Purchasing Department
Finance Group

July 5, 2016

INVITATION TO BID

The City of Norwalk, on the behalf of the Oak Hills Park Authority, is soliciting bids for Golf Course Improvements in the following areas: bunker replacement, tee construction and related irrigation at the Oak Hills Park Golf Course facility. Funding for this project is being provided for by a State of Connecticut Department of Energy and Environmental Protection grant. The approximate budget for this project is $1,000,000.00. The requirements of these construction services are outlined in greater detail within the specification materials contained within Section 2 of this bid package – Project Specifications; and within the accompanying project drawings.

PROJECT NUMBER:	**3697**
DEADLINE :	**2:00 PM, July 22, 2016**
BID TITLE :	**Golf Course Improvements Project at Oak Hills Park**
SITE LOCATION:	**Oak Hills Park** **165 Fillow Street, Norwalk CT 06850**

BID DOCUMENTS for this project are available over the Internet at http://www.norwalkct.org Adobe Acrobat reader is required to view this document. If you do not have this software you may download the required software from Adobe.

A Pre-Bid Conference will be held at 12:00PM, Tuesday, July 12, 2016, meeting at the Maintenance Garage which is located at Oak Hills Park, 165 Fillow Street, Norwalk, CT 06850. A walk-through of the project area will follow the pre-bid conference. The pre-bid conference is not mandatory but highly recommended.

All questions concerning this solicitation must be directed in writing via email to Sharon Conners, sconners@norwalkct.org. The deadline for submission of questions for this bid solicitation is **02:00PM, Thursday, July 14, 2016. Please include the Project Number and Bid Title in the subject line,** thank you**.**

Bidders will be required to provide:

- 10% bid bond with your response (see Section 3.1 C).
- Performance, labor, and materials bond for 100% of the project upon award if the contract value exceeds $50,000.00 (see Section 3.1 C & D).
- Copies of current certifications as applicable to this solicitation.
- Original bid response, plus nine (9) copies.

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THIS CONTACT IS SUBJECT TO THE STATE OF CONNECTICUT CHRO STATE SET-ASIDE AND CONTRACT COMPLIANCE REQUIREMENTS

The contractor who is selected to perform this State project must comply with CONN. GEN. STAT. §§ 4a-60, 4a-60a, 4a-60g, and 46a-68b through 46a-68f, inclusive, as amended by June 2015 Special Session Public Act 15-5.

State law requires a minimum of twenty-five (25%) percent of the state-funded portion of the contract forward to subcontractors holding current certification from the Connecticut Department of Administrative Services ("DAS") under the provisions of CONN. GEN. STAT. § 4a-60g. (25% of the work with DAS certified Small and Minority owned businesses and 25% of that work with DAS certified Minority, Women and/or Disabled owned businesses.) The contractor must demonstrate good faith effort to meet the 25% set-aside goals.

For municipal public works contracts and quasi-public agency projects, the contractor must file a written or electronic non-discrimination certification with the Commission on Human Rights and Opportunities. Forms can be found at:
http://www.ct.gov/opm/cwp/view.asp?a=2982&q=390928&opmNav_GID=1806

Bidders must complete, sign, and submit the "CHRO Contract Compliance Regulations
Notification to Bidders" form with their bid. Bids not including this form shall be considered incomplete and will be rejected. This form is attached and can be found at:
http://www.ct.gov/chro/lib/chro/pdf/notificationtobidders.pdf

Bidders should refer to the Checklist for Contractors on Municipal Public Works Contracts,
Effective October 1st, 2015, and available at:

http://www.ct.gov/chro/lib/chro/CHECKLIST_modified_for_Legislature__FOR_CONTRACTORS_FOR_MUNICIPAL_PROJECTS15.pdf

Any individual trade contract award which exceeds $500,000 in value must comply with the State of Connecticut Department of Administrative Services' (DAS) Contractor Prequalification Program (Connecticut General Statutes §4a-100, 4b-101 and 4b-91). These contractors must hold a current DAS Contractor Prequalification certificate. The bid submission work must contain their current prequalification certificate and the update (bid) statement, in addition to the other bid submission materials required herein. The classification required for these trade packages is Landscaping and Sitework.

The selected bidder must comply with all provisions of the Connecticut General Statute 31-53 (State of Connecticut, Department of Labor Prevailing Wage Rates and Executive Order #3. Certified payroll information shall be required and submitted on a weekly utilizing the forms provided within the bid specification book.

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SPECIAL NOTES:

1.) PROJECT SCHEDULE: Construction shall commence on or about Oct. 16, 2016 and shall be completed on or about Dec. 31, 2017.

Construction Phasing Schedule: Oak Hills Park Golf Course is scheduled to operate as a 9 hole course (front 9 only) beginning on October 11, 2016. Golf Course improvements will begin on holes 10-18 beginning on October 11, 2016. The work will progress logistically in the following areas of the golf course (Area A- Holes 10, 11, 12 & 13), (Area B- Holes 14 & 15), (Area C- Holes 16 & 17) and (Area D- Hole 18). Weather permitting the project is scheduled for completion on or before December 31, 2016. Holes 10-18 will reopen when ready for play in 2017.

2.) BUILDING PERMITS - Contractors shall obtain and pay for all required permit(s) for this project. Permits fees are NOT waived for this project. See Section 2 PROJECT SPECIFICATIONS/SCOPE OF WORK

3.) References to Department of Public Works, Director of Public Works, and Engineer in Section 3 and Section 4 are to be interpreted as "Owner's designated representative".

4.) Section 4, Item 109-04-2b, Contractor Charges is changed to read "...profit and overhead shall be figured at fifteen (15) percent unless some other basis is approved by the Director."

5.) Section 3.8, Liquidated Damages, change to read “Liquidated damages as defined in Article 27 of the Norwalk General Conditions for Construction will be $350.00 per day.

6.) Contractors are hereby reminded that all submitted bid amounts MUST include all costs/insurance premium required to satisfy the various insurance limits as identified in these documents.

7.) Contractors are hereby advised that the determination of the lowest responsible bidder will be based on the sum of the Base Bid(s) and the Alternate Item(s) selected by the City in its best interest. Said determination by the City would be final.

8.) As part of the scope of services and the bid amount for this project, Contractor shall include the installation of a construction sign as specified herein. Said sign shall be installed at location to be determined on site by the City. See Section 2 SPECIFICATIONS/SCOPE OF WORK

9.) **Prevailing Wage Rates** shall apply to these services. All labor required for this project shall comply with the State of Connecticut. A copy of the State of Connecticut prevailing wage rates is included or to be provided via bid addendum prior to bid opening as a component of this solicitation. See Section 5 for this information.

BIDDER LISTS (List of Plan Holders) will not be published.

ADDENDA, if issued, will be available over the Internet at http://www.norwalkct.org. It is the responsibility of the bidders to verify the issuance of any addenda. **We strongly suggest that you check for any addenda a minimum of forty eight hours in advance of the bid deadline.**

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SUMMARIES will be available any time after 5:00 PM on the day of the bid opening over the Internet at **http://www.norwalkct.org**. The document number to request will be the same as the project number indicated in the invitation to bid. Bid results will not be provided over the phone.

AWARD NOTIFICATION will be issued by mail.

If, after review of the bid documents, your firm is interested in performing the services specified, provide the information requested, sign and return the complete documents, along with your detailed proposal, to the Purchasing Department by the due date.

SEALED BID RESPONSES, One (1) Original plus nine (9) copies are to be delivered to:

City of Norwalk
Purchasing Department, Room 103
125 East Avenue
Norwalk, CT 06856-5125

NOTE: The City of Norwalk will not accept any sealed bid submissions via email or facsimile (fax). Please indicate the bid number and bid title on the envelope.

The City of Norwalk is an Affirmative Action/Equal Opportunity Employer; Minority/Women's Business Enterprises are encouraged to apply

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SECTION 1 – FORMS OF PROPOSAL

1.1 RESPONSE FORM - BID #3697 Golf Course Improvements Project-Oak Hills Park

Vendor Name -		
Address -		
Phone -	**Fax -**	**Email -**
Manager -		**Fed ID#**

Bid Security in the form of a (check one) is attached.		Bond		Certified Check
Cost for performance bond <u>included in lump sum</u>	$		per thousand dollars	
Insurance Agency Name -			Tel.-	
Agency Address -				

The undersigned hereby declares that he has or they have carefully examined the plans, specifications and project site and has satisfied himself as to all the quantities and conditions, and understands that in signing this proposal he waives all right to plead any misunderstanding regarding the same.

The undersigned further understands and agrees that he will furnish and provide all the necessary material, machinery, implements, tools, labor, services, and other items of whatever nature, and to do and perform all the work necessary under the aforesaid conditions, to carry out the contract and to accept in full compensation therefore the amount of the contract as agreed to by the Contractor and the City.

The undersigned further agrees, in case of variations of quantities from those shown or specified, the following unit prices will be used in adjusting the contract price. If quantities are authorized by the City, the following amount will be added to the contract as required. Unless otherwise noted, each UNIT PRICE shall include all equipment, tools, labor, permits, fees, etc., incidental to the installation and completion of the work involved.

It is further understood and agreed that all the information included in, and attached to, or required by the Request for Bid shall become public record upon delivery to the City.

The following unit prices shall apply to this project:

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Item #	Oak Hills Park Golf Course Hole 1	Units	Quantity	Unit Cost	Total Cost
H1-1	**Layout and Staking**	LS	1		
H1-2	**Silt Fence Installation**	LF	200		
H1-3	**Tree Removal**				
A	**cut, log, stump**	EA	10		
B	**cut, log, grind**	EA			
C	**canopy trim**	EA			
D	**underbrushing**	LS	1		
H1-4	**Sod Stripping and Disposal**	SF	9,000		
H1-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	20		
H1-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable) Includes 7th tee area**	SF	4,624		
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H1-7	**Rock Removal**				
a	**blasting, removal, hauling to staging area**	CY			
b	**hammering, removal, hauling to staging area**	CY	100		
c	**saw cutting for piping**	LF			
H1-8	**New Tee Construction (shape complex, mix install, laser level)**	SF	3,379		
H1-9	**Tee Surface Laser Leveling**	SF	470		
H1-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (2)**	SF			
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H1-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H1-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF			

Item #	Oak Hills Park Golf Course Hole 1	Units	Quantity	Unit Cost	Total Cost
b	4" Pipe-perf. (with stone surround)	LF			
c	6" Pipe-solid (poly smooth wall interior)-repair	LF			
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA			
m	18" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H1-13	**Asphalt Cart Path Construction (8' width)**	LF	305		
H1-14	**Aggregate Cart Path Construction (8' width)**	SF			
H1-15	**Asphalt Cart Path Curbing**	LF	170		
H1-16	**Finish Grading**	LS	1		
H1-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	3,849		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	2,000		
c	Primary Rough Sod Allowance	SF	15,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			

Item #	Oak Hills Park Golf Course Hole 1	Units	Quantity	Unit Cost	Total Cost
g	Green Seed(007 or approved equivalent)	SF			
H1-18	**Rock Wall Construction (Hole 1)- utilize on site rock from excav.**	FF	0		
H1-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H1-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H1-21	**Miscellaneous**				
a					
b					
c					
				Hole 1 Total	
H1-22	**Bid Alternates**				
a	Rebuild Bunker (in place- see specifications)	SF	1,100		
b	4" Pipe-solid (poly smooth wall interior)	LF	75		
c	4" Pipe-perf. (with stone surround)	LF	194		
d	6" Pipe-solid (poly smooth wall interior)-repair	LF	50		
e	12" Nyloplast Drain Inlets with grates	EA	4		
f	18" Nyloplast Drain Inlets with grates	EA	2		
g	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF	1,017		
h	Fairway Sod Allowance (Low Mow BG sod)	SF	2,000		
i	Primary Rough Sod Allowance	SF	10,000		

Item #	Oak Hills Park Golf Course Hole 2	Units	Quantity	Unit Cost	Total Cost
H2-1	**Layout and Staking**	LS	1		
H2-2	**Silt Fence Installation**	LF	184		
H2-3	**Tree Removal**				
a	**cut, log, stump**	EA			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip behind green)**	SF			
H2-4	**Sod Stripping and Disposal**	SF	2,500		
H2-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	10		
H2-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H2-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H2-8	**New Tee Construction (shape complex, mix install, laser level)**	SF			
H2-9	**Tee Surface Laser Leveling**	SF	4,087		
H2-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (1)**	SF	1,550		
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)-behind green**	SF			
H2-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H2-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				

Item #	Oak Hills Park Golf Course Hole 2	Units	Quantity	Unit Cost	Total Cost
a	4" Pipe-solid (poly smooth wall interior)	LF	35		
b	4" Pipe-perf. (with stone surround)	LF	125		
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	1		
m	24" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF	220		
H2-13	**Asphalt Cart Path Construction (8' width)**	SF			
H2-14	**Aggregate Cart Path Construction (8' width)**	SF			
H2-15	**Asphalt Cart Path Curbing**	LF			
H2-16	**Finish Grading**	LS	1		
H2-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	4,087		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	1,200		
c	Primary Rough Sod Allowance	SF	4,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			

Item #	Oak Hills Park Golf Course Hole 2	Units	Quantity	Unit Cost	Total Cost
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			
H2-18	**Rock Wall Construction (Hole 1)- utilize on site rock from excav.**	FF			
H2-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H2-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H2-21	**Miscellaneous**				
a					
b					
c					
				Hole 2 Total	
H2-22	**Bid Alternates**				
BA2-a	6" Pipe-solid (poly smooth wall interior)	LF	220		
b	Daylight Outfall with stone dissipator, flare end	EA	1		
c	Grass Hollow (shape in new grass hollow)-behind green	SF	1,568		
d	Secondary Rough Sod Allowance	SF	2,000		

Item #	Oak Hills Park Golf Course Hole 3	Units	Quantity	Unit Cost	Total Cost
H3-1	**Layout and Staking**	LS	1		
H3-2	**Silt Fence Installation**	LF	368		
H3-3	**Tree Removal**				
a	**cut, log, stump**	EA			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H3-4	**Sod Stripping and Disposal**	SF	7,500		
H3-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	15		
H3-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF	1,750		
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H3-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H3-8	**New Tee Construction (shape complex, mix install, laser level)**	SF	2,400		
H3-9	**Tee Surface Laser Leveling**	SF			
H3-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF			
b	**Rebuild Bunker (in place- see specifications)**	SF	700		
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H3-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H3-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF			
b	4" Pipe-perf. (with stone surround)	LF	195		

Item #	Oak Hills Park Golf Course Hole 3	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA			
m	24" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H3-13	**Asphalt Cart Path Construction (8' width) -to #4 tee**	SF	926		
H3-14	**Aggregate Cart Path Construction (8' width)**	SF			
H3-15	**Asphalt Cart Path Curbing**	LF			
H3-16	**Finish Grading**	LS			
H3-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	2,400		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	3,600		
c	Primary Rough Sod Allowance	SF	10,000		
d	Primary Rough Seed Allowance/w hydromulch	SF	2,500		
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 3	Units	Quantity	Unit Cost	Total Cost
H3-18	**Rock Wall Construction (Hole 1)- utilize on site rock from excav.**	FF			
H3-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H3-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H3-21	**Miscellaneous**				
a					
b					
c					
				Hole 3 Total	
H3-22	**Bid Alternates**				

Item #	Oak Hills Park Golf Course Hole 4	Units	Quantity	Unit Cost	Total Cost
H4-1	**Layout and Staking**	LS	1		
H4-2	**Silt Fence Installation**	LF			
H4-3	**Tree Removal**				
a	**cut, log, stump**	EA	12		
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H4-4	**Sod Stripping and Disposal**	SF	4,000		
H4-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	20		
H4-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H4-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H4-8	**New Tee Construction (shape complex, mix install, laser level)**	SF	5,500		
H4-9	**Tee Surface Laser Leveling**	SF	1,940		
H4-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF			
b	**Rebuild Bunker (in place- see specifications)**	SF	500		
c	**Existing Bunker Removal (shape to hollow)**	SF	700		
d	**Grass Hollow (shape in new grass hollow)**	SF			
H4-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H4-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	48		
b	4" Pipe-perf. (with stone surround)	LF			

Item #	Oak Hills Park Golf Course Hole 4	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA			
m	24" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H4-13	**Asphalt Cart Path Construction (8' width)**	SF			
H4-14	**Aggregate Cart Path Construction (8' width)**	SF			
H4-15	**Asphalt Cart Path Curbing**	LF			
H4-16	**Finish Grading**	LS	1		
H4-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	7,607		
b	Fairway Sod Allowance (Low Mow BG sod)	SF			
c	Primary Rough Sod Allowance	SF	10,000		
d	Primary Rough Seed Allowance/w hydromulch	SF	3,500		
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 4	Units	Quantity	Unit Cost	Total Cost
H4-18	**Rock Wall Construction (Hole 1)- utilize on site rock from excav.**	FF			
H4-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H4-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H4-21	**Miscellaneous**				
a	Guard Rail at Tee	LF	187		
b					
c					
				Hole 4 Total	
H4-22	**Bid Alternates**				
BA4-a	Cut, Log, Stump	EA	30		
b	Tee Surface Laser Leveling-Middle Tee	SF	5,946		

Item #	Oak Hills Park Golf Course Hole 5	Units	Quantity	Unit Cost	Total Cost
H5-1	**Layout and Staking**	LS	1		
H5-2	**Silt Fence Installation**	LF	768		
H5-3	**Tree Removal**				
a	**cut, log, stump (includes select trees behind 5 tee)**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H5-4	**Sod Stripping and Disposal**	SF	1,500		
H5-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	10		
H5-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H5-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H5-8	**New Tee Construction (shape complex, mix install, laser level)**	SF			
H5-9	**Tee Surface Laser Leveling**	SF	4,171		
H5-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	700		
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H5-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H5-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	21		
b	4" Pipe-perf. (with stone surround)	LF			

Item #	Oak Hills Park Golf Course Hole 5	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA			
m	24" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H5-13	**Asphalt Cart Path Construction (8' width)**	SF			
H5-14	**Aggregate Cart Path Construction (8' width)**	SF			
H5-15	**Asphalt Cart Path Curbing**	LF			
H5-16	**Finish Grading**	LS	1		
H5-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	4,171		
b	Fairway Sod Allowance (Low Mow BG sod)	SF			
c	Primary Rough Sod Allowance	SF	4,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 5	Units	Quantity	Unit Cost	Total Cost
H5-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			
H5-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H5-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H5-21	**Miscellaneous**				
a					
b					
c					
				Hole 5 Total	
H5-22	**BID ALTERNATES Hole 5**				
BA5-a	Asphalt Cart Path Construction	LF	330		
b	Guard Rail Installation	LF	102		

Item #	Oak Hills Park Golf Course Hole 6	Units	Quantity	Unit Cost	Total Cost
H6-1	**Layout and Staking**	LS	1		
H6-2	**Silt Fence Installation (inc. on Hole #5)**	LF			
H6-3	**Tree Removal**				
a	**cut, log, stump**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H6-4	**Sod Stripping and Disposal**	SF	2,000		
H6-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	8		
H6-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H6-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H6-8	**New Tee Construction (shape complex, mix install, laser level)**	SF			
H6-9	**Tee Surface Laser Leveling**	SF			
H6-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF			
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H6-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H6-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF			
b	4" Pipe-perf. (with stone surround)	LF			
Item #	**Oak Hills Park Golf Course Hole 6**	**Units**	**Quantity**	**Unit Cost**	**Total Cost**
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF	72		

e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	2		
m	24" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF	595		
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF	72		
H6-13	**Asphalt Cart Path Construction (8' width) - to #4 tee**	SF			
H6-14	**Aggregate Cart Path Construction (8' width)**	SF			
H6-15	**Asphalt Cart Path Curbing**	LF			
H6-16	**Finish Grading**	LS	1		
H6-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	875		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	2,000		
c	Primary Rough Sod Allowance	SF	3,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			
H6-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			
H6-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H6-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H6-21	**Miscellaneous**				
a					
b					
c					
				Hole 6 Total	

Item #	Oak Hills Park Golf Course Hole 6	Units	Quantity	Unit Cost	Total Cost
H6-22	**BID ALTERNATES Hole 6**				
BA6-a	New Tee Construction (shape complex, mix install, laser level)	SF	875		
b	Tee Surfaces (Low Mow BG sod)	SF	875		
c	Primary Rough Sod	SF	750		
d	Tee Irrigation	LS	1		
e	6" Perf Pipe (with stone surround)	LF	131		
f	12" Nyloplast Drain Inlets with grates	EA	1		

Item #	Oak Hills Park Golf Course Hole 7	Units	Quantity	Unit Cost	Total Cost
H7-1	**Layout and Staking**	LS	1		
H7-2	**Silt Fence Installation (inc. on Hole #5)**	LF			
H7-3	**Tree Removal**				
a	**cut, log, stump (includes select trees behind 5 tee)**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H7-4	**Sod Stripping and Disposal**	SF	12,000		
H7-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	750		
H7-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF	2,563		
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H7-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H7-8	**New Tee Construction (shape complex, mix install, laser level)**	SF	1,200		
H7-9	**Tee Surface Laser Leveling**	SF	1,305		
H7-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF			
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H7-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H7-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	26		
b	4" Pipe-perf. (with stone surround)	LF	243		
c	6" Pipe-solid (poly smooth wall interior)	LF	118		
d	6" Perf Pipe (with stone surround)	LF	69		

Item #	Oak Hills Park Golf Course Hole 7	Units	Quantity	Unit Cost	Total Cost
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	4		
m	24" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H7-13	**Asphalt Cart Path Construction (8' width)**	LF	849		
H7-14	**Aggregate Cart Path Construction (8' width)**	LF			
H7-15	**Asphalt Cart Path Curbing**	LF			
H7-16	**Finish Grading**	LS	1		
H7-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	1,305		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	9,000		
c	Primary Rough Sod Allowance	SF	15,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			
H7-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			
H7-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H7-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H7-21	**Miscellaneous**				
a	Earthwork/Mounding/Shaping (500cy, 3000sf)- at lower fairway	LS	1		
b					
c					
				Hole 7 Total	

Item #	Oak Hills Park Golf Course Hole 7	Units	Quantity	Unit Cost	Total Cost
H7-22	**BID ALTERNATES Hole 7**				
BA7-a	Asphalt Cart Path Construction- Do Not Install Area (credit savings)	LF	140		
b	Grass Hollows (shaped along right side per plan-field directive)	SF	2,700		
c	Primary Rough Sod Allowance	SF	3,000		

Item #	Oak Hills Park Golf Course Hole 8	Units	Quantity	Unit Cost	Total Cost
H8-1	**Layout and Staking**	LS	1		
H8-2	**Silt Fence Installation**	LF	467		
H8-3	**Tree Removal**				
a	**cut, log, stump**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H8-4	**Sod Stripping and Disposal**	SF	12,000		
H8-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	50		
H8-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H8-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H8-8	**New Tee Construction (shape complex, mix install, laser level)**	SF			
H8-9	**Tee Surface Laser Leveling**	SF	2,900		
H8-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	3,895		
b	**Rebuild Bunker (in place- see specifications)**	SF	750		
c	**Existing Bunker Removal (shape to hollow)**	SF	3,500		
d	**Grass Hollow (shape in new grass hollow)**	SF			
H8-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H8-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	44		
b	4" Pipe-perf. (with stone surround)	LF			

Item #	**Oak Hills Park Golf Course Hole 8**	**Units**	**Quantity**	**Unit Cost**	**Total Cost**
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	1		
m	24" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H8-13	**Asphalt Cart Path Construction (8' width) - to #9 tee**	LF			
H8-14	**Aggregate Cart Path Construction (8' width)**	SF	8,856		
H8-15	**Asphalt Cart Path Curbing**	LF			
H8-16	**Finish Grading**	LS	1		
H8-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	2,900		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	2,000		
c	Primary Rough Sod Allowance	SF	13,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 8	Units	Quantity	Unit Cost	Total Cost
H8-18	**Rock Wall Construction (Hole 1)- utilize on site rock from excav.**	FF			
H8-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H8-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H8-21	**Miscellaneous**				
a	Earthwork/Mounding/Shaping (500cy, 3000sf)	LS			
b					
c					
				Hole 8 Total	
H8-22	**BID ALTERNATES Hole 8**				
BA8-a	New Tee Construction (shape complex, mix install, laser level)	SF	600		
b	Tee Surface Sod	SF	600		
c	Primary Rough Sod	SF	750		
d	Tee Irrigation	LS	1		
e	Asphalt Cart Path - Do Not Install Area (credit-savings)	LF	312		
f	Asphalt Cart Path Construction (from end of existing to #9 tee)	LF	1,107		
g	Aggregate Cart Path Construction (from end of existing to existing connect)	SF	561		

Item #	Oak Hills Park Golf Course Hole 9	Units	Quantity	Unit Cost	Total Cost
H9-1	**Layout and Staking**	LS	1		
H9-2	**Silt Fence Installation**	LF	142		
H9-3	**Tree Removal**				
a	**cut, log, stump**	LS			
b	**cut, log, grind**	EA	3		
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H9-4	**Sod Stripping and Disposal**	**SF**	16,000		
H9-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	150		
H9-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF	730		
H9-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H9-8	**New Tee Construction (shape complex, mix install, laser level)**	SF			
H9-9	**Tee Surface Laser Leveling**	SF	4,200		
H9-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	2,785		
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF	3,182		
d	**Grass Hollow (shape in new grass hollow)**	SF			
H9-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H9-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	51		
b	4" Pipe-perf. (with stone surround)	LF			

Item #	**Oak Hills Park Golf Course Hole 9**	**Units**	**Quantity**	**Unit Cost**	**Total Cost**
c	6" Pipe-solid (poly smooth wall interior)	LF	468		
d	6" Perf Pipe (with stone surround)	LF	86		
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF	72		
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	4		
m	24" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H9-13	**Asphalt Cart Path Construction (8' width) - to #10 tee**	LF	1,150		
H9-14	**Aggregate Cart Path Construction (8' width)**	LF			
H9-15	**Asphalt Cart Path Curbing**	LF			
H9-16	**Finish Grading**	LS	1		
H9-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	4,200		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	1,200		
c	Primary Rough Sod Allowance	SF	20,000		
d	Primary Rough Seed Allowance/w hydromulch	SF	2,000		
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 9	Units	Quantity	Unit Cost	Total Cost
H9-18	**Rock Wall Construction (Hole 1)- utilize on site rock from excav.**	FF			
H9-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H9-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H9-21	**Miscellaneous**				
a		LS			
b					
c					
				Hole 9 Total	
H9-22	**BID ALTERNATES Hole 9**				
BA9-a	New Tee Construction (shape complex, mix install, laser level)	SF	900		
b	Tee Surface Sod	SF	900		
c	Primary Rough Sod	SF	750		
d	Tee Irrigation	LS	1		
e	Aggregate Cart Path Construction (from 9 existing aggregate)	LF	591		
f	6" Perf Pipe (with stone surround)	LF	309		

Item #	Oak Hills Park Golf Course Hole 10	Units	Quantity	Unit Cost	Total Cost
H10-1	**Layout and Staking**	LS	1		
H10-2	**Silt Fence Installation**	LF			
H10-3	**Tree Removal**				
a	**cut, log, stump**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H10-4	**Sod Stripping and Disposal**	SF	17,000		
H10-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	100		
H10-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H10-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H10-8	**New Tee Construction (shape complex, mix install, laser level)**	SF	1,200		
H10-9	**Tee Surface Laser Leveling**	SF	3,347		
H10-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	3,870		
b	**Rebuild Bunker (in place- see specifications)**	SF	750		
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H10-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H10-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	93		
b	4" Pipe-perf. (with stone surround)	LF			

Item #	Oak Hills Park Golf Course Hole 10	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF	151		
d	6" Perf Pipe (with stone surround)	LF	550		
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior)	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	4		
m	24" Nyloplast Drain Inlets with grates	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H10-13	**Asphalt Cart Path Construction (8' width)**	LF			
H10-14	**Aggregate Cart Path Construction (8' width)**	SF	4,409		
H10-15	**Asphalt Cart Path Curbing**	LF			
H10-16	**Finish Grading**	LS	1		
H10-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	3,347		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	2,000		
c	Primary Rough Sod Allowance	SF	20,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 10	Units	Quantity	Unit Cost	Total Cost
H10-18	**Rock Wall Construction (Hole 1)- utilize on site rock from excav.**	FF			
H10-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H10-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H10-21	**Miscellaneous**				
a	Earthwork at Tee (1200sf back mid tee tie in)	LS	1		
b					
c					
				Hole 10 Total	
H10-22	**BID ALTERNATES Hole 10**				
BA10-a	New Tee Construction (shape complex, mix install, laser level)- forward	SF	1,015		
b	Tee Surface Sod	SF	1,015		
c	Primary Rough Sod	SF	750		
d	Tee Irrigation	LS	1		
e	Asphalt Cart Path Construction (from 10 existing aggregate/at green)	LF	621		
f	New Tee Construction (shape complex, mix install, laser level)- middle	SF	730		
g	Tee Surface Sod	SF	730		
h	Primary Rough Sod	SF	1,200		
i	New Tee Construction (shape complex, mix install, laser level)- middle	SF	4,310		
j	Tee Surface Sod	SF	4,310		
k	Primary Rough Sod	SF	2,000		
l	6" Perf Pipe (with stone surround)	LF	334		

Item #	Oak Hills Park Golf Course Hole 11	Units	Quantity	Unit Cost	Total Cost
H11-1	**Layout and Staking**	LS	1		
H11-2	**Silt Fence Installation**	LF			
H11-3	**Tree Removal**				
a	**cut, log, stump (includes select trees behind 5 tee)**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H11-4	**Sod Stripping and Disposal**	SF	15,000		
H11-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	50		
H11-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF	2,817		
H11-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H11-8	**New Tee Construction (shape complex, mix install, laser level)**	SF			
H11-9	**Tee Surface Laser Leveling**	SF	3,880		
H11-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	2,210		
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF	2,500		
d	**Grass Hollow (shape in new grass hollow)**	SF			
H11-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H11-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	45		
b	4" Pipe-perf. (with stone surround)	LF			

Item #	Oak Hills Park Golf Course Hole 11	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)-ellipse	LF	20		
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior) riser with grate	LF	8		
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA			
m	24" Nyloplast Drain Inlets with grates-	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF	20		
H11-13	**Asphalt Cart Path Construction (8' width)**	LF	852		
H11-14	**Aggregate Cart Path Construction (8' width)**	LF			
H11-15	**Asphalt Cart Path Curbing**	LF			
H11-16	**Finish Grading**	LS	1		
H11-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	3,880		
b	Fairway Sod Allowance (Low Mow BG sod)	SF			
c	Primary Rough Sod Allowance	SF	12,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			
H11-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			

Item #	**Oak Hills Park Golf Course Hole 11**	**Units**	**Quantity**	**Unit Cost**	**Total Cost**
H11-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H11-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H11-21	**Miscellaneous**				
a		LS			
b					
c					
				Hole 11 Total	
H11-22	**BID ALTERNATES Hole 11**				
BA11-a	New Tee Construction (shape complex, mix install, laser level)-forward	SF	1,000		
b	Tee Surface Sod	SF	1,000		
c	Primary Rough Sod	SF	750		
d	Tee Irrigation	LS	1		
e	New Tee Construction (shape complex, mix install, laser level)- back	SF	4,927		
f	Tee Surface Sod	SF	4,927		
g	Primary Rough Sod	SF	1,200		

Item #	Oak Hills Park Golf Course Hole 12	Units	Quantity	Unit Cost	Total Cost
H12-1	**Layout and Staking**	LS	1		
H12-2	**Silt Fence Installation**	LF			
H12-3	**Tree Removal**				
a	**cut, log, stump (includes select trees behind 5 tee)**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H12-4	**Sod Stripping and Disposal**	SF	12,000		
H12-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	25		
H12-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF	1,584		
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H12-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H12-8	**New Tee Construction (shape complex, mix install, laser level)**	SF	4,475		
H12-9	**Tee Surface Laser Leveling**	SF			
H12-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	5,744		
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF	3,200		
d	**Grass Hollow (shape in new grass hollow)**	SF			
H12-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H12-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	358		
b	4" Pipe-perf. (with stone surround)	LF	432		

Item #	Oak Hills Park Golf Course Hole 12	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF	170		
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)-ellipse	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior) riser with grate	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA			
m	24" Nyloplast Drain Inlets with grates-	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H12-13	**Asphalt Cart Path Construction (8' width)**	LF	310		
H12-14	**Aggregate Cart Path Construction (8' width)**	LF			
H12-15	**Asphalt Cart Path Curbing**	LF			
H12-16	**Finish Grading**	LS	1		
H12-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	4,475		
b	Fairway Sod Allowance (Low Mow BG sod)	SF			
c	Primary Rough Sod Allowance	SF	20,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			
H12-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			

Item #	Oak Hills Park Golf Course Hole 12	Units	Quantity	Unit Cost	Total Cost
H12-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H12-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H12-21	**Miscellaneous**				
a		LS			
b					
c					
				Hole 12 Total	
H12-22	**BID ALTERNATES Hole 12**				
BA12-a	Reduce length of Asphalt Cart Path (total length 214lf)	LF	214		

Item #	Oak Hills Park Golf Course Hole 13	Units	Quantity	Unit Cost	Total Cost
H13-1	**Layout and Staking**	LS	1		
H13-2	**Silt Fence Installation**	LF			
H13-3	**Tree Removal**				
a	**cut, log, stump (includes select trees behind 5 tee)**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H13-4	**Sod Stripping and Disposal**	SF	8,500		
H13-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	50		
H13-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H13-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H13-8	**New Tee Construction (shape complex, mix install, laser level)**	SF			
H13-9	**Tee Surface Laser Leveling**	SF	2,500		
H13-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	750		
b	**Rebuild Bunker (in place- see specifications)**	SF	600		
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H13-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H13-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	173		
b	4" Pipe-perf. (with stone surround)	LF			

Item #	Oak Hills Park Golf Course Hole 13	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)-ellipse	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior) riser with grate	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA			
m	24" Nyloplast Drain Inlets with grates-	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H13-13	**Asphalt Cart Path Construction (8' width)**	LF			
H13-14	**Aggregate Cart Path Construction (8' width)**	LF			
H13-15	**Asphalt Cart Path Curbing**	LF			
H13-16	**Finish Grading**	LS	1		
H13-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	2,500		
b	Fairway Sod Allowance (Low Mow BG sod)	SF			
c	Primary Rough Sod Allowance	SF	12,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 13	Units	Quantity	Unit Cost	Total Cost
H13-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			
H13-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H13-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H13-21	**Miscellaneous**				
a					
b					
c					
				Hole 13 Total	
H13-22	**BID ALTERNATES Hole 13**				
BA13-a	Earthwork/Shaping Mounding at back of green (1000cy/3000sf)	LS	1		
b	Remove, fill reshape as hollow- bunker behind green	SF	961		
c	Primary Rough Sod- bunker behind green	SF	2,000		

Item #	Oak Hills Park Golf Course Hole 14	Units	Quantity	Unit Cost	Total Cost
H14-1	**Layout and Staking**	LS	1		
H14-2	**Silt Fence Installation**	LF	80		
H14-3	**Tree Removal**				
a	**cut, log, stump**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H14-4	**Sod Stripping and Disposal**	SF	6,000		
H14-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	30		
H14-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H14-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H14-8	**New Tee Construction (shape complex, mix install, laser level)**	SF	3,760		
H14-9	**Tee Surface Laser Leveling**	SF	600		
H14-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF			
b	**Rebuild Bunker (in place- see specifications)**	SF	1,325		
c	**Existing Bunker Removal (shape to hollow)**	SF	3,000		
d	**Grass Hollow (shape in new grass hollow)**	SF			
H14-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H14-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF			
b	4" Pipe-perf. (with stone surround)	LF	436		

Item #	Oak Hills Park Golf Course Hole 14	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF	462		
e	8" Pipe-solid (poly smooth wall interior)	LF	368		
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)-ellipse	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior) riser with grate	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	6		
m	24" Nyloplast Drain Inlets with grates-	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end (+/-60sf)	EA	1		
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H14-13	**Asphalt Cart Path Construction (8' width)**	LF			
H14-14	**Aggregate Cart Path Construction (8' width)**	LF			
H14-15	**Asphalt Cart Path Curbing**	LF			
H14-16	**Finish Grading**	LS	1		
H14-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	4,360		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	1,000		
c	Primary Rough Sod Allowance	SF	12,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 14	Units	Quantity	Unit Cost	Total Cost
H14-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			
H14-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H14-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H14-21	**Miscellaneous**				
a		LS			
b					
c					
				Hole 14 Total	
H14-22	**BID ALTERNATES Hole 14**				
BA14-a	New Tee Construction (shape complex, mix install, laser level)	SF	400		
b	Tee Surface Sod	SF	400		
c	Primary Rough Sod	SF	500		
d	Tee Irrigation	LS	1		

Item #	Oak Hills Park Golf Course Hole 15	Units	Quantity	Unit Cost	Total Cost
H15-1	**Layout and Staking**	LS	1		
H15-2	**Silt Fence Installation**	LF	533		
H15-3	**Tree Removal**				
a	**cut, log, stump**	LS			
b	**cut, log, grind**	EA	7		
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H15-4	**Sod Stripping and Disposal**	SF	8,000		
H15-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	25		
H15-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H15-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H15-8	**New Tee Construction (shape complex, mix install, laser level)**	SF	4,510		
H15-9	**Tee Surface Laser Leveling**	SF			
H15-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	3,346		
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H15-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H15-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	385		
b	4" Pipe-perf. (with stone surround)	LF	623		

Item #	Oak Hills Park Golf Course Hole 15	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF	52		
d	6" Perf Pipe (with stone surround)	LF			
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)-ellipse	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior) riser with grate	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA			
m	24" Nyloplast Drain Inlets with grates-	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H15-13	**Asphalt Cart Path Construction (8' width)**	LF			
H15-14	**Aggregate Cart Path Construction (8' width)**	LF			
H15-15	**Asphalt Cart Path Curbing**	LF			
H15-16	**Finish Grading**	LS	1		
H15-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	4,510		
b	Fairway Sod Allowance (Low Mow BG sod)	SF			
c	Primary Rough Sod Allowance	SF	13,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 15	Units	Quantity	Unit Cost	Total Cost
H15-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			
H15-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H15-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H15-21	**Miscellaneous**				
a		LS			
b					
c					
				Hole 15 Total	
H15-22	**BID ALTERNATES Hole 15**				
BA15-a	New Tee Construction (shape complex, mix install, laser level)	SF	1,000		
b	Tee Surface Sod	SF	1,000		
c	Primary Rough Sod	SF	750		
d	Tee Irrigation	LS	1		

Item #	Oak Hills Park Golf Course Hole 16	Units	Quantity	Unit Cost	Total Cost
H16-1	**Layout and Staking**	LS	1		
H16-2	**Silt Fence Installation**	LF	93		
H16-3	**Tree Removal**				
a	**cut, log, stump**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H16-4	**Sod Stripping and Disposal**	SF	5,000		
H16-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	25		
H16-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H16-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H16-8	**New Tee Construction (shape complex, mix install, laser level)**	SF			
H16-9	**Tee Surface Laser Leveling**	SF	3,367		
H16-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF			
b	**Rebuild Bunker (in place- see specifications)**	SF			
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H16-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H16-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF			
b	4" Pipe-perf. (with stone surround)	LF			

Item #	Oak Hills Park Golf Course Hole 16	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF	115		
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)-ellipse	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior) riser with grate	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	1		
m	24" Nyloplast Drain Inlets with grates-	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF	65		
H16-13	**Asphalt Cart Path Construction (8' width)**	LF			
H16-14	**Aggregate Cart Path Construction (8' width)**	LF			
H16-15	**Asphalt Cart Path Curbing**	LF			
H16-16	**Finish Grading**	LS	1		
H16-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	3,367		
b	Fairway Sod Allowance (Low Mow BG sod)	SF	2,000		
c	Primary Rough Sod Allowance	SF	2,000		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 16	Units	Quantity	Unit Cost	Total Cost
H16-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			
H16-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H16-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H16-21	**Miscellaneous**				
a		LS			
b					
c					
				Hole 16 Total	
H16-22	**BID ALTERNATES Hole 16**				
BA16-a	New Tee Construction (shape complex, mix install, laser level)	SF	1,000		
B	Tee Surface Sod	SF	1,000		
C	Primary Rough Sod	SF	750		
D	Tee Irrigation	LS	1		
E	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF	455		

Item #	Oak Hills Park Golf Course Hole 17	Units	Quantity	Unit Cost	Total Cost
H17-1	**Layout and Staking**	LS	1		
H17-2	**Silt Fence Installation**	LF	205		
H17-3	**Tree Removal**				
a	**cut, log, stump**	LS			
b	**cut, log, grind**	EA	8		
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H17-4	**Sod Stripping and Disposal**	SF	7,000		
H17-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	30		
H17-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H17-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H17-8	**New Tee Construction (shape complex, mix install, laser level)**	SF	750		
H17-9	**Tee Surface Laser Leveling**	SF	4,450		
H17-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	1,395		
b	**Rebuild Bunker (in place- see specifications)**	SF	1,100		
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H17-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H17-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	86		
b	4" Pipe-perf. (with stone surround)	LF	50		

Item #	Oak Hills Park Golf Course Hole 17	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF			
d	6" Perf Pipe (with stone surround)	LF	90		
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)-ellipse	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior) riser with grate	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	2		
m	24" Nyloplast Drain Inlets with grates-	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA			
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H17-13	**Asphalt Cart Path Construction (8' width)**	LF			
H17-14	**Aggregate Cart Path Construction (8' width)**	LF			
H17-15	**Asphalt Cart Path Curbing**	LF			
H17-16	**Finish Grading**	LS	1		
H17-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	5,200		
b	Fairway Sod Allowance (Low Mow BG sod)	SF			
c	Primary Rough Sod Allowance	SF	10,000		
d	Primary Rough Seed Allowance/w hydromulch	SF	2,000		
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 17	Units	Quantity	Unit Cost	Total Cost
H17-18	**Rock Wall Construction (Hole 1)-utilize on site rock from excav.**	FF			
H17-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA	5		
H17-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H17-21	**Miscellaneous**				
a	Asphalt Cart Path Repairs	SF	100		
b					
c					
H17-22	**BID ALTERNATES Hole 17**				
BA16-a	New Tee Construction (shape complex, mix install, laser level)	SF	775		
b	Tee Surface Sod	SF	775		
c	Primary Rough Sod	SF	750		
d	Tee Irrigation	LS	1		
e	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF	725		
f	Fairway Sod Allowance (slit repairs)	SF	2,000		

Item #	Oak Hills Park Golf Course Hole 18	Units	Quantity	Unit Cost	Total Cost
H18-1	**Layout and Staking**	LS	1		
H18-2	**Silt Fence Installation**	LF	192		
H18-3	**Tree Removal**				
a	**cut, log, stump**	LS			
b	**cut, log, grind**	EA			
c	**canopy trim**	EA			
d	**underbrushing (cut/chip)**	SF			
H18-4	**Sod Stripping and Disposal**	SF	10,000		
H18-5	**Topsoil Management (strip, screen, respread) -on site up to 4"**	CY	30		
H18-6	**Asphalt Cart Path Demolition and Removal**				
a	**asphalt, subbase, grade, topsoil (reuse subbase if acceptable)**	SF			
b	**aggregate, topsoil (reuse material for new cart path subbase if acceptable)**	SF			
H18-7	**Rock Removal**				
a	**blasting, removal to staging area**	CY			
b	**hammering, removal to staging area**	CY			
c	**saw cutting for piping**	LF			
H18-8	**New Tee Construction (shape complex, mix install, laser level)**	SF			
H18-9	**Tee Surface Laser Leveling**	SF	1,146		
H18-10	**Bunker Construction**				
a	**New Bunker Construction (shape complex, drainage pipe and gravel, finish bottom cavity, sand install/spread) (3)**	SF	1,700		
b	**Rebuild Bunker (in place- see specifications)**	SF	750		
c	**Existing Bunker Removal (shape to hollow)**	SF			
d	**Grass Hollow (shape in new grass hollow)**	SF			
H18-11	**Green Construction (shape complex, drainage pipe, gravel layer, rootzone layer, finish surface)**	SF			
H18-12	**Sub-Surface Drainage (all pipe 12" and > with stone surround)**				
	(all pricing is for piping installed up to a depth of 4')				
a	4" Pipe-solid (poly smooth wall interior)	LF	276		
b	4" Pipe-perf. (with stone surround)	LF	68		

Item #	Oak Hills Park Golf Course Hole 18	Units	Quantity	Unit Cost	Total Cost
c	6" Pipe-solid (poly smooth wall interior)	LF	100		
d	6" Perf Pipe (with stone surround)	LF	285		
e	8" Pipe-solid (poly smooth wall interior)	LF			
f	8" Perf Pipe (with stone surround)	LF			
g	12" Pipe-solid (poly smooth wall interior)	LF			
h	24" Pipe-solid (poly smooth wall interior)-ellipse	LF			
i	30" Pipe-solid (poly smooth wall interior)	LF			
j	36" Pipe-solid (poly smooth wall interior) riser with grate	LF			
k	6" Nyloplast Drain Inlets with grates	EA			
l	12" Nyloplast Drain Inlets with grates	EA	5		
m	24" Nyloplast Drain Inlets with grates-	EA			
n	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF			
o	Daylight Outfall with stone dissipator, flare end	EA	3		
p	Bunker Sump/Endline Sump (4x4x6) w/12" riser and grate	EA			
q	Existing Drain Pipe Removal (cmp, rcp, clay, poly, other)	LF			
H18-13	**Asphalt Cart Path Construction (8' width)**	LF			
H18-14	**Aggregate Cart Path Construction (8' width)**	LF			
H18-15	**Asphalt Cart Path Curbing**	LF			
H18-16	**Finish Grading**	LS	1		
H18-17	**Grassing (see fairway and primary rough sod allowance below)**				
a	Tee Surfaces (Low Mow BG sod)	SF	1,146		
b	Fairway Sod Allowance (Low Mow BG sod)	SF			
c	Primary Rough Sod Allowance	SF	8,500		
d	Primary Rough Seed Allowance/w hydromulch	SF			
e	Secondary Rough Sod Allowance	SF			
f	Secondary Rough Seed Allowance/w hydromulch	SF			
g	Green Seed(007 or approved equivalent)	SF			

Item #	Oak Hills Park Golf Course Hole 18	Units	Quantity	Unit Cost	Total Cost
H18-18	**Rock Wall Construction (Hole 1)- utilize on site rock from excav.**	FF			
H18-19	**Landscape Rock Placement- from site inventory (Hole 17) 3x3 typ**	EA			
H18-20	**RR Tie Wall Construction/Repair (Hole 18)**	FF			
H18-21	**Miscellaneous**				
a					
b					
c					
				Hole 18 Total	
H18-22	**BID ALTERNATES Hole 18**				
BA18-a	Slit Drainage System (2" wrapped pipe set in 2mm sand profile)	LF	565		
b	Strip Finish Approach at right of Green	SF	6,500		
c	New Tee Construction (shape complex, mix install, laser level) back, mid	SF	3,305		
d	Tee Surfaces (Low Mow BG sod)	SF	3,305		
e	RR Tie Wall Construction/Repair (Hole 18)	FF	250		
f	Fairway Sod Allowance (approach at right of green)	SF	6,500		

ESTIMATE SUMMARY/TOTALS PAGE					
	HOLE				Page Totals
	Hole 1				
	Hole 2				
	Hole 3				
	Hole 4				
	Hole 5				
	Hole 6				
	Hole 7				
	Hole 8				
	Hole 9				
	Hole 10				
	Hole 11				
	Hole 12				
	Hole 13				
	Hole 14				
	Hole 15				
	Hole 16				
	Hole 17				
	Hole 18				
	Total Holes 1-18				

	Additional Items (included in Bid Total)				
	Fill Needs per Hole				
	Hole 1	CY	1,000		
	Hole 2	CY	70		
	Hole 3	CY	100		
	Hole 4	CY	50		
	Hole 5	CY	50		
	Hole 6	CY	0		
	Hole 7	CY	500		
	Hole 8	CY	75		
	Hole 9	CY	50		
	Hole 10	CY	350		
	Hole 11	CY	50		
	Hole 12	CY	100		
	Hole 13	CY	200		
	Hole 14	CY	150		
	Hole 15	CY	100		
	Hole 16	CY	50		
	Hole 17	CY	300		
	Hole 18	CY	50		
			3,245		
	Fill Allowance (includes Hauling from staging area)-	CY	3,245		
	Topsoil Allowance (includes Hauling from staging area)	CY	1,000		
	Irrigation Allowance (includes materials and labor per TPC Plan)	LS	1		
	Mobilization	LS	1		
	Performance Bond (per City requirements)				
	Total (Additional Items)				
	Total (Holes 1-18)				
	Oak Hills Park Total Cost Estimate				

	Bid Alternate- Unit Cost Only Items				
	TO BE USED FOR ADDITIONS AND DELETIONS ONLY				
	***must be consistent with bid pricing**				
BA-19	Topsoil Import (from off site source)- Allowance beyond above	CY			
BA-20	Fill Import (from off site source)- if needed	CY			
BA-21	Primary Rough (sod) Additional Allowance beyond above	SF			
BA-22	Secondary Rough (sod) Additional Allowance beyond above	SF			
BA-23	Fairway Sod Additional Allowance beyond above	SF			
BA-24	Rock Hauling (measured on site)- Allowance beyond above	CY			
BA-25	Tree Removal 3-6" Caliper (cut, stump, remove debris, grade)	EA			
BA-26	Tree Removal 7-12" Caliper (cut, stump, remove debris, grade)	EA			
BA-27	Tree Removal 13-20" Caliper (cut, stump, remove debris, grade)	EA			
BA-28	Tree Removal 21-30" Caliper (cut, stump, remove debris, grade)	EA			
BA-29	Tree Removal (>30" Caliper) (cut, stump, remove debris, grade)	EA			
BA-30	Drainage Installation 4+ to 8' 4"	LF			
BA-31	Drainage Installation 4+ to 8' 6"	LF			
BA-32	Drainage Installation 4+ to 8' 8"	LF			
BA-33	Drainage Installation 4+ to 8' 12"	LF			
BA-34	Drainage Installation 8'+ 4"	LF			
BA-35	Drainage Installation 8'+ 6"	LF			
BA-36	Drainage Installation 8'+ 8"	LF			
BA-37	Drainage Installation 8'+ 12"	LF			
BA-38	Drainage Installation 4+ to 8' 4" perforated	LF			
BA-39	Drainage Installation 4+ to 8' 6" perforated	LF			
BA-40	Drainage Installation 4+ to 8' 8" perforated	LF			
BA-41	Drainage Installation 4+ to 8' 12" perforated	LF			
BA-42	Drainage Installation 8'+ 4" perforated	LF			
BA-43	Drainage Installation 8'+ 6" perforated	LF			

BA-44	Drainage Installation 8'+ 8" perforated	LF			
BA-45	Drainage Installation 8'+ 12" perforated	LF			
	Bid Alternate- Unit Cost Only Items				
	TO BE USED FOR ADDITIONS AND DELETIONS ONLY				
	***must be consistent with bid pricing**				
BA-46	12" Pipe Installation	LF			
BA-47	18" Pipe Installation	LF			
BA-48	24" Pipe Installation	LF			
BA-49	30" Pipe Installation	LF			
BA-50	36" Pipe Installation	LF			
BA-51	Rock Saw (per day)	DAY			
BA-52	Rock Hammer (per day)	DAY			
BA-53	Blasting, Rock Removal, Hauling, Bedding, Disposal	CY			
BA-54	Tee Seeding	SF			
BA-55	Backhoe with Operator (per hour)	HR			
BA-56	Excavator with Operator (per hour)	HR			
BA-57	Articulated Truck with Operator (per hour)	HR			
BA-58	Rock Removal Off Site	CY			
BA-59	Rock Removal to Stockpile/Bury Site ON-SITE	CY			
BA-60	Rock Crushing Operation (On-site reuse)	CY			
BA-61	Deleterious Material Removal	CY			
BA-62	EZ Flow Drainage System (bunker interiors)	LF			

The above signatory acknowledges receipt of the following addenda issued during the bidding period and understands that they are a part of the bidding documents (if applicable):

Addendum #		Dated		Addendum #		Dated	
Addendum #		Dated		Addendum #		Dated	
Addendum #		Dated		Addendum #		Dated	

Submitted by:

Print Name of Authorized Agent of Company	
Signature of Authorized Agent of Company	
Date	

PROJECT:	3697 Golf Course Improvements Project-Oak Hills Park
VENDOR NAME:	

1.2 STATEMENT OF BIDDERS QUALIFICATIONS

Please answer the following questions regarding your company's past performance. Attach a financial statement or other supportive documentation. Failure to reply to this instruction may be regarded as justification for rejecting a bid.

1. Number of years in business - _____
2. Number of personnel employed Part-time - _____, Full - time_____,
3. List projects of this type/size your firm has completed within the last three years:

Project	Date	Contact Person	Phone No.

4. ORGANIZATIONAL STRUCTURE OF BIDDER (check which applies)		general partnership
		limited partnership
		limited liability corporation
		limited liability partnership,
		corporation doing business under a trade name
		individual doing business under a trade name
		other (specify)

5. STATUS OF THE BUSINESS AND ITS CURRENT STANDING WITH THE SECRETARY OF STATE'S OFFICE; e.g., are all required filings current and in good standing or has the entity been withdrawn or canceled	Connecticut corporations - Will the Secretary of State be able to issue a Certificate of Good Standing within 30 days of the bid opening?	Yes	No
	Out-of -State corporations - Do you have a valid license to do business in the State of Connecticut? (Evidence in the form of a Certificate of Authority from the Connecticut Secretary of State will be required within 30 days of the bid opening.)	Yes	No

6. Is your local organization an affiliate of a parent company? If so, indicate the principal place of business of your company and the name of the agent for service if different from what has been indicated on the response form:

Business Name					
Address					
City		State		Zip	
Name of Agent					

PROJECT:	**3697 Golf Course Improvements Project-Oak Hills Park**
VENDOR NAME:	

NOTE: In the case of a Limited Liability Corporation or a Limited Liability Partnership a certified copy of the Articles of Organization certified as valid and in effect as of the date of the bid opening will be required within 30 days of the bid opening.

A listing of the corporate officers, in the case of a corporation; the general or managing partners, in the case of a partnership; or the managers and members in the case of either a limited liability partnership or company will be required within 30 days of the bid opening.

7. The awarded contractor may be required to submit one copy of the following information relative to its company's financial statements prior to contract signing. This information must represent the current circumstance which surrounds the financial position of the bidding organization. Note: This information will be kept confidential if provided in a separate envelop from your bid pricing.

All information should be supported with appropriate audited financials.
a. Book Value (Total Assets (-) Total Liabilities)
b. Working Capital (Current Assets (-) Current Liabilities
c. Current Ratio (Current Assets/Current Liabilities)
d. Debt to Equity Ratio (Long Term Debt/Shareholder's Equity)
e. Return on Assets (Net Income/Total Assets)
f. Return on Equity (Net Income/Shareholder's Equity)
g. Return on Invested Capital (Net Income/Long Term Debt = Shareholders' Equity)

8. SUBCONTRACTORS: If subcontractors are to be used, please list firm name, address, name of principal, and phone number below or on a separate sheet. Also, indicate the portion or section of work a subcontractor will be performing.

COMPANY NAME	ADDRESS	PRINCIPAL	PHONE

All responses to this questionnaire are understood to be proprietary to the vendor, and will be considered confidential. Additional information may be requested subsequent to your responding to this bid request.

9. OTHER QUALIFICATIONS: your firm must submit the following supporting documentation with the bid:

A. How many renovation projects has the Golf Course Contractor successfully administered and completed? **(A minimum of 5 golf course projects of similar nature completed by contractors bidding on the Oak Hills Park Golf Course Project are required)**

1. Please list the completed renovation projects, scope of work, budget, time frame of work (start and finish), and cost overruns (change orders) for each project.

2. Please list a contact for each project described above to speak with about performance, including name, address, and telephone number.

B. List the Project Manager for the Oak Hills Park Golf Course Project (start date of October 14, 2016). How many golf course projects has the Project Manager managed? Experience and references will be required at time of bid.

CONTINUED TO NEXT PAGE

PROJECT:	**3697 Golf Course Improvements Project-Oak Hills Park**
VENDOR NAME:	

C. List the Project Shapers for this project. How many renovation projects have the Shapers successfully executed? Their experience and references will be required at time of bid.

D. List any anticipated sub-contractors, including the irrigation sub-contractor if necessary, and their experience and license numbers.

E. Company Literature:

END OF SECTION

1.3 SAMPLE CONTRACT

"The following document is the City's standard construction services contract. Please be advised that the substantive terms and requirements outlined therein may be revised only with the approval of Norwalk's Corporation Counsel."

CITY OF NORWALK
CONTRACT FOR CONSTRUCTION SERVICES
WITH «VendorName»
«Project»

This Contract entered into this _____ day of _____, 2016, by the **CITY OF NORWALK,** a municipal corporation organized and existing under the laws of the State of Connecticut (hereinafter referred to as "CITY"), acting by and through «ContractAuthorizer», its «ContractAuthorizerTitle», duly authorized, and **«VendorName»**, a corporation organized and existing under the laws of the State of Connecticut with an office and principal place of business located at «VendorAddress1» «VendorAddress2», «VendorCity», «VendorState» «VendorZip», acting herein by «VendorAuthorizer», its «VendorAuthorizerTitle», duly authorized (hereinafter the "CONTRACTOR").

WITNESSETH: That the CITY and CONTRACTOR, for the consideration hereinafter named, agree as follows:

ARTICLE 1. WORK TO BE DONE

The CONTRACTOR shall (a) furnish all the materials, machinery, implements, tools, labor, services, and other items of every kind (the "Work") using its best skill and attention required to perform and complete in the most substantial and workmanlike manner the project generally identified as **«Project»** (hereinafter the "Project"). The Work shall be performed in strict compliance with the City of Norwalk Department of Public Works General Provisions; the general and technical specifications and conditions of contract; the Project Plans; Special Conditions and Addenda; State Labor Department minimum wage rates; any addenda to the specifications; and all requirements of the Contract Documents, as defined herein.

The CITY will compensate the CONTRACTOR for the satisfactory completion of the Project and of all of the CONTRACTOR's duties, obligations and responsibilities under this Contract, subject to additions and deductions as herein provided, the total sum of **«ContractBudgetInEnglish»($«ContractBudget»)** in the manner set

forth herein and the Contract Documents.

The Project shall be performed in accordance with the true intent and meaning of the Contract Documents without any expense of any nature whatsoever to the CITY exceeding the compensation stated herein. The CONTRACTOR’s Work hereunder shall be overseen by «VendorAuthorizer», its duly authorized «VendorAuthorizerTitle».

The CONTRACTOR hereby represents that it has carefully examined and understands all of the terms and requirements of the Contract Documents, has investigated the nature, locality and site of the Project (the Site) and the conditions and difficulties under which it is to be performed and that it enters into this Contract on the basis of its own examination, investigation and evaluation of such and not in reliance on any opinions or representations of the CITY or any third party, including any officer, agent, servant or employee thereof.

ARTICLE 2. ADMINISTRATION OF CONTRACT BY CITY

The Work to be performed under this Contract shall be administered on behalf of the CITY by «DepartmentHead», «DepartmentHeadTitle», referred to as the "Director." The CONTRACTOR acknowledges and agrees that any instructions, reviews, advice, approvals or directives rendered to it by the Director or his designated representative consistent with the Contract Documents are authorized on behalf of the CITY. However, notwithstanding the above, no advice, directive or other recommendation or request by the CITY shall give rise to liability or responsibility on the CITY’s part for any portion of the Work, nor shall it relieve the CONTRACTOR of its responsibilities hereunder.

ARTICLE 3. DOCUMENTS FORMING THE CONTRACT

The Contract Documents shall be deemed to include the Bid Documents; Addendum No. 1; the CONTRACTOR's bid response, dated ; this written Contract, including all bonds and insurance certificates; the City of Norwalk Department of Public Works General Provisions; the general and technical specifications and conditions for the Project; the Project plans; Special Conditions and Addenda; State Labor Department minimum wage rates (if applicable); any addenda to the specifications; and all provisions required by law to be inserted in this Contract, whether or not physically inserted.

This Contract will supersede any Contract or contract form that may have been included in the bid specifications, which

form was included for information purposes only, and any writings or documents not incorporated herein by specific reference. This Contract, together with the other Contract Documents are all intended to supplement and complement each other and shall, to the fullest extent possible, be so construed and interpreted. If, however, any provision of this Contract irreconcilably conflicts with any provision of the other Contract Documents, the provision imposing a greater obligation on the CONTRACTOR shall govern.

ARTICLE 4. EXAMINATION OF DOCUMENTS AND SITE

The CONTRACTOR confirms that it has carefully examined the Project Site, as well as its surrounding territory. As a result, the CONTRACTOR acknowledges that it is fully informed regarding all existing conditions, both natural and manmade, as well as all such above grade, at grade and subsurface conditions that may in any way affect the Work to be done and labor and materials to be furnished for the proper completion of the Project, including, by way of example, the existence of poles, wires, pipes, ducts, conduits and other facilities and structures of municipal and public service corporations on, over or under the Project site. The CONTRACTOR further acknowledges that it has secured such information by personal investigation, research, and inquiry into all reasonably available data concerning the actual Site and has not relied upon the estimates or records of the CITY; and that it will make no claim against the CITY by reason of reliance on any such estimates, tests, information, data or representations made by any officer, agent, representative or employee of the CITY, or for costs incurred as a result thereof.

In addition, the CONTRACTOR agrees that, prior to starting any part of the Work, it shall carefully study and compare the various drawings, plans and other Contract Documents relative to that portion of the Work in order to facilitate construction and determine whether inconsistencies or conflicts exist.

ARTICLE 5. DATE OF COMPLETION

The CONTRACTOR further agrees that it will begin the Project herein described within ten (10) days of the date hereof, unless written instruction from the Director is given to begin at a different date. The CONTRACTOR shall diligently and continuously prosecute and complete the same and coordinate its Work with all other work being performed on the Project according to any schedules that may be issued from time to time

during the Project and any other scheduling requirements listed in the Contract Documents, so as not to delay, impede, obstruct, hinder or interfere with the commencement, progress or completion of any part of the Project and so that the Project shall be entirely completed no later than **«CompletedDate»** (the "Completion Date"), unless such Completion Date is extended by written notice signed by the Director.

THE CONTRACTOR ACKNOWLEDGES THAT TIME IS OF THE ESSENCE IN TERMS OF COMPLETION OF THE CONTRACTOR'S WORK HEREUNDER.

No extension beyond this date of completion shall be effective unless in writing signed by the Director. Any extension shall be for such time and upon such terms and conditions as may be set by the Director, which may include charges for professional services, engineering and inspection expenses incurred, (including expenses incurred by railroad companies on contracts which affect a railroad right of way) as a result. Notice of application for any extension shall be filed with the Director at least fifteen (15) days prior to the date of completion set forth above.

The CONTRACTOR shall work during such days and times as required by the CITY so as not to interfere with its use or operation of the Site. However, if the CITY deems it necessary, it may direct the CONTRACTOR to work overtime. If so directed, the CONTRACTOR shall work overtime and, provided that it is not in default under any of the terms or provisions of this Contract or of other Contract Documents, the CITY will pay the CONTRACTOR for such actual additional wages paid directly for such overtime work, if any, at rates which have been approved by the CITY.

The CONTRACTOR shall contribute to and cooperate with the development of the Project schedules and other efforts to achieve timely completion of the Work. The CONTRACTOR shall be required to provide information for the scheduling of the times and sequence of operations required in order for its Work to meet the CITY's overall schedule requirements and it shall continuously monitor the Project schedule so as to be fully familiar with the timing, phasing and sequence of operations of the Work and of any other work performed by others on the Project. The CONTRACTOR shall diligently execute the Work in accordance with the requirements of the Project schedule including any revisions thereto.

In the event the CONTRACTOR is delayed, obstructed, hindered or interfered with in the commencement, prosecution or completion of the Work by any cause including, but not limited

to, any act, omission, neglect, negligence or default of the CITY or of anyone employed by it, or by any other contractor or subcontractor on the Project, or by damage caused by fire or other casualty or by any other cause beyond the control of and not due to any fault, neglect, act or omission of the CONTRACTOR, its officers, agents, employees, subcontractors or suppliers, the CONTRACTOR's
exclusive remedy shall be an extension of time for a period equivalent to the time lost by reason of any and all of the aforesaid causes. Provided, however, that the CONTRACTOR shall not be entitled to any such extension of time unless the CONTRACTOR (1) notifies the CITY in writing of the cause or causes of such delay, obstruction, hindrance or interference within forty-eight (48) hours of the commencement thereof and (2) demonstrates that it could not have anticipated or avoided such delay, obstruction, hindrance or interference and has used all available means to minimize the consequences thereof. Notwithstanding the foregoing, if any of the Contract Documents are at variance with granting such time extension, then the provisions of such documents shall control.

In no event shall the CONTRACTOR be entitled to money damages or an adjustment to the sum payable hereunder by virtue of any such delay.

In the event of a delay in the progress of the Work or disruption of, hinderance, obstruction, or interference with the Work due to any fault, neglect, action or omission of the CONTRACTOR or any of its officers, agents, servants, employees, subcontractors or suppliers which results in any additional cost, expense, liability or damage to the CITY including, legal fees and disbursements incurred by the CITY (whether incurred in defending claims arising from such delay or in seeking reimbursement or indemnity from the CONTRACTOR and/or its surety hereunder or otherwise) or any damages or additional costs or expenses for which the CITY may or shall become liable, no extension of time shall be granted and the CONTRACTOR (and its surety) shall be liable to compensate the CITY for and indemnify it against all such costs, expenses, damages and liability. In addition, the CONTRACTOR shall not only fulfill all of its obligations imposed by this Contract at its own cost and expense, but also work such overtime as may be necessary to make up for all time lost in the performance of the Work and of the Project. Should the CONTRACTOR fail to make up for the time lost by reason of such delay, the CITY shall have the right to hire other contractors to work overtime, if needed, and to take whatever other action it deems necessary to avoid delay in the completion of the Work and of the Project. The cost and expense

of such overtime and/or such other action, including all other consequential damages and expenses, shall be borne by the CONTRACTOR hereunder.

ARTICLE 6. CONTINGENCIES, EXTRA WORK, AND CHANGES

Whenever the CITY determines that, for any reason deemed to be in the best interests of the Project, the scope of Work or plans for the Project should be revised to provide for changes, deletions, contingencies, additional or extra work, it may issue a Change Order to the CONTRACTOR. Once the CITY has issued and signed a written Change Order in its standard form, the CONTRACTOR shall forthwith comply with the specifications of such Change Order. In such event, allowances for additions and/or deductions to the prices listed in the bid documents will be made commensurate with such changes in the scope or extent of the Work. Any such action by the CITY shall not constitute grounds for a claim by the CONTRACTOR for damages, loss of anticipated profits, or for costs resulting from any variations between the approximate quantities and quality of Work contemplated in the bid documents and as built.

All changes, additions or omissions in the Work ordered in writing by the CITY shall be deemed to be a part of the Work hereunder and shall be performed and furnished in strict accordance with all of the terms and provisions of the Contract Documents based on a negotiated cost for the Work and materials. The CONTRACTOR shall be responsible for keeping its surety informed of all such modifications to this Contract. The obligations of CONTRACTOR's surety shall not be reduced, waived or adversely affected by the issuance of such Change Orders, additions or deductions and the CITY shall not be required to inform the surety of the same or to obtain the consent of the surety to such modifications.

Payment for any unforeseen Work and/or changes shall be made as provided for in the Standard Specifications.

ARTICLE 7. MEANS AND METHODS

The CONTRACTOR shall supervise and direct the Work using its best skill and attention in order to perform and complete the Project according to the Contract Documents in a timely and workmanlike manner. The CONTRACTOR shall be responsible for safeguarding the Site and all adjacent property from damage and for implementing all reasonable and necessary construction means, methods, techniques, sequences and procedures for safety precautions, protection against vandalism, and compliance with

fire insurance rating bureau procedures, in connection with the performance of the Work. CONTRACTOR further assumes responsibility for all actions and omissions of its agents, employees, subcontractors, suppliers and all of their respective agents, employees and any other person performing any part of the Work.

ARTICLE 8. NO COLLUSION OR FRAUD

The CONTRACTOR hereby agrees that all persons interested as principal or principals in the bid or proposal submitted by the CONTRACTOR for this Project are named therein; that this Contract has been secured without any connection with any person or persons other than those named; that this Contract was secured without collusion or fraud; and that neither any officer nor employee of the CITY, nor any member of the immediate family of any such person, has or will have a financial interest in the performance of this Contract, in the supplies, Work or business to which it relates, or in any portion of the profits thereof.

ARTICLE 9. ESTIMATES AND PAYMENT

As the Project progresses in accordance with the Contract and in a manner that is satisfactory to the CITY, the CITY hereby agrees to make payments to the CONTRACTOR, based upon the prices set out in the CONTRACTOR’s Proposal. The procedure for processing payments is as follows: on or before the last day of each month the CONTRACTOR shall submit to the CITY, in the form required by the CITY, a written Application For Payment showing the value of the Work performed and in place as of that date. From this amount shall be deducted all previous payments and all charges for services, materials, equipment and other items chargeable to the CONTRACTOR. The balance of such Application must be approved by the CITY and should represent the value of Work done and material furnished in accordance with the terms and conditions of this Contract during the preceding month. The CONTRACTOR shall be paid ninety-five (95%) percent of such amount. The five (5) percent retained shall be held by the CITY until final completion and acceptance of all Work covered by this Contract; compliance by the CONTRACTOR with all of its responsibilities hereunder including the provision of signed waivers of lien from CONTRACTOR, its subcontractors and suppliers; the posting of a twenty-five percent (25%) maintenance bond by the CONTRACTOR insuring the Project for a period of two (2) years from the date of final acceptance; and the making of all payments due all subcontractors and material suppliers in connection with the Project. Nothing herein shall

modify or limit detailed payment provisions contained in the Contract Documents and approved by the Director.

Prior to commencing the Work, the CONTRACTOR shall submit to the CITY a detailed Schedule of Values showing the breakdown of the total contract price into its various parts for approval. The CITY may modify the Schedule of Values, or may require additional information or a more detailed breakdown of costs, subject to their final approval. All Applications for Payments will thereafter be submitted according to the approved payment Schedule.

The CITY reserves the right to advance the date of any payment (including the final payment) under this Contract if, in its judgment, it becomes desirable to do so.

The CONTRACTOR agrees that, if and when requested to do so by the CITY, it shall furnish such information, evidence and substantiation as the CITY may require with respect to the nature and extent of all obligations incurred by the CONTRACTOR for or in connection with the Work, all payments made by the CONTRACTOR thereon, and the amounts remaining unpaid and the reasons therefor.

The CONTRACTOR warrants that: (1) title to Work, materials and equipment covered by an Application for Payment will pass to the CITY either by incorporation in construction or upon receipt of any payment for the same by the CONTRACTOR, whichever occurs first; (2) Work, materials and equipment covered by Applications for Payment shall be free and clear of liens, claims, security interests or encumbrances; and (3) no Work, materials or equipment covered by an Application for Payment shall be acquired by the CONTRACTOR, or any other entity or person performing any Work at the Site or furnishing materials or equipment for the Project, subject to an Contract or arrangement under which any interest therein or an encumbrance thereon is retained by the seller of such or is otherwise imposed by the CONTRACTOR or such other entity or person.

With each Application For Payment the CONTRACTOR shall certify to the CITY that the Work, for which payment is requested, has been fully completed in accordance with the Contract Documents; that all amounts owed to any subcontractor and subconsultant for Work or materials covered by all previous progress payments have been paid in full; and that the CONTRACTOR has no claim outstanding against the CITY related to this, or any previous progress payment, except any such claim as has been previously served by way of a detailed, verified statement upon the CITY prior to the filing of such Application

For Payment. If requested to do so, the CONTRACTOR will file signed Waivers of Lien with each Application for Payment in a form satisfactory to the CITY.

The CONTRACTOR's refusal to accept any payment as tendered shall constitute a waiver of any right to interest thereon.

It is further agreed that so long as the CONTRACTOR fails to comply with any lawful or proper direction concerning the Work or material given by or on behalf of the Director, the CONTRACTOR shall not be entitled to have any estimate made for the purpose of payment. No such estimate shall be rendered until the CONTRACTOR fully and satisfactorily complies with all such directions.

If any of the following occurs: (1) a claim or lien is made or filed with or against the CITY, the Project, or the Project funds by any person claiming that the CONTRACTOR or any subcontractor or other person under subcontract has failed to make payment for any labor, services, materials, equipment, taxes or other items or obligations furnished or incurred for or in connection with the Work; (2) there is evidence of such nonpayment or of any claim or lien for which, if established, the CITY might become liable and which is chargeable to the CONTRACTOR; (3) the CONTRACTOR or any subcontractor or other person under subcontract causes damage to the Work or to any other work on the Project; (4) or if the CONTRACTOR fails to perform or is otherwise in default under any of the terms or provisions of this Contract, the CITY shall have the right to retain from any payment then due or thereafter to become due an amount which it deems sufficient to (i) satisfy, discharge and/or defend against any such claim or lien or any action which may be brought or judgment which may be recovered thereon, (ii) make good any such nonpayment, damage, failure or default, and (iii) compensate the CITY for and indemnify and hold it harmless against any and all actual or potential losses, liabilities, damages, costs and expenses, including legal fees and disbursements, which may be sustained or incurred in connection therewith. The CITY shall have the right to apply and charge against the CONTRACTOR so much of the amount retained as may be required for the foregoing purposes. If the amount is insufficient therefor, the CONTRACTOR shall be liable for the difference and promptly pay the same to the CITY. No person shall have any right or claim by reason of the CITY's failure or refusal to withhold monies. No interest shall be payable by the CITY on any amounts withheld under this provision.

This provision is not intended to limit or in any way

prejudice any other right of the CITY.

No payment (final or otherwise) made under or in connection with this Contract shall be conclusive evidence of the proper performance of the Work or of this Contract, in whole or in part, and no such payment shall be construed to be an acceptance of defective, faulty or improper work or materials nor shall it release the CONTRACTOR from any of its obligations under this Contract; nor shall entrance upon and use of the Site by the CITY constitute acceptance of the Work or any part thereof.

If, in the judgment of the Director, the Project is "substantially," although not entirely, completed, and in this event the withholding of the retained percentage would be an injustice to the CONTRACTOR, the Director may, provided that he receives certification that the essential items in the Contract have been completed in accordance with the terms of the Contract,
include in the final account such uncompleted items. The CITY will pay the CONTRACTOR therefor at the item prices in the Contract upon the CONTRACTOR's depositing with the Director a certified check drawn upon a legally incorporated bank or trust company equal to at least double the value of such uncompleted Work. The deposit may be used by the Director to complete the uncompleted portion of the Contract and any unused portion may be returned to the CONTRACTOR upon its satisfactory completion of the uncompleted Work within a specified number of working days after it has been notified to proceed.

ARTICLE 10. PAYMENT TO SUBCONTRACTORS AND SUPPLIERS

The CONTRACTOR shall, within thirty (30) days after its receipt of payment from the CITY, pay all amounts due any supplier or subcontractor, whether for labor performed or materials furnished hereunder, when such labor or materials have been included in a requisition submitted by the CONTRACTOR and paid by the CITY.

The CONTRACTOR shall include in each of its contracts and subcontracts hereunder a provision requiring each contractor or subcontractor to pay all amounts due any of its own subcontractors, (second tier subcontractors), whether for labor performed or materials furnished, within thirty (30) days after such contractor or subcontractor is paid by the CONTRACTOR an amount that includes payment for labor or materials furnished by such second tier subcontractor.

ARTICLE 11. FINAL PAYMENT

Final payment and payment of any amounts retained shall not become due until the following conditions precedent have been met: (1) the CITY accepts the Project and approves of all the Work performed hereunder; (2) the CONTRACTOR submits the following documents satisfactory to the CITY (a) certification that all payrolls, bills for materials, labor and equipment, and all other indebtedness connected with the Project, for which the CITY or CITY's property might be liable, have been paid or otherwise satisfied and that there are no claims, obligations, or liens outstanding or unsatisfied for labor, services, materials, equipment or other items performed, furnished or incurred for or in connection with the Work; (b) written consent of surety, if applicable; (c) a certificate confirming that insurance required by the Contract Documents is to remain in force for the required period of time following completion of the Work; (d) a satisfactory maintenance bond posted with the CITY ensuring the Project in compliance with Section 109-13 of the General Conditions for a period of two (2) years from the date of final acceptance; (e) the CONTRACTOR provides all required certifications that all products and materials comply with applicable specifications and have been properly installed and/or incorporated into the Project including all applicable manufacturers' warranties for same; (f) any other information and documentation establishing payment or satisfaction of all outstanding obligations, to the extent and in such form as may be designated by the CITY, such as, by way of example only, receipts, releases and waivers of liens, including the execution and delivery by the CONTRACTOR, in a form satisfactory to the CITY, of a general release running to and in favor of the CITY; (g) all required Certified Payrolls acceptable to the State of Connecticut Department of Labor; and (h) all Change Orders with sufficient backup/documentation acceptable to the CITY. Should any claim be made or other obligation arise after final payment is made, the CONTRACTOR shall refund to the CITY all expenses paid by the CITY to satisfy, discharge or defend against any such claim, obligation or lien or any action brought or judgment recovered thereon and all costs and expenses, including legal fees and disbursements, incurred in connection therewith.

If the CONTRACTOR cannot, for reasonable cause not of its own fault, furnish any such information or documentation required by the CITY, the CONTRACTOR may furnish a bond satisfactory to the CITY promising to indemnify the CITY against any Project related, outstanding obligation. If any lien remains unsatisfied after final payments are made by the CITY, the CONTRACTOR shall reimburse the CITY for moneys the CITY may be compelled to pay in discharging such lien, including all costs and reasonable attorneys' fees.

Final payment being tendered by the CITY shall constitute a waiver of claims by the CITY except those arising from:

A. unsettled liens;

B. faulty or defective Work or materials;

C. failure of the Work or materials to comply with requirements of the Contract Documents; or

D. terms of special warranties provided by the CONTRACTOR, its suppliers, or its subcontractors, or within the Contract Documents.

E. Claims arising after the authorization of any payment.

Acceptance by the CONTRACTOR, or anyone claiming by or through it, of any interim or final payment hereunder shall constitute and operate as a release of the CITY from any and all claims of any liability or responsibility to the CONTRACTOR for anything done to, furnished for, relating to or in connection with the Project hereunder, and for any act, neglect, default on the part of the CITY or any of its officers, agents, or employees unless the CONTRACTOR serves a detailed and verified statement of claim upon the CITY prior to the acceptance of such payment. Such statement shall specify the items and details upon which the claim is based and any claim shall be limited to such items. The CONTRACTOR's refusal to accept the final payment as tendered shall constitute a waiver of any right to interest thereon.

ARTICLE 12. FINAL ACCEPTANCE OF WORK

When, in the opinion of the Director, the CONTRACTOR has fully performed all the required Work under this Contract and any Change Orders issued for the Project to the CONTRACTOR, the Director shall recommend the acceptance of the Work so completed. If the recommendation is accepted, the CITY shall thereupon notify the CONTRACTOR in writing of such acceptance, and copies of such acceptance shall be sent to other interested parties. However, the CITY has the right to reject the whole or any portion of the Work should it be found or known to be inconsistent with the terms of the Contract Documents or otherwise improper. All certifications upon which partial payments may have been made, being merely estimates, are subject to correction in the final determination or upon final payment.

ARTICLE 13. SAFETY

The CONTRACTOR agrees that it is responsible for preventing accidents and ensuring safety of all persons engaged in the Project or in the vicinity of the Work including members of the general public. The CONTRACTOR shall comply with all laws, ordinances, rules, regulations, codes, standards, orders, notices and requirements concerning safety applicable to the Work, including, among others, the Federal Occupational Safety and Health Act of 1970, as amended, and all standards, rules, regulations and orders which have been or shall be adopted or issued thereunder, and with all safety standards established during the progress of the Work.

The CONTRACTOR shall at all times provide sufficient, safe and proper facilities for the inspection of the Work by the CITY and its authorized representatives in the field, at shops or at any other place where materials or equipment for the Work are in the course of preparation, manufacture, treatment or storage. The CONTRACTOR shall, immediately upon receiving written notice from the CITY, stop any part of the Work which is deemed unsafe and proceed to take down all portions of the Work and remove all materials whether worked or unworked, that may be noted as unsound, defective or improper or as in any way failing to conform to this Contract or the Plans, Specifications or other Contract Documents. The CONTRACTOR, at its own cost and expense, shall replace the same with proper and satisfactory Work and materials and make good all Work damaged or destroyed by or as a result of such unsound, defective, improper or nonconforming Work or materials or by the taking down, removal or replacement thereof. The CONTRACTOR agrees that it shall not have nor make any claim for costs, damages, delays or extensions of time arising out of such stoppages. Should the CONTRACTOR neglect to take such corrective measures, the CITY may do so at the cost and
expense of the CONTRACTOR and may deduct the cost thereof from any payments due or to become due to the CONTRACTOR.

Notwithstanding the foregoing, CONTRACTOR shall at all times be responsible for ensuring the safety of all persons and property at the Site, regardless of any action or failure to act on the part of the CITY. Nothing set forth herein, nor any action or failure to act by the CITY, shall relieve the CONTRACTOR of its obligations and responsibilities with regard to safety and safeguarding of the Site and all persons and property thereon or adjacent thereto.

ARTICLE 14. COMPLIANCE WITH GOVERNMENTAL LAW AND REGULATIONS

The CONTRACTOR shall comply with all applicable laws, codes and regulations governing the Work and the Project, including any and all special requirements of the Contract Documents, including specifically the City of Norwalk Code Chapter 34 and shall require the same of its Trade Contractors and Subcontractors. In addition, all Trade Contractors and Subcontractors working on the Project shall have, throughout the period of the Work, valid State of Connecticut Department of Consumer Protection issued licenses to do business according to the current, applicable regulations.

A. Equal Employment Opportunity and Affirmative Action

The CONTRACTOR for itself and all subcontractors and subconsultants employed in connection with the Project shall agree to abide by the provisions of State of Connecticut Executive Orders Numbers 3 and 17 and Presidential Executive Orders Numbers 11246, 11375 and 11063.

The CONTRACTOR or its subcontractors and subconsultants further agree and warrant that in the performance of this Contract it will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness -unless it is shown by the CONTRACTOR, its subcontractors and/or subconsultants that such disability prevents performance of the Work involved- in any manner prohibited by the laws of the United States or of the State of Connecticut. The CONTRACTOR further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability including, but not limited to, blindness -unless it is shown by the CONTRACTOR that such disability prevents performance of the work involved. The terms stated in this paragraph shall be defined as set forth in Connecticut General Statutes Section 4a-60(d).

The CONTRACTOR shall not permit any coercion, intimidation, threatening or interference with any individual in the exercise or enjoyment of, or on account of his or her having exercised or enjoyed, or on account of his or her having aided or encouraged

any other individual in the exercise or enjoyment of, any right granted or protected by state or federal laws, including without limitation, the Americans with Disabilities Act.

The CONTRACTOR agrees to comply with any request of the City of Norwalk or the Connecticut Commission on Human Rights and Opportunities to provide information and permit access to pertinent books, records and accounts concerning its employment practices and procedures.

For purposes hereof, discrimination in employment shall include, but need not be limited to, employment advertising, recruitment, layoff, termination, rates of pay or other forms of compensation, conditions or privileges of employment and selection for apprenticeship.

The CONTRACTOR agrees and warrants that it will make good faith efforts to employ minority business enterprises as contractors, subcontractors and suppliers of materials on or related to the Project. For purposes of this paragraph the term “minority business enterprise” shall be defined as set forth in Connecticut General Statutes Section 4a-60(e).

The CONTRACTOR will cause the foregoing provisions to be inserted in all trade contracts and subcontracts for any Work related to the Project or covered by this Contract so that such provisions will be binding upon each trade contractor and subcontractor.

B. In addition, CONTRACTOR shall comply and shall require its trade contractors and subcontractors who perform any Work in connection with the Project to comply with all current, applicable terms of the following, as the same may be amended from time to time:

- The Civil Rights Act of 1964, as amended;
- Federal Labor Standards (29 CFR Parts 3, 5 and 5a); Davis Bacon Act;
- Copeland "Anti-Kickback" Act (18 USC 874), as supplemented in the Department of Labor Regulations (20 CFR - Part 3);
- Flood Disaster Protection Act (PL 93-291);
- Hatch Act (Title 4 USC Chapter 15);
- Section 504 of the Rehabilitation Act of 1973;
- The Americans With Disabilities Act;

C. <u>Prevailing Wage Requirements</u>

This Contract shall be subject to the Connecticut State Prevailing Wage regulations and requirements and applicable prevailing wage rates- as such may be amended or revised from time to time; and

The CONTRACTOR shall comply, at its own cost, with all such applicable prevailing wage rate regulations, as the same may be revised or amended from time to time. Under no circumstances shall the CONTRACTOR be entitled to any additional payment or any increase in the costs, fees or expenses payable by the CITY hereunder, based on any increase in the cost of compliance with applicable regulations, requirements or any increase in the applicable, prevailing wage rates.

D. State Labor and Employment Regulations

Pursuant to Connecticut General Statutes, Section 31-52a, the following provision shall be incorporated into this Contract and each subcontract hereunder insofar as this Contract or any such subcontract relates to a public works project, including, but not limited to, construction, remodeling or repairing of any public facility or structure (except public buildings covered by Section 31-52), site preparation or improvement, appurtenances or highways, or the preparation or improvement of any land or waterway on or in which a structure is situated or to be constructed:

> In the employment of mechanics, laborers or workmen to perform the work specified herein, preference shall be given to residents of the State who are, and continuously for at least six (6) months prior to the date hereof have been, residents of this State, and if no such person is available then to residents of other states.

Pursuant to Connecticut General Statutes, Section 31-53, the following provision shall be incorporated into this Contract and each subcontract hereunder for work relating to the construction of a public works project where the total cost of all Work to be performed in connection with the Project is Four Hundred Thousand Dollars ($400,000.00) or more, or for work relating to the remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project if the total cost of all work to be performed in connection with such project is One Hundred Thousand Dollars ($100,000.00) or more:

The wages paid on an hourly basis to any person performing the work of any mechanic, laborer or worker on the Work herein contracted to be done and the amount of payment or contribution paid or payable on behalf of each such person to any employee welfare fund, as defined in subsection (i) of Section 31-53 of the Connecticut General Statutes, shall be at a rate equal to the rate customary or prevailing for the same work in the same trade or occupation in the CITY of Norwalk. Any contractor who is not obligated by Contract to make payment or contribution on behalf of such persons to any such employee welfare fund shall pay to each mechanic, laborer or worker as part of such person’s wages the amount of payment or contribution for such person’s classification on each pay day.

In the event that the CITY determines that any mechanic, laborer or workman employed by the CONTRACTOR or any subcontractor directly on the Site for the Work contemplated hereunder has been or is being paid a rate of wages less than that required to be paid, as stated herein, the CITY may, by written notice to the CONTRACTOR, terminate the CONTRACTOR's right to proceed with the Work hereunder or such part of the Work for which there has been a failure to pay the required wages. In the event of such termination, the CITY may prosecute the Work to completion by contract or otherwise and the CONTRACTOR and its sureties shall be liable to the CITY for all costs incurred thereby in excess of the compensation to be paid under this Contract.

Each employer subject to the provisions of Section 31-53 of the Connecticut General Statutes shall comply with the applicable requirements at its own cost and expense and shall not be entitled to any additional payment or increase in its fees payable hereunder as a result of or due to the cost of compliance.

ARTICLE 15. RIGHT TO SUSPEND WORK OR TERMINATE CONTRACT

A. If, at any time, the CITY determines that the Work hereunder is not being performed according to the Contract or for the best interest of the CITY or should the CONTRACTOR at any time refuse or neglect to supply a sufficient number of skilled workers or materials of the proper quality and quantity; or fail in any respect to prosecute the Work with promptness and diligence; or cause by any act or omission the stoppage, impede, obstruct, hinder or delay of or interference with or damage to the Work of any other contractors or subcontractors on the

Project; or fail in the performance of any of the terms and provisions of this Contract or of the other Contract Documents; or should there be filed by or against the CONTRACTOR a petition in bankruptcy or for an arrangement or reorganization; or should the CONTRACTOR become insolvent or be adjudicated a bankrupt or go into liquidation or dissolution, either voluntarily or involuntarily or under a court order, or make a general assignment for the benefit of creditors, or otherwise acknowledge insolvency -- then in any of such events, each of which shall constitute a default hereunder on the CONTRACTOR's part, the CITY shall have the right, in addition to all other rights and remedies provided by this Contract and the other Contract Documents or by law, to temporarily suspend the execution of the Work by the CONTRACTOR and proceed with the Work under its own direction in accordance with the Contract specifications and in such manner as the Director determines to be in the best interests of the CITY or, the CITY may terminate the CONTRACTOR's employment under this Contract while it is in progress, and thereupon proceed with the Project in such manner and by such process as it determines to be in the best interest of the Project.

In any of the foregoing events, the CONTRACTOR shall not be entitled to receive any further payment under this Contract until the Work shall be wholly completed to the satisfaction of the CITY, as evidenced by written acceptance signed by the Director. All costs, expenses, losses and damages, including attorneys' fees, and all other charges incurred by the CITY for the completion of the Work as a result shall be charged to the CONTRACTOR and deducted by the CITY from any monies due or payable or to become due or payable hereunder. Such costs and expenses shall include not only the cost of completing the Work to the satisfaction of the CITY and of performing and furnishing all labor, services, materials, equipment, and other items required therefor, but also all losses, damages, costs and expenses, (including legal fees and disbursements incurred in connection with reprocurement, in defending claims arising from such default and in seeking recovery of all such costs and expenses from the CONTRACTOR and/or its surety), and disbursements sustained, incurred or suffered by reason of or resulting from the CONTRACTOR's default. If such costs and expenses and other charges exceed the amount stated herein, such excess amount shall be charged to and promptly paid by the CONTRACTOR to the CITY. In computing the amounts chargeable to the CONTRACTOR, the CITY shall not be held to a basis of the lowest prices for which the completion of the Project or any part thereof might have been accomplished, but the CONTRACTOR shall be liable for all sums actually paid or expenses actually

incurred
in affecting prompt completion of the Project hereunder. The rights described herein are in addition to any other rights and remedies provided by law.

Should the CITY reactivate the performance of the Project, in whole or in part, within one (1) year from the time of suspension, any fees paid to the CONTRACTOR pursuant to this Contract shall be applied as payment on the fees as set forth in the Contract at the time of reactivation. Should reactivation occur after a period of suspension exceeding one (1) year but not sooner, the CONTRACTOR and the CITY may renegotiate the Contract based upon current conditions or may unilaterally elect to terminate the Contract.

Termination or suspension under this section shall not give rise to any claim against the CITY for damages or compensation in addition to that provided hereunder.

ARTICLE 16. INTERPRETATION OF PLANS/SHOP DRAWINGS

The Work shall be performed and furnished under the direction and to the satisfaction of the CITY and, where appropriate, its Architect or Engineer. The CONTRACTOR shall be responsible for identifying any ambiguity in, or difference in interpretation of the plans, specifications or other Contract Documents, or between or among any of them, and immediately submitting the issue to the CITY, which will transmit the same to the responsible professional designer (i.e., Professional Engineer or Architect) who shall resolve the same. Any decision in relation thereto shall be final and conclusive upon the parties. The CITY will furnish to the CONTRACTOR any additional information and Plans as may be prepared to further describe the Work and the CONTRACTOR shall conform to and abide by the same.

Notwithstanding the dimensions on the Plans, Specifications and other Contract Documents it shall be the obligation and responsibility of the CONTRACTOR to take such measurements as will insure the proper matching and fitting of the Work covered by this Contract with contiguous work.

The CONTRACTOR shall prepare and submit to the Director such shop drawings as may be necessary to describe completely the details and construction of the Work. Approval of such shop drawings shall not relieve the CONTRACTOR of its obligation to perform the Work according to the Plans, Specifications, the Special Conditions, Addenda and all other Contract Documents, nor of its responsibility for the proper matching and fitting of

the Work with contiguous work and the coordination of the Work with other work being performed on the Site, which obligation and responsibility shall continue until completion and acceptance of the Project.

The CONTRACTOR's submission of a shop drawing shall constitute the CONTRACTOR's representation that it has reviewed the submission for accuracy and compliance with all Contract Documents and that, wherever engineering is required to be performed, same has been performed by a qualified and licensed engineer which shall have responsibility therefor.

Should the proper and accurate performance of the Work hereunder depend upon the proper and accurate performance of other work not covered by this Contract, the CONTRACTOR shall carefully examine such other work, determine whether it is in fit, ready and suitable condition for the proper and accurate performance of the Work hereunder, use all means necessary to discover any defects in such other work, and before proceeding with the Work hereunder, report promptly any such improper conditions and defects to the CITY in writing and allow the CITY a reasonable time to have such improper conditions and defects remedied.

ARTICLE 17. REJECTED WORK AND MATERIAL

In the event the CITY finds that the materials furnished, the finished Project or the Work performed hereunder by the CONTRACTOR, for any reason, does not conform with the requirements of the Contract Documents including any performance and Project specifications and has resulted or will result in an inferior or unsatisfactory product, the materials or Work shall be removed and replaced or otherwise corrected, to the satisfaction of the CITY, by and at the expense of the CONTRACTOR.

The CONTRACTOR agrees that it shall at once remove from the Site at its own expense all Work or material which may be rejected by the CITY and replace the same with Work or material satisfactory to the CITY. All Work shall be in a first class and satisfactory condition at the time of final acceptance.

ARTICLE 18. LAWS, PERMITS, AND LICENSES

The CONTRACTOR shall observe all Federal, State, and local laws and regulations and shall procure all necessary licenses and permits, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the

Work hereunder without any additional charge or expense to the CITY. CONTRACTOR shall be responsible for and shall correct, at its sole cost and expense, any violation thereof resulting from or in connection with the performance or failure to perform the Work.

The CONTRACTOR shall at any time upon demand furnish such proof as the CITY may require showing such compliance and the correction of such violations. The CONTRACTOR agrees to save harmless and indemnify the CITY, its officers and employees, from and against any and all loss, injury, claims, actions, proceedings, liability, damages, fines, penalties, costs and expenses, including legal fees and disbursements, caused or occasioned directly or indirectly by the CONTRACTOR's failure to comply with any of said laws, ordinances, rules, regulations, standards, orders, notices or requirements or to correct such violations therefor in connection with the performance of Work.

ARTICLE 19. EQUAL EMPLOYMENT OPPORTUNITY

The CONTRACTOR shall agree to provide the Commission on Human Rights and Opportunities with such information requested by the Commission concerning its employment practices and procedures. The CONTRACTOR will cause the foregoing provisions to be inserted in all subcontracts for any of the Work covered by this Contract so that such provisions will be binding upon each subcontractor.

ARTICLE 20. SUCCESSORS AND ASSIGNS

This Contract shall bind the successors, assigns and representatives of the parties hereto. Notwithstanding the foregoing, this Contract may not be assigned by the CONTRACTOR nor shall the CONTRACTOR's rights, title or interest herein or hereto be assigned, transferred, conveyed, sublet, or disposed of without the previous written consent of the Director.

ARTICLE 21. RESPONSIBILITY FOR THE SITE

At all times throughout the performance of this Contract and until final acceptance of the Work hereunder, the CONTRACTOR shall be in control of and responsible for the Site and for any loss or damage to the Work to be performed and furnished under this Contract, however caused. This shall include responsibility for loss of or damage to materials, tools, equipment, appliances or other personal property owned, rented or used by the CONTRACTOR or anyone employed by it in the performance of the Work, however caused. Accordingly, the

CONTRACTOR shall, at its own cost and expense, (1) keep the Site free at all times from all waste materials, packaging materials and other rubbish accumulated in connection with the execution of its Work, (2) clean and remove from its own Work and from all contiguous work of others any soiling, staining, mortar, plaster, concrete or dirt caused by the execution of its Work and make good all defects resulting therefrom, (3) at the completion of its Work in each area, perform such cleaning as may be required to leave the area "broom clean," and (4) at the entire completion of its Work, remove all of its tools, equipment, scaffolds, shanties and surplus materials. Should the CONTRACTOR fail to perform any of the foregoing to the CITY's satisfaction, the CITY shall have the right to perform and complete such Work itself or through others and charge the cost thereof to the CONTRACTOR.

ARTICLE 22. INSURANCE

The CONTRACTOR agrees to obtain at its own cost and expense all insurance required by the attached Insurance Rider and to keep the same in continuous effect for a period of two (2) years following the date on which the Director indicates the termination of the CONTRACTOR's responsibilities hereunder. Before commencing the Project, the CONTRACTOR shall furnish the CITY's Corporation Counsel a certificate of insurance, and shall thereafter provide renewal certificates, as appropriate, evidencing such coverage written by a company or companies acceptable to the CITY. Each insurance certificate shall be endorsed to name the City of Norwalk as an additional insured party and shall provide that the insurance company providing coverage shall notify the CITY by certified mail at least thirty (30) days prior to the effective termination of or any change in the policy or policies coverage. No change in the coverage provided hereunder shall be made without the prior written approval of the Director.

Waiver of Subrogation: **Contractor hereby waives the right to subrogate or seek recovery from City of Norwalk and its insurance carriers.**

ARTICLE 23. INDEMNIFICATION

The CONTRACTOR expressly agrees to at all times indemnify, defend and save harmless the City of Norwalk and its respective officers, agents and employees, on account of any and all demands; claims; damages; losses; litigation; financial costs and expenses, including counsel's fees; and compensation arising out of personal injuries (including death), any damage to

property, real or personal, and any other loss, expense or aggrievement directly or indirectly arising out of, related to or connected with the Project and the Work to be performed hereunder by the CONTRACTOR, its employees, agents, subcontractors, material suppliers, or anyone directly or indirectly employed by any of them. The CONTRACTOR shall and does hereby assume and agree to pay for the defense of all such claims, demands, suits, proceedings and litigation. The provisions of this paragraph shall survive the expiration or early termination of this Contract; shall be separate and independent of any other provision or requirement of this Contract; and shall not be limited by reason of any insurance coverage provided hereunder.

The CITY may withhold from any payment due or to become due to the CONTRACTOR an amount sufficient in its judgment to protect and indemnify the CITY, its officers, agents, servants and employees from and against any and all such claims and liabilities described above.

Nothing in this provision, or elsewhere in this Contract, shall be deemed to relieve the CONTRACTOR of its duty to defend the CITY or any Indemnified Party, as specified in this Contract, pending a determination of the respective liabilities of the CONTRACTOR, the CITY, or any Indemnified Party, by legal proceeding or Contract.

In furtherance to but not in limitation of the indemnity provisions in this Contract, CONTRACTOR hereby expressly and specifically agrees that its obligation to indemnify, defend and save harmless as provided in this Contract shall not in any way be affected or diminished by any statutory or constitutional immunity it enjoys from suits by its own employees or from limitations of liability or recovery under workers' compensation laws.

ARTICLE 24. SUBCONTRACTING AND ASSIGNMENTS

The CONTRACTOR shall not subcontract any portion of the Work to be performed hereunder unless the prior written consent of the Director is given for both the Work to be subcontracted and the subcontractor to perform the same.

In the event that the CITY approves of the hiring of subcontractors or subconsultants to pursue the Project, the CONTRACTOR agrees to cooperate as fully as possible with the CITY and any and all such subcontractors and subconsultants in the interests of the Project. The CONTRACTOR shall be as fully

responsible to the CITY for the acts and omissions of its subcontractors and subconsultants as it is for the acts and omissions of its direct employees and shall require any subcontractor or subconsultant approved by the CITY to agree in a written contract to observe and be bound by all obligations and conditions of this Contract to which CONTRACTOR is bound hereby including the requirements regarding insurance and indemnification.

Each subcontract Contract shall preserve and protect the rights of the CITY and the Project Architect/Design Engineer, under the Contract Documents with respect to the Work to be performed by the subcontractor so that the subcontracting thereof will not prejudice such rights, and shall allow the subcontractor, unless specifically provided otherwise, the benefits of all rights, remedies and redress against the CONTRACTOR that the CONTRACTOR has against the CITY pursuant to the Contract Documents.

Nor shall CONTRACTOR assign, sell, transfer, delegate or encumber any rights, duties or obligations arising under this Contract including, but not limited to, any right to receive payments hereunder, without the prior written consent of the CITY in its sole discretion. The giving of any such consent to a particular assignment shall not dispense with the necessity of such consent to any further or other assignments. In the event CONTRACTOR assigns, sells, encumbers or otherwise transfers its rights to any monies due or to become due under this Contract as security for any loan, financing or other indebtedness (herein "Assignment"), notification to the CITY of such Assignment must be sent by certified mail, return receipt requested, and the Assignment shall not be effective as against the CITY until the CITY provides its written consent to such Assignment. CONTRACTOR agrees that any such Assignment shall not relieve the CONTRACTOR of any of its Contracts, duties, responsibilities or obligations under this Contract and the other Contract Documents and shall not create a contractual relationship or a third party beneficiary relationship of any kind between the CITY and assignee or transferee. CONTRACTOR further agrees that all of the CITY's defenses and claims arising out of this Contract with respect to any Assignment are reserved unless expressly waived in writing by a duly authorized corporate officer. CONTRACTOR hereby agrees to indemnify, defend and hold harmless the CITY from and against any and all loss, cost, expense or damages that the CITY has or may sustain or incur in connection with such Assignment.

ARTICLE 25. WARRANTY

The CONTRACTOR hereby warrants to the CITY that all of the Work shall be in conformance with the Plans, Specifications, and all Contract Documents and shall be of good quality and free from any faults and defects.

The CONTRACTOR shall remove, replace and/or repair at its own expense and at the convenience of the CITY any portion of the Work, materials or equipment which, at any time up until two (2) years from the date of final acceptance of the Work hereunder, the Architect or the CITY shall condemn as unsound, defective or improper or as in any way failing to conform to this Contract or the plans, specifications or other Contract Documents, and the CONTRACTOR, at its own cost and expense, shall replace the same with proper and satisfactory Work, materials and/or equipment.
Without limiting the generality of the foregoing, the CONTRACTOR warrants to the CITY that all materials and equipment furnished under this Contract will be of first class quality and new, unless otherwise required or permitted by the other Contract Documents; that the Work performed and materials used pursuant to this Contract will be free from any defects and that the Work will conform with the requirements of the Contract Documents. Work not conforming to such requirements, not of the prescribed quality, or not capable of meeting the CITY's performance specifications, including substitutions not properly approved and authorized, shall be considered defective and must be removed and replaced by CONTRACTOR at its own cost and expense. All warranties contained in this Contract and in the Contract Documents shall be in addition to and not in limitation of all other warranties or remedies required and/or arising pursuant to applicable law.

ARTICLE 26. NOTICE OF CLAIMS

Claims by either party must be in writing and sent within thirty (30) days following the occurrence of an event giving rise to the claim or within thirty (30) days after the claimant first acquires knowledge of or information concerning the claim, whichever occurs later to the extent that such knowledge or information could not have been reasonably obtained earlier. Claims must be made in writing and sent to the other party at the address(es) listed herein and shall describe the nature of the claim, the events or circumstances that gave rise to the claim with reasonable detail, and the amount thereof to the best of the claimant's information.

ARTICLE 27. LIQUIDATED DAMAGES

It is understood by the parties that timely completion of the Project is essential. Failure of the CONTRACTOR to complete the Project by the date stated herein will result in the CITY and the public incurring damages, additional costs and inconveniences that would be impossible or extremely difficult to accurately quantify at the time. Therefore, the parties agree that, if the CONTRACTOR fails to satisfactorily complete the Project hereunder within the time specified or within any extension of time that may have been allowed, there shall be deducted from any monies due or that may become due the CONTRACTOR, the sum of _____ **HUNDRED DOLLARS ($_____)** for each and every calendar day, including Saturdays and legal holidays, that the Project remains incomplete in accordance with Article 5 of this Contract. This sum shall not be imposed as a penalty, but as liquidated damages due the CITY from the CONTRACTOR by reason of the damages incurred, inconvenience and additional costs and expenses to the public together with other problems suffered as a result of any such delay thereby occasioned.

ARTICLE 28. GENERAL PROVISIONS

A. This Contract shall be deemed binding only to the extent that sufficient funds are available and appropriated to the CITY for payment in accordance with the terms hereof and no liability on account of this Contract shall be incurred by the CITY beyond such moneys as are properly made available and appropriated for the Project.

B. The relationship of the CONTRACTOR to the CITY is that of an independent CONTRACTOR. The CONTRACTOR covenants and agrees that it will conduct itself consistent with such status; that it will neither hold itself nor any of its employees or agents out as nor claim to be an officer, agent, or employee of the CITY by reason hereof; and that it will not, neither for itself nor on behalf of any of its employees, agents, or subcontractors, by reason hereof, make any claim, demand or application to or for any right or privilege applicable to an officer or employee of the CITY, including, but not limited to, workers' compensation coverage, unemployment insurance benefits, social security coverage, or retirement membership or credit.

C. The CONTRACTOR hereby certifies that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any federal or state department or agency. Should the CONTRACTOR be unable to certify the above statement, it shall attach a certified

statement explaining such to this Contract. The CONTRACTOR further agrees to include the foregoing certification in any subcontract or purchase order, which it may enter into in furtherance of the Work contemplated hereunder.

D. No member of the governing body of the CITY, and no other officer, employee, or agent of the CITY, shall have any personal interest, direct or indirect, in this Contract, except as permitted by the Code of Ethics of the City of Norwalk; and the CONTRACTOR covenants that no person having such interest shall be employed in the performance of this Contract.

E. This Contract shall be construed in accordance with the laws of the State of Connecticut, and any action at law in connection herewith shall be brought in the Superior Court of the State of Connecticut, Judicial District Stamford/Norwalk.

F. The CONTRACTOR shall comply with all applicable laws, ordinances and codes of any governmental body having jurisdiction over any matter related to this Contract or the services to be performed hereunder, and shall commit no trespass on any private property in performing any of the Work embraced herein.

G. This Contract incorporates all the understandings of the parties hereto, supersedes any and all Contracts and negotiations reached and all commitments made by the parties prior to the execution of this Contract, whether oral or written, and shall not be released, amended or modified in any way unless by a written instrument signed by the parties hereto.

H. If any provision of this Contract is held invalid, the balance of the provisions of this Contract shall not be affected thereby if the balance of the provisions of this Contract would then continue to conform to the requirements of applicable laws.

I. Each and every provision and clause required by law to be inserted in this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though such provisions and clauses were included herein. If, through mistake or otherwise, any such provision is not inserted or is not correctly inserted, then upon the written consent of the parties, this Contract shall forthwith be physically amended to make such insertion.

J. All notices of any nature referred to in this Contract shall be in writing and sent by registered or certified mail, postage prepaid, to the respective addresses set forth below or

to such other addresses as the respective parties hereto may designate in writing:

To the City:	«DepartmentHead», «DepartmentHeadTitle» Norwalk «Department» Department
With copies to:	Office of Corporation Counsel City Hall, 125 East Avenue, Room 237 Norwalk, Connecticut 06856-5125
To the Contractor:	«VendorAuthorizer», «VendorAuthorizerTitle» «VendorName» «VendorAddress1» «VendorCity», «VendorState» «VendorZip»

K. The CITY of Norwalk's hiring practices strive to comply with all applicable federal regulations regarding employment eligibility and employment practices. Thus, all individuals and entities seeking to do work for the CITY are expected to comply with all applicable laws, governmental requirements and regulations, including the regulations of the United States Department of Justice pertaining to employment eligibility and employment practices. The CITY reserves the right at its discretion, but does not assume the obligation to require proof of valid citizenship or, in the alternative, proof of a valid green card for each person employed in the performance of work or services for the City of Norwalk. By reserving this right the CITY does not assume any obligation or responsibility to enforce or ensure compliance with the applicable laws and/or regulations.

L. The Contract and its attached exhibits include applicable State of Connecticut and federal governmental requirements that the Contractor must comply with and must require its subcontractors and consultants to comply with. The Contractor hereby acknowledges that such requirements are subject to revision by the state or federal governmental authorities from time to time during the Contract term and that, by entering into a Contract with the City, the Contractor agrees to be subject to such revised requirements and changes in law or regulations as in effect at any given time and, as a result thereof, shall perform any additional obligations with respect to the particular Project, throughout the term of this Contract. The Contractor shall observe all federal, state and local laws, Ordinances, policies, practices and regulations. In addition, the Contractor agrees to promptly procure all necessary approvals, licenses and

permits, pay all charges and fees, and give all notices necessary and incident to the due and lawful prosecution of the Work.

M. In case of a conflict between the provisions of the Contract any state and federal requirements, or any specification, guide, manual, policy, or requirement of the Contract Documents, or other publication referenced herein, the provision containing additional details or more stringent requirements will control. In case of the Contractor's inability to determine the controlling provision or where it is not possible to comply with the requirements of multiple provisions, the City shall have the right to determine, in its sole discretion, which provision applies. The Contractor shall promptly request in writing the City's determination upon the Contractor's inability to determine the controlling provision or upon becoming aware of any such conflict. This provision shall survive the expiration or termination of the Contract.

N. With respect to any referenced guide, manual, policy, document, or other publication noted in the Contract and noted to be subject to revision throughout the term of the Contract, the Contractor agrees to comply with the version of the document or publication that is in effect on the date effective of the Contract.

O. The Contractor shall cooperate fully with the City and permit the City, or other state or federal authority, as applicable, to review, at any time during the Work, all activities performed by the Contractor with respect to any Work under this Contract. Upon request of the City, the Contractor shall timely furnish all documents related to the Work so that the City may evaluate the Contractor's activities with respect to the Project, including, but not limited to, its performance of the Work pursuant to this Contract, and applicable law.

P. The CONTRACTOR hereby represents to the CITY as follows:

(i) That it is a legally existing corporation under the laws of its state of incorporation and has not previously filed, nor is presently contemplating filing, nor has received notice of a petition of, nor contemplates receiving notice of a petition of, bankruptcy, liquidation, receivership or any other action for the protection of creditors or debtors;

ii) that it has the financial resources to perform this Contract and that it is not the subject of any litigation or action, pending or threatened, regarding this Contract or which,

if resulting in an adverse decision, would affect its ability to perform its duties under this Contract;

(iii) that it has, and has exercised, the required corporate power and authority and has complied with all applicable legal requirements necessary to adopt, execute and deliver this Contract and to assume the responsibilities and obligations created hereunder;

(iv) that this Contract is duly executed and delivered by an authorized corporate officer, in accordance with such officer's powers to bind the CONTRACTOR hereunder, and constitutes a valid and binding obligation enforceable in accordance with its terms, conditions and provisions; and

(v) that it is in compliance with all applicable regulations and laws governing employment practices.

IN WITNESS WHEREOF, this Contract has been executed in four (4) counterparts by the CITY, acting by and through its Mayor, who has caused the seal of his office to be affixed hereto, and the CONTRACTOR has duly executed this Contract on the day and year first above written.

Signed, Sealed and Delivered
in the Presence of:

CITY OF NORWALK

_____
Witness

_____
Witness

By:_____
«ContractAuthorizer»
Its «ContractAuthorizerTitle»
Duly Authorized

Date Signed: _____

Signed, Sealed and Delivered
in the Presence of:

«VendorName»

_____
Witness

_____

By:_____

Witness

«VendorAuthorizer»
Its «VendorAuthorizerTitle»
Duly Authorized

(Affix corporate seal of
contractor if a corporation)

Date Signed: _____

APPROVED AS TO FORM:
OFFICE OF CORPORATION COUNSEL

By:_____

APPROVED AS TO
AVAILABILITY OF FUNDS:

By:_____
Comptroller

Date:_____

INSURANCE RIDER

The Contractor shall provide and maintain insurance coverage related to its services in connection with the Project in compliance with the following requirements.

The insurance required shall be written for not less than the scope and limits of insurance specified hereunder, or required by applicable federal, state and/or municipal law, regulation or requirement, whichever coverage requirement is greater. It is agreed and understood that the scope and limits of insurance specified hereunder are minimum requirements and shall in no way limit or preclude the City from requiring additional limits and coverage to be provided under the Contractor's policies.

Minimum Scope and Limits of Insurance:

Workers' Compensation Insurance: With respect to all operations the Contractor performs, it shall carry Workers' Compensation Insurance in accordance with the requirements of the laws of the State of Connecticut.

Commercial General Liability: With respect to all operations the Contractor performs it shall carry Commercial General Liability insurance providing for a total limit of One Million Dollars ($1,000,000) coverage per Occurrence for all damages arising out of bodily injury, personal injury, property damage, products/completed operations, and contractual liability coverage for the indemnification obligations arising under this Agreement. The Annual Aggregate limit shall not be less than Two Million Dollars ($2,000,000).

Automobile Liability: With respect to each owned, non-owned, or hired vehicles the Contractor shall carry Automobile Liability insurance providing One Million Dollars ($1,000,000) coverage per accident for bodily injury and property damage.

Umbrella/Excess Liability: With respect to all operations the Contractor performs, the insurance limits required can be provided with a combination of Umbrella or Excess Liability insurance that would “follow form” of the underlying required terms and conditions.

Environmental Liability: If applicable, based on the Contractor’s Scope of Work, the Contractor is required to provide environmental and remediation (Contractor’s Pollution Liability –CPL-) insurance in the amount of Five Million Dollars ($5,000,000) per claim limit and Five Million Dollars

($5,000,000) aggregate limit per occurrence. If the insurance is provided with a combination of excess pollution liability policies, the policy shall be written on a follow form coverage wording to its underlying Schedule of insurance.

Errors and Omissions/Professional Liability: With respect to any damage caused by an error, omission or any negligent or wrongful act of the Contractor or any subcontractor or subconsultant in connection with any professional services performed under this Agreement the Contractor shall carry One Million Dollars ($1,000,000) coverage per claim.

"Tail" Coverage: If any of the required liability insurance is on a "claims made" basis, "tail" coverage will be required at the completion of the Project for a duration of twenty-four (24) months, or the maximum time period reasonably available in the marketplace. Contractor shall furnish certification of "tail" coverage as described or continuous "claims made" liability coverage for twenty-four (24) months following Project completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of this Agreement. If continuous "claims made" coverage is used, Contractor shall be required to keep the coverage in effect for a duration of not less than twenty-four (24) months from the date of final completion of the Project.

Acceptability of Insurers: The Contractor's policies shall be written by insurance companies licensed to do business in the State of Connecticut, with an AM Best rating of A-VII, or otherwise acceptable to the City.

Subcontractors: The Contractor shall require all subcontractors to provide the same "minimum scope and limits of insurance" as required herein, with the exception of Errors and Omissions/Professional Liability insurance, unless Errors and Omissions/Professional Liability insurance is applicable to the Work performed by the subcontractors. All Certificates of Insurance shall be provided to the City's Corporation Counsel as required herein.

Aggregate Limits: Any aggregate limits must be declared to and be approved by the City. It is agreed that the Contractor shall notify the City whenever fifty percent (50%) of the aggregate limits are eroded during the required coverage period. If the aggregate limit is eroded for the full limit, the Contractor agrees to reinstate or purchase additional limits to meet the

minimum limit requirements stated herein. Any premium for such shall be paid by the Contractor.

Deductibles and Self-Insured Retentions: Any deductible or self-insured retention must be declared to and approved by the City. All deductibles or self-insured retentions are the sole responsibility of the Contractor to pay and/or to indemnify.

Notice of Cancellation or Nonrenewal: Each insurance policy required shall be endorsed to state that coverage shall not be suspended, voided, or cancelled in coverage or in limits before the expiration date except after thirty (30) days prior written notice by certified mail, return receipt requested, has been given to the City. Notwithstanding this requirement, the Contractor is primarily responsible for providing such written notice to the CITY thirty (30) days prior to any policy change or cancellation that would result in a change of the amount or type of coverage provided. In the event of any such change the Contractor shall provide comparable substitute coverage so that there is no lapse in applicable coverage or reduction in the amount of coverage available to the CITY related to the Contractor’s services.

Waiver of Governmental Immunity: Unless requested otherwise by the City, the Contractor and its insurer shall waive governmental immunity as defense and shall not use the defense of governmental immunity in the adjustment of claims or in the defense of any suit brought against the City.

Additional Insured: The liability insurance coverage, except Errors and Omissions, Professional Liability, or Workers' Compensation, if included, required for the performance of the Project shall include the City of Norwalk as an Additional Insured with respect to the Contractor's activities to be performed under this Agreement. Coverage shall be primary and non-contributory with any other insurance and self-insurance.

Waiver of Subrogation: Contractor hereby waives the right to subrogate or seek recovery from City of Norwalk and its insurance carriers.

Certificate of Insurance: As evidence of the insurance coverage required by this Agreement, the Contractor shall furnish Certificate(s) of Insurance to Corporation Counsel's Office prior to the Contractor's commencement of services under this Agreement. The Certificate(s) will specify all parties who are endorsed on the policy as Additional Insureds (or Loss Payees). The Certificates and endorsements for each insurance policy are

to be signed by a person authorized by the insurer to bind coverage on its behalf. Renewals of expiring Certificates shall be filed thirty (30) days prior to expiration. The City reserves the right to require complete, certified copies of all required policies at any time.

All insurance documents required should be mailed to the City of Norwalk Corporation Counsel, 125 East Avenue, Room 237, P.O. Box 5125, Norwalk, Connecticut 06856-5125.

Waiver of requirements: The Corporation Counsel may vary these insurance requirements at Corporation Counsel's sole discretion if Corporation Counsel determines that the City's interests will be adequately protected by the provision of different types or other amounts of coverage.

CHRO CONTRACT LANGUAGE (for contract with selected contractor)

Non-Discrimination and Affirmative Action Provisions

(A)(1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, sexual orientation, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the state of Connecticut. The Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, intellectual disability, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved; (2) the Contractor agrees, in all solicitations or advertisements for employees placed by or ·on behalf of the Contractor, to state that it is an ."affirmative action-equal opportunity employer" in accordance with regulations adopted by the commission; (3) the Contractor agrees to provide each labor union or representative of workers with which such Contractor has a collective bargaining agreement or other contract or understanding and each vendor with which such Contractor has a contract or understanding, a notice to be provided by the commission advising the labor union or workers' representative of the Contractor's commitments under this section, and to post copies of the notice in conspicuous places available to employees and applicants for employment; (4) the Contractor agrees to comply with each provision of this section and sections 46a-68e and 46a-68f and with each regulation or relevant order issued by said commission pursuant to sections 46a-56, 46a-68e,46a-68f and 46a-86; (5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this section and section 46a-56.

(B) Any Contractor who is a party to a municipal public works contract or quasipublic agency project, where any such contract is valued at less than $50,000 for each year of the contract, shall provide the Commission on Human Rights and Opportunities with a written or electronic representation that complies with the nondiscrimination agreement and warranty under subsection (A)(1) above, provided if there is any change in such representation, the Contractor shall provide the updated representation to the Commission not later than 30 days after such change. Any Contractor who is a party to a municipal public works contract or a quasi-public agency project, where any such contract is valued at $50,000 or more for any year of the contract, shall provide the Commission with any one of the following: (1) Documentation in the form of a company or corporate police adopted by resolution of the board of directors, shareholder, managers, members or other g9overning body of such Contractor that complies with the nondiscrimination agreement and warranty under subsection (A)(1) of this section; (2) Documentation in the form of a company or corporate policy adopted by a prior resolution of the board of directors, shareholders, managers, members or other governing body of such

contractor if (a) the prior resolution is certified by a duly authorized corporate officer of such contractor to be in effect on the date the documentation is submitted, and the executive director of the Commission on Human Rights and Opportunities or designee certifies that the prior resolution complies with the nondiscrimination agreement and warranty under subdivision (A)(1) of this section; or (3) Documentation in the form of an affidavit signed under penalty of false statement by a chief executive officer, president, chairperson or other corporate officer duly authorized to adopt company or corporate policy that certifies that the company or corporate policy of the contractor complies with the nondiscrimination agreement and warranty under subdivision (A)(1) of this section and is in effect on the date the affidavit is signed..

(C) If the Contract is a municipal public works contract or a quasi-public agency project, the Contractor agrees and warrants that s/he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works project. The Contractor shall include the provisions of subdivision (A)(1) of this section in every subcontract or purchase order entered into to fulfill any obligation of a municipal public works contract or contract for a quasi-public agency project, and such provisions shall be binding on a subcontractor, vendor or manufacturer, unless exempted by regulations or orders of the Commission on Human Rights and Opportunities. The Contractor shall take such action with respect to any such subcontract or purchase order as the Commission may direct as a means of enforcing such provisions, including sanctions for noncompliance in accordance with section 46a-56; provided, if such Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the Commission regarding a state contract, the contractor may request the state of Connecticut to enter into any such litigation or negotiation prior thereto to protect the interests of the state and the state may so enter.

(D) "Minority business enterprise" means any small contractor or supplier of materials fifty-one per cent or more of the capital stock, if any, or assets of which is owned by a person or persons: (1) Who are active in the daily affairs of the enterprise, (2) who have the power to direct the management and policies of the enterprise and (3) who are members of a minority, as such term is defined in subsection (a) of section 32-9n; and "good faith" means that degree of diligence which a reasonable person would exercise in the performance of legal duties and obligations. "Good faith efforts" shall include, but not be limited to, those reasonable initial efforts necessary to comply with statutory or regulatory requirements and additional or substituted efforts when it is determined that such initial efforts will not be sufficient to comply with such requirements. Determination of the Contractor's good faith efforts shall include, but shall not

be eliminated to, the following factors: The contractor's employment and subcontracting policies, patterns and practices; affirmative advertising recruitment and training; technical assistance activities and such other reasonable activities or efforts as the Commission on Human Rights and Opportunities may prescribe that are designed to ensure the participation of minority business enterprises in municipal public works contracts or quasi-public agency projects. "Municipal public works project" means that portion of an agreement entered into on or after October 1, 2015, between any individual, form or corporation and a municipality for the construction, rehabilitation, conversion, extension, demolition or repair of a public building, highway or other changes or improvements in real property, which is financed in whole or in part by the state, including, but not limited to, matching expenditures,

grants, loans, insurance or guarantees but excluding any project of an alliance district, as defined in section 10-262u, finance by the state funding in an amount equal to fifty thousand dollars or less. "Quasi-public agency project" means the construction, rehabilitation, conversion, extension, demolition or repair of a building or other changes or improvements in real property pursuant to a contract entered into on or after October 1, 2015, which is financed in whole or in part by a quasi-public agency using state funds, including, but not limited to, matching expenditures, grants, loans, insurance or guarantees.

STATE OF CT-DEPARTMENT OF ENERGY & ENVIRONMENTAL PROTECTION Contract Provisions

Contract Provisions. The Municipality/Grant Recipient shall include the following provisions in all bid packages and the ensuing contract(s):

As of 6-15-2016 when State funding is involved the following language and respective headings must be included in all bid packages and be incorporated in contractual agreements.

Executive Orders.

The Contract is subject to the provisions of Executive Order No. Three of Governor Thomas J. Meskill, promulgated June 16, 1971, concerning labor employment practices, Executive Order No. Seventeen of Governor Thomas J. Meskill, promulgated February 15, 1973, concerning the listing of employment openings and Executive Order No. Sixteen of Governor John G. Rowland promulgated August 4, 1999, concerning violence in the workplace, all of which are incorporated into and are made a part of the Contract as if they had been fully set forth in it. The Contract may also be subject to Executive Order No. 14 of Governor M. Jodi Rell, promulgated April 17, 2006, concerning procurement of cleaning products and services and to Executive Order No. 49 of Governor Dannel P. Malloy , promulgated May 22, 2015, mandating disclosure of certain gifts to public employees and contributions to certain candidates for office. If Executive Order 14 and/or Executive Order 49 are applicable, they are deemed to be incorporated into and are made a part of the Contact as if it had been fully set forth in it. At the Contractor's request, the Client Agency or DAS shall provide a copy of these orders to the Contractor.

Indemnification

(a) The Contractor shall indemnify, defend and hold harmless the State and its officers, representatives, agents, servants, employees, successors and assigns from and against any and all **(1)** Claims arising, directly or indirectly, in connection with the Contract, including the acts of commission or omission (collectively, the "Acts") of the Contractor or Contractor Parties; and **(2)** liabilities, damages, losses, costs and expenses, including but not limited to, attorneys' and other professionals' fees, arising, directly or indirectly, in connection with Claims, Acts or the Contract. The Contractor shall use counsel reasonably acceptable to the State in carrying out its obligations under this section. The Contractor's obligations under this section to indemnify, defend and hold harmless against Claims includes Claims concerning confidentiality of any part of or all of the Contractor's bid, proposal or any Records, any intellectual property rights, other proprietary rights of any person or entity, copyrighted or uncopyrighted compositions, secret processes, patented or unpatented inventions, articles or appliances furnished or used in the Performance.

(b) The Contractor shall not be responsible for indemnifying or holding the State harmless from any liability arising due to the negligence of the State or any other person or entity acting under the direct control or supervision of the State.

(c) The Contractor shall reimburse the State for any and all damages to the real or personal property of the State caused by the Acts of the Contractor or any Contractor Parties. The State shall give the Contractor reasonable notice of any such Claims.

(d) The Contractor's duties under this section shall remain fully in effect and binding in accordance with the terms and conditions of the Contract, without being lessened or compromised in any way, even where the Contractor is alleged or is found to have

merely contributed in part to the Acts giving rise to the Claims and/or where the State is alleged or is found to have contributed to the Acts giving rise to the Claims.

(e) The Contractor shall carry and maintain at all times during the term of the Contract, and during the time that any provisions survive the term of the Contract, sufficient general liability insurance to satisfy its obligations under this Contract. The Contractor shall name the State as an additional insured on the policy and shall provide (1) a certificate of insurance, (2) the declaration page and (3) the additional insured endorcement to the policy to DAS and the Client Agency all in an electronic format acceptable to DAS prior to the Effective Date of the Contract evidencing that the State is an additional insured. The Contractor shall not begin Performance until the delivery of these 3 documents to the Client Agency. Contractor shall provide an annual electronic update of the 3 documents to the Client Agency and DAS on or before each anniversary of the Effective Date during the Contract term. State shall be entitled to recover under the insurance policy even if a body of competent jurisdiction determines that the State is contributorily negligent.

(f) This section shall survive the Termination of the Contract and shall not be limited by reason of any insurance coverage.

Non-Discrimination

(1) The Contractor agrees and warrants that in the performance of the Contract such Contractor will not discriminate or permit discrimination against any person or group of persons on the grounds of race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by such Contractor that such disability prevents performance of the work involved, in any manner prohibited by the laws of the United States or of the State of Connecticut; and the Contractor further agrees to take affirmative action to insure that applicants with job-related qualifications are employed and that employees are treated when employed without regard to their race, color, religious creed, age, marital status, national origin, ancestry, sex, gender identity or expression, mental retardation, mental disability or physical disability, including, but not limited to, blindness, unless it is shown by the Contractor that such disability prevents performance of the work involved;

(2) the Contractor agrees, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, to state that it is an "affirmative action-equal opportunity employer" in accordance with regulations adopted by the Commission;

(3) the Contractor agrees to provide each labor union or representative of workers with which the Contractor has a collective bargaining Agreement or other contract or understanding and each vendor with which the Contractor has a contract or understanding, a notice to be provided by the Commission, advising the labor union or workers' representative of the Contractor's commitments under this section and to post copies of the notice in conspicuous places available to employees and applicants for employment;

(4) the Contractor agrees to comply with each provision of this Section and Connecticut General Statutes §§ 46a-68e and 46a-68f and with each regulation or relevant order issued by said Commission pursuant to Connecticut General Statutes §§ 46a-56, 46a-68e and 46a-68f; and

(5) the Contractor agrees to provide the Commission on Human Rights and Opportunities with such information requested by the Commission, and permit access to pertinent books, records and accounts, concerning the employment practices and procedures of the Contractor as relate to the provisions of this Section and Connecticut General Statutes § 46a-56. If the contract is a public works contract, the Contractor agrees and

warrants that he will make good faith efforts to employ minority business enterprises as subcontractors and suppliers of materials on such public works projects.

Set Aside. State funded projects are subject to the requirements of CGS Sec. 4a-60g "Set-Aside program for small contractors, minority business enterprises, individuals with disabilities and nonprofit corporations" unless exempted from these requirements by the Department of Administrative Services Supplier Diversity Program. For contracts using non-exempted funding sources and subcontracting any portion of work, contractors are required to subcontract 25% of the total contract value to small businesses certified by the Department of Administrative Services and are further required to subcontract 25% of that 25% to minority and women small contractors certified as minority business enterprises by the Department of Administrative Services.

Audit and Inspection of Plants, Places of Business and Records.

(a) The State and its agents, including, but not limited to, the Connecticut Auditors of Public Accounts, Attorney General and State's Attorney and their respective agents, may, at reasonable hours, inspect and examine all of the parts of the Contractor's and Contractor Parties' plants and places of business which, in any way, are related to, or involved in, the performance of this Contract.

(b) The Contractor shall maintain, and shall require each of the Contractor Parties to maintain, accurate and complete Records. The Contractor shall make all of its and the Contractor Parties' Records available at all reasonable hours for audit and inspection by the State and its agents.

(c) The State shall make all requests for any audit or inspection in writing and shall provide the Contractor with at least twenty-four (24) hours' notice prior to the requested audit and inspection date. If the State suspects fraud or other abuse, or in the event of an emergency, the State is not obligated to provide any prior notice.

(d) The Contractor will pay for all costs and expenses of any audit or inspection which reveals information that, in the sole determination of the State, is sufficient to constitute a breach by the Contractor under this Contract. The Contractor will remit full payment to the State for such audit or inspection no later than 30 days after receiving an invoice from the State. If the State does not receive payment within such time, the State may setoff the amount from any moneys which the State would otherwise be obligated to pay the Contractor in accordance with this Contractor's Setoff provision.

(e) The Contractor shall keep and preserve or cause to be kept and preserved all of its and Contractor Parties' Records until three (3) years after the latter of (i) final payment under this Contract, or (ii) the expiration or earlier termination of this Contract, as the same may be modified for any reason. The State may request an audit or inspection at any time during this period. If any Claim or audit is started before the expiration of this period, the Contractor shall retain or cause to be retained all Records until all Claims or audit findings have been resolved.

(f) The Contractor shall cooperate fully with the State and its agents in connection with an audit or inspection. Following any audit or inspection, the State may conduct and the Contractor shall cooperate with an exit conference.

a. Contracts (except those of $5,000 or less) awarded by the Municipality shall include a provision to the effect that the State, *the National Park Service, the Comptroller General of the United States, or any of their duly authorized representatives (if federally funded),* shall have access to any books, papers, and records of the contractor for the purpose of making audit, examination, excerpts, and transcriptions.

b. Contracts in excess of $100,000 shall contain a provision, which requires the Municipality to agree to comply with all applicable standards, orders, or regulations issued pursuant to the Clean Air Act (As Amended). Violators must be reported to the State.

1.4 INSURANCE REQUIREMENTS

The Contractor shall provide and maintain insurance coverage related to its services in connection with the Project in compliance with the following requirements.

The insurance required shall be written for not less than the scope and limits of insurance specified hereunder, or required by applicable federal, state and/or municipal law, regulation or requirement, whichever coverage requirement is greater. It is agreed and understood that the scope and limits of insurance specified hereunder are minimum requirements and shall in no way limit or preclude the City from requiring additional limits and coverage to be provided under the Contractor's policies.

Minimum Scope and Limits of Insurance:

Workers' Compensation Insurance: With respect to all operations the Contractor performs, it shall carry workers' compensation insurance in accordance with the requirements of the laws of the State of Connecticut, and employer's liability limits of One Hundred Thousand Dollars ($100,000.00) coverage for each accident, One Hundred Thousand Dollars ($100,000.00) coverage for each employee by disease, Five Hundred Thousand Dollars ($500,000.00) policy limit coverage for disease.

Commercial General Liability: With respect to all operations the Contractor performs it shall carry Commercial General Liability insurance providing for a total limit of One Million Dollars ($1,000,000.00) coverage per occurrence for all damages arising out of bodily injury, personal injury, property damage, products/completed operations, and contractual liability coverage for the indemnification obligations arising under this Agreement. The annual aggregate limit shall not be less than Two Million Dollars ($2,000,000.00).

Automobile Liability: With respect to each owned, non-owned, or hired vehicles the Contractor shall carry Automobile Liability insurance providing One Million Dollars ($1,000,000.00) coverage per accident for bodily injury and property damage.

Umbrella/Excess Liability: With respect to all operations the Contractor performs, the insurance limits required can be provided with a combination of Umbrella or Excess Liability insurance that would “follow form” of the underlying required terms and conditions.

"Tail" Coverage: If any of the required liability insurance is on a "claims made" basis, "tail" coverage will be required at the completion of the Project for a duration of twenty-four (24) months, or the maximum time period reasonably available in the marketplace. Contractor shall furnish certification of "tail" coverage as described or continuous "claims made" liability coverage for twenty-four (24) months following Project completion. Continuous "claims made" coverage will be acceptable in lieu of "tail" coverage, provided its retroactive date is on or before the effective date of this Agreement. If continuous "claims made" coverage is used, Contractor shall be required to keep the coverage in effect for a duration of not less than twenty-four (24) months from the date of final completion of the Project.

Acceptability of Insurers: The Contractor's policies shall be written by insurance companies licensed to do business in the State of Connecticut, with an AM Best rating of A-VII, or otherwise acceptable to the City.

Subcontractors: The Contractor shall require all subcontractors to provide the same "minimum scope and limits of insurance" as required herein, with the exception of Errors and Omissions/Professional Liability insurance, unless Errors and Omissions/Professional Liability insurance is applicable to the Work performed by the subcontractors. All Certificates of Insurance shall be provided to the City's Corporation Counsel as required herein.

Aggregate Limits: Any aggregate limits must be declared to and be approved by the City. It is agreed that the Contractor shall notify the City whenever fifty percent (50%) of the aggregate limits are eroded during the required coverage period. If the aggregate limit is eroded for the full limit, the Contractor agrees to reinstate or purchase additional limits to meet the minimum limit requirements stated herein. Any premium for such shall be paid by the Contractor.

Deductibles and Self-Insured Retentions: Any deductible or self-insured retention must be declared to and approved by the City. All deductibles or self-insured retentions are the sole responsibility of the Contractor to pay and/or to indemnify.

Notice of Cancellation or Nonrenewal: Each insurance policy required shall be endorsed to state that coverage shall not be suspended, voided, cancelled, or reduced in coverage or in limits before the expiration date except after thirty (30) days

prior written notice by certified mail, return receipt requested, has been given to the City. Notwithstanding this requirement, the Contractor is primarily responsible for providing such written notice to the CITY thirty (30) days prior to any policy change or cancellation that would result in a change of the amount or type of coverage provided. In the event of any such change the Contractor shall provide comparable substitute coverage so that there is no lapse in applicable coverage or reduction in the amount of coverage available to the CITY related to the Contractor’s services.

Waiver of Governmental Immunity: Unless requested otherwise by the City, the Contractor and its insurer shall waive governmental immunity as defense and shall not use the defense of governmental immunity in the adjustment of claims or in the defense of any suit brought against the City.

Additional Insured: The liability insurance coverage, except Errors and Omissions, Professional Liability, or Workers' Compensation, if included, required for the performance of the Project shall include the City as an Additional Insured with respect to the Contractor's activities to be performed under this Agreement. Coverage shall be primary and non-contributory with any other insurance and self-insurance.

Certificate of Insurance: As evidence of the insurance coverage required by this Agreement, the Contractor shall furnish Certificate(s) of Insurance to Corporation Counsel's Office prior to the Contractor's commencement of services under this Agreement. The Certificate(s) will specify all parties who are endorsed on the policy as Additional Insureds (or Loss Payees). The Certificates and endorsements for each insurance policy are to be signed by a person authorized by the insurer to bind coverage on its behalf. Renewals of expiring Certificates shall be filed thirty (30) days prior to expiration. The City reserves the right to require complete, certified copies of all required policies at any time.

All insurance documents required should be mailed to the City of Norwalk Corporation Counsel, 125 East Avenue, P. O. Box 798, Norwalk, Connecticut 06856-0798.

Waiver of requirements: The Corporation Counsel may vary these insurance requirements at Corporation Counsel's sole discretion if Corporation Counsel determines that the City's interests will be adequately protected by the provision of different types or other amounts of coverage.

1.5 CHRO CONTRACT COMPLIANCE REGULATIONS NOTIFICATION TO BIDDERS

Note: ***The CHRO Compliance Regulations Notification to Bidders Form is included at the end of the bid package***.

END OF SECTION

SECTION 2
PROJECT SPECIFICATIONS/SCOPE OF WORK

Note: ***For more information on the project please see the PROJECT MANUAL, TECHNICAL SPECS, SIGNAGE AND DRAWINGS included at the end of the bid package***.

END OF SECTION

SECTION 3 - GENERAL BIDDING INFORMATION FOR CONSTRUCTION

Rev. 08/08/2013, Express Request Doc. #1006

3.1 GENERAL**:**

A. The City reserves the right to require the successful firm to execute a contract in a format supplied by Corporation Counsel. Award of all or a portion of the requirement may be subject to approval by the Norwalk Common Council.

B. The City of Norwalk General Conditions for Construction and the Contract documents prepared by the City shall govern as the terms and conditions for this project.

1. A copy of the City of Norwalk General Conditions for Construction (04202011) is available upon request. A copy of this document is located on the City's website: Document #1008 http://www.norwalkct.org/DocumentCenter/Home/View/866

C. A certified or cashiers check or bid bond in the amount indicated in the **Invitation to Bid** must accompany your response. The certified or cashiers checks will be returned to all unsuccessful candidates upon the awarding of the contract. If your quotation is not accompanied by a bid bond or check at the bid opening the bid will be automatically rejected.

D. The successful firm will be required to furnish a performance bond and labor and materials bond acceptable to Corporation Counsel, each for the full contract amount, prior to execution of a contract and/or performance under Purchase Orders. Indicate the cost for these bonds, included in the lump sum bid(s) on the response form. **Note**: The requirement for a maintenance bond is not contingent on the dollar threshold for other bonds indicated in the invitation to bid. Please refer to Sections 3.17 and 109-15 for maintenance bond requirements.

For 3.1, C & D:

Surety Companies must be listed on the current Federal Register, licensed in the State of Connecticut and have an underwriting limitation exceeding the value of the project with no more than 5% of capitol in surplus tied to any one risk.

Banks must have a branch office in Connecticut with insurance provided by the FDIC.

E. The award of any contract is subject to the following conditions and contingencies:

(1). The approval of such governmental agencies as may be required by law.
(2). The appropriation of adequate funds by the proper agencies.
(3). If the bidder is a corporation or other legal business entity, it must have a current license to do business in the State of Connecticut that is on file with the Connecticut Secretary of State's office, or it must be organized under the laws of the State of Connecticut and current in terms of its required filings.

Note: If you are an out-of state business and the performance of your contract with the City requires that tangible personal property will be used or consumed in this state, you must comply with Connecticut General Statutes 12-430-7 a copy of which can be found at http://www.ct.gov/drs/cwp/view.asp?A=1514&Q=501308

Questions concerning this statute should be addressed to the Commissioner of Revenue Services for the State of Connecticut, Department of Revenue Services, 92 Farmington Avenue, Hartford CT 06115.

Registration by out-of state corporations with the Connecticut Secretary of State, 30 Trinity Street, Hartford CT 06106, telephone 860-509-6002, is required by law as a condition for doing business in the State of Connecticut.

F. Notice is hereby given to all bidders that as a municipality the City of Norwalk is subject to and bound to comply with the terms of the Freedom of Information Act. Consequently, please be informed that under the terms of the Act some or all of your submissions, including attachments, may be subject to disclosure to the public or press upon request. The FOI Act recognizes that certain documents are exempt from disclosure or may be held confidentially. However, these exemptions are considered exceptions to the general rule favoring disclosure and are generally narrowly construed. You should consult with legal counsel before making your submission if you have any questions about what submitted document may be disclosed. You are hereby requested to submit those documents to which an exemption is claimed under seal along with those non-exempt documents. These sealed documents shall initially be held in confidence but may be released to the extent required or allowed by law.

G. When work is required in which no specific payment item is listed in the Proposal Form, the cost of such work will be included in the unit prices bid.

3.2 QUALIFICATIONS OF CANDIDATES:

The City may make such investigations as deemed necessary to determine the ability of the candidate to perform the work and the degree to which any candidate meets the criteria for Award listed herein.

3.3 RECYCLING POLICY:

The City of Norwalk is committed to protecting the environment and managing solid waste. Where possible and practical the City will procure recycled and/or recyclable products. The City will consider alternate proposals which maximize the use of products which are produced from post consumer waste, which reduce waste or consumption, or that offer products with a salvage value.

The City requests that its vendors eliminate all non-essential packaging that may be used in the delivery process.

3.4 OBLIGATIONS OF THE CANDIDATE:

At the time of the opening of proposals, each candidate will be presumed to be thoroughly familiar with the specifications, the various sites, the City's requirements, and the objectives for each element of the project item or service.

3.5 LABOR RATES:

See sections 102.18 and 107.12 of the City of Norwalk General Conditions for Construction. NOTE: Prevailing Wage Rates apply when (1) the total cost of work performed on **new construction is $400,000** or more; or (2) the total cost of all work in connection with an alteration, repair, remodeling, refinishing, refurbishing or **rehabilitation is $100,000** or more.

3.6 SITE INSPECTION:

Information contained in these documents is provided with the understanding as outlined in section 102-06 of General Conditions for Construction. Candidates are required to conduct a thorough inspection or study of existing conditions/equipment.

3.7 INSURANCE REQUIREMENTS:

A certificate of insurance must be presented to the Corporation Counsel at the time of award and must name the City as an additional insured on the face of the document. In addition, please list the name and address of your insurance agent as part of the returned bid proposal. The City's Standard insurance requirements, if not listed within the bid documents are available on the Purchasing Department’s website within the Terms and Conditions section, refer to document number 1007.

All policies must be written on a "per occurrence" basis. "Claims Made" Policies are not acceptable. The Contractor is responsible for the cost of maintaining such insurance throughout the duration of the project.

3.8 LIQUIDATED DAMAGES:

Liquidated damages as defined in Article 27 of the Norwalk General Conditions for Construction will be $350.00 per day.

3.9 RETAINAGE:

The City will retain 5% of the total project cost until such time as a guarantee bond, satisfactory to the Corporation Council's office is posted with the City (sect. 109-15, Gen. Cond. for Construction) or other terms for retainage are specifically stated in the contract for this project.

3.10 ACCEPTABLE BRANDS:

The attached specifications are not intended to limit consideration to the particular service organization or manufacturer from which they were developed. References to brand names or numbers are to be interpreted as establishing a standard of quality and is not to be construed as limiting competition. Brand names used within these specifications shall be presumed to be followed by the words "or approved equal".

Burden of proving a product and/or material as equal to a specific product and/or material by brand name is the responsibility of the contractor.

Final determination as to what is an "or equal" product will be made by the Purchasing Agent in conjunction with other City staff. The City will award on the basis of the criteria stated herein, and reserves the right to waive or require compliance with any element of the specifications.

3.11 HOW TO RESPOND:

Supply the required information on the response and prequalification form. An authorized agent of your organization must sign and date the response form and any supplementary proposal document.

If a prospective bidder needs clarification or interpretation of any items in the General Conditions, and/or Specifications, he/she must request such in writing, addressed to the Director of Purchasing at least fourteen calendar days prior to the bid opening. Responses shall also be in writing, and shall be distributed to all bidders. The City of Norwalk, or its agents shall not be responsible for any oral instructions or interpretations given to a bidder.

Return the response forms, one original and nine copies of the bid response, bond (if required), and any informational literature to the ***City of Norwalk Purchasing Department, Room 103, 125 East Avenue, P.O.Box 5125, Norwalk, Ct. 06856-5125***. Be sure to indicate the request number, name, and opening time on the face of the envelope otherwise we will not be able to insure the confidentiality of the bid.
Late bids – bid submissions delivered or received later than the date and time specified on the invitation to bid will not be considered and will be returned unopened. The bidder shall assume full responsibility for the timely delivery of their submission at the location designated for the receipt of the submissions.

Failure to follow these guidelines may be just cause for rejection of the bid.

3.12 CRITERIA FOR AWARD:

This Request for proposal/bid does not necessarily contemplate an award based solely on price. Rather, the City reserves its rights to accept or reject any and all proposals / bids, or any part thereof, to waive defects in the same, or accept any proposal / bid or a combination of proposals / bids deemed to be in its best interests.

3.13 THE RFP PROCESS:

Bids are advertised as required by law. The City may also mail invitations to businesses as it deems appropriate. Placement on a vendor mailing list or a history of having received invitations in the past or having received prior contract awards in no way obligates the City to continue any form of direct notification. At the discretion of the Purchasing Agent the City may remove vendors from the mailing list for whatever reason including a poor performance history or failure to respond to previous invitations.

Refer any questions that may arise during the solicitation and award process, in writing, to the Purchasing Agent.

3.14 TIME PROVISIONS:

The content of any proposal submitted is to remain valid and available to the City for ninety (90) days from the day proposals are due.

3.15 ASSIGNMENT OF CONTRACT:

The successful candidate agrees that he will not assign, transfer, or subcontract any portion of the award.

3.16 INDEMNIFICATION:

Contractor shall not assert any claim arising out of any act or omission by any agent, officer or employee of the City in the execution or performance of this Agreement against any such agent, officer or employee. Such claims may be made against the City.

No member of the governing body of the City, and no other officer, employee, or agent of the City shall have any personal interest, direct or indirect, in this Agreement, except as permitted by the Code of Ethics of the City of Norwalk; and the Contractor covenants that no person having such interest shall be employed in the performance of this Agreement.
The Contractor expressly agrees to at all times indemnify, defend and save harmless the City of Norwalk and its respective officers, agents, and employees on account of any and all demands, claims, damages, losses, litigation, financial costs and expenses, including counsel's fees, and compensation arising out of personal injuries (including death), any damage to property, real or personal and any other loss, expense or aggrievement directly or indirectly arising out of, related to or in connection with the Project and the work to be performed hereunder by the Contractor, its employees, agents, subcontractors, material suppliers, or anyone directly or indirectly employed by any of them. The Contractor shall and does hereby assume and agree to pay for the defense of all such claims, demands, suits, proceedings and litigation. The provisions of this paragraph shall survive the expiration or early termination of this Agreement and shall not be limited by reason of any insurance coverage.

3.17 WARRANTIES, GUARANTEES, & INSTRUCTIONS:

All work shall be warranted by the Contractor for a minimum period of two (2) years from the date of completion of the work against all defective workmanship and materials furnished by the Company. Where longer periods of Warranty/ Guarantee are required by these specifications, the contract documents, or are provided for by specific or implied warranty of materials, goods or equipment or by general law, the longer period of time will govern.

The Contractor shall promptly replace or repair in a manner satisfactory to the City any such defective work after notice from the City to do so. Work will be assumed to be defective if it is determined by the City that the material or equipment is not performing in a satisfactory manner, consistent with its intended use or operation. If the Contractor fails to make such replacement or repairs, the City may perform or cause to be performed all necessary work and the Company and its sureties shall be liable for all costs thereof.

Original manufacturers' warranties, guarantees, instruction sheets, parts lists, and certificates of title are to be delivered to the Purchasing Agent. Copies of all such materials are to be provided to the department accepting delivery.

3.18 TERMS AND CONDITIONS: See Section 4

3.19 ASSIGNMENT OF ANTITRUST CLAIMS:

The Contractor offers and agrees to assign to the City of Norwalk all of it's right, title and interest in and to any and all causes of action it may have under Section 4 of the Clayton Act, 15 U.S.C. Section 15, or under Chapter 624 of the Connecticut General Statutes, arising out of the purchase of services, goods, property or intangibles of any kind pursuant to a purchase order, contract agreement, subcontract or other form of public purchase by the City of Norwalk. This assignment shall be made and become effective upon award or acceptance by the City of Norwalk of the bid, purchase order or contract agreement with the Contractor without requiring any additional or further act or acknowledgement by the parties.

The Contractor shall include the terms of this assignment to the City of Norwalk in any contract, agreement or purchase document that it may enter into for services, goods, property or intangibles used for or incorporated into any work or materials, performed for or provided to the City of Norwalk.

3.20 SMOKING POLICY

No person shall smoke in any municipal or school system facility.

3.21 BUILDING PERMIT FEES

Refer to Section 4, 107-01

END OF SECTION

SECTION 4

CITY OF NORWALK GENERAL CONDITIONS FOR CONSTRUCTION

NOTE: SECTION 4 contains the City's General Terms and Conditions for construction. Your Firm is responsible for obtaining a copy of this document prior to bidding. If you do not have a revision dated 04/20/2011 or later on file you may download a copy of this document from the Terms and Conditions section of the City of Norwalk's website at www.norwalkct.org http://www.norwalkct.org/DocumentCenter/Home/View/866 Document number 1008.

SECTION 5

PREVAILING WAGE ADDENDEUM

(Note: Page numbering in this section is not sequential with other sections within this document)

The Contractor shall weekly submit to the Director a certified payroll, which shall consist of a complete copy of its records relating to the wages and hours worked by each employee and a schedule of the occupation or work classification at which each mechanic, laborer or workman on the Project is employed during each work day and week. The submission shall be in such manner and form as the State Labor Commissioner requires and in compliance with the requirements of Public Act 93392. This weekly submission shall also include a statement signed by the employer (the Contractor) indicating the information set forth in Section l (f) of Public Act 93-392."

5.1 – LIVING WAGE ORDINACE

GENERAL INFORMATION

Rev. 033116, Express Request Doc. #1019

NOTE: SECTION 5.1 contains information concerning City's Living Wage Ordinance. You are responsible for obtaining a copy prior to bidding. If you do not have a revision dated 03/31/2016 or later on file you may download a copy of this Ordinance from the Terms and Conditions section of the City of Norwalk's website at http://www.norwalkct.org

Document number **1019:** http://www.norwalkct.org/DocumentCenter/Home/View/862

COMMISSION ON HUMAN RIGHTS AND OPPORTUNITIES
CONTRACT COMPLIANCE REGULATIONS
NOTIFICATION TO BIDDERS

(Revised 09/3/15)

The contract to be awarded is subject to contract compliance requirements mandated by Sections 4a-60 and 4a-60a of the Connecticut General Statutes; and, when the awarding agency is the State, Sections 46a-71(d) and 46a-81i(d) of the Connecticut General Statutes. There are Contract Compliance Regulations codified at Section 46a-68j-21 through 43 of the Regulations of Connecticut State Agencies, which establish a procedure for awarding all contracts covered by Sections 4a-60 and 46a-71(d) of the Connecticut General Statutes.

According to Section 46a-68j-30(9) of the Contract Compliance Regulations, every agency awarding a contract subject to the contract compliance requirements has an obligation to "aggressively solicit the participation of legitimate minority business enterprises as bidders, contractors, subcontractors and suppliers of materials." "Minority business enterprise" is defined in Section 4a-60 of the Connecticut General Statutes as a business wherein fifty-one percent or more of the capital stock, or assets belong to a person or persons: "(1) Who are active in daily affairs of the enterprise; (2) who have the power to direct the management and policies of the enterprise; and (3) who are members of a minority, as such term is defined in subsection (a) of Section 32-9n." "Minority" groups are defined in Section 32-9n of the Connecticut General Statutes as "(1) Black Americans . . . (2) Hispanic Americans . . . (3) persons who have origins in the Iberian Peninsula . . . (4)Women . . . (5) Asian Pacific Americans and Pacific Islanders; (6) American Indians . . ." An individual with a disability is also a minority business enterprise as provided by Section 4a-60g of the Connecticut General Statutes. The above definitions apply to the contract compliance requirements by virtue of Section 46a-68j-21(11) of the Contract Compliance Regulations.

The awarding agency will consider the following factors when reviewing the bidder's qualifications under the contract compliance requirements:

(a) the bidder's success in implementing an affirmative action plan;
(b) the bidder's success in developing an apprenticeship program complying with Sections 46a-68-1 to 46a-68-17 of the Administrative Regulations of Connecticut State Agencies, inclusive;
(c) the bidder's promise to develop and implement a successful affirmative action plan;
(d) the bidder's submission of employment statistics contained in the "Employment Information Form", indicating that the composition of its workforce is at or near parity when compared to the racial and sexual composition of the workforce in the relevant labor market area; and
(e) the bidder's promise to set aside a portion of the contract for legitimate minority business enterprises. See Section 46a-68j-30(10)(E) of the Contract Compliance Regulations.

INSTRUCTIONS AND OTHER INFORMATION

The following BIDDER CONTRACT COMPLIANCE MONITORING REPORT must be completed in full, signed, and submitted with the bid for this contract. The contract awarding agency and the Commission on Human Rights and Opportunities will use the information contained thereon to determine the bidders compliance to Sections 4a-60 and 4a-60a CONN. GEN. STAT., and Sections 46a-68j-23 of the Regulations of Connecticut State Agencies regarding equal employment opportunity, and the bidder's good faith efforts to include minority business enterprises as subcontractors and suppliers for the work of the contract.

1) Definition of Small Contractor

Section 4a-60g CONN. GEN. STAT. defines a small contractor as a company that has been doing business under the same management and control and has maintained its principal place of business in Connecticut for a one year period immediately prior to its application for certification under this section, had gross revenues not exceeding fifteen million dollars in the most recently completed fiscal year, and at least fifty-one percent of the ownership of which is held by a person or persons who are active in the daily affairs of the company, and have the power to direct the management and policies of the company, except that a nonprofit corporation shall be construed to be a small contractor if such nonprofit corporation meets the requirements of subparagraphs (A) and (B) of subdivision 4a-60g CONN. GEN. STAT.

MANAGEMENT: Managers plan, organize, direct, and control the major functions of an organization through subordinates who are at the managerial or supervisory level. They make policy decisions and set objectives for the company or departments. They are not usually directly involved in production or providing services. Examples include top executives, public relations managers, managers of operations specialties (such as financial, human resources, or purchasing managers), and construction and engineering managers.

BUSINESS AND FINANCIAL OPERATIONS: These occupations include managers and professionals who work with the financial aspects of the business. These occupations include accountants and auditors, purchasing agents, management analysts, labor relations specialists, and budget, credit, and financial analysts.

MARKETING AND SALES: Occupations related to the act or process of buying and selling products and/or services such as sales engineer, retail sales workers and sales representatives including wholesale.

LEGAL OCCUPATIONS: In-House Counsel who is charged with providing legal advice and services in regards to legal issues that may arise during the course of standard business practices. This category also includes assistive legal occupations such as paralegals, legal assistants.

COMPUTER SPECIALISTS: Professionals responsible for the computer operations within a company are grouped in this category. Examples of job titles in this category include computer programmers, software engineers, database administrators, computer scientists,systems analysts, and computer support specialists

ARCHITECTURE AND ENGINEERING: Occupations related to architecture, surveying, engineering, and drafting are included in this category. Some of the job titles in this category include electrical and electronic engineers, surveyors, architects, drafters, mechanical engineers, materials engineers, mapping technicians, and civil engineers.

OFFICE AND ADMINISTRATIVE SUPPORT: All clerical-type work is included in this category. These jobs involve the preparing, transcribing, and preserving of written communications and records; collecting accounts; gathering and distributing information; operating office machines and electronic data processing equipment; and distributing mail. Job titles listed in this category include telephone operators, bill and account collectors, customer service representatives, dispatchers, secretaries and administrative assistants, computer operators and clerks (such as payroll, shipping, stock, mail and file).

BUILDING AND GROUNDS CLEANING AND MAINTENANCE: This category includes occupations involving landscaping, housekeeping, and janitorial services. Job titles found in this category include supervisors of landscaping or housekeeping, janitors, maids, grounds maintenance workers, and pest control workers.

CONSTRUCTION AND EXTRACTION: This category includes construction trades and related occupations. Job titles found in this category include boilermakers, masons (all types), carpenters, construction laborers, electricians, plumbers (and related trades), roofers, sheet metal workers, elevator installers, hazardous materials removal workers, paperhangers, and painters. Paving, surfacing, and tamping equipment operators; drywall and ceiling tile installers; and carpet, floor and tile installers and finishers are also included in this category. First line supervisors, foremen, and helpers in these trades are also grouped in this category..

INSTALLATION, MAINTENANCE AND REPAIR: Occupations involving the installation, maintenance, and repair of equipment are included in this group. Examples of job titles found here are heating, ac, and refrigeration mechanics and installers; telecommunication line installers and repairers; heavy vehicle and mobile equipment service technicians and mechanics; small engine mechanics; security and fire alarm systems installers; electric/electronic repair, industrial, utility and transportation equipment; millwrights; riggers; and manufactured building and mobile home installers. First line supervisors, foremen, and helpers for these jobs are also included in the category.

MATERIAL MOVING WORKERS: The job titles included in this group are Crane and tower operators; dredge, excavating, and lading machine operators; hoist and winch operators; industrial truck and tractor operators; cleaners of vehicles and equipment; laborers and freight, stock, and material movers, hand; machine feeders and offbearers; packers and packagers, hand; pumping station operators; refuse and recyclable material collectors; and miscellaneous material moving workers.

PRODUCTION WORKERS: The job titles included in this category are chemical production machine setters, operators and tenders; crushing/grinding workers; cutting workers; inspectors, testers sorters, samplers, weighers; precious stone/metal workers; painting workers; cementing/gluing machine operators and tenders; etchers/engravers; molders, shapers and casters except for metal and plastic; and production workers.

3) Definition of Racial and Ethnic Terms (as used in Part IV Bidder Employment Information) (Page 3)

White (not of Hispanic Origin)- All persons having origins in any of the original peoples of Europe, North Africa, or the Middle East. Black(not of Hispanic Origin)- All persons having origins in any of the Black racial groups of Africa. Hispanic- All persons of Mexican, Puerto Rican, Cuban, Central or South American, or other Spanish culture or origin, regardless of race.	Asian or 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. This area includes China, India, Japan, Korea, the Philippine Islands, and Samoa. American Indian or Alaskan Native- All persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.

BIDDER CONTRACT COMPLIANCE MONITORING REPORT

PART I - Bidder Information

Company Name Street Address City & State Chief Executive	Bidder Federal Employer Identification Number _____ Or Social Security Number_____
Major Business Activity (brief description)	Bidder Identification (response optional/definitions on page 1) -Bidder is a small contractor. Yes __No __ -Bidder is a minority business enterprise Yes __No __ (If yes, check ownership category) Black ___ Hispanic___ Asian American___ American Indian/Alaskan Native ___Iberian Peninsula ___ Individual(s) with a Physical Disability___ Female ___
Bidder Parent Company (If any)	- Bidder is certified as above by State of CT Yes__ No__
Other Locations in Ct. (If any)	

PART II - Bidder Nondiscrimination Policies and Procedures

1. Does your company have a written Affirmative Action/Equal Employment Opportunity statement posted on company bulletin boards? Yes__ No__	7. Do all of your company contracts and purchase orders contain non-discrimination statements as required by Sections 4a-60 & 4a-60a Conn. Gen. Stat.? Yes__ No__
2. Does your company have the state-mandated sexual harassment prevention in the workplace policy posted on company bulletin boards? Yes__ No__	8. Do you, upon request, provide reasonable accommodation to employees, or applicants for employment, who have physical or mental disability? Yes__ No__
3. Do you notify all recruitment sources in writing of your company's Affirmative Action/Equal Employment Opportunity employment policy? Yes__ No__	9. Does your company have a mandatory retirement age for all employees? Yes__ No__
4. Do your company advertisements contain a written statement that you are an Affirmative Action/Equal Opportunity Employer? Yes __No __	10. If your company has 50 or more employees, have you provided at least two (2) hours of sexual harassment training to all of your supervisors? Yes__ No__ NA__
5. Do you notify the Ct. State Employment Service of all employment openings with your company? Yes __No __	11. If your company has apprenticeship programs, do they meet the Affirmative Action/Equal Employment Opportunity requirements of the apprenticeship standards of the Ct. Dept. of Labor? Yes __No __NA __
6. Does your company have a collective bargaining agreement with workers? Yes__ No__ 6a. If yes, do the collective bargaining agreements contain non-discrim ination clauses covering all workers? Yes__ No__ 6b. Have you notified each union in writing of your commitments under the nondiscrimination requirements of contracts with the state of Ct? Yes__ No__	12. Does your company have a written affirmative action Plan? Yes __No __ If no, please explain. 13. Is there a person in your company who is responsible for equal employment opportunity? Yes __No __ If yes, give name and phone number. _____

Part III - Bidder Subcontracting Practices

1. Will the work of this contract include subcontractors or suppliers? Yes__ No___

1a. If yes, please list all subcontractors and suppliers and report if they are a small contractor and/or a minority business enterprise. (defined on page 1 / use additional sheet if necessary)

1b. Will the work of this contract require additional subcontractors or suppliers other than those identified in 1a. above? Yes__ No__

PART IV - Bidder Employment Information

Date:

JOB CATEGORY *	OVERALL TOTALS	WHITE (not of Hispanic origin)		BLACK (not of Hispanic origin)		HISPANIC		ASIAN or PACIFIC ISLANDER		AMERICAN INDIAN or ALASKAN NATIVE	
		Male	Female	Male	Female	Male	Female	Male	Female	male	female
Management											
Business & Financial Ops											
Marketing & Sales											
Legal Occupations											
Computer Specialists											
Architecture/Engineering											
Office & Admin Support											
Bldg/ Grounds Cleaning/Maintenance											
Construction & Extraction											
Installation , Maintenance & Repair											
Material Moving Workers											
Production Occupations											
TOTALS ABOVE											
Total One Year Ago											
FORMAL ON THE JOB TRAINEES (ENTER FIGURES FOR THE SAME CATEGORIES AS ARE SHOWN ABOVE)											
Apprentices											
Trainees											

*NOTE: JOB CATEGORIES CAN BE CHANGED OR ADDED TO (EX. SALES CAN BE ADDED OR REPLACE A CATEGORY NOT USED IN YOUR COMPANY)

1. Which of the following recruitment sources are used by you? (Check yes or no, and report percent used)				2. Check (X) any of the below listed requirements that you use as a hiring qualification (X)		3. Describe below any other practices or actions that you take which show that you hire, train, and promote employees without discrimination
SOURCE	YES	NO	% of applicants provided by source			
State Employment Service					Work Experience	
Private Employment Agencies					Ability to Speak or Write English	
Schools and Colleges					Written Tests	
Newspaper Advertisement					High School Diploma	
Walk Ins					College Degree	
Present Employees					Union Membership	
Labor Organizations					Personal Recommendation	
Minority/Community Organizations					Height or Weight	
Others (please identify)					Car Ownership	
					Arrest Record	
					Wage Garnishments	

Certification (Read this form and check your statements on it CAREFULLY before signing). I certify that the statements made by me on this BIDDER CONTRACT COMPLIANCE MONITORING REPORT are complete and true to the best of my knowledge and belief, and are made in good faith. I understand that if I knowingly make any misstatements of facts, I am subject to be declared in non-compliance with Section 4a-60, 4a-60a, and related sections of the CONN. GEN. STAT.

(Signature)	(Title)	(Date Signed)	(Telephone)

CITY OF NORWALK
INLAND WETLAND AGENCY

P.O. Box 5125, 125 East Avenue, Norwalk, CT 06856-52125
Phone: (203) 854-7744 Fax: (203) 854-7962

April 18, 2016

City of Norwalk/Oak Hills Park Authority
165 Fillow Street
Norwalk, CT 06850

Subject: Permit Application #S16-485
165 Fillow Street (Oak Hills Park), Norwalk, CT

Dear City of Norwalk/Oak Hills Park Authority:

The Inland Wetland Agency of the City of Norwalk has **GRANTED** your application for renovation and reconstruction of existing and installation of new components of existing golf course in and adjacent to wetlands and watercourses. The permit contains a description of the permitted work and the terms and conditions of the work are attached. Your work must conform to your permit.

For your records, a copy of the Legal Notice of the Agency's decision is enclosed. If you have any questions or comments regarding your permit, please contact this office. Thank you for your cooperation in protecting the valuable natural resources of the City of Norwalk.

Sincerely,

Alexis Cherichetti
Senior Environmental Officer

encl. Permit #S16-485
Legal Notice of Publication

CITY OF NORWALK

INLAND WETLAND AGENCY

125 EAST AVE., NORWALK, CT 06856
203-854-7744 phone / 203-854-7962 FAX

DECISION – April 12, 2016

PERMIT – # S16-485

As the licensing Agency, this Agency takes the following action on the proposed activity in accordance with the Inland Wetlands and Watercourses Regulations of the City of Norwalk concerning regulated activity affecting a wetland.

APPLICANT: City of Norwalk/Oak Hills Park Authority
165 Fillow Street
Norwalk, CT 06850

PROPERTY: **165 Fillow Street (Oak Hills Park), Norwalk, CT**
Fifth Taxing District, Block 64, Lot 162

ACTIVITY: Renovation and reconstruction of existing and installation of new components of existing golf course in and adjacent to wetlands and watercourses.

Whereas, the Inland Wetland Agency has carefully considered all the information submitted and the factors for consideration of decision, as detailed in section 60A-10 of Norwalk's Inland Wetland and Watercourses Regulations; and

Whereas, the impacts of the proposed activities, as conditioned below, will not result in any addition negative impact on the wetland or watercourses; and

Now therefore be it Resolved:

that Inland Wetland Application #S16-485, for renovation and reconstruction of existing and installation of new components of existing golf course in and adjacent to a wetland and watercourse, be GRANTED to the City of Norwalk/Oak Hill Park Authority for property located at 165 Fillow Street, Norwalk, CT [5-64-162], with the following conditions:

1. **PRIOR TO THE COMMENCEMENT OF ANY ON-SITE PERMIT RELATED ACTIVITY** the permittee shall provide photo documentation of the wetland and watercourse areas and cross-reference the photographs on a site plan. Photographs should represent wide-angle views.

2. Prior to the commencement of site work, permittee shall convene an on-site pre-construction meeting with Conservation Office staff to review terms and limitations imposed by this permit.

3. **SILT FENCE** shall be installed along the limit of disturbance or in any other location deemed by Conservation Staff necessary for the prevention of sedimentation. The limit of disturbance shall be no more than five (5) feet from the feature indicated.

   All silt fencing is to be properly installed, and then inspected by the Conservation Staff, prior to the commencement of any work on site.

4. No construction-related activity, including, but not limited to, stockpiling, construction access, grading or vegetation removal may occur beyond the silt fencing, which shall be considered the limit of disturbance unless specifically exempted by conditions of this permit.
5. Regulated activities must be completed within **one (1) month** of commencement of any regulated activity at each hole.
6. **FOLLOWING COMPLETION OF ON-SITE PERMIT RELATED ACTIVITIES** the permittee shall provide photo documentation of the site and cross-reference the photographs on a site plan. Photographs should represent wide-angle views.
7. Any change to the overall plan will require a return to the Inland Wetland Agency for review.

GENERAL CONDITIONS in the issuance of all Norwalk Inland Wetland Agency permits:

1. The permittee shall notify the Senior Environmental Officer 24 hours prior to the commencement of work and upon its completion.

2. This permit, for which an approval is required under chapter 124, 124b, 126 or 126a of the Connecticut General Statutes, shall be valid until the approval granted under such above chapter expires or ten (10) years, whichever is earlier.

3. No equipment or material including fill, construction materials, or debris, shall be deposited, placed, or stored in any wetland or watercourse on or off site unless specifically authorized by this permit.

4. All work conducted pursuant to this authorization shall be consistent with the terms and conditions of this permit. Any structures, excavation, fill, obstructions, encroachments or regulated activities not specifically identified and authorized herein shall constitute a violation of this permit and may result in its modification, suspension, or revocation.

5. Upon initiation of the activities authorized herein, the permittee thereby accepts and agrees to comply with the terms and conditions of this permit.

6. Prior to commencement of any work, each and every general contractor and subcontractor employed by the applicant shall complete a Contractor Agreement, indicating that the contractor or subcontractor has fully familiarized itself with and understands the Norwalk Inland Wetlands and Watercourses Regulations as they apply to its project, and with the terms of the permitted activity, including the general and special conditions which may pertain.

7. In evaluating this application, the Agency has relied on information provided by the applicant and, if such information subsequently proves to be false, deceptive, incomplete and/or inaccurate, this permit shall be modified, suspended or revoked.

8. Nothing in this permit shall obviate the requirements for the applicant to obtain any other assents, permits or licenses required by law or regulation by the City of Norwalk, State of Connecticut or the Government of the United States, including any approval required by the Connecticut Department of Environmental Protection and U.S. Army Corps of Engineers. Obtaining such assents, permits or licenses is the sole responsibility of the applicant.

9. This authorization is not transferable without the written consent of the Norwalk Inland Wetland Agency.

10. Where applicable, the oil tank shall be above ground or in the basement of the dwelling.

11. All disturbed areas are to be stabilized immediately upon completion of work.

END

CONTRACTOR AGREEMENT

INLAND WETLAND AGENCY PERMIT NUMBER: **# S16-485**

As a contractor/subcontractor engaged by _____ to perform the regulated activities described in Norwalk Inland Wetland Agency Permit referenced above, I am familiar with the applicable State and City of Norwalk Inland Wetlands and Water Courses Regulations and the Permit, and will comply with all the conditions therein.

Work will commence on or about _____ and will be completed within

_____ weeks.

Name: _____

Address: _____

_____

_____

Telephone: _____

_____
Signature

_____
Date Signed

RETURN OR MAIL TO: Conservation Office
125 East Avenue
Norwalk, CT 06856-5125
203-854-7962 (fax)

NOTICE TO CONTRACTORS

Failure to comply with the terms and conditions of this permit shall subject the permittee and the contractor to enforcement actions, as per Chapter 60A-10 of the City of Norwalk Inland Wetlands and Watercourses Regulations, and Section 22a-361 of the State Statutes. Enforcement actions may include penalties and injunctions as provided by law.

CITY OF NORWALK
INLAND WETLAND AGENCY

NOTICE TO ALL IW PERMIT HOLDERS

THE PERMIT HOLDER WILL BE RESPONSIBLE FOR SCHEDULING ALL NECESSARY INSPECTIONS.

An inspection shall be scheduled prior to the commencement of any on-site work for all soil and erosion controls.

An inspection shall be scheduled when a planting plan is initially completed. Failing to contact the Conservation Office to schedule an inspection will delay the release of bond held for such plantings.

A Certificate of Compliance inspection will be required for all projects necessitating a Certificate of Occupancy. Requests for a certificate of compliance shall be submitted to the Conservation Office a week prior to an anticipated closing. It is in your best interest to provide ample time to make it possible for staff to schedule a final site inspection.

This office will not issue a Certificate of Compliance unless all permit conditions are met.

PROJECT SIGN
DEPARTMENT OF ENERGY AND ENVIRONMENTAL PROTECTION

6-8’

3-4’

NAME OF THE PROJECT

NAME OF THE SPONSOR/DEVELOPER

Constructed in cooperation with the

STATE OF CONNECTICUT
DANNEL P. MALLOY, GOVERNOR

Department of Energy and Environmental Protection
Robert J. Klee, Commissioner

and the
Name of Town/City
Name of Chief Elected Official and title

Name of Architect
Name of General Contractor

SIGN PANEL: ¾” MDO-EXT-APA PLYWOOD SUPPORTED WITH (2) 4X4 TREATED WOOD COLUMNS AND SECURED 4’ INTO GRADE. TOP OF SIGN AT 8’-0” ABOVE GRADE.

COLORS: ALL LETTERS AND SYMBOLS ARE TO BE ROYAL BLUE. THE BACKGROUND WILL BE WHITE ENAMEL. BACK OF PLYWOOD AND SUPPORT STRUCTURE SHALL BE PAINTED MATTE BLACK.

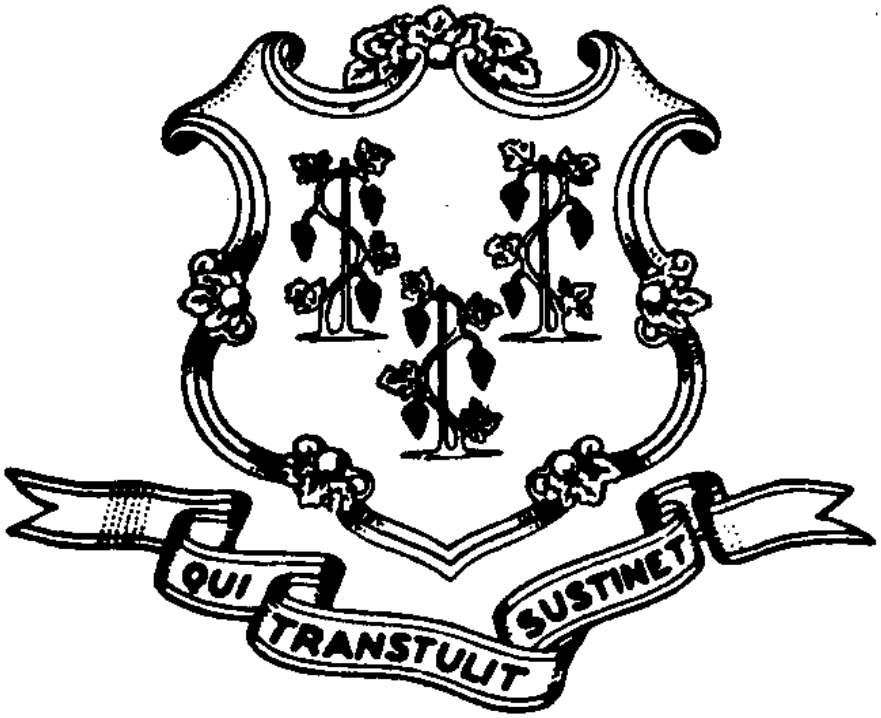
TYPEFACE: AREAL ROUNDED BOLD OR SIMILAR.

LOCATION: SIGN MUST BE LOCATED TO BE CLEARLY VISIBLE TO THE PUBLIC.

TIMING: INSTALL AT THE START OF CONSTRUCTION AND REMOVE AT CONSTRUCTION COMPLETION.

STATE SEAL & DEEP LOGO: ATTACHED

STATE SEAL



DEEP LOGO

Prepared for:

Oak Hills Park
Golf Course

City of Norwalk/Oak Hills Park Authority
165 Fillow Street
Norwalk, Connecticut 06850

Holes 1-18 Golf Course Improvement Project
Bid/Construction Documents

June 27, 2016

Prepared by:

THE NORTHEAST GOLF COMPANY
GOLF COURSE DESIGN

BROAD VISION • CAREFUL THOUGHT • HAND-CRAFTED DESIGN

Saunderstown, Rhode Island
phone: 401-667-4994
Red Bank, New Jersey
phone: 732-747-1888

fax: 401-667-4995
email: **design@northeastgolfcompany.com**
website: **www.northeastgolfcompany.com**

Robert McNeil, ASGCA Associate

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Project Team

Golf Course Architect
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McNeil Design Collaborative, Inc
118 Beauchamp Drive
Saunderstown, Rhode Island 02874
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cell: 732-915-8385
email: design@northeastgolfcompany.com

Project Engineer/Surveyor
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D'Andrea Associates
6 Neil Lane
Riverside, Connecticut 06878
phone: 203-637-1779
cell: 732-915-8385
email: ld@rvdi.com

Irrigation Consultant
Peter Hull
Turf Products Corporation
157 Moody Road
Enfield, Connecticut 06082
phone: 860-763-3581

Project Team

Executive Director
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Oak Hills Golf Course
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Golf Course Superintendent
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Golf Professional
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Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850
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email: edruizpga@gmail.com

Oak Hills Park Authority
Ernie DesRochers- Chairperson
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850
phone: 203-838-0303
email: edesrochers@Northmarq.com

Page 137 - 3697 Golf Course Improvements Project at Oak Hills Park Addendum 2v2

Oak Hills Park Golf Course

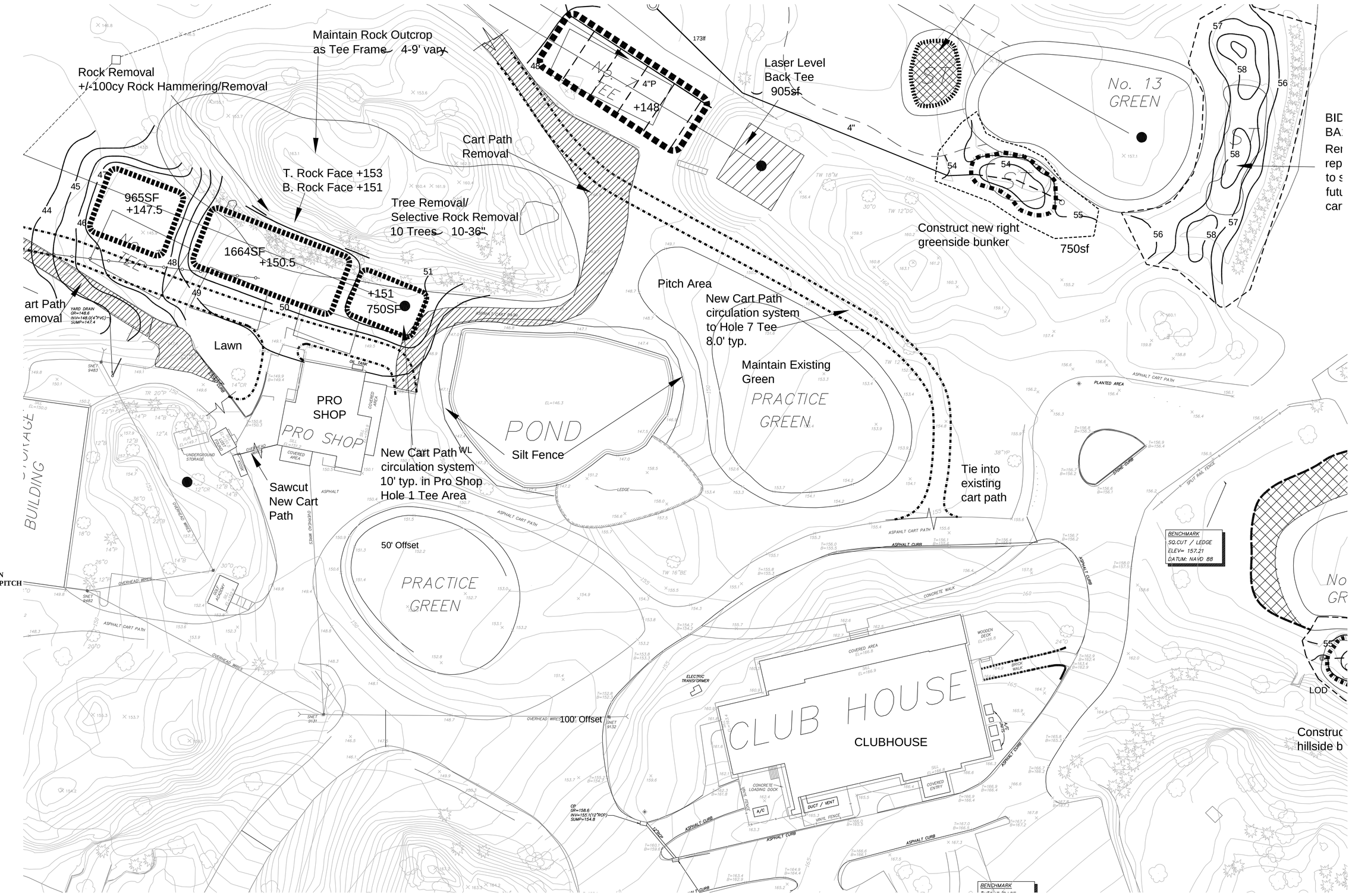
165 Fillow Street
Norwalk, Connecticut 06850

BUNKER REBUILDING

1. REMOVAL OF SURROUNDING SOD WITHIN AREAS OF DISTURANCE AS MARKED IN THE FIELD BY THE GOLF COURSE ARCHITECT. REMOVED SOD SHALL BE DELIVERED TO DESIGNATED DUMP AREA.
2. REMOVAL OF EXISTING SAND (STOCKPILE ALL REMOVED SAND IN DUMP AREA OR ON SITE AS DIRECTED BY CLUB).
3. REMOVE EXISTING DRAINAGE PIPE AND ALL DRAINAGE STONE WITHIN BUNKER CAVITY. PLACE ALL REMOVED STONE IN DUMP AREA OR ON SITE AS DIRECTED BY CLUB; ALL OLD DRAINAGE PIPE TO BE PLACED IN DUMPSTER AND TAKEN OFF SITE.
4. GOLF COURSE ARCHITECT SHALL DELINEATE NEW BUNKER SHAPE, INTERIOR AND EXTERIOR ELEVATIONS.
5. NEW BUNKER SHALL BE ROUGH SHAPED TO THE FIELD DIRECTIVES OF THE GOLF COURSE ARCHITECT. FOLLOWING APPROVAL OF SHAPING BY GCA, BUNKER SHALL BE FINAL SHAPED AND DRAINED.
6. INSTALL SPECIFIED DRAINAGE/GRAVEL WITHIN BUNKER BOTTOM AS MARKED IN FIELD. (EZ/FLOW-BID ALTERNATE NEW DRAINAGE WILL EITHER BE TIED INTO EXISTING OUTLET PIPE OR EXTENDED TO NEW OUTFALL OR BUNKER SUMP.
7. CONTRACTOR SHALL CLEAN AND FINISH BUNKER BOTTOM INCLUDING REMOVAL OF ALL DEBRIS, STONE (outside of drain lines), OLD/UNUSED PIPE, ETC.; RAKE OUT BUNKER CAVITY, VIBRATORY TAMP BUNKER CAVITY.
8. INSTALL SPECIFIED SOD AROUND BUNKER WITHIN AREAS OF DISTURBANCE THAT HAVE BEEN PREPARED (REPLACE ANY DAMAGED SOD WITHIN ACCESS AREAS)
9. INSTALL SPECIFIED BUNKER SAND AT A WATER SETTLED DEPTH OF 5" ALONG THE BOTTOM AND 4" ALONG BUNKER FACE WITHIN BUNKER CAVITY
10. REPAIR ALL ACCESS POINTS AROUND BUNKERS.

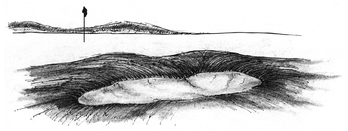
TEE CONSTRUCTION

1. REMOVAL OF SURROUNDING SOD WITHIN AREAS OF DISTURANCE AS MARKED IN THE FIELD BY THE GOLF COURSE ARCHITECT. REMOVED SOD SHALL BE DELIVERED TO DESIGNATED DUMP AREA.
2. DELIVERY AND STOCKPILING OF FILL MATERIAL AS NEEDED TO ESTABLISH TEE SUBGRADE ELEVATIONS. TOWN SHALL SUPPLY ALL FILL MATERIAL.
3. ROUGH SHAPE FILL MATERIAL TO FINAL TEE DIMENSIONS AS STAKED IN FIELD. ALL TEE SLOPES SHALL TIE CLEANLY INTO SURROUNDING GRADES.
4. INSTALL 70% SAND 20% TOPSOIL 10% PEAT TEE ROOTZONE WITHIN SURFACE DIMENSIONS OF TEE. LASER LEVEL TEE SURFACE WITH PITCH AS DIRECTED IN FIELD.
5. INSTALL AND FINISH 6" OF TOPSOIL WITHIN ALL DISTURBED TEE SURROUNDS.
6. ALL TEE SURFACES AND SURROUNDS TO BE SODDED PER PROJECT GRASSING SPECIFICATIONS.



NEW TEE
TEE LASER LEVEL
NEW BUNKER
REBUILT BUNKER
TREE REMOVAL
GRASS HOLLOW
SUBSURFACE DRAINAGE
FAIRWAY EXPANSION
CART PATH REMOVAL
NEW CART PATH
WETLAND DELINEATION
EXISTING DRAINAGE

Fairway Bunker Perspective
FINAL BUNKER STYLING AND DETAILS TO BE DIRECTED IN FIELD BY GOLF COURSE ARCHITECT.



Greenside Bunker Perspective
FINAL BUNKER STYLING AND DETAILS TO BE DIRECTED IN FIELD BY GOLF COURSE ARCHITECT.

THE NORTHEAST GOLF COMPANY
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Red Bank, New Jersey
phone: 732-747-1888

email: design@northeastgolfcompany.com
website: www.northeastgolfcompany.com

DATE: June 27, 2016
PROJECT CODE: OAK
DRAWN BY: REM
CHECKED BY: NGC
SCALE: 1" = 40-0"

NORTH

Scale 1 Inch = 20 Feet
20 10 0 20 30 40

Oak Hills Park Golf Course
Norwalk, Connecticut

Prepared for:
Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: CD-2 Central Circulation

Sheet no. 2 of 15

American Society of Golf Course Architects
Robert McNeil

CONSTRUCTION PLANS PAGE 2 of 15

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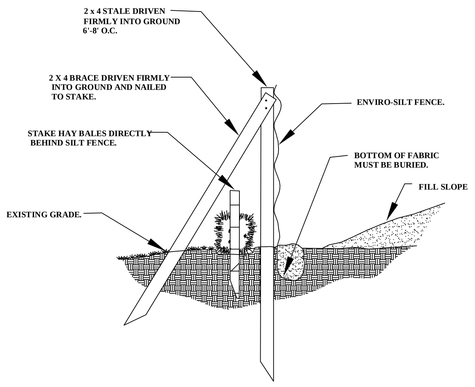
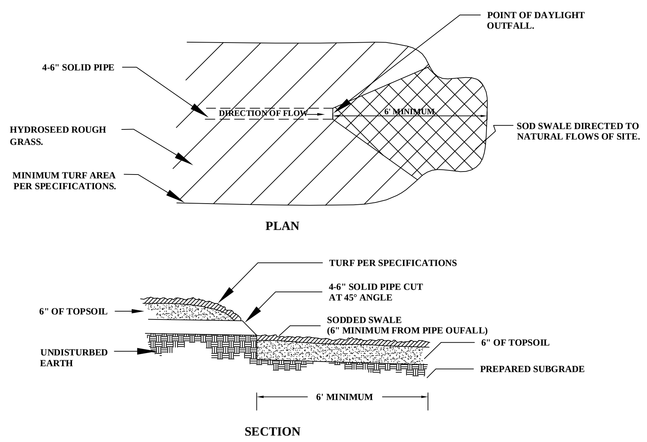
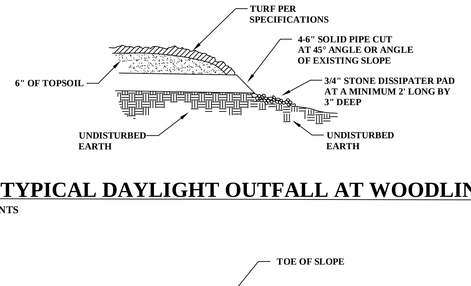
Erosion Control Details



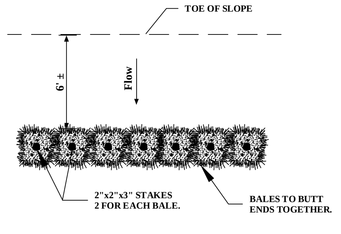
1/13 **Reinforced Silt Fence**
NTS — Section



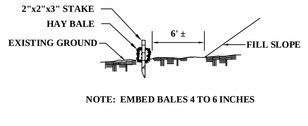
2/13 **Daylight Outfall (typical)**
NTS



3/13 **TYPICAL DAYLIGHT OUTFALL AT WOODLINE**
NTS — SECTION



TO BE USED WHERE THE EXISTING GROUND SLOPES AWAY FROM THE HIGHWAY EMBANKMENT AS CALLED FOR ON THE PLAN. MEASUREMENT AND PAYMENT WILL BE BY THE BALE IN PLACE. BALES WILL BE ALLOWED TO ROT IN PLACE SO THERE WILL BE NO REMOVAL ITEM. THERE WILL BE NO PROVISIONS FOR MAINTENANCE OTHER THAN REPLACEMENT OF A BALE IF REQUIRED.

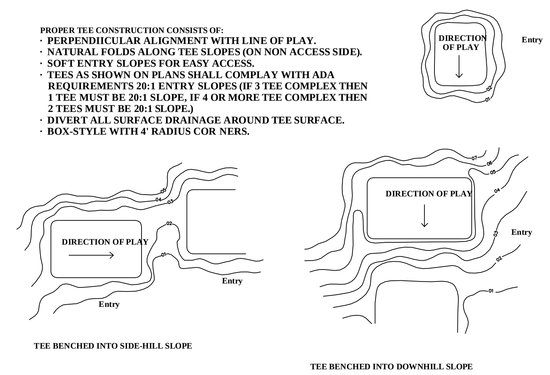


NOTE: EMBED BALES 4 TO 6 INCHES

4/13 **Baled Hay/Straw Erosion Checks**
NTS — Plan & Section

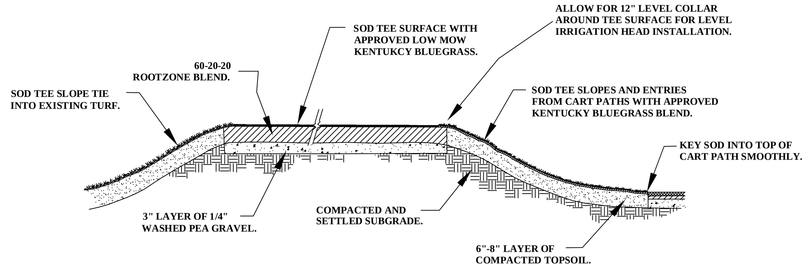
Tee Details

PROPER TEE CONSTRUCTION CONSISTS OF:
- PERPENDICULAR ALIGNMENT WITH LINE OF PLAY.
- NATURAL FOLDS ALONG TEE SLOPES (ON NON ACCESS SIDE).
- SOFT ENTRY SLOPES FOR EASY ACCESS.
- TEES AS SHOWN ON PLANS SHALL COMPLAY WITH ADA REQUIREMENTS 20:1 ENTRY SLOPES (IF 3 TEE COMPLEX THEN 1 TEE MUST BE 20:1 SLOPE, IF 4 OR MORE TEE COMPLEX THEN 2 TEES MUST BE 20:1 SLOPE.)
- DIVERT ALL SURFACE DRAINAGE AROUND TEE SURFACE.
- BOX-STYLE WITH 4' RADIUS COR NERS.



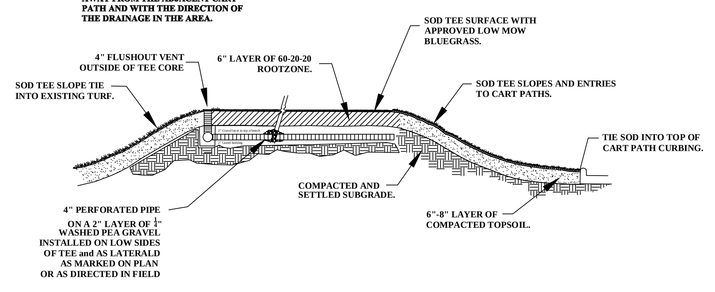
5/13 **Tee Grading Detail**
NTS — Plan

NOTE:
TEE SURFACE TO SLOPE 0.5% - 0.7% WITH THE DIRECTION OF THE HOLE AWAY FROM THE ADJACENT CART PATH AND WITH THE DIRECTION OF THE DRAINAGE IN THE AREA.

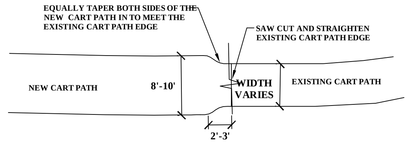


6/13 **Tee Detail**
NTS — Section

NOTE:
TEE SURFACE TO SLOPE 0.5% - 0.7% WITH THE DIRECTION OF THE HOLE AWAY FROM THE ADJACENT CART PATH AND WITH THE DIRECTION OF THE DRAINAGE IN THE AREA.

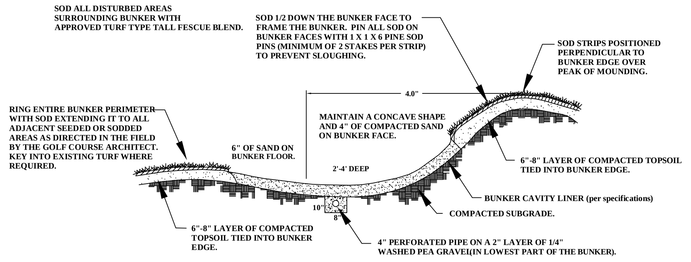


7/13 **Tee With Lateral Underdrains**
NTS — Section

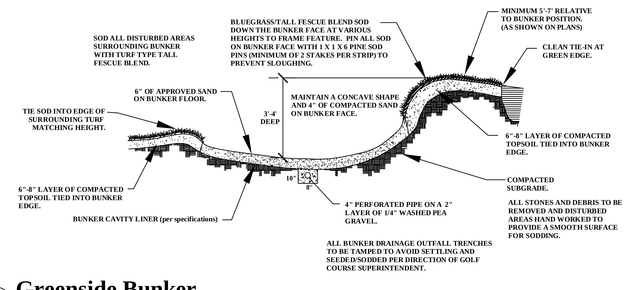


8/13 **TYPICAL CART PATH TIE-IN**
NTS — PLAN

Bunker Details

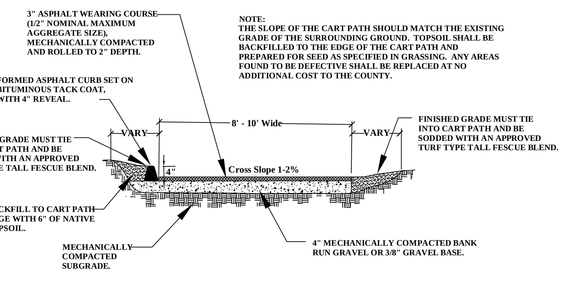


9/13 **Fairway Bunker**
NTS — Section

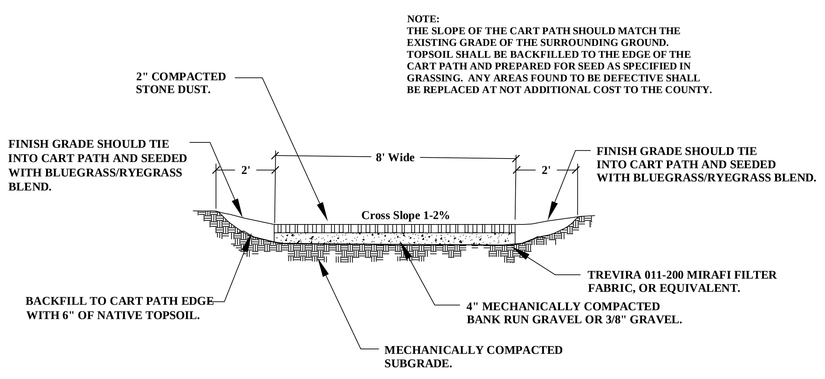


10/13 **Greenside Bunker**
NTS — SECTION

Cart Path Details



11/13 **ASPHALT CART PATH DETAIL (with curb)**
NTS — Section



12/13 **Aggregate Cart Path**
NTS — Section

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DATE: June 27, 2016
PROJ. CODE: OAK
DRAWN BY: REM
CHECKED BY: NGC
SCALE: NTS

Robert McNeil
ASGCA

Oak Hills Park Golf Course

165 Fillow Street
Norwalk, Connecticut 06850

OAK HILLS PARK GOLF COURSE

Construction Details

REVISIONS:

No.	Date	Description

Sheet title: **Construction Details**

Sheet no. **14 of 15**

CONSTRUCTION DETAILS PAGE 14 of 15

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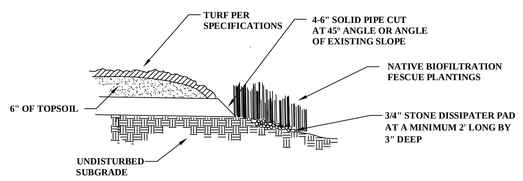
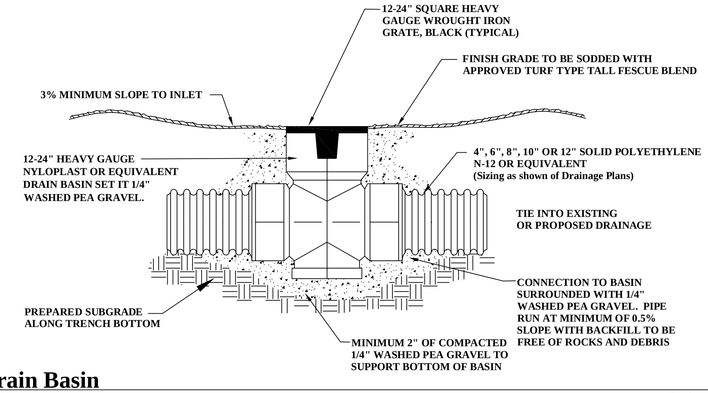
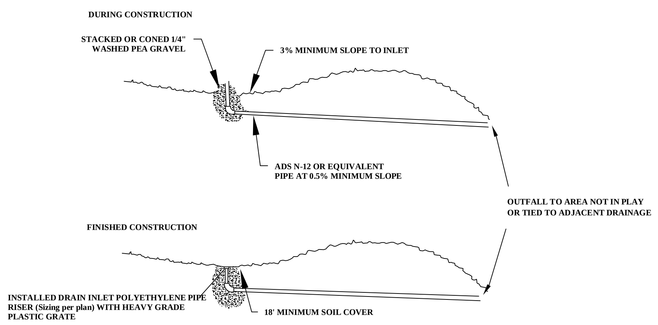
Golf Course Drainage Details



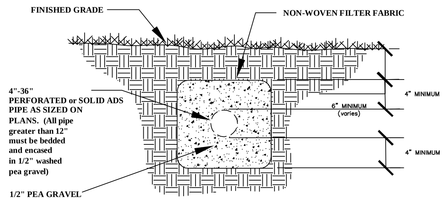
1/14 **Biofiltration Buffer at Native Area**
NTS — SECTION



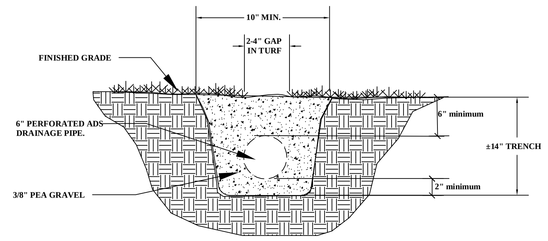
2/14 **Drain Basin**
NTS — Section



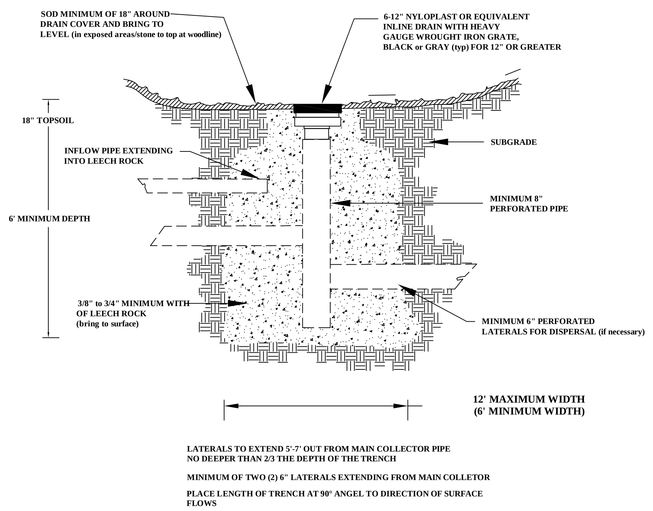
3/14 **Drain Inlet Structure (vent with grate)**
NTS — Section



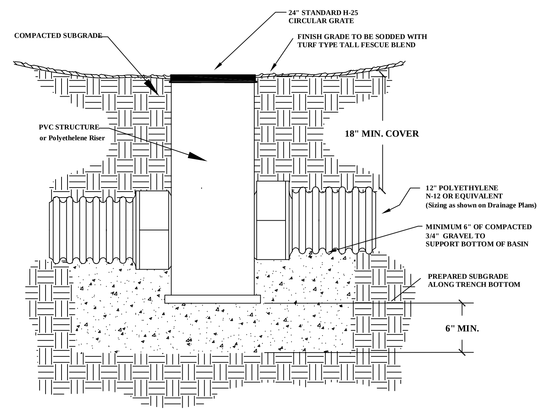
4/14 **Fairway Underdrain**
NTS — Section



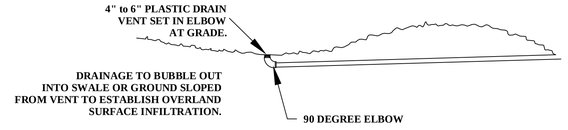
5/14 **French Curtain Drain**
NTS — Section



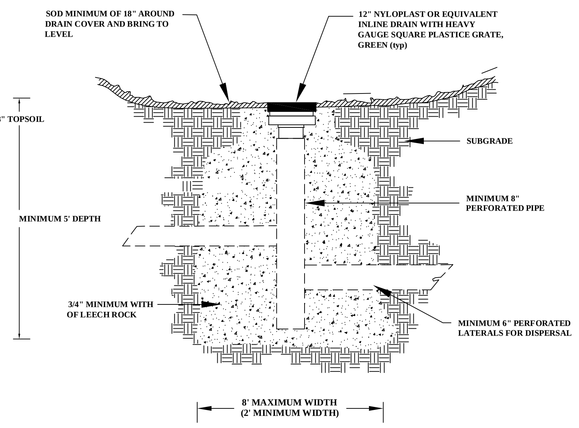
6/14 **Sump Detail (use at bubble out locations along woodline)**
NTS — Section



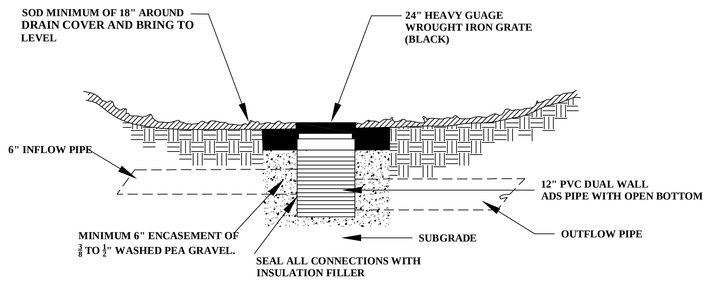
7/14 **18" - 30" Nyloplast Manholes**
NTS — SECTION



8/14 **Bubble Outfall**
NTS — Section

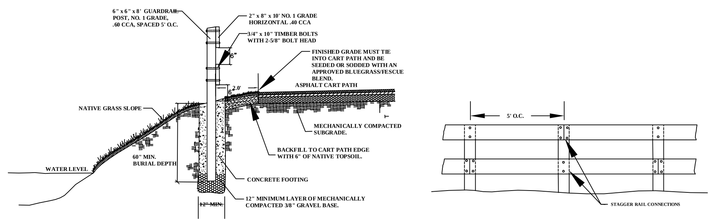


9/14 **Bunker Sump/Inline Riser Basin Detail**
NTS — Section

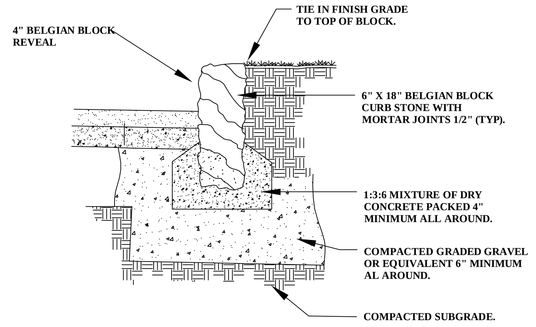


10/14 **12" DRAIN BASIN RISER DETAIL**
NTS — Section

Special Details



11/14 **PRESSURE TREATED WOOD GUARDRAIL (Hole 4)**
NTS — SECTION



12/14 **Belgian Block Curbing (Typ.) (at new cart path areas at tees)**
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DATE: June 27, 2016
PROJ. CODE: OAK
DRAWN BY: REM
CHECKED BY: NGC
SCALE: NTS

Robert McNeil
ASGCA

Oak Hills Park Golf Course

165 Fillow Street
Norwalk, Connecticut 06850

OAK HILLS PARK GOLF COURSE

Construction Details

REVISIONS:

No.	Date	Description

Sheet title: **Construction Details**

Sheet no. **15 of 15**

CONSTRUCTION DETAILS PAGE 15 of 15

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Oak Hills Park Golf Course

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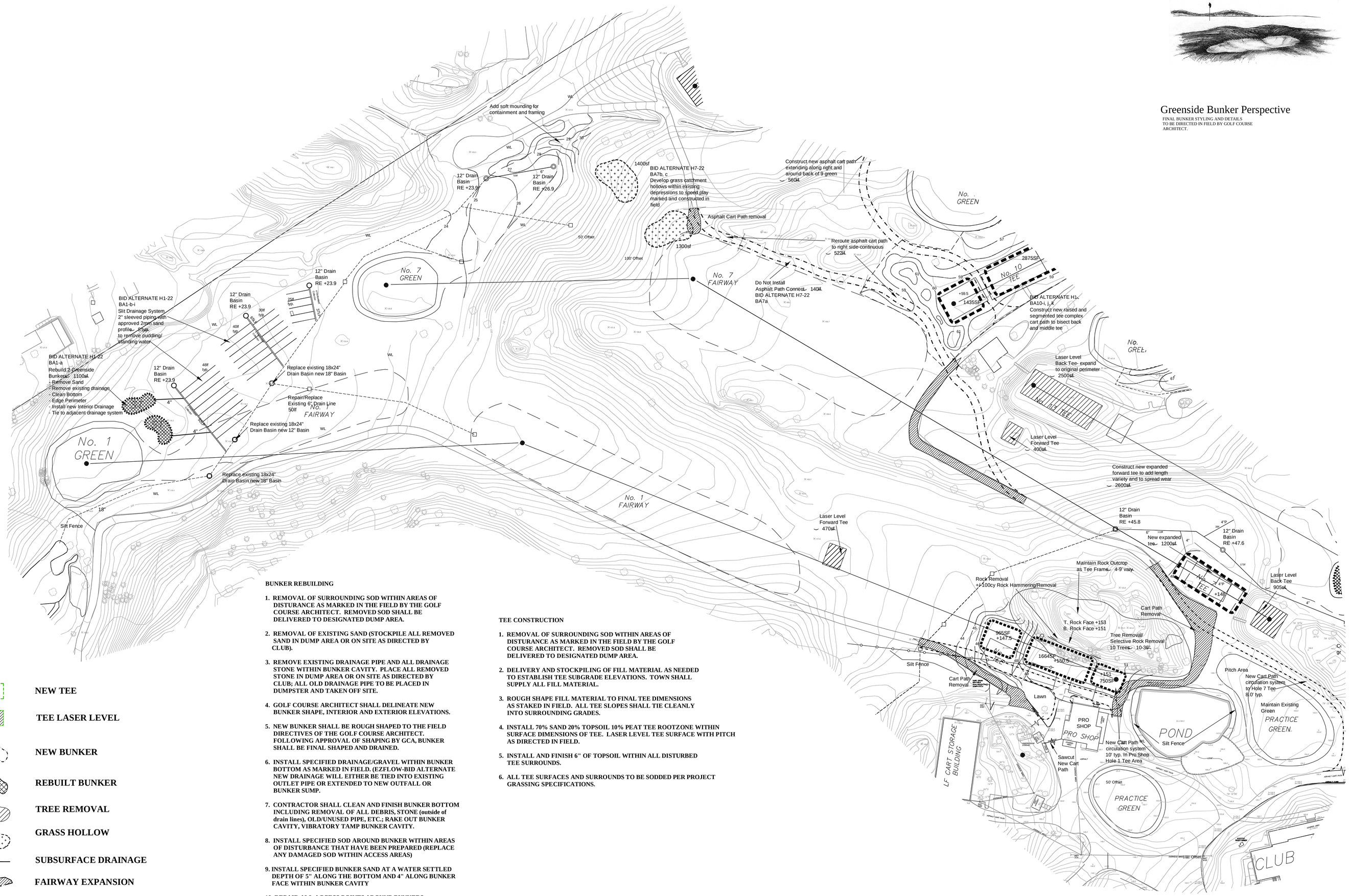

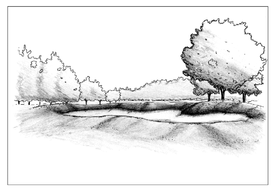

Fairway Bunker Perspective (Typ.)

Fairway Bunker Perspective

FINAL BUNKER STYLING AND DETAILS TO BE DIRECTED IN FIELD BY GOLF COURSE ARCHITECT.

Greenside Bunker Perspective

FINAL BUNKER STYLING AND DETAILS TO BE DIRECTED IN FIELD BY GOLF COURSE ARCHITECT.

BUNKER REBUILDING

1. REMOVAL OF SURROUNDING SOD WITHIN AREAS OF DISTURANCE AS MARKED IN THE FIELD BY THE GOLF COURSE ARCHITECT. REMOVED SOD SHALL BE DELIVERED TO DESIGNATED DUMP AREA.
2. REMOVAL OF EXISTING SAND (STOCKPILE ALL REMOVED SAND IN DUMP AREA OR ON SITE AS DIRECTED BY CLUB).
3. REMOVE EXISTING DRAINAGE PIPE AND ALL DRAINAGE STONE WITHIN BUNKER CAVITY. PLACE ALL REMOVED STONE IN DUMP AREA OR ON SITE AS DIRECTED BY CLUB; ALL OLD DRAINAGE PIPE TO BE PLACED IN DUMPSTER AND TAKEN OFF SITE.
4. GOLF COURSE ARCHITECT SHALL DELINEATE NEW BUNKER SHAPE, INTERIOR AND EXTERIOR ELEVATIONS.
5. NEW BUNKER SHALL BE ROUGH SHAPED TO THE FIELD DIRECTIVES OF THE GOLF COURSE ARCHITECT. FOLLOWING APPROVAL OF SHAPING BY GCA, BUNKER SHALL BE FINAL SHAPED AND DRAINED.
6. INSTALL SPECIFIED DRAINAGE/GRAVEL WITHIN BUNKER BOTTOM AS MARKED IN FIELD. (EZFLOW-BID ALTERNATE NEW DRAINAGE WILL EITHER BE TIED INTO EXISTING OUTLET PIPE OR EXTENDED TO NEW OUTFALL OR BUNKER SUMP.
7. CONTRACTOR SHALL CLEAN AND FINISH BUNKER BOTTOM INCLUDING REMOVAL OF ALL DEBRIS, STONE (outside of drain lines), OLD/UNUSED PIPE, ETC.; RAKE OUT BUNKER CAVITY, VIBRATORY TAMP BUNKER CAVITY.
8. INSTALL SPECIFIED SOD AROUND BUNKER WITHIN AREAS OF DISTURBANCE THAT HAVE BEEN PREPARED (REPLACE ANY DAMAGED SOD WITHIN ACCESS AREAS)
9. INSTALL SPECIFIED BUNKER SAND AT A WATER SETTLED DEPTH OF 5" ALONG THE BOTTOM AND 4" ALONG BUNKER FACE WITHIN BUNKER CAVITY
10. REPAIR ALL ACCESS POINTS AROUND BUNKERS.

TEE CONSTRUCTION

1. REMOVAL OF SURROUNDING SOD WITHIN AREAS OF DISTURANCE AS MARKED IN THE FIELD BY THE GOLF COURSE ARCHITECT. REMOVED SOD SHALL BE DELIVERED TO DESIGNATED DUMP AREA.
2. DELIVERY AND STOCKPILING OF FILL MATERIAL AS NEEDED TO ESTABLISH TEE SUBGRADE ELEVATIONS. TOWN SHALL SUPPLY ALL FILL MATERIAL.
3. ROUGH SHAPE FILL MATERIAL TO FINAL TEE DIMENSIONS AS STAKED IN FIELD. ALL TEE SLOPES SHALL TIE CLEANLY INTO SURROUNDING GRADES.
4. INSTALL 70% SAND 20% TOPSOIL 10% PEAT TEE ROOTZONE WITHIN SURFACE DIMENSIONS OF TEE. LASER LEVEL TEE SURFACE WITH PITCH AS DIRECTED IN FIELD.
5. INSTALL AND FINISH 6" OF TOPSOIL WITHIN ALL DISTURBED TEE SURROUNDS.
6. ALL TEE SURFACES AND SURROUNDS TO BE SODDED PER PROJECT GRASSING SPECIFICATIONS.

- NEW TEE
- TEE LASER LEVEL
- NEW BUNKER
- REBUILT BUNKER
- TREE REMOVAL
- GRASS HOLLOW
- SUBSURFACE DRAINAGE
- FAIRWAY EXPANSION
- CART PATH REMOVAL
- NEW CART PATH
- WETLAND DELINEATION
- EXISTING DRAINAGE

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DATE: June 27, 2016
PROJECT CODE: OAK
DRAWN BY: REM
CHECKED BY: NGC
SCALE: 1" = 40-0"

NORTH

Scale 1 Inch = 40 Feet
40 20 0 40 60 80

Oak Hills Park Golf Course

Norwalk, Connecticut

Prepared for:
Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: CD-3
Holes 1 & 7

Sheet no. 3 of 15

American Society of Golf Course Architects
Robert McNeil

CONSTRUCTION PLANS PAGE 3 of 15

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Oak Hills Park Golf Course

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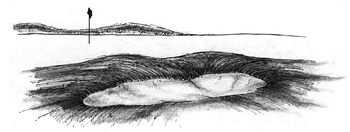
Fairway Bunker Perspective (Typ.)

Fairway Bunker Perspective

FINAL BUNKER STYLING AND DETAILS
TO BE DIRECTED IN FIELD BY GOLF COURSE
ARCHITECT.



Greenside Bunker Perspective

FINAL BUNKER STYLING AND DETAILS
TO BE DIRECTED IN FIELD BY GOLF COURSE
ARCHITECT.

BUNKER REBUILDING

1. REMOVAL OF SURROUNDING SOD WITHIN AREAS OF DISTURANCE AS MARKED IN THE FIELD BY THE GOLF COURSE ARCHITECT. REMOVED SOD SHALL BE DELIVERED TO DESIGNATED DUMP AREA.
2. REMOVAL OF EXISTING SAND (STOCKPILE ALL REMOVED SAND IN DUMP AREA OR ON SITE AS DIRECTED BY CLUB).
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CART PATH REMOVAL
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GOLF COURSE DESIGN

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Oak Hills Park Golf Course
Norwalk, Connecticut

Prepared for:
Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: CD-4
Hole 2

Sheet no. 4 of 15

American Society of Golf Course Architects
Robert McNeil

CONSTRUCTION PLANS PAGE 4 of 15

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Oak Hills Park Golf Course

165 Fillow Street
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Fairway Bunker Perspective (Typ.)

Fairway Bunker Perspective

FINAL BUNKER STYLING AND DETAILS
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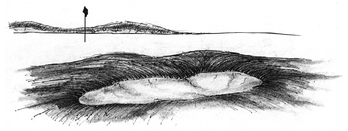

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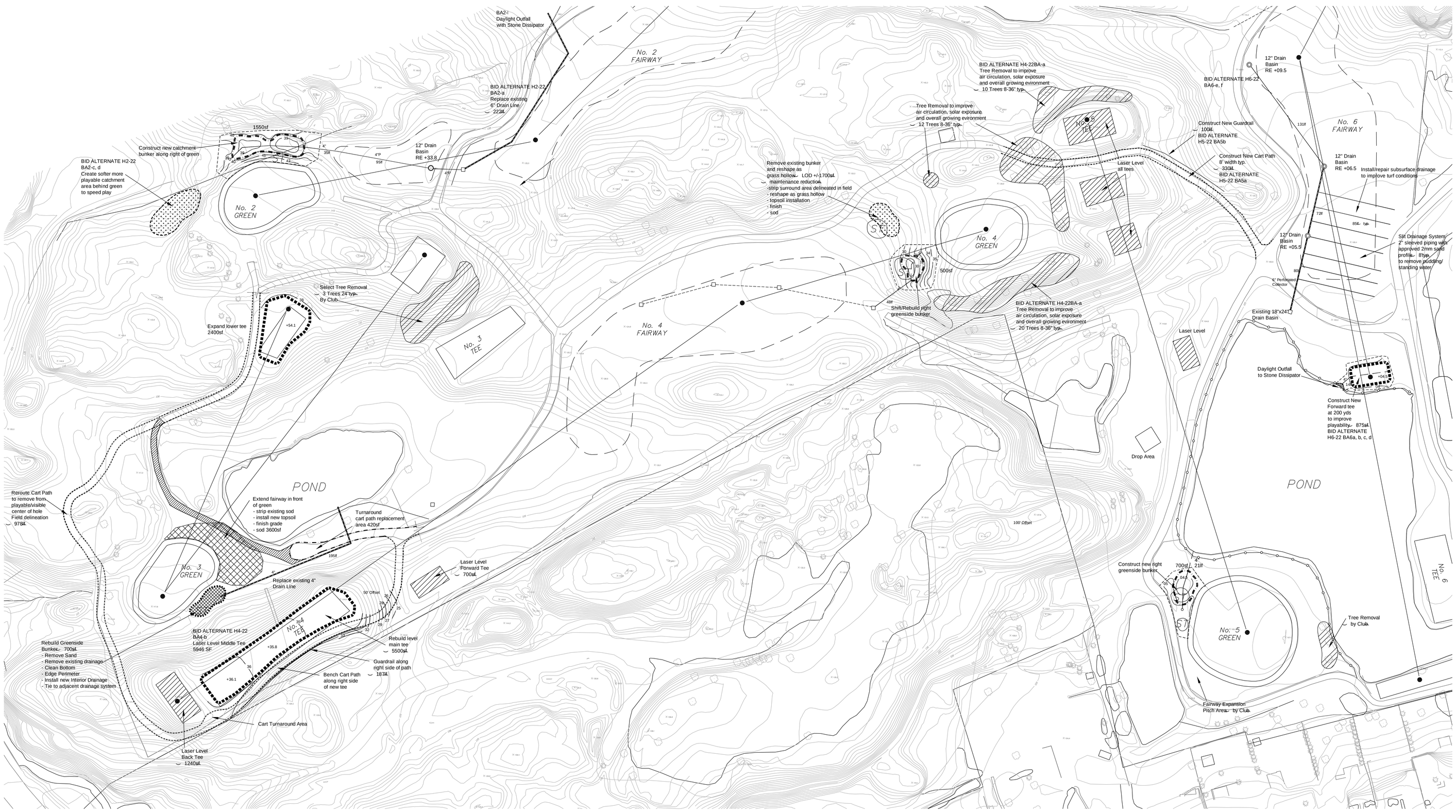

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REVISIONS:

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Sheet title: CD-5
Holes 3, 4 & 5

Sheet no. 5 of 15

American Society of Golf Course Architects
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CONSTRUCTION PLANS PAGE 5 of 15

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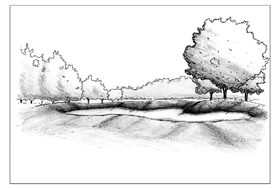

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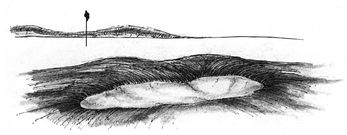

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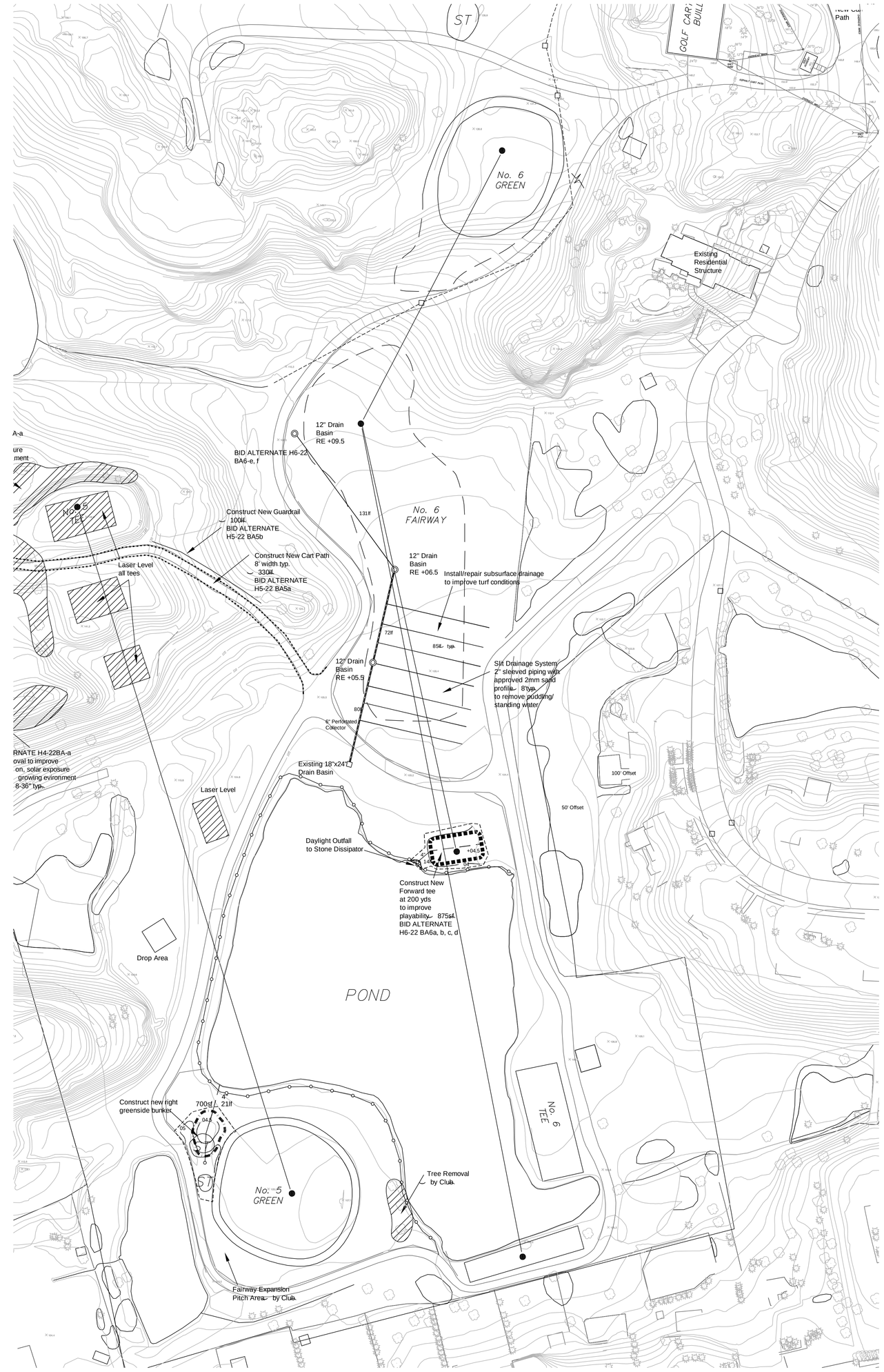

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165 Fillow Street
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Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: CD-6
Hole 6

Sheet no. 6 of 15

American Society of Golf Course Architects
Robert McNeil

CONSTRUCTION PLANS PAGE 6 of 15

Page 144 - 3697 Golf Course Improvements Project at Oak Hills Park Addendum 2v2

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Oak Hills Park Golf Course

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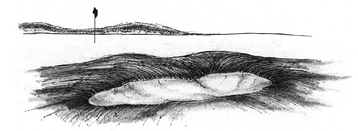

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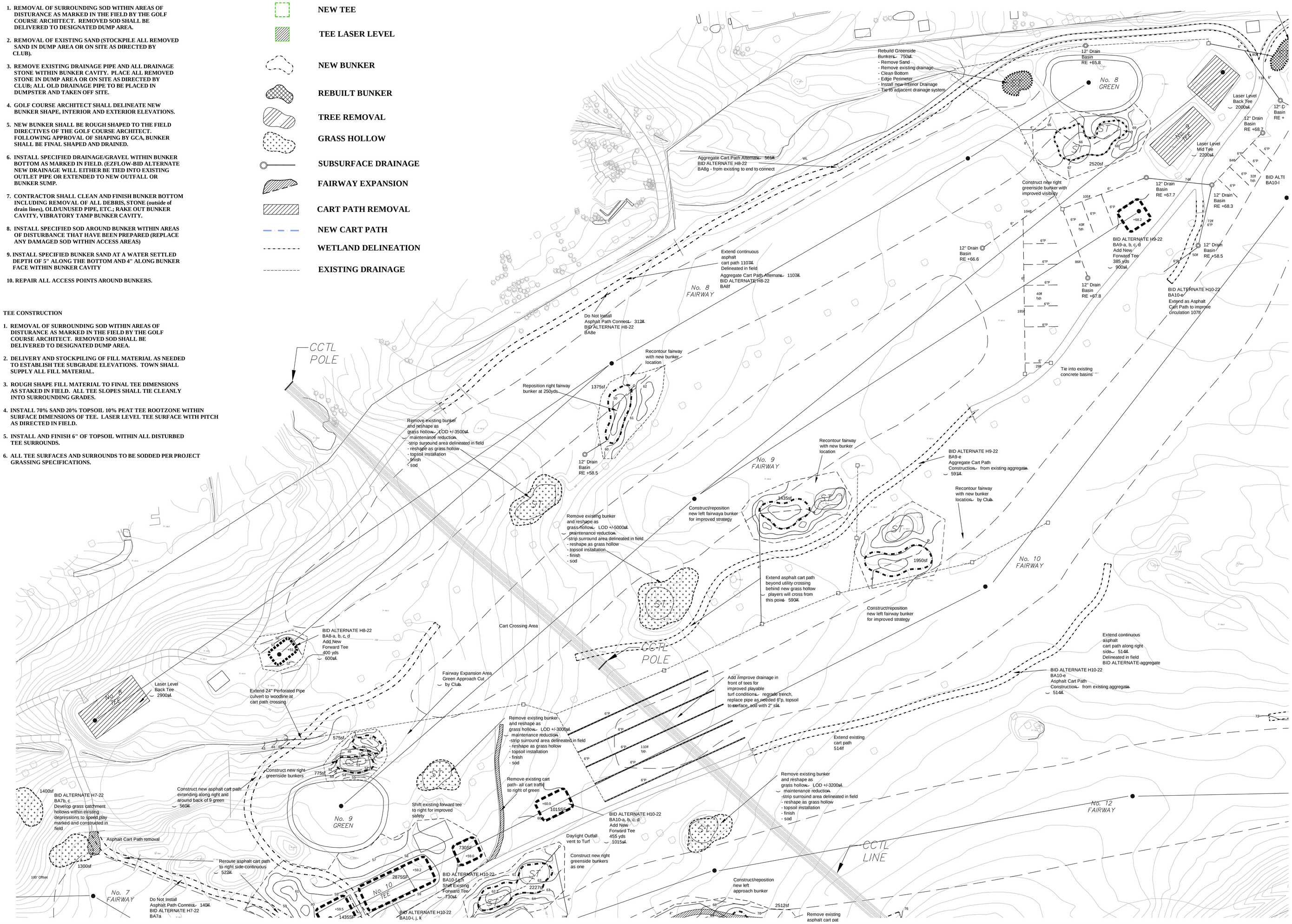

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REVISIONS:

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Holes 8 & 9

Sheet no. 7 of 15

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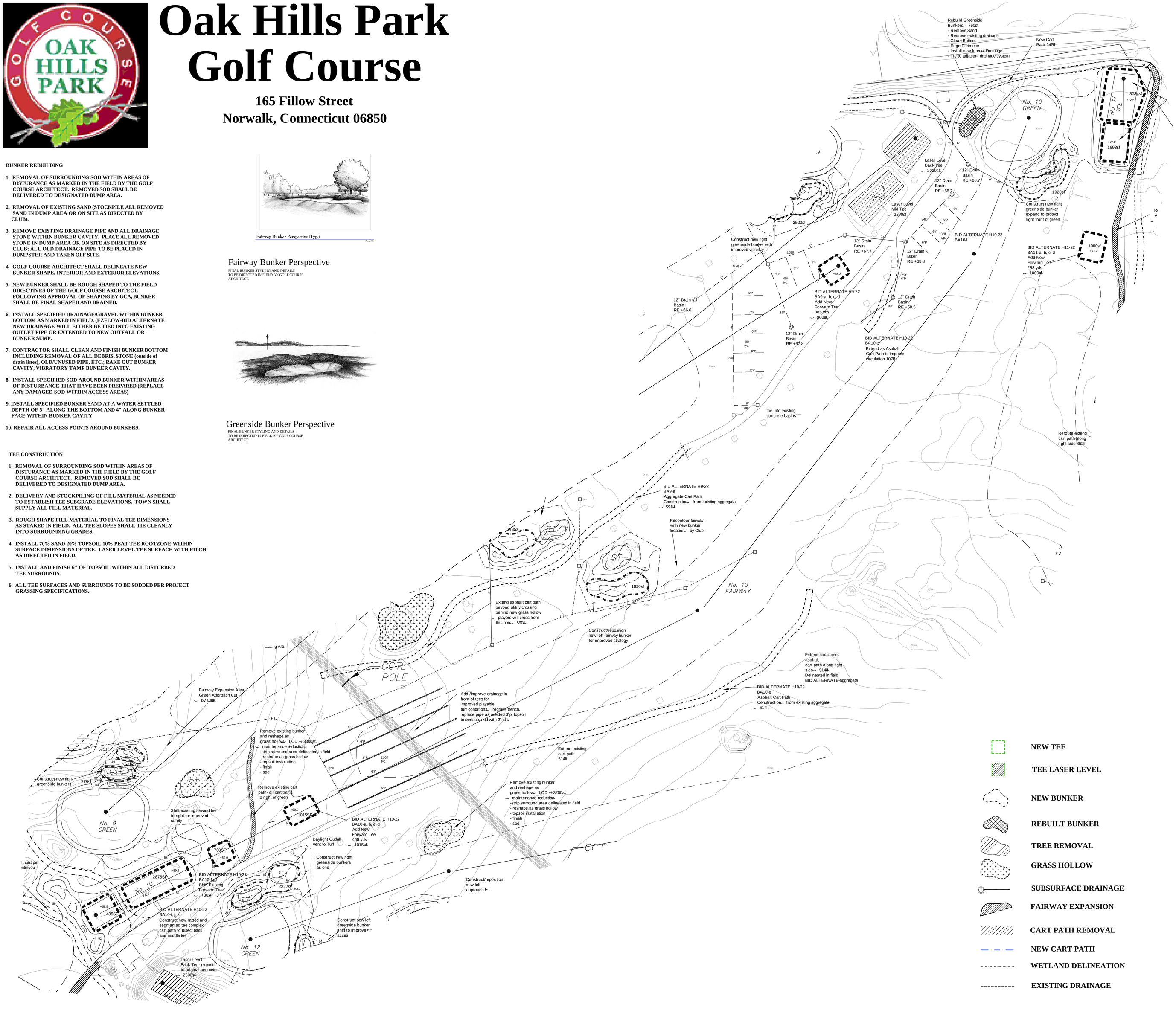

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Hole 10

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CONSTRUCTION PLANS PAGE 8 of 15

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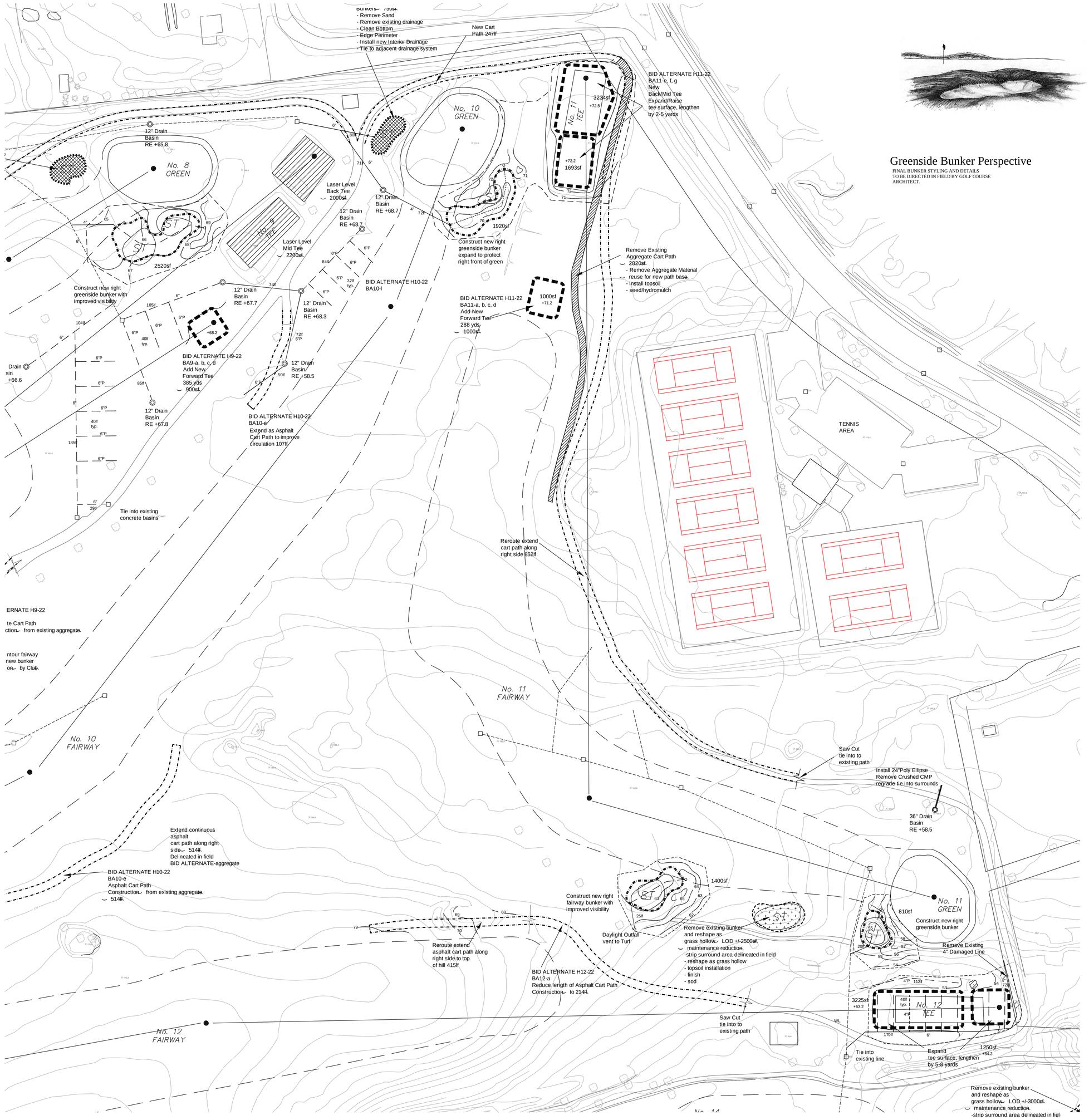

Fairway Bunker Perspective
FINAL BUNKER STYLING AND DETAILS TO BE DIRECTED IN FIELD BY GOLF COURSE ARCHITECT.

Greenside Bunker Perspective
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THE NORTHEAST GOLF COMPANY
GOLF COURSE DESIGN
BROAD VISION • CAREFUL THOUGHT • HAND-CRAFTED DESIGN

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NORTH

Scale 1 Inch = 40 Feet
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Oak Hills Park Golf Course
Norwalk, Connecticut

Prepared for:
Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: CD-9
Hole 11 & 12 TEE

Sheet no. 9 of 13

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Robert McNeil

CONSTRUCTION PLANS PAGE 9 of 13

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Oak Hills Park Golf Course

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Greenside Bunker Perspective

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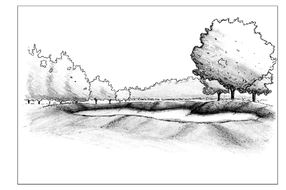

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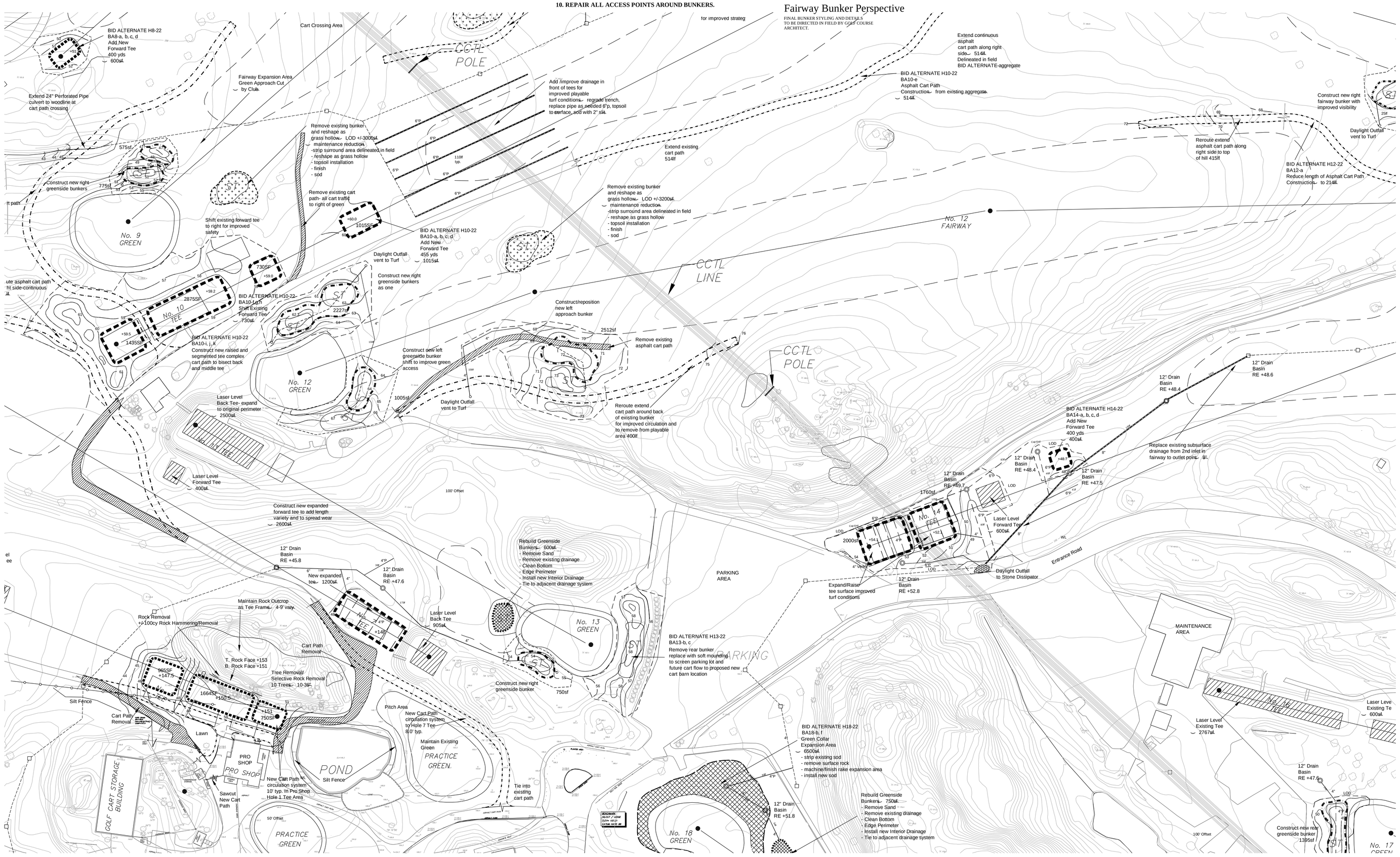

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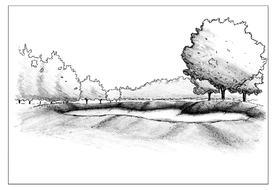

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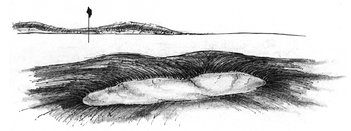

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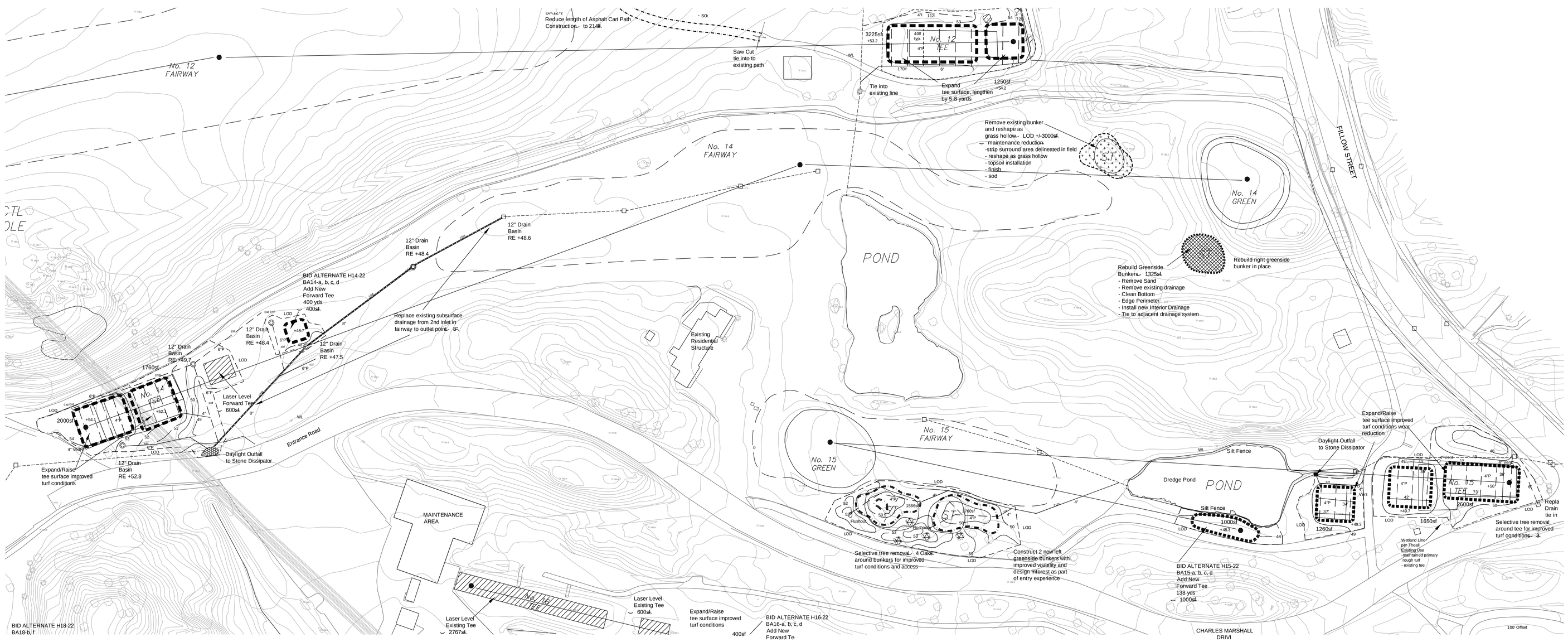

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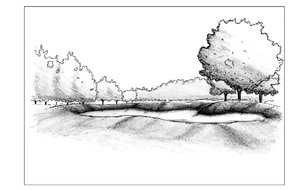

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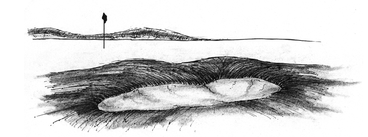

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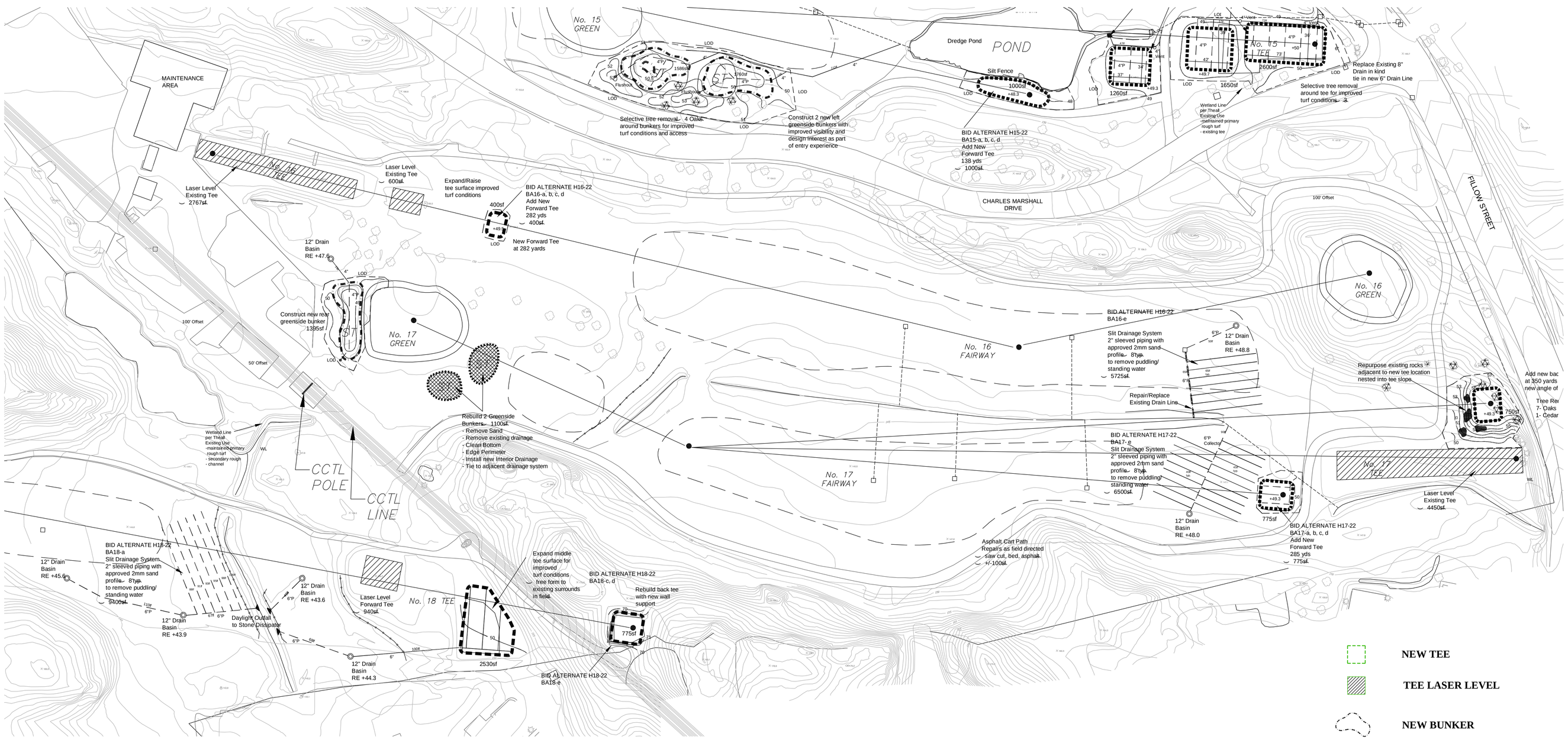

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CONSTRUCTION PLANS PAGE 12 of 15

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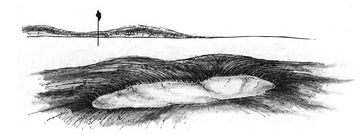

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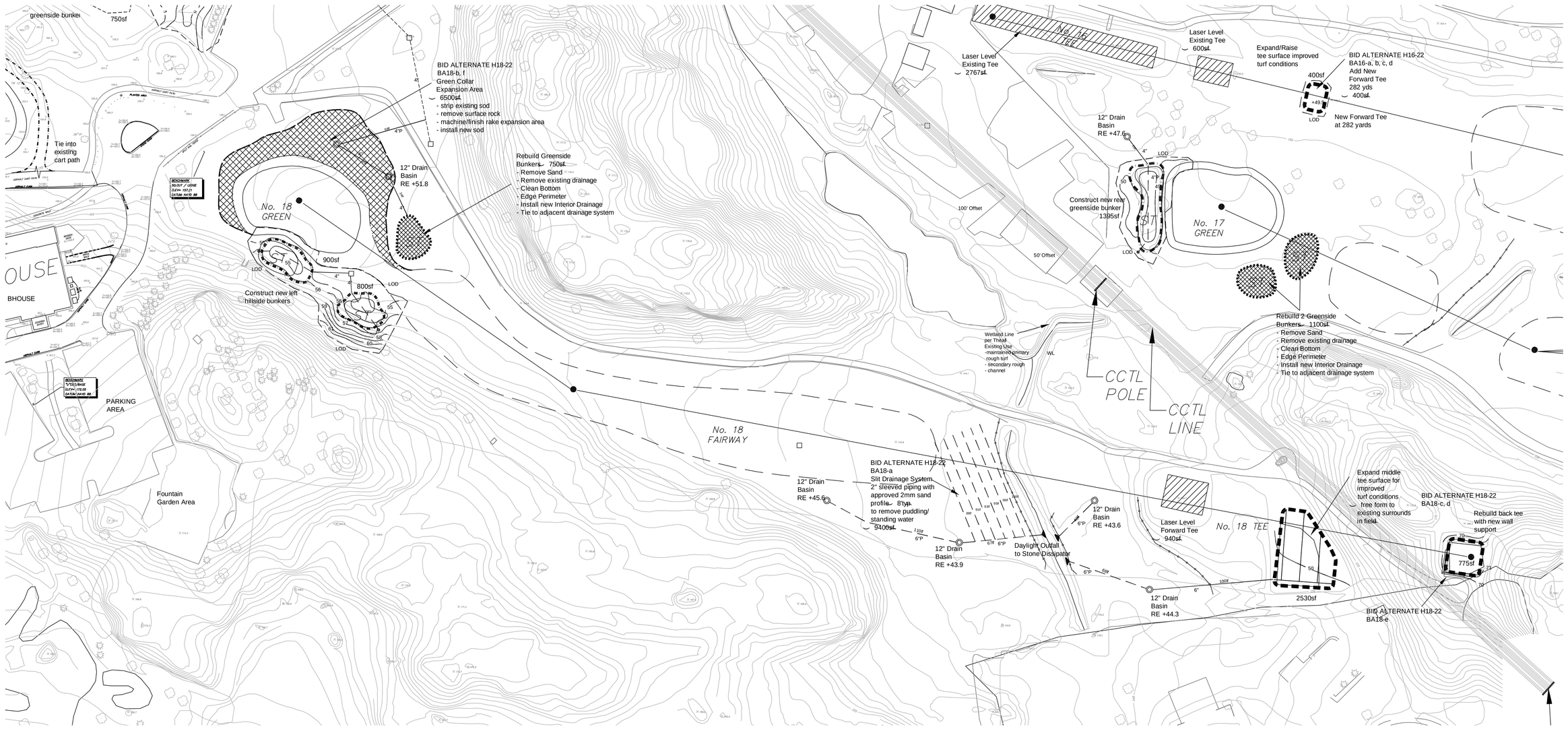

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Hole 18

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CONSTRUCTION PLANS PAGE 13 of 15

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Oak Hills Park Golf Course
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Hole 1
a. Reposition, raise tees; lengthen hole to opposite side of existing cart path (option tie into pitch area to practice green)
b. Install additional drainage within low pockets short of green (50yds in) to improve turf conditions
c. Connect fairway at right on bottom of hill to the left side of #7 green to add playable strategy and additional shotmaking options
d. Remove tree at left of green to open access onto surface and improve turf conditions
e. Clean, drain greenside bunkers
f. Regrade, smooth out area between green and cart path for improved access and playability
g. Continue with tree management around green to improve turf conditions and growing environment

Hole 2
a. Explore tee relocation to the right of existing tees on top of rock outcrops (this will eliminate safety issues from proposed practice range)
b. Laser level all tees for improved playing conditions (expand middle and forward tees)
c. Extend fairway to crossing path (add drainage within expansion area)- see option to reroute cart path to left side.
d. Rebuild right greenside bunker in Oak Hills style *(classic flowing lines maintainable framing)*
e. Reroute cart path to left side of hole to eliminate hole crossing at green and provide improved circulation to hole 3 tee.
f. Tree thinning along right side of tees and right of green for improved air circulation
g. Clean out brush along perimeter of pond to improve visual appeal and speed play

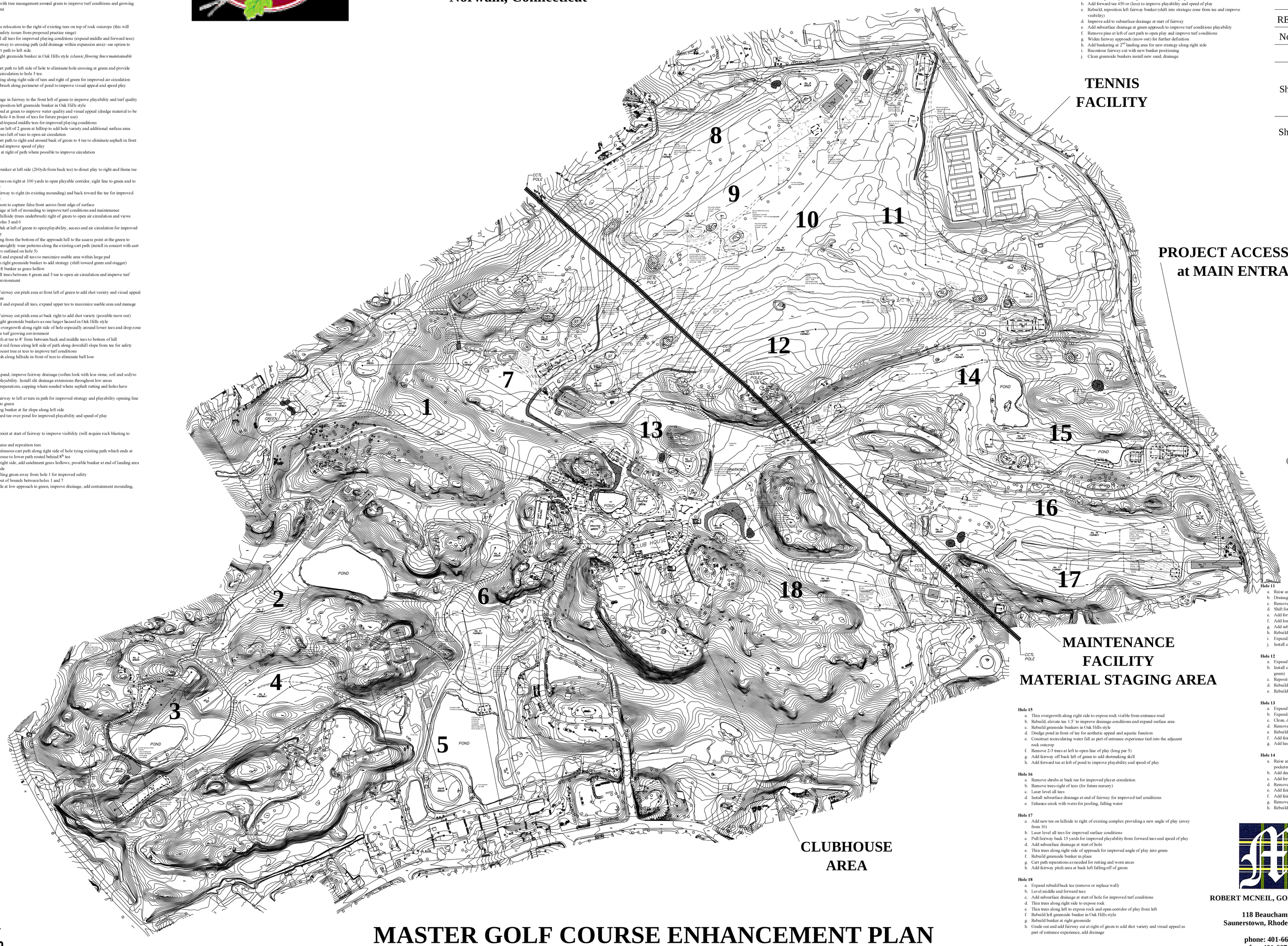
Hole 3
a. Add drainage in fairway to the front left of green to improve playability and turf quality
b. Rebuild/reposition left greenside bunker in Oak Hills style
c. Dredge pond at green to improve water quality and visual appeal (dredge material to be staged on hole 4 in front of tees for future project use)
d. Laser Level/expand middle tees for improved playing conditions
e. Add new tee left of 2 green at hilltop to add hole variety and additional surface area.
f. Remove trees left of tees to open air circulation
g. Reroute cart path to right and around back of green to 4 tee to eliminate asphalt in front of green and improve speed of play
h. Thin trees at right of path where possible to improve circulation

Hole 4
a. Add new bunker at left side (260yds from back tee) to direct play to right and frame tee shot
b. Remove trees on right at 100 yards to open playable corridor, sight line to green and to speed play
c. Expand fairway to right (to existing mounding) and back toward the tee for improved playability.
d. Expand green to capture false front across front edge of surface
e. Add drainage at left of mounding to improve turf conditions and maintenance
f. Clean out hillside (trees underbrush) right of green to open air circulation and views down to holes 5 and 6
g. Remove Oak at left of green to open playability, access and air circulation for improved turf quality
h. Add curbing from the bottom of the approach hill to the access point at the green to eliminate unsightly wear patterns along the existing cart path (install in concert with cart path repairs outlined on hole 5)
i. Laser level and expand all tees to maximize usable area within large pad
j. Reposition right greenside bunker to add strategy (shift toward green and stagger)
k. Rebuild left bunker as grass hollow
l. Remove all trees between 4 green and 5 tee to open air circulation and improve turf growing environment

Hole 5
a. Develop Fairway cut pitch area at front left of green to add shot variety and visual appeal from the tee
b. Laser level and expand all tees, expand upper tee to maximize usable area and manage wear
c. Develop Fairway cut pitch area at back right to add shot variety. (possible mow out)
d. Rebuild right greenside bunkers as one larger hazard in Oak Hills style
e. Trim/thin overgrowth along right side of hole especially around lower tees and drop zone to improve turf growing environment
f. Widen path at tee to 8' from between back and middle tees to bottom of hill
g. Install split rail fence along left side of path along downhill slope from tee for safety
h. Remove locust tree at tees to improve turf conditions
i. Clean brush along hillside in front of tees to eliminate ball loss

Hole 6
a. Repair, expand, improve fairway drainage (soften look with less stone, soil and sod) to improve playability. Install slit drainage extensions throughout low areas
b. Cart path reparations, capping where needed where asphalt rutting and holes have occurred.
c. Expand fairway to left at turn in path for improved strategy and playability opening line of play into green
d. Add aiming bunker at far slope along left side
e. Add forward tee over pond for improved playability and speed of play

Hole 7
a. Cut high point at start of fairway to improve visibility (will require rock blasting to achieve)
b. Expand, raise and reposition tees
c. Install continuous cart path along right side of hole tying existing path which ends at halfway house to lower path routed behind 8th tee
d. Clean up right side, add catchment grass hollows, possible bunker at end of landing area on right side
e. Study shifting green away from hole 1 for improved safety
f. Remove out of bounds between holes 1 and 7
g. Raise grade at low approach to green, improve drainage, add containment mounding, hide path



Hole 8
a. Add forward tee at 395yds for improved playability
b. Laser Level all tees
c. Rebuild, realign right fairway bunker to provide visibility and strategy
d. Install continuous cart path along left side, keep along tree line
e. Clean, drain, left greenside bunker for improved function
f. Rebuild right greenside bunker complex set within contours, improved visibility and strategy to green

Hole 9
a. Rebuild, reposition left fairway bunkers into hole to add strategy and improved framing to the tee shot
b. Laser level all tees
c. Add forward tee at 405 yards to improve playability and speed of play
d. Remove pines at right of tees (5) for improved growing conditions
e. Extend fairway toward tee to improve playability
f. Add drainage at tee area to improve turf conditions
g. Extend culvert at right of green to accommodate cart path routing
h. Install cart path along left side extending to 1st fairway bunker
i. Pick up cart path on right side and route around back of green to 10 tee/half way house (position to minimize any safety issues from hole 7)
j. Add drainage at green approach for improved turf conditions and left of green
k. Rebuild fairway bunkering in Oak Hills style, remove left bunker at tree (reshape as grass hollow area) to alleviate circulation issues

Hole 10
a. Extend right cart path to edge of tree line area along right side
b. Add forward tee (50 yr (less) to improve playability and speed of play
c. Rebuild, reposition left fairway bunker (shift into strategic zone from tee and improve visibility)
d. Improve add to subsurface drainage at start of fairway
e. Add subsurface drainage at green approach to improve turf conditions playability
f. Remove pine at left of cart path to open play and improve turf conditions
g. Widen fairway approach (mow out) for further definition
h. Add bunkering at 2nd landing area for new strategy along right side
i. Recontour fairway cut with new bunker positioning
j. Clean greenside bunkers install new sand, drainage

Project
Key Map

REVISIONS:

No.	Date	Description

Sheet title: CD-1
Key Map

Sheet no. 1 of 15

1" = 100'

NEW TEE
TEE LASER LEVEL
NEW BUNKER
REBUILT BUNKER
TREE REMOVAL
GRASS HOLLOW
SUBSURFACE DRAINAGE
FAIRWAY EXPANSION
CART PATH REMOVAL
NEW CART PATH
WETLAND DELINEATION
EXISTING DRAINAGE

Hole 11
a. Raise and level tees (pull back 5 yds) for improved visibility to landing area
b. Drainage improvements around tee area
c. Remove, thin trees at right of tee for improved turf conditions
d. Shift forward tee to right for improved alignment
e. Add forward tee at 300 yards to speed play with reachable turn in the hole
f. Add long fairway bunker (study visibility) for long target
g. Add subsurface drainage outside of turn to improve turf conditions
h. Rebuild right fairway bunker, remove 2nd bunker
i. Expand, shift fairway contour to right
j. Install continuous cart path along left side tee to green

Hole 12
a. Expand tee back slightly (+/- 5yds) and raise 1/5' to improve turf conditions
b. Install cart path extending to top of hill along right side (shift left at left bunker short of green)
c. Reposition and rebuild left 2nd landing area bunker
d. Rebuild right 2nd landing area bunker as grass hollow
e. Rebuild and reposition greenside bunkering in Oak Hills style

Hole 13
a. Expand and level upper tee for improved playability and to lessen wear
b. Expand, level forward tee
c. Clean, drain, right front bunker
d. Remove back bunker and add separation mounding from parking lot
e. Rebuild right greenside bunker
f. Add fairway cut to further define look of hole and to frame leading bunker
g. Add hedge behind green to screen parking lot (6' plus laeebark)

Hole 14
a. Raise and level all tees to improve turf, playability (set grade above surrounding low pocketed wet areas
b. Add drainage at tee to improve turf conditions (in concert with tee expansion)
c. Add forward tee at 330 yards
d. Remove 3-5 trees along inside of cart path to open line of play
e. Add fairway drainage to alleviate standing water
f. Add fairway off front perimeter of green
g. Remove left greenside bunker (unnecessary, improve speed of play)
h. Rebuild, reposition right greenside bunker

Hole 15
a. Thin overgrowth along right side to expose rock visible from entrance road
b. Rebuild, elevate tee 1.5' to improve drainage conditions and expand surface area
c. Rebuild greenside bunkers in Oak Hills style
d. Dredge pond in front of tee for aesthetic appeal and aquatic function
e. Construct recirculating water fall as part of entrance experience tied into the adjacent rock outcrop
f. Remove 2-3 trees at left to open line of play (long par 3)
g. Add fairway off back left of green to add shotmaking skill
h. Add forward tee at left of pond to improve playability and speed of play

Hole 16
a. Remove shrubs at back tee for improved player circulation
b. Remove trees right of tees (for future nursery)
c. Laser level all tees
d. Install subsurface drainage at end of fairway for improved turf conditions
e. Enhance creek with weirs for pooling, falling water

Hole 17
a. Add new tee on hillside to right of existing complex providing a new angle of play (away from 16)
b. Laser level all tees for improved surface conditions
c. Pull fairway back 15 yards for improved playability from forward tees and speed of play
d. Add subsurface drainage at start of hole
e. Thin trees along right side of approach for improved angle of play into green
f. Rebuild greenside bunker in place
g. Cart path reparations as needed for rutting and worn areas
h. Add fairway pitch area at back left falling off of green

Hole 18
a. Expand rebuild back tee (remove or replace wall)
b. Level middle and forward tees
c. Add subsurface drainage at start of hole for improved turf conditions
d. Thin trees along right side to expose rock
e. Thin trees along left to expose rock and open corridor of play from left
f. Rebuild left greenside bunker in Oak Hills style
g. Rebuild bunker at right greenside
h. Grade out and add fairway cut at right of green to add shot variety and visual appeal as part of entrance experience, add drainage

ROBERT MCNEIL, GOLF ARCHITECT

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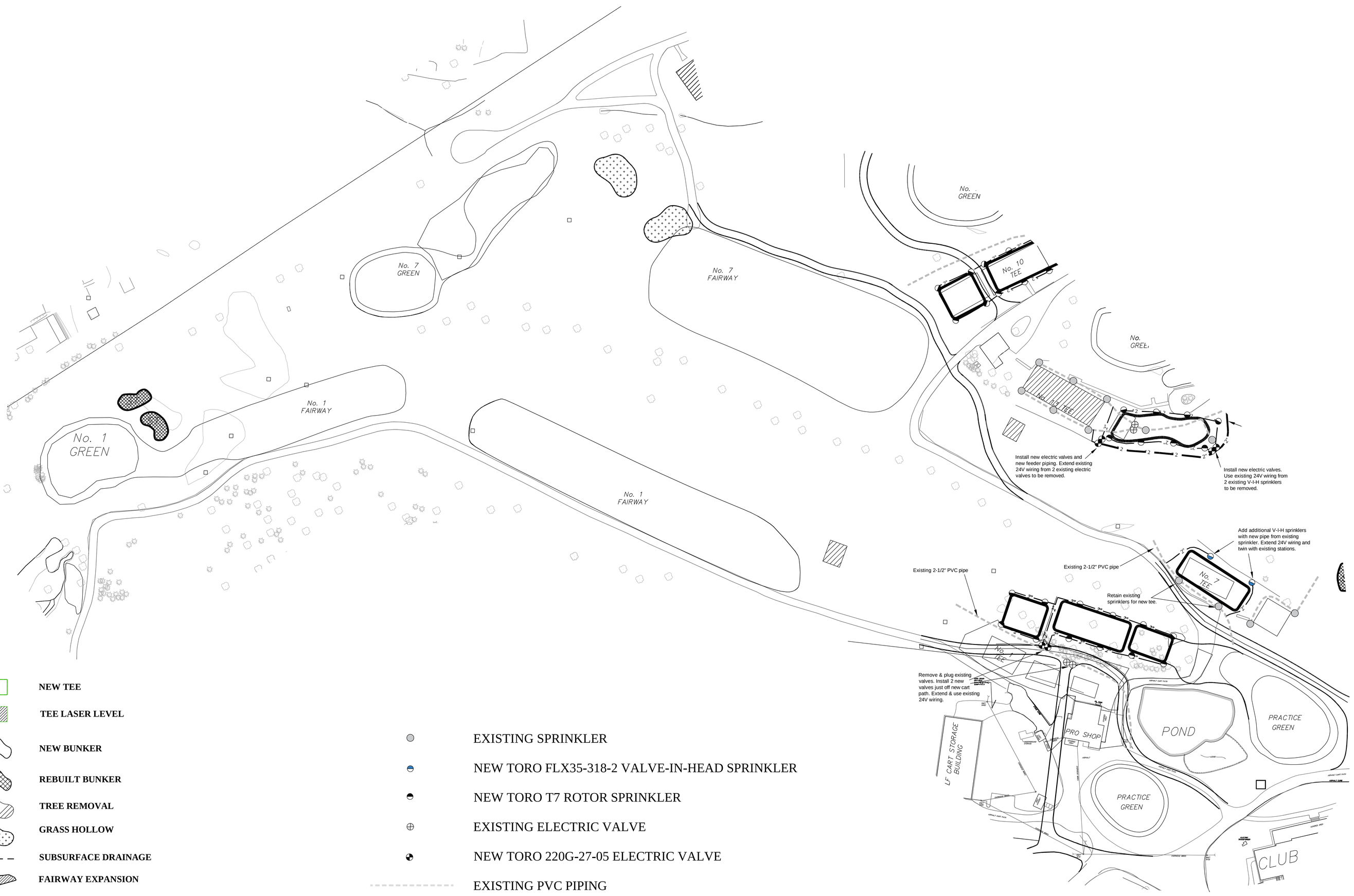
MASTER GOLF COURSE ENHANCEMENT PLAN

October 5, 2015/ May 24, 2016/June 27, 2016



NEW TEE

TEE LASER LEVEL

NEW BUNKER

REBUILT BUNKER

TREE REMOVAL

GRASS HOLLOW

SUBSURFACE DRAINAGE

FAIRWAY EXPANSION

CART PATH REMOVAL

NEW CART PATH

WETLAND DELINEATION

EXISTING DRAINAGE

EXISTING SPRINKLER

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NEW TORO 220G-27-05 ELECTRIC VALVE

EXISTING PVC PIPING

NEW 2.5" PVC PIPING

NEW 2" PVC PIPING

THE NORTHEAST GOLF COMPANY

GOLF COURSE DESIGN

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Red Bank, New Jersey
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website: www.northeastgolfcompany.com

DATE: May 24, 2016

PROJECT CODE: OAK

DRAWN BY: PH

CHECKED BY: TPC

SCALE: 1" = 40-0"

NORTH

Scale 1 Inch = 40 Feet

40 20 0 40 60 80

Oak Hills Park Golf Course

Norwalk, Connecticut

Prepared for:

Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

Irrigation Plan

REVISIONS:

No.	Date	Description

Sheet title: IR-1
Holes 1 & 7

Sheet no. 1 of 12

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Robert McNeil

IRRIGATION PLANS PAGE 1 of 12

Page 153: 3697 Golf Course Improvements Project at Oak Hills Park Addendum 2v2

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EXISTING SPRINKLER

NEW TORO FLX35-318-2 VALVE-IN-HEAD SPRINKLER

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SUBSURFACE DRAINAGE

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CART PATH REMOVAL

NEW CART PATH

WETLAND DELINEATION

EXISTING DRAINAGE

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Irrigation Plan

REVISIONS:

No.	Date	Description

Sheet title: IR-2
Hole 2

Sheet no. 2 of 12

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IRRIGATION PLANS PAGE 2 of 12

Page 154, 3697 Golf Course Improvements Project at Oak Hills Park Addendum 2v2

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Norwalk, Connecticut

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REVISIONS:

No.	Date	Description

Sheet title: IR-3
Holes 3, 4 & 5

Sheet no. 3 of 12

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IRRIGATION PLANS PAGE 3 of 12

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SUBSURFACE DRAINAGE

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CART PATH REMOVAL

NEW CART PATH

WETLAND DELINEATION

EXISTING DRAINAGE

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NORTH

Scale 1 Inch = 40 Feet

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Norwalk, Connecticut

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Irrigation Plan

REVISIONS:

No.	Date	Description

Sheet title: IR-4
Hole 6

Sheet no. 4 of 12

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IRRIGATION PLANS PAGE 4 of 12

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NEW TORO FLX35-318-2 VALVE-IN-HEAD SPRINKLER

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GRASS HOLLOW

SUBSURFACE DRAINAGE

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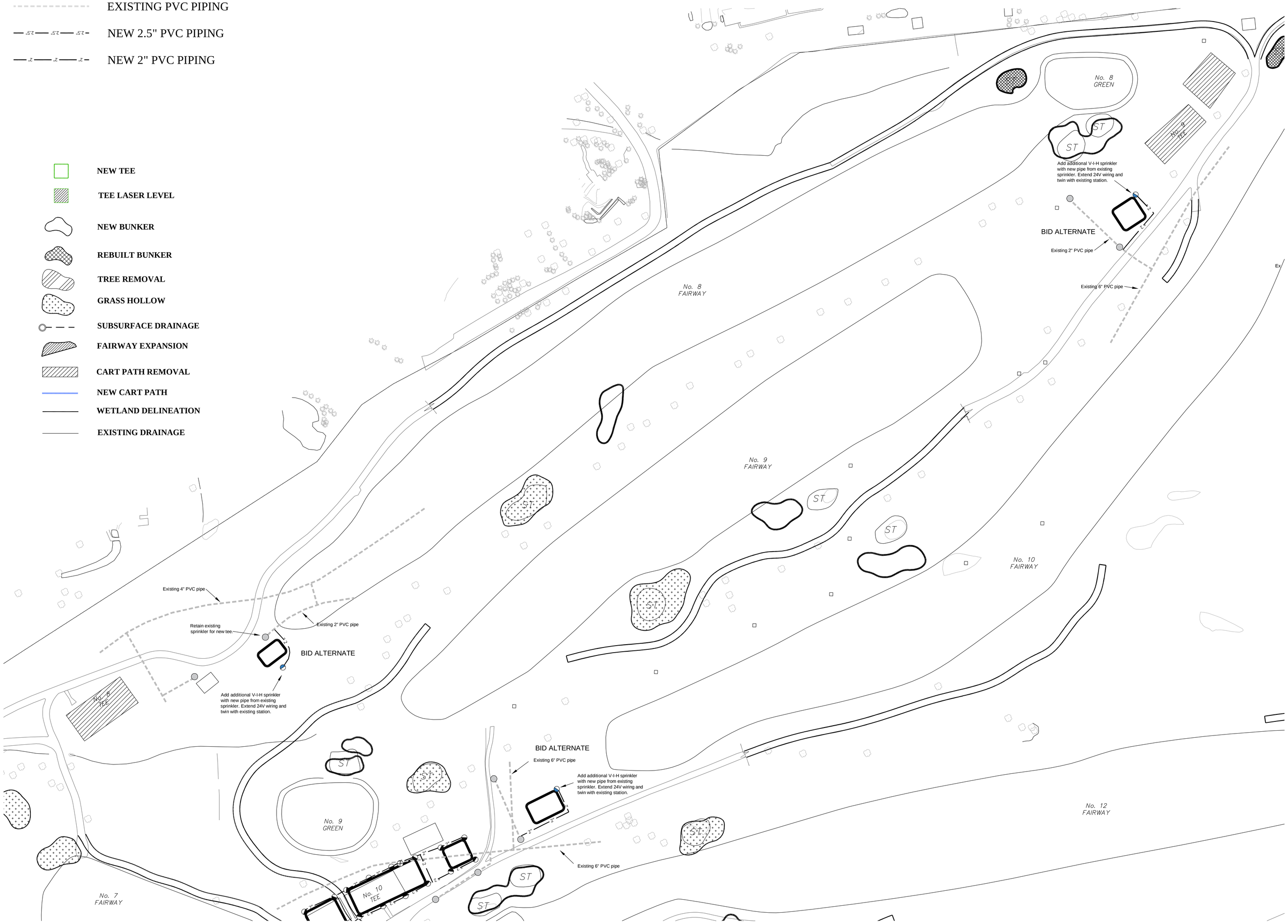
WETLAND DELINEATION

EXISTING DRAINAGE



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NORTH

Scale 1 Inch = 40 Feet

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Oak Hills Park Golf Course

Norwalk, Connecticut

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Irrigation Plan

REVISIONS:

No.	Date	Description

Sheet title: IR-5
Holes 8 & 9

Sheet no. 5 of 12

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CONSTRUCTION PLANS PAGE 5 of 12

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NEW TORO FLX35-318-2 VALVE-IN-HEAD SPRINKLER

NEW TORO T7 ROTOR SPRINKLER

EXISTING ELECTRIC VALVE

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NEW 2.5" PVC PIPING

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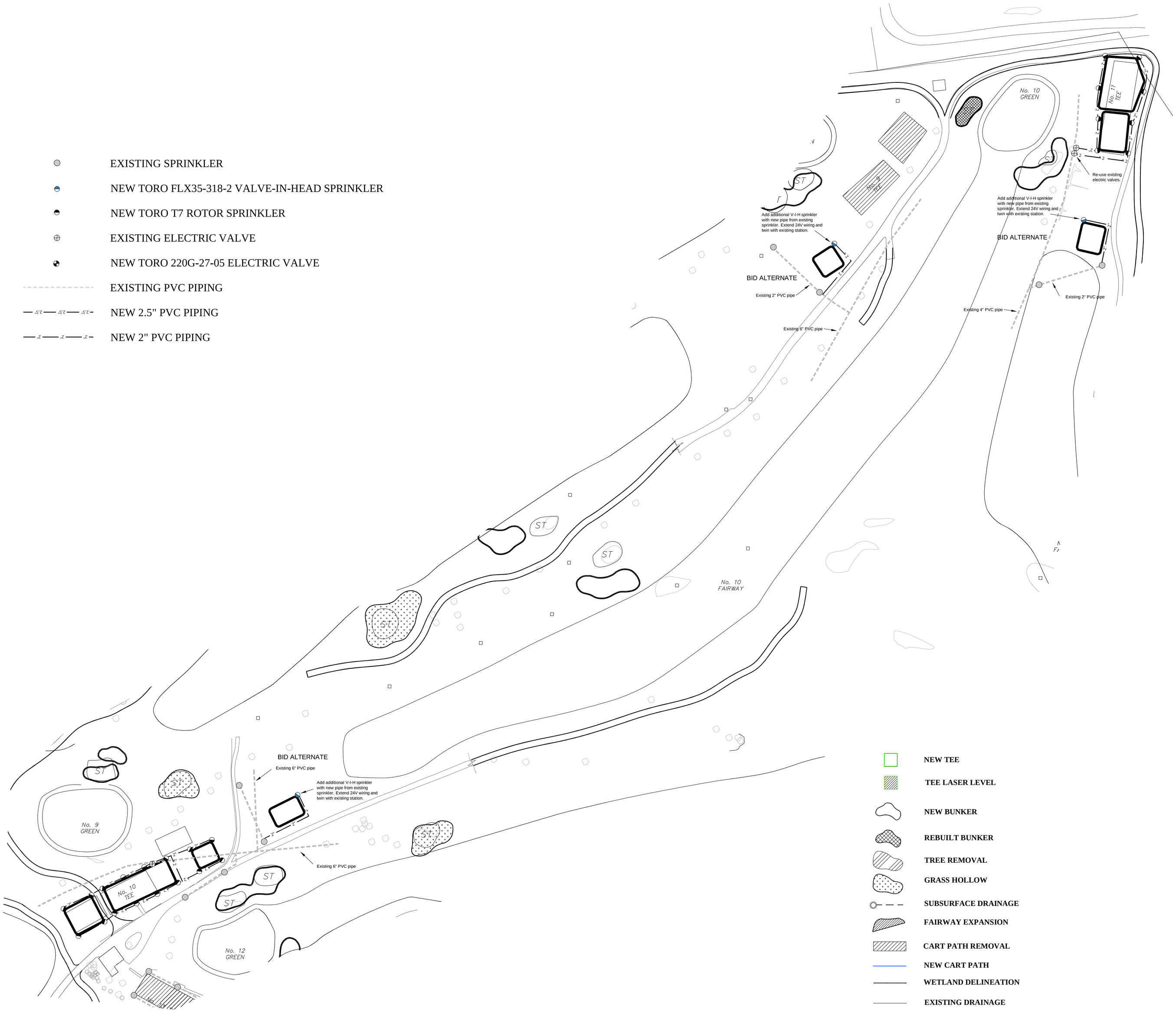

NEW TEE

TEE LASER LEVEL

NEW BUNKER

REBUILT BUNKER

TREE REMOVAL

GRASS HOLLOW

SUBSURFACE DRAINAGE

FAIRWAY EXPANSION

CART PATH REMOVAL

NEW CART PATH

WETLAND DELINEATION

EXISTING DRAINAGE

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PROJECT CODE: OAK

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CHECKED BY: TPC

SCALE: 1" = 40-0"

NORTH

Scale 1 Inch = 40 Feet

40 20 0 40 60 80

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Norwalk, Connecticut

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Irrigation Plan

REVISIONS:

No.	Date	Description

Sheet title: IR-6
Hole 10

Sheet no. 6 of 12

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IRRIGATION PLANS PAGE 6 of 12

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NEW TORO FLX35-318-2 VALVE-IN-HEAD SPRINKLER

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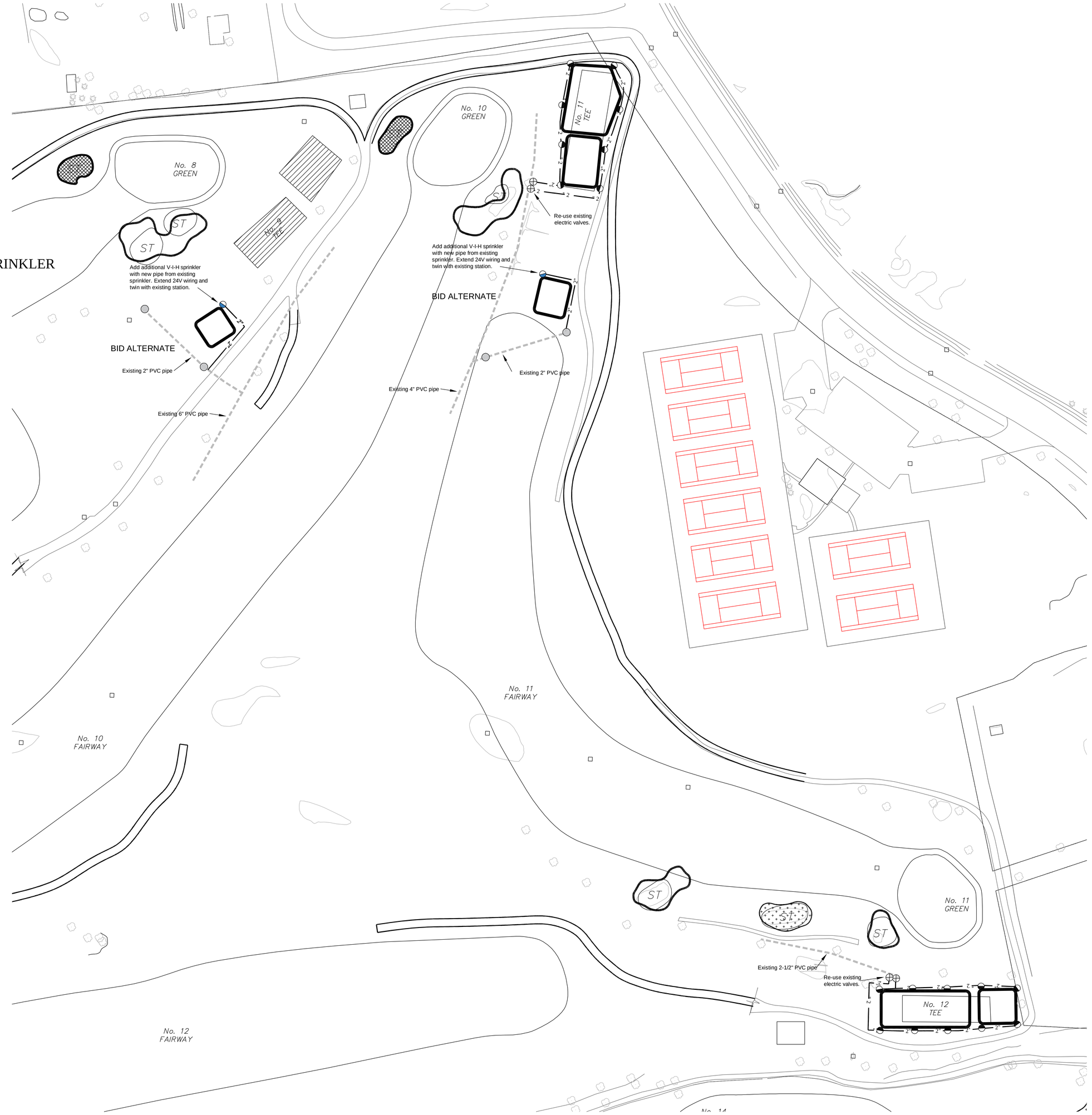
EXISTING DRAINAGE



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TPC

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Scale 1 Inch = 40 Feet

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Irrigation Plan

REVISIONS:

No.	Date	Description

Sheet title: IR-7
Hole 11 & 12 TEE

Sheet no. 7 of 12

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IRRIGATION PLANS PAGE 7 of 12

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EXISTING ELECTRIC VALVE

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Oak Hills Park Golf Course

Norwalk, Connecticut

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Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: IR-8
Holes 12 & 13

Sheet no. 8 of 12

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IRRIGATION PLANS PAGE 8 of 12

Page 160, 3897 Golf Course Improvements Project at Oak Hills Park Addendum 2v2

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EXISTING ELECTRIC VALVE

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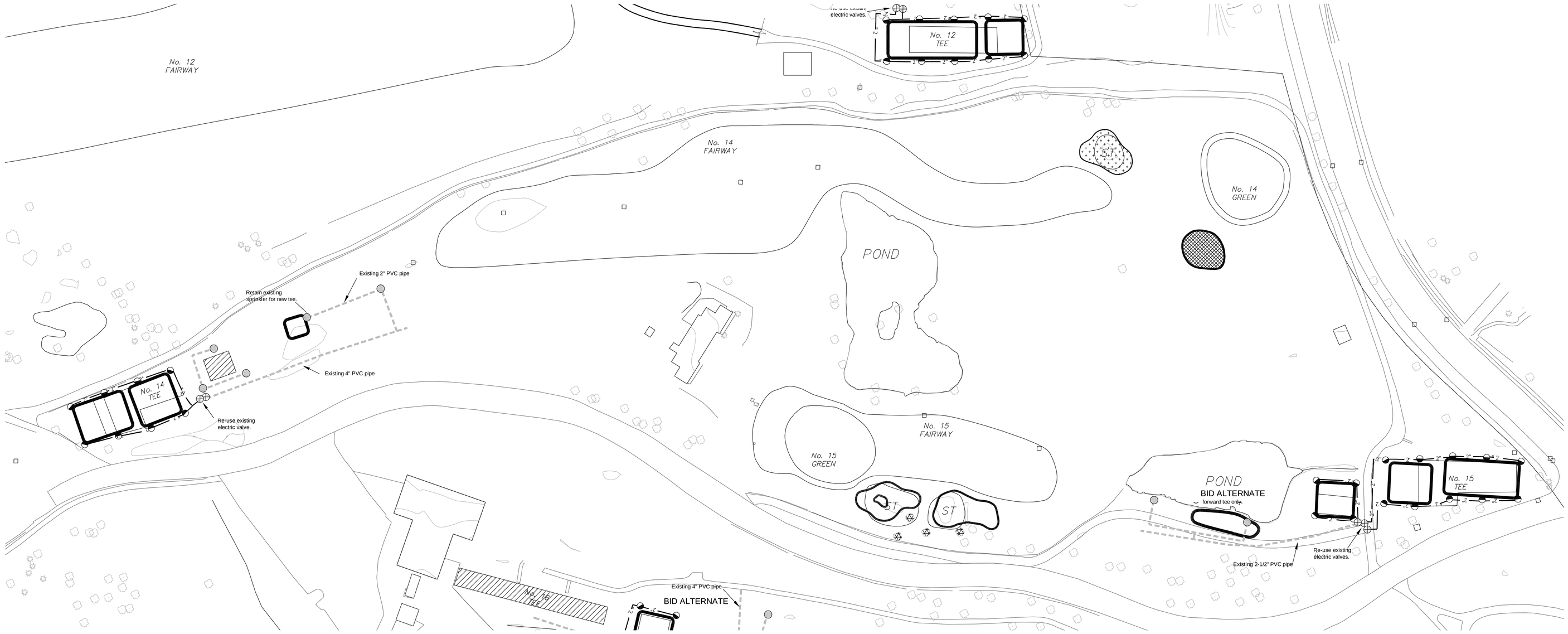
WETLAND DELINEATION

EXISTING DRAINAGE



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phone: 401-667-4994
fax: 401-667-4995

Red Bank, New Jersey
phone: 732-747-1888

email: design@northeastgolfcompany.com
website: www.northeastgolfcompany.com

DATE: May 24, 2016

PROJECT CODE: OAK

DRAWN BY: PH

CHECKED BY: TPC

SCALE: 1" = 40-0"

NORTH

Scale 1 Inch = 40 Feet

40 20 0 40 60 80

Oak Hills Park Golf Course

Norwalk, Connecticut

Prepared for:

Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: CD-1
Holes 14 & 15

Sheet no. 9 of 12

American Society of Golf Course Architects
Robert McNeil

IRRIGATION PLANS PAGE 9 of 12

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EXISTING SPRINKLER

NEW TORO FLX35-318-2 VALVE-IN-HEAD SPRINKLER

NEW TORO T7 ROTOR SPRINKLER

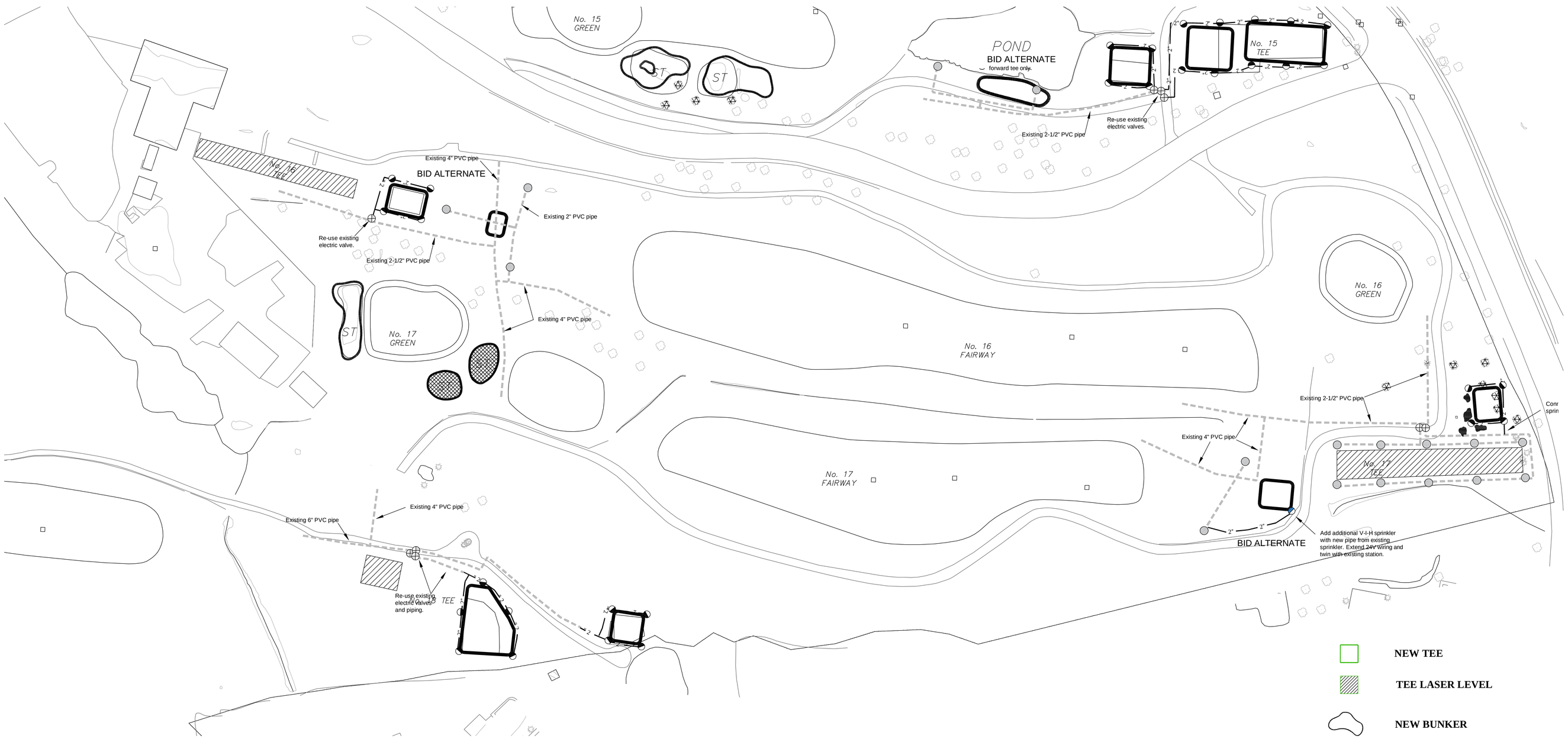
EXISTING ELECTRIC VALVE

NEW TORO 220G-27-05 ELECTRIC VALVE

EXISTING PVC PIPING

NEW 2.5" PVC PIPING

NEW 2" PVC PIPING



NEW TEE

TEE LASER LEVEL

NEW BUNKER

REBUILT BUNKER

TREE REMOVAL

GRASS HOLLOW

SUBSURFACE DRAINAGE

FAIRWAY EXPANSION

CART PATH REMOVAL

NEW CART PATH

WETLAND DELINEATION

EXISTING DRAINAGE

THE NORTHEAST GOLF COMPANY
GOLF COURSE DESIGN

BROAD VISION • CAREFUL THOUGHT • HAND-CRAFTED DESIGN

118 Beauchamp Drive
Saunderstown, Rhode Island 02874
phone: 401-667-4994
fax: 401-667-4995

Red Bank, New Jersey
phone: 732-747-1888

email: design@northeastgolfcompany.com
website: www.northeastgolfcompany.com

DATE: April 14, 2016

PROJECT CODE: OAK

DRAWN BY: PH

CHECKED BY: TPC

SCALE: 1" = 40-0"

NORTH

Scale 1 Inch = 40 Feet

40 20 0 40 60 80

Oak Hills Park Golf Course

Norwalk, Connecticut

Prepared for:

Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: CD-1
Holes 16 & 17

Sheet no. 10 of 12

American Society of Golf Course Architects
Robert McNeil

IRRIGATION PLANS PAGE 10 of 12

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EXISTING SPRINKLER

NEW TORO FLX35-318-2 VALVE-IN-HEAD SPRINKLER

NEW TORO T7 ROTOR SPRINKLER

EXISTING ELECTRIC VALVE

NEW TORO 220G-27-05 ELECTRIC VALVE

EXISTING PVC PIPING

NEW 2.5" PVC PIPING

NEW 2" PVC PIPING

NEW TEE

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NEW BUNKER

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GOLF COURSE DESIGN

BROAD VISION • CAREFUL THOUGHT • HAND-CRAFTED DESIGN

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fax: 401-667-4995

Red Bank, New Jersey
phone: 732-747-1888

email: design@northeastgolfcompany.com
website: www.northeastgolfcompany.com

DATE: May 24, 2016

PROJECT CODE: OAK

DRAWN BY: PH

CHECKED BY: TPC

SCALE: 1" = 40-0"

NORTH

Scale 1 Inch = 40 Feet

40 20 0 40 60 80

Oak Hills Park Golf Course

Norwalk, Connecticut

Prepared for:

Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: CD-1
Hole 18

Sheet no. 11 of 12

American Society of Golf Course Architects
Robert McNeil

IRRIGATION PLANS PAGE 11 of 12

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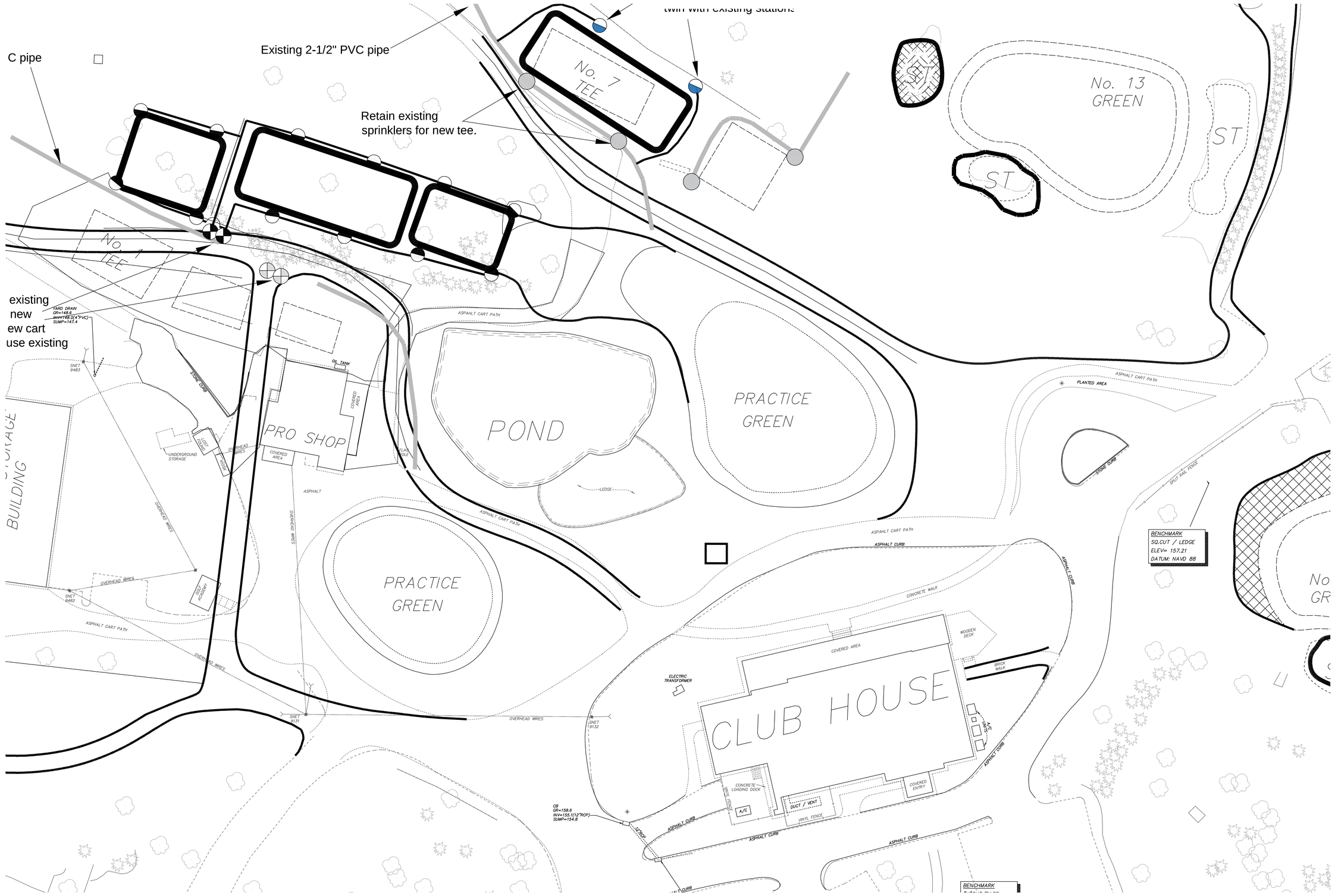

NEW TEE

TEE LASER LEVEL

NEW BUNKER

REBUILT BUNKER

TREE REMOVAL

GRASS HOLLOW

SUBSURFACE DRAINAGE

FAIRWAY EXPANSION

CART PATH REMOVAL

NEW CART PATH

WETLAND DELINEATION

EXISTING DRAINAGE

EXISTING SPRINKLER

NEW TORO FLX35-318-2 VALVE-IN-HEAD SPRINKLER

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THE NORTHEAST GOLF COMPANY
GOLF COURSE DESIGN
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118 Beauchamp Drive
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DATE: May 24, 2016

PROJECT CODE: OAK

DRAWN BY: PH

CHECKED BY: TPC

SCALE: 1" = 40-0"

NORTH

Scale 1 Inch = 20 Feet

20 10 0 20 30 40

Oak Hills Park Golf Course

Norwalk, Connecticut

Prepared for:

Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

Construction Plan

REVISIONS:

No.	Date	Description

Sheet title: CD-1
Central Circulation

Sheet no. 12 of 12

American Society of Golf Course Architects
Robert McNeil

IRRIGATION PLANS PAGE 12 of 12

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Page 164, 3897 Golf Course Improvements Project at Oak Hills Park Addendum 2v2

SECTION 5

PREVAILING WAGE ADDENDEUM

(Note: Page numbering in this section is not sequential with other sections within this document)

The Contractor shall weekly submit to the Director a certified payroll, which shall consist of a complete copy of its records relating to the wages and hours worked by each employee and a schedule of the occupation or work classification at which each mechanic, laborer or workman on the Project is employed during each work day and week. The submission shall be in such manner and form as the State Labor Commissioner requires and in compliance with the requirements of Public Act 93392. This weekly submission shall also include a statement signed by the employer (the Contractor) indicating the information set forth in Section l (f) of Public Act 93-392."

5.1 – LIVING WAGE ORDINACE

GENERAL INFORMATION

Rev. 033116, Express Request Doc. #1019

NOTE: SECTION 5.1 contains information concerning City's Living Wage Ordinance. You are responsible for obtaining a copy prior to bidding. If you do not have a revision dated 03/31/2016 or later on file you may download a copy of this Ordinance from the Terms and Conditions section of the City of Norwalk's website at http://www.norwalkct.org

Document number **1019:** http://www.norwalkct.org/DocumentCenter/Home/View/862

Employee Complaint Forms
Employer Forms
Laws/Legislation
Manuals and Publications
Compliance Assistance
Prevailing Wages
Standard Wage Rates
Workplace Standards
Employment of Minors
FMLA
Joint Enforcement Commission For Worker Misclassification (JEC)
Stop Work Orders
Reports of Activities
FAQs
Newsroom
Contact Us

PREVAILING WAGE BID PACKAGE

- Prevailing Wage Law Poster (PDF, 97KB)
- Section 31-53b: Construction safety and Health Course. Proof of completion required for employees on public building projects. (PDF, 10KB)
  - Informational Bulletin - The 10-Hour OSHA Construction Safety and Health Course (PDF, 20KB)
- Notice For All Mason Contractors (PDF, 5KB)
- CT General Statute 31-55a
- Contracting Agency Certification Form (PDF, 89KB)
- Contractor's Wage Certification Form (PDF, 11KB)
- Payroll Certification - Public Works Projects
- Occupational Classification Bulletin
- Footnotes (Rev. 06/15) (PDF, 24KB)

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Opportunity ★ Guidance ★ Support

CONNECTICUT DEPARTMENT OF LABOR

THIS IS A PUBLIC WORKS PROJECT

Covered by the

PREVAILING WAGE LAW

CT General Statutes Section 31-53

If you have QUESTIONS regarding your wages
CALL (860) 263-6790

Section 31-55 of the CT State Statutes requires every contractor or subcontractor performing work for the state to post in a prominent place the prevailing wages as determined by the Labor Commissioner.

Sec. 31-53b. Construction safety and health course. New miner training program. Proof of completion required for mechanics, laborers and workers on public works projects. Enforcement. Regulations. Exceptions. (a) Each contract for a public works project entered into on or after July 1, 2009, by the state or any of its agents, or by any political subdivision of the state or any of its agents, described in subsection (g) of section 31-53, shall contain a provision requiring that each contractor furnish proof with the weekly certified payroll form for the first week each employee begins work on such project that any person performing the work of a mechanic, laborer or worker pursuant to the classifications of labor under section 31-53 on such public works project, pursuant to such contract, has completed a course of at least ten hours in duration in construction safety and health approved by the federal Occupational Safety and Health Administration or, has completed a new miner training program approved by the Federal Mine Safety and Health Administration in accordance with 30 CFR 48 or, in the case of telecommunications employees, has completed at least ten hours of training in accordance with 29 CFR 1910.268.

(b) Any person required to complete a course or program under subsection (a) of this section who has not completed the course or program shall be subject to removal from the worksite if the person does not provide documentation of having completed such course or program by the fifteenth day after the date the person is found to be in noncompliance. The Labor Commissioner or said commissioner's designee shall enforce this section.

(c) Not later than January 1, 2009, the Labor Commissioner shall adopt regulations, in accordance with the provisions of chapter 54, to implement the provisions of subsections (a) and (b) of this section. Such regulations shall require that the ten-hour construction safety and health courses required under subsection (a) of this section be conducted in accordance with federal Occupational Safety and Health Administration Training Institute standards, or in accordance with Federal Mine Safety and Health Administration Standards or in accordance with 29 CFR 1910.268, as appropriate. The Labor Commissioner shall accept as sufficient proof of compliance with the provisions of subsection (a) or (b) of this section a student course completion card issued by the federal Occupational Safety and Health Administration Training Institute, or such other proof of compliance said commissioner deems appropriate, dated no earlier than five years before the commencement date of such public works project.

(d) This section shall not apply to employees of public service companies, as defined in section 16-1, or drivers of commercial motor vehicles driving the vehicle on the public works project and delivering or picking up cargo from public works projects provided they perform no labor relating to the project other than the loading and unloading of their cargo.

(P.A. 06-175, S. 1; P.A. 08-83, S. 1.)

History: P.A. 08-83 amended Subsec. (a) by making provisions applicable to public works project contracts entered into on or after July 1, 2009, replacing provision re total cost of work with reference to Sec. 31-53(g), requiring proof in certified payroll form that new mechanic, laborer or worker has completed a 10-hour or more construction safety course and adding provision re new miner training program, amended Subsec. (b) by substituting "person" for "employee" and adding "or program", amended Subsec. (c) by adding "or in accordance with Federal Mine
Safety and Health Administration Standards" and setting new deadline of January 1, 2009, deleted former Subsec. (d) re "public building", added new Subsec. (d) re exemptions for public service company employees and delivery drivers who perform no labor other than delivery and made conforming and technical changes, effective January 1, 2009.

Informational Bulletin

THE 10-HOUR OSHA CONSTRUCTION SAFETY AND HEALTH COURSE

(applicable to public building contracts entered into *on or after July 1, 2007,* where the total cost of all work to be performed is at least $100,000)

(1) This requirement was created by Public Act No. 06-175, which is codified in Section 31-53b of the Connecticut General Statutes (pertaining to the prevailing wage statutes);

(2) The course is required for public building construction contracts (projects funded in whole or in part by the state or any political subdivision of the state) entered into on or after July 1, 2007;

(3) It is required of private employees (not state or municipal employees) and apprentices who perform manual labor for a general contractor or subcontractor on a public building project where the total cost of all work to be performed is at least $100,000;

(4) The ten-hour construction course pertains to the ten-hour Outreach Course conducted in accordance with federal OSHA Training Institute standards, and, for telecommunications workers, a ten-hour training course conducted in accordance with federal OSHA standard, 29 CFR 1910.268;

(5) The internet website for the federal OSHA Training Institute is http://www.osha.gov/fso/ote/training/edcenters/fact_sheet.html;

(6) The statutory language leaves it to the contractor and its employees to determine who pays for the cost of the ten-hour Outreach Course;

(7) Within 30 days of receiving a contract award, a general contractor must furnish proof to the Labor Commissioner that all employees and apprentices performing manual labor on the project will have completed such a course;

(8) Proof of completion may be demonstrated through either: (a) the presentation of a *bona fide* student course completion card issued by the federal OSHA Training Institute; *or* (2) the presentation of documentation provided to an employee by a trainer certified by the Institute pending the actual issuance of the completion card;

(9) Any card with an issuance date more than 5 years prior to the commencement date of the construction project shall not constitute proof of compliance;

(10) Each employer shall affix a copy of the construction safety course completion card to the certified payroll submitted to the contracting agency in accordance with Conn. Gen. Stat. § 31-53(f) on which such employee's name first appears;

(11) Any employee found to be in non-compliance shall be subject to removal from the worksite if such employee does not provide satisfactory proof of course completion to the Labor Commissioner by the fifteenth day after the date the employee is determined to be in noncompliance;

(12) Any such employee who is determined to be in noncompliance may continue to work on a public building construction project for a maximum of fourteen consecutive calendar days while bringing his or her status into compliance;

(13) The Labor Commissioner may make complaint to the prosecuting authorities regarding any employer or agent of the employer, or officer or agent of the corporation who files a false certified payroll with respect to the status of an employee who is performing manual labor on a public building construction project;

(14) The statute provides the minimum standards required for the completion of a safety course by manual laborers on public construction contracts; any contractor can exceed these minimum requirements; and

(15) Regulations clarifying the statute are currently in the regulatory process, and shall be posted on the CTDOL website as soon as they are adopted in final form.

(16) Any questions regarding this statute may be directed to the Wage and Workplace Standards Division of the Connecticut Labor Department via the internet website of http://www.ctdol.state.ct.us/wgwkstnd/wgemenu.htm; or by telephone at (860)263-6790.

THE ABOVE INFORMATION IS PROVIDED EXCLUSIVELY AS AN EDUCATIONAL RESOURCE, AND IS NOT INTENDED AS A SUBSTITUTE FOR LEGAL INTERPRETATIONS WHICH MAY ULTMATELY ARISE CONCERNIG THE CONSTRUCTION OF THE STATUTE OR THE REGULATIONS.

November 29, 2006

Notice

To All Mason Contractors and Interested Parties Regarding Construction Pursuant to Section 31-53 of the Connecticut General Statutes (Prevailing Wage)

The Connecticut Labor Department Wage and Workplace Standards Division is empowered to enforce the prevailing wage rates on projects covered by the above referenced statute.

Over the past few years the Division has withheld enforcement of the rate in effect for workers who operate a forklift on a prevailing wage rate project due to a potential jurisdictional dispute.

The rate listed in the schedules and in our Occupational Bulletin (see enclosed) has been as follows:

Forklift Operator:

- **Laborers (Group 4) Mason Tenders -** operates forklift solely to assist a mason to a maximum height of nine feet only.

- **Power Equipment Operator (Group 9) -** operates forklift to assist any trade and to assist a mason to a height over nine feet.

The U.S. Labor Department conducted a survey of rates in Connecticut but it has not been published and the rate in effect remains as outlined in the above Occupational Bulletin.

Since this is a classification matter and not one of jurisdiction, effective January 1, 2007 the Connecticut Labor Department will enforce the rate on each schedule in accordance with our statutory authority.

Your cooperation in filing appropriate and accurate certified payrolls is appreciated.

STATUTE 31-55a

print Statute 31-55a (PDF, 383KB)

- SPECIAL NOTICE -

To All State and Political Subdivisions,Their Agents, and Contractors

Connecticut General Statute 31-55a - Annual adjustments to wage rates by contractors doing state work.

Each contractor that is awarded a contract on or after October 1, 2002, for (1) the construction of a state highway or bridge that falls under the provisions of section 31-54 of the general statutes, or (2) the construction, remodeling, refinishing, refurbishing, rehabilitation, alteration or repair of any public works project that falls under the provisions of section 31-53 of the general statutes shall contact the Labor Commissioner on or before July first of each year, for the duration of such contract, to ascertain the prevailing rate of wages on an hourly basis and the amount of payment or contributions paid or payable on behalf of each mechanic, laborer or worker employed upon the work contracted to be done, and shall make any necessary adjustments to such prevailing rate of wages and such payment or contributions paid or payable on behalf of each such employee, effective each July first.

- The prevailing wage rates applicable to any contract or subcontract awarded on or after October 1, 2002 are subject to annual adjustments each July 1st for the duration of any project which was originally advertised for bids on or after October 1, 2002.
- Each contractor affected by the above requirement shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.
- It is the ***contractor's*** responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's Web Site. The annual adjustments will be posted on the Department of Labor Web page: www.ctdol.state.ct.us. For those without internet access, please contact the division listed below.
- The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project. All subsequent annual adjustments will be posted on our Web Site for contractor access.

Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

Workplace Laws

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STATUTE 31-55a

- SPECIAL NOTICE -

To: All State and Political Subdivisions,Their Agents, and Contractors

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Any questions should be directed to the Contract Compliance Unit, Wage and Workplace Standards Division, Connecticut Department of Labor, 200 Folly Brook Blvd., Wethersfield, CT 06109 at (860)263-6790.

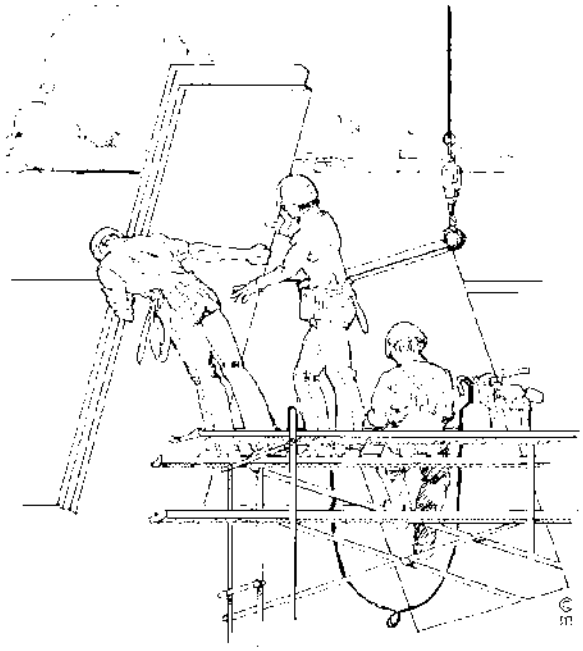
~NOTICE~

TO ALL CONTRACTING AGENCIES

Please be advised that Connecticut General Statutes Section 31-53, requires the contracting agency to certify to the Department of Labor, the total dollar amount of work to be done in connection with such public works project, regardless of whether such project consists of one or more contracts.

Please find the attached "Contracting Agency Certification Form" to be completed and returned to the Department of Labor, Wage and Workplace Standards Division, Public Contract Compliance Unit.

✎ Inquiries can be directed to (860)263-6543.



CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION
CONTRACT COMPLIANCE UNIT

CONTRACTING AGENCY CERTIFICATION FORM

I, _____, acting in my official capacity as _____,
authorized representative title

for _____, located at _____,
contracting agency address

do hereby certify that the total dollar amount of work to be done in connection with

_____, located at _____,
project name and number address

shall be $_____, which includes all work, regardless of whether such project

consists of one or more contracts.

CONTRACTOR INFORMATION

Name:_____

Address:_____
Authorized Representative:_____
Approximate Starting Date: _____

Approximate Completion Date:_____

_____ _____
Signature Date

Return To: Connecticut Department of Labor
Wage & Workplace Standards Division
Contract Compliance Unit
200 Folly Brook Blvd.
Wethersfield, CT 06109

Date Issued: _____

CONNECTICUT DEPARTMENT OF LABOR
WAGE AND WORKPLACE STANDARDS DIVISION

CONTRACTORS WAGE CERTIFICATION FORM

Construction Manager at Risk/General Contractor/Prime Contractor

I,_____of _____
Officer, Owner, Authorized Rep. Company Name

do hereby certify that the _____
Company Name

_____
Street

_____
City

and all of its subcontractors will pay all workers on the

_____
Project Name and Number

_____
Street and City

the wages as listed in the schedule of prevailing rates required for such project (a copy of which is attached hereto).

_____
Signed

Subscribed and sworn to before me this _____ day of _____,_____.

_____
Notary Public

Return to:

Connecticut Department of Labor
Wage & Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

Rate Schedule Issued (Date): _____

CERTIFIED PAYROLL FORM WWS - CPI

Employee Complaint Forms
Employer Forms
Laws/Legislation
Manuals and Publications
Compliance Assistance
Prevailing Wages
Standard Wage Rates
Workplace Standards
Employment of Minors
FMLA
Joint Enforcement Commission For Worker Misclassification (JEC)
Stop Work Orders
Reports of Activities
FAQs
Newsroom
Contact Us

In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.

Note: Once you have downloaded these forms and are ready to print them out, set the print function on your PC to the horizontal print orientation.

Note2: Please download both the Payroll Certification for Public Works Projects **and** the Certified Statement of Compliance for a complete package. The Certified Statement of Compliance appears on the same page as the Fringe Benefits Explanation page.

Announcement: The Certified Payroll Form WWS-CPI can now be completed on-line!

- Certified Payroll Form WWS-CPI (PDF, 727KB)
- Sample Completed Form (PDF, 101KB)

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[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

In accordance with Connecticut General Statutes, 31-53
Certified Payrolls with a statement of compliance
shall be submitted monthly to the contracting agency.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

Connecticut Department of Labor
Wage and Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

CONTRACTOR NAME AND ADDRESS:

SUBCONTRACTOR NAME & ADDRESS

WORKER'S COMPENSATION INSURANCE CARRIER

POLICY #

EFFECTIVE DATE:
EXPIRATION DATE:

PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION / Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S	Total ST Hours / Total O/T Hours	BASE HOURLY RATE / TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY																
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							
												$ Base Rate	1. $ 2. $ 3. $							
												$ Cash Fringe	4. $ 5. $ 6. $							

12/9/2013 *IF REQUIRED
WWS-CP1

*SEE REVERSE SIDE

PAGE NUMBER _____OF

OSHA 10 ~ATTACH CARD TO 1ST CERTIFIED PAYROLL

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

1) Medical or hospital care _____ 4) Disability_____

2) Pension or retirement _____ 5) Vacation, holiday_____

3) Life Insurance _____ 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of _____,

I, _____of _____, (hereafter known as

Employer) in my capacity as _____ (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

a) The records submitted are true and accurate;

b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such person to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;

c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);

d) Each such person is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;

e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and

f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such persons name first appears.

_____	_____	_____
(Signature)	(Title)	Submitted on (Date)

*****THIS IS A PUBLIC DOCUMENT*****
*****DO NOT INCLUDE SOCIAL SECURITY NUMBERS*****

Weekly Payroll Certification For Public Works Projects (Continued)

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

Week-Ending Date:
Contractor or Subcontractor Business Name:

WEEKLY PAYROLL

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S	M	T	W	TH	F	S	Total ST Hours Total O/T Hours	BASE HOURLY RATE TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY								$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							
												$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							

*IF REQUIRED

12/9/2013
WWS-CP2

NOTICE: THIS PAGE MUST BE ACCOMPANIED BY A COVER PAGE (FORM # WWS-CP1)

PAGE NUMBER _____OF

[New] In accordance with Section 31-53b(a) of the C.G.S. each contractor shall provide a copy of the OSHA 10 Hour Construction Safety and Health Card for each employee, to be attached to the first certified payroll on the project.

In accordance with Connecticut General Statutes, 31-53 Certified Payrolls with a statement of compliance shall be submitted monthly to the contracting agency.

PAYROLL CERTIFICATION FOR PUBLIC WORKS PROJECTS

WEEKLY PAYROLL

Connecticut Department of Labor
Wage and Workplace Standards Division
200 Folly Brook Blvd.
Wethersfield, CT 06109

CONTRACTOR NAME AND ADDRESS:
Landon Corporation, 15 Connecticut Avenue, Northford, CT 06472

SUBCONTRACTOR NAME & ADDRESS
XYZ Corporation
2 Main Street
Yantic, CT 06389

WORKER'S COMPENSATION INSURANCE CARRIER
Travelers Insurance Company
POLICY # #BAC8888928
EFFECTIVE DATE: 1/1/09
EXPIRATION DATE: 12/31/09

PAYROLL NUMBER	Week-Ending Date	PROJECT NAME & ADDRESS
1	9/26/09	DOT 105-296, Route 82

PERSON/WORKER, ADDRESS and SECTION	APPR RATE %	MALE/ FEMALE AND RACE*	WORK CLASSIFICATION / Trade License Type & Number - OSHA 10 Certification Number	DAY AND DATE S 20	M 21	T 22	W 23	TH 24	F 25	S 26	Total ST Hours / Total O/T Hours	BASE HOURLY RATE / TOTAL FRINGE BENEFIT PLAN CASH	TYPE OF FRINGE BENEFITS Per Hour 1 through 6 (see back)	GROSS PAY FOR ALL WORK PERFORMED THIS WEEK	TOTAL DEDUCTIONS FICA	FEDERAL WITH-HOLDING	STATE WITH-HOLDING	LIST OTHER	GROSS PAY FOR THIS PREVAILING RATE JOB	CHECK # AND NET PAY
				HOURS WORKED EACH DAY																
Robert Craft 81 Maple Street Willimantic, CT 06226		M/C	Electrical Lineman E-1 1234567 Owner OSHA 123456		8	8	8	8	8		S-TIME 40 O-TIME	$ 30.75 Base Rate $ 8.82 Cash Fringe	1. $ 5.80 2. $ 3. $ 2.01 4. $ 5. $ 6. $	$1,582.80				P-xxxx	$1,582.80	#123 $ xxx.xx
Ronald Jones 212 Elm Street Norwich, CT 06360	65%	M/B	Electrical Apprentice OSHA 234567		8	8	8	8	8		S-TIME 40 O-TIME	$ 19.99 Base Rate $ 16.63 Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $	$1,464.80	xx.xx	xxx.xx	xx.xx	G-xxx	$1,464.80	#124 $xxx.xx
Franklin T. Smith 234 Washington Rd. New London, CT 06320 SECTION B		M/H	Project Manager			8					S-TIME 8 O-TIME	$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $	$1,500.00	xx.xx	xx.xx	xx.xx	M-xx.x		#125 xxx.xx
											S-TIME O-TIME	$ Base Rate $ Cash Fringe	1. $ 2. $ 3. $ 4. $ 5. $ 6. $							

7/13/2009
WWS-CP1

*IF REQUIRED

*SEE REVERSE SIDE

PAGE NUMBER 1 OF 2

OSHA 10 ~ATTACH CARD TO 1ST CERTIFIED PAYROLL

***FRINGE BENEFITS EXPLANATION (P):**

Bona fide benefits paid to approved plans, funds or programs, except those required by Federal or State Law (unemployment tax, worker's compensation, income taxes, etc.).

Please specify the type of benefits provided:

1) Medical or hospital care Blue Cross 4) Disability _____

2) Pension or retirement _____ 5) Vacation, holiday _____

3) Life Insurance Utopia 6) Other (please specify) _____

CERTIFIED STATEMENT OF COMPLIANCE

For the week ending date of 9/26/09,

I, Robert Craft of XYZ Corporation, (hereafter known as

Employer) in my capacity as Owner (title) do hereby certify and state:

Section A:

1. All persons employed on said project have been paid the full weekly wages earned by them during the week in accordance with Connecticut General Statutes, section 31-53, as amended. Further, I hereby certify and state the following:

a) The records submitted are true and accurate;

b) The rate of wages paid to each mechanic, laborer or workman and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as defined in Connecticut General Statutes, section 31-53 (h), are not less than the prevailing rate of wages and the amount of payment or contributions paid or payable on behalf of each such employee to any employee welfare fund, as determined by the Labor Commissioner pursuant to subsection Connecticut General Statutes, section 31-53 (d), and said wages and benefits are not less than those which may also be required by contract;

c) The Employer has complied with all of the provisions in Connecticut General Statutes, section 31-53 (and Section 31-54 if applicable for state highway construction);

d) Each such employee of the Employer is covered by a worker's compensation insurance policy for the duration of his employment which proof of coverage has been provided to the contracting agency;

e) The Employer does not receive kickbacks, which means any money, fee, commission, credit, gift, gratuity, thing of value, or compensation of any kind which is provided directly or indirectly, to any prime contractor, prime contractor employee, subcontractor, or subcontractor employee for the purpose of improperly obtaining or rewarding favorable treatment in connection with a prime contract or in connection with a prime contractor in connection with a subcontractor relating to a prime contractor; and

f) The Employer is aware that filing a certified payroll which he knows to be false is a class D felony for which the employer may be fined up to five thousand dollars, imprisoned for up to five years or both.

2. OSHA~The employer shall affix a copy of the construction safety course, program or training completion document to the certified payroll required to be submitted to the contracting agency for this project on which such employee's name first appears.

Robert Craft owner 10/2/09

(Signature) (Title) Submitted on (Date)

Section B: Applies to CONNDOT Projects ONLY

That pursuant to CONNDOT contract requirements for reporting purposes only, all employees listed under Section B who performed work on this project are not covered under the prevailing wage requirements defined in Connecticut General Statutes Section 31-53.

Robert Craft owner 10/2/09

(Signature) (Title) Submitted on (Date)

Note: CTDOL will assume all hours worked were performed under Section A unless clearly delineated as Section B WWS-CP1 as such. Should an employee perform work under both Section A and Section B, the hours worked and wages paid must be segregated for reporting purposes.

*****THIS IS A PUBLIC DOCUMENT*****

*****DO NOT INCLUDE SOCIAL SECURITY NUMBERS*****

CONNECTICUT DEPARTMENT OF LABOR

Employee Complaint Forms
Employer Forms
Laws/Legislation
Manuals and Publications
Compliance Assistance
Prevailing Wages
Standard Wage Rates
Workplace Standards
Employment of Minors
FMLA
Joint Enforcement Commission For Worker Misclassification (JEC)
Stop Work Orders
Reports of Activities
FAQs
Newsroom
Contact Us

UNDER CONSTRUCTION

under construction on 6/28/2016
please check back for updated information

200 Folly Brook Boulevard, Wethersfield, CT 06109 / Phone: 860-263-6000

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Connecticut Department of Labor
Wage and Workplace Standards Division
FOOTNOTES

⇨ Please Note: If the "Benefits" listed on the schedule for the following occupations includes a letter(s) (+ a or + a+b for instance), refer to the information below.

Benefits to be paid at the appropriate prevailing wage rate for the listed occupation.

If the "Benefits" section for the occupation lists only a dollar amount, disregard the information below.

Bricklayers, Cement Masons, Cement Finishers, Concrete Finishers, Stone Masons
(Building Construction) and
(Residential- Hartford, Middlesex, New Haven, New London and Tolland Counties)

a. Paid Holiday: Employees shall receive 4 hours for Christmas Eve holiday provided the employee works the regularly scheduled day before and after the holiday. Employers may schedule work on Christmas Eve and employees shall receive pay for actual hours worked in addition to holiday pay.

Elevator Constructors: Mechanics

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, Christmas Day, plus the Friday after Thanksgiving.

b. Vacation: Employer contributes 8% of basic hourly rate for 5 years or more of service or 6% of basic hourly rate for 6 months to 5 years of service as vacation pay credit.

Glaziers

a. Paid Holidays: Labor Day and Christmas Day.

Power Equipment Operators
(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Good Friday, Memorial day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day, provided the employee works 3 days during the week in which the holiday falls, if scheduled, and if scheduled, the working day before and the working day after the holiday. Holidays falling on Saturday may be observed on Saturday, or if the employer so elects, on the preceding Friday.

Ironworkers

a. Paid Holiday: Labor Day provided employee has been on the payroll for the 5 consecutive work days prior to Labor Day.

Laborers (Tunnel Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day. No employee shall be eligible for holiday pay when he fails, without cause, to work the regular work day preceding the holiday or the regular work day following the holiday.

Roofers

a. Paid Holidays: July 4th, Labor Day, and Christmas Day provided the employee is employed 15 days prior to the holiday.

Sprinkler Fitters

a. Paid Holidays: Memorial Day, July 4th, Labor Day, Thanksgiving Day and Christmas Day, provided the employee has been in the employment of a contractor 20 working days prior to any such paid holiday.

Truck Drivers

(Heavy and Highway Construction & Building Construction)

a. Paid Holidays: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, Christmas day, and Good Friday, provided the employee has at least 31 calendar days of service and works the last scheduled day before and the first scheduled day after the holiday, unless excused.

Rev. 7/1/15

Minimum Rates and Classifications
for Heavy/Highway Construction

ID#: **H** 22342

Connecticut Department of Labor
Wage and Workplace Standards Division

By virtue of the authority vested in the Labor Commissioner under provisions of Section 31-53 of the General Statutes of Connecticut, as amended, the following are declared to be the prevailing rates and welfare payments and will apply only where the contract is advertised for bid within 20 days of the date on which the rates are established. Any contractor or subcontractor not obligated by agreement to pay to the welfare and pension fund shall pay this amount to each employee as part of his/her hourly wages.

Project Number: 3697

Project Town: Norwalk

FAP Number:

State Number:

Project: Golf Course Improvements At Oak Hills Park/Golf Course

CLASSIFICATION	Hourly Rate	Benefits
01) Asbestos/Toxic Waste Removal Laborers: Asbestos removal and encapsulation (except its removal from mechanical systems which are not to be scrapped), toxic waste removers, blasters. **See Laborers Group 5 and 7**		
1) Boilermaker	33.79	34% + 8.96
1a) Bricklayer, Cement Masons, Cement Finishers, Plasterers, Stone Masons	33.48	28.76
2) Carpenters, Piledrivermen	32.00	24.42

As of: Wednesday, July 06, 2016

Project: Golf Course Improvements At Oak Hills Park/Golf Course

2a) Diver Tenders	32.00	24.42
3) Divers	40.46	24.42
03a) Millwrights	32.47	24.84
4) Painters: (Bridge Construction) Brush, Roller, Blasting (Sand, Water, etc.), Spray	46.95	20.15
4a) Painters: Brush and Roller	32.02	20.15
4b) Painters: Spray Only	35.02	20.15
4c) Painters: Steel Only	34.02	20.15

As of: Wednesday, July 06, 2016

Project: Golf Course Improvements At Oak Hills Park/Golf Course

4d) Painters: Blast and Spray	35.02	20.15
4e) Painters: Tanks, Tower and Swing	34.02	20.15
5) Electrician (Trade License required: E-1,2 L-5,6 C-5,6 T-1,2 L-1,2 V-1,2,7,8,9)	38.02	23.75+3% of gross wage
6) Ironworkers: Ornamental, Reinforcing, Structural, and Precast Concrete Erection	35.22	31.99 + a
7) Plumbers (Trade License required: (P-1,2,6,7,8,9 J-1,2,3,4 SP-1,2) and Pipefitters (Including HVAC Work) (Trade License required: S-1,2,3,4,5,6,7,8 B-1,2,3,4 D-1,2,3,4 G-1, G-2, G-8, G-9)	40.62	29.71
----LABORERS---- -		
8) Group 1: Laborer (Unskilled), Common or General, acetylene burner, concrete specialist	28.55	18.90

As of: Wednesday, July 06, 2016

9) Group 2: Chain saw operators, fence and guard rail erectors, pneumatic tool operators, powdermen	28.80	18.90
10) Group 3: Pipelayers	29.05	18.90
11) Group 4: Jackhammer/Pavement breaker (handheld); mason tenders (cement/concrete), catch basin builders, asphalt rakers, air track operators, block paver, curb setter and forklift operators	29.05	18.90
12) Group 5: Toxic waste removal (non-mechanical systems)	30.55	18.90
13) Group 6: Blasters	30.30	18.90
Group 7: Asbestos/lead removal, non-mechanical systems (does not include leaded joint pipe)	29.55	18.90
Group 8: Traffic control signalmen	16.00	18.90

Group 9: Hydraulic Drills	29.30	18.90

----LABORERS (TUNNEL CONSTRUCTION, FREE AIR). Shield Drive and Liner Plate Tunnels in Free Air.----

13a) Miners, Motormen, Mucking Machine Operators, Nozzle Men, Grout Men, Shaft & Tunnel Steel & Rodmen, Shield & Erector, Arm Operator, Cable Tenders	32.22	18.90 + a
13b) Brakemen, Trackmen	31.28	18.90 + a

----CLEANING, CONCRETE AND CAULKING TUNNEL----

14) Concrete Workers, Form Movers, and Strippers	31.28	18.90 + a
15) Form Erectors	31.60	18.90 + a

Project: Golf Course Improvements At Oak Hills Park/Golf Course

----ROCK SHAFT LINING, CONCRETE, LINING OF SAME AND TUNNEL IN FREE AIR:----

16) Brakemen, Trackmen, Tunnel Laborers, Shaft Laborers	31.28	18.90 + a
17) Laborers Topside, Cage Tenders, Bellman	31.17	18.90 + a
18) Miners	32.22	18.90 + a

----TUNNELS, CAISSON AND CYLINDER WORK IN COMPRESSED AIR: ----

18a) Blaster	38.53	18.90 + a
19) Brakemen, Trackmen, Groutman, Laborers, Outside Lock Tender, Gauge Tenders	38.34	18.90 + a

20) Change House Attendants, Powder Watchmen, Top on Iron Bolts	36.41	18.90 + a
21) Mucking Machine Operator	39.11	18.90 + a
----TRUCK DRIVERS----(*see note below)		
Two axle trucks	28.83	21.39 + a
Three axle trucks; two axle ready mix	28.93	21.39 + a
Three axle ready mix	28.98	21.39 + a
Four axle trucks, heavy duty trailer (up to 40 tons)	29.03	21.39 + a

Four axle ready-mix	29.08	21.39 + a
Heavy duty trailer (40 tons and over)	29.28	21.39 + a
Specialized earth moving equipment other than conventional type on-the road trucks and semi-trailer (including Euclids)	29.08	21.39 + a
----POWER EQUIPMENT OPERATORS----		
Group 1: Crane handling or erecting structural steel or stone, hoisting engineer (2 drums or over), front end loader (7 cubic yards or over), Work Boat 26 ft. & Over, Tunnel Boring Machines. (Trade License Required)	38.55	23.55 + a
Group 2: Cranes (100 ton rate capacity and over); Excavator over 2 cubic yards; Piledriver ($3.00 premium when operator controls hammer); Bauer Drill/Caisson. (Trade License Required)	38.23	23.55 + a
Group 3: Excavator/Backhoe under 2 cubic yards; Cranes (under 100 ton rated capacity), Gradall; Master Mechanic; Hoisting Engineer (all types of equipment where a drum and cable are used to hoist or drag material regardless of motive power of operation), Rubber Tire Excavator (Drott-1085 or similar);Grader Operator; Bulldozer Fine Grade (slopes, shaping, laser or GPS, etc.). (Trade License Required)	37.49	23.55 + a

Project: Golf Course Improvements At Oak Hills Park/Golf Course

Group 4: Trenching Machines; Lighter Derrick; Concrete Finishing Machine; CMI Machine or Similar; Koehring Loader (Skooper)	37.10	23.55 + a
Group 5: Specialty Railroad Equipment; Asphalt Paver; Asphalt Spreader; Asphalt Reclaiming Machine; Line Grinder; Concrete Pumps; Drills with Self Contained Power Units; Boring Machine; Post Hole Digger; Auger; Pounder; Well Digger; Milling Machine (over 24" Mandrell)	36.51	23.55 + a
Group 5 continued: Side Boom; Combination Hoe and Loader; Directional Driller.	36.51	23.55 + a
Group 6: Front End Loader (3 up to 7 cubic yards); Bulldozer (rough grade dozer).	36.20	23.55 + a
Group 7: Asphalt Roller; Concrete Saws and Cutters (ride on types); Vermeer Concrete Cutter; Stump Grinder; Scraper; Snooper; Skidder; Milling Machine (24" and Under Mandrel).	35.86	23.55 + a
Group 8: Mechanic, Grease Truck Operator, Hydroblaster, Barrier Mover, Power Stone Spreader; Welder; Work Boat under 26 ft.; Transfer Machine.	35.46	23.55 + a
Group 9: Front End Loader (under 3 cubic yards), Skid Steer Loader regardless of attachments (Bobcat or Similar); Fork Lift, Power Chipper; Landscape Equipment (including hydroseeder).	35.03	23.55 + a

As of: Wednesday, July 06, 2016

Project: Golf Course Improvements At Oak Hills Park/Golf Course

Group 10: Vibratory Hammer, Ice Machine, Diesel and Air Hammer, etc.	32.99	23.55 + a
Group 11: Conveyor, Earth Roller; Power Pavement Breaker (whiphammer), Robot Demolition Equipment.	32.99	23.55 + a
Group 12: Wellpoint Operator.	32.93	23.55 + a
Group 13: Compressor Battery Operator.	32.35	23.55 + a
Group 14: Elevator Operator; Tow Motor Operator (Solid Tire No Rough Terrain).	31.21	23.55 + a
Group 15: Generator Operator; Compressor Operator; Pump Operator; Welding Machine Operator; Heater Operator.	30.80	23.55 + a
Group 16: Maintenance Engineer/Oiler	30.15	23.55 + a

Group 17: Portable asphalt plant operator; portable crusher plant operator; portable concrete plant operator.	34.46	23.55 + a
Group 18: Power Safety Boat; Vacuum Truck; Zim Mixer; Sweeper; (minimum for any job requiring CDL license).	32.04	23.55 + a

**NOTE: SEE BELOW

----LINE CONSTRUCTION----(Railroad Construction and Maintenance)----

20) Lineman, Cable Splicer, Technician	45.43	6.25% + 20.70
21) Heavy Equipment Operator	40.89	6.25% + 18.56
22) Equipment Operator, Tractor Trailer Driver, Material Men	38.62	6.25% + 17.99

23) Driver Groundmen	24.99	6.25% + 11.81
23a) Truck Driver	34.07	6.25% + 16.60
----LINE CONSTRUCTION----		
24) Driver Groundmen	30.92	6.5% + 9.70
25) Groundmen	22.67	6.5% + 6.20
26) Heavy Equipment Operators	37.10	6.5% + 10.70
27) Linemen, Cable Splicers, Dynamite Men	41.22	6.5% + 12.20

28) Material Men, Tractor Trailer Drivers, Equipment Operators	35.04	6.5% + 10.45

Welders: Rate for craft to which welding is incidental.

**Note: Hazardous waste removal work receives additional $1.25 per hour for truck drivers.*

***Note: Hazardous waste premium $3.00 per hour over classified rate*

ALL Cranes: When crane operator is operating equipment that requires a fully licensed crane operator to operate he receives an extra $3.00 premium in addition to the hourly wage rate and benefit contributions:

1) Crane handling or erecting structural steel or stone; hoisting engineer (2 drums or over)

2) Cranes (100 ton rate capacity and over) Bauer Drill/Caisson

3) Cranes (under 100 ton rated capacity)

Crane with 150 ft. boom (including jib) - $1.50 extra
Crane with 200 ft. boom (including jib) - $2.50 extra
Crane with 250 ft. boom (including jib) - $5.00 extra
Crane with 300 ft. boom (including jib) - $7.00 extra
Crane with 400 ft. boom (including jib) - $10.00 extra

All classifications that indicate a percentage of the fringe benefits must be calculated at the percentage rate times the "base hourly rate".

Apprentices duly registered under the Commissioner of Labor's regulations on "Work Training Standards for Apprenticeship and Training Programs" Section 31-51-d-1 to 12, are allowed to be paid the appropriate percentage of the prevailing journeymen hourly base and the full fringe benefit rate, providing the work site ratio shall not be less than one full-time journeyperson instructing and supervising the work of each apprentice in a specific trade.

~~Connecticut General Statute Section 31-55a: Annual Adjustments to wage rates by contractors doing state work ~~

The Prevailing wage rates applicable to this project are subject to annual adjustments each July 1st for the duration of the project.

Each contractor shall pay the annual adjusted prevailing wage rate that is in effect each July 1st, as posted by the Department of Labor.

It is the contractor's responsibility to obtain the annual adjusted prevailing wage rate increases directly from the Department of Labor's website.

The annual adjustments will be posted on the Department of Labor's Web page: www.ct.gov/dol.

The Department of Labor will continue to issue the initial prevailing wage rate schedule to the Contracting Agency for the project.

All subsequent annual adjustments will be posted on our Web Site for contractor access.

Contracting Agencies are under no obligation pursuant to State labor law to pay any increase due to the annual adjustment provision.

Project: Golf Course Improvements At Oak Hills Park/Golf Course

Effective October 1, 2005 - Public Act 05-50: any person performing the work of any mechanic, laborer, or worker shall be paid prevailing wage

All Person who perform work ON SITE must be paid prevailing wage for the appropriate mechanic, laborer, or worker classification.

All certified payrolls must list the hours worked and wages paid to All Persons who perform work ON SITE regardless of their ownership i.e.: (Owners, Corporate Officers, LLC Members, Independent Contractors, et. al)

Reporting and payment of wages is required regardless of any contractual relationship alleged to exist between the contractor and such person.

~~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 clause (29 CFR 5.5 (a) (1) (ii)).

Please direct any questions which you may have pertaining to classification of work and payment of prevailing wages to the Wage and Workplace Standards Division, telephone (860)263-6790.

Oak Hills Park Golf Course

165 Fillow Street
Norwalk, Connecticut 06850

GOLF COURSE CONSTRUCTION
TECHNICAL SPECIFICATIONS

May 24, 2016

Prepared by:

BROAD VISION • CAREFUL THOUGHT • HAND-CRAFTED DESIGN
118 Beauchamp Drive
Saunderstown, Rhode Island 02874
phone: 401-667-4994
fax: 401-667-4995
email: design@northeastgolfcompany.com
website: www.northeastgolfcompany.com

Prepared for:
Oak Hills Park Authority
Oak Hills Park Golf Course
165 Fillow Street
Norwalk, Connecticut 06850

GOLF COURSE CONSTRUCTION
TECHNICAL SPECIFICATIONS

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PREFACE

1. The General Conditions of the Contract for Construction GCC201, Special Conditions, Contractor Agreement, Golf Course Construction Technical Specifications and the Golf Course Construction Plans prepared by the GOLF COURSE ARCHITECT and PROJECT ENGINEER shall govern construction of the various items of work to be done.

2. The word "CITY" shall herein refer to **City of Norwalk, Connecticut**. The CITY will be represented on the project by the Building and Facilities Manager , **Mr. Alan Lo**.

3. The word AUTHORITY shall herein refer to the **Oak Hills Park Authority**. The AUTHORITY will be represented on the project by Mr. Ernie DesRochers.

4. The word "ARCHITECT" or "GOLF COURSE ARCHITECT" shall herein apply to ***The Northeast Golf Company*** represented by **Mr. Robert McNeil, ASGCA.**

5. The words "GOLF COURSE SUPERINTENDENT" shall herein refer to **Mr. Jim Schell**, employed as and titled Golf Course Superintendent at the Oak Hills Park Golf Course facility.

6. The words "GOLF PROFESSIONAL" shall herein refer to **Mr. Edward Ruiz**, employed as and titled Golf Professional at the Dennis Pines Golf Course facility.

7. The words "IRRIGATION CONSULTANT" shall herein refer to ***Turf Products Corporation, Enfield, CT*** represented by **Mr. Peter Hull.**

8. The words "CONSTRUCTION MANAGER" shall herein refer to Construction Manager hired by the CITY to handle Project Management tasks represented on the project

9. The word "CONTRACTOR" shall mean GOLF COURSE CONTRACTOR and all SUBCONTRACTORS.

10. Additional technical specification or changes to the golf course construction plans will be established through addendum.

PROJECT PREPARATION

GENERAL GUIDELINES

The start and completion dates as outlined in the Notice to Bidders section must be followed. Failure to adhere to these dates for reasons other than weather , natural occurrence or direction by the CITY, shall result in the enforcement of a $300.00 per day penalty until completion. It is the intent and the objective of the CITY to execute this project with minimal disruption to the golf operation.

In order to maintain a responsible relationship with the surrounding community, work hours will be from 7AM to 5PM when it is foreseen that noise will penetrate these communities in a negative manner. If and as agreed upon and directed by the CITY, Saturday and Sunday work hours will be permissible. In all cases local work hour ordinances shall apply.

The CONTRACTOR shall contain his work to specified holes to limit damage to the course and to limit the interruption to daily play (typically not more than 3 holes). The CITY, GOLF COURSE ARCHITECT, AUTHORITY, and CONTRACTOR will produce a schedule of execution in concert with the objectives of the Club prior to the start of work.

The CONTRACTOR shall present the CITY with an acceptable certificate of insurance before commencing work and will be bonded for the entire amount of the agreed amount of the contract.

The CONTRACTOR will supply the CITY, AUTHORITY, CONSTRUCTION MANAGER and the GOLF COURSE ARCHITECT with a weekly construction progress report to be used for work completion approvals and payment approvals.

MOBILIZATION

It is the responsibility of the CONTRACTOR to furnish materials, labor, equipment, etc., required to begin all operations necessary for the development of the golf course improvements in accordance with the contract drawings, and specifications within terms of the contract.

The CITY is responsible for any permits necessary to do the work.

The CONTRACTOR is responsible for the purchase and storage of all construction materials including; (drainage pipe, stone, irrigation materials and equipment, tee/green rootzone, asphalt, concrete, topsoil, fill material, specified seed and sod, and all other necessary materials to complete the enhancement project).

The CONTRACTOR shall provide a Construction Trailer at the work site for the purposes of project administration, communications and storage.

The CONTRACTOR shall provide portable lavatory facilities for employee use. The CONTRACTOR shall be responsible for weekly service of said facility.

The CONTRACTOR is responsible for all equipment and labor necessary to efficiently complete the work; the CITY'S equipment and manpower are not to be used for the completion of the work unless agreed upon between the CONTRACTOR and the CITY.

The CITY shall provide the CONTRACTOR with an area to store materials and equipment throughout the duration of the work period. This area is to be restored to its original condition upon completion of the work.

The CITY shall not be responsible for the equipment stored on the CITY'S property; this will be the responsibility of the CONTRACTOR.

The CONTRACTOR shall provide a dumpster of ample size on each work site as needed for the disposal of all project related refuse to be serviced in a timely manner throughout the course of the project.

ACCESS

The project may be accessed from the main entry road Charles Marshall Drive. All access points including those listed, must be reviewed and approved by the CITY prior to use to ensure any necessary coordination, scheduling and signage.

Internal access shall be along the existing cart path system. Holes 1-7 have existing systems. Holes 8, 9, 10 shall be along proposed cart path locations where possible. Hole 11 shall be along existing cart path, Hole 12 shall be along service path along left side of hole. Holes 13-18 shall be along existing cart paths. Hole 17 Green and 18 Tee may be accessed from rear of Maintenance Area. Work access to each area shall be reviewed prior to any construction equipment traversing the golf course. In all cases protective measures and care, including ½"-¾" plywood, shall be taken to minimize any damage to existing turf.

STAGING

Material/equipment staging shall be at specified areas within the golf course property as defined in the field by the CITY, GOLF COURSE ARCHITECT and CONSTRUCTION MANAGER. These include specified areas within the maintenance facility parking lot, main parking lot, and at designated areas within the practice range area. Other approved vacant areas along the holes may be considered with CITY approval. In all instances, the CITY shall review and approve material and equipment staging areas. CONTRACTOR shall coordinate with the CITY to assign specific areas for such use.

LAYOUT AND STAKING

The CONTRACTOR shall establish all significant layout points from the Golf Course Construction Plans supplied by the GOLF COURSE ARCHITECT. The GOLF COURSE ARCHITECT shall verify, adjust, and/or approve all points prior to construction. These points shall define and direct the placement of all features and shall be maintained by the CONTRACTOR throughout construction.

Work Areas are defined in the construction drawings by the GOLF COURSE ARCHITECT and are to be established in the field by the CONTRACTOR. These points are to be marked with 2X2X4 LATHE STAKES, pin flags, paint, or approved equivalent, appropriately labeled with semi-permanent marker and flagged with surveyor's ribbon. The maintenance of these points are the responsibility of the CONTRACTOR and are to be maintained throughout construction. The GOLF COURSE ARCHITECT reserves the right to adjust the staking in the field as the project proceeds and as design directives dictate.

The CONTRACTOR will supply appropriate Pin Flags, Marking Paints, Paint Gun, Ribbon, and Lathe Stakes which must be immediately available on site, <u>in ample supply at all times</u> for use by the GOLF COURSE ARCHITECT.

The CONTRACTOR will have on site at all times an appropriate grade surveying instrument and capable operator for use in field verification situations. It is the intent of the GOLF COURSE ARCHITECT to field verify any and all grades considered of importance to the success of the project. Areas verified will include tee and green surfaces and subgrades and constructed swales, subsurface drainage and basins.

Benchmark elevations may be available throughout the property. If these elevations are not available the CONTRACTOR shall work off of surveyed spot elevations as shown on the plans and develop the feature work relative to these elevations (if available). The CONTACTOR and GOLF COURSE ARCHITECT will work closely to ensure the elevations are consistent with the intent of the design. In the case where no topographical survey mapping is available the CONTRACTOR shall establish spot elevations in the field from which to develop the work and to confirm slope and pitch of drainage pipe.

EROSION CONTROL

Erosion control measures shall be practiced and maintained as called for in Golf Course Construction Plans.

Description- This work shall consist of the construction and maintenance of various temporary soil erosion and sediment control measures, including relocating them as required for staged construction.

MATERIALS

Haybales shall be bound with wire or baling twine. The twine shall be an ultraviolet light stabilized polypropylene that has a knot strength of 170 pounds and straight break strength of 300 pounds.

Wood stakes, posts, and boards shall be solid, reasonably knot-free lumber conforming to the nominal size specified on the Plans.

Temporary riprap stones shall consist of a designated median stone (d_{50}) size in the range of 6 to 9 inches.

Coarse aggregate shall consist of broken stone or washed gravel.

Pipe for temporary slope drains shall be a minimum size of 8 inches. End sections and elbows shall be of the same material as the pipe to which they are to be joined.

CONSTRUCTION

The Contractor shall incorporate all permanent pollution control features into the Project at the earliest practicable time. Temporary soil erosion and sediment control measures shall be coordinated with the permanent pollution control features and with the construction of pavement, drainage facilities such as pipes, culverts, headwalls, channels, or ditches to the maximum extent practical to ensure economical, effective, and continuous erosion control throughout the life of the Contract.

Before all grubbing operations, soil erosion and control measures shall be installed. When unstabilized areas caused by site development, grading, or other earth disturbing activities exist beyond 14 calendar days, the areas disturbed shall be seeded and mulched. These requirements pertain to perimeter controls, berms, dams, swales, ditches, and slopes. Upon completion of the grading or construction, disturbed areas shall be permanently stabilized within seven calendar days.

When excavation or embankment construction reaches the finished subgrade, those areas on which paving is to be placed are exempt from the above stabilization requirements. Roadways and haul roads actively being used for daily conveyance of equipment, as well as areas between temporary berms, except median areas, are also exempt.

Streams shall be protected from soil erosion and sediment. Streams being diverted shall be protected through the use of silt fences. Temporary diversion channels shall be lined with geotextile fabric and temporary riprap.

The turbid discharge from dewatering construction activities shall be contained in a dewatering basin to control sediment and provide filtration of water before it being released into adjacent streams or other watercourses.

Soil being stockpiled shall be placed in well-drained areas no closer than 50 feet from streams, wetlands, floodplains, and other watercourses, unless otherwise directed. The stockpiles shall be seeded and mulched. Adequate temporary soil erosion and sediment controls shall be provided around the stockpiles until such time as vegetation is established on the piles.

Temporary soil erosion and sediment control measures shall be used to correct conditions that develop during construction that were not foreseen during design, and may include construction work outside of the Project limits.

In the event that temporary soil erosion and sediment control measures are required due to the Contractor's failure, for any reason, to install or maintain soil erosion and sediment controls, either as part of the work or as directed, such work shall be performed by the Contractor at no cost to the State.

If the Contractor is not in compliance with soil erosion and sediment control provisions, corrective actions shall be taken immediately. The CITY may suspend the work, wholly or in part, until such time as the Contractor is fully in compliance. All corrective and remedial work required to bring the Contractor into compliance shall be performed at no cost to the State.

Temporary soil erosion and sediment control measures shall be removed when necessary to allow for the installation of permanent control features, or as permanent controls become functional. Before Acceptance, all items used for temporary soil erosion and sediment control shall be removed unless the Engineer directs that specific items remain in place.

Soil Erosion and Sediment Control Manager.

The Contractor shall assign to the Project a supervisory-level employee to serve in the capacity of soil erosion and sediment control manager. This employee shall be thoroughly experienced in all aspects of soil erosion and sediment control and construction. The Contractor shall submit the name and applicable experience of this employee to the Engineer for approval at least fourteen calendar days before commencing any work on the Project. Any change in the appointment of the soil erosion and sediment control manager during the term of the Contract shall require a written submission and approval.

The soil erosion and sediment control manager shall have the primary responsibility and sufficient authority for implementing the approved soil erosion and sediment control schedules and methods of operations. The soil erosion and sediment control manager shall coordinate its operations with the CITY, and shall oversee and supervise all aspects of soil erosion and sediment control on the Project. This includes both on-site and off-site activities, including those involving subcontractors.

The soil erosion and sediment control manager will be required to attend all soil erosion and sediment control meetings held during the life of the Project.

Limitations of Operations.

Clearing and grubbing operations shall be so scheduled and performed that grading and mulching, seeding, and other permanent pollution control features can follow immediately thereafter according to the approved progress schedule. Should seasonal limitations make such coordination unrealistic, additional temporary soil erosion and sediment control measures shall be required between successive construction stages, as directed.

The amount of surface area of erodible earth material exposed at one time by clearing and grubbing, excavation, borrow, or fill operations, without stabilization, shall not exceed 17 acres for clearing and grubbing operations, or 17 acres for grading operations without prior approval. The CITY may increase or decrease these amounts commensurate with the Contractor's capability and progress in keeping the construction current with the approved progress schedule.

Soil Erosion and Sediment Control Measures.

A. Silt Fence. Silt fence shall consist of geotextile fabric at least 3 feet wide to provide for a 2-foot high fence after 1 foot of fabric is buried in the existing soil. Heavy duty silt fence shall consist of geotextile fabric at least 4 feet wide to provide for a 3-foot high fence after 1 foot of fabric is buried in the existing soil. Sections of fabric shall be overlapped a minimum of 1 foot - 6 inches then joined in such a manner that, when in operation, the sections work effectively as a continuous fence. Fence posts shall be installed at a slight angle toward the anticipated runoff source.

Heavy-duty silt fence shall include a welded wire mesh backing for the geotextile fabric. This welded steel wire mesh shall be galvanized and contain 6-inch openings. The geotextile fabric shall be secured to the welded wire mesh.

B. Haybale Check Dams With Temporary Stone Outlets. Haybales shall be embedded 4 inches into the ground and anchored in place with two wood stakes per bale. The temporary stone outlets, consisting of riprap stones conforming to the requirements for temporary riprap, shall be placed in the center of each flow line. Coarse aggregate size No. 2 shall be placed immediately upgrade of each stone outlet.

The riprap stones and coarse aggregate shall be placed on geotextile fabric that shall be buried in the soil. When sections of geotextile fabric need to be joined, the sections shall be overlapped a minimum of 1 foot - 6 inches in the direction of flow.

C. Temporary Stone Check Dams. Temporary stone check dams shall be constructed in ditches to reduce flow velocity.

The check dams shall consist of riprap stones conforming to the requirements for temporary riprap. Coarse aggregate size No. 2 shall be placed immediately upgrade of each check dam.

The riprap stones and coarse aggregate shall be placed on geotextile fabric that shall be buried in the soil. When sections of geotextile fabric need to be joined, the sections shall be overlapped a minimum of 1 foot - 6 inches in the direction of flow.

D. Temporary Slope Drains. Temporary slope drains shall be installed on embankment slopes to intercept surface runoff where concentrated runoff will cause excessive erosion of the slope.

The drainpipe shall be staked to the slope or secured with riprap stones to prevent movement or displacement. A flared end section shall be attached at each end of the pipe, and elbows shall be installed as required to conform with the existing changes in slopes.

A temporary earth berm and haybales shall be constructed at the top of slope in the vicinity of the slope drain to intercept runoff and channel the runoff to the slope drain. The haybales shall be embedded 4 inches into the ground and anchored in place with two wood stakes per bale.

Riprap stones, conforming to the requirements for temporary riprap, shall be placed loosely at both ends of the pipe to prevent scour. The riprap stones shall be placed on geotextile fabric that, at the top of slope, shall be draped over the earth berm. When sections of geotextile fabric need to be joined, the sections shall be overlapped a minimum of 1 foot - 6 inches in the direction of flow.

E. Inlet Filters. Inlet filters, consisting of welded wire mesh and geotextile fabric shall be installed to control sedimentation at new inlet drainage structures. Inlet filters of geotextile fabric alone shall be installed to control sedimentation at existing inlet drainage structures.

For new inlet structures, welded steel wire mesh shall be molded around the inlet frames and grates, or inlet structures, and extend a minimum of 6 inches down each side of the new structures. Geotextile fabric shall then be secured to the welded wire mesh. Coarse aggregate size No. 8 shall be placed against the inlet structures to hold the inlet filter in place.

For existing inlet structures, geotextile fabric shall be placed under the grates, over the curb pieces, and extend a minimum of 6 inches beyond. Coarse aggregate size No. 8 shall be placed behind each curb piece and on the geotextile fabric to secure the fabric in place.

Openings required in new inlet walls to provide for temporary drainage shall be covered with welded wire mesh, geotextile fabric, and coarse aggregate size No. 8.

Inlet filters shall be removed the same day as scheduled paving operations.

F. Inlet Protection, Haybale Barrier. Inlet protection, haybale barrier shall consist of haybales that completely encircle inlet drainage structures. The perimeter length of the haybale barrier shall be at least four times the perimeter length of the inlet structure. Haybales shall not encroach into the traveled way.

Haybales placed around inlet structures within earthen areas shall be embedded 4 inches into the ground and anchored in place with two wood stakes per bale. Haybales placed around inlet structures within pavement areas shall only be placed on top of the pavement and tied together to prevent movement. Haybales placed on pavement areas shall not be anchored in place.

G. Inlet Sediment Traps. Inlet sediment traps, consisting of silt fence and temporary stone inlets, shall be constructed to control sedimentation at existing and new inlet drainage structures.

The silt fence shall consist of geotextile fabric whose width shall be at least 3 feet to provide for a 2-feet high fence after 1 foot of fabric is buried in the existing soil. Sections of fabric shall be overlapped a minimum of 1 foot - 6 inches then joined in such a manner that, when in operation, the sections work effectively as a continuous fence. The silt fence shall be installed around the drainage structure and meet into the stone inlets. Fence posts shall be installed at a slight angle toward the anticipated flow.

The temporary stone inlets, consisting of coarse aggregate size No. 2, shall be placed in each flow line upgrade of the inlet structure. The coarse aggregate shall be placed on geotextile fabric that shall be buried in the soil. When sections of geotextile fabric need to be joined, the sections shall be overlapped a minimum of 1 foot - 6 inches in the direction of flow.

H. Floating Turbidity Barriers. Floating turbidity barriers, consisting of 10 mil thick polyethylene plastic sheets suspended from floats, shall be installed in streams or other watercourses to intercept silt outletting from drainage pipes, or caused by construction operations within the waterways.

Barriers shall be located 50 feet from the point of discharge of drainage pipes, or from construction operations affecting the waterways. The barriers shall extend across the entire waterway or radially from the shore line.

I. Temporary Stone Outlet Sediment Traps. Temporary stone outlet sediment traps, consisting of temporary basins and riprap spillways, shall be constructed within existing, new, and temporary ditches.

The spillways shall consist of riprap stones conforming to the requirements for temporary riprap. Coarse aggregate size No. 2 shall be placed immediately upgrade of the spillways.

The riprap stones and coarse aggregate shall be placed on geotextile fabric that shall be buried in the soil. When sections of geotextile fabric need to be joined, the sections shall be overlapped a minimum of 1 foot – 6 inches in the direction of flow.

J. Dewatering Basin. Dewatering basins shall be constructed within the ROW of the Project and outside of any undisturbed wetland area, and areas not affected by roadway construction, as a dewatering containment measure to control sediment and provide filtration of water.

The Contractor shall size the dewatering basins to entirely contain the expected discharge of water and sediment based on the flow rate of the pump to be used and the volume of area to be dewatered. The material to be used to form the basin is at the discretion of the Contractor. The outfall of the basin shall be such that the water exiting the basin does not cause erosion to or scour the area onto which the water is being discharged.

Dust and Dirt Control Measures.

A. Dust Control. The Contractor shall employ construction methods and means that keep flying dust to the minimum. The Contractor shall also sprinkle water on the Project and on roads, streets, and other areas immediately adjacent to the Project limits, wherever pedestrian or vehicular traffic, or buildings that are occupied or in use are affected by such dust caused by the Contractor's hauling or other construction operations.

B. Dirt Control. The Contractor shall provide for prompt removal from existing roadways of all dirt and other materials that have been spilled, washed, tracked, or otherwise deposited thereon by its hauling and other operations whenever the accumulation is sufficient to cause the formation of mud, interfere with drainage, damage pavements, or create a traffic hazard.

To minimize tracking of dirt and other materials onto existing roadways, a construction driveway shall be constructed at locations where vehicles exit a work site.

The construction driveway shall consist of a layer of broken stone which shall be a minimum 4 inches thick and 100 feet long where practical, and of sufficient width to serve the intended purpose. The broken stone shall be 2½ inches nominal size, the driveway shall be maintained by top dressing with additional stone, as directed, and shall be removed when no longer required.

Soil Erosion and Sediment Control Maintenance.

Soil erosion and sediment control measures shall be maintained during the construction season as well as during winter months and other times when the Project is closed down, throughout the life of the Project, to ensure that the measures function properly. Soil erosion and sediment controls shall be immediately inspected after each rain, and any corrective work shall immediately be performed to return the soil erosion and sediment control measures to proper function, as directed. Riprap stones, coarse aggregate, silt fence, or haybales damaged due to washouts or siltation shall be replaced as directed.

Sediment traps and basins shall be cleaned out when they are 50 percent filled. Silt fences, stone outlet structures, dams, and haybales shall have sediment removed when the sediment reaches 50 percent of the height of the soil erosion and sediment control measure. Sediment removed shall be disposed of as directed on site.

The Contractor shall maintain the floating turbidity barrier by cleaning it periodically and keeping it free from debris to ensure its proper function throughout the duration of the Project, at no additional cost to the State.

COMPENSATION

Method of Measurement.

Silt fence of the various types will be measured by the linear foot.
Haybale check dams with temporary stone outlets will be measured by the linear foot.
Temporary stone check dams will be measured by the cubic yard.
Temporary slope drains will be measured by the linear foot.
Inlet filters will be measured by the unit.
Inlet protection, haybale barriers will be measured by the unit. A unit shall consist of the total number of haybales necessary to encircle the inlet structure.
Inlet sediment traps will be measured by the unit.
Floating turbidity barriers will be measured by the linear foot.
Temporary stone outlet sediment traps of the various sizes will be measured by the unit.
Dewatering basins will be measured by the unit.
Construction driveway will be measured by the ton.
Roadway excavation, temporary erosion control, required for the construction of temporary berms and ditches, and required for maintenance clean-out of the various soil erosion and sediment controls will be measured by the cubic yard.
Embankment, temporary erosion control, required for the construction of temporary berms and ditches, will be measured by the cubic yard.
Temporary riprap for ditches and channels will be measured by the cubic yard. Geotextile for ditches and channels will be measured by the square yard.
Haybales required as directed and for maintenance replacement of bales for the various soil erosion and sediment controls will be measured by the unit.

Basis of Payment.

Payment will be made under:

Pay Item	*Pay Unit*
SILT FENCE	LINEAR FOOT
HEAVY DUTY SILT FENCE	I & WD */LF
STOCKPILE TEMPORARY SOIL STABILIZATION	UNIT/LS
TREE PROTECTION	PER TREE
CONSTRUCTION DRIVEWAY	UNIT
HAYBALES	UNIT
DRAINAGE OUTFALL WITH RIP RAP	I & WD */LF
MAINTENANCE OF SE&SC DEVICES	LUMP SUM

* IF AND WHERE DIRECTED

Payment for silt fence or heavy duty silt fence, for maintenance replacement for the various soil erosion and sediment controls, will be made under their respective “Silt Fence” Pay Item.

Payment for top dressing of construction driveways with additional stone will be made under the Pay Item “Construction Driveway.”

Separate payment will not be made for dust control. All costs thereof shall be included in the prices bid for the various Pay Items scheduled in the Proposal.

LIMITS OF DISTURBANCE

SCOPE

The CONTRACTOR shall remove all sod, sand, asphalt, gravel, wood, debris from within limits of disturbance. All topsoil within limits of disturbance shall be stockpiles proximate to work area (within limits) so as not to impede proposed improvements as delineated on the Golf Course Construction Plans. The CONTRACTOR shall remove fences, shrubs, other vegetation, rubbish, and any perishables or objectionable matter, in the areas to be disturbed. All debris shall be disposed of in a legal manner. Other obstructions shall be removed to the limits of the disturbed area of work as shown on the Construction Plans.

LIMITS OF DISTURBANCE

It is the intent of the GOLF COURSE ARCHITECT to disturb as little of the existing conditions as possible. The limits of disturbance is defined in the Golf Course Construction Plans, and must be clearly marked in the field by the CONTRACTOR, as well as approved by the GOLF COURSE ARCHITECT before general clearing and/or stripping for feature work can begin.

The CONTRACTOR may not excessively disturb areas beyond the limits of disturbance in any way. It should be understood that tie-in work necessary beyond the limits of disturbance is acceptable, but does not entitle the CONTRACTOR to any additional compensation. If circumstances occur where the CONTRACTOR feels excessive disturbance is necessary approval by the GOLF COURSE ARCHITECT and the CITY must be obtained. In the event the CONTRACTOR does not receive approval, a fine of $1.50 per square foot of disturbed area will be assessed to the CONTRACTOR, and revegetation or restoration of the impacted area to its original state will be necessary, at the CONTRACTOR'S expense. This restoration will coincide with the seeding and sodding of the improved areas.

The intent of the fine and required restoration or revegetation is to inform all involved in the project that the areas that are to remain undisturbed stay that way. Our desire is to ensure that the golf course blends perfectly with the existing terrain of the site. All vehicular movement around the golf course shall be along the existing cart paths only and along approved traffic areas as delineated in the field by the GOLF COURSE SUPERINTENDENT. Access to work areas within fairway areas shall be over ½ to ¾ inch plywood so as to minimize damage to the existing turf. Any damage caused by vehicles or construction equipment traveling in all areas of the golf course will be restored to the original condition, at the CONTRACTOR’S expense, including access roads. Areas to be repaired, if damaged, include turf areas, cart paths, curbing, or any other areas on the golf course.

Before the commencement of each phase, the CONTRACTOR, CONSTRUCTION MANAGER, GOLF COURSE SUPERINTENDENT and GOLF COURSE ARCHITECT will review entry, exits and traffic areas for each hole. Under no circumstance will the CONTRACTOR be allowed to choose a path to accomplish his work .

REMOVALS

TREE REMOVAL

All trees removed by the CONTRACTOR shall be taken off the site for disposal or to the designated storage area and reduced to wood chips and removed from the site as directed by the CITY. Logs may be up to 30' in length and removed with logging equipment along specified access roads. At no time shall tree debris or logs be dragged across the property when in transport. Any and all damage caused by tree removal work shall be repaired and restored to preconstruction conditions. All cut logs shall be no longer than 24" long. All stumps shall be removed or ground as directed by GOLF COURSE ARCHITECT and CITY. All leaves, branches, and other debris shall be cleaned up and removed from the site as directed by the CITY.

Local tree removal ordinance shall govern all tree removal on the site. All trees for removal shall be marked by City for 10 day waiting period prior to removal.

Maintenance Staff shall reduce logs to firewood for donation to City where reasonable.

All Tulip and Pine trees shall be removed from site.

REFUSE/CONSTRUCTION MATERIALS

The CONTRACTOR is responsible for disposal of their own refuse, i.e. old pallets, paper materials, packaging material, lumber, and other construction related material. This material must be removed from the site by truck or project dumpster and disposed of at the CONTRACTOR'S expense.

ASPHALT CART PATH

The CONTRACTOR is responsible for the disposal of all asphalt or concrete removed during construction. This material must be removed from the site by truck or dumpster and disposed of in a legal manner at the CONTRACTOR'S expense to nearest recycling plant.

EXCESS FILL

Any excess fill shall be hauled to the designated storage area at the practice facility or "Great Lawn" areas as directed by the CITY at the expense of the CONTRACTOR (included within bid).

GRAVEL CART PATH

The material of existing gravel cart pathways to be paved with asphalt may be reused as subbase if said material meets the construction specifications outlined within (CART PATH CONSTRUCTION). All gravel shall be removed from areas to be finished graded, topsoiled and grassed.

CHAIN LINK FENCE (<u>if necessary</u>)

The CONTRACTOR is responsible for the disposal of all chain link fence removed during construction. This material must be removed from the site by truck or dumpster and disposed of at the CONTRACTOR'S expense.

SPLIT RAIL FENCE

The CONTRACTOR is responsible for the disposal of all split rail fence removed during construction. This material must be removed from the site by truck or dumpster and disposed of legally at the CONTRACTOR'S expense. The CONTRACTOR may be required to stockpile removed split rail fencing at the Maintenance Area, at the request of the CITY, for future use.

OLD BUNKER SAND

The CONTRACTOR is responsible for the removal and disposal of all sand within existing bunkers. This sand is to be removed from bunkers and trucked to approved disposal or stockpiling areas at the practice facility as directed by the CITY and GOLF COURSE ARCHITECT. At the discretion of the CITY and per field conditions, old bunker sand may be used for specific drainage trench filling, irrigation pipe shading, or blended with soils to produce acceptable subgrade material.

OLD DRAINAGE PIPE

The CONTRACTOR is responsible for the removal and disposal of all old drainage pipe. This may include polyethylene, corregated metal, clay tile, reinforced concrete, pvc or any other type of drainage or utility piping found on the site. This material must be removed from the site by truck or dumpster and disposed of off-site at the CONTRACTOR'S expense

OLD DRAINAGE STONE

The CONTRACTOR is responsible for the removal and disposal of all old drainage stone found within the bunkers or in any other proposed work area on the property. This material must be removed from the site by truck or dumpster and legally disposed of at the CONTRACTOR'S expense unless otherwise directed by the CITY. If directed, old drainage stone may be delivered to fill areas at the practice area.

SOD/TURF

The CONTRACTOR is responsible for the removal and disposal of all sod removed from around bunkers or within drainage trenches that is deemed unusable or was not intended for reuse. This material is to be removed from bunkers and trucked to approved disposal or stockpiling areas at the practice facility dump as directed by the CITY and GOLF COURSE ARCHITECT. .

TOPSOIL MATERIAL MANAGEMENT

SCOPE

The work covered under this section consists of furnishing all labor, equipment, materials, and performing all operations in connection with the stripping, stockpiling, screening and replacing of existing topsoil material within the work areas or importing from on or off-site locations, and hauling of fill material from designated borrow areas on the site.

MATERIALS

Topsoil Materials - Topsoil material shall be a good quality sandy loam soil, free from lumps, sod, stones or debris of any kind, satisfactory to the GOLF COURSE ARCHITECT, and shall be the best available on the site. If quality material is not available within work limits or on-site, see (Shortage) section below. Topsoil material shall contain no stone larger than one-half (1/2) of an inch in diameter. **If required, screening of the site topsoil material will be necessary to eliminate rock and debris inconsistent with the desired specification. The following criteria for screened topsoil material must be met:**

U.S. Standard Sieve	Percent (%) Retained
Size #4(4.00mm)	0.0
Size #7(2.83mm)	No More Than 20%
Size #8(1.00mm)	No More Than 20%
Size #140 (0.11mm)	No More Than 85%
Silt - 0.002-05mm	Less Than 8%
Clay	Less Than 2%

STRIPPING AND STOCKPILING

Overall, the grading intent is to disturb a minimum of area. It is also the intent of the design to utilize existing material from within work areas where possible. In the areas of heavy cuts or fills, the CONTRACTOR must salvage any topsoil material available, accomplish the grading, and respread the topsoil material at a depth of six (6) inches. Any topsoil material that must be stockpiled or stored while work is conducted shall be done so in an area that does not impair drainage or construction of the golf feature and is in accordance with the local Soil Conservation requirements. Should additional fill material or topsoil material be needed, the GOLF COURSE ARCHITECT and CITY will determine a borrow site. **Hauling from any designated borrow area on the site to the work areas is included as a line item within the itemized bid form.**

SHORTAGE

It is the CONTRACTOR'S responsibility to salvage all of the fill and topsoil material available within the work limits. It is also the responsibility of the CONTRACTOR to develop accurate calculations of all required materials needed to meet any shortage of fill or topsoil material. The CITY and/or the CONTRACTOR will investigate all reasonable sources of on-site and off-site material. The CONTRACTOR shall include within the bid the quantity of import and unit cost necessary to complete the project. This includes all fill material and topsoil. All off-site topsoil

and fill material shall meet the specification standards set forth within this and the Shaping and Feature Construction Sections of this document. The CITY may have stockpiled fill available on site for use within the scope of the project. It is intended that the work within each feature be balanced with potential needs at removal and reshaping areas. Tee complex development and expansion will required approved fill for completion.

Costs associated with shaping and feature construction shall be inclusive of all material handling {excavation, rough earthwork, (*on site*)}. This includes work beyond the Limits of Disturbance as shown on the plans and marked in the field deemed <u>necessary to execute proper tie-ins to existing grades</u>. The CONTRACTOR shall not be entitled to additional compensation for this tie-in work unless determined as extensive following review by the CITY and GOLF COURSE ARCHITECT prior to the commencement of said work.

ROUGH EARTHWORK

SCOPE

The work covered under this section consists of furnishing all labor, equipment and materials, and performing all operations in connection with the manipulation of soil or dirt throughout the site and rough grading as required by the plans and following specifications. **(This section applies to New Bunker, Tee Construction, Cart Path Construction and Bunker Removal only)**

BEFORE ANY GRADING IS TO OCCUR WITHIN ANY GREEN, BUNKER OR TEE COMPLEX, OR CART PATH THE GOLF COURSE ARCHITECT, THE CITY AND THE CONTRACTOR MUST REVIEW THE WORK THAT IS TO BE DONE. This should be done on a hole by hole basis based on the schedule of execution. The intent is to further insure that the CONTRACTOR understands the design intent prior to the commencement of work. By reviewing the work prior, it may be possible to lessen the grading in some areas. The real advantage is that the GOLF COURSE ARCHITECT, the CITY and CONTRACTOR are working together to properly build each feature. The result should be a well-coordinated effort.

MATERIALS

Fill - Fill, when and as required, shall be a good quality fill material, free from debris of any kind, shall be of a type suitable for the purpose intended, satisfactory to the GOLF COURSE ARCHITECT, and shall be the best available on the site. A possible borrow source will be identified by the CITY.

EXCAVATION

Excavation areas are to be completed in accordance with the Construction Plans supplied by the GOLF COURSE ARCHITECT. The material excavated shall be used as fill on the golf course if suitable for the purpose, and satisfactory to the GOLF COURSE ARCHITECT. If the material is determined to be unsuitable as fill, the CONTRACTOR shall regrade the test area to its original condition or an acceptable condition that is properly tied into surrounding grade and seed.

If an excavation site is utilized on the site, reparation of all excavation (borrow areas) shall be completed by the CONTRACTOR and included within the bid proposal. All excavation areas shall be regraded to tie into existing surrounds, finished and seeded to match the preexcavation conditions as closely as possible.

GRADING

Grading consists of the mechanical manipulation of existing land or soil to achieve the limits of cut, fill, and required elevations as designated in the Construction Plans or in the field by the GOLF COURSE ARCHITECT.

Fills shall be free of debris and properly compacted. Fill shall be placed in six (6) inch layers and compacted with equipment approved by the GOLF COURSE ARCHITECT. The top twelve-(12) inches of the fill shall contain no stones more than two (2) inches in diameter. The soil shall be treated and worked so as to be damp but not wet. Fill in areas under roads or paved

areas shall be compacted to not less than ninety-five percent (95%) maximum density at optimum moisture as determined by ASTM D-698. Borrow areas, if required, in addition to proposed cuts shown on the plans, shall be approved by the GOLF COURSE ARCHITECT.

It is the intent of the CITY and GOLF COURSE ARCHITECT that all work areas be well-drained, playable, and fit comfortably within their surroundings. The CONTRACTOR shall maintain adequate drainage of surface water during construction from all areas on the site, **whether included in his work or not.**

IMBALANCE IN DESIGNATED CUT AND FILLS

Should the grading plan reflect an imbalance in cut and fills, the GOLF COURSE ARCHITECT shall indicate a "borrow area" to overcome a shortage of cut and/or a "disposal area" to accommodate any excess of fill. It is the intent to have no import or export from the site. Hauling and movement of material from and within the property is included within the bid proposal and shall not result in additional cost incurred by the CITY. (see Excavation above/ see Limits of Disturbance above)

GOLF COURSE ARCHITECT'S LICENSE

All work areas affecting the appearance and function of the course may be lowered or raised upon the request of the GOLF COURSE ARCHITECT. The meaning of the above sentence is that after feature has been rough graded, it may have to be rebuilt to satisfy the design objectives of the GOLF COURSE ARCHITECT. Material cut in such adjustments will be placed as directed by the GOLF COURSE ARCHITECT. No additional costs shall be incurred by the CITY for such adjustments, when given on a timely basis, shortly following the initial grading. Prior to acceptance of any feature by the GOLF COURSE ARCHITECT, the feature must adhere to the GOLF COURSE ARCHITECT'S design intent. Each and every phase of work must be approved prior to the next phase of work beginning.

DENSITY REQUIREMENTS

Compact each layer of embankment and fill material to the following percentages of maximum density at or slightly above optimum moisture content as determined by ASTM-D698 (Standard Proctor Density).

Golf Course Corridors (except as modified herein)	= 80 percent
Lakes, Ponds and Dams	= 95 percent

ADJUSTMENT FOR AN ERROR IN CONTOURING

In figuring depths of cuts or fills, contours shown in the drawings shall be assumed to be correct unless the CONTRACTOR notifies the GOLF COURSE ARCHITECT to the contrary before any cut, fill or excavation is made. The CONTRACTOR shall make contour adjustment as may be required and approved by the GOLF COURSE ARCHITECT to correct an error at no additional cost.

UTILITIES

The CONTRACTOR shall seal all utility lines or tile lines broken in the course of excavation and not required for service thereafter. If there are tile lines which need to be extended, the

CONTRACTOR shall get the approval of the CITY and GOLF COURSE ARCHITECT to proceed.

All existing utilities will be clearly marked through a coordinated effort between the CITY and the CONTRACTOR. It will be the responsibility of the CONTRACTOR to avoid damaging marked utilities. All costs associated to damaged utility lines as a result of construction activities by the CONTRACTOR shall be paid by the CONTRACTOR. The CONTRACTOR must contact the local (Dig Safe) Agency prior to any excavation within a potential utility area. This will be coordinated with CITY officials as needed.

ROCK EXCAVATION

SCOPE

The work covered in this section consists of furnishing all labor, equipment and materials, for the identification, excavation, blasting, hammering, chipping, breaking and removal of all rock encountered while executing the Golf Course Construction Plans.

ROCK ESTIMATE

Should rock be encountered, the total amount of rock in place to be excavated shall be determined as herein specified. Adjustment for the excavation of such rock will be made as provided by the Contract Documents.

ROCK CLASSIFCATION

Rock is defined as stone or hard rock in original ledge, that cannot be broken and removed or dislodged by a D-8 Caterpillar tractor, or equivalent, equipped with a hydraulically operated power ripper (or CAT 235 hydraulic backhoe or equivalent), without the use of explosives or drills, or boulders over ½ cubic yard in volume. <u>This classification does not include materials such as loose rock, concrete or other materials that can be removed by means other than drilling and blasting or drilling and wedging, but which, for reasons of economy in excavating, the Contractor prefers to remove by drilling and blasting.</u> **(Hole 1 Tee Complex)**

ROCK SURVEY

Before excavating any material for which the Contractor may claim classification as rock excavation, such material shall be uncovered and exposed so as to permit accurate measurements and the Engineer shall be notified before proceeding further. No payment will be allowed for rock or cemented materials which have not been uncovered and measured as specified, nor for boulders which have not been separated from earthwork for proper measurements. The material uncovered shall then be cross-sectioned and measured by the CONTRACTOR and the quantities within the rock payment lines hereinafter specified shall be computed under the supervision of the CITY.

> **Recording-** Complete current records of quantities of rock excavated, methods of excavation used and extent of labor and equipment involved shall be submitted by the Contractor for approval. Such records shall also include plot plans at suitable scale showing all elevations and other measurements of rock excavation and the location and measurements or computed volumes of boulders encountered. The Contractor shall furnish all labor and equipment necessary to make these records. No payment will be considered for rock, which has been removed without obtaining the specified data.

ROCK EXCAVATION IN UTILITY TRENCHES

Blasting and excavation of rock in utility trenches outside of general excavation areas, without first uncovering rock, will not be permitted. Elevations and measurements of rock surfaces shall be taken as hereinbefore specified from rock profiles appearing in trenches after excavation. Rough or sloping rock shall be brought to level beds in steps for foundations as required. In pipe spaces or other unfinished areas, low spots shall be filled and leveled off with earth, sand or other acceptable material.

ROCK BLASTING

Blasting shall be done carefully, and such work shall be entirely at the Contractor's own responsibility for any resultant damage. The transportation, handling, storage and the use of explosives shall be performed in accordance with the provisions of local, state and federal laws and authorities having jurisdiction. Perform blasting so as not to disturb rock at or below finished grade levels.

Blasting will be permitted subject to the following restrictions:

1. CONTRACTOR is responsible for any resultant damage due to blasting operations.

2. All blasting operations and use of explosives shall conform to the requirements of federal and state laws, local ordinances, and regulations relative to rock blasting and the storage and use of explosives.

3. The use of explosives shall be limited to labor skilled and licensed in its use.

4. No larger quantity of explosives shall be stored at the site at any time than will be required for one day's work. Unused explosives shall be removed from the site at the end of each day.

5. Maintain a daily log for each blast detonated on each working day. The log shall include the date, exact time of firing, number of holes, depth of holes, total poundage used, the distribution of instantaneous and delay caps, poundage's per delay, and location and spacing of drill holes.

6. All blasting operations shall be conducted so that the resulting vibrations either adjacent to or on the lowest level of the nearest structure do not exceed a maximum particle velocity of 2 in./sec. When specific site conditions preclude the ability to achieve this criterion. The CONTRACTOR must propose alternative criteria and excavation methods and demonstrate that such procedures will not cause damage to the structures.

7. The CONTRACTOR is responsible for preventing rock throw and for protecting the work. Use woven wire cable mats, or other means, over all blast holes.

8. Blasting procedures shall be subject to the review of the local authorities having jurisdiction.

Excavation beyond the limits of disturbance specified herein shall be considered unauthorized excavation. Do not excavate rock beyond the limits specified in "Rock Payment Lines" below.

ROCK PAYMENT LINE

Payment will be made for actual quantity of rock removed but no payment will be allowed for rock excavated beyond the limits shown on the plans or marked in the field (penalty shall apply if out of delineated work area) and/or the following limits:

1. In pipe trenches and utility trenches, 6 inches below invert elevation of pipe and 2 feet wider than the inside diameter of the pipe but not less than 3 feet minimum trench width.

2. 6 inches below invert of building drainage pipe when subgrade is in soil or rock.

3. 6 inches beyond sides of building drainage pipe.

ROCK HAULING/PUSHING

All rock encountered within the work areas shall be gathered and stockpiled for calculation at the Maintenance Area or within the rock dump area between holes 12 and 14. Dependent upon the location of the rock encountered it may be pushed off to wooded out of play areas adjacent to work areas or designated area on the site. Rock hauling or pushing shall be included within the itemized bid for each work area or within the bid alternate section of the bid form. This rock can be defined as boulders or rubble from 6" to 3' in diameter. If walls are called for on the site, (Hole 1) rock shall be gathered from on site and delivered to location of walls. The itemized bids for walls shall include delivery of all rock to installation location.

Excess rock not able to be pushed or used for wall construction shall be hauled to a designated staging area between holes 12 and 14. The CITY may designate other rock disposal areas to be shown on the Construction Plans and/or directed in the field.

SHAPING AND FEATURE CONSTRUCTION

SCOPE

The work covered in this section consists of furnishing all labor, equipment and materials, for the shaping and construction of the Golf Course Features including greens, tees, bunkers, cart paths, mound, hollows and swales. The location, size, and elevations of these features are found in the Construction Plans and/or will be directed and delineated in the field by the GOLF COURSE ARCHITECT.

SHAPING

Shaping consists of the artistic manipulation of rough graded or existing land or soil to obtain the features designated by the GOLF COURSE ARCHITECT in the plans, and as directed in the field.

The intent of shaping is to match closely the location and intent of design of the features (i.e., tees, bunkers, mounds, swales) as shown on the plans. The GOLF COURSE ARCHITECT reserves the right, on a timely basis, to refine these features in the field as they affect the appearance, playability and aesthetic quality of the golf course. The maximum grading slope ratio in mowable turf areas will be 3:1, unless otherwise directed in the field by the GOLF COURSE ARCHITECT.

MATERIALS (surrounds of tees, greens and bunkers)

Topsoil Material - Topsoil/seedbed material used at and adjacent to the features mentioned in this section shall be the best available from the site and may need to be screened, if inconsistent with the desired specifications as established in the Topsoil/Plating Material Management Section.

Fill Material - Shall be a good quality fill taken from the site and approved by the GOLF COURSE ARCHITECT.

BUNKERS

Intent

One objective of the bunker renovation component of the project at Oak Hills Park Golf Course is to provide new drainage, (alternate-lining), slope repairs, and sand within specific existing bunkers. This project will entail the execution of one of two construction methods; restructuring or new bunker construction as described below. Well-shaped and executed bunkers give a course character, depth, and preserve strategy. It is our intent that the bunkers have a natural appearance, and fit comfortably within their support mounding and the movement of the surrounding ground. The edges of the bunkers will be slightly flashed and lipped with soft, but natural perimeter movement. It is critical that the face and floor of the bunker have a concave shape throughout. The sand should flash up the bunker face to various heights as marked in the field by the GOLF COURSE ARCHTIECT. Bunker maintenance is an important consideration at Oak Hills Park Golf Course. Bunker styling and surrounds shaping will be conducive to efficient maintenance practices. Slopes and faces shall be held to a 2 ½ -3:1 ratio to

allow for effective maintenance with existing equipment supplies.

Existing Bunker Restructuring

1. Removal of surrounding sod as marked and as needed. Sod removal shall be marked by GOLF COURSE ARCHITECT and will vary in width and distance from the edge of the existing bunker based on existing field conditions. All removed sod to be placed in dump area or at site location as directed by CITY. Each bunker will be assessed individually for the need to remove surround sod to execute work.
2. Removal of existing sand (stockpile all removed sand in dump area or at site location as directed by CITY. Alternative excess removed sand to be taken off site via dumpster or approved means)
3. Removal of existing lining material.
4. Remove existing drainage within bunker cavity (all removed pipe to be taken off site via dumpster or approved means).
5. Remove all existing drainage stone from within bunker cavity (place all removed stone in dump area or at site location as directed by CITY. Alternative- excess removed drainage to be taken off site via dumpster or approved means)
6. GOLF COURSE ARCHITECT shall delineate final shape of bunker (*typically* consistent with original shape) to be edged with all excess material to be removed or used within bunker surrounds area. It should be understood that each bunker will require individual assessment. Some restructured bunkers may require more shaping than others, but typically the work will be within the existing cavity. Work will include cupping/establishing the finish bottom, shaping/recutting the new bunker edge, removal/cutting of existing noses, etc. as directed by the GOLF COURSE ARCHITECT.
7. Install specified drainage/gravel within bunker bottom as marked in field to either be tied to existing drainage outlet point, or extended to new outfall point.
8. CONTRACTOR shall clean and finish bottom of bunker including removal of all debris, stone, pipe, etc.; rake out bottom cavity, vibratory tamp bunker cavity.
9. Install specified bunker liner throughout bottom cavity. (Bid Alternate)
10. Install specified sod at bunker surrounds within prepared areas.
11. Install specified bunker sand at a water settled depth of 5” along bottom, 4” along bunker face within bunker cavity. ‘
12. Repair all access points around bunker.

New Bunker Construction

There are specific bunkers on the golf course that will be built as new, rebuilt, combined with adjacent bunkers, reshaped as grass hollows or removed. These include bunkers on holes 2, 5, 8, 9, 10, 11, 12, 13, 15, 17 and 18. Refer to the Construction Plan to identify which category each bunker falls into.

The bunkers around the greens and in the fairways shall be constructed to the sizes and shapes shown on the plans and/or as otherwise marked in the field by the GOLF COURSE ARCHITECT. The GOLF COURSE ARCHITECT reserves the right to alter the shape and position of any bunker on a timely basis when, in his opinion, such alteration is necessary to improve the design of these features. Any such alteration shall not entitle the CONTRACTOR to extra compensation.

The CONTRACTOR shall be careful to preserve the natural looking perimeter lines on the bunkers as shown on the plans or as directed by the GOLF COURSE ARCHITECT. The artistic and aesthetic handling of the shaping of mounds, noses, and outlines of all bunkers shall be the responsibility of the GOLF COURSE ARCHITECT. It is to be expected that most of this work will be accomplished by machine and then hand-worked as directed by the GOLF COURSE ARCHITECT.

All bunkers, both along the fairways and at the greens, shall be constructed so that the edges blend well into the surrounding ground. The perimeter of the bunkers shall receive six (6) inches of topsoil, which is to be tamped and compacted to insure stability for sodding. The inside of the bunker will receive no topsoil where the future sand will be placed.

Bunker Materials

Sand-The sand incorporated into the bunkers shall be a clean and stable local product, such as washed mortar sand. Samples of sand shall be submitted to a pre-qualified testing lab for approval prior to the start of construction. Sand shall be tested per above requirements every 500 tons throughout the project. Generally, a masonry type sand, angular in shape, with a mixture of particle sizes is suitable. The sand must meet the following physical specifications:

1. Particle Size Analysis and Sand Distribution
   A. No more than 3% gravel
   B. No more than 25% fine to very fine sand
   C. No more than 3% clay and silt (combined total)

2. Fried Egg Lie Development
   Greater than 34.128 lbs/in2

3. Crusting and Set-Up
   No crusting or set-up after the sand is saturated and dried.

4. Sand Color and Shape
   Light color of moist sand preferred, measure by Munsell Color Chart. Color must be approved by GOLF COURSE ARCHITECT.

Acceptable color, ball lie, shape crusting, and set-up ratings must be met and are to be approved by a pre-qualified testing lab and the GOLF COURSE ARCHITECT. The depth of the bunker sand is six (6) inches after water and mechanical compaction on the bunker bottoms and a minimum of 4” on the bunker slopes.

Gravel - Shall be washed and screened pea gravel one-quarter (1/4) inch in diameter. Gravel must be approved by the CITY and GOLF COURSE ARCHITECT.

Perforated Pipe - Shall be four (4) inch Hancor Hi-Q or ADS N-12 perforated, corrugated, smooth interior wall polyethylene drain pipe or acceptable equivalent.

Bunker Drainage

Trenches shall be cut into the subgrade within the lowest portions of the bunker so that the perforated pipe will slope uniformly. The minimum acceptable slope shall be 0.5%. The trench will be eight (8) inches wide to contain a four (4) inch pipe surrounded by two inches of gravel. Depth of the trench is to be ten (10) inches minimum. All excavated material from the drainage trenches is to be removed from the bunker and used in an adjacent areas if feasible.

Perforated pipe is to be laid perforations down on a two (2) inch gravel base. After the pipe is laid, the trenches shall be backfilled with gravel to the top of trench.

4" vent flushouts shall be installed outside each bunker at the high point and at the exit point as indicated on the Golf Course Construction Plans or in the field. Tracer wire shall be connected to all drainage pipes. Tracer wire shall be attached to piping with the color specified on the Project As-Builts.

Installation of Sand

The CONTRACTOR shall install the sand in the bunkers prior to seeding and sodding, bringing the sand to approximate finish grade. Sand shall be approved by the GOLF COURSE ARCHITECT. Bunkers shall be filled with six (6) inches of sand. After placement of the six (6) inches of sand, it must be watered and tamped by the CONTRACTOR to create a firm surface. It is essential to have six (6) inches of sand within each bunker floor and four (4) inches of compacted sand on the bunker slopes after water compaction.

Sodding of Perimeters and Faces

Prior to sodding all bunker surrounds shall be properly fertilized as specified in Finishing. The GOLF COURSE ARCHITECT will mark the bunker perimeter to define the limits of sodding. All sod at the perimeter of the bunkers is to be pinned with 1x1x6 sod pins (2 per sod strip) to insure proper soil/sod contact and reduce the chance of erosion problems and sloughing.

TEES

Intent

The GOLF COURSE ARCHITECT and the CONTRACTOR will work to achieve the intended tee styling consistent with the existing tee style throughout the golf course as well as expansions and elevations to improve turf maintenance conditioning. It is the attention to this detail that will bring aesthetic consistency to the golf course.

Construction

Tees shall be constructed to the size and elevation shown on the Construction Plans or as sized and positioned in the field by the GOLF COURSE ARCHITECT. Tees must be properly aligned towards the landing area. Tee elevations are outlined on the construction plans in each corner. Tees shall be grass sloped at 0.75% to 1% as directed on the Construction Plans or as by the GOLF COURSE ARCHITECT in the field at time of construction. Where the irrigation system passes through the tees, this system shall be installed prior to placing of the sand layer.

Tee surfaces shall consist of a six (6) inch 60-20-20 rootzone layer. Sand shall meet USGA quality specifications and shall be approved by a qualified testing lab, the GOLF COURSE ARCHITECT and CITY. All topsoil if used shall be screened through a 3/8" sieve to remove all rock and debris. The tee surface shall be **laser leveled** as described in FINISHING.

The tees and supporting ground shall be constructed to the sizes and shapes shown on the Construction Plans and/or as otherwise marked in the field by the GOLF COURSE ARCHITECT. The GOLF COURSE ARCHITECT reserves the right to alter the construction of any tee or surrounding feature on a timely basis when, in his opinion, such alteration is necessary to improve the design of these features. Any such alteration shall not entitle the CONTRACTOR to extra compensation. The maximum grading slope ratio in mowable turf areas will be 3:1.

The CONTRACTOR shall be careful to preserve the natural lines and tie-ins as shown on the plans or as directed by the GOLF COURSE ARCHITECT. The artistic and aesthetic shaping of mounds, support and slopes shall be directed by the GOLF COURSE ARCHITECT. It is to be expected that most of this work will be accomplished by machine and then hand-worked as directed by the GOLF COURSE ARCHITECT.

Mixing of the Tee Rootzone- Mixing shall be done at the sand pit facility. The tee mixture shall be blended utilizing a mechanical blending process. Loader mixing is not allowed as a substitute. **Organic clumping and incomplete blending will not be accepted.**

Placing of the Tee Mixture- The surface of this layer shall be brought to elevation as shown on the Golf Course Construction Plans. The mixture shall be properly moistened and compacted while placing in the tee area. Sufficient consideration shall be given to settling of this layer, being sure that the ultimate grades shall be those specified on the Construction Plans or subsequently altered in the field by the GOLF COURSE ARCHITECT. The tee mixture throughout the project shall match in every aspect the recommendations of the GOLF COURSE ARCHITECT.

Tee Materials

Tee Rootzone Mixture- Mixture shall consist of 60% approved sand, 20% approved topsoil, 20% percent organic material. The tee rootzone mix is to be tested by Hummel Labs and approved by the GOLF COURSE ARCHITECT. All test results must be delivered to Mr. Jim Schell and ***The Northeast Golf Company*** prior to construction.

Sand - Sand shall be clean, washed sand, tested by Hummel Labs and approved by the GOLF COURSE ARCHITECT. Samples of available sands are to be submitted to Hummel Labs within 10 days after award of the contract. The CONTRACTOR will be responsible for the cost of testing of each sample until a sample is approved. The proposed tee rootzone mixture shall fall within the following general specifications:

1. Silt content less than 5%.
2. Clay content less than 3%.
3 Gravel content less than 3%.
4. 75% of all particles in the .25 to 1.00 mm range.
5. Gravel(2mm)/Very Course(1mm) particles less than 10% combined
6. Coarse(.5mm)/Medium(.25mm) particles less than 60% combined
7. Fine(.15mm) particles less than 20%
8. Very fine particles(.05mm) particles less than 5%.

Topsoil – 3/8 sieve screening of the site topsoil material will be necessary to eliminate rock and debris inconsistent with the desired specification. The following criteria for screened topsoil must be met:

U.S. Standard Sieve	Percent (%) Retained
Size #4(4.00mm)	0.0
Size #7(2.83mm)	No More Than 20%
Size #8(1.00mm)	No More Than 20%
Size #140 (0.11mm)	No More Than 85%
Silt - 0.002-05mm	Less Than 8%
Clay	Less Than 2%

The above criteria are subject to further review by pre-qualified testing lab. The CONTRACTOR shall test all screened topsoil prior to spreading on tees to ensure screening specifications are met.

Organic Materials - Shall be a USGA recommended organic material approved for use by a pre-qualified testing lab and the GOLF COURSE ARCHITECT, including Dakota Reed Sedge, Sphagnum, and Irish Peat. **COMPOST OF ANY TYPE SHALL NOT BE USED.**

Gravel - Shall be washed and screened pea gravel one-quarter (1/4) inch in diameter. Gravel must be approved by the GOLF COURSE ARCHITECT.

Perforated Pipe - Shall be four (4) inch Hancor Hi-Q or ADS N-12 perforated,

corrugated, smooth interior wall polyethylene drain pipe or acceptable equivalent placed at a minimum 12' on center per field layout.

FILLING TO REQUIRED SUBGRADE LEVELS

Where more than one (1) foot of subsoil fill is required, the fill shall be accomplished in six (6) inch layers and compacted as specified in ROUGH GRADING.

FINISH GRADE

After the tee mixture has been allowed to settle, the CONTRACTOR shall fine grade the tee to the grades specified. Identical rootzone material shall be supplied to add or subtract as may be necessary to bring the surface to the specified grade and contour. It is necessary that the CONTRACTOR keep the tee mixture wet and firm, as a settled surface. The CONTRACTOR is expected, when planting, to have six (6) inches of rootzone material under the tee surface. (+.5 inch acceptable, minus unacceptable)

Tee Laser Leveling

As noted on Plans and in field by GOLF COURSE ARCHITECT designated tee surfaces shall be laser leveled. Laser leveling of tee surfaces shall include the following:

1. Strip all surface sod. (Sod to be removed and delivered to dump area at Practice Facility). Club may select specific tees to harvest sod for reuse on other areas of the golf course. This shall be executed by the Club's Maintenance Staff.
2. Till existing tee rootzone, assess for any tee specific issues to be rectified.
3. Amend existing rootzone with 60-20-20 rootzone as needed to ensure there is enough material to effectively level the tee at the desired elevation.
4. Laser level tee surface as directed in the field with approved laser leveling (gps guided) equipment.
5. Finish float by hand as needed to tie work into surrounding elevations.
6. Sod surface (per grassing specifications).

GREENS (Practice Greens-future construction)

Construction

The CONTRACTOR shall shape and construct all greens as specified and designed by the GOLF COURSE ARCHITECT, as shown in the Green Construction Plans. Contours in the collar and seam areas shall be blended into the contours of the adjacent features so as to appear natural. The GOLF COURSE ARCHITECT must approve all subgrades and reserves the right to make changes on a timely basis in the field.

Sublayers

Subgrade - The subgrade shall be constructed at an elevation sixteen (16) inches below the proposed finished grade (eighteen (18) inches if a choker layer is necessary). The contours of the subgrade shall conform to those of the proposed finished grade with a tolerance of + one (1) inch. The subgrade shall be compacted sufficiently to prevent future settling which would create water retaining depressions. All subgrades must be

approved by the GOLF COURSE ARCHITECT prior to the installation of materials. The CONTRACTOR will supply and position a transit on the greens for the GOLF COURSE ARCHITECT'S site inspections. The intent is to recheck on the spot if necessary.

Drainage - Trenches shall be cut into the subgrade within the lowest portions of the green well so that the perforated pipe will slope uniformly. The minimum acceptable slope shall be 0.5%. The trench will be eight (8) inches wide to contain a four (4) inch pipe surrounded by two inches of gravel. Depth of trench is to be ten (10) inches minimum. A four (4) inch perforated smile drain shall be installed with the same trench dimensions along the lower edge of the green core extending perpendicular from the main drainage line. This drain shall extend in accordance with the elevations of the subgrade. Flushouts shall be installed in each green as indicated on the Golf Course Construction Plans. 14g Tracer wire shall be connected to all drainage pipe with a washer attached to the vent or cap. All excavated material is to be removed from the green well and used in an adjacent area if feasible. Perforated pipe is to be laid perforations down on a two (2) inch gravel base. Laterals extending from the main trunk shall be laid a maximum of sixteen (16) feet apart, with final positioning dependent upon the configuration of the green and surface contouring.
Suggested pipe layout and tie-ins are as shown on Green Construction Plans. Final pipe locations shall be laid out in the field by the CONTRACTOR and OWNER'S REPRESENTATIVE. After the pipe is laid, the trenches shall be backfilled with gravel to the top of trench.

Sublayer Installation

The green cross-section calls for a four (4) inch washed pea gravel layer, a two (2) inch choker layer (if necessary), and twelve (12) inches of rootzone material to be placed over the approved and established subgrade. This profile is implemented to achieve a perched water system with components that, through proper particle sizing, will not migrate to other areas. Approval testing of the pea gravel, choker or bridging material and greens mix shall be provided to the GOLF COURSE ARCHITECT for approval.

Placing Gravel Layer - A four (4) inch layer of ¼ inch washed pea gravel is to be installed over the subgrade upon proper installation of green drainage and approval of the GOLF COURSE ARCHITECT. The gravel must be tested by a pre-qualified testing lab, and approved by the GOLF COURSE ARCHITECT.

Placing Choker Layer - (If necessary), a two (2) inch coarse sand layer is to be installed over the gravel layer. The coarse sand must be tested and approved by a pre-qualified testing lab and the GOLF COURSE ARCHITECT.

Placing of the Green Turf Rootzone- The 80% approved sand, 10% approved topsoil, 10% percent organic material green mixture shall be placed being careful not to disturb the installed gravel. The surface of this layer shall be brought to elevation and contour as shown on the green plans. The mixture shall be properly moistened and compacted while placing in the green area. Sufficient consideration shall be given to settling of this layer being sure that the ultimate grades shall be exactly those specified on the green plan or subsequently altered in the field by the GOLF COURSE ARCHITECT. The green mixture specifications throughout the project shall match in every respect the

recommendations of the USGA and the GOLF COURSE ARCHITECT.

Green Materials

Greens Mixture - Mixture shall consist of 80% approved sand, 10% approved topsoil, and 10% approved organic material. The sand and organic material are to be tested by a pre-qualified testing lab and approved by the GOLF COURSE ARCHITECT and the OWNER. The resulting mix sand must conform to approved specifications and be randomly sampled and tested every 900 tons delivered at the CONTRACTOR'S expense for consistency, throughout the construction process. The mixing of the materials is to be done at the pit prior to hauling the mix to the project. It is not acceptable to mix the greens material on site.

The following criteria will be observed:

Sand - Sand shall be clean, washed sand, tested by a pre-qualified testing lab and approved by the GOLF COURSE ARCHITECT. Samples of available sands are to be submitted to a pre-qualified testing lab within 30 days after award of the contract. The CONTRACTOR will be responsible for the cost of testing of each sample until a sample is approved. The proposed rootzone mix shall fall within the following particle size specifications:

1. Silt content less than or equal to 5%.
2. Clay content less than or equal to 3%.
3. Gravel content less than or equal to 3% for (2mm) Less than or equal to 10% combined with (V. Coarse 1mm)
4. Greater than or equal to 60% of all particles in the .5 to .25 mm range
5. Fine content less than or equal to 20%
6. Very fine (.10mm) and Very Fine (.05mm) less than or equal to 5%

The proposed rootzone mix shall fall within the following particle size coefficient specifications:

Bulk Density (g/cc)-	1.2-1.6
Saturated Conductivity (in/hr)-	6-24
Total Porosity (%)-	35-55
Aeration Porosity (%)-	15-30
Capillary Porosity (%)-	15-25
%OM-	0.7-3.0

Topsoil - Shall be local material and shall be approved as suitable blending material by the GOLF COURSE ARCHITECT and Hummel Labs or approved soil testing facility.

Organic Materials - Shall be a USGA recommended organic material approved for use by a pre-qualified testing lab and the GOLF COURSE ARCHITECT, including Dakota Reed Sedge, Sphagnum, and Irish Peat.

Coarse or "Choker" Sand Layer – (if required) The USGA recommends that a two (2) inch coarse sand layer be installed between the four (4) inches of gravel and the twelve (12) inches of greens mix, if necessary, to achieve a perched water system. The necessity of this layer will be determined by the results of the testing of the greens mix by a pre-qualified testing lab.

Gravel - Shall be washed and screened pea gravel or crushed stone, approximately one-quarter (1/4) inch diameter, and must be tested by a pre-qualified testing lab and approved by the GOLF COURSE ARCHITECT and the OWNER. Gravel of questionable weathering/ mechanical stability must pass the LA Abrasion Test and/or the Sulfate Soundness Test. (ASTM Tests C-131 and C-88, respectively).

Perforated Pipe - Shall be four (4) inch Hancor Hi-Q or ADS N-12 perforated, corrugated, smooth interior wall polyethylene drain pipe or acceptable equivalent.

FINISH GRADE

After the green mixture has been allowed to settle, the CONTRACTOR shall fine grade the green to the grades specified. Identical rootzone material shall be supplied to add or subtract as may be necessary to bring the surface to the specified grade and contour. It is necessary that the CONTRACTOR keep the green mixture wet and firm, as a settled surface. The CONTRACTOR is expected, when planting, to have twelve (12) inches of rootzone material under the green surface. (+1 inch acceptable, minus unacceptable). It is the CONTRACTORS responsibility to protect mix once placed from all contaminants.

All weed growth shall be removed from green surface by CONTRACTOR prior to planting and through grow-in period until which time greens are turned over to the OWNER. If the greens are not planted within 10 days, they shall be protected to prevent contamination of the sand mixture with a ten(10) mil, or thicker, clear polyethylene material to cover the entire greens surface and secured with sand bags.

DRAINAGE

SCOPE

The work covered under this section includes all labor, material, tools and equipment necessary to furnish and install the golf course drainage systems as specified and shown on the drawings for the golf course. The CONTRACTOR shall verify that the pipe has proper fall before beginning the backfill operation.

MATERIALS

Reinforced Concrete Pipe (if used) - Shall meet ASTM Specification C-76-41, latest Revisions and all requirements specified by the PROJECT ENGINEER.

Corrugated Metal Pipe (if used) - Shall be ARMCO corrugated metal pipe or equal, conforming to AASHO Specifications M-136 and all requirements specified by the PROJECT ENGINEER.

Frames, Covers and Grating - Frames, covers and gratings shall be of a type and duty as shown on the plans. Iron casting shall conform to standard specifications for gray iron casting, ASTM Specifications A-48-41, Class 20. All castings shall be true to pattern, in form and dimensions, free from faults, sponginess, cracks, blow holes and other defects affecting their strength. Bearing surfaces between cast iron frames, covers and grates shall be machined, fitted together, and match-marked to prevent rocking. As specified by PROJECT ENGINEER.

Drain Basins - Shall be eight (8), twelve (12) or eighteen (18) inch ***Nyloplast®*** drain basins or approved equivalent with size specified on plans. **(12" riser in stone may be used in place of Nyloplast basins- as specified)**

Inline Drains - Shall be eight (8) inch or twelve (12) inch ***Nyloplast®*** inline drains or approved equivalent.

Drain Pipe - Shall be ***ADS N-12®, Hancor Hi-Q®*** or any other approved high density polyethylene, corrugated, smooth interior wall pipe.

Perforated Drain Pipe - Shall be (4, 6, 8 or 12) inch ***ADS N-12®*** or ***Hancor Hi-Q®*** high density polyethylene, perforated, corrugated, smooth interior wall pipe or approved equivalent. No lesser quality pipe will be considered.

Slit Drainage Piping Systems

CONTRACTOR shall submit with the bid a minimum of 3 golf course projects completed in the past 3 years where SLIT DRAINAGE was installed. CONTRACTOR shall also submit the type of equipment proposed for the Oak Hills Park SLIT DRAINAGE project.

Slit drainage is to be used primarily to remove excess surface water rather trapped in the surface layers (top 12 inches of the soil profile).

Slit trench pipe drains consist of a 3 inch wide trench, 11 to 15 inches deep,

containing a 1.5 or 2 inch diameter drain pipe, factory wrapped with a fabric envelope material, backfilled to the surface with a column of medium to coarse sand (infiltration rate in the range of 28 to 38 inches per hour). The slit drains need to be topped up with additional sand approximately 1 month after installation (following settlement after rains or irrigation).

The sand trenches are eventually grassed over by the natural growth of the turf from both sides during a growing season. Seeding of the sand slits has not been normally done by other golf clubs due to the difficulty in exactly matching the colour and variety of the existing turf. Seeding could, however, increase the speed of recovery. Allowing the adjacent turf to root in the medium to coarse sand without the addition of a finer top soil maintains a high infiltration rate into the slit trench which is required to remove the excess water. The excess surface water moves into the columns of sand and is then carried away by the slit drain pipes to a collector drain pipe which then leads to an outlet.

Slit drain spacings depend on soil type and topography. For Oak Hills Park Golf Course, drain spacing of 6 to 10 feet will be typical.

SLIT DRAINAGE MACHINERY

A **special wheel trencher is required** for the installation of the 2 inch diameter lateral slit drains. The wheel trencher should be capable of digging a trench on grade using laser grade control, installing the slit drain pipe and backfilling with coarse sand in one operation. An example of the machinery that has been used to install slit drainage systems at numerous golf courses in the North East is shown below.

Bunker Dry Well/Sump - Shall be constructed according to the detail specifications prepared by the GOLF COURSE ARCHITECT including 12" perforated riser with grate set in 1/4 washed pea gravel (min 3x3x6).

Concrete - All concrete shall have a minimum compressive strength of 3000 psi at 28 days. Reinforcing steel shall be grade 40 or 60 as may be required by the drawings.

Gravel - Shall be washed and screened pea gravel or crushed stone approximately one-quarter (1/4) inch in diameter. Gravel must be approved by the GOLF COURSE ARCHITECT upon recommendation from a pre-qualified testing lab.

TRENCHING

Bunkers - Trenches will be cut into the subgrade so that the perforated polyethylene pipe will slope uniformly. The minimum acceptable slope shall be 0.5%. The trench shall be eight (8) inches wide to contain a four (4) inch pipe over two (2) inches of acceptable gravel. Bunker trenches shall be cut approximately ten (10) feet apart.

Other Areas - Trenches for drain lines shall be excavated to a width equal to the outside diameter of the pipe plus eight (8) inches, and to a depth as required to maintain grade eighteen (18) inches to top of pipe. All trenches shall maintain a minimum slope of 0.5% and shall be free of any debris.

INSTALLATION OF GOLF COURSE DRAINAGE PIPE

Bunkers - Pipe shall be installed in open trenches, true to line and grade over two (2) inches of gravel. A gray tracer wire shall be attached to all drain pipe along the length of the run for future detection. All perforated polyethylene pipe shall be backfilled with washed gravel to the top of the trench with additional gravel heaped on top to allow for settling. Perforated pipe will extend to the bunker or green's edge where it will be picked up by non-perforated pipe to extend to an outfall or point of discharge into an adjacent drainage system. Bunker Sumping system may be installed based on field conditions. Sumps shall consist of minimum 4' x 4'x 4' drainage gravel pit positioned either within the perimeter of the bunker or in a location on the exterior of the bunker as directed in the field. Flushouts are required as shown on the Golf Course Construction Plans. All flushouts shall consist of a vent cap placed on the end for air flow and clean out. The exact location of all runs of pipe, flushouts and color of tracer wire is to be accurately shown on the CONTRACTOR'S As-Built drawings. Bid Alternate- EZ Flow Drainage System.

Tees-

Other Areas - Pipe shall be installed in open trenches true to line and grade. A gray tracer wire shall be attached to all drainage pipe along the length of the run for future detection. Trenches shall be backfilled with fill material in six (6) inch layers and each layer thoroughly tamped to the top of the ground for pipe laid under paving. Pipe outside the limits of paving shall be tamped in nine (9) inch layers to the top of the ground. The top six (6) inches of backfill material shall consist of topsoil equivalent to the surrounding area with no stones or debris directly around pipe.

No back filling shall be commenced before the GOLF COURSE ARCHITECT or CITY'S REPRESENTATIVE has inspected and approved the line. The CONTRACTOR acknowledges that, at his sole cost and expense, he shall correct and repair all settlement of ditch backfill including but not limited to, all filling, leveling, regrassing with sod or seed as may be required, as directed by the GOLF COURSE ARCHITECT or CITY'S REPRESENTATIVE.

ALL TRENCHES WILL BE WATER-SETTLED AND COMPACTED TO AVOID LATER SETTLEMENT.

Major storm drainage system requirements shall be designed by the PROJECT ENGINEER designated by the CITY and will be specified within construction documentation under separate cover. The CITY has the discretion to bid any and all major drainage improvements as separate.

INSTALLATION OF INLINE DRAINS AND DRAIN BASINS

Nyloplast® drain inlets or approved equivalent, shall be constructed and installed in accordance with the plans prepared by the GOLF COURSE ARCHITECT. **All inline drains and drain basins must be set level and true to line and grade**.

All drain pipes shall be brought to a level 2-3 feet above final grade and capped during period following installation and prior to installation of basins or inlets. The pipe shall be capped to avoid any debris clogging the installed system and painted with highly visible spray paint (orange or equivalent) to maintain visibility during ongoing construction.

INSTALLATION OF FRAMES, COVERS, AND GRATINGS

Frames, covers, and gratings shall be placed as shown on the plans and true to surface grades. Where castings are to be installed at curbs and paved areas, they shall be aligned properly with same.

INSTALLATION OF POLYETHYLENE PIPE

Polyethylene pipe shall be installed in open trenches, true to line and grade. The excavation of trenches shall not advance more than three hundred (300) feet ahead of the complete pipe work except upon the permission of the GOLF COURSE ARCHITECT. After the pipe is laid and inspected by the GOLF COURSE ARCHITECT or CITY'S REPRESENTATIVE, the CONTRACTOR shall immediately refill the trench to the surface of the ground, making sure that the upper six (6) inches consists of approved topsoil, a full six (6) inches of depth after compaction.

INSTALLATION OF SUMPS/DRY WELLS

All sumps/dry wells shall be constructed as illustrated in the Construction Details and where indicated on the Drainage Plans.

INSTALLATION OF STONE CATCHMENT BASINS

Stone catchment basins shall be located at the outfall point of all golf course drainage. The basins shall be shaped in a concave manner so as to receive and dissipate water flow. Basins shall be lined with 4-5” clean rip rap stone material, bedded into the floor of the basin at a minimum of 2 courses and typically 10x10.

MAINTENANCE

All drainage installations shall be flushed and maintained in good working order previous to final acceptance. Erosion control practices shall be applied at all inline drains and drain basins to reduce sediment build up throughout the construction and grow in period.

GRADES

Grades for the drainage pipes and basins must be strictly adhered to in accordance with the drawings, or as may otherwise directed by the GOLF COURSE ARCHITECT.

AS-BUILT

The CONTRACTOR shall provide the CITY and GOLF COURSE ARCHITECT accurate scaled progress drawings of all installed drain lines. Locations shall be accurate with reference to existing site features and drainage drawings. These working As-Builts shall be submitted to the GOLF COURSE ARCHITECT and CITY'S REPRESENTATIVE on a hole-by-hole basis. Also, a final As-Built plan in acceptable GPS format denoting all drainage system locations shall be supplied by the CONTRACTOR to the CITY and GOLF COURSE ARCHITECT. The final payment will be withheld until the final As-Builts are received. The As-Builts must be concise and well-documented, showing all components, including but not limited to:

1. Name of individual preparing the drawing, and the date.

2. All tee, bunker and cart path locations and dimensions to be documented on As-Built drawings.

3. Drainage of bunkers, tees, and greens (if piped) will be scale 1" = 30'. Drain inlets, catch basins and junction boxes will be scale 1" = 100'. Locations will be referenced from two (2) fixed, permanent points from flushout to tie-ins. Length of distances can be rounded to the closest foot, with notations of pipe size being used.

4. Irrigation As-Builts shall be delivered to the CITY in accordance with the As-Built requirements outlined within the Irrigation Specifications Attached.
5. Specific notes detailing unique installation information.

The following features on the golf course shall be included in a comprehensive As-built developed in acceptable GPS format:

1. **Golf Course Features (tees, fairway lines, greens, bunkers, cart paths)**
2. **Golf Course Drainage**

3. **Golf Course Irrigation- if requested (location and database set up in accordance with Site Pro software requirements as directed by Irrigation Consultant)**

As-built information shall be set up as an overlay on the existing topographical surveys or construction aerial plans.

These As-Builts will be kept clean, dry and safe from damage at all times. It will be kept up to date and available for reference at each planning meeting. **The As-Builts and their supporting evidence will be used to process payment requests**. **No payment will be authorized without submission of the proper As-Built documentation.**

IRRIGATION

If required, See **Irrigation Specifications**, **Plans** under separate cover and **Bid Documents** (INSERT as needed) provided by **Turf Product Corporation** represented by **Peter Hull**. As-built information to be compiled as outlined above in concert with the database requirements of the Site Pro System and/or as directed by the Irrigation Consultant and CITY.

CART PATH CONSTRUCTION

SCOPE

The work covered in this section includes furnishing all materials, labor, and equipment to install asphalt or aggregate cart paths, and cleaning and regrading after such installation.

INSTALLATION

Cart path alignment shall generally follow the course as shown on the Construction Plans. Centerlines and grades of the cart paths shall be approved by the PROJECT ENGINEER and are subject to change in the field by the PROJECT ENGINEER prior to pouring.

Unless otherwise directed by the GOLF COURSE ARCHITECT, cart paths shall be kept out of play and shall be installed at the base of the slopes of all golf course features. Cart path shaping shall include associated mounds and depressions which will screen the view of the path from tees and landing areas where possible.

The GOLF COURSE ARCHITECT is only responsible for the suggestion of cart path positioning in the field according to the Grading Plans. Final approval of the cart path routing must be given by a Licensed Engineer as directed by the CITY. The GOLF COURSE ARCHITECT assumes no responsibility for the final routing and construction of the cart path and shall be held harmless from any legal action resulting from its construction as shown on the construction plans.

MATERIALS (asphalt)

Three (3) Inch Thick Asphalt Cart Path - Upon completion of routing approval by the GOLF COURSE ARCHITECT and cart path grading, the CONTRACTOR shall construct an asphalt cart path eight (8) feet wide to ten (10) feet wide at areas specified. In the installation of the asphalt cart path there will be areas where the GOLF COURSE ARCHITECT will widen the paths for turn outs.

The completed asphalt cart path shall consist of a three (3) inches asphalt wearing course spread (1/2" nominal maximum aggregate size). Underneath the asphalt layers is a **mechanically compacted** four (4) inch aggregate gravel base at a width of eight (8) feet. The aggregate gravel base shall consist of three-eighths (3/8) inch gravel, graded so that the finished asphalt surface will blend into the surrounding grades. The completed path shall also contain a smooth rolled surface, free of all "bird baths" or low points, and is to be approved by the GOLF COURSE ARCHITECT and the CITY. In all instances, the slope of the cart path should match the existing grade of the surrounding ground. Topsoil shall be backfilled to the edge of the cart path and prepared for seed as specified in Grassing. Any areas found to be defective shall be replaced at no additional cost to CITY. The CONTRACTOR shall be responsible to blend back to existing turf on either side of the cart path or as directed in the field by the GOLF COURSE ARCHITECT.

Asphalt Cart Path with Four (4) Inch Asphalt Curbing – Curbing will be added to the cart path where indicated on the plans. The curbing shall consist of a four (4) inch monolithically poured asphalt curb set on a bituminous tack coat placed on top of the asphalt wearing course. Where curbing is present, the cart path will be eight (8) feet wide

plus the four (4) inch width of the curb.

MATERIALS (aggregate)

Four (4) Inch Thick Aggregate Cart Path - Upon completion of routing approval by the GOLF COURSE ARCHITECT and cart path grading, the CONTRACTOR shall construct an aggregate cart path eight (8) feet wide. In the installation of the asphalt cart path there will be areas where the GOLF COURSE ARCHITECT will widen the paths for turn outs.

The completed aggregate cart path shall consist of a four (4) inches of **mechanically compacted** ½" to ¾" inch road mix over a mechanically compacted subgrade at a width of eight (8) feet. The completed path shall also contain a smooth rolled surface, free of all "bird baths" or low points, and is to be approved by the GOLF COURSE ARCHITECT and the CITY. In all instances, the slope of the cart path should match the existing grade of the surrounding ground. Topsoil shall be backfilled to the edge of the cart path and prepared for seed as specified in Grassing. Any areas found to be defective shall be replaced at no additional cost to CITY. The CONTRACTOR shall be responsible to blend back to existing turf on either side of the cart path or as directed in the field by the GOLF COURSE ARCHITECT.

FINISHING

SCOPE

Work under this section shall consist of furnishing all materials, labor, and equipment for the cleaning and finish grading of tees, greens, bunkers, fairways, roughs, till, and all disturbed areas so as to produce a proper planting bed for seed, or sod. Work shall also consist of finish grading so as to countersink sod at grass depressions, drain inlets, and around bunkers; adjustment of soil pH, and fertilization of all golf course areas. CONTRACTOR shall purchase all fertilization material according to specifications established by the GOLF COURSE SUPERINTENDENT or AGRONOMIC CONSULTANT hired by GOLF COURSE ARCHITECT.

Testing of all construction materials and native soil conditions shall be completed prior to the start of construction and or delivery of the product to the site. All test results shall be communicated to the GOLF COURSE ARCHITECT and CITY.

MATERIALS

Fertilizer – The GOLF COURSE SUPERINTENDENT and/or AGRONOMIC CONSULTANT shall determine all fertilizer types, application rates and equipment. Generally the fertilizer shall be a complete commercial fertilizer of high quality grade. It shall be free flowing with uniform particle sizes and suitable for turf grass applications. The nitrogen source shall be either a methylene urea or polymer encapsulated urea base. The fertilizer shall be delivered to the site in bags or other convenient containers with labeled proof of conforming to applicable state fertilizer laws with the name, trademark and warranty of the producer. Fertilizer rates and specifications will be set according to the soil analysis on a hole-by-hole basis and shall be supplied upon completion of the soil analysis.

Sulphur or Lime - Based on soil tests, if the soil ph level needs to be adjusted, then either sulphur or lime shall be used. The CONTRACTOR shall submit a one cubic foot sample of sulphur to the CITY'S REPRESENTATIVE for approval, if necessary. Source of the material shall be stated on the container.

FINISH GRADING

All areas graded throughout the course are to be finish graded to achieve a superior planting and playing surface as herein described. All areas to be sodded are to be countersunk in areas of tie-ins for a proper transition. Areas of steep slopes including bunker, tee, and green slopes are to be adequately watered and tamped to insure proper settling and stability of the soil.

When suitable soil has been placed and other site work has been substantially completed, and when notified to proceed by the GOLF COURSE ARCHITECT, the CONTRACTOR shall finish grade all areas to be seeded or sodded under this contract. Finish grading is to consist of the work necessary to bring the surface of the soil to a smooth, true and even surface free of "bird baths and scalp areas," and acceptable to the GOLF COURSE ARCHITECT.

Areas to be finish graded shall be brought to a smooth and harmonious grade by the use of approved mechanical means and handworked as necessary. The surface shall be cleaned of stones or other objects larger than one (1) inch in maximum dimension, and of all roots, brush,

wire, grade stakes and other objects. Any undulations or irregularities in the surface resulting from tillage, fertilizing or other operation shall be leveled out by hand before seeding or sodding operations are begun.

PRIOR TO JOB COMPLETION, ANY PERMANENT OR TEMPORARY REMOVAL OF GRADING EQUIPMENT MUST BE REVIEWED BY THE GOLF COURSE ARCHITECT. THE INTENT OF THIS STATEMENT IS TO INSURE THAT PROPER PERSONNEL AND EQUIPMENT REMAIN THROUGH THE COMPLETION OF THE PROJECT, AND THAT THE GOLF COURSE DOES NOT SUFFER DUE TO CHANGES IN PERSONNEL AND EQUIPMENT.

PROCESS

Tees - Shall be first mechanically raked then handworked to smooth any ridges, fill any depressions and bring the surface to elevation and contour shown on the grading plan. All stones, sticks and other rubble shall be raked out of the tee surface and removed from the site. All tee surfaces shall be evenly finished and are subject to refinishing upon the direction of the GOLF COURSE ARCHITECT or the CITY'S REPRESENTATIVE.

Fairways, Roughs, Bunker and Tee Surrounds - After topsoil/plating material has been replaced, all the areas of the site to be seeded shall be finish graded as herein specified. All sticks, stones, boulders, tree roots, brush, wire, grade stakes and all other foreign matter shall be disposed of on the site at the direction of the GOLF COURSE ARCHITECT. **Surface drainage shall be maintained and given special attention throughout the FINISHING process**.

Rough Areas - After topsoil/plating material has been replaced, rough areas of the site to be seeded shall be finish graded as herein specified. All sticks, stones, boulders, tree roots, brush, wire, grade stakes and all other foreign matter shall be disposed of on the site at the direction of the GOLF COURSE ARCHITECT.

Prior to pH adjustment, fertilization, and planting, all areas shall be inspected by the CONTRACTOR, GOLF COURSE ARCHITECT and GOLF COURSE SUPERINTENDENT to assure that the planting bed has been properly prepared. The CONTRACTOR, the GOLF COURSE ARCHITECT and the CITY must be in agreement on the acceptability of the planting bed. Inadequate preparation of the planting bed shall result in the CONTRACTOR'S reworking of the area to the complete satisfaction of the GOLF COURSE ARCHITECT and CITY.

SOIL PH ADJUSTMENT

Upon completion of the finish grading, if required, fairway and rough areas shall be pH adjusted at the rate dictated by soil test recommendations. Because soil conditions may vary from hole to hole, it is advisable that several soil samples be taken from each fairway and that those samples be mixed and tested on an individual hole basis so that proper rate of soil amendments may be applied. Green putting surfaces and their surrounding areas and tees shall be pH adjusted at the rate dictated by soil test recommendations.

FERTILIZER TYPES, RATES AND METHOD OF APPLICATION

After the finish grading and before seeding, all areas shall be lightly raked (spring-toothed Harrow or equivalent) until the finished grade is smooth, loose and pulverized. The commercial fertilizer as specified by the GOLF COURSE SUPERINTENDENT and/or AGRONOMIC CONSULTANT, following proper testing procedures, shall be applied at the recommended rates and be thoroughly incorporated into the top three (3) or four (4) inches of the surface of the seedbed in all areas with the recommended equipment.

GRASSING

SCOPE

Work under this section shall consist of supplying all labor, equipment and materials and performing all operations in connection with the planting, seeding and sodding of greens, tees, tee surrounds, fairways, roughs, native areas, bunker edges, cart path edges, and slopes, grass depressions, and or hydro seeding any other slopes designated by the GOLF COURSE ARCHITECT.

ACCEPTANCE BY THE GOLF COURSE ARCHITECT AND THE CITY

Prior to grassing, all worked areas are to be accepted as completed by the CITY. The following items are to be judged as complete by the CITY and GOLF COURSE ARCHITECT in the determination of an acceptable seedbed:

1. Irrigation system complete and tested/verified as functioning with all heads, valve boxes and quick couplers properly set. All splices must be water resistant, in junction boxes and deemed functional. (*to be deemed complete by Irrigation Consultant and the Construction Manager*.)

2. The tees to be floated and smoothed with a light roller to a consistently sloped plane in the proper direction, free of undulations, and low points and tied into the surrounding ground.

3. All bunkers should contain piled bunker sand. Sand to be spread at a water settled depth of six (6) inches on the bottom and four (4) inches on the face following rooting of sod surrounds. Preliminary bunker edges should be marked to allow proper sodding limits.

4. All drainage system components checked and approved as functioning.

5. Throughout the remaining golf areas <u>no undesirable low points, ridges, bumps or "bird baths" should be present. All trenches checked for settling problems</u>.

6. Areas adjacent to the cart path should be compacted and tied-in evenly to the cart path edge creating proper drainage and traffic patterns throughout the golf course.

7. All debris including refuse, rocks, sticks, wire, and weeds should be cleared from all areas to be grassed and disposed of appropriately.

8. All previously existing turf eradicated entirely within the areas to be grassed.

9. Fertilizers applied according to the specified types and rates.

10. All areas of sod limits countersunk for proper grade transitions.

GRASS TYPES, RATES AND METHOD OF INSTALLATION

Tees – Tees shall be sodded with an approved blend of:

Low Mow Bluegrass (or approved equivalent)

(If seeded) **Immediately after seeding the tee surface, the seed shall be dimpled in with a sandpro then watered in to ensure proper seed to soil contact.**

(If seeded) **A ring of sod shall be planted and counter sunk around the edge of the tee surface at a width of one sod strip (minimum 18"), immediately following seeding to prevent erosion.**

Tee Entries, Bunker Surrounds and Primary Roughs – Shall be sodded with an approved blend of:

Turf Type Tall Fescue

Fairways – Shall be sodded with an approved blend of:

Low Mow Bluegrass
(existing sod shall be sod cut rolled and placed along drainage line and relaid where feasible)

Secondary Roughs – Shall be seeded at rate of 170#/acre or appropriate rate with an approved blend of:

100% Low Maintenance Fescue/Ryegrass Mixture

THE GOLF COURSE IS TO BE SODDED UPON APPROVAL BY GOLF COURSE ARCHITECT AND MAY BE SEEDED NO EARLIER THAN **See Memorandum at time of contract** AND NO LATER THAN **See Memorandum at time of contract**, SCHEDULE PERMITTING. THE SUBCONTRACTOR WILL BE FINED $1,000. PER DAY FOR ANY AREAS THAT DO NOT MEET THE PLANTING TIME FRAME. AREAS READY FOR SEEDING OR SODDING BEFORE THE PLANTING TIME FRAME CAN BE PLANTED WITH THE APPROVAL OF THE GOLF COURSE ARCHITECT AND THE CITY, CONTINGENT UPON THE WEATHER AND THE TEMPERATURE AND ANY DOCUMENTED DELAYS IN THE PROJECT.

Sod - Sod is required on all disturbed areas including, green surrounds, bunker perimeters and faces, support mounding, around all tees, minimum 18 inches and around all drain inlets a minimum of 18 inches, along all lake edges, and at any other steep slopes or drainage areas as may be determined by the GOLF COURSE ARCHITECT.

Native Areas - All areas that are disturbed, but not grassed, shall be hydroseeded with a native mix approved by the GOLF COURSE SUPERINTENDENT and GOLF COURSE ARCHITECT.

HYDROMULCHING

All seeded areas shall be hydromulched with an acceptable blend (heavy gauge) of specified seed, wood fiber (70/30) and tackifier so as to efficiently stabilize all areas through germination. All erosion rivlets shall be repaired by the CONTRACTOR within one day of occurence according to seeding and mulching specifications.

SODDING

IT IS THE INTENT THAT FOLLOWING THE SATISFACTORY FINISHING OF ALL THE FEATURES AS HEREIN DESCRIBED, ALL DISTURBED AREAS SHALL BE SODDED WITH APPROVED SOD BLENDS AS DESCRIBED ABOVE. IN THE EVENT THAT SODDING IS NOT POSSIBLE, BASED ON THE DIRECTION OF THE CITY OR GOLF COURSE ARCHITECT, THE FOLLOWING MINIMAL SODDING REQUIREMENTS WILL APPLY:

Sod laying must occur immediately upon delivery of material to site from farm.

All bunker perimeters are to be **sodded over the peak of face slopes**. Only strongly rooted, sand or topsoil-based sod will be used, not less than one year old in vigorous condition and free from uncontrollable weeds and grasses. **No sod grown on peat will be used**.

All tees require sod around the perimeter of the surface. Slopes exceeding 3 1/2% and drainage areas may require sodding and will be designated in the field by the GOLF COURSE ARCHITECT.

In the installation of sod, no gaps, spaces, voids or openings will be allowed between strips of sod. Strips will be placed to be tight together so as to appear knitted, minimizing the need for follow-up top dressing and filling of interstices. Any top dressing, required within 14 days of laying sod, will be the responsibility of the CONTRACTOR.

Sodding occurring on bunker slopes as well as any areas exceeding 3:1 slope is to be pinned with 1 x 1 x 6 pine sod pins (minimum of 2 stakes per strip). During and immediately after laying, all sod is to be watered to avoid stress related to high temperatures that may be associated with the sodding schedule for the job. Any sod may be rejected if, in the judgment of the GOLF COURSE ARCHITECT or CITY, its survival after placing is doubtful.

Upon completion of the above work, the surface of the sodded areas shall coincide with finish grade, be flush with other seeded or grassed areas, and shall meet the established grade around buildings and at cart paths. *** It is the responsibility of the CONTRACTOR to water all newly seeded or sodded areas for (10) ten days after which the watering shall become the responsibility of the CITY. At this critical time of germination a coordinated effort between the CONTRACTOR and the GOLF COURSE SUPERINTENDENT is imperative. New sod should never remain unwatered (depending on current precipitation) for any 24 hour period. Attention must be paid to the local weather reports for up to the minute information. The CONTRACTOR and GOLF COURSE SUPERINTENDENT must coordinate watering schedules with ongoing work schedules to ensure sod is never left unattended.**

Care should be taken in sodding to preserve the finish grade elevations so that there will be no

depressions or uneven places in the surface of the sod. As soon as sod has rooted down enough to support a tractor and spreader, it should be top-dressed with an approved soil mixture by the CITY. All sod must be delivered to the job within twenty-four (24) hours after being cut, unless circumstances beyond the CONTRACTOR'S control make it necessary for the sod to be placed in temporary storage, in which case permission shall be obtained from the GOLF COURSE ARCHITECT.

During wet weather, the sod shall be allowed to dry sufficiently to prevent tearing, and during dry weather, it shall be watered before being lifted to insure its vitality and to prevent the soil from dropping off in handling. Any sod permitted to dry out or rot may be rejected if, in the judgment of the GOLF COURSE ARCHITECT or CITY, its survival after placing is doubtful.

GRASSING LIMITS

The limits of grassing shall be coincidental with the areas that are disturbed and are shown per the Golf Course Construction Plans and labeled as Limits of Disturbance and/or as delineated in the field by the GOLF COURSE ARCHITECT.

GRASSING SCHEDULE

The CONTRACTOR shall begin grassing immediately following approval of the finish grading notification to do so by the GOLF COURSE ARCHITECT, and once work has begun shall press forward toward completion of the planting as rapidly as weather conditions permit. The CONTRACTOR will be expected to plant all areas within two (2) working days for the segment prepared and made ready, and other areas at the minimum rate of five (5) acres per day (if seeding). When delays in operations carry the work into less than favorable conditions (drought, high winds, excessive moisture or other factors that may influence unsatisfactory results), grassing operations will be stopped by the CONTRACTOR and the CITY or the CITY'S REPRESENTATIVE shall be immediately notified.

All seeded areas shall be hydro-mulched with an approved hay/straw product allowing enough coverage to reduce erosion and promote germination.

COMPLETION OF SEEDING

After seedbed preparations, acceptance by the GOLF COURSE ARCHITECT, planting of any area, acceptable stabilization through germination, the maintenance, and fertilizing of such areas becomes the responsibility of the CITY. However, the CONTRACTOR will be fully responsible for watering until such time as the irrigation system is accepted by the CITY. CONTRACTOR shall guarantee germination of all areas and shall reseed any areas which do not show seed germination at no additional cost to the CITY. Cutting of grass shall be the responsibility of the CITY.

Immediately after completion of planting and seeding of any specific area, the CONTRACTOR shall commence a regular germination watering program. In no case shall a planted area be allowed to remain for more than four (4) hours before watering is initiated. After initial water, the planted surface shall be watered frequently with light applications as necessary to keep soil surface sufficiently moist to ensure maximum germination and growth.

CONTINUATION OF WORK

Areas which do not obtain the performance criteria listed herein shall be redone following the same procedure initially required at the CONTRACTOR'S expense.

CONTRACTOR must repair any turf damaged by himself or his subcontractors during subsequent work in planted areas.

SEED QUALITY

All seed must be labeled in accordance with USDA rules and regulations under the Federal Seed Act and State Seed Laws. Seed standards are to be based on a minimum thirty (30) gram test.

All grasses must be certified by an independent registered seed laboratory of the CONTRACTOR'S choice, stating as to its genetic purity (free of insects, noxious weeds, other varieties of grasses, any foreign matter; material or animal residue). Seed types shall be true to name and shall be delivered to the site in sealed bags of the vendor, bearing seed analysis and the date of the seed testing. The testing shall be within a period of six (6) months prior to commencement of planting operations. The seed shall be stored in such a manner as not to impair its effectiveness.

Listed below are the minimum grass standards:

Pure Seed, minimum	97.00%
Germination, minimum	85.00%
Inert, maximum	1.50%
Weed Seed, maximum	0.00%
Other Crop Seed, maximum	0.00%
Noxious Weed	0.00%

PROJECT COORDINATION & TEAMWORK

A well-established protocol of communication is the key ingredient toward exceptional results. The CITY, OHPA, GOLF COURSE ARCHITECT, GOLF COURSE SUPERINTENDENT, and CONTRACTOR must all work as a team to achieve our desired objective. Communication and cooperation during the busier times of the construction process will give all parties concerned a product of which we can all be proud.

BID DOCUMENTS

The attached Bid Documents must be completed and returned in accordance with Instruction to Bidders. See Bidders' Checklist for required information.

Please do not submit written bid in the bound Specification book.

TERM DEFINITIONS
FOR THE
GOLF COURSE CONSTRUCTION

AT

OAK HILLS PARK GOLF COURSE, NORWALK, CONNECTICUT

May 24, 2016

1). TEE CONSTRUCTION:

Includes shaping clean core to grade and dimension, tie in of surrounds to adjacent elevations, installation of drainage, installation of specified rootzone and laser leveling. Trucking of fill material from on site stockpile location included as transport from fill area.

2). TEE LASER LEVELING:

Includes stripping of existing sod on surface of specified tees to be leveled. Disposal of such sod as directed. Tilling of existing 6" rootzone as needed to loosen material. Amended with approved 60-20-20 rootzone material. Laser level surface of tee with approved laser leveling equipment. Hand finish surface in preparation of sod installation.

3). BUNKER CONSTRUCTION

Includes establishing clean core, tie in of surrounds to adjacent elevations, drainage/stone installation, bunker liner installation, sand installation-spread/stabilize. (See New Construction-NC, Rebuilding-RB, Removal-RM) within document and on construction plans. Trucking of fill material from on site stockpile location included-extra compensation only allowed for excavation from borrow area)

4). SUB-SURFACE DRAINAGE

Includes all associated trenching, installation and backfill for sub-surface piping, outfalls, stone in perforated and gravel trench areas, stone catchment basins, filtration pads and culvert replacements and extensions.

5). CART PATH CONSTRUCTION

Includes coring path, rolling/clean subbase, installation /roll gravel layer, installation of asphalt, (aggregate- subbase/stone dust), edge clean up, topsoil tie in of cart path edges post installation. **Includes hauling of spoils to designated area.**

6). ASPHALT CART PATH DEMOLITION AND REMOVAL

Includes demolition and removal of asphalt hauling OFF-SITE or to Disposal location determined by CITY. Regrading of cart path removal area including installation of topsoil, tie in to surrounding grades and finishing.

7). GRAVEL CART PATH DEMOLITION

Includes removing gravel cart path and re-placing material (if suitable) as base for new cart path installation. Installing topsoil and seeding/sodding in area of removal.

8). OFF SITE FILL/SHAPING MATERIAL ALLOWANCE

Includes cost of materials, trucking, and delivery to stockpile area.

9). ON SITE TRUCKING OF MATERIAL (Fill, Topsoil)

Includes loading and delivery from stockpile area to work location.

10.) FINISHING/GRASSING

Includes all finishing and preparation of seeded and sodded areas, seeding, hydromulching and sodding per project specifications.

11). BID ALTERNATES NOT INCLUDED IN PAGE TOTALS.

12.) SUBMIT BID WITH SUPPORTING DOCUMENTATION AS REQUIRED IN PROJECT SPECIFICATIONS (refer to bidder's checklist within CITY Documents)

12.) IRRIGATION IMPROVEMENTS

Refer to plans (separate) and specifications/materials or allowances provided by Turf Products Corporation.

13.) SOIL EROSION AND SEDIMENT CONTROL

Refer to plans (separate) and specifications (included) provided by Project Engineering.

14.) ROUGH SHAPING/EARTHWORK

Applicable to tee, green, cart path, bunker rebuilding work.

SECTION 311000

SITE CLEARING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Protecting existing vegetation to remain.
2. Removing existing vegetation.
3. Clearing and grubbing.
4. Stripping and stockpiling topsoil.
5. Removing above- and below-grade site improvements.
6. Disconnecting, capping or sealing, and removing site utilities abandoning site utilities in place.
7. Temporary erosion and sedimentation control.

1.3 DEFINITIONS

A. Subsoil: Soil beneath the level of subgrade; soil beneath the topsoil layers of a naturally occurring soil profile, typified by less than 1 percent organic matter and few soil organisms.

B. Surface Soil: Soil that is present at the top layer of the existing soil profile. In undisturbed areas, surface soil is typically called "topsoil," but in disturbed areas such as urban environments, the surface soil can be subsoil.

C. Topsoil: Top layer of the soil profile consisting of existing native surface topsoil or existing in-place surface soil; the zone where plant roots grow. Its appearance is generally friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects larger than 2 inches in diameter; and free of weeds, roots, toxic materials, or other nonsoil materials.

D. Tree-Protection Zone: Area surrounding individual trees or groups of trees and shrubs to be protected during construction and indicated on Drawings.

E. Vegetation: Trees, shrubs, groundcovers, grass, and other plants.

1.4 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.5 MATERIAL OWNERSHIP

A. Except for materials indicated to be stockpiled or otherwise remain Owner's property, cleared materials shall become Contractor's property and shall be removed from Project site.

1.6 INFORMATIONAL SUBMITTALS

A. Existing Conditions: Documentation of existing trees and plantings, adjoining construction, and site improvements that establishes preconstruction conditions that might be misconstrued as damage caused by site clearing.

1. Use sufficiently detailed photographs or video recordings.

B. Record Drawings: Identifying and accurately showing locations of capped utilities and other subsurface structural, electrical, and mechanical conditions.

1.7 FIELD CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.
2. Provide alternate routes around closed or obstructed trafficways if required by Owner or authorities having jurisdiction.

B. Improvements on Adjoining Property: Authority for performing site clearing indicated on property adjoining Owner's property will be obtained by Owner before award of Contract.

1. Do not proceed with work on adjoining property until directed by Architect.

C. Salvageable Improvements: Carefully remove items indicated to be salvaged and store on Owner's premises.

D. Utility Locator Service: Notify Call Before You Dig for area where Project is located before site clearing.

E. Do not commence site clearing operations until temporary erosion- and sedimentation-control and plant-protection measures are in place.

F. Tree- and Plant-Protection Zones: Protect according to requirements in Section 015639 "Temporary Tree and Plant Protection."

G. Soil Stripping, Handling, and Stockpiling: Perform only when the soil is dry or slightly moist.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Satisfactory Soil Material: Review requirements of approved imported soil with Golf Course Architect.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect and maintain benchmarks and survey control points from disturbance during construction.

B. Verify that trees, shrubs, and other vegetation to remain or to be relocated have been flagged and that protection zones have been identified and enclosed according to requirements in Section 015639 "Temporary Tree and Plant Protection."

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to Owner.

3.2 TEMPORARY EROSION AND SEDIMENTATION CONTROL

A. Provide temporary erosion- and sedimentation-control measures to prevent soil erosion and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways, according to erosion- and sedimentation-control Drawings and requirements of authorities having jurisdiction.

B. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross protection zones.

C. Inspect, maintain, and repair erosion- and sedimentation-control measures during construction until permanent vegetation has been established.

D. Remove erosion and sedimentation controls, and restore and stabilize areas disturbed during removal.

3.3 TREE AND PLANT PROTECTION

A. Protect trees and plants remaining on-site according to requirements in Section 015639 "Temporary Tree and Plant Protection."

B. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations according to requirements in Section 015639 "Temporary Tree and Plant Protection."

3.4 EXISTING UTILITIES

A. Locate, identify, disconnect, and seal or cap utilities indicated to be removed or abandoned in place.

1. Arrange with utility companies to shut off indicated utilities.

B. Locate, identify, and disconnect utilities indicated to be abandoned in place.

C. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by Owner or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Architect and Owner not less than five days in advance of proposed utility interruptions.
2. Do not proceed with utility interruptions without Architect's written permission.

D. Excavate for and remove underground utilities indicated to be removed.

3.5 CLEARING AND GRUBBING

A. Remove obstructions, trees, shrubs, and other vegetation to permit installation of new construction.

1. Do not remove trees, shrubs, and other vegetation indicated to remain or to be relocated.
2. Grind down stumps and remove roots larger than 3 inches in diameter, obstructions, and debris to a depth of 18 inches below exposed subgrade.
3. Use only hand methods or air spade for grubbing within protection zones.
4. Chip removed tree branches and dispose of off-site.

B. Fill depressions caused by clearing and grubbing operations with satisfactory soil material unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding a loose depth of 8 inches, and compact each layer to a density equal to adjacent original ground.

3.6 TOPSOIL STRIPPING

A. Remove sod and grass before stripping topsoil.

B. Strip topsoil in a manner to prevent intermingling with underlying subsoil or other waste materials.

C. Stockpile topsoil away from edge of excavations without intermixing with subsoil or other materials. Grade and shape stockpiles to drain surface water. Cover to prevent windblown dust and erosion by water.

1. Limit height of topsoil stockpiles to.
2. Do not stockpile topsoil within protection zones.
3. Stockpile surplus topsoil to allow for respreading deeper topsoil.

3.7 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and necessary to facilitate new construction.

B. Remove slabs, paving, curbs, gutters, and aggregate base as indicated.

1. Unless existing full-depth joints coincide with line of demolition, neatly saw-cut along line of existing pavement to remain before removing adjacent existing pavement. Saw-cut faces vertically.
2. Paint cut ends of steel reinforcement in concrete to remain with two coats of antirust coating, following coating manufacturer's written instructions. Keep paint off surfaces that will remain exposed.

3.8 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials including trash and debris, and legally dispose of them off Owner's property.

B. Separate recyclable materials produced during site clearing from other nonrecyclable materials. Store or stockpile without intermixing with other materials, and transport them to recycling facilities. Do not interfere with other Project work.

END OF SECTION 311000

SECTION 32 14 00

UNIT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Brick pavers set in aggregate setting beds.
2. Steel edge restraints.

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For the following:

1. Pavers.
2. Edge restraints.

B. Sieve Analyses: For aggregate setting-bed materials, according to ASTM C 136.

C. Samples for Verification: For full-size units of each type of unit paver indicated.

1.5 INFORMATIONAL SUBMITTALS

A. Adhesion and Compatibility Test Reports: From latex-additive manufacturer for mortar and grout containing latex additives.

B. Material Certificates: For unit pavers. Include statements of material properties indicating compliance with requirements, including compliance with standards. Provide for each type and size of unit.

1.6 QUALITY ASSURANCE

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store pavers on elevated platforms in a dry location. If units are not stored in an enclosed location, cover tops and sides of stacks with waterproof sheeting, securely tied.

B. Store cementitious materials on elevated platforms, under cover, and in a dry location. Do not use cementitious materials that have become damp.

C. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Source Limitations: Obtain each type of unit paver, joint material, and setting material from single source with resources to provide materials and products of consistent quality in appearance and physical properties.

2.2 BRICK PAVERS

A. Brick Pavers: Light-traffic paving brick; ASTM C 902, Class SX, Type II, Application PS. Provide brick without frogs or cores in surfaces exposed to view in the completed Work.

1. Manufacturer: As indicated.
2. Thickness: As indicated.
3. Face Size and Shape: As indicated by model.
4. Color: As indicated.

2.3 CURBS AND EDGE RESTRAINTS

A. Steel Edge Restraints: Manufacturer's standard painted steel edging 1/8 inch thick by 4 inches high with loops pressed from or welded to face to receive stakes at 36 inches o.c. and steel stakes 15 inches long for each loop.

1. Manufacturers: As indicated.
2. Color: As indicated.

2.4 AGGREGATE SETTING-BED MATERIALS

A. Graded Aggregate for Subbase: Sound, crushed stone or gravel complying with ASTM D 448 for Size No. 57.

B. Graded Aggregate for Base: Sound, crushed stone or gravel complying with ASTM D 448 for Size No. 8.

C. Sand for Leveling Course: Sound, sharp, washed, natural sand or crushed stone complying with gradation requirements in ASTM C 33/C 33M for fine aggregate.

D. Sand for Joints: Polymeric sand.

1. Provide sand of color needed to match paver color. Submit samples to A/E for approval.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces indicated to receive unit paving, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Proof-roll prepared subgrade according to requirements in Section 312000 "Earth Moving" to identify soft pockets and areas of excess yielding. Proceed with unit paver installation only after deficient subgrades have been corrected and are ready to receive subbase and base course for unit pavers.

3.3 INSTALLATION, GENERAL

A. Do not use unit pavers with chips, cracks, voids, discolorations, or other defects that might be visible or cause staining in finished work.

B. Mix pavers from several pallets or cubes, as they are placed, to produce uniform blend of colors and textures.

C. Cut unit pavers with motor-driven masonry saw equipment to provide clean, sharp, unchipped edges. Cut units to provide pattern indicated and to fit adjoining work neatly. Use full units without cutting where possible. Hammer cutting is not acceptable.

1. For concrete pavers, a block splitter may be used.

D. Handle protective-coated brick pavers to prevent coated surfaces from contacting backs or edges of other units. If, despite these precautions, coating does contact bonding surfaces of brick, remove coating from bonding surfaces before setting brick.

E. Joint Pattern: As indicated.

F. Tolerances: Do not exceed 1/4 inch in 10 feet from level, or indicated slope, for finished surface of paving.

G. Provide edge restraints as indicated. Install edge restraints before placing unit pavers.

1. Install edge restraints to comply with manufacturer's written instructions. Install stakes at intervals required to hold edge restraints in place during and after unit paver installation.

3.4 AGGREGATE SETTING-BED APPLICATIONS

A. Compact soil subgrade uniformly to at least 95 percent of laboratory density.

B. Place aggregate base, compact by tamping with plate vibrator, and screed to depth indicated.

C. Place leveling course and screed to a thickness of 1 to 1-1/2 inches, taking care that moisture content remains constant and density is loose and uniform until pavers are set and compacted.

D. Treat leveling course with herbicide to inhibit growth of grass and weeds.

E. Set pavers with a minimum joint width of 1/16 inch and a maximum of 1/8 inch, being careful not to disturb leveling base. If pavers have spacer bars, place pavers hand tight against spacer bars. Use string lines to keep straight lines. Fill gaps between units that exceed 3/8 inch with pieces cut to fit from full-size unit pavers.

1. When installation is performed with mechanical equipment, use only unit pavers with spacer bars on sides of each unit.

F. Vibrate pavers into leveling course with a low-amplitude plate vibrator capable of a 3500- to 5000-lbf compaction force at 80 to 90 Hz. Use vibrator with neoprene mat on face of plate or other means as needed to prevent cracking and chipping of pavers. Perform at least three passes across paving with vibrator.

1. Compact pavers when there is sufficient surface to accommodate operation of vibrator, leaving at least 36 inches of uncompacted pavers adjacent to temporary edges.
2. Before ending each day's work, compact installed concrete pavers except for 36-inch width of uncompacted pavers adjacent to temporary edges (laying faces).
3. As work progresses to perimeter of installation, compact installed pavers that are adjacent to permanent edges unless they are within 36 inches of laying face.
4. Before ending each day's work and when rain interrupts work, cover pavers that have not been compacted and cover leveling course on which pavers have not been placed with nonstaining plastic sheets to protect them from rain.

G. Spread dry sand and fill joints immediately after vibrating pavers into leveling course. Vibrate pavers and add sand until joints are completely filled, then remove excess sand. Leave a slight surplus of sand on the surface for joint filling.

H. Do not allow traffic on installed pavers until sand has been vibrated into joints.

I. Repeat joint-filling process 30 days later.

3.5 REPAIRING, POINTING, AND CLEANING

A. Remove and replace unit pavers that are loose, chipped, broken, stained, or otherwise damaged or that do not match adjoining units. Provide new units to match adjoining units and install in same manner as original units, with same joint treatment and with no evidence of replacement.

B. Pointing: During tooling of joints, enlarge voids or holes and completely fill with grout. Point joints at sealant joints to provide a neat, uniform appearance, properly prepared for sealant application.

C. Cleaning: Remove excess grout from exposed paver surfaces; wash and scrub clean.

END OF SECTION 321400

SECTION 32 92 00

TURF AND GRASSES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Seeding
2. Sodding
3. Meadow grasses and wildflowers
4. Lawn renovation

1.3 DEFINITIONS

A. Finish Grade: Elevation of finished surface of planting soil.

B. Manufactured Soil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

C. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

D. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill immediately beneath planting soil.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Certification of Grass Seed: From seed vendor for each grass-seed monostand or mixture stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

1. Certification of each seed mixture for turfgrass sod, identifying source, including name and telephone number of supplier.

C. Product Certificates: For soil amendments and fertilizers, signed by product manufacturer.

D. Qualification Data: For landscape Installer.

E. Material Test Reports: For existing surface soil and imported topsoil.

F. Planting Schedule: Indicating anticipated planting dates for each type of planting.

G. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of lawns during a calendar year. Submit before expiration of required maintenance periods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful lawn and meadow establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when planting is in progress.

B. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

C. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of topsoil.

1. Report suitability of topsoil for lawn growth. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce a satisfactory topsoil.

D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Management and Coordination."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Seed: Deliver seed in original sealed, labeled, and undamaged containers.

B. Sod: Harvest, deliver, store, and handle sod according to requirements in "Specifications for Turfgrass Sod Materials" and "Specifications for Turfgrass Sod Transplanting and Installation" in TPI's "Guideline Specifications to Turfgrass Sodding." Deliver sod in time for planting within 24 hours of harvesting. Protect sod from breakage and drying.

C. Bulk Materials:
1. Do not dump or store bulk materials near structures, utilities, walkways and pavements, or on existing turf areas or plants.
2. Provide erosion-control measures to prevent erosion or displacement of bulk materials, discharge of soil-bearing water runoff, and airborne dust reaching adjacent properties, water conveyance systems, or walkways.
3. Accompany each delivery of bulk fertilizers, lime, and soil amendments with appropriate certificates.

1.7 SCHEDULING

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.

1. Spring Planting: March 15 until June 15.
2. Fall Planting: August 15 until October 15.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

1.8 MAINTENANCE SERVICE

A. Initial Turf Maintenance Service: Provide full maintenance by skilled employees of landscape Installer. Maintain as required in Part 3. Begin maintenance immediately after each area is planted and continue until acceptable turf is established but for not less than the following periods:
1. Seeded Turf: 60 days from date of Substantial Completion.
a. When initial maintenance period has not elapsed before end of planting season, or if turf is not fully established, continue maintenance during next planting season.
2. Sodded Turf: 60 days from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 SEED

A. Grass Seed: Fresh, clean, dry, new-crop seed complying with AOSA's "Journal of Seed Technology; Rules for Testing Seeds" for purity and germination tolerances.

B. Seed Species: State-certified seed of grass species, as follows:

1. Sun and Partial Shade: Proportioned by weight as follows:

a. 70 percent turf-type tall fescue.
b. 20 percent perennial ryegrass (Lolium perenne).
c. 10 percent Kentucky bluegrass (Poa pratensis).

2.2 TURFGRASS SOD

A. Turfgrass Sod: Certified, complying with "Specifications for Turfgrass Sod Materials" in TPI's "Guideline Specifications to Turfgrass Sodding." Furnish viable sod of uniform density, color, and texture, strongly rooted, and capable of vigorous growth and development when planted.

B. Turfgrass Species: Sod of grass species as follows, with not less than 95 percent germination, not less than 85 percent pure seed, and not more than 0.5 percent weed seed:

1. Turf-type tall fescue, a minimum of three cultivars.

2.3 MEADOW GRASSES AND WILDFLOWERS

A. Wildflower and Native-Grass Seed: Fresh, clean, and dry new seed, of mixed species as follows:

1. 'Northeastern Pollinator Conservation Seed Mix' by Ernst Conservation Seeds, Meadville, PA www.ernstseed.com (800) 873-3321.

B. Seed Carrier: Inert material, sharp clean sand or perlite.

2.4 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 6 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source: Amend existing in-place surface soil to produce topsoil. Verify suitability of surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

a. Surface soil may be supplemented with imported or manufactured topsoil from off-site sources. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.

2.5 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:

1. Class: Class T, with a minimum 99 percent passing through No. 8 sieve and a minimum 75 percent passing through No. 60 sieve.
2. Provide lime in form of dolomitic limestone.

B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.

C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.

D. Aluminum Sulfate: Commercial grade, unadulterated.

E. Perlite: Horticultural perlite, soil amendment grade.

F. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.

G. Sand: Clean, washed, natural or manufactured, free of toxic materials.

H. Diatomaceous Earth: Calcined, diatomaceous earth, 90 percent silica, with approximately 140 percent water absorption capacity by weight.

I. Zeolites: Mineral clinoptilolite with at least 60 percent water absorption by weight.

2.6 ORGANIC SOIL AMENDMENTS

A. Peat: Finely divided or granular texture, with a pH range of 6 to 7.5, containing partially decomposed moss peat, native peat, or reed-sedge peat and having a water-absorbing capacity of 1100 to 2000 percent.

B. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

2.7 FERTILIZER

A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.

B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.

C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

2.8 MULCHES

A. Straw Mulch: Provide air-dry, clean, mildew- and seed-free, salt hay or threshed straw of wheat, rye, oats, or barley.

B. Fiber Mulch: Biodegradable, dyed-wood, cellulose-fiber mulch; nontoxic; free of plant-growth or germination inhibitors; with maximum moisture content of 15 percent and a pH range of 4.5 to 6.5.

C. Nonasphaltic Tackifier: Colloidal tackifier recommended by fiber-mulch manufacturer for slurry application; nontoxic and free of plant-growth or germination inhibitors.

2.9 PESTICIDES

A. General: Pesticide, registered and approved by EPA, acceptable to authorities having jurisdiction, and of type recommended by manufacturer for each specific problem and as required for Project conditions and application. Do not use restricted pesticides unless authorized in writing by authorities having jurisdiction.

B. Pre-Emergent Herbicide (Selective and Non-Selective): Effective for controlling the germination or growth of weeds within planted areas at the soil level directly below the mulch layer.

C. Post-Emergent Herbicide (Selective and Non-Selective): Effective for controlling weed growth that has already germinated.

2.10 PLANTING SOIL MIX

A. Planting Soil Mix: Mix topsoil with soil amendments and fertilizers as recommended in the soils report.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive lawns and grass for compliance with requirements and other conditions affecting performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, trees, shrubs, and plantings from damage caused by planting operations.

1. Protect adjacent and adjoining areas from hydroseeding overspray.

B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.3 LAWN PREPARATION

A. Limit lawn subgrade preparation to areas to be planted.

B. Newly Graded Subgrades: Loosen subgrade to a minimum depth of 6 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Apply superphosphate fertilizer directly to subgrade before loosening.

2. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.

    a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
    b. Mix lime with dry soil before mixing fertilizer.

3. Spread planting soil mix to a depth of 4 inches but not less than required to meet finish grades after light rolling and natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

    a. Spread approximately one-half the thickness of planting soil mix over loosened subgrade. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil mix.
    b. Reduce elevation of planting soil to allow for soil thickness of sod.

C. Unchanged Subgrades: If lawns are to be planted in areas unaltered or undisturbed by excavating, grading, or surface soil stripping operations, prepare surface soil as follows:

1. Remove existing grass, vegetation, and turf. Do not mix into surface soil.
2. Loosen surface soil to a depth of at least of 6 inches. Apply soil amendments and fertilizers according to planting soil mix proportions and mix thoroughly into top 6 inches of soil. Till soil to a homogeneous mixture of fine texture.

    a. Apply superphosphate fertilizer directly to surface soil before loosening.

3. Remove stones larger than 1 inch in any dimension and sticks, roots, trash, and other extraneous matter.
4. Legally dispose of waste material, including grass, vegetation, and turf, off Owner's property.

D. Finish Grading: Grade planting areas to a smooth, uniform surface plane with loose, uniformly fine texture. Grade to within plus or minus 1/2 inch of finish elevation. Roll and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future.

E. Moisten prepared lawn areas before planting if soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

F. Restore areas if eroded or otherwise disturbed after finish grading and before planting.

3.4 SEEDING

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.

1. Do not use wet seed or seed that is moldy or otherwise damaged.

B. Sow lawn seed at the rate of 6 to 8 lb/1000 sq. ft..

C. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray.

D. Protect seeded areas with slopes exceeding 1:6 with erosion-control fiber mesh installed and stapled according to manufacturer's written instructions.

E. Protect seeded areas with slopes not exceeding 1:6 by spreading straw mulch. Spread uniformly at a minimum rate of 2 tons/acre to form a continuous blanket 1-1/2 inches in loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

1. Anchor straw mulch by crimping into topsoil with suitable mechanical equipment.
2. Bond straw mulch by spraying with asphalt emulsion at the rate of 10 to 13 gal./1000 sq. ft.. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

F. Protect seeded areas from hot, dry weather or drying winds by applying straw mulch within 24 hours after completing seeding operations. Soak and scatter uniformly to a depth of 3/16 inch and roll to a smooth surface.

3.5 SODDING

A. Lay sod within 24 hours of harvesting. Do not lay sod if dormant or if ground is frozen or muddy.

B. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod; do not stretch or overlap. Stagger sod strips or pads to offset joints in adjacent courses. Avoid damage to subgrade or sod during installation. Tamp and roll lightly to ensure contact with subgrade, eliminate air pockets, and form a smooth surface. Work sifted soil or fine sand into minor cracks between pieces of sod; remove excess to avoid smothering sod and adjacent grass.
1. Lay sod across angle of slopes exceeding 1:3.
2. Anchor sod on slopes exceeding 1:6 with wood pegs or steel staples spaced as recommended by sod manufacturer but not less than 2 anchors per sod strip to prevent slippage.

C. Saturate sod with fine water spray within two hours of planting. During first week after planting, water daily or more frequently as necessary to maintain moist soil to a minimum depth of 1-1/2 inches below sod.

3.6 TURF RENOVATION

A. Renovate existing lawn.

B. Renovate existing lawn damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.

1. Reestablish lawn where settlement or washouts occur or where minor regrading is required.

C. Remove sod and vegetation from diseased or unsatisfactory lawn areas; do not bury in soil.

D. Remove topsoil containing foreign materials resulting from Contractor's operations, including oil drippings, fuel spills, stone, gravel, and other construction materials, and replace with new topsoil.

E. Mow, dethatch, core aerate, and rake existing lawn.

F. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.

G. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and turf, and legally dispose of them off Owner's property.

H. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.

I. Apply soil amendments and initial fertilizers required for establishing new lawns and mix thoroughly into top 4 inches of existing soil. Provide new planting soil to fill low spots and meet finish grades.

J. Apply seed and protect with straw mulch as required for new lawns.

K. Water newly planted areas and keep moist until new lawn is established.

3.7 PESTICIDE APPLICATION

A. Apply pesticides and other chemical products and biological control agents in accordance with requirements of authorities having jurisdiction and manufacturer's written recommendations. Coordinate applications with Owner's operations and others in proximity to the Work. Notify Owner before each application is performed.

B. Post-Emergent Herbicides (Selective and Non-Selective): Apply only as necessary to treat already-germinated weeds and in accordance with manufacturer's written recommendations.

3.8 TURF MAINTENANCE

A. Maintain and establish turf by watering, fertilizing, weeding, mowing, trimming, replanting, and performing other operations as required to establish healthy, viable turf. Roll, regrade, and replant bare or eroded areas and remulch to produce a uniformly smooth turf. Provide materials and installation the same as those used in the original installation.
   1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and turf damaged or lost in areas of subsidence.
   2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
   3. Apply treatments as required to keep turf and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and turf-watering equipment to convey water from sources and to keep turf uniformly moist to a depth of 4 inches.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch.
2. Water turf with fine spray at a minimum rate of 1 inch per week unless rainfall precipitation is adequate.
3. Use installed irrigation system if available.

C. Mow turf as soon as top growth is tall enough to cut. Repeat mowing to maintain specified height without cutting more than 1/3 of grass height. Remove no more than 1/3 of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain the following grass height:
1. Mow grass to a height of 3 to 4 inches.
2. Do not mow detention basin.

D. Turf Postfertilization: Apply fertilizer after initial mowing and when grass is dry.
1. Use fertilizer that will provide actual nitrogen of at least 1 lb/1000 sq. ft. to turf area.

3.9 SATISFACTORY LAWNS

A. Satisfactory Seeded Lawn: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. (0.92 sq. m) and bare spots not exceeding 5 by 5 inches.

B. Reestablish lawns that do not comply with requirements and continue maintenance until lawns are satisfactory.

3.10 MEADOW

A. Sow seed with spreader or seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph.

1. Before sowing, mix seed with seed carrier at a ratio of not less than two parts seed carrier to one part seed.
2. Evenly distribute seed by sowing equal quantities in two directions at right angles to each other.
3. Do not use wet seed or seed that is moldy or otherwise damaged.

B. Sow seed at a total rate of 7.2 bulk pounds/ acre.

C. Brush seed into top 1/16 inch of soil, roll lightly, and water with fine spray.

D. Protect seeded areas from hot, dry weather or drying winds by applying peat or compost mulch within 24 hours after completing seeding operations. Soak areas, scatter mulch uniformly to a thickness of 3/16 inch, and roll surface smooth.

E. Water newly planted areas and keep moist until meadow is established.

3.11 MEADOW MAINTENANCE

A. Maintain and establish meadow by watering, weeding, mowing, trimming, replanting, and performing other operations as required to establish a healthy, viable meadow. Roll, regrade, and replant bare or eroded areas and remulch. Provide materials and installation the same as those used in the original installation.

1. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace materials and meadow damaged or lost in areas of subsidence.
2. In areas where mulch has been disturbed by wind or maintenance operations, add new mulch and anchor as required to prevent displacement.
3. Apply treatments as required to keep meadow and soil free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards.

B. Watering: Install and maintain temporary piping, hoses, and meadow-watering equipment to convey water from sources and to keep meadow uniformly moist.

1. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.
2. Water meadow with fine spray at a minimum rate of 1/2 inch (13 mm) per week for six weeks after planting unless rainfall precipitation is adequate.

3.12 CLEANUP AND PROTECTION

A. Promptly remove soil and debris created by lawn work from paved areas. Clean wheels of vehicles before leaving site to avoid tracking soil onto roads, walks, or other paved areas.

B. Erect barricades and warning signs as required to protect newly planted areas from traffic. Maintain barricades throughout maintenance period and remove after lawn is established.

C. Remove erosion-control measures after grass establishment period.

END OF SECTION 329200

SECTION 32 93 00

PLANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Trees.
2. Shrubs.
3. Ground cover.
4. Plants.

1.3 DEFINITIONS

A. Backfill: The earth used to replace or the act of replacing earth in an excavation.

B. Balled and Burlapped Stock: Exterior plants dug with firm, natural balls of earth in which they are grown, with ball size not less than diameter and depth recommended by ANSI Z60.1 for type and size of tree or shrub required; wrapped, tied, rigidly supported, and drum-laced as recommended by ANSI Z60.1.

C. Balled and Potted Stock: Exterior plants dug with firm, natural balls of earth in which they are grown and placed, unbroken, in a container. Ball size is not less than diameter and depth recommended by ANSI Z60.1 for type and size of exterior plant required.

D. Bare-Root Stock: Exterior plants with a well-branched, fibrous-root system developed by transplanting or root pruning, with soil or growing medium removed, and with not less than minimum root spread according to ANSI Z60.1 for kind and size of exterior plant required.

E. Clump: Where three or more young trees were planted in a group and have grown together as a single tree having three or more main stems or trunks.

F. Container-Grown Stock: Healthy, vigorous, well-rooted exterior plants grown in a container with well-established root system reaching sides of container and maintaining a firm ball when removed from container. Container shall be rigid enough to hold ball shape and protect root mass during shipping and be sized according to ANSI Z60.1 for kind, type, and size of exterior plant required.

G. Fabric Bag-Grown Stock: Healthy, vigorous, well-rooted exterior plants established and grown in-ground in a porous fabric bag with well-established root system reaching sides of fabric bag. Fabric bag size is not less than diameter, depth, and volume required by ANSI Z60.1 for type and size of exterior plant.

H. Finish Grade: Elevation of finished surface of planting soil.

I. Manufactured Topsoil: Soil produced off-site by homogeneously blending mineral soils or sand with stabilized organic soil amendments to produce topsoil or planting soil.

J. Multi-Stem: Where three or more main stems arise from the ground from a single root crown or at a point right above the root crown.

K. Planting Soil: Native or imported topsoil, manufactured topsoil, or surface soil modified to become topsoil; mixed with soil amendments.

L. Subgrade: Surface or elevation of subsoil remaining after completing excavation, or top surface of a fill or backfill, before placing planting soil.

1.4 SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Certificates: For each type of manufactured product, signed by product manufacturer, and complying with the following:

1. Manufacturer's certified analysis for standard products.
2. Analysis of other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

C. Qualification Data: For landscape Installer.

D. Material Test Reports: For existing surface soil and imported topsoil.

E. Planting Schedule: Indicating anticipated planting dates for exterior plants.

F. Maintenance Instructions: Recommended procedures to be established by Owner for maintenance of exterior plants during a calendar year. Submit before expiration of required maintenance periods.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A qualified landscape installer whose work has resulted in successful establishment of exterior plants.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on Project site when exterior planting is in progress.

B. Soil-Testing Laboratory Qualifications: An independent laboratory, recognized by the State Department of Agriculture, with the experience and capability to conduct the testing indicated and that specializes in types of tests to be performed.

C. Topsoil Analysis: Furnish soil analysis by a qualified soil-testing laboratory stating percentages of organic matter; gradation of sand, silt, and clay content; cation exchange capacity; sodium absorption ratio; deleterious material; pH; and mineral and plant-nutrient content of topsoil.

1. Report suitability of topsoil for plant growth. State recommended quantities of nitrogen, phosphorus, and potash nutrients and soil amendments to be added to produce a satisfactory topsoil.

D. Provide quality, size, genus, species, and variety of exterior plants indicated, complying with applicable requirements in ANSI Z60.1, "American Standard for Nursery Stock."

1. Selection of exterior plants purchased under allowances will be made by Architect, who will tag plants at their place of growth before they are prepared for transplanting.

E. Tree and Shrub Measurements: Measure according to ANSI Z60.1 with branches and trunks or canes in their normal position. Do not prune to obtain required sizes. Take caliper measurements 6 inches above ground for trees up to 4-inch caliper size, and 12 inches above ground for larger sizes. Measure main body of tree or shrub for height and spread; do not measure branches or roots tip-to-tip.

F. Observation: Landscape Architect may observe trees and shrubs either at place of growth or at site before planting for compliance with requirements for genus, species, variety, size, and quality. Landscape Architect retains right to observe trees and shrubs further for size and condition of balls and root systems, insects, injuries, and latent defects and to reject unsatisfactory or defective material at any time during progress of work. Remove rejected trees or shrubs immediately from Project site.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver exterior plants freshly dug.

1. Immediately after digging up bare-root stock, pack root system in wet straw, hay, or other suitable material to keep root system moist until planting.

B. Do not prune trees and shrubs before delivery, except as approved by Architect. Protect bark, branches, and root systems from sun scald, drying, sweating, whipping, and other handling and tying damage. Do not bend or bind-tie trees or shrubs in such a manner as to destroy their natural shape. Provide protective covering of exterior plants during delivery. Do not drop exterior plants during delivery.

C. Handle planting stock by root ball.

D. Store bulbs, corms, and tubers in a dry place at 60 to 65 deg F until planting.

E. Deliver exterior plants after preparations for planting have been completed and install immediately. If planting is delayed more than six hours after delivery, set exterior

plants trees in shade, protect from weather and mechanical damage, and keep roots moist.

1. Set balled stock on ground and cover ball with soil, peat moss, sawdust, or other acceptable material.
2. Do not remove container-grown stock from containers before time of planting.
3. Water root systems of exterior plants stored on-site with a fine-mist spray. Water as often as necessary to maintain root systems in a moist condition.

1.7 PROJECT CONDITIONS

A. Planting Restrictions: Plant during one of the following periods. Coordinate planting periods with maintenance periods to provide required maintenance from date of Substantial Completion.

1. Spring Planting: March 15 until June 15.
2. Fall Planting: August 15 until October 15.

B. Weather Limitations: Proceed with planting only when existing and forecasted weather conditions permit.

C. Coordination with Lawns: Plant trees and shrubs after finish grades are established and before planting lawns, unless otherwise acceptable to Landscape Architect.

1. When planting trees and shrubs after lawns, protect lawn areas and promptly repair damage caused by planting operations.

1.8 WARRANTY

A. Special Warranty: Warrant the following exterior plants, for the warranty period indicated, against defects including death and unsatisfactory growth, except for defects resulting from lack of adequate maintenance, neglect, or abuse by Owner, or incidents that are beyond Contractor's control.

1. Warranty Period for Trees: One year from date of Substantial Completion.
2. Remove dead exterior plants immediately. Replace immediately unless required to plant in the succeeding planting season.
3. Replace exterior plants that are more than 25 percent dead or in an unhealthy condition at end of warranty period.
4. A limit of one replacement of each exterior plant will be required, except for losses or replacements due to failure to comply with requirements.

1.9 MAINTENANCE

A. Trees and Shrubs: Maintain for the following maintenance period by pruning, cultivating, watering, weeding, fertilizing, restoring planting saucers, tightening and repairing stakes and guy supports, and resetting to proper grades or vertical position, as required to establish healthy, viable plantings. Spray as required to keep trees and shrubs free of insects and disease. Restore or replace damaged tree wrappings.

1. Maintenance Period: 12 months from date of Substantial Completion.

B. Ground Cover and Plants: Maintain for the following maintenance period by watering, weeding, fertilizing, and other operations as required to establish healthy, viable plantings:

1. Maintain plantings until completion and acceptance of the entire project.

PART 2 - PRODUCTS

2.1 TREE AND SHRUB MATERIAL

A. General: Furnish nursery-grown trees and shrubs complying with ANSI Z60.1, with healthy root systems developed by transplanting or root pruning. Provide well-shaped, fully branched, healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions, and disfigurement.

B. Grade: Provide trees and shrubs of sizes and grades complying with ANSI Z60.1 for type of trees and shrubs required. Trees and shrubs of a larger size may be used if acceptable to Architect, with a proportionate increase in size of roots or balls.

C. If formal arrangements or consecutive order of trees or shrubs is shown, select stock for uniform height and spread, and number label to assure symmetry in planting.

2.2 SHADE AND FLOWERING TREES

A. Shade Trees: Single-stem trees with straight trunk, well-balanced crown, and intact leader, of height and caliper indicated, complying with ANSI Z60.1 for type of trees required.

1. Provide balled and burlapped trees.
2. Branching Height: One-third to one-half to One-half of tree height.

B. Small Upright Trees: Branched or pruned naturally according to species and type, with relationship of caliper, height, and branching according to ANSI Z60.1; stem form as follows:

1. Stem Form: Single stem.
2. Provide balled and burlapped trees.

C. Multistem Trees: Branched or pruned naturally according to species and type, with relationship of caliper, height, and branching according to ANSI Z60.1; stem form as follows:

1. Stem Form: Clump.
2. Provide balled and burlapped trees.

2.3 DECIDUOUS SHRUBS

A. Form and Size: Deciduous shrubs with not less than the minimum number of canes required by and measured according to ANSI Z60.1 for type, shape, and height of shrub.

1. Provide balled and burlapped, balled and potted, container-grown, or fabric bag-grown trees.

2.4 GROUND COVER PLANTS

A. Ground Cover: Provide ground cover of species indicated, established and well rooted in pots or similar containers, and complying with ANSI Z60.1.

2.5 PLANTS

A. Annuals: Provide healthy, disease-free plants of species and variety shown or listed. Provide only plants that are acclimated to outdoor conditions before delivery and that are in bud but not yet in bloom.

B. Perennials: Provide healthy, field-grown plants from a commercial nursery, of species and variety shown or listed.

2.6 TOPSOIL

A. Topsoil: ASTM D 5268, pH range of 5.5 to 7, a minimum of 6 percent organic material content; free of stones 1 inch or larger in any dimension and other extraneous materials harmful to plant growth.

1. Topsoil Source: Reuse surface soil stockpiled on-site. Verify suitability of stockpiled surface soil to produce topsoil. Clean surface soil of roots, plants, sod, stones, clay lumps, and other extraneous materials harmful to plant growth.

a. Supplement with imported or manufactured topsoil from off-site sources when quantities are insufficient. Obtain topsoil displaced from naturally well-drained construction or mining sites where topsoil occurs at least 4 inches deep; do not obtain from agricultural land, bogs or marshes.

2.7 INORGANIC SOIL AMENDMENTS

A. Lime: ASTM C 602, agricultural limestone containing a minimum 80 percent calcium carbonate equivalent and as follows:

1. Class: Class T, with a minimum 99 percent passing through No. 8 sieve and a minimum 75 percent passing through No. 60 sieve.
2. Provide lime in form of dolomitic limestone.

B. Sulfur: Granular, biodegradable, containing a minimum of 90 percent sulfur, with a minimum 99 percent passing through No. 6 sieve and a maximum 10 percent passing through No. 40 sieve.

C. Iron Sulfate: Granulated ferrous sulfate containing a minimum of 20 percent iron and 10 percent sulfur.

D. Aluminum Sulfate: Commercial grade, unadulterated.

E. Perlite: Horticultural perlite, soil amendment grade.

F. Agricultural Gypsum: Finely ground, containing a minimum of 90 percent calcium sulfate.

G. Sand: Clean, washed, natural or manufactured, free of toxic materials.

H. Diatomaceous Earth: Calcined, diatomaceous earth, 90 percent silica, with approximately 140 percent water absorption capacity by weight.

I. Zeolites: Mineral clinoptilolite with at least 60 percent water absorption by weight.

2.8 ORGANIC SOIL AMENDMENTS

A. Peat: Finely divided or granular texture, with a pH range of 6 to 7.5, containing partially decomposed moss peat, native peat, or reed-sedge peat and having a water-absorbing capacity of 1100 to 2000 percent.

B. Manure: Well-rotted, unleached, stable or cattle manure containing not more than 25 percent by volume of straw, sawdust, or other bedding materials; free of toxic substances, stones, sticks, soil, weed seed, and material harmful to plant growth.

C. Mycorrhizal fungi: Endo and Ecto mycorrhiza spores at 95 million spores/lb. Apply to all exterior plants per manufacturer's written specifications.
   1. Available products:
      a. M-Roots, Novozymes Biologicals, Inc.
      b. PHC Tree Saver, PHC Products.
      c. Mycorrhizal Applications, Inc.

2.9 FERTILIZER

A. Bonemeal: Commercial, raw or steamed, finely ground; a minimum of 4 percent nitrogen and 20 percent phosphoric acid.

B. Superphosphate: Commercial, phosphate mixture, soluble; a minimum of 20 percent available phosphoric acid.

C. Commercial Fertilizer: Commercial-grade complete fertilizer of neutral character, consisting of fast- and slow-release nitrogen, 50 percent derived from natural organic sources of urea formaldehyde, phosphorous, and potassium in the following composition:

1. Composition: 1 lb/1000 sq. ft. of actual nitrogen, 4 percent phosphorous, and 2 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

D. Slow-Release Fertilizer: Granular or pelleted fertilizer consisting of 50 percent water-insoluble nitrogen, phosphorus, and potassium in the following composition:

1. Composition: 20 percent nitrogen, 10 percent phosphorous, and 10 percent potassium, by weight.
2. Composition: Nitrogen, phosphorous, and potassium in amounts recommended in soil reports from a qualified soil-testing agency.

2.10 MULCHES

A. Organic Mulch: Free from deleterious materials and suitable as a top dressing of trees and shrubs, consisting of one of the following:

1. Type: Shredded hardwood.

2.11 MISCELLANEOUS PRODUCTS

A. Antidesiccant: Water-insoluble emulsion, permeable moisture retarder, film forming, for trees and shrubs. Deliver in original, sealed, and fully labeled containers and mix according to manufacturer's written instructions.

2.12 PLANTING SOIL MIX

A. Planting Soil Mix: Mix topsoil with the soil amendments and fertilizers recommended in the soils report.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive exterior plants for compliance with requirements and conditions affecting installation and performance. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities, and lawns and existing exterior plants from damage caused by planting operations.

B. Provide erosion-control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

C. Apply antidesiccant to trees and shrubs using power spray to provide an adequate film over trunks, branches, stems, twigs, and foliage to protect during digging, handling, and transportation.

1. If deciduous trees or shrubs are moved in full leaf, spray with antidesiccant at nursery before moving and again two weeks after planting.

D. Time of planting:
1. Deciduous material: Plant deciduous materials in a dormant condition. If deciduous trees are planted in leaf, they shall be sprayed with anti-desiccant.

3.3 PLANTING BED ESTABLISHMENT

A. Loosen subgrade of planting beds to a minimum depth of 8 inches. Remove stones larger than 1 inch in any dimension and sticks, roots, rubbish, and other extraneous matter and legally dispose of them off Owner's property.

1. Apply superphosphate fertilizer directly to subgrade before loosening.
2. Thoroughly blend planting soil mix off-site before spreading or spread topsoil, apply soil amendments and fertilizer on surface, and thoroughly blend planting soil mix.

a. Delay mixing fertilizer with planting soil if planting will not proceed within a few days.
b. Mix lime with dry soil before mixing fertilizer.

3. Spread planting soil mix to a depth of 12 inches but not less than required to meet finish grades after natural settlement. Do not spread if planting soil or subgrade is frozen, muddy, or excessively wet.

a. Spread approximately one-half the thickness of planting soil mix over loosened subgrade. Mix thoroughly into top 4 inches of subgrade. Spread remainder of planting soil mix.

B. Finish Grading: Grade planting beds to a smooth, uniform surface plane with loose, uniformly fine texture. Roll and rake, remove ridges, and fill depressions to meet finish grades.

C. Restore planting beds if eroded or otherwise disturbed after finish grading and before planting.

3.4 TREE AND SHRUB EXCAVATION

A. Pits and Trenches: Excavate circular pits with sides sloped inward. Trim base leaving center area raised slightly to support root ball and assist in drainage. Do not further disturb base. Scarify sides of plant pit smeared or smoothed during excavation.

1. Excavate approximately three times as wide as ball diameter for balled and burlapped and container-grown stock.
2. Excavate at least 12 inches wider than root spread and deep enough to accommodate vertical roots for bare-root stock.

B. Subsoil removed from excavations may not be used as backfill.

C. Obstructions: Notify Architect if unexpected rock or obstructions detrimental to trees or shrubs are encountered in excavations.

1. Hardpan Layer: Drill 6-inch- diameter holes into free-draining strata or to a depth of 10 feet, whichever is less, and backfill with free-draining material.

D. Drainage: Notify Architect if subsoil conditions evidence unexpected water seepage or retention in tree or shrub pits.

E. Fill excavations with water and allow to percolate away before positioning trees and shrubs.

3.5 TREE AND SHRUB PLANTING

A. Set balled and burlapped stock plumb and in center of pit or trench with top of root ball 2 inchs above adjacent finish grades.

1. Remove burlap and wire baskets from tops of root balls and partially from sides, but do not remove from under root balls. Remove pallets, if any, before setting. Do not use planting stock if root ball is cracked or broken before or during planting operation.
2. Place planting soil mix around root ball in layers, tamping to settle mix and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of planting soil mix.

B. Set container-grown stock plumb and in center of pit or trench with top of root ball 1 inch above adjacent finish grades.

1. Carefully remove root ball from container without damaging root ball or plant.
2. Place planting soil mix around root ball in layers, tamping to settle mix and eliminate voids and air pockets. When pit is approximately one-half backfilled, water thoroughly before placing remainder of backfill. Repeat watering until no more water is absorbed. Water again after placing and tamping final layer of planting soil mix.

3.6 TREE AND SHRUB PRUNING

A. Prune, thin, and shape trees and shrubs as directed by Landscape Architect.

B. Prune, thin, and shape trees and shrubs according to standard horticultural practice. Prune trees to retain required height and spread. Unless otherwise indicated by Architect, do not cut tree leaders; remove only injured or dead branches from flowering trees. Prune shrubs to retain natural character. Shrub sizes indicated are sizes after pruning.

3.7 PLANTING BED MULCHING

A. Mulch backfilled surfaces of planting beds and other areas indicated.

1. Organic Mulch: Apply 3-inch average thickness of organic mulch, and finish level with adjacent finish grades. Do not place mulch against plant stems.

3.8 CLEANUP AND PROTECTION

A. During exterior planting, keep adjacent pavings and construction clean and work area in an orderly condition.

B. Protect exterior plants from damage due to landscape operations, operations by other contractors and trades, and others. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged exterior planting.

3.9 ACCEPTANCE

A. Planted areas will be inspected at completion of installation and accepted subject to compliance with specified materials and installation requirements.

B. Inspection to determine acceptance of planted areas will be made by Owner's Representative upon Contractor's request. Provide notification at least 10 working days before requested inspection date.

1. Planted areas will be accepted provided all requirements, including maintenance, have been complied with and plant materials are alive an in a healthy, vigorous condition.

C. Upon acceptance, the Owner will assume plant maintenance.

3.10 DISPOSAL

A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of them off Owner's property.

END OF SECTION 329300