



**Cobbs Creek Golf Course Improvements  
Driving Range and Youth Golf Center**

**September 7th, 2022**

# Overview of the Master Plan

## Phasing and Implementation





Wynnewood

St Charles Borromeo Seminary

Saint Joseph's University

South Ardmore Park

Wynnewood Lanes

Lankenau Medical Center

Morris Park

Site

Belmont Plateau

Fairmount Park

Fairmount Park Athletic Field

East Fairmount Park

Please Touch Museum

Girard College

Philadelphia Zoo

Boathouse Row

Philadelphia Museum of Art

Barnes Foundation

Millbourne

United States Citizenship and Immigration Services

Pennsylvania State University

Philadelphia

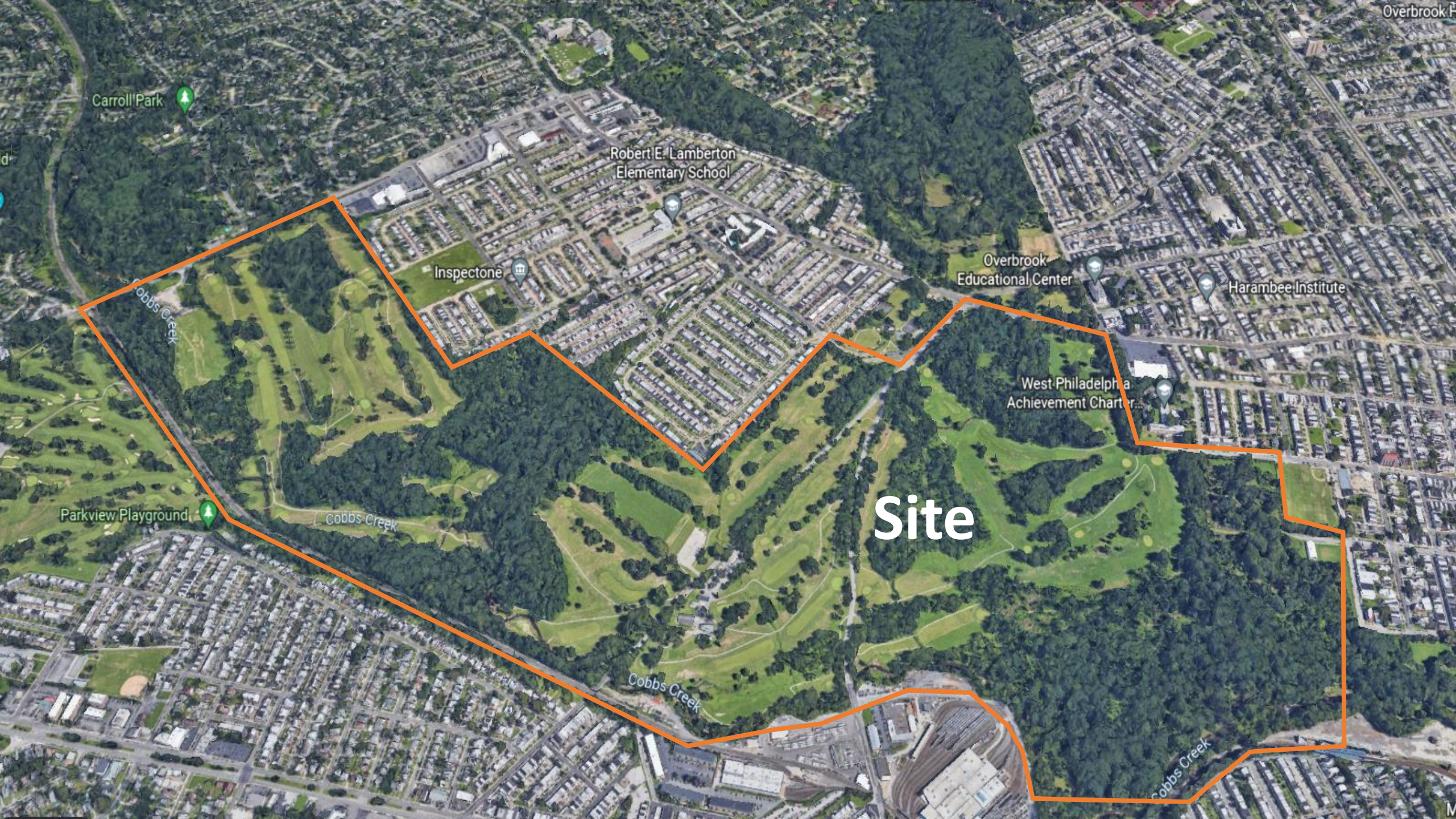
Upper Darby High School

Monsignor Bonner & Archbishop...

Malcolm X Park

Cira Green





Carroll Park

Robert E. Lamberton  
Elementary School

Inspectone

Overbrook  
Educational Center

Harambee Institute

West Philadelphia  
Achievement Charter

Parkview Playground

Site

Cobbs Creek

Cobbs Creek

Cobbs Creek

Cobbs Creek

Overbrook P

M



# Existing Conditions





# Existing Conditions



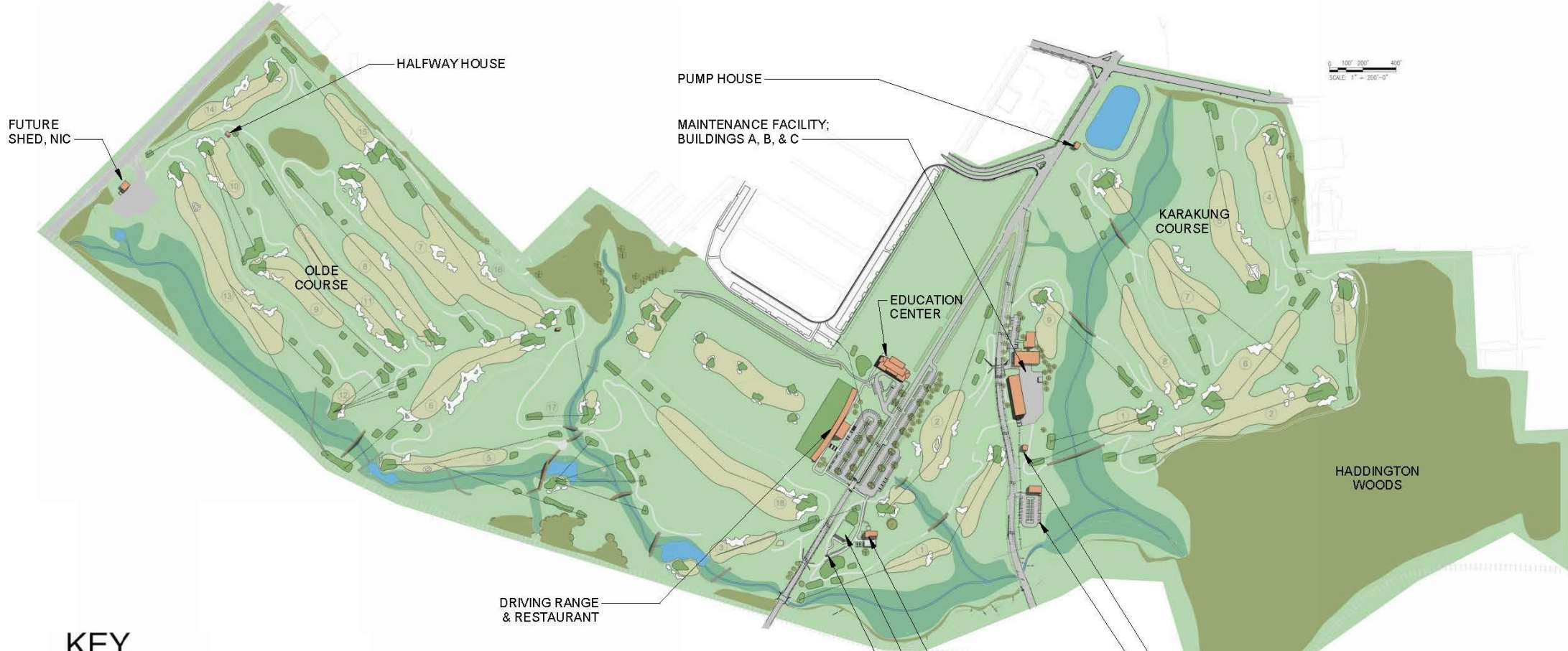
COBBS CREEK GOLF CLUB | A CITY OF PHILADELPHIA DEPARTMENT OF PARKS AND RECREATION FACILITY OPERATED BY THE COBBS CREEK FOUNDATION



# Existing Conditions







**KEY**

- |   |  |  |
|---|--|--|
|  Buildings   |  Tunnels                        |  Pervious track paths |
|  Bridges    |  Fairways, greens, sand traps |  Traffic Signals    |
|  Waterways |  Hitting tee boxes            |  Speed Tables       |
|  Forest    |  Impervious paths             |  Mobile Food Trucks |

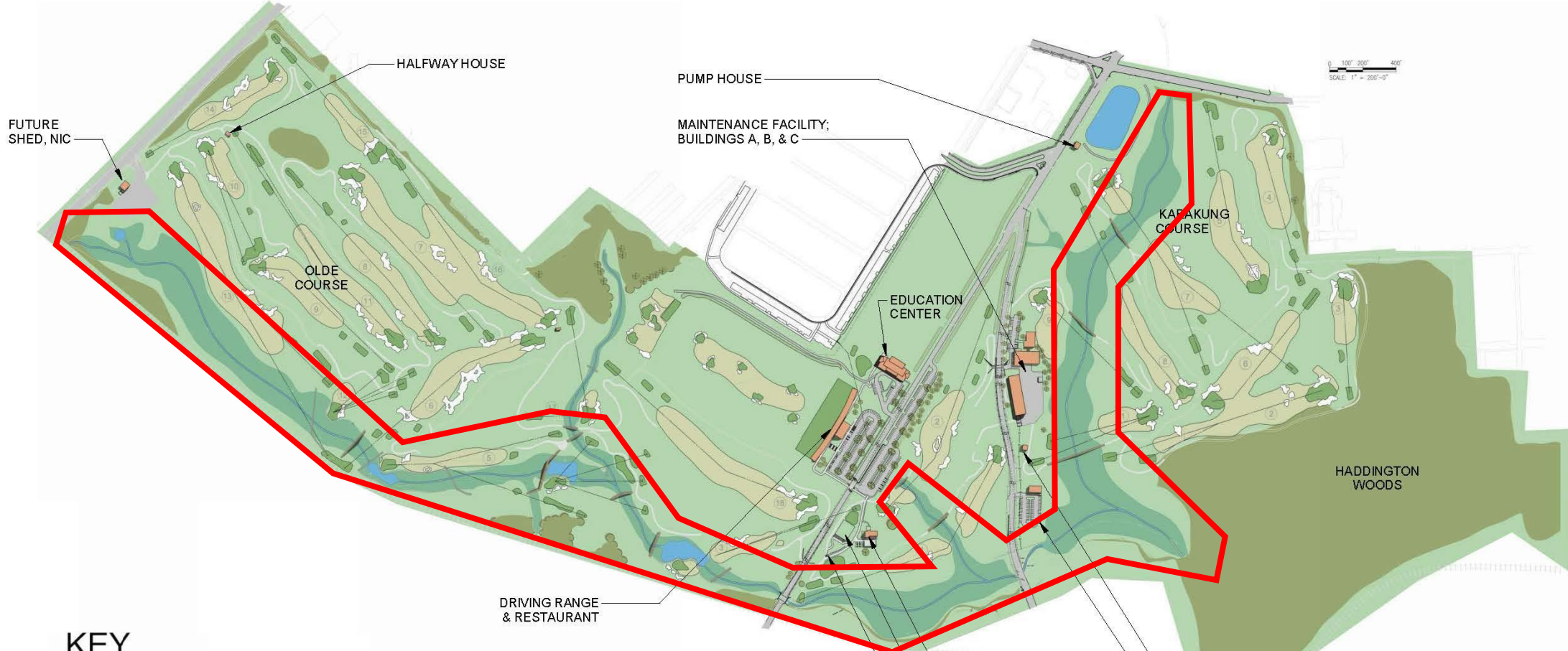


**Master Site Plan**

prepared by:  
Blackney Hayes Architect  
April 6th, 2022

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0 100' 200' 300'  
SCALE: 1" = 200'-0"

**KEY**

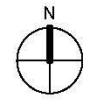
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**Phase I : Creek Restoration and Wetland Construction**

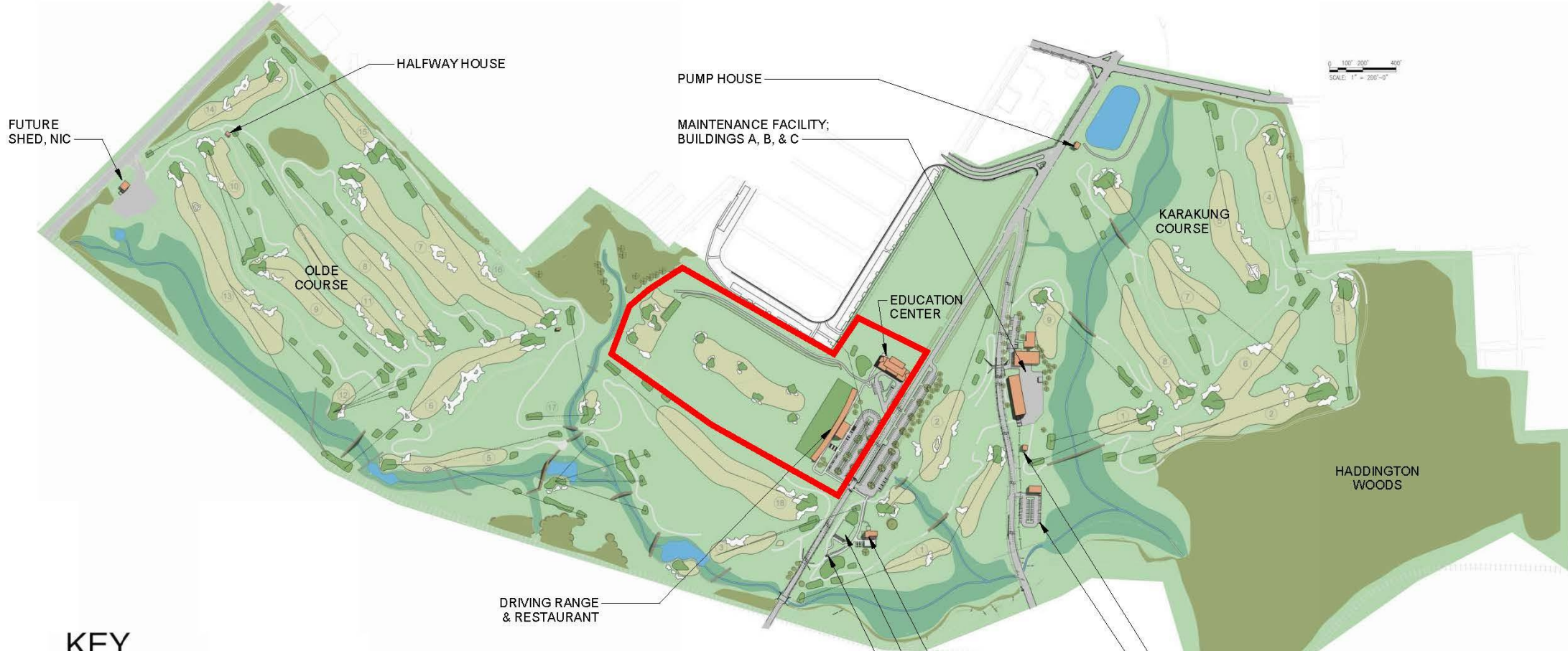
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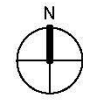
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**Phase II : Driving Range, Youth Golf Center & Associated Site Work**



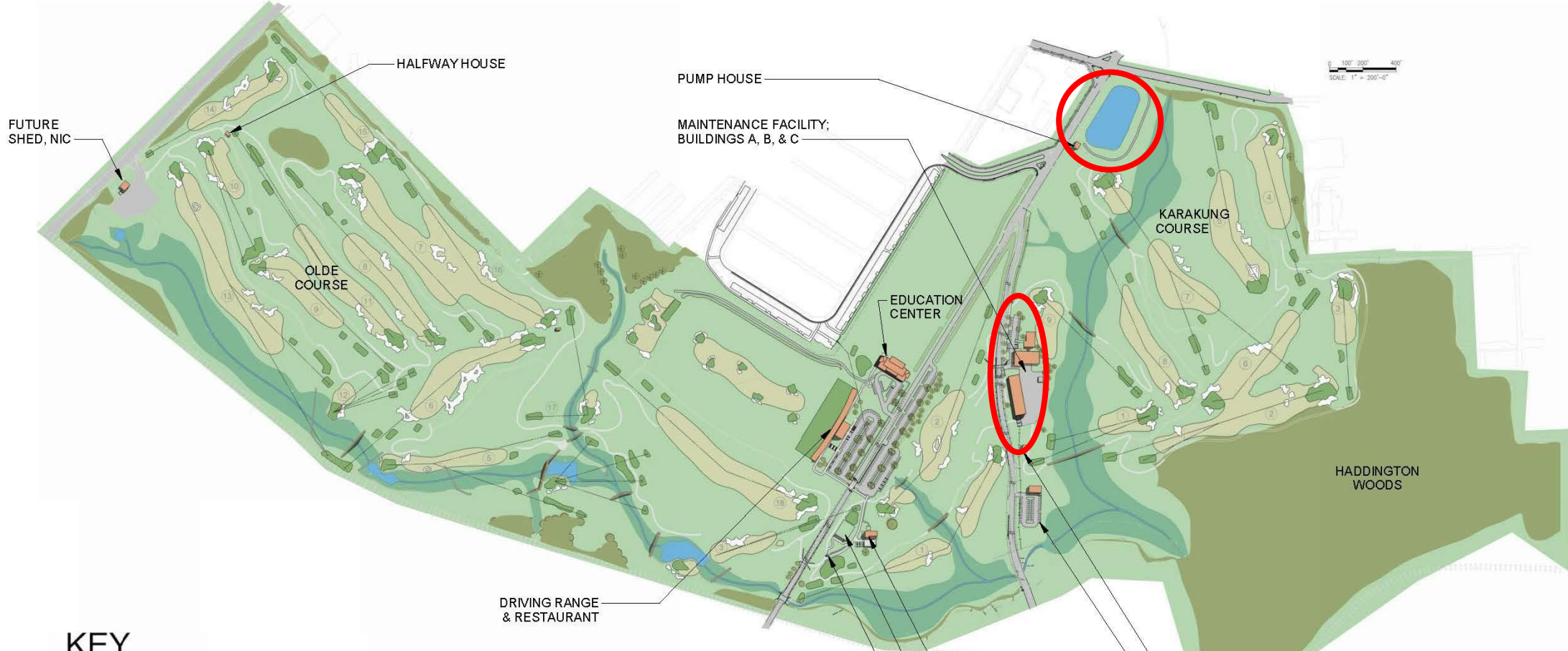
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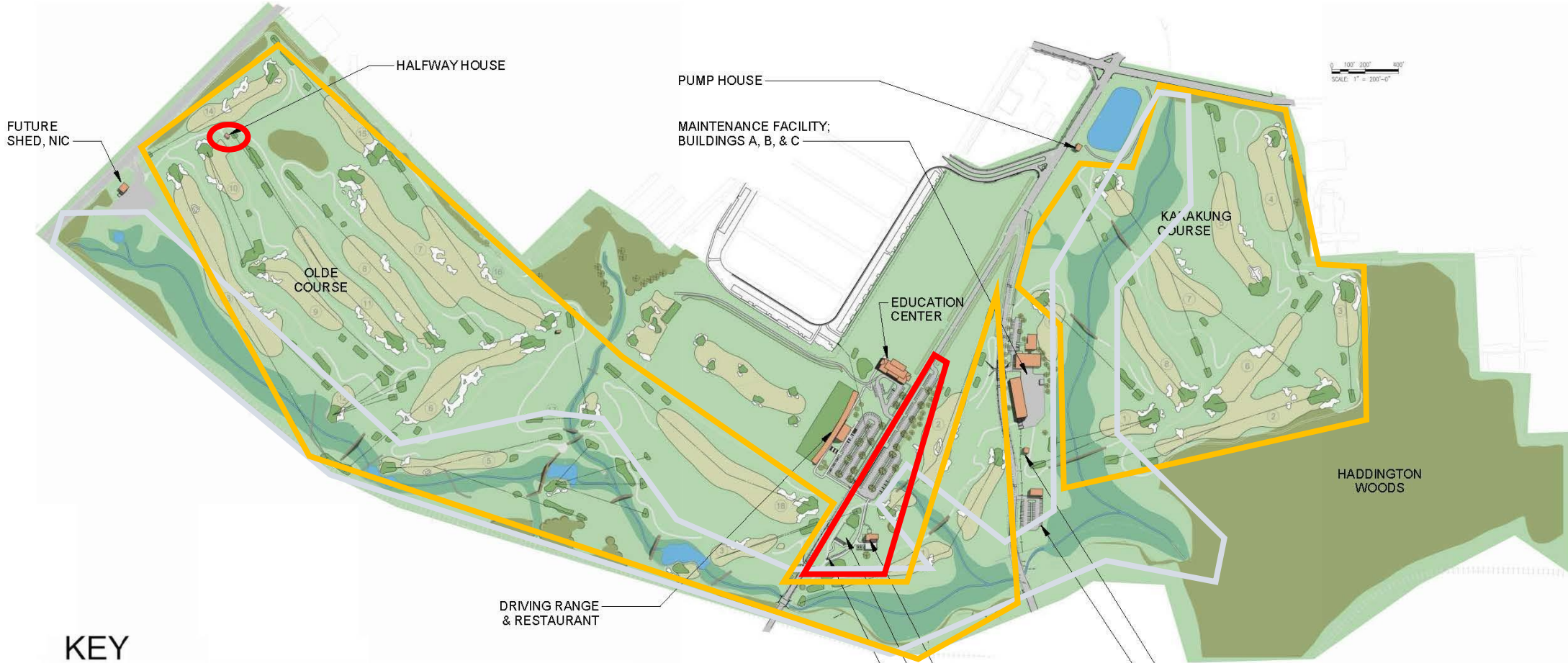


**Phase III : Maintenance Facility, Pump House, and Retention Basin**

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**KEY**

 Buildings	 Tunnels	 Pervious track paths
 Bridges	 Fairways, greens, sand traps	 Traffic Signals
 Waterways	 Hitting tee boxes	 Speed Tables
 Forest	 Impervious paths	 Mobile Food Trucks



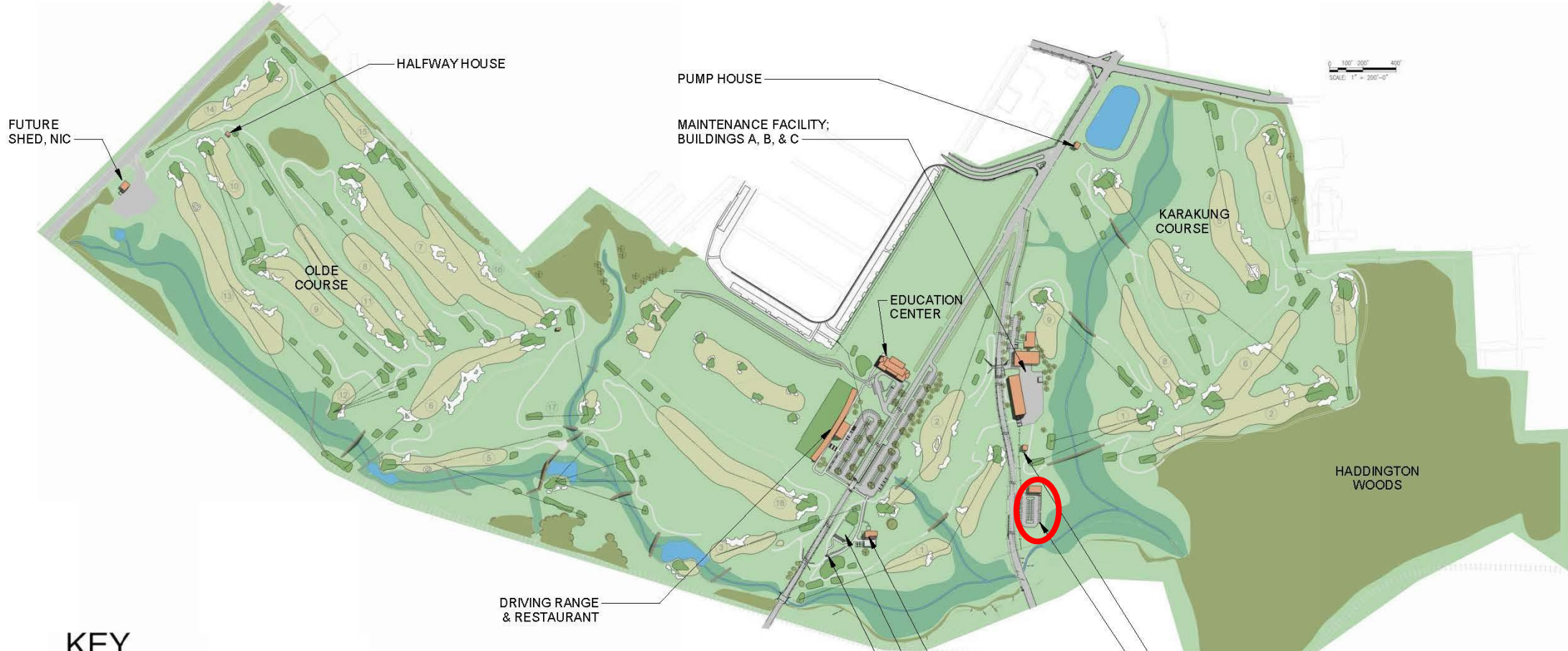
**Phase IV : Clubhouse & Cart Barn, Halfway House, Karakung Course, Restoration of Olde Course**

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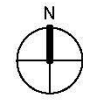
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- |   |   |  |
|---|---|--|
|  Buildings   |  Tunnels                       |  Pervious track paths |
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**Phase V : Karakung Cart Barn**



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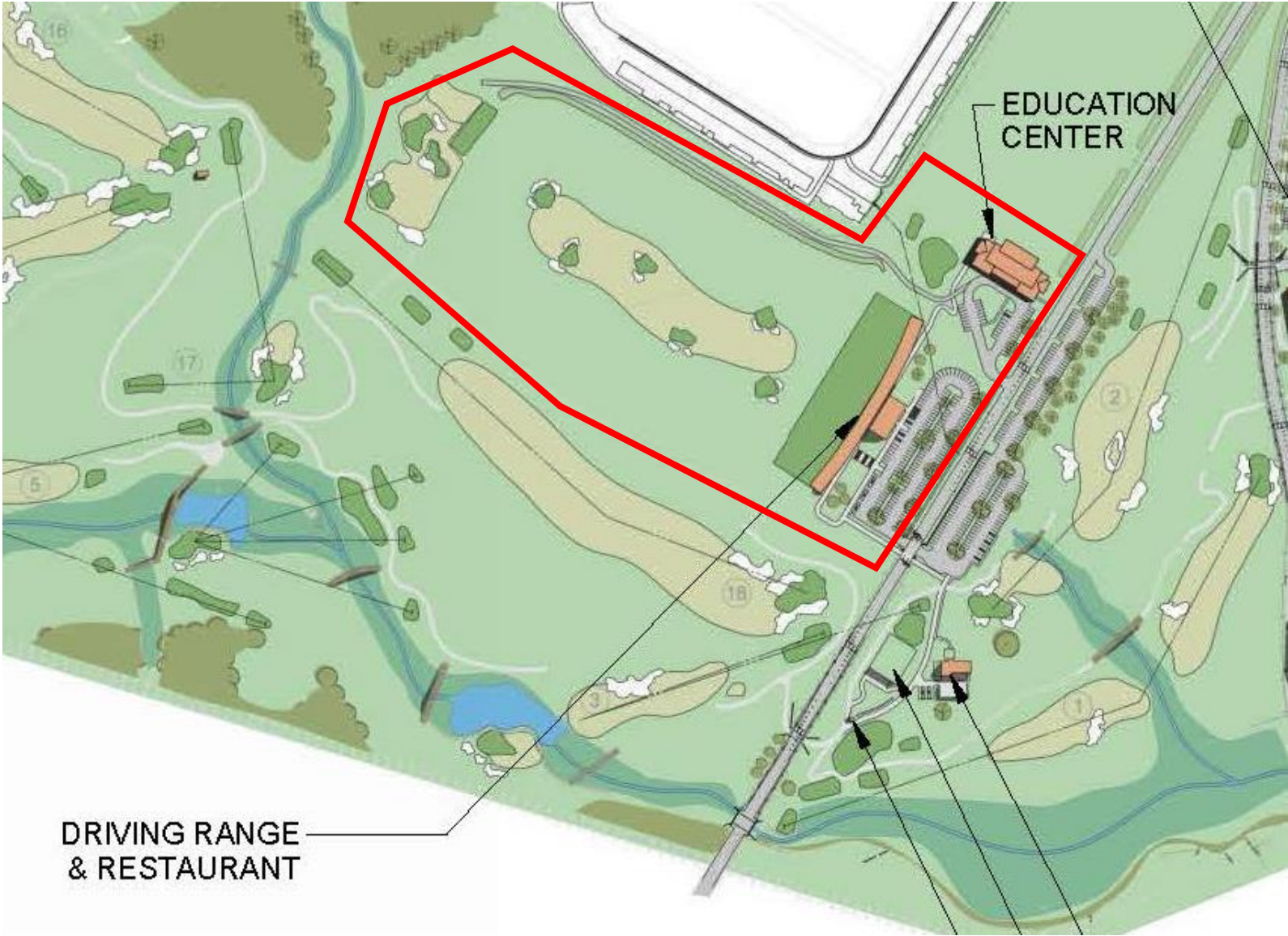
# **Creek Restoration & Wetland Reconstruction Phase I**



**Cobbs Creek Driving Range  
& Youth Golf Center  
Phase II**



# Driving Range and Youth Golf Center – Proposed Site











Future location of Youth Golf Center

Future location of Driving Range

Renovations in Clubhouse E

Lansdowne Ave



# Driving Range and Youth Golf Existing Site





# Driving Range & Youth Golf - Stormwater Plan



SCALE: 1" = 60'-0"

**KSE** KSE ENGINEERS, P.C.  
ENGINEERING/CONSTRUCTION MANAGERS  
630 WALNUT STREET, SUITE 400  
PHILADELPHIA, PENNSYLVANIA 19106  
PHONE: 215.925.0425 • FAX: 215.922.0430



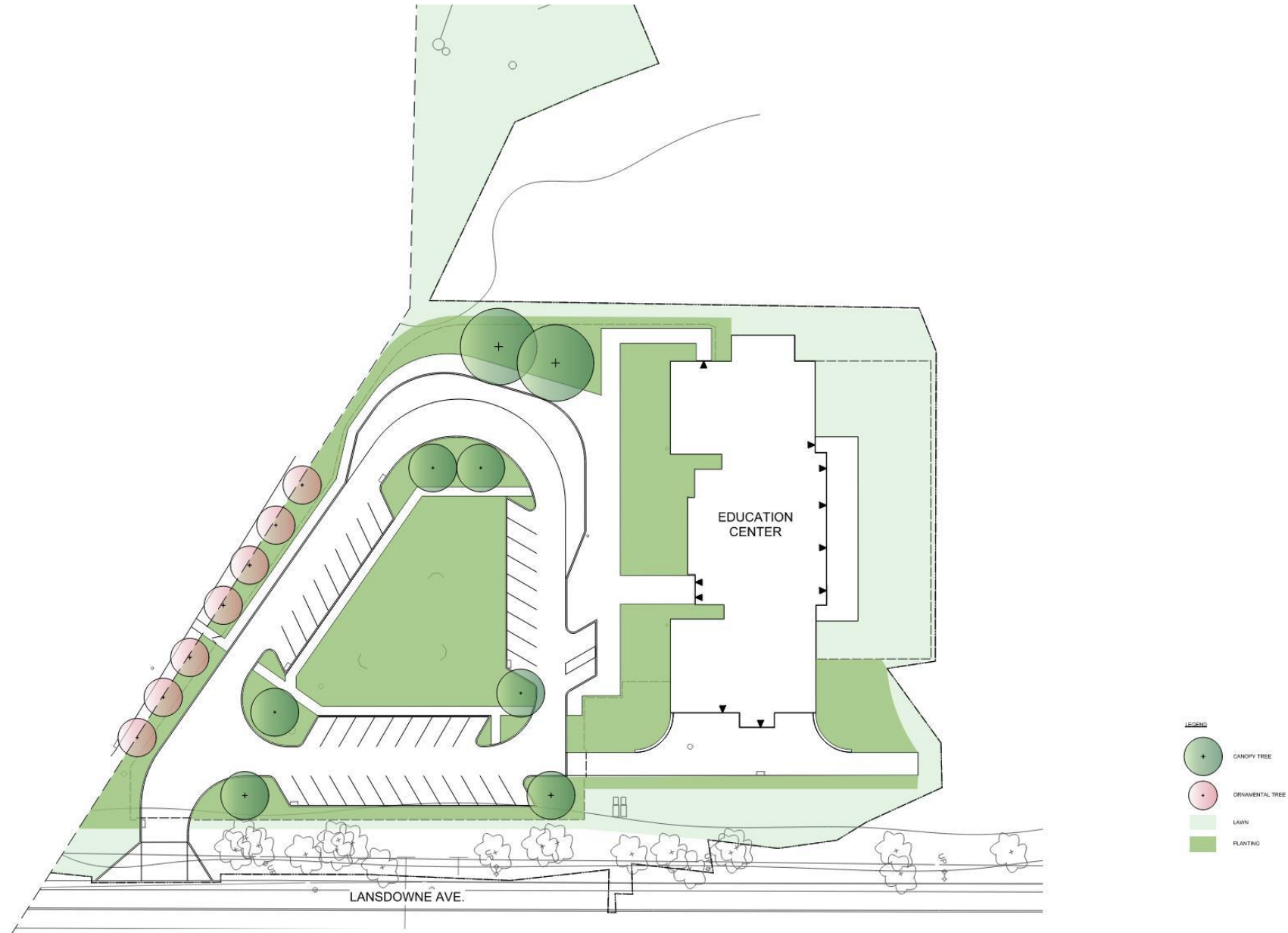
# Driving Range – Full Plan



CC



# Youth Golf Center – Illustrative Landscape Plan

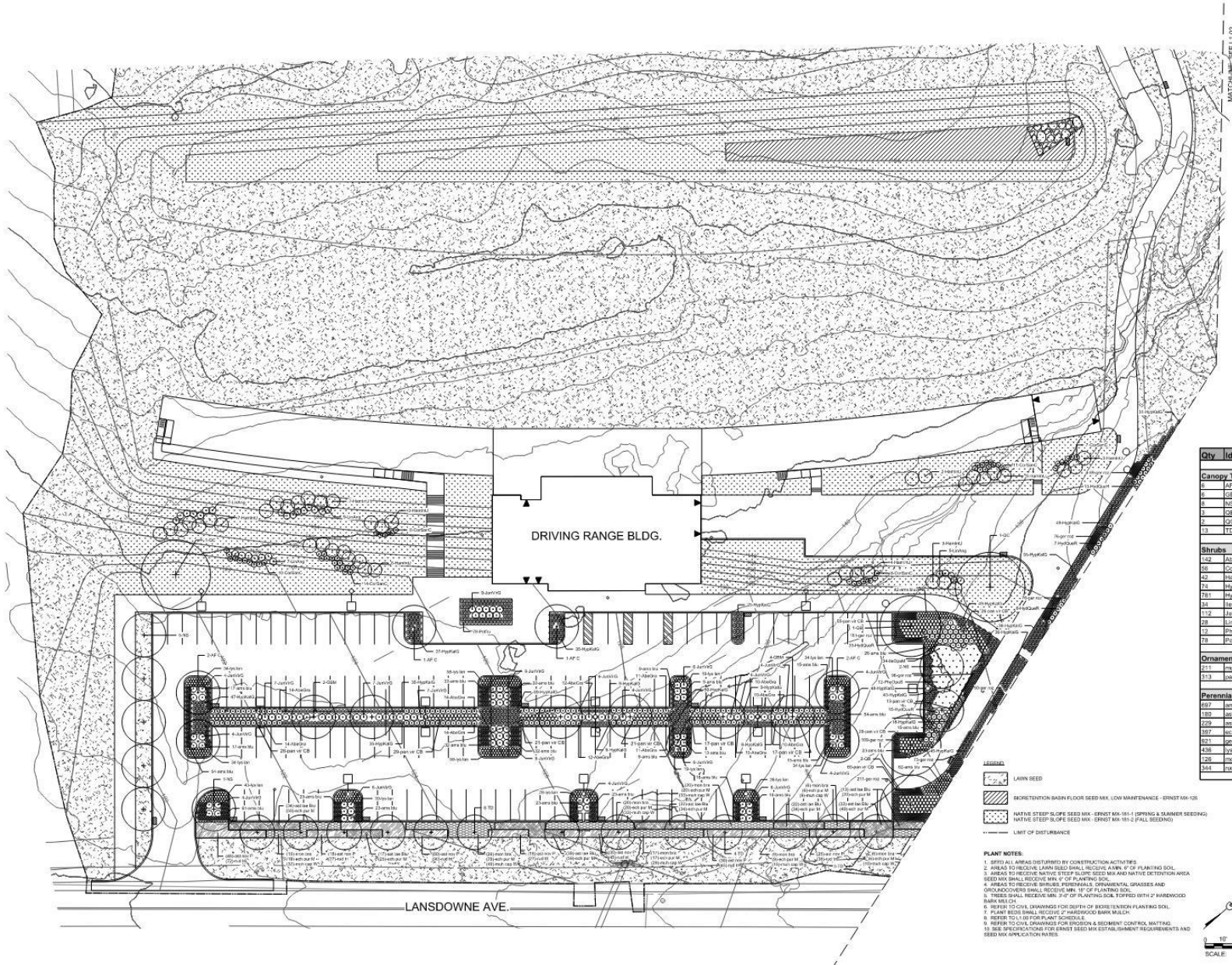








# Driving Range – Detailed Planting Schedule



Qty	Id	Botanical Name	Common Name	Size	Spacing	Notes
<b>Canopy Trees</b>						
6	AF-C	Acer x freemanii 'Cotnam'	Celebration Maple	3" - 3 1/2" cal.	As Shown	Specimen Quality, BAB
6	GBM	Quercus laevis 'Maynor'	Madrone Tree	3" - 3 1/2" cal.	As Shown	Specimen Quality, BAB
6	NE	Quercus rubra	Red Oak	3" - 3 1/2" cal.	As Shown	Specimen Quality, BAB
3	QB	Quercus bicolor	Swamp White Oak	3" - 3 1/2" cal.	As Shown	Specimen Quality, BAB
2	QO	Quercus prinus	Scarlet Oak	3" - 3 1/2" cal.	As Shown	Specimen Quality, BAB
33	TD	Taxodium distichum 'Shawnee Blaze'	Shawnee Blaze Bald Cypress	12-12' tall	As Shown	Specimen Quality, BAB
<b>Shrubs</b>						
142	AbxGr	Abelia x grandiflora Little Abnham'	Little Richard Abelia	65	As Shown	
68	CoBac	Comptosia sanguinea 'Cady'	Cady Dogwood	65	As Shown	
42	HymnH	Hymenocallis x intermedia 'Jasmin'	Jasmin Wandering	65	As Shown	
14	HydDart	Hydrangea quercifolia 'Ruby Slippers'	Ruby Slippers Oak Leaf Hydrangea	65	As Shown	
781	HydKAO	Physocarpus opulifolius 'Diamant'	Diamond St. John's Wort	65	As Shown	
44	HydDart	Hydrangea quercifolia 'Dwarf'	Hydrangea Dwarf American Holly	65	As Shown	
112	HydVIG	Hydrangea virginiana 'Snow Claf'	Snow Claf Hydrangea	65	As Shown	
28	LirAnq	Liriodendron angustifolium	Oriental Spicebush	65	As Shown	
32	PhyDps5	Physocarpus opulifolius 'Seward'	Summer Wine Ninebark	65	As Shown	
78	PhyDps	Physocarpus opulifolius 'Middletown'	Middletown Shrubby Cornus	65	As Shown	
<b>Ornamental Grasses</b>						
211	mult esp W	Muhlenbergia capillaris 'White Cloud'	White Cloud Nuts Grass	61	24" o.c.	
103	low var CB	Panicum virgatum 'Dapples Broom'	Cape Broom Switch Grass	61	24" o.c.	
<b>Perennials</b>						
687	blue star	Aster sp.	Blue Star Flower	61	18" o.c.	
120	smooth aster	Aster sp.	Smooth Aster	61	18" o.c.	
628	purple dome	Aster novae-angliae 'Purple Dome'	Purple Dome New England Aster	61	18" o.c.	
387	purple dome	Echinacea purpurea 'Magnus'	Magnus Purple Coneflower	61	18" o.c.	
604	purple dome	Cornus x rugosa	Rugosa Dogwood	61	18" o.c.	
438	purple dome	Lysimachia lanceolata var. purpurea	Lance-leaved Loosestrife	61	18" o.c.	
126	purple dome	Mimulus lewisii	Eastern Bee Balm	61	18" o.c.	
384	purple dome	Rudbeckia hirta	Brown-Eyed Susan	61	18" o.c.	

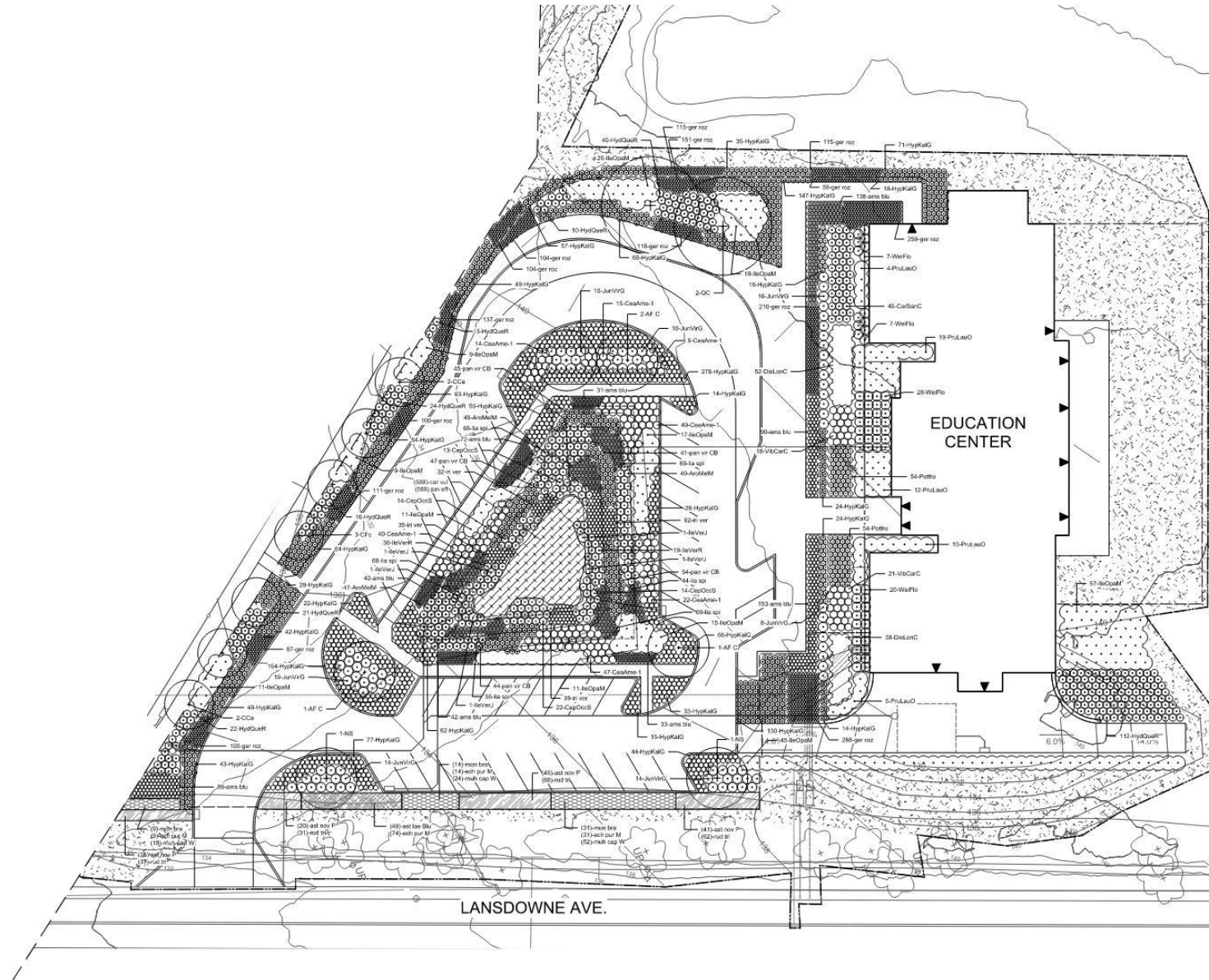
- LEGEND**
- LAWN SEED
  - EROSION CONTROL BAIN FLOOR SEED MIX - LOW MAINTENANCE - ERNST MIX 105
  - NATIVE STEEP SLOPE SEED MIX - ERNST MIX 101-1 (SPRING & SUMMER SEEDING)
  - NATIVE STEEP SLOPE SEED MIX - ERNST MIX 101-2 (FALL SEEDING)
  - LIMIT OF DISTURBANCE

- PLANT NOTES:**
- SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES
  - AREAS TO RECEIVE LAWN SEED SHALL RECEIVE A MIN. 4" OF PLANTING SOIL
  - AREAS TO RECEIVE NATIVE STEEP SLOPE SEED MIX AND NATIVE RESTORATION AREA SEED SHALL RECEIVE MIN. 4" OF PLANTING SOIL
  - AREAS TO RECEIVE SHRUBS, PERENNIALS, ORNAMENTAL GRASSES AND OTHER PLANTS SHALL RECEIVE MIN. 4" OF PLANTING SOIL
  - TREES SHALL RECEIVE MIN. 3'-0" OF PLANTING SOIL TOPPED WITH 2" HARDWOOD BARK MULCH
  - SEE REF TO CIVIL DRAWINGS FOR DEPTH OF EROSION CONTROL PLANTING SOIL
  - PLANT BEDS SHALL RECEIVE 2" HARDWOOD BARK MULCH
  - REFER TO L.I.M. FOR PLANT SCHEDULE
  - REFER TO CIVIL DRAWINGS FOR EROSION & SEDIMENT CONTROL MATTING
  - SEE SPECIFICATIONS FOR SEED MIX ESTABLISHMENT REQUIREMENTS AND SEED MIX APPLICATION RATES





# Youth Golf Center – Detailed Planting Schedule



Qty	Id	Botanical Name	Common Name	Size	Spacing	Notes
<b>Canopy Trees</b>						
1	4-C	Acer Freemanii 'Cedargl'	Celebration Maple	1" - 3 1/2" cal.	As Shown	Specimen Quality, B&B
2	NS	Nyssa sylvatica	Blackgum	3" - 3 1/2" cal.	As Shown	Specimen Quality, B&B
2	OC	Quercus coccinea	Scarlet Oak	3" - 3 1/2" cal.	As Shown	Specimen Quality, B&B
<b>Ornamental Trees</b>						
4	CCa	Cercis canadensis	Eastern Redbud	2" - 2 1/2" cal.	As Shown	Specimen Quality, B&B, Single Stem
3	CFc	Comus florida 'Cherokee Princess'	Cherokee Princess Dogwood	2" - 2 1/2" cal.	As Shown	Specimen Quality, B&B, Single Stem
<b>Shrubs</b>						
135	AvzAeM	Amorpha mamosa 'Mystic'	Black Chokeberry	#5	As Shown	
185	CoaAmc-1	Comarostaphylis amplexicaulis	New Jersey Tea	#5	As Shown	
87	CoaOocR	Cornus alternifolia 'Sugar Shack'	Sugar Shack Dogwood	#5	As Shown	
45	CoaBarC	Cornus sanguinea 'Cats'	Cats Dogwood	#5	As Shown	
60	DeLoRc	Diervilla lonicera 'Copper'	Bush Honeysuckle	#5	As Shown	
245	HydQuar	Hydrangea serrata 'Pinky Shopp'	Pinky Shopp Old Leaf Hydrangea	#5	As Shown	
1830	HydQuar	Hydrangea macrophylla 'Garden of Eatin'	Garden of Eatin' Hydrangea	#5	As Shown	
224	MeOpaM	Meibomia 'Maryland Dwarf'	Maryland Dwarf American Holly	#7	As Shown	
1	BeVer	Berberis verticillata 'Zim Dancy'	Zim Dancy Winterberry	#5	As Shown	
49	BeVer	Berberis verticillata 'Red Spirit'	Red Spirit Winterberry	#5	As Shown	
61	JunVnG	Juniperus virginiana 'Grey Chief'	Grey Chief Juniper	#5	As Shown	
138	PrLauD	Prunella lauro-coccinea 'Mistwood'	Blackthorn Spotted Crapweed	#5	As Shown	
30	PrLauD	Prunella lauro-coccinea 'Dix Lady'	Dix Lady Blackthorn	#5	As Shown	
39	VibCarC	Viburnum caradisi 'Compactum'	Roseau Spice Viburnum	#5	As Shown	
62	VibCarC	Viburnum caradisi 'Robustum'	Robustum Spice Viburnum	#5	As Shown	
<b>Ornamental Grasses</b>						
588	CarAut	Carex vulpocarpa	Fox Sedge	#1	12" o.s.	
588	CarAut	Carex vulpocarpa	Fox Sedge	#1	12" o.s.	
61	WheCapW	Wolfsbane capillaris 'White Cloud'	White Cloud Misty Grass	#1	24" o.s.	
231	PenVrCB	Panicum virgatum 'Cape Brewar'	Cape Brewar Switch Grass	#1	24" o.s.	
<b>Perennials</b>						
690	AmS Blu sp	Amorpha blue sp	Blue Star Flower	#1	18" o.s.	
49	Asp Blu	Asperula 'Blue Star'	Blue Star Flower	#1	18" o.s.	
121	Asp Blu	Asperula 'Blue Star'	Blue Star Flower	#1	18" o.s.	
128	Asp Blu	Asperula 'Blue Star'	Blue Star Flower	#1	18" o.s.	
2055	Asp Blu	Asperula 'Blue Star'	Blue Star Flower	#1	18" o.s.	
135	Asp Blu	Asperula 'Blue Star'	Blue Star Flower	#1	18" o.s.	
389	Asp Blu	Asperula 'Blue Star'	Blue Star Flower	#1	18" o.s.	
54	Asp Blu	Asperula 'Blue Star'	Blue Star Flower	#1	18" o.s.	
168	Asp Blu	Asperula 'Blue Star'	Blue Star Flower	#1	18" o.s.	

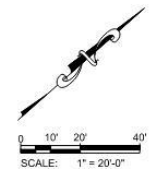
**PLANT NOTES:**

- SEED ALL AREAS DISTURBED BY CONSTRUCTION ACTIVITIES.
- AREAS TO RECEIVE LAWN SEED SHALL RECEIVE A MIN. 6" OF PLANTING SOIL.
- AREAS TO RECEIVE NATIVE STEEP SLOPE SEED MIX AND NATIVE DETENTION AREA SEED MIX SHALL RECEIVE MIN. 6" OF PLANTING SOIL.
- AREAS TO RECEIVE SHRUBS, PERENNIALS, ORNAMENTAL GRASSES AND GROUNDCOVERS SHALL RECEIVE MIN. 18" OF PLANTING SOIL.
- TREES SHALL RECEIVE MIN. 3'-0" OF PLANTING SOIL TOPPED WITH 2" HARDWOOD BARK MULCH.
- REFER TO CIVIL DRAWINGS FOR DEPTH OF BIORETENTION PLANTING SOIL.
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- REFER TO L100 FOR PLANT SCHEDULE.
- REFER TO CIVIL DRAWINGS FOR EROSION & SEDIMENT CONTROL MATTING.
- SEE SPECIFICATIONS FOR ERNST SEED MIX ESTABLISHMENT REQUIREMENTS AND SEED MIX APPLICATION RATES.

**LEGEND:**

- LAWN SEED
- LIMIT OF DISTURBANCE

LANSDOWNE AVE.





# Driving Range & Youth Golf – Overall Detailed Plant Schedule

CANOPY TF



*Acer x freemanii* 'Celzam'



*Nyssa sylvatica*



*Quercus coccinea*

ORNAMENTAL



*Cercis canadensis*



*Cornus florida* 'Cherokee Princess'

SHRUBS



*Hypericum kalmianum* 'Gemo'



*Cornus sanguinea* 'Cato'



*Ilex opaca* 'Maryland Dwarf'



*Hydrangea quercifolia*



*Juniperus virginiana* 'Grey Owl'



*Potentilla fruticosa* 'Abbotswood'



*Aronia melanocarpa* 'Morton'



*Ceanothus americanus*



*Cephalanthus occidentalis*



*Diervilla lonicera* 'Copper'



*Ilex verticillata* 'Jim Dandy'



*Ilex verticillata* 'Red Sprite'



*Prunus laurocerasus* 'Otto Luyken'



*Viburnum carlesii* 'Compactum'



*Weigela florida* 'Bokrasopin'

GRASSES + PERENNIALS



*Muhlenbergia capillaris* 'White Cloud'



*Panicum virgatum* 'Cape Breeze'



*Carex vulpinoidea*



*Juncus effusus*



*Iris versicolor*



*Liatris spicata*



*Echinacea purpurea* 'Magnus'



*Geranium x 'Rozanne'*



*Monarda bradburiana*



*Rudbeckia triloba*



*Amsonia* 'Blue Ice'



*Aster laevis* 'Bluebird'



*Aster novae-angliae* 'Purple Dome'



# Driving Range





# Driving Range



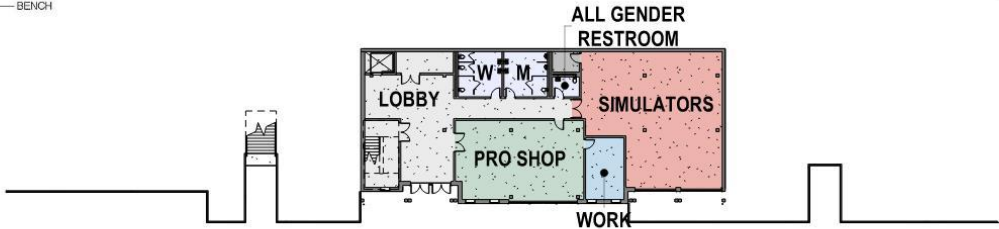
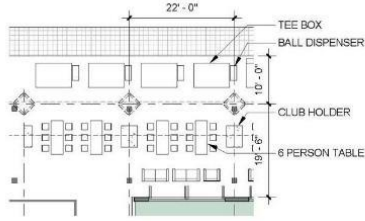
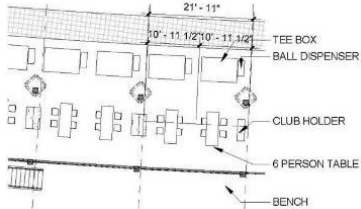
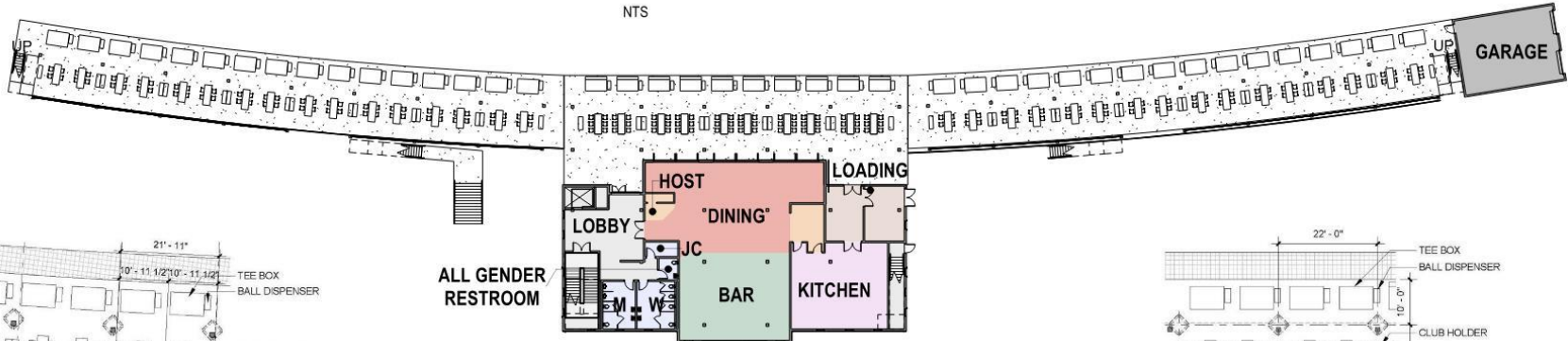
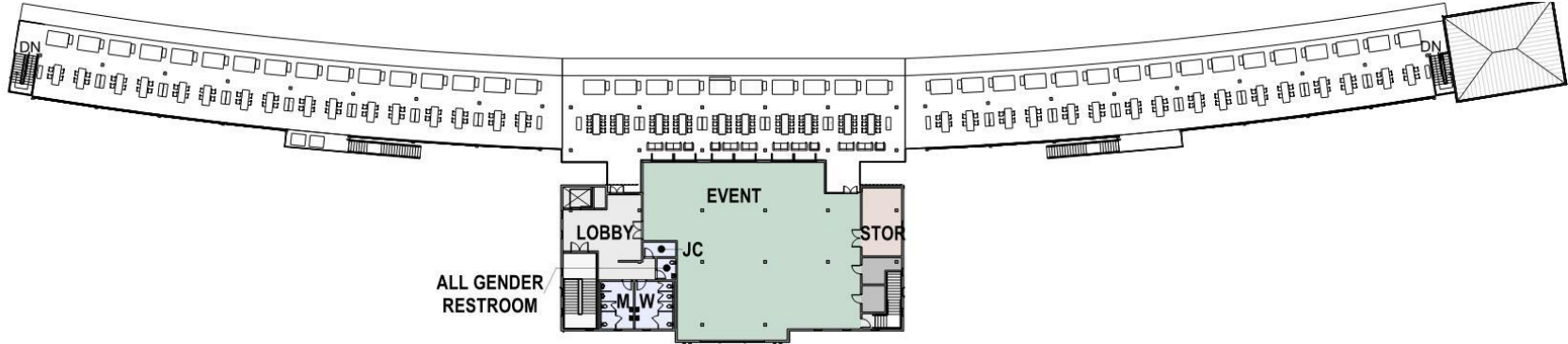
## Driving Range

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# Driving Range



## Driving Range Overall Plans

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08/30/2022

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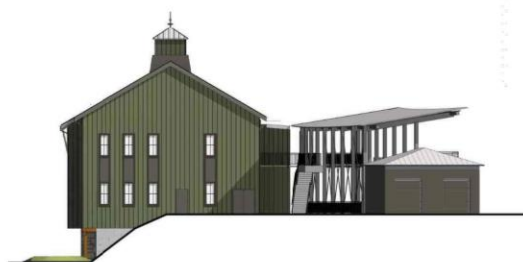
# Driving Range



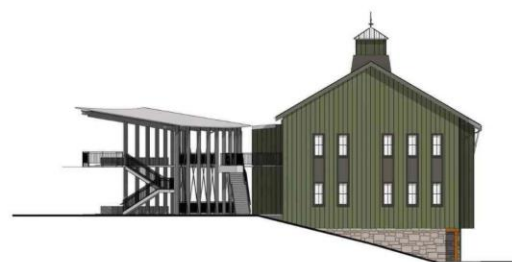
**BUILDING FRONT**



**BUILDING'S BACK and DRIVING RANGE**



**BUILDING'S NORTHEAST SIDE**



**SOUTHWEST SIDE**

## **BUILDING ELEVATIONS**

Clubhouse & Cart Barn

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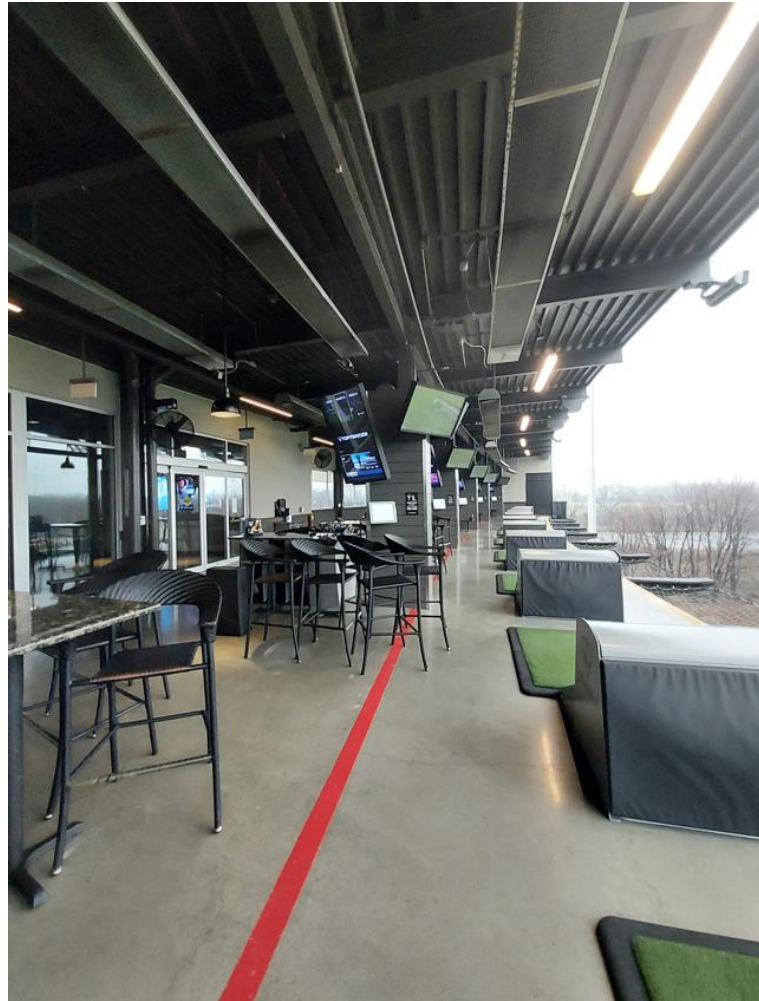
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# Driving Range - Finishes



Typical Hitting Bays



UV Bird Safe, Low E Glass

Hardie Board Siding

Pre-Manufactured Stone Veneer

Standing Seam Metal Roof



# Youth Golf Center



# Youth Golf Center



Youth Golf Center

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# Youth Golf Center



Youth Golf Center

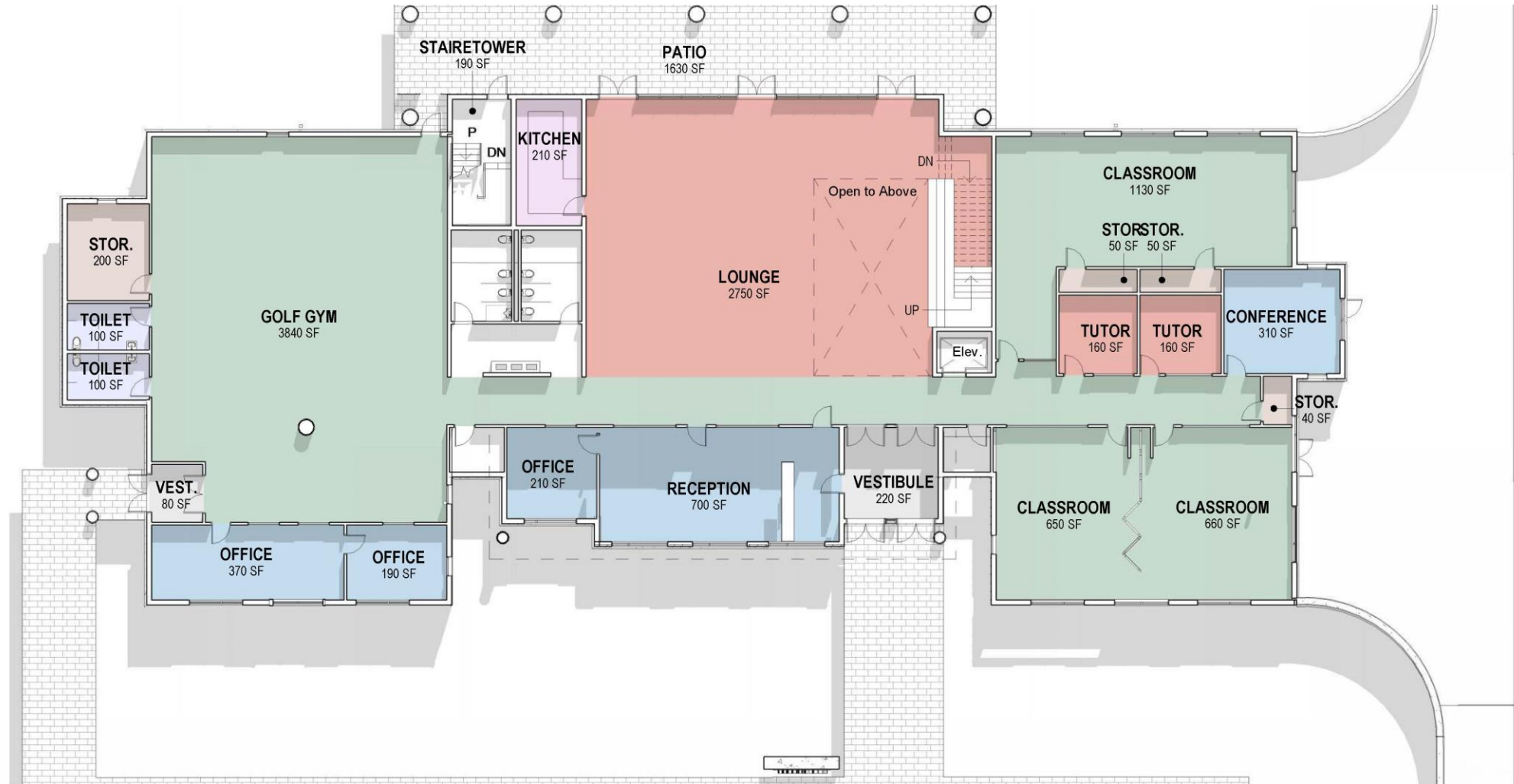
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# Youth Golf Center



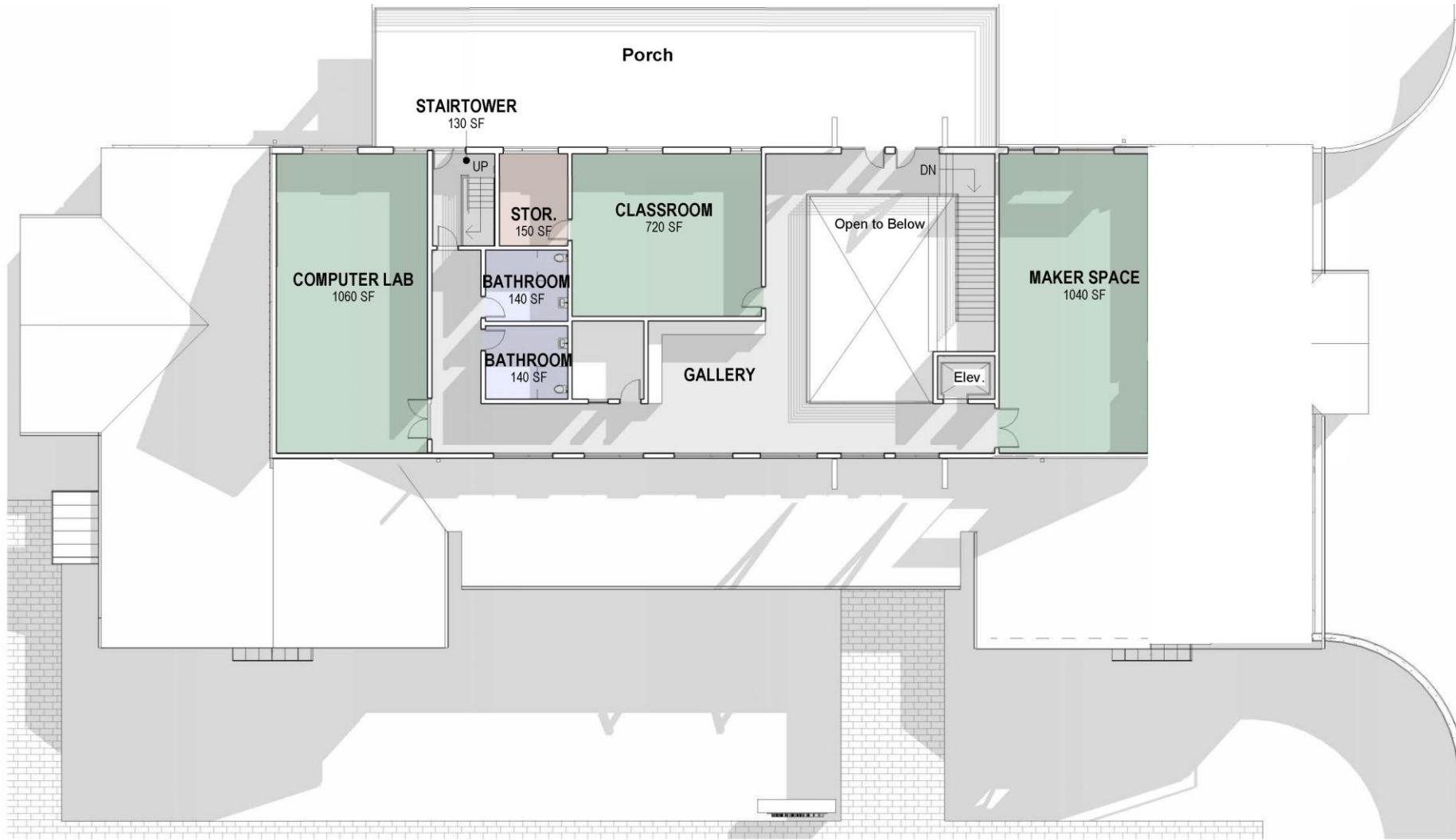
## First Floor Plan

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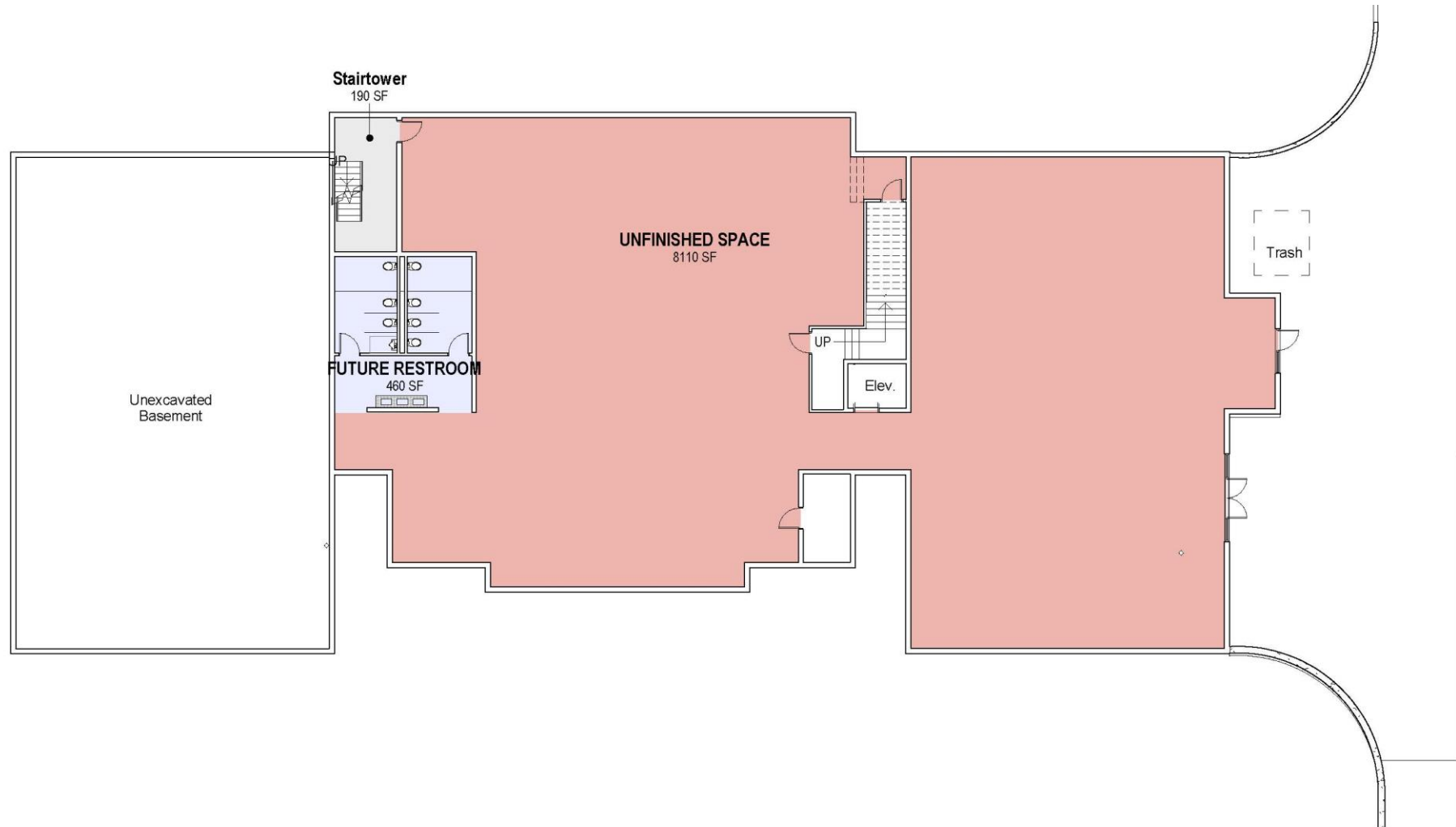


# Youth Golf Center





# Youth Golf Center





# Youth Golf Center



REAR ELEVATION

1 : 200



FRONT ELEVATION

1 : 200



## Exterior Elevations

prepared by:  
Blackney Hayes Architects  
April 6th, 2022

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# Youth Golf Center



① **West Elevation**  
1/16" = 1'-0"

② **East Elevation**  
1/16" = 1'-0"



# Youth Golf Center - Finishes

UV Bird Safe Low E Glass  
Hardie Vertical Board Siding Pre-Manufactured Stone Veneer



Roof Shingles



Standing Seam Metal Roof



# Miscellaneous - The Site Steep Slopes











Building	Roof Brand	Roof Type	Roof Color	Solar Reflectance (metal) Initial Reflectivity (shingle)	Thermal Emittance (metal) Initial Emissivity (shingle)	Solar Reflective Index (metal) Aged SRI (shingle)	Comments
Education Center	Pac-Clad	Snap-Clad	Slate Gray (TBD)	0.71	0.85	86	
	GAF	Timberline CS Shingles	Weathered Wood (TBD)	0.28	0.92	28	*Asphalt shingle alternate
Driving Range	Pac-Clad	Snap-Clad	Slate Gray (TBD)	0.36	0.84	37	
	GAF	Timberline CS Shingles	Weathered Wood (TBD)	0.28	0.92	28	*Asphalt shingle alternate
Pump House	Pac-Clad	Snap-Clad	Slate Gray (TBD)	0.38	0.84	40	
Halfway House	GAF	Timberline CS Shingles	Weathered Wood (TBD)	0.28	0.92	28	
Cart Barn	Tile Tech	Turf Tray Synthetic Turf	TBD	N/A	N/A	N/A	Artificial turf has no reflectivity that we could determine
Clubhouse	GAF	Timberline CS Shingles	Weathered Wood (TBD)	0.28	0.92	28	
Maintenance Bldg A	Butler	Butlerib II Roof System	Cool Shell Gray (TBD)	55.1	0.84	63	
Maintenance Bldg B	Butler						
Maintenance Bldg C	Pac-Clad	Snap-Clad	Slate Gray (TBD)	0.38	0.84	40	
Final colors to be determined if need be, we can adjust color to improve solar reflectivity							



# Stormwater Management

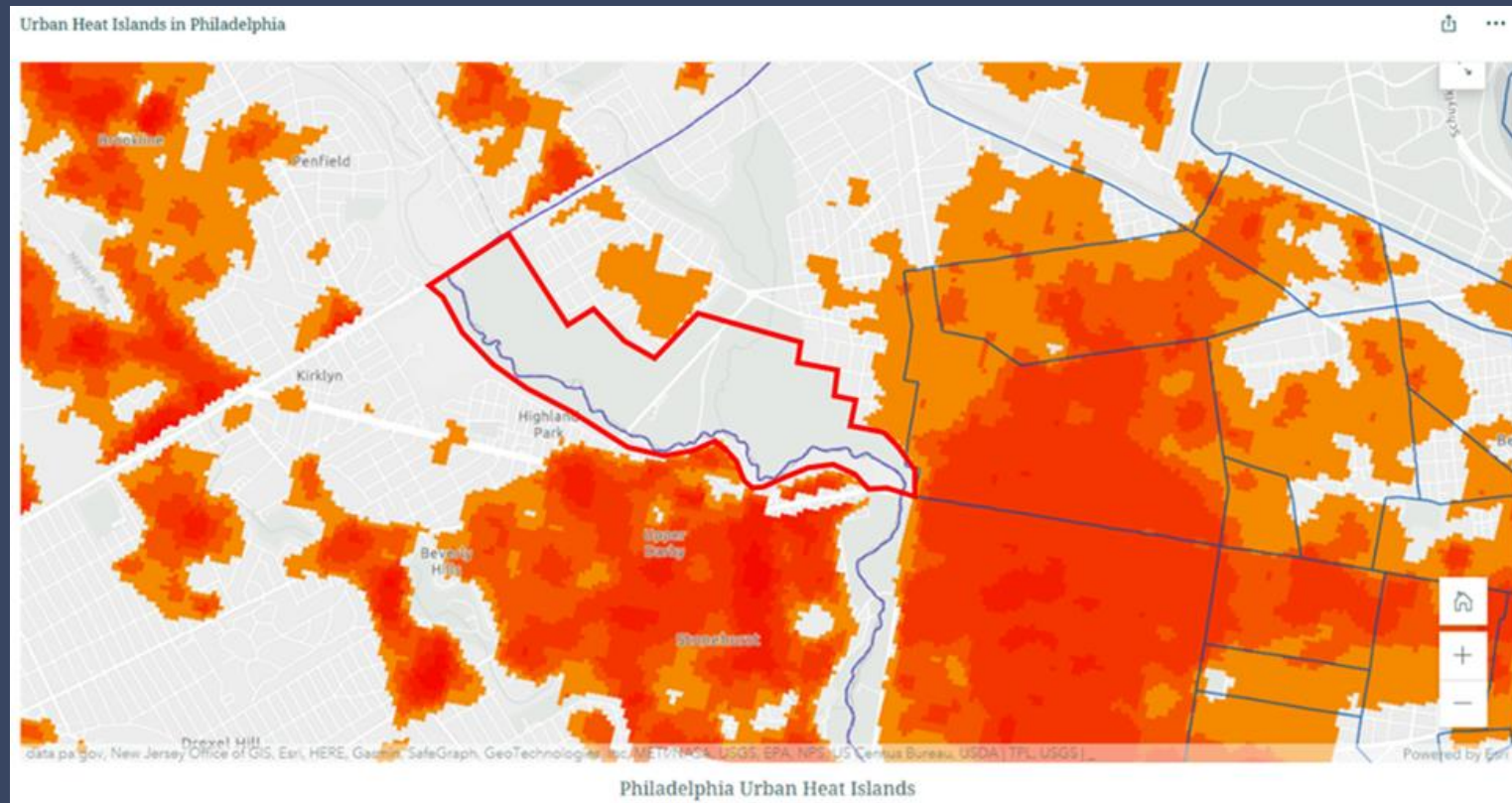
- Includes infiltration and detention systems, both subsurface and underground.
- Controls designed to meet post-construction stormwater management requirements: water quality, channel protection, and flood control.
- Multiple stormwater management facilities throughout site.
- Golf course renovation will result in reduction to Upper Cobbs Creek Combined Sewer Coverflow (CSO)



# Heat Island Effect



- Image shows western part of Philadelphia and impacts of urban heat.
- Colored areas warmer than normal temperatures.
- Golf course outlined in red.





- **Golf course does not include any colored areas.**
- **Golf course is large, contiguous space that reduces heat islands.**

### **Strategies to maintain cooling functions of golf course:**

- **Planting more trees on course.**
- **Changing roof design can decrease heat retention.**
- **Minimize pavement in future design.**
- **Partner with surrounding community to expand urban tree canopy.**



# Miscellaneous – Site Lighting

# Site Lighting



# PROJECT SUMMARY

Project: Cobbs Creek Golf Driving Range

Quote No.:

Drawn By: Hal

Date Created: 4-29-2022

Sales Agent: Penn Lighting Associates



Triton™ G2  
300W/400W/500W  
Weight: 33 lbs.  
EPA: 1.42 ft<sup>2</sup>



Triton™ G2  
750W/1250W  
Weight: 62 lbs.  
EPA: 2.08 ft<sup>2</sup>



Nova™ G2  
400W/500W/600W  
Weight: 43 lbs.  
EPA: 1.90 ft<sup>2</sup>



Nova™ G2  
800W/1000W/1200W  
Weight: 77 lbs.  
EPA: 3.60 ft<sup>2</sup>

Luminaire Summary	
Color/CRI/NEMA:	5700K – 70CRI – NEMA 3, 4
Luminaire Output:	146469~153833 Lumens
Total Load:	14.63 kW
No. of Luminaire:	12
LED Lifetime:	L70>100,000 hours
Electrical Load:	Refer to Amperage Draw Chart in product spec sheet.
Aiming/Installation:	Results ± 3% nominal voltage at line side of driver & structures located within 3ft of layout locations.
Measurement:	Illuminance (FC) are measured at a 1m (3ft) elevation within PPA (Primary Playing Area).
Illumination Performance:	LLF is 0.95 includes the dirt depreciation factor, illumination level guaranteed minimum 10 year & up to 25 years based on usage. *Refer to Warranty Letter.
Spill Reading:	Spill reading listed do not account for any foliage or obstructions.

THIS DESIGN WAS DONE IN ACCORDANCE WITH ILLUMINATION SOCIETY OR NORTH AMERICA STANDARDS

## MAINTAINED

GUARANTEE IS BASED ON PROPER INSTALLATION, MINIMUM INPUT VOLTAGE +/- 3 FEET, AND POLES PLACED WITHIN 4 FEET OF SPECIFIED LOCATIONS, POLES TO COMPLY WITH CURRENT ASSHTO STANDARDS.

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### Illumination Calculation Summary (Primary Playing Area)

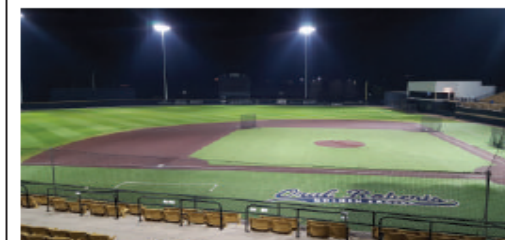
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF	Description	Lum. Watts	Total Watts
→	8	SPL2-1250-57-H-D-3	SINGLE	153833	0.950	1250W 15D 5700K	1206.3	9650.4
↻	4	SPL2-1250-57-H-D-4 40D	SINGLE	146469	0.950	1250W 40D 5700K	1245.7	4982.8

### Calculation Summary (Primary Playing Area)

Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min	# Pts	CV	UG	PtSpclr	PtSpCb	Grid Z
164ft_V_III_Seg1	Vertical Illuminance	Fc	30.57	43.3	19.0	1.61	2.28	378	0.19	N.A.	6.5	6.5	N.A
600ft_V_III_Seg1	Vertical Illuminance	Fc	11.21	13.7	5.1	2.20	2.69	180	0.19	N.A.	6.5	6.5	N.A
Golf_H	Illuminance	Fc	1.51	9.6	0.1	15.10	96.00	1145	1.12	2.63	20	20	0
Spill_H	Illuminance	Fc	0.01	0.1	0.0	N.A.	N.A.	27	2.63	N.A.	30	N.A.	N.A
Spill_V_Cd_Seg1	Vertical Candela	N.A.	44518	84345	6785	6.56	12.43	27	0.55	N.A.	30	5	N.A
Spill_V_III_Seg1	Vertical Illuminance	Fc	0.11	0.2	0.1	1.10	2.00	27	0.33	N.A.	30	5	N.A
Tee boxes	Illuminance	Fc	7.22	26.2	1.2	6.02	21.83	477	0.82	3.22	10	10	0



### Recreation Areas to Professional Locales

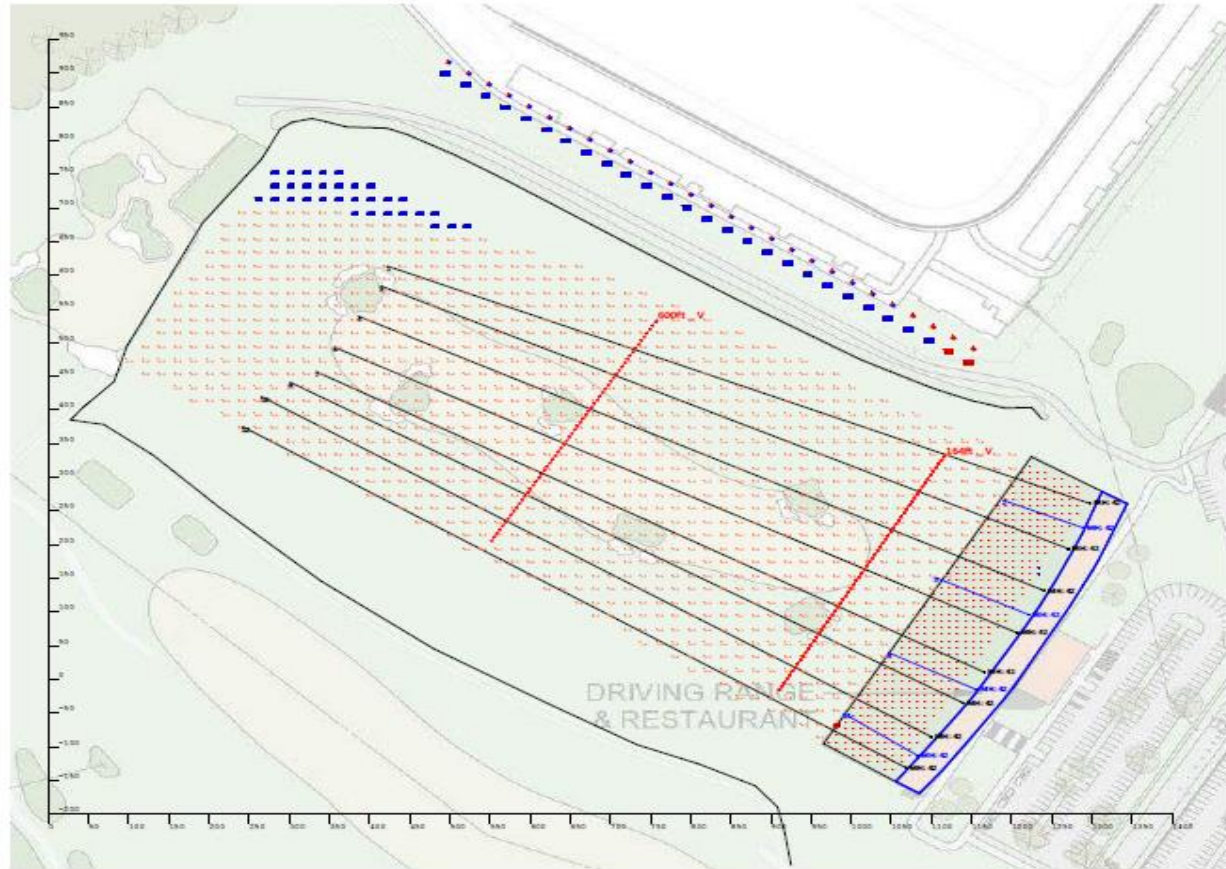


### Game-Changing Performance & Reliability

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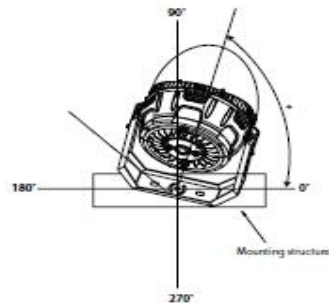
## Mounting Height: 42ft (Above Grade)

Luminaire Location Summary									
LumNo	Label	X	Y	Z	Orient	Tilt	X-Aimpt	Y-Aimpt	Z-Aimpt
1	SPL2-1250-57-H-D-3	1298.644	260.843	42	158.066	87.452	422.326	613.72	0
2	SPL2-1250-57-H-D-4 400	1289.925	224.818	42	157.678	68.687	1189.413	266.086	0
3	SPL2-1250-57-H-D-3	1271.727	193.344	42	155.499	87.446	414.067	584.227	0
4	SPL2-1250-57-H-D-3	1241.714	131.241	42	154.506	87.461	385.753	539.396	0
5	SPL2-1250-57-H-D-4 400	1222.273	95.699	42	154.65	72.027	1104.365	151.561	0
6	SPL2-1250-57-H-D-3	1207.737	68.761	42	153.495	87.47	356.259	493.386	0
7	SPL2-1250-57-H-D-3	1166.965	10.245	42	151.808	87.453	333.844	456.813	0
8	SPL2-1250-57-H-D-4 400	1157.327	-15.636	42	153.395	71.159	1046.378	39.935	0
9	SPL2-1250-57-H-D-3	1140.671	-35.566	42	150.403	87.508	300.811	441.475	0
10	SPL2-1250-57-H-D-3	1100.653	-85.634	42	148.816	87.534	265.486	419.851	0
11	SPL2-1250-57-H-D-4 400	1083.877	-113.828	42	145.737	69.378	990.807	-50.429	0
12	SPL2-1250-57-H-D-3	1069.401	-131.715	42	148.501	87.52	241.823	375.409	0

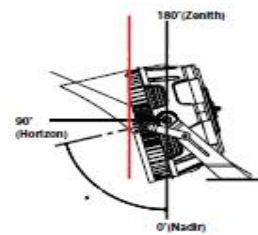


### Orientation

Pre-aiming base on modulo positioning

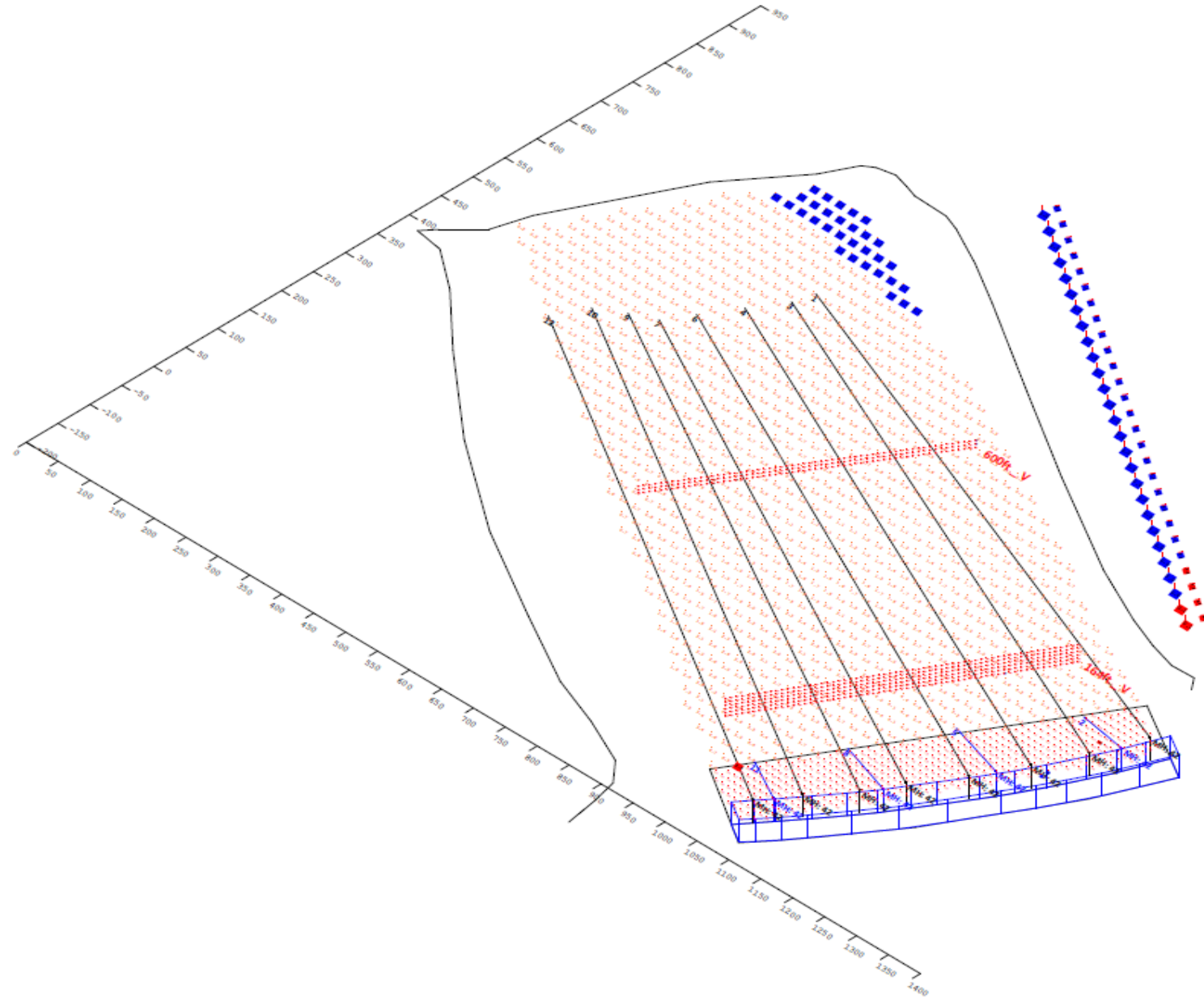


### Tilt



Orient values shown in TGS Installation layout are based on 0° being Plan East. Plan East means 0° is heading to the right side of layout drawing as you hold it in front of you, which is not necessarily geodetic or True East.

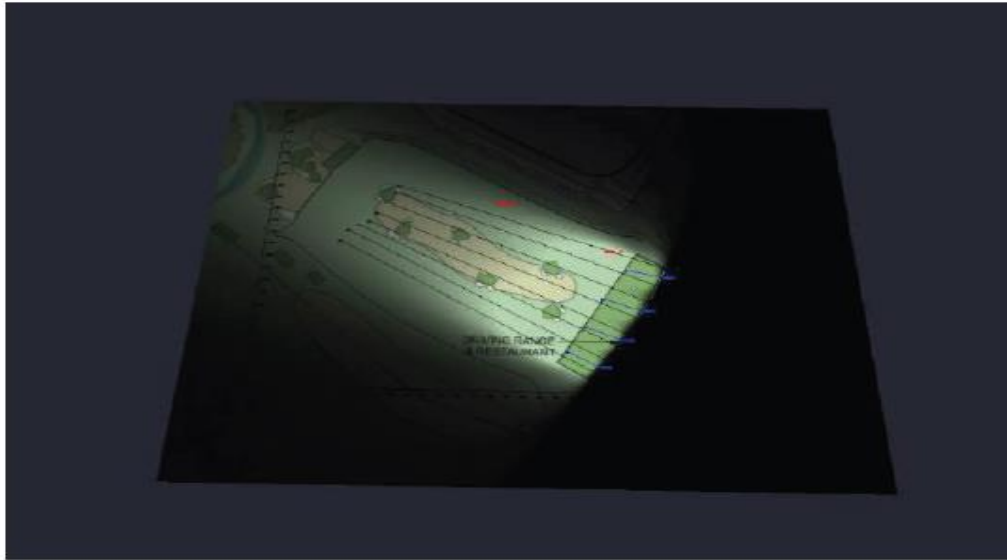








## 3D Rendering



## Color Rendering

