Keney Park Golf Course

Hartford & Windsor, CT - USA

City of Hartford
Mayor Pedro E. Segarra
Department of Public Works

Keith Chapman- Interim Director of Public Works

Department of Public Works,
50 Jennings Rd., Hartford CT 06120

DPW Project Number: 14-20

Golf Course Architect:

Dusenberry Design
Dusenberry Golf Course Design LLC

4230 N. Oakland Ave - #214
Shorewood, WI 53211
ph: 262-395-5294
e-mail: matt@dusenberrydesign.com
www.dusenberrydesign.com

Soils and Wetland Scientists:

Environmental Planning Services

Michael Klein
Address: 89 Belknap Road, West Hartford CT 06117
Ph: (860) 236 -1578
e-mail: michael.klein@epsct.com
www.epsct.com

Civil Engineer:

TE TORRES ENGINEERING INC.

Ozzie Torres
63 Reed Dr
Wethersfield, CT 06109
Ph:(860) 232-9833

Landscape Architect/planner:

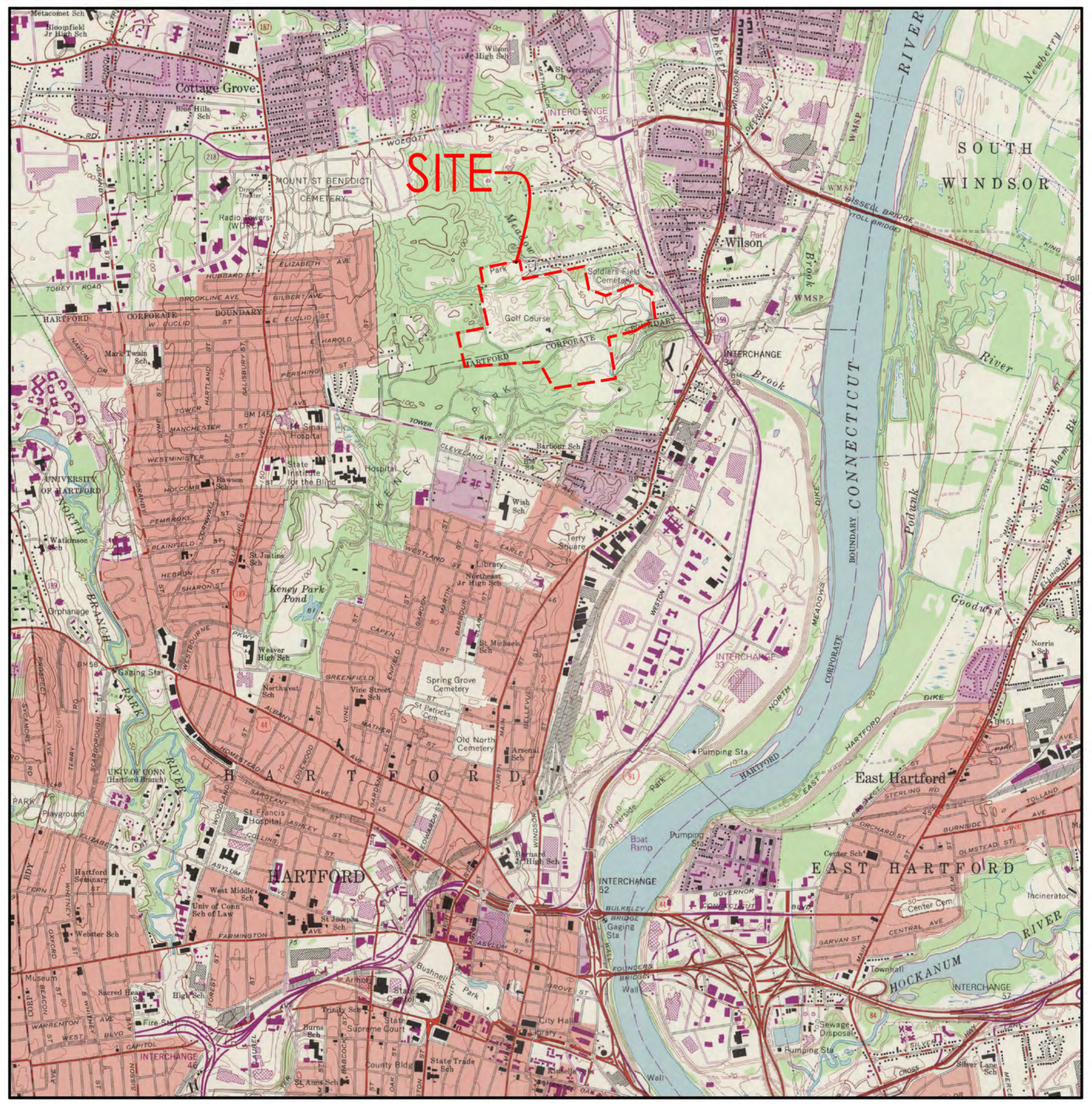
Richter & Cegan Inc.
Landscape Architects and Urban Designers

William Richter
Avon Park North, Box 567
8B Canal Court
Avon, Connecticut 06001
tel 860/678-0669
fax 860/678-8934
www.richtercegan.com

golf course Irrigation Design:

AASI
Aqua Agronomic Solutions, Inc

Paul Granger
12 E. Main Street, P.O. Box 5532
Clinton, NJ 08809
tel 908/730-7887
fax 908/730-9321
www.aasigolf.com



PROJECT LOCATION MAP

1992 USGS - North Hartford Quad NTS

LOCATION AND DESCRIPTION OF PROJECT PARCEL
Property Address: Keney Park Golf Course, 280 Tower Ave., Hartford, CT 06112
Property Location: 137 Matianuck Ave.
Zone: NZ
Total Area (acres): 160.6 Map No.: 70
Block No.: 1 Parcel No.: 1

CONSTRUCTION DOCUMENTS

March 11, 2014

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MISCELLANEOUS	**DATE**
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GROW-IN PROGRAM & SCHEDULE	3/11/14
CITY OF HARTFORD TREE ORDINANCE	3/11/14

N 855726.19 Lat=42°N
E 1020343.96 Lon=73°W
Elev 67.20

N 855682.10 Lat=42°N
E 1020042.33 Lon=73°W
Elev 76.30

N 855557.60 Lat=42°N
E 1020103.77 Lon=73°W
Elev 76.00

N 855404.21 Lat=42°N
E 1020776.48 Lon=73°W
Elev 56.73

N 855665.29 Lat=42°N
E 1021588.85 Lon=73°W
Elev 46.89

N 855617.96 Lat=42°N
E 1021736.16 Lon=73°W
Elev 47.10

N 855546.05 Lat=42°N
E 1021359.00 Lon=73°W
Elev 62.82

N 855435.91 Lat=42°N
E 1021384.27 Lon=73°W
Elev 64.00

N 855219.90 Lat=42°N
E 1021278.94 Lon=73°W
Elev 64.49

N 855110.53 Lat=42°N
E 1019976.79 Lon=73°W
Elev 68.29

N 855084.66 Lat=42°N
E 1020967.62 Lon=73°W
Elev 81.10

N 855032.04 Lat=42°N
E 1020570.07 Lon=73°W
Elev 81.14

N 855012.51 Lat=42°N
E 1021089.75 Lon=73°W
Elev 74.00

N 854983.11 Lat=42°N
E 1019821.60 Lon=73°W
Elev 86.45

N 854915.05 Lat=42°N
E 1021600.01 Lon=73°W
Elev 65.32

N 854876.45 Lat=42°N
E 1019882.20 Lon=73°W
Elev 84.15

N 854831.25 Lat=42°N
E 1019829.42 Lon=73°W
Elev 87.79

N 854761.08 Lat=42°N
E 1020381.46 Lon=73°W
Elev 81.41

N 854774.93 Lat=42°N
E 1021043.23 Lon=73°W
Elev 77.12

N 854613.67 Lat=42°N
E 1021808.30 Lon=73°W
Elev 69.77

N 854517.93 Lat=42°N
E 1020129.58 Lon=73°W
Elev 80.23

N 854521.06 Lat=42°N
E 1020534.98 Lon=73°W
Elev 79.00

N 854512.74 Lat=42°N
E 1021168.13 Lon=73°W
Elev 82.45

N 854536.59 Lat=42°N
E 1021530.43 Lon=73°W
Elev 77.62

N 854469.76 Lat=42°N
E 1021277.16 Lon=73°W
Elev 82.02

N 854376.33 Lat=42°N
E 1021125.74 Lon=73°W
Elev 83.00

N 854270.77 Lat=42°N
E 1020459.50 Lon=73°W
Elev 78.65

N 854242.38 Lat=42°N
E 1019839.15 Lon=73°W
Elev 89.06

N 854180.90 Lat=42°N
E 1020047.35 Lon=73°W
Elev 83.99

N 854191.83 Lat=42°N
E 1021319.70 Lon=73°W
Elev 89.95

N 854067.71 Lat=42°N
E 1020617.99 Lon=73°W
Elev 85.00

N 854047.26 Lat=42°N
E 1019868.02 Lon=73°W
Elev 88.00

N 853948.51 Lat=42°N
E 1021435.61 Lon=73°W
Elev 85.02

100 yards

150 yards

200

Layout and Staking Plan Instructions

Place and secure 8 foot long, 4" diameter white PVC pipe at each tee, landing area, and green location as indicated on the staking and layout plans.

Paint the top 1 foot of the PVC pipe with designated color;

Tees = Red
Landing Area = Blue
Greens = Green

North

0 50 100 200 500'

Staking and Layout Plan

Sheet 1 of 2

Scale: 1"=100'

Date: March 11, 2014 Drawn by: MED

Keney Golf Course

Hartford, CT

Dusenberry Design

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Matthew Dusenberry
Design Partner

W. Tad Burnett
Design Partner

N 855727.59 Lat=42°N
E 1021870.97 Lon=73°W
Elev 70.85

N 855665.29 Lat=42°N
E 1021588.85 Lon=73°W
Elev 46.89

N 855617.56 Lat=42°N
E 1021736.16 Lon=73°W
Elev 47.10

N 855616.83 Lat=42°N
E 1022076.65 Lon=73°W
Elev 72.00

N 855402.03 Lat=42°N
E 1022145.68 Lon=73°W
Elev 64.06

N 855375.02 Lat=42°N
E 1023068.81 Lon=73°W
Elev 58.58

N 855359.91 Lat=42°N
E 1023229.51 Lon=73°W
Elev 42.79

N 855285.19 Lat=42°N
E 1023353.81 Lon=73°W
Elev 38.27

N 855192.79 Lat=42°N
E 1021904.37 Lon=73°W
Elev 44.83

N 855046.44 Lat=42°N
E 1022551.75 Lon=73°W
Elev 50.31

N 855016.62 Lat=42°N
E 1022108.51 Lon=73°W
Elev 44.03

N 854915.05 Lat=42°N
E 1021600.01 Lon=73°W
Elev 65.32

N 854832.64 Lat=42°N
E 1023231.72 Lon=73°W
Elev 49.49

N 854756.21 Lat=42°N
E 1023243.85 Lon=73°W
Elev 55.53

N 854725.63 Lat=42°N
E 1023512.87 Lon=73°W
Elev 36.37

N 854698.14 Lat=42°N
E 1022826.49 Lon=73°W
Elev 70.58

N 854624.78
E 1023709.40
Elev 64.60

N 854613.67 Lat=42°N
E 1021808.30 Lon=73°W
Elev 69.77

N 854592.25 Lat=42°N
E 1022288.04 Lon=73°W
Elev 55.89

N 854554.01 Lat=42°N
E 1022837.85 Lon=73°W
Elev 74.00

N 854536.59 Lat=42°N
E 1021530.43 Lon=73°W
Elev 77.62

N 854489.63 Lat=42°N
E 1022165.30 Lon=73°W
Elev 62.12

N 854468.34 Lat=42°N
E 1022097.46 Lon=73°W
Elev 65.46

N 854280.09 Lat=42°N
E 1022063.57 Lon=73°W
Elev 66.56

100 yards
150 yards
200 yards
250 yards
300 yards

N 853594.22 Lat=42°N
E 1022097.09 Lon=73°W
Elev 57.00

Layout and Staking Plan Instructions

Place and secure 8 foot long, 4" diameter white PVC pipe at each tee, landing area, and green location as indicated on the staking and layout plans.

Paint the top 1 foot of the PVC pipe with designated color;

Tees = Red
Landing Area = Blue
Greens = Green

North

0 50 100 200 500'

Staking and Layout Plan

Sheet 2 of 2

Scale: 1"=100'

Date: March 11, 2014 Drawn by: MED

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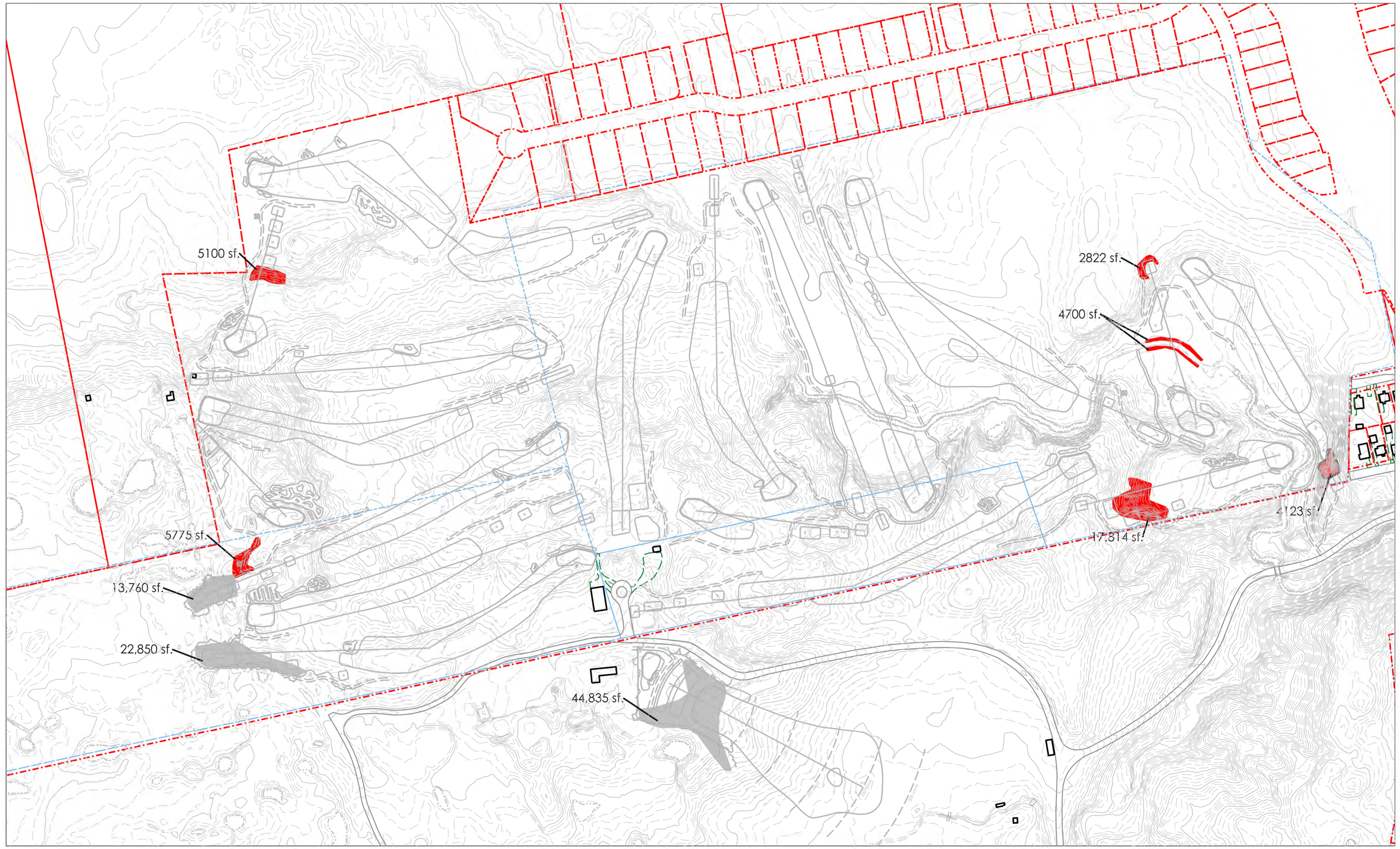

Key

Mechanical Clearing

Hand Clearing

Description	Quantity
Hole 3 Tees - Hand Clearing	5100 sf.
Hole 7 Tees - Hand Clearing	5775 sf.
Hole 7 Tees - Mechanical Clearing	13,760 sf.
Hole 9 Tees - Mechanical Clearing	22,850 sf.
Hole 11 Tees - Hand Clearing	17,814 sf.
Hole 12 Tees - Hand Clearing	4,123 sf.
Hole 13 Tees - Hand Clearing	2,822 sf.
Hole 13 Stream Corridor - Hand Clearing	4,700 sf.
Practice Tee Area - Mechanical Clearing	44,835 sf.

Example of trees on-site for select clearing and grinding of stumps. Remove all cleared material and shavings from stump grinding from the site. Dispose of off-site in a lawful manner.

Photo of shot line on hole 11 tee. Illustrate hand clearing of brush and trees to open the sight line from tees to the approach.

Photo of shot line on hole 13 tee. Illustrate hand clearing of brush near stream to open the sight line of the green and approach.

Photo of shot line on hole 3 tee. Illustrate hand clearing of brush on steep slope in front of tees to open the sight line of the green and approach.

0 50 100 200 500'

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Design Partner

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Keney Golf Course

Hartford, CT

Clearing Plan

Sheet 1 of 1

Scale: 1"=200'

Date: March 11, 2014 Drawn by: MED

Proposed Major Contour

Proposed Minor Contour - 2'

Proposed Minor Contour - 1'

Proposed Feature Contour

Limits of Disturbance

North

0 50 100 200 500'

Grading Plan

Sheet 1 of 2

Scale: 1"=100'

Date: March 11, 2014 Drawn by: MED

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Proposed Major Contour

Proposed Minor Contour - 2'

Proposed Minor Contour - 1'

Proposed Feature Contour

Limits of Disturbance

North

0 50 100 200 500'

Grading Plan

Sheet 2 of 2

Scale: 1"=100'

Date: March 11, 2014 Drawn by: MED

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Cut: 87.0 cu yd
Fill: 19.7 cu yd

Net: 67.3 cu yd

Cut: 0.0 cu yd
Fill: 6,851.1 cu yd

Net: -6,851.1 cu yd

Cut: 182.1 cu yd
Fill: 29.7 cu yd

Net: 152.4 cu yd

Cut: 3,841.0 cu yd
Fill: 694.2 cu yd

Net: 3,146.8 cu yd

F

D

CCC

See Sheet 1 of 2

Cut: 860.1 cu yd
Fill: 904.6 cu yd

Net: -44.5 cu yd

E

2

C

Cut: 435 cu yd
Fill: 218 cu yd

Net: 217 cu yd

Cut: 632.7 cu yd
Fill: 2.3 cu yd

Net: 630.4 cu yd

B

G

V-V

Cut: 0.0 cu yd
Fill: 53.3 cu yd

Net: -53.3 cu yd

3

Cut: 540.0 cu yd
Fill: 957.8 cu yd

Net: -417.8 cu yd

H

Cut: 450.1 cu yd
Fill: 0.3 cu yd

Net: 449.8 cu yd

Cut: 2,725.2 cu yd
Fill: 883.4 cu yd

Net: 1,841.8 cu yd

W-W

Cut: 4.5 cu yd
Fill: 73.4 cu yd

Net: -68.9 cu yd

K

J

Cut: 29.9 cu yd
Fill: 26.7 cu yd

Net: 3.3 cu yd

L

17

Cut: 45.7 cu yd
Fill: 9.5 cu yd

Net: 36.2 cu yd

4

N

M

Cut: 1,814.6 cu yd
Fill: 1,202.2 cu yd

Net: 612.4 cu yd

I

Cut: 54.8 cu yd
Fill: 103.5 cu yd

Net: -48.8 cu yd

Cut: 1,072.5 cu yd
Fill: 6.1 cu yd

Net: 1,066.8 cu yd

R

1

Cut: 688.5 cu yd
Fill: 293.6cu yd

Net: 394.9 cu yd

Cut: 801.7 cu yd
Fill: 65.1 cu yd

Net: 736.6 cu yd

5

Cut: 462.9 cu yd
Fill: 72.2 cu yd

Net: 390.7 cu yd

Cut: 131.6 cu yd
Fill: 4.4 cu yd

Net: 127.2 cu yd

Cut: 1,466.3 cu yd
Fill: 48.2 cu yd

Net: 1,418.1 cu yd

X-X

Cut: 0.0 cu yd
Fill: 28.6 cu yd

Net: -28.6 cu yd

6

O

P

7

Q

Cut: 19.5 cu yd
Fill: 197.2 cu yd

Net: -177.7 cu yd

S

A

Z-Z

Cut: 59.4 cu yd
Fill: 0.5 cu yd

Net: 58.9 cu yd

U

T

Cut: 3,096.2 cu yd
Fill: 1,150.0 cu yd

Net: 1,946.2 cu yd

18

Cut: 0.0 cu yd
Fill: 58.7 cu yd

Net: -58.7 cu yd

Y

Cut: 360.1 cu yd
Fill: 152.5 cu yd

Net: 207.6 cu yd

B-B

Cut: 47.5 cu yd
Fill: 0.5 cu yd

Net: 47.0 cu yd

V

8

Cut: 160.8 cu yd
Fill: 0.0 cu yd

Net: 160.8 cu yd

Cut: 713.6 cu yd
Fill: 305.0 cu yd

Net: 408.6 cu yd

Z

10

A-A

Cut: 16.6 cu yd
Fill: 15.5 cu yd

Net: 1.1 cu yd

W

Cut: 0.1 cu yd
Fill: 24.3 cu yd

Net: -24.2 cu yd

9

X

Practice
Range

AAA

Cut: 4,416.5 cu yd
Fill: 2,318.5 cu yd

Net: 2,098.0 cu yd

Existing Major Contour

Existing Minor Contour

Proposed Major Contour

Proposed Minor Contours

Proposed Feature Contour

N

Limit of Disturbance/Grading

Cut: 4201.2 cu yd
Fill: 2318.5 cu yd

Net: 1882.7 cu yd

Cut/Fill Calculation
Blue Box indicated Net Fill
Red Box indicates Net Cut

** Cut/Fill volumes include material excavated to create green wells

North

0 50 100 200 500'

Cut/Fill Plan
Sheet 1 of 2

Scale: 1"=100'

Date: March 11, 2014 Drawn by: WTB

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CUT/FILL Volumes (in Cubic Yds)				Green Well Excavation
Area	Cut Volume	Fill Volume	Net Volume	*(Green - Volume)*
A	688.5	293.6	394.9	PG - 476
B	435.0	218.0	217.0	1 - 418
C	632.7	2.3	630.4	
D	182.1	29.7	152.4	
E	-	53.3	(53.3)	
F	87.0	19.7	67.3	
G	3,841.0	694.2	3,146.8	2 - 339
H	540.0	957.8	(417.8)	3 - 313.5
I	1,814.6	1,202.2	612.4	4 - 399
J	450.1	0.3	449.8	
K	2,725.2	883.4	1,841.8	5 - 305
L	29.9	26.7	3.2	
M	45.7	9.5	36.2	
N	54.8	103.5	(48.7)	
O	462.9	72.2	390.7	6 - 355.5
P	-	28.6	(28.6)	
Q	131.6	4.4	127.2	
R	1,072.9	6.1	1,066.8	7 - 359
S	19.5	197.2	(177.7)	
T	-	58.7	(58.7)	
U	59.4	0.5	58.9	
V	3,096.2	1,150.0	1,946.2	8 - 358.7
W	160.8	-	160.8	
X	0.1	24.3	(24.2)	
Y	713.6	305.0	408.6	9 - 317
Z	360.1	152.5	207.6	
A-A	16.6	15.5	1.1	

** Excavation for green wells is included in Earthwork calculations.

CUT/FILL Volumes (in Cubic Yds)				Green Well Excavation
Area	Cut Volume	Fill Volume	Net Volume	*(Green - Volume)*
B-B	47.5	0.5	47.0	
C-C	135.2	-	135.2	
D-D	1,649.7	128.6	1,521.1	10 - 381
E-E	44.2	27.5	16.7	
F-F	468.2	722.2	(254.0)	
G-G	1.0	53.2	(52.2)	
HH	140.1	51.8	88.3	
II	364.1	-	364.1	11 - 364.1
JJ	347.5	1.7	345.8	
KK	-	114.0	(114.0)	
LL	340.4	-	340.4	12 - 340.4
MM	83.6	28.1	55.5	
NN	-	272.9	(272.9)	
OO	3,461.8	2,524.4	937.4	13 - 360
PP	378.5	1.0	377.5	
QQ	104.9	11.5	93.4	
RR	313.5	-	313.5	14 - 313.5
SS	140.3	124.2	16.1	
TT	583.0	-	583.0	15 - 426
UU	696.8	1.1	695.7	
VV	860.1	904.6	(44.5)	16 - 358
WW	4.5	73.4	(68.9)	
XX	801.7	65.1	736.6	17 - 365
YY	1,465.5	941.3	524.2	
ZZ	1,466.3	48.2	1,418.1	18 - 381
AAA	4,416.5	2,318.5	2,098.0	PR - 215.3
BBB	-	13,577.0	(13,577.0)	
CCC	-	6,851.1	(6,851.1)	

See Sheet 1 of 2

Cut: 140.3 cu yd
Fill: 124.2 cu yd

Net: 16.1 cu yd

S-S

Cut: 313.5 cu yd
Fill: 0.0 cu yd

Net: 313.5 cu yd

R-R

V-V

Cut: 104.9 cu yd
Fill: 11.5 cu yd

Net: 93.5 cu yd

16

Q-Q

Cut: 378.5 cu yd
Fill: 1.0 cu yd

Net: 377.5 cu yd

P-P

14

15

Cut: 696.8 cu yd
Fill: 1.1 cu yd

Net: 695.7 cu yd

U-U

See Sheet 1 of 2

17

X-X

Cut: 583.0 cu yd
Fill: 0.0 cu yd

Net: 583.0 cu yd

T-T

Y-Y

18

B-B

10

Cut: 1,465.5 cu yd
Fill: 941.3 cu yd

Net: 524.2 cu yd

C-C

Cut: 135.2 cu yd
Fill: 0.0 cu yd

Net: 135.2 cu yd

Cut: 1,649.7 cu yd
Fill: 128.6 cu yd

Net: 1,521.1 cu yd

D-D

Cut: 44.2 cu yd
Fill: 27.5 cu yd

Net: 16.7 cu yd

E-E

F-F

Cut: 468.2 cu yd
Fill: 722.2 cu yd

Net: -254.0 cu yd

Cut: 0.0 cu yd
Fill: 13,577.0 cu yd

Net: -13,577.0 cu yd

See Sheet 1 of 2

BBB

Practice Range

200 yards

250 yards

300 yards

M-M

Cut: 83.6 cu yd
Fill: 28.1 cu yd

Net: 55.5 cu yd

L-L

Cut: 340.4 cu yd
Fill: 0.0 cu yd

Net: 340.4 cu yd

12

N-N

Cut: 0.0 cu yd
Fill: 272.9 cu yd

Net: -272.9 cu yd

Cut: 3461.8 cu yd
Fill: 2524.4 cu yd

Net: 937.4 cu yd

13

O-O

K-K

Cut: 0.0 cu yd
Fill: 114.0 cu yd

Net: -114.0 cu yd

Cut: 347.5 cu yd
Fill: 1.7 cu yd

Net: 345.8 cu yd

J-J

11

G-G

H-H

I-I

Cut: 140.1 cu yd
Fill: 51.8 cu yd

Net: 88.3 cu yd

Cut: 364.1 cu yd
Fill: 0.0 cu yd

Net: 364.1 cu yd

Cut: 1.0 cu yd
Fill: 53.2 cu yd

Net: -52.2 cu yd

Existing Major Contour

Existing Minor Contour

Proposed Major Contour

Proposed Minor Contours

Proposed Feature Contour

B-B

Limit of Disturbance/Grading

Cut: 4201.2 cu yd
Fill: 2318.5 cu yd

Net: 1882.7 cu yd

Cut/Fill Calculation
Blue Box indicated Net Fill
Red Box indicates Net Cut

** Cut/Fill volumes include material excavated to create green wells

North

0 50 100 200 500'

Cut/Fill Plan
Sheet 2 of 2

Scale: 1"=100'

Date: March 11, 2014 Drawn by: WTB

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12" Drop-In Cast Iron - Catch Basin

12" Sub-surface Drainage Pipe

6" Sub-surface Drainage Pipe

4" Sub-surface Drainage Pipe

4" Filter Drain (perf. pipe with sand/gravel/trace wire)

Exfiltration Trench

Outfall (upland)

North

0 50 100 200 500'

Drainage Plan

Sheet 1 of 3

Scale: 1"=100'

Date: March 11, 2014 Drawn by: MED

Keney Golf Course

Hartford, CT

Dusenberry Design

Dusenberry Golf Course Design LLC

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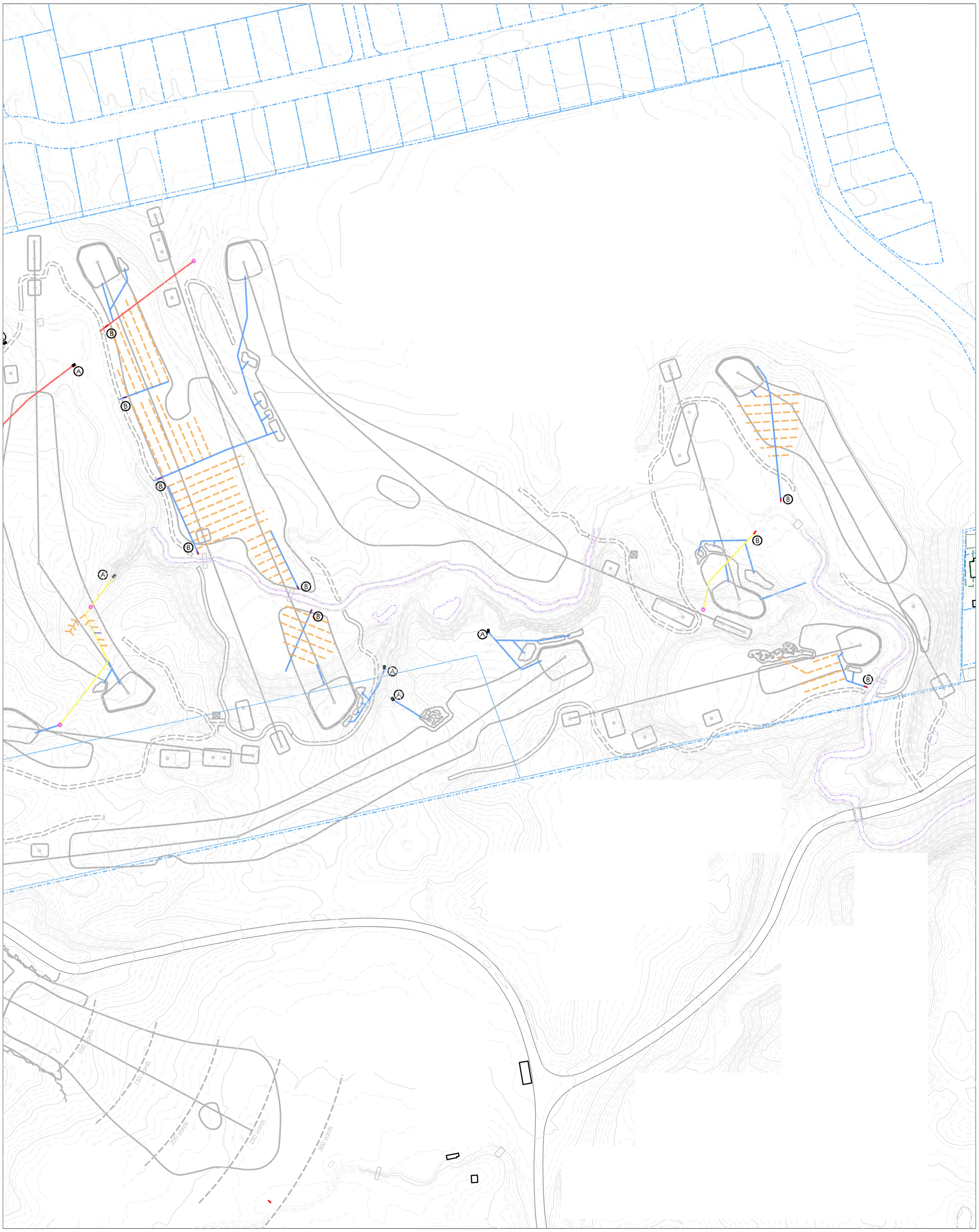
Matthew Dusenberry
Design Partner

W. Tad Burnett
Design Partner



12" Drop-In Cast Iron - Catch Basin

12" Sub-surface Drainage Pipe

6" Sub-surface Drainage Pipe

4" Sub-surface Drainage Pipe

4" Filter Drain (perf. pipe with sand/gravel/trace wire)

Exfiltration Trench

Outfall (upland)

North

0 50 100 200 500'

Drainage Plan

Sheet 2 of 3

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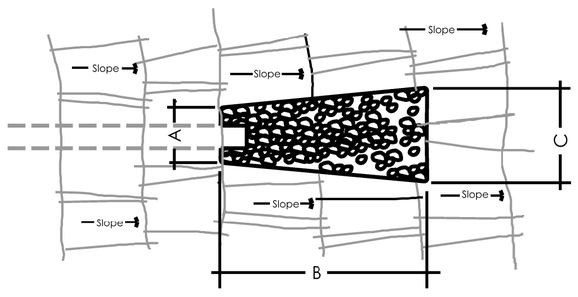
Ⓐ Sub-surface Drainage Outfall (upland)

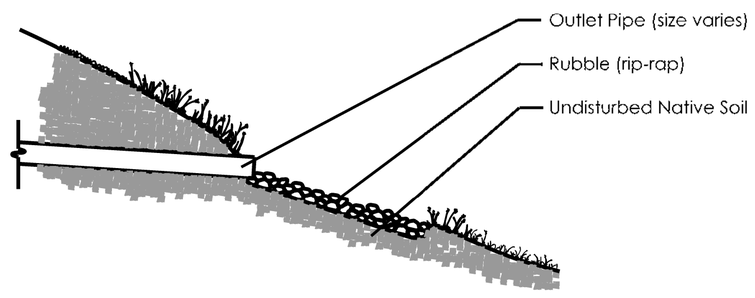
Plan View



Note that the size of the diffusing rip rap area diminishes with the size of the outfall pipe. The following sizes are specified;

Size outfall pipe (inches)	A	B	C
12	2'	10'	3'
6	2'	6'	3'
4	1'	4'	2'

Section View

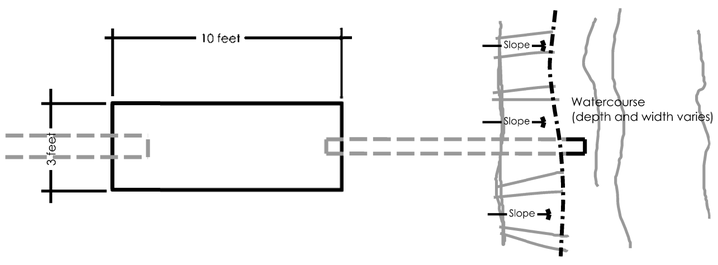


Notes:
1. Excavate area for rubble 6 inches in depth. Remove cut material from work area.
2. Outfall slope must be 2% or greater.
3. Establish all disturbed areas around the outfall with hydromulch and seed and specified in bid documents.
4. Install and maintain erosion control measures as indicated in Erosion and Sedimentation Control plans.

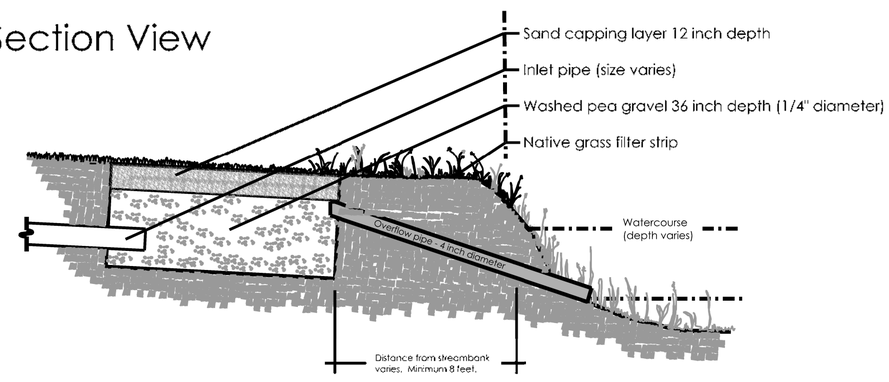
not to scale

Ⓑ Exfiltration Drainage Outfall (lowland)

Plan View



Section View

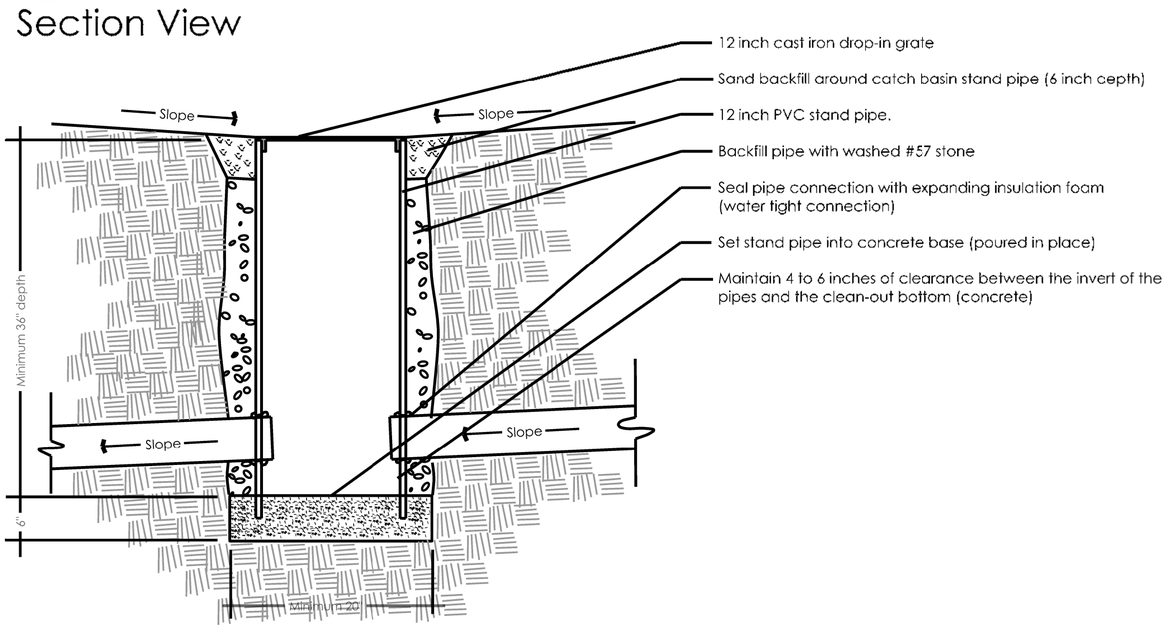


Notes:
1. Excavate area from undisturbed soil. Remove cut material from work area. Minimize disturbance between the excavation and the stream bank.
2. Establish all disturbed areas around the outfall with hydromulch and seed and specified in bid documents.
3. Install and maintain erosion control measures as indicated in Erosion and Sedimentation Control plans.

not to scale

Ⓒ Drainage Catch Basin

Section View

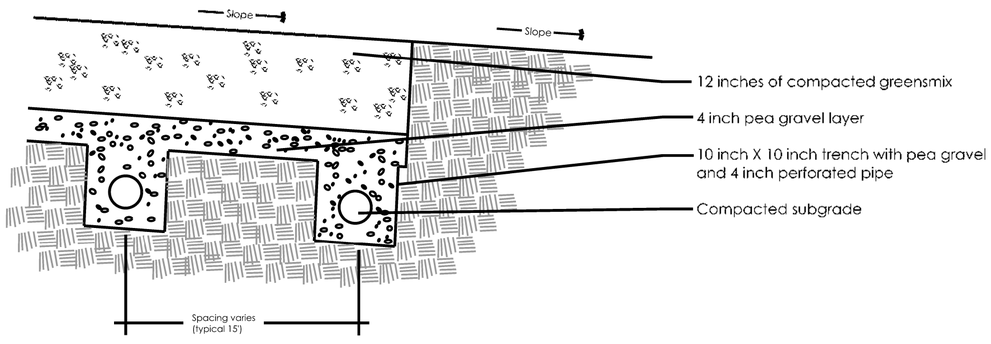


Notes:
1. Minimum 2% surface slope towards catch basin in newly graded areas.
2. Perforate stand pipe with hand-held drill and bits. Drilling schedule; 3/8" holes @ 6 inch spacing.
3. Install standpipe plumb (vertical).
4. Expanding insulation foam should be waterproof and manufacturer rated for this application.
5. Pour concrete clean-out pad in-place. Use quikrete (or equal) that is manufacturer labeled for this application.

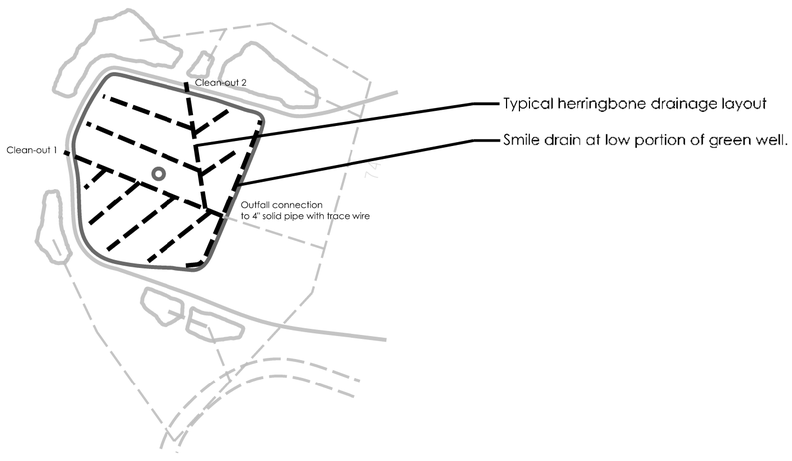
not to scale

Ⓓ Greens Drainage

Section View



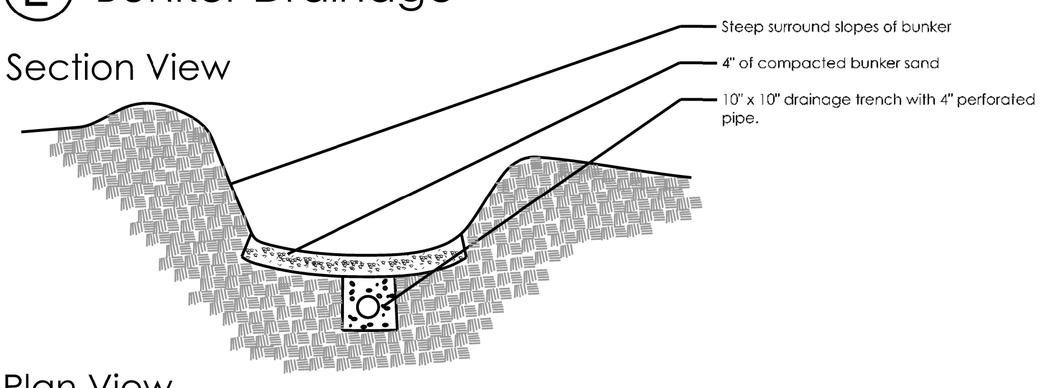
Plan View



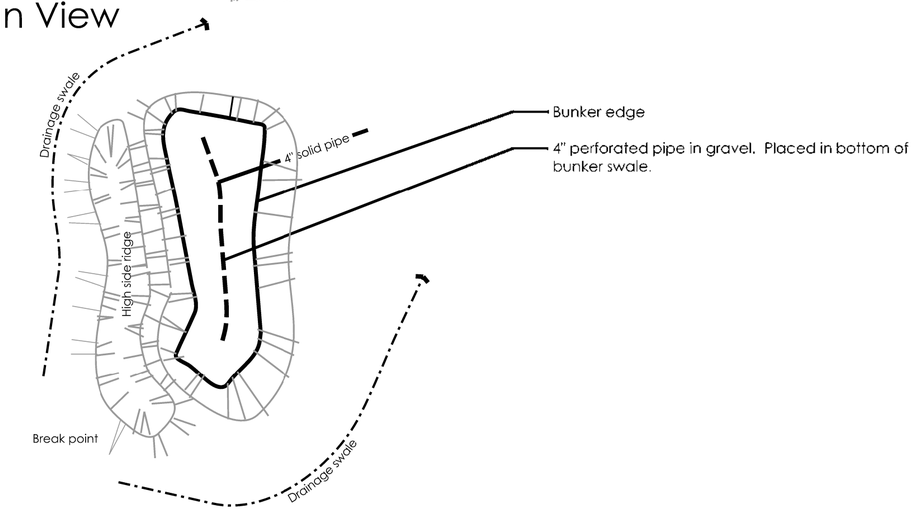
not to scale

Ⓔ Bunker Drainage

Section View



Plan View



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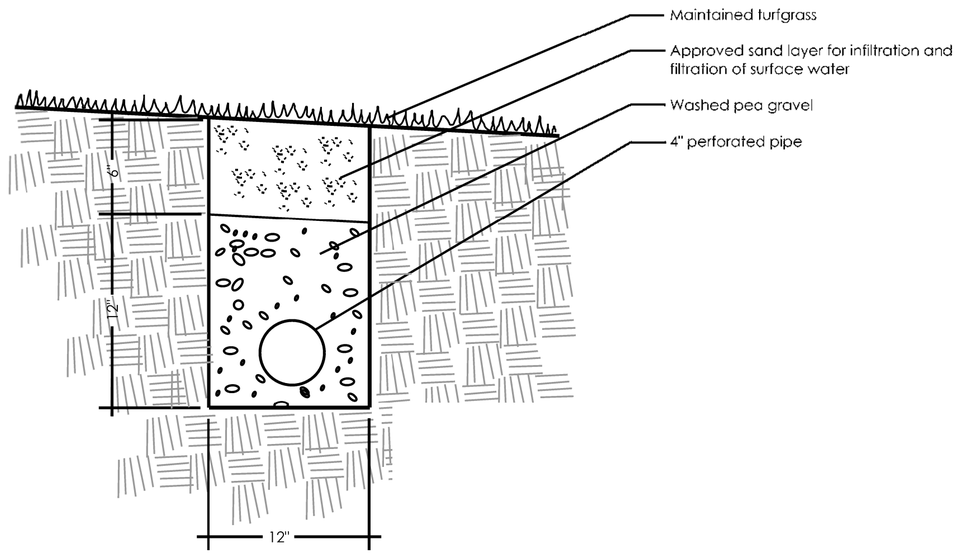
Ⓕ Filter Drain



not to scale

Drainage Plan - Details

Sheet 3 of 3

Scale: 1"=100'

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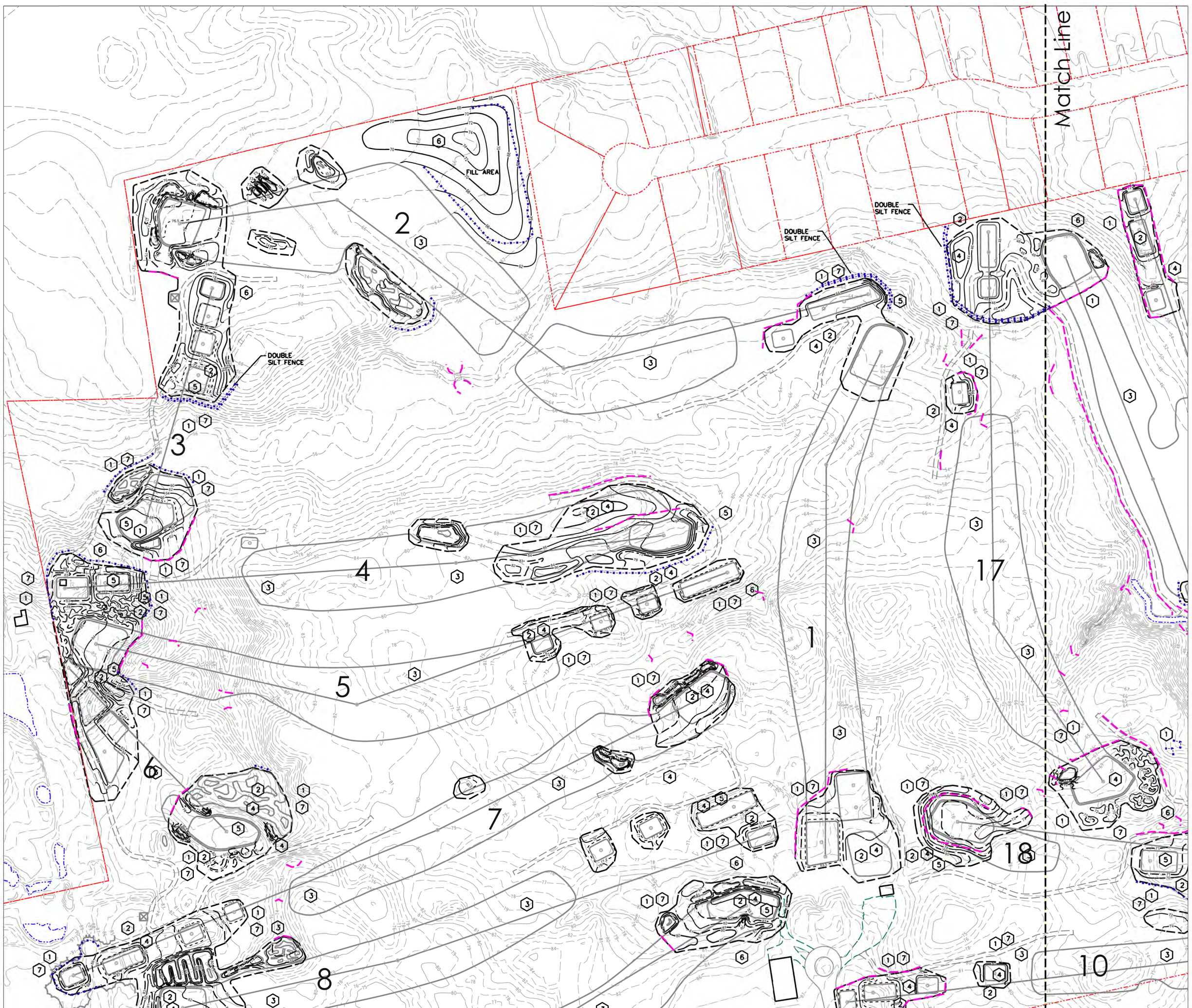

Proposed Major Contour

Proposed Minor Contour - 2'

Proposed Minor Contour - 1'

Proposed Feature Contour

Limits of Disturbance

Silt Fence

Straw Wattle

Silt Fence or Hay Bale Check Dam

Erosion Control Measure

North

0 50 100 200 500'

Erosion & Sedimentation Control Plan Sheet 1 of 3

Scale: 1"=100'

Date: March 11, 2014 Drawn by: DT, MED

Keney Golf Course

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TORRES ENGINEERING, INC.

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Match Line

DOUBLE SILT FENCE

DOUBLE SILT FENCE

DOUBLE SILT FENCE

FILL AREA

Practice Range

100 yards

150 yards

200 yards

250 yards

300 yards

Match Line

Proposed Major Contour

Proposed Minor Contour - 2'

Proposed Minor Contour - 1'

Proposed Feature Contour

Limits of Disturbance

Silt Fence

Straw Wattle

Silt Fence or Hay Bale Check Dam

Erosion Control Measure

North

0 50 100 200 500'

Erosion & Sedimentation Control Plan
Sheet 2 of 3

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SEDIMENTATION AND EROSION CONTROL PLAN

A. INTENT: IT IS THE INTENT OF THIS SEDIMENTATION AND EROSION CONTROL PLAN TO PROVIDE THE SITE CONTRACTOR THE MEANS TO CONTROL EROSION AND SEDIMENTS INTO EXISTING WATERCOURSES AND DRAINAGE SYSTEMS, AND ON TO SURROUNDING PROPERTIES AND ROADWAYS. THE CONTRACTOR SHALL USE THIS PLAN, ALONG WITH THE GUIDELINES PROVIDED, TO CONTAIN SEDIMENTS WITHIN SPECIFICALLY NOTED AREAS AS LISTED ON THIS PLAN.

B. DESIGN CRITERIA: THE DESIGN CRITERIA USED TO PREPARE THIS PLAN WAS THE "2002 CT EROSION AND SEDIMENTATION CONTROL GUIDELINES." WHILE TAKING INTO CONSIDERATION THE EXISTING NATURE AND TOPOGRAPHY OF THE SITE, AS WELL AS THE SPECIFICS OF THE PROPOSED PROJECT.

C. STARTING DATE OF CONSTRUCTION: MAY 2014

D. COMPLETION DATE OF CONSTRUCTION: NOV. 2014

(PLEASE NOTE THE ABOVE NOTED DATES SHOULD BE ASSUMED AS TENTATIVE, AND ARE SUBJECT TO CHANGE DUE TO CONDITIONS BEYOND THE CONTROL OF THE DEVELOPER.)

E. AGENT RESPONSIBLE FOR IMPLEMENTATION OF PLAN:
THE DEVELOPING CONTRACTOR.

F. DISCUSSION OF SITE AND DEVELOPMENT:
THE SITE IS LOCATED IN KENEY PARK IN THE CITY OF HARTFORD, CONNECTICUT.

THE DEVELOPMENT, AS PROPOSED, INVOLVES THE RE-GRADING AND RENOVATING OF AN EXISTING GOLF COURSE. A CONSTRUCTION AREA OF APPROXIMATELY 25.8 ACRES.

THE SITE PRESENTLY DRAINS OVER-GROUND TO EXISTING BROOK.

SITE CONSTRUCTION SHALL INVOLVE EXCAVATION AND FILLING IN THE AREAS OF THE PROPOSED BUILDING LOT.

THE FOLLOWINGS ARE DEEMED POTENTIAL AREAS REQUIRING PROPER SEDIMENTATION AND EROSION CONTROL MEASURES.
a. LOWER SLOPE OF EXCAVATION AREAS
b. BOTTOM OF SLOPE WITH EXCAVATION AREAS
c. STORM SEWERS, INCLUDING EXISTING AND PROPOSED CATCH BASINS.
d. DUST AND MUD CONTROL ON SURROUNDING STREETS AND PROPERTIES.

THIS PLAN DEALS WITH THESE POTENTIAL SOURCES OF SEDIMENTS BY PROPOSING SILTATION FENCES AND CHECKS, AND REQUIRING PROMPT STABILIZATION OF EXPOSED SLOPES.

20. ORGANIC MULCH ANCHORING WITH STRAW OR HAY MULCH MUST BE ANCHORED IMMEDIATELY AFTER SPREADING TO PREVENT WIND BLOWING. THE FOLLOWING METHODS AND/OR PROCEDURES SHOULD BE USED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AND THE STATE OF CONNECTICUT SEDIMENTATION AND EROSION CONTROL GUIDELINES....
A) MULCH ANCHORING TOOL
B) TRACKING
C) LIQUID MULCH BINDERS
D) MULCH NETTING
E) PEG AND TWINE
F) CHEMICAL MULCHES
G) MATS

G. SEDIMENTATION & EROSION CONTROL NOTES:

1. ALL EMBANKMENT SLOPES, DISTURBED OR RE-GRADED DURING CONSTRUCTION SHALL BE SODDED OR SEEDED AND MULCHED (AS REQUIRED), AS SOON AS PRACTICAL AFTER COMPLETION OF SLOPES.

2. SYNTHETIC FILTER FABRIC BARRIERS, STRAW WATTLES, OR HAY BALES SHALL BE PLACED AS SHOWN ON THIS PLAN TO CONTROL SEDIMENTATION AND EROSION. REFER TO DETAIL FOR PROPER INSTALLATION REQUIREMENTS.

3. ALL PERIMETER SYNTHETIC FILTER CHECKS OR BARRIERS SHALL BE PLACED PRIOR TO STARTING OF ANY SITE CONSTRUCTION.

4. PRIOR TO CONSTRUCTION, ALL AREAS TO BE DISTURBED IN A PARTICULAR LOCATION SHALL BE STRIPPED OF TOPSOIL AND STOCKPILED IN AN APPROPRIATE LOCATION. HAY BALES OR SYNTHETIC FILTER BARRIERS SHALL BE PLACED AROUND THE PERIMETER OF THE PILE. TOPSOIL SHALL BE IMMEDIATELY SEEDED WITH A TEMPORARY COVER OF ANNUAL RYE GRASS.

5. HAY BALES, STRAW WATTLES, OR SYNTHETIC FILTER BARRIERS SHALL BE PLACED AT ENDS OF ALL SWALES, EITHER PERMANENT OR TEMPORARY, IMMEDIATELY AFTER SWALE HAS BEEN ROUGH GRADED.

6. HAY BALES CHECKS OR STRAW WATTLES SHALL BE PLACED AROUND CATCH BASINS AFTER COMPLETION TO PREVENT SILTATION OF SUMPS. REFER TO DETAIL FOR PROPER INSTALLATION REQUIREMENTS.

7. AREAS SHALL BE SODDED OR SEEDED IMMEDIATELY AFTER FINAL GRADING BETWEEN APRIL 1 AND JUNE 15, AND BETWEEN AUGUST 15 AND SEPTEMBER 30.

8. WHEN GRADING IS NOT COMPLETED BY SEPTEMBER 30, OR AREAS TO BE EXPOSED FOR EXTENDED PERIODS OF TIME, A TEMPORARY COVER OF ANNUAL RYE GRASS SEEDED AT THE RATE OF 1.5 POUNDS PER 1000 SQUARE FEET SHALL BE ESTABLISHED OR HAY SPREAD.

9. THE CITY ENGINEER, OR HIS AGENT, SHALL BE NOTIFIED BEFORE CONSTRUCTION BEGINS AND UPON COMPLETION.

10. ALL CONTROL MEASURES SHALL BE INSPECTED WEEKLY FOR EXCESSIVE ACCUMULATIONS OF SILT. THESE INSPECTIONS SHALL BE INCREASED TO DAILY DURING PERIODS OF RAIN OR WHEN EXCESSIVE EROSION WITHIN A PARTICULAR PORTION OF SITE IS OCCURRING WITH REGULARITY.

11. CONTROL MEASURES SHALL BE CLEANED OF SILT WHEN DEPTH ACCUMULATIONS REACH 1/2 THE OVERALL HEIGHT.

12. ALL CONTROL MEASURES ARE TO BE REMOVED FROM SITE IMMEDIATELY AFTER WORK HAS BEEN COMPLETED AND GROUND COVER HAS BEEN ESTABLISHED. PERIODIC REVIEW OF THE SITE MAY BE REQUIRED TO INSPECT THE SITE TO INSURE THAT GRADED EMBANKMENTS MAINTAIN VEGETATION AS ESTABLISHED. IN THE EVENT THAT GROUND COVER HAS NOT BEEN FULLY ESTABLISHED IN A PARTICULAR AREA, ADDITIONAL MEASURES MAY NEED TO BE TAKEN TO REESTABLISH THE GROUND COVER.

13. EXISTING STORM SEWERS, WATERCOURSES, AND CATCH BASINS SHALL BE CLEANED OF ANY ACCUMULATION OF SILT DUE TO CONSTRUCTION.

14. CONTRACTOR TO KEEP ROADWAY FREE AND CLEAR OF ANY ACCUMULATED MUD OR SILT DURING CONSTRUCTION. MEASURES TO BE USED MAY INCLUDE EITHER SWEEPING, APPLICATION OF WATER SPRAYS OR MULCHING TECHNIQUES.

15. DISTURBED AREAS SHALL BE SEEDED WITH SPECIFIED SEEDING MIXTURE. PLANTING SEASONS ARE FROM APRIL 1 TO JUNE 1 AND FROM AUGUST 15 TO SEPTEMBER 15.

16. MULCHING SHALL BE REQUIRED IN ADDITION TO SEEDING AFTER SEPTEMBER 30th.

17. SEED BED PREPARATION:
A) APPLY FERTILIZER AT THE RATE SPECIFIED IN BID DOCUMENTS.

18. AREAS WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDED SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING. MULCH ANCHORING WILL BE USED ON SLOPES GREATER THAN 3 PERCENT AND CONCENTRATED FLOW AREAS SUCH AS DIVERSIONS AND OUTLET WATERWAY CHANNELS.

19. ORGANIC MULCH MAY BE USED IN ANY AREA WHERE MULCH IS REQUIRED. THE USE OF STRAW OR HAY AT THE RATE OF 1.5-2 TONS/ACRE OR 70-90 LBS/1000 S.F. AND BE FREE OF WEEDS AND COURSE MATTER, AND MUST BE ANCHORED AND SPREAD WITH A MULCH BLOWER OR BY HAND.

20. ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR FILL EROSION WHERE EROSION IS OBSERVED, ADDITIONAL MULCH SHOULD BE APPLIED. NET SHOULD BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCURS, RE-INSTALL NET AS NECESSARY AFTER REPAIRING DAMAGE TO THE SLOPE(S). INSPECTIONS SHOULD TAKE PLACE UNTIL GRASSED AREAS ARE FIRMLY ESTABLISHED TO CONTROL SOIL EROSION AND TO SURVIVE SEVERE WEATHER CONDITIONS.

21. WHERE SLOPES HAVE ERODED, AND SUBSEQUENT REPAIR MEASURES HAVE FAILED TO PROVIDE A STABILIZED EMBANKMENT, USE OF EROSION CONTROL BLANKETS SHALL BE REQUIRED. BLANKETS SHALL BE SELECTED AND INSTALLED IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

22. INSTALLATION OF ALL CONTROL MEASURES TO BE DONE IN ACCORDANCE WITH THE "GUIDELINES FOR SOIL & WATER CONSERVATION IN CONNECTICUT", THE CONNECTICUT COUNCIL ON SOIL AND WATER CONSERVATION, JAN. 1985, OR AS AMENDED. ADDITIONAL CONTROL MEASURES MAY HAVE TO BE ADDED TO THE SITE CONSTRUCTION AREAS WHERE SURFACE EROSION OR SEDIMENT CONTROL IS A PROBLEM. THE ABOVE REFERENCE MANUAL SHALL BE USED AS THE BASIS FOR THESE ADDITIONAL CONTROL MEASURES.

H. SEQUENCE OF SITE DEVELOPMENT AND INSTALLATION OF CONTROL MEASURES:

1. INSTALL PERIMETER EROSION CONTROL MEASURES AND SWALE CHECK DAMS. INSTALL DOUBLE SILT FENCE OR HAY BALES WHERE NOTED.
2. ROUGH GRADE INDIVIDUAL SITES AT TEES AND GREENS.
3. INSTALL FAIRWAY DRAINAGE SYSTEM AND IRRIGATION SYSTEM. PROTECT INSTALLED LAWNS WITH SILT FENCE, STRAW WATTLES AND/OR HAY BALES.
4. INSTALL FINAL GRADING AND CART PATH PAVING. SILTATION MEASURES TO BE REINSTALLED AFTER PAVING IS COMPLETED.
5. FINAL GRADING OF SLOPES TO BE COMPLETED, INCLUDING PLACING AND FINAL GRADING OF TOPSOIL AND SEEDING.
6. INSTALL FINAL LANDSCAPING.
7. SEDIMENTATION CONTROL MEASURES TO BE REMOVED AFTER VEGETATION IS FULLY ESTABLISHED ON SLOPES AND OTHER POTENTIAL AREAS OF EROSION HAVE BEEN CONTROLLED.
8. ROADWAYS, SIDEWALKS AND ABUTTING ROADS TO BE CLEARED OF SILT AND DIRT AND DIRT DUE TO CONSTRUCTION. CATCH BASINS AND STORM DRAINS TO BE CLEANED OF ANY ACCUMULATED SILT. DOWNSTREAM CULVERTS AND/OR WATERCOURSES TO BE INSPECTED, AND CLEANED, OF ANY DEPOSITED SILT DUE TO CONSTRUCTION.

WATER POLLUTION CONTROL PLAN

A. SITE DESCRIPTION
1. NATURE OF THE CONSTRUCTION ACTIVITY

THE SITE IS BEING RENOVATED AS A GOLF COURSE.

2. SEQUENCE OF MAJOR SOIL DISTURBANCE ACTIVITIES

ACTIVITY	CONSTRUCTION SCHEDULE 2014						
	MAY	JUN	JULY	AUG	SEPT	OCT	NOV
INSTALL INITIAL EROSION CONTROL MEASURES	X						
CLEARING AND GRUBBING	X						
EXCAVATE RAIN SHELTER FOUNDATIONS		X	X	X			
INSTALL SITE UTILITIES			X	X			
INSTALL RAIN SHELTERS			X	X	X		
SITE GRADING			X	X	X	X	
SITE PAVING				X	X	X	
TOPSOIL AND FINAL GRADING				X	X	X	
STABILIZE EMBANKMENTS					X	X	
LANDSCAPING					X	X	
CLEAN UP						X	X

3. SITE AREA

THE AREA OF THE CONSTRUCTION IS 25.8 ACRES. A PORTION OF THE COURSE WILL BE DISTURBED AS THE COURSE IS RE-GRADED.

4. RUNOFF COEFFICIENT
THE AVERAGE RUNOFF COEFFICIENT OF THE SITE AFTER CONSTRUCTION IS APPROX. 0.60.

5. SITE MAP
THE SITE PLAN INCLUDED HEREIN PROVIDES ALL INFORMATION ON SLOPES AND GRADING REQUIRED.

6. RECEIVING WATERS
THE RUNOFF FROM THE SITE WILL BE DISCHARGED TO THE EXISTING WATER COURSE.

B. CONTROLS

1. EROSION AND SEDIMENT CONTROLS ARE SHOWN ON THIS PLAN.

2. STRUCTURAL PRACTICES
THE PROPOSED STORM SYSTEM IS DESIGNED AS A MAIN SYSTEM OF MANHOLE TO MANHOLE WITH THE CATCH BASINS GOING TO MANHOLES ONLY. THE CATCH BASINS ARE EQUIPPED WITH TRAPS TO ALLOW THE HEAVY SOILS AND SILT TO FALL OUT, FLOATABLES TO BE TRAPPED AND OILS TO REMAIN IN THE CATCH BASINS.

3. MAINTENANCE PROGRAM DURING CONSTRUCTION
ALL CATCH BASINS SHALL BE CLEANED AND CLEARED OF DEBRIS, SAND OR SILT ON A BY WEEKLY BASIS. DEBRIS SHALL BE REMOVED FROM THE SITE ALONG WITH OTHER CONSTRUCTION DEBRIS. SILT AND SAND MAY BE SPREAD IN FLAT OR LEVEL AREAS LATER TO BE TOPSOILED OR GRADED.
SILT FENCE OR HAY BALE PROTECTION SHALL BE REPAIRED AS NEEDED AND NOTED ABOVE. ACCUMULATED SILT SHALL BE REMOVED OR SPREAD PER THE EROSION CONTROL PLAN ELSEWHERE ON THIS SHEET.

4. DEWATERING WASTEWATERS

ANY DEWATERING ON SITE SHALL BE TO A CONTROLLED FLAT AREA OR AN EXCAVATED SUMP AREA ENCIRCLED WITH HAY BALES OR SILT FENCE. NO WATER SHALL BE ALLOWED TO ENTER THE STORM SYSTEM WITHOUT BEING DETAINED TO LET SILT DROP OUT.

5. POST CONSTRUCTION STORMWATER MANAGEMENT

A. CATCH BASIN SUMPS WILL BE CLEANED ON A SIX MONTH BASIS. REMOVED MATERIAL WILL BE TAKEN OFF SITE. OILS WILL BE SKIMMED OFF THE WATER SURFACE ON A SIX MONTH BASIS OR AS A PROBLEM MAY DICTATE. PROPER REMOVAL OF OILS WILL BE CONDUCTED AS REQUIRED.

6. OTHER CONTROLS
ALL CONSTRUCTION DEBRIS WILL BE REMOVED FROM THE SITE AS SOON AS POSSIBLE. NO DEBRIS WILL BE ALLOWED TO ENTER THE STORM SYSTEM. THE CONTRACTORS WILL REMOVE ANY DEBRIS ACCIDENTALLY OR OTHERWISE DEPOSITED IN THE STORM STRUCTURES.

WATER POLLUTION PREVENTION AND EROSION CONTROL MEASURES SHALL BE CHECKED FOR DAMAGE DISREPAIR OR REPLACEMENT BY AN INSPECTOR AT A MINIMUM INTERVAL OF ONCE A WEEK UNTIL THE SITE IS STABILIZED. AFTER THE SITE IS STABILIZED, INSPECTIONS SHALL BE CONDUCTED ONCE A MONTH FOR THREE MONTHS.

THE INSPECTOR SHALL PROVIDE A WRITTEN REPORT SHOWING THAT THE CONTROL MEASURES ARE BEING FOLLOWED OR PRESENTING RECOMMENDATIONS FOR REPAIR AND MAINTENANCE. THE RECOMMENDATIONS SHALL BE CARRIED OUT WITHIN 7 DAYS OF BEING REPORTED.

A REPORT SUMMARIZING THE SCOPE OF THE INSPECTION, NAMES AND QUALIFICATIONS OF PERSONNEL MAKING THE INSPECTION, MAJOR OBSERVATIONS RELATING TO THE IMPLEMENTATION OF THE STORMWATER CONTROL PLAN, AND ACTIONS TAKEN, SHALL BE AND RETAINED FOR AT LEAST THREE YEARS AFTER THE DATE OF INSPECTION. THE REPORT SHALL BE SIGNED BY THE PERMITTEE.

C. CONTRACTORS

ALL CONTRACTORS AND SUBCONTRACTORS WORKING ON THIS PROJECT WHICH MAY REASONABLY BE EXPECTED TO CAUSE OR HAVE THE POTENTIAL TO CAUSE POLLUTION OF THE WATERS OF THE STATE, SHALL SIGN THE FOLLOWING CERTIFICATION:

"I CERTIFY UNDER PENALTY OF THE LAW THAT I HAVE READ AND UNDERSTAND THE TERMS AND CONDITIONS OF THE GENERAL PERMIT FOR THE DISCHARGE OF STORMWATER ASSOCIATED WITH CONSTRUCTION ACTIVITY. I UNDERSTAND THAT AS A CONTRACTOR OR SUBCONTRACTOR AT THE SITE, I AM COVERED BY THIS GENERAL PERMIT, AND MUST COMPLY WITH THE GENERAL CONDITIONS OF THIS PERMIT, INCLUDING BUT NOT LIMITED TO THE REQUIREMENTS OF THE STORMWATER POLLUTION CONTROL PLAN PREPARED FOR THIS SITE."

CONTRACTOR/SUB	PHONE	CONSTRUCTION SITE	DATE
CONTRACTOR/SUB	PHONE	CONSTRUCTION SITE	DATE
CONTRACTOR/SUB	PHONE	CONSTRUCTION SITE	DATE
CONTRACTOR/SUB	PHONE	CONSTRUCTION SITE	DATE

ENTRENCHMENT DETAIL

TYPICAL WATTLE INSTALLATION GUIDE

NOTES:

1) BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2-3" DEEP X 9" WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UP-SLOPE FROM THE ANCHOR TRENCH.

2) PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT THE SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. ADJACENT WATTLES SHOULD TIGHTLY ABUT.

3) SECURE THE WATTLE WITH 18-24" STAKES EVERY 3-4' AND WITH A STAKE ON EACH END. THE STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LEAVING AT LEAST 2-3" OF THE STAKE EXTENDING ABOVE THE WATTLE. STAKES SHOULD BE DRIVEN PERPENDICULAR TO SLOPE FACE.

STRAW WATTLE INSTALLATION
N.T.S.

SILT FENCE DETAIL
N.T.S.

PLACEMENT AND CONSTRUCTION OF A STRAW BALE BARRIER
N.T.S.

CONSTRUCTION ENTRANCE
N.T.S.

HAY BALE INSTALLATION AT CATCH BASINS N.T.S.

SILT FENCE INSTALLATION AT CATCH BASINS N.T.S.

Erosion & Sedimentation Control Details
Sheet 3 of 3

Scale: 1"=100'

Date: March 11, 2014 Drawn by: DT, WTB

Keney Golf Course

Hartford, CT

TORRES ENGINEERING, INC.
Ozzie Torres
63 Reed Dr
Wethersfield, CT 06109
Ph:(860) 232-9833

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Matthew Dusenberry
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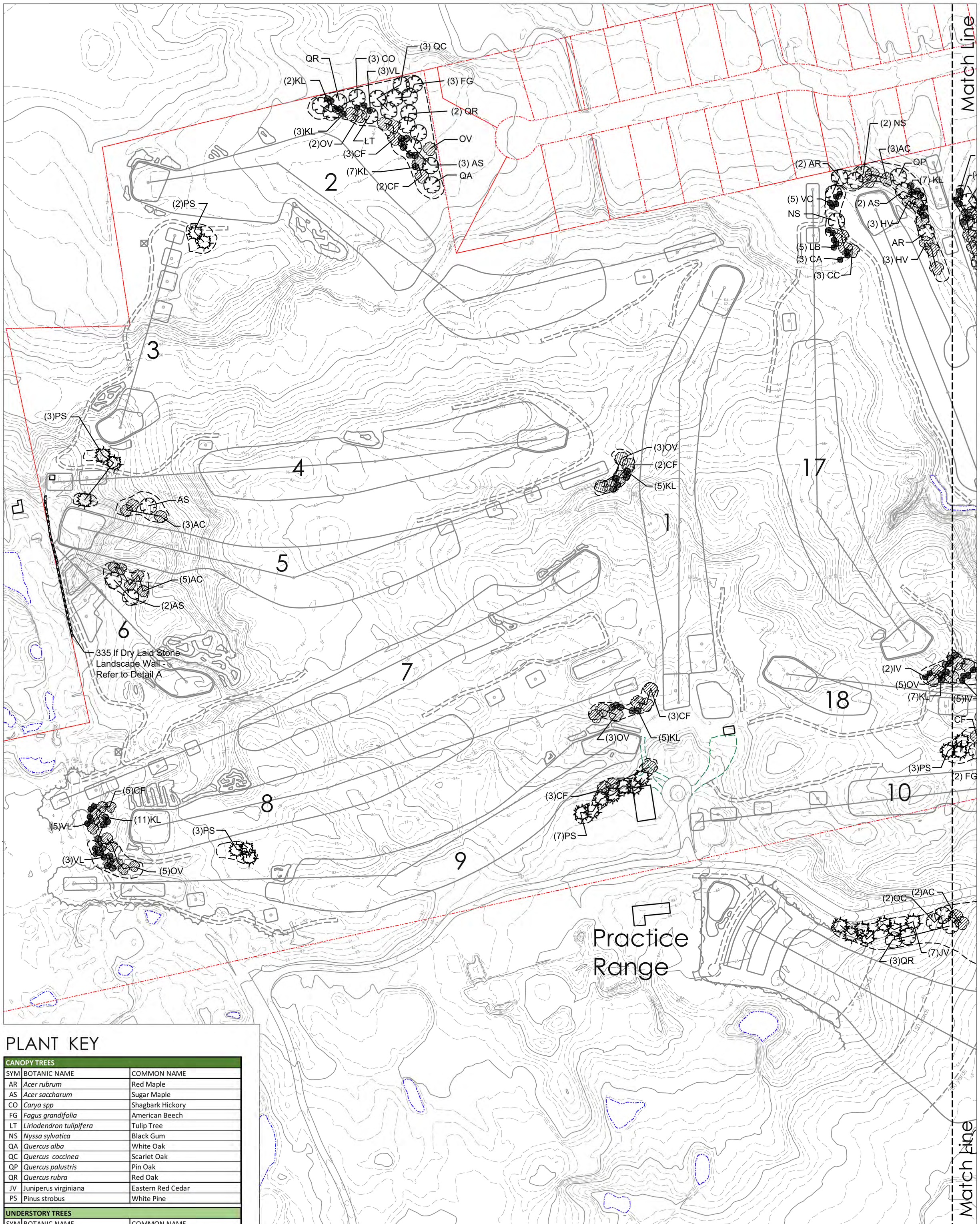

PLANT KEY

CANOPY TREES		
SYM	BOTANIC NAME	COMMON NAME
AR	*Acer rubrum*	Red Maple
AS	*Acer saccharum*	Sugar Maple
CO	*Carya spp*	Shagbark Hickory
FG	*Fagus grandifolia*	American Beech
LT	*Liriodendron tulipifera*	Tulip Tree
NS	*Nyssa sylvatica*	Black Gum
QA	*Quercus alba*	White Oak
QC	*Quercus coccinea*	Scarlet Oak
QP	*Quercus palustris*	Pin Oak
QR	*Quercus rubra*	Red Oak
JV	Juniperus virginiana	Eastern Red Cedar
PS	Pinus strobus	White Pine

UNDERSTORY TREES		
SYM	BOTANIC NAME	COMMON NAME
AC	*Amelanchier canadensis*	Shadblow Serviceberry
BN	*Betula nigra*	River Birch
CC	*Carpinus caroliniana*	Ironwood
CF	*Cornus florida*	American Dogwood
HV	*Hamamelis virginiana*	Witch Hazel
OV	*Ostrya virginiana*	American Hophornbeam
SA	*Sassafras albidum*	Sassafras

SHRUBS		
SYM	BOTANIC NAME	COMMON NAME
CA	*Clethra alnifolia*	Sweet Pepperbush
IV	*Ilex verticillata*	Winterberry
KL	*Kalmia latifolia*	Mountain Laurel
LB	*Lindera benzoin*	Spicebush
RV	*Rhododendron viscosum*	Swamp Azalea
VC	*Vaccinium corymbosum*	Highbush Blueberry
VL	*Viburnum lentago*	Sweet Viburnum

Large Canopy Tree

Large Evergreen Tree

Understory Tree

Shrub - Deciduous

Shrub - Evergreen

Dry-Laid Stone Wall

Area of Native Grass Interseeding (not formal bed)

North

0 50 100 200 500'

Landscape Plan

Sheet 1 of 3

Scale: 1"=100'

Date: March 11, 2014 Drawn by: WTB

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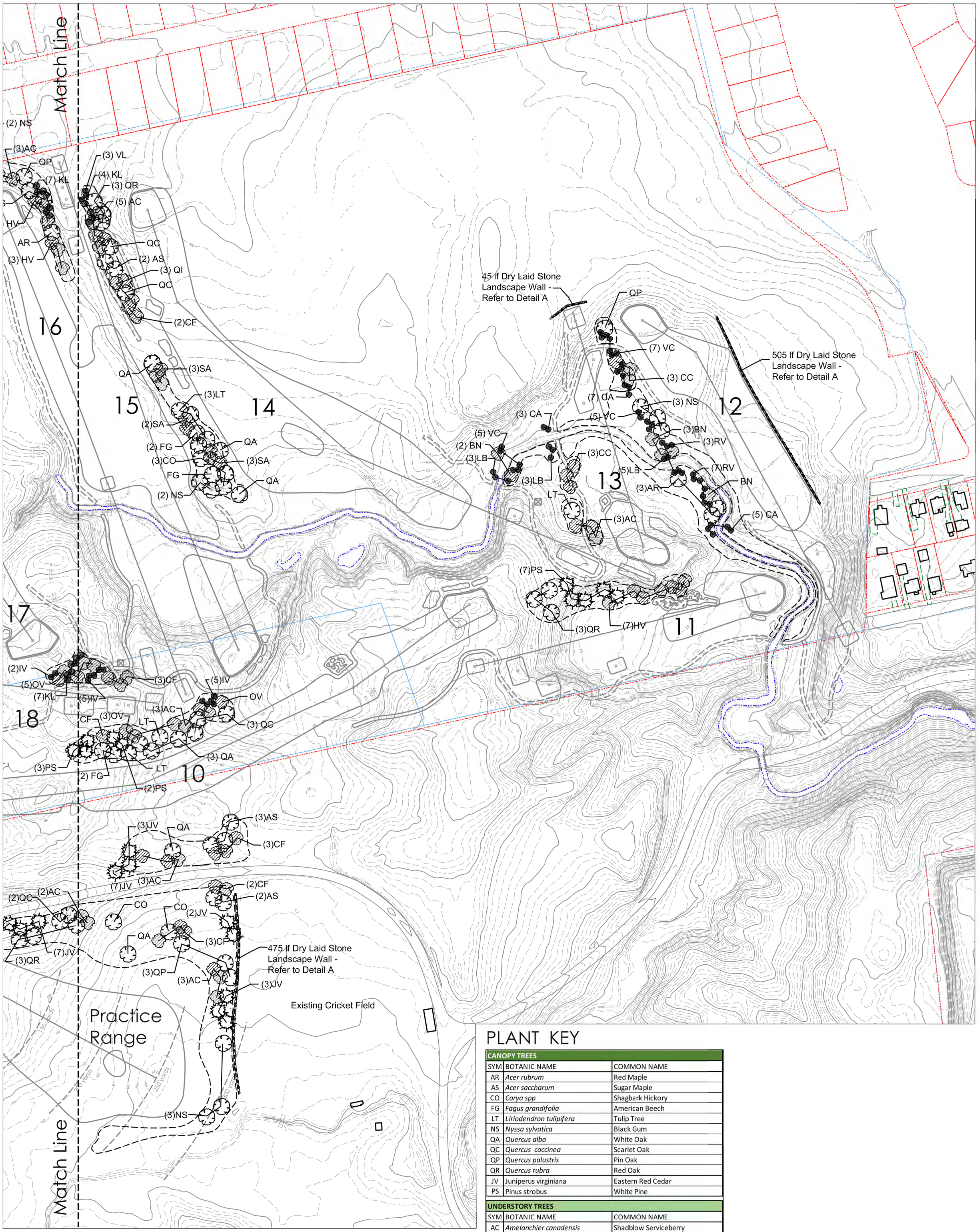

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LT	*Liriodendron tulipifera*	Tulip Tree
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QA	*Quercus alba*	White Oak
QC	*Quercus coccinea*	Scarlet Oak
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VC	*Vaccinium corymbosum*	Highbush Blueberry
VL	*Viburnum lentago*	Sweet Viburnum

Large Canopy Tree

Large Evergreen Tree

Understory Tree

Shrub - Deciduous

Shrub - Evergreen

Dry-Laid Stone Wall

Area of Native Grass Interseeding (not formal bed)

North

0 50 100 200 500'

Landscape Plan

Sheet 2 of 3

Scale: 1"=100'

Date: March 11, 2014 Drawn by: WTB

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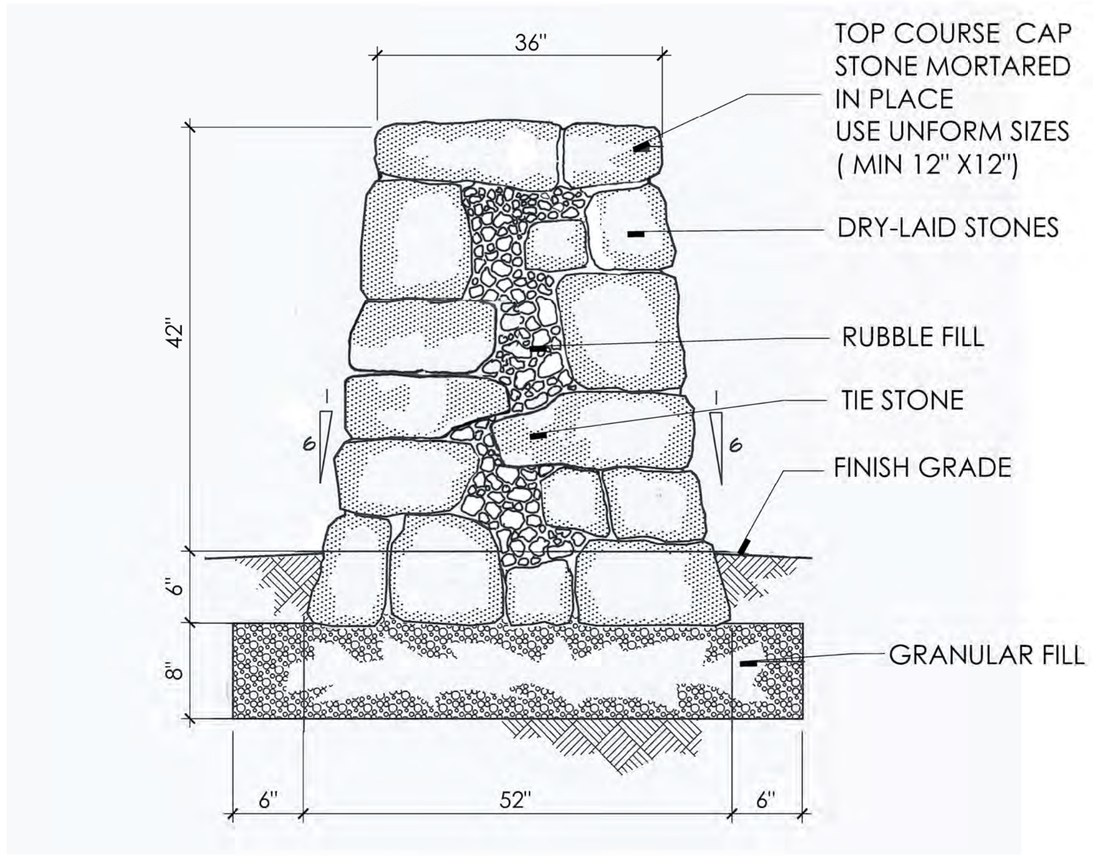


NOTES:
1) Match the scale and color range of stone used for the entry wall and piers of park (Tower Ave. Entrance) Submit materials for approval by Golf Course Architect (GCA)
2) Build full scale mockup wall with approved stones for approval by GCA prior to commencing wall construction.(min 4 feet long)
3) Demonstrate color consistency with mockup; color range shall not exceed range of color established in samples
4) Ensure there is adequate supply of approved stone from same source to complete entire project.

A Dry - Laid Stone Wall
N.T.S.

EXAMPLE OF WALL/MATERIALS SIZE AND SCALE

KENEY PARK ENTRY WALL/PIERS TOWER AVENUE ENTRANCE
Example of Color Range

DETAIL PLANT LIST

CANOPY TREES

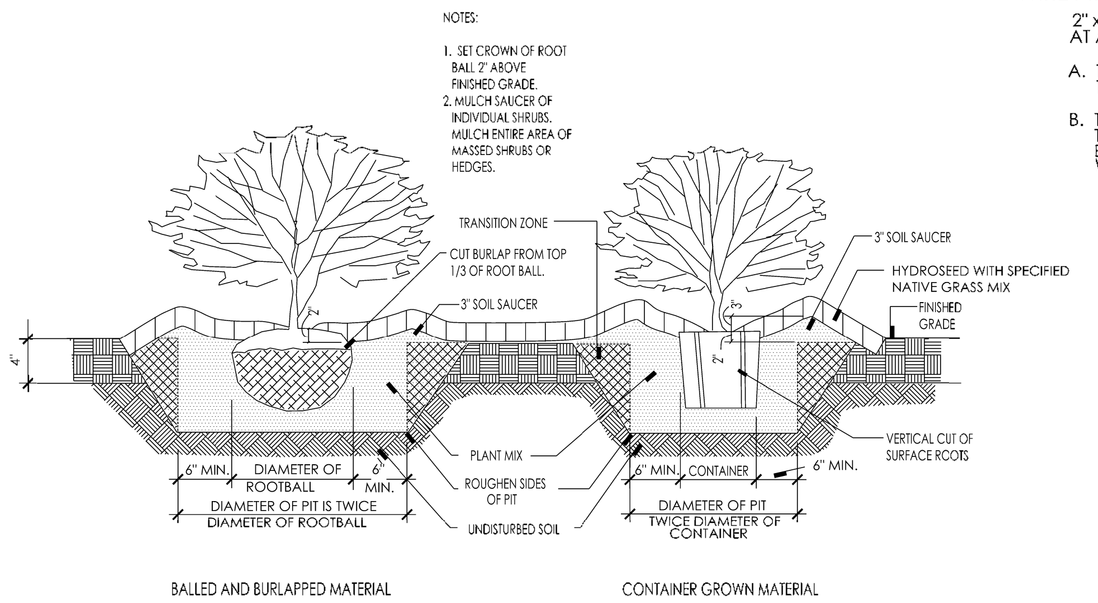
QTY	SYM	BOTANIC NAME	COMMON NAME	SIZE	NOTES	NATIVE
6	AR	*Acer rubrum 'Autumn Flame'*	Red Maple	3"-3.5" Cal, B&B		Y
15	AS	*Acer saccharum*	Sugar Maple	2.5"-3" Cal, B&B		Y
8	CO	*Carya ovata*	Shagbark Hickory	2.5"-3" Cal, B&B		Y
8	FG	*Fagus grandifolia*	American Beech	2.5"-3" Cal, B&B		Y
7	LT	*Liriodendron tulipifera*	Tulip Tree	2.5"-3" Cal, B&B		Y
11	NS	*Nyssa sylvatica*	Black Gum	2.5"-3" Cal, B&B		Y
9	QA	*Quercus alba*	White Oak	2.5"-3" Cal, B&B		Y
10	QC	*Quercus coccinea*	Scarlet Oak	2.5"-3" Cal, B&B		Y
5	QP	*Quercus palustris*	Pin Oak	2.5"-3" Cal, B&B		Y
12	QR	*Quercus rubra*	Red Oak	2.5"-3" Cal, B&B		Y
15	JV	Juniperus virginiana	Eastern Red Cedar	8'-10', B&B	Full	Y
25	PS	Pinus strobus	White Pine	8'-10', B&B	Full	Y

UNDERSTORY TREES

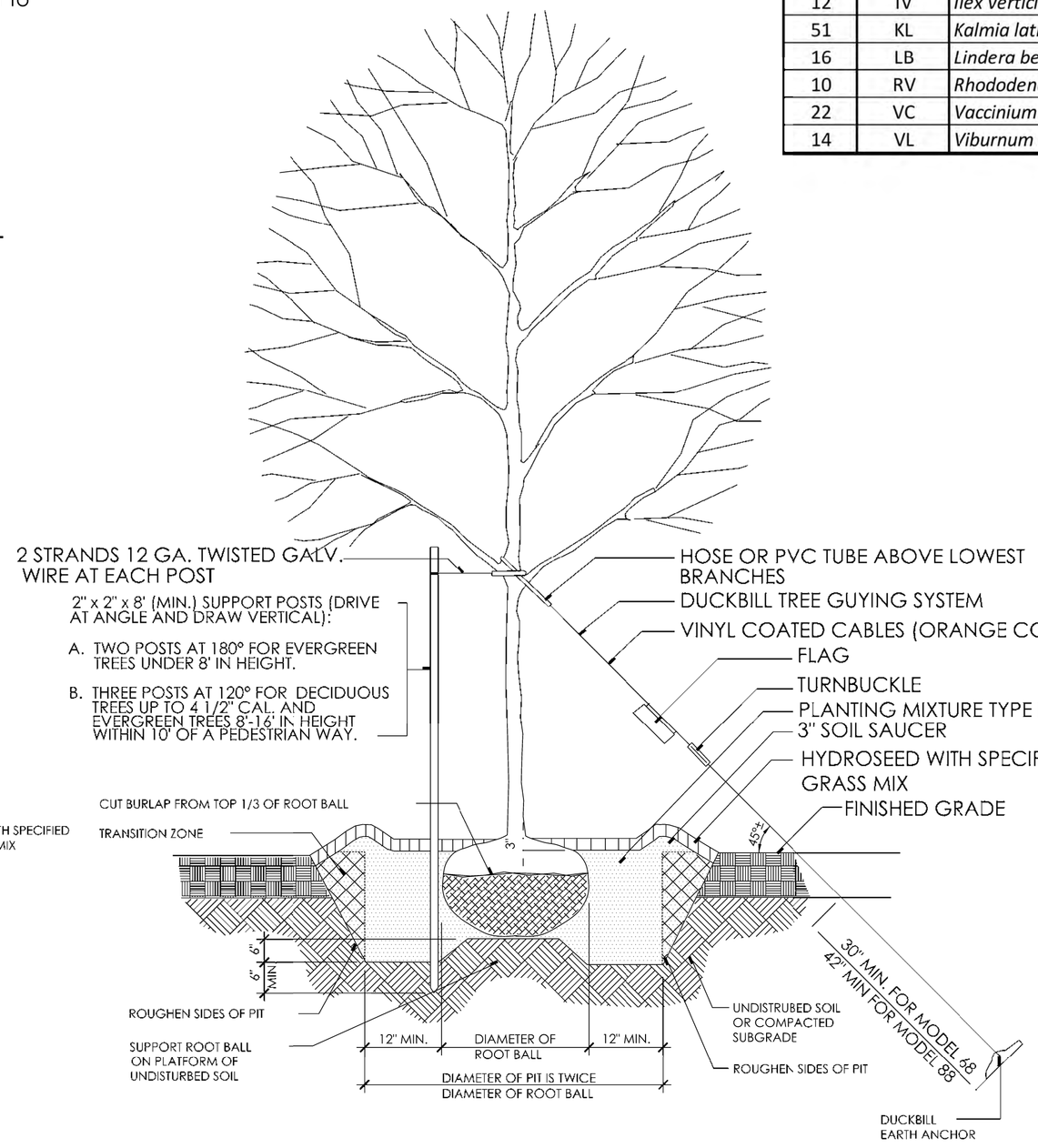
QTY	SYM	BOTANIC NAME	COMMON NAME	SIZE	NOTES	NATIVE
30	AC	*Amelanchier canadensis*	Shadblow Serviceberry	6'-8', B&B	Clump	Y
6	BN	*Betula nigra 'Heritage'*	River Birch	14'-16', B&B	Clump	Y
9	CC	*Carpinus caroliniana*	Ironwood	2"-2.5" Cal, B&B		Y
32	CF	*Cornus florida*	American Dogwood	2"-2.5" Cal, B&B		Y
16	HV	*Hamamelis virginiana*	Witch Hazel	6'-8', B&B	Tree Form	Y
23	OV	*Ostrya virginiana*	American Hophornbeam	8'-10', B&B		Y
8	SA	*Sassafras albidum*	Sassafras	5'-6', B&B		Y

SHRUBS

QTY	SYM	BOTANIC NAME	COMMON NAME	SIZE	NOTES	NATIVE
17	CA	*Clethra alnifolia*	Sweet Pepperbush	#3 Container, Full		Y
12	IV	*Ilex verticillata*	Winterberry	#7 Container, B&B, 4'-5'		Y
51	KL	*Kalmia latifolia*	Mountain Laurel	#7 Container, B&B, 4'-5'		Y
16	LB	*Lindera benzoin*	Spicebush	#3 Container, Full		Y
10	RV	*Rhododendron viscosum*	Swamp Azalea	#3 Container, Full		Y
22	VC	*Vaccinium corymbosum*	Highbush Blueberry	#3 Container, Full		Y
14	VL	*Viburnum lentago*	Sweet Viburnum	#7 Container, B&B, 4'-5'		Y



B Plant Pit For Shrubs
N.T.S.



NOTES:
1. SET TREE PLUMB PRIOR TO STAKING OR GUYING.
2. THIS DETAIL ILLUSTRATES THE MINIMUM REQUIRED STAKING OR GUYING SYSTEM. PROVIDE ADDITIONAL STAKES OR GUYS IF REQUIRED DUE TO HELD CONDITIONS OR SIZE OF TREE.
3. SET CROWN OF ROOT BALL 3" ABOVE FINISHED GRADE.

GUYING DETAIL
FOR USE WITH:
A. DECIDUOUS TREES 3"-4 1/2" CALIPER WHEN PLANTED GREATER THAN 10' OUTSIDE OF PEDESTRIAN WAYS.
B. DECIDUOUS TREE OVER 4 1/2" CALIPER.
C. EVERGREEN TREES 8'-16' IN HEIGHT WHEN PLANTED GREATER THAN 10' OUTSIDE OF PEDESTRIAN WAYS.
D. EVERGREEN TREES OVER 16' IN HEIGHT.

STAKING DETAIL
FOR USE WITH:
A. DECIDUOUS TREES UNDER 3" CALIPER.
B. DECIDUOUS TREE 3"-4 1/2" CALIPER WHEN PLANTED WITHIN 10' OF PEDESTRIAN WAYS.
C. EVERGREEN TREES UNDER 8' IN HEIGHT.
D. EVERGREEN TREES 8'-16' IN HEIGHT WHEN PLANTED WITHIN 10' OF PEDESTRIAN WAYS.

C Tree Planting
N.T.S.

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Matthew Dusenberry
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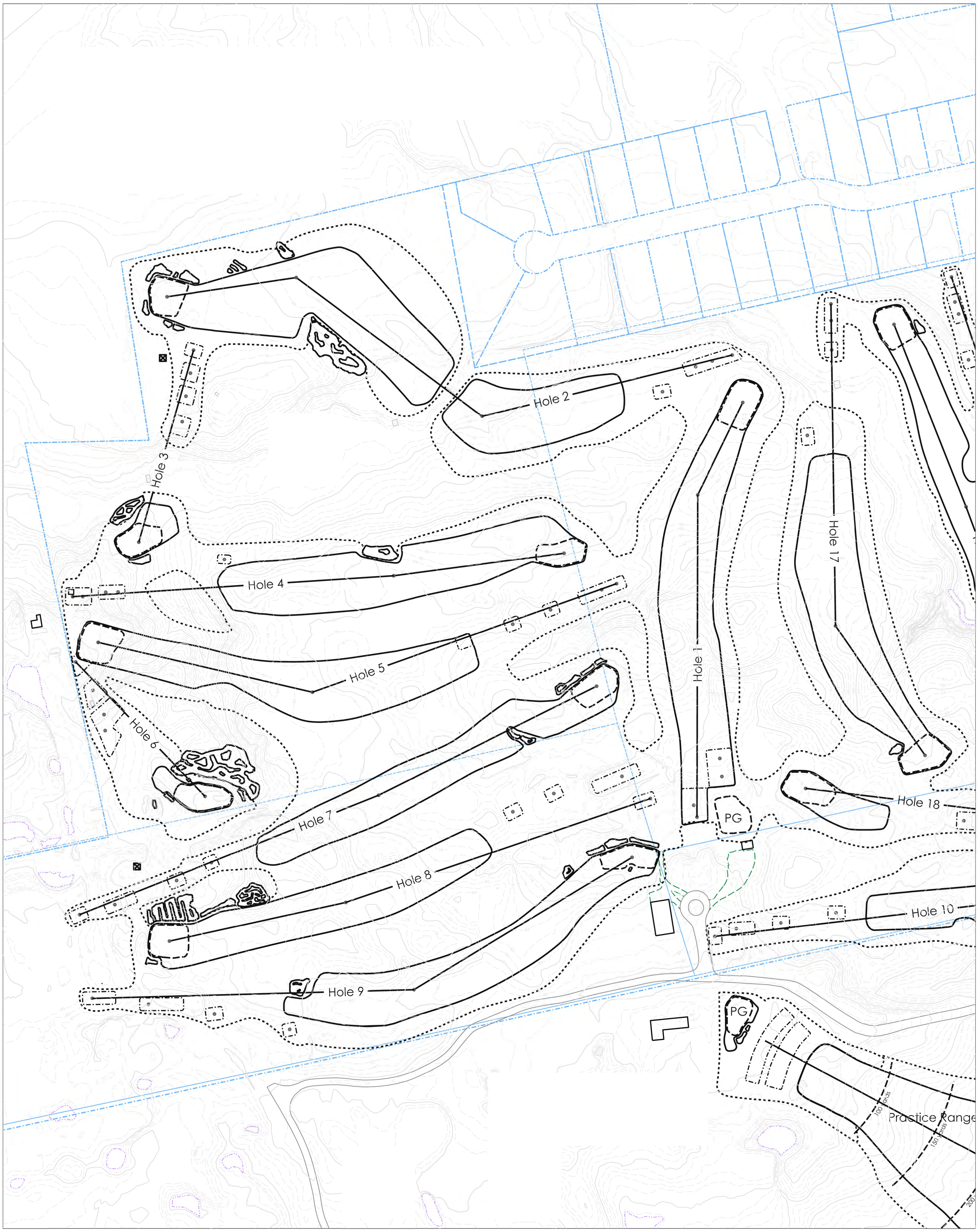
W. Tad Burnett
Design Partner

Keney Golf Course
Hartford, CT

Landscape Plan Details
Sheet 3 of 3

Scale: 1"=100'
Date: March 11, 2014 Drawn by: WTB



Legend

- Greens = Bentgrass mix (see specifications for details)
- Fairways = Fescue / Bentgrass mix (see specifications for details)
- Tees = Ryegrass / Bentgrass mix (see specifications for details)
- Rough = Bluegrass / Ryegrass mix (see specifications for details)

North

0 50 100 200 500'

Grassing Plan

Sheet 1 of 2

Scale: 1"=100'

Date: March 11, 2014 Drawn by: MED

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Hartford, CT

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Design Partner

Hole 10

Hole 11

Hole 12

Hole 13

Hole 14

Hole 15

Hole 16

Hole 18

ractice Range

150 yards

200 yards

250 yards

300 yards

Legend

- Greens = Bentgrass mix (see specifications for details)
- Fairways = Fescue / Bentgrass mix (see specifications for details)
- Tees = Ryegrass / Bluegrass mix (see specifications for details)
- Rough = Bluegrass / Fescue mix (see specifications for details)

North

0 50 100 200 500'

Grassing Plan

Sheet 2 of 2

Scale: 1"=100'

Date: March 11, 2014 Drawn by: MED

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Phase 1

Phase 2

Phase 3

Phase 4

Phase 5

Phase 6

Key

Phase 1
Phase 2
Phase 3
Phase 4
Phase 5
Phase 6

0 25 50 100 200 feet

North

Project Phasing Plan

Scale: 1"=200'

Date: February 7, 2014 Drawn by: MED,WTB

Keney Golf Course

Hartford, CT - USA

Dusenberry Design

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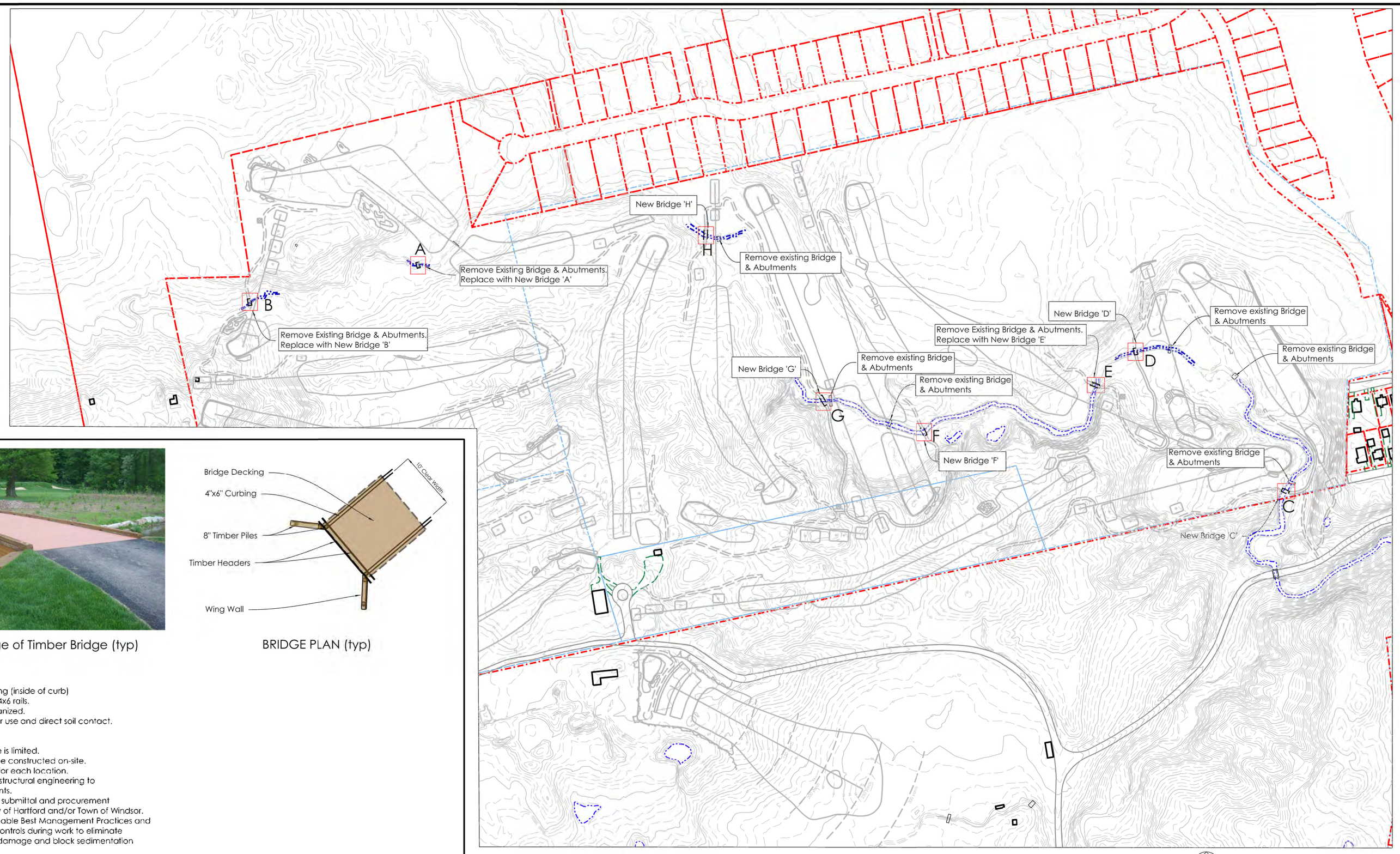


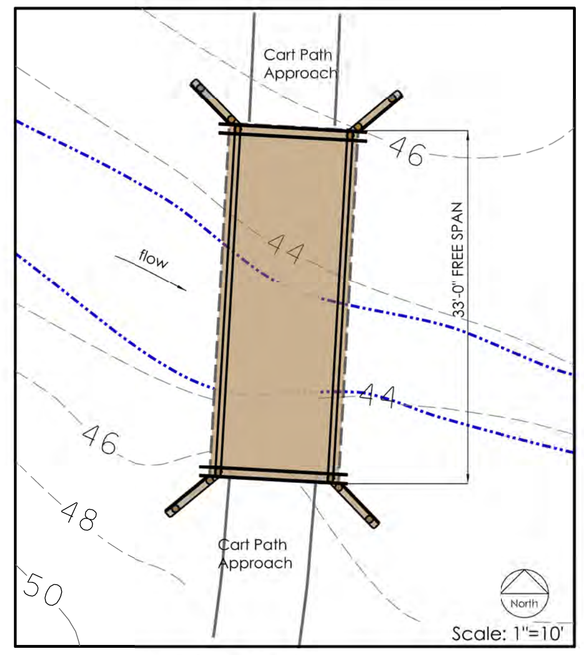
Representative Image of Timber Bridge (typ)

BRIDGE PLAN (typ)

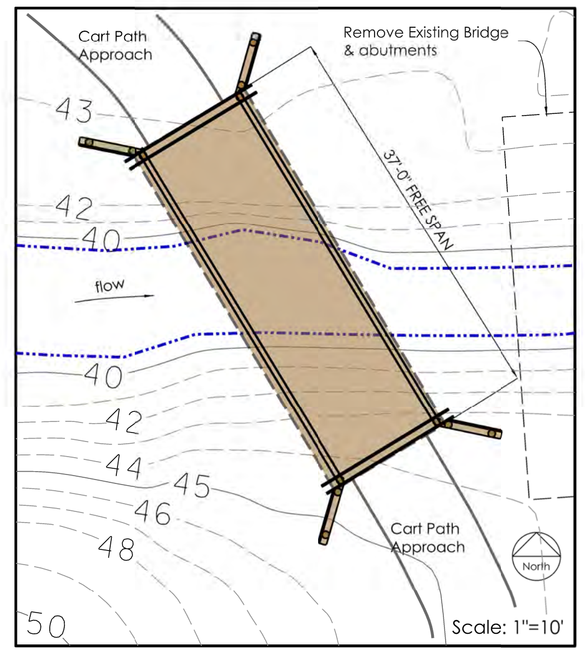
BRIDGE SPEC

-5 ton bridge.
-10 foot clear width of decking (inside of curb)
-Curbing: 4x6 blocking with 4x6 rails.
-All fasteners should be galvanized.
-All wood treated for outdoor use and direct soil contact.

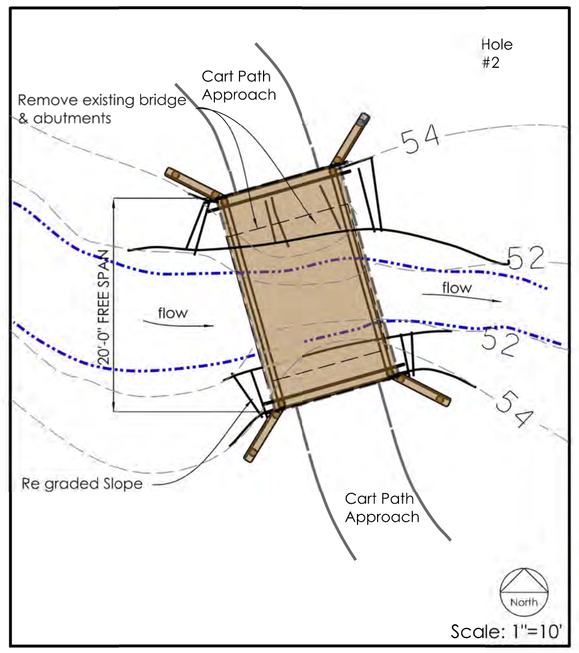
Notes:
1) Access to each bridge site is limited.
2) Each bridge will need to be constructed on-site.
3)Length of wing wall varies for each location.
4)Contractor responsible for structural engineering to match 5-ton load requirements.
5) Contractor responsible for submittal and procurement of building permits in the City of Hartford and/or Town of Windsor.
6) Contract will use all applicable Best Management Practices and Erosion and Sedimentation controls during work to eliminate or minimize stream channel damage and block sedimentation from entering watercourse.
7) Bridge lengths and locations are subject to final field staking by GCA and Contractor prior to manufacturing of laminated beams or custom timbers.



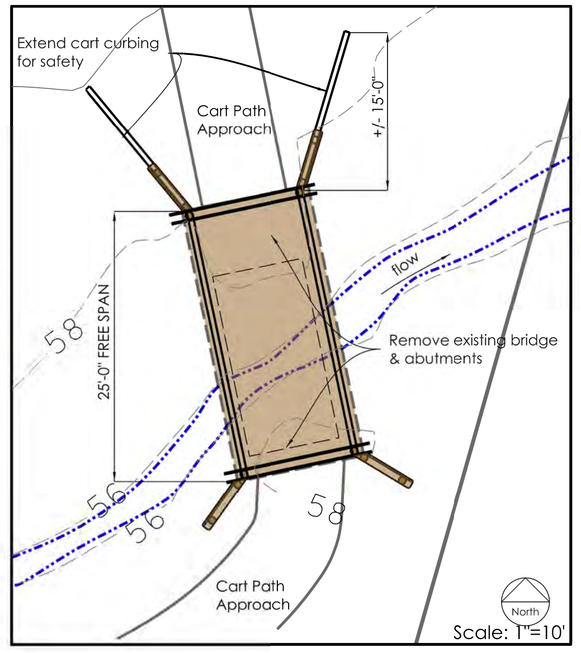
Bridge H - Hole #17
Free Span= 33'-0"



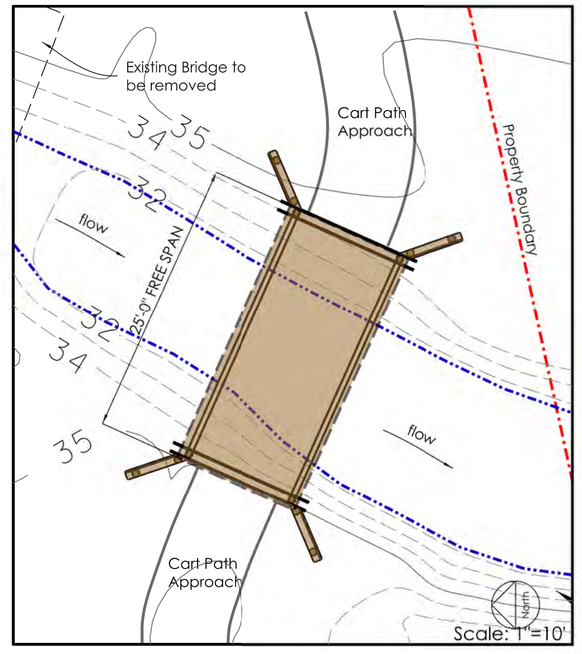
Bridge G - Hole #16
Free Span= 37'-0"



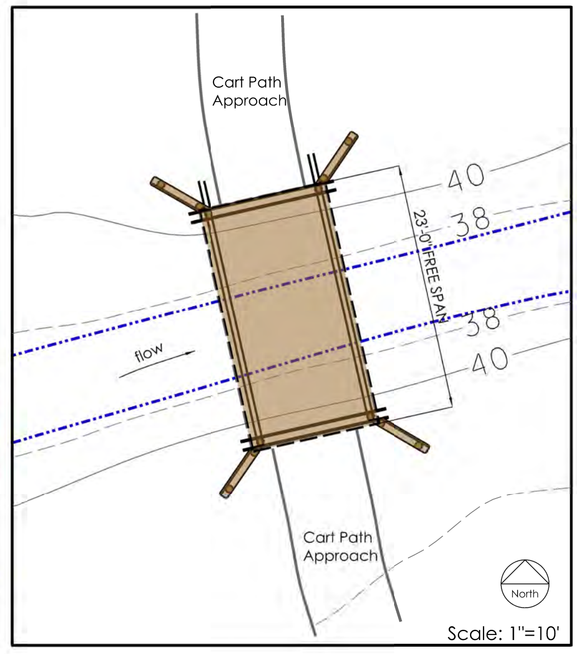
Bridge A - Hole #2
Free Span= 20'-0"



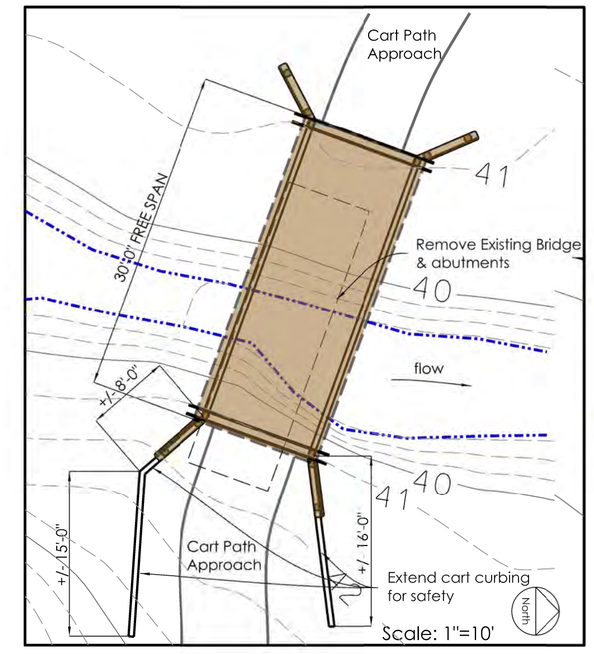
Bridge B - Hole #3
Free Span= 25'-0"



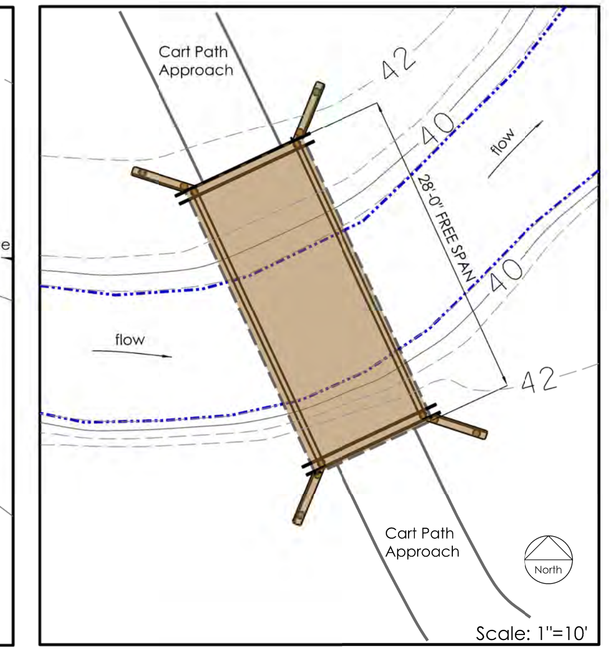
Bridge C - Hole #12
Free Span= 25'-0"



Bridge D - Hole #13
Free Span= 23'-0"



Bridge E - Hole #14
Free Span= 30'-0"



Bridge F - Hole #15
Free Span= 28'-0"

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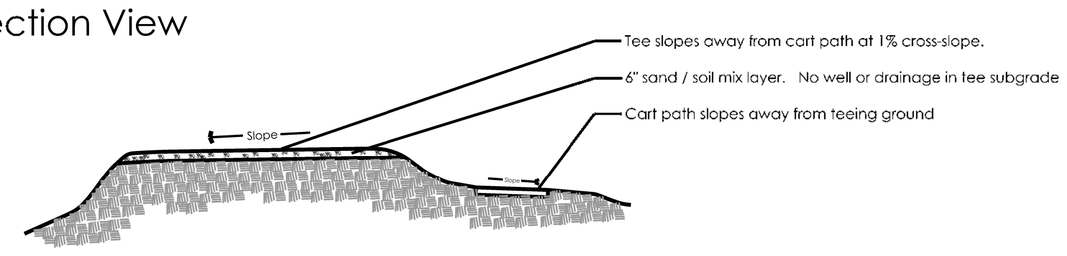
Hartford, CT

Bridge Plan
Sheet 1 of 1

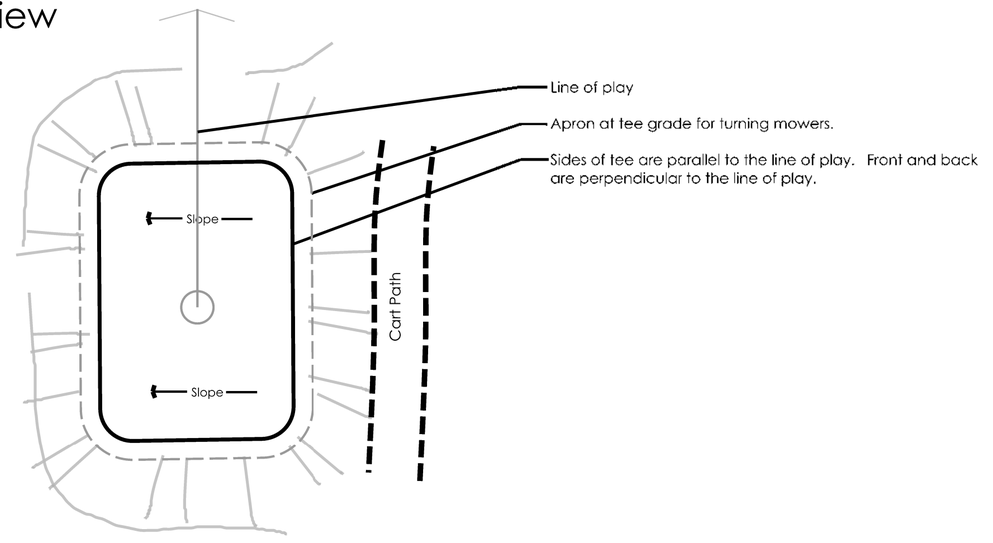
Scale: As Noted
Date: March 11, 2014 Drawn by: MED, WTB

Tee Construction Detail

Section View



Plan View

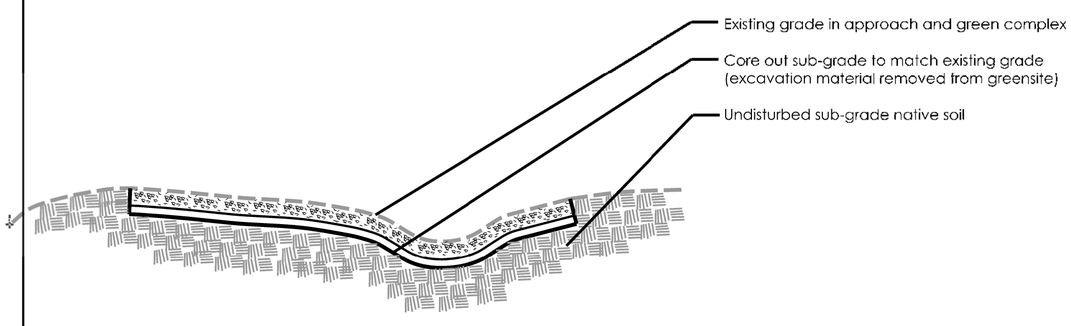


Notes:
1. Laycut and staking of the tee rectangular/square to ensure alignment is correct. Round corners during seedbed preparation and final laser leveling.
2. Laser level native soil sub-grade and the sand mix finish level. Laser subgrade and finish grade at exact same slope/grade.
3. Cross-slope of 1% away from the cart path and walk-up area. Tee is level from front to back.
4. No crainage or well constructed in the sub-grade of the tee.
5. Place sand/soil mix at 6" depth compacted. Uniform through out teeing surface area and feathered into outside surrounding slopes.
6. Shape cart path at least 15' from teeing ground to allow for traffic and wear on tee surround.

not to scale

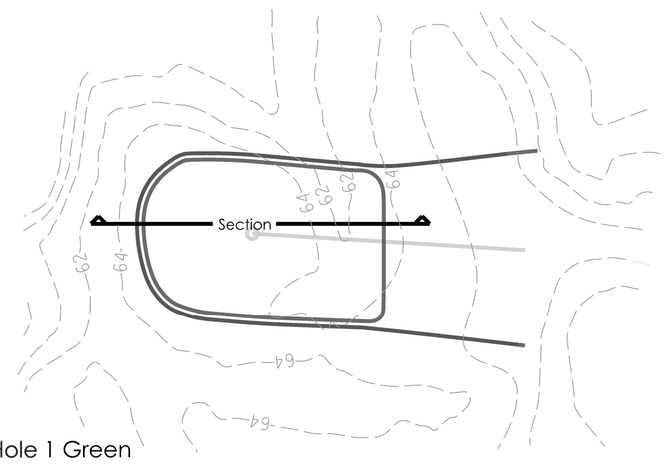
Green Construction Detail

Section View - Existing Green (excavate core only)



Hole 1 Green

Plan View - Existing Green (excavate core only)

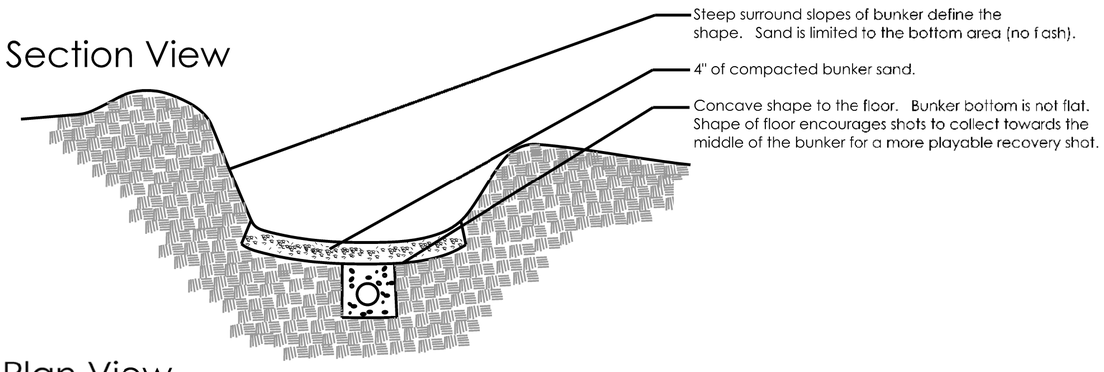


Hole 1 Green

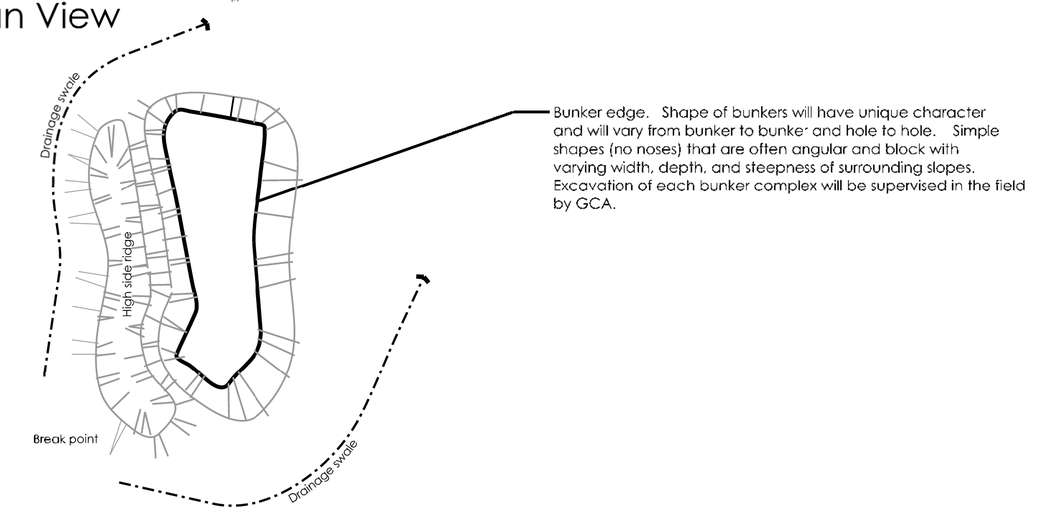
not to scale

Bunker Construction Detail

Section View



Plan View

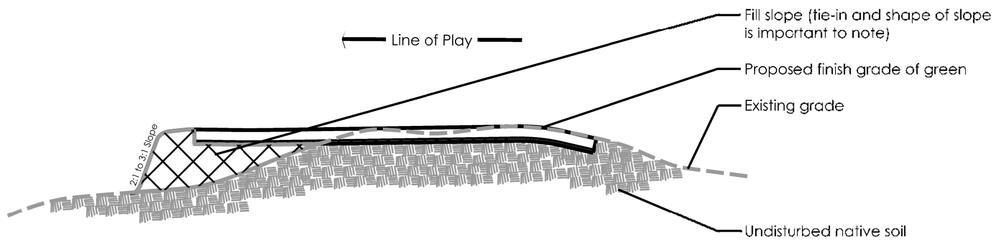


not to scale

Bunker Photos

Photos representative of the bunker style and appearance for Keney GC are displayed below. These photos are from Devereux Emmet's other work in places like Garden City GC and St. Georges on Long Island. The historic Emmet style guides the style and appearance of the bunkers, greens, and tee construction.

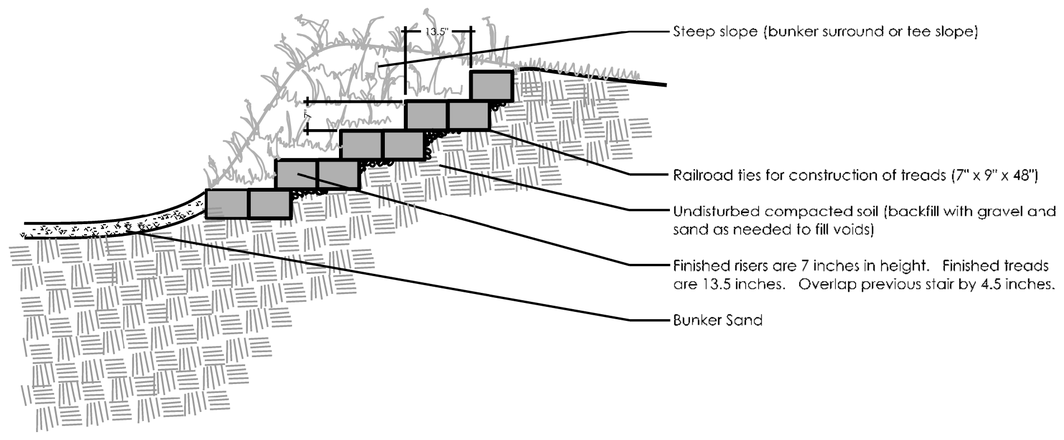
Section View - Graded new green complex



Notes:
1. Approach ties into the green surface "at grade" in the approach. This is an important design and construction detail. The greens should all appear to sit low with a seamless tie-in to the approach. Avoid a rise in the approach near the front of the green. That is an attribute and appearance of a more modern green approach not a 1927 green complex.
2. Graded areas around new green complexes that tie-into native surrounding slopes should be treated carefully during grading. In particular fill slopes should tie into the surrounding grade steep. Avoid long tie-in slopes. The "blocky" tie-in is desirable and reminiscent of 1920's construction before large earth moving equipment.

not to scale

Stair Construction Detail



Notes:
1. Allowance for stair construction (unit price per course) is included in the Schedule of Prices.
2. Placement indicated by GCA.
3. Compaction of the subgrade and backfill with stone and sand are essential for stable treads and reduces settling of stairs after completion of construction.
4. Finished stair width available for walking is 36". The rough cut timbers are cut to 48" so that the final 6" on each edge can be backfilled with native soil and ensure a better tie-in to the surrounding grade.
5. Sod or hydroseeding of surrounds will be necessary to limit erosion and ensure establishement of the steep slopes.

not to scale

Feature Construction Details

Sheet 1 of 1

Scale: 1"=100'

Date: March 11, 2014 Drawn by: MED

Keney Golf Course

Hartford, CT

Dusenberry Design

Dusenberry Golf Course Design LLC

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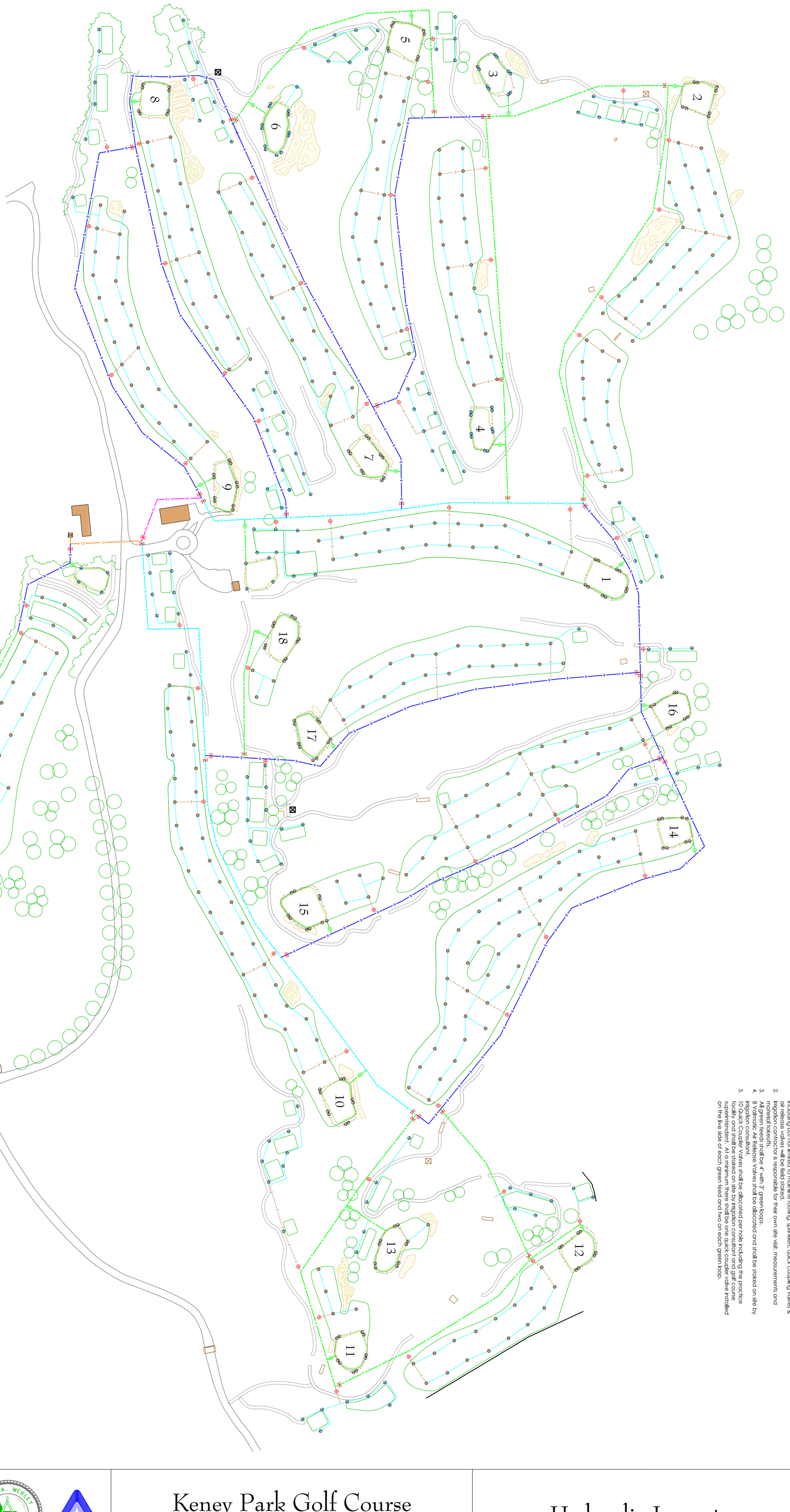

Legend

Toro 835S-46-336-1, Full Circle VIH Sprinkler - Producing 22.9 gpm at 65 psi, 65' Spacing
Rain Bird 751-IC-36-70-ACME, Full Circle VIH Sprinkler - Producing 22.6 gpm at 70 psi, 65' Spacing
Toro 835S-46-336-1, Adjustable Part Circle VIH Sprinkler - Producing 22.9 gpm at 65 psi, 65' Spacing
Rain Bird 751-IC-36-70-ACME, Part Circle VIH Sprinkler - Producing 22.6 gpm at 70 psi, 65' Spacing
Toro 835S-46-326-1, Full Circle VIH Sprinkler - Producing 20.5 gpm at 65 psi, 60' Spacing
Rain Bird 751-IC-32-70-ACME, Full Circle VIH Sprinkler - Producing 20.0 gpm at 70 psi, 60' Spacing
Toro 835S-46-326-1, Adjustable Part Circle VIH Sprinkler - Producing 20.5 gpm at 65 psi, 60' Spacing
Rain Bird 751-IC-32-70-ACME, Part Circle VIH Sprinkler - Producing 20.0 gpm at 70 psi, 60' Spacing
Mainline Valve, Line Size
4" Lateral Valve
3" Lateral Valve
Valmatic Model #1.5A.3, 1" Air Release Valve
DR 13.5 4710 HDPE Pipe, Size as Indicated
12" Pipe
10" Pipe
8" Pipe
6" Pipe
4" Pipe
3" DR 13.5 4710 HDPE Pipe
2" DR 13.5 4710 HDPE Pipe

Notes:

1. This schematic is intended only as a guide for the installation. It does not depict exact placement of the components. Final locations of irrigation components including but not limited to mainline routing, sprinklers, quick coupling valves & air release valves will be field staked.
2. Irrigation Contractor is responsible for their own site visit, measurements and irrigation takeoffs.
3. All green feeds shall be 4" with 3" green loops.
4. 8 Valmatic Air Release Valves shall be allocated and shall be staked on site by irrigation consultant.
5. 10 Quick Coupler Valves shall be allocated per hole including the practice facility and shall be staked on site by irrigation consultant and golf course superintendent. At a minimum, there shall be one quick coupler valve installed on the live side of each green feed and two on each green loop.

Aqua Agronomic Solutions, Inc.
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ROBB A. WERLEY 002210 GOLF COURSE SUPERINTENDENTS ASSOCIATION

ASIC FOUNDED 1970

Keney Park Golf Course

Hartford, Connecticut

Hydraulic Layout

Scale 1 Inch = 100 Feet
100 50 0 100 150 200

Revision Date: February 27, 2014
Plot Date: February 28, 2014

Sheet 1 of 2

W S N E

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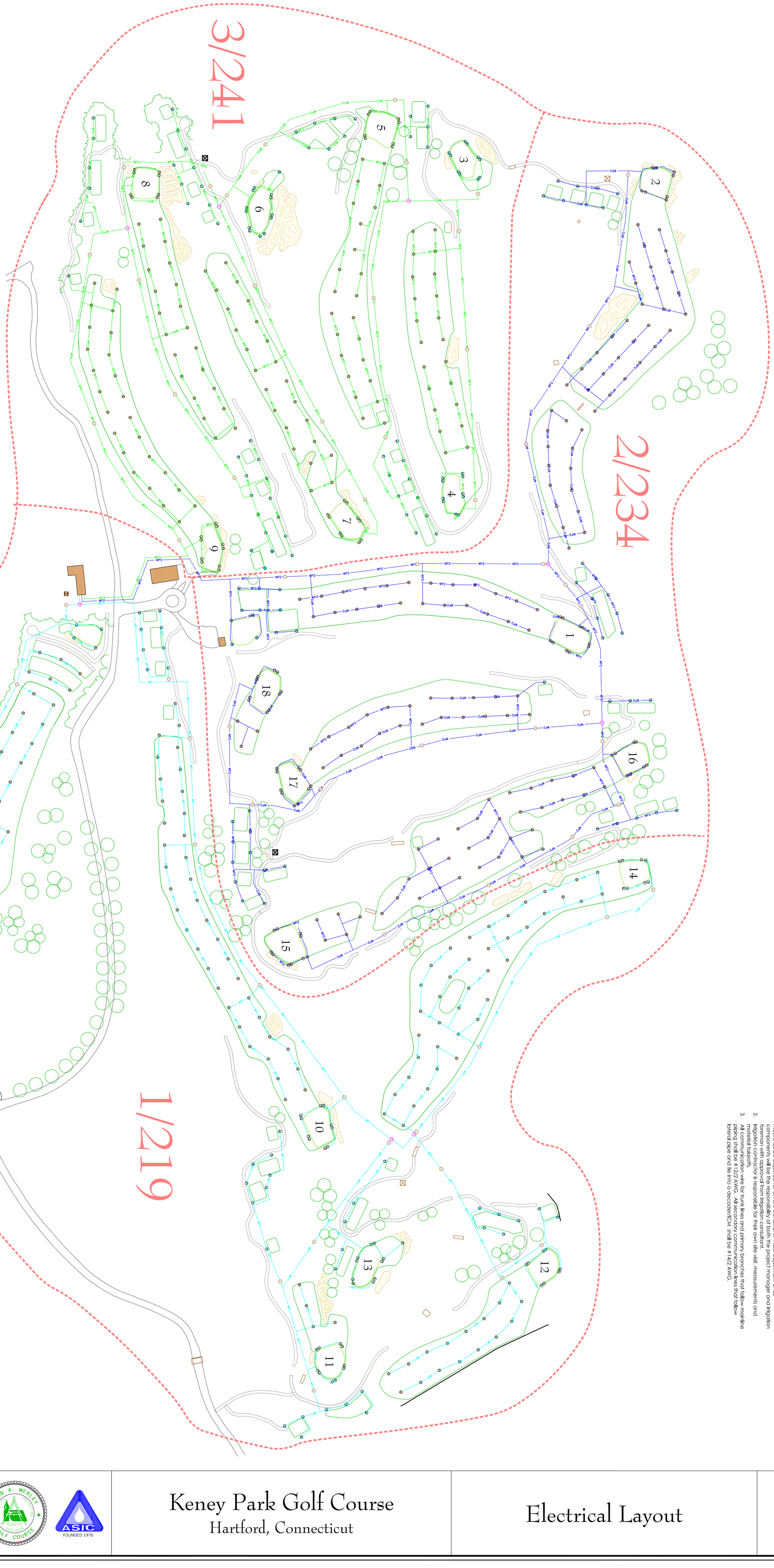

Legend

- Toro 835S-46-336-L Full Circle VIH Sprinkler - Producing 22.9 gpm at 65 psi, 65' Spacing
- Rain Bird 751-IC-36-70-ACME, Full Circle VIH Sprinkler - Producing 22.6 gpm at 70 psi, 65' Spacing
- Toro 835S-46-336-L Adjustable Part Circle VIH Sprinkler - Producing 22.9 gpm at 65 psi, 65' Spacing
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- Rain Bird 751-IC-32-70-ACME, Part Circle VIH Sprinkler - Producing 20.0 gpm at 70 psi, 60' Spacing
- Paige 270DCFD, Decoder Cable Fuse Device
- Rain Bird ICSD, IC Surge Device With Copper Ground Plate, 4" x 3' w/ 10' of 10 AWG Wire
- Toro DEC-SG-LINE, Line Surge Unit With Copper Ground Plate, 4" x 3' w/ 10' of 10 AWG Wire
- 12/2 AWG Communication Cable, Primary Wire Path (1-3) as Indicated Below
- Wire Path 1 - 219 Stations
- Wire Path 2 - 234 Stations
- Wire Path 3 - 241 Stations
- 14/2 AWG Communication Cable, Secondary Wire Path (1-3) indicated same as above
- Wire Path Control Zone

Notes:

1. Routings and component placements on this plan are schematic only and may/shall be adjusted for on-site conditions. Field adjustment of all components will be the responsibility of both the project manager and irrigation foreman with approval from Irrigation Consultant.
2. Irrigation Contractor is responsible for their own site visit, measurements and material takeoffs.
3. All communication wire for trunk lines and primary branches that follow mainline piping shall be #12/2 AWG. All secondary communication lines that follow lateral pipe and tie into a decoder/ICM shall be #14/2 AWG.

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PAUL F. GRANGER 000595 GOLF COURSE

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ASIC FOUNDED 1970

Keney Park Golf Course

Hartford, Connecticut

Electrical Layout

Scale 1 Inch = 100 Feet

100 50 0 100 150 200

Revision Date: February 27, 2014

Plot Date: February 28, 2014

Sheet 2 of 2

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