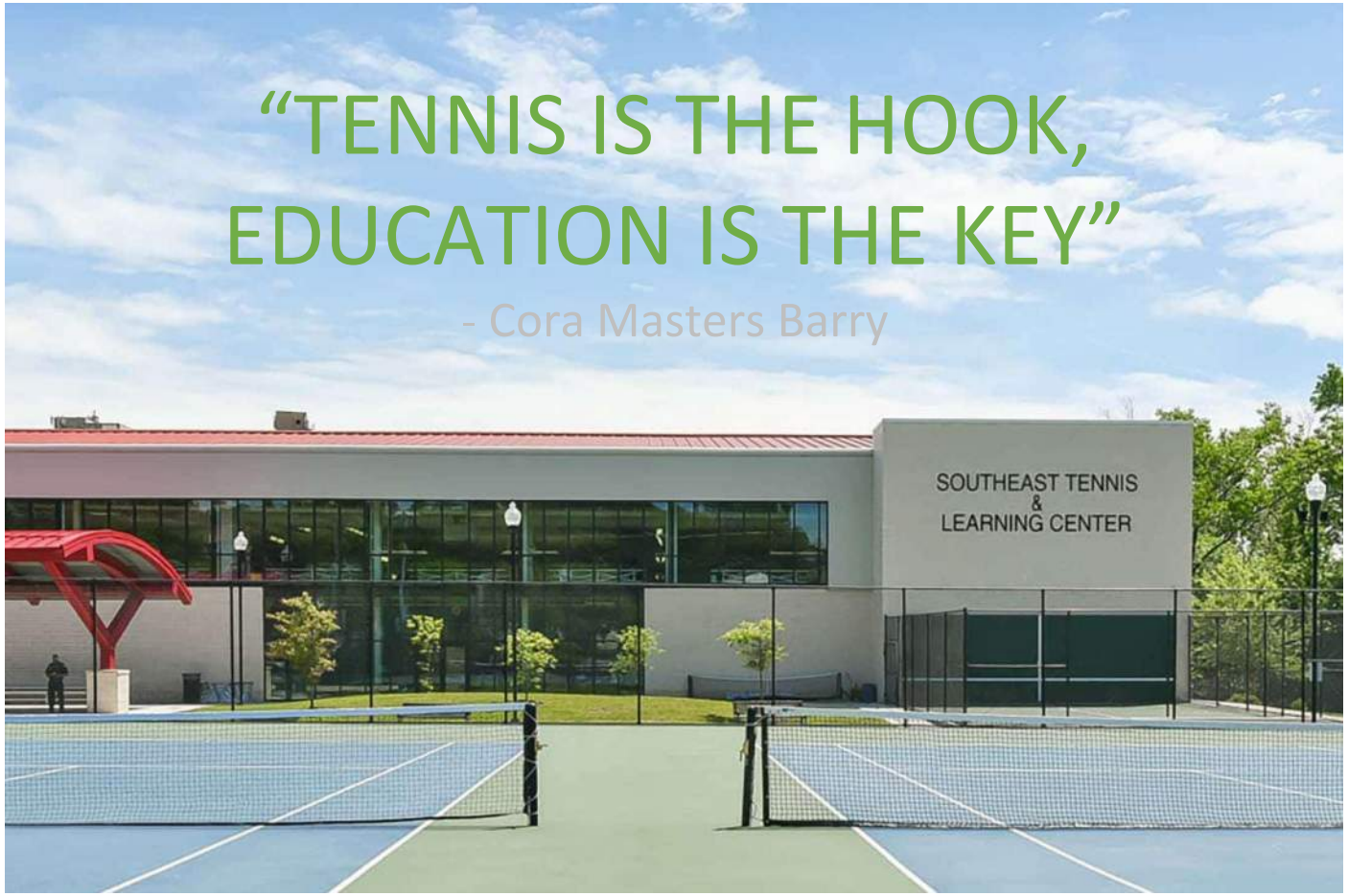
Southeast Tennis and Learning Center – South Campus

Revised Concept Submission

October 10, 2023

SOUTHEAST TENNIS & LEARNING CENTER



Existing Southeast Tennis and Learning Center

Existing Conditions

MTFA design + preservation

DGS DEPARTMENT OF GENERAL SERVICES BUILD MAINTAIN SUSTAIN

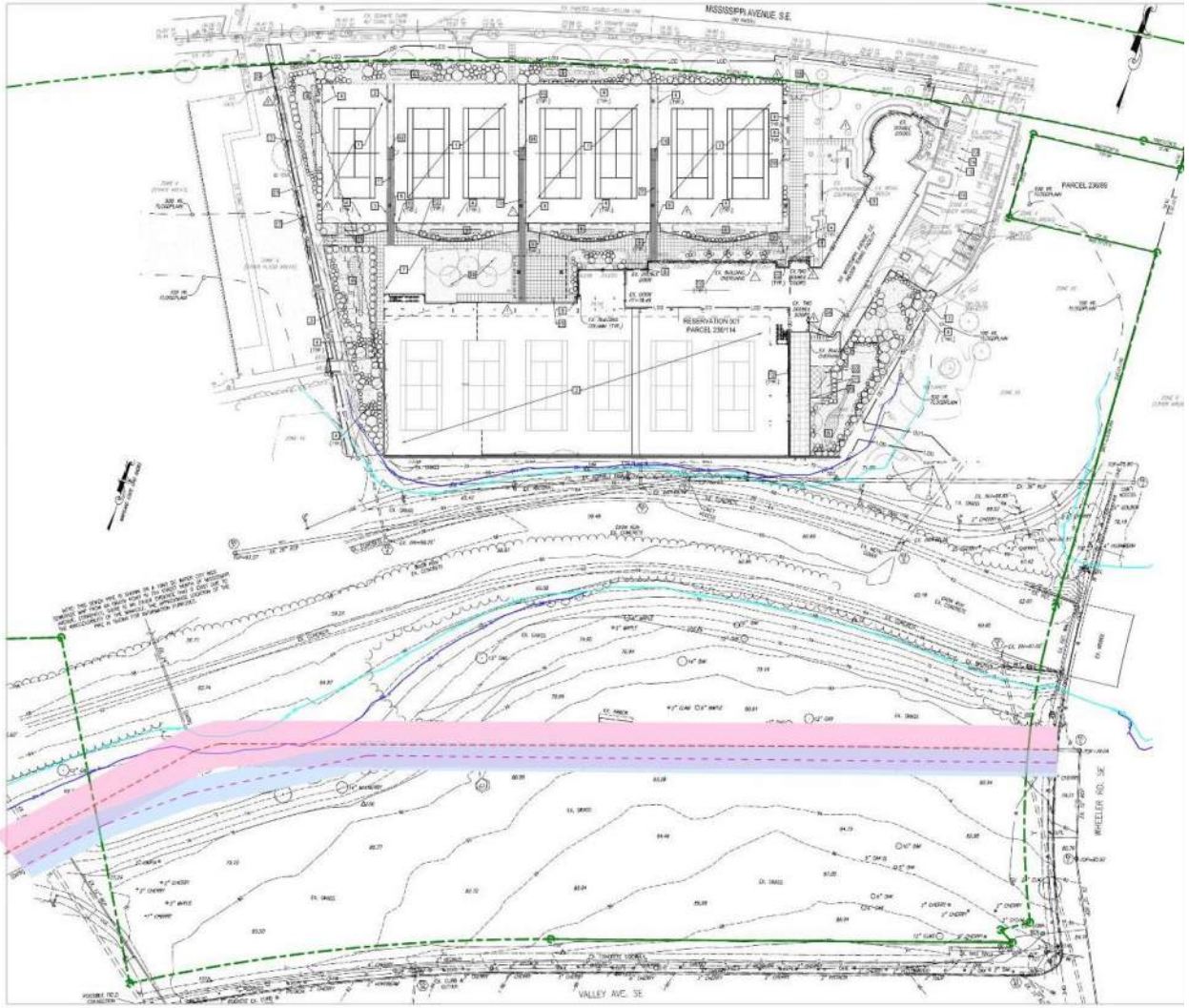
DPR DC DEPARTMENT OF PARKS AND RECREATION

GOVERNMENT OF THE DISTRICT OF COLUMBIA
MURIEL BOWSER, MAYOR

Site Analysis

SITE DIAGRAM LEGEND

- MODERATE RISK FLOOD ZONE
- HIGH RISK FLOOD ZONE
- SITE BOUNDARY
- 40'-0" WIDE SEWER LINE EASEMENT
- 25'-0" WIDE WATER LINE EASEMENT
- EXISTING WATER LINES
- EXISTING SEWER LINES



ZONING RA-1

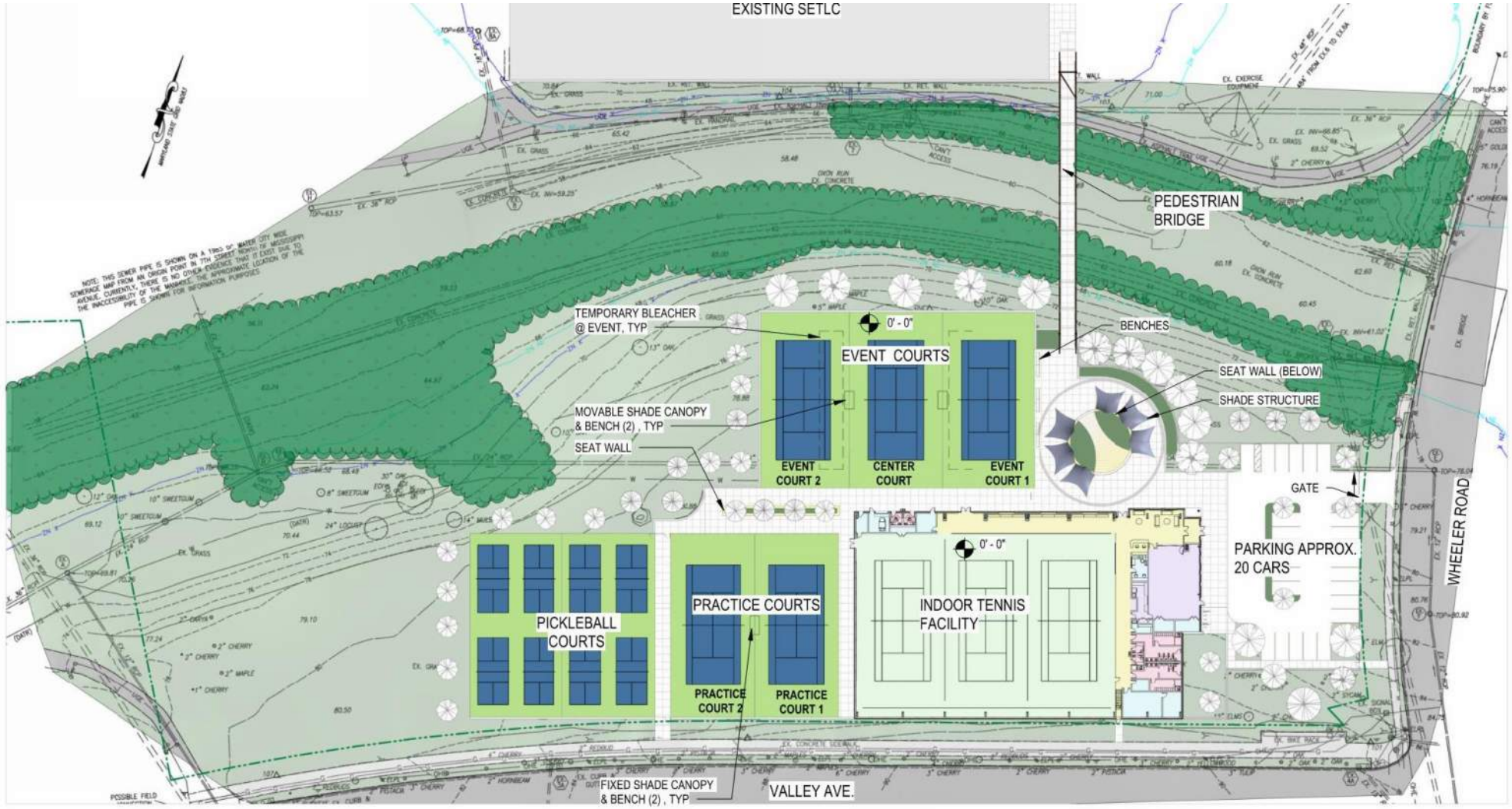
Program

SETLC Program Spaces	Program Required Qty	Space SF	Total SF	Total	Notes
Outdoor Tennis					
USTA Tennis Court (Class 1)	5	7,200	36,000		1 center court, Hard Courts, to meet requirements for junior tennis tournaments
Spectator Viewing	1	0	0		Temp Bleachers on courts
Outdoor Tennis Storage	1	250	250		Space for electric golf cart, charging station of golf cart, roll-up door.
Pedestrian Bridge	1	0	0		Suitable to handle golf cart
Plaza	1	3,000	3,000		Provide alternate shade structure
Pickleball Courts	10	1,800	18,000		8 Pickleball Hard Courts, ideally these would be located together and be dedicated to Pickleball only, 2 pickle ball courts at existing Claytech Courts
Outdoor Drinking Fountain and Bottle Filler	1				To be mounted to building wall
Parking	1				Approximately 20 off-street parking spaces, 40-60 to be accommodated on street.
Perimeter Security Fence	1	0	0		Match height of existing SETLC fence
Outdoor Total				57,250	
Indoor Tennis					
USTA Tennis Courts (Class 1)	3	7,200	21,600		Hard Courts to comply with USTA Tournament Clearances, 35' minimum clearance at net, 18' at baseline, 9' clearance from court to divider net, 12' from court to wall/column
Tennis Storage	1	250	250		
Practice hitting wall	1				
Area for Player waiting and bag drop	1	600	600		
Subtotal				22,450	
Lobby					
Entrance Lobby	1	900	900		
Reception Desk	1	100	100		Lockable file cabinet storage, seating for 2 people
Subtotal				1,000	

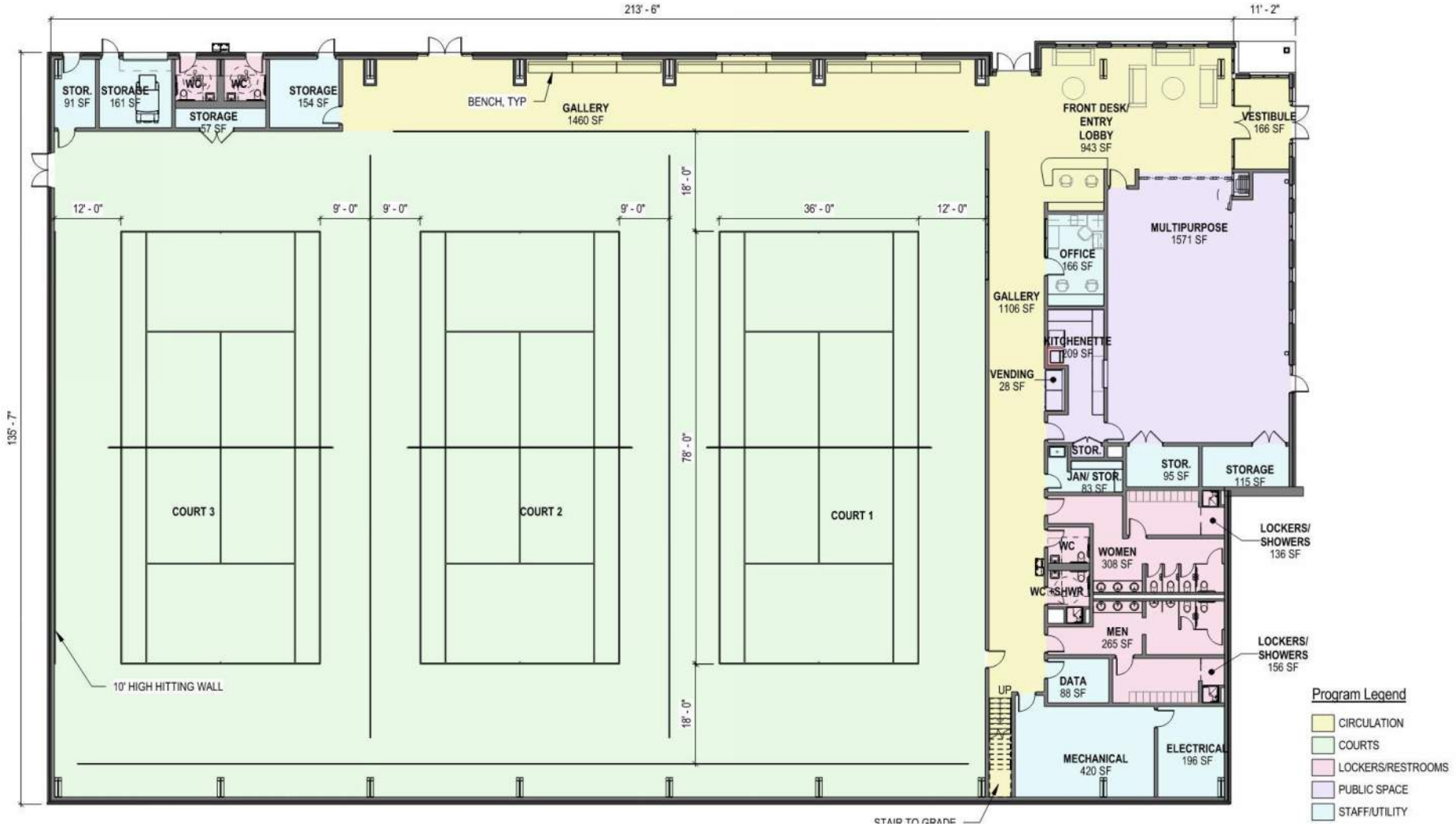
Multipurpose					
	Multipurpose Room	1	1,500	1,500	Sliding doors to expand to lobby AV to support multiple functions, 150 people standing
	Storage	1	150	150	
	Subtotal			1,650	
Kitchenette					
	Kitchenette	1	150	150	Microwave, Sink, Disposal, Base cabinets, Residential 30" refrigerator/freezer, ice machine, space for refrigerator for lunch program Service window to Multipurpose Room
	Vending	1	30	30	2 vending machines
	Subtotal			180	
Administration					
	Main Office				
	Closed Offices	2	110	220	
	Storage	1	100	100	
	Subtotal			320	
Building Service Facilities					
	Men's Restroom	1	290	290	Plumbing fixtures as requried by code
	Men's Locker Room	1	250	250	20 lockers double height, 1 shower
	Women's Restroom	1	290	290	Plumbing fixtures as requried by code
	Women's Locker Room	1	250	250	20 lockers double height, 1 shower
	Family Restroom	1	70	70	
	Family Restroom with shower	1	100	100	
	Family Restroom with exterior access	2	70	140	
	Drinking Fountain and Bottle Filler	1	9	9	
	Janitor's Closet	1	60	60	
	Building Storage	1	220	220	
	IT Room	1	80	80	
	Ice Machine Accessible to Outside	1	30	30	
	Electric Room	1	400	400	
	Mechanical Room	1	500	500	
	Subtotal			1,789	
Net Building Area Subtotal				27,389	
	Circulation / Misc. Areas Subtotal				
	Circulation / Walls			2,739	
Total Gross Building Area				30,128	

Concept – Site Plan

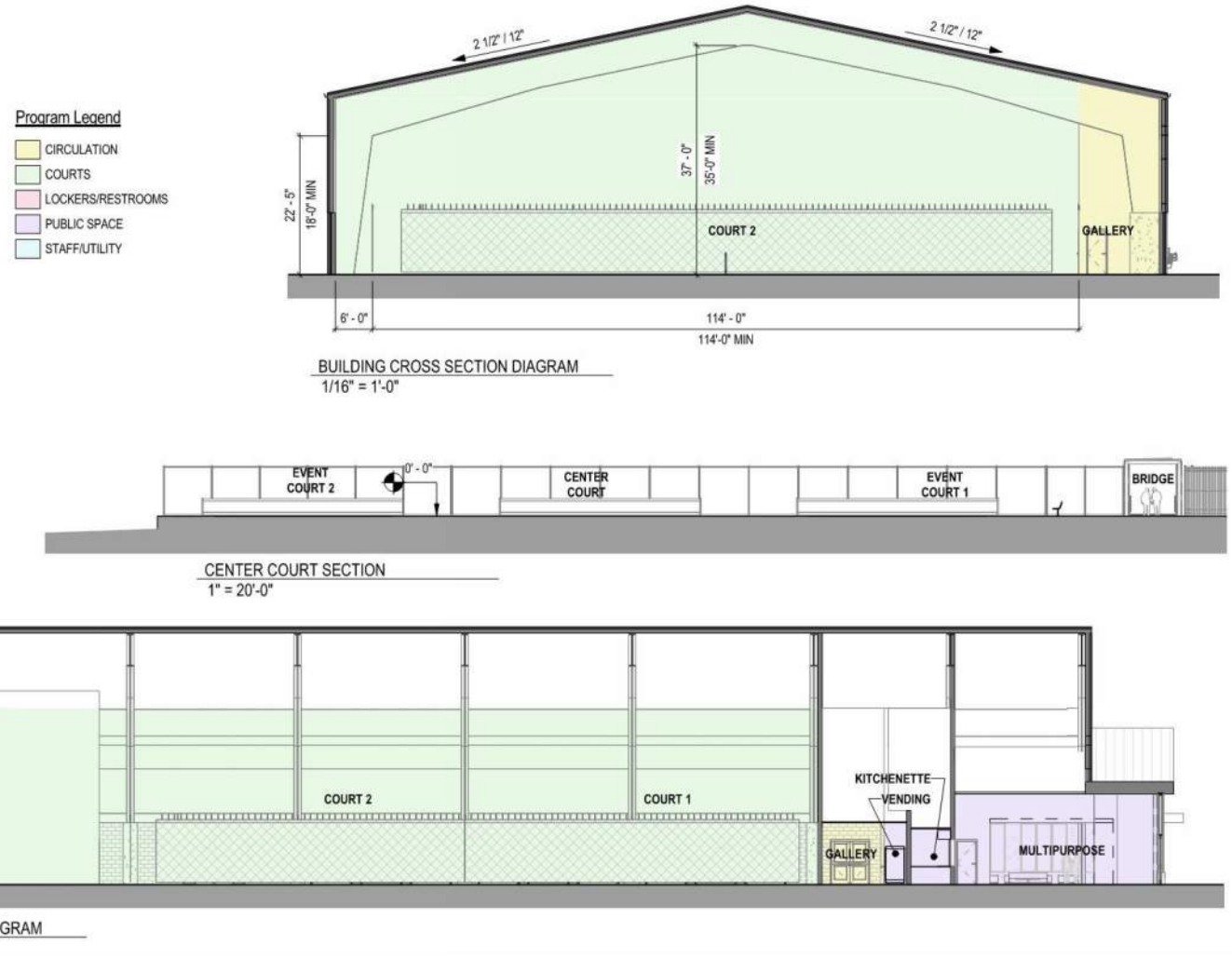
- COMMUNITY ROOM
- 3 INDOOR USTA TENNIS COURTS
- 5 OUTDOOR USTA TENNIS COURTS, INCLUDING A CENTER COURT
- 10 PICKLEBALL COURTS
- 20 OFFSTREET PARKING SPACES
- PEDESTRIAN BRIDGE CONNECTING TO EXISITING SETLC
- OUTDOOR PLAZA
- INCREASED NUMBER OF EXISTING SITE TREES



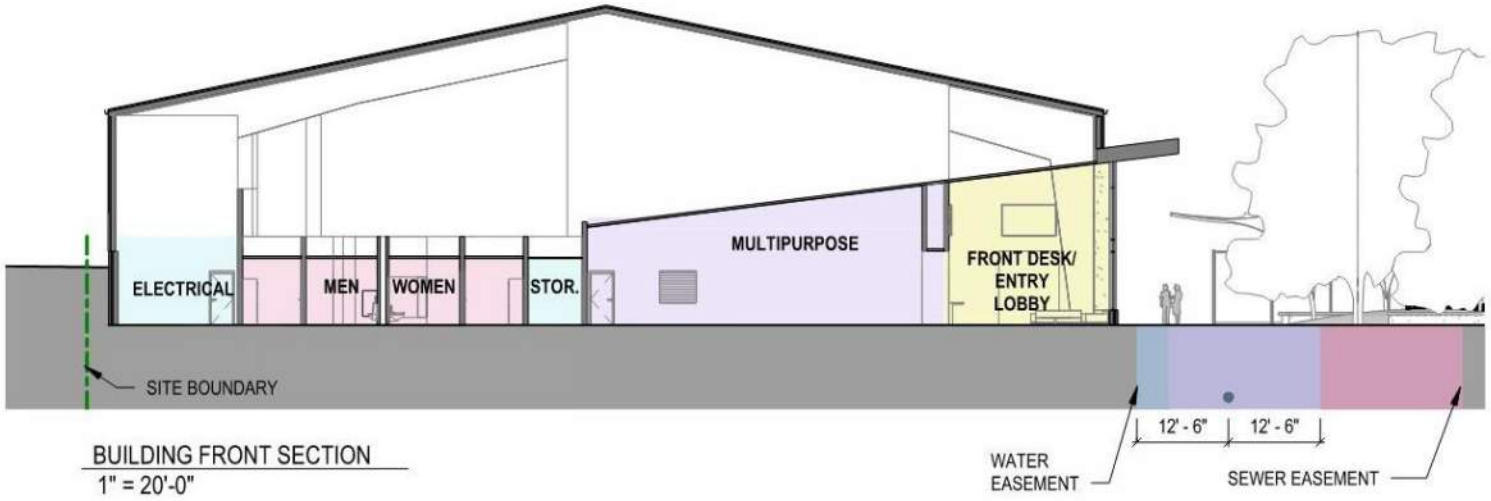
Concept – First Floor Plan



Concept – Building Section



Concept – Building Section



BUILDING FRONT SECTION
1" = 20'-0"

SITE DIAGRAM LEGEND

- MODERATE RISK FLOOD ZONE
- HIGH RISK FLOOD ZONE
- SITE BOUNDARY
- 40'-0" WIDE SEWER LINE EASEMENT
- 25'-0" WIDE WATER LINE EASEMENT
- EXISTING WATER LINES
- EXISTING SEWER LINES

Program Legend

- CIRCULATION
- COURTS
- LOCKERS/RESTROOMS
- PUBLIC SPACE
- STAFF/UTILITY

Concept – Building Entrance Perspective

Concept – Building Entrance Perspective

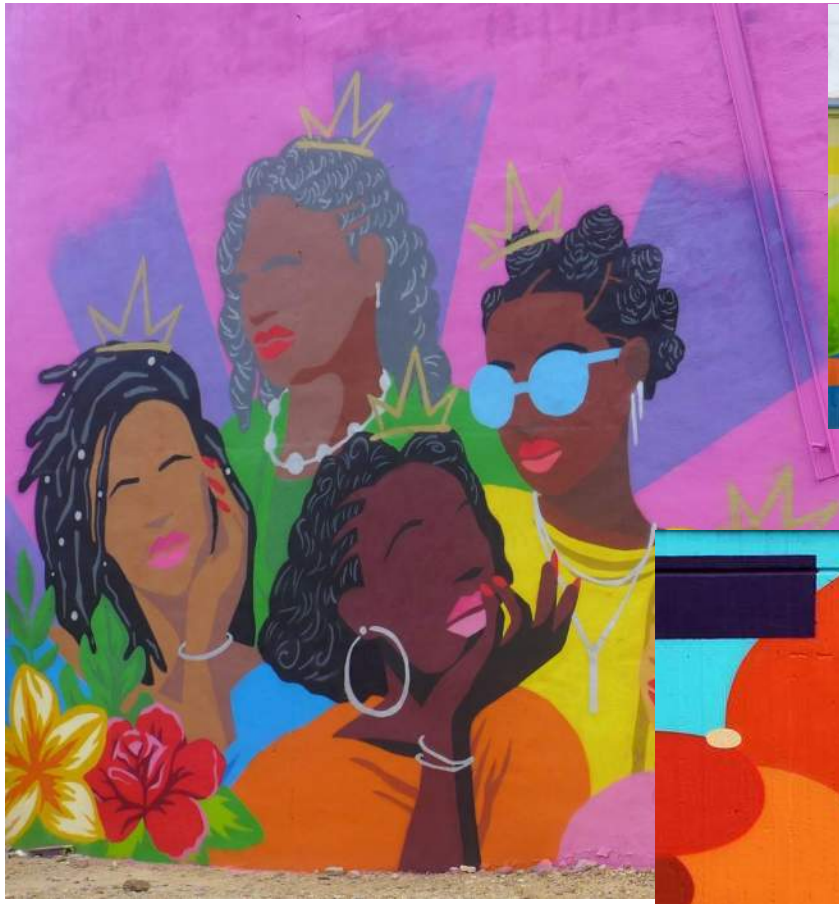
Concept – Building Perspective from SETLC North

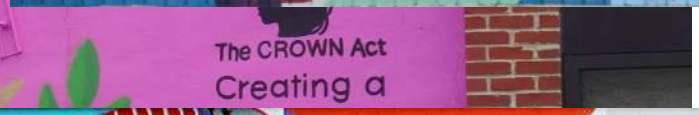
Concept – Building Perspective looking SW

Concept – Building Perspective from SETLC North

Concept – Building Perspective along Valley Avenue

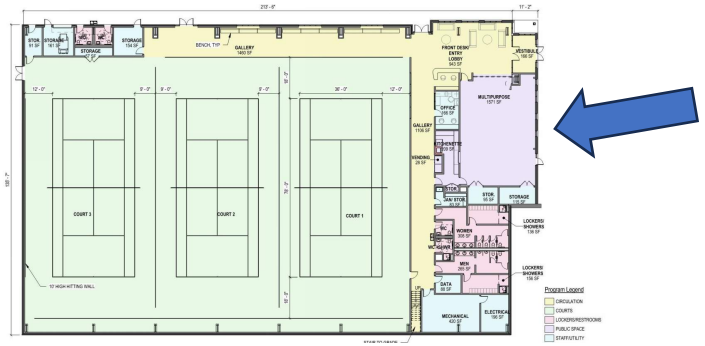
Design Inspiration – Mural





Design Inspiration Images – Entry Lobby

Design Inspiration Images – Multipurpose Room

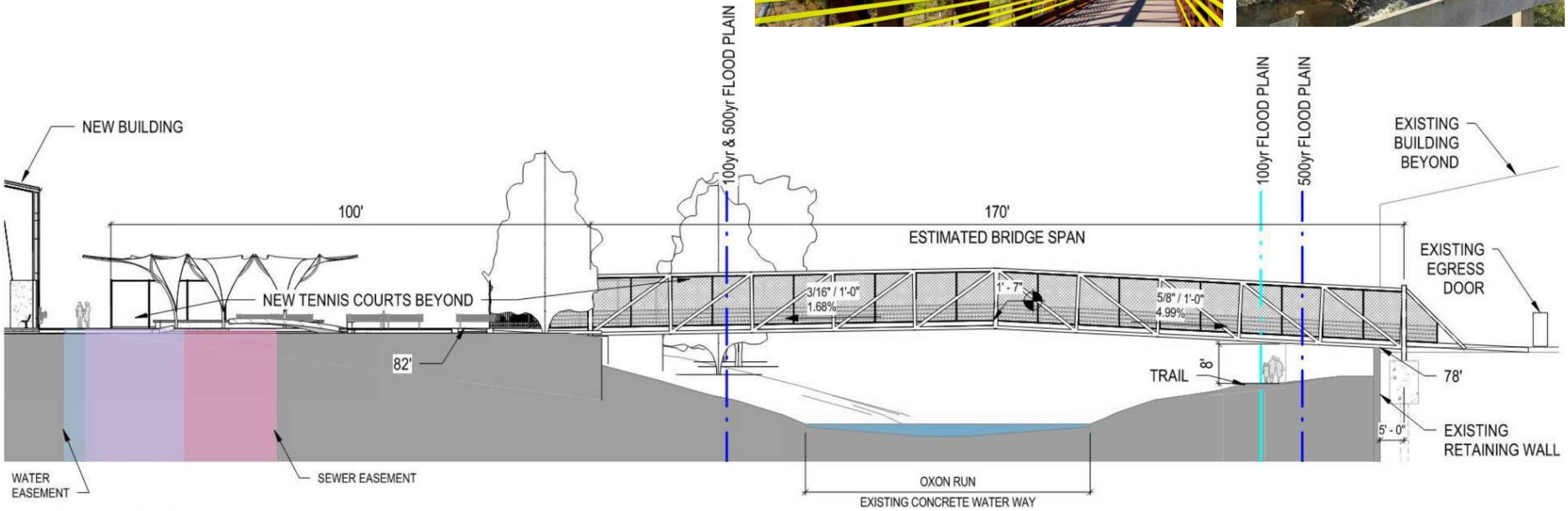


Design Inspiration Images– Indoor Tennis

Design Inspiration – Outdoor Tennis

Design Inspiration – Pickleball

Pedestrian Bridge



MTFA design + preservation

DGS Department of General Services BUILD MAINTAIN SUSTAIN

DPR DC Department of Parks and Recreation

WE ARE WASHINGTON DC GOVERNMENT OF THE DISTRICT OF COLUMBIA MURIEL BOWSER, MAYOR

Bioretention Plantings – Grasses & Perennials

Andropogon virginicus
Broomsedge

Panicum virgatum
Shenandoah Switch Grass

Schizachyrium scoparium
Little Bluestem

Lobelia cardinalis
Cardinal Flower

Monarda didyma
Beebalm

Coreopsis verticillate
Tickseed

Chelone glabra
White Turtlehead

Penstemon digitalis
Beardtongue

Iris virginica
Virginia Blueflag

Brugmansia 'Feingold'
Angel's trumpet

Phlox maculate
Meadow Phlox

Rudbeckia hirta
Blackeyed Susan

Bioretention Plantings – Shrubs

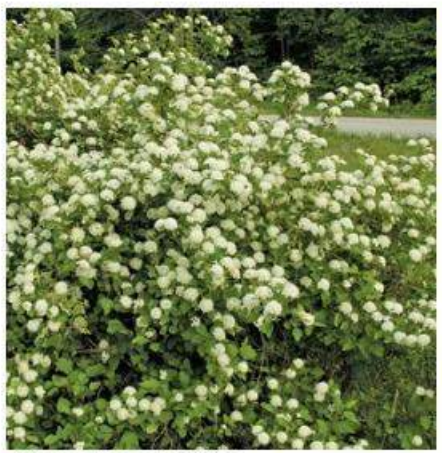
Myrica pennsylvanica
Northern Bayberry

Corylus americana
American Hazelnut

Ilex laevigata
Winterberry Holly

Hamamelia virginiana
American Witch-Hazel

Rhododendron atlanticum
Dwarf Azalea



Physocarpus opulifolius
Eastern Ninebark

Prunus virginiana
Choke Cherry

Viburnum dentatum
Arrowwood Viburnum

Viburnum prunifolium
Black-Haw

Clethera alnifolia
Sweet Pepperbush

Cornus amomum
Silky Dogwood

MTFA design + preservation Gordon DGS Department of General Services BUILD MAINTAIN SUSTAIN DPR DC Department of Parks and Recreation WE ARE GOVERNMENT OF THE DISTRICT OF COLUMBIA DC MURIEL BOWSER, MAYOR

Native Trees

Quercus palustris
Pin Oak

Betula nigra
River Birch

Celtis occidentalis
Common Hackberry

Ilex opaca
American Holly

Juniperus virginiana
Eastern Redcedar

Nyssa sylvatica
Black Gum

Quercus phellos
Willow Oak

Acer rubrum
Red Maple

Cercis Canadensis 'Jn2'
Rising Sun Redbud

Cercis Canadensis
Eastern Redbud

Amelanchier arborea
Downy serviceberry

Cornus florida
Flowering Dogwood

Ulmus americana
American elm

Appendix:

1. **VE Strategies Memo**

2. **Civil Survey:**
   - Existing Conditions Plan
   - Tree Inventory
   - Boundary Plan

3. **Structural Concept Design Narrative**

4. **Mechanical, Plumbing, Electrical Concept Design Narrative**

5. **Revised Concept Design Cost Estimate**

6. **Phase 1 Environmental Survey**

7. **Hazardous Material Report**

8. **Preliminary LEED Scorecard**

SURVEY NOTES:

1. TOPOGRAPHIC SURVEY CONDUCTED BY GORDON ON, APRIL 27 – MAY 05, 2023.
   VERTICAL CONTROL: NAVD88
   HORIZONTAL CONTROL: MARYLAND COORDINATE SYSTEM NAD83; US SURVEY FOOT
   CONTOUR INTERVAL: 1 FOOT
2. EXISTING UNDERGROUND UTILITY LOCATIONS ARE BASED ON FIELD LOCATIONS AND AVAILABLE RECORDS AND MAY NOT REPRESENT ALL UNDERGROUND UTILITIES OR SERVICE LINES.
3. THE FOLLOWING UNDERGROUND UTILITIES WERE DESIGNATED BY MID-ATLANTIC UTILITY LOCATING, L.L.C.,
   – EXISTING UNDERGROUND ELECTRIC
   – EXISTING UNDERGROUND WATERLINE
   – EXISTING UNDERGROUND NATURAL GAS
4. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS NOT INTENDED TO SHOW ALL EASEMENTS THAT MAY AFFECT THE PROPERTY.
5. BOUNDARY WAS PERFORMED BY FOX & ASSOCIATES INC. ON MAY 24, 2023
6. THE PROPERTY SHOWN HEREON LIES WITH ZONE AE & ZONE X, BASE FLOOD ELEVATIONS DETERMINED ACCORDING TO MAP NUMBER 1100010078C OF THE FEMA FLOOD INSURANCE RATE MAP EFFECTIVE DATE SEPTEMBER 27, 2010.

ABBREVIATIONS

EX	EXISTING
CONC	CONCRETE
BLDG	BUILDING
ELEV	ELEVATION
EOI	END OF INFORMATION
FF	FIRST FLOOR
RET	RETAINING
UNK	UNKNOWN
SAMH	SANITARY MANHOLE
STMH	STORM MANHOLE
STCIMH	STORM CURB INLET
STGI	STORM GRATE INLET
STCIMH	STORM CURB INLET MANHOLE
STYIMH	STORM YARD INLET MANHOLE
DATR	DETERMINED ACCORDING TO RECORDS

LEGEND

- ROOF DRAIN
- STORM SEWER CURB INLET
- STORM MANHOLE
- CLEANOUT
- SANITARY MANHOLE
- ELECTRIC MANHOLE
- LIGHT POLE
- POWER POLE
- GUY WIRE
- GAS TEST STATION
- GAS VALVE
- FIRE HYDRANT
- WATER VALVE
- WATER MANHOLE
- WATER METER
- BOLLARD
- MAILBOX
- SIGN
- × 311.8 SPOT ELEVATION
- TREE
- CHAIN LINK FENCE
- IRON FENCE
- WOODEN FENCE
- OHW — OVERHEAD UTILITY LINE
- UGCM — UNDERGROUND COMMUNICATION LINE
- UGE — UNDERGROUND ELECTRIC LINE
- G — UNDERGROUND GAS LINE
- W — UNDERGROUND WATER LINE
- UNK — UNDERGROUND UNKNOWN UTILITY LINE
- ZN AE — FEMA FLOOD ZONE AE
- ZN X — FEMA FLOOD ZONE X

SURVEY CONTROL TABLE

POINT	NORTHING	EASTING	ELEVATION	DESCRIPTION
100	426004.86	1313821.95	88.20	TRAV RBC
101	426125.92	1314207.83	87.84	TRAV RBC
102	426478.22	1314148.15	77.18	TRAV X-CUT
103	426466.96	1313921.93	70.98	TRAV RBC
104	426408.19	1313714.21	67.20	TRAV RBC
105	426306.26	1313849.31	76.59	TRAV RBC
106	426074.06	1313619.19	79.30	TRAV RBC
107	425888.67	1313538.46	80.42	TRAV RBC

STORM AS-BUILTS TABLE

STRUCTURE	TOP	INV	SIZE	IN/OUT	FROM/TO	STRUCTURE
CULVERT / EX. 1		55.60	36" RCP	IN	FROM	EX. 1A
STMH	79.21	65.57	36" RCP	OUT	TO	CULVERT / EX. 1
EX. 1A		65.67	36" RCP	IN	FROM	SOUTH
STCIMH / EX. 2	79.94	74.95	15" RCP	OUT	TO	TO POSSIBLE FIELD CONNECTION
STMH / EX. 3	83.40	78.60	15" RCP	IN	FROM	EX. 3A
STCIMH / EX. 3A	83.85	78.87	15" RCP	OUT	TO	EX. 3
STMH / EX. 4	88.28	83.23	15" RCP	IN	FROM	EX. 4A
STCIMH / EX. 4A	88.29	83.04	15" RCP	OUT	TO	EX. 4
CULVERT / EX. 5		61.02	27" RCP	IN	FROM	EX. 5A
STMH	88.65	78.63	27" RCP	OUT	TO	EX. CULVERT
EX. 5A		78.69	27" RCP	IN	FROM	SOUTH
CULVERT / EX. 6		60.28	48" RCP	IN	FROM	EX. 6A
STMH	80.23	68.80	48" RCP	OUT	TO	EX. CULVERT 6
EX. 6A		68.83	48" RCP	IN	FROM	NORTH
CULVERT / EX. 7		65.10	12" PVC	IN	FROM	EX. 7A
STGI / EX. 7A	69.85	66.65	12" PVC	OUT	TO	EX. 7
CULVERT / EX. 8		59.25	18" PVC	IN	FROM	EX. 8A
STMH / EX. 8A	68.70	68.70	18" PVC	OUT	TO	EX. 8

SANITARY AS-BUILTS TABLE

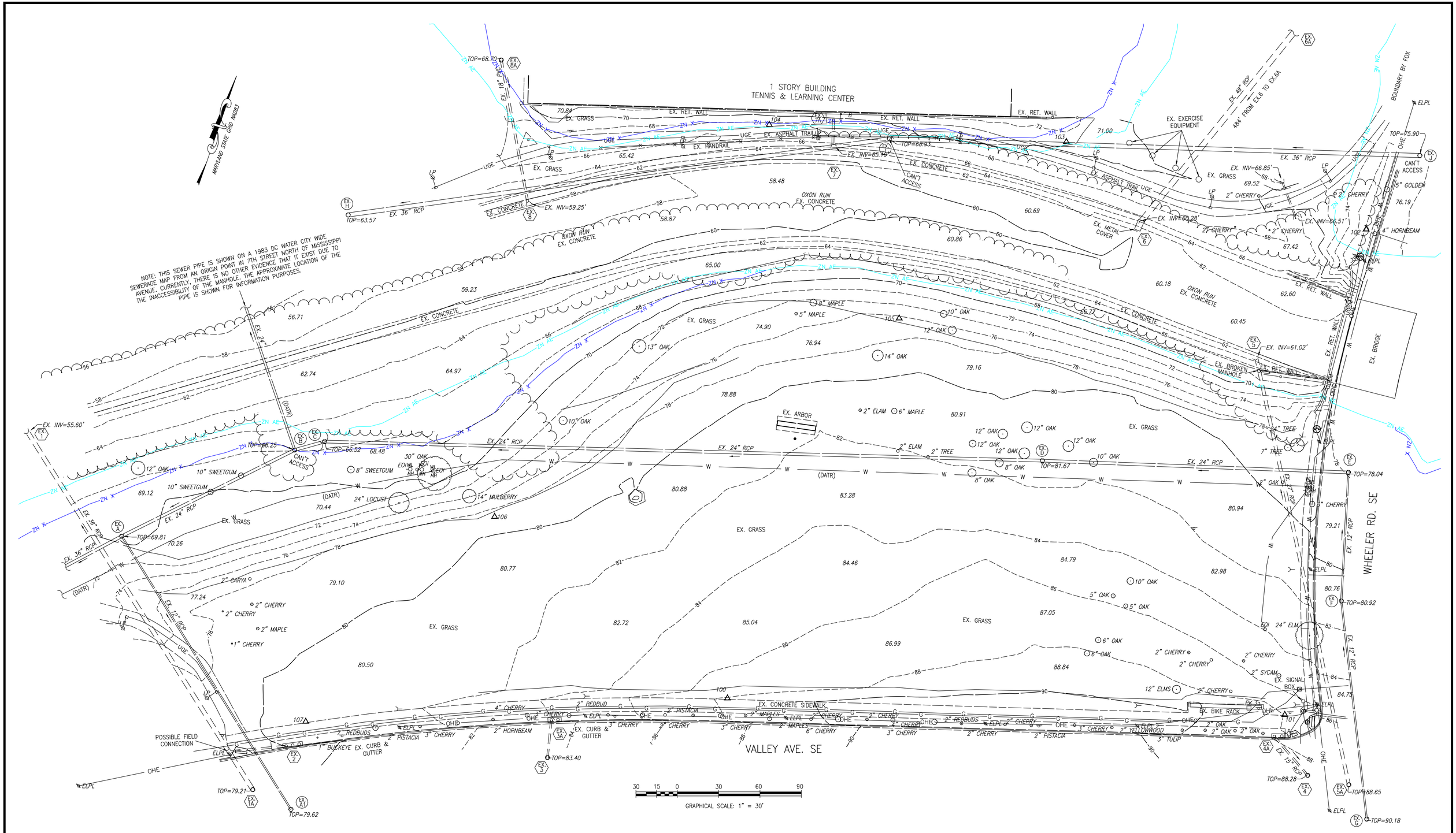
STRUCTURE	TOP	INV	SIZE	IN/OUT	FROM/TO	STRUCTURE
SAMH	69.81	52.43	24" RCP	OUT	TO	WEST
EX. A		52.50	24" RCP	IN	FROM	EX. B
		53.21	12" RCP	IN	FROM	EX. A1
SAMH / EX. B	68.25	CAN'T ACCESS				
SAMH	66.52	53.51	24" RCP	OUT	TO	EX. B
EX. C		53.57	24" RCP	IN	FROM	EX. D
SAMH	81.67	55.07	24" RCP	OUT	TO	EX. C
EX. D		55.67	24" RCP	IN	FROM	EX. E
SAMH	78.04	57.34	24" RCP	OUT	TO	EX. D
EX. E		58.54	12" RCP	IN	FROM	EX. F
SAMH	80.92	67.24	12" RCP	OUT	TO	EX. E
EX. F		67.32	12" RCP	IN	FROM	EX. G
SAMH	90.18	78.58	12" RCP	OUT	TO	EX. F
EX. G		78.66	12" RCP	IN	FROM	EAST
SAMH	79.62	67.57	12" RCP	OUT	TO	EX. A
EX. A1		67.66	12" RCP	IN	FROM	SOUTH
SAMH	63.57	52.37	36" RCP	OUT	TO	WEST
EX. H		52.52	36" RCP	IN	FROM	EAST
		54.52	12" RCP	IN	FROM	NORTH
SAMH / EX. I	68.93	CAN'T ACCESS, UNDER HAND RAIL.				
SAMH / EX. J	75.9	CAN'T ACCESS, BROKEN LID, ON ROAD.				

No.	Revision	Date

Gordon
4501 Daly Drive
Chantilly, VA 20151
Phone: 703-263-1900
www.gordon.us.com
PROGRAMMING AND PLANNING
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
SURVEY AND MAPPING
SECURITY CONSULTING

PLAT SHOWING
TOPOGRAPHIC MAP ON A PORTION OF
OF
SOUTHEAST TENNIS & LEARNING CENTER
SOUTHEAST
WASHINGTON, D.C.

SCALE: N/A
DATE: 05-25-2023
D153
0101
EOT
D153-0101_to01.dwg
SHEET 1 of 3

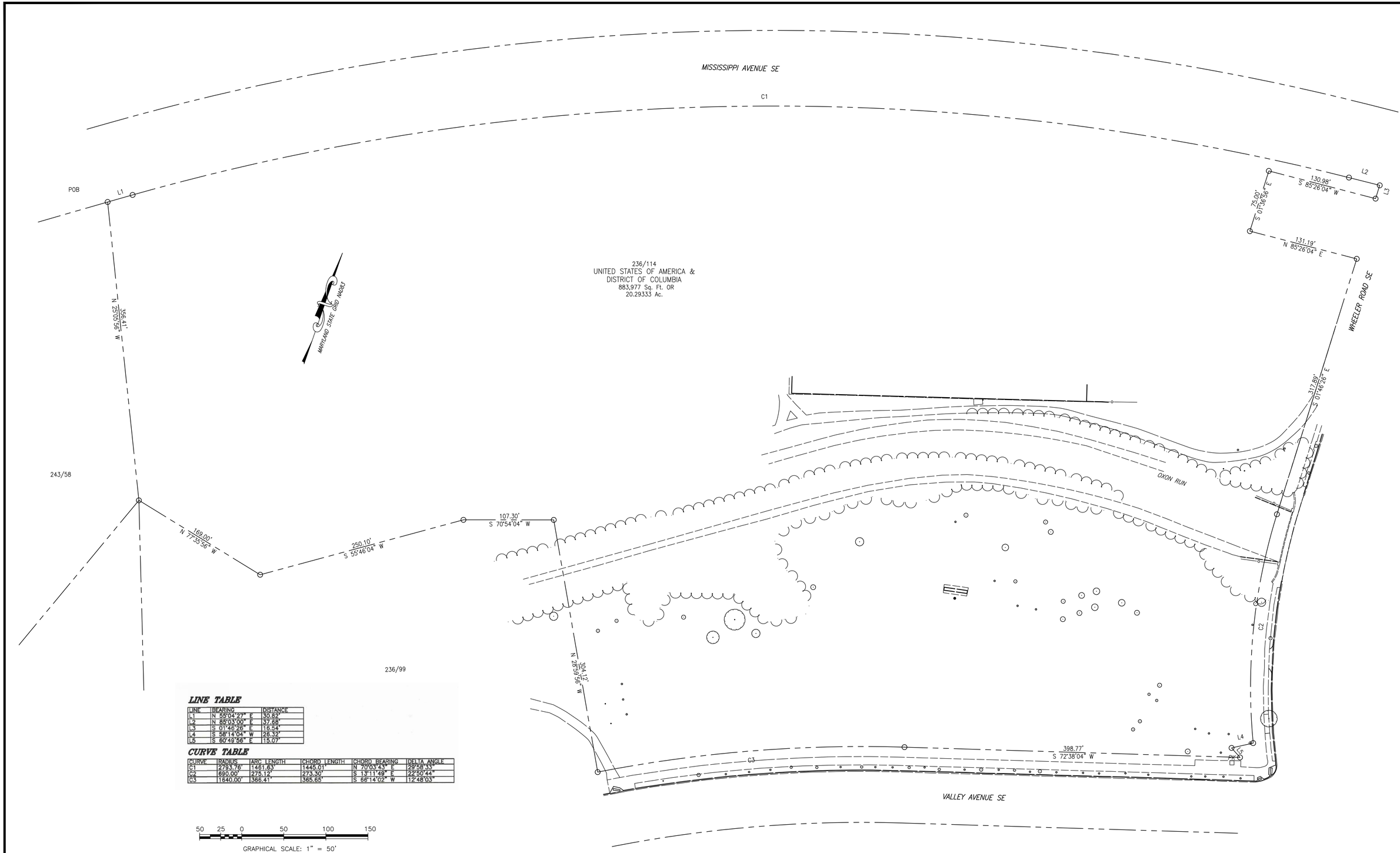


No.	Revision	Date

Gordon
4501 Daly Drive
Chantilly, VA 20151
Phone: 703-263-1900
www.gordon.us.com
PROGRAMMING AND PLANNING
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
SURVEY AND MAPPING
SECURITY CONSULTING

PLAT SHOWING
TOPOGRAPHIC MAP ON A PORTION OF
OF
SOUTHEAST TENNIS & LEARNING CENTER
SOUTHEAST
WASHINGTON, D.C.

SCALE:	1"=30'
DATE:	05-25-2023
D153	
0101	
EOT	
D153-0101_to01.dwg	
SHEET	2 of 3



LINE TABLE

LINE	BEARING	DISTANCE
L1	N 85°04'27" E	30.82'
L2	N 85°03'00" E	37.68'
L3	S 01°46'26" E	16.54'
L4	S 58°14'04" W	26.32'
L5	S 60°49'56" E	15.07'

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	2793.78'	1461.63'	1445.01'	N 70°03'43" E	29°58'33"
C2	690.00'	275.12'	273.30'	S 13°11'49" E	22°50'44"
C3	1640.00'	366.41'	365.65'	S 66°14'02" W	12°48'03"

50 25 0 50 100 150

GRAPHICAL SCALE: 1" = 50'

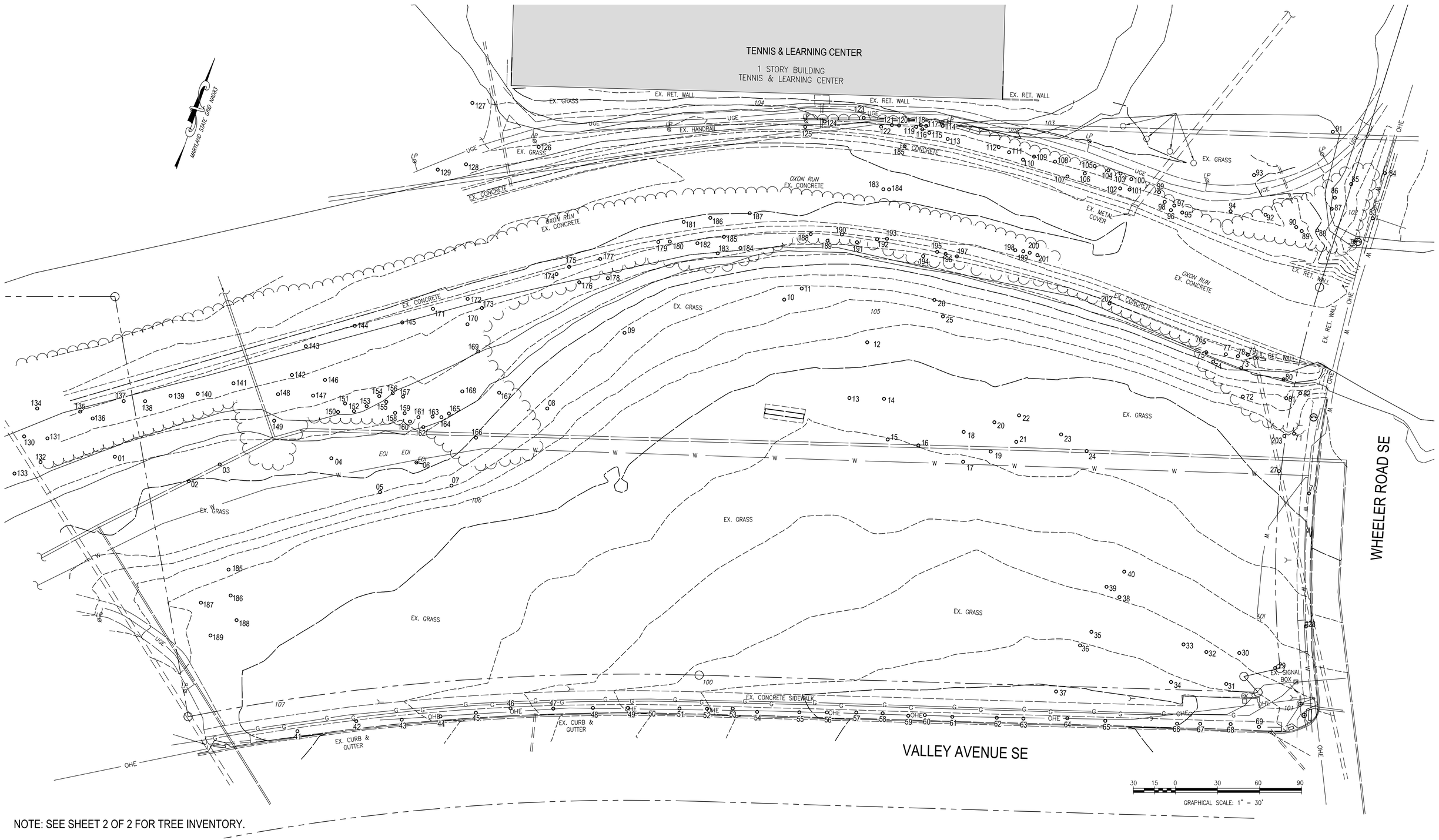
No.	Revision	Date

Gordon
4501 Daly Drive
Chantilly, VA 20151
Phone: 703-263-1900
www.gordon.us.com

PROGRAMMING AND PLANNING
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
SURVEY AND MAPPING
SECURITY CONSULTING

PLAT SHOWING
TOPOGRAPHIC MAP
ON A PORTION OF
OF
SOUTHEAST TENNIS & LEARNING CENTER
SOUTHEAST
WASHINGTON, D.C.

SCALE:	1"=50'
DATE:	05-25-2023
D153	
0101	
EOT	
D153-0101_to01.dwg	
SHEET 3 of 3	



NOTE: SEE SHEET 2 OF 2 FOR TREE INVENTORY.

No.	Revision	Date

Gordon
4501 Daly Drive
Chantilly, VA 20151
Phone: 703-263-1900
www.gordon.us.com

PROGRAMMING AND PLANNING
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
SURVEY AND MAPPING
SECURITY CONSULTING

TREE INVENTORY PLAN
ON A PORTION OF
OF
SOUTHEAST TENNIS & LEARNING CENTER
SOUTHEAST
WASHINGTON, D.C.

SCALE:	1"=30'
DATE:	05-24-2023
D153	
0101	
EOT	
D153-0101_to01.dwg	
SHEET	1 of 2

TREE INVENTORY

TREE KEY	D.B.H. (in.)*	BOTANICAL NAME	COMMON NAME	SRZ (Feet)	CRZ (1.5 ft Radius/ in. DBH)	CONDITION	DEAD TREE (Y/N)	NO. OF STEMS	PRIORITY (1-4)	COMMENTS
1	11	Ulmus americana	American elm	5.5	16.5	Good	No	1	3	
2	6	Liquidambar styraciflua	Sweetgum	3	9	Good	No	2	3	
3	7	Liquidambar styraciflua	Sweetgum	3.5	10.5	Good	No	1	3	
4	5	Liquidambar styraciflua	Sweetgum	2.5	7.5	Good	No	1	3	
5	24	Robinia pseudoacacia	Black locust	12	36	Good	No	1	3	
6	21	Quercus phellos	Willow oak	10.5	31.5	Fair	No	2	2	21" and 17" stems; Smaller trunk with large holes; Deadwood
7	14	Morus alba	White mulberry	7	21	Good	No	1	3	
8	8	Quercus phellos	Willow oak	4	12	Good	No	1	3	
9	10	Ulmus americana	American elm	5	15	Good	No	1	3	
10	4	Liquidambar styraciflua	Sweetgum	2	6	Good	No	1	3	
11	6	Liquidambar styraciflua	Sweetgum	3	9	Good	No	1	3	
12	9	Ulmus americana	American elm	4.5	13.5	Good	No	1	3	
13	2	Juglans nigra	Black walnut	1	3	Good	No	1	3	
14	6	Liquidambar styraciflua	Sweetgum	0	0	Dead	Yes	1	0	
15	2	Juglans nigra	Black walnut	1	3	Good	No	1	3	
16	2	Quercus muehlenbergii	Chinkapin oak	1	3	Good	No	1	3	
17	7	Liriodendron tulipifera	Tulip Poplar	3.5	10.5	Good	No	1	3	
18	9	Liriodendron tulipifera	Tulip Poplar	4.5	13.5	Good	No	1	3	
19	7	Liriodendron tulipifera	Tulip Poplar	3.5	10.5	Good	No	1	3	
20	10	Quercus palustris	Pin oak	5	15	Good	No	1	3	
21	12	Quercus palustris	Pin oak	6	18	Good	No	1	3	
22	11	Quercus palustris	Pin oak	5.5	16.5	Good	No	1	3	
23	10	Quercus palustris	Pin oak	5	15	Good	No	1	3	
24	7	Quercus palustris	Pin oak	3.5	10.5	Good	No	1	3	
25	7	Platanus occidentalis	American sycamore	3.5	10.5	Good	No	1	3	
26	5	Platanus occidentalis	American sycamore	2.5	7.5	Good	No	1	3	
27	2	Quercus prinus	Chestnut oak	1	3	Good	No	1	3	
28	24	Ulmus americana	American elm	12	36	Fair	No	1	3	Street tree along Wheeler Rd. SE
29	19	Platanus occidentalis	American sycamore	9.5	28.5	Fair	No	5	2	(19",9",7",7",4"); Avg form; Minor deadwood
30	2	Prunus x yedoensis	Yoshino cherry	1	3	Good	No	1	3	
31	2	Prunus spp.	Ornamental Cherry	1	3	Good	No	1	3	
32	2	Prunus x yedoensis	Yoshino cherry	1	3	Poor	No	1	2	Dead at top
33	2	Prunus x yedoensis	Yoshino cherry	1	3	Good	No	1	2	
34	12	Ulmus americana	American elm	6	18	Good	No	1	2	
35	6	Quercus bicolor	Swamp white oak	3	9	Good	No	1	2	
36	6	Quercus bicolor	Swamp white oak	3	9	Good	No	1	2	
37	1	Pistacia chinensis	Chinese pistache	0.5	1.5	Good	No	1	2	
38	5	Quercus bicolor	Swamp white oak	2.5	7.5	Good	No	1	2	
39	5	Quercus bicolor	Swamp white oak	2.5	7.5	Good	No	1	2	
40	10	Quercus bicolor	Swamp white oak	5	15	Good	No	1	2	
41	1	Aesculus hippocastanum	Horsechestnut	0.5	1.5	Good	No	1	3	Street tree along Valley Drive SE
42	5	Cercis canadensis	Eastern redbud	2.5	7.5	Fair	No	3	3	Street tree along Valley Drive SE; Trunk splitting at base
43	2	Pistacia chinensis	Chinese pistache	1	3	Good	No	1	3	Street tree along Valley Drive SE
44	2	Prunus spp.	Ornamental Cherry	1	3	Good	No	1	3	Street tree along Valley Drive SE
45	2	Carpinus caroliniana	Hornbeam	1	3	Fair	No	1	3	Street tree along Valley Drive SE; Damage at base
46	4	Carpinus caroliniana	Hornbeam	2	6	Good	No	1	3	Street tree along Valley Drive SE; Damage at base
47	3	Prunus virginiana	Choke cherry	1.5	4.5	Good	No	1	3	Street tree along Valley Drive SE
48	2	Cercis canadensis	Eastern redbud	1	3	Good	No	1	3	Street tree along Valley Drive SE
49	3	Prunus virginiana	Choke cherry	1.5	4.5	Good	No	1	3	Street tree along Valley Drive SE
50	2	Pistacia chinensis	Chinese pistache	1	3	Good	No	1	3	Street tree along Valley Drive SE
51	2	Carpinus caroliniana	Hornbeam	1	3	Fair	No	1	3	Street tree along Valley Drive SE; Deadwood
52	3	Prunus virginiana	Choke cherry	1.5	4.5	Good	No	1	3	Street tree along Valley Drive SE
53	2	Acer grandidentatum	Bigtooth maple	1	3	Good	No	1	3	Street tree along Valley Drive SE
54	2	Acer grandidentatum	Bigtooth maple	1	3	Good	No	1	3	Street tree along Valley Drive SE
55	2	Prunus spp.	Ornamental Cherry	1	3	Fair	No	1	3	Street tree along Valley Drive SE; Deadwood
56	6	Carpinus caroliniana	Hornbeam	3	9	Good	No	1	3	Street tree along Valley Drive SE
57	2	Malus spp.	Crabapple	1	3	Fair	No	1	3	Street tree along Valley Drive SE; Thin canopy
58	3	Carpinus caroliniana	Hornbeam	1.5	4.5	Good	No	1	3	Street tree along Valley Drive SE
59	2	Prunus spp.	Ornamental Cherry	1	3	Good	No	1	3	Street tree along Valley Drive SE
60	2	Cercis canadensis	Eastern redbud	1	3	Good	No	1	3	Street tree along Valley Drive SE
61	2	Carpinus caroliniana	Hornbeam	1	3	Poor	No	1	3	Street tree along Valley Drive SE; 2/3 of tree is dead
62	2	Prunus spp.	Ornamental Cherry	1	3	Good	No	1	3	Street tree along Valley Drive SE
63	2	Pistacia chinensis	Chinese pistache	1	3	Good	No	1	3	Street tree along Valley Drive SE
64	3	Prunus spp.	Ornamental Cherry	1.5	4.5	Good	No	1	3	Street tree along Valley Drive SE
65	2	Cladrastis kentukea	Yellowwood	1	3	Good	No	1	3	Street tree along Valley Drive SE
66	2	Liriodendron tulipifera	Tulip Poplar	1	3	Good	No	1	3	Street tree along Valley Drive SE
67	2	Quercus lyrata	Overcup oak	1	3	Good	No	1	3	Street tree along Valley Drive SE
68	2	Gymnocladus dioicus	Kentucky coffeetree	1	3	Good	No	1	3	Street tree along Valley Drive SE
69	2	Quercus phellos	Willow oak	1	3	Good	No	1	3	Street tree along Valley Drive SE
70	4	Prunus virginiana	Choke cherry	2	6	Good	No	1	3	Street tree along Wheeler Road SE
71	12	Robinia pseudoacacia	Black locust	6	18	Poor	No	1	2	Broken limb; Poor form + structure
72	6	Ailanthus altissima	Tree-of-heaven	3	9	Fair	No	1	2	
73	2	Ailanthus altissima	Tree-of-heaven	1	3	Fair	No	1	2	
74	10	Ailanthus altissima	Tree-of-heaven	5	15	Fair	No	1	2	
75	8	Morus alba	White mulberry	4	12	Fair	No	1	2	
76	8	Prunus serotina	Black cherry	4	12	Fair	No	1	2	
77	14	Robinia pseudoacacia	Black locust	7	21	Fair	No	1	2	
78	10	Robinia pseudoacacia	Black locust	5	15	Fair	No	1	2	
79	8	Robinia pseudoacacia	Black locust	4	12	Fair	No	1	2	
80	9	Robinia pseudoacacia	Black locust	4.5	13.5	Fair	No	1	2	
81	6	Robinia pseudoacacia	Black locust	3	9	Fair	No	1	2	
82	10	Robinia pseudoacacia	Black locust	5	15	Fair	No	1	2	
83	4	Carpinus caroliniana	Hornbeam	2	6	Fair	No	1	2	Street tree along Wheeler Road SE
84	5	Koelreuteria paniculata	Goldenraintree	2.5	7.5	Fair	No	1	2	Street tree along Wheeler Road SE
85	13	Ailanthus altissima	Tree-of-heaven	6.5	19.5	Fair	No	1	2	
86	6	Ailanthus altissima	Tree-of-heaven	3	9	Fair	No	1	2	
87	4	Ailanthus altissima	Tree-of-heaven	2	6	Fair	No	1	2	
88	4	Ulmus americana	American elm	2	6	Fair	No	1	2	
89	7	Pyrus calleryana	Callery pear	3.5	10.5	Fair	No	1	2	
90	5	Robinia pseudoacacia	Black locust	2.5	7.5	Fair	No	1	2	
91	2	Prunus spp.	Ornamental Cherry	1	3	Good	No	1	2	
92	2	Prunus spp.	Ornamental Cherry	1	3	Good	No	1	2	
93	2	Prunus spp.	Ornamental Cherry	1	3	Poor	No	1	2	Dead on top
94	2	Prunus spp.	Ornamental Cherry	1	3	Fair	No	1	2	
95	6	Tilia americana	American basswood	3	9	Fair	No	1	2	
96	7	Ulmus americana	American elm	3.5	10.5	Fair	No	1	2	
97	5	Ulmus americana	American elm	2.5	7.5	Fair	No	1	2	
98	5	Ulmus americana	American elm	2.5	7.5	Fair	No	1	2	
99	5	Morus alba	White mulberry	2.5	7.5	Fair	No	1	2	
100	2	Morus alba	White mulberry	1	3	Fair	No	1	2	
101	4	Morus alba	White mulberry	2	6	Fair	No	1	2	
102	3	Robinia pseudoacacia	Black locust	1.5	4.5	Fair	No	1	2	
103	4	Morus alba	White mulberry	2	6	Fair	No	1	2	
104	5	Robinia pseudoacacia	Black locust	2.5	7.5	Fair	No	1	2	
105	4	Robinia pseudoacacia	Black locust	2	6	Fair	No	1	2	
106	6	Salix babylonica	Weeping willow	3	9	Good	No	1	2	
107	4	Catalpa speciosa	Northern catalpa	2	6	Good	No	1	2	
108	3	Juglans nigra	Black walnut	1.5	4.5	Good	No	1	2	
109	9	Pyrus calleryana	Callery pear	4.5	13.5	Good	No	1	2	
110	6	Morus alba	White mulberry	3	9	Good	No	1	2	
111	14	Ulmus americana	American elm	7	21	Good	No	1	2	
112	6	Morus alba	White mulberry	3	9	Good	No	1	2	
113	10	Morus alba	White mulberry	5	15	Good	No	1	2	
114	9	Ulmus americana	American elm	4.5	13.5	Good	No	1	2	
115	8	Morus alba	White mulberry	4	12	Fair	No	1	2	
116	3	Morus alba	White mulberry	1.5	4.5	Fair	No	1	2	
117	3	Morus alba	White mulberry	1.5	4.5	Fair	No	1	2	
118	3	Morus alba	White mulberry	1.5	4.5	Fair	No	1	2	
119	3	Morus alba	White mulberry	1.5	4.5	Fair	No	1	2	
120	5	Morus alba	White mulberry	2.5	7.5	Fair	No	1	2	
121	6	Morus alba	White mulberry	3	9	Fair	No	1	2	
122	7	Juglans nigra	Black walnut	3.5	10.5	Fair	No	1	2	
123	11	Ulmus americana	American elm	5.5	16.5	Poor	No	1	2	Poor form; Minor deadwood
124	3	Juniperus virginiana	Eastern redcedar	1.5	4.5	Good	No	1	2	
125	5	Morus alba	White mulberry	2.5	7.5	Good	No	1	2	
126	4	Robinia pseudoacacia	Black locust	2	6	Good	No	1	2	
127	18	Platanus occidentalis	American sycamore	9	27	Poor	No	1	2	Large limb broken; Sparse canopy
128	5	Morus alba	White mulberry	2.5	7.5	Poor	No	1	2	Vines
129	2	Robinia pseudoacacia	Black locust	1	3	Good	No	1	2	
130	12	Platanus occidentalis	American sycamore	6	18	Fair	No	1	2	
131	14	Platanus occidentalis	American sycamore	7	21	Fair	No	1	2	Vines
132	5	Acer rubrum	Red maple	2.5	7.5	Good	No	1	2	
133	5	Liriodendron tulipifera	Tulip Poplar	2.5	7.5	Good	No	1	2	
134	8	Platanus occidentalis	American sycamore	4	12	Good	No	1	2	
135	5	Salix babylonica	Weeping willow	2.5	7.5	Good	No	1	2	
136	12	Platanus occidentalis	American sycamore	6	18	Good	No	1	2	
137	10	Platanus occidentalis	American sycamore	5	15	Good	No	1	2	
138	18	Platanus occidentalis	American sycamore	9	27	Good	No	1	2	Vines
139	8	Salix nigra	Black willow	4	12	Poor	No	1	2	Vines 50%; Deadwood
140	2	Catalpa speciosa	Northern catalpa	1	3	Good	No	1	2	
141	6	Salix babylonica	Weeping willow	3	9	Good	No	1	2	
142	2	Fraxinus pennsylvanica	Green ash	1	3	Good	No	1	2	
143	5	Platanus occidentalis	American sycamore	2.5	7.5	Good	No	1	2	
144	6	Platanus occidentalis	American sycamore	3	9	Good	No	1	2	
145	8	Platanus occidentalis	American sycamore	4	12	Good	No	1	2	
146	6	Platanus occidentalis	American sycamore	3	9	Good	No	1	2	
147	4	Catalpa speciosa	Northern catalpa	2	6	Good	No	1	2	
148	10	Salix babylonica	Weeping willow	5	15	Good	No	1	2	
149	5	Morus alba	White mulberry	2.5	7.5	Good	No	4	2	
150	2	Ulmus americana	American elm	1	3	Good	No	1	2	
151	4	Catalpa speciosa	Northern catalpa	2	6	Good	No	1	2	
152	2	Ulmus americana	American elm	1	3	Good	No	1	2	
153	2	Ulmus americana	American elm	1	3	Good	No	1	2	
154	3	Cladrastis kentukea	Yellowwood	1.5	4.5	Good	No	1	2	
155	2	Ulmus americana	American elm	1	3	Good	No	1	2	
156	6	Salix babylonica	Weeping willow	3	9	Good	No	1	2	
157	3	Salix babylonica	Weeping willow	1.5	4.5	Good	No	1	2	
158	2	Salix babylonica	Weeping willow	1	3	Good	No	1	2	
159	2	Salix babylonica	Weeping willow	1	3	Good	No	1	2	
160	1	Salix babylonica	Weeping willow	0.5	1.5	Good	No	1	2	
161	1	Salix babylonica	Weeping willow	0.5	1.5	Good	No	1	2	
162	2	Populus deltoides	Eastern cottonwood	1	3	Good	No	1	2	
163	1	Salix babylonica	Weeping willow	0.5	1.5	Good	No	1	2	
164	2	Salix babylonica	Weeping willow	1	3	Good	No	1	2	
165	5	Ulmus americana	American elm	2.5	7.5	Fair	No	3	2	Multi-stem (5",3",1")
166	5	Ulmus americana	American elm	2.5	7.5	Fair	No	3	2	Multi-stem (5",3",1")
167	6	Salix babylonica	Weeping willow	3	9	Good	No	1	2	
168	10	Salix babylonica	Weeping willow	5	15	Good	No	1	2	
169	5	Fraxinus pennsylvanica	Green ash	2.5	7.5	Fair	No	1	2	
170	4	Fraxinus pennsylvanica	Green ash	2	6	Fair	No	1	2	
171	12	Liriodendron tulipifera	Tulip Poplar	6	18	Good	No	1	2	
172	12	Salix babylonica	Weeping willow	6	18	Good	No	1	2	
173	5	Fraxinus pennsylvanica	Green ash	2.5	7.5	Good	No	1	2	
174	7	Populus deltoides	Eastern cottonwood	3.5	10.5	Good	No	1	2	
175	9	Platanus occidentalis	American sycamore	4.5	13.5	Good	No	1	2	
176	12	Populus deltoides	Eastern cottonwood	6	18	Good	No	1	2	
177	3	Liquidambar styraciflua	Sweetgum	1.5	4.5	Good	No	1	2	
178	5	Robinia pseudoacacia	Black locust	2.5	7.5	Good	No	1	2	
179	6	Populus deltoides	Eastern cottonwood	3	9	Good	No	1	2	
180	8	Catalpa speciosa	Northern catalpa	4	12	Good	No	1	2	
181	8	Platanus occidentalis	American sycamore	4	12	Good	No	1	2	Within standing water
182	10	Populus deltoides	Eastern cottonwood	5	15	Good	No	1	2	
183	10	acer negundo	Boxelder	5	15	Good	No	1	2	
184	15	Robinia pseudoacacia	Black locust	7.5	22.5	Good	No	1	2	
185	14	Robinia pseudoacacia	Black locust	7	21	Good	No	1	2	
186	4	Catalpa speciosa	Northern catalpa	2	6	Good	No	1	2	
187	8	Catalpa speciosa	Northern catalpa	4	12	Good	No	1	2	
188	8	Salix babylonica	Weeping willow	4	12	Good	No	1	2	
189	4	Catalpa speciosa	Northern catalpa	2	6	Good	No	1	2	
190	1	Catalpa speciosa	Northern catalpa	0.5	1.5	Good	No	1	2	
191	1	Salix babylonica	Weeping willow	0.5	1.5	Good	No	1	2	
192	1	Salix babylonica	Weeping willow	0.5	1.5	Good	No	1	2	
193	3	Liriodendron tulipifera	Tulip Poplar	1.5	4.5	Good	No	1	2	
194	4	Morus alba	White mulberry	2	6	Fair	No	1	2	
195	1	Catalpa speciosa	Northern catalpa	0.5	1.5	Good	No	1	2	
196	3	Salix babylonica	Weeping willow	1.5	4.5	Good	No	1	2	
197	2	Platanus occidentalis	American sycamore	1	3	Good	No	1	2	
198	10	Catalpa speciosa	Northern catalpa	5	15	Poor	No	1	2	Near concrete
199	9	Populus deltoides	Eastern cottonwood	4.5	13.5	Good	No	1	2	
200	8	Populus deltoides	Eastern cottonwood	4	12	Good	No	1	2	
201	9	Populus deltoides	Eastern cottonwood	4.5	13.5	Fair	No	1	2	
202	6	Morus alba	White mulberry	3	9	Fair	No	1	2	Heavy Lean
203	7	Dead	Dead	3.5	10.5	Dead	Yes	1	2	

No.	Revision	Date

Gordon
PROGRAMMING AND PLANNING
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE
SURVEY AND MAPPING
SECURITY CONSULTING
4501 Daly Drive
Chantilly, VA 20151
Phone: 703-263-1900
www.gordon.us.com

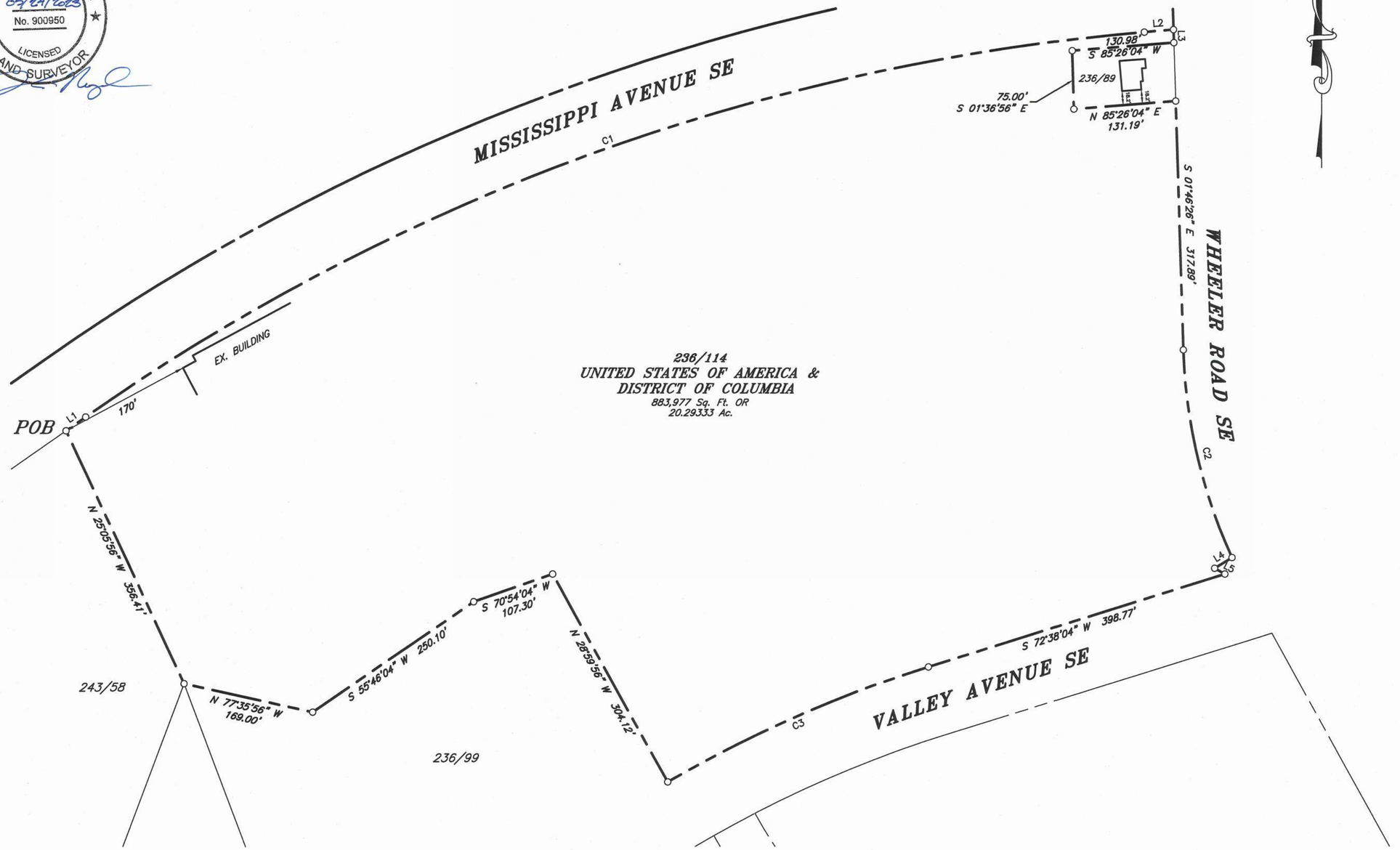
TREE INVENTORY
ON A PORTION OF
OF
SOUTHEAST TENNIS & LEARNING CENTER
SOUTHEAST
WASHINGTON, D.C.

SCALE: N/A
DATE: 05-24-2023
D153
0101
EOT
D153-0101_to01.dwg
SHEET 2 of 2

NOTES

1. THE SOURCE OF THE BEARINGS SHOWN HEREON IS THE MARYLAND COORDINATE SYSTEM OF 1983.

DISTRICT OF COLUMBIA
GEORGE E. NAGEL
05/24/2023
No. 900950
LICENSED
LAND SURVEYOR



LINE TABLE

LINE	BEARING	DISTANCE
L1	N 55°04'27" E	30.82'
L2	N 85°03'00" E	37.68'
L3	S 01°46'26" E	16.54'
L4	S 58°14'04" W	26.32'
L5	S 60°49'56" E	15.07'

CURVE TABLE

CURVE	RADIUS	ARC LENGTH	CHORD LENGTH	CHORD BEARING	DELTA ANGLE
C1	2793.76'	1461.63'	1445.01'	N 70°03'43" E	29°58'33"
C2	690.00'	275.12'	273.30'	S 13°11'49" E	22°50'44"
C3	1640.00'	366.41'	365.65'	S 66°14'02" W	12°48'03"

BOUNDARY SURVEY
FOR
SE TENNIS & LEARNING CENTER
PARCEL 236/114
701 MISSISSIPPI AVENUE SE, WASHINGTON, D.C.

DRAWN BY: M.E.H.	DATE: 5/24/2023
CHECKED BY: G.E.N.	DATE: 5/24/2023
SCALE:	1" = 100'

FOX & ASSOCIATES, INC.
ENGINEERS • SURVEYORS • PLANNERS
981 MT. AETNA ROAD
HAGERSTOWN, MARYLAND 21740
PHONE: (301)733-8503
FAX: (301)733-1853
82 WORMAN'S MILL CT. STE. 'G'
FREDERICK, MARYLAND 21701
PHONE: (301)695-0880
FAX: (301)293-6009

FOX & ASSOCIATES INC. Est. 1966

DISTRICT SE
TAX MAP No. 8
DWG. No. C-3818

FOX & ASSOCIATES INC.
Est. 1966
ENGINEERS
SURVEYORS
PLANNERS
LANDSCAPE ARCHITECTS

981 Mt. Aetna Road
Hagerstown, MD 21740
Phone: 301-733-8503
Fax: 301-733-1853
Email: foxhagerstown@foxassociatesinc.com

May 24, 2023

DESCRIPTION OF PARCEL 236/114

Situate south of Mississippi Avenue SE, north of Valley Avenue SE, and west of Wheeler Road SE, Washington D.C., and being more particularly described as follows:

Beginning for the said parcel of land at a point in the southern line of Mississippi Avenue SE, said point being the northeast corner of Parcel 243/58, thence with the southern line of Mississippi Avenue SE the following three courses;

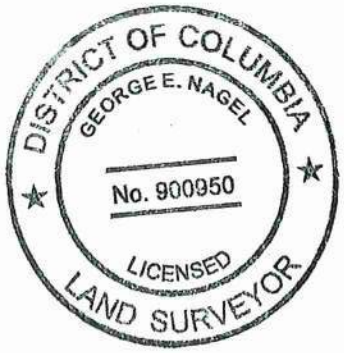
1) North 55° 04' 27" East	30.82 feet, thence with a tangent curve to the right, having a radius of 2,793.76 feet, an arc length of 1,461.63, a delta of 29° 58' 33", and a chord of
2) North 70° 03' 43" East	1,445.01 feet, thence
3) North 85° 03' 00" East	37.68 feet to the western line of Wheeler Road SE, thence with the western line of Wheeler Road SE
4) South 01° 46' 26" East	16.54 feet to the northeast corner of Parcel 236/89, thence with Parcel 236/89 the following three (3) courses;
5) South 85° 26' 04" West	130.98 feet, thence
6) South 01° 36' 56" East	75.00 feet, thence
7) North 85° 26' 04" East	131.19 feet to the western line of Wheeler Road SE, thence with the western line of Wheeler Road SE the following four (4) courses;
8) South 01° 46' 26" East	317.89 feet, thence with a tangent curve to the left, having a radius of 690.00 feet, an arc length of 275.12 feet, a delta of 22° 50' 44", and a chord of
9) South 13° 11' 49" East	273.30 feet, thence
10) South 58° 14' 04" West	26.32 feet, thence
11) South 60° 49' 56" East	15.07 feet to the northern line of Valley Avenue SE, thence with the northern line of Valley Avenue SE the following two (2) courses;

12) South 72° 38' 04" West	398.77 feet, thence with a tangent curve to the left, having a radius of 1,640.00 feet, an arc length of 366.41 feet, a delta of 12° 48' 03", and a chord of
13) South 66° 14' 02" West	365.65 feet to the southeast corner of Parcel 236/99, thence with Parcel 236/99 the following four (4) courses;
14) North 28° 59' 56" West	304.12 feet, thence
15) South 70° 54' 04" West	107.30 feet, thence
16) South 55° 46' 04" West	250.10 feet, thence
17) North 77° 35' 56" West	169.00 feet to the eastern line of Parcel 243/58, thence with Parcel 243/58
18) North 25° 05' 56" West	356.41 feet to the Point of Beginning, containing 883,977 square feet or 20.29333 acres of land more or less.

Being all of Parcel 236/114.

The bearings described above are in the datum of the Maryland Coordinate System of 1983.

George E. Nagel
Professional Land Surveyor No. 900950



EHLERT BRYAN DC
consulting structural engineers

DISTRICT OF COLUMBIA – SOUTHEAST DC TENNIS CENTER
SCHEMATIC DESIGN STRUCTURAL NARRATIVE

The project consists of a new indoor tennis center, exterior tennis and pickleball courts, miscellaneous sitework, and a new bridge connecting the new portion of the site over Oxon Run to the existing tennis facilities. The current concept includes eight outdoor pickleball courts, six outdoor tennis courts, and four indoor tennis courts within the tennis center. The indoor tennis center features restrooms, locker rooms, office spaces, conference rooms, a multipurpose room, warmup/stretching room, utility and storage rooms, and a mezzanine level with spectator seating and MEP spaces. The tennis center building measures approximately 137ft x 328ft with a maximum height of approximately 44ft.

The indoor tennis center building will consist of two sections: a pre-engineered metal building containing the tennis courts, mezzanine, and MEP spaces measuring approximately 270ft x 137ft and a structural steel framed entry building measuring approximately 58ft x 137ft. The pre-engineered metal building will be designed and supplied by a specialty engineer with the foundations designed by Ehlert Bryan for the specified loadings received from the specialty engineer.

The structural steel framed building entry portion of the building it anticipated to be metal roof deck over steel beams and/or bar joists supported by steel girders and steel columns. The lateral system is anticipated to be steel braced frames with HSS diagonal bracing. Foundations will be designed in accordance with the recommendations of the geotechnical recommendations upon completion of that investigation.

The exterior finishes of the building are anticipated to consist of a mixture of masonry veneer and panel siding materials with the extents and types to be finalized as the design progresses.

Project Design Features

Design challenges and unique aspects of the project include the following:

- The site grading will require a partial height retaining wall as part of the exterior building wall along the Valley Ave. side of the tennis center building. An exterior stair and areaway will provide access to grade at the steel framed portion of the building, while an interior stair with a landing at grade level will provide exterior access at the pre-engineered metal building.
- The foundations along the plan North side of the building will be configured to avoid the zone of influence and easement widths for an existing 20” water line and 24” sanitary line to remain on the site. It is anticipated that this will require offset/property line type footings with strap beams at the walls and columns along the plan North face of the building.
- Strap Beams/Grade Beams are anticipated to run in the plan North-South direction at pre-engineered building column locations to resolve the outward thrust forces at the column bases and the eccentricity resulting from offset column footings along the plan north side of the pre-engineered metal building. Below grade utilities will be coordinated with the grade beam sizes and locations.
- Slab-on-grade options: There are two options for slab-on-grade construction, particularly within the pre-engineered portion of the building. A conventional slab-on-grade reinforced with welded wire fabric is anticipated to be viable, pending the results of the geotechnical investigation. It is anticipated that a post-tensioned slab-on-grade will also be a viable option. The post-tensioned slab option would provide a tighter slab that is more resistant to cracking and better able to bridge over soft spots within the subgrade. A post-tensioned slab was used in the adjacent tennis center building on the opposite side of Oxon Run, likely primarily due to the soil conditions. While on this portion of the site a post-

tensioned slab may not be structurally necessary, but could be considered an upgrade to the slab at an increased cost.

- A pre-engineered bridge spanning Oxon Run designed by a specialty engineer in conjunction with the project civil engineer, including foundation for the bridge structure.

STRUCTURAL DESIGN CRITERIA

Structural Design Codes

The project will be designed to meet the current District of Columbia Construction Codes (DCMR-12) Supplement of 2017, the 2015 International Building Code (IBC), American Society of Civil Engineers (ASCE) 7-10 and other industry standards enforced in the District of Columbia. These include, but are not necessarily limited to:

1. Building Code Requirements for Reinforced Concrete ACI-318-14, American Concrete Institute, Detroit, MI

2. Specifications for Structural Concrete for Buildings ACI 301-10, American Concrete Institute, Detroit, MI

3. Manual of Steel Construction, American Institute of Steel Construction, Chicago, IL

4. AISI Specification for the Design of Cold-Formed Steel Structural Members, American Iron and Steel Institute, Washington, DC

5. Building Code Requirements for Masonry Structures and Specifications for Masonry Structures ACI-530 / 530.1, American Concrete Institute, Detroit, MI

Design Loads

1. Building Risk Category III

2. Dead Loads:
   - In accordance with IBC, sections 1606 and 1605.3.1

3. Snow Loads:
   - In accordance with IBC, sections 1607 and 1605.3.1
   - Roof minimum – 30 PSF plus snow drift, as required
   - Snow Importance Factor – 1.15
   - Ground Snow Load (Pg) – 25 PSF
   - Flat Roof Snow Load (Pf) – 21 PSF
   - Snow Exposure Factor (Ce) - 1.0
   - Thermal Factor (Ct) - 1.0

4. Live Loads:
   - Stairs and Exits – 100 PSF
   - Assembly Spaces – 100 PSF
   - 1st Floor Corridors – 100 PSF
   - Offices – 50 PSF + Partition
   - Partitions – 15 PSF
   - Light Storage/Mechanical Rooms – 125PSF
   - Note: Live Load Reduction will be Utilized as allowed by Code where applicable

5. Wind Loads (ASCE 7-10 for Building Risk Category III):
   - Basic Wind Speed (Ultimate) = 120 MPH
   - Basic Wind Speed (Service, 0.77*Vult for MWFRS) = 92 MPH
   - Exposure B

6. Seismic Loads:
   - Seismic Importance Factor = 1.25
   - Site Classification – D (assumed, to be confirmed with geotechnical study)
   - Seismic Design Category – To be determined, B is assumed
   - Ss = 0.119g
   - S1 = 0.051g
   - Equivalent Lateral Force Method

Materials

1. Cast in place concrete:
   - Typical slab on grade (interior) – 3,500 PSI
   - Foundations – 4,000 PSI
   - Site retaining walls (if required) – 4,500 PSI
   - Concrete exposed to freeze/thaw: 0.45 max water/cement ratio with 6% air-entrainment

2. Concrete reinforcing steel
   - Deformed Bars - ASTM A615, Grade 60
   - Welded Wire Fabric – ASTM A185
   - Epoxy Coated Reinforcement – anticipated at site retaining walls

3. Concrete Unit Masonry:
   - Concrete Masonry Units – ASTM C90, f'm = 2,000 PSI
   - Mortar – ASTM C270, Type M or S
   - Grout – ASTM C476, f'm = 2500 PSI
   - Deformed Bars - ASTM A615, Grade 60

4. Structural Steel:
   - Primary Steel Framing – ASTM A992
   - Miscellaneous Steel – ASTM A36
   - Hollow Steel Sections – ASTM A500, Gr C
   - Bolts – ASTM A325 (High Strength)

5. Cold-Formed Metal Framing:
   - 18 gage and lighter units: ASTM A653, ASTM A875, ASTM A792, or ASTM A463. Minimum Yield Strength of 33 KSI.
   - 16 gage and heavier units: ASTM A653, ASTM A875, ASTM A792, or ASTM A463. Minimum Yield Strength of 50 KSI.

6. Foundation System/Allowable Soil Bearing Capacity:
   - Per recommendations of Geotechnical Engineer based on subsurface exploration. A geotechnical study is in progress for this site. For the purposes of this narrative, conventional shallow spread and strip footings with a slab-on-grade are assumed.

PROPOSED STRUCTURAL BUILDING SYSTEMS

- **Foundations** - A geotechnical investigation for the site is in progress. The foundations and

underslab/perimeter drainage design will be based upon the recommendations provided in the geotechnical report. For schematic design purposes, the following is assumed:

- Conventional concrete spread and strip footings bearing on suitable natural materials or engineered fill with allowable bearing pressures as specified in the geotechnical recommendations.
- Offset/property line footings along the plan North side of the building as required to avoid the zone of influence and easements for existing below grade utilities to remain.
- Concrete grade beams/strap beams spanning the full north-south dimension of the building to resolve outward thrust at the pre-engineered metal building and the eccentricities at any offset footings required. Shorter length strap beams are anticipated to be necessary at the North side of the steel framed portion of the building.
- Slab-on-grade: 5-inch thick concrete slab reinforced with one layer of 6x6-W2.1xW2.1 WWF over a vapor barrier and compacted #57 stone or optional upgrade to 5-inch thick post-tensioned slab on grade reinforced with one layer 6x6-W2.1xW2.1 WWF and fully encapsulated PT tendons at 4'-0" o.c. in each direction over a vapor barrier and compacted #57 stone.
- A partial height retaining wall is anticipated along the plan south exterior wall of the building due to exterior grade elevations in relation to the proposed finished floor.

- Pre-Engineered Metal Building
  - The pre-engineered metal building and mezzanine is delegated design by a specialty engineer/supplier. It is anticipated that the pre-engineered building roof framing will consist of built-up bent frames spanning in the building short direction with purlins spanning between the bent frames. The mezzanine is anticipated to consist of concrete on metal deck over steel beams and columns. The lateral system of the metal building is anticipated to be composed built-up bent moment frames in the short direction and braced frames or moment frames in the building long direction. An expansion joint will separate the pre-engineered portion of the building from the structural steel framed portion of the building.

- Structural Steel Roof Framing
  - 1-1/2", 20 gage Type B wide rib metal roof deck on steel beams and/or steel bar joists at 5'-0" o.c. maximum and steel girders. Beam/joist spacing will be decreased as required at areas of heavy snow drift loading resulting from the various roof elevations, particularly at the low flat roof areas.

- Columns – W10 typical columns at the entry portion of the building. Built-up bent frames are anticipated for the pre-engineered metal building with addition interior columns for mezzanine support as required.

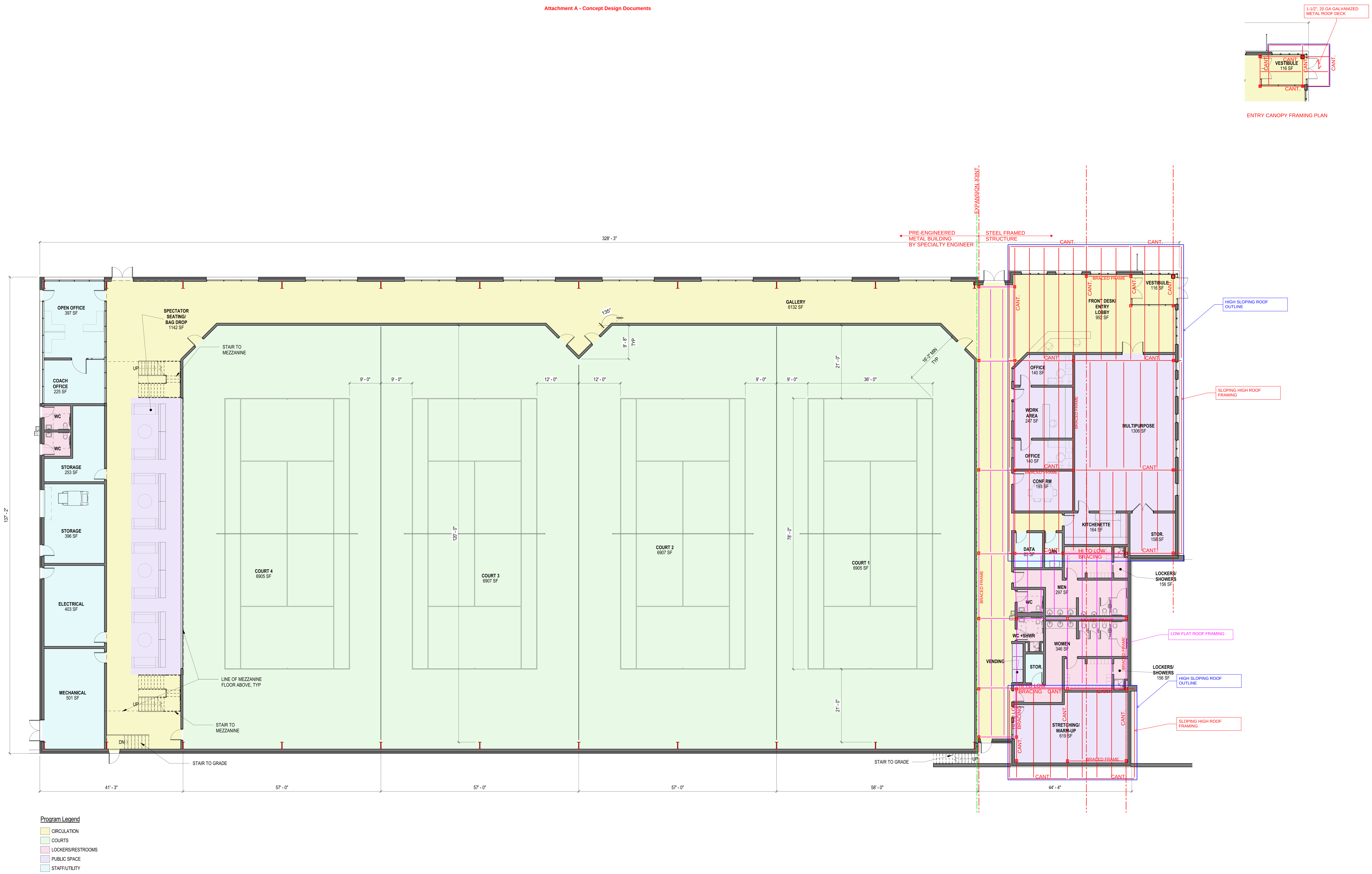
- Lateral System - The lateral system of the steel framing section of the building will consist of steel braced frames and high to low bracing between the various roof levels.

- Exterior Walls – 6" or 8" cold formed metal stud framing supported at the floor and roof levels designed by the contractor's specialty engineer based on the provided performance requirements.

- Stairs – Site stairs to be concrete on-grade. Stairs within the metal building are anticipated to be steel framed concrete filled metal pan as part of the metal building design.

ATTACHMENTS: SE DC Tennis Center – Concept Roof Framing Plan

END



CONCEPT ROOF FRAMING PLAN

SCHEMATIC DESIGN PACKAGE

EHLERT BRYAN DC

Department of General Services - SouthEast Tennis and Learning Center (SETLC)

FIRE PROTECTION, PLUMBING, MECHANICAL, & ELECTRICAL SYSTEMS CONCEPT DESIGN INTENT NARRATIVE

PREPARED FOR
MTFA Architecture

EXECUTIVE SUMMARY

2RW Consultants, Inc. has been engaged by MTFA Architects to provide design services for Fire Protection, Plumbing, Mechanical, and Electrical (FPME) systems for the new tennis facility and site expansion in Washington DC. This project is an expansion of the existing facility site and had a cross over pedestrian bridge over Oxon Run to connect the existing facility with the new facility. The following design concept intent narrative is an overview of the proposed engineering systems in the context of the proposed building to aid in conceptual pricing exercises.

APPLICABLE CODES AND STANDARDS

- 2017 DCRA codes
- 2017 NFPA 70 (NEC)
- NFPA 13
- NFPA 72

FIRE PROTECTION SYSTEMS

Automatic Sprinkler Systems:
The entire building is to be protected by wet pipe sprinkler system. All fire suppression incoming service will be located in a central water room along with domestic water. Water supply pressure test information will be required to determine if a fire pump is required but due to the relatively low height and low hazard (flow) for the building, a fire pump is not anticipated. A test header and FDC shall be mounted on the building exterior (in-line type), with final location to be approved by the fire marshal. Fire suppression water line size anticipated to be a 6". Service shall be provided with double check, detector assembly (DCDA) backflow preventer in accordance with DC water requirements.

Fire Alarm Systems:
A new digital addressable fire alarm system shall be provided. Horn/strobe devices shall be provided throughout the facility where required by NFPA. Smoke detection shall be provided where required by

NFPA. Heat detector shall be provided in fire service room that has both high and low temperature alarm points. Manual pull stations will be located at all building exits. An LCD remote annunciator shall be located near the building main entrance in a location approved by the AHJ. The fire alarm control panel shall be capable of both POTS and VOIP dial communicator connections.

PLUMBING SYSTEMS

Domestic Water Service:
The building will utilize a main incoming water service feed from DC water utility. Incoming water meter service is anticipated to be 2" with a 1.5" meter. If irrigation is required, the meter size will increase to a 2" meter with a 3" main.

Domestic Water Piping:
The main water distribution throughout the facility is anticipated to be 2" routed from the riser room to the office space restroom/breakrooms. Domestic water shall be distributed through the building via insulated copper piping with code compliant piping insulation. Pressure regulating valves shall be provided as required on the piping to ensure the pressure in the piping is at acceptable level for equipment. Hose bibs shall be provided on each exterior face of the building and in each restrooms. Water connections to ice, coffee machines, and refrigerators shall have in-wall valve stops with integral code compliant backflow prevention.

An in-grade lockable freezless yard hydrant will be provided at each of the following to facilitate washdown: Pickle Ball, Practice, and Event Courts. Final location will be coordinated with landscape and civil.

Sanitary Waste and Vent Piping:
The building will be connected to the DC water sanitary storm system through a new 4" sanitary lateral. This will serve all the domestic water waste requirements. PVC Schedule 40 pipes can be used for under slab for sanitary systems. All floor drains which do not receive water on a regular basis will require a pressure drop trap primer or trap seal. Vent piping will be routed directly to the roof through the exterior walls. All restrooms and janitor closets shall have floor drains tied to the septic system.

Storm Water Systems:
Rainwater collected on the sloped roof portion of the main structure (tennis court areas) of the building structure will be drained through external gutters. The rain leaders will collect at below grade connections and route to the site storm sewers or discharged to grade. All exterior gutters and storm connections will be coordinated between the architect and civil. The building reverse sloped roof will drain to the section of flat roof and will contain two primary and two overflow drains (each anticipated to be 6". Storm roof drain leaders will be routed inside, collected and the primary will be connected to the site storm system whereas the secondary drain system will be collected and connected to an exterior mounted cow's tongue drain body and spill to grade.

Domestic Hot Water Systems:
A new 75-gallon, 75 MBH gas water heater will serve water for the restrooms, kitchenette, and janitor's closet fixtures on the plan East portion of the building. The water heater will be located in a central

location near the main restroom area. A small self-contained hot water recirculation loop will be provided to ensure timely hot water delivery (eco-circ or similar). A 2nd smaller 10 gallon, 2.5 kW electric water heater will be provided to serve the two smaller single use restrooms on the plan west of the building.

Plumbing Fixtures:
All fixtures will be low flow type to maximize LEED water usage credits. All urinals and water closets will be automatic flush valve style (solar/battery operated). All lavatory faucets will be automatic (solar/battery). All water fountains shall be ADA compliant and include bottle filling stations. All exterior water fountains will be exterior rated and freeze-less.

Water hammer arrestors shall be placed on plumbing fixture supply piping in accordance with the latest adopted version of the IPC. The water hammer arrestors shall be installed in an accessible location. These are used to minimize transference of water vibration noise to the space.

Gas Utility Service:
The building shall be served by a new 2" gas service and meter located on the outside of the building. Gas shall be distributed to the appliances within the building with Schedule 40 black steel piping and fittings suitable for the gas pressure. Gas equipment includes the hot water heater and HVAC equipment.

MECHANICAL SYSTEMS

The building will be fully conditioned (heated and cooled). For this project, two HVAC options are being considered: for the Eastern office spaces (the tennis courts HVAC system does not change between options.

Common HVAC items between options:

Tennis Courts: The tennis courts will be heated and cooled via two DX split system heat pump units with the outdoor units located on-grade and the indoor units located in the mezzanine mechanical space. Outside air will be ducted directly to the units through building exterior louvers. Units shall be capable of 100% economizer, dehumidification sequence, gas fired supplemental heater section, and BACNET communication capability. Air distribution will be through a single run of fabric duct (one run per AHU) running west to east at the north and south end of the courts. The courts shall also have infrared ceiling hung natural gas infrared heaters to provide supplemental space comfort heating. HVLS or destratification fans will be provided to increase air movement in the facility.

Office/storage (plan west areas):
Single DX split system heat pump unit with the outdoor unit located on-grade and the indoor unit located in the mezzanine mechanical space above. Outside air will be ducted directly to the unit through building exterior louver. Unit shall be capable of 100% economizer, dehumidification sequence, gas fired supplemental heater section, and BACNET communication capability. Air distribution will be through sheet metal duct and diffusers.

Support areas (mechanical, electric rooms):
Unit heaters and exhaust fans (if needed). Fans would provide circulation air only with building air and be controlled via line voltage thermostats.

HVAC Option 1 (lower energy usage):

Office/multipurpose (plan East areas):

Single VRF heat pump system (single outdoor unit) with interior branch selector and mix of ducted/ductless units. The condenser unit will be mounted on the flat roof. A dedicated outside air unit (DOAS) heat pump unit will provide conditioned outside air delivery to the occupied spaces and exhaust for central gang restrooms. Unit shall have a plate/frame heat exchanger, gas fired supplemental heater section, and BACNET communication capability.

HVAC Option 2 (higher energy usage):

Office/multipurpose (plan East areas):

Approximately 2-3 constant volume heat pump roof top units (located on flat roof) to serve different zones. Central exhaust is provided for the core gang restrooms operating at constant volume. RTUs will be capable of 100% economizer, DCV, gas fired supplemental heater section, and BACNET communication capability.

Outdoor Ambient Conditions:

Summer: 97 degrees F. db/73 degrees F. wb.
Winter: 22 degrees F. db

Indoor Conditions: No humidification control has been provided for winter operation.

Room Type	Summer Cooling Setpoints	Winter Heating Setpoints	Remarks
Office/multipurpose Spaces	74-76F db, +/- 2F and 50% RH +/- 10%	65-70F db, +/- 2F	Heated and Cooled w/ Ventilation
Tennis Courts	76-78F db, +/- 2F and 50% RH +/- 10%	65-68F db, +/- 2F	Heated and Cooled w/ Ventilation
Mechanical and Electrical Spaces	75-85F db, +/- 3F	60-68F db, +/- 2F	Heating and Ventilated
Restrooms	65-70F db, +/- 2F	65-70F db, +/- 2F	Heating, cooled and Exhausted

ELECTRICAL SYSTEMS

Electrical Service:

The building will be supplied via a new underground primary, pad mount transformer, and underground secondary. Incoming electric service is anticipated to be rated for 800A, 480/277V, 3phase, 4wire connected to an incoming interior CT cabinet. The utility work duct-bank service laterals and transformer location shall be coordinated with PEPCO and adjusted/coordinated as required with the site utilities.

Power utility provider is PEPCO and all work will be done in accordance with their standards and requirements.

Normal Power Systems and Distribution

Power for the building will be distributed through a 480/277V, 3 phase, 4 wire Main Switchboard rated at 800A buss and 800A main circuit breaker. This main switchboard will distribute to smaller branch circuit panelboards throughout the building in addition to serving the following loads directly: Tennis Court HVAC units. Main switchboard will have integral surge suppression and capable power meter.

Refer to the electric gear schedule below for anticipated panel quantities, sizes, and locations.

Equipment Name	Location	Voltage	Fed From	Bus/MCB Rating (A)	Distribution
MSB	Main electric	480/277	CT Cabinet	800/800	1 dist.sects.
Panel H1	Main electric	480/277	MSB	400/MLO	84 Pole
Panel H1A	East side Elec Closet	480/277	MSB	225/MLO	42 Pole
T-1	Main electric	480-208/120	MSB	150 kVA	N/A
Panel P1	Main electric	208/120	T112.5	600/600	DP Construction
Panel P1A	Electric 161	208/120	P1	400/MLO	84 Pole

Systems wiring will be routed concealed throughout the building. An adequate number of outlets will be provided in all areas of the building.

General receptacles shall be provided throughout the building in accordance with typical office/tennis court design. Power is to be run to all equipment shown in the architectural floorplans as required. Notable additional locations are listed below:

- 1 duplex at each end of the court for ball machines
- Power for AV/IT equipment for the building
- Empty conduit infrastructure (power and data) for (2) 2 port level 2 chargers
- Power/data floor boxes for the multipurpose room
- General use duplex receptacle at each end of the event and practice courts for ball machines.
- Four general use duplex receptacle (one in each quadrant) for the pickleball courts.
- The pedestrian bridge shall have a lockable duplex receptacle at each end and every 25’ OC.

Emergency Power Systems and Distribution

All emergency power will utilize local/integral batteries. No backup generator is provided.

Interior Lighting

All luminaires will utilize high quality integral LED light source. Minimum Color Rendering Index (CRI) will be 80. Color temperatures will be between 3500 and 4100 degrees kelvin. All lighting will be capable of dimming. In general, lighting will be designed per IES Standards

Tennis court lighting will be specialized court lighting fixtures from Musco, Sports Lighting Interior, or Cooper Ephesus. Lighting packages will be combined with the vendor providing the exterior court lighting to provide a single source for specialty lighting. Interior court lighting is anticipated to be indirect style and connected to the exterior tennis lighting control system to provide continuity of control platforms.

Unless otherwise noted, lighting controls will be standalone (non-centralized) systems to meet the DCRA energy code. CAT 5 digital based system: Nlight, Wattstopper DLM, or Hubbell NX.

All emergency egress lighting will be specified to meet the minimum 1fc requirement and will remain on 24/7. All emergency lighting will utilize integral battery packs or emergency lighting unit fixtures. Exit signs will be located at all exit doors and as required to direct occupants along the path of egress.

Exterior Lighting

General exterior lighting will consist of building mounted lighting for direct illumination of the spaces surrounding the building. All other site and tennis court lighting is designed by others (refer to other report sections)

All exterior lighting will be powered from the building. Tennis court lighting will be powered and controlled via local override buttons on each court along with timeclock and remote access functionality. All other general site lighting will be controlled via central photocell with HOA contactors.

LEED NC v4

53 pts "yes"
19 pts "maybe"

LEED v4 for BD+C New Construction

SE Tennis & Learning Center

July 11, 2023

SUSTAINABLE BUILDING PARTNERS

Integrative Process — Possible Points: 1

Y	?	N			
1			Credit 1	Integrative Process	1

Location and Transportation — Possible Points: 16

Y	?	N			
		16	Credit 1	LEED for Neighborhood Development	PATH 1: 16
1			Credit 2	Sensitive Land Protection	PATH 2: 1
1		1	Credit 3	High Priority Site	2
2		3	Credit 4	Surrounding Density & Diverse Uses	5
3		2	Credit 5	Access to Quality Transit (v4.1)	5
1			Credit 6	Bicycle Facilities (v4.1)	1
1			Credit 7	Reduced Parking Footprint (v4.1)	1
1			Credit 8	Electric Vehicles (v4.1)	1

Sustainable Sites — Possible Points: 10

Y	?	N			
Y			Prereq 1	Construction Activity Pollution Prevention	Required
1			Credit 1	Site Assessment	1
		2	Credit 2	Site Development - Protect or Restore Habitat (v4.1)	2
1			Credit 3	Open Space	1
3			Credit 4	Rainwater Management (v4.1)	3
		2	Credit 5	Heat Island Reduction	2
	1		Credit 6	Light Pollution Reduction	1

Water Efficiency — Possible Points: 11

Y	?	N			
Y			Prereq 1	Outdoor Water Use Reduction	Required
Y			Prereq 2	Indoor Water Use Reduction	Required
Y			Prereq 3	Building-Level Water Metering	Required
1	1		Credit 1	Outdoor Water Use Reduction	2
2	1	3	Credit 2	Indoor Water Use Reduction	6
		2	Credit 3	Cooling Tower Water Use (v4.1)	2
	1		Credit 4	Water Metering	1

Energy and Atmosphere — Possible Points: 33

Y	?	N			
Y			Prereq 1	Fundamental Commissioning and Verification	Required
Y			Prereq 2	Minimum Energy Performance	Required
Y			Prereq 3	Building-Level Energy Metering	Required
Y			Prereq 4	Fundamental Refrigerant Management	Required
5		1	Credit 1	Enhanced Commissioning	6
6	4	8	Credit 2	Optimize Energy Performance	18
1			Credit 3	Advanced Energy Metering	1
		2	Credit 4	Demand Response (v4.1)	2
	2	3	Credit 5	Renewable Energy Production (v4.1)	5
		1	Credit 6	Enhanced Refrigerant Management	1

Materials and Resources — Possible Points: 13

Y	?	N			
Y			Prereq 1	Storage and Collection of Recyclables	Required
Y			Prereq 2	Construction and Demolition Waste Management Planning	Required
1	2	2	Credit 1	Building Life-Cycle Impact Reduction (v4.1)	5
1	1		Credit 2	Product Disclosure & Optimization - EPDs (v4.1)	2
	1	1	Credit 3	Product Disclosure & Optimization - Sourcing of Raw Materials (v4.1)	2
1	1		Credit 4	Product Disclosure & Optimization - Material Ingredients (v4.1)	2
2			Credit 5	Construction and Demolition Waste Management (v4.1)	2

Indoor Environmental Quality — Possible Points: 16

Y	?	N			
Y			Prereq 1	Minimum Indoor Air Quality Performance	Required
Y			Prereq 2	Environmental Tobacco Smoke Control (v4.1)	Required
1	1		Credit 1	Enhanced Indoor Air Quality Strategies	2
3			Credit 2	Low-Emitting Materials (v4.1)	3
1			Credit 3	Construction Indoor Air Quality Management Plan	1
	2		Credit 4	Indoor Air Quality Assessment (v4.1)	2
1			Credit 5	Thermal Comfort	1
1		1	Credit 6	Interior Lighting	2
		3	Credit 7	Daylight (v4.1)	3
1			Credit 8	Quality Views	1
		1	Credit 9	Acoustic Performance (v4.1)	1

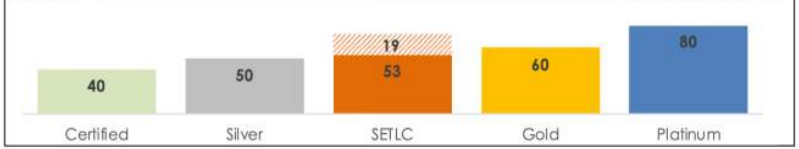
Innovation — Possible Points: 6

Y	?	N			
5			Credit 1	Innovation in Design	5
1			Credit 2	LEED Accredited Professional	1

Regional Priority Credits — Possible Points: 4

Y	?	N			
1			Credit 1	Regional Priority: Rainwater Management (3 pts)	1
	1		Credit 2	Optimized Energy (10 pts)	1
1			Credit 3	Regional Priority: Green Vehicles (1 pt)	1
1			Credit 4	Regional Priority: Reduced Parking Footprint (1 pt)	1

53 19 38 — Possible Points: 110



LEED Design Prerequisites

DC DGS

- Recycling / Strategy: Ongoing consumables, batteries, e-waste
- No Smoking / Policy: No smoking inside or outside *(within 25')*
- Utility Data / Commitment: Share energy & water usage

MTFA

- Water Fixtures / EPA WaterSense plumbing fixtures (WC, urinals, showers)
- Appliances / ENERGY STAR Appliances (clothes/dishwasher, ice maker)

MEP

- Metering / Whole-building water, electricity & gas meters
- Ventilation / Comply with ASHRAE 62.1-2010
- OA Monitoring / Outdoor airflow intake measurement devices
- Refrigerants / No CFC-based refrigerants

LEED Design Targets

MTFA

- IP Charettes (2) / 2 early analyses *(energy, water, social equity, health, resilience, etc.)*
- Bike Parking / 4 long term; 5 short term; 1 shower
- Electric Vehicles / 2 EV charging or 6 EV ready parking spaces
- Water Fixtures / 1.28 gpf WC, 0.125 gpf urinal, 0.5 gpm lav, 1.75 gpm shwr
- Finishes / Low emitting Paint, Ceiling, Insulation, & Flooring
- Enhanced IAQ / Entry walk-off mats & deck-to-deck partitions

Civil

- Rainwater / Retain 90th percentile (Green Roof, Cistern, etc.)
- Irrigation / 50%+ reduction in potable water usage
- Open Space / 30%+ accessible; of which, 25% vegetated

LEED Design Targets

MEP

- Energy Meters / Submeter energy end uses (≥ 10% of total consumption)
- Enhanced IAQ / MERV 13 filters
- Thermostats / All regularly occupied spaces
- Indoor Lighting / LED & 3-level lighting controls

-- Maybe Credits --

- Outdoor Lighting / Do not exceed BUG rating B0-U2-G2 (LZ2)
- Water *Meters* / Submeter indoor fixtures, irrigation, hot water
- Sensors / CO2 sensors in multi-occupant spaces

DC DGS

- Commissioning / Fundamental, Enhanced, & Enclosure *(Required by Code)*
- Innovation / Resilience Assessment, Gender-neutral Restrooms, etc.

District of Columbia Code

DC Green Building Act

- **Application:** project area ≥10,000 sf
- **Required:** LEED BD+C Silver
- **Verification**: DOB check at Permit and LEED certification w/in 24 months

2017 DC Energy Conservation Code

- **Compliance paths:** Prescriptive, w/ Envelope Trade-off, Performance, ACP
- **Commissioning:** MEP & Envelope
- **Submetering:** all end-uses
- **Solar-ready design:** 25% gross roof allocated for future solar
- **EV-ready design:** 20% of parking spaces EV ready
- **..Benchmarking & BEPS..**