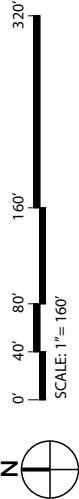
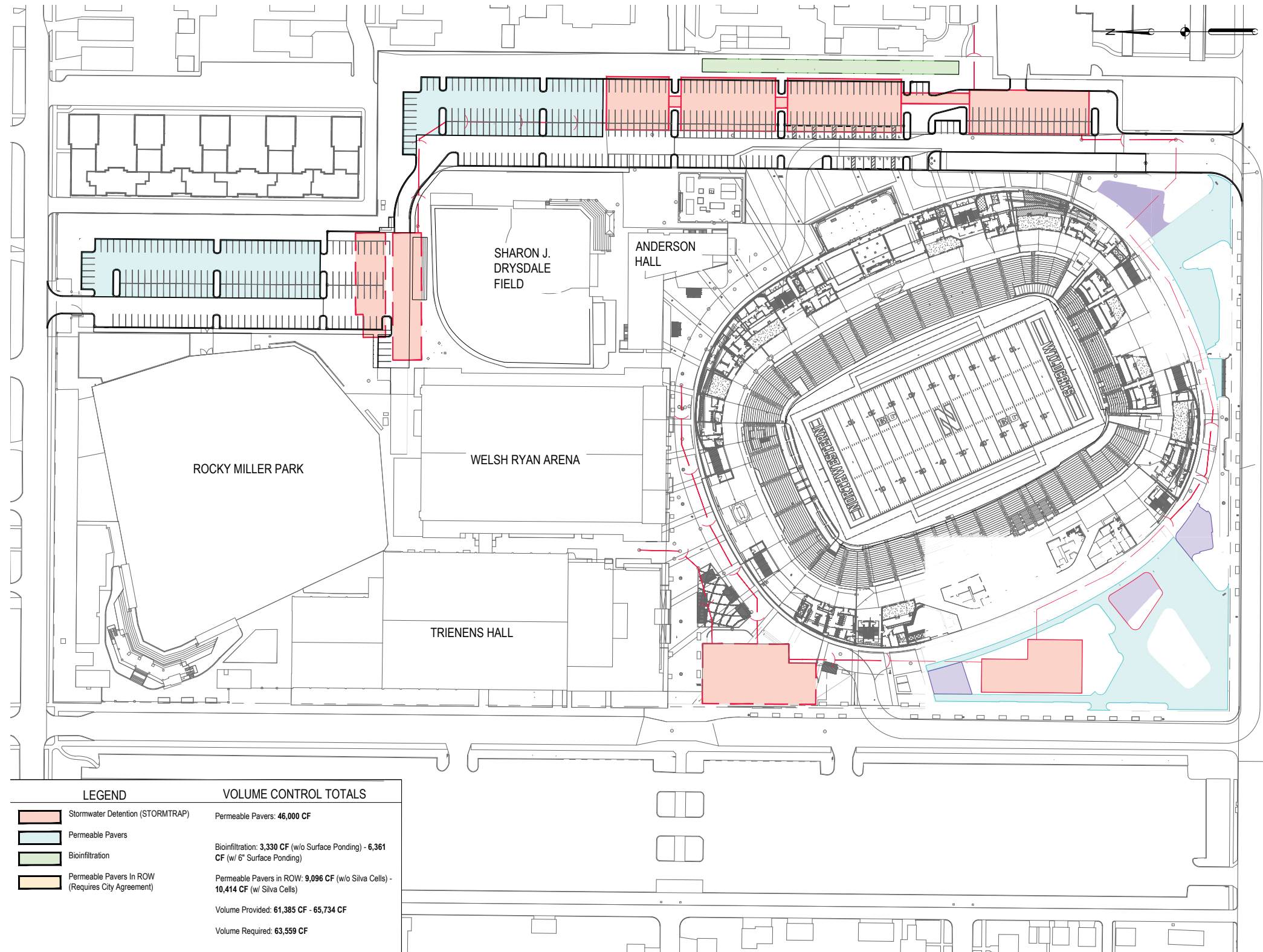


SITE UTILITIES PLAN





SUMMARY

The Drainage Plan presents the concepts for overall storm and groundwater management. The development of engineering solutions and calculations is currently in progress.

Detention will be provided via existing and new underground vaults. The proposed vaults will be interconnected allowing them to function as one large system.

Volume control will be provided using a combination of permeable pavement, bioretention practices, and aggregate storage.

LEGEND

- Stormwater Detention (STORMTRAP)
- Permeable Pavers
- Play Surface
- Bioretention
- Synthetic Turf

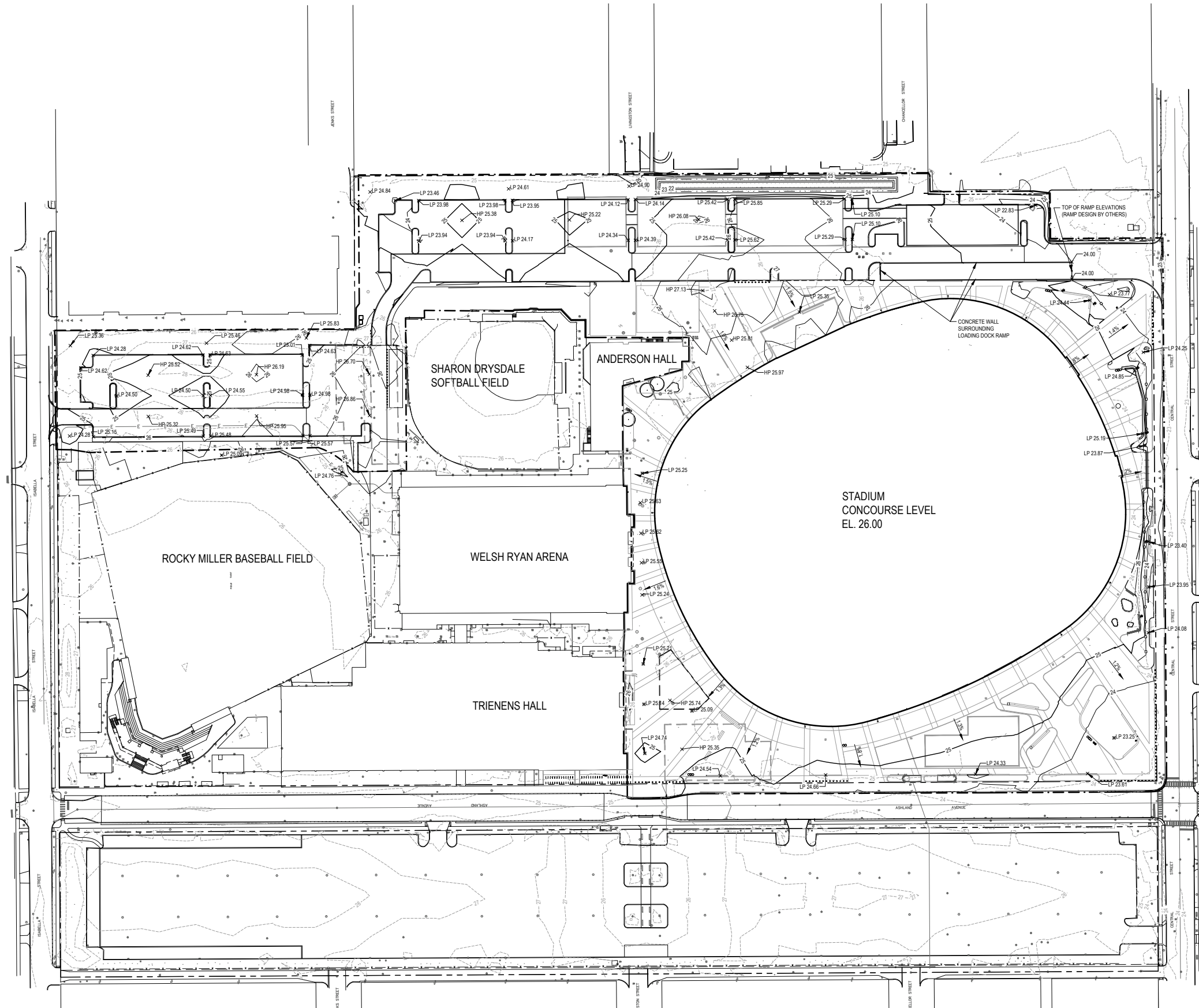
LEGEND	VOLUME CONTROL TOTALS
<span style="display: inline-block; width: 20px; height: 10px; background-color: #f4a460; border: 1px solid black; margin-right: 5px;"></span> Stormwater Detention (STORMTRAP)	Permeable Pavers: <b>46,000 CF</b>
<span style="display: inline-block; width: 20px; height: 10px; background-color: #add8e6; border: 1px solid black; margin-right: 5px;"></span> Permeable Pavers	Bioinfiltration: <b>3,330 CF</b> (w/o Surface Ponding) - <b>6,361 CF</b> (w/ 6" Surface Ponding)
<span style="display: inline-block; width: 20px; height: 10px; background-color: #90ee90; border: 1px solid black; margin-right: 5px;"></span> Bioretention	Permeable Pavers in ROW: <b>9,096 CF</b> (w/o Silva Cells) - <b>10,414 CF</b> (w/ Silva Cells)
<span style="display: inline-block; width: 20px; height: 10px; background-color: #f4a460; border: 1px solid black; margin-right: 5px;"></span> Permeable Pavers in ROW (Requires City Agreement)	Volume Provided: <b>61,385 CF</b> - <b>65,734 CF</b>
	Volume Required: <b>63,559 CF</b>

DRAINAGE PLAN



CONCEPT SUBJECT TO VERIFICATION WITH MWRD





LEGEND

- 855 --- EXISTING MAJOR CONTOUR
- 854 --- EXISTING MINOR CONTOUR
- 851.50 X EXISTING SPOT ELEVATION
- 855 --- PROPOSED MAJOR CONTOUR
- 854 --- PROPOSED MINOR CONTOUR
- - - GRADING LIMITS
- - - GRADE BREAK LINE
- 2.5% DRAINAGE SLOPE
- DRAINAGE SWALE
- FLOW DIRECTION
- 851.50 --- PROPOSED SPOT ELEVATION
- 851.50 M.E. X APPROX. SPOT ELEVATION: MATCH EXISTING GRADE
- RIM 851.50 --- STRUCTURE RIM ELEVATION
- TIC 851.50 --- TOP OF CURB ELEVATION
- G/C 851.50 --- GUTTER OF CURB ELEVATION
- EP 851.50 --- EDGE OF PAVEMENT ELEVATION
- T/F 851.50 --- TOP OF FOOTING ELEVATION
- B/F 851.50 --- BOTTOM OF FOOTING ELEVATION
- T/S 851.50 --- TOP OF SWALE ELEVATION
- B/S 851.50 --- BOTTOM OF SWALE ELEVATION
- T/W 851.50 --- TOP OF WALL ELEVATION
- B/W 851.50 --- BOTTOM OF WALL ELEVATION
- HP 851.50 --- HIGH POINT ELEVATION
- LP 851.50 --- LOW POINT ELEVATION
- - - LIMITS OF CONSTRUCTION
- - - PROPERTY LIMITS

EXISTING TOPOGRAPHY PLAN

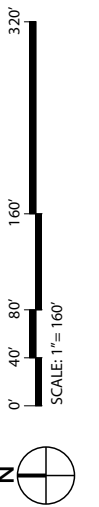




Table 2: General subsurface profile and geotechnical parameters

Age	Unit	Log	Name	Description	T/Layer Elevation (ECD)	Total Unit Wt, $\gamma$	Mohr-Coulomb		Pressuremeter			LPile		
							Shear Strength, $S_u$ (Adhesion, $C_u$ )	Friction Angle, $\phi$	Creep Pressure, $P_c$	Net Limit Pressure, $P_l$	Pressure Modulus, $E_d$	p-y Subgrade Modulus, $k$	$E_{50}$	
			Fill	VI	Man placed material consisting predominantly of sand-size particles with varying inclusions of cinders, brick, and concrete fragments.	+20 to +25	120-125 pcf	-	28-32 deg	-	-	-	40-60 pci	-
Pleistocene - Wisconsin	Glacial Drift	Lake Border moraines	Glacial Lake Bottom	V	Weathered, over-consolidated clay with low to medium PI. Identified by Peck and Reed as "Desiccated Clay Crust."	+15 to +20	125-130 pcf	1-2.5 ksf (0.5-1.3 ksf)	-	3-4	4-7	45-70	450-750 pci	0.006-0.008
			Blodgett and Deerfield	IVa	Grey to bluish grey clay and silty clay with occasional non-persistent silt and sandy silt seams. Normally to slightly overconsolidated with OCR between 1.1 and 1.6.	+0 to -5	122-127 pcf	0.4-0.6 ksf (0.3-0.5 ksf)	--	-	-	-	330-400 pci	0.01-0.014
				IVb		-10 to -15	125-127 pcf	0.45-0.7 ksf (0.3-0.4 ksf)	--	-	-	-	350-500 pci	0.009-0.011
			Park Ridge	II	Lacustrine and low plasticity clay with natural moisture content between 18-22%. Transitional zone of variable thickness.	-25 to -30	130-135 pcf	1.0-2.5 ksf (0.5-1.3 ksf)	-	10-15	15-22	130-150	550-900 pci	0.005-0.008
			Tinley moraine	II	Glacially consolidated low plasticity clay, silty clay and clayey silt. Blow counts in excess of 40 bpf and natural moisture contents below 14%. Locally referred to as "Chicago Hardpan."	-55 to -60	130-135 pcf	4.0-5.0 ksf (2.0-2.5 ksf)	-	17-25	26-39	230-620	1,000-1,200 pci	0.003 - 0.005
				Valparaiso moraine		I	Extremely dense sandy silt, silty gravel and gravelly sand with occasional cobbles and boulders.	-75 to -80	130-135 pcf	-	32-35 deg	25-35	42-55	870-1,150
Age	Unit	Log	Name	Description	T/Layer Elevation (CCD)	Total Unit Wt, $\gamma$	Uniaxial Strength	Young's Modulus, $E_r$	RQD (RMR)	GSI	$c'$	$\phi'$	$K_{rm}$	
Silurian	Niagran Series		Dolomite	Extremely weathered to disintegrated dolomite	-90 to -92 (Variable)	135-140 pcf	-	-	-	20-25	20-30 ksf	18-23 deg	0.00008	
				Fresh to moderately weathered, hard to medium, grey to light tan, blocky, slightly to moderately vuggy dolomite and dolomite limestone. Generally near-horizontal bedding with slightly inclined to near-vertical joints.	-90 to -95 (Estimated)	150-160 pcf	7-30 ksi	1,500-3,000 ksi	71-98 (65-75)	60-70	85-210 ksf	35-38 deg	0.00005	