



SUMMIT ENGINEERS, INC.

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March 15, 2011

Derick S.J. Mitchell
Development Manager
City Interests
2900 K Street, NW, Suite 401
Washington, DC 20007

RE: PUD Plumbing Calculations
Parkside Development

Hello Derick,

Please see below for approximate estimate of average waste water, peak waste water and average domestic water flow projections for Parkside Development buildings G1, G2, H and I1.

Building G1: Residential

Average Waste Water Flow: (ASPE Chapter 25)

Estimate 722 Residential Occupants x 70 GPD	= 50,540 GPD
Estimate 250 Retail/Restaurants Occupants x 15 GPD	= <u>3,750 GPD</u>
Total GPD	= 54,290 GPD Round to <u>56,000 GPD</u>

Waste Water Peak: (IPC, Appendix E)

35 Studio Apts x 7.8 TSFU	= 273 TSFU
226 1 BR/1BA x 10.7 TSFU	= 2418 TSFU
87 2BR/2BA x 11.4 TSFU	= 992 TSFU
Estimate Retail/Restaurant	= <u>350 TSFU</u>
Total	= 4033 TSFU
Hunter Curve yields 526 GPM – Round up to <u>530 GPM</u>	

Domestic Water Average:

Waste water average	= 56,000 GPD
Estimated Irrigation demand	= 1,000 GPD
Estimated HVAC Fixed Demand	= <u>2,000 GPD</u>
Total	= <u>59,000 GPD</u>

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Building G2: Office

Average Waste Water Flow: (ASPE Chapter 25)

Estimate 1365 Office Occupants x 15 GPD	= 20,475 GPD
Estimate 135 Retail/Restaurants Occupants x 15 GPD	= <u>2,025 GPD</u>
Total GPD	= 22,500 GPD Round to <u>23,000 GPD</u>

Average Water Peak: (IPC, Appendix E)

Estimate 100 TSFU/FLR x 11FLR =1100 TSFU
Estimate Retail/Restaurant = <u>250 TSFU</u>
Total = <u>1350 TSFU</u>
Hunter Curve yields 261GPM Round to <u>275 GPM</u> .

Domestic Water Average:

Waste water average	=23,000 GPD
Estimated Irrigation demand	= 1,000 GPD
Estimated HVAC Fixed Demand	= <u>2,000 GPD</u>
Total	= <u>26,000 GPD</u>

Building H: Office

Average Waste Water Flow: (ASPE Chapter 25)

Estimate 2600 Office Occupants x 15 GPD	= 39,000 GPD
Estimate 260 Retail/Restaurants Occupants x 15 GPD	= <u>3,900 GPD</u>
Total GPD	= 42,900 GPD Round to <u>44,000 GPD</u>

Average Water Peak: (IPC, Appendix E)

Estimate 200 TSFU/FLR x 11FR =2200 TSFU
Estimate Retail/Restaurant = <u>500 TSFU</u>
Total = <u>2700 TSFU</u>
Hunter Curve yields 410 GPM Round to <u>425 GPM</u> .

Domestic Water Average:

Waste water average	=44,000 GPD
Estimated Irrigation demand	= 1,500 GPD
Estimated HVAC Fixed Demand	= <u>2,500 GPD</u>
Total	= <u>48,000 GPD</u>

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Building I1: Education

Average Waste Water Flow: (ASPE Chapter 25)

Estimate 3100 Education Occupants x 15 GPD = 46,500 GPD, Round to 47,000 GPD

Average Water Peak: (IPC, Appendix E)

Estimate 140 TSFU/FLR x 7 FLR (FLRS 2-8) = 980 TSFU

Estimate 210 TSFU Plaza Level = 210 TSFU

Estimate 320 TSFU Terrace Level = 320 TSFU

Total = 1,510 TSFU

Hunter Curve yields 271 GPM Round to 300 GPM.

Domestic Water Average:

Waste water average =47,000 GPD

Estimated Irrigation demand = 1,800 GPD

Estimated HVAC Fixed Demand= 3,200 GPD

Total =52,000 GPD

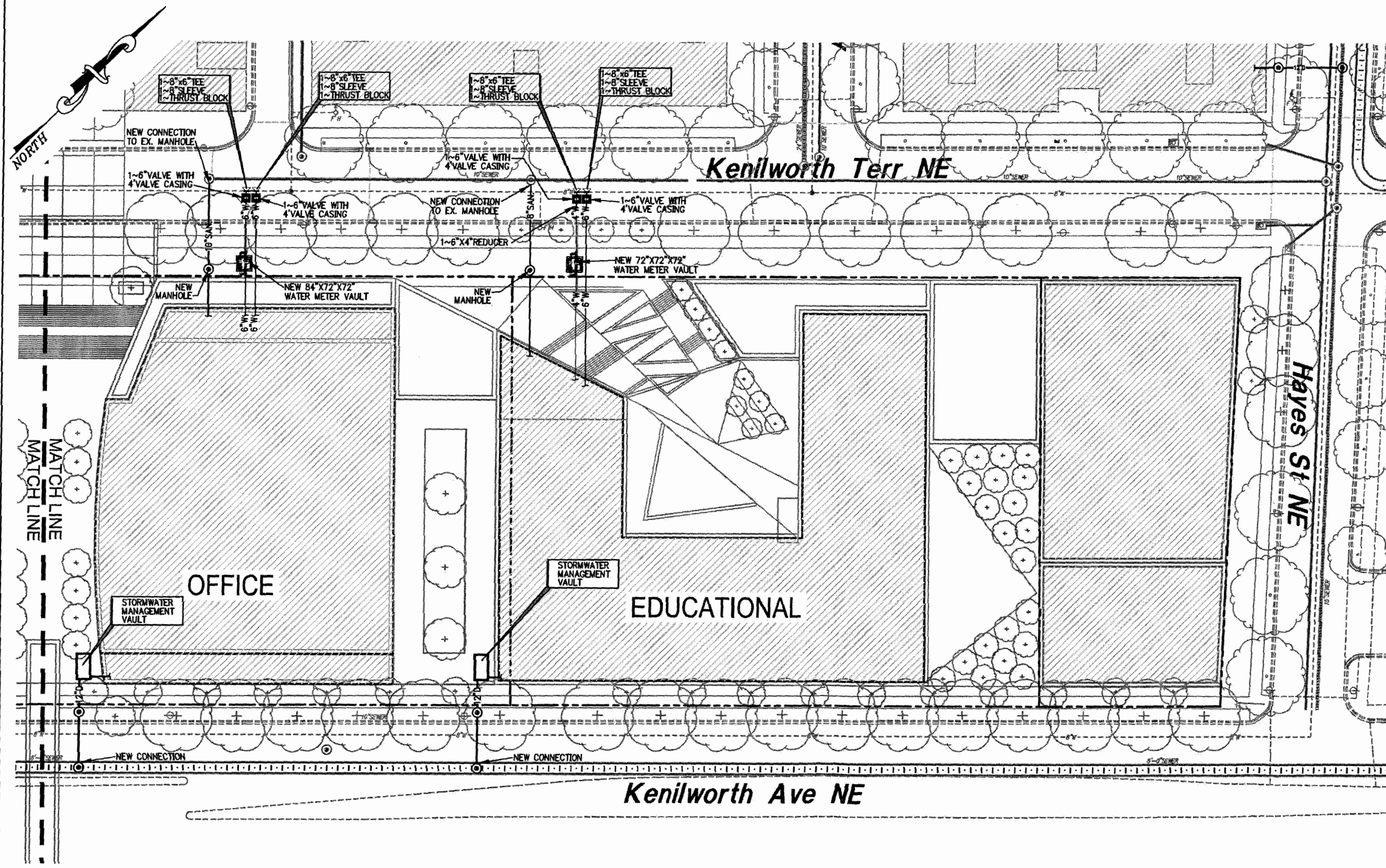
Abbreviations:

GPD	Gallons Per Day
GPM	Gallons Per Minute
TSFU	Total Supply Fixture Unit
FLR	Floor
IPC	International Plumbing Code
ASPE	American Society of Plumbing Engineers

We hope this meets your needs

Regards,

Gregory E. Hayes, P.E. CPD
Vice President
Summit Engineers, Inc.
greg@summitengineers.com



STORMWATER MANAGEMENT NARRATIVE

THE PARKSIDE DEVELOPMENT LANO PARCEL 12 LLC WILL PROVIDE STORMWATER MANAGEMENT THROUGH A VARIETY OF BEST MANAGEMENT PRACTICES IN ACCORDANCE WITH CURENT DISTRICT DEPARTMENT OF THE ENVIRONMENT (DDOE) REGULATIONS. THE SITE WILL TREAT ALL STORMWATER FOR WATER QUALITY BEFORE DISCHARGING THE RUNOFF TO THE EXISTING STORM DRAINAGE INFRASTRUCTURE. IT IS EXPECTED THAT THE NEW STREETS INTERIOR TO THE DEVELOPMENT WILL UTILIZE DDOE APPROVED WATER QUALITY INLETS TO TREAT STORMWATER RUNOFF FROM THE STREETS AND SIDEWALKS. AN APPROVED STORMWATER BMP SUCH AS A SAND FILTER, GREEN ROOF, OR A STORMFILTER DEVICE WILL BE USED FOR EACH BUILDING TO TREAT RUNOFF. OPPORTUNITIES TO IMPLEMENT LOW IMPACT DEVELOPMENT PRACTICES SUCH AS RAIN GARDENS WILL BE EXPLORED DURING DESIGN SO THAT WATER QUALITY CAN BE IMPROVED WITH NATIVE PLANTINGS. THE DETAILS OF THE STORMWATER MANAGEMENT BMPs TO BE UTILIZED WILL BE DETERMINED DURING SITE THE DESIGN PROCESS.

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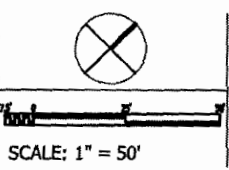
WILES MENSCH CORPORATION

Lano Parcel 12 LLC

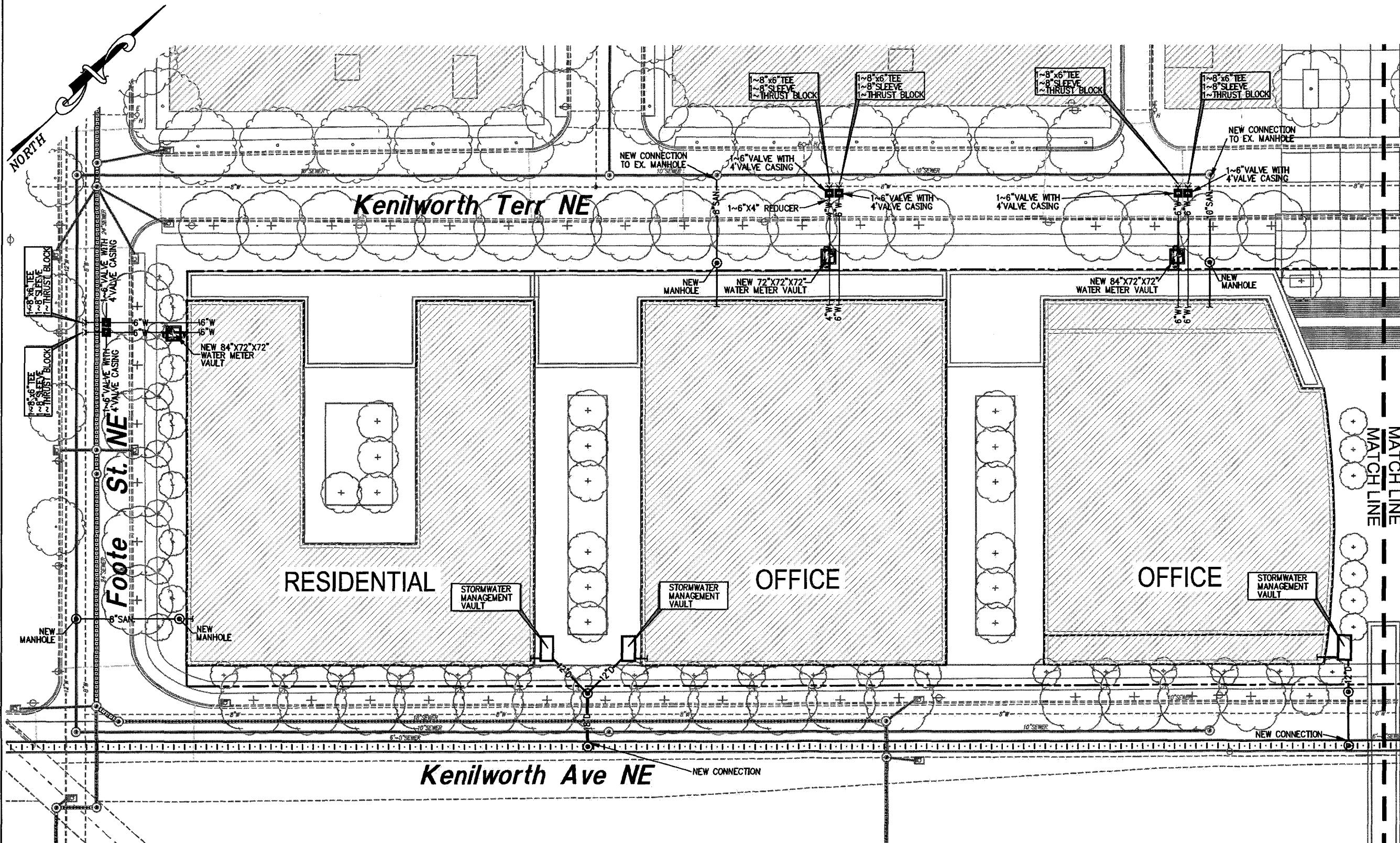
C1.05B Utility Plan

PARKSIDE DEVELOPMENT
LANO PARCEL 12 LLC

March 15, 2011



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STORMWATER MANAGEMENT NARRATIVE

THE PARKSIDE DEVELOPMENT LANO PARCEL 12 LLC WILL PROVIDE STORMWATER MANAGEMENT THROUGH A VARIETY OF BEST MANAGEMENT PRACTICES IN ACCORDANCE WITH CURENT DISTRICT DEPARTMENT OF THE ENVIRONMENT (DDOE) REGULATIONS. THE SITE WILL TREAT ALL STORMWATER FOR WATER QUALITY BEFORE DISCHARGING THE RUNOFF TO THE EXISTING STORM DRAINAGE INFRASTRUCTURE. IT IS EXPECTED THAT THE NEW STREETS INTERIOR TO THE DEVELOPMENT WILL UTILIZE DDOE APPROVED WATER QUALITY INLETS TO TREAT STORMWATER RUNOFF FROM THE STREETS AND SIDEWALKS. AN APPROVED STORMWATER BMP SUCH AS A SAND FILTER, GREEN ROOF, OR A STORMFILTER DEVICE WILL BE USED FOR EACH BUILDING TO TREAT RUNOFF. OPPORTUNITITES TO IMPLEMENT LOW IMPACT DEVELOPMENT PRACTICES SUCH AS RAIN GARDENS WILL BE EXPLORED DURING DESIGN SO THAT WATER QUALITY CAN BE IMPROVED WITH NATIVE PLANTINGS. THE DETAILS OF THE STORMWATER MANAGEMENT BMPs TO BE UTILIZED WILL BE DETERMINED DURING SITE THE DESIGN PROCESS.