

Civil Exhibits

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LEGEND Table with columns: EXISTING, DESCRIPTION, PROPOSED. Includes symbols for INDEX CONTOUR, INTERMEDIATE CONTOUR, EDGE OF PAVEMENT, CURB AND CUTTER, TRANSITION FROM CG-6R TO CG-6, PROPOSED HEADER CURB, PROPERTY LINE, DEPARTING PROPERTY LINE, LOT LINE, RIGHT-OF-WAY, CENTERLINE, FLOOD PLAIN, CLEARING AND GRADING, TREE LINE, FLOW LINE OF SWALE, STREAM, OVERLAND RELIEF PATHWAY, FENCE LINE, EASEMENT, WATER LINE, WATER VALVE, REDUCER, SANITARY SEWER, STORM SEWER, CABLE TV, ELECTRIC SERVICE, TELEPHONE SERVICE, GAS LINE, SPOT ELEVATION, UTILITY POLE, SIGN, SANITARY SEWER IDENTIFIER, STORM DRAIN IDENTIFIER, EASEMENT IDENTIFIER, WATER METER, FIRE HYDRANT, PARKING INDICATOR, STREET LIGHT, VEHICLES PER DAY, TEST PIT LOCATION, CRITICAL SLOPE, HANDICAP RAMP, DENOTES CLEAR SIGHT TRIANGLE, TREE, BENCHMARK, ASPHALT TRAIL, CONCRETE SIDEWALK, END WALLS, END SECTIONS, STOP SIGN, STREET SIGN, OVERHEAD ELECTRIC, OVERHEAD TELEPHONE, HANDICAP PARKING SPACE (VAN), RIP RAP, EX. WETLANDS.

ABBREVIATIONS Table with columns: A, DESCRIPTION, H, DESCRIPTION, U, DESCRIPTION. Includes terms like ASHTO, AREA OF ARC, TRANSPS OFFICIALS, AC, ACRE, ADJ, ADJACENT, AGGR, AGGREGATE, ARE, ACRE, ANS, AMERICAN NATIONAL STANDARDS INSTITUTE, APPROX, APPROXIMATE, ARCH, ARCHITECTURAL, ASPH, ASPHALT, ASTM, AMERICAN SOCIETY FOR TESTING AND MATERIALS, AWMA, AMERICAN WATER WORKS ASSOCIATION, B, BREADTH, BC, BACK OF CURB, BF, BASEMENT FLOOR, BLDG, BUILDING, BM, BENCHMARK, BMP, BEST MANAGEMENT PRACTICES (WATER QUALITY), BOV, BLOW OFF VALVE, BRG, BEARING, BRL, BUILDING RESTRICTION LINE, BVCE, BEGINNING VERTICAL CURVE ELEVATION, BVCS, BEGINNING VERTICAL CURVE STATION, BW, BOTTOM OF WALL, c.c, CENTER CORRECTION ON VERTICAL CURVE, C, RUNOFF COEFFICIENT, CATV, CABLE TELEVISION, C&G, CURB AND GUTTER, CB, CATCH BASIN, CBR, CALIFORNIA BEARING RATIO, CC, CENTER TO CENTER, CF, CURB FEET, CFS, CUBIC FEET PER SECOND, CG(R), CURB AND GUTTER (REVERSE SLOPE), CM, CHORD BEARING, CIP, CAST IRON PIPE, CL, CENTERLINE OR CLASS, CN, CENTERLINE, CLR, CLEAR, CM, CUBIC METERS, CMP, CORRUGATED METAL PIPE, CMS, CUBIC METERS PER SECOND, CN, RUNOFF CURVE NUMBER, CONT, CONTINUOUS, CLEAT, CLEAN OUT, CONC, CONCRETE, CS, CURB STOP, CT, COURT, CTR, CENTERLINE, CY, CUBIC YARD, D, DEPTH, DA, DRAINAGE AREA, DB, DEED BOOK, DC, DISTRICT OF COLUMBIA, DEO, VA. DEPARTMENT OF ENVIRONMENTAL QUALITY, DET, DETAIL, DIA, DIAMETER, DI, DUCTILE IRON PIPE, DI, DROP INLET, DIST, DISTANCE, DL, DOMESTIC LINE, DM, DROP MANHOLE, DOM, DOMESTIC, DR, DRIVE, DRN, DRAINAGE AREA, DS, DOWN SPOUT, DU, DWELLING UNITS, DWG, DRAWING, D/W, DELTA, D/W, DRIVEWAY, E, RATE OF SUPER ELEVATION, EA, EAST BOUND LANE, EBL, EROSION CONTROL, EG, EDGE OF GUTTER, EGL, ENERGY GRADIENT LINE, EL, ELEVATION, ELEC, ELECTRIC, ELEV, ELEVATION, ENGR, ENGINEER, ENT, ENTRANCE, EP, EDGE OF PAVEMENT, EQIP, EQUIPMENT, ES, END SECTION, ESMT, EASEMENT, ETD, EXISTING TO BE DEMOLISHED, ETR, EXISTING TO REMAIN, ETR, EXISTING TO BE RELOCATED, ETRP, EXISTING TO BE REPLACED, EVCE, ENDING VERTICAL CURVE ELEVATION, EVCS, ENDING VERTICAL CURVE STATION, EW, END WALL, EX, EXISTING, EOC, ENVIRONMENTAL QUALITY CORRIDOR, F, FIRE LINE, FAR, FLOOR AREA RATIO, FC, FACE OF CURB, FCPA, FAIRFAX COUNTY PARK AUTHORITY, FCWA, FAIRFAX COUNTY WATER AUTHORITY, FD, FLOOR DRAIN, FF, FIRST FLOOR, FG, FINISH GRADE, FH, FIRE HYDRANT, FL, FLOW LINE, FND, FOUNDATION, FOY, FLOOD PLAIN, FP, FEET PER SECOND, FPS, FIRE SERVICE OR FACTOR OF SAFETY, FS, FEET / FEET, FT, GAS, GAR, GARAGE, GFA, GROSS FLOOR AREA, GR, GUARD RAIL OR GRATE INLET, H, HEAD, HC, HANDICAP, HB, HORIZONTAL BEND, HGL, HYDRAULIC GRADE LINE, HORZ, HORIZONTAL, HP, HIGH POINT, HR, HAND RAIL, HT, HEIGHT, HW, HEADWATER, I, RAINFALL INTENSITY, ID, INSIDE DIAMETER OR IDENTIFICATION, IE, INVERT ELEVATION, IN, INCH, USGS, US GEOLOGICAL SURVEY, INV, INVERT, V OR VOL, VOLUME, V OR VEL, VELOCITY, VA, VIRGINIA, VAN, HANDICAPPED VAN PARKING SPACE, VB, VERTICAL BEND, VC, VERTICAL CURVE, VDOT, VERTICAL FOOT, WF, WEIGHT OR WIDTH, WBL, WEST BOUND LANE, WL, WATER LINE, WM, WATER METER, W/M OR WM, WATER MAIN, WQIA, WATER QUALITY IMPACT ASSESSMENT, WV, WATER VALVE, X, CROSSING, XF, TRANSFORMER, YI, YARD INLET, YR, YEAR, Z, SUBC SLOPES, UG, UNDERGROUND, UGE, UNDERGROUND ELECTRIC, UGT, UNDERGROUND TELEPHONE, UCC, UNDERGROUND CABLE, UD, UNDERDRAIN, UL, UPPER LEVEL, UP, UTILITY POLE, USGS, US GEOLOGICAL SURVEY, V OR VOL, VOLUME, V OR VEL, VELOCITY, VA, VIRGINIA, VAN, HANDICAPPED VAN PARKING SPACE, VB, VERTICAL BEND, VC, VERTICAL CURVE, VDOT, VERTICAL FOOT, WF, WEIGHT OR WIDTH, WBL, WEST BOUND LANE, WL, WATER LINE, WM, WATER METER, W/M OR WM, WATER MAIN, WQIA, WATER QUALITY IMPACT ASSESSMENT, WV, WATER VALVE, X, CROSSING, XF, TRANSFORMER, YI, YARD INLET, YR, YEAR, Z, SUBC SLOPES, UG, UNDERGROUND, UGE, UNDERGROUND ELECTRIC, UGT, UNDERGROUND TELEPHONE, UCC, UNDERGROUND CABLE, UD, UNDERDRAIN, UL, UPPER LEVEL, UP, UTILITY POLE, USGS, US GEOLOGICAL SURVEY, V OR VOL, VOLUME, V OR VEL, VELOCITY, VA, VIRGINIA, VAN, HANDICAPPED VAN PARKING SPACE, VB, VERTICAL BEND, VC, VERTICAL CURVE, VDOT, VERTICAL FOOT, WF, WEIGHT OR WIDTH, WBL, WEST BOUND LANE, WL, WATER LINE, WM, WATER METER, W/M OR WM, WATER MAIN, WQIA, WATER QUALITY IMPACT ASSESSMENT, WV, WATER VALVE, X, CROSSING, XF, TRANSFORMER, YI, YARD INLET, YR, YEAR, Z, SUBC SLOPES.

DC WATER NOTES 1. CONTACT: NOTIFY THE FOLLOWING DC WATER DEPARTMENTS PRIOR TO THE COMMENCEMENT OF UTILITY CONSTRUCTION... 2. STANDARDS: ALL CONSTRUCTION MATERIALS, AND APPURTENANCES SHALL COMPLY WITH THE LATEST EDITIONS OF THE DC WATER PROJECT DESIGN MANUAL, STANDARD DETAILS & DESIGN GUIDELINES, AND SPECIFICATIONS... 3. LEAD SERVICE REPLACEMENT... 4. OWNER RESPONSIBILITY... 5. DC WATER RESPONSIBILITY... 6. MISS UTILITY... 7. PLAN SET... 8. ABANDONMENT... 9. UNMETERED WATER... 10. PRESSURE TESTING AGAINST VALVES... 11. WATER METER INSTALLATION... 12. GROSS CONTAMINATION CONTROL... 13. UTILITY SERVICE DISRUPTIONS... 14. WATER VALVE OPERATION... 15. WATER GATE VALVE LOCATION... 16. MATERIAL... 17. TEMPORARY CONDITIONS MINIMUM COVER... 18. AS-BUILT... 19. CONFLICTS... 20. FIRE HYDRANT USE... 21. FIRE HYDRANT STATUS... 22. DC WATER SAFETY OFFICE... 23. SEWER BACKWATER PREVENTION...

DC GENERAL NOTES 1. CONTACT "MISS UTILITY" 1-800-257-7777 48 HOURS PRIOR TO THE START OF CONSTRUCTION... 2. SEWER AND WATER B.M. TO BE USED FOR CONSTRUCTION... 3. ALL PROPOSED WATER AND SEWER WORK TO BE PERFORMED UNDER THE INSPECTION OF THE DC WATER... 4. ALL PROPOSED WORK TO BE CONSTRUCTED IN ACCORDANCE WITH THE LATEST STANDARDS AND SPECIFICATIONS OF THE DC WATER... 5. USE MANHOLE ENTRY SEALS WHERE REQUIRED... 6. THIS PLAN DOES NOT IMPLY THAT ALL UNDERGROUND UTILITIES AND THOSE SHOWN ARE NECESSARILY APPROXIMATE... 7. THE CONTRACTOR SHALL CAREFULLY EXAMINE THE SITE AND MAKE ALL INSPECTIONS NECESSARY IN ORDER TO DETERMINE THE FULL EXTENT OF THE WORK REQUIRED TO MAKE THE COMPLETED WORK CONFORM TO THE DRAWINGS AND SPECIFICATIONS... 8. THE PROPOSED STORMWATER MANAGEMENT SYSTEMS SHALL BE PRIVATELY OWNED AND MAINTAINED INCLUDING ALL PIPING ON PRIVATE PROPERTY... 9. CONTRACTOR SHALL COORDINATE UTILITY POLE AND UNDERGROUND CONDUIT RELOCATIONS WITH PEPO, WASHINGTON GAS, VERIZON AND COMCAST... 10. SCHEDULE AND HOLD PRE-CONSTRUCTION MEETING WITH THE SEDIMENT CONTROL INSPECTOR... 11. ALL WATER MAINS TO BE DUCTILE IRON PIPE... 12. IT IS CONTRACTOR'S RESPONSIBILITY TO OBTAIN THE MOST CURRENT APPROVED ARCHITECTURAL/MEP PLAN AND COORDINATE SAME WITH THIS SITE PLAN PRIOR TO BEGINNING CONSTRUCTION OPERATIONS... 13. PERMANENT WATER CONNECTIONS MUST BE INSTALLED FOR ALL CONSTRUCTION PURPOSES... 14. ALL WATER DISTRIBUTION AND SANITARY SEWER MATERIALS, CONSTRUCTION AND APPURTENANCES SHALL CONFORM TO THE LATEST DC WATER AND DDOT PROJECT DESIGN MANUAL, STANDARD, SPECIFICATIONS AND DETAILS... 15. ALL PUBLIC UTILITIES AND ROAD CONSTRUCTION SHALL CONFORM TO THE LATEST DDOT SPECIFICATIONS AND DETAILS... 16. DC WATER AND PLUMBING INSPECTORS MAY REQUIRE WATERLINE CONNECTIONS TO BE "CUT-IN" AT CERTAIN LOCATIONS DUE TO SIZE AND AGE OF EXISTING MAINS... 17. THE TEST PIT LOCATIONS SHOWN ARE PRELIMINARY AND SUBJECT TO REVISIONS... 18. THE TOPOGRAPHIC SURVEY WAS PREPARED BY BCG ON 2/1/11 USING A VERTICAL DATUM OF DC PUBLIC WORKS AND A DC NORTH HORIZONTAL PLANE... 19. CIVIL PLANS HAVE BEEN PREPARED BASED ON ARCHITECTURAL PLANS AVAILABLE AT THE TIME OF DESIGN DEVELOPMENT PLAN DISTRIBUTION AND ARE SUBJECT TO CHANGE PENDING RECEIPT OF FINAL ARCHITECTURAL PLANS.

SANITARY SEWER TABULATION Table with columns: Station, Elevation, Invert, etc. Includes entries for 1327, 1444, 1507, 1741, 1914, 2186, 2374, 6060, 6141, 6153, 6277, 6279, 6447, 6484.

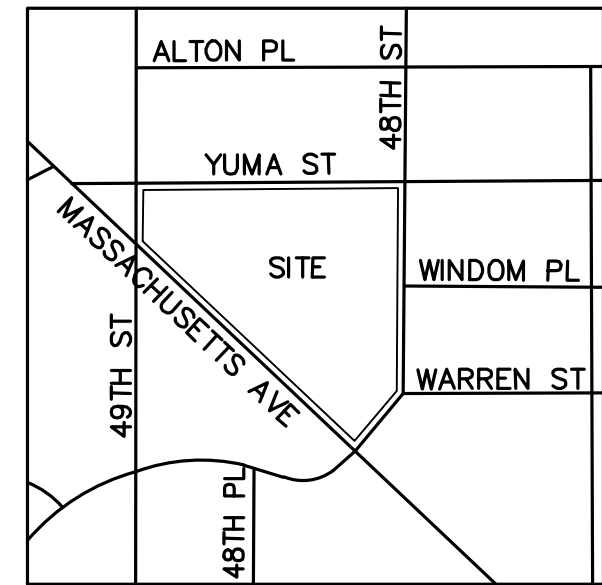
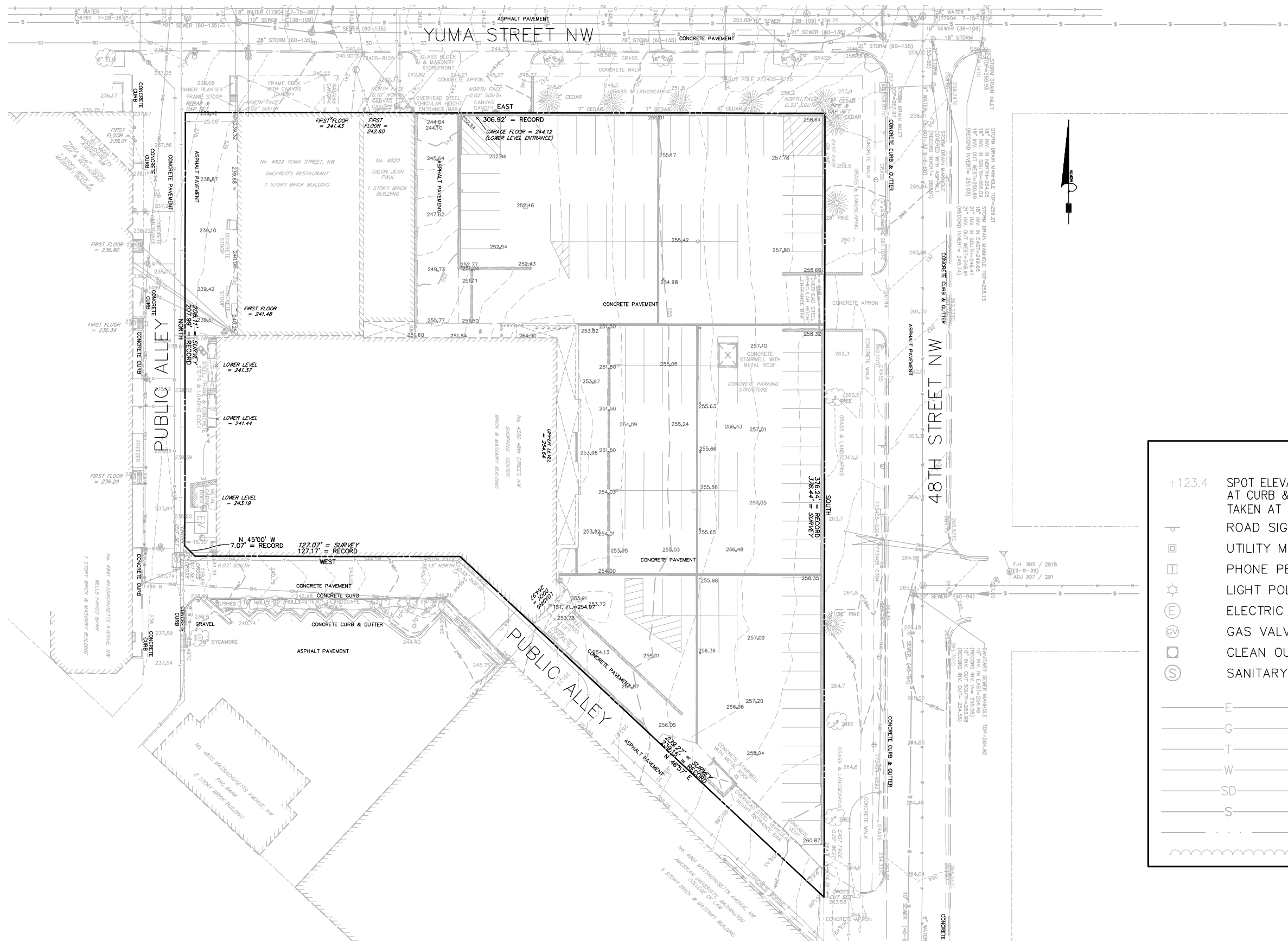
STORM SEWER TABULATION Table with columns: Station, Elevation, Invert, etc. Includes entries for 1527, 1552, 1567, 1578, 1644, 1746, 1915, 1947, 1999, 2215, 2241, 2242, 2312, 2326, 2335, 2351, 2427, 2458, 2459, 2463.

SOURCE OF INFORMATION Table with 2 entries: 1. TOPOGRAPHIC AND UTILITY SURVEY PROVIDED BY MADDOX ENGINEERS & SURVEY INC., DATED JANUARY 2015. 2. ALTA SURVEY PROVIDED BY BOWMAN CONSULTING GROUP, DATED APRIL 12, 2018.

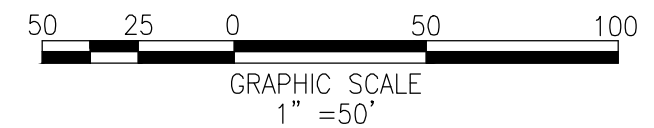
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Design Review Submission | **GENERAL NOTES, ABBREVIATIONS, & LEGEND**

Bowman CONSULTING | 1



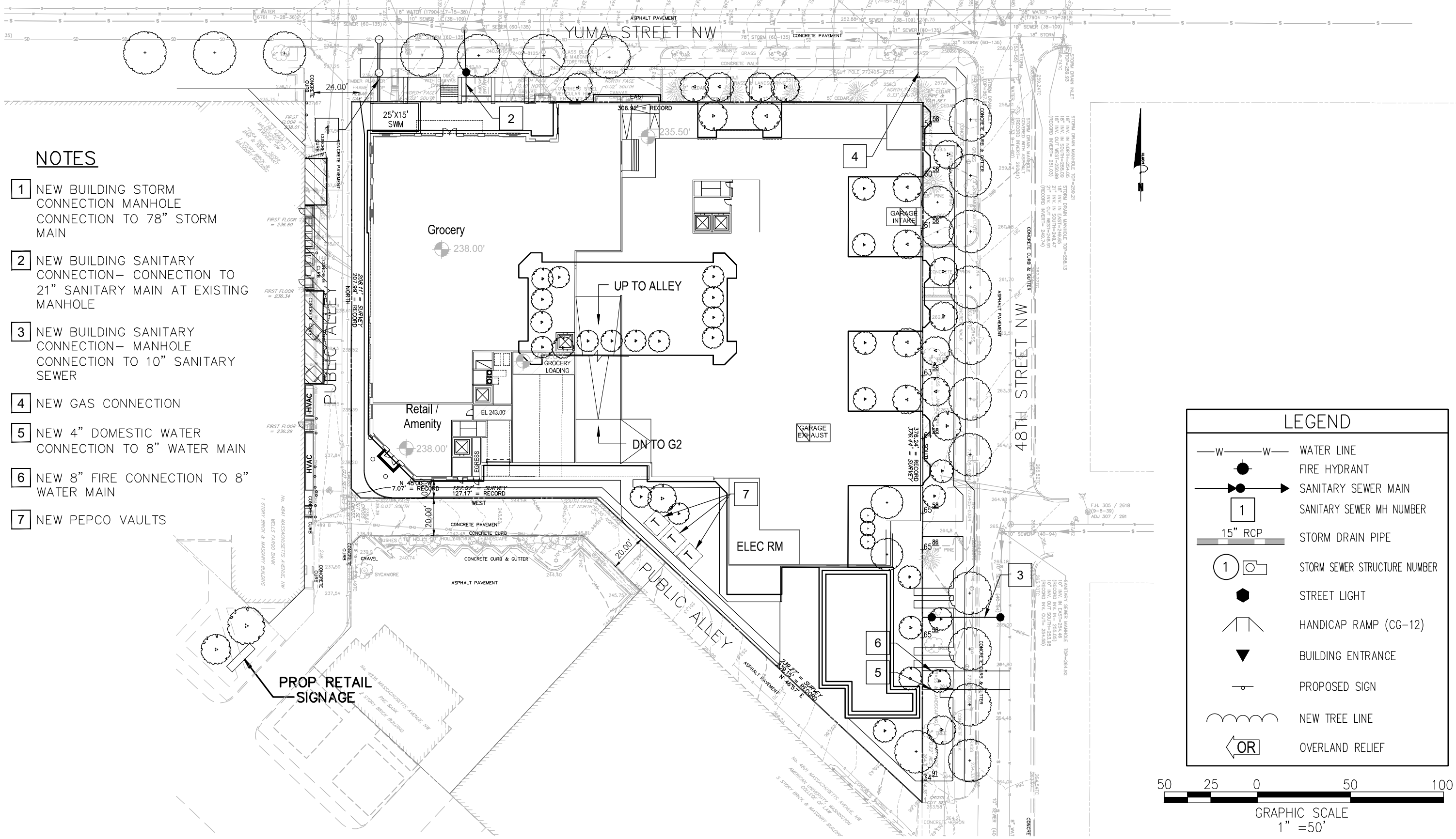
LEGEND			
+123.4	SPOT ELEVATION (ELEVATIONS AT CURB & GUTTER WERE TAKEN AT TOP OF CURB)	FLARE END SECTION	
	ROAD SIGN		STORM MANHOLE
	UTILITY MARKER POST		FIRE HYDRANT
	PHONE PEDESTAL		WATER VALVE
	LIGHT POLE		WATER METER
	ELECTRIC MANHOLE		WATER MANHOLE
	GAS VALVE		BLUE PIN FLAG
	CLEAN OUT		IRRIGATION CONTROL BOX
	SANITARY MANHOLE		DRILINE
	UNDERGROUND ELECTRIC (APPROX. LOCATION)		IRON PIPE FOUND
	UNDERGROUND GAS (APPROX. LOCATION)		HANDICAP RAMP
	UNDERGROUND TELEPHONE (APPROX. LOCATION)		
	UNDERGROUND WATER (APPROX. LOCATION)		
	UNDERGROUND STORM (APPROX. LOCATION)		
	UNDERGROUND SANITARY (APPROX. LOCATION)		
	DITCH		
	TREELINE		



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NOTES

- 1 NEW BUILDING STORM CONNECTION MANHOLE CONNECTION TO 78" STORM MAIN
- 2 NEW BUILDING SANITARY CONNECTION- CONNECTION TO 21" SANITARY MAIN AT EXISTING MANHOLE
- 3 NEW BUILDING SANITARY CONNECTION- MANHOLE CONNECTION TO 10" SANITARY SEWER
- 4 NEW GAS CONNECTION
- 5 NEW 4" DOMESTIC WATER CONNECTION TO 8" WATER MAIN
- 6 NEW 8" FIRE CONNECTION TO 8" WATER MAIN
- 7 NEW PEPCO VAULTS

LEGEND

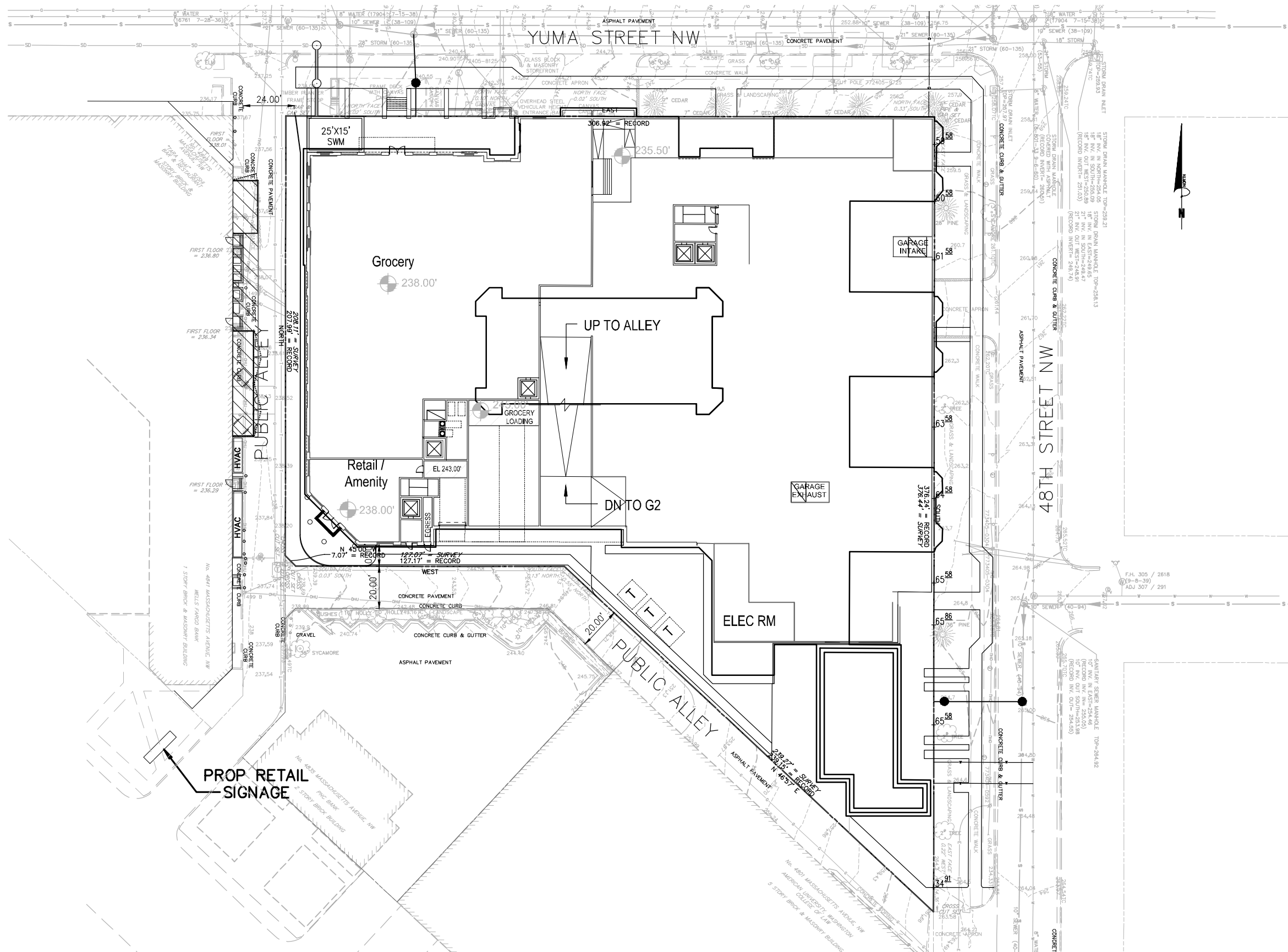
- W—W— WATER LINE
- FIRE HYDRANT
- SANITARY SEWER MAIN
- 1 SANITARY SEWER MH NUMBER
- 15" RCP STORM DRAIN PIPE
- 1 Storm Sewer Structure Number
- STREET LIGHT
- Handicap Ramp (CG-12)
- ▼ BUILDING ENTRANCE
- PROPOSED SIGN
- NEW TREE LINE
- OR OVERLAND RELIEF



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Design Review Submission | **SITE PLAN**

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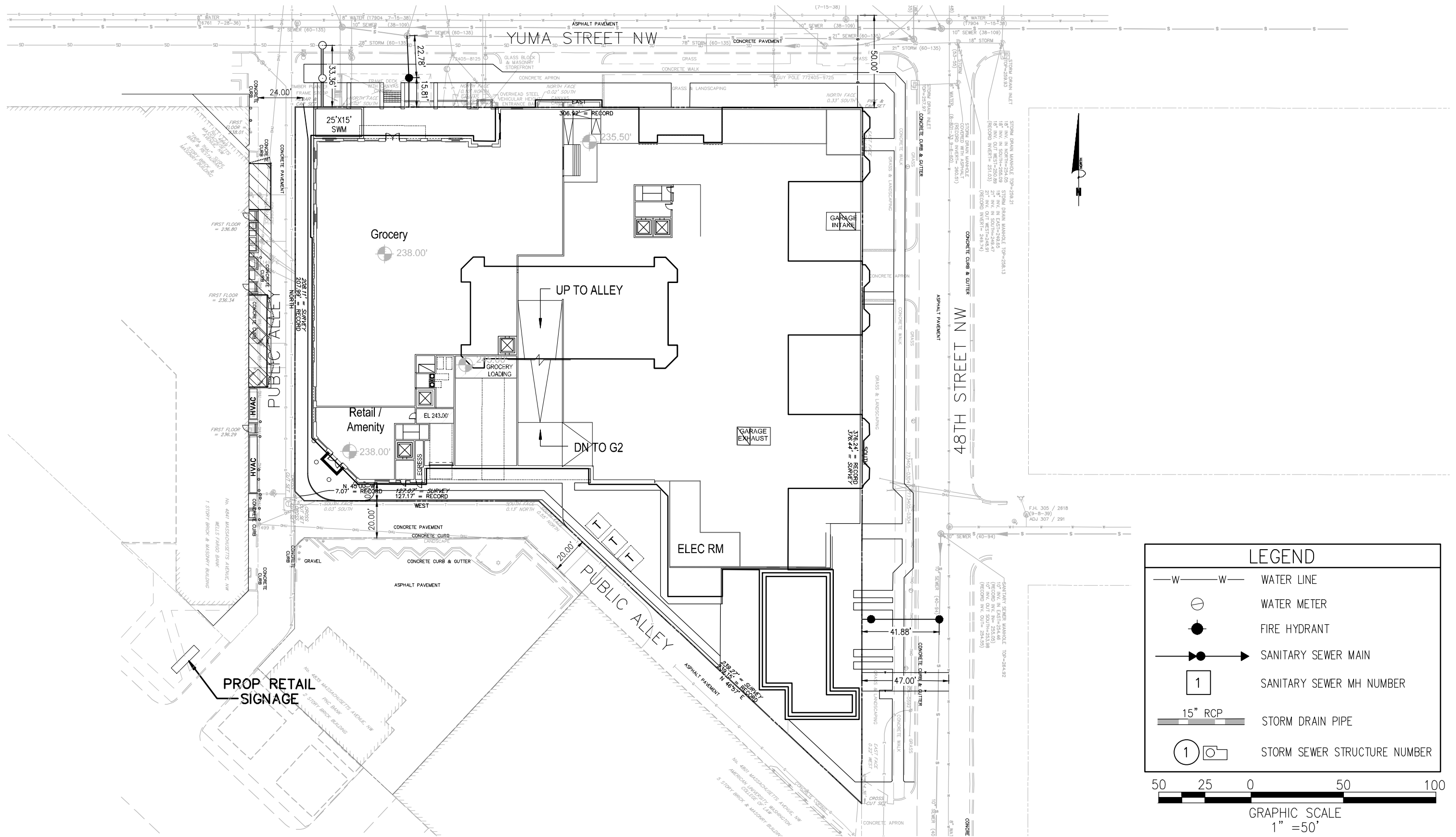
LEGEND	
--- 40 ---	EXISTING CONTOUR
— 40 —	PROPOSED CONTOUR
+ 50.18	PROPOSED SPOT ELEVATION
====	CURB & GUTTER (CG-6)
— W — W —	WATER LINE
⊕	WATER METER
●	FIRE HYDRANT
—●—▶	SANITARY SEWER MAIN
1	SANITARY SEWER MH NUMBER
15" RCP	STORM DRAIN PIPE
1	STORM SEWER STRUCTURE NUMBER
∧	HANDICAP RAMP (CG-12)
▼	BUILDING ENTRANCE
⊙	PROPOSED SIGN
~~~~~	NEW TREE LINE
OR	OVERLAND RELIEF



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Design Review Submission | **GRADING PLAN**

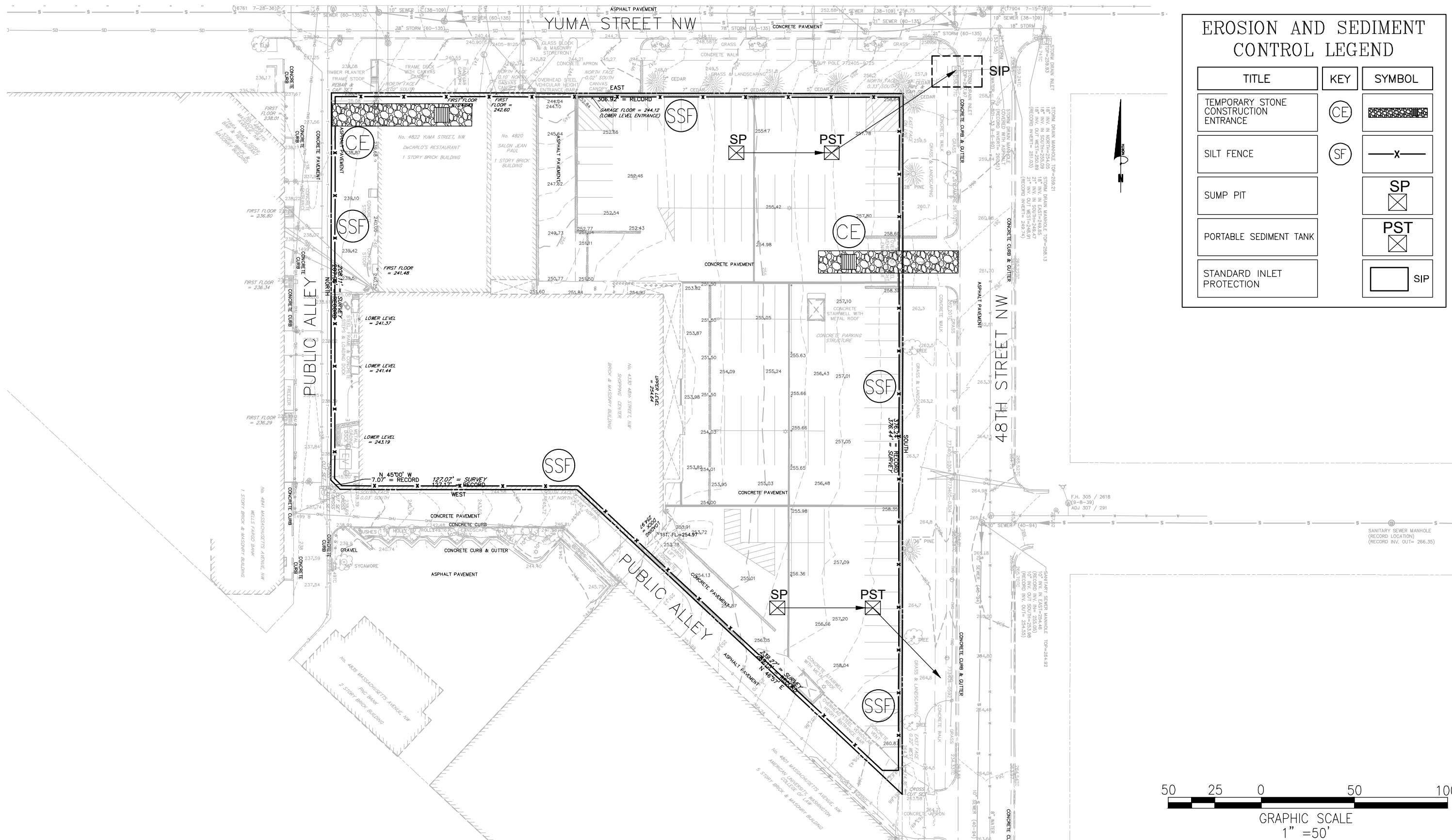
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Design Review Submission | **UTILITY PLAN**

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TITLE	KEY	SYMBOL
TEMPORARY STONE CONSTRUCTION ENTRANCE	CE	
SILT FENCE	SF	
SUMP PIT	SP	
PORTABLE SEDIMENT TANK	PST	
STANDARD INLET PROTECTION	SIP	



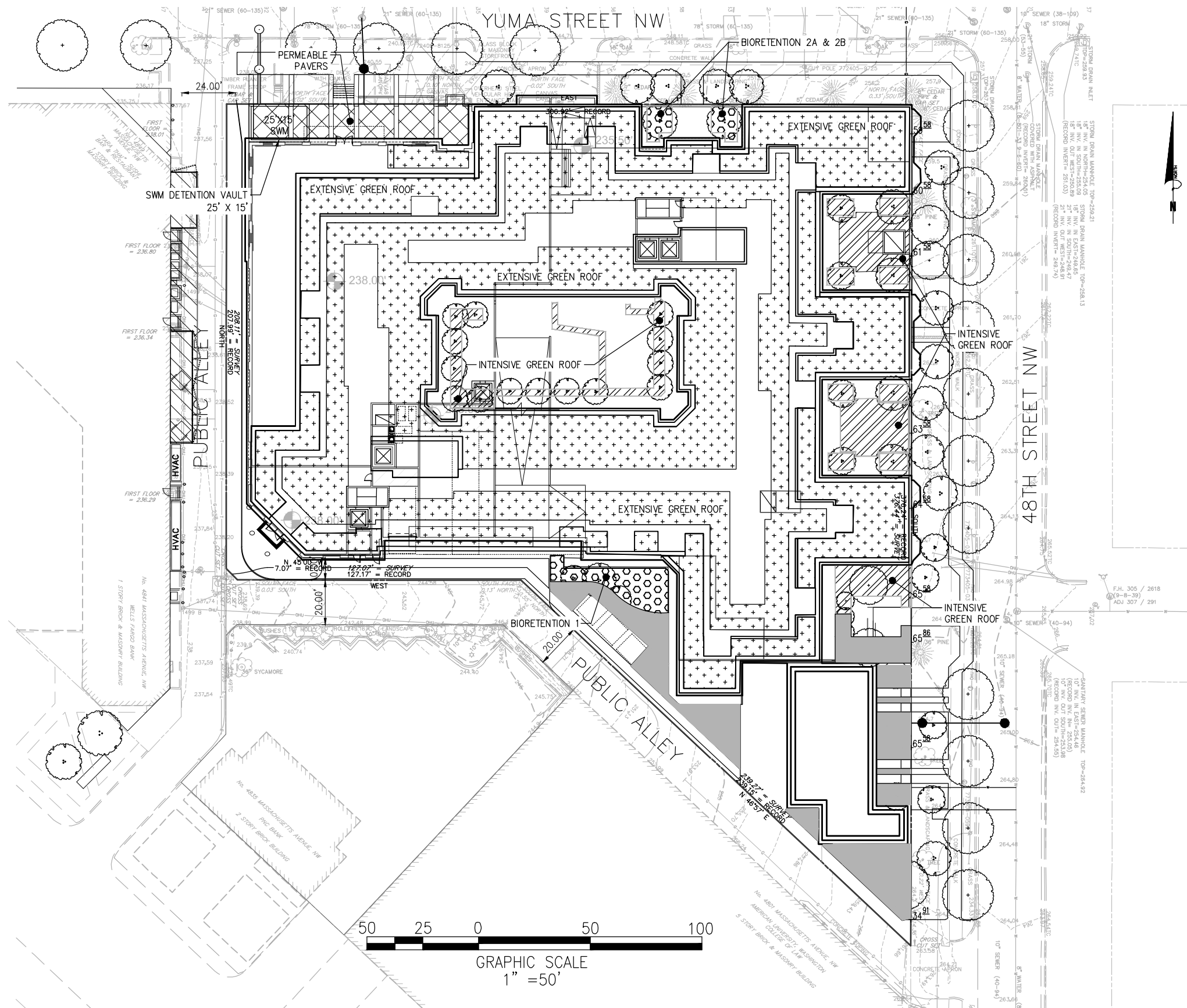
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Design Review Submission | **EROSION & SEDIMENT CONTROL PLAN**

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**LEGEND**

	LANDSCAPED\COMPACTED LAND COVER (3,105 SF)
	INTENSIVE GREEN ROOF (3,543 SF)
	EXTENSIVE GREEN ROOF (28,578 SF)
	PERMEABLE PAVERS (1,360 SF)
	BIORETENTION FACILITY (BIO 1 = 650 SF) (BIO 2A + 2B = 319 SF)

**STORMWATER MANAGEMENT COMPLIANCE SUMMARY**

SWR_v REQUIRED = 7,352 CF  
 SWR_v PROVIDED = 7,367 CF

**2-Year Allowable Peak Discharge:**

DA (acres) =	1.83
DA (mi ² ) =	0.002859
CN =	70
T _c =	0.083333
S = 1000/CN - 10 =	4.285714
l _a = 0.2S =	0.857143

$Q(2\text{ year}) = [(P-0.2S)^2] / (P+0.8S) = 0.828\text{ in}$

**Pre-Development Peak Discharge:**

q (2 year) = $q_u \cdot A_m \cdot Q \cdot F_p =$	2.37\text{ cfs}
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**15-Year Allowable Peak Discharge:**

DA (acres) =	1.83
DA (mi ² ) =	0.002859
CN =	98
T _c =	0.083333
S = 1000/CN - 10 =	0.204082
l _a = 0.2S =	0.040816

$Q(15\text{ year}) = [(P-0.2S)^2] / (P+0.8S) = 4.963\text{ in}$

**Pre-Project Peak Discharge:**

q (15 year) = $q_u \cdot A_m \cdot Q \cdot F_p =$	14.19\text{ cfs}
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NOTE: THE APPLICANT RESERVES THE RIGHT TO VARY THE TYPE, NUMBER, SIZE, SHAPE, AND LOCATION OF THE SWM PRACTICES, AS WELL AS THE RIGHT TO PURCHASE SRCs IF DEEMED NECESSARY, WITH FINAL ENGINEERING.

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