

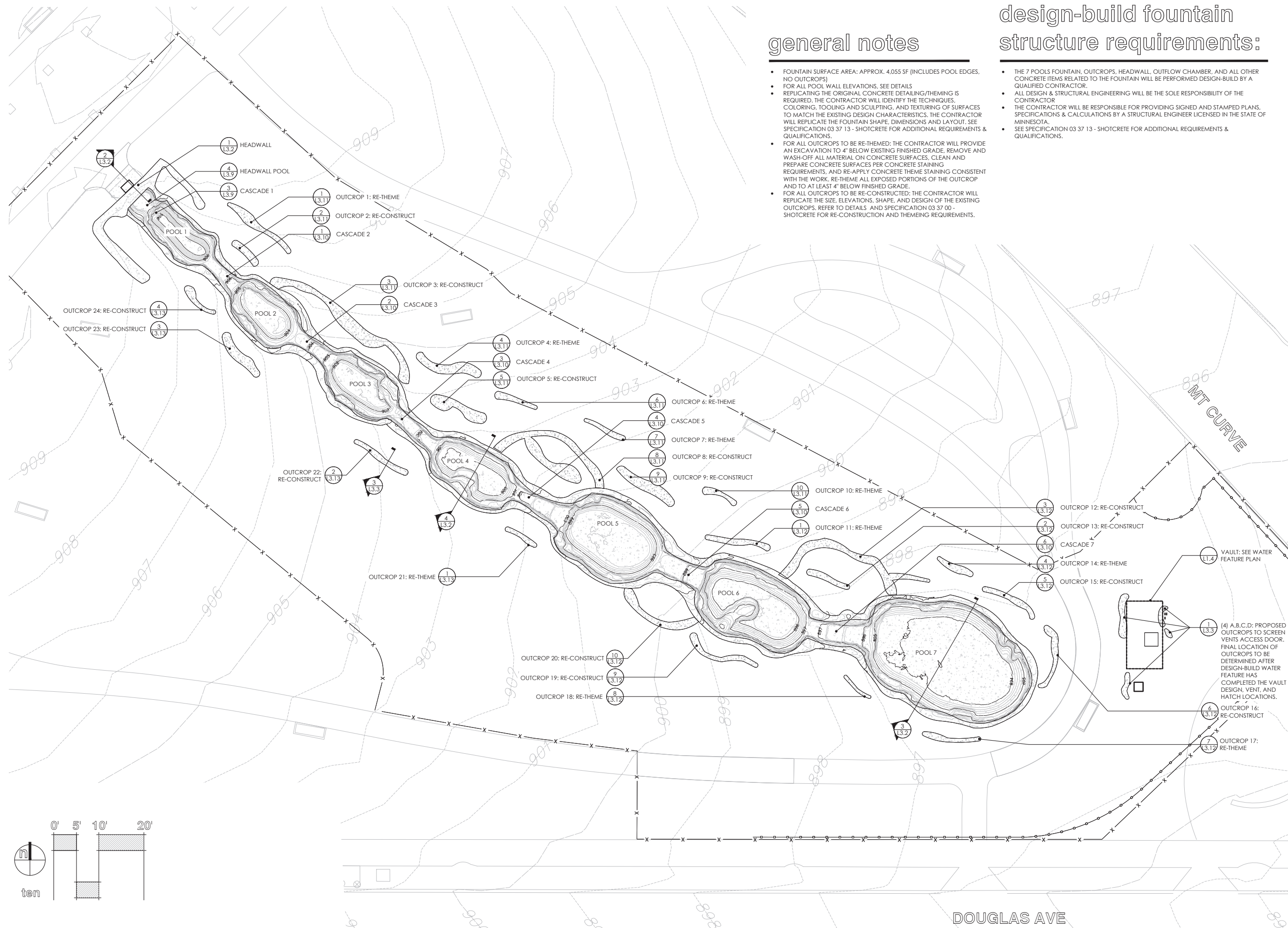


design-build fountain structure requirements:

- THE 7 POOLS FOUNTAIN, OUTCROPS, HEADWALL, OUTFLOW CHAMBER, AND ALL OTHER CONCRETE ITEMS RELATED TO THE FOUNTAIN WILL BE PERFORMED DESIGN-BUILD BY A QUALIFIED CONTRACTOR.
- ALL DESIGN & STRUCTURAL ENGINEERING WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR
- THE CONTRACTOR WILL BE RESPONSIBLE FOR PROVIDING SIGNED AND STAMPED PLANS, SPECIFICATIONS & CALCULATIONS BY A STRUCTURAL ENGINEER LICENSED IN THE STATE OF MINNESOTA.
- SEE SPECIFICATION 03 37 13 - SHOTCRETE FOR ADDITIONAL REQUIREMENTS & QUALIFICATIONS.

general notes

- FOUNTAIN SURFACE AREA: APPROX. 4,055 SF (INCLUDES POOL EDGES, NO OUTCROPS)
- FOR ALL POOL WALL ELEVATIONS, SEE DETAILS
- REPLICATING THE ORIGINAL CONCRETE DETAILING/THEMING IS REQUIRED. THE CONTRACTOR WILL IDENTIFY THE TECHNIQUES, COLORING, TOOLING AND SCULPTING, AND TEXTURING OF SURFACES TO MATCH THE EXISTING DESIGN CHARACTERISTICS. THE CONTRACTOR WILL REPLICATE THE FOUNTAIN SHAPE, DIMENSIONS AND LAYOUT. SEE SPECIFICATION 03 37 13 - SHOTCRETE FOR ADDITIONAL REQUIREMENTS & QUALIFICATIONS.
- FOR ALL OUTCROPS TO BE RE-THEMED: THE CONTRACTOR WILL PROVIDE AN EXCAVATION TO 4" BELOW EXISTING FINISHED GRADE, REMOVE AND WASH-OFF ALL MATERIAL ON CONCRETE SURFACES, CLEAN AND PREPARE CONCRETE SURFACES PER CONCRETE STAINING REQUIREMENTS, AND RE-APPLY CONCRETE THEME STAINING CONSISTENT WITH THE WORK. RE-THEME ALL EXPOSED PORTIONS OF THE OUTCROP AND TO AT LEAST 4" BELOW FINISHED GRADE.
- FOR ALL OUTCROPS TO BE RE-CONSTRUCTED: THE CONTRACTOR WILL REPLICATE THE SIZE, ELEVATIONS, SHAPE, AND DESIGN OF THE EXISTING OUTCROPS. REFER TO DETAILS AND SPECIFICATION 03 37 00 - SHOTCRETE FOR RE-CONSTRUCTION AND THEMING REQUIREMENTS.



client

MINNEAPOLIS PARK & RECREATION BOARD

2117 WEST RIVER ROAD N
 MINNEAPOLIS, MN 55411

project

7 POOLS REPLACEMENT PROJECT

THOMAS LOWRY PARK
 900 DOUGLAS AVE
 MINNEAPOLIS, MN 55405

PROJECT NUMBER: 180021

certification

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SIGNATURE: *Carlos Fernandez*

TYPED OR PRINTED NAME: CARLOS FERNANDEZ

DATE: 5/19/20 REG. NO.: 45414

issue / revision

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sheet title

fountain plan

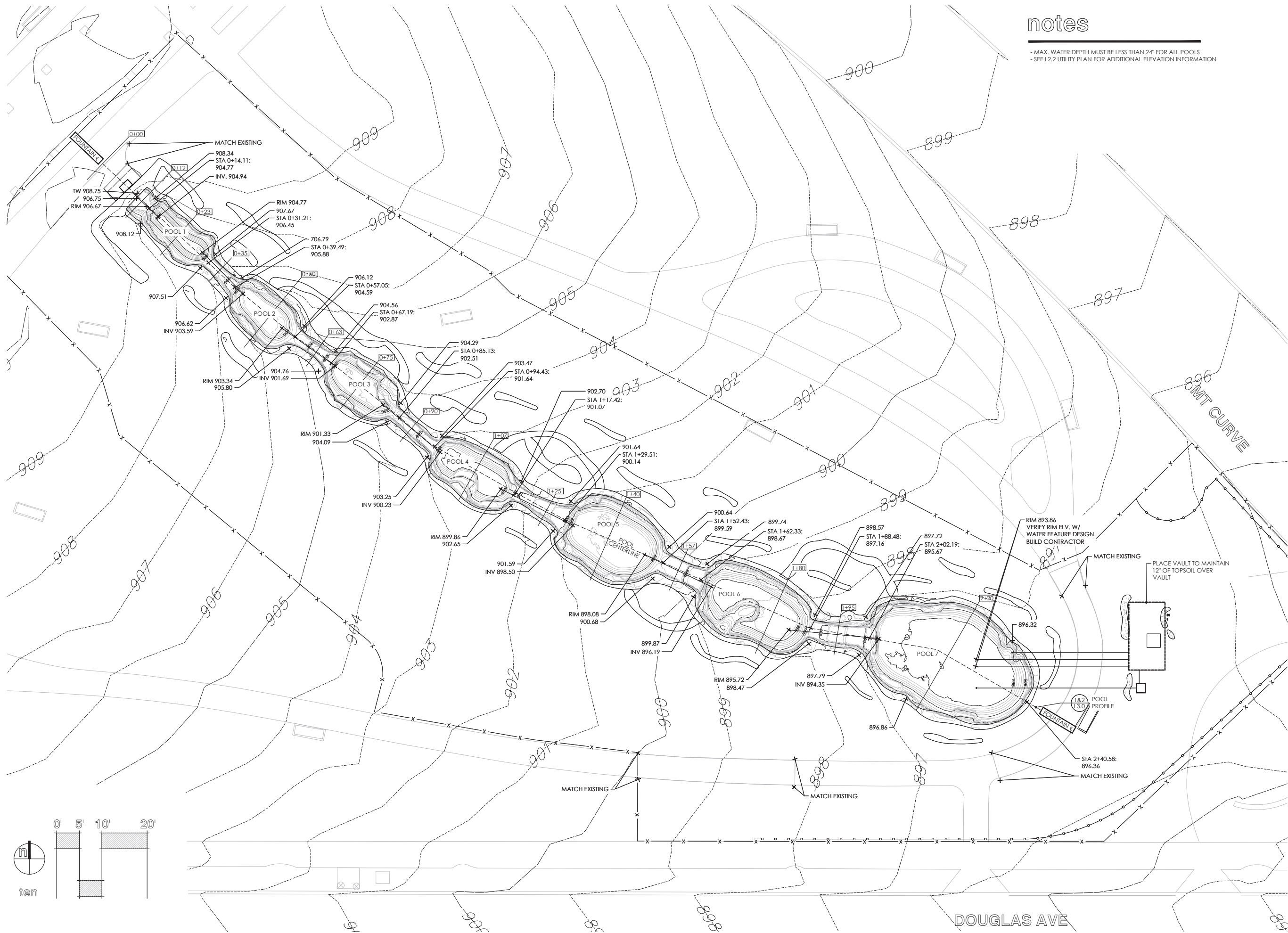
THIS SQUARE APPEARS 1/2" x 1/2" ON FULL SIZE SHEETS.

DRAWN BY: AKH
 CHECKED BY: CJF

L1.1

notes

- MAX. WATER DEPTH MUST BE LESS THAN 24" FOR ALL POOLS
- SEE L2.2 UTILITY PLAN FOR ADDITIONAL ELEVATION INFORMATION



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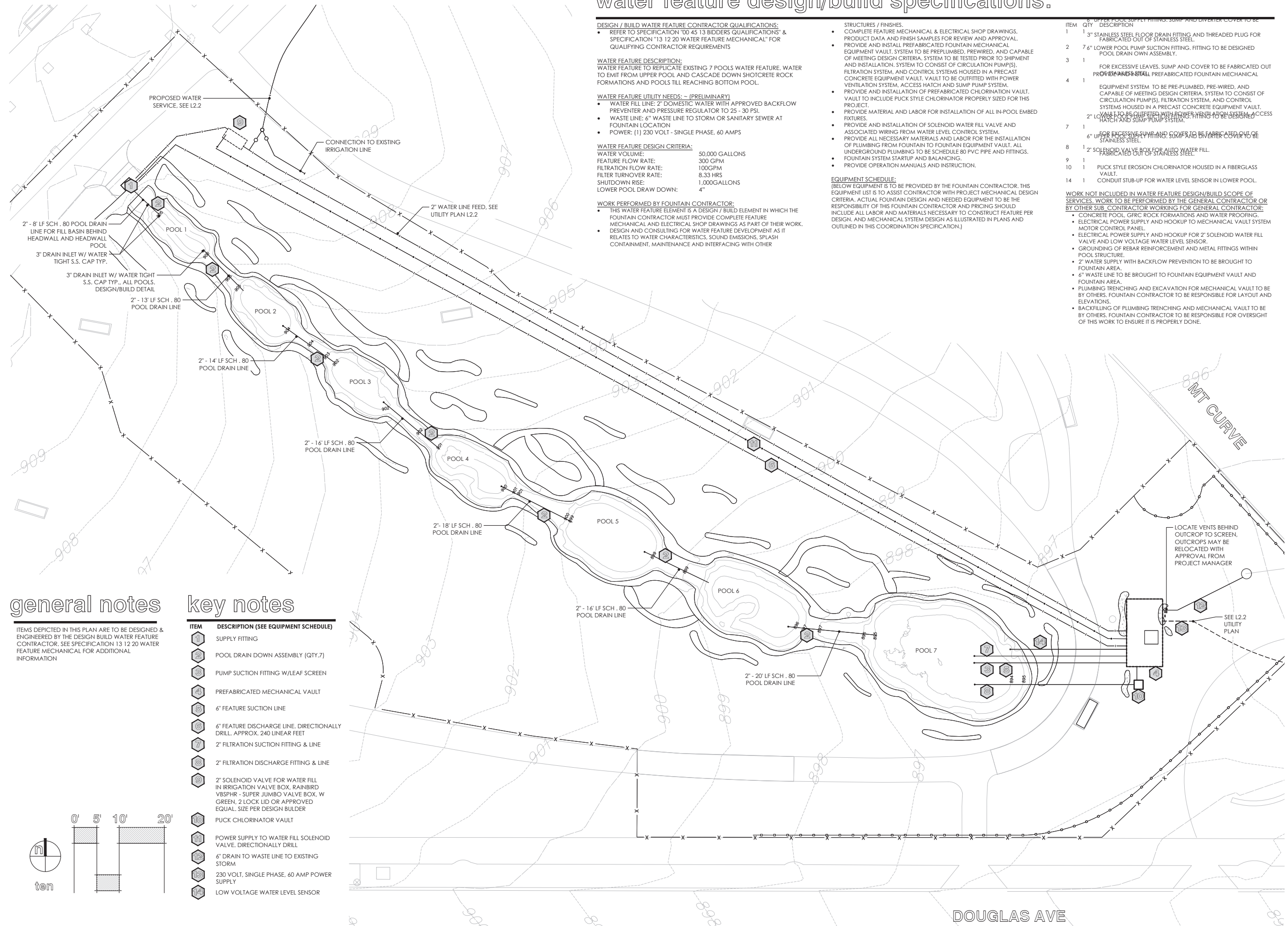
fountain layout

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DRAWN BY: AKH
 CHECKED BY: CJF

L1.3

water feature design/build specifications:



DESIGN / BUILD WATER FEATURE CONTRACTOR QUALIFICATIONS:

- REFER TO SPECIFICATION '00 45 13 BIDDERS QUALIFICATIONS' & SPECIFICATION '13 12 20 WATER FEATURE MECHANICAL' FOR QUALIFYING CONTRACTOR REQUIREMENTS

WATER FEATURE DESCRIPTION:
 WATER FEATURE TO REPLICATE EXISTING 7 POOLS WATER FEATURE. WATER TO EMIT FROM UPPER POOL AND CASCADE DOWN SHOTCRETE ROCK FORMATIONS AND POOLS TILL REACHING BOTTOM POOL.

WATER FEATURE UTILITY NEEDS: - (PRELIMINARY)

- WATER FILL LINE: 2" DOMESTIC WATER WITH APPROVED BACKFLOW PREVENTER AND PRESSURE REGULATOR TO 25 - 30 PSI.
- WASTE LINE: 6" WASTE LINE TO STORM OR SANITARY SEWER AT FOUNTAIN LOCATION
- POWER: (1) 230 VOLT - SINGLE PHASE, 60 AMPS

WATER FEATURE DESIGN CRITERIA:

WATER VOLUME: 50,000 GALLONS
 FEATURE FLOW RATE: 300 GPM
 FILTRATION FLOW RATE: 100GPM
 FILTER TURNOVER RATE: 8.33 HRS
 SHUTDOWN RISE: 1,000GALLONS
 LOWER POOL DRAW DOWN: 4"

WORK PERFORMED BY FOUNTAIN CONTRACTOR:

- THIS WATER FEATURE ELEMENT IS A DESIGN / BUILD ELEMENT IN WHICH THE FOUNTAIN CONTRACTOR MUST PROVIDE COMPLETE FEATURE MECHANICAL AND ELECTRICAL SHOP DRAWINGS AS PART OF THEIR WORK.
- DESIGN AND CONSULTING FOR WATER FEATURE DEVELOPMENT AS IT RELATES TO WATER CHARACTERISTICS, SOUND EMISSIONS, SPLASH CONTAINMENT, MAINTENANCE AND INTERFACING WITH OTHER

STRUCTURES / FINISHES:

- COMPLETE FEATURE MECHANICAL & ELECTRICAL SHOP DRAWINGS, PRODUCT DATA AND FINISH SAMPLES FOR REVIEW AND APPROVAL.
- PROVIDE AND INSTALL PREFABRICATED FOUNTAIN MECHANICAL EQUIPMENT VAULT. SYSTEM TO BE PREPLUMBED, PREWIRED, AND CAPABLE OF MEETING DESIGN CRITERIA. SYSTEM TO BE TESTED PRIOR TO SHIPMENT AND INSTALLATION. SYSTEM TO CONSIST OF CIRCULATION PUMP(S), FILTRATION SYSTEM, AND CONTROL SYSTEMS HOUSED IN A PRECAST CONCRETE EQUIPMENT VAULT. VAULT TO BE OUTFITTED WITH POWER VENTILATION SYSTEM, ACCESS HATCH AND SUMP PUMP SYSTEM.
- PROVIDE AND INSTALLATION OF PREFABRICATED CHLORINATION VAULT. VAULT TO INCLUDE PUCK STYLE CHLORINATOR PROPERLY SIZED FOR THIS PROJECT.
- PROVIDE MATERIAL AND LABOR FOR INSTALLATION OF ALL IN-POOL EMBED FIXTURES.
- PROVIDE AND INSTALLATION OF SOLENOID WATER FILL VALVE AND ASSOCIATED WIRING FROM WATER LEVEL CONTROL SYSTEM.
- PROVIDE ALL NECESSARY MATERIALS AND LABOR FOR THE INSTALLATION OF PLUMBING FROM FOUNTAIN TO FOUNTAIN EQUIPMENT VAULT. ALL UNDERGROUND PLUMBING TO BE SCHEDULE 80 PVC PIPE AND FITTINGS.
- FOUNTAIN SYSTEM STARTUP AND BALANCING.
- PROVIDE OPERATION MANUALS AND INSTRUCTION.

EQUIPMENT SCHEDULE:
 (BELOW EQUIPMENT IS TO BE PROVIDED BY THE FOUNTAIN CONTRACTOR. THIS EQUIPMENT LIST IS TO ASSIST CONTRACTOR WITH PROJECT MECHANICAL DESIGN CRITERIA. ACTUAL FOUNTAIN DESIGN AND NEEDED EQUIPMENT TO BE THE RESPONSIBILITY OF THIS FOUNTAIN CONTRACTOR AND PRICING SHOULD INCLUDE ALL LABOR AND MATERIALS NECESSARY TO CONSTRUCT FEATURE PER DESIGN, AND MECHANICAL SYSTEM DESIGN AS ILLUSTRATED IN PLANS AND OUTLINED IN THIS COORDINATION SPECIFICATION.)

ITEM	QTY	DESCRIPTION
1	1	3" STAINLESS STEEL FLOOR DRAIN FITTING AND THREADED PLUG FOR FABRICATED OUT OF STAINLESS STEEL.
2	7	6" LOWER POOL PUMP SUCTION FITTING, FITTING TO BE DESIGNED POOL DRAIN OWN ASSEMBLY.
3	1	FOR EXCESSIVE LEAVES, SUMP AND COVER TO BE FABRICATED OUT OF STAINLESS STEEL.
4	1	PREFABRICATED FOUNTAIN MECHANICAL EQUIPMENT VAULT. SYSTEM TO BE PRE-PLUMBED, PRE-WIRED, AND CAPABLE OF MEETING DESIGN CRITERIA. SYSTEM TO CONSIST OF CIRCULATION PUMP(S), FILTRATION SYSTEM, AND CONTROL SYSTEMS HOUSED IN A PRECAST CONCRETE EQUIPMENT VAULT.
5	1	VAULT TO BE OUTFITTED WITH POWER VENTILATION SYSTEM, ACCESS HATCH AND SUMP PUMP SYSTEM.
6	1	FOR EXCESSIVE LEAVES, SUMP AND COVER TO BE FABRICATED OUT OF STAINLESS STEEL.
7	1	6" UPPER POOL PUMP SUCTION FITTING, FITTING TO BE DESIGNED POOL DRAIN OWN ASSEMBLY.
8	1	SOLENOID VALVE BOX FOR AUTO WATER FILL.
9	1	FABRICATED OUT OF STAINLESS STEEL.
10	1	PUCK STYLE EROSION CHLORINATOR HOUSED IN A FIBERGLASS VAULT.
14	1	CONDUIT STUB-UP FOR WATER LEVEL SENSOR IN LOWER POOL.

WORK NOT INCLUDED IN WATER FEATURE DESIGN/BUILD SCOPE OF SERVICES. WORK TO BE PERFORMED BY THE GENERAL CONTRACTOR OR BY OTHER SUB CONTRACTOR WORKING FOR GENERAL CONTRACTOR:

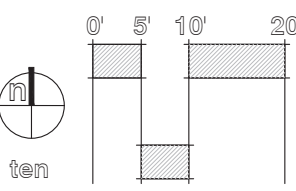
- CONCRETE POOL, GFRC ROCK FORMATIONS AND WATER PROOFING.
- ELECTRICAL POWER SUPPLY AND HOOKUP TO MECHANICAL VAULT SYSTEM MOTOR CONTROL PANEL.
- ELECTRICAL POWER SUPPLY AND HOOKUP FOR 2" SOLENOID WATER FILL VALVE AND LOW VOLTAGE WATER LEVEL SENSOR.
- GROUNDING OF REBAR REINFORCEMENT AND METAL FITTINGS WITHIN POOL STRUCTURE.
- 2" WATER SUPPLY WITH BACKFLOW PREVENTION TO BE BROUGHT TO FOUNTAIN AREA.
- 6" WASTE LINE TO BE BROUGHT TO FOUNTAIN EQUIPMENT VAULT AND FOUNTAIN AREA.
- PLUMBING TRENCHING AND EXCAVATION FOR MECHANICAL VAULT TO BE BY OTHERS. FOUNTAIN CONTRACTOR TO BE RESPONSIBLE FOR LAYOUT AND ELEVATIONS.
- BACKFILLING OF PLUMBING TRENCHING AND MECHANICAL VAULT TO BE BY OTHERS. FOUNTAIN CONTRACTOR TO BE RESPONSIBLE FOR OVERSIGHT OF THIS WORK TO ENSURE IT IS PROPERLY DONE.

general notes

ITEMS DEPICTED IN THIS PLAN ARE TO BE DESIGNED & ENGINEERED BY THE DESIGN BUILD WATER FEATURE CONTRACTOR. SEE SPECIFICATION 13 12 20 WATER FEATURE MECHANICAL FOR ADDITIONAL INFORMATION

key notes

ITEM	DESCRIPTION (SEE EQUIPMENT SCHEDULE)
1	SUPPLY FITTING
2	POOL DRAIN DOWN ASSEMBLY (QTY.7)
3	PUMP SUCTION FITTING W/LEAF SCREEN
4	PREFABRICATED MECHANICAL VAULT
5	6" FEATURE SUCTION LINE
6	6" FEATURE DISCHARGE LINE, DIRECTIONALLY DRILL, APPROX. 240 LINEAR FEET
7	2" FILTRATION SUCTION FITTING & LINE
8	2" FILTRATION DISCHARGE FITTING & LINE
9	2" SOLENOID VALVE FOR WATER FILL IN IRRIGATION VALVE BOX, RAINBIRD VBSPHR - SUPER JUMBO VALVE BOX, W GREEN, 2 LOCK LID OR APPROVED EQUAL, SIZE PER DESIGN BULDER
10	PUCK CHLORINATOR VAULT
11	POWER SUPPLY TO WATER FILL SOLENOID VALVE, DIRECTIONALLY DRILL
12	6" DRAIN TO WASTE LINE TO EXISTING STORM
13	230 VOLT, SINGLE PHASE, 60 AMP POWER SUPPLY
14	LOW VOLTAGE WATER LEVEL SENSOR



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sheet title

water feature plan

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DRAWN BY: AKH
 CHECKED BY: CJF

L1.4

soils notes

- A ALL PLANTING BEDS SHALL RECEIVE 18" PULVERIZED LOAM TOPSOIL BORROW MN DOT SPEC. 3877-2B ENHANCE WITH AGED AND SCREENED COMPOST
- B ALL SODDED(LAWN) AREA WITHIN EXCAVATION LIMITS SHALL RECEIVE 12" MIN. COMMON TOPSOIL BORROW MN DOT SPEC. 3877-1A
- C ALL SODDED(LAWN) AREA WITHIN DISTURBED AREAS BUT OUTSIDE OF EXCAVATION LIMITS SHALL RECEIVE 4" MIN. COMMON TOPSOIL BORROW MN DOT SPEC. 3877-1A IF EXISTING SOILS ARE DEEMED UNSUITABLE

key notes

- IRRIGATION: SEE SHEET L2.1 FOR AS-BUILT IRRIGATION PLAN. EXISTING IRRIGATION SYSTEM BRAND IS RAINBIRD. IRRIGATION REPLACEMENT TO BE DESIGN-BUILT BY THE IRRIGATION CONTRACTOR. THE IRRIGATION CONTRACTOR WILL BE REQUIRED TO SUBMIT AN IRRIGATION PLAN FOR APPROVAL PRIOR TO INSTALLATION. REFER TO SPECIFICATION (DESIGN BUILD IRRIGATION) FOR FURTHER INFORMATION ON DESIGN BUILD IRRIGATION REPLACEMENT REQUIREMENTS AND SYSTEM DESIGN. REFER TO SHEET L2.2 -UTILITY PLAN FOR THE LOCATION AND TYPE OF BACKFLOW PREVENTER (RP2) AND BLOW-OUT POINT. THE BASEBID WILL REFLECT THE INSTALLATION OF A COMPLETE AND FUNCTIONING IRRIGATION SYSTEM. PROVIDE ON-SITE OPERATION TUTORIAL FOR OWNER AND INCLUDE ALL MANUALS AND INFORMATION ON THE SYSTEM. IRRIGATION TO ALL AREAS OUTSIDE THE CONSTRUCTION LIMITS MUST REMAIN ON & IN OPERATION THROUGHOUT CONSTRUCTION.
- ANTICIPATED SOD REPLACEMENT BOUNDARY. CONTRACTOR IS RESPONSIBLE FOR THE REPLACEMENT OF ALL DAMAGED TURF WITH SOD.

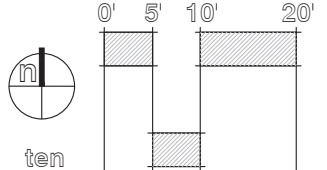
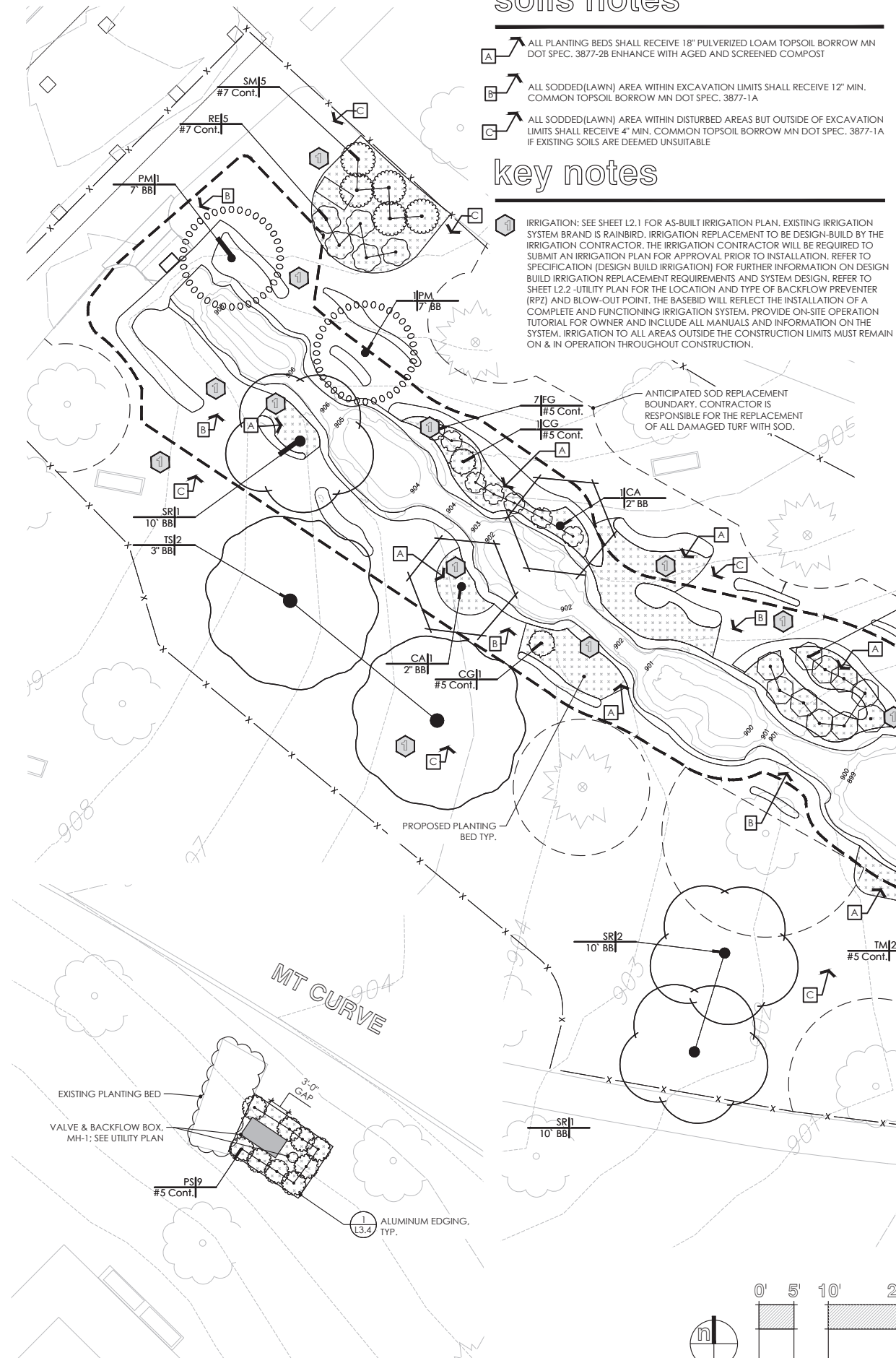
planting notes

1. FOR PLANTING DETAILS, SEE SHEET L3.4.
2. CONFIRM ALL QUANTITIES, SHAPES AND LOCATIONS OF BEDS, AND ADJUST AS REQUIRED TO CONFORM TO THE SITE CONDITIONS. CONFIRM ANY ADJUSTMENTS WITH THE LANDSCAPE ARCHITECT.
3. LOCATE ALL UTILITIES. NOTIFY THE LANDSCAPE ARCHITECT OF ANY CONFLICTS WITH NEW CONSTRUCTION.
4. ALL PLANTING BEDS SHALL RECEIVE 18" MIN. OF PLANTING SOIL. REFER TO SOIL NOTES FOR PLANTING SOIL MIX REQUIREMENTS.
5. ALL SOD AREAS SHALL RECEIVE 12" OF TOP SOIL. REFER TO SOIL NOTES FOR TOP SOIL MIX REQUIREMENTS.
6. ALL PLANTING AREAS SHALL RECEIVE HARDWOOD SHREDDED MULCH APPLIED TO 4" DEPTH WITH PELLET WEED PREVENTER UNDER ALL MULCH BEDS UNLESS INDICATED AS OTHER MULCH ON PLANS.
7. THE CONTRACTOR SHALL REMOVE FROM THE SITE ALL SOD/TURF WHICH HAS BEEN REMOVED FOR NEW PLANT BEDS. ANY PLANT STOCK NOT PLANTED ON DAY OF DELIVERY SHALL BE HELED IN AND WATERED UNTIL INSTALLATION. PLANTS NOT MAINTAINED IN THIS MANNER WILL BE REJECTED.
8. THE PLAN TAKES PRECEDENCE OVER THE PLANT SCHEDULE IF DISCREPANCIES EXIST. ADVISE LANDSCAPE ARCHITECT OF ANY DISCREPANCIES.
9. THE CONTRACTOR SHALL AVOID DAMAGING EXISTING TREES. DO NOT STORE OR DRIVE HEAVY MATERIALS OVER TREE ROOTS. DO NOT DAMAGE TREE BARK OR BRANCHES.
10. THE CONTRACTOR SHALL KEEP PAVEMENTS, FIXTURES AND BUILDINGS CLEAN AND UNSTAINED. ANY DAMAGE TO EXISTING FACILITIES SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE. THE PROJECT SITE SHALL BE KEPT CLEAR OF CONSTRUCTION WASTES AND DEBRIS.
11. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR PLANTING SOIL QUANTITIES TO COMPLETE THE WORK SHOWN ON THE PLAN. MULCH, PLANTING SOIL AND OTHER MISCELLANEOUS PLANTING COMPONENTS SHALL BE CONSIDERED INCIDENTAL TO THE RELATED PLAN. VERIFY ALL QUANTITIES.
12. CONTRACTOR IS RESPONSIBLE FOR WATERING AND ALL PLANT CARE UNTIL FINAL ACCEPTANCE BY THE OWNER.
13. PLANT MATERIAL SHALL BE PROTECTED AND MAINTAINED UNTIL THE INSTALLATION OF PLANTINGS IS COMPLETE. INSPECTION HAS BEEN MADE AND PLANTING IS ACCEPTED EXCLUSIVE OF THE GUARANTEE.
14. MAINTENANCE SHALL INCLUDE WATERING, WEEDING, MULCHING, REMOVAL OF DEAD MATERIAL PRIOR TO GROWING SEASON, RESETTING PLANTS AND PROPER GRADE, AND KEEPING PLANTS IN A PLUMB POSITION. AFTER ACCEPTANCE, THE OWNER SHALL ASSUME MAINTENANCE RESPONSIBILITIES. HOWEVER, THE CONTRACTOR SHALL CONTINUE TO BE RESPONSIBLE FOR KEEPING THE TREES PLUMB THROUGHOUT THE GUARANTEE PERIOD.
15. WATERING: MAINTAIN A WATERING SCHEDULE WHICH WILL THOROUGHLY WATER ALL PLANTS ONCE A WEEK AND SOD EVERY OTHER DAY UNTIL ACCEPTANCE BY THE OWNER. IN EXTREMELY HOT, DRY WEATHER, WATER MORE OFTEN AS REQUIRED BY INDICATIONS OF HEAT STRESS SUCH AS WILTING LEAVES. CHECK MOISTURE UNDER MULCH PRIOR TO WATERING TO DETERMINE NEED. CONTRACTOR SHALL MAKE THE NECESSARY ARRANGEMENTS FOR WATER.

plant schedule

TREES	CODE	BOTANICAL / COMMON NAME	CONT	QTY
PM	PM1	Acer x freemanii 'AF #1' / Firefall Freeman Maple	3" BB	1
SR	SR1	Syringa reticulata 'Ivory Silk' / Japanese Clump Lilac	3" BB	1
TS	TS1	Tilia americana 'Sentry' / American Linden Single Stem	3" BB	2
CG	CG1	Chamaecyparis pisifera 'Golden Map' / Golden Map Threadleaf False Cypress	7" BB	2
FF	FF1	Festuca glauca 'Elijah Blue' / Elijah Blue Fescue	10' BB	3
FG	FG1	Forsythia x 'Courtasol' / Dwarf Gold Tide Forsythia	3" BB	2
SHRUBS				
JN	JN1	Juniperus chinensis 'Sea Green' / Sea Green Juniper	#5 Cont.	3
JD	JD1	Juniperus procumbens 'Nana' / Japanese Dwarf	#5 Cont.	6
PS	PS1	Philadelphus x 'Snow White Fantasy' / Snow White Sensation Mock Orange	#5 Cont.	9
RB	RB1	Rhododendron x 'P.J.M.' / P.J.M. Rhododendron	#5 Cont.	6
SA	SA1	Symphoricarpos albus / Common White Snowberry	#7 Cont.	5
SN	SN1	Syringa meyeri 'Palibin' / Dwarf Korean Lilac	#5 Cont.	9
TM	TM1	Tsuga canadensis 'Moon Frost' / Moon Frost Hemlock	#5 Cont.	2
RE	RE1	Rhododendron x 'P.J.M.' / P.J.M. Rhododendron	#5 Cont.	2
SA	SA2	Symphoricarpos albus / Common White Snowberry	sod 10,813 sf	#5 Cont.
SM	SM1	Syringa meyeri 'Palibin' / Dwarf Korean Lilac	#7 Cont.	5
TM	TM2	Tsuga canadensis 'Moon Frost' / Moon Frost Hemlock	#5 Cont.	2
GROUND COVERS				
PP	PP1	Poa pratensis / Kentucky Bluegrass	sod 10,813 sf	

4" SHREDDED HARDWOOD MULCH APPROX. QTY.: 63 CY



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DRAWN BY: AKH
 CHECKED BY: CJF

L2.0



A. CRAGGY ROCK

- IRREGULAR, UNDULATING SURFACE FORM
- 2"-6" DIA. UNDULATIONS
- HEAVILY TEXTURED

1 cascade character type a: craggy rock
NTS



B. SMALL HORIZONTAL CLEFT

- 1"-2" CLEFTS ON RISER OF STEPS
- ORGANIC AND IRREGULAR CLEFTS FORM NON-CONTINUOUS HORIZONTAL CLEFT DETAIL
- HEAVILY TEXTURED

2 cascade character type b: small horizontal cleft
NTS



C. RUNNING STEPS

- CONTINUOUS 1"-2" CLEFT SPANNING THE CASCADE
- PRODUCES SMALL STEP-LIKE RIPPLES ON THE FACE OF THE CASCADE DROP

3 cascade character type c: running steps
NTS



D. OVERHANG

- 2"-8" LAYERS
- CLEFT DEPTH VARIES
- ROUNDED TEXTURE ON FACES BETWEEN CLEFTS
- OVER-ALL PROFILE RESULTS IN 4"-8" OVERHANGING FACES

4 cascade character type d: overhang
NTS



A. BIG ROCK FLUSH

- BIG ROCK FORMS
- DEFINED BY DEEP CRACK OR FISSURE-LIKE DETAILS
- 3"-4" WITHIN TURF GRADE
- BEDROCK-LIKE FEATURE EMBEDDED UNDER SOD

5 outcrop character type a: big rock flush
NTS



B. BIG ROCK CROP

- BIG ROCK FORMS
- DEFINED BY DEEP CRACK OR FISSURE-LIKE DETAILS
- 4"+ FROM TURF GRADE
- BEDROCK-LIKE PROTRUSION THROUGH SOD

6 outcrop character type b: big rock crop
NTS



C. PILLOWED

- BIG ROCK FORMS
- DEFINED BY DEEP AND WIDE CRACK OR FISSURE-LIKE DETAILS
- MULTIPLE, MASSES PILLOW-LIKE INDIVIDUAL ROCKS
- 2"-8"+ FROM TURF GRADE
- BEDROCK-LIKE PROTRUSION THROUGH SOD

7 outcrop character type c: pillowed
NTS



A. BIG ROCK OUTCROP

- LARGE, CONTINUOUS MASSES STONE FACES
- DEEP CRACK DETAILS DEFINE INDIVIDUAL, PILLOW-LIKE FEATURES
- PILLOW FEATURES VARY WIDELY IN SIZE

8 in-pool feature character type a: big rock outcrop
NTS



B. STEP

- 6"-10" CLEFTS
- PRODUCING A STACKED, STEP-LIKE FEATURE
- 2"-18" TREADS
- STACKS ARE BOTH GEOMETRIC AND ROUND AND ORGANIC

9 in-pool feature character type b: steps
NTS



C. SHELF

- MEDIUM SHELF
- PROTRUDING 6"-12" FROM BASE OF POOL WALL
- 4"-10" TALL
- SHELF FACES ARE SMALL HOR. CLEFT DETAILS
- INTERACTS WITH WATER SURFACE

10 in-pool feature character type c: big shelf
NTS



A. SMALL CLEFT

- 2" - 4" LAYERS
- CLEFT DEPTH VARIES
- ROUNDED TEXTURE ON FACES BETWEEN CLEFTS

11 pool wall character type a: small cleft
NTS



B. LONG CLEFT/LARGE ROCK

- 6"-10" LAYERS
- CLEFT DEPTH VARIES
- MOSTLY FLAT FACES BETWEEN CLEFTS
- PRODUCES INDIVIDUAL ROCK FORMATIONS THAT APPEAR TO BE STACKED

12 pool wall character type b: long cleft/large rock
NTS



A. STIPPLED

- SMOOTH SURFACE COVERED IN SMALL 1/4" - 1/2" STIPPLED DEPRESSIONS

13 theming texture character type a: stippled
NTS



B. KNOBBY

- BUMPY SURFACE COVERED IN 1/2" - 1" IRREGULAR DEPRESSIONS
- FLAKY CHARACTER

14 theming texture character type b: knobby
NTS

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existing theme character classifications

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