# ALGONKIAN PARK POOL RENOVATIONS

## NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
## FAIRFAX STATION, VA

DATE: OCTOBER 11, 2000

COMMONWEALTH OF VIRGINIA
DAVID N. MARKEY
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4253 EDGEWATER CT.
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(770) 424-1306
(770) 514-7071 FAX


ENGINEER'S PROJECT NO. 0002

As Built

A-87

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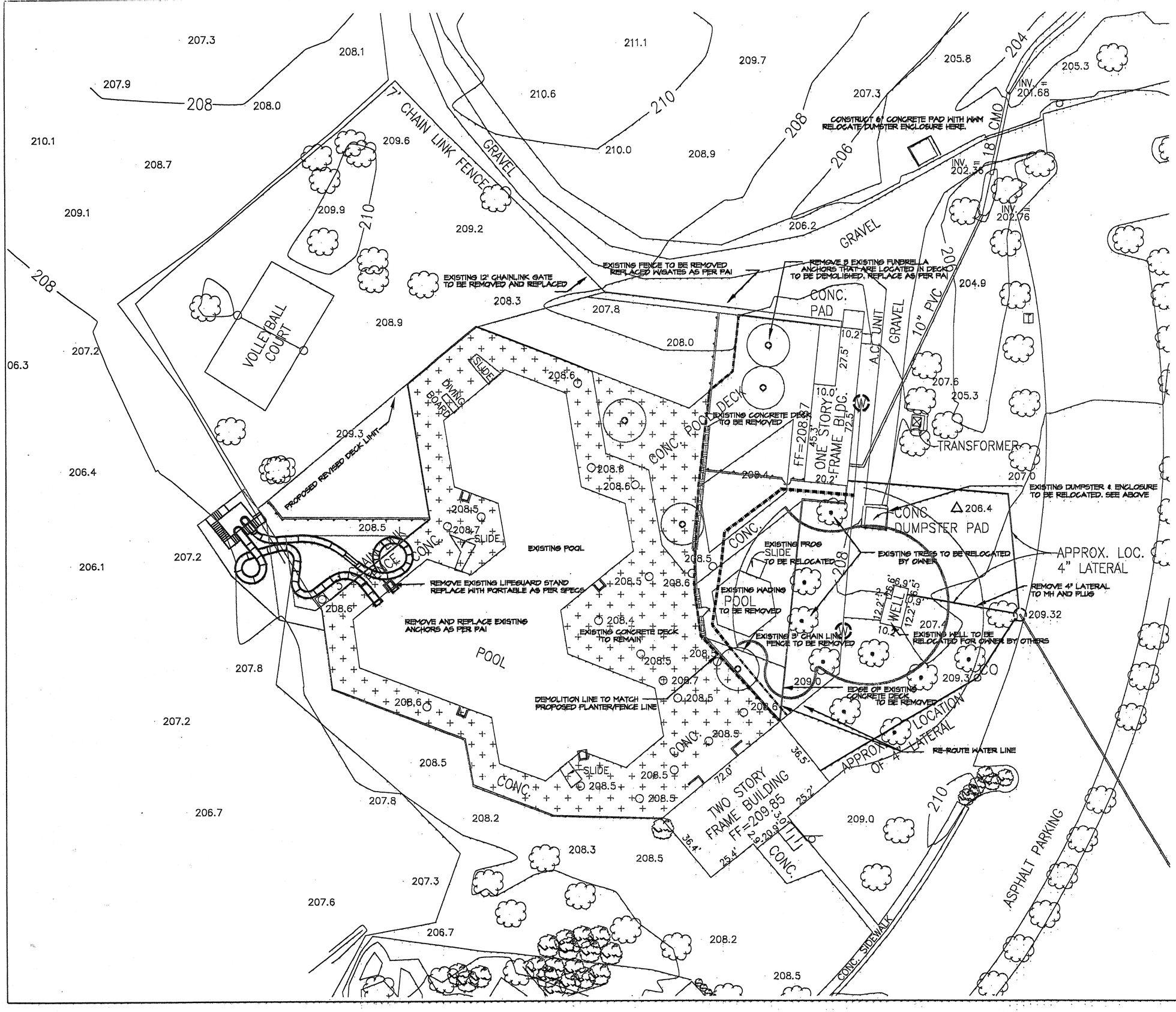


REVISIONS

| NO. | DATE |
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DATE OCT 11, 2000

COMMONWEALTH OF VIRGINIA
DAVID M. MARKEY
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Markey and Associates, Inc.
Engineering Planning
4925 Dupont Circle, N.W.
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(703) 524-1555

DRAWING TITLE: DEMOLITION PLAN

PROJECT: RENOVATIONS TO ALGONKIAN POOL
NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
FAIRFAX STATION, VA

DRAWN BY: TPM
CHECKED BY: TPM
PROJECT NO. 0002

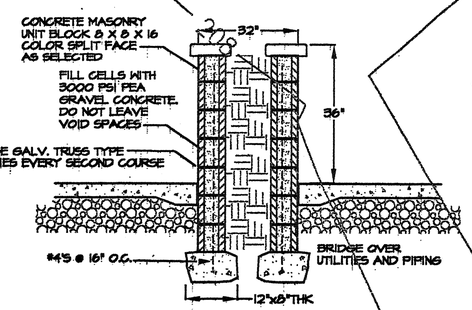
SHEET D1

DRAINAGE LEGEND

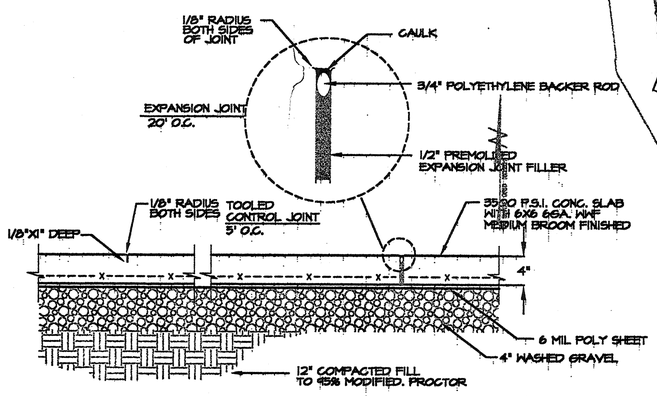
PLASTIC AREA DRAIN SEE SPECIFICATION

6" SCH 40 DWV @ SLOPE

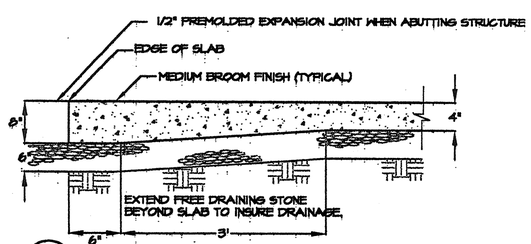
4" PLASTIC TRENCH DRAIN SEE SPECIFICATION TIE TO EXIST. DRAIN U.N.O.



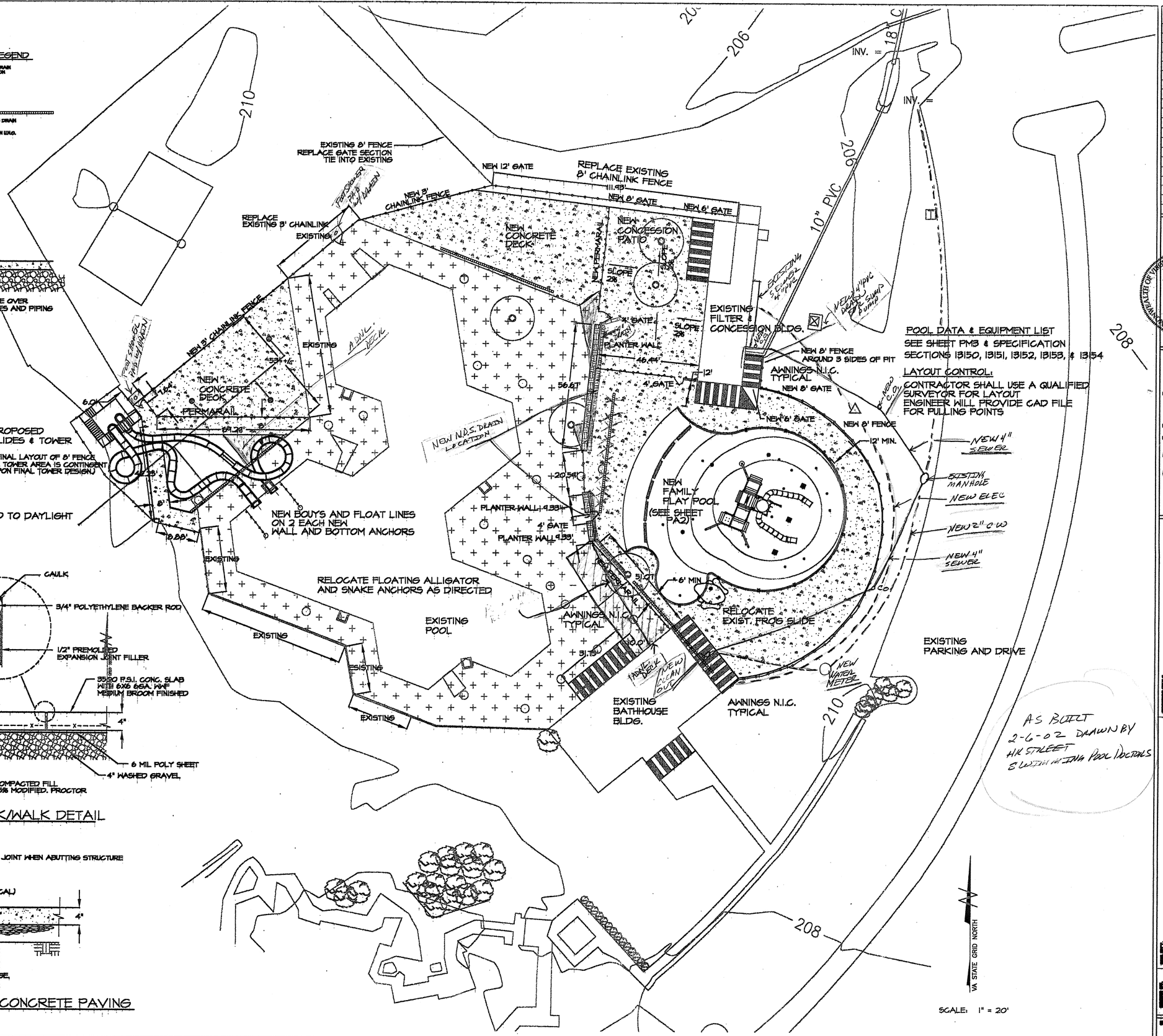

1 PAI PLANTER WALL NTS




2 PAI CONCRETE DECK/WALK DETAIL NTS




3 PAI THICKENED EDGE OF CONCRETE PAVING NTS




POOL DATA & EQUIPMENT LIST

SEE SHEET PM3 & SPECIFICATION SECTIONS 13150, 13151, 13152, 13153, & 13154

LAYOUT CONTROL:

CONTRACTOR SHALL USE A QUALIFIED SURVEYOR FOR LAYOUT ENGINEER WILL PROVIDE CAD FILE FOR PULLING POINTS

AS BUILT 2-6-02 DRAWN BY H.K. STREET & WITH EXISTING POOL DETAILS

REVISIONS

| NO. | DATE |
|---|---|
| | |

DATE OCT 11, 2000

COMMONWEALTH OF VIRGINIA DAVID N. MARKEY No. 034542 PROFESSIONAL ENGINEER

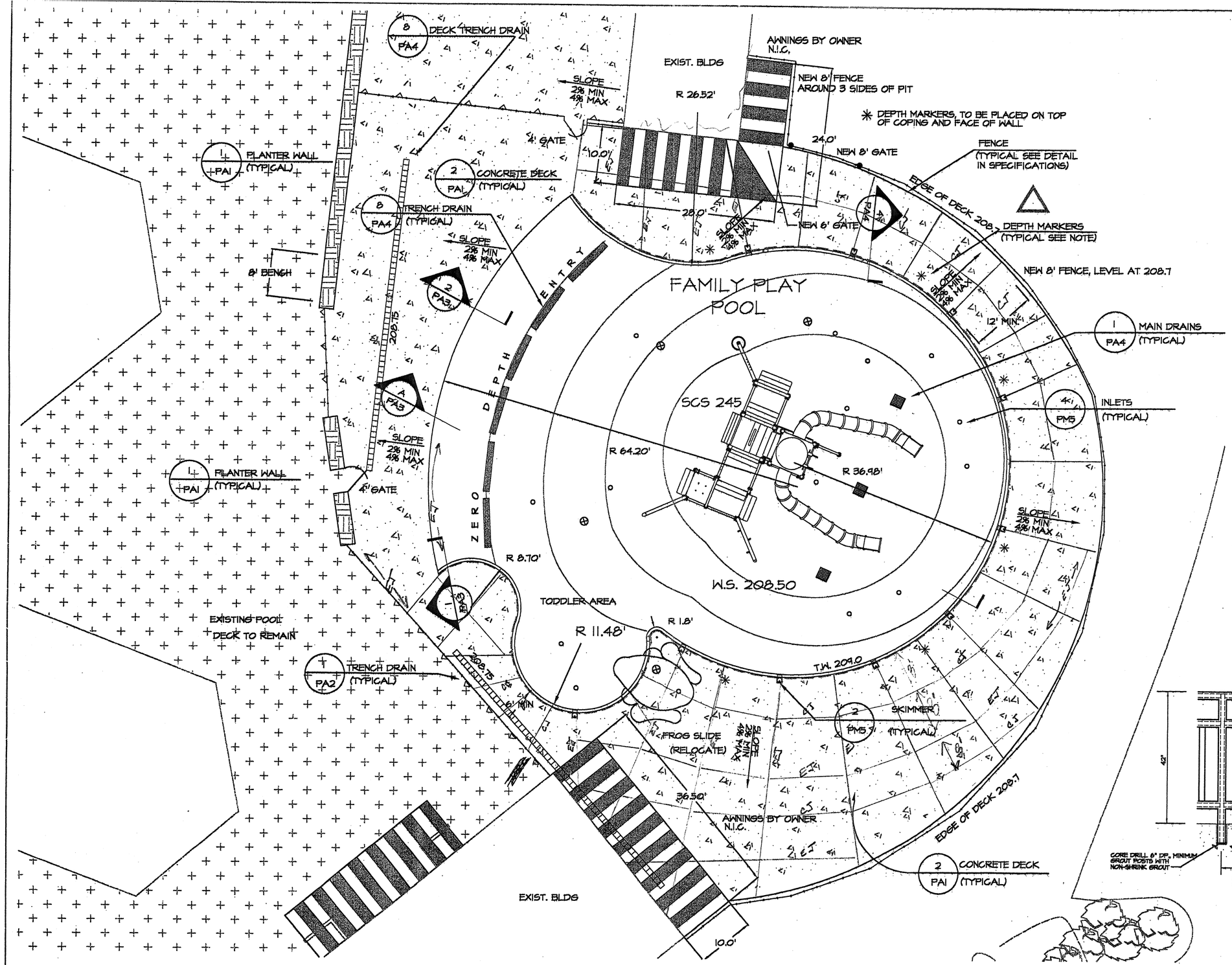

Markey and Associates, Inc.
4263 Edgewater Court, N.W.
Kennesaw, Georgia 30144
(770) 424-1310
FAX (770) 514-7071


TITLE: POOL AREA PLAN

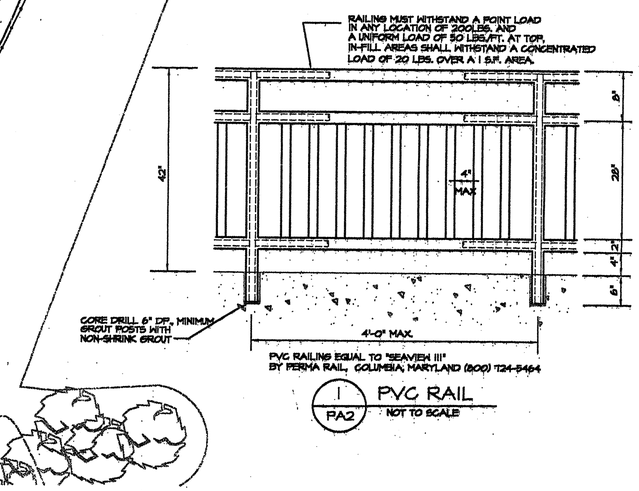
PROJECT: ADDITIONS TO ALGONKIAN POOL
NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
FAIRFAX STATION, VA

DRAWN BY: TA
CHECKED BY: DNM
PROJECT NO. 0002

SHEET PA1




SCALE: 1/8" = 1'-0"




1 PA2 PVC RAIL
NOT TO SCALE

REVISIONS

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| | |

DATE OCT 11, 2000

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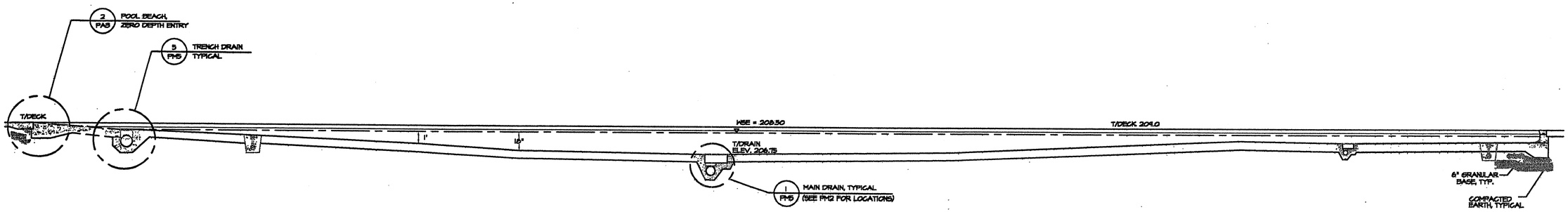
PROJECT TITLE: ADDITIONS TO BLOOMING POOL
NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
FAIRFAX STATION, VA

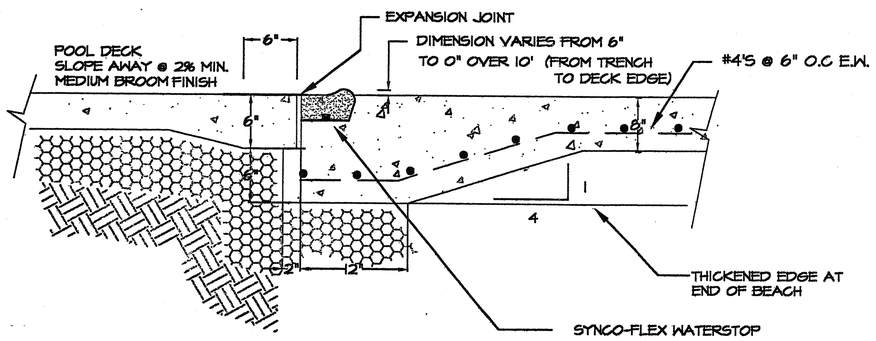
DRAWN BY: DNM
DESIGNED BY: DNM
APPROVED BY: DNM
DATE: 10-11-00

SHEET TITLE: FAMILY PLAN

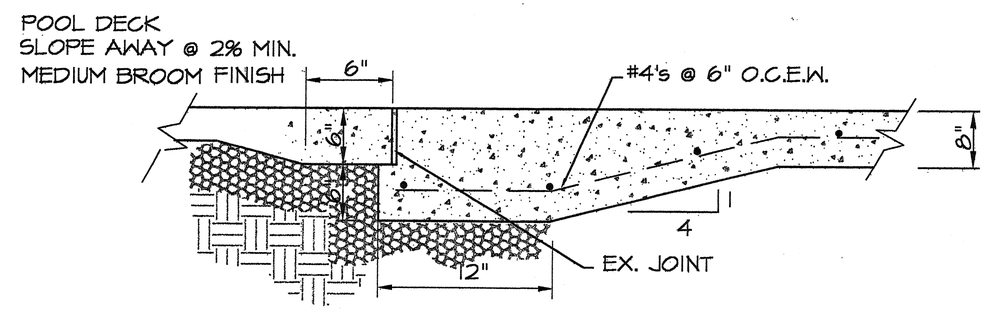
SHEET NO.



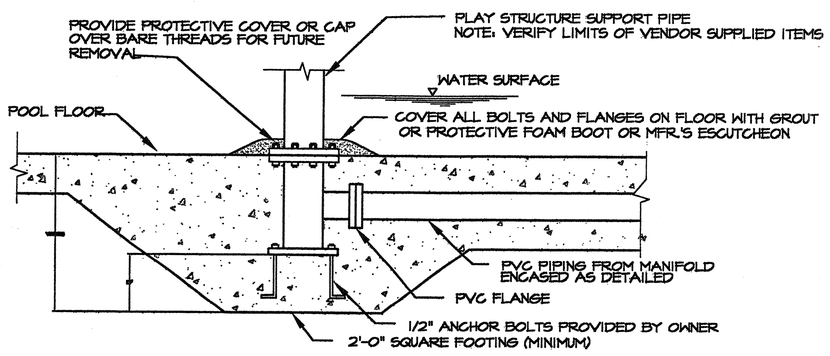

A PA3 SECTION PLAY POOL
SCALE: 1/4" = 1'-0"




1 PA3 SECTION @ POOL WALL EDGE
SCALE: 1" = 1'-0"




2 PA3 SECTION @ POOL AND BEACH
N.T.S.




3 PA3 SCS PLAY SYSTEM FOOTING / PIPE CONNECTION DETAIL
NOT TO SCALE

REVISIONS

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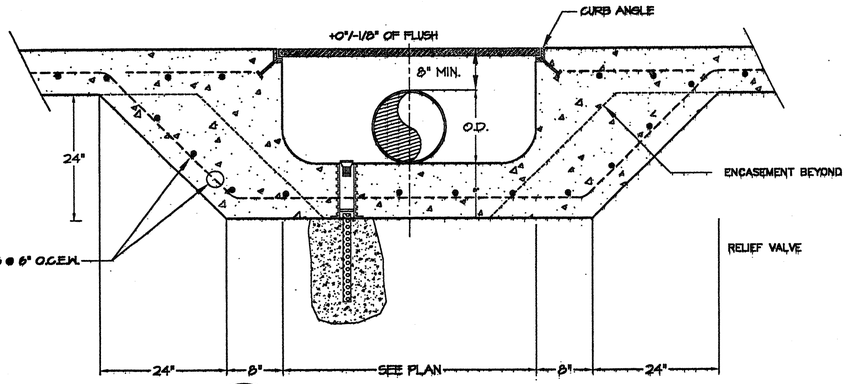
DRAWING TITLE: PLAY POOL SECTION AND DETAILS

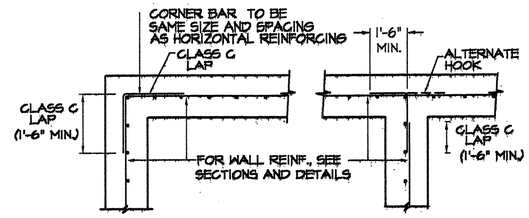
PROJECT: ALGONKIAN PARK POOL RENOVATIONS
NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
FAIRFAX STATION, VA

DESIGNED BY: DNM
DRAWN BY: DNM
PROJECT NO. 0002

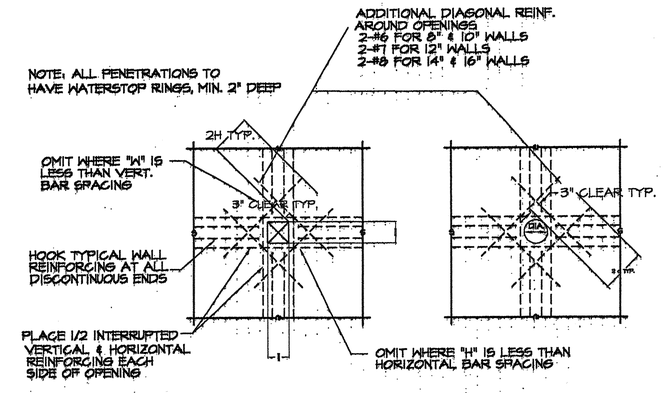
SHEET PA3



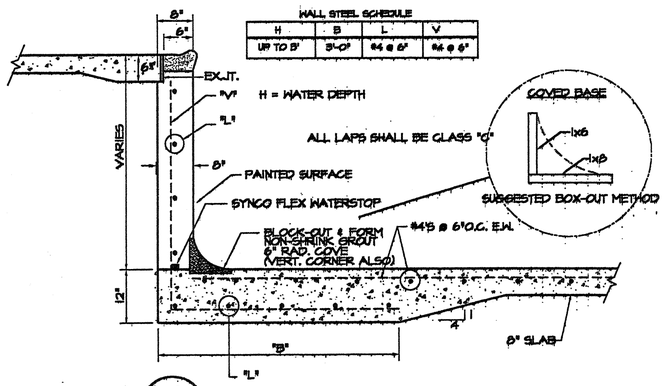

1 / PA4 MAIN DRAIN STRUCTURE
NOT TO SCALE




2 / PA4 TYPICAL WALL REINFORCEMENT DETAILS
NOT TO SCALE



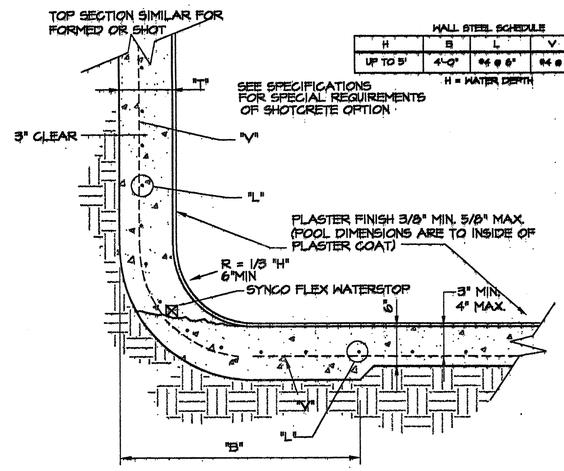

3 / PA6 TYPICAL REINFORCING AROUND POOL WALL OR FLOOR OPENINGS/PENETRATIONS
NOT TO SCALE




WALL STEEL SCHEDULE

| H | B | L | V |
|---|---|---|---|
| UP TO 8' | 3'-0" | #4 @ 8" | #4 @ 6" |

4 / PA4 POOL WALL - FORMED & POURED
SCALE: NTS




WALL STEEL SCHEDULE

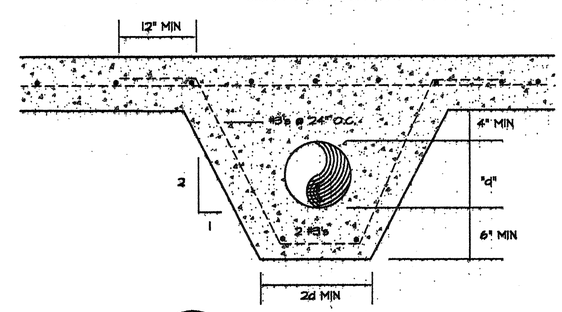
| H | B | L | V | T |
|---|---|---|---|---|
| UP TO 5' | 4'-0" | #4 @ 6" | #4 @ 6" | 8" |

H = WATER DEPTH

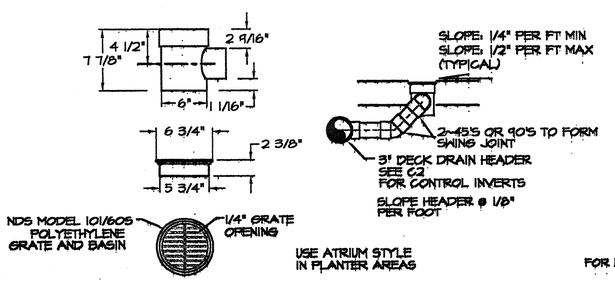
SEE SPECIFICATIONS FOR SPECIAL REQUIREMENTS OF SHOTCRETE OPTION

5 / PA4 SHOTCRETE WALL OPTION - BOTH POOLS
N.T.S.

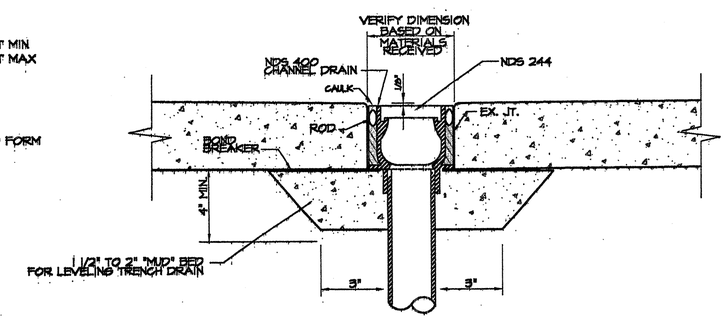
NOTE: SEE SUMP AND OTHER IMBEDMENT DETAILS ELSEWHERE FOR ADDITIONAL REINFORCING STEEL REQUIREMENTS.




6 / PA4 TYP. PIPE ENCASEMENT
SCALE: NTS




7 / PA4 AREA DECK DRAIN DETAIL
NOT TO SCALE




8 / PA4 TRENCH DRAIN DETAIL
SCALE: N.T.S.

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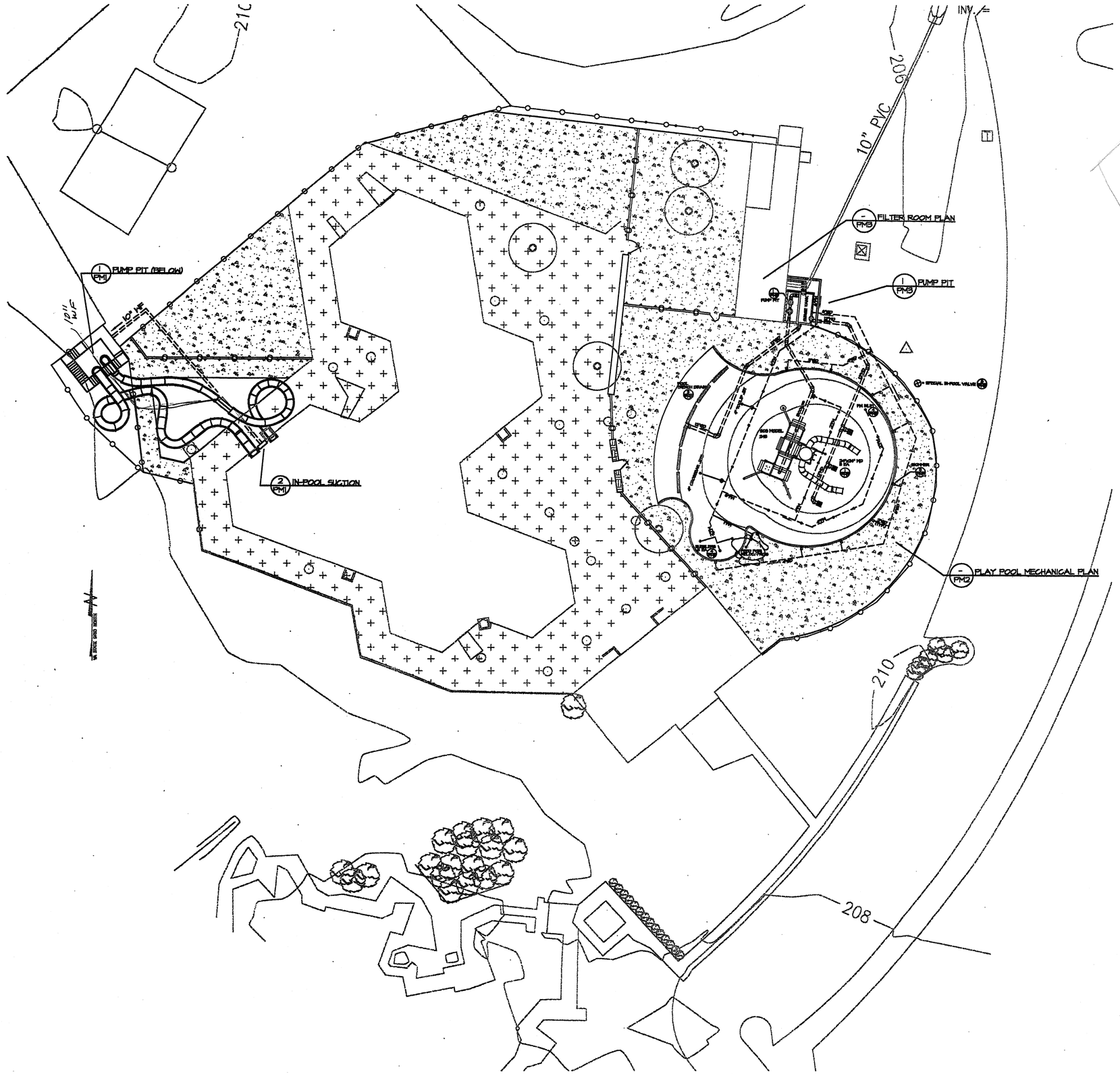
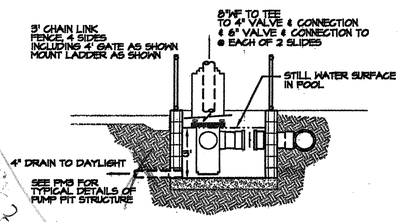
POOL DETAILS

PROJECT: ALGONKIAN PARK POOL RENOVATIONS
NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
FAIRFAX STATION, VA

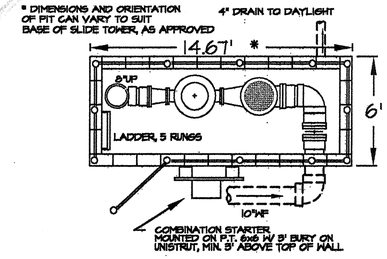
DESIGNED BY: JNM
DRAWN BY: JNM
PROJECT NO. 10002

SHEET PA4



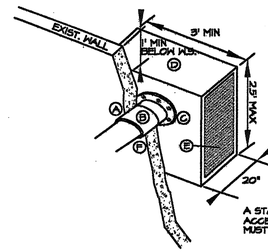




SECTION




PLAN

1 PM1 SLIDE PUMP PIT
SCALE: 1/4" = 1'-0"




- A CORE DRILL HOLE
- B 10" SCH 40 COUPLING
- C PVC FLANGE, 316 ST. STL. BOLTS
- D FRP BOX, 3/8" PL., lxl L FRAME
- E MIN. 40% OPEN FRP GRATING, 2 SIDES MIN. 6 SF OF GRATING (2.4 SF OPEN) SECURELY FASTEN MECHANICALLY W/ TAMPER-PROOF ST. STL. HARDWARE
- F INJECT ANNULAR SPACE W/ EPOXY PATCH

A STAINLESS STL. ALTERNATIVE IS ACCEPTABLE, BUT BONDING AND GROUNDING MUST BE ACCEPTABLY ADDRESSED

2 PM1 IN-POOL SUCTION
SCALE: 1/4" = 1'-0"

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| | |

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COMMONWEALTH OF VIRGINIA
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(770) 424-5508
FAX (770) 514-7071


DRAWING TITLE: POOL MECHANICAL GENERAL LAYOUT

PROJECT: ALGONKIAN PARK POOL RENOVATIONS

OWNER: NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
FAIRFAX STATION, VA

DRAWN BY: DMM
CHECKED BY: DMM
PROJECT NO. 0002

SHEET PM1

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| NO. | DATE |
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| | |

DATE OCT 11, 2000

COMMONWEALTH OF VIRGINIA
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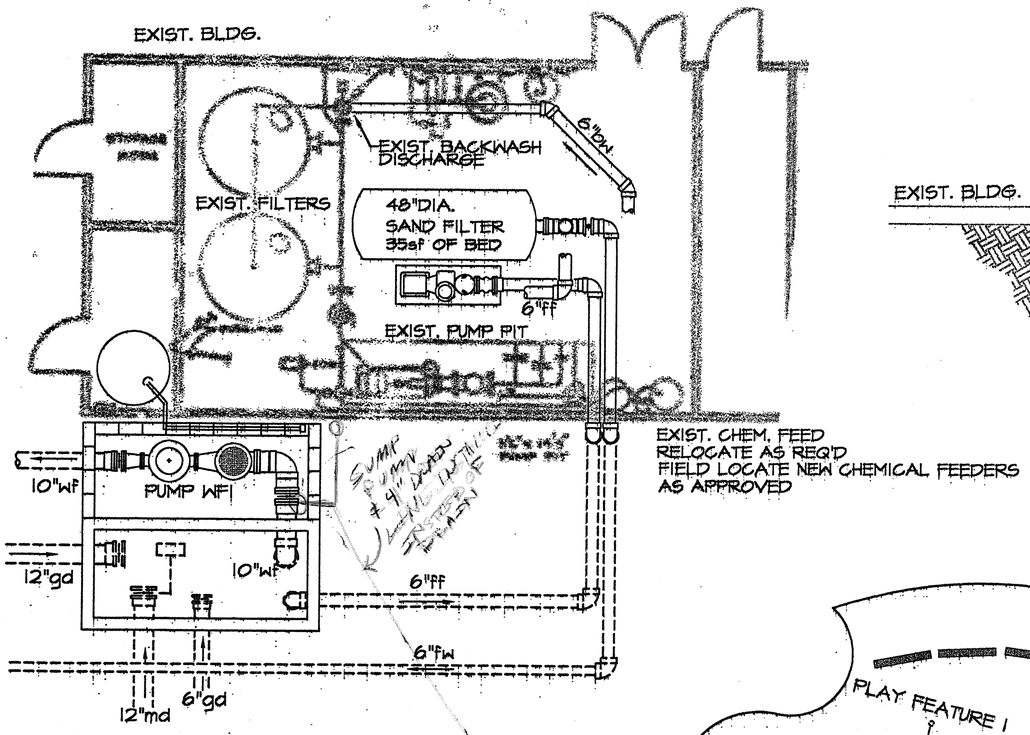
4250 Ridgemoor Court, N.W.
Kennesaw, Georgia 30144
(770) 424-2308
FAX (770) 514-0071


DRAWING TITLE: PLAY POOL MECHANICAL PLAN

PROJECT: ALGONKIAN PARK POOL RENOVATIONS
AGRITHERA VIRGINIA REGIONAL PARK AUTHORITY
FAIRFAX STATION, VA

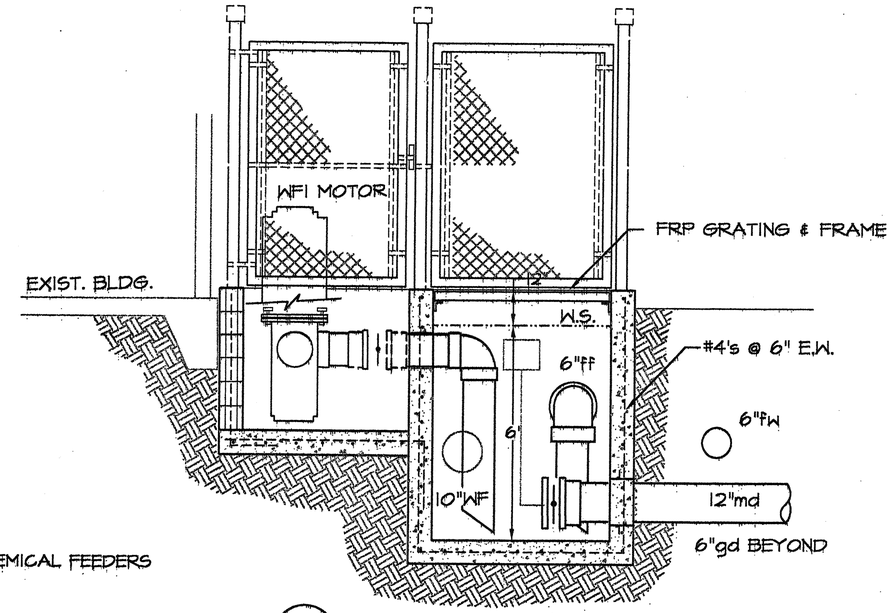
DRAWN BY: LDM
CHECKED BY: DNM
PROJECT NO. 0002

SHEET PM2




## PUMP PIT & FILTER AREA

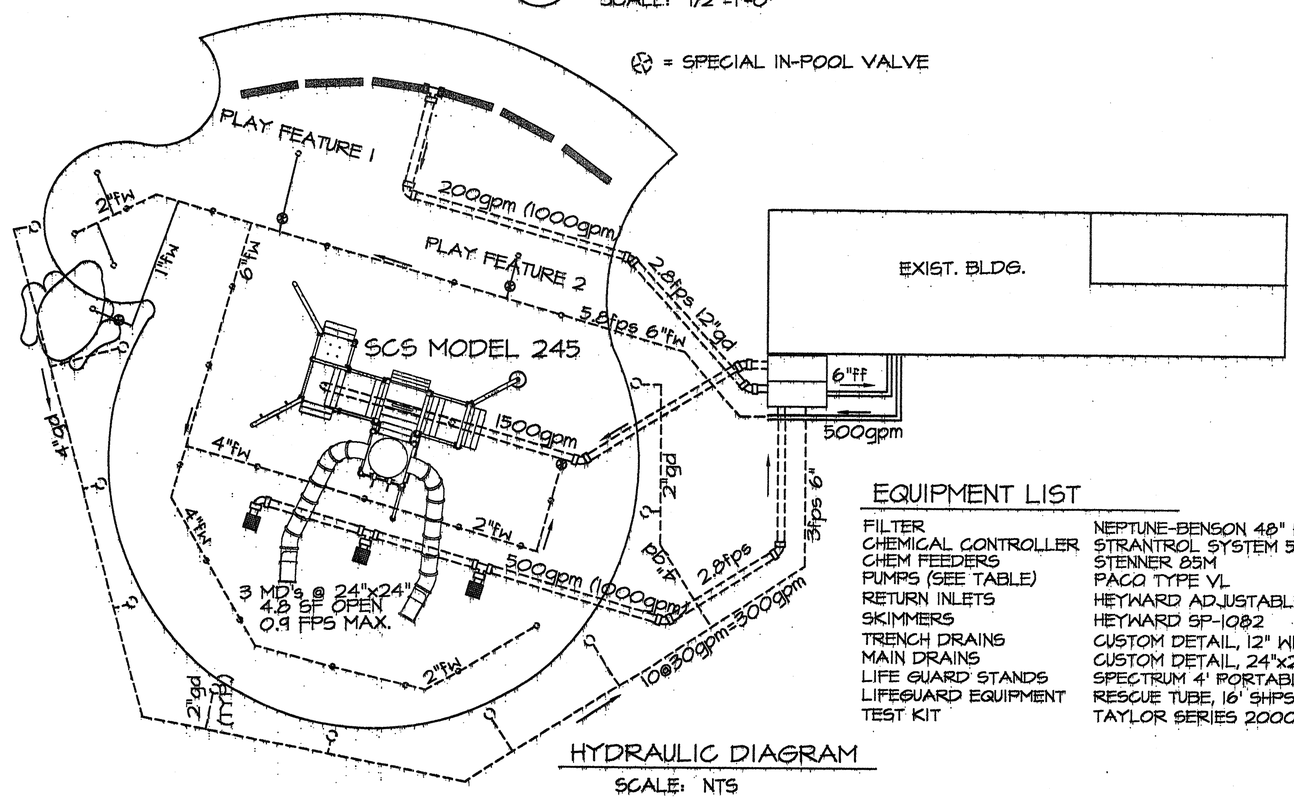
SCALE: 1/4"=1'-0"




1 PM3 PUMP PIT

SCALE: 1/2"=1'-0"

⊗ = SPECIAL IN-POOL VALVE




## HYDRAULIC DIAGRAM

SCALE: NTS

## POOL DATA AND FILTRATION CRITERIA

KIDS PLAY POOL

POOL AREA: 5,640 SF
POOL VOLUME: 45,000 GALS
DESIGN TURNOVER RATE: 90 MINS.
FILTER LOADING RATE: 15 gpm/SF
USE 1 48"DIA. HIGH RATE SAND FILTER w/ 35sf OF BED
AVAILABLE AREA: 35 SF
FILTER FEED (FF) FLOWRATE: 1 PUMP @ 500 gpm @ 65'
DESIGN MAX Cl FEED RATE: 15 PPM = 3 gal/hr
AVERAGE NaOCl FEED: 15 gal/DAY
MAX. ACID FEED RATE: 1 GALS/hr
AVERAGE ACID FEED: 4 GALS/DAY

PUMP WF1 (PLAY POOL WATER FEATURE) PACO TYPE VL, MODEL 8095-1, 8" IMPELLER 1,500 GPM @ 40-FEET TDH, 20 HP
PUMP WF2 (WATER SLIDE) PACO TYPE VL, MODEL 8095-1, 8" IMPELLER 1,500 GPM @ 40-FEET TDH, 20 HP
PUMP FF1 (PLAY POOL FILTER) SELF-PRIMING STA-RITE, INCLUDE PKG184C STRAINER, MODEL CCSPHM3, 500 GPM @ 65-FEET TDH, 15 HP, 1750 RPM
* ALL MOTORS 200V, 3-PHASE, NON-OVERLOADING OVER ENTIRE CURVE

## EQUIPMENT LIST

| | |
|---|---|
| FILTER | NEPTUNE-BENSON 48" HORIZONTAL FIBERGLASS |
| CHEMICAL CONTROLLER | STRANTROL SYSTEM 5 |
| CHEM FEEDERS | STENNER 85M |
| PUMPS (SEE TABLE) | PACO TYPE VL |
| RETURN INLETS | HEYWARD ADJUSTABLE FLOOR INLET |
| SKIMMERS | HEYWARD SP-1082 |
| TRENCH DRAINS | CUSTOM DETAIL, 12" WIDE, 1/2" OPENINGS |
| MAIN DRAINS | CUSTOM DETAIL, 24"x24" u.n.o., 1/2" OPENINGS |
| LIFE GUARD STANDS | SPECTRUM 4' PORTABLE |
| LIFEGUARD EQUIPMENT | RESCUE TUBE, 16' SHPS. HOOK, THROW LINE (BY OWNER) |
| TEST KIT | TAYLOR SERIES 2000 |

REVISIONS
NO. DATE

DATE OCT. 11, 2000

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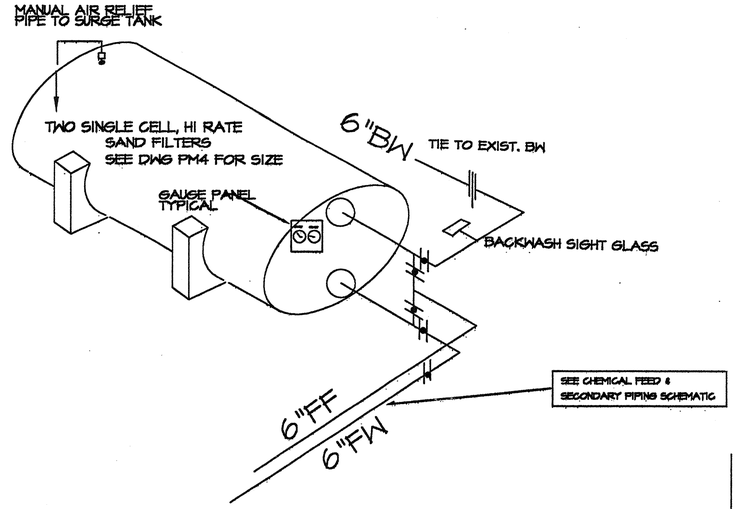
TITLE
FILTER PLAN AND SCHEDULES

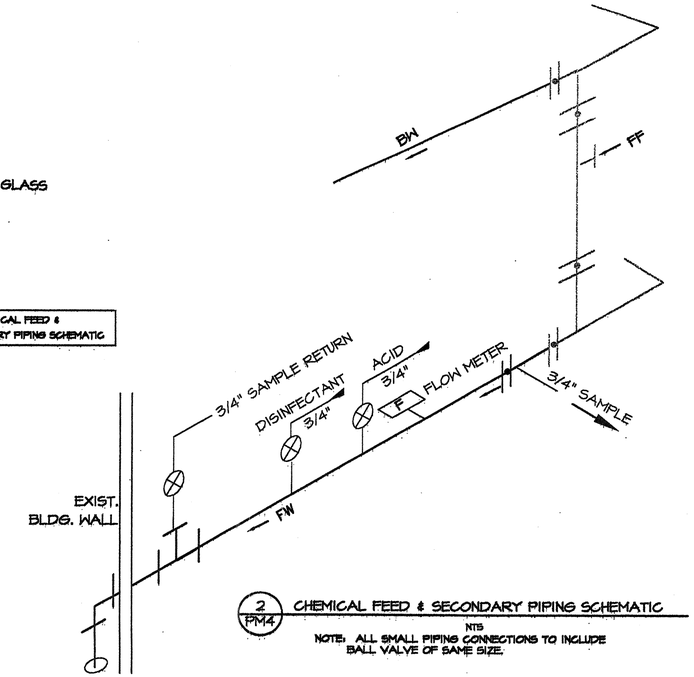
PROJECT
ADDITIONS TO ALEXANDRIA POOL
NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
FAIRFAX STATION, VA

DRAWN BY JDM
CHECKED BY DNM
PROJECT NO. 0002

SHEET PM3




1 PM4 FILTER SYSTEM CONFIGURATIONS
N.T.S.

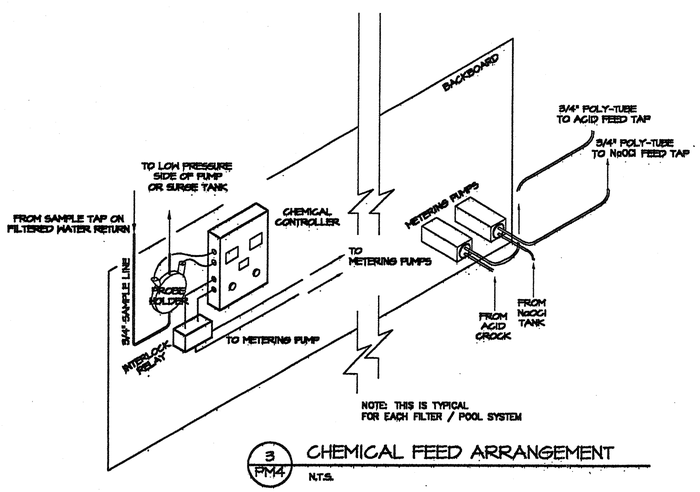



2 PM4 CHEMICAL FEED & SECONDARY PIPING SCHEMATIC
NTS
NOTE: ALL SMALL PIPING CONNECTIONS TO INCLUDE BALL VALVE OF SAME SIZE.

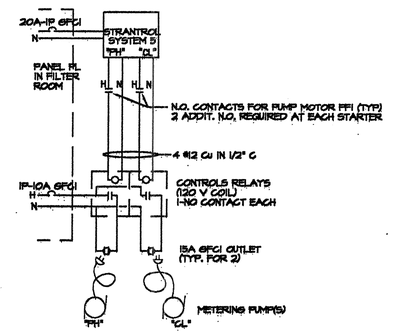
NOTES:

1. ALL SMALL PIPING CONNECTIONS TO INCLUDE BALL VALVE OF SAME SIZE.
2. ALL HIGH POINTS IN THE PIPING AND ON THE FILTERS SHALL BE FITTED WITH A 1/2" TAP AND BALL VALVE WITH AIR RELIEF PIPING TO THE POOL SYSTEM.
3. RUN A 1.5" PVC DRAIN LINE FROM A POINT ABOVE WATER LEVEL BACK TO THE SURGE TANKS OR PUMP SUCTION AS APPLICABLE. AIR RELIEF TUBING AND WASTE SAMPLE FROM CHEMICAL CONTROLLERS SHALL DISCHARGE INTO THESE DRAINS.
4. CHEMICAL FEED TUBING AND SAMPLE STREAMS SHALL BE RUN THROUGH 2" PVC SLEEVES ON THE FLOOR SLAB BETWEEN THE TAPS AND THE CHEMICAL CONTROL STATION.
5. INSTALLATION OF THE CHEMICAL CONTROL EQUIPMENT SHALL BE COORDINATED WITH AND BE ASSISTED BY THE ELECTRICAL SUBCONTRACTOR.

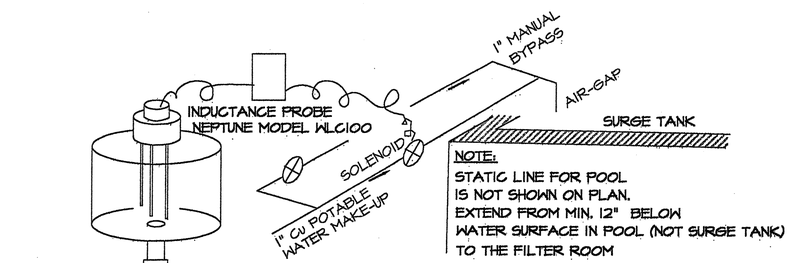
| LEGEND | | COLOR CODE |
|---|---|---|
| FF | FILTER FEED | BLUE W/ BRN STRIPE |
| FW | FILTERED WATER | BLUE |
| GD | GUTTER DRAIN | N/A |
| MD | MAIN DRAIN | N/A |
| BW | BACKWASH | BROWN |
| WF | WATER FEATURE | |
| | BUTTERFLY VALVE | |
| | BALL VALVE | |




3 PM4 CHEMICAL FEED ARRANGEMENT
N.T.S.




4 PM4 CHEMICAL FEED CONTROL WIRING
N.T.S.




5 PM4 AUTO-FILL
N.T.S.

REVISIONS

| NO. | DATE |
|---|---|
| | |

DATE OCT 11, 2000

COMMONWEALTH OF VIRGINIA
DAVID N. MARKEY
No. 034542
PROFESSIONAL ENGINEER

Markey and Associates, Inc.
4250 Ridgewood Court, N.W.
Roanoke, Virginia 24012
(703) 424-1308
FAX (703) 554-7071

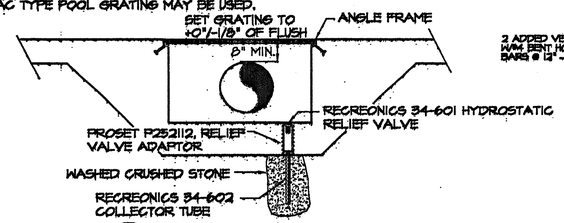
FILTER & CHEMICAL FEED SCHEMATICS

PROJECT NO.
ALGONKIAN PARK POOL RENOVATIONS
NORTHERN VIRGINIA REGIONAL
PARK AUTHORITY
FAIRFAX STATION, VA

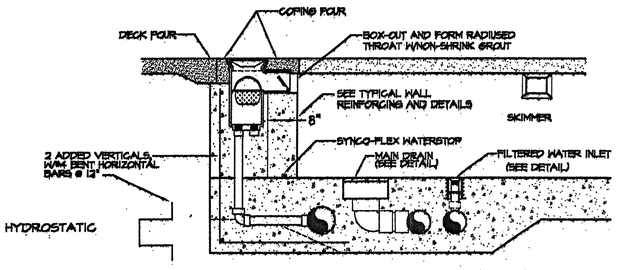
DESIGNED BY: DNM
DRAWN BY: CRM
PROJECT NO. 0002

SHEET PM4

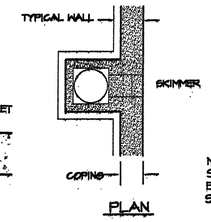
NOTE:
FRP GRATING TO BE PULTRUDED 1" I BAR SERIES ISOPHTHALIC POLYESTER RESIN, WHITE, FLAME RETARDENT WITH FLUSH TOP LOCKING SYSTEM, 40% OPEN AREA, 1/2" MAX. OPENINGS, 60-100 MESH POTTERS SPHERICAL GLASS BEADS IN 2 COATS EPON EPOXY RESIN. GRATING EQUAL TO SEASAFE 4000, FIBERGRATE I-4010, OR EQUAL BY DURADEK. USE MFR'S STANDARD ACCESSORY ANGLE FRAME COMPLETE W/ STAINLESS HOLD-DOWN CLIPS.
ON GRATINGS 18"x18" OR SMALLER, CYCOLAC TYPE POOL GRATING MAY BE USED.

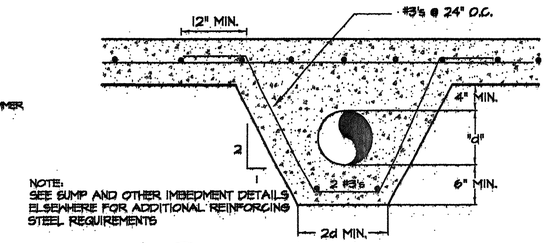



1 PM5 MAIN DRAIN HARDWARE
NOT TO SCALE



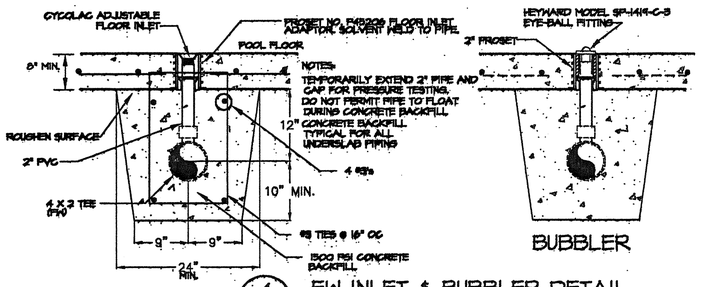

2 PM5 SKIMMER IMBEDMENT
NOT TO SCALE



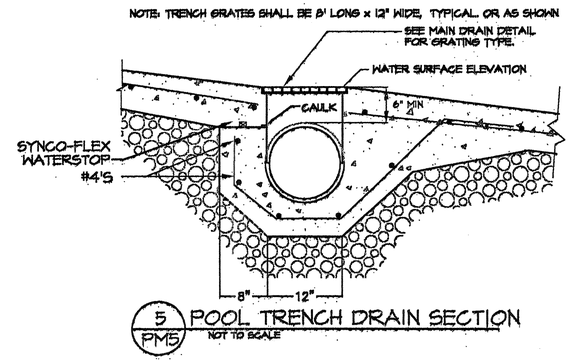




NOTE:
SEE SUMP AND OTHER IMBEDMENT DETAILS ELSEWHERE FOR ADDITIONAL REINFORCING STEEL REQUIREMENTS

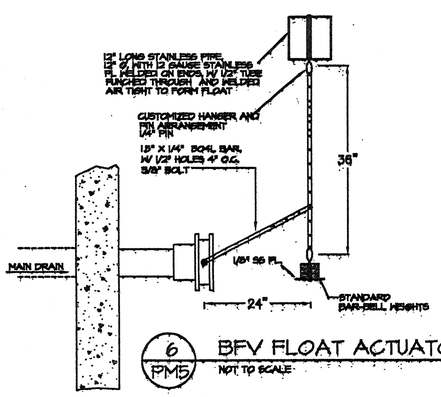
3 PM5 TYPICAL PIPE ENCASEMENT
NOT TO SCALE



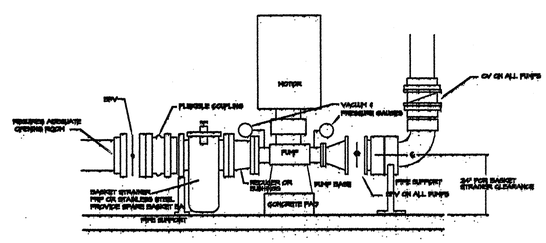

4 PM5 FW INLET & BUBBLER DETAIL
NOT TO SCALE



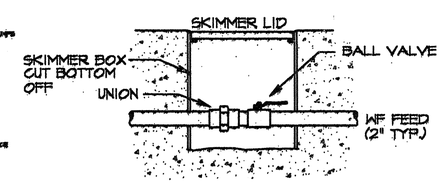

5 PM5 POOL TRENCH DRAIN SECTION
NOT TO SCALE




6 PM5 BFV FLOAT ACTUATOR
NOT TO SCALE




7 PM5 TYP. PUMP ARRANGEMENT
NOT TO SCALE




8 PM5 IN-POOL VALVE & BOX
NOT TO SCALE

REVISIONS

| NO. | DATE |
|---|---|
| | |

DATE OCT 11, 2000

COMMONWEALTH OF VIRGINIA
DAVID N. MARKEY
No. 034562
PROFESSIONAL ENGINEER


MC Markey and Associates, Inc.
4225 Edgewater Court, N.W.
Mount Ulla, NC 28125
(704) 434-2348
FAX (704) 434-7071


PROJECT: ALEXANDRIA POOL RENOVATIONS
NORTHERN VIRGINIA REGIONAL PARK AUTHORITY
FAIRFAX STATION, VA.

DRAWING TITLE: POOL MECHANICAL DETAILS

DRAWN BY: DNM
CHECKED BY: DNM
PROJECT NO. 0002

SHEET PM5

## NEW PANELBOARD SCHEDULE MP

MAIN: 800A MLO | VOLTAGE: 208/120V | PHASE: 3 | WIRE: 4 | MOUNTING: SURFACE

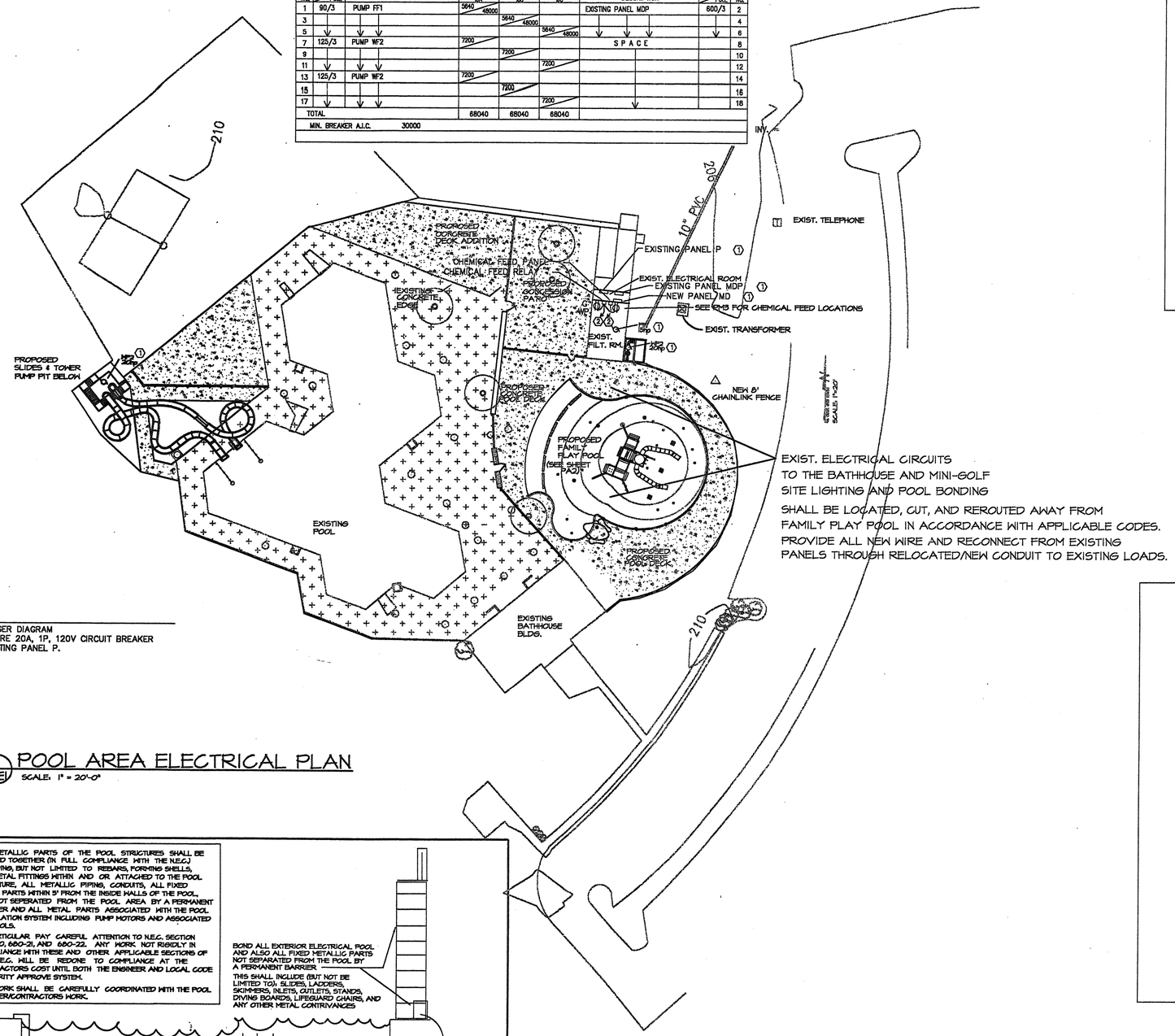
RATED FOR SERVICE ENTRANCE

| CIR NO. | TRIP | POLE | DESCRIPTION | CONNECTED VA | LOAD VA | KVA VA | DESCRIPTION | TRIP | POLE | CIR NO. |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 90/3 | | PUMP FF1 | 5640 / 48000 | | | EXISTING PANEL MDP | 600/3 | | 2 |
| 3 | | | | | 5640 / 48000 | | | | | 4 |
| 5 | | | | | | 5640 / 48000 | | | | 6 |
| 7 | 125/3 | | PUMP WF2 | 7200 | | | SPACE | | | 8 |
| 9 | | | | | 7200 | | | | | 10 |
| 11 | | | | | | 7200 | | | | 12 |
| 13 | 125/3 | | PUMP WF2 | 7200 | | | | | | 14 |
| 15 | | | | | 7200 | | | | | 16 |
| 17 | | | | | | 7200 | | | | 18 |
| TOTAL | | | | 68040 | 68040 | 68040 | | | | |

MIN. BREAKER A.I.C. 30000

## ELECTRICAL SYMBOLS LEGEND & ABBREVIATIONS

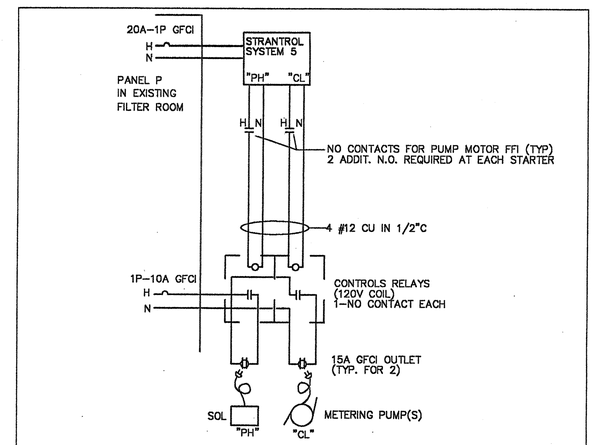
| | |
|---|---|
| A–1,3 | HOMERUN TO DESIGNATED PANEL AND CIRCUIT NUMBER. TALLIES INDICATE NUMBER OF #12 CONDUCTORS. NO TALLIES INDICATE 2#12 & 1#12G–1/2"C, UON. |
| | CONDUIT RUN CONCEALED ABOVE CEILING OR IN WALLS OR EXPOSED |
| | CONDUIT RUN UNDER FLOORSLAB OR UNDERGROUND |
| | 20A, 125V, 3W DUPLEX (NEMA 5–20R) RECEPTACLE, MTD 18" AFF, UON. |
| | PANELBOARD W/TOP, MAX. 6'–6" AFF |
| | COMBINATION MAGNETIC MOTOR STARTER W/ FUSED DISCONNECT SWITCH. |
| F | HEAVY–DUTY DISCONNECT SWITCH, RATINGS AS INDICATED. "F" INDICATES FUSED W/CURRENT LIMITING FUSES. |
| J | JUNCTION BOX |
| | MOTOR |
| AFF | ABOVE FINISHED FLOOR |
| G | GROUND FAULT INTERRUPTING |
| MCB | MAIN CIRCUIT BREAKER |
| MT | MOUNT |
| MTD | MOUNTED |
| MLO | MAIN LUGS ONLY |
| TYP | TYPICAL |
| UON | UNLESS OTHERWISE NOTED |
| WP | WEATHERPROOF |
| X | NOTE DESIGNATION |




NOTES:
1. SEE RISER DIAGRAM
2. TO SPARE 20A, 1P, 120V CIRCUIT BREAKER IN EXISTING PANEL P.

## POOL AREA ELECTRICAL PLAN

SCALE: 1" = 20'-0"



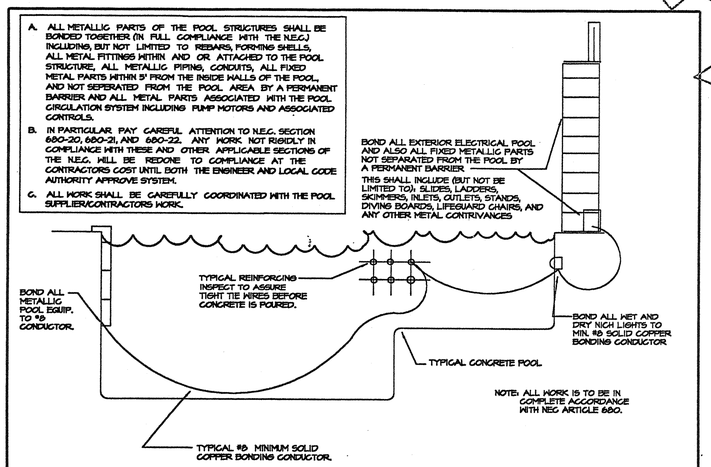

## CHEMICAL FEED INTERLOCK

NTS

A. ALL METALLIC PARTS OF THE POOL STRUCTURES SHALL BE BONDED TOGETHER (IN FULL COMPLIANCE WITH THE N.E.C.) INCLUDING, BUT NOT LIMITED TO REBARS, FORMING SHELLS, ALL METAL FITTINGS WITHIN AND OR ATTACHED TO THE POOL STRUCTURE, ALL METALLIC PIPING, CONDUITS, ALL FIXED METAL PARTS WITHIN 5' FROM THE INSIDE WALLS OF THE POOL, AND NOT SEPERATED FROM THE POOL AREA BY A PERMANENT BARRIER AND ALL METAL PARTS ASSOCIATED WITH THE POOL CIRCULATION SYSTEM INCLUDING PUMP MOTORS AND ASSOCIATED CONTROLS.

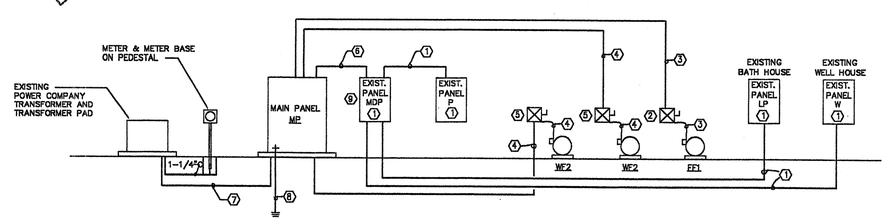
B. IN PARTICULAR, PAY CAREFUL ATTENTION TO N.E.C. SECTION 680-20, 680-21, AND 680-22. ANY WORK NOT RIGIDLY IN COMPLIANCE WITH THESE AND OTHER APPLICABLE SECTIONS OF THE N.E.C. WILL BE REDONE TO COMPLIANCE AT THE CONTRACTORS COST UNTIL BOTH THE ENGINEER AND LOCAL CODE AUTHORITY APPROVE SYSTEM.

C. ALL WORK SHALL BE CAREFULLY COORDINATED WITH THE POOL SUPPLIER/CONTRACTORS WORK.




## BASIC SCHEMATIC OF POOL BONDING (NEC ARTICLE 680–22)

NTS




## RISER DIAGRAM

NTS

RISER NOTES:
1. EXISTING TO REMAIN, VERIFY AS NECESSARY.
2. NEMA SIZE 2 MAGNETIC MOTOR STARTER, 100A DISCONNECT SWITCH W/ 70A FUSES AND NEMA 3R ENCLOSURE.
3. 3#6, 1#8G – 3/4"C.
4. 3#4, 1#8G – 1"C.
5. NEMA SIZE 3 MAGNETIC MOTOR STARTER, 100A DISCONNECT SWITCH W/ 80A FUSES AND NAME 3R ENCLOSURE.
6. 2 SETS – 4#350MCM, 1#1G – 3"C.
7. 2 SETS – 4#500MCM – 3–1/2"C.
8. 1#3/0G. PROVIDE SERVICE ENTRANCE GROUNDING PER NEC ARTICLE 250.
9. DISCONNECT AND REMOVE EXISTING ELECTRICAL SERVICE AND SERVICE EQUIPMENT. COORDINATE W/ LOCAL POWER COMPANY FOR SERVICE REMOVAL.

REVISIONS

| NO. | DATE |
|---|---|

DATE OCT 11, 2000

COMMONWEALTH OF VIRGINIA
DAVID N. MARKEY
No. 034542
PROFESSIONAL ENGINEER


Markey and Associates, Inc.
42553 Edgewater Court, N.W.
Kennesaw, Georgia 30144
(770) 424-1308
FAX (770) 514-7071


DRAWING TITLE: POOL AREA ELECTRICAL

PROJECT: ALGONKIAN PARK POOL RENOVATIONS

OWNER: NORTHERN VIRGINIA REGIONAL PARK AUTHORITY

LOCATION: FAIRFAX STATION, VA

DRAWN BY: JH
CHECKED BY: DNM
PROJECT NO. 0002

SHEET PE1

| No. | Revision | Date |
|---|---|---|
| | | |
| | | |
| | | |
| | | |

Revision Block

# GRADING PLAN FOR ALGONKIAN REGIONAL PARK POOL RENOVATION

LIST OF DRAWINGS


1. COVER SHEET
2. GENERAL NOTES AND CONSTRUCTION DETAILS
3. DEMOLITION PLAN
4. GRADING PLAN
5. EROSION SEDIMENT STAGE I & II PLAN
6. WATER QUALITY (BMP) FACILITY AND NARRATIVE


BROAD RUN DISTRICT
LOUDOUN COUNTY, VIRGINIA

OWNER/DEVELOPER

**NORTHERN VIRGINIA REGIONAL PARK AUTHORITY**

5400 OX ROAD
FAIRFAX STATION, VA. 22039
TELEPHONE: (703) 352-5900


William H. Gordon Associates, Inc.
Engineers•Land Planners•Landscape Architects•Surveyors
4501 DALY DRIVE CHANTILLY, VIRGINIA 22021
(703) 263-1900

PROJECT MANAGER: ROBERT W. WALKER, C.L.A.


COMMONWEALTH OF VIRGINIA
JOSEPH W. McCLELLAN
10/12/00
LICENSE No. 8521
PROFESSIONAL ENGINEER

COMMONWEALTH OF VIRGINIA
JOSEPH W. McCLELLAN
LICENSE No. 8521
PROFESSIONAL ENGINEER

## LEGEND

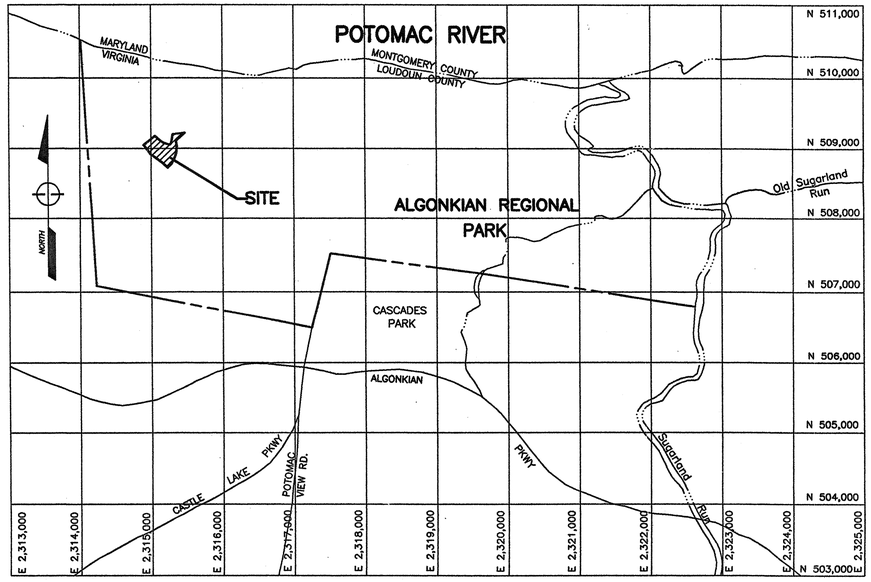
| EXISTING | | PROPOSED |
|---|---|---|
| | PROPERTY LINE | |
| | DEPARTING PROPERTY LINE | |
| | EASEMENT LINE | |
| | EDGE PAVEMENT | |
| | CENTERLINE | |
| X X | FENCE LINE | X X |
| | RAILROAD | |
| G | GAS LINE | G |
| EX. OHE | OVERHEAD ELECTRIC | OHE |
| EX. UGE | UNDERGROUND ELECTRIC LINE | UGE |
| EX. OHT | OVERHEAD TELEPHONE LINE | OHT |
| EX. UGT | UNDERGROUND TELEPHONE LINE | UGT |
| | ROADSIDE DELINEATORS | |
| | GUARDRAIL OR TRAFFIC BARRICADE | |
| EX. 8" W/M W | WATER MAIN | PROP. 8" W/M W |
| TO BE REMOVED / TO REMAIN | BUILDINGS | PROP. BLDG. |
| | RETAINING WALL | |
| EX. CONC. S/W | SIDEWALK | |
| | HEADER CURB | |
| EX. H.C. | CURB & GUTTER | |
| EX. C&G | | CG-6 TRANS CG-6R |
| A EX. 8" SAN S | SANITARY SEWER | A 8" SAN |
| 3 EX. STM. 4 | STORM SEWER | 3 15" RCP 4 |
| | DITCH, SWALE OR SMALL STREAM | |
| | LARGE STREAM | |
| | CONCRETE DITCH | |
| SAVE 30" OAK | TREES | |
| | TREE LINE | |
| | LIMITS OF CLEARING & GRADING | 262 260 |
| 390 | CONTOUR LINE | 390 |
| 42 X 5 | SPOT ELEVATION | 42.5 |

DIRECTOR'S APPROVAL

DIRECTOR — DATE — ORDINANCE SECTION

DEPARTMENT OF BUILDING & DEVELOPMENT

VICINITY MAP
SCALE:1"=1000'



## GENERAL NOTES

1. THIS PARCEL IS IDENTIFIED AS LOUDOUN COUNTY TAX MAP NO. 64, PARCELS 5 AND 5A.
2. THE TOTAL AREA OF DISTURBANCE IS APPROXIMATELY 1.0 ACRES.
3. TOPOGRAPHIC SURVEY FOR THE GRADING PLANS IS FROM A FIELD RUN SURVEY BY WILLIAM H. GORDON ASSOCIATES, INC.
4. THE TOPOGRAPHIC CONTOUR INTERVAL IS TWO (2) FEET (UNLESS OTHERWISE NOTED).
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING THE OWNER AND THE ENGINEER OF ANY CHANGES OR CONDITIONS ATTACHED TO THE GRADING PERMIT.
6. WILLIAM H. GORDON ASSOCIATES, INC. DOES NOT CERTIFY TO THE LOCATION OF OR THE EXISTENCE OF ANY UNDERGROUND UTILITIES. THE UNDERGROUND UTILITIES SHOWN ARE FROM AVAILABLE RECORDS. THIS DOES NOT CONSTITUTE GUARANTEE OF THEIR ACTUAL LOCATION OR THAT THEY HAVE ALL BEEN SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE DIGGING OF TEST HOLES PRIOR TO BEGINNING ANY CONSTRUCTION. THESE TEST HOLES WILL BE MADE TO VERIFY ALL EXISTING CONDITIONS. IF CONDITIONS ARE FOUND IN THE FIELD WHICH ARE MATERIALLY DIFFERENT FROM THE PLANS, THE CONTRACTOR SHALL NOTIFY WILLIAM H. GORDON ASSOCIATES, INC. SO THE APPROPRIATE REVISIONS CAN BE MADE TO THE PLANS.
7. SEE COVER SHEET FOR LEGEND OF SYMBOLS USED HEREIN.
8. CONTRACTOR SHALL NOTIFY OPERATORS WHO MAINTAIN EXISTING UNDERGROUND UTILITY LINES IN THE AREA OF PROPOSED EXCAVATION OR BLASTING AT LEAST TWO (2) WORKING DAYS, BUT NOT MORE THAN TEN (10) WORKING DAYS, PRIOR TO COMMENCEMENT OF EXCAVATION OR DEMOLITION. CONTRACTOR SHALL CONTACT "MISS UTILITY" AT 1-800-275-7777 PRIOR TO COMMENCEMENT OF ANY EXCAVATION.

   MISS UTILITY CONTACT NUMBERS
   (PARTIAL LIST)

| UTILITY | UTILITY COMPANY | TELEPHONE NUMBER |
|---|---|---|
| WATER | LOUDOUN COUNTY SANITATION AUTHORITY | (703) 771-1095 |
| SANITARY SEWER | LOUDOUN COUNTY SANITATION AUTHORITY | (703) 771-1095 |
| STORM SEWERS | LOUDOUN COUNTY DEPARTMENT OF BUILDING & DEVELOPMENT | (703) 777-0397 |
| GAS | COLUMBIA GAS TRANSMISSION CORP. | (703) 759-2115 |
| | WASHINGTON GAS | (703) 750-9500 |
| | CNG TRANSMISSION CROP. | (703) 527-1531 |
| ELECTRIC | VIRGINIA POWER | (703) 547-1291 |
| | NOVEC | (703) 777-2041 |
| TELEPHONE | AT&T | (703) 430-5310 |
| | BELL ATLANTIC | 611 |
| CABLE | PRIME CABLE | (703) 478-1825 |
| OTHER | MISS UTILITY | (800) 257-7777 |

9. ALL LAND ON OR OFF-SITE WHICH IS DISTURBED BY CONSTRUCTION AND WHICH IS NOT BUILT UPON OR SURFACED SHALL BE ADEQUATELY STABILIZED TO CONTROL EROSION AND SEDIMENTATION.
10. THE CONTRACTOR SHALL PROVIDE ADEQUATE MEANS OF CLEANING TRUCKS AND/OR EQUIPMENT OF MUD PRIOR TO ENTERING THE VDOT RIGHT-OF-WAY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CLEAN STREETS OF MUD AND/OR ALLAY DUST OR TAKE WHATEVER MEASURES NECESSARY TO ENSURE THAT THE STREETS ARE KEPT IN A CLEAN AND DUST-FREE CONDITION AT ALL TIMES.
11. THE CONTRACTOR SHALL VISIT THE SITE AND SHALL VERIFY EXISTING CONDITIONS PRIOR TO STARTING CONSTRUCTION.
12. UNLESS OTHERWISE NOTED, ALL PROPOSED ELEVATIONS AS SHOWN HEREON ARE FINISHED GRADE.
13. CONTROLLED FILL:
    A. CONTROLLED COMPACTION SHALL OCCUR IN ALL FILL SECTIONS FOR PAVEMENT, TRENCHES FOR UTILITIES, AND IN ANY AREA DESIGNATED ON THE DRAWINGS.
    B. CONTROLLED FILLS MUST BE COMPACTED TO 95% DENSITY AS DETERMINED BY METHODS AS PER STANDARD PROCTOR AASHTO-T99 OR ASTM-B698. DENSITY MUST BE VERIFIED BY A QUALIFIED SOILS ENGINEER.
    C. CONTROLLED FILLS SHALL BE COMPACTED IN EIGHT (8) INCH LIFTS (LOOSE THICKNESS) TO THE SPECIFIED DENSITY, BEGINNING FROM THE EXISTING GROUND SURFACE, UNLESS OTHERWISE APPROVED IN WRITING BY A QUALIFIED SOILS ENGINEER.
    D. THE SURFACE AREA DIRECTLY BENEATH AREAS TO RECEIVE CONTROLLED FILLS OF LESS THAN FIVE (5) FEET IS TO BE DENUDED OF ALL VEGETATION AND SCARIFIED AND COMPACTED TO A DEPTH OF SIX (6) INCHES TO THE SAME DENSITY AS THE CONTROLLED FILL TO BE PLACED THEREIN.
14. ALL TEST, STUDIES, ETC., WILL BE CARRIED OUT AT THE EXPENSE OF THE OWNER.

## STORMWATER NARRATIVE

THIS SITE LIES WITHIN THE 100 YEAR FLOODPLAIN FOR THE POTOMAC RIVER, THEREFORE , STORMWATER MANAGEMENT(SWM) IS NOT REQUIRED.

## PROJECT AND EROSION AND SEDIMENT CONTROL NARRATIVE

### PROJECT DESCRIPTION:

THIS PROJECT PROPOSES TO RENOVATE AN EXISTING POOL. THIS WILL INCLUDE CONCRETE DECK ADDITION AREAS, THE INSTALLATION OF NEW FAMILY PLAY POOL AND DUAL SLIDES WITH TOWER. APPROXIMATELY 1.0 AC OF LAND WILL BE DISTURBED WITH THIS PROJECT.

### EXISTING CONDITIONS:

ALL OF THIS PROJECT SITE IS WITHIN THE 100 YEAR FLOODPLAIN OF THE POTOMAC RIVER. THE EXISTING RAISED ASPHALT SERVICE ROAD IS AN EXISTING DRAINAGE DIVIDE WITH SWALES ON EITHER SIDE AT SOME POINTS.

### GENERAL EROSION CONTROL NOTES:

DEVICES SHOWN BELOW ARE TO BE CONSIDERED MINIMUM EROSION AND SILTATION CONTROLS. ADDITIONAL CONTROLS MAY BE NECESSARY DUE TO CONTRACTOR PHASING OR OTHER UNANTICIPATED CONDITIONS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE ADDITIONAL DEVICES TO THOSE SHOWN IN ORDER TO CONTROL EROSION AND SILTATION.

EROSION AND SILTATION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED ACCORDING TO THE STANDARDS AND SPECIFICATIONS IN THE VIRGINIA EROSION AND SEDIMENT CONTROL HANDBOOK.

TREES TO BE SAVED ARE TO BE TO BE PROTECTED FROM EQUIPMENT DAMAGE. PROTECTION TO BE LOCATED AT THE DRIP LINE OF TREES (LIMITS OF DISTURBANCE).

APPLY PERMANENT VEGETATION (SODDING AND SEEDING) WITH SOIL PREPARATION. AMENDMENTS AND SEED MIXTURE AS DETERMINED BY N.V.R.P.A.

### EROSION/SEDIMENT CONTROL PROGRAM:

DUE TO THE SIMPLE NATURE OF THIS CONSTRUCTION BOTH THE STAGE I AND STAGE II EROSION SEDIMENT CONTROLS ARE INCLUDED ON THE SAME DRAWING.

### EROSION CONTROL REQUIREMENTS

1. NO DISTURBED AREA SHALL BE LEFT DENUDED FOR MORE THAN SEVEN (7) CALENDAR DAYS UNLESS AUTHORIZED BY THE DIRECTOR OR HIS AGENT (SPECIFIC AREAS TO BE DETERMINED IN THE FIELD PRIOR TO COMMENCING CONSTRUCTION).
2. NO MORE THAN 50% OF THE SITE SHALL BE DENUDED AT ONE TIME.
3. TOPSOIL THAT HAS BEEN STOCKPILED IS TO BE SURROUNDED BY SILT FENCE AND SHALL BE PROTECTED BY MULCH AND/OR TEMPORARY VEGETATION IMMEDIATELY AFTER GRADING.
4. ALL CUT AND FILL SLOPES ARE TO BE SEEDED AND MULCHED WITHIN FIVE (5) DAYS OF COMPLETION OF GRADING.
5. ANY DISTURBED AREA NOT PAVED, SODDED OR BUILT UPON BY NOVEMBER 1, OR DISTURBED AFTER NOVEMBER 1, IS TO BE SEEDED WITHIN FIFTEEN (15) DAYS WITH OATS, ABRUZZI RYE OR EQUIVALENT, AND MULCHED WITH STRAW OR HAY MULCH AT THE RATE OF TWO (2) TONS PER ACRE.

### SEDIMENT CONTROL REQUIREMENTS

THE EROSION AND SILTATION CONTROL PROGRAM HAS BEEN PROPOSED IN TWO (2) STAGES WHERE THE STAGE I CONTROL FACILITIES SHALL BE INSTALLED BEFORE OTHER GRADING AND CONSTRUCTION STARTS AND THE STAGE II CONTROL FACILITIES SHALL BE INSTALLED AFTER THE FINAL GRADING.

CONTROL MEASURES SHALL BE INSTALLED AS SHOWN ON THE STAGE I AND STAGE II PLANS. CONTROLS INSTALLED UNDER THE STAGE I PLAN MAY REQUIRE REVISIONS AS CONSTRUCTION PROGRESSES BUT ARE INTENDED TO REMAIN FOR THE DURATION OF THE PROJECT. ADDITIONAL CONTROLS WILL BE PROVIDED UNDER STAGE II.

### EROSION AND SILTATION CONTROL MEASURES FOR STAGE I WILL INCLUDE:

1. CONSTRUCTION ENTRANCE.
2. SILT FENCE.
3. TREE PROTECTION.

### EROSION AND SILTATION CONTROL MEASURES FOR STAGE II WILL INCLUDE:

1. PROVIDE PERMANENT SEEDING.

### VEGETATIVE MEASURES WILL INCLUDE:

1. TEMPORARY SEEDING (3.31) – NO AREA SHALL REMAIN DENUDED FOR MORE THAN SEVEN (7) DAYS. TEMPORARY SEEDING MAY BE USED DURING SEASONS WHEN PERMANENT SEED IS PROHIBITED.
2. PERMANENT SEEDING (3.32) – ALL AREAS DENUDED BY THIS CONSTRUCTION SHALL BE STABILIZED WITH APPROPRIATE TURF GRASSES, GROUND COVER, AND/OR OTHER ACCEPTABLE MEASURES TO BE DETERMINED BY OWNER.

### ANTICIPATED PHASING OF CONSTRUCTION:

1. FLAG LIMITS OF GRADING AND ESTABLISH TREE PROTECTION MEASURES.
2. INSTALL STAGE I EROSION SEDIMENT CONTROLS.
3. RECEIVE O.K. FROM THE COUNTY INSPECTOR TO PROCEED.
4. REMOVE AND RELOCATE EXISTING CONCRETE DUMPSTER PAD AND ENCLOSURE.
5. REMOVE FENCES, FUNBRELLA ANCHORS, EXISTING WADING POOL, AND ALL OTHER ENTITIES CALLED OUT ON THE DEMOLITION PLAN.
6. PREPARE EXISTING CONCRETE DECK FOR MATCHING CONCRETE DECK EXTENSION.
7. INSTALL CONCRETE DECK EXTENSIONS, FAMILY PLAY POOL, DUAL WATER SLIDES AND TOWER, AND ALL FENCES CALLED OUT TO BE REPLACE ON THE GRADING PLAN.
8. REMOVE STAGE I EROSION/SEDIMENT CONTROLS.
9. INSTALL PERMANENT SEEDING (STAGE II EROSION SEDIMENT CONTROL).
10. REMOVAL OF ANY REMAINING EROSION AND SILTATION CONTROLS WITH THE APPROVAL OF THE COUNTY INSPECTOR.

## EROSION AND SEDIMENT CONTROL NARRATIVE CON'T

### MAINTENANCE:

1. ALL MEASURES ARE TO BE INSPECTED DAILY BY THE SITE SUPERINTENDENT OR HIS REPRESENTATIVE. ANY DAMAGED MEASURES ARE TO BE REPAIRED BY THE END OF THE DAY.
2. TRAPPED SEDIMENT IS TO BE REMOVED AS REQUIRED TO MAINTAIN EFFICIENCY AND TO BE DISPOSED OF BY SPREADING ON-SITE.
3. CONTROLS MAY BE REMOVED AFTER AREAS ABOVE THEM HAVE BEEN STABILIZED AND WITH APPROVAL OF THE SITE INSPECTOR.

---

COMMONWEALTH of VIRGINIA
**DEPARTMENT OF PUBLIC HEALTH**
COUNTY OF LOUDOUN
1 HARRISON STREET, S.E.
P. O. BOX 7000
LEESBURG, VA 20177-7000

Phone 703/777-0234
Metro 703/478-8408

Fax 703/771-5023
TDD 703/771-5352

September 19, 2000

Mr. Tim Geisler
Northern Virginia Regional Park Authority
5400 Ox Road
Fairfax Station, Virginia 22039-1022

RE: LCTM 64/5

Dear Mr. Geisler:

Your request for a waiver to the Loudoun county policy SOP 3.11A has been approved with the condition that the well be abandoned as specified in the permit and the abandonment witnessed by this office.

Should you have any questions concerning this matter, please feel free to contact me at (703) 777-0234.

Respectfully,

Jerry D, Franklin
Sr. Environmental Health Specialist
Division of Environmental Health

cc: file
JDF/ATB/jdf
a:Geisler.ltr

VDH VIRGINIA DEPARTMENT OF HEALTH
Protecting You and Your Environment

---

**Well/Water System Construction Permit** Page 1 Of 1

Loudoun County, Virginia
Division of Environmental Health
777-0234 Metro 478-8408

Health Department Identification Number 1193 WHB FW 00
Map Reference 64 ... 5

**General Information** #7575

New ☒ Repair ☐ Abandonment ☐ Upgrade ☐ Well ID.# ______
Based on the application for a well/water supply system construction permit filed in accordance with Chapter 1040, Codified Ordinances, a construction permit is hereby issued to:
Owner Northern Va. Regional Park Telephone (540) 352-5900
Address 5400 Ox Rd. Farifax, Va. 22039
For a well/water system which is to be constructed on/at Rt. 7 E. to Cascades Pkwy. go N. on Cascades Pkwy. to Park entrance L. at first Rd. to pool.
Subdivision ______ Section/Block 64 Lot 5

**DESIGN**

Water supply, existing: (describe) III B to be
To be installed: class III B abandon
Cased and Grouted to Bedrock plus 10' or a minimum cased 100' Grouted 100' whichever is greater
Well Location See Page 2

I. If well yield as determined by 30 minute airlift test is less than 5 gallons per minute, a pumping test must be performed as follows:

A. Pump and related equipment shall be installed and the static water level measured.
B. Pumping shall begin at a rate of withdrawal greater than 5 GPM until water level drops to a point close to bottom of the well.
C. At this point, the pump rate shall be adjusted so the water level remains constant.
D. Measure and record the volume of water discharge and water level (electric tape) at 15 minute intervals throughout the test.
E. Discharge water at least 50 feet from the well and sewage disposal area.
F. Interruption of pumping longer than 15 minutes shall require extending the pumping time that amount of time.

The well/water system is to be constructed as specified by the permit ☑ or attached plans and specifications ☐.

This water system construction permit is null and void if (a) conditions are changed from those shown on the application (b) conditions are changed from those shown on the construction permit.

**NOTE: INSPECTION RESULTS**

Water supply location: Satisfactory yes ☐ no ☐
Drillers Report (G.W.2) Received yes ☐ no ☐
Well Construction Approval yes ☐ no ☐
Sanitarian ______ Date ______
Well Driller ______ Lic # ______
Pump Installer ______ Lic # ______
Chemical Quality Data Received yes ☐ no ☐ N/A ☐
Pumping Data Received yes ☐ no ☐ N/A ☐
As built sketch on page ______
Bacteriological Sample Received yes ☐ no ☐
Water System Approved yes ☐ no ☐
Sanitarian Date

II. Criteria for approval of well and well yield are as follows:
The well must produce a:

A. Minimum of 1 gallon per minute for 6 continuous pumping hours after the well has been pumped out according to Part I, Sec. B of this permit.
B. The pump test can be terminated early and well yield considered adequate if:
   1. The well cannot be pumped out as stated in Part I B of this permit.
   2. The Well yields 2.5 gpm or greater for 3 hours of continuous pumping after Part I B of this permit is completed.
C. Sufficient storage and yield may be considered for approval.
D. Person conducting the pump test shall collect a sample to be analyzed for constituents described in Codified Ordinances of Loudoun County Title 4, Chapter 1040, Appendix III.
E. Replacement wells are exempt from this requirement.

Date: 8/15/00 Issued by: [signature] Sanitarian
Date: 8/16/00 Reviewed by: [signature] Supervisory Sanitarian
This Construction Permit Valid until 8/15/01

Original / Health Department Copy / Applicants Copy

---

REVISIONS

SURVEY W.H.G.A.
DESIGN J.T.WILLIAMS
DRAWN J.T.WILLIAMS
CHECKED J.McCLELLAN

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**William H. Gordon Associates, Inc.**
4501 Daly Drive · Chantilly, Virginia 20151
(703) 263-1900 · METRO (703) 803-9508 · FAX (703) 263-0766

DATE OCTOBER 6, 2000
SCALE HORZ: N/A VERT: N/A
SEAL COMMONWEALTH OF VIRGINIA JOSEPH W. McCLELLAN LICENSE No. 8521 PROFESSIONAL ENGINEER

GENERAL NOTES & LETTERS

PROJECT **ALGONKIAN REGIONAL PARK POOL RENOVATION**
BROAD RUN DISTRICT
LOUDOUN COUNTY, VIRGINIA

JOB 0520-0501
CADD 0520NT1.DWG
SHEET 2 OF 6

\PROJECT\ENGIN\052(\0501\0520nt1.dwg Mon Oct 30 13:15:57 2000 HP 1050C HP

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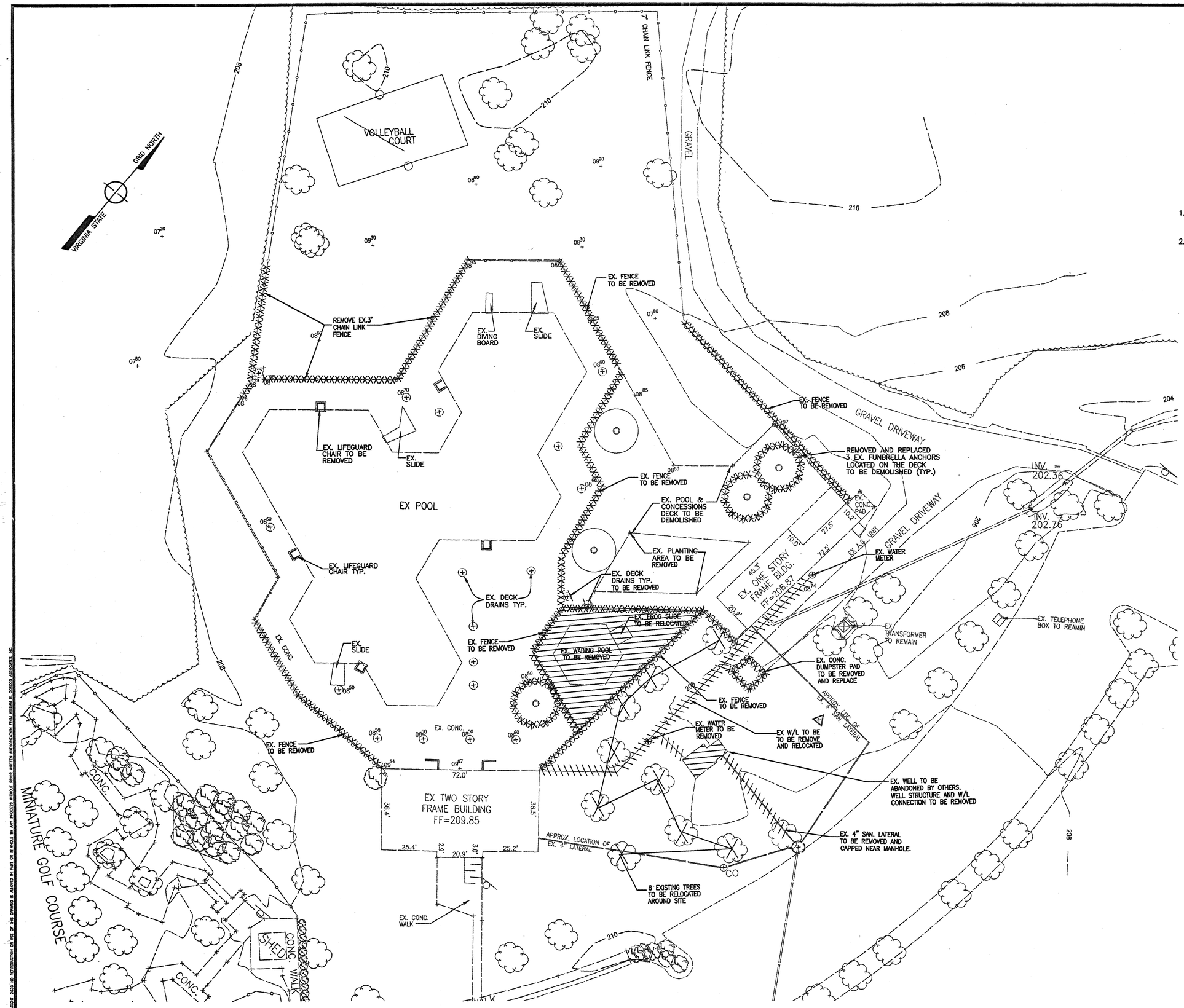


## LEGEND

| | |
|---|---|
| | EXISTING BUILDING, FOUNDATIONS AND FOOTINGS TO BE DEMOLISHED |
| \\\\\\\\\\ | UNDERGROUND UTILITIES TO BE REMOVED OR ABANDONED |
| | TREES TO BE REMOVED OR RELOCATED |
| XXXXXXXXX | ABOVE GROUND ENTITIES. FENCES, ETC. TO BE REMOVED OR REPLACED |

## DEMOLITION NOTES

1. THE EXISTING WADING POOL ALONG WITH FENCES, WELL, ABOVE AND UNDER GROUND UTILITIES, ARE TO BE DEMOLISHED AND CLEARED FROM PROPOSED CONSTRUCTION AREA.
2. THE EXISTING WELL HAS BEEN PREVIOUSLY PERMITTED TO BE CUT AND CAPPED PER VIRGINIA DEPARTMENT OF HEALTH REQUIREMENTS. SEE SHEET #2 FOR THE EXISTING PERMIT.

| NO. | DESCRIPTION | REVIEW BY | APPROVED | DATE |
|---|---|---|---|---|

REVISION APPROVED BY DIVISION OF DESIGN REVIEW

REVISIONS

SURVEY W.H.G.A.
DESIGN J.T.WILLIAMS
DRAWN J.T.WILLIAMS
CHECKED J.McCLELLAN

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William H. Gordon Associates, Inc.
4501 Daly Drive • Chantilly, Virginia 20151
(703) 263-1900 • METRO (703) 803-9508 • FAX (703) 263-0766

DATE 10/6/00
SCALE HORZ: 1" = 20 VERT: N/A
SEAL COMMONWEALTH OF VIRGINIA J.T. McCLELLAN LICENSE No. 8521 PROFESSIONAL ENGINEER

DEMOLITION PLAN

PROJECT
# ALGONKIAN REGONAL PARK POOL RENOVATION
BROAD RUN DISTRICT
LOUDOUN COUNTY VIRGINIA

JOB 0520-0501
CADD 0520demo.DWG
SHEET 3 OF 6

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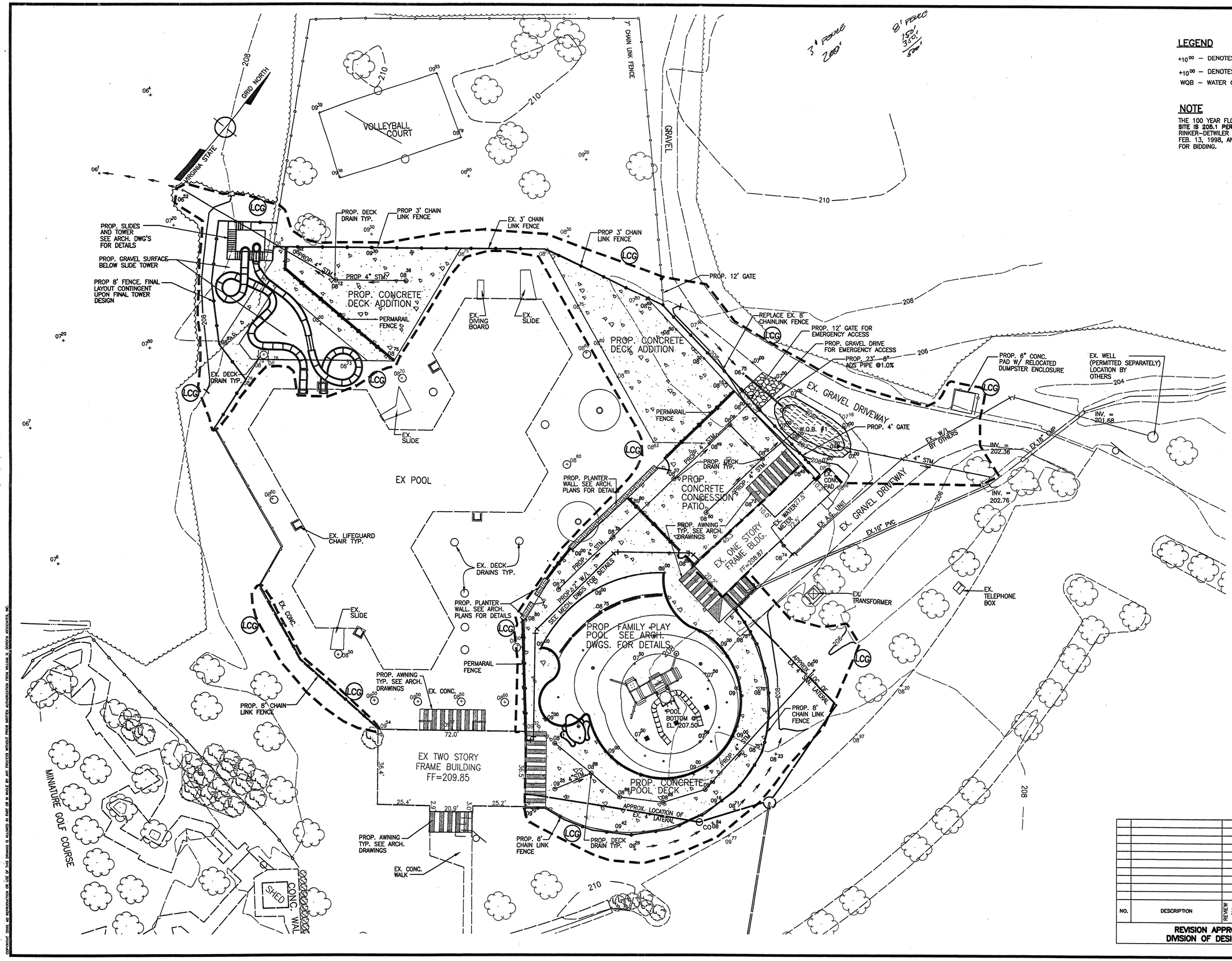


## LEGEND

$+10^{00}$ – DENOTES EXISTING SPOT ELEVATIONS

$+10^{00}$ – DENOTES PROPOSED SPOT ELEVATIONS

WQB – WATER QUALITY BASIN

## NOTE

THE 100 YEAR FLOOD ELEVATION FOR THIS SITE IS 205.1 PER SITE GRADING PLAN BY RINKER–DETWILER & ASSOCIATES, PC. DATED FEB. 13, 1998, AND REVISED FEB 16, 1998 FOR BIDDING.

| NO. | DESCRIPTION | REVIEW BY | APPROVED | DATE |
|---|---|---|---|---|

REVISION APPROVED BY DIVISION OF DESIGN REVIEW

REVISIONS

SURVEY W.H.G.A.

DESIGN J.T.WILLIAMS

DRAWN J.T.WILLIAMS

CHECKED J.McCLELLAN

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William H. Gordon Associates, Inc.
4501 Daly Drive • Chantilly, Virginia 20151
(703) 263-1900 • METRO (703) 803-9508 • FAX (703) 263-0766

DATE 10/6/00

SCALE HORZ: 1" = 20'
VERT: N/A

SEAL
COMMONWEALTH OF VIRGINIA
J. T. McCLELLAN
LICENSE No. 8521
PROFESSIONAL ENGINEER

GRADING PLAN

PROJECT
# ALGONKIAN REGIONAL PARK POOL RENOVATION
BROAD RUN DISTRICT
LOUDOUN COUNTY, VIRGINIA

JOB 0520-0501

CADD 0520GP1.DWG

SHEET 4 OF 6

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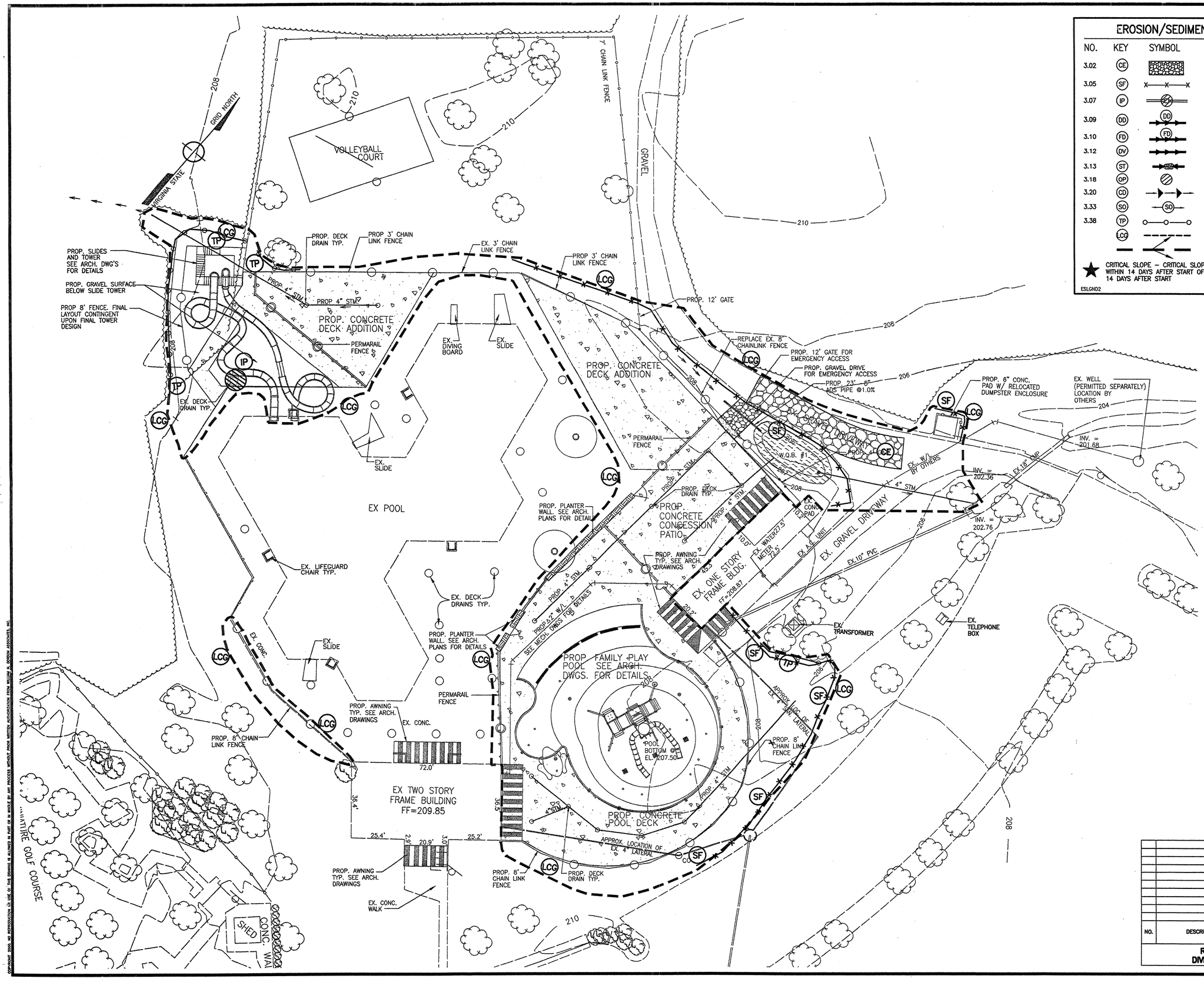


## EROSION/SEDIMENT CONTROL LEGEND

| NO. | KEY | SYMBOL | DESCRIPTION |
|---|---|---|---|
| 3.02 | CE | | TEMPORARY GRAVEL CONSTRUCTION ENTRANCE |
| 3.05 | SF | X—X—X | SILT FENCE |
| 3.07 | IP | | STORM DRAIN INLET PROTECTION |
| 3.09 | DD | DD | TEMPORARY DIVERSION DIKE |
| 3.10 | FD | FD | TEMPORARY FILL DIVERSION |
| 3.12 | DV | | DIVERSION |
| 3.13 | ST | | TEMPORARY SEDIMENT TRAP |
| 3.18 | OP | | OUTLET PROTECTION |
| 3.20 | CD | | CHECK DAMS |
| 3.33 | SO | SO | SODDING |
| 3.38 | TP | | TREE PROTECTION |
| | LCG | | LIMITS OF CLEARING & GRADING |
| | | | DRAINAGE DIVIDES |

★ CRITICAL SLOPE – CRITICAL SLOPE TO BE SEEDED, MULCHED AND TACKED WITHIN 14 DAYS AFTER START OF GRADING, OR SODDED AND PEGGED WITHIN 14 DAYS AFTER START

ESLGND2

| NO. | DESCRIPTION | REVIEW BY | APPROVED | DATE |
|---|---|---|---|---|
| | | | | |

REVISION APPROVED BY DIVISION OF DESIGN REVIEW

REVISIONS

SURVEY W.H.G.A.

DESIGN J.T.WILLIAMS

DRAWN J.T.WILLIAMS

CHECKED J.McCLELLAN

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(703) 263-1900 • METRO (703) 803-9308 • FAX (703) 263-0766

DATE 10/6/00

SCALE HORZ: 1" = 20'
VERT: N/A

SEAL
COMMONWEALTH OF VIRGINIA
JOSEPH A. McCLELLAN
LICENSE No. 8521
PROFESSIONAL ENGINEER

EROSION SEDIMENT CONTROL PHASE 1 & 2

PROJECT
# ALGONKIAN REGIONAL PARK POOL RENOVATION
BROAD RUN DISTRICT
LOUDOUN COUNTY, VIRGINIA

JOB 0520-0501

CADD 0520ES.DWG

SHEET 5 OF 6

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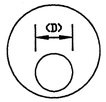
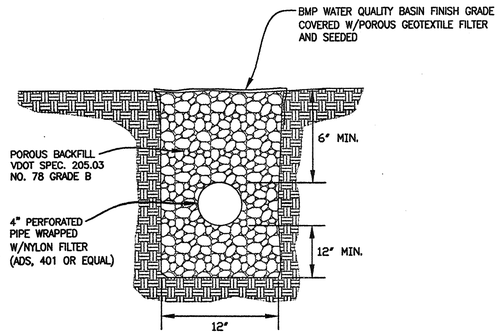


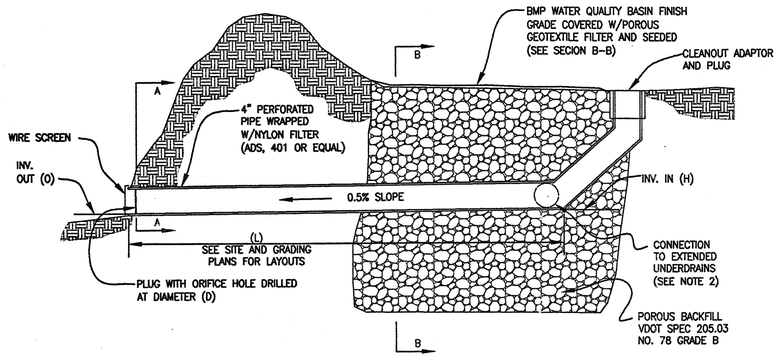

## DETAIL FOR OUTLET ORIFICE SECTION A–A

NOT TO SCALE




## SECTION B–B

NOT TO SCALE

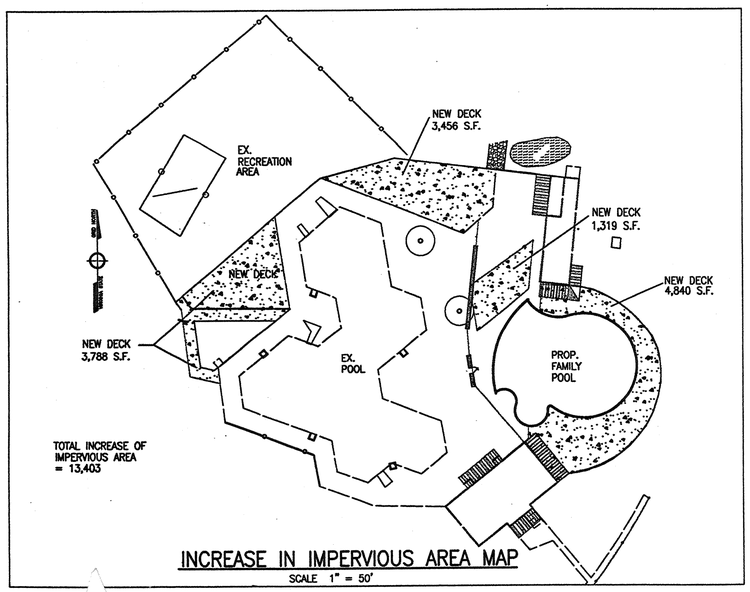



## TYPICAL DETAIL FOR BMP WATER QUALITY BASIN OUTLET

NOT TO SCALE

NOTES:

1. CLEANOUT LENGTH (L) TO BE FROM INVERT OUT TO FIRST PIPE JUNCTION.
2. EXTENDED UNDERDRAINS TO BE FIELD LOCATED WITH SLOPE 0.5%.




## INCREASE IN IMPERVIOUS AREA MAP

SCALE 1" = 50'

# BMP WATER QUALITY BASINS EXAMPLE COMPUTATIONS

**BMP VOLUME COMPUTATION FOR WATER QUALITY BASIN #1**

DRAINAGE AREA = 0.30 ACRES

VOLUME OF FIRST INCH OF RAINFALL RUNOFF (BMP VOLUME REQUIRED) = $\frac{(1.73\ ac)(43{,}560\ ft/ac)(1.0\ in)}{(12\ in/ft)}$ = 1,117 CF

BMP WATER SURFACE ELEVATION = 207.0 FT
BMP VOLUME PROVIDED @ BMP WSE = 1,120 CF

**BMP 24 HOUR DRAWDOWN COMPUTATION**

AVERAGE ORIFICE FLOW IS APPROXIMATELY 60 PERCENT OF PEAK ORIFICE FLOW (ORIFICE SIZING DOES NOT FACTOR OUTFALL RESTRICTIONS DUE TO STONE AND/OR FILTER FABRIC)

WATER SURFACE ELEVATION 207.0 FT
ORIFICE ELEVATION 202.8 FT
ORIFICE HEAD 4.2 FT

AVERAGE FLOW = $\frac{1{,}120\ CF}{(24\ hr)(60\ min/hr)(60\ sec/min)}$ = 0.013 CFS

ALLOWABLE PEAK ORIFICE FLOW = $\frac{0.013}{0.60}$ = 0.02 CFS
(AVERAGE/60%=PEAK)

OUTLET ORIFICE DIAMETER = 0.5 IN
OUTLET ORIFICE AREA = 0.0025 SF

PEAK FLOW THROUGH THIS ORIFICE= $(Cd)(0.005\ SF)\sqrt{(0.50)(g)(4.2\ FT)}$= 0.0123 CFS

CONSTANTS USED FOR ALL PEAK FLOW COMPS:
Cd=0.6=OVERALL ORIFICE COEFF. OF DISCHARGE
g=32.2 ft/sec$^2$ =ACCELERATION OF GRAVITY

ACTUAL DRAW DOWN = $\frac{1{,}120\ CF}{(0.60)(0.0123\ CFS)(60\ sec/min)(60\ min/hr)}$ = 42.0 HRS
(USING AVG. FLOW, AVERAGE=PEAK*60%)

# BMP WATER QUALITY BASINS COMPUTATION TABLE

| BMP WATER QUALITY BASIN # | SHOWN ON GRADING PLAN SHEET # | 4" PIPE INV. OUT OF ORIFICE (O) FT. | 4" PIPE INV. IN (H) FT. | CLEANOUT PIPE LENGTH (L) FT. | OVERFLOW/ BMP WATER SURFACE ELEV. (B) FT. | OUTLET ORIFICE DIAMETER (D) IN. | DRAINAGE AREA AC. | BMP VOLUME REQUIRED CF | BMP VOLUME PROVIDED CF | ORIFICE HEAD FT. | AVERAGE FLOW CFS | ALLOWABLE PEAK ORIFICE FLOW CFS | OUTLET ORIFICE AREA SF | PEAK FLOW THIS ORIFICE CFS | ACTUAL DRAW DOWN HRS. (30 HR. MIN.) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 4 | 202.80 | 203.18 | 75 | 207 | 0.50 | 0.30 | 1,117 | 1,120 | 4.2 | 0.013 | 0.02 | 0.0025 | 0.0123 | 42 |
| | | | | | | | | | | | | | | | |

## BMP NARRATIVE

BEST MANAGEMENT PRACTICES (BMP) HAVE BEEN PROVIDED FOR ONLY THE INCREASE IN IMPERVIOUS AREA FOR THIS SITE PLAN SINCE THIS SITE WAS DEVELOPED PRIOR TO FACILITIES STANDARDS MANUAL REQUIRING BMP. THE INCREASE IN IMPERIOUS AREA IS APPROXIMATELY 13,403 SQUARE FEET (SEE MAP THIS SHEET). WITH THE ADDITION OF A WATER QUALITY BASIN, THIS SITE PROVIDES THE REQUIRED BMP STORAGE AND DRAW DOWN FOR THE INCREASE IN IMPERVIOUS AREA.

## OUTFALL NARRATIVE

THIS SITE LIES WITHIN THE 100 YEAR FLOODPLAIN FOR THE POTOMAC RIVER AND, THEREFORE IN THE OPINION OF THIS ENGINEER HAS AN ADEQUATE OUTFALL PER THE STANDARDS SET FORTH IN THE LOUDOUN COUNTY FACILITIES STANDARDS MANUAL.

| NO. | DESCRIPTION | REVIEW BY | APPROVED | DATE |
|---|---|---|---|---|

REVISION APPROVED BY DIVISION OF DESIGN REVIEW

REVISIONS

SURVEY W.H.G.A.
DESIGN R. WALKER
DRAWN J.T.WILLIAMS
CHECKED R. WALKER

ENGINEERS • SURVEYORS • LAND PLANNERS • LANDSCAPE ARCHITECTS
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4501 Daly Drive • Chantilly, Virginia 20151
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DATE OCTOBER, 2000
SCALE HORZ: N/A VERT: N/A
SEAL COMMONWEALTH OF VIRGINIA JACQUELINE M. McGLEVEY LICENSE No. 8521 PROFESSIONAL ENGINEER

WATER QUALITY (BMP) FACILITY AND NARRATIVES

PROJECT ALGONKIAN REGIONAL PARK POOL RENOVATION
BROAD RUN, DISTRICT
LOUDOUN COUNTY, VIRGINIA

JOB 0520–0501
CADD 0520BMP.DWG
SHEET 6 OF 6

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