TRINITY UNITED METHODIST CHURCH
SPECIAL PERMIT AMENDMENT PLAN

Application No. SPA 87-D-074

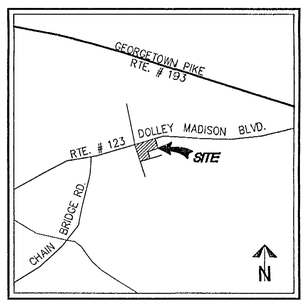
Chairman, Board of Zoning Appeals

NOTES:

1. OWNER/APPLICANT: TRINITY UNITED METHODIST CHURCH
   1205 DOLLEY MADISON BLVD.
   MCLEAN, VA 22101
2. THIS APPLICATION REQUESTS A GROUP 3 SPECIAL PERMIT FOR A CHURCH AND DAYCARE.
3. THE PROPERTY DELINEATED ON THIS PLAT IS LOCATED ON FAIRFAX COUNTY TAX ASSESSMENT MAP 030-2-32 PARCELS 0001, 0005 AND A, AND ARE ZONED R-2.
4. TOTAL AREA OF THE PROPERTY IS 317,817 SQUARE FEET OR 7.2961 ACRES.
5. TO THE BEST OF OUR KNOWLEDGE, ALL UTILITY EASEMENTS HAVING A WIDTH OF 25 FEET OR MORE ON THIS PROPERTY ARE SHOWN.
6. THIS PLAT DOES NOT SHOW ALL COVENANTS, EASEMENTS, RESTRICTIONS OR DEDICATIONS WHICH MAY EXIST IN THE CHAIN OF TITLE.
7. THE PROPOSED DEVELOPMENT CONFORMS TO ALL APPLICABLE FAIRFAX COUNTY ORDINANCES, REGULATIONS AND ADOPTED STANDARDS, EXCEPT AS NOTED IN THE WAIVERS REQUESTED SECTION.
8. BOUNDARY AND TOPOGRAPHIC INFORMATION IS TAKEN FROM A FIELD SURVEY PERFORMED BY THIS FIRM. CONTOUR INTERVAL IS 2 FOOT.
9. PROPERTY IS SERVED BY PUBLIC WATER AND SEWER.
10. THIS WILL CERTIFY THAT A REVIEW OF FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAP FOR FAIRFAX COUNTY, VIRGINIA, COMMUNITY PANEL NUMBER 515525 0100 D, REVISED MARCH 5, 1990, DESIGNATES THE SUBJECT PROPERTY AS BEING IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 500-YEAR FLOODPLAIN.
11. NO RESOURCE PROTECTION AREAS OR ENVIRONMENTAL QUALITY CORRIDORS, AS DEFINED, ARE DELINEATED ON THIS PROPERTY.
12. NO GRAVES OR OTHER EVIDENCE OF BURIAL PLACES HAVE BEEN FOUND ON THIS PROPERTY.
13. THIS PLAN IS CONCEPTUAL AND IS INTENDED TO BE USED IN CONJUNCTION WITH THE LAND USE APPROVAL PROCESS ONLY. IT IS NOT AN ENGINEERING CONSTRUCTION DRAWING, AND MINOR DEVIATIONS AND ADJUSTMENTS MAY BE REQUIRED, AND ARE PERMITTED, AS PART OF THE FINAL DESIGN AND SITE PLAN APPROVAL PROCESS.
14. SITE SIGNAGE WILL BE PROVIDED IN ACCORDANCE WITH ARTICLE 12 OF THE FAIRFAX COUNTY ZONING ORDINANCE.
15. LIGHTING WILL BE IN ACCORDANCE WITH FAIRFAX COUNTY STANDARDS.
16. THE EXISTING HOUSE LOCATED AT 1201 DOLLEY MADISON BOULEVARD MAY BE USED TO PROVIDE OFFICES AND TRAINING SPACE FOR LANGLEY RESIDENTIAL SUPPORT SERVICES.
17. THE TEMPORARY TRAILERS WILL BE REMOVED UPON COMPLETION OF CONSTRUCTION.

SHEET INDEX:

1. COVER SHEET
2. SPECIAL PERMIT AMENDMENT PLAT
3. EXISTING VEGETATION MAP
4. CONCEPTUAL LANDSCAPE PLAN
5. PRELIMINARY STORMWATER MANAGEMENT PLAN
6. PRELIMINARY STORMWATER MANAGEMENT CALCULATIONS
7. OPTIONAL OUTFALL ANALYSIS METHOD
8. OPTIONAL OUTFALL ANALYSIS METHOD -- CHANNEL SECTIONS



VICINITY MAP
NOT TO SCALE

WAIVERS/MODIFICATIONS REQUESTED:

1. WAIVE TRANSITIONAL SCREENING REQUIREMENT AND BARRIER REQUIREMENT ON THE NORTHERN SIDE OF THE PROPERTY ADJACENT TO DOLLEY MADISON BOULEVARD.
2. WAIVE TRANSITIONAL SCREENING REQUIREMENT AND BARRIER REQUIREMENT ON THE WESTERN SIDE OF THE SITE ADJACENT TO BUCHANAN STREET.
3. MODIFY TRANSITIONAL SCREENING REQUIREMENT AND WAIVE BARRIER REQUIREMENT ON THE SOUTHERN SIDE OF THE SITE ADJACENT TO GILLIAMS ROAD AS SHOWN ON THE PLAT.
4. WAIVE SERVICE DRIVE REQUIREMENT ALONG DOLLEY MADISON BOULEVARD.
5. WAIVE FRONTAGE IMPROVEMENTS ON DOLLEY MADISON BOULEVARD, BUCHANAN STREET, AND GILLIAMS ROAD.
6. MODIFICATION OF PFM TO ALLOW THE PRIMARY SPILLWAY TO ALSO FUNCTION AS THE EMERGENCY SPILLWAY.

ZONING TABULATION:

R-2, RESIDENTIAL DISTRICT: TWO DWELLING UNITS/ACRE

	REQUIRED	PROVIDED
MIN. LOT AREA	15,000 SF	±317,817 SF
MIN. LOT WIDTH	125 FT	±833 FT
MAX. BLDG. HT.	60 FT	±50 FT
MIN. YARD REQUIREMENTS		
FRONT	40' ABP, 35 FT	14.5 FT (EX. CONDITION)
SIDE	40' ABP, 15 FT	15.8 FT
REAR	40' ABP, 25 FT	±149 FT
MAX. FAR	0.20	±0.14
OPEN SPACE	N/A	N/A

PARKING TABULATION:

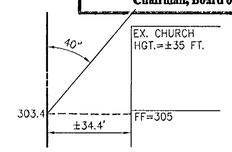
CHURCH: 448 SEATS @ 1 SP/4 SEATS
AUDITORIUM: 450 SEATS @ 1 SP/4 SEATS
REQUIRED = (448 + 450)/4 = 225 SPACES
NURSERY SCHOOL: 99 CHILDREN @ 0.19 SP/CHILD
REQUIRED = 99 x 0.19 = 19 SPACES
TOTAL REQUIRED = 244 SPACES
PROVIDED = 253 SPACES (INCLUDING 11 HC)

FAR TABULATION:

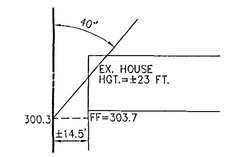
	EX. BLD	PROP. ADDITION	TOTAL
GROSS FLOOR AREA	15,258 SF	±21,200 SF	±36,458 SF
SITE AREA			317,817 SF

FAR = 36,458/317,817 = ±0.11

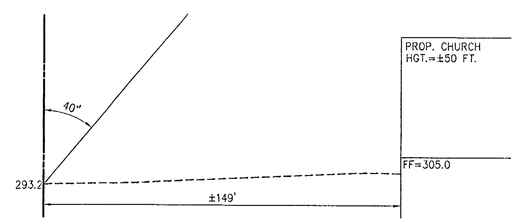
*AN ADDITIONAL ±14,000 SF OF CELLAR IS PROPOSED.
*TEMPORARY PORTABLE TRAILERS (TO BE REMOVED UPON COMPLETION OF CONSTRUCTION) ARE ±2,500 SF. (SEE NOTE 17)



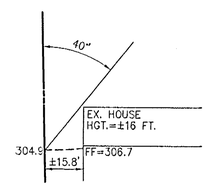
FRONT BULK PLANE DETAIL - DOLLEY MADISON BLVD.
1" = 30'



FRONT BULK PLANE DETAIL - DOLLEY MADISON BLVD.
1" = 30'



REAR BULK PLANE DETAIL - ADJ. TO BALLANTRAE FARMS
1" = 30'



SIDE BULK PLANE DETAIL - ADJ. TO SALONA VILLAGE
1" = 30'

RECEIVED
Department of Planning & Zoning
JAN 20 2006
Zoning Evaluation Division

WALTER L. PHILLIPS
INCORPORATED
CIVIL ENGINEERS LAND SURVEYORS PLANNERS LANDSCAPE ARCHITECTS
207 PARK AVENUE FALLS CHURCH, VIRGINIA 22046
(703) 532-6163 FAX (703) 533-1801 WWW.WLPINC.COM

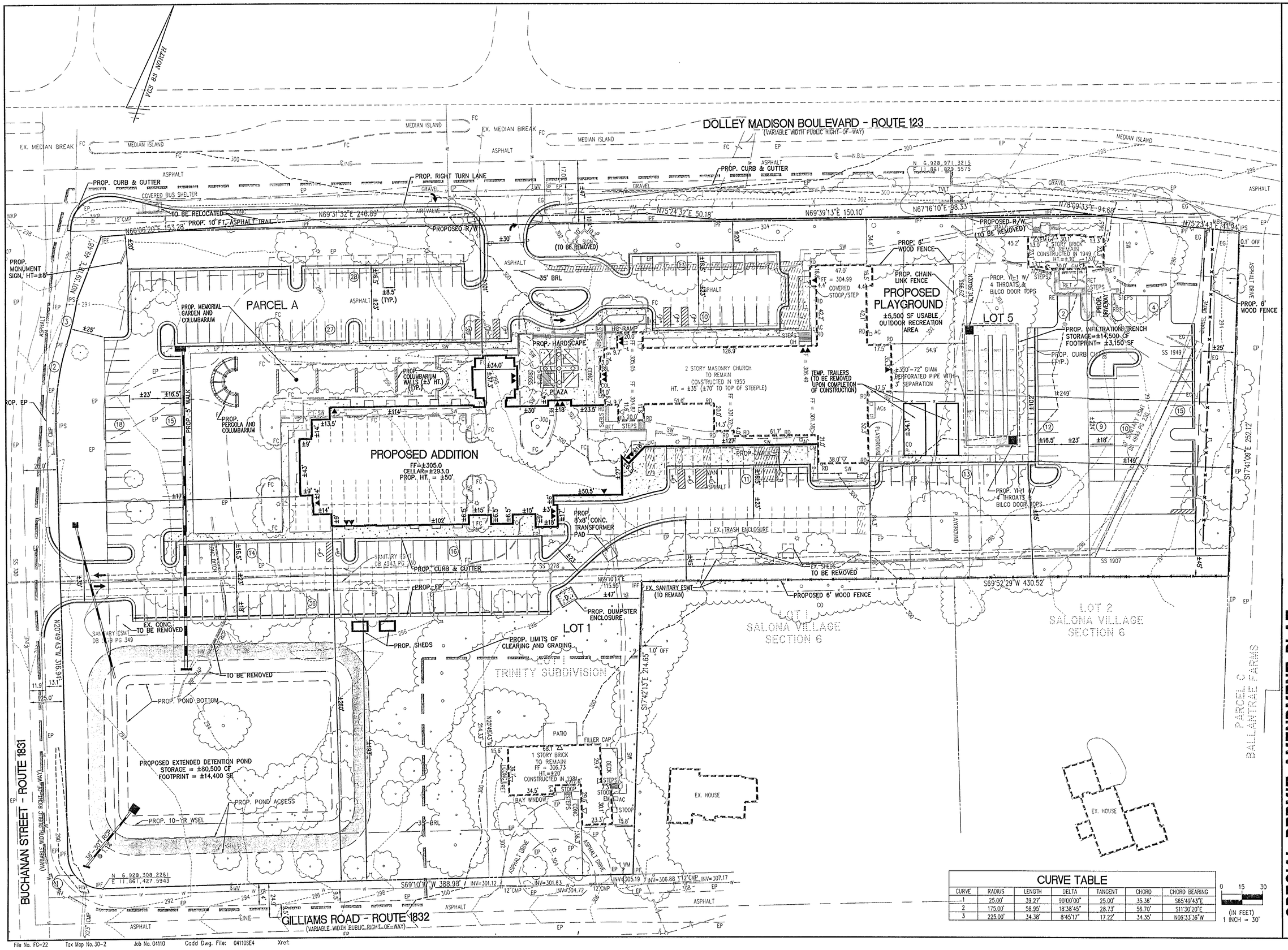
DATE: 7/13/05 REV. 10/3/05 REV. 11/3/05 REV. 1/20/06
DRAWN: JLH
SCALE: 1" = 30'

COMMONWEALTH OF VIRGINIA
CHARLES F. DOUGHERTY
No. 13068
7/13/05
LAND SURVEYOR

NO.	DESCRIPTION	DATE	REV. BY	APPROVED

REVISION APPROVED BY

COVER SHEET
TRINITY UNITED METHODIST CHURCH
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA



CURVE TABLE

CURVE	RADIUS	LENGTH	DELTA	TANGENT	CHORD	CHORD BEARING
1	25.00'	39.27'	90°00'00"	25.00'	35.36'	S65°49'43"E
2	175.00'	56.95'	18°38'45"	28.73'	56.70'	S11°30'20"E
3	225.00'	34.38'	8°45'17"	17.22'	34.35'	N06°33'36"W

0 15 30
(IN FEET)
1 INCH = 30'

File No. FG-22 Tax Map No. 30-2 Job No. 04110 Cadd Dwg. File: 041105E4 Xref:

SHEET: 2 OF 8

SPECIAL PERMIT AMENDMENT PLAT
TRINITY UNITED METHODIST CHURCH
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

WALTER L. PHILLIPS
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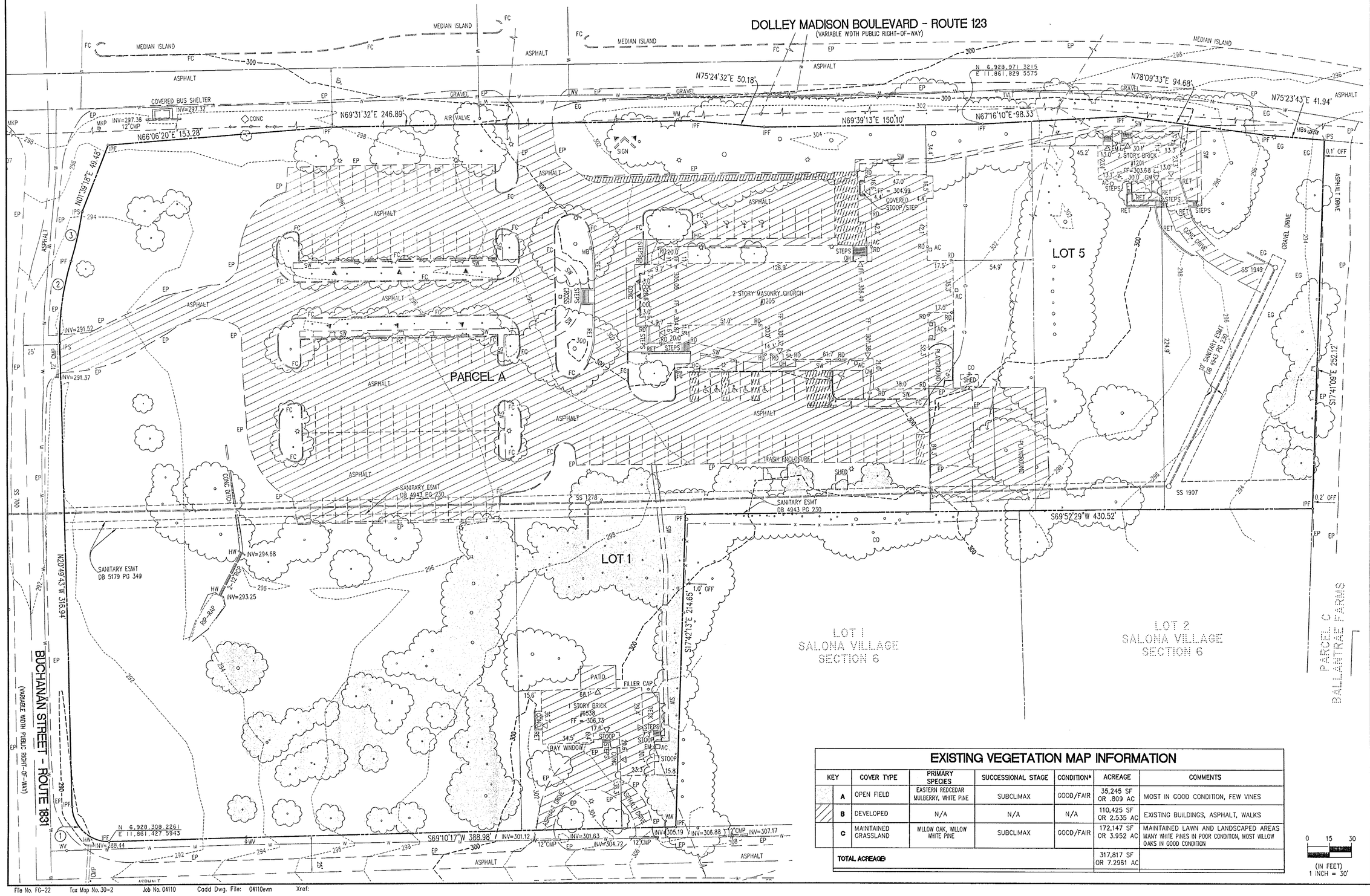
SCALE: 1" = 30'
DATE: 7/13/05
REV. 10/3/05
REV. 11/3/05
REV. 01/20/06
DRAWN: AJH

COMMONWEALTH OF VIRGINIA
CHARLES R. BONLAP
No. 13098
7/13/05
LAND SURVEYOR

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE



EXISTING VEGETATION MAP INFORMATION

KEY		COVER TYPE	PRIMARY SPECIES	SUCCESSIONAL STAGE	CONDITION*	ACREAGE	COMMENTS
	A	OPEN FIELD	EASTERN REDCEDAR MULBERRY, WHITE PINE	SUBCLIMAX	GOOD/FAIR	35,245 SF OR .809 AC	MOST IN GOOD CONDITION, FEW VINES
	B	DEVELOPED	N/A	N/A	N/A	110,425 SF OR 2.535 AC	EXISTING BUILDINGS, ASPHALT, WALKS
	C	MAINTAINED GRASSLAND	WILLOW OAK, WILLOW WHITE PINE	SUBCLIMAX	GOOD/FAIR	172,147 SF OR 3.952 AC	MAINTAINED LAWN AND LANDSCAPED AREAS MANY WHITE PINES IN POOR CONDITION, MOST WILLOW OAKS IN GOOD CONDITION
		TOTAL ACREAGE				317,817 SF OR 7.2961 AC	

0 15 30
(IN FEET)
1 INCH = 30'

EXISTING VEGETATION MAP

TRINITY UNITED METHODIST CHURCH

DRANESVILLE DISTRICT

FAIRFAX COUNTY, VIRGINIA

WALTER L. PHILLIPS
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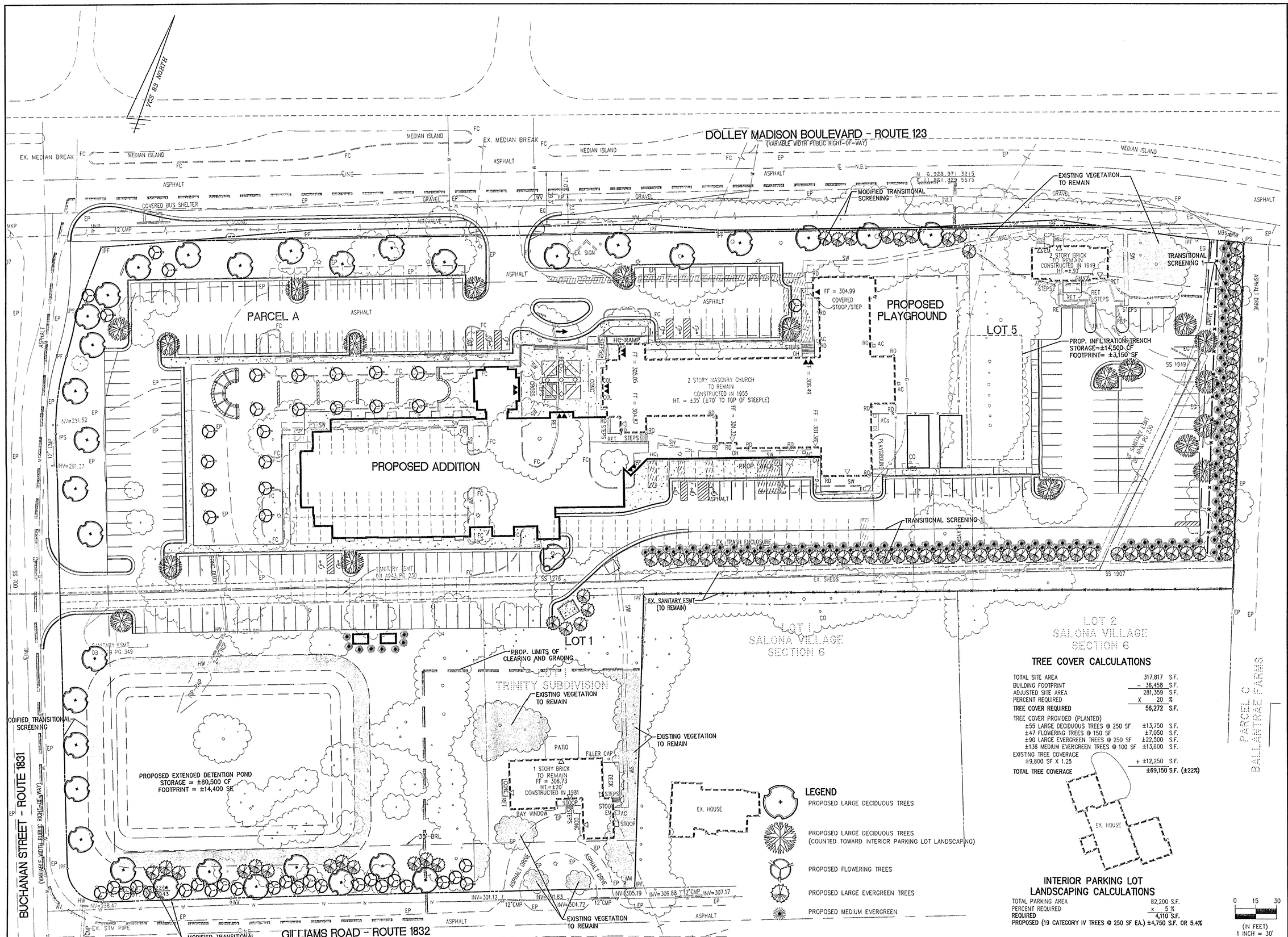
DATE: 7/13/05
REV. 10/3/05
REV. 11/3/05
REV. 1/20/06
DRAWN: RLM
SCALE: 1" = 30'

COMMONWEALTH OF VIRGINIA
CHARLES D. MCCARTY
No. 13091
7/13/05
LAND SURVEYOR

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

File No. FC-22 Tax Map No. 30-2 Job No. 04110 Cadd Dwg. File: 04110evm Xref:



TREE COVER CALCULATIONS

TOTAL SITE AREA	317,817	S.F.
BUILDING FOOTPRINT	- 36,458	S.F.
ADJUSTED SITE AREA	281,359	S.F.
PERCENT REQUIRED	X 20	%
TREE COVER REQUIRED	56,272	S.F.
TREE COVER PROVIDED (PLANTED)		
±55 LARGE DECIDUOUS TREES @ 250 SF	±13,750	S.F.
±47 FLOWERING TREES @ 150 SF	±7,050	S.F.
±90 LARGE EVERGREEN TREES @ 250 SF	±22,500	S.F.
±136 MEDIUM EVERGREEN TREES @ 100 SF	±13,600	S.F.
EXISTING TREE COVERAGE ±9,800 SF X 1.25	+ ±12,250	S.F.
TOTAL TREE COVERAGE	±69,150	S.F. (±22%)

INTERIOR PARKING LOT LANDSCAPING CALCULATIONS

TOTAL PARKING AREA	82,200	S.F.
PERCENT REQUIRED	x 5	%
REQUIRED	4,110	S.F.
PROPOSED (19 CATEGORY IV TREES @ 250 SF EA.)	±4,750	S.F. OR 5.4%

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SCALE: 1" = 30'

COMMONWEALTH OF VIRGINIA
CHARLES F. DONLAP
No. 13098
7/13/05
LAND SURVEYOR

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

CONCEPTUAL LANDSCAPE PLAN
TRINITY UNITED METHODIST CHURCH
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA

File No. FG-22 Tax Map No. 30-2 Job No. 04110 Cadd Dwg. File: 04110SE4 Xref:
SHEET: 4 OF 8

PRELIMINARY STORMWATER MANAGEMENT PLAN

TRINITY UNITED METHODIST CHURCH

DRANESVILLE DISTRICT

FAIRFAX COUNTY, VIRGINIA

WALTER L. PHILLIPS
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SCALE: 1" = 30' | DATE: 7/13/05 REV. 10/3/05 | REV. 11/3/05 REV. 1/20/06 | DRAWN: JLH

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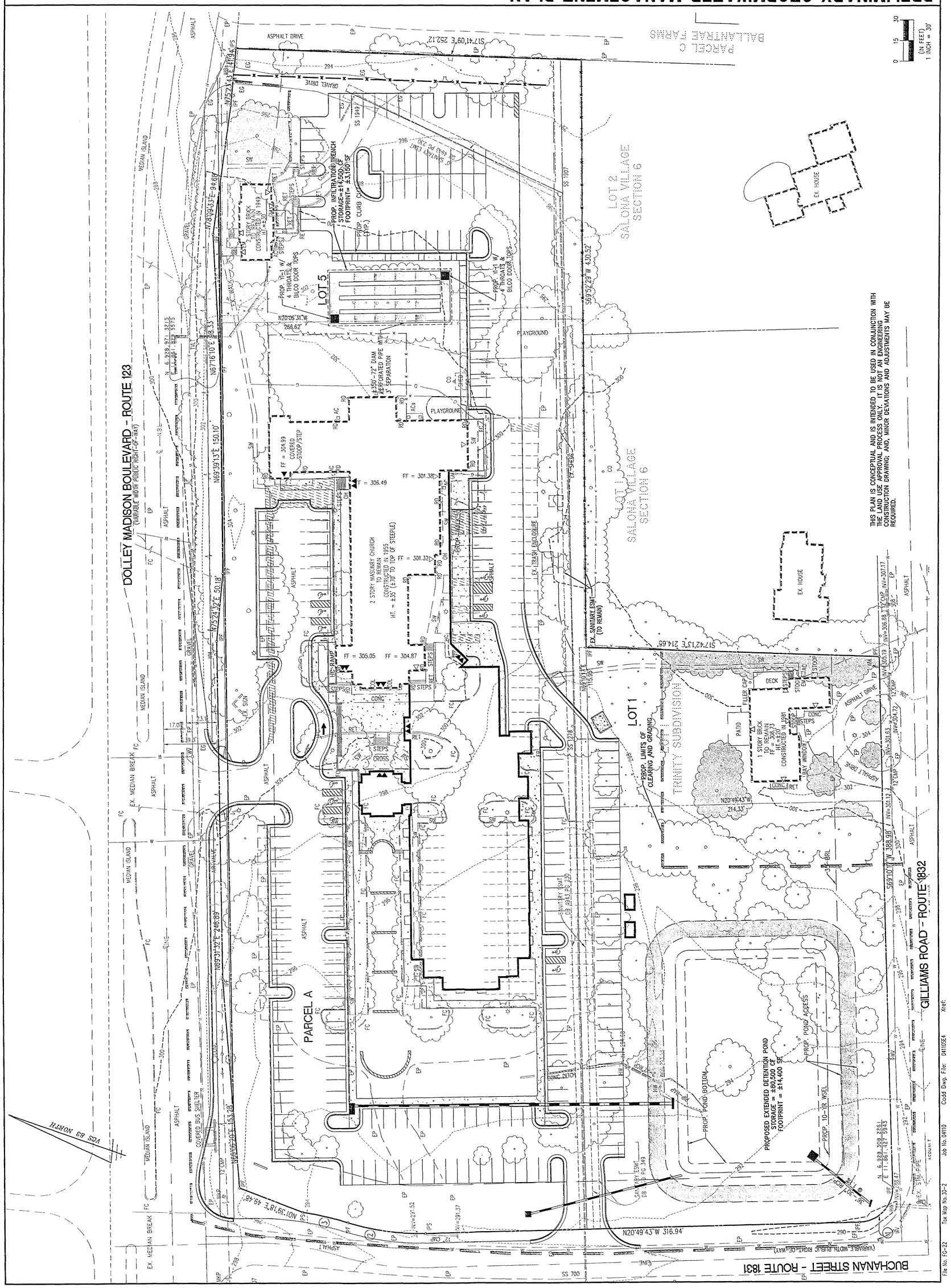
NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE



THIS PLAN IS CONCEPTUAL AND IS INTENDED TO BE USED IN CONJUNCTION WITH THE LAND USE APPROVAL PROCESS ONLY. IT IS NOT AN ENGINEERING CONSTRUCTION DRAWING; AND, MINOR DEVIATIONS AND ADJUSTMENTS MAY BE REQUIRED.

(IN FEET) 1 INCH = 30'

File No. FG-22 | Tax Map No. 30-2 | Job No. 04110 | Cadd Dwg. File: 04110SE4 | Xref:

SHEET: 5 OF 8

SITE 'C' FACTOR SUMMARY

I. PRE-DEVELOPMENT (EXISTING CONDITIONS):

A. CONTRIBUTING AREAS:

4.82 AC. @ 0.30 (GREEN AREA, ON-SITE)
2.48 AC. @ 0.90 (ROOFS, DRIVEWAYS, SIDEWALKS, ETC.) (SITE IS ±34% IMPERVIOUS)
7.30 AC.

B. WEIGHTED 'C':

$$\frac{(4.82)(0.30)+(2.48)(0.90)}{7.30} = 0.50$$

II. ONSITE POST-DEVELOPMENT UNDETAINED:

A. CONTRIBUTING AREAS:

0.90 AC. @ 0.30 (GREEN AREA)
0.06 AC. @ 0.90 (IMPERVIOUS AREA)
0.96 AC.

B. WEIGHTED 'C':

$$\frac{(0.90)(0.30)+(0.06)(0.90)}{0.96} = 0.34$$

III. ONSITE POST-DEVELOPMENT DETAINED TO PROPOSED INFILTRATION TRENCH:

A. CONTRIBUTING AREAS:

0.48 AC. @ 0.30 (GREEN AREA)
1.04 AC. @ 0.90 (IMPERVIOUS AREA)
1.52 AC.

B. WEIGHTED 'C':

$$\frac{(0.48)(0.30)+(1.04)(0.90)}{1.52} = 0.71$$

IV. ONSITE POST-DEVELOPMENT TO PROPOSED EXTENDED DETENTION POND:

A. CONTRIBUTING AREAS:

2.58 AC. @ 0.30 (GREEN AREA)
2.24 AC. @ 0.90 (IMPERVIOUS AREA)
4.82 AC.

B. WEIGHTED 'C':

$$\frac{(2.58)(0.30)+(2.24)(0.90)}{4.82} = 0.58$$

V. OFFSITE POST-DEVELOPMENT TO PROPOSED EXTENDED DETENTION POND:

A. CONTRIBUTING AREAS:

0.97 AC. @ 0.30 (GREEN AREA)
0.57 AC. @ 0.90 (IMPERVIOUS AREA)
1.54 AC.

B. WEIGHTED 'C':

$$\frac{(0.97)(0.30)+(0.57)(0.90)}{1.54} = 0.52$$

VI. TOTAL ONSITE POST-DEVELOPMENT 'C' FACTOR:

$$\frac{(0.96)(0.34)+(1.52)(0.71)+(4.82)(0.58)}{7.30} = 0.58$$

BMP FACILITY DESIGN CALCULATIONS

PART 1: LIST ALL OF THE SUBAREAS AND "C" FACTORS USED IN THE BMP COMPUTATIONS

	SUBAREA DESIGNATION AND DESCRIPTION (1)	"C" (2)	ACRES (3)
A_1	ONSITE DRAINAGE AREA TO INFILTRATION TRENCH	0.71	1.52
A_2	ONSITE DRAINAGE AREA TO POND	0.58	4.82
A_3	OFFSITE AREA TO POND	0.52	1.58
A_4	UNCONTROLLED	0.34	0.96
	TOTAL SITE AREA		7.30 AC.

PART 2: COMPUTE THE WEIGHTED AVERAGE "C" FACTOR FOR THE SITE

(A) AREA OF THE SITE (a) 7.30 ACRES

(B) WEIGHTED AVERAGE "C" FACTOR= 0.58

(SEE STORMWATER MANAGEMENT SUMMARY THIS SHEET)

PART 3: COMPUTE THE TOTAL PHOSPHORUS REMOVAL FOR THE SITE

SUBAREA DESIGNATION (1)	BMP TYPE (2)	REMOVAL EFF. (%) (3)	AREA RATIO (4)	"C" FACTOR RATIO (5)	PRODUCT (6)
*A_1	ONSITE DRAINAGE AREA TO INFILTRATION TRENCH	65	x 1.52/7.30	x 0.71/0.58	= 16.6
**A_2	ONSITE DRAINAGE AREA TO POND	40	x 4.82/7.30	x 0.58/0.58	= 26.4
A_3	OFFSITE AREA TO POND	40	x 0.96/7.30	x 0.34/0.58	= 3.1
				(a) TOTAL =	46.1%

PART 4: DETERMINE COMPLIANCE WITH PHOSPHORUS REMOVAL REQUIREMENT

(A) SELECT REQUIREMENT (a) 40%

* WATER SUPPLY OVERLAY DISTRICT (OCCOQUAN WATERSHED) = 50 %

* CHESAPEAKE BAY PRESERVATION AREA (NEW DEVELOPMENT) = 40 %

* CHESAPEAKE BAY PRESERVATION AREA (REDEVELOPMENT) = [1-0.9 x ("C"PRE/"C"POST)] x 100 =

(B) IF LINE 3(a) 46.1 ≥ LINE 4(a) 40 THEN PHOSPHORUS REMOVAL REQUIREMENT IS SATISFIED.

*ONLY 40% PHOSPHOROUS REMOVAL CREDIT IS TAKEN FOR THE POND, HOWEVER, THE POSSIBILITY OF ENHANCING THE POND WITH WATER TOLERANT PLANT SPECIES WILL BE EVALUATED AT THE TIME OF SITE PLAN. A PHOSPHOROUS REMOVAL CREDIT OF 50% WOULD THEN BE USED.

**CREDIT IS ONLY TAKEN FOR THE ONSITE UNDETAINED AREA & "C" FACTOR.

ADEQUATE OUTFALL/SWM/BMP NARRATIVE

DETENTION FOR THE SITE WILL BE PROVIDED BY A ±80,500 CF POND IN CONJUNCTION WITH A ±14,500 CF INFILTRATION TRENCH. ADEQUATE OUTFALL IS PROPOSED TO BE MET WITH THE EXTENDED DETENTION METHOD AS DESCRIBED IN A CURRENTLY PROPOSED PFM AMENDMENT. AS AN OPTIONAL METHOD OF OBTAINING OUTFALL ADEQUACY, SHEETS 7 & 8 DESCRIBE A DOWNSTREAM STORM SEWER CHANNEL ANALYSIS. SHOULD THE CURRENT PFM AMENDMENT NOT BE APPROVED OR SHOULD THE FEASIBILITY OF THE POND BE REEVALUATED, WE RESERVE THE RIGHT TO USE THE OPTIONAL METHOD OF ANALYSIS DESCRIBED ON SHEETS 7 & 8.

THE EXTENDED DETENTION METHOD REQUIRES THE 48 HR DRAWDOWN OF THE BMP VOLUME, THE 24 HR DRAWDOWN OF THE 1 YR STORM AND THAT THE RELEASE RATES FOR THE 2 & 10 YEAR STORMS BE REDUCED TO PRE-DEVELOPMENT FORESTED CONDITIONS MULTIPLIED BY AN ADDITIONAL REDUCTION FACTOR. THE POND SHOWN ON THIS SPECIAL PERMIT AMENDMENT HAS BEEN PRELIMINARILY SIZED TO MEET THESE REQUIREMENTS. ADDITIONALLY, AN INFILTRATION TRENCH IS PROPOSED TO CONTAIN THE ENTIRE 10 YEAR STORM VOLUME DRAINING TO IT WITH A RELEASE RATE OF 0 CFS. DEPENDING ON THE EXISTING SOIL CONDITIONS AND INFILTRATION RATES, THE TRENCH IS SUBJECT TO MINOR ADJUSTMENTS IN LOCATION, SIZE, AND/OR RELEASE RATES AT THE TIME OF SITE PLAN.

USING THE EXTENDED DETENTION METHOD AS DESCRIBED IN THE CURRENTLY PROPOSED PFM AMENDMENT, THE TOTAL RELEASE RATES FROM THE SITE WILL BE NO MORE THAN 1.44 CFS FOR THE 2-YEAR STORM AND 8.39 CFS FOR THE 10-YEAR STORM, NOT INCLUDING OFFSITE AREAS THAT DRAIN TO THE POND.

BMP REMOVAL FOR THE SITE IS PROPOSED TO BE PROVIDED BY BOTH THE POND AND THE INFILTRATION TRENCH. THE POND HAS A PHOPHOROUS REMOVAL RATE OF 40% AND THE TRENCH HAS A PHOSPHOROUS REMOVAL RATE OF 65%. 6.40 AC OF ONSITE & OFFSITE AREA DRAIN TO THE POND PROVIDING 29.5% PHOSPHOROUS REMOVAL. 1.52 AC OF ONSITE AREA DRAIN TO THE TRENCH PROVIDING 16.6% PHOSPHOROUS REMOVAL. THEREFORE, A TOTAL PHOSPHOROUS REMOVAL OF 46.1% IS ACHIEVED, WHICH EXCEEDS THE REQUIREMENT OF 40%.

LID TECHNIQUES HAVE BEEN USE IN THE FORM OF AN INFILTRATION TRENCH THAT IS PROPOSED TO PROVIDE 100% INFILTRATION WITH A 0 CFS RELEASE RATE.

STORMWATER MANAGEMENT CHECKLIST

MINIMUM STORMWATER INFORMATION FOR REZONING, SPECIAL EXCEPTION, SPECIAL PERMIT AND DEVELOPMENT PLAN APPLICATIONS

The following information is required to be shown or provided in all zoning applications, or a waiver request of the submission requirement with justification shall be attached. Note: Waivers will be acted upon separately. Failure to adequately address the required submission information may result in a delay in processing this application.

This information is required under the following Zoning Ordinance paragraphs:

Special Permits (9-011 2J & 2L)	Special Exceptions (9-011 2J & 2L)
Cluster Subdivision (9-615 1G & 1N)	Commercial Revitalization Districts (9-622 2A (12) & (14))
Development Plans PRC District (16-302 3 & 4L)	PRC Plan (16-303 1E & 1O)
FDP P Districts (except PRC) (16-502 1F & 1Q)	Amendments (16-202 10F & 10I)

[X] 1. Plat is at a minimum scale of 1"=50' (unless it is depicted on one sheet with a minimum scale of 1"=100').

[X] 2. A graphic depicting the stormwater management facility(ies) and limits of clearing and grading accommodate the stormwater management facility(ies), storm drainage pipe systems and outlet protection, pond spillways, access roads, site outfalls, energy dissipation devices, and stream stabilization measures as shown on Sheet 5.

[X] 3. Provide:

Facility Name/ Type & No.	On-site area served (acres)	Off-site area served (acres)	Drainage area (acres)	Footprint area (sf)	Storage Volume (cf)	If pond, dam height (ft)
POND	4.82	1.58	6.40	±14,400	±80,500	5.9'
INFILTRATION TRENCH	1.52	0	1.52	±3,150	±14,500	N/A
Totals						

[X] 4. Onsite drainage channels, outfalls and pipe systems are shown on Sheet 5. Pond inlet and outlet pipe systems are shown on Sheet N/A.

[ ] 5. Maintenance access (road) to stormwater management facility(ies) are shown on Sheet N/A. Type of maintenance access road surface noted on the plat is N/A (asphalt, geoblock, gravel, etc.).

[X] 6. Landscaping and tree preservation shown in and near the stormwater management facility is shown on Sheet 4.

[X] 7. A 'stormwater management narrative' which contains a description of how detention and best management practices requirements will be met is provided on Sheet 6.

[X] 8. A description of the existing conditions of each numbered site outfall extended downstream from the site to a point which is at least 100 times the site area or which has a drainage area of at least one square mile (640 acres) is provided on Sheet 7,8.

[X] 9. A description of how the outfall requirements, including contributing drainage areas of the Public Facilities Manual will be satisfied is provided on Sheet 7,8.

[X] 10. Existing topography with maximum contour intervals of two (2) feet and a note as to whether it is an air survey or field run is provided on Sheets 1,2.

[X] 11. A submission waiver is requested for SEE SHEET 1.

[ ] 12. Stormwater management is not required because N/A.

THIS PLAN IS CONCEPTUAL AND IS INTENDED TO BE USED IN CONJUNCTION WITH THE LAND USE APPROVAL PROCESS ONLY. IT IS NOT AN ENGINEERING CONSTRUCTION DRAWING; AND, MINOR DEVIATIONS AND ADJUSTMENTS MAY BE REQUIRED.

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DATE: 7/13/05 REV: 10/3/05 REV: 11/3/05 REV: 1/20/05
SCALE: 1" = 50' DRAWN: JLH

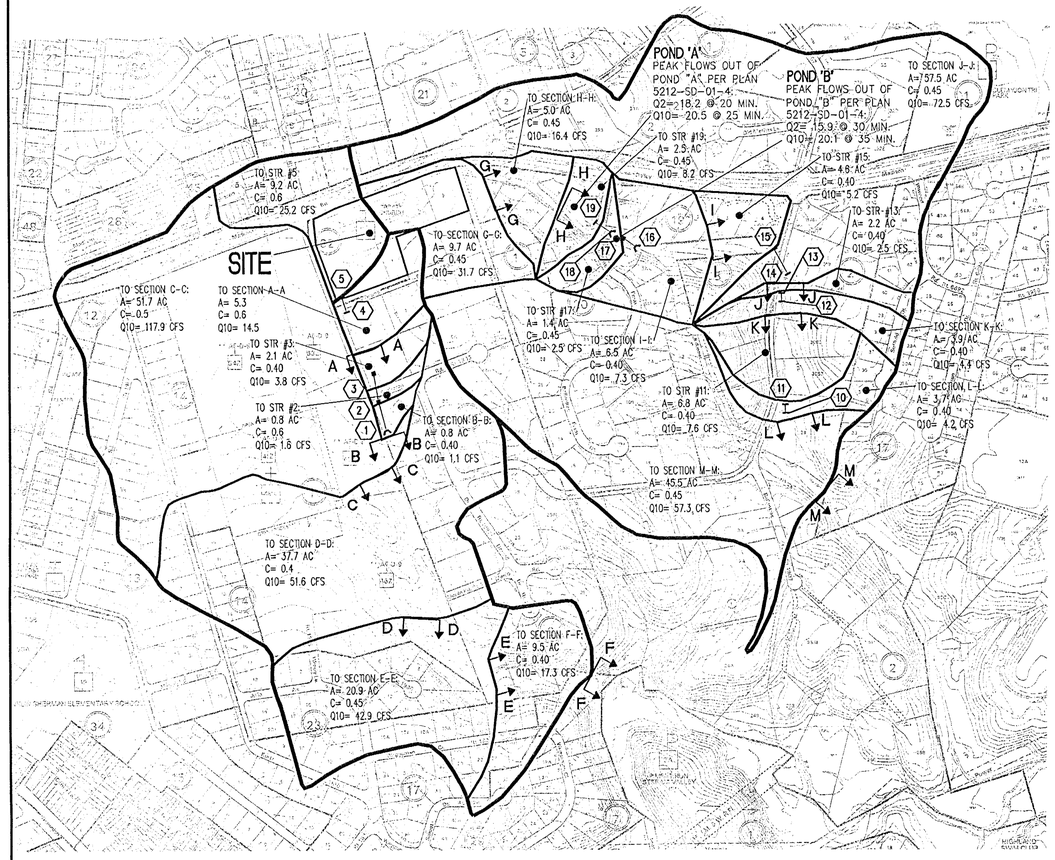
COMMONWEALTH OF VIRGINIA CHARLES F. DONLON JR. No. 13088 7/13/05 LAND SURVEYOR

PRELIMINARY STORMWATER MANAGEMENT CALCULATIONS

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

TRINITY UNITED METHODIST CHURCH
DRANESVILLE DISTRICT
FAIRFAX COUNTY, VIRGINIA



OUTFALL DRAINAGE AREA MAP

1" = 400'

CULVERT COMPUTATION (STR. #11 TO #10)- 10 YEAR STORM

Project TRINITY METHODIST CHURCH — Plan Sheet No. ___ Designer ___ — Rev. Date ___ Date 06/22/05 — Sheet ___ of ___

HYDROLOGICAL DATA: D.A.= 100.1 AC.

AHW Controls — STATION ___
100YR FLOOD PLAIN ___ ELEV. ___
DESIGN AHW DEPTH ___ ELEV. ___
STRUCTURES ___ ELEV. ___
FREQ. TW ELEV.

SHOULDER ELEV. ___ ℄ ELEV. 218.5 — SKEW ___ COVER ___

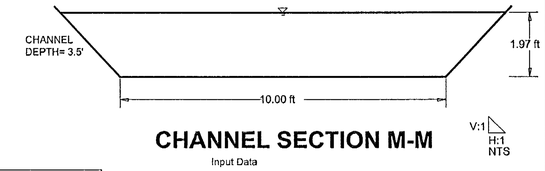
DISCHARGE'S USED: Q10 YR= 119.6 CFS; Q= CFS; Q= CFS; Q= CFS; Q= CFS

RISK ASSESSMENT — ADT ___
DETOURS AVAILABLE ___ LENGTH ___
OVER TOPPING STAGE ___
FLOOD PLAIN MANAGEMENT ___
CRITERIA AND SIGNIFICANT IMPACT ___

INV. EL. 215.4 — So= 2.0% — INV. EL 215
ORIG. GR. ELEV. N/A — L= 20 FT — ORIG. GR. ELEV. N/A

CULVERT TYPE & SIZE	Q	Q/B	HEADWATER COMPUTATIONS: INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ko	dc	(dc+D)/2	ho	H	LSo	HW	CONT. HW ELEV.	OUTLET VELOCITY		END TREAT.	COMMENTS
EX. 4 x 18' DIAM. CULVERTS	119.6	29.9	6.0	9.0	0.5	1.9	1.7	2.72	9	0.4	11.3	219.48		3.56 FPS		

DESIGN FLOOD EXCEED. PROB ___ ELEV. ___
OVERTOP FLOOD EXCEED. PROB ___ ELEV. ___
BASE FLOOD 1% EXCEED. PROB ___ ELEV. ___



CHANNEL SECTION M-M

Input Data

Mannings Coefficient	0.040
Slope	0.025000 ft/ft
Left Side Slope	1.07 V : H
Right Side Slope	1.07 V : H
Bottom Width	10.00 ft
10 YR Discharge	181.10 cfs

Results

Depth	1.97 ft
Flow Area	23.4 ft²
Wetted Perimeter	15.40 ft
Top Width	13.69 ft
Critical Depth	2.03 ft
Critical Slope	0.022711 ft/ft
Velocity	7.75 ft/s
Velocity Head	0.93 ft
Specific Energy	2.91 ft
Froude Number	1.05
Flow Type	Supercritical

2-YR STORM:
2 YR DISCHARGE 170.20 CFS
2 YR VELOCITY 7.60 FPS

CULVERT NOTE: NO CULVERT COMPUTATION IS PROVIDED FOR STRUCTURE #5 TO #4 BECAUSE THERE IS A NEGATIVE SLOPE THROUGH THE CULVERT. THIS CULVERT CURRENTLY OPERATES UNDER INADEQUATE CONDITIONS.

EXISTING STORM SEWER DESIGN COMPUTATIONS

FROM POINT	TO POINT	OUT-FALL 'A' ACRES	RUN-OFF COEF. C	CA INCRE-MENT	CA ACCUM-ULATED	INLET TIME MIN-UTES	RAIN FALL IN/HR	RUN-OFF Q CFS	LENGTH FT.	SLOPE FT.	DIA. IN.	CAPA-CITY C.F.S.
3	2	16.6	0.57	9.46	9.46	20.0	4.56	43.5	150	0.0100	30	44.12
2	1	0.8	0.60	0.48	9.94	20.0	4.56	45.7	200	0.0250	27	48.97

NOTE: EXISTING PIPE RUNS FROM STRUCTURES 19 TO 18 AND 17 TO 16 ARE ADEQUATE PER FX. CO. PLAN # 5212-SD-01-4 (BALLANTRAE FARMS). THESE PIPES ARE THE DISCHARGE PIPES FROM PONDS A AND B.

CULVERT COMPUTATION (STR. #15 TO #14)- 10 YEAR STORM

Project TRINITY METHODIST CHURCH — Plan Sheet No. ___ Designer ___ — Rev. Date ___ Date 06/22/05 — Sheet ___ of ___

HYDROLOGICAL DATA: D.A.= 29.7 AC.

AHW Controls — STATION ___
100YR FLOOD PLAIN ___ ELEV. ___
DESIGN AHW DEPTH ___ ELEV. ___
STRUCTURES ___ ELEV. ___
FREQ. TW ELEV.

SHOULDER ELEV. 235 — ℄ ELEV. 236 — SKEW ___ COVER ___

DISCHARGE'S USED: Q10 YR= 32.6 CFS; Q= CFS; Q= CFS; Q= CFS; Q= CFS

RISK ASSESSMENT — ADT ___
DETOURS AVAILABLE ___ LENGTH ___
OVER TOPPING STAGE ___
FLOOD PLAIN MANAGEMENT ___
CRITERIA AND SIGNIFICANT IMPACT ___

INV. EL. 231.9 — So= 0.3% — INV. EL. 231.4
ORIG. GR. ELEV. N/A — L= 150 FT — ORIG. GR. ELEV. N/A

CULVERT TYPE & SIZE	Q	Q/B	HEADWATER COMPUTATIONS: INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ko	dc	(dc+D)/2	ho	H	LSo	HW	CONT. HW ELEV.	OUTLET VELOCITY		END TREAT.	COMMENTS
EX. 24" CMP CULVERT	32.6	32.6	21.8	5.6	0.9	1.3	1.65	1.65	14	0.45	15.2	236.46		5.6 FPS		

DESIGN FLOOD EXCEED. PROB ___ ELEV. ___
OVERTOP FLOOD EXCEED. PROB ___ ELEV. ___
BASE FLOOD 1% EXCEED. PROB ___ ELEV. ___

CULVERT COMPUTATION (STR. #13 TO #12)- 10 YEAR STORM

Project TRINITY METHODIST CHURCH — Plan Sheet No. ___ Designer ___ — Rev. Date ___ Date 06/22/05 — Sheet ___ of ___

HYDROLOGICAL DATA: D.A.= 89.4 AC.

AHW Controls — STATION ___
100YR FLOOD PLAIN ___ ELEV. ___
DESIGN AHW DEPTH ___ ELEV. ___
STRUCTURES ___ ELEV. ___
FREQ. TW ELEV.

SHOULDER ELEV. ___ ℄ ELEV. 228.5 — SKEW ___ COVER ___

DISCHARGE'S USED: Q10 YR= 107.6 CFS; Q= CFS; Q= CFS; Q= CFS; Q= CFS

RISK ASSESSMENT — ADT ___
DETOURS AVAILABLE ___ LENGTH ___
OVER TOPPING STAGE ___
FLOOD PLAIN MANAGEMENT ___
CRITERIA AND SIGNIFICANT IMPACT ___

INV. EL. 225.6 — So= 3.0% — INV. EL225
ORIG. GR. ELEV. N/A — L= 20 FT — ORIG. GR. ELEV. N/A

CULVERT TYPE & SIZE	Q	Q/B	HEADWATER COMPUTATIONS: INLET CONT. HW/D	INLET CONT. HW	OUTLET CONTROL Ko	dc	(dc+D)/2	ho	H	LSo	HW	CONT. HW ELEV.	OUTLET VELOCITY		END TREAT.	COMMENTS
EX. 4 x 18' DIAM. CULVERTS	107.6	26.9	5.9	8.9	0.5	1.8	1.7	2.18	6	0.34	7.8	229.28		10.6 FPS		

DESIGN FLOOD EXCEED. PROB ___ ELEV. ___
OVERTOP FLOOD EXCEED. PROB ___ ELEV. ___
BASE FLOOD 1% EXCEED. PROB ___ ELEV. ___

OPTIONAL ADEQUATE OUTFALL METHOD NARRATIVE

ONSITE STORMWATER MANAGEMENT DETENTION MEASURES ARE PROVIDED FOR THE PROPOSED PROJECT TO TREAT THE INCREASE IN IMPERVIOUS AREA POST-DEVELOPMENT. THIS SITE HAS TWO OUTFALL PATHS THAT BOTH END IN PIMMIT RUN. THE STORMWATER FROM THIS SITE IS CONVEYED DOWNSTREAM VIA STORM SEWER, OPEN CHANNEL FLOW AND CULVERTS. WE HAVE DETERMINED THE EXISTING DRAINAGE DIVIDES, AND VERIFIED THE EXISTING OFFSITE STORM SEWER, CULVERTS, AND CHANNEL SECTIONS USING RECORD AS-BUILT AND TOPOGRAPHY INFORMATION AS WELL AS INFORMATION GATHERED IN THE FIELD.

THE WESTERN PORTION OF THE SITE DRAINS TO THE SOUTHWEST CORNER WHERE IT FLOWS INTO A CULVERT UNDERNEATH GILLIAMS ROAD. THIS CULVERT CURRENTLY IS INADEQUATE DUE TO A SLIGHT NEGATIVE SLOPE. AFTER FLOWING THROUGH THIS CULVERT, RUNOFF ENTERS A GRASS LINED ROAD SIDE DITCH ADJACENT TO BUCHANON STREET. IT IS THEN COLLECTED VIA STORM SEWER INLETS AND DISCHARGED INTO A CHANNEL LEADING TO PIMMIT RUN. AT THIS POINT, THE OUTFALL PATH IS IN A RESOURCE PROTECTION AREA (RPA). THE OUTFALL ANALYSIS IS CONTINUED UNTIL A FLOODPLAIN LINE FOR PIMMIT RUN IS REACHED. THIS FLOODPLAIN HAS A DRAINAGE AREA GREATER THAN 1 SQ. MILE AND THEREFORE THE ANALYSIS IS ENDED AT THIS POINT. AT THIS POINT OF OUTFALL THE STREAM HAS A STONY BOTTOM WITH VEGETATION ALONG THE BANKS.

THE EASTERN PORTION OF THE SITE DRAINS TO THE EAST VIA SHEET FLOW INTO THE BALLANTRAE FARMS SUBDIVISION. RUNOFF THEN FLOWS TO PONDS A & B IN SEQUENCE. THE DISCHARGE FROM POND B THEN FLOWS IN A SWALE LEADING TO A CULVERT UNDERNEATH LANGLEY LANE. AT THIS POINT, THE DRAINAGE ENTERS A FLOODPLAIN. THE RUNOFF THEN FLOWS SOUTH ADJACENT TO LANGLEY LANE THROUGH A STREAM AND DRIVEWAY CULVERT SYSTEM. ULTIMATELY, THIS STREAM DISCHARGES TO PIMMIT RUN WHICH HAS A FLOOD PLAIN DRAINING GREATER THEN 1 SQ. MILE. THEREFORE, THE ANALYSIS IS ENDED AT THIS POINT. THE STREAM AT THIS POINT OF OUTFALL HAS A STONY BOTTOM AND IS VEGETATED ALONG THE BANKS.

EXISTING CONDITIONS FOR PARTS OF THE CHANNELS AND STREAMS ARE INADEQUATE AND FUNCTION UNDER EROSIVE CONDITIONS TODAY. ADDITIONALLY, THE CULVERTS ALONG THE OUTFALL PATH ARE INADEQUATE AND OPERATE UNDER CONDITIONS WHERE RUNOFF OVERTOPS THE ROADS OR DRIVEWAYS. THOUGH WE ARE PROPOSING ONSITE DETENTION MEASURES IN ORDER TO RELEASE AT OR BELOW PRE-DEVELOPMENT RATES, NO AMOUNT OF ONSITE MEASURES WOULD COMPENSATE FOR EXISTING INADEQUACIES ALONG THE OUTFALL PATH. THROUGH THE PROPOSED ONSITE DETENTION MEASURES, WE WILL NOT AGGRAVATE AN ALREADY INADEQUATE SITUATION.

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DATE: 7/13/05 REV. 11/3/05
REV. 10/3/05 REV. 1/20/06
DRAWN: JH
SCALE: 1" = 30'

COMMONWEALTH OF VIRGINIA — CHARLES R. DONLAP — No. 13098 — 7/13/07 — LAND SURVEYOR

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	DATE	APPROVED	DATE

OPTIONAL OUTFALL ANALYSIS METHOD

TRINITY UNITED METHODIST CHURCH

DRAINEVILLE DISTRICT

FAIRFAX COUNTY, VIRGINIA

CHANNEL SECTION A-A

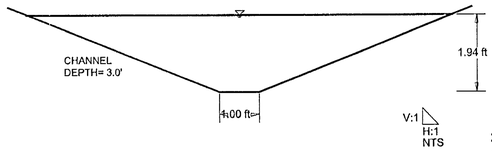
Input Data

Mannings Coefficient	0.030	
Slope	0.005000	ft/ft
Left Side Slope	0.40	V : H
Right Side Slope	0.40	V : H
Bottom Width	1.00	ft
10 YR Discharge	39.70	cfs

Results

Depth	1.94	ft
Flow Area	11.4	ft²
Wetted Perimeter	11.47	ft
Top Width	10.72	ft
Critical Depth	1.55	ft
Critical Slope	0.015045	ft/ft
Velocity	3.49	ft/s
Velocity Head	0.19	ft
Specific Energy	2.13	ft
Froude Number	0.60	
Flow Type	Subcritical	

2-YR STORM:
2 YR DISCHARGE 29.80 CFS
2 YR VELOCITY 3.24 FPS



CHANNEL SECTION B-B

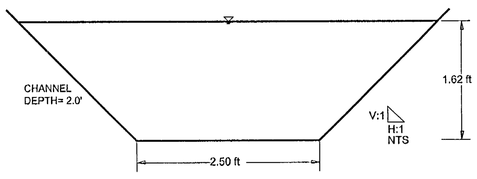
Input Data

Mannings Coefficient	0.045	
Slope	0.050000	ft/ft
Left Side Slope	1.00	V : H
Right Side Slope	1.00	V : H
Bottom Width	2.50	ft
10 YR Discharge	47.20	cfs

Results

Depth	1.62	ft
Flow Area	6.7	ft²
Wetted Perimeter	7.07	ft
Top Width	5.73	ft
Critical Depth	1.75	ft
Critical Slope	0.036841	ft/ft
Velocity	7.09	ft/s
Velocity Head	0.78	ft
Specific Energy	2.40	ft
Froude Number	1.16	
Flow Type	Supercritical	

2-YR STORM:
2 YR DISCHARGE 35.40 CFS
2 YR VELOCITY 6.57 FPS



CHANNEL SECTION C-C

Input Data

Slope	0.022000	ft/ft
10 YR Discharge	165.10	cfs

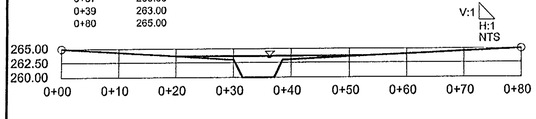
Results

Mannings Coefficient	0.045	
Water Surface Elevation	263.67	ft
Elevation Range	260.00 to 265.00	
Flow Area	34.7	ft²
Wetted Perimeter	38.13	ft
Top Width	32.39	ft
Actual Depth	3.67	ft
Critical Elevation	262.78	ft
Critical Slope	0.035444	ft/ft
Velocity	4.76	ft/s
Velocity Head	0.35	ft
Specific Energy	264.02	ft
Froude Number	0.81	
Flow Type	Subcritical	

2-YR STORM:
2 YR DISCHARGE 123.80 CFS
2 YR VELOCITY 6.70 FPS

Channel Points

Station (ft)	Elevation (ft)
0+00	265.00
0+30	263.00
0+32	260.00
0+37	260.00
0+39	263.00
0+80	265.00



CHANNEL SECTION D-D

Input Data

Slope	0.024000	ft/ft
10 YR Discharge	233.90	cfs

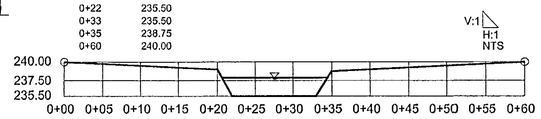
Results

Mannings Coefficient	0.045	
Water Surface Elevation	237.95	ft
Elevation Range	235.50 to 240.00	
Flow Area	30.6	ft²
Wetted Perimeter	16.71	ft
Top Width	13.91	ft
Actual Depth	2.45	ft
Critical Elevation	237.81	ft
Critical Slope	0.029200	ft/ft
Velocity	7.65	ft/s
Velocity Head	0.91	ft
Specific Energy	238.86	ft
Froude Number	0.91	
Flow Type	Subcritical	

2-YR STORM:
2 YR DISCHARGE 175.40 CFS
2 YR VELOCITY 6.98 FPS

Channel Points

Station (ft)	Elevation (ft)
0+00	240.00
0+20	239.00
0+22	235.50
0+33	235.50
0+35	238.75
0+60	240.00



CHANNEL SECTION E-E

Input Data

Slope	0.021000	ft/ft
10 YR Discharge	276.80	cfs

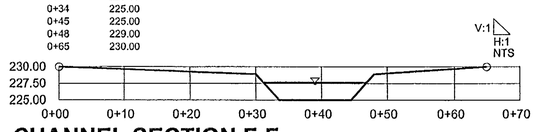
Results

Mannings Coefficient	0.045	
Water Surface Elevation	227.72	ft
Elevation Range	225.00 to 230.00	
Flow Area	36.5	ft²
Wetted Perimeter	18.24	ft
Top Width	15.77	ft
Actual Depth	2.72	ft
Critical Elevation	227.52	ft
Critical Slope	0.027461	ft/ft
Velocity	7.59	ft/s
Velocity Head	0.90	ft
Specific Energy	228.62	ft
Froude Number	0.88	
Flow Type	Subcritical	

2-YR STORM:
2 YR DISCHARGE 207.60 CFS
2 YR VELOCITY 6.94 FPS

Channel Points

Station (ft)	Elevation (ft)
0+00	230.00
0+30	229.00
0+34	225.00
0+45	225.00
0+48	229.00
0+65	230.00



CHANNEL SECTION F-F

Input Data

Slope	0.060000	ft/ft
10 yr Discharge	294.10	cfs

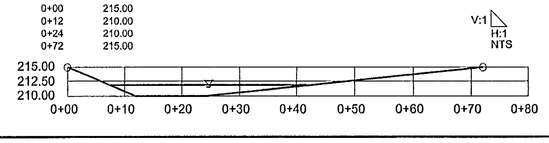
Results

Mannings Coefficient	0.060	
Water Surface Elevation	211.84	ft
Elevation Range	210.00 to 215.00	
Flow Area	42.3	ft²
Wetted Perimeter	34.52	ft
Top Width	34.05	ft
Actual Depth	1.84	ft
Critical Elevation	211.93	ft
Critical Slope	0.049015	ft/ft
Velocity	6.95	ft/s
Velocity Head	0.75	ft
Specific Energy	212.59	ft
Froude Number	1.10	
Flow Type	Supercritical	

2-YR STORM:
2 YR DISCHARGE 220.60 CFS
2 YR VELOCITY 6.42 FPS

Channel Points

Station (ft)	Elevation (ft)
0+00	215.00
0+12	210.00
0+24	210.00
0+72	215.00



CHANNEL SECTION G-G

Input Data

Slope	0.045000	ft/ft
10 YR Discharge	31.70	cfs

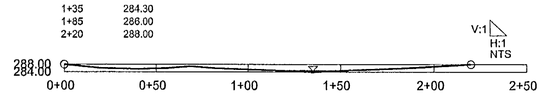
Results

Mannings Coefficient	0.030	
Water Surface Elevation	284.80	ft
Elevation Range	284.30 to 288.00	
Flow Area	7.6	ft²
Wetted Perimeter	30.36	ft
Top Width	30.34	ft
Actual Depth	0.50	ft
Critical Elevation	284.88	ft
Critical Slope	0.019780	ft/ft
Velocity	4.17	ft/s
Velocity Head	0.27	ft
Specific Energy	285.07	ft
Froude Number	1.47	
Flow Type	Supercritical	

2-YR STORM:
2 YR DISCHARGE 23.80 CFS
2 YR VELOCITY 3.88 FPS

Channel Points

Station (ft)	Elevation (ft)
0+00	288.00
0+20	286.00
0+40	285.50
0+56	286.00
0+69	287.00
0+82	286.00
1+35	284.30
1+85	286.00
2+20	288.00



CHANNEL SECTION H-H

Input Data

Slope	0.033000	ft/ft
10 YR Discharge	48.10	cfs

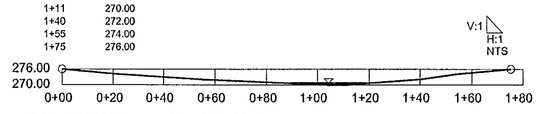
Results

Mannings Coefficient	0.030	
Water Surface Elevation	270.56	ft
Elevation Range	270.00 to 276.00	
Flow Area	10.8	ft²
Wetted Perimeter	29.72	ft
Top Width	29.69	ft
Actual Depth	0.56	ft
Critical Elevation	270.65	ft
Critical Slope	0.017768	ft/ft
Velocity	4.53	ft/s
Velocity Head	0.32	ft
Specific Energy	270.88	ft
Froude Number	1.34	
Flow Type	Supercritical	

2-YR STORM:
2 YR DISCHARGE 36.10 CFS
2 YR VELOCITY 4.20 FPS

Channel Points

Station (ft)	Elevation (ft)
0+00	276.00
0+20	274.00
0+55	272.00
1+03	270.00
1+11	270.00
1+40	272.00
1+55	274.00
1+75	276.00



CHANNEL SECTION I-I

Input Data

Slope	0.027000	ft/ft
10 YR Discharge	27.40	cfs

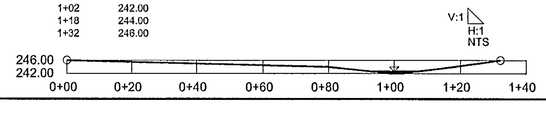
Results

Mannings Coefficient	0.030	
Water Surface Elevation	242.68	ft
Elevation Range	242.00 to 246.00	
Flow Area	6.1	ft²
Wetted Perimeter	15.02	ft
Top Width	14.94	ft
Actual Depth	0.68	ft
Critical Elevation	242.75	ft
Critical Slope	0.017280	ft/ft
Velocity	4.47	ft/s
Velocity Head	0.31	ft
Specific Energy	242.99	ft
Froude Number	1.23	
Flow Type	Supercritical	

2-YR STORM:
2 YR DISCHARGE 23.10 CFS
2 YR VELOCITY 4.28 FPS

Channel Points

Station (ft)	Elevation (ft)
0+00	246.00
0+80	244.00
0+99	242.00
1+02	242.00
1+18	244.00
1+32	246.00



CHANNEL SECTION J-J

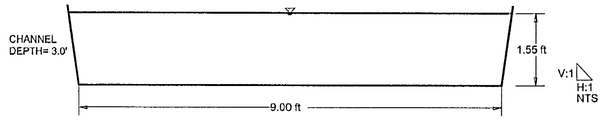
Input Data

Mannings Coefficient	0.045	
Slope	0.040000	ft/ft
Left Side Slope	7.00	V : H
Right Side Slope	7.00	V : H
Bottom Width	9.00	ft
10 YR Discharge	105.10	cfs

Results

Depth	1.55	ft
Flow Area	14.3	ft²
Wetted Perimeter	12.13	ft
Top Width	9.44	ft
Critical Depth	1.60	ft
Critical Slope	0.035843	ft/ft
Velocity	7.36	ft/s
Velocity Head	0.84	ft
Specific Energy	2.39	ft
Froude Number	1.06	
Flow Type	Supercritical	

2-YR STORM:
2 YR DISCHARGE 95.40 CFS
2 YR VELOCITY 7.13 FPS



CHANNEL SECTION K-K

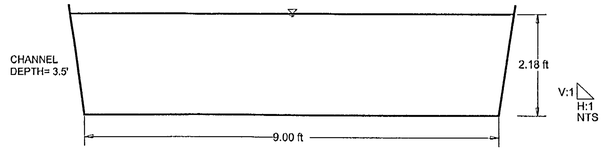
Input Data

Mannings Coefficient	0.045	
Slope	0.016000	ft/ft
Left Side Slope	7.00	V : H
Right Side Slope	7.00	V : H
Bottom Width	9.00	ft
10 YR Discharge	112.00	cfs

Results

Depth	2.18	ft
Flow Area	20.3	ft²
Wetted Perimeter	13.41	ft
Top Width	9.62	ft
Critical Depth	1.67	ft
Critical Slope	0.035794	ft/ft
Velocity	5.51	ft/s
Velocity Head	0.47	ft
Specific Energy	2.65	ft
Froude Number	0.67	
Flow Type	Subcritical	

2-YR STORM:
2 YR DISCHARGE 102.10 CFS
2 YR VELOCITY 5.35 FPS



CHANNEL SECTION L-L

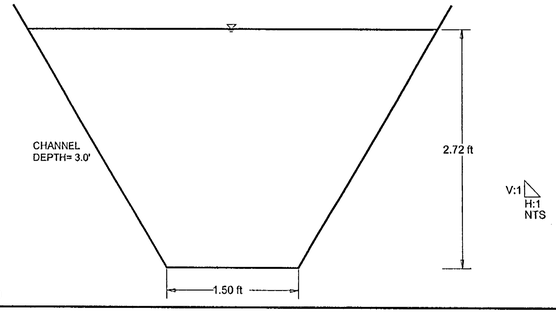
Input Data

Mannings Coefficient	0.015	
Slope	0.020000	ft/ft
Left Side Slope	1.71	V : H
Right Side Slope	1.71	V : H
Bottom Width	1.50	ft
10 YR Discharge	123.80	cfs

Results

Depth	2.72	ft
Flow Area	8.4	ft²
Wetted Perimeter	7.80	ft
Top Width	4.68	ft
Critical Depth	3.80	ft
Critical Slope	0.005114	ft/ft
Velocity	14.72	ft/s
Velocity Head	3.37	ft
Specific Energy	6.09	ft
Froude Number	1.94	
Flow Type	Supercritical	

2-YR STORM:
2 YR DISCHARGE 29.80 CFS
2 YR VELOCITY 3.24 FPS



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SCALE: 1" = 30'
DATE: 7/13/05
REV. 10/3/05
REV. 11/3/05
REV. 1/20/06
DRAWN: JV

COMMONWEALTH OF VIRGINIA
CHARLES E. DUNLAP
No. 13398
7/13/05
LAND SURVEYOR

REVISION APPROVED BY

NO.	DESCRIPTION	DATE	REV. BY	APPROVED	DATE

OPTIONAL OUTFALL ANALYSIS METHOD- CHANNEL SECTIONS

TRINITY UNITED METHODIST CHURCH

DRAINEVILLE DISTRICT

FAIRFAX COUNTY, VIRGINIA