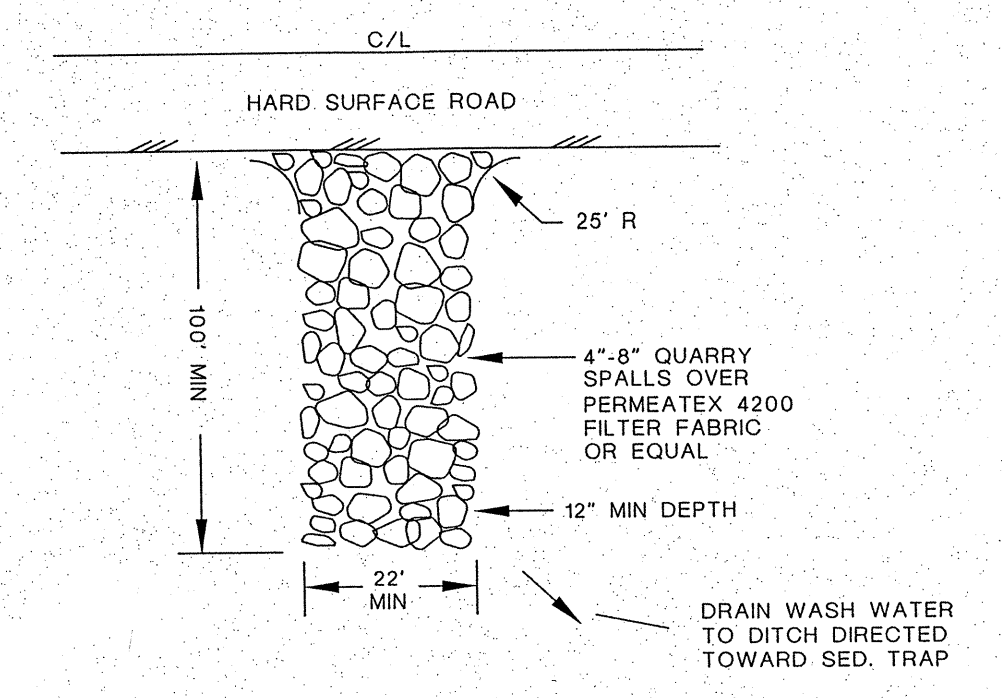
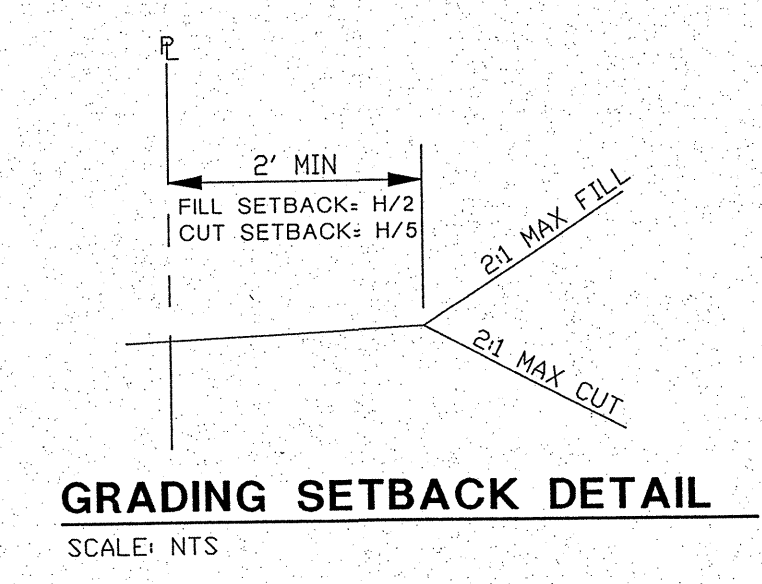
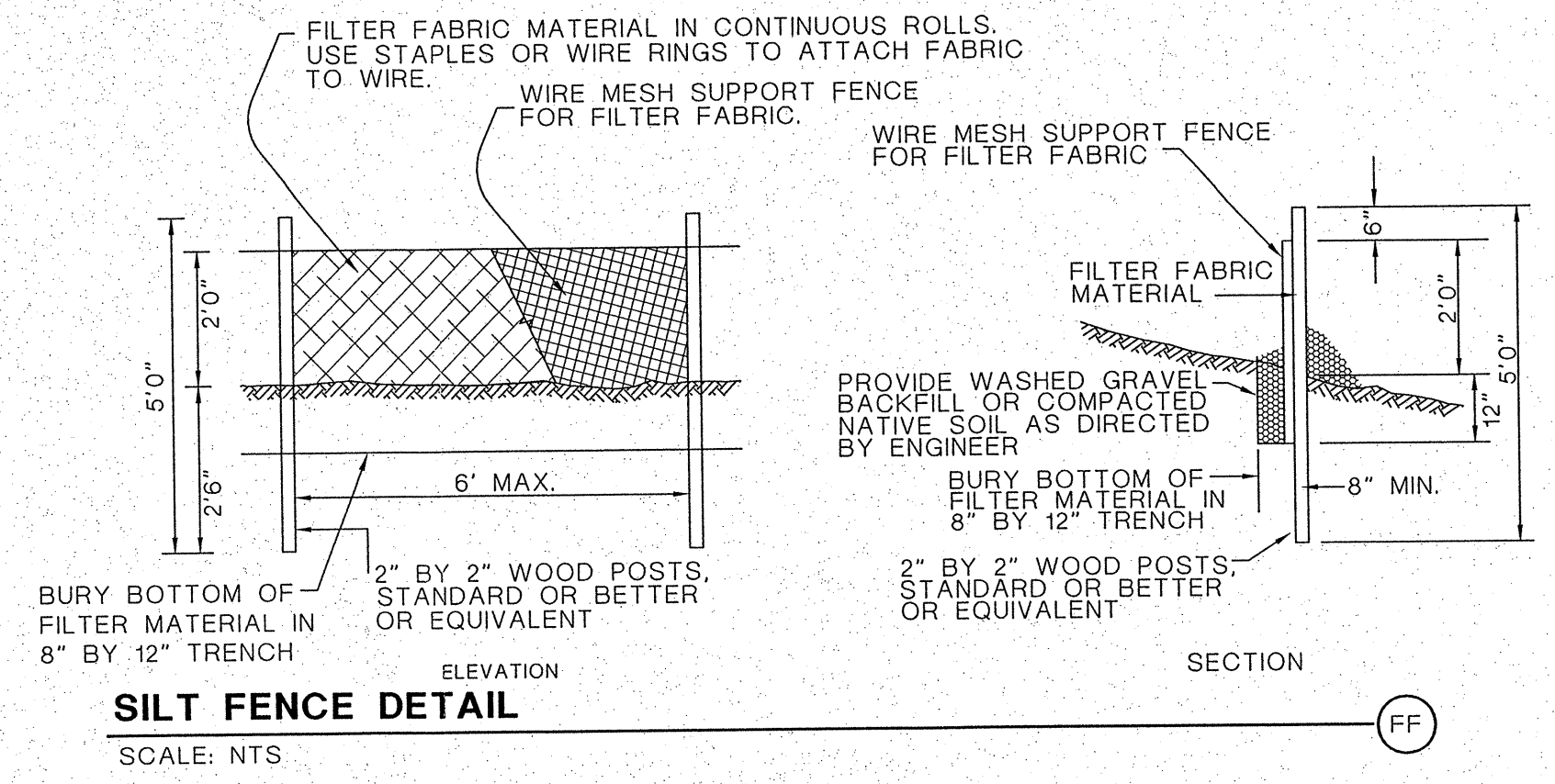
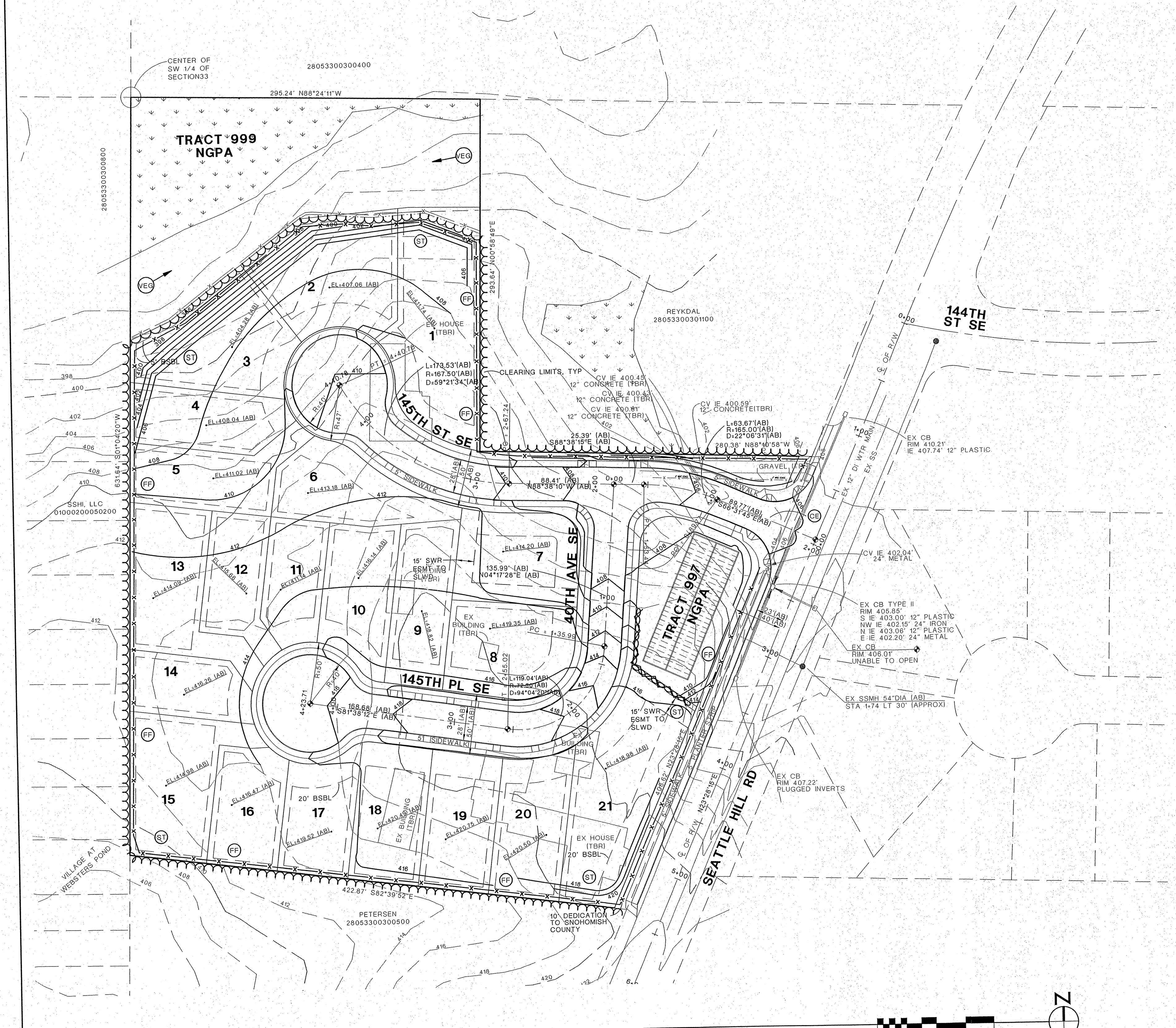


SW 1/4, SECTION 33, TOWNSHIP 28 N, RANGE 5 E, W.M.



- LEGEND**
- PROPOSED CLEARING LIMITS
 - TEMPORARY ROCK CONSTRUCTION ENTRANCE
 - FILTER FABRIC FENCE
 - SEDIMENT TRAP
 - RETAIN EXISTING VEGETATION

CALL BEFORE YOU DIG
1-800-424-5555

THESE RECORD DRAWINGS ARE SUBMITTED FOR REVIEW ON A TRUE COPY OF THE COUNTY-APPROVED CONSTRUCTION PLANS SIGNED FOR APPROVAL ON (ENTER DATE) 09/20/07

BY: 08/27/08
PROJECT ENGINEER/SURVEYOR DATE

WE HERBY DECLARE THAT THE ROAD, STORM DRAINAGE, GRADING AND OTHER IMPROVEMENTS ARE LOCATED AS SHOWN ON THESE RECORD DRAWINGS.

BY: 08/27/08
PROJECT ENGINEER/SURVEYOR DATE

BY: 08/27/08
PROJECT DEVELOPER/OWNER DATE

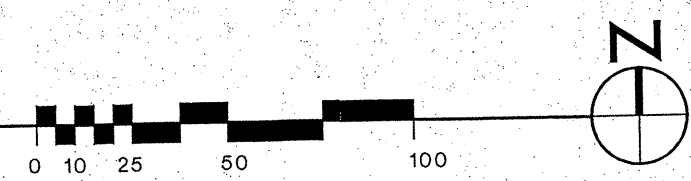
REVISION NO.	REVISION	DATE OF REV.	SNOCO APPROVAL	DATE OF APPROVAL
1	CHANGE IN COVER OVER VAULT	11/30/07		
2	CHANGE IN GRADES & DRN (SEWER LAYOUT CHANGES)	2/07/08		

SNOHOMISH COUNTY PLANNING DEVELOPMENT SERVICES
APPROVED FOR GRADING

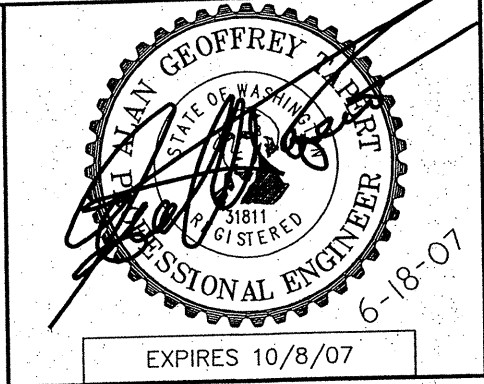
BY: _____
FOR RANDOLPH R. SLEIGHT, P.E., P.L.S.
R/W PERMIT NO. _____

JOB NO.: 2195 - THOMAS LAKE COURT
DATE: JUN 18, 2007
DRAWN BY: AGT/WSJ
SHEET C-2 OF 6

PLAN VIEW
SCALE: 1" = 50' [1"=100' IF ON 11x17"]



CIVIL ENGINEER:
X-SOUND ENGINEERING, INC.
P.O. BOX 1265
FREELAND, WA 98249
(360) 331-3113 (TEL)
(360) 331-7114 (FAX)

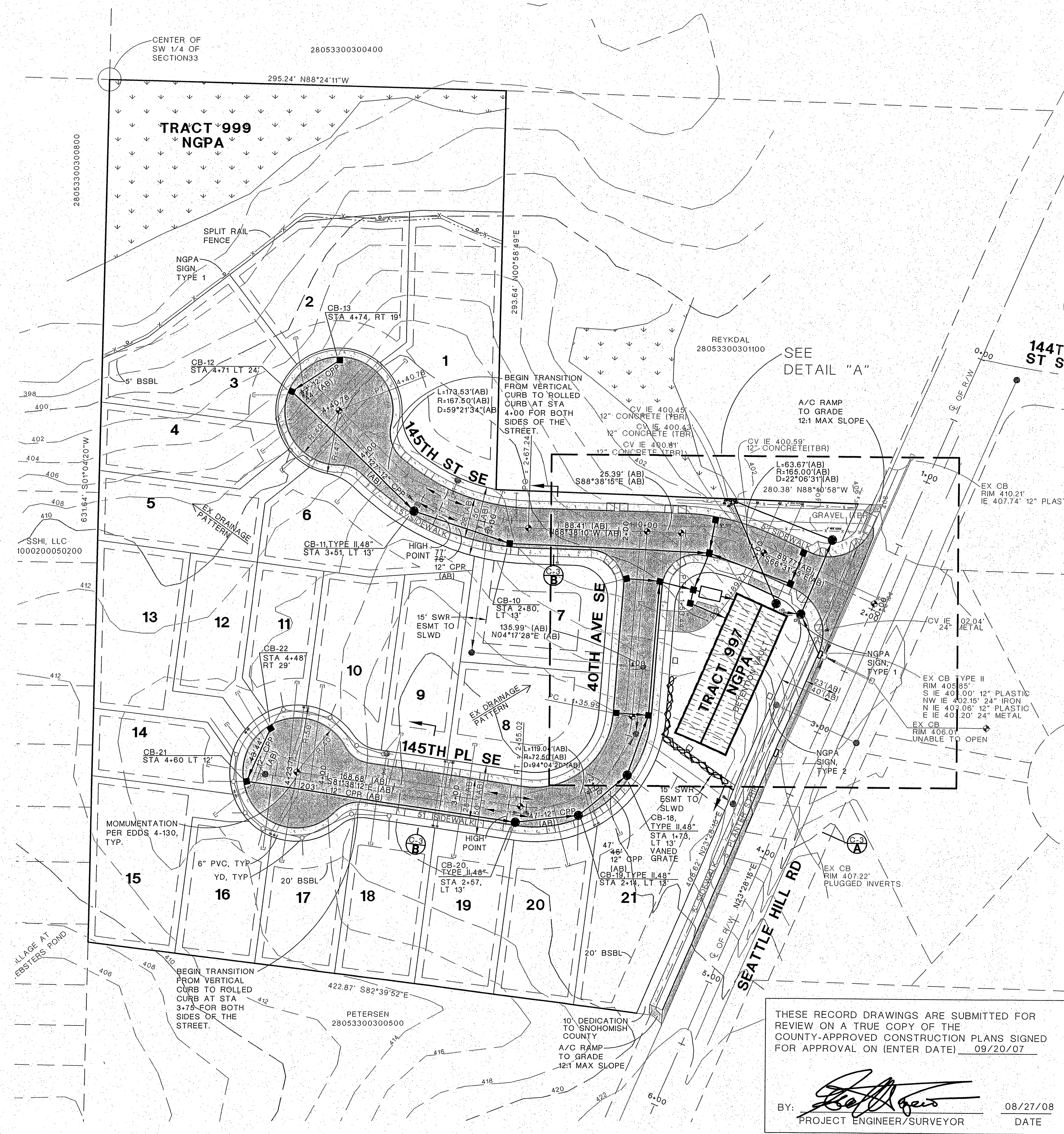


FOR/CONTACT:
STRAHM PROPERTIES, LLC
ATTN: BOB STRAHM
1712 PACIFIC AVE. SUITE 104
EVERETT, WA 98201
(425) 259-1457

APPLETREE AT THOMAS LAKE
THOMAS LAKE COURT
GRADING & EROSION CONTROL PLAN
(SWPPP)
AS-BUILTS

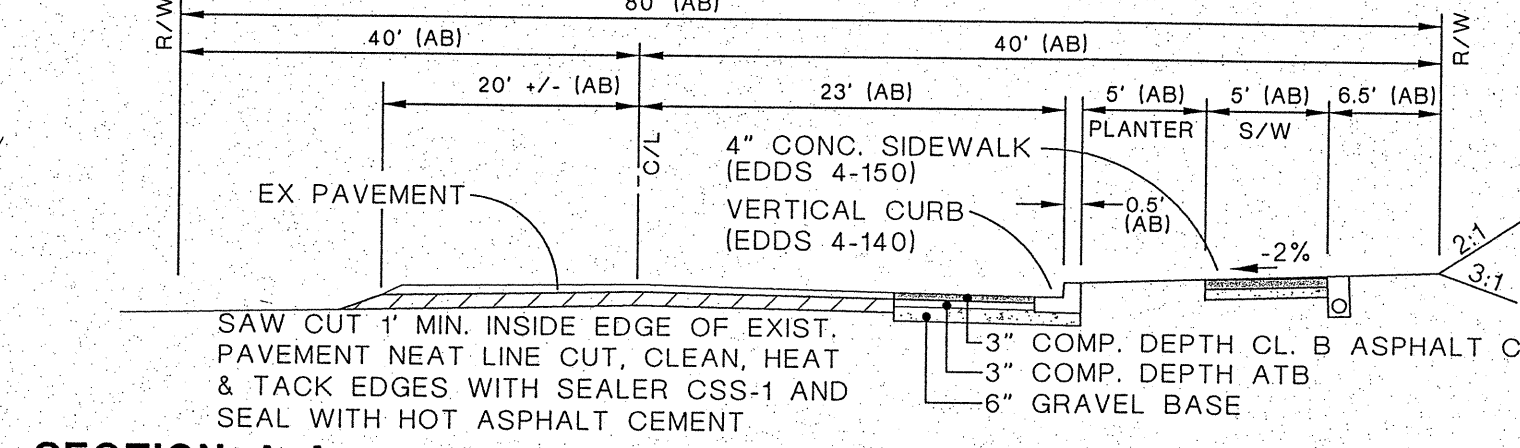
HDEV-2443

SW 1/4, SECTION 33, TOWNSHIP 28 N, RANGE 5 E, W.M.

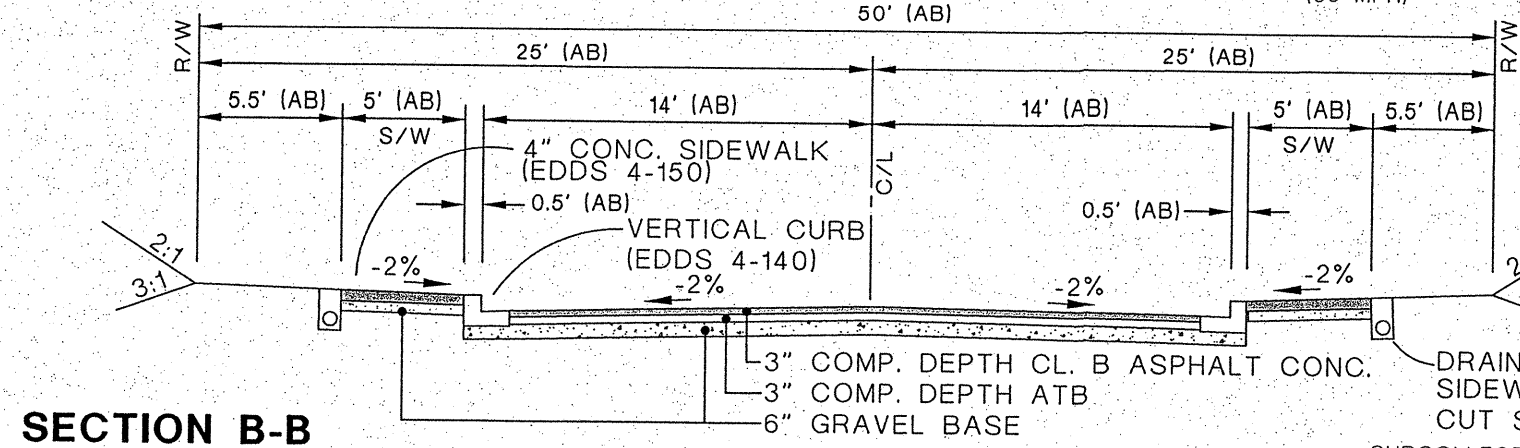


THESE RECORD DRAWINGS ARE SUBMITTED FOR REVIEW ON A TRUE COPY OF THE COUNTY-APPROVED CONSTRUCTION PLANS SIGNED FOR APPROVAL ON (ENTER DATE) 09/20/07

BY: *[Signature]* PROJECT ENGINEER/SURVEYOR DATE: 08/27/08



SECTION A-A SCALE: NTS

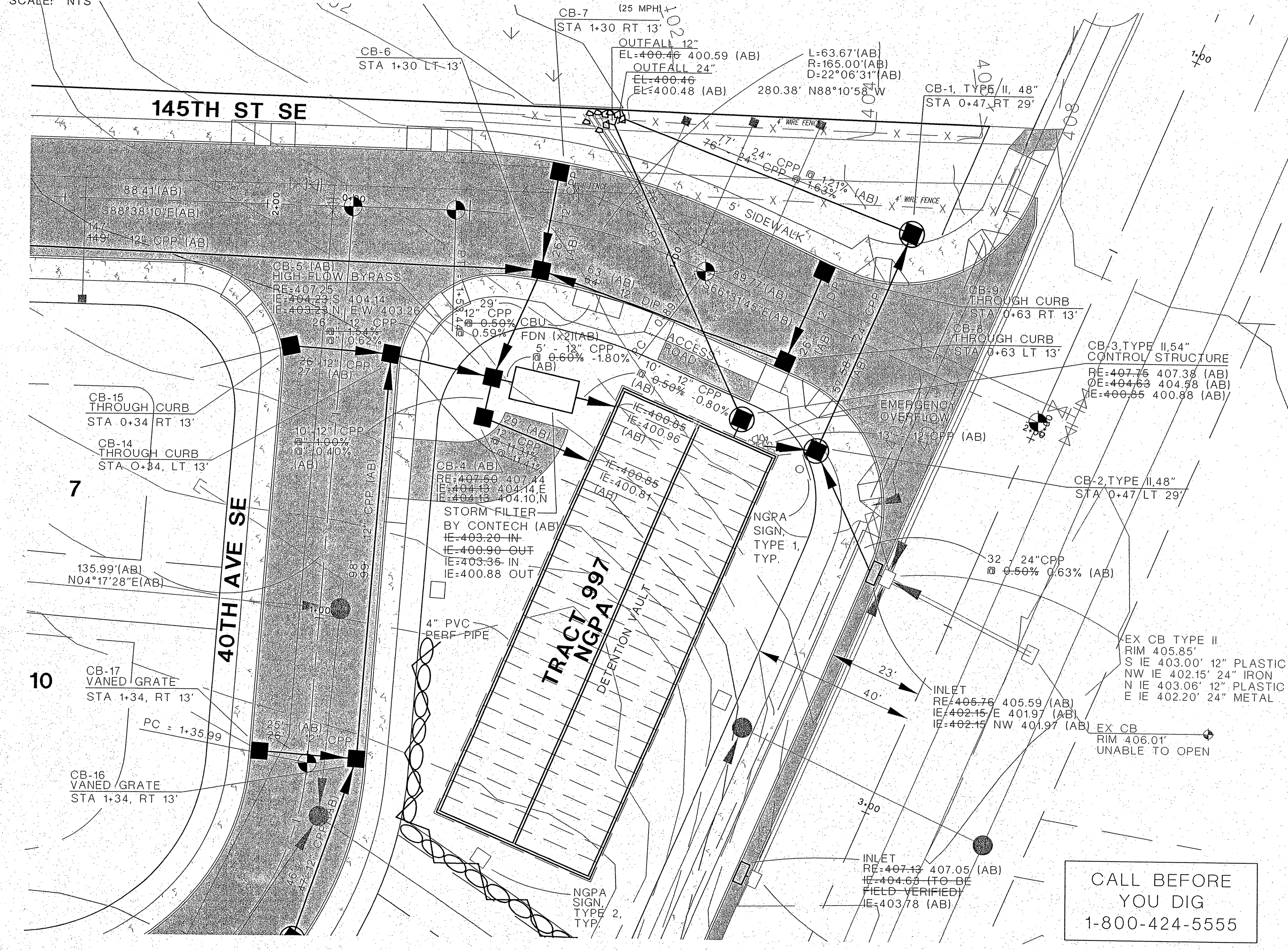


SECTION B-B SCALE: NTS

LOT	STATION	RE.	YARD DRAIN TABLE	A/B RE.	IE	A/B IE	MIN C.S. EL.
1	4+00	RT 40'	ROLLED CURB	222'			
2	4+00	RT 40'	ROLLED CURB	222'			
3	4+00	LT 40'	ROLLED CURB	222'			
4	4+00	LT 40'	ROLLED CURB	222'			
5	4+00	LT 40'	ROLLED CURB	222'			
6	3+75	LT 14'	3-75 LT 14'	15'			
7	2+86	LT 14'	2-86 LT 14'	15'			
8	2+95	LT 14'	2-95 LT 14'	15'			
9	3+44	LT 14'	3-44 LT 14'	15'			
10	3+71	RT 40'	ROLLED CURB	246'			
11	3+71	RT 40'	ROLLED CURB	246'			
12	3+71	RT 40'	ROLLED CURB	246'			
13	3+71	RT 40'	ROLLED CURB	246'			
14	3+71	RT 40'	ROLLED CURB	246'			
15	3+71	RT 40'	ROLLED CURB	246'			
16	3+71	RT 40'	ROLLED CURB	246'			
17	3+71	RT 40'	ROLLED CURB	246'			
18	3+71	RT 40'	ROLLED CURB	246'			
19	2+22	LT 14'	2-22 LT 14'	15'			
20	2+26	LT 14'	2-24 LT 14'	15'			
21	1+95	LT 14'	1-95 LT 14'	15'			
897-W	0+82	LT 14'	0-82 LT 14'	15'			
897-N	0+79	LT 14'	0-80, LT 14'	24'			

EVENT	LIVE STORAGE VOLUME (CF)		DEAD STORAGE VOLUME (CF)		RELEASE RATE (CFS)	
	REQUIRED	DESIGNED	REQUIRED	DESIGNED	REQUIRED	DESIGNED
2 (1/2")	14,470	14,470	13,888	14,426	13,843	0.051
10	14,829	14,829	14,336	14,426	13,843	0.332
100	16,934	16,934	16,576	14,426	13,843	0.890

LIST LOTS THAT FLOW TO DETENTION FACILITY: 1, 21
DESIGN IMPERVIOUS AREA FOR DEVELOPMENT: 2,500 SQFT/LOT

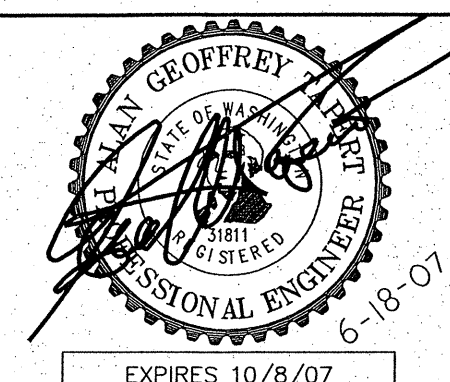


DETAIL "A" SCALE: 1" = 20' (1"=40' IF ON 11x17)

PLAN VIEW SCALE: 1" = 50' (1"=100' IF ON 11x17)

REVISION NO.	REVISION	DATE OF REV.	SNOOCO APPROVAL	DATE OF APPROVAL
1	CHANGE IN COVER OVER VAULT	11/30/07		
2	CHANGE IN GRADES & DRN (SEWER LAYOUT CHANGES)	2/07/08		

CIVIL ENGINEER:
X-SOUND ENGINEERING, INC.
P.O. BOX 1265
FREELAND, WA 98249
(360) 331-3113 (TEL)
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FOR/CONTACT:
STRAHM PROPERTIES, LLC
ATTN: BOB STRAHM
1712 PACIFIC AVE. SUITE 104
EVERETT, WA 98201
(425) 259-1457

APPLETREE AT THOMAS LAKE
THOMAS LAKE COURT
DRAINAGE PLAN
AS-BUILTS

WE HERBY DECLARE THAT THE ROAD, STORM DRAINAGE, GRADING AND OTHER IMPROVEMENTS ARE LOCATED AS SHOWN ON THESE RECORD DRAWINGS.

BY: *[Signature]* PROJECT ENGINEER/SURVEYOR DATE: 08/27/08
BY: *[Signature]* PROJECT DEVELOPER/OWNER DATE: 8/26/08

SNOHOMISH COUNTY PLANNING DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

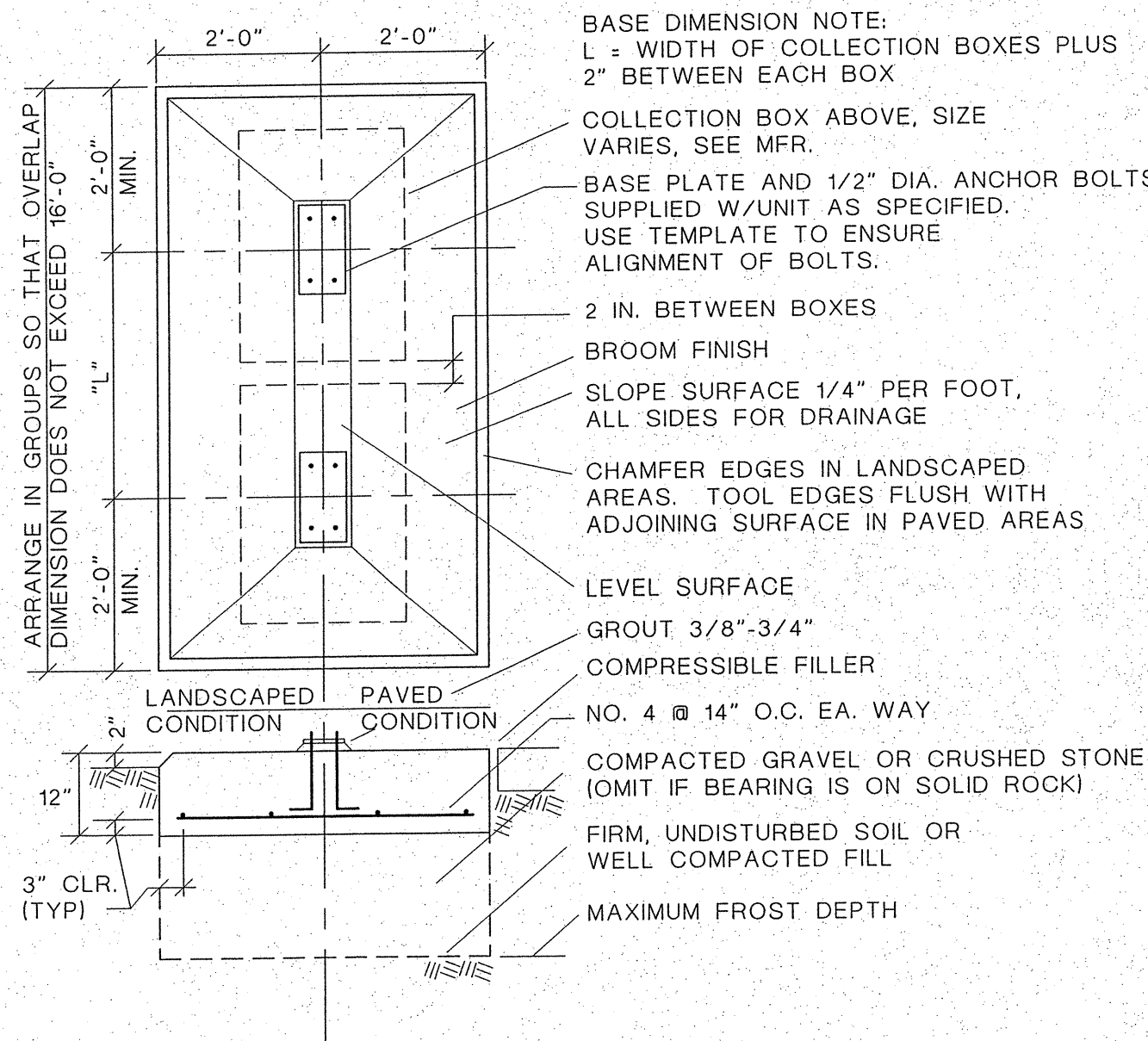
BY: FOR RANDOLPH R. SLEIGHT, PE, PLS
R/W PERMIT NO.

JOB NO.:
2195 - THOMAS LAKE COURT
DATE:
JUN 18, 2007
DRAWN BY:
AGT/WSJ
SHEET C-3 OF 6

HDEV-2444

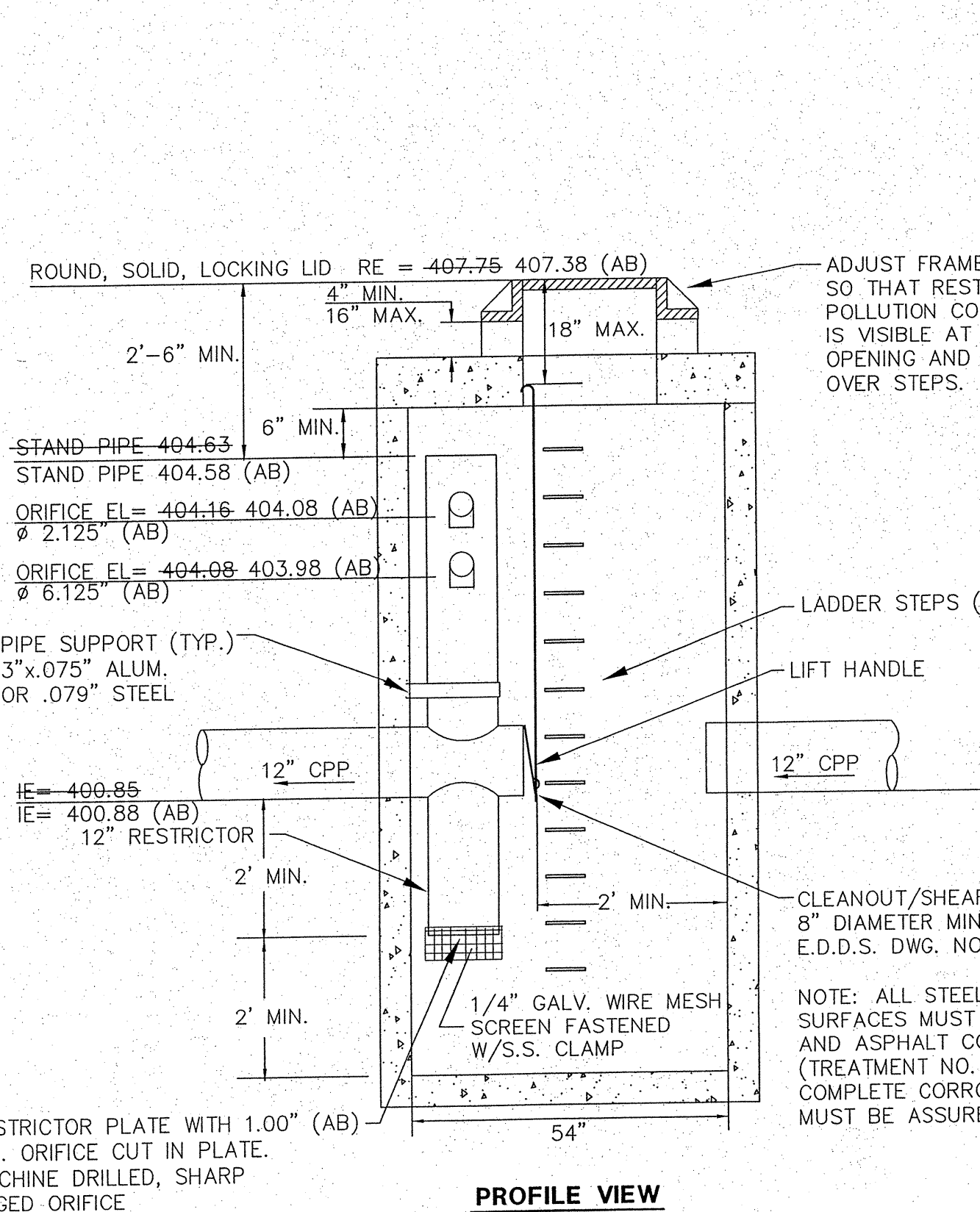
APPLE TREE AT THOMAS LAKE

SW 1/4, SECTION 33, TOWNSHIP 28 N, RANGE 5 E, W.M.

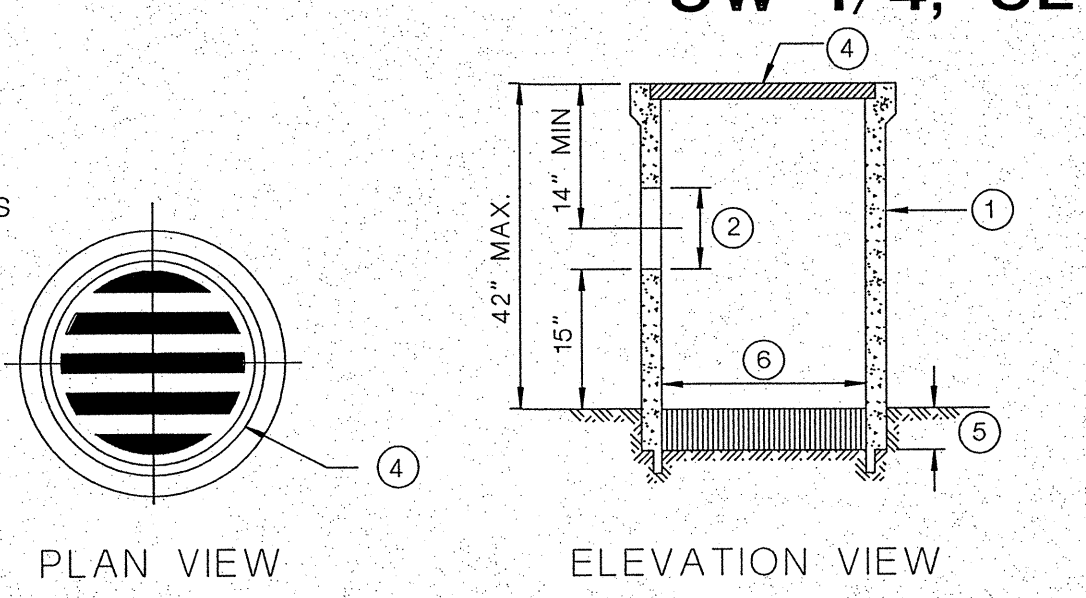


NOTES:
 1. CONCRETE: 3,000 PSI @ 28 DAYS, 6% AIR ENTRAINMENT
 2. SLUMP, PLACE IN ACCORDANCE WITH ACI-301
 3. REINFORCING STEEL: ASTM A615, GRADE 60
 4. ANCHOR BOLTS: SEE SPECS.
 5. GROUT: NON-SHRINK, NON-METALLIC (SEE SPECS)
 6. THIS BASE DETAIL CAN BE USED FOR TWO OR MORE NEIGHBORHOOD DELIVERY COLLECTION BOX UNITS (NDCBU), CLUSTER BOXES AND PARCEL LOCKERS WITH 4"x10" BOLT PATTERN ON ONE CONCRETE BASE
 7. REQUIRED EXPANSION BOLT CAPACITY, BASED ON CALCULATED DESIGN LOAD = 3,100 LBS TENSION, 2,000 LBS SHEAR.

USPS POSTAL BOX BASE DETAIL
 SCALE: NTS

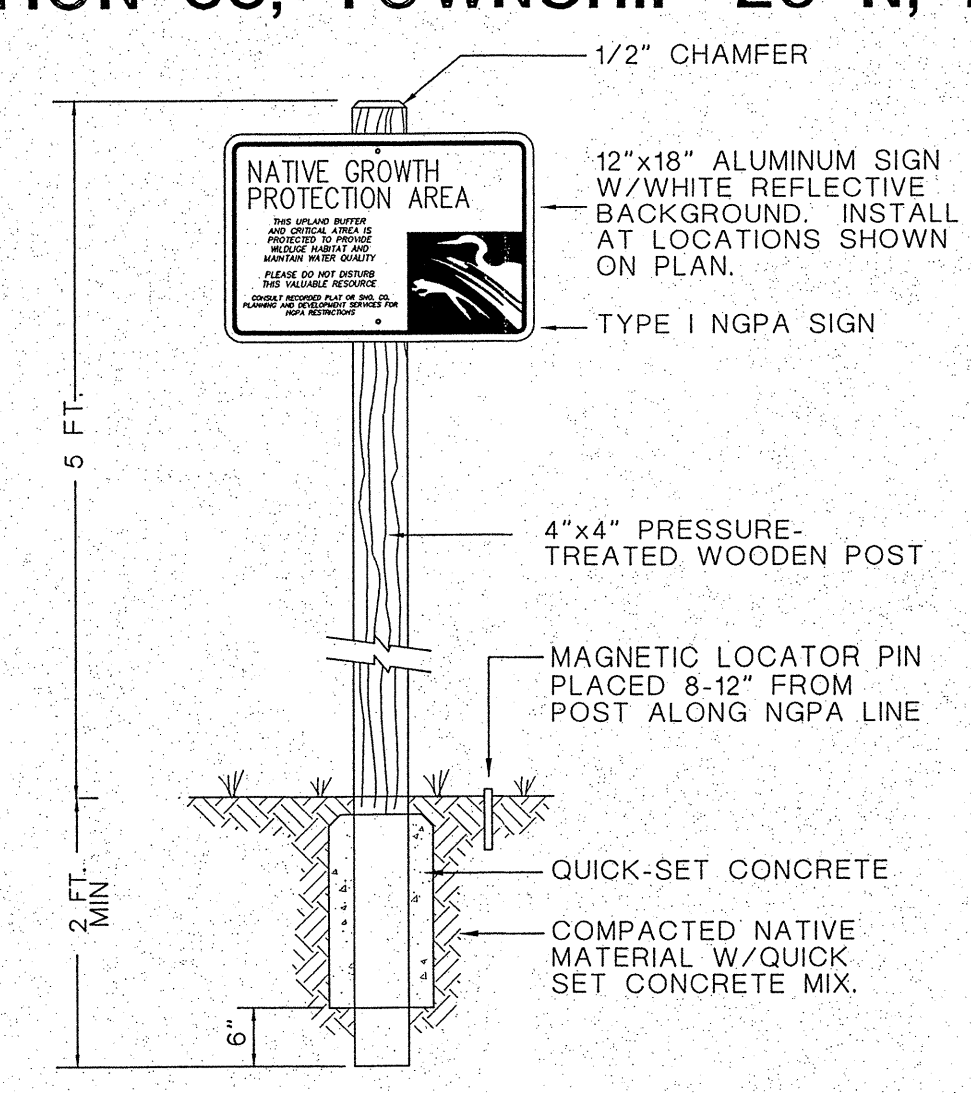


CONTROL STRUCTURE DETAIL - CB-3
 SCALE: N.T.S.



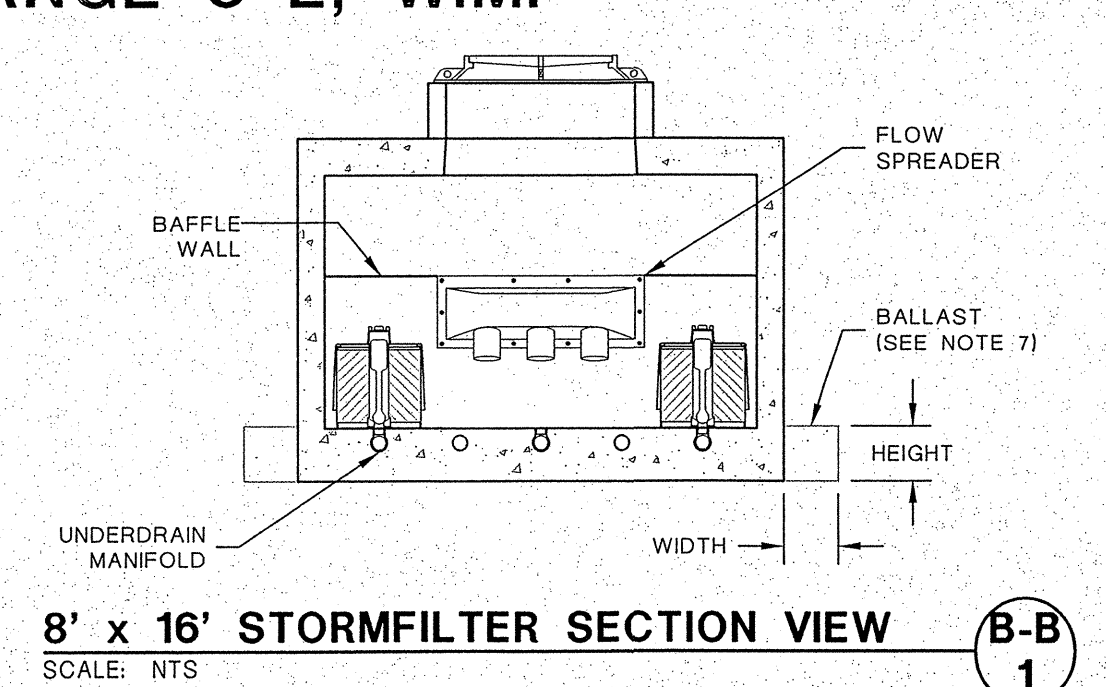
NOTES:
 1. YARD DRAINS TO BE CONSTRUCTED FROM CONCRETE PIPE OR HDPE N-12 IN ACCORDANCE WITH ASTM C 14.
 2. CUTOUT HOLE SIZE IS EQUAL TO OUTLET PIPE OUTSIDE DIAMETER PLUS YARD DRAIN WALL THICKNESS.
 3. CONNECTION TO OUTLET PIPE TO BE MORTARED AND MADE FLUSH WITH INSIDE OF THE YARD DRAIN WALL.
 4. CAST IRON BELL GRATE FITS INTO BELL RECESS AND EXTENDS FLUSH WITH FACE OF BELL. THE GRATE SHALL HAVE SLOTS (HOLES) THAT CONSTITUTE 60 PERCENT OPEN AREA FOR DRAINAGE. INLET BELL SURFACE SHALL BE FINISHED TO ASSURE NON-ROCKING FIT WITH ANY COVER POSITION.
 5. WASHED DRAIN ROCK. 6 INCHES MINIMUM DEPTH.
 6. VARIES 12 INCHES OR 18 INCHES.
 7. SPECIAL CAST YARD DRAIN MAY BE REQUIRED FOR MULTIPLE PIPE CONNECTIONS.
 8. CLEAN OUTS ARE REQUIRED FOR DEPTHS OVER 42 INCHES.
 SEE TEXT SECTION 5-04.

YARD DRAIN DETAIL
 SCALE: NTS



SIGN DETAIL - TYPE 1 NGPA AND EROSION HAZARD
 SCALE: NTS

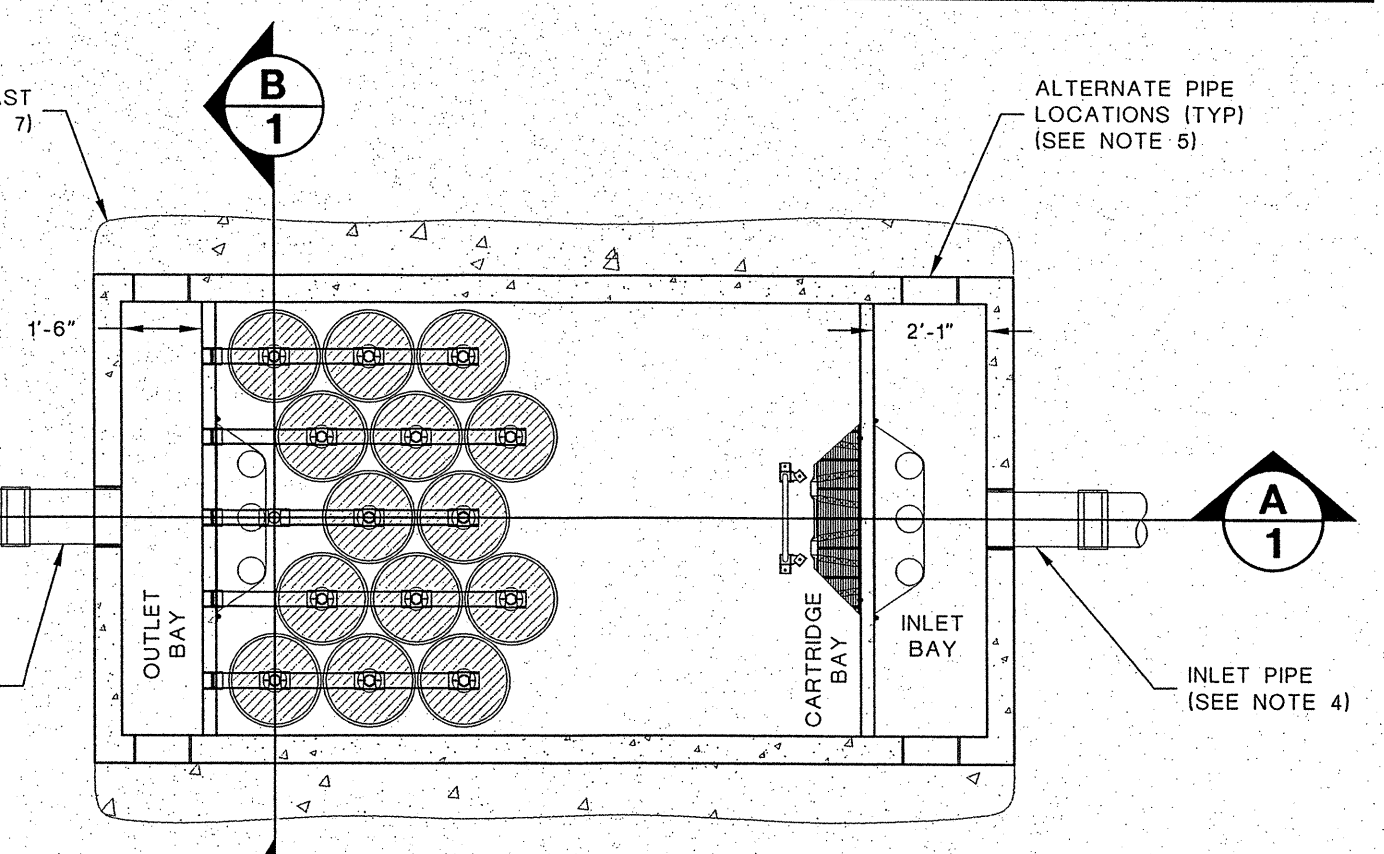
PAINT WHITE WITH BLACK LETTERING. INSTALL AT LOCATIONS SHOWN ON PLAN.



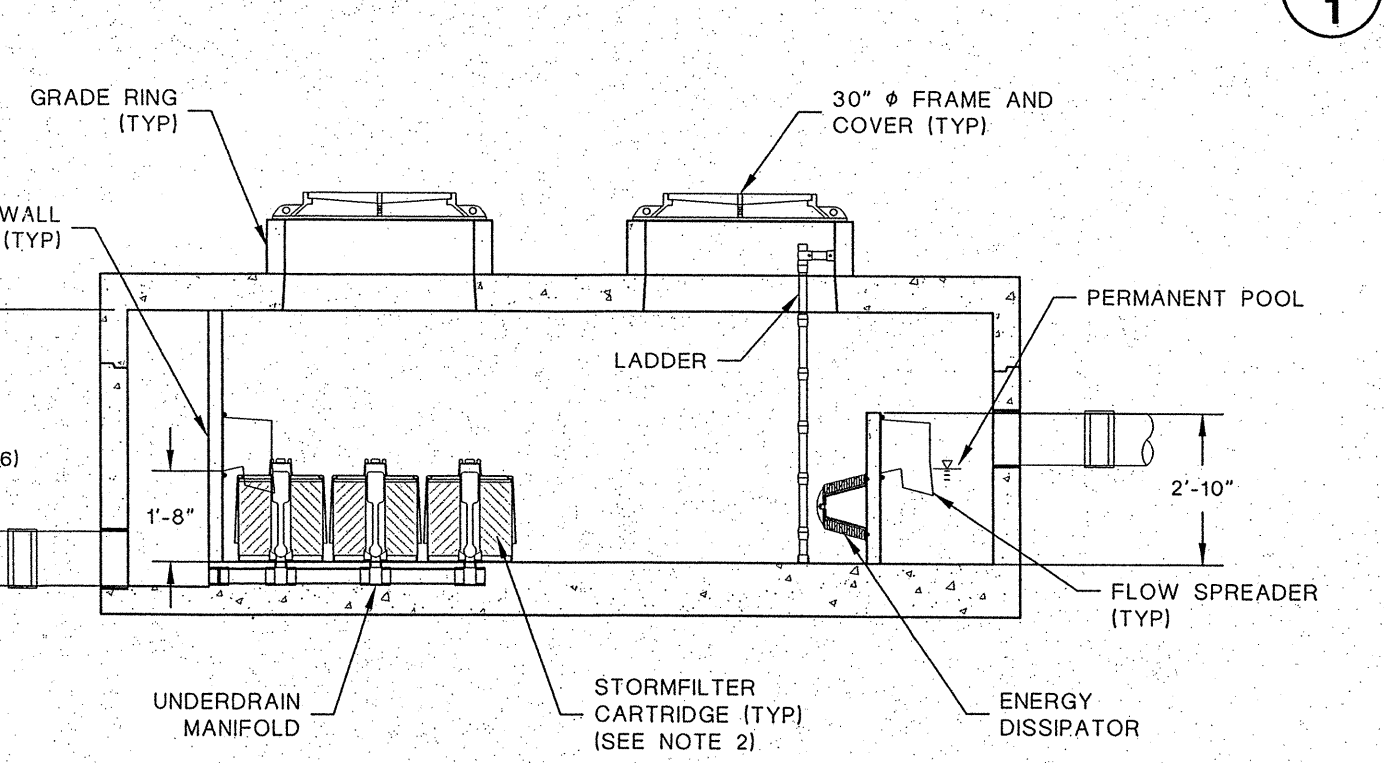
8' x 16' STORMFILTER SECTION VIEW
 SCALE: NTS

PRECAST MANHOLE STORMFILTER DATA			
STRUCTURE ID			
WATER QUALITY FLOW RATE (cfs)			0.449 cfs
PEAK FLOW RATE (18cfs)			2.661 cfs
RETURN PERIOD OF PEAK FLOW (yrs)			
NO. OF CARTRIDGES REQUIRED			14
CARTRIDGE FLOW RATE (15 OR 7.5 gpm)			15 gpm
MEDIA TYPE (CSF, PERLITE, ZPG)			ZPG
RIM ELEVATION	407.70		407.84
PIPE DATA:	I.E.	ORIENTATION	MATERIAL DIAMETER
INLET PIPE	409.19 403.35	340°	CPP 12"
OUTLET STUB	400.89 400.88	340°	CPP 12"
ECCENTRIC REDUCER (BY CONTRACTOR)		YES/NO	SIZE
ANTI-FLOTATION BALLAST		WIDTH	HEIGHT
		N/A	N/A
NOTES/SPECIAL REQUIREMENTS:	PIPE ORIENTATION KEY:		

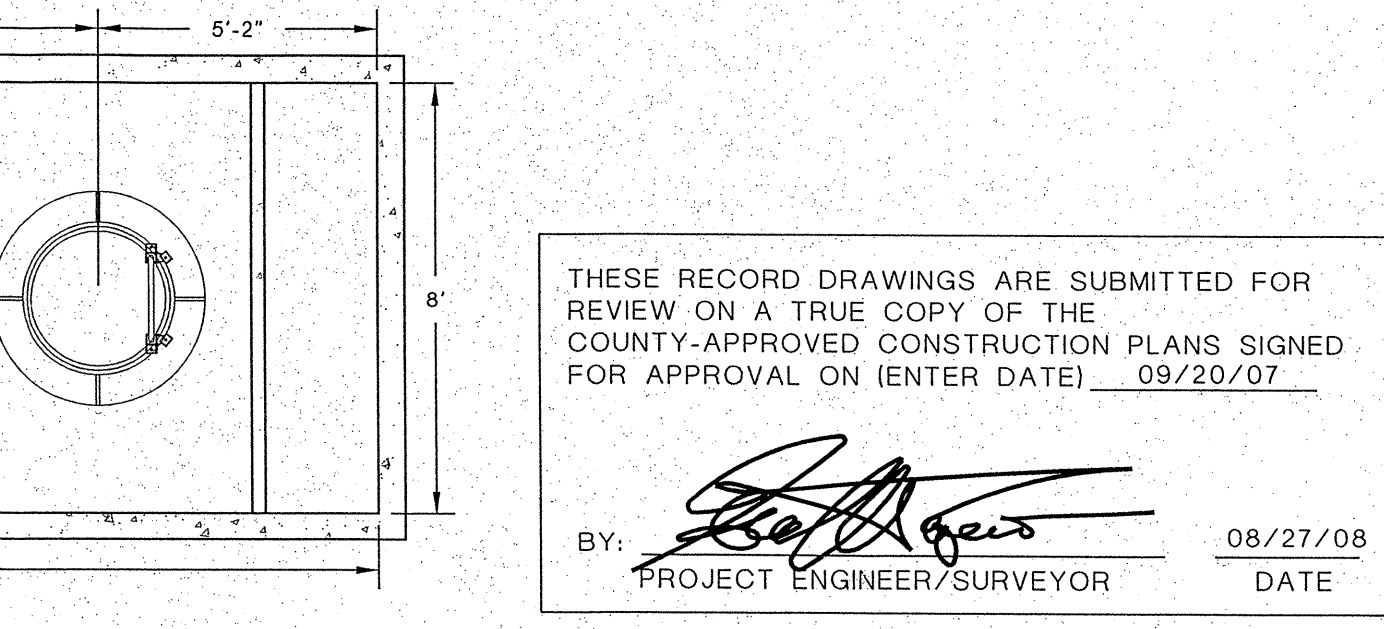
GENERAL NOTES
 1) STORMFILTER BY CONTECH, PORTLAND, OREGON 800-548-4667.
 2) FILTER CARTRIDGE(S) TO BE SIPHON-ACTUATED AND SELF-CLEANING. STANDARD DETAIL SHOWS MAXIMUM NUMBER OF CARTRIDGES. ACTUAL NUMBER REQUIRED TO BE SPECIFIED ON SITE PLANS OR IN DATA TABLE BELOW.
 3) PRECAST MANHOLE STRUCTURE TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C478. DETAIL REFLECTS DESIGN INTENT ONLY. ACTUAL DIMENSIONS AND CONFIGURATION OF STRUCTURE WILL BE SHOWN ON PRODUCTION SHOP DRAWING.
 4) STRUCTURE AND ACCESS COVERS TO MEET AASHTO H-20 LOAD RATING.
 5) STORMFILTER REQUIRES 2.3 FEET OF DROP FROM INLET TO OUTLET. IF LESS DROP IS AVAILABLE, CONTACT CONTECH. MINIMUM ANGLE BETWEEN INLET AND OUTLET IS 45°. DETAIL REFLECTS DESIGN INTENT ONLY. ACTUAL DIMENSIONS AND CONFIGURATION OF STRUCTURE WILL BE SHOWN ON PRODUCTION SHOP DRAWING.
 6) INLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR. PRECAST MANHOLE STORMFILTER EQUIPPED WITH A DUAL DIAMETER HDPE OUTLET STUB AND SAND COLLAR. EIGHT INCH DIAMETER OUTLET SECTION MAY BE SEPARATED FROM OUTLET STUB AT MOLDED-IN CUT LINE TO ACCOMMODATE A 12 INCH OUTLET PIPE. CONNECTION TO DOWNSTREAM PIPING TO BE MADE USING A FLEXIBLE COUPLER OR ECCENTRIC REDUCER, AS REQUIRED. COUPLER BY FERNCO OR EQUAL AND PROVIDED BY CONTRACTOR.
 7) PROVIDE MINIMUM CLEARANCE FOR MAINTENANCE ACCESS. IF A SHALLOWER SYSTEM IS REQUIRED, CONTACT CONTECH FOR OTHER OPTIONS.
 8) ANTI-FLOTATION BALLAST TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR, IF REQUIRED. BALLAST TO BE SET AROUND THE PERIMETER OF THE STRUCTURE.
 9) ALL STORMFILTERS REQUIRE REGULAR MAINTENANCE. REFER TO OPERATION AND MAINTENANCE GUIDELINES FOR MORE INFORMATION.



8' x 16' STORMFILTER PLAN VIEW
 SCALE: NTS

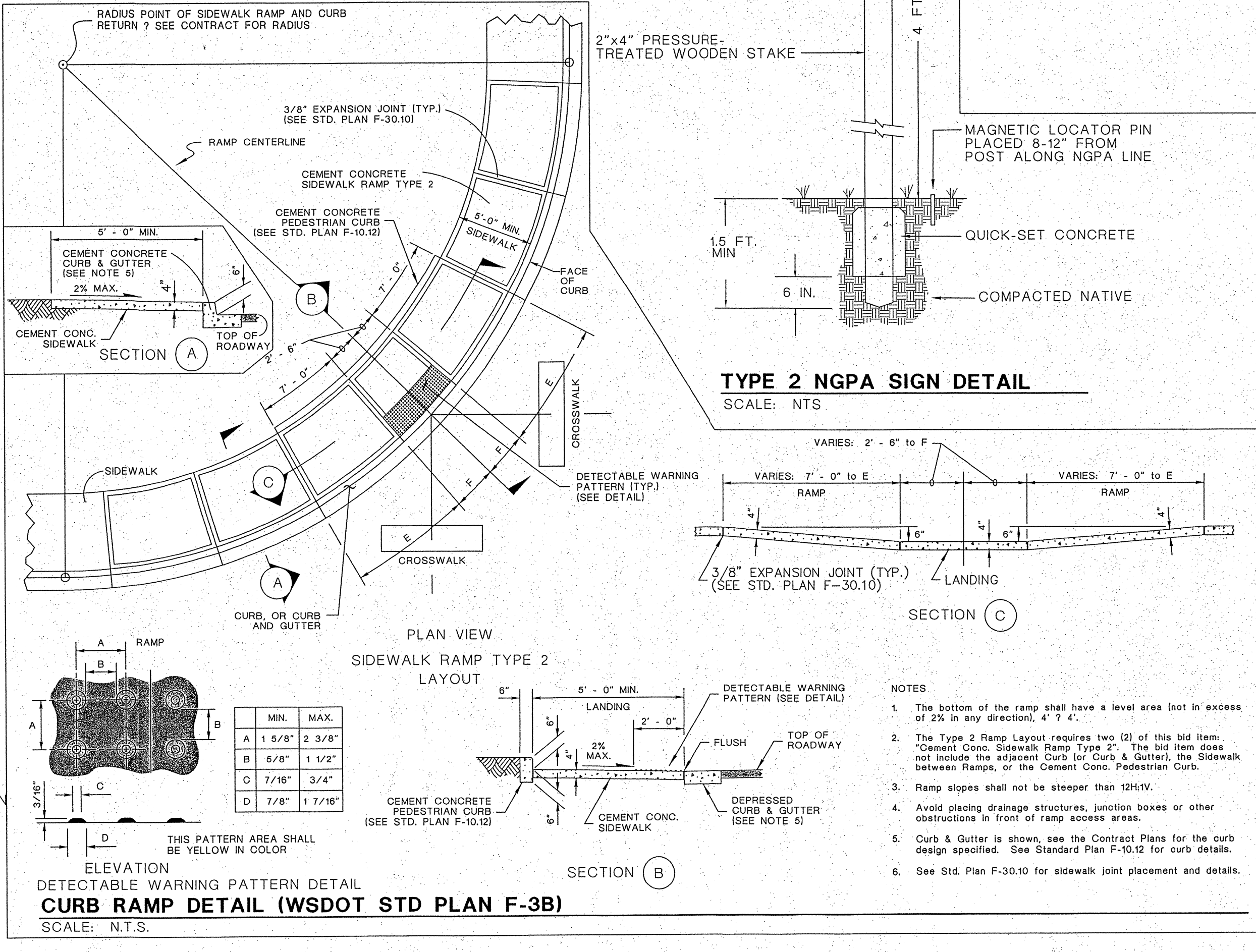


8' x 16' STORMFILTER SECTION VIEW
 SCALE: NTS



8' x 16' STORMFILTER TOP VIEW
 SCALE: NTS

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 BY: *[Signature]* PROJECT ENGINEER/SURVEYOR 08/27/08 DATE



TYPE 2 NGPA SIGN DETAIL
 SCALE: NTS

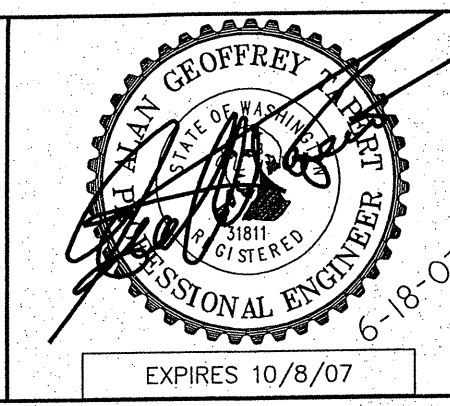
SIDEWALK RAMP TYPE 2 LAYOUT

	MIN.	MAX.
A	1 5/8"	2 3/8"
B	6/8"	1 1/2"
C	7/16"	3/4"
D	7/8"	1 7/16"

CALL BEFORE YOU DIG
 1-800-424-5555

REVISION NO.	REVISION	DATE OF REV.	SNOCO APPROVAL	DATE OF APPROVAL
1	CHANGE IN COVER OVER VAULT	11/30/07		
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CIVIL ENGINEER:
X-SOUND ENGINEERING, INC.
 P.O. BOX 1265
 FREELAND, WA 98249
 (360) 331-3113 (TEL)
 (360) 331-7114 (FAX)



FOR/CONTACT:
 STRAHM PROPERTIES, LLC
 ATTN: BOB STRAHM
 1712 PACIFIC AVE. SUITE 104
 EVERETT, WA 98201
 (425) 259-1457

APPLE TREE AT THOMAS LAKE
THOMAS LAKE COURT
 DETAILS
 AS-BUILTS

WE HERBY DECLARE THAT THE ROAD, STORM DRAINAGE, GRADING AND OTHER IMPROVEMENTS ARE LOCATED AS SHOWN ON THESE RECORD DRAWINGS.
 BY: *[Signature]* PROJECT ENGINEER/SURVEYOR 08/27/08 DATE
 BY: *[Signature]* PROJECT DEVELOPER/OWNER 8/26/08 DATE

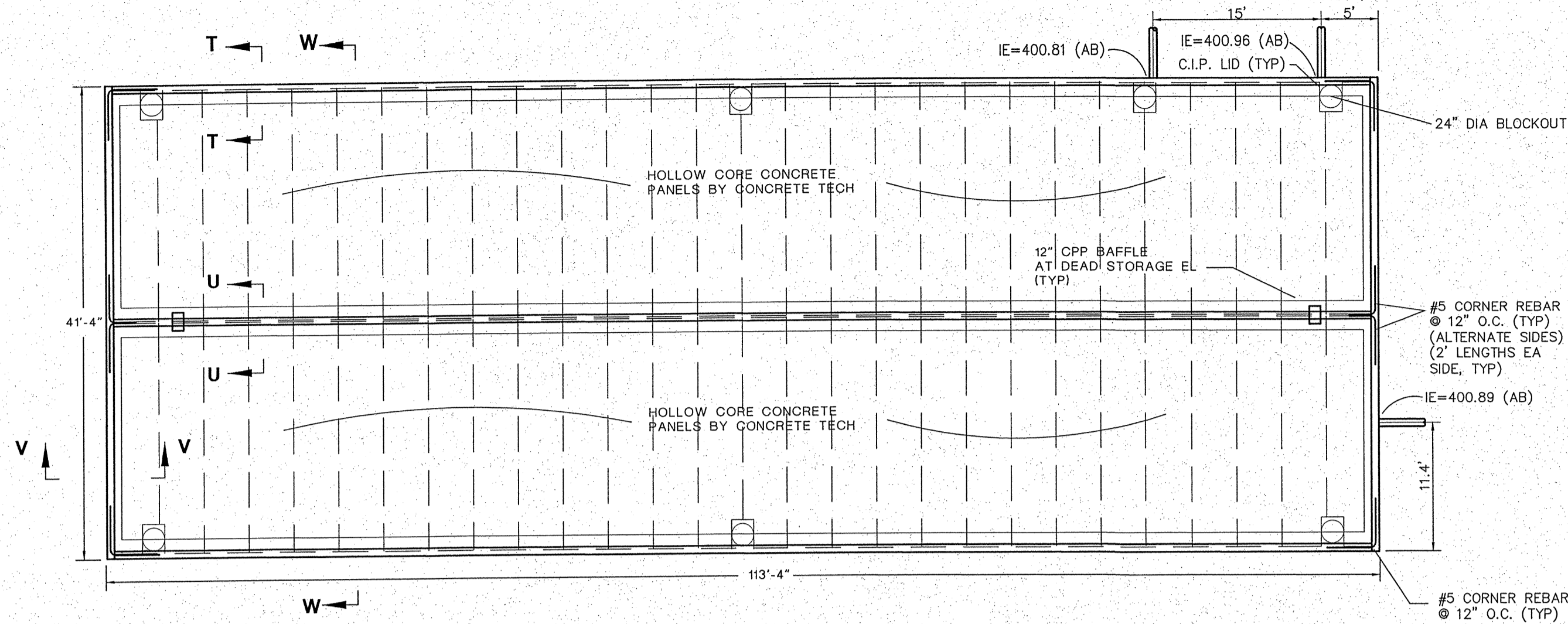
SNOHOMISH COUNTY PLANNING DEVELOPMENT SERVICES
 APPROVED FOR CONSTRUCTION
 BY: *[Signature]* FOR RANDOLPH R. SLEIGHT, P.E., P.L.S.
 R/W PERMIT NO. _____

JOB NO.: 2195 - THOMAS LAKE COURT
 DATE: JUN 18, 2007
 DRAWN BY: AGT/WSJ
SHEET C-5 OF 6

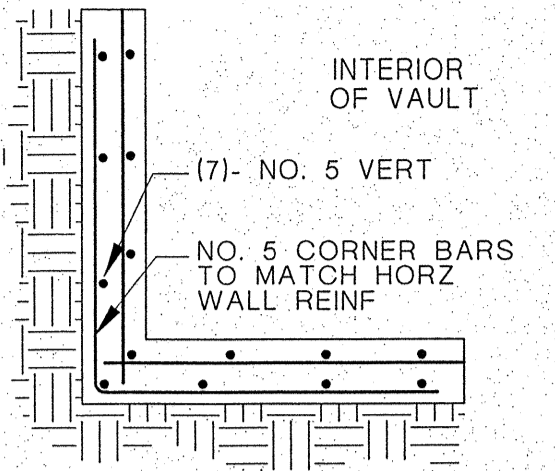
HDEV-2446

APPLETREE AT THOMAS LAKE

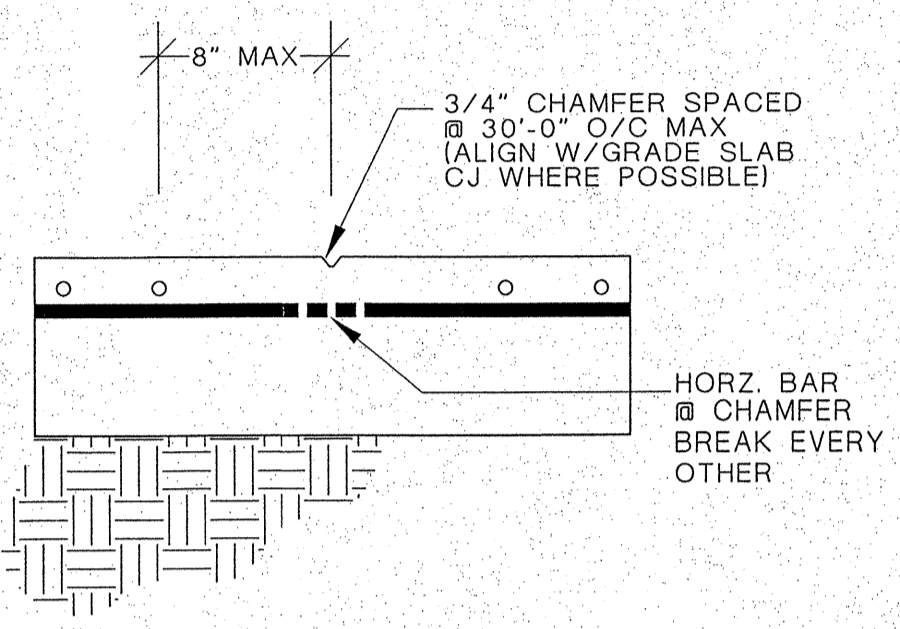
SW 1/4, SECTION 33, TOWNSHIP 28 N, RANGE 5 E, W.M.



PLAN VIEW
SCALE: 1"=10'



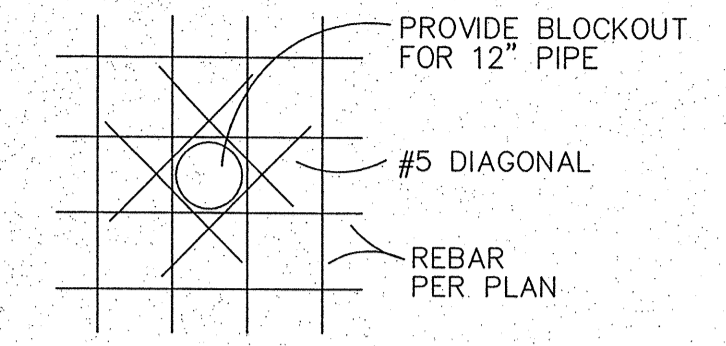
TYP WALL CORNER REINF
SCALE: NTS



TYP PERIMETER WALL CONTRACTION JOINT DETAIL
SCALE: NTS

HOLLOW CORE PLANK

- SCOPE OF WORK: THE WORK INCLUDED IS THE DESIGN MANUFACTURE AND DELIVERY OF PRECAST RESTRESSED CONCRETE UNITS. DESIGN PLANK FOR THE MOST CRITICAL OF THE LOADING CONDITIONS AS SHOWN WITHIN THE DESIGN CRITERIA NOTE.
- THE MANUFACTURER SHALL SUBMIT STRUCTURAL CALCULATIONS AND PLACING DRAWINGS SIGNED BY A WASHINGTON STATE REGISTERED STRUCTURAL ENGINEER FOR REVIEW PRIOR TO FABRICATION.
- THE MANUFACTURER SHALL INSTALL ALL BLOCKOUTS REQUIRED FOR STRUCTURAL CONNECTIONS AS INDICATED ON THESE DRAWINGS. NO OTHER PENETRATIONS ARE ALLOWED WITHOUT THE PRIOR APPROVAL OF THE PLANK MANUFACTURER.
- ALL HOLLOW CORE JOINTS SHALL BE GROUTED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.



PIPE PENETRATION DETAIL
SCALE: NTS

REINFORCING BAR

- MATERIAL REQUIREMENT:
 - REINFORCING BARS: USE DEFORMED BARS, CONFORM TO ASTM A618, GRADE 60, EXCEPT AS NOTED ON DRAWINGS.
 - WELDED WIRE FABRIC: SMOOTH FABRIC, CONFORM TO ASTM A185.
- CONTRACTOR SUBMITTALS: SUBMIT SHOP DRAWINGS FOR REINFORCING STEEL.
- FABRICATION AND PLACING REQUIREMENTS:
 - BENDING: BARS SHALL BE BENT COLD. BARS PARTIALLY EMBEDDED IN CONCRETE SHALL NOT BE FIELD BENT UNLESS NOTED OR SHOWN OTHERWISE OR AUTHORIZED BY THE ENGINEER.
 - PLACING: PLACE BARS IN ACCORDANCE WITH CRIS - PLACING REINFORCING BARS. REINFORCEMENT SHALL BE SUPPORTED AND TIED TO PREVENT DISPLACEMENT BY CONSTRUCTION LOADS OR BY PLACING OF CONCRETE.
 - CONCRETE COVERS: MINIMUM CONCRETE COVERS SHALL BE AS FOLLOWS, UNLESS NOTED OR SHOWN OTHERWISE: CONCRETE CAST AGAINST EARTH-3" CONCRETE CAST AGAINST FORMS AND EXPOSED TO EARTH - 2", TIES IN COLUMNS AND BEAMS - 1 1/2".
 - WELDING: DO NOT WELD BARS UNLESS NOTED OR SHOWN OTHERWISE OR AUTHORIZED BY THE ENGINEER. WHEN AUTHORIZED, WELDS SHALL CONFORM TO AWS D14.
 - WET SETTINGS: REINFORCEMENT ANCHOR BOLTS, OR ANY OTHER EMBEDDED ITEM WITHIN THE CONCRETE, MAY NOT BE SET INTO THE CONCRETE AFTER IT HAS BEEN POURED WITHIN THE FORMS.
- LAP SPICES: LAP ALL BARS 24" MIN UNLESS NOTED OTHERWISE ON THESE DRAWINGS.

NOTES:

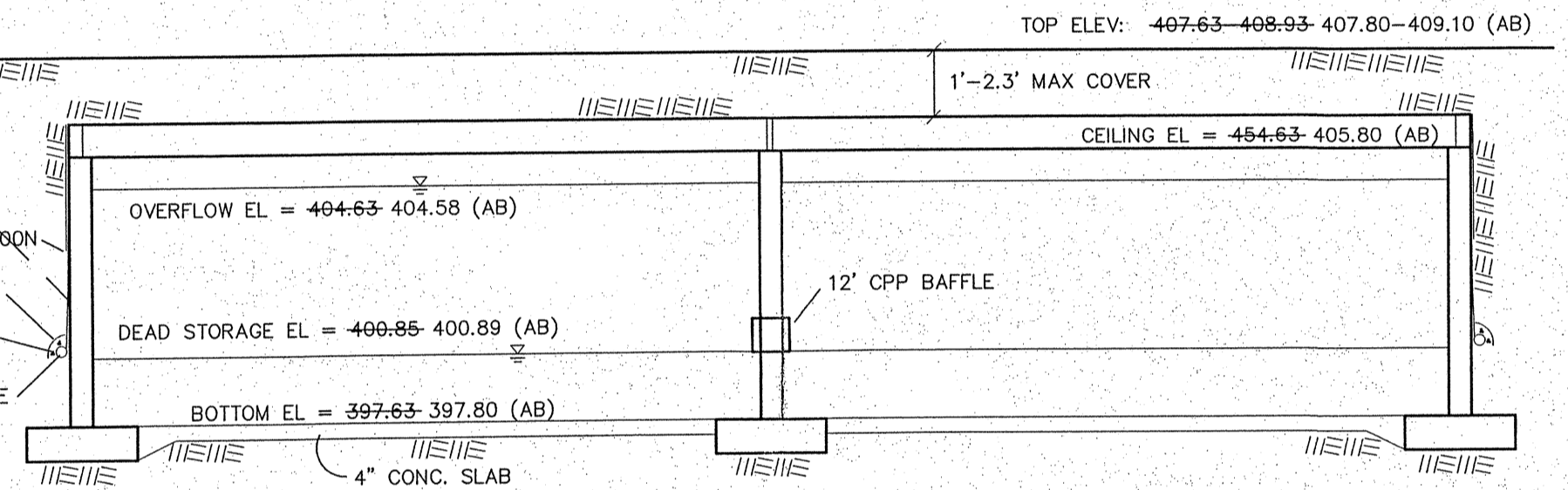
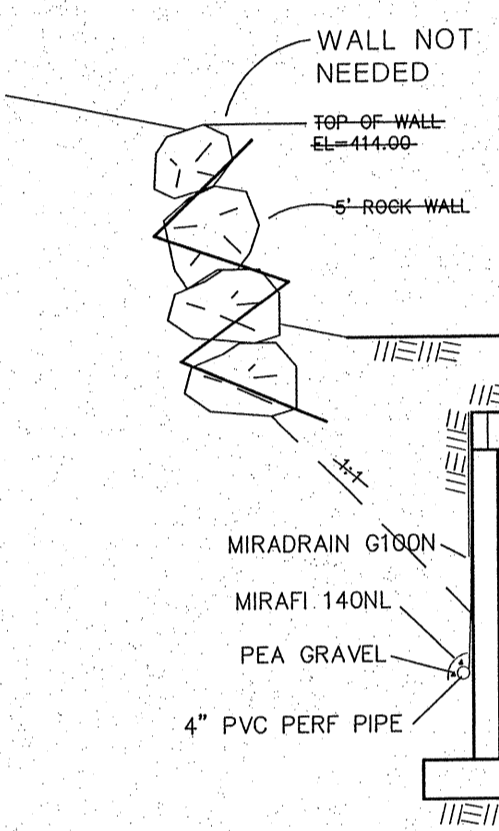
- LID CONNECTION DETAILS, SPECIFICATIONS PER CONCRETE TECH
- CONCRETE WALLS TO CURE 28 DAYS PRIOR TO BACKFILL
- BACKFILL TO BE ACCOMPLISHED WITH SUITABLE MATERIAL, PLACED IN LIFTS NOT TO EXCEED 12" AND COMPACTED TO 90% PER ASTM D-1557

DESIGN ASSUMPTIONS

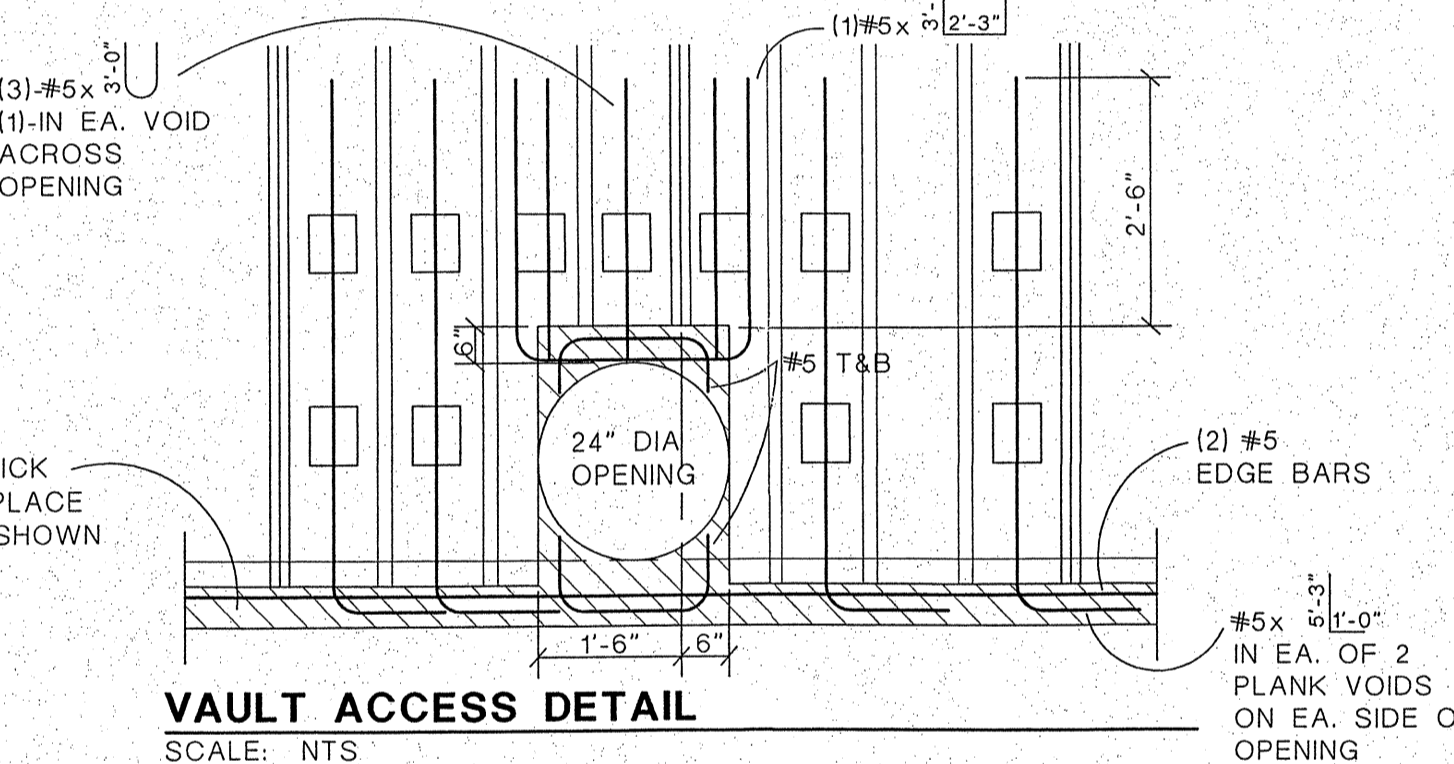
SOIL WEIGHT	120 PCF
CONCRETE WEIGHT	150 PCF
EQUIVALENT FLUID PRESSURE	40 PCF
f'c	4000 PSI
fy	60 KSI
MAX SOIL BEARING	2,500 PSF
LIVE LOAD	HS-25
SOIL COVER	1'-2.5'

RETAINING WALL & VAULT NOTES

- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL REQUIRED SAFETY PRECAUTIONS AND THE METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES REQUIRED TO PERFORM THE WORK.
- ANY DISCREPANCY FOUND IN THE PLANS SHALL IMMEDIATELY BE REPORTED IN WRITING TO THE ENGINEER OF RECORD.
- WALL AND VAULT DESIGN AND CONSTRUCTION SHALL COMPLY WITH THE MOST RECENT EDITIONS OF THE UBC, WSDOT/APWA STANDARD SPECIFICATION FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, AND THE GEOTECHNICAL ENGINEERING REPORT. DETENTION VAULTS MUST ADDITIONALLY MEET THE DESIGN REQUIREMENTS OF EDDS STANDARDS. (NOTE: THE STRUCTURAL ENGINEER NEEDS TO SPECIFY THE STANDARDS USED)
- STRUCTURAL TESTS AND INSPECTIONS SHALL BE IN ACCORDANCE WITH THE UBC CHAPTER 17 (NOTE: THE REQUIRED TESTS AND INSPECTIONS NEED TO BE SPELLED OUT)
- CONCRETE FOR CAST-IN-PLACE CONCRETE SHALL BE INSPECTED AND TESTED. CONCRETE SHALL ATTAIN A MINIMUM 28-DAY COMPRESSIVE STRENGTH OF 4000 PSI.
- AN INDEPENDENT TESTING FIRM APPROVED BY THE BUILDING OFFICE SHALL CONDUCT SPECIAL INSPECTIONS. CERTIFICATION OF THE PLACEMENT OF ALL STEEL REINFORCING SHALL BE SUBMITTED FROM A QUALIFIED INSPECTOR OR ENGINEER TO THE COUNTY INSPECTOR. TESTS SHALL BE TAKEN DURING THE PLACEMENT OF CONCRETE. TEST RESULTS SHALL BE PROVIDED TO ALL AFFECTED PARTIES, AND THE COUNTY INSPECTOR, (UBC 1705.51, TEST CYLINDERS SHALL BE CURED ON SITE.
- STEEL DETAILING, FABRICATION AND PLACEMENT SHALL BE IN COMPLIANCE WITH ACI "MANUAL OF STANDARD PRACTICE", ACI-308.
- DESIGN LOAD AND OTHER PARAMETERS FOR PRE-CAST, PRE-STRESSED HOLLOW CORE CONCRETE PLANKS, OR OTHER PRE-CAST CONCRETE DESIGN, DETAILS AND SHOP DRAWINGS SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION.
- A GEOTECHNICAL ENGINEER SHALL VERIFY WALL FOUNDATION CONDITIONS THE TIME OF WALL OR VAULT EXCAVATION OR STRUCTURAL FILL BEFORE PLACEMENT OF THE FOUNDATION AND SHALL SUBMIT A REPORT TO THE COUNTY INSPECTOR. THE GEOTECHNICAL ENGINEER SHALL VERIFY THE DESIGN PARAMETERS, INCLUDING BUT NOT LIMITED TO COEFFICIENT OF SOIL FRICTION AND EARTH PRESSURES, HYDROSTATIC CONDITIONS, AND SOIL TYPE ARE CONSISTENT WITH THE SITE CONDITIONS.
- EXCAVATION AND FILL SHALL COMPLY WITH TITLE 30.638 SCC, AND UBC APPENDIX 33.
- WALL FOUNDATIONS SHALL BE SUITABLE UNDISTURBED NATIVE SOIL. SHOULD STRUCTURAL FILL BE REQUIRED, MINIMUM COMPACTION OF FILL SHALL BE PLACED AT 95% PER ASTM D-1557. ALL STRUCTURAL FILL SHALL BE INSPECTED UNDER THE DIRECTION OF A GEOTECHNICAL ENGINEER. UNSUITABLE MATERIALS ENCOUNTERED SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER, UNDER THE DIRECTION OF A GEOTECHNICAL ENGINEER.
- BACKFILL PLACED BEHIND WALL SHALL BE FREE DRAINING MATERIAL MEETING WSDOT/APWA STANDARD SPECIFICATION FOR ROAD, BRIDGE AND MUNICIPAL CONSTRUCTION, SECTION 9-03.12(12). UNLESS THE WALL DESIGN CALCULATIONS ADEQUATELY PROVIDE FOR HYDROSTATIC CONDITIONS.
- WATER STOPS SHALL BE PROVIDED AT ALL CONSTRUCTION JOINTS.



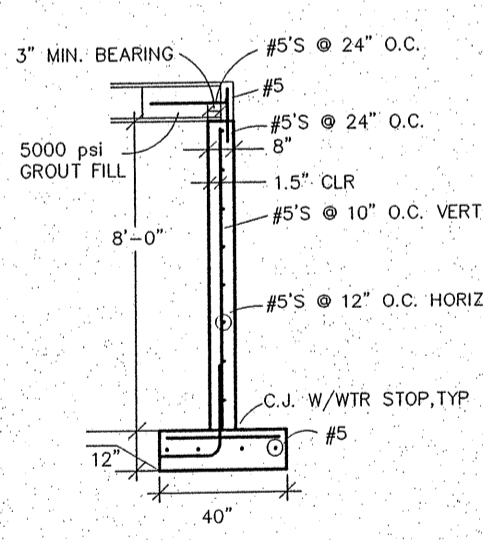
SECTION W-W
SCALE: 1"=5'



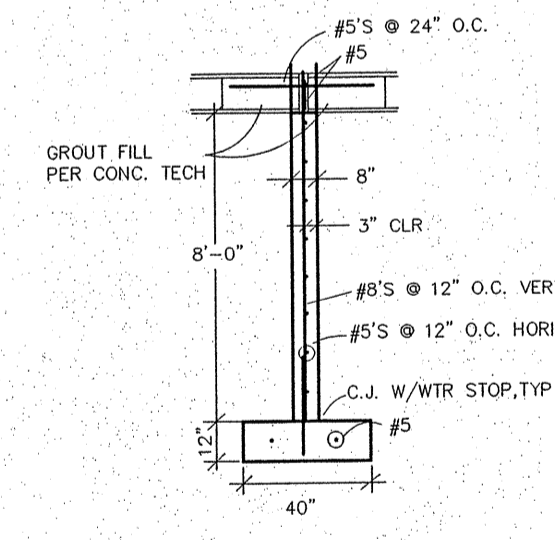
VAULT ACCESS DETAIL
SCALE: NTS

INSPECTION & TESTING

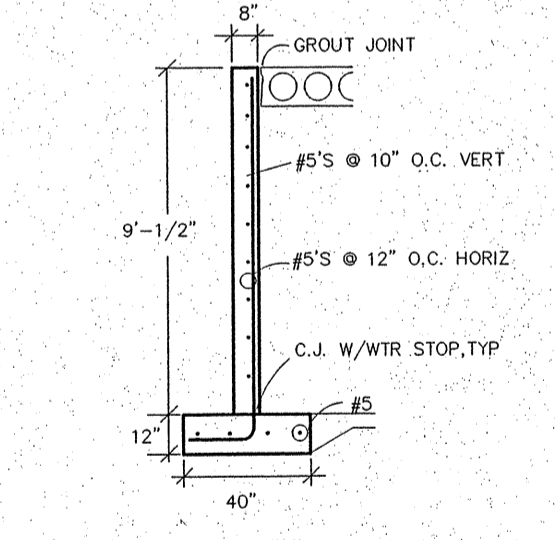
1. GEO-TECH SHALL BE ON SITE FOR FOOTING EXCAVATION AND TO VERIFY SOIL CONDITIONS. GEO-TECH WILL PROVIDE A REPORT TO THE COUNTY ALONG WITH AS-BUILT DRAWING SUBMITTALS.
2. THE ENGINEER OR TESTING LAB SHALL CHECK FORMS AND STEEL TO VERIFY CONFORMANCE TO THE DRAWINGS BEFORE PLACEMENT OF CONCRETE. A REPORT WILL BE SUBMITTED TO THE COUNTY ALONG WITH THE AS-BUILT DRAWING SUBMITTALS.
3. THE TESTING LAB SHALL BE ON SITE AT THE TIME OF CONCRETE PLACEMENT. THREE TO FOUR CYLINDERS PER TRUCK WILL BE TAKEN AND SHALL REMAIN ON SITE IN ACCORDANCE WITH THE U.B.C. ONE SLUMP TEST PER TRUCK WILL BE TAKEN. ALL REPORTS AND TESTS WILL BE SUBMITTED TO THE COUNTY ALONG WITH THE AS-BUILT DRAWING SUBMITTAL.
4. EITHER THE SOILS ENGINEER OR TESTING AGENCY SHALL BE ON SITE AT THE TIME OF BACKFILL TO PROVIDE COMMENTS & INSPECTION TESTS. ALL TESTS WILL BE SUBMITTED TO THE COUNTY ALONG WITH THE AS-BUILT DRAWING SUBMITTALS.



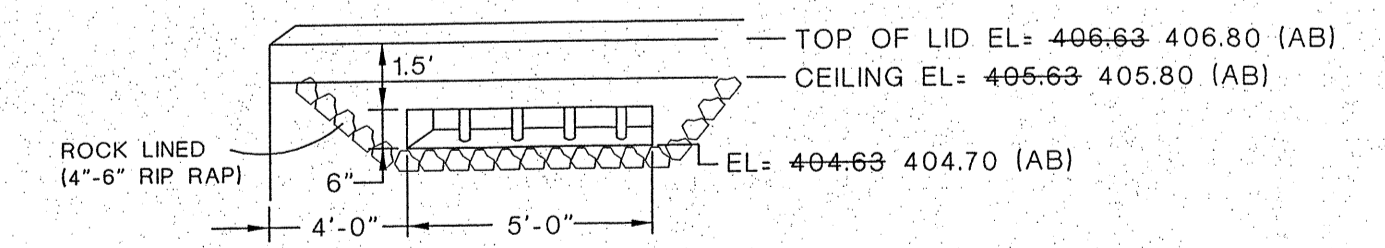
SECTION T-T
SCALE: 1"=5'



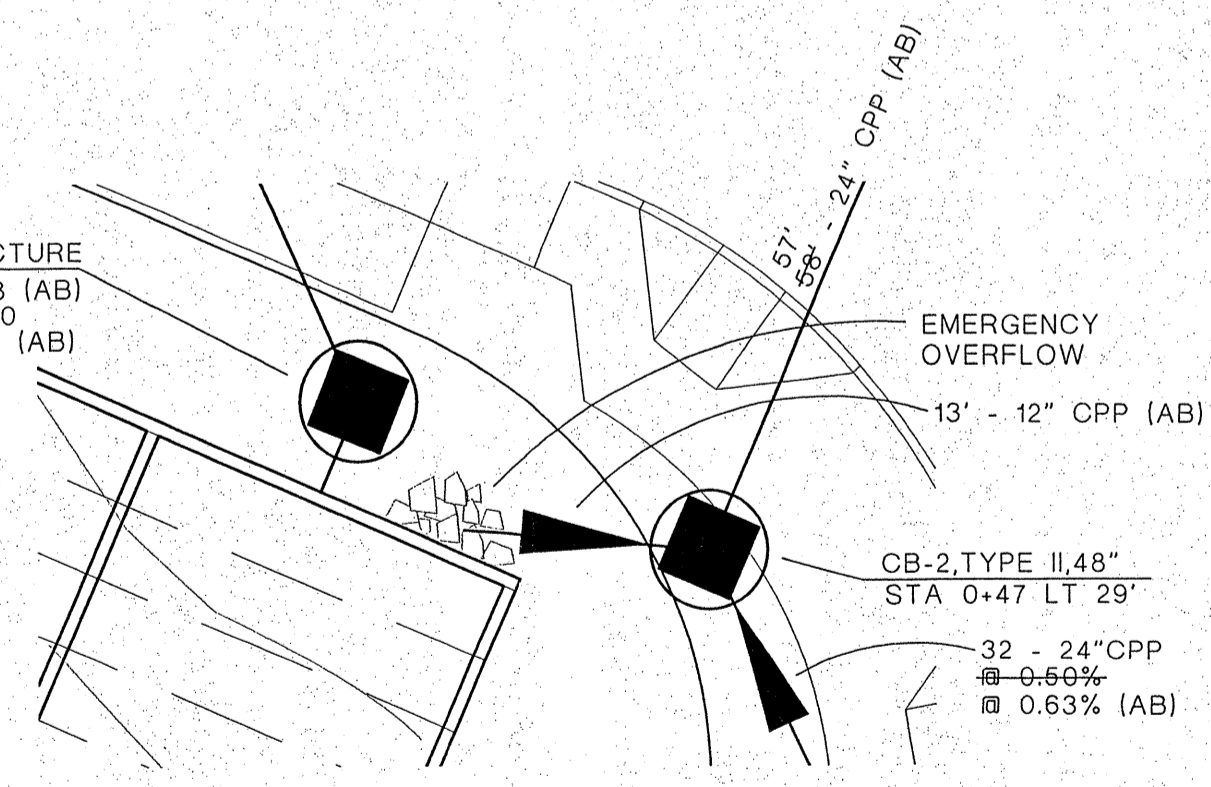
SECTION U-U
SCALE: 1"=5'



SECTION V-V
SCALE: 1"=5'



EMERGENCY OVERFLOW DETAIL
SCALE: N.T.S.



EMERGENCY OVERFLOW PLAN
SCALE: 1"=10'

CALL BEFORE YOU DIG
1-800-424-5555

PFN: 05-119918

THESE RECORD DRAWINGS ARE SUBMITTED FOR REVIEW ON A TRUE COPY OF THE COUNTY-APPROVED CONSTRUCTION PLANS SIGNED FOR APPROVAL ON (ENTER DATE) 09/20/07

BY: *[Signature]* 08/27/08
PROJECT ENGINEER/SURVEYOR DATE

WE HERBY DECLARE THAT THE ROAD, STORM DRAINAGE, GRADING AND OTHER IMPROVEMENTS ARE LOCATED AS SHOWN ON THESE RECORD DRAWINGS.

BY: *[Signature]* 08/27/08
PROJECT ENGINEER/SURVEYOR DATE

BY: *[Signature]* 8/29/08
PROJECT DEVELOPER/OWNER DATE

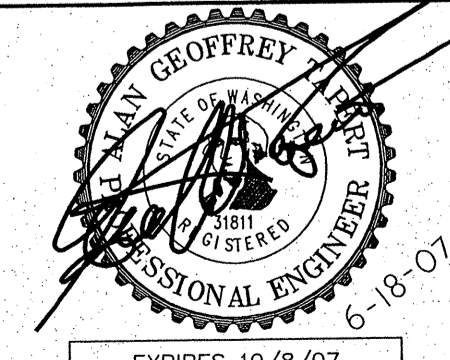
REVISION NO.	REVISION	DATE OF REV.	SNOOCO APPROVAL	DATE OF APPROVAL
1	CHANGE IN COVER OVER VAULT	11/30/07		
2	CHANGE IN GRADES & DRN (SEWER LAYOUT CHANGES)	2/07/08		

SNOHOMISH COUNTY PLANNING DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

BY: _____
R/W PERMIT NO. _____

JOB NO.: 2195 - THOMAS LAKE COURT
DATE: JUN 18, 2007
DRAWN BY: AGT/WSJ
SHEET C-6 OF 6

CIVIL ENGINEER:
X-SOUND ENGINEERING, INC.
P.O. BOX 1265
FREELAND, WA 98249
(360) 331-3113 (TEL)
(360) 331-7114 (FAX)



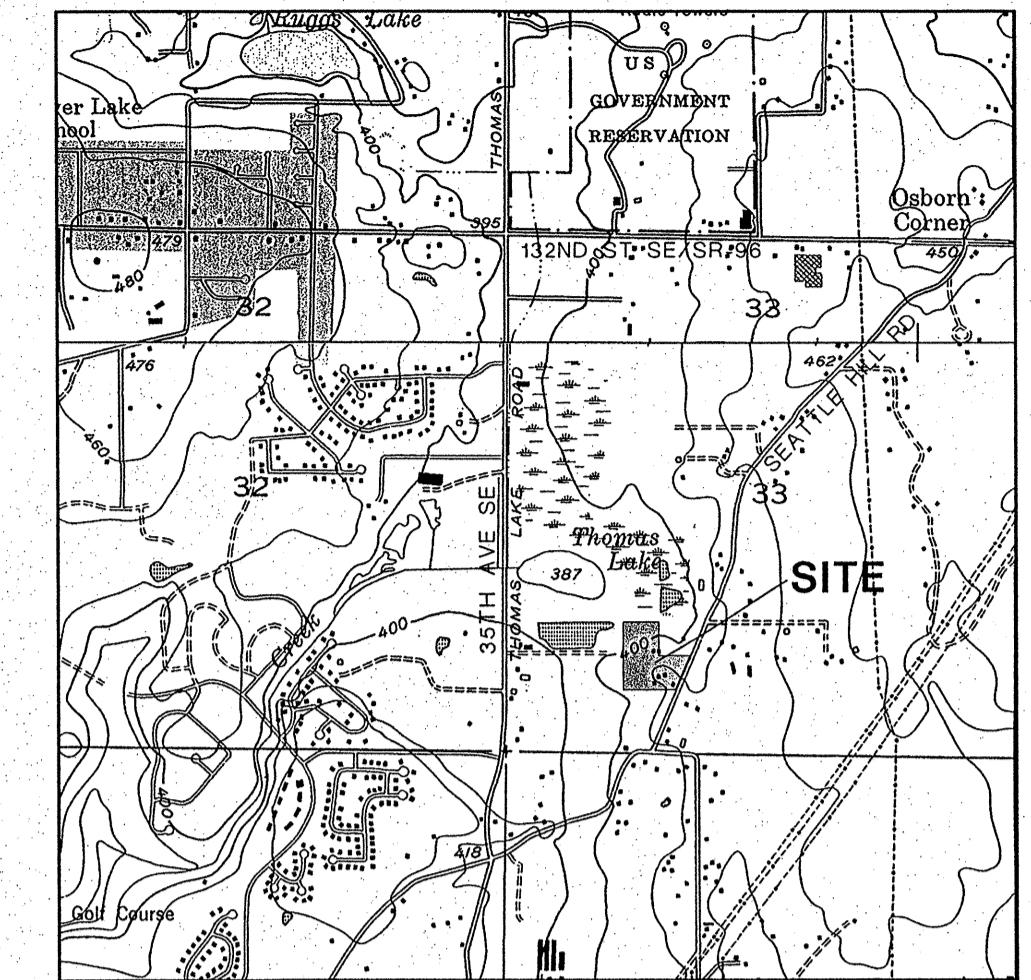
FOR/CONTACT:
STRAHM PROPERTIES, LLC
ATTN: BOB STRAHM
1712 PACIFIC AVE, SUITE 104
EVERETT, WA 98201
(425) 259-1457

APPLETREE AT THOMAS LAKE
THOMAS LAKE COURT
STRUCTURAL DETAILS
AS-BUILTS

SW 1/4, SECTION 33, TOWNSHIP 28 N, RANGE 5 E, W.M.

CONSTRUCTION NOTES

- LOCATIONS SHOWN OF EXISTING UTILITIES AND IMPROVEMENTS ARE APPROXIMATE ONLY, AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXACT LOCATIONS OF ALL UTILITIES AND IMPROVEMENTS TO AVOID DAMAGE OR DISTURBANCE.
- ALL WORK AND MATERIALS MUST BE IN ACCORDANCE WITH THE LATEST REVISION, INCLUDING ADDENDA AND UPDATES, OF THE SILVER LAKE WATER DISTRICT DEVELOPER STANDARDS. CONTRACTOR TO HAVE SILVER LAKE WATER DISTRICT STANDARDS ON JOB SITE.
- ROAD RESTORATION SHALL BE PER SNOHOMISH COUNTY STANDARDS.
- CONTRACTOR SHALL "DIAL DIG"(1-800-424-5555), PRIOR TO CONSTRUCTION, FOR AID IN LOCATING ANY EXISTING UNDERGROUND UTILITIES.
- THE CONTRACTOR SHALL KEEP TWO SETS OF PLANS ON SITE AT ALL TIMES FOR RECORDING "AS BUILTS" INFORMATION. ONE SET SHALL BE SUBMITTED TO SILVER LAKE WATER DISTRICT AT COMPLETION OF CONSTRUCTION.
- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE SILVER LAKE WATER & SEWER DISTRICT FOR A PRECONSTRUCTION MEETING.
- SIDE SEWER LATERALS SHALL BE AT A MINIMUM OF 2.00% SLOPE
- MINIMUM FINISHED FLOOR ELEVATIONS ARE BASED ON A 2.00% SLOPE



VICINITY MAP

SCALE: 1" = 2000'

LEGAL DESCRIPTION:

PARCEL A:
LOT 2 OF SNOHOMISH COUNTY SHORT PLAT NO. SP-260 (11-82), RECORDED DECEMBER 21, 1982 UNDER RECORDING NO. 8212210141, RECORDS OF SNOHOMISH COUNTY, WASHINGTON.

PARCEL B:
LOT 1 OF SNOHOMISH COUNTY SHORT PLAT NO. SP-308 (6-78), RECORDED AUGUST 11, 1978, UNDER RECORDING NO. 7808110274, RECORDS OF SNOHOMISH COUNTY, WASHINGTON.

PROPERTY TAX ACCT. NO.S

28053300301200, 28053300301300

DATUM:

NAVD '88 (SUBTRACT 3.67 TO ARRIVE AT NGVD '29)

TEMPORARY BENCH MARK

RIM OF CB LOCATION ON EAST SIDE OF SEATTLE HILL ROAD APPROX. STA 1+95. EL+406.01'

GRADING QUANTITIES

CUT: 7,903 CY
FILL: 7,903 CY

SOIL TYPE/GROUND COVER

SOIL TYPE IS ALDERWOOD GRAVELLY SANDY LOAM FOR THE DEVELOPMENT PORTION OF THE SITE AND MUKLETO MUCK FOR THE REST OF THE SITE. EXISTING GROUND COVER IS GRASS AND ALDER TREES. PROPOSED DEVELOPED GROUND COVER IS GRASS.

SITE ADDRESS

14526 SEATTLE HILL ROAD
SNOHOMISH, WA 98298

APPLICANT/OWNER/DEVELOPER

THOMAS LAKE COURT, LLC
ATTN: BOB CAREY
P.O. BOX 12277
EVERETT, WA 98202
(425) 422-3311

SURVEYOR

DAVID R. DOWNING & ASSOCIATES
4229 76TH DR NE, SUITE 104
MARYSVILLE, WA 98270
(360) 653-5385

NOTES:

- LONGITUDINAL TRENCH - 2" ASPHALT CLASS B OVERLAY. TRANSVERSE TRENCH - 2" ASPHALT CLASS B OVERLAY WHERE MULTIPLE CROSSINGS BY SAME UTILITY.
- EXISTING PAVEMENT
- LONGITUDINAL TRENCH - 6" ACP OR 2" ACP + 4" ATB TRANSVERSE TRENCH - 8" ACP OR 2" ACP + 6" ATB CONCRETE, RESTORATION SHALL BE IN ACCORDANCE W/ SECTION 5-05 OF THE WSDOT/APWA SPECIFICATIONS.
- NATIVE MATERIAL, BANK RUN GRAVEL, CSTC OR CONTROL DENSITY FILL MAY BE REQUIRED BY THE ENGINEER.
- NEAT LINE CUT, CLEAN, HEAT AND TACK EDGES WITH SEALER CSS-1 & SEAL WITH HOT ASPHALT CEMENT.
- TEMPORARY RESTORATION OF TRENCHES FOR OVERNIGHT USE SHALL BE ACCOMPLISHED BY USING COLD MIX, ATB OR STEEL PLATES.
- PATCH SHALL BE MACHINE ROLLED FLUSH WITH EXISTING PAVEMENT AND SHALL BE PLACED PER SECTION 5-04 OF THE WSDOT/APWA SPECIFICATIONS.
- COVER DEPTH OVER UNDERGROUND UTILITIES SHALL CONFORM TO FEDERAL AND STATE REGULATIONS.
- TRENCHES IN CONCRETE PAVEMENT SHALL BE RESTORED USING TIE BARS OR DOWEL BARS IN ACCORDANCE WITH SECTION 5-05 OF THE WSDOT/APWA SPECIFICATIONS. SEE EDDS TEXT SECTIONS 8-02, 8-04 & 8-05.

TRENCH RESTORATION DETAIL

SCALE: NTS

MATERIALS

MHS: CUZ CONC.
PIPE: PVC PW 3034

USED SLWD 2006 SPECS
G&O 70451

AS-BUILT 07/07/08

PFN: 05-119918

REVISION NO.	REVISION	DATE OF REV.	DIST APPROVAL	DATE OF APPROVAL
1	AS-BUILTS	07/07/08		

SILVER LAKE WATER & SEWER DISTRICT
APPROVED FOR CONSTRUCTION

BY: _____ DATE: _____

"THESE PLANS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12-MONTHS FROM THE DATE SHOWN ABOVE. THE DISTRICTS RESERVES THE RIGHT TO MAKE REVISIONS, MODIFICATIONS, AND CHANGES SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT."

JOB NO.:
2195 - THOMAS LAKE COURT

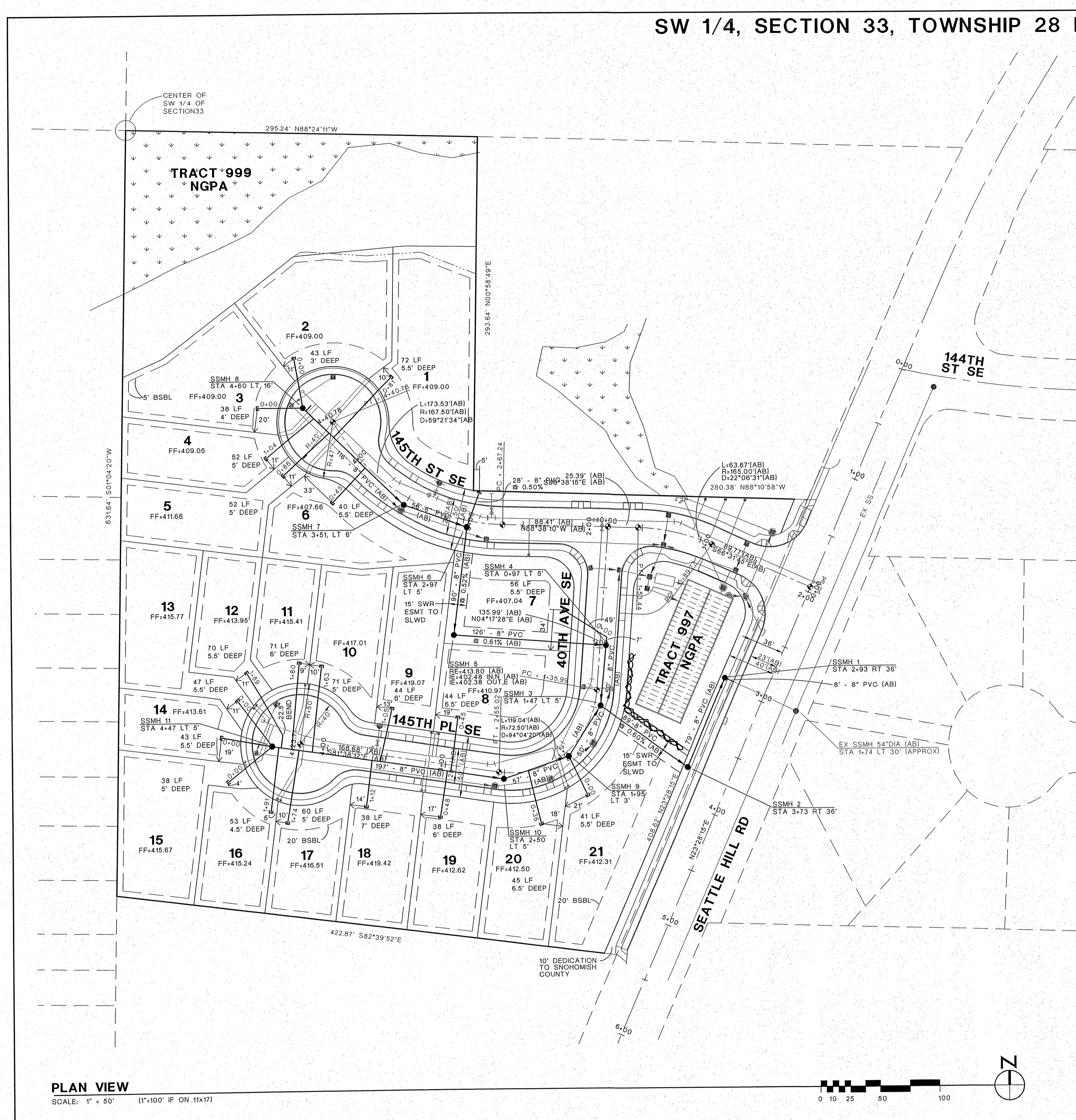
DATE:
JULY 7, 2008

DRAWN BY:
AGT/RJF

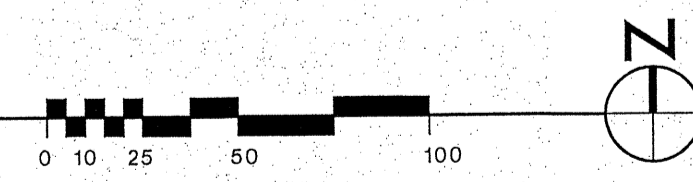
SHEET SWR-1 OF 2

HDEV - 2448

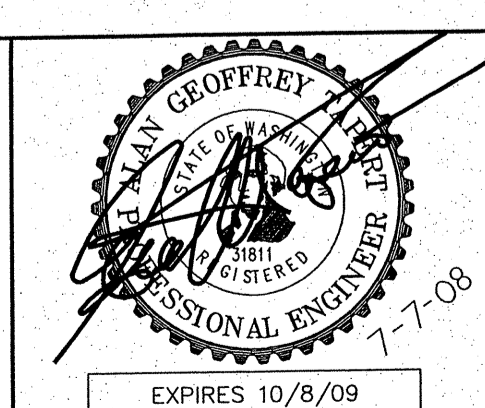
APPLETREE AT THOMAS LAKE



PLAN VIEW
SCALE: 1" = 50' (1"=100' IF ON 11x17)



CIVIL ENGINEER:
X-SOUND ENGINEERING, INC.
P.O. BOX 1265
FREELAND, WA 98249
(360) 331-3113 (TEL)
(360) 331-7114 (FAX)



FOR/CONTACT:
THOMAS LAKE COURT, LLC
ATTN: BOB CAREY
P.O. BOX 12277
EVERETT, WA 98203
(425) 422-3311

APPLETREE AT THOMAS LAKE
~~THOMAS LAKE COURT~~
SEWER NOTES & PROJECT DATA
SEWER PLAN
AS-BUILTS

CALL BEFORE
YOU DIG
1-800-424-5555

SILVER LAKE WATER & SEWER DISTRICT
APPROVED FOR CONSTRUCTION

BY: _____ DATE: _____

"THESE PLANS ARE APPROVED FOR CONSTRUCTION FOR A PERIOD OF 12-MONTHS FROM THE DATE SHOWN ABOVE. THE DISTRICTS RESERVES THE RIGHT TO MAKE REVISIONS, MODIFICATIONS, AND CHANGES SHOULD CONSTRUCTION BE DELAYED BEYOND THIS TIME LIMIT."

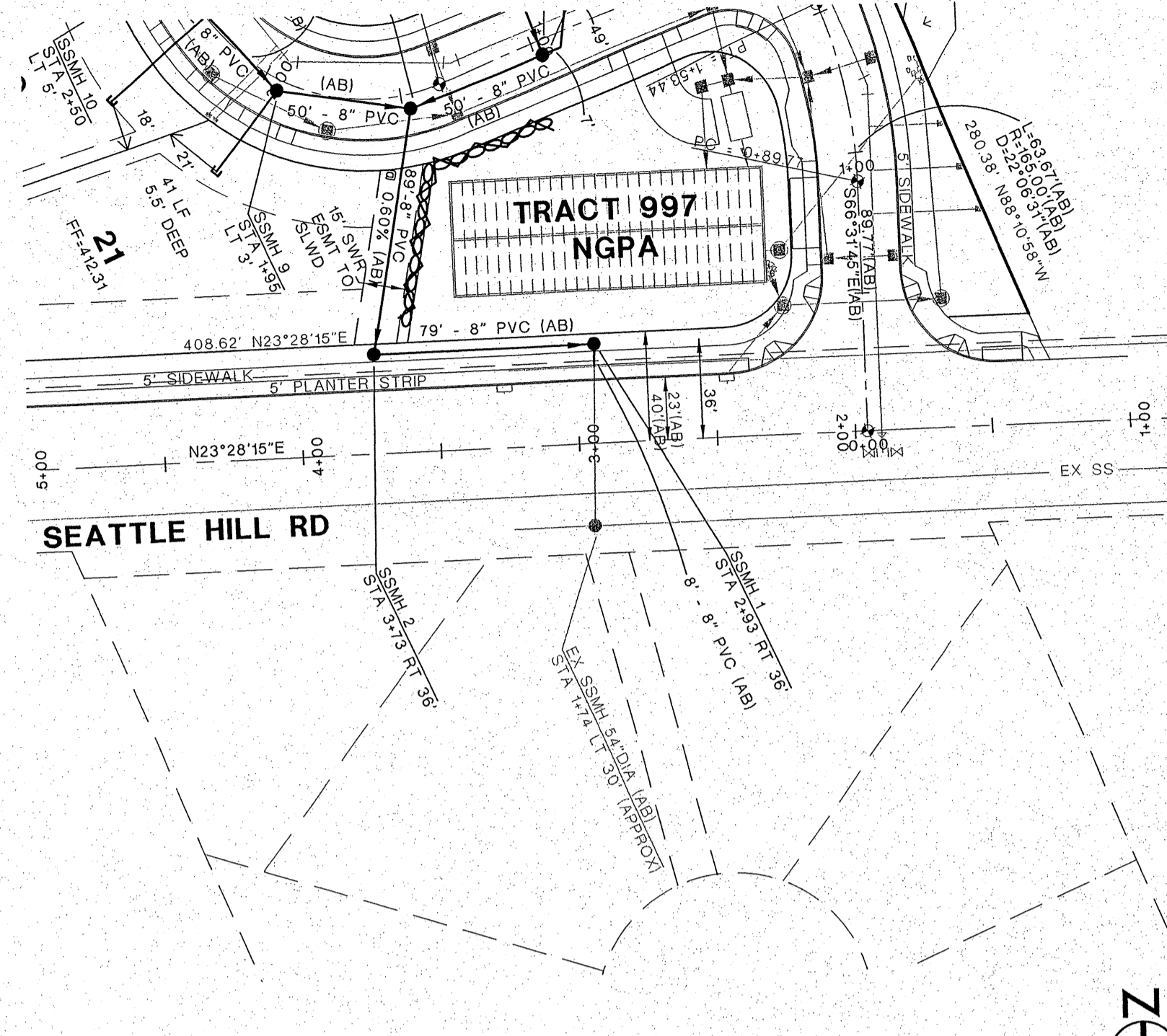
JOB NO.:
2195 - THOMAS LAKE COURT

DATE:
JULY 7, 2008

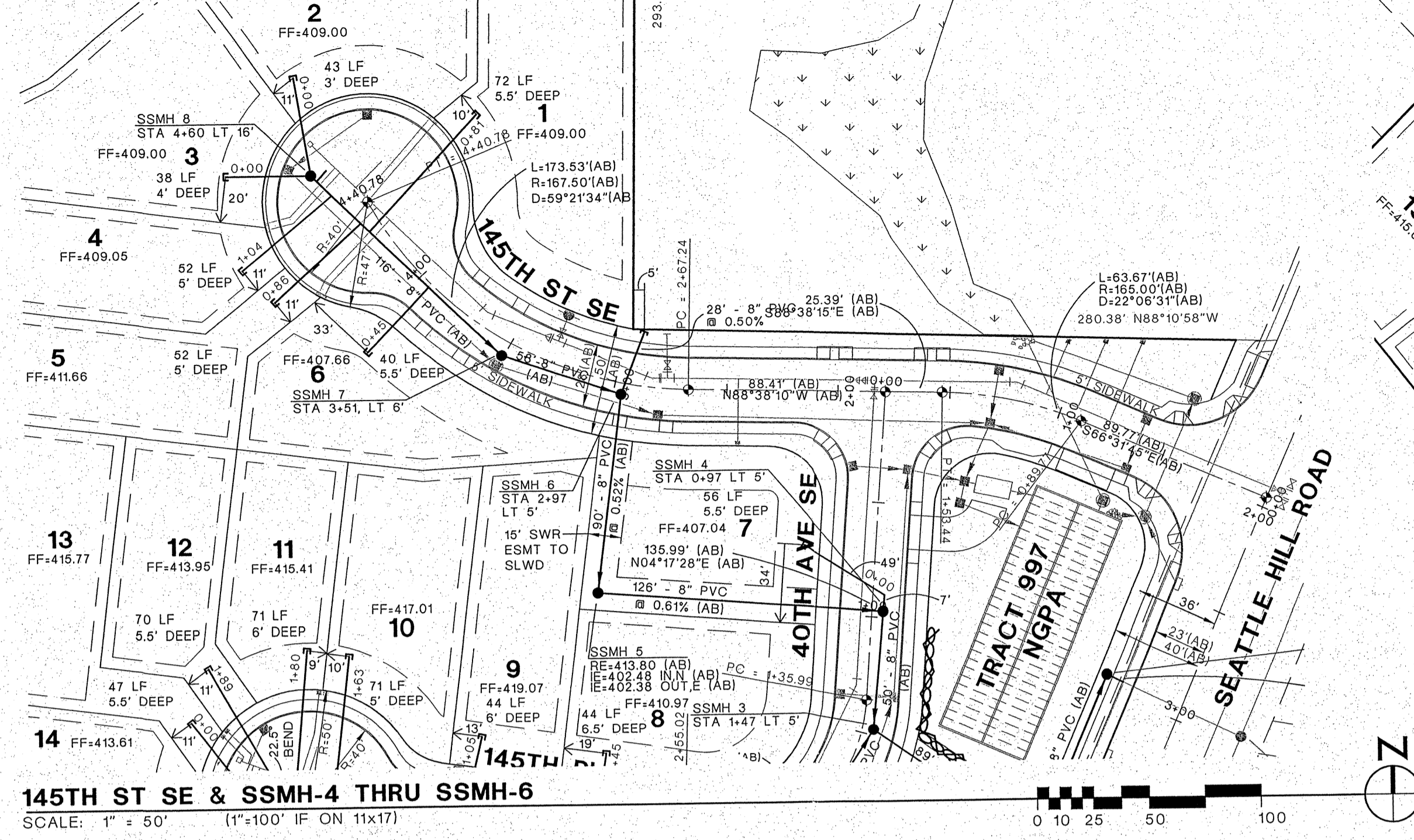
DRAWN BY:
AGT/RJF

SHEET SWR-1 OF 2

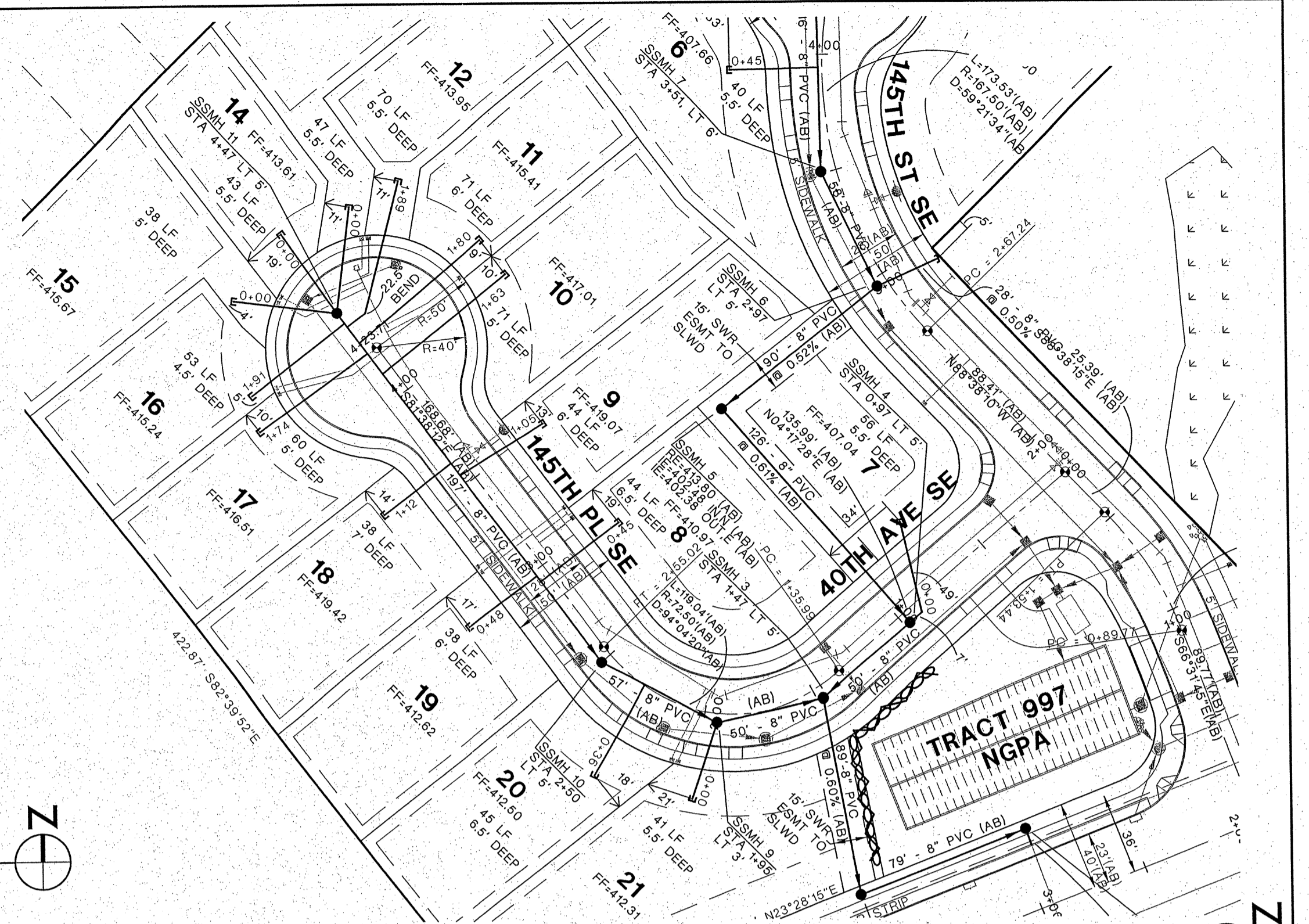
SW 1/4, SECTION 33, TOWNSHIP 28 N, RANGE 5 E, W.M.



SEATTLE HILL ROAD
SCALE: 1" = 50' (1"=100' IF ON 11x17)



145TH ST SE & SSMH-4 THRU SSMH-6
SCALE: 1" = 50' (1"=100' IF ON 11x17)



145TH PL SE
SCALE: 1" = 50' (1"=100' IF ON 11x17)



SSMH 1 THRU SSMH 3
SCALE: 1" = 5' V, 50' H

145TH ST SE
SCALE: 1" = 5' V, 50' H

SILVER LAKE WATER DISTRICT APPROVAL FOR CONSTRUCTION
ORIGINAL APPROVAL SIGNATURE NOT REPLICATED

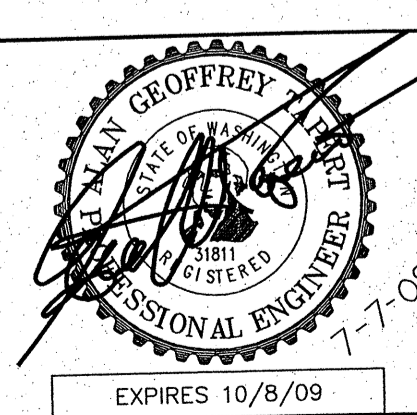
DESIGN ENGINEER: GEOFF TAPERT, PE SIGNED ON: 02-07-08
SLWD APPROVED FOR CONSTRUCTION BY: RICHARD GILMORE
THE: DISTRICT ENGINEER SIGNED ON: 02-08-08

USED SLWD 2006 SPECS
G&O 07451
AS-BUILT 07/07/08

145TH PL SE/40TH AVE SE
SCALE: 1" = 5' V, 50' H

REVISION NO.	REVISION	DATE OF REV.	DIST APPROVAL	DATE OF APPROVAL
1	AS-BUILTS	07/07/08		

CIVIL ENGINEER:
X-SOUND ENGINEERING, INC.
P.O. BOX 1265
FREELAND, WA 98249
(360) 331-3113 (TEL)
(360) 331-7114 (FAX)



FOR/CONTACT:
THOMAS LAKE COURT, LLC
ATTN: BOB CAREY
P.O. BOX 12277
EVERETT, WA 98203
(425) 422-3311

APPLETREE AT THOMAS LAKE
~~THOMAS LAKE COURT~~
SEWER PROFILES
AS-BUILTS

CALL BEFORE
YOU DIG
1-800-424-5555

SILVER LAKE WATER & SEWER DISTRICT
APPROVED FOR CONSTRUCTION

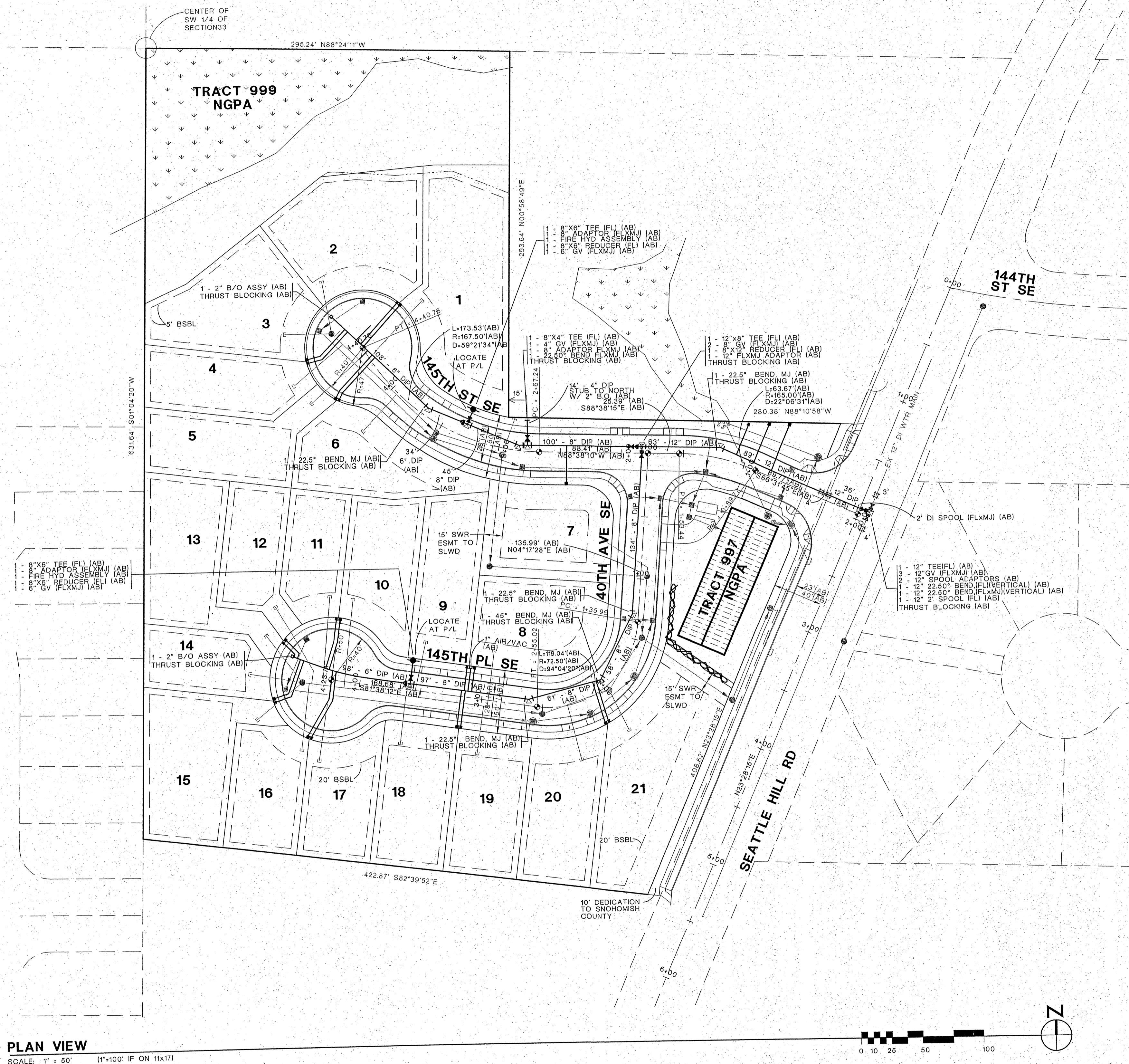
BY: _____ DATE: _____

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JOB NO.:
2195 - THOMAS LAKE COURT
DATE:
JULY 7, 2008
DRAWN BY:
AGT/RJF
SHEET SWR-2 OF 2

HDEV-2449

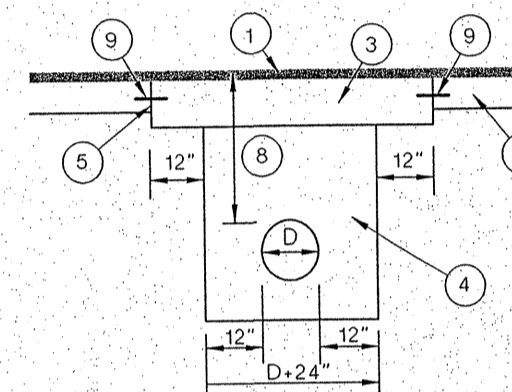
SW 1/4, SECTION 33, TOWNSHIP 28 N, RANGE 5 E, W.M.



PLAN VIEW
SCALE: 1" = 50' (1"=100' IF ON 11x17)

CONSTRUCTION NOTES

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- CONTRACTOR SHALL "DIAL DIG"(1-800-424-5555), PRIOR TO CONSTRUCTION, FOR AID IN LOCATING ANY EXISTING UNDERGROUND UTILITIES.
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- PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE SILVER LAKE WATER & SEWER DISTRICT FOR A PRECONSTRUCTION MEETING.
- ALL DUCTILE IRON PIPE TO BE CLASS 53
- PROVIDE BLUE STREET REFLECTORS ON THE HYDRANT SIDE OF CENTERLINE TO INDICATE HYDRANT LOCATION.
- THE TOPS OF THE HYDRANT(S) SHALL BE COLORED GREEN.



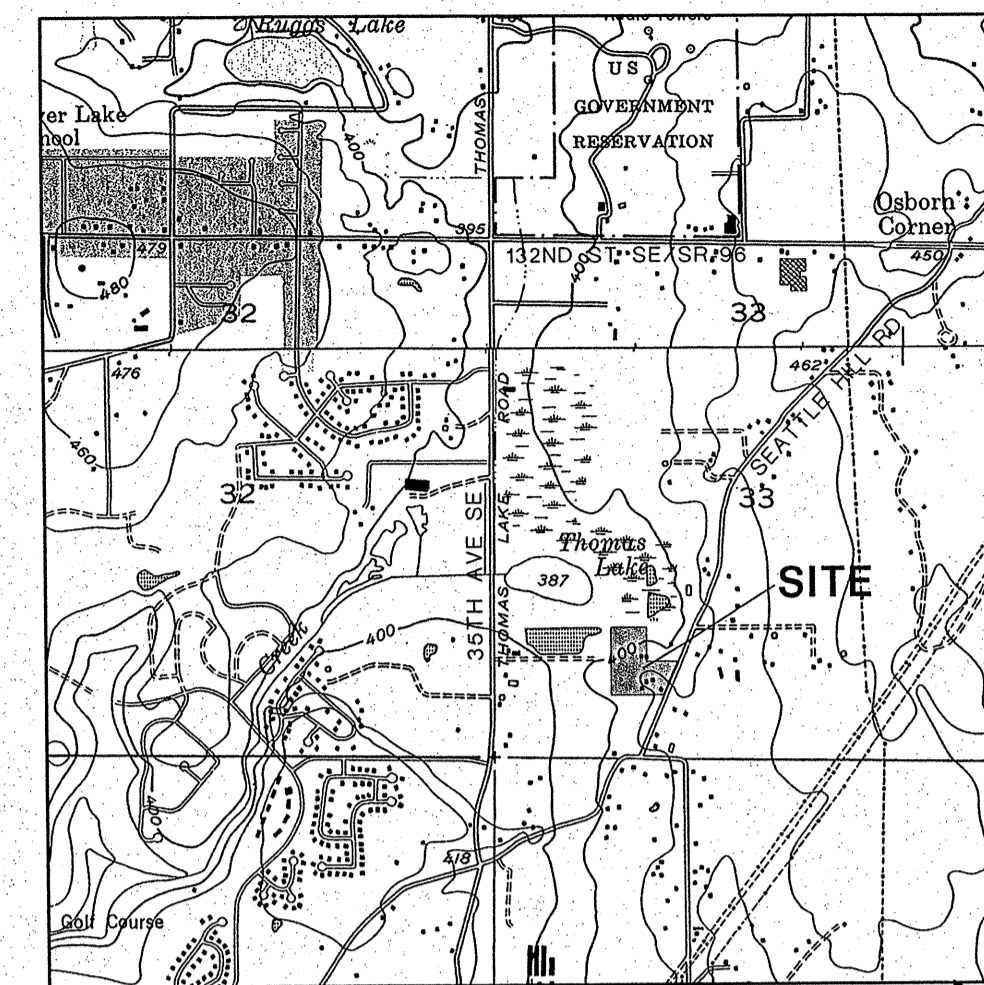
NOTES:

- LONGITUDINAL TRENCH - 2" ASPHALT CLASS B OVERLAY. TRANSVERSE TRENCH - 2" ASPHALT CLASS B OVERLAY WHERE MULTIPLE CROSSINGS BY SAME UTILITY.
- EXISTING PAVEMENT
- LONGITUDINAL TRENCH - 6" ACP OR 2" ACP + 4" ATB. TRANSVERSE TRENCH - 8" ACP OR 2" ACP + 6" ATB. CONCRETE RESTORATION SHALL BE IN ACCORDANCE WITH SECTION 5-05 OF THE WSDOT/APWA SPECIFICATIONS.
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TRENCH RESTORATION DETAIL
SCALE: NTS

MATERIALS

GV'S: KENNEDY/M&H
PIPE: USP
F.H.'S: M&H
FITTINGS: FORD/TYLER



VICINITY MAP

SCALE: 1" = 2000'

LEGAL DESCRIPTION:

PARCEL A:
LOT 2 OF SNOHOMISH COUNTY SHORT PLAT NO. SP-260 (11-82), RECORDED DECEMBER 21, 1982 UNDER RECORDING NO. 8212210141, RECORDS OF SNOHOMISH COUNTY, WASHINGTON.

PARCEL B:
LOT 1 OF SNOHOMISH COUNTY SHORT PLAT NO. SP-306 (6-78), RECORDED AUGUST 11, 1978, UNDER RECORDING NO. 7808110274, RECORDS OF SNOHOMISH COUNTY, WASHINGTON.

PROPERTY TAX ACCT. NO.S

280653300301200, 28053300301300

DATUM:

NAVD '88 (SUBTRACT 3.67 TO ARRIVE AT NGVD '29)

TEMPORARY BENCH MARK

RIM OF CB LOCATION ON EAST SIDE OF SEATTLE HILL ROAD APPROX. STA 1+95. EL+406.01'

GRADING QUANTITIES

CUT: 7.903 CY
FILL: 7.903 CY

SOIL TYPE/GROUND COVER

SOIL TYPE IS ALDERWOOD GRAVELLY SANDY LOAM FOR THE DEVELOPMENT PORTION OF THE SITE AND MUKILTEO MUCK FOR THE REST OF THE SITE. EXISTING GROUND COVER IS GRASS AND ALDER TREES. PROPOSED DEVELOPED GROUND COVER IS GRASS.

SITE ADDRESS

14526 SEATTLE HILL ROAD
SNOHOMISH, WA 98296

APPLICANT/OWNER/DEVELOPER

STRAHM PROPERTIES, LLC
ATTN: BOB STRAHM
1712 PACIFIC AVE., SUITE 104
EVERETT, WA 98201
(425) 259-1457

SURVEYOR

DAVID R. DOWNING & ASSOCIATES
4229 76TH DR NE, SUITE 104
MARYSVILLE, WA 98270
(360) 653-5385

SILVER LAKE WATER DISTRICT APPROVAL FOR CONSTRUCTION
ORIGINAL APPROVAL SIGNATURE NOT REPLICATED

DESIGN ENGINEER: GEOFF TAPERT, PE SIGNED ON: 02-07-08
SLWD APPROVED FOR CONSTRUCTION BY: RICHARD GILMORE
THE: DISTRICT ENGINEER SIGNED ON: 09-17-07

USED SLWD 2006 SPECS
G&O 07451

AS-BUILT 07/07/08 PFN: 05-119918

REVISION NO.	REVISION	DATE OF REV.	DIST APPROVAL	DATE OF APPROVAL
1	AS-BUILTS	07/07/08		

SILVER LAKE WATER & SEWER DISTRICT
APPROVED FOR CONSTRUCTION

JOB NO.: 2195 - THOMAS LAKE COURT
DATE: JULY 7, 2008
DRAWN BY: AGT/RJF

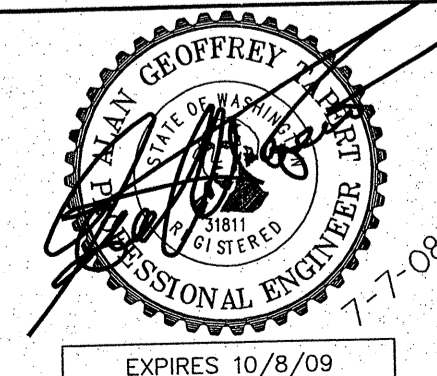
BY: _____ DATE: _____
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SHEET WTR-1 OF 1

CALL BEFORE
YOU DIG
1-800-424-5555

APPLETREE AT THOMAS LAKE
~~THOMAS LAKE COURT~~
WATER PLAN
AS-BUILTS

CIVIL ENGINEER:
X-SOUND ENGINEERING, INC.
P.O. BOX 1265
FREELAND, WA 98249
(360) 331-3113 (TEL)
(360) 331-7114 (FAX)

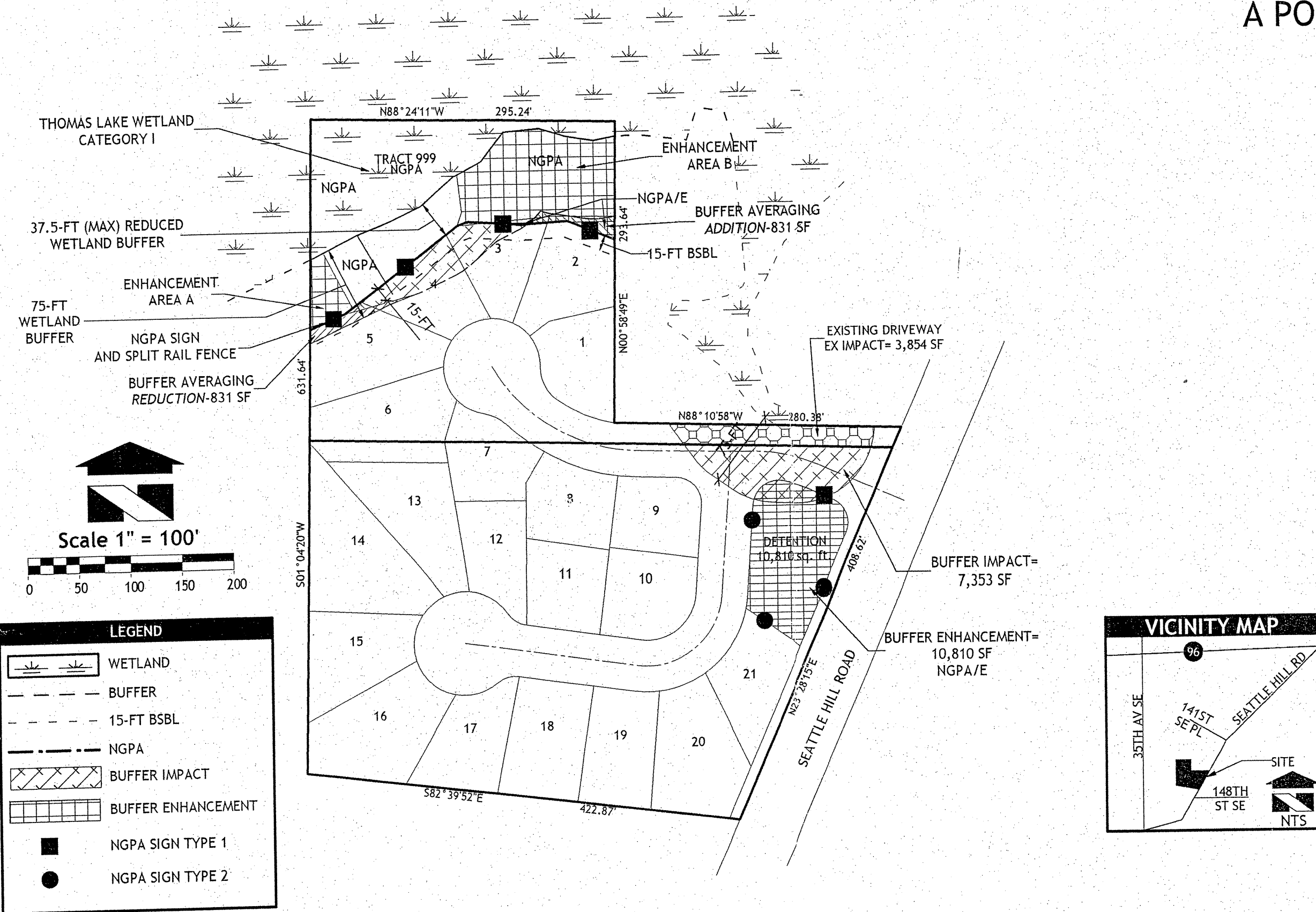


FOR/CONTACT:
STRAHM PROPERTIES, LLC
ATTN: BOB STRAHM
1712 PACIFIC AVE., SUITE 104
EVERETT, WA 98201
(425) 259-1457

H DEV-2450

APPLETREE AT THOMAS LAKE

**FINAL WETLAND MITIGATION PLAN
THOMAS LAKE COURT
A PORTION OF SECTION 33, TOWNSHIP 28N, RANGE 5E, W.M.**



BUFFER AVERAGING AND MITIGATION PLAN
Because of the degraded state of the on-site buffer and the potential for enhancement, the applicant is proposing to reduce portions of the standard buffer width to a minimum of 37.5 feet. The buffer proposed for reduction is currently comprised of unmanaged pasture and invasive species are beginning to establish this area. Likewise portions of the standard buffer are also becoming overgrown with this type of vegetation or contain native pioneer species such as red alder and black cottonwood, which are short lived. These areas present an ideal opportunity for enhancement. Enhancement would involve the planting of a variety of conifer and shrub species within the enhancement areas. The proposed enhancement would benefit the site in that it will assist and speed the transition of the buffer to a climax conifer forest with greater structural diversity. The applicant is proposing reduction through averaging and through enhancement.

The applicant is proposing buffer averaging to reduce portions of the buffer that are in a degraded state. Additional buffer is offered at a 1:1 addition to reduction ratio. The area chosen to give back buffer is primarily vegetated with pasture grasses and Scot's broom, therefore the quality of buffer "taken" is of similar quality that is "given". However, the applicant is proposing to enhance the portion of buffer added thus providing an overall increase in the quality of the averaged buffer. This buffer averaging plan is allowed under SCC 30.62.650 because there will be no loss of wetland functions and values, no loss of buffer area and the resulting buffer width shall not be less than fifty percent of the standard width.

The applicant is further proposing reduction with an enhancement credit. Pursuant to SCC 32.10.570.1.c.ii and Snohomish County Administrative Rule "Buffer Enhancement Reductions" this reduction is allowed because the buffer will have minimal functional value, the proposed enhancement and reduction will result in an increase in the functional value of the buffer, the resulting buffer width shall not be less than fifty percent of the standard width and the functional value of the wetland that the buffer is protecting shall not decrease. Because the entire buffer is not in demonstrated need of enhancement, a proportionate reduction credit was determined. The reduction credit is based upon the ratio of standard buffer to amount of enhancement proposed. The reduction credit of 19 percent will allow 4,771 square feet of reduction based upon the enhancement of 14,140 square feet of buffer and a total of 25,113 square feet of standard buffer on-site. The applicant is proposing to reduce approximately 4,441 square feet of the standard buffer, not less than fifty percent of the original width. This reduction should be acceptable as it falls below the threshold of the proportionate reduction.

BUFFER ENHANCEMENT
As mitigation for the 4,441 square feet of permanent buffer impact resulting from the proposed buffer reduction, the applicant is proposing to enhance the 14,140 square feet of buffer located in the western and eastern on-site portion of the property. There are two buffer areas proposed for enhancement but methods for enhancement will be the same for both. Enhancement Area A is located in the western portion of the buffer while Enhancement Area B is located in the eastern portion of the buffer. Planting lists will be shown in two tables in order to properly distribute species and quantities in the proper areas. Any bare ground areas within the enhancement area shall be seeded with the grass seed mixture recommended in this plan. This enhancement should aid in the transformation of the buffer area to a climax conifer forest, increasing vegetative and structural diversity thereby improving the buffer functions related to the wetland and providing higher quality habitat for wildlife.

Buffer Enhancement Areas A and B (14,140 square feet)
The two areas the applicant is proposing to enhance are located on either end of the on-site buffer. These areas are represented by a minor canopy of immature red alder and black cottonwood with some willow species. The understory of these areas is dominated by hardwood, Himalayan and evergreen blackberry. Due to overgrowth of these invasive species the applicant is proposing to plant native trees and shrubs throughout the enhancement areas. Prior to planting all hardwood and any other invasive species throughout the enhancement area shall be removed by the roots and transported off-site. Any trees (including willows) in these areas should be left as undisturbed as possible. Plant spacing and quantity shall be based upon 100 percent of the areas being planted with 50 percent trees on 10-foot centers and 50 percent shrubs planted on 5-foot centers. Plants should be arranged randomly to achieve the desired natural asymmetric patterns found in nature. Mulch as specified in this plan, shall be applied to all plantings. Upon completion of plantings, all bare ground areas shall be grass seeded using the recommended seed mixture in this plan and then covered with straw. The applicant is proposing to plant a total of 72, (10 & 62) trees and 285, (40 & 245) shrubs within the enhancement areas. The proposed distribution of native plants for this buffer enhancement plan follows:

COMMON NAME	LATIN NAME	SIZE	SPACING	QUANTITY
Western red cedar	<i>Thuja plicata</i>	1 gal. 10'	10'	4
Douglas-fir	<i>Pseudotsuga menziesii</i>	1 gal. 10'	10'	3
Western hemlock	<i>Tsuga heterophylla</i>	1 gal. 10'	10'	3
Oso-berry	<i>Oemleria cerasiformis</i>	1 gal. 5'	5'	6
Snowberry	<i>Symphoricarpos albus</i>	1 gal. 5'	5'	6
Red elderberry	<i>Sambucus racemosa</i>	1 gal. 5'	5'	6
Salal	<i>Gaultheria shallon</i>	1 gal. 5'	5'	6
Oregon grape	<i>Mahonia nervosa</i>	1 gal. 5'	5'	6
Black twinberry	<i>Lonicera involucrata</i>	1 gal. 5'	5'	5
Red osier dogwood	<i>Cornus sericea</i>	1 gal. 5'	5'	5

COMMON NAME	LATIN NAME	SIZE	SPACING	QUANTITY
Western red cedar	<i>Thuja plicata</i>	1 gal. 10'	10'	16
Douglas-fir	<i>Pseudotsuga menziesii</i>	1 gal. 10'	10'	16
Western hemlock	<i>Tsuga heterophylla</i>	1 gal. 10'	10'	15
Big-leaf maple	<i>Acer macrophyllum</i>	1 gal. 10'	10'	15
Oso-berry	<i>Oemleria cerasiformis</i>	1 gal. 5'	5'	35
Snowberry	<i>Symphoricarpos albus</i>	1 gal. 5'	5'	35
Red elderberry	<i>Sambucus racemosa</i>	1 gal. 5'	5'	35
Salal	<i>Gaultheria shallon</i>	1 gal. 5'	5'	35
Oregon grape	<i>Mahonia nervosa</i>	1 gal. 5'	5'	35
Black twinberry	<i>Lonicera involucrata</i>	1 gal. 5'	5'	35
Red osier dogwood	<i>Cornus sericea</i>	1 gal. 5'	5'	35

BUFFER AVERAGING
The applicant proposes buffer width averaging at an approximate 1:1 addition to reduction ratio, as allowed under SCC 30.62.350. A total of 831 square feet of buffer is proposed to be added for a total of 831 square feet of buffer proposed to be reduced. The area designated for reduction is comprised of disturbed pasture. The area designated as additional buffer shall be enhanced with native vegetation, as proposed in the Buffer Enhancement plan described above. Based on the existing buffer vegetation on this site, no loss of buffer functions and values is anticipated as a result of this buffer averaging plan.

OFF-SITE WETLAND BUFFER MITIGATION
As mitigation for impacts to the isolated portion of buffer extending onto the subject property, the applicant is proposing to designate the area within the stormwater tract as additional buffer to be enhanced. The proposed stormwater vault will be capped, grass seeded and planted with native shrubs. Approximately 7,353 square feet of buffer will be impacted as a result of access road improvements. To ensure no net loss of buffer functions and values, the applicant is proposing to enhance 10,810 square feet of buffer located within the applicant's stormwater tract. This enhancement will increase total buffer area as well as restore vegetative structure and diversity, which in turn will increase the low level of functions and values this portion of the buffer is providing to the wetland. The enhanced buffer area will remain isolated from the wetland, however functional value is commensurate with the wetland it is meant to protect and will be increased overall.

Following the installation and capping of the stormwater vault, the entire area (10,810 square feet) will be planted with native shrubs and then grass seeded. High quality topsoil should be used to cap the vault for planting purposes. Plant spacing and quantity will be based upon 100 percent of the areas being planted with shrubs on 5-foot centers. Plants should be arranged randomly to achieve the desired natural asymmetric patterns found in nature. Mulch as specified in this plan, shall be applied to all plantings. Upon completion of plantings, all bare ground areas shall be grass seeded using the recommended seed mixture in this plan and then covered with straw. The applicant is proposing to plant a total of 430 plants in the enhancement area. The proposed distribution of native plants for this enhancement plan follows:

COMMON NAME	LATIN NAME	SIZE	SPACING	QUANTITY
Oso-berry	<i>Oemleria cerasiformis</i>	1 gal. 5'	5'	86
Snowberry	<i>Symphoricarpos albus</i>	1 gal. 5'	5'	86
Salal	<i>Gaultheria shallon</i>	1 gal. 5'	5'	86
Black twinberry	<i>Lonicera involucrata</i>	1 gal. 5'	5'	86
Red osier dogwood	<i>Cornus sericea</i>	1 gal. 5'	5'	86

GRASS SEEDING
Any disturbed soil in buffers shall be seeded to the recommended grass seed mixture below, or similar approved mixtures. Any change in species or concentration shall be approved by a County biologist. Fertilizer shall only be used if absolutely necessary due to potential runoff into adjacent waters. If deemed absolutely necessary by the consulting biologist and/or the County biologist an appropriate fertilizer will be recommended for the particular situation.

COMMON NAME	LATIN NAME	LBS/1,000 S.F.
Tall fescue	<i>Festuca arundinacea</i>	0.4
Colonial bentgrass	<i>Agrostis tenuis</i>	0.4
Annual ryegrass	<i>Lolium multiflorum</i>	0.5
Red clover	<i>Trifolium repens</i>	0.2

PROPOSED DEVELOPMENT, BUFFER AVERAGING & BUFFER REDUCTION
The applicant is proposing to develop a 21-lot residential subdivision and related infrastructure on this property. To accommodate portions of this development the applicant is proposing to reduce portions of the buffer down to a minimum of 37.5 feet in places. Buffer averaging is proposed for a portion of the reduction with the remainder to be reduced with enhancement. The applicant is proposing to reduce that portion of buffer, which is currently comprised primarily of pasture grasses, and/or being overgrown by aggressive, weedy species. This reduction is not less than 50 percent of the standard buffer width and the remaining buffer area is greater than 75 percent of the area before reduction. Much of the remainder of the buffer is primarily dominated by hardwood and evergreen blackberry. While the applicant is proposing to reduce the buffer the proposed enhancement of the remaining buffer will greatly improve its buffering capacity and provide greater protection to the valuable Thomas Lake Wetland system. Mitigation for these impacts is proposed through buffer addition, buffer enhancement as well as placement of a two-rail fence. In Snohomish County buffer widths may be reduced pursuant to SCC 30.62.350.

Buffer averaging is proposed to reduce approximately 831 square feet of degraded buffer. Additional buffer is proposed at the 1:1 required ratio. The additional buffer proposed is located between the "development" and the critical area that is being buffered. This buffer averaging plan is allowed under SCC 30.62.350 because there will be no loss of wetland functions and values, no loss of buffer area and the resulting buffer width shall not be less than 50 percent of the standard width.

The applicant is proposing to further reduce the degraded buffer with enhancement. Portions of the on-site buffer are comprised of short lived and/or weedy species and the potential for enhancement of this area is great. Approximately 14,140 square feet of buffer after averaging will be enhanced with enhancement. This amount of enhancement allows a proportionate reduction of 19%, which is equates to 4,771 square feet. The buffer enhancement proposed by the applicant will result in a net improvement in the functions and values of the wetland and buffer.

As mitigation for the 4,441 square feet of buffer reduction, the applicant is proposing buffer enhancement at greater than 3:1 (buffer enhancement to buffer reduction) ratio. This will provide 14,140 square feet of enhanced buffer. In addition, the applicant is proposing to place a two-rail fence along the entire perimeter of the buffer to demarcate critical areas and prevent intrusion and disturbance to the wetland and buffer.

Proposed buffer enhancement shall consist of removing all weedy species by hand and planting native trees and shrubs. The implementation of this mitigation/enhancement plan will improve the overall functions and values over those currently provided by this wetland buffer.

USE OF THIS PLAN
This Final Wetland Mitigation Plan is supplied to Strahm Properties, LLC as a means of determining on-site wetland conditions and mitigating for critical area impacts, as required by Snohomish County during the permitting process. This report is based largely on readily observable conditions and, to a lesser extent, on readily ascertainable conditions. No attempt has been made to determine hidden or concealed conditions.

The laws applicable to wetlands are subject to varying interpretations and may be changed at any time by the courts or legislative bodies. This report is intended to provide information deemed relevant in the applicant's attempt to comply with the laws now in effect.

The work for this report has conformed to the standard of care employed by wetland ecologists. No other representation or warranty is made concerning the work or this report and any implied representation or warranty is disclaimed.

SITE DESCRIPTION
On March 10, 2005 Wetland Resources, Inc. conducted a wetland delineation on the 5.5-acre site located at 14430 and 14526 Seattle Hill Road. The site is further located as a part of Section 33, Township 28N, Range 5E, W.M., in urban Snohomish County, Washington.

The site is comprised of two parcels, the northern parcel is generally square in shape with a "panhandle" from the southeast corner to Seattle Hill Road and the southern parcel is generally rectangular in shape. This site is accessed from the east via Seattle Hill Road. To the north and east of the subject property is the Thomas Lake wetland system. A portion of the northern boundary of this large Category 1 wetland is located on-site, along the northern forested areas on the property. The wetland and portions of the buffer are the only forested areas on the site, however portions of the wetland and buffer are dominated by monotypic community of hardwood with minor amounts of salmonberry and evergreen blackberry present. The remainder of the subject property is currently disturbed pasture and is vegetated with typical pasture grasses and invasive/exotic species including reed canarygrass, hardwood and Scot's broom. Surrounding land use to the south and east is comprised of single-family residences. Category 1 wetlands in urban Snohomish County typically receive 75' protective buffers.

OFF-SITE WETLAND BUFFER DISCUSSION
A portion of the Thomas Lake wetland system extends south onto an adjacent property, east of the subject property. This highly degraded "finger" is located within actively used horse pasture and the condition of the wetland is very poor. In respect to functional value it is likely that this portion of the wetland has a negative effect on functions and values especially in regards to water quality. This portion of the wetland appears to terminate prior to extending onto the subject property. Data was collected on-site in the area where the wetland has the potential to extend onto the subject property. No positive wetland field indicators were present at the time of investigation in March of 2005 (see attached field data sheet and map). Additionally, the boundary of the off-site wetland area has been confirmed by PDS personnel.

While the wetland does not extend onto the subject property, the buffer does. The portion of on-site buffer is comprised of pasture and is isolated from the wetland by the existing gravel access road from Seattle Hill Road. The applicant is proposing to improve the existing gravel road for access to the development. This portion of the buffer is comprised of pasture and is providing little functional value to the off-site wetland area. In order to provide access to the development, the applicant is proposing to improve existing access resulting in impacts to approximately 7,353 square feet of isolated buffer. To ensure no net loss of buffer functions and values the applicant is proposing to enhance approximately 10,810 square feet of additional buffer to be located south of the improved access road. The additional buffer area will be located within the applicant's detention facility tract. A stormwater vault is proposed for this area and the applicant is proposing to cap the vault and plant native shrubs to replace the impacted buffer area.

No net loss of functions and values is likely as the area of enhancement is similar to current conditions of the buffer. It will still be isolated, but buffer square footage will be increased and vegetative diversity and structure will be vastly increased by planting native shrubs. Even more the wetland area it is meant to protect is of such low quality, buffer functions will be commensurate with the functional value of the finger off-site wetland. As such this proposed mitigation should more than offset impacts to functions and values of the wetland buffer.

PROJECT MONITORING PROGRAM
Requirements for monitoring project:
1. Initial compliance report
2. Semi-annual site inspections (twice yearly in the spring and fall) for three years
3. Annual reports (One report submitted in the fall of each monitored year)

The purpose for monitoring: The purpose for monitoring this wetland mitigation project shall be to evaluate the success of the mitigation. Success will be determined if monitoring shows at the end of three years that the definitions of success stated below are being met. The property owner shall grant access to the mitigation areas for inspection and maintenance to the contracted wetland specialist and the Snohomish County biologist during the period of the bond, or until the project is evaluated as successful.

Initial Compliance / As-built Report: Upon completion of the mitigation project, an inspection by a qualified wetland professional will be made to determine plan compliance. A compliance report ("as-built") will be supplied to Snohomish County within 30 days after the completion of planting. The report will detail the installed mitigation measures, including descriptions of any changes that were made during installation, and identify test plots and photo sites for monitoring. Test plot data and photos from the established photo sites shall be included in the compliance report, along with a copy of the approved final mitigation plan.

Criteria For Success: Condition monitoring of the plantings will be done by a qualified wetland professional in the spring and fall annually. A written report describing the monitoring results will be submitted to Snohomish County after the fall site inspection of each monitored year. Final inspection will occur three years after completion of this project. The consulting wetland professional will prepare a report as to the success of the project.

Definition of Success: The mitigation areas shall support at least 80 percent of the native plants set forth in the approved Final Wetland Mitigation Plan by the end of three years. The species mix should resemble that proposed in the planting plans, but strict adherence to obtaining all of the species shall not be a criteria for success. By the end of the third growing season, the percent areal coverage of native plants shall be 80 percent in the mitigation areas. No more than 10 percent coverage by non-native, invasive species shall occur within the mitigation areas at the end of the third monitored year for a successful determination.

Maintenance: This mitigation project may require periodic maintenance to replace vegetation mortality as necessary. Maintenance may include, but will not be limited to, removal of competing grasses, removal of invasive vegetation, irrigation, fertilization, replacement of plant mortality, and/or the replacement of mulch for each maintenance period. Chemical control, if necessary, shall be applied by a licensed applicator following all label instructions.

Contingency Plan: If 20 percent or more of the installed plants are severely stressed during any of the inspections, or it appears 20 percent may not survive, a contingency plan must be developed to address the reduced level of success. Elements of a contingency plan may include, but will not be limited to: more aggressive weed control, animal control, mulching, replanting with larger plant material, species substitution, fertilization, soil amendments, and/or irrigation.

PERFORMANCE BONDING
A performance bond for the planted species shall be provided to Snohomish County for the period of three years from the completion of the project, in the amount of 150 percent of the estimated cost for plant material, installation labor, monitoring and maintenance. This bond shall be released at the end of three years, upon a successful determination by Snohomish County for all portions of this mitigation project. The definitions of success shall be as described under Project Monitoring Program in this plan. Monitoring and maintenance estimates are provided for bond calculation purposes only and are not actual bids.

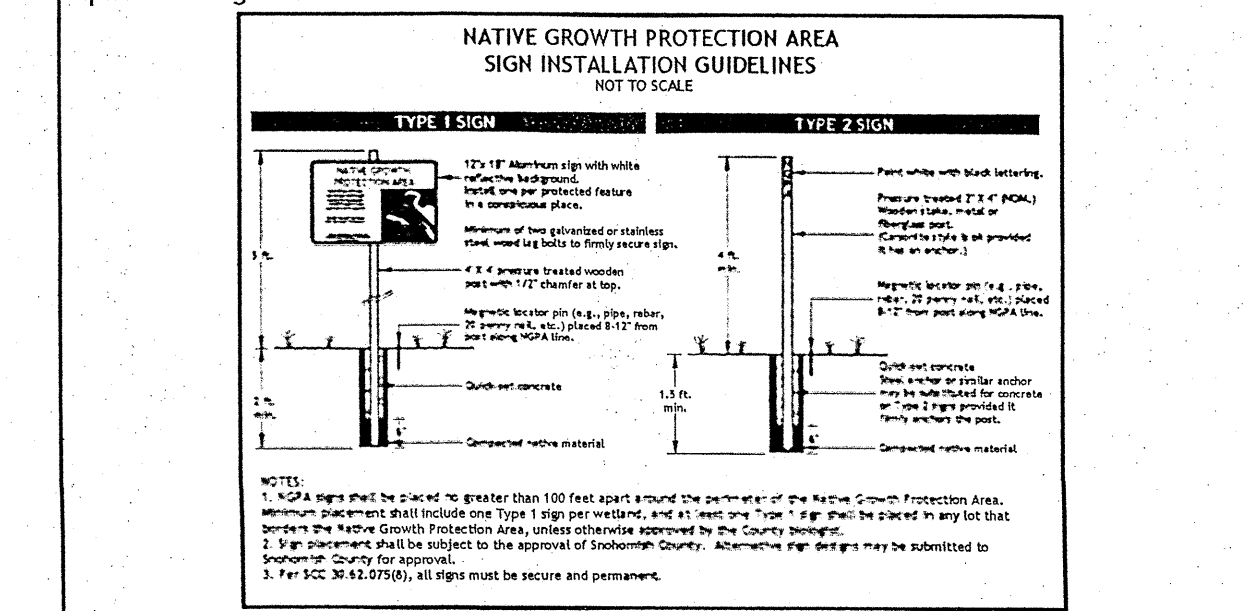
Total Quantity of 1-gallon plants	787
Estimated cost of plant material and labor (\$8.25/plant)	\$6,492.75
Estimated cost of Monitoring \$1,200/year	\$3,600.00
Estimated cost of maintenance \$1,500/year	\$4,500.00
Total Estimated Cost	\$14,592.75

TOTAL ESTIMATED BOND AMOUNT (150% of total estimated cost) **\$21,889.13**

NGPA SIGNS
Signs designating the presence of the NGPA shall be posted along the NGPA boundary. Signs shall be placed at approximately 100-foot intervals around the perimeter of the NGPA. Minimum placement shall include one Type 1 sign per wetland, and at least one Type 1 sign shall be placed in any lot that borders the NGPA, unless otherwise approved by the County. The design and proposed locations for the NGPA signs should be submitted to the Land Use Division for review and approval. An example of Type 1 sign language is as follows:

NATIVE GROWTH PROTECTION AREA
THIS WETLAND AND UPLAND BUFFER ARE PROTECTED TO PROVIDE WILDLIFE HABITAT AND MAINTAIN WATER QUALITY. PLEASE DO NOT DISTURB THIS VALUABLE RESOURCE.
*SEE RECORDED PLAT FOR RESTRICTIONS

The signs shall be constructed of aluminum or similar durable material. They shall be secured to 4" x 4" x 7' (min.) pressure treated posts buried a minimum of two feet in quick setting concrete.



SNOHOMISH COUNTY
PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

BY: *[Signature]* DATE: 9/2/07
FOR RANDOLPH R. SLEIGHT, P.E., P.L.S.

07-110811

R/W PERMIT NO.

Wetland Resources, Inc.
Wetland Delineation / Restoration / Habitat Creation / Permit Assistance

9505 19th Avenue S.E. Suite 106
Everett, Washington 98208
Phone: (425) 337-3174
Fax: (425) 337-3045
Email: mailbox@wetlandresources.com

FINAL WETLAND MITIGATION PLAN
THOMAS LAKE COURT
Snohomish County, Washington

Strahm Properties, LLC Sheet 1/1
Attn: Bob Strahm WRI Job # 05051
1712 Pacific Ave., Ste. 104 Drawn by: E. Hirsch
Everett, WA 98201 Date: 01.18.2007