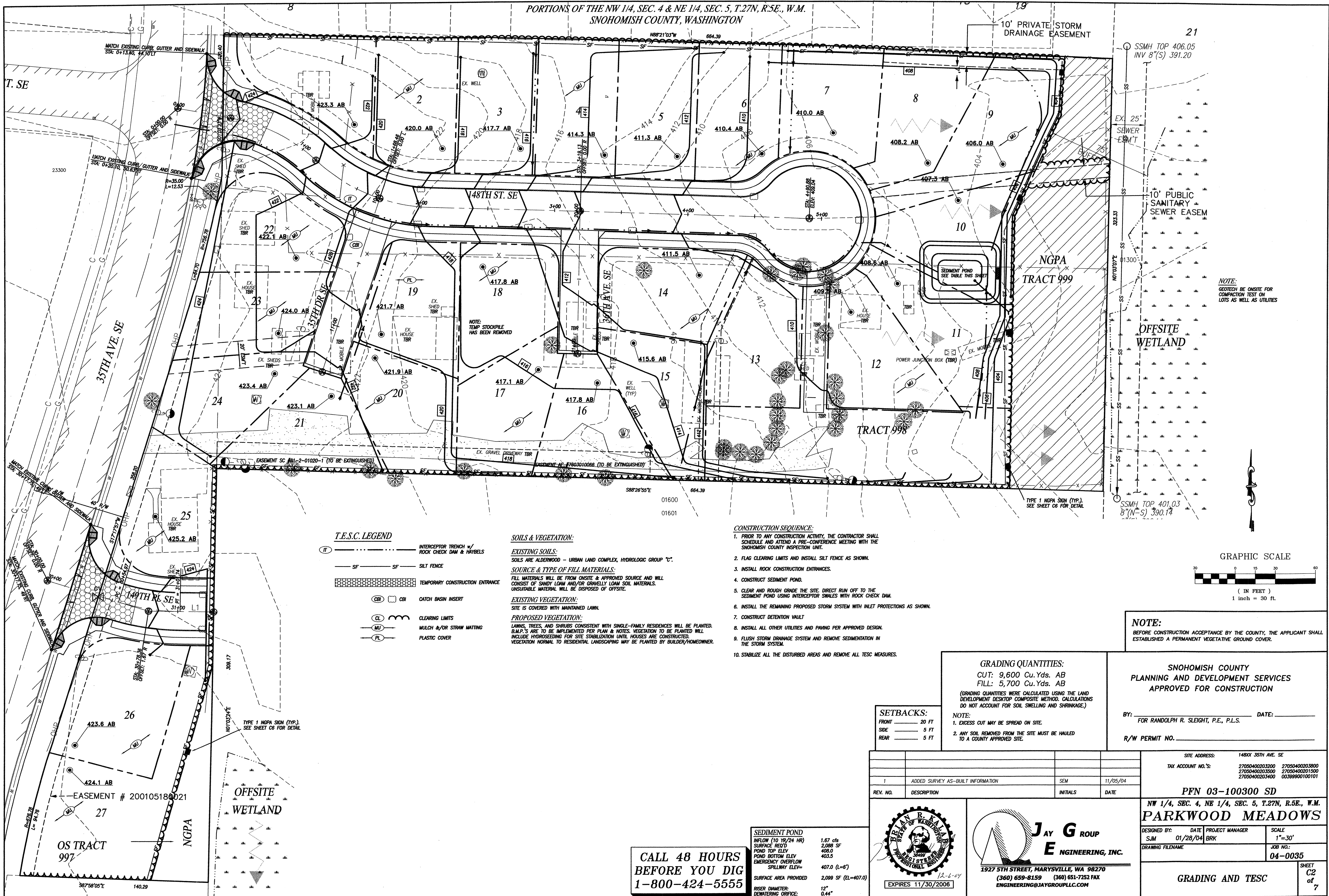


PORTIONS OF THE NW 1/4, SEC. 4 & NE 1/4, SEC. 5, T.27N, R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON



NOTE:
GEOTECH BE ONSITE FOR
COMPACTION TEST ON
LOTS AS WELL AS UTILITIES

OFFSITE
WETLAND

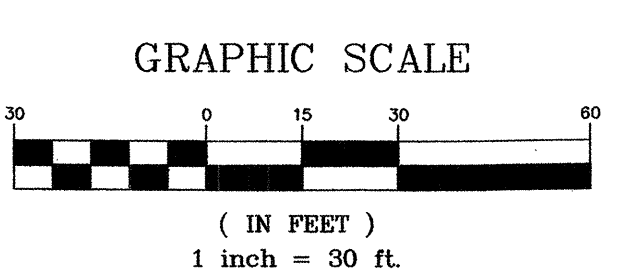
SSMH TOP 401.03
8"(N-S) 390.14

T.E.S.C. LEGEND

(IT)	INTERCEPTOR TRENCH w/ ROCK CHECK DAM & HAYBELS
SF	SILT FENCE
(Pattern)	TEMPORARY CONSTRUCTION ENTRANCE
(CBI)	CATCH BASIN INSERT
(CL)	CLEARING LIMITS
(MU)	MULCH &/OR STRAW MATTING
(PL)	PLASTIC COVER

SOILS & VEGETATION:
EXISTING SOILS:
SOILS ARE ALDERWOOD - URBAN LAND COMPLEX, HYDROLOGIC GROUP "C".
SOURCE & TYPE OF FILL MATERIALS:
FILL MATERIALS WILL BE FROM ONSITE & APPROVED SOURCE AND WILL CONSIST OF SANDY LOAM AND/OR GRAVELLY LOAM SOIL MATERIALS. UNSUITABLE MATERIAL WILL BE DISPOSED OF OFFSITE.
EXISTING VEGETATION:
SITE IS COVERED WITH MAINTAINED LAWN.
PROPOSED VEGETATION:
LAWNS, TREES, AND SHRUBS CONSISTENT WITH SINGLE-FAMILY RESIDENCES WILL BE PLANTED. B.M.P.'S ARE TO BE IMPLEMENTED PER PLAN & NOTES. VEGETATION TO BE PLANTED WILL INCLUDE HYDROSEEDING FOR SITE STABILIZATION UNTIL HOUSES ARE CONSTRUCTED. VEGETATION NORMAL TO RESIDENTIAL LANDSCAPING MAY BE PLANTED BY BUILDER/HOMEOWNER.

- CONSTRUCTION SEQUENCE:**
1. PRIOR TO ANY CONSTRUCTION ACTIVITY, THE CONTRACTOR SHALL SCHEDULE AND ATTEND A PRE-CONFERENCE MEETING WITH THE SNOHOMISH COUNTY INSPECTION UNIT.
 2. FLAG CLEARING LIMITS AND INSTALL SILT FENCE AS SHOWN.
 3. INSTALL ROCK CONSTRUCTION ENTRANCES.
 4. CONSTRUCT SEDIMENT POND.
 5. CLEAR AND ROUGH GRADE THE SITE. DIRECT RUN OFF TO THE SEDIMENT POND USING INTERCEPTOR SWALES WITH ROCK CHECK DAM.
 6. INSTALL THE REMAINING PROPOSED STORM SYSTEM WITH INLET PROTECTIONS AS SHOWN.
 7. CONSTRUCT DETENTION VAULT
 8. INSTALL ALL OTHER UTILITIES AND PAVING PER APPROVED DESIGN.
 9. FLUSH STORM DRAINAGE SYSTEM AND REMOVE SEDIMENTATION IN THE STORM SYSTEM.
 10. STABILIZE ALL THE DISTURBED AREAS AND REMOVE ALL TESC MEASURES.



NOTE:
BEFORE CONSTRUCTION ACCEPTANCE BY THE COUNTY, THE APPLICANT SHALL ESTABLISHED A PERMANENT VEGETATIVE GROUND COVER.

GRADING QUANTITIES:
CUT: 9,600 Cu.Yds. AB
FILL: 5,700 Cu.Yds. AB
(GRADING QUANTITIES WERE CALCULATED USING THE LAND DEVELOPMENT DESKTOP COMPOSITE METHOD. CALCULATIONS DO NOT ACCOUNT FOR SOIL SWELLING AND SHRINKAGE.)

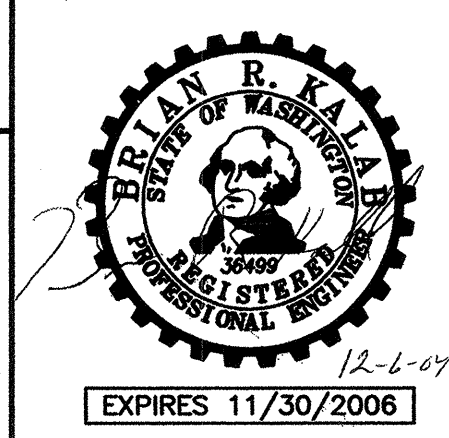
SNOHOMISH COUNTY
PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

BY: _____ DATE: _____
FOR RANDOLPH R. SLEIGHT, P.E., P.L.S.

R/W PERMIT NO. _____

SETBACKS:
FRONT 20 FT
SIDE 5 FT
REAR 5 FT

REV. NO.	DESCRIPTION	INITIALS	DATE
1	ADDED SURVEY AS-BUILT INFORMATION	SEM	11/05/04



JAY G. ROUP
E ENGINEERING, INC.
1927 5TH STREET, MARYSVILLE, WA 98270
(360) 659-8159 (360) 651-7252 FAX
ENGINEERING@JAYGROUP.LLC.COM

SITE ADDRESS: 148X 35TH AVE. SE	
TAX ACCOUNT NO.'S:	27050400203200 27050400203800 27050400203300 27050400201500 27050400203400 00399900100101
PFN 03-100300 SD	
NW 1/4, SEC. 4, NE 1/4, SEC. 5, T.27N, R.5E., W.M. PARKWOOD MEADOWS	
DESIGNED BY: S.J.M.	DATE: 01/28/04
PROJECT MANAGER: BRK	SCALE: 1"=30'
DRAWING FILENAME:	JOB NO.: 04-0035
GRADING AND TESC	
SHEET C2 of 7	

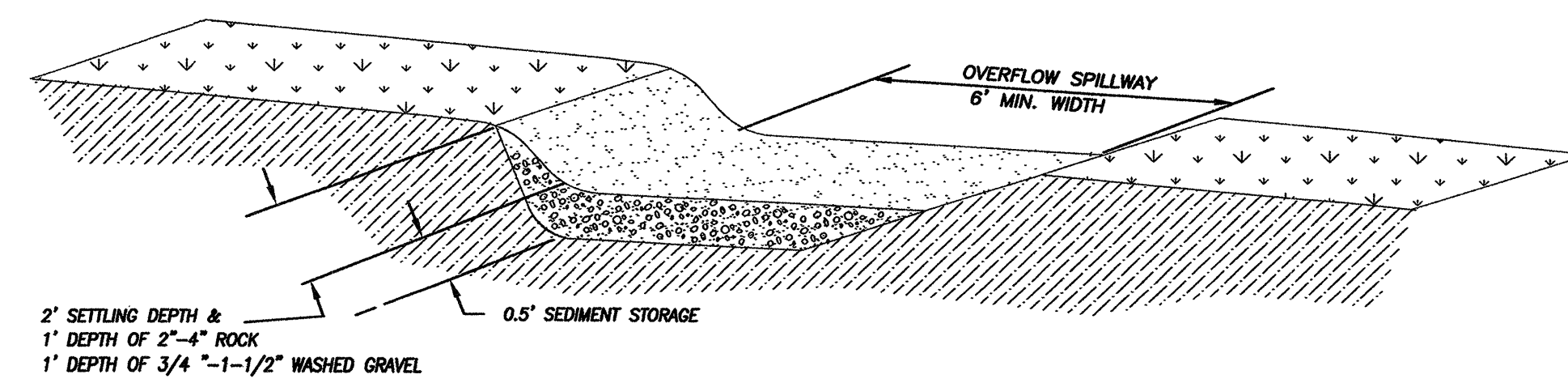
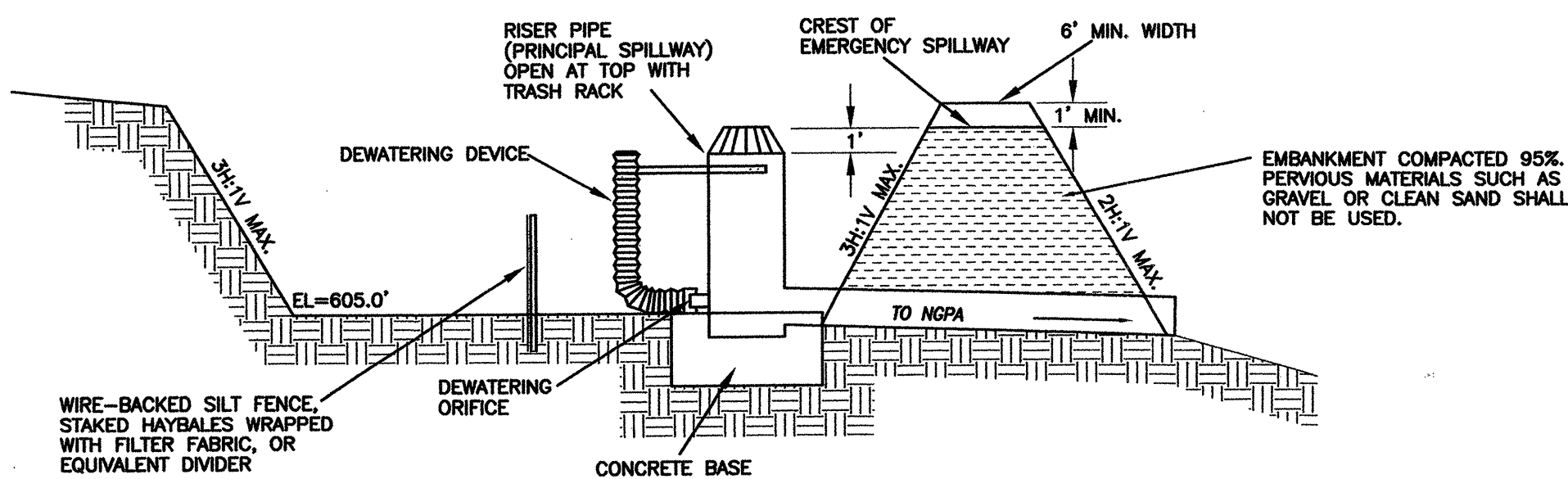
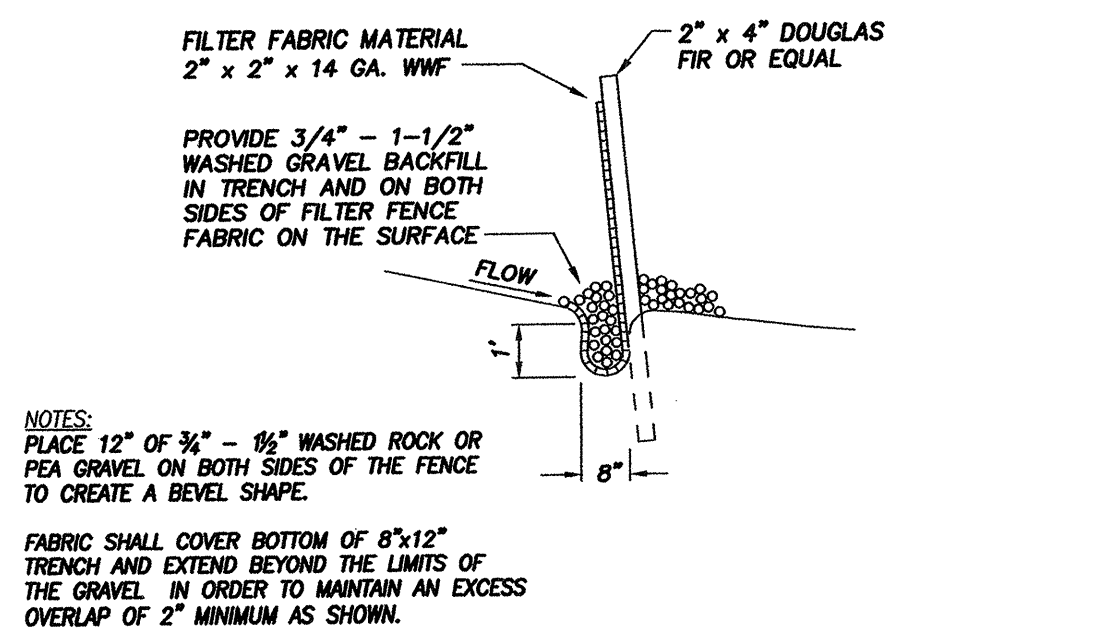
CALL 48 HOURS
BEFORE YOU DIG
1-800-424-5555

SEDIMENT POND
INFLOW (10 YR/24 HR) 1.67 cfs
SURFACE RED'D 2,088 SF
POND TOP ELEV 408.0
POND BOTTOM ELEV 403.5
EMERGENCY OVERTFLOW SPILLWAY ELEV= 407.0 (L=6')
SURFACE AREA PROVIDED 2,099 SF (EL.=407.0)
RISER DIAMETER: 12"
DEWATERING ORIFICE: 0.44"

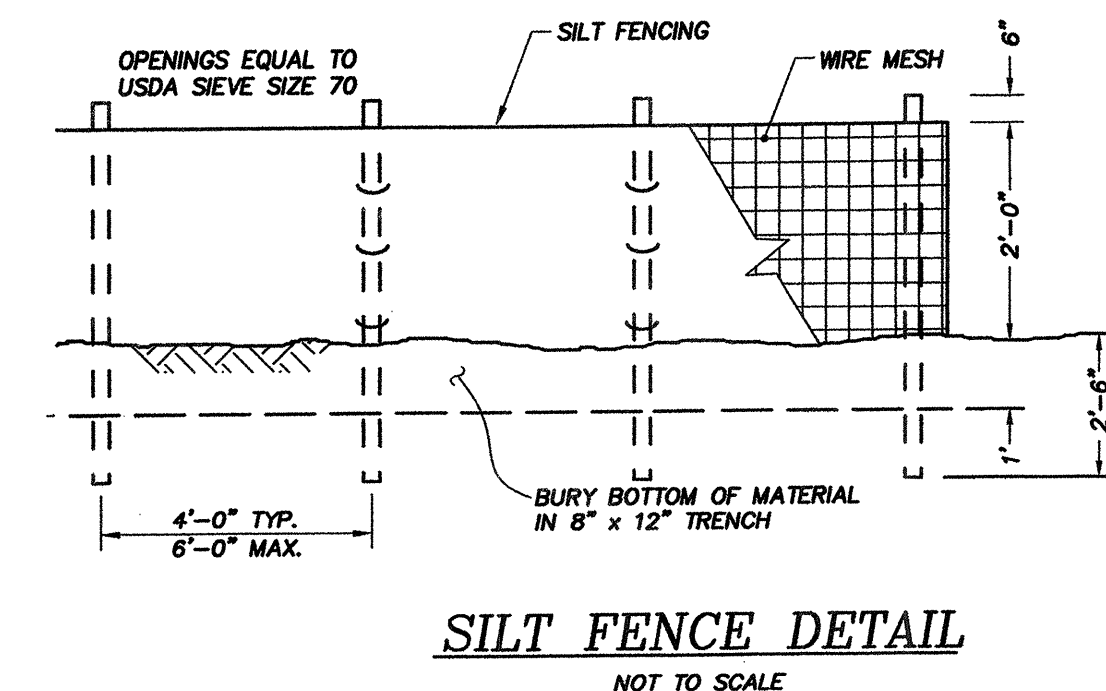
STONEHEDGE

HDEV-2229

PORTIONS OF THE NW 1/4, SEC. 4 & NE 1/4, SEC. 5, T.27N, R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON

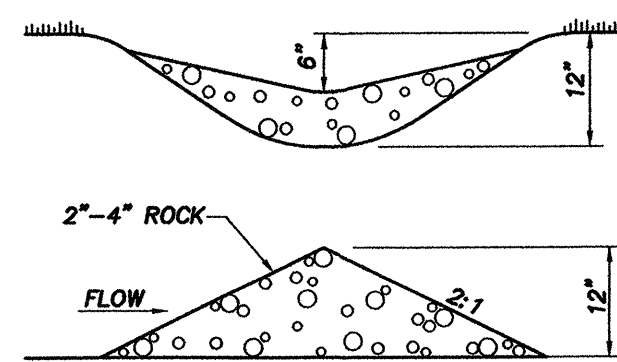


EMERGENCY OVERFLOW DETAIL:
NOT TO SCALE

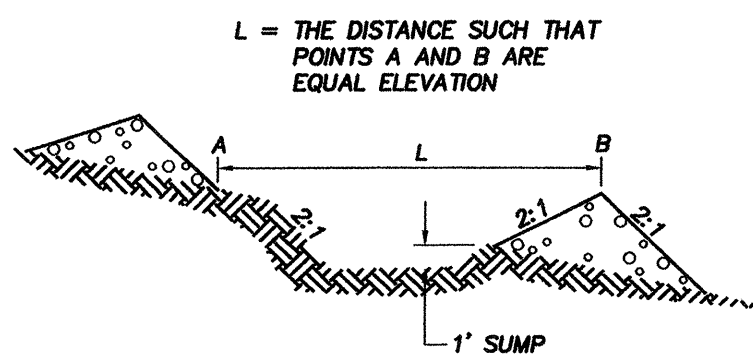


SILT FENCE DETAIL
NOT TO SCALE

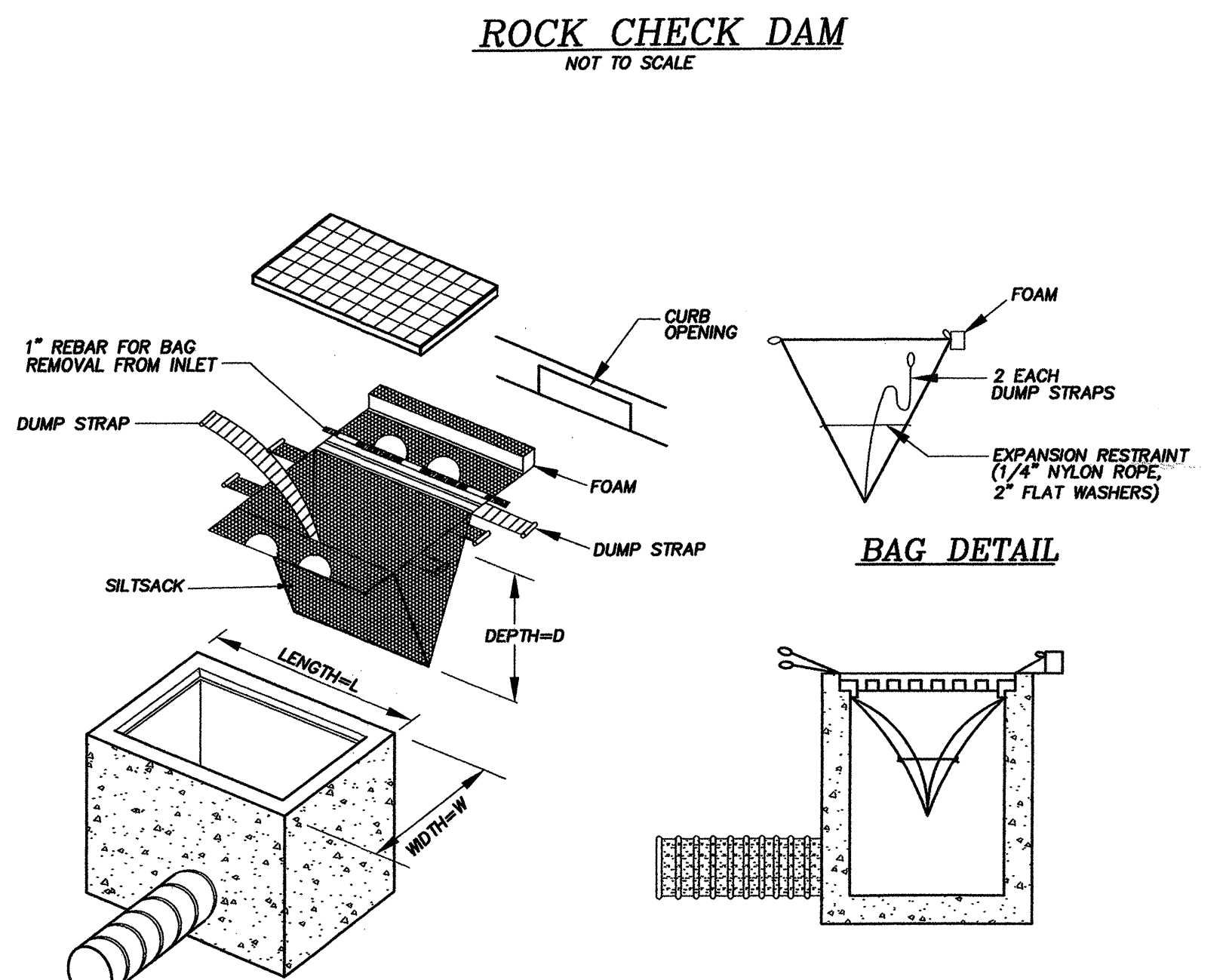
TEMPORARY RISER DETAIL
NOT TO SCALE



ROCK CHECK DAM



SPACING BETWEEN CHECK DAMS



CATCH BASIN INSERT
NOT TO SCALE

ROCK CHECK DAM
NOT TO SCALE

CONTRACTOR RESPONSIBILITY FOR EROSION/SILTATION CONTROL

- IT IS THE INTENT OF THIS TEMPORARY EROSION AND SILTATION CONTROL PLAN THAT STORM WATER RUNOFF BE CONTROLLED AT ALL TIMES TO PREVENT SOIL EROSION AND TO MAINTAIN WATER QUALITY. ANY AND ALL MEASURES NECESSARY TO DO SO SHALL BE EMPLOYED BY THE CONTRACTOR.
- REGARDLESS OF SITE, WEATHER, SOIL OR OTHER CONDITIONS, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ENSURING THAT EROSION DOES NOT OCCUR ON THE SITE AND THAT POLLUTED OR SILT-LADEN RUNOFF DOES NOT LEAVE THE SITE OR ENTER INTO ANY CREEK, STREAM, WETLAND OR WATER BODY.
 - BEYOND THE MINIMUM REQUIREMENTS SHOWN ON THIS PLAN, THE CONTRACTOR SHALL BE RESPONSIBLE FOR SELECTING AND IMPLEMENTING APPROPRIATE METHODS, "BEST MANAGEMENT PRACTICES" (BMPs), FOR STORM WATER TREATMENT AND CONTROL THAT MEETS THE REQUIREMENTS OF BOTH THE WASHINGTON STATE DEPARTMENT OF ECOLOGY AND SNOHOMISH COUNTY.
 - THE CONTRACTOR SHALL REPORT ALL WATER QUALITY CONCERNS AND ACTIVITIES TO THE PROJECT ENGINEER AND TO SNOHOMISH COUNTY. IN THE EVENT THAT THE INSTALLED WATER QUALITY CONTROL MEASURES ARE INEFFECTIVE AT CONTROLLING EROSION AND SILTATION, THE CONTRACTOR SHALL IMMEDIATELY REPORT TO AND CONSULT WITH THE PROJECT ENGINEER TO FIND AN APPROPRIATE REMEDY. ALL CONSTRUCTION ACTIVITIES, WITH THE EXCEPTION OF EROSION AND SILTATION CONTROL MEASURES, SHALL CEASE UNTIL SUCH TIME AS THE WATER QUALITY IS BROUGHT UNDER CONTROL.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR MONITORING WEATHER FORECASTS AND STORM ACTIVITY AND SHALL SCHEDULE ALL PROJECT ACTIVITIES IN ANTICIPATION OF THE WEATHER.
 - ALL SUPPLIES AND MATERIALS NECESSARY FOR IMPLEMENTING BMPs SHALL BE STORED ON SITE AND SHALL BE IMMEDIATELY AVAILABLE FOR USE. SUCH SUPPLIES AND MATERIALS SHALL INCLUDE, BUT NOT BE LIMITED TO, STRAW BALES OR OTHER MULCHING MATERIAL, SILT FENCING AND STAKES, FILTER FABRIC, ETC.
 - DURING AND AFTER RUNOFF PRODUCING STORM EVENTS, CONTRACTOR SHALL MONITOR ALL EROSION CONTROL MEASURES AND SHALL PRIORITIZE IMPLEMENTATION AND MAINTENANCE OF EROSION AND SILTATION CONTROL MEASURES ABOVE ALL OTHERS.
 - THE CONTRACTOR SHALL PROVIDE VERIFICATION TO THE COUNTY THAT AN EROSION CONTROL SPECIALIST HAS BEEN OBTAINED TO REVIEW SITE CONDITIONS, PRIOR TO CONSTRUCTION.

STAND PIPE AND SEDIMENT TRAP MAINTENANCE

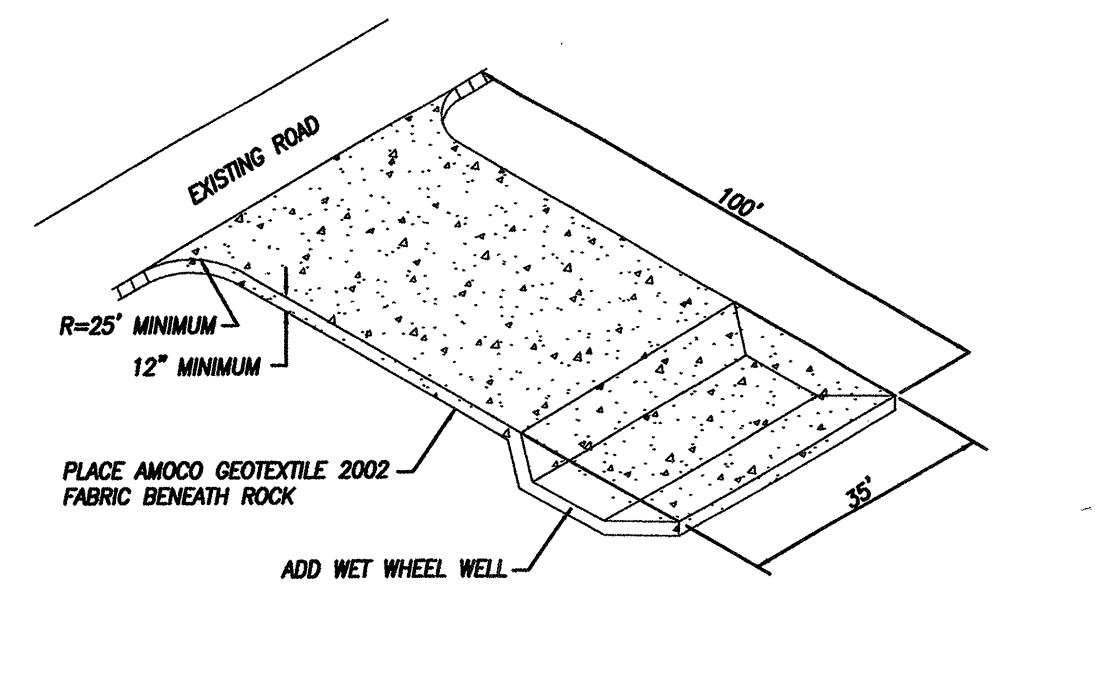
- THE EMBANKMENT OF THE BASIN SHOULD BE CHECKED REGULARLY TO INSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT. THE EMERGENCY SPILLWAY SHOULD BE CHECKED REGULARLY TO INSURE THAT ITS LINING IS WELL ESTABLISHED AND EROSION-RESISTANT. THE SILTATION BASIN SHOULD BE CHECKED AFTER EACH RUNOFF-PRODUCING RAINFALL FOR SEDIMENT CLEAN OUT. WHEN THE SEDIMENT REACHES THE CLEAN OUT LEVEL, IT SHALL BE REMOVED AND PROPERLY DISPOSED.

MAINTENANCE OF SILTATION BARRIERS

- SILTATION BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BARRIERS, END RUNS AND UNDERCUTTING BENEATH BARRIERS. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF BARRIERS SHALL BE ACCOMPLISHED PROMPTLY. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.

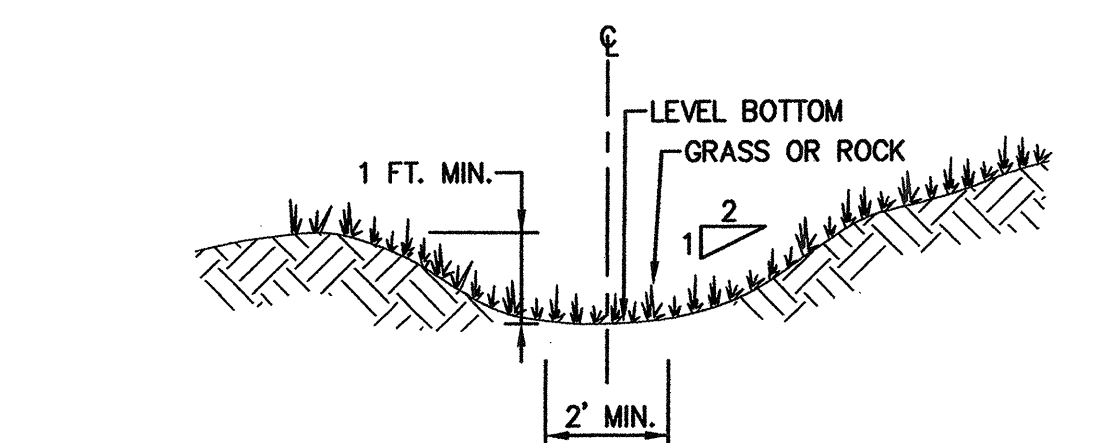
PERMANENT COVER BMP (HYDROSEEDING GENERAL NOTES)

- CONSTRUCTION ACCEPTANCE: WILL BE SUBJECT TO A WELL ESTABLISHED GROUND COVER THAT FULFILLS THE REQUIREMENT OF THE APPROVED CONSTRUCTION PLANS AND TITLE 30.63B, SNOHOMISH COUNTY DRAINAGE ORDINANCE.
- ALL DISTURBED AREAS SUCH AS DETENTION FACILITIES ROADWAY BACK-SLOPES, ETC. SHALL BE SEEDING WITH A PERENNIAL GROUND COVER GRASS TO MINIMIZE EROSION. GRASS SEEDING WILL BE DONE USING AN APPROVED HYDROSEEDER OR AS OTHERWISE APPROVED BY SNOHOMISH COUNTY.
- PREPARATION OF SURFACE: ALL AREAS TO BE SEEDING SHALL BE CULTIVATED TO THE SATISFACTION OF THE COUNTY INSPECTOR. THIS MAY BE ACCOMPLISHED BY DISKING, PARKING, HARROWING OR OTHER ACCEPTABLE MEANS.
- IMMEDIATELY FOLLOWING FINISH GRADING PERMANENT VEGETATION (CONSISTING OF RAPID PERSISTENT AND LEGGING) WILL BE APPLIED. THIS IS TO INCLUDE THE FOLLOWING:
20% ANNUAL, PERENNIAL OR HYBRID RYE GRASS, 40% CREEPING RED FESCUE, 40% WHITE CLOVER.
- FERTILIZER SHALL BE APPLIED AT 400# PER ACRE OF 10-20-20 (10LB. PER 1,100 SQUARE FEET) OR EQUIVALENT.
- TIME OF PLANTING - PLANNING SHOULD PREFERABLY BE DONE BETWEEN APRIL 1 AND JUNE 30, AND SEPTEMBER 1 THROUGH OCTOBER 31. IF PLANTING IS DONE IN THE MONTHS OF JULY AND AUGUST, IRRIGATION MAY BE REQUIRED. IF PLANTING IS DONE BETWEEN NOVEMBER 1 AND MARCH 31, MULCHING SHALL BE REQUIRED IMMEDIATELY AFTER PLANTING.

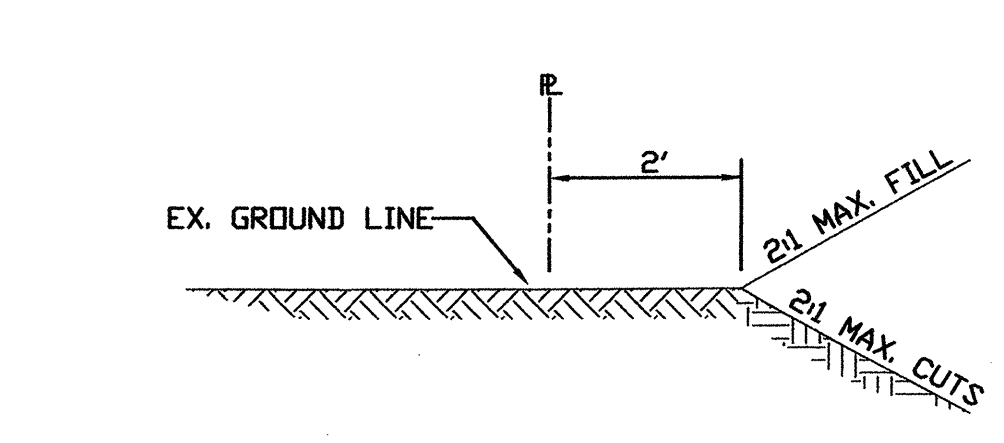


- NOTES:
- INSTALLATION: THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS AND OTHER OBJECTIONABLE MATERIAL. THE GRAVEL SHALL BE PLACED TO THE SPECIFIED DIMENSIONS. ANY DRAINAGE FACILITIES REQUIRED BECAUSE OF WASHING SHOULD BE CONSTRUCTED ACCORDING TO SPECIFICATIONS IN THE PLAN. IF WASH RACKS ARE USED, THEY SHOULD BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS.
 - AGGREGATE: 4" TO 6" CRUSHED BALLAST ROCK WSDOT STANDARD SPECIFICATION 9-03.9 (1)
 - ENTRANCE DIMENSIONS: THE AGGREGATE LAYER MUST BE AT LEAST 6 INCHES THICK. IT MUST EXTEND THE FULL WIDTH OF THE VEHICULAR INGRESS AND EGRESS AREA. THE LENGTH OF THE ENTRANCE MUST BE AT LEAST 50 FEET.
 - WASHING: IF CONDITIONS ON THE SITE ARE SUCH THAT MOST OF THE MUD IS NOT REMOVED FROM VEHICLE TIRES BY CONTACT WITH THE GRAVEL, THEN THE TIRES MUST BE WASHED BEFORE VEHICLES ENTER A PUBLIC ROAD. WASH WATER MUST BE CARRIED AWAY FROM THE ENTRANCE TO A SETTLING AREA TO REMOVE SEDIMENT. A WASH RACK MAY ALSO BE USED TO MAKE WASHING MORE CONVENIENT AND EFFECTIVE.
 - MAINTENANCE: THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN OUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED OR TRACKED FROM VEHICLES ONTO ROADWAY OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.

TEMPORARY CONSTRUCTION ENTRANCE
NOT TO SCALE



TEMPORARY INTERCEPTOR TRENCH SECTION
NOT TO SCALE



TYPICAL CONSTRUCTION SETBACK DETAIL
NOT TO SCALE

REV. NO.	DESCRIPTION	INITIALS	DATE
1	ADDED SURVEY AS-BUILT INFORMATION	SEM	11/05/04

EXPIRES 11/30/2006

JAY G. ROUP
E. ENGINEERING, INC.

1927 5TH STREET, MARYSVILLE, WA 98270
(360) 659-8159 (360) 651-7252 FAX
ENGINEERING@JAYGROUP.LLC.COM

CALL 48 HOURS
BEFORE YOU DIG
1-800-424-5555

SNOHOMISH COUNTY
PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

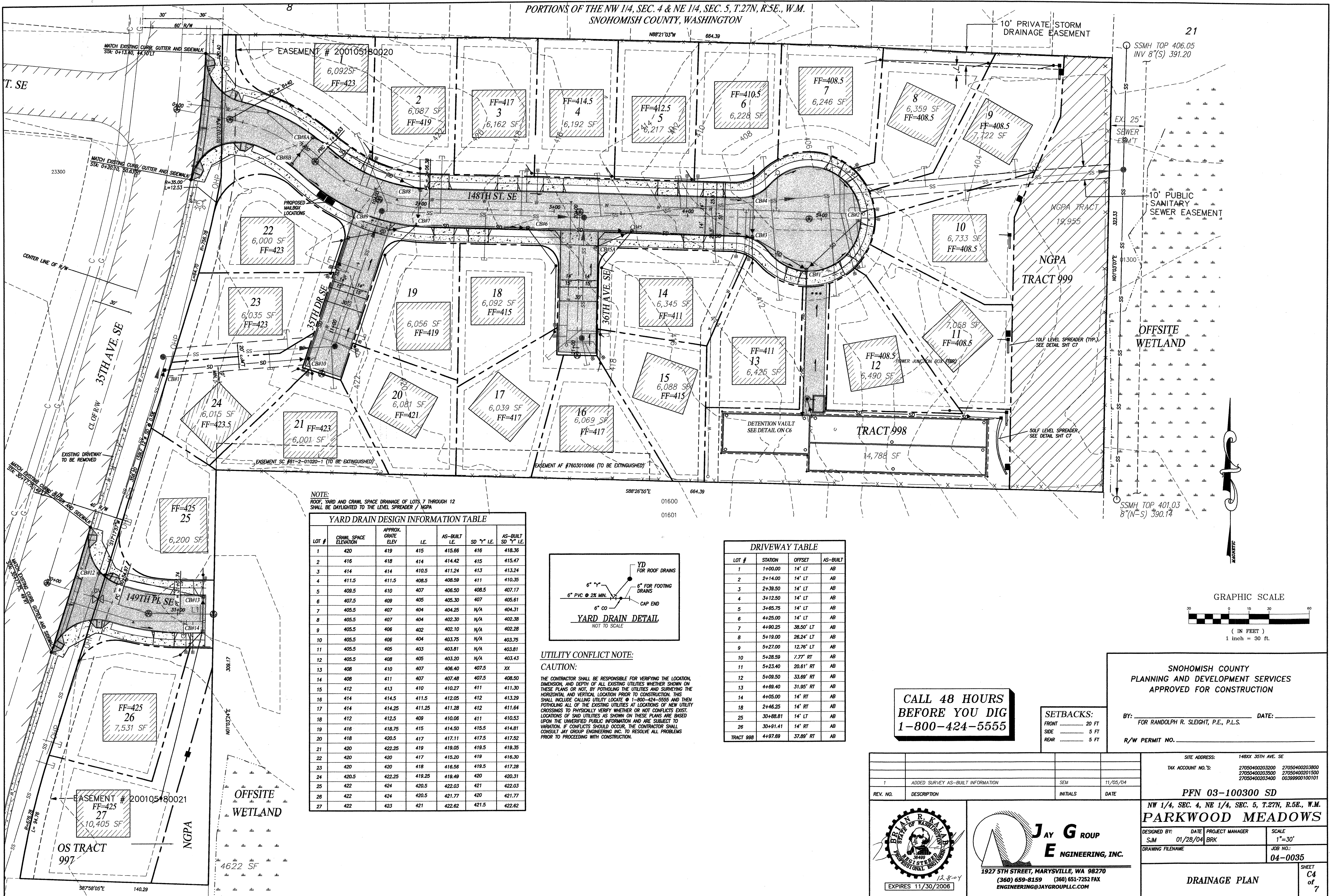
BY: _____ DATE: _____
FOR RANDOLPH R. SLEIGHT, P.E., P.L.S.
R/W PERMIT NO. _____

SITE ADDRESS: 1480' 35TH AVE. SE	
TAX ACCOUNT NO.'S:	27050400203200 27050400203800 27050400203500 27050400201500 27050400203400 0039900100101
PFN 03-100300 SD	
NW 1/4, SEC. 4, NE 1/4, SEC. 5, T.27N, R.5E., W.M. PARKWOOD MEADOWS	
DESIGNED BY: SJM	DATE: 01/28/04
PROJECT MANAGER: BRK	SCALE: -
DRAWING FILENAME:	JOB NO.: 04-0035
GRADING AND TESC NOTES AND DETAILS	
SHEET C3 of 7	

STONE HEDGE

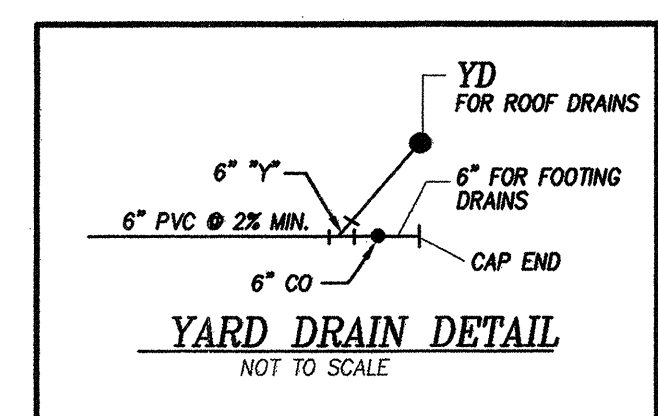
HDEV-2230

PORTIONS OF THE NW 1/4, SEC. 4 & NE 1/4, SEC. 5, T.27N, R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON



NOTE:
ROOF, YARD AND CRAWL SPACE DRAINAGE OF LOTS 7 THROUGH 12
SHALL BE DRAUGHTED TO THE LEVEL SPREADER @ NGPA

YARD DRAIN DESIGN INFORMATION TABLE						
LOT #	CRAWL SPACE ELEVATION	APPROX. GRAVE ELEV.	I.E.	AS-BUILT I.E.	SD "Y" I.E.	AS-BUILT SD "Y" I.E.
1	420	419	415	415.66	416	418.36
2	416	418	414	414.42	415	415.47
3	414	414	410.5	411.24	413	413.24
4	411.5	411.5	408.5	408.59	411	410.35
5	409.5	410	407	406.50	408.5	407.17
6	407.5	409	405	405.30	407	405.61
7	405.5	407	404	404.25	N/A	404.31
8	405.5	407	404	402.30	N/A	402.38
9	405.5	408	402	402.10	N/A	402.28
10	405.5	406	404	403.75	N/A	403.75
11	405.5	405	403	403.81	N/A	403.81
12	405.5	408	405	403.20	N/A	403.43
13	408	410	407	406.40	407.5	XX
14	408	411	407	407.48	407.5	408.50
15	412	413	410	410.27	411	411.30
16	414	414.5	411.5	412.05	412	413.29
17	414	414.25	411.25	411.28	412	411.64
18	412	412.5	409	410.06	411	410.53
19	416	418.75	415	414.50	415.5	414.81
20	418	420.5	417	417.11	417.5	417.52
21	420	422.25	419	419.05	419.5	419.35
22	420	420	417	415.20	419	416.30
23	420	420	418	416.56	419.5	417.28
24	420.5	422.25	419.25	419.49	420	420.31
25	422	424	420.5	422.03	421	422.03
26	422	424	420.5	421.77	420	421.77
27	422	423	421	422.62	421.5	422.62



UTILITY CONFLICT NOTE:
CAUTION:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT, BY POT-HOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE @ 1-800-424-5555 AND THEN POT-HOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT JAY GROUP ENGINEERING INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

DRIVEWAY TABLE			
LOT #	STATION	OFFSET	AS-BUILT
1	1+00.00	14' LT	AB
2	2+14.00	14' LT	AB
3	2+38.50	14' LT	AB
4	3+12.50	14' LT	AB
5	3+46.75	14' LT	AB
6	4+25.00	14' LT	AB
7	4+90.25	38.50' LT	AB
8	5+19.00	26.24' LT	AB
9	5+27.00	12.76' LT	AB
10	5+28.59	7.77' RT	AB
11	5+23.40	20.61' RT	AB
12	5+09.50	33.69' RT	AB
13	4+69.40	31.95' RT	AB
14	4+05.00	14' RT	AB
18	2+46.25	14' RT	AB
25	30+88.81	14' LT	AB
26	30+91.41	14' RT	AB
TRACT 998	4+97.69	37.89' RT	AB

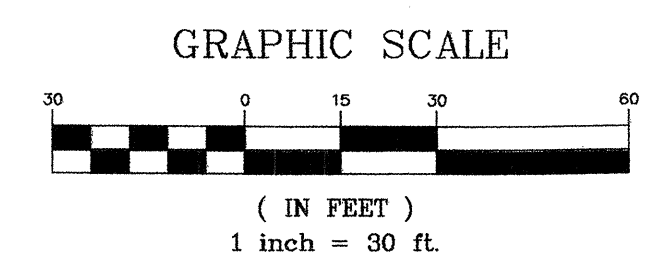
CALL 48 HOURS BEFORE YOU DIG
1-800-424-5555

SETBACKS:
FRONT 20 FT
SIDE 5 FT
REAR 5 FT

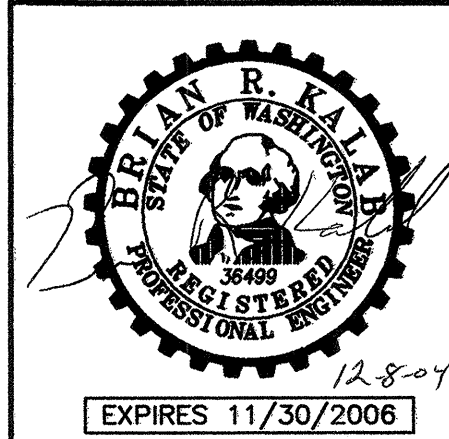
SNOHOMISH COUNTY
PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

BY: _____ DATE: _____
FOR RANDOLPH R. SLEIGHT, P.E., P.L.S.

R/W PERMIT NO. _____



SITE ADDRESS: 148XX 35TH AVE. SE		TAX ACCOUNT NO. S: 27050400203200 27050400203800 27050400203500 27050400201500 27050400203400 00389600100101	
REV. NO. 1		DESCRIPTION	INITIALS DATE
ADDED SURVEY AS-BUILT INFORMATION		SEM	11/05/04
PFN 03-100300 SD		NW 1/4, SEC. 4, NE 1/4, SEC. 5, T.27N, R.5E., W.M.	
PARKWOOD MEADOWS		DESIGNED BY: DATE PROJECT MANAGER SCALE 1"=30'	
DRAWING FILENAME		JOB NO: 04-0035	
SHEET 4 of 7		DRAINAGE PLAN	

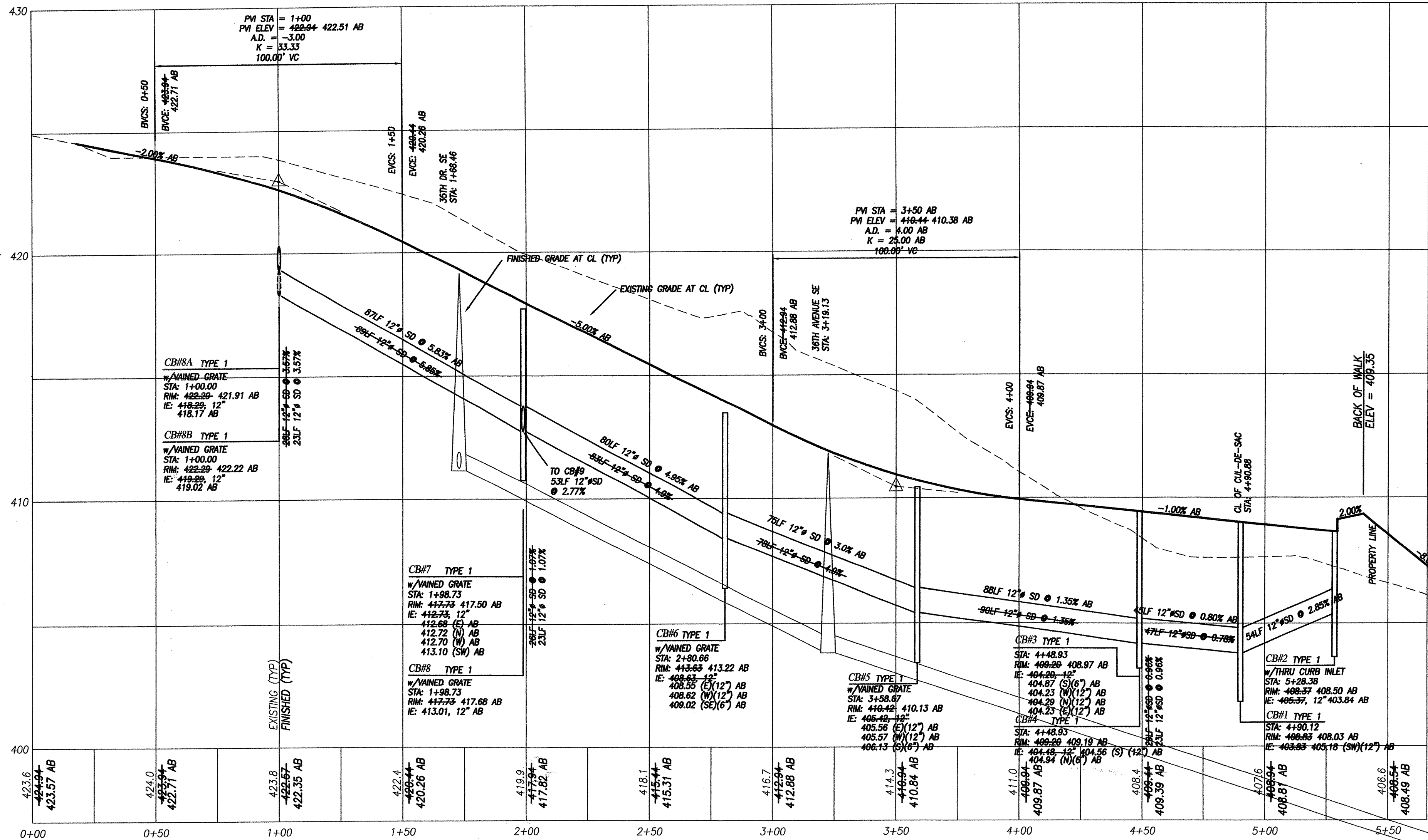


JAY GROUP ENGINEERING, INC.
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STONEHEDGE

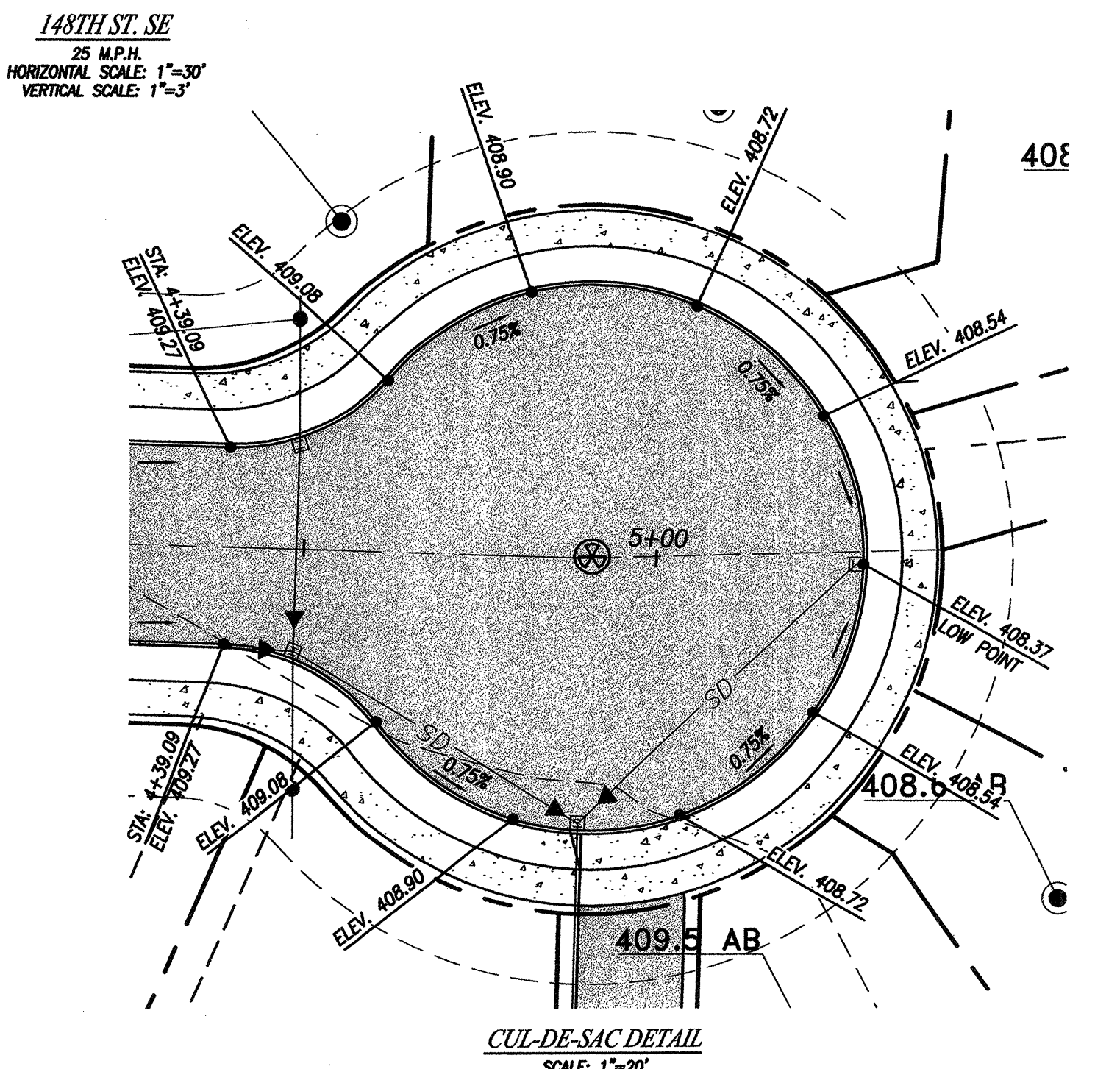
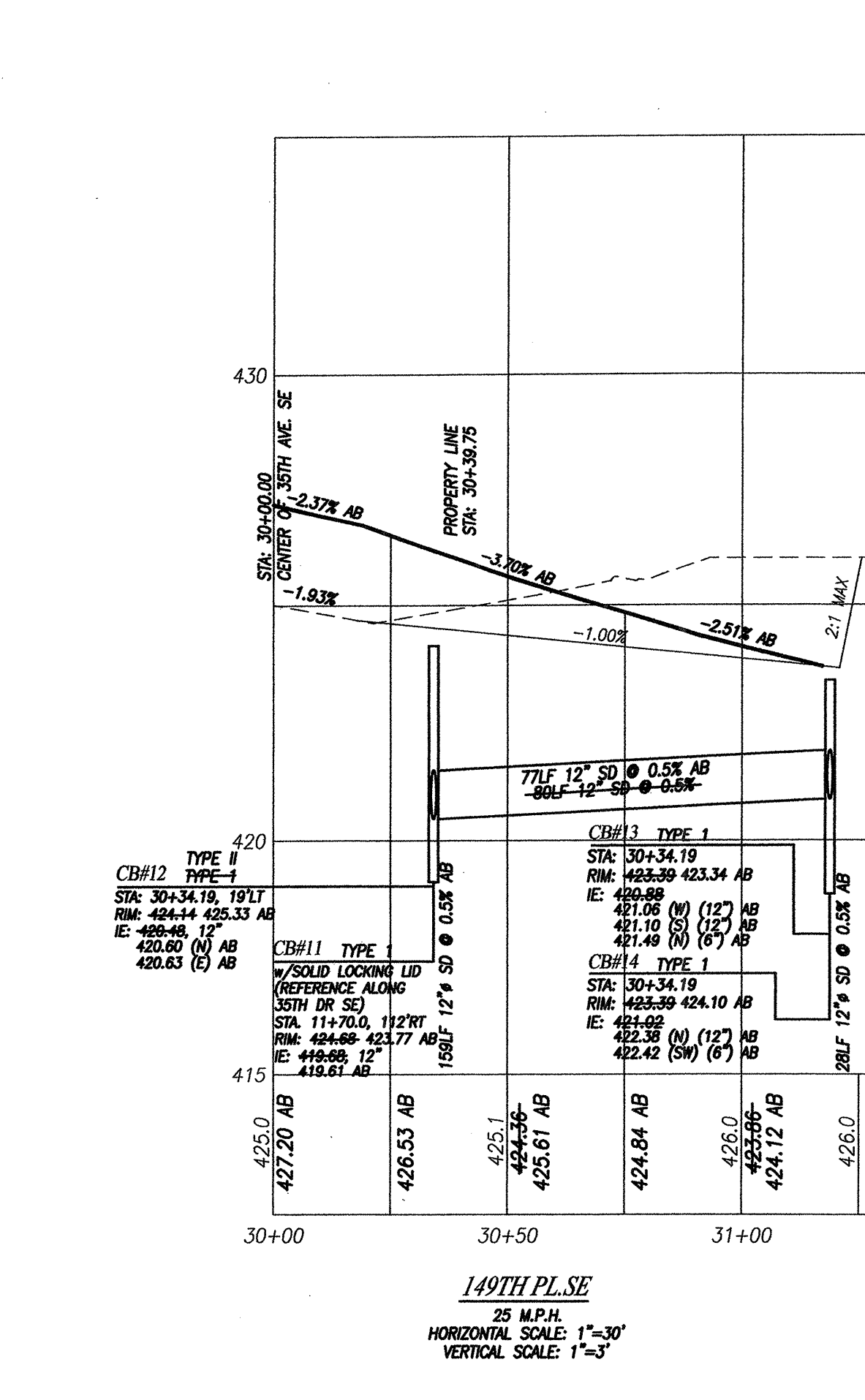
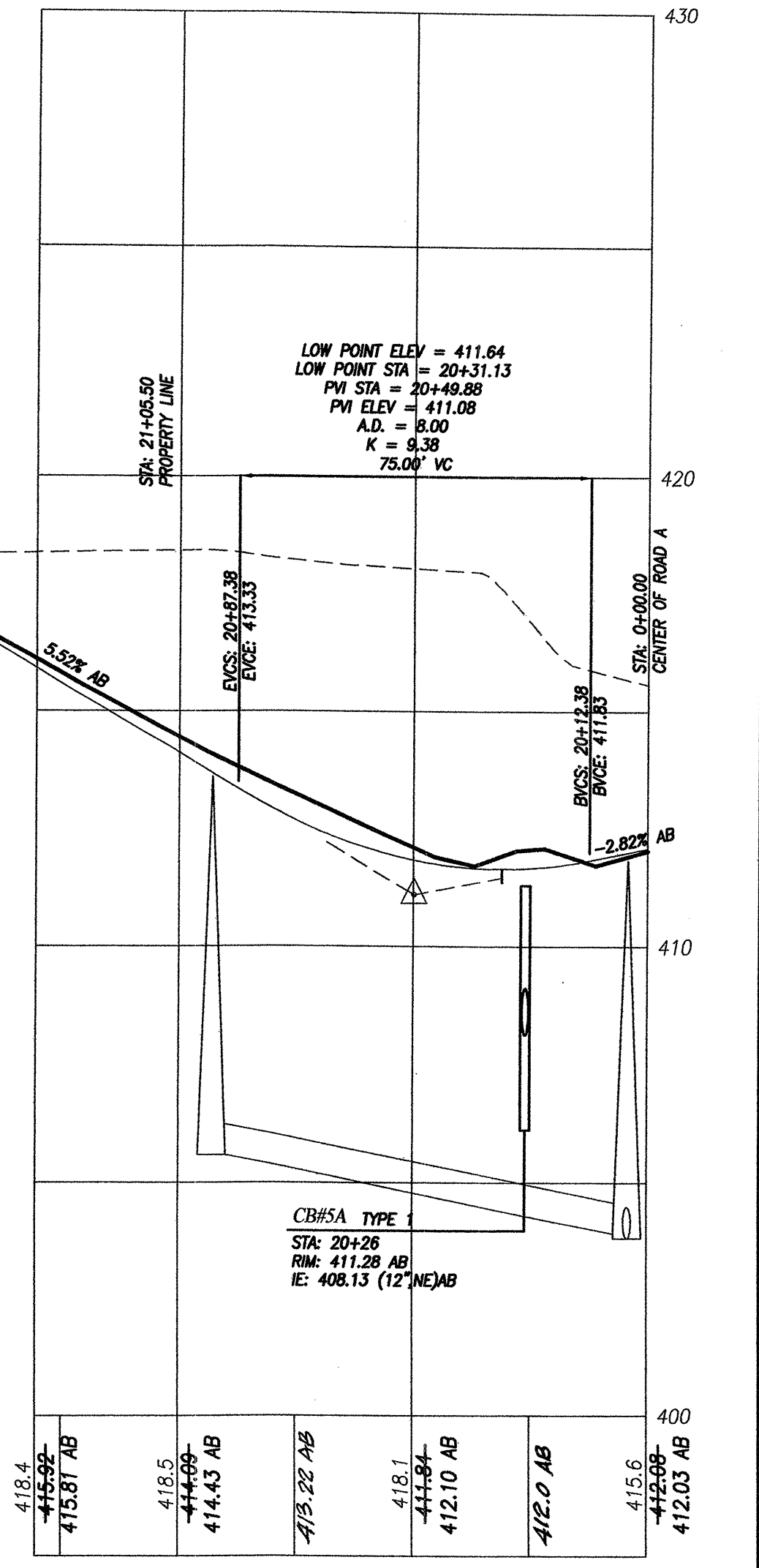
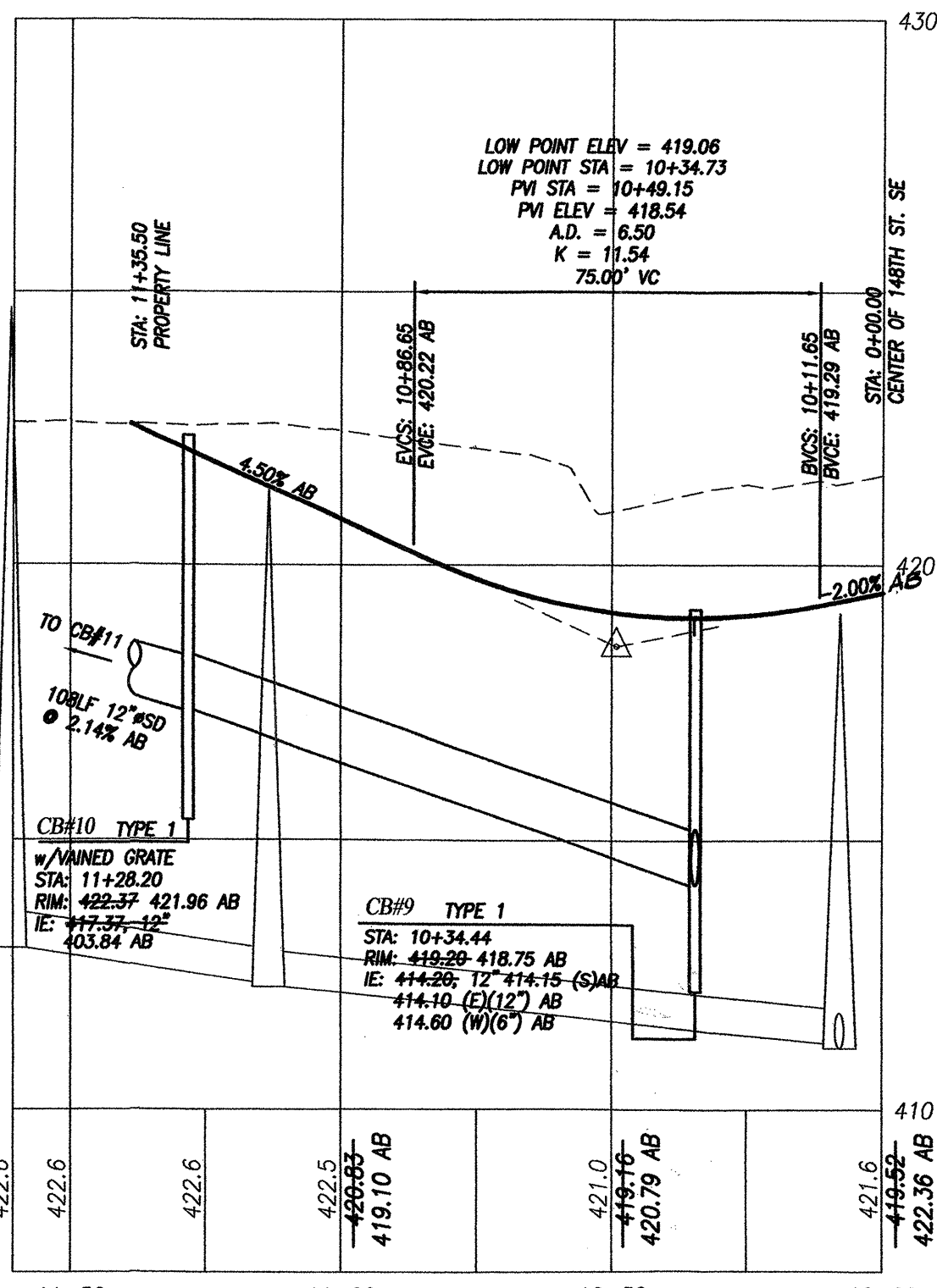
HDEV-2251

PORTIONS OF THE NW 1/4, SEC. 4 & NE 1/4, SEC. 5, T.27N, R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON



CATCH BASIN STRUCTURE OFFSET TABLE

STRUCTURE TYPE	CENTER OF STRUCTURE OFFSET FROM FACE OF VERT. CURB	CENTER OF STRUCTURE OFFSET FROM BACK OF 1.5' THICKENED EDGE
TYPE 1 w/820 GRATE	0.92	1.50'
TYPE 1 w/ THRU CURB INLET	0.65	N/A
TYPE 2, 48" w/820 GRATE	1.92	2.50'
TYPE 2, 48" w/THRU CURB INLET	1.65	N/A
TYPE 2, 54" w/820 GRATE	2.17	2.75'
TYPE 2, 54" w/THRU CURB INLET	1.90	N/A
TYPE 2, 60" w/820 GRATE	2.42	3.00'
TYPE 2, 60" w/THRU CURB INLET	2.15	N/A
TYPE 2, 72" w/820 GRATE	2.92	3.50'
TYPE 2, 72" w/THRU CURB INLET	2.65	N/A
TYPE 2, 96" w/820 GRATE	3.92	4.50'
TYPE 2, 96" w/THRU CURB INLET	3.65	N/A



UTILITY CONFLICT NOTE:
CAUTION:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT, BY POT-HOLING THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE @ 1-800-424-5555 AND THEN POT-HOLING ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT JAY GROUP ENGINEERING INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

CALL 48 HOURS BEFORE YOU DIG
1-800-424-5555

SETBACKS:
FRONT 20 FT
SIDE 5 FT
REAR 5 FT

SNOHOMISH COUNTY PLANNING AND DEVELOPMENT SERVICES APPROVED FOR CONSTRUCTION

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

REV. NO.	DESCRIPTION	INITIALS	DATE
1	ADDED SURVEY AS-BUILT INFORMATION	SEM	11/05/04



JAY GROUP ENGINEERING, INC.
1927 5TH STREET, MARYSVILLE, WA 98270
(360) 659-8159 (360) 651-7252 FAX
ENGINEERING@JAYGROUP.LLC.COM

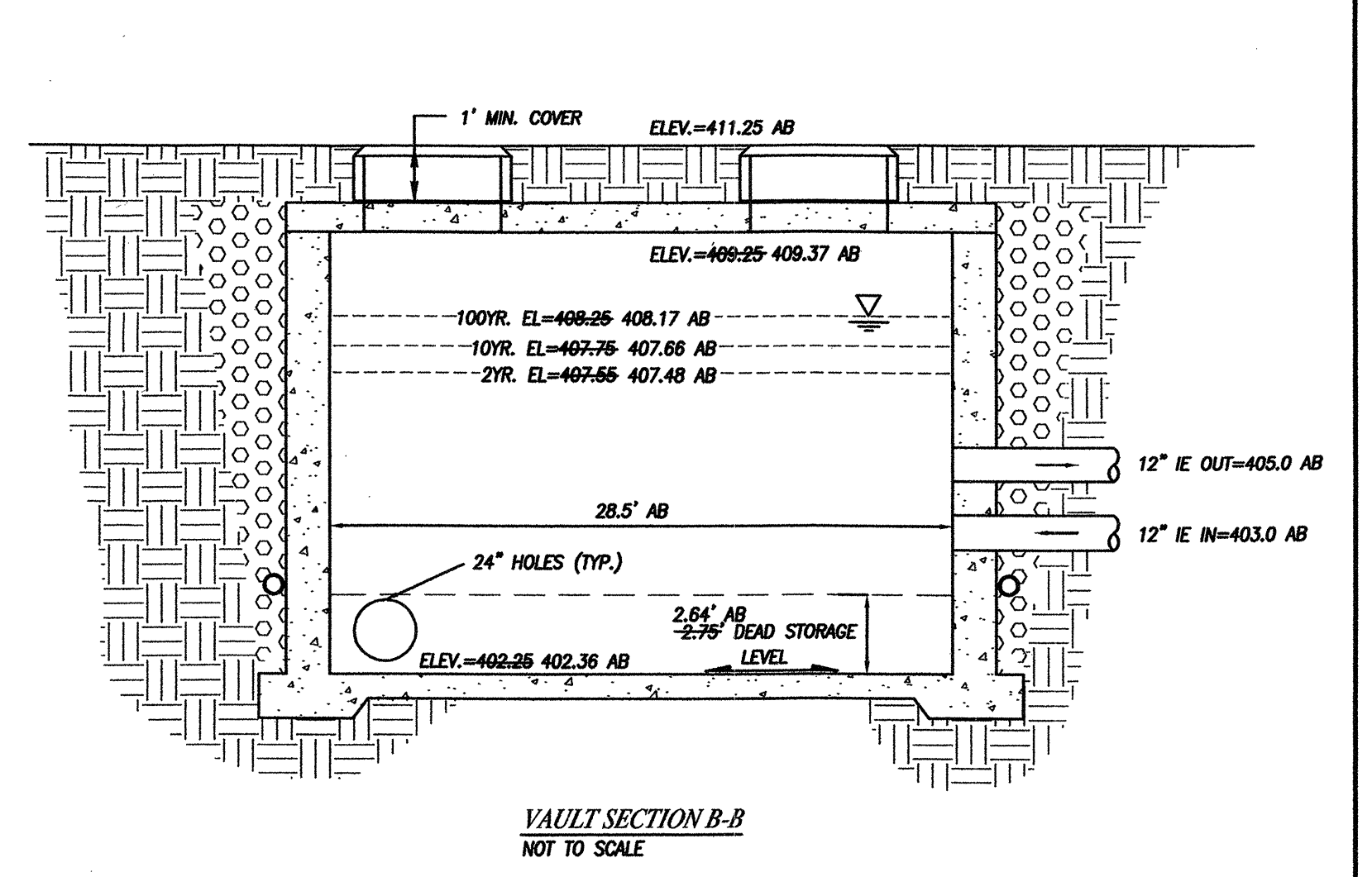
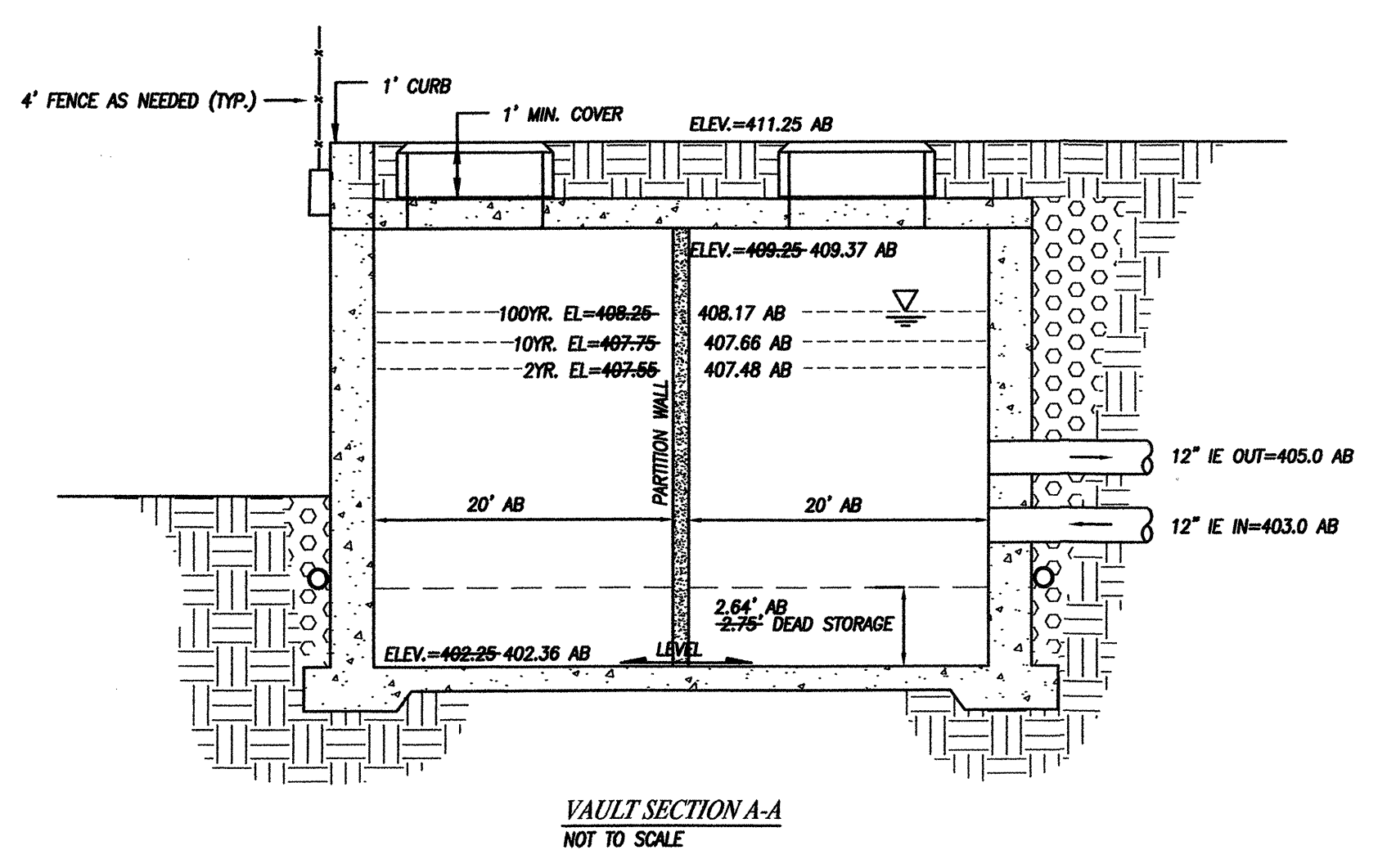
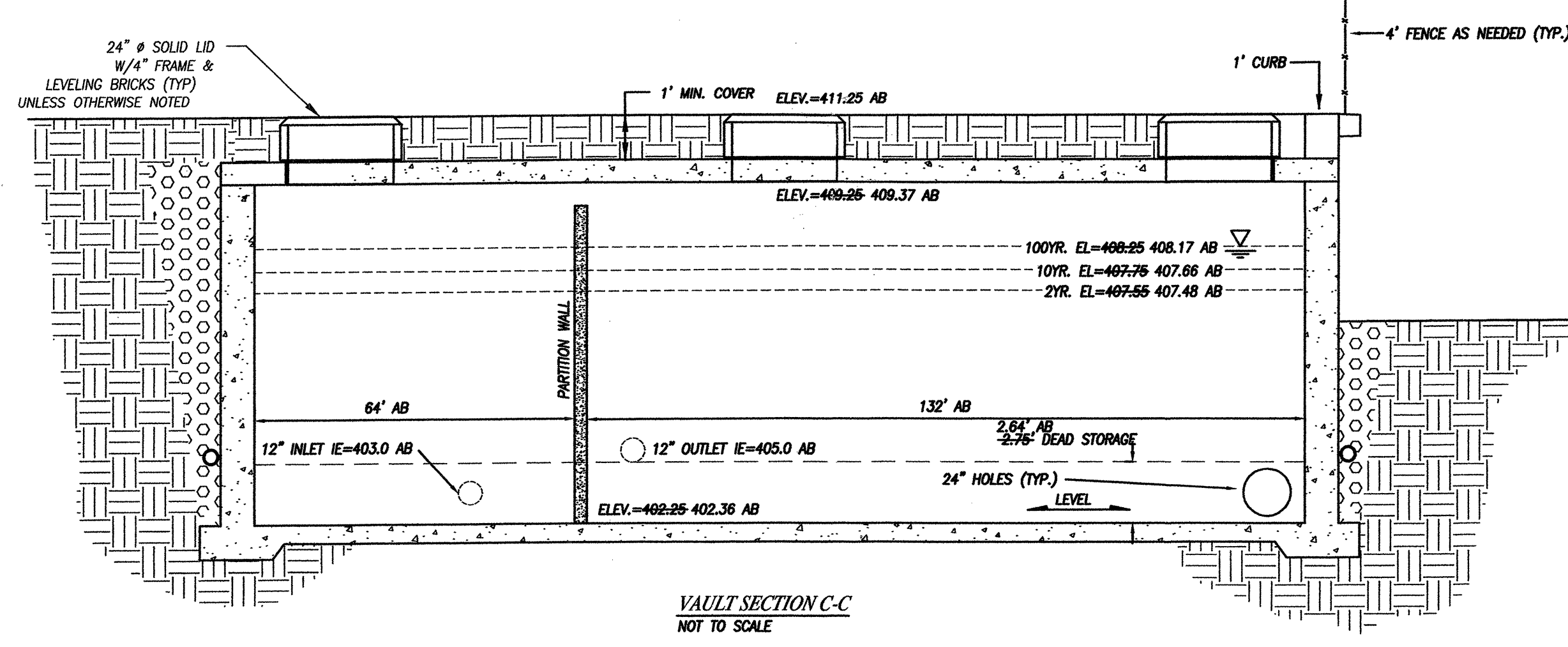
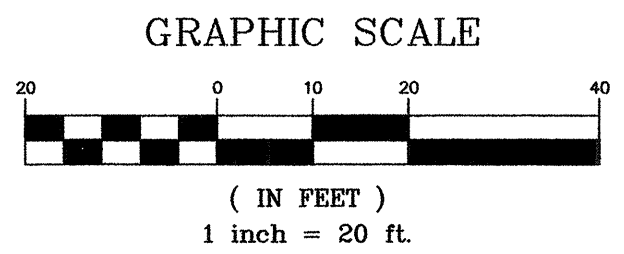
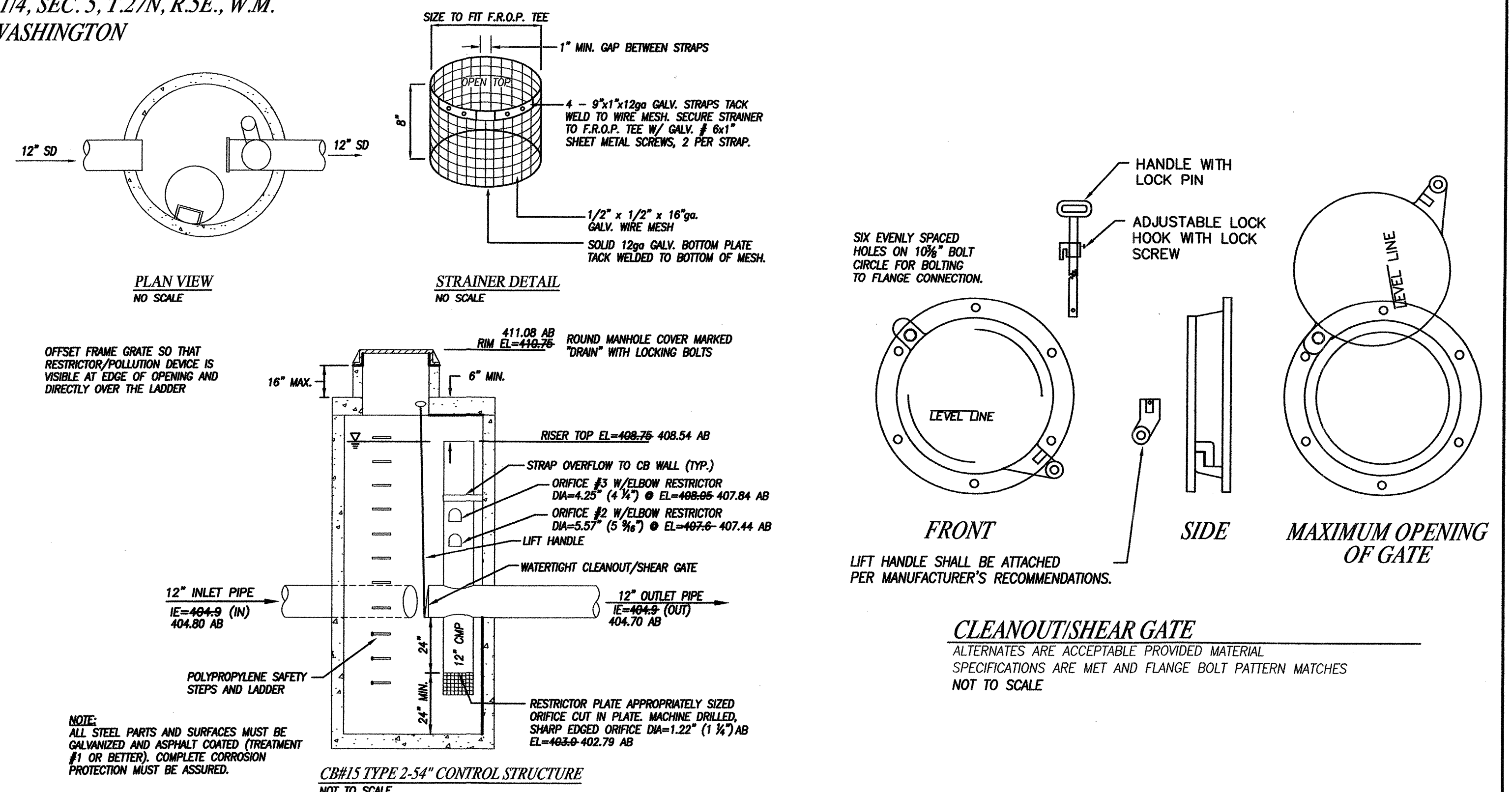
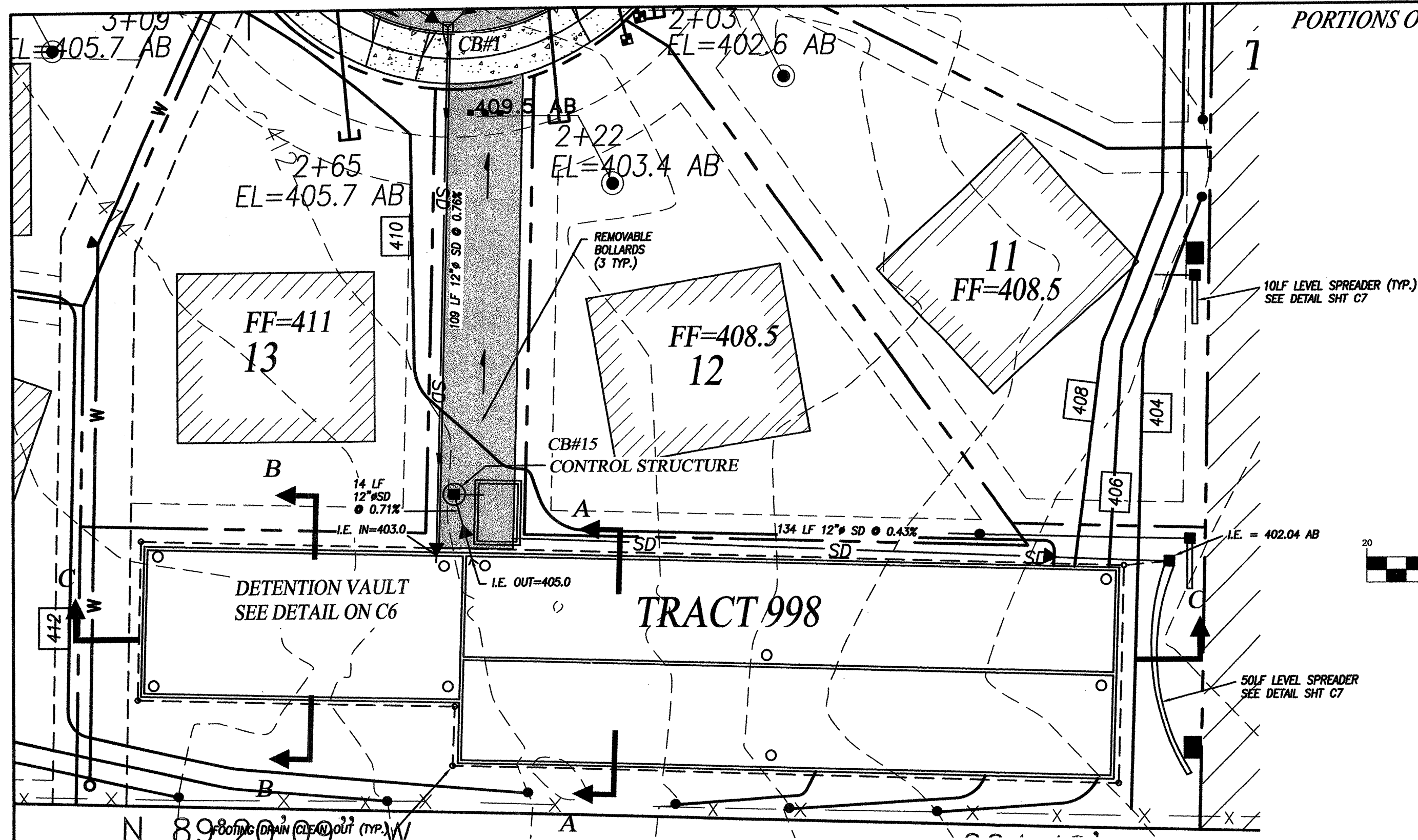
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TAX ACCOUNT NO.'S: 27050400203200 27050400203800
27050400203500 27050400201500
27050400203400 00399900100101
PFN 03-100300 SD
NW 1/4, SEC. 4, NE 1/4, SEC. 5, T.27N, R.5E., W.M.
PARKWOOD MEADOWS
DESIGNED BY: SJM DATE: 01/28/04 PROJECT MANAGER: BRK SCALE: 1"=30'
DRAWING FILENAME: _____ JOB NO.: 04-0035
DRAINAGE PROFILES

STONEHEDGE

HDEV-2232

SHEET C5 of 7

PORTIONS OF THE NW 1/4, SEC. 4 & NE 1/4, SEC. 5, T.27N, R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON



STORM EVENT	LIVE STORAGE VOLUME (CF)			DEAD STORAGE VOLUME (CF)			RELEASE RATE (CFS)		
	REQUIRED	DESIGNED	AS-BUILT	REQUIRED	DESIGNED	AS-BUILT	REQUIRED	DESIGNED	AS-BUILT
2-YEAR	10,587	13,763	13,446	N/A	19,360 CF	20,698 CF	0.07	0.07	0.07
10-YEAR	11,356	14,763	14,425	N/A	19,360 CF	20,698 CF	0.36	0.36	0.36
100-YEAR	13,469	17,510	17,151	N/A	19,360 CF	20,698 CF	0.95	0.95	0.97

LIST LOTS THAT FLOW TO DETENTION FACILITY - ALL, EXCEPT 7-12

DESIGN IMPERVIOUS AREA FOR LOT DEVELOPMENT - 2,500 SF PER LOT

NOTE:
AS-BUILT DETENTION VOLUME INCLUDES A FACTOR OF SAFETY OF 30%.

CALL 48 HOURS BEFORE YOU DIG
1-800-424-5555

SNOHOMISH COUNTY
PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

BY: _____ DATE: _____
FOR RANDOLPH R. SLEIGHT, P.E., P.L.S.

R/W PERMIT NO. _____

REV. NO.		DESCRIPTION	INITIALS	DATE
1		ADDED SURVEY AS-BUILT INFORMATION	SEM	11/05/04

12-8-04
EXPIRES 11/30/2006

JAY GROUP ENGINEERING, INC.
1927 5TH STREET, MARYSVILLE, WA 98270
(360) 659-8159 (360) 651-7252 FAX
ENGINEERING@JAYGROUPLLC.COM

SITE ADDRESS: 1480X 35TH AVE. SE
TAX ACCOUNT NO. S: 27050400203200 27050400203300 27050400203400 27050400203400 00399900100101

PFN 03-100300 SD
NW 1/4, SEC. 4, NE 1/4, SEC. 5, T.27N, R.5E., W.M.
PARKWOOD MEADOWS

DESIGNED BY: SJM DATE: 01/28/04 PROJECT MANAGER: BRK SCALE: -
DRAWING FILENAME: - JOB NO.: 04-0035

DETENTION NOTES AND DETAILS

SHEET C6 of 7

STONE HEDGE

HDEV-2232

STORM DRAINAGE NOTES

- PIPES
 - THE ENGINEER SHALL PLACE A NOTE STATING THE MINIMUM PIPE SPECIFICATIONS ALLOWED FOR THE DESIGN.
 - ALL STORM SEWER PIPE SHALL CONFORM WITH CHAPTER 5 OF THE SNOHOMISH COUNTY ENGINEERING DESIGN AND DEVELOPMENT STANDARDS (E.D.D.S.) AND DIVISION 7 OF THE WSDOT/APWA SPECIFICATIONS.
 - ALL PIPE SHALL BE PLACED ON STABLE EARTH, OR IF IN THE OPINION OF THE COUNTY INSPECTOR, THE EXISTING FOUNDATION IS UNSATISFACTORY, THEN IT SHALL BE EXCAVATED BELOW GRADE AND BACK FILLED WITH COMPACTED GRAVEL MATERIAL TO SUPPORT THE PIPE.
 - THE BACKFILL SHALL BE PLACED EQUALLY ON BOTH SIDES OF THE PIPE OR PIPE ARCH IN LAYERS WITH A LOOSE AVERAGE DEPTH OF 6", MAXIMUM DEPTH 8", THOROUGHLY TAMPING EACH LAYER. THESE COMPACTED LAYERS MUST EXTEND FOR ONE DIAMETER ON EACH SIDE OF THE PIPE OR TO THE SIDE OF THE TRENCH. MATERIALS TO COMPLETE THE FILL OVER PIPE SHALL BE THE SAME AS DESCRIBED. (REFER TO WSDOT STANDARD SPECIFICATION 7-04.3(3) AND STANDARD SPECIFICATION 2-03.3(1)(C), METHOD B & C.
 - CATCH BASINS AND MANHOLES
 - ALL CATCH BASINS SHALL BE TYPE 1 UNLESS OTHERWISE NOTED.
 - ALL CATCH BASINS WITH A DEPTH OVER 5.0 FEET TO THE FLOW LINE SHALL BE A TYPE II OR LARGER (MANHOLE).
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING ALL MANHOLE, INLET, AND CATCH BASIN FRAMES AND GRATES JUST PRIOR TO POURING OF CURBS AND PAVING.
 - ALL GRATES SHALL BE DERESSED 0.1 FEET BELOW PAVEMENT LEVEL.
 - CATCH BASIN FRAME AND GRATES SHALL BE OLYMPIC FOUNDRY MODEL 5433, 5435A, OR 5050A, LOCKING TYPE OR EQUAL. MODEL 5435A IS REFERRED TO AS A "THROUGH CURB INLET" ON THE PLAN. MODEL 5050A IS REFERRED TO AS A "ROLLED GRATE INLET" IN THE PLAN.
 - ALL TYPE II CATCH BASIN MANHOLES, INLET, AND CATCH BASINS SHALL HAVE LOCKING LIDS. ROLLED GRATE NOT APPROVED FOR OUTSIDE OF COUNTY RIGHT OF WAY OR FOR USE WITH TYPE II MANHOLE.
 - STANDARD LADDER STEPS SHALL BE PROVIDED IN ALL CATCH BASINS AND MANHOLES EXCEEDING 5 FEET IN DEPTH.
 - PRIOR TO SIDEWALK CONSTRUCTION, CONSTRUCT THE LOT DRAINAGE CONNECTIONS AND/OR STUB OUTS BEYOND SIDEWALK. STUB OUTS SHALL BE MARKED WITH A 2" X 4" AND LABELED "STORM". LOCATIONS OF THESE INSTALLATIONS SHALL BE PLACED ON THE AS-BUILT CONSTRUCTION PLANS AND SUBMITTED TO THE COUNTY.
 - DETENTION PONDS WITH SIDE SLOPES STEEPER THAN 3:1 SHALL REQUIRE A PERIMETER FENCE PER SNOHOMISH COUNTY CODE. SIDE SLOPE AVERAGING SHALL NOT BE ALLOWED.
- DRAINAGE PIPE AND CATCH BASINS SHALL BE FLUSHED AND CLEANED PRIOR TO SNOHOMISH COUNTY ACCEPTANCE.

PIPE SPECIFICATIONS

PLACEMENT REQUIREMENTS FOR CULVERTS AND STORM SEWER INSTALLATION SHALL BE AS INDICATED IN THE WSDOT/APWA SPECIFICATIONS SECTIONS 7-02 AND 7.04, RESPECTIVELY, AND AASHTO SPECIFICATIONS. PIPE MATERIALS SHALL COMPLY WITH SECTION 9-05 OF THE WSDOT/APWA SPECIFICATIONS WITH THE FOLLOWING CLARIFICATIONS:

- DOUBLE WALLED (SMOOTH INTERIOR) CORRUGATED POLYETHYLENE PIPE, MEETING THE REQUIREMENTS OF AASHTO M 292 IN 8 INCH SIZE AND AASHTO M 294S IN SIZES 12" THROUGH 36", IS AN ACCEPTABLE ALTERNATIVE FOR SCHEDULE 40 CULVERT PIPE, AS SHOWN ON WSDOT/APWA STANDARD PLAN 9-17 AND FOR STORM SEWERS IN ACCORDANCE WITH THESE STANDARDS.

THE ENDS OF THE PIPE SHALL BE BEVELED TO MATCH THE SLOPE. CORRUGATED POLYETHYLENE PIPE SHALL NOT BE USED WHEN BEVELED SLOPES ARE FLATTER THAN 4:1. FOR ANY PIPE LENGTH SECTION THAT IS TO BE BEVELED ON THE END, THE MINIMUM LENGTH OF THE UNBEVELED PORTION OF THE PIPE SHALL BE 6 FEET.

THE PIPE SHALL BE INSTALLED IN A DESIGN A TRENCH AS SHOWN ON STANDARD DRAWING 9-210. FOR BURIAL DEPTHS EXCEEDING 15 FEET, THE PIPE SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS AND THESE STANDARDS.

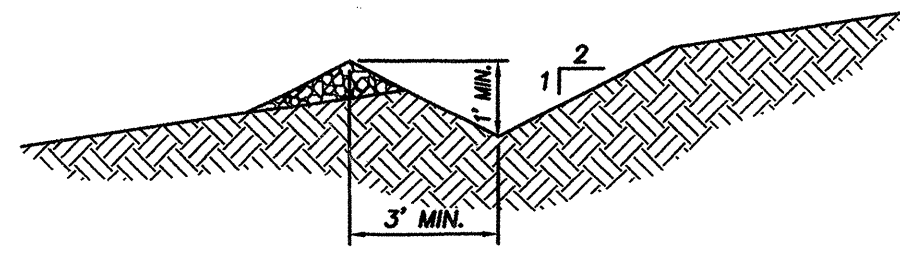
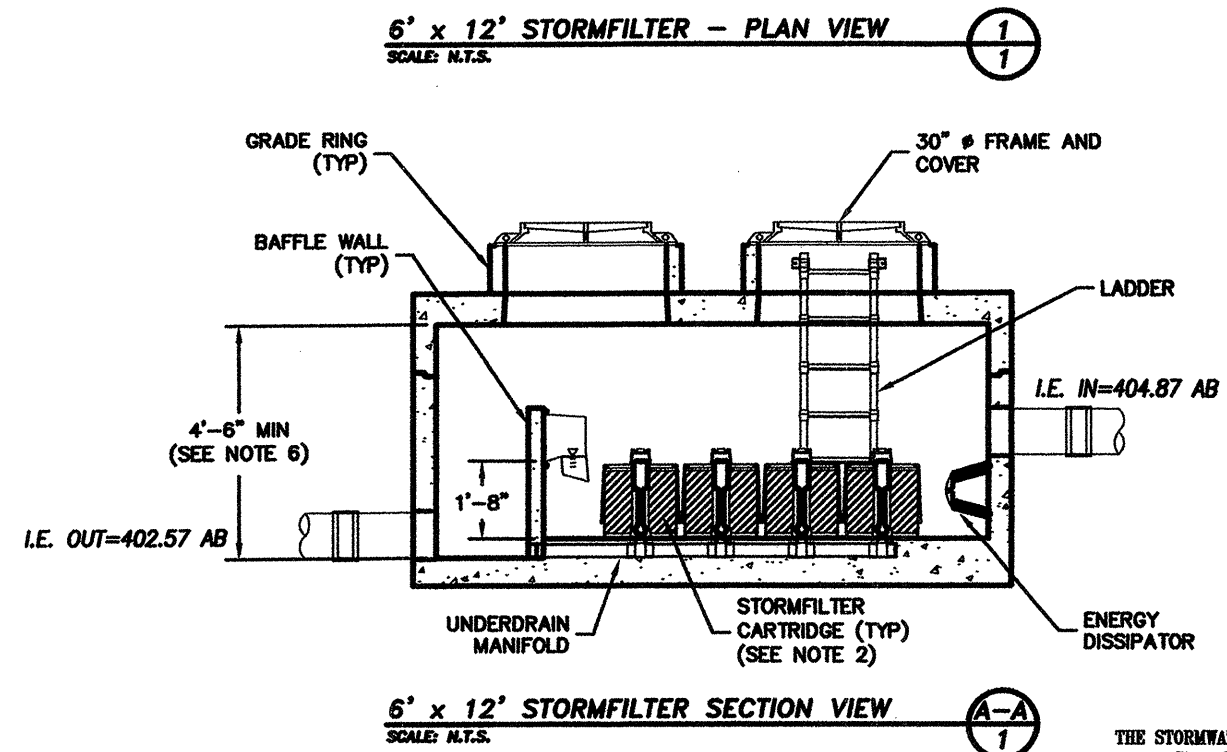
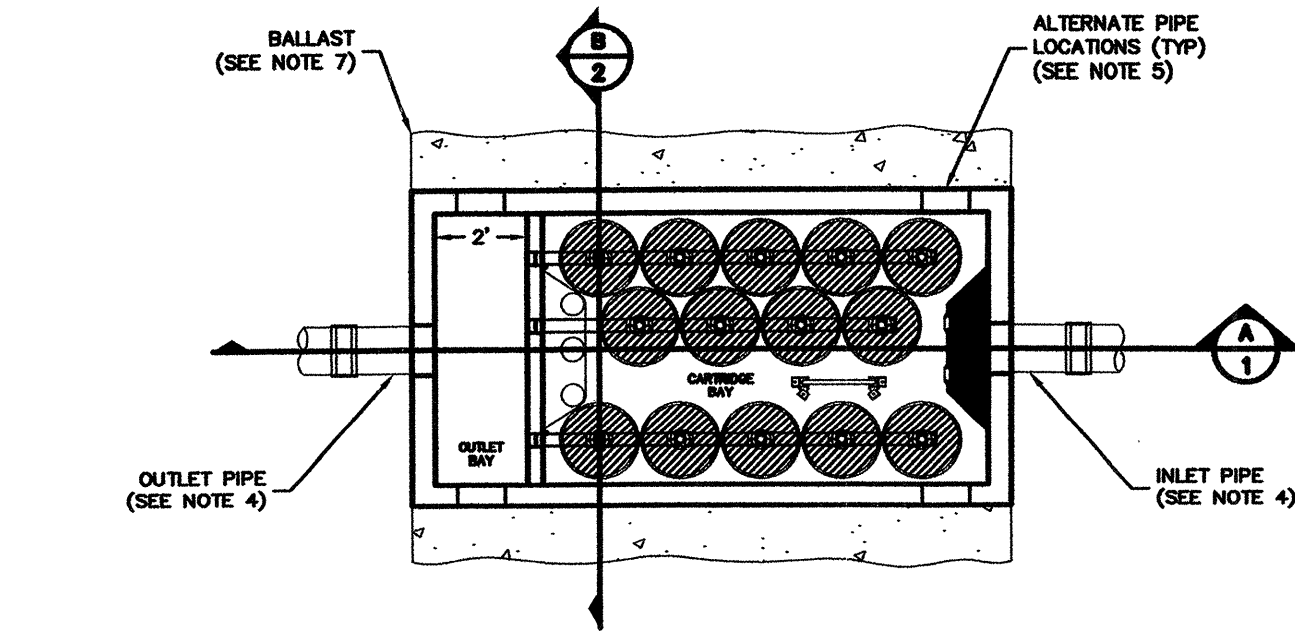
- IN PRIVATE DEVELOPMENTS, THE USE OF NON-SMOOTH INTERIOR CORRUGATED POLYETHYLENE (AASHTO M-294, TYPE "C") IS ALLOWED, EXCEPT WHERE THESE INSTALLATIONS ARE OR CAN REASONABLY BE EXPECTED TO BECOME PART OF THE COUNTY MAINTAINED DRAINAGE SYSTEM.
- GALVANIZED CORRUGATED STEEL PIPE SHALL HAVE ASPHALT COATING TREATMENT 1 AS SPECIFIED IN WSDOT/APWA SPECIFICATION SECTION 9-05.4(3). ALUMINIZED STEEL PIPE MAY BE USED WITHOUT TREATMENT 1.
- FRIBED SEAMLESS GRAVITY SEWER PIPE AND FITTINGS CONFORMING TO ASTM F794 AND UNI-B-9 FOR 8"-15" DIAMETER; ULTRA-RIB PVC STORM SEWER PIPE CONFORMING TO ASTM F794 & UNI-B-9 FOR 8"-24" DIAMETER; AND ULTRA-CORR PVC SEWER AND DRAIN PIPE CONFORMING TO ASTM F949 AND ASTM F794.

- MATERIALS ALLOWED FOR STORM PIPE SYSTEMS LABELED AS "SD":
- PLAN CONCRETE
 - DUCTILE IRON (WATER SUPPLY, CLASS 50 OR 52)
 - REINFORCED CONCRETE PIPE
 - CORRUGATED HIGH DENSITY POLYETHYLENE PIPE (CPEP) - SMOOTH INTERIOR (SEE NOTE 1)
 - POLYETHYLENE GLYCOL (PE) SEWER PIPE
 - HIGH DENSITY POLYETHYLENE PIPE (HDPE)
 - PVC SMOOTH INTERIOR WITH CORRUGATED RIB EXTERIOR (SEE NOTE 4)
- MATERIALS ALLOWED FOR STORM PIPE SYSTEMS LABELED AS "RDP":
- REINFORCED CONCRETE PIPE
 - DUCTILE IRON (WATER SUPPLY, CLASS 50 OR 52)

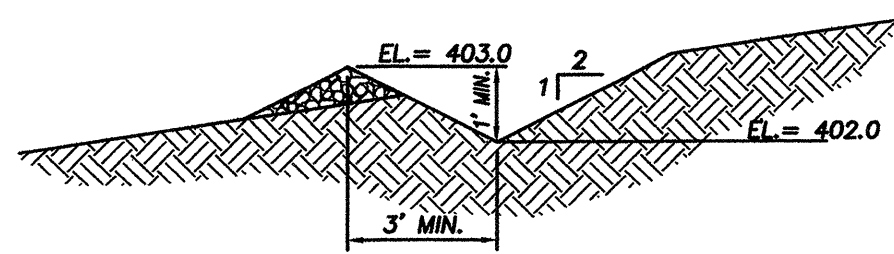
GENERAL NOTES

- ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH SNOHOMISH COUNTY ENGINEERING DESIGN AND DEVELOPMENT STANDARDS (E.D.D.S.), WASHINGTON STATE DEPARTMENT OF TRANSPORTATION/AMERICAN PUBLIC WORKS ASSOCIATION 1998 STANDARD SPECIFICATIONS FOR ROAD, BRIDGE, AND MUNICIPAL CONSTRUCTION, AND THE WSDOT HYDRAULICS MANUAL.
- ALL WORK WITHIN THE SITE AND COUNTY RIGHT-OF-WAY SHALL BE SUBJECT TO THE INSPECTION OF THE COUNTY ENGINEER OR HIS DESIGNATED REPRESENTATIVE.
- ALL SITE WORK MUST COMPLY TO CHAPTER 33 OF THE BUILDING CODE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF THE LOCATION AND DEPTH OF ALL EXISTING UTILITIES (WHETHER SHOWN ON THIS PLAN OR NOT) PRIOR TO BEGINNING OF CONSTRUCTION, SO AS TO AVOID DAMAGE OR DISTURBANCE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER AT THE EARLIEST OPPORTUNITY REGARDING APPARENT UTILITY CONFLICTS. THE CONTRACTOR SHALL CALL 1-800-424-5555 FOR UTILITY LOCATION INFORMATION PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY.
- ALL STRUCTURAL FILLS SHALL BE COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DENSITY BY MODIFIED PROCTOR TEST.
- TRENCH BACKFILL OF NEW UTILITIES SHALL BE COMPACTED WITH 90% RELATIVE COMPACTION OF SUBGRADE, AS SPECIFIED IN SECTION 2-03.3(1)(C).
- IF FIELD CONDITIONS REQUIRE OR IF OTHER CHANGES TO THE APPROVED PLANS ARE PROPOSED, A REVISED PLAN STAMPED AND SIGNED BY THE DESIGN ENGINEER SHALL BE SUBMITTED TO THE COUNTY AND APPROVED PRIOR TO CONSTRUCTION.
- FOR ANY SITE WORK PERTAINING TO DRAINAGE, THE CONTRACTOR SHALL CONTACT THE INSPECTOR FOR LAND DEVELOPMENT DIVISION AT (425) 388-3375 TO SCHEDULE A PRE-CONSTRUCTION CONFERENCE DUE TO FIELD CHANGES (REVISIONS). ENGINEER AS-BUILTS SHALL BE REQUIRED PRIOR TO SITE APPROVAL.
- THE TEMPORARY EROSION/SEDIMENTATION CONTROL FACILITY SHALL BE CONSTRUCTED PRIOR TO ANY GRADING OR EXTENSIVE LAND CLEARING IN ACCORDANCE WITH THE APPROVED TEMPORARY EROSION/SEDIMENTATION CONTROL PLAN. THESE FACILITIES MUST BE SATISFACTORILY MAINTAINED UNTIL CONSTRUCTION AND LANDSCAPING IS COMPLETED AND THE POTENTIAL FOR ON-SITE EROSION HAS PASSED.
- ALL EARTH WORK SHALL BE PERFORMED IN ACCORDANCE WITH COUNTY STANDARDS. PRE-CONSTRUCTION SOILS INVESTIGATION MAY BE REQUIRED TO EVALUATE SOILS STABILITY.
- IF CUT AND FILL SLOPES EXCEED A MAXIMUM OF TWO FEET HORIZONTAL TO ONE FOOT VERTICAL, A ROCK OR CONCRETE RETAINING WALL WILL BE REQUIRED. ALL ROCK RETAINING WALLS ARE TO FOLLOW COUNTY SPECIFICATIONS.
- VEGETATION SHALL BE ESTABLISHED ON AREAS DISTURBED OR AREAS OF CONSTRUCTION AS NECESSARY TO MINIMIZE EROSION.
- CONTRACTOR WILL BE RESPONSIBLE FOR CONTACTING THE SURVEYOR WHEN FLOW RESTRICTOR FOR STORM DETENTION IS ON SITE AND BEFORE IN SERVICE. AT THIS TIME, AN AS-BUILT WILL BE DONE ON THE FLOW RESTRICTOR (F.R.O.P.).
- CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS FOR THE SAFETY OF EMPLOYEES ON THE WORK AND SHALL COMPLY WITH ALL APPLICABLE PROVISIONS OF FEDERAL, STATE AND MUNICIPAL SAFETY LAWS AND BUILDING CODES. HE SHALL ERRECT AND PROPERLY MAINTAIN, AT ALL TIMES, AS REQUIRED BY THE CONDITIONS AND PROGRESS OF THE WORK, ALL NECESSARY SAFEGUARDS FOR PROTECTION OF WORKMAN AND THE PUBLIC. SHALL POST DANGER SIGNS WARNING AGAINST KNOWN OR UNUSUAL HAZARDS; AND HE SHALL DESIGNATE A RESPONSIBLE MEMBER OF HIS ORGANIZATION ON THE CONSTRUCTION SITE WHOSE DUTY SHALL BE THE PREVENTION OF ACCIDENTS.
- STOCKPILES ARE TO BE LOCATED IN SAFE AREAS AND ADEQUATELY PROTECTED BY TEMPORARY SEEDING AND MULCHING. HYDROSEED PREFERRED.
- THE DEVELOPER/PROJECT ENGINEER IS RESPONSIBLE TO MONITOR THE PROJECT FOR STORM WATER QUALITY IN ACCORDANCE WITH THESE PLANS INCLUDING WHATEVER EXTRAORDINARY MEASURES AS MAY BE NECESSARY TO MEET APPLICABLE FEDERAL, STATE, AND LOCAL REGULATION FOR WATER QUALITY. THIS MONITORING PROGRAM SHALL REMAIN IN PLACE UNTIL 1 YEAR AFTER CONSTRUCTION. THE DEVELOPER SHALL NOTIFY THE PROJECT ENGINEER 48 HOURS PRIOR TO THE START OR RESTART OF ANY PHASE OF CONSTRUCTION.
- PRIOR TO ANY SITE CONSTRUCTION TO INCLUDE CLEARING, LOGGING OR GRADING THE SITE/LOT CLEARING LIMITS SHALL BE LOCATED AND FIELD IDENTIFIED BY THE PROJECT SURVEYOR/ENGINEER AS REQUIRED BY THESE PLANS.
- ENGINEERED AS-BUILTS SHALL BE REQUIRED PRIOR TO FINAL APPROVAL.
- ANY REVISIONS TO THE APPROVED CONSTRUCTION PLANS MUST BE SUBMITTED TO SNOHOMISH COUNTY AND APPROVED PRIOR TO CONSTRUCTION.

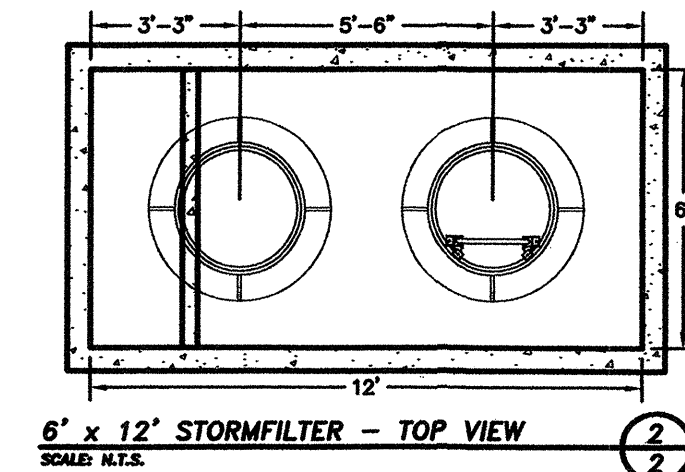
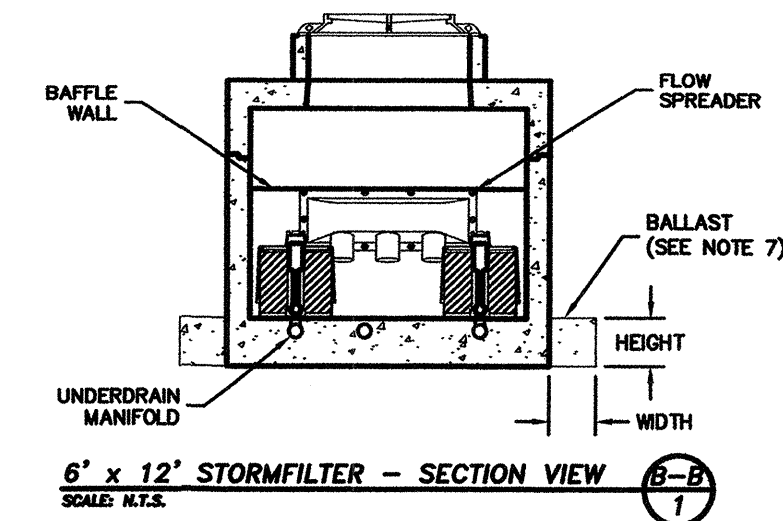
PORTIONS OF THE NW 1/4, SEC. 4 & NE 1/4, SEC. 5, T.27N, R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON



10LF LEVEL SPREADER TRENCH (TYP.)
NOT TO SCALE

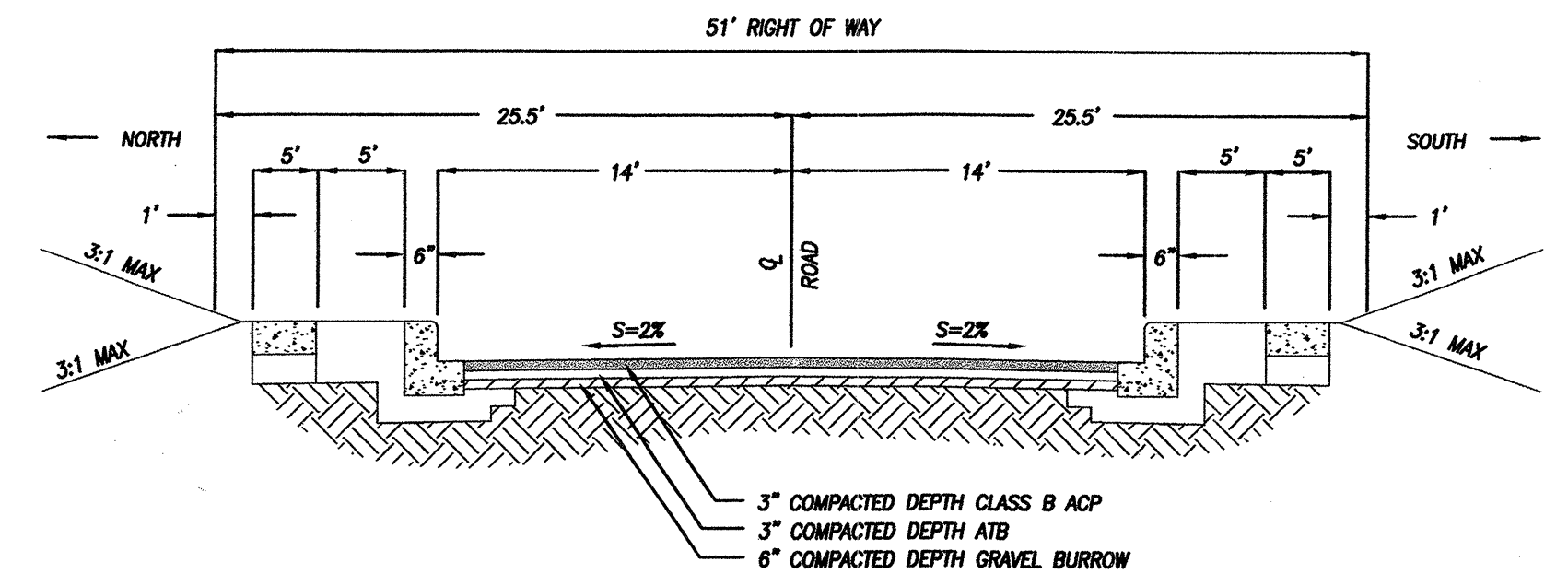


50LF LEVEL SPREADER TRENCH
NOT TO SCALE

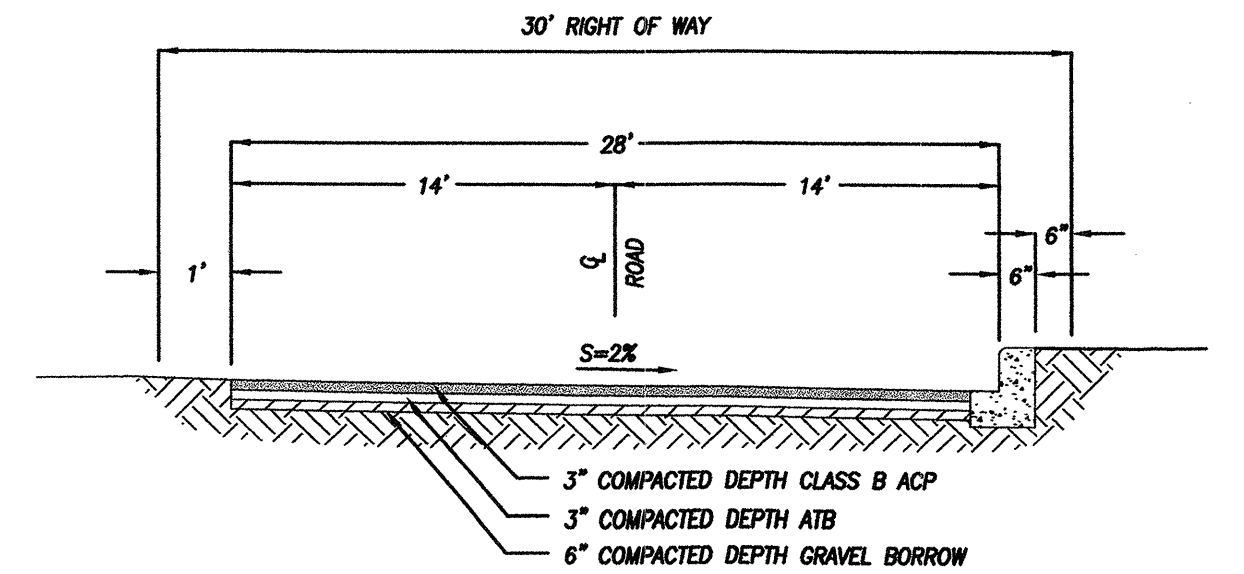


6' x 12' STORMFILTER - TOP VIEW
SCALE N.E.E.

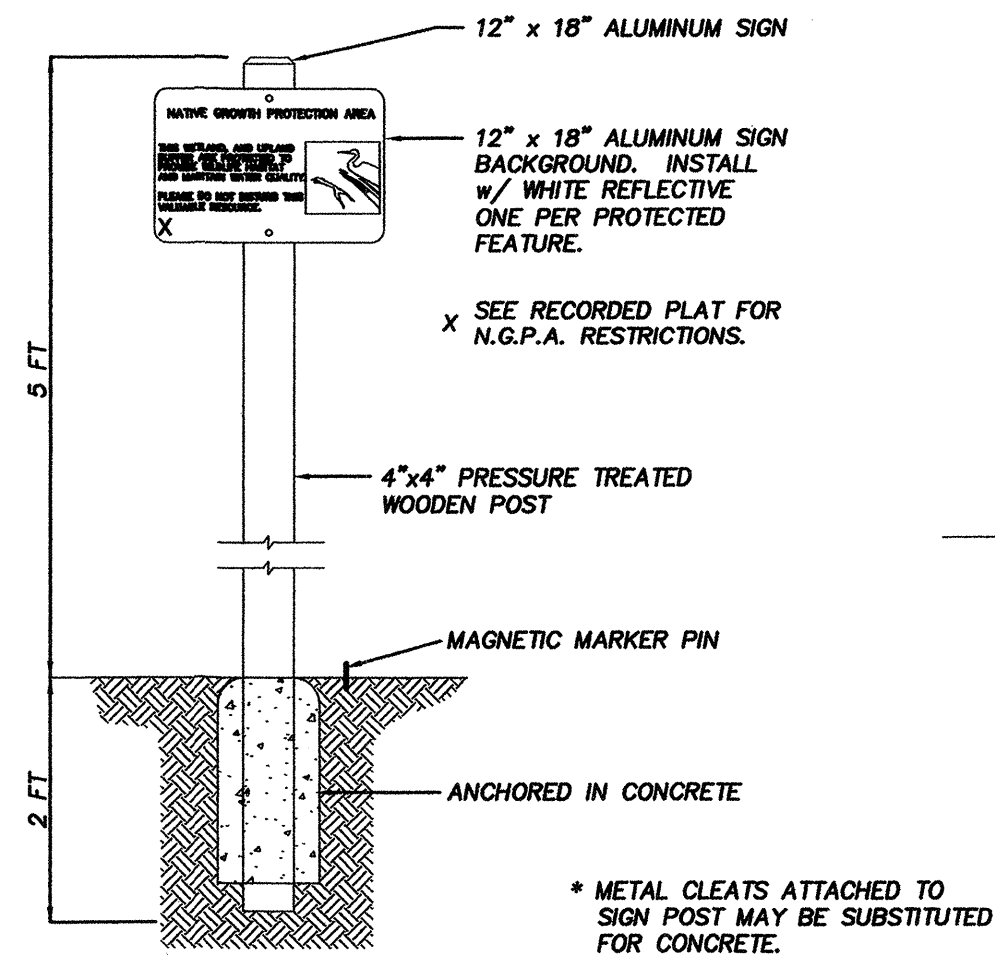
- GENERAL NOTES**
- STORMFILTER BY STORMWATER MANAGEMENT INC., PORTLAND, OREGON 800/548-4667.
 - FILTERS TO BE SIPHON-ACTUATED AND SELF-CLEANING.
 - PRECAST CONCRETE VAULT TO BE CONSTRUCTED IN ACCORDANCE WITH ASTM C857 AND C858.
 - STORMFILTER REQUIRES 2.3' OF DROP FROM INLET TO OUTLET. INLET AND OUTLET PIPING TO BE SPECIFIED BY ENGINEER AND PROVIDED BY CONTRACTOR.
 - PRECAST STORMFILTER EQUIPPED WITH EITHER CORED OPENINGS OR KNOCKOUTS AT INLET/OUTLET LOCATION.
 - RECOMMENDED MINIMUM CLEARANCE FOR MAINTENANCE ACCESS. CONTACT SMI FOR OTHER OPTIONS IF A SHALLOWER SYSTEM IS REQUIRED.
 - ANTI-FLOTATION BALLAST TO BE SPECIFIED BY ENGINEER IF NEEDED. BALLAST TO BE SET ALONG ENTIRE LENGTH OF BOTH SIDES OF VAULT. BALLAST MATERIALS PROVIDED BY CONTRACTOR.
 - ALL STORMFILTERS REQUIRE REGULAR MAINTENANCE. REFER TO OPERATION AND MAINTENANCE GUIDELINES FOR DETAILS.
 - DETAIL REFLECTS DESIGN INTENT ONLY. ACTUAL VAULT DIMENSIONS AND CONFIGURATION WILL BE SHOWN ON PRODUCTION SHOP DRAWING.
 - STANDARD DETAIL SHOWS MAXIMUM NUMBER OF CARTRIDGES. EXACT NUMBER REQUIRED TO BE SPECIFIED ON SITE PLANS.



PUBLIC RESIDENTIAL 148TH ST. SE & 149TH PL. SE - 25 MPH-AB
NOT TO SCALE



PUBLIC ROAD 35TH DR. SE & 36TH AVE. SE - 25 MPH-AB
NOT TO SCALE



TYPE 1

- NOTE:**
- NGPA SIGNS SHALL BE PLACED NO GREATER THAN 100 FEET APART AROUND THE PERIMETER OF THE NATIVE GROWTH PROTECTION AREA. 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 NATIVE GROWTH PROTECTION AREA, UNLESS OTHERWISE APPROVED BY THE COUNTY BIOLOGIST.

NATIVE GROWTH PROTECTION AREA
NOT TO SCALE

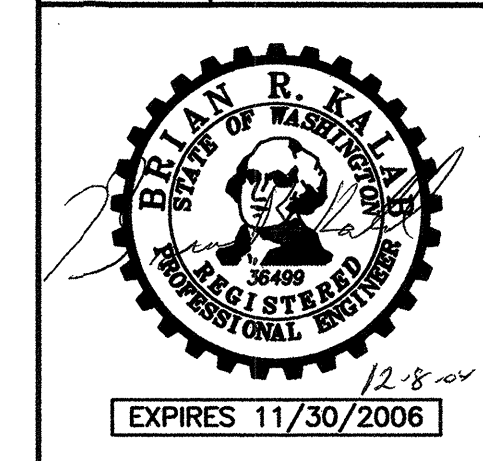
SNOHOMISH COUNTY
PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION

BY: _____ DATE: _____
FOR RANDOLPH R. SLEIGHT, P.E., P.L.S.

R/W PERMIT NO. _____

REV. NO.	DESCRIPTION	INITIALS	DATE
1	ADDED SURVEY AS-BUILT INFORMATION	SEM	11/05/04

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TAX ACCOUNT NO. S:	27050400203200 27050400203800 27050400203500 27050400201500 27050400203400 00399900100101
PFN 03-100300 SD	



JAY G. ROUP
ENGINEERING, INC.

1927 5TH STREET, MARYSVILLE, WA 98270
(360) 659-8159 (360) 651-7252 FAX
ENGINEERING@JAYGROUPLLC.COM

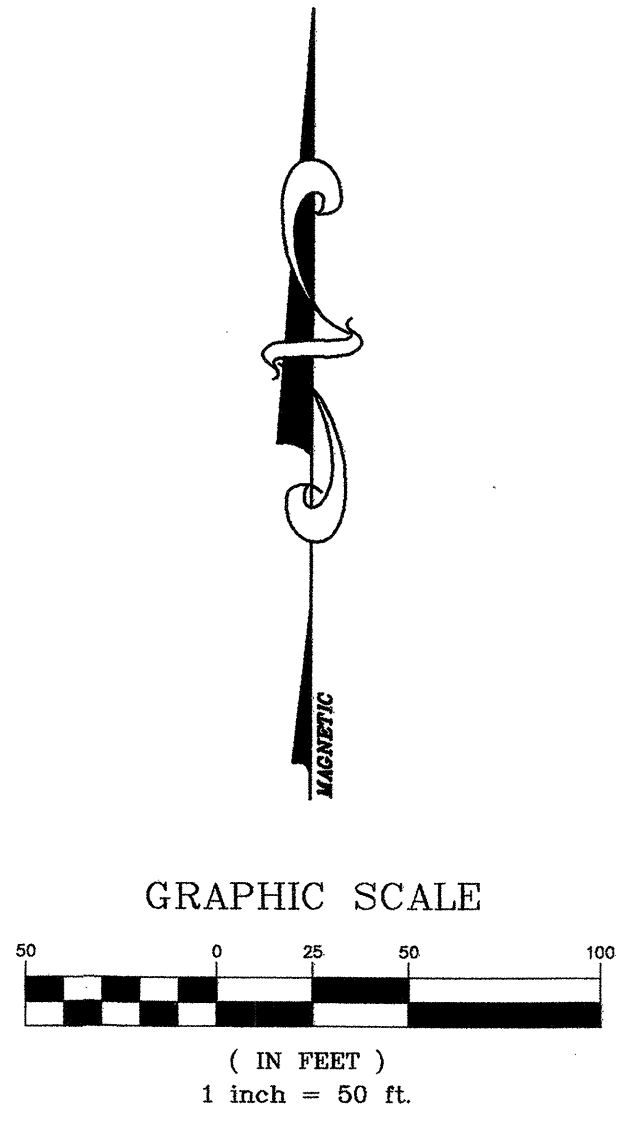
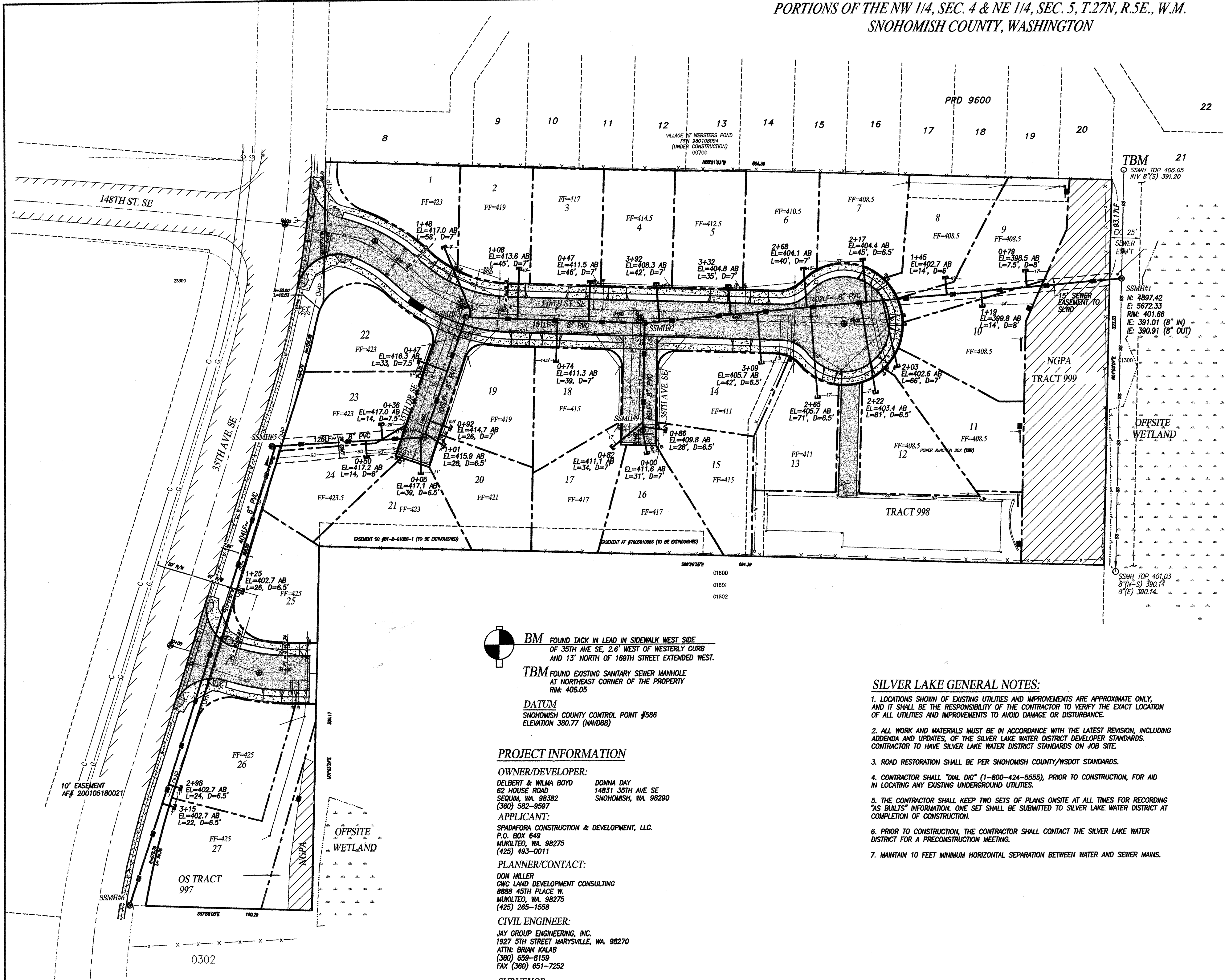
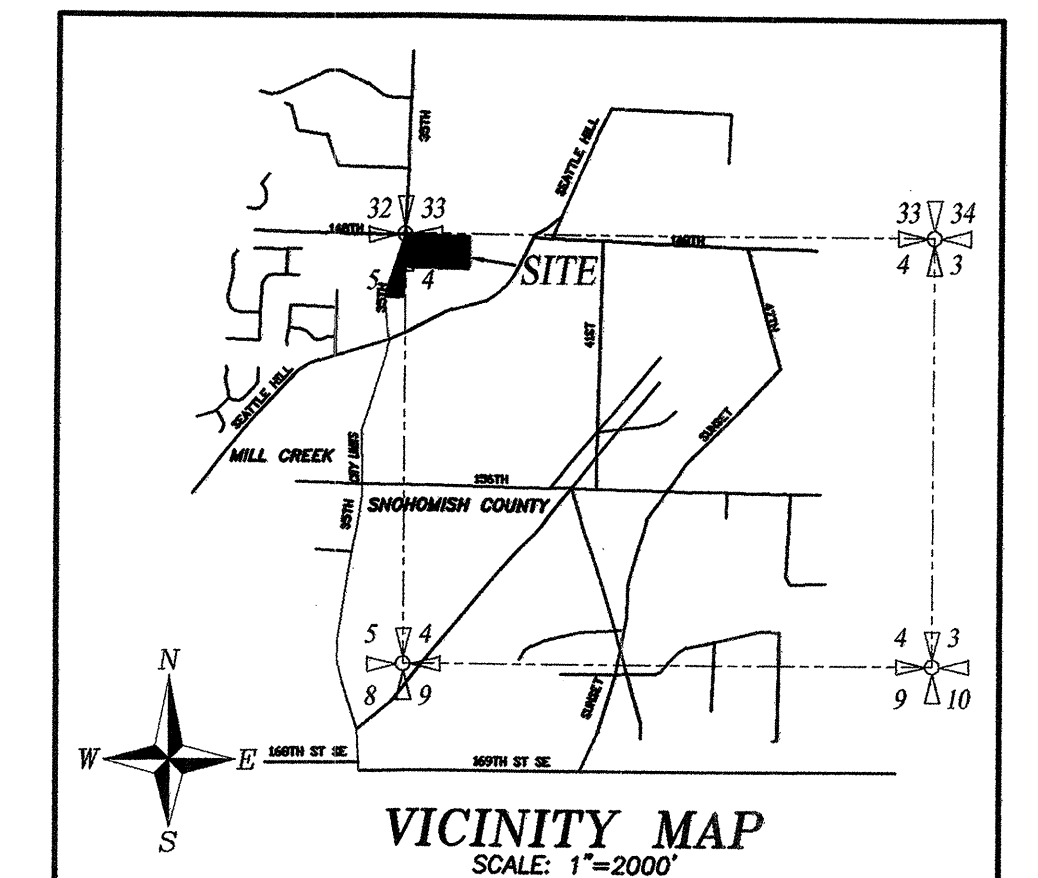
NW 1/4, SEC. 4, NE 1/4, SEC. 5, T.27N, R.5E., W.M.	
PARKWOOD MEADOWS	
DESIGNED BY: S.M.	DATE: 01/28/04
PROJECT MANAGER: BRK	SCALE: -
DRAWING FILENAME: -	JOB NO.: 04-0035
SHEET C7 of 7	
DRAINAGE NOTES AND DETAILS	

CALL 48 HOURS
BEFORE YOU DIG
1-800-424-5555

STONEHEDGE

HDEV-2233

PORTIONS OF THE NW 1/4, SEC. 4 & NE 1/4, SEC. 5, T.27N, R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON



BM FOUND TACK IN LEAD IN SIDEWALK WEST SIDE OF 35TH AVE SE, 2.8' WEST OF WESTERLY CURB AND 13' NORTH OF 168TH STREET EXTENDED WEST.
TBM FOUND EXISTING SANITARY SEWER MANHOLE AT NORTHEAST CORNER OF THE PROPERTY R/W: 406.05
DATUM SNOHOMISH COUNTY CONTROL POINT #588 ELEVATION 380.77 (NWDB)

PROJECT INFORMATION

OWNER/DEVELOPER:
DELBERT & WILMA BOYD DONNA DAY
62 HOUSE ROAD 14831 35TH AVE SE
SEQUIM, WA 98282 SNOHOMISH, WA 98280
(360) 582-9597
APPLICANT:
SPADAFORA CONSTRUCTION & DEVELOPMENT, LLC.
P.O. BOX 649
MUKILTEO, WA 98275
(425) 493-0011
PLANNER/CONTACT:
DON MILLER
GWC LAND DEVELOPMENT CONSULTING
8888 45TH PLACE W.
MUKILTEO, WA 98275
(425) 265-1558
CIVIL ENGINEER:
JAY GROUP ENGINEERING, INC.
1927 5TH STREET MARYSVILLE, WA 98270
ATTN: BRIAN KALAB
(360) 659-8159
FAX (360) 651-7252
SURVEYOR:
J. CURTIS & ASSOCIATES, INC.
P.O. BOX 1512
LAKE STEVENS, WA 98258
TELEPHONE (425) 397-8424

- SILVER LAKE GENERAL NOTES:**
- LOCATIONS SHOWN OF EXISTING UTILITIES AND IMPROVEMENTS ARE APPROXIMATE ONLY, AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXACT LOCATION 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/WSDOT 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 ONSITE AT ALL TIMES FOR RECORDING "AS BUILT" INFORMATION. ONE SET SHALL BE SUBMITTED TO SILVER LAKE WATER DISTRICT AT COMPLETION OF CONSTRUCTION.
 - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE SILVER LAKE WATER DISTRICT FOR A PRECONSTRUCTION MEETING.
 - MAINTAIN 10 FEET MINIMUM HORIZONTAL SEPARATION BETWEEN WATER AND SEWER MAINS.

MATERIALS:
PIPE—DIAMOND
FITTINGS—PLASTIC TRENDS
MANHOLES—CUZ CONCRETE

SETBACKS:
FRONT 20 FT
SIDE 5 FT
REAR 5 FT

**SILVER LAKE WATER DISTRICT
APPROVED FOR CONSTRUCTION**

BY: _____ DATE: _____
DISTRICT MANAGER

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

AS BUILT DATE: 11/21/04
G&O 04537

**CALL 48 HOURS
BEFORE YOU DIG
1-800-424-5555**

UTILITY CONFLICT NOTE:
CAUTION:
THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION, DIMENSION, AND DEPTH OF ALL EXISTING UTILITIES WHETHER SHOWN ON THESE PLANS OR NOT, BY POT-HOLES THE UTILITIES AND SURVEYING THE HORIZONTAL AND VERTICAL LOCATION PRIOR TO CONSTRUCTION. THIS SHALL INCLUDE CALLING UTILITY LOCATE @ 1-800-424-5555 AND THEN POT-HOLES ALL OF THE EXISTING UTILITIES AT LOCATIONS OF NEW UTILITY CROSSINGS TO PHYSICALLY VERIFY WHETHER OR NOT CONFLICTS EXIST. LOCATIONS OF SAID UTILITIES AS SHOWN ON THESE PLANS ARE BASED UPON THE UNVERIFIED PUBLIC INFORMATION AND ARE SUBJECT TO VARIATION. IF CONFLICTS SHOULD OCCUR, THE CONTRACTOR SHALL CONSULT JAY GROUP ENGINEERING, INC. TO RESOLVE ALL PROBLEMS PRIOR TO PROCEEDING WITH CONSTRUCTION.

SILVER LAKE WATER DISTRICT APPROVAL FOR CONSTRUCTION
ORIGINAL APPROVAL SIGNATURES NOT REPLICATED
Design Engineer: Brian R. Kalab Signed on: 6/27/04
SLWD Approved For Construction by: Richard Gilmore
The District Engineer Signed on: 6/28/04
Used SLWD 2003 SPECIFICATIONS

**FIRE HYDRANT COLOR CODING
PER SNOHOMISH COUNTY CODE
TITLE 16.36.080(12)**

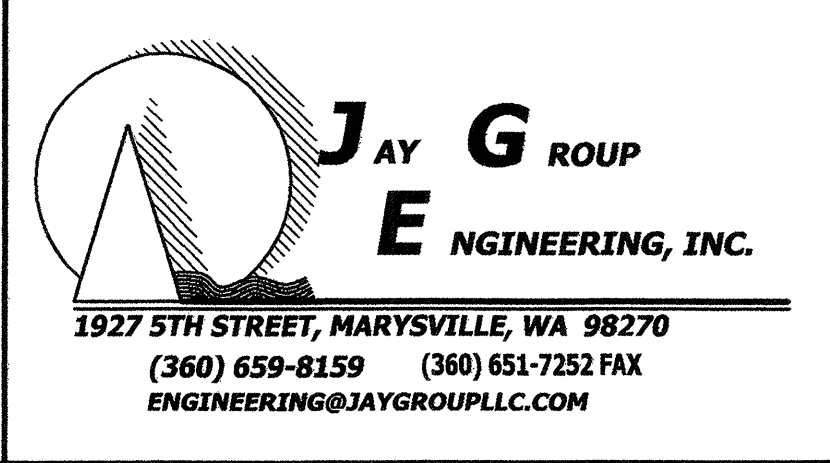
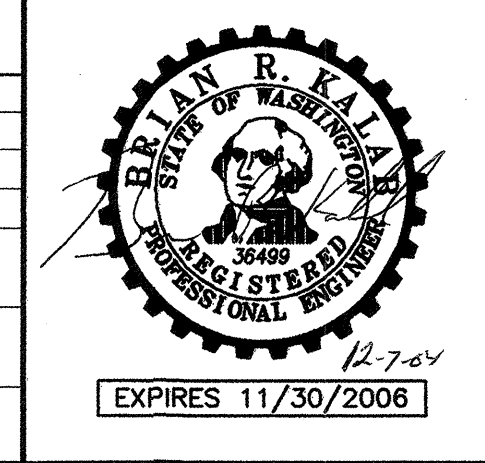
LIGHT BLUE	1500 GPM OR GREATER
GREEN	1000 TO 1499 GPM
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RED	LESS THAN 500 GPM
BLACK	FOR DRAFTING USE ONLY (HARD SUCTION/STEAMER PORT)
WHITE	CROSS ON TOP OF HYDRANT - FOR FILLING TANKERS ONLY
BLUE	PROVIDE BLUE STREET REFLECTOR(S) ON THE HYDRANT SIDE OF CENTERLINE TO INDICATE HYDRANT LOCATIONS

3	PER G&O REVIEW	WSR	12/06/04
2	ADDED G&O AS-BUILT INFORMATION	SEM	11/21/04
1	ADDED SURVEY AS-BUILT INFORMATION	SEM	11/05/04

SITE ADDRESS: 14831 35TH AVE SE
TAX ACCOUNT NO.'S: 27050400203200 27050400203800
27050400203500 27050400201500
27050400203400 0039900100101

PN 03-100300 SD
NW 1/4, SEC. 4, NE 1/4, SEC. 5, T.27N, R.5E., W.M.
PARKWOOD MEADOWS

DESIGNED BY: SJM DATE: 01/28/04 PROJECT MANAGER: BRK SCALE: 1"=50'
DRAWING FILENAME: JOB NO.: 04-0035

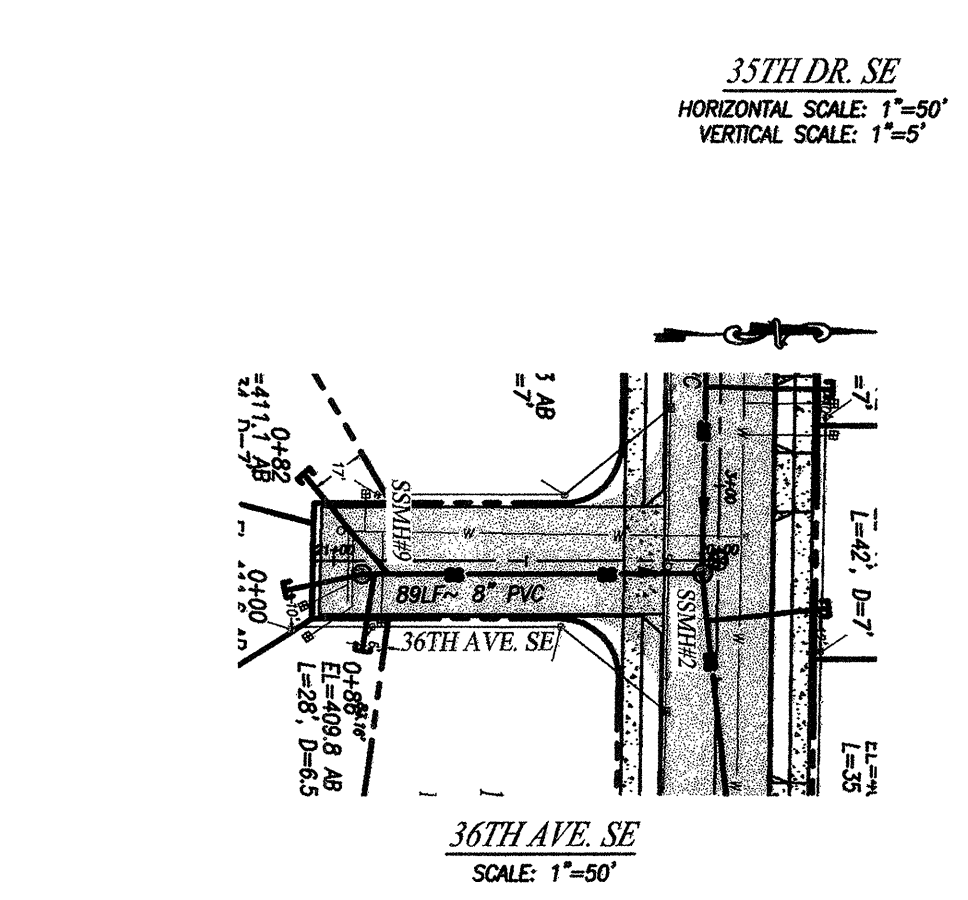
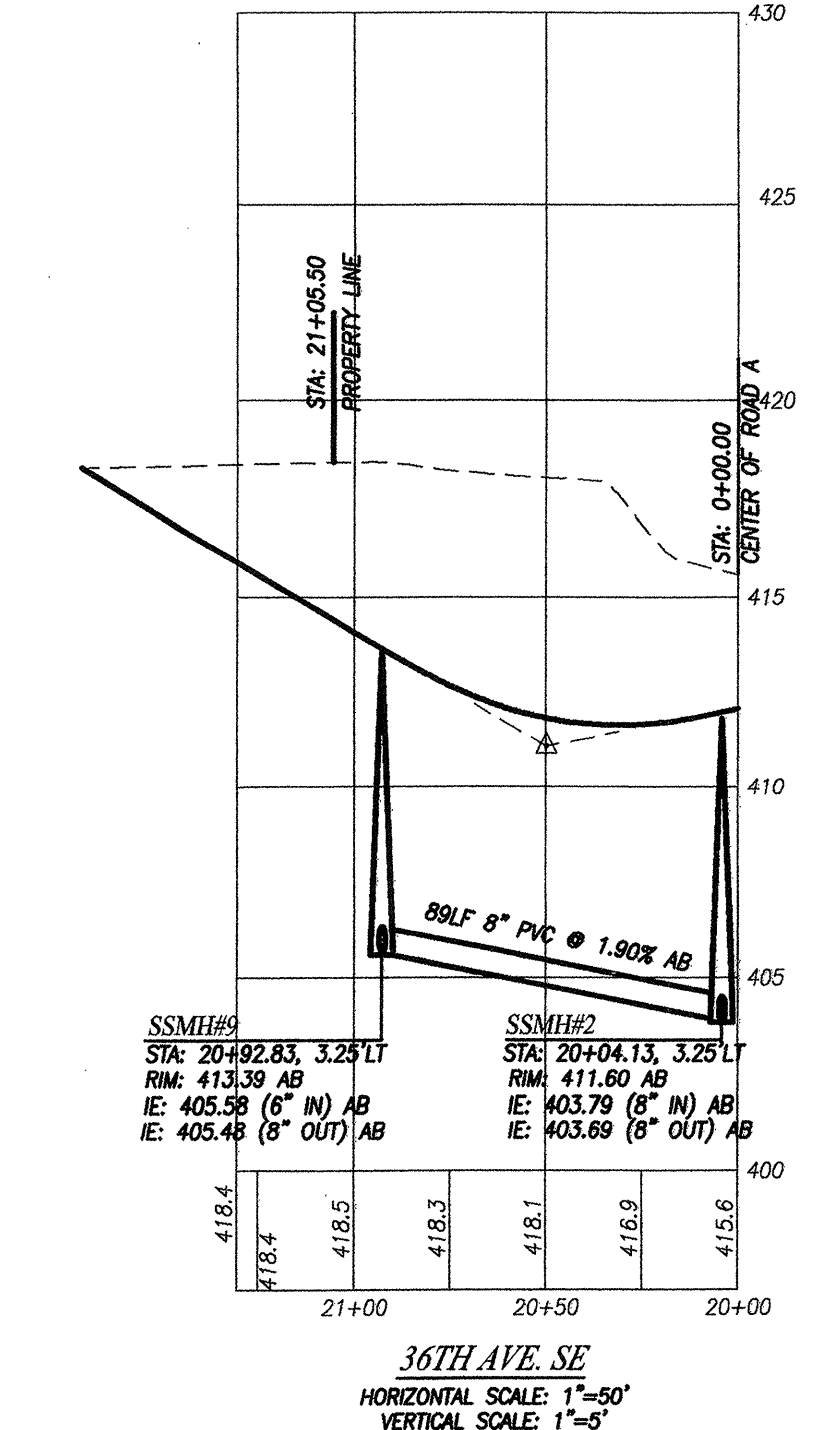
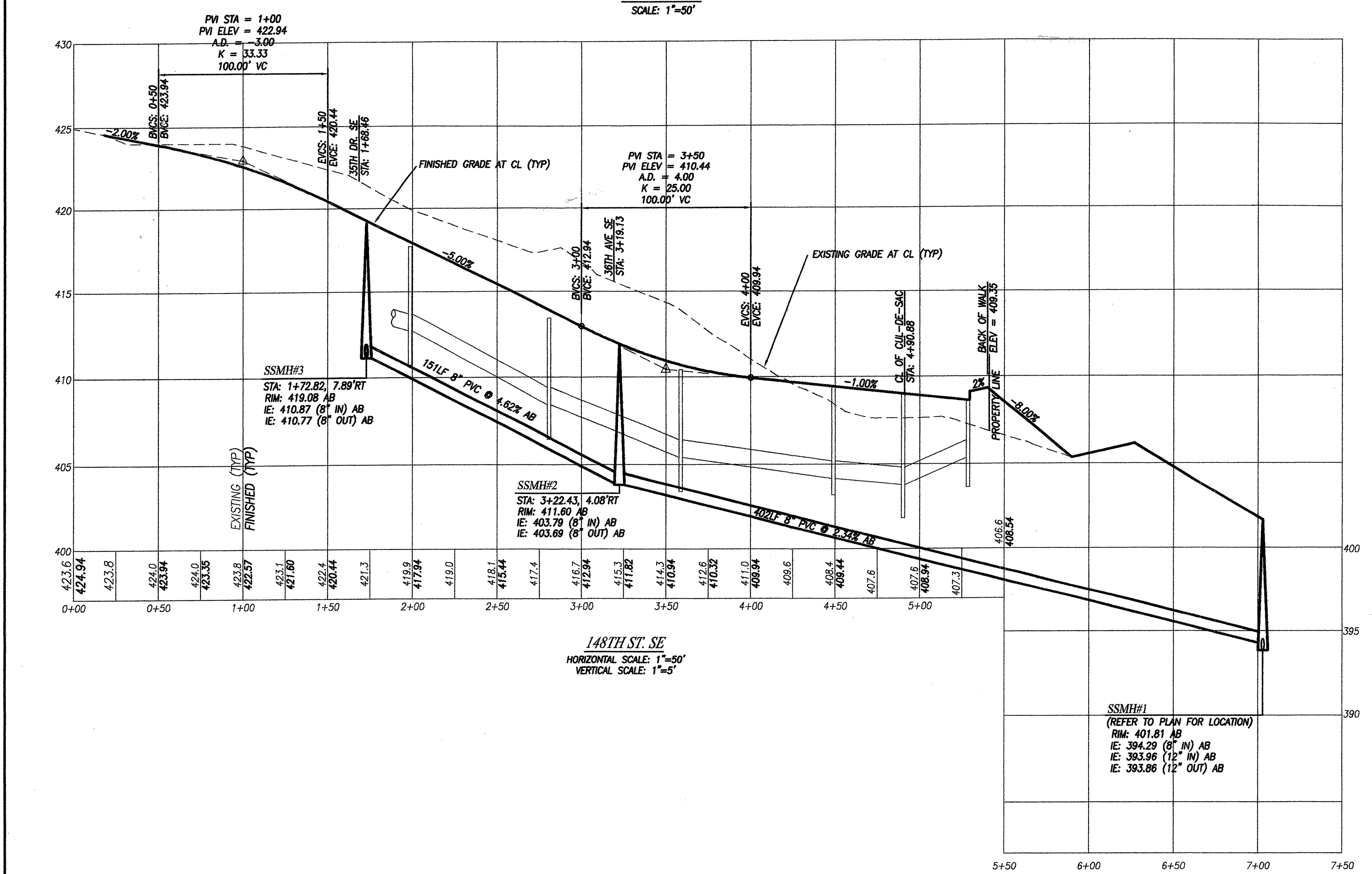
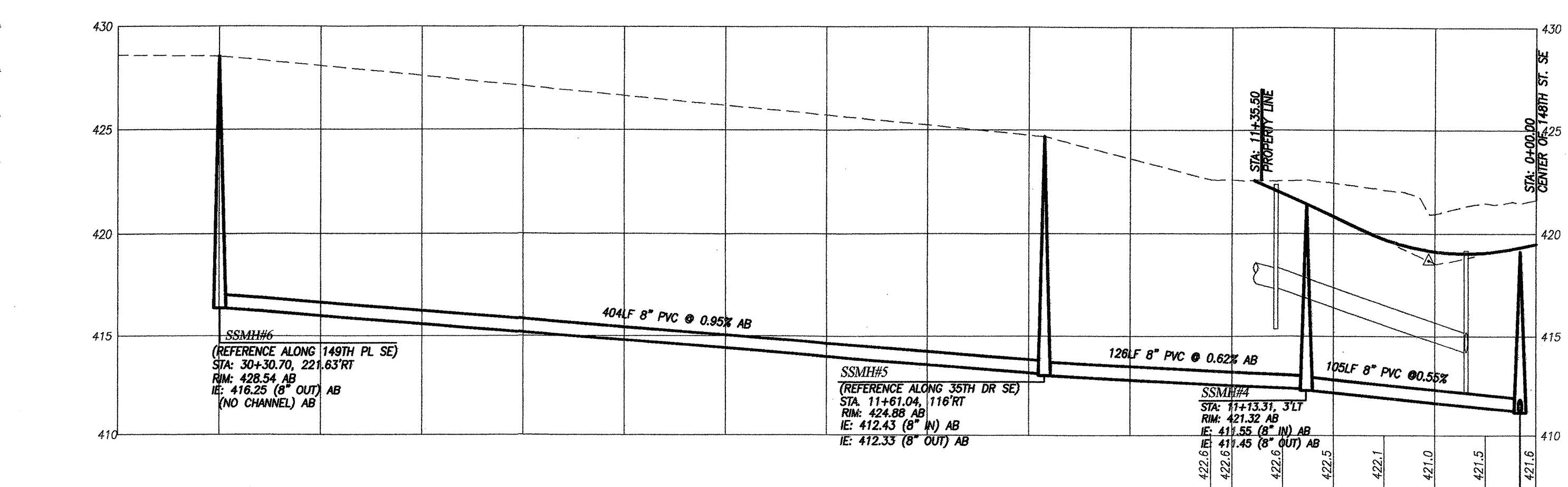
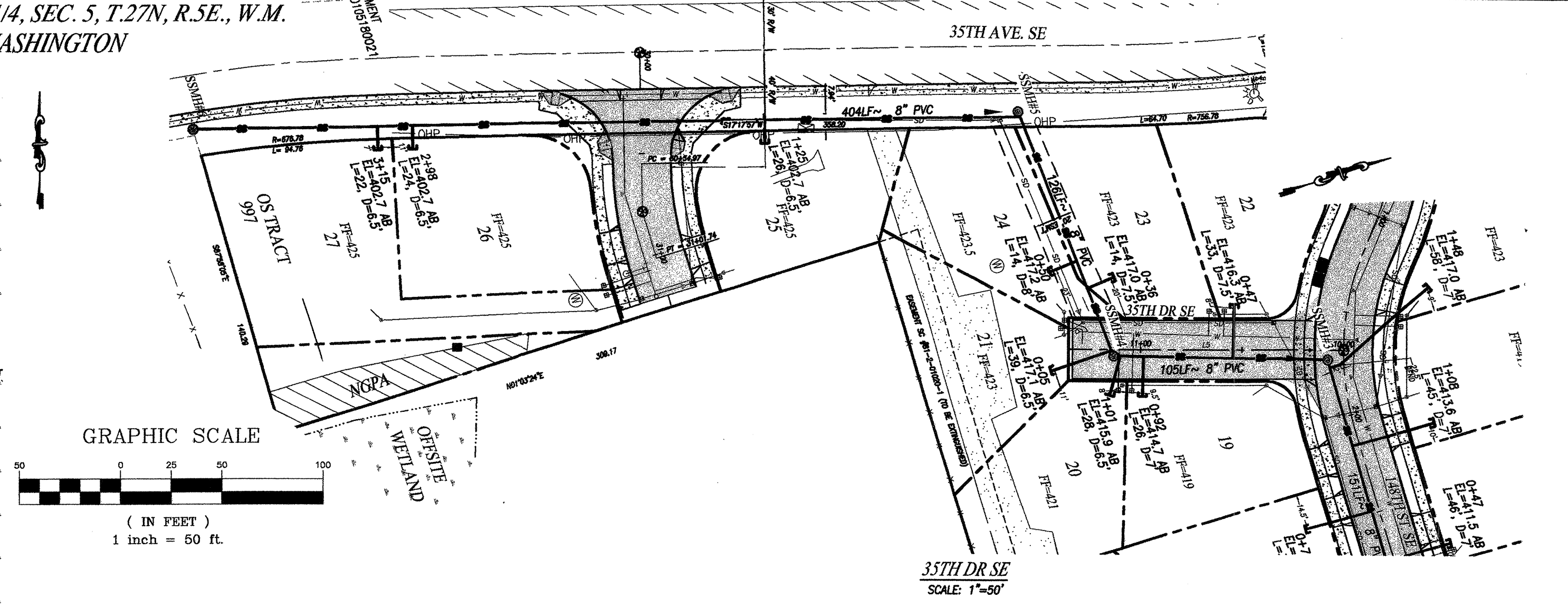
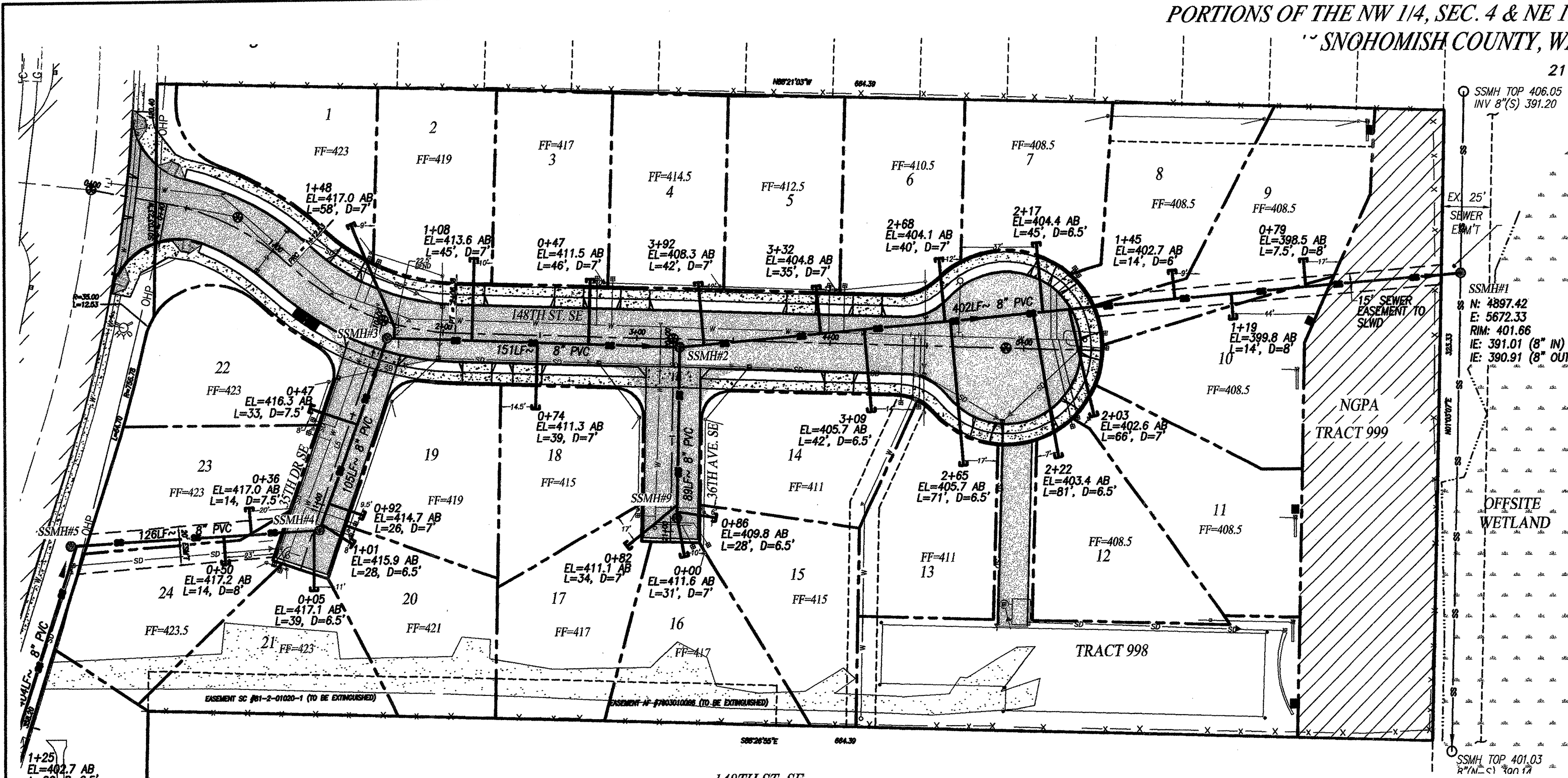


SEWER PLAN
SHEET 51 of 2

STONEHEDGE

HDEV-2234

PORTIONS OF THE NW 1/4, SEC. 4 & NE 1/4, SEC. 5, T.27N, R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON



UTILITY CONFLICT NOTE:
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SETBACKS:

FRONT	20 FT
SIDE	5 FT
REAR	5 FT

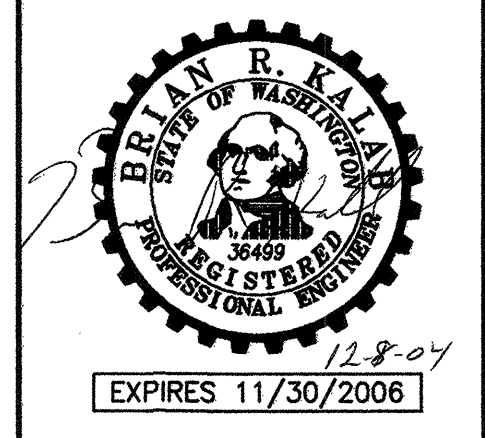
CALL 48 HOURS BEFORE YOU DIG
1-800-424-5555

AS BUILT DATE: 11/21/04
G&O 04537

REV. NO.	DESCRIPTION	INITIALS	DATE
3	PER G&O REVIEW	WSR	12/06/04
2	ADDED G&O AS-BUILT INFORMATION	SEM	11/21/04
1	ADDED SURVEY AS-BUILT INFORMATION	SEM	11/05/04

SITE ADDRESS: 148X 35TH AVE. SE
TAX ACCOUNT NO.'S: 27050400203200 27050400203800
27050400203500 27050400201500
27050400203400 00398900100101

SILVER LAKE WATER DISTRICT APPROVAL FOR CONSTRUCTION
ORIGINAL APPROVAL SIGNATURES NOT REPLICATED
Design Engineer: Brian R. Kalab Signed on: 6/27/04
SLWD Approved For Construction by: Richard Gilmore
The District Engineer Signed on: 6/28/04
Used SLWD 2003 SPECIFICATIONS



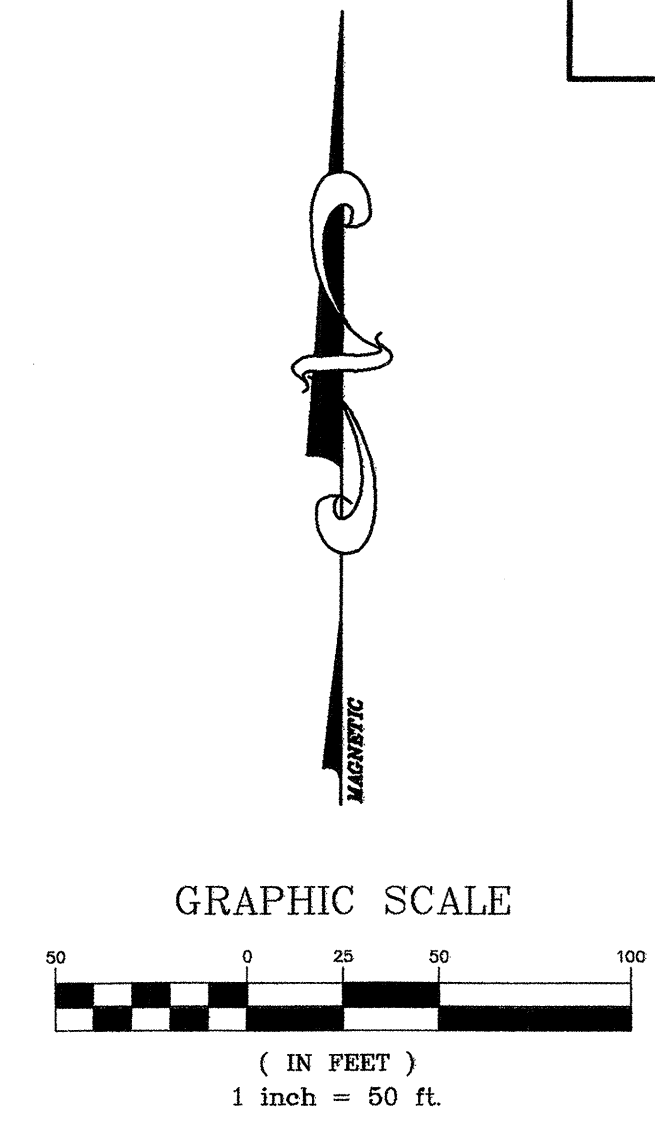
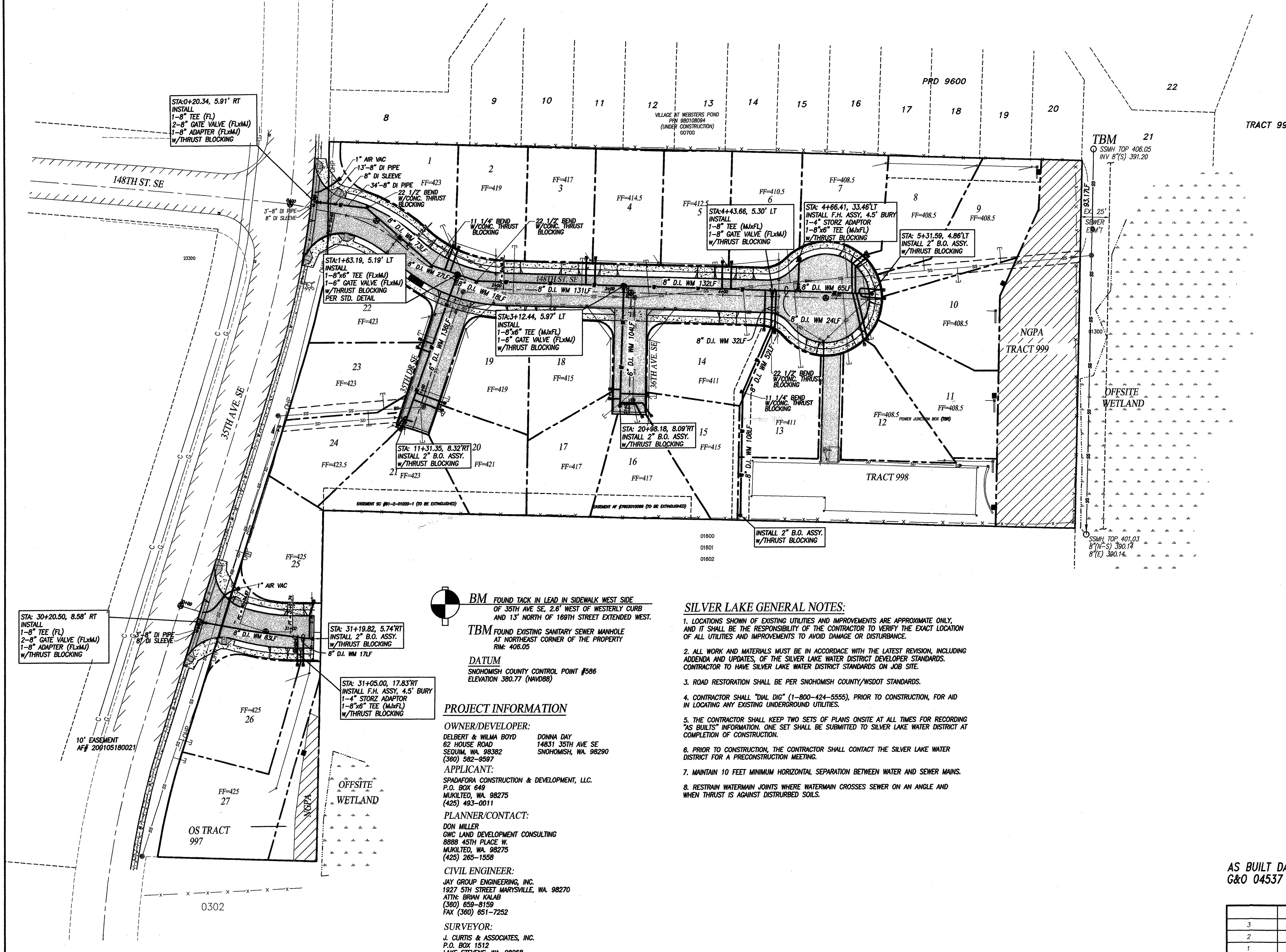
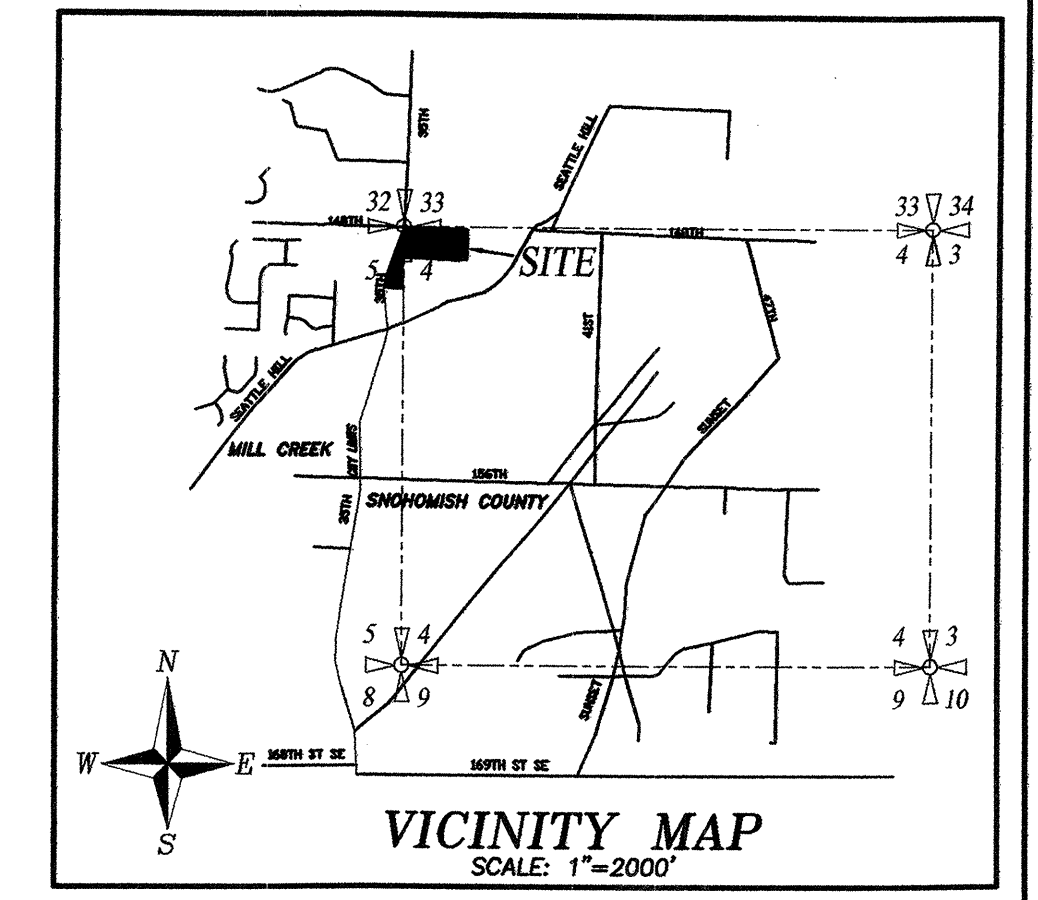
JAY GROUP ENGINEERING, INC.
1927 5TH STREET, MARYSVILLE, WA 98270
(360) 659-8159 (360) 651-7252 FAX
ENGINEERING@JAYGROUP.LLC.COM

PNF 03-100300 SD
NW 1/4, SEC. 4, NE 1/4, SEC. 5, T.27N, R.5E., W.M.
PARKWOOD MEADOWS
DESIGNED BY: SJM DATE: 01/28/04 PROJECT MANAGER: BRK SCALE: 1"=50'
DRAWING FILENAME: SEWER PLAN & PROFILES JOB NO.: 04-0035
SHEET 52 of 2

STONEHEDGE

HPEV - 2235

PORTIONS OF THE NW 1/4, SEC. 4 & NE 1/4, SEC. 5, T.27N, R.5E., W.M.
SNOHOMISH COUNTY, WASHINGTON



- SILVER LAKE GENERAL NOTES:**
- LOCATIONS SHOWN OF EXISTING UTILITIES AND IMPROVEMENTS ARE APPROXIMATE ONLY, AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXACT LOCATION 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/WSDOT 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 ONSITE AT ALL TIMES FOR RECORDING "AS BUILT" INFORMATION. ONE SET SHALL BE SUBMITTED TO SILVER LAKE WATER DISTRICT AT COMPLETION OF CONSTRUCTION.
 - PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL CONTACT THE SILVER LAKE WATER DISTRICT FOR A PRECONSTRUCTION MEETING.
 - MAINTAIN 10 FEET MINIMUM HORIZONTAL SEPARATION BETWEEN WATER AND SEWER MAINS.
 - RESTRAIN WATERMAIN JOINTS WHERE WATERMAIN CROSSES SEWER ON AN ANGLE AND WHEN THRUST IS AGAINST DISTURBED SOILS.

BM FOUND TACK IN LEAD IN SIDEWALK WEST SIDE OF 35TH AVE SE, 2.6' WEST OF WESTERLY CURB AND 13' NORTH OF 180TH STREET EXTENDED WEST.
TBM FOUND EXISTING SANITARY SEWER MANHOLE AT NORTHEAST CORNER OF THE PROPERTY RMC 406.05
DATUM
SNOHOMISH COUNTY CONTROL POINT #586 ELEVATION 380.77 (NAVD89)

PROJECT INFORMATION
OWNER/DEVELOPER:
DEBERT & WILMA BOYD
62 HOUSE ROAD
SEQUIIM, WA 98382
(360) 562-9997
APPLICANT:
SPAWFORA CONSTRUCTION & DEVELOPMENT, LLC.
P.O. BOX 649
MUKILTEO, WA 98275
(425) 493-0011
PLANNER/CONTACT:
DON MILLER
GWC LAND DEVELOPMENT CONSULTING
6888 45TH PLACE W.
MUKILTEO, WA 98275
(425) 265-1558
CIVIL ENGINEER:
JAY GROUP ENGINEERING, INC.
1927 5TH STREET MARYSVILLE, WA 98270
ATTN: BRIAN KALAB
(360) 659-8159
FAX (360) 651-7252
SURVEYOR:
J. CURTIS & ASSOCIATES, INC.
P.O. BOX 1512
LAKE STEVENS, WA 98258
TELEPHONE (425) 397-8424

UTILITY CONFLICT NOTE:
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SILVER LAKE WATER DISTRICT APPROVAL FOR CONSTRUCTION
ORIGINAL APPROVAL SIGNATURES NOT REPLICATED
Design Engineer: Brian R. Kalab Signed on: 6/27/04
SLWD Approved For Construction by: Richard Gilmore
The District Engineer Signed on: 6/28/04
Used SLWD 2003 SPECIFICATIONS

FIRE HYDRANT COLOR CODING PER SNOHOMISH COUNTY CODE TITLE 16.36.080(12)

LIGHT BLUE	1500 GPM OR GREATER
GREEN	1000 TO 1499 GPM
ORANGE	500 TO 999 GPM
RED	LESS THAN 500 GPM
BLACK	FOR DRAFTING USE ONLY (HARD SUCTION/STEAMER PORT)
WHITE	CROSS ON TOP OF HYDRANT - FOR FILLING TANKERS ONLY
BLUE	PROVIDE BLUE STREET REFLECTOR(S) ON THE HYDRANT SIDE OF CENTERLINE TO INDICATE HYDRANT LOCATIONS

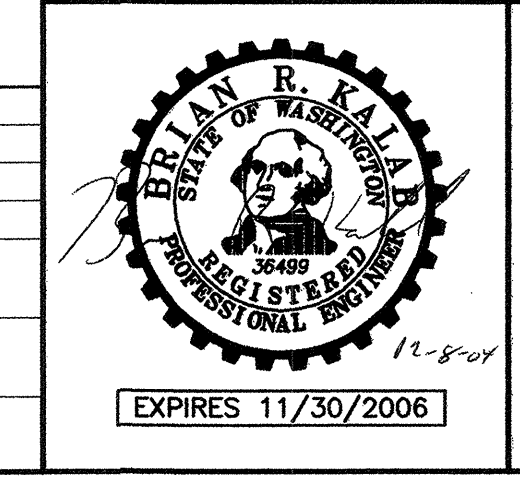
AS BUILT DATE: 11/21/04
G&O 04537

REV. NO.	DESCRIPTION	INITIALS	DATE
3	PER G&O REVIEW	WSR	12/08/04
2	ADDED G&O AS-BUILT INFORMATION	SEM	11/21/04
1	ADDED SURVEY AS-BUILT INFORMATION	SEM	11/05/04

MATERIALS:
PIPE-PACIFIC STATES
FIRE HYDRANTS-M&H
GATE VALVES-M&H
FITTINGS-TYLER/UNION
BRASS-FORD

SETBACKS:
FRONT 20 FT
SIDE 5 FT
REAR 5 FT

SILVER LAKE WATER DISTRICT APPROVED FOR CONSTRUCTION
BY: _____ DATE: _____
DISTRICT MANAGER
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 LIMITATION.

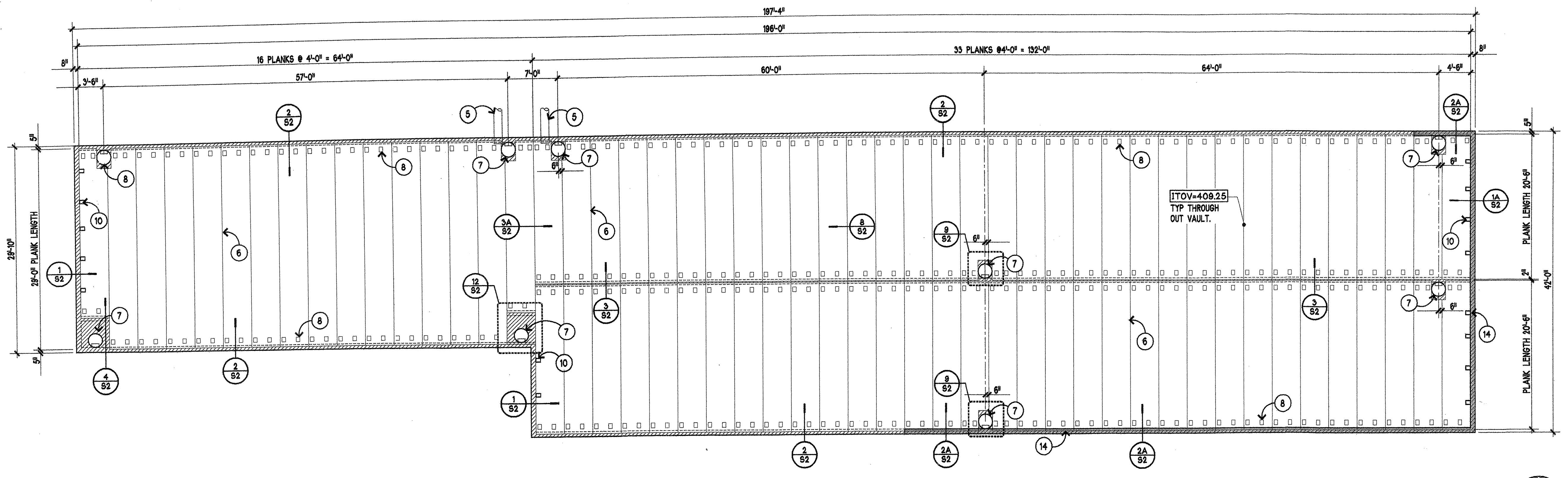


JAY GROUP ENGINEERING, INC.
1927 5TH STREET, MARYSVILLE, WA 98270
(360) 659-8159 (360) 651-7252 FAX
ENGINEERING@JAYGROUPLLC.COM

SITE ADDRESS: 148XX 35TH AVE. SE	
TAX ACCOUNT NO. S:	27050400203200 27050400203800 27050400203500 27050400201500 27050400203400 00399900100101
PFN 03-100300 SD	
NW 1/4, SEC. 4, NE 1/4, SEC. 5, T.27N, R.5E., W.M.	
PARKWOOD MEADOWS	
DESIGNED BY: SJM	DATE: 01/28/04
PROJECT MANAGER: BRK	SCALE: 1"=50'
DRAWING FILENAME:	JOB NO.: 04-0035
WATER PLAN	
SHEET 1 of 1	

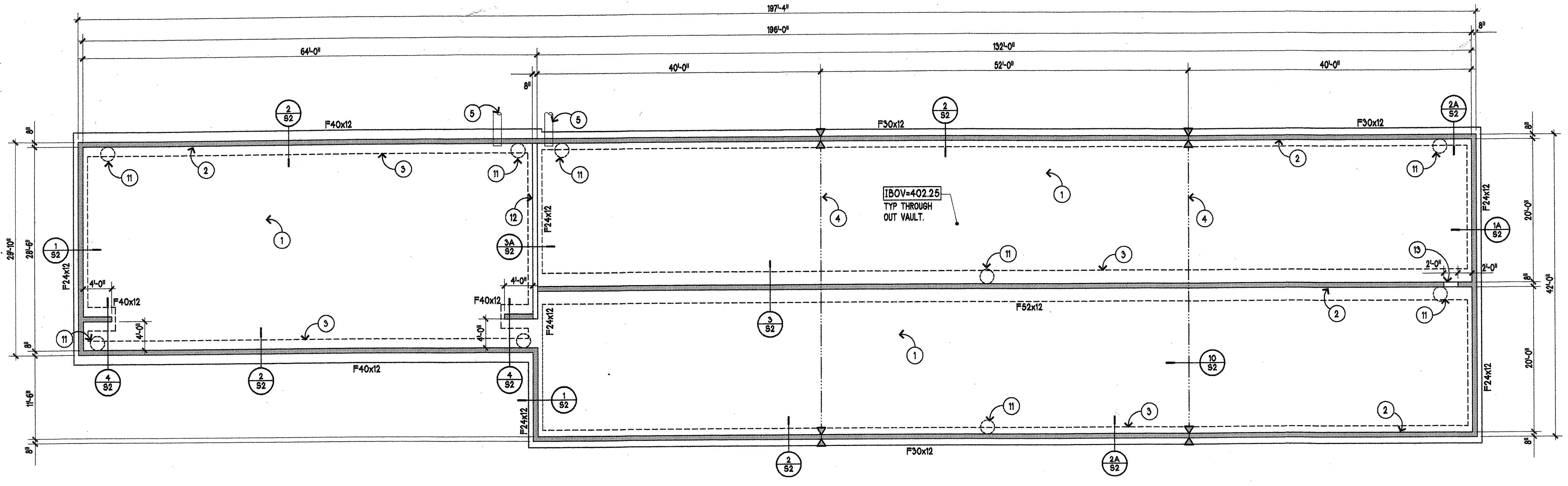
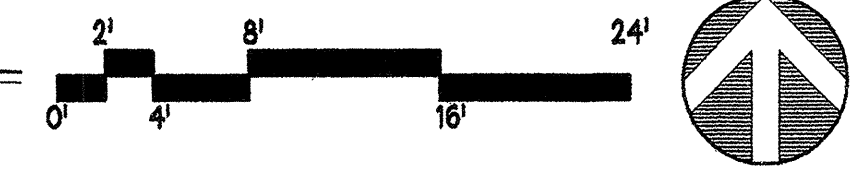
STONEHEDGE

HDEV-2236



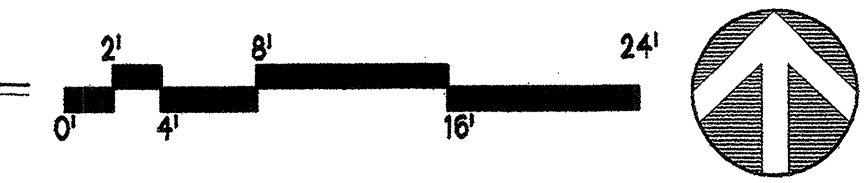
VAULT LID PLAN

SCALE 1/8" = 1'-0"



VAULT FOUNDATION PLAN

SCALE 1/8" = 1'-0"



PLAN KEYNOTES

- 4" THICK CONCRETE SLAB ON GRADE REINF WITH 6X6 - W2.9 x W2.9 WELDED WIRE FABRIC. PLACE ALL REINF AT MID-DEPTH OF THE SLAB. SEE 10/S2 FOR CONSTRUCTION DETAILS.
- 8" THICK CONCRETE WALLS. TYPICAL AT THE PERIMETER & INTERIOR OF THE VAULT. SEE WALL SECTIONS FOR REINFORCING. PROVIDE ADDED REINF AT PIPE PENETRATIONS AS SHOWN IN 5/S2. PROVIDE REINF. @ ALL WALL CORNERS AS SHOWN IN 1/S3.
- THICKENED SLAB FOOTINGS TO BE CAST MONOLITHIC WITH THE GRADE SLAB. SEE SCHEDULE AND DETAILS FOR REINF.
- SLAB ON GRADE CONST. JOINT SEE 10/S2.
- PIPE INLET OR OUTLET TO VAULT. SEE CIVIL DWGS FOR PIPE DIAMETER & INVERT ELEVATION. SEE 5/S2 FOR WALL REINF. @ PENETRATION.
- 12-1/2" THICK PRECAST HOLLOW CORE PLANK. SEE DESIGN CRITERIA NOTES FOR PLANK LOADING REQUIREMENTS.
- 24" DIAMETER OPENING TO ACCEPT 24" DIAMETER RISERS, GALV. LADDER, RING AND LOCKING MANHOLE COVER PER CIVIL DRAWINGS TYP 9 PLACES. SEE 9 & 12/S2.
- POUR SLOTS IN TOP OF PLANK. MANUFACTURER TO PROVIDE A MINIMUM OF 2 SLOTS @ EACH END OF EA. PLANK. PLANK MANUFACTURE MAY REQUIRE GROUING OF ADDITIONAL CELLS BEYOND THE MINIMUM OF 2. THE GENERAL CONTRACTOR SHALL INCLUDE GROUING OF THESE ADDITIONAL CELLS IN HIS BID.
- HATCHED AREA REPRESENTS THE EXTENT OF THE 12-1/2" THICK CAST IN PLACE CLOSURE POUR.
- KNOCKOUT IN EDGE CELL (LOCATED APPROXIMATELY AS SHOWN) TO ACCEPT WALL TO PLANK DOWELS. SEE 1/S2.
- ACCESS HATCH ABOVE
- 8" THICK BARRIER WALL BETWEEN CELLS TO EXTEND TO WITHIN 6" OF THE INSIDE TOP OF THE VAULT. SEE 3A/S2.
- 24" DIAMETER OPENING BETWEEN CELLS. SEE 11/S2 FOR WALL REINFORCING @ OPENING.
- 8" THICK x 12" TALL CURB TO OCCUR WITHIN SHADED AREA.

LEGEND

- F24x12 FOOTING MARK - SEE SCHEDULE FOR SIZE & REINF.
- IBOV INSIDE BOTTOM OF VAULT (TOP OF GRADE SLAB)
- ITOV INSIDE TOP OF VAULT LID (TOP OF CONCRETE WALLS)
- CIP CONCRETE WALL
- CONCRETE SPREAD FOOTING
- GRADE SLAB CONST. JT.
- WALL CONTRACTION JOINT SEE 7/S2

FOOTING SCHEDULE

MARK	SIZE	REINFORCING
F24x12	24" WIDE x 12" THICK	13)-#5 B. LONG. #5 B. @16" O/C TRANS.
F30x12	30" WIDE x 12" THICK	13)-#5 B. LONG. #5 B. @16" O/C TRANS.
F40x12	40" WIDE x 12" THICK	14)-#5 B. LONG. #5 B. @16" O/C TRANS.
F52x12	52" WIDE x 12" THICK	15)-#5 B. LONG. #5 B. @16" O/C TRANS.

PFN#: 03-100300

SNOHOMISH COUNTY
PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION
R/W PERMIT NO. 04-115417

STONEHEDGE

REVISIONS:

DATE:	02-24-04	ISSUED FOR CONST. PERMIT APPLICATION
DATE:	02-28-04	1ST RESPONSE TO PLAN REVIEW COMMENTS

KOSNIK ENGINEERING
CONSULTING & SURVEYING ENGINEERS
1680 MILL CREEK BLVD., SUITE 105
MILL CREEK, WASHINGTON 98012
PH: (425) 742-7004
FAX: (425) 742-1848

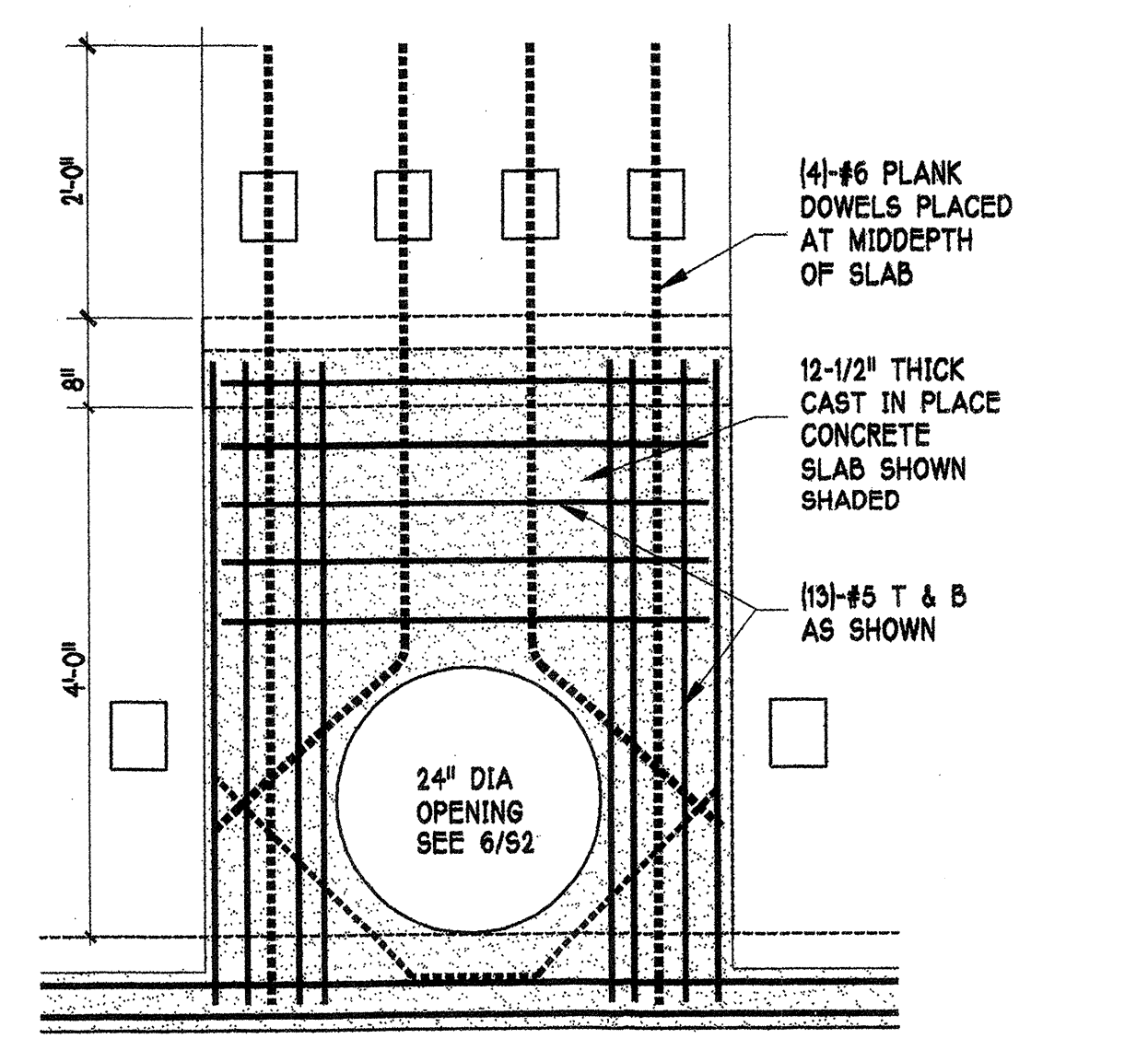
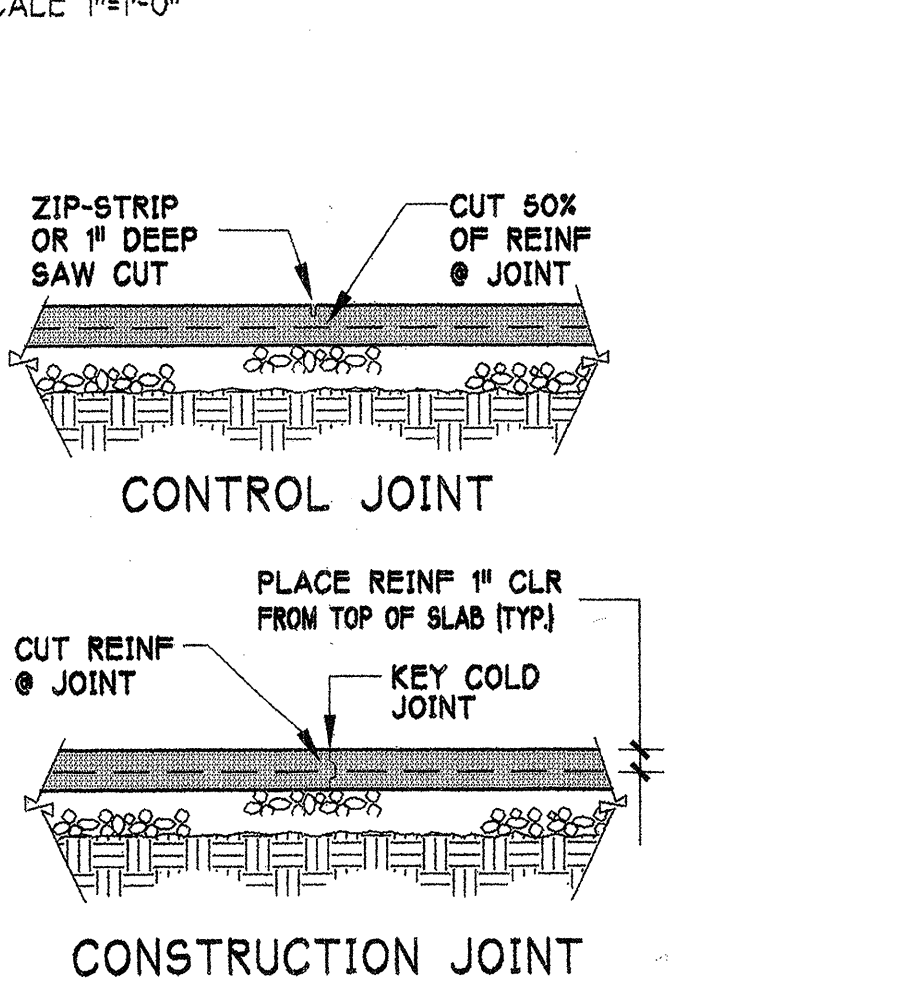
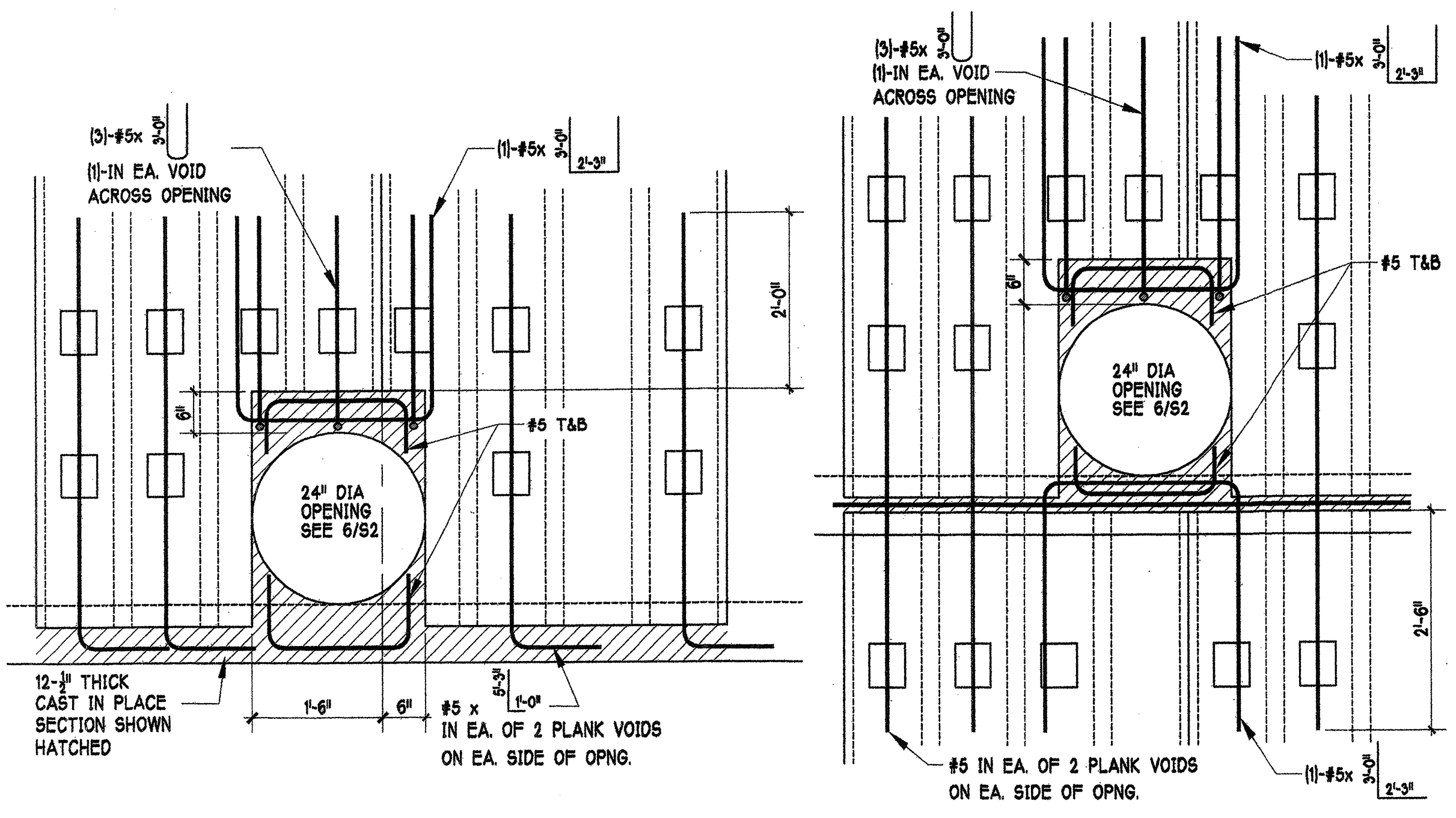
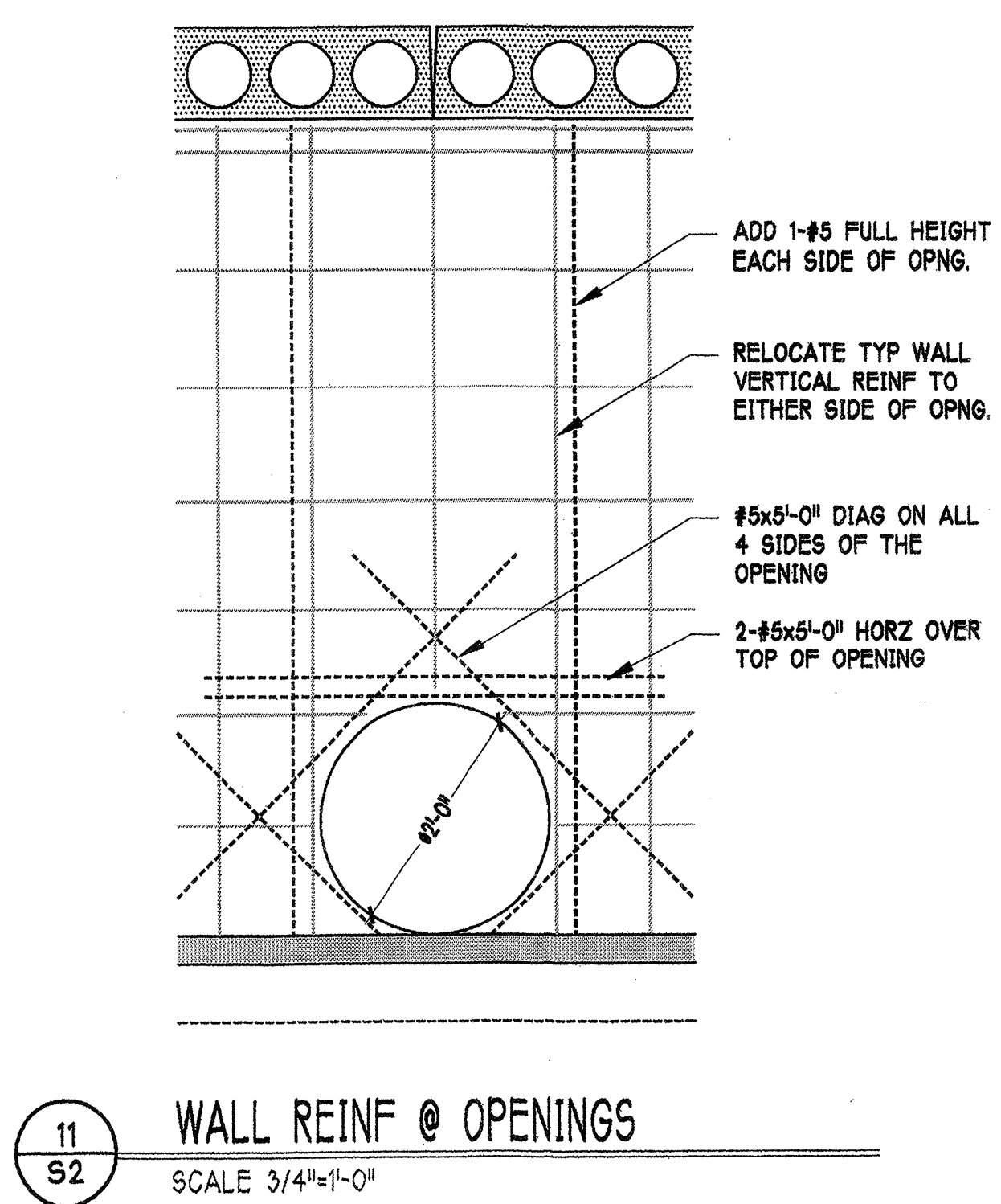
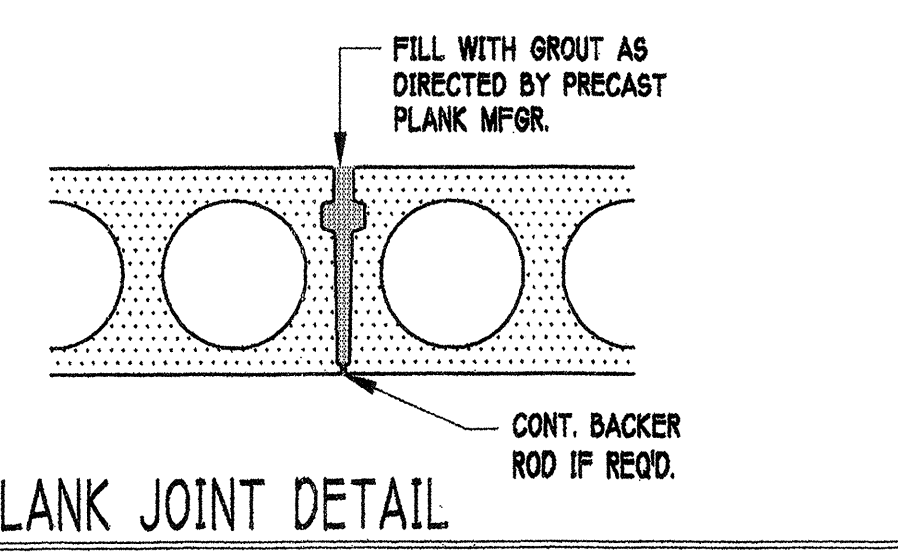
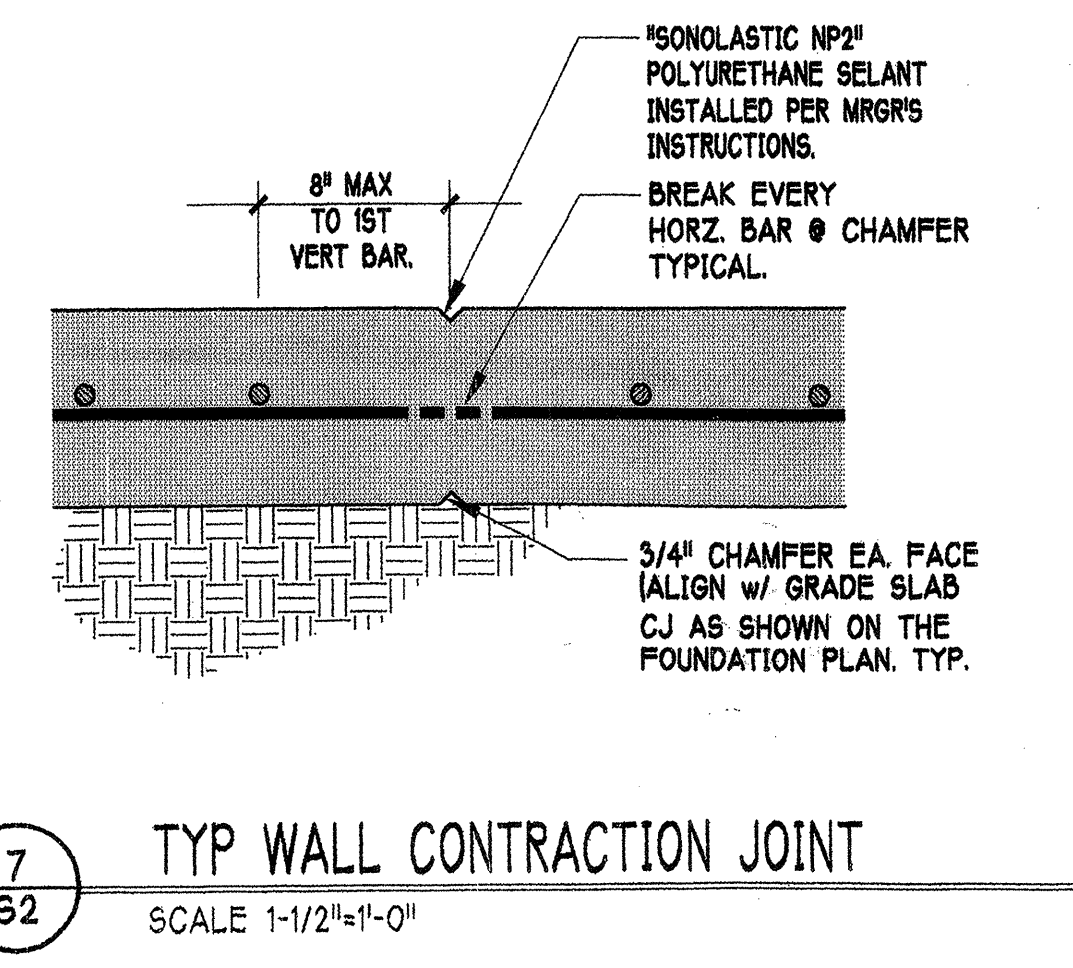
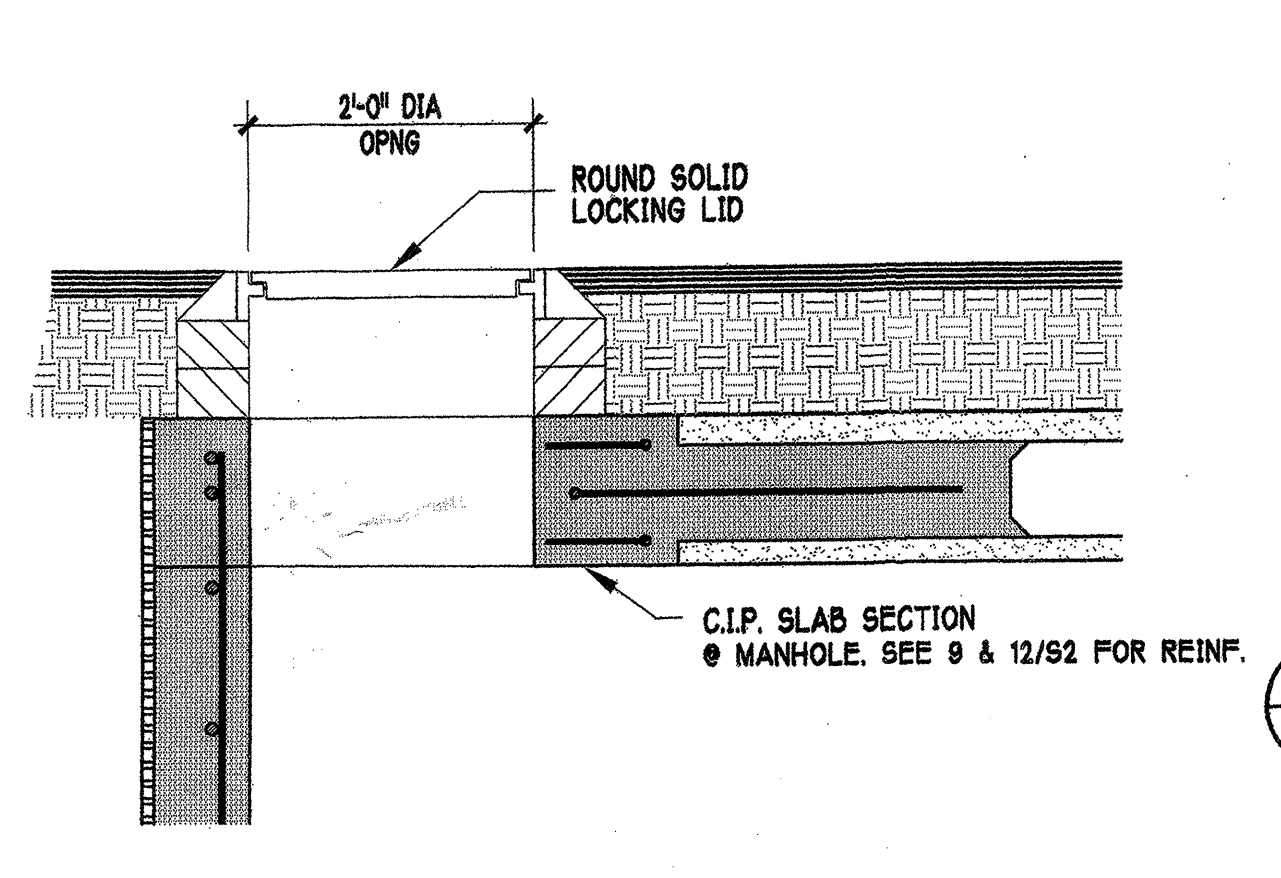
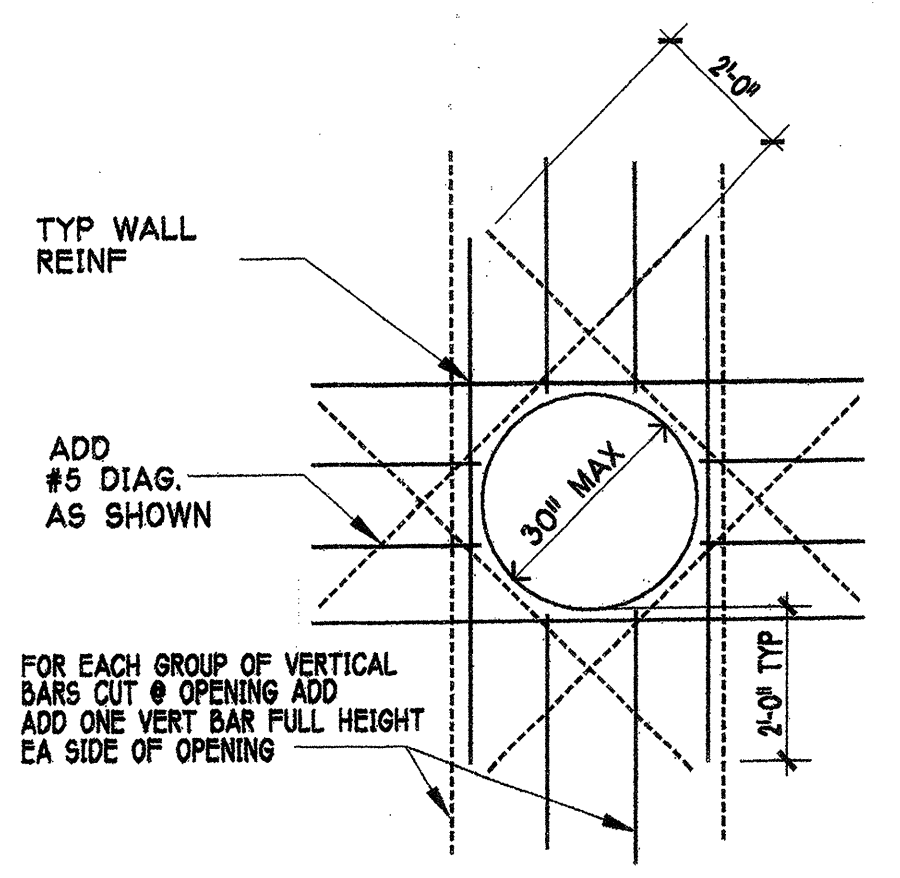
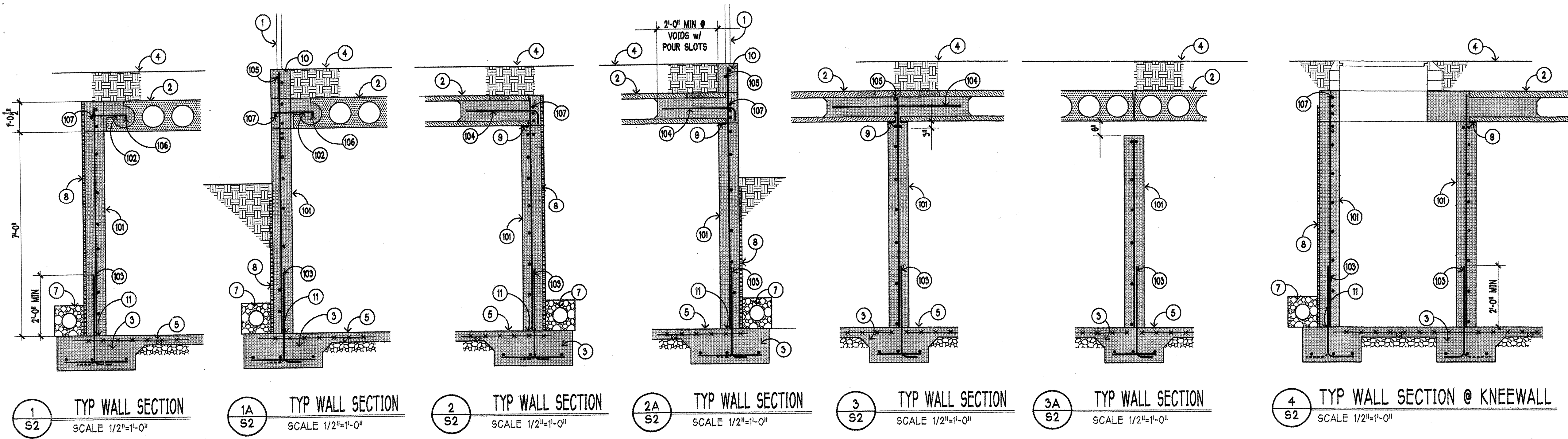
PROFESSIONAL ENGINEER
DANIEL J. KOSNIK
STATE OF WASHINGTON
NO. 30744
EXPIRES 9/12/2004

PARKWOOD MEADOWS
STORM WATER DETENTION VAULT
SNOHOMISH COUNTY, WA.

VAULT LID and
FOUNDATION PLAN

SHEET:
S1 of 3
KE# 04-025

HDEV-2237



DETAIL KEYNOTES

- PROVIDE HAND RAIL OR FENCE AS SHOWN ON THE CIVIL DRAWINGS.
- 12-1/2" THICK PRECAST PRESTRESSED HOLLOW CORE PLANK.
- FOOTING TO BE CAST WITH THE GRADE SLAB. SEE S1 FOR FOOTING SIZE AND REINFORCING.
- FINISHED GRADE ELEVATION VARIES. SEE THE CIVIL DWGS FOR FINAL GRADE ELEVATIONS.
- CONCRETE SLAB ON GRADE SEE S1 FOR GRADE SLAB THICKNESS, REINF & CONSTRUCTION DETAILS.
- 4" PERFORATED PVC FOOTING DRAIN WRAPPED IN 12"x12" MINIMUM DRAIN ROCK BEDDING & FILTER FABRIC. ROUTE DRAIN TO DISCHARGE PIPE AS SHOWN ON THE CIVIL DWGS.
- APPLY PREFABRICATED DRAINAGE PANEL TO ALL PERIMETER VAULT WALLS RECEIVING BACKFILL AS SHOWN.
- PLANK TO BEAR 3" +/- 1/4" ONTO TOP OF CONC. WALL. INSTALL NEOPRENE BEARING PAD AS DETAILED ON THE PRECAST PLANK SHOP DRAWINGS.
- 8" THICK CURB TO EXTEND NO MORE THAN 12" ABOVE THE TOP OF THE VAULT.
- AT WALL FTG INTERFACE PROVIDE 2x4 KEY OR BENTONITE CLAY WATERSTOP. TYP @ ALL PERIMETER WALLS.

REINFORCING KEYNOTES

- 8" THICK CONCRETE WALL. TYPICAL THROUGHOUT THE VAULT. REINF. w/ #5@12" o/c HORZ. & VERT. PLACE VERT REINF AT THE CENTER OF THE WALL WITH THE HORZ REINF TOWARD THE INTERIOR FACE OF THE WALL. PROVIDE (2)-#5 CONT. HORZ. BARS @ THE TOP OF THE WALL. PROVIDE CORNER BARS @ ALL HORZ. REINF AS SHOWN IN 1/5S. PROVIDE ADDITIONAL WALL REINF AT PIPE PENETRATIONS AS SHOWN IN 5/S2. WHERE CURB EXIST EXTEND VERTICAL REINF TO WITHIN 1-1/2" OF THE TOP OF THE CURB.
- #5 HAIRPIN w/ 20" WIDTH & 24" LONG TAILS @ EA. VOID KNOCKOUT.
- #5 FOOTING TO WALL DOWELS @ 12" o/c. PROVIDE STD HOOK @ END OF BAR CAST INTO FOOTING. ALTERNATE HOOK. PLACE ALL DOWELS @ THE CENTER OF THE WALL. DOWELS SHALL BE EMBEDDED A MINIMUM OF 9" +/- 1/2" INTO THE FOOTING & SHALL EXTEND 24" MINIMUM INTO THE WALL.
- #5x30" @ 24" o/c (#5x5'-0" @ INTERIOR BRG WALL) PLACED SUCH THAT EA 48" WIDE PLANK RECEIVES (2) BARS. LOCATE BARS IN VOIDS WITH POUR SLOTS AS SHOWN ON THE PRECAST PLANK SHOP DWGS. PROVIDE ADDITIONAL BARS @ EA. PLANK IF REQD. AND SHOWN ON THE PRECAST PLANK SHOP DWGS.
- (2)-#5 CONT.
- #5 CONT WITHIN EDGE VOID OF PLANK.
- (3)-#6 CONT. IN CLOSURE POUR AT THE PERIMETER OF THE VAULT.

BACKFILL NOTE

DO NOT BACK FILL PERIMETER VAULT WALLS UNTIL THE PRECAST HOLLOW CORE PLANK & CAST IN PLACE CONCRETE LIDS ARE FULLY INSTALLED & CONCRETE HAS CURED FOR A MINIMUM OF 7 DAYS.

PFN#: 03-100300

SNOHOMISH COUNTY
PLANNING AND DEVELOPMENT SERVICES
APPROVED FOR CONSTRUCTION
BY *[Signature]*
R/W PERMIT NO. *[Stamp]*

REVISIONS: ISSUED FOR CONST. PERMIT APPLICATION 02-24-04
1ST RESPONSE TO PLAN REVIEW COMMENTS 02-26-04

DATE: 02-24-04

KOSNIK ENGINEERING
REGISTERED PROFESSIONAL ENGINEER
1630 MILL CREEK BLVD., SUITE 100
MILL CREEK, WASHINGTON 98012
PH: (425) 743-7004
FAX: (425) 743-1848

EXPIRES 9/12/2004

PARKWOOD MEADOWS
STORM WATER DETENTION VAULT
SNOHOMISH COUNTY, WA.

STANDARD DETAILS & WALL SECTIONS

SHEET: **S2** of 3

KE# 04-025

HDEV-22238

CONCRETE

CONCRETE REQUIREMENTS:

LOCATION	STRENGTH	W/C
VAULT WALLS	3,000PSI @ 28DAYS	0.40
FTGS & GRADE SLAB	3,000PSI @ 28DAYS	0.50
PLANK VOID FILL	3,000PSI @ 28DAYS	0.55
JOINT GROUT	3,000PSI TO MEET PLANK MFG'S REQUIREMENTS	

- a. AIR CONTENT: CONCRETE EXPOSED TO WEATHER SHALL CONTAIN 5% +/- 1% ENTRAINED AIR.
- b. MIX DESIGN: TO BE BASED ON FIELD EXPERIENCE OR TRIAL MIXTURES.

TESTING SPECIFICATIONS:

ASTM C 31-01: METHOD OF MAKING AND CURING CONCRETE TEST SPECIMENS IN THE FIELD
 ASTM C 143-00: TEST METHOD FOR SLUMP OF PORTLAND CEMENT CONCRETE
 ACI-318: PART 2 - STANDARDS FOR TESTS AND MATERIALS

MATERIAL SPECIFICATIONS:

CEMENT: ASTM C150; AASHTO M85; WSDOT SECTION 9-01
 ADMIXTURES: ACI 301
 AGGREGATES: ASTM C33.
 WATER: ASTM C84.

MIXING AND PLACING REQUIREMENTS:

- a. MIXING AND TRANSPORTATION: SHALL BE IN ACCORDANCE WITH ACI 301, CHAPTER 7.
- b. PLACING: PLACE CONCRETE AS NEARLY AS PRACTICABLE TO ITS FINAL POSITION TO AVOID SEGREGATION. THE FREE UNCONFINED FALL OF THE CONCRETE SHALL NOT EXCEED 5 FEET.
- c. DEBRIS: REMOVE ALL DEBRIS FROM FORMS PRIOR TO PLACING CONCRETE.
- d. CONSOLIDATION: CONSOLIDATE CONCRETE BY SUITABLE MEANS. THOROUGHLY WORK CONCRETE AROUND REINFORCEMENT, EMBEDDED ITEMS AND INTO CORNERS OF FORMS.

CURING REQUIREMENTS:

- a. CURING: CONCRETE SHALL BE MAINTAINED IN A MOIST CONDITION FOR A SUITABLE PERIOD AFTER PLACEMENT, IN ACCORDANCE WITH THE CODE.
- b. WEATHER CONDITIONS: ADEQUATE PRECAUTIONS SHALL BE TAKEN DURING HOT AND COLD WEATHER IN ACCORDANCE WITH SECTION 12.3, ACI 301.

SPECIAL INSPECTION

GENERAL: SPECIAL INSPECTION BY A QUALIFIED INSPECTOR IS REQUIRED IN ACCORDANCE WITH THE 1997 UNIFORM BUILDING CODE, THE WASHINGTON STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND ANY ADDITIONAL REQUIREMENTS OF SNOHOMISH COUNTY ON THE FOLLOWING ITEMS:

- a. CONCRETE STRENGTH AND PLACEMENT
- b. REINFORCING BAR PLACEMENT

CERTIFICATION & SUPERVISION: THE SPECIAL INSPECTOR SHALL BE WABO CERTIFIED AND SUPERVISED BY REGISTERED PROFESSIONAL ENGINEER EMPLOYED BY THE FIRM PROVIDING THE INSPECTION SERVICES.

A THE SPECIAL INSPECTION TESTING AGENCY SHALL REVIEW FORMWORK AND REINFORCING STEEL BAR SIZE AND PLACEMENT. TO ENSURE THAT THEY ARE IN CONFORMANCE WITH THE SNOHOMISH COUNTY APPROVED CONSTRUCTION DOCUMENTS, PRIOR TO PLACING CONCRETE. WRITTEN REPORTS OF THESE FIELD REVIEWS SHALL BE SUBMITTED TO SNOHOMISH COUNTY IN CONJUNCTION WITH THE AS BUILT CONSTRUCTION DOCUMENTS.

B THE SPECIAL INSPECTION TESTING AGENCY SHALL BE ON SITE DURING ALL CONCRETE PLACEMENT PROCEDURES. FREQUENCY OF TESTING SHALL CONFORM TO UBC SECTION 1905.6.1. CYLINDERS SHALL REMAIN ON THE SITE IN ACCORDANCE WITH THE UBC. ALL TEST RESULTS SHALL BE SUBMITTED TO SNOHOMISH COUNTY IN CONJUNCTION WITH THE AS BUILT CONSTRUCTION DOCUMENTS.

FOUNDATION INSPECTION:

GEOTECHNICAL ENGINEER SHALL BE ON SITE DURING EXCAVATIONS FOR THE FOOTINGS IN ORDER TO VERIFICATION COMPETENCY OF THE EXISTING SOIL CONDITIONS & SHALL BE ON SITE TO OBSERVE ALL BACKFILL PLACEMENT AND COMPACTION PROCEDURES.

REINFORCING BAR

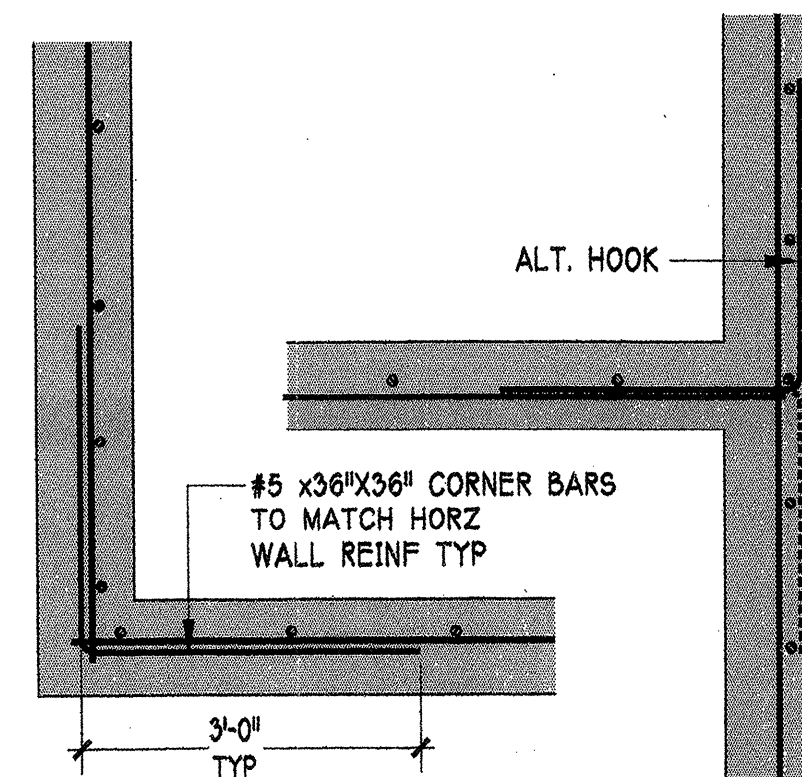
MATERIAL REQUIREMENT:

- a. REINFORCING BARS: USE DEFORMED BARS, CONFORM TO ASTM A615, GRADE 60, EXCEPT AS NOTED ON DRAWINGS.

FABRICATION AND PLACING REQUIREMENTS:

- a. 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.
- b. PLACING: PLACE BARS IN ACCORDANCE WITH CRSI - "PLACING REINFORCING BARS". REINF SHALL BE SUPPORTED AND TIED TO PREVENT DISPLACEMENT BY PLACING OF CONCRETE.
- c. CONCRETE COVERS: SHALL BE AS SHOWN IN THE DETAILS.
- d. 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, UNO.

LAP SPLICES: LAP ALL BARS 24" MIN UNLESS NOTED OTHERWISE ON THESE DRAWINGS.



1
93
TYP WALL CORNER REINF
SCALE 3/4"=1'-0"

GENERAL CONSTRUCTION NOTES

CODE:

BUILDING DESIGN AND CONSTRUCTION SHALL CONFORM TO THE PROVISIONS OF THE UNIFORM BUILDING CODE 1997 EDITION AS ADOPTED BY THE COUNTY OF SNOHOMISH, WASHINGTON

GENERAL DETAILS:

TYPICAL OR GENERAL NOTES AND DETAILS ON THESE SHEETS SHALL APPLY TO ALL CONSTRUCTION UNLESS SPECIFICALLY NOTED OR SHOWN OTHERWISE. CONSTRUCTION DETAILS NOT FULLY SHOWN OR NOTED SHALL BE SIMILAR TO DETAILS SHOWN FOR SIMILAR CONDITIONS.

DISCREPANCIES:

THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH A WRITTEN REQUEST FOR CLARIFICATION UPON FINDING ANY DISCREPANCY OR OMISSION IN THE DRAWINGS OR SPECIFICATIONS.

SHORING:

IT SHALL BE THE CONTRACTOR'S SOLE RESPONSIBILITY TO DESIGN AND PROVIDE ADEQUATE SHORING, RESHORING AND BRACING OF THE WORK AS REQUIRED TO PROTECT LIFE AND PROPERTY DURING THE CONSTRUCTION OF THIS BUILDING.

EXCAVATION:

THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL EXCAVATION PROCEDURES INCLUDING LAGGING, SHORING AND PROTECTION OF ADJACENT PROPERTY, STRUCTURES, STREETS AND UTILITIES.

STRUCTURAL FILL AND BACKFILL AGAINST WALLS:

- a. ALL BACKFILLING OPERATIONS & MATERIALS SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT.
- b. ONLY HAND OPERATED EQUIPMENT SHALL BE USED TO PLACE & COMPACT BACKFILL MATERIAL WITHIN 5FT OF THE FACE OF THE WALL.
- c. BACKFILL SHALL BE COMPACTED TO WITHIN 95% OF THE MAXIMUM DRY DENSITY IN ACCORDANCE WITH ASTM D-698.
- d. GENERAL CONTRACTOR SHALL SUBMIT TO THE GEOTECHNICAL ENGINEER OF RECORD A WRITTEN DESCRIPTION OF THE BACKFILL PROCEDURES AND MATERIALS TO BE USED ON THIS PROJECT, FOR HIS REVIEW AND APPROVAL.

HOLLOW CORE PLANK

SCOPE OF WORK: THE WORK INCLUDED IS THE DESIGN MANUFACTURE AND DELIVERY OF PRECAST PRESTRESSED 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 JOINTS SHALL BE GROUTED IN ACCORDANCE WITH THE MFG'S RECOMMENDATIONS.

DESIGN CRITERIA

FOUNDATIONS: VAULT DESIGN IS BASED ON THE FOLLOWING ASSUMED VALUES:

- ALLOWABLE BEARING PRESSURE = 2500PSF
- SOIL PRESSURE (EPW) = 55 PCF RESTRAINED-DRAINED WALLS
- = 350PCF PASSIVE
- COEFF. OF FRICTION = 0.45

WATER TABLE: THE WATER TABLE IS ASSUMED TO BE LOCATED BELOW BOTTOM OF THE VAULT - THEREFORE FLOATATION IS NOT A DESIGN CONSIDERATION.

PRECAST PLANK LOADING:

PLANK SHALL BE DESIGNED FOR THE FOLLOWING LIVE LOAD CONDITIONS NOT ASSUMED TO ACT CONCURRENTLY:

TRUCK LOADING HS20-44 (PER SNOHOMISH COUNTY EDDG DATED JUNE 2003) OR A UNIFORM LIVE LOAD 150PSF WHICH IS ASSUMED NOT TO ACT CONCURRENTLY WITH THE TRUCK LOADING.

IN ADDITION THE PLANKS SHALL BE DESIGNED TO ACCOMMODATE A MINIMUM OF 24" OF SATURATED SOIL @ 135PCF.

DEFERRED SUBMITTALS

THE FOLLOWING WORK IS A DEFERED SUBMITTAL:

- a. PRECAST PRESTRESSED HOLLOW CORE PLANK.

ALL DEFERRED SUBMITTALS SHALL BEAR THE STAMP AND SIGNATURE OF A STRUCTURAL ENGINEER LICENSED TO PRACTICE IN THE STATE OF WASHINGTON. THE DEFERRED SUBMITTAL ITEMS SHALL NOT BE INSTALLED UNTIL THEIR DESIGN AND SUBMITTAL DOCUMENTS HAVE BEEN APPROVED BY THE BUILDING OFFICIAL.

REVISIONS:

DATE	ISSUED FOR	CONIST. PERMIT APPLICATION
02-24-04		
02-26-04		1ST RESPONSE TO PLAN REVIEW COMMENTS

KOSNIK ENGINEERING
 STRUCTURAL ENGINEERING
 1820 MILL CREEK BLVD., SUITE 100
 MILL CREEK, WASHINGTON 98012
 PH: (425) 743-7004
 FAX: (425) 743-1848

WASHINGTON STATE REGISTERED PROFESSIONAL ENGINEER
 30744
 EXPIRES 9/12/2004

PARKWOOD MEADOWS
 STORM WATER DETENTION VAULT
 SNOHOMISH COUNTY, WA.

STRUCTURAL NOTES
 & STANDARD DETAILS

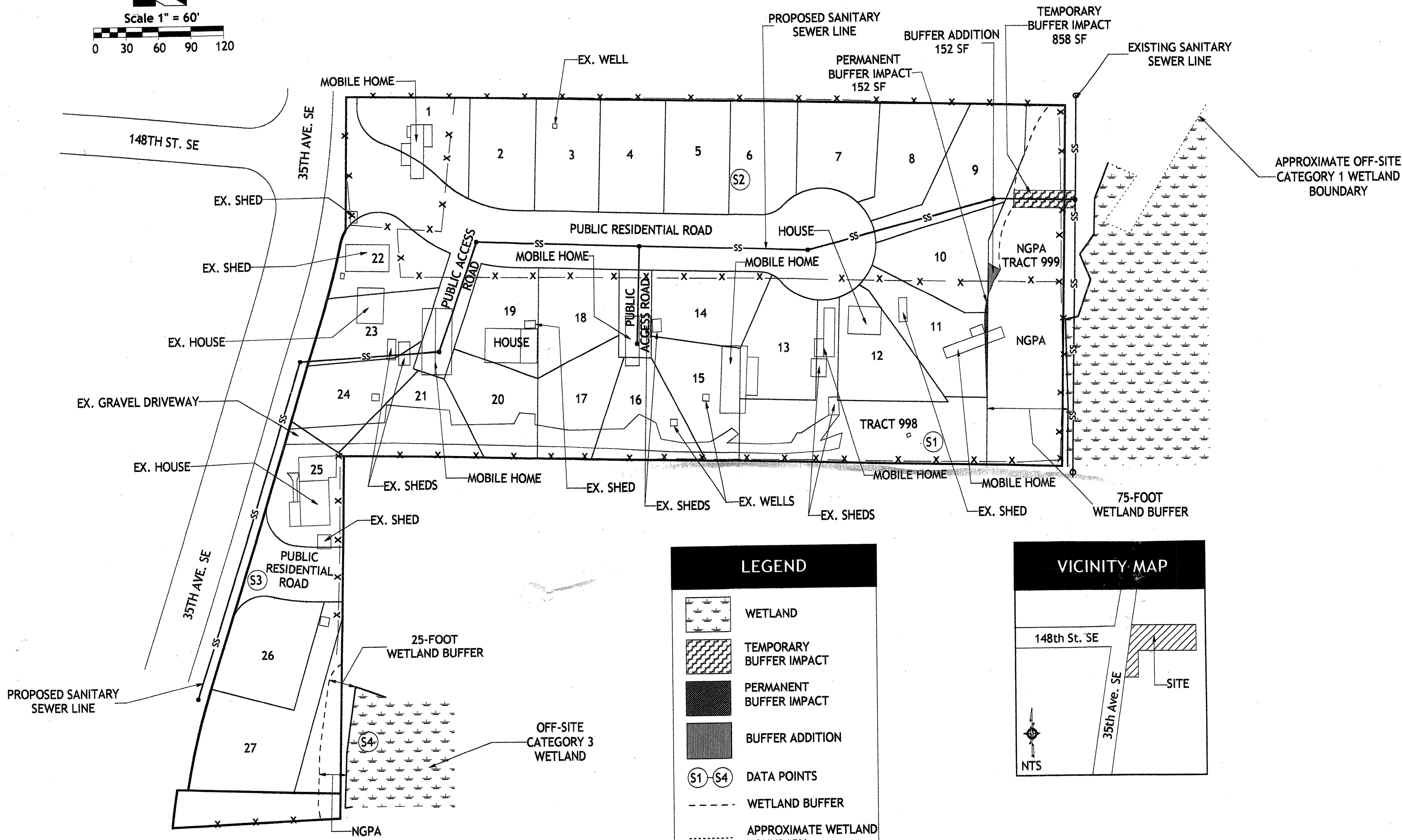
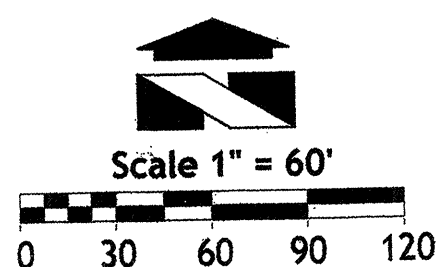
PFN#: 03-100300
 SNOHOMISH COUNTY
 PLANNING AND DEVELOPMENT SERVICES
 APPROVED FOR CONSTRUCTION
 BY *[Signature]*
 R/W PERMIT NO. 04-123417

SHEET:
S3 of 3
 KE# 04-025

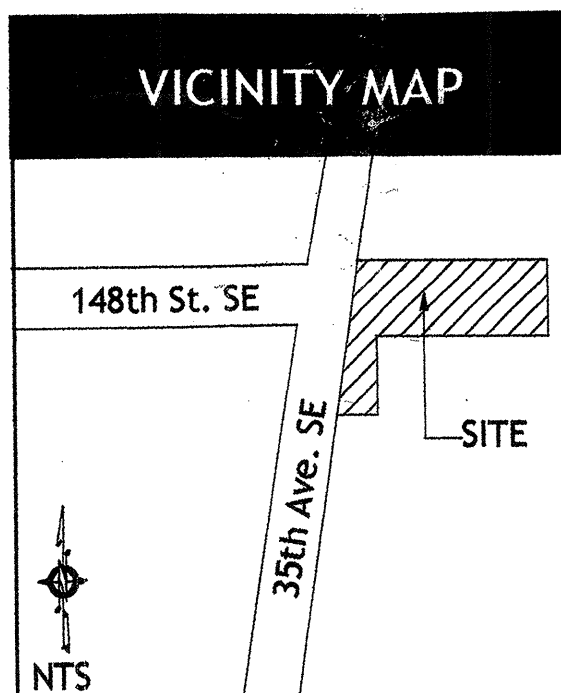
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STONEHEDGE

**PARKWOOD MEADOWS (PFN #03-100300 PA)
FINAL WETLAND MITIGATION PLAN MAP
SNOHOMISH COUNTY, WASHINGTON
A PORTION OF SECTION 04, TOWNSHIP 27N, RANGE 5E, W.M.**



LEGEND	
	WETLAND
	TEMPORARY BUFFER IMPACT
	PERMANENT BUFFER IMPACT
	BUFFER ADDITION
	DATA POINTS
	WETLAND BUFFER
	APPROXIMATE WETLAND BOUNDARY



WETLAND FUNCTIONS AND VALUES ASSESSMENT

Methodology:
The methodology for this functions and values assessment is based on professional opinion developed through past field analyses and interpretations. This assessment pertains specifically to the off-site wetlands, but is typical for assessments of similar systems throughout western Washington.

Analysis:
The off-site wetlands serve important functions to the surrounding environment such as hydrologic control, water quality, and wildlife habitat.

Hydrologic control (flood control and water supply) is a very important function provided by wetlands. Due to their depressional characteristics, wetlands effectively function as natural water storage areas during periods of high precipitation, and are able to accumulate stormwater runoff. Wetlands with limited outlets store greater amounts of water than wetlands with unrestricted flow outlets. Areas with thicker vegetation, such as the vegetation present within the off-site wetlands, retain much of the stormwater and help prevent soil erosion through hydrologic flows. The vegetation in the wetlands stores any excess stormwater that reaches the wetlands. Therefore, the off-site wetlands have the potential to create a valuable, natural water-retention system.

The off-site wetlands also provide important water quality features. Water quality is closely tied to hydrologic control. Wetlands are areas into which floodwaters spread during periods of high runoff. As water flows through wetlands, it is slowed by vegetation, and sediment settles to the bottom before the water moves further downstream. Suspended soils in the water may be removed as the water moves through wetlands, resulting in cleaner water entering streams, rivers, and lakes.

Many wildlife species are expected to use the off-site wetlands, because the wetlands provide valuable habitat for avian, mammal, and amphibian species. The wetlands and associated edges provide movement corridors, which become increasingly important as areas become populated with humans. Wetlands often contain resources such as food, water, thermal cover, and hiding cover in close proximity, which every animal needs to thrive. The following are typical avian species that may utilize the wetlands: American crow (*Corvus brachyrhynchos*), American robin (*Turdus migratorius*), black-capped chickadee (*Parus atricapillus*), bush-tit (*Psaltriparus minimus*), common raven (*Corvus corax*), rufous-sided towhee (*Pipilo erythrophthalmus*), song sparrow (*Melospiza melodia*), steller's jay (*Cyanocitta stelleri*), and winter wren (*Troglodytes troglodytes*). Mammalian species that may utilize this site include species that easily adapt to suburban environments such as bats (*Myotis* spp.), black-tailed deer (*Odocoileus hemionus columbianus*), deer mice (*Peromyscus maniculatus*), eastern cottontail rabbits (*Sylvilagus floridanus*), moles (*Scapanus* spp.), raccoons (*Procyon lotor*), shrews (*Sorex* spp.), skunks (*Mephitis* spp.), squirrels (*Sciurus carolinensis*, *Tamiasciurus douglasii*), and Virginia opossums (*Didelphis virginiana*). Although no egg masses, juveniles, or adult amphibians were observed during the field survey, some species are expected to occur within the wetlands or adjacent habitats. The expected amphibian species include the pacific tree frog (*Hyla regilla*), the bullfrog (*Rana catesbeiana*), and the northwestern salamander (*Ambystoma gracile gracile*). These lists are not intended to be all-inclusive, and may omit some bird, mammal, or amphibian species that do utilize the site.

Along with the functions and values mentioned above, wetlands also perform additional functions. Aesthetic value, recreational opportunities, and educational tools are examples of other important functions that wetlands often provide in western Washington.

USE OF THIS REPORT

This Final Mitigation Plan is supplied to Spadafora Construction & Development, LLC as a means of determining wetland conditions, 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.

Wetland Resources, Inc.

SITE DESCRIPTION

Wetland Resources, Inc. conducted a wetland delineation identifying the location of a jurisdictional wetland in June of 2003. The site encompasses approximately 5.9 acres and is located east and southeast of the intersection of 148th Street SE and 35th Avenue SE in Snohomish County. The property lies in the extreme NW portion of Section 4, Township 27N, Range 5E, W.M.

The subject property contains nine existing residences and nine associated sheds. The applicant is proposing to remove these structures. The site is essentially level across the property.

No wetlands are located on the subject property, but two off-site wetlands exist that will affect the property. However, a Category 1 wetland exists to the east of the northeast portion of the property and a Category 3 wetland exists to the east of the southeast portion of the property. These wetlands are isolated from each other and are not hydrologically connected in any way. Under the Snohomish County Critical Area Regulations (CAR), Chapter 30.62, urban Category 1 wetlands generally receive 75-foot protective buffers and urban Category 3 wetlands receive 25-foot buffers. A portion of the wetlands' protective buffers will extend onto the subject property, and will be designated Native Growth Protection Areas (NGPA).

Vegetation in the off-site wetlands is dominated by hardhack and willow species. The pasture areas in the upland portions of the subject property are highly disturbed and are primarily dominated by dandelions, cut-leaf blackberry, colonial bentgrass, and common velvet grass. Red alder, Douglas fir, salmonberry, and red elderberry dominate the forested upland areas.

PROJECT DESCRIPTION AND PROPOSAL

A 27-lot development and associated infrastructure is proposed on the subject property. To accommodate lot 11, the applicant is proposing to permanently impact the off-site Category 1 wetland buffer by 152 square feet on the extreme eastern portion of the lot. To compensate for that buffer impact, the applicant is proposing buffer addition directly north and adjacent to the buffer impact area. The buffer addition area equals 152 square feet, resulting in a 1:1 ratio between buffer impact and buffer addition areas.

TEMPORARY BUFFER IMPACT AND RESTORATION PROPOSAL

The applicant is also proposing to temporarily impact the buffer in the northeast portion of the property to install a sanitary sewer line for the proposed development. The sewer line will run generally west-east across the property and connect with an existing sewer line off-site to the east. The buffer area that will be temporarily impacted by the sanitary sewer line equals 858 square feet.

To address the temporary buffer impacts, the applicant is proposing to place the soil back in roughly the same horizon structure to minimize the effect on the soils. The applicant is also proposing to replant native shrubs on 5-foot centers, meaning that one shrub will be planted for every 25 square feet of impacted area. Therefore, because the total area to be temporarily impacted is 858 square feet, a total of 35 shrubs will be planted in the impacted buffer area. Shrubs shall be planted in clusters of 2-3 like species and shall be planted to achieve natural, asymmetric vegetation patterns found in nature. Planting these native shrubs in the impacted buffer area would also increase the vegetative diversity in the area.

BUFFER RESTORATION AREA PLANTINGS (858 SQUARE FEET)

Common Name	Latin Name	Size	Spacing	Quantity
Red elderberry	<i>Sambucus racemosa</i>	1 gal	5 ft	18
Oso-berry	<i>Oemleria cerasiformis</i>	1 gal	5 ft	17

ESTIMATED PROJECT COST

Quantity of One-gallon plants 35 @ 8.25/plant

TOTAL ESTIMATED COST (PLANT MATERIAL AND LABOR) \$288.75

Typically in Snohomish County, if the cost of plant material and labor is less than \$1,000.00, monitoring and bonding for plants and materials is not required.

Wetland Resources, Inc.
Delineation / Mitigation / Restoration / Habitat Creation / Permit Assistance
9505 19th Avenue S.E. Suite 106 Everett, Washington 98208
Phone (425) 337-3174
Fax (425) 337-3045
E-mail: mail@wetlandresources.com

**PARKWOOD MEADOWS
(PFN #03-100300 PA)
SNOHOMISH COUNTY, WASHINGTON**

Spadafora Const. & Devel., LLC
P.O. Box 649
Mukilteo, WA 98275

Sheet 1/1
Job # 02276
Drawn by: S. Spooner
Date: Feb. 12, 2004

STONEHEDGE

HDEV-2240