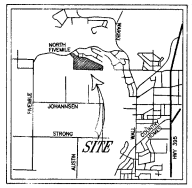
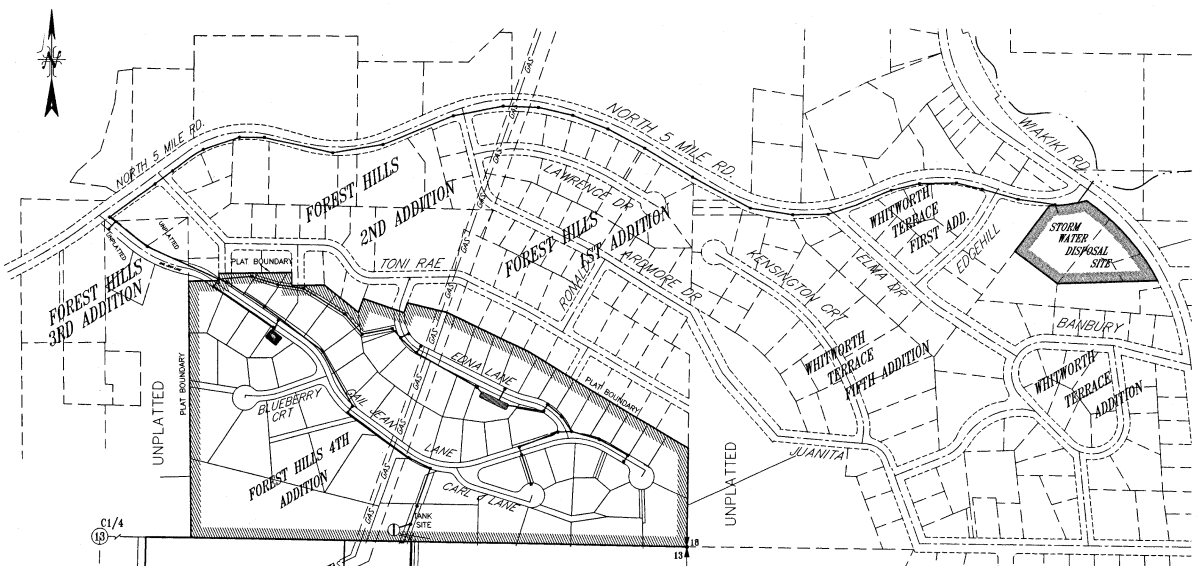
TITLE SHEET
for
FOREST HILLS 4TH ADDITION
PRIVATE ROAD and STORM SEWER
PORTION OF SECTION 13, T26N, R42E,W.M.
SPOKANE COUNTY, WASHINGTON



VICINITY MAP



STANDARD NOTES FOR CONSTRUCTION PLANS

The following standard notes are to be included in a road and drainage plan set, for privately sponsored developments. These notes are applicable to both public and private roads.

1) All work and materials shall be in conformance with the "SPOKANE COUNTY STANDARDS FOR ROAD AND SEWER CONSTRUCTION" 2001, and as amended.

2) Locations of existing utilities shown on the plans are approximate. The Contractor shall be responsible for locating all underground utilities. Any conflicting utilities shall be relocated prior to construction of road and drainage facilities.

3) The Contractor is required to have a complete set of the approved road and drainage plans on the job site whenever construction is in progress.

4) If the Contractor discovers any discrepancies between the plans and existing conditions encountered, the Contractor shall immediately notify the Design Engineer and the Spokane County Engineer's Office.

5) For construction of drywells, install filter fabric between the washed drainrock and the native soils.

6) Prior to site construction, the Contractor is responsible for locating underground utilities. Call the underground utility location service at 456-8000 before you dig.

7) For any curb grades less than 0.8% (0.008 ft/ft), a Washington State-licensed Professional Land Surveyor shall verify that the curb forms are at the grades noted on the approved plans, prior to placement of curb material. The Contractor is responsible for arranging and coordinating work with the Professional Land Surveyor.

8) The Contractor shall employ a licensed surveyor to verify that the cross-gutter forms are at the correct plane grade prior to concrete placement. The cross-gutters shall be constructed prior to paving, and the pavement shall then match the edge of concrete gutter.

9) The floor of a Grassed Percolation Area (GPA) swale includes the level portion of the floor of the swale, and the side slopes of the swale up to the GPA overflow elevation or top of drywell. The soil located in the floor of the GPA swale shall be a medium to well-draining material, with a minimum infiltration rate of 0.5 inches per hour. The Engineer shall provide a written statement which verifies that all GPA swales conform to this requirement. This written statement shall be submitted to the Spokane County Engineer's Office prior to installing finished landscaping/sod and prior to final acceptance. The swale floor material shall be installed to a native soil stratum which also meets or exceeds this minimum percolation rate of 0.5 inches per hour.

10) 48" and 54" SDMH to be WSDOT Standard manholes per drawing B-1e. WSDOT Type 1-L catch basin to be per standard plan B-1a. WSDOT 48" Type 2 Catch basin to be per standard drawing B-1e. Type 1 catch basins to be Spokane County Standard per drawing B-4. Type 5 grates are Spokane County Standard, and to be per Standard Plan B-16. Solid lids for Spokane County inlets are per plan B-15. Vaned grate lids for WSDOT structures are per Spk. Co. Standard drawing B-16. Flat grate lids for WSDOT structures are per WSDOT Standard drawing B-2a.

11) Place filter fabric under all rip-rap outfall pads on the project.

12) Curb drops shown to be per Spokane County Standard plan B-8.

13) Representatives of Williams Gas Pipeline may require temporary protective measures over the high pressure gas pipeline, based on pipeline depths to be measured by Williams Gas Pipeline before construction starts. Temporary measures may include additional cover depth or steel plates over the high pressure gas main for protection of this gas main during construction. Contact Williams Gas Pipeline at (509) 468-6550 before beginning construction and coordinate protective measures with their representatives. See Detail, Sheet 15.

14) Silt fence is to be placed around the downslope perimeter of the site before removal of erosion control measures. Leave fence in place until final ground cover roots and construction related erosion hazard subsides.

15) Pipes installed at over 20% grade are to be secured with standard pipe anchors.

16) Storm sewer to be constructed using ADS pipe with watertight joints. Joint coupler to be kept clean during pipe installation, and the installation procedure shall follow manufacturer's recommendations.

17) Contractor to provide traffic control for entire time construction activities occur within the right-of-way of North Five Mile Road. A traffic control plan must be submitted to the Spokane County Engineers office for approval prior to beginning construction. Status and amount of open trench must conform to Spokane County Road Standards. Any open trench remaining overnight must be fenced and protected with lighted barricades.

18) Anti-seep collars or concrete trench dams to be installed on all pipe in North Five Mile Road at 150' intervals.

19) Construction of the onsite stormwater pipeline, catchbasins and associated drainage facilities may occur concurrently with the offsite stormwater pipeline, manholes and drainage disposal facility, so long as the onsite catchbasins and/or inlets remain above grade and functionally, will not be capable of receiving any stormwater runoff prior to the offsite system being completed.

20) No paving or curbing of the onsite roads may occur until the offsite system is complete and a letter from the inspecting engineer verifies that the system is ready for onsite tie-in.

21) Language will be placed on the face of the plat that will allow Spokane County to invoke the portion of the bond that pertains to the offsite system in the event that this construction criteria is not adhered to.

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1507B
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.80 mi
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

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SHEET 5:	BLUEBERRY LANE
SHEET 6:	EDNA LANE
SHEET 7:	CARL J. LANE
SHEET 8:	GAIL JEAN CUL-DE-SAC
SHEET 9:	FIVE MILE ROAD STA 41+50 – STA 27+50
SHEET 10:	FIVE MILE ROAD STA 27+50 – STA 13+00
SHEET 11:	FIVE MILE ROAD STA 13+00 – STA 0+00
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NOTE:
UNDERGROUND UTILITIES WERE OBTAINED BY EXISTING FIELD LOCATED FIXTURES AND MAPS SUPPLIED BY SPOKANE COUNTY. THEY SHOULD BE FIELD VERIFIED.

LEGEND

- STORM DRAIN LINE FOR FOREST HILLS 4th
- STORM CATCH BASIN OR MANHOLE
- WSD — STORM DRAIN LINE FOR OFF-SITE RUNOFF (FUTURE NORTHVIEW ESTATES)
- D — DEAD END ROAD SIGN – PLACE WHERE INDICATED
- W — PROPOSED WATER LINE
- PROPOSED SANITARY SEWER LINE

CALL 48 HOURS BEFORE YOU DIG
456-8000
ONE CALL NUMBER

DEVELOPER

DATE: 9-5-03

BASIS OF BEARING
N0°29'00"E – EASTERLY BOUNDARY LINE OF FOREST HILLS 3RD ADDITION.

BASIS OF ELEVATION
2167.07 – SPIKE IN POWER POLE LOCATED AT SOUTH CORNER OF LOTS 1 & 2, BLOCK 10 IN FOREST HILLS 2ND ADDITION.

TO CONVERT THIS DATUM TO NAVD88, ADD 3.80' TO THE ELEVATIONS GIVEN.

ENGINEER'S CERTIFICATE
THE DESIGN IMPROVEMENTS SHOWN IN THIS SET OF PLANS AND CALCULATIONS CONFORM TO THE APPLICABLE EDITIONS OF THE SPOKANE COUNTY STANDARDS FOR ROAD AND SEWER CONSTRUCTION, AND THE SPOKANE COUNTY GUIDELINES FOR STORM WATER MANAGEMENT. THE SPOKANE COUNTY ENGINEER HAS APPROVED ALL DESIGN DEVIATIONS. I APPROVE THESE PLANS FOR CONSTRUCTION.

EXPIRES 01/22/04

THIS STAMP IS NOT VALID UNLESS SIGNED WITH AN ORIGINAL SIGNATURE AND DATE

0 100' 200' 400'

Ramer & Associates, L.L.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

DATE: 11/15/01	FOREST HILLS 4th ADDITION	PROJECT NO. 00032
SCALE: 1"=200'	ROAD & STORM SEWER PLANS	
DRAWN BY: WHJ/DPP	TITLE SHEET	SHT 1 OF 17
CHECKED BY: PMK		
FIELD BOOK:		

P1507B Ins Road & Drainage

POINT FILE:

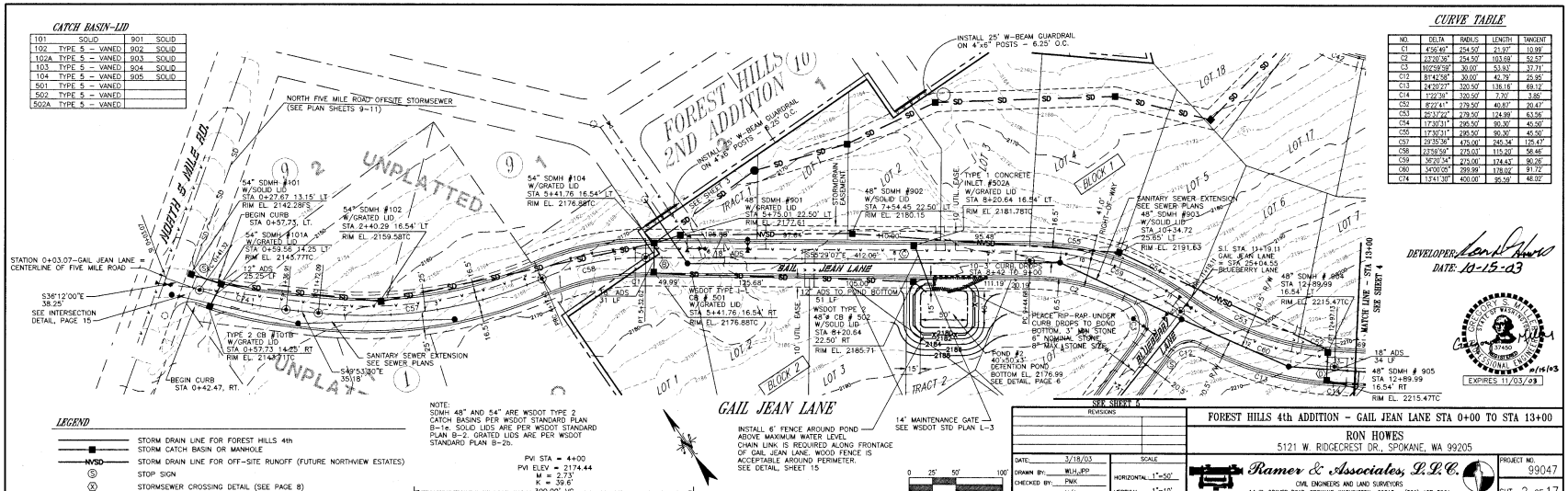
\\ACAD\acad\Land Projects\00032-NEWES-FOREST HILLS -OFFSITE\dwg\00032title.dwg 9/2/2003 10:20:03 AM PST

CATCH BASIN-LID

101	SOLID	901	SOLID
102	TYPE 5 – VANED	902	SOLID
102A	TYPE 5 – VANED	903	SOLID
103	TYPE 5 – VANED	904	SOLID
104	TYPE 5 – VANED	905	SOLID
501	TYPE 5 – VANED		
502	TYPE 5 – VANED		
502A	TYPE 5 – VANED		

CURVE TABLE

NO.	DELTA	RADIUS	LENGTH	TANGENT
C1	4°50'49"	254.50'	21.97'	10.99'
C2	23°20'36"	254.50'	103.69'	52.57'
C3	102°59'59"	30.00'	53.93'	37.71'
C12	81°42'58"	30.00'	42.79'	25.95'
C13	24°20'27"	320.50'	136.16'	69.12'
C14	122°36"	320.50'	7.70'	3.85'
C52	8°27'41"	279.50'	40.87'	20.47'
C53	25°37'22"	279.50'	124.99'	63.56'
C54	17°30'31"	295.50'	90.30'	45.56'
C55	17°30'31"	295.50'	90.30'	45.50'
C57	29°35'36"	475.00'	245.34'	125.47'
C58	23°58'59"	275.03'	115.20'	58.46'
C59	36°20'54"	275.00'	174.43'	90.26'
C60	34°00'05"	299.99'	178.02'	91.72'
C74	13°41'30"	400.00'	95.59'	48.02'



DEVELOPER: Ron Howes
DATE: 10-15-03

STATE OF WASHINGTON GARY L. MILLS 37450 REGISTERED PROFESSIONAL ENGINEER 10/15/03
EXPIRES 11/03/03

LEGEND

- STORM DRAIN LINE FOR FOREST HILLS 4th
- STORM CATCH BASIN OR MANHOLE
- STORM DRAIN LINE FOR OFF-SITE RUNOFF (FUTURE NORTHVIEW ESTATES)
- STOP SIGN
- STORMSEWER CROSSING DETAIL (SEE PAGE 8)

NOTE:
SDMH 48" AND 54" ARE WSDOT TYPE 2 CATCH BASINS PER WSDOT STANDARD PLAN B-1e. SOLID LIDS ARE PER WSDOT STANDARD PLAN B-2 GRATED LIDS ARE PER WSDOT STANDARD PLAN B-2b.

REVISIONS	

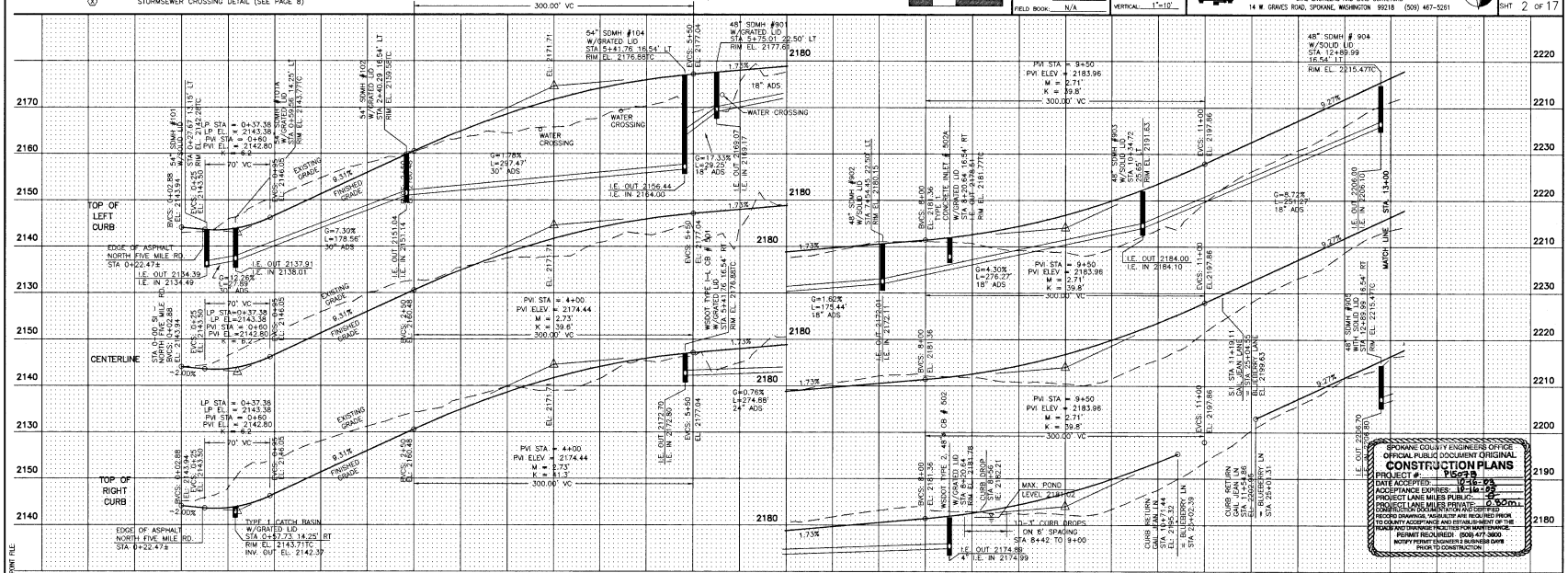
FOREST HILLS 4th ADDITION – GAIL JEAN LANE STA 0+00 TO STA 13+00

RON HOWES
5121 W. RIDGECREST DR., SPOKANE, WA 99205

DATE: 3/18/03
DRAWN BY: WLH,JPP
CHECKED BY: PMK
FIELD BOOK: N/A
SCALE
HORIZONTAL: 1"=50'
VERTICAL: 1"=10'

Ramer & Associates, P.S.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 99047
SHT 2 OF 17



SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: 95039
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0.50
PROJECT LANE MILES PRIVATE: 0.50
AS-BUILT DRAWINGS ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT INSPECTOR 1-2 BUSINESS DAYS PRIOR TO CONSTRUCTION

P-15078 Eng Rod Drawing

NE1/4, SEC. 13, TWP. 26, RGE. 42

POINT FILE:
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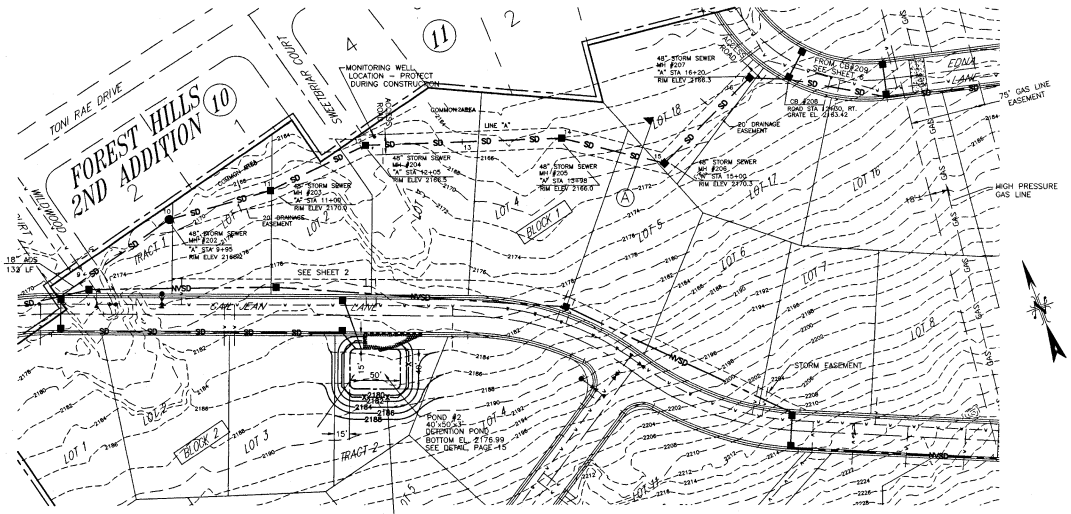
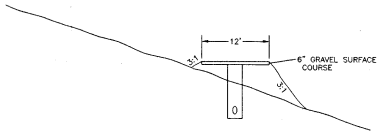
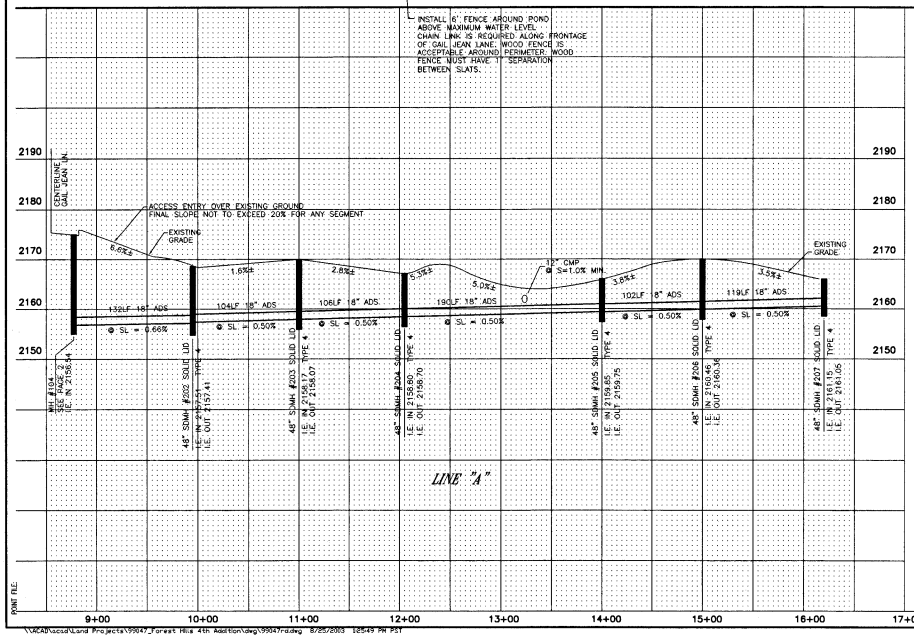




STORM PIPE W/ MAINTENANCE ACCESS DRIVE (A)

NTS

DEVELOPER: Ronald Howes
DATE: 8-26-03



NOTE:
48" SDMH ARE WSDOT TYPE 2 CATCH BASINS PER WSDOT STANDARD PLAN B-1e. SOLID LIDS ARE PER WSDOT STANDARD PLAN B-2.

LEGEND

- SD — STORM DRAIN LINE FOR FOREST HILLS 4th
- ■ STORM CATCH BASIN OR MANHOLE
- NVSD — STORM DRAIN LINE FOR OFF-SITE RUNOFF

0 25' 50' 100'

REVISIONS	

DATE: 7/23/02	SCALE
DRAWN BY: WJH,RP	HORIZONTAL: 1"=50'
CHECKED BY: PMK	VERTICAL: 1"=10'
FIELD BOOK: N/A	

FOREST HILLS 4th ADDITION - LINE "A"

RON HOWES
5121 W. RIDGECREST DR., SPOKANE, WA 99205

Ramer & Associates, L.L.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 99047
SHT 3 OF 17

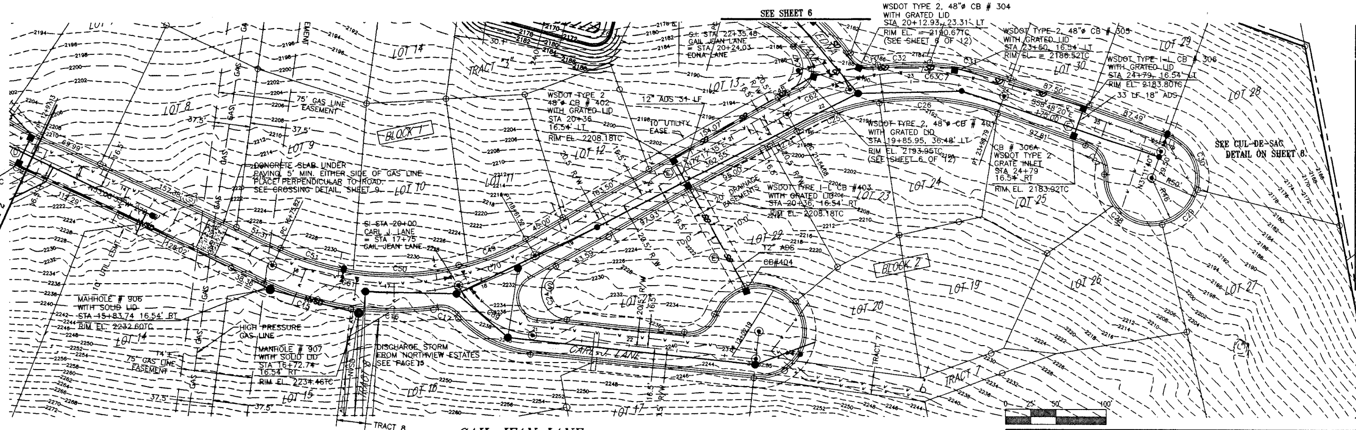
WILLIAM M. KOHLER 00036336 REGISTERED PROFESSIONAL ENGINEER STATE OF WASHINGTON
EXPIRES 01/22/03

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-1507 B
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0
PRIVATE: 0.60 mi.
CONSTRUCTION PLANS MUST BE CERTIFIED RECORD DRAWINGS, "AS-BUILT" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 5 BUSINESS DAYS PRIOR TO CONSTRUCTION

P-1507 B Eng Rec'd Dwg NE1/4, SEC. 13, TWP. 26, RANG. 42

PDMT FILE:

\\ACAD\acad\Land Projects\99047_Forest Hls 4th Addition\dwg\99047rd.dwg 8/25/2003 12:49 PM PST



CURVE TABLE

NO.	DELTA	RADIUS	LENGTH	TANGENT	B.O.C.
C15	17°4'42"	320.50'	95.53'	48.12'	
C16	15°23'19"	320.50'	86.08'	43.30'	
C17	54°39'23"	30.00'	28.62'	15.50'	30.53'
C24	144°29'43"	30.00'	75.66'	93.71'	80.17'
C25	20°45'36"	254.50'	92.21'	46.62'	
C26	28°8'29"	254.50'	125.00'	63.79'	
C27	74°46'54"	30.00'	39.16'	22.93'	
C28	107°9'51"	50.00'	93.52'	67.77'	
C29	63°1'31"	50.00'	55.00'	30.66'	
C30	84°36'3"	50.00'	73.83'	45.50'	
C31	16°43'2"	295.50'	86.22'	43.42'	
C32	10°31'14"	295.50'	54.26'	27.21'	
C33	62°33'29"	30.00'	32.76'	18.23'	34.94'
C47	110°55'17"	30.00'	58.08'	43.59'	61.95'
C48	2°12'21"	295.50'	11.38'	5.69'	
C49	15°32'8"	279.50'	75.78'	38.13'	
C50	24°42'6"	279.50'	120.50'	61.20'	
C51	14°19'38"	279.50'	69.89'	35.13'	
C61	38°02'14"	300.00'	199.16'	103.41'	
C62	14°52'35"	275.00'	71.40'	35.90'	
C63	34°01'30"	275.00'	163.31'	84.14'	
C70	16°31'25"	300.00'	86.52'	43.56'	

DEVELOPER: [signature]

DATE: 9-5-03

PETER M. KRUSE · STATE OF WASHINGTON · 0023636 · REGISTERED PROFESSIONAL ENGINEER · 9-05-03

EXPIRES 01/22/05

LEGEND

- SD — STORM DRAIN LINE FOR FOREST HILLS 4th
- STORM CATCH BASIN OR MANHOLE
- NVSD — STORM DRAIN LINE FOR OFF-SITE RUNOFF (FUTURE NORTHVIEW ESTATES)
- (S) STOP SIGN
- (X) STORMSEWER CROSSING DETAIL (SEE PAGE 8)

NOTE: HIGH PRESSURE GAS LINE
CONTRACTOR TO NOTIFY WILLIAMS GAS PIPELINE CORP. AT (509) 466-6650 3 DAYS PRIOR TO DIGGING IN THE VICINITY OF THE 16" GAS LINE. CONTRACTOR SHALL NOT EXPOSE OR EXCAVATE BENEATH THE 16" GAS LINE WITHOUT A REPRESENTATIVE OF WILLIAMS GAS PIPELINE CORP. ON SITE.

GAIL JEAN LANE

CATCH BASIN-LID

404	TYPE 5 – STRAIGHT	904	SOLID
403	TYPE 5 – VANED	905	SOLID
402	TYPE 5 – VANED	906	SOLID
401	TYPE 5 – VANED	907	SOLID
304	TYPE 5 – VANED		
305	TYPE 5 – VANED		
306	TYPE 5 – STRAIGHT		
306A	TYPE 5 – STRAIGHT		

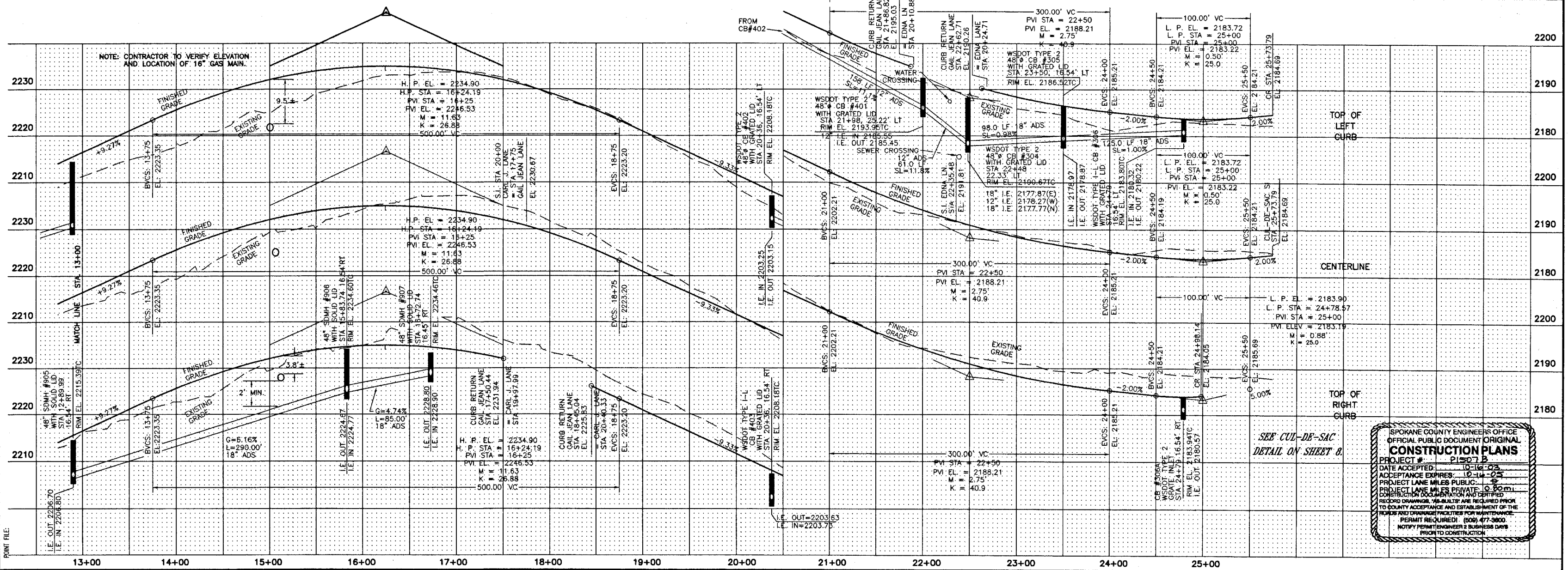
REVISIONS	
DATE: 1/13/03	SCALE
DRAWN BY: WLH,JPP	HORIZONTAL: 1"=50'
CHECKED BY: PMK	VERTICAL: 1"=10'
FIELD BOOK: N/A	

FOREST HILLS 4th ADDITION – GAIL JEAN LANE STA 13+00 TO STA 25+73.79

RON HOWES
5121 W. RIDGECREST DR., SPOKANE, WA 99205

Ramer & Associates, L.L.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 99047



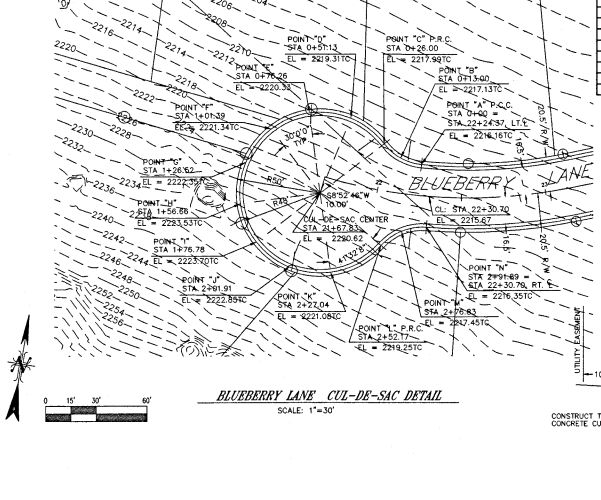
SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1507B
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.80 mi
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600.
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

\\ACAD\prod\Land Projects\99047 Forest Hills 4th Addition\dwg\99047rd.dwg 9/4/2003 2:23:23 PM PST

P1507B Eng Road & Drainage

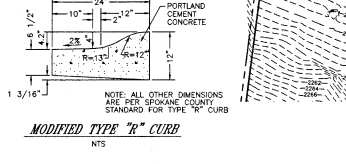
CURVE TABLE

NO.	DELTA	RADIUS	LENGTH	TANGENT	B.O.C.
C3	102°59'59"	50.00'	53.94'	37.71'	57.53'
C5	5°37'54"	279.50'	27.47'	13.75'	
C6	45°33'29"	30.00'	24.38'	12.91'	
C7	58°25'43"	50.00'	50.99'	27.96'	
C8	55°47'34"	50.00'	48.69'	26.47'	
C9	49°08'33"	50.00'	42.86'	22.86'	
C10	49°08'33"	50.00'	42.86'	22.86'	
C12	81°42'58"	30.00'	42.79'	25.95'	45.79'
C71	69°01'45"	50.00'	60.24'	34.38'	
C72	53°45'47"	30.00'	28.15'	15.21'	
C73	3°38'14"	320.50'	20.35'	10.18'	



BLUEBERRY LANE CUL-DE-SAC DETAIL

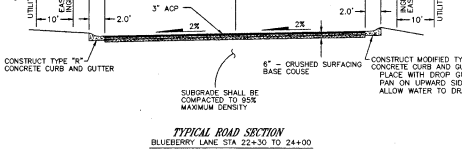
SCALE: 1"=30'



NOTE: ALL OTHER DIMENSIONS ARE PER SPOKANE COUNTY STANDARD FOR TYPE "R" CURB

MODIFIED TYPE "R" CURB

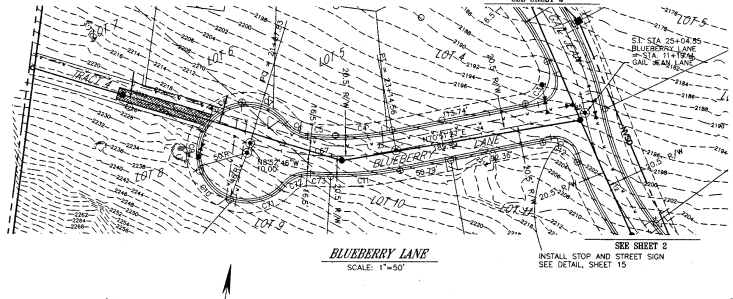
NTS



TYPICAL ROAD SECTION

BLUEBERRY LANE STA 22+30 TO 24+00

NTS



INSTALL STOP AND STREET SIGN SEE DETAIL, SHEET 15

BLUEBERRY LANE

SCALE: 1"=50'

0 25' 50' 100'

DEVELOPER: 8-26-03

DATE:

EXPIRES 01/22/05

REVISIONS	

FOREST HILLS 4th ADDITION - BLUEBERRY LANE

RON HOWES

5121 W. RIDGECREST DR., SPOKANE, WA 99205

DATE: 7/25/02	SCALE
DRAWN BY: WLH, PP	HORIZONTAL: 1"=50'
CHECKED BY: PMK	VERTICAL: 1"=10'
FIELD BOOK: N/A	

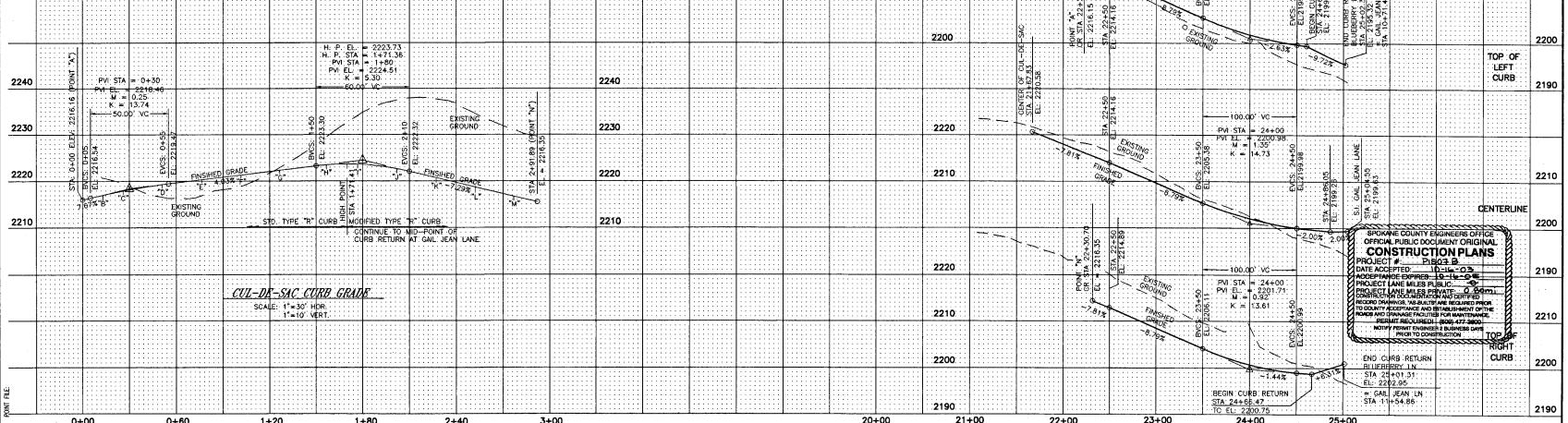
Ramer & Associates, L.P.C.

CIVIL ENGINEERS AND LAND SURVEYORS

14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 99047

SHT 5 OF 17



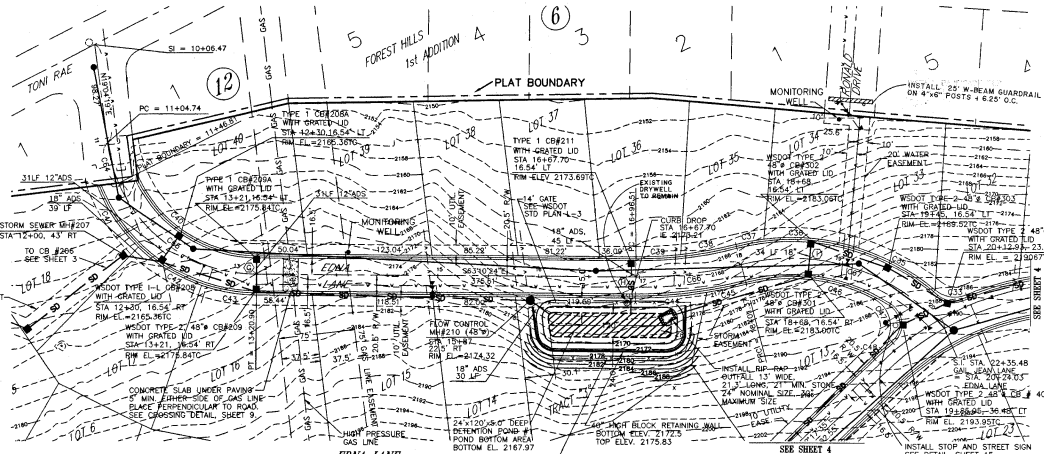
SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1507 B
DATE ACCEPTED: 10-14-03
ACCEPTANCE EXPIRES: 10-14-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.54mi
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, AS-BUILT ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED - (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

POINT FILE:

\\ACAD\acad\Land Projects\99047_Forest Hills 4th Addition\dwg\99047r-dwg 8/25/2003 12:49 PM PST

P1507B

Engineering Drawing



NOTE: HIGH PRESSURE GAS LINE CONTRACTOR TO NOTIFY WILLIAMS GAS PIPELINE CORP. AT (509) 466-6650 3 DAYS PRIOR TO DIGGING IN THE VICINITY OF THE 16" GAS LINE. CONTRACTOR SHALL NOT EXPOSE OR EXCAVATE BENEATH THE 16" GAS LINE WITHOUT A REPRESENTATIVE OF WILLIAMS GAS PIPELINE CORP. ON SITE.

CATCH BASIN-LID

206	SOLID	301	T5 - VANED
207	SOLID	302	T5 - VANED
208	T5 - VANED	303	T5 - VANED
209	T5 - VANED		
209A	T5 - VANED		
210	SOLID		
211	T5 - STRAIGHT		

CURVE TABLE

NO.	DELTA	RADIUS	LENGTH	TANGENT
C33	62°33'29"	30.00'	32.76'	18.23'
C35	24°11'18"	220.50'	92.46'	46.91'
C36	22°13'45"	220.50'	85.55'	43.32'
C37	7°17'59"	220.50'	28.07'	14.05'
C38	8°21'29"	379.50'	55.36'	27.73'
C39	6°39'45"	379.50'	44.13'	22.09'
C40	67°25'8"	129.50'	152.38'	86.40'
C41	24°52'3"	170.50'	74.00'	37.59'
C42	24°52'3"	170.50'	74.00'	37.59'
C43	18°44'3"	170.50'	55.75'	28.13'
C44	9°36'9"	420.50'	70.47'	35.32'
C45	5°25'5"	420.50'	39.76'	19.90'
C46	41°46'16"	179.50'	130.88'	68.49'
C47	110°55'17"	30.00'	58.08'	43.59'
C48	2°12'21"	295.50'	11.38'	5.69'
C64	16°04'10"	150.00	42.07	21.17'
C65	66°29'54"	150.00	174.09	98.34'
C66	15°01'14"	400.00	104.86	52.73'
C67	83°47'05"	200.00	222.65	124.45'

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: PIE5-16
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: .25
PROJECT LANE MILES PRIVATE: 2.50 (M)
RECORD DRAWINGS: NEW BUILT BY AND REGARDED BY THE CONTRACTOR AND ACCEPTED BY THE OWNER OF THE ROAD AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 7 BUSINESS DAYS PRIOR TO CONSTRUCTION

DEVELOPER: Ron Howes
DATE: 9-5-03

STATE OF WASHINGTON — 22636 — REGISTERED PROFESSIONAL ENGINEER — 9-05-03
EXPIRES 01/22/04

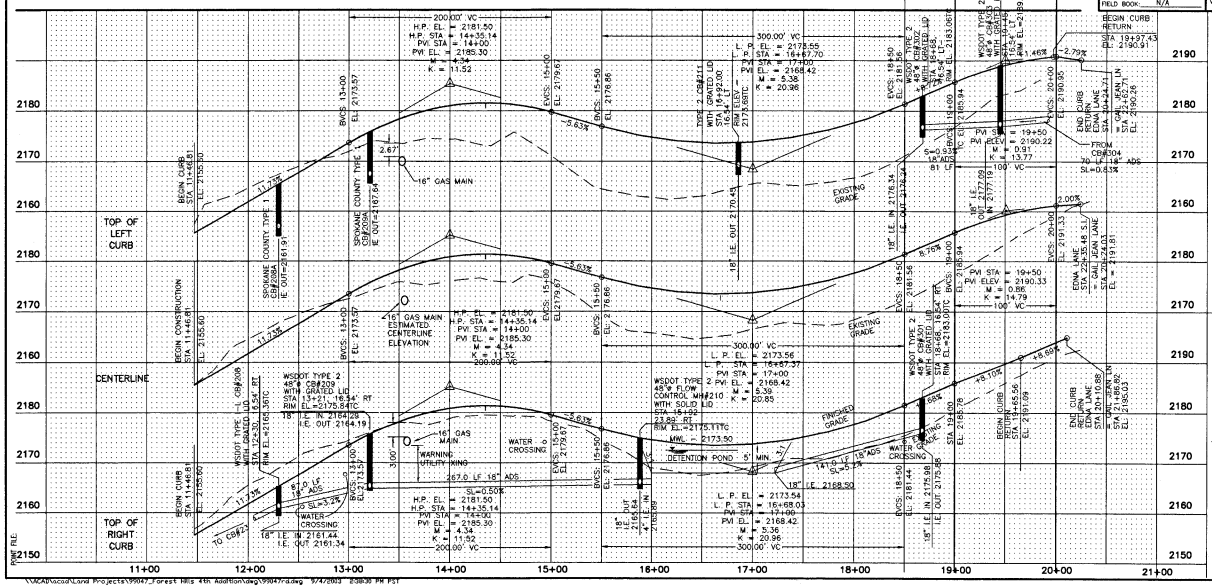
LEGEND

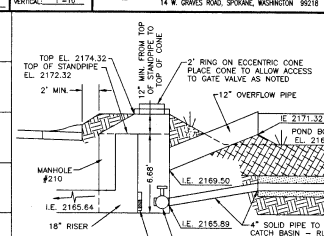
- SD — STORM DRAIN LINE FOR FOREST HILLS 4th
- STORM CATCH BASIN OR MANHOLE
- (D) STORMSEWER CROSSING DETAIL (SEE PAGE 8)

REVISIONS	

FOREST HILLS 4th ADDITION - EDNA LANE
RON HOWES
5121 W. RIDGECREST DR., SPOKANE, WA 99205

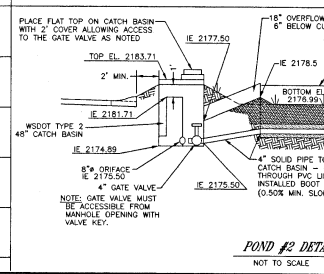
DATE: 11/09/01	SCALE		
DRAWN BY: WJH,JPP	HORIZONTAL: 1"=50'	Ramer & Associates, S.P.C. CIVIL ENGINEERS AND LAND SURVEYORS 14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261	PROJECT NO. 99047
CHECKED BY: PMK	VERTICAL: 1"=10'		SHT 6 OF 17
FIELD BOOK: N/A			





POND 1 DETAIL

NTS



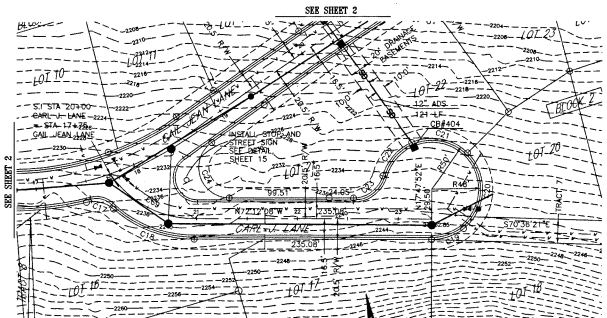
POND #2 DETAIL

NOT TO SCALE

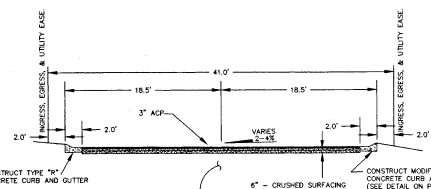
P-1507B Eng Book/Drawing NE1/4, SEC. 13, TWP. 26, RANG. 42

CURVE TABLE

NO.	DELTA	RADIUS	LENGTH	TANGENT	B.O.C.
C17	54°39'23"	30.00'	28.62'	15.50'	30.53'
C18	41°14'59"	120.50'	86.75'	45.35'	
C19	38°58'25"	50.00'	34.01'	17.69'	
C20	96°28'57"	50.00'	84.20'	56.00'	
C21	68°10'47"	50.00'	59.50'	33.84'	
C22	51°18'45"	50.00'	44.63'	23.93'	
C23	74°46'54"	30.00'	39.16'	22.93'	
C24	144°29'43"	30.00'	75.66'	93.71'	80.71
C69	56°01'08"	100.00'	97.77'	53.19'	

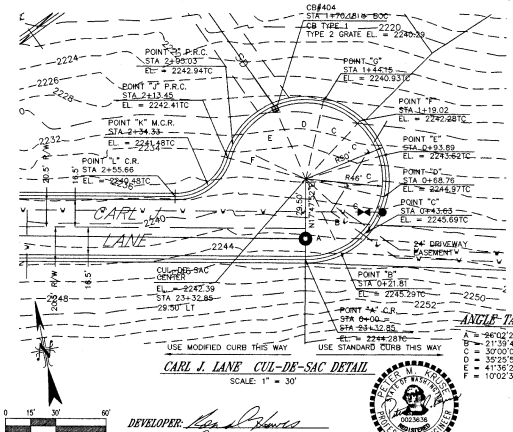


CARL J. LANE



TYPICAL ROAD SECTION
CARL J. LANE STA 20+00 TO STA 23+32.85

NTS



CARL J. LANE CUL-DE-SAC DETAIL

SCALE: 1" = 30'

ANGLE TABLE

A =	26°02'21"
B =	21°39'42"
C =	30°00'00"
D =	35°25'57"
E =	41°36'21"
F =	10°02'32"

DEVELOPER: Ron Howes
DATE: 8-5-03

REGISTERED PROFESSIONAL ENGINEER
RONALD M. RAMER
STATE OF WASHINGTON
22893
8-5-03
EXPIRES 01/22/04

LEGEND

- SD — STORM DRAIN LINE FOR FOREST HILLS 4th
- STORM CATCH BASIN OR MANHOLE
- NVSD — STORM DRAIN LINE FOR OFF-SITE RUNOFF (FUTUI

0 25' 50' 100'

REVISIONS	

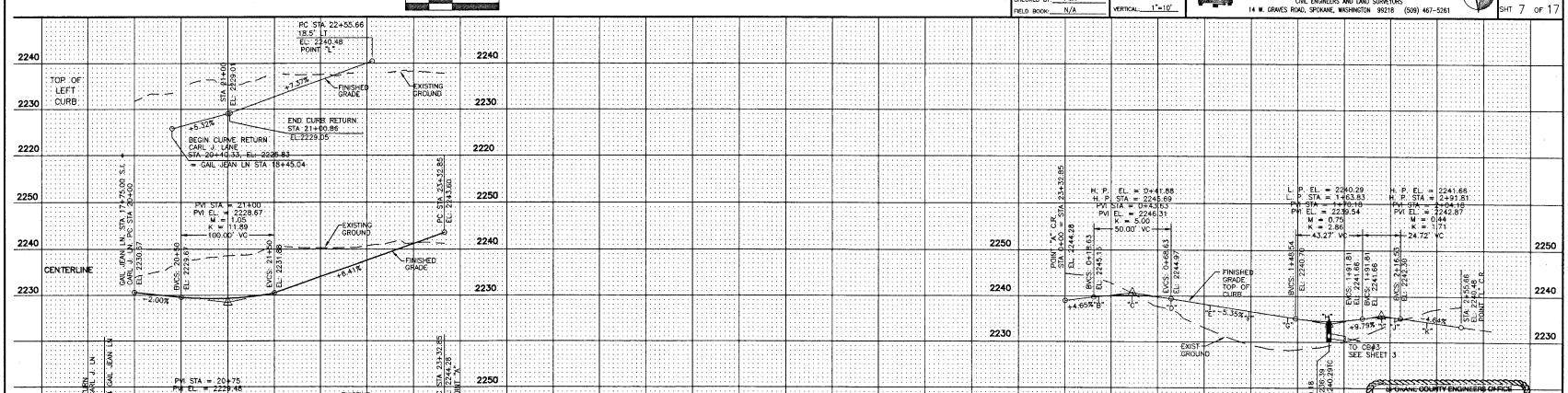
DATE: 1/13/03
DRAWN BY: WLH_PP
CHECKED BY: PMK
FIELD BOOK: N/A

SCALE
HORIZONTAL: 1"=50'
VERTICAL: 1"=10'

FOREST HILLS 4th ADDITION - CARL J. LANE
RON HOWES
5121 W. RIDGECREST DR., SPOKANE, WA 99205

Ramer & Associates, S.P.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 99047
SHT 7 OF 17



CUL-DE-SAC CURB GRADE

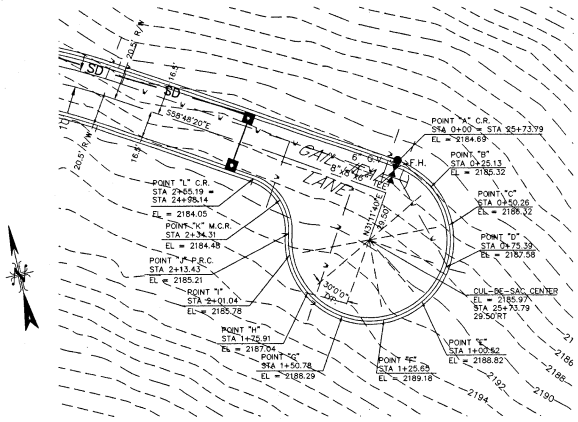
SCALE: 1" = 30' HOR.
1" = 10' VERT.

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT # P-15018
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: .35
PROJECT LANE MILES PRIVATE: 0.001
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

POINT FILE:

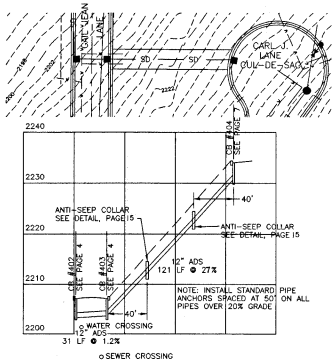
C:\CAD\acad\Land Projects\99047_3 Forest Hills 4th Addition\dwg\99047.dwg 9/2/2003 10:08 PM PST

P15018 Ron Howes NE1/4, SEC. 13, TWP. 26, RANG. 42



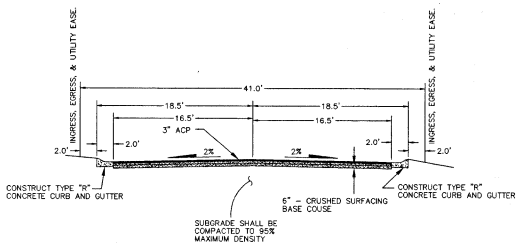
GAIL JEAN LANE CUL-DE-SAC DETAIL

SCALE: 1" = 30' HOR.
1" = 10' VERT.



STORMSEWER LINE E

SCALE: 1" = 50' HOR.
1" = 10' VERT.



TYPICAL ROAD SECTION
GAIL JEAN STA 0+00 TO STA 25+73.79
EDNA LANE STA 11+46.81 TO STA 20+24.03

NTS

DEVELOPER: Ron L. Howes

DATE: 9-5-03

STATE OF WASHINGTON
MICHAEL P. RAMER
20236.36
REGISTERED PROFESSIONAL ENGINEER
12-2-03
EXPIRES: 01/22/04

0 15' 30' 60'

REVISIONS

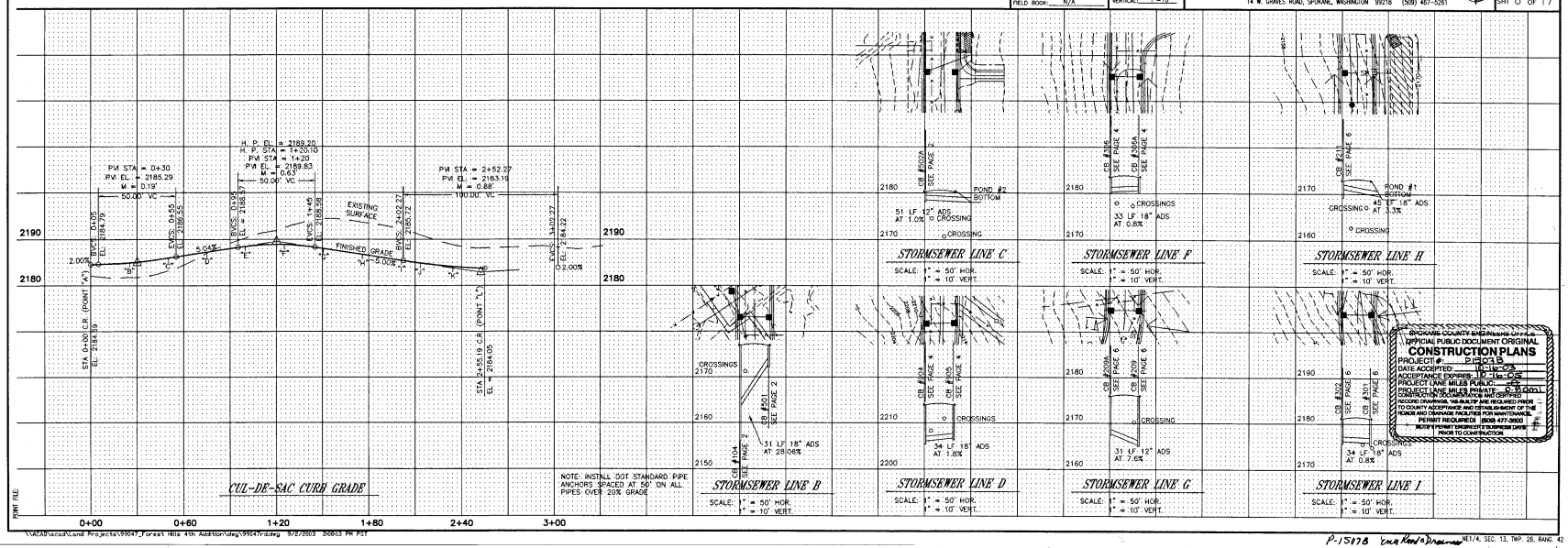
FOREST HILLS 4th ADDITION - GAIL JEAN LANE CUL-DE-SAC
RON HOWES
5121 W. RIDGECREST DR., SPOKANE, WA 99205

DATE: 11/12/01	SCALE
DRAWN BY: WLH,JPP	HORIZONTAL: 1"=30'
CHECKED BY: PMK	VERTICAL: 1"=10'
FIELD BOOK: N/A	

Ramer & Associates, S.L.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 99047

SHT 8 OF 17

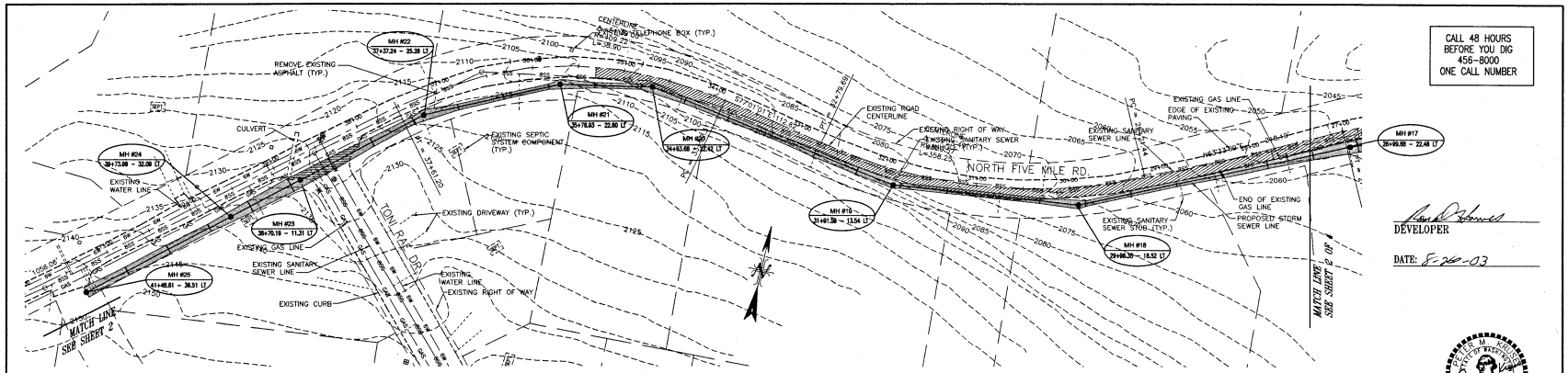


SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1303B
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0.5
PRIVATE LANE MILES PRIVATE: 0.75 (0.1)
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADWAY AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTE: PERMIT SIGNOFF IS REQUIRED ONLY PRIOR TO CONSTRUCTION

PMK FILE:

\\CADD\acad\Land Projects\99047_Forest Hills 4th Addition\dwg\99047rdwg 9/2/2003 8:08:13 PM PST

P-15078 Edna Road Drainage NE1/4, SEC. 13, TWP. 26, RANG. 42



DEVELOPER

DATE: 8-26-03

LEGEND

- EXISTING WATER VALVE
- EXISTING MONUMENT
- EXISTING UNDERGROUND WARNING SIGN
- REMOVE AND REPLACE EXISTING ASPHALT

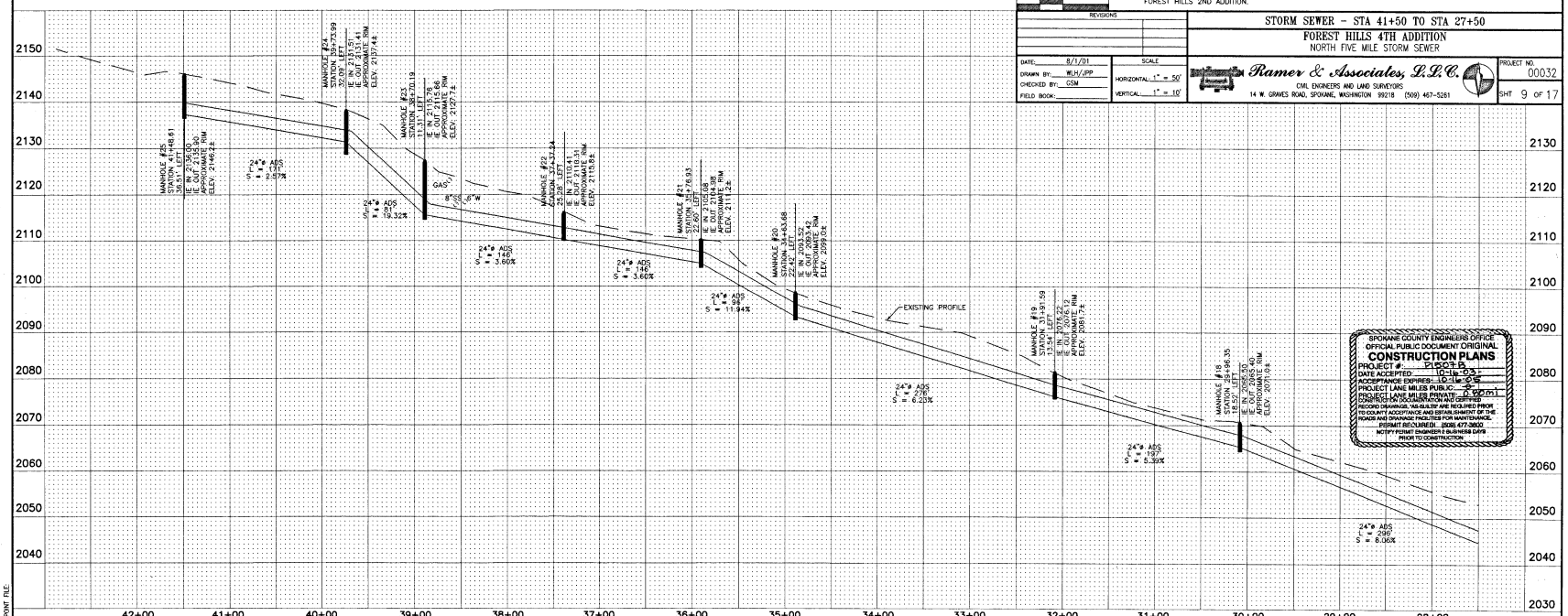
NOTE:
FOR FIVE MILE ROAD CENTERLINE INFORMATION, SEE TABLES ON SHEET 16

NOTE:
UNDERGROUND UTILITIES WERE OBTAINED BY EXISTING FIELD LOCATED FIXTURES AND MAPS SUPPLIED BY SPOKANE COUNTY, PRODUCED FOR UID - 964. THEY SHOULD BE FIELD VERIFIED.

BASIS OF BEARING
N0°29'00"E - EASTERLY BOUNDARY LINE OF FOREST HILLS 3RD ADDITION.

BASIS OF ELEVATION
2167.07 - SPIKE IN POWER POLE LOCATED AT SOUTH CORNER OF LOTS 1 & 2, BLOCK 10 IN FOREST HILLS 2ND ADDITION.

0 25' 50' 100'



SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P15073
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0.00
PROJECT LANE MILES PRIVATE: 0.00
CONTRACTOR DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, AS BUILTS ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT RECURRED: (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

STATE OF WASHINGTON REGISTERED PROFESSIONAL ENGINEER 30236 36
EXPIRES 01/22/05

REVISIONS	

DATE: 8/1/01	SCALE
DRAWN BY: WLH/JPP	HORIZONTAL: 1" = 50'
CHECKED BY: GSM	VERTICAL: 1" = 10'
FIELD BOOK:	

STORM SEWER - STA 41+50 TO STA 27+50
FOREST HILLS 4TH ADDITION
NORTH FIVE MILE STORM SEWER

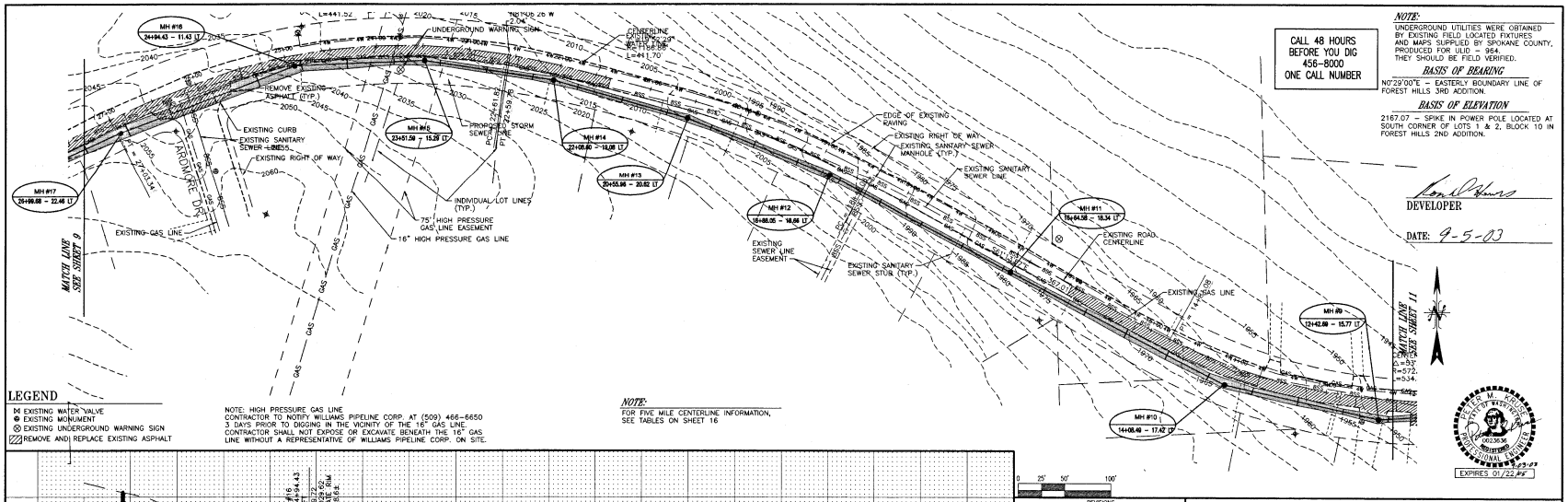
Ramer & Associates, L.L.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5281

PROJECT NO. 00032
SHT 9 OF 17

POINT FILE

\\CADD\SCWI\Civil Projects\00032-FIVEMILE-FOREST HILLS -GRIFFITH\dwg\00032RM3.dwg 8/26/2003 7:21:53 AM PST

P-15073



CALL 48 HOURS BEFORE YOU DIG 456-8000 ONE CALL NUMBER

NOTE:
UNDERGROUND UTILITIES WERE OBTAINED BY EXISTING FIELD LOCATED FIXTURES AND MAPS SUPPLIED BY SPOKANE COUNTY, PRODUCED FOR UUID - 964. THEY SHOULD BE FIELD VERIFIED.

BASIS OF BEARING
N0°29'00"E - EASTERLY BOUNDARY LINE OF FOREST HILLS 3RD ADDITION.

BASIS OF ELEVATION
2167.07 - SPIKE IN POWER POLE LOCATED AT SOUTH CORNER OF LOTS 1 & 2, BLOCK 10 IN FOREST HILLS 2ND ADDITION.

DEVELOPER

DATE: 9-5-03

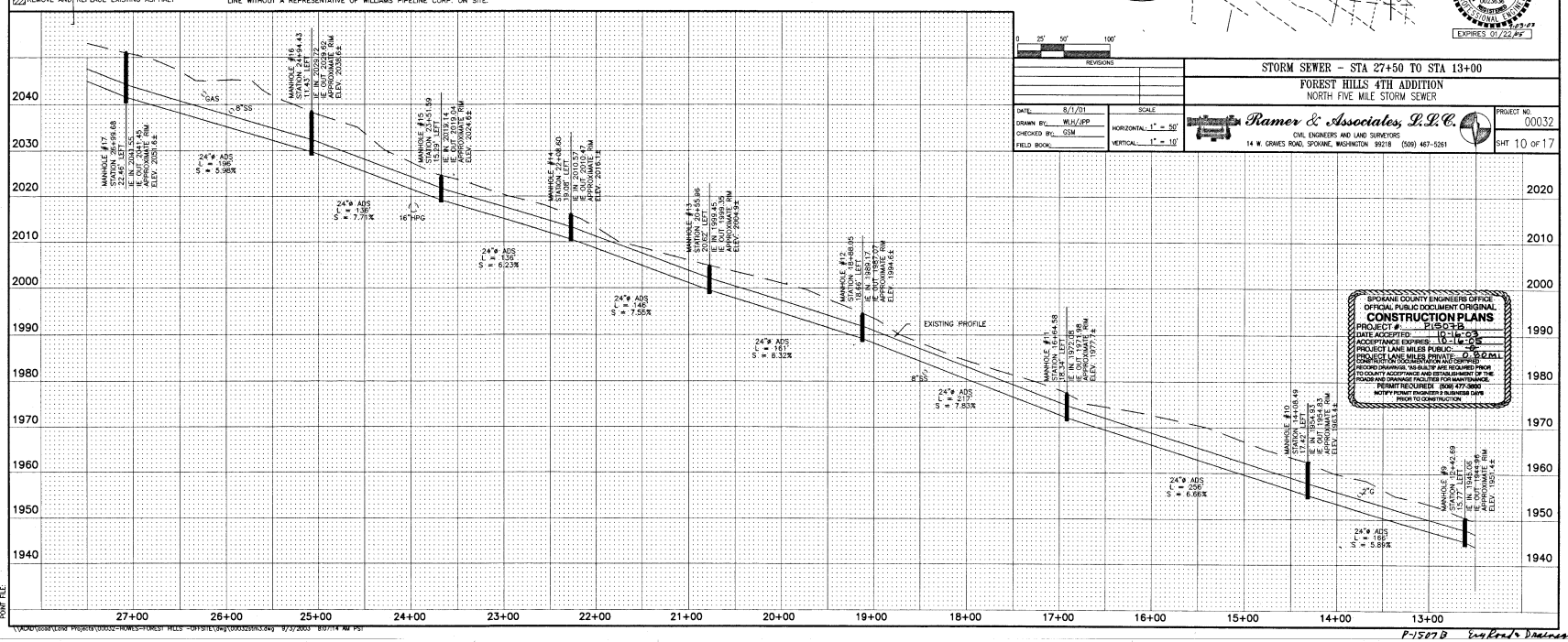
LEGEND

- EXISTING WATER VALVE
- EXISTING MONUMENT
- EXISTING UNDERGROUND WARNING SIGN
- REMOVE AND REPLACE EXISTING ASPHALT

NOTE: HIGH PRESSURE GAS LINE
CONTRACTOR TO NOTIFY WILLIAMS PIPELINE CORP. AT (509) 466-6650
3 DAYS PRIOR TO DIGGING IN THE VICINITY OF THE 16" GAS LINE.
CONTRACTOR SHALL NOT EXPOSE OR EXCAVATE BENEATH THE 16" GAS LINE WITHOUT A REPRESENTATIVE OF WILLIAMS PIPELINE CORP. ON SITE.

NOTE:
FOR FIVE MILE CENTERLINE INFORMATION, SEE TABLES ON SHEET 16

PETER M. KNUDSEN WASHINGTON REGISTERED PROFESSIONAL ENGINEER 9-5-03
EXPIRES 01/22/04



SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P15075
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0.0
PROJECT LANE MILES PRIVATE: 0.62 M.L.
RECORD DRAWINGS: THIS SHEET WAS REVISED AND REQUIRED PRIOR TO COUNTY ACCEPTANCE OF THE PUBLIC IMPROVEMENTS FOR THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED: (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

REVISIONS	

STORM SEWER - STA 27+50 TO STA 13+00

FOREST HILLS 4TH ADDITION
NORTH FIVE MILE STORM SEWER

DATE: 8/1/01
DRAWN BY: WLH/JPP
CHECKED BY: GSM
FIELD BOOK:

SCALE
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

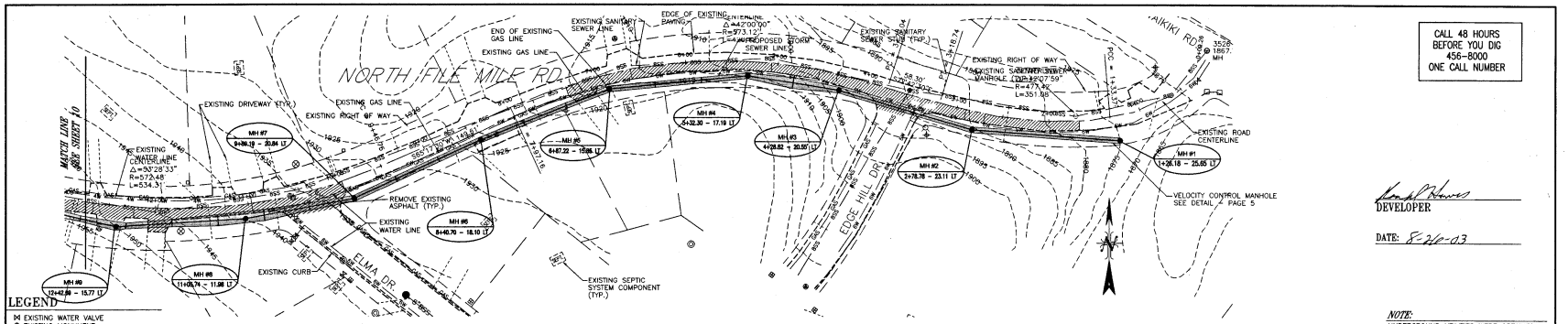
Ramer & Associates, S.P.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 00032
SHT 10 OF 17

POINT FILE:

\\CADD\00032\Land Projects\00032-FOREST HILLS -GH3STL\dwg\00032SW10.dwg 9/5/2003 8:07:14 AM PST

P-1507B



CALL 48 HOURS BEFORE YOU DIG 456-8000 ONE CALL NUMBER

DEVELOPER

DATE: 8-26-03

LEGEND

- EXISTING WATER VALVE
- EXISTING MONUMENT
- EXISTING UNDERGROUND WARNING SIGN
- REMOVE AND REPLACE EXISTING ASPHALT

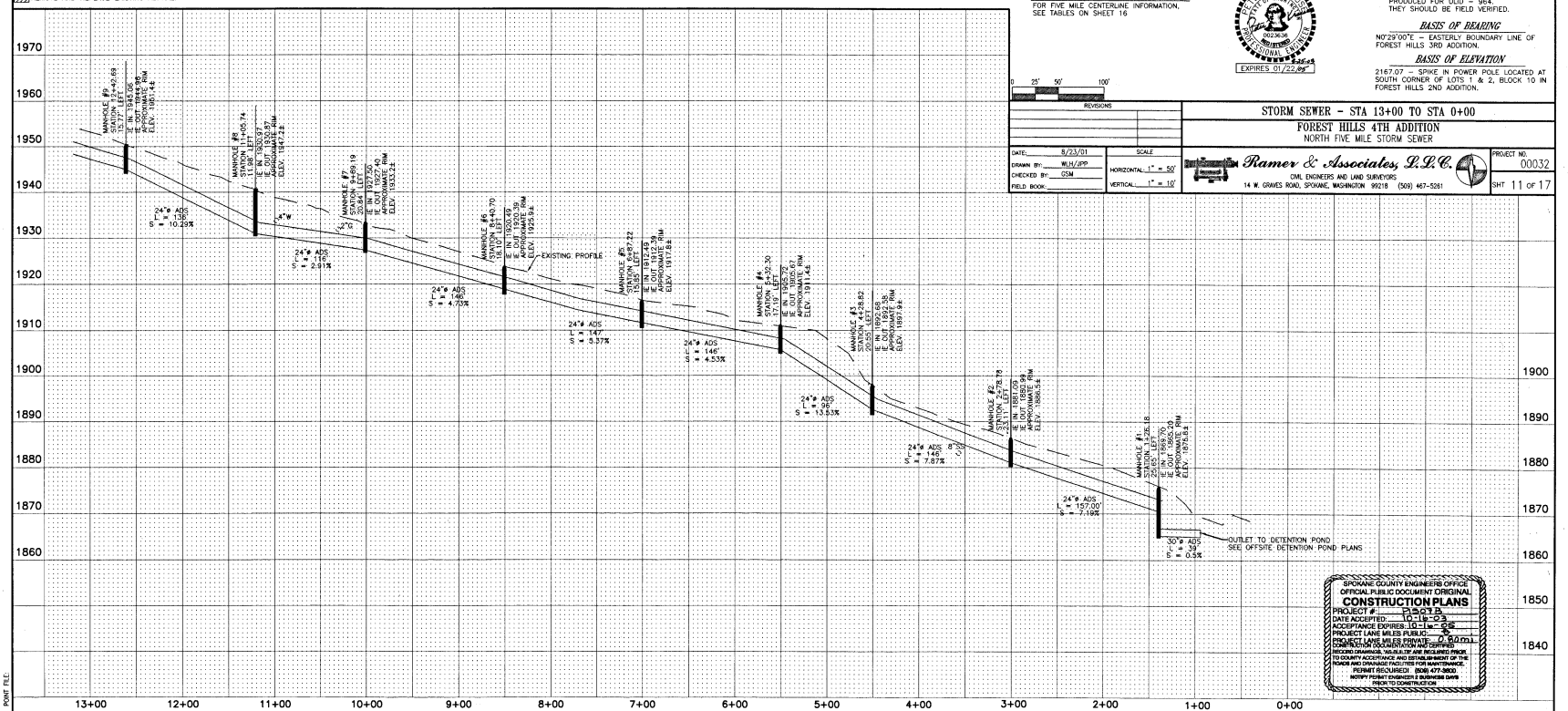
NOTE:
FOR FIVE MILE CENTERLINE INFORMATION, SEE TABLES ON SHEET 16

NOTE:
UNDERGROUND UTILITIES WERE OBTAINED BY EXISTING FIELD LOCATED FIXTURES AND MAPS SUPPLIED BY SPOKANE COUNTY, PRODUCED FOR LUID - 964. THEY SHOULD BE FIELD VERIFIED.

BASIS OF BEARING
N0°29'00"E - EASTERLY BOUNDARY LINE OF FOREST HILLS 3RD ADDITION.

BASIS OF ELEVATION
2167.07 - SPIKE IN POWER POLE LOCATED AT SOUTH CORNER OF LOTS 1 & 2, BLOCK 10 IN FOREST HILLS 2ND ADDITION.

BRUCE M. RAMER STATE OF WASHINGTON 002.36.36 REGISTERED PROFESSIONAL ENGINEER
EXPIRES 01/22/05



POINT FILE:

\\CAD\Grant\Land Projects\00032-ROWES-FOREST HILLS -OFFSITE\dwg\00032SHR3.dwg 8/26/2003 7:21:53 AM PST

REVISIONS	

DATE: 8/23/01	SCALE
DRAWN BY: WJH/JPP	HORIZONTAL: 1" = 50'
CHECKED BY: GSM	VERTICAL: 1" = 10'
FIELD BOOK:	

STORM SEWER - STA 13+00 TO STA 0+00

FOREST HILLS 4TH ADDITION

NORTH FIVE MILE STORM SEWER

Ramer & Associates, P.L.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 00032

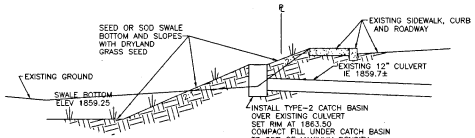
SHT 11 of 17

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-5078
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.80 mi
THIS DOCUMENT IS PROVISIONALLY ACCEPTED UNDER DRAWINGS, VALIDATED AND RESUBMITTED TO COUNTY ACCEPTANCE AND ENDORSEMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT OVERSEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

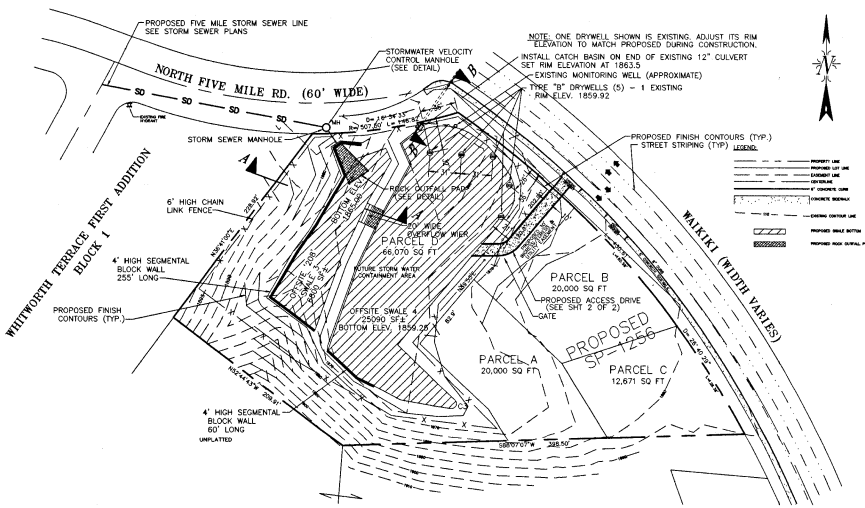
P-1507B Ins Road & Drainage

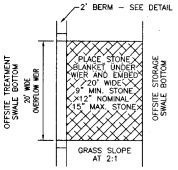
OFFSITE STORMWATER POND LAYOUT

FOREST HILLS 4TH ADDITION
LONG PLAT PN - 1507 - 85



SECTION B-B
NTS



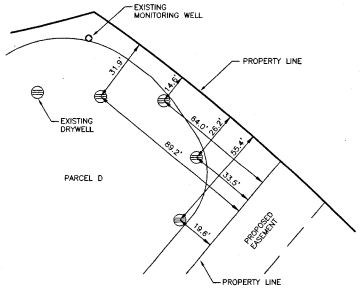


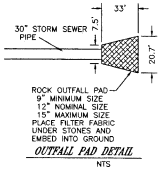
WEIR DETAIL
NTS

GENERAL NOTES

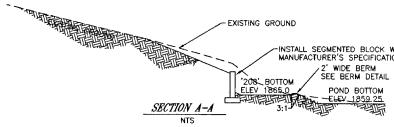
1. DRYLAND GRASS SEED MIX IS SPOKANE COUNTY STANDARD: 10% - ELKA PERENNIAL RYE, 20% DURAR HARD FESCUE, 45% COVAR SHEEP/FESCUE, 15% REUBENS CANADIAN BLUEGRASS. APPLY PER SPOKANE COUNTY STANDARD: 90 POUNDS OF SEED PER ACRE, WITH 300 POUNDS OF FERTILIZER PER ACRE (USE 16-16-16 TIMED RELEASE COMPOSITION)
2. WHERE NOT SPECIFIED IN THESE PLANS, USE DRYLAND GRASS SEED MIX IN ALL PLACES WHERE GRASS SEED IS CALLED FOR, EXCEPT WHERE IRRIGATION IS PROVIDED.

Note:
The soil in the 208 treatment area(s) must have an average cation exchange capacity of 15 milliequivalents/100 grams or must be a minimum of 2% organic carbon. One test for CEC and organic matter shall be performed for the first 1500 sf of pond bottom area and an additional set of tests is required for each additional 2000 sf of pond bottom area, or fraction thereof. Tests shall be performed on a well-mixed composite sample consisting of the top six (6) inches of soil from at least four (4) cores uniformly distributed over the area being tested (i.e. for a 9,500 sf pond bottom, four sets of tests or 16 cores would be required). Note that if the soil is amended during construction, soil CEC and organic matter data must be submitted from the soil supplier as part of the certification package. If the soil is tested post construction, those tests shall be submitted as part of the certification package.

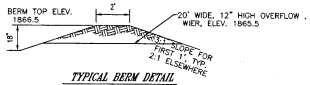




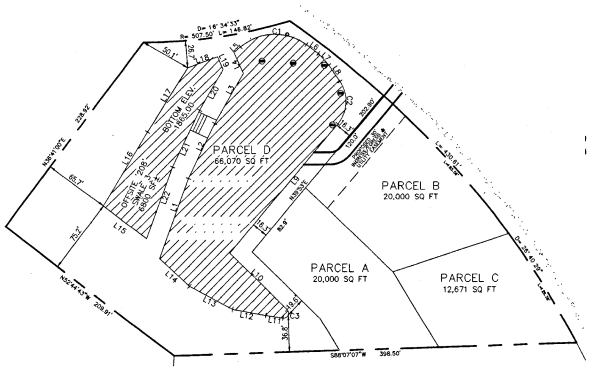
OUTFALL PAD DETAIL
NTS



SECTION A-A
NTS



TYPICAL BERM DETAIL
NTS



L1	N19°35'12"E	84.45'
L2	N25°13'04"E	60.59'
L3	N29°35'47"E	57.57'
L4	N24°27'37"W	22.68'
L5	N49°48'00"E	8.52'
L6	S53°31'04"E	14.72'
L7	S41°54'17"E	15.47'
L8	S34°20'52"E	19.83'
L9	S39°53'00"W	167.75'
L10	S46°14'00"E	78.87'
L11	N81°23'23"W	17.46'
L12	N79°34'15"W	33.45'
L13	N62°27'56"W	48.20'
L14	N47°15'42"W	39.82'
L15	S52°44'43"E	53.66'
L16	S30°33'11"W	85.71'
L17	S31°30'04"W	75.41'
L18	S70°15'36"W	31.38'
L19	N24°27'37"W	13.40'
L20	N29°35'47"E	47.19'
L21	N25°13'04"E	62.52'
L22	N19°35'12"E	75.78'

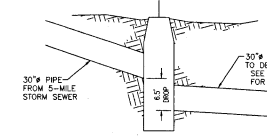
	DELTA	RADIUS	LENGTH
C1	76°40'56"	53.00'	70.93'
C2	74°13'52"	35.00'	45.35'
C3	141°59'20"	5.00'	12.39'

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P15078
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.82mi
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 5 BUSINESS DAYS PRIOR TO CONSTRUCTION

DEVELOPER

DATE: 9-5-03

PAUL M. KNOWLES
STATE OF WASHINGTON
36236
PROFESSIONAL ENGINEER
9-5-03
EXPIRES 01/22/04



VELOCITY CONTROL MANHOLE
NTS

NOTE:
ELEVATION DATA SHOWN AS PROVIDED BY DURYEA AND ASSOCIATES

5' CONTOURS
0' 25' 50' 100'

TBM
SPIKE IN LUMINARE POLE AT THE NORTHWEST CORNER OF WAIKIKI AND NORTH FIVE MILE ROAD. ELEV 1870.52, NAD 29

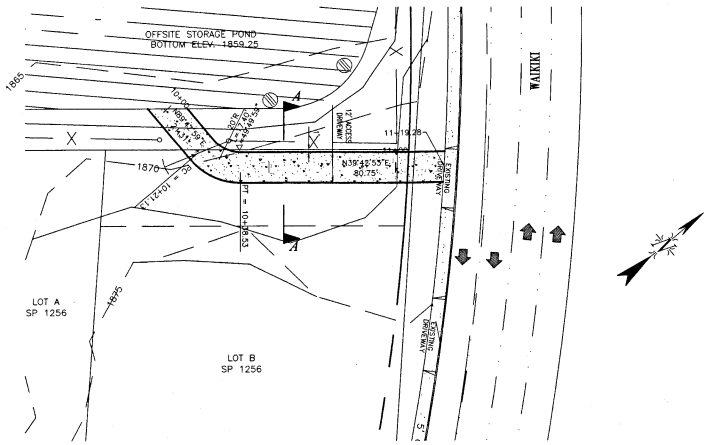
Ramer & Associates, L.S.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

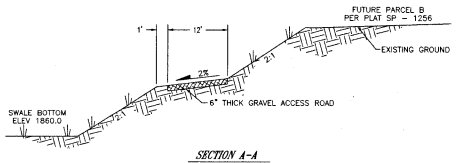
DATE: 8/22/02	FOREST HILLS 4TH ADDITION	PROJECT NO. 00032STRM
SCALE: 1= 50'	NORTH FIVE MILE STORM SEWER	
DRAWN BY: JPP		SHT 12 OF 17
CHECKED BY: PMK		
FIELD BOOK:		

PDMF FILE:
\\ACAD\acad\Land Projects\00032-HOWES-FOREST HILLS -OFFSITE\dwg\00032stm3.dwg 9/3/2003 9:07:43 AM PST

P-15078 Ens Roads Drainage

CALL 48 HOURS
BEFORE YOU DIG
456-8000
ONE CALL NUMBER





SECTION A-A
NTS

DEVELOPER

DATE: 8-26-03

PETER M. KEUS
STATE OF WASHINGTON
00236.36
REGISTERED
PROFESSIONAL ENGINEER
8-25-03
EXPIRES 01/22/05

NOTE:
ELEVATION DATA SHOWN AS PROVIDED BY DURYEA AND ASSOCIATES

0 10' 20' 40'

TBM
SPIKE IN LUMINAIRE POLE AT THE NORTHWEST CORNER OF WAIKIKI AND NORTH FIVE MILE ROAD. ELEV 1870.52, NAD 29

REVISIONS

ACCESS DRIVE TO POND

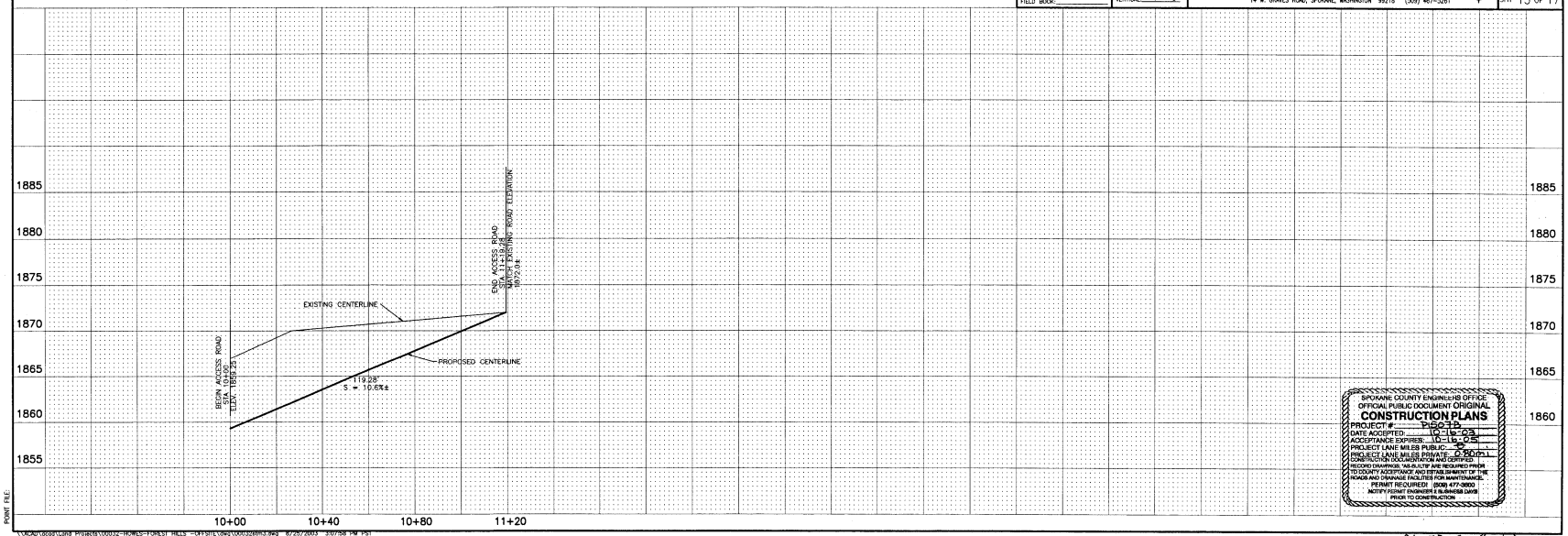
FOREST HILLS 4TH ADDITION - PN 1507-85
OFFSITE STORAGE POND

DATE: 11/15/01
DRAWN BY: WLH/JPP
CHECKED BY: PWK
FIELD BOOK:

SCALE
HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'

Ramer & Associates, L.L.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 00032
SHT 13 OF 17

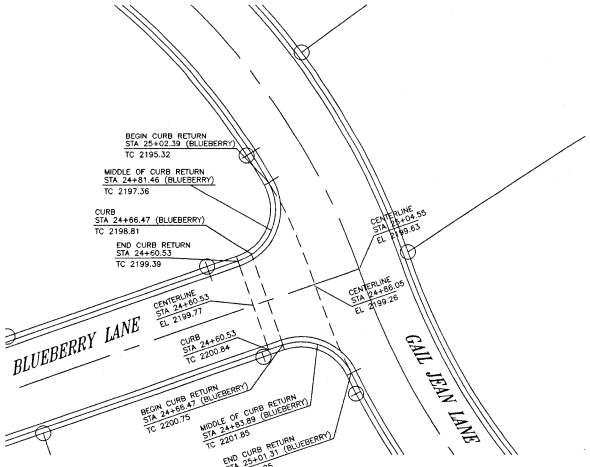


SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1507B
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.80mi
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS-BUILT" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

POINT FILE:

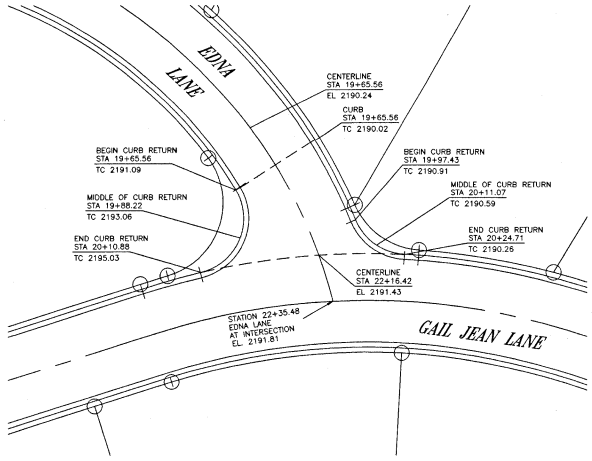
\\ACAD\acad\Land Projects\00032-HOWES-FOREST HILLS -OFFSITE\dwg\00032ttm3.dwg 8/25/2003 3:07:58 PM PST

P-1507B Eng Road & Drainage



BLUEBERRY INTERSECTION DETAIL

SCALE: 1" = 20'



EDNA INTERSECTION DETAIL

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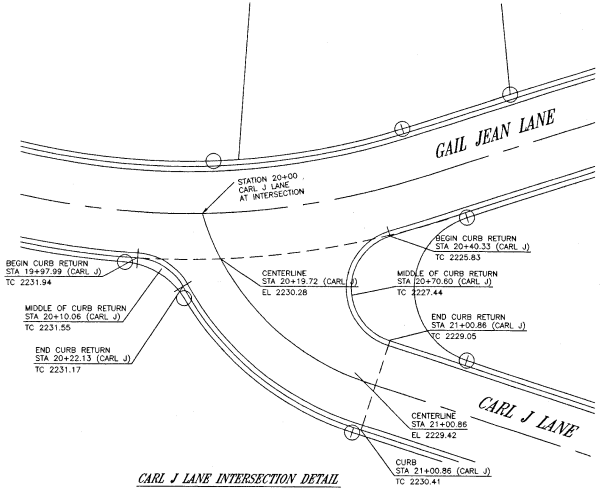

CARL J LANE INTERSECTION DETAIL

SCALE: 1" = 20'

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1507B
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.80mi
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

DEVELOPER: Ronald Howes

DATE: 9-5-03

PETER M. KRUPPER
STATE OF WASHINGTON
00236365
REGISTERED PROFESSIONAL ENGINEER
9-23-03
EXPIRES 01/22/05

REVISIONS	

FOREST HILLS 4th ADDITION, PN-1507-85, ROAD INTERSECTION DETAILS
RON HOWES
5121 W. RIDGECREST DR., SPOKANE, WA 99205

		SCALE	
DATE:	1/13/03		
DRAWN BY:	WLH,JPP	HORIZONTAL:	1"=50'
CHECKED BY:	PMK		
FIELD BOOK:	N/A	VERTICAL:	1"=10'

Ramer & Associates, L.L.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

PROJECT NO. 99047
SHT 14 OF 17

P-1507B Eng Road Drawings

NS1/4 SEC 13 TWP 26 RANG 42

POINT FILE:

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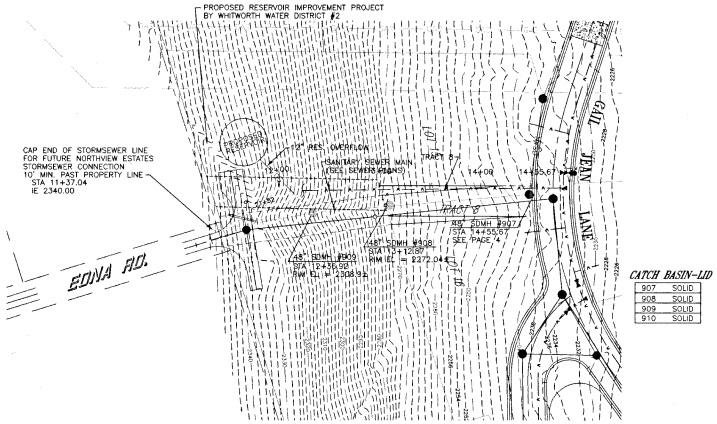
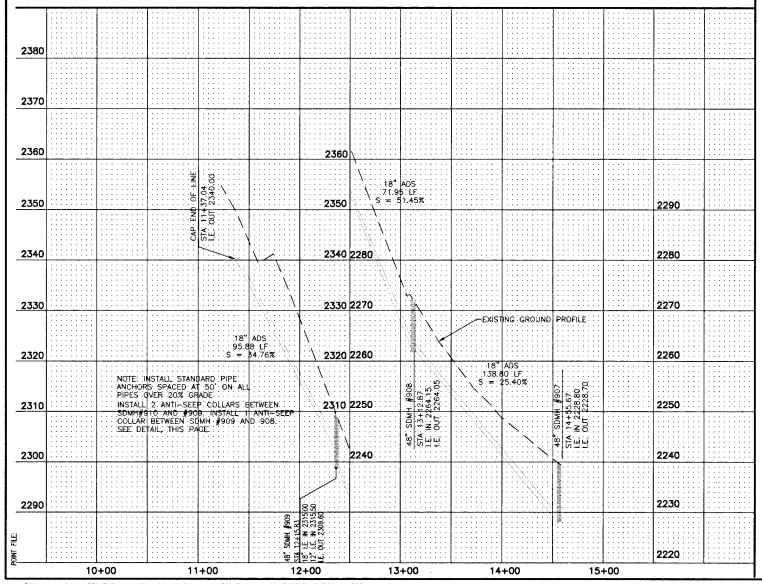
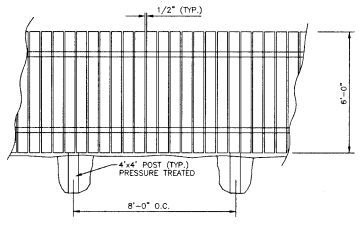


OFFSITE STORM DRAIN CONNECTION LINE

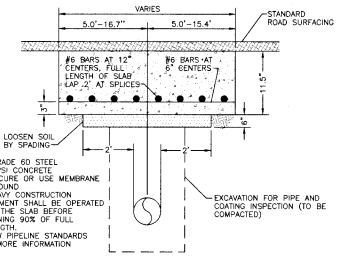
SCALE: 1" = 50' HOR.
1" = 10' VERT.





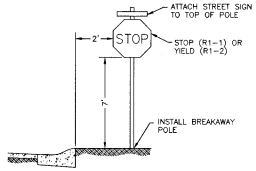
WOOD FENCE DETAIL

NOT TO SCALE



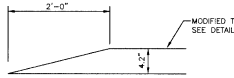
TYPICAL GAS LINE CROSSING

NOT TO SCALE



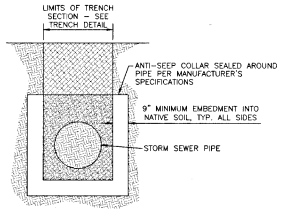
TYPICAL STREET SIGN DETAIL

NOT TO SCALE



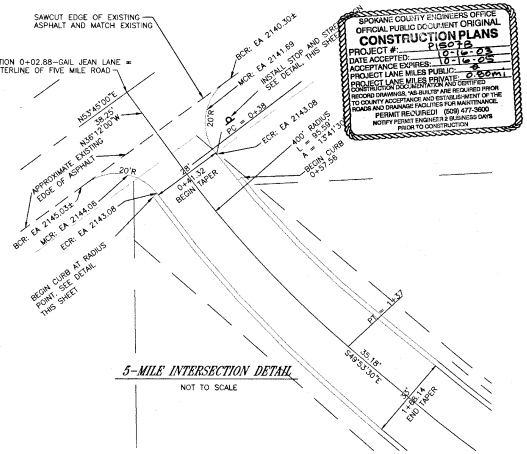
CURB TRANSITION DETAIL

NOT TO SCALE



ANTI-SEEP COLLAR DETAIL

NOT TO SCALE



5-MILE INTERSECTION DETAIL

NOT TO SCALE

DEVELOPER: Ron Howes

DATE: 10-15-03

OREGON
GREGORY S. MILLER
STATE OF WASHINGTON
37450
REGISTERED PROFESSIONAL ENGINEER
10/15/03
EXPIRES 11/03/03

REVISIONS	

FOREST HILLS 4th ADDITION, PN-1507-85, STORM SEWER DETAILS

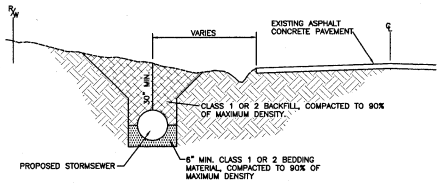
RON HOWES
5121 W. RIDGECREST DR., SPOKANE, WA 99205

DATE: 1/13/03	SCALE	Ramer & Associates, P.L.C.	PROJECT NO. 99047
DRAWN BY: WLH, PP	HORIZONTAL: 1"=50'	CIVIL ENGINEERS AND LAND SURVEYORS	
CHECKED BY: PWK	VERTICAL: 1"=10'	14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261	SHT 15 OF 17
FIELD BOOK: N/A			

NE1/4, SEC. 13, TWP. 26, RANGE 42

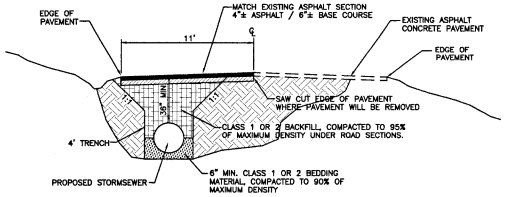
P-1507B Eng Road & Drainage

C:\land projects\99047_Forest Hills 4th Addition\dwg\99047-rd.dwg 10/15/2003 8:17:33 AM PST



TYPICAL TRENCH SECTION

NTS



TYPICAL PAVEMENT REMOVAL SECTION

NTS

FIVE MILE ROAD C/L		
	BEARING	DISTANCE
L1	N72°42'30"W	58.30'
L2	S65°17'30"W	149.61'
L3	N61°13'57"W	367.01'
L4	S63°33'09"W	218.10'
L5	N77°01'01"W	112.62'
L6	S51°19'59"W	1056.06'

FIVE MILE ROAD C/L			
CURVE	DELTA	RADIUS	LENGTH
C1	51°39'00"	138.99'	125.30'
C2	22°14'50"	477.42'	185.38'
C3	42°00'00"	573.12'	420.12'
C4	53°28'33"	572.48'	534.31'
C5	19°13'57"	1186.86'	411.70'
C6	35°20'24"	715.82'	441.52'
C7	39°25'49"	520.57'	358.25'
C8	51°39'00"	409.22'	368.90'

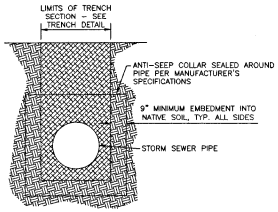
BEDDING CLASSIFICATION FOR RIGID PIPE

DIMENSION	*CLASS A*	*CLASS B*	*CLASS C*	*CLASS D*	*CLASS F*
A	4" MIN. 1/4" I.D. 1/2" MAW.	4" MIN. 27" & UNDER 6" MIN. OVER 27" I.D.		ZERO	SAME AS CLASS B
B	1/4" O.D.	1/2" O.D.	1/8" O.D.	ZERO	O.D.
C	3/4" O.D.	1/2" O.D.	7/8" O.D.	O.D.	-----

(FOR DIMENSION "W", SEE SECTION 7-17.3(1)A OF THE WSDOT STD. SPECIFICATIONS)

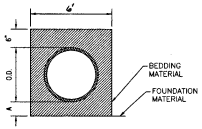
FIVE MILE STORM SEWER CONSTRUCTION NOTES:

1. DUE TO EXISTING UNDERGROUND UTILITIES LOCATED WITHIN THE RIGHT-OF-WAY, STORMSEWER MANHOLE LOCATIONS MAY REQUIRE ADJUSTING. LIMITS OF PAVEMENT REMOVAL AND REPLACEMENT WILL BE DETERMINED AT THAT TIME.
2. ANY ASPHALT PAVEMENT REMOVED WILL BE REPLACED TO MATCH EXISTING PAVEMENT THICKNESS AND WIDTH.
3. TRENCH EXCAVATION WITHIN THE RIGHT-OF-WAY OF FIVE MILE ROAD SHALL BE BACKFILLED AT THE END OF THE WORK DAY.
4. ALL WORK AND MATERIALS SHALL BE IN CONFORMANCE WITH THE "SPOKANE COUNTY STANDARDS FOR ROAD AND SEWER CONSTRUCTION 1999", AND AS AMENDED.
5. LOCATIONS OF EXISTING UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES. ANY CONFLICTING UTILITIES SHALL BE RELOCATED PRIOR TO CONSTRUCTION OF STORMSEWER.
6. THE CONTRACTOR IS REQUIRED TO HAVE A COMPLETE SET OF THE PLANS ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
7. IF THE CONTRACTOR DISCOVERS ANY DISCREPANCIES BETWEEN THE PLANS AND EXISTING CONDITIONS ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER AND THE SPOKANE COUNTY ENGINEERS OFFICE.



ANTI-SEEP COLLAR DETAIL

NOT TO SCALE



CLASS "F" BEDDING FOR FLEXIBLE PIPE IN TRENCHES

(SEE SECTION 9-03.16 OF THE STANDARD SPECIFICATIONS FOR BEDDING MATERIAL SPECIFICATION)

PIPE BEDDING DETAIL

NTS

DEVELOPER

DATE: 8-26-03

PETER M. KNOWLES STATE OF WASHINGTON 20236 REGISTERED PROFESSIONAL ENGINEER 8-26-03

EXPIRES 01/22/04

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1507B
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.82mi
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

Ramer & Associates, P.S.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

DATE: 6/6/01 SCALE: N/A DRAWN BY: JEP/WLH CHECKED BY: GSM FIELD BOOK:	FOREST HILLS 4th ADDITION OFF-SITE STORM SEWER	PROJECT NO. 00032 SHT 16 OF 17

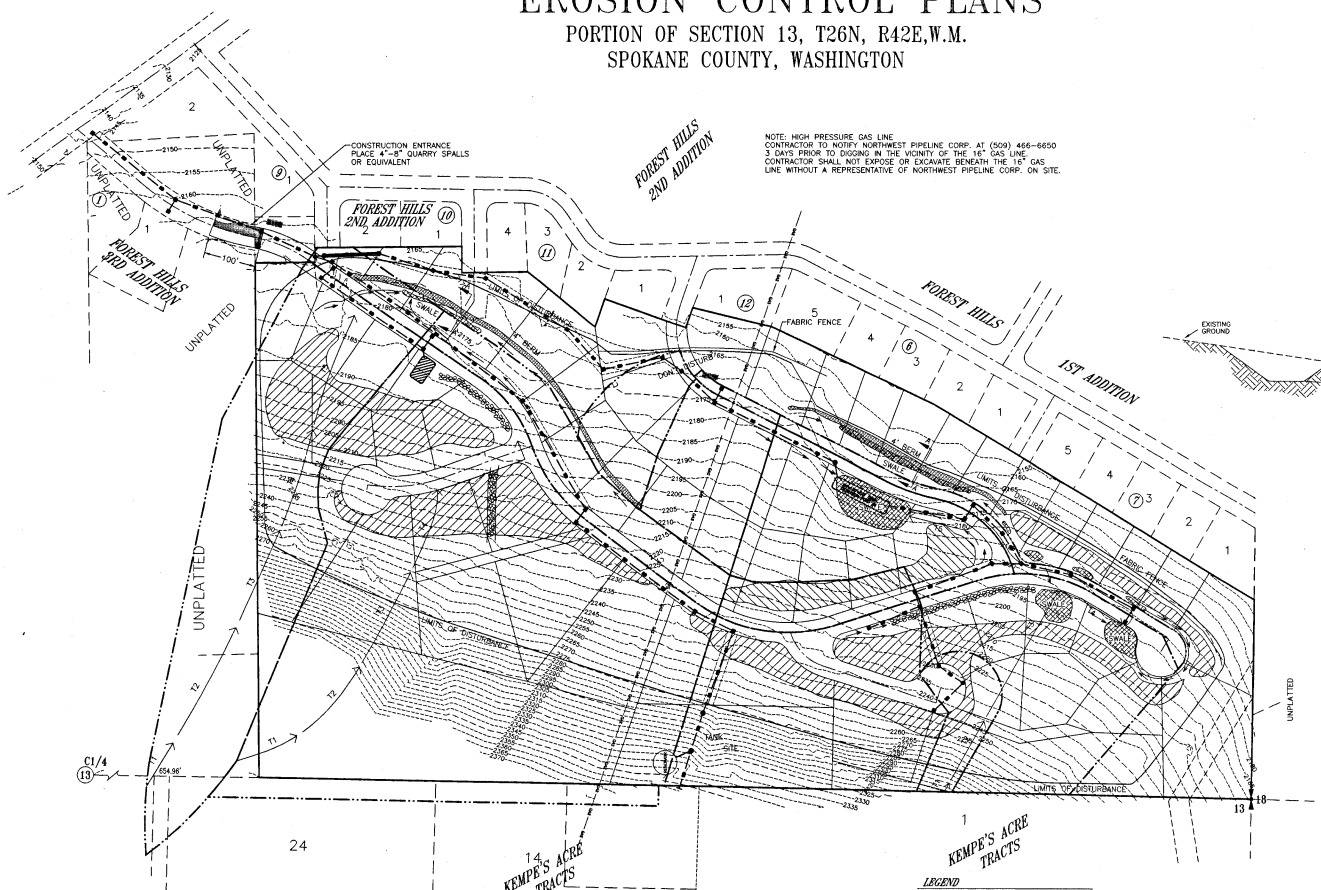
\\ACAD\acad\Land Projects\00032-HOWES-FOREST HILLS -OFFSITE\dwg\00032stm3.dwg 8/25/2003 2:42:09 PM PST

P-1507B Eng Road & Drainage

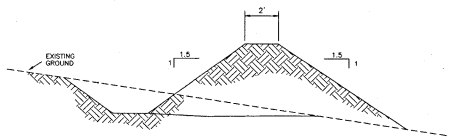
FOREST HILLS 4TH ADDITION
EROSION CONTROL PLANS

PORTION OF SECTION 13, T26N, R42E,W.M.
SPOKANE COUNTY, WASHINGTON

CALL 48 HOURS
BEFORE YOU DIG
456-8000
ONE CALL NUMBER



NOTE: HIGH PRESSURE GAS LINE
CONTRACTOR TO NOTIFY NORTHWEST PIPELINE CORP. AT (509) 466-6650
3 DAYS PRIOR TO DIGGING IN THE VICINITY OF THE 16" GAS LINE.
CONTRACTOR SHALL NOT EXPOSE OR EXCAVATE BENEATH THE 16" GAS
LINE WITHOUT A REPRESENTATIVE OF NORTHWEST PIPELINE CORP. ON SITE.



BERM/SWALE DETAIL A-A
NTS

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1507B
DATE ACCEPTED: 10-16-03
ACCEPTANCE EXPIRES: 10-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.90 mi
RECORD DRAWINGS "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED (509) 477-3600
NOTIFY PERMIT ENGINEER 3 BUSINESS DAYS PRIOR TO CONSTRUCTION

PROPERTY OWNER:	RON HOWES
APPLICANT:	PETER KRUSE
CONTACT PERSON:	RON HOWES
CONTACT PHONE:	509-218-5943
LEGAL DESCRIPTION:	SEE LONG PLAT
ESC PREPARER:	PETER KRUSE
EXIST. VEGETATION:	MIXED GRASSES AND SHRUBS
SOILS ON SITE:	SEE GEOTECHNICAL REPORTS BEGINNING IN 1985

DEVELOPER

DATE 8-26-03

GRADING NOTES -- SEE ROAD PLAN FOR ADDITIONAL NOTES

1) All work and materials shall be in conformance with the "SPOKANE COUNTY STANDARDS FOR ROAD AND SEWER CONSTRUCTION 1995", and as amended.
2) Locations of existing utilities shown in the plans are approximate. The Contractor shall be responsible for locating all underground utilities prior to commencing construction. Any conflicting utilities shall be relocated prior to construction of road and drainage facilities in coordination with the respective utility owner. Call the underground utility location service at 456-8000 before you dig.
3) The Contractor is required to have a complete set of the approved road and drainage plans on the job site whenever construction is in progress.
4) If the Contractor discovers any discrepancies between the plans and existing conditions encountered, the Contractor shall immediately notify the Design Engineer and the Spokane County Engineers Office.
5) Construction traffic shall be responsible for the removal of mud and debris prior to accessing public streets.

EROSION CONTROL NOTES

ER1) An Erosion/Sedimentation Control (ESC) plan is required for this project. Implementation of the ESC plan, and construction, maintenance, and upgrading of the ESC facilities are the responsibility of the Developer until all construction is completed and accepted by Spokane County, or until vegetation is established throughout the site, and accepted by Spokane County, whichever is later.

ER2) Approval of the ESC plan does not constitute approval of any of the proposed road, storm drainage, grading or utility design elements shown on the ESC plan.

ER3) The erosion/sedimentation control measures shown are the minimum requirements for the anticipated site conditions. The Contractor shall inspect and maintain these ESC measures daily, and shall maintain and upgrade these measures as necessary to prevent sediment-laden water from either flowing off the site, or into new/existing storm drainage facilities, such as drywells, culverts, or gravel galleries.

ER4) The Contractor/Developer is responsible for installing Rock Construction Entries at any and all locations used to enter or exit project site.

ER5) Geotextile fabric is to be placed on the rims of all drywells, catch basins and inlets until such time as the vegetation on the site is established and the threat of sediment deposition into the drainage system is mitigated. See road plans for details.

LEGEND

- TRACK PACK AND SEED (DRYLAND SEED MIX, 120 LBS./AC.)
- TRACK PACK
- DEPRESSION SWALE
- 4" BERM
- RIP RAP
- DITCH
- CUTOFF DITCH

0 50' 100' 200'

THIS STAMP IS NOT VALID UNLESS SIGNED WITH AN ORIGINAL SIGNATURE AND DATE

EXPIRES 01/22/04

Ramer & Associates, L.P.C.
CIVIL ENGINEERS AND LAND SURVEYORS
14 W. GRAVES ROAD, SPOKANE, WASHINGTON 99218 (509) 467-5261

DATE: 11/15/01 SCALE: 1"=100' DRAWN BY: MJH CHECKED BY: PMK FIELD BOOK:	RON HOWES 5121 W. RIDGCREST DR. SPOKANE, WA 99208	PROJECT NO. 99047 SHT 17 OF 17

POINT FILE:

\\ACAD\acad\Land Projects\99047_Forest Hills 4th Addition\dwg\99047stn-BAK.dwg 8/26/2003 8:28:11 AM PST

P-1507B Long Road + Drainage