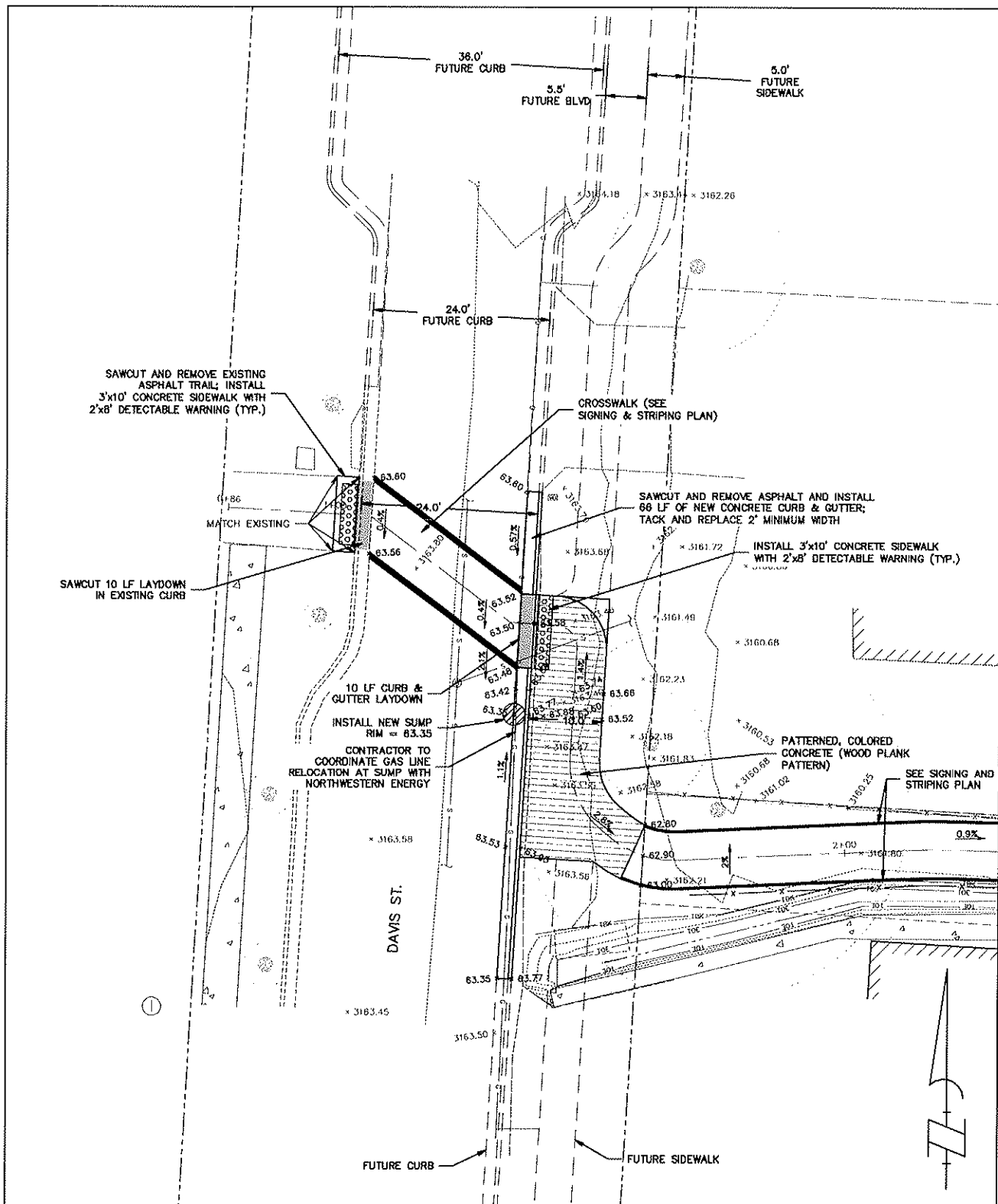


GRADING DETAILS
MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

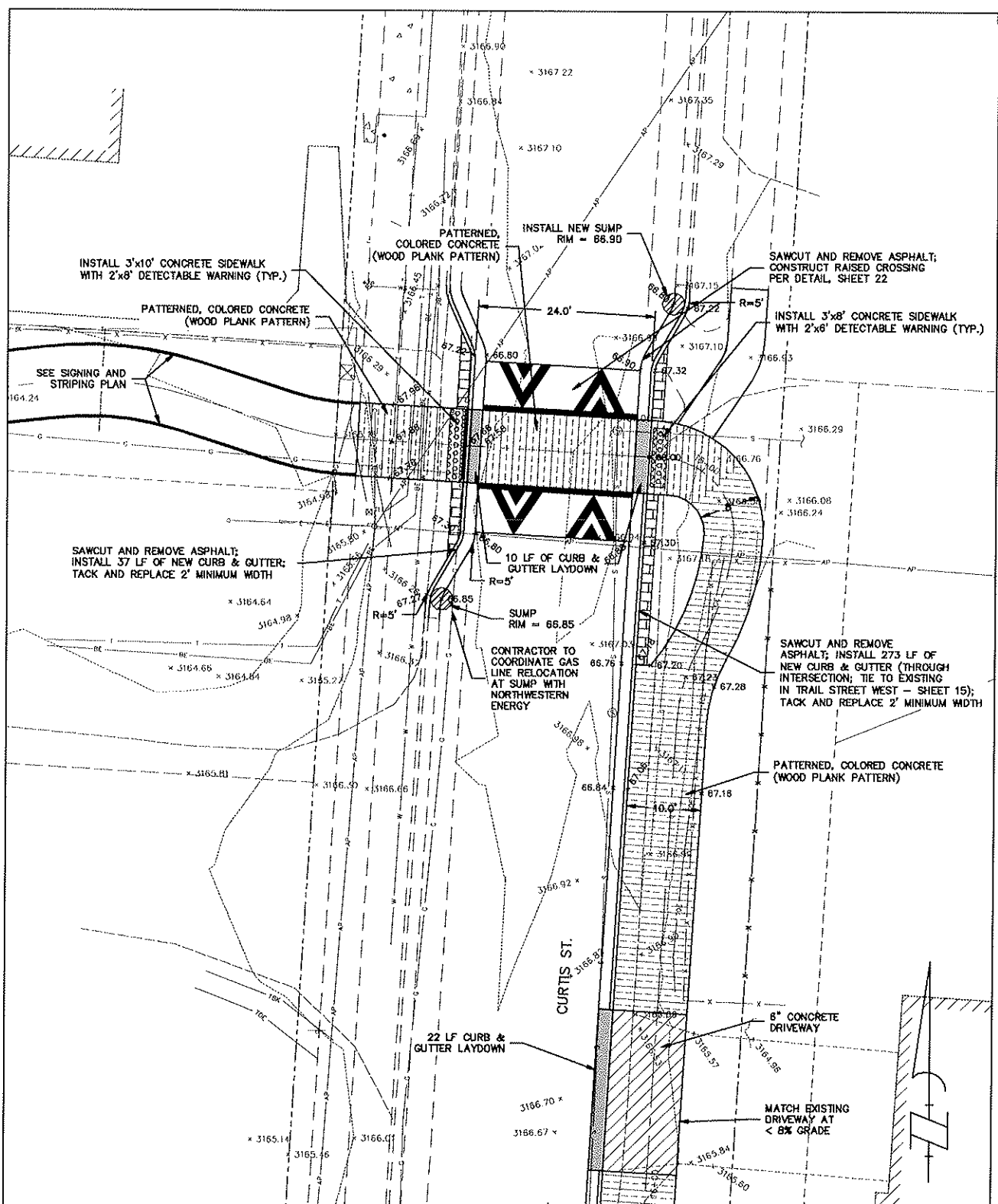
REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 09-11-06
FILE NO: 091106N1.dwg
FILE PATH: K:\Projects\091106\091106.dwg
LAYOUT: SH-14
SURVEYED: WGM GROUP
DESIGN: MRN/KW
DRAFT: EDI
APPROVE: JWK
DATE:

JANUARY 6, 2011



DAVIS STREET CROSSING AT TRAIL CONNECTION
(PLAN AND PROFILE SHEET 2)



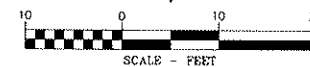
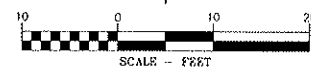
CURTIS STREET CROSSING
(PLAN AND PROFILE SHEET 4)



GRADING DETAILS
MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

PROJECT: 09-11-06
FILE No: 091106INT.dwg
FILE PATH:
W:\Projects\091106\CAD Data-091106\Design
LAYOUT: SMIT5
SURVEYED: WGM GROUP
DESIGN: MRM/KW
DRAFT: EDI
APPROVE: JWK
DATE:

15 OF 47





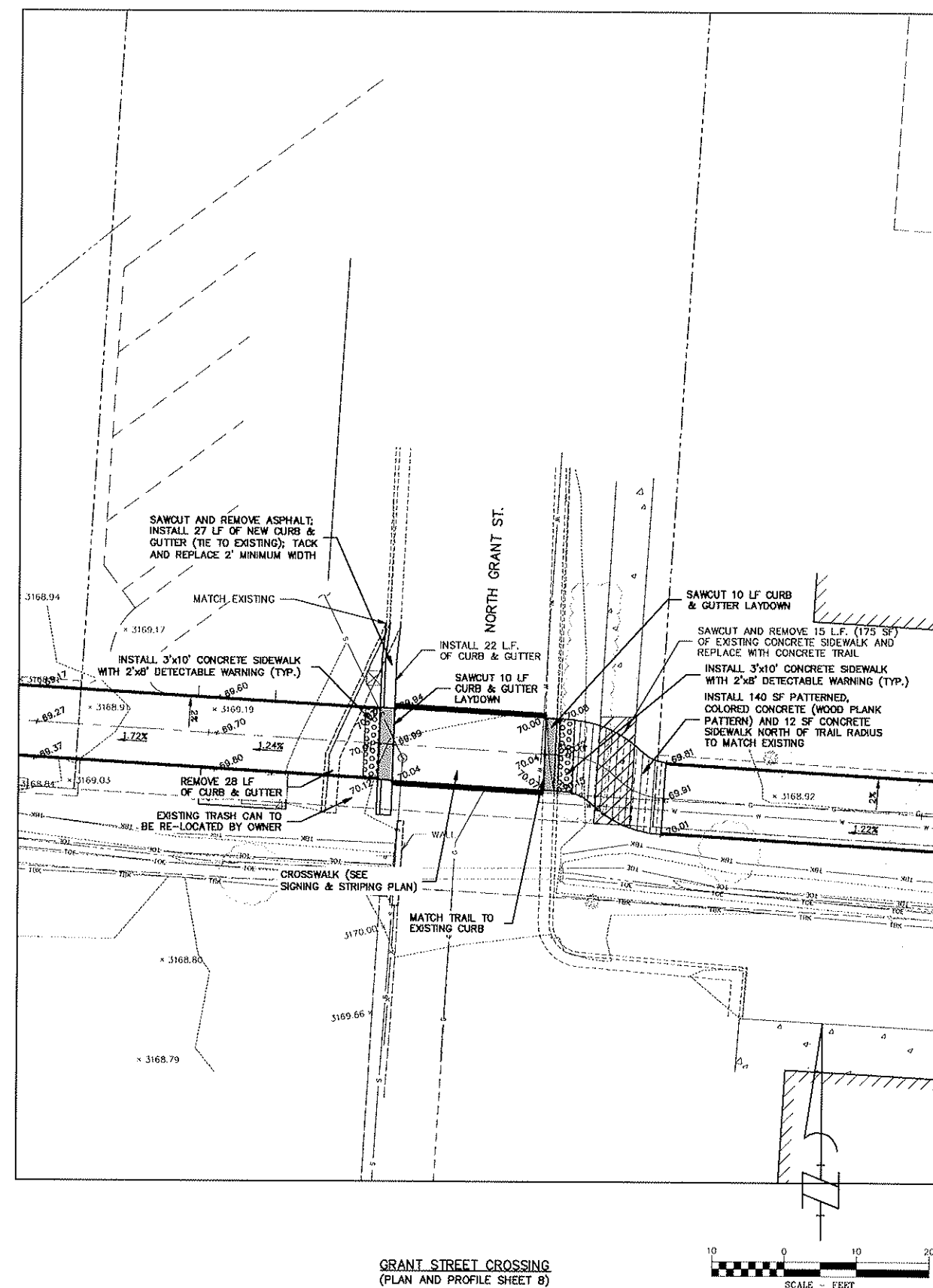
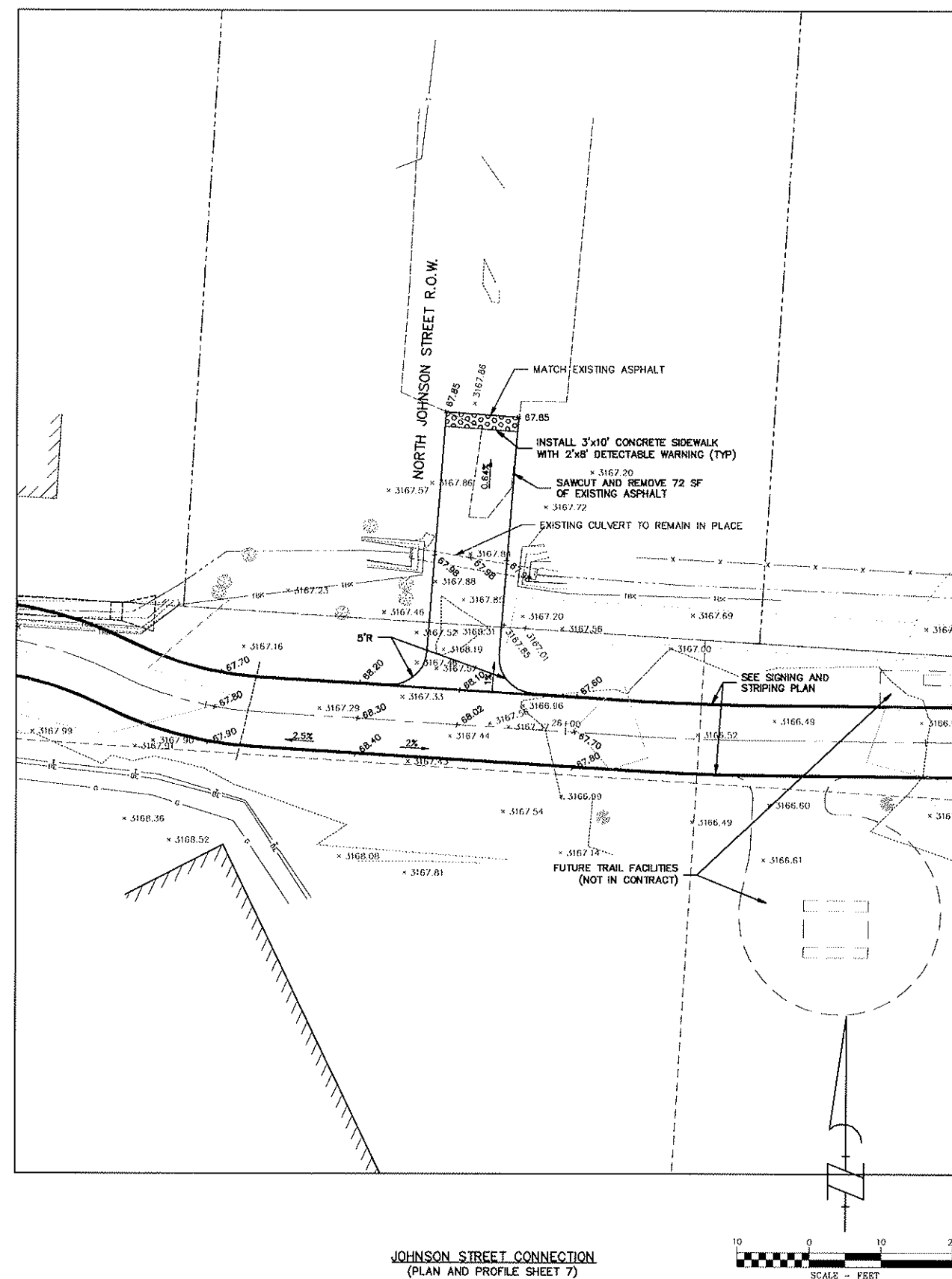
Kent Watson & Associates
 10000 Highway 100, Suite 100, Richmond, BC V6V 2G9
 Tel: (604) 273-1111 Fax: (604) 273-1112

GRADING DETAILS
MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

```

REVISIONS:
NO. DESCRIPTION DATE
-----
1. 091106IN.dwg
2.
3.
4.
5.
6.
7.
8.
9.
10.
11.
12.
13.
14.
15.
16.
17.
18.
19.
20.
21.
22.
23.
24.
25.
26.
27.
28.
29.
30.
31.
32.
33.
34.
35.
36.
37.
38.
39.
40.
41.
42.
43.
44.
45.
46.
47.
48.
49.
50.
51.
52.
53.
54.
55.
56.
57.
58.
59.
60.
61.
62.
63.
64.
65.
66.
67.
68.
69.
70.
71.
72.
73.
74.
75.
76.
77.
78.
79.
80.
81.
82.
83.
84.
85.
86.
87.
88.
89.
90.
91.
92.
93.
94.
95.
96.
97.
98.
99.
100.
101.
102.
103.
104.
105.
106.
107.
108.
109.
110.
111.
112.
113.
114.
115.
116.
117.
118.
119.
120.
121.
122.
123.
124.
125.
126.
127.
128.
129.
130.
131.
132.
133.
134.
135.
136.
137.
138.
139.
140.
141.
142.
143.
144.
145.
146.
147.
148.
149.
150.
151.
152.
153.
154.
155.
156.
157.
158.
159.
160.
161.
162.
163.
164.
165.
166.
167.
168.
169.
170.
171.
172.
173.
174.
175.
176.
177.
178.
179.
180.
181.
182.
183.
184.
185.
186.
187.
188.
189.
190.
191.
192.
193.
194.
195.
196.
197.
198.
199.
200.
201.
202.
203.
204.
205.
206.
207.
208.
209.
210.
211.
212.
213.
214.
215.
216.
217.
218.
219.
220.
221.
222.
223.
224.
225.
226.
227.
228.
229.
230.
231.
232.
233.
234.
235.
236.
237.
238.
239.
240.
241.
242.
243.
244.
245.
246.
247.
248.
249.
250.
251.
252.
253.
254.
255.
256.
257.
258.
259.
260.
261.
262.
263.
264.
265.
266.
267.
268.
269.
270.
271.
272.
273.
274.
275.
276.
277.
278.
279.
280.
281.
282.
283.
284.
285.
286.
287.
288.
289.
290.
291.
292.
293.
294.
295.
296.
297.
298.
299.
300.
301.
302.
303.
304.
305.
306.
307.
308.
309.
310.
311.
312.
313.
314.
315.
316.
317.
318.
319.
320.
321.
322.
323.
324.
325.
326.
327.
328.
329.
330.
331.
332.
333.
334.
335.
336.
337.
338.
339.
340.
341.
342.
343.
344.
345.
346.
347.
348.
349.
350.
351.
352.
353.
354.
355.
356.
357.
358.
359.
360.
361.
362.
363.
364.
365.
366.
367.
368.
369.
370.
371.
372.
373.
374.
375.
376.
377.
378.
379.
380.
381.
382.
383.
384.
385.
386.
387.
388.
389.
390.
391.
392.
393.
394.
395.
396.
397.
398.
399.
400.
401.
402.
403.
404.
405.
406.
407.
408.
409.
410.
411.
412.
413.
414.
415.
416.
417.
418.
419.
420.
421.
422.
423.
424.
425.
426.
427.
428.
429.
430.
431.
432.
433.
434.
435.
436.
437.
438.
439.
440.
441.
442.
443.
444.
445.
446.
447.
448.
449.
450.
451.
452.
453.
454.
455.
456.
457.
458.
459.
460.
461.
462.
463.
464.
465.
466.
467.
468.
469.
470.
471.
472.
473.
474.
475.
476.
477.
478.
479.
480.
481.
482.
483.
484.
485.
486.
487.
488.
489.
490.
491.
492.
493.
494.
495.
496.
497.
498.
499.
500.
501.
502.
503.
504.
505.
506.
507.
508.
509.
510.
511.
512.
513.
514.
515.
516.
517.
518.
519.
520.
521.
522.
523.
524.
525.
526.
527.
528.
529.
530.
531.
532.
533.
534.
535.
536.
537.
538.
539.
540.
541.
542.
543.
544.
545.
546.
547.
548.
549.
550.
551.
552.
553.
554.
555.
556.
557.
558.
559.
560.
561.
562.
563.
564.
565.
566.
567.
568.
569.
570.
571.
572.
573.
574.
575.
576.
577.
578.
579.
580.
581.
582.
583.
584.
585.
586.
587.
588.
589.
590.
591.
592.
593.
594.
595.
596.
597.
598.
599.
600.
601.
602.
603.
604.
605.
606.
607.
608.
609.
610.
611.
612.
613.
614.
615.
616.
617.
618.
619.
620.
621.
622.
623.
624.
625.
626.
627.
628.
629.
630.
631.
632.
633.
634.
635.
636.
637.
638.
639.
640.
641.
642.
643.
644.
645.
646.
647.
648.
649.
650.
651.
652.
653.
654.
655.
656.
657.
658.
659.
660.
661.
662.
663.
664.
665.
666.
667.
668.
669.
670.
671.
672.
673.
674.
675.
676.
677.
678.
679.
680.
681.
682.
683.
684.
685.
686.
687.
688.
689.
690.
691.
692.
693.
694.
695.
696.
697.
698.
699.
700.
701.
702.
703.
704.
705.
706.
707.
708.
709.
710.
711.
712.
713.
714.
715.
716.
717.
718.
719.
720.
721.
722.
723.
724.
725.
726.
727.
728.
729.
730.
731.
732.
733.
734.
735.
736.
737.
738.
739.
740.
741.
742.
743.
744.
745.
746.
747.
748.
749.
750.
751.
752.
753.
754.
755.
756.
757.
758.
759.
760.
761.
762.
763.
764.
765.
766.
767.
768.
769.
770.
771.
772.
773.
774.
775.
776.
777.
778.
779.
780.
781.
782.
783.
784.
785.
786.
787.
788.
789.
790.
791.
792.
793.
794.
795.
796.
797.
798.
799.
800.
801.
802.
803.
804.
805.
806.
807.
808.
809.
810.
811.
812.
813.
814.
815.
816.
817.
818.
819.
820.
821.
822.
823.
824.
825.
826.
827.
828.
829.
830.
831.
832.
833.
834.
835.
836.
```

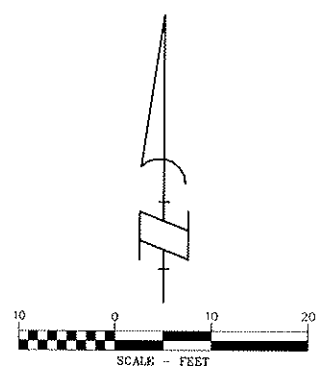
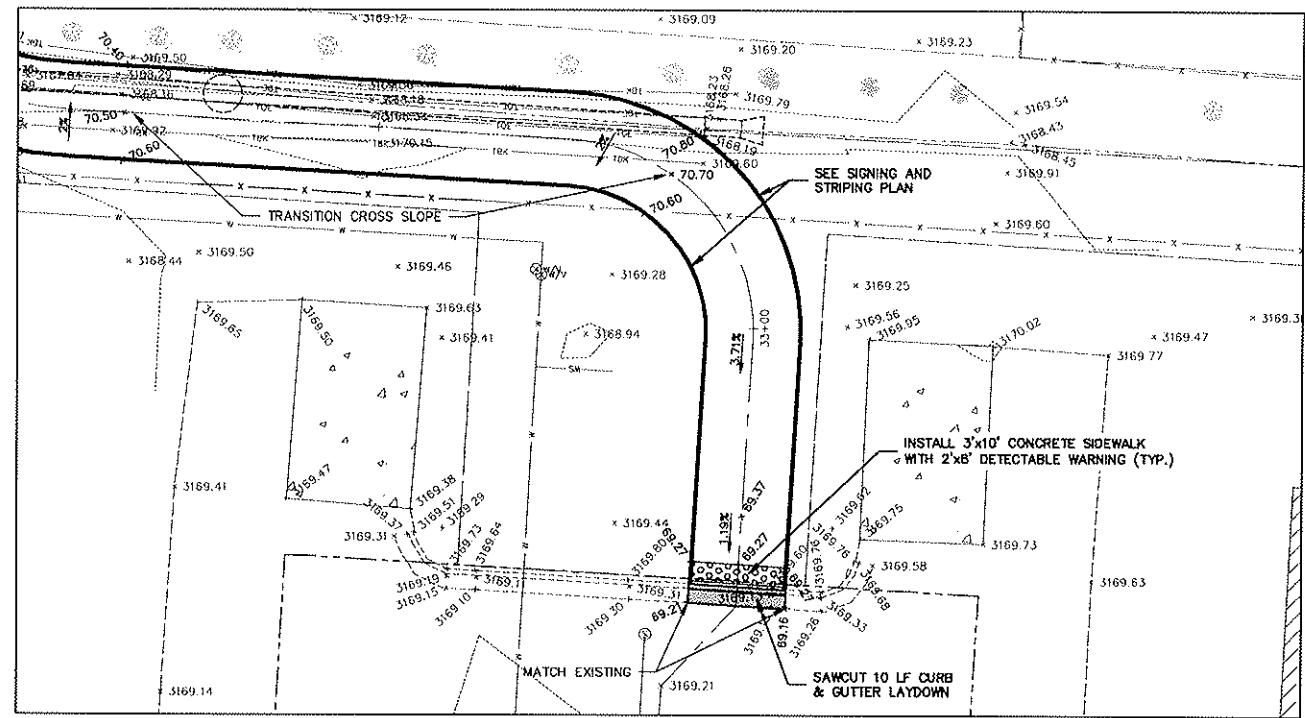
16 OF 47



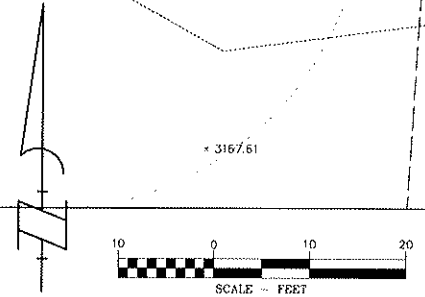
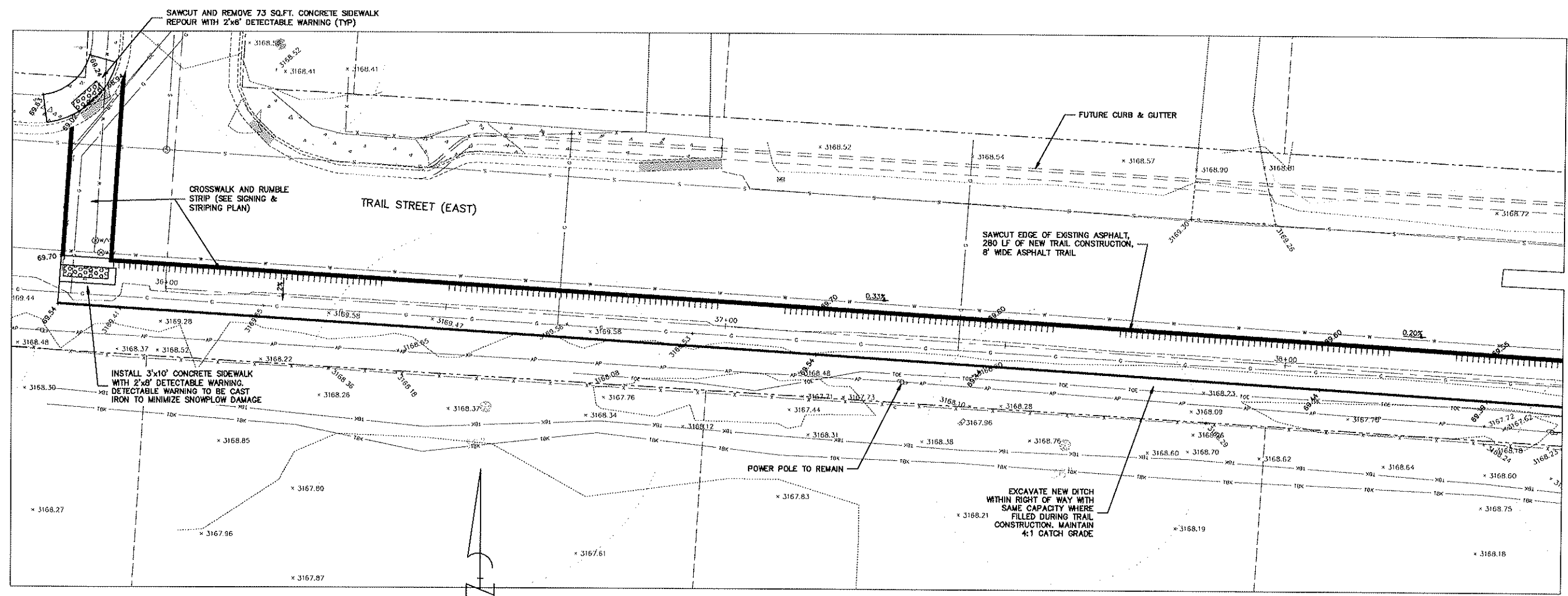
WGM GROUP

1111 EAST BROADWAY
MISSOULA, MONTANA 59802
TEL. 406-728-4611
FAX. 406-728-2476
WWW.WGMGROUP.COM

Kent Watson & Associates



JUSTUS LANE COMMON AREA CROSSING
(PLAN AND PROFILE SHEET 8)



TRAIL STREET (EAST)
(PLAN AND PROFILE SHEET 9)

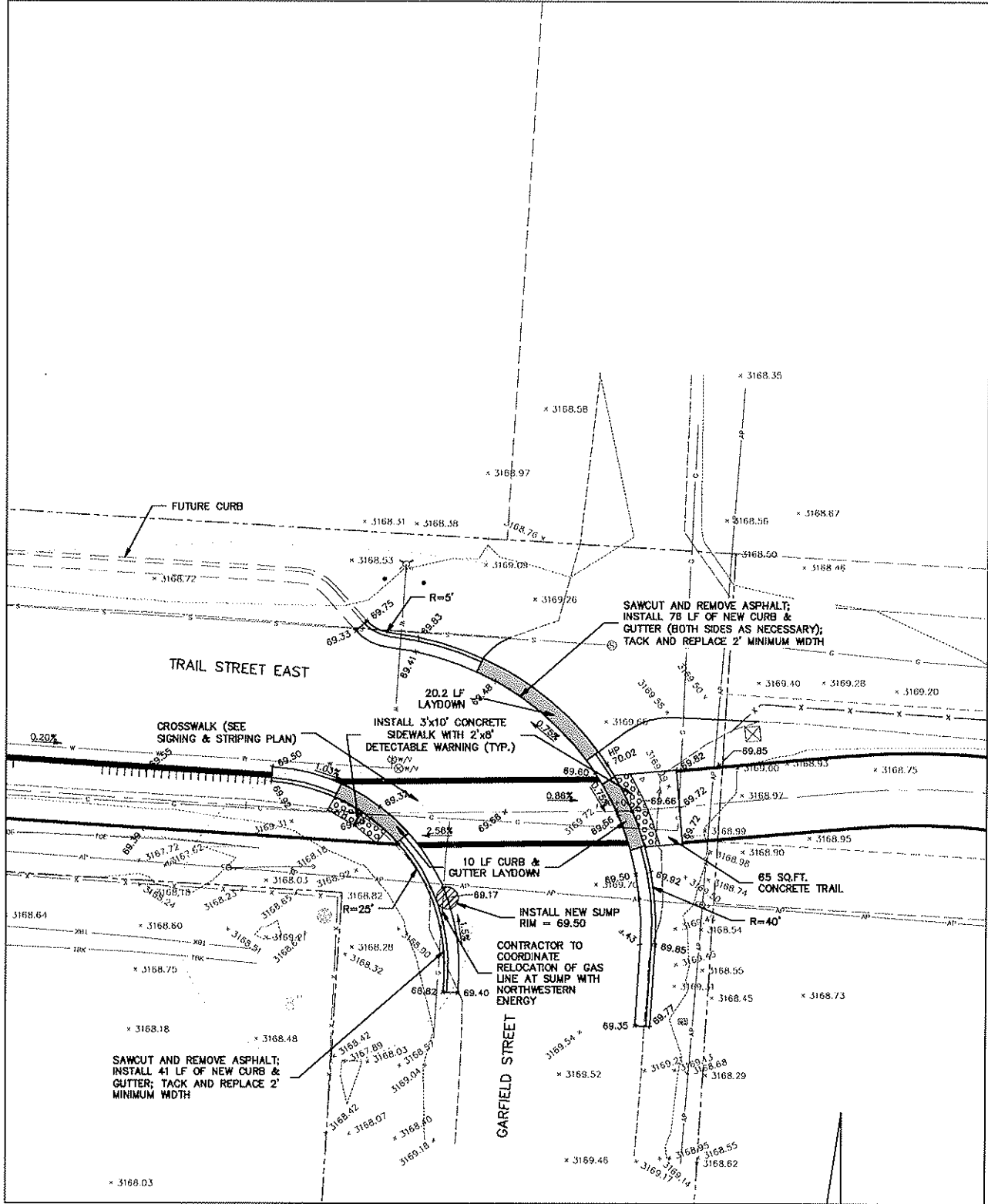
GRADING DETAILS
MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

REVISIONS:

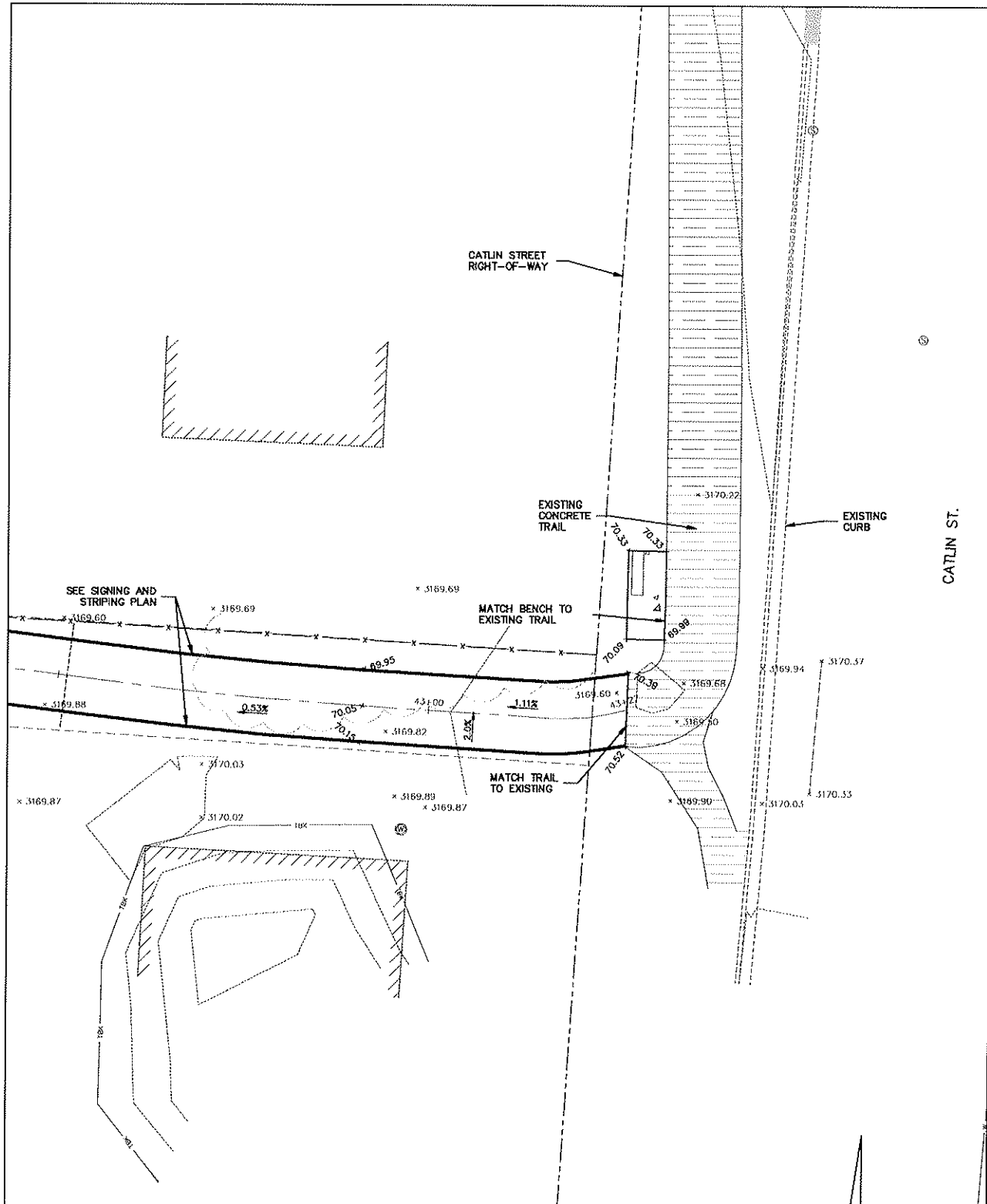
NO.	DESCRIPTION	DATE

PROJECT: 09-11-06
FILE No: 091106INT.dwg
FILE PATH: \\Project\091106\CAD Data\091106\Design
LAYOUT: SH117
SURVEYED: WGM GROUP
DESIGN: MRW/KW
DRAFT: EDI
APPROVE: JNK
DATE:

JANUARY 6, 2011



TRAIL STREET (EAST) AND GARFIELD STREET CROSSING
(PLAN AND PROFILE SHEET 9)



CATLIN STREET CROSSING
(PLAN AND PROFILE SHEET 10)

GRADING DETAILS

MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 09-11-05
FILE NO: 091105INT.dwg
FILE PATH: \\Projects\091105\091105.dwg
LAYOUT: S1118
SURVEYED: WGM GROUP
DESIGN: MRM/KW
DRAFT: EDI
APPROVE: JWK
DATE: JANUARY 6, 2011



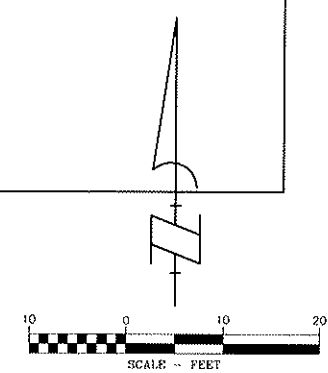
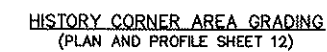
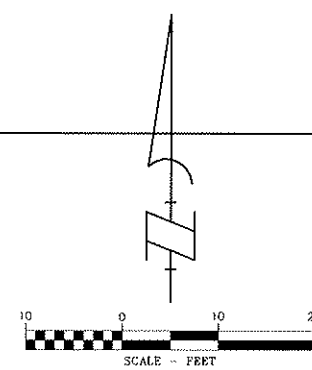
Kent Watson & Associates
 10000 Highway 100, Suite 100, Houston, TX 77036
 (713) 465-1000

GRADING DETAILS
MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

[illegible]

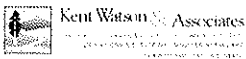
JANUARY 6, 2011

19 OF 47





1111 EAST BROADWAY
MISSOULA, MONTANA 59802
TEL: 406-728-4811
FAX: 406-728-2476
WWW.WGMGROUP.COM

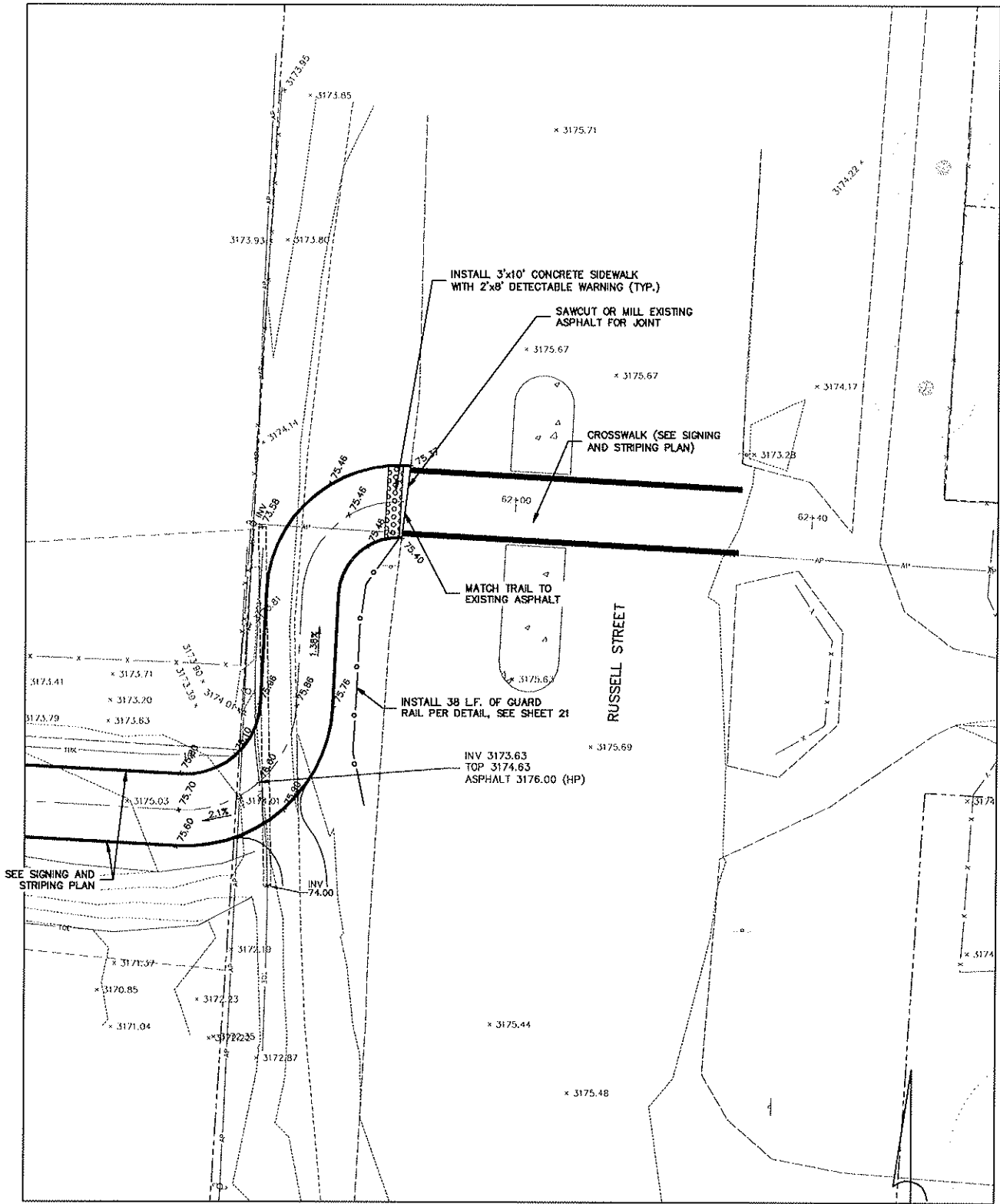


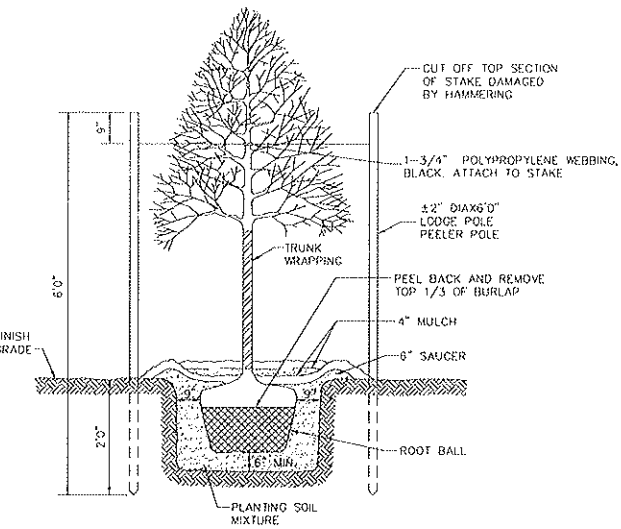
GRADING DETAILS
MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

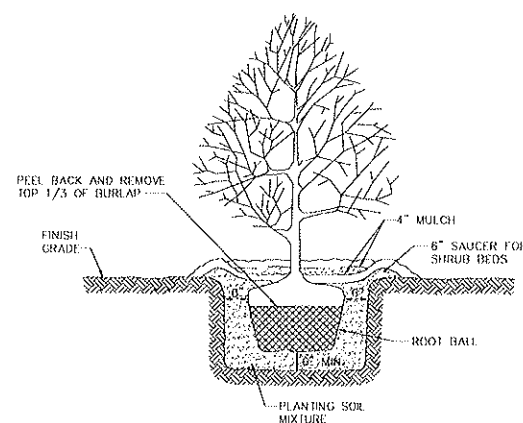
PROJECT: 09-11-06
FILE No: 091106INT.dwg
FILE PATH:
LAYOUT: S11720
SURVEYED: WGM GROUP
DESIGN: MRM/KW
DRAFT: EDI
APPROVE: JWK
DATE:

JANUARY 6, 2011

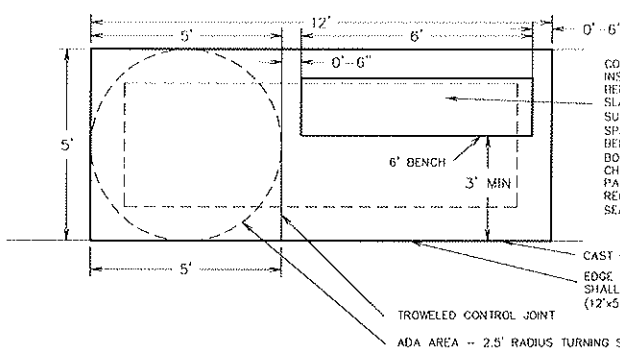




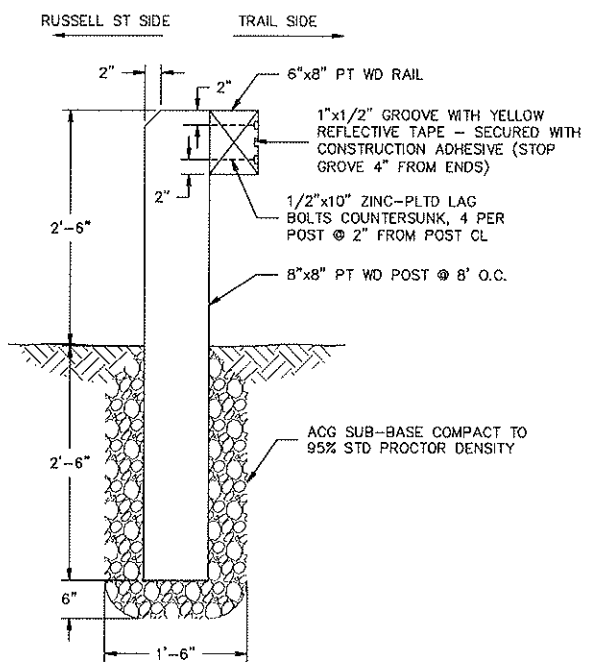
STAKING AND TREE PLANTING DETAIL
NO SCALE



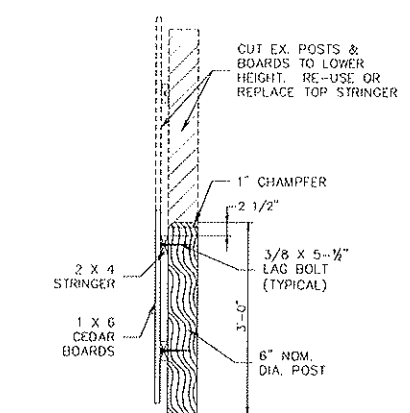
SHRUB PLANTING DETAIL
NO SCALE



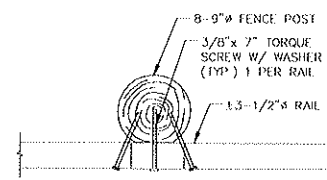
ADA BENCH PAD DETAIL
NO SCALE



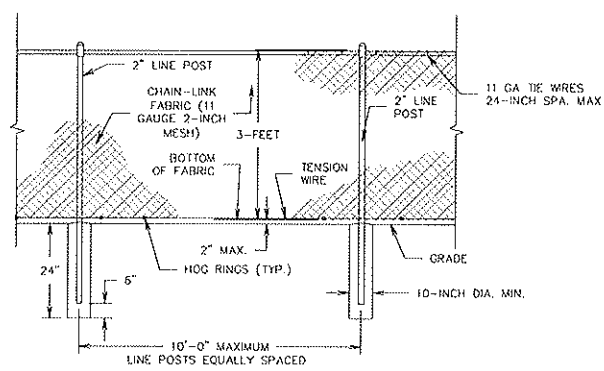
GUARDRAIL FENCE DETAIL
NO SCALE



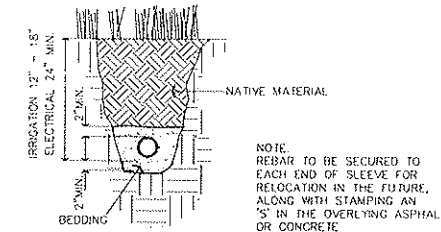
(APPROX. STA 31+75 TO 32+85)
WOOD BOARD FENCE
MODIFICATION DETAIL
NO SCALE



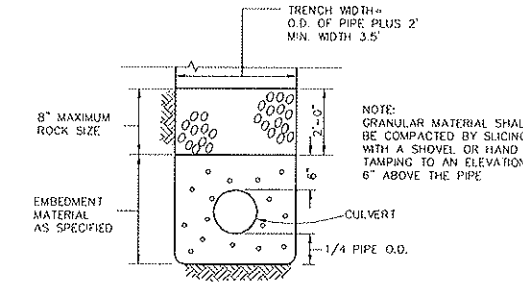
POLE FENCING PLAN VIEW
NO SCALE



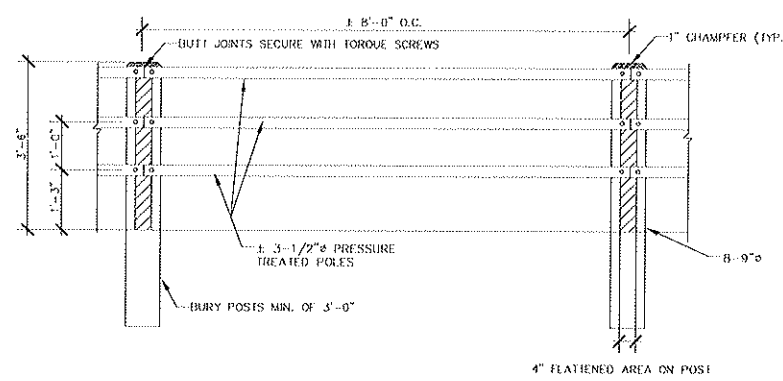
CHAIN-LINK FENCE DETAIL
NO SCALE



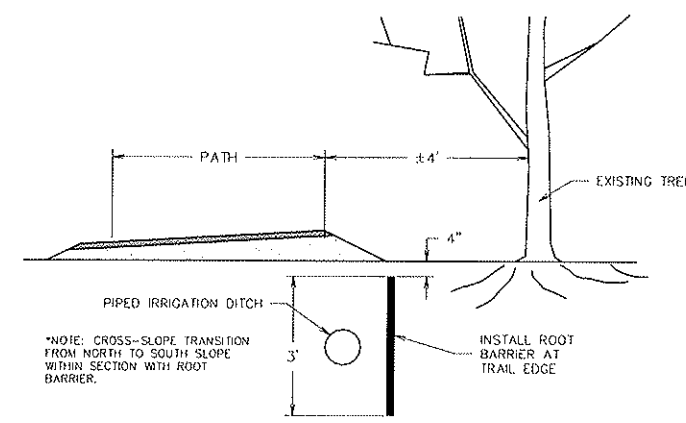
SLEEVE DETAIL
NO SCALE



STANDARD PIPE EMBEDMENT
NO SCALE



POLE FENCING SECTION
NO SCALE



(APPROX. STA 32+20 TO 32+85)
TRAIL SECTION WITH ROOT BARRIER
NO SCALE

DETAIL SHEET

MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

REVISIONS:

NO.	DESCRIPTION	DATE

PROJECT: 09-11-06
FILE No: 091106DT.dwg
FILE PATH: W:\Projects\091106\CAD Data\091106\Design
LAYOUT: SH121
SURVEYED: N/A
DESIGN: MRM/KW
DRAFT: EDI
APPROVE: JWK
DATE: JANUARY 6, 2011



LAYOUT/GEOMETRY WILL BE STAKED IN FIELD



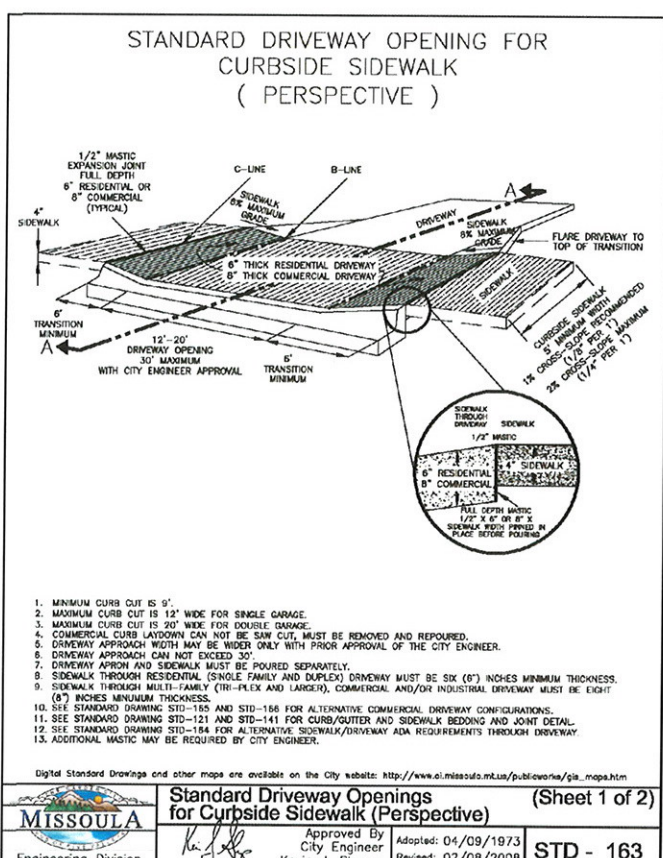
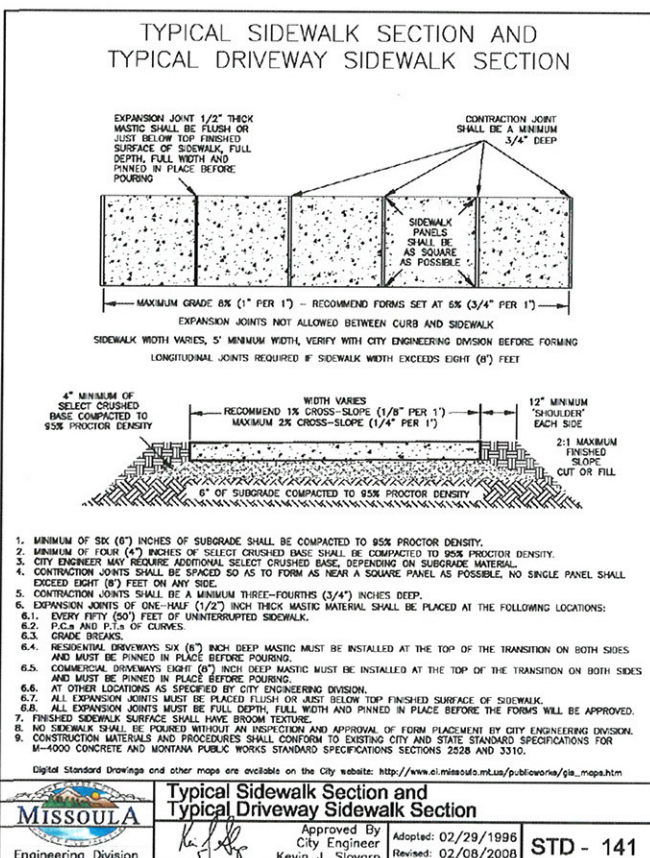
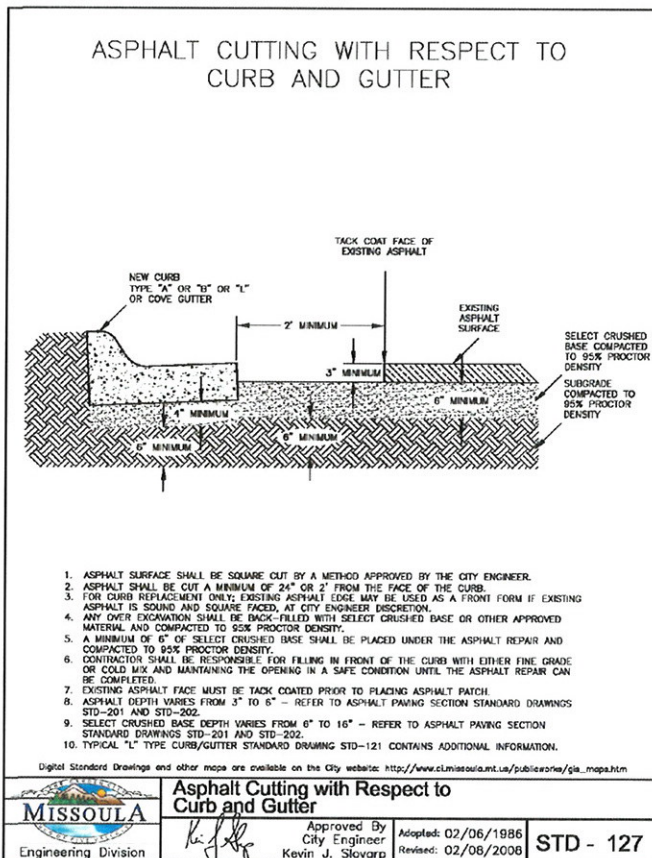
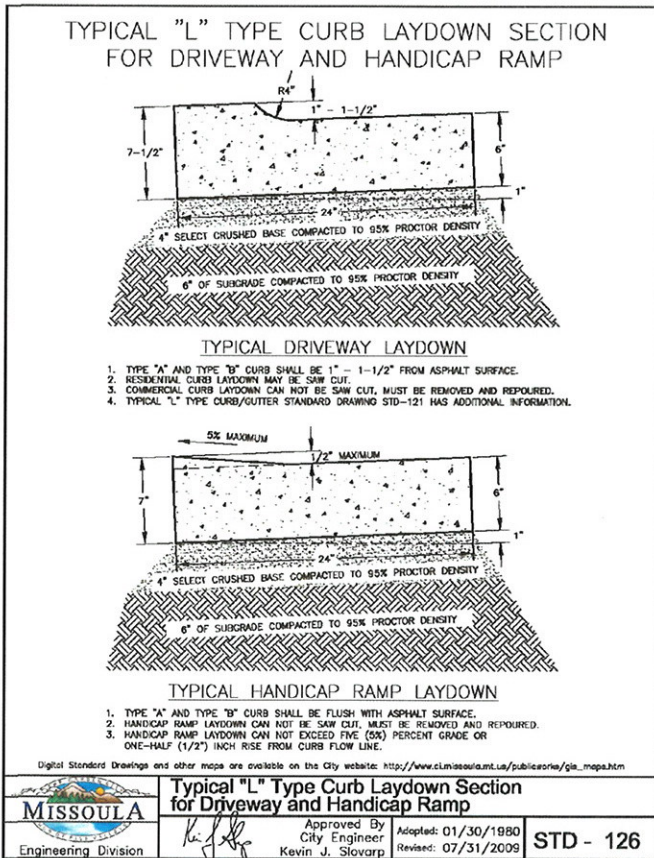
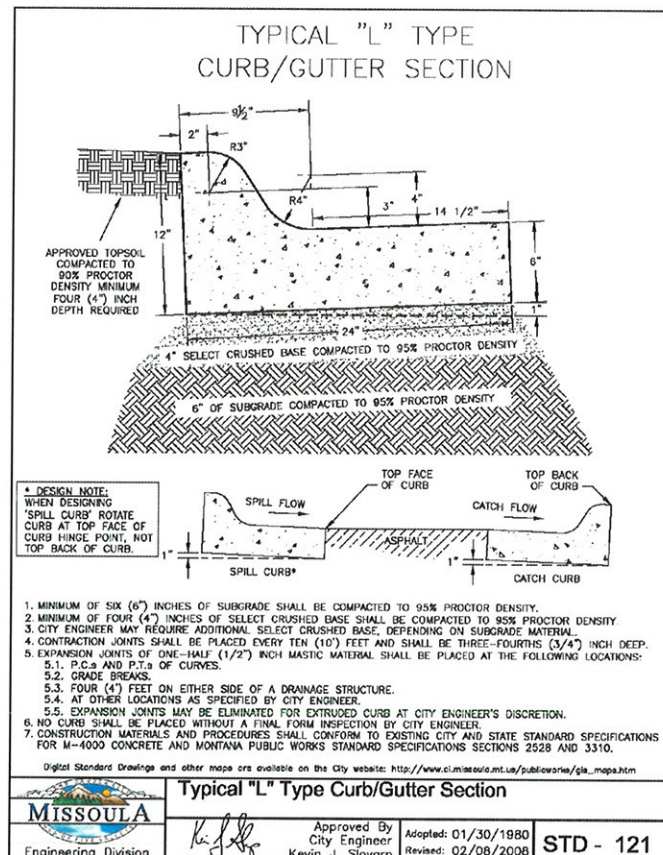
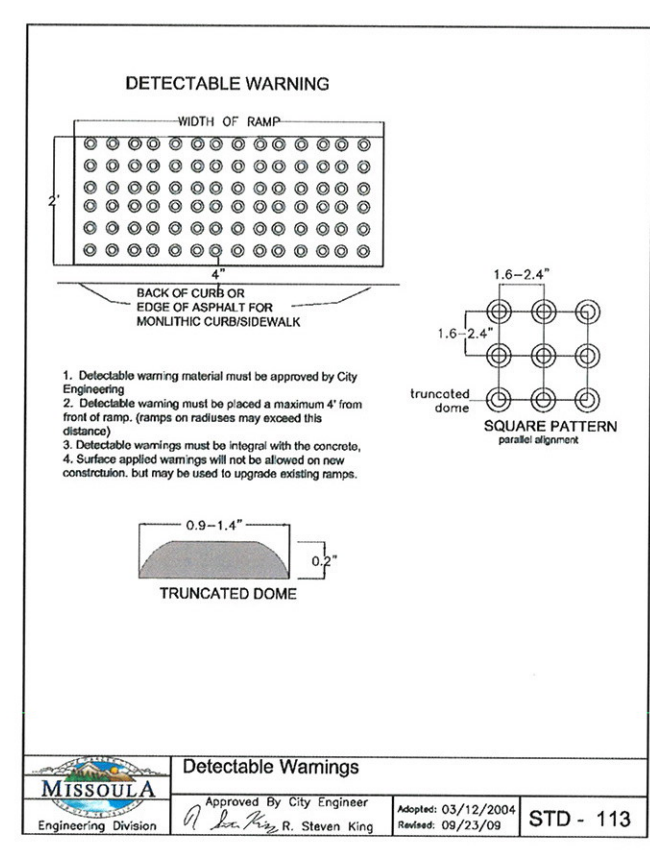
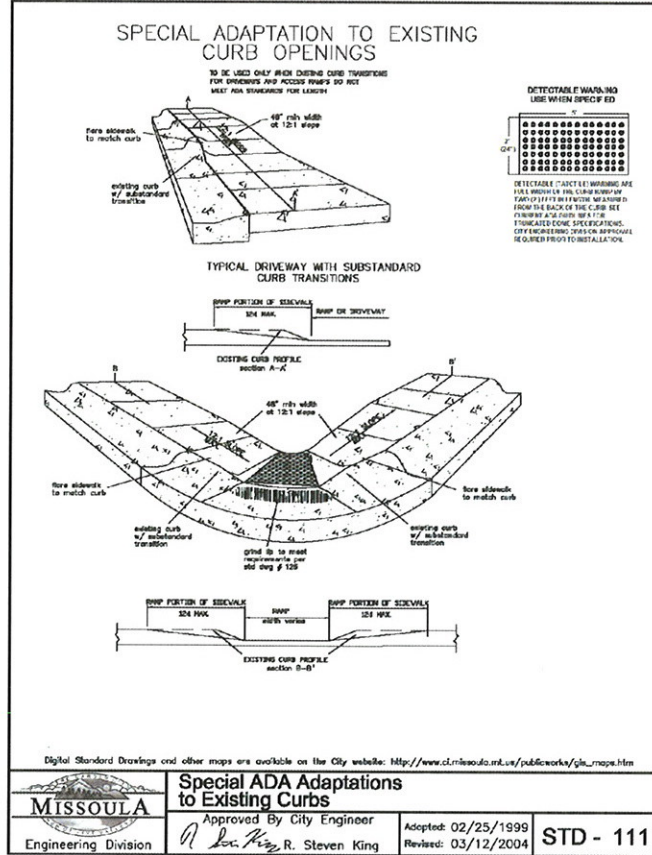
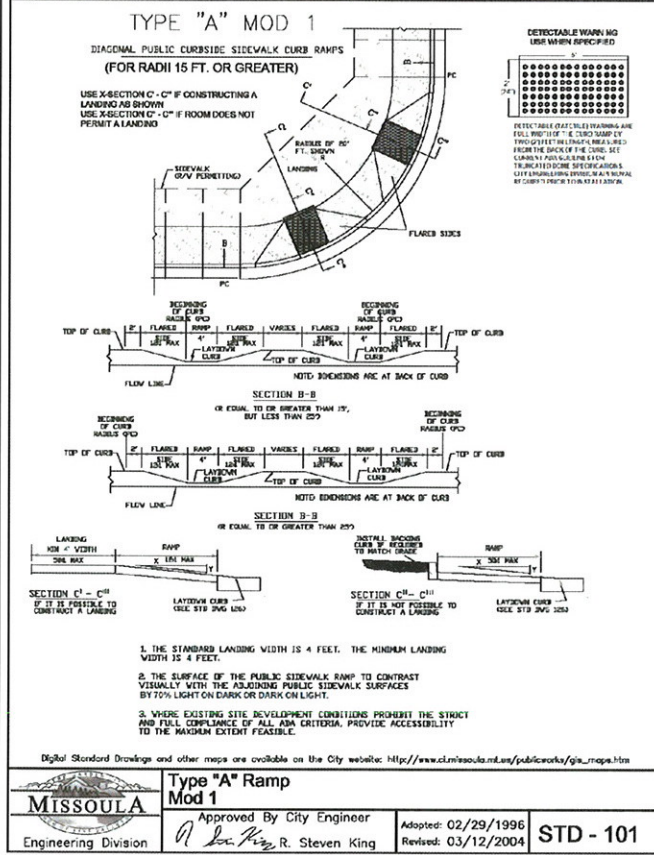
Page 17

NOTE: DETECTABLE WARNING INFORMATION IS OUT OF DATE ON CITY STD-101 AND STD-111. REFER TO STD-113 FOR DETECTABLE WARNING DETAILS TO BE INCLUDED IN THESE STANDARDS.

BID SET



1111 EAST BROADWAY
MISSOULA, MONTANA 59802
TEL: 406-728-4611
FAX: 406-728-2476
WWW.WGMGROUP.COM



DETAIL SHEET

MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

NO.	DESCRIPTION	DATE

PROJECT: 09-11-06
FILE No: 091106DT.dwg
FILE PATH: \\Projects\091106\CAD Data\091106\Design Layout - SH123
SURVEYED: N/A
DESIGN: MRM
DRAFT: EDI
APPROVE: JWK
DATE: JANUARY 6, 2011

1. MINIMUM CURB CUT IS 12" WIDE FOR SINGLE GARAGE.
2. MAXIMUM CURB CUT IS 8' WIDE FOR DOUBLE GARAGE.
3. MAXIMUM CURB CUT IS 3' WIDE FOR DRIVE/DRIVEWAY.
4. COMMERCIAL CURB LAYOUT/CUT CAN NOT BE SAVED, MUST BE REMOVED AND REPOURED.
5. DRIVE/DRIVEWAY APPROACH SHALL BE UNDER ONE WITH APPROVAL OF THE CITY ENGINEER.
6. DRIVEWAY APPROACH CAN NOT EXCEED 30'.
7. DRIVEWAY APPROACH SHALL BE PAVED SEPARATELY.
8. SIDEWALK THROUGH RESIDENTIAL (SINGLE FAMILY AND DUPLEX) DRIVEWAY MUST BE SIX (6") INCHES MINIMUM THICKNESS.
9. SIDEWALK THROUGH MULTI-FAMILY (TRI-PLEX AND LARGER), COMMERCIAL AND/OR INDUSTRIAL DRIVEWAY MUST BE EIGHT (8") INCHES THICKNESS.
10. SEE STANDARD DRAWING STD-185 AND STD-186 FOR ALTERNATIVE COMMERCIAL DRIVEWAY CONFIGURATIONS.
11. SEE STANDARD DRAWING STD-181 AND STD-141 FOR DRIVE/CUTTER AND SIDEWALK BEDDING AND JOINT DETAIL.
12. SEE STANDARD DRAWING STD-185 FOR ALTERNATIVE SIDEWALK/DRIVEWAY ADA REQUIREMENTS THROUGH DRIVEWAY.

Digital Standard Drawings and other maps are available on the City website: http://www.ci.missionmtn.us/publicworks/cis_maps.htm



1/2" (13mm) LETTERING
(RECESSED FLUSH)

TROUT LOGO

1"

[25mm]

3"

[76mm]

1 3/4"

[44mm]

1 1/2"

[38mm]

TOP VIEW

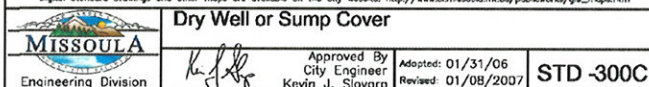
SECTION

BOTTOM VIEW

✓ MACHINED SURFACE

SEE STD-3000 FOR STANDARD
MANHOLE RING SPECIFICATIONS

Digital Standard Drawings and other maps are available on the City website: http://www.ci.missoula.mt.us/subdivisions/ps_maps.htm

[illegible]

1. ALL SIGNS MUST MEET MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR SIGN COLOR, SIZE, AND RETROREFLECTIVITY COMPLIANCE.
2. SIGNS PLACED IN THE CITY RIGHT-OF-WAY MUST BE SLEEVE-MOUNTED FOR BREAKAWAY AND REPLACEABILITY.
3. SIGN LOCATION MUST BE DETERMINED AND APPROVED BY THE CITY ENGINEER.

Note! Standard Densities and other items are available on the CBE website: <http://www.cbe.com/resources/technical-support/>

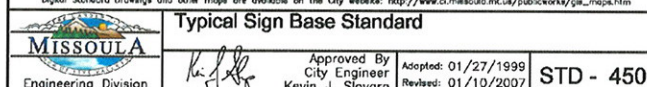
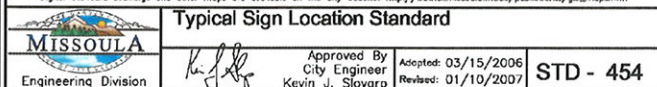


Diagram illustrating the placement of various traffic signs and markers at a street intersection. Key labels include:

- 3' MINIMUM FROM BACK OF CURB
- COMBINATION STREET NAME SIGN AND STOP SIGN
- 45°
- NO PARKING WITH ARROW
- 20' MIN.
- 3' MINIMUM
- INTERSECTION POINT OF CURVATURE (PC)
- 3' MINIMUM FROM BACK OF CURB
- SPEED LIMIT SIGN
- 3' MINIMUM FROM STOP BAR
- 3' MINIMUM FROM SIDEWALK
- 15' MIN.
- STOP SIGN

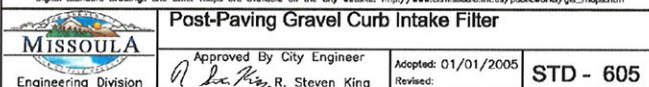
1. ALL SIGNS MUST MEET MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR SIGN COLOR, SIZE, AND RETROREFLECTIVITY COMPLIANCE.
2. SIGNS PLACED IN THE CITY RIGHT-OF-WAY MUST BE SLEEVE-MOUNTED FOR BREAKAWAY AND REPLACEMENT.
3. SIGN LOCATION MUST BE DETERMINED AND APPROVED BY THE CITY ENGINEER.
4. ALL "NO PARKING" SIGNS - WITH ARROWS MUST BE SET AT 45° TO STREET
WITHOUT ARROWS MUST BE SET AT 90° TO STREET
5. SIGN STANDARD DRAWING IS A GUIDE, FINAL SIGN PLACEMENT TO BE DETERMINED BY CITY ENGINEER.

Digital Standard Drawings and other maps are available on the City website: http://www.ci.missoula.mt.us/publicworks/ole_maps.htm



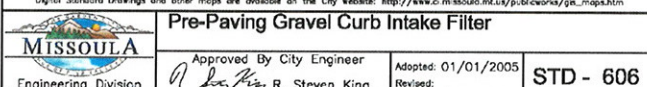
Note: This application for paved streets. See STD-606 for inlets on gravel roads.

Digital Standard Drawings and other maps are available on the City website: http://www.ci.mission.ca.us/publicworks/pls_maps.htm



Sand bags filled with washed coarse aggregate may also be used.

Digital Standard Drawings and other maps are available on the City website: http://www.ci.mimonsa.mt.us/645main/city_maps.htm



A detailed technical diagram of a street intersection. The diagram shows a cross-section of the road with various markings and features. Key elements include:

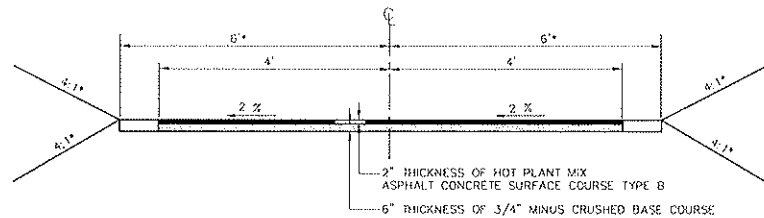
- STOP BAR**: A horizontal bar across the road, labeled "STOP BAR - 12\" BY LANE WIDTH".
- INTERSECTION POINT OF CURVATURE (PC)**: A point on the road labeled "INTERSECTION POINT OF CURVATURE (PC)".
- BROKEN LINE STRIPING**: A striped area on the road labeled "BROKEN LINE STRIPING 4\" WIDE, 24\" LONG WITH 8\" MINIMUM GAP BETWEEN STRIPES".
- EPOXY PAVEMENT MARKING MATERIAL**: A material used for marking, labeled "EPOXY PAVEMENT MARKING MATERIAL".
- CROSSWALK TO STOP BAR**: A crosswalk area labeled "3'-0\" CROSSWALK TO STOP BAR".
- PARKING LOT**: A parking area labeled "PARKING LOT".
- FIRE HYDRANT**: A fire hydrant labeled "FIRE HYDRANT".
- Dimensions**: Various dimensions are indicated, including "20' MIN.", "20'", and "30'".

1. ALL STREET MARKINGS MUST MEET MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) FOR DIMENSION, PLACEMENT, COLOR AND RETROREFLECTIVITY COMPLIANCE.
2. ALL MATERIALS MUST CONFORM WITH MONTANA STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION 714.08 AND METHODS OF SAMPLING AND TESTING MT 410-04.
3. STREET MARKINGS STANDARD DRAWINGS ARE A GUIDE - FINAL STREET MARKINGS TO BE DETERMINED BY CITY ENGINEER.

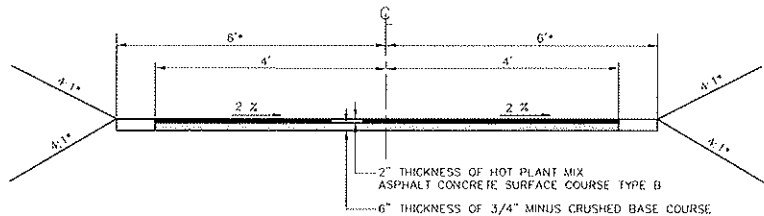


PROJECT: 09-11-06
FILE No: 091106DT.dwg
FILE PATH
W:\Projects\091106\CAD Data-091106\Design
LAYOUT: SHT24
SURVEYED: N/A
DESIGN: MRM
DRAFT: EDI
APPROVE: JWK
DATE:

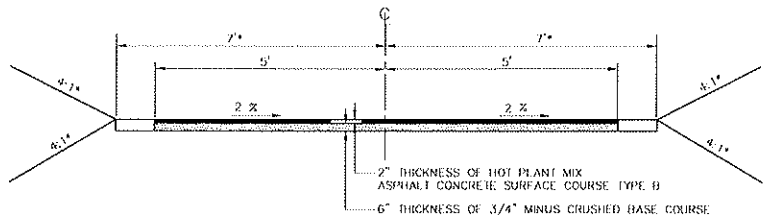
JANUARY 6, 2011



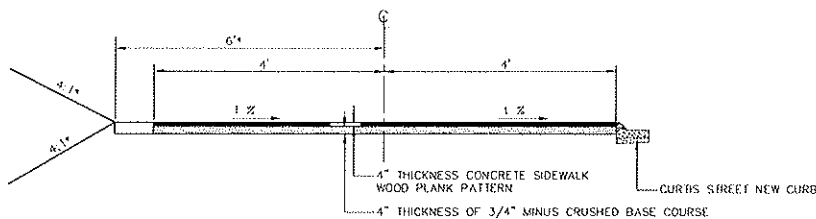
TYPICAL TRAIL SECTION, STA 1+32.06-3+20
NO SCALE



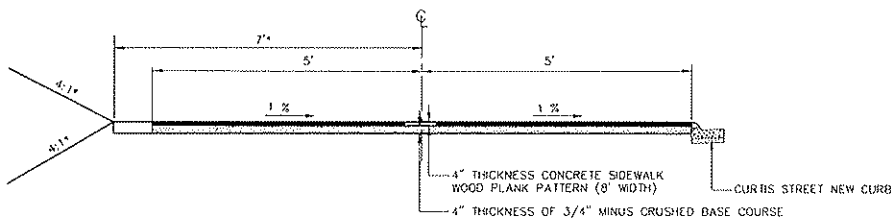
TYPICAL TRAIL SECTION, STA 3+20-4+90
NO SCALE



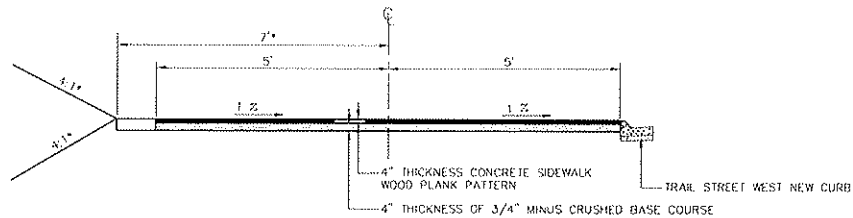
TYPICAL TRAIL SECTION, STA 5+10-14+67.16, 22+97.45-23+37,
27+00-29+00, 32+80-33+25.74, 50+30.18-END
NO SCALE



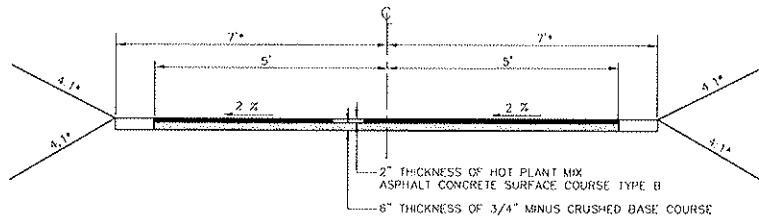
TYPICAL TRAIL SECTION, STA 14+92.14-15+30
NO SCALE



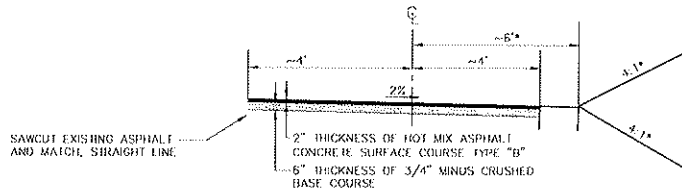
TYPICAL TRAIL SECTION, STA 15+30-16+63.73
NO SCALE



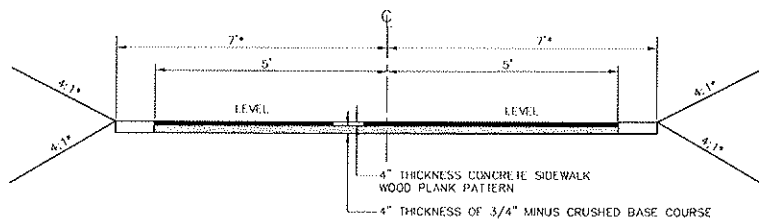
TYPICAL TRAIL SECTION, STA 16+87.99-17+20.84
NO SCALE



TYPICAL TRAIL SECTION, STA 23+50-26+00, 30+00-32+20, 40+90-43+26
NO SCALE



TYPICAL TRAIL SECTION, 19' WEST OF 35+98.63-38+65
NO SCALE



TYPICAL TRAIL SECTION, STA 50+00-50+25.18
NO SCALE

NOTE: TYPICAL SECTION TRANSITION AREAS:
STA 3+20 TO 3+75
STA 4+90 TO 5+10
STA 14+67.16 TO 14+92.49
STA 16+63.73 TO 16+87.99
STA 17+20.84 TO 17+27.73
STA 23+37 TO 23+50
STA 26+00 TO 27+00
STA 29+00 TO 30+00
STA 32+20 TO 32+80
STA 39+40 TO 40+90

*NOTE: IDEAL SECTION CATCH SLOPE IS 2' LEVEL SHOULDER WITH 4:1 CATCH TO EXISTING. HOWEVER, CONTRACTOR MAY FIELD-WARP CATCH SLOPES AT NO LESS THAN 1' SHOULDER AND 2:1 CATCH TO EXISTING, WITH ENGINEER APPROVAL, TO FIT EXISTING TOPOGRAPHIC CHALLENGES AND EASEMENT LIMITS. FURTHER, TYPICAL CATCH LIMITS MAY BE REDUCED IN SPECIAL CIRCUMSTANCES, SUCH AS PATH LOCATED ADJACENT TO IRRIGATION DITCHES, WITH THE USE OF POLE FENCE AS A GUARDRAIL IN THE LOCATIONS SPECIFIED IN THE PLANS.

DETAIL SHEET - TYPICAL SECTIONS
MILWAUKEE RAILROAD PATH
MISSOULA, MONTANA

REVISIONS:		
NO.	DESCRIPTION	DATE

PROJECT: 09-11-06
FILE No: 091106DT.dwg
FILE PATH:
W:\Projects\091106\091106.dwg
LAYOUT: S4125
SURVEYED: N/A
DESIGN: MRM
DRAFT: EDI
APPROVE: JWK
DATE:

JANUARY 6, 2011