HAPPY TRAILS RANCH

A PLANNED UNIT DEVELOPMENT

A PORTION OF SECTION 33, T26N, R45E, W.M.
SPOKANE COUNTY, STATE OF WASHINGTON

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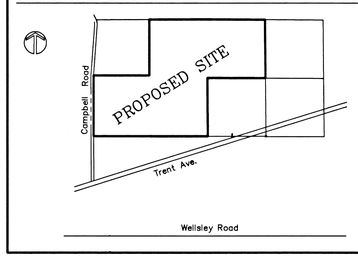
VICINITY MAP



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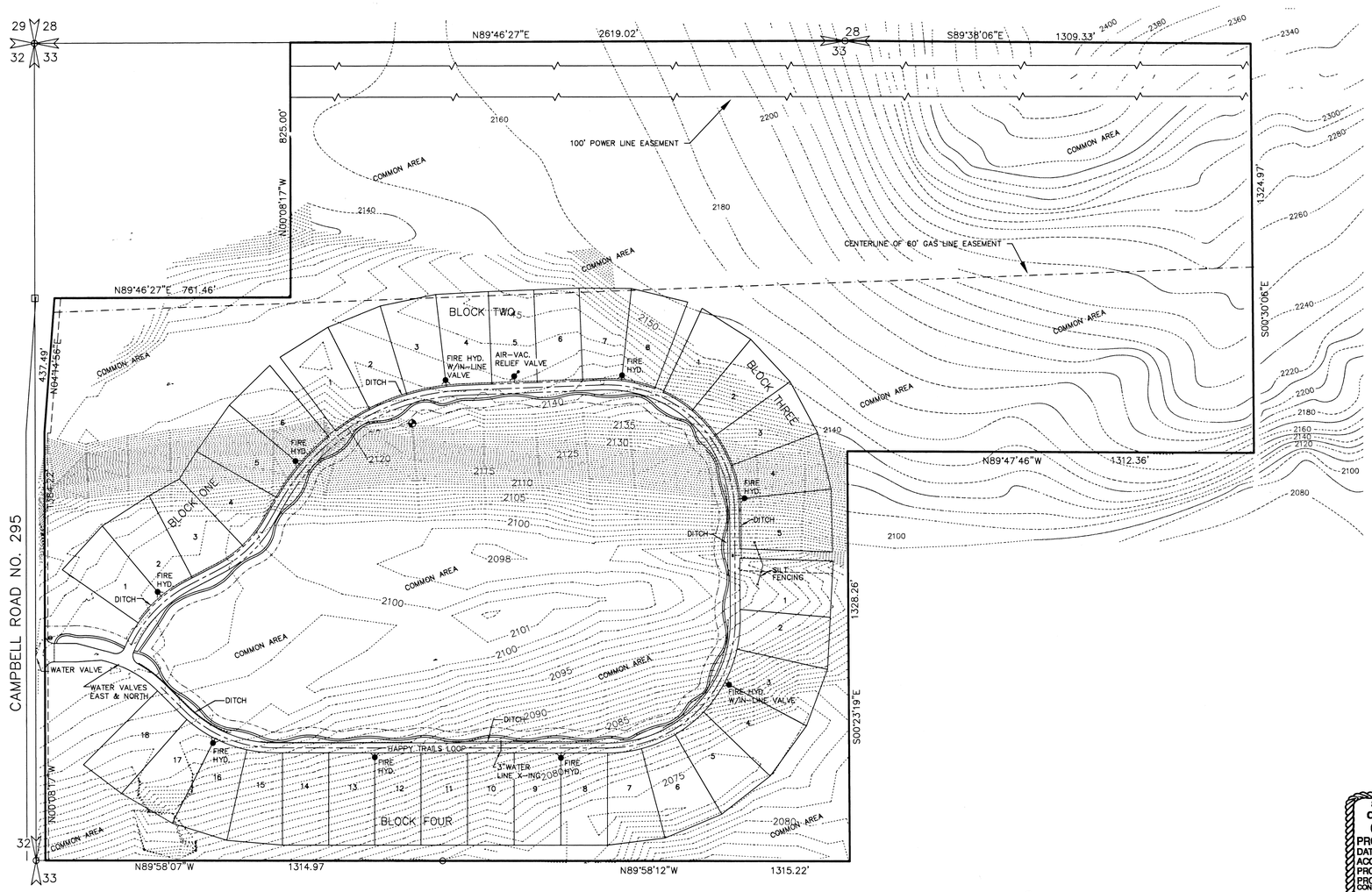
Scale: 1" = 200'



NOTES:

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 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 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 (AMOCO 4545 OR APPROVED EQUIVALENT) BETWEEN THE DRYWELL BARREL AND THE WASHED DRAIN ROCK, AND BETWEEN THE WASHED DRAIN ROCK 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 FLOOR OF A GRASSED PERCOLATION AREA (GPA) SWALE INCLUDES THE LEVEL PORTION OF THE FLOOR OF THE SWALE, AND THE SIDESLOPES 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 THE 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.
9. CONSTRUCTION ENTRANCE TO CONFORM TO SPOKANE COUNTY STANDARDS

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 the project site.

ER5) Geotextile fabric if to be used on the rims of drywells, catch basins and inlets until such time the vegetation on the site is established and the thereat of sediment deposition into the drainage system is mitigated.

Dryland Grass Seed Mix

ALL DISTURBED AREAS SHALL BE RESHAPED AND HYDROSEEDED

Grass seed:
Provide fresh, clean, new-crop seed complying with tolerance of purity and germination established by the Official Seed Analysis of North America. Provide seed mixture composed of grass species and percentages as follows:

15 percent	Elkra Perennial Rye
25 percent	Dural Hard Fescue
45 percent	Covar Sheep/Fescue
15 percent	Reubens Canadian Bluegrass

Provide mixture composed of grass seed and fertilizer in percentages as follows:

Grass Seed:	90 lbs. per acre
Fertilizer:	16-16-16 timed release composition, 300 lbs. per acre

All seeding of slopes shall be done in accordance with the WSDOT Standard Specifications, Sec. 8-01.

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-1793A
DATE ACCEPTED: 10-27-03
ACCEPTANCE EXPIRES: 10-27-05
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 2.08
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

Fred Rogers
DEVELOPER'S APPROVAL

10/16/03
DATE

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.

TEMPORARY BENCHMARK:
STA. 42+56.96
OFFSET 77.60'
NAVD88 ELEV=2139.20

NOTE:
EXISTING CONTOURS ARE APPROXIMATE AND ARE SHOWN FOR GENERAL TOPOGRAPHY ONLY.

R. SCOTT JAMAR
STATE OF IDAHO
10-15-03
39778
REGISTERED
PROFESSIONAL ENGINEER
EXPIRES: 04-16-04

REVISION	HORIZ. SCALE AS SHOWN	DATE
	VERT. SCALE	
	CHECKED BY:	
	APPROVED BY:	
	DESIGN BY:	
	DRAWN BY:	
	PLAN DWG. NO.	
	PROFILE DWG. NO.	

HAPPY TRAILS SUBDIVISION
COVER SHEET

JAMAR ASSOCIATES, INC.
Engineers Planners Surveyors
Project Management Engineering Construction Services
Ph. (208) 762-3755 P.O. Box 352 Hayden, ID. 83835
PROJECT NO. 1078 DATE: 10/15/03

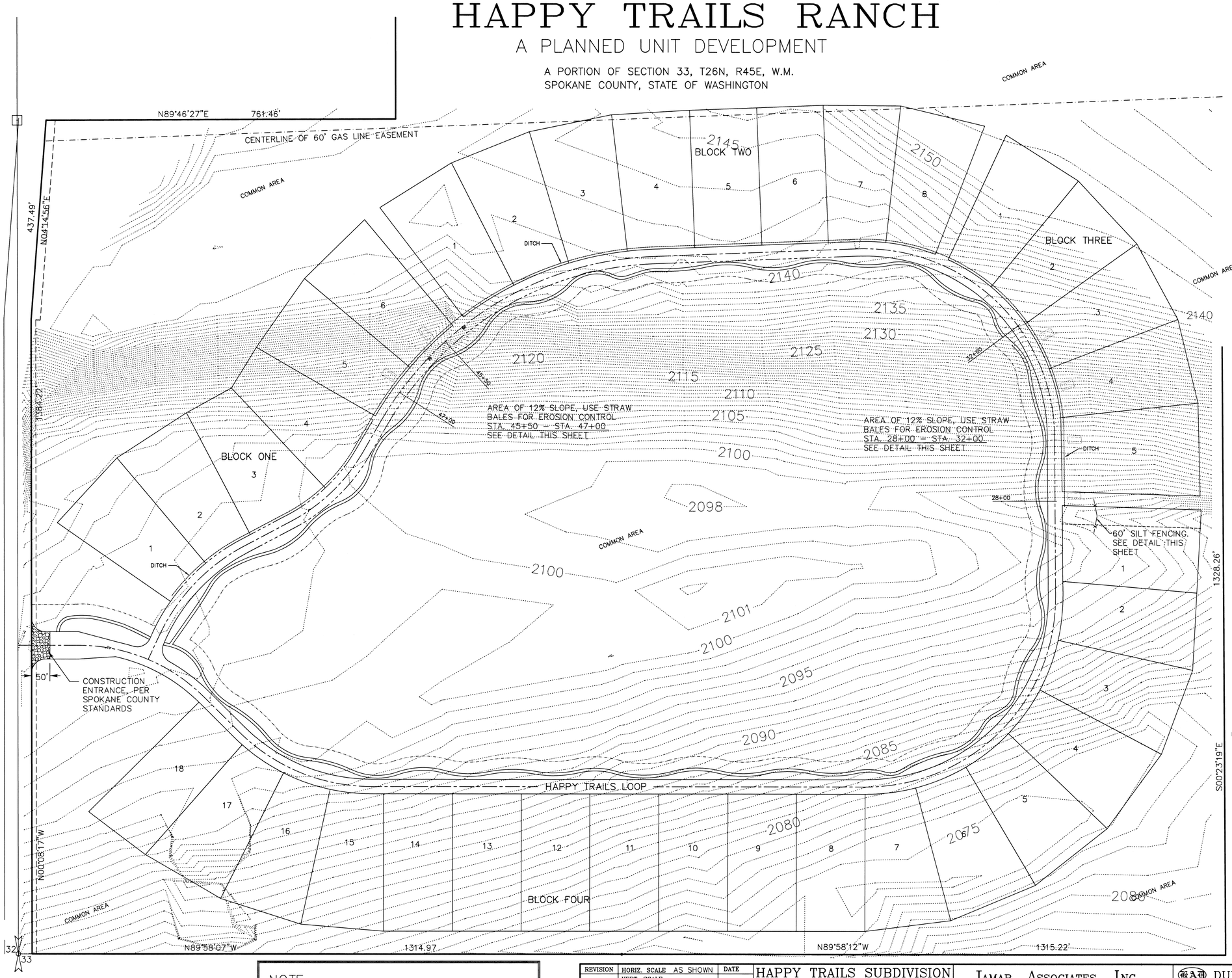
DURTSCHI & ASSOC.
SURVEYING-PLANNING
P.O. BOX 700
9751 GOVERNMENT WAY, SUITE 5
HAYDEN LAKE, ID 83835
(208) 772-2233
FAX: 772-9231
PROJECT NO. 3202 DATE: OCOTBER 2003

P-1793A Eng Road+Drainage

HAPPY TRAILS RANCH

A PLANNED UNIT DEVELOPMENT

A PORTION OF SECTION 33, T26N, R45E, W.M.
SPOKANE COUNTY, STATE OF WASHINGTON

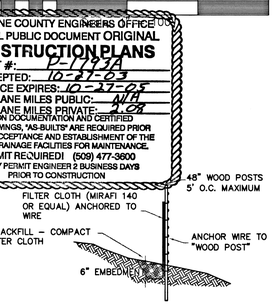


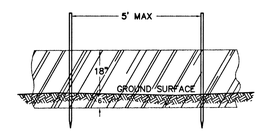
LEGEND

- STRAW BALES
- —X—X— SILT FENCING
- 12" OF 2"–8" FRACTURED ROCK

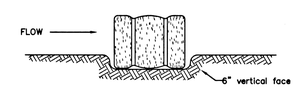
100 0 100 200 400

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-1793A
DATE ACCEPTED: 10-27-03
ACCEPTANCE EXPIRES: 10-27-05
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 2.02
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

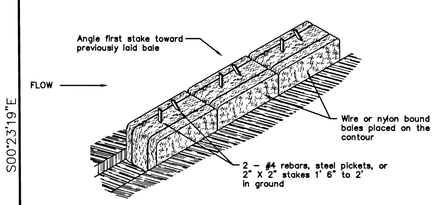




SILT FENCE
NTS



EMBEDDING DETAIL



ANCHORING DETAIL

STRAW BALE SEDIMENT BARRIER
NTS

Fred Rogers
DEVELOPER'S APPROVAL

10/16/03
DATE

NOTE:
EXISTING CONTOURS ARE APPROXIMATE AND ARE SHOWN FOR GENERAL TOPOGRAPHY ONLY.

REVISION	HORIZ. SCALE AS SHOWN	DATE
	VERT. SCALE	
	CHECKED BY:	
	APPROVED BY:	
	DESIGN BY:	
	DRAWN BY:	
	PLAN DWG. NO.	
	PROFILE DWG. NO.	

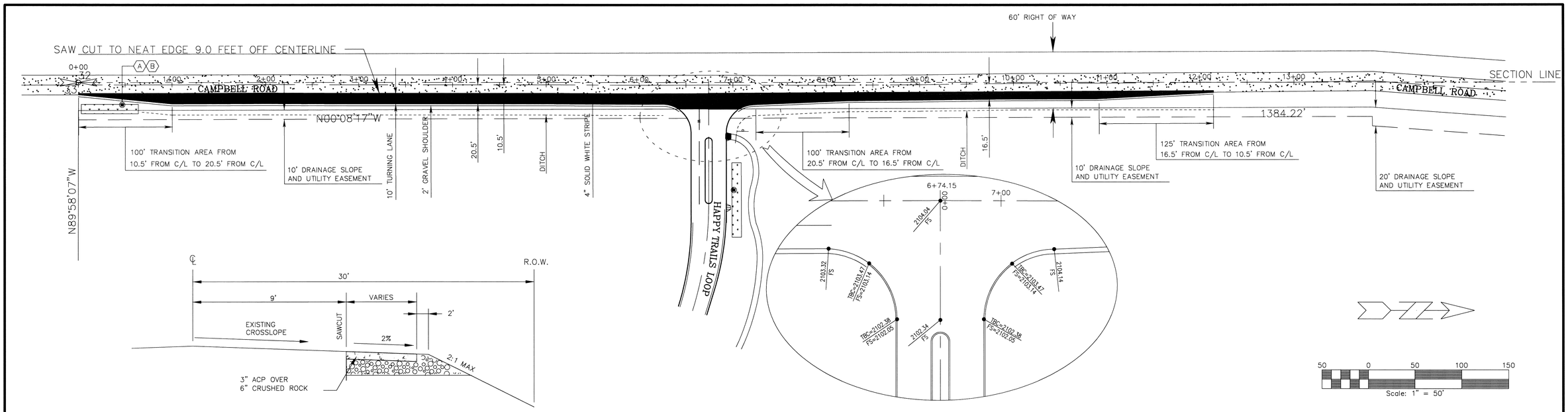
HAPPY TRAILS SUBDIVISION
EROSION CONTROL PLAN

JAMAR ASSOCIATES, INC.
Engineers Planners Surveyors
Project Management Engineering Construction Services
Ph. (208) 762-3755 P.O. Box 352 Hayden, ID. 83835
PROJECT NO. 1078 DATE: 10/15/03

DURTSCHI & ASSOC.
SURVEYING–PLANNING
P.O. BOX 700
9751 GOVERNMENT WAY, SUITE 5
HAYDEN LAKE, ID 83835
(208) 772-2233
FAX: 772-9231
PROJECT NO. 3202 DATE: OCTOBER 2003

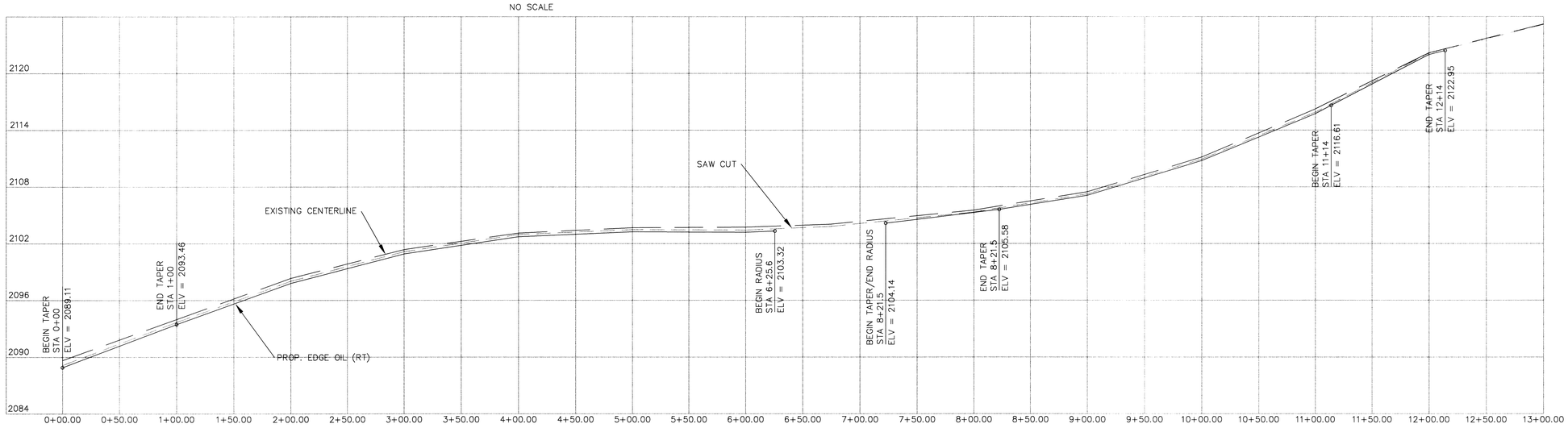
SCOTT JAMAR STATE OF IDAHO 39778 REGISTERED PROFESSIONAL ENGINEER 10-15-03
EXPIRES: 04-16-04

P-1793A Eng Roads & Drainage



TYPICAL SECTION – CAMPBELL ROAD

NO SCALE



EX CL	2089.66	2091.83	2093.99	2096.16	2098.33	2099.85	2101.37	2102.24	2103.10	2303.39	2103.67	2103.70	2103.73	2103.94	2104.35	2104.94	2105.52	2106.50	2107.48	2109.33	2111.16	2113.70	2116.24	2119.21	2122.17	2123.69	2125.20
EX E/O RT	2089.14	2091.42	2093.69	2095.86	2098.02	2099.58	2101.14	2102.05	2102.95	2103.21	2103.47	2103.45	2103.42	2103.68	2104.11	2104.71	2105.31	2106.26	2107.25	2109.10	2110.95	2113.42	2115.89	2119.02	2122.14	2123.65	2125.15
PROPOSED E/O RT	2089.11	2091.29	2093.46	2095.63	2097.79	2099.35	2100.91	2101.82	2102.72	2102.98	2103.24	2103.22	2103.19			2104.50	2105.14	2106.13	2107.10	2108.95	2110.80	2113.27	2115.74	2118.92	2122.10		

NOTES:

1.) CONTRATOR TO POST STOP SIGN ON PRIVATE ROAD PER SPOKANE COUNTY STANDARDS.
2.) CONTRACTOR TO POST PRIVATE ROAD & STREET NAME SIGNS PER SPOKANE COUNTY STANDARDS.

KEY NOTES:

(A) 22' LT OF 0+47 (CAMPBELL RD) TYPE "A" DRYWELL; RIM EL=2087.50
(B) 10'x61' SWALE BOTTOM EL=2087.00

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-1793A
DATE ACCEPTED: 10-27-03
ACCEPTANCE EXPIRES: 10-27-05
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 2.03
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

EXPIRES: 04-16-04

REVISION	HORIZ. SCALE 1" = 50'	DATE
	VERT. SCALE 1" = 5'	
	CHECKED BY:	
	APPROVED BY:	
	DESIGN BY:	
	DRAWN BY:	
	PLAN DWG. NO.	
	PROFILE DWG. NO.	

HAPPY TRAILS SUBDIVISION
CAMPBELL ROAD

JAMAR ASSOCIATES, INC.
Engineers Planners Surveyors
Project Management Engineering Construction Services
Ph. (208) 762-3755 P.O. Box 352 Hayden, ID. 83835
PROJECT NO. 1078 DATE: 10/15/03

DURTSCHI & ASSOC.
SURVEYING-PLANNING
P.O. BOX 700
9751 GOVERNMENT WAY, SUITE 5
HAYDEN LAKE, ID 83835
(208) 772-2233
FAX: 772-9231
PROJECT NO. 3202 DATE: OCTOBER 2003

P-1793A Engineered Drainage

JAMAR ASSOCIATES, INC.
Engineers Planners Surveyors
Project Management Engineering Construction Services
Ph. (208) 762-3755 P.O. Box 352 Hayden, ID. 83835

PROJECT NO. 1078 DATE: 6/3/03

DURTSCHI & ASSOC.
SURVEYING-PLANNING
P.O. BOX 700
9751 GOVERNMENT WAY, SUITE 5
HAYDEN LAKE, ID 83835
(208) 772-2233
FAX: 772-9231

PROJECT NO. 3202 DATE: 10/15/03

HAPPY TRAILS SUBDIVISION WATER SYSTEM HAPPY TRAILS LOOP ROAD PLAN & PROFILE

REVISION	HORIZ. SCALE AS SHOWN	DATE
	VERT. SCALE	
	CHECKED BY:	
	APPROVED BY:	
	DESIGN BY:	
	DRAWN BY:	
	PLAN DWG. NO.	
	PROFILE DWG. NO.	

Fred Rogers
DEVELOPER'S APPROVAL

10/16/03
DATE

SCOTT J. MAY STATE OF WASHINGTON 39778 REGISTERED PROFESSIONAL ENGINEER 10.15.03
EXPIRES: 04-16-04

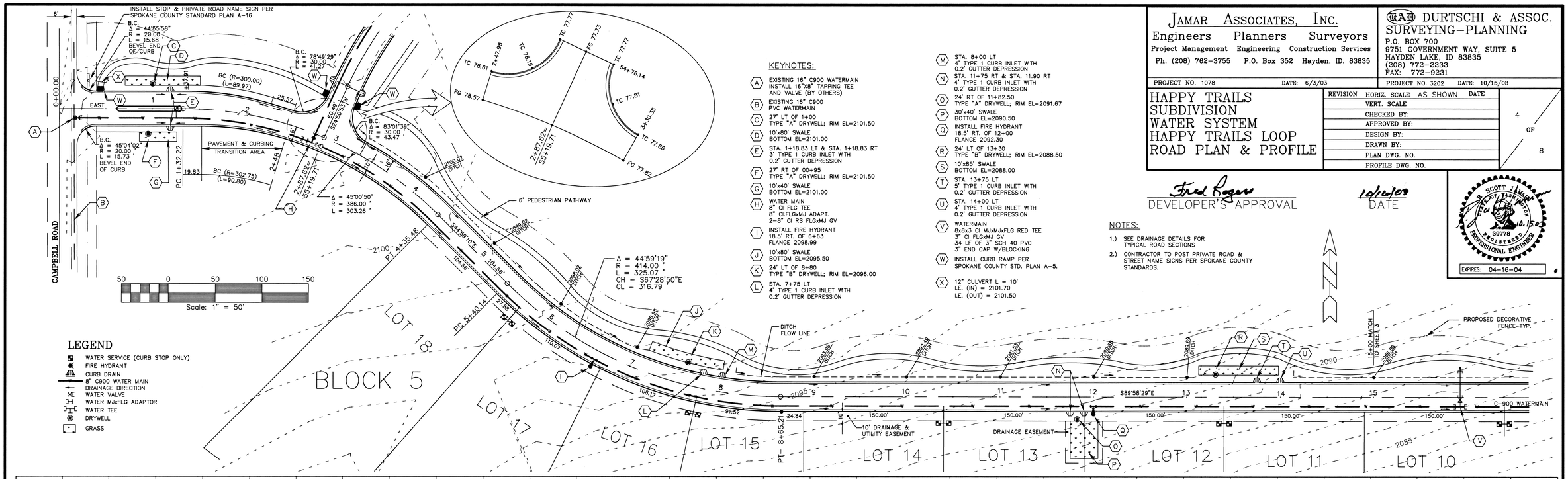
KEYNOTES:

- (A) EXISTING 16" C900 WATERMAIN INSTALL 16"x8" TAPPING TEE AND VALVE (BY OTHERS)
- (B) EXISTING 16" C900 PVC WATERMAIN
- (C) 27' LT OF 1+00 TYPE "A" DRYWELL; RIM EL=2101.50
- (D) 10'x80' SWALE BOTTOM EL=2101.00
- (E) STA. 1+18.83 LT & STA. 1+18.83 RT 3' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (F) 27' RT OF 00+95 TYPE "A" DRYWELL; RIM EL=2101.50
- (G) 10'x40' SWALE BOTTOM EL=2101.00
- (H) WATER MAIN 8" CI FLG TEE 8" CI.FLGxMJ ADAPT. 2-8" CI RS FLGxMJ GV
- (I) INSTALL FIRE HYDRANT 18.5' RT. OF 6+63 FLANGE 2098.99
- (J) 10'x80' SWALE BOTTOM EL=2095.50
- (K) 24' LT OF 8+80 TYPE "B" DRYWELL; RIM EL=2096.00
- (L) STA. 7+75 LT 4' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (M) STA. 8+00 LT 4' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (N) STA. 11+75 RT & STA. 11.90 RT 4' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (O) 24' RT OF 11+82.50 TYPE "A" DRYWELL; RIM EL=2091.67
- (P) 30'x40' SWALE BOTTOM EL=2090.50
- (Q) INSTALL FIRE HYDRANT 18.5' RT. OF 12+00 FLANGE 2092.30
- (R) 24' LT OF 13+30 TYPE "B" DRYWELL; RIM EL=2088.50
- (S) 10'x85' SWALE BOTTOM EL=2088.00
- (T) STA. 13+75 LT 5' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (U) STA. 14+00 LT 4' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (V) WATERMAIN 8x8x3 CI MJxMJxFLG RED TEE 3" CI FLGxMJ GV 34 LF OF 3" SCH 40 PVC 3" END CAP W/BLOCKING
- (W) INSTALL CURB RAMP PER SPOKANE COUNTY STD. PLAN A-5.
- (X) 12" CULVERT L = 10' I.E. (IN) = 2101.70 I.E. (OUT) = 2101.50

NOTES:

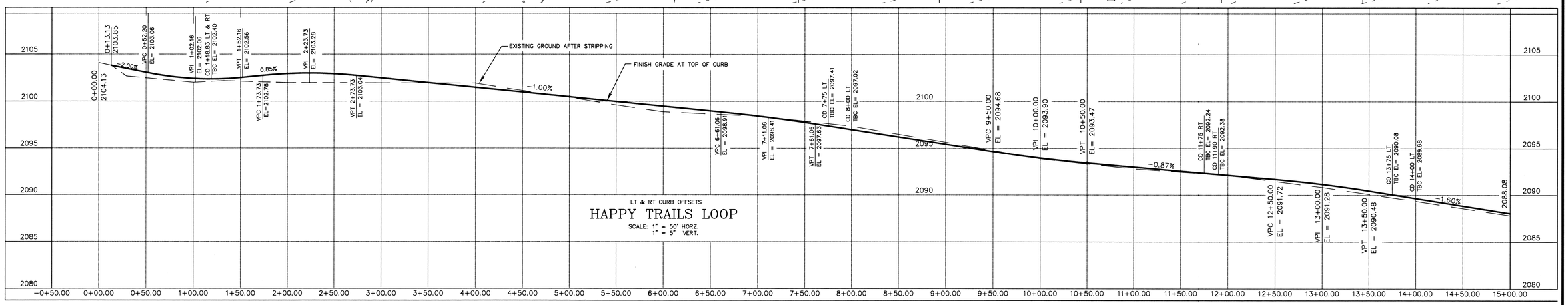
1.) SEE DRAINAGE DETAILS FOR TYPICAL ROAD SECTIONS

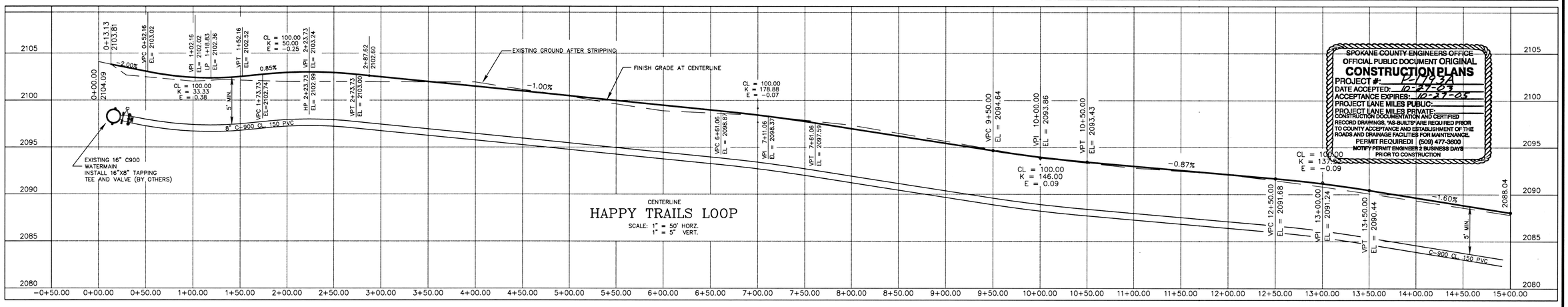
2.) CONTRACTOR TO POST PRIVATE ROAD & STREET NAME SIGNS PER SPOKANE COUNTY STANDARDS.



LEGEND

- WATER SERVICE (CURB STOP ONLY)
- FIRE HYDRANT
- CURB DRAIN
- 8" C900 WATER MAIN
- DRAINAGE DIRECTION
- WATER VALVE
- WATER MJxFLG ADAPTOR
- WATER TEE
- DRYWELL
- GRASS





SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-1793A
DATE ACCEPTED: 10-27-03
ACCEPTANCE EXPIRES: 10-27-05
PROJECT LANE MILES PUBLIC:
PROJECT LANE MILES PRIVATE:
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

P-1793A Eng Road & Drainage

HAPPY TRAILS SUBDIVISION
WATER SYSTEM
HAPPY TRAILS LOOP
ROAD PLAN & PROFILE

JAMAR ASSOCIATES, INC.
Engineers Planners Surveyors
Project Management Engineering Construction Services
Ph. (208) 762-3755 P.O. Box 352 Hayden, ID. 83835

PROJECT NO. 1078 DATE: OCTOBER 2003

DURTSCHI & ASSOC.
SURVEYING-PLANNING
P.O. BOX 700
9751 GOVERNMENT WAY, SUITE 5
HAYDEN LAKE, ID 83835
(208) 772-2233
FAX: 772-9231

R. SCOTT JAMES 39778 10-15-03 REGISTERED PROFESSIONAL ENGINEER
EXPIRES: 04-16-04

PROJECT NO. 3202 DATE: 10/15/03

REVISION	HORIZ. SCALE AS SHOWN	DATE
	VERT. SCALE	
	CHECKED BY:	
	APPROVED BY:	
	DESIGN BY:	
	DRAWN BY:	
	PLAN DWG. NO.	
	PROFILE DWG. NO.	

5 OF 8

Fred Rogers
DEVELOPER'S APPROVAL

10/14/03
DATE

LEGEND

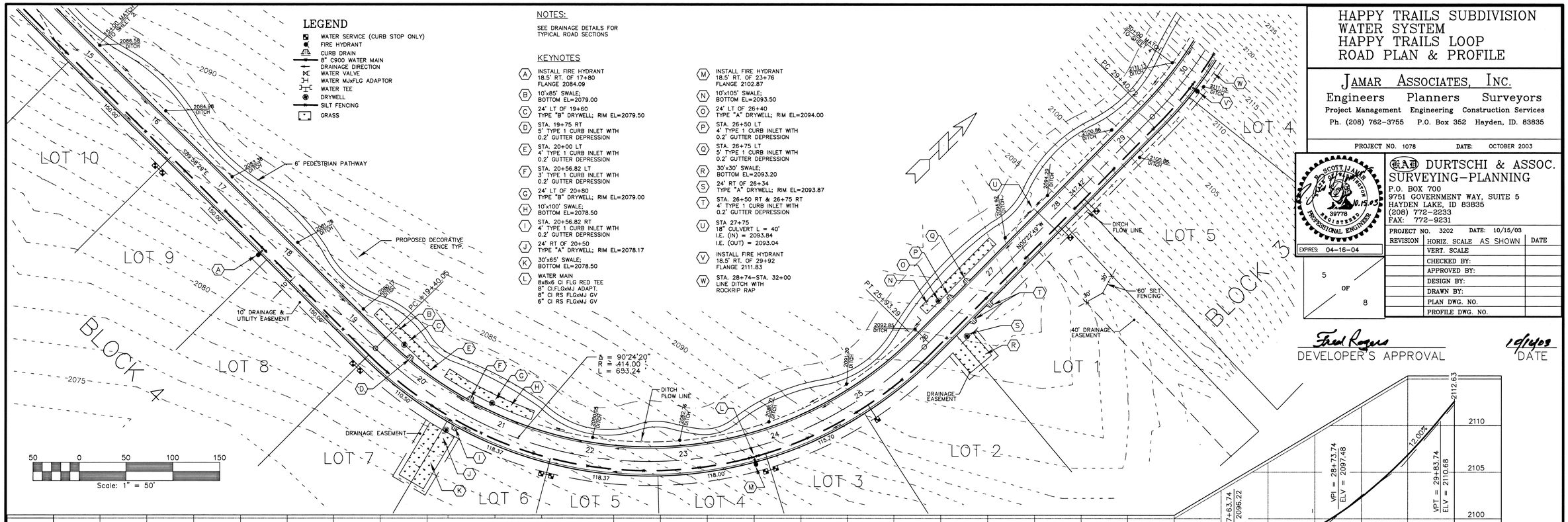
- WATER SERVICE (CURB STOP ONLY)
- FIRE HYDRANT
- CURB DRAIN
- 8" C900 WATER MAIN
- DRAINAGE DIRECTION
- WATER VALVE
- WATER MJxFLG ADAPTOR
- WATER TEE
- DRYWELL
- SILT FENCING
- GRASS

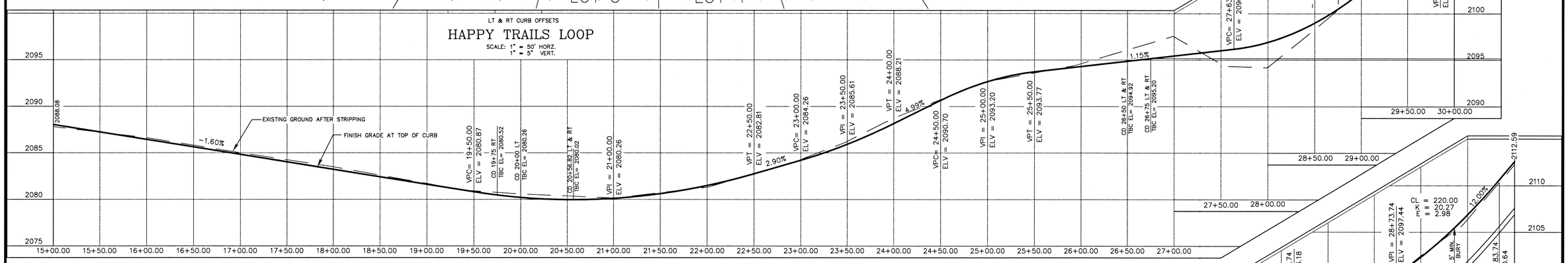
NOTES:

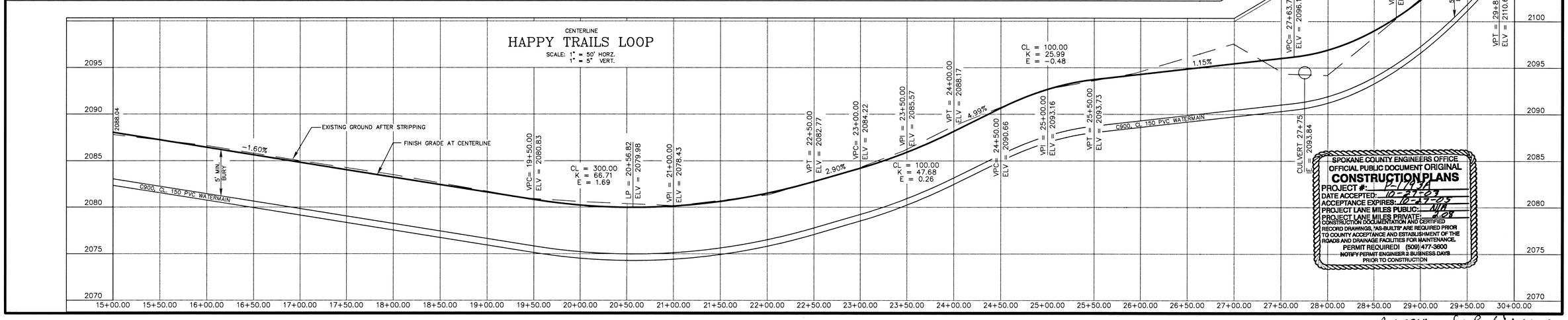
SEE DRAINAGE DETAILS FOR TYPICAL ROAD SECTIONS

KEYNOTES

- (A) INSTALL FIRE HYDRANT 18.5' RT. OF 17+80 FLANGE 2084.09
- (B) 10'x85' SWALE; BOTTOM EL=2079.00
- (C) 24' LT OF 19+60 TYPE "B" DRYWELL; RIM EL=2079.50
- (D) STA. 19+75 RT 5' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (E) STA. 20+00 LT 4' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (F) STA. 20+56.82 LT 3' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (G) 24' LT OF 20+80 TYPE "B" DRYWELL; RIM EL=2079.00
- (H) 10'x100' SWALE; BOTTOM EL=2078.50
- (I) STA. 20+56.82 RT 4' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (J) 24' RT OF 20+50 TYPE "A" DRYWELL; RIM EL=2078.17
- (K) 30'x65' SWALE; BOTTOM EL=2078.50
- (L) WATER MAIN 8x8x6 CI FLG RED TEE 8" CI.FLGxMJ ADAPT. 8" CI RS FLGxMJ GV 6" CI RS FLGxMJ GV
- (M) INSTALL FIRE HYDRANT 18.5' RT. OF 23+76 FLANGE 2102.87
- (N) 10'x105' SWALE; BOTTOM EL=2093.50
- (O) 24' LT OF 26+40 TYPE "A" DRYWELL; RIM EL=2094.00
- (P) STA. 26+50 LT 4' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (Q) STA. 26+75 LT 5' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (R) 30'x30' SWALE; BOTTOM EL=2093.20
- (S) 24' RT OF 26+34 TYPE "A" DRYWELL; RIM EL=2093.87
- (T) STA. 26+50 RT & 26+75 RT 4' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (U) STA 27+75 18" CULVERT L = 40' I.E. (IN) = 2093.84 I.E. (OUT) = 2093.04
- (V) INSTALL FIRE HYDRANT 18.5' RT. OF 29+92 FLANGE 2111.83
- (W) STA. 28+74-STA. 32+00 LINE DITCH WITH ROCKRIP RAP







SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-1793A
DATE ACCEPTED: 10-21-03
ACCEPTANCE EXPIRES: 10-21-05
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 2.08
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

P-1793A Eng Roads & Drainage

NOTES:

SEE DRAINAGE DETAILS FOR TYPICAL ROAD SECTIONS

LEGEND

- WATER SERVICE (CURB STOP ONLY)
- FIRE HYDRANT
- CURB DRAIN
- 8" C900 WATER MAIN
- DRAINAGE DIRECTION
- WATER VALVE
- WATER MJxFLG ADAPTOR
- WATER TEE
- DRYWELL
- GRASS
- TEMPORARY BENCHMARK: STA. 42+56.96 OFFSET 77.60' NAVD88 ELEV=2139.20

KEYNOTES

(A) 24' LT OF 30+66 TYPE "A" DRYWELL; RIM EL=2121.00

(B) 10'x15' SWALE; BOTTOM EL=2118.50, BERM EL=2119.50

(C) 10'x15' SWALE; BOTTOM EL=2122.25, BERM EL=2122.75

(D) 10'x15' SWALE; BOTTOM EL=2125.50 BERM EL=2126.0

(E) 10'x15' SWALE; BOTTOM EL=2128.00, BERM EL=2128.50

(F) 10'x15' SWALE; BOTTOM EL=2130.00, BERM EL=2130.50

(G) 10'x15' SWALE; BOTTOM EL=2132.00, BERM EL=2132.50

(H) DITCH TO SWALE LINE WITH ROCK RIPRAP

(I) 50' 8" PVC @2% INLET I.E. = 2133.00 OUTLET I.E. = 2132.00

(J) STA. 32.50 RT TYPE 1 CATCH BASIN TYPE 2 METAL FRAME AND GRATE WITH 0.2' DEPRESSION FROM GUTTER

(K) 24' LT OF 33+60 TYPE "A" DRYWELL; RIM EL=2137.50

(L) 10'x70' SWALE; BOTTOM EL=2137.00

(M) STA. 34+00 LT & STA. 34+25 LT 4' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION

(N) INSTALL FIRE HYDRANT 18.5' RT. OF 35+56 FLANGE 2141.14

(O) 39+04.66 (28' RT.) INSTALL 1" AIR RELIEF VALVE SEE DETAIL.

(P) INSTALL FIRE HYDRANT 18.5' RT. OF 31+16 FLANGE 2142.24

(Q) WATER MAIN 8x8x6 CI FLG RED TEE 8" CI.FLGxMJ ADAPT. 8" CI RS FLGxMJ GV 6" CI RS FLGxMJ GV

(R) 24' LT OF 42+90 TYPE "A" DRYWELL; RIM EL=2139.00

(S) 10'x65' SWALE; BOTTOM EL=2138.50

(T) STA. 43+25 AND STA. 43+50 LT 3' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION

(U) STA. 43+50 RT TYPE 1 CATCH BASIN TYPE 2 METAL FRAME AND GRATE WITH 0.2' DEPRESSION FROM GUTTER

(V) 90' 8" PVC @2% INLET I.E. = 2137.3 OUTLET I.E. = 2135.50

(W) DITCH TO SWALE LINE WITH ROCK RIPRAP

(X) 10'x13' SWALE; BOTTOM EL=2134.50, BERM EL=2135.00

(Y) 10'x13' SWALE; BOTTOM EL=2132.50, BERM EL=2133.00

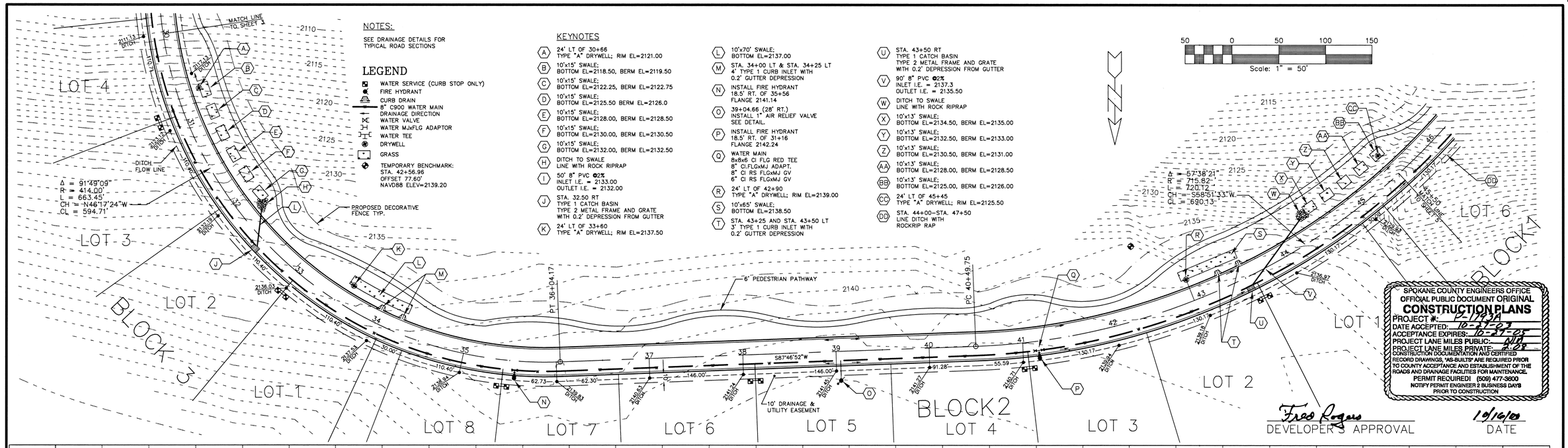
(Z) 10'x13' SWALE; BOTTOM EL=2130.50, BERM EL=2131.00

(AA) 10'x13' SWALE; BOTTOM EL=2128.00, BERM EL=2128.50

(BB) 10'x13' SWALE; BOTTOM EL=2125.00, BERM EL=2126.00

(CC) 24' LT OF 45+45 TYPE "A" DRYWELL; RIM EL=2125.50

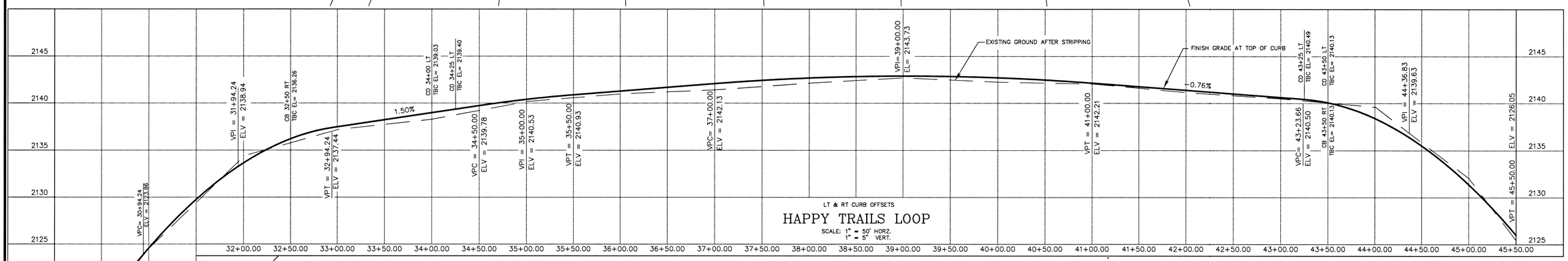
(DD) STA. 44+00-STA. 47+50 LINE DITCH WITH ROCKRIP RAP

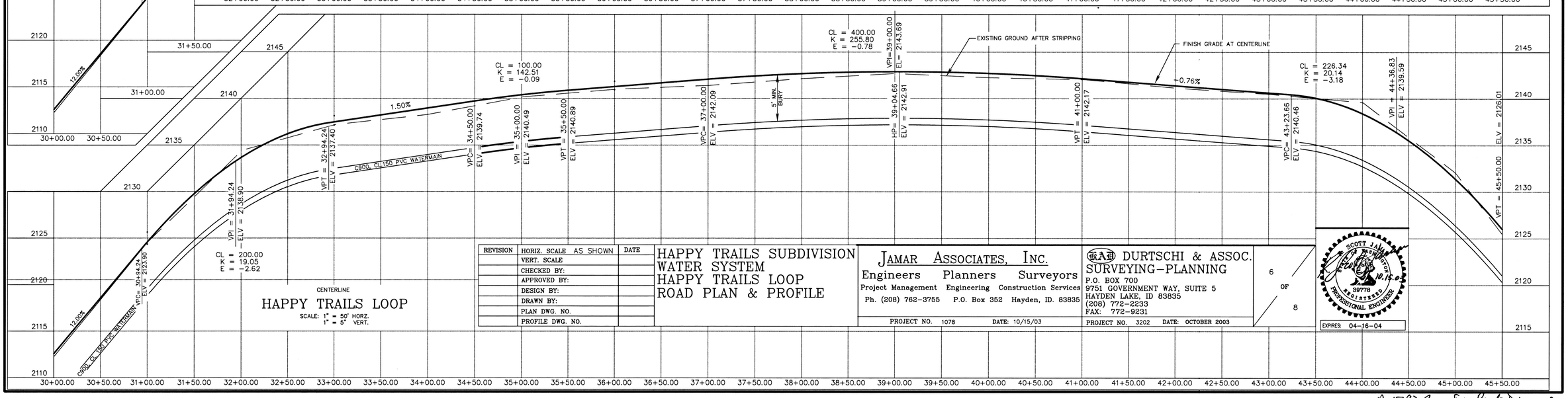


SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-1793A
DATE ACCEPTED: 10-27-03
ACCEPTANCE EXPIRES: 10-27-05
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 2.28
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, 'AS-BUILTS' ARE REQUIRED 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

Fred Rogers — DEVELOPER'S APPROVAL

10/16/03 — DATE





REVISION	HORIZ. SCALE AS SHOWN	DATE
	VERT. SCALE	
	CHECKED BY:	
	APPROVED BY:	
	DESIGN BY:	
	DRAWN BY:	
	PLAN DWG. NO.	
	PROFILE DWG. NO.	

HAPPY TRAILS SUBDIVISION
WATER SYSTEM
HAPPY TRAILS LOOP
ROAD PLAN & PROFILE

JAMAR ASSOCIATES, INC.
Engineers Planners Surveyors
Project Management Engineering Construction Services
Ph. (208) 762-3755 P.O. Box 352 Hayden, ID. 83835
PROJECT NO. 1078 DATE: 10/15/03

DURTSCHI & ASSOC.
SURVEYING-PLANNING
P.O. BOX 700
9751 GOVERNMENT WAY, SUITE 5
HAYDEN LAKE, ID 83835
(208) 772-2233
FAX: 772-9231
PROJECT NO. 3202 DATE: OCTOBER 2003

6 OF 8

SCOTT JAMES WASHBURN — STATE OF WASHINGTON — 39778 — REGISTERED PROFESSIONAL ENGINEER — 10-15-03
EXPIRES: 04-16-04

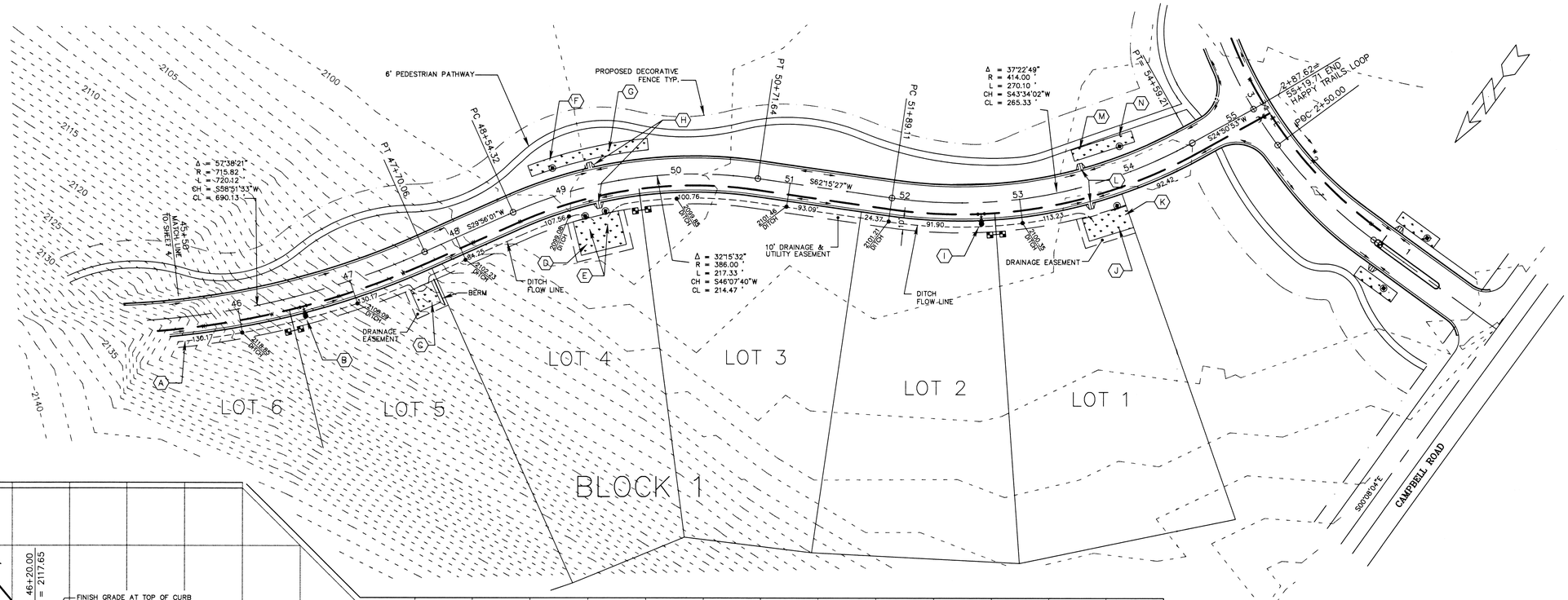
P-1793A Eng Road & Drainage

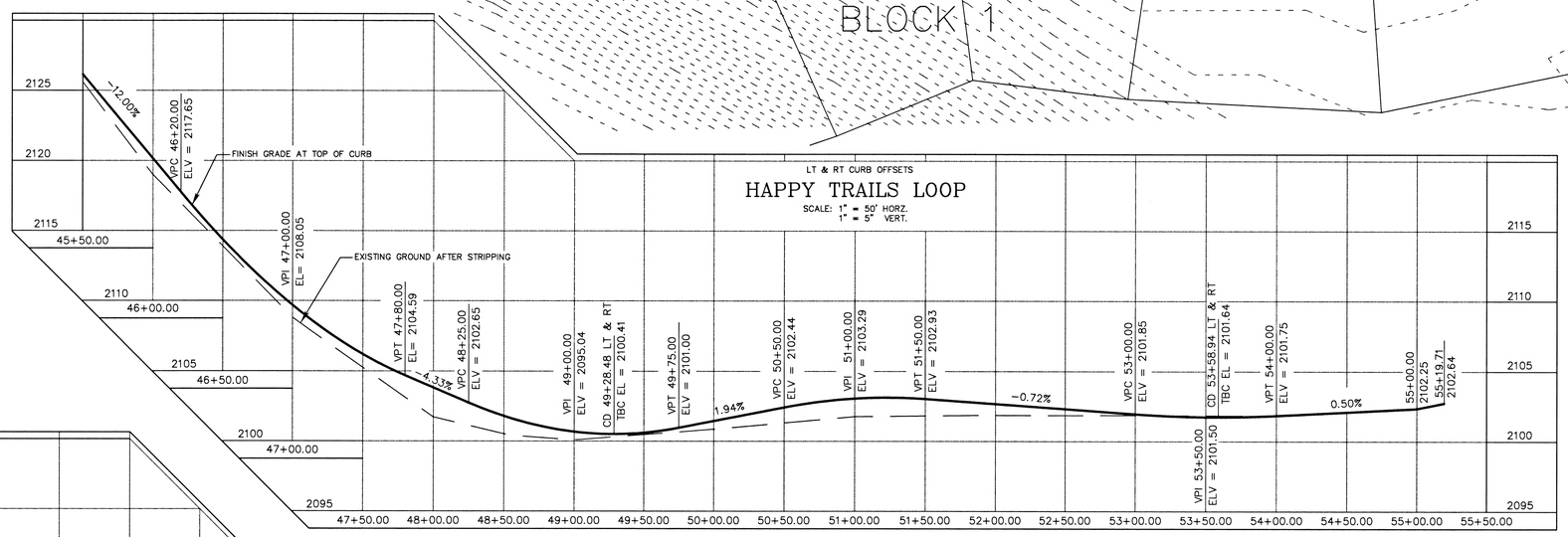
NOTES:

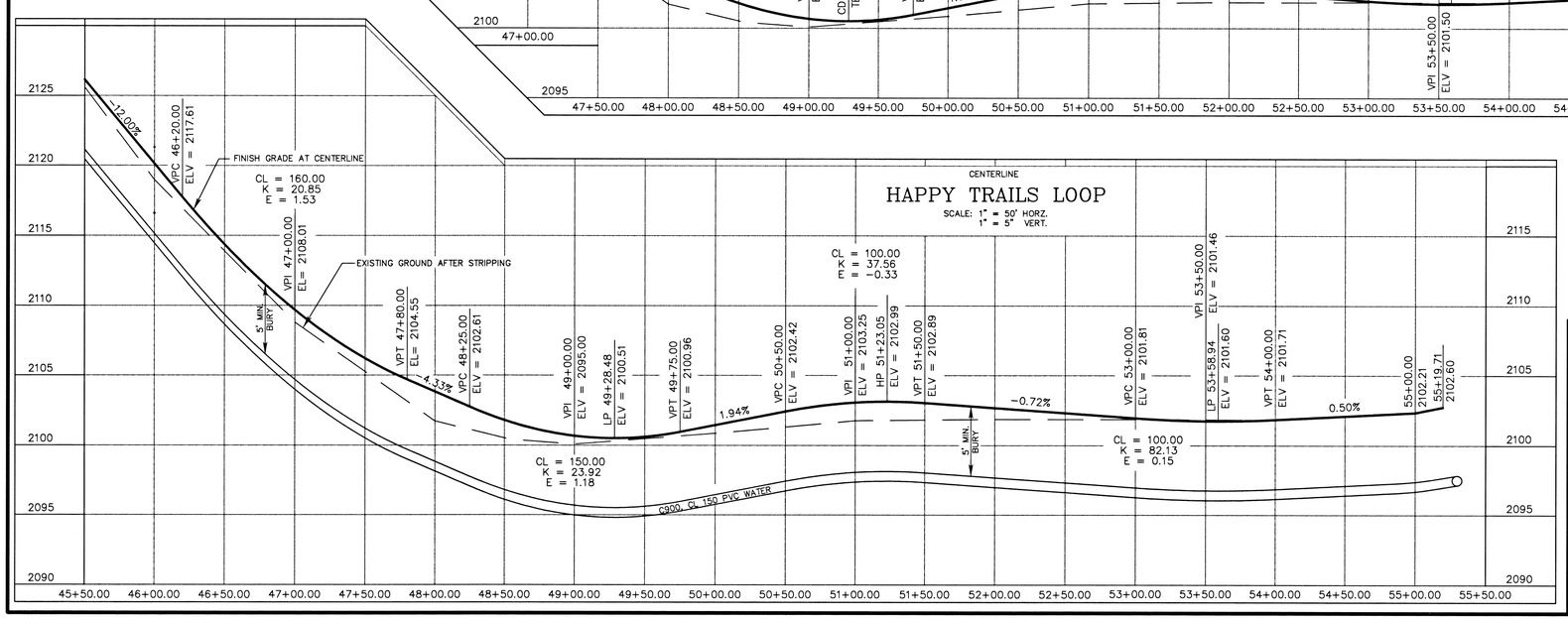
SEE DRAINAGE DETAILS FOR TYPICAL ROAD SECTIONS

KEYNOTES

- (A) STA. 44+00–STA. 47+50 LINE DITCH WITH ROCKRIP RAP
- (B) INSTALL FIRE HYDRANT 18.5' RT. OF 46+55 FLANGE 2113.91
- (C) 20'x20' SWALE; BOTTOM EL=2103.50, BERM 2104.00
- (D) 40'x30' SWALE; BOTTOM EL=2099.00
- (E) 31' RT OF 49+15 & 49+35 TYPE "B" DRYWELLS; RIM EL=2099.50
- (F) 24' LT OF 49+00 TYPE "B" DRYWELL; RIM EL=2099.50
- (G) 10'x105' SWALE; BOTTOM EL=2099.00
- (H) STA. 49+28.48 RT AND STA. 49+28.48 LT 3' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (I) INSTALL FIRE HYDRANT 18.5' RT. OF 52+66 FLANGE 2102.26
- (J) 20'x40' SWALE; BOTTOM EL=2100.00
- (K) 24' RT OF 53+80 TYPE "A" DRYWELL; RIM EL=2100.50
- (L) STA. 53+58.94 RT AND STA. 53+58.94 LT 3' TYPE 1 CURB INLET WITH 0.2' GUTTER DEPRESSION
- (M) 10'x55' SWALE; BOTTOM EL=2100.00
- (N) 24' LT OF 54+00 TYPE "A" DRYWELL; RIM EL=2100.50







LEGEND

- WATER SERVICE (CURB STOP ONLY)
- FIRE HYDRANT
- CURB DRAIN
- 8" C900 WATER MAIN
- DRAINAGE DIRECTION
- WATER VALVE
- WATER MJxFLG ADAPTOR
- WATER TEE
- DRYWELL
- GRASS

50 0 50 100 150
Scale: 1" = 50'

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-1793A
DATE ACCEPTED: 10-27-03
ACCEPTANCE EXPIRES: 10-27-05
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 1.08
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

Fred Rogers
DEVELOPER'S APPROVAL

10/14/03
DATE

HAPPY TRAILS SUBDIVISION
WATER SYSTEM
HAPPY TRAILS LOOP
ROAD PLAN & PROFILE

DURTSCHI & ASSOC.
SURVEYING–PLANNING
P.O. BOX 700
9751 GOVERNMENT WAY, SUITE 5
HAYDEN LAKE, ID 83835
(208) 772–2233
FAX: 772–9231

PROJECT NO. 3202 DATE: OCTOBER 2003

SCOTT JAMAR 39778 REGISTERED PROFESSIONAL ENGINEER 10.15.03
EXPIRES: 04–16–04

7 OF 8

JAMAR ASSOCIATES, INC.
Engineers Planners Surveyors
Project Management Engineering Construction Services
Ph. (208) 762–3755 P.O. Box 352 Hayden, ID. 83835

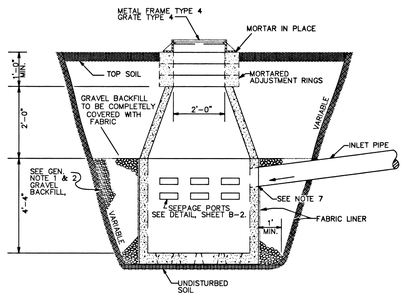
PROJECT NO. 1078 DATE: 10/15/03

PROJECT NO. 3202	DATE: MARCH 2003	
REVISION	HORIZ. SCALE AS SHOWN	DATE
	VERT. SCALE	
	CHECKED BY:	
	APPROVED BY:	
	DESIGN BY:	
	DRAWN BY:	
	PLAN DWG. NO.	
	PROFILE DWG. NO.	

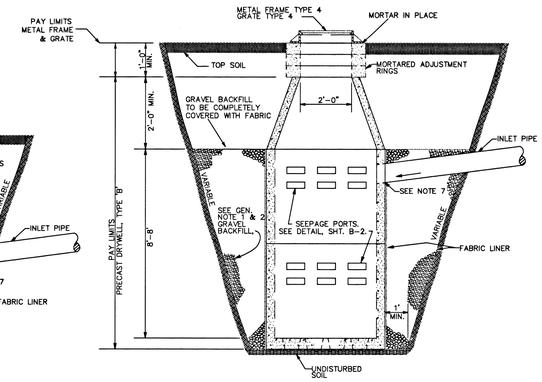
P-1793A Eng Roads Drainage

GENERAL NOTES

1. GRAVEL BACKFILL QUANTITY FOR DRYWELLS : TYPE "A" – 30 CUBIC YARDS MINIMUM / 42 TONS. TYPE "B" – 40 CUBIC YARDS MINIMUM / 56 TONS. OR AS SPECIFIED ON ROAD PLANS.
2. SPECIAL BACKFILL MATERIAL FOR DRYWELLS SHALL CONSIST OF WASHED GRAVEL GRADED FROM 1" TO 3" WITH A MAXIMUM OF 5% PASSING THE U.S. No. 200 SCREEN, AS MEASURED BY WEIGHT. A MAXIMUM OF 10% OF THE AGGREGATE, AS MEASURED BY WEIGHT, MAY BE CRUSHED OR FRACTURED ROCK. THE REMAINING 90% SHALL BE NATURALLY OCCURRING UNFRACTURED MATERIAL.
3. FABRIC SHALL BE MODERATE SURVIVABILITY AS OUTLINED IN STANDARD SPECIFICATIONS 9-33
4. SEE STANDARD PLANS SHEETS B-2 AND B-3 FOR PRECAST CONCRETE DETAILS.
5. ADJUSTMENT BLOCKS SHALL BE CEMENT CONCRETE.
6. PRECAST RISER MAY BE USED IN COMBINATION WITH OR IN LIEU OF ADJUSTING BLOCKS.
7. WHEN PVC PIPE IS USED A PVC ADAPTER SHALL BE INSTALLED.
8. PIPES SHALL BE GROUTED INTO DRYWELLS.



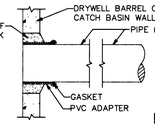
DRYWELL – TYPE 'A' SWALE



DRYWELL – TYPE 'B' SWALE

PRECAST DRYWELLS

NO SCALE



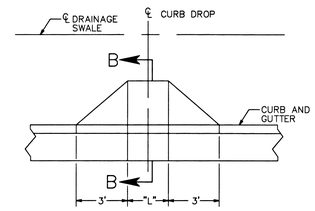
PVC ADAPTER (SAND COLLAR)

NOTE:

PVC PIPE ADAPTERS AND GASKET MAY VARY IN SHAPE AND SIZE AS ILLUSTRATED IN DETAIL BY ACCEPTABLE ALTERNATE IN ACCORDANCE WITH A.S.T.M.-C-428.

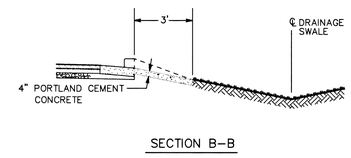
GENERAL NOTES

1. CURB INLET SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) & ASTM C 890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE PROJECT SPECIAL PROVISIONS.
2. TOP SURFACE TO BE BROOM FINISHED.
3. ALL EXTERNAL EDGES NOT LABELED SHALL BE TROWELLED WITH 1/4" RADIUS EDGER.
4. DIMENSION "L" SHALL BE SHOWN ON THE PLANS.



TYPE 1 CURB INLET

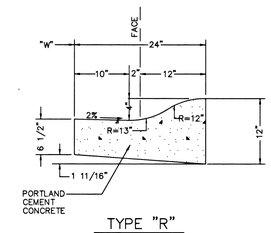
NO SCALE



SECTION B–B

GENERAL NOTES

1. PORTLAND CEMENT CONCRETE SHALL BE CLASS 3000 CONFORMING TO THE STANDARD SPECIFICATIONS.
2. WEAKENED PLANE JOINTS FOR PORTLAND CEMENT CONCRETE SHALL BE PLACED AT 15' INTERVALS.
3. 3/8" EXPANSION JOINTS IN PORTLAND CEMENT CONCRETE SHALL BE PLACED AT CURB RETURNS.
4. EPOXY CEMENT SHALL BE APPLIED AT A 10-15 MIL THICKNESS AND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 9-26 OF THE STANDARD SPECIFICATIONS.
5. THE FINISH SHALL BE STEEL TROWELLED TO PROVIDE A DENSE, SMOOTH REFLECTIVE FINISH.
6. CURBS SHALL HAVE A LIGHT BROOMED FINISH. GUTTERS SHALL BE FINISHED WITH A STEEL TROWEL.

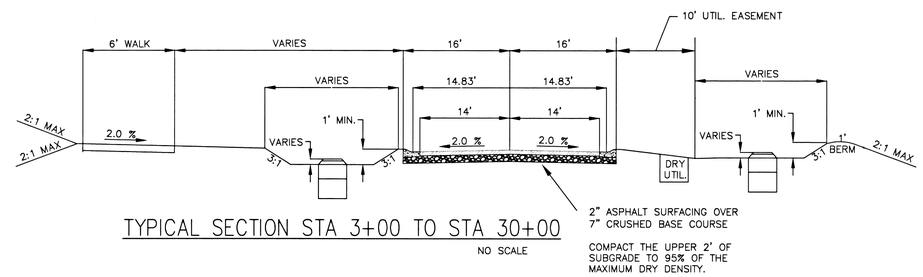


TYPE "R"

QUANTITY = 0.052259 C.Y. / L.F.

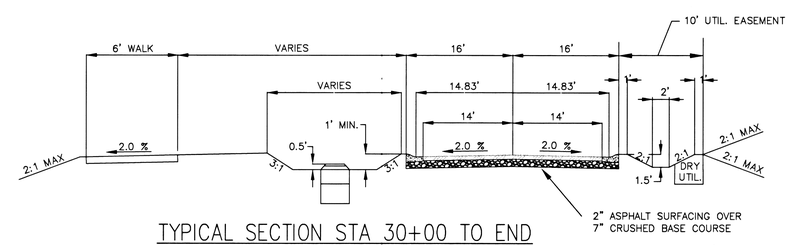
ROLLED CURB

NO SCALE



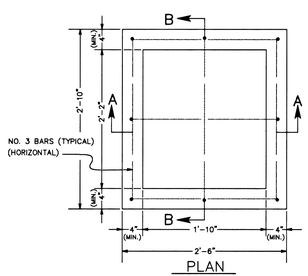
TYPICAL SECTION STA 3+00 TO STA 30+00

NO SCALE



TYPICAL SECTION STA 30+00 TO END

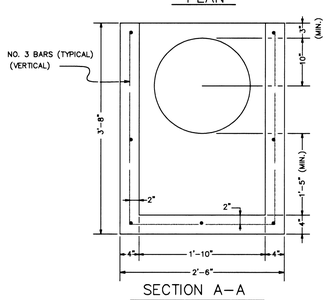
NO SCALE



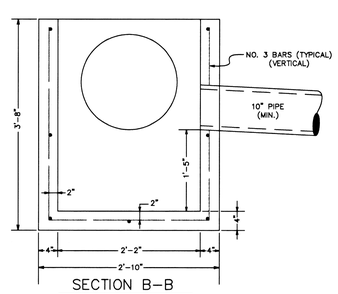
PLAN

GENERAL NOTES

1. CATCH BASIN SHALL BE CONSTRUCTED IN ACCORDANCE WITH ASTM C 478 (AASHTO M 199) & ASTM C 890 UNLESS OTHERWISE SHOWN ON PLANS OR NOTED IN THE PROJECT SPECIAL PROVISIONS.
2. AS AN ACCEPTABLE ALTERNATE TO REBAR, WELDED WIRE FABRIC HAVING A MINIMUM AREA OF 0.12 SQUARE INCHES PER FOOT MAY BE USED. WELDED WIRE FABRIC SHALL COMPLY TO ASTM A 497 (AASHTO M 221). WIRE FABRIC SHALL NOT BE PLACED IN THE KNOCKOUTS.
3. PRECAST BASINS SHALL BE FURNISHED WITH CUTOUTS OR KNOCKOUTS. KNOCKOUTS SHALL HAVE A WALL THICKNESS OF 2" MINIMUM.
4. KNOCKOUTS SHALL BE ON ALL 4 SIDES WITH MAXIMUM DIAMETER OF 20". KNOCKOUTS SHALL BE ROUND. PIPE SHALL BE INSTALLED IN FACTORY SUPPLIED KNOCKOUTS.
5. KNOCKOUT OR CUTOUT HOLE SIZE IS EQUAL TO PIPE OUTER DIAMETER PLUS CATCH BASIN WALL THICKNESS.
6. THE MAXIMUM DEPTH FROM THE FINISHED GRADE TO THE PIPE INVERT IS 5'-0".
7. THE TAPER ON THE SIDES OF THE PRECAST BASE SECTION AND RISER SECTION SHALL NOT EXCEED 1/2"/FT.
8. CATCH BASIN FRAME AND GRATE SHALL BE IN ACCORDANCE WITH STANDARD SPECIFICATION. MATING SURFACES SHALL BE FINISHED TO ASSURE NON-ROCKING FIT.
9. FRAME AND GRATE MAY BE INSTALLED WITH FLANGE DOWN OR CAST INTO RISER.
10. WHEN PVC PIPE IS USED, A PVC ADAPTER SHALL BE INSTALLED.
11. PVC ADAPTER SHALL BE GROUTED INTO CATCH BASIN.



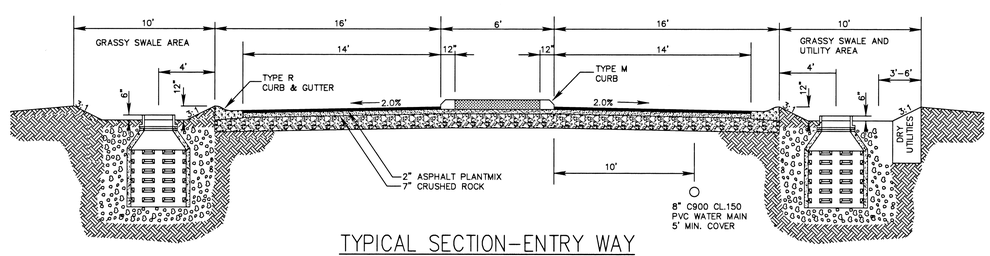
SECTION A–A



SECTION B–B

TYPE 1 CATCH BASIN

NO SCALE



TYPICAL SECTION–ENTRY WAY

SCALE: 1" = 5'

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-17934
DATE ACCEPTED: 10-27-03
ACCEPTANCE EXPIRES: 10-27-05
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 2.08
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

R. SCOTT JAMAR — STATE OF WASHINGTON — 39778 — REGISTERED PROFESSIONAL ENGINEER — 10.15.03
EXPIRES: 04-16-04

REVISION	HORIZ. SCALE AS SHOWN	DATE
	VERT. SCALE	
	CHECKED BY:	
	APPROVED BY:	
	DESIGN BY:	
	DRAWN BY:	
	PLAN DWG. NO.	
	PROFILE DWG. NO.	

HAPPY TRAILS SUBDIVISION
ROAD, CURB & STORMWATER DETAILS

JAMAR ASSOCIATES, INC.
Engineers Planners Surveyors
Project Management Engineering Construction Services
Ph. (208) 762-3755 P.O. Box 352 Hayden, ID. 83835
PROJECT NO. 1078 DATE: 10/15/03

DURTSCHI & ASSOC.
SURVEYING–PLANNING
P.O. BOX 700
9751 GOVERNMENT WAY, SUITE 5
HAYDEN LAKE, ID 83835
(208) 772-2233
FAX: 772-9231
PROJECT NO. 3202 DATE: OCTOBER 2003

8 OF 8

P-17934 Eng Road • Drainage