ROAD/DRAINAGE IMPROVEMENT PLANS

FOR

WHITETAIL RIDGE

RURAL CLUSTER DEVELOPMENT
SECTION 35, TOWNSHIP 25 N, RANGE 44 E
SPOKANE COUNTY, WASHINGTON

AUGUST, 2003

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.

Matt Folwell, P.E. – Project Engineer

DEVELOPER'S APPROVAL:

8/22/03

Johnny Humphreys

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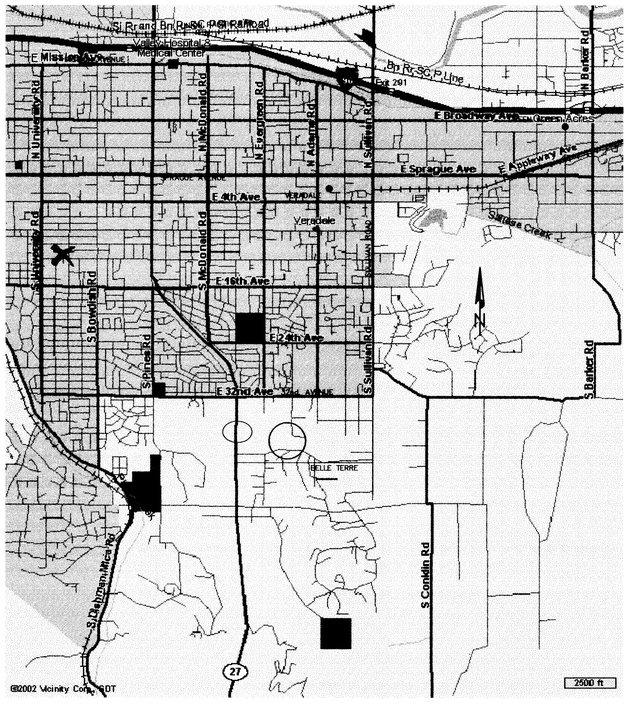
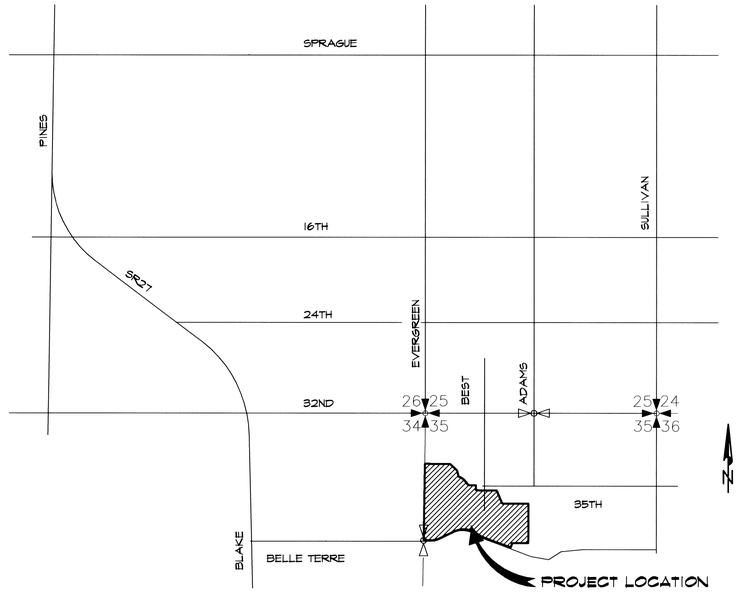


VICINITY MAP

NOT TO SCALE



BENCH MARK DATUM

T.B.M.: B2, RID #517
ELEVATION: 2023.36
LOCATION: "x" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1904
DATE ACCEPTED: 09-16-03
ACCEPTANCE EXPIRES: 09-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.56
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

MATTHEW RAYMOND FOLWELL
STATE OF WASHINGTON
37871
REGISTERED
PROFESSIONAL ENGINEER
8/21/03
EXPIRES 7-05-04

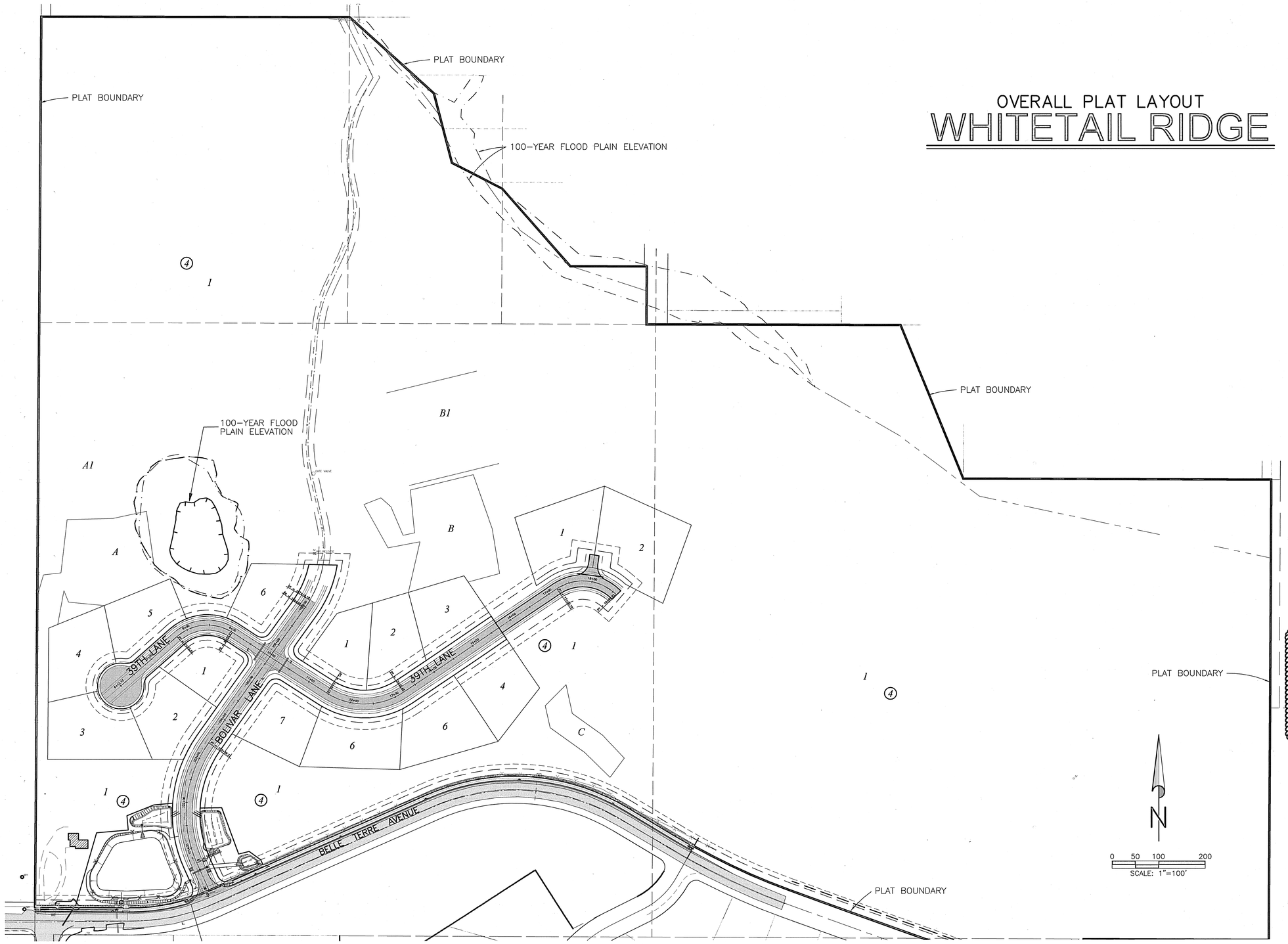
SHEET 1

SHEET 1 OF 14

AC
Adams & Clark, Inc.
1720 W. FOURTH AVE.
SPOKANE, WA. 99204
(509) 747-4600 F(509) 747-8913
Project No. 2002-01-020

P-1904 Eng Book Drainage

OVERALL PLAT LAYOUT
WHITETAIL RIDGE



SCALE: 1"=100'

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CONSTRUCTION PLANS
PROJECT #: P1904
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PROJECT LANE MILES PRIVATE: 0.36
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8/27/03

KATHLEEN RAYMOND HALL — STATE OF WASHINGTON — 37871 — REGISTERED PROFESSIONAL ENGINEER — 8/21/03

EXPIRES 7-05-04

CALL BEFORE YOU DIG: 1-800-456-8000

BY	REVISIONS	DATE	PROJ.	FROM	AS BUILT	TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20					
DPH	PER COUNTY COMMENTS	3/26					

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL 50'	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL N/A		CHECKED MF
LOCATION "x" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

ADAMS & CLARK, Inc.
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
CLUSTER DEVELOPMENT
PLAT LAYOUT
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: LAYOUT

PROJECT NUMBER	PLAN NUMBER
2002-01-020	2

P-1904 Eng Roads & Drainage

P:\2002\02010\dwg\WHITETAILRIDGEplan-REC7-31-03.dwg, 8/21/2003 10:42:50 PM, Dodd

SHEET 5

SHEET 7

SHEET 6

SHEET 8

39TH LANE

BOLIVAR LANE

BELLE TERRE AVENUE

EXISTING HOME

26,267 sq.ft.

23,519 sq.ft.

27,847 sq.ft.

23,909 sq.ft.

29,267 sq.ft.

27,588 sq.ft.

22,463 sq.ft.

23,273 sq.ft.

23,814 sq.ft.

28,798 sq.ft.

34,837 sq.ft.

28,738 sq.ft.

24,990 sq.ft.

29,925 sq.ft.

28,310 sq.ft.

60'

LEGEND

1 DENOTES LOT NUMBER (SEE PLAT)

(4) DENOTES BLOCK NUMBER (SEE PLAT)

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

DEVELOPER'S APPROVAL:
Johnny Humphreys 8/23/03

MATTHEW RAYMOND CLARK
STATE OF WASHINGTON
37871
REGISTERED
PROFESSIONAL ENGINEER
8/21/03
EXPIRES 7-05-04

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WHITETAIL RIDGE
CLUSTER DEVELOPMENT
OVERVIEW
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: OVERVIEW	
PROJECT NUMBER	PLAN NUMBER
2002-01-020	3

P-1904 Eng. Road & Drainage

P:\2002\02015\eng\WHITETAIL\Overview-4927-33-03.dwg, 08/22/2003 04:53:38 PM, Jared

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 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.

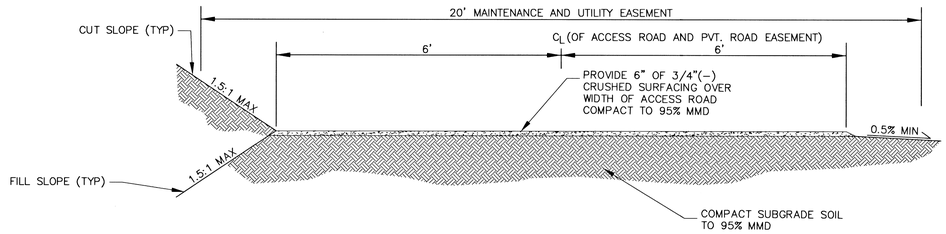
4) IF THE CONTRACTOR DISCOVERS ANY DISCREPANCIES BETWEEN THE PLANS AND EXISTING CONDITIONS ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER AND THE SPOKANE COUNTY ENGINEER'S OFFICE.

5) FOR CONSTRUCTION OF DRYWELLS, INSTALL FILTER FABRIC (AMOCO 4545 OR APPROVED EQUIVALENT) BETWEEN THE DRYWELL BARREL AND THE WASHED DRAINROCK, AND 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 PROFESSIONAL LAND SURVEYOR SHALL VERIFY THAT THE CURB FORMS ARE AT THE GRADES NOTED ON THE APPROVED PLANS, PRIOR TO PLACEMENT OF CURB MATERIALS. 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.



COMMUNITY DRAIN FIELD ACCESS ROAD SECTION (1/4)
SCALE: NOT TO SCALE

WATER NOTES AND SPECIFICATIONS:

1) ALL WATER MAIN FITTINGS TO BE MECHANICAL JOINT WITH RESTRAINTS PER CITY SPECIFICATIONS.

2) WATER SERVICES SHALL BE ONE-INCH (1") DIAMETER, TYPE "K" COPPER, AND SHALL EXTEND INSIDE THE PROPERTY LINE PER TYPICAL WATER SERVICE DETAIL ON THIS SHEET, UNLESS OTHERWISE DIMENSIONED.

3) DEFLECTIONS AT PIPE JOINTS SHALL NOT EXCEED 75% OF MAXIMUM ALLOWED DEFLECTION, PER MANUFACTURER'S RECOMMENDATIONS. BENDS OF 11 1/2° SHALL BE USED AS NECESSARY TO INSTALL WATER LINES AT THE RADIUS AS SHOWN.

4) SLEEVE SERVICE LINES 10 FEET BOTH DIRECTIONS FROM CROSSING IF THE VERTICAL CLEARANCE TO THE SANITARY SEWER MAIN IS 18 INCHES OR LESS. SEE STANDARD DRAWING W-111.

5) A 5.5' DEPTH IS REQUIRED FROM INVERT TO FINISH GRADE.

6) NO UTILITIES ARE TO BE INSTALLED WITHIN 5' PARALLEL OF WATER SERVICE LINES. A MINIMUM OF 9.5' SEPARATION IS REQUIRED BETWEEN SANITARY SEWER LINES.

7) CONTACT VERA WATER FOR INFORMATION ON CONNECTIONS TO EXISTING MAINS.

8) ALL VALVES, FITTINGS, PIPES, ETC,. SHALL BE DUCTILE IRON, FOR 4" AND LARGER DIAMETER.

9) ALL MATERIALS AND INSTALLATION SHALL BE IN ACCORDANCE WITH VERA WATER.

10) BACKFILL SHALL BE INSTALLED PER WASHINGTON STATE DEPARTMENT OF TRANSPORTATION (W.S.D.O.T.) "STANDARD SPECIFICATION" CURRENT EDITION. LIFTS TO BE 8" MAXIMUM AND COMPACTED TO 95% MODIFIED PROCTOR.

ROADWAY CONSTRUCTION NOTES

1) STRIP AND CLEAR ROADWAY AREAS OF TREES, GRASS, ORGANIC-RICH TOPSOIL AND ROOTS LARGER THAN ONE-HALF INCH IN DIAMETER TO A DEPTH OF 4 TO 12 INCHES. IF STRIPPING AND CLEARING ACTIVITIES CAUSE SUBGRADE DISTURBANCE OR WEEK SUBGRADE CONDITIONS, ADDITIONAL STRIPPING MAY BE REQUIRED.

2) BLASTING OF IN-PLACE ROCK MAY BE REQUIRED WHERE RIPPING IS NOT EFFECTIVE IN LOOSENING AND BREAKING THE ROCK.

3) EXCAVATED ROADWAY SUBGRADE SHALL BE SCARIFIED, MOISTURE CONDITIONED AND COMPACTED TO A MINIMUM OF 95% MAXIMUM DRY DENSITY BASED UPON A MODIFIED PROCTOR. COMPACTION SHALL EXTEND FOR A MINIMUM DEPTH OF 12 INCHES BELOW SUBGRADE.

4) ROADWAY SUBGRADE FILL AREAS SHALL BE COMPACTED TO A MINIMUM OF 95% OF A MODIFIED PROCTOR WITHIN THE UPPER 2 FEET OF THE FILL. FILL LOCATED MORE THAN 2 FEET BELOW THE ROADWAY SUBGRADE SHALL BE COMPACTED TO 92% OF A MODIFIED PROCTOR.

5) IF SUBGRADE MATERIAL CANNOT BE COMPACTED TO THE REQUIRED DENSITY, OVER EXCAVATION TO A DEPTH OF 2 FEET OR FIRM BEARING, WHICHEVER IS LESS, WILL BE REQUIRED. OVER EXCAVATED AREAS SHALL BE FILLED WITH STRUCTURAL FILL MEETING THE REQUIREMENTS NOTED BELOW.

6) STRUCTURAL FILL MAY CONSIST OF ON-SITE SANDS, GRAVEL AND WEATHERED ROCK FREE OF DEBRIS, ORGANIC MATERIAL, FROZEN SOIL OR PARTICLES GREATER THAN 6 INCHES IN DIAMETER. IMPORTED STRUCTURAL FILL SHALL CONSIST OF A WELL-GRADED SAND OR SAND/GRAVEL MIX CONFORMING TO WSDOT SPECIFICATIONS FOR "SELECT BORROW". STRUCTURAL FILL SHALL BE PLACED IN LIFTS NOT EXCEEDING 8 INCHES AND COMPACTED AS SPECIFIED ABOVE.

7) ROADWAY SUBGRADE CONSISTING OF SILT MATERIAL SHALL BE OVER EXCAVATED TO A DEPTH OF 12 INCHES. THE FLOOR OF THE OVER EXCAVATED AREA SHALL BE COVERED WITH A GEOGRID SUCH AS TENSAR BX-1100 OR EQUAL. THE ROADWAY SUBGRADE SHALL BE BROUGHT BACK TO GRADE WIDTH STRUCTURAL FILL AS SPECIFIED ABOVE.

8) DURING ROADWAY CONSTRUCTION, A REPRESENTATIVE FROM A GEOTECHNICAL FIRM SHALL BE PRESENT TO PROVIDE TESTING AND CONSTRUCTION OBSERVATION.

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NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

MATTHEW RAYMOND PLUMB — STATE OF WASHINGTON — 37871 — REGISTERED PROFESSIONAL ENGINEER — 8/21/03
EXPIRES 7-05-04

DEVELOPER'S APPROVAL:
Johnny Humphreys 8/23/03

CALL BEFORE YOU DIG: 1-800-456-8000

BY	REVISIONS	DATE	PROJ.	FROM AS BUILT TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20/03			
DPH	PER COUNTY COMMENTS	3/26			

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL N/A	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL N/A		CHECKED MF
LOCATION "x" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

AC **ADAMS & CLARK, Inc.**
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
CLUSTER DEVELOPMENT
NOTES
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: NOTES	
PROJECT NUMBER	PLAN NUMBER
2002-01-020	4

P-1904 Eng. Road & Drainage

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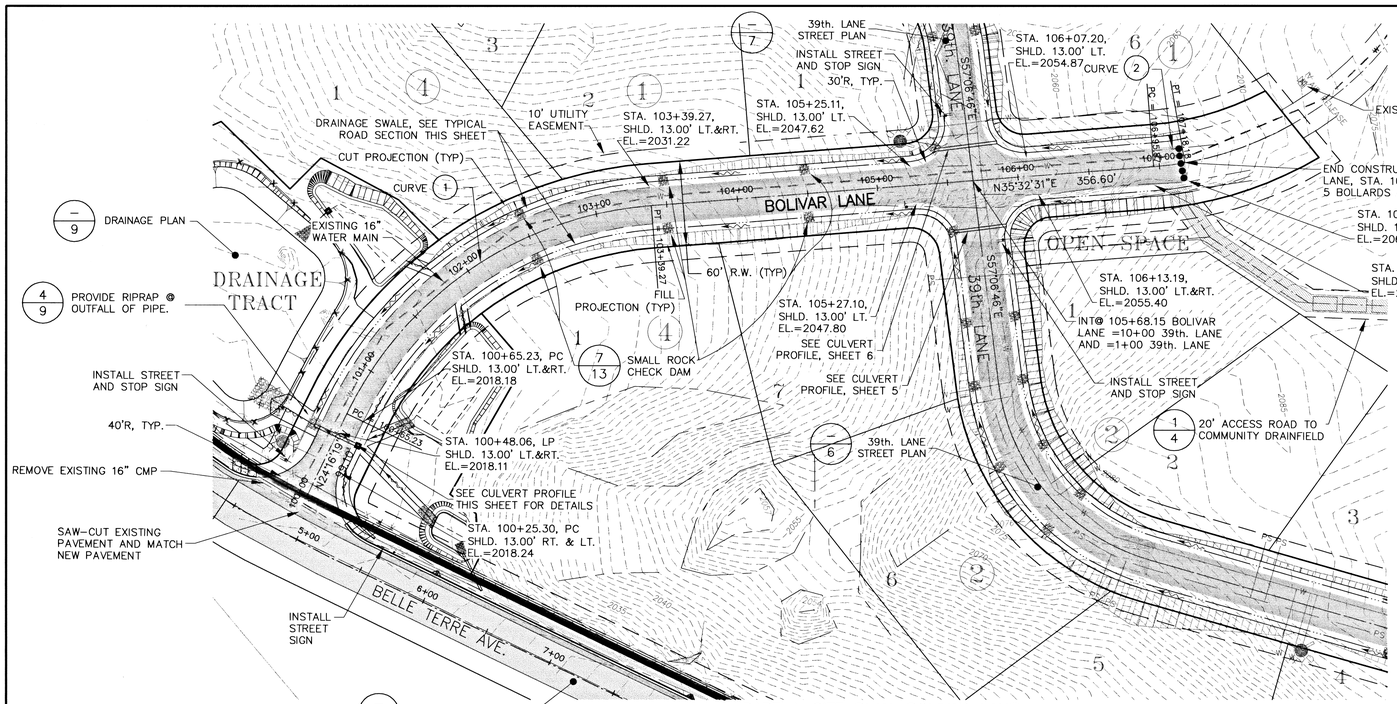


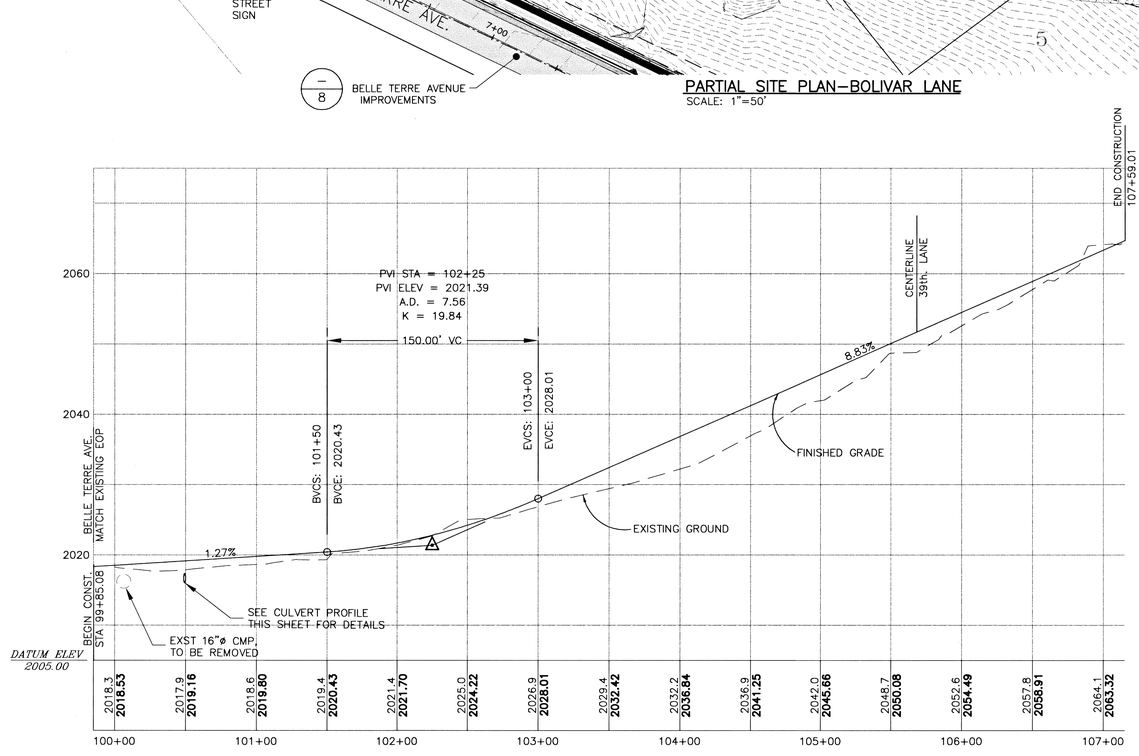
PARTIAL SITE PLAN–BOLIVAR LANE
SCALE: 1"=50'

BOLIVAR LANE
CENTERLINE CURVE DATA

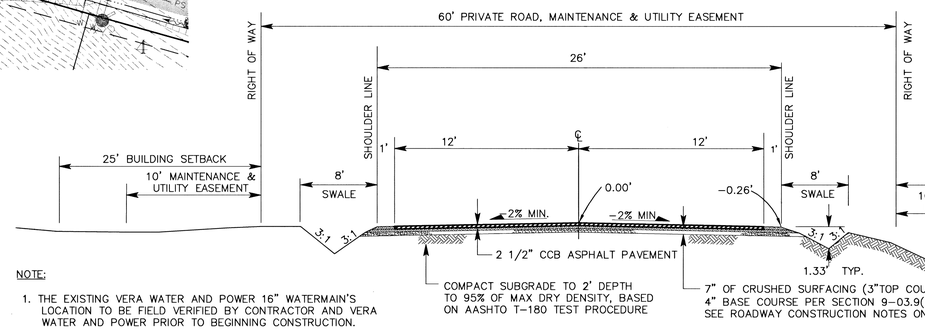
CURVE	RADIUS	LENGTH	DELTA	TAN
1	262.50'	274.04'	59°48'51"	150.99'
2	237.50'	22.31'	32°51'03"	11.16'

LEGEND
- EXISTING WATER VALVE
- EXISTING EDGE OF ASPHALT
- EXISTING CURB LINE
- EXISTING FENCE LINE
- CURB DROP
- STREET NAME SIGN, SEE SPOKANE COUNTY STD DETAIL A–16
- STREET & STOP SIGN COMBO, SEE SPOKANE COUNTY STD DETAIL A–16

GRAPHIC SCALE
50 0 25 50 100 200
(IN FEET)
1 inch = 50 ft.



BOLIVAR LANE CENTERLINE PROFILE

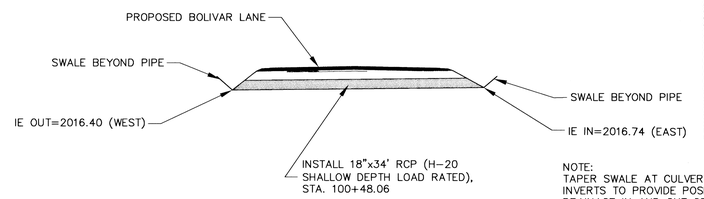


NOTE:
1. THE EXISTING VERA WATER AND POWER 16" WATERMAIN'S LOCATION TO BE FIELD VERIFIED BY CONTRACTOR AND VERA WATER AND POWER PRIOR TO BEGINNING CONSTRUCTION.

COMPACT SUBGRADE TO 2' DEPTH TO 95% OF MAX DRY DENSITY, BASED ON AASHTO T–180 TEST PROCEDURE

7" OF CRUSHED SURFACING (3"TOP COURSE, 4" BASE COURSE PER SECTION 9–03.9(3) WSDOT SPECS). SEE ROADWAY CONSTRUCTION NOTES ON SHEET 4.

BOLIVAR ROAD TYPICAL SECTION
SCALE: NOT TO SCALE



NOTE:
TAPER SWALE AT CULVERT INVERTS TO PROVIDE POSITIVE DRAINAGE IN AND OUT OF THE CULVERT AND DOWNSTREAM

BOLIVAR ROAD CULVERT PROFILE
SCALE: NOT TO SCALE

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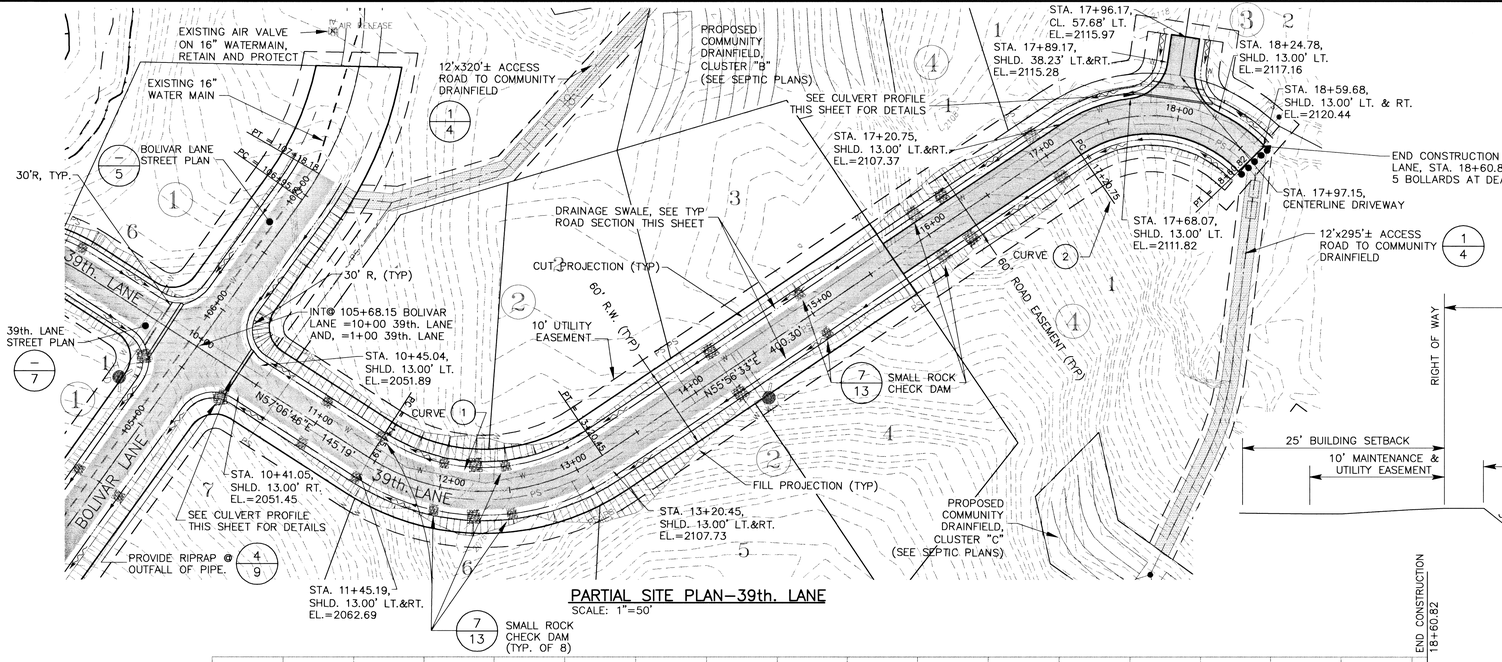
WHITETAIL RIDGE
BOLIVAR LANE
PLAN and PROFILE
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: STREET	
PROJECT NUMBER	PLAN NUMBER
2002–01–020	5

P-1904 Eng. Road + Drainage



PARTIAL SITE PLAN–39th. LANE
SCALE: 1"=50'

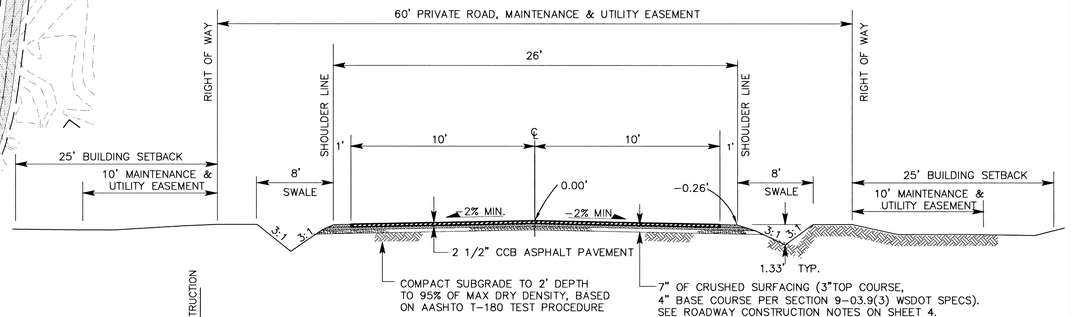
39th. LANE
CENTERLINE CURVE DATA

CURVE	RADIUS	LENGTH	DELTA	TAN
1	150.00'	175.26'	66°56'41"	99.18'
2	100.00'	129.98'	74°28'23"	76.00'

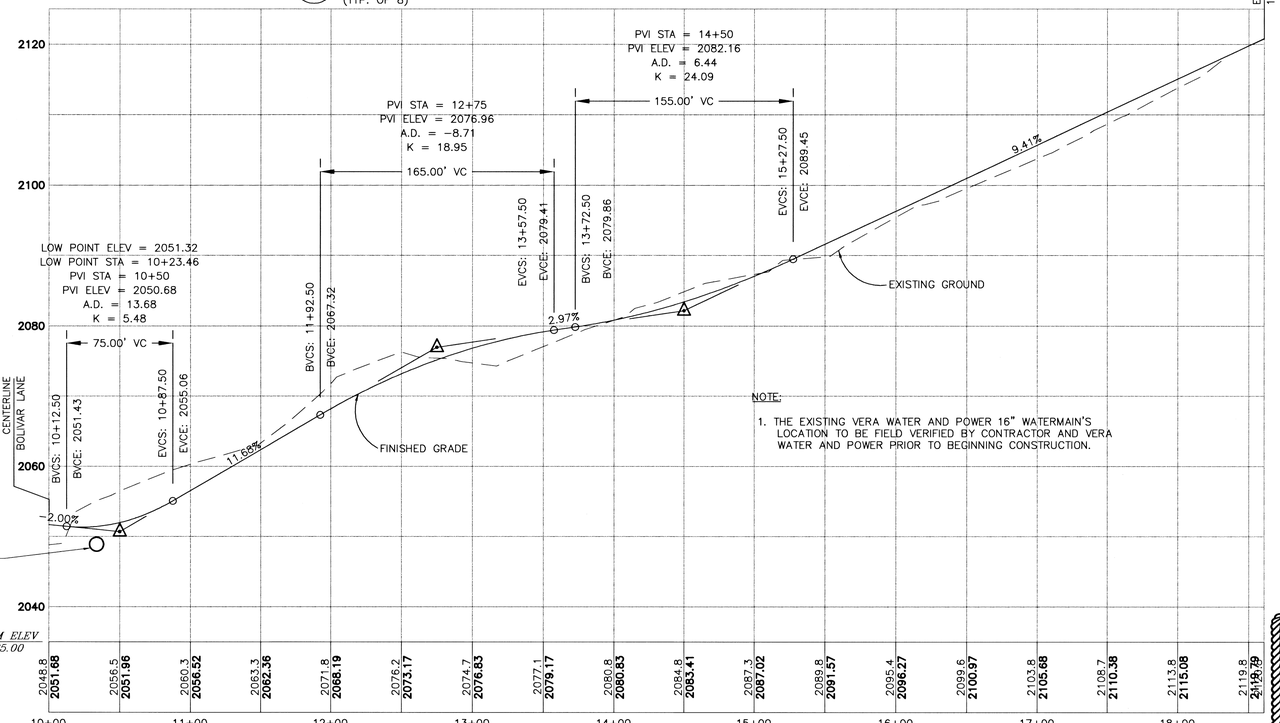
GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.



39th. LANE TYPICAL SECTION
SCALE: NOT TO SCALE



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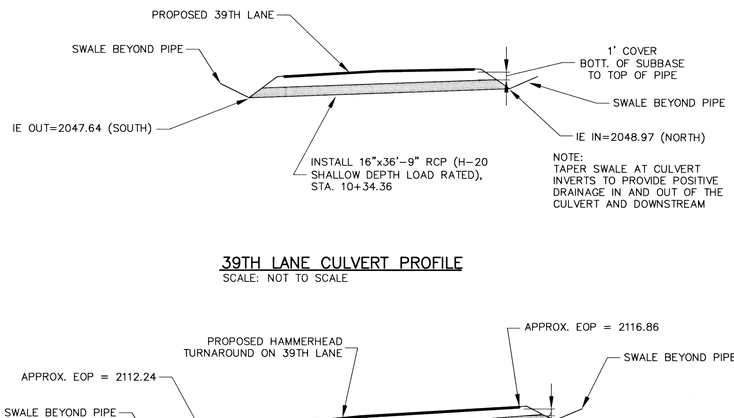

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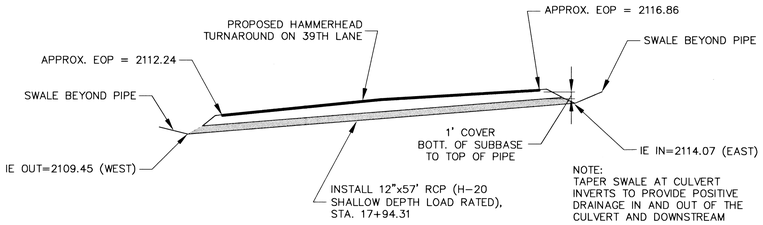

39TH LANE CULVERT PROFILE AT HAMMERHEAD
SCALE: NOT TO SCALE

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DEVELOPER'S APPROVAL:
Johnny Humphreys 8/29/03

MATTHEW RAYMOND FOLEY
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37971
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ELEVATION 2023.36 NAVD88	VERTICAL 10'		CHECKED MF
LOCATION "x" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

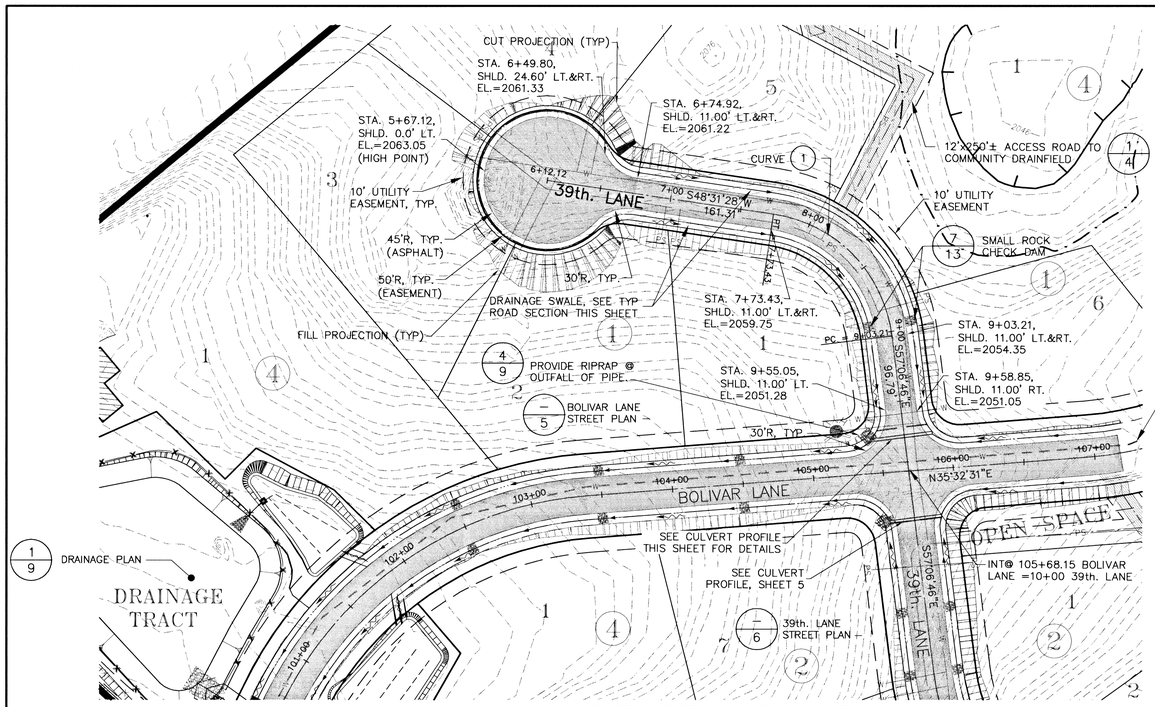
AC
ADAMS & CLARK, Inc.
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
39th. LANE
PLAN and PROFILE
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: STREET	
PROJECT NUMBER	PLAN NUMBER
2002-01-020	6

P-1904 Eng Roads & Drainage

P:\2002\02012\dwg\ENGINEER\ENGPlan 8X22 (3 - 6).dwg, 08/26/2003 09:58:15 PM, dwood



PARTIAL SITE PLAN–39th. LANE
SCALE: 1"=50'

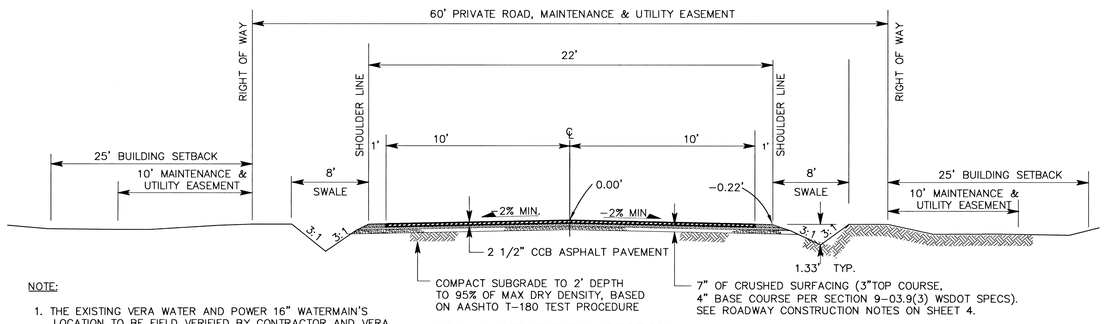
39th. LANE
CENTERLINE CURVE DATA

CURVE	RADIUS	LENGTH	DELTA	TAN
1	100.00'	129.79'	74°21'46"	75.85'

GRAPHIC SCALE

50 0 25 50 100 200

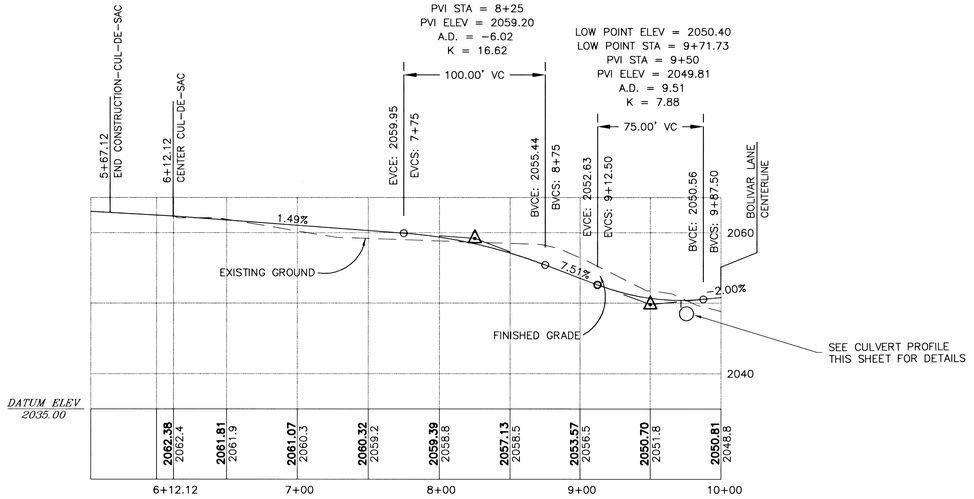
(IN FEET)
1 inch = 50 ft.



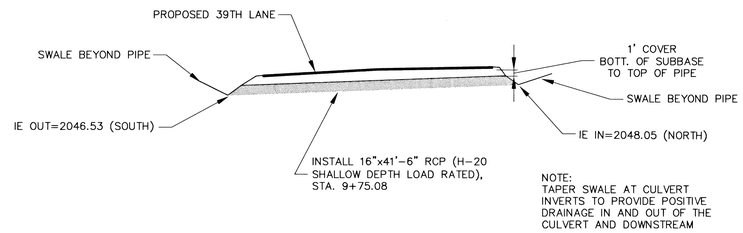
NOTE:

1. THE EXISTING VERA WATER AND POWER 16" WATERMAIN'S LOCATION TO BE FIELD VERIFIED BY CONTRACTOR AND VERA WATER AND POWER PRIOR TO BEGINNING CONSTRUCTION.

39th. LANE TYPICAL SECTION
SCALE: NOT TO SCALE



39th. LANE CENTERLINE PROFILE



NOTE:
TAPER SWALE AT CULVERT INVERTS TO PROVIDE POSITIVE DRAINAGE IN AND OUT OF THE CULVERT AND DOWNSTREAM

39TH LANE CULVERT PROFILE
SCALE: NOT TO SCALE

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1904
DATE ACCEPTED: 09-16-03
ACCEPTANCE EXPIRES: 09-16-05
PROJECT LANE MILES PUBLIC: -0-
PROJECT LANE MILES PRIVATE: 0.38
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'S APPROVAL:
Johnny Humphreys 8/23/03

MATTHEW RAYMOND POLAND — STATE OF WASHINGTON — 37871 — REGISTERED PROFESSIONAL ENGINEER — 8/21/03
EXPIRES 7-05-04

CALL BEFORE YOU DIG: 1-800-456-8000

BY	REVISIONS	DATE	PROJ.	FROM	AS BUILT	TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20/03					
DPH	PER COUNTY COMMENTS	3/26					

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL 50'	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL 10'		CHECKED MF
LOCATION "x" ON FHY AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

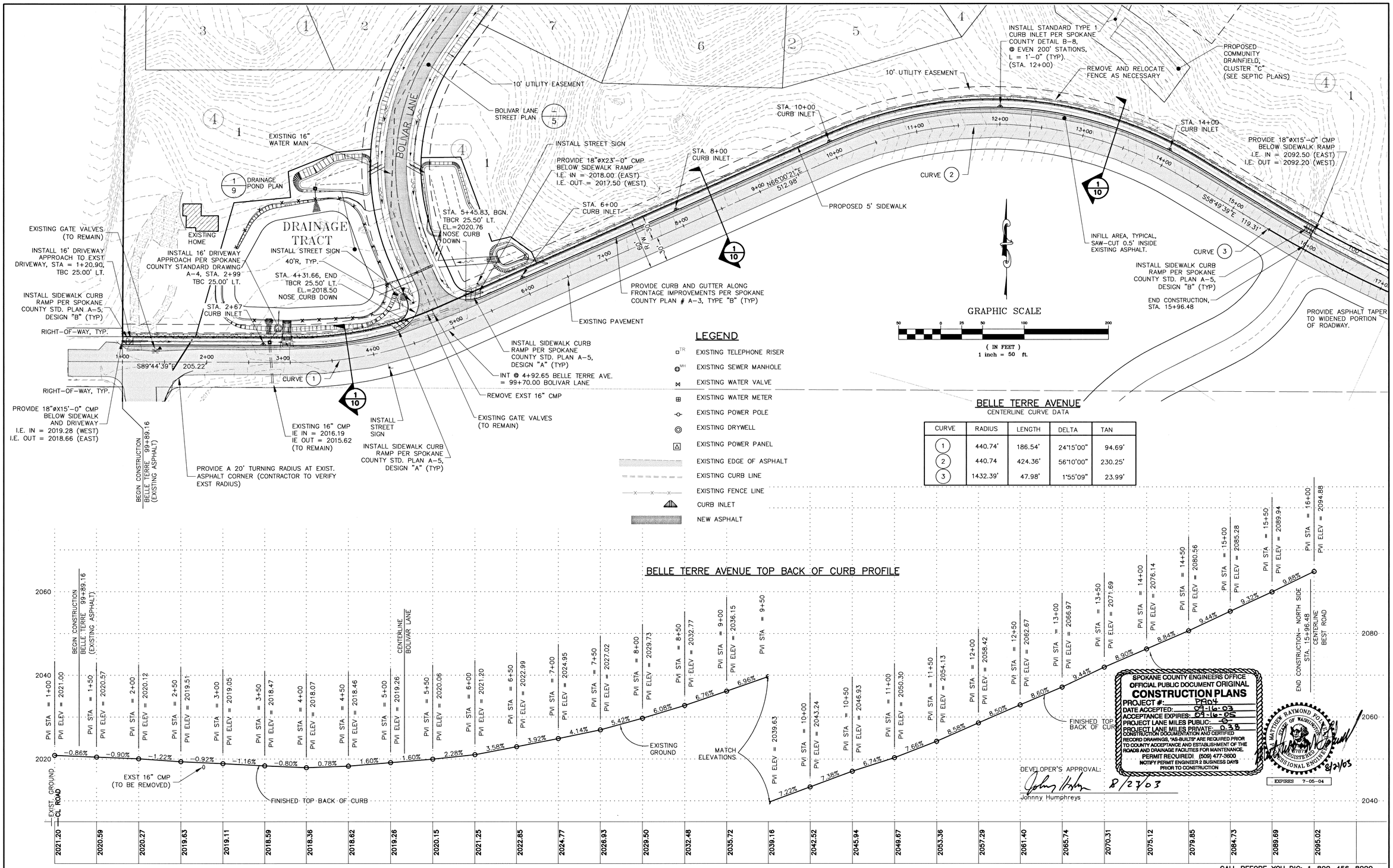
AC
ADAMS & CLARK, Inc.
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
39th. LANE
PLAN and PROFILE
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: STREET	
PROJECT NUMBER	PLAN NUMBER
2002-01-020	7

P-1904 Eng. Road & Drainage

P:\2002\2002\Eng\CAD\SITE\SitePlan 8X17-35-03.dwg, 08/21/2003 05:04:38 PM, Daniel



LEGEND

- EXISTING TELEPHONE RISER
- EXISTING SEWER MANHOLE
- EXISTING WATER VALVE
- EXISTING WATER METER
- EXISTING POWER POLE
- EXISTING DRYWELL
- EXISTING POWER PANEL
- EXISTING EDGE OF ASPHALT
- EXISTING CURB LINE
- EXISTING FENCE LINE
- CURB INLET
- NEW ASPHALT

BELLE TERRE AVENUE

CENTERLINE CURVE DATA

CURVE	RADIUS	LENGTH	DELTA	TAN
1	440.74'	186.54'	24°15'00"	94.69'
2	440.74	424.36'	56°10'00"	230.25'
3	1432.39'	47.98'	1°55'09"	23.99'

BELLE TERRE AVENUE TOP BACK OF CURB PROFILE

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1904
DATE ACCEPTED: 09-16-03
ACCEPTANCE EXPIRES: 09-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.38
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'S APPROVAL:
Johnny Humphreys 8/27/03

MATTHEW RAYMOND POLAK — STATE OF WASHINGTON — REGISTERED PROFESSIONAL ENGINEER — 8/21/03
EXPIRES 7-05-04

BY	REVISIONS	DATE	PROJ.	FROM	AS BUILT	TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20/03					
RAH	PAVEMENT REVISIONS PER COUNTY	4/23					
DPH	PER COUNTY COMMENTS	3/26					

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL 50'	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL 10'		CHECKED MF
LOCATION "x" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

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Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
BELLE TERRE AVENUE IMPROVEMENTS
PLAN and PROFILE
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: STREET	
PROJECT NUMBER	PLAN NUMBER
2002-01-020	8

P-1904 Eng. Road + Drainage

CALL BEFORE YOU DIG: 1-800-456-8000

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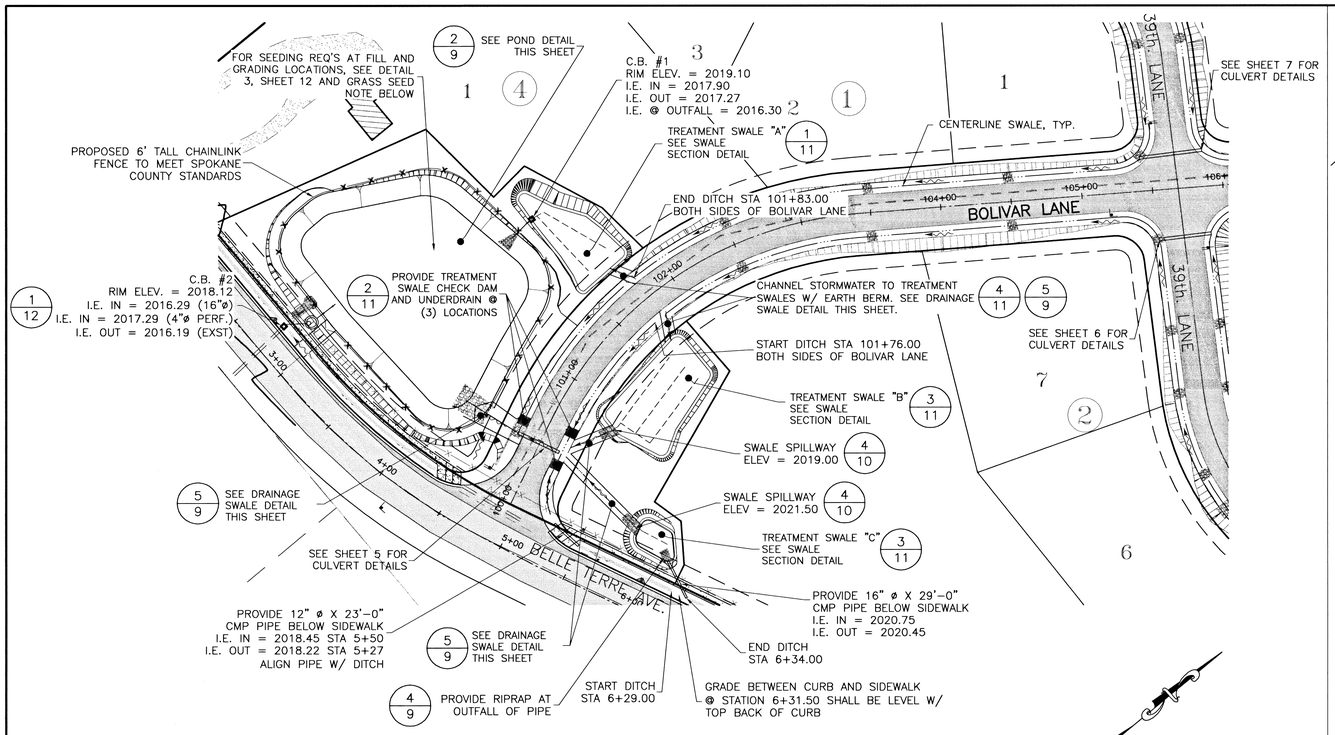
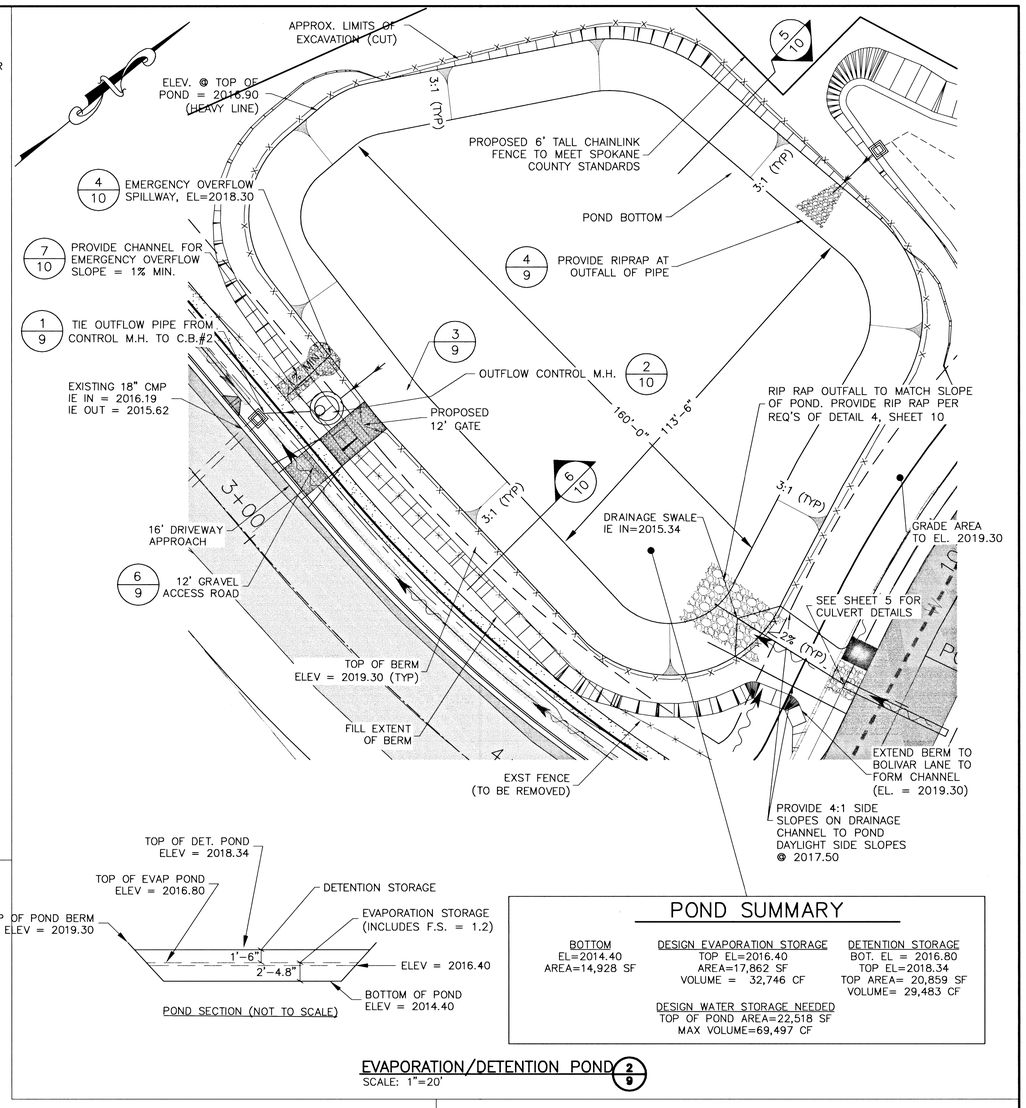


GRASS SEED NOTE FOR POND AND TREATMENT SWALES: FRESH, CLEAN, DRY, NEW CROP SEED COMPLYING WITH THE ASSOCIATION OF OFFICIAL ANALYSTS' "RULES FOR TESTING SEEDS" FOR PURITY AND GERMINATION TOLERANCE. PROVIDE SEED MIXTURE COMPOSED OF GRASS SPECIES AND PERCENTAGES AS FOLLOWS: 10% ELKA PERRENIAL RYE, 20 % DURAR HARD FESCUE, 45% COVAR SHEEP/FESCUE AND 15% REUBENS CANADIAN BLUEGRASS. SEED SHALL BE APPLIED AT A MINIMUM RATE OF 90 POUNDS PER ACRE. FERTILIZER SHALL BE 16-16-16 TIMED RELEASE COMPOSITION AND SHALL BE APPLIED AT 300 POUNDS PER ACRE.

PARTIAL SITE PLAN-DRAINAGE PLAN (1/9)
SCALE: 1"=50'

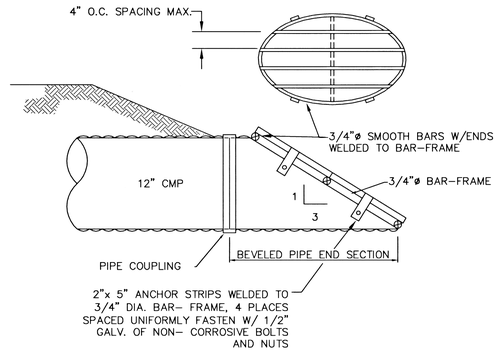


POND SUMMARY

BOTTOM	DESIGN EVAPORATION STORAGE	DETENTION STORAGE
EL=2014.40	TOP EL=2016.40	BOT. EL = 2016.80
AREA=14,928 SF	AREA=17,862 SF	TOP EL=2018.34
	VOLUME = 32,746 CF	TOP AREA= 20,859 SF
		VOLUME= 29,483 CF

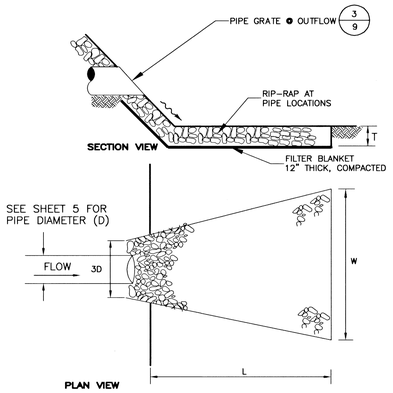
DESIGN WATER STORAGE NEEDED
TOP OF POND AREA=22,518 SF
MAX VOLUME=69,497 CF

EVAPORATION/DETENTION POND (2/9)
SCALE: 1"=20'

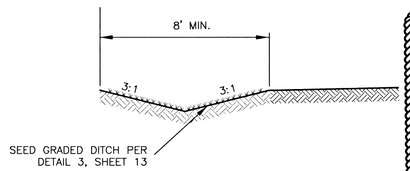


DETAIL-PIPE GRATE (3/9)
SCALE: NOT TO SCALE

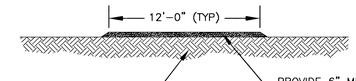
LOCATION	L(ft)	W(ft)	T(in.)	MIN. STONE DIAMETER (in.)
BOLIVAR LANE	17.7	11.6	12"	5"
39th LANE (EAST)	12.8	9.1	12"	4"
39th LANE (WEST)	10.5	8.2	12"	3"
CONTROL M.H @ POND	17.7	11.6	12"	5"
PIPE OUTFALL @ POND	11	9	12"	4"



DETAIL-DRAINAGE PIPE OUTFALL (4/9)
SCALE: NOT TO SCALE



DETAIL-SWALE SECTION (5/9)
SCALE: NOT TO SCALE



GRAVEL ACCESS ROAD SECTION (6/9)
SCALE: NOT TO SCALE

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1904
DATE ACCEPTED: 08-16-03
ACCEPTANCE EXPIRES: 08-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.38
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'S APPROVAL:
8/23/03
Johnny Humphreys

CALL BEFORE YOU DIG: 1-800-456-8000

BY	REVISIONS	DATE	PROJ.	FROM	AS BUILT	TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20/03					
DPH	PER COUNTY COMMENTS	3/26					

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL N/A	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL N/A		CHECKED MF
LOCATION "x" ON FHY AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

ADAMS & CLARK, Inc.
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
DRAINAGE POND
PLAN and DETAILS
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: DRAINAGE

PROJECT NUMBER	PLAN NUMBER
2002-01-020	9

P-1904 Eng. Road & Drainage

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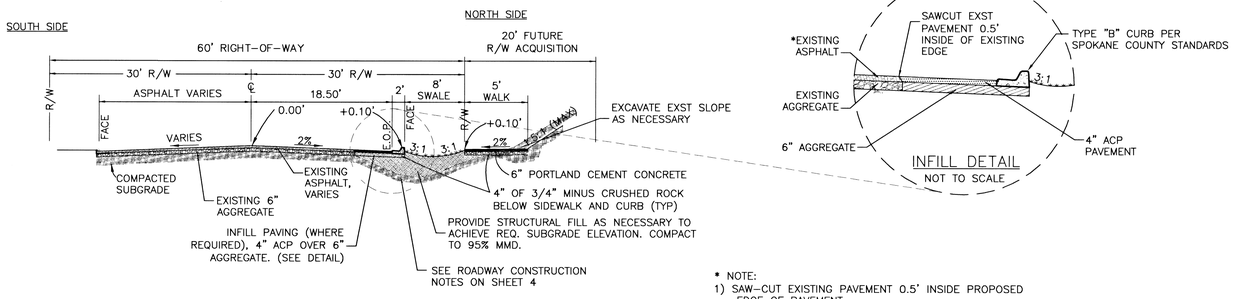
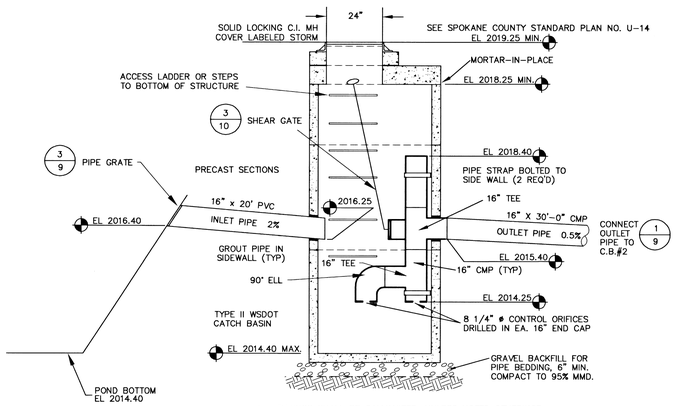


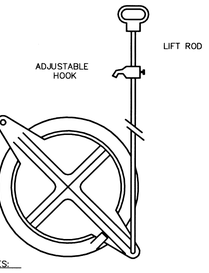
* NOTE:
1) SAW-CUT EXISTING PAVEMENT 0.5' INSIDE PROPOSED EDGE OF PAVEMENT.

BELLE TERRE AVE. SECTION 1/10
NOT TO SCALE



ALL FITTINGS SHALL BE GALVANIZED, UNLESS NOTED OTHERWISE.

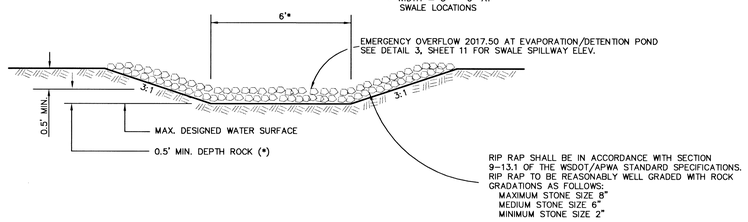
DETAIL-FLOW RESTRICTOR MANHOLE 2/10
SCALE: NOT TO SCALE



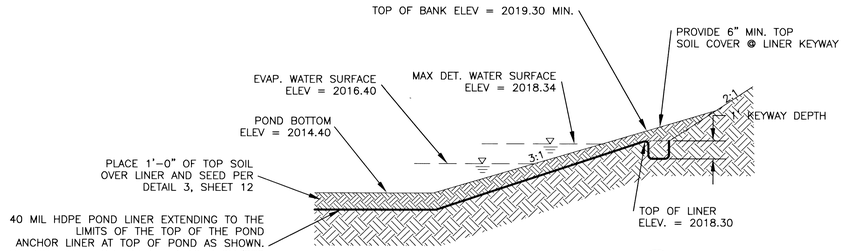
NOTES:

1. SHEAR GATE SHALL BE CAST IRON BODY AND GATE, OLYMPIC FOUNDRY STANDARD OR EQUAL.
2. GATE SHALL BE 8" DIAMETER.
3. GATE SHALL BE JOINED TO TEE SECTION BY BOLTING THROUGH FLANGE.
4. LIFT ROD SHALL BE AS SPECIFIED BY MFR. WITH HANDLE EXTENDING TO WITHIN ONE FOOT OF COVER AND ADJUSTABLE HOOK FASTENED TO UPPER RUNG OF LADDER.

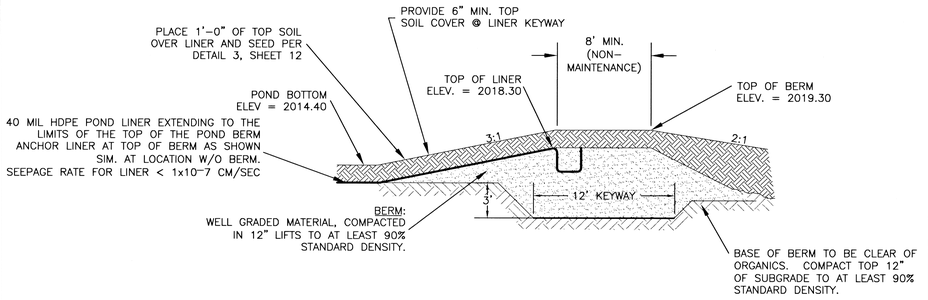
DETAIL-SHEAR GATE 3/10
SCALE: NOT TO SCALE



EMERGENCY OVERFLOW / SWALE SPILLWAY 4/10
N.T.S.



POND BANK DETAIL 5/10
N.T.S.



GENERAL POND BERM NOTES:

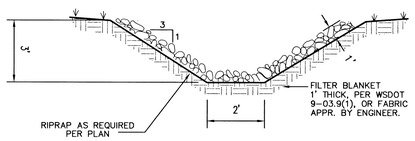
1. BOTTOM OF POND AND NON-BERM AREAS OF POND SHALL BE PLANTED WITH NATIVE-TYPE GRASSES ACCLIMATED TO ARID CONDITIONS.
2. THE BASE OF THE BERM SHALL BE FIRM, UNYIELDING SUBGRADE, FREE OF ORGANICS AND FILL MATERIAL.
3. STANDARD DENSITY SHALL BE IN ACCORDANCE WITH ASTM D-1557.

POND BERM DETAIL 6/10
N.T.S.

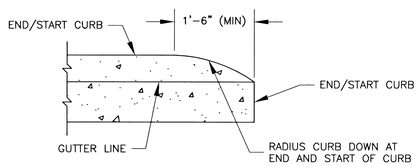
RIPRAP TYPES:

TYPE 3: HAND PLACED RIPRAP 9_13.2

FILTER BLANKET: 9-03.9(1) OR FABRIC APPROVED BY ENGINEER WHEN RIPRAP IS SPECIFIED.



RIPRAPPED DITCH SECTION 7/10
NTS



CURB NOSE PROFILE DETAIL 8/10
NTS

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1904
DATE ACCEPTED: 04-16-03
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8/23/03
Johnny Humphreys

MATTHEW RAYMOND ADAMS — STATE OF WASHINGTON — 37871 — REGISTERED PROFESSIONAL ENGINEER — 8/21/03
EXPIRES 7-05-04

CALL BEFORE YOU DIG: 1-800-456-8000

BY	REVISIONS	DATE	PROJ.	FROM	AS BUILT	TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20/03					
RAH	CROSS SECTION REVISION, ADD DETAIL	4/23					
DPH	PER COUNTY COMMENTS	3/26					

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL N/A	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL N/A		CHECKED MF
LOCATION "X" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

AC
ADAMS & CLARK, Inc.
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
CLUSTER DEVELOPMENT
CONSTRUCTION DETAILS
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: DETAILS	
PROJECT NUMBER	PLAN NUMBER
2002-01-020	10

P-1904 Eng. Road + Drainage

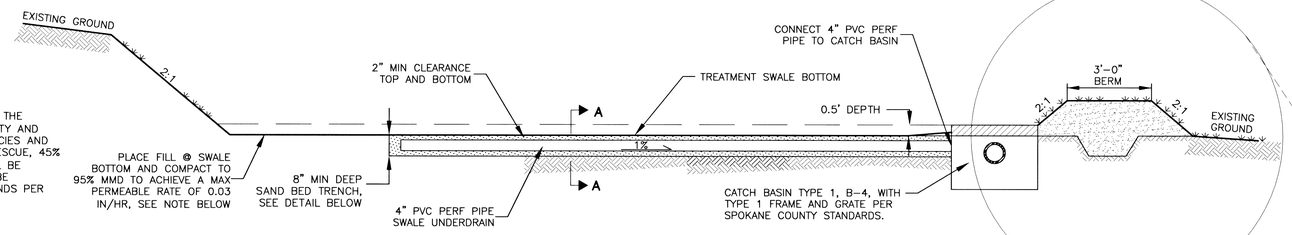
P:\2002\02010\dwg\Sheet\Details.dgn 8/21/03 09:05:56 Pw_Sheet

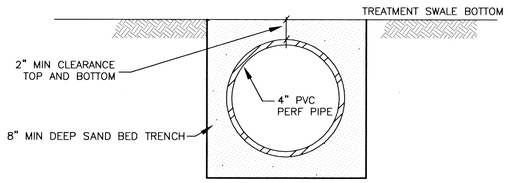
GENERAL TREATMENT SWALE BERM NOTES:

1. GRASS SEED NOTE; FRESH, CLEAN, DRY, NEW CROP SEED COMPLYING WITH THE ASSOCIATION OF OFFICIAL ANALYSTS' "RULES FOR TESTING SEEDS" FOR PURITY AND GERMINATION TOLERANCE. PROVIDE SEED MIXTURE COMPOSED OF GRASS SPECIES AND PERCENTAGES AS FOLLOWS: 10% ELKA PERRENIAL RYE, 20 % DURAR HARD FESCUE, 45% COVAR SHEEP/FESCUE AND 15% REUBENS CANADIAN BLUEGRASS. SEED SHALL BE APPLIED AT A MINIMUM RATE OF 90 POUNDS PER ACRE. FERTILIZER SHALL BE 16-16-16 TIMED RELEASE COMPOSITION AND SHALL BE APPLIED AT 300 POUNDS PER ACRE.

2. THE BASE OF THE BERM SHALL BE FIRM, UNYIELDING SUBGRADE, FREE OF ORGANICS AND FILL MATERIAL.

3. STANDARD DENSITY SHALL BE IN ACCORDANCE WITH ASTM D-1557.



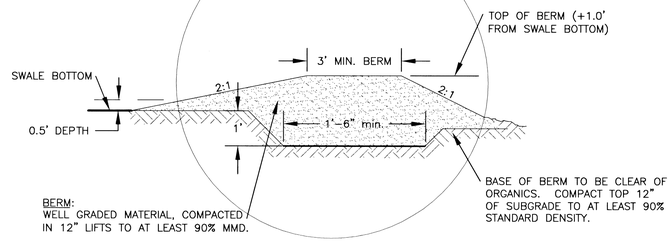


SECTION A-A
SWALE UNDERDRAIN

TREATMENT POND "A" SIZE
TOP EL. = 2020.40 2621 SQFT
TREATMENT W.S. = 2019.90 2509 SQFT
BOTTOM EL. = 2019.40 2184 SQFT
TREATMENT SWALE VOL. = 1173 CUFT (MIN)

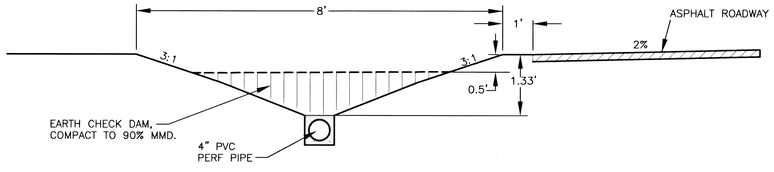
NOTE:
CONTRACTOR SHALL HAVE INSPECTION FIRM TEST CONSTRUCTED SWALE BOTTOMS FOR PERMEABILITY. IF THE PERMEABILITY RATE FOR THE CONSTRUCTED SWALE BOTTOM EXCEEDS 0.03 IN/HR (0.5% OF 50 YEAR STORM EVENT), THE SWALE WILL NEED TO BE LINED WITH A COMPACTABLE MATERIAL TO ACHIEVE THIS INFILTRATION REQUIREMENT.

TREATMENT SWALE "A" X-SECTION 1/11
SCALE: NOT TO SCALE

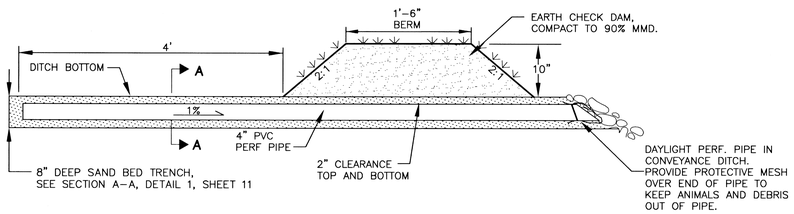


BERM:
WELL GRADED MATERIAL, COMPACTED IN 12" LIFTS TO AT LEAST 90% MMD.

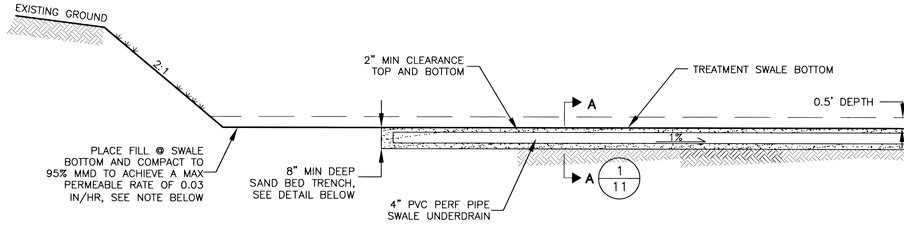
BERM DETAIL



SECTION A-A



TYPICAL EARTH CHECK DAM/V-DITCH 2/11
SCALE: NOT TO SCALE



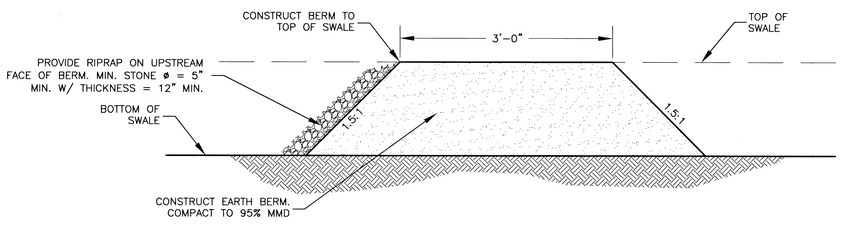
NOTE:
FOR GENERAL CONSTRUCTION DETAILS OF TREATMENT SWALES AND BERMS, SEE DETAIL 1, THIS SHEET

NOTE:
CONTRACTOR SHALL HAVE INSPECTION FIRM TEST CONSTRUCTED SWALE BOTTOMS FOR PERMEABILITY. IF THE PERMEABILITY RATE FOR THE CONSTRUCTED SWALE BOTTOM EXCEEDS 0.03 IN/HR (0.5% OF 50 YEAR STORM EVENT), THE SWALE WILL NEED TO BE LINED WITH A COMPACTABLE MATERIAL TO ACHIEVE THIS INFILTRATION REQUIREMENT.

TREATMENT POND "B" SIZE
TOP EL. = 2021.35 3506 SQFT
TREATMENT W.S. = 2020.85 3388 SQFT
BOTTOM EL. = 2020.35 3272 SQFT
TREATMENT SWALE VOL. = 1665 CUFT (MIN)
TOP OF SPILLWAY EL. = 2020.85

TREATMENT POND "C" SIZE
TOP EL. = 2021.45 596 SQFT
TREATMENT W.S. = 2020.95 551 SQFT
BOTTOM EL. = 2020.45 507 SQFT
TREATMENT SWALE VOL. = 264 CUFT (MIN)
TOP OF SPILLWAY EL. = 2020.95

TREATMENT SWALE "B" & "C" X-SECTION 3/11
SCALE: NOT TO SCALE



DITCH BERM DETAIL 4/11
SCALE: NOT TO SCALE

DEVELOPER'S APPROVAL:
8/23/03
Johnny Humphreys

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1904
DATE ACCEPTED: 09-16-03
ACCEPTANCE EXPIRES: 09-16-05
PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.38
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

MATTHEW RAYMOND FOX, STATE OF WASHINGTON, 37677, REGISTERED PROFESSIONAL ENGINEER, 8/21/03
EXPIRES 7-05-04

CALL BEFORE YOU DIG: 1-800-456-8000

BY	REVISIONS	DATE	PROJ.	FROM	AS BUILT	TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20/03					
RAH	CROSS SECTION REVISION, ADD DETAIL	4/23					
DPH	PER COUNTY COMMENTS	3/26					

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL N/A	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL N/A		CHECKED MF
LOCATION "x" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

AC ADAMS & CLARK, Inc.
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
CLUSTER DEVELOPMENT
SWALE CONSTRUCTION DETAILS
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: DETAILS	
PROJECT NUMBER	PLAN NUMBER
2002-01-020	11

P-1904 Eng Road & Drainage

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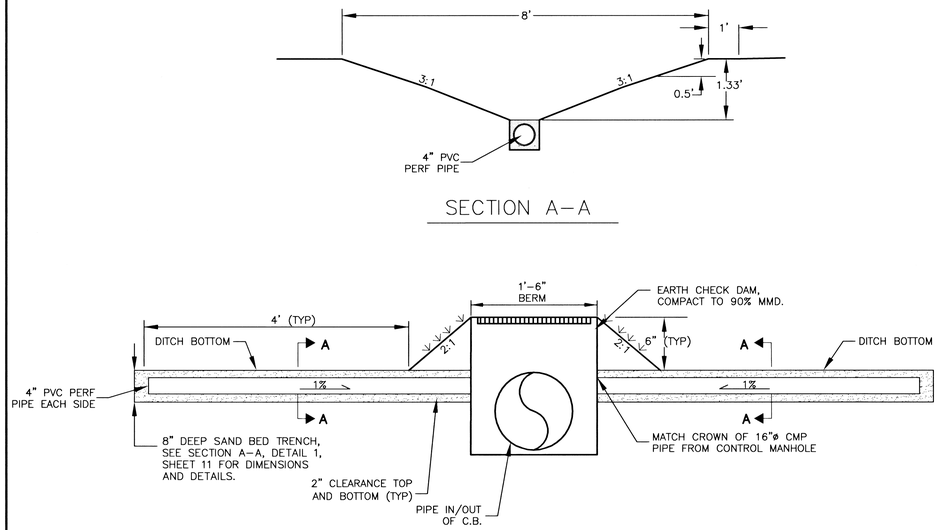
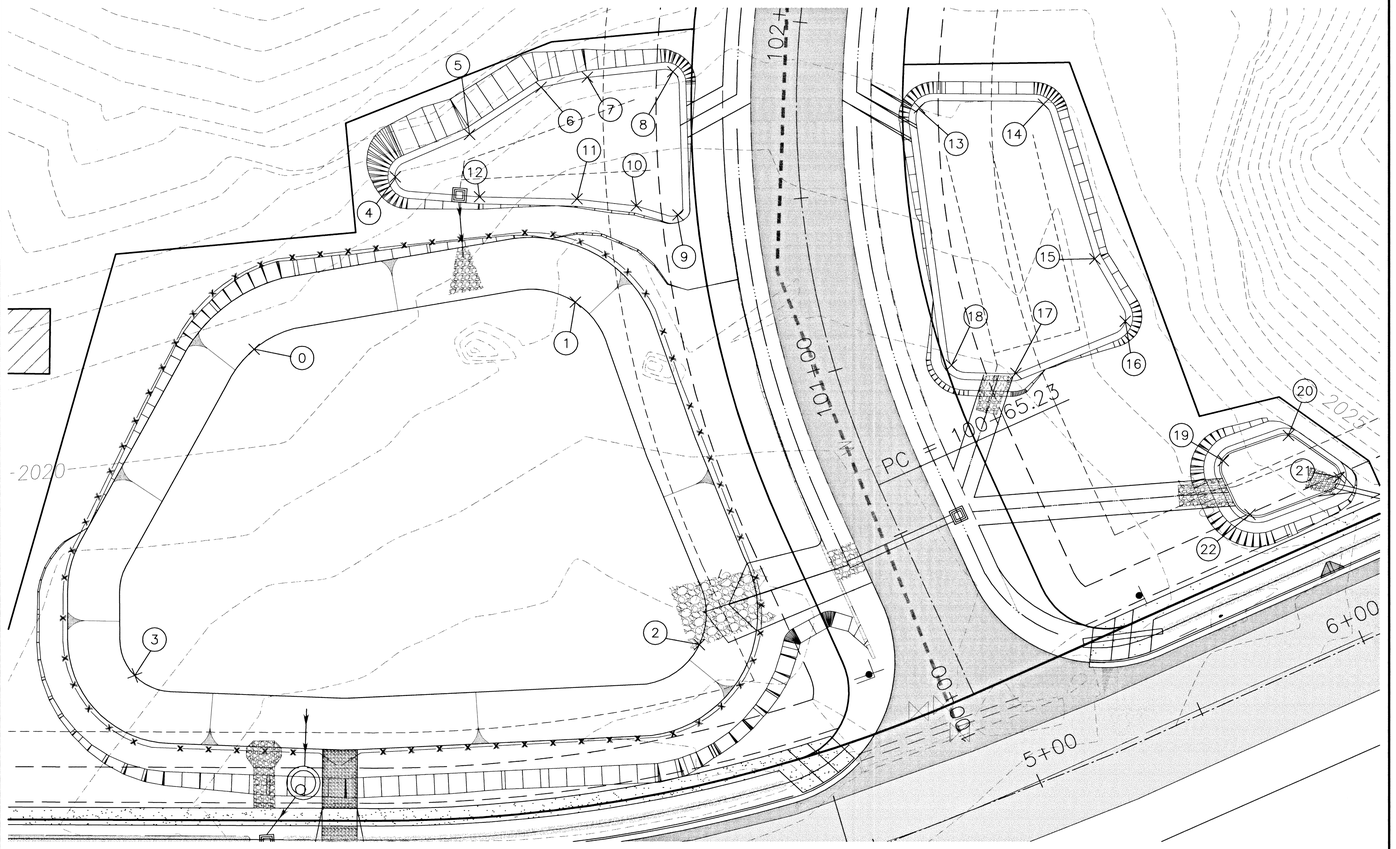


CATCH BASIN DETAIL 1/12
SCALE: NOT TO SCALE



POINT	NORTHING	EASTING	ELEVATION
0	5193.0013	5171.7313	2014.4
1	5206.3843	5262.6887	2014.4
2	5109.0601	5297.8140	2014.4
3	5100.3670	5137.9704	2014.4
4	5242.048	5211.885	2019.4
5	5254.060	5232.910	2019.4
6	5267.470	5253.060	2019.4
7	5270.280	5266.120	2019.4
8	5271.9091	5290.3019	2019.4
9	5231.2167	5291.7373	2019.4
10	5233.780	5279.910	2019.4
11	5235.730	5263.0704	2019.4

POINT	NORTHING	EASTING	ELEVATION
12	5236.4067	5235.6549	2019.4
13	5261.6381	5360.2438	2020.35
14	5262.6289	5395.2815	2020.35
15	5218.7031	5409.8456	2020.35
16	5200.9535	5418.6291	2020.35
17	5186.1116	5387.4672	2020.35
18	5188.485	5369.2752	2020.35
19	5161.3405	5446.4667	2020.45
20	5168.577	5464.8691	2020.45
21	5156.5334	5479.1555	2020.45
22	5146.0855	5454.0252	2020.45

POND AND SWALE LOACTIONS 2/12
SCALE: NOT TO SCALE

DEVELOPER'S APPROVAL:
8/23/03
Johnny Humphreys

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1904
DATE ACCEPTED: 09-16-03
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PROJECT LANE MILES PUBLIC: 0
PROJECT LANE MILES PRIVATE: 0.38
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PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

MATTHEW RAYMOND ROLFE — STATE OF WASHINGTON — 37871 — REGISTERED PROFESSIONAL ENGINEER
8/21/03
EXPIRES 7-05-04

CALL BEFORE YOU DIG: 1-800-456-8000

BY	REVISIONS	DATE	PROJ.	FROM	AS BUILT	TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20/03					
RAH	CROSS SECTION REVISION, ADD DETAIL	4/23					
DPH	PER COUNTY COMMENTS	3/26					

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL N/A	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL N/A		CHECKED MF
LOCATION "x" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

AC
ADAMS & CLARK, Inc.
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
CLUSTER DEVELOPMENT
POND/SWALE LOCATIONS & DETAILS
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: DETAILS	
PROJECT NUMBER	PLAN NUMBER
2002-01-020	12

P-1904 Eng Road - Drainage

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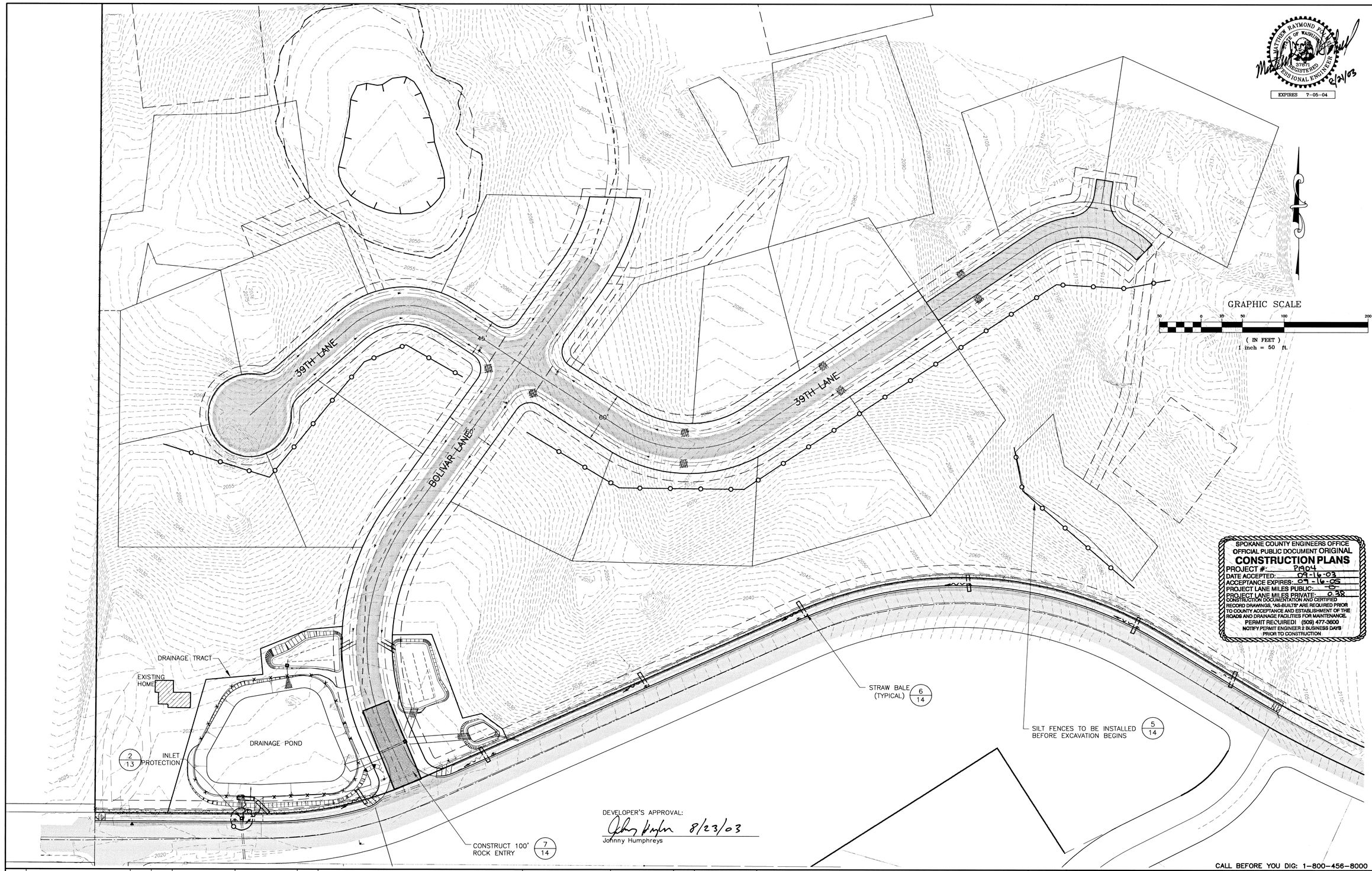

MATTHEW RAYMOND FRANK
STATE OF WASHINGTON
37871
REGISTERED
PROFESSIONAL ENGINEER
8/21/03

EXPIRES 7-05-04

DEVELOPER'S APPROVAL:
8/23/03
Johnny Humphreys

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1904
DATE ACCEPTED: 09-16-03
ACCEPTANCE EXPIRES: 09-16-05
PROJECT LANE MILES PUBLIC: 0.5
PROJECT LANE MILES PRIVATE: 0.38
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

CALL BEFORE YOU DIG: 1-800-456-8000

BY	REVISIONS	DATE	PROJ.	FROM	AS BUILT	TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20/03					
DPH	PER COUNTY COMMENTS	3/26					

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL 50'	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL N/A		CHECKED MF
LOCATION "x" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

AC
ADAMS & CLARK, Inc.
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
CLUSTER DEVELOPMENT
EROSION CONTROL PLAN
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: EROSION

PROJECT NUMBER	PLAN NUMBER
2002-01-020	13

P-1904 Eng Roads + Drainage

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DEFINITION:

MINIMIZING EXPOSED SOILS AND CONSEQUENT EROSION BY CLEARING ONLY WHERE CONSTRUCTION WILL OCCUR.

PURPOSE:

TO REDUCE EROSION BY PRESERVING NATURAL VEGETATION WHEREVER PRACTICABLE.

CONDITIONS WHERE PRACTICE APPLIES:

NATURAL VEGETATION SHOULD BE PRESERVED ON ALL AREAS OUTSIDE THE CLEARING AND GRUBBING LIMITS.

PRESERVE NATURAL VEGETATION (1/14)

DEFINITION:
A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN, DROP INLET, OR CURB INLET.

PURPOSE:
TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.

* INSTALLATION PROCEDURE FOR FILTER FABRIC FENCE:

  A. PLACE 2 INCH BY 2 INCH WOODEN POSTS AROUND THE PERIMETER OF THE INLET A MAXIMUM OF 3 FEET APART AND DRIVE THEM AT LEAST 8 INCHES INTO THE GROUND. THE STAKES MUST BE AT LEAST 3 FEET LONG.

  B. EXCAVATE A TRENCH APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP AROUND THE OUTSIDE PERIMETER OF THE STAKES.

  C. STAPLE THE FILTER FABRIC TO WOODEN STAKES SO THAT 32 INCHES OF THE FABRIC EXTENDS OUT AND CAN BE FORMED INTO THE TRENCH. USE HEAVY-DUTY WIRE STAPLES AT LEAST 1/2 INCH IN LENGTH.

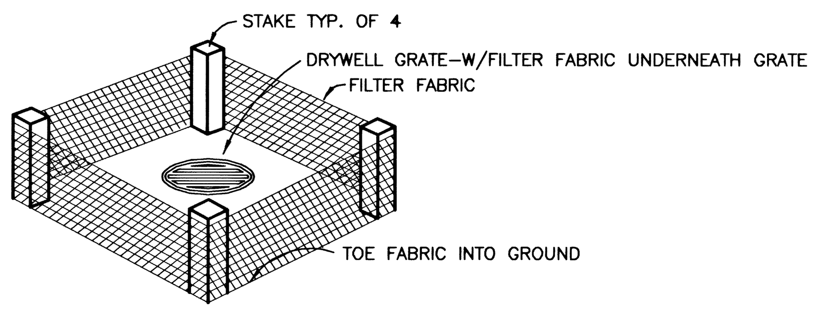
  D. BACKFILL THE TRENCH WITH 3/4 INCH OR LESS WASHED GRAVEL ALL THE WAY AROUND.

  E. SILT FENCE INLET BARRIER SHALL BE CONSTRUCTED ON ALL DRYWELL INLETS AT THE TIME OF THEIR CONSTRUCTION. APPARENT OPENING SIZE OF FILTER FABRIC SHALL BE 70.

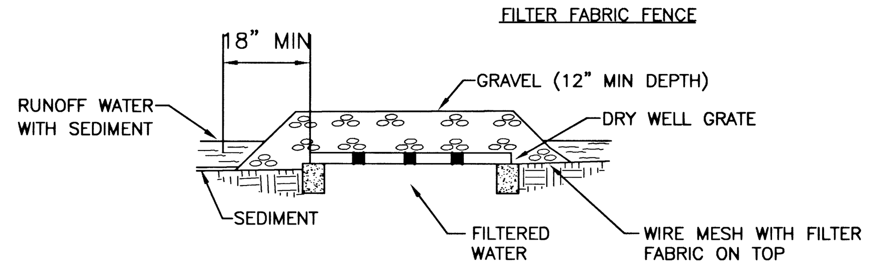
* INSTALLATION PROCEDURE FOR GRAVEL AND WIRE MESH FILTER:

  A. PLACE WIRE MESH OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1 FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE. USE HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2 INCH OPENINGS. IF MORE THAN ONE STRIP OF MESH IS NECESSARY, OVERLAP THE STRIPS. PLACE FILTER FABRIC OVER WIRE MESH.

  B. EXTEND THE FILTER FENCE/WIRE MESH BEYOND THE INLET OPENING AT LEAST 18 INCHES ON ALL SIDES. PLACE 3/4 INCH TO 3-INCH GRAVEL OVER THE FILTER FABRIC/WIRE MESH. THE DEPTH OF THE GRAVEL SHOULD BE AT LEAST 12 INCHES.



FILTER FABRIC FENCE



GRAVEL AND WIRE MESH FILTER

STORM DRAIN INLET PROTECTION (2/14)

DEFINITION:

THE ESTABLISHMENT OF PERENNIAL VEGETATIVE COVER ON DISTURBED AREAS.

PURPOSE:

TO ESTABLISH PERMANENT VEGETATION (SUCH AS GRASSES, LEGUMES AND TREES AND SHRUBS) AS RAPIDLY AS POSSIBLE TO PREVENT SOIL EROSION BY WIND OR WATER, AND TO IMPROVE WILDLIFE HABITAT AND SITE AESTHETICS.

CONDITIONS WHERE PRACTICE APPLIES:

- GRADED, FINAL GRADED OR CLEARED AREAS WHERE PERMANENT VEGETATIVE COVER IS NEEDED TO ESTABLISH THE SOIL.
- AREAS WHICH WILL NOT BE BROUGHT TO FINAL GRADE FOR A YEAR OR MORE.
- VEGETATION-LINED CHANNELS.

PROVIDE FRESH, CLEAN NEW CROP SEED COMPLYING WITH TOLERANCE FOR PURITY AND GERMINATION ESTABLISHED BY OFFICIAL SEED ANALYSTS OF NORTH AMERICA. PROVIDE SEED MIXTURE COMPOSED OF GRASS SPECIES AND AND NATIVE SPECIES AT PERCENTAGES AS FOLLOWS:

GRASS SEED: FRESH, CLEAN, DRY, NEW CROP SEED COMPLYING WITH THE ASSOCIATION OF OFFICIAL ANALYSTS' "RULES FOR TESTING SEEDS" FOR PURITY AND GERMINATION TOLERANCE. PROVIDE SEED MIXTURE COMPOSED OF GRASS SPECIES AND PECENTAGES AS FOLLOWS: 10% ELKA PERRENIAL RYE, 20 % DURAR HARD FESCUE, 45% COVAR SHEEP/FESCUE AND 15% REUBENS CANADIAN BLUEGRASS. SEED SHALL BE APPLIED AT A MINIMUM RATE OF 90 POUNDS PER ACRE. FERTILIZER SHALL BE 16-16-16 TIMED RELEASE COMPOSITION AND SHALL BE APPLIED AT 300 POUNDS PER ACRE.

PROVIDE HYDROSEEDING AS FOLLOWS:

HYDROSEEDING: MIX SPECIFIED SEED AT THE RATE OF 90 LBS./ACRE, FERTILIZER AT THE RATE OF 400 LBS./ACRE OF 16-16-16 AND FIBER MULCH IN WATER, USING EQUIPMENT SPECIFICALLY DESIGNED FOR HYDROSEED APPLICATION. CONTINUE MIXING UNTIL UNIFORMLY BLENDED INTO HOMOGENOUS SLURRY SUITABLE FOR HYDRAULIC APPLICATION.

1. MIX SLURRY WITH NONASPHALTIC TACKIFIER, PER MANUFACTURER'S RECOMMENDATION.

2. APPLY SLURRY UNIFORMLY TO ALL AREAS TO BE SEEDED IN A 1-STEP PROCESS. APPLY MULCH AT THE MINIMUM RATE OF 2000 LBS./ACRE (16.5 KG PER 100 SQ.M) DRY WEIGHT BUT NOT LESS THAN THE RATE REQUIRED TO OBTAIN SPECIFIED SEED-SOWING RATE.

ALL SEEDING OF SLOPES SHALL BE DONE IN ACCORDANCE WITH W.S.D.O.T. STANDARD SPECIFICATIONS.

PERMANENT SEEDING SHALL OCCUR BETWEEN THE DATES OF AUGUST 15 TO OCTOBER 15. ANY AREAS THAT ARE NOT SEEDED AND ARE EXPOSED FOR MORE THAN 30 DAYS SHALL HAVE A TEMPORARY CONTROL BLANKET, OR A STRAW MULCH (1.2 TONS PER ACRE APPLIED). MULCH SHALL BE ANCHORED INTO THE SOIL BY DISKING OR OTHER METHODS AS APPROVED BY THE CITY OF SPOKANE. CONSTRUCTION SERVICES DEPARTMENT.
MULCHING OPERATIONS SHALL BE PER W.S.D.O.T. SPECIFICATIONS SECTION 8-01.3(5).

PERMANENT SEEDING (3/14)

DEFINITION:

A TEMPORARY STONE-STABILIZED PAD LOCATED AT POINTS OF VEHICULAR INGRESS AND EGRESS ON A CONSTRUCTION SITE.

PURPOSE:

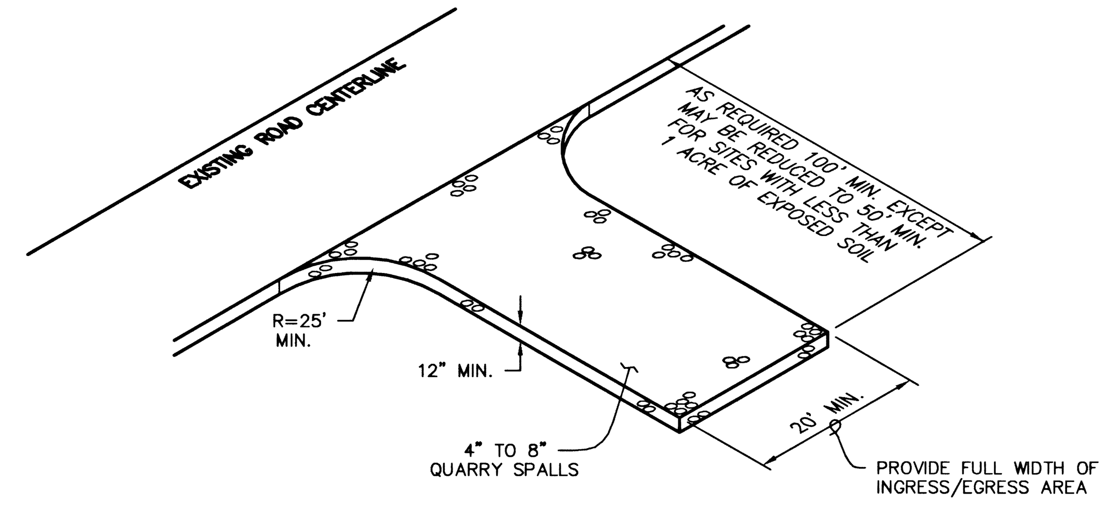
TO REDUCE THE AMOUNT OF MUD, DIRT, ROCKS, ETC. TRANSPORTED ONTO PUBLIC ROADS BY MOTOR VEHICLES OR RUNOFF BY CONSTRUCTING A STABILIZED PAD OF ROCK SPALLS AT ENTRANCES TO CONSTRUCTION SITES AND WASHING OF TIRES DURING EGRESS.

CONDITIONS WHERE PRACTICE APPLIES:

- WHENEVER TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND MOVING DIRECTLY ONTO A PUBLIC ROAD OR OTHER PAVED AREAS.

MAINTENANCE:

- THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OF FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONE, AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED IMMEDIATELY.



ROCK CONSTRUCTION ENTRY (4/14)

DEFINITION:
A TEMPORARY SEDIMENT BARRIER CONSISTING OF A FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED. THE FILTER FENCE IS CONSTRUCTED OF STAKES AND SYNTHETIC FILTER FABRIC WITH A RIGID WIRE FENCE BACKING WHERE NECESSARY FOR SUPPORT.

PURPOSE:
1. TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT UNDER SHEET FLOW CONDITIONS FROM DISTURBED AREAS DURING CONSTRUCTION OPERATIONS IN ORDER TO PREVENT SEDIMENT FROM LEAVING THE SITE.
2. TO DECREASE THE VELOCITY OF SHEET FLOWS.

THE FILTER FABRIC SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS AR NECESSARY, FILTER CLOTH SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST, WITH A MINIMUM 6 INCH OVERLAP, AND BOTH ENDS SECURELY FASTENED TO THE POST.

POSTS SHALL BE SPACED A MAXIMUM OF 6 FEET APART AND DRIVEN SECURELY INTO THE GROUND A MINIMUM OF 30 INCHES (WHERE PHYSICALLY POSSIBLE).

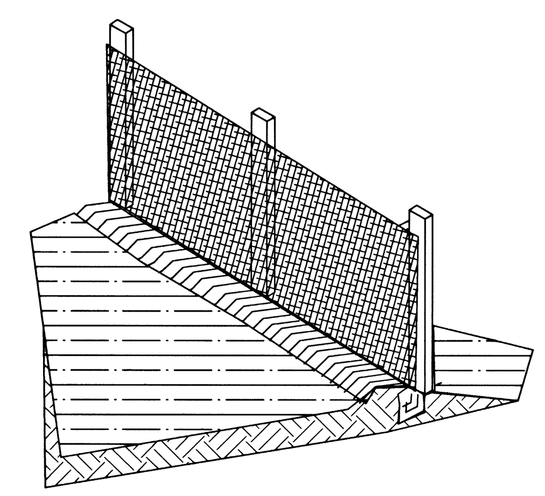
A TRENCH SHALL BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POST AND UP SLOPE FROM THE BARRIER. THE TRENCH SHALL BE CONSTRUCTED TO FOLLOW THE CONTOUR.

WHEN SLIT FILM FILTER FABRIC IS USED, WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UP SLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG, TIE WIRES OR HOG RIGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 4 INCHES AND SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE.

SLIT FILM FILTER FABRIC SHALL BE WIRED TO THE FENCE, AND 20 INCHES OF THE FABRIC SHALL EXTEND INTO THE TRENCH. THE FABRIC SHALL NOT EXTEND MORE THAN 36 INCHES ABOVE THE ORIGINAL GROUND SURFACE. FILTER FABRIC SHALL NOT BE STAPLED TO EXISTING TREES. OTHER TYPES OF FABRIC MAY BE STAPLED TO THE FENCE.

WHEN EXTRA-STRENGTH OR MONOFILAMENT FABRIC AND CLOSER POST SPACING ARE USED, THE WIRE MESH SUPPORT FENCE MAY BE ELIMINATED. IN SUCH A CASE, THE FILTER FABRIC IS STAPLED OR WIRED DIRECTLY TO THE POST. EXTRA CARE SHOULD BE USED WHEN JOINING OR OVERLAPPING THESE STIFFER FABRICS. APPARENT OPENING SIZE OF FILTER FABRIC SHALL BE 70.

MAINTENANCE:
* INSPECT IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL. REPAIR AS NECESSARY.
* SEDIMENT MUST BE REMOVED WHEN IT REACHES APPROXIMATELY ONE THIRD THE HEIGHT OF THE FENCE, ESPECIALLY IF HEAVY RAINS ARE EXPECTED.



FILTER FENCE (5/14)

DEFINITION:

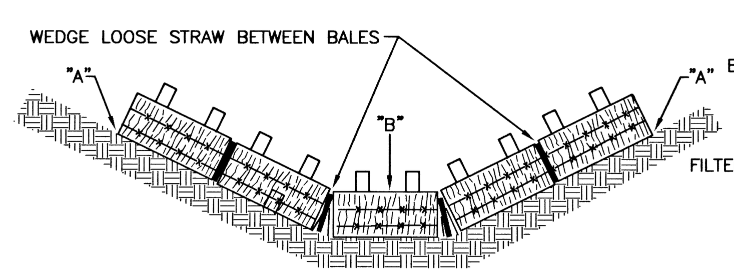
A TEMPORARY SEDIMENT BARRIER CONSISTING OF A ROW OF ENTRENCHED AND ANCHORED STRAW BALES.

PURPOSE:

1. TO INTERCEPT AND DETAIN SMALL AMOUNTS OF SEDIMENT FROM DISTURBED AREAS OF LIMITED EXTENT TO PREVENT SEDIMENT FROM LEAVING THE SITE.
2. TO DECREASE THE VELOCITY OF SHEET FLOWS AND LOW TO MODERATE LEVEL CHANNEL FLOWS.

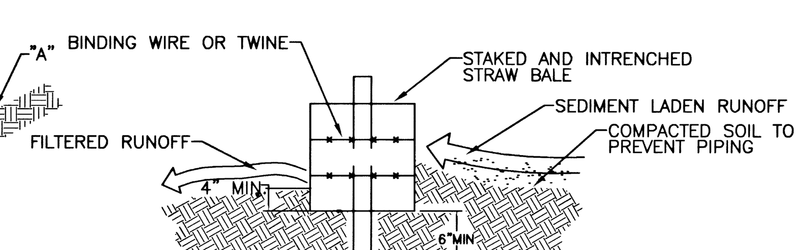
MAINTENANCE:

* CLOSE ATTENTION SHALL BE PAID TO THE REPAIR OF DAMAGED BALES, END RUNS, AND UNDERCUTTING BENEATH BALES.
* SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RUNOFF-PRODUCING RAINFALL. THEY MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY ONE-HALF THE HEIGHT OF THE BARRIER.



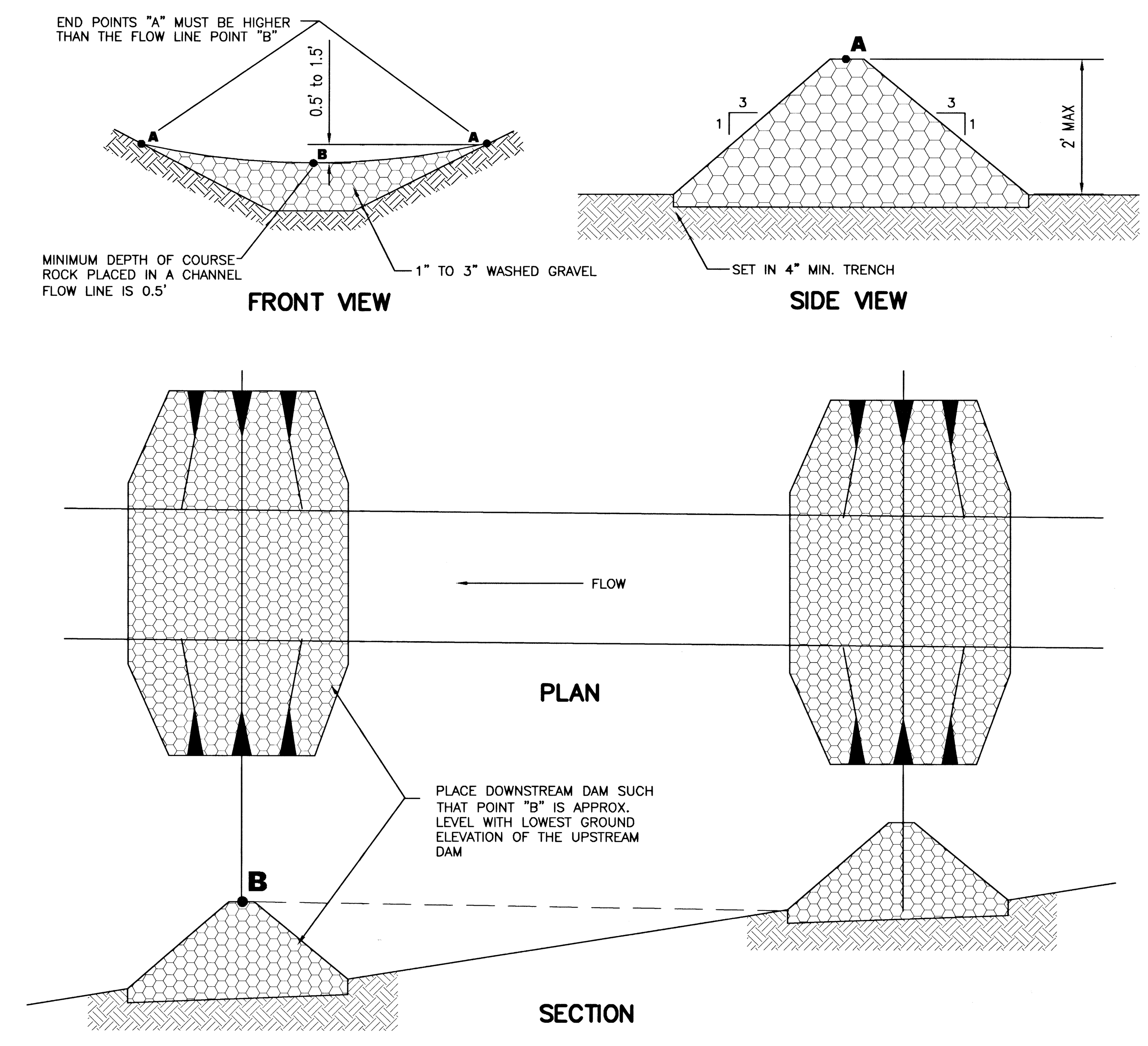
POINT "A" SHOULD BE HIGHER THAN POINT "B"

PROPER PLACEMENT OF STRAW BALE BARRIER IN DRAINAGE WAY



CROSS-SECTION OF A PROPERLY INSTALLED STRAW BALE

STRAW BALE DETAILS (6/14)



SMALL ROCK CHECK DAM (7/14)

MATTHEW RAYMOND FOLWELL — STATE OF WASHINGTON — 37871 — REGISTERED PROFESSIONAL ENGINEER
8/21/03
EXPIRES 7-05-04

DEVELOPER'S APPROVAL:
8/23/03
Johnny Humphreys

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1904
DATE ACCEPTED: 09-16-03
ACCEPTANCE EXPIRES: 09-16-05
PROJECT LANE MILES PUBLIC: -0-
PROJECT LANE MILES PRIVATE: 0.38
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PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

CALL BEFORE YOU DIG: 1-800-456-8000

BY	REVISIONS	DATE	PROJ.	FROM	AS BUILT	TO	ACCEPT
DPH	PER COUNTY COMMENTS 8/19/03	8/20/03					
DPH	PER COUNTY COMMENTS	3/26					

BENCH MARK DATUM	SCALE	DATE	STAFF
TBM B-2, RID #517	HORIZONTAL 50'	05/03	DRAWN DPH
ELEVATION 2023.36 NAVD88	VERTICAL N/A		CHECKED MF
LOCATION "x" ON FHY BOLT AT NORTHEAST CORNER OF SHORT PLAT			APPROVED

AC
ADAMS & CLARK, Inc.
1720 W. Fourth Ave.
Spokane, Washington 99204
(509) 747-4600 FAX (509) 747-8913

WHITETAIL RIDGE
CLUSTER DEVELOPMENT
EROSION CONTROL DETAILS
SPOKANE COUNTY, WASHINGTON

TYPE OF IMPROVEMENT: EROSION	
PROJECT NUMBER	PLAN NUMBER
2002-01-020	14

P-1904 Eng Roads Drainage

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