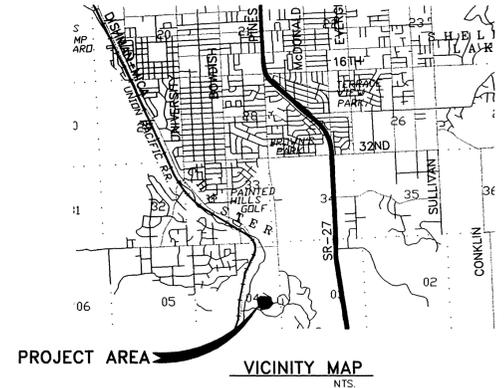


ROAD AND DRAINAGE IMPROVEMENTS
WHISPERING WINDS
 SECTION 3, TOWNSHIP 24 NORTH, RANGE 44
 EAST, W.M. SPOKANE COUNTY, WASHINGTON

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
 PROJECT # P1874
 DATE ACCEPTED: 4/13/05
 ACCEPTANCE EXPIRES: 4/13/08
 PROJECT LANE MILES PUBLIC: _____
 PROJECT LANE MILES PRIVATE: 2.17
 RECORD DRAWINGS, 1% QUALITY ARE REQUIRED PRIOR
 TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE
 RECORD AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
 NOTIFY PERMIT ENGINEER 3 BUSINESS DAYS
 PRIOR TO CONSTRUCTION



No.	DATE	BY

STORHAUG ENGINEERING
 CIVIL ENGINEERING AND PROJECT MANAGEMENT
 1522 NORTH MONROE SPOKANE, WA 99201
 PHONE 509-242-1000 FAX 509-242-1001

COVER AND INDEX SHEET
 ROAD AND DRAINAGE IMPROVEMENTS
 PROJECT TITLE
 WHISPERING WINDS
 SPOKANE COUNTY, WASHINGTON

SEAL
 CHAD HEIMBIGNER
 STATE OF WASHINGTON
 REGISTERED PROFESSIONAL ENGINEER
 4117105
 EXPIRES 10-03-06

DATE	04/05/05
DRAWN	RH
CHECKED	CM
SCALE	AS SHOWN
PROJECT NUMBER	02-073
DRAWING NO.	1 OF 7

COVER

SHEET INDEX

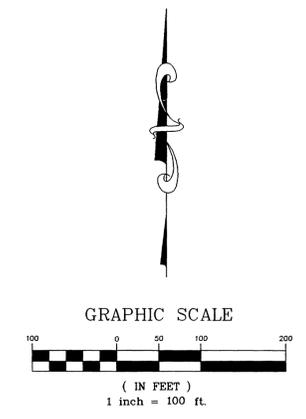
- SHEET 1 COVER AND INDEX SHEET
- SHEET 2 EROSION / SEDIMENT CONTROL PLAN
- SHEET 3 LOCHSA LANE - PLAN AND PROFILE STA. 1+00 TO 9+21.62
- SHEET 4 ACCESS & PRIVATE DRIVEWAY - PLAN AND PROFILE STA. 1+00 TO 1+99.60
 HAMMERHEAD TURNAROUND - PLAN AND PROFILE STA. 1+99.60 TO 5+45.44
- SHEET 5 DETAIL SHEET
- SHEET 6 DETAIL SHEET
- SHEET 7 DETAIL SHEET

CERTIFICATION

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. I APPROVE THESE PLANS FOR CONSTRUCTION.

Chad Heimbigner 4/12/05
 CHAD HEIMBIGNER DATE

Barbara 4/17/05
 DEVELOPER DATE



LEGEND

- EXISTING FEATURES**
- ASPHALT PAVEMENT
 - CURB
 - SIDEWALK
 - FOUND POINT AS NOTED
 - DRYWELL
 - GUY WIRE POLE
 - POWER POLE
 - TELEPHONE ENCLOSURE
 - WATER VALVE
 - WATER METER
 - FIRE HYDRANT
 - WELL
 - SANITARY SEWER MANHOLE
 - WATER LINE
 - SANITARY SEWER LINE
 - STORM DRAIN LINE / CULVERT
 - POWER LINE (OHP OR UGP)
 - TELEPHONE LINE (OHT OR UGT)
 - GAS LINE - UNDERGROUND
 - CONTOURS
 - FENCE - BARBED WIRE
 - FIBER OPTIC LINE
 - TREE - CONIFER
- PROPOSED IMPROVEMENTS**
- ASPHALT SURFACING
 - CURB
 - SIDEWALK
 - GRAVEL
 - DRYWELL
 - STORM MANHOLE
 - CONCRETE INLET
 - POWER POLE
 - WATER VALVE
 - FIRE HYDRANT
 - WATER SHUTOFF / WATER VAULT
 - SANITARY SEWER MANHOLE
 - CLEANOUT (CO)
 - WATER LINE (AS SIZED)
 - SLEEVE FOR WATER / SEWER CROSSING
 - SANITARY SEWER LINE (AS SIZED)
 - STORM DRAIN LINE / CULVERT
 - UTILITY TRENCHING
 - GAS LINE TRENCHING
 - CONTOURS
 - STORM WATER SWALE / POND
 - DIRECTION OF SURFACE STORM WATER DRAINAGE
 - 1924.50 TOP OF CURB ELEVATION
 - 1924.00 FLOWLINE ELEVATION
 - CURB INLET 1924.00 CURB INLET INLET ELEVATION AT FLOWLINE
 - 1924.00 FINISHED GRADE ELEVATION
 - 1924.00 TW TOP OF WALL ELEVATION
 - 1923.50 BW BOTTOM OF WALL ELEVATION



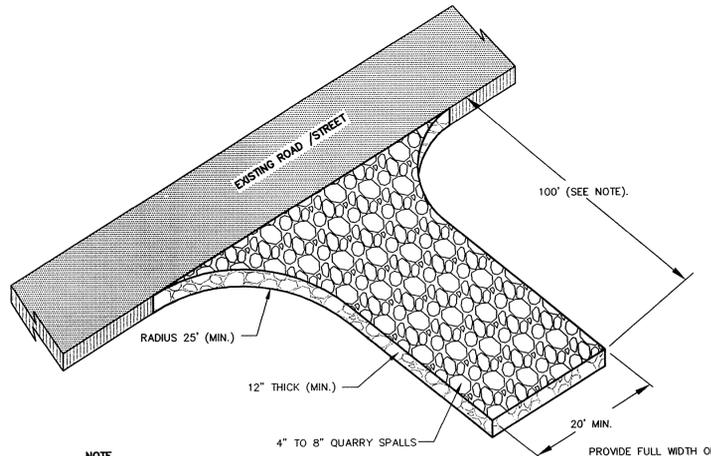
02073-02WG COVER-ST

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, ROCK, 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: WHEREVER 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 OR FLOW OF MUD, ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH 2-INCH STONES, 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.



NOTE: AS REQUIRED 100' MINIMUM, EXCEPT MAY BE REDUCED TO 50' MINIMUM FOR SITES WITH LESS THAN 1 ACRE OF EXPOSED SOIL.

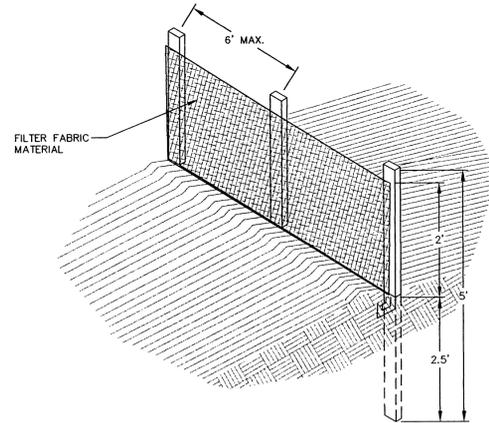
STABILIZED CONSTRUCTION ENTRANCE/TIRE WASH (CE) NTS

DEFINITION: A TEMPORARY SEDIMENT BARRIER CONSISTING OF A FILTER FABRIC STRETCHED ACROSS AND ATTACHED TO SUPPORTING POSTS AND ENTRENCHED. THE FILTER FABRIC 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.

CONDITIONS WHERE PRACTICE APPLIES: FILTER FENCES MUST BE PROVIDED JUST UPSTREAM OF THE POINT(S) OF DISCHARGE OF RUNOFF FROM A SITE, BEFORE THE FLOW BECOMES CONCENTRATED. THEY MAY ALSO BE REQUIRED:

1. BELOW DISTURBED AREAS WHERE RUNOFF MAY OCCUR IN THE FORM OF SHEET AND RILL EROSION; WHEREVER RUNOFF HAS THE POTENTIAL TO IMPACT DOWNSTREAM RESOURCES.
2. PERPENDICULAR TO MINOR SWALES OR DITCH LINES FROM CONTRIBUTING DRAINAGE AREAS UP TO ONE ACRE IN SIZE.
3. CONTRACTOR SHALL COORDINATE WITH DESIGN ENGINEER FOR ACTUAL PLACEMENT LOCATIONS.



FILTER FENCE (FF) NTS

STANDARD NOTES: A. THE FILTER FABRIC FENCE SHALL BE PURCHASED IN A CONTINUOUS ROLL CUT TO THE LENGTH OF THE BARRIER TO AVOID USE OF JOINTS. WHEN JOINTS ARE NECESSARY, OVERLAP FILTER CLOTH AND SECURELY FASTEN BOTH ENDS TO THE POST.

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

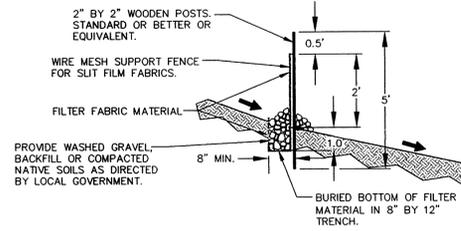
C. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER. THE TRENCH SHALL BE CONSTRUCTED TO FOLLOW THE CONTOURS.

D. WHEN SLIT FILM FILTER FABRIC IS USED, A WIRE MESH SUPPORT FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 1 INCH LONG, THE WIRES OR HOG RINGS. 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.

E. 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.

F. 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 POSTS WITH ALL OTHER PROVISIONS OF STANDARD NOTE "E" APPLYING. EXTRA CARE SHOULD BE USED WHEN JOINING OR OVERLAPPING THESE STIFFER FABRICS.

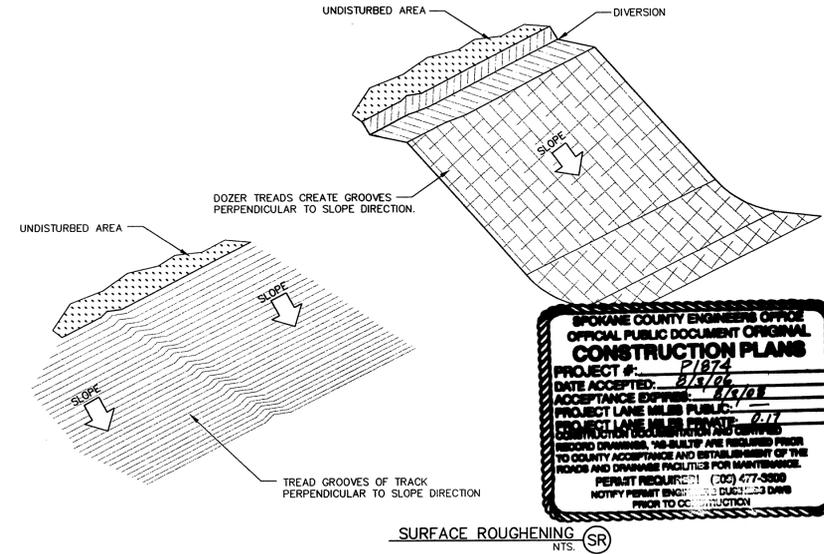
G. LOCAL GOVERNMENTS MAY SPECIFY THE USE OF PROPERLY COMPACTED NATIVE MATERIALS. IN MANY INSTANCES, THIS MAY BE THE PREFERRED ALTERNATIVE BECAUSE THE SOIL FORMS A MORE CONTINUOUS CONTACT WITH THE TRENCH BELOW.



DEFINITION: PROVISION OF A ROUGH SOIL SURFACE WITH HORIZONTAL DEPRESSIONS CREATED BY OPERATING A TILLER OR OTHER SUITABLE EQUIPMENT ON THE CONTOUR OR BY LEAVING SLOPES IN A ROUGHED CONDITION BY NOT FILE GRADING THEM.

PURPOSE: TO AID IN ESTABLISHMENT OF VEGETATIVE COVER, REDUCE RUNOFF VELOCITY, INCREASE INFILTRATION, AND PROVIDE FOR SEDIMENT TRAPPING.

CONDITIONS WHERE PRACTICE APPLIES: ALL SLOPES STEEPER THAN 3:1, AND GREATER THAN 5 VERTICAL FEET, REQUIRE SURFACE ROUGHENING, EITHER STAIR-STEP GRADING, GROOVING, FURROWING, OR TRACKING IF THEY ARE TO BE STABILIZED WITH VEGETATION.



SURFACE ROUGHENING (SR) NTS



PROPERTY OWNER/PERMIT APPLICANT/ CONTACT PERSON

BRETT SULLIVAN
3004 N. SULLIVAN RD. SUITE A
SPOKANE, WA 99216
(509) 624-4598

LEGAL DESCRIPTION/ADDRESS

LOT 31, BLOCK 1, PAINTED HILLS SIXTH ADDITION, VOLUME 17 OF PLATS, PAGE 36, SPOKANE COUNTY, WASHINGTON. SUBJECT SITE IS LOCATED NORTH OF ZUNI DRIVE AND WEST OF LOCHSA DRIVE.

PROJECT / SITE DESCRIPTION

THE PROPOSED PROJECT INCLUDES THE DEVELOPMENT OF A RESIDENTIAL SUBDIVISION LOCATED SOUTHWEST OF LOCHSA DRIVE. THE GROUND SURFACE AT THE PROJECT SITE SLOPES 10% TO 30% DOWN TO THE NORTHWEST.

THE MAJORITY OF THE SITE IS PONDEROSA PINE WITH SOME OPEN MEADOWS.

SOIL TYPE

THE SOILS IN THIS REGION OF THE SUBJECT PROPERTY HAVE BEEN IDENTIFIED AS PREDOMINANTLY THE SPOKANE SERIES. THE SPOKANE SERIES IS CLASSIFIED AS A TYPE "C" SOIL.

ESC MEASURES

FILTER FENCE SHALL BE USED TO AID IN CONTAINING ANY SEDIMENT ON THE SITE DURING CONSTRUCTION. STABILIZED CONSTRUCTION ENTRANCES SHALL BE USED AT POINTS OF INGRESS AND EGRESS FOR CONSTRUCTION VEHICLES. DRYWELL/INLET PROTECTION SHALL BE USED AT ALL STORMWATER PIPE INLETS OR DRYWELLS.

REFER TO PLAN VIEW ON THIS SHEET FOR APPROXIMATE LOCATION OF THE ABOVE ITEMS.

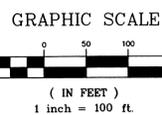
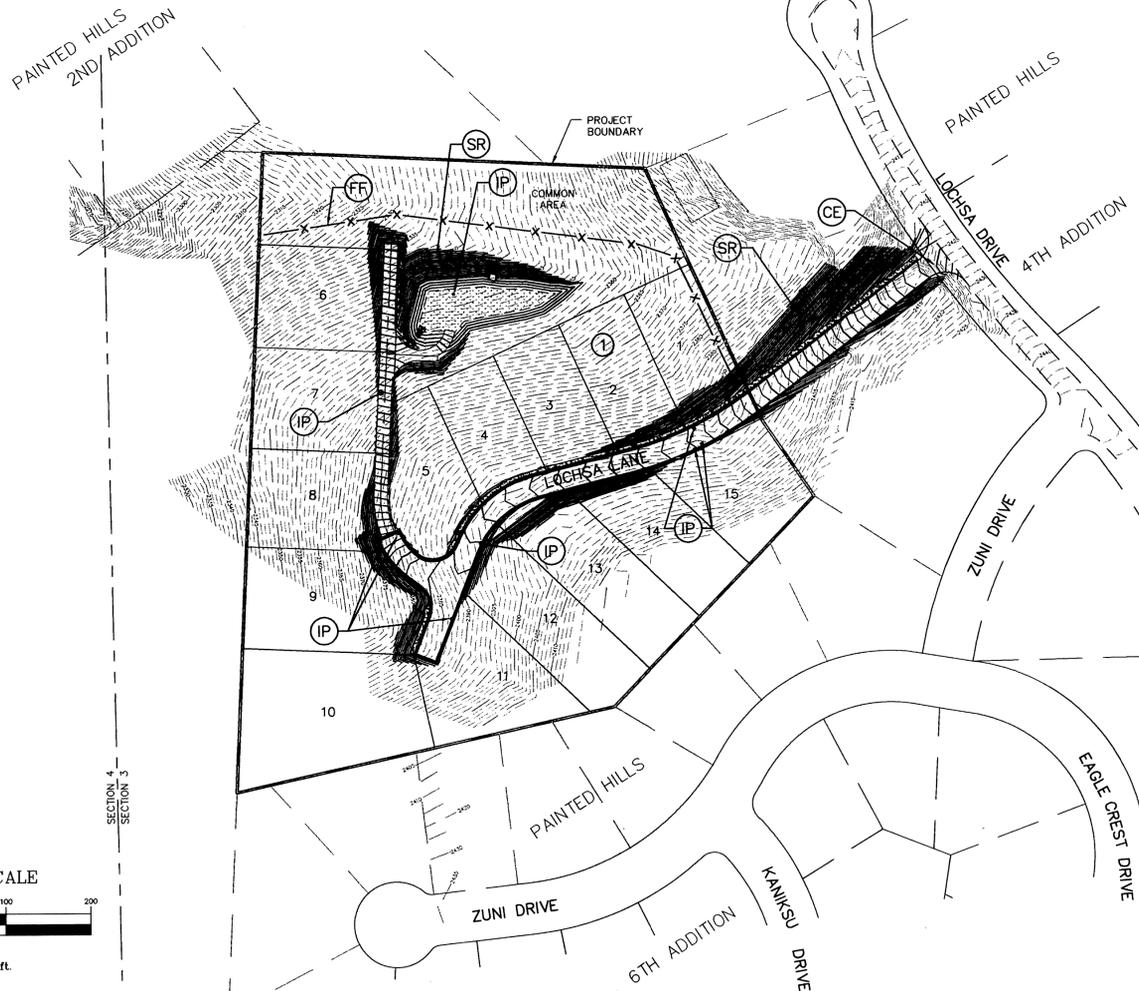
CERTIFICATION

THE EROSION AND SEDIMENT CONTROL PLAN MEETS THE REQUIREMENTS AS LISTED IN CHAPTER 4.5 OF THE GUIDELINES FOR STORMWATER MANAGEMENT. THIS ESC PLAN REPRESENTS A GUIDELINE FOR THE CONTRACTOR TO FOLLOW. THE CONTRACTOR SHALL BE RESPONSIBLE TO FOLLOW ALL SPOKANE COUNTY REQUIREMENTS FOR EROSION AND SEDIMENT CONTROL.

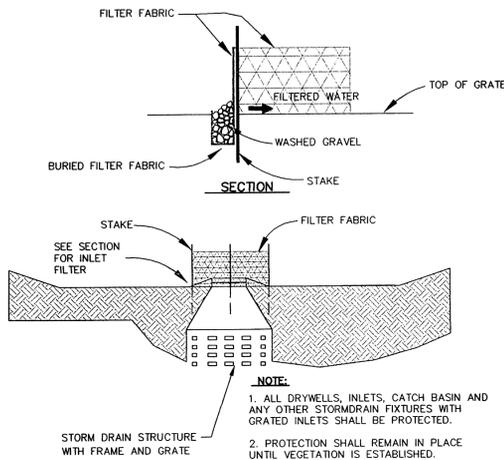
CHAD HEIMBIGNER 4/14/05
DATE

NOTE: REFER TO COVER AND INDEX SHEET FOR VICINITY MAP.

BRETT SULLIVAN 4/17/05
DEVELOPER DATE



TEMPORARY INLET PROTECTION (IP) NTS



NOTE:
1. ALL DRYWELLS, INLETS, CATCH BASIN AND ANY OTHER STORM DRAIN FIXTURES WITH GRATED INLETS SHALL BE PROTECTED.
2. PROTECTION SHALL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED.

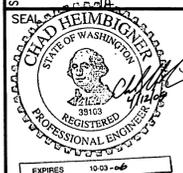
02073-1DWG EROSION



BENCHMARK
TBM: TOP OF 800 SPIKE, NORTH SIDE OF POWER POLE ON MOHAWK DRIVE
ELEVATION = 2225.77 (SPOKANE COUNTY)
ELEVATION = 2229.60 (NAVD 88)

STORHAUG ENGINEERING
CIVIL ENGINEERING AND PROJECT MANAGEMENT
1322 NORTH MONROE SPOKANE, WA 99201
PHONE 509-242-1000 FAX 509-242-1000

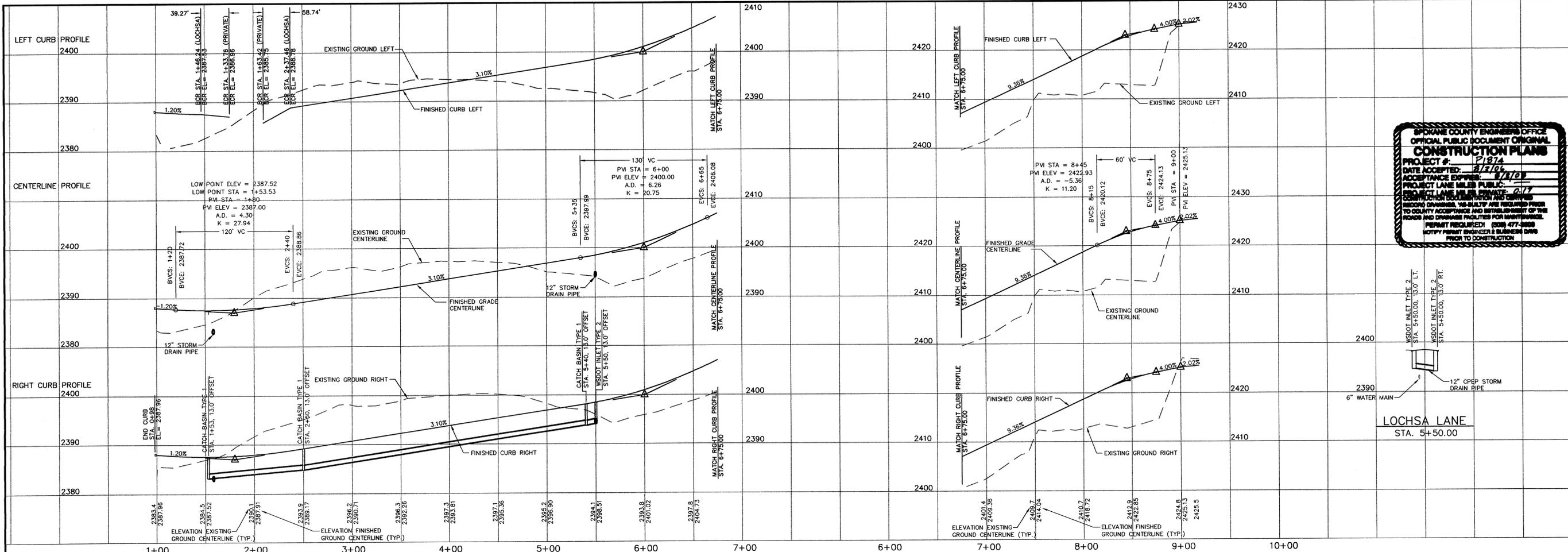
EROSION / SEDIMENT CONTROL PLAN
WHISPERING WINDS
SPOKANE COUNTY, WASHINGTON



DATE	04/05/05
DRAWN	RH
CHECKED	CM
SCALE	AS SHOWN
PROJECT NUMBER	02-073
DRAWING NO.	2 OF 7

CALL BEFORE YOU DIG 456-8000

P-1874 Eng Road Drainage



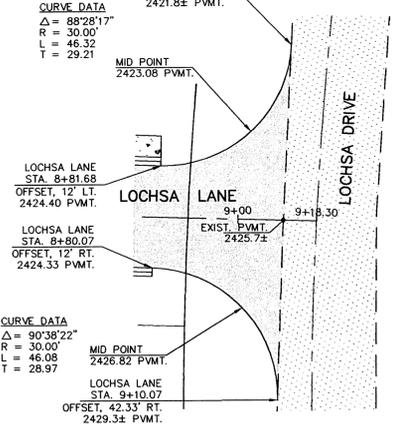
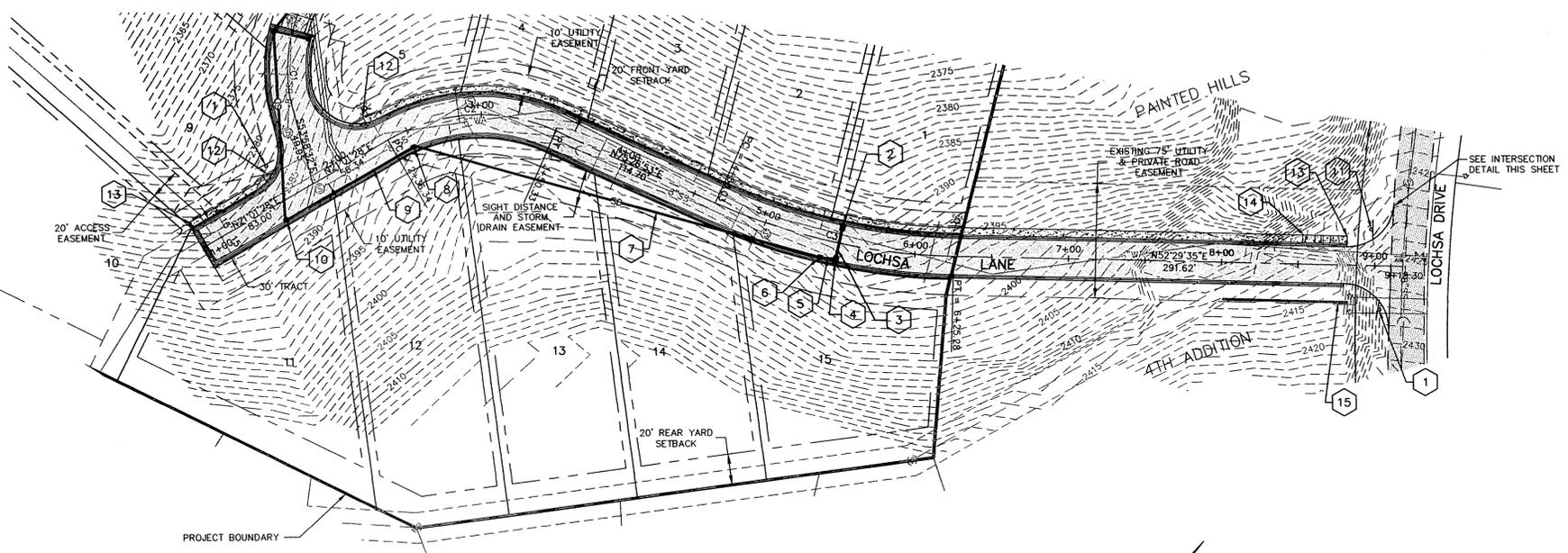
SPokane County Engineers Office
 OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
 PROJECT # 21874
 DATE ACCEPTED: 1/17/05
 ACCEPTANCE EXPIRES: 1/17/10
 PROJECT LANE MILES PUBLIC:
 PROJECT LANE MILES PRIVATE: 2.77
 CONTRACT DOCUMENTS, PERMITS AND CHANGES TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE FENCE AND DRAINAGE FACILITIES FOR MAINTENANCE. PERMIT REGULATORY (308) 477-8888. NOTIFY PERMIT ENGINEER & BUSINESS OPS PRIOR TO CONSTRUCTION.

No. DATE BY

STORHAUG ENGINEERING
 CIVIL ENGINEERING AND PROJECT MANAGEMENT
 1322 NORTH MONROE SPOKANE, WA 99201
 PHONE 509-242-1000 FAX 509-242-1001

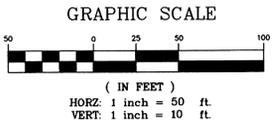
TABLE

1	STOP AND STREET SIGNS PER M.U.T.C.D. STANDARDS.	5	12" CPEP STORM DRAIN PIPE L = 10.0' S = 2.40%	10	CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 2 METAL FRAME, STD. B-11, AND TYPE 3 METAL GRATE, STD. B-14. STA. 1+53.00, 13.00' RT. GRATE EL = 2387.17 IE = 2383.22 (N) IE = 2383.12 (NW)
2	GRATE INLET TYPE 2 WSDOT STD. B-44. STA. 5+50.00, 13.00' LT. GRATE EL = 2398.16 IE = 2394.63 (S) SEE NOTE 7	6	CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 2 METAL FRAME, STD. B-11, AND TYPE 1 METAL GRATE, STD. B-12. STA. 5+40.00, 13.00' RT. GRATE EL = 2397.80 IE = 2393.84 (E) IE = 2393.74 (W)	11	"NO OUTLET" SIGN PER M.U.T.C.D. STANDARDS.
3	12" CPEP STORM DRAIN PIPE L = 19' S = 2.37%	7	12" CPEP STORM DRAIN PIPE L = 275' S = 3.23%	12	PEDESTRIAN RAMP. SEE DETAIL SHEET.
4	GRATE INLET TYPE 2 WSDOT STD. B-44. STA. 5+50.00, 13.00' RT. GRATE EL = 2398.16 IE = 2394.18 (N) IE = 2394.08 (W) SEE NOTE 7	8	CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 2 METAL FRAME, STD. B-11, AND TYPE 1 METAL GRATE, STD. B-12. STA. 2+50.00, 13.00' RT. GRATE EL = 2388.82 IE = 2384.87 (N) IE = 2384.77 (S)	13	FINISHED GROUND SURFACE SHALL BE FLUSH WITH THE END OF SIDEWALK.
		9	12" CPEP STORM DRAIN PIPE L = 96.0' S = 1.61%	14	ACCESSIBILITY RAMP FOR STREET CROSSING TO THE SOUTH EAST SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG). SEE NOTE 1 OF PEDESTRIAN RAMP DETAIL SHEET 7 OF 7.
				15	RETAINING WALL DESIGN BY OTHERS. RETAINING WALL HEIGHT SHALL NOT EXCEED 4'-0".



CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C1	52.65	100.00	30°38'48"	26.95
C2	113.98	120.00	54°25'25"	61.70
C3	160.26	400.00	22°57'18"	81.22



BENCHMARK
 TBM: TOP OF 800 SPIKE, NORTH SIDE OF POWER POLE ON MOHAWK DRIVE
 ELEVATION = 2225.77 (SPOKANE COUNTY)
 ELEVATION = 2229.60 (NAVD 88)

- NOTES**
- SEE CONSTRUCTION SPECIFICATIONS SHOWN ON DETAIL SHEET.
 - ALL CURB RETURNS ARE 30' RADIUS AT BACK OF CURB UNLESS OTHERWISE SHOWN.
 - ALL CURB AND OFFSET DATA IS REFERENCED TO BACK OF CURB, UNLESS OTHERWISE NOTED.
 - THE UNDERGROUND UTILITY LINES AND OFF-SITE UTILITIES LOCATION HAS BEEN EXTRACTED FROM RECORD UTILITY DRAWINGS AND FOUND SURFACE FEATURES. FIELD VERIFY EXACT LOCATIONS.
 - EXISTING OVERHEAD POWER, TELEPHONE AND OTHER UTILITIES WITHIN THE PROPOSED ROADWAY OF LOCHSA DRIVE SHALL BE RELOCATED AS NEEDED PRIOR TO CONSTRUCTION.
 - 1.0' (MIN.) OF COVER SHALL BE MAINTAINED OVER ALL STORM DRAIN PIPES.
 - THE W.S.D.O.T. TYPE II INLET SHALL BE PLACED SO THAT THE LONGER SIDE OF THE STRUCTURE IS PERPENDICULAR TO THE CURB. THE SHORTER SIDE SHALL ABUT THE FACE OF THE CURB.
 - INLETS AND CATCH BASINS WITH TYPE 2 METAL FRAMES SHALL HAVE A FULL TYPE B CURB AND GUTTER SECTION 5' ON EACH SIDE OF THE INLET OR CATCH BASIN. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION FROM TYPE R TO TYPE B CURB PRIOR TO 5' ON EACH SIDE OF THE INLET OR CATCH BASIN.

LOCHSA LANE - PLAN & PROFILE
 1+00 TO 9+21.62

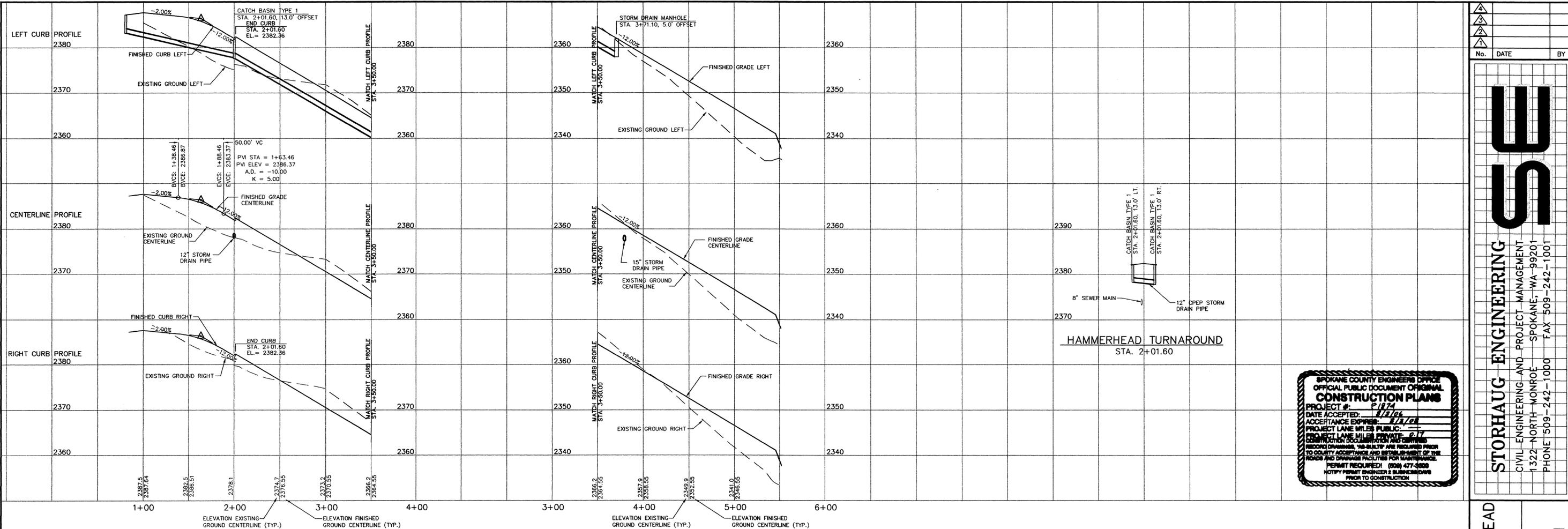
PROJECT TITLE
 WHISPERING WINDS
 SPOKANE COUNTY, WASHINGTON

DATE 04/05/05
 DRAWN RH
 CHECKED CM
 SCALE AS SHOWN
 PROJECT NUMBER 02-073
 DRAWING NO. 3 OF 7
 STREET

02073-4DWG STREET-1

CALL BEFORE YOU DIG 456-8000

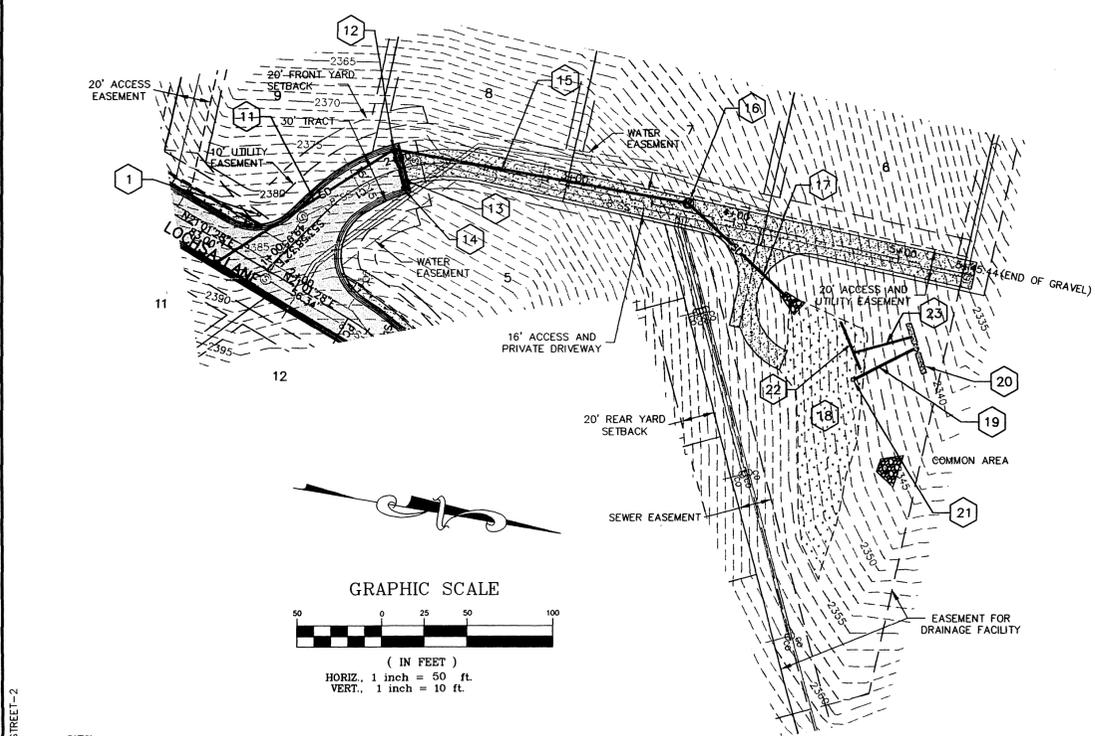
P-1874 Eng Road Drainage



W
S

STORHAUG ENGINEERING
CIVIL ENGINEERING AND PROJECT MANAGEMENT
1322 NORTH MONROE SPOKANE, WA 99201
PHONE 509-242-1000 FAX 509-242-1001

SPOKANE COUNTY ENGINEERING DEPT.
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT # 21874
DATE ACCEPTED: 4/1/05
ACCEPTANCE EXPIRES: 4/1/10
PROJECT LANE MILES PUBLIC: 2.17
CONSTRUCTION DOCUMENTS AND PERMITS
BEYOND DRAINAGE, NO-SPLIT ARE RELEASED PRIOR
TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE
ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-4000
NOTIFY PERMIT ENGINEER & SUPERVISOR
PRIOR TO CONSTRUCTION



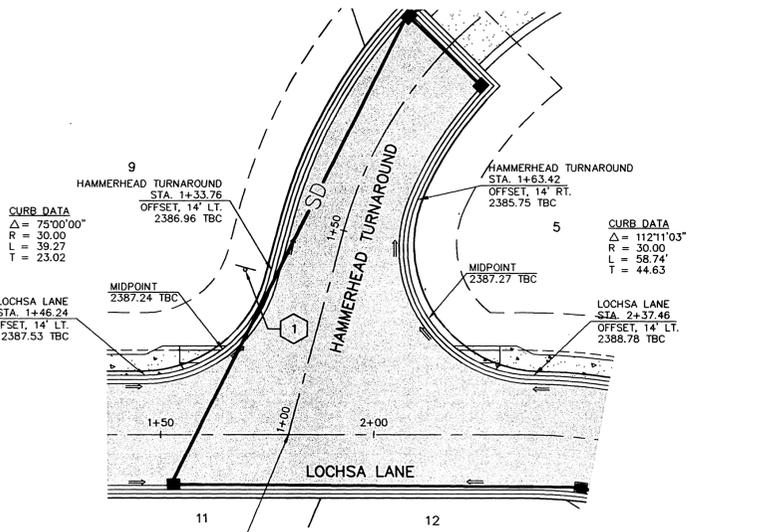
TABLE

1	STOP AND STREET SIGNS PER M.U.T.C.D. STANDARDS.	16	MANHOLE TYPE III-48 SPOKANE COUNTY STD. U-5 W/ TYPE 4 FRAME AND SOLID LID. STA. 3+71.10, 5.0' LT. GRATE EL.= 2361.92 L= 121.0' S= 4.43% IE.= 2357.97 (S) IE.= 2357.77 (N)	21	CONCRETE INLET TYPE 1 SPOKANE COUNTY STANDARD B-5 WITH WSDOT STD. B-2a FRAME AND GRATE. GRATE EL.= 2352.50 IE.= 2349.00 (N)
11	12" CPEP STORM DRAIN PIPE L= 121.0' S= 4.43%	17	15" CPEP STORM DRAIN PIPE L= 78.2' S= 4.82% IE.= 2354.00 (OUT) SEE RIPRAP TABLE ON DETAIL SHEET.	22	12" PERFORATED CPEP STORM DRAIN PIPE. L= 30.0' S= 0.0% I.E.= 2347.75 TO BE CONSTRUCTED INSIDE DRAIN ROCK LAYER UNDER POND BOTTOM.
12	CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 2 METAL FRAME, STD. B-11, AND TYPE 1 METAL GRATE, STD. B-12. STA. 2+01.60, 13.00' LT. GRATE EL.= 2381.76 IE.= 2377.76 (S,E) IE.= 2377.66 (N)	18	208 SWALE "A" TOP OF BERM EL.= 2356.0 BOTTOM ELEV.= 2352.00 BOTTOM AREA= 4998 SF. DEPTH= 4.0' MAX WATER SURFACE EL.= 2354.97 (50-YEAR) SIDE SLOPES= 3:1 FOR ADDITIONAL CONSTRUCTION SPECIFICATIONS AND INFORMATION REFER TO DETAIL SHEET.	23	12" PVC STORM DRAIN PIPE TO INFILTRATOR GALLERY. L= 35.0' S= 18.80%
13	12" CPEP STORM DRAIN PIPE L= 19.0' S= 2.63%	19	12" PVC STORM DRAIN PIPE TO INFILTRATOR GALLERY L= 39.44' S= 19.85%		
14	CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 2 METAL FRAME, STD. B-11, AND TYPE 1 METAL GRATE, STD. B-12. STA. 2+01.60, 13.00' RT. GRATE EL.= 2381.76 IE.= 2378.26 (W)	20	STORMTECH SC-310 INFILTRATION CHAMBER OR EQUIVALENT. SEE DETAIL SHEETS. L= 31.0' W= 2.83' IE.= 2341.17 (IN) BOTTOM= 2341.00		
15	12" CPEP STORM DRAIN PIPE L= 171.6' S= 11.47%				

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	TANGENT
C1	52.65	100.00	30°09'48"	26.95

- NOTES**
- SEE CONSTRUCTION SPECIFICATIONS SHOWN ON DETAIL SHEET.
 - ALL CURB RETURNS ARE 30' RADIUS AT BACK OF CURB UNLESS OTHERWISE SHOWN.
 - ALL CURB AND OFFSET DATA IS REFERENCED TO BACK OF CURB, UNLESS OTHERWISE NOTED.
 - THE UNDERGROUND UTILITY LINES AND OFF-SITE UTILITIES LOCATION HAS BEEN EXTRACTED FROM RECORD UTILITY DRAWINGS AND FOUND SURFACE FEATURES. FIELD VERIFY EXACT LOCATIONS.
 - EXISTING OVERHEAD POWER, TELEPHONE AND OTHER UTILITIES WITHIN THE PROPOSED ROADWAY OF LOCHSA DRIVE SHALL BE RELOCATED AS NEEDED PRIOR TO CONSTRUCTION.
 - 1.0' (MIN.) OF COVER SHALL BE MAINTAINED OVER ALL STORM DRAIN PIPES.
 - INLETS AND CATCH BASIN WITH TYPE 2 METAL FRAMES SHALL HAVE A FULL TYPE B CURB AND GUTTER SECTION 5' ON EACH SIDE OF THE INLET OR CATCH BASIN. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION FROM TYPE R TO TYPE B CURB PRIOR TO 5' ON EACH SIDE OF THE INLET OR CATCH BASIN.



INTERSECTION DETAIL
SCALE: 1"=20'

SI: STA. 1+80.00 (LOCHSA) =
STA. 1+00.00 (HAMMERHEAD TURNAROUND)

DEVELOPER: [Signature]
DATE: 4/1/05

02073-40WS STREET-2

BENCHMARK
TBM: TOP OF 800 SPIKE, NORTH SIDE OF POWER POLE ON MOHAWK DRIVE
ELEVATION = 2225.77 (SPOKANE COUNTY)
ELEVATION = 2229.60 (NAVD 88)

ACCESS & PRIVATE DR., HAMMERHEAD TURNAROUND PLAN & PROFILE

PROJECT TITLE: WHISPERING WINDS
SPOKANE COUNTY, WASHINGTON

SHEET TITLE: [Blank]

DATE: 04/05/05
DRAWN: RH
CHECKED: CM
SCALE: AS SHOWN
PROJECT NUMBER: 02-073
DRAWING NO.: 4 OF 7

STREET: [Blank]

SEAL: [Professional Engineer Seal]

EXPRES: 10-03-10

CALL BEFORE YOU DIG 456-8000

P 1874 Eng And Drainage

- 1) All work and materials shall be in conformance with the "SPOKANE COUNTY STANDARDS FOR ROAD AND SEWER CONSTRUCTION" 1999, and as amending.
 - 2) Locations of existing utilities shown in the plans are approximate. Prior to site construction, the Contractor shall be responsible for locating all underground and overhead utilities. Any conflicting utilities shall be relocated prior to construction of road and drainage facilities. Call the underground utility location service at 456-8000 before you dig.
 - 3) The Contractor is required to have a complete set of the approved road and drainage plans on the job site whenever construction is in progress.
 - 4) If the Contractor discovers any discrepancies between the plans and existing conditions encountered, the Contractor shall immediately notify the Design Engineer.
 - 5) For construction of drywells, install filter fabric (Amoco 4545 or approved equivalent) between the washed drain rock and the native soils.
 - 6) 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.
 - 7) 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.
 - 8) The contractor shall review all geotechnical recommendations and investigation reports associated with the subject development prior to starting construction. Any discrepancies between design plans and geotechnical report shall be reported to the Design Engineer. Construction shall comply with recommendations of the geotechnical reports.
 - 9) The contractor shall demolish and remove existing structures and associated improvements on the subject site prior to starting construction. Contractor shall coordinate demolition activities with owner for further direction and extent of work.
 - 10) Storm water management ponds and disturbed areas shall be seeded per seeding specifications.
 - 11) Irrigation system for storm water management ponds shall be provided by Contractor/Developer. Irrigation system shall be design/build.
- 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 or 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 is to be placed on the rims of drywells, catch basins and inlets until such time the vegetation on the site is established and the threat of sediment deposition into the drainage system is mitigated.

CONSTRUCTION SPECIFICATIONS

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 percentages as follows:

- 20 percent Elka Perennial Rye
- 20 percent Durar Hard Fescue
- 45 percent Covar Sheep /Fescue
- 15 percent reubens Canadian Bluegrass

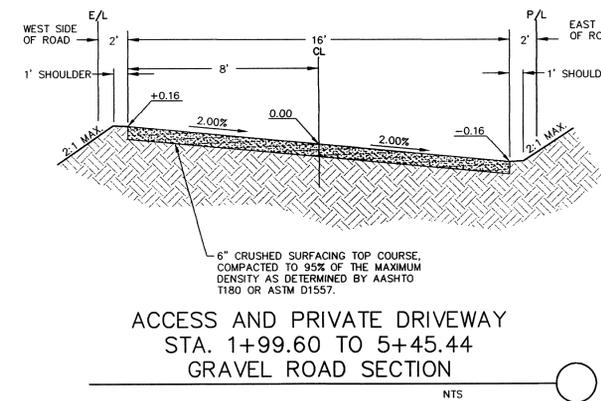
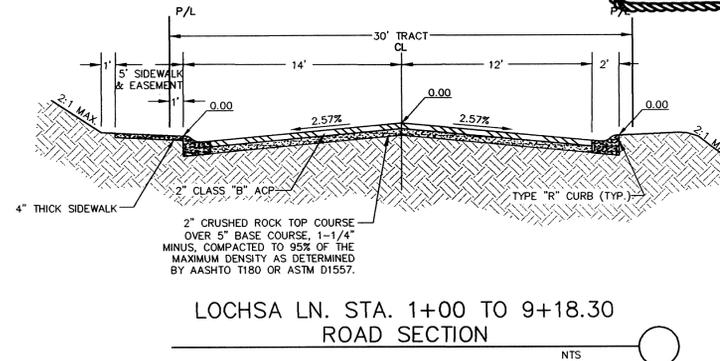
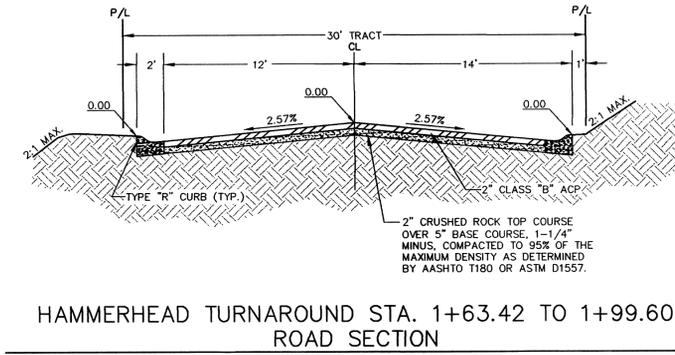
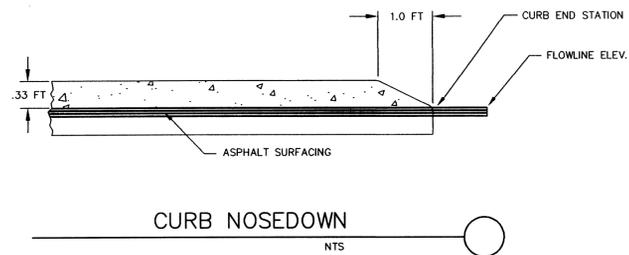
Provide mixture composed of grass seed and fertilizer in percentages as follows:

Grass seed mixture: 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 WSDOT Standard Specifications.

Contractor shall irrigate seeded areas until seed has germinated and has been accepted by Spokane County.

SEEDING SPECIFICATIONS



TYPE "R" - ROLLED CURB DETAIL

- 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 9-25 OF THE SPOKANE COUNTY STANDARD SPECIFICATIONS.
 5. CURBS SHALL HAVE A LIGHT BROOMED FINISH. GUTTERS SHALL BE FINISHED WITH A STEEL TROWEL.

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS

PROJECT #: P1874
DATE ACCEPTED: 2/2/05
ACCEPTANCE EXPIRES: 2/2/08
PROJECT LANE MILES PUBLIC: 0.17
PROJECT LANE MILES PRIVATE: 0.17
CONSTRUCTION DOCUMENTATION AUTHORIZED

RECORD DRAWINGS, AS-BUILT ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3000
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION!

STORHAUG ENGINEERING
CIVIL ENGINEERING AND PROJECT MANAGEMENT
1322 NORTH MONROE SPOKANE, WA 99201
PHONE: 509-242-1000 FAX: 509-242-1001

DETAIL SHEET
PROJECT TITLE: WHISPERING WINDS
SPOKANE COUNTY, WASHINGTON

SEAL: CHAD HELMSTADT, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER, EXPIRES 10-31-06

DATE	04/05/05
DRAWN	RH
CHECKED	CM
SCALE	AS SHOWN
PROJECT NUMBER	02-073
DRAWING NO.	5 OF 7
DETAIL	

DEVELOPER: [Signature] DATE: 4/17/05

CALL BEFORE YOU DIG 456-8000

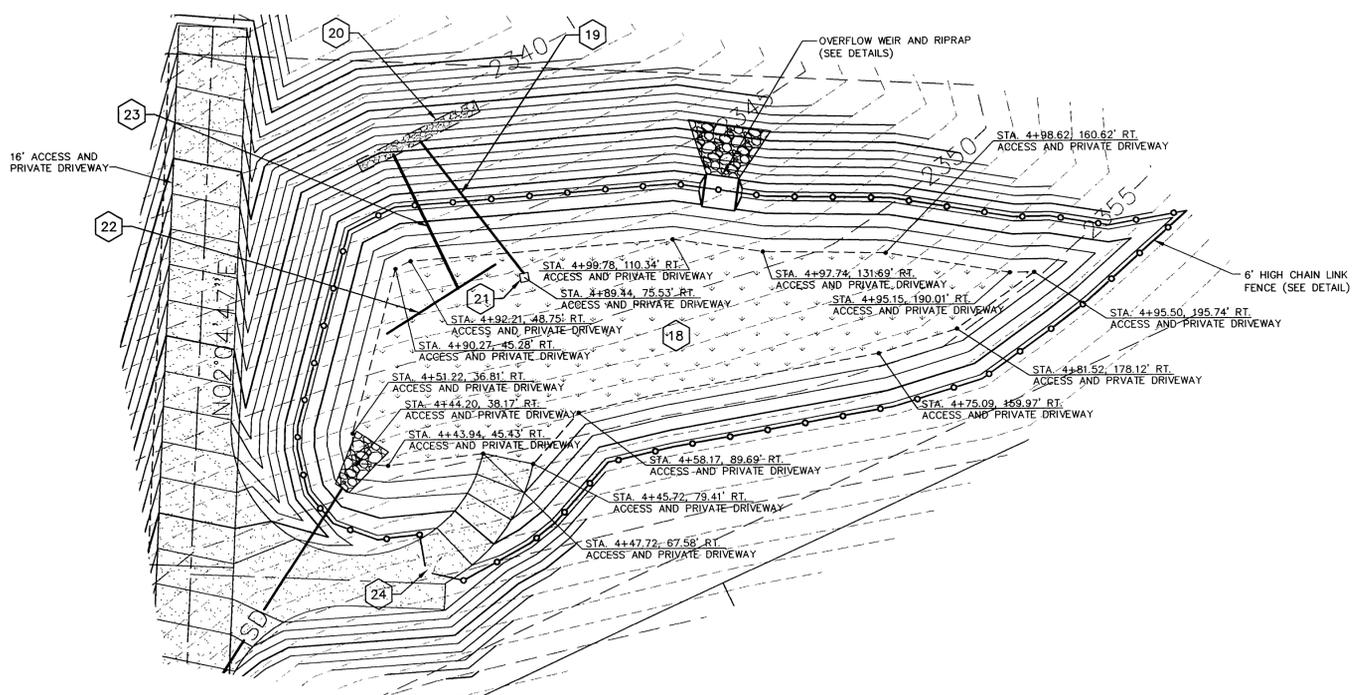
P-1874 England Drainage

02073-40WG DETAIL ST-1

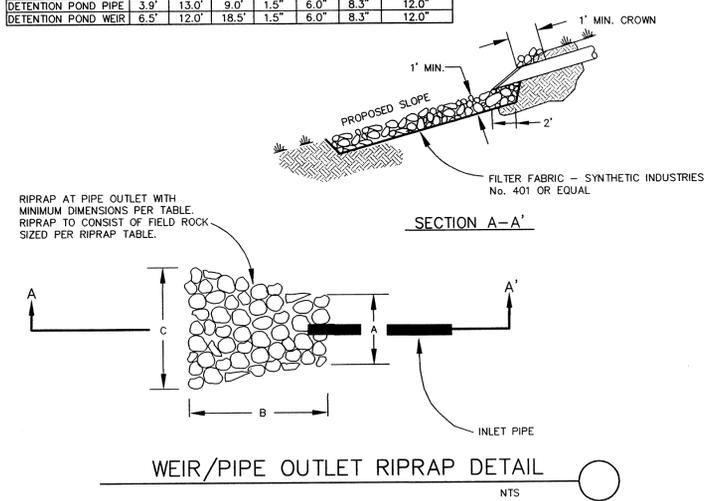
NO.	DATE	BY

W S

STORHAUG ENGINEERING
 CIVIL ENGINEERING AND PROJECT MANAGEMENT
 1322 NORTH MONROE SPOKANE, WA 99201
 PHONE: 509-242-1000 FAX: 509-242-1001

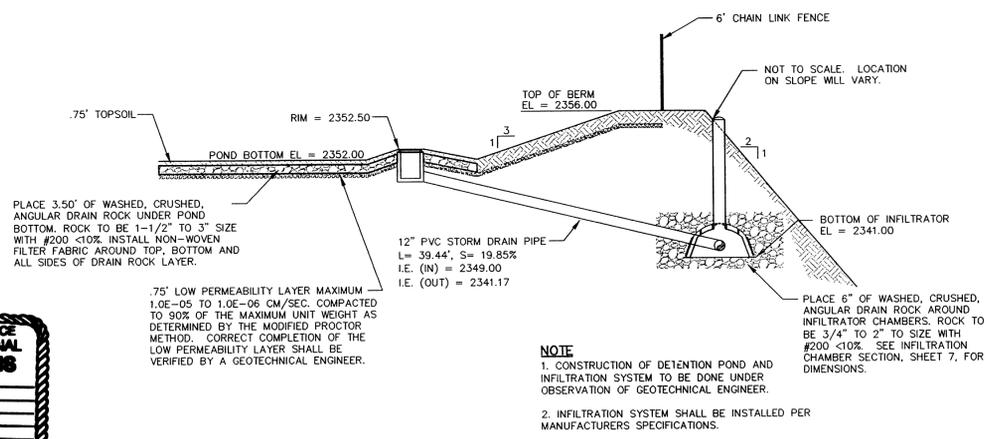


LOCATION	A	B	C	MIN.	AVG.	MAX.	THICKNESS
DETENTION POND PIPE	3.9'	13.0'	9.0'	1.5"	6.0"	8.3"	12.0"
DETENTION POND WEIR	6.5'	12.0'	18.5'	1.5"	6.0"	8.3"	12.0"

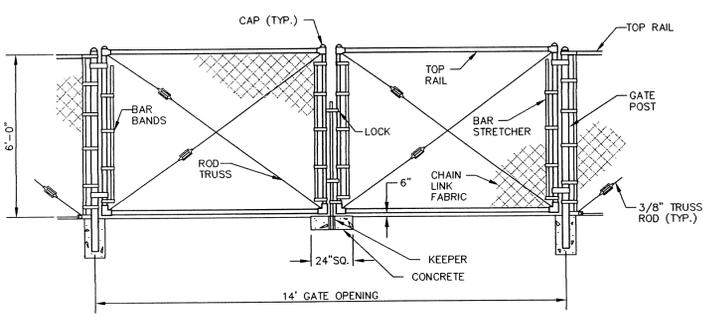


- TABLE**
- 18 208 SWALE "A"
TOP OF BERM EL = 2356.00
BOTTOM EL = 2332.00
BOTTOM AREA = 4,998 SF.
DEPTH = 4.0'
MAX. WATER SURFACE EL = 2354.97 (50-YEAR)
SIDE SLOPES = 3:1
FOR SEEDING SPECIFICATIONS SEE DETAIL SHEET 5 OF 6.
INCLUDE DRAIN ROCK LAYER AND LOW PERMEABILITY LAYER. SEE POND DETAIL THIS SHEET.
 - 19 12" PVC STORM DRAIN PIPE TO INFILTRATOR GALLERY
L = 39.44'
S = 19.85%
 - 20 STORMTECH SC-310 INFILTRATOR CHAMBER OR EQUIVALENT. SEE DETAIL SHEETS.
L = 31.0'
W = 2.83'
IE = 2341.17 (IN)
BOTTOM = 2341.00
 - 21 CONCRETE INLET TYPE 1 SPOKANE COUNTY STANDARD B-5 WITH WSDOT STD. B-26 FRAME AND GRATE.
GRATE EL = 2352.50
IE = 2349.00 (N)
 - 22 12" PERFORATED CPEP STORM DRAIN PIPE.
L = 30.0'
S = 0.0%
IE = 2347.75
TO BE CONSTRUCTED INSIDE DRAIN ROCK LAYER UNDER POND BOTTOM.
 - 23 12" PVC STORM DRAIN PIPE TO INFILTRATOR GALLERY.
L = 35.0'
S = 18.80%
 - 24 CHAIN LINK FENCE GATE (SEE DETAIL)

DETENTION POND
1" = 20'



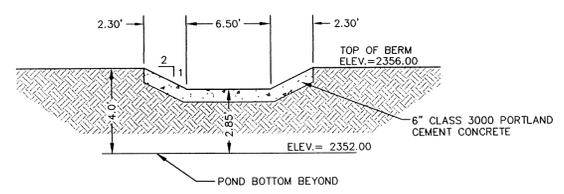
DETENTION POND / INLET TO INFILTRATION DETAIL
NTS



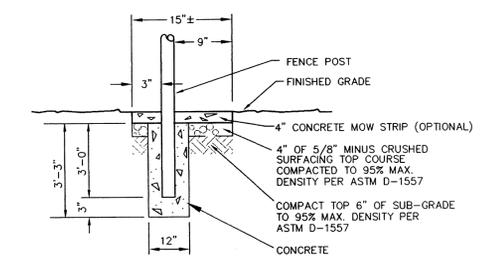
- NOTES:**
- SEE W.S.D.O.T. STANDARD PLAN L-2 FOR MEMBER SIZE.
 - GATES SHALL HAVE 6" CLEARANCE ABOVE PAVEMENT OR GROUND.
 - CHAIN LINK FENCE TO BE CONSTRUCTED PER W.S.D.O.T. SPECIFICATIONS TYPE 3.

DOUBLE SWING GATE
NTS

SPOKANE COUNTY ENGINEERS OFFICE
 OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
 PROJECT #: P1874
 DATE ACCEPTED: 8/3/06
 ACCEPTANCE EXPIRES: 8/3/08
 PROJECT LAINE MILES PUBLIC: 0.17
 PROJECT LAINE MILES PRIVATE: 0.17
 CONSTRUCTION DOCUMENTATION AND CERTIFIED TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE POND AND DRAINAGE FACILITIES FOR MAINTENANCE.
 PERMIT REQUIRED! (509) 477-3800
 NOTIFY PERMIT ENGINEER 8 BUSINESS DAYS PRIOR TO CONSTRUCTION.



OVERFLOW WEIR SECTION
NTS



TYP. FENCE POST PLACEMENT & MOW STRIP
NTS

DEVELOPER: [Signature]
 DATE: 4/17/05

DETAIL SHEET

PROJECT TITLE: WHISPERING WINDS SPOKANE COUNTY, WASHINGTON

SHEET TITLE: DETENTION POND / INLET TO INFILTRATION DETAIL

DATE: 04/05/05
 DRAWN: RH
 CHECKED: CM
 SCALE: AS SHOWN
 PROJECT NUMBER: 02-073
 DRAWING NO.: 6 OF 7
 DETAIL

CALL BEFORE YOU DIG 456-8000

P. 1874 Eng'g Drainage

02073-00WS DETAIL ST-2

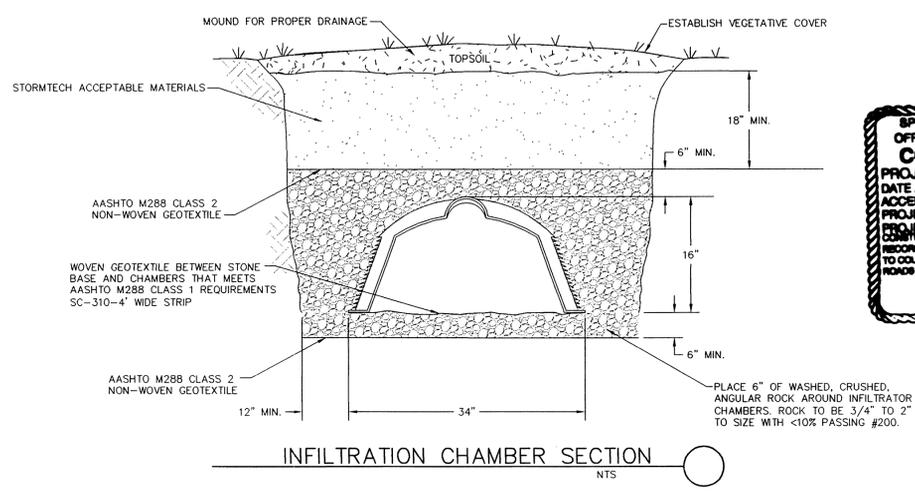
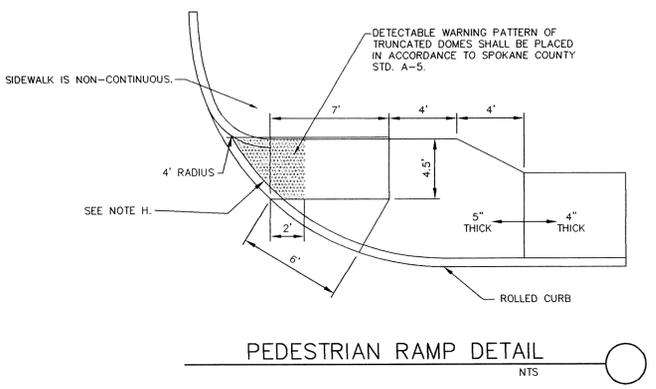
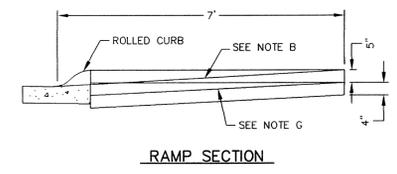
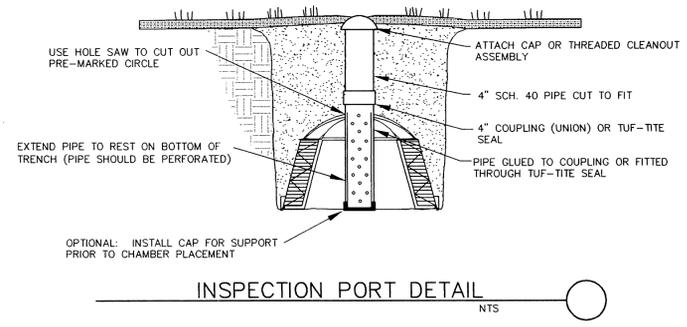
1		
2		
3		
No.	DATE	BY

WES

STORHAUG ENGINEERING
 CIVIL ENGINEERING AND PROJECT MANAGEMENT
 1322 NORTH MONROE SPOKANE, WA 99201
 PHONE 509-242-1000 FAX 509-242-1001

NOTES:

- A. THIS TYPE OF RAMP TO BE USED WHERE:
 - 1) THE SIDEWALK IS NOT REQUIRED TO CONTINUE AROUND THE RADIUS
 - 2) A SECOND RAMP IS NOT REQUIRED TO MOVE PEDESTRIANS ACROSS THE PRIMARY STREET.
- B. ALL RAMP SURFACES SHALL NOT BE STEEPER THAN A 12:1 SLOPE TO CONFORM TO ADA REQUIREMENTS. SIDEWALK AND PEDESTRIAN RAMP SHALL CONFORM WITH ALL ADA REQUIREMENTS AND STANDARDS.
- C. THIS TYPE OF CORNER MUST HAVE A SINGLE RAMP TURNED PARALLEL TO THE PRIMARY STREET.
- D. CORNER RADIUS IS 15' AS A MINIMUM. THE OWNER MAY REQUIRE LARGER RADIUS SIZES WHERE LARGER VEHICLE TURNING IS EXPECTED.
- E. THE RAMP THROAT WIDTH MUST BE 3 FEET MEASURED PERPENDICULAR TO THE 7 FOOT THROAT SIDE. THE RAMP THROAT DEPTH MUST BE 7 FEET MEASURED FROM THE FACE OF THE CURB TO THE BACK OF THE APPROACH. THE 7 FOOT SIDE OF THE RAMP THROAT MUST BE PARALLEL WITH THE EXPECTED PATH OF THE PEDESTRIAN AND NOT PERPENDICULAR TO THE CURB FOR EXAMPLE: PARALLEL WITH THE CROSS WALK STRIPES, THE STOP BAR, OR THE PRIMARY STREET CURB.
- F. ALL RAMP MUST HAVE A MINIMUM 4 FOOT X 3 FOOT LANDING BEHIND THEM FOR PEDESTRIANS.
- G. ALL CONCRETE ADJOINING THE RADIUS WITHIN AND AROUND THE RAMP SHALL BE 5 INCHES THICK WITH 4 INCHES OF 3/4 INCH AGGREGATE BASE.
- H. THE RAMP WING MUST BE 6 FEET MEASURED AT THE CURB FACE. THE WING AWAY FROM THE ROAD IS ELIMINATED AND REPLACED WITH A WING SUBSTITUTE THAT IS 4 INCHES HIGH AT THE FACE OF THE CURB AND 0 INCHES HIGH AT THE BACK OF THE RAMP AND POURED MONOLITHICALLY WITH THE RAMP.
- I. DETECTABLE WARNINGS SHALL CONSIST OF RAISED TRUNCATED DOMES WITH A DIAMETER OF NOMINAL 0.9 IN.(23MM), A HEIGHT OF NOMINAL 0.2 IN.(5MM) AND A CENTER TO CENTER SPACING OF NOMINAL 2.35 IN.(60MM) AND SHALL CONTRAST VISUALLY WITH ADJOINING SURFACES, EITHER LIGHT-ON-DARK, OR DARK-ON-LIGHT. THE MATERIAL USED TO PROVIDE CONTRAST SHALL BE AN INTEGRAL PART OF THE WALKING SURFACE. DETECTABLE WARNINGS USED ON INTERIOR SURFACES SHALL DIFFER FROM ADJOINING WALKING SURFACES IN RESILIENCY OR SOUND-ON-CANE CONTACT.



SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
 PROJECT #: P-1874
 DATE ACCEPTED: 8/12/04
 ACCEPTANCE EXPIRES: 1/15/08
 PROJECT TYPE: PUBLIC
 PROJECT NAME: PRIVATE
 REGISTERED PROFESSIONAL ENGINEER
 RECORD DRAWINGS: THE SUBJECT ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE RECORDS AND DRAINAGE FACILITIES MAINTENANCE.
 PLANT REQUIRED: 10/10/00
 NOTED: 10/10/00
 FOR TO: 10/10/00

DETAIL SHEET

WHISPERING WINDS
 SPOKANE COUNTY, WASHINGTON



DATE	04/05/05
DRAWN	RH
CHECKED	CM
SCALE	AS SHOWN
PROJECT NUMBER	02-073
DRAWING NO.	7 OF 7
DETAIL	

[Signature] 4/17/05
 DEVELOPER DATE