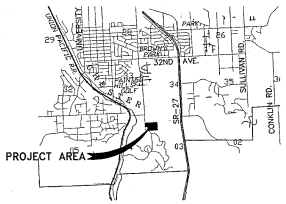
ROAD AND DRAINAGE IMPROVEMENTS

ALDERWOOD

IN THE NORTHWEST 1/4,
SECTION 3, TOWNSHIP 24 NORTH, RANGE 44 EAST, W.M.
SPOKANE COUNTY, WASHINGTON



VICINITY MAP
NTS.

SHEET INDEX

SHEET 1	COVER AND INDEX SHEET ROAD AND DRAINAGE IMPROVEMENTS
SHEET 2	EROSION / SEDIMENT CONTROL PLAN
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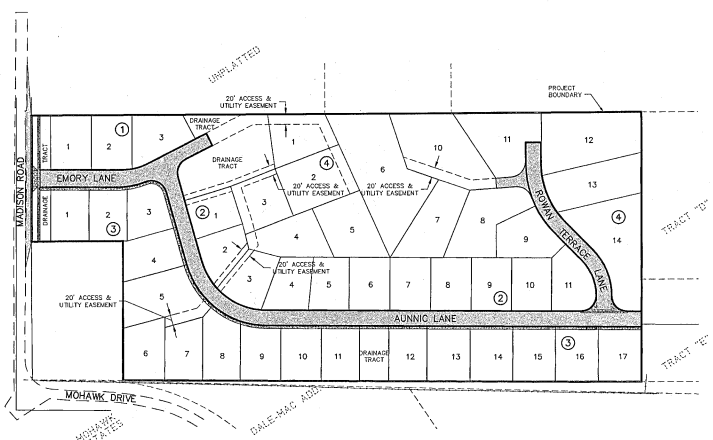
LEGEND

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
- WA — WATER LINE
- SS — SANITARY SEWER LINE
- SD — STORM DRAIN LINE / CULVERT
- OHP — POWER LINE (OHP OR UGP)
- OHT — TELEPHONE LINE (OHT OR UGT)
- GA — GAS LINE – UNDERGROUND
- 1924 — CONTOURS
- X — FENCE – BARBED WIRE
- FO — FIBER OPTIC LINE
- TREE – CONIFER

PROPOSED IMPROVEMENTS

- ASPHALT SURFACING – SEE DESIGN PLANS FOR SPECIFICATIONS
- CURB – SEE DESIGN PLANS FOR TYPE
- SIDEWALK – SEE DESIGN PLANS FOR SPECIFICATIONS
- DRYWELL – SEE DESIGN PLANS FOR SPECIFICATIONS
- STORM MANHOLE – SEE DESIGN PLANS FOR SPECIFICATIONS
- CONCRETE INLET
- POWER POLE
- WATER VALVE
- FIRE HYDRANT
- WATER SHUTOFF / WATER VAULT
- SANITARY SEWER MANHOLE
- CO — CLEANOUT (CO)
- 8"WA — WATER LINE (AS SIZED)
- SLEEVE FOR WATER / SEWER CROSSING
- 8"SS — SANITARY SEWER LINE (AS SIZED)
- SD — STORM DRAIN LINE / CULVERT
- UTILITY TRENCHING
- GAS LINE TRENCHING
- 1924 — CONTOURS
- STORM WATER SWALE / POND
- DIRECTION OF SURFACE STORM WATER DRAINAGE
- 1924.50 / 1924.00 — TOP OF CURB ELEVATION / FLOWLINE ELEVATION
- CURB INLET / 1924.00 — CURB INLET / INLET ELEVATION AT FLOWLINE
- 1924.00 — FINISHED GRADE ELEVATION
- 1924.00 TW / 1923.50 BW — TOP OF WALL ELEVATION / BOTTOM OF WALL ELEVATION



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 HEMBIGNER — DATE 8/2/04

DEVELOPER — DATE 8/4/04

GRAPHIC SCALE

100 50 0 50 100 200

(IN FEET)
1 inch = 100 ft.

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT # P1923
DATE ACCEPTED: 8/26/04
ACCEPTANCE EXPIRES: 8/26/06
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.33
CONSTRUCTION DOCUMENTATION AS CONFIRMED RECORD DRAWINGS, WAS SUBMITTED TO AND ACCEPTED PRIOR TO COUNTY ACCEPTANCE FOR MAINTENANCE OF THE ROADS AND DRAINAGE FACILITIES PERTINENT TO THIS PROJECT.
REVISED BY: DATE:
APPROVED BY: DATE:
PE SEAL:

CALL BEFORE YOU DIG 456-8000

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

No.	DATE	BY
1		
2		
3		
4		
5		

SHEET TITLE: COVER AND INDEX SHEET ROAD AND DRAINAGE IMPROVEMENTS

PROJECT TITLE: ALDERWOOD SPOKANE COUNTY, WASHINGTON

SEAL: CHAD HEMBIGNER, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER — EXPIRES 10-10-04

DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	1 OF 11
	COVER

03022-1.DWG COVER-ST

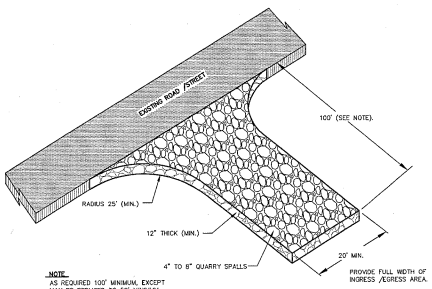
P-1923 Eng Rect Drainage

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
NTS (CE)

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.

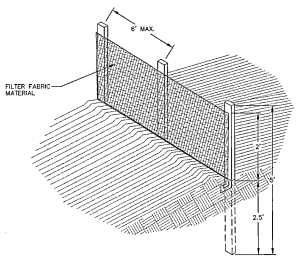
2. TO DECREASE THE VELOCITY OF SHEET FLOWS.

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.



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).

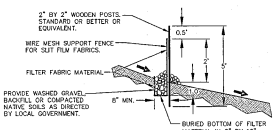
C. A TRENCH SHALL BE EXCAVATED APPROXIMATELY 8 INCHES WIDE AND 12 INCHES DEEP ALONG THE LINE OF POSTS AND UPSLOPE FROM THE BARRIER. THE TRENCH SHALL BE CONSTRUCTED TO FOLLOW THE CONTOURS.

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, TIE 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 SIMPLIFIED 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.

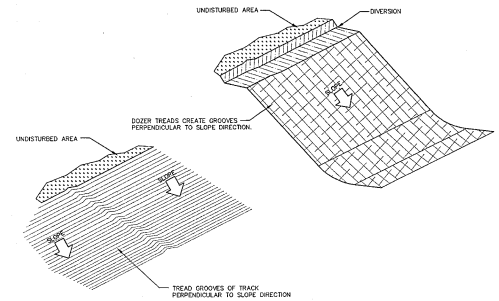


FILTER FENCE
NTS (FF)

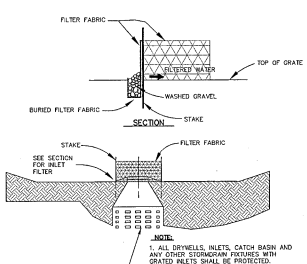
DEFINITION: PROVISION OF A ROUGH SOIL SURFACE WITH HORIZONTAL DEPRESSIONS CREATED BY OPERATING A TILLER OR OTHER SUITABLE EQUIPMENT ON THE CONTOUR OR BY LEAVING SLOPES IN A ROUGHED CONDITION BY NOT FILE GRADING THEM.

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.

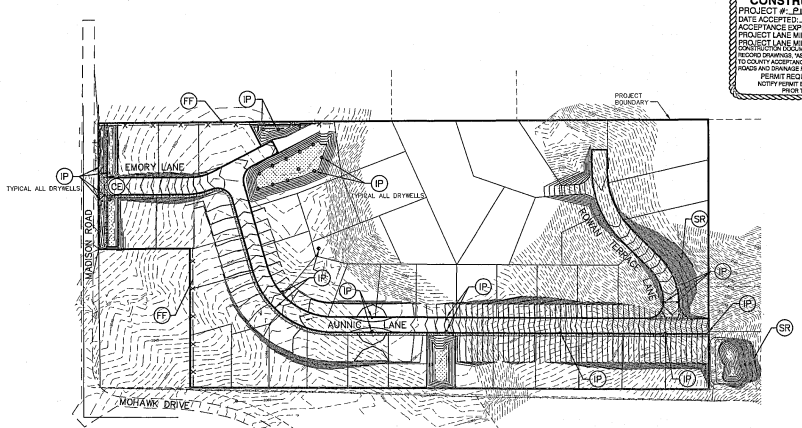


SURFACE ROUGHENING
NTS (SR)



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

TEMPORARY INLET PROTECTION
NTS (IP)



SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1923
DATE ACCEPTED: 8/26/2004
ACCEPTANCE EXPIRES: 8/26/2006
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.73
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) 477-3622
NOTIFY PERMIT ENGINEER 3 BUSINESS DAYS PRIOR TO CONSTRUCTION

CONTACT PERSON

DAVID FINKLE
P.O. BOX 3349
HAYDEN, IDAHO 83835
208-687-0451

PROJECT / SITE DESCRIPTION

THE PROPOSED PROJECT INCLUDES THE DEVELOPMENT OF PRIVATE ROADS TO SERVE SINGLE FAMILY HOMES. THE SITE IS CURRENTLY IMPROVED WITH A SINGLE FAMILY DWELLING AND ASSOCIATED OUT BUILDINGS NEAR THE SOUTHEAST PORTION OF THE PROPERTY. THE WEST AND SOUTH CENTRAL PORTIONS OF THE SITE HAVE SLOPES THAT RANGE FROM RELATIVELY FLAT TO 20%, TOWARDS THE WEST AND NORTHWEST. THE EAST AND NORTH CENTRAL PORTIONS FEATURE SOME ROCK OUTCROPS, AND SLOPE MORE STEEPLY, UP TO 50% IN PLACES.

SOIL TYPE

THE SOILS IN THIS REGION OF THE SUBJECT PROPERTY HAVE BEEN IDENTIFIED AS PREDOMINANTLY THE BERNHILL, CLAYTON, AND SPOKANE SERIES. THE BERNHILL AND CLAYTON SERIES ARE CLASSIFIED AS TYPE "B" SOILS AND 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.

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

DEVELOPER 8/4/04 DATE

BENCHMARK
TNB: "+" ON NORTH BOLT OF FIRE HYDRANT AT THE SOUTHWEST CORNER OF MADISON ROAD AND MOHAWK DRIVE AS PER SPOKANE COUNTY SANITARY SEWER PLANS.
ELEVATION=2046.85 (NAVD88)

CALL BEFORE YOU DIG 456-8000

No.	DATE	BY
4		
3		
2		
1		

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

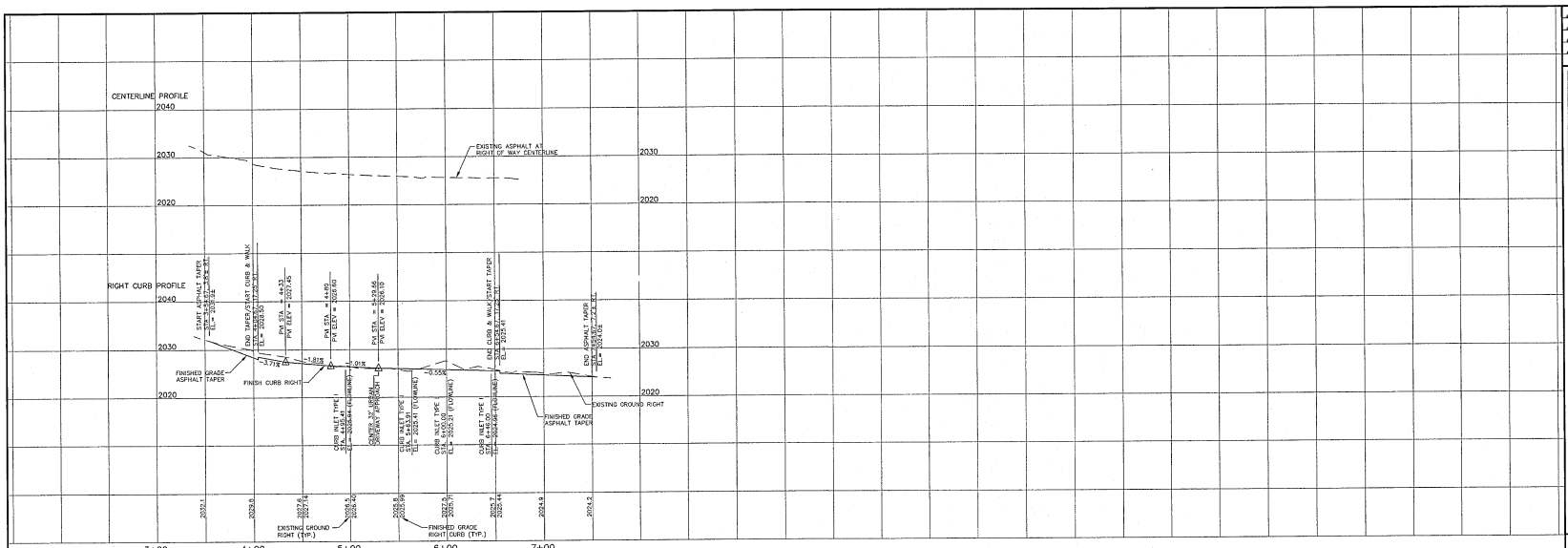
SHEET TITLE: EROSION / SEDIMENT CONTROL PLAN
PROJECT TITLE: ALDERWOOD
SPOKANE COUNTY, WASHINGTON

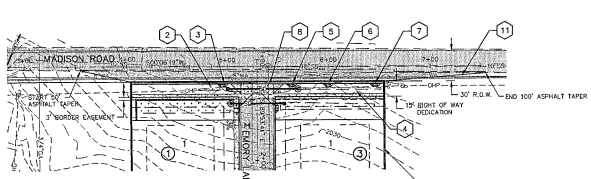
SEAL: RAY HEIMBIGNER, STATE OF WASHINGTON, 21202, REGISTERED PROFESSIONAL ENGINEER

DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	2 OF 11
	EROSION

03022-1.DWG EROSION

P-1923 Eng Road-Drainage



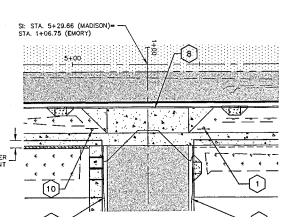


TABLE

1. STOP AND STREET SIGNS PER M.U.T.C.D. STANDARDS.
2. 208 SWALE "C" FOR ADDITIONAL CONSTRUCTION SPECIFICATIONS AND CURB INLET INFORMATION REFER TO DETAIL SHEET.
3. CURB INLET TYPE I SPOKANE COUNTY STD. B-8 STA. 4+95.41, 17.25' RT. L.= 4.5'
4. 208 SWALE "A1" FOR ADDITIONAL CONSTRUCTION SPECIFICATIONS AND CURB INLET INFORMATION REFER TO DETAIL SHEET.
5. CURB INLET TYPE I SPOKANE COUNTY STD. B-8 STA. 5+63.91, 17.25' RT. L.= 4.5'
6. CURB INLET TYPE I SPOKANE COUNTY STD. B-8 STA. 6+00.00, 17.25' RT. L.= 4.5'
7. CURB INLET TYPE I SPOKANE COUNTY STD. B-8 STA. 6+46.00, 17.25' RT. L.= 4.5'
8. URBAN DRIVEWAY-SEPARATED SIDEWALK, SEE DETAIL SHEET L.= 32.00'
9. CURB TRANSITION FROM TYPE "B", SPOKANE COUNTY STD. A-3 TO TYPE "S" MATCH GUTTER FLOWLINE ELEVATION AND BACK OF CURB ALIGNMENT. TRANSITION SHALL BE 5' IN LENGTH (2.5' EACH SIDE) TO ALLOW FOR A SMOOTH APPEARANCE. STA. 1+59.75, LEFT & RIGHT (EMORY)
10. "NO OUTLET" SIGN PER M.U.T.C.D. STANDARDS.
11. 4 FLEXIBLE GUIDE POSTS (GROUND MOUNT), PER W.S.D.O.T. STD. H-1, TO BE SPACED EVENLY BETWEEN STA. 6+54.67 AND STA. 7+54.67 ON NORTH MERGING TAPER.

NOTES

1. SEE CONSTRUCTION SPECIFICATIONS SHOWN ON DETAIL SHEET.
2. ALL CURB RETURNS ARE 30' RADIUS AT BACK OF CURB UNLESS OTHERWISE SHOWN.
3. ALL CURB AND OFFSET DATA IS REFERENCED TO BACK OF CURB, UNLESS OTHERWISE NOTED.
4. THE UNDERGROUND UTILITY LINES AND OFF-SITE UTILITIES LOCATION HAS BEEN EXTRACTED FROM RECORD UTILITY DRAWINGS AND FOUND SURFACE FEATURES. FIELD VERIFY EXACT LOCATIONS.
5. EXISTING OVERHEAD POWER, TELEPHONE AND OTHER UTILITIES WITHIN THE PROPOSED ROADWAY OF MADISON ROAD SHALL BE RELOCATED AS NEEDED PRIOR TO CONSTRUCTION.
6. SAWCUT LINE FROM STA. 3+54.67 TO 6+64.60 SHALL BE 3.0' EAST OF RIGHT OF WAY CENTERLINE AND FROM STA. 6+64.60 TO STA. 7+54.67 THE SAWCUT LINE SHALL BE 6.2' EAST OF THE RIGHT OF WAY CENTERLINE.
7. 1.0' (MIN.) OF COVER SHALL BE MAINTAIND OVER ALL STORM DRAIN PIPES.
8. CURB INLETS SHALL BE CONSTRUCTED AT 2" LOWER THAN THE FLOW LINE OF THE CURB. ASPHALT AND CURB TO HAVE SMOOTH TAPER INTO CURB INLETS.
9. IRRIGATION SYSTEM FOR SWALES SHALL BE PROVIDED BY CONTRACTOR/DEVELOPER. IRRIGATION SYSTEM SHALL BE DESIGN/BUILD.
10. PROVIDE TRASH RACKS AT PIPE INLETS AND OUTLETS FOR PIPES THAT ARE 18" OR LARGER. SEE DETAIL SHEET.



ENTRY DETAIL
SCALE: 1"=20'

GRAPHIC SCALE

50 0 25 50 100

(IN FEET)
HORZ: 1 inch = 50 ft.
VERT: 1 inch = 10 ft.

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1923
DATE ACCEPTED: 8/26/2004
ACCEPTANCE EXPIRES: 8/26/2006
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.73
RECORD DRAWINGS "AS-BUILT" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

DEVELOPER 8/6/04 DATE

BENCHMARK
TBM: "+" ON NORTH BOLT OF FIRE HYDRANT AT THE SOUTHWEST CORNER OF MADISON ROAD AND MOHAWK DRIVE AS PER SPOKANE COUNTY SANITARY SEWER PLANS.
ELEVATION=2046.65 (NAVD88)

CALL BEFORE YOU DIG 456-8000

No.	DATE	BY
1		
2		
3		
4		

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

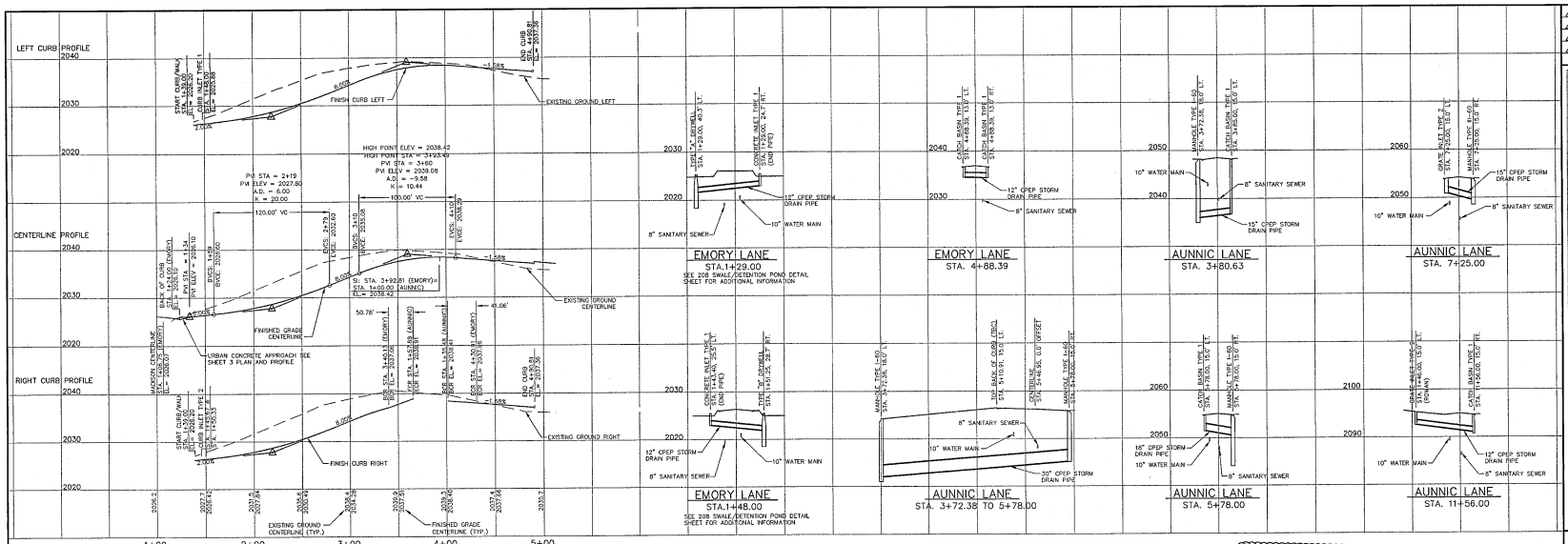
SHEET TITLE: MADISON ROAD – STREET WIDENING STA. 3+54.67 TO 7+54.67
PROJECT TITLE: ALDERWOOD
SPOKANE COUNTY, WASHINGTON

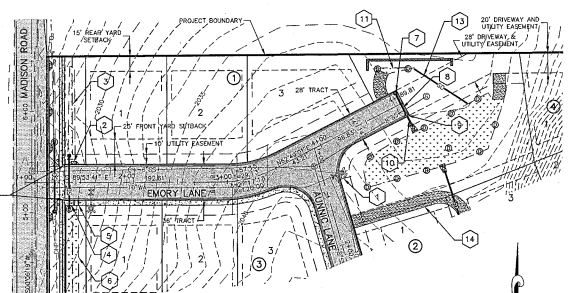
SEAL: CHAD REIMBIGLER, STATE OF WASHINGTON, 39110, REGISTERED PROFESSIONAL ENGINEER
EXPIRES 9/13/04

DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	3 OF 11
	STREET

03022-ABMG ST-1

P-1923 Eng Road-Drainage





GRAPHIC SCALE

(IN FEET)
HORIZ: 1 inch = 50 ft.
VERT: 1 inch = 10 ft.

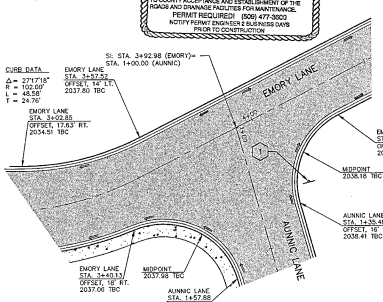
TABLE

1. STOP AND STREET SIGNS PER M.U.T.C.D. STANDARDS.
2. CURB INLET TYPE 1 SPOKANE COUNTY STD. B-8 STA. 1+48.00, 18.00' LT. L= 4.5'
3. 208 SWALE "B" FOR ADDITIONAL CONSTRUCTION SPECIFICATIONS AND CURB INLET INFORMATION REFER TO DETAIL SHEET.
4. CURB INLET TYPE 2 SPOKANE COUNTY STD. B-9 STA. 1+45.67, 18.00' RT. EL= 2025.90 (FLOWLINE)
5. CURB INLET TYPE 2 SPOKANE COUNTY STD. B-9 STA. 1+50.33, 18.00' RT. EL= 2026.00 (FLOWLINE)
6. 208 SWALE "U" FOR ADDITIONAL CONSTRUCTION SPECIFICATIONS AND CURB INLET INFORMATION REFER TO DETAIL SHEET.
7. CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 2 METAL FRAME AND GRATE. STA. 4+88.39, 13.00' LT. GRATE EL.= 2036.72 IE. = 2034.67 (OUT)
8. 12" CPEP STORM DRAIN PIPE L= 21.0' S= 0.5%
9. CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 2 METAL FRAME AND GRATE. STA. 4+88.39, 13.00' RT. GRATE EL.= 2036.72 IE.= 2034.56 (IN, OUT)
10. 12" CPEP STORM DRAIN PIPE L= 10.0' S= 0.60% IE.= 2034.50 (OUT) SEE RIPRAP TABLE ON DETAIL SHEET.
11. DETENTION POND "U" FOR ADDITIONAL CONSTRUCTION SPECIFICATIONS AND INFORMATION REFER TO DETAIL SHEET.
12. CURB NOSE DOWN (LEFT & RIGHT) STA. 1+39.00 SEE DETAIL SHEET.
13. 12" CPEP STORM DRAIN PIPE L= 62.0' S= 0.0% IE.= 2032.10 (IN, OUT)
14. 12' WIDE GRAVEL ACCESS ROAD, 6" CRUSHED ROCK TOP COURSE, 3/4" MINUS COMPACTED TO 95% MAX. DENSITY (ASTM D698). MAXIMUM SLOPE SHALL BE 5:1 (20%) SHALL BE CONSTRUCTED WITHIN THE 20' EASEMENT.

NOTES

1. SEE CONSTRUCTION SPECIFICATIONS SHOWN ON DETAIL SHEET.
2. ALL CURB RETURNS ARE 30' RADIUS AT BACK OF CURB UNLESS OTHERWISE SHOWN.
3. ALL CURB AND OFFSET DATA IS REFERENCED TO BACK OF CURB, UNLESS OTHERWISE NOTED.
4. THE UNDERGROUND UTILITY LINES AND OFF-SITE UTILITIES LOCATION HAS BEEN EXTRACTED FROM RECORD UTILITY DRAWINGS AND FOUND SURFACE FEATURES. FIELD VERIFY EXACT LOCATIONS.
5. EXISTING OVERHEAD POWER, TELEPHONE AND OTHER UTILITIES WITHIN THE PROPOSED ROADWAY OF MADISON ROAD SHALL BE RELOCATED AS NEEDED PRIOR TO CONSTRUCTION.
6. 1.0' (MIN.) OF COVER SHALL BE MAINTAINED OVER ALL STORM DRAIN PIPES.
7. CATCH INLETS SHALL BE CONSTRUCTED AT 2" LOWER THAN THE FLOW LINE OF THE CURB. ASPHALT AND CURB TO HAVE SMOOTH TAPER INTO CURB INLETS.
7. PROVIDE TRASH RACKS AT PIPE INLETS AND OUTLETS FOR PIPES THAT ARE 18" OR LARGER. SEE DETAIL SHEET.

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-1923
DATE ACCEPTED: 9/26/2004
ACCEPTANCE EXPIRES: 9/26/2006
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.73
RECORD 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



INTERSECTION DETAIL
SCALE: 1"=20'

DEVELOPER 9/16/04

BENCHMARK
TBM: "+" ON NORTH BOLT OF FIRE HYDRANT AT THE SOUTHWEST CORNER OF MADISON ROAD AND MOHAWK DRIVE AS PER SPOKANE COUNTY SANITARY SEWER PLANS.
ELEVATION=2046.65 (NAVD88)

CALL BEFORE YOU DIG 456-8000

No.	DATE	BY
1		
2		
3		
4		

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

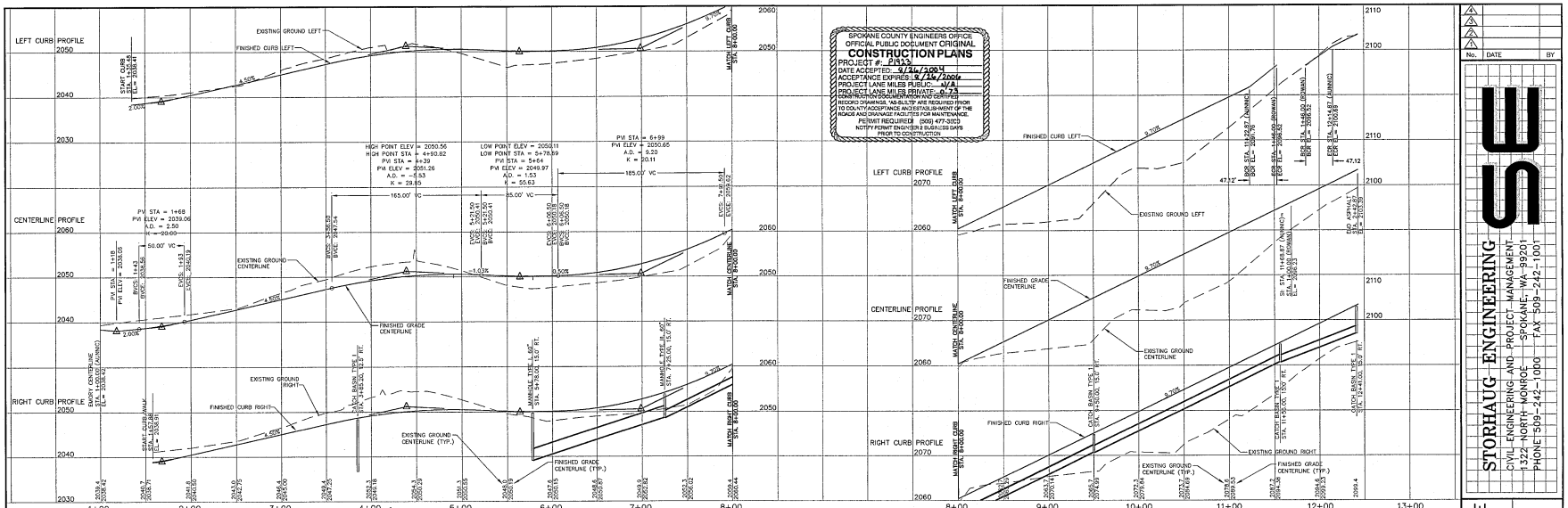
SHEET TITLE: EMORY LANE – PLAN AND PROFILE STA. 1+00 TO 4+90.81
PROJECT TITLE: ALDERWOOD
SPOKANE COUNTY, WASHINGTON

SEAL: BRIAN HEIMBIGNER, STATE OF WASHINGTON, 38798, REGISTERED PROFESSIONAL ENGINEER
EXPIRES 10-05-04

DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	4 OF 11
	STREET

03022-ALDWD S1-2

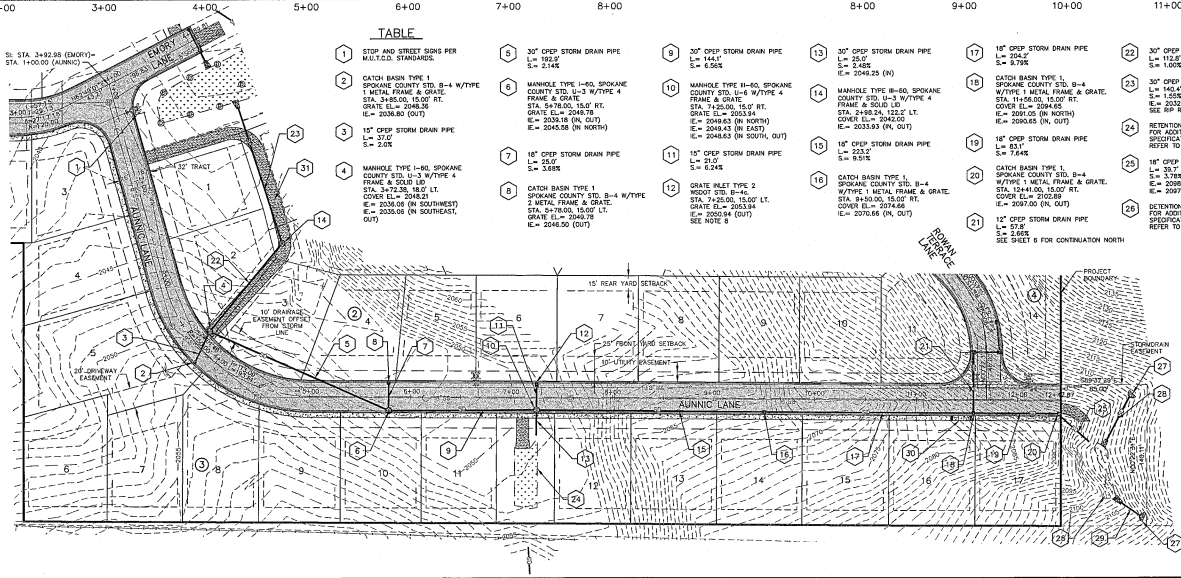
P-1923 Eng Road/Drainage



SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1923
DATE ACCEPTED: 9/26/2004
ACCEPTANCE EXPIRES: 9/26/2006
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.75
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) 477-3053
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

No.	DATE	BY
4		
3		
2		
1		

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.
2. CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 1 METAL FRAME & GRATE. STA. 3+85.00, 15.00' RT. GRATE EL.= 2048.36 IE.= 2036.80 (OUT)
3. 15" CPEP STORM DRAIN PIPE L.= 37.0' S.= 2.0%
4. MANHOLE TYPE I-60, SPOKANE COUNTY STD. U-3 W/TYPE 4 FRAME & SOLID LID STA. 3+72.38, 18.0' LT. COVER EL.= 2048.21 IE.= 2035.08 (IN SOUTHWEST) IE.= 2035.08 (IN SOUTHEAST, OUT)
5. 30" CPEP STORM DRAIN PIPE L.= 192.9' S.= 2.14%
6. MANHOLE TYPE I-60, SPOKANE COUNTY STD. U-3 W/TYPE 4 FRAME & GRATE. STA. 3+78.00, 15.0' RT. GRATE EL.= 2048.78 IE.= 2039.18 (IN, OUT) IE.= 2045.58 (IN NORTH)
7. 18" CPEP STORM DRAIN PIPE L.= 25.0' S.= 3.68%
8. CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 2 METAL FRAME & GRATE. STA. 3+78.00, 15.00' LT. GRATE EL.= 2048.78 IE.= 2046.50 (OUT)
9. 30" CPEP STORM DRAIN PIPE L.= 144.1' S.= 6.56%
10. MANHOLE TYPE II-60, SPOKANE COUNTY STD. U-6 W/TYPE 4 FRAME & GRATE STA. 7+25.00, 15.0' RT. GRATE EL.= 2053.94 IE.= 2049.63 (IN NORTH) IE.= 2049.43 (IN EAST) IE.= 2049.63 (IN SOUTH, OUT)
11. 15" CPEP STORM DRAIN PIPE L.= 21.0' S.= 6.24%
12. GRATE INLET TYPE 2 WSDOT STD. E-4c. STA. 7+25.00, 15.00' LT. GRATE EL.= 2053.94 IE.= 2050.94 (OUT) SEE NOTE 8
13. 30" CPEP STORM DRAIN PIPE L.= 25.0' S.= 2.48% IE.= 2049.25 (IN)
14. MANHOLE TYPE III-60, SPOKANE COUNTY STD. U-3 W/TYPE 4 FRAME & SOLID LID STA. 2+98.24, 122.2' LT. COVER EL.= 2042.00 IE.= 2033.93 (IN, OUT)
15. 18" CPEP STORM DRAIN PIPE L.= 233.2' S.= 9.51%
16. CATCH BASIN TYPE 1, SPOKANE COUNTY STD. B-4 W/TYPE 1 METAL FRAME & GRATE. STA. 2+50.00, 15.00' RT. COVER EL.= 2074.66 IE.= 2070.66 (IN, OUT)
17. 18" CPEP STORM DRAIN PIPE L.= 204.9' S.= 9.79%
18. CATCH BASIN TYPE 1, SPOKANE COUNTY STD. B-4 W/TYPE 1 METAL FRAME & GRATE. STA. 11+56.00, 15.00' RT. COVER EL.= 2094.65 IE.= 2091.05 (IN, NORTH) IE.= 2090.65 (IN, OUT)
19. 16" CPEP STORM DRAIN PIPE L.= 83.1' S.= 7.64%
20. CATCH BASIN TYPE 1, SPOKANE COUNTY STD. B-4 W/TYPE 1 METAL FRAME & GRATE. STA. 12+41.00, 15.00' RT. COVER EL.= 2102.89 IE.= 2097.00 (IN, OUT)
21. 12" CPEP STORM DRAIN PIPE L.= 57.8' S.= 2.66% SEE SHEET 6 FOR CONTINUATION NORTH
22. 30" CPEP STORM DRAIN PIPE L.= 112.8' S.= 1.00%
23. 30" CPEP STORM DRAIN PIPE L.= 140.4' S.= 1.55% IE.= 2032.60 (OUT) SEE RIP RAP TABLE ON DETAIL SHEET
24. RETENTION POND "A" FOR ADDITIONAL CONSTRUCTION SPECIFICATIONS AND INFORMATION REFER TO DETAIL SHEETS.
25. 18" CPEP STORM DRAIN PIPE L.= 39.7' S.= 3.78% IE.= 2098.50 (IN) IE.= 2097.00 (OUT)
26. DETENTION POND "B" FOR ADDITIONAL CONSTRUCTION SPECIFICATIONS AND INFORMATION REFER TO DETAIL SHEETS.
27. CONCRETE HEADWALL SEE DETAIL SHEET. IE.= 2106.50
28. 18" CPEP STORM DRAIN PIPE L.= 48.6' S.= 19.55% IE.= 2099.00 (OUT) SEE RIPRAP TABLE ON DETAIL SHEET.
29. 18" CPEP STORM DRAIN PIPE L.= 22.6' S.= 41.30% IE.= 2099.00 (OUT) PIPE ANCHORS REQUIRED FOR SPOKANE COUNTY STDS. SEE RIPRAP TABLE ON DETAIL SHEET.
30. ACCESSABILITY RAMP FOR STREET CROSSING TO THE NORTH, SHALL COMPLY WITH THE AMERICANS WITH DISABILITIES ACT ACCESSIBILITY GUIDELINES (ADAAG).
31. 12' WIDE GRAVEL ACCESS ROAD. 6" CRUSHED ROCK TOP COURSE, 3/4" MINUS COMPACTED TO 95% MAX. DENSITY (ASTM D698). MAXIMUM SLOPE SHALL BE 5:1 (20%) SHALL BE CONSTRUCTED WITHIN THE 20' EASEMENT.

NOTES

1. SEE CONSTRUCTION SPECIFICATIONS SHOWN ON DETAIL SHEET.
2. ALL CURB RETURNS ARE 30' RADIUS AT BACK OF CURB UNLESS OTHERWISE SHOWN.
3. ALL CURB AND OFFSET DATA IS REFERENCED TO BACK OF CURB, UNLESS OTHERWISE NOTED.
4. THE UNDERGROUND UTILITY LINES AND OFF-SITE UTILITIES LOCATIONS HAS BEEN EXTRACTED FROM RECORD UTILITY DRAWINGS AND FOUND SURFACE FEATURES. FIELD VERIFY EXACT LOCATIONS.
5. EXISTING OVERHEAD POWER, TELEPHONE AND OTHER UTILITIES WITHIN THE PROPOSED ROADWAY OF MADISON ROAD SHALL BE RELOCATED AS NEEDED PRIOR TO CONSTRUCTION.
6. 1.0' (MIN.) OF COVER SHALL BE MAINTAINED OVER ALL STORM DRAIN PIPES.
7. CURB INLETS SHALL BE CONSTRUCTED AT 2" LOWER THAN THE FLOW LINE OF THE CURB. ASPHALT AND CURB TO HAVE SMOOTH TAPER INTO CURB INLETS.
8. THE W.S.D.O.T. TYPE 2 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.
9. PROVIDE TRASH RACKS AT PIPE INLETS AND OUTLETS FOR PIPES THAT ARE 18" OR LARGER. SEE DETAIL SHEET.

DEVELOPER / DATE

CALL BEFORE YOU DIG 456-8000

GRAPHIC SCALE
(IN FEET)
HORZ: 1 inch = 50 ft.
VERT: 1 inch = 10 ft.

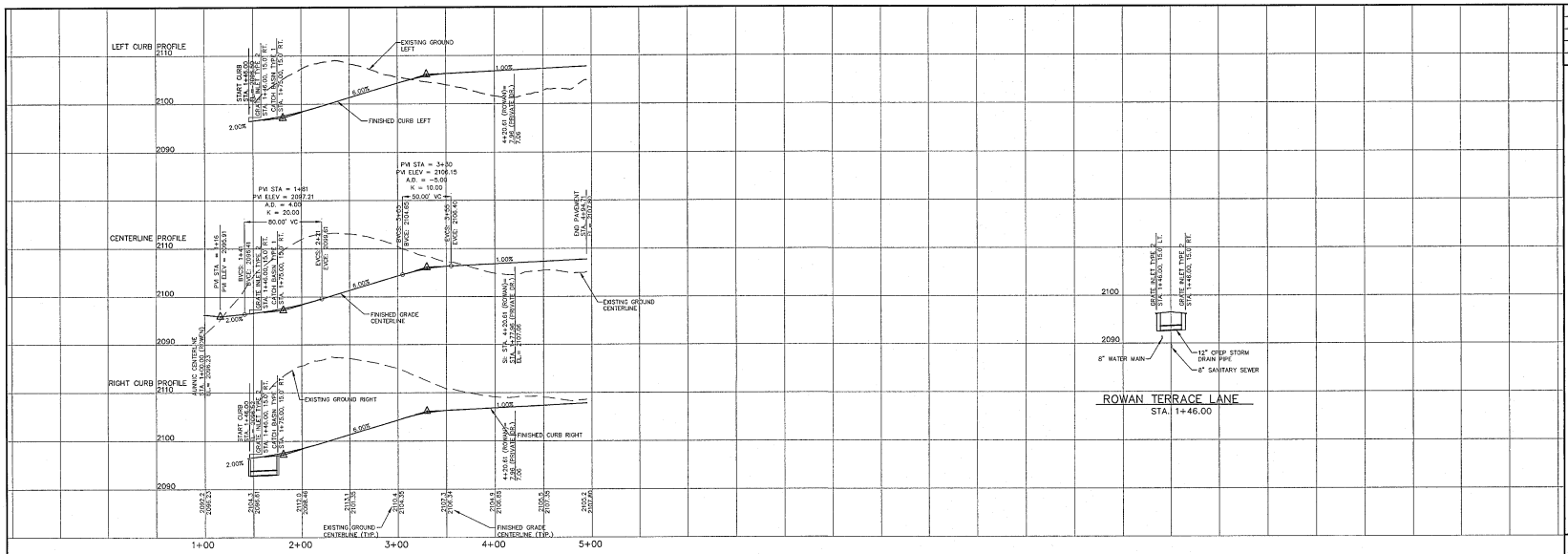
BENCHMARK
TBM: "+" ON NORTH BOLT OF FIRE HYDRANT AT THE SOUTHWEST CORNER OF MADISON ROAD AND MOHAWK DRIVE AS PER SPOKANE COUNTY SANITARY SEWER PLANS.
ELEVATION=2046.65 (NAVD88)

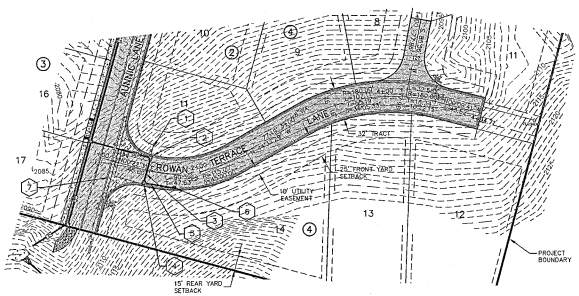
SHEET TITLE: AUNNIC LANE – PLAN AND PROFILE STA. 1+00 TO 12+42.87
PROJECT TITLE: ALDERWOOD SPOKANE COUNTY, WASHINGTON

SEAL: CHRIS HEIMBIGNER, STATE OF WASHINGTON, 29918, REGISTERED PROFESSIONAL ENGINEER
EXP. DATE 10-10-04

DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	5 OF 11
	STREET

P-1923 Eng Road Drainage





GRAPHIC SCALE

(IN FEET)
HORIZ: 1 inch = 50 ft.
VERT: 1 inch = 10 ft.

TABLE

1. STOP AND STREET SIGNS PER M.U.T.C.D. STANDARDS.
2. GRATE INLET TYPE 2 WSDOT STD. B-4c STA. 1+45.00, 15.00' LT. GRATE EL.= 2096.18 IE. = 2092.59 (IN, OUT) SEE NOTE 8
3. 12" CPEP STORM DRAIN PIPE L= 21.0' S.= 1.0%
4. GRATE INLET TYPE 2 WSDOT STD. B-4c STA. 1+46.00, 15.00' RT. GRATE EL.= 2096.18 IE. = 2092.80 (IN, OUT) SEE NOTE 8
5. 12" CPEP STORM DRAIN PIPE L= 24.9' S.= 1.00%
6. CATCH BASIN TYPE 1 SPOKANE COUNTY STD. B-4 W/TYPE 1 METAL FRAME AND GRATE STA. +75.00, 16.00' RT. GRATE EL.= 2097.05 IE. = 2093.05 (OUT)
7. CROSS GUTTER TYPE I SPOKANE COUNTY STD. B-18.

NOTES

1. SEE CONSTRUCTION SPECIFICATIONS SHOWN ON DETAIL SHEET.
2. ALL CURB RETURNS ARE 30' RADIUS AT BACK OF CURB UNLESS OTHERWISE SHOWN.
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8. THE W.S.D.O.T. TYPE 2 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.
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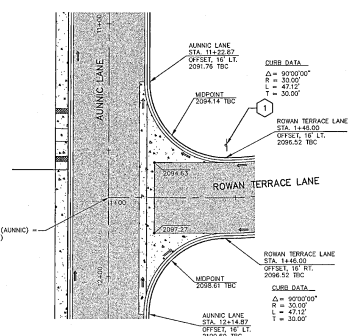


INTERSECTION DETAIL
SCALE: 1"=20'

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1923
DATE ACCEPTED: 8/26/2004
ACCEPTANCE EXPIRES: 8/26/2006
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.73
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS "AS-BUILT" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3223
NOTIFY PERMIT ENGINEER 8 BUSINESS DAYS PRIOR TO CONSTRUCTION

DEVELOP ENG. DATE 8/26/04

BENCHMARK
TBM: "+" ON NORTH BOLT OF FIRE HYDRANT AT THE SOUTHWEST CORNER OF MADISON ROAD AND MOHAWK DRIVE AS PER SPOKANE COUNTY SANITARY SEWER PLANS.
ELEVATION=2046.65 (NAVD88)

CALL BEFORE YOU DIG 456-8000

No.	DATE	BY
1		
2		
3		
4		

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

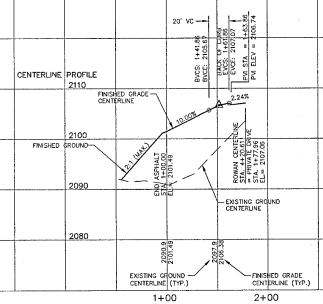
SHEET TITLE: ROWAN TERRACE LANE PLAN AND PROFILE STA. 1+00 TO 4+94.71
PROJECT TITLE: ALDERWOOD
SPOKANE COUNTY, WASHINGTON

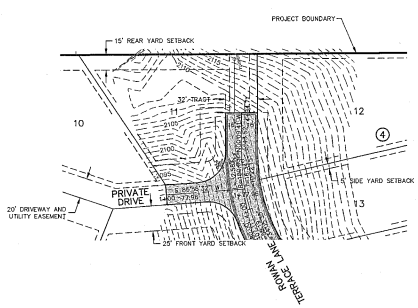
SEAL: CHAD HEINBIGNER, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER
EXPIRES 10-03-04

DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	6 OF 11
	STREET

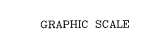
P-1923 Eng Road Drainage

03022-LDWG ST-4





GRAPHIC SCALE



(IN FEET)
HORZ: 1 inch = 50 ft.
VERT: 1 inch = 10 ft.

NOTES

1. SEE CONSTRUCTION SPECIFICATIONS SHOWN ON DETAIL SHEET.
2. ALL CURB RETURNS ARE 30' RADIUS AT BACK OF CURB UNLESS OTHERWISE SHOWN.
3. ALL CURB AND OFFSET DATA IS REFERENCED TO BACK OF CURB, UNLESS OTHERWISE NOTED.
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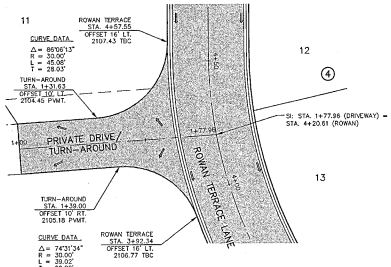
6. 1.0' (MIN.) OF COVER SHALL BE MAINTAINED OVER ALL STORM DRAIN PIPES.
7. CURB INLETS SHALL BE CONSTRUCTED AT 3" LOWER THAN THE FLOW LINE OF THE CURB. ASPHALT AND CURB TO HAVE SMOOTH TAPER INTO CURB INLETS.
8. THE W.S.D.O.T. TYPE 2 INLET SHALL BE PLACED SO THAT THE LONGER SIDE OF THE STRUCTURE IS PERPENDICULAR TO THE CURB. THE SHORTER SIDE SHALL ABUT THE FACE OF THE CURB.



INTERSECTION DETAIL
SCALE: 1"=20'

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1923
DATE ACCEPTED: 9/26/2004
ACCEPTANCE EXPIRES: 9/26/2006
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.23
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 DATE

CALL BEFORE YOU DIG 456-8000

DWN BENCHMARK
TBM "L" ON NORTH BOLT OF FIRE HYDRANT AT THE SOUTHWEST CORNER OF MADISON AND MORAINE DRIVE AS PER SPOKANE COUNTY SANITARY SEWER PLANS.
ELEVATION=2046.65 (NAVD88)

L03022-CLWS S1-5

No.	DATE	BY
4		
3		
2		
1		

STORHAUG ENGINEERING
CIVIL-ENGINEERING AND PROJECT MANAGEMENT
1323 NORTH MONROE SPOKANE, WA 99201
PHONE 509-242-1000 FAX 509-242-1001

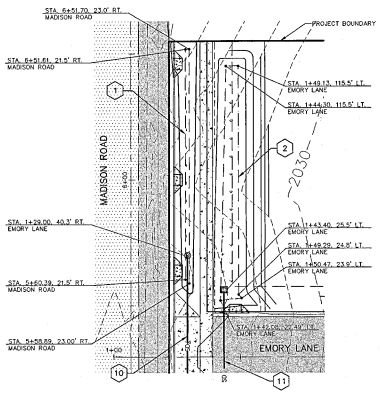
SHEET TITLE: DRIVEWAY / TURN-AROUND PLAN AND PROFILE STA. 1+00 TO 1+77.96

PROJECT TITLE: ALDERWOOD SPOKANE COUNTY, WASHINGTON

SEAL: CHAD HAUGEN, STATE OF WASHINGTON, REGISTERED PROFESSIONAL ENGINEER, 31316, EXPIRES 03-03-05

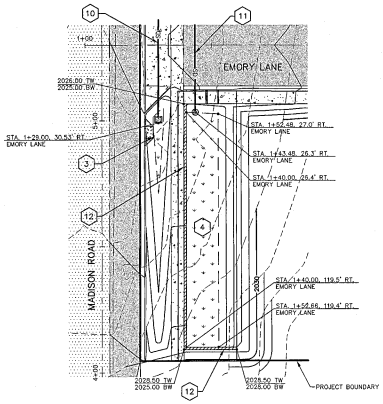
DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	7 OF 11
	STREET

P-1923 Eng Road Drainage



208 SWALES "A" & "B"

1" = 20'

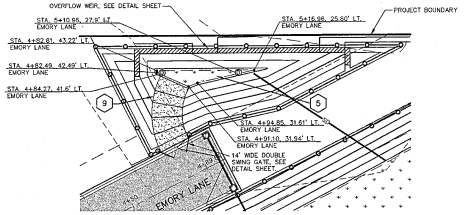


208 SWALES "C" & "D"

1" = 20'

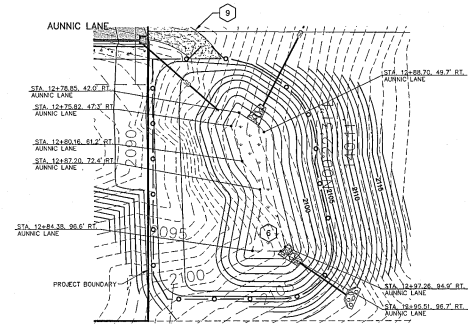
NOTES

1. STORM WATER MANAGEMENT PONDS / SWALES AND DISTURBED AREAS SHALL BE SEEDED PER SEEDING SPECIFICTAIONS. IRRIGATION SYSTEM FOR PONDS / SWALES SHALL BE PROVIDED BY CONTRACTOR / DEVELOPER. IRRIGATION SYSTEMS SHALL BE DESIGN BUILD.



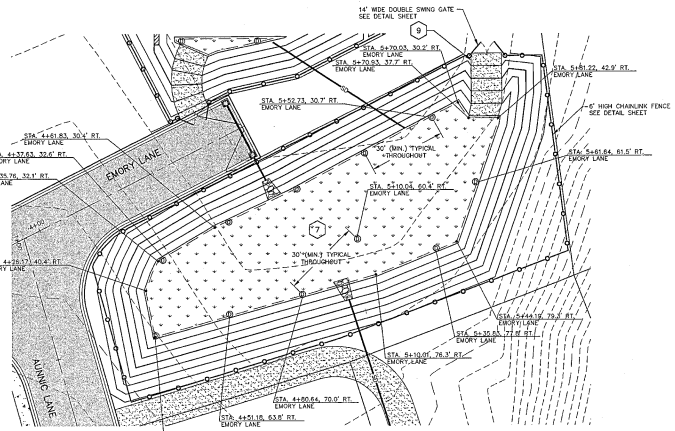
DETENTION POND "E"

1" = 20'



DETENTION POND "F"

1" = 20'



DETENTION POND "G"

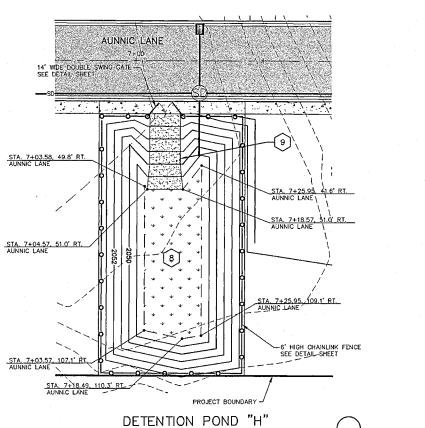
1" = 20'

TABLE

1. 208 SWALE "A"
   BOTTOM EL= 1.05 (MAX.)
   BOTTOM AREA= 138 SF.
   DEPTH= 1.0'
   (1) TYPE A DRYWELL SPOKANE COUNTY STD. B-1a W/TYPE 4 FRAME & GRATE
   RIM EL= 2024.44
   IE= 2021.63 (IN)
   SEE DETAIL SHEET FOR ADDITIONAL DIMENSIONS.
2. 208 SWALE "B"
   BOTTOM EL= 2025.00
   BOTTOM AREA= 558 SF.
   DEPTH= 1.0'
   (1) CONCRETE INLET TYPE I, SPOKANE COUNTY STD. B-5 W/WSDOT STD. B-2a FRAME & GRATE
   RIM EL= 2025.50
   IE= 2023.00 (OUT)
3. 208 SWALE "C"
   BOTTOM EL= 2025.00
   BOTTOM AREA= 76 SF.
   DEPTH= 1.0'
   (1) CONCRETE INLET TYPE I, SPOKANE COUNTY STD. B-5 W/WSDOT STD. B-2a FRAME & GRATE
   RIM EL= 2025.50
   IE= 2023.00 (OUT)
4. 208 SWALE "D"
   BOTTOM EL= 2025.00
   BOTTOM AREA= 1166 SF.
   DEPTH= 1.0'
   (1) TYPE B DRYWELL SPOKANE COUNTY STD. B-1a W/TYPE 4 FRAME & GRATE
   RIM EL= 2025.50
   IE= 2021.97 (IN)
5. DETENTION POND "E"
   TOP OF BERM EL= 2037.00
   BOTTOM EL= 2031.75
   BOTTOM AREA= 118 SF.
   DEPTH= 5.25'
   MAX. WATER SURFACE EL= 2035.35 (50-YEAR)
   (2) TRIPLE DEPTH DRYWELLS W/TYPE 4 FRAME & GRATE, SEE DETAIL SHEET.
   RIM EL= 2032.25
6. DETENTION POND "F"
   TOP OF BERM EL= 2101.00
   BOTTOM EL= 2096.00
   BOTTOM AREA= 456 SF.
   DEPTH= 5.0'
   IE= 2098.50 (OUTLET)
   MAX. WATER SURFACE EL= 2099.78 (50-YEAR)
7. DETENTION POND "G"
   TOP OF BERM EL= 2037.00
   BOTTOM EL= 2031.75
   BOTTOM AREA= 5734 SF.
   DEPTH= 5.25'
   MAX. WATER SURFACE EL= 2035.35 (50-YEAR)
   (11) TRIPLE DEPTH DRYWELLS W/TYPE 4 FRAME & GRATE, SEE DETAIL SHEET
   RIM EL= 2032.25
8. DETENTION POND "H"
   TOP OF BERM EL= 2053.00
   BOTTOM EL= 2048.00
   BOTTOM AREA= 1333 SF.
   DEPTH= 5.0'
   MAX. WATER SURFACE EL= 2051.99 (50-YEAR)
9. 12' WIDE GRAVEL ACCESS ROAD.
   6" CRUSHED ROCK TOP COURSE, 3/4" MINUS COMPACTED TO 95% MAX. DENSITY (ASTM D698). MAXIMUM SLOPE SHALL BE 5:1 (20%).
10. 12" CPEP STORM DRAIN PIPE
    L= 68.37'
    S= 2.0%
11. 12" CPEP STORM DRAIN PIPE
    L= 51.76'
    S= 2.0%
12. RETAINING WALL
    SEE DETAIL SHEET 10 OF 11.

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1923
DATE ACCEPTED: 9/26/2006
ACCEPTANCE EXPIRES: 9/26/2008
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.23
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS "AS-BUILT" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3033
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

DEVELOPER — DATE 9/26/06



DETENTION POND "H"

1" = 20'

CALL BEFORE YOU DIG 456-8000

No.	DATE	BY
1		
2		
3		
4		
5		

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

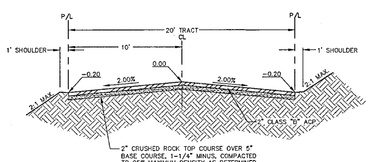
SHEET TITLE: 208 SWALE / DETENTION POND DETAIL SHEET

PROJECT TITLE: ALDERWOOD
SPOKANE COUNTY, WASHINGTON

SEAL: DAVID HEINRICHS, STATE OF WASHINGTON, 34108, REGISTERED PROFESSIONAL ENGINEER
EXPIRES 10-06-06

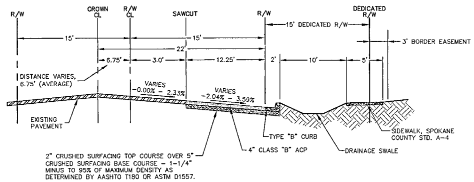
DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	8 OF 11
	DETAIL

P-1923 Eng Road Drainage



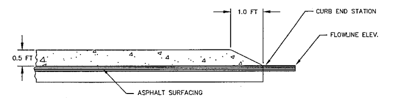
DRIVEWAY / TURN-AROUND ROAD SECTION

NTS



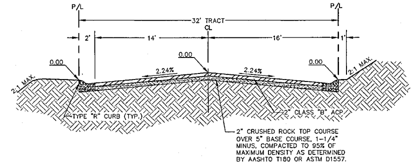
MADISON ROAD WIDENING SECTION

NTS



CURB NOSEDOWN

NTS



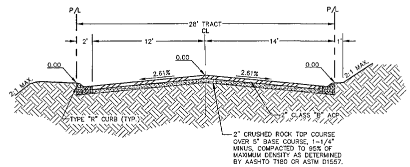
ROWAN TERRACE ROAD SECTION

NTS

1) All work and materials shall be in conformance with the "Spokane County Standards for Road and Sewer Construction" 2001, as amended.
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) 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 this requirement. This written statement shall be submitted to the Spokane County Engineer's Office prior to installing finished landscaping/sod and prior to final acceptance. The swale floor material shall be installed to a native soil stratum which also meets or exceeds this minimum percolation rate of 0.5 inches per hour.

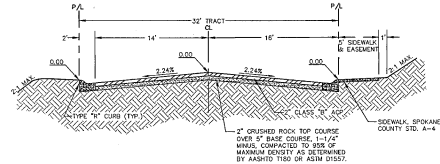
ER1) An Erosion /Sedimentation Control (ESC) plan is required for this project. Implementation of the ESC plan, and construction, maintenance, and upgrading of the ESC facilities are the responsibility of the Developer until all construction is completed and accepted by Spokane County, or until vegetation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



EMORY LN. STA. 3+57.52 TO 4+89.81 ROAD SECTION

NTS



AUNNIC LN. ROAD SECTION

NTS

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

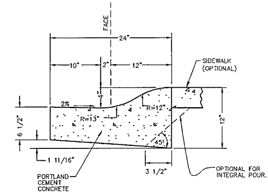
Provide mixture composed of grass seed and fertilizer in percentages as follows:

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



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.

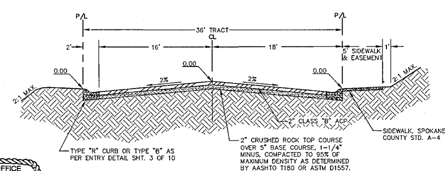
3. 3/8" EXPANSION JOINTS IN PORTLAND CEMENT CONCRETE SHALL BE PLACED AT CURB RETURNS.

4. EPOXY CEMENT SHALL BE APPLIED AT A 10-15 MIL THICKNESS AND SHALL CONFORM TO THE REQUIREMENTS OF SECTION 9-26 OF THE SPOKANE COUNTY STANDARD SPECIFICATIONS.

5. CURBS SHALL HAVE A LIGHT BROOMED FINISH. GUTTERS SHALL BE FINISHED WITH A STEEL TROWEL.

TYPE "R" - ROLLED CURB DETAIL

NTS



EMORY LN. STA. 1+39.00 TO 3+24.31 ROAD SECTION

NTS

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1923
DATE ACCEPTED: 8/26/2004
ACCEPTANCE EXPIRES: 8/26/2006
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.73
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 [signature] DATE [handwritten date]

CALL BEFORE YOU DIG 456-8000

03022-k.DWG DETAIL-2-ST

4		
3		
2		
1		
No.	DATE	BY

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

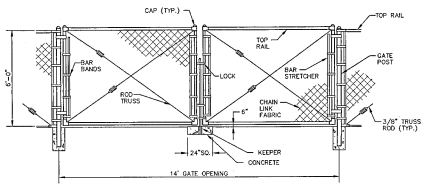
SHEET TITLE: DETAIL SHEET

PROJECT TITLE: ALDERWOOD SPOKANE COUNTY, WASHINGTON

SEAL: CHAD HEIMBIGNER, STATE OF WASHINGTON, 38103, REGISTERED PROFESSIONAL ENGINEER, EXPIRES 10-03-04

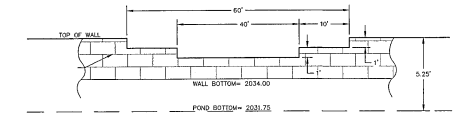
DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	9 OF 11
	DETAIL

P-1923 Eng Road-Drainage



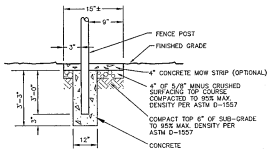
NOTES:
1. SEE W.S.D.O.T. STANDARD PLAN L-2 FOR MEMBER SIZE.
2. GATES SHALL HAVE 6" CLEARANCE ABOVE PAVEMENT OR GROUND.
3. CHAIN LINK FENCE TO BE CONSTRUCTED PER W.S.D.O.T. SPECIFICATIONS TYPE 3.

DOUBLE SWING GATE
NTS

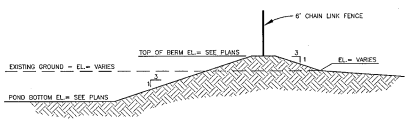


RETAINING WALL TO BE DESIGNED BY OTHERS

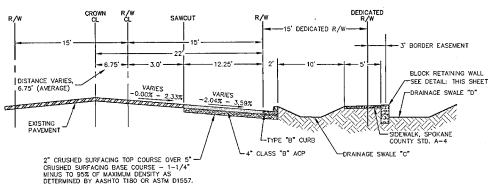
OVERFLOW WEIR SECTION
NTS



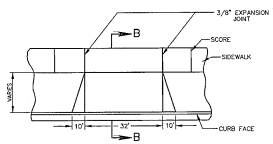
TYP. FENCE POST PLACEMENT & MOW STRIP
NTS



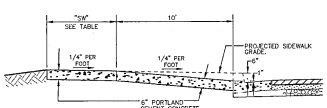
TYPICAL POND BERM SECTION
NTS



MADISON ROAD CROSS SECTION
SOUTH OF MAIN ENTRANCE
NTS

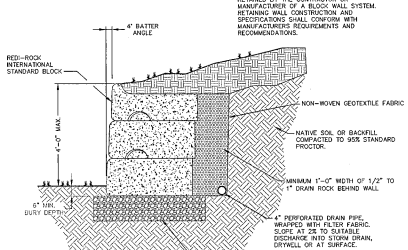


PLAN

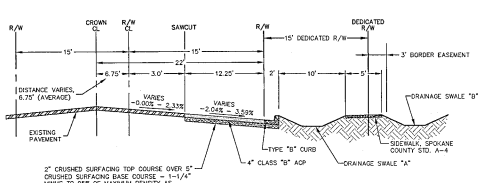


SECTION B-B

NOTES
1. ALL DISTURBED AREAS SHALL BE SEEDED WITH DRYLAND GRASS SEED MIX.
2. RETAINING WALL CONSTRUCTION AND SPECIFICATIONS SHALL CONFORM WITH MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS.
3. ANY WALL OVER 4' 0" TO BE DESIGNED BY OTHERS. DESIGN SHALL BE PROVIDED BY A STATE OF WASHINGTON LICENSED ENGINEER RETAINED BY THE CONTRACTOR OR MANUFACTURER OF A BLOCK WALL SYSTEM. RETAINING WALL CONSTRUCTION AND SPECIFICATIONS SHALL CONFORM WITH MANUFACTURERS REQUIREMENTS AND RECOMMENDATIONS.



BLOCK RETAINING WALL
NTS



MADISON ROAD CROSS SECTION
NORTH OF MAIN ENTRANCE
NTS

GENERAL NOTES

1. EXPANSION JOINT MATERIAL SHALL BE PLACED IN THE CENTER OF ALL DRIVEWAYS OVER 20' IN WIDTH.
2. EXPANSION JOINT REQUIRED IF POUR INCLUDES ADDITIONAL DRIVEWAY AREA.
3. CONCRETE FOR DRIVEWAYS SHALL BE CLASS 3000 AIR ENTRAINED.
4. ALL EXTERNAL EDGES TO BE TROWELLED WITH 1/4" RADIUS EDGER.
5. SIDEWALK TO BE SCORED EVERY 5'. 3/8" EXPANSION JOINT TO BE INSTALLED EACH SIDE OF A CURB RETURN AND AT LOCATIONS WHERE SIDEWALK INTERSECTS OTHER SIDEWALKS, DRIVEWAYS AND CURBS.
6. THE WIDTH OF COMMERCIAL DRIVEWAYS MAY BE WIDER THAN SHOWN, IF APPROVED BY THE COUNTY ENGINEER.
7. SEE SHEET A-5 (WHEEL CHAIR RAMPS)
8. SEE SHEET A-7 (CEMENT CONCRETE APPROACHES)

SIDEWALK

WIDTHS	
ROAD TYPE	"SW"
RESIDENTIAL ACCESS	5' MIN
OTHER	6' MIN

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1923
DATE ACCEPTED: 8/26/2004
ACCEPTANCE EXPIRES: 8/26/2006
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.23
DOCUMENTATION AND CERTIFIED AS-BUILTS ARE REQUIRED PRIOR TO ACCEPTANCE AND ESTABLISHMENT OF THE PUBLIC USE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED: (509) 477-3600
NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

URBAN DRIVEWAYS - SEPARATED SIDEWALKS
NTS

DEVELOPER DATE

CALL BEFORE YOU DIG 456-8000

P-1923 Eng Bond - Drainage

No.	DATE	BY
1		
2		
3		
4		

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

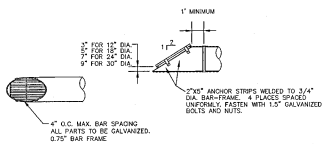
SHEET TITLE: DETAIL SHEET

PROJECT TITLE: ALDERWOOD
SPOKANE COUNTY, WASHINGTON

SEAL: DAVID HEIMBIGNER, STATE OF WASHINGTON, 36703, REGISTERED PROFESSIONAL ENGINEER
EXPIRES 2005-11-11

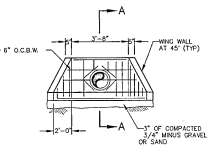
DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	10 OF 11
	DETAIL

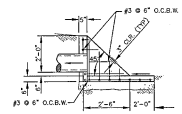
03022-alwd DETAIL-3-ST



TRASH RACK / PIPE GRATE DETAIL

NTS



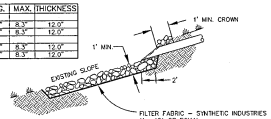


SECTION A–A

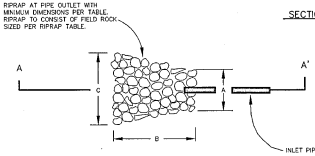
DRAIN PIPE CONCRETE HEADWALL DETAIL

NTS

LOCATION	A	B	C	MIN.	AVG.	MAX.	THICKNESS
RETENTION POND "A"							
NORTH PIPE	4.5'	9.0'	8.1'	1.5'	6.0'	8.3'	12.0'
SOUTH PIPE	4.5'	9.0'	8.1'	1.5'	6.0'	8.3'	12.0'
RETENTION POND "C"							
NORTH PIPE	3.0'	5.0'	5.0'	1.5'	6.0'	8.3'	12.0'
SOUTH PIPE	7.5'	5.0'	9.0'	1.5'	6.0'	8.3'	12.0'

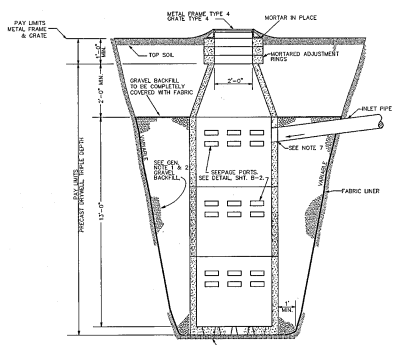


SECTION A–A'



PIPE OUTLET / RIPRAP DETAIL

NTS



TRIPLE DEPTH DRYWELL DETAIL

NTS

GENERAL NOTES

1. GRAVEL BACKFILL QUANTITY FOR DRYWELLS :
TYPE "A" – 30 CUBIC YARDS MINIMUM / 42 TONS.
TYPE "B" – 40 CUBIC YARDS MINIMUM / 56 TONS.
TRIPLE DEPTH – 50 CUBIC YARDS MINIMUM / 70 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

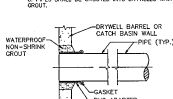
4. SEE STANDARD PLANS SHEETS B-2 AND B-3 FOR PRECAST CONCRETE DETAILS.

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.

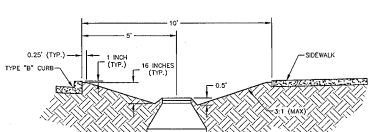
8. PIPES SHALL BE GROUTED INTO DRYWELLS WITH NON-SHRINK GROUT.



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.



NOTES

1. HYDROSEED OR SOD PER SEEDING SPECIFICATIONS.

2. DRYWELL OR INLET SHALL BE RAISED 6" ABOVE THE FLOWLINE OF THE DRAINAGE SWALE UNLESS OTHERWISE SHOWN ON THE PLANS.

3. DRYWELL TO BE CONSTRUCTED TO SPOKANE COUNTY STD. B-1a.

4. ALL SWALE SIDE SLOPES TO BE 3:1 MAX (H:V).

5. FOR CONSTRUCTION OF DRYWELLS, INSTALL FILTER FABRIC (AMOCO 4545 OR APPROVED EQUIVALENT).

6. BOTTOM OF SWALE SHALL BE CONSTRUCTED WITH A SLOPE MATCHING THE ADJACENT CURB AND SIDEWALK.

NORTH MADISON RD. WIDENING
208 SWALE "A" SECTION

NTS

SPOKANE COUNTY ENGINEERS OFFICE
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P1923
DATE ACCEPTED: 3/26/2004
ACCEPTANCE EXPIRES: 8/26/2004
PROJECT LANE MILES PUBLIC: N/A
PROJECT LANE MILES PRIVATE: 0.23
CONSTRUCTION PLANS EXPIRE AT 18 MONTHS
RECORD DRAWINGS, "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE.
PERMIT REQUIRED! (509) 477-3600
NOTIFY PERMIT ENGINEER 3 BUSINESS DAYS PRIOR TO CONSTRUCTION

DEVELOPER DATE

CALL BEFORE YOU DIG 456-8000

P-1923 Eng Road Drainage

No.	DATE	BY
1		
2		
3		
4		

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

SHEET TITLE: DETAIL SHEET

PROJECT TITLE: ALDERWOOD
SPOKANE COUNTY, WASHINGTON

SEAL: CHAD HEIMBIGNER, STATE OF WASHINGTON, 40513, REGISTERED PROFESSIONAL ENGINEER
EXPIRES 10-03-04

DATE	07/20/04
DRAWN	RWH
CHECKED	CH
SCALE	AS SHOWN
PROJECT NUMBER	03-022
DRAWING NO.	11 OF 11
	DETAIL

03022-LDWD DETAIL-4-ST