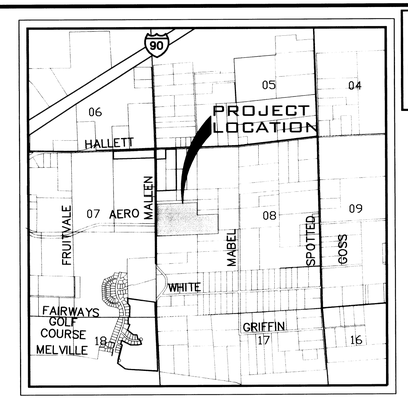
NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.

CONSTRUCTION PLANS

THOMAS MALLEN PHASE 1

LOCATED IN A PORTION OF THE NW 1/4 OF SEC. 8, T. 24 N., R. 42 E., W.M. SPOKANE COUNTY, WA.

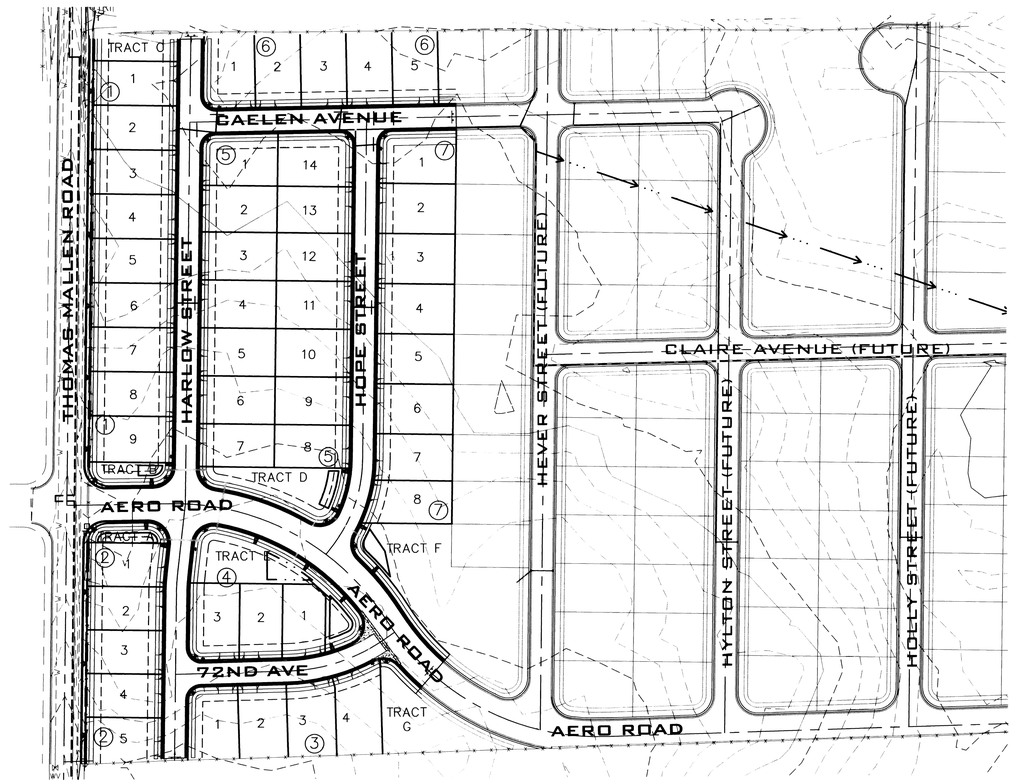
UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG



VICINITY MAP

TITLE

EXISTING	DESCRIPTION	PROPOSED
	ROADWAY CENTER LINE	
	RIGHT OF WAY LINE	
	PROPERTY LINE	
	EASEMENT LINE	
	FENCE	
	CURB	
	PAVEMENT	
	GRAVEL	
	CONCRETE	
	BUILDINGS & STRUCTURES	
	MONUMENT	
	SEWER	
	SANITARY SEWER	
	MANHOLE	
	CLEANOUT	
	SEWER SERVICE	
	WATER	
	WATER LINE	
	VALVE	
	FIRE HYDRANT	
	SERVICE	
	METER	
	BLOWOFF	
	AIR VACUUM RELIEF STATION	
	DRAINAGE	
	DRAINAGE LINE	
	MANHOLE	
	DRYWELL	
	CATCH BASIN	
	DITCH	
	GAS	
	GAS LINE	
	VALVE	
	METER	
	TELE-POWER	
	BURIED TELEPHONE	
	POWER OR TELEPHONE POLE	
	BURIED POWER	
	TRANSFORMER PAD	
	TELEPHONE RISER	
	TELEPHONE VAULT	
	OVERHEAD POWER	
	GUY ANCHOR	
	POWER VAULT	
	LIGHT POLE	



N
W E
S

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

SHEET INDEX

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C9.2	SWPPP BMPs
C9.3	SWPPP BMPs

SEWER MAINTENANCE
CITY OF SPOKANE
909 EAST SPRAGUE AVENUE
SPOKANE, WASHINGTON 99202
PHONE: 625-7900
CONTACT: GARY KAESEMEYER

WATER
CITY OF SPOKANE
914 E NORTH FOOTHILLS DR
SPOKANE, WASHINGTON 99207
PHONE: 625-7854
CONTACT: JIM SAKAMOTO, P.E.

FIRE
FIRE DISTRICT NO. 3
10 SOUTH PRESLEY DRIVE
CHENEY, WASHINGTON 990045
PHONE: 235-6645
CONTACT: BRUCE HOLLOWAY

STREETS
SPOKANE COUNTY ENGINEERS
1028 WEST BROADWAY AVE.
SPOKANE, WASHINGTON 99260
PHONE: 477-3600
CONTACT: MATT ZARECOR, P.E.

INSPECTION
CITY OF SPOKANE
1423 NORTH NORMANDIE
SPOKANE, WASHINGTON 99201
PHONE: 625-7716
CONTACT: JOHN HOGBERG

INSPECTION-S.C.
INLAND PACIFIC ENGINEERING
P. O. BOX 1566
VERADALE, WASHINGTON 99037
PHONE: 209-6262
CONTACT: PAUL NELSON, P.E.

HEALTH
SPOKANE REGIONAL HEALTH
1101 WEST COLLEGE AVENUE
SPOKANE, WASHINGTON 99260
PHONE: 324-1560-1
CONTACT: DON COPLEY

SOLID WASTE
CITY OF SPOKANE
1225 E MARIETTA AVENUE
SPOKANE, WASHINGTON 99207
PHONE: 625-7871
CONTACT: RICK HUGHES

GAS / POWER
AVISTA UTILITIES
1411 EAST MISSION AVENUE
SPOKANE, WASHINGTON 99220
PHONE: 495-8610
CONTACT: KEN CARLSON

TELEPHONE
CENTURY LINK
904 NORTH COLUMBUS
SPOKANE, WASHINGTON, 99202
PHONE: 623-0309
CONTACT: CHARISSE MATHES

CABLE
COMCAST BROADBAND
1717 EAST BUCKEYE
SPOKANE, WASHINGTON, 99207
PHONE: 209-4717
CONTACT: BRYAN RICHARDSON

SURVEYOR
WHIPPLE CONSULTING ENGINEERS
2528 N. SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PHONE: 893-2617
CONTACT: JON GORDON, PLS

ENGINEER
WHIPPLE CONSULTING ENGINEERS
2528 N. SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PHONE: 893-2617
CONTACT: TODD WHIPPLE, P.E.

OWNER/DEVELOPER
WEST PLAIN HOLDINGS, LLC
C/O AHO CONSTRUCTION, INC
5512 NE 109TH CT. STE, 101
VANCOUVER, WASHINGTON 98662
PHONE: (360) 901-0228
CONTACT: JON JOHNSON

ABBREVIATIONS

ACT. LEN.	ACTUAL LENGTH	GB	GRADE BREAK	PRC	POINT OF REVERSE CURVE
BCR	BEGINNING OF CURVE RADIUS	FT./FT.	FEET PER FOOT	PT	POINT OF TANGENCY
BDRY.	BOUNDARY	HYD.	HYDRANT	RIM EL.	RIM ELEVATION
CO.	SEWER CLEANOUT	I.E.	INVERT ELEVATION	RD	ROAD
CSTC	CRUSHED SURFACE TOP COURSE	LN.	LANE	RT.	RIGHT
CT.	COURT	LT.	LEFT	SI	STREET INTERSECTION
DIA.	DIAMETER	MH	MANHOLE	SS	SANITARY SEWER
ECR	END OF CURVE RADIUS	MCR	MIDDLE OF CURVE RADIUS	STA.	STATION
EXIST.	EXISTING	PC	POINT OF CURVATURE	STA. LEN.	STATION LENGTH
G	GRADE	PET.	PETROLEUM	TG	TOP OF GRATE
		PI	POINT OF INTERSECTION	TC	TOP OF CURB

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: 1" = 100'
VERTICAL: N/A

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: NJH
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

THOMAS MALLEN PHASE 1
COVER SHEET
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: 1.24
PROJECT LANE MILES PRIVATE: 0
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

6-17-16
MARK L. KRIEGBAUM
STATE OF WASHINGTON
39236
REGISTERED PROFESSIONAL ENGINEER

PREPARED UNDER THE DIRECT SUPERVISION OF MARK KRIEGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

SHEET
C0.0

JOB NUMBER
15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 West Plain Holding LLC - Thomas Mallen Phase 1\Dwg\15-1467.DWG\15-1467-C0.0 COVER SHEET.dwg, C0.0 COVER SHEET, 6/17/2016 2:31:17 PM, nathb

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

GENERAL NOTES

1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF SITE IMPROVEMENTS SHALL MEET OR EXCEED SITE WORK STANDARDS AND THE STANDARDS AND SPECIFICATIONS SET FORTH IN SPOKANE COUNTY REGULATIONS AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY. ALL WORK WITHIN PUBLIC R.O.W. OR EASEMENTS SHALL BE INSPECTED AND APPROVED BY SPOKANE COUNTY INSPECTOR. INSPECTION SERVICES AND CONSTRUCTION CERTIFICATION TO BE PROVIDED BY DESIGNEE OF PROJECT SPONSOR/OWNER.

2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL NOTIFY SPOKANE COUNTY INSPECTOR AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS.

4. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH SPOKANE COUNTY AND ALL UTILITY COMPANIES WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION, TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION, AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.

5. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND ONE (1) COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ON-SITE AT ALL TIMES.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO: EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.

7. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.

8. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.

9. FOR WORK AFFECTING PUBLIC ROADWAYS OR IF REQUIRED BY SPOKANE COUNTY, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL AND PHASING PLAN IN ACCORDANCE WITH M.U.T.C.D. FOR APPROVAL. PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN OR AFFECTING THE RIGHT-OF-WAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY SAID PLANS. PRIOR TO INSTALLATION.
A PRECONSTRUCTION CONFERENCE SHALL BE HELD WITH SPOKANE COUNTY.

10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED OR RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.

11. PER AGENCY STANDARDS THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING RECORD INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE AND AVAILABLE TO SPOKANE COUNTY INSPECTOR AT ALL TIMES.

13. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. FOR ADDITIONAL INFORMATION CONTACT THE ENGINEER FOR CLARIFICATION AND NOTE ON THE RECORD DRAWINGS.

14. ALL EROSION AND SEDIMENT CONTROL (E.S.C.) MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION PRIOR TO GROUND DISTURBING ACTIVITY. ALL E.S.C. MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING.

15. THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF WATER LINES AND DRY UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS CONSISTENT WITH THE CONTRACTORS SCHEDULE FOR THIS PROJECT, WHETHER SHOWN OR NOT SHOWN, AS IT RELATES TO THE CONSTRUCTION ACTIVITIES CONTEMPLATED IN THESE PLANS.

16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY IS SUBJECT TO THE JURISDICTION OF SPOKANE COUNTY ENGINEERING DEPARTMENT STANDARD DETAILS AND SPECIFICATIONS.

17. ALL CONSTRUCTION OPERATIONS, INCLUDING THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTH MOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED EQUIPMENT SHALL GENERALLY BE LIMITED TO THE TIME PERIOD APPROVED BY SPOKANE COUNTY.

18. BASED ON REQUIREMENTS FROM SPOKANE COUNTY, THE ENGINEER OR HIS DESIGNEE SHALL PERFORM MATERIALS TESTING AND QUALITY CONTROL ON THE PROJECT AND SHALL SUBMIT COPIES OF DAILY REPORTS, TEST REPORTS, PROJECT CERTIFICATION AND RECORD DRAWINGS TO THE SPOKANE COUNTY ENGINEER.

19. NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT APPROVAL OF SPOKANE COUNTY ENGINEERS AND NOTIFICATION OF THE ENGINEER OF RECORD.

20. ON-SITE GRADING SHALL BE IN ACCORDANCE WITH THE APPROVED GRADING PLAN AND E.S.C. PLAN. ANY IMPORT OR EXPORT OF MATERIAL SHALL BE FROM A PREAPPROVED SOURCE/DESTINATION AND COORDINATED WITH THE SPOKANE COUNTY DEPARTMENT OF BUILDING AND PLANNING AT 509-477-3675. GRADING ON THIS SITE OR ANY OTHER SITE MUST COMPLY WITH ALL DEVELOPMENT REGULATIONS INCLUDING, BUT NOT LIMITED TO , GRADING PERMITS, S.E.P.A. REVIEW, TIMBER HARVEST PERMITS, CRITICAL AREAS, FLOOD PLAINS, DESIGNATED DRAINAGE WAYS, ETC.

21. THE CONTRACTOR IS CAUTIONED THAT IT IS THE UNDERSTANDING OF THE OWNER AND THE ENGINEER THAT SHOULD A CONFLICT OR DISCREPANCY IN THESE PLANS, SPECIFICATIONS, GENERAL NOTES OR PLANS ET.AL. DETERMINED TO BE PART OF THE OVERALL PROJECT, INCLUDING BUT NOT LIMITED TO THE ARCHITECTURAL PLANS, MECHANICAL PLANS, ELECTRICAL PLANS, LANDSCAPE PLANS, GENERAL SPECIAL PROVISIONS, ETC., THAT WITHOUT WRITTEN CLARIFICATION FROM THE ENGINEER, OWNER OR OTHER PROFESSIONAL, DURING THE BIDDING PROCESS, THAT IN ALL INSTANCES THE CONTRACTOR WILL BE REQUIRED TO BID THE HIGHER STANDARD. FAILURE TO DO SO MAY RESULT IN THE HIGHER STANDARD BEING REQUIRED BY THE OWNER, ENGINEER OR OTHER PROFESSIONAL WITH NO CHANGE IN VALUE TO THE CONTRACT VIA CHANGE ORDER OR OTHER MECHANISM.

22. CONSTRUCTION OF EVERY DRYWELL, INCLUDING FABRIC AND DRAINROCK, SHALL BE OBSERVED BY THE ON-SITE INSPECTOR TO CONFIRM THAT IT MEETS THE DESIGN DETAILS AND SPECIFICATIONS. DRYWELLS NOT OBSERVED SHALL HAVE THEIR PERFORMANCE VERIFIED BY A FULL-SCALE DRYWELL TEST.

23. DURING CONSTRUCTION THE CONTRACTOR IS RESPONSIBLE TO COORDINATE ANY AND ALL INCONSISTENCIES BETWEEN THESE PLANS AND CONSTRUCTION STAKING. CONTRACTOR ASSUMES RESPONSIBILITY TO CONSTRUCT TO THESE PLANS IN LIEU OF FIELD STAKING. SHOULD INCONSISTENCIES BE APPARENT THE CONTRACTOR SHALL CONTACT THE ENGINEER, OWNER, AND SURVEYOR TO RECTIFY THE DISCREPANCY PRIOR TO CONSTRUCTION EFFORT BEING APPLIED.

GENERAL GRADING NOTES

1. CONTOURS AND / OR ELEVATIONS SHOWN ARE FOR FINISHED PAVING, SIDEWALK, SLAB, OR GROUND. ADJUSTMENT TO SUBGRADE IS THE CONTRACTOR'S RESPONSIBILITY.

2. ALL DISTURBED AREAS THAT ARE UNSURFACED OR ARE NOT DESIGNATED AS LANDSCAPE AREAS ARE TO BE SEEDED, FERTILIZED, AND WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.

3. IF DURING THE OVERLOT GRADING PROCESS, CONDITIONS ARE ENCOUNTERED WHICH COULD INDICATE AN UNIDENTIFIED SITUATION IS PRESENT, THE SOILS ENGINEER SHALL BE CONTACTED FOR RECOMMENDATIONS.

4. UNLESS OTHERWISE SHOWN, NO PROPOSED SLOPE SHALL EXCEED THREE (3) HORIZONTAL TO ONE (1) VERTICAL. ALL SLOPED AREAS MUST BE PROTECTED FROM EROSION.

5. IF STRIPPED MATERIALS CONSISTING OF VEGETATION AND ORGANIC MATERIALS ARE STOCKPILED ON THE SITE, TOPSOIL MAY BE PLACED TO A HEIGHT OF FIVE FEET. SILT FENCE SHALL BE PLACED AROUND THE BASE OF THE STOCKPILE AND THE STOCKPILE SHALL BE SEEDED WITH NATIVE SEED MIX IMMEDIATELY AFTER STRIPPING OPERATIONS ARE COMPLETE.

6. SPOT ELEVATIONS SHALL TAKE PRECEDENCE OVER CONTOURS AND SLOPES SHOWN. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF SPOT ELEVATIONS THAT DO NOT APPEAR TO BE CONSISTENT WITH THE CONTOURS AND SLOPES. SPOT ELEVATIONS AND SPECIFIC PROFILE DESIGN SHALL BE USED FOR SETTING ELEVATIONS OF CURB, GUTTER, AND UTILITIES.

7. BENCHMARK VERIFICATION: CONTRACTOR SHALL USE BENCHMARKS AND DATUMS SHOWN HEREON TO SET PROJECT BENCH MARK'S), BY RUNNING A LEVEL LOOP BETWEEN AT LEAST TWO BENCHMARKS, AND SHALL PROVIDE SURVEY NOTES OF SUCH TO PROJECT ENGINEER PRIOR TO COMMENCING CONSTRUCTION.

8. ALL UTILITIES (MANHOLES, VALVE COVERS, CLEANOUTS, VAULTS, BOXES, ETC.) SHALL BE ADJUSTED TO FINAL GRADE PRIOR TO THE FINAL LIFT OF ASPHALT.

9. GRADES WITHIN ASPHALT PARKING AREAS SHALL BE CONSTRUCTED TO WITHIN 0.10 FEET OF THE DESIGN GRADE. HOWEVER, THE CONTRACTOR SHALL MAINTAIN POSITIVE DRAINAGE IN ALL PAVEMENT AREAS AND ALONG ALL CURBS. ALL CURBS SHALL BE BUILT IN ACCORDANCE TO THE PLAN. CURBS OR PAVEMENT AREAS WHICH DO NOT PROVIDE PROPER DRAINAGE MUST BE REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.

10. SPOT ELEVATIONS REPRESENT FLOW LINE OR TOP OF ASPHALT UNLESS OTHERWISE NOTED.

11. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING HIS OWN ESTIMATE OF EARTHWORK QUANTITIES.

12. WHERE NEW CURB AND GUTTER IS BEING CONSTRUCTED ADJACENT TO EXISTING ASPHALT OR CONCRETE PAVEMENT, THE FOLLOWING SHALL APPLY: PRIOR TO PLACEMENT OF ANY CONCRETE THE CONTRACTOR SHALL HAVE A LICENSED SURVEYOR VERIFY THE GRADE AND CROSS SLOPE OF THE CURB AND GUTTER FORMS. THE CONTRACTOR SHALL SUBMIT THE SLOPES AND GRADES TO THE ENGINEER FOR APPROVAL PRIOR TO PLACEMENT OF CONCRETE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY SECTION WHICH DOES NOT CONFORM TO THE DESIGN OR TYPICAL CROSS SECTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR CURB AND GUTTER POURS WITHOUT THE APPROVAL OF THE ENGINEER.

13. THE EARTHWORK FOR ALL BUILDING FOUNDATIONS AND SLABS SHALL BE IN ACCORDANCE WITH ARCHITECTURAL BUILDING PLANS AND SPECIFICATIONS.

14. PRE CAST STRUCTURES MAY BE USED AT CONTRACTORS OPTION.

15. EXISTING DRAINAGE STRUCTURES TO BE INSPECTED AND REPAIR AS NEEDED, AND EXISTING PIPES TO BE CLEANED OUT TO REMOVE ALL SILT AND DEBRIS.

16. EXISTING GRADE CONTOUR INTERVALS SHOWN AT 1 FOOT INTERVALS.

17. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.

18. CONTRACTOR SHALL ADJUST AND/OR CUT EXISTING PAVEMENT AS NECESSARY TO ASSURE A SMOOTH FIT AND CONTINUOUS GRADE.

19. CONTRACTOR SHALL ASSURE POSITIVE DRAINAGE AWAY FROM BUILDINGS FOR ALL NATURAL AND PAVED AREAS.

20. TOPOGRAPHIC INFORMATION TAKEN FROM A TOPOGRAPHIC SURVEY PROVIDED BY THE OWNER . IF CONTRACTOR DOES NOT ACCEPT EXISTING TOPOGRAPHY AS SHOWN ON THE PLANS. WITHOUT EXCEPTION, HE SHALL HAVE MADE, AT HIS EXPENSE, A TOPOGRAPHIC SURVEY BY A REGISTERED LAND SURVEYOR AND SUBMIT IT TO THE OWNER FOR REVIEW.

21. ALL UNSURFACED AREA DISTURBED BY GRADING OPERATION SHALL RECEIVE 4 INCHES OF TOPSOIL. CONTRACTOR SHALL APPLY STABILIZATION FABRIC TO ALL SLOPES 3H:1V OR STEEPER. (CONTRACTOR SHALL PLACE SOD OR HYDROSEED DISTURBED AREAS IN ACCORDANCE WITH CITY/COUNTY SPECIFICATIONS AND MAINTAINED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.)

22. CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE GOVERNING CODES AND SITE SHALL BE CONSTRUCTED TO SAME.

23. CONTRACTOR IS RESPONSIBLE FOR VERIFYING ALL UTILITIES AND NOTIFYING THE APPROPRIATE UTILITY COMPANY PRIOR TO BEGINNING CONSTRUCTION.

24. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES, AND WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE APPROPRIATE UTILITY COMPANIES AT LEAST 72 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF UTILITIES. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS.

25. ENGINEER SHALL BE NOTIFIED WHEN 'CURBING STRING LINE' HAS BEEN SET, PRIOR TO CURBING BEING INSTALLED.

STREET GENERAL NOTES

THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR, AND EQUIPMENT TO CONSTRUCT AND INSTALL TO PROPER WORKING ORDER. ALL IMPROVEMENTS AS DETAILED OR CALLED OUT ON THESE PLANS.

1. ALL WORK AND MATERIALS SHALL BE IN CONFORMANCE WITH THE "SPOKANE COUNTY STANDARDS FOR ROAD AND SEWER CONSTRUCTION, CURRENT EDITION", AND AS AMENDED.

2. THE CONTRACTOR IS REQUIRED TO HAVE A VALID CONSTRUCTION PERMIT ON SITE AT ALL TIMES. THE ABSENCE OF THE PERMIT WILL RESULT IN AN IMMEDIATE SHUTDOWN OF WORK AND THE POSSIBLE REMOVAL OF THOSE ITEMS CONSTRUCTED WITHOUT THE PERMIT.

3. LOCATIONS OF EXISTING UTILITIES SHOWN IN THE PLANS ARE APPROXIMATE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES. ANY CONFLICTING UTILITIES SHALL BE RELOCATED PRIOR TO CONSTRUCTION OF ROAD AND DRAINAGE FACILITIES.

4. 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.

5. IF THE CONTRACTOR DISCOVERS ANY DISCREPANCIES BETWEEN THE PLANS AND EXISTING CONDITIONS ENCOUNTERED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE DESIGN ENGINEER, TODD R WHIPPLE, P.E., @ 893-2617, THE SITE/PROJECT INSPECTING ENGINEER OR HIS REPRESENTATIVE, ALLWEST, PAUL T. NELSON, P.E., @ 534-4411 AND THE SPOKANE COUNTY ENGINEER'S OFFICE, CONSTRUCTION ENGINEER, @ 477-3600.

6. FOR CONSTRUCTION OF DRYWELLS, INSTALL FILTER FABRIC, "AMOCO" 4545 OR APPROVED EQUAL, BETWEEN THE DRYWELL BARREL AND THE WASHED DRAINROCK AND BETWEEN THE WASHED DRAINROCK AND NATIVE SOILS PER SPOKANE COUNTY STANDARD DETAIL B-1a.

7. PRIOR TO SITE CONSTRUCTION, THE CONTRACTOR IS RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES. CALL THE UNDERGROUND UTILITY LOCATION SERVICE AT 456-8000 BEFORE YOU DIG.

8. THE CONTRACTOR SHALL MAKE AN EFFORT TO PROTECT ALL CATCH BASINS AND DRYWELLS FROM BEING CONTAMINATED WITH SILT BY INSTALLING FILTER FABRIC UNDER THE LID FOR AT LEAST 6 WEEKS, OR UNTIL THE ESTABLISHMENT OF GRASS AND/OR OTHER SITE CONSTRUCTION WORK HAS ENDED. IN THE EVENT THAT SILT OR OTHER DELETERIOUS MATERIAL IS ALLOWED TO ENTER THE DRYWELLS OR CATCH BASINS THE CONTRACTOR WILL BE REQUIRED TO CLEAN OUT THE DRYWELL OR CATCH BASIN TO THE SATISFACTION OF THE CERTIFYING ENGINEER.

9. THE CONTRACTOR SHALL EMPLOY A LICENSED SURVEYOR TO VERIFY THAT THE CROSS- GUTTER FORMS ARE 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.

10. ALL DRYWELL CONNECTION PIPES SHALL BE PLACED BELOW THE DRYWELL CONE AND SHALL FLOW AS DIRECTED IN THE PLANS.

11. 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.

STORM DRAINAGE NOTES

1. SEE STREET PLAN AND PROFILE SHEETS FOR DRYWELL AND CATCH BASIN TYPES AND LOCATIONS.

2. PONDS SHALL BE CONSTRUCTED PER THE REQUIREMENTS OF THESE DRAWINGS INCLUDING GRADING, SOD, AND DRYWELL INSTALLATION. ALL PONDS WITHIN TRACTS SHALL INCLUDE AN IRRIGATION SYSTEM. ALL IRRIGATION SHALL CONFORM TO SPOKANE COUNTY POND IRRIGATION SYSTEM GUIDELINES.

3. ALL "208" PONDS SHOWN SHALL BE ROUGH GRADED PRIOR TO PAVING OF ADJACENT ROADWAY.

4. CONTRACTOR SHALL PROVIDE SPOKANE COUNTY WITH AS-BUILT IRRIGATION PLANS UPON COMPLETION OF ALL POND CONSTRUCTION.

5. INSTALL "AMOCO" #4545 FILTER FABRIC (OR APPROVED EQUAL) IN ALL DRYWELLS. SEE SPOKANE COUNTY STANDARDS (1999 EDITION) SHEET B-1a FOR INSTALLATION LOCATIONS.

6. ALL PONDS WITHIN THE COUNTY RIGHT-OF-WAY, IN THE AREA ASSOCIATED WITH THIS PROJECT, SHALL BE COMPLETED DURING THE CONSTRUCTION OF THE ROADWAY. THE CONTRACTOR SHALL PERFORM THE POND GRADE WORK, INSTALL THE IRRIGATION SYSTEM, AND PLACE THE SOD WITHIN THE PONDS FOLLOWING THE ROAD PAVING WORK.

7. THE CONTRACTOR SHALL MAKE AN EFFORT TO PROTECT ALL DRAINAGE STRUCTURES FROM BEING CONTAMINATED WITH SILT BY INSTALLING FILTER FABRIC UNDER THE LID FOR AT LEAST 6 WEEKS, OR UNTIL THE ESTABLISHMENT OF GRASS AND/OR OTHER SITE CONSTRUCTION WORK HAS ENDED. IN THE EVENT THAT SILT OR OTHER DELETERIOUS MATERIAL IS ALLOWED TO ENTER THE DRYWELLS OR CATCH BASINS, THE CONTRACTOR WILL BE REQUIRED TO CLEAN THE DRYWELL OR CATCH BASIN OUT TO THE SATISFACTION OF THE CERTIFYING ENGINEER.

8. ALL LANDSCAPE AREAS ('208' PONDS) ARE TO BE IRRIGATED BY AN AN AUTOMATIC IRRIGATION SYSTEM INSTALLED BY OR UNDER THE DIRECTION OF THE LANDSCAPE CONTRACTOR. THE IRRIGATION SYSTEM SHALL COMPLY WITH ALL LOCAL CODES AND ORDINANCES (90 DAY GUARANTEE). AN APPROVED BACKFLOW DEVICE SHALL BE INSTALLED TO PREVENT WATER FROM GOING BACK INTO THE WATER SUPPLY.

SLEEVING: PROVIDE SLEEVING AS REQUIRED UNDER SIDEWALKS, PATHS, NEEDED FOR IRRIGATION ACCESS. ALL SLEEVING TO BE 4" PVC. WITH AT LEAST 12" OF COVER (1) FOOT BELOW FINISH GRADE. THE OWNER/GENERAL CONTRACTOR IS RESPONSIBLE FOR INSTALLING SLEEVING BEFORE CURBING, SIDEWALKS, PAVING, ETC. IS INSTALLED. PATCH ASPHALT AS NEEDED.

LAWN AREAS: LAWN AREAS ARE TO BE IRRIGATED WITH TORO POP-UP HEADS OR EQUIVALENT. (TEST SYSTEM BEFORE BACKFILLING).

CURBING, PAVING, ETC. AS

ADJUSTMENT: AFTER INSTALLATION, ADJUST VALVES, HEADS, EMITTERS,

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: 1.24
PROJECT LANE MILES PRIVATE: Ø
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

MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED
PROFESSIONAL ENGINEER
6-17-16
PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: NJH
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

THOMAS MALLEN PHASE 1
GENERAL NOTES
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

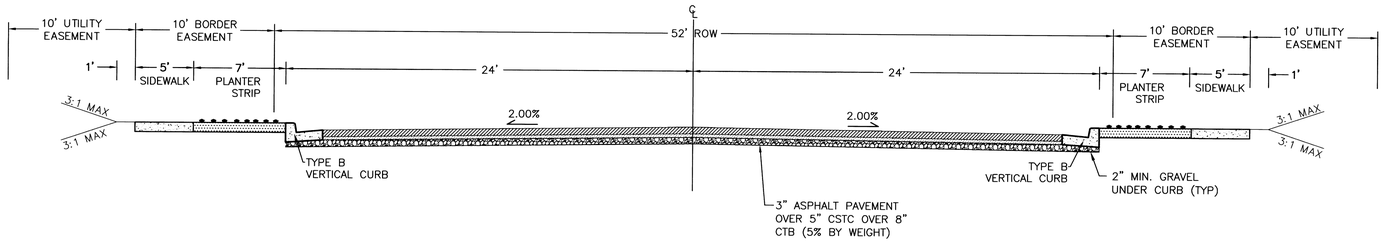
SHEET
C0.1

JOB NUMBER
15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 West Plain Holding LLC - Thomas Mallen Phase I (Ref 1018)\DWG\1467-C0.0 COVER.dwg, C0.1 NOTES, 6/16/2016 2:31:33 PM, nickh

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.

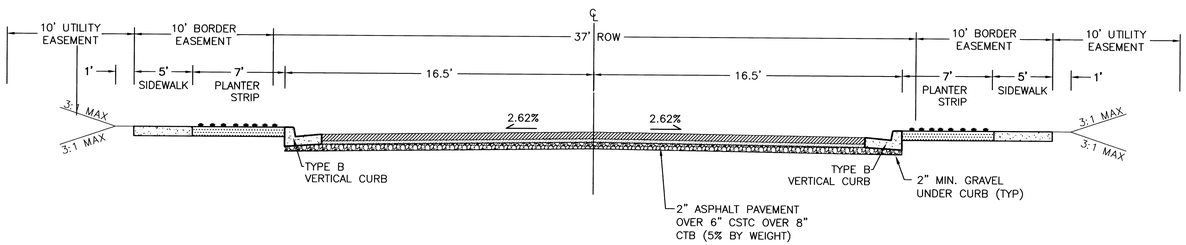
UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG



TYPICAL STREET SECTION - AERO ROAD

NOT TO SCALE

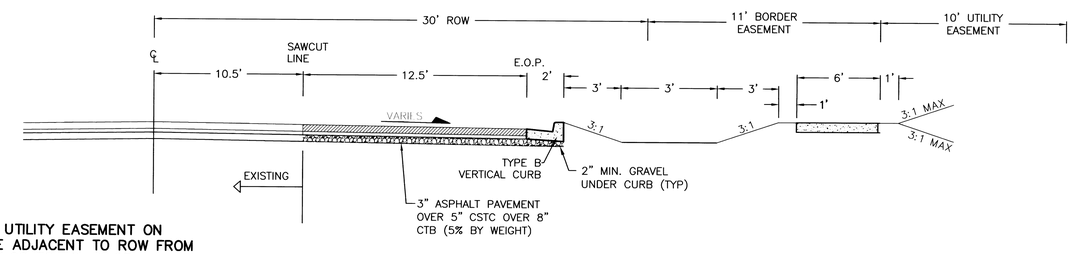
1



TYPICAL STREET SECTION - INTERNAL STREETS

NOT TO SCALE

2



NOTE: 10' UTILITY EASEMENT ON RIGHT SIDE ADJACENT TO ROW FROM STA 26+61.20 TO 36+73.23.

TYPICAL WIDENING SECTION - THOMAS MALLEN ROAD

NOT TO SCALE
STA 25+52.39 TO 38+88.85

3

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: 1.24
PROJECT LANE MILES PRIVATE: 0
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE
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6-17-16
MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED
PROFESSIONAL ENGINEER
PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: RMA
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

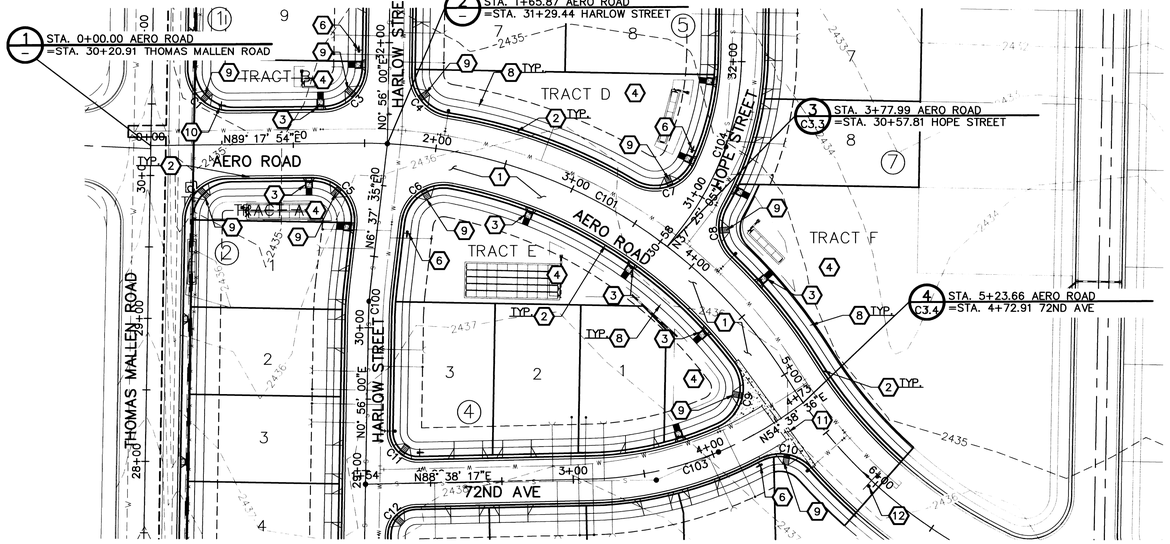
WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

THOMAS MALLEN PHASE 1
TYPICAL STREET SECTIONS
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET
C0.2

JOB NUMBER
15-1467

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.



CONSTRUCTION NOTES

1. PROVIDE AND INSTALL ROADWAY SECTION PER AERO ROAD TYPICAL ROADWAY SECTION–SEE DETAIL 1, SHEET C0.2
2. PROVIDE AND INSTALL TYPE B VERTICAL CURB AND GUTTER PER SPOKANE COUNTY STANDARD PLAN A–3. TBC=℄+0.06
3. PROVIDE AND INSTALL SPOKANE COUNTY TYPE 1 CURB INLET WITH SPOKANE COUNTY TYPE 2 CURB INLET PER STANDARD PLANS B–8 AND B–9. SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
4. PROVIDE AND INSTALL STORM POND, SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
5. RESERVED.
6. PROVIDE AND INSTALL STREET SIGN PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
7. PROVIDE AND INSTALL STREET NAME SIGNS PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
8. PROVIDE AND INSTALL 6' WIDE SIDEWALK PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
9. PROVIDE AND INSTALL PEDESTRIAN RAMP PER SPOKANE COUNTY STANDARD PLAN A–5 DESIGN B.
10. PROVIDE AND INSTALL STOP SIGN AND STREET NAME SIGN PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
11. PROVIDE AND INSTALL CONCRETE CROSS GUTTER PER SPOKANE COUNTY STANDARD PLAN B–18.
12. PROVIDE AND INSTALL TYPE 3 TRAFFIC BARRIERS WITH ROAD CLOSED SIGN PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.

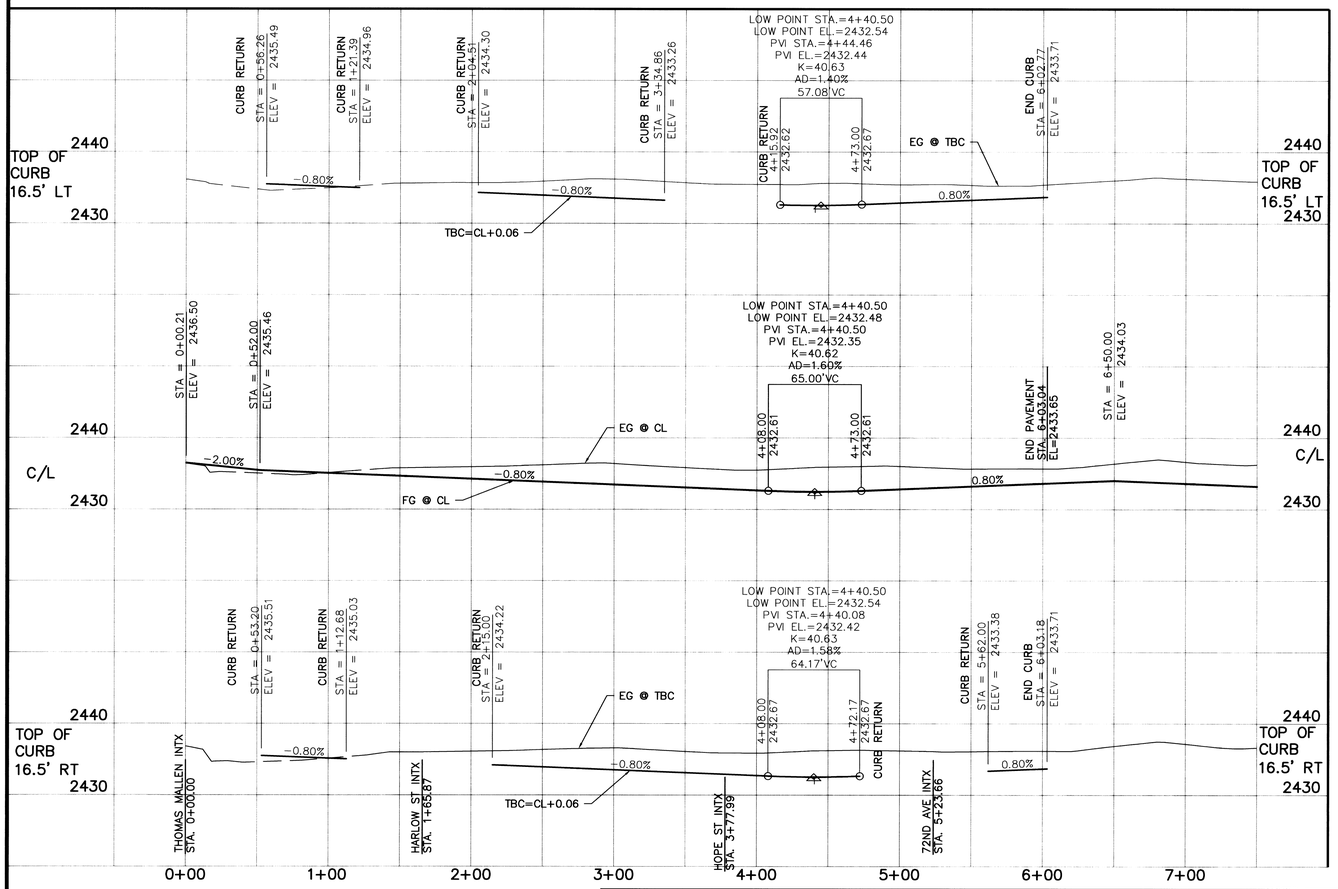
UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

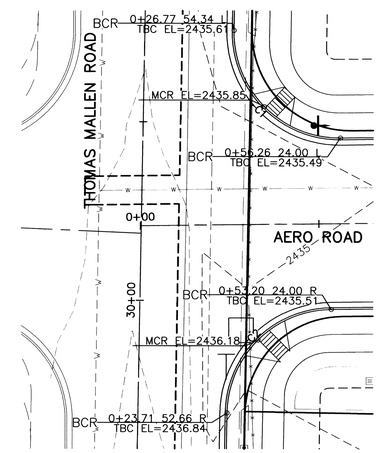
Curve Table (TBC)			
Curve #	Length	Radius	Delta
C1	47.18	29.50	91.64
C2	45.50	29.50	88.36
C3	45.50	29.50	88.36
C4	42.17	29.50	81.91
C5	50.11	29.50	97.33
C6	48.53	29.50	94.26
C7	49.05	29.50	95.27
C8	39.11	29.50	75.96
C9	52.97	29.50	102.89
C10	39.34	29.50	76.40
C11	31.41	19.50	92.30
C12	29.85	19.50	87.70
C13	31.25	19.50	91.83
C14	30.01	19.50	88.17
C15	31.25	19.50	91.83
C16	30.01	19.50	88.17

Curve Table (CL)			
Curve #	Length	Radius	Delta
C100	19.89	200.00	5.70
C101	358.35	350.00	58.66
C102	343.28	350.00	56.20
C103	148.33	250.00	33.99
C104	127.36	200.00	36.48

N
W E
S

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

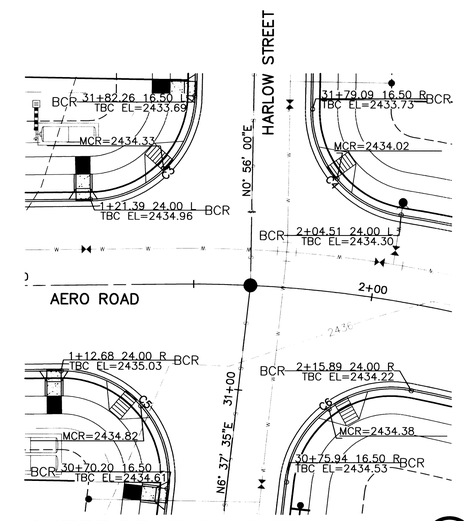




INTERSECTION DETAIL 1

AERO ROAD & THOMAS MALLEN ROAD
1" = 20'
STA 0+00.00 AERO RD = STA 30+20.91 THOMAS MALLEN RD

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.



INTERSECTION DETAIL 2

AERO ROAD & HARLOW STREET
1" = 20'
STA 1+65.87 AERO RD = STA 31+29.44 HARLOW ST

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-20374
DATE ACCEPTED: 06-16-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: .23
PROJECT LANE MILES PRIVATE: Ø
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

6-17-16
MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED PROFESSIONAL ENGINEER

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM, WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: NJH
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

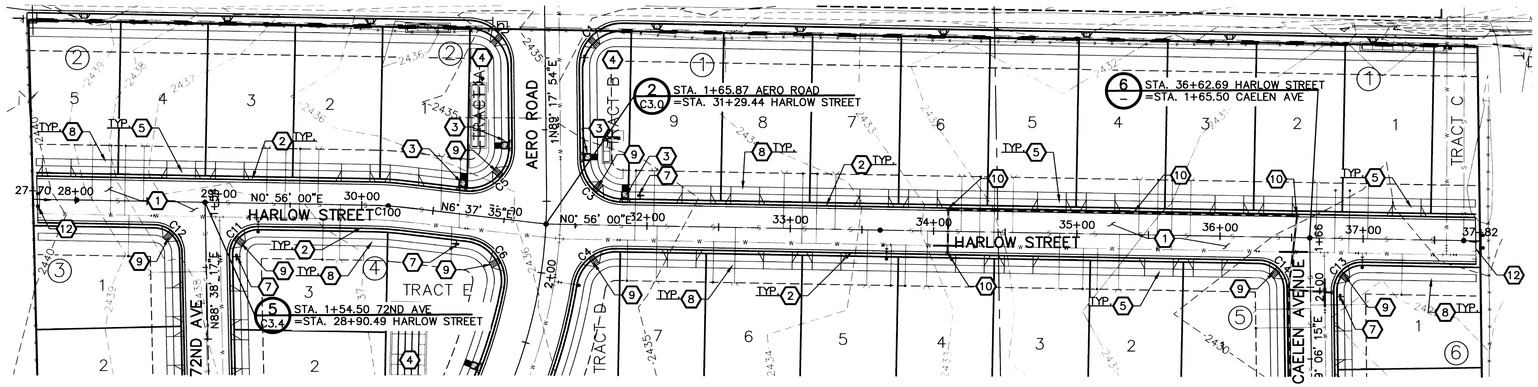
THOMAS MALLEN PHASE 1
AERO ROAD PLAN & PROFILE
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET C3.0

JOB NUMBER 15-1467

P:\WCE_WORK\2015\WCE PROJECTS\2015-1467 Rose Plain (Hyd 101)\DWG\1467-C3 X STREET SHEETS.dwg C3-1 AERO ROAD, 5/9/2016 2:33:31 PM, mlk

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.

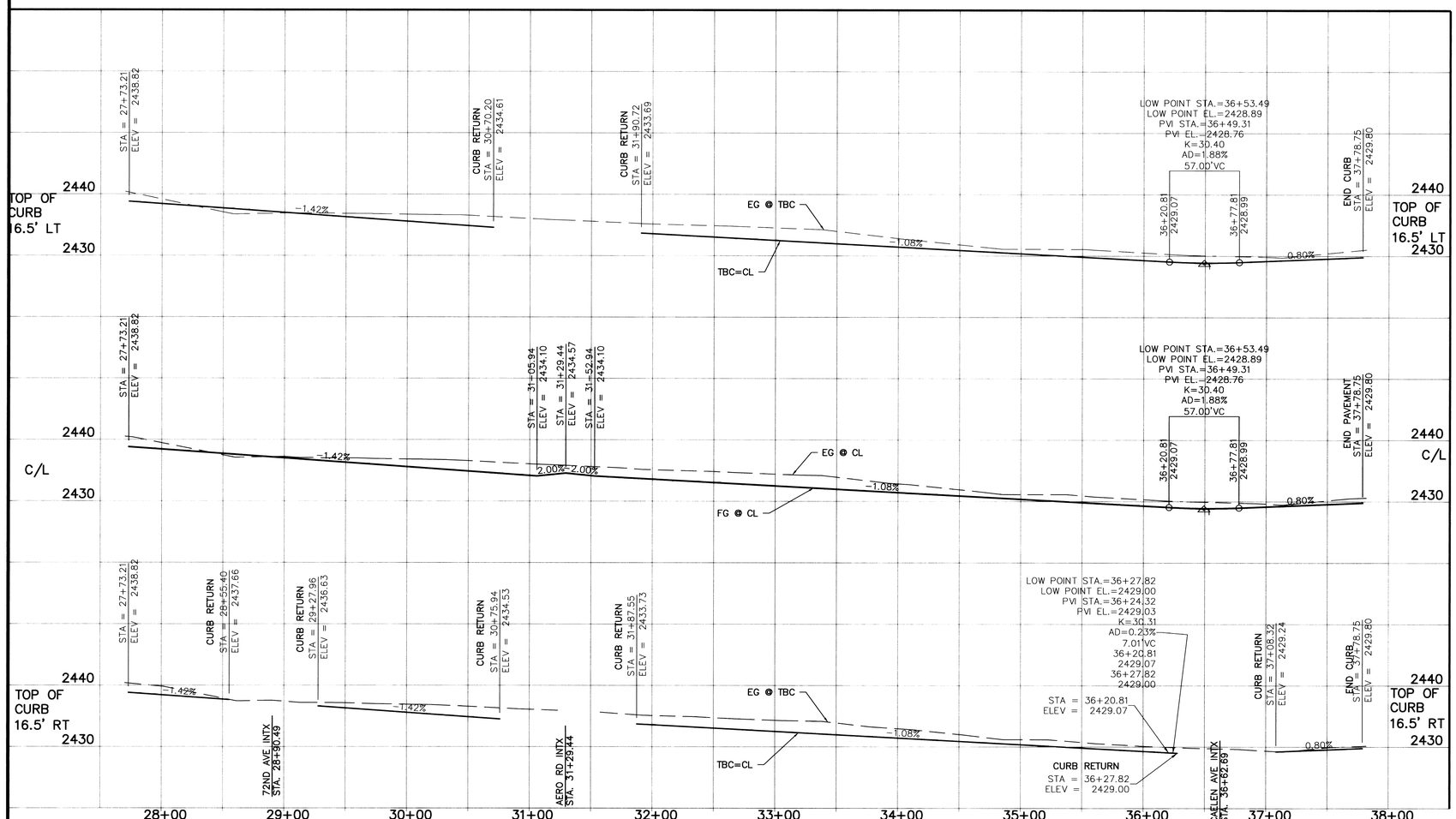


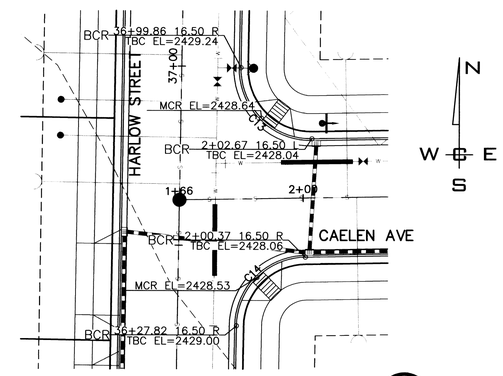
GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 inch = 50 ft.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

CONSTRUCTION NOTES

1. PROVIDE AND INSTALL ROADWAY SECTION PER INTERIOR ROAD TYPICAL ROADWAY SECTION–SEE DETAIL 2, SHEET C0.2.
2. PROVIDE AND INSTALL TYPE B VERTICAL CURB AND GUTTER PER SPOKANE COUNTY STANDARD PLAN A–3.
3. PROVIDE AND INSTALL SPOKANE COUNTY TYPE 1 CURB INLET WITH SPOKANE COUNTY TYPE 2 CURB INLET PER STANDARD PLANS B–8 AND B–9. SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
4. PROVIDE AND INSTALL STORM POND, SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
5. PROVIDE AND INSTALL 20' CONCRETE DRIVEWAY PER SPOKANE COUNTY STANDARD PLAN A–4. SEE LOCATION TABLE C3.3.
6. RESERVED.
7. PROVIDE AND INSTALL STREET NAME SIGNS PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
8. PROVIDE AND INSTALL 5' WIDE SIDEWALK PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
9. PROVIDE AND INSTALL PEDESTRIAN RAMP PER SPOKANE COUNTY STANDARD PLAN A–5 DESIGN B.
10. PROVIDE AND INSTALL STORM DRAINAGE STRUCTURE AND PIPE. SEE SHEET C5.3 FOR MORE DETAILS.
11. RESERVED.
12. PROVIDE AND INSTALL TYPE 3 TRAFFIC BARRIERS WITH ROAD CLOSED SIGN PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.





INTERSECTION DETAIL 6
CAELEN AVE & HARLOW STREET
1" = 20'
STA 1+65.50 CAELEN AVE = STA 36+62.69 HARLOW ST

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

Curve Table (TBC)			
Curve #	Length	Radius	Delta
C1	47.18	29.50	91.64
C2	45.50	29.50	88.36
C3	45.50	29.50	88.36
C4	42.17	29.50	81.91
C5	50.11	29.50	97.33
C6	48.53	29.50	94.26
C7	49.05	29.50	95.27
C8	39.11	29.50	75.96
C9	52.97	29.50	102.89
C10	39.34	29.50	76.40
C11	31.41	19.50	92.30
C12	29.85	19.50	87.70
C13	31.25	19.50	91.83
C14	30.01	19.50	88.17
C15	31.25	19.50	91.83
C16	30.01	19.50	88.17

Curve Table (CL)			
Curve #	Length	Radius	Delta
C100	19.89	200.00	5.70
C101	358.35	350.00	58.66
C102	343.28	350.00	56.20
C103	148.33	250.00	33.99
C104	87.38	200.00	25.03

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: .38
PROJECT LANE MILES PRIVATE: 0
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS–BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE
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NOTIFY PERMIT ENGINEER 2 BUSINESS DAYS PRIOR TO CONSTRUCTION

MARK L. KRIEGBAUM
STATE OF WASHINGTON
39236
REGISTERED PROFESSIONAL ENGINEER
6-17-16

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIEGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
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VERTICAL: 1" = 10'

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: NJH
REVIEWED: MLK

X CIVIL
STRUCTURAL
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LANDSCAPE
OTHER

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WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

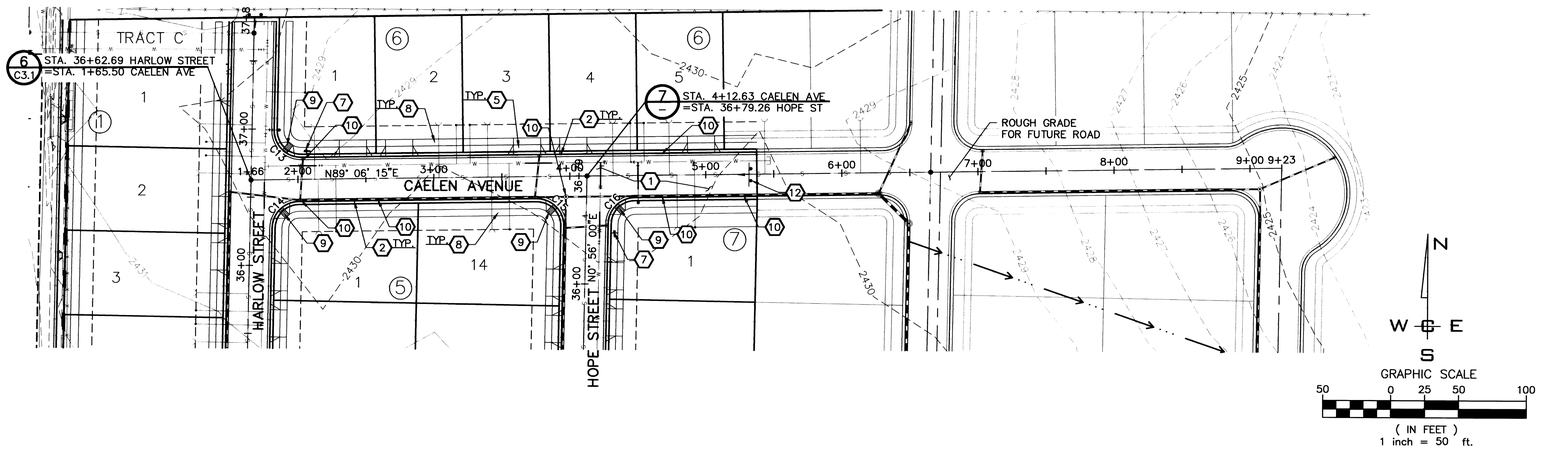
THOMAS MALLEN PHASE 1
HARLOW STREET PLAN & PROFILE
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET C3.1

JOB NUMBER 15-1467

F:\WCE_WORK\2015\WCE PROJECTS\2015-1467 West Plain Holding LLC - Thomas Mallen Phase 1\Dwf\15\1467PV3 & STREET SHEETS.dwg C3 1 HARLOW RD, 6/16/2016 2:33:36 PM, nick

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.



CONSTRUCTION NOTES

1. PROVIDE AND INSTALL ROADWAY SECTION PER INTERIOR ROAD TYPICAL ROADWAY SECTION–SEE DETAIL 2, SHEET C0.2.
2. PROVIDE AND INSTALL TYPE B VERTICAL CURB AND GUTTER PER SPOKANE COUNTY STANDARD PLAN A–3.
3. RESERVED.
4. PROVIDE AND INSTALL TEMPORARY POND, SEE SHEET C5.0 FOR MORE INFORMATION.
5. PROVIDE AND INSTALL 20' CONCRETE DRIVEWAY PER SPOKANE COUNTY STANDARD PLAN A–4. SEE LOCATION TABLE C3.3.
6. RESERVED.
7. PROVIDE AND INSTALL STREET NAME SIGNS PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
8. PROVIDE AND INSTALL 5' WIDE SIDEWALK PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
9. PROVIDE AND INSTALL PEDESTRIAN RAMP PER SPOKANE COUNTY STANDARD PLAN A–5 DESIGN B.
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UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
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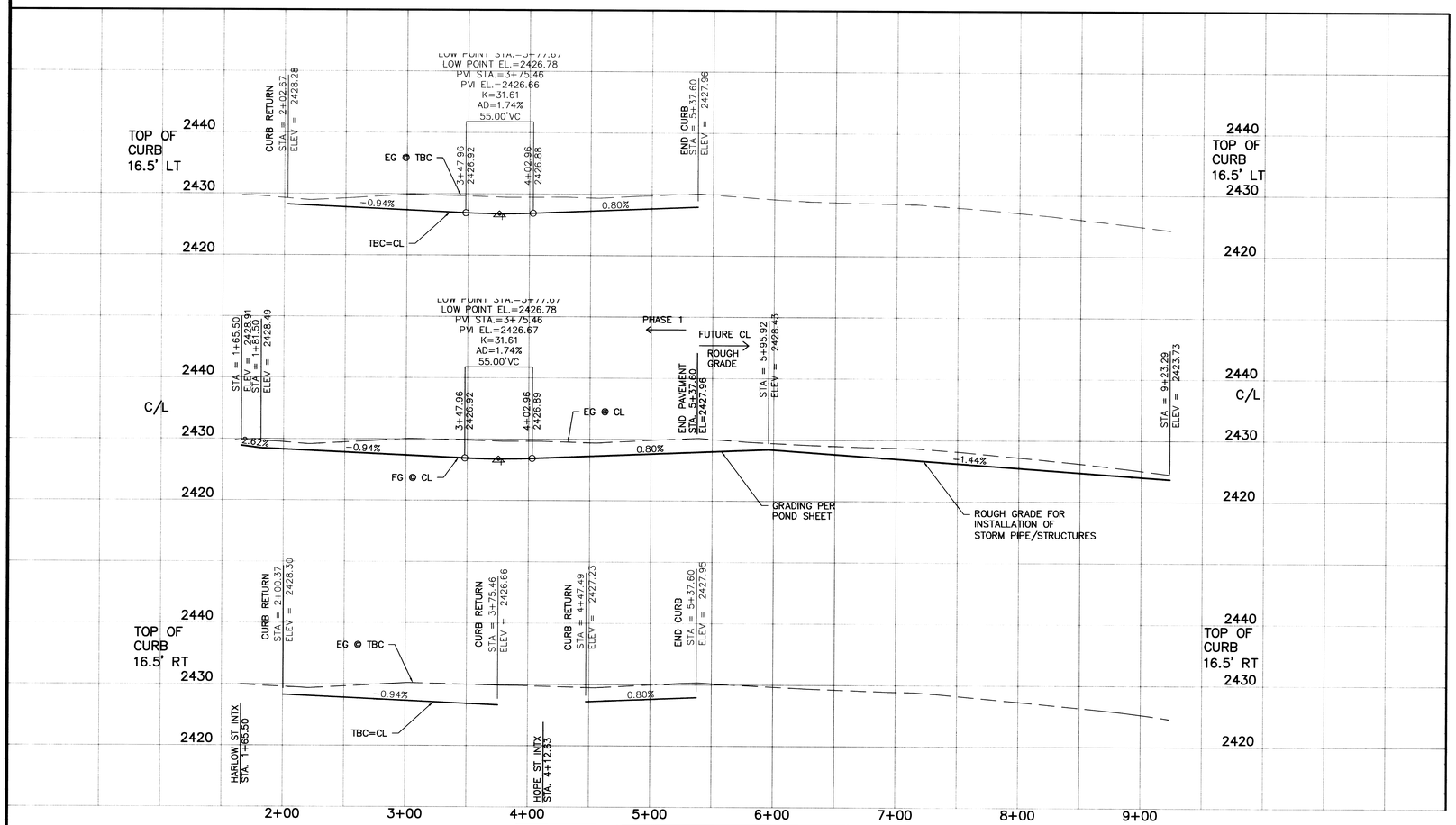
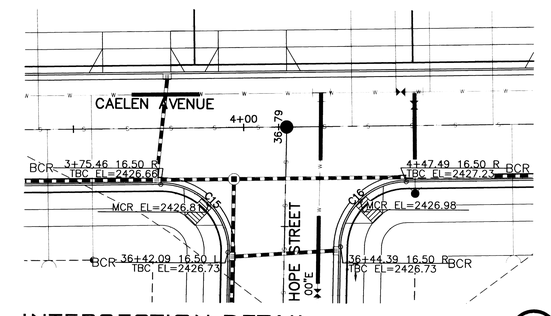
C7	49.05	29.50	95.27
C8	39.11	29.50	75.96
C9	52.97	29.50	102.89
C10	39.34	29.50	76.40
C11	31.41	19.50	92.30
C12	29.85	19.50	87.70
C13	31.25	19.50	91.83
C14	30.01	19.50	88.17
C15	31.25	19.50	91.83
C16	30.01	19.50	88.17





INTERSECTION DETAIL 7

CAELEN AVENUE & HOPE STREET
1" = 20'
STA 4+12.63 CAELEN AVE = STA 36+79.26 HOPE ST

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: .12
PROJECT LANE MILES PRIVATE: 0
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

MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED PROFESSIONAL ENGINEER
6-17-16

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM, PROFESSIONAL ENGINEER, REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: NJH
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

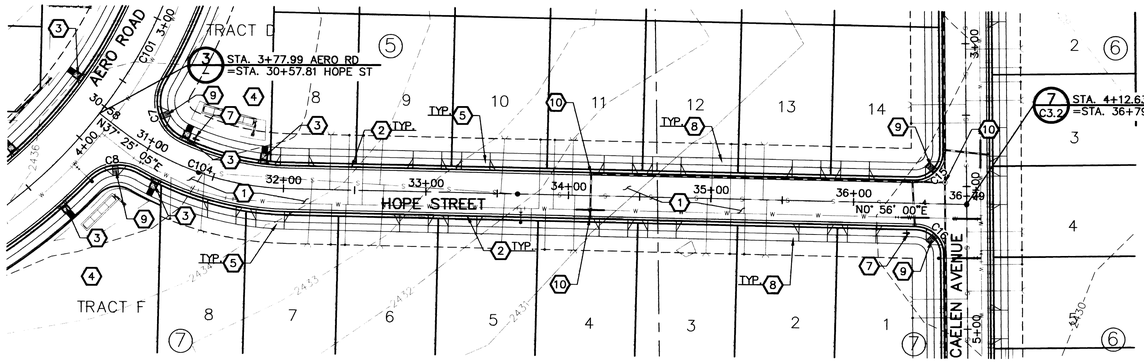
THOMAS MALLEN PHASE 1
CAELEN AVENUE PLAN & PROFILE
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET C3.2

JOB NUMBER 15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 Mallen Phase 1 Dwl 1\DWG\15-1467-C3.X STREET SHEETS.dwg, C3.2 CAELEN AVE, 6/16/2016 2:16:30 PM, mark

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.



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

CONSTRUCTION NOTES

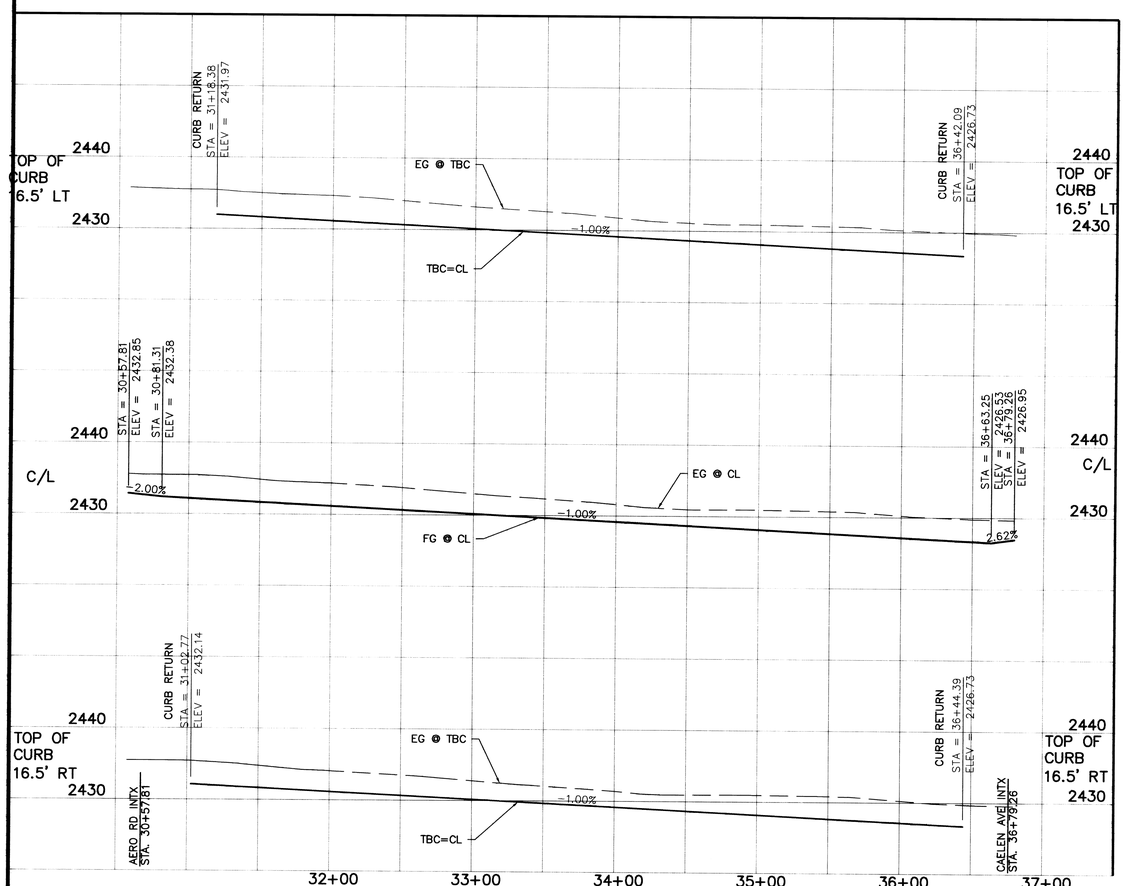
1. PROVIDE AND INSTALL ROADWAY SECTION PER INTERIOR ROAD TYPICAL ROADWAY SECTION–SEE DETAIL 2, SHEET C0.2.
2. PROVIDE AND INSTALL TYPE B VERTICAL CURB AND GUTTER PER SPOKANE COUNTY STANDARD PLAN A–3.
3. PROVIDE AND INSTALL SPOKANE COUNTY TYPE 1 CURB INLET WITH SPOKANE COUNTY TYPE 2 CURB INLET PER STANDARD PLANS B–8 AND B–9. SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
4. PROVIDE AND INSTALL STORM POND, SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
5. PROVIDE AND INSTALL 20' CONCRETE DRIVEWAY PER SPOKANE COUNTY STANDARD PLAN A–4. SEE LOCATION TABLE, THIS SHEET.
6. RESERVED.
7. PROVIDE AND INSTALL STREET NAME SIGNS PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
8. PROVIDE AND INSTALL 5' WIDE SIDEWALK PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
9. PROVIDE AND INSTALL PEDESTRIAN RAMP PER SPOKANE COUNTY STANDARD PLAN A–5 DESIGN B.
10. PROVIDE AND INSTALL STORM DRAINAGE STRUCTURE AND PIPE. SEE SHEET C5.3 FOR MORE DETAILS.

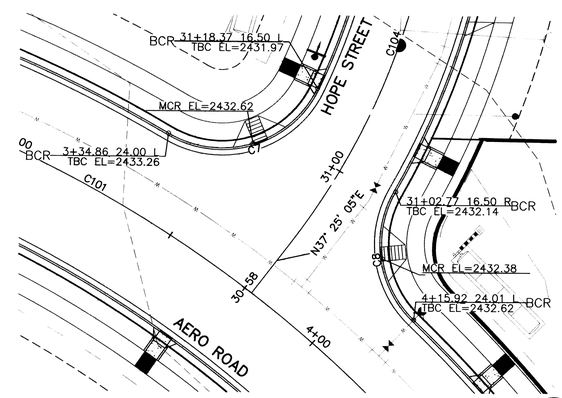
UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

Curve Table (TBC)			
Curve #	Length	Radius	Delta
C1	47.18	29.50	91.64
C2	45.50	29.50	88.36
C3	45.50	29.50	88.36
C4	42.17	29.50	81.91
C5	50.11	29.50	97.33
C6	48.53	29.50	94.26
C7	49.05	29.50	95.27
C8	39.11	29.50	75.96
C9	52.97	29.50	102.89
C10	39.34	29.50	76.40
C11	31.41	19.50	92.30
C12	29.85	19.50	87.70
C13	31.25	19.50	91.83
C14	30.01	19.50	88.17
C15	31.25	19.50	91.83
C16	30.01	19.50	88.17

Curve Table (CL)			
Curve #	Length	Radius	Delta
C100	19.89	200.00	5.70
C101	358.35	350.00	58.66
C102	343.28	350.00	56.20
C103	148.33	250.00	33.99
C104	127.36	200.00	36.48

DRIVEWAY CL LOCATION TABLE							
BLOCK	LOT	ALIGNMENT	STATION	BLOCK	LOT	ALIGNMENT	STATION
1	1	HARLOW	37+30.10	5	4	HARLOW	34+25.76
	2	HARLOW	36+40.10		5	HARLOW	33+25.76
	3	HARLOW	36+06.10		6	HARLOW	32+91.76
	4	HARLOW	35+16.10		7	HARLOW	32+24.76
	5	HARLOW	34+81.74		8	HOPE	32+07.44
	6	HARLOW	33+92.10		9	HOPE	33+00.44
	7	HARLOW	33+58.10		10	HOPE	33+34.44
	8	HARLOW	32+68.10		11	HOPE	34+34.44
	9	HARLOW	32+34.10		12	HOPE	34+68.44
2	1	HARLOW	30+26.85		13	HOPE	35+66.40
	2	HARLOW	29+95.41		14	HOPE	36+00.44
	3	HARLOW	29+07.41	6	1	CAELEN	2+40.81
	4	HARLOW	28+73.41		2	CAELEN	2+74.81
	5	HARLOW	27+86.41		3	CAELEN	3+68.81
3	1	72ND	2+23.65		4	CAELEN	4+02.81
	2	72ND	2+57.65		5	CAELEN	4+96.81
	3	72ND	3+54.39	7	1	HOPE	36+06.19
	4	72ND	3+84.89		2	HOPE	35+72.19
4	1	72ND	3+52.30		3	HOPE	34+66.19
	2	72ND	2+61.23		4	HOPE	34+32.19
	3	72ND	2+27.20		5	HOPE	33+26.19
5	1	HARLOW	35+91.76		6	HOPE	32+92.19
	2	HARLOW	35+57.76		7	HOPE	31+92.63
	3	HARLOW	34+59.76		8	HOPE	31+62.57





N
W E
S

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

INTERSECTION DETAIL (3)

HOPE STREET & AERO ROAD
1" = 20'
STA 30+57.81 HOPE ST = STA 3+77.99 AERO RD

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: .22
PROJECT LANE MILES PRIVATE: 0
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6-17-16
MARK L. KROGBALM
STATE OF WASHINGTON
39236
REGISTERED PROFESSIONAL ENGINEER

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KROGBALM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: NJH
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
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PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

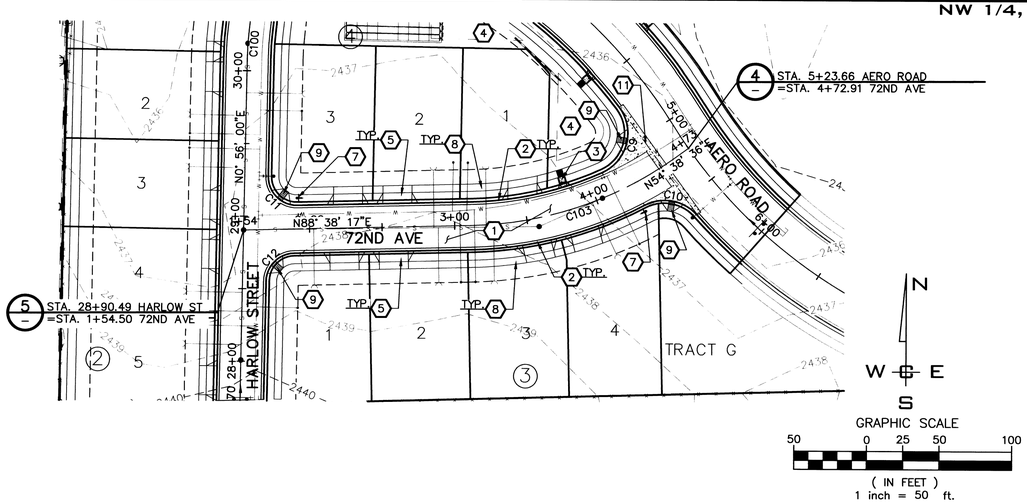
THOMAS MALLEN PHASE 1
HOPE STREET PLAN & PROFILE
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET C3.3

JOB NUMBER 15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 West Plain Holding LLC - Thomas Mallen Phase 1\Def 01\16\DWG\16-1467-C3.3-HOPE AVENUE_6-16-2016 2:34:32 PM.mdb

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.



Curve Table (TBC)			
Curve #	Length	Radius	Delta
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C2	45.50	29.50	88.36
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C6	48.53	29.50	94.26
C7	49.05	29.50	95.27
C8	39.11	29.50	75.96
C9	52.97	29.50	102.89
C10	39.34	29.50	76.40
C11	31.41	19.50	92.30
C12	29.85	19.50	87.70
C13	31.25	19.50	91.83
C14	30.01	19.50	88.17
C15	31.25	19.50	91.83
C16	30.01	19.50	88.17

Curve Table (CL)			
Curve #	Length	Radius	Delta
C100	19.89	200.00	5.70
C101	358.35	350.00	58.66
C102	343.28	350.00	56.20
C103	148.33	250.00	33.99
C104	127.36	200.00	36.48

CONSTRUCTION NOTES

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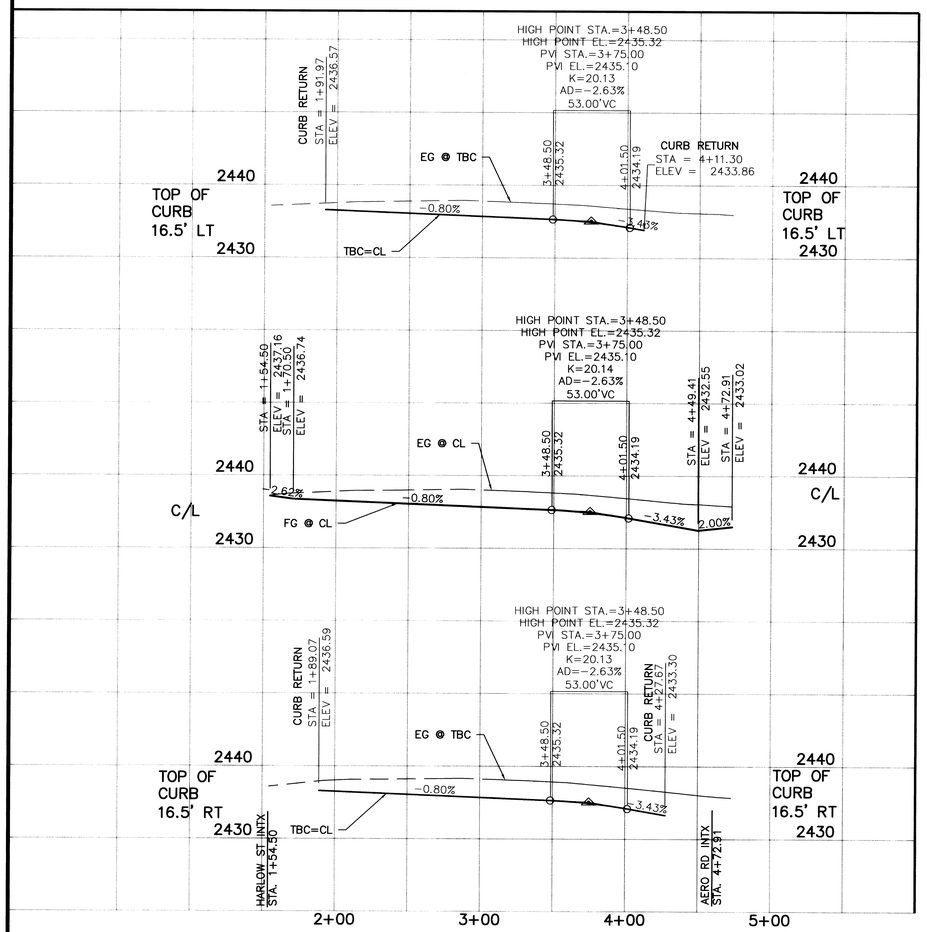
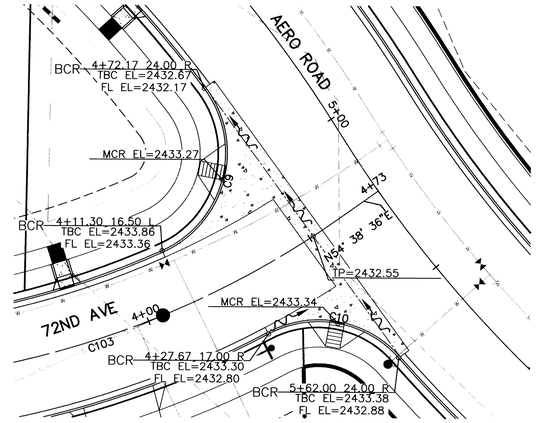
2. PROVIDE AND INSTALL TYPE B VERTICAL CURB AND GUTTER PER SPOKANE COUNTY STANDARD PLAN A–3.
3. PROVIDE AND INSTALL SPOKANE COUNTY TYPE 1 CURB INLET WITH SPOKANE COUNTY TYPE 2 CURB INLET PER STANDARD PLANS B–8 AND B–9. SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
4. PROVIDE AND INSTALL STORM POND, SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
5. PROVIDE AND INSTALL 20' CONCRETE DRIVEWAY PER SPOKANE COUNTY STANDARD PLAN A–4. SEE LOCATION TABLE C3.3.
6. RESERVED.
7. PROVIDE AND INSTALL STREET NAME SIGNS PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
8. PROVIDE AND INSTALL 5' WIDE SIDEWALK PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
9. PROVIDE AND INSTALL PEDESTRIAN RAMP PER SPOKANE COUNTY STANDARD PLAN A–5 DESIGN B.
10. RESERVED.
11. PROVIDE AND INSTALL CONCRETE CROSS GUTTER PER SPOKANE COUNTY STANDARD PLAN B–18.
12. PROVIDE AND INSTALL TYPE 3 TRAFFIC BARRIERS WITH ROAD CLOSED SIGN PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.

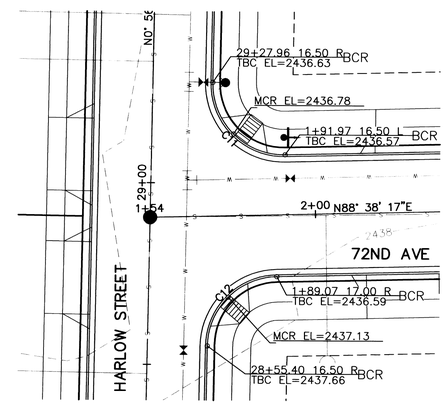
UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG





INTERSECTION DETAIL (4)

72ND AVENUE & AERO ROAD
1" = 20'
STA 4+72.91 72ND AVE = STA 5+23.66 AERO RD



INTERSECTION DETAIL (5)

72ND AVENUE & HARLOW STREET
1" = 20'
STA 1+54.50 72ND AVE = STA 28+90.49 HARLOW ST

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: .10
PROJECT LANE MILES PRIVATE: 0
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MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED PROFESSIONAL ENGINEER
6-17-16

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1" = 10'

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: NJH
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

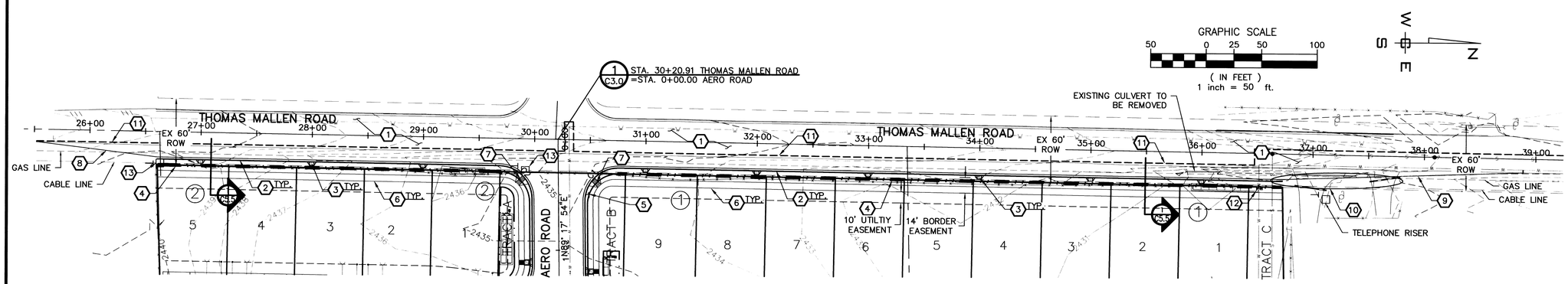
THOMAS MALLEN PHASE 1
72ND AVENUE PLAN & PROFILE
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET C3.4

JOB NUMBER 15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 Wave Plan Holding LLC - Thomas Mallen Phase 1\Civil 3D\01\01\02\01\147-C3.3 STREET SHEETS.dwg, C3.4-72ND AVE, 6/16/2016 2:35:18 PM, rob&h

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.



UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
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Curve Table (TBC)			
Curve #	Length	Radius	Delta
C1	47.18	29.50	91.64
C2	45.50	29.50	88.36
C3	45.50	29.50	88.36
C4	42.17	29.50	81.91
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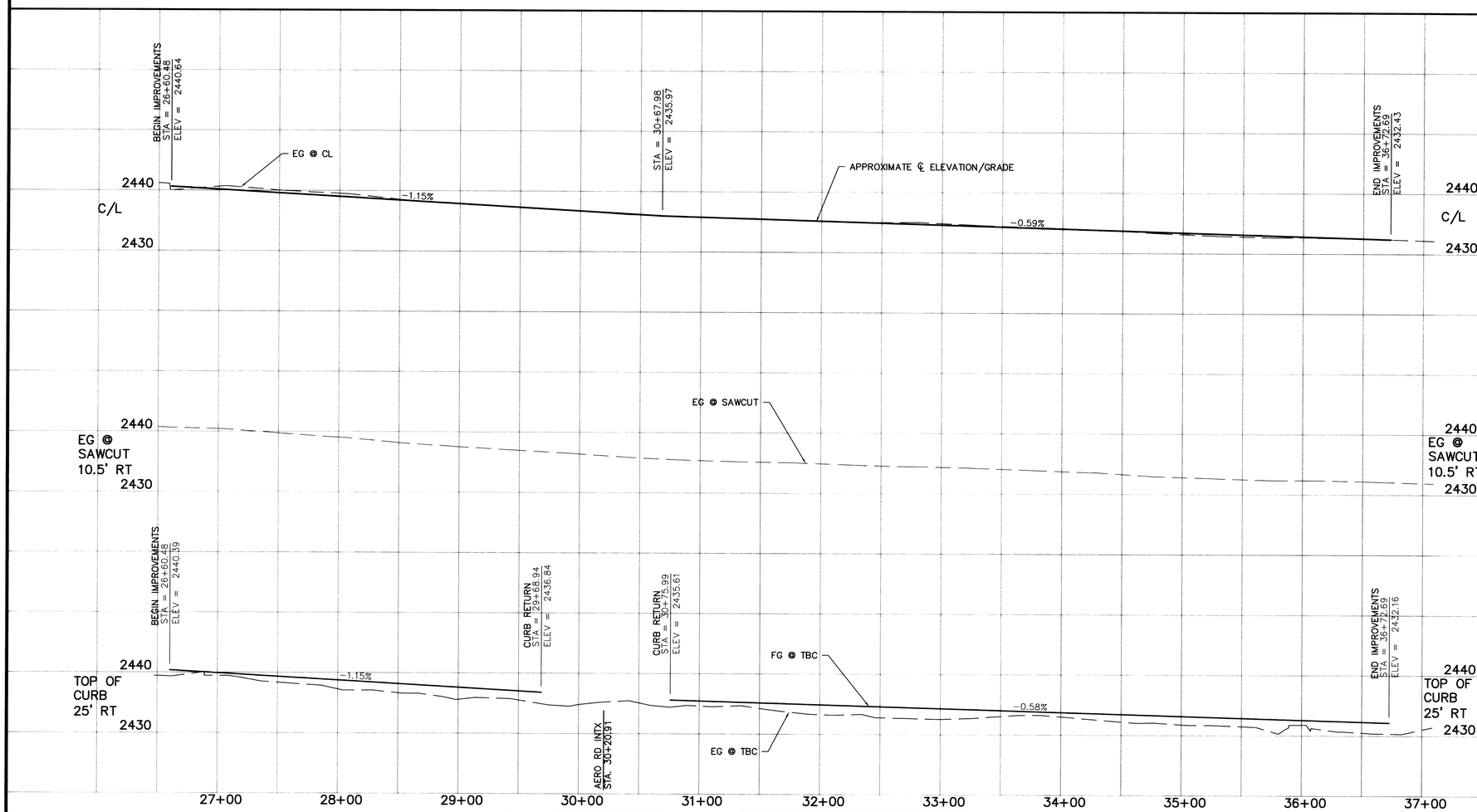

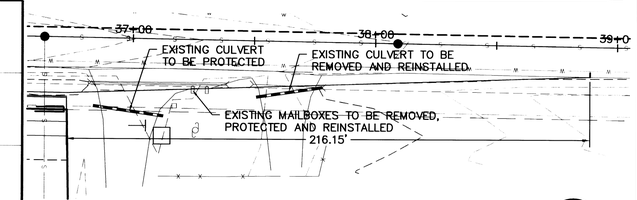

NORTHERN TAPER DETAIL

THOMAS MALLEN ROAD
1" = 30'

CONSTRUCTION NOTES

1. PROVIDE AND INSTALL ROADWAY WIDENING PER THOMAS MALLEN TYPICAL WIDENING SECTION–SEE DETAIL 3, SHEET C0.2.
2. PROVIDE AND INSTALL TYPE B VERTICAL CURB AND GUTTER PER SPOKANE COUNTY STANDARD PLAN A–3.
3. PROVIDE AND INSTALL SPOKANE COUNTY TYPE 1 CURB INLET PER STANDARD PLAN B–8. SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
4. PROVIDE AND INSTALL ROADSIDE SWALE, SEE SHEETS C5.0–C5.4 FOR MORE INFORMATION.
5. PROVIDE AND INSTALL STOP SIGN AND STREET SIGN PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
6. PROVIDE AND INSTALL 6' WIDE SIDEWALK PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.
7. PROVIDE AND INSTALL PEDESTRIAN RAMP PER SPOKANE COUNTY STANDARD PLAN A–5 DESIGN B.
8. PROVIDE AND INSTALL 108' LONG ASPHALT TAPER ON EAST SIDE OF THOMAS MALLEN ROAD FOR APPROACHING END OF THE ROAD WIDENING.
9. PROVIDE AND INSTALL 216' LONG ASPHALT TAPER ON THE EAST SIDE OF THOMAS MALLEN ROAD FOR THE DEPARTING END OF THE ROAD WIDENING.
10. RELOCATE EXISTING CULVERTS, MAILBOXES AND REQUIRED UTILITY POLES TO COMPLETE ROAD WIDENING TAPER.
11. SAWCUT AND REMOVE 1' MINIMUM OF EXISTING ASPHALT APPROXIMATELY 10.5' RIGHT OF CENTERLINE TO CREATE A CLEAN EDGE, TACK COAT AND MATCH TO EXISTING ASPHALT WITH NEW ASPHALT.
12. STORM STRUCTURE. SEE SHEET C5.5 FOR MORE INFORMATION.
13. TELEPHONE RISER TO BE RELOCATED BY AVISTA, PAID FOR BY CONTRACTOR.

NOTE: MAINTAIN 2% TO 4% CROSS SLOPE AT ALL POINTS IN THE WIDENING SECTION.

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-20234
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: .19
PROJECT LANE MILES PRIVATE: 0
CONSTRUCTION DOCUMENTATION AND CERTIFIED RECORD DRAWINGS, "AS-BUILTS" ARE REQUIRED PRIOR TO COUNTY ACCEPTANCE AND ESTABLISHMENT OF THE ROADS AND DRAINAGE FACILITIES FOR MAINTENANCE
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6-17-16
MARK L. KROGRAUM
STATE OF WASHINGTON
39236
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VERTICAL: 1" = 10'

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X CIVIL
STRUCTURAL
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OTHER

WCE
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THOMAS MALLEN PHASE 1
THOMAS MALLEN RD PLAN & PROFILE
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET
C3.5

JOB NUMBER
15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 Wave Place Holding LLC - Thomas Mallen Phase 1\Civil\DWG\1467CD-STREET SHEETS.dwg CD-T THOMAS MALLEN, 6/16/2016 2:36:15 PM, mlab

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
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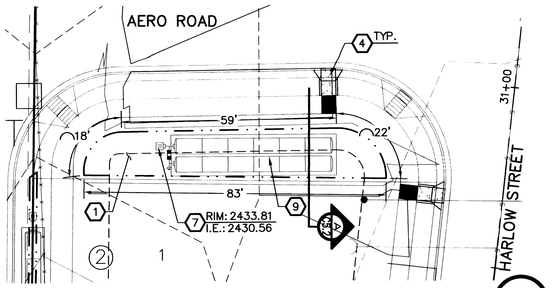
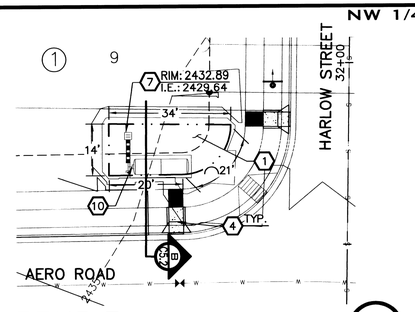


POND A (1)

SCALE: 1"=20'

POND A
FINISHED GRADE POND BOTTOM EL=2433.31 POND BOTTOM AREA PROVIDED=1,060 S.F. TREATMENT AREA REQUIRED=898 S.F. MINIMUM BERM ELEV.=2434.11

GRAVEL GALLERY DIMENSIONS
44.66' X 12'

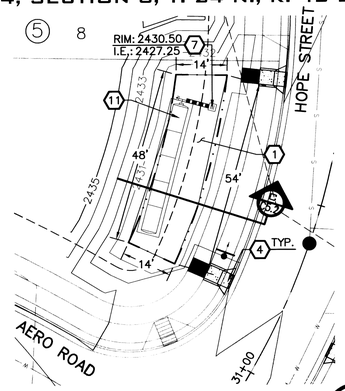


POND B (2)

SCALE: 1"=20'

POND B
FINISHED GRADE POND BOTTOM EL=2432.39 POND BOTTOM AREA PROVIDED=429 S.F. TREATMENT AREA REQUIRED=375 S.F. MINIMUM BERM ELEV.=2433.19

GRAVEL GALLERY DIMENSIONS
16.22' X 7.25'

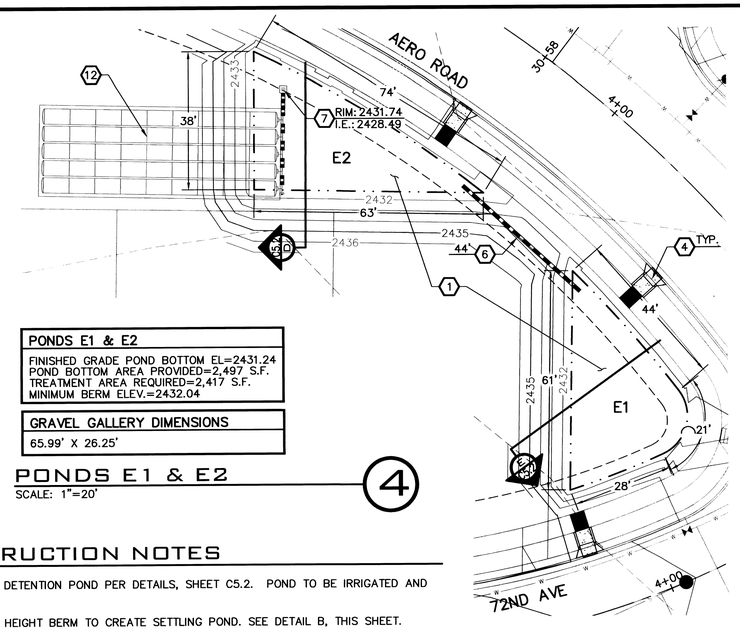


POND D (3)

SCALE: 1"=20'

POND D
FINISHED GRADE POND BOTTOM EL=2430.00 POND BOTTOM AREA PROVIDED=719 S.F. TREATMENT AREA REQUIRED=616 S.F. MINIMUM BERM ELEV.=2430.80

GRAVEL GALLERY DIMENSIONS
37.55' X 7.25'

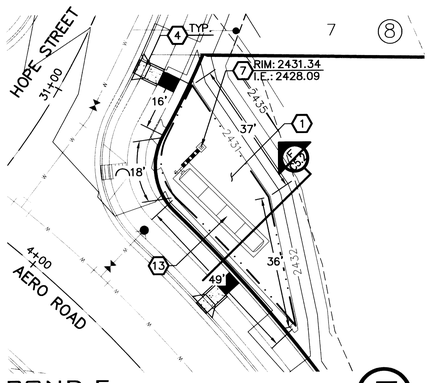


PONDS E1 & E2
FINISHED GRADE POND BOTTOM EL=2431.24 POND BOTTOM AREA PROVIDED=2,497 S.F. TREATMENT AREA REQUIRED=2,417 S.F. MINIMUM BERM ELEV.=2432.04

GRAVEL GALLERY DIMENSIONS
65.99' X 26.25'

PONDS E1 & E2 (4)

SCALE: 1"=20'

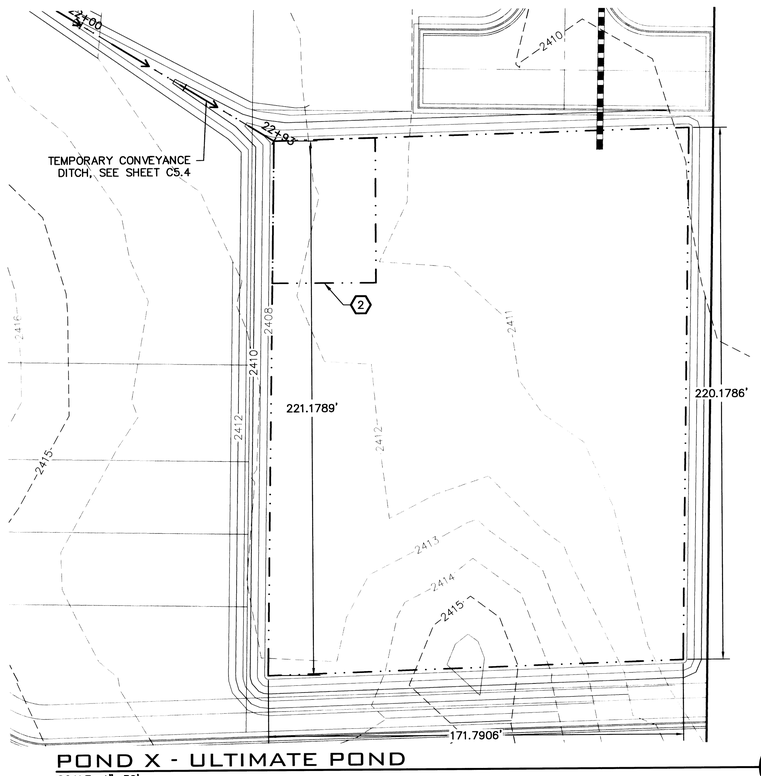


POND F (5)

SCALE: 1"=20'

POND F
FINISHED GRADE POND BOTTOM EL=2430.84 POND BOTTOM AREA PROVIDED=936 S.F. TREATMENT AREA REQUIRED=587 S.F. MINIMUM BERM ELEV.=2431.64

GRAVEL GALLERY DIMENSIONS
30.44' X 7.25'



POND X - ULTIMATE POND (6)

SCALE: 1"=30'

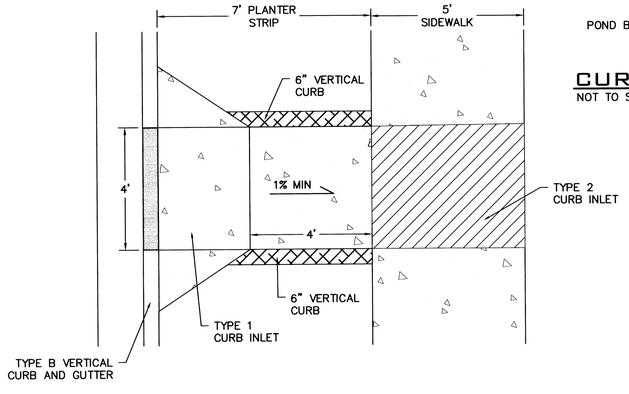
POND X – ULTIMATE POND
FINISHED GRADE POND BOTTOM EL=2407.50 POND BOTTOM AREA PROVIDED=37,892 S.F. TREATMENT AREA REQUIRED=10,929 S.F. MINIMUM BERM ELEV.=2410.00

NOTE:
TREATMENT SOIL TO BE INSTALLED DURING FUTURE PHASE

CONSTRUCTION NOTES

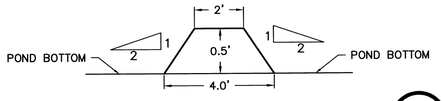
1. CONSTRUCT DETENTION POND PER DETAILS, SHEET C5.2. POND TO BE IRRIGATED AND SODDED.
2. PROVIDE 6" HEIGHT BERM TO CREATE SETTLING POND. SEE DETAIL B, THIS SHEET.
3. RESERVED.
4. CONSTRUCT CURB INLET PER DETAIL A, THIS SHEET.
5. RESERVED.
6. PROVIDE AND INSTALL 12" CMP EQUALIZER PIPE. EL=2431.24. LENGTH PER PLAN.
7. PROVIDE AND INSTALL TYPE 1 CATCH BASIN WITH METAL FRAME AND GRATE PER SPOKANE COUNTY STANDARD PLANS B-4, B-10, AND B-12.
8. PROVIDE AND INSTALL STORM PIPE. SEE SHEET C5.3 FOR MORE INFO.
9. PROVIDE AND INSTALL 2 ROWS OF 6 CHAMBERS LONG OF THE SC 740 STORM TECH CHAMBERS WITH FILTER FABRIC AND REQUIRED ACCESSORIES. SEE DETAILS SHEET C5.1.
10. PROVIDE AND INSTALL 1 ROW OF 2 CHAMBERS LONG OF THE SC 740 STORM TECH CHAMBERS WITH FILTER FABRIC AND REQUIRED ACCESSORIES. SEE DETAILS SHEET C5.1.
11. PROVIDE AND INSTALL 1 ROW OF 5 CHAMBERS LONG OF THE SC 740 STORM TECH CHAMBERS WITH FILTER FABRIC AND REQUIRED ACCESSORIES. SEE DETAILS SHEET C5.1.
12. PROVIDE AND INSTALL 5 ROWS OF 9 CHAMBERS LONG OF THE SC 740 STORM TECH CHAMBERS WITH FILTER FABRIC AND REQUIRED ACCESSORIES. SEE DETAILS SHEET C5.1.
13. PROVIDE AND INSTALL 1 ROW OF 4 CHAMBERS LONG OF THE SC 740 STORM TECH CHAMBERS WITH FILTER FABRIC AND REQUIRED ACCESSORIES. SEE DETAILS SHEET C5.1.

N
W E
S
GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.



CURB INLET DETAIL (A)

NOT TO SCALE



CURB INLET DETAIL (B)

NOT TO SCALE

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: 1.24
PROJECT LANE MILES PRIVATE: 0
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

MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED
PROFESSIONAL ENGINEER
6-17-16

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM, WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:	
HORIZONTAL:	1" = 20'
VERTICAL:	N/A

PROJ #:	15-1467
DATE:	08/03/15
DRAWN:	RMA
REVIEWED:	MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

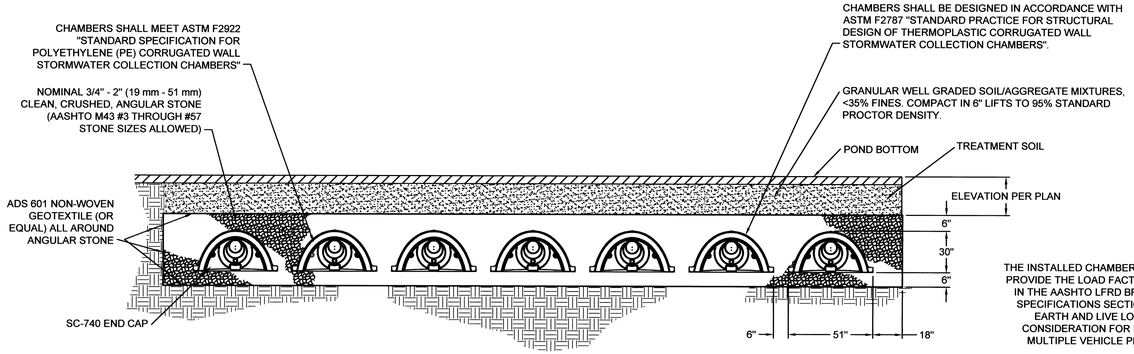
THOMAS MALLEN PHASE 1
POND DETAILS
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET
C5.0

JOB NUMBER
15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 Maxar Plant Holding LLC - Thomas Mallen Phase 1 (Rd 101)\DWG\15-1467-C5.X-POND DETAILS.dwg, C5.1-POND DETAILS, 6/17/2016 2:57:28 PM, rmah

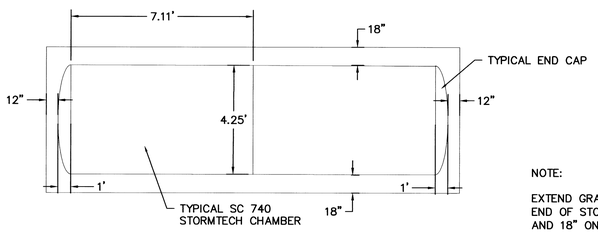
UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG



THE INSTALLED CHAMBER SYSTEM SHALL PROVIDE THE LOAD FACTORS SPECIFIED IN THE AASHTO LFRD BRIDGE DESIGN SPECIFICATIONS SECTION 12.12 FOR EARTH AND LIVE LOADS WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCES.

GRAVEL GALLERY SECTION (TYPICAL SEE PLAN) 1

NOT TO SCALE



NOTE:

EXTEND GRAVEL GALLERY 12" MINIMUM ON EACH END OF STORMTECH CHAMBER (OUTER MOST ENDS ONLY) AND 18" ON EACH SIDE (OUTER MOST SIDES ONLY).

GRAVEL GALLERY DETAIL (TYPICAL SEE PLAN) 2

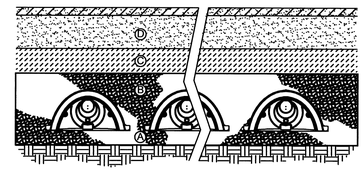
NOT TO SCALE

ACCEPTABLE FILL MATERIALS: STORMTECH SC-740 CHAMBER SYSTEMS

MATERIAL LOCATION	DESCRIPTION	AASHTO M43 DESIGNATION [1]	COMPACTION/DENSITY REQUIREMENT
(D) FILL MATERIAL FOR LAYER 'D' STARTS FROM THE TOP OF THE 'C' LAYER TO THE BOTTOM OF FLEXIBLE PAVEMENT OR UNPAVED FINISH GRADE ABOVE. NOTE THAT PAVEMENT SUB-BASE MAY BE PART OF THIS LAYER.	ANY SOIL/ROCK MATERIALS, NATIVE SOILS, OR PER ENGINEER'S PLANS. CHECK PLANS FOR PAVEMENT SUBGRADE REQUIREMENTS.	N/A	PREPARE PER ENGINEER'S PLANS. PAVED INSTALLATIONS MAY HAVE STRINGENT MATERIAL AND PREPARATION REQUIREMENTS.
(C) FILL MATERIAL FOR LAYER 'C' STARTS FROM THE TOP OF THE EMBEDMENT STONE TO 18" [457 mm] ABOVE THE TOP OF THE CHAMBER. NOTE THAT PAVEMENT SUB-BASE MAY BE A PART OF THIS LAYER.	GRANULAR WELL-GRADED SOIL/AGGREGATE MIXTURES, < 35% FINES. MOST PAVEMENT SUB-BASE MATERIALS CAN BE USED IN LIEU OF THIS LAYER.	3, 357, 4, 467, 5, 56, 57, 6, 67, 68, 7, 78, 8, 89, 9, 10	BEGIN COMPACTION AFTER 12" [305 mm] OF MATERIAL OVER THE CHAMBERS IS REACHED. COMPACT ADDITIONAL LAYERS IN 6" [152 mm] LIFTS TO A MIN. 95% STANDARD PROCTOR DENSITY. ROLLER GROSS VEHICLE WEIGHT NOT TO EXCEED 12,000 lbs [53 kN]. DYNAMIC FORCE NOT TO EXCEED 20,000 lbs [89 kN].
(B) EMBEDMENT STONE SURROUNDING THE CHAMBERS FROM THE FOUNDATION STONE TO THE 'C' LAYER ABOVE.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH [19 - 51 mm]	3, 357, 4, 467, 5, 56, 57	NO COMPACTION REQUIRED.
(A) FOUNDATION STONE BELOW CHAMBERS FROM THE SUBGRADE UP TO THE FOOT (BOTTOM) OF THE CHAMBER.	CLEAN, CRUSHED, ANGULAR STONE, NOMINAL SIZE DISTRIBUTION BETWEEN 3/4 - 2 INCH [19 - 51 mm]	3, 35, 4, 467, 5, 56, 57	PLATE COMPACT OR ROLL TO ACHIEVE A 95% STANDARD PROCTOR DENSITY [2].

PLEASE NOTE:
1. THE LISTED AASHTO DESIGNATIONS ARE FOR GRADATIONS ONLY. THE STONE MUST ALSO BE CLEAN, CRUSHED, ANGULAR. FOR EXAMPLE, A SPECIFICATION FOR #4 STONE WOULD STATE: "CLEAN, CRUSHED, ANGULAR NO. 4 (AASHTO M43) STONE".

2. AS AN ALTERNATE TO PROCTOR TESTING AND FIELD DENSITY MEASUREMENTS ON OPEN GRADED STONE, STORMTECH COMPACTION REQUIREMENTS ARE MET FOR 'A' LOCATION MATERIALS WHEN PLACED AND COMPACTED IN 9" [229 mm] (MAX) LIFTS USING TWO FULL COVERAGES WITH AN APPROPRIATE COMPACTOR.



STORMWATER CHAMBER SPECIFICATIONS

1. CHAMBERS SHALL BE STORMTECH SC-740 OR APPROVED EQUAL.
2. CHAMBERS SHALL BE MANUFACTURED FROM VIRGIN POLYPROPYLENE OR POLYETHYLENE RESINS TESTED USING ASTM STANDARDS.
3. CHAMBERS SHALL BE DESIGNED IN ACCORDANCE WITH ASTM F2787, "STANDARD PRACTICE FOR STRUCTURAL DESIGN OF THERMOPLASTIC CORRUGATED WALL STORMWATER COLLECTION CHAMBERS".
4. CHAMBER ROWS SHALL PROVIDE CONTINUOUS, UNOBSTRUCTED INTERNAL SPACE WITH NO INTERNAL SUPPORT PANELS.
5. THE STRUCTURAL DESIGN OF THE CHAMBERS, THE STRUCTURAL BACKFILL AND THE INSTALLATION REQUIREMENTS SHALL ENSURE THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET FOR: 1) LONG-DURATION DEAD LOADS AND 2) SHORT-DURATION LIVE LOADS, BASED ON THE AASHTO DESIGN TRUCK WITH CONSIDERATION FOR IMPACT AND MULTIPLE VEHICLE PRESENCE.
6. ONLY CHAMBERS THAT ARE APPROVED BY THE ENGINEER WILL BE ALLOWED. THE CONTRACTOR SHALL SUBMIT (3 SETS) OF THE FOLLOWING TO THE ENGINEER FOR APPROVAL BEFORE DELIVERING CHAMBERS TO THE PROJECT SITE:
   a. A STRUCTURAL EVALUATION BY A REGISTERED STRUCTURAL ENGINEER THAT DEMONSTRATES THAT THE LOAD FACTORS SPECIFIED IN THE AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS, SECTION 12.12 ARE MET. THE 50-YEAR CREEP MODULUS DATA SPECIFIED IN ASTM F2922 MUST BE USED AS A PART OF THE AASHTO STRUCTURAL EVALUATION TO VERIFY LONG-TERM PERFORMANCE.
7. CHAMBERS SHALL BE PRODUCED AT AN ISO 9001 CERTIFIED MANUFACTURING FACILITY.
8. ALL DESIGN SPECIFICATIONS FOR CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST DESIGN MANUAL.
9. THE INSTALLATION OF CHAMBERS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S LATEST INSTALLATION INSTRUCTIONS.

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: 12094
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: 1.29
PROJECT LANE MILES PRIVATE: 0
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

6-17-16
MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED
PROFESSIONAL ENGINEER
PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: RMA
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

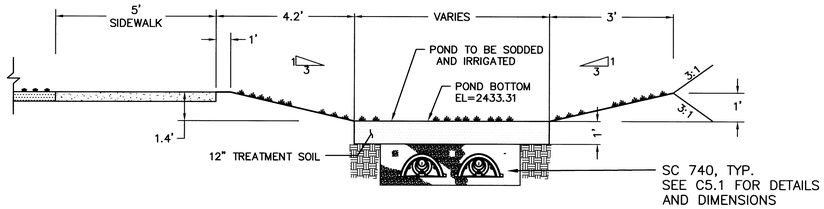
THOMAS MALLEN PHASE 1
STORM TECH DETAILS
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET
C5.1

JOB NUMBER
15-1467

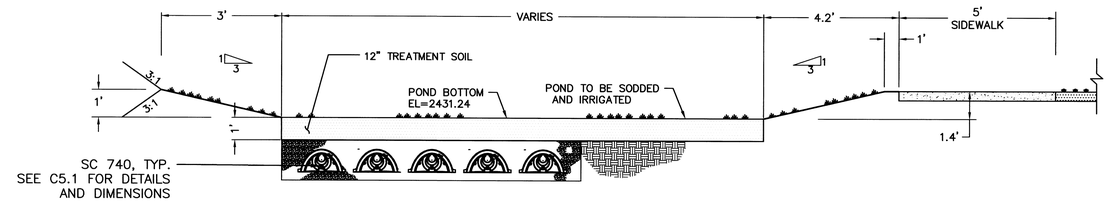
P:\WCE_WORK\2015\WCE PROJECTS\2015-1467 Waus Plain Holding LLC - Thomas Mallen Phase 1\Bid 1\15\12\WCD\1467-C5 X-POND DETAILS.dwg, C5.1 STORMTECH, 6/16/2016 3:40:28 PM, sadab

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG



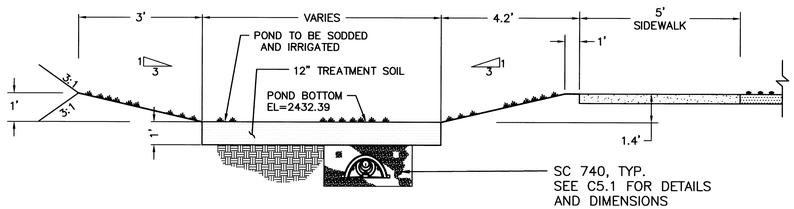
POND A SECTION W/ DRAINAGE GALLERY (A)

NOT TO SCALE



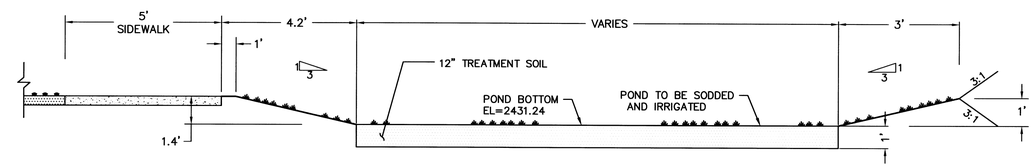
POND E2 SECTION W/ DRAINAGE GALLERY (D)

NOT TO SCALE



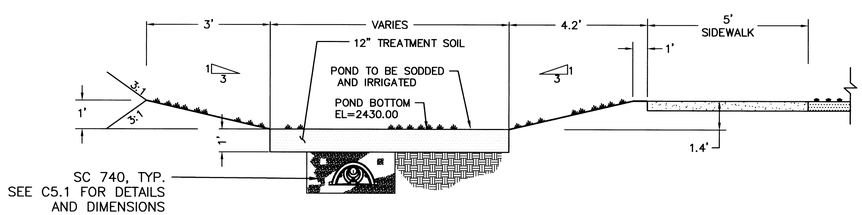
POND B SECTION W/ DRAINAGE GALLERY (B)

NOT TO SCALE



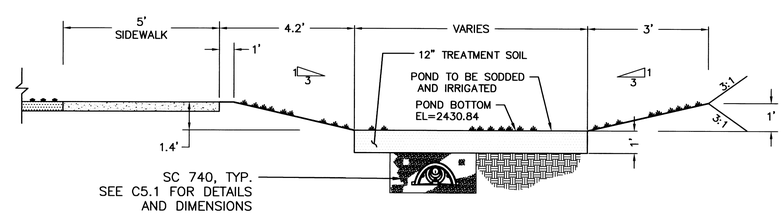
POND E1 SECTION (E)

NOT TO SCALE



POND D SECTION W/ DRAINAGE GALLERY (C)

NOT TO SCALE



POND F SECTION W/ DRAINAGE GALLERY (F)

NOT TO SCALE

TREATMENT SOIL NOTE:
12" OF TREATMENT SOIL WITH AN INFILTRATIVE RATE BETWEEN 0.25 AND 0.5 INCHES/HOUR AND AVERAGE CATION EXCHANGE CAPACITY OF AT LEAST 15 MILLIQUIVELENTS/100 GRAMS OR AT LEAST 2% OF ORGANIC MATTER BY WEIGHT. SEE TABLE 6-1, PG. 6-16 OF THE SPOKANE REGIONAL STORMWATER MANUAL

WARNING – THE USE OF SILTY LOAM IS PROHIBITED AS POND BOTTOM MATERIAL.

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-22232
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: 1.24
PROJECT LANE MILES PRIVATE: 0
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

6-17-16
MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED PROFESSIONAL ENGINEER

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: N/A
VERTICAL: N/A

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: RMA
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

THOMAS MALLEN PHASE 1
POND SECTIONS
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

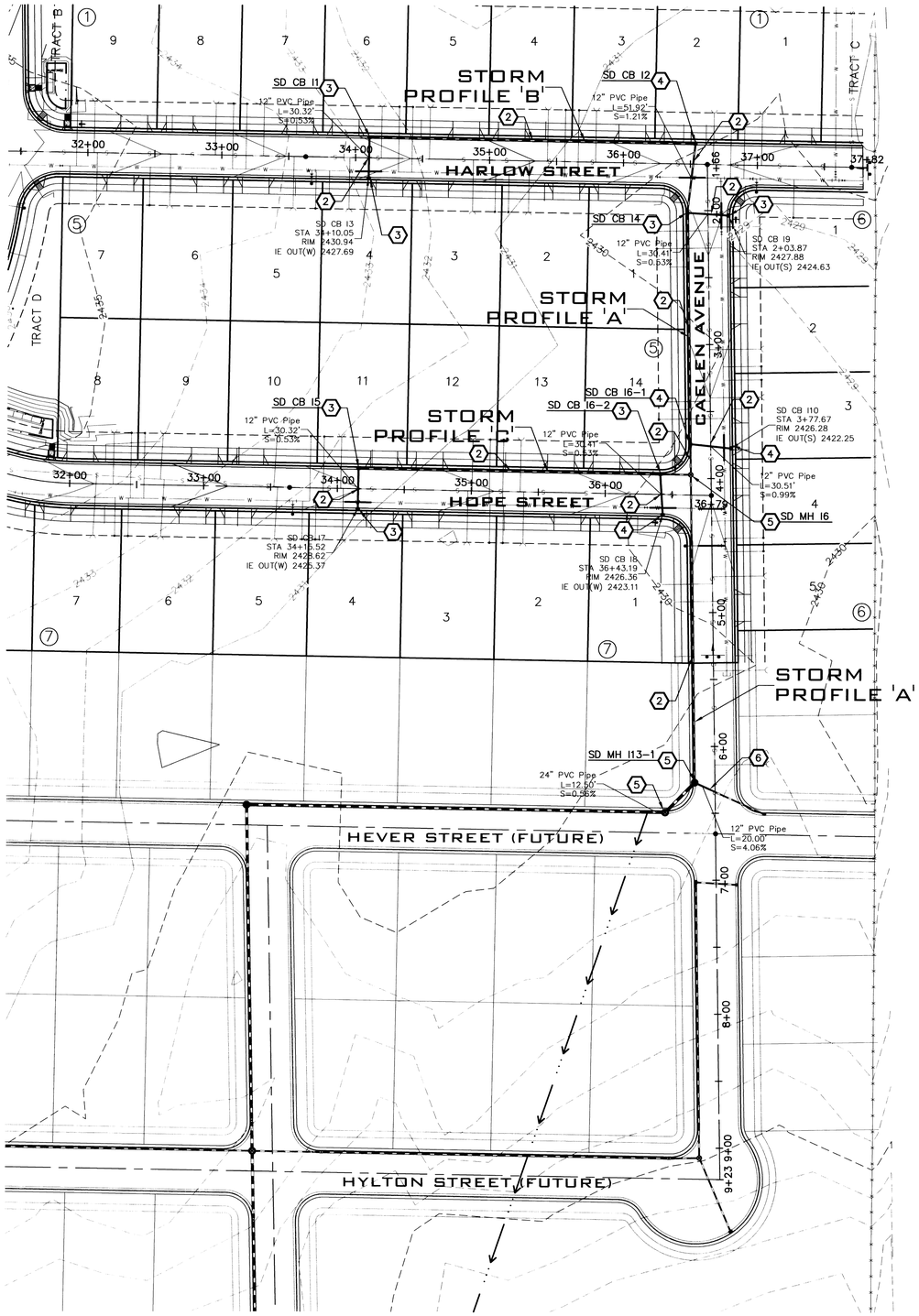
SHEET C5.2

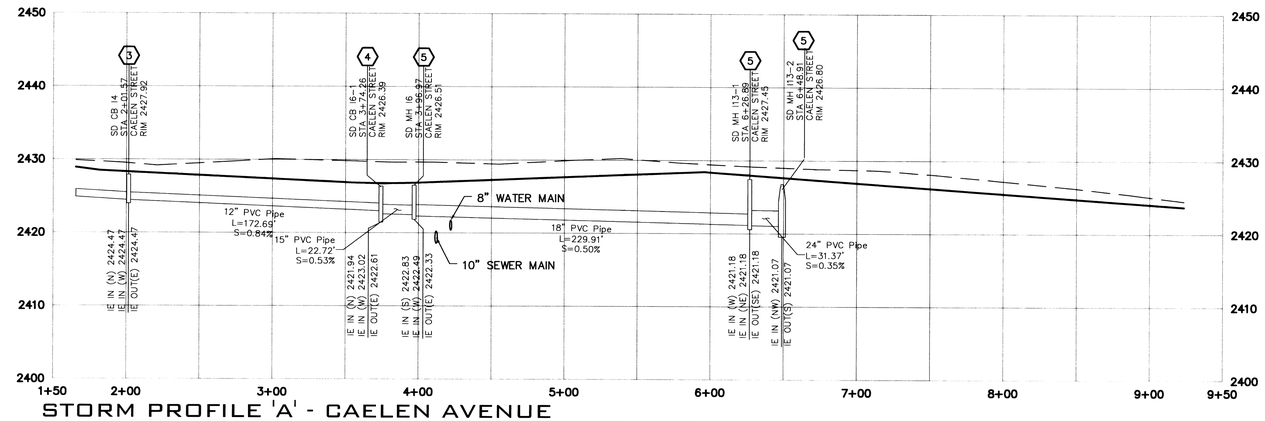
JOB NUMBER 15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 Wine Plan Holding LLC - Thomas Mallen Phase 1 (Rd)\1101\PROV\1467C2 X POND SECTIONS_6-15-2016 3:49:42 PM.xcdb

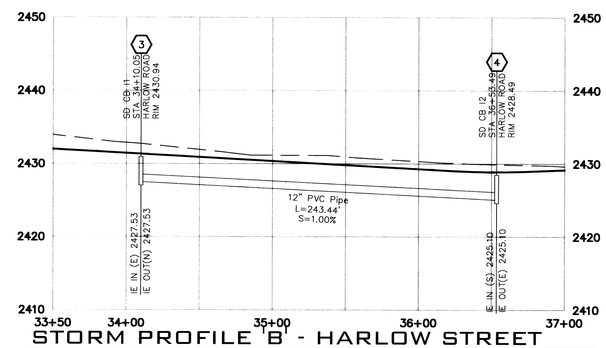
NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

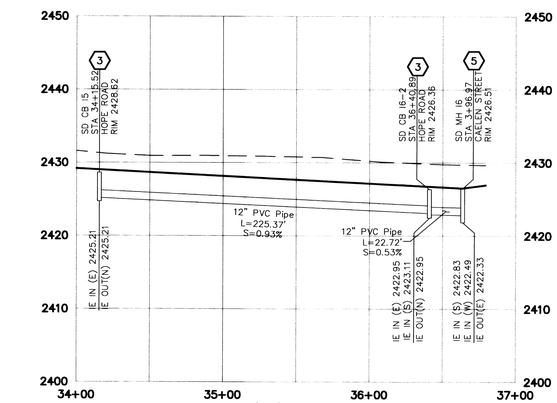




STORM PROFILE 'A' - CAELEN AVENUE



STORM PROFILE 'B' - HARLOW STREET



STORM PROFILE 'C' - HOPE STREET

CONSTRUCTION NOTES

1. CONSTRUCT DETENTION POND PER DETAILS, SHEET C5.0–C5.2.
2. PROVIDE AND INSTALL PVC ASTM D–3034 SDR35 STORM PIPE. SIZE PER PLAN AND PROFILE, THIS SHEET. TRENCH AND BEDDING PER SPOKANE COUNTY STANDARD SPECIFICATIONS.
3. PROVIDE AND INSTALL TYPE 1 CATCH BASIN PER SPOKANE COUNTY STANDARD PLAN B–4. WITH TYPE 1 METAL FRAME PER SPOKANE STANDARD PLAN B–10 AND TYPE 1 METAL GRATE PER SPOKANE COUNTY STANDARD PLAN B–12.
4. PROVIDE AND INSTALL TYPE 1 CATCH BASIN PER SPOKANE COUNTY STANDARD PLAN B–4. WITH TYPE 2 METAL FRAME PER SPOKANE STANDARD PLAN B–11 AND TYPE 3 METAL GRATE PER SPOKANE COUNTY STANDARD PLAN B–14.
5. PROVIDE AND INSTALL TYPE 1 CATCH BASIN PER SPOKANE COUNTY STANDARD PLAN B–4. WITH TYPE 4 METAL FRAME AND SOLID COVER PER SPOKANE COUNTY STANDARD PLAN B–15.
6. PROVIDE AND INSTALL 20 LONG STUB OF 12" PVC ASTM D–3034 SDR35 STORM PIPE WITH END CAP FOR FUTURE CONNECTION. TRENCH AND BEDDING PER SPOKANE COUNTY STANDARDS AND SPECIFICATIONS.

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-20342
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: 1.34
PROJECT LANE MILES PRIVATE: 0
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

6-17-16
MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED PROFESSIONAL ENGINEER
PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:
HORIZONTAL: 1" = 50'
VERTICAL: 1"=10'

PROJ #: 15-1467
DATE: 08/03/15
DRAWN: RMA
REVIEWED: MLK

X CIVIL
STRUCTURAL
SURVEYING
TRAFFIC
PLANNING
LANDSCAPE
OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

THOMAS MALLEN PHASE 1
STORM PIPE PLAN AND PROFILES
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

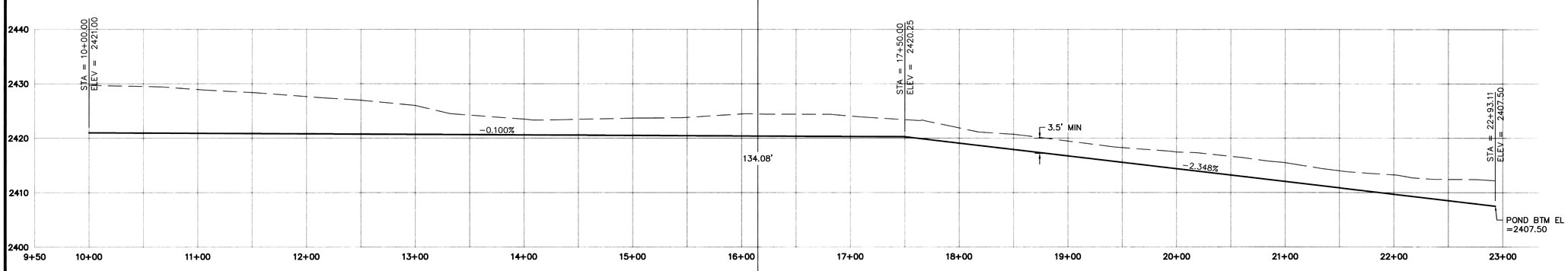
SHEET
C5.3

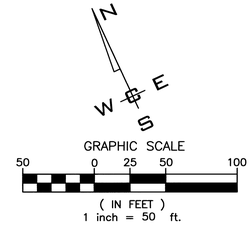
JOB NUMBER
15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 Rear Pine Holding LLC - Thomas Mallen Phase 1\Rd\1015\PROP\1467-C3.3-STORM PPP15.dwg, C3.3 STORM PPP15, 6/16/2016 3:70:50 PM, rmah

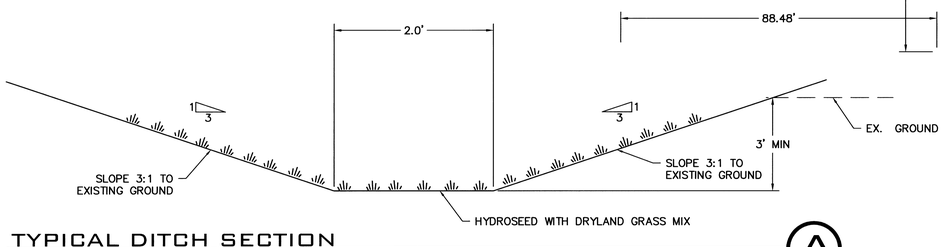
NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG





NOTE--THE GEOTECHNICAL ENGINEER SHALL BE ONSITE TO OBSERVE THE EXCAVATION AND ANY FUTURE FILL OF DITCH. ANY FILL UNDER FUTURE ROADWAYS OR BUILDING PADS IN SUBSEQUENT PLAT PHASES SHALL BE MONITORED AS WELL.



TYPICAL DITCH SECTION
NOT TO SCALE
A

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SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

THOMAS MALLEN PHASE 1
TEMPORARY DITCH DETAILS
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET
C5.4

JOB NUMBER
15-1467

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
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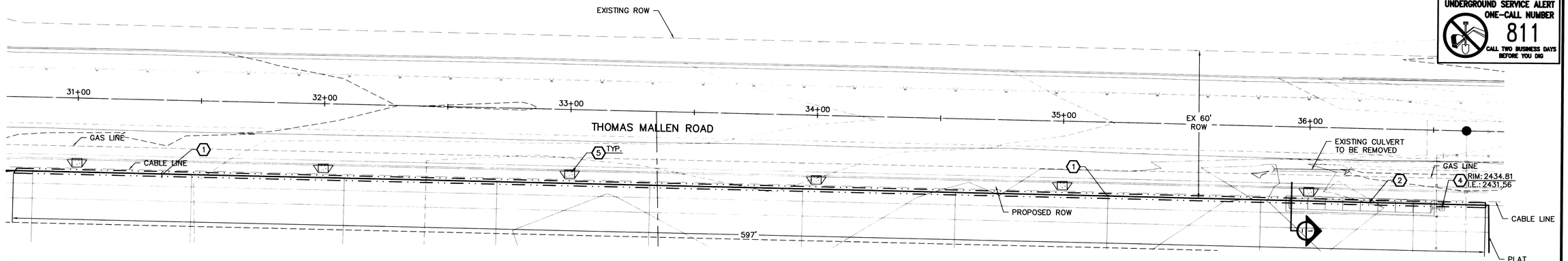
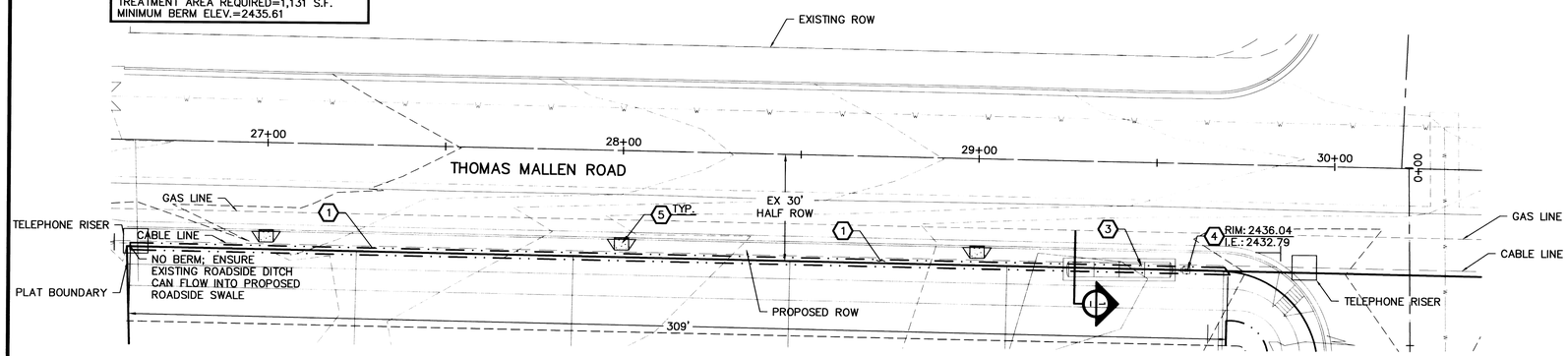


SWALE C

SCALE: 1"=20'

SWALE C

FINISHED GRADE POND BOTTOM EL=VARIES
POND BOTTOM AREA PROVIDED=2,390 S.F.
TREATMENT AREA REQUIRED=1,131 S.F.
MINIMUM BERM ELEV.=2435.61

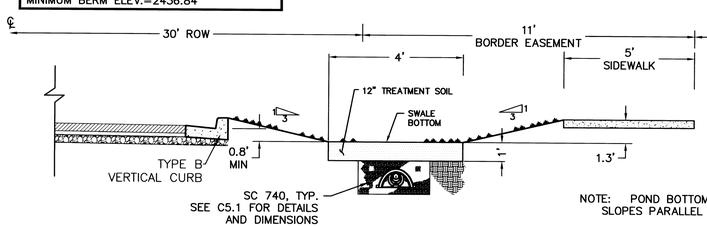


SWALE J

SCALE: 1"=20'

SWALE J

FINISHED GRADE POND BOTTOM EL=VARIES
POND BOTTOM AREA PROVIDED=1,234 S.F.
TREATMENT AREA REQUIRED=619 S.F.
MINIMUM BERM ELEV.=2436.84



NOTE: ROADSIDE SWALE BOTTOMS MAY NOT EXCEED 1%

NOTE: POND BOTTOM ELEVATION SLOPES PARALLEL TO CURB GRADE

SWALE C SECTION

NOT TO SCALE

CONSTRUCTION NOTES

1. CONSTRUCT ROADSIDE SWALE. SWALE TO BE IRRIGATED AND SODDED.
2. PROVIDE AND INSTALL 1 ROW OF 8 CHAMBERS LONG OF THE SC 740 STORM TECH CHAMBERS WITH FILTER FABRIC AND REQUIRED ACCESSORIES. SEE DETAILS SHEET C5.1.
3. PROVIDE AND INSTALL 1 ROW OF 4 CHAMBERS LONG OF THE SC 740 STORM TECH CHAMBERS WITH FILTER FABRIC AND REQUIRED ACCESSORIES. SEE DETAILS SHEET C5.1.
4. PROVIDE AND INSTALL TYPE 1 CATCH BASIN WITH METAL FRAME AND GRATE PER SPOKANE COUNTY STANDARD PLANS B-4, B-10, AND B-12.
5. PROVIDE AND INSTALL SPOKANE COUNTY TYPE 1 CURB INLET PER STANDARD PLAN B-8.

CURB DROP LOCATION TABLE		
ALIGNMENT	STATION	OFFSET
THOMAS MALLEN	27+00.00	24.5' R
	28+00.00	24.5' R
	29+00.00	24.5' R
	31+00.00	24.5' R
	32+00.00	24.5' R
	33+00.00	24.5' R
	34+00.00	24.5' R
	35+00.00	24.5' R
	36+00.00	24.5' R
AERO ROAD	1+10.69	23.5' R
	1+19.39	23.5' L
	2+78.01	23.5' R
	3+65.30	23.5' R
	4+40.24	23.5' L
	4+40.54	23.5' R
HARLOW STREET	30+68.20	16.0' L
	31+84.26	16.0' L
HOPE STREET	31+14.97	16.0' R
	31+20.55	16.0' L
	31+83.82	16.0' L
72ND AVE	3+81.31	16.0' L

TREATMENT SOIL NOTE:
12" OF TREATMENT SOIL WITH AN INFILTRATIVE RATE BETWEEN 0.25 AND 0.5 INCHES/HOUR AND AVERAGE CATION EXCHANGE CAPACITY OF AT LEAST 15 MILLIQUIVELENTS/100 GRAMS OR AT LEAST 2% OF ORGANIC MATTER BY WEIGHT. SEE TABLE 6-1, PG. 6-16 OF THE SPOKANE REGIONAL STORMWATER MANUAL

WARNING – THE USE OF SILTY LOAM IS PROHIBITED AS POND BOTTOM MATERIAL.

GRAPHIC SCALE
20 0 10 20 40
(IN FEET)
1 inch = 20 ft.

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MARK L. KRIGBAUM
STATE OF WASHINGTON
39236
REGISTERED PROFESSIONAL ENGINEER
6-17-16

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

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VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

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X CIVIL
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2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

THOMAS MALLEN PHASE 1
THOMAS MALLEN ROAD POND DETAILS
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET
C5.5

JOB NUMBER
15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 Mesa Plain Holding LLC - Thomas Mallen Phase1 (Ref 1101)\DWG\1467-C5.5 POND DETAILS.dwg, C5.5 THOMAS MALLEN, SWALE, 6/16/2016 3:50:20 PM, mark

NW 1/4, SECTION 8, T. 24 N., R. 42 E., W.M.

SWPPP/EROSION CONTROL PLAN

THOMAS MALLEN PHASE 1
LOCATED IN A PORTION OF THE
NW 1/4 OF SEC. 8, T. 24 N., R. 42 E., W.M.
SPOKANE COUNTY, WA

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

GENERAL NOTES

1. ALL MATERIALS, WORKMANSHIP, AND CONSTRUCTION OF SITE IMPROVEMENTS SHALL MEET OR EXCEED SITE WORK STANDARDS AND THE STANDARDS AND SPECIFICATIONS SET FORTH IN **SPOKANE COUNTY** REGULATIONS AND APPLICABLE STATE AND FEDERAL REGULATIONS. WHERE THERE IS CONFLICT BETWEEN THESE PLANS AND THE SPECIFICATIONS, OR ANY APPLICABLE STANDARDS, THE HIGHER QUALITY STANDARD SHALL APPLY. ALL WORK WITHIN PUBLIC R.O.W. OR EASEMENTS SHALL BE INSPECTED AND APPROVED BY THE **SPOKANE COUNTY** INSPECTOR. INSPECTION SERVICES AND CONSTRUCTION CERTIFICATION TO BE PROVIDED BY DESIGNEE OF PROJECT SPONSOR/OWNER.

2. THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES, AS SHOWN ON THESE PLANS, IS BASED ON RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS TAKEN IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED UPON AS BEING EXACT OR COMPLETE. THE CONTRACTOR MUST CALL THE LOCAL UTILITY LOCATION CENTER AT LEAST 48 HOURS BEFORE ANY EXCAVATION TO REQUEST EXACT FIELD LOCATIONS OF EXISTING UTILITIES. THE CONTRACTOR SHALL VERIFY PERTINENT LOCATIONS AND ELEVATIONS, ESPECIALLY AT THE CONNECTION POINTS AND AT POTENTIAL UTILITY CONFLICTS. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES THAT CONFLICT WITH THE PROPOSED IMPROVEMENTS SHOWN ON THESE PLANS.

3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM ALL APPLICABLE AGENCIES. THE CONTRACTOR SHALL NOTIFY THE **SPOKANE COUNTY** INSPECTOR AT LEAST 48 HOURS PRIOR TO THE START OF ANY EARTH DISTURBING ACTIVITY OR CONSTRUCTION ON ANY AND ALL PUBLIC IMPROVEMENTS.

4. THE CONTRACTOR SHALL COORDINATE AND COOPERATE WITH **SPOKANE COUNTY** AND ALL UTILITY COMPANIES WITH REGARD TO RELOCATIONS OR ADJUSTMENTS OF EXISTING UTILITIES DURING CONSTRUCTION, TO ASSURE THAT THE WORK IS ACCOMPLISHED IN A TIMELY FASHION, AND WITH A MINIMUM DISRUPTION OF SERVICE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING ALL PARTIES AFFECTED BY ANY DISRUPTION OF ANY UTILITY SERVICE.

5. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE APPROVED PLANS, ONE (1) COPY OF THE APPROPRIATE STANDARDS AND SPECIFICATIONS, AND ONE (1) COPY OF ANY PERMITS AND EXTENSION AGREEMENTS NEEDED FOR THE JOB ON-SITE AT ALL TIMES.

6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ASPECTS OF SAFETY INCLUDING, BUT NOT LIMITED TO: EXCAVATION, TRENCHING, SHORING, TRAFFIC CONTROL, AND SECURITY.

7. IF, DURING THE CONSTRUCTION PROCESS, CONDITIONS ARE ENCOUNTERED BY THE CONTRACTOR, HIS SUBCONTRACTORS, OR OTHER AFFECTED PARTIES WHICH COULD INDICATE A SITUATION THAT IS NOT IDENTIFIED IN THE PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE ENGINEER IMMEDIATELY.

8. ALL REFERENCES TO ANY PUBLISHED STANDARDS SHALL REFER TO THE LATEST REVISION OF SAID STANDARD, UNLESS SPECIFICALLY STATED OTHERWISE.

9. FOR WORK AFFECTING PUBLIC ROADWAYS OR IF REQUIRED BY **SPOKANE COUNTY**, THE CONTRACTOR SHALL SUBMIT A TRAFFIC CONTROL AND PHASING PLAN IN ACCORDANCE WITH M.U.T.C.D. FOR APPROVAL. PRIOR TO ANY CONSTRUCTION ACTIVITIES WITHIN OR AFFECTING THE RIGHT-OF-WAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ANY AND ALL TRAFFIC CONTROL DEVICES AS MAY BE REQUIRED BY SAID PLANS. PRIOR TO INSTALLATION. A PRECONSTRUCTION CONFERENCE SHALL BE HELD WITH **SPOKANE COUNTY.**

10. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL LABOR AND MATERIALS NECESSARY FOR THE COMPLETION OF THE INTENDED IMPROVEMENTS SHOWN ON THESE DRAWINGS OR DESIGNATED TO BE PROVIDED, INSTALLED, CONSTRUCTED, REMOVED OR RELOCATED UNLESS SPECIFICALLY NOTED OTHERWISE.

11. PER AGENCY STANDARDS THE CONTRACTOR SHALL BE RESPONSIBLE FOR KEEPING ROADWAYS FREE AND CLEAR OF ALL CONSTRUCTION DEBRIS AND DIRT TRACKED FROM THE SITE.

12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING RECORD INFORMATION ON A SET OF RECORD DRAWINGS KEPT AT THE CONSTRUCTION SITE AND AVAILABLE TO THE **SPOKANE COUNTY** INSPECTOR AT ALL TIMES.

13. DIMENSIONS FOR LAYOUT AND CONSTRUCTION ARE NOT TO BE SCALED FROM ANY DRAWING. FOR ADDITIONAL INFORMATION CONTACT THE ENGINEER FOR CLARIFICATION AND NOTE ON THE RECORD DRAWINGS.

14. ALL EROSION AND SEDIMENT CONTROL **(E.S.C.)** MEASURES SHALL BE INSTALLED AT THE LIMITS OF CONSTRUCTION PRIOR TO GROUND DISTURBING ACTIVITY. ALL **E.S.C.** MEASURES SHALL BE MAINTAINED IN GOOD REPAIR BY THE CONTRACTOR UNTIL SUCH TIME AS THE ENTIRE DISTURBED AREAS ARE STABILIZED WITH HARD SURFACE OR LANDSCAPING.

15. THE CONTRACTOR SHALL SEQUENCE INSTALLATION OF UTILITIES IN SUCH A MANNER AS TO MINIMIZE POTENTIAL UTILITY CONFLICTS. IN GENERAL, STORM SEWER AND SANITARY SEWER SHOULD BE CONSTRUCTED PRIOR TO INSTALLATION OF WATER LINES AND DRY UTILITIES. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE ALL UTILITY RELOCATIONS CONSISTENT WITH THE CONTRACTORS SCHEDULE FOR THIS PROJECT, WHETHER SHOWN OR NOT SHOWN, AS IT RELATES TO THE CONSTRUCTION ACTIVITIES CONTEMPLATED IN THESE PLANS.

16. ALL WORK WITHIN THE PUBLIC RIGHT-OF-WAY IS SUBJECT TO THE JURISDICTION OF THE **SPOKANE COUNTY** ENGINEERING DEPARTMENT STANDARD DETAILS AND SPECIFICATIONS.

17. ALL CONSTRUCTION OPERATIONS, INCLUDING THE WARMING UP, REPAIR, ARRIVAL, DEPARTURE OR RUNNING OF TRUCKS, EARTH MOVING EQUIPMENT, CONSTRUCTION EQUIPMENT AND ANY OTHER ASSOCIATED EQUIPMENT SHALL GENERALLY BE LIMITED TO THE TIME PERIOD APPROVED BY **SPOKANE COUNTY.**

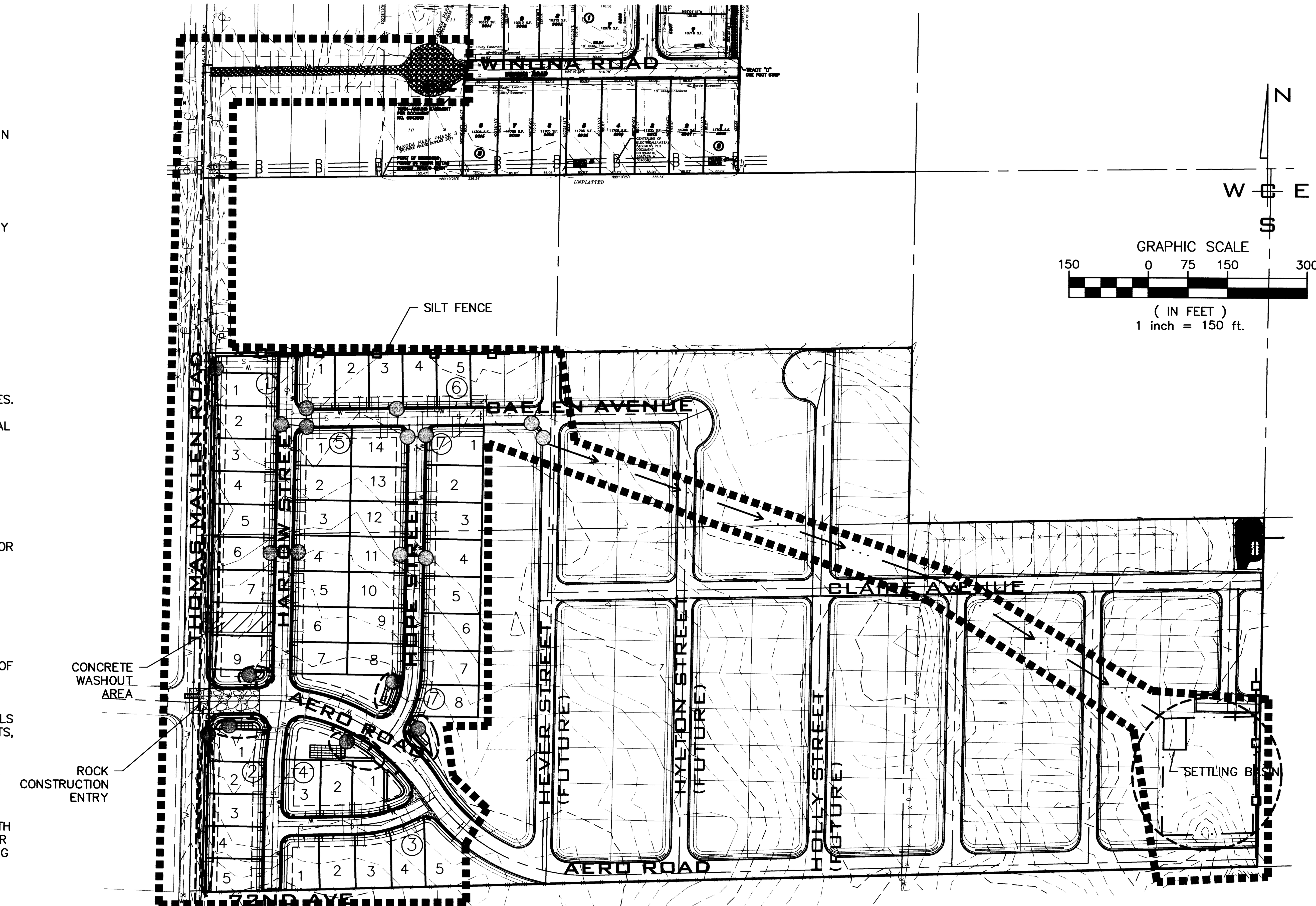
BASED ON REQUIREMENTS FROM **SPOKANE COUNTY**, THE ENGINEER OR HIS DESIGNEE SHALL PERFORM MATERIALS TESTING AND QUALITY CONTROL ON THE PROJECT AND SHALL SUBMIT COPIES OF DAILY REPORTS, TEST REPORTS, PROJECT CERTIFICATION AND RECORD DRAWINGS TO THE **SPOKANE COUNTY** ENGINEER.

18. NO REVISIONS SHALL BE MADE TO THESE PLANS WITHOUT APPROVAL OF THE **SPOKANE COUNTY** ENGINEERS AND NOTIFICATION OF THE ENGINEER OF RECORD.

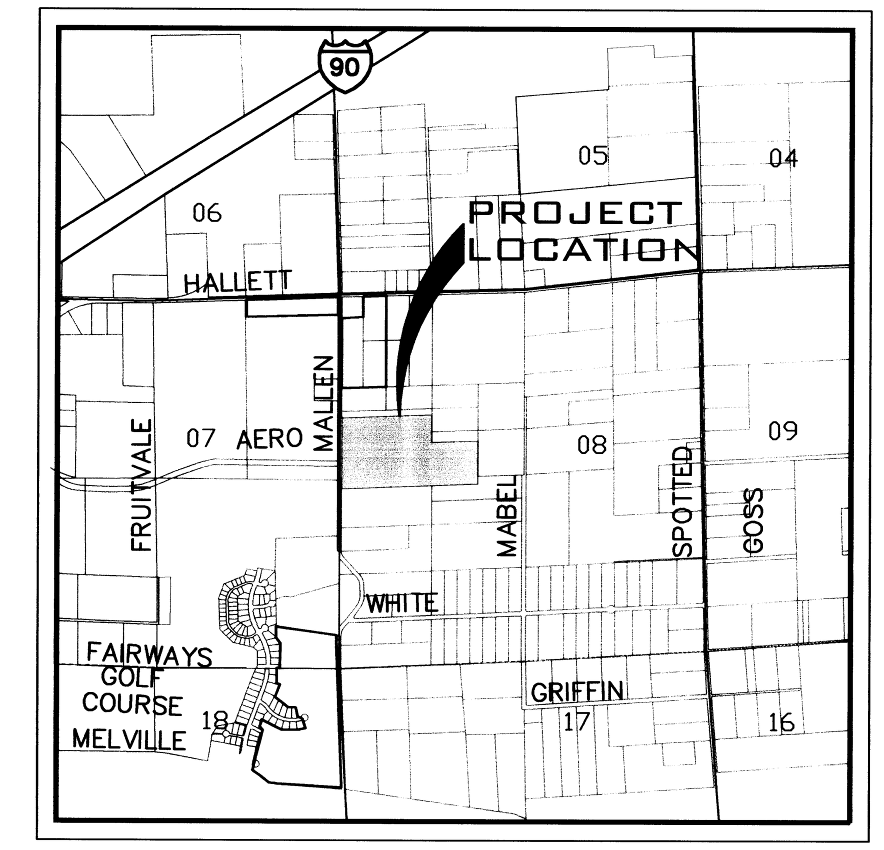
19. ON-SITE GRADING SHALL BE IN ACCORDANCE WITH THE APPROVED **GRADING PLAN** AND **E.S.C.** PLAN. ANY IMPORT OR EXPORT OF MATERIAL SHALL BE FROM A PREAPPROVED SOURCE/DESTINATION AND COORDINATED WITH THE **SPOKANE COUNTY** DEPARTMENT OF BUILDING AND PLANNING AT **509-477-3675.** GRADING ON THIS SITE OR ANY OTHER SITE MUST COMPLY WITH ALL DEVELOPMENT REGULATIONS INCLUDING, BUT NOT LIMITED TO , GRADING PERMITS, S.E.P.A. REVIEW, TIMBER HARVEST PERMITS, CRITICAL AREAS, FLOOD PLAINS, DESIGNATED DRAINAGE WAYS, ETC.

20. THE CONTRACTOR IS CAUTIONED THAT IT IS THE UNDERSTANDING OF THE OWNER AND THE ENGINEER THAT SHOULD A CONFLICT OR DISCREPANCY IN THESE PLANS, SPECIFICATIONS, GENERAL NOTES OR PLANS ET.AL. DETERMINED TO BE PART OF THE OVERALL PROJECT, INCLUDING BUT NOT LIMITED TO THE ARCHITECTURAL PLANS, MECHANICAL PLANS, ELECTRICAL PLANS, LANDSCAPE PLANS, GENERAL SPECIAL PROVISIONS, ETC., THAT WITHOUT WRITTEN CLARIFICATION FROM THE ENGINEER, OWNER OR OTHER PROFESSIONAL, DURING THE BIDDING PROCESS, THAT IN ALL INSTANCES THE CONTRACTOR WILL BE REQUIRED TO BID THE HIGHER STANDARD. FAILURE TO DO SO MAY RESULT IN THE HIGHER STANDARD BEING REQUIRED BY THE OWNER, ENGINEER OR OTHER PROFESSIONAL WITH NO CHANGE IN VALUE TO THE CONTRACT VIA CHANGE ORDER OR OTHER MECHANISM.

21. CONSTRUCTION OF EVERY DRYWELL, INCLUDING FABRIC AND DRAINROCK, SHALL BE OBSERVED BY THE ON-SITE INSPECTOR TO CONFIRM THAT IT MEETS THE DESIGN DETAILS AND SPECIFICATIONS. DRYWELLS NOT OBSERVED SHALL HAVE THEIR PERFORMANCE VERIFIED BY A FULL-SCALE DRYWELL TEST.



SITE PLAN
SCALE: 1" = 150'



VICINITY MAP

INDEX TO PLAN SHEETS

C9.0	SWPPP/EROSION CONTROL COVER SHEET
C9.1	SWPPP NOTES
C9.2	SWPPP BMP'S
C9.3	SWPPP BMP'S

LEGEND

STORM DRAINAGE POND – NO CONCRETE TRUCK WASHOUT AREA.

SILT FENCE – SEE DETAIL 1, SHEET C9.2 AND GENERAL NOTE 5, SHEET C9.1.

ROCK CONSTRUCTION ENTRY. SEE DETAIL 2, SHEET C9.2 AND GENERAL NOTE 6, SHEET C9.1.

SEDIMENT FILTER – SEE DETAIL 3, SHEET C9.3 AND GENERAL NOTE 4, SHEET C9.1.

CONCRETE WASHOUT AREA– MAY ONLY TAKE PLACE ON UNCOMPACTED SUBGRADE AFTER ASPHALT REMOVAL, AND IN A NON-LANDSCAPED AREA. OTHERWISE ANY CONCRETE WASHOUT MUST BE OFF SITE. SEE DETAIL 4, SHEET C9.3 AND GENERAL NOTE 7, SHEET C9.1.

LIMITS OF DISTURBANCE

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THOMAS MALLEN PHASE 1
SWPPP COVER SHEET
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET C9.0

JOB NUMBER 15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 West Plain Holding LLC - Thomas Mallen Phase I (Ref 1018)\DWG\1467-C9.X SWPPP SHEETS.dwg, 9.0 SWPPP COVER, 6/16/2016 4:02:06 PM, nickh

UNDERGROUND SERVICE ALERT
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EROSION & SEDIMENT CONTROL

GENERAL NOTES AND INFORMATION

1. AN EROSION/SEDIMENT CONTROL **(E.S.C.)** PLAN IS REQUIRED FOR THIS PROJECT. IMPLEMENTATION OF THE **E.S.C. PLAN,** AND CONSTRUCTION, MAINTENANCE, AND UPGRADING OF THE **E.S.C.** 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.
2. APPROVAL OF THE **E.S.C. PLAN** DOES NOT CONSTITUTE APPROVAL OF ANY OF THE PROPOSED ROAD, STORM DRAINAGE, GRADING OR UTILITY DESIGN ELEMENTS SHOWN ON THE **E.S.C. PLAN.**
3. THE EROSION/SEDIMENT CONTROL MEASURES SHOWN ARE THE MINIMUM REQUIREMENTS FOR THE ANTICIPATED SITE CONDITIONS. THE CONTRACTOR SHALL INSPECT AND MAINTAIN THESE **E.S.C.** MEASURES DAILY, AND SHALL MAINTAIN AND UPGRADE THESE MEASURES AS NECESSARY TO PREVENT SEDIMENT–LADEN WATER FROM EITHER FLOWING OFF SITE, OR INTO NEW/EXISTING STORM DRAINAGE FACILITIES, SUCH AS DRYWELLS, CULVERTS, OR GRAVEL GALLERIES.
4. GEOTEXTILE FABRIC IS TO BE PLACED ON THE RIMS, CATCH BASINS AND INLETS UNTIL SUCH TIME THAT THE VEGETATION ON THE SITE IS ESTABLISHED AND THE THREAT OF SEDIMENT DEPOSITION INTO THE DRAINAGE SYSTEM IS MITIGATED.
5. THE SILT FENCES SHALL BE INSTALLED BY THE CONTRACTOR PRIOR TO OTHER SITE WORK, AND MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.
6. THE CONTRACTOR IS RESPONSIBLE FOR INSTALLING ROCK CONSTRUCTION ENTRIES AT ANY AND ALL LOCATIONS USED TO ENTER OR EXIT THE PROJECT SITE. SEE DETAIL,
7. THE CONTRACTOR IS RESPONSIBLE FOR DESIGNATING A LOCATION WHERE CONCRETE TRUCKS AND EQUIPMENT CAN BE WASHED OUT, NOT LOCATED NEAR OR DRAINING INTO A STORM DRAINAGE AREA.
8. PROPERTY OWNER: **WEST PLAIN HOLDINGS, LLC**
   PERMIT APPLICANT: **WHIPPLE CONSULTING ENGINEERS, 509–893–2617**
   CONTACT PERSON ON SITE: **TBD**
9. PROJECT LOCATION: **IN SPOKANE COUNTY, WASHINGTON IN THE NW 1/4 OF SECTION 8, TOWNSHIP 24 N., RANGE 42 E. W.M.**
10. PROJECT DESCRIPTION: **THIS PROJECT CONSISTS OF A NEW 49–LOT RESIDENTIAL DEVELOPMENT ON APPROXIMATELY 12 ACRES. THE PROJECT WILL REQUIRE CONSTRUCTION OF NEW PAVING, WATER, SEWER AND STORM DRAINAGE FACILITIES.**
11. DESCRIPTION OF **E.S.C.** MEASURES: USE OF SILT FENCES AND SEDIMENTATION FILTERS. ALL **E.S.C.** MEASURES MENTIONED ABOVE ARE TEMPORARY AND WILL BE REMOVED AFTER SITE IS LANDSCAPED.
12. EXISTING VEGETATION: **VACANT LAND WITH GRASS AND WEED COVER**
13. PLAN PREPARATION DATE: **JULY 28, 2015**
14. SOILS: **CHENEY–ALECANYON COMPLEX, DEARYTON ASHY SILTY LOAM, & KRAMERHILL ASHY LOAM**
15. **STABILIZATION OF DENUDED AREAS:**
    ANY DISTURBED AREAS, WHICH WOULD BE LEFT BARE FOR MORE THAN 7 DAYS AND ARE NOT INTENDED TO BE REWORKED WITHIN 30–45 DAYS SHALL BE SEEDED WITH A FAST STARTING NATIVE DRYLAND GRASS SUCH AS ANNUAL RYE, OR APPROVED EQUAL, AT A RATE OF 60 lbs/ACRE.
16. **CONTROL OF POLLUTANTS:**
    ANY SPILLS WILL BE HANDLED ACCORDING TO **D.O.E. AND D.O.H.** GUIDELINES.
17. **LIMITS OF GRADING:**
    DURING THE COURSE OF CONSTRUCTION, THE AMOUNT OF DISTURBED AREA SHALL BE KEPT TO A MINIMUM AND SHALL BE LIMITED TO THE AREA SHOWN AS "LIMITS OF GRADING" ON THIS SHEET OF THE EROSION CONTROL PLANS.

MAINTENANCE

1. **THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION AND MAINTENANCE OF THE TEMPORARY E.S.C.** MEASURES.
2. SEDIMENT BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RUNOFF–PRODUCING RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL.
3. NECESSARY REPAIRS TO BARRIERS OR REPLACEMENT OF FILTER FABRIC SHALL BE ACCOMPLISHED PROMPTLY.
4. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH RUNOFF–PRODUCING RAINFALL. DEPOSITS MUST BE REMOVED WHEN THE LEVEL OF DEPOSITION REACHES APPROXIMATELY 1/2 THE HEIGHT OF THE BARRIER.
5. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE **E.S.C.** STRUCTURE IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM TO THE EXISTING GRADE, PREPARED AND SEEDED.
6. ALL TEMPORARY AND PERMANENT **E.S.C.** PRACTICES SHALL BE MAINTAINED AND REPAIRED AS NEEDED TO ASSURE CONTINUED PERFORMANCE OF THEIR INTENDED FUNCTION.
7. ALL TEMPORARY **E.S.C.** MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION IS ACHIEVED OR AFTER THE TEMPORARY BMP'S ARE NO LONGER NEEDED. TRAPPED SEDIMENT SHALL BE REMOVED OR STABILIZED ON SITE. DISTURBED SOIL AREAS RESULTING FROM REMOVAL SHALL BE PERMANENTLY STABILIZED.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING DIRT, MUD AND OTHER CONSTRUCTION DEBRIS WHICH MAY ACCUMULATE ON PAVED STREETS ADJACENT TO THE SITE AS A RESULT OF CONSTRUCTION ACTIVITY. CLEANING SHALL BE ON AN "AS NEEDED" BASIS USING SWEEPING AND WATER TO WASH THE CONSTRUCTION DEBRIS FROM THE STREET.
9. ON–SITE DUST CONTROL SHALL BE ACCOMPLISHED BY USING WATER. APPLICATIONS OF WATER MAY BE REQUIRED SEVERAL TIMES PER DAY DURING CONSTRUCTION ACTIVITY.

E.S.C. STANDARD PLAN NOTES FROM APPENDIX 9A OF THE

SPOKANE REGIONAL STORMWATER MANUAL

1. THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE FOLLOWED IN ORDER TO BEST MINIMIZE THE POTENTIAL FOR EROSION AND SEDIMENTATION CONTROL PROBLEMS.

(A) CLEAR AND GRUB SUFFICIENTLY FOR INSTALL OF TEMPORARY **E.S.C.** BMP'S;

(B) INSTALL TEMPORARY **E.S.C.** BMPs, CONSTRUCTING SEDIMENT TRAPPING BMP'S AS ONE OF THE FIRST STEPS PRIOR TO GRADING;

(C) CLEAR, GRUB AND ROUGH GRADE FOR ROADS, TEMPORARY ACCESS POINTS AND UTILITY LOCATIONS;

(D) STABILIZE ROADWAY APPROACHES AND TEMPORARY ACCESS POINTS WITH THE APPROPRIATE CONSTRUCTION ENTRY BMP;

(E) CLEAR, GRUB AND GRADE INDIVIDUAL LOTS OR GROUPS OF LOTS;

(F) TEMPORARILY STABILIZE, THROUGH RE–VEGETATION OR OTHER APPROPRIATE BMP'S, LOTS OR GROUPS OF LOTS IN SITUATIONS WHERE SUBSTANTIAL CUT OR FILL SLOPES ARE A RESULT OF THE SITE GRADING;

(G) CONSTRUCT ROADS, BUILDINGS, PERMANENT STORMWATER FACILITIES. (I.E. INLETS, PONDS, U.I.C. FACILITIES, ETC.);

(H) PROTECT ALL PERMANENT STORMWATER FACILITIES UTILIZING THE APPROPRIATE BMP'S;

(I) INSTALL PERMANENT **E.S.C.** CONTROLS, WHEN APPLICABLE; AND,

(J) REMOVE TEMPORARY **E.S.C.** CONTROLS WHEN;

2. PERMANENT **E.S.C.** CONTROLS. WHEN APPLICABLE, HAVE BEEN COMPLETELY INSTALLED;
3. ALL LAND–DISTURBING ACTIVITIES THAT HAVE THE POTENTIAL TO CAUSE EROSION AND SEDIMENTATION PROBLEMS HAVE CEASED; AND,
4. VEGETATION HAD BEEN ESTABLISHED IN THE AREAS NOTED AS REQUIRING VEGETATION ON THE ACCEPTED **E.S.C.** PLAN ON FILE WITH THE LOCAL JURISDICTION.
5. INSPECT ALL ROADWAYS, AT THE END OF EACH DAY, ADJACENT TO THE CONSTRUCTION ACCESS ROUTE. IF IT IS EVIDENT THAT SEDIMENT HAS BEEN TRACKED OFF SITE AND/OR BEYOND THE ROADWAY APPROACH, CLEANING IS REQUIRED.
6. IF SEDIMENT REMOVAL IS NECESSARY PRIOR TO STREET WASHING, IT SHALL BE REMOVED BY SHOVELING OR PICKUP SWEEPING AND TRANSPORTED TO A CONTROLLED SEDIMENT DISPOSAL AREA.
7. IF STREET WASHING IS REQUIRED TO CLEAN SEDIMENT TRACKED OFF SITE, ONCE SEDIMENT HAS BEEN REMOVED, STREET WASH WASTEWATER SHALL BE CONTROLLED BY PUMPING BACK ON–SITE OR OTHERWISE PREVENTED FROM DISCHARGING INTO SYSTEMS TRIBUTARY TO WATERS OF THE STATE.
8. RESTORE CONSTRUCTION ACCESS ROUTE EQUAL TO OR BETTER THAN THE PRE–CONSTRUCTION CONDITION.
9. RETAIN THE DUFF LAYER, NATIVE TOPSOIL, AND NATURAL VEGETATION IN AND UNDISTURBED STATE TO THE MAXIMUM EXTENT PRACTICAL.
10. INSPECT SEDIMENT CONTROL BMP'S WEEKLY AT A MINIMUM, DAILY DURING A STORM EVENT, AND AFTER ANY DISCHARGE FROM THE SITE (STORMWATER OR NON–STORMWATER). THE INSPECTION FREQUENCY MAY BE REDUCED TO ONCE A MONTH IF THE SITE IS STABILIZED AND INACTIVE.
11. CONTROL FUGITIVE DUST FROM CONSTRUCTION ACTIVITY IN ACCORDANCE WITH THE STATE AND/OR LOCAL AIR QUALITY CONTROL AUTHORITIES WITH JURISDICTION OVER THE PROJECT AREA.
12. STABILIZE EXPOSED UNWORKED SOILS (INCLUDING STOCKPILES), WHETHER AT FINAL GRADE OR NOT WITHIN 10 DAYS DURING THE REGIONAL DRY SEASON (JULY 1 TO SEPTEMBER 30) AND WITHIN 5 DAYS DURING THE REGIONAL WET SEASON (OCTOBER 1 THRU JUNE 30). SOILS MUST BE STABILIZED AT THE END OF A SHIFT BEFORE A HOLIDAY WEEKEND IF NEEDED BASED ON THE WEATHER FORECAST. THE TIME LIMIT MAY ONLY BE ADJUSTED BY A LOCAL JURISDICTION WITH A "QUALIFIED LOCAL PROGRAM," IF IT CAN BE DEMONSTRATED THAT THE RECENT PRECIPITATION JUSTIFIES A DIFFERENT STANDARD AND MEETS THE REQUIREMENTS SET FORTH IN THE CONSTRUCTION STORMWATER GENERAL PERMIT.
13. PROTECT INLETS, DRYWELLS, CATCH BASINS AND OTHER STORMWATER MANAGEMENT FACILITIES FROM SEDIMENT, WHETHER OR NOT FACILITIES ARE OPERABLE,
14. KEEP ROADS ADJACENT TO INLETS CLEAN.
15. INSPECT INLETS WEEKLY AT A MINIMUM AND DAILY FOR STORM EVENTS.
16. CONSTRUCT STORMWATER CONTROL FACILITIES (DETENTION/RETENTION STORAGE POND OR SWALES) BEFORE GRADING BEGINS. THESE FACILITIES SHALL BE OPERABLE BEFORE THE CONSTRUCTION OF IMPERVIOUS SITE IMPROVEMENTS.
17. STOCKPILE MATERIALS (SUCH AS TOPSOIL) ON SITE, KEEPING OFF OF ROADWAY AND SIDEWALKS.
18. COVER, CONTAIN AND PROTECT ALL CHEMICALS, LIQUID PRODUCTS, PETROLEUM PRODUCT, AND NON–INERT WASTES PRESENT ON SITE FROM VANDALISM (SEE CHAPTER 173–304 W.A.C. FOR THE DEFINITION OF INERT WASTE), USE SECONDARY CONTAINMENT FOR ON–SITE FUELING TANKS.
19. CONDUCT MAINTENANCE AND REPAIR OF HEAVY EQUIPMENT AND VEHICLES INVOLVING OIL CHANGES, HYDRAULIC SYSTEMS REPAIRS, SOLVENT AND DE_GREASING OPERATIONS, FUEL TANK DRAIN DOWN AND REMOVAL, AND OTHER ACTIVITIES THAT MAY RESULT IN DISCHARGE OR SPILLAGE OF POLLUTANTS TO THE GROUND OR INTO STORMWATER RUNOFF USING SPILL RECONVENTION MEASURES, SUCH AS DRIP PANS. CLEAN ALL CONTAMINATED SURFACES IMMEDIATELY FOLLOWING ANY DISCHARGE OR SPILL INCIDENT. IF RAINING OVER EQUIPMENT OR VEHICLE, PERFORM EMERGENCY REPAIRS ON SITE USING TEMPORARY PLASTIC BENEATH THE VEHICLE.
20. CONDUCT APPLICATION OF AGRICULTURAL CHEMICALS, INCLUDING FERTILIZERS AND PESTICIDES, IN SUCH A MANNER, AND AT APPLICATION RATES, THAT INHIBITS THE LOSS OF CHEMICALS INTO STORMWATER RUNOFF FACILITIES. AMEND MANUFACTURER'S RECOMMENDED APPLICATION RATES AND PROCEDURES TO MEET THIS REQUIREMENT, IF NECESSARY.
21. INSPECT ON A REGULAR BASIS (AT A MINIMUM WEEKLY, AND DAILY DURING/AFTER A RUNOFF PRODUCING EVENT) AND MAINTAIN ALL **EROSION AND SEDIMENT CONTROL** BMP'S TO ENSURE SUCCESSFUL PERFORMANCE OF THE BMP'S. NOTE THAT INLET PROTECTIONS DEVICES SHALL BE CLEANED OR REMOVED AND REPLACE BEFORE SIX INCHES OF SEDIMENT CAN ACCUMULATE.
22. REMOVE TEMPORARY **E.SC.** BMP'S WITHIN 30 DAYS AFTER THE TEMPORARY BMP'S ARE NO LONGER NEEDED. PERMANENTLY STABILIZE AREA THAT ARE DISTURBED DURING REMOVAL PROCESS.

SRCAA GENERAL NOTES

1. DUST EMISSIONS DURING DEMOLITION, CONSTRUCTION, AND EXCAVATION PROJECTS MUST BE CONTROLLED. THIS MAY REQUIRE THE USE OF WATER SPRAYS, TARPS, SPRINKLERS, OR SUSPENSION OF ACTIVITY DURING CERTAIN WEATHER CONDITIONS.
2. MEASURES MUST BE TAKEN TO AVOID THE DEPOSITION OF DIRT AND MUD FROM UNPAVED SURFACES ONTO PAVED SURFACES. IF TRACKING OR SPILLS OCCUR ON PAVED SURFACES, MEASURES MUST BE TAKEN IMMEDIATELY TO CLEAN THESE SURFACES.
3. DEBRIS GENERATED, AS A RESULT OF THIS PROJECT, MUST BE DISPOSED OF BY MEANS OTHER THAN BURNING (I.E., CONSTRUCTION WASTE, VEGETATIVE WASTE, ECT.).
4. SPOKANE CLEAN AIR (SRCAA) STRONGLY RECOMMENDS THAT ALL TRAVELED SURFACES (I.E., INGRESS, EGRESS, PARKING AREAS, ACCESS ROADS, ECT.) BE PAVED AND KEPT CLEAN TO MINIMIZE DUST EMISSIONS.
5. IF OBJECTIONABLE ODORS RESULT FROM THIS PROJECT, EFFECTIVE CONTROL APPARATUS AND MEASURES MUST BE TAKEN TO REDUCE ODORS TO A MINIMUM.
6. SPECIAL ATTENTION SHOULD BE GIVEN TO PROPER MAINTENANCE OF DIESEL POWERED CONSTRUCTION EQUIPMENT TO REDUCE THE IMPACT OF DIESEL EXHAUST, A SUSPECTED CARCINOGEN.
7. A NOTICE OF CONSTRUCTION AND APPLICATION FOR APPROVAL IS REQUIRED TO BE SUBMITTED AND APPROVED BY SRCAA PRIOR TO THE CONSTRUCTION, INSTALLATION, OR ESTABLISHMENT OF AN AIR POLLUTION SOURCE. THIS INCLUDES EMERGENCY GENERATORS RATED AT 500 HP(375 KW) OR HIGHER, NATURAL GAS HEATING EQUIPMENT UNITS RATED AT FOUR MMBTU/HOUR OR HIGHER (INPUT), AND HEATING EQUIPMENT UNITS FIRED WITH OTHER FUELS (E.G., DIESEL) RATED AT ONE MMBTU/HOUR (INPUT) OR HIGHER. CONTACT SPOKANE CLEAN AIR (SRCAA) FOR A NOTICE OF CONSTRUCTION APPLICATION.
8. NOTICE OF INTENT MUST BE SUBMITTED TO SRCAA PRIOR TO ANY DEMOLITION PROJECT OR ASBESTOS PROJECT. AN ASBESTOS SURVEY MUST BE DONE BY AN HERA–ACCREDITED BUILDING INSPECTOR PRIOR TO THE DEMOLITION OR RENOVATION OF BUILDINGS TO DETERMINE IF ASBESTOS–CONTAINING MATERIAL IS PRESENT AT THE SITE. CONTACT SPOKANE CLEAN AIR (SRCAA) FOR A NOTICE OF INTENT APPLICATION.

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: 1.24
PROJECT LANE MILES PRIVATE: Ø
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

MARK L. KRIGBAUM, STATE OF WASHINGTON, 39236, REGISTERED PROFESSIONAL ENGINEER
6-17-16

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE:	
HORIZONTAL:	N/A
VERTICAL:	N/A

PROJ #:	15-1467
DATE:	08/03/15
DRAWN:	RMA
REVIEWED:	MLK

X	CIVIL
	STRUCTURAL
	SURVEYING
	TRAFFIC
	PLANNING
	LANDSCAPE
	OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
PH: 509-893-2617 FAX: 509-926-0227

THOMAS MALLEN PHASE 1
SWPPP NOTES
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET C9.1
JOB NUMBER 15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 West Plain Holding LLC - Thomas Mallen Phase I (Ref 1018)\DWG\1467-C9.X SWPPP SHEETS.dwg, 9.1 SWPPP NOTES, 6/16/2016 4:02:28 PM, nickh

BMP C233: SILT FENCE

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE: USE OF SILT FENCE REDUCES THE TRANSPORT OF COARSE SEDIMENT FROM A CONSTRUCTION SITE BY PROVIDING A TEMPORARY PHYSICAL BARRIER TO SEDIMENT AND REDUCING THE RUNOFF VELOCITIES OF OVERLAND FLOW. SEE FIGURE 7.3.20 OF THE EASTERN WASHINGTON STORMWATER MANUAL OR DETAIL BELOW FOR DETAILS ON SILT FENCE CONSTRUCTION.

CONDITIONS OF USE: SILT FENCE MAY BE USED DOWNSLOPE OF ALL DISTURBED AREAS. SILT FENCE IS NOT INTENDED TO TREAT CONCENTRATED FLOWS, NOR IS IT INTENDED TO TREAT SUBSTANTIAL AMOUNTS OF OVERLAND FLOW. ANY CONCENTRATED FLOWS MUST BE CONVEYED THROUGH THE DRAINAGE SYSTEM TO A SEDIMENT POND. THE ONLY CIRCUMSTANCE IN WHICH OVERLAND FLOW CAN BE TREATED SOLELY BY A SILT FENCE, RATHER THAT BY A SEDIMENT POND, IS WHEN THE AREA DRAINING TO THE FENCE IS ONE ACRE OR LESS AND FLOW RATES ARE LESS THAN 0.5 CFS.

SILT FENCES SHOULD NOT BE CONSTRUCTED IN STREAMS OR USED IN V-SHAPED DITCHES. THEY ARE NOT AN ADEQUATE METHOD OF SILT CONTROL FOR ANYTHING DEEPER THAT SHEET OR OVERLAND FLOW.

DESIGN AND INSTALLATION: DRAINAGE AREA OF 1 ACRE OR LESS OR IN COMBINATION WITH SEDIMENT BASIN IN A LARGER SITE.

MAXIMUM SLOPE STEEPNESS (NORMAL OR PERPENDICULAR TO FENCE LINE) 1:1.

MAXIMUM SHEET OR OVERLAND FLOW PATH LENGTH TO THE FENCE OF 100 FEET.

NO FLOWS GREATER THAN 0.5 CFS.

THE GEOTEXTILE USED SHALL MEET THE FOLLOWING STANDARDS. ALL GEOTEXTILE PROPERTIES LISTED BELOW ARE MINIMUM AVERAGE ROLL VALUES.

POLYMETRIC MESH AOS (ASTM D4751)	0.60MM MAX. FOR SLIT WOVENS (#30 SIEVE). 0.30MM MAX. FOR ALL OTHER GEOTEXTILE TYPES (#50 SIEVE). 0.15MM MAX. FOR ALL FABRIC TYPES (#100 SIEVE).
WATER PERMITTIVITY (ASTM D4491)	0.02/SEC MIN.
GRAB TENSILE STRENGTH (ASTM D4632)	180 LBS. MIN. FOR EXTRA STRENGTH FABRIC. 100 LBS. MIN. FOR STANDARD STRENGTH FABRIC
GRAB TENSILE ELONGATION (ASTM D4632)	30% MAX,
ULTRAVIOLET RESISTANCE (ASTM D4335)	70% MIN.

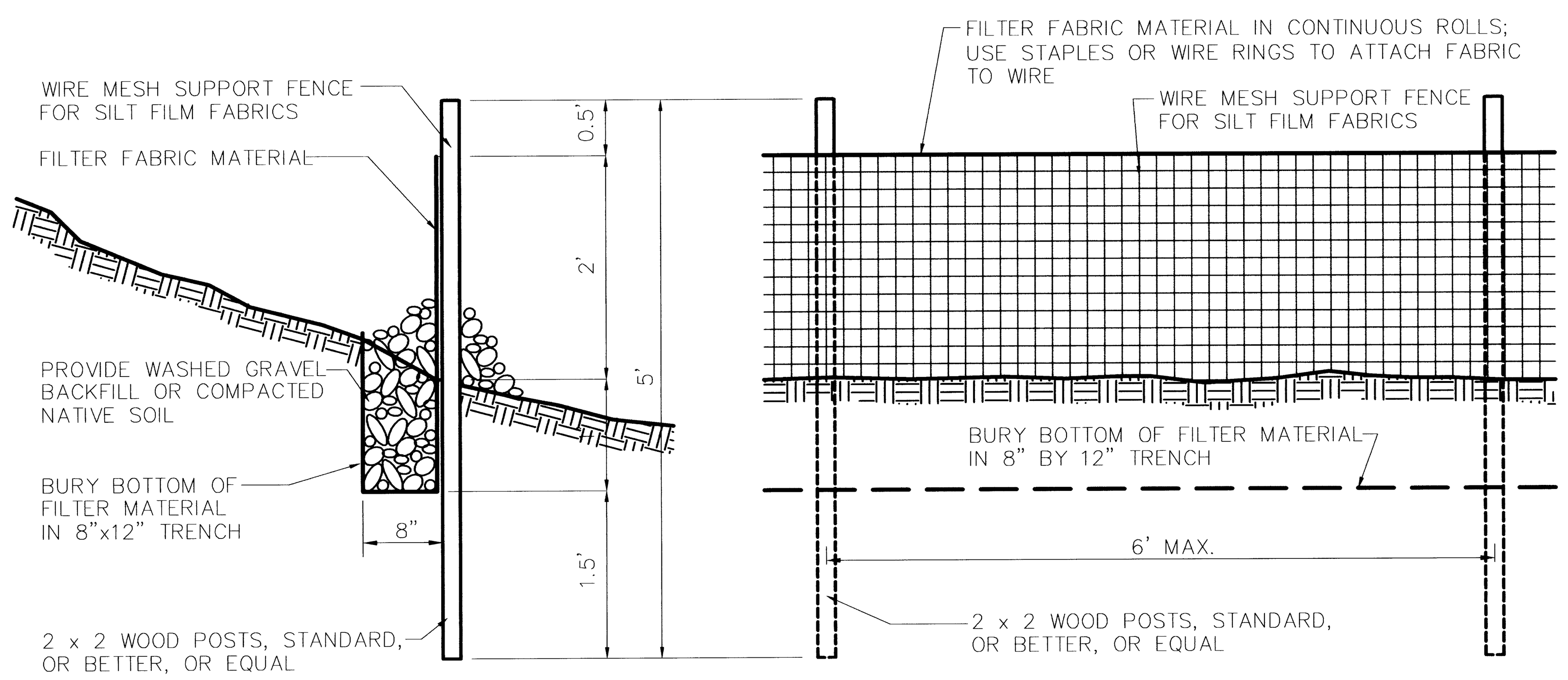
STANDARD STRENGTH FABRICS SHALL BE SUPPORTED WITH WIRE MESH, CHICKEN WIRE, 2-INCH X 2-INCH, SAFETY FENCE, OR JUST MESH TO INCREASE THE STRENGTH OF FABRIC. SILT FENCE MATERIALS ARE AVAILABLE THAT HAVE SYNTHETIC MESH BACKING ATTACHED.

FILTER FABRIC MATERIAL SHALL CONTAIN ULTRAVIOLET RAY INHIBITORS AND STABILIZERS TO PROVIDE A MINIMUM OF SIX MONTHS OF EXPECTED USABLE CONSTRUCTION LIFE AT A TEMPERATURE RANGE OF 0°F. TO 120°F.

100 PERCENT BIODEGRADABLE SILT FENCE IS AVAILABLE THAT IS STRONG, LONG LASTING, AND CAN BE LEFT IN PLACE AFTER THE PROJECT IS COMPLETED, IF PERMITTED BY LOCAL REGULATIONS.

CONTRACTOR SHALL INSTALL AND MAINTAIN TEMPORARY SILT FENCES AT THE LOCATIONS SHOWN IN THE PLANS. THE SILT FENCE SHALL BE CONSTRUCTED IN THE AREAS OF CLEARING, GRADING, OR DRAINAGE PRIOR TO STARTING THOSE ACTIVITIES. A SILT FENCE SHALL NOT BE CONSIDERED TEMPORARY IF THE SILT FENCE MUST OPERATE BEYOND THE LENGTH OF THE CONTRACT. THE SILT FENCE SHALL PREVENT SOIL CARRIED BY RUNOFF WATER FROM GOING BENEATH, THROUGH, OR OVER THE TOP OF THE SILT FENCE, BUT SHALL ALLOW WATER TO PASS THROUGH THE FENCE.

THE MINIMUM HEIGHT OF THE TOP OF SILT FENCE SHALL BE 2 FEET AND THE MAXIMUM SHALL BE 2.5 FEET ABOVE THE ORIGINAL GROUND SURFACE.



SILT FENCE DETAIL (1/-)

NOT TO SCALE

DESIGN AND INSTALLATION: (CONTINUED) THE GEOTEXTILE SHALL BE SEWN TOGETHER AT THE POINT OF MANUFACTURE, OR AT AN APPROVED LOCATION AS DETERMINED BY THE ENGINEER, TO FORM GEOTEXTILE LENGTHS AS REQUIRED. ALL SEWN SEAMS SHALL BE LOCATED AT A SUPPORT POST. ALTERNATIVELY, TWO SECTIONS OF SILT FENCE CAN BE OVERLAPPED, PROVIDED THE CONTRACTOR CAN DEMONSTRATE, TO THE SATISFACTION OF THE ENGINEER, THAT THE OVERLAP IS LONG ENOUGH AND THAT THE ADJACENT FENCE SECTIONS ARE CLOSE ENOUGH TOGETHER TO PREVENT SILT LADEN WATER FROM ESCAPING THROUGH THE FENCE AT THE OVERLAP.

THE GEOTEXTILE SHALL BE ATTACHED ON THE UP-SLOPE SIDE OF THE POSTS AND SUPPORT SYSTEM WITH STAPLES, WIRE, OR IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE GEOTEXTILE SHALL BE ATTACHED IN A MANNER THAT REDUCES THE POTENTIAL FOR GEOTEXTILE TEARING AT THE STAPLES, WIRE, OR OTHER CONNECTION DEVICE. SILT FENCE BACKUP SUPPORT FOR THE GEOTEXTILE IN THE FORM OF A WIRE OF PLASTIC MESH IS DEPENDENT ON THE PROPERTIES OF THE GEOTEXTILE SELECTED FOR SUE. IF WIRE OR PLASTIC BACK-UP MESH IS USED, THE MESH SHALL BE FASTENED SECURELY TO THE UP-SLOPE OF THE POSTS WITH THE GEOTEXTILE BEING UP-SLOPE OF THE MESH BACK SUPPORT.

THE GEOTEXTILE AT THE BOTTOM OF THE FENCE HALL BE BURIED IN A TRENCH TO A MINIMUM DEPTH OF 4" BELOW THE GROUND SURFACE. THE TRENCH SHALL BE BACKFILLED AND THE SOIL TAMPED IN PLACE OVER THE BURIED PORTION OF THE GEOTEXTILE, SUCH THAT NO FLOW CAN PASS BENEATH THE FENCE AND SCOURING CAN NOT OCCUR. WHEN WIRE OR POLYMETRIC BACK-UP SUPPORT MESH IS USED, THE WIRE OR POLYMERIC MESH SHALL EXTEND INTO THE TRENCH A MINIMUM OF 3".

THE FENCE POSTS SHALL BE PLACED OR DRIVEN A MIN. OF 18'. A MIN. DEPTH OF 12" IS ALLOWED IF TOPSOIL OR OTHER SOFT SUBGRADE SOIL IS NOT PRESENT AND A MIN. DEPTH OF 18' CANNOT BE REACHED. FENCE POST DEPTHS SHALL BE INCREASED 6' IF THE FENCE IS LOCATED ON SLOPES PF 3;1 OR STEEPER AND THE SLOPE IS PERPENDICULAR TO THE FENCE. IF REQUIRED POST DEPTHS CANNOT BE OBTAINED, THE POSTS SHALL BE ADEQUATELY SECURED BY BRACING OR GUYING TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT LOADING.

SILT FENCES SHALL BE LOCATED ON CONTOUR AS MUCH AS POSSIBLE, EXCEPT AT THE ENDS OF THE FENCE, WHERE THE FENCE SHALL BE TURNED UPHILL SUCH THAT THE SILT FENCE CAPTURES THE RUNOFF WATER AND PREVENTS WATER FROM FLOWING AROUND THE END OF THE FENCE.

IF THE FENCE MUST CROSS CONTOURS, WITH THE EXCEPTION OF THE END OF THE FENCE. GRAVEL CHECK DAMS PLACED PERPENDICULAR TO THE BACK OF THE FENCE SHALL BE USED TO MINIMIZE CONCENTRATED FLOW AND EROSION ALONG THE BACK OF THE FENCE. THE GRAVEL CHECK DAMS SHALL BE APPROXIMATELY 1' DEEP AT THE BACK OF THE FENCE. IT SHALL BE CONTINUED PERPENDICULAR TO THE FENCE AT THE SAME ELEVATION UNTIL THE TOP OF THE CHECK DAM INTERCEPTS THE THE GROUND SURFACE BEHIND THE FENCE. THE GRAVEL CHECK DAMS SHALL CONSIST OF CRUSHED SURFACING TOP COURSE, GRAVEL BACKFILL FOR WALLS, OR SHOULDER BALLAST. THE GRAVEL CHECK DAMS SHALL BE LOCATED EVERY 10' ALONG THE FENCE WHERE THE FENCE MUST CROSS THE CONTOURS. THE SLOPE OF THE FENCE LINE WHERE THE CONTOURS MUST BE CROSSED SHALL NOT BE STEEPER THAN 3:1

WOOD, STEEL OR EQUIVALENT POSTS SHALL BE USED. WOOD POSTS SHALL HAVE MINIMUM DIMENSIONS OF 2"X2"X3' MIN. LENGTH, AND SHALL BE FREE OF DEFECTS SUCH AS KNOTS, SPLITS, OR GOUGES. STEEL POSTS SHALL CONSIST OF EITHER SIZE NO. 6 REBAR OR LARGER, ASTM A 120 STEEL PIPE WITH A MIN. DIAMETER. OR 1-INCH, U, T, L, OR C SHAPE STEEL POSTS WITH A MIN. WEIGHT OF 1.35 LBS./FT. OR OTHER STEEL POSTS HAVING EQUIVALENT STRENGTH AND BENDING RESISTANCE TO THE POST SIZES LISTED. THE SPACING OF THE SUPPORTS POSTS SHALL BE A MAXIMUM OR 6'.

FENCE BACK-UP SUPPORT, IF USED, SHALL CONSIST OF STEEL WIRE WITH A MAX. MESH SPACING OF 2', OR A PREFABRICATED POLYMERIC MESH. THE STRENGTH OF WIRE ON POLYMERIC MESH SHALL BE EQUIVALENT TO OR GREATER THAT 180 LBS. GRAB TENSILE STRENGTH. THE POLYMERIC MESH MUST BE AS RESISTANT TO ULTRAVIOLET. RADIATION AS THE GEOTEXTILE IT SUPPORTS.

SILT FENCE INSTALLATION USING THE SLICING METHOD SPECIFICATION DETAILS FOLLOW.

THE BASE OF BOTH END POSTS MUST BE AT LEAST 2-4"ABOVE THE TOP OF THE SILT FENCE FABRIC ON THE MIDDLE POSTS FOR DITCH CHECKS TO DRAIN PROPERLY. USE A HAND LEVEL OR STRING LEVEL, IF NECESSARY, TO MARK BASE POINTS BEFORE INSTALLATION.

INSTALL POSTS 3-4' APART IN CRITICAL RETENTION AREAS. AND 6-7' APART IN STANDARD APPLICATIONS.

INSTALL POSTS 24" DEEP ON THE DOWNSTREAM SIDE OF THE SILT FENCE, AND AS CLOSE AS POSSIBLE TO THE FABRIC. ENABLING POSTS TO SUPPORT THE FABRIC FROM THE UPSTREAM WATER PRESSURE.

INSTALL POSTS WITH NIPPLES FACING AWAY FROM THE SILT FENCE FABRIC.

ATTACH THE FABRIC TO EACH POST WITH THREE TIES, ALL SPACED WITH THE TOP 8" OF THE FABRIC. ATTACH EACH TIE DIAGONALLY 45 DEGREES THROUGH THE FABRIC, WITH EACH PUNCTURE AT LEAST 1 INCH VERTICALLY APART, IN ADDITION, EACH TIE SHOULD BE POSITIONED TO HANG ON A POST NIPPLE WHEN TIGHTENING TO PREVENT SAGGING.

WRAP APPROXIMATELY 6 INCHES OF FABRIC AROUND THE END POSTS AND SECURE WITH 3 TIES.

NO MORE THEN 24" OF A 36" FABRIC IS ALLOWED ABOVE GROUND LEVEL.

THE ROPE LOCK SYSTEM MUST BE USED IN ALL DITCH CHECK APPLICATIONS.

THE INSTALLATION SHOULD BE CHECKED AND CORRECTED FOR ANY DEVIATION BEFORE COMPACTION. USE A FLAT-BLADED SHOVEL TO TUCK FABRIC DEEPER INTO THE GROUND IF NECESSARY.

COMPACTION IS VITALLY IMPORTANT FOR EFFECTIVE RESULTS. COMPACT THE SOIL IMMEDIATELY NEXT TO THE SILT FENCE WITH THE FRONT WHEEL OF A TRACTOR, SKID STEER, OR ROLLER EXERTING 60 PSI, COMPACT THE UPSTREAM SIDE FIRST AND THEN EACH SIDE TWICE FOR A TOTAL OF FOUR TRIPS

MAINTENANCE STANDARDS: ANY DAMAGE SHALL BE REPAIRED IMMEDIATELY.

IF CONCENTRATED FLOWS ARE EVIDENT UPHILL OF THE FENCE, THEY MUST BE INTERCEPTED AND CONVEYED TO A SEDIMENT POND.

IT IS IMPORTANT TO CHECK THE UPHILL SIDE OF THE FENCE FOR SIGNS OF THE FENCE CLOGGING AND ACTING AS A BARRIER TO FLOW AND THEN CAUSING CHANNELIZATION OF THE FLOWS PARALLEL TO THE FENCE, IF THIS OCCURS, REPLACE THE FENCE OR REMOVE THE TRAPPED SEDIMENT.

SEDIMENT DEPOSITS SHALL EITHER BE REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-THIRD THE HEIGHT OF THE SILT FENCE, OR A SECOND SILT FENCE INSTALLED.

IF THE FILTER FABRIC OR GEOTEXTILE HAS DETERIORATED DUE TO ULTRAVIOLENT BREAKDOWN, IT SHALL BE REPLACED.

BMP C105: STABILIZED CONSTRUCTION ENTRANCE

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE: CONSTRUCTION ENTRANCES ARE STABILIZED TO REDUCE THE AMOUNT OF SEDIMENT TRANSPORTED ONTO PAVED ROADS BY VEHICLES OR EQUIPMENT BY CONSTRUCTING A STABILIZED PAD OF QUARRY SPALLS AT ENTRANCES TO CONSTRUCTION SITES.

CONDITIONS OF USE: CONSTRUCTION ENTRANCES SHALL BE STABILIZED WHEREVER TRAFFIC WILL BE LEAVING A CONSTRUCTION SITE AND TRAVELING ON PAVED ROADS OR OTHER PAVED AREAS WITHIN 1,000 FEET OF THE SITE.

ON LARGE COMMERCIAL, HIGHWAY, AND ROAD PROJECTS, THE DESIGNER AND OR CONTRACTOR SHOULD INCLUDE ENOUGH MATERIALS IN THE CONTRACT TO ALLOW FOR ADDITIONAL STABILIZED ENTRANCES NOT SHOWN IN THE INITIAL CONSTRUCTION SWPPP. IT IS DIFFICULT TO DETERMINE EXACTLY WHERE ACCESS TO THESE PROJECTS WILL TAKE PLACE; ADDITIONAL MATERIALS WILL ENABLE THE CONTRACTOR TO INSTALL THEM WHERE NEEDED.

DESIGN AND INSTALLATION: SEE FIGURE 7.3.2 OF THE EASTERN WATER STORMWATER MANAGEMENT MANUAL OR DETAIL BELOW.

THE SURFACE MATERIAL SHALL BE 4"-8" QUARRY SPALLS. SMALLER CRUSHED ROCK SUCH AS BASE COURSE MAY BE APPROPRIATE IN SOME SITUATIONS BUT, SINCE IT IS MORE LIKELY TO BE TRACKED OFF-SITE, MUST BE APPROVED BY THE LOCAL JURISDICTION.

A SEPARATION GEOTEXTILE SHALL BE PLACED UNDER THE SPALLS TO PREVENT FINE SEDIMENT FROM PUMPING UP INTO THE ROCK PAD. THE GEOTEXTILE SHALL MEET THE FOLLOWING STANDARDS:

GRAB TENSILE STRENGTH (ASTM D4751)	200 PSI MIN.
GRAB TENSILE ELONGATION (ASTM D4632)	30% MAX.
MULLEN BURST STRENGTH (ASTM D3786-80A)	400 PSI MIN.
AOS (ASTM D4751)	20-45 (U.S. STANDARD SIEVE SIZE)

IF SITE CONDITIONS DO NOT WARRANT THE USE OF GEOTEXTILE, IT IS NOT REQUIRED.

MAINTENANCE STANDARDS: IF QUARRY SPALLS (OR HOG FUEL) SHALL BE ADDED IF THE PAD IS NO LONGER IN ACCORDANCE WITH THE SPECIFICATIONS.

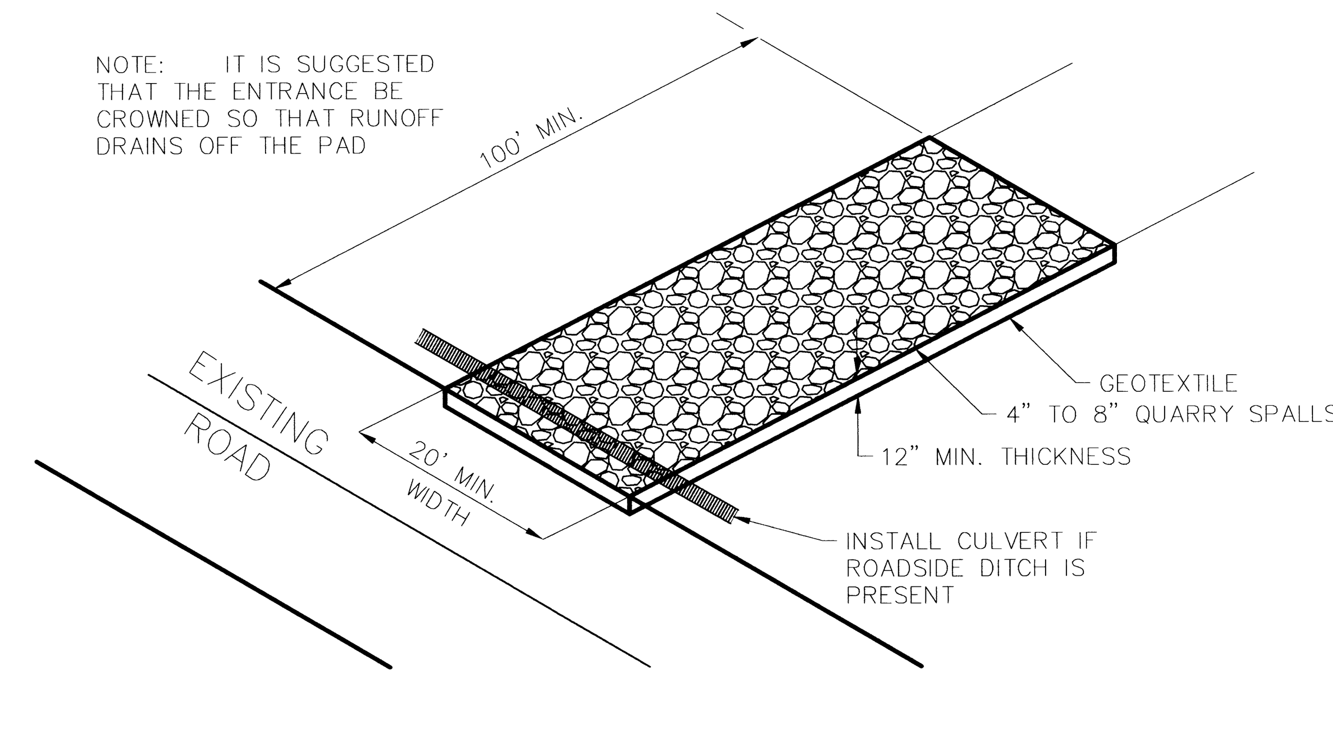
IF THE ENTRANCE IS NOT PREVENTING SEDIMENT FROM BEING TRACKED ONTO PAVEMENT, THEN ALTERNATIVE MEASURES TO KEEP THE STREETS FREE OF SEDIMENT SHALL BE USED. THIS MAY INCLUDE STREET SWEEPING, AN INCREASE IN THE DIMENSIONS OF THE ENTRANCE, OR THE INSTALLATION OF A WHEEL WASH.

ANY SEDIMENT THAT IS TRACKED ONTO PAVEMENT SHALL BE REMOVED BY SHOVELING OR STREET SWEEPING. THE SEDIMENT COLLECTED BY SWEEPING SHALL BE REMOVED OR STABILIZED ON SITE. THE PAVEMENT SHALL NOT BE CLEANED BY WASHING DOWN THE STREET, EXCEPT WHEN SWEEPING IS INEFFECTIVE AND THERE IS A THREAT TO PUBLIC SAFETY. IF IT IS NECESSARY TO WASH THE STREETS. THE CONSTRUCTION OF A SMALL SUMP SHALL BE CONSIDERED. THE SEDIMENT WOULD THEN BE WASHED INTO THE SUMP WHERE IT CAN BE CONTROLLED.

ANY QUARRY SPALLS THAT ARE LOOSENED FROM THE PAD, WHICH END UP ON THE ROADWAY SHALL BE REMOVED IMMEDIATELY.

IF VEHICLES ARE ENTERING OR EXITING THE SITE AT POINTS OTHER THAN THE CONSTRUCTION ENTERANCE(S), FENCING (SEE BMPS C103 AND C104) SHALL BE INSTALLED TO CONTROL TRAFFIC.

UPON PROJECT COMPLETION AND SITE STABILIZATION, ALL CONSTRUCTION ACCESSES INTENDED AS PERMANENT ACCESS FOR MAINTENANCE SHALL BE PERMANENTLY STABILIZED.



ROCK CONSTRUCTION ENTRY (2/-)

NOT TO SCALE

UNDERGROUND SERVICE ALERT ONE-CALL NUMBER 811 CALL TWO BUSINESS DAYS BEFORE YOU DIG

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
CONSTRUCTION PLANS
PROJECT #: P-2034
DATE ACCEPTED: 06-22-16
ACCEPTANCE EXPIRES: 06-22-18
PROJECTS LANE MILES: PUBLIC: 1.34
PROJECT LANE MILES PRIVATE: 0
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

MARK L. KRIGBAUM · STATE OF WASHINGTON · 39236 · REGISTERED PROFESSIONAL ENGINEER · 6-17-16

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

DATUM - NAVD 88
VERTICAL DATUM BASED ON FOUND BENCH MARK LOCATED AT NORTHEAST CORNER OF HAYFORD ROAD & GEIGER BOULEVARD. #W 354 - EL=2412.34.

NO.	DATE	BY	REVISIONS
-	8/3/15	NJH	ORIGINAL PRESENTATION

SCALE: HORIZONTAL: N/A · VERTICAL: N/A

PROJ #: 15-1467 · DATE: 08/03/15 · DRAWN: RMA · REVIEWED: MLK

X CIVIL · STRUCTURAL · SURVEYING · TRAFFIC · PLANNING · LANDSCAPE · OTHER

WCE
WHIPPLE CONSULTING ENGINEERS
2528 NORTH SULLIVAN ROAD
SPOKANE VALLEY, WA 99216
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THOMAS MALLEN PHASE 1
SWPPP BMPs
THOMAS MALLEN RD AND AERO RD
SPOKANE COUNTY, WA

SHEET C9.2
JOB NUMBER 15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 West Plain Holding LLC - Thomas Mallen Phase I (Ref 1018)\DWG\1467-C9.X SWPPP SHEETS.dwg, 9.2 SWPPP BMPs, 6/16/2016 4:02:56 PM, nickh

UNDERGROUND SERVICE ALERT
ONE-CALL NUMBER
811
CALL TWO BUSINESS DAYS BEFORE YOU DIG

BMP C220: STORM DRAIN INLET PROTECTION

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

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

CONDITIONS OF USE: WHERE STORM DRAIN INLETS ARE TO BE MADE OPERATIONAL BEFORE PERMANENT STABILIZATION OF THE DISTURBED DRAINAGE AREA. PROTECTION SHOULD BE PROVIDED FOR ALL STORM DRAIN INLETS DOWNSLOPE AND WITHIN 500 FEET OF A DISTURBED OR CONSTRUCTION AREA, UNLESS THE RUNOFF THAT ENTERS THE CATCH BASIN WILL BE CONVEYED TO A SEDIMENT POND OR TRAP. INLET PROTECTION MAY BE USED ANYWHERE TO PROTECT THE DRAINAGE SYSTEM. IT IS LIKELY THAT THE DRAINAGE SYSTEM WILL REQUIRE CLEANING.

TABLE 7.3.9 (IN THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL) LISTS SEVERAL OPTIONS FOR INLET PROTECTION. ALL OF THE METHODS FOR STORM DRAIN INLET PROTECTION ARE PRONE TO PLUGGING AND REQUIRE A HIGH FREQUENCY OF MAINTENANCE. DRAINAGE AREAS SHOULD BE LIMITED TO 1 ACRE OR LESS. EMERGENCY OVERFLOWS MAY BE REQUIRED WHERE STORMWATER PONDING WOULD CAUSE A HAZARD. IF AN EMERGENCY OVERFLOW IS PROVIDED, ADDITIONAL END-OF-PIPE TREATMENT MAY BE REQUIRED.

DESIGN AND INSTALLATION: EXCAVATED DROP INLET PROTECTION – AN EXCAVATED IMPOUNDMENT AROUND THE STORM DRAIN. SEDIMENT SETTLES OUT OF THE STORMWATER PRIOR TO ENTERING THE STORM DRAIN.

DEPTH 1-2 FT AS MEASURED FROM THE CREST OF THE INLET STRUCTURE.

SIDE SLOPES OF EXCAVATION NO STEEPER THAT 2:1

MINIMUM VOLUME OF EXCAVATION 35 CUBIC YARDS

SHAPE THE BASIN TO FIT THE SITE WITH THE LONGEST DIMENSION ORIENTED TOWARD THE LONGEST INFLOW AREA.

INSTALL PROVISIONS FOR DRAINING TO PREVENT STANDING WATER PROBLEMS.

CLEAR THE AREA OF ALL DEBRIS.

GRADE THE APPROACH TO THE INLET UNIFORMLY.

DRILL WEEP HOLES INTO THE SIDES OF THE INLET.

PROTECT WEEP HOLES WITH SCREEN WIRE AND WASHED AGGREGATE.

SEAL WEEP HOLES WHEN REMOVING STRUCTURE AND STABILIZING AREA.

IT MAY BE NECESSARY TO BUILD A TEMPORARY DIKE TO THE DOWN SLOPE STRUCTURE TO PREVENT BYPASS FLOW.

BLOCK AND GRAVEL FILTER – A BARRIER FORMED AROUND THE STORM DRAIN INLET WITH STANDARD CONCRETE BLOCKS AND GRAVEL. SEE FIGURE 4.15 IN THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL.

HEIGHT 1-2 FT ABOVE THE INLET.

RECESS THE FIRST ROW 2" INTO THE GROUND FOR STABILITY.

SUPPORT SUBSEQUENT COURSES BY PLACING A 2X4 THROUGH THE BLOCK OPENING.

DO NOT USE MORTAR.

LAY SOME BLOCKS IN THE BOTTOM ROW ON THEIR SIDE FOR DEWATERING THE POOL.

PLACE HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2" OPENINGS OVER ALL BLOCK OPENINGS.

PLACE GRAVEL JUST BELOW THE TOP OF BLOCKS ON SLOPES 2:1 OR FLATTER.

AN ALTERNATIVE DESIGN IN A GRAVEL DONUT.

INLET SLOPE OF 3:1.

OUTLET SLOPE OF 2:1.

1-FOOT WIDE LEVEL STONE AREA BETWEEN THE STRUCTURE AND THE INLET.

INLET SLOPES STONES 3" IN DIAMETER OR LARGER.

OUTLET SLOPE USE GRAVEL 1/2" TO 3/4" AT A MINIMUM THICKNESS OF 1 FOOT.

GRAVEL AND WIRE MESH INLET – A GRAVEL BARRIER PLACED OVER TOP OF THE INLET. THIS STRUCTURE DOES NOT PROVIDE AND OVERFLOW

HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH 1/2" OPENINGS.

COARSE AGGREGATE.

HEIGHT 1-FOOT OR MORE, 18" WIDER THAN INLET ON ALL SIDES.

PLACE WIRE MESS OVER THE DROP INLET SO THAT THE WIRE EXTENDS A MINIMUM OF 1-FOOT BEYOND EACH SIDE OF THE INLET STRUCTURE,

IF MORE THAN ONE STRIP OF MESH IN NECESSARY, OVERLAP THE STRIPS.

PLACE COARSE AGGREGATE OVER THE WIRE MESH.

THE DEPTH OF THE GRAVEL SHOULD BE AT LEAST 12" OVER THE ENTIRE INLET OPENING AND EXTEND AT LEAST 18" ON ALL SIDES.

DESIGN AND INSTALLATION: CONTINUED

CATCH BASIN FILTERS – INSERTS SHOULD BE DESIGNED BY THE MANUFACTURER FOR USE AT CONSTRUCTION SITES. THE LIMITED SEDIMENT STORAGE CAPACITY INCREASES THE AMOUNT OF INSPECTION AND MAINTENANCE REQUIRED, WHICH MAY BE DAILY FOR HEAVY SEDIMENT LOADS, THE MAINTENANCE REQUIREMENTS CAB BE REDUCED BY COMBINING A CATCH BASIN FILTER WITH ANOTHER TYPE OF INLET PROTECTION. THIS TYPE OF INLET PROTECTION PROVIDES FLOW BYPASS WITHOUT OVERFLOW AND THEREFORE MAY BE A BETTER METHOD FOR INLETS LOCATED ALONG ACTIVE RIGHTS-OF-WAY.

5 CUBIC FEET OF STORAGE

DEWATERING PROVISIONS

HIGH-FLOW BYPASS THAT WILL NOT CLOG UNDER NORMAL USE AT A CONSTRUCTION SITE.

THE CATCH BASIN FILTER IS INSERTED IN THE CATCH BASIN JUST BELOW THE GRATING.

CURB INLET PROTECTION WITH WOODED WEIR – BARRIER FORMED AROUND CURB INLET WITH A WOODEN FRAME AND GRAVEL.

WIRE MESH WITH 1/2" OPENINGS.

EXTRA STRENGTH FILTER FABRIC TO THE FRAME.

PILE COARSE WASHED AGGREGATE AGAINST THE WIRE/FABRIC.

PLACE WEIGHT ON FRAME ANCHORS.

BLOCK AND GRAVEL CURB INLET PROTECTION – BARRIER FORMED AROUND AN INLET WITH CONCRETE BLOCKS AND GRAVEL. SEE FIGURE 7.3.16 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL.

WIRE MESH WITH 1/2" OPENINGS.

PLACE 2 CONCRETE BLOCKS ON THEIR SIDES ABUTTING THE CURB AT EITHER SIDE OF THE INLET OPENING. THESE ARE SPACER BLOCKS.

PLACE A 2X4 STUD THROUGH THE OUT HOLES OF EACH SPACER BLOCK TO ALIGN THE FRONT BLOCKS.

PLACE BLOCKS ON THEIR SIDES ACROSS THE FRONT OF THE INLET AND ABUTTING THE SPACER BLOCKS.

PLACE WIRE MESH OVER THE OUTSIDE VERTICAL FACE.

PILE COARSE AGGREGATE AGAINST THE WIRE TO THE TOP OF THE BARRIER.

CURB AND GUTTER SEDIMENT BARRIER – SANDBAG OR ROCK BERM (RIPRAP AND AGGREGATE) 3 FEET HIGH AND 3 FEET WIDE IN A HORSESHOE SHAPE. SEE FIGURE 7.3.17 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL.

CONSTRUCT HORSESHOE SHAPED BERM, FACED WITH COARSE AGGREGATE IF USING RIPRAP, 3 FEET HIGH AND 3 FEET WIDE, AT LEAST 2 FEET FROM THE INLET.

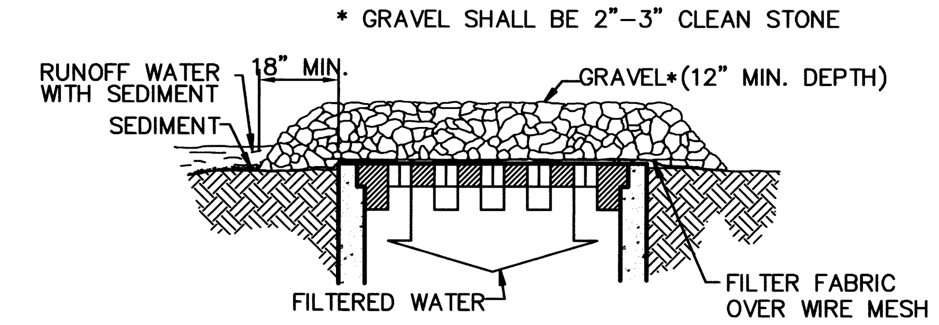
CONSTRUCT A HORSESHOE SHAPED SEDIMENTATION TRAP ON THE OUTSIDE OF THE BERM SIZED TO SEDIMENT TRAP STANDARDS FOR PROTECTING A CULVERT INLET.

MAINTENANCE STANDARDS: CATCH BASIN FILTERS SHOULD BE INSPECTED FREQUENTLY, ESPECIALLY AFTER STORM EVENTS. IF THE INSERT BECOMES CLOGGED, IT SHOULD BE CLEANED OR REPLACED.

FOR SYSTEMS USING STONE FILTERS: IF THE STONE FILTER BECOMES CLOGGED WITH SEDIMENT, THE STONES MUST BE PULLED AWAY FROM THE INLET AND CLEANED OR REPLACED. SINCE CLEANING OF GRAVEL AT A CONSTRUCTION SITE MAY BE DIFFICULT, AND ALTERNATIVE APPROACH WOULD BE USED TO USE THE CLOGGED STONES FILL AND PUT FRESH STONE AROUND THE INLET.

DO NOT WASH SEDIMENT INTO STORM DRAINS WHILE CLEANING. SPREAD ALL EXCAVATED MATERIAL EVENLY OVER THE SURROUNDING LAND AREA OR STOCKPILE AND STABILIZE AS APPROPRIATE.

* GRAVEL SHALL BE 2"-3" CLEAN STONE



SPECIFIC APPLICATION

THIS METHOD OF INLET PROTECTION IS APPLICABLE WHERE HEAVY CONCENTRATED FLOWS ARE EXPECTED, BUT NOT WHERE PONDING AROUND THE STRUCTURE MIGHT CAUSE EXCESSIVE INCONVENIENCE OR DAMAGE TO ADJACENT STRUCTURES AND UNPROTECTED ACRES.

GRAVEL AND WIRE MESH INLET SEDIMENT FILTER

NOT TO SCALE

3 / -

BMP C151: CONCRETE HANDLING

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE: CONCRETE WORK CAN GENERATE PROCESS WATER AND SLURRY THAT CONTAIN FINE PARTICLES AND HIGH PH, BOTH OF WHICH CAN VIOLATE WATER QUALITY STANDARDS IN THE RECEIVING WATER. THIS BMP IS INTENDED TO MINIMIZE AND ELIMINATE CONCRETE PROCESS WATER AND SLURRY FROM ENTERING WATERS OF THE STATE.

CONDITIONS OF USE: ANY TIME CONCRETE IS USED, THESE MANAGEMENT PRACTICES SHALL BE UTILIZED. CONCRETE CONSTRUCTION PROJECTS INCLUDE, BUT ARE NOT LIMITED TO, THE FOLLOWING:

- CURBS
- SIDEWALKS
- ROADS
- BRIDGES
- FOUNDATIONS
- FLOORS
- RUNWAYS

DESIGN AND INSTALLATION: CONCRETE TRUCK CHUTES, PUMPS, AND INTERNALS SHALL BE WASHED OUT ONLY INTO FORMED AREAS AWAITING INSTALLATION OF CONCRETE OR ASPHALT.

UNUSED CONCRETE REMAINING IN THE TRUCK AND PUMP SHALL BE RETURNED TO THE ORIGINATING BATCH PLANT FOR RECYCLING.

HAND TOOLS INCLUDING, BUT NOT LIMITED TO, SCREEDS, SHOVELS, RAKES, FLOATS, AND TROWELS SHALL BE WASHED OFF ONLY INTO FORMED AREAS AWAITING INSTALLATION OF CONCRETE OR ASPHALT.

EQUIPMENT THAT CANNOT BE EASILY MOVED, SUCH AS CONCRETE PAVERS, SHALL ONLY BE WASHED IN AREAS THAT DO NOT DIRECTLY DRAIN TO NATURAL OR CONSTRUCTED STORMWATER CONVEYANCES.

WASHDOWN FROM AREAS SUCH AS CONCRETE AGGREGATE DRIVEWAYS SHALL NOT DRAIN DIRECTLY TO NATURAL OR CONSTRUCTED STORMWATER CONVEYANCES.

WHEN NO FORMED AREAS ARE AVAILABLE, WASHWATER AND LEFTOVER PRODUCT SHALL BE CONTAINED IN A LINED CONTAINER. CONTAINED CONCRETE SHALL BE DISPOSED OF IN A MANNER THAT DOES NOT VIOLATE GROUNDWATER OR SURFACE WATER QUALITY STANDARDS.

MAINTENANCE STANDARDS: CONTAINERS SHALL BE CHECKED FOR HOLES IN THE LINER DAILY DURING CONCRETE POURS AND REPAIRED THE SAME DAY.

CONCRETE TRUCK WASHOUT STANDARDS

NOT TO SCALE

4 / -

BMP C140: DUST CONTROL

INFORMATION TAKEN FROM CHAPTER 7 OF THE EASTERN WASHINGTON STORMWATER MANAGEMENT MANUAL 2004 EDITION

PURPOSE: DUST CONTROL PREVENTS WIND TRANSPORT OF DUST FROM DISTURBED SOIL SURFACES ONTO ROADWAYS, DRAINAGE WAYS, AND SURFACE WATERS. WIND EROSION IS A SIGNIFICANT CAUSE OF SOIL MOVEMENT FROM CONSTRUCTION SITES IN EASTERN WASHINGTON. ALTHOUGH WIND EROSION CAN CONTRIBUTE TO WATER QUALITY IMPACTS, DUST CONTROL IS REGULATED IN SOME AREAS OF EASTERN WASHINGTON PRIMARILY THROUGH LOCAL AIR QUALITY AUTHORITIES. WHERE SUCH AN ENTITY EXISTS, CONTACT THE LOCAL AIR QUALITY AUTHORITY FOR APPROPRIATE AND REQUIRED BMPS FOR DUST CONTROL TO IMPLEMENT AT YOUR PROJECT SITE.

CONDITIONS OF USE: IN AREAS (INCLUDING ROADWAYS) SUBJECT TO SURFACE AND AIR MOVEMENT OF DUST WHERE ON-SITE AND OFF-SITE IMPACTS TO ROADWAYS, DRAINAGE WAYS, OR SURFACE WATERS ARE LIKELY.

DESIGN AND INSTALLATION: CONTACT YOUR LOCAL AIR POLLUTION CONTROL AUTHORITY FOR GUIDANCE AND TRAINING ON OTHER DUST CONTROL MEASURES. COMPLIANCE WITH THE LOCAL AIR POLLUTION CONTROL AUTHORITY CONSTITUTES COMPLIANCE WITH THIS BMP.

WATER APPLIED TO CONSTRUCTION SITES FOR DUST CONTROL MUST NOT LEAVE THE SITE AS SURFACE RUNOFF.

SEE ALSO "TECHNIQUES FOR DUST PREVENTION AND SUPPRESSION," ECOLOGY PUBLICATION NUMBER 96-433, REVISED APRIL 2002.

TECHNIQUES THAT CAN BE USED FOR CONSTRUCTION PROJECTS INCLUDE:

VEGETATE OR MULCH AREAS THAT WILL NOT RECEIVE VEHICLE TRAFFIC. IN AREAS WHERE PLANTING, MULCHING, OR PAVING IS IMPRACTICAL, APPLY GRAVEL OR LANDSCAPING ROCK.

LIMIT DUST GENERATION BY CLEARING ONLY THOSE AREAS WHERE IMMEDIATE ACTIVITY WILL TAKE PLACE, LEAVING THE REMAINDER AREA(S) IN THE ORIGINAL CONDITION, IF STABLE. MAINTAIN THE ORIGINAL GROUND COVER AS LONG AS PRACTICAL.

CONSTRUCT NATURAL OR ARTIFICIAL WINDBREAKS OR WINDSCREENS. THESE MAY BE DESIGNED AS ENCLOSURES FOR SMALL DUST SOURCES.

SPRINKLE THE SITE WITH WATER UNTIL THE SURFACE IS WET. REPEAT AS NEEDED. TO PREVENT CARRYOUT OF MUD ONTO STREET, REFER TO STABILIZED CONSTRUCTION ENTRANCE (BMP C105).

IRRIGATION WATER CAN BE USED FOR DUST CONTROL. IRRIGATION SYSTEMS SHOULD BE INSTALLED AS A FIRST STEP ON SITES WHERE DUST CONTROL IS A CONCERN.

SPRAY EXPOSED SOIL AREAS WITH A DUST PALLIATIVE, FOLLOWING THE MANUFACTURER'S INSTRUCTIONS AND CAUTIONS REGARDING ANDLING AND APPLICATION. USED OIL IS PROHIBITED FROM USE AS A DUST SUPPRESSANT. LOCAL GOVERNMENTS MAY APPROVE OTHER DUST PALLIATIVES SUCH AS CALCIUM CHLORIDE OR PAM.

PAM (BMPC126) ADDED TO WATER AT A RATE OF 0.5LBS PER 1,000 GALLONS OF WATER PER ACRE AND APPLIED FROM A WATER TRUCK IS MORE EFFECTIVE THAT WATER ALONE. THE IS DUE TO THE INCREASED INFILTRATION OF WATER INTO THE SOIL AND REDUCED EVAPORATION. IN ADDITION, SMALL SOIL PARTICLES ARE BONDED TOGETHER AND ARE NOT AS EASILY TRANSPORTED BY WIND. ADDING PAM MAY ACTUALLY REDUCE THE QUANTITY OF WATER NEEDED FOR DUST CONTROL, ESPECIALLY IN EASTERN WASHINGTON. SINCE THE WHOLESALE COST OF PAM IS ABOUT $4.00 PER POUND, THIS IS AN EXTREMELY COST-EFFECTIVE DUST CONTROL METHOD.

TECHNIQUES THAT CAN BE USED FOR UNPAVED ROADS AND LOTS INCLUDE:

LOWER SPEED LIMITS. HIGH VEHICLE SPEEDS INCREASES THE AMOUNT OF DUST STIRRED UP FROM UNPAVED ROADS AND LOTS.

UPGRADE ROAD SURFACE STRENGTH BY IMPROVING PARTICLE SIZE, SHAPE, AND MINERAL TYPES THAT MAKE UP THE SURFACE AND BASE MATERIALS.

ADD SURFACE GRAVEL TO REDUCE THE SOURCE OF DUST EMISSION. LIMIT THE AMOUNT OF FINE PARTICLES (THOSE SMALLER THAN .075 MILLIMETERS) 10 TO 20 PERCENT.

USE GEOTEXTILE FABRIC TO INCREASE THE STRENGTH OF NEW ROADS OR ROADS UNDERGOING RECONSTRUCTION.

ENCOURAGE THE USE OF ALTERNATE, PAVED ROUTES, IF AVAILABLE.

RESTRICT USE BY TRACKED VEHICLES AND HEAVY TRUCKS TO PREVENT DAMAGE TO ROAD SURFACE AND BASE.

APPLY CHEMICAL DUST SUPPRESSANTS USING THE ADMIX METHOD, BLENDING THE PRODUCT WITH THE TOP FEW INCHES OF MATERIAL. SUPPRESSANTS MAY ALSO BE APPLIED AS SURFACE TREATMENTS.

PAVE UNPAVED PERMANENT ROADS AND OTHER TRAFFICKED AREAS.

USE VACUUM STREET SWEEPERS.

REMOVED MUD AND OTHER DIRT PROMPTLY SO IT DOES NOT DRY AND THEN TURN INTO DUST.

LIMIT DUST-CAUSEING WORK ON WINDY DAYS.

MAINTENANCE STANDARDS: REPAY AREA AS NECESSARY TO KEEP DUST TO A MINIMUM. WATER APPLIED TO CONSTRUCTION SITES FOR DUST CONTROL MUST NOT LEAVE THE SITE AS SURFACE RUNOFF.

SPOKANE COUNTY PUBLIC WORKS
OFFICIAL PUBLIC DOCUMENT ORIGINAL
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MARK L. KRIGBAUM, STATE OF WASHINGTON, 39236, REGISTERED PROFESSIONAL ENGINEER, 6-17-16

PREPARED UNDER THE DIRECT SUPERVISION OF MARK L. KRIGBAUM WASHINGTON REGISTRATION NO. 39236 FOR AND ON BEHALF OF WCE

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NO.	DATE	BY	REVISIONS
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SCALE: HORIZONTAL: N/A VERTICAL: N/A

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X CIVIL, STRUCTURAL, SURVEYING, TRAFFIC, PLANNING, LANDSCAPE, OTHER

WCE
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JOB NUMBER 15-1467

P:\WCE_WORK\2015 WCE PROJECTS\2015-1467 West Plain Holding LLC - Thomas Mallen Phase I (Ref 1018)\DWG\1467-C9.X SWPPP SHEETS.dwg, 9.3 SWPPP BMPs, 6/16/2016 4:03:16 PM, nickh