PRE DEVELOPMENT GRADING AND EROSION CONTROL PLAN

A PORTION OF SECTIONS 13 AND 24, TOWNSHIP 11 SOUTH, RANGE 65 SOUTH, AND A PORTION OF THE WEST HALF SECTON 19, TOWNSHIP 11 SOUTH, RANGE 64 WEST OF THE 6TH P.M. COUNTY OF EL PASO, STATE OF COLORADO

CONTACTS:

WINSOME, LLC 1864 WOODMOOR DRIVE, SUITE 100 MONUMENT, CO 80132 TEL: (719) 476-0800 CONTÀCT: JOSEPH DESJARDIN

PLANNER/LANDSCAPE ARCHITECT:

619 N CASCADE AVENUE, SUITE 200 COLORADO SPRINGS, CO 80903 TEL: (719) 471-0073 EMAIL: ABARLOW@NESCOLORADO.COM CONTACT: ANDREA BARLOW

KIMLEY-HORN AND ASSOCIATES, INC. 2 NORTH NEVADA, SUITE 300 COLORADO SPRINGS, CO 80903 (719) 453-0180

KEVIN.KOFFORD@KIMLEY-HORN.COM CONTACT: KEVIN KOFFORD

SURVEY: EDWARD JAMES SURVEYING, INC. 926 ELKTON DRIVE COLORADO SPRINGS, CO 80907 TEL: (719) 576-1216 CONTACT: JONATHAN TESSIN

EL PASO COUNTY PLANNING 2880 INTERNATIONAL CIRCLE, SUITE

COLORADO SPRINGS, CO 80910 PLANNING REVIEWER:

RYAN HOWSER TEL: (719) 520-6442 EMAIL: RYANHOWSER@ELPASOCO.COM

ENGINEERING REVIEWER: GILBERT LAFORCE TEL: (719) 520-7945 GILBERTLAFORCE@ELPASOCO.COM EPC DPW STORMWATER TEAM:

CHRISTINA FURCHAK (719) 433-4863

CHRISTINAFURCHAK@ELPASOCO.COM

EPC PCD INSPECTIONS SUPERVISOR: TEM: BRAD WALTERS EMAIL: BRADWALTERS@ELPASOCO.COM

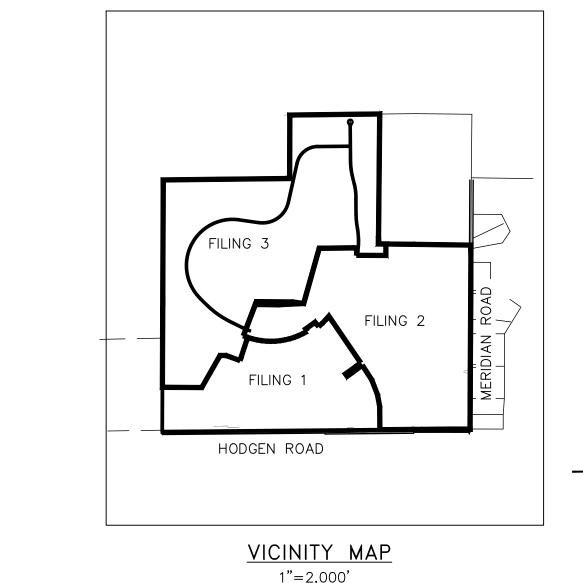
FALCON FIRE DEPARTMENT:

AREA: FAL D2 FIRE CHIEF T. HARWIG 7030 OLD MERIDIAN ROAD PAYTON, CO 80831 TEL: (719) 495-4050

TEL: (303) 692-3500

FALCONFIRE@FALCONFIREPD.ORG

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT WATER QUALITY CONTROL DIVISION 4300 CHERRY CREEK DRIVE SOUTH DENVER, CO 80246



BENCHMARK

A 2.5" ALUMINUM CAP BEING A 30 FOOT WITNESS CORNER NORTH OF THE SOUTHWEST CORNER OF SECTION 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN.

BASIS OF BEARING

THE WEST LINE OF THE NORTHWEST QUARTER OF SECTION 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6 PRINCIPAL MERIDIAN MONUMENTED ON THE SOUTHERLY END BY A 2-1/2" ALUMINUM CAP STAMPED "LS 28658" AND AT THE NORTHERLY END BY A 3-1/2" ALUMINUM CAP STAMPED "LS 12103" BEING ASSUMED TO BEAR NOO"14'25"E A DISTANCE OF 2636.99 FEET AS SHOWN IN LAND SURVEY PLAT RECORDED UNDER RECEPTION 218900072 RECORDS OF EL PASO COUNTY, COLORADO.

LEGAL DESCRIPTION

TRACT OF LAND BEING A PORTION OF THE SOUTHEAST QUARTER OF SECTION 13, AND A PORTION OF SECTION 24, TOWNSHIP 11 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE WEST QUARTER CORNER OF SAID SECTION 24, SAID POINT BEING THE POINT OF BEGINNING: THENCE NOO°14'25"E ON THE WEST LINE OF THE NORTHWEST QUARTER OF SAID SECTION 24, SAID LINE ALSO BEING ON THE WEST BOUNDARY OF PARCEL 4, AS RECORDED UNDER RECEPTION NUMBER 218900072, A DISTANCE OF 2,636.99 FEET TO THE NORTHWEST CORNER OF SAID SECTION 24; THENCE N89°21'38"E ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SAID SECTION 24, A DISTANCE OF 2,633.02 FEET TO THE NORTH QUARTER CORNER OF SAID SECTION 24; THENCE NOO°10'29"E ON THE WEST LINE OF THE SOUTH HALF OF THE SOUTH EAST QUARTER OF SECTION 13, TOWNSHIP 11 SOUTH, RANGE 65 WEST, A DISTANCE OF 1,321.95 FEET TO THE NORTHWEST CORNER OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 13; THENCE N89°20'26"E ON THE NORTH LINE OF THE SOUTH HALF OF THE SOUTHEAST QUARTER OF SAID SECTION 13, A DISTANCE OF 1,873.37 FEET; THENCE S00°34'43"W, A DISTANCE OF 2,706.21 FEET; THENCE S89°15'17"E, A DISTANCE OF 155.82 FEET; THENCE S00°17'06"W, A DISTANCE OF 239.06 FEET; THENCE N89°42'54"W, A DISTANCE OF 609.60 FEET TO A POINT ON CURVE; THENCE ON THE ARC OF A CURVE TO THE LEFT, WHOSE CENTER BEARS N85°44'53"W, HAVING A DELTA OF 05°13'06", A RADIUS OF 1,710.00 FEET, A DISTANCE OF 155.74 FEET TO A POINT ON CURVE; THENCE S89°02'00"W, A DISTANCE OF 60.00 FEET; S89°29'13"W, A DISTANCE OF 722.44 FEET; THENCE S15°45'23"W, A DISTANCE OF 1,195.74 FEET; THENCE N82°21'05"W, A DISTANCE OF 229.91 FEET; THENCE N89°29'30"W, A DISTANCE OF 757.49 FEET; THENCE S20°46'13"W, A DISTANCE OF 758.90 FEET TO A POINT ON CURVE; THENCE ON THE ARC OF A CURVE TO THE LEFT, WHOSE CENTER BEARS N22°56'03"E, HAVING A DELTA OF 03°42'28", A RADIUS OF 1,470.00 FEET, A DISTANCE OF 95.13 FEET TO A POINT ON CURVE; THENCE S19°13'35"W, A DISTANCE OF 60.00 FEET; THENCE S18°06'10"W, A DISTANCE OF 383.72 FEET TO A POINT OF CURVE; THENCE ON THE ARC OF A CURVE TO THE RIGHT, HAVING A DELTA OF 02°06'44", A RADIUS OF 1,790.00 FEET, A DISTANCE OF 65.99 FEET TO A POINT ON CURVE; THENCE N69°47'06"W, A DISTANCE OF 306.30 FEET; THENCE N89°45'39"W, A DISTANCE OF 128.26 FEET; THENCE S29°41'56"W, A DISTANCE OF 768.98 FEET; THENCE N89°41'23"W, A DISTANCE OF 820.25 FEET TO A POINT ON THE WEST LINE OF THE SOUTHWEST QUARTER OF SAID SECTION 24; THENCE NOO"14'17"E ON THE WEST LINE OF SOUTHWEST QUARTER OF SAID SECTION 24 A DISTANCE OF 1,684.27 FEET TO THE POINT OF BEGINNING.

CONTAINING A CALCULATED AREA OF 15,222,954 SQUARE FEET OR 349.471 ACRES.

FLOODPLAIN NOTE

FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP, MAP NUMBER 08041C0350G, EFFECTIVE DECEMBER 7, 2018 INDICATES THE AREA IN THE VICINITY OF THIS PARCEL OF LAND TO BE IN ZONE X (AREA DETERMINED TO BE OUT OF THE 500 YEAR FLOODPLAIN). A CONDITIONAL LETTER OF MAP REVISION HAS BEEN PROCESSED AND APPROVED FOR THIS REACH OF WEST KIOWA CREEK (FEMA CASE NO: 19-08-0185R).

THE SOIL ON SITE IS USGS HYDROLOGIC SOIL GROUP B.

SITE INFORMATION

TOTAL

ANTICIPATED STARTING AND COMPLETION TIME PERIOD OF SITE GRADING: START: SPRING 2023 END: SUMMER 2024

EXPECTED DATE ON WHICH THE FINAL STABILIZATION WILL BE COMPLETE: SUMMER 2024

TOTAL DISTURBED AREA: 30.81 ACRES

RECEIVING WATERS:

NAME OF RECEIVING WATERS: WEST KIOWA CREEK

DESCRIPTION OF EXISTING VEGETATION: THE EXISTING SITE IS CURRENTLY UNDEVELOPED AND GROUND COVER CONSISTS OF 90% NATIVE GRASSES.

 $= \pm 31..66$ ACRES

DESCRIPTION OF PERMANENT BMPS:

THREE (3) FULL SPECTRUM EXTENDED DETENTION BASIN ONE (1) WATER QUALITY EXTENDED DETENTION BASIN ONE (1) PERMANENT SEDIMENT BASIN

LIMITS OF CONSTRUCTION

ONSITE DISTURBANCE $= \pm 31.66$ ACRES OFFSITE DISTURBANCE $= \pm 0.00$ ACRES

SHEET INDEX

SHEET NO.	SHEET TITLE						
1.0	COVER SHEET						
1.1	NOTES						
1.2	CUT AND FILL PAN						
1.3	GEC INITIAL PLAN						
1.4	GEC INITIAL PLAN						
1.5	GEC INITIAL PLAN						
1.6	GEC INITIAL PLAN						
1.7	GEC INTERIM PLAN						
1.8	GEC INTERIM PLAN						
1.9	GEC INTERIM PLAN						
1.10	GEC INTERIM PLAN						
1.12	CULVERT PLAN & PROFILE						
1.13	CULVERT PLAN & PROFILE						
1.14	DETAIL SHEET (1 OF 4)						
1.15	DETAIL SHEET (2 OF 4)						
1.16	DETAIL SHEET (3 OF 4)						
1.17	DETAIL SHEET (4 OF 4)						
1.18	HEADCUTTING EXHIBIT OVERALL						
1.19	HEADCUTTING EXHIBIT REACH H1						
1.20	HEADCUTTING EXHIBIT REACH H1						
1.21	HEADCUTTING EXHIBIT REACH H5B						
1.22	HEADCUTTING EXHIBIT REACH H3						
1.23	HEADCUTTING EXHIBIT DETAILS						

GEC PLAN SIGNATURES:

IN THESE DETAILED PLANS AND SPECIFICATIONS.

JOE DESJARDIN - WINSOME, LLC

DEVELOPER'S/OWNER'S SIGNATURE BLOCK

, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN AND ALL OF THE REQUIREMENTS SPECIFIED

1864 WOODMOOR, CO 80132 ENGINEER'S SIGNATURE BLOCK

AG NO OLORAI GESC | THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE. GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLANS AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR

OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND

KEVIN KOFFORD, P.E. 57234 - KIMLEY-HORN AND ASSOCIATES, INC.

EL PASO COUNTY

SPECIFICATIONS.

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUAL VOLUMES 1 AND 2, AND ENGINEERING CRITERIA MANUAL, AS AMENDED.

IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE 2 YEARS, THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S

JOSHUA PALMER, P.E. - INTERIM COUNTY ENGINEER/ECM ADMINISTRATOR

PRELIMINARY OR REVIEW ONL' NOT FOR CONSTRUCTION Kimley»Horn

MIN PAS DEV

DESIGNED BY: KRI

DRAWN BY: A

CHECKED BY: KR

DATE: 12/10/202

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P P

PROJECT NO. 196106001 SHEET

Kimley-Horn and Associates, In-

CALL UTILITY NOTIFICATION CENTER OF COLORADO 2-BUSINESS DAYS IN ADVANCE YOU DIG. GRADE. OR EXCAVATI HE MARKING OF UNDERGROUND MEMBER UTILITIES

Delete "interim" **UPDATED**

Know what's **below.**

Call before you dig.

EL PASO COUNTY GRADING AND EROSION CONTROL PLAN NOTES

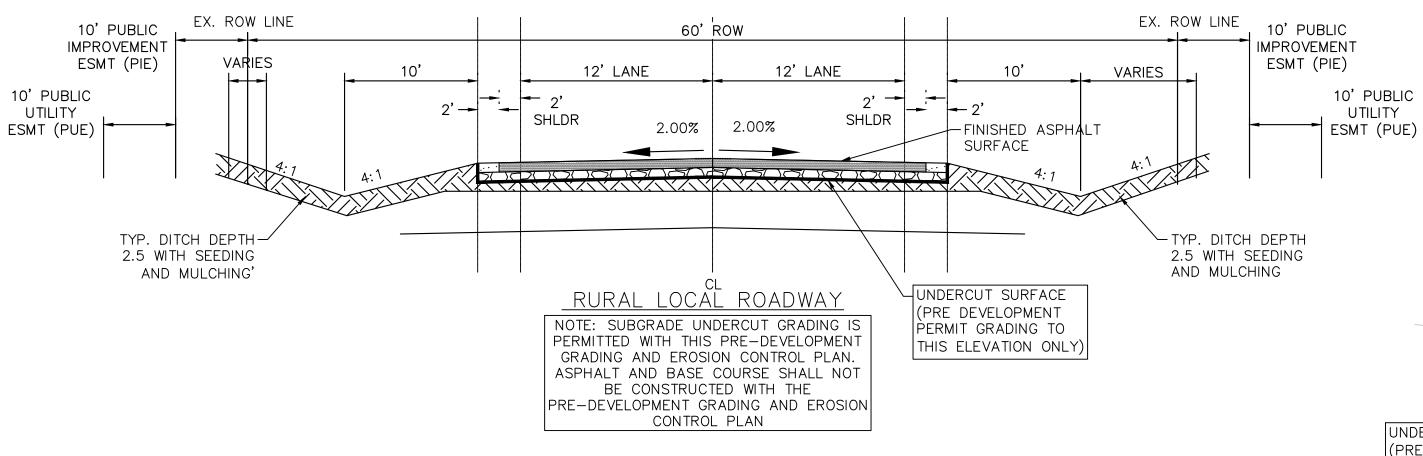
- 1. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.
- 2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE. THE ENGINEERING CRITERIA MANUAL. THE DRAINAGE CRITERIA MANUAL. AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
- 3. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE
- 4. ONCE THE ESQCP IS APPROVED AND A "NOTICE TO PROCEED" HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL MEASURES AS INDICATED ON THE APPROVED GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH
- 5. CONTROL MEASURES MUST BE INSTALLED PRIOR TO COMMENCEMENT OF ACTIVITIES THAT COULD CONTRIBUTE POLLUTANTS TO STORMWATER. CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, AND DISTURBED LAND AREAS SHALL BE INSTALLED IMMEDIATELY UPON COMPLETION
- 6. ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE MAINTAINED AND REMAIN IN EFFECTIVE OPERATING CONDITION UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND FINAL STABILIZATION IS ESTABLISHED. ALL PERSONS ENGAGED IN LAND DISTURBANCE ACTIVITIES SHALL ASSESS THE ADEQUACY OF CONTROL MEASURES AT THE SITE AND IDENTIFY IF CHANGES TO THOSE CONTROL MEASURES ARE NEEDED TO ENSURE THE CONTINUED EFFECTIVE PERFORMANCE OF THE CONTROL MEASURES. ALL CHANGES TO TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES MUST BE INCORPORATED INTO THE STORMWATER MANAGEMENT PLAN.
- 1. TEMPORARY STABILIZATION SHALL BE IMPLEMENTED ON DISTURBED AREAS AND STOCKPILES WHERE GROUND DISTURBING CONSTRUCTION ACTIVITY HAS PERMANENTLY CEASED OR TEMPORARILY CEASED FOR LONGER THAN 14 DAYS.
- 8. FINAL STABILIZATION MUST BE IMPLEMENTED AT ALL APPLICABLE CONSTRUCTION SITES. FINAL STABILIZATION IS ACHIEVED WHEN ALL GROUND DISTURBING ACTIVITIES ARE COMPLETE AND ALL DISTURBED AREAS EITHER HAVE A UNIFORM VEGETATIVE COVER WITH INDIVIDUAL PLANT DENSITY OF 70 PERCENT OF PRE-DISTURBANCE LEVELS ESTABLISHED OR EQUIVALENT PERMANENT ALTERNATIVE STABILIZATION METHOD IS IMPLEMENTED. $\,$ ALL TEMPORARY SEDIMENT AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND
- 9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT EFFECT THE DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- 10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
- 11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
- 12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT
- 13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS. INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
- 14. DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
- 15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- 16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.

- 17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY. BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES
- 18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS. STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT
- 20.THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED. AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON-SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS. WITH ORIGINAL MANUFACTURER'S LABELS
- 21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- 22.BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- 23.NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES. 24.OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY
- CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
- 25.ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- 26.PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES. 27.A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- 28.THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING, INC. DATED JANUARY 26, 2021 AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- 29.AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB ONE (1) ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

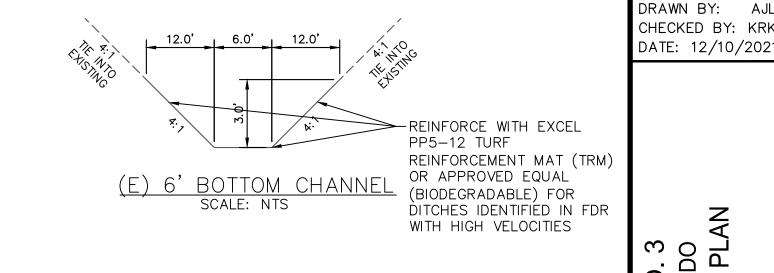
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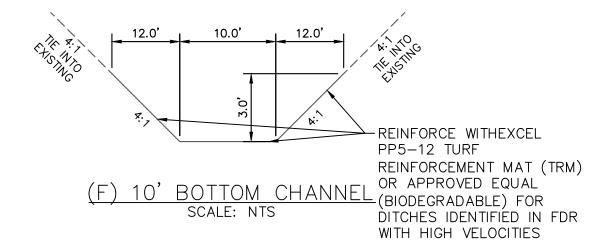
WQCD - PERMITS

WATER QUALITY CONTROL DIVISION 4300 CHERRY CREEK DRIVE SOUTH DENVER, CO 80246-1530 ATTN: PERMITS UNIT

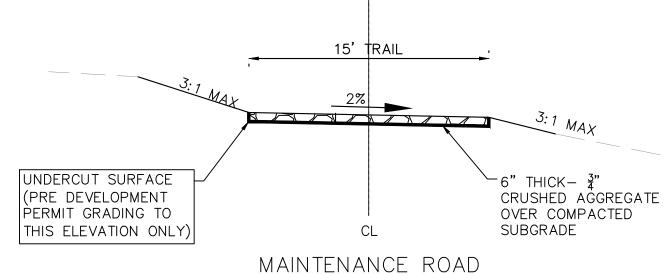


DRAINAGE CHANNEL CROSS SECTIONS





MAINTENANCE ROAD CROSS SECTION



SCALE: NTS

NOTE: SUBGRADE UNDERCUT GRADING IS PERMITTED WITH THIS PRE-DEVELOPMENT GRADING AND EROSION CONTROL PLAN. ASPHALT AND BASE COURSE SHALL NOT BE CONSTRUCTED WITH THE PRE—DEVELOPMENT GRADING AND EROSION CONTROL PLAN

Know what's **below.** Call before you dig. CALL UTILITY NOTIFICATION

CENTER OF COLORADO

2-BUSINESS DAYS IN ADVANCE

YOU DIG, GRADE, OR EXCAVATI

IE MARKING OF UNDERGROUND MEMBER UTILITIES

Kimley-Horn and Associates, In-PROJECT NO. 196106001 SHEET

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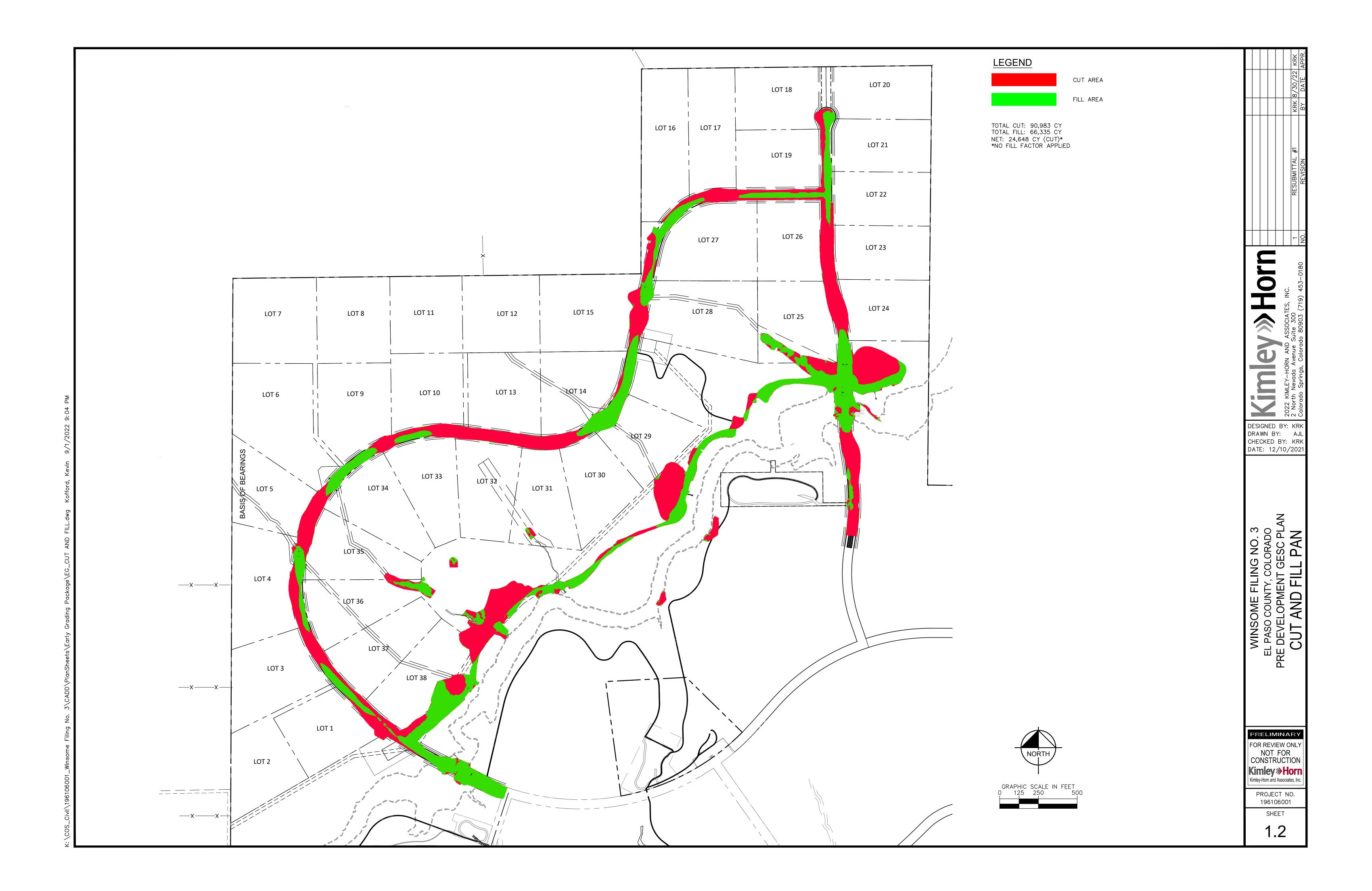
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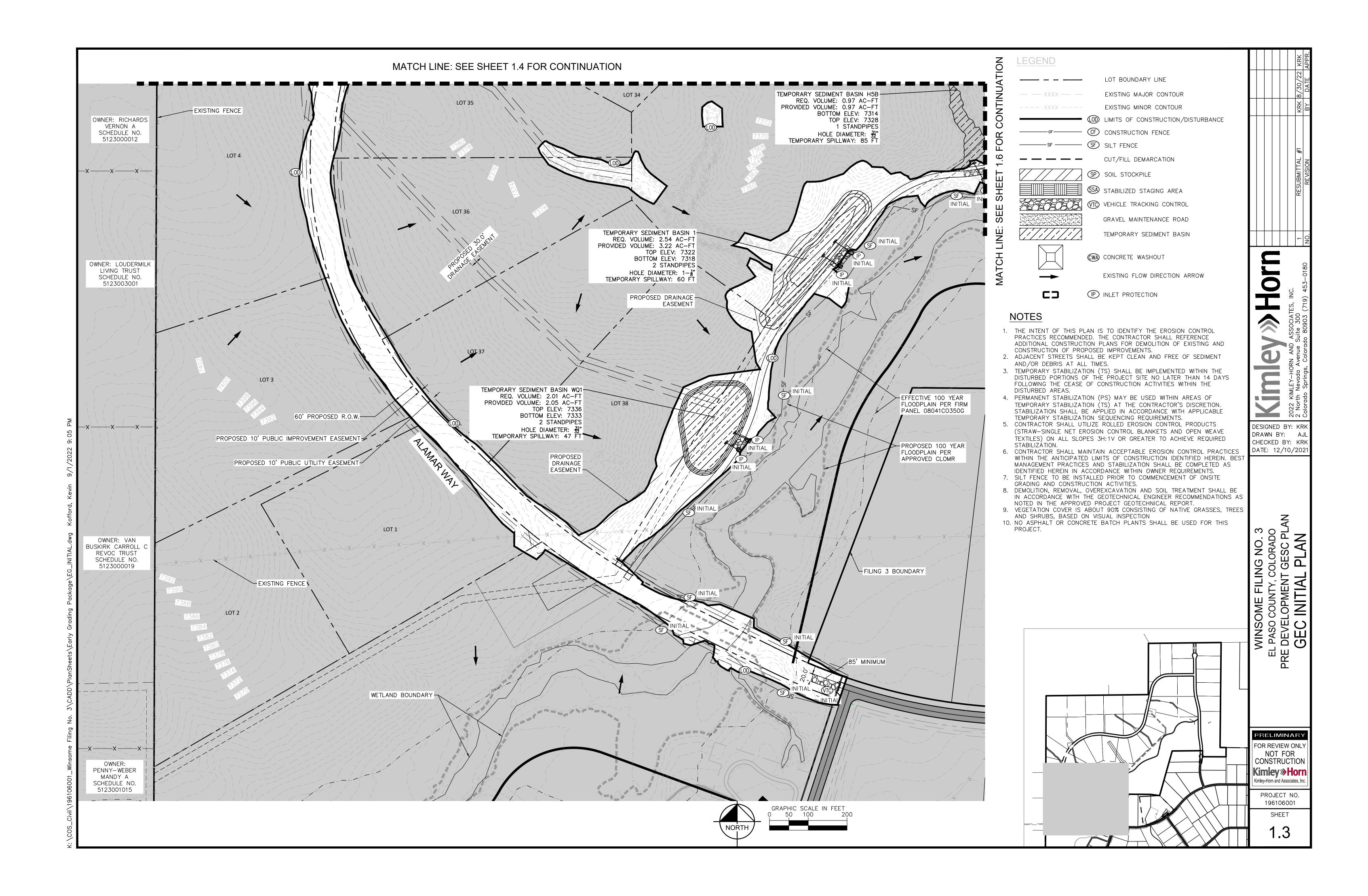
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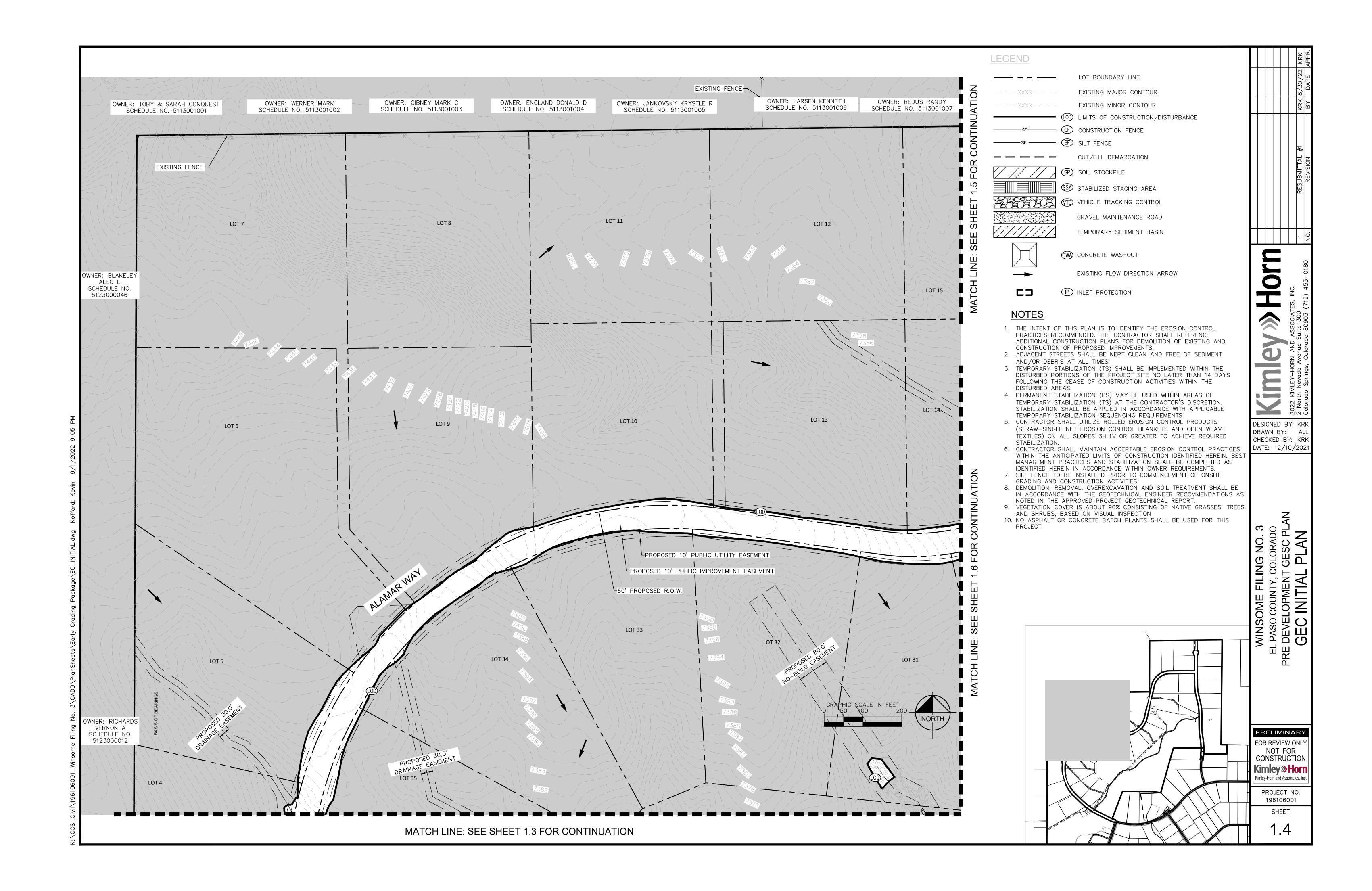
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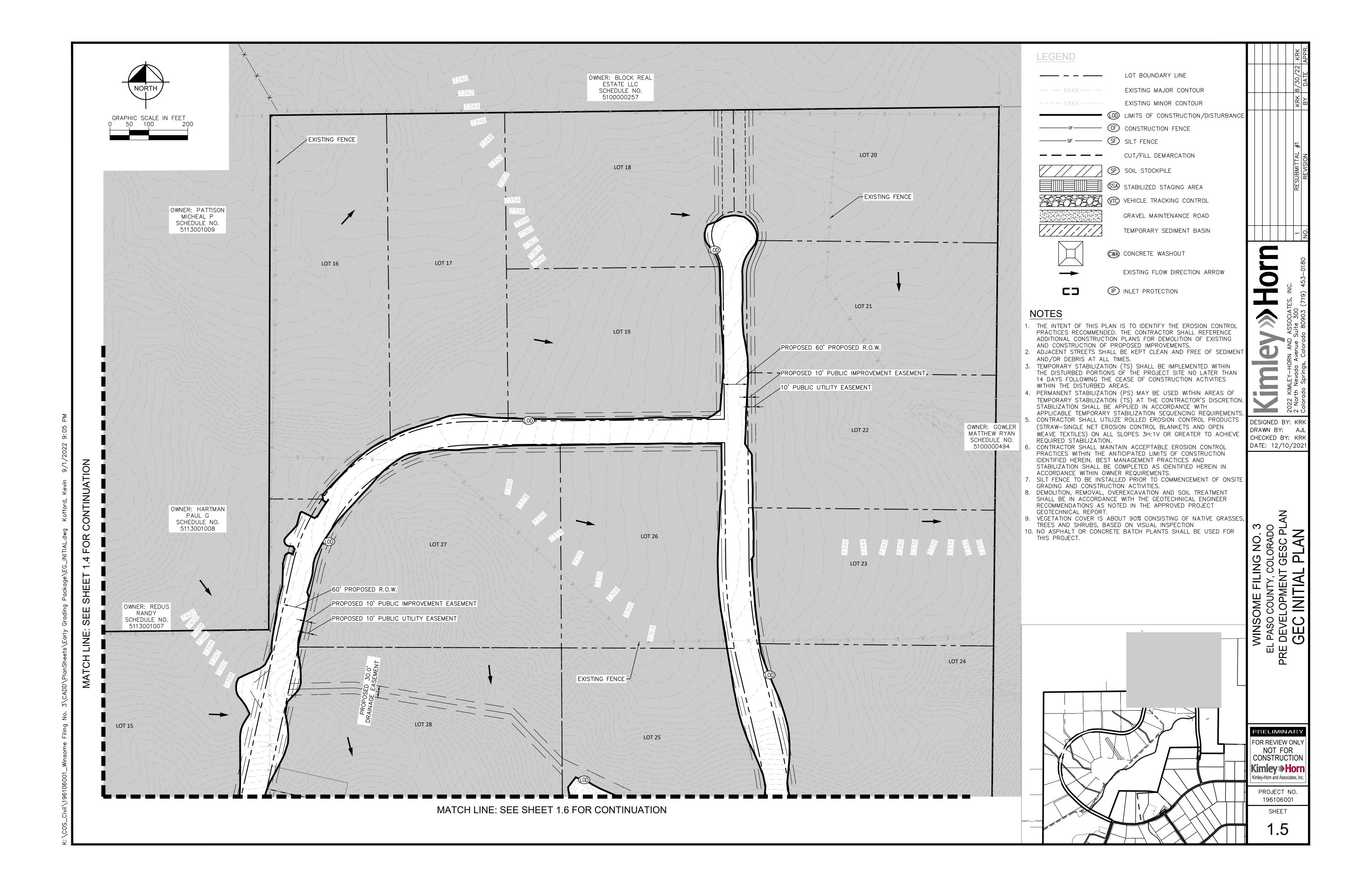
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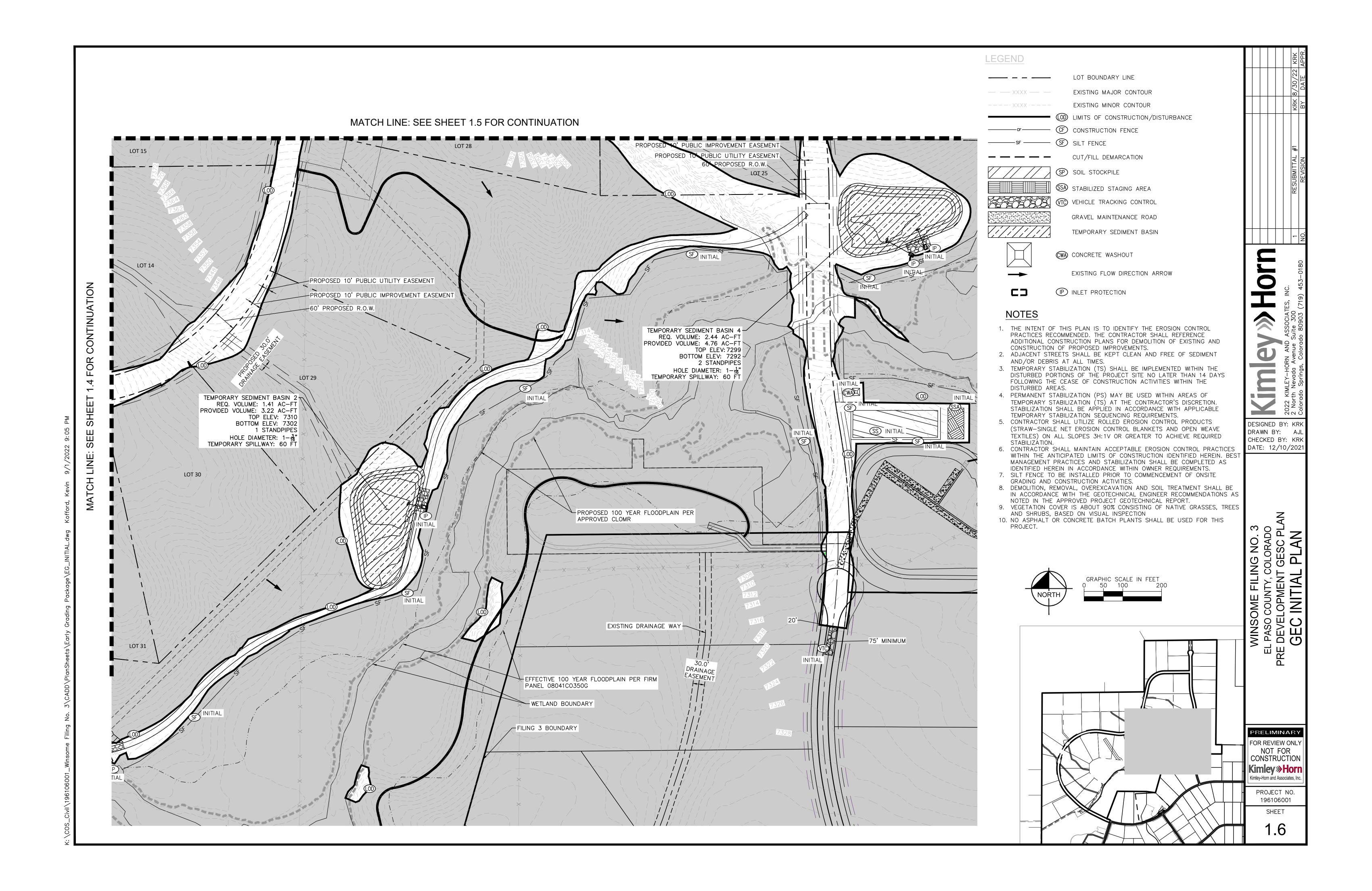
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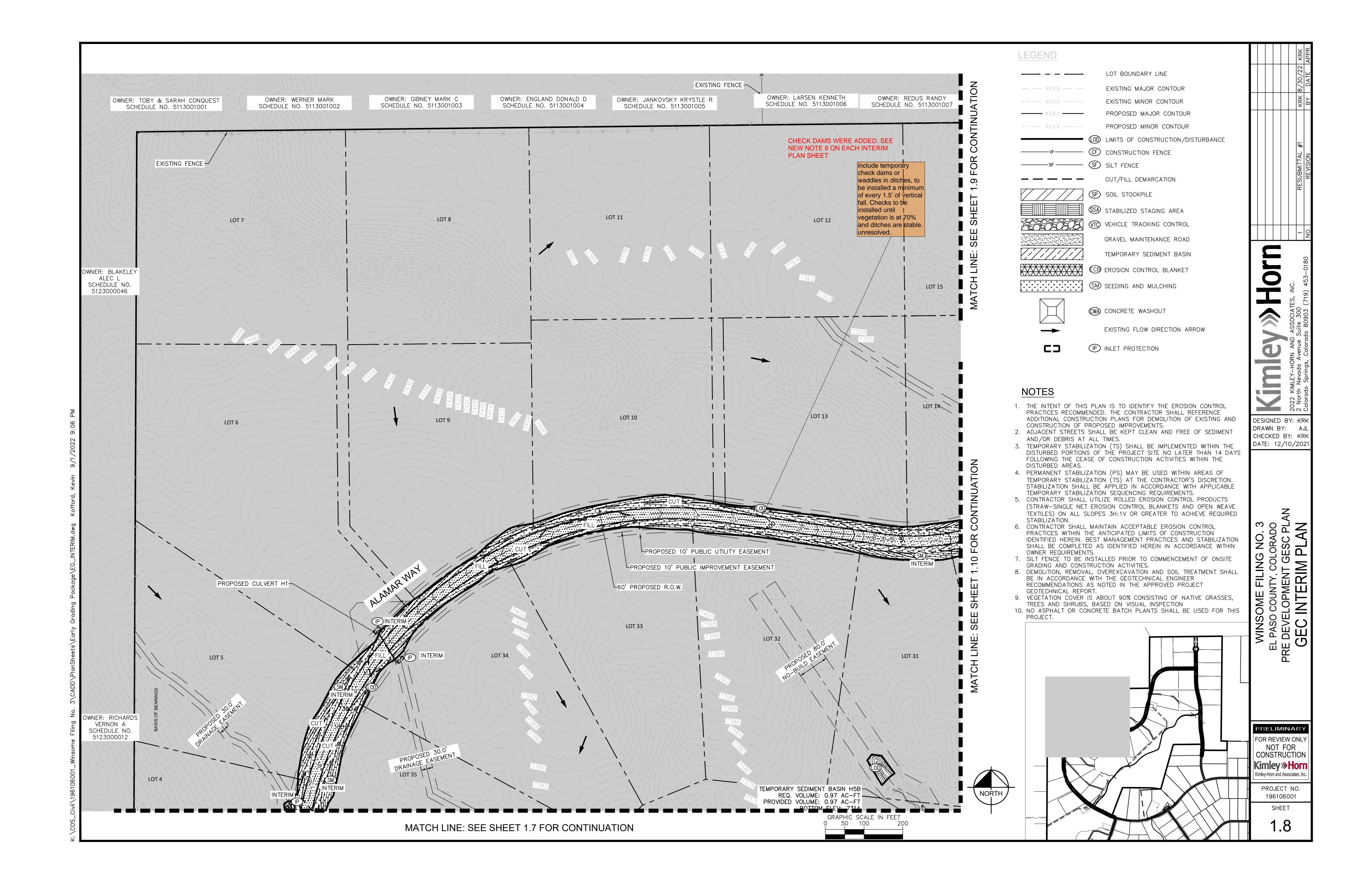


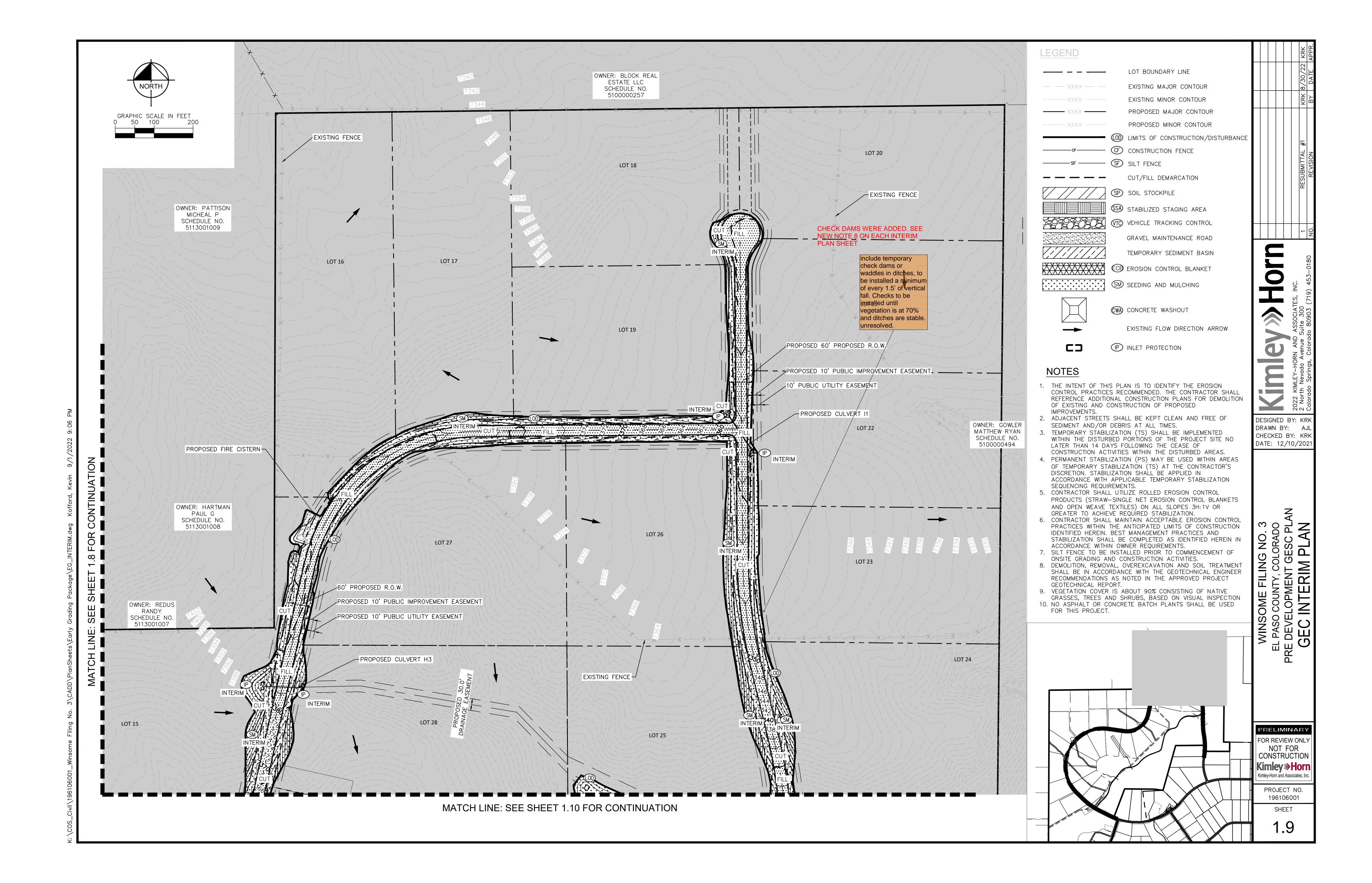


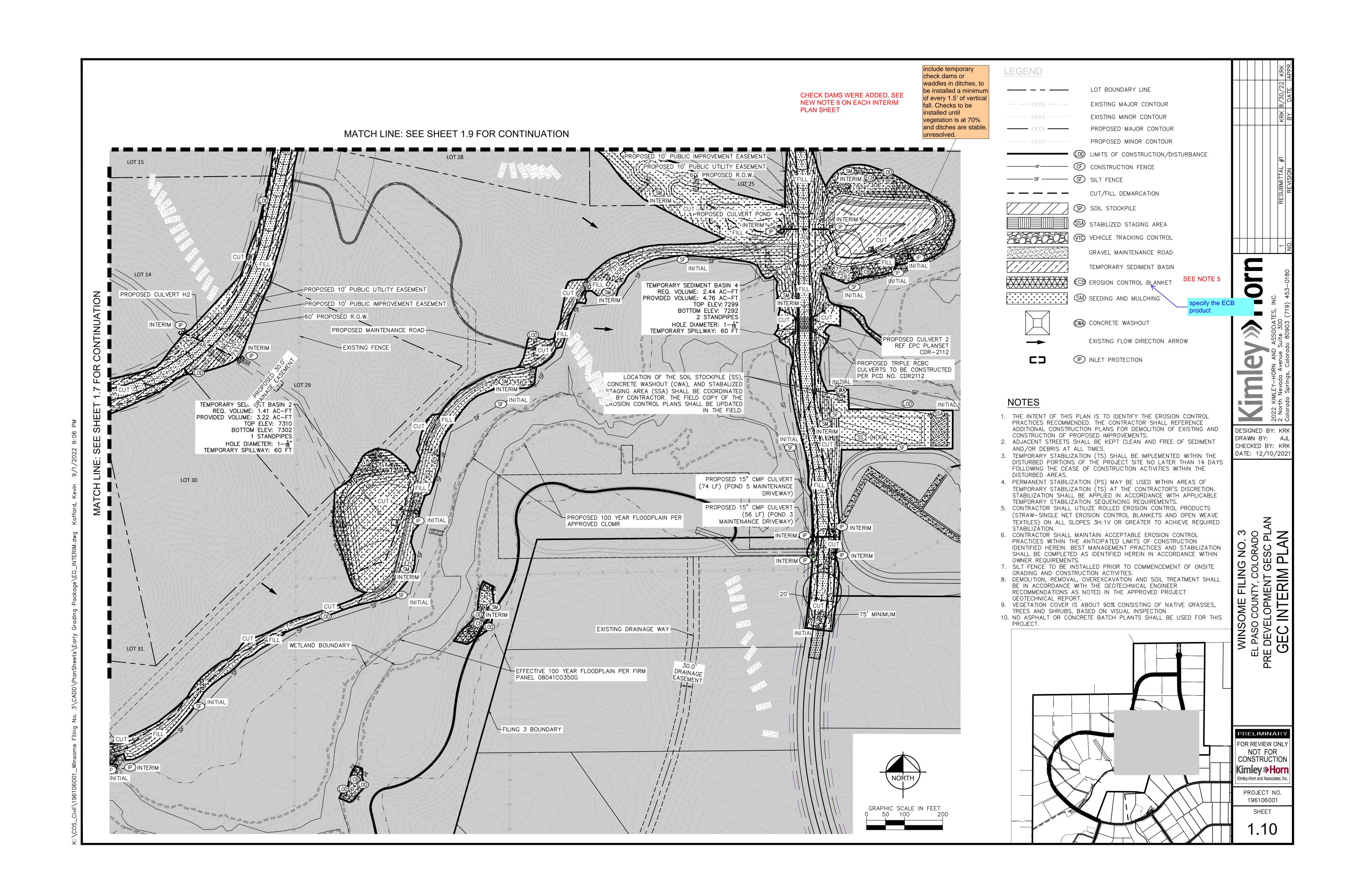


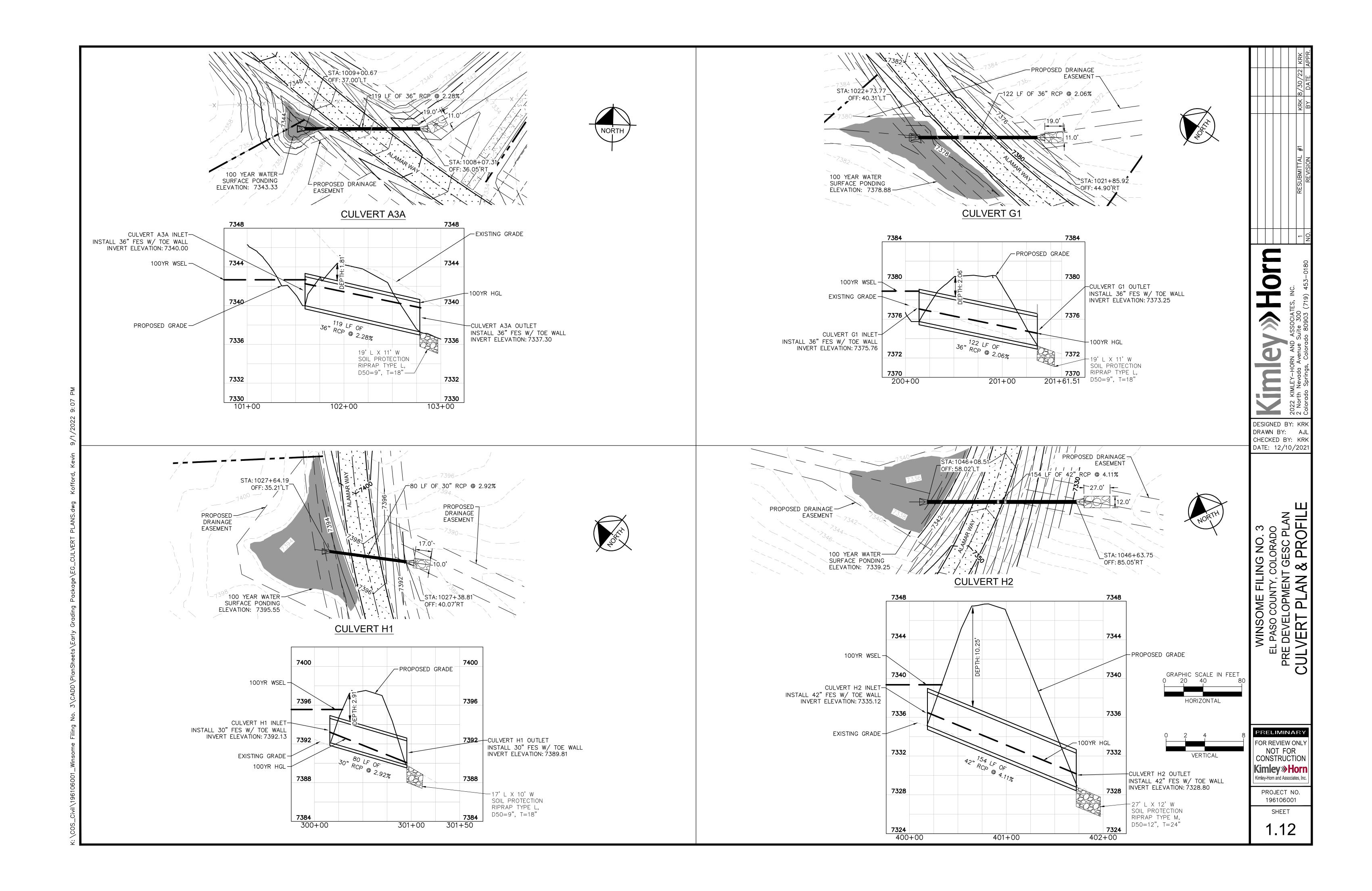


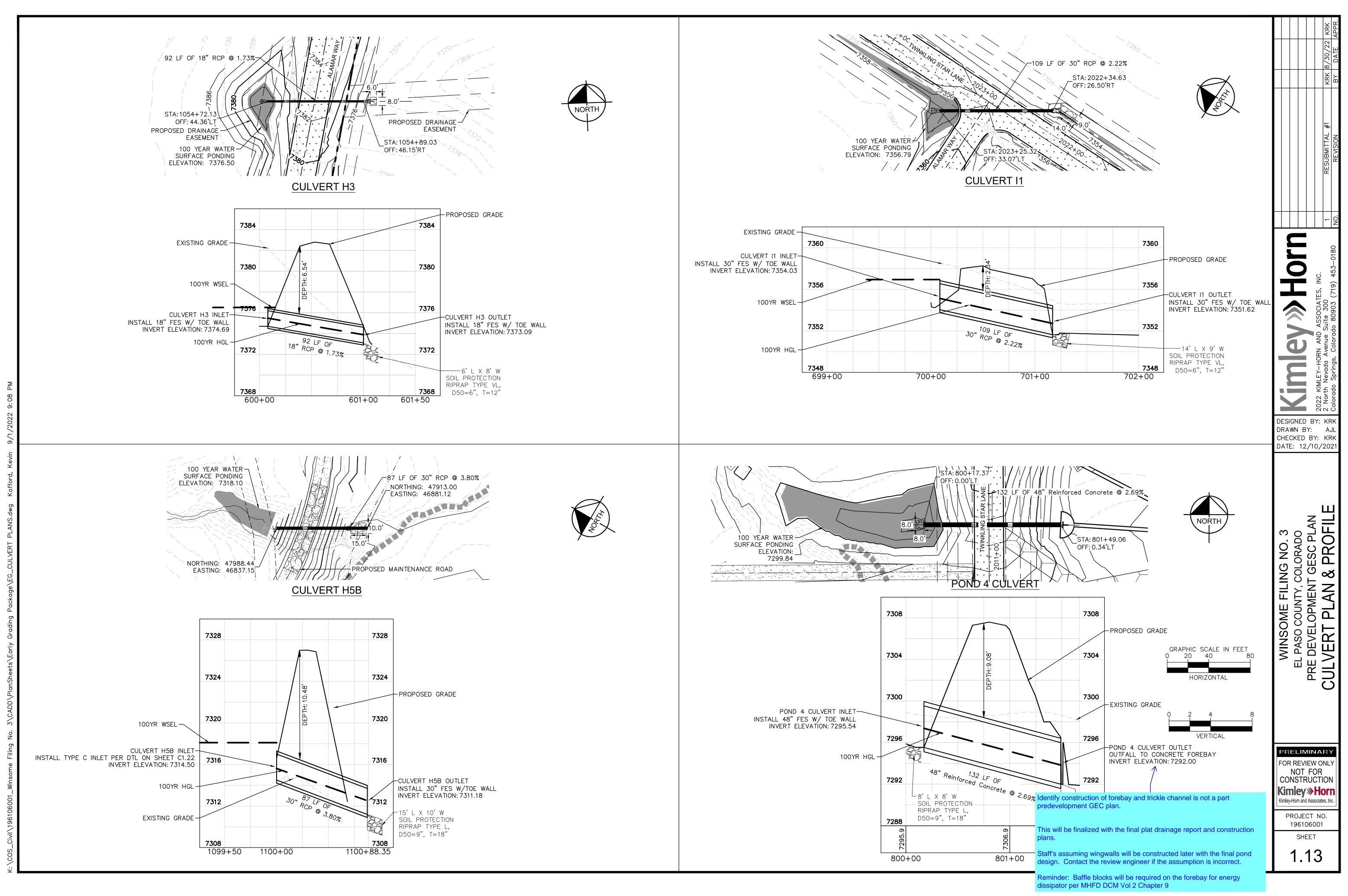




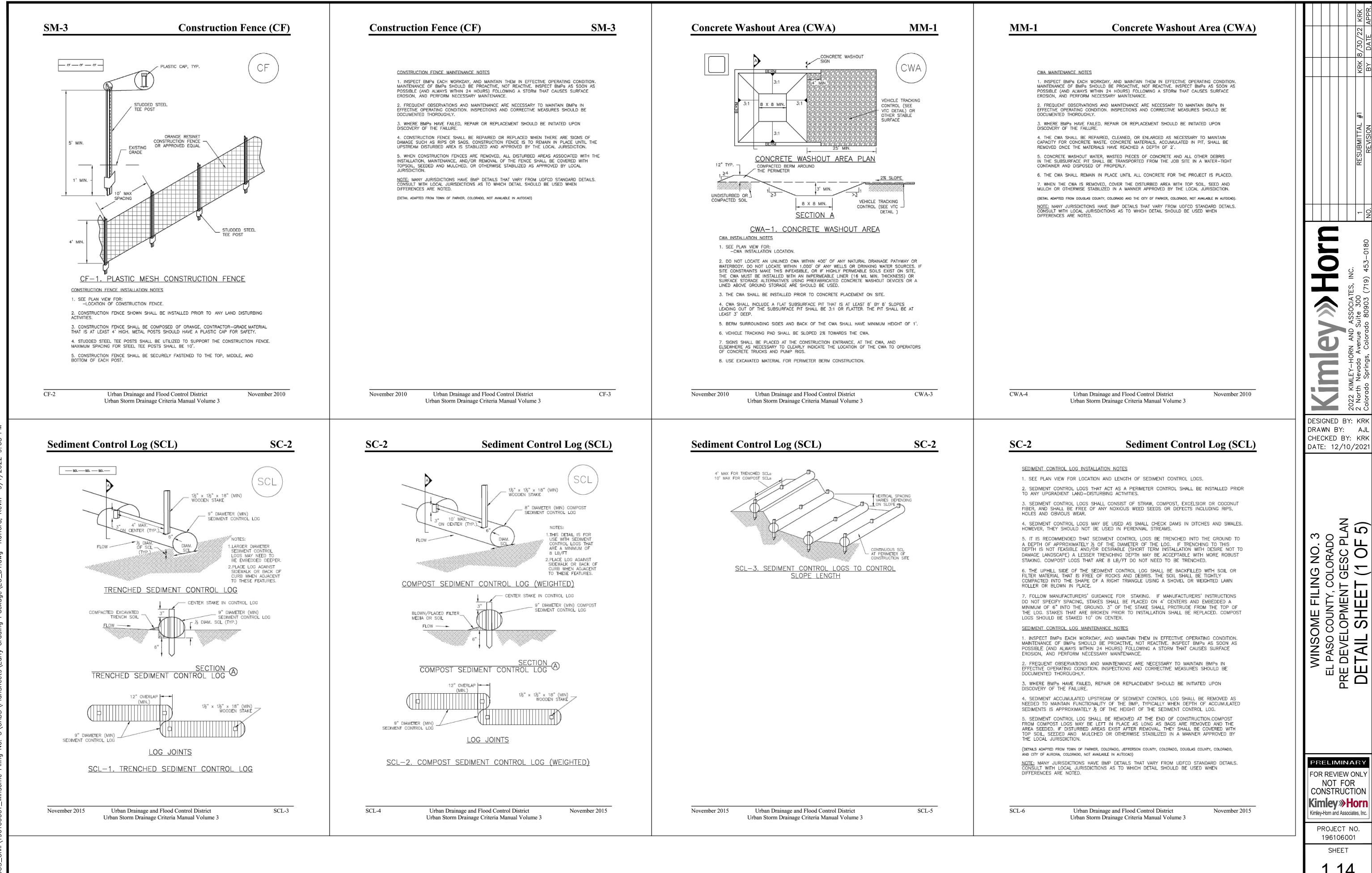








REFERENCE TO THE CONCRETE FOREBAY WAS REMOVED. OUTELT PROTECTION WILL BE USED UNTIL THE FOREBAY CAN BE CONSTRUCTED.



.COS_Civil\196106001_Winsome Filing No. 3\CADD\PlanSheets\Early Grading Package\EG_DT.dwg Kofford, Kev

Temporary and Permanent Seeding (TS/PS)

Seeding dates for the highest success probability of perennial species along the Front Range are generally in the spring from April through early May and in the fall after the first of September until the ground freezes. If the area is irrigated, seeding may occur in summer months, as well. See Table TS/PS-3 for appropriate seeding dates.

Table TS/PS-1. Minimum Drill Seeding Rates for Various Temporary Annual Grasses

Species ^a (Common name)	Growth Season ^b	L C		
1. Oats	Cool	35 - 50	1 - 2	
2. Spring wheat	Cool	25 - 35	1 - 2	
3. Spring barley	Cool	25 - 35	1 - 2	
4. Annual ryegrass	Cool	10 - 15	1/2	
5. Millet	Warm	3 - 15	1/2 - 3/4	
6. Sudangrass	Warm	5–10	1/2 - 3/4	
7. Sorghum	Warm	5–10	1/2 - 3/4	
8. Winter wheat	Cool	20–35	1 - 2	
9. Winter barley	Cool	20–35	1 - 2	
10. Winter rye	Cool	20–35	1 - 2	
11. Triticale	Cool	25–40	1 - 2	

- usually produce enough dead-plant residue to provide protection from wind and water erosion for an additional year. This assumes that the cover is not disturbed or mowed closer than 8 inches.
- Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in
- See Table TS/PS-3 for seeding dates. Irrigation, if consistently applied,
- may extend the use of cool season species during the summer months. Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

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Temporary and Permanent Seeding (TS/PS)

Cool

Cool

Cool

Cool

Cool

Cool

Cool

Cool

Cool

Warm

Cool

Seeds/

Pound

1,750,000

165,000

79,000

110,000

175,000

565,000

130,000

170,000

110,000

900,000

5,000,000

68,000

130,000

389,000

79,000

247,000

130,000

Growth

Form

Bunch

Bunch

Bunch

Sod

Bunch

Sod

Sod

Sod

Sod

Sod

Bunch

Sod

Sod

Stockpile Management (SM)

Sod

Pounds of

PLS/acre

7.0

0.25

3.0

1.0

5.5

10.75

3.0

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses

Sporobolus airoides

Festuca ovina 'duriuscula

Agropyron riparium 'Sodar'

Agropyron smithii 'Arriba'

Bromus inermis leyss

Agrostis alba

'Lincoln'

Phalaris arundinacea

Bromus inermis leyss

Panicum virgatum

Agropyron elongatum

Lolium perenne 'Citation'

Bromus inermis leyss

'Lincoln'

Elvmus cinereus

June 2012

Temporary and Permanent Seeding (TS/PS)

Bouteloua gracilis

Schizachyrium scoparium

Calamovilfa longifolia

Sporobolus cryptandrus

Agropyron smithii 'Arriba'

Bouteloua curtipendula

Bromus inermis leyss

hydraulic seeding is used, hydraulic mulching should be done as a separate operation.

Can substitute 0.5 lbs PLS of blue grama for the 2.0 lbs PLS of Vaughn sideoats grama.

If site is to be irrigated, the transition turf seed rates should be doubled.

Crested wheatgrass should not be used on slopes steeper than 6H to 1V.

Agropyron smithii 'Arriba'

All of the above seeding mixes and rates are based on drill seeding followed by crimped straw mulch. These rates should be

doubled if seed is broadcast and should be increased by 50 percent if the seeding is done using a Brillion Drill or is applied

through hydraulic seeding. Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1. If

Sandy Soil Seed Mix

Camper little bluestem

Vaughn sideoats grama

Arriba western wheatgrass

Total

Oahe Intermediate wheatgrass

Vaughn sideoats gramae

Lincoln smooth brome

June 2012

Arriba western wheatgrass

See Table TS/PS-3 for seeding dates.

Heavy Clay, Rocky Foothill Seed Mix

Prairie sandreed

Sand dropseed

Table TS/PS-2. Minimum Drill Seeding Rates for Perennial Grasses (cont.)

Warm

Warm

Warm

Cool

Warm

Cool

Cool

Cool

Warm

Growth Form

bunchgrass

Open sod

Bunch

Sod

Sod

Sod

Sod

Sod

Seeds/ Pound

825,000

240,000

5,298,000

191,000

110,000

175,000

115,000

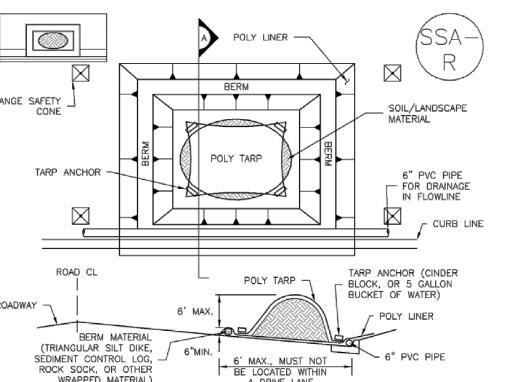
191,000

130,000

PLS/acre

Urban Drainage and Flood Control District

Urban Storm Drainage Criteria Manual Volume 3



- DAMAGE OR LOSS OF INTEGRITY.
- SPREADING OUT ON THE POLY LINER OR FOR DEMOLITION MATERIALS. THIS FEATURE CAN BE USED FOR:
 —UTILITY REPAIRS.

Urban Storm Drainage Criteria Manual Volume 3

Temporary and Permanent Seeding (TS/PS)

Table TS/PS-3. Seeding Dates for Annual and Perennial Grasses

	(Numbers in	l Grasses table reference able TS/PS-1)	Perennial Grasses		
Seeding Dates	Warm	Cool	Warm	Cool	
January 1–March 15			✓	✓	
March 16–April 30	4	1,2,3	✓	✓	
May 1–May 15	4		✓		
May 16–June 30	4,5,6,7				
July 1–July 15	5,6,7				
July 16–August 31					
September 1–September 30		8,9,10,11			
October 1–December 31			✓	✓	

Cover seeded areas with mulch or an appropriate rolled erosion control product to promote establishment of vegetation. Anchor mulch by crimping, netting or use of a non-toxic tackifier. See the Mulching BMP Fact Sheet for additional guidance.

Maintenance and Removal

Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed and mulch these areas, as needed.

An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.

Seeded areas may require irrigation, particularly during extended dry periods. Targeted weed control may

Protect seeded areas from construction equipment and vehicle access.

TS/PS-6

MM-2

Urban Drainage and Flood Control District

June 2012

Stockpile Management (SM)

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1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS

POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON

5. CLEAN MATERIAL FROM PAVED SURFACES BY SWEEPING OR VACUUMING.

EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

4. INSPECT PVC PIPE ALONG CURB LINE FOR CLOGGING AND DEBRIS. REMOVE OBSTRUCTIONS

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN

MATERIALS STAGING IN ROADWAY MAINTENANCE NOTES

DIFFERENCES ARE NOTED.

(DETAILS ADAPTED FROM AURORA, COLORADO)

DESIGNED BY: KRI DRAWN BY: A CHECKED BY: KRI

DATE: 12/10/202

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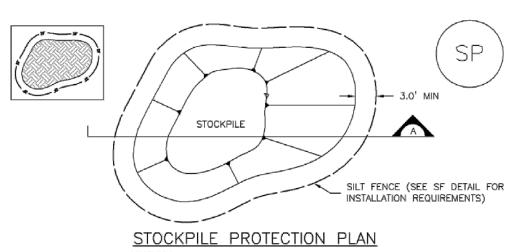
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Stockpile Management (SP)

MM-2

TS/PS-3



SILT FENCE (SEE SF DETAIL FOR INSTALLATION REQUIREMENTS) SECTION A

SP-1. STOCKPILE PROTECTION

- PERIMETER CONTROLS INCLUDING SEDIMENT CONTROL LOGS OR ROCK SOCKS MAY BE SUITABLE IN SOME CIRCUMSTANCES. CONSIDERATIONS FOR DETERMINING THE APPROPRIATE TYPE OF PERIMETER CONTROL FOR A STOCKPILE INCLUDE WHETHER THE STOCKPILE IS LOCATED ON A PERVIOUS OR IMPERVIOUS SURFACE, THE RELATIVE HEIGHTS OF THE PERIMETER CONTROL AND STOCKPILE, THE ABILITY OF THE PERIMETER CONTROL TO CONTAIN OR SLUMPS AGAINST THE PERIMETER, AND OTHER FACTORS.
- 3. STABILIZE THE STOCKPILE SURFACE WITH SURFACE ROUGHENING, TEMPORARY SEEDING AND MULCHING, EROSION CONTROL BLANKETS, OR SOIL BINDERS, SOILS STOCKPILED FOR AN EXTENDED PERIOD (TYPICALLY FOR MORE THAN 60 DAYS) SHOULD BE SEEDED AND MULCHED WITH A TEMPORARY GRASS COVER ONCE THE STOCKPILE IS PLACED (TYPICALLY WITHIN 14 DAYS). USE OF MULCH ONLY OR A SOIL BINDER IS ACCEPTABLE IF THE STOCKPILE WILL BE
- 4. FOR TEMPORARY STOCKPILES ON THE INTERIOR PORTION OF A CONSTRUCTION SITE, WHERE OTHER DOWNGRADIENT CONTROLS, INCLUDING PERIMETER CONTROL, ARE IN PLACE, STOCKPILE PERIMETER CONTROLS MAY NOT BE REQUIRED.

November 2010

Urban Drainage and Flood Control District

SP-3

MM-2

TS/PS-4

Alakali Soil Seed Mix

Sodar streambank wheatgrass

Alkali sacaton

Jose tall wheatgrass

Dural hard fescue

Meadow foxtail

Reed canarygrass

Lincoln smooth brome

Pathfinder switchgrass

Alkar tall wheatgrass

Transition Turf Seed Mix^c

Ruebens Canadian bluegrass

Citation perennial ryegrass

Total

Lincoln smooth brome

Arriba western wheatgrass

Fertile Loamy Soil Seed Mix

Ephriam crested wheatgrass

Lincoln smooth brome

Arriba western wheatgrass

Sodar streambank wheatgrass

High Water Table Soil Seed Mix

Basin wildrye

- STOCKPILE PROTECTION MAINTENANCE NOTES 1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE
- 2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- STOCKPILE PROTECTION MAINTENANCE NOTES
- 4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.
- 5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE
- (DETAILS ADAPTED FROM PARKER, COLORADO, NOT AVAILABLE IN AUTOCAD)
- NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

Stockpile Management (SP)

MM-2

TS/PS-5

- 2. FEATURE MUST BE INSTALLED PRIOR TO EXCAVATION, EARTHWORK OR DELIVERY OF
- 3. MATERIALS MUST BE STATIONED ON THE POLY LINER. ANY INCIDENTAL MATERIALS DEPOSITED ON PAVED SECTION OR ALONG CURB LINE MUST BE CLEANED UP PROMPTLY. 4. POLY LINER AND TARP COVER SHOULD BE OF SIGNIFICANT THICKNESS TO PREVENT
- 6. FEATURE IS NOT INTENDED FOR USE WITH WET MATERIAL THAT WILL BE DRAINING AND/OR
 - -WHEN OTHER STAGING LOCATIONS AND OPTIONS ARE LIMITED.

SP-6

Urban Storm Drainage Criteria Manual Volume 3

Kimley Horn November 2010

> PROJECT NO. 196106001

> > SHEET

PRELIMINARY

FOR REVIEW ONL'

NOT FOR CONSTRUCTION

STOCKPILE PROTECTION INSTALLATION NOTES 1. SEE PLAN VIEW FOR:
-LOCATION OF STOCKPILES.
-TYPE OF STOCKPILE PROTECTION.

2. INSTALL PERIMETER CONTROLS IN ACCORDANCE WITH THEIR RESPECTIVE DESIGN DETAILS. SILT FENCE IS SHOWN IN THE STOCKPILE PROTECTION DETAILS; HOWEVER, OTHER TYPES OF

IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).

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Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

November 2010

SP-2. MATERIALS STAGING IN ROADWAY

MATERIALS STAGING IN ROADWAYS INSTALLATION NOTES

1. SEE PLAN VIEW FOR -LOCATION OF MATERIAL STAGING AREA(S). -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL FROM THE LOCAL JURISDICTION.

5. SAND BAGS MAY BE SUBSTITUTED TO ANCHOR THE COVER TARP OR PROVIDE BERMING

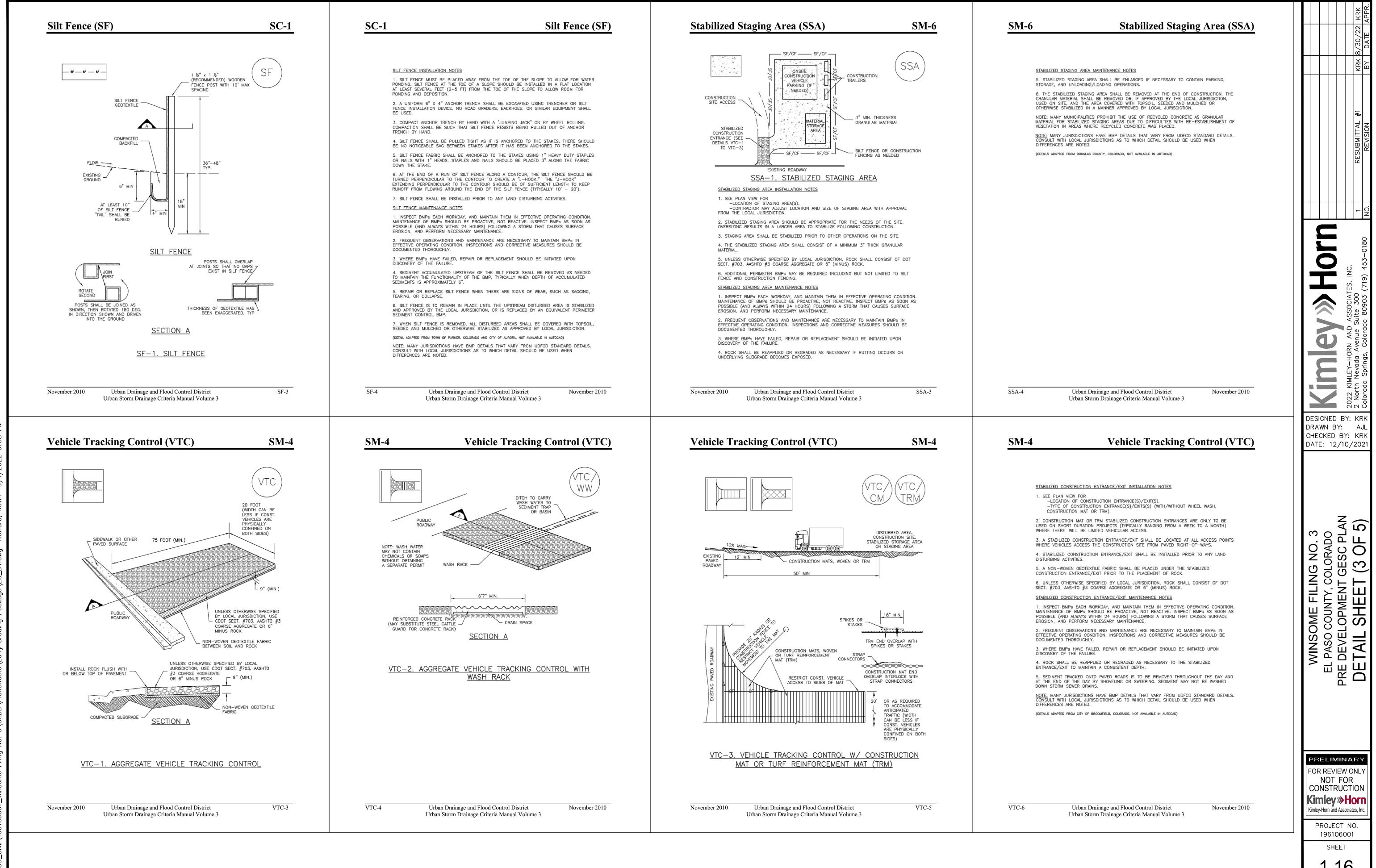
-OTHER LIMITED APPLICATION AND SHORT DURATION STAGING.

Urban Drainage and Flood Control District

SP-5

Urban Drainage and Flood Control District

Kimley-Horn and Associates, In-



1.16

• Outlet Protection and Spillway: Consider all flow paths for runoff leaving the basin, including protection at the typical point of discharge as well as overtopping.

- Outlet Protection: Outlet protection should be provided where the velocity of flow will exceed the maximum permissible velocity of the material of the waterway into which discharge occurs. This may require the use of a riprap apron at the outlet location and/or other measures to keep the waterway from eroding.
- o **Emergency Spillway:** Provide a stabilized emergency overflow spillway for rainstorms that exceed the capacity of the sediment basin volume and its outlet. Protect basin embankments from erosion and overtopping. If the sediment basin will be converted to a permanent detention basin, design and construct the emergency spillway(s) as required for the permanent facility. If the sediment basin will not become a permanent detention basin, it may be possible to substitute a heavy polyvinyl membrane or properly bedded rock cover to line the spillway and downstream embankment, depending on the height, slope, and width of the embankments.

Urban Storm Drainage Criteria Manual Volume 3

TABLE SB-1, SIZING INFORMATION FOR STANDARD SEDIMENT BASIN

	TABLE 38-1, SIZING INFORMATION FOR STANDARD SEDIMENT BASIN									
	Upstream Drainage Area (rounded to nearest acre), (ac)	Basin Bottom Width (W), (ft)	Spillway Crest Length (CL), (ft)	Hole Diameter (HD), (in)						
	1 2 3 4 5 6 7 8 9 10 11 12 13 14	12 ½ 21 28 33 ½ 38 ½ 43 47 ¼ 51 55 58 ¼ 61 64 67 ½ 70 ½ 73 ¼	2 3 5 6 8 9 11 12 13 15 15 16 18 19 21	952 13/6 13/6 13/2 21/52 21/52 25/52 27/52 27/52 27/52 15/16 31/52 1 1/6 1 1/6						
Γ	REFERENCE RISER	DIDE DETAIL ON	THIS SHEET FOR	BASINS						

Urban Drainage and Flood Control District

R PIPE DETAIL ON THIS SHEET FOR BASINS LARGER THAN 15 AC

SEDIMENT BASIN INSTALLATION NOTES

August 2013

-LOCATION OF SEDIMENT BASIN.

-TYPE OF BASIN (STANDARD BASIN OR NONSTANDARD BASIN).
-FOR STANDARD BASIN, BOTTOM WIDTH W, CREST LENGTH CL, AND HOLE DIAMETER, HD. FOR NONSTANDARD BASIN, SEE CONSTRUCTION DRAWINGS FOR DESIGN OF BASIN INCLUDING RISER HEIGHT H, NUMBER OF COLUMNS N, HOLE DIAMETER HD AND PIPE

2. FOR STANDARD BASIN, BOTTOM DIMENSION MAY BE MODIFIED AS LONG AS BOTTOM AREA IS NOT REDUCED.

3. SEDIMENT BASINS SHALL BE INSTALLED PRIOR TO ANY OTHER LAND-DISTURBING ACTIVITY THAT RELIES ON ON BASINS AS AS A STORMWATER CONTROL. 4. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL FREE OF DEBRIS, ORGANIC MATERIAL, AND ROCKS OR CONCRETE GREATER THAN 3 INCHES AND SHALL HAVE A MINIMUM OF 15 PERCENT BY WEIGHT PASSING THE NO. 200 SIEVE.

5. EMBANKMENT MATERIAL SHALL BE COMPACTED TO AT LEAST 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D698.

6. PIPE SCH 40 OR GREATER SHALL BE USED.

7. THE DETAILS SHOWN ON THESE SHEETS PERTAIN TO STANDARD SEDIMENT BASIN(S) FOR DRAINAGE AREAS LESS THAN 15 ACRES. SEE CONSTRUCTION DRAWINGS FOR EMBANKMENT, STORAGE VOLUME, SPILLWAY, OUTLET, AND OUTLET PROTECTION DETAILS FOR ANY SEDIMENT BASIN(S) THAT HAVE BEEN INDIVIDUALLY DESIGNED FOR DRAINAGE AREAS LARGER THAN 15 ACRES.

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Sediment Basin (SB)

Maintenance and Removal

Maintenance activities include the following:

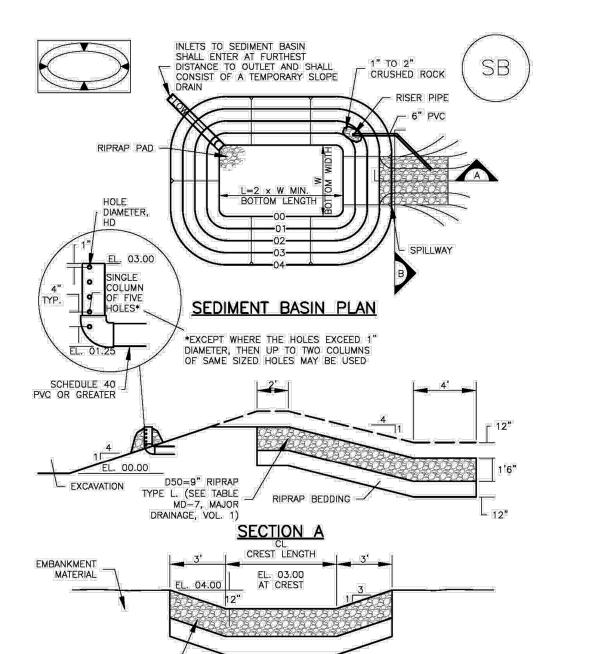
- Dredge sediment from the basin, as needed to maintain BMP effectiveness, typically when the design storage volume is no more than one-third filled with sediment.
- Inspect the sediment basin embankments for stability and seepage.
- Inspect the inlet and outlet of the basin, repair damage, and remove debris. Remove, clean and replace the gravel around the outlet on a regular basis to remove the accumulated sediment within it and keep the outlet functioning.
- Be aware that removal of a sediment basin may require dewatering and associated permit
- Do not remove a sediment basin until the upstream area has been stabilized with vegetation.

Final disposition of the sediment basin depends on whether the basin will be converted to a permanent post-construction stormwater basin or whether the basin area will be returned to grade. For basins being converted to permanent detention basins, remove accumulated sediment and reconfigure the basin and outlet to meet the requirements of the final design for the detention facility. If the sediment basin is not to be used as a permanent detention facility, fill the excavated area with soil and stabilize with vegetation.

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August 2013

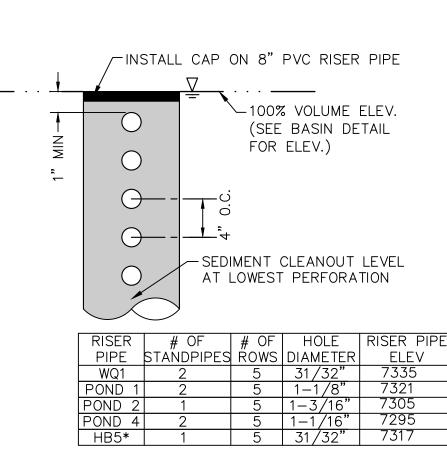
Sediment Basin (SB)



August 2013 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

- D50=9" RIPRAP TYPE L

SC-7



RISER PIPE DETAIL N.T.S.

Inlet Protection (IP)

DESIGNED BY: KRK

DRAWN BY: A CHECKED BY: KRK DATE: 12/10/202

5 AN S NO. 3 ORADO ESC PL/ COLC COLC T GE

PRE I

WINSOME FILII L PASO COUNTY, C E DEVELOPMENT ETAIL SHEET

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON

INLET PROTECTION SHALL BE INSTALLED PROMPTLY AFTER INLET CONSTRUCTION OR PAVING IS COMPLETE (TYPICALLY WITHIN 48 HOURS). IF A RAINFALL/RUNOFF EVENT IS FORECAST,

3. MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS.

INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION.
MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS

POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE

CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN

4. SEDIMENT ACCUMULATED UPSTREAM OF INLET PROTECTION SHALL BE REMOVED AS NECESSARY TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN STORAGE VOLUME REACHES 50% OF CAPACITY, A DEPTH OF 6" WHEN SILT FENCE IS USED, OR 1/4 OF THE HEIGHT FOR

5. INLET PROTECTION IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS PERMANENTLY STABILIZED, UNLESS THE LOCAL JURISDICTION APPROVES EARLIER REMOVAL OF INLET PROTECTION IN STREETS.

6. WHEN INLET PROTECTION AT AREA INLETS IS REMOVED, THE DISTURBED AREA SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED, OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION. (DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED. NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF INLET PROTECTION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY

PROPRIETARY INLET PROTECTION METHODS ON THE MARKET, UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY INLET PROTECTION; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWIP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

NOTE: SOME MUNICIPALITIES DISCOURAGE OR PROHIBIT THE USE OF STRAW BALES FOR INLET PROTECTION. CHECK WITH LOCAL JURISDICTION TO DETERMINE IF STRAW BALE INLET PROTECTION IS ACCEPTABLE.

Kimley-Horn and Associates, Inc

SHEET

Sediment Basin (SB)

EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

4. SEDIMENT ACCUMULATED IN BASIN SHALL BE REMOVED AS NEEDED TO MAINTAIN BMP EFFECTIVENESS, TYPICALLY WHEN SEDIMENT DEPTH REACHES ONE FOOT (I.E., TWO FEET

(DETAILS ADAPTED FROM DOUGLAS COUNTY, COLORADO)

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SEDIMENT BASIN MAINTENANCE NOTES

1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE

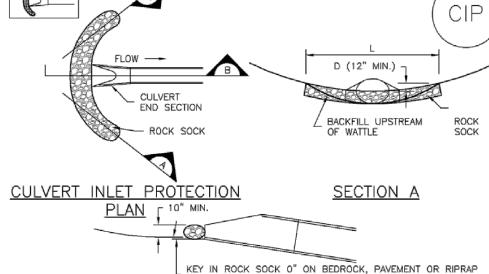
EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.

5. SEDIMENT BASINS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND GRASS COVER IS ACCEPTED BY THE LOCAL JURISDICTION. 6. WHEN SEDIMENT BASINS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY

Sediment Basin (SB)

SC-7

Inlet Protection (IP)



1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE

3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON

4. SEDIMENT ACCUMULATED UPSTREAM OF THE CULVERT SHALL BE REMOVED WHEN THE SEDIMENT DEPTH IS ½ THE HEIGHT OF THE ROCK SOCK. 5. CULVERT INLET PROTECTION SHALL REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED

AREA IS PERMANENTLY STABILIZED AND APPROVED BY THE LOCAL JURISDICTION. (DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

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KEY IN ROCK SOCK 2" ON EARTH CIP-1. CULVERT INLET PROTECTION CULVERT INLET PROTECTION INSTALLATION NOTES SEE PLAN VIEW FOR
 -LOCATION OF CULVERT INLET PROTECTION.

DOCUMENTED THOROUGHLY.

DISCOVERY OF THE FAILURE.

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

SC-6

GENERAL INLET PROTECTION INSTALLATION NOTES

DIFFERENCES ARE NOTED.

INLET PROTECTION MAINTENANCE NOTES

INSTALL INLET PROTECTION PRIOR TO ONSET OF EVENT.

EROSION, AND PERFORM NECESSARY MAINTENANCE.

-LOCATION OF INLET PROTECTION.
-TYPE OF INLET PROTECTION (IP.1, IP.2, IP.3, IP.4, IP.5, IP.6)

Urban Drainage and Flood Control District

Urban Storm Drainage Criteria Manual Volume 3



SB-6

Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

2. SEE ROCK SOCK DESIGN DETAIL FOR ROCK GRADATION REQUIREMENTS AND JOINTING CULVERT INLET PROTECTION MAINTENANCE NOTES EROSION, AND PERFORM NECESSARY MAINTENANCE.

2. FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE

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TURF REENFORCEMENT MATTING (TRM)
OR ROCK RIPRAP PROTECTED CHANNEL
10%-16% SLOPES

RIPRAP GRADE CONTROL STRUCTURE 2'-4' DROP AT 4:1

REGRADE AREA TO VEGETATED SWALE VEGETATION W/ EXCEL PP5-12 TURF REINFORCEMENT MAT (TRM) OR APPROVED EQUAL (BIODEGRADABLE)
SEED MIX: TABLE A-4 RIPARIAN SEED MIX- LOAMY TO CLAY
SOIL PER MILE HIGH FLOOD DISTRICT OR APPROVED EQUAL
~2.0% SLOPES

ROCK CHUTE 4:1 MAX SLOPES

ROCK SILL

CHANNEL PLUG/ BACKFILL ABANDONED CHANNEL

0

DESIGNED BY: KRK DRAWN BY: JR CHECKED BY: KRK DATE: 9/3/202

PRELIMINARY FOR REVIEW ONLY

NOT FOR

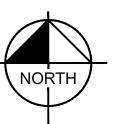
CONSTRUCTION Kimley»Horn

> PROJECT NO. 196106001 SHEET

Kimley-Horn and Associates, Inc

1.18





GRAPHIC SCALE IN FEET O 150 300 600

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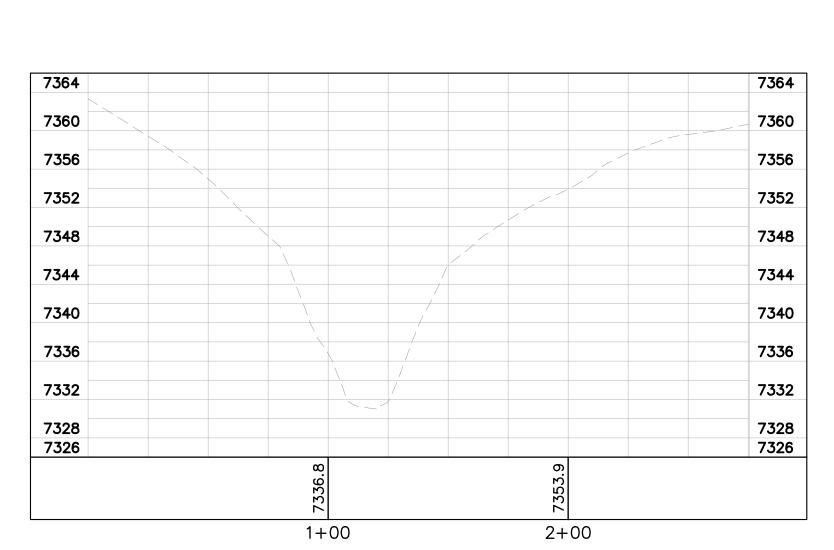
7344

7342

4:1 - 8:1 SIDE SLOPES **7364**

1+00

EX. CROSS SECTION A-A



7352 7352 7348 7348 7344 7344 7340 7338 7340 7338 1+00

7364

7360

7356

EX CROSS SECTION B-B

				Drop (ft)							
			Upstream	(Inlet Apron		Downstream				Min Rock	
	Channel		Inlet Apron	to Outlet	Chute Length	Outlet Apron			Rock Chute	Chute Depth	Rock Chute
Rock Chute ID	Location	Flow (cfs)	Length (ft)	Apron)	(ft)	Length (ft)	Chute Width (ft)	D50 (in)	Thickness (in)	(ft)	Depth (ft)
1	H1	45	10	7	28	14	12	12	24	1.09	2.00
2	H1	45	10	5	20	14	12	12	24	1.09	2.00
3	H4	17	10	13	52	8	12	9	18	0.58	2.00
5	H5B	29	10	8	32	18	4	18	36	1.54	2.00
7	H3	58	10	6	24	15	12	18	36	1.27	2.00
8	H3	58	10	6	24	15	12	18	36	1.27	2.00
9	H3	58	10	6	24	15	12	18	36	1.27	2.00
10	H3	58	10	6	24	15	12	18	36	1.27	2.00

4:1 - 8:1 SIDE SLOPES -

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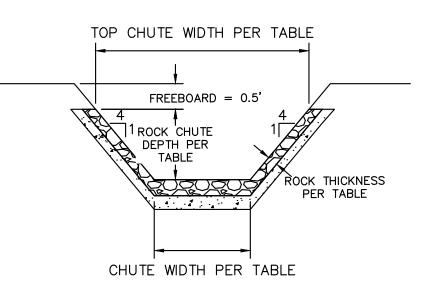
CALL UTILITY NOTIFICATION
CENTER OF COLORADO
1-800-922-1987

CALL 2-BUSINESS DAYS IN ADVANCE
BEFORE YOU DIG, GRADE, OR EXCAVATE
FOR THE MARKING OF UNDERGROUND
MEMBER UTILITIES

EX CROSS SECTION C-C

✓INLET APRON (0% SLOPE) -GEOTEXTILE CLASS I (NON-WOVEN) SHALL BE CHANNEL OVERLAPPED AND ANCHORED (18-INCHES MIN ALONG SIDES AND 24-INCHES MIN. ON ENDS) VOID-FILLED RIRRAP D50 PER TABLE COUTLET APRON (0% SLOPE) 10' MIN VARIES PER _DOWNSTREAM CHANNEL ROCK SILL PER DETAIL ON SHEET 1.23 RADIUS VARIES CHANNEL SLOPE 2" LAYER OF SAND-GRAVEL BEDDING OVER COMPACTED SUBGRADE WIDTH PER TABLE

ROCK SILL PER DETAIL ON SHEET 1.23



LENGTH VARIES PER TABLE

ROCK CHUTE PROFILE

ROCK CHUTE CROSS SECTION

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WINSOME FILING NO. 3
EL PASO COUNTY, COLORADO
CONSTRUCTION DOCUMENTS
HEADCUTTING EXHIBIT REACH H1

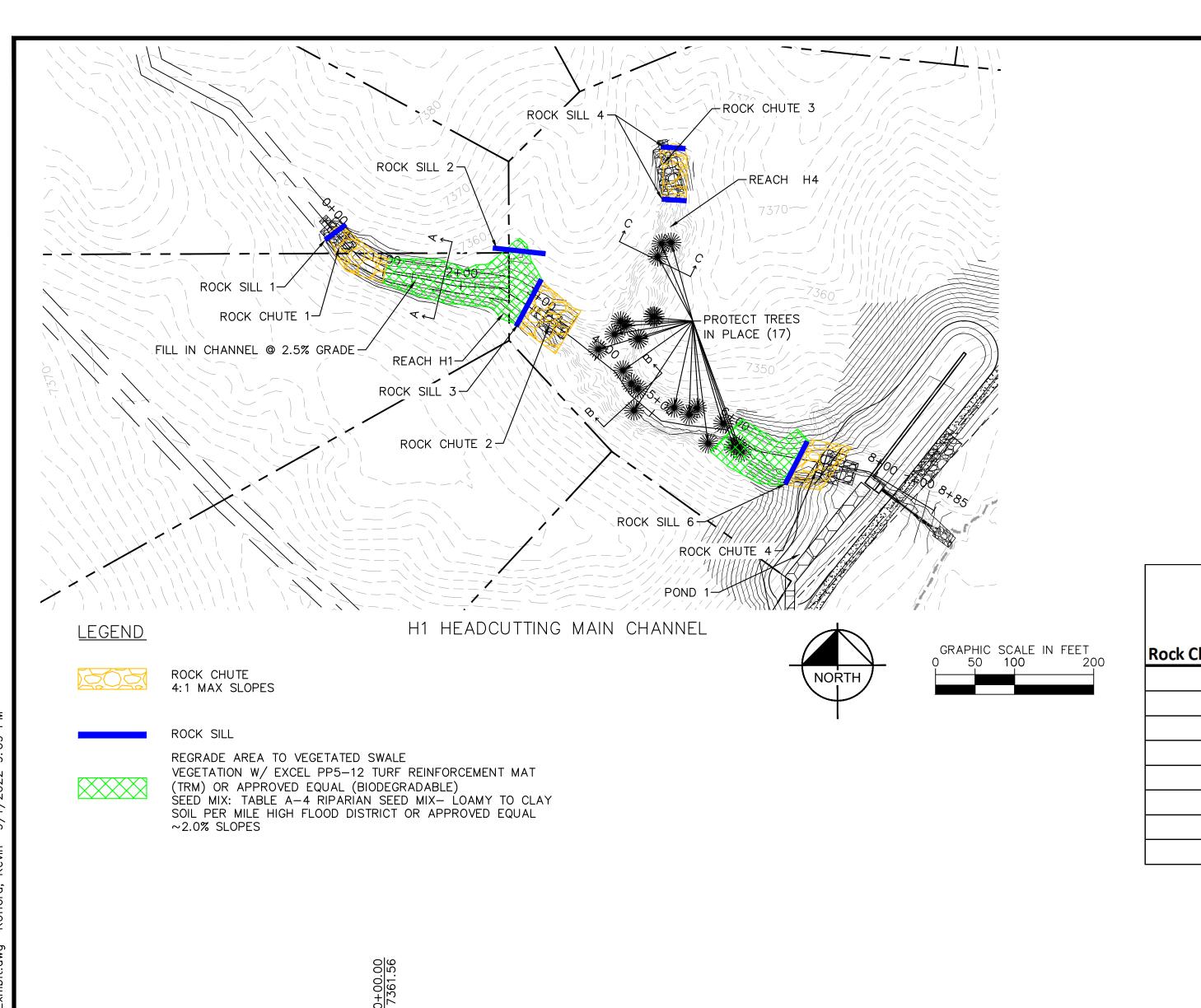
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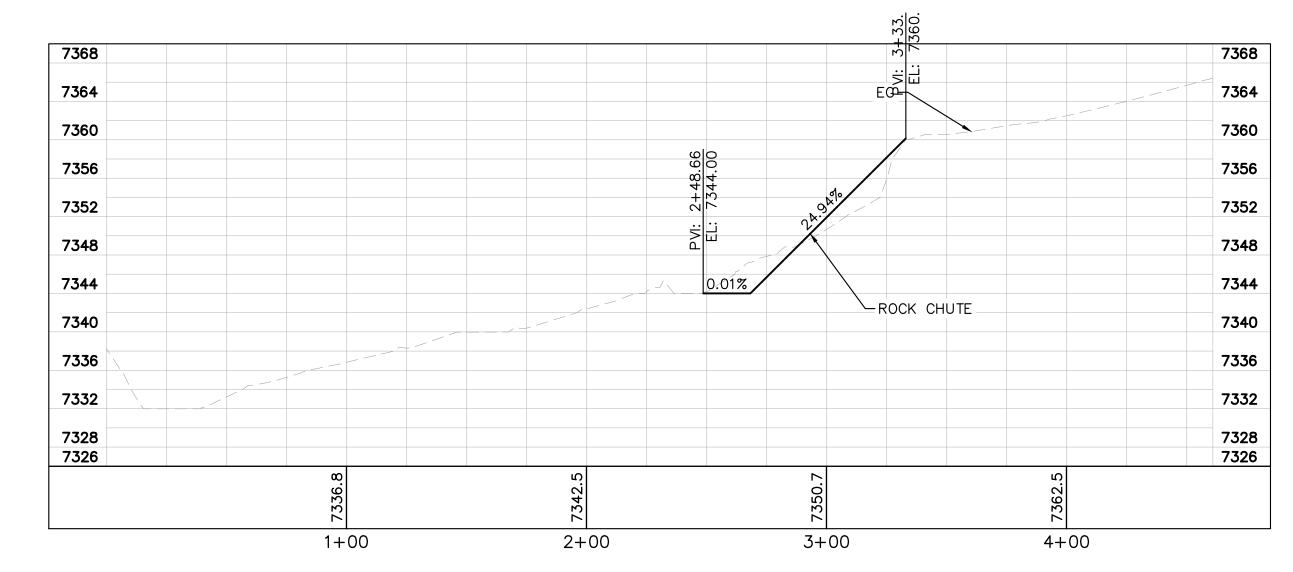
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REACH H4 CENTERLINE PROFILE

0

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WINSOME FILING NO. 3
EL PASO COUNTY, COLORADO
CONSTRUCTION DOCUMENTS
HEADCUTTING EXHIBIT REACH H1

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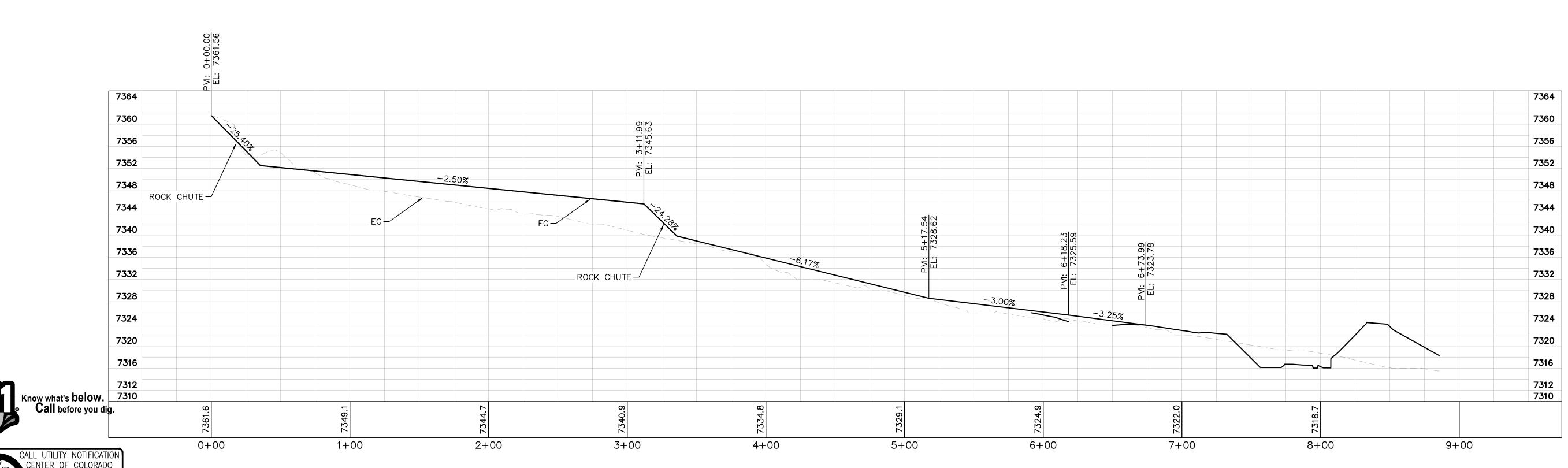
Kimley » Horn Kimley-Horn and Associates, Inc.

> PROJECT NO. 196106001

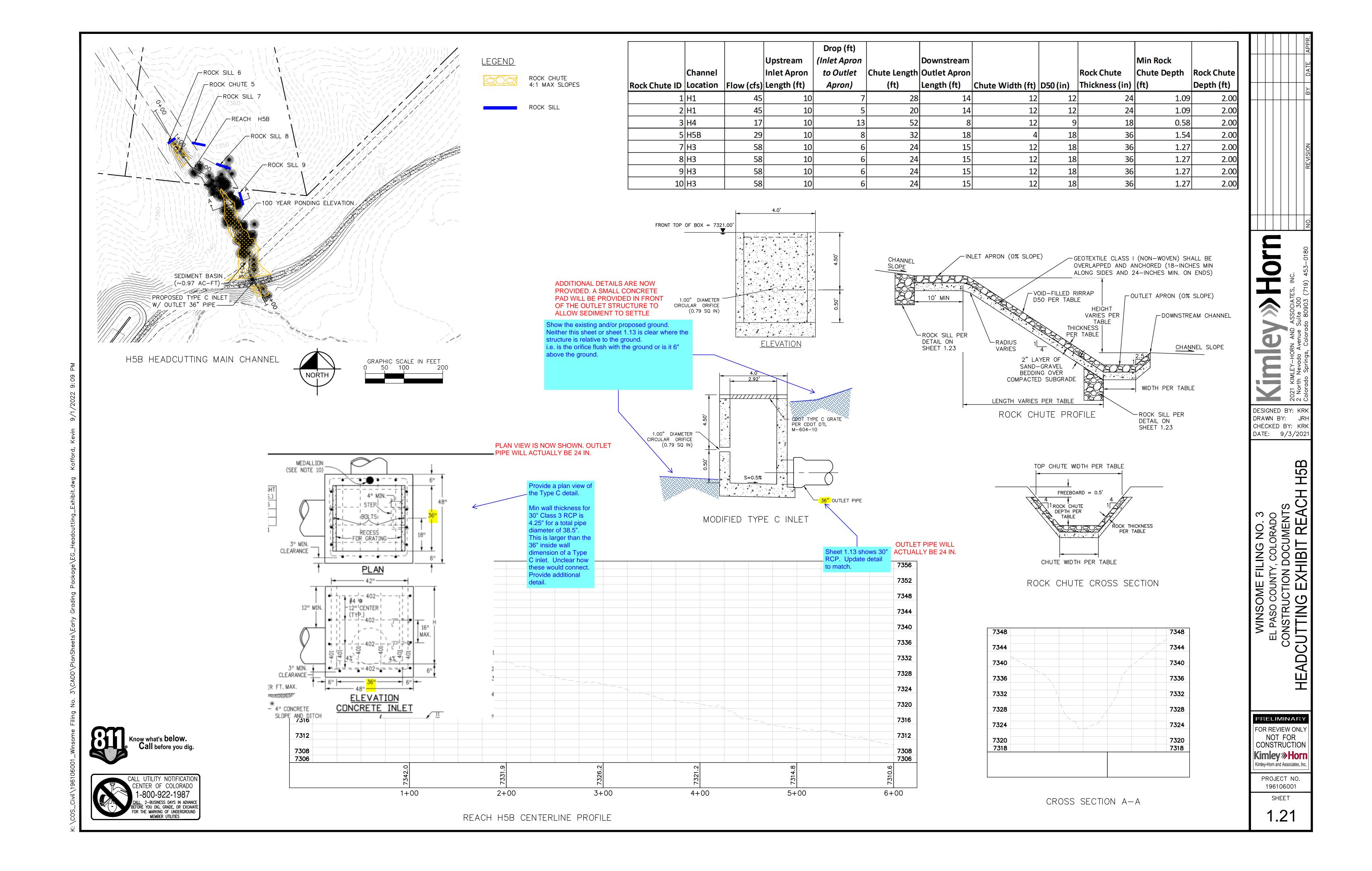
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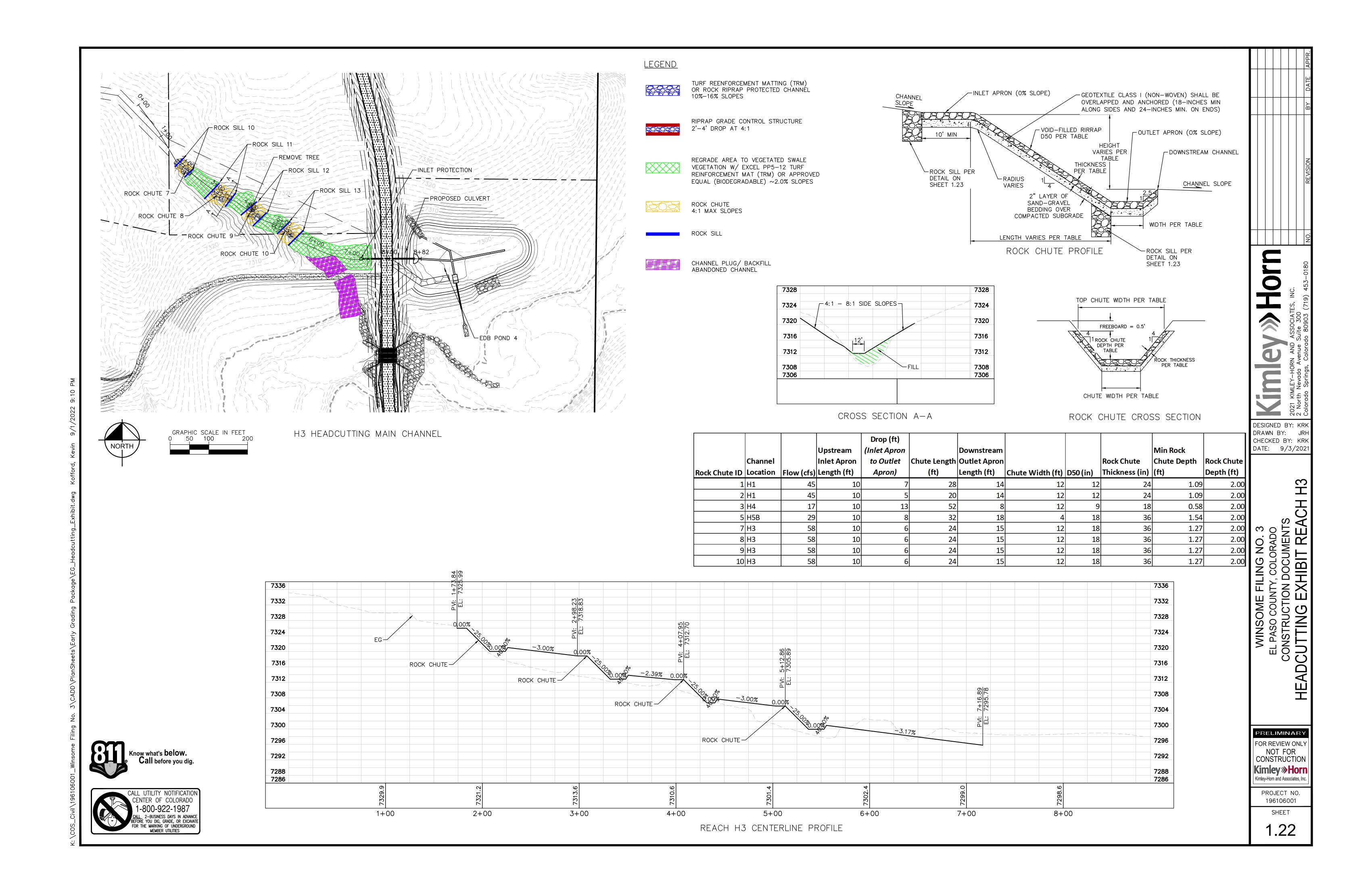
1.20

Rock Chute ID	Channel Location		Upstream Inlet Apron Length (ft)	Drop (ft) (Inlet Apron to Outlet Apron)	Chute Length						Rock Chute Depth (ft)
				7.61.7				12			i e
1	H1	45	10	/	28	14	12	12	24	1.09	2.00
2	H1	45	10	5	20	14	12	12	24	1.09	2.00
3	H4	17	10	13	52	8	12	9	18	0.58	2.00
5	H5B	29	10	8	32	18	4	18	36	1.54	2.00
7	H3	58	10	6	24	15	12	18	36	1.27	2.00
8	H3	58	10	6	24	15	12	18	36	1.27	2.00
9	H3	58	10	6	24	15	12	18	36	1.27	2.00
10	H3	58	10	6	24	15	12	18	36	1.27	2.00



REACH H1 CENTERLINE PROFILE





FOOTER BOULDER

BOULDER



HEADER BOULDER

TYPE II FABRIC —

SEE PLANS FOR ELEVATION —

FLOW

- RIP RAP SCOUR PROTECTION 3'

DOWNSTREAM

-HEADER BOULDER

FOOTER BOULDER

TABLE

- MATCH EXISTING GRADE

SEE PLANS FOR ELEVATION OR

-EMBED SILL INTO BANK PER

 $\sim\sim$

NOTES:

1. A BOULDER SILL MAY BE USED ALONE OR IN COMBINATION WITH A ROCK CHUTE.

NON-WOVEN FABRIC -

TOB

TOE OF SLOPE

TOE OF SLOPE

TOB

ROCK CHUTE, SEE SEPARATE DETAIL

FLOW

 $\sim\sim$

BACKFILL MATERIAL

- 2. NO PART OF THE SILL SHALL BE PLACED ABOVE THE ELEVATION OF THE UPSTREAM AND/OR ADJACENT CHANNEL BED.
- 3. A FOOTER BOULDER IS NOT REQUIRED IF THE HEADER BOULDER DEPTH EXCEEDS SPECIFIED SILL DEPTH. 4. THE ROCK SILL IS GENERALLY CONSTRUCTED AS FOLLOWS:
- A. OVER-EXCAVATE CHANNEL BED TO A DEPTH EQUAL TO THE TOTAL THICKNESS OF THE HEADER AND FOOTER BOULDERS.
- B. PLACE FOOTER BOULDERS. THERE SHALL BE NO GAPS BETWEEN BOULDERS.
- C. INSTALL FILTER FABRIC. D. PLACE BACKFILL MATERIAL BEHIND THE FOOTER BOULDERS.
- E. INSTALL HEADER BOULDERS ON TOP OF AND SET SLIGHTLY BACK FROM THE FOOTER BOULDERS (SUCH THAT PART OF THE HEADER BOULDER IS RESTING ON THE BACKFILL MATERIAL). HEADER BOULDERS SHALL SPAN THE SEAMS OF THE FOOTER BOULDERS. THERE SHALL NOT BE A SEAM IN THE CENTER OF THE

3' MIN.

ROCK SILL PLAN VIEW

STREAM BED (AT THE THALWEG). THERE SHALL BE NO GAPS BETWEEN BOULDERS OR THALWEG SEAM BETWEEN HEADERS. F. PLACE BACKFILL MATERIAL BEHIND HEADER BOULDERS ENSURING THAT ANY VOIDS BETWEEN THE

DESIGN VARIABLES						
BOULDER DIMENSIONS	24" MIN					
BACKFILL MATERIAL 1	D50 = 9"					
SILL AND BACKFILL DEPTH	5'					
EMBEDDED LENGTH INTO BANK	2'					

WELL MIXED GRADATION 80% STONE, AND 20% EARTH) OF THE SPECIFIED MATERIALS: D50 = 9", D_MAX =18", D_MIN = 2".



BOULDERS ARE FILLED.



Kimley-Horn and Associates, Inc

1.23

Grading & Erosion Control Plan_V2-redline.pdf Markup Summary

dotprete (6)



Subject: Engineer

Page Label: [8] 1.7 GEC INTERIM PLAN

Author: dotprete

Date: 9/28/2022 4:11:06 PM

Status: Color: Layer: Space:

Subject: Engineer

Page Label: [8] 1.7 GEC INTERIM PLAN

Author: dotprete

Date: 9/28/2022 4:26:20 PM

Status: Color: ■ Layer: Space: show contours and details for Sediment Basin H5B or note that it will be installed under a separate filing. adjust text and leader so it is not cut off from this sheet. include in area of disturbance if

installing with the EGP filing.



Subject: Engineer

Page Label: [11] 1.10 GEC INTERIM PLAN

Author: dotprete

Date: 9/28/2022 4:34:17 PM

Status: Color: ■ Layer: Space: include temporary check dams or waddles in ditches, to be installed a minimum of every 1.5' of vertical fall. Checks to be installed until vegetation is at 70% and ditches are stable.

unresolved.



Subject: Engineer

Page Label: [10] 1.9 GEC INTERIM PLAN

Author: dotprete

Date: 9/28/2022 4:34:25 PM

Status: Color: ■ Layer: Space: include temporary check dams or waddles in ditches, to be installed a minimum of every 1.5' of vertical fall. Checks to be installed until vegetation is at 70% and ditches are stable.

unresolved.



Subject: Engineer

Page Label: [9] 1.8 GEC INTERIM PLAN

Author: dotprete

Date: 9/28/2022 4:34:30 PM

Status: Color: ■ Layer: Space: include temporary check dams or waddles in ditches, to be installed a minimum of every 1.5' of vertical fall. Checks to be installed until vegetation is at 70% and ditches are stable.

unresolved.



Subject: Engineer

Page Label: [8] 1.7 GEC INTERIM PLAN

Author: dotprete

Date: 9/28/2022 4:34:45 PM

Status: Color: Layer: Space: include temporary check dams or waddles in ditches, to be installed a minimum of every 1.5' of vertical fall. Checks to be installed until vegetation is at 70% and ditches are stable.

unresolved.

dsdlaforce (11)

- INTERIM COU

Subject: Line

Page Label: [1] 1.0 COVER SHEET

Author: dsdlaforce Date: 9/26/2022 4:29:19 PM

Status: Color: Layer: Space:

A PALMER, P.E. - INTERIM COUN

Subject: Callout

Page Label: [1] 1.0 COVER SHEET

Author: dsdlaforce Date: 9/26/2022 4:29:29 PM

Status: Color: Layer: Space:

Delete "interim"



Page Label: [21] 1.21 HEADCUTTING EXHIBIT REACH H5B

Author: dsdlaforce Date: 9/27/2022 3:04:16 PM

Status: Color: Layer: Space:



Subject: Group

Page Label: [21] 1.21 HEADCUTTING EXHIBIT REACH H5B

Author: dsdlaforce Date: 9/27/2022 3:04:52 PM

Status: MODIFIE

Color: Layer: Space:



Subject: Callout

Page Label: [21] 1.21 HEADCUTTING EXHIBIT REACH H5B

Author: dsdlaforce

Date: 9/27/2022 3:04:57 PM

Status: Color: Layer: Space:

Show the existing and/or proposed ground. Neither this sheet or sheet 1.13 is clear where the

structure is relative to the ground.

i.e. is the orifice flush with the ground or is it 6"

above the ground.



Subject: Callout

Author: dsdlaforce

Date: 9/27/2022 3:10:04 PM

Status: Color: Layer: Space:

Page Label: [21] 1.21 HEADCUTTING EXHIBIT REACH H5B Sheet 1.13 shows 30" RCP. Update detail to match.

36" OU Subject: Highlight

Page Label: [21] 1.21 HEADCUTTING EXHIBIT REACH H5B

Author: dsdlaforce

Date: 9/27/2022 3:10:08 PM

Status: Color: Layer: Space:

Subject: Image

Page Label: [21] 1.21 HEADCUTTING EXHIBIT REACH H5B

Author: dsdlaforce

Date: 9/27/2022 3:12:28 PM

Status: Color: Layer: Space:



Subject: Callout

Page Label: [21] 1.21 HEADCUTTING EXHIBIT REACH H5B

Author: dsdlaforce

Date: 9/27/2022 3:16:35 PM

Status: Color: Layer: Space:

Provide a plan view of the Type C detail.

Min wall thickness for 30" Class 3 RCP is 4.25" for a total pipe diameter of 38.5". This is larger than the 36" inside wall dimension of a Type C inlet.

Unclear how these would connect.

Provide additional detail.



Subject: Callout

Page Label: [13] 1.13 CULVERT PLAN & PROFILE

Author: dsdlaforce

Date: 9/27/2022 3:48:44 PM

Status: Color: Layer: Space:

Identify construction of forebay and trickle channel is not a part predevelopment GEC plan.

This will be finalized with the final plat drainage report and construction plans.

Staff's assuming wingwalls will be constructed later with the final pond design. Contact the review engineer if the assumption is incorrect.

Reminder: Baffle blocks will be required on the forebay for energy dissipator per MHFD DCM Vol

2 Chapter 9



Subject: Callout

Page Label: [11] 1.10 GEC INTERIM PLAN

Author: dsdlaforce

Date: 9/27/2022 3:52:56 PM

Status: Color: Layer: Space:

specify the ECB product