Know what's **below**. **Call** before you dig.

INDEX OF SHEETS SHEET No. TITLE SHEET **GN01 KEY MAP** 03 **GN02 GENERAL NOTES** 04-09 GEC01-GEC06 **GRADING & EROSION CONTROL PLAN** 10-12

HAY CREEK VALLEY

EL PASO COUNTY, COLORADO

FINAL GRADING & EROSION CONTROL PLANS

MAY 2024

AGENCY CONTACT INFO

VIEW HOMES, INC. OWNER/DEVELOPER

> 555 MIDDLE CREEK PARKWAY, SUITE 500 COLORADO SPRINGS, CO 80921

CIVIL ENGINEER

ECN01-ECN03

MATRIX DESIGN GROUP

TIM BUSCHAR, (719)-382-9433

2435 RESEARCH PARKWAY, SUITE 300 COLORADO SPRINGS, CO 80920

(719)-575-0100

ELECTRIC

MOUNTAIN VIEW ELECTRIC ASSOCIATION 15706 JACKSON CREEK PARKWAY, SUITE 100

MONUMENT, CO 80132

GINA PERRY, (719) 494-2636

GAS

BLACK HILLS ENERGY 105 S VICTORIA AVENUE PUEBLO, CO 81003

(800) 303-0752

ENGINEERING

EL PASO COUNTY PUBLIC WORKS DEPARTMENT

3275 AKERS DRIVE

COLORADO SPRINGS, CO 80922

(719) 520-6460

TRAFFIC

EL PASO COUNTY PUBLIC WORKS DEPARTMENT 3275 AKERS DRIVE

COLORADO SPRINGS, CO 80922 (719) 520-6460

DRAINAGE

EL PASO COUNTY PUBLIC WORKS DEPARTMENT

3275 AKERS DRIVE COLORADO SPRINGS, CO 80922

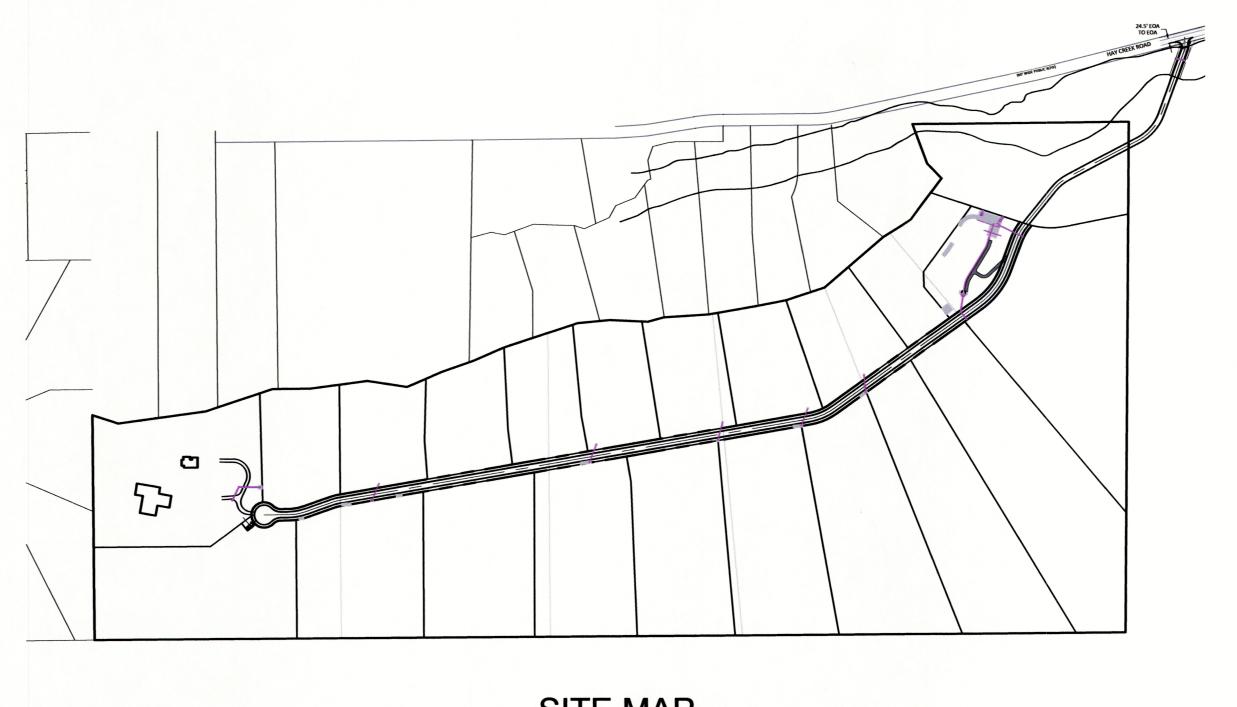
(719) 520-6460

FIRE DEPARTMENT

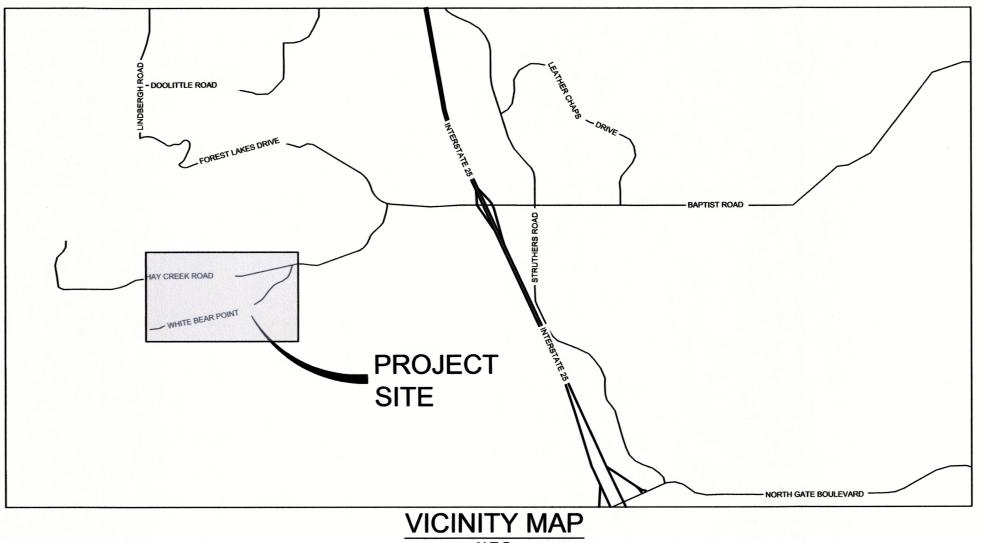
MONUMENT FIRE DISTRICT 16055 OLD FOREST POINT, SUITE 102

MONUMENT, CO 80132

(719)-484-0911







OWNER/DEVELOPER'S STATEMENT:

UNDERGROUND UTILITIES.

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

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND

UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE

LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND

EXISTING UTILITIES BEFORE COMMENCING WORK. THE

CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL

CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY

VIEW HOMES, INC. 555 MIDDLE CREEK PARKWAY, SUITE 500 COLORADO SPRINGS, CO 80921

DESIGN ENGINEER'S STATEMENT:

ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR GRADING AND EROSION CONTROL PLANS. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLAN.

FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC.

EL PASO COUNTY:

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 DISCRETION.

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

DATE

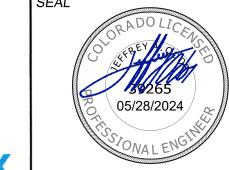
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REFERENCE DRAWINGS					SHEET KEY
-TITLE-CD -886-PR-SITE EMA_XS -886.066-EX-MAP-1 64022-01 Hay Creek Road BNI -886-ALTA-SURVEY lay Creek BFEs	Y No.	DATE	DESCRIPTION REVISIONS	BY	
		AME: S:\22.886	E MANAGEMENT .076 Hay Creek-Forest Manor-O'Leary Properties\500 CADD\504 Plan Sets\Construction Plans\GEC Plan\TS01.dwg		
		DATE: 1/26/2024 WING IS CURRENT AS	3:01 PM S OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.		

PROJECT ELEVATIONS ARE NAVD 88 ELEVATIONS BASED ON AN OPUS DERIVED ELEVATION ON CONTROL POINT 10, A NO. 5 REBAR HAVING AN ELEVATION OF 5769.92.

THE SOUTH LINE OF THE NORTHWEST QUARTER OF SECTION 22, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO, BEING MONUMENTED ON THE EASTERLY END BY A 2-12" ALUMINUM CAP STAMPED "NOLTE PLS25955 C1/4 S22 T15S, R65W 1999, "AND THE WESTERLY END BY A2-1/2" ALUMINUM CAP STAMPED "SSS PLS 16154 1/4 S21 S22 T15S, R65W 2000, "BEING ASSUMED TO BEAR S89°54'42"W, A DISTANCE OF 2,627.78 FEET.





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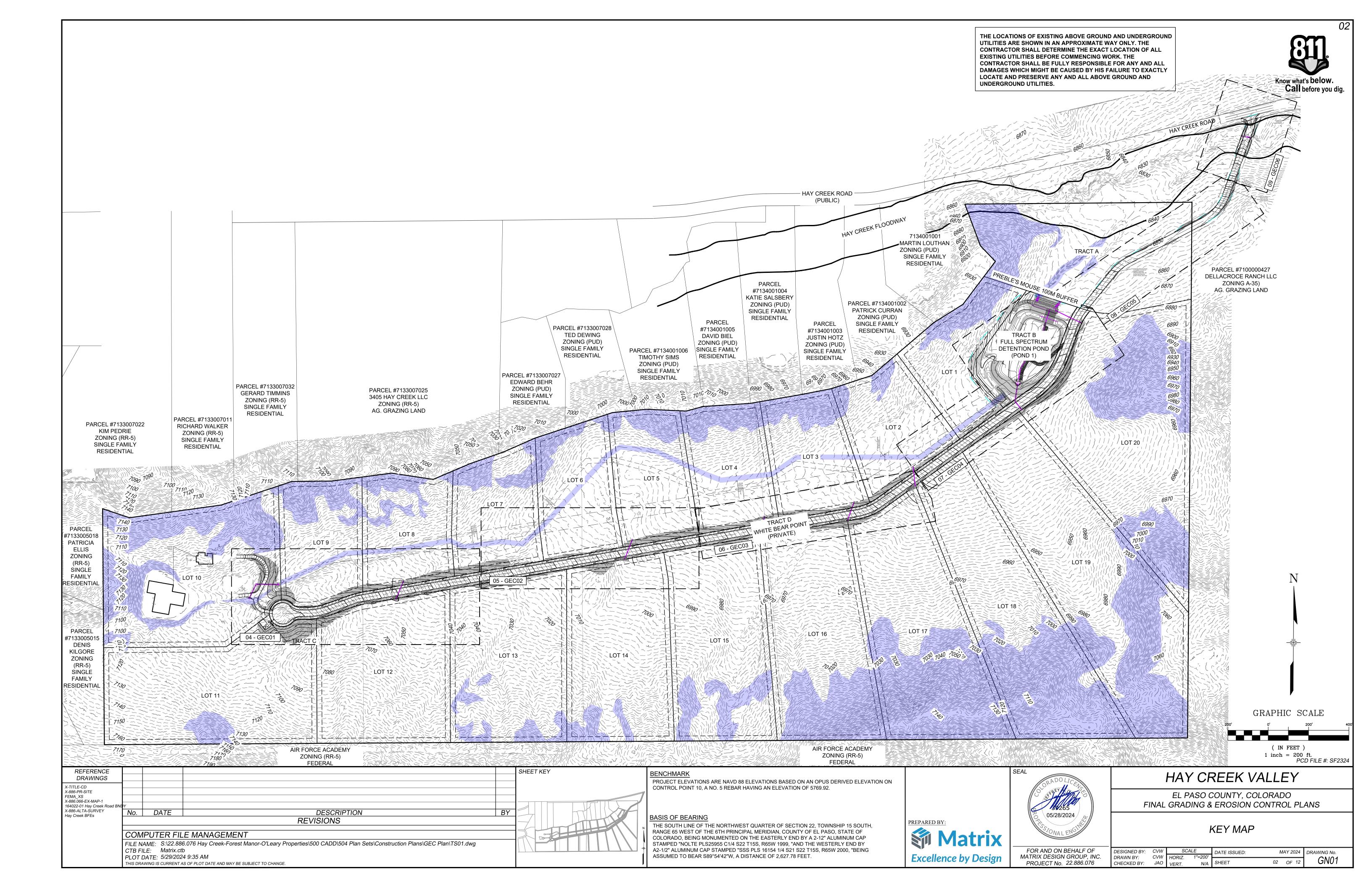
EL PASO COUNTY, COLORADO FINAL GRADING & EROSION CONTROL PLANS

HAY CREEK VALLEY

TITLE SHEET

SCALE MAY 2024 DRAWING No. CVW HORIZ. TS01 01 OF 12 CHECKED BY: JAO VERT.

FOR AND ON BEHALF OF DESIGNED BY: CVW MATRIX DESIGN GROUP, INC. DRAWN BY: PROJECT No. 22.886.076



- 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 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.
- A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS 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 15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
- 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 COUNTY STAFF.
- 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 OF THE DISTURBANCE.
- 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 19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL 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 STORMWATER MANAGEMENT PLAN.
- 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.
- 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 AND EROSION CONTROL MEASURES SHALL BE REMOVED UPON FINAL STABILIZATION AND BEFORE PERMIT CLOSURE.
- 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 23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- 10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO 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 25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL APPROVED CONSTRUCTION ACCESS POINTS FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).

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 28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY CTL DISCHARGE OF SEDIMENT OFF SITE.

RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY 13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE 29. AT LEAST TEN (10) DAYS PRIOR TO THE ANTICIPATED START OF 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.

PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER 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.

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.

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.

CONTROL MEASURES MUST BE INCORPORATED INTO THE 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

> 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.

STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT 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.

> THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.

AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND 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.

NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED 26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.

> 27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK 2. OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.

THOMPSON, DATED SEPTEMBER 19, 2023, AND SHALL BE CONSIDERED A PART OF THESE PLANS.

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:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT WATER QUALITY CONTROL DIVISION

WQCD - PERMITS 4300 CHERRY CREEK DRIVE SOUTH

DENVER, CO 80246-1530

ATTN: PERMITS UNIT

NRCS SOIL SURVEY FOR EL PASO COUNTY

SOIL ID NO	D. SOIL TYPE	HYDROLOGIC CLASSIFICATION
38	JARRE-TECOLOTE COMPLEX (8%-65% SLOPES)	В
71	PRING COARSE SANDY LOAM (3%-8% SLOPES)	В
93	TOMAH-CROWFOOT COMPLEX	В

TIMING

ANTICIPATED STARTING AND COMPLETION TIME PERIOD OF SITE GRADING:

WINTER 2024 THRU FALL 2024

EXPECTED DATE ON WHICH THE FINAL STABILIZATION WILL BE COMPLETED: FALL 2024

TOTAL DISTURBED AREA: 17.28 ACRES

RECEIVING WATERS

NAME OF RECEIVING WATERS HAY CREEK (ULTIMATE)

ENGINEER'S NOTES:

THE EXISTING VEGETATION CONSISTS OF MODERATELY DENSE NATIVE GRASSES AND SHRUBS. BASED ON SITE VISITS AND A REVIEW OF AERIAL PHOTOGRAPHY, THE VEGETATIVE COVER AT HAY CREEK VALLEY IS APPROXIMATELY 80%

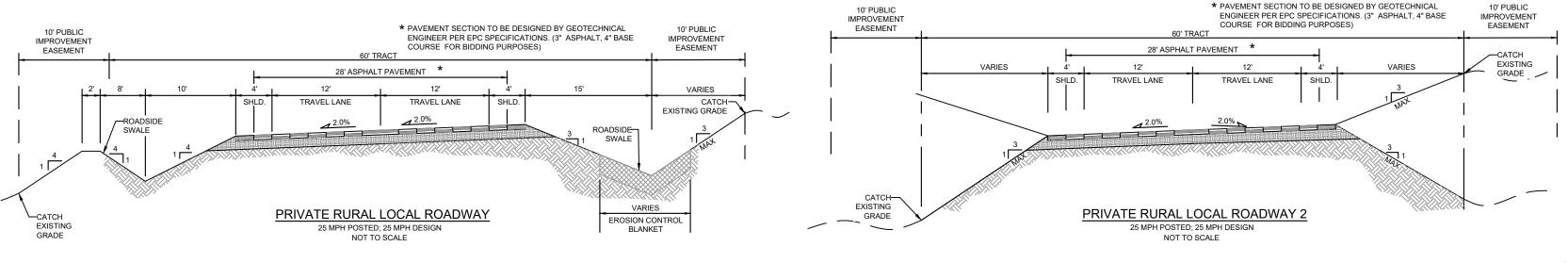
ABBREVIATIONS

BOW	BOTTOM OF WALL	PL	PROPERTY LINE
EL.	ELEVATION	PSI	POUNDS PER SQUARE INCH
EX	EXISTING	RCP	REINFORCED CONCRETE PIPE
HORIZ	HORIZONTAL	SHLDR	SHOULDER
INV	INVERT	TOW	TOP OF WALL
MIN	MINIMUM	TYP	TYPICAL
N,S,E,W	NORTH,SOUTH,EAST,WEST		

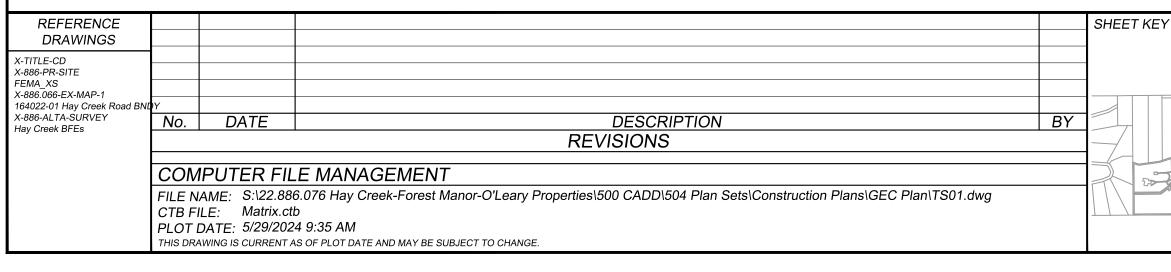
NPDES NOTES:

- 1. THE CONTRACTOR SHALL REMOVE ALL SEDIMENT. MUD. AND CONSTRUCTION DEBRIS THAT MAY ACCUMULATE IN THE FLOWLINES AND PUBLIC RIGHTS OF WAYS AS A RESULT OF THIS CONSTRUCTION PROJECT. SAID REMOVAL SHALL BE CONDUCTED IN A TIMELY MANNER, OR AS DIRECTED BY THE ENGINEER.
 - THIS CONSTRUCTION ACTIVITIES STORMWATER MANAGEMENT PLAN (SWMP) HAS BEEN SUBMITTED AS PART OF Know what's below.
- AN APPLICATION FOR AN EROSION AND SEDIMENT CONTROL PERMIT FILED WITH EL PASO COUNTY Call before you dig. AND AS INCLUSION BY REFERENCE TO THE CDPHE CONSTRUCTION ACTIVITY PERMIT. THE SWMP IS A LIVING DOCUMENT AND ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES MAY BE REQUIRED OF THE CONTRACTOR DUE TO UNFORESEEN EROSION PROBLEMS OR IF THE SUBMITTED PLAN DOES NOT FUNCTION AS INTENDED. THE REQUIREMENTS OF THIS PLAN SHALL BE THE OBLIGATION OF THE LAND OWNER AND/OR HIS SUCCESSORS OR HEIRS: UNTIL SUCH TIME AS THE PLAN IS PROPERLY COMPLETED, MODIFIED, OR VOIDED.
- THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR REMEDIATION OF ANY ADVERSE IMPACTS TO ADJACENT WATERWAYS. WETLANDS, ETC., RESULTING FROM WORK DONE AS PART OF THIS PROJECT
- THE CONTRACTOR SHALL PREVENT SEDIMENT, DEBRIS AND ALL OTHER POLLUTANTS FROM ENTERING THE STORM SEWER SYSTEM DURING ALL DEMOLITION, EXCAVATION, TRENCHING, BORING, GRADING OR OTHER CONSTRUCTION OPERATIONS THAT ARE PART OF THIS PROJECT.
- A LAYER OF SUITABLE MULCH SHALL BE APPLIED TO ALL DISTURBED PORTIONS OF THE SITE WITHIN 21 DAYS OF THE COMPLETION OF GRADING. SAID MULCH SHALL BE APPLIED AT A RATE OF 2 TONS PER ACRE AND SHALL BE TACKED OR FASTENED BY AN APPROVED METHOD SUITABLE FOR THE TYPE OF MULCH USED. ROUGH-CUT STREETS SHALL BE MULCHED UNLESS A LAYER OF AGGREGATE ROAD BASE OR ASPHALT PAVING IS TO BE APPLIED TO SAID ROUGH-CUT STREETS WITHIN THE 21 DAY PERIOD AFTER COMPLETION OF OVERLOT GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THEN SIXTY (60) DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMP'S SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED.
- THE CONTRACTOR SHALL LOCATE, INSTALL, AND MAINTAIN ALL EROSION CONTROL AND WATER QUALITY "BEST MANAGEMENT PRACTICES" AS INDICATED IN THE APPROVED CONSTRUCTION ACTIVITIES STORMWATER MANAGEMENT PLAN. BMP'S SHALL BE MAINTAINED AND KEPT IN GOOD REPAIR FOR THE DURATION OF THIS PROJECT
- AT A MINIMUM, THE CONTRACTOR SHALL INSPECT, AND KEEP A LOG OF, ALL BMP'S WEEKLY AND AFTER SIGNIFICANT PRECIPITATION EVENTS. ALL NECESSARY MAINTENANCE AND REPAIR SHALL BE COMPLETED IN A TIMELY MANNER. ACCUMULATED SEDIMENT AND DEBRIS SHALL BE REMOVED FROM A BMP WHEN THE SEDIMENT LEVEL REACHES ONE-HALF THE HEIGHT OF THE BMP. OR. AT ANY TIME THAT SEDIMENT OR DEBRIS ADVERSELY IMPACTS THE FUNCTIONING OF THE BMP.
- THE CONTRACTOR SHALL PROPERLY COVER ALL LOADS OF CUT AND FILL MATERIAL IMPORTED TO OR EXPORTED FROM THIS SITE TO PREVENT LOSS OF THE MATERIAL DURING TRANSPORT WITHIN PUBLIC RIGHTS OF WAY.
- THE USE OF REBAR, STEEL STAKES, OR STEEL FENCE POSTS TO STAKE DOWN STRAW OR HAY BALES; OR TO SUPPORT SILT FENCING USED AS AN EROSION CONTROL MEASURE; IS PROHIBITED. THE USE OF OSHA APPROVED COLORED WARNING CAPS ON REBAR OR FENCE POSTS USED WITH EROSION CONTROL MEASURES IS NOT ACCEPTABLE.
- 10. SOILS THAT WILL BE STOCKPILED FOR MORE THAN 30 DAYS SHALL BE MULCHED AND SEEDED WITH A TEMPORARY OR PERMANENT GRASS COVER WITHIN 21 DAYS OF STOCKPILE CONSTRUCTION. IF STOCKPILES ARE LOCATED WITHIN 100 FEET OF A DRAINAGEWAY. ADDITIONAL SEDIMENT CONTROLS SUCH AS TEMPORARY DIKES OR SILT FENCE SHALL BE REQUIRED.
- 11. MODIFICATION OF AN ACTIVE EROSION AND SEDIMENT CONTROL PERMIT BY THE CONTRACTOR SHALL REQUIRE TIMELY NOTIFICATION OF AND APPROVAL BY EL PASO COUNTY. TERMINATION OF AN ACTIVE EROSION AND SEDIMENT CONTROL PERMIT UPON COMPLETION OF THE PROJECT REQUIRES NOTIFICATION OF AND APPROVAL BY EL PASO COUNTY.
- 12. UNLESS CONFINED IN A PREDEFINED, BERMED CONTAINMENT AREA, THE CLEANING OF CONCRETE TRUCK DELIVERY CHUTES IS PROHIBITED AT THE JOB SITE. THE DISCHARGE OF WATER CONTAINING WASTE CEMENT TO THE STORM SEWER SYSTEM IS PROHIBITED.
- 13. THE CONTRACTOR SHALL PROTECT ALL STORM SEWER FACILITIES ADJACENT TO ANY LOCATION WHERE PAVEMENT CUTTING OPERATIONS INVOLVING WHEEL CUTTING, SAW CUTTING OR ABRASIVE WATER JET CUTTING ARE TO TAKE PLACE. THE DISCHARGE OF ANY WATER CONTAMINATED BY WASTE PRODUCTS FROM CUTTING OPERATIONS TO THE STORM SEWER SYSTEM IS PROHIBITED. THE CONTRACTOR SHALL REMOVE AND PROPERLY DISPOSE OF ALL WASTE PRODUCTS GENERATED BY SAID CUTTING OPERATIONS ON A DAILY BASIS.
- 14. LOCATION OF STAGING, STORAGE, EQUIPMENT MAINTENANCE, TEMPORARY DISPOSAL, VEHICLE TRACKING CONTROL AND CONCRETE TRUCK WASHOUT AREAS WILL BE DETERMINED IN THE FIELD AT THE START OF CONSTRUCTION ACTIVITY AND DELINEATED ON THIS PLAN.

TYPICAL ROADWAY CROSS SECTIONS



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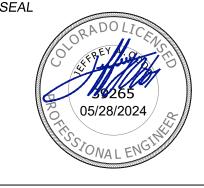
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ASSUMED TO BEAR S89°54'42"W, A DISTANCE OF 2,627.78 FEET.

Excellence by Design



FOR AND ON BEHALF OF

MATRIX DESIGN GROUP, INC.

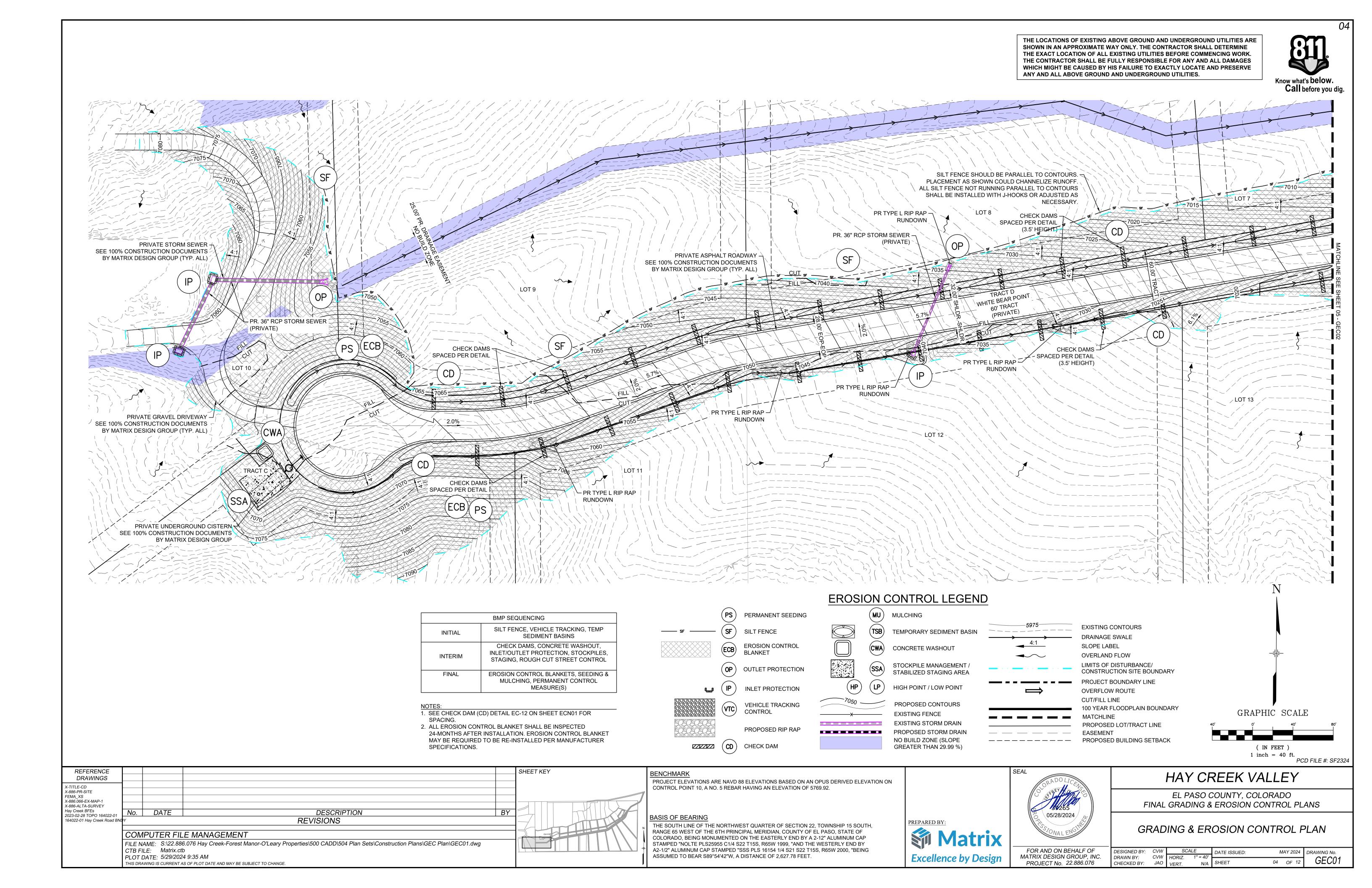
PROJECT No. 22.886.076

HAY CREEK VALLEY

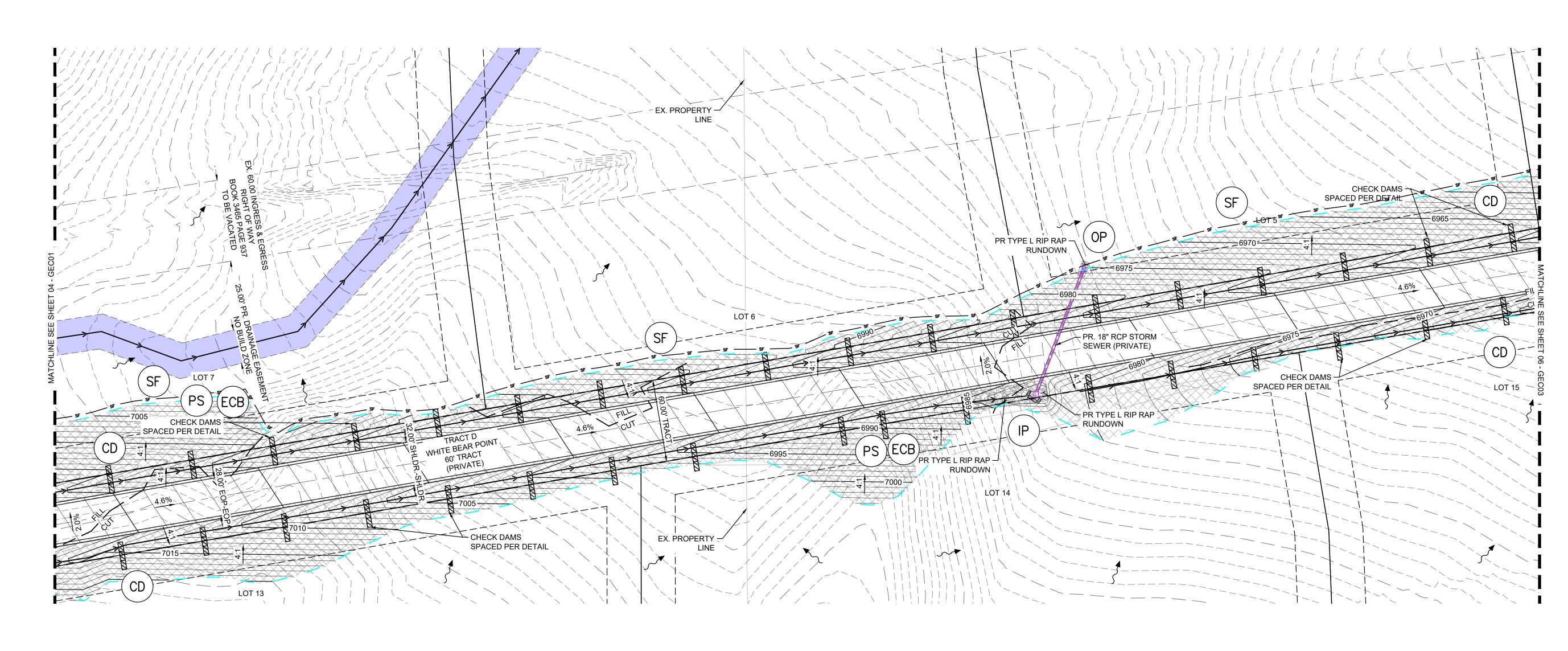
EL PASO COUNTY. COLORADO FINAL GRADING & EROSION CONTROL PLANS

GENERAL NOTES

DESIGNED BY: SCALE MAY 2024 DRAWING No. DATE ISSUED: CVW HORIZ. DRAWN BY: GN02 N/A SHEET 03 OF 12 CHECKED BY: JAO







BMP SEQUENCING						
INITIAL	SILT FENCE, VEHICLE TRACKING, TEMP SEDIMENT BASINS					
INTERIM	CHECK DAMS, CONCRETE WASHOUT, INLET/OUTLET PROTECTION, STOCKPILES, STAGING, ROUGH CUT STREET CONTROL					
FINAL	EROSION CONTROL BLANKETS, SEEDING & MULCHING, PERMANENT CONTROL MEASURE(S)					

NOTES: 1. SEE CHECK DAM (CD) DETAIL EC-12 ON SHEET ECN01 FOR

2. ALL EROSION CONTROL BLANKET SHALL BE INSPECTED 24-MONTHS AFTER INSTALLATION. EROSION CONTROL BLANKET MAY BE REQUIRED TO BE RE-INSTALLED PER MANUFACTURER SPECIFICATIONS.

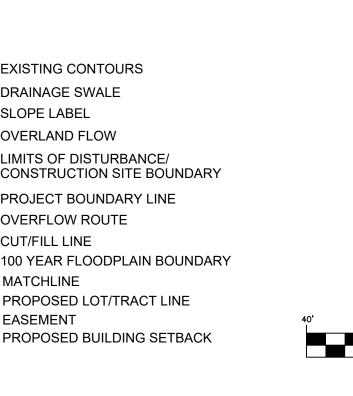
	PS	PERMANENT SEEDING	
SF	SF	SILT FENCE	
	ECB	EROSION CONTROL BLANKET	
	(OP)	OUTLET PROTECTION	
		INLET PROTECTION	
	VTC	VEHICLE TRACKING CONTROL	-
		PROPOSED RIP RAP	

	CWA	CONCRETE WASHOUT
1	SSA	STOCKPILE MANAGEMENT / STABILIZED STAGING AREA
	HP LP	HIGH POINT / LOW POINT
	7050	PROPOSED CONTOURS
	X	EXISTING FENCE
		EXISTING STORM DRAIN
		PROPOSED STORM DRAIN
		NO BUILD ZONE (SLOPE GREATER THAN 29.99 %)

EROSION CONTROL LEGEND

(MU) MULCHING

WOLCHING		
TEMPORARY SEDIMENT BASIN	5975	EXISTING CONTOURS
TEINIT OTAINT SEDIMENT BASIN		DRAINAGE SWALE
CONCRETE WASHOUT	4:1	SLOPE LABEL
	~ ~~	OVERLAND FLOW
STOCKPILE MANAGEMENT / STABILIZED STAGING AREA		LIMITS OF DISTURBANG CONSTRUCTION SITE E
HIGH POINT / LOW POINT	$\stackrel{-}{\Longrightarrow}$	PROJECT BOUNDARY LOVERFLOW ROUTE
PROPOSED CONTOURS		CUT/FILL LINE 100 YEAR FLOODPLAIN
EXISTING FENCE		MATCHLINE
EXISTING STORM DRAIN		PROPOSED LOT/TRACT
PROPOSED STORM DRAIN		EASEMENT
NO BUILD ZONE (SLOPE GREATER THAN 29 99 %)		PROPOSED BUILDING



	GRA	APHIC	C SC	ALE	
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	1	(IN I	= 40 ft	:. SD FILE #: SF2	324

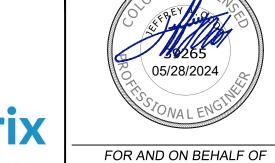
REFERENCE DRAWINGS					SHEET KEY
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	FILE N.	AME: S:\22.88			

THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

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Excellence by Design

MATRIX DESIGN GROUP, INC.

PROJECT No. 22.886.076

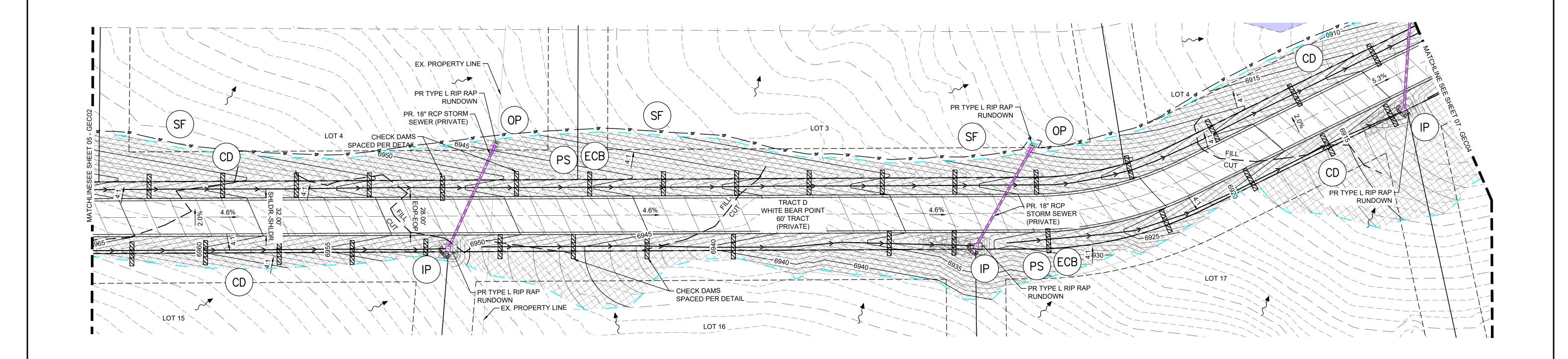
HAY CREEK VALLEY

EL PASO COUNTY, COLORADO FINAL GRADING & EROSION CONTROL PLANS

-								
	DESIGNED BY:	CVW CVW		ALE 1" = 40'	DATE ISSUED:	M	AY 2024	DRAWING No.
	DRAWN BY: CHECKED BY:	JAO	HORIZ. VERT.	N/A	SHEET	05	OF 12	GEC02

THE LOCATIONS OF EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK. THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE CAUSED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL ABOVE GROUND AND UNDERGROUND UTILITIES.



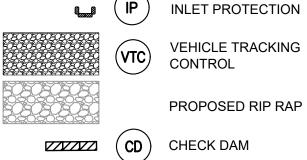


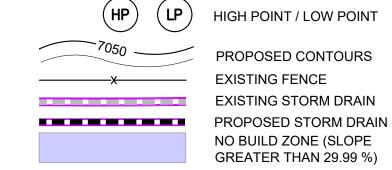
	BMP SEQUENCING
INITIAL	SILT FENCE, VEHICLE TRACKING, TEMP SEDIMENT BASINS
INTERIM	CHECK DAMS, CONCRETE WASHOUT, INLET/OUTLET PROTECTION, STOCKPILES, STAGING, ROUGH CUT STREET CONTROL
FINAL	EROSION CONTROL BLANKETS, SEEDING & MULCHING, PERMANENT CONTROL MEASURE(S)

1. SEE CHECK DAM (CD) DETAIL EC-12 ON SHEET ECN01 FOR

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	PS	PERMANENT SEEDING
SF	SF	SILT FENCE
	ECB	EROSION CONTROL BLANKET
	(OP)	OUTLET PROTECTION





EROSION CONTROL LEGEND

MULCHING

CONCRETE WASHOUT

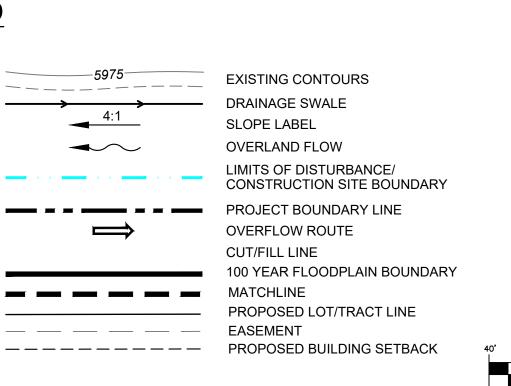
Excellence by Design

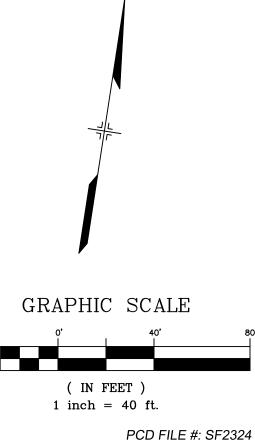
STOCKPILE MANAGEMENT /

STABILIZED STAGING AREA

(MU)

-5975-TEMPORARY SEDIMENT BASIN 4:1 _ _ _ _ _ _ _





REFERENCE DRAWINGS					SHEET KEY	
X-TITLE-CD X-886-PR-SITE FEMA_XS X-886.066-EX-MAP-1 X-886-ALTA-SURVEY Hay Creek BFEs 2023-02-28 TOPO 164022-01	No.	DATE	DESCRIPTION	BY		7
164022-01 Hay Creek Road BNL	СОМ		REVISIONS E MANAGEMENT .076 Hay Creek-Forest Manor-O'Leary Properties\500 CADD\504 Plan Sets\Construction Plans\GEC Plan\GEC01.dwg			N

CTB FILE: Matrix.ctb

PLOT DATE: 5/29/2024 9:35 AM

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05/28/2024
ONAL ENGINEER

FOR AND ON BEHALF OF

MATRIX DESIGN GROUP, INC.

PROJECT No. 22.886.076

GRADING & EROSION CONTROL DI ANI

DESIGNED BY:

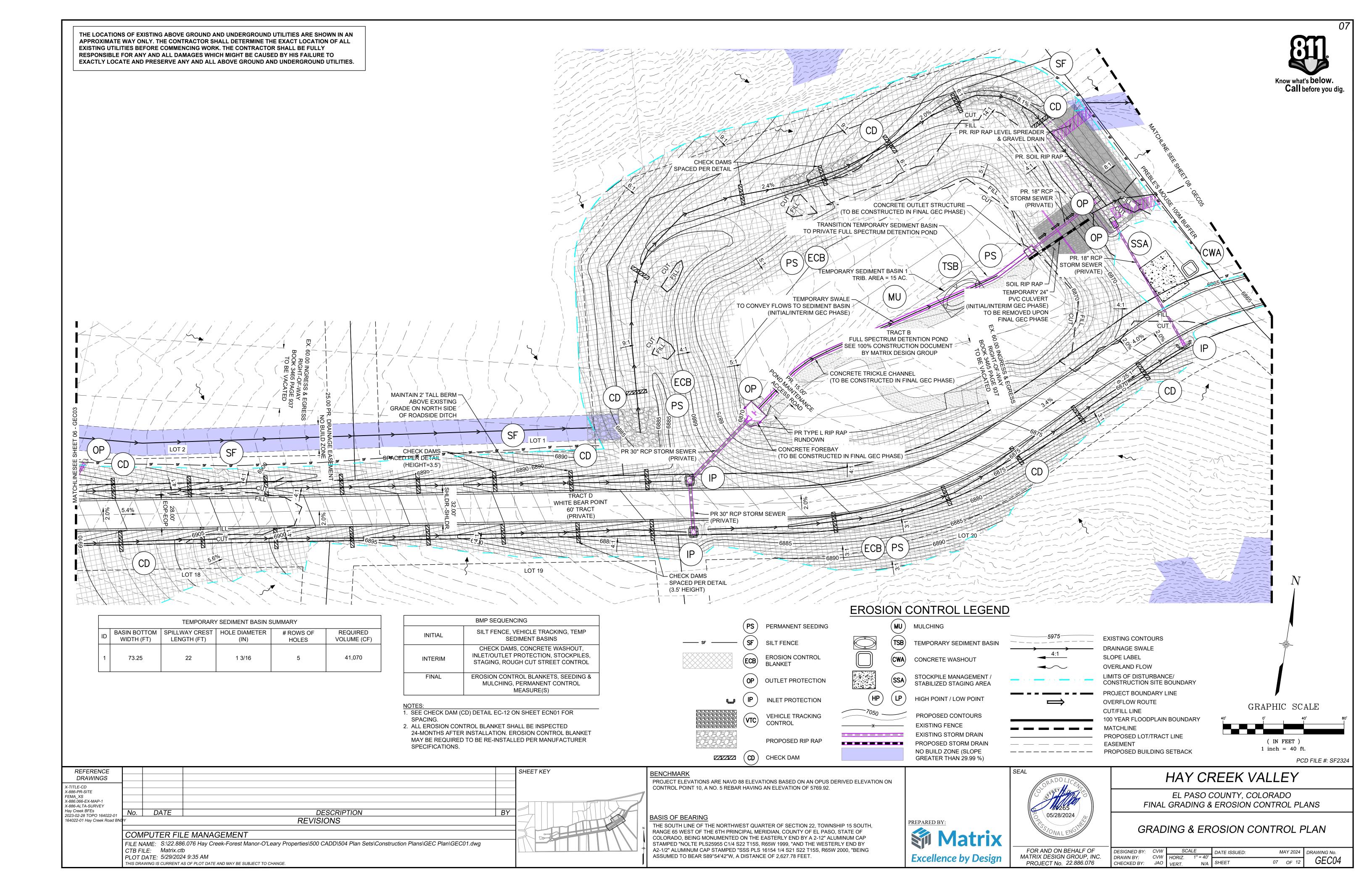
DRAWN BY:

HAY CREEK VALLEY	
EL PASO COUNTY, COLORADO	

FINAL GRADING & EROSION CONTROL PLANS

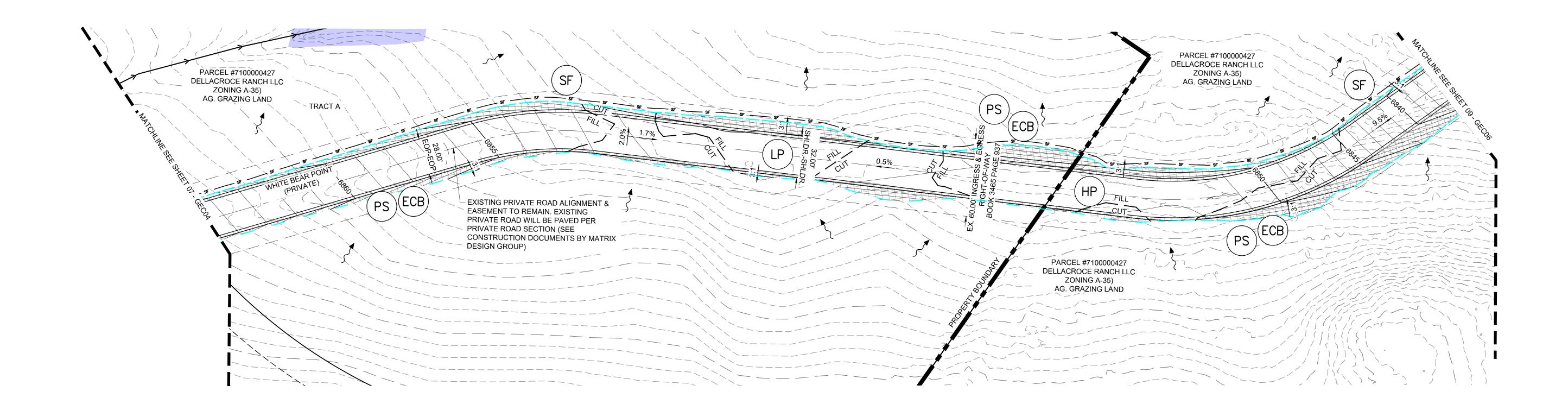
RADING	& ERUSION	CONTROL PLAN	

′ :	CVW	SCALE		DATE ISSUED:	MAY 2024		DRAWING No.
	CVW	HORIZ.	1" = 40'				CEC02
:	JAO	VERT.	N/A	SHEET	06	OF 12	GECUS



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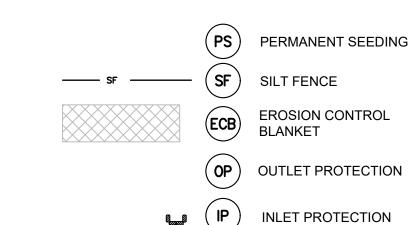


BMP SEQUENCING				
INITIAL	SILT FENCE, VEHICLE TRACKING, TEMP SEDIMENT BASINS			
INTERIM	CHECK DAMS, CONCRETE WASHOUT, INLET/OUTLET PROTECTION, STOCKPILES, STAGING, ROUGH CUT STREET CONTROL			
FINAL	EROSION CONTROL BLANKETS, SEEDING & MULCHING, PERMANENT CONTROL MEASURE(S)			

NOTES:
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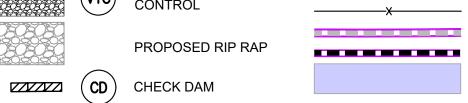
SPACING.

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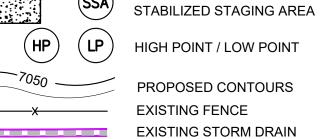


VEHICLE TRACKING CONTROL



EROSION CONTROL LEGEND (MU) MULCHING

TEMPORARY SEDIMENT BASIN CONCRETE WASHOUT STOCKPILE MANAGEMENT

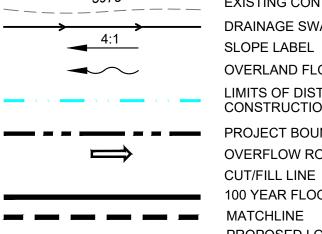


PROPOSED STORM DRAIN

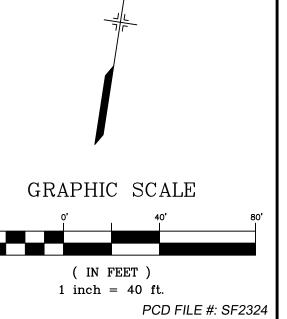
NO BUILD ZONE (SLOPE

GREATER THAN 29.99 %)

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EXISTING CONTOURS DRAINAGE SWALE OVERLAND FLOW LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY PROJECT BOUNDARY LINE **OVERFLOW ROUTE** 100 YEAR FLOODPLAIN BOUNDARY PROPOSED LOT/TRACT LINE



REFERENCE					SHEET KEY
DRAWINGS					_
X-TITLE-CD					
X-886-PR-SITE FEMA XS					
X-886.066-EX-MAP-1					
X-886-ALTA-SURVEY Hay Creek BFEs	No	DATE	DECORIDATION	DV	
2023-02-28 TOPO 164022-01	No.	DATE	DESCRIPTION	BY	
164022-01 Hay Creek Road BNI	Y		REVISIONS		
	CON/	יחודרם בוו ו			N N
	COM	IPU I ER FILE	E MANAGEMENT		
	FILEN	AME: S:\22 886	076 Hay Creek-Forest Manor-O'l eary Properties\500 CADD\504 Plan Sets\Construction Plans\GEC Plan\GEC01 dwg		

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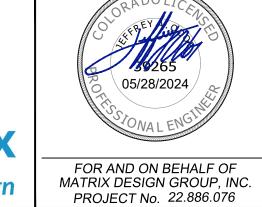
PLOT DATE: 5/29/2024 9:35 AM

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_ _ _ _ _ _ _

EASEMENT

---- PROPOSED BUILDING SETBACK

FINAL GRADING & EROSION CONTROL PLANS

GRADING & EROSION CONTROL PLAN

HAY CREEK VALLEY

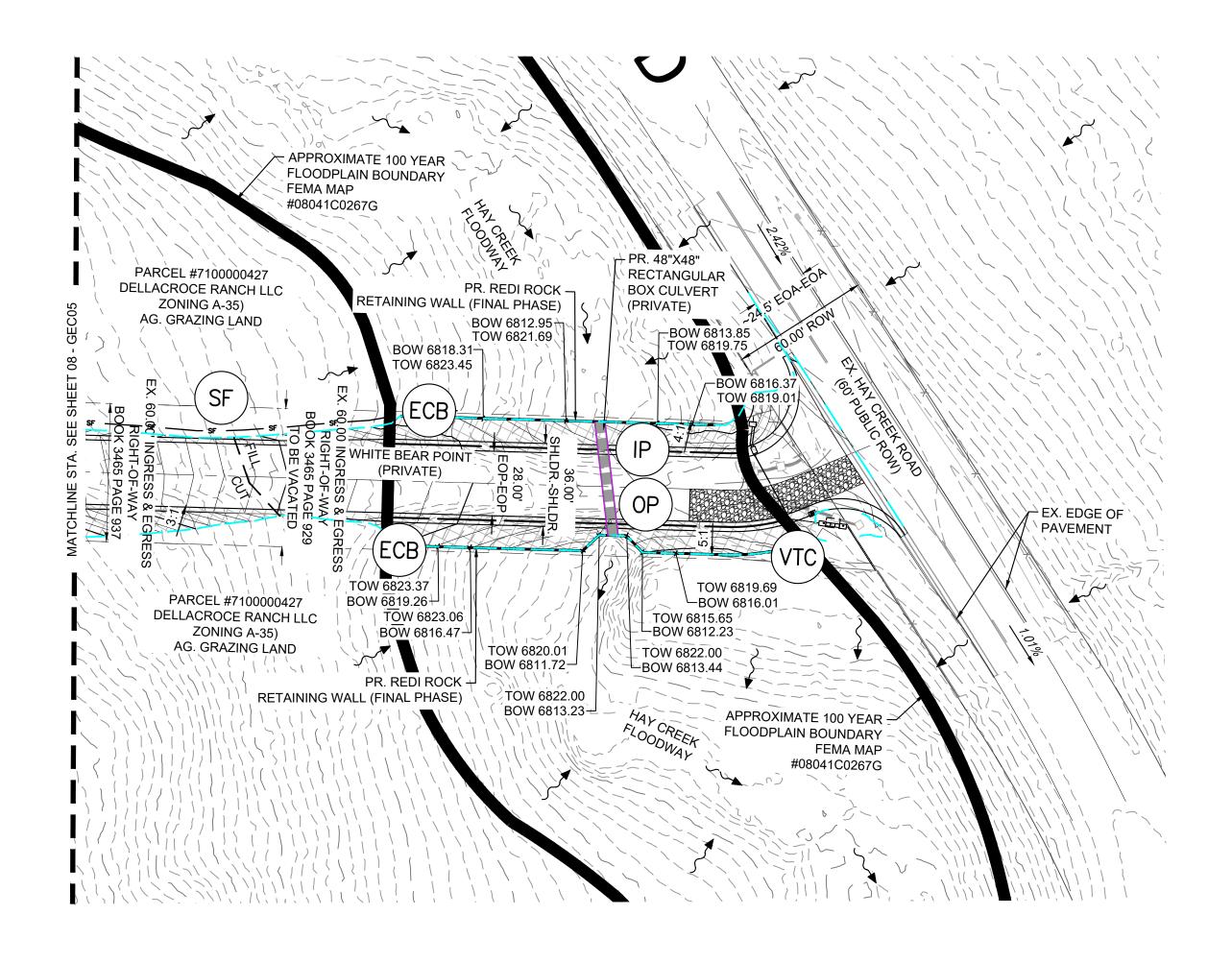
EL PASO COUNTY, COLORADO

DESIGNED BY:	CVW		ALE	DATE ISSUED:	MAY 2024	DRAWING No.
DRAWN BY:	CVW	HORIZ.	1" = 40'			CECOE

BY:	CVW	SCA	4LE	DATE ISSUED:	М	AY 2024	DRAWING No.
' :	CVW	HORIZ.	1" = 40'				CECOE
BY:	JAO	VERT.	N/A	SHEET	08	OF 12	GECUS

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	BMP SEQUENCING
INITIAL	SILT FENCE, VEHICLE TRACKING, TEMP SEDIMENT BASINS
INTERIM	CHECK DAMS, CONCRETE WASHOUT, INLET/OUTLET PROTECTION, STOCKPILES, STAGING, ROUGH CUT STREET CONTROL
FINAL	EROSION CONTROL BLANKETS, SEEDING & MULCHING, PERMANENT CONTROL MEASURE(S)

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PERMANENT SEEDING SILT FENCE **EROSION CONTROL** BLANKET OUTLET PROTECTION **INLET PROTECTION** VEHICLE TRACKING

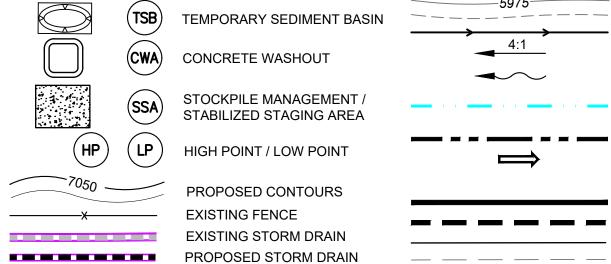
CONTROL

(CD) CHECK DAM

PROPOSED RIP RAP

EROSION CONTROL LEGEND

(MU) MULCHING



NO BUILD ZONE (SLOPE

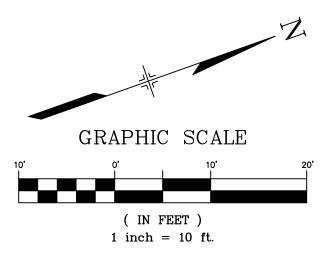
GREATER THAN 29.99 %)

PREPARED BY:

DRAINAGE SWALE SLOPE LABEL OVERLAND FLOW LIMITS OF DISTURBANCE/ CONSTRUCTION SITE BOUNDARY PROJECT BOUNDARY LINE OVERFLOW ROUTE CUT/FILL LINE 100 YEAR FLOODPLAIN BOUNDARY MATCHLINE PROPOSED LOT/TRACT LINE **EASEMENT**

---- PROPOSED BUILDING SETBACK

EXISTING CONTOURS



PCD FILE #: SF2324

REFERENCE DRAWINGS				SHEET KEY
X-TITLE-CD X-886-PR-SITE FEMA_XS X-886.066-EX-MAP-1 X-886-ALTA-SURVEY Hay Creek BFEs 2023-02-28 TOPO 164022-01 164022-01 Hay Creek Road BN	COM FILE N CTB FI PLOT I	AME: S:\22.886. ILE: Matrix.ctb DATE: 5/29/2024	BY	

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FINAL GRADING & EROSION CONTROL PLANS

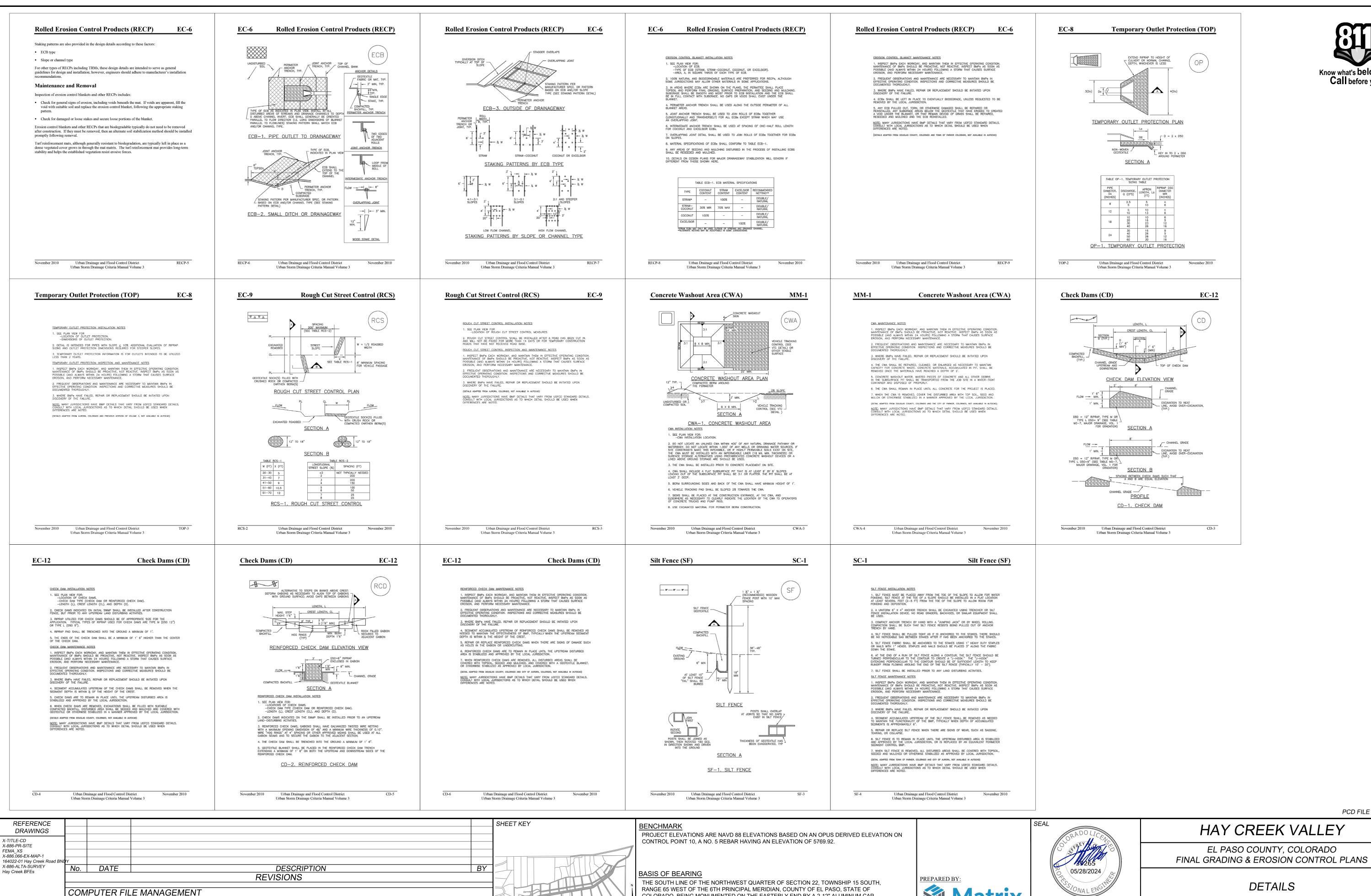
GRADING & FROSION CONTROL PLAN

HAY CREEK VALLEY

EL PASO COUNTY, COLORADO

CIVIDING & ENCOPORT CONTINUE EXIV

- 1									
	DESIGNED BY:	CVW	SCALE		DATE ISSUED:	MAY 2024		DRAWING No.	
	DRAWN BY:	CVW	HORIZ.	1" = 40'				GFC06	
	CHECKED BY:	JAO	VERT.	N/A	SHEET	09	OF 12	GECUO	



FILE NAME: S:\22.886.076 Hay Creek-Forest Manor-O'Leary Properties\500 CADD\504 Plan Sets\Construction Plans\GEC Plan\ECN01.dwg

CTB FILE: Matrix.ctb

PLOT DATE: 5/29/2024 9:35 AM

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COLORADO, BEING MONUMENTED ON THE EASTERLY END BY A 2-12" ALUMINUM CAP

STAMPED "NOLTE PLS25955 C1/4 S22 T15S, R65W 1999, "AND THE WESTERLY END BY A2-1/2" ALUMINUM CAP STAMPED "SSS PLS 16154 1/4 S21 S22 T15S, R65W 2000, "BEING

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PCD FILE #: SF2324

Know what's below.

Call before you dig.

SCALE DATE ISSUED:

FOR AND ON BEHALF OF

MATRIX DESIGN GROUP, INC.

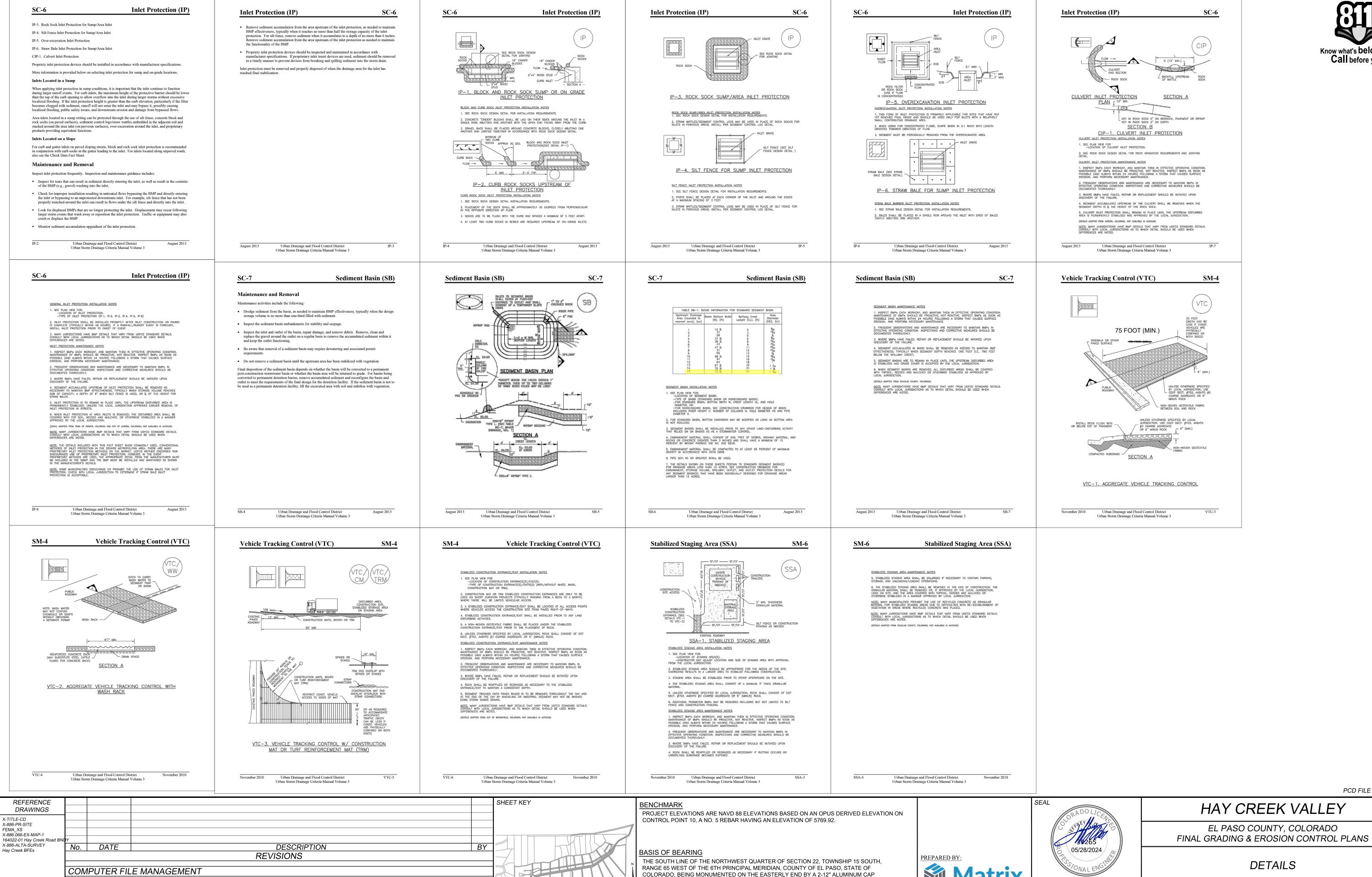
PROJECT No. 22.886.076

Excellence by Design

DESIGNED BY:

DRAWN BY:

MAY 2024 DRAWING No. CVW HORIZ. ECN01 _{N/A} SHEET 10 OF 12 CHECKED BY: JAO



STAMPED "NOLTE PLS25955 C1/4 S22 T15S, R65W 1999, "AND THE WESTERLY END BY A2-1/2" ALUMINUM CAP STAMPED "SSS PLS 16154 1/4 S21 S22 T15S, R65W 2000, "BEING

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X-TITLE-CD

FEMA XS

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PCD FILE #: SF2324

MAY 2024 DRAWING No.

11 OF 12

ECN02

FOR AND ON BEHALF OF

MATRIX DESIGN GROUP, INC.

PROJECT No. 22.886.076

Excellence by Design

DESIGNED BY:

CHECKED BY: JAO VERT.

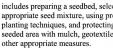
DRAWN BY:

SCALE

CVW HORIZ.

DATE ISSUED:

_{N/A} | SHEET



Appropriate Uses

When the soil surface is disturbed and period (typically determined by local

Photograph TS/PS -1. Equipment used to drill seed. Photo courtesy of Douglas County. government requirements), proactive stabilization measures, including planting a temporary seed mix, should be implemented. If the ina-period is short-lived (on the order of two weeks), techniques such as surface roughening may be porary seed mix, should be implemented. If the inactive appropriate. For longer periods of inactivity of up to one year, temporary seeding and mulching can osion control. Permanent seeding should be used on finished areas that have not been

The USDCM Volume 2 Revegetation Chapter contains suggested annual grains and native seed mixes to use for temporary seeding. Alternatively, local governments may have their own seed mixes and timelines for seeding. Check jurisdictional requirements for seeding and temporary stabilization.

Design and Installation

Effective seeding requires proper seedbed preparation, selecting an appropriate seed mixture, using appropriate seeding equipment to ensure proper coverage and density, and protecting seeded areas with mulch or fabric until plants are established.

The USDCM Volume 2 Revegetation Chapter contains detailed seed mixes, soil preparation practices, and seeding and mulching recommendations that should be referenced to supplement this Fact Sheet.

Drill seeding is the preferred seeding method. Hydroseeding is not recommended except in areas where steep slopes prevent use of drill seeding equipment, and even in these instances it is preferable to hand seed and mulch. Some jurisdictions do not allow

Temporary and Permanent Seeding

Mulching (MU)

hydroseeding or hydromulching.

Functions Prior to seeding, ensure that areas to be revegetated have Erosion Control Yes soil conditions capable of supporting vegetation. Overlot grading can result in loss of topsoil and compaction, resulting in poor quality subsoils at the ground surface that

have to be weighted to afford proper soil penetration.

of mulch. (See the ECM/TRM BMP for more information

for more information on general types of tackifiers.)

Maintenance and Removal

needed, to cover bare areas.

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

Clean, weed-free and seed-free cereal grain straw should be applied evenly at a rate of 2 tons per acre and must be tacked or fastened by a method suitable for the condition of the site. Straw mulch must be anchored (and not merely placed) on the surface. This can be accomplished mechanically by crimping or with the aid of tackifiers or nets. Anchoring with a crimping implement is preferred, and is the recommended method for areas flatter than 3:1. Mechanical crimpers must be capable of tucking the long mulch fibers into the soil to a depth of 3 inches without cutting them. An agricultural disk, while not an ideal substitute, may work if the disk blades are dull or blunted and set vertically; however, the frame may

 Grass hay may be used in place of straw; however, because hay is comprised of the entire plant including seed, mulching with hay may seed the site with non-native grass species which might in turn out-compete the native seed. Alternatively, native species of grass hay may be purchased, but can be difficult to find and are more expensive than straw. Purchasing and utilizing a certified weed-free straw is an easier and less costly mulching method. When using grass hay, follow the same guidelines as for straw (provided On small areas sheltered from the wind and heavy runoff, spraying a tackifier on the mulch is satisfactory for holding it in place. For steep slopes and special situations where greater control is needed, erosion control blankets anchored with stakes should be used instead of mulch. Hydraulic mulching consists of wood cellulose fibers mixed with water and a tackifying agent and should be applied at a rate of no less than 1,500 pounds per acre (1,425 lbs of fibers mixed with at least 75 lbs of tackifier) with a hydraulic mulcher. For steeper slopes, up to 2000 pounds per acre may be required for effective hydroseeding. Hydromulch typically requires up to 24 hours to dry; therefore, it should not be applied immediately prior to inclement weather. Application to roads, waterways and existing vegetation Erosion control mats, blankets, or nets are recommended to help stabilize steep slopes (generally 3:1 and steeper) and waterways. Depending on the product, these may be used alone or in conjunction with grass or straw mulch. Normally, use of these products will be restricted to relatively small areas. Biodegradable mats made of straw and jute, straw-coconut, coconut fiber, or excelsior can be used instead

 Some tackifiers or binders may be used to anchor mulch. Check with the local jurisdiction for allowed tackifiers. Manufacturer's recommendations should be followed at all times. (See the Soil Binder BMP

 Rock can also be used as mulch. It provides protection of exposed soils to wind and water erosion and allows infiltration of precipitation. An aggregate base course can be spread on disturbed areas for temporary or permanent stabilization. The rock mulch layer should be thick enough to provide full coverage of exposed soil on the area it is applied.

After mulching, the bare ground surface should not be more than 10 percent exposed. Reapply mulch, as

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

EC-2 Temporary and Permanent Seeding (TS/PS)

have low nutrient value, little organic matter content, few soil microorganisms, rooting restrictions, and conditions less conducive to infiltration of precipitation. As a result, it is typically necessary to provide stockpiled topsoil, compost, or other soil amendments and rototill them into the soil to a depth of 6 inches

Topsoil should be salvaged during grading operations for use and spread on areas to be revegetated later. Topsoil should be viewed as an important resource to be utilized for vegetation establishment, due to its water-holding capacity, structure, texture, organic matter content, biological activity, and nutrient content. The rooting depth of most native grasses in the semi-arid Denver metropolitan area is 6 to 18 inches. If present, at a minimum of the upper 6 inches of topsoil should be stripped, stockpiled, and ultimately spread across areas that will be revegetated.

Where topsoil is not available, subsoils should be amended to provide an appropriate plant-growth medium. Organic matter, such as well digested compost, can be added to improve soil characteristics conducive to plant growth. Other treatments can be used to adjust soil pH conditions when needed. Soil testing, which is typically inexpensive, should be completed to determine and optimize the types and amounts of amendments that are required.

If the disturbed ground surface is compacted, rip or rototill the upper 12 inches of the surface prior to placing topsoil. If adding compost to the existing soil surface, rototilling is necessary. Surface roughening will assist in placing a stable topsoil layer on steeper slopes, and allow infiltration and root enetration to greater depth. Topsoil should not be placed when either the salvaged topsoil or receiving

Prior to seeding, the soil surface should be rough and the seedbed should be firm, but neither too loose nor compacted. The upper layer of soil should be in a condition suitable for seeding at the proper depth and conducive to plant growth. Seed-to-soil contact is the key to good germination.

Refer to MHFD's Topsoil Management Guidance for detailed information on topsoil assessment, design,

To provide temporary vegetative cover on disturbed areas which will not be paved, built upon, or fully landscaped or worked for an extended period (typically 30 days or more), plant an annual grass appropriate for the time of planting and mulch the planted areas. Temporary grain seed mixes suitable for the Denver metropolitan area are listed in Table TS/PS-1. Native temporary seed mixes are provided in USDCM Volume 2, Chapter 13, Appendix A. These are to be considered only as general recommendations when specific design guidance for a particular site is not available. Local governments typically specify seed mixes appropriate for their jurisdiction.

Temporary Vegetation

To provide vegetative cover on disturbed areas that have reached final grade, a perennial grass mix should be established. Permanent seeding should be performed promptly (typically within 14 days) after reaching final grade. Each site will have different characteristics and a landscape professional or the local jurisdiction should be contacted to determine the most suitable seed mix for a specific site. In lieu of a specific recommendation, one of the perennial grass mixes appropriate for site conditions and growth season listed in seed mix tables in the USDCM Volume 2 *Revegetation* Chapter can be used. The pure live seed (PLS) rates of application recommended in these tables are considered to be absolute minimum rates for seed applied using proper drill-seeding equipment. These are to be considered only as general

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Temporary and Permanent Seeding (TS/PS) EC-2

recommendations when specific design guidance for a particular site is not available. Local governments typically specify seed mixes appropriate for their jurisdiction

If desired for wildlife habitat or landscape diversity, shrubs such as rubber rabbitbrush (Chrysothamnus nauseosus), fourwing saltbush (Atriplex canescens) and skunkbrush sumac (Rhus trilobata) could be added to the upland seed mixes at 0.25, 0.5 and 1 pound PLS/acre, respectively. In riparian zones, planting root stock of such species as American plum (*Prunus americana*), woods rose (*Rosa woodsii*), plains cottonwood (*Populus sargentii*), and willow (*Salix spp.*) may be considered. On non-topsoiled upland sites, a legume such as Ladak alfalfa at 1 pound PLS/acre can be included as a source of nitrogen

Timing of seeding is an important aspect of the revegetation process. For upland and riparian areas on the Colorado Front Range, the suitable timing for seeding is from October through May. The most favorable time to plant non-irrigated areas is during the fall, so that seed can take advantage of winter and spring moisture. Seed should not be planted if the soil is frozen, snow covered, or wet.

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-2 for appropriate seeding dates.

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EC-2 Temporary and Permanent Seeding (TS/PS)

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

^a Successful seeding of annual grass resulting in adequate plant growth will usually produce enough dead-plant residue to provide protection from

wind and water erosion for an additional year. This assumes that the cover

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

^b See Table TS/PS-2 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.

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is not disturbed or mowed closer than 8 inches.

		Pounds of	Planting
Species ^a	Growth	Pure Live Seed	Depth
(Common name)	Season	(PLS)/acre ^c	(inches)
1. Oats	Cool	35 - 50	1 - 2
Spring wheat	Cool	25 - 35	1 - 2
Spring barley	Cool	25 - 35	1 - 2
Annual ryegrass	Cool	10 - 15	1/2
5. Millet	Warm		1/2 - 3/4
		3 - 15	
6. Winter wheat	Cool	20–35	1 - 2
Winter barley	Cool	20-35	1 - 2
8. Winter rye	Cool	20–35	1 - 2
9. Triticale	Cool	25-40	1 - 2

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 USDCM Volume 2 Revegetation Chapter and Volume 3 Mulching BMP Fact Sheet (EC-04) for additional

Temporary and Permanent Seeding (TS/PS) EC-2

Table TS/PS-2. Seeding Dates for Annual and Perennial Grasses

Maintenance and Removal

Monitor and observe seeded areas to identify areas of poor growth or areas that fail to germinate. Reseed

If a temporary annual seed was planted, the area should be reseeded with the desired perennial mix when there will be no further work in the area. To minimize competition between annual and perennial species the annual mix needs time to mature and die before seeding the perennial mix. To increase success of the perennial mix, it should be seeded during the appropriate seeding dates the second year after the temporary annual mix was seeded. Alternatively, if this timeline is not feasible, the annual mix seed heads should be removed and then the area seeded with the perennial mix.

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.

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Mulching (MU)

Description

Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and securing the mulch by crimping, tackifier netting or other measures. Mulching helps reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff. Although often applied in conjunction with temporary or permanent seeding, it can also be used for temporary reseeded due to seasonal constraints.

Mulch can be applied either using



EC-4

standard mechanical dry application methods or using hydromulching equipment

Photograph MU-1. An area that was recently seeded, mulched, and crimmed that hydraulically applies a slurry of water,

Use mulch in conjunction with seeding to help protect the seedbed and stabilize the soil. Mulch can also be used as a temporary cover on low to mild slopes to help temporarily stabilize disturbed areas where growing season constraints prevent effective reseeding. Disturbed areas should be properly mulched and tacked, or seeded, mulched and tacked promptly after final grade is reached (typically within no longer than 14 days) on portions of the site not otherwise permanently stabilized.

Standard dry mulching is encouraged in most jurisdictions; however, hydromulching may not be allowed in certain jurisdictions or may not be allowed near waterways

Design and Installation

sites. Consider the following:

Prior to mulching, surface-roughen areas by rolling with a crimping or punching type roller or by track walking. Track walking should only be used where other methods are impractical because track walking

A variety of mulches can be used effectively at construction

Do not apply mulch during windy conditions.



Urban Drainage and Flood Control Distric Urban Storm Drainage Criteria Manual Volume 3 Call before you dig.

REFERENCE DRAWINGS X-TITLE-CD X-886-PR-SITE FEMA XS X-886.066-EX-MAP-1 164022-01 Hay Creek Road BNI X-886-ALTA-SURVEY DESCRIPTION No. DATE Hay Creek BFEs REVISIONS COMPUTER FILE MANAGEMENT FILE NAME: S:\22.886.076 Hay Creek-Forest Manor-O'Leary Properties\500 CADD\504 Plan Sets\Construction Plans\GEC Plan\ECN01.dwg CTB FILE: Matrix.ctb PLOT DATE: 5/29/2024 9:36 AM THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.

SHEET KEY

PROJECT ELEVATIONS ARE NAVD 88 ELEVATIONS BASED ON AN OPUS DERIVED ELEVATION ON CONTROL POINT 10, A NO. 5 REBAR HAVING AN ELEVATION OF 5769.92.

BASIS OF BEARING

THE SOUTH LINE OF THE NORTHWEST QUARTER OF SECTION 22, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN, COUNTY OF EL PASO, STATE OF COLORADO, BEING MONUMENTED ON THE EASTERLY END BY A 2-12" ALUMINUM CAP STAMPED "NOLTE PLS25955 C1/4 S22 T15S, R65W 1999, "AND THE WESTERLY END BY A2-1/2" ALUMINUM CAP STAMPED "SSS PLS 16154 1/4 S21 S22 T15S, R65W 2000, "BEING ASSUMED TO BEAR S89°54'42"W, A DISTANCE OF 2,627.78 FEET.





FOR AND ON BEHALF OF

MATRIX DESIGN GROUP, INC.

PROJECT No. 22.886.076

EL PASO COUNTY, COLORADO FINAL GRADING & EROSION CONTROL PLANS

DETAILS

DESIGNED BY:	CVW	SCALE		DATE ISSUED:	MAY 2024		DRAWING No.
DRAWN BY:	CVW	HORIZ.	N/A				E01100
CHECKED BY:	JAO	VERT.	N/A	SHEET	12	OF 12	L ECNO3
ONEONED DT.	0, 10	VERI.	11//				

PCD FILE #: SF2324 HAY CREEK VALLEY