



Know what's below.
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TRAILS AT ASPEN RIDGE FILING NO.1

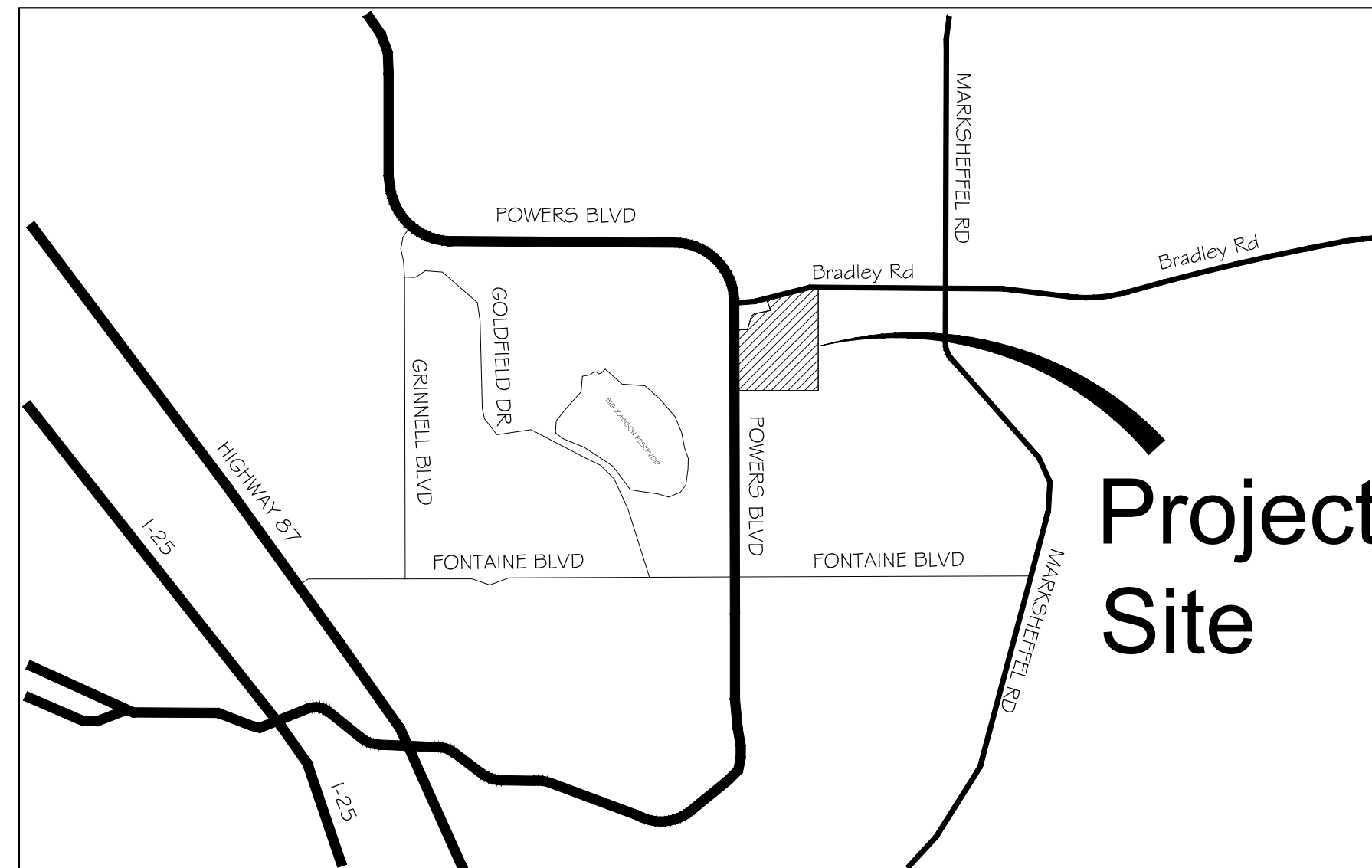
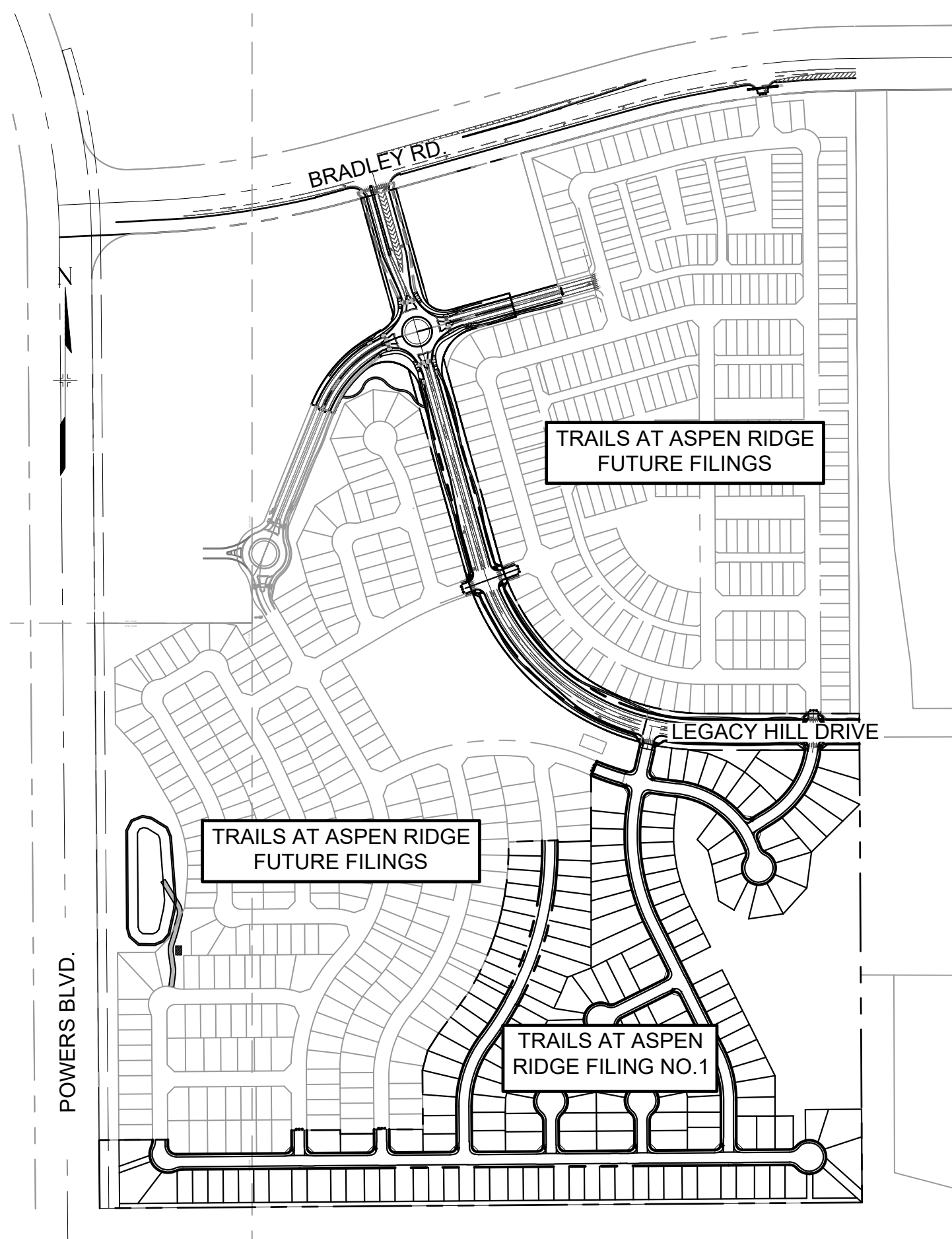
EL PASO COUNTY, CO

FINAL GRADING & EROSION CONTROL PLANS

SEPTEMBER, 2019

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THIS IS AN OVERLOT GRADING AND EROSION CONTROL PLAN ONLY. THIS PLAN DOES NOT REFLECT DETAILED/FINE GRADING ELEMENTS THAT WILL BE PART OF FINAL CONSTRUCTION DOCUMENTS FOR SITE DEVELOPMENT, PAVING OPERATIONS, PLACEMENT OF CURB & GUTTER, AND LANDSCAPING. BUILDING AND PARKING LOT LOCATIONS ARE PROVIDED FOR REFERENCE ONLY AND ARE SUBJECT TO CHANGE.



OWNER'S STATEMENT:

THE OWNER WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

RANDY O'LEARY, PRESIDENT _____ DATE _____

ENGINEER'S STATEMENT:

THIS GRADING AND EROSION CONTROL PLAN WAS PREPARED UNDER MY DIRECTION AND SUPERVISION AND IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. SAID PLAN HAS BEEN PREPARED 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 REPORT.

NICOLE SCHANEL, PE #52434 _____ DATE _____

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 DIRECTORS DISCRETION.

JENNIFER IRVINE, P.E. DATE
COUNTY ENGINEER / ECM ADMINISTRATOR

TRAFFIC CONTROL NOTE:

THE CONTRACTOR SHOULD PROVIDE ALL TRAFFIC CONTROL DEVICES AND MONITORING NECESSARY TO SAFELY COMPLETE THE WORK SHOWN IN THESE CONSTRUCTION DOCUMENTS IN CONFORMANCE WITH M.U.T.C.D. GUIDELINES. THE CONTRACTOR SHALL COMPLETE ALL NECESSARY WORK FOR PLAN REVIEW, PERMITS, AND PROCESSING. TRAFFIC CONTROL WILL NOT BE PAID SEPARATELY BUT IS INCLUDED IN THE COST OF THE PROJECT.

OWNER/DEVELOPER	COLA, LLC 555 MIDDLE CREEK PARKWAY, SUITE 380 COLORADO SPRINGS, CO 80921
CIVIL ENGINEER	MATRIX DESIGN GROUP 2435 RESEARCH PARKWAY, SUITE 300 COLORADO SPRINGS, CO 80920
WATER & SANITARY SEWER	WIDEFIELD WATER AND SANITATION DISTRICT 8495 FONTAINE BOULEVARD COLORADO SPRINGS, CO 80925 ROBERT BANNISTER, (719) 390-7111
ELECTRIC	MOUNTAINVIEW ELECTRIC ASSOCIATION (719) 495-2283
GAS	COLORADO SPRINGS UTILITIES 1521 HANCOCK EXPRESSWAY COLORADO SPRINGS, CO MARY HOAGLUND (719) 668-4083
STREET	EL PASO COUNTY PUBLIC SERVICES DEPARTMENT (719) 520-6460
DRAINAGE	EL PASO COUNTY PUBLIC SERVICES DEPARTMENT (719) 520-6460
FIRE DEPARTMENT	SECURITY FIRE DEPARTMENT 400 SECURITY BOULEVARD SECURITY, CO 80911 (719) 392-7121

BENCHMARK
 COLORADO SPRINGS UTILITIES (FIMS) MONUMENT F206
 A BERNTSEN TOP SECURITY MONUMENT SYSTEM WITH A 3.5-INCH DIAMETER ALUMINUM CAP IN A
 ROAD BOX, LOCATED ON THE NORTHWEST CORNER OF FONTAINE BOULEVARD AND POWERS
 BOULEVARD,
 ELEVATION - 5897.89' U.S. SURVEY FT

BASIS OF BEARING

BEARINGS ARE BASED ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 9, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE 6TH P.M. SAID LINE BEARS S89°51'23"E FROM THE NORTHWEST CORNER OF SAID SECTION 9 (2 1/2" AULM. CAP PLS 17664) TO THE N 1/4 CORNER OF SAID SECTION 9 (3 1/4" AULM. CAP PLS 10377)

PREPARED BY:



SEAL

PRELIMINARY
THIS DRAWING HAS NOT
BEEN APPROVED BY
GOVERNING AGENCIES AND
IS SUBJECT TO CHANGE

FOR AND ON BEHALF OF
MATRIX DESIGN GROUP, INC.
PROJECT No. 19.886.011

DESIGNED BY:	NMS	SCALE	DATE ISSUED:	SEPTEMBER, 2019	DRAWING No. TS01
DRAWN BY:	AAL	HORIZ. N/A	SHEET	1 OF 8	
CHECKED BY:	NMS	VERT. N/A			

TRAILS AT ASPEN RIDGE

FILING NO. 1
FINAL GRADING & EROSION CONTROL PLANS

TITLE SHEET



Know what's below.
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ABBREVIATIONS

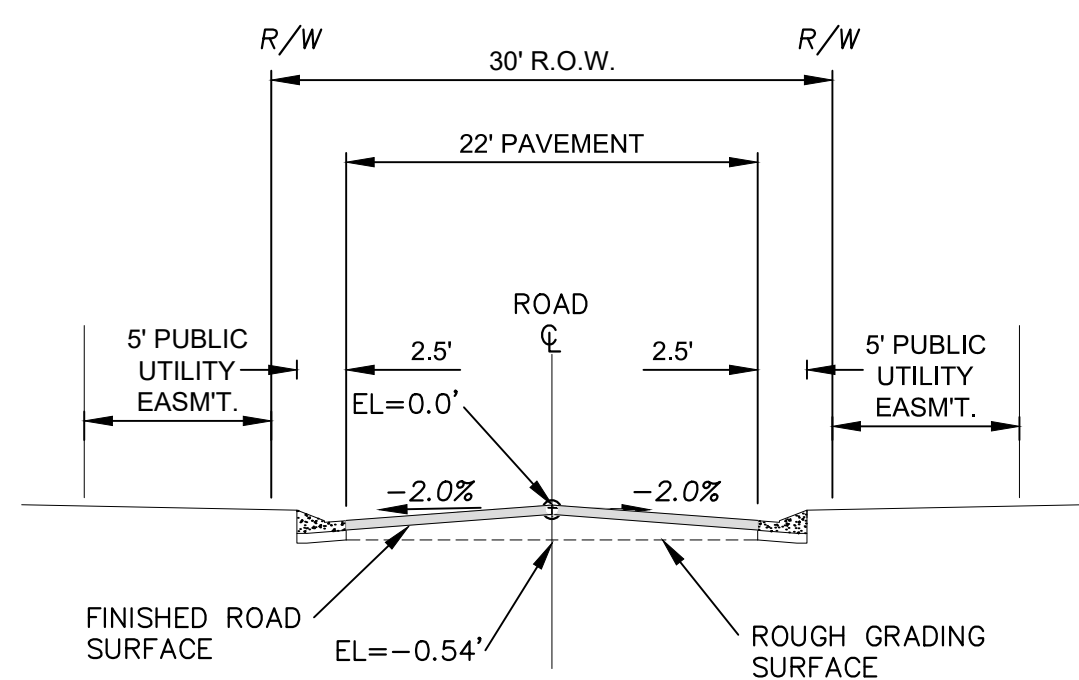
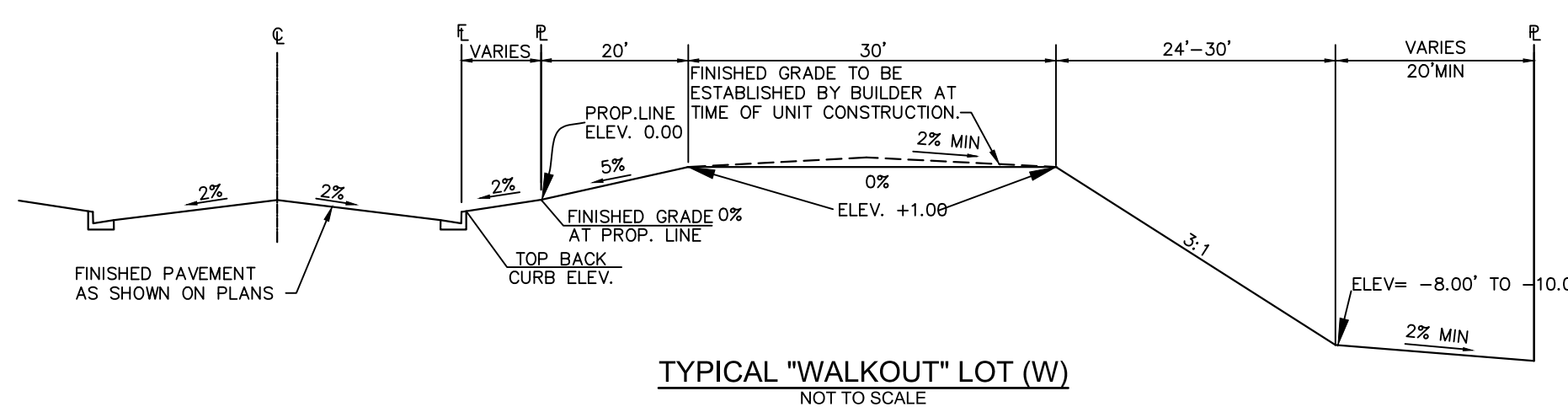
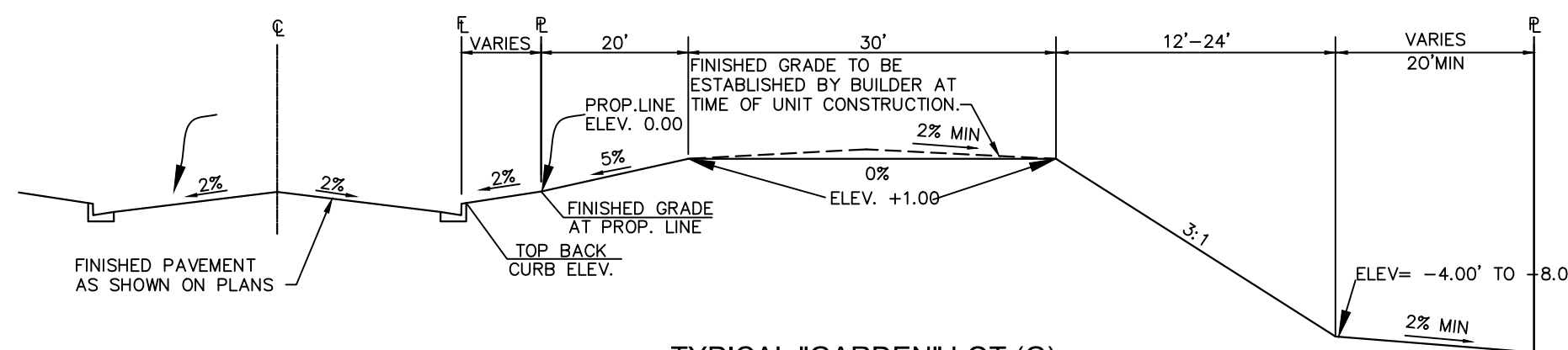
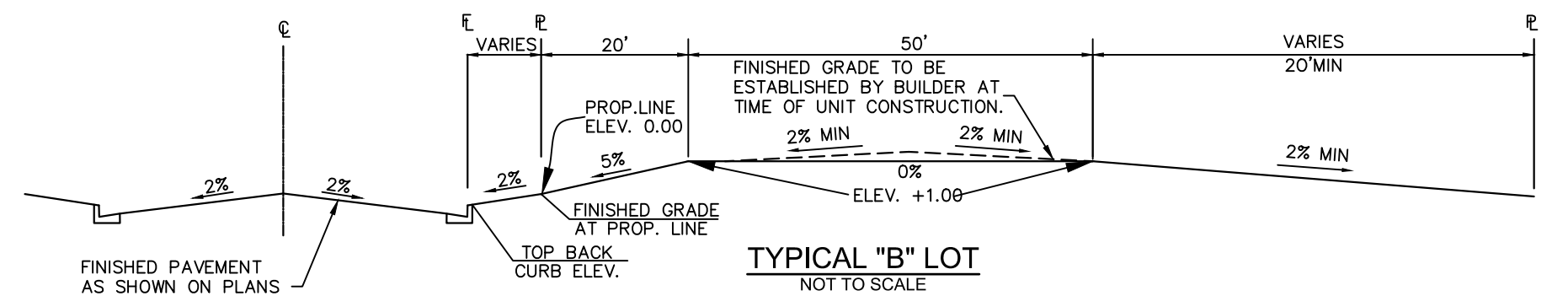
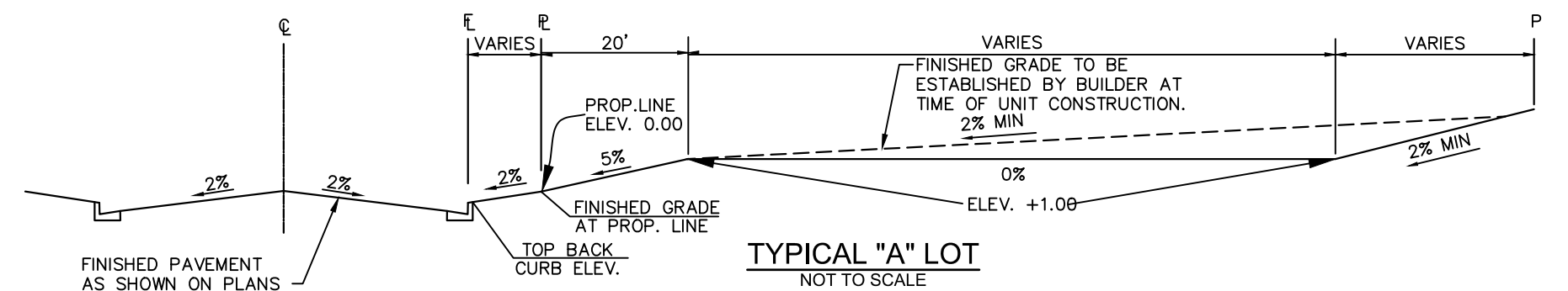
ASSY	ASSEMBLY	MAX	MAXIMUM
ASTM	AMERICAN SOCIETY OF TESTING AND MATERIALS	MH	MANHOLE
APPROX	APPROXIMATE or APPROXIMATELY	MIN	MINIMUM
AVE	AVENUE	MJ	MECHANICAL JOINT
AVG	AVERAGE	NTS	NOT TO SCALE
BLVD	BOULEVARD	O/S	OFFSET
BTM	BOTTOM	PR	PROPOSED
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	PC	POINT OF CURVATURE
CEN	CENTER	PCC	POINT OF COMPOUND CURVE
C or CL	CENTERLINE	PCR	POINT OF CURB RETURN
CFS	CUBIC FEET PER SECOND	P _L or P/L	PROPERTY LINE
CONC	CONCRETE	PRC	POINT OF REVERSE CURVE
CONST	CONSTRUCTION	PT	POINT OF TANGENCY
CONT	CONTINUOUS	PVC	POINT OF VERTICAL CURVE or POLYVINYL CHLORIDE
DIA	DIAMETER	PVI	POINT OF VERTICAL INTERSECTION
DWG	DRAWING	PVMT	PAVEMENT
EA	EACH	PVT	POINT OF VERTICAL TANGENT
EGL	ENERGY GRADE LINE	RCP	REINFORCED CONCRETE PIPE
ELEV or EL	ELEVATION	RED	REDUCER
ESMT	EASEMENT	REF	REFERENCE
EX or EXIST	EXISTING	REQ	REQUIRED
FES	FLARED END SECTION	REV	REVISION
F or FL	FLOWLINE	ROW	RIGHT-OF-WAY
FLG	FLANGE	RT	RIGHT
FT	FOOT/FEET	SD	STORM SEWER
HGL	HYDRAULIC GRADE LINE	ST	STREET
HP	HIGH POINT	STA	STATION
HORIZ	HORIZONTAL	STD	STANDARD
HCL	HORIZONTAL CONTROL LINE	SS	SANITARY SEWER
INV	INVERT	SW or S/W	SIDEWALK
	VERTICAL CURVE FACTOR	TAN	TANGENT
LF	LINEAR FEET	TBC	TOP BACK OF CURB
LN	LANE	TYP	TYPICAL
LP	LOW POINT	UG	UNDERGROUND
LT	LEFT	UTIL	UTILITY
		VERT	VERTICAL
		W	WIDTH
		w/	WITH

SYMBOLS

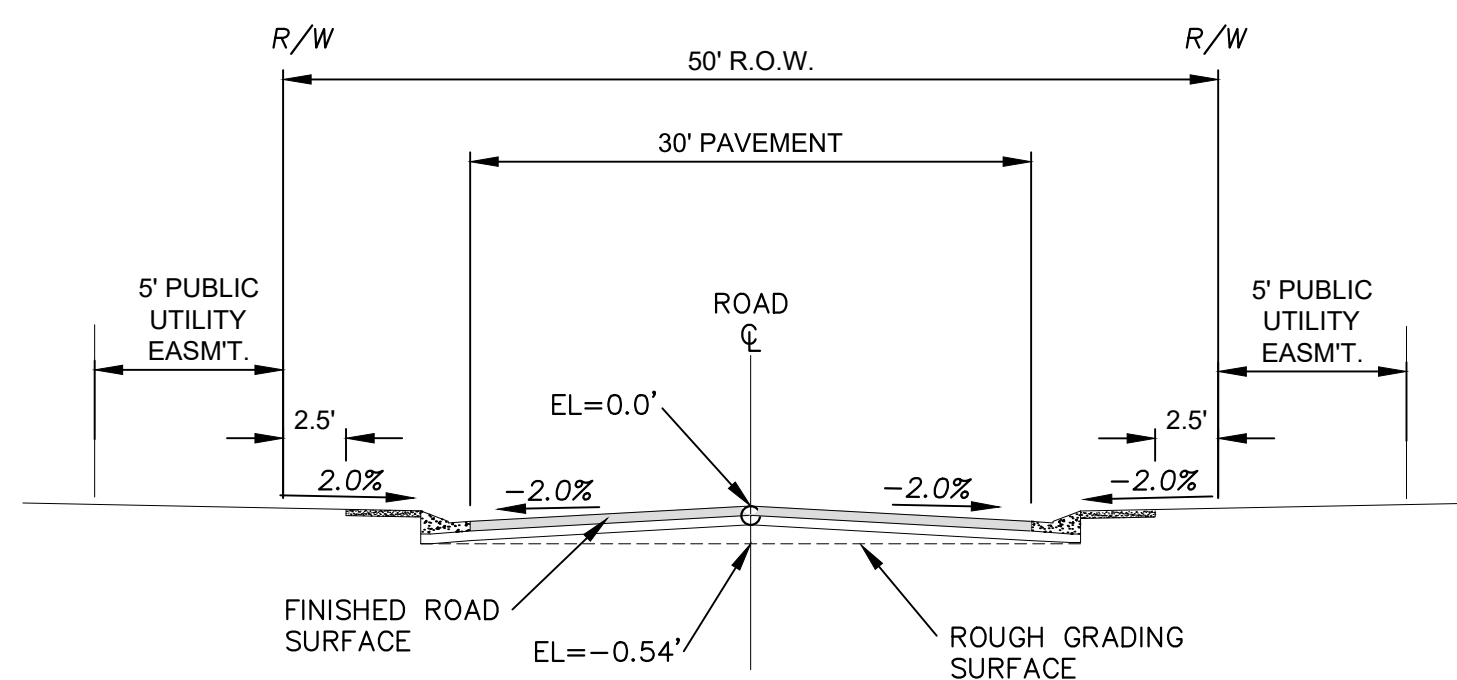
	PROPOSED CENTERLINE		PROPOSED MANHOLE
	EXISTING PAVED ROAD		EXISTING POWER POLE
	EXISTING UNDERGROUND UTILITY		THRUST BLOCK
	PROPOSED UNDERGROUND UTILITY		FIRE HYDRANT
	RIGHT OF WAY		EXISTING WATER VALVE
	EASEMENT		PROPOSED WATER VALVE
	EXISTING CURB & GUTTER		WATER FITTINGS
	PROPOSED CURB & GUTTER		EXISTING STORM INLET
	EXISTING CONTOUR		PROPOSED STORM DRAIN/INLET
	PROPOSED CONTOUR		PLUG PIPE
	LIMITS OF CONSTRUCTION		PROPOSED SIGN
			EXISTING SIGN

LOT TYPES

- ☐ (A) LOT DRAINS TO STREET
- ☐ (B) LOT DRAINS TO STREET & REAR OF LOT
- ☐ (T) LOT DRAINAGE VARIES
- ☐ (G) GARDEN LEVEL BASEMENT
- ☐ (W) WALK OUT BASEMENT



TYPICAL SECTION
(PRIVATE ROADWAY)
SCALE : N.T.S.

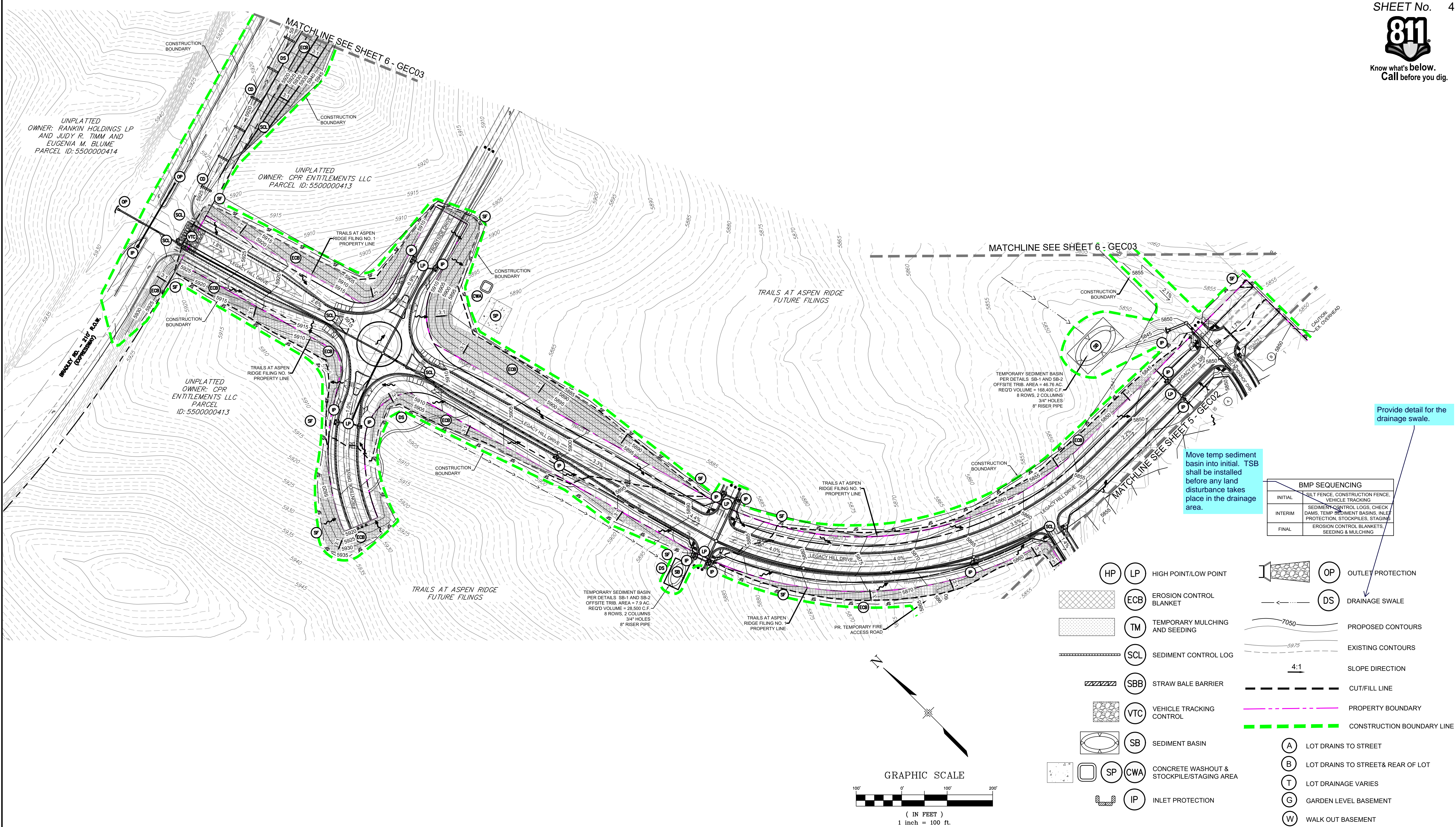


TYPICAL SECTION
(URBAN LOCAL ROADWAY)
SCALE : N.T.S.

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Know what's below.
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BMP SEQUENCING	
INITIAL	SILT FENCE, CONSTRUCTION FENCE, VEHICLE TRACKING
INTERIM	SEDIMENT CONTROL LOGS, CHECK DAMS, TEMP SEDIMENT BASINS, INLET PROTECTION, STOCKPILES, STAGINGS
FINAL	EROSION CONTROL BLANKETS, SEEDING & MULCHING

- HP

LP

HP

LP

HIGH POINT/LOW POINT
- ECB

ECB

EROSION CONTROL BLANKET
- TM

TM

TEMPORARY MULCHING AND SEEDING
- SCL

SCL

SEDIMENT CONTROL LOG
- SBB

SBB

STRAW BALE BARRIER
- VTC

VTC

VEHICLE TRACKING CONTROL
- SB

SB

SEDIMENT BASIN
- SP

CWA

CONCRETE WASHOUT & STOCKPILE/STAGING AREA
- IP

IP

INLET PROTECTION
- OP

OP

OUTLET PROTECTION
- DS

DS

DRAINAGE SWALE
- PROPOSED CONTOURS

EXISTING CONTOURS

PROPOSED CONTOURS
- 4:1

4:1

SLOPE DIRECTION
- CUT/FILL LINE

CUT/FILL LINE

CUT/FILL LINE
- PROPERTY BOUNDARY

CONSTRUCTION BOUNDARY LINE

PROPERTY BOUNDARY
- A

B

T

G

W

LOT DRAINS TO STREET
- B

T

G

W

LOT DRAINS TO STREET& REAR OF LOT
- T

G

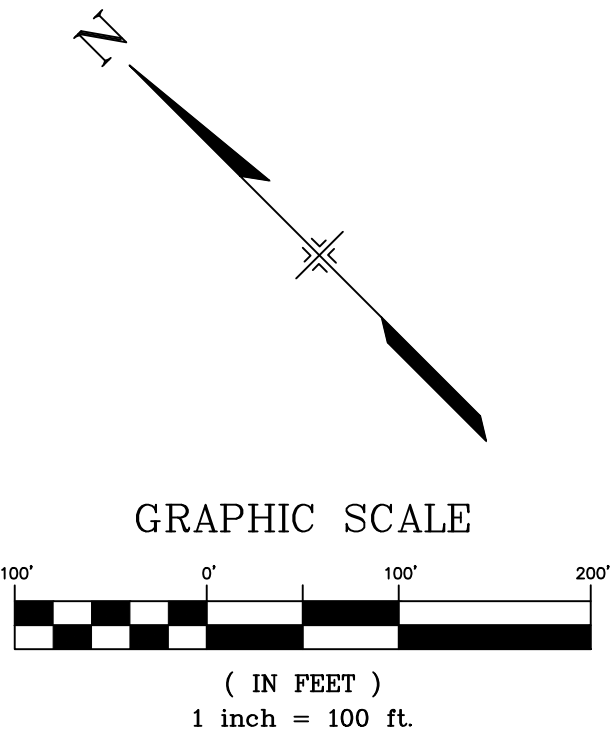
W

LOT DRAINAGE VARIES
- G

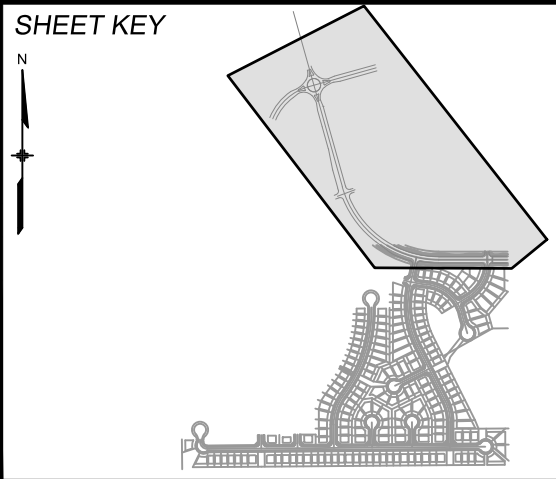
W

GARDEN LEVEL BASEMENT
- W

WALK OUT BASEMENT



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CTB FILE: ---			
PLOT DATE: September 25, 2019 8:14:12 AM			
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.			



BENCHMARK
COLORADO SPRINGS UTILITIES (FIMS) MONUMENT F206
A BERNTSEN TOP SECURITY MONUMENT SYSTEM WITH A 3.5-INCH DIAMETER ALUMINUM CAP IN A ROAD BOX, LOCATED ON THE NORTHWEST CORNER OF FONTAINE BOULEVARD AND POWERS BOULEVARD.
ELEVATION - 5897.89' U.S. SURVEY FT

BASIS OF BEARING
BEARINGS ARE BASED ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 9, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE 6TH P.M. SAID LINE BEARS S89°51'23"E FROM THE NORTHWEST CORNER OF SAID SECTION 9 (2 1/2" AULM. CAP PLS 17664) TO THE N 1/4 CORNER OF SAID SECTION 9 (3 1/4" AULM. CAP PLS 10377)



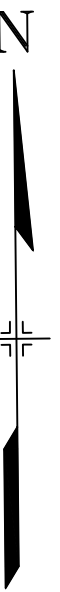
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FOR AND ON BEHALF OF
MATRIX DESIGN GROUP, INC.
PROJECT No. 19.886.011

TRAILS AT ASPEN RIDGE			
FILING NO. 1 FINAL GRADING & EROSION CONTROL PLANS			
GRADING & EROSION CONTROL PLAN			
DESIGNED BY: NMS	SCALE: 1" = 100'	DATE ISSUED: SEPTEMBER, 2019	DRAWING No. GEC01
CHECKED BY: NMS	HORIZ: N/A	SHEET 4 OF 8	



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GRAPHIC SCALE

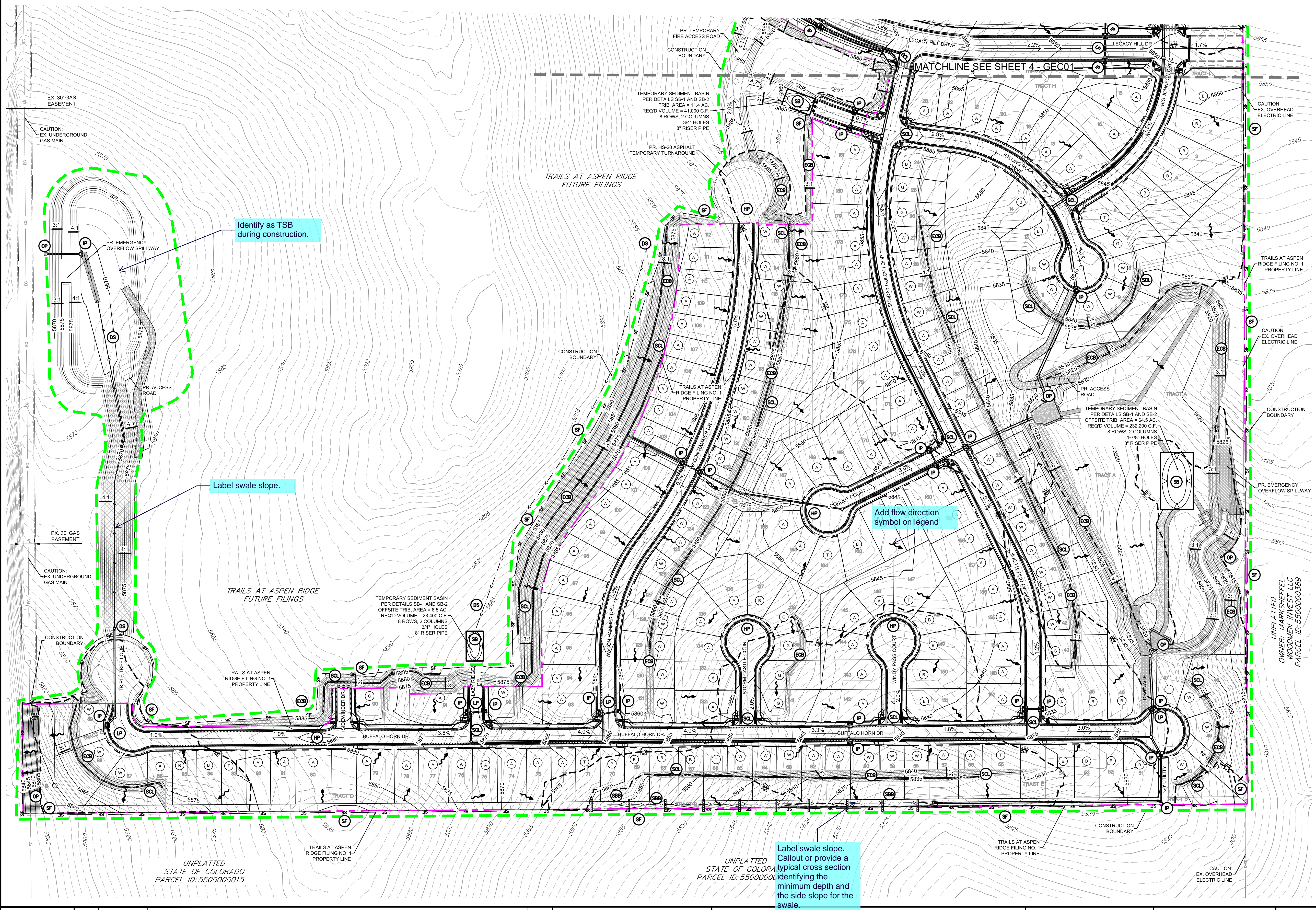


(IN FEET)
1 inch = 100 ft.

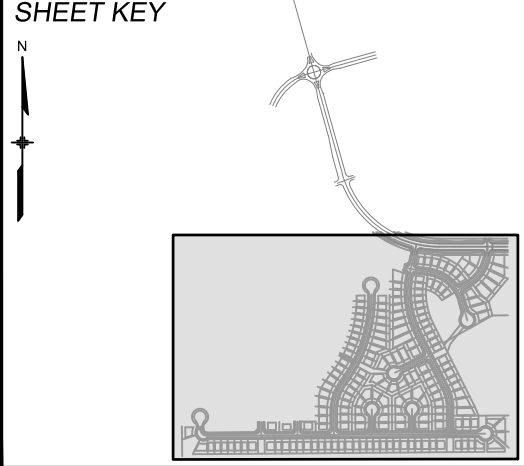
- HP LP HIGH POINT/LOW POINT
- ECB EROSION CONTROL BLANKET
- TM TEMPORARY MULCHING AND SEEDING
- SCL SEDIMENT CONTROL LOG
- SBB STRAW BALE BARRIER
- VTC VEHICLE TRACKING CONTROL
- SB SEDIMENT BASIN
- SP CWA CONCRETE WASHOUT & STOCKPILE/STAGING AREA
- IP INLET PROTECTION
- OP OUTLET PROTECTION
- DS DRAINAGE SWALE
- PROPOSED CONTOURS
- EXISTING CONTOURS
- SLOPE DIRECTION
- CUT/FILL LINE
- PROPERTY BOUNDARY
- CONSTRUCTION BOUNDARY LINE

- A LOT DRAINS TO STREET
- B LOT DRAINS TO STREET/REAR OF LOT
- T LOT DRAINAGE VARIES
- G GARDEN LEVEL BASEMENT
- W WALK OUT BASEMENT

BMP SEQUENCING	
INITIAL	SILT FENCE, CONSTRUCTION FENCE, VEHICLE TRACKING
INTERIM	SEDIMENT CONTROL LOGS, CHECK DAMS, TEMP SEDIMENT BASINS, INLET PROTECTION, STOCKPILES, STAGING
FINAL	EROSION CONTROL BLANKETS, SEEDING & MULCHING



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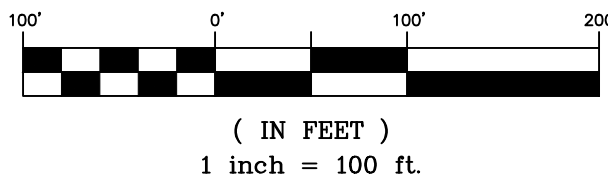
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FOR AND ON BEHALF OF
MATRIX DESIGN GROUP, INC.
PROJECT No. 19.886.011

TRAILS AT ASPEN RIDGE			
FILING NO. 1 FINAL GRADING & EROSION CONTROL PLANS			
GRADING & EROSION CONTROL PLAN			
DESIGNED BY: NMS	SCALE: HORIZ 1" = 100'	DATE ISSUED: SEPTEMBER, 2019	DRAWING No. GEC02
CHECKED BY: NMS	VERT. N/A	SHEET 5 OF 8	

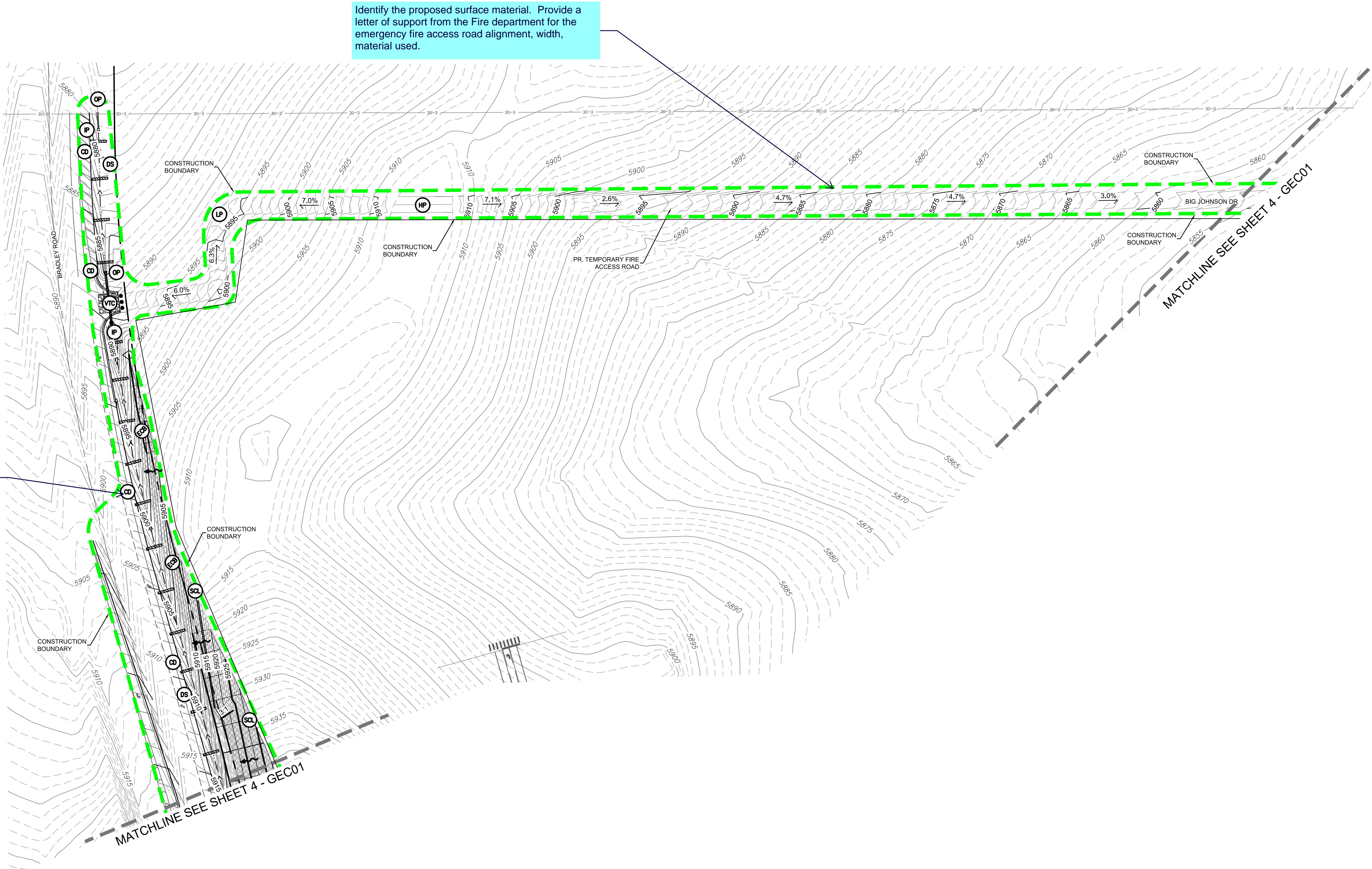


GRAPHIC SCALE



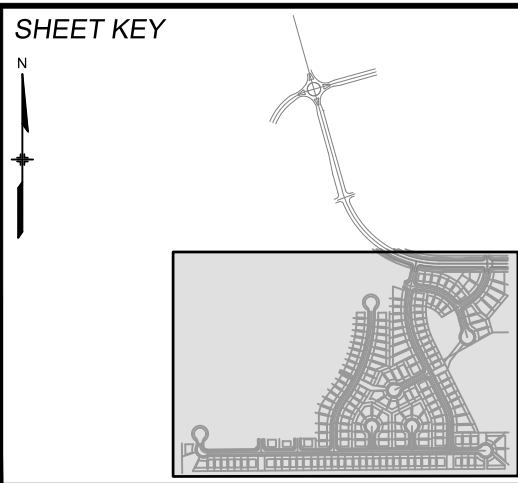
- HP LP** HIGH POINT/LOW POINT
- ECB** EROSION CONTROL BLANKET
- TM** TEMPORARY MULCHING AND SEEDING
- SCL** SEDIMENT CONTROL LOG
- SBB** STRAW BALE BARRIER
- VTC** VEHICLE TRACKING CONTROL
- SB** SEDIMENT BASIN
- SP CWA** CONCRETE WASHOUT & STOCKPILE/STAGING AREA
- IP** INLET PROTECTION
- OP** OUTLET PROTECTION
- DS** DRAINAGE SWALE
- PROPOSED CONTOURS** (solid line with elevation 7050)
- EXISTING CONTOURS** (dashed line with elevation 5975)
- 4:1** SLOPE DIRECTION
- CUT/FILL LINE** (dashed line)
- PROPERTY BOUNDARY** (dashed line)
- CONSTRUCTION BOUNDARY LINE** (dashed line)
- A** LOT DRAINS TO STREET
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INTERIM	SEDIMENT CONTROL LOGS, CHECK DAMS, TEMP SEDIMENT BASINS, INLET PROTECTION, STOCKPILES, STAGING
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Add check dam in the legend

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FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC. PROJECT No. 19.886.011	SEAL

TRAILS AT ASPEN RIDGE			
FILING NO. 1 FINAL GRADING & EROSION CONTROL PLANS			
GRADING & EROSION CONTROL PLAN			
DESIGNED BY: NMS	SCALE: HORIZ 1" = 100'	DATE ISSUED: SEPTEMBER, 2019	DRAWING No. GEC03
CHECKED BY: NMS	VERT. N/A	SHEET 6 OF 8	

ECB

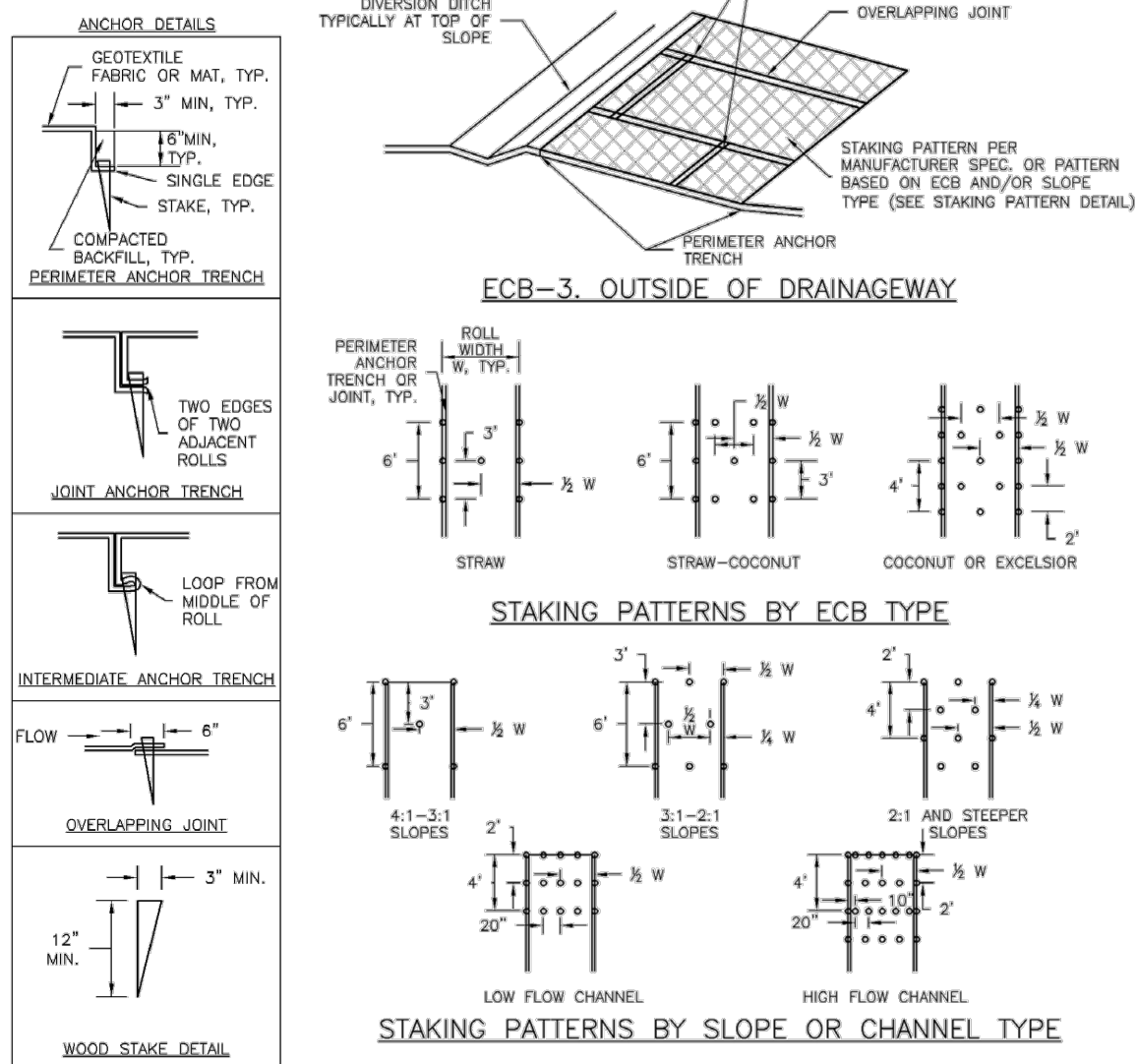


TABLE ECB-1, ECB MATERIAL SPECIFICATIONS				
TYPE	COCONUT CONTENT	STRAW CONTENT	EXCELSIOR CONTENT	RECOMMENDED NETTING **
STRAW *	-	100%	-	DOUBLE/ NATURAL
STRAW-COCONUT	30% MIN	70% MAX	-	DOUBLE/ NATURAL
COCONUT	100%	-	-	DOUBLE/ NATURAL
EXCELSIOR	-	-	100%	DOUBLE/ NATURAL

* STRAW ECBs MAY ONLY BE USED OUTSIDE OF STREAMS AND DRAINAGE CHANNELS.
** ALTERNATE NETTING MAY BE ACCEPTABLE IN SOME JURISDICTIONS.

EROSION CONTROL BLANKET

INSTALLATION NOTES:

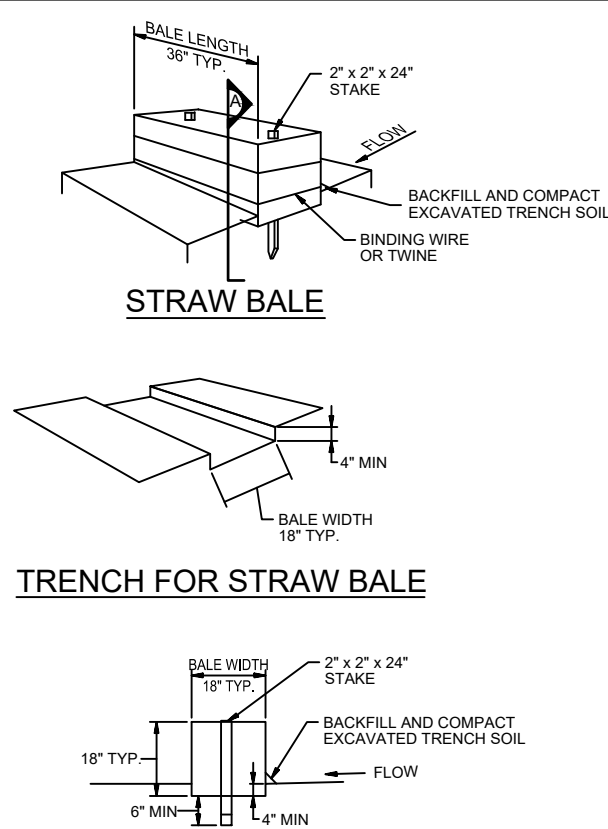
- SEE PLAN VIEW FOR:
 - LOCATION OF ECB.
 - TYPE OF ECB (STRAW, STRAW-COCONUT, COCONUT, EXCELSIOR).
 - AREA, IN SQUARE YARDS OF EACH TYPE OF ECB.
- 100% NATURAL AND BIODEGRADABLE MATERIALS ARE PREFERRED FOR RECPs, ALTHOUGH SOME JURISDICTIONS MAY ALLOW OTHER MATERIALS IN SOME APPLICATIONS.
- IN AREAS WHERE ECBs ARE SHOWN ON THE PLANS, THE PERMITTEE SHALL PLACE TOPSOIL AND PERFORM FINAL GRADING, SURFACE PREPARATION, AND SEEDING AND MULCHING. SUBGRADE SHALL BE SMOOTH AND MOIST PRIOR TO ECB INSTALLATION AND THE ECB SHALL BE IN FULL CONTACT WITH SUBGRADE. NO GAPS OR VOIDS SHALL EXIST UNDER THE BLANKET.
- PERIMETER ANCHOR TRENCH SHALL BE USED ALONG THE OUTSIDE PERIMETER OF ALL BLANKET AREAS.
- JOINT ANCHOR TRENCH SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER (LONGITUDINALLY AND TRANSVERSELY) FOR ALL ECBs EXCEPT STRAW WHICH MAY USE AN OVERLAPPING JOINT.
- INTERMEDIATE ANCHOR TRENCH SHALL BE USED AT SPACING OF ONE-HALF ROLL LENGTH FOR COCONUT AND EXCELSIOR ECBs.
- OVERLAPPING JOINT DETAIL SHALL BE USED TO JOIN ROLLS OF ECBs TOGETHER FOR ECBs ON SLOPES.
- MATERIAL SPECIFICATIONS OF ECBs SHALL CONFORM TO TABLE ECB-1.
- ANY AREAS OF SEEDING AND MULCHING DISTURBED IN THE PROCESS OF INSTALLING ECBs SHALL BE RESEEDED AND MULCHED.
- DETAILS ON DESIGN PLAND FOR MAJOR DRAINAGEWAY STABILIZATION WILL GOVERN IF DIFFERENT FROM THOSE SHOWN HERE.

MAINTENANCE NOTES:

- 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 EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- ECBs SHALL BE LEFT IN PLACE TO EVENTUALLY BIODEGRADE, UNLESS REQUESTED TO BE REMOVED BY THE LOCAL JURISDICTION.
- ANY ECB PULLED OUT, TORN, OR OTHERWISE DAMAGED SHALL BE REPAIRED OR REINSTALLED. ANY SUBGRADE AREAS BELOW THE GEOTEXTILE THAT HAVE ERODED TO CREATED A VOID UNDER THE BLANKET, OR THAT REMAIN DEVOID OF GRASS SHALL BE REPAIRED, RESEEDED AND MULCHED AND THE ECB REINSTALLED.

Figure EC-6
Rolled Erosion Control Product
Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3

SBB



STRAW BALE INSTALLATION NOTES:

- SEE PLAN VIEW FOR:
 - LOCATION(S) OF STRAW BALES.
- STRAW BALES SHALL CONSIST OF CERTIFIED WEED FREE STRAW OR HAY. LOCAL JURISDICTIONS MAY REQUIRE PROOF THAT BALES ARE WEED FREE.
- STRAW BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF STRAW OR HAY AND WEIGH NOT LESS THAN 35 POUNDS.
- WHEN STRAW BALES ARE USED IN A SERIES AS A BARRIER, THE END OF EACH BALE SHALL BE TIGHTLY ABUTTING ON ANOTHER.
- STRAW BALE DIMENSIONS SHALL BE APPROXIMATELY 36"x18"x16".
- A UNIFORM ANCHOR TRENCH SHALL BE EXCAVATED TO A DEPTH OF 4". STRAW BALES SHALL BE PLACED SO THAT BINDING TWINE IS ENCOMPASSING THE VERTICAL SIDES OF THE BALES. ALL EXCAVATED SOIL SHALL BE PLACED ON THE UPHILL SIDE OF THE STRAW BALES AND COMPACTED.
- TWO (2) WOODEN STAKES SHALL BE USED TO HOLD EACH BALE IN PLACE. WOODEN STAKES SHALL BE 2"x2"x24". WOODEN STAKES SHALL BE DRIVEN 6" INTO THE GROUND.

STRAW BALE MAINTENANCE NOTES:

- 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 EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
- STRAW BALES SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, ROTTEN, OR DAMAGED BEYOND REPAIR.
- SEDIMENT ACCUMULATED UPSTREAM OF STRAW BALE BARRIER SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP. TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/4 OF THE HEIGHT OF THE STRAW BARRIER BALE.
- STRAW BALES ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN THE STRAW BALES ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOP SOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

Figure SC-3
Straw Bale Barrier
Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3

OP

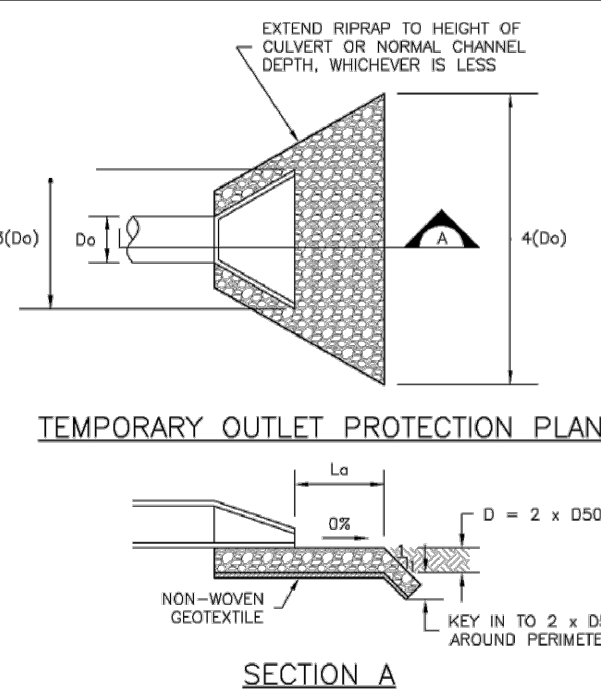


TABLE OP-1, TEMPORARY OUTLET PROTECTION SIZING TABLE			
PIPE DIAMETER, D _o (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, L _a (FT)	RIPRAP D ₅₀ DIAMETER MIN. (INCHES)
8	2.5	5	4
12	5	10	6
18	10	10	6
24	20	16	9
	30	23	12
	40	26	16
	50	30	16
	60	30	16

TEMPORARY OUTLET PROTECTION

INSTALLATION NOTES:

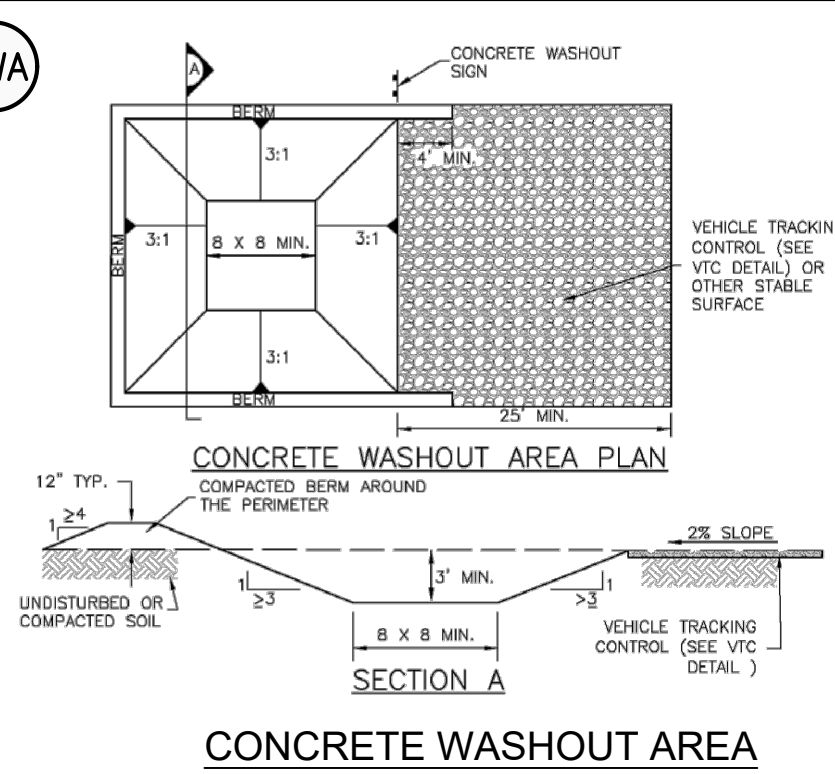
- SEE PLAN VIEW FOR:
 - LOCATION OF OUTLET PROTECTION.
 - DIMENSIONS OF OUTLET PROTECTION
- DETAIL IS INTENDED FOR PIPES WITH SLOPE ≤ 10%. ADDITIONAL EVALUATION OF RIPRAP SIZING AND OUTLET PROTECTION DIMENSIONS REQUIRED FOR STEEPER SLOPES.
- TEMPORARY OUTLET PROTECTION INFORMATION IS FOR OUTLETS INTENDED TO BE UTILIZED LESS THAN 2 YEARS.

MAINTENANCE NOTES:

- 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 EROSION, AND PERFORM NECESSARY MAINTENANCE.
- FREQUENT OBSERVATIONS AND MAINTENANCE ARE NECESSARY TO MAINTAIN BMPs IN EFFECTIVE OPERATING CONDITION. INSPECTIONS AND CORRECTIVE MEASURES SHOULD BE DOCUMENTED THOROUGHLY.
- WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.

Figure EC-8
Temporary Outlet Protection
Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3

CWA



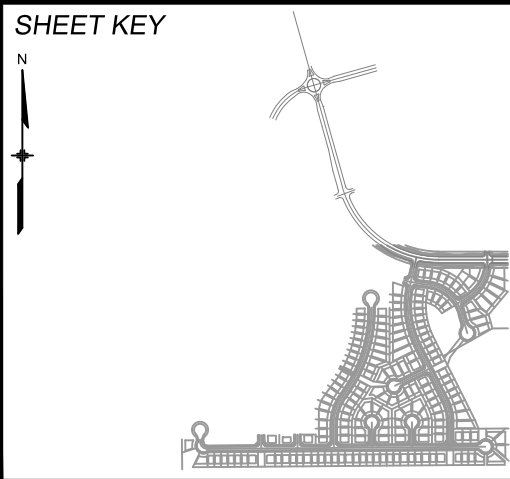
CONCRETE WASHOUT AREA

CWA INSTALLATION NOTES:

- SEE PLAN VIEW FOR:
 - CWA INSTALLATION LOCATION
- DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATER BODY. DO NOT LOCATE WITHIN 1000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE AREA SHOULD BE USED.
- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- THE CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8" BY 8" SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
- BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE A MINIMUM HEIGHT OF 1'.
- VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.
- SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
- USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

Figure CWA-3
Concrete Washout Area
Urban Drainage and Flood Control District
Urban Storm Drainage Criteria Manual Volume 3

REFERENCE DRAWINGS			
No.	DATE	DESCRIPTION	BY
COMPUTER FILE MANAGEMENT			
FILE NAME: S:\19.886.011 (Trails at Aspen Ridge - F1)\100 Dwg\104 Plan Sets\Construction Plans\GEC Plan\ECN01.dwg			
CTB FILE: ----			
PLOT DATE: September 25, 2019 8:14:30 AM			
THIS DRAWING IS CURRENT AS OF PLOT DATE AND MAY BE SUBJECT TO CHANGE.			



BENCHMARK	
COLORADO SPRINGS UTILITIES (FIMS) MONUMENT F206 A BERNTSEN TOP SECURITY MONUMENT SYSTEM WITH A 3.5-INCH DIAMETER ALUMINUM CAP IN A ROAD BOX, LOCATED ON THE NORTHWEST CORNER OF FONTAINE BOULEVARD AND POWERS BOULEVARD. ELEVATION - 5897.89' U.S. SURVEY FT	
BASIS OF BEARING	
BEARINGS ARE BASED ON THE NORTH LINE OF THE NORTHWEST QUARTER OF SECTION 9, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE 6TH P.M. SAID LINE BEARS S89°51'23"E FROM THE NORTHWEST CORNER OF SAID SECTION 9 (2 1/2" AULM. CAP PLS 17664) TO THE N 1/4 CORNER OF SAID SECTION 9 (3 1/4" AULM. CAP PLS 10377)	



SEAL	
PRELIMINARY THIS DRAWING HAS NOT BEEN APPROVED BY GOVERNING AGENCIES AND IS SUBJECT TO CHANGE	
FOR AND ON BEHALF OF MATRIX DESIGN GROUP, INC. PROJECT No. 19.886.011	

TRAILS AT ASPEN RIDGE			
FILING NO. 1 FINAL GRADING & EROSION CONTROL PLANS			
EROSION CONTROL NOTES			
DESIGNED BY: NMS	SCALE: HORIZ N.A.	DATE ISSUED: SEPTEMBER, 2019	DRAWING No. ECN02
CHECKED BY: NMS	VERT. N.A.	SHEET 8 OF 8	