

URBAN COLLECTION AT PALMER VILLAGE

A PORTION OF THE NORTHEAST QUARTER OF SECTION 5
TOWNSHIP 14 SOUTH, RANGE 65 WEST OF THE SIXTH PRINCIPAL MERIDIAN,
COUNTY OF EL PASO, STATE OF COLORADO

GRADING AND EROSION CONTROL PLANS

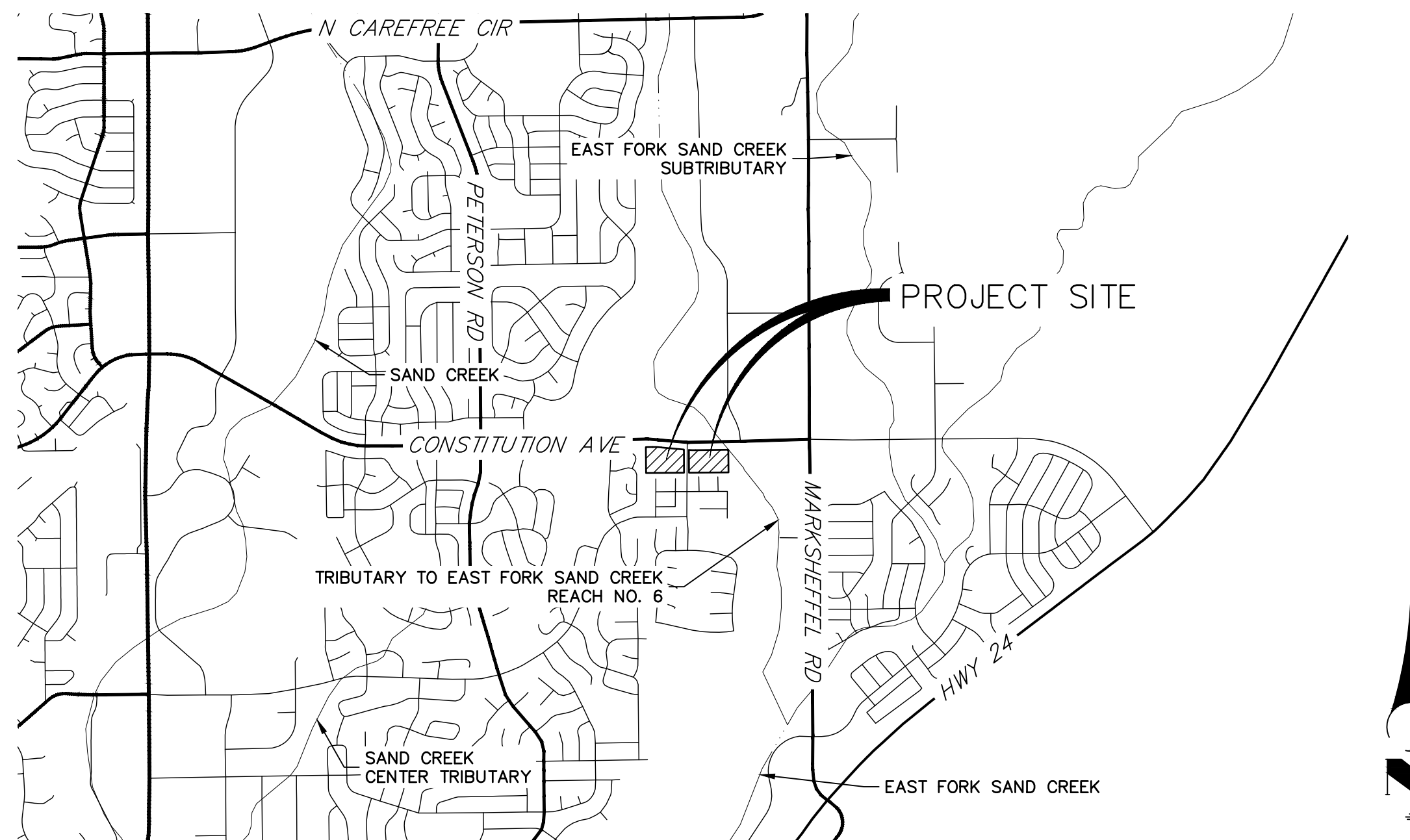
PCD FILING NO: SF-20-028



Know what's below.
Call before you dig.

ABBREVIATIONS

AC	ACRE	INT	INTERSECTION
AD	ALGEBRAIC DIFFERENCE	INV	INVERT
AH	AHEAD	IRR	IRRIGATION
ARCH	ARCHITECT	KB	KICK (THRUST) BLOCK
ASCE	AMERICAN SOCIETY OF CIVIL ENGINEERS	LB	POUND
ASSY	ASSEMBLY	LE	LANDSCAPE EASEMENT
AVE	AVENUE	LF	LINEAR FOOT
BB	BOX BASE	LN	LANE
BK	BACK	LOMR	LETTER OF MAP REVISION
BNDY	BOUNDARY	LP	LOW POINT
BOP	BOTTOM OF PIPE	LS	LUMP SUM
BOV	BLOW OFF VALVE	LT	LEFT
BFV	BUTTERFLY VALVE	LT	LEFT
BLVD	BOULEVARD	LT	LEFT
BW	BOTTOM OF WALL	MAX	MAXIMUM
C&G	CURB & GUTTER	M/D	MOISTURE DENSITY
CATV	CABLE TELEVISION	MDDP	MASTER DEVELOPMENT
CB	CATCH BASIN	MH	MANHOLE
CBC	CONCRETE BOX CULVERT	MIN	MINIMUM
CDOT	COLORADO DEPARTMENT OF TRANSPORTATION	MS	MOUNTABLE SIDEWALK
CDS	CUL-DE-SAC	N	NORTH
CF	CUBIC FOOT	NRCP	NON-REINFORCED CONCRETE
CFS	CUBIC FEET PER SECOND	PIPE	PIPE
CIP	COMPLETE IN PLACE	ODP	OFFICIAL DEVELOPMENT PLAN
CL	CENTER LINE	OHE	OVERHEAD ELECTRIC
CLOMR	CONDITIONAL LETTER OF MAP REVISION	OBU	OVERHEAD UTILITY
CLR	CLEAR	PC	POINT OF CURVATURE
CMP	CORRUGATED METAL PIPE	PCC	POINT OF COMPOUND
CO	CLEAN OUT	PCR	POINT OF CURB RETURN
COCs	CITY OF COLORADO SPRINGS	PDP	PRELIMINARY DEVELOPMENT
CONC	CONCRETE	PE	PROFESSIONAL ENGINEER
CR	CIRCLE	PI	POINT OF INTERSECTION
CSP	CORRUGATED STEEL PIPE	PKWY	PARKWAY
CSU	COLORADO SPRINGS UTILITIES	PL	PROPERTY LINE
CT	COURT	PR	PROPOSED
CTRB	CONCRETE THRUST REDUCER	PRC	POINT OF REVERSE CURVATURE
CY	CUBIC YARD	PT	POINT OF TANGENCY
DBPS	DRAINAGE BASIN PLANNING STUDY	PV	PLUG VALVE
DE	DRAINAGE EASEMENT	PVC	POLYVINYL CHLORIDE
DIA	DIAMETER	R	RADIUS
DIP	DUCTILE IRON PIPE	RCBC	REINFORCED CONCRETE BOX CULVERT
DRC	DESIGN REVIEW COMMITTEE	RCP	REINFORCED CONCRETE PIPE
DU	DWELLING UNITS	RD	ROAD
DY	DAY	ROW	RIGHT OF WAY
E	EAST	RT	RIGHT
EA	EACH	S	SOUTH
EGL	ENERGY GRADE LINE	STE	STEEL
EL	ELEVATION	SAN	SANITARY SEWER
ELEC	ELECTRIC	SF	SQUARE FOOT
EOA	EDGE OF ASPHALT	ST	STREET
EPC	EL PASO COUNTY	STA	STATION
ERCP	ELLIPTICAL RCP	STM	STORM SEWER
ESMT	EASEMENT	SY	SQUARE YARD
EST	ESTIMATE	SY-IN	SQUARE YARD INCH
EX	EXISTING	TB	THRUST BLOCK
FDP	FINAL DEVELOPMENT PLAN	TBC	TOP BACK OF CURB
FDR	FINAL DRAINAGE REPORT	TBW	TOP BACK OF WALK
FES	FLARED END SECTION	TEL	TELEPHONE
FF	FINISHED FLOOR ELEVATION	TN	TON
FG	FINISHED GRADE	TOA	TOP OF ASPHALT
FH	FIRE HYDRANT	TOB	TOP OF BOX
FL	FLOWLINE	TOC	TOP OF CURB OR CONCRETE
FIL	FILING	TOF	TOP OF FOUNDATION
FO	FIBER OPTIC CABLE	TOP	TOP OF PIPE
GB	GRADE BREAK	TW	TOP OF WALL
GE	GAS EASEMENT	UDFCD	URBAN DRAINAGE AND FLOOD CONTROL DISTRICT
GIS	GEOGRAPHIC INFORMATION SYSTEM	UE	UTILITY EASEMENT
GL	GAS LINE	U&DE	UTILITY & DRAINAGE EASEMENT
GPS	GLOBAL POSITIONING SYSTEM	UGE	UNDERGROUND ELECTRIC
GV	GATE VALVE	VCP	VITRIFIED CLAY PIPE
HBP	HOT BITUMINOUS PAVEMENT	VPC	VERTICAL POINT OF CURVATURE
HC	HANDICAP	VPI	VERTICAL POINT OF INTERSECTION
HDC	HIGH DEFLECTION COUPLING	VPT	VERTICAL POINT OF TANGENCY
HDPE	HIGH DENSITY POLYETHYLENE	VTC	VEHICLE TRACKING CONTROL
HGL	HYDRAULIC GRADE LINE	W	WEST
HMA	HOT MIX ASPHALT	WL	WATER LINE
HOA	HOME OWNERS ASSOCIATION	WM	WATER MAIN
HP	HIGH POINT	WRD	WATER RESOURCES DEPARTMENT
HR	HOUR	WS	WATER SURFACE
I	INLET	WSE	WATER SURFACE ELEVATION
IE	IRRIGATION EASEMENT	WTR	WATER
		YR	YEAR



VICINITY MAP
SCALE: 1"=2000'

SHEET INDEX

- 1 - COVER PAGE
- 2 - LEGEND & NOTES
- 3 - SWALE CROSS SECTIONS
- 4-6 - EROSION CONTROL PLAN
- 7-10 - DETAILS

BASIS OF BEARING

BEARINGS SHOWN HEREON ARE REFERENCED TO THE NORTH LINE OF NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF SECTION 5, TOWNSHIP 14 SOUTH, RANGE 65 WEST, ASSUMED TO BEAR NORTH 89°09'25" EAST BETWEEN THE MONUMENTS SHOWN HEREON.

BENCHMARK

FIMS MONUMENT SR06 IS A 2 INCH DIAMETER ALUMINUM CAP ON TOP OF THE SOUTH CURB OF PONY TRACKS DRIVE, APPROXIMATELY 850 FEET EASTERLY OF THE CENTERLINE OF PETERSON ROAD, 125 FEET EASTERLY OF THE EAST CURB OF BANKSIDE DRIVE, AND 10 FEET EASTERLY OF AN ELECTRICAL VAULT.

ELEVATION = 6523.04 (NGVD 29)

NOTE

1. BASED ON ELEVATION DATA, THE APPLICANT WILL NEED TO FILE FEDERAL AVIATION ADMINISTRATION (FAA) FORM 7460-1 "NOTICE OF PROPOSED CONSTRUCTION OR ALTERATION" FOR ANY NEW VERTICAL DEVELOPMENT AT THIS SITE, INCLUDING TEMPORARY CONSTRUCTION EQUIPMENT, AND PROVIDE FAA DOCUMENTATION TO THE AIRPORT BEFORE THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES; FAA'S WEBSITE (HTTPS://OEAAA.FAA.GOV/OEAAA/EXTERNAL/PORTAL.JSP).

CONTACTS:

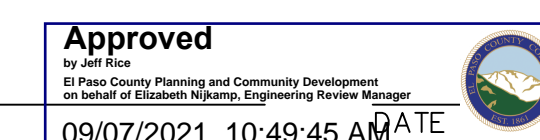
OWNER/DEVELOPER	MDC HOLDINGS - RICHMOND AMERICAN HOMES 4350 S. MONACO STREET DENVER, CO 80237 JASON POCK P~(720)-977-3827
ENGINEER/SURVEYOR	JR ENGINEERING, LLC ATTN: GLENN D. ELLIS 5475 TECH CENTER DRIVE, SUITE 235 COLORADO SPRINGS, CO 80919 P~(719) 593-2593
FIRE PROTECTION DISTRICT	FALCON FIRE PROTECTION DISTRICT 730 OLD MERIDIAN ROAD PEYTON, CO 80851 TRENT HARWIG P~(719) 495-4050
WATER AND SEWER DISTRICT	CHEROKEE METRO DISTRICT 6250 PALMER PARK BLVD COLORADO SPRINGS, CO 80915 CONTACT: KEVIN BROWN P~(719) 322-4339
JURISDICTION	EL PASO COUNTY PCD P~(719)-520-6300 EL PASO COUNTY DPW P~(719)-520-6460

EL PASO COUNTY STATEMENT

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 EOM 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.

COUNTY ENGINEER/ECM ADMINISTRATOR

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 PLANS.



GLENN ELLIS P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

Urban Collection at Palmer Village Erosion and Sediment Control Cost Opinion						
Subdivision:		Urban Collection at Palmer Village				
Project NO.:		25149.01				
BMP NO.	BMP	ID	Unit	Installation Unit Cost	Quantity	Cost
1	Silt Fence	SF	LF	\$ 2.60	2774	\$ 7,212.40
3	Concrete Washout Area	CWA	EA	\$ 932.00	1	\$ 932.00
4	Inlet Protection	IP	EA	\$ 173.00	14	\$ 2,422.00
5	Outlet Protection	OP	EA	\$ 173.00	3	\$ 519.00
6	Temporary Seeding	TS	AC	\$ 650.00	10.83	\$ 7,039.50
7	Temporary Mulching	MU	AC	\$ 777.00	10.83	\$ 8,414.91
8	Temporary Stock Pile	TSP	EA	\$ 500.00	1	\$ 500.00
9	Check Dams	CD	EA	\$ 26.00	8	\$ 208.00
10	Stabilized Staging Area	SSA	SY	\$ 2.00	2000	\$ 4,000.00
11	Vehicle Tracking Control	VTC	EA	\$ 2,453.00	2	\$ 4,906.00
12	Sediment Basin	SB	EA	\$ 1,824.00	2	\$ 3,648.00
Subtotal						\$39,801.81
30% Contingency						\$11,940.54
40% Maintenance Agreement						\$15,920.72
Total						\$67,663.08
Estimate Prepared By:		Date:		1/26/2021		
JR Engineering 5475 Tech Center Drive, Suite 235 Colorado Spring, CO 80919 (719) 593-2593						
JR Engineering cannot and does not guarantee that the construction cost will not vary from these opinions of probable construction cost. These opinions represent our best judgment as design professionals familiar with the construction industry and this development.						

OWNER/DEVELOPER STATEMENT

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

Jason J.W. Pock 7-16-2021
DATE

MDC HOLDINGS - RICHMOND AMERICAN HOMES
4359 S. MONACO STREET
DENVER, CO 80237

BY	DATE	No.	REVISION	H-SCALE	V-SCALE	DATE	DESIGNED BY	DRAWN BY	CHECKED BY	SHEET	OF	JOB NO.
URBAN COLLECTION AT PALMER VILLAGE	COVER PAGE	GEC PLANS	1	10	25149.01							

GRADING AND EROSION CONTROL STANDARD 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 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 (SWMP) 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 FIELD.
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 COUNTY STAFF.
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 OF THE DISTURBANCE.
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.
7. 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 BEFORE PERMIT CLOSURE.
9. ALL PERMANENT STORMWATER MANAGEMENT FACILITIES SHALL BE INSTALLED AS DESIGNED IN THE APPROVED PLANS. ANY PROPOSED CHANGES THAT AFFECT THE 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 INFESIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION IS ACHIEVED BY VEGETATIVE COVER. 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 OFF SITE.
13. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR INTO 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 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 04/07/2020) 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:

COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
WATER QUALITY CONTROL DIVISION
WOOD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT

LAYER LINETYPE LEGEND

Table with columns: PHASE LINE, MATCH LINE, SECTION LINE, BOUNDARY LINE, PROPERTY LINE, EASEMENT LINE, RIGHT OF WAY, R.O.W. A LINE, CENTERLINE, CITY LIMITS, WIRE FENCE, CHAIN LINK FENCE, WOOD FENCE, MASONRY FENCE, GUARDRAIL, CONC. BARRIER, CABLE TV, ELECTRIC, FIBER OPTIC, GAS MAIN, IRRIGATION MAIN, OIL/PETRO. MAIN, OVERHEAD UTILITY, SANITARY SEWER, STORM DRAIN, TELEPHONE, WATER MAIN, RAW WATER LINE, SWALE/WATERWAY FLOWLINE, DIVERSION DITCH, DIVERSION CHANNEL, MAJOR DRAINAGE BASIN, MINOR DRAINAGE BASIN, TOP OF SLOPE, TOE OF SLOPE, EDGE OF WATER, INDEX CONTOUR, INTERMEDIATE CONTOUR, DEPRESSION CONT. (INDEX), DEPRESSION CONT. (INTER), TOP OF CUTS, TOE OF FILLS, CUT AND FILL LINE, SILT FENCE, 100 YEAR FLOODPLAIN, 500 YEAR FLOODPLAIN, FLOODWAY, BASE FLOOD ELEVATION, EDGE OF WETLANDS, STONE WALL.

UTILITIES LEGEND

Table with columns: EXISTING, PROPOSED. Includes categories: STORM SEWER, SANITARY SEWER, WATER LINE, GAS LINE, DRY UTILITIES, MISC. UTILITIES. Lists various utility types like manhole, service marker, valve, meter, etc.

LANDSCAPE LEGEND

Table with columns: EXISTING, PROPOSED. Lists landscape elements like trees (coniferous, deciduous), shrubs, bushes, irrigation boxes, valves, bollards, and flagpoles.

LEGEND

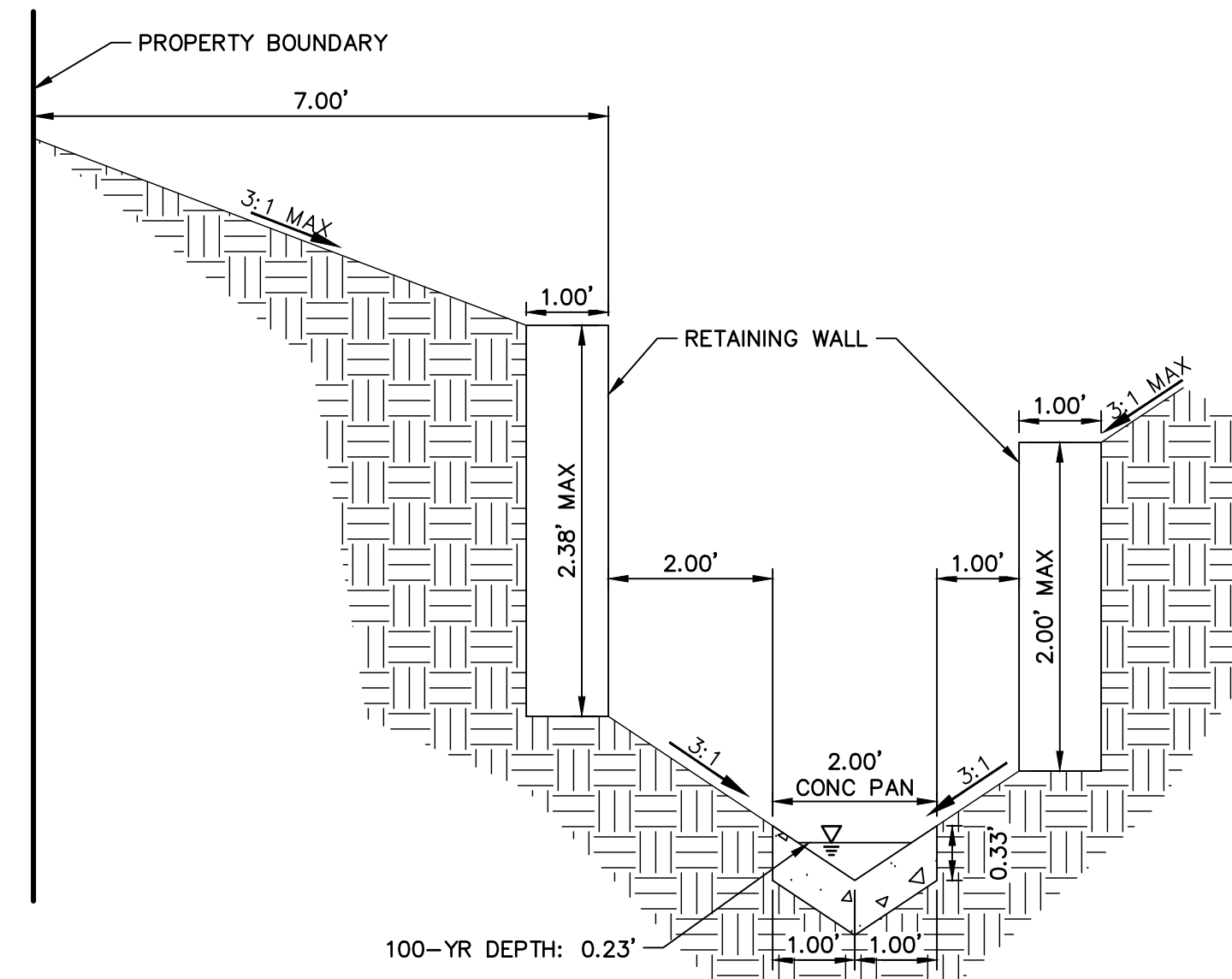
Table listing various construction and erosion control features with their corresponding symbols: Check dam, construction fence, concrete washout area, inlet protection, limits of construction, outlet protection, temporary seeding, sediment basin, silt fence, stabilized staging area, temporary stock pile, temporary swale, vehicle tracking control, erosion control blanket, and stormwater flow direction.



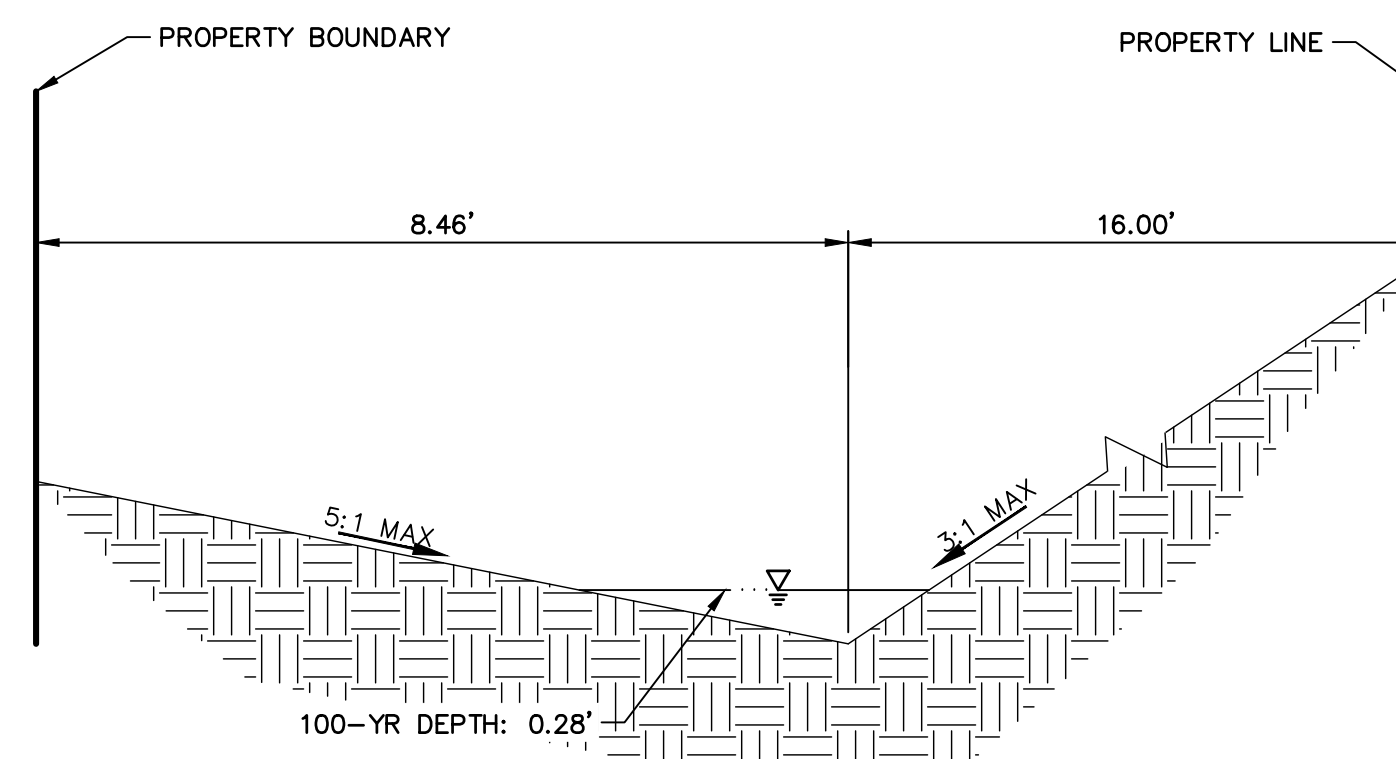
ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING
GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
DATE: 07/15/2021
FOR AND ON BEHALF OF JR ENGINEERING, L.L.C.

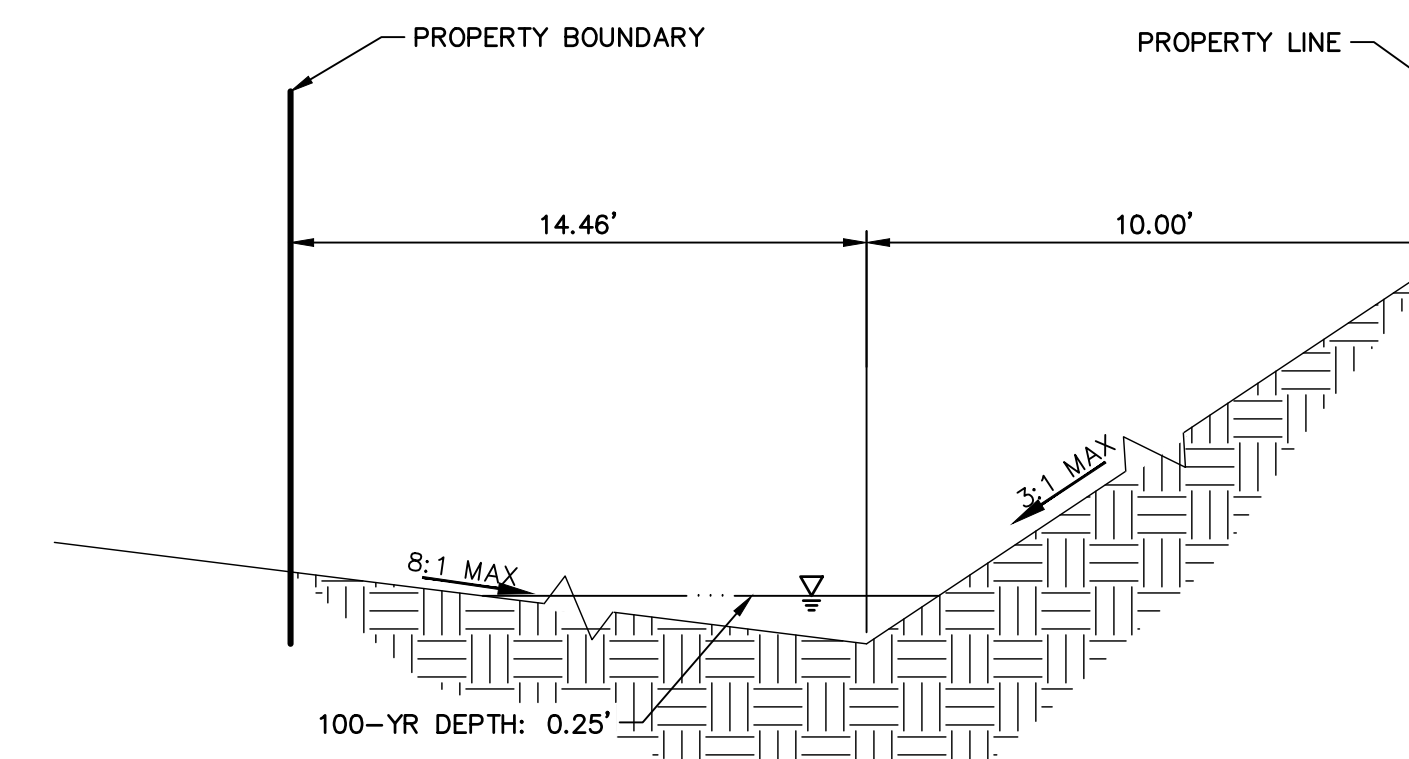
Vertical strip on the right side of the page. Includes: PREPARED FOR (MDC HOLDINGS), RICHMOND AMERICAN HOMES, 4350 S. MONACO STREET, DENVER, CO 80237, ATTN: JASON FOCK, 720-977-3827. Also includes logo for J.R. ENGINEERING (A Westman Company), address: Centennial 300-740-0888, Colorado Springs 719-588-2593, Fort Collins 970-491-9888, www.jrengineering.com. A table with columns: REVISION, No., DATE. Bottom: URBAN COLLECTION AT PALMER VILLAGE, LEGEND & NOTES, GEC PLANS. SHEET 2 OF 10. JOB NO. 25149.01.



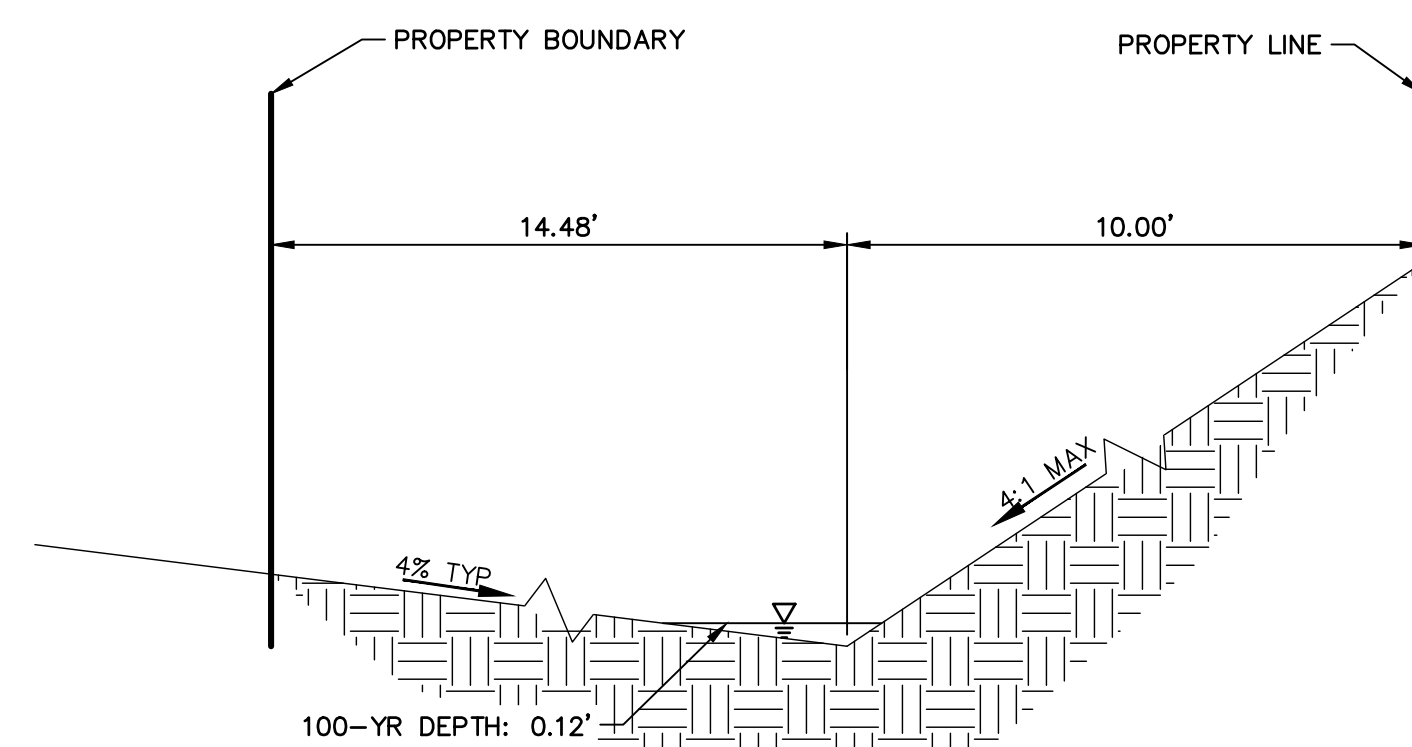
A SWALE A-A SECTION
SCALE: 1"=2' (HOR), 1"=1' (VERT)



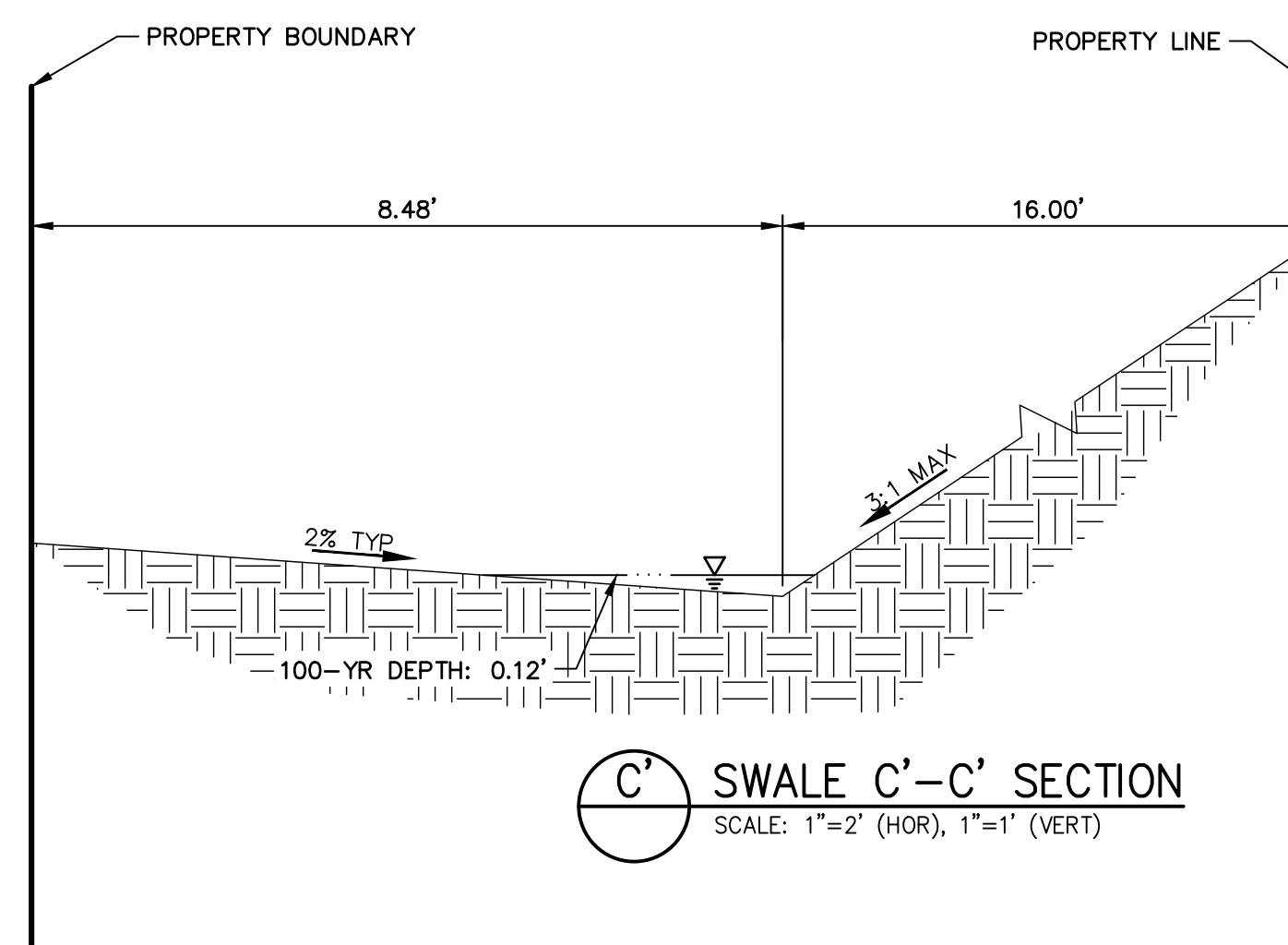
B SWALE B-B SECTION
SCALE: 1"=2' (HOR), 1"=1' (VERT)



B' SWALE B'-B' SECTION
SCALE: 1"=2' (HOR), 1"=1' (VERT)



C SWALE C-C SECTION
SCALE: 1"=2' (HOR), 1"=1' (VERT)



C' SWALE C'-C' SECTION
SCALE: 1"=2' (HOR), 1"=1' (VERT)

SWALE SECTION NOTES

1. ALL SWALE SECTIONS ARE FACING UPSTREAM (WEST).
2. SEE LANDSCAPE PLANS BY OTHERS FOR PROPOSED SURFACE MATERIAL.

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PREPARED FOR
MDC HOLDINGS
RICHMOND AMERICAN HOMES
4350 S. MONACO STREET
DENVER, CO 80237
ATTN: JASON FOCK
720-977-3827

J.R. ENGINEERING
A Westman Company
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1" = 2'	1" = 1'	01/26/21	RPD	RPD	

URBAN COLLECTION AT
PALMER VILLAGE
SWALE CROSS SECTIONS
GEC PLANS

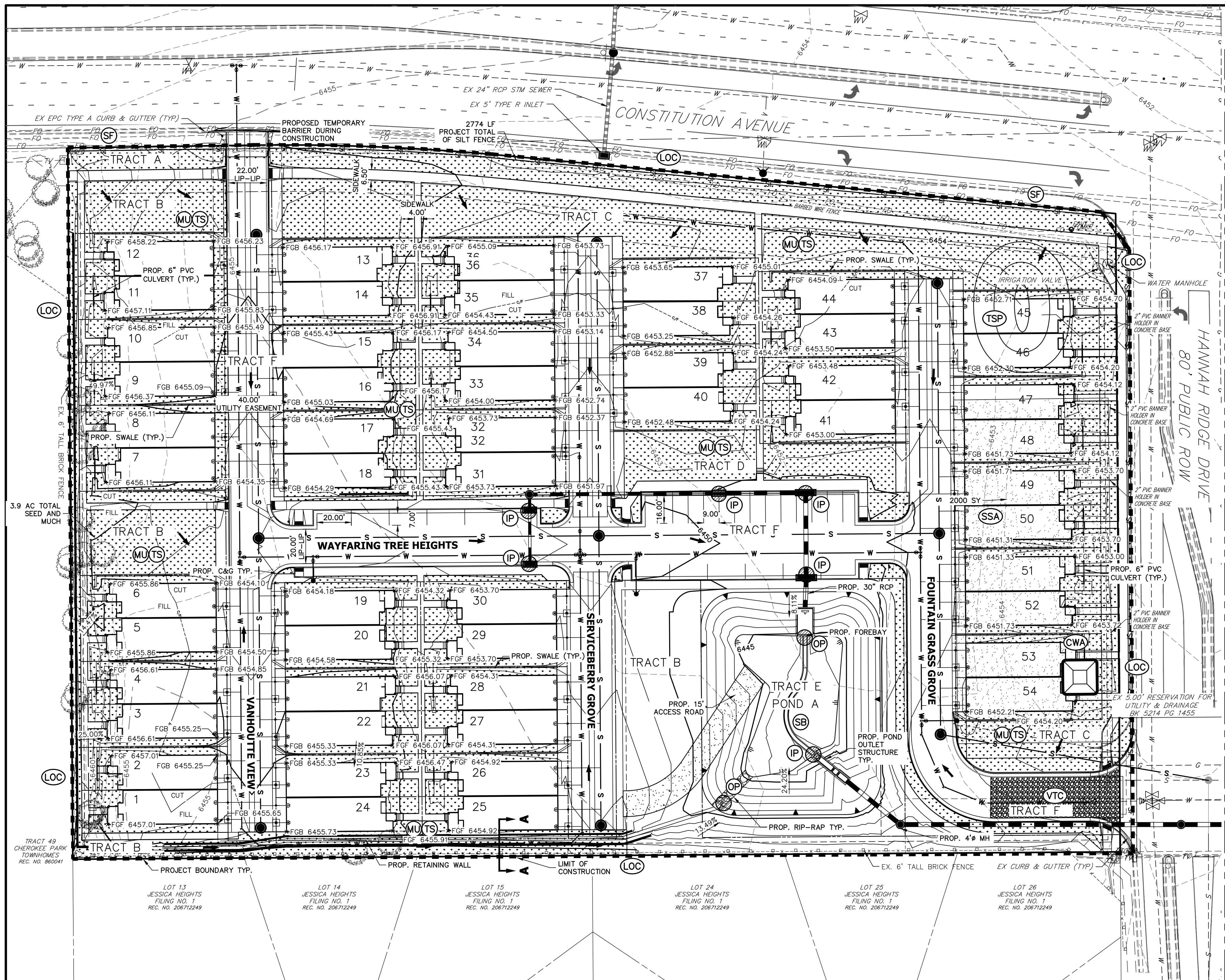


ENGINEER'S STATEMENT

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, INC.





LEGEND

CHECK DAM (STRAW BALE)	CD	
CONSTRUCTION FENCE	CF	
CONCRETE WASHOUT AREA	CWA	
INLET PROTECTION	IP	
LIMITS OF CONSTRUCTION/DISTURBANCE	LOC	
OUTLET PROTECTION	OP	
TEMPORARY SEEDING & MULCHING	TS/MU	
SEDIMENT BASIN	SB	
SILT FENCE	SF	
STABILIZED STAGING AREA	SSA	
TEMPORARY STOCK PILE	TSP	
TEMPORARY SWALE	TSW	
VEHICLE TRACKING CONTROL	VTC	
EROSION CONTROL BLANKET	ECB	
STORMWATER FLOW DIRECTION		

GRADING, EROSION AND STORMWATER QUALITY CONTROL PLAN NOTES

- SEE SHEETS 3-5 FOR LIMITS OF SEED AND MULCH AREAS. TOTAL AMOUNT TO RECEIVE TEMPORARY SEED & MULCH IS 10.83 AC.
- ALL ROADWAY & DRIVE AREAS WILL BE ASPHALT.
- SEE STORM SEWER & POND IMPROVEMENT PLANS FOR DETAILED DESIGN OF PROPOSED IMPROVEMENTS.
- FGF = FINISHED GRADE @ FRONT OF BUILDING
- RGR = FINISHED GRADE @ REAR OF BUILDING
- THERE WILL BE NO PHASING FOR THIS PROJECT
- THE EXISTING VEGETATION CONSISTS OF NATIVE GRASSES, AND A FEW SHRUBS AND TREES.

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.

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 GLENN D. ELLIS, P.E.
 COLORADO P.E. 38861
 FOR AND ON BEHALF OF JR ENGINEERING, L.L.C.
 07/15/2021 DATE

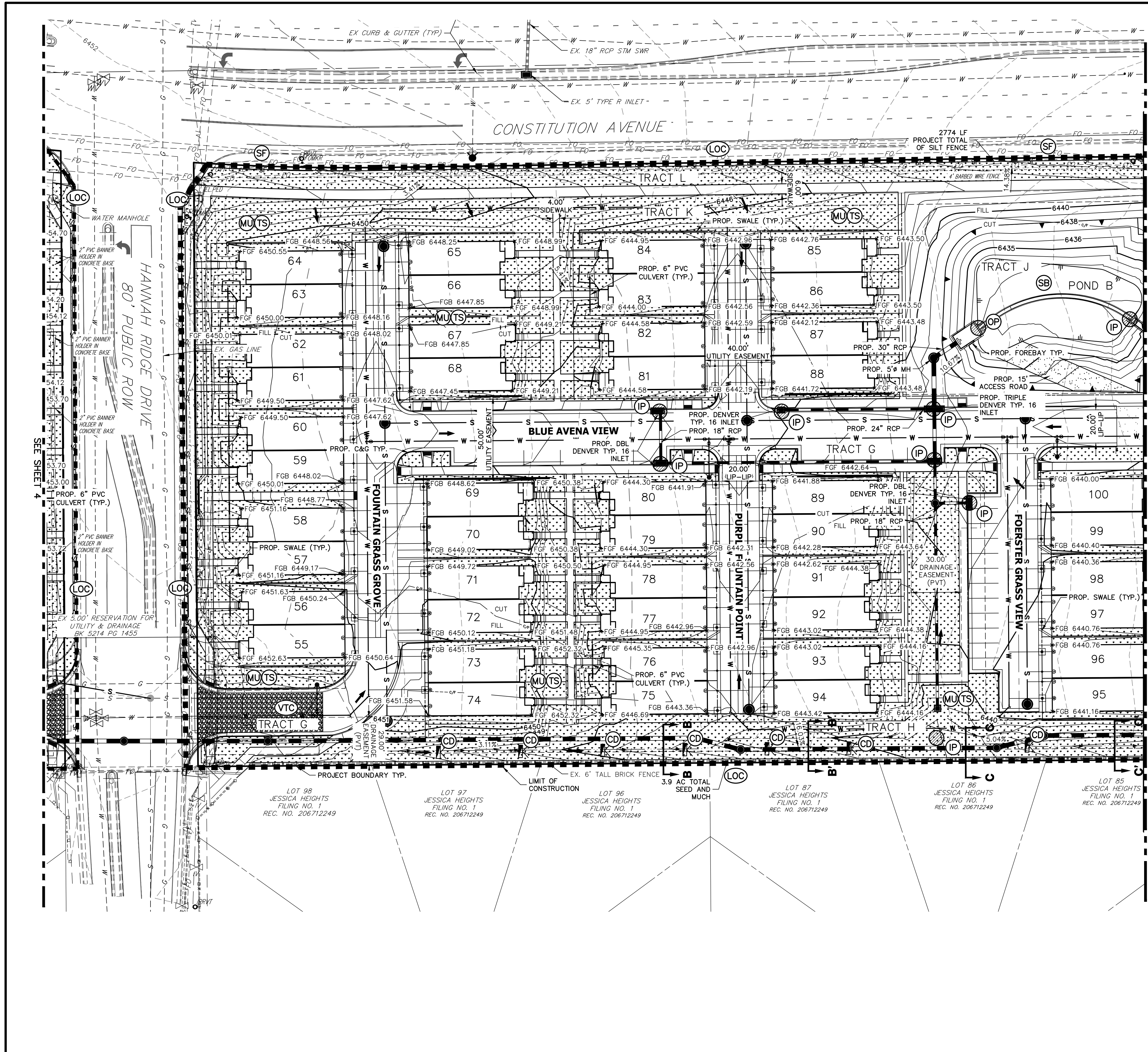
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 DENVER, CO 80237
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 720-977-3827

BY DATE
 No. REVISION
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 V-SCALE 1"=3'
 DATE 01/26/21
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URBAN COLLECTION AT
 PALMER VILLAGE
 EROSION CONTROL PLAN
 GEC PLAN

SHEET 4 OF 10
 JOB NO. 25149.01



LEGEND

CHECK DAM (STRAW BALE)	CD	
CONSTRUCTION FENCE	CF	
CONCRETE WASHOUT AREA	CWA	
INLET PROTECTION	IP	
LIMITS OF CONSTRUCTION/DISTURBANCE	LOC	
OUTLET PROTECTION	OP	
TEMPORARY SEEDING & MULCHING	TS/MU	
SEDIMENT BASIN	SB	
SILT FENCE	SF	
STABILIZED STAGING AREA	SSA	
TEMPORARY STOCK PILE	TSP	
TEMPORARY SWALE	TSW	
VEHICLE TRACKING CONTROL	VTC	
EROSION CONTROL BLANKET	ECB	
STORMWATER FLOW DIRECTION		

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ORIGINAL SCALE: 1" = 30'

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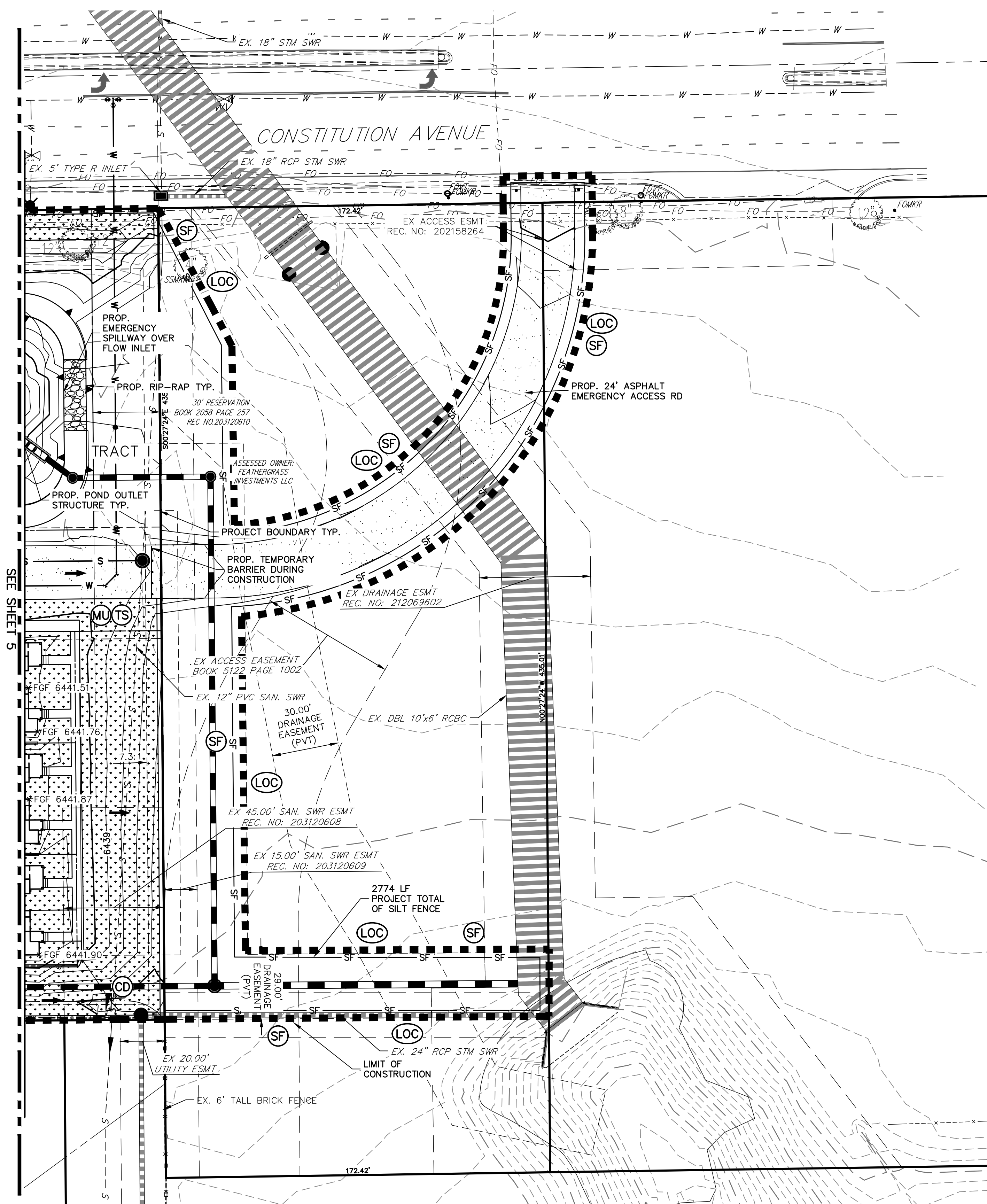
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V-SCALE	1"=3'
DATE	01/26/21
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CHECKED BY	

URBAN COLLECTION AT PALMER VILLAGE
 EROSION CONTROL PLAN
 GEC PLAN

SHEET 5 OF 10
 JOB NO. 25149.01



LEGEND

CHECK DAM (STRAW BALE)	CD	
CONSTRUCTION FENCE	CF	
CONCRETE WASHOUT AREA	CWA	
INLET PROTECTION	IP	
LIMITS OF CONSTRUCTION/DISTURBANCE	LOC	
OUTLET PROTECTION	OP	
TEMPORARY SEEDING & MULCHING	TS/MU	
SEDIMENT BASIN	SB	
SILT FENCE	SF	
STABILIZED STAGING AREA	SSA	
TEMPORARY STOCK PILE	TSP	
TEMPORARY SWALE	TSW	
VEHICLE TRACKING CONTROL	VTC	
EROSION CONTROL BLANKET	ECB	
STORMWATER FLOW DIRECTION		

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30 15 0 30 60
ORIGINAL SCALE: 1" = 30'

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07/15/2021 DATE

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DENVER, CO 80237
ATTN: JASON FOCK
720-977-3827

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A Westman Company
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DATE 01/26/21
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URBAN COLLECTION AT PALMER VILLAGE
EROSION CONTROL PLAN
GEC PLAN

SHEET 6 OF 10
JOB NO. 25149.01

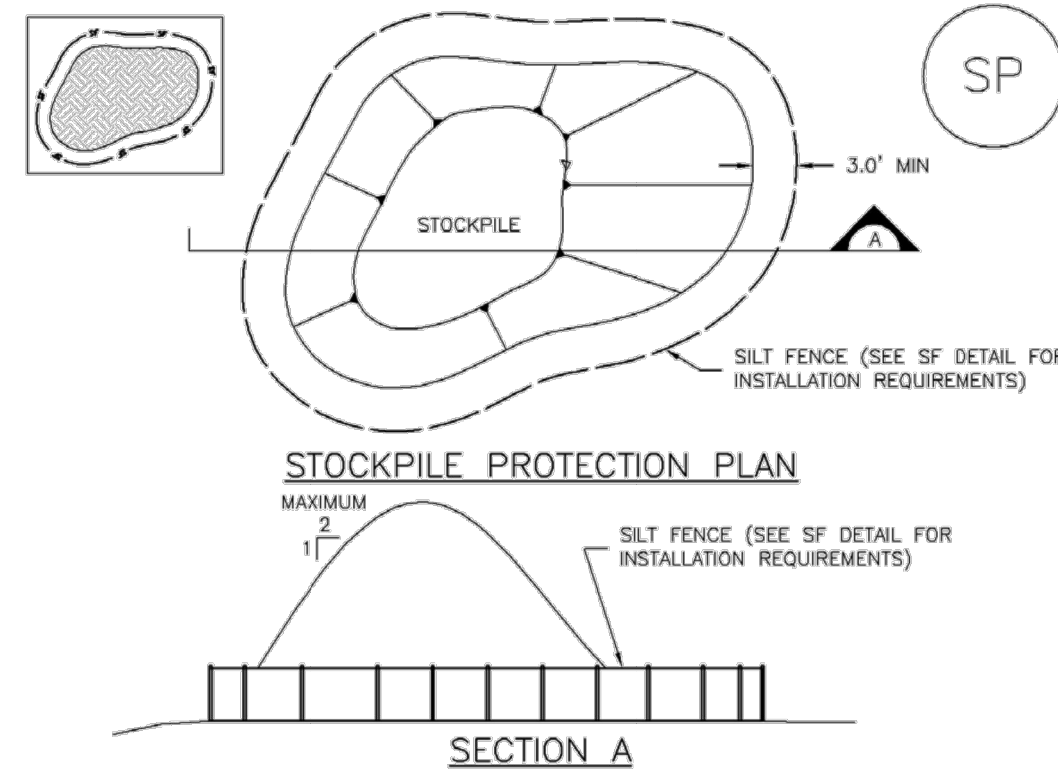
MM-1 Concrete Washout Area (CWA)

CWA 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 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 DOCUMENTED THOROUGHLY.
 3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON DISCOVERY OF THE FAILURE.
 4. THE CWA SHALL BE REPAIRED, CLEANED, OR ENLARGED AS NECESSARY TO MAINTAIN CAPACITY FOR CONCRETE WASTE. CONCRETE MATERIALS ACCUMULATED IN PIT SHALL BE REMOVED ONCE THE MATERIALS HAVE REACHED A DEPTH OF 2'.
 5. CONCRETE WASHOUT WATER, WASTED PIECES OF CONCRETE AND ALL OTHER DEBRIS IN THE SUBSURFACE PIT SHALL BE TRANSPORTED FROM THE JOB SITE IN A WATER-TIGHT CONTAINER AND DISPOSED OF PROPERLY.
 6. THE CWA SHALL REMAIN IN PLACE UNTIL ALL CONCRETE FOR THE PROJECT IS PLACED.
 7. WHEN THE CWA IS REMOVED, COVER THE DISTURBED AREA WITH TOP SOIL, SEED AND MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
- (DETAIL ADAPTED FROM DOUGLAS COUNTY, COLORADO AND THE CITY OF 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.

CWA-4 Urban Drainage and Flood Control District November 2010
Urban Storm Drainage Criteria Manual Volume 3

MM-2 Stockpile Management (SP)



SP-1 STOCKPILE PROTECTION

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 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 THE STOCKPILE WITHOUT FAILING IN THE EVENT THAT MATERIAL FROM THE STOCKPILE SHIFTS 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 IN PLACE FOR A MORE LIMITED TIME PERIOD (TYPICALLY 30-60 DAYS).
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.

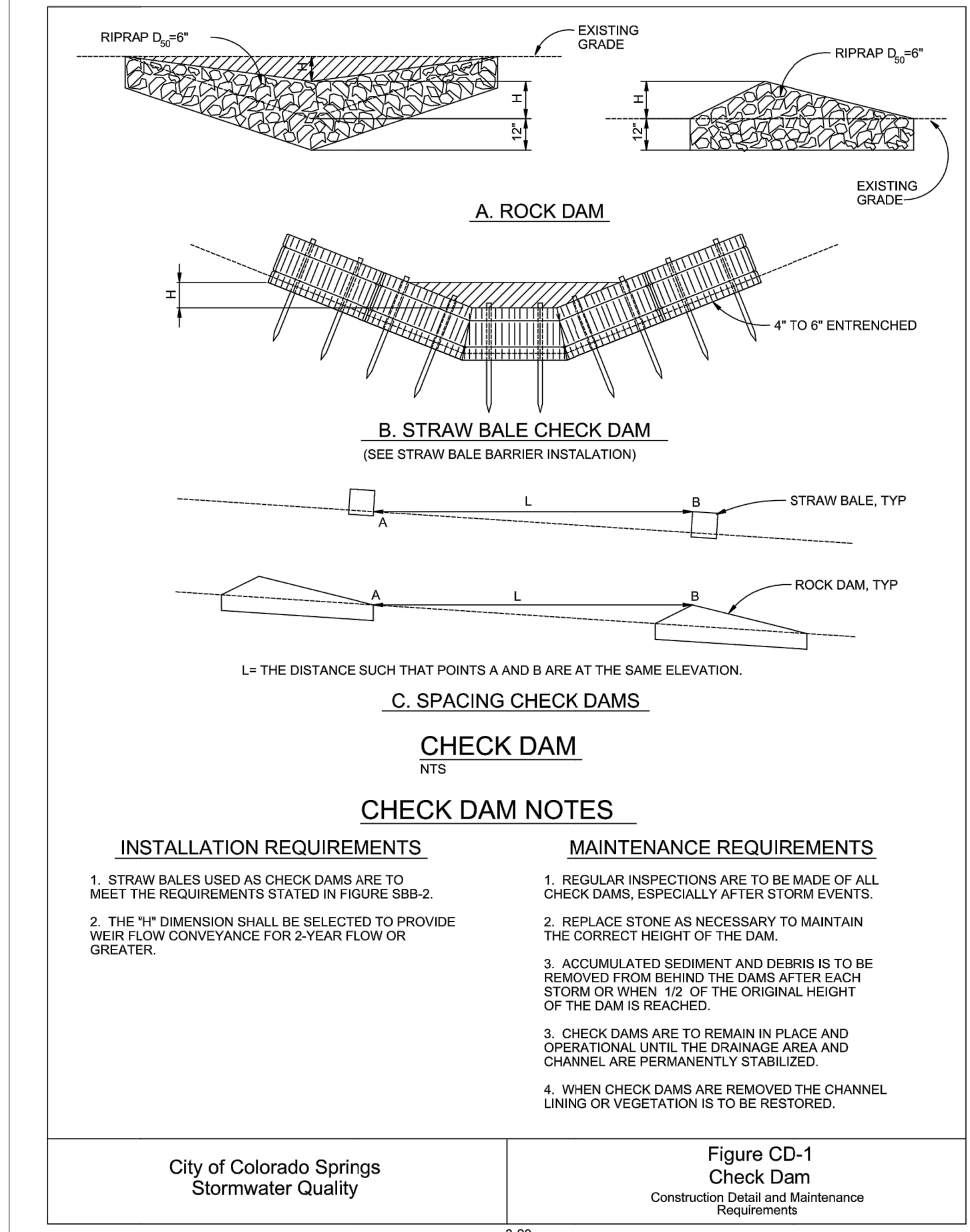
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Urban Storm Drainage Criteria Manual Volume 3

MM-2 Stockpile Management (SM)

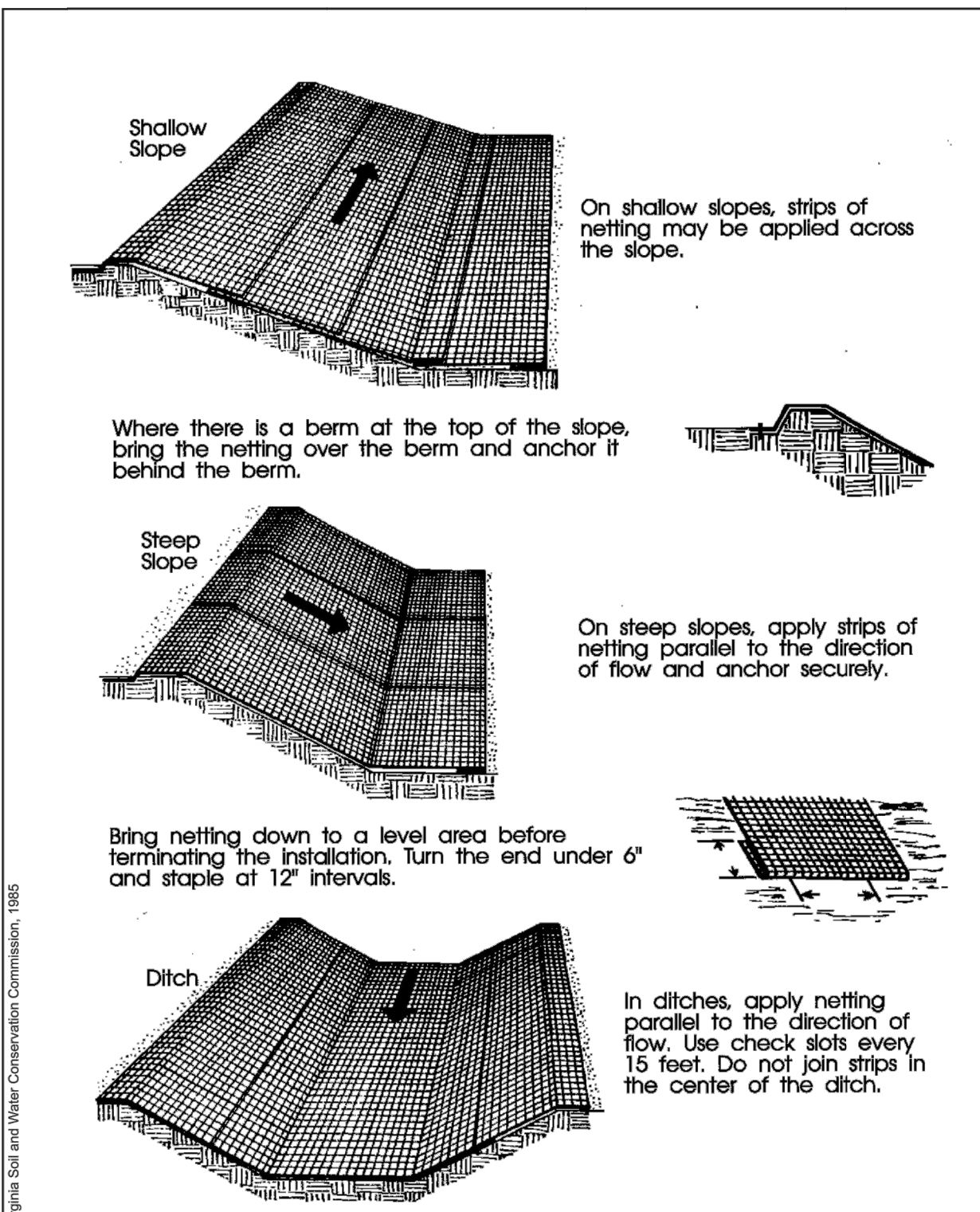
STOCKPILE PROTECTION MAINTENANCE NOTES

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 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.
 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 STOCKPILE HAS BEEN USED.
- (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.

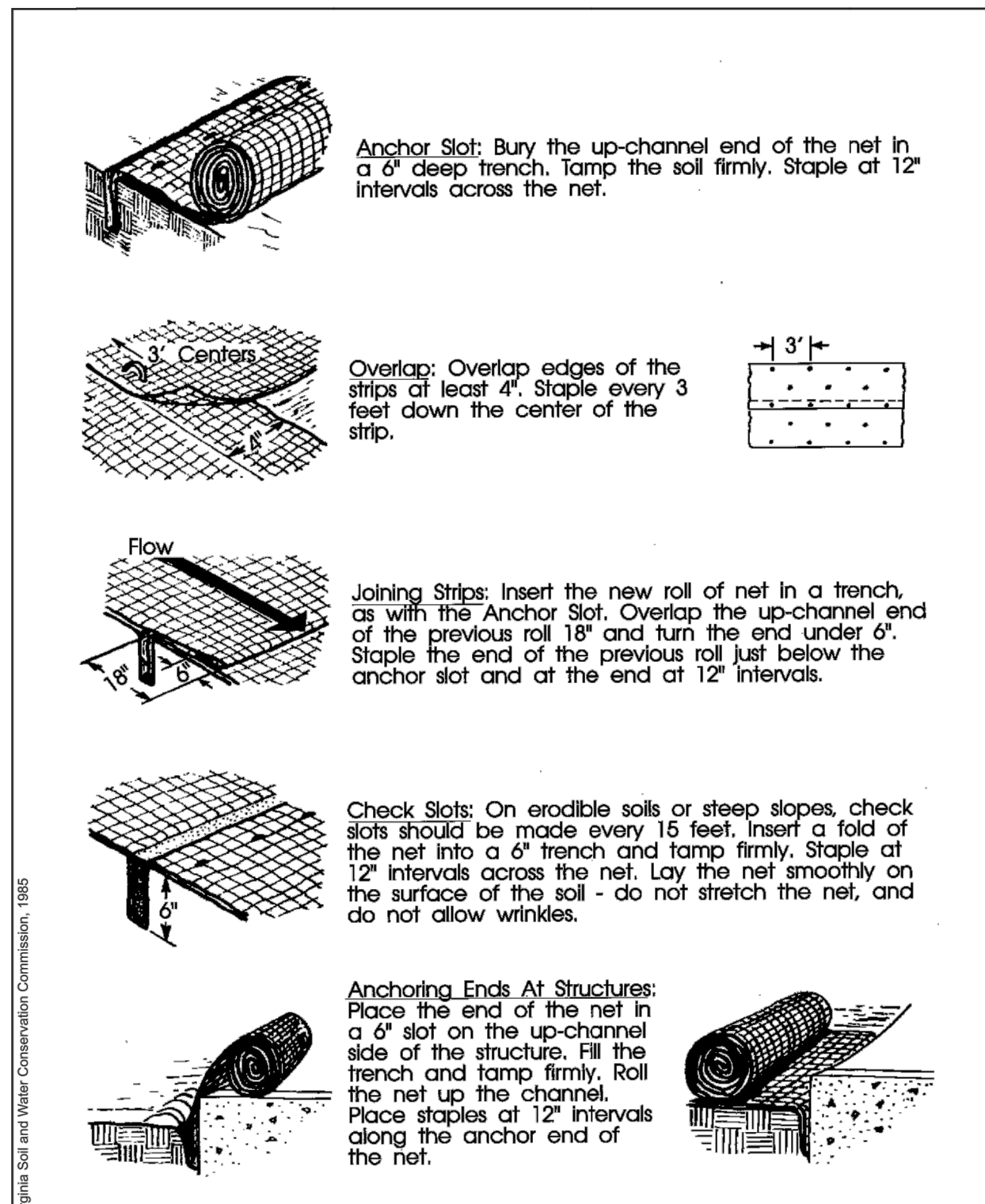
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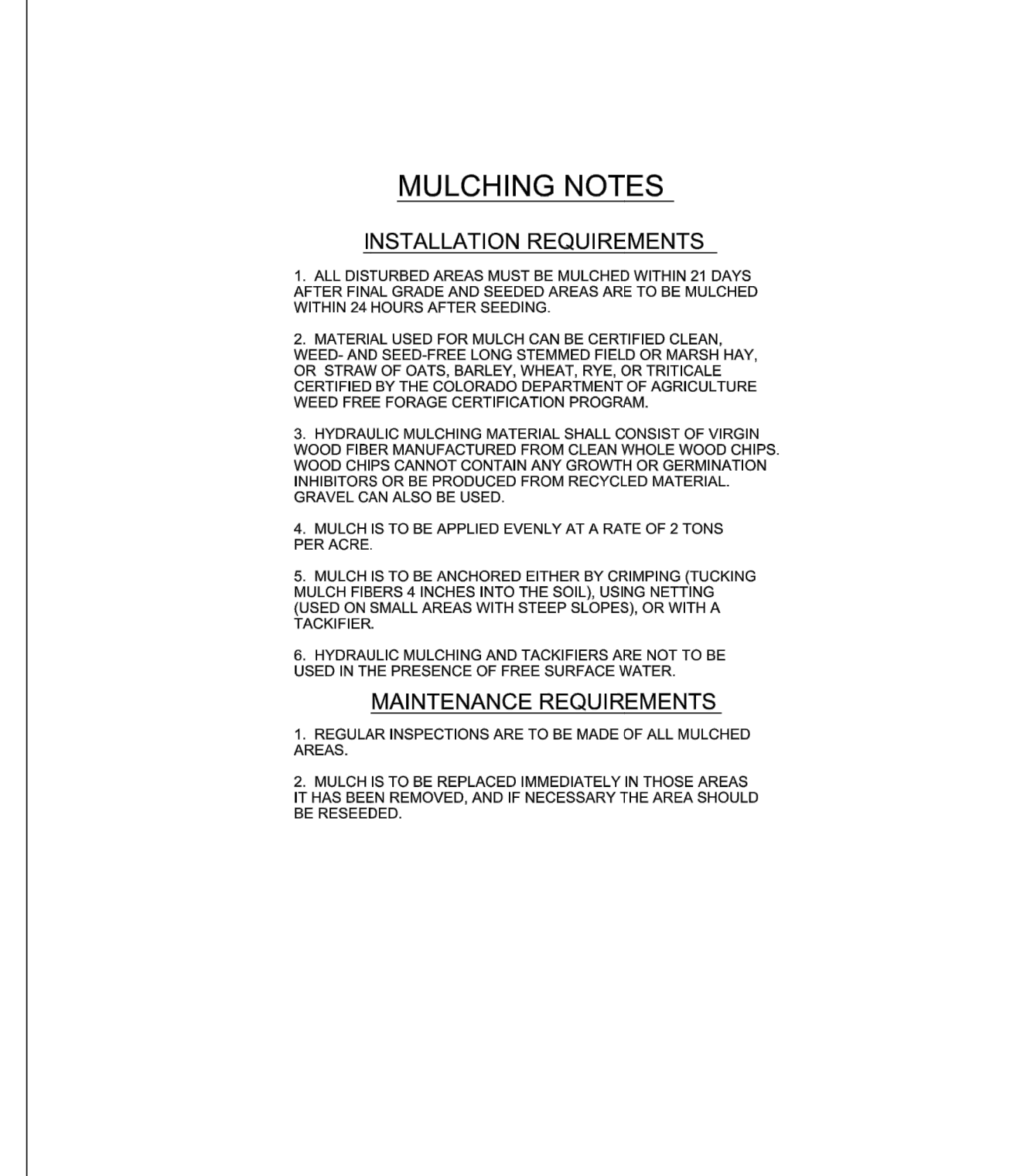
City of Colorado Springs Stormwater Quality Figure CD-1 Check Dam Construction Detail and Maintenance Requirements 3-20



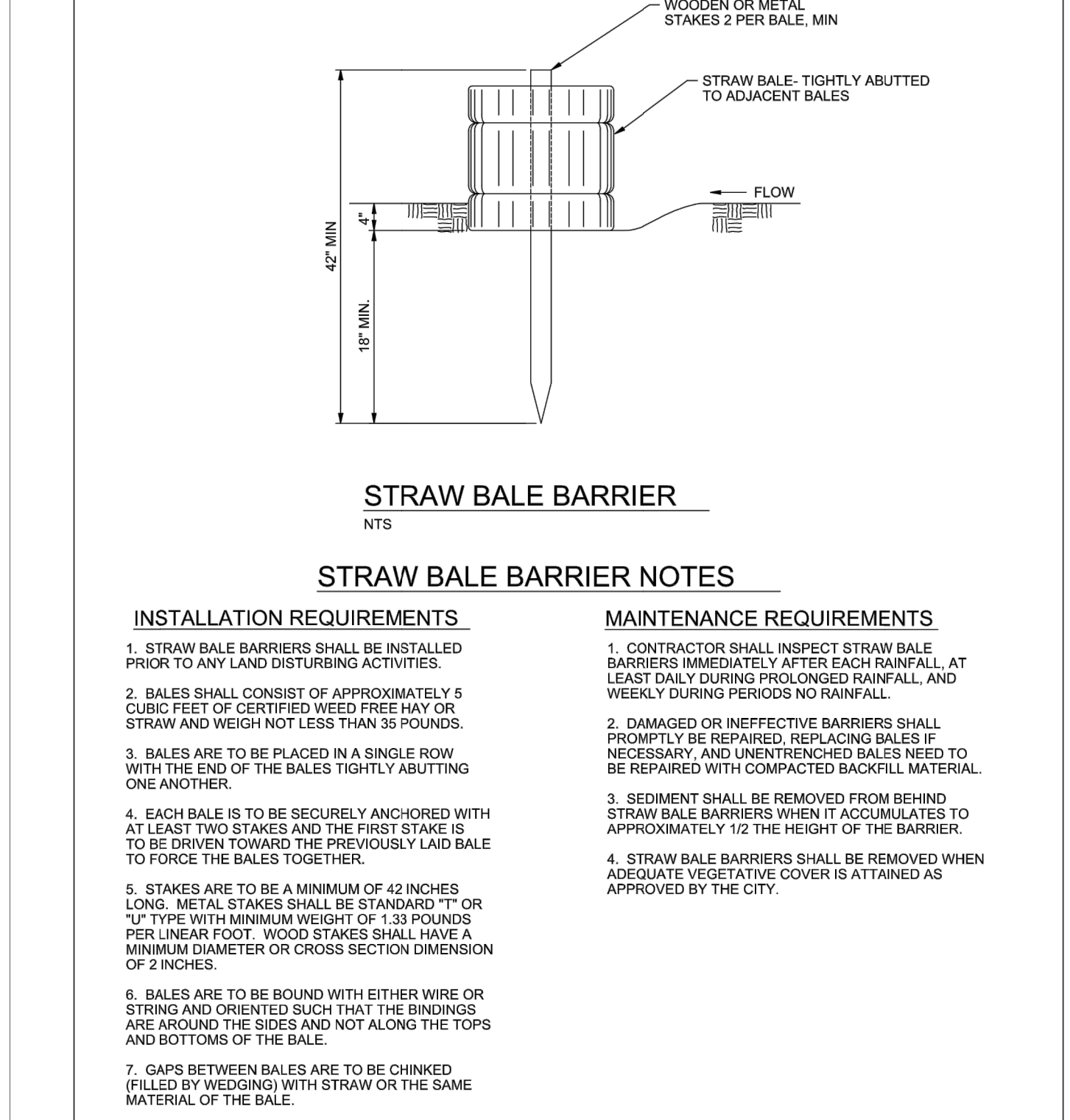
City of Colorado Springs Storm Water Quality Figure ECB-1 Erosion Control Blanket Application Examples 3-22



City of Colorado Springs Storm Water Quality Figure ECB-2 Erosion Control Blanket Installation Requirements 3-23



City of Colorado Springs Stormwater Quality Figure MU-1 Mulching Construction Detail and Maintenance Requirements 3-30



City of Colorado Springs Stormwater Quality Figure SBB-2 Straw Bale Barrier Construction Detail and Maintenance Requirements 3-42



ENGINEER'S STATEMENT
STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT

GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING

07/15/2021 DATE

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RECOMMENDED ANNUAL GRASSES				
SPECIES (COMMON NAME)	GROWTH SEASON	SEEDING DATE	POUNDS OF PURE LIVE SEED (PLS) (PLS/ACRE)	PLANTING DEPTH (INCHES)
1. OATS	COOL	MARCH 16 - APRIL 30	35-60	1-2
2. SPRING WHEAT	COOL	MARCH 16 - APRIL 30	25-35	1-2
3. SPRING BARLEY	COOL	MARCH 16 - APRIL 30	25-35	1-2
4. ANNUAL RYEGRASS	COOL	MARCH 16 - JUNE 30	10-15	1/2
5. MILLET	WARM	MAY 16 - JULY 15	3-15	1/2-3/4
6. SUDANGRASS	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
7. SORGHUM	WARM	MAY 16 - JULY 15	5-10	1/2-3/4
8. WINTER WHEAT	COOL	SEPTEMBER 1 - 30	20-35	1-2
9. WINTER BARLEY	COOL	SEPTEMBER 1 - 30	20-35	1-2
10. WINTER RYE	COOL	SEPTEMBER 1 - 30	20-35	1-2
11. TRITICALE	COOL	SEPTEMBER 1 - 30	25-40	1-2

THIS TABLE WAS TAKEN FROM UDFCD FOR RECOMMENDED ANNUAL GRASSES FOR THE DENVER METROPOLITAN AREA. THIS TABLE MAY BE USED UNLESS A SITE-SPECIFIC SEED MIX IS REQUESTED AND APPROVED.

TABLE TS-1

TEMPORARY SEEDING NOTES

INSTALLATION REQUIREMENTS

1. DISTURBED AREAS ARE TO BE SEEDDED WITHIN 21 DAYS AFTER CONSTRUCTION ACTIVITY OR GRADING ENDS IF SEASON ALLOWS.
2. IF NECESSARY, SOIL IS TO BE CONDITIONED FOR PLANT GROWTH BY APPLYING TOPSOIL, FERTILIZER, OR LIME.
3. SOIL IS TO BE TILLED IMMEDIATELY PRIOR TO APPLYING SEEDS. COMPACT SOILS ESPECIALLY NEED TO BE LOOSENEED.
4. SEEDBED DEPTH IS TO BE 4 INCHES FOR SLOPES FLATTER THAN 2:1, AND 1 INCH FOR SLOPES STEEPER THAN 2:1.
5. ANNUAL GRASSES LISTED IN TABLE TS-1 ARE TO BE USED FOR TEMPORARY SEEDING. SEED MIXES ARE NOT TO CONTAIN ANY NOXIOUS WEED SEEDS INCLUDING RUSSIAN OR CANADIAN THISTLE, KNAPWEED, PURPLE LOOSESTRIFE, EUROPEAN BINDWEED, JOHNSON GRASS, AND LEAFY SPURGE.
6. TABLE TS-1 ALSO PROVIDES REQUIREMENTS FOR SEEDING RATES, SEEDING DATES, AND PLANTING DEPTHS FOR THE APPROVED TYPES OF ANNUAL GRASSES.
7. SEEDING IS TO BE APPLIED USING MECHANICAL TYPE DRILLS EXCEPT WHERE SLOPES ARE STEEP OR ACCESS IS LIMITED THEN HYDRAULIC SEEDING MAY BE USED.
8. ALL SEEDDED AREAS ARE TO BE MULCHED (SEE FACTSHEET ON MULCHING).
9. IF HYDRAULIC SEEDING IS USED THEN HYDRAULIC MULCHING SHALL BE DONE SEPARATELY TO AVOID SEEDS BECOMING ENCAPSULATED IN THE MULCH.

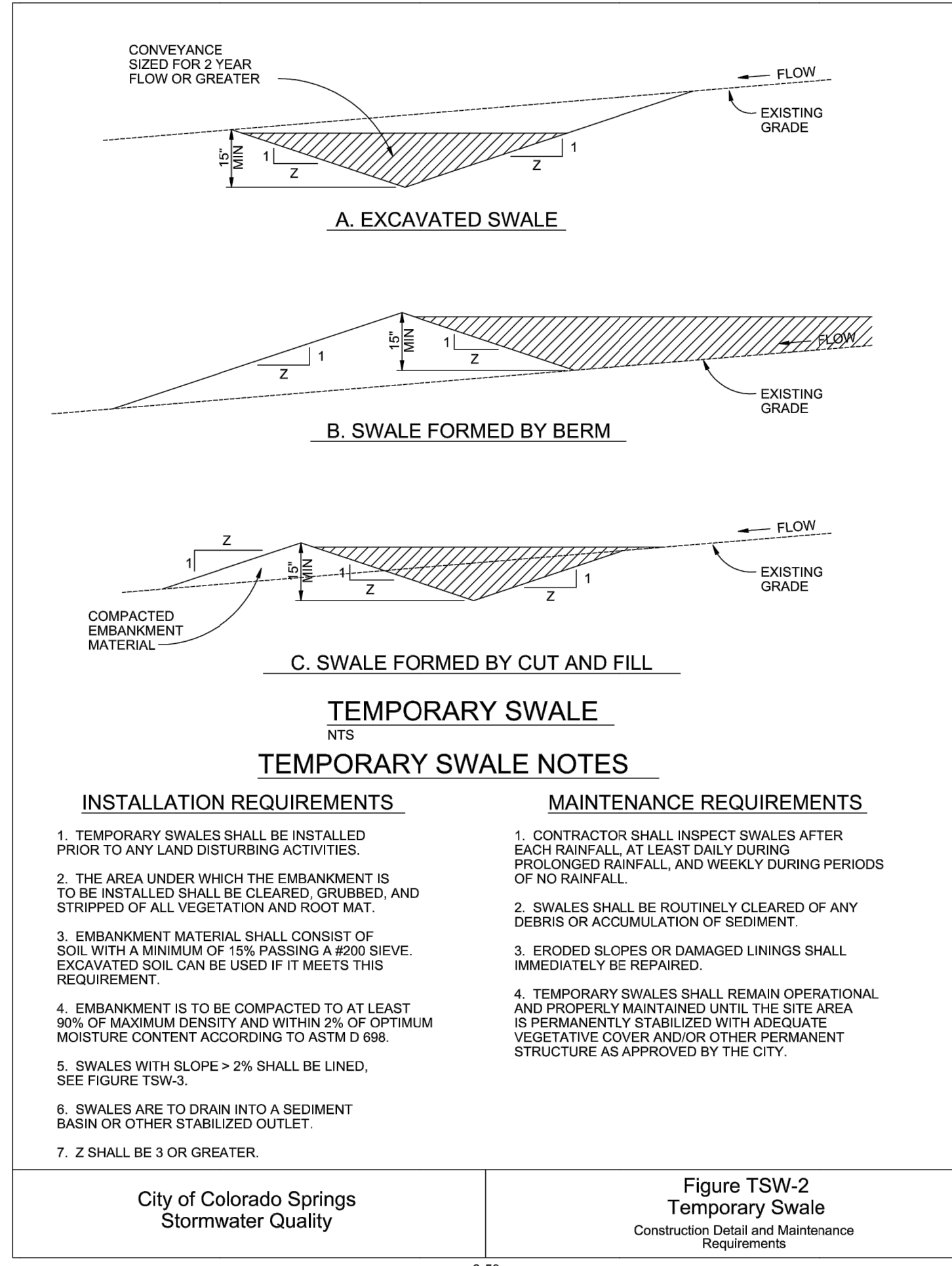
MAINTENANCE REQUIREMENTS

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL SEEDED AREAS TO ENSURE GROWTH.
2. AREAS WHERE GROWTH IS NOT OCCURRING QUICKLY OR THE MULCH HAS BEEN REMOVED SHALL BE RE-SEEDDED AS SOON AS POSSIBLE AND RE-MULCHED IF NEEDED.
3. SEEDDED AREAS ARE NOT TO BE DRIVEN OVER WITH CONSTRUCTION EQUIPMENT OR VEHICLES. NEED TO BE LOOSENEED.

City of Colorado Springs
Stormwater Quality

Figure TS-1
Temporary Seeding
Construction Detail and Maintenance
Requirements

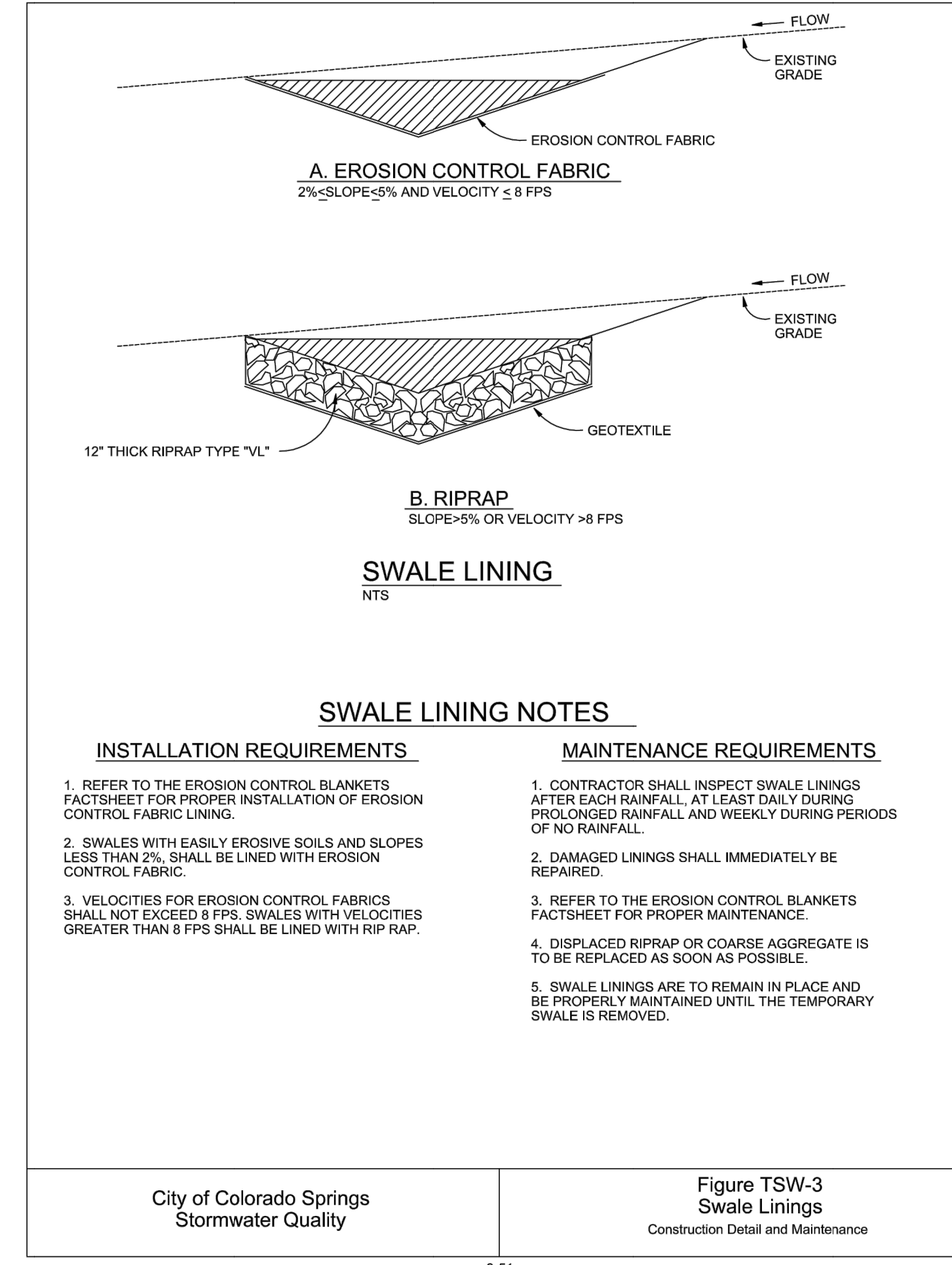
3-47



City of Colorado Springs
Stormwater Quality

Figure TSW-2
Temporary Swale
Construction Detail and Maintenance
Requirements

3-50



City of Colorado Springs
Stormwater Quality

Figure TSW-3
Swale Linings
Construction Detail and Maintenance
Requirements

3-51

Temporary Outlet Protection (TOP) EC-8

Description

Outlet protection helps to reduce erosion immediately downstream of a pipe, culvert, slope drain, rundown or other conveyance with concentrated, high-velocity flows. Typical outlet protection consists of riprap or rock aprons at the conveyance outlet.



Photograph TOP-1. Riprap outlet protection.

Appropriate Uses

Outlet protection should be used when a conveyance discharges onto a disturbed area where there is potential for accelerated erosion due to concentrated flow. Outlet protection should be provided where the velocity at the culvert outlet exceeds the maximum permissible velocity of the material in the receiving channel.

Note: This Fact Sheet and detail are for temporary outlet protection, outlets that are intended to be used for less than 2 years. For permanent, long-term outlet protection, see the Major Drainage chapter of Volume 1.

Design and Installation

Design outlet protection to handle runoff from the largest drainage area that may be contributing runoff during construction (the drainage area may change as a result of grading). Key in rock, around the entire perimeter of the apron, to a minimum depth of 6 inches for stability. Extend riprap to the height of the culvert or the normal flow depth of the downstream channel, whichever is less. Additional erosion control measures such as vegetative lining, turf reinforcement mat and/or other channel lining methods may be required downstream of the outlet protection if the channel is susceptible to erosion. See Design Detail OP-1 for additional information.

Maintenance and Removal

Inspect apron for damage and displaced rocks. If rocks are missing or significantly displaced, repair or replace as necessary. If rocks are continuously missing or displaced, consider increasing the size of the riprap or deeper keying of the perimeter.

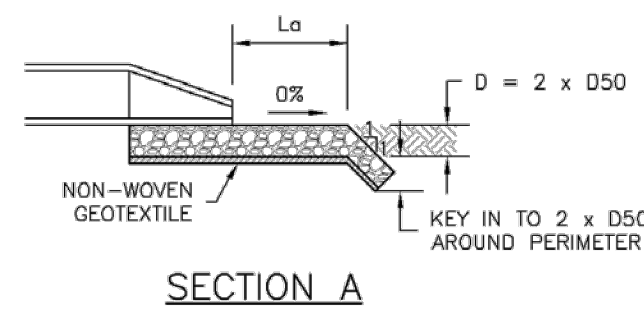
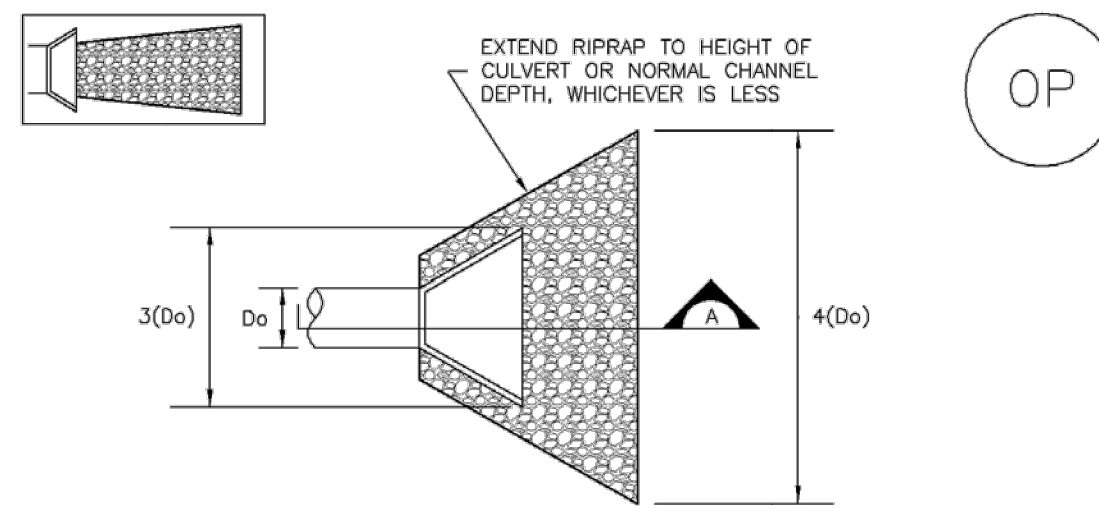
Remove sediment accumulated at the outlet before the outlet protection becomes buried and ineffective. When sediment accumulation is noted, check that upgradient BMPs, including inlet protection, are in effective operating condition.

Outlet protection may be removed once the pipe is no longer draining an upstream area, or once the downstream area has been sufficiently stabilized. If the drainage pipe is permanent, outlet protection can be left in place; however, permanent outlet protection should be designed and constructed in accordance with the requirements of the Major Drainage chapter of Volume 2.

Outlet Protection	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No

November 2010 Urban Drainage and Flood Control District TOP-1
Urban Storm Drainage Criteria Manual Volume 3

Temporary Outlet Protection (TOP) EC-8



PIPE DIAMETER, D _o (INCHES)	DISCHARGE, Q (CFS)	APRON LENGTH, L _a (FT)	RIPRAP D ₅₀ DIAMETER MIN (INCHES)
8	2.5	5	4
	5	10	6
	10	10	6
12	5	10	4
	10	13	6
	20	16	9
18	30	23	12
	40	26	16
	50	26	12
24	30	16	9
	40	26	9
	50	26	12

OP-1. TEMPORARY OUTLET PROTECTION

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TEMPORARY OUTLET PROTECTION INSTALLATION NOTES

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

TEMPORARY OUTLET PROTECTION INSPECTION AND 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 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 DOCUMENTED THOROUGHLY.
3. WHERE BMPs HAVE FAILED, REPAIR OR REPLACEMENT SHOULD BE INITIATED UPON 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.

(DETAILS ADAPTED FROM AURORA, COLORADO AND PREVIOUS VERSION OF VOLUME 3, NOT AVAILABLE IN AUTOCAD)

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ENGINEER'S STATEMENT

STANDARD DETAILS SHOWN WERE REVIEWED ONLY AS TO THEIR APPLICATION ON THIS PROJECT



GLENN D. ELLIS, P.E.
COLORADO P.E. 38861
FOR AND ON BEHALF OF JR ENGINEERING, LLC

URBAN COLLECTION AT
PALMER VILLAGE
DETAILS
GEC PLANS

SHEET 10 OF 10
JOB NO. 25149.01

PREPARED FOR
MDC HOLDINGS
RICHMOND AMERICAN HOMES
4350 S. MONACO STREET
DENVER, CO 80237
ATTN: JASON POCK
720-977-3827

J.R. ENGINEERING
A Westman Company
Central 303-740-9883 • Colorado Springs 719-583-2593
Fort Collins 970-491-9888 • www.jrengineering.com

UNTIL SUCH TIME AS THESE DRAWINGS ARE APPROVED BY THE APPROPRIATE REVIEWING AGENCIES, JR ENGINEERING APPROVES THEIR USE AS DESIGNATED BY WRITTEN AUTHORIZATION.