



JICS - WAYNOKA

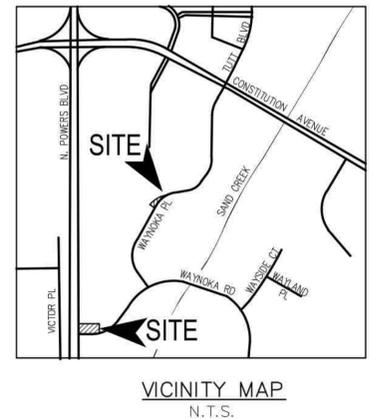
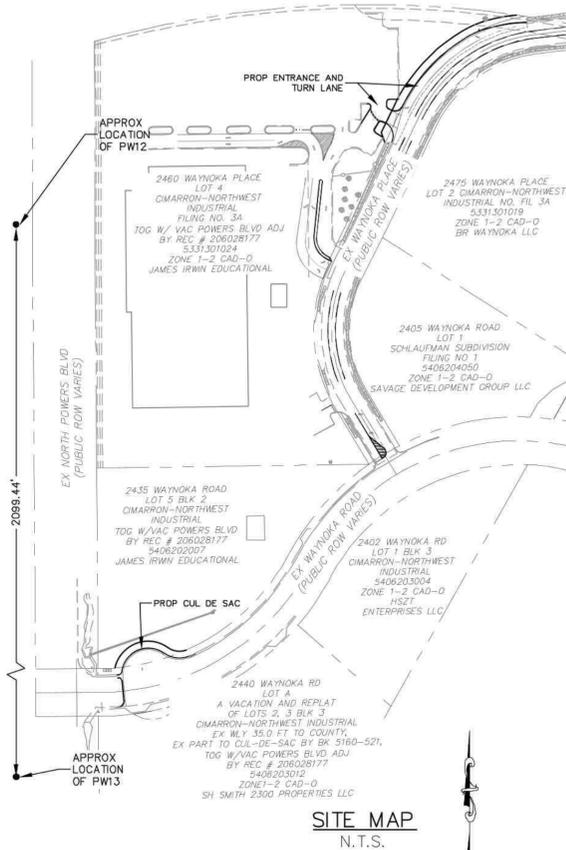
COUNTY OF EL PASO, STATE OF COLORADO

GRADING AND EROSION CONTROL PLANS

MAY 2023

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

- 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.
- NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
- A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE 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 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.
- 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 STABILIZATION METHOD IS IMPLEMENTED. ALL TEMPORARY SEDIMENT 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 THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE-EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
- COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENEED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
- 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.
- CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
- 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.
- EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- 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.
- 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.
- TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 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.
- 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.
- NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ON-SITE 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.
- 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 ON-SITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
- 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.
- ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- 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.
- THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH ENGINEERING, INC., TITLED "SOIL, GEOLOGY, AND GEOLOGIC HAZARD STUDY COPPER CHASE AT STERLING RANCH", DATED MARCH 7, 2022, REVISED _____ AND SHALL BE CONSIDERED A PART OF THESE PLANS.
- 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
WQCD - PERMITS
4300 CHERRY CREEK DRIVE SOUTH
DENVER, CO 80246-1530
ATTN: PERMITS UNIT



SHEET INDEX

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ADDITIONAL NOTES:

- STAGING AREA TO BE DETERMINED/MODIFIED BY CONTRACTOR IN THE FIELD. THE LOCATIONS SHALL BE DELINEATED ON THIS PLAN BY THE CONTRACTOR.
- THE EROSION CONTROL DELINEATED ON THIS PLAN SHALL BE REGULARLY UPDATED BY THE CONTRACTOR.
- TEMPORARY SEDIMENT TRAP LOCATIONS WILL BE DETERMINED BY THE CONTRACTOR IN THE FIELD.
- EXISTING SITE TERRAIN GENERALLY SLOPES FROM NORTH TO SOUTHWEST AT GRADE RATES THAT VARY BETWEEN 2% TO 6%.
- THERE ARE NO BATCH PLANTS ON SITE.
- AREAS LEFT OPEN FOR 30 DAYS OR MORE, OTHER THAN FOR UTILITY AND DRAINAGE CONSTRUCTION SHALL BE SEEDED AND/OR MULCHED.
- NO PORTION OF THIS PROPERTY IS LOCATED WITHIN A DESIGNATED FEMA FLOODPLAIN IN ACCORDANCE WITH FLOOD INSURANCE RATE MAPS (FIRM) 08041C0533C, EFFECTIVE DATE DECEMBER 7, 2018.
- EXISTING VEGETATION:
THE SITE CONSISTS OF ASPHALT ROADS AND PARKING AREAS, WITH PRAIRIE GRASSES AND SHRUBS OVER A PORTION OF THE SITE.

TIMING: SPRING 2023 - WINTER 2023

ANTICIPATED STARTING AND COMPLETION TIME PERIOD OF SITE GRADING: SPRING 2024

EXPECTED DATE ON WHICH THE FINAL STABILIZATION WILL BE COMPLETED: _____

AREAS: 0.6 AC

TOTAL AREA OF THE SITE TO BE CLEARED, EXCAVATED OR GRADED: _____

RECEIVING WATERS: SAND CREEK

PROJECT DATUM

HORIZONTAL DATUM IS MODIFIED TO GROUND STATE PLANE COORDINATES VERTICAL DATUM IS NAVD88, ADJUSTMENT TO FIMS -3.55'

BASIS OF BEARINGS

BEARINGS ARE BASED ON GPS OBSERVATIONS OF BENCHMARKS PW13 AND PW12. THE BEARING IS N00°05'18"W, A DISTANCE OF 2099.44 US SURVEY FEET

BENCHMARKS:

- FIMS MONUMENT PW12 IS A 2" DIA. ALUMINIUM CAP STAMPED "CSU FIMS CONTROL PW12" ON THE NE CORNER OF AN ELECTRIC VAULT ON THE WEST SIDE OF POWERS BLVD. OPPOSITE THE LITTON DATA SYSTEMS BLDG AT 2450 WAYNOKA PLACE. ELEV.= 6383.21 (NAVD29 & 1960 SUPPLEMENTARY ADJUSTMENT)
- MONUMENT PW13, 2" FIMS CAP MARKED PW13 IN CONC WW ON THE NORTH SIDE OF SAND CREEK. ELEV.= 6350.64' (NAVD88)

AGENCIES:

OWNER/DEVELOPER:	ELDER CONSTRUCTION 4870 CENTENNIAL BLVD, SUITE 100 COLORADO SPRINGS, CO 80919 JEREMY HAMMERS (719)471-2708
CIVIL ENGINEER:	M & S CIVIL CONSULTANTS, INC. 212 N. WAHSATCH, SUITE 305 COLORADO SPRINGS, CO 80903 VIRGIL A. SANCHEZ P.E. (719) 955-5485
COUNTY ENGINEERING:	EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910
TRAFFIC ENGINEERING:	EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS 3275 AKERS DRIVE COLORADO SPRINGS, CO 80922
WATER RESOURCES:	CHEROKEE METROPOLITAN DISTRICT 6250 PALMER PARK BOULEVARD COLORADO SPRINGS, CO 80915-1721 JEFF MUNGER (719) 597-5080
FIRE DISTRICT:	CIMARRON HILLS FIRE DEPARTMENT 1835 TUSKEGEE PLACE COLORADO SPRINGS, CO 80915 (719) 591-0960
GAS DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556
ELECTRIC DEPARTMENT:	COLORADO SPRINGS UTILITIES 7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556
COMMUNICATIONS:	QWEST COMMUNICATIONS (U.N.C.C. LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674

DESIGN 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 NEGLIGENCE ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARING THIS PLAN.



VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160
FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC. DATE: 05-10-23

OWNER/DEVELOPER'S STATEMENT:

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

Jeremy Hammers 5/10/23
JEREMY HAMMERS (719)471-2708 DATE: 05-10-23
ELDER CONSTRUCTION

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.

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



AS-BUILT PLANS

EL PASO COUNTY FILE NO. PCD # PPR239

JICS - WAYNOKA

GRADING AND EROSION CONTROL PLANS

PROJECT NO. 10-022

DATE: 05/12/2023

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

DESIGNED BY: CW DRAWN BY: CLP CHECKED BY: WS

SHEET 1 OF 7

GR01

212 N. WAHSATCH AVE, STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.955.5485

M&S CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

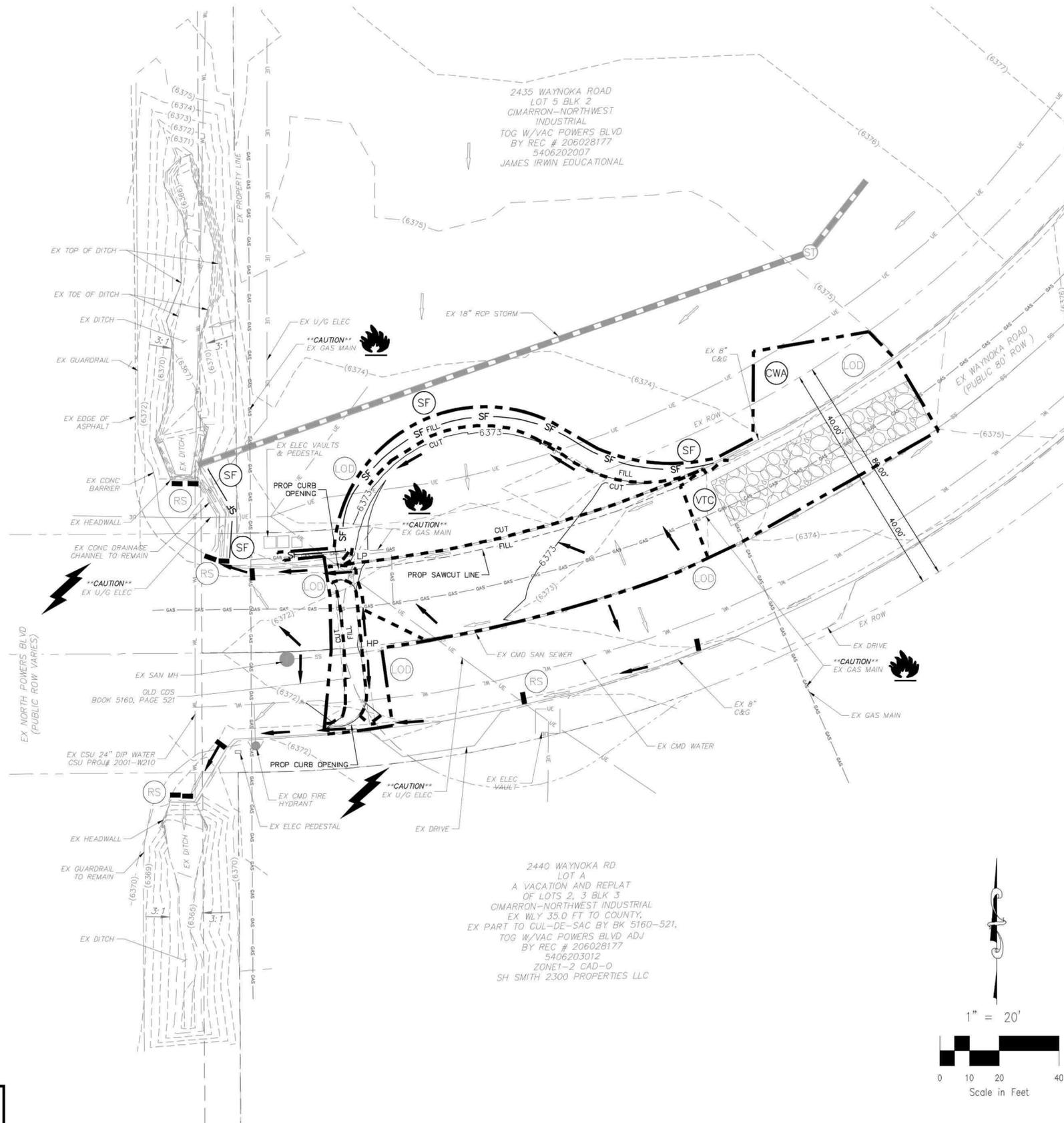
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REVISIONS:

NO.	DATE:	BY:	DESCRIPTION:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THESE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARED BY THESE PLANS.

CAUTION



ABBREVIATION LEGEND

- CL CENTERLINE
- LT LEFT
- RT RIGHT
- C&G CURB AND GUTTER
- EL ELEVATION
- W WEST
- CONST CONSTRUCTION
- N NORTH
- WTR WATER
- S SOUTH
- STM STORM SEWER
- PUB PUBLIC
- EX EXISTING
- STA STATION
- NTS NOT TO SCALE
- PROP PROPOSED
- SAN SANITARY SEWER
- CDS CUL DE SAC
- CMD CHEROKEE METRO DISTRICT
- VAC VACATED

LEGEND

- (6920) EXISTING MAJOR CONTOUR
- (-6918) EXISTING MINOR CONTOUR
- 6920 PROPOSED MAJOR CONTOUR
- 6918 PROPOSED MINOR CONTOUR
- SS FILING BOUNDARY (PROPERTY LINE)
- SS EXISTING SAN SEWER
- GAS EXISTING GAS MAIN
- WT EXISTING WATER MAIN
- UE EXISTING GUARDRAIL
- UE EXISTING U/G ELEC
- UE EXISTING STORM DRAIN
- UE EXISTING FIRE HYDRANT
- UE EXISTING SAN MH
- CUT/FILL LINE
- LOD LIMIT OF DISTURBANCE/CONST BNDRY/CONST FENCE
- RS ROCKSOCKS (COMPLETED IN INITIAL PHASE TO REMAIN UNTIL FINAL LANDSCAPE IS ESTABLISHED)
- SF SILT FENCE (COMPLETED IN INITIAL PHASE TO REMAIN UNTIL FINAL LANDSCAPE IS ESTABLISHED)
- VTC VEHICLE TRACKING CONTROL (COMPLETED IN INITIAL PHASE TO REMAIN UNTIL PAVEMENT INSTALL)
- CWA CONCRETE WASHOUT AREA - INTERIM
- L.P./H.P. LOW POINT/HIGH POINT
- 2.1% FLOW DIRECTION & SLOPE
- FLOW DIRECTION ARROW
- EXISTING FLOW DIRECTION ARROW

NARRATIVE NOTES:

- LOCATION OF STOCKPILES IF REQUIRED SHALL BE DETERMINED BY CONTRACTOR. ALL STOCKPILES SHALL REMAIN WITHIN THE CONSTRUCTION BOUNDARIES AS INDICATED ON THE SITE MAP.
- THE EXACT LOCATION FOR THE STABILIZED STAGING AREA, STORAGE EQUIPMENT AND TEMPORARY DISPOSAL AREAS SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR. PLAN SHALL BE UPDATED BY CONTRACTOR UPON DETERMINATION OF EXACT LOCATION.
- FINAL STABILIZATION SHALL BE COMPLETED AT THE END OF THE CONSTRUCTION ACTIVITIES. ALL AREAS DISTURBED WITHIN THE CONSTRUCTION BOUNDARY/LIMITS OF DISTURBANCE AREA SHALL BE RESEEDED WITH NATIVE SEEDING.
- EROSION CONTROL BLANKET SHALL BE USED ON SLOPES GREATER THAN 4:1.
- REFER TO JCS-WAYNOKA CONSTRUCTION PLANS BY M&S CIVIL CONSULTANTS FOR ADDITIONAL DETAIL.

ADDITIONAL NOTES:

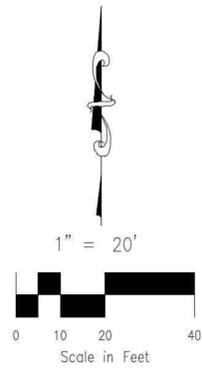
- THE EROSION CONTROL DELINEATED ON THIS PLAN SHALL BE REGULARLY UPDATED BY THE CONTRACTOR.
- LOCATIONS OF ALL NON-STRUCTURAL CONTROL MEASURES. NONSTRUCTURAL CONTROLS (LIKE STREET SWEEPING) WITHOUT A SPECIFIC LOCATION MAY BE DESCRIBED USING NOTES.
- PROPOSED SLOPES SHALL BE 4:1 OR GREATER.
- THE CONTRACTOR SHALL OBTAIN A COPY OF THE GEOTECHNICAL ENGINEERING REPORT AND KEEP A COPY ONSITE DURING ALL EARTHWORK OPERATIONS.
- TO REDUCED RUNOFF EROSION, THE CONTRACTOR SHALL IMPLEMENT SURFACING ROUGHING MEASURES OVER LARGER AREAS OF THE SITE. IF WEATHER DICTATES, THE CONTRACTOR SHOULD UTILIZE WATERING NON-STRUCTURAL MEASUREMENTS TO MINIMIZE WIND EROSION. THE SITE SHOULD BE MULCHED AFTER INTERIM GRADING WITHIN 21 DAYS, AND THE SITE SHALL BE SEEDDED IF CONSTRUCTION DOESN'T COMMENCE WITHIN 60 DAYS, PER EPC STANDARDS SPECIFICATIONS.
- NO ASPHALT/CONCRETE BATCH PLANTS SHALL BE UTILIZED ON THIS SITE.

VEGETATION:

EXISTING VEGETATION: MOSTLY ASPHALT ROAD WITH A SMALL PORTION CONSISTING OF NATIVE PRAIRIE GRASSES AND SHRUBS.

TEMPORARY NON-STRUCTURAL PRACTICES:

TO REDUCED RUNOFF EROSION, THE CONTRACTOR SHALL IMPLEMENT SURFACING ROUGHING MEASURES OVER LARGER AREAS OF THE SITE. IF WEATHER DICTATES, THE CONTRACTOR SHOULD UTILIZE WATERING NON-STRUCTURAL MEASUREMENTS TO MINIMIZE WIND EROSION. THE SITE SHOULD BE MULCHED AFTER INTERIM GRADING WITHIN 21 DAYS, AND THE SITE SHALL BE SEEDDED IF CONSTRUCTION DOESN'T COMMENCE WITHIN 60 DAYS, PER EL PASO COUNTY (EPC) STANDARDS.



FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

FOR BURIED UTILITY INFORMATION 48 HRS BEFORE YOU DIG CALL 1-800-922-1987

JCS - WAYNOKA

INITIAL/INTERIM GRADING & EROSION CONTROL PLAN

212 N WAHATCH AVE, STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5485

DATE: 05/12/2023

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

PROJECT NO. 10-022

DESIGNED BY: GW CLP
DRAWN BY: CLP
CHECKED BY: WS

SHEET 2 OF 7

GR02

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

MIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REGISTERED PROFESSIONAL ENGINEER
37160
05-10-23

NO.	DATE	DESCRIPTION	APP'D. BY	DATE

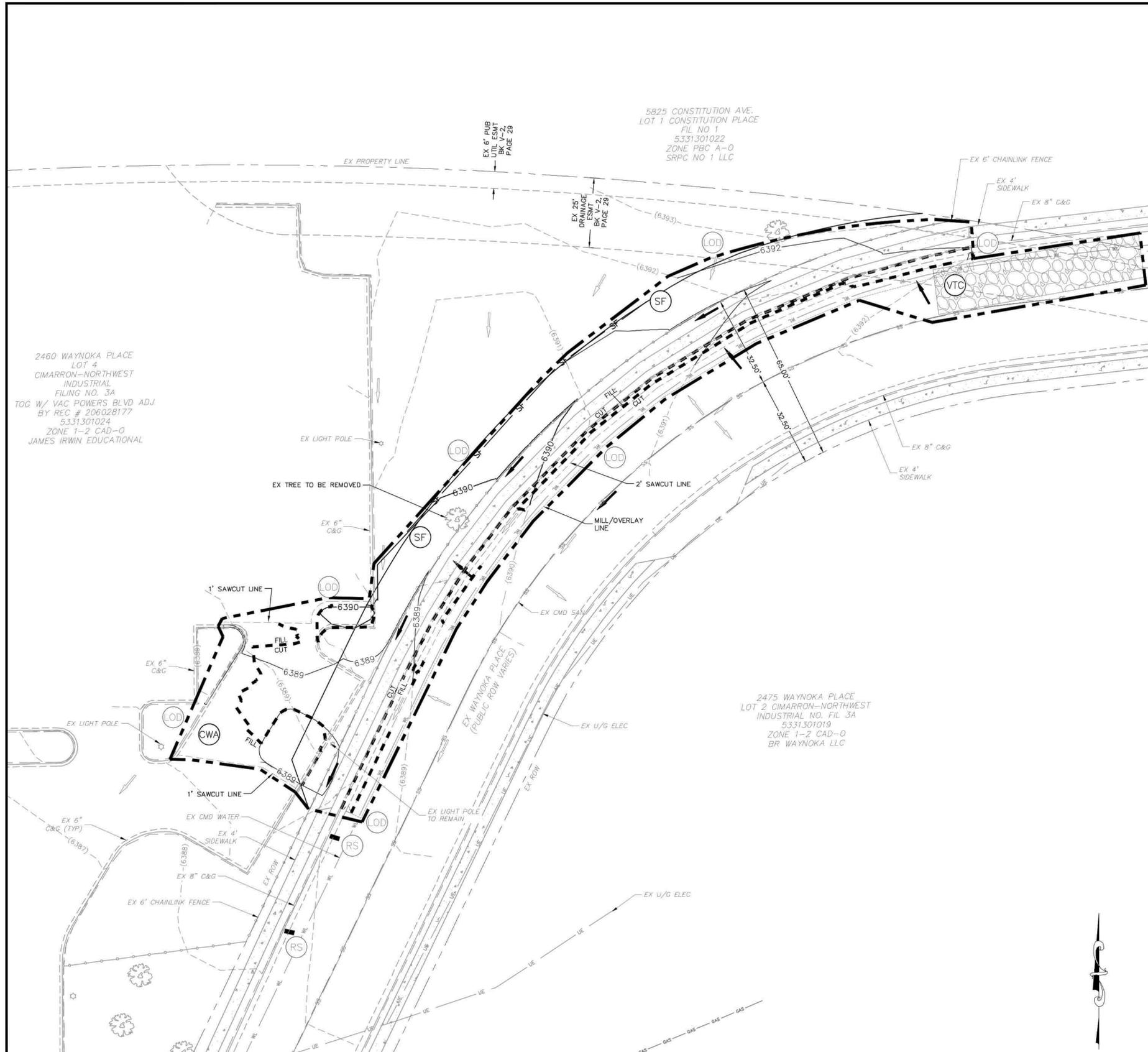
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CAUTION

AS-BUILT PLANS

EPC 5/25/23

EL PASO COUNTY FILE NO. PCD # PPR239



ABBREVIATION LEGEND

CL	CENTERLINE
LT	LEFT
RT	RIGHT
C&G	CURB AND GUTTER
EL	ELEVATION
W	WEST
CONST	CONSTRUCTION
N	NORTH
WTR	WATER
S	SOUTH
STM	STORM SEWER
PUB	PUBLIC
EX	EXISTING
STA	STATION
NTS	NOT TO SCALE
PROP	PROPOSED
SAN	SANITARY SEWER
CDS	CUL DE SAC
CMD	CHEROKEE METRO DISTRICT
VAC	VACATED

LEGEND

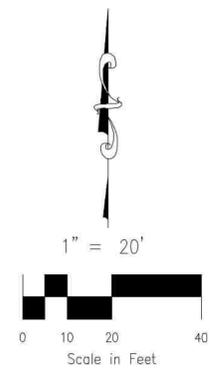
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(6918)	EXISTING MINOR CONTOUR
6920	PROPOSED MAJOR CONTOUR
6918	PROPOSED MINOR CONTOUR
---	FLING BOUNDARY (PROPERTY LINE)
SS	EXISTING SAN SEWER
GAS	EXISTING GAS MAIN
WT	EXISTING WATER MAIN
---	EXISTING GUARDRAIL
U/E	EXISTING U/G ELEC
U/E	EXISTING U/G ELEC
LOD	LIMIT OF DISTURBANCE/CONST BNDRY/CONST FENCE
RS	ROCKSOCKS (COMPLETED IN INITIAL PHASE TO REMAIN UNTIL FINAL LANDSCAPE IS ESTABLISHED)
SF	SILT FENCE (COMPLETED IN INITIAL PHASE TO REMAIN UNTIL FINAL LANDSCAPE IS ESTABLISHED)
---	CUT/FILL LINE
VTC	VEHICLE TRACKING CONTROL (COMPLETED IN INITIAL PHASE TO REMAIN UNTIL PAVEMENT INSTALL)
CWA	CONCRETE WASHOUT AREA - INTERIM
L.P./H.P.	LOW POINT/HIGH POINT
2.1%	FLOW DIRECTION & SLOPE
→	FLOW DIRECTION ARROW
↔	EXISTING FLOW DIRECTION ARROW

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VEGETATION:
EXISTING VEGETATION: ASPHALT ROAD, PARKING AND ROCK LANDSCAPING WITH A SMALL PORTION OF NATIVE GRASSES AND TREES.

TEMPORARY NON-STRUCTURAL PRACTICES:
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WAYNOKA PLACE
SCALE 1"=20'

FOR LOCATING & MARKING GAS, ELECTRIC, WATER & TELEPHONE LINES

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JICS - WAYNOKA		INITIAL/INTERIM GRADING & EROSION CONTROL PLAN	DATE: 05/12/2023
PROJECT NO. 10-022	SCALE: HORIZONTAL: 1"=20'	DESIGNED BY: CW	SHEET 3 OF 7
DRAWN BY: CLP	CHECKED BY: WS	GR03	

212 N WAHATCH AVE, STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5485

M&S CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

PROFESSIONAL ENGINEER
VIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

NO.	REVISIONS:	DATE:	BY:

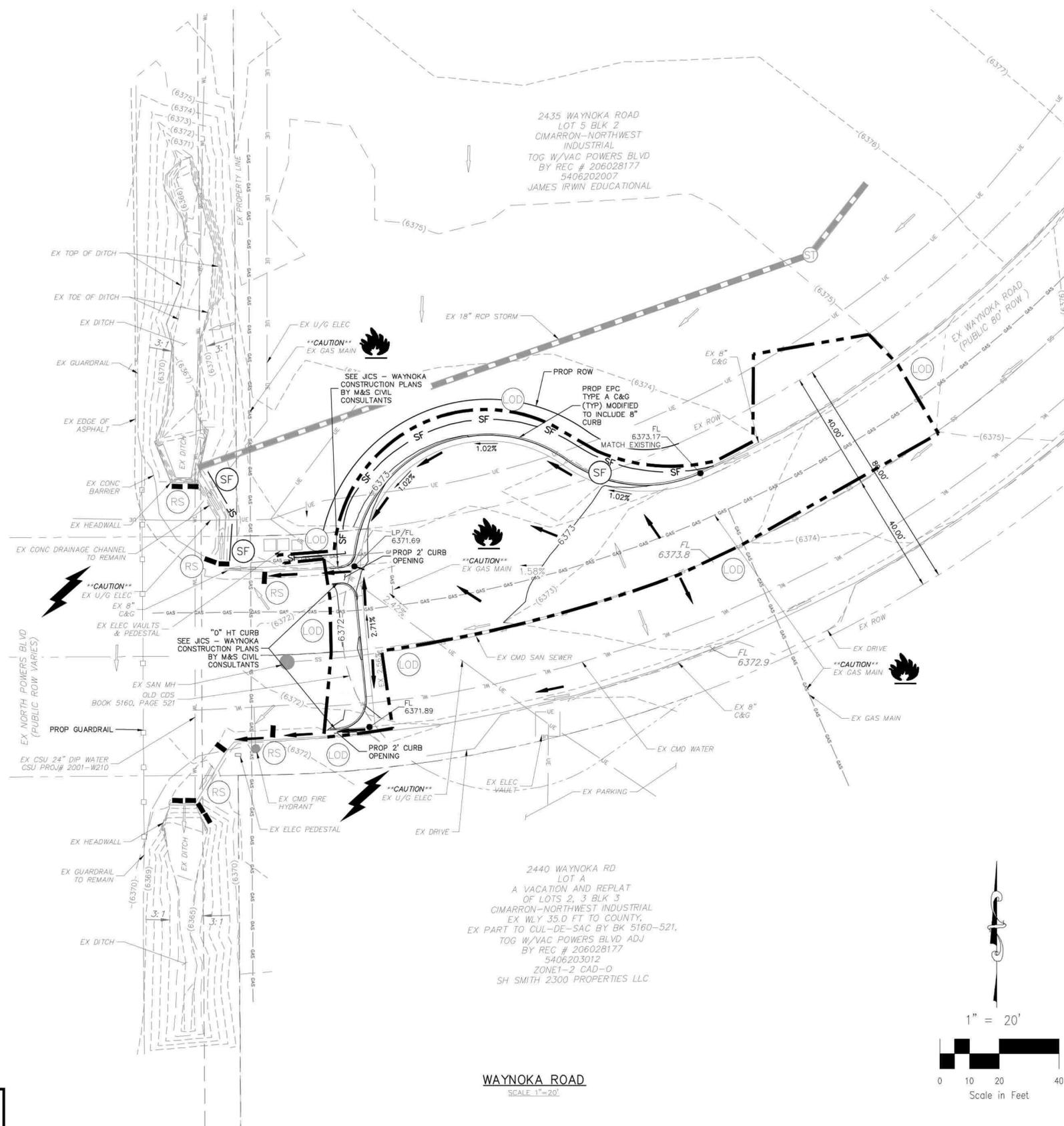
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CAUTION

AS-BUILT PLANS

EPC 5/25/23

EL PASO COUNTY FILE NO. PCD # PPR239



WAYNOKA ROAD
SCALE: 1"=20'

ABBREVIATION LEGEND

- CL CENTERLINE
- LT LEFT
- RT RIGHT
- C&G CURB AND GUTTER
- EL ELEVATION
- W WEST
- CONST CONSTRUCTION
- N NORTH
- WTR WATER
- S SOUTH
- STM STORM SEWER
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- PROP PROPOSED
- SAN SANITARY SEWER
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LEGEND

- (---) (6920) --- EXISTING MAJOR CONTOUR
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- 6918 — PROPOSED MINOR CONTOUR
- — FILING BOUNDARY (PROPERTY LINE)
- SS — SS — EXISTING SAN SEWER
- GAS — GAS — EXISTING GAS MAIN
- WT — WT — EXISTING WATER MAIN
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VEGETATION:

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JICS - WAYNOKA

FINAL GRADING & EROSION CONTROL PLAN

DATE: 05/12/2023

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

PROJECT NO. 10-022 DESIGNED BY: GW CLP DRAWN BY: CIP WS CHECKED BY: N/A

212 N WAHATCH AVE, STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5485

CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

MIRGIL A. SANCHEZ, COLORADO P.E. NO. 37160

REGISTERED PROFESSIONAL ENGINEER
NO. 37160
05-10-23

NO.	DATE:	BY:	DESCRIPTION:

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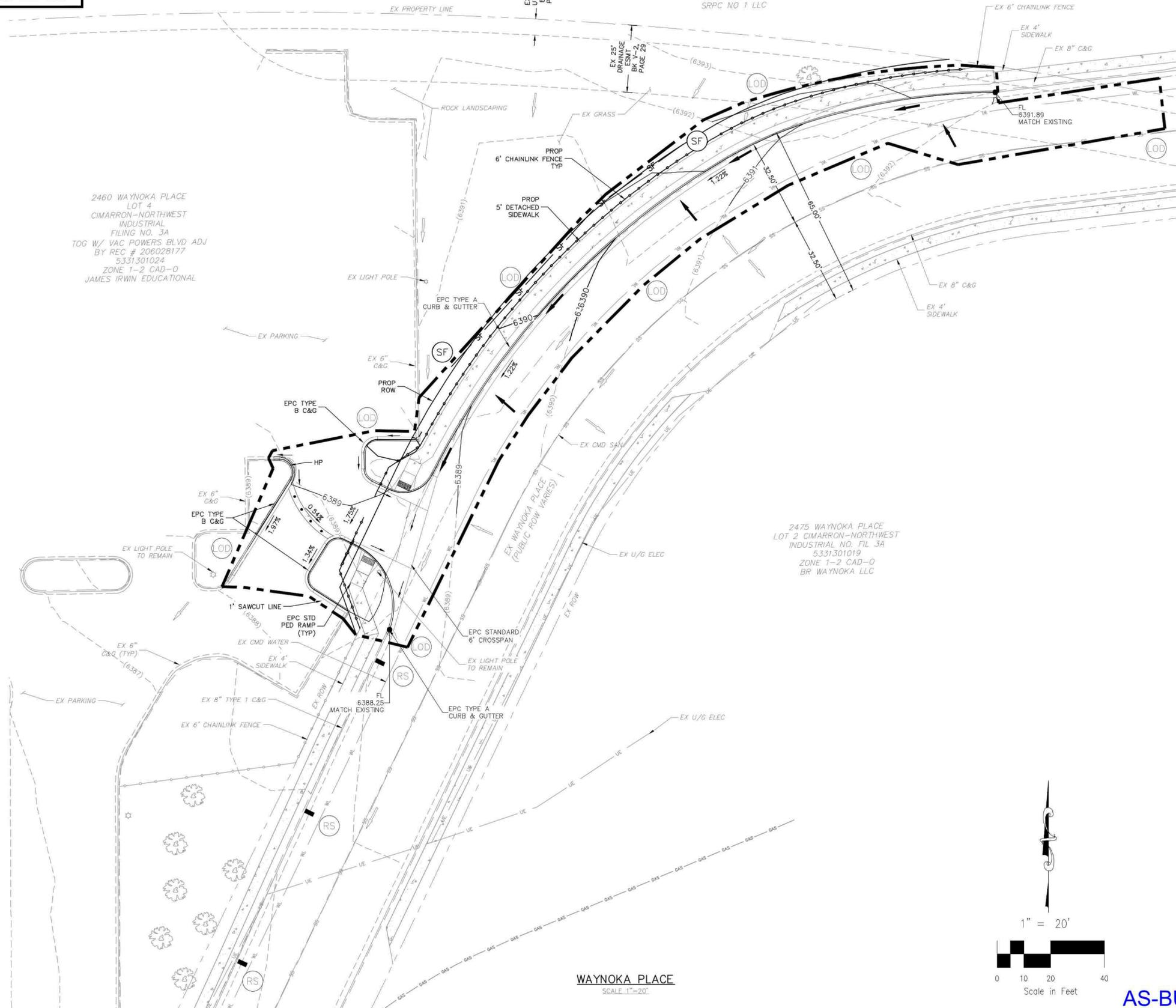
CAUTION

AS-BUILT PLANS

EPC 5/25/23

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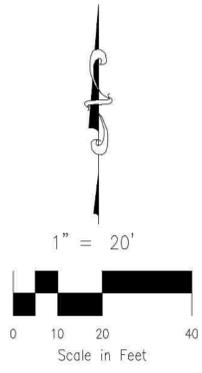
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EPC 5/25/23



AS-BUILT PLANS

EL PASO COUNTY FILE NO. PCD # PPR239

JICS - WAYNOKA	
FINAL GRADING & EROSION CONTROL PLAN	
PROJECT NO. 10-022	DATE: 05/12/2023
SCALE: HORIZONTAL: 1"=20'	VERTICAL: N/A
DESIGNED BY: CW	CLP
DRAWN BY: WS	VS
CHECKED BY:	
GR05	
SHEET 5 OF 7	

212 N WASHCATCH AVE, STE 305
 COLORADO SPRINGS, CO 80903
 PHONE: 719.555.5485

M&S CIVIL CONSULTANTS, INC.

FOR AND ON BEHALF OF M&S CIVIL CONSULTANTS, INC.

Virgil A. Sanchez, Colorado P.E. No. 37160

NO.	DATE:	DESCRIPTION:

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File: C:\10022A-Waynoka Rd\Elder Const\Draw\Const\Draw\GCD\GR05.dwg PlotStamp: 5/10/2023 10:53 AM

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

soil amendments and rototill them into the soil to a depth of 6 inches or more.

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. At a minimum, the upper 6 inches of topsoil should be stripped, stockpiled, and ultimately respread 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 surface prior to placing topsoil. If adding compost to the existing soil surface, rototilling will assist in placement of a stable topsoil layer on steeper slopes, and allow infiltration and root penetration to greater depth.

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.

Seed Mix for Temporary Vegetation

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. Annual grasses suitable for the Denver metropolitan area are listed in Table TS/PS-1. 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.

Seed Mix for Permanent Revegetation

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 Table TS/PS-2 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.

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 seedmixes 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 (*Populus 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 for perennial grasses.

TS/PS-2	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	June 2012
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EC-2 Temporary and Permanent Seeding (TS/PS)

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

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

Mulch

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

Maintenance and Removal

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

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

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

Protect seeded areas from construction equipment and vehicle access.

TS/PS-6	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	June 2012
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Temporary and Permanent Seeding (TS/PS) EC-2

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

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

Species* (Common name)	Growth Season	Pounds of Pure Live Seed (PLS)/acre	Planting Depth (inches)
1. Oats	Cool	35 - 50	1 - 2
2. Spring wheat	Cool	25 - 35	1 - 2
3. Spring barley	Cool	25 - 35	1 - 2
4. Annual ryegrass	Cool	10 - 15	½
5. Millet	Warm	3 - 15	½ - ¾
6. Sudangrass	Warm	5 - 10	½ - ¾
7. Sorghum	Warm	5 - 10	½ - ¾
8. Winter wheat	Cool	20 - 35	1 - 2
9. Winter barley	Cool	20 - 35	1 - 2
10. Winter rye	Cool	20 - 35	1 - 2
11. Triticale	Cool	25 - 40	1 - 2

* 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 is not disturbed or mowed closer than 8 inches.

Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1 or where access limitations exist. When hydraulic seeding is used, hydraulic mulching should be applied as a separate operation, when practical, to prevent the seeds from being encapsulated in the mulch.

See Table TS/PS-3 for seeding dates. Irrigation, if consistently applied, may extend the use of cool season species during the summer months.

Seeding rates should be doubled if seed is broadcast, or increased by 50 percent if done using a Brillion Drill or by hydraulic seeding.

June 2012	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	TS/PS-3
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Mulching (MU) EC-4

Description

Mulching consists of evenly applying straw, hay, shredded wood mulch, rock, bark or compost to disturbed soils and securing the mulch by crimping, tackifiers, 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 stabilization of areas that cannot be reseeded due to seasonal constraints.

Mulch can be applied either using standard mechanical dry application methods or using hydromulching equipment that hydraulically applies a slurry of water, wood fiber mulch, and often a tackifier.

Appropriate Uses

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.

Do not apply mulch during windy conditions.

Design and Installation

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 with heavy equipment typically compacts the soil.

A variety of mulches can be used effectively at construction sites. Consider the following:

Mulch	
Functions	
Erosion Control	Yes
Sediment Control	Moderate
Site/Material Management	No



Photograph MU-1. An area that was recently seeded, mulched, and crimped.

June 2012	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	MU-1
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EC-2 Temporary and Permanent Seeding (TS/PS)

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

Common Name	Botanical Name	Growth Season	Growth Form	Seeds/Pound	Pounds of PLS/acre
Alkalali Soil Seed Mix					
Alkali sycamore	<i>Sporobolus airoides</i>	Cool	Bunch	1,750,000	0.25
Basin wildrye	<i>Elymus cinereus</i>	Cool	Bunch	165,000	2.5
Sodar streambank wheatgrass	<i>Agropyron riparium 'Sodar'</i>	Cool	Sod	170,000	2.5
Jose tall wheatgrass	<i>Agropyron elongatum 'Jose'</i>	Cool	Bunch	79,000	7.0
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	5.5
Total					17.75
Fertile Loamy Soil Seed Mix					
Ephraim crested wheatgrass	<i>Agropyron cristatum 'Ephraim'</i>	Cool	Sod	175,000	2.0
Dural hard fescue	<i>Festuca ovina 'duriuscula'</i>	Cool	Bunch	565,000	1.0
Lincoln smooth brome	<i>Bromus inermis leysii 'Lincoln'</i>	Cool	Sod	130,000	3.0
Sodar streambank wheatgrass	<i>Agropyron riparium 'Sodar'</i>	Cool	Sod	170,000	2.5
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	7.0
Total					15.5
High Water Table Soil Seed Mix					
Meadow foxtail	<i>Alopecurus pratensis</i>	Cool	Sod	900,000	0.5
Redtop	<i>Agrostis alba</i>	Warm	Open sod	5,000,000	0.25
Reed canarygrass	<i>Phalaris arundinacea</i>	Cool	Sod	68,000	0.5
Lincoln smooth brome	<i>Bromus inermis leysii 'Lincoln'</i>	Cool	Sod	130,000	3.0
Pathfinder switchgrass	<i>Panicum virgatum 'Pathfinder'</i>	Warm	Sod	389,000	1.0
Alkar tall wheatgrass	<i>Agropyron elongatum 'Alkar'</i>	Cool	Bunch	79,900	5.5
Total					10.75
Transition Turf Seed Mix*					
Ruebens Canadian bluegrass	<i>Poa compressa 'Ruebens'</i>	Cool	Sod	2,500,000	0.5
Dural hard fescue	<i>Festuca ovina 'duriuscula'</i>	Cool	Bunch	565,000	1.0
Citation perennial ryegrass	<i>Lolium perenne 'Citation'</i>	Cool	Sod	247,000	3.0
Lincoln smooth brome	<i>Bromus inermis leysii 'Lincoln'</i>	Cool	Sod	130,000	3.0
Total					7.5

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EC-4 Mulching (MU)

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 have to be weighted to afford proper soil penetration.

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 above).

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 should be avoided.

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

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 for more information on general types of tackifiers.)

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.

Maintenance and Removal

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

MU-2	Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3	June 2012
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Temporary and Permanent Seeding (TS/PS) EC-2

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

Common Name	Botanical Name	Growth Season	Growth Form	Seeds/Pound	Pounds of PLS/acre
Sandy Soil Seed Mix					
Blue grama	<i>Bouteloua gracilis</i>	Warm	Sod-forming bunchgrass	825,000	0.5
Camper little bluestem	<i>Schizachyrium scoparium 'Camper'</i>	Warm	Bunch	240,000	1.0
Prairie sandreed	<i>Calamovilfa longifolia</i>	Warm	Open sod	274,000	1.0
Sand dropseed	<i>Bouteloua curtipendula</i>	Cool	Bunch	5,298,000	0.25
Vaughn sideoats grama	<i>Bouteloua curtipendula 'Vaughn'</i>	Warm	Sod	191,000	2.0
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	5.5
Total					10.25
Heavy Clay, Rocky Foothill Seed Mix					
Ephraim crested wheatgrass	<i>Agropyron cristatum 'Ephraim'</i>	Cool	Sod	175,000	1.5
Oahe intermediate wheatgrass	<i>Agropyron intermedium 'Oahe'</i>	Cool	Sod	115,000	5.5
Vaughn sideoats grama	<i>Bouteloua curtipendula 'Vaughn'</i>	Warm	Sod	191,000	2.0
Lincoln smooth brome	<i>Bromus inermis leysii 'Lincoln'</i>	Cool	Sod	130,000	3.0
Arriba western wheatgrass	<i>Agropyron smithii 'Arriba'</i>	Cool	Sod	110,000	5.5
Total					17.5

* All of the above seeding mixes and rates are based on drill seeding followed by crimped straw mulch. These rates should be doubled if seed is broadcast and should be increased by 50 percent if the seeding is done using a Brillion Drill or is applied through hydraulic seeding. Hydraulic seeding may be substituted for drilling only where slopes are steeper than 3:1. If hydraulic seeding is used, hydraulic mulching should be done as a separate operation.

See Table TS/PS-3 for seeding dates.

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

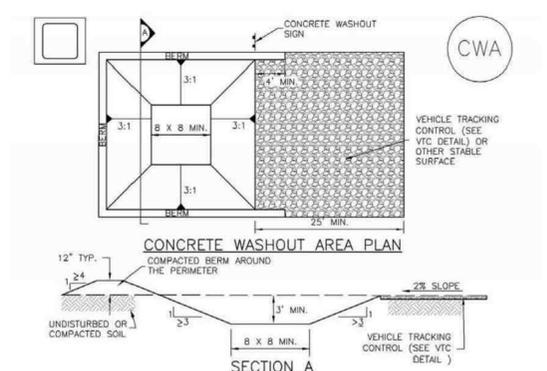
Crested wheatgrass should not be used on slopes steeper than 6H to 1V.

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

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EL PASO COUNTY FILE NO. PCD # PPR239

Concrete Washout Area (CWA) MM-1



CWA-1. 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 WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS UNFEASIBLE, 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 ARE SHOULD BE USED.
- THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- 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 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 TRIGS.
- USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

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EPC 5/25/23

JICS - WAYNOKA

GRADING & EROSION CONTROL DETAILS

DATE: 05/12/2023

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

DESIGNED BY: CW

DRAWN BY: CLP

CHECKED BY: WS

PROJECT NO. 10-022

GR06

SHEET 6 OF 7

212 N WAHSATCH AVE, STE 305
COLORADO SPRINGS, CO 80903
PHONE: 719.555.5485



FOR AND ON BEHALF OF MRS. CIVIL CONSULTANTS, INC.



REVISIONS: NO. DATE: BY: DESCRIPTION:

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS.

CAUTION

Rock Sock (RS)

SC-5

Description

A rock sock is constructed of gravel that has been wrapped by wire mesh or a geotextile to form an elongated cylindrical filter. Rock socks are typically used either as a perimeter control or as part of inlet protection. When placed at angles in the curb line, rock socks are typically referred to as curb socks. Rock socks are intended to trap sediment from stormwater runoff that flows onto roadways as a result of construction activities.



Photograph RS-1. Rock socks placed at regular intervals in a curb line can help reduce sediment loading to storm sewer inlets. Rock socks can also be used as perimeter controls.

Appropriate Uses

Rock socks can be used at the perimeter of a disturbed area to control localized sediment loading. A benefit of rock socks as opposed to other perimeter controls is that they do not have to be trenched or staked into the ground; therefore, they are often used on roadway construction projects where paved surfaces are present.

Use rock socks in inlet protection applications when the construction of a roadway is substantially complete and the roadway has been directly connected to a receiving storm system.

Design and Installation

When rock socks are used as perimeter controls, the maximum recommended tributary drainage area per 100 lineal feet of rock socks is approximately 0.25 acres with disturbed slope length of up to 150 feet and a tributary slope gradient no steeper than 3:1. A rock sock design detail and notes are provided in Detail RS-1. Also see the Inlet Protection Fact Sheet for design and installation guidance when rock socks are used for inlet protection and in the curb line.

When placed in the gutter adjacent to a curb, rock socks should protrude no more than two feet from the curb in order for traffic to pass safely. If located in a high traffic area, place construction markers to alert drivers and street maintenance workers of their presence.

Maintenance and Removal

Rock socks are susceptible to displacement and breaking due to vehicle traffic. Inspect rock socks for damage and repair or replace as necessary. Remove sediment by sweeping or vacuuming as needed to maintain the functionality of the BMP, typically when sediment has accumulated behind the rock sock to one-half of the sock's height.

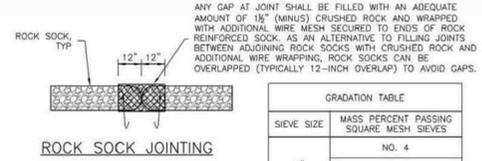
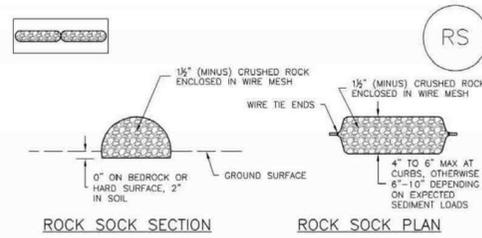
Once upstream stabilization is complete, rock socks and accumulated sediment should be removed and properly disposed.

Rock Sock	
Functions	
Erosion Control	No
Sediment Control	Yes
Site/Material Management	No

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

SC-5

Rock Sock (RS)



- ROCK SOCK INSTALLATION NOTES**
- SEE PLAN VIEW FOR: -LOCATION(S) OF ROCK SOCKS.
 - CRUSHED ROCK SHALL BE 1/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES) AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (1/2" MINUS).
 - WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A MAXIMUM OPENING OF 1/2", RECOMMENDED MINIMUM ROLL WIDTH OF 48"
 - WIRE MESH SHALL BE SECURED USING "HOC RINGS" OR WIRE TIES AT 6" CENTERS ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.
 - SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

RS-1. ROCK SOCK PERIMETER CONTROL

RS-2 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Rock Sock (RS)

SC-5

ROCK SOCK 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.
- ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.
- SEDIMENT ACCUMULATED UPSTREAM OF ROCK SOCKS SHALL BE REMOVED AS NEEDED TO MAINTAIN FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 1/2 OF THE HEIGHT OF THE ROCK SOCK.
- ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.
- WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

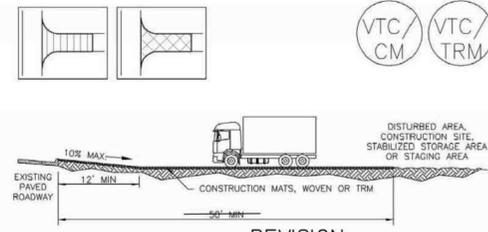
NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET. UDFCD NEITHER ENDORSES NOR DISCOURAGES USE OF PROPRIETARY PROTECTION PRODUCTS; HOWEVER, IN THE EVENT PROPRIETARY METHODS ARE USED, THE APPROPRIATE DETAIL FROM THE MANUFACTURER MUST BE INCLUDED IN THE SWMP AND THE BMP MUST BE INSTALLED AND MAINTAINED AS SHOWN IN THE MANUFACTURER'S DETAILS.

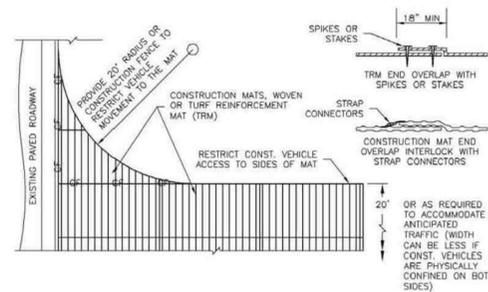
November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 RS-3

Vehicle Tracking Control (VTC)

SM-4



REVISION: PER DCM (VOL 2) MIN LENGTH = 75'



VTC-3. VEHICLE TRACKING CONTROL W/ CONSTRUCTION MAT OR TURF REINFORCEMENT MAT (TRM)

November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 VTC-5

SM-4

Vehicle Tracking Control (VTC)

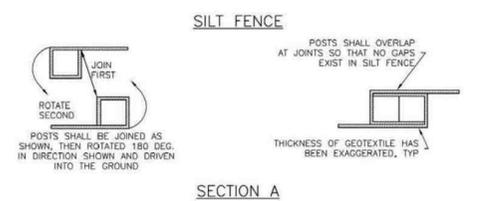
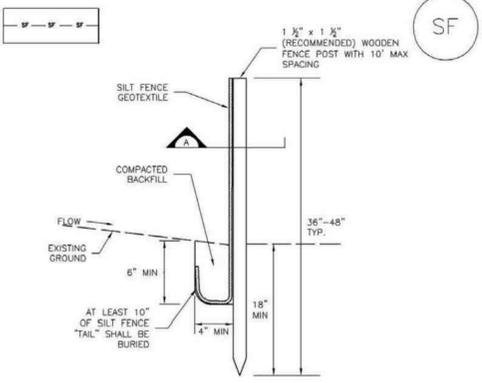
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 - UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

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- 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.
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VTC-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010

Silt Fence (SF)

SC-1

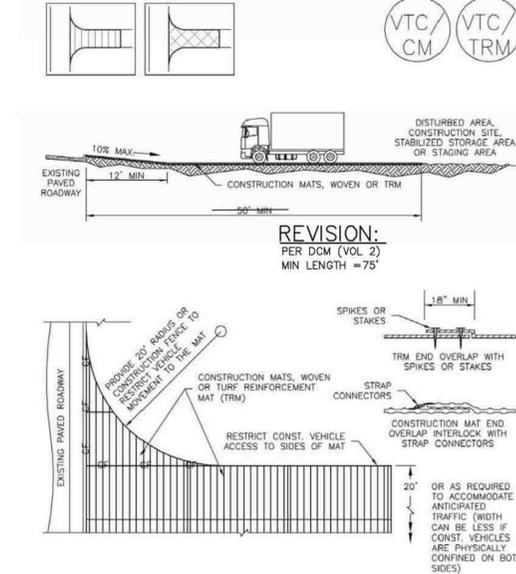


SF-1. SILT FENCE

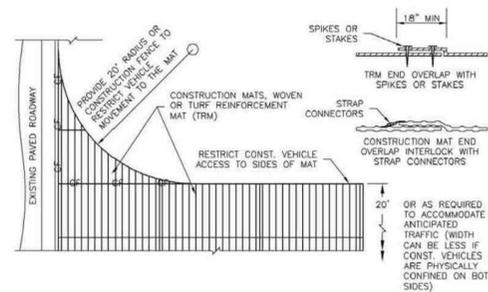
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SM-4

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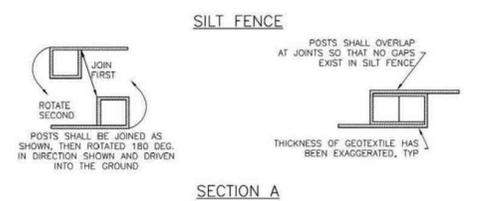
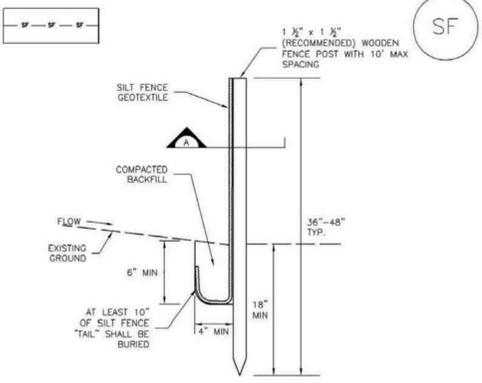
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SC-1

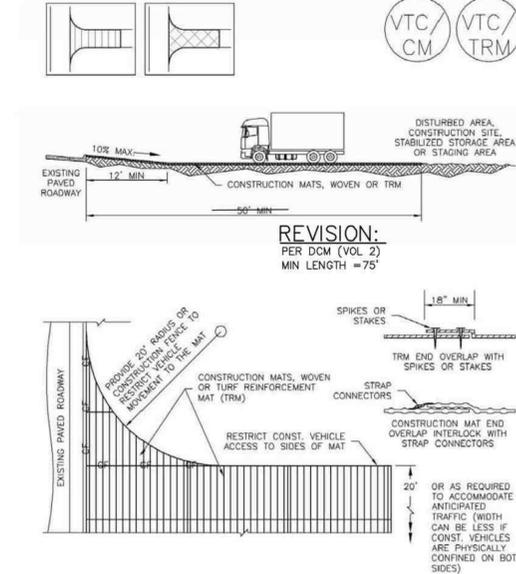


SF-1. SILT FENCE

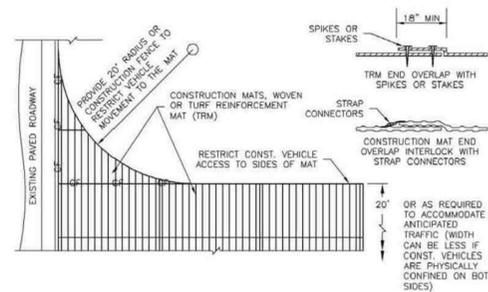
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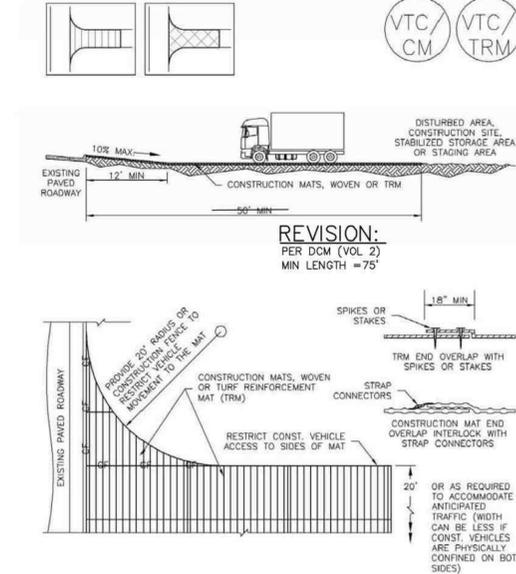
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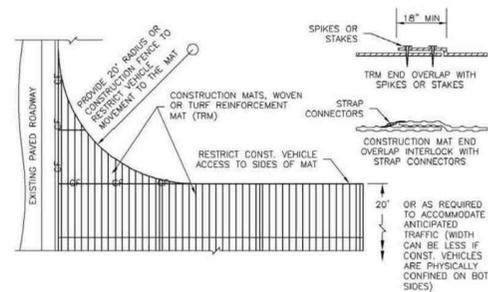
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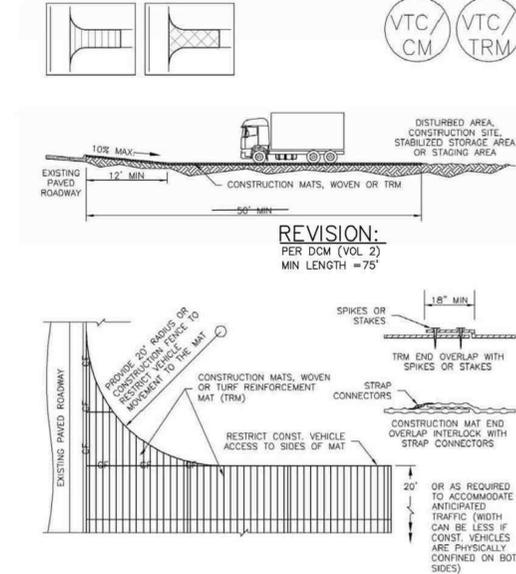
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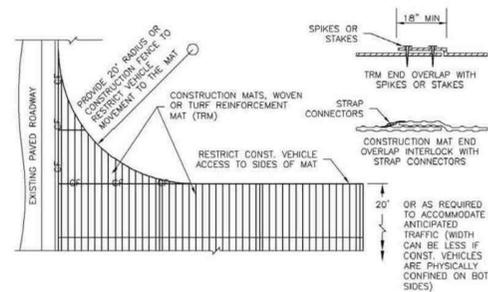
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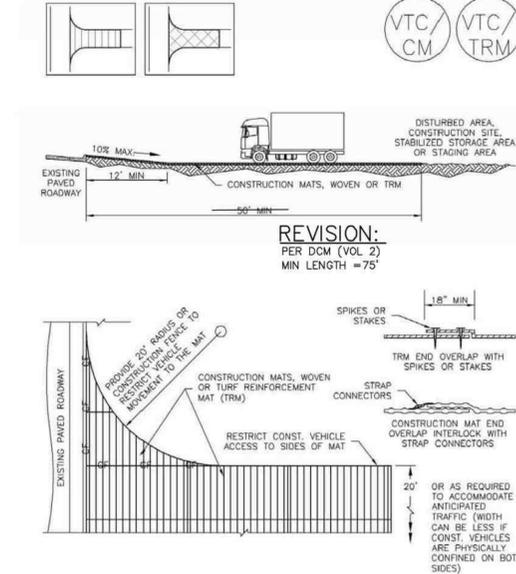
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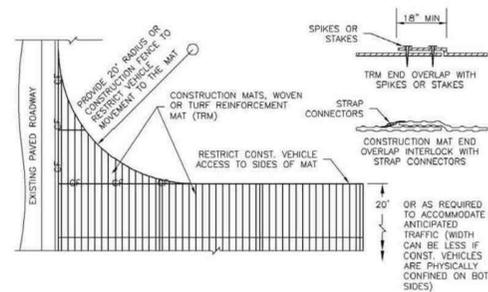
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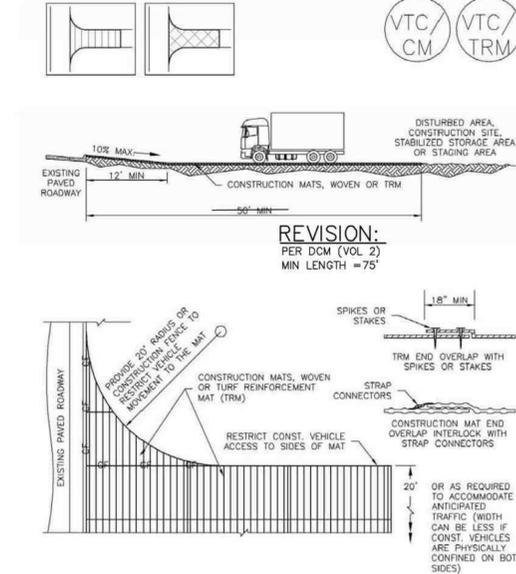
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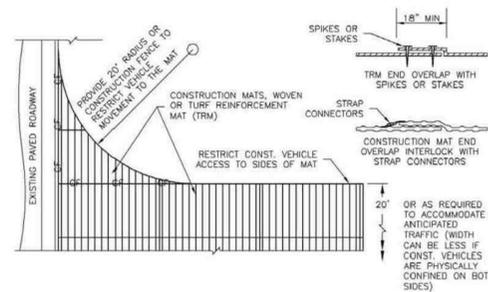
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