## **VOLLMER ROAD (NORTH)**

**COUNTY OF EL PASO, STATE OF COLORADO** 

### STREET IMPROVEMENT PLAN **AUGUST 2022**

### **AGENCIES**

TRAFFIC ENGINEERING:

SR LAND, LLC OWNER/DEVELOPER:

20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 471-1742

JR ENGINEERING, LLC CIVIL ENGINEER: 5475 TECH CENTER DRIVE

COLORADO SPRINGS, CO 80919 MIKE BRAMLETT P.E. (303) 267-6240

COUNTY ENGINEERING: EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT

> 2880 INTERNATIONAL CIRCLE, SUITE 110 COLORADO SPRINGS, CO 80910

JEFF RICE, P.E. (719) 520-6300

3275 AKERS DRIVE COLORADO SPRINGS, CO 80922

EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS

JENNIFER IRVINE, P.E. (719) 520-6460 STERLING RANCH METRO DISTRICT ENGINEERS WATER RESOURCES:

JDS-HYDRO CONSULTANTS 545 E. PIKES PEAK AVE., SUITE 300

COLORADO SPRINGS, CO 80903 JOHN MCGINN (719) 668-8769

BLACK FOREST FIRE PROTECTION DISTRICT FIRE DISTRICT: 11445 TEACHOUT ROAD

COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300

GAS DEPARTMENT: COLORADO SPRINGS UTILITIES

7710 DURANT DR. COLORADO SPRINGS, CO 80947 TIM WENDT (719) 668-3556

MOUNTAIN VIEW ELECTRIC ELECTRIC DEPARTMENT:

11140 E. WOODMEN ROAD FALCON, CO 80831 (719) 495-2283

QWEST COMMUNICATIONS COMMUNICATIONS:

(U.N.C.C. LOCATORS) (800) 922-1987 AT&T (LOCATORS) (719) 635-3674

STORMWATER ENTERPRISE 30 S. NEVADA AVENUE, SUITE 401

COLORADO SPRINGS, CO 80903 (719) - 385 - 5918

4:1 MAX

CUT/FILL

FUTURE GRADING

AND SIDEWALK BY

DEVELOPMENT

4:1 MAX

CUT/FILL

FUTURE 6'

**MEANDERING** 

TO THE WEST

### **BENCHMARKS**

1. THE TOP OF AN ALUMINUM SURVEYORS CAP, STAMPED "9853", AT THE SOUTHEAST BOUNDARY CORNER OF BARBARICK SUBDIVISION NORTHING = 411416.273

CITY STORMWATER:

EASTING = 235167.071ELEVATION = 7023.42

2. THE TOP OF A RED PLASTIC SURVEYORS CAP, ILLEGIBLE, AT THE NORTHWEST BOUNDARY CORNER OF PAWNEE RANCHEROS SUBDIVISION NORTHING = 410095.404

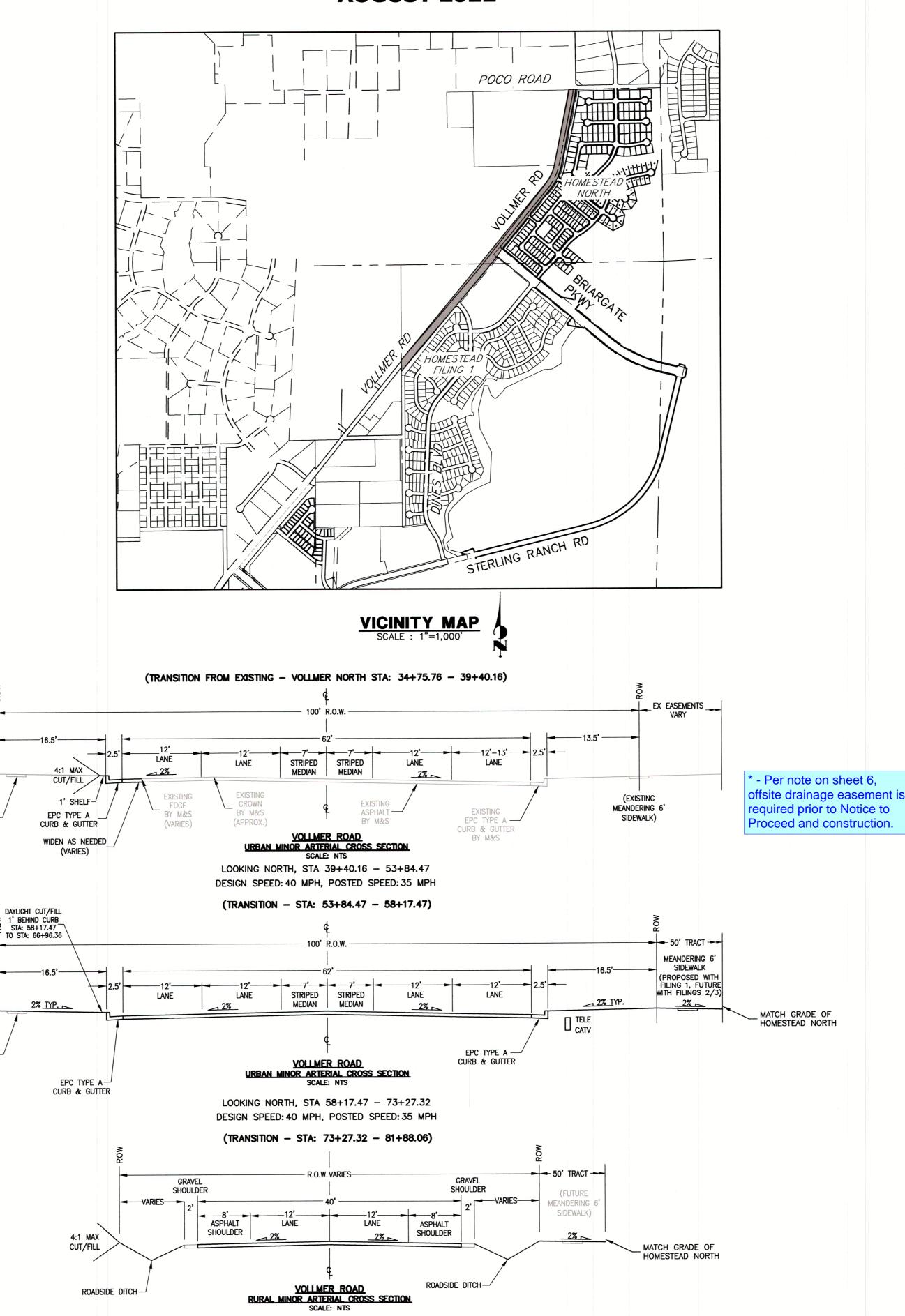
EASTING = 235052.131ELEVATION = 7000.40

3. THE TOP OF A RED PLASTIC SURVEYORS CAP, STAMPED "38141", AT THE SOUTHWEST BOUNDARY CORNER OF BARBARICK SUBDISION NORTHING = 411399.962

EASTING = 233849.817ELEVATION = 7030.82

BASIS OF BEARINGS: BEARINGS ARE BASED ON THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624", SAID LINE BEARS N89'14'14"E, A DISTANCE OF 2,722.56 FEET.





LOOKING NORTH, STA: 81+88.06 - 84+62.27

DESIGN SPEED: 50 MPH, POSTED SPEED: 45 MPH (EXISTING)

### SHEET INDEX

COVER SHEET NOTES AND DETAILS ROADWAY PLAN & PROFILE STORM PLAN & PROFILE SIGNAGE & STRIPING

### OWNER/DEVELOPER STATEMENT

. THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

SR LAND, LLC 20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903

### 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

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.

INTERIM COUNTY ENGINEER/ECM ADMINISTRATOR

### ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECT SUPERVISION. SAID PLANS AND SPECIFICATIONS HAVE BEEN PREPARED ACCORDING TO THE CRITERIA ESTABLISHED BY THE COUNTY FOR DETAILED ROADWAY, DRAINAGE, GRADING AND EROSION CONTROL PLANS AND SPECIFICATIONS, AND SAID PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE PLANS AND MASTER TRANSPORTATION PLANS. SAID PLAN AND SPECIFICATIONS MEET THE PURPOSES FOR WHICH THE PARTICULAR ROADWAY AND DRAINAGE FACILITIES ARE DESIGNED AND ARE CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF. I ACCEPT RESPONSIBILITY FOR ANY LIABILITY CAUSED BY ANY NEGLIGENT ACTS, ERRORS OR OMISSIONS ON MY PART IN PREPARATION OF THESE DETAILED PLANS AND SPECIFICATIONS.

MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314

08/23/22 FOR AND ON BEHALF OF JR ENGINEERING

### DISTRICT APPROVALS

THESE DOCUMENTS HAVE BEEN REVIEWED AND APPROVED FOR STORM DRAIN AND ASSOCIATED UTILITY SERVICE

PCD FILE NO. CDR-21-10

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SHEET 1 OF 17

### **GENERAL CONSTRUCTION NOTES:**

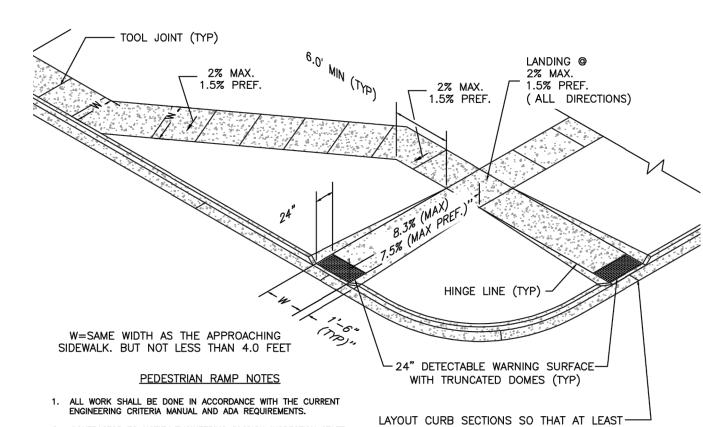
- 1. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXISTENCE AND LOCATION OF ALL UNDERGROUND UTILITIES ALONG THE ROUTE OF THE WORK. THE OMISSION FROM OR THE INCLUSION OF UTILITY LOCATIONS ON THE PLANS IS NOT TO BE CONSIDERED AS THE NONEXISTENCE OF OR A DEFINITE LOCATION OF EXISTING UNDERGROUND UTILITIES.
- 2. THE CONTRACTOR WILL TAKE THE NECESSARY PRECAUTIONS TO PROTECT EXISTING UTILITIES FROM DAMAGE DUE TO THIS OPERATION. ANY DAMAGE TO THE UTILITIES WILL BE REPAIRED AT THE CONTRACTOR'S EXPENSE, AND ANY SERVICE DISRUPTION WILL BE SETTLED BY THE CONTRACTOR.
- 3. ADDITIONAL EROSION CONTROL STRUCTURES MAY BE REQUIRED AT THE TIME OF CONSTRUCTION.
- 4. ALL BACKFILL, SUB-BASE, AND/OR BASE COURSE (CLASS 6) MATERIAL SHALL BE COMPACTED PER THE SOILS ENGINEER'S RECOMMENDATIONS, AND APPROVED BY EL PASO COUNTY PCD.
- 5. ALL STATIONING IS CENTERLINE OF IMPROVEMENTS UNLESS OTHERWISE INDICATED. ALL ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE INDICATED AS TOP BACK OF CURB (TBC), ASPHALT (ASP), OR TOP OF INLET OR BOX (TOB).
- 6. ALL DISTURBED PAVEMENT EDGES SHALL BE CUT TO NEAT LINES. REPAIR SHALL CONFORM TO EPC ECM APPENDIX K 1.2C.
- 7. ALL INTERSECTION ACCESSES TO BE CONSTRUCTED WITH A 25 FOOT SIGHT VISIBILITY TRIANGLES EXCEPT [VOLLMER ROAD, MARKSHEFFEL ROAD, BRAIRGATE PARKWAY] WHICH IS AN ARTERIAL AND A 50 FOOT SIGHT VISIBILITY TRIANGLE IS REQUIRED AND THERE SHALL BE NO OBSTRUCTIONS GREATER THAN 18" IN THIS AREA.
- 8. ALL CULVERTS AND STORM DRAIN PIPES SHALL BE SMOOTH INTERIOR CORRUGATED POLYETHYLENE PIPE (HDPE), REINFORCED CONCRETE PIPE (RCP). ALL CULVERTS SHALL BE PLACED COMPLETE WITH FLARED END SECTIONS. ADEQUACY OF MATERIAL THICKNESS FOR ANY CSP INSTALLED SHALL BE VERIFIED BY OWNER'S GEOTECHNICAL ENGINEER TO SUPPORT MINIMUM 50 YEAR DESIGN LIFE. CULVERTS MUST CONFORM TO EPC ECM SECTION 3.32 - CULVERTS.
- 9. ASPHALT THICKNESS AND BASE COURSE THICKNESS (COMPACTED) FOR ROADS SHALL BE PER DESIGN REPORT BY OWNER'S GEOTECHNICAL ENGINEER. OWNER'S GEOTECHNICAL ENGINEER TO BE ON SITE AT THE TIME OF ROAD CONSTRUCTION TO EVALUATE SOIL CONDITIONS AND DETERMINE IF ADDITIONAL MEASURES ARE NECESSARY TO ASSURE STABILITY OF THE NEW ROADS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT ENGINEERING DIVISION PRIOR TO CONSTRUCTION.

### **SIGNING AND STRIPING NOTES:**

- 1. ALL SIGNS AND PAVEMENT MARKINGS SHALL BE IN COMPLIANCE WITH THE CURRENT MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).
- 2. REMOVAL OF EXISTING PAVEMENT MARKINGS SHALL BE ACCOMPLISHED BY A METHOD THAT DOES NOT MATERIALLY DAMAGE THE PAVEMENT. THE PAVEMENT MARKINGS SHALL BE REMOVED TO THE EXTENT THAT THEY WILL NOT BE VISIBLE UNDER DAY OR NIGHT CONDITIONS. AT NO TIME WILL IT BE ACCEPTABLE TO PAINT OVER EXISTING PAVEMENT MARKINGS.
- 3. ANY DEVIATION FROM THE STRIPING AND SIGNING PLAN SHALL BE APPROVED BY EL PASO COUNTY PCD.
- 4. EXISTING SIGNS MAY REMAIN OR BE REUSED IF THEY MEET CURRENT EL PASO COUNTY AND MUTCD STANDARDS.
- 5. STREET NAME AND REGULATORY STOP SIGNS SHALL BE ON THE SAME POST AT INTERSECTIONS.
- 6. ALL REMOVED SIGNS SHALL BE DISPOSED OF IN A PROPER MANNER BY THE CONTRACTOR.
- 7. ALL STREET NAME SIGNS SHALL HAVE "D" SERIES LETTERS, WITH LOCAL ROADWAY SIGNS BEING 4" UPPER-LOWER CASE LETTERING ON 8" BLANK AND NON-LOCAL ROADWAY SIGNS BEING 6" LETTERING, UPPER-LOWER CASE ON 12" BLANK, WITH A WHITE BORDER THAT IS NOT RECESSED. MULTI-LANE ROADWAYS WITH SPEED LIMITS OF 40 MPH OR HIGHER SHALL HAVE 8" UPPER-LOWER CASE LETTERING ON 18" BLANK WITH A WHITE BORDER THAT IS NOT RECESSED. THE WIDTH OF THE NON-RECESSED WHITE BORDERS SHALL MATCH PAGE 255 OF THE 2012 MUTCD "STANDARD HIGHWAY SIGNS"
- 8. ALL TRAFFIC SIGNS SHALL HAVE A MINIMUM HIGH INTENSITY PRISMATIC GRADE SHEETING.
- 9. ALL LOCAL RESIDENTIAL STREET SIGNS SHALL BE MOUNTED ON A 1.75" X 1.75" SQUARE TUBE SIGN POST AND STUB POST BASE. FOR OTHER APPLICATIONS, REFER TO THE CDOT STANDARD S-614-8 REGARDING USE OF THE P2 TUBULAR STEEL POST SLIPBASE DESIGN.
- 10. ALL SIGNS SHALL BE SINGLE SHEET ALUMINUM WITH 0.100" MINIMUM THICKNESS.
- ALL LIMIT LINES/STOP LINES, CROSSWALK LINES, PAVEMENT LEGENDS, AND ARROWS SHALL BE A MINIMUM 125 MIL THICKNESS PREFORMED THERMOPLASTIC PAVEMENT MARKINGS WITH TAPERED LEADING EDGES PER CDOT STANDARD S-627-1. WORD AND SYMBOL MARKINGS SHALL BE THE NARROW TYPE. STOP BARS SHALL BE 24" IN WIDTH. CROSSWALKS LINES SHALL BE 12" WIDE AND 8' LONG PER CDOT S-627-1
- 12. ALL LONGITUDINAL LINES SHALL BE A MINIMUM 15MIL THICKNESS EPOXY PAINT. ALL NON-LOCAL RESIDENTIAL ROADWAYS SHALL INCLUDE BOTH RIGHT AND LEFT EDGE LINE STRIPING AND ANY ADDITIONAL STRIPING AS REQUIRED BY CDOT S-627-1.
- 13. THE CONTRACTOR SHALL NOTIFY EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT (719) 520-6819 PRIOR TO AND UPON COMPLETION OF SIGNING AND STRIPING.
- 14. THE CONTRACTOR SHALL OBTAIN A WORK IN THE RIGHT OF WAY PERMIT FROM THE EL PASO COUNTY PCD PRIOR TO ANY SIGNAGE OR STRIPING WORK WITHIN AN EXISTING EL PASO COUNTY ROADWAY.

### STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS:

- 1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL. VOLUMES 1 AND 2. AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
- 3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOILS AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
- a. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM) b. CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
- c. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION d. CDOT M & S STANDARDS
- 4. 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. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER-THE-FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- 5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS. ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- 6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PCD INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- 7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES AND TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS-ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- 8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- 9. ALL STORM DRAIN PIPE SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.
- 10. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- 11. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- 12. SIGHT VISIBILITY TRIANGLES AS IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED WITHIN SIGHT TRIANGLES.
- 13. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY PCD AND MUTCD CRITERIA. [IF APPLICABLE, ADDITIONAL SIGNING AND STRIPING NOTES WILL BE PROVIDED.
- 14. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY PCD, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- 15. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF-SITE DISTURBANCE, GRADING, OR CONSTRUCTION.



ONE TOOL JOINT IS WITHIN RAMP THROAT

**GENERAL NOTES** 

1. WHERE THE 1'-6" FLARED SIDE(S) OF A PERPENDICULAR CURB RAMP IS (ARE) CONTIGUOUS WITH A PEDESTRIAN OR HARD SURFACE AREA

(PEDESTRIAN CIRCULATION PATH), THE MAXIMUM FLARE SLOPE SHALL

. PEDESTRIAN WALKWAY (PEDESTRIAN ACCESS ROUTE) AND/OR LOCATION OF EXISTING OR FUTURE PEDESTRIAN RAMPS ON OPPOSITE CORNERS

SHALL BE REVIEWED BEFORE CONSTRUCTING NEW RAMPS.

3. AT MARKED PEDESTRIAN CROSSINGS, THE BOTTOM OF THE RAMPS EXCLUSIVE OF THE FLARE SIDES, SHALL BE TOTALLY CONTAINED

- 8 HOURS PRIOR TO CONCRETE PLACEMENT.
- 3. PEDESTRIAN CURB RAMP CONSTRUCTION SHALL BE A MINIMUM 4,500 PSI
- CONCRETE, MINIMUM 4" THICK, NON-COLORED, NON-SCORED, COARSE BROOM FINISH.
- PEDESTRIAN CURB RAMP LOCATION AND LENGTH MAY REQUIRE MODIFICATION TO MAINTAIN THE 8.3% MAXIMUM RUNNING RAMP SLOPE DUE TO STREET INTERSECTION GRADES AND/OR ALIGNMENTS. SEE ECM SECTION 6.3.6 FOR PEDESTRIAN PUSHBUTTON LOCATION REQUIREMENTS.
- 5. DETECTABLE WARNING SURFACE SHALL START A MINIMUM OF 6" BUT NOT MORE THAN 8" FROM THE FLOWLINE OF THE CURB
- 6. DETECTABLE WARNING SURFACE SHALL BE PREFABRICATED, CAST IRON (PATINA NATURAL FINISH) AND IN ACCORDANCE WITH ECM CHAPTER 6 AND SD\_2-42. THERMOPLASTIC TRUNCATED DOMES AND PAVERS WILL
- 7. THE DETECTABLE WARNING SURFACE SHALL BE 24" IN LENGTH AND THE FULL WIDTH OF THE RAMP.
- 8. PEDESTRIAN CURB RAMP WIDTH REQUIRED IS SAME AS APPROACHING
- ALL PEDESTRIAN CURB RAMPS WILL BE PERPENDICULAR TO TRAFFIC WITH THE EXCEPTION OF MID—BLOCK OR TERMINAL RAMPS WHICH MAY BE PARALLEL SUBJECT TO APPROVAL.
- DRAINAGE STRUCTURES, TRAFFIC SIGNAL/SIGNAGE, UTILITIES/JUNCTION BOXES, OR OTHER OBSTRUCTIONS WITHIN PROPOSED PEDESTRIAN CURB RAMP AREAS AND LANDINGS ARE PROHIBITED.
- 11. THE COUNTER SLOPE OF THE GUTTER OR ROAD AT THE FOOT OF A RAMP

### PEDESTRIAN INTERSECTION RAMP (SD 2-41)

6" RESIDENTIAL

-8" MULTI—FAMILY

AND COMMERCIAL

# EXPANSION JOINT MATERIAL REQUIRED. IF CONCRETE DRIVE —— IS USE BEHIND CURB CUT. ---5'-0"--- CURB CUT WIDTH ----5'-0"---(NOR

RO

.MER

SHEET 2 OF 17

JOB NO. **25188.00** 

Know what's below.

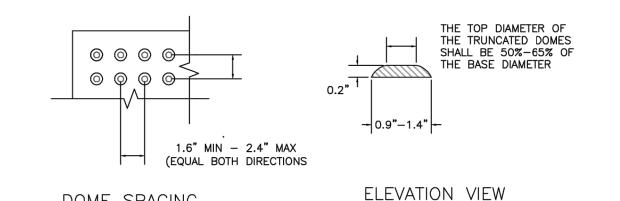
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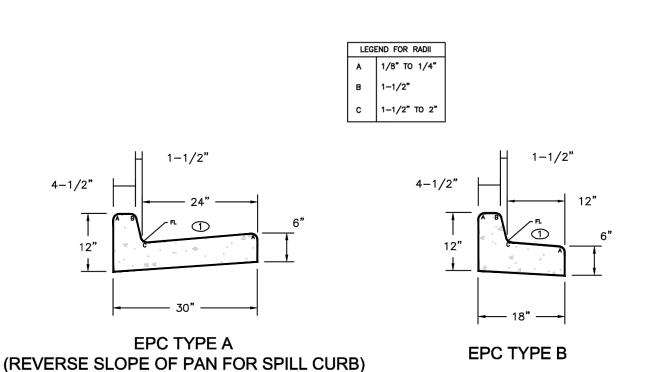
20

ADO JAM

### TRUNCATED DOME DETAILS



DOME SPACING



TYPICAL CURB & GUTTER DETAILS DETAIL (SD 2-20)

SCALE: NTS

DETECTABLE WARNING SURFACE AREA −CURB RAMP <del>----</del> FLARED SIDE OR RETURN CURB CURB TRANSITION 5% MAX. TRUNCATED DOME PLATE(S) — (CAST IRON – PATINA NATURAL FINISH) PAID FOR AS PAID FOR AS CONCRETE CURB RAMP CURB AND GUTTER TO BE POURED MONOLITHICALLY

> P.J.= PERMISSABLE JOINT WITH EPOXY-COATED DEFORMED NO. 4 BARS CONFORMING TO AASHTO M 284 AT 18 IN. SPACING

DETECTABLE WARNING SURFACE DETAILS (SD 2-42)

SCALE: NTS

NOTES 1. W - WIDTH SHALL BE 6' FOR LOCAL, 8' FOR COLLECTORS, AND 10' FOR ARTERIAL ROADS. 2. T - SQUARED-OFF RETURN TO BE POURED MONOLITHICALLY, 8" PCC

FOR LOCAL ROADS, 9" FOR COLLECTORS WITH 6x6 - 4.4 W.W.F. OR #4

SECTION A-A

SAW CUT OR

CONCRETE

COLD JOINT

(TYP)

PLAN VIEW

3. MINIMUM ASPHALT DEPTH (2 LIFTS).

REINFORCING BAR @ 18" EACH WAY.

4. DESIGN TO SPECIFY ELEVATIONS AT PI AND PCR.

TYPICAL CROSS PAN LAYOUT DETAIL (SD 2-26)

ENGINEER'S STATEMENT PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING Brumlitt 32314 MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314 FOR AND ON BEHALF OF JR ENGINEERING ALOWA

·4'-6" (TYP)·

CROSS SECTION

FRONT VIEW

DRIVEWAY CUT DETAIL (SD 2-23)

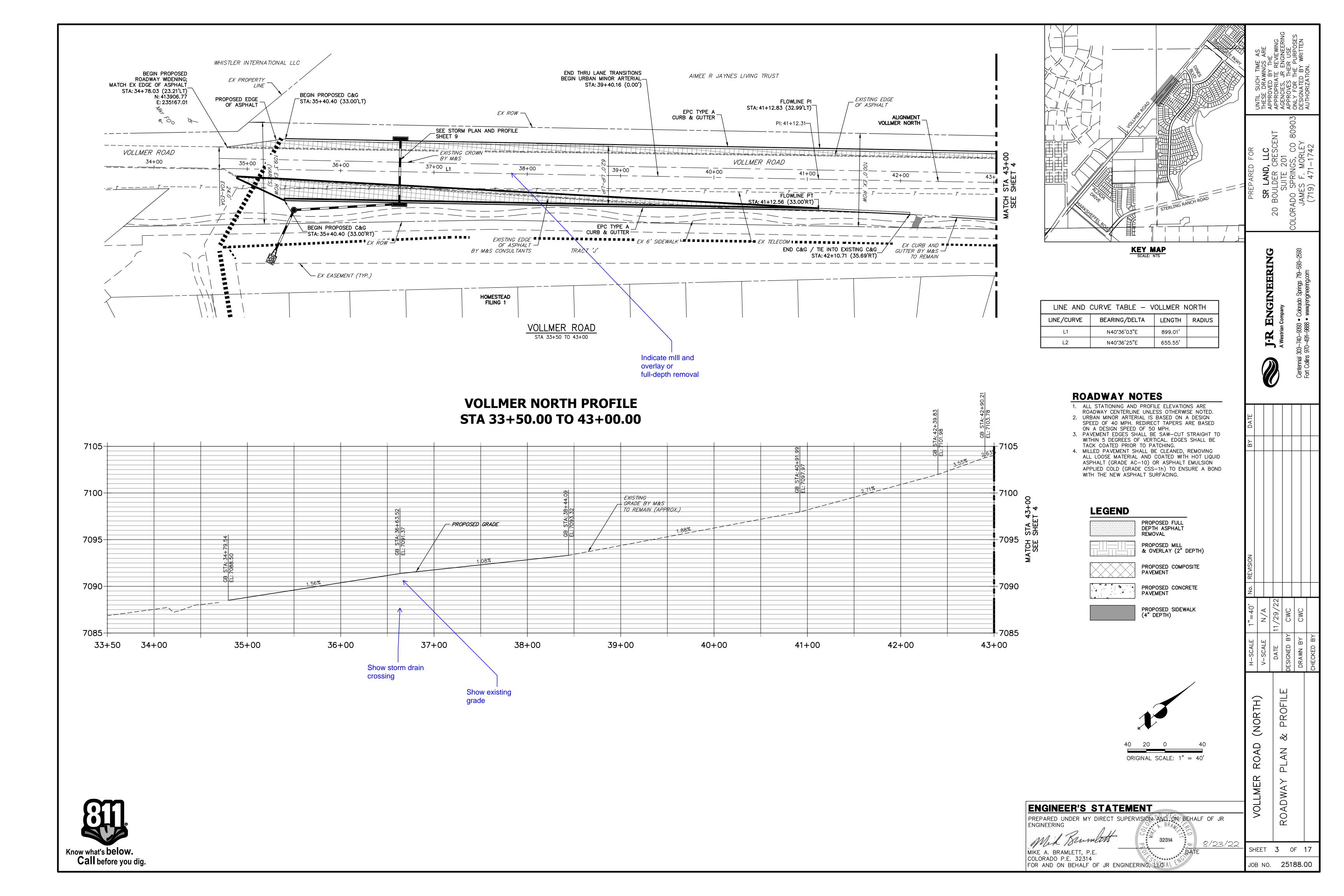
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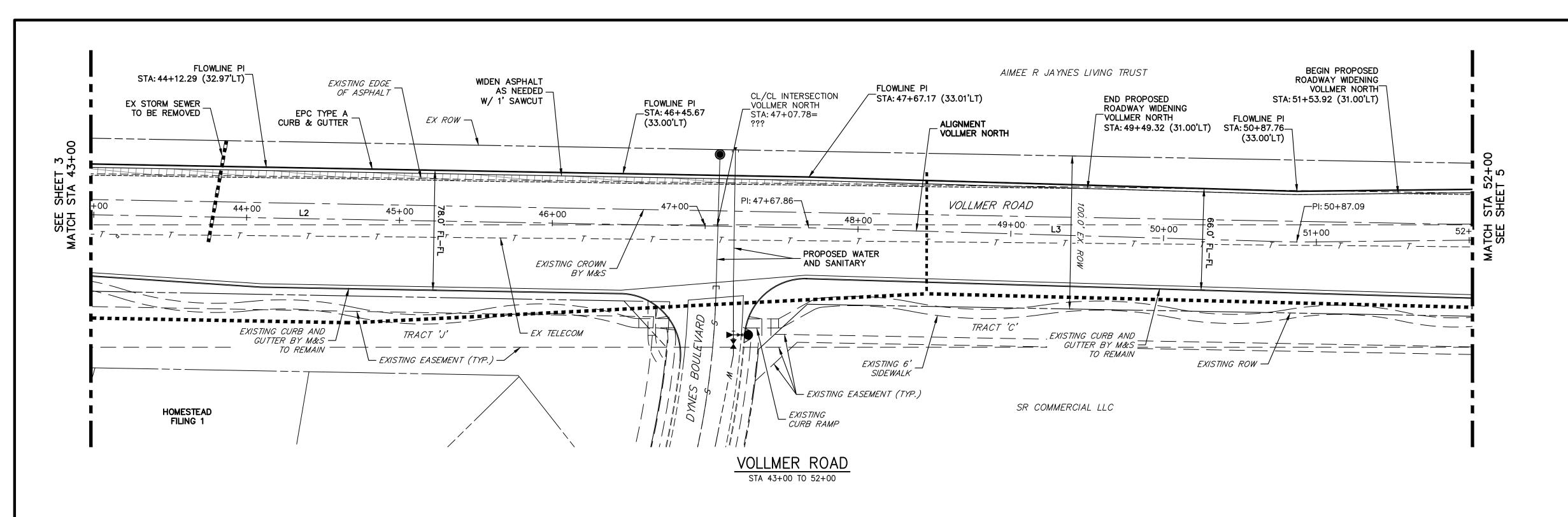
SCALE: NTS

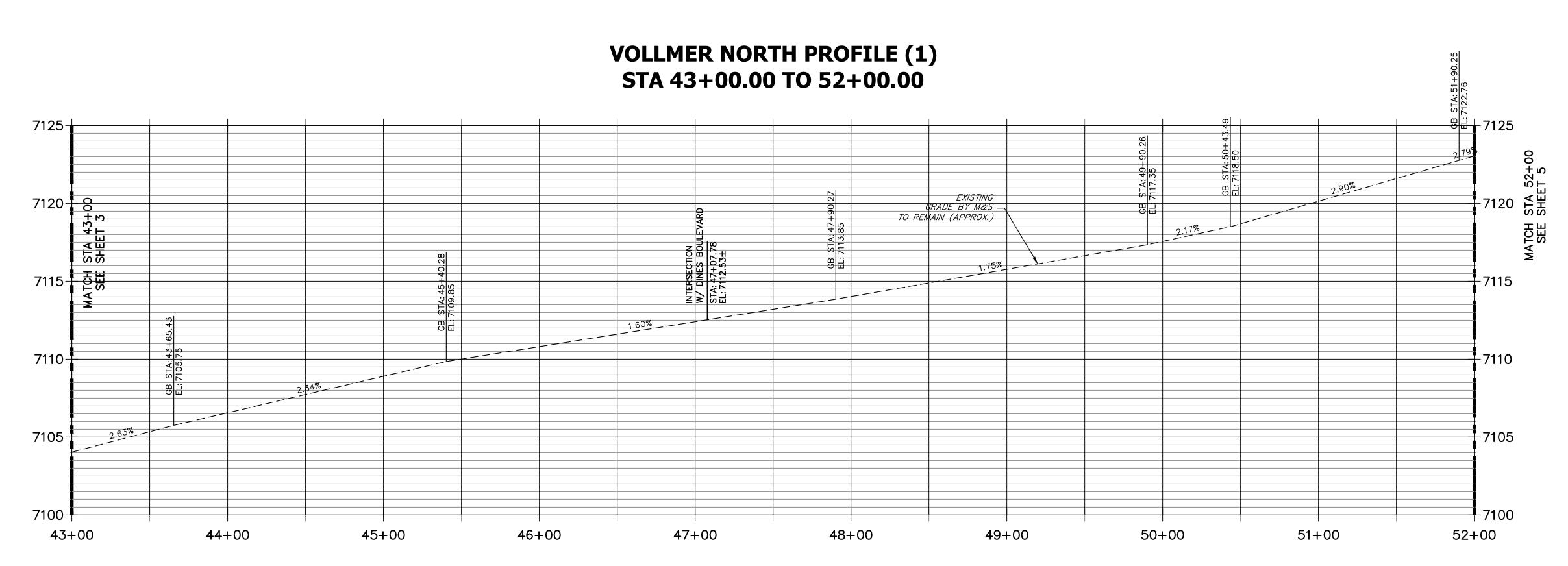
CURB RADIUS 20" MIN.

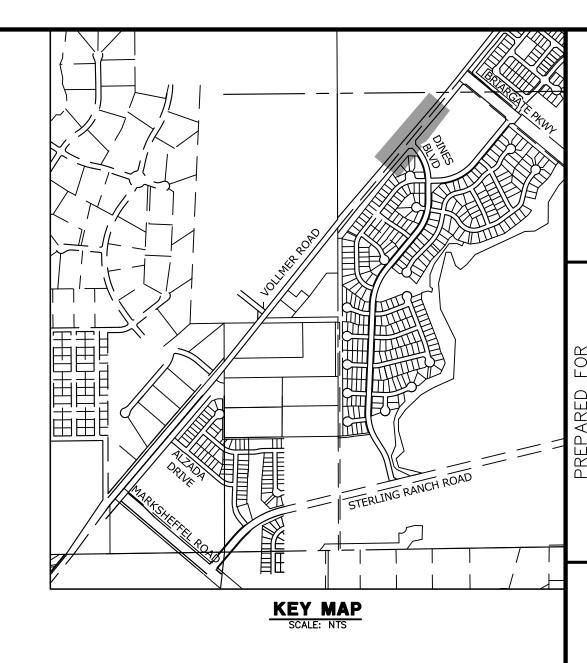
TO CROWN OF STREET OR

20', WHICHEVER IS LESS









LINE AND CURVE TABLE - VOLLMER NORTH					
LINE/CURVE BEARING/DELTA LENGTH RADIUS					
L2	N40°36'25"E	655.55'			
L3	N41*14'08"E	319.23'			
L4	N38 <b>°</b> 55'46"E	531.96'	_		

### **ROADWAY NOTES**

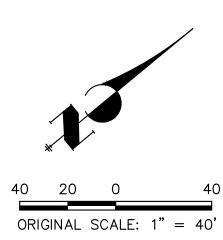
- ALL STATIONING AND PROFILE ELEVATIONS ARE ROADWAY CENTERLINE UNLESS OTHERWISE NOTED.
- 2. URBAN MINOR ARTERIAL IS BASED ON A DESIGN
  SPEED OF 40 MPH. REDIRECT TAPERS ARE BASED
- ON A DESIGN SPEED OF 50 MPH.

  3. PAVEMENT EDGES SHALL BE SAW—CUT STRAIGHT TO WITHIN 5 DEGREES OF VERTICAL. EDGES SHALL BE
- TACK COATED PRIOR TO PATCHING.

  4. MILLED PAVEMENT SHALL BE CLEANED, REMOVING
  ALL LOOSE MATERIAL AND COATED WITH HOT LIQUID
  ASPHALT (GRADE AC-10) OR ASPHALT EMULSION
  APPLIED COLD (GRADE CSS-1h) TO ENSURE A BOND
  WITH THE NEW ASPHALT SURFACING.

### **LEGEND**

	PROPOSED FULL DEPTH ASPHALT REMOVAL
	PROPOSED MILL & OVERLAY (2" DEPT
	PROPOSED COMPOSITE PAVEMENT
44 4	PROPOSED CONCRETE PAVEMENT
	PROPOSED SIDEWALK (4" DEPTH)



ENGINEER'S STATEMENT

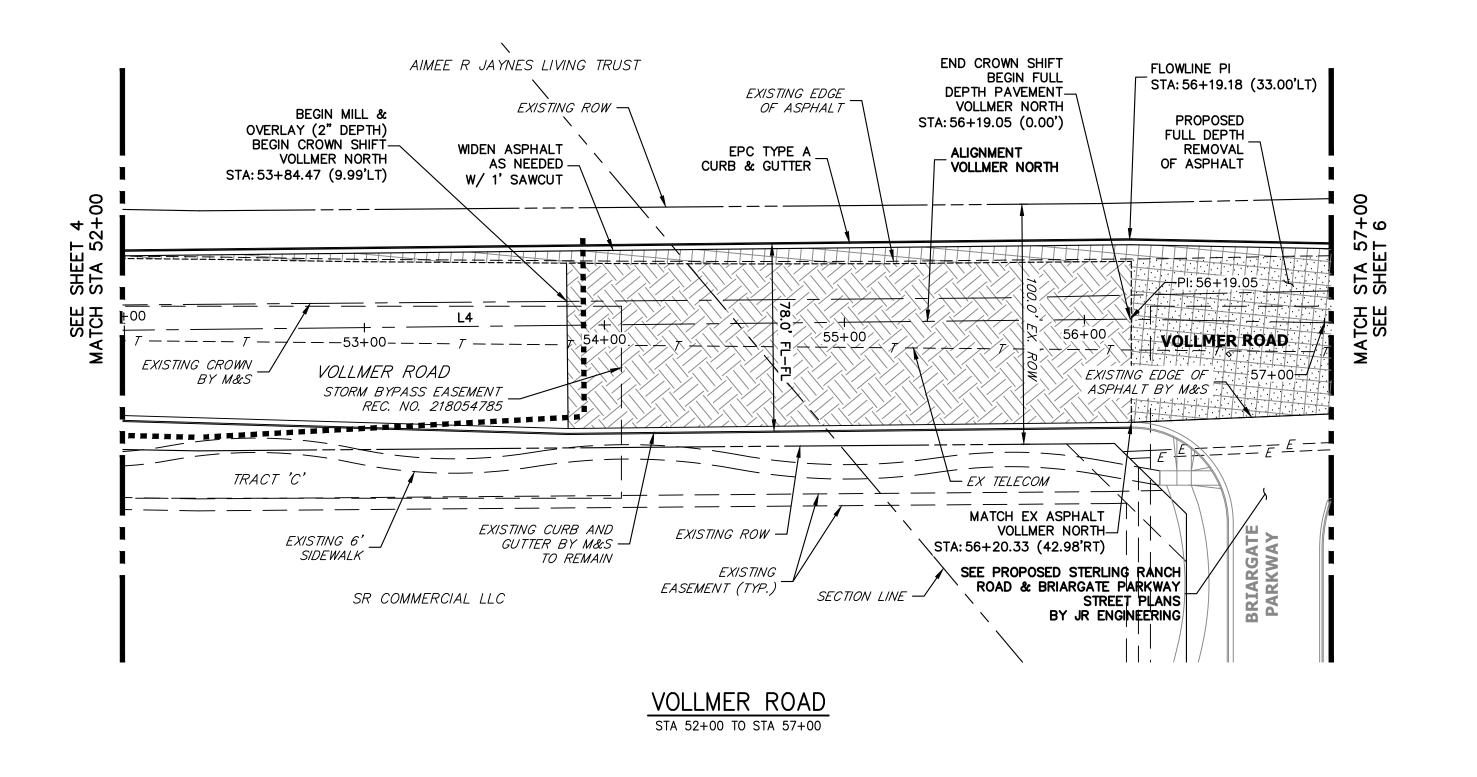
PREPARED UNDER MY DIRECT SUPERVISION AND COMBEHALF OF JR ENGINEERING

32314

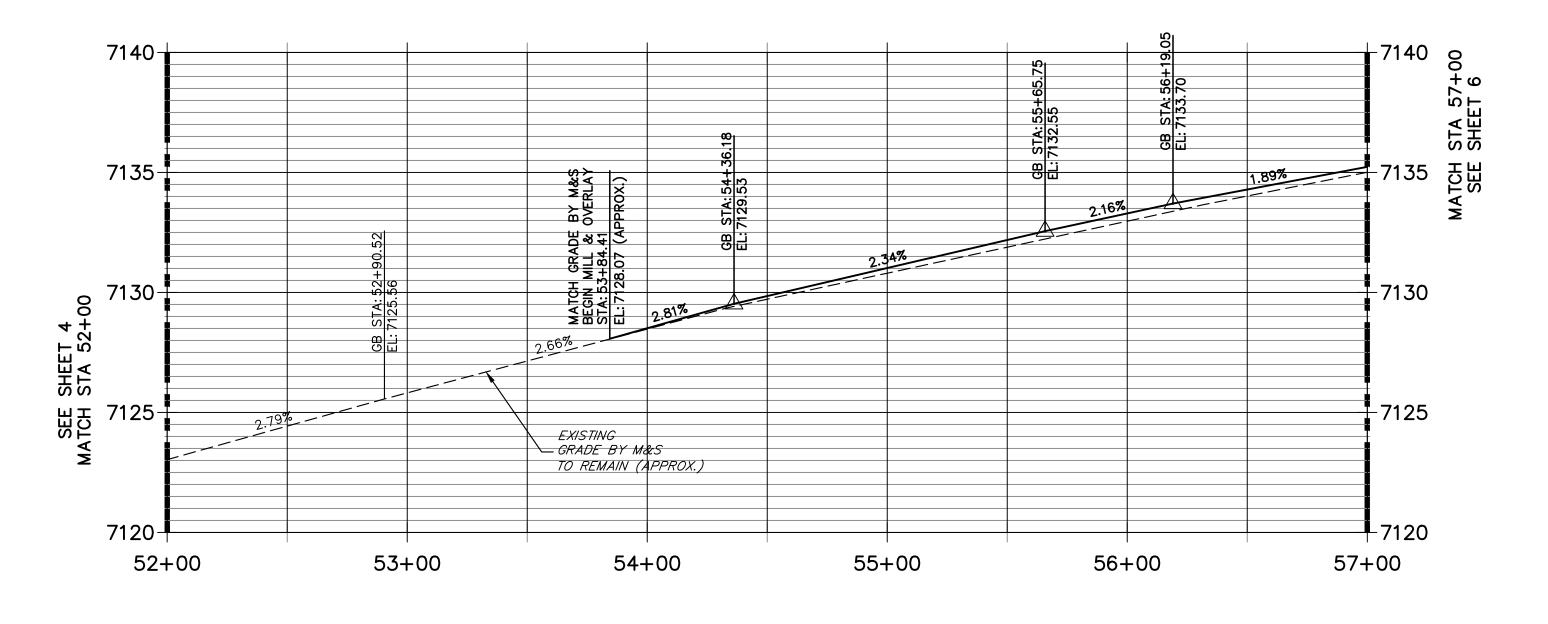
MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314

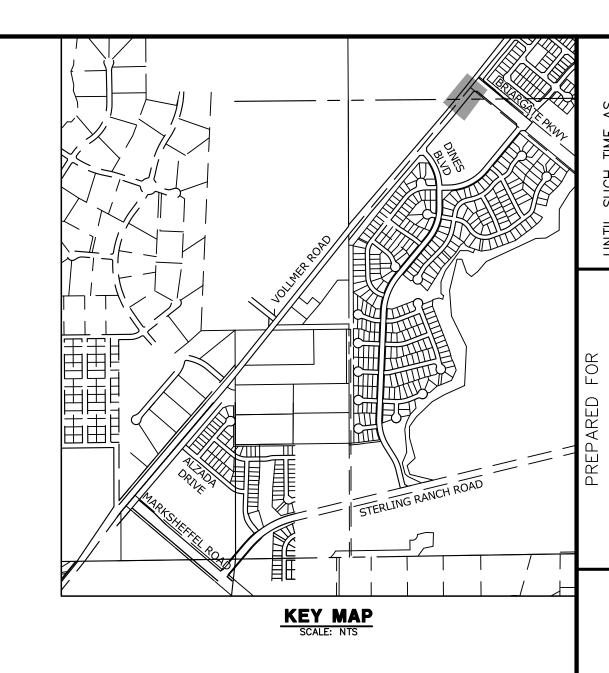
FOR AND ON BEHALF OF JR ENGINEERING AND COMAL PROPERTY OF THE PROPERTY OF





### **VOLLMER NORTH PROFILE (2)** STA 52+00.00 TO 57+00.00



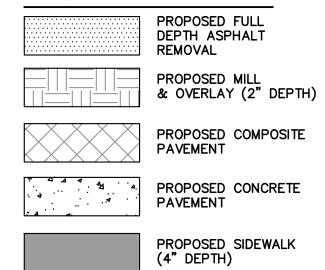


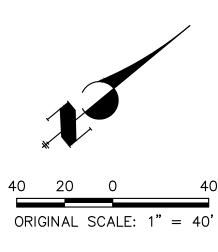
LINE AND CURVE TABLE - VOLLMER NORTH					
LINE/CURVE	LENGTH	RADIUS			
L4	N38 <b>°</b> 55'46 <b>"</b> E	531.96'			
L5	N40°37'46 <b>"</b> E	198.41'			

### **ROADWAY NOTES**

- 1. ALL STATIONING AND PROFILE ELEVATIONS ARE ROADWAY CENTERLINE UNLESS OTHERWISE NOTED.
- URBAN MINOR ARTERIAL IS BASED ON A DESIGN SPEED OF 40 MPH. REDIRECT TAPERS ARE BASED ON A DESIGN SPEED OF 50 MPH.
- 3. PAVEMENT EDGES SHALL BE SAW-CUT STRAIGHT TO WITHIN 5 DEGREES OF VERTICAL. EDGES SHALL BE TACK COATED PRIOR TO PATCHING.
- ALL LOOSE MATERIAL AND COATED WITH HOT LIQUID ASPHALT (GRADE AC-10) OR ASPHALT EMULSION APPLIED COLD (GRADE CSS—1h) TO ENSURE A BOND WITH THE NEW ASPHALT SURFACING.

### **LEGEND**





**ENGINEER'S STATEMENT** 

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

32314 MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING ALL

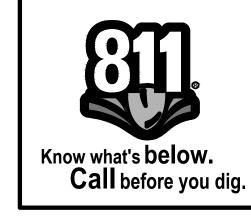
VOLLMER ROADWA SHEET 5 OF 17

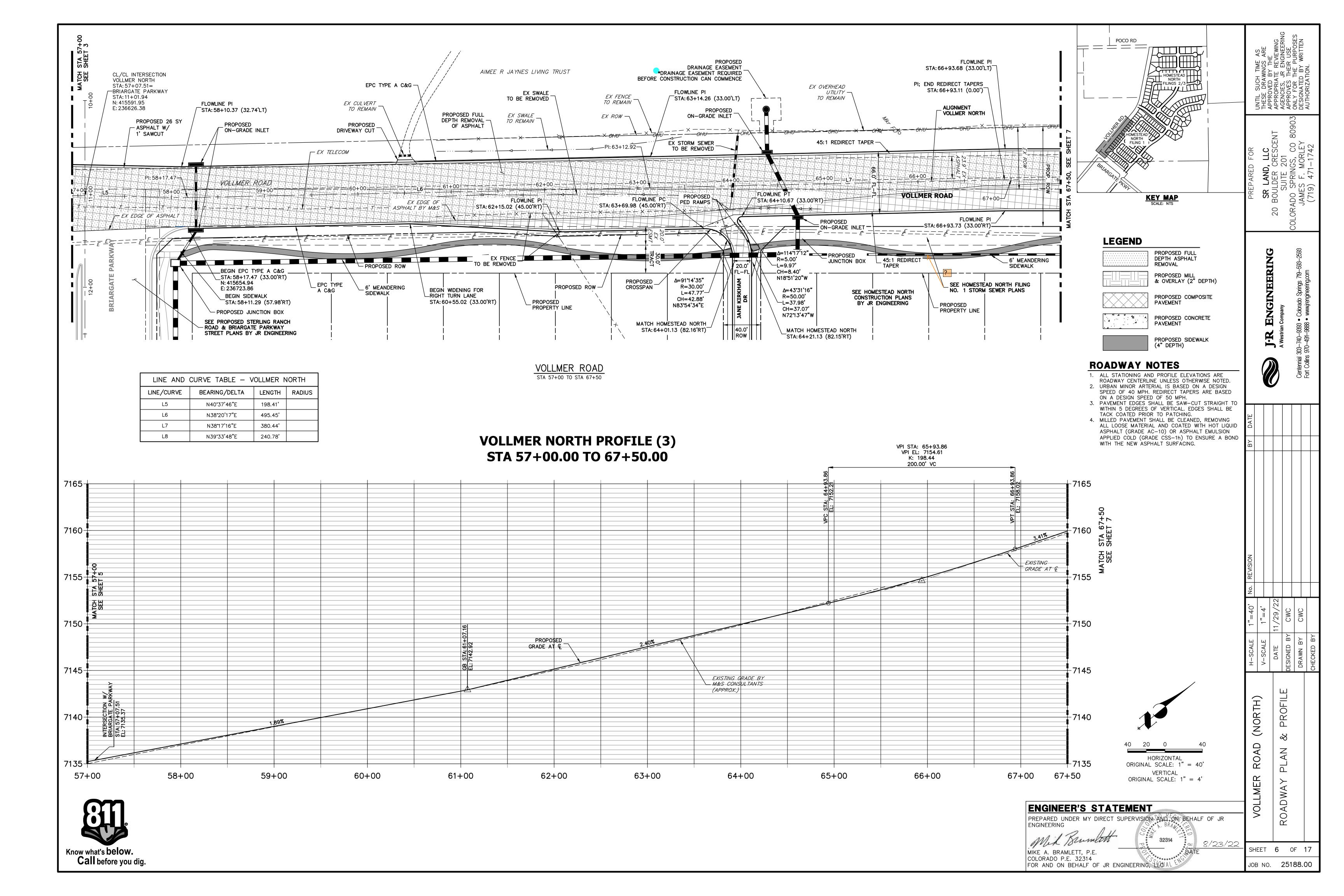
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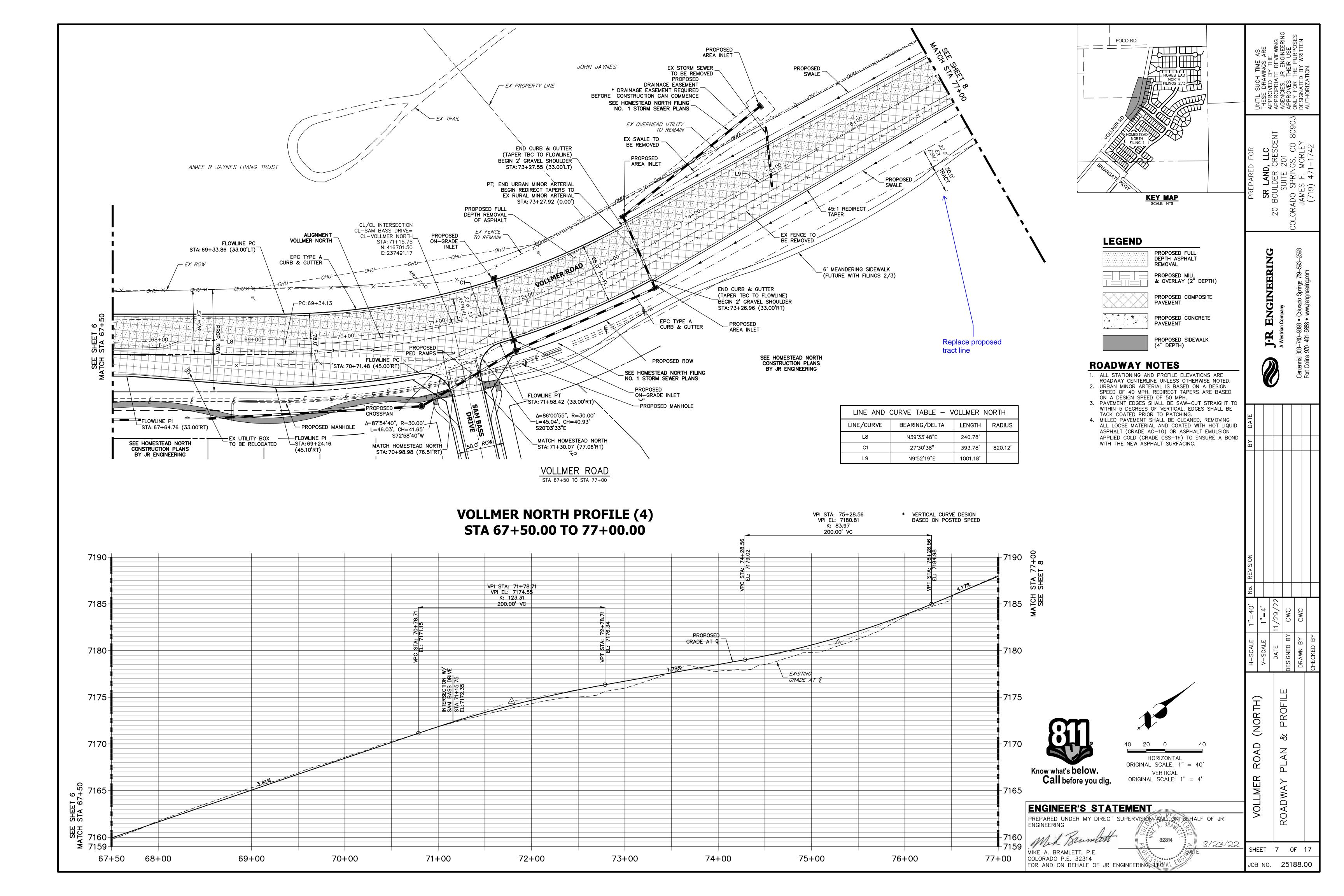
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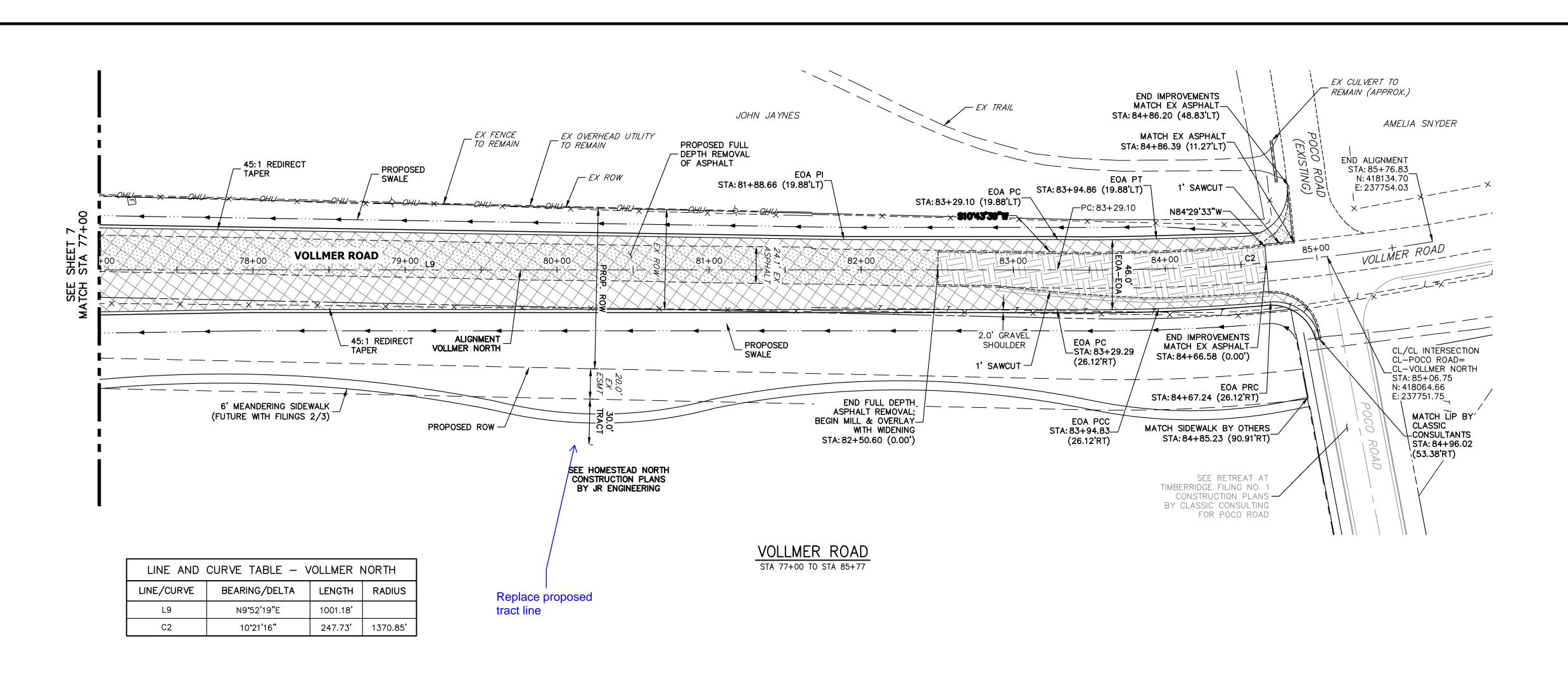
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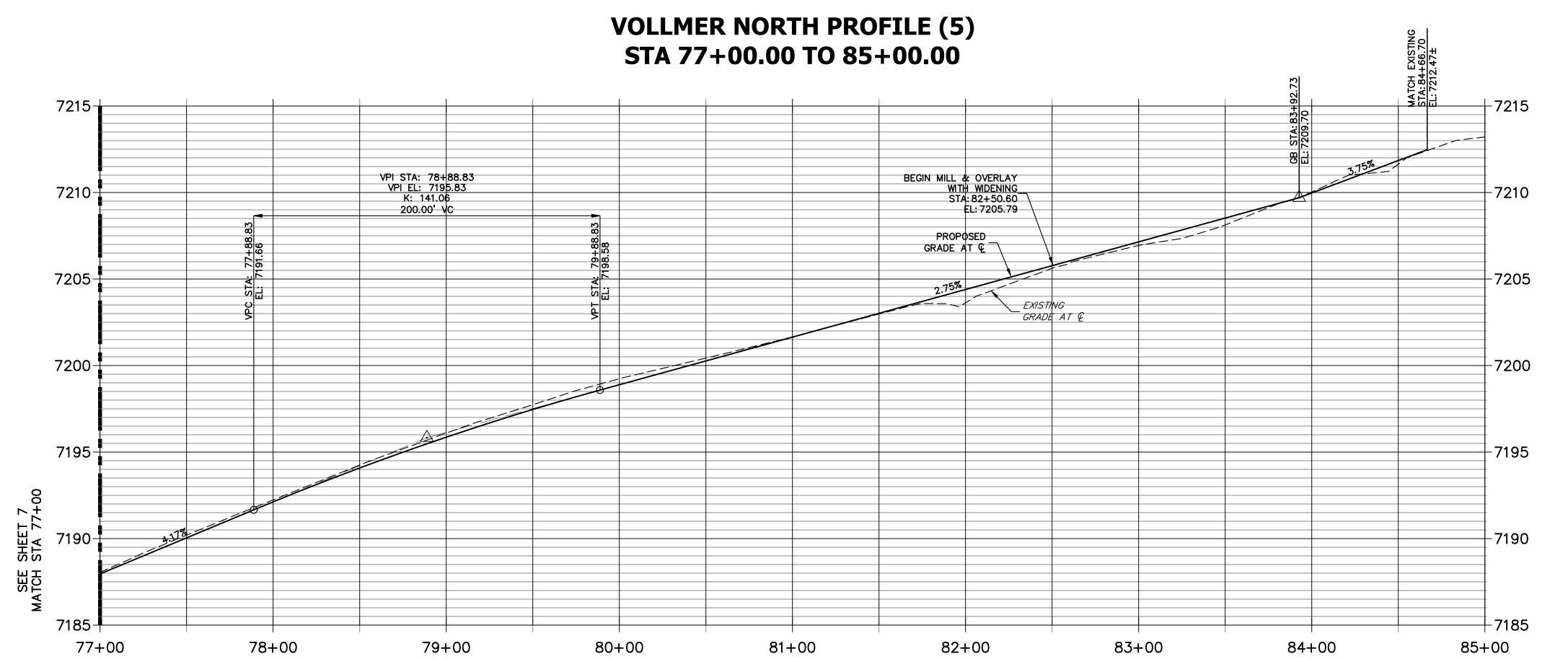
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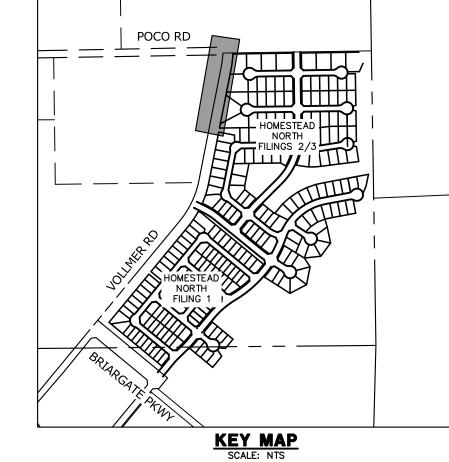












### **LEGEND**

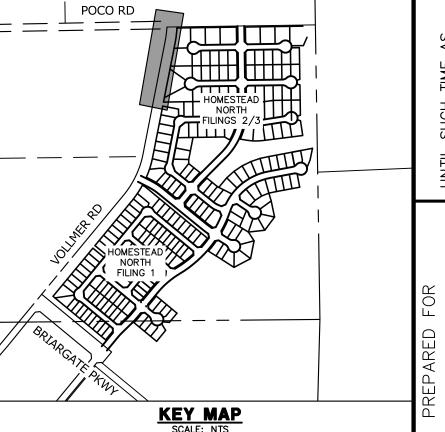
	PROPOSED FULL DEPTH ASPHALT REMOVAL
	PROPOSED MILL & OVERLAY (2" DEPTH)
	PROPOSED COMPOSITE PAVEMENT
4 4 4	PROPOSED CONCRETE PAVEMENT

### **ROADWAY NOTES**

- 1. ALL STATIONING AND PROFILE ELEVATIONS ARE ROADWAY CENTERLINE UNLESS OTHERWISE NOTED
- 2. URBAN MINOR ARTERIAL IS BASED ON A DESIGN SPEED OF 40 MPH. REDIRECT TAPERS ARE BASED ON A DESIGN SPEED OF 50 MPH.

PROPOSED SIDEWALK (4" DEPTH)

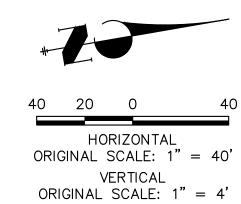
- 3. PAVEMENT EDGES SHALL BE SAW-CUT STRAIGHT TO WITHIN 5 DEGREES OF VERTICAL. EDGES SHALL BE TACK COATED PRIOR TO PATCHING.
- 4. MILLED PAVEMENT SHALL BE CLEANED, REMOVING ALL LOOSE MATERIAL AND COATED WITH HOT LIQUID ASPHALT (GRADE AC-10) OR ASPHALT EMULSION APPLIED COLD (GRADE CSS-1h) TO ENSURE A BOND WITH THE NEW ASPHALT SURFACING.



ENGIN

SUIDE SUIDE SUIDE SUIDE SUIDE SPECIAL (719)





### **ENGINEER'S STATEMENT**

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

32314 8/23/22 MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING (1971)

SHEET **8** OF **17** JOB NO. **25188.00** 

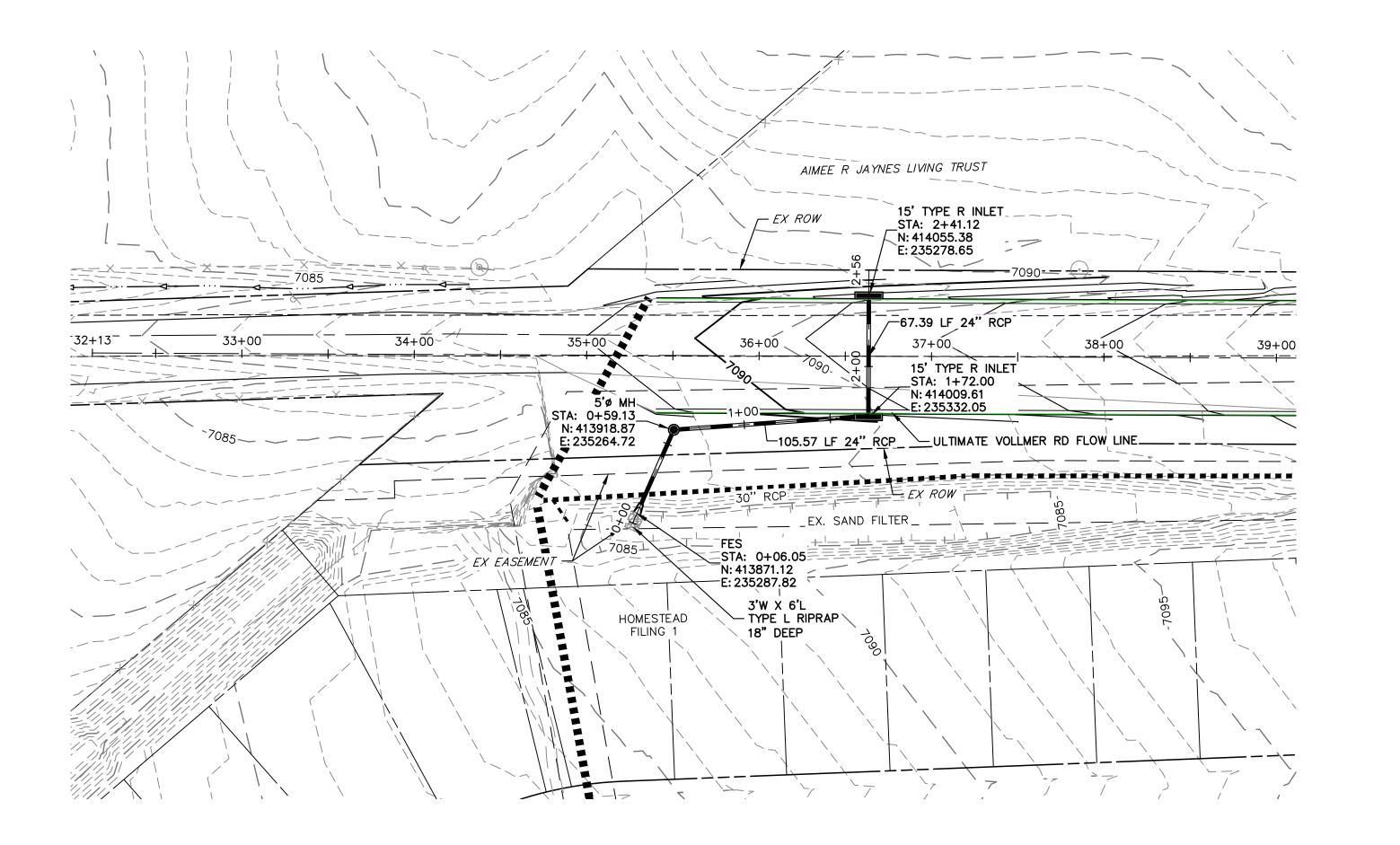
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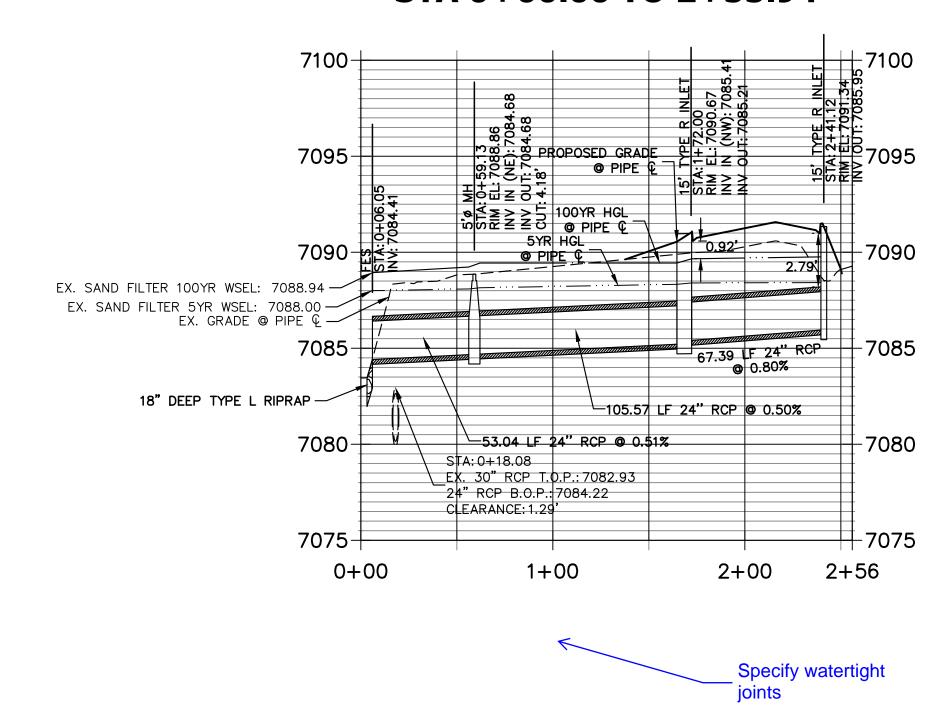
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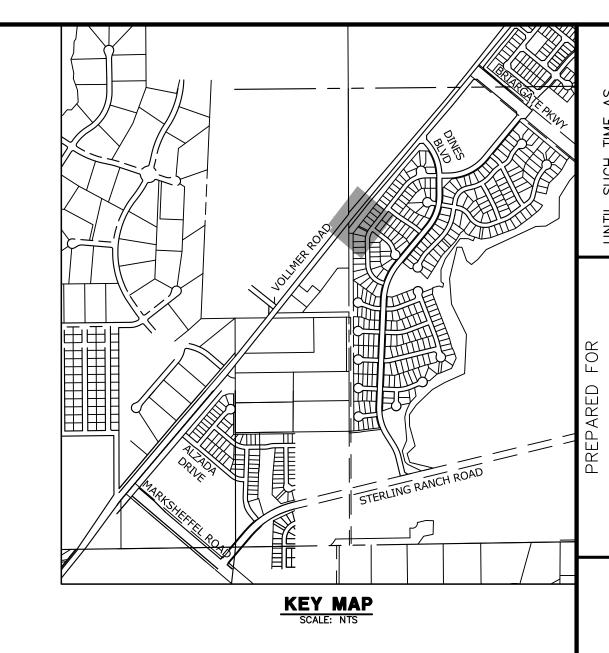
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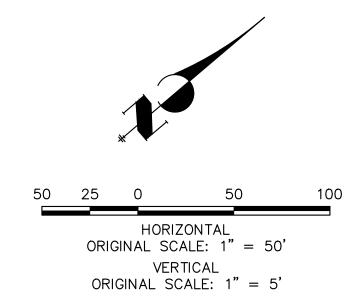
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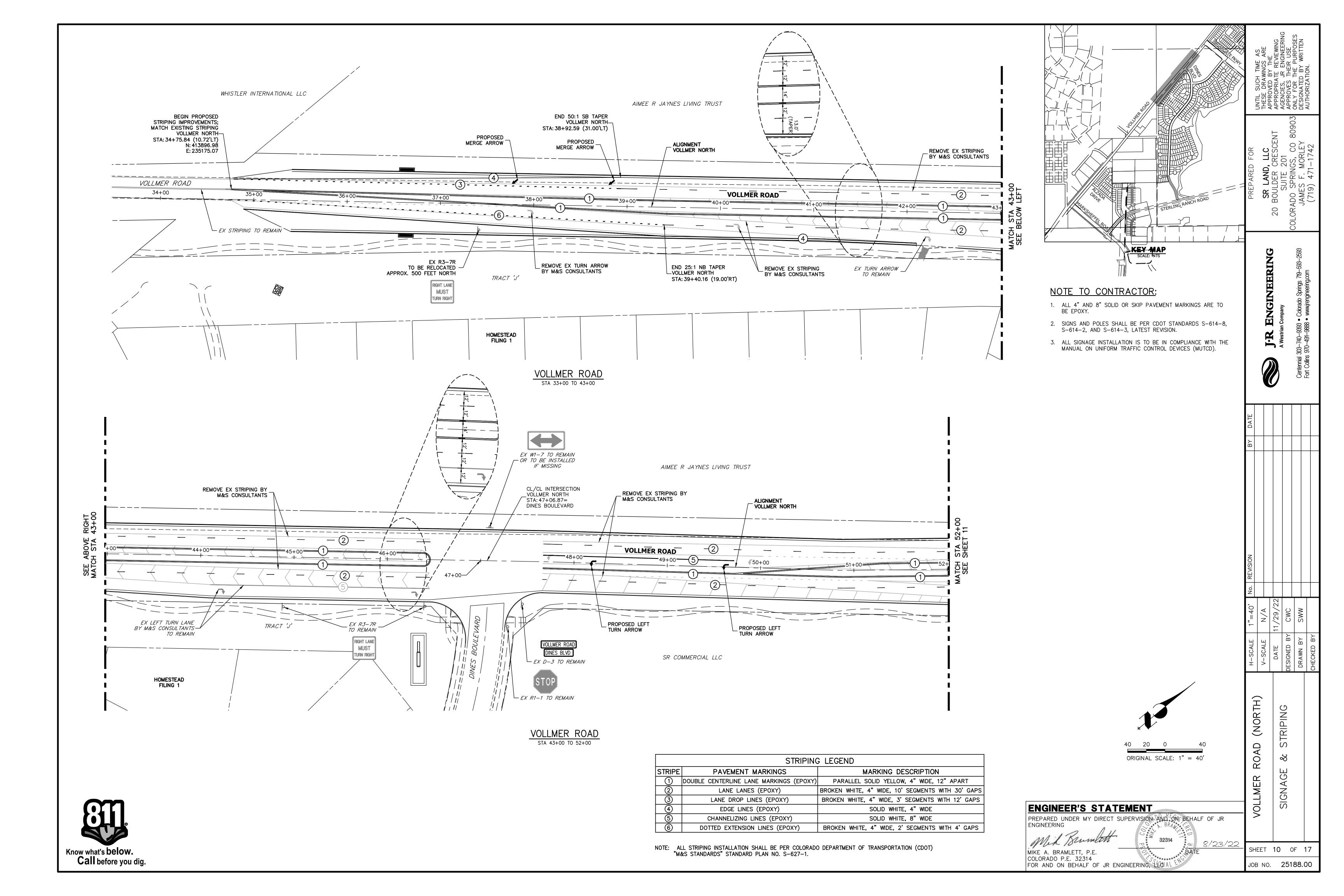


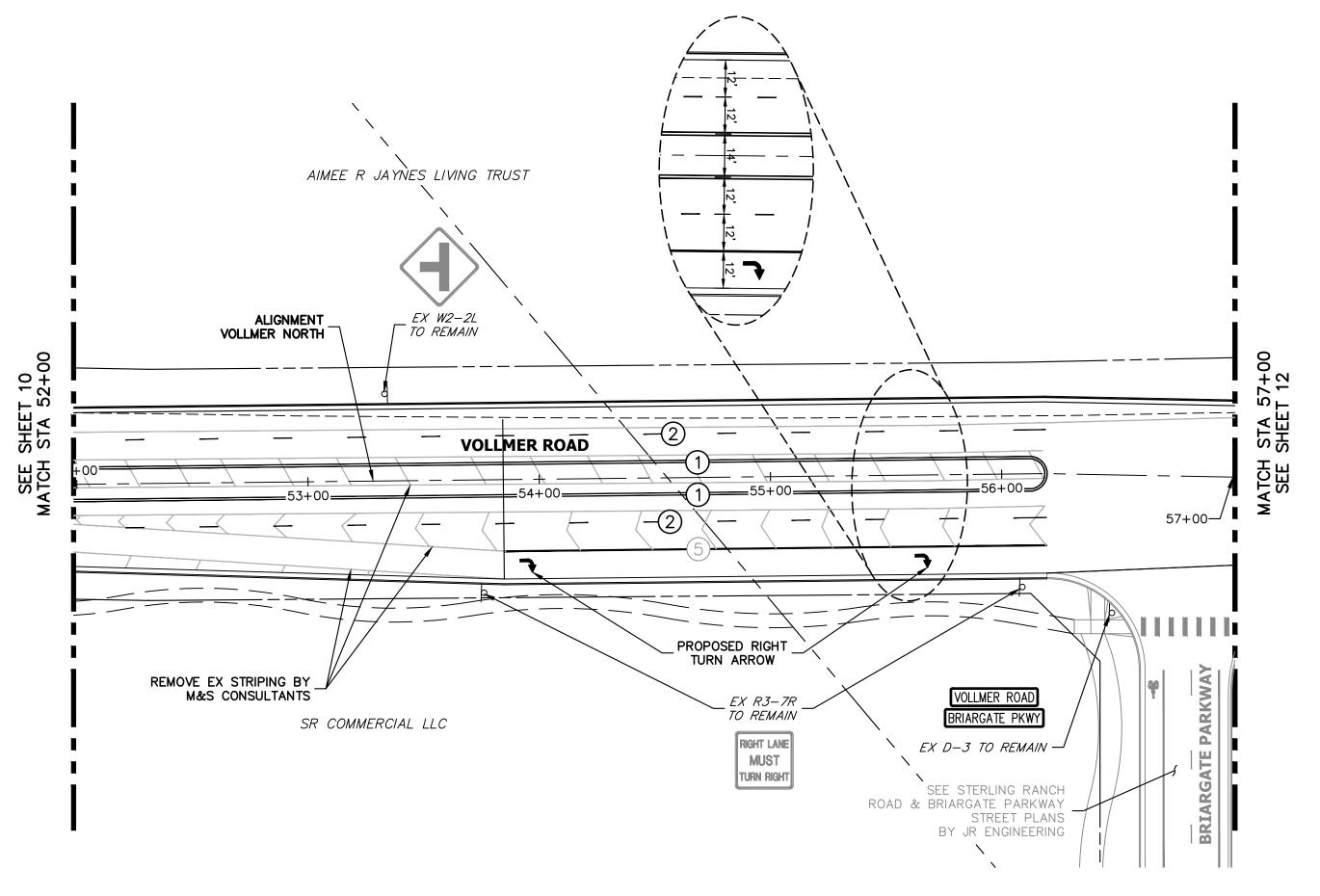
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ROAD



ENGINEER'S STATEMENT  PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING  32314  32314	VOLLMER	STORM PL	
MIKE A. BRAMLETT, P.E.	SHEET	9 OF 1	17
FOR AND ON BEHALF OF JR ENGINEERING OF ALEMINING	JOB NO.	25188.0	)O

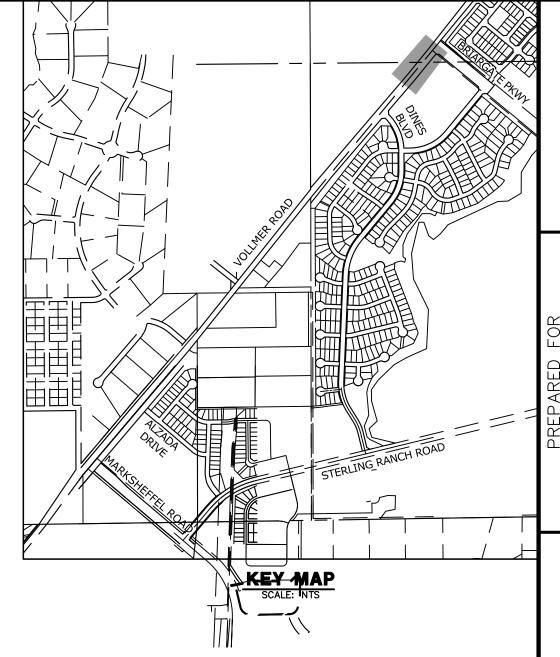




VOLLMER ROAD
STA 52+00 TO STA 57+00

	STRIPING LEGEND						
STRIPE	TRIPE PAVEMENT MARKINGS MARKING DESCRIPTION						
1	DOUBLE CENTERLINE LANE MARKINGS (EPOXY)	PARALLEL SOLID YELLOW, 4" WIDE, 12" APART					
@	LANE LANES (EPOXY)	BROKEN WHITE, 4" WIDE, 10' SEGMENTS WITH 30' GAPS					
3	LANE DROP LINES (EPOXY)	BROKEN WHITE, 4" WIDE, 3' SEGMENTS WITH 12' GAPS					
4	EDGE LINES (EPOXY)	SOLID WHITE, 4" WIDE					
(5)	CHANNELIZING LINES (EPOXY)	SOLID WHITE, 8" WIDE					
6	DOTTED EXTENSION LINES (EPOXY)	BROKEN WHITE, 4" WIDE, 2' SEGMENTS WITH 4' GAPS					

NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) "M&S STANDARDS" STANDARD PLAN NO. S-627-1.



- ALL 4" AND 8" SOLID OR SKIP PAVEMENT MARKINGS ARE TO BE EPOXY.
- 2. SIGNS AND POLES SHALL BE PER CDOT STANDARDS S-614-8, S-614-2, AND S-614-3, LATEST REVISION.
- ALL SIGNAGE INSTALLATION IS TO BE IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

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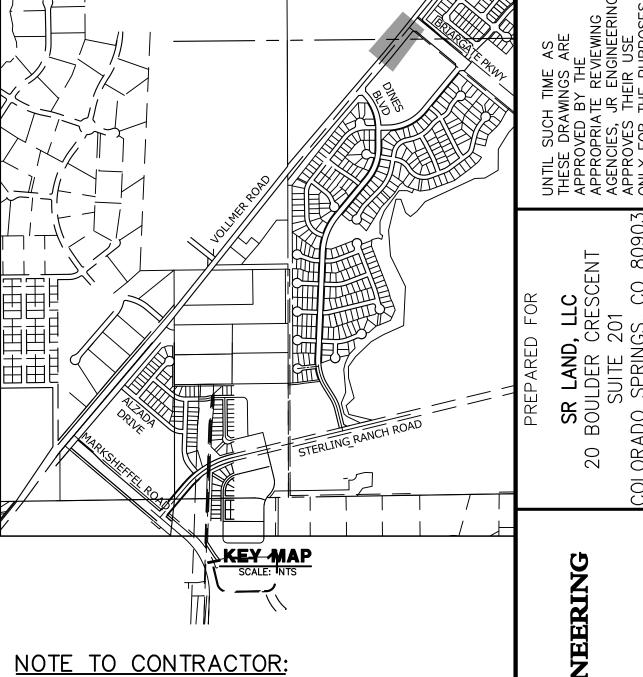
PREPARED UNDER MY DIRECT SUPERVISION AND BEHALF OF JR ENGINEERING

**ENGINEER'S STATEMENT** 

MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, JUNEAU

ORIGINAL SCALE: 1" = 40'

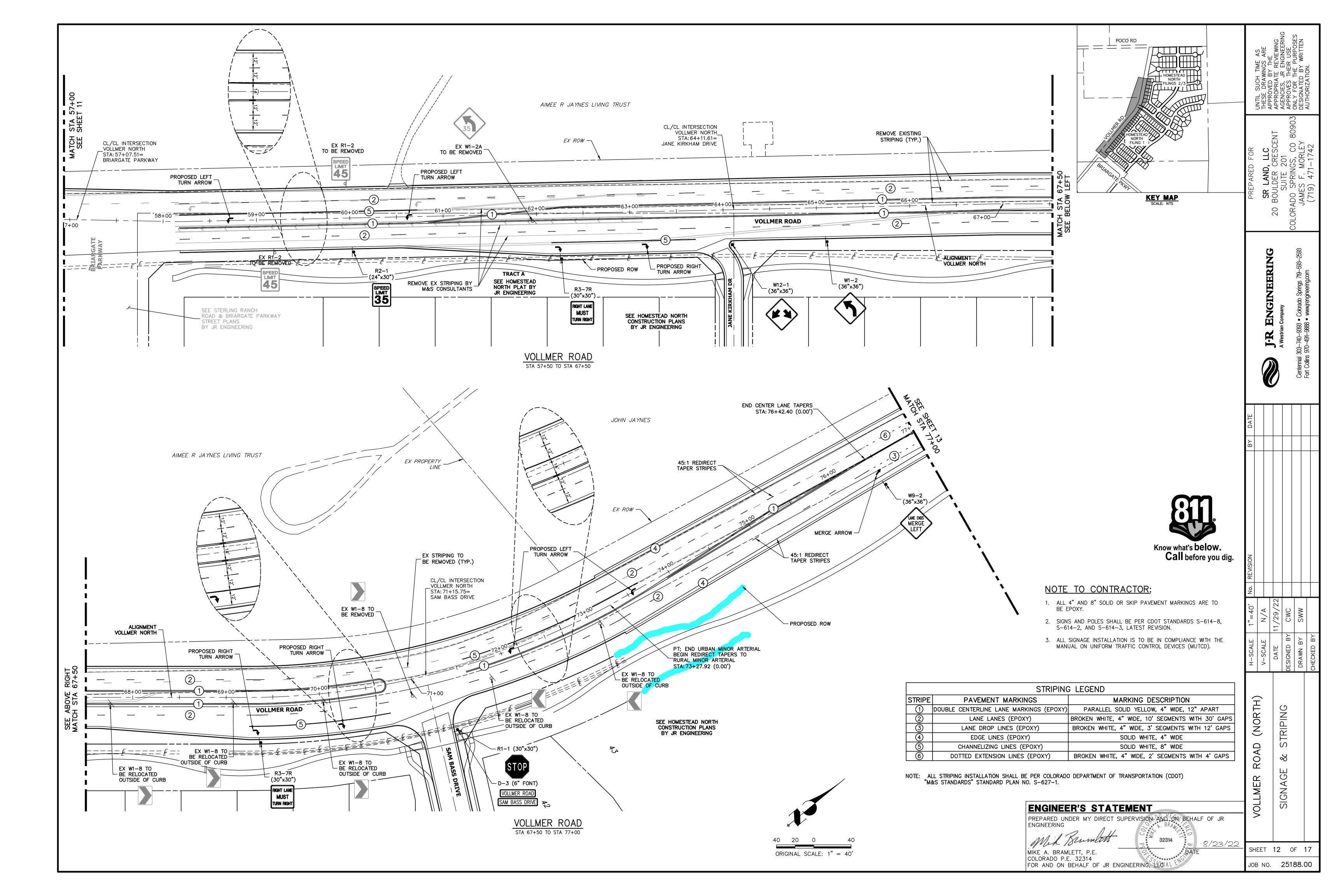
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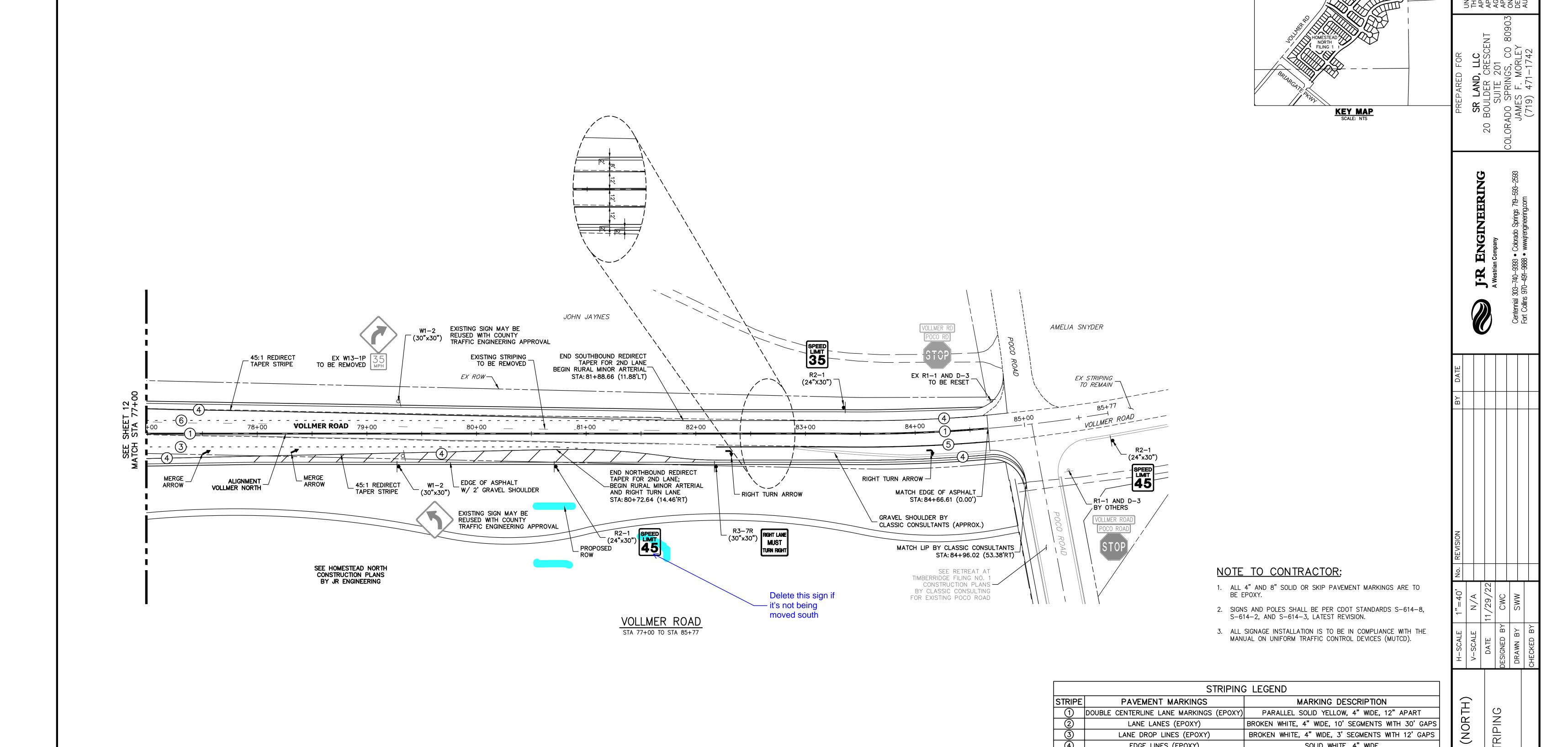


(NORTH) TRIPING ROAD S SIGNAGE VOLLMER

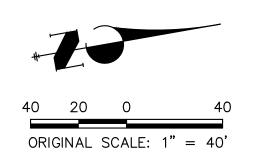
SHEET 11 OF 17







Know what's below. Call before you dig.





EDGE LINES (EPOXY)

CHANNELIZING LINES (EPOXY)

DOTTED EXTENSION LINES (EPOXY)

"M&S STANDARDS" STANDARD PLAN NO. S-627-1.

NOTE: ALL STRIPING INSTALLATION SHALL BE PER COLORADO DEPARTMENT OF TRANSPORTATION (CDOT)

PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR

ENGINEERING 32314 MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314 FOR AND ON BEHALF OF JR ENGINEERING

SOLID WHITE, 4" WIDE

SOLID WHITE, 8" WIDE

BROKEN WHITE, 4" WIDE, 2' SEGMENTS WITH 4' GAPS

SHEET 13 OF 17 JOB NO. **25188.00** 

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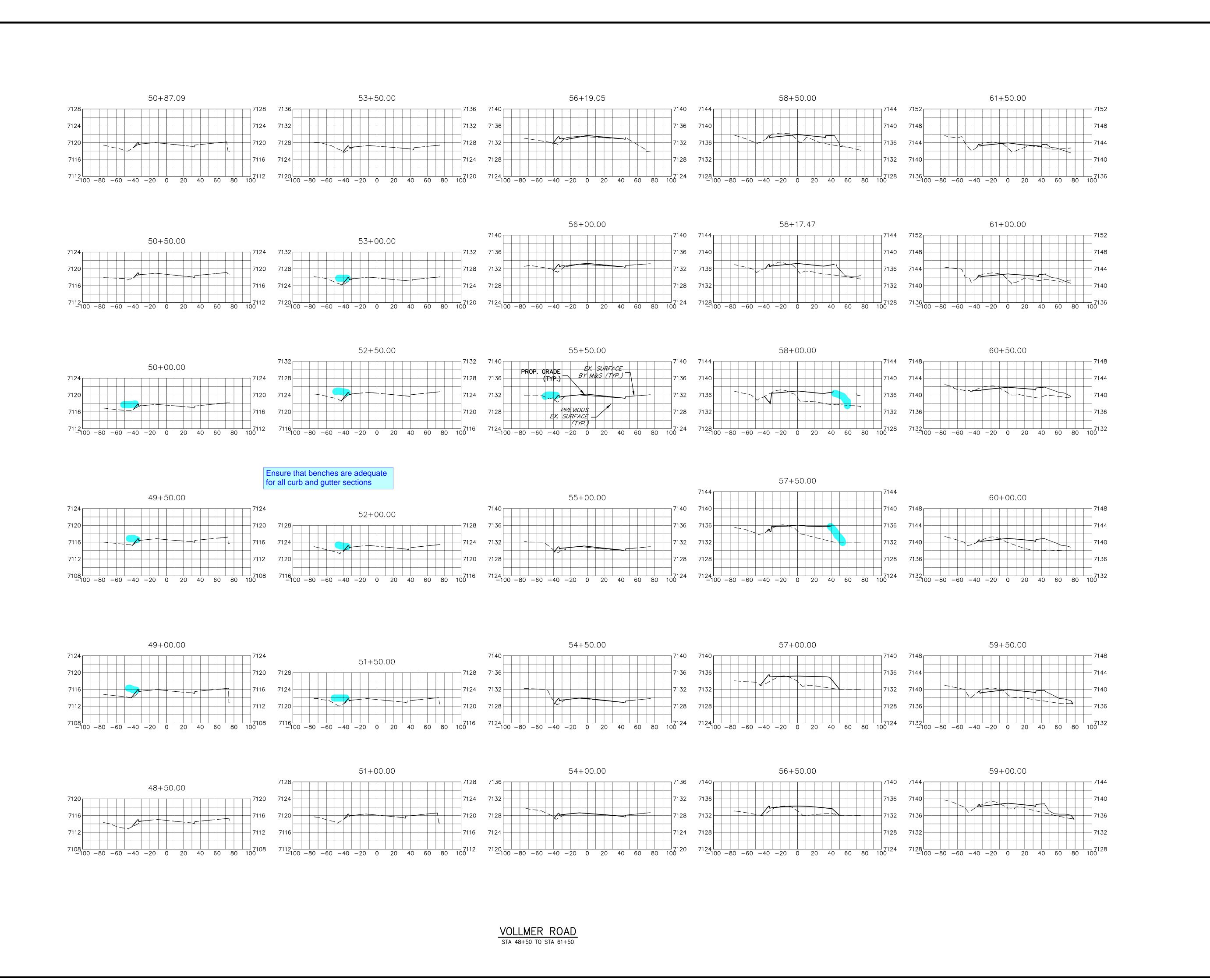
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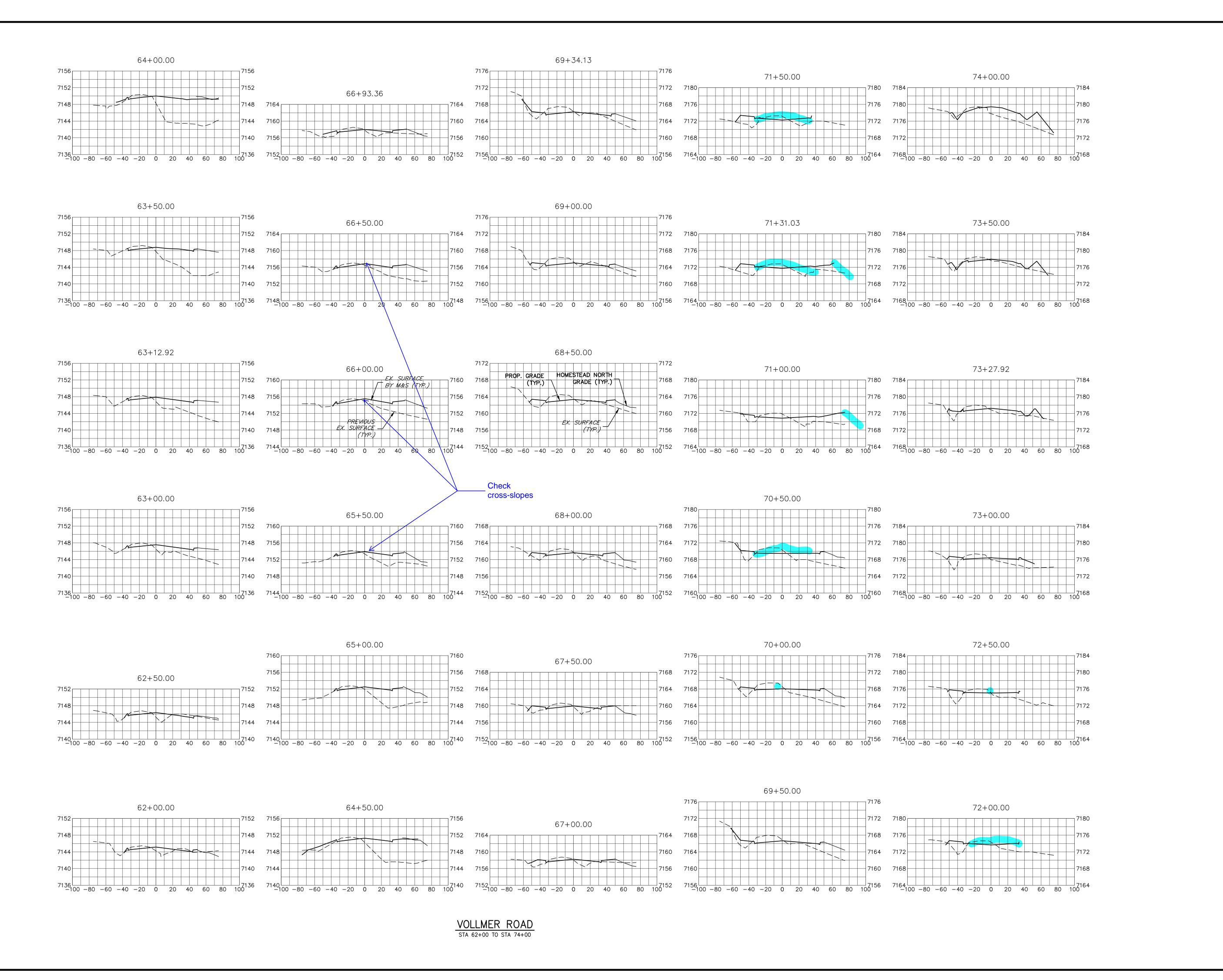
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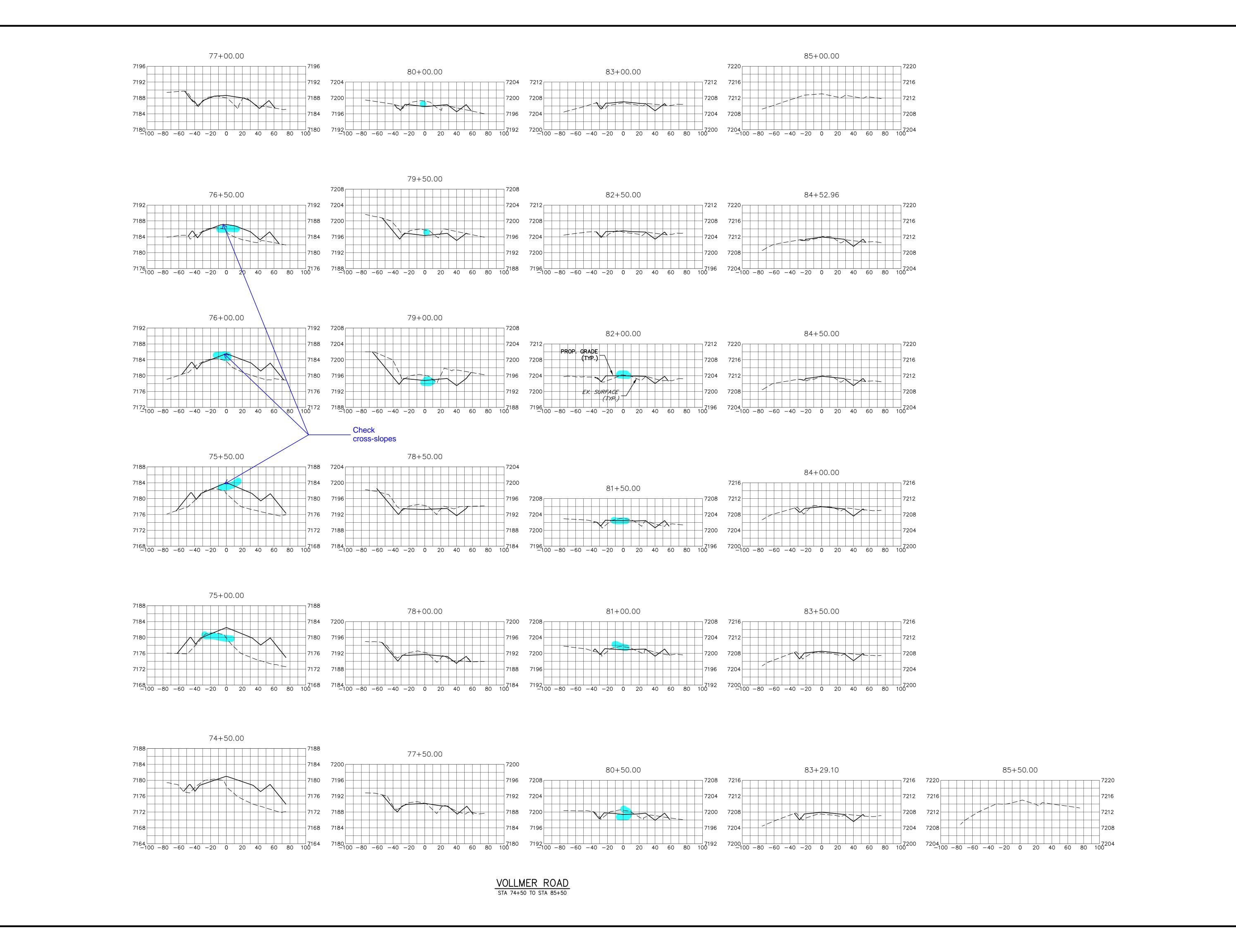


(NORTH) MOIL ROAD  $\dot{\mathcal{O}}$ SE  $\mathcal{O}$ VOLLMER S CRO SHEET **15** OF **17** JOB NO. 25188.00

ENGINEERING



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SHEET **17** OF **17** JOB NO. 25188.00

(NORTH) MOIL AD  $\circ$ SE RO  $\mathcal{O}$ VOLLMER S CRO

ENGINEERING

Please include completed GEC checklist with next submittal. Checklists can be found at: https://publicworks.elpasoco.com/stormwater/

### **VOLLMER ROAD (NORTH)**

**COUNTY OF EL PASO, STATE OF COLORADO** 

# GRADING AND EROSION CONTROL PLANS AUGUST 2022

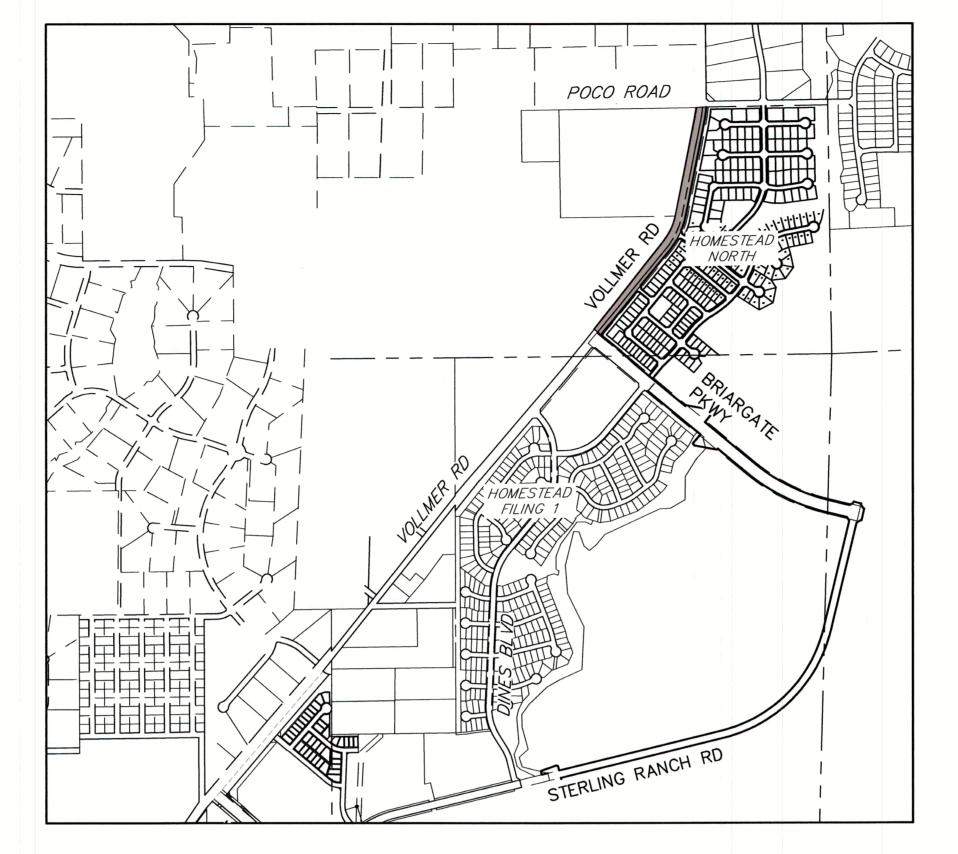
### **GRADING AND EROSION CONTROL STANDARD NOTES**

- STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON-SITE OR OFF-SITE WATERS, INCLUDING WETLANDS.
- 2. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
- 3. A SEPARATE STORMWATER MANAGEMENT PLAN (SMWP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. MANAGEMENT OF THE SWMP DURING CONSTRUCTION IS THE RESPONSIBILITY OF THE DESIGNATED QUALIFIED STORMWATER MANAGER OR CERTIFIED EROSION CONTROL INSPECTOR. THE SWMP SHALL BE LOCATED ON SITE AT ALL TIMES DURING CONSTRUCTION AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE 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 DESIGN OR FUNCTION OF PERMANENT STORMWATER MANAGEMENT STRUCTURES MUST BE APPROVED BY THE ECM ADMINISTRATOR PRIOR TO IMPLEMENTATION.
- 10. EARTH DISTURBANCES SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY MINIMIZE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME. PRE—EXISTING VEGETATION SHALL BE PROTECTED AND MAINTAINED WITHIN 50 HORIZONTAL FEET OF A WATERS OF THE STATE UNLESS SHOWN TO BE INFEASIBLE AND SPECIFICALLY REQUESTED AND APPROVED.
- 11. COMPACTION OF SOIL MUST BE PREVENTED IN AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES OR WHERE FINAL STABILIZATION WILL BE ACHIEVED BY VEGETATIVE COVER. AREAS DESIGNATED FOR INFILTRATION CONTROL MEASURES SHALL ALSO BE PROTECTED FROM SEDIMENTATION DURING CONSTRUCTION UNTIL FINAL STABILIZATION IS ACHIEVED. IF COMPACTION PREVENTION IS NOT FEASIBLE DUE TO SITE CONSTRAINTS, ALL AREAS DESIGNATED FOR INFILTRATION AND VEGETATION CONTROL MEASURES MUST BE LOOSENED PRIOR TO INSTALLATION OF THE CONTROL MEASURE(S).
- 12. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE A STABILIZED CONVEYANCE DESIGNED TO MINIMIZE EROSION AND THE DISCHARGE OF SEDIMENT 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 ALLOWED TO ENTER STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES. CONCRETE WASHOUTS SHALL NOT BE LOCATED IN AN AREA WHERE SHALLOW GROUNDWATER MAY BE PRESENT, OR WITHIN 50 FEET OF A SURFACE WATER BODY, CREEK OR STREAM.
- 14. DURING DEWATERING OPERATIONS OF UNCONTAMINATED GROUND WATER MAY BE DISCHARGED ON SITE, BUT SHALL NOT LEAVE THE SITE IN THE FORM OF SURFACE RUNOFF UNLESS AN APPROVED STATE DEWATERING PERMIT IS IN PLACE.
- 15. EROSION CONTROL BLANKETING OR OTHER PROTECTIVE COVERING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
- 16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
- 17. WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. CONTROL MEASURES MAY BE REQUIRED BY EL PASO COUNTY ENGINEERING IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
- 18. TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF-SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFF-SITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
- 19. THE OWNER/DEVELOPER SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, SOIL, AND SAND THAT MAY ACCUMULATE IN ROADS, STORM DRAINS AND OTHER DRAINAGE CONVEYANCE SYSTEMS AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
- 20. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON—SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
- 21. NO CHEMICAL(S) HAVING THE POTENTIAL TO BE RELEASED IN STORMWATER ARE TO BE STORED OR USED ONSITE UNLESS PERMISSION FOR THE USE OF SUCH CHEMICAL(S) IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING APPROVAL FOR THE USE OF SUCH CHEMICAL(S), SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
- 22. BULK STORAGE OF ALLOWED PETROLEUM PRODUCTS OR OTHER ALLOWED LIQUID CHEMICALS IN EXCESS OF 55 GALLONS SHALL REQUIRE ADEQUATE SECONDARY CONTAINMENT PROTECTION TO CONTAIN ALL SPILLS ONSITE AND TO PREVENT ANY SPILLED MATERIALS FROM ENTERING STATE WATERS, ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR OTHER FACILITIES.
- 23. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE CURB AND GUTTER OR DITCH EXCEPT WITH APPROVED SEDIMENT CONTROL MEASURES.
- 24. OWNER/DEVELOPER AND THEIR AGENTS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS OF THE LAND DEVELOPMENT CODE, DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (1041, NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND OTHER LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, LOCAL, OR COUNTY AGENCIES, THE MOST RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
- 25. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE ONLY AT APPROVED CONSTRUCTION ACCESS POINTS.
- 26. PRIOR TO CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
- 27. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND SHALL BE UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
- 28. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY ENTECH (JULY 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 WQCD — PERMITS 4300 CHERRY CREEK DRIVE SOUTH DENVER, CO 80246—1530

ATTN: PERMITS UNIT



### VICINITY MAP

### SHEET INDEX

1 COVER SHEET
2-5 GRADING AND EROSION CONTROL INITAL PLAN
6-9 GRADING AND EROSION CONTROL INTERIM PLAN
10-13 GRADING AND EROSION CONTROL FINAL PLAN
14-16 GESC DETAILS

### STANDARD NOTES FOR EL PASO COUNTY CONSTRUCTION PLANS

- 1. ALL DRAINAGE AND ROADWAY CONSTRUCTION SHALL MEET THE STANDARDS AND SPECIFICATIONS OF THE CITY OF COLORADO SPRINGS/EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2, AND THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
- 2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE NOTIFICATION AND FIELD NOTIFICATION OF ALL EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, BEFORE BEGINNING CONSTRUCTION. LOCATION OF EXISTING UTILITIES SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. CALL 811 TO CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO (UNCC).
- 3. CONTRACTOR SHALL KEEP A COPY OF THESE APPROVED PLANS, THE GRADING AND EROSION CONTROL PLAN, THE STORMWATER MANAGEMENT PLAN (SWMP), THE SOIL AND GEOTECHNICAL REPORT, AND THE APPROPRIATE DESIGN AND CONSTRUCTION STANDARDS AND SPECIFICATIONS AT THE JOB SITE AT ALL TIMES, INCLUDING THE FOLLOWING:
- 3.1. EL PASO COUNTY ENGINEERING CRITERIA MANUAL (ECM)
  3.2. CITY OF COLORADO SPRINGS/ EL PASO COUNTY DRAINAGE CRITERIA MANUAL, VOLUMES 1 AND 2
  3.4. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS AND PRINCE CONSTRUCTION
- 3.3. COLORADO DEPARTMENT OF TRANSPORTATION (CDOT) STANDARD SPECIFICATIONS AND BRIDGE CONSTRUCTION 3.4. CDOT M&S STANDARDS
- 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 VERSIONS OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE EINGEERI9NG 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. ANY MODIFICATIONS NECESSARY TO MEET CRITERIA AFTER—THE—FACT WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO RECTIFY.
- 5. IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ACCURATELY SHOW EXISTING CONDITIONS, BOTH ONSITE AND OFFSITE, ON THE CONSTRUCTION PLANS.
  ANY MODIFICATIONS NECESSARY DUE TO CONFLICTS, OMISSIONS, OR CHANGED CONDITIONS WILL BE ENTIRELY THE DEVELOPER'S RESPONSIBILITY TO
- 6. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH EL PASO COUNTY PLANNING AND COMMUNITY DEVELOPMENT INSPECTIONS, PRIOR TO STARTING CONSTRUCTION.
- 7. IT IS THE CONTRACTOR'S RESPONSIBILITY TO UNDERSTAND THE REQUIREMENTS OF ALL JURISDICTIONAL AGENCIES TO OBTAIN ALL REQUIRED PERMITS, INCLUDING BUT NOT LIMITED TO EL PASO COUNTY EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP), REGIONAL BUILDING FLOODPLAIN DEVELOPMENT PERMIT, U.S. ARMY CORPS OF ENGINEERS—ISSUED 401 AND/OR 404 PERMITS, AND COUNTY AND STATE FUGITIVE DUST PERMITS.
- 8. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND PCD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- 9. CONTRACTOR SHALL COORDINATE GEOTECHNICAL TESTING PER ECM STANDARDS. PAVEMENT DESIGN SHALL BE APPROVED BY EL PASO COUNTY PCD PRIOR TO PLACEMENT OF CURB AND GUTTER AND PAVEMENT.
- 10. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
- 11. SIGHT VISIBILITY TRIANGLES ARE IDENTIFIED IN THE PLANS SHALL BE PROVIDED AT ALL INTERSECTIONS. OBSTRUCTIONS GREATER THAN 18 INCHES ABOVE FLOWLINE ARE NOT ALLOWED IN SIGHT TRIANGLES.
- 12. SIGNING AND STRIPING SHALL COMPLY WITH EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS AND MUTCD CRITERIA.
- 13. CONTRACTOR SHALL OBTAIN ANY PERMITS REQUIRED BY EL PASO COUNTY DEPARTMENT OF PUBLIC WORKS, INCLUDING WORK WITHIN THE RIGHT-OF-WAY AND SPECIAL TRANSPORT PERMITS.
- 14. THE LIMITS OF CONSTRUCTION SHALL REMAIN WITHIN THE PROPERTY LINE UNLESS OTHERWISE NOTED. THE OWNER/DEVELOPER SHALL OBTAIN WRITTEN PERMISSION AND EASEMENTS, WHERE REQUIRED, FROM ADJOINING PROPERTY OWNER(S) PRIOR TO ANY OFF—SITE DISTURBANCE, GRADING, OR CONSTRUCTION
- 15. ALL STORM DRAIN PIPES SHALL BE CLASS III RCP UNLESS OTHERWISE NOTED AND APPROVED BY PCD.

### AGENCIES

FIRE DISTRICT:

OWNER/DEVELOPER: SR L

20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903 JAMES F. MORLEY (719) 471-1742

CIVIL ENGINEER:

JR ENGINEERING, LLC
5475 TECH CENTER DRIVE
COLORADO SPRINGS CO 80919

COLORADO SPRINGS, CO 80919 MIKE BRAMLETT P.E. (303) 267-6240

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 JENNIFER IRVINE, P.E. (719) 520-6460

JEFF RICE, P.E. (719) 520-6300

WATER RESOURCES:

STERLING RANCH METRO DISTRICT ENGINEERS

JDS-HYDRO CONSULTANTS

545 E. PIKES PEAK AVE., SUITE 300

COLORADO SPRINGS, CO 80903

JOHN MCGINN (719) 668-8769

BLACK FOREST FIRE PROTECTION DISTRICT
11445 TEACHOUT ROAD

COLORADO SPRINGS, CO 80908 CHIEF BRYAN JACK (719) 495-4300

11140 E. WOODMEN ROAD

30 S. NEVADA AVENUE, SUITE 401

COLORADO SPRINGS, CO 80903

FALCON, CO 80831

(719) - 385 - 5918

GAS DEPARTMENT: COLORADO SPRINGS UTILITIES
7710 DURANT DR.
COLORADO SPRINGS, CO 80947

TIM WENDT (719) 668–3556

ELECTRIC DEPARTMENT: MOUNTAIN VIEW ELECTRIC

(719) 495–2283

COMMUNICATIONS: QWEST COMMUNICATIONS
(U.N.C.C. LOCATORS) (800) 922–1987

AT&T (LOCATORS) (719) 635–3674

CITY STORMWATER: STORMWATER ENTERPRISE

### EASTING = 233849.817 ELEVATION = 7030.82

**BASIS OF BEARING** 

STAMPED "38141", AT THE SOUTHWEST

BENCHMARKS

NORTHING = 411416.273

EASTING = 235167.071

NORTHING = 410095.404

EASTING = 235052.131

NORTHING = 411399.962

ELEVATION = 7000.40

ELEVATION = 7023.42

1. THE TOP OF AN ALUMINUM SURVEYORS CAP.

2. THE TOP OF A RED PLASTIC SURVEYORS CAP,

CORNER OF PAWNEE RANCHEROS SUBDIVISION

3. THE TOP OF A RED PLASTIC SURVEYORS CAP,

BOUNDARY CORNER OF BARBARICK SUBDISION

ILLEGIBLE. AT THE NORTHWEST BOUNDARY

CORNER OF BARBARICK SUBDIVISION

STAMPED "9853", AT THE SOUTHEAST BOUNDARY

BEARINGS ARE BASED ON THE SOUTH LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 12 SOUTH, RANGE 65 WEST OF THE 6TH P.M. AS MONUMENTED AT THE SOUTHWEST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624" AND AT THE SOUTHEAST CORNER OF SAID SOUTHWEST QUARTER BY A 2-1/2" ALUMINUM CAP STAMPED "LS 11624",

11624", SAID LINE BEARS N89"14'14"E, A DISTANCE OF 2,722.56 FEET.

Know what's below.

Call before you dig.

### 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 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.

DATE

JOSHUA PALMER, P.E.

INTERIM COUNTY ENGINEER/ECM ADMINISTRATOR

### OWNER/DEVELOPER STATEMENT

I, THE OWNER/DEVELOPER HAVE READ AND WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN AND ALL OF THE REQUIREMENTS SPECIFIED IN THESE DETAILED PLANS AND SPECIFICATIONS.

AND, LLC

20 BOULDER CRESCENT, SUITE 201 COLORADO SPRINGS, CO 80903

### **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.

MIKE A. BRAMLETT, P.E. COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING SON ALEMANIA

PCD #CDR-21-10"

J-R ENGI

A Westrian Company

Centennial 303–740–9393 • Colorado
Fort Collins 970–491–9888 • www.jreng

OR.

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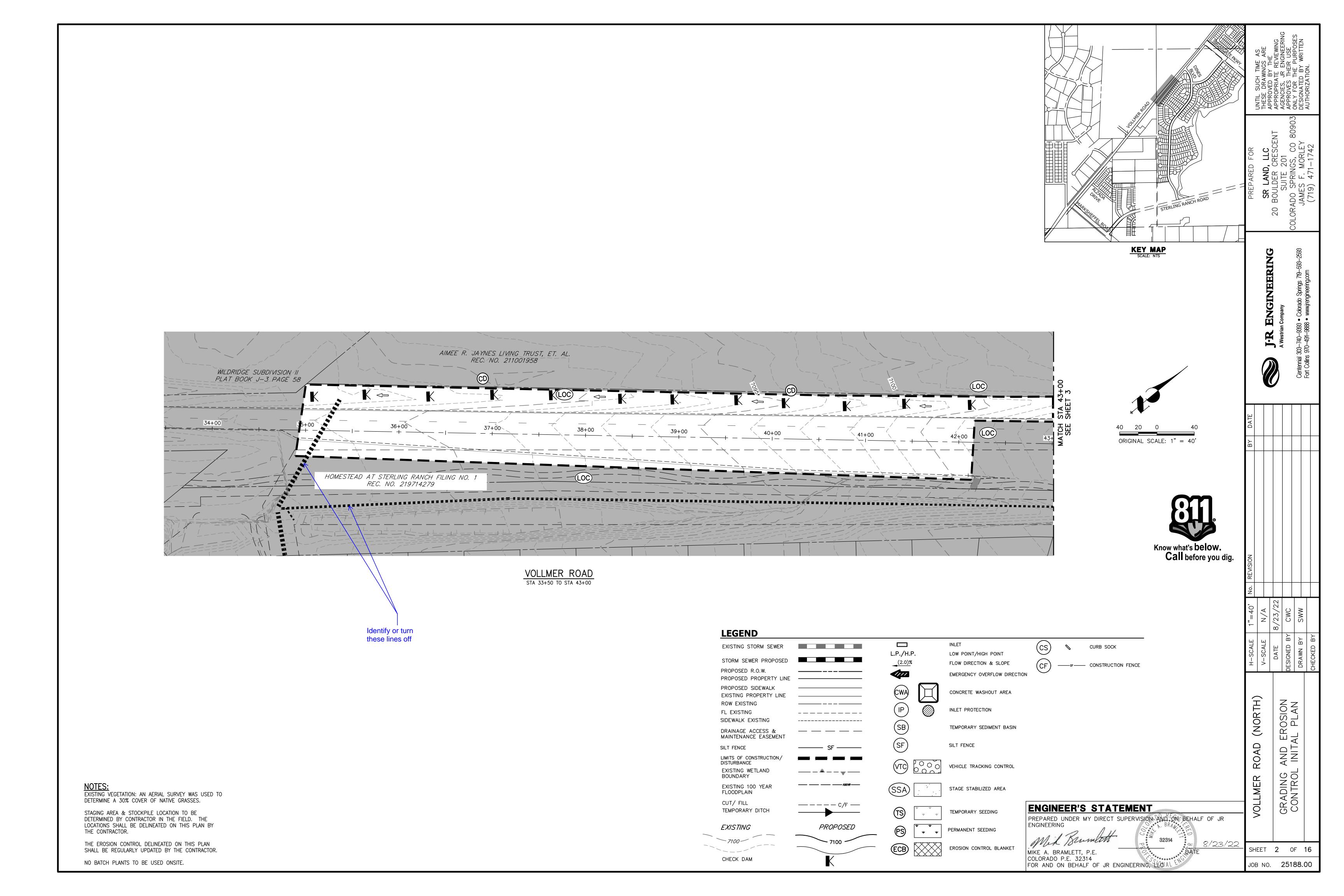
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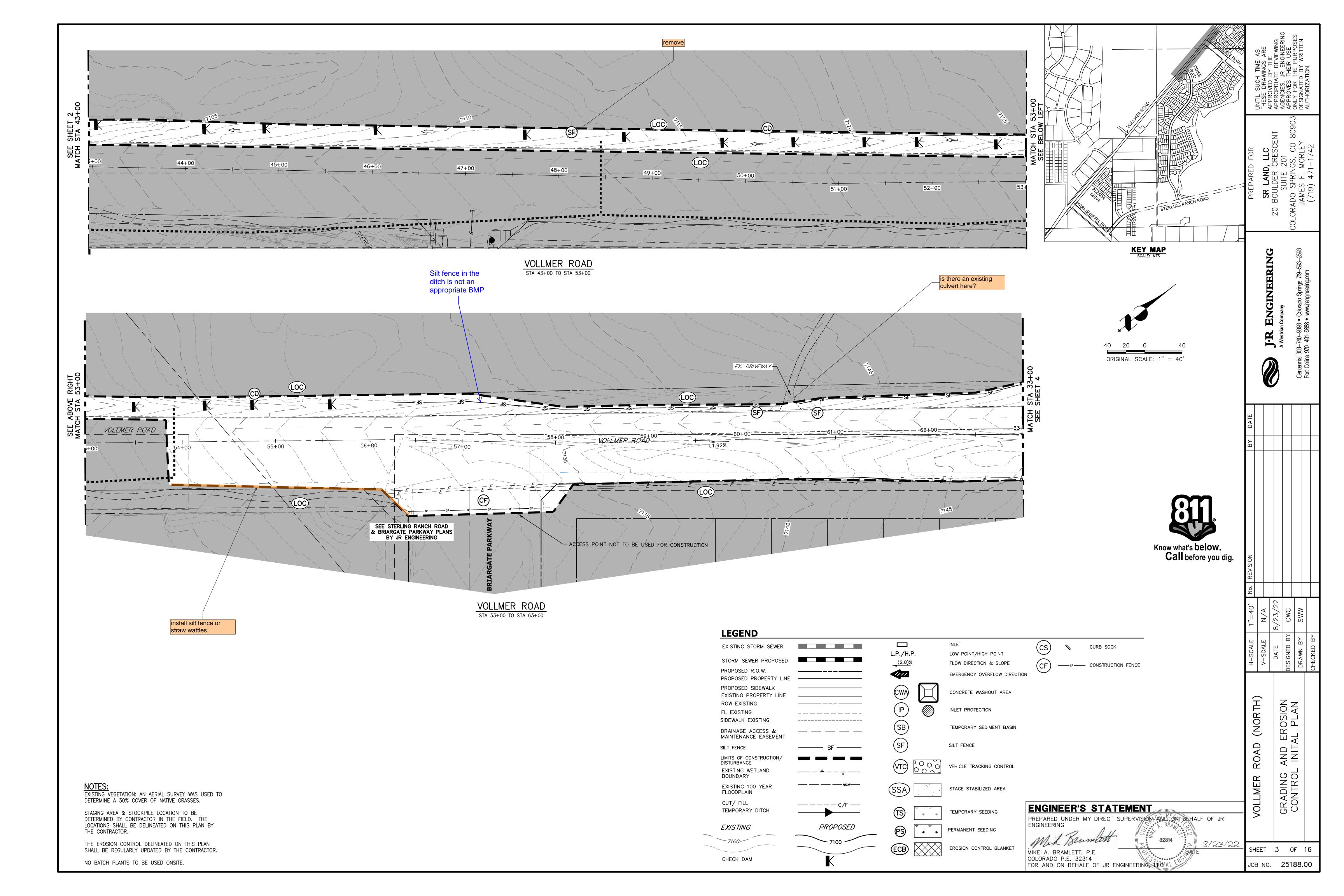
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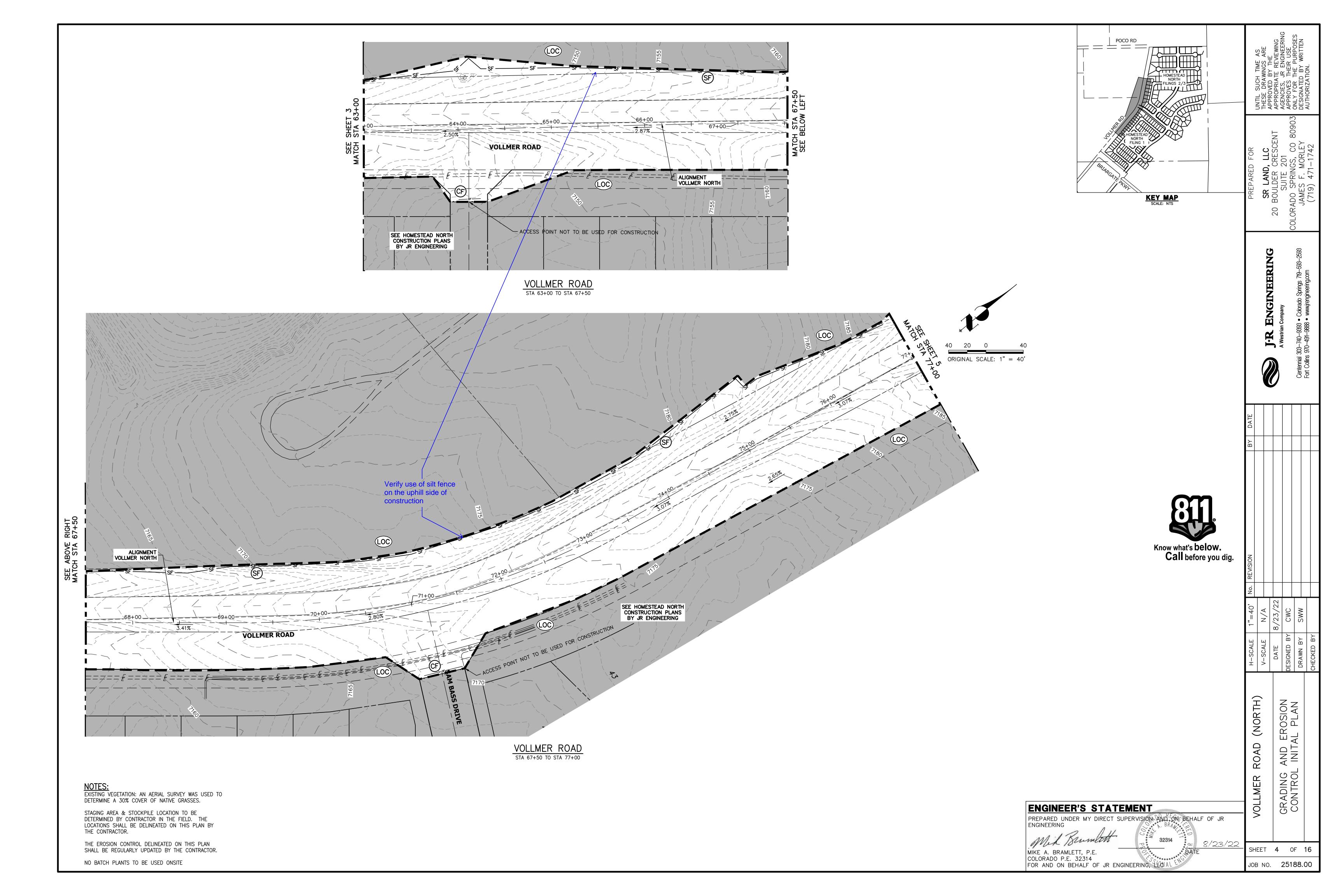
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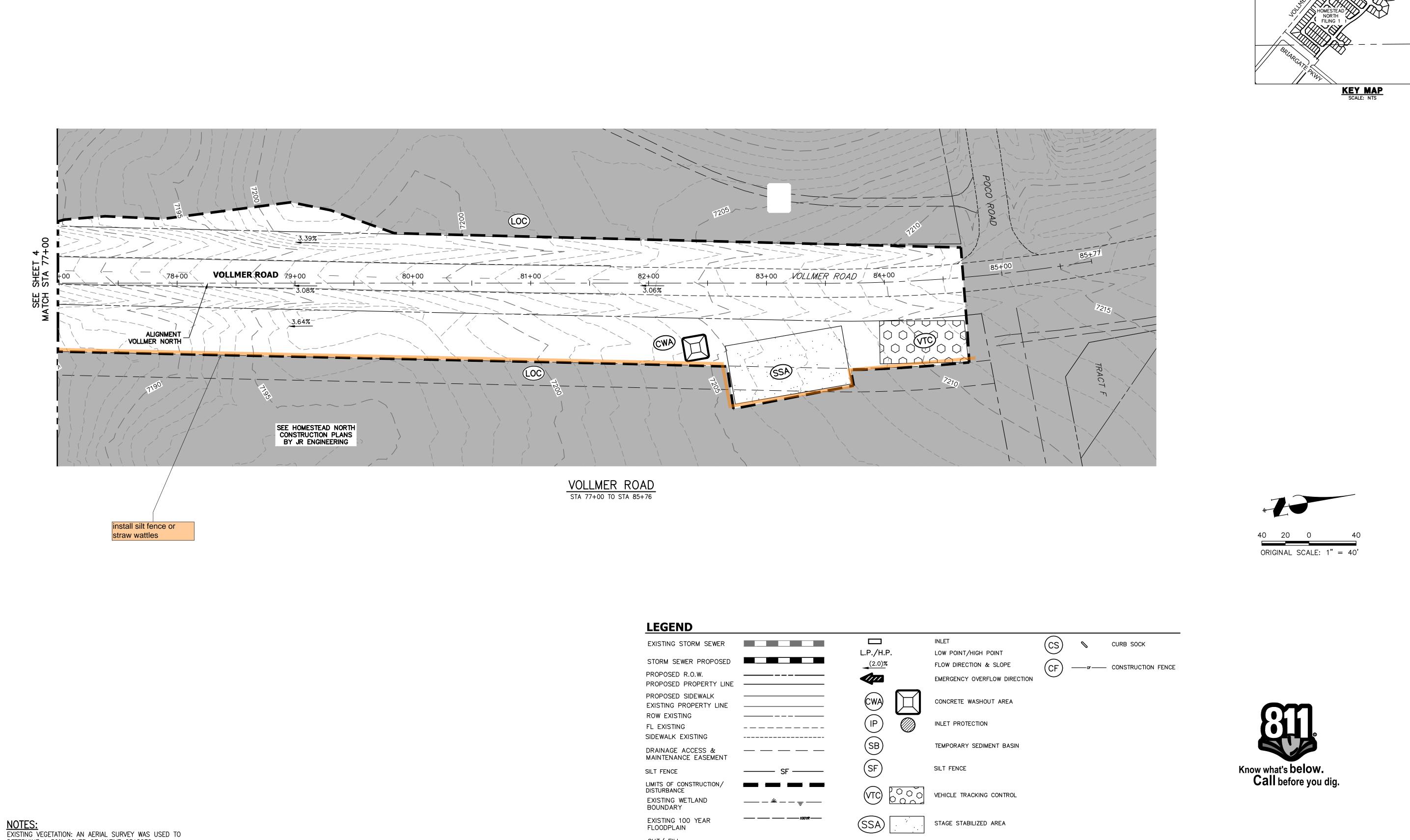
JOB NO. 25188.00

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FLOODPLAIN

CUT/ FILL

EXISTING

CHECK DAM

7100

TEMPORARY DITCH

PROPOSED

TEMPORARY SEEDING

PERMANENT SEEDING

ECB EROSION CONTROL BLANKET

DETERMINE A 30% COVER OF NATIVE GRASSES.

STAGING AREA & STOCKPILE LOCATION TO BE

NO BATCH PLANTS TO BE USED ONSITE.

THE CONTRACTOR.

DETERMINED BY CONTRACTOR IN THE FIELD. THE

LOCATIONS SHALL BE DELINEATED ON THIS PLAN BY

THE EROSION CONTROL DELINEATED ON THIS PLAN

SHALL BE REGULARLY UPDATED BY THE CONTRACTOR.

(NORTH)

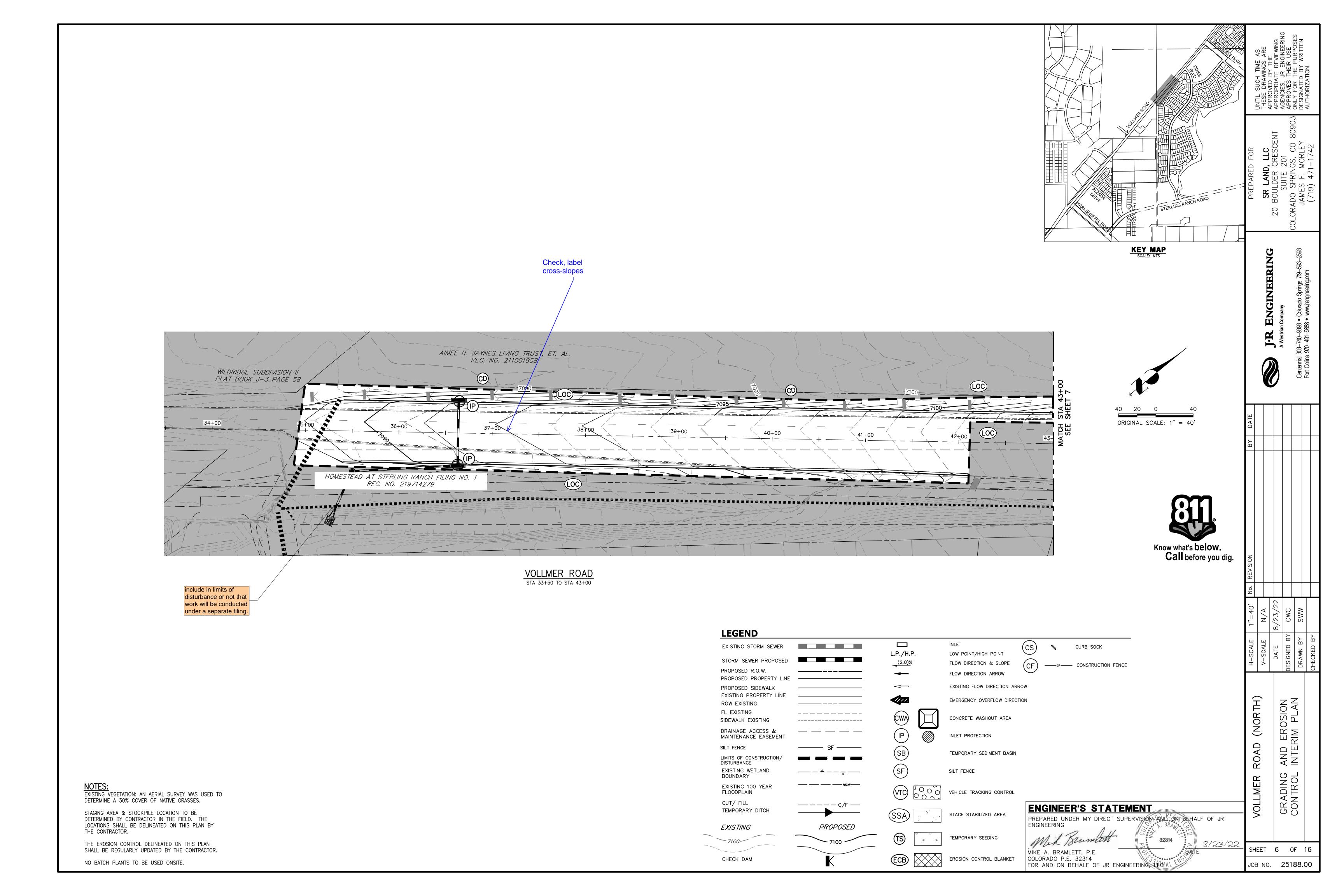
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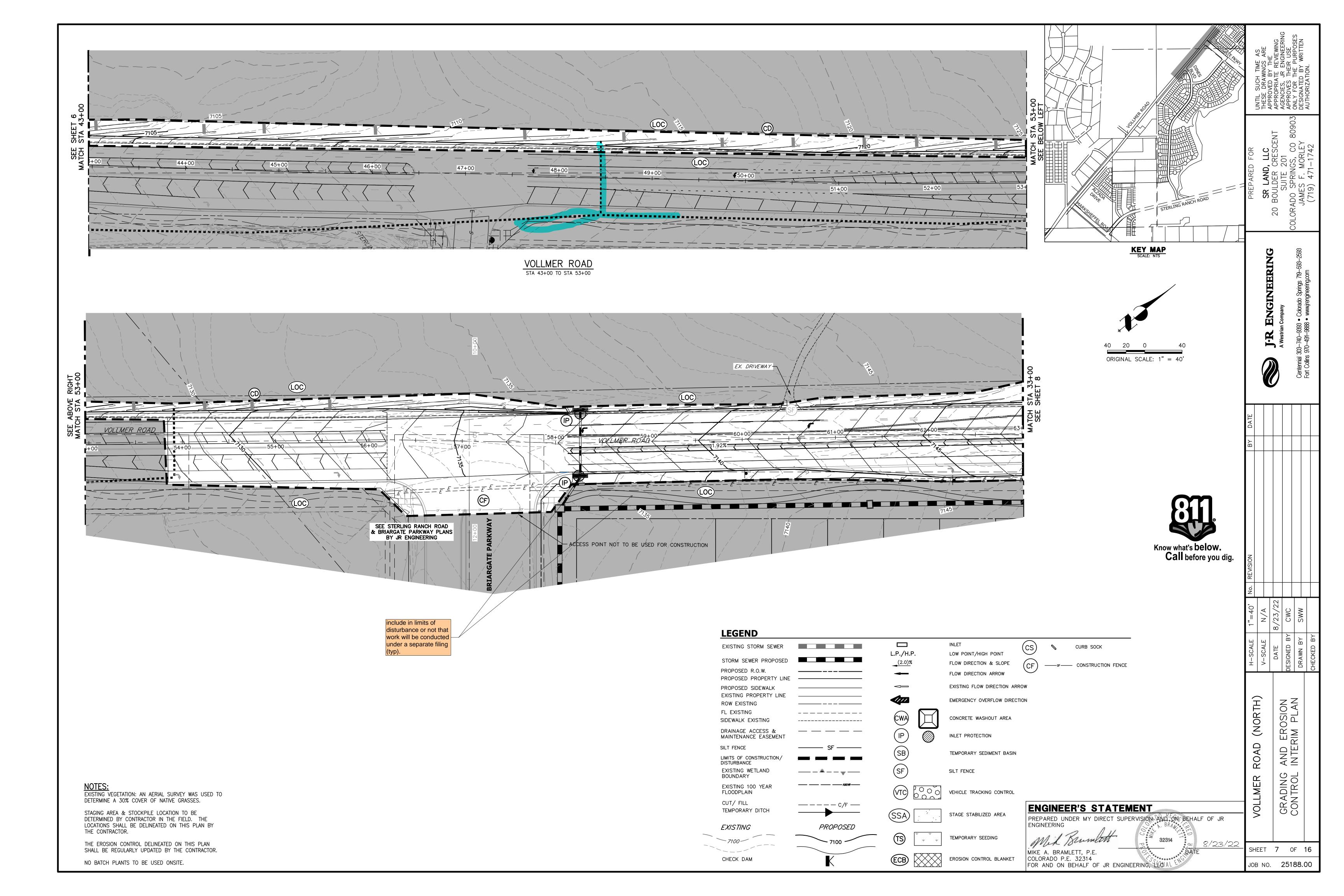
AND EROSION INITAL PLAN

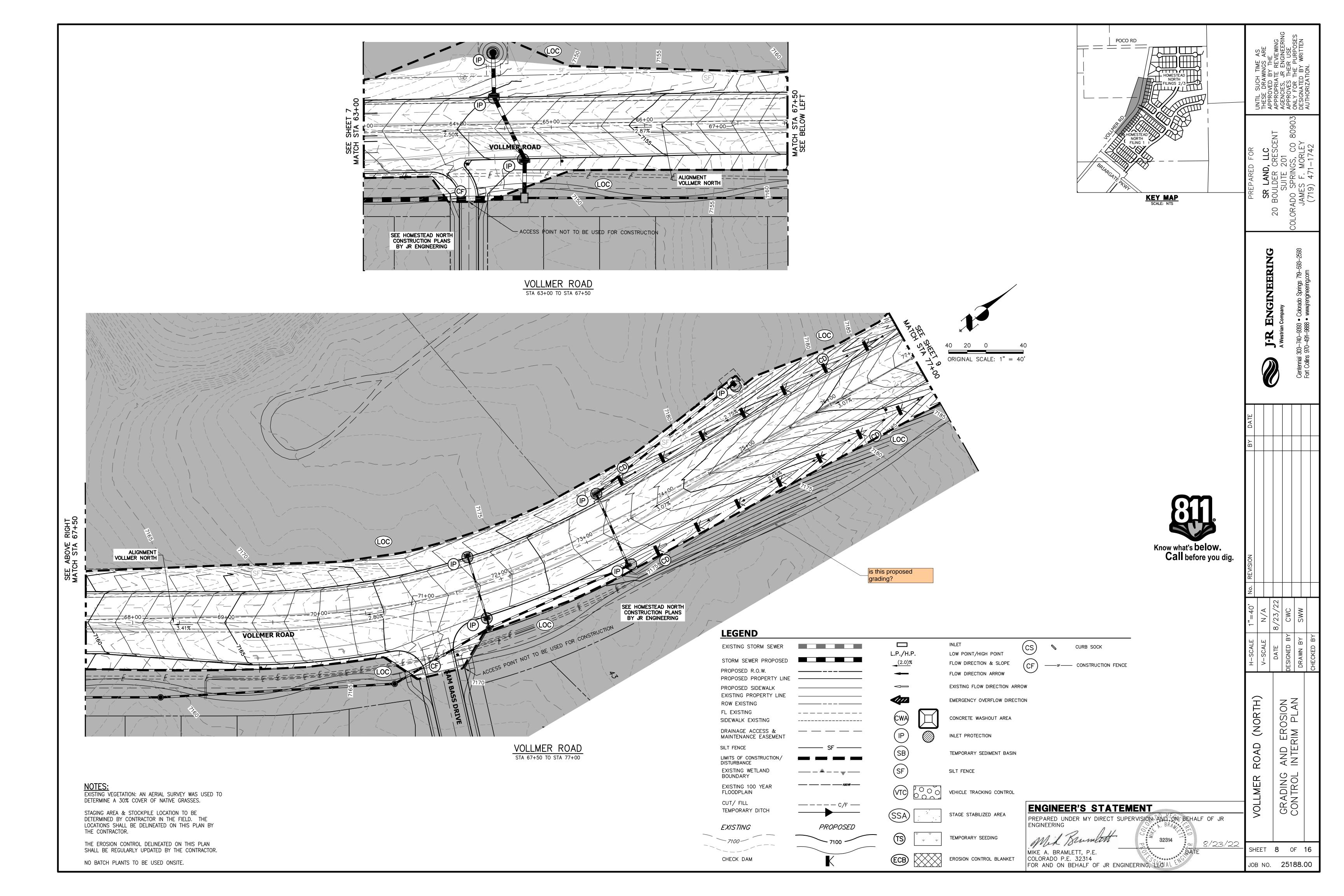
GRADING CONTROL

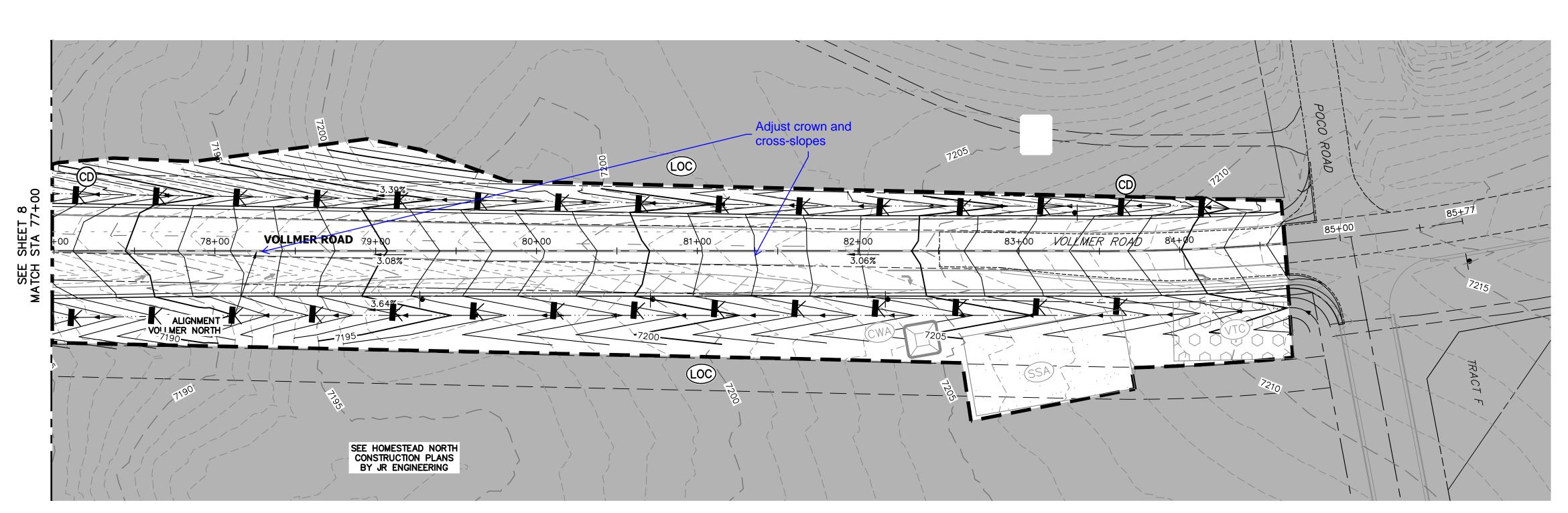
**ENGINEER'S STATEMENT** PREPARED UNDER MY DIRECT SUPERVISION AND ON BEHALF OF JR ENGINEERING

VOLLMER 32314 8/23/22 SHEET 5 OF 16 MIKE A. BRAMLETT, P.E.
COLORADO P.E. 32314
FOR AND ON BEHALF OF JR ENGINEERING, JONAL JOB NO. **25188.00** 

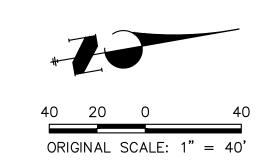


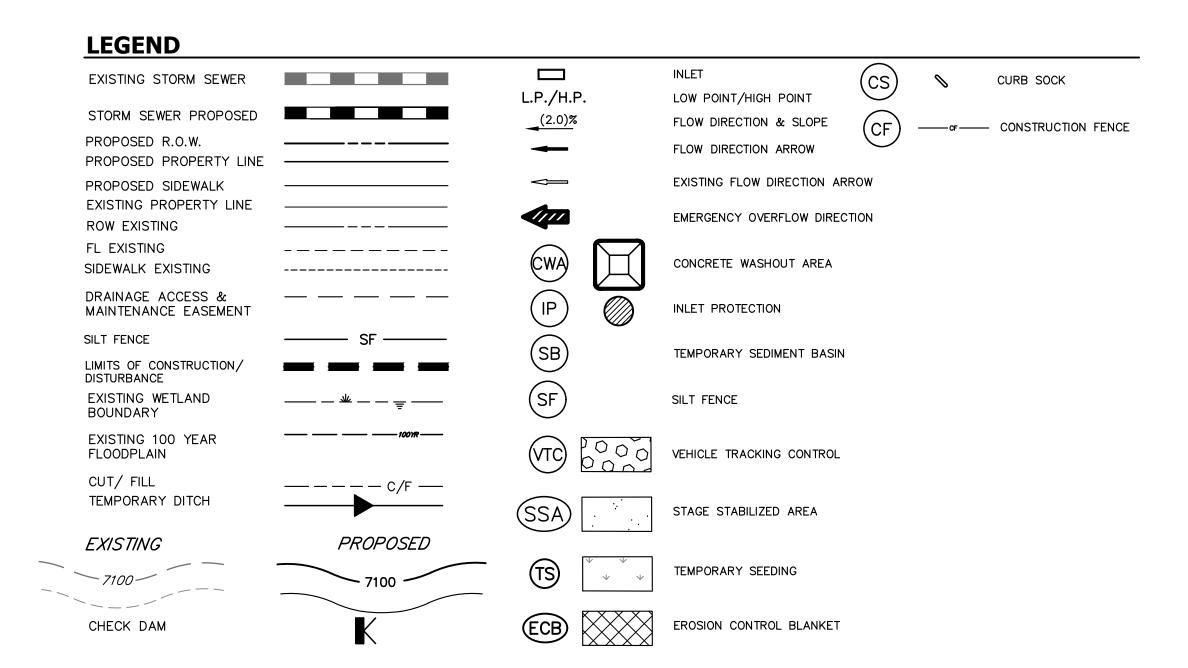






VOLLMER ROAD STA 77+00 TO STA 85+76







ENGINEER'S STATEMENT  PREPARED UNDER MY DIRECT SUPERVISION AND COMP BEHALF OF JR ENGINEERING  32314	VOLLMER ROAD	GRADING AND E	
MIKE A. BRAMLETT, P.E. 28/23/22	SHEET	9 OF	1
FOR AND ON BEHALF OF JR ENGINEERING ALL	JOB NO.	25188.	0

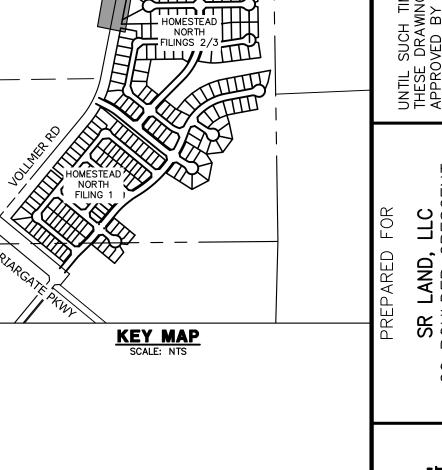
NOTES:

EXISTING VEGETATION: AN AERIAL SURVEY WAS USED TO DETERMINE A 30% COVER OF NATIVE GRASSES.

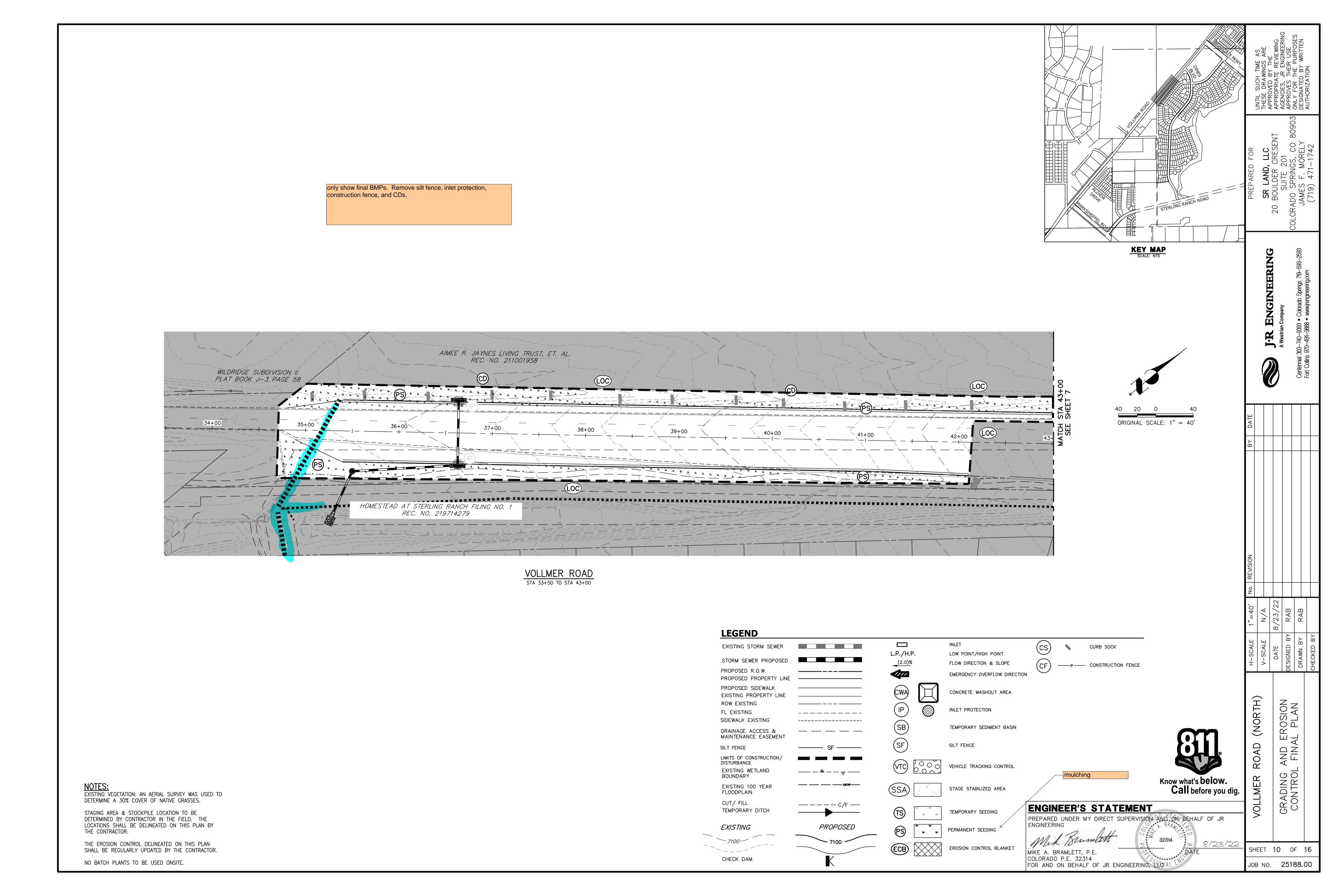
STAGING AREA & STOCKPILE LOCATION TO BE DETERMINED BY CONTRACTOR IN THE FIELD. THE LOCATIONS SHALL BE DELINEATED ON THIS PLAN BY THE CONTRACTOR.

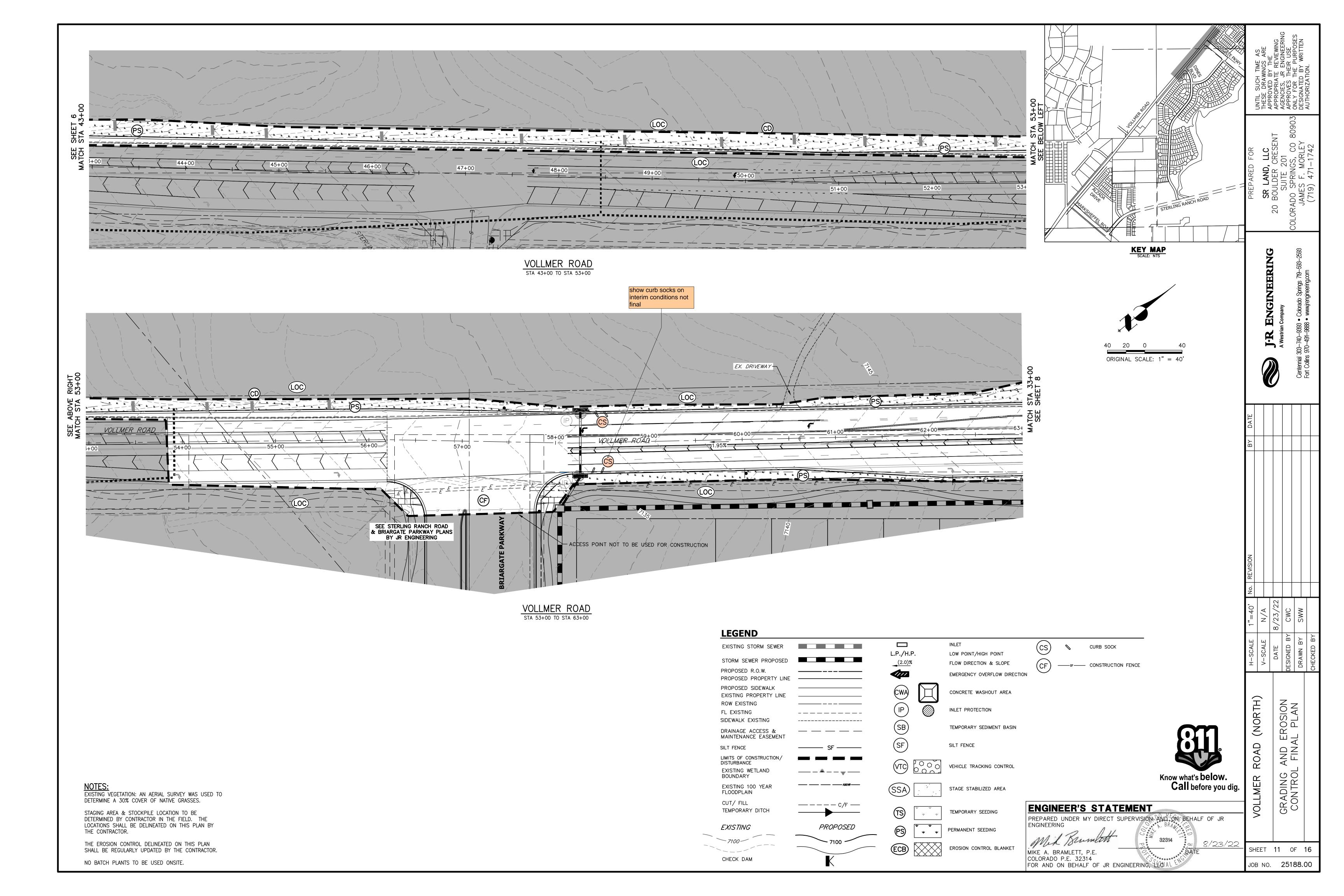
THE EROSION CONTROL DELINEATED ON THIS PLAN SHALL BE REGULARLY UPDATED BY THE CONTRACTOR.

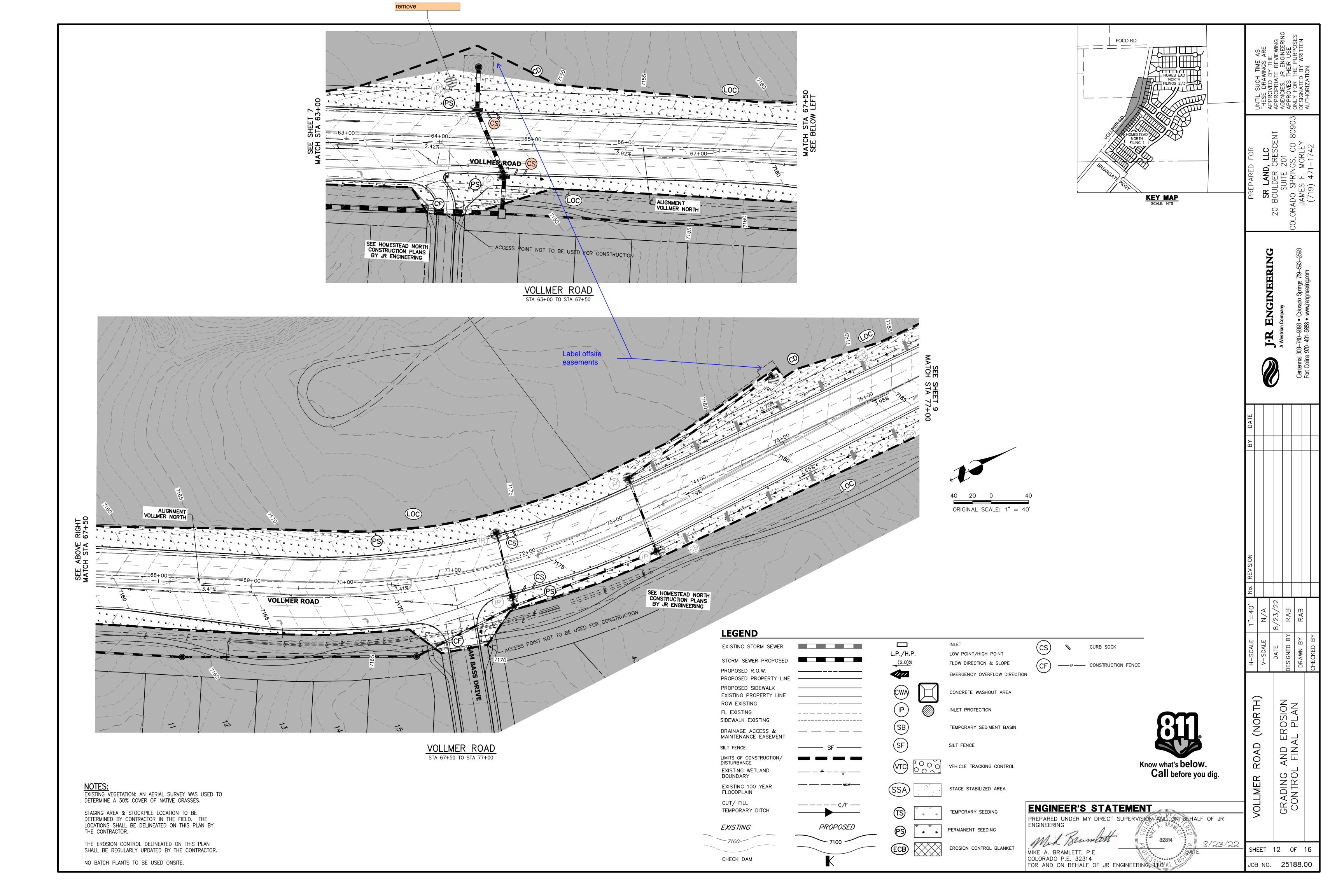
NO BATCH PLANTS TO BE USED ONSITE.

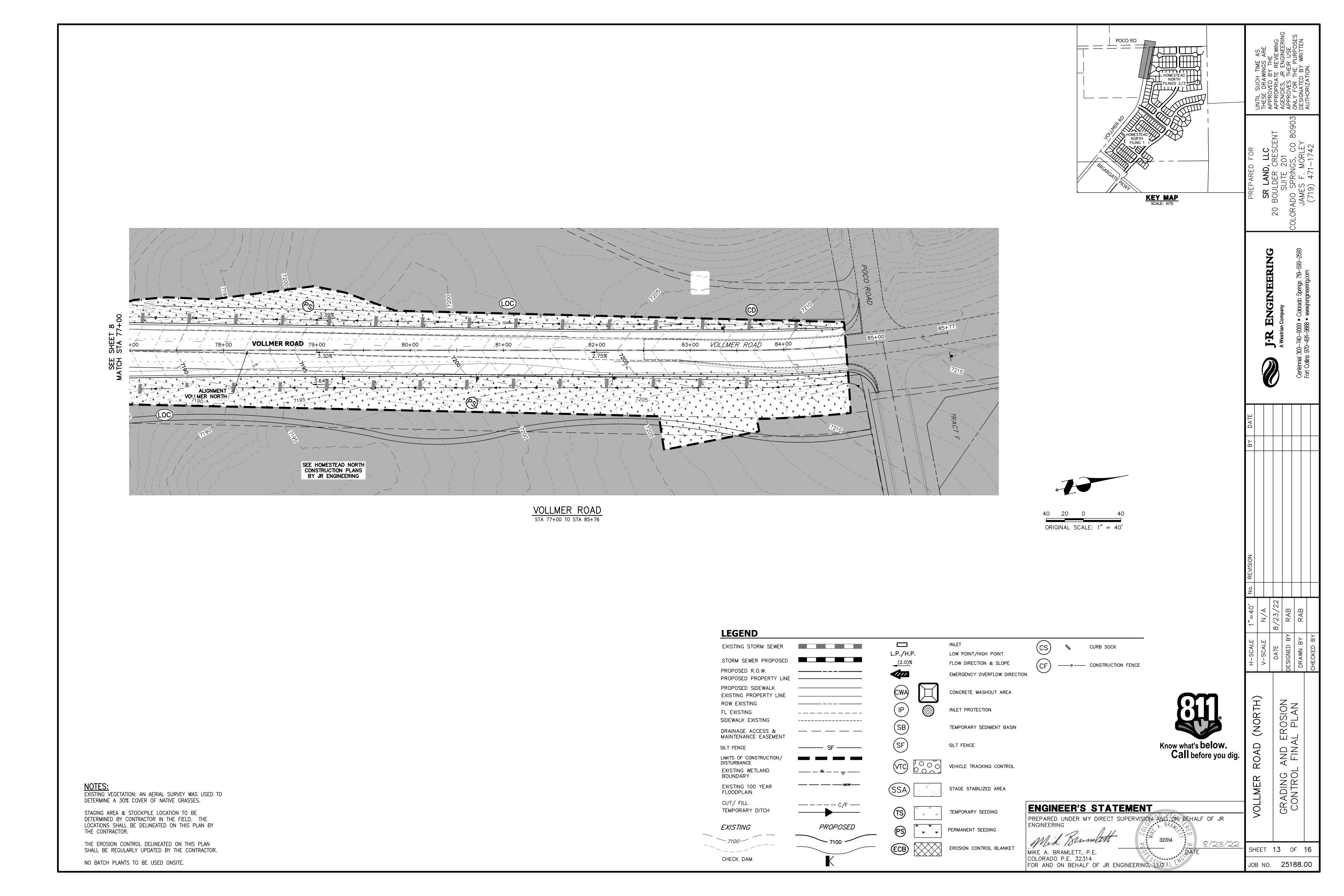


(NORTH) EROSION RIM PLAN









UNDISTURBED OR L

CWA INSTALLATION NOTES

SEE PLAN VIEW FOR:
 -CWA INSTALLATION LOCATION.

LINED ABOVE GROUND STORAGE ARE SHOULD BE USED.

CONCRETE WASHOUT AREA PLAN

8 X 8 MIN.

CWA-1. CONCRETE WASHOUT AREA

2. DO NOT LOCATE AN UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR

SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE,

THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A

4. 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

5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE MINIMUM HEIGHT OF 1'.

ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.

7. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND

3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.

6. VEHICLE TRACKING PAD SHALL BE SLOPED 2% TOWARDS THE CWA.

8. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

include inlet protection

WATERBODY, DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF

**MM-1** 

VEHICLE TRACKING

CONTROL (SEE

VTC DETAIL) OR OTHER STABLE SURFACE

VEHICLE TRACKING

CONTROL (SEE VTC -

Name

Bouteloua gracilis

Schizachyrium scoparium

Calamovilfa longifolia

Sporobolus cryptandrus

Bouteloua curtipendula

Agropyron smithii 'Arriba'

Agropyron intermedium

Bouteloua curtipendula

Bromus inermis leyss

Agropyron smithii 'Arriba'

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

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

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

'Lincoln'

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

<sup>e</sup> Can substitute 0.5 lbs PLS of blue grama for the 2.0 lbs PLS of Vaughn sideoats grama.

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

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

Sandy Soil Seed Mix

Camper little bluestem

Vaughn sideoats grama

Arriba western wheatgrass

Ephriam crested wheatgrass<sup>d</sup>

Oahe Intermediate wheatgrass

Vaughn sideoats gramae

Lincoln smooth brome

Heavy Clay, Rocky Foothill Seed Mix

See Table TS/PS-3 for seeding dates.

Blue grama

Prairie sandreed

Sand dropseed

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

Season<sup>b</sup>

Warm

Warm

Warm

Warm

Cool

Cool

Warm

Cool

Form

Sod-forming

bunchgrass

Bunch

Open sod

Bunch

Sod

Sod

Sod

Sod

Sod

Pound

825,000

240,000

274,000

5,298,000

191,000

110,000

175,000

115,000

191,000

130,000

PLS/acre

0.25

10.25

SHEET 8 OF 10 JOB NO. **25188.00** 

### 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.



**EC-4** 

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

### 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.

**Temporary and Permanent Seeding (TS/PS)** 

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

**Annual Grasses** 

(Numbers in table reference species in Table TS/PS-1)

Cool

1,2,3

8,9,10,11

Warm

4

4 4,5,6,7

5,6,7

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

**Perennial Grasses** 

Warm

 $\checkmark$ 

Cool

 $\checkmark$ 

June 2012 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 November 2010 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

### CWA-3

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

TS/PS-4 Urban Drainage and Flood Control District

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

Common <sup>a</sup> Name	Botanical Name	Growth Season <sup>b</sup>	Growth Form	Seeds/ Pound	Pounds of PLS/acre
Alakali Soil Seed Mix					
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Ruebens Canadian bluegrass	Poa compressa 'Ruebens'	Cool	Sod	2,500,000	0.5
Dural hard fescue	Festuca ovina 'duriuscula'	Cool	Bunch	565,000	1.0
Citation perennial ryegrass	Lolium perenne 'Citation'	Cool	Sod	247,000	3.0
Lincoln smooth brome	Bromus inermis leyss 'Lincoln'	Cool	Sod	130,000	3.0

June 2012

**Temporary and Permanent Seeding (TS/PS)** 

Common <sup>a</sup> Name	Botanical Name	Growth Season <sup>b</sup>	Growth Form	Seeds/ Pound	Pounds of PLS/acre
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Citation perennial ryegrass	Lolium perenne 'Citation'	Cool	Sod	247,000	3.0
Lincoln smooth brome	Bromus inermis leyss 'Lincoln'	Cool	Sod	130,000	3.0

June 2012 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3 Urban Storm Drainage Criteria Manual Volume 3

7.5

### Mulch

TS/PS-6

**Seeding Dates** 

May 1–May 15

July 1–July 15 July 16–August 31

May 16–June 30

September 1–September 30 October 1–December 31

January 1–March 15

March 16–April 30

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.

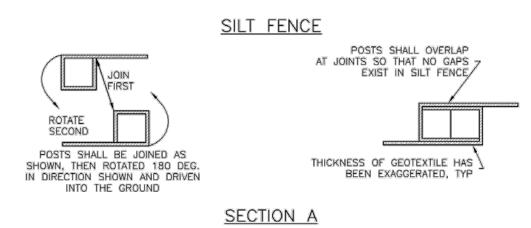
An area that has been permanently seeded should have a good stand of vegetation within one growing season if irrigated and within three growing seasons without irrigation in Colorado. Reseed portions of the site that fail to germinate or remain bare after the first growing season.

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.

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SC-1



SF-1. SILT FENCE

November 2010

**SM-4** 

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-TYPE OF CONSTRUCTION ENTRANCE(S)/EXITS(S) (WITH/WITHOUT WHEEL WASH,

2. CONSTRUCTION MAT OR TRM STABILIZED CONSTRUCTION ENTRANCES ARE ONLY TO BE

USED ON SHORT DURATION PROJECTS (TYPICALLY RANGING FROM A WEEK TO A MONTH)

4. STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE INSTALLED PRIOR TO ANY LAND

6. UNLESS OTHERWISE SPECIFIED BY LOCAL JURISDICTION, ROCK SHALL CONSIST OF DOT

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

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

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

5. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED THROUGHOUT THE DAY AND THE END OF THE DAY BY SHOVELING OR SWEEPING. SEDIMENT MAY NOT BE WASHED

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

4. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY TO THE STABILIZED

NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARIATION OF THE STREET WHEN CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN

(DETAILS ADAPTED FROM CITY OF BROOMFIELD, COLORADO, NOT AVAILABLE IN AUTOCAD)

WHERE VEHICLES ACCESS THE CONSTRUCTION SITE FROM PAVED RIGHT-OF-WAYS.

5. A NON-WOVEN GEOTEXTILE FABRIC SHALL BE PLACED UNDER THE STABILIZED

CONSTRUCTION ENTRANCE/EXIT PRIOR TO THE PLACEMENT OF ROCK.

SECT. #703, AASHTO #3 COARSE AGGREGATE OR 6" (MINUS) ROCK.

STABILIZED CONSTRUCTION ENTRANCE/EXIT MAINTENANCE NOTES

EROSION, AND PERFORM NECESSARY MAINTENANCE.

ENTRANCE/EXIT TO MAINTAIN A CONSISTENT DEPTH.

DOWN STORM SEWER DRAINS.

3. A STABILIZED CONSTRUCTION ENTRANCE/EXIT SHALL BE LOCATED AT ALL ACCESS POINTS

STABILIZED CONSTRUCTION ENTRANCE/EXIT INSTALLATION NOTES

-LOCATION OF CONSTRUCTION ENTRANCE(S)/EXIT(S).

WHERE THERE WILL BE LIMITED VEHICULAR ACCESS.

1. SEE PLAN VIEW FOR

DISTURBING ACTIVITIES.

CONSTRUCTION MAT OR TRM).

**Vehicle Tracking Control (VTC)** 

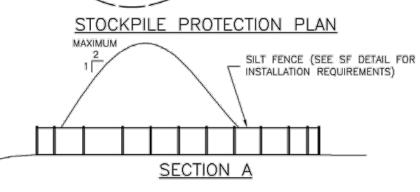
SF-3

SILT FENCE MAINTENANCE NOTES

MM-2

### **Stockpile Management (SP)**

SP **STOCKPILE** SILT FENCE (SEE SF DETAIL FOR INSTALLATION REQUIREMENTS)



SP-1. STOCKPILE PROTECTION

STOCKPILE PROTECTION INSTALLATION NOTES

 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.

SILT FENCE INSTALLATION NOTES

1. SILT FENCE MUST BE PLACED AWAY FROM THE TOE OF THE SLOPE TO ALLOW FOR WATER PONDING, SILT FENCE AT THE TOE OF A SLOPE SHOULD BE INSTALLED IN A FLAT LOCATION AT LEAST SEVERAL FEET (2-5 FT) FROM THE TOE OF THE SLOPE TO ALLOW ROOM FOR

3. COMPACT ANCHOR TRENCH BY HAND WITH A "JUMPING JACK" OR BY WHEEL ROLLING. COMPACTION SHALL BE SUCH THAT SILT FENCE RESISTS BEING PULLED OUT OF ANCHOR

2. A UNIFORM 6" X 4" ANCHOR TRENCH SHALL BE EXCAVATED USING TRENCHER OR SILT

FENCE INSTALLATION DEVICE. NO ROAD GRADERS, BACKHOES, OR SIMILAR EQUIPMENT SHALL BE USED.

4. SILT FENCE SHALL BE PULLED TIGHT AS IT IS ANCHORED TO THE STAKES. THERE SHOULD BE NO NOTICEABLE SAG BETWEEN STAKES AFTER IT HAS BEEN ANCHORED TO THE STAKES. 5. SILT FENCE FABRIC SHALL BE ANCHORED TO THE STAKES USING 1" HEAVY DUTY STAPLES OR NAILS WITH 1" HEADS. STAPLES AND NAILS SHOULD BE PLACED 3" ALONG THE FABRIC DOWN THE STAKE.

6. AT THE END OF A RUN OF SILT FENCE ALONG A CONTOUR, THE SILT FENCE SHOULD BE TURNED PERPENDICULAR TO THE CONTOUR TO CREATE A "J-HOOK." THE "J-HOOK" EXTENDING PERPENDICULAR TO THE CONTOUR SHOULD BE OF SUFFICIENT LENGTH TO KEEP RUNOFF FROM FLOWING AROUND THE END OF THE SILT FENCE (TYPICALLY 10' - 20').

7. SILT FENCE SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.

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

. 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. SEDIMENT ACCUMULATED UPSTREAM OF THE SILT FENCE SHALL BE REMOVED AS NEEDED TO MAINTAIN THE FUNCTIONALITY OF THE BMP, TYPICALLY WHEN DEPTH OF ACCUMULATED SEDIMENTS IS APPROXIMATELY 6". 5. REPAIR OR REPLACE SILT FENCE WHEN THERE ARE SIGNS OF WEAR, SUCH AS SAGGING,

TEARING, OR COLLAPSE. 6. SILT FENCE IS TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION, OR IS REPLACED BY AN EQUIVALENT PERIMETER

7. WHEN SILT FENCE IS 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, NOT AVAILABLE IN AUTOCAD)

 ${\hbox{NOTE:}}$  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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B" MIN OF COURSE AGGREGATE ON ALL CONSTRUCTION ROADS, PARKING AREAS, STAGING AREA, LOADING/UNLOADING AREAS, AND STORAGE AREAS. COARSE AGGREGAT PAVEMENT -3 INCHES (D<sub>50</sub>) GEOTEXTILE (MATERIAL REQUIREMENTS IN APPENDIX B, TABLE MT-3) <u>SECTION</u> VEHICLE TRACKING

75'-0' MIN

VEHICLE TRACKING NOTES INSTALLATION REQUIREMENTS 1. ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION

2. CONSTRUCTION ENTRANCES ARE TO BE BUILT WITH AN APRON TO ALLOW FOR TURNING TRAFFIC, BUT SHOULD NOT BE BUILT OVER EXISTING PAVEMENT EXCEPT FOR A SLIGHT OVERLAP. 3. AREAS TO BE STABILIZED ARE TO BE PROPERLY

GRADED AND COMPACTED PRIOR TO LAYING DOWN

GEOTEXTILE AND STONE. 4. CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED. 5. CONSTRUCTION ROADS ARE TO BE BUILT TO

CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE

Figure VT-2 City of Colorado Springs Vehicle Tracking Stormwater Quality Application Examples

MAINTENANCE REQUIREMENTS

STABILIZED AREAS, ESPECIALLY AFTER STORM

REMOVED DAILY BY SHOVELING OR SWEEPING

SEDIMENT IS NOT TO BE WASHED DOWN STORM

4. STORM SEWER INLET PROTECTION IS TO BE IN

5. OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING

PLACE, INSPECTED, AND CLEANED IF NECESSARY

WHEN REPAIR IS NECESSARY

SEWER DRAINS.

1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL

2. STONES ARE TO BE REAPPLIED PERIODICALLY AND

3. SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE

#### **Stockpile Management (SM) MM-2**

STOCKPILE PROTECTION MAINTENANCE NOTES

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

STOCKPILE PROTECTION MAINTENANCE NOTES

4. IF PERIMETER PROTECTION MUST BE MOVED TO ACCESS SOIL STOCKPILE, REPLACE PERIMETER CONTROLS BY THE END OF THE WORKDAY.

5. STOCKPILE PERIMETER CONTROLS CAN BE REMOVED ONCE ALL THE MATERIAL FROM THE 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.

#### — SF/CF —— SF/CF — ONSITE CONSTRUCTION CONSTRUCTION VEHICLE PARKING (IF NEEDED) CONSTRUCTION SITE ACCESS 3" MIN. THICKNESS GRANULAR MATERIAL STABILIZED CONSTRUCTION ENTRANCE (SEE DETAILS VTC-1 TO VTC-3) SILT FENCE OR CONSTRUCTION — SF/CF —— SF/CF →

SSA-1. STABILIZED STAGING AREA

STABILIZED STAGING AREA INSTALLATION NOTES SEE PLAN VIEW FOR

-LOCATION OF STAGING AREA(S). -CONTRACTOR MAY ADJUST LOCATION AND SIZE OF STAGING AREA WITH APPROVAL

FROM THE LOCAL JURISDICTION. 2. STABILIZED STAGING AREA SHOULD BE APPROPRIATE FOR THE NEEDS OF THE SITE. OVERSIZING RESULTS IN A LARGER AREA TO STABILIZE FOLLOWING CONSTRUCTION.

3. STAGING AREA SHALL BE STABILIZED PRIOR TO OTHER OPERATIONS ON THE SITE. 4. THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM 3" THICK GRANULAR

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

6. ADDITIONAL PERIMETER BMPs MAY BE REQUIRED INCLUDING BUT NOT LIMITED TO SILT FENCE AND CONSTRUCTION FENCING.

STABILIZED STAGING AREA 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. ROCK SHALL BE REAPPLIED OR REGRADED AS NECESSARY IF RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.

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

**Stabilized Staging Area (SSA) SM-6** 

STABILIZED STAGING AREA MAINTENANCE NOTES

5. STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING/LOADING OPERATIONS.

6. THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE LOCAL JURISDICTION, USED ON SITE, AND THE AREA COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.

NOTE: MANY MUNICIPALITIES PROHIBIT THE USE OF RECYCLED CONCRETE AS GRANULAR MATERIAL FOR STABILIZED STAGING AREAS DUE TO DIFFICULTIES WITH RE-ESTABLISHMENT OF VEGETATION IN AREAS WHERE RECYCLED CONCRETE WAS PLACED.

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 DOUGLAS COUNTY, COLORADO, NOT AVAILABLE IN AUTOCAD)

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SHEET 9 OF 10

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VTC-6

SP-3

O" ON BEDROCK OR

HARD SURFACE, 2"

ROCK SOCK SECTION

ROCK SOCK JOINTING

ROCK SOCK INSTALLATION NOTES

-LOCATION(S) OF ROCK SOCKS.

1. SEE PLAN VIEW FOR:

IN SOIL

ROCK SOCK,

1½" (MINUS) CRUSHED ROCK ENCLOSED IN WIRE MESH

4" TO 6" MAX AT

6"-10" DEPENDING

SEDIMENT LOADS

ON EXPECTED

ROCK SOCK PLAN

GRADATION TABLE

SIEVE SIZE MASS PERCENT PASSING SQUARE MESH SIEVES

MATCHES SPECIFICATIONS FOR NO. 4

COARSE AGGREGATE FOR CONCRETE PER AASHTO M43. ALL ROCK SHALL BE

FRACTURED FACE, ALL SIDES.

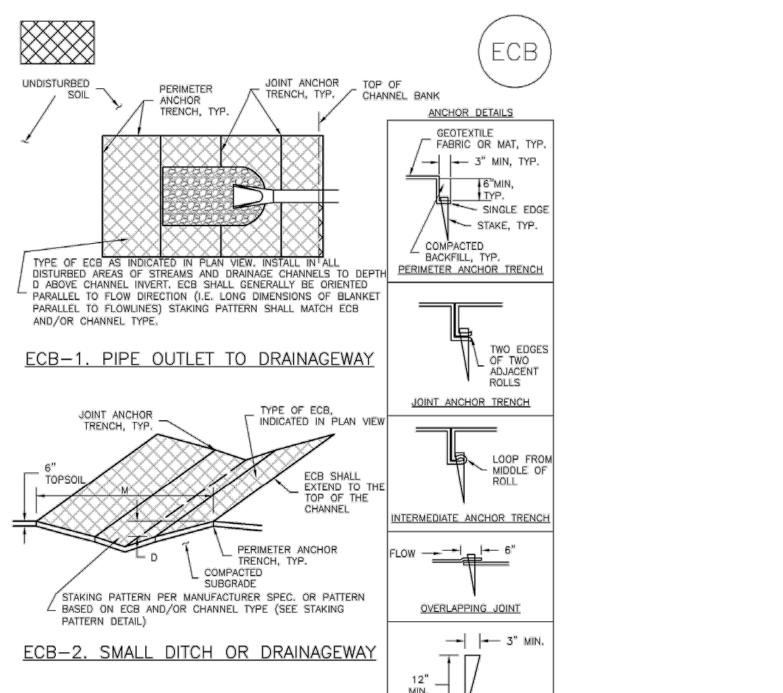
ANY GAP AT JOINT SHALL BE FILLED WITH AN ADEQUATE AMOUNT OF 1½" (MINUS) CRUSHED ROCK AND WRAPPED WITH ADDITIONAL WIRE MESH SECURED TO ENDS OF ROCK REINFORCED SOCK. AS AN ALTERNATIVE TO FILLING JOINTS

ADDITIONAL WIRE WRAPPING, ROCK SOCKS CAN BE

BETWEEN ADJOINING ROCK SOCKS WITH CRUSHED ROCK AND

OVERLAPPED (TYPICALLY 12-INCH OVERLAP) TO AVOID GAPS.

SHEET 10 OF 10 JOB NO. **25188.00** 



Rock Sock (RS)

November 2010

WOOD STAKE DETAIL

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

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

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

5. 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.

6. ROCK SOCKS ARE TO REMAIN IN PLACE UNTIL THE UPSTREAM DISTURBED AREA IS STABILIZED AND APPROVED BY THE LOCAL JURISDICTION.

(DETAIL ADAPTED FROM TOWN OF PARKER, COLORADO AND CITY OF AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD) NOTE: MANY JURISDICTIONS HAVE BMP DETAILS THAT VARY FROM UDFCD STANDARD DETAILS. CONSULT WITH LOCAL JURISDICTIONS AS TO WHICH DETAIL SHOULD BE USED WHEN DIFFERENCES ARE NOTED.

NOTE: THE DETAILS INCLUDED WITH THIS FACT SHEET SHOW COMMONLY USED, CONVENTIONAL METHODS OF ROCK SOCK INSTALLATION IN THE DENVER METROPOLITAN AREA. THERE ARE MANY OTHER SIMILAR PROPRIETARY PRODUCTS ON THE MARKET, UDFCD NEITHER NDORSES 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.

### STAGGER OVERLAPS - OVERLAPPING JOINT TYPICALLY AT TOP O STAKING PATTERN PER MANUFACTURER SPEC. OR PATTERN BASED ON ECB AND/OR SLOPE TYPE (SEE STAKING PATTERN DETAIL) PERIMETER ANCHOR ECB-3. OUTSIDE OF DRAINAGEWAY PERIMETER ANCHOR TRENCH OR JOINT, TYP. COCONUT OR EXCELSIOR STAKING PATTERNS BY ECB TYPE LOW FLOW CHANNEL HIGH FLOW CHANNEL

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**EC-6** 

**EC-9** 

ROUGH CUT STREET CONTROL INSTALLATION NOTES

**Rough Cut Street Control (RCS)** 

-LOCATION OF ROUGH CUT STREET CONTROL MEASURES.

ROUGH CUT STREET CONTROL SHALL BE INSTALLED AFTER A ROAD HAS BEEN CUT IN, AND WILL NOT BE PAVED FOR MORE THAN 14 DAYS OR FOR TEMPORARY CONSTRUCTION ROADS THAT HAVE NOT RECEIVED ROAD BASE.

ROUGH CUT STREET CONTROL INSPECTION AND MAINTENANCE NOTES

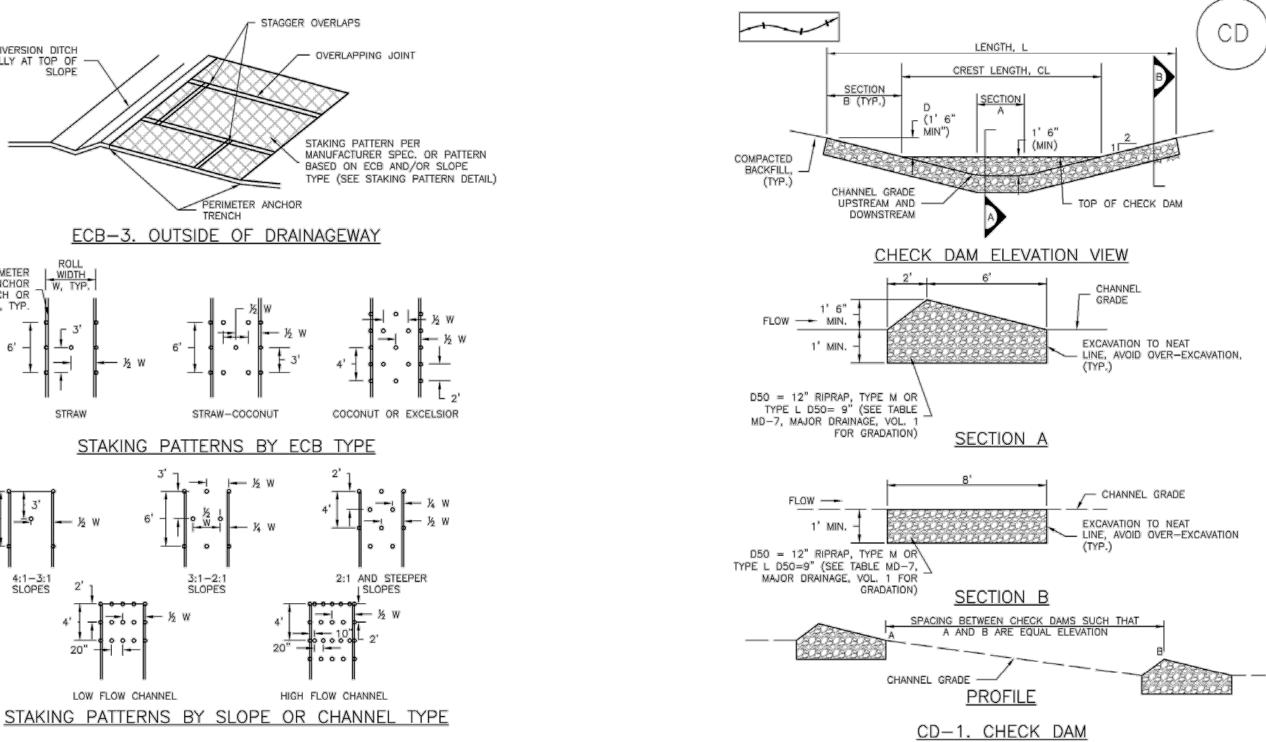
1. INSPECT BMPs EACH WORKDAY, AND MAINTAIN THEM IN EFFECTIVE OPERATING CONDITION. MAINTENANCE OF BMPs SHOULD BE PROACTIVE, NOT REACTIVE. INSPECT BMPs AS SOON AS POSSIBLE (AND ALWAYS WITHIN 24 HOURS) FOLLOWING A STORM THAT CAUSES SURFACE

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.

(DETAILS ADAPTED FROM AURORA, COLORADO, NOT AVAILABLE IN AUTOCAD)

 $\underline{\text{NOTE:}}$  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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CD-3

RS-2

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2. CRUSHED ROCK SHALL BE 11/2" (MINUS) IN SIZE WITH A FRACTURED FACE (ALL SIDES)

4. WIRE MESH SHALL BE SECURED USING "HOG RINGS" OR WIRE TIES AT 6" CENTERS

RS-1. ROCK SOCK PERIMETER CONTROL

3. WIRE MESH SHALL BE FABRICATED OF 10 GAGE POULTRY MESH, OR EQUIVALENT, WITH A

5. SOME MUNICIPALITIES MAY ALLOW THE USE OF FILTER FABRIC AS AN ALTERNATIVE TO WIRE MESH FOR THE ROCK ENCLOSURE.

AND SHALL COMPLY WITH GRADATION SHOWN ON THIS SHEET (11/2" MINUS).

MAXIMUM OPENING OF 1/2", RECOMMENDED MINIMUM ROLL WIDTH OF 48"

ALONG ALL JOINTS AND AT 2" CENTERS ON ENDS OF SOCKS.

1½" (MINUS) CRUSHED ROCK ENCLOSED IN WIRE MESH

WIRE TIE ENDS

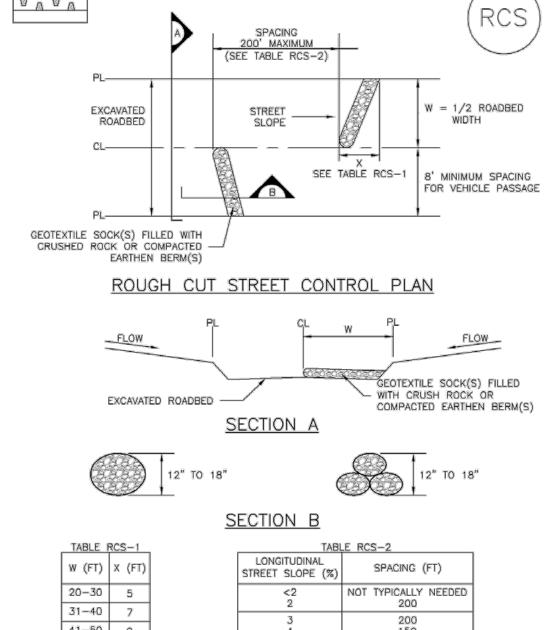
GROUND SURFACE

November 2010

RECP-6 Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

**SC-5** 

**Rough Cut Street Control (RCS)** 



200 150 51-60 10.5 61-70 12 RCS-1. ROUGH CUT STREET CONTROL Urban Drainage and Flood Control District Urban Storm Drainage Criteria Manual Volume 3

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ROCK SOCK MAINTENANCE NOTES EROSION, AND PERFORM NECESSARY MAINTENANCE.

4. ROCK SOCKS SHALL BE REPLACED IF THEY BECOME HEAVILY SOILED, OR DAMAGED BEYOND REPAIR.

7. WHEN ROCK SOCKS ARE REMOVED, ALL DISTURBED AREAS SHALL BE COVERED WITH TOPSOIL, SEEDED AND MULCHED OR OTHERWISE STABILIZED AS APPROVED BY LOCAL

RS-3

RCS-2

**EC-9**