

MESA RIDGE PARKWAY ROADWAY DESIGN

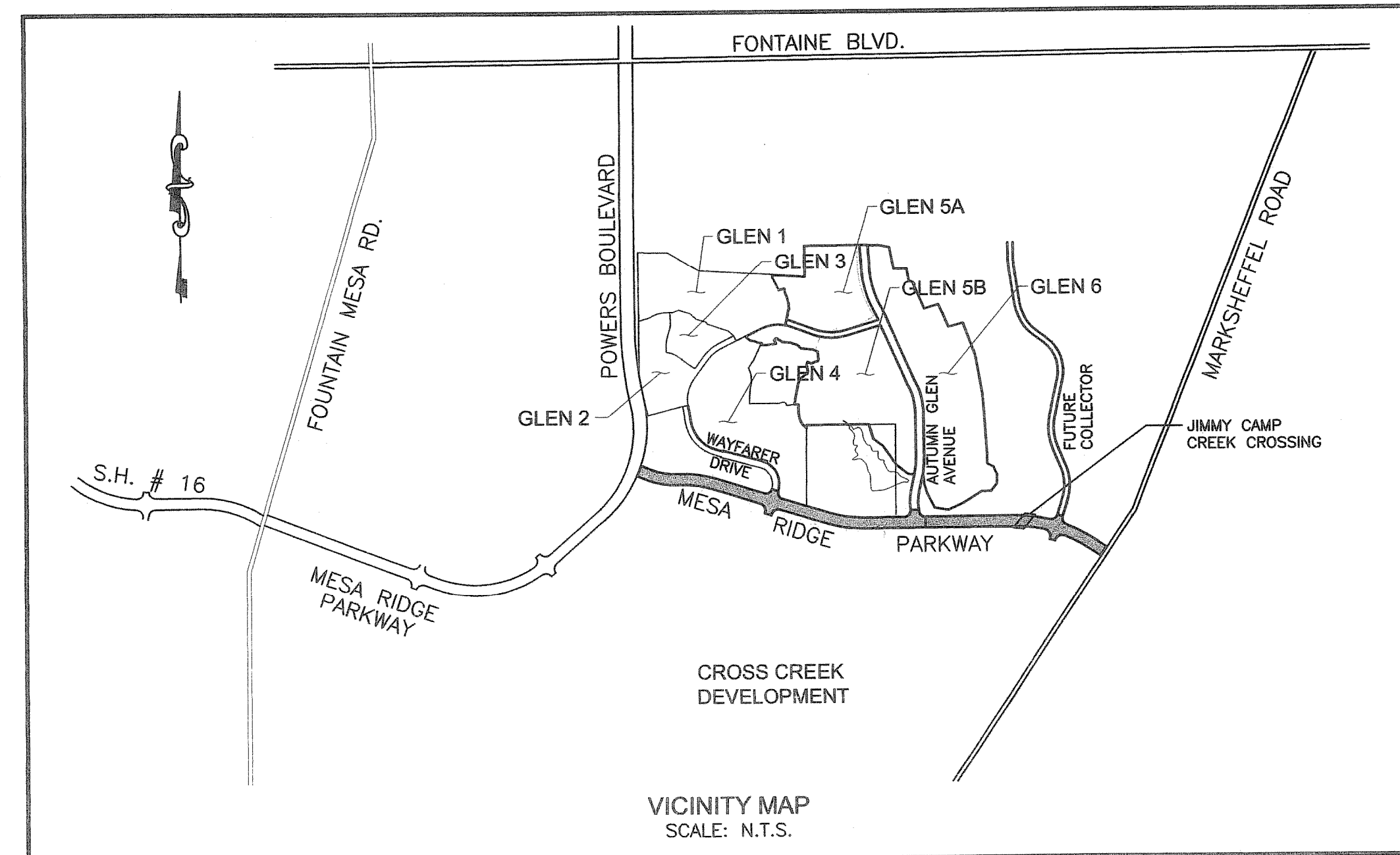
Autumn Glen Avenue to Marksheffel Road and Widening from Powers Boulevard to Autumn Glen Avenue El Paso County, Colorado

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MESA RIDGE PARKWAY DESIGN DATA AUTUMN GLEN TO MARKSHEFFEL ROAD PRINCIPAL ARTERIAL CLASSIFICATION	
DESIGN ITEM	MESA RIDGE PARKWAY DESIGN ITEM SPECIFICATION
MAXIMUM DEGREE OF CURVE	N/A
MAXIMUM GRADE	6%
MINIMUM S.S.D. HORIZONTAL	≥1505
MINIMUM S.S.D. VERTICAL DATA	K (CREST 180, SAG 140)
MAXIMUM DESIGN SPEED	60 MPH
2030 DESIGN TRAFFIC VOLUME	40,000

CONTACT INFORMATION		
SANITARY SEWER:	WIDEFIELD W&S DISTRICT (WWS)	390-7111
WATER:	WIDEFIELD W&S DISTRICT (WWS)	390-7111
ELECTRIC:	MOUNTAIN VIEW ELECTRIC	495-2283
GAS:	AQUILA NATURAL GAS	800-303-0752
PHONE:	QWEST	636-4632

ABBREVIATIONS			
ABC	= AGGREGATE BASE COURSE	MAX.	= MAXIMUM
ASSY	= ASSEMBLY	MH	= MANHOLE
BNDY	= BOUNDARY	MIN	= MINIMUM
B.O.P.	= BOTTOM OF PIPE	NTS	= NOT TO SCALE
CL	= CENTERLINE	O.D.	= OUTSIDE DIAMETER
CRA	= CONCRETE REVERSE ANCHOR	PC	= POINT OF HORIZONTAL CURVATURE
CTRB	= CONCRETE THRUST BLOCK	PCHC	= POINT OF CURVATURE ON HORIZ. CURVE
CR	= POINT OF CURB RETURN	PP	= PROPOSED
dIP	= DUCTILE IRON PIPE	PT	= POINT OF HORIZONTAL TANGENCY
EL	= ELEVATION	PTHC	= POINT OF TANGENCY ON HORIZ. CURVE
EOA	= EDGE OF ASPHALT	PVC	= POLY VINYL CHLORIDE PIPE
ESMT	= EASEMENT	PVC	= POINT OF VERTICAL CURVATURE
EX.	= EXISTING	PVI	= POINT OF VERTICAL INTERSECTION
FC	= FACE OF CURB	PVT	= POINT OF VERTICAL TANGENCY
FES	= FLARED END SECTION	RCB	= REINFORCED CONCRETE BOX
FLG	= FLANGE	RCR	= REINFORCED CONCRETE PIPE
FL	= FLOWLINE	ROW	= RIGHT OF WAY
GB	= GRADE BREAK	RT	= RIGHT
HBP	= HOT BITUMINOUS PAVEMENT	SHT	= SHEET
HP	= HIGH POINT	SS	= SANITARY SEWER
HORIZ.	= HORIZONTAL	STA.	= STATION
HYD	= HYDRANT	STD.	= STANDARD
I.D.	= INSIDE DIAMETER	T.O.P.	= TOP OF PIPE
LT	= LEFT	TYP.	= TYPICAL
LF	= LINEAR FEET	VC	= VERTICAL CURVE
LP	= LOW POINT	VERT.	= VERTICAL



PRE-EXCAVATION CHECKLIST

- GAS AND OTHER UTILITY LINES OF RECORD SHOWN ON PLANS.
- UTILITIES CENTRAL LOCATING CALLED AT LEAST 2 BUSINESS DAYS AHEAD. (1-800-922-1987)
- UTILITIES LOCATED AND MARKED.
- EMPLOYEES BRIEFED ON MARKING AND COLOR CODES.*
- EMPLOYEES TRAINED ON EXCAVATION AND SAFETY PROCEDURES FOR NATURAL GAS LINES.
- WHEN EXCAVATION APPROACHES GAS LINES, EMPLOYEES EXPOSE LINES BY CAREFUL PROBING AND HAND DIGGING.

*A.G.A./A.P.W.A. STANDARD UTILITY MARKING COLOR CODE

NATURAL GAS	YELLOW
ELECTRIC	RED
WATER	BLUE
WASTEWATER	GREEN



Know what's below.
Call before you dig.

Kiowa Project No. 08082
December 8, 2010

STATEMENTS

APPROVAL - 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 ENGINEERING CRITERIA MANUAL, LAND DEVELOPMENT CODE, AND DRAINAGE CRITERIA MANUAL, VOLUMES 1 & 2 AS AMENDED.

ANDRE BRACKIN, P.E.
COUNTY ENGINEER/ECM ADMINISTRATOR

1-18-11
DATE

DETAILED DRAINAGE CONSTRUCTION PLANS & SPECIFICATIONS ENGINEER'S STATEMENT

THESE DETAILED PLANS AND SPECIFICATIONS WERE PREPARED UNDER MY DIRECTION AND 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 DETAILED PLANS AND SPECIFICATIONS ARE IN CONFORMITY WITH APPLICABLE MASTER DRAINAGE AND MASTER TRANSPORTATION PLANS. SAID PLANS 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.

ANDREW W. MCCORD P.E. #25057

12/9/10
DATE

THE UNDERSIGNED OWNER/DEVELOPER HAS READ AND WILL COMPLY WITH ALL OF THE REQUIREMENTS SPECIFIED IN THESE CONSTRUCTION PLANS AND THE ACCOMPANYING DRAINAGE REPORT.

DEVELOPER
COMPANY: NEW GENERATION HOMES
ADDRESS: 3 WIDEFIELD BOULEVARD
COLORADO SPRINGS, CO 80911

12/16/10
DATE

DEVELOPER
COMPANY: NORWOOD DEVELOPMENT
ADDRESS: 111 SOUTH TEJON ST. #222
COLORADO SPRINGS, CO 80903

12/14/10
DATE

PREPARED FOR:

**NEW GENERATION
HOMES**
3 Widefield Boulevard
Colorado Springs, Colorado 80911

NORWOOD DEVELOPMENT
111 South Tejon Street #222
Colorado Springs, Colorado 80903

PREPARED BY:

Kiowa
Engineering Corporation

1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

RECEIVED
DEC 16 2010

FOR DEVELOPMENT SERVICES

GENERAL NOTES

1. THE COUNTY ENGINEER'S SIGNATURE AFFIXED TO THIS DOCUMENT INDICATES THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT HAS REVIEWED THIS DOCUMENT AND FOUND IT IN GENERAL CONFORMANCE WITH THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL. BY APPROVAL OF THIS DOCUMENT, THE COUNTY ASSUMES NO RESPONSIBILITY, OTHER THAN STATED ABOVE, FOR THE COMPLETENESS AND/OR ACCURACY OF THESE DOCUMENTS. THE OWNER AND ENGINEER UNDERSTAND THAT IT IS THE POLICY AND PRACTICE OF EL PASO COUNTY NOT TO ACCEPT THE LIABILITY FOR FACILITIES DESIGNED BY OTHERS. THE RESPONSIBILITY FOR THE ENGINEERING ADEQUACY OF THE FACILITIES DEPICTED IN THIS DOCUMENT LIES SOLELY WITH THE REGISTERED PROFESSIONAL ENGINEER WHOSE STAMP AND SIGNATURE IS AFFIXED TO THIS DOCUMENT.
 2. ALL ROADWAY CONSTRUCTION SHALL CONFORM TO EL PASO COUNTY ENGINEERING CRITERIA MANUAL AS WELL AS COLORADO DEPARTMENT OF TRANSPORTATION STANDARD PLANS, M&S STANDARDS AND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION..
 3. A PRE-CONSTRUCTION MEETING SHALL BE HELD WITH THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT PRIOR TO ANY CONSTRUCTION.
 4. ALL MATERIALS AND WORKMANSHIP SHALL BE SUBJECT TO INSPECTION BY THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT. THE COUNTY RESERVES THE RIGHT TO ACCEPT OR REJECT ANY SUCH MATERIALS OR WORKMANSHIP THAT DO NOT CONFORM TO ITS STANDARDS AND SPECIFICATIONS.
 5. THE CONTRACTOR SHALL NOTIFY THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT, INSPECTION SECTION, A MINIMUM OF 48 HOURS AND A MAXIMUM OF 96 HOURS PRIOR TO STARTING ANY CONSTRUCTION.
 6. CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING UTILITY LOCATOR AT 1-800-922-1987 PRIOR TO BEGINNING ANY CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR FIELD LOCATION AND VERIFICATION PRIOR TO BEGINNING WORK. IF IT APPEARS THAT THERE COULD BE A CONFLICT WITH ANY UTILITIES, WHETHER ON THE PLANS OR NOT, THE CONTRACTOR IS TO NOTIFY THE ENGINEER AND OWNER IMMEDIATELY. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION AND REPAIR (IF NECESSARY) OF ALL UTILITIES.
 7. THE CONTRACTOR SHALL HAVE ONE (1) SIGNED COPY OF THE PLANS APPROVED BY THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT, ONE (1) COPY OF THE ROADWAY DESIGN AND CONSTRUCTION STANDARDS, ONE (1) COPY OF THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD PLANS M & S STANDARDS, AND ONE (1) COPY OF THE CITY OF COLORADO SPRINGS & EL PASO COUNTY DRAINAGE CRITERIA MANUAL VOLUMES 1 & 2 AT THE JOB SITE AT ALL TIMES.
 8. ALL STATIONING IS BASED ON CENTERLINE OF ROADWAY UNLESS OTHERWISE NOTED.
 9. STRUCTURAL DEPTHS SHALL BE MODIFIED, AS NECESSARY, BASED ON OBSERVED CONDITIONS DURING CONSTRUCTION. APPROPRIATE R-VALUES (HVEEM) AND 18K ESAL SHALL BE APPLIED. STRUCTURAL DEPTHS AND PROPERTIES OF ABC AND HBP SHALL BE ADJUSTED AS APPROPRIATE TO CONFORM TO THE SECTION RECOMMENDED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT.
 10. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF ANY PROBLEM IN CONFORMING TO THE APPROVED PLANS FOR ANY ELEMENT OF THE PROPOSED IMPROVEMENT PRIOR TO ITS CONSTRUCTION. EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT APPROVAL SHALL BE OBTAINED PRIOR TO ANY MODIFICATION.
 11. ALL DISTURBED AREAS SHALL BE REVEGETATED WITHIN 21 DAYS OF FINAL GRADING OR SUSPENSION OF ACTIVITY.
 12. FOR DRAINAGE AND UTILITY REQUIREMENTS, SEE RESPECTIVE PLANS. ALL STORM SEWER PIPE LENGTHS AND SLOPES ARE FIGURED FROM CENTER OF MANHOLE OR BEND. PIPE LENGTHS ARE GIVEN AS A HORIZONTAL LENGTH. ALL STORM SEWER BEDDING TO BE PER CDOT STANDARDS. ALL STORM SEWER PIPE CLASS AND TYPE IS CALLED OUT ON THE PLAN AND PROFILE SHEETS. ALL WYES AND BENDS USED IN CONSTRUCTION OF STORM SEWER FACILITIES SHALL BE FACTORY FABRICATED, UNLESS APPROVED BY THE EL PASO COUNTY DEVELOPMENT SERVICES DEPARTMENT. CONSTRUCTION AND MATERIALS USED IN ALL STORM SEWER MANHOLES SHALL BE PER SPECIFICATION. STORM SEWER RADIAL DEFLECTIONS TO BE GROUDED OR INSTALLED PER MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL ADJUST ANY EXISTING MANHOLES, VALVES, VALVE BOXES, INLETS, CULVERTS, ETC., WITHIN THE WORK AREA TO PROPER GRADES.
 13. ALL NECESSARY PERMITS, SUCH AS NPDES, FUGITIVE DUST, ACCESS, ESQCP, SWMP, C.O.E. 404, ETC., SHALL BE OBTAINED PRIOR TO CONSTRUCTION.
 14. REDUCED DESIGN SPEED, ADDITIONAL SIGNAGE, INCLUDING SPEED LIMIT SIGNS, MUST BE INSTALLED TO ADVISE THE MOTORIST TO SLOW TO A SAFE SPEED BASED ON AVAILABLE SIGHT DISTANCE. SIGNAGE SHALL FOLLOW THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES", LATEST EDITION.
 15. SPEED LIMIT SIGNS THROUGHOUT THIS PROJECT MUST BE INSTALLED TO PRODUCE A SAFE CONDITION BASED ON AVAILABLE SIGHT DISTANCE BOTH VERTICALLY AND HORIZONTALLY.
 16. GRADING SHALL BE PERFORMED IN ACCORDANCE WITH THESE PLANS AND ANY APPLICABLE GEOTECHNICAL REPORTS PERFORMED BY KLEINFELDER OR OTHERS.
 17. THE SCOPE OF THIS PROJECT INCLUDES THE COMPLETION OF THE NORTH HALF OF MESA RIDGE PARKWAY BETWEEN AUTUMN GLEN AVENUE AND MARKSHEFFEL ROAD, EXCLUDING THE BRIDGE OVER WEST FORK JIMMY CAMP CREEK. THE SCOPE ALSO INCLUDES 7' OF ADDITIONAL PAVED SHOULDER ON THE NORTH SIDE OF MESA RIDGE PARKWAY AND THE WIDENING OF MESA RIDGE PARKWAY TO ACCOMMODATE WESTBOUND LEFT TURN LANES AND EASTBOUND RIGHT TURN LANES AT WAYFARER DRIVE AND AUTUMN GLEN AVENUE. THE NORTH HALF OF MESA RIDGE PARKWAY TO BE CONSTRUCTED EAST OF AUTUMN GLEN AVENUE SHALL HAVE A PAVEMENT WIDTH OF 88' CONSISTING OF TWO 12' LANES AND SHOULDERS. THE WIDENING AND EXTENSION OF MESA RIDGE PARKWAY SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE PLANS AND ANY APPLICABLE GEOTECHNICAL REPORTS PREPARED BY KLEINFELDER OR OTHERS. ALL PAVEMENT DESIGN, EXCAVATION, FILL MATERIAL, SETTLEMENT MITIGATION, EMBANKMENT CONSTRUCTION, COMPACTION, AND THE LIKE SHALL BE IN ACCORDANCE WITH THESE PLANS AND ANY GEOTECHNICAL REPORTS PREPARED BY KLEINFELDER OR OTHERS.
 18. THE NORTH HALF OF MESA RIDGE PARKWAY SHALL BE SHALL BE CONSTRUCTED FOR IMMEDIATE USE. PAVEMENT MARKINGS ON THE NORTHERN LANES SHALL ALLOW FOR TWO-WAY DIRECTIONAL TRAFFIC AS SHOWN ON THESE PLANS. UNTIL THE BRIDGE OVER WEST FORK JIMMY CAMP CREEK IS CONSTRUCTED, MESA RIDGE PARKWAY SHALL BE BARRICADED ON EITHER END OF THE BRIDGE.
 19. THIS PROJECT INCLUDES ALL NECESSARY SETTLEMENT MITIGATION FOR BOTH THE NORTH AND SOUTH LANES. THE PLACEMENT OF WICK DRAINS, SURCHARGES, OR OTHER SETTLEMENT MITIGATION AS RECOMMENDED BY KLEINFELDER OR OTHER GEOTECHNICAL ENGINEERS WILL BE A NECESSARY TASK OF THIS PROJECT FOR ANY AREAS AFFECTING THE ENTIRE RIGHT OF WAY.
 20. CONTRACTOR SHALL OBTAIN A COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT DISCHARGE PERMIT PRIOR TO CONSTRUCTION REQUIRING DEWATERING. CONTRACTOR SHALL OBTAIN AN EL PASO COUNTY AIR QUALITY PERMIT PRIOR TO CONSTRUCTION.
 21. UNLESS OTHERWISE SPECIFIED IN THE CONTRACT, ALL SALVAGEABLE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ALL REMOVED ASPHALT WILL BECOME THE PROPERTY OF THE CONTRACTOR AND WILL BE PROPERLY DISPOSED OF OUTSIDE PROJECT LIMITS.
 22. CONTRACTOR SHALL VERIFY THE LOCATION OF ALL CONSTRUCTION EASEMENTS.
 23. DESIGN CONTROLS FOR VERTICAL CURVES ARE FROM TABLES 2-13 AND 2-15 OF THE EL PASO COUNTY ENGINEERING CRITERIA MANUAL.
 24. WHERE APPROPRIATE, NEATLY SAW CUT ALL EXISTING CONCRETE AND ASPHALT. THE PLACEMENT OF ADDITIONAL PAVING SHALL BE DONE TO A NEAT WORK LINE, SAW CUTTING A MINIMUM OF ONE (1) FOOT. SAW CUTTING WILL NOT BE PAID FOR SEPARATELY BUT WILL BE CONSIDERED INCIDENTAL TO THE WORK. REPAIR/REPLACE ALL DISTURBED EXISTING ITEMS WITH LIKE MATERIALS AND THICKNESS. ANY ASPHALT REMOVED IS TO BE REPLACED TO MEET THE SPECIFICATIONS OF EL PASO COUNTY. EXISTING CONCRETE PAVEMENT SHALL BE SCORED THEN BROKEN AT JOINT TO CREATE A ROUGH SURFACE FOR THE CONSTRUCTION JOINT.
 25. ALL ASPHALT WORK REQUIRING PATCHING WILL BE PERFORMED TO A NEAT WORK LINE. THE EXISTING ASPHALT SHALL BE SAW CUT. ALL ASPHALT PATCH WORK SHALL BE AT LEAST 2' WIDE AFTER THE COMPLETION OF WORK. NEW CURB CAN BE PLACED FLUSH WITH THE EXISTING ASPHALT IF IT IS TO A NEAT WORK LINE.
 26. EXISTING CONCRETE PAVEMENT SHALL BE SCORED THEN BROKEN AT JOINT TO CREATE A ROUGH SURFACE FOR THE CONSTRUCTION JOINT.
 27. NOT WITHSTANDING 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 DESIGN 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.
 28. CONTRACTOR SHALL NOT DEVIATE FROM THE PLANS WITHOUT FIRST OBTAINING WRITTEN APPROVAL FROM THE DESIGN ENGINEER AND DSD. CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY UPON DISCOVERY OF ANY ERRORS OR INCONSISTENCIES.
- BENCHMARK: MONUMENT IS LOCATED AT THE NORTHWEST CORNER OF THE INTERSECTION OF POWERS BOULEVARD AND FONTAINE STREET. THE MONUMENT IS A 3-INCH ALUMINUM CAP (FIMS ID #206), LOCATED 51.3 FEET WEST OF THE WEST EDGE OF ASPHALT OF POWERS BLVD AND 65.5 FEET NORTH OF THE NORTH EDGE OF ASPHALT OF FONTAINE STREET. ELEVATION=5897.89 FEET (NGVD 1929, 1960 ADJ.)
- BASIS OF BEARINGS IS RELATIVE TO THE SOUTHEASTERLY LINE OF THE GLEN AT WIDFIELD FILING NO. 2. SAID LINE BEING MONUMENTED BY A FOUND NO.4 REBAR AND CAP L.S.#25968 AT THE SOUTHERLY TERMINATION POINT AND BY A FOUND REBAR WITH CAP L.S.#25968 AT THE NORTHERLY TERMINATION POINT. SAID LINE BEING ALSO THE SOUTHERLY RIGHT-OF-WAY LINE OF WAYFARER DRIVE. SAID LINE BEARS N35°50'53"E, A DISTANCE OF 353.61 FEET.

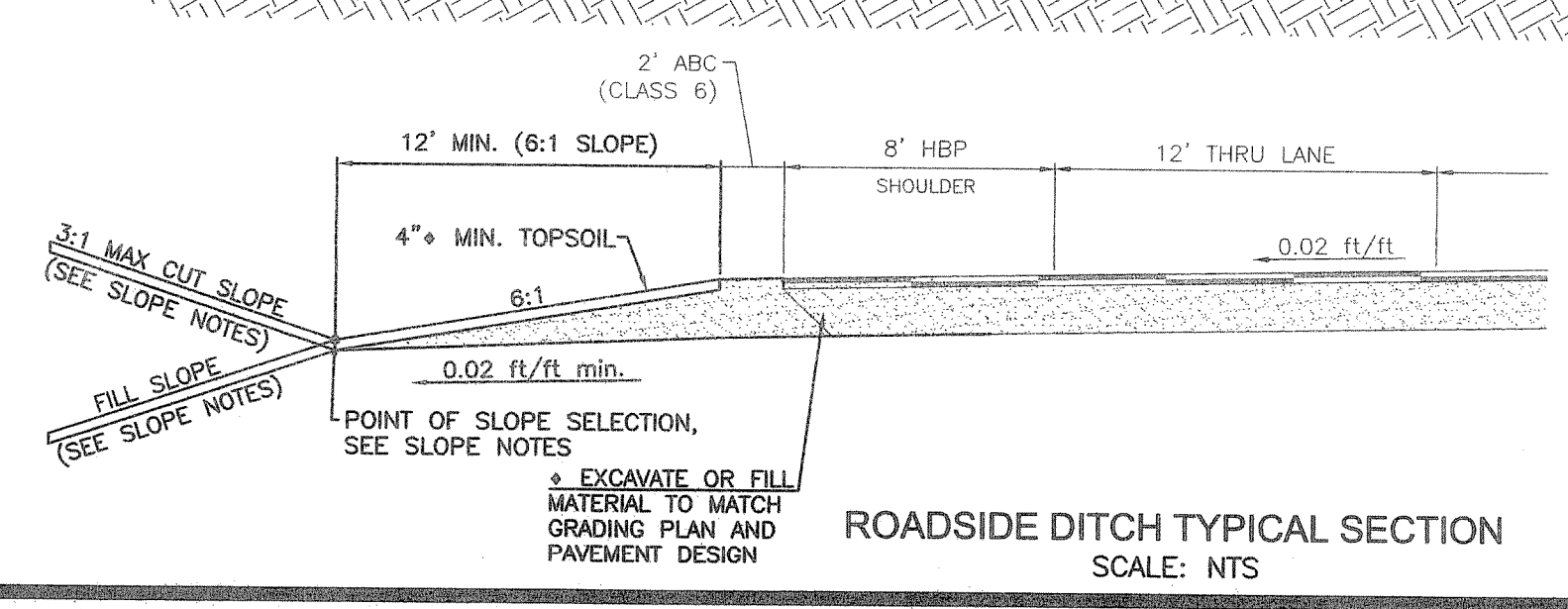
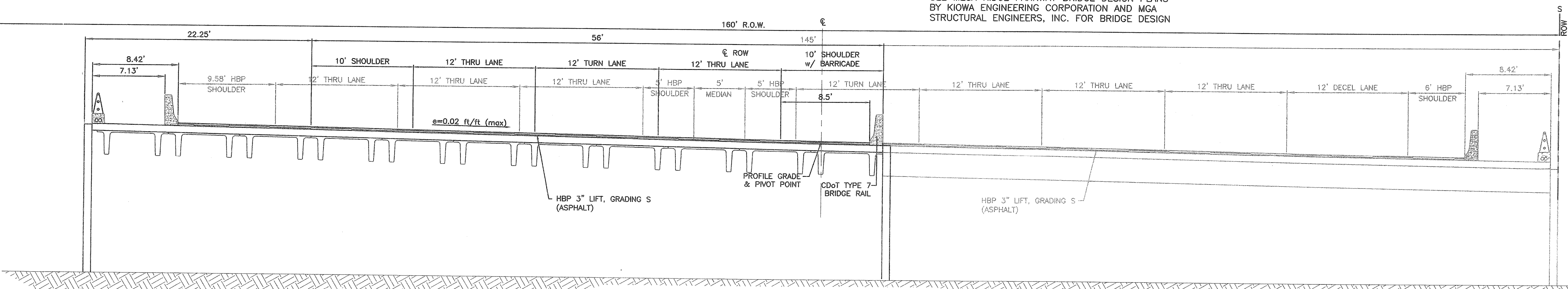
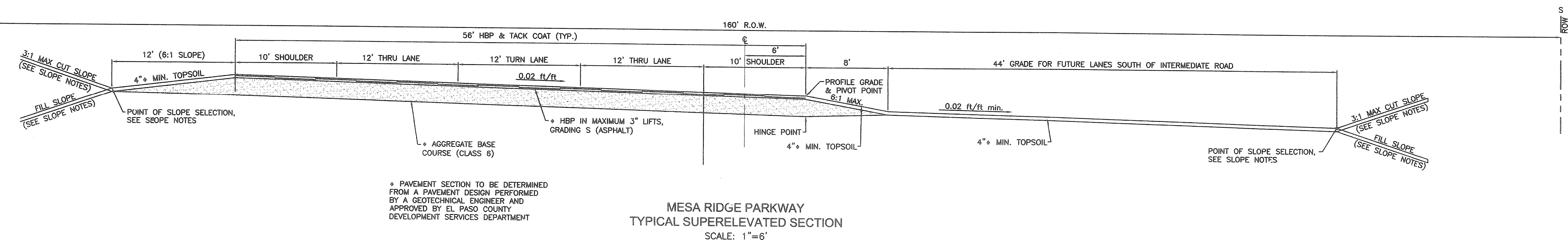
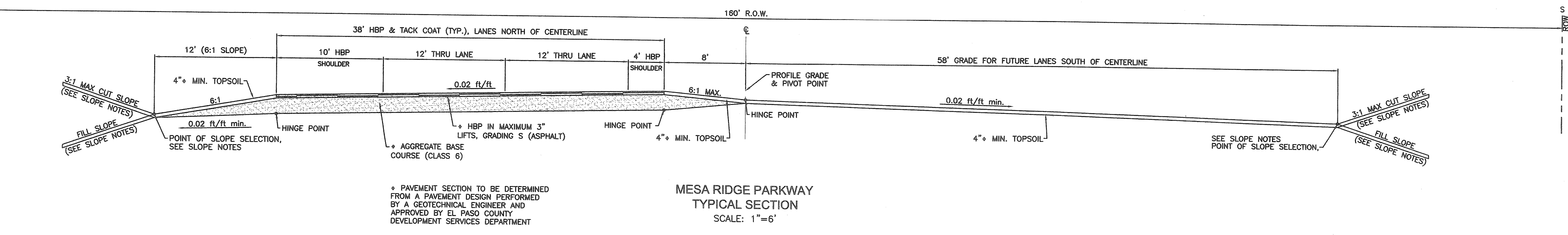
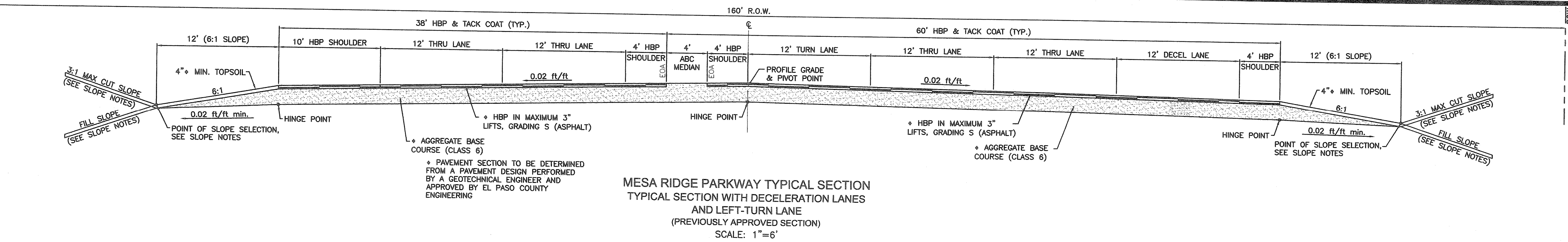
Kiowa
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1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

MESA RIDGE PARKWAY
ROADWAY DESIGN
GENERAL NOTES
El Paso County, Colorado

Project No.:	08082
Date:	December 8, 2010
Design:	IGD
Drawn:	RLA
Check:	AWMc
Revisions:	

SHEET
2
OF 23 SHEETS

**MESA RIDGE PARKWAY
ROADWAY DESIGN
TYPICAL CROSS-SECTIONS**
El Paso County, Colorado



SLOPE NOTES

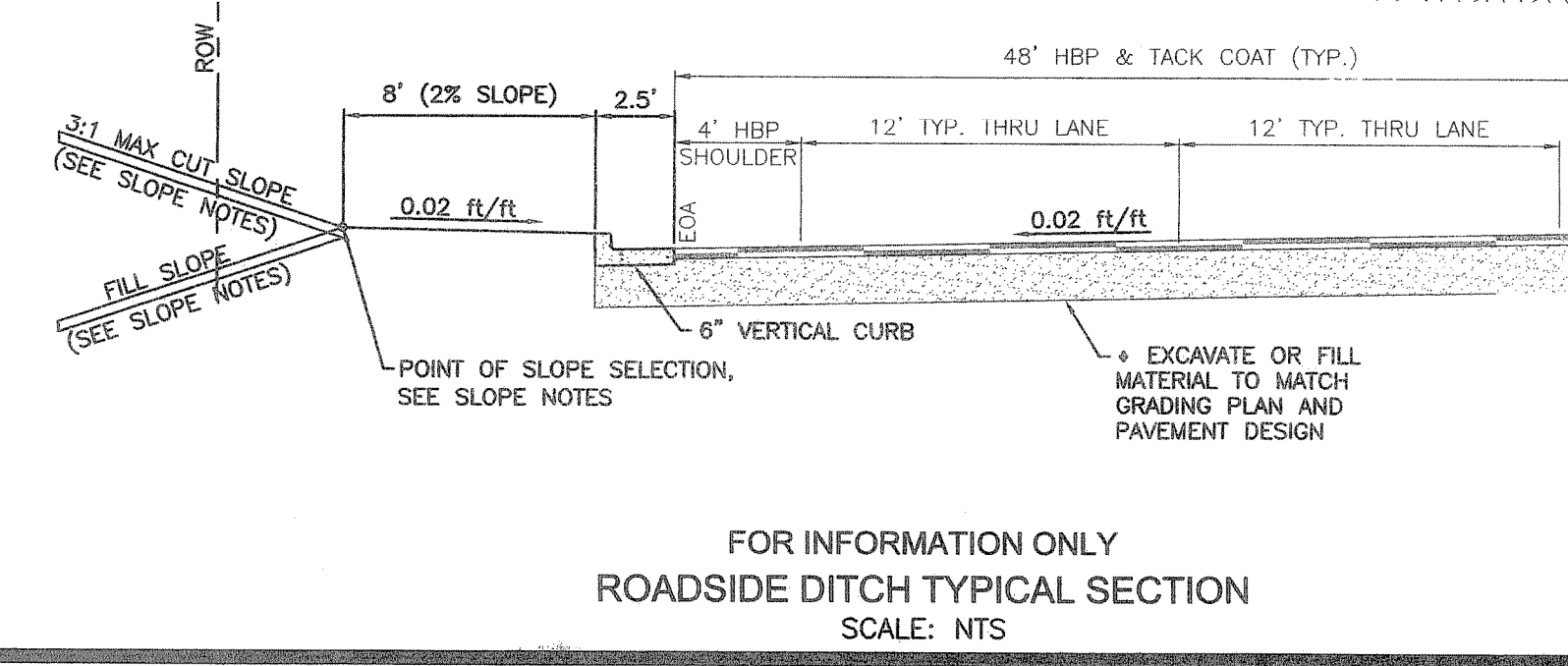
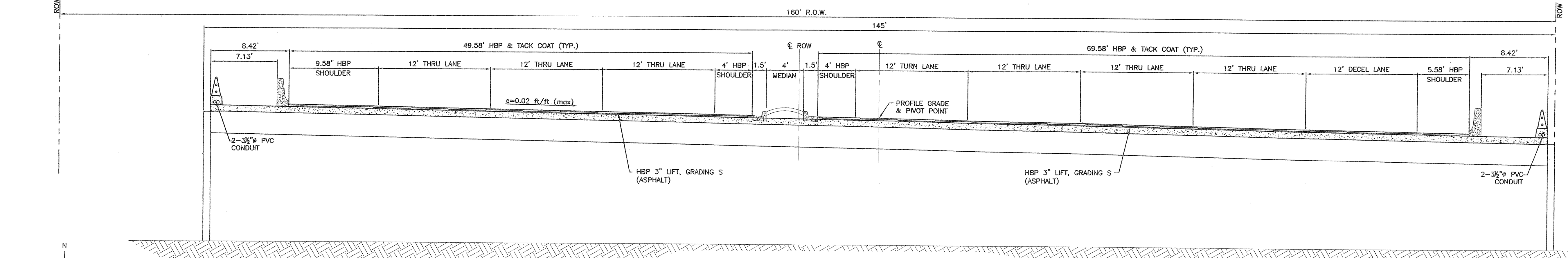
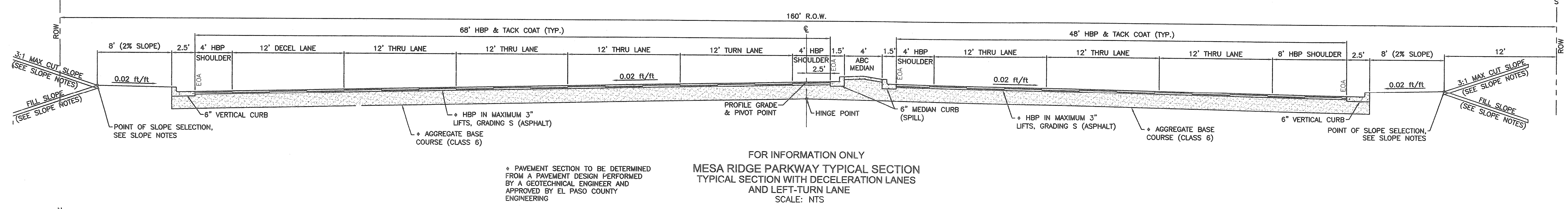
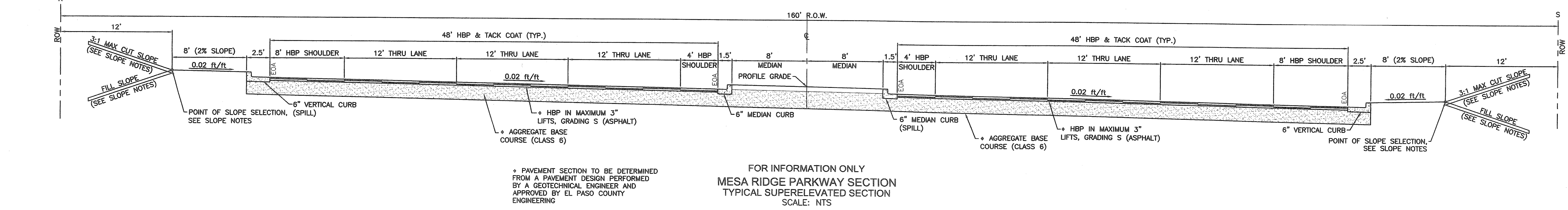
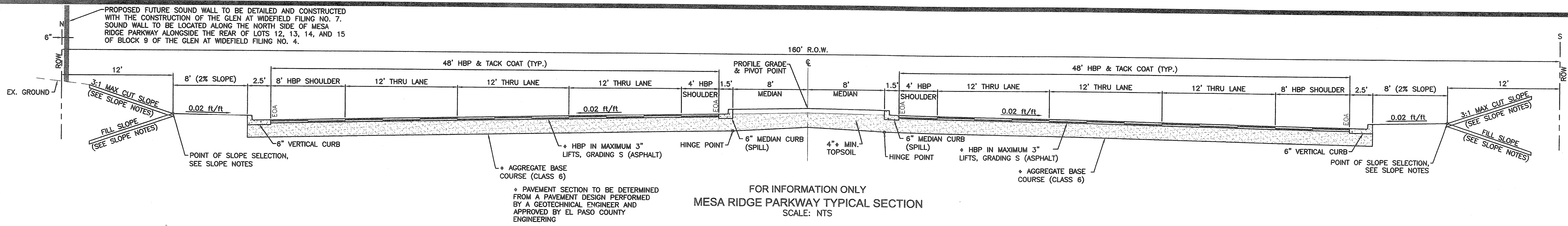
FILL HEIGHT (H)	FILL SLOPE
0' TO 10'	4:1
OVER 10'	3:1

CUT SLOPES NOT STEEPER THAN 3:1, EXCEPT IN SPECIAL CASES.

◊ = APPROXIMATE THICKNESS
 e = MAXIMUM SUPERELEVATION AS REQUIRED
 BREAK POINTS ON SLOPES AND IN BOTTOM OF DITCHES SHALL BE ROUNDED ON CONSTRUCTION FOR A PLEASING APPEARANCE.

Project No.: 08082
 Date: December 8, 2010
 Design: JGD
 Drawn: RLA
 Check: AWMc
 Revisions:

**MESA RIDGE PARKWAY
ROADWAY DESIGN
ULTIMATE TYPICAL CROSS SECTIONS (FOR INFORMATION ONLY)**
El Paso County, Colorado



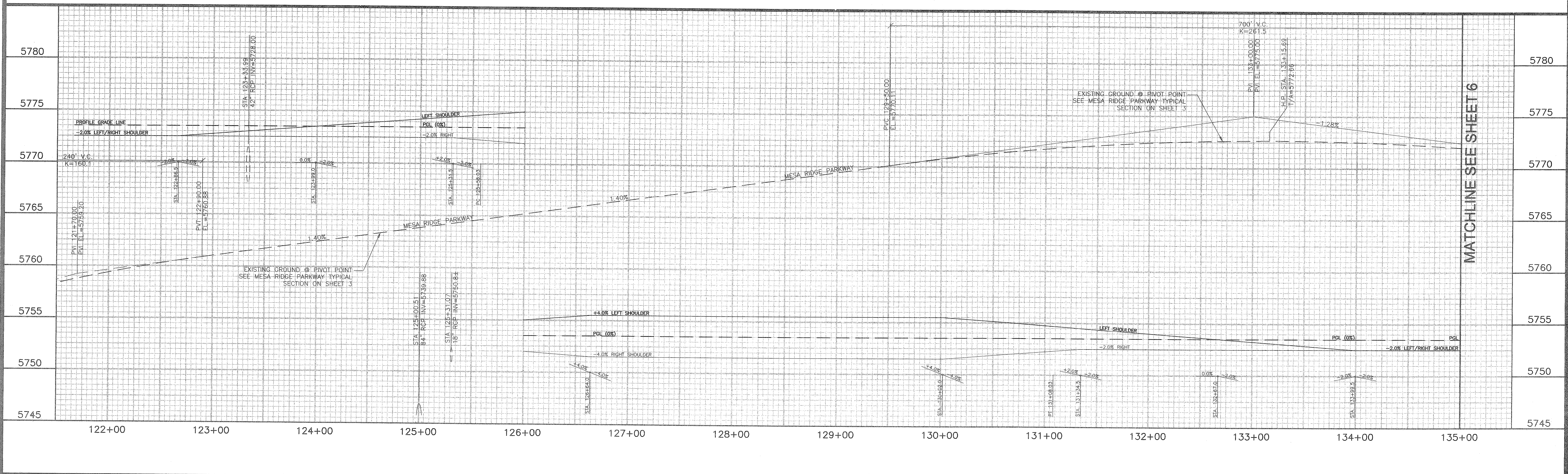
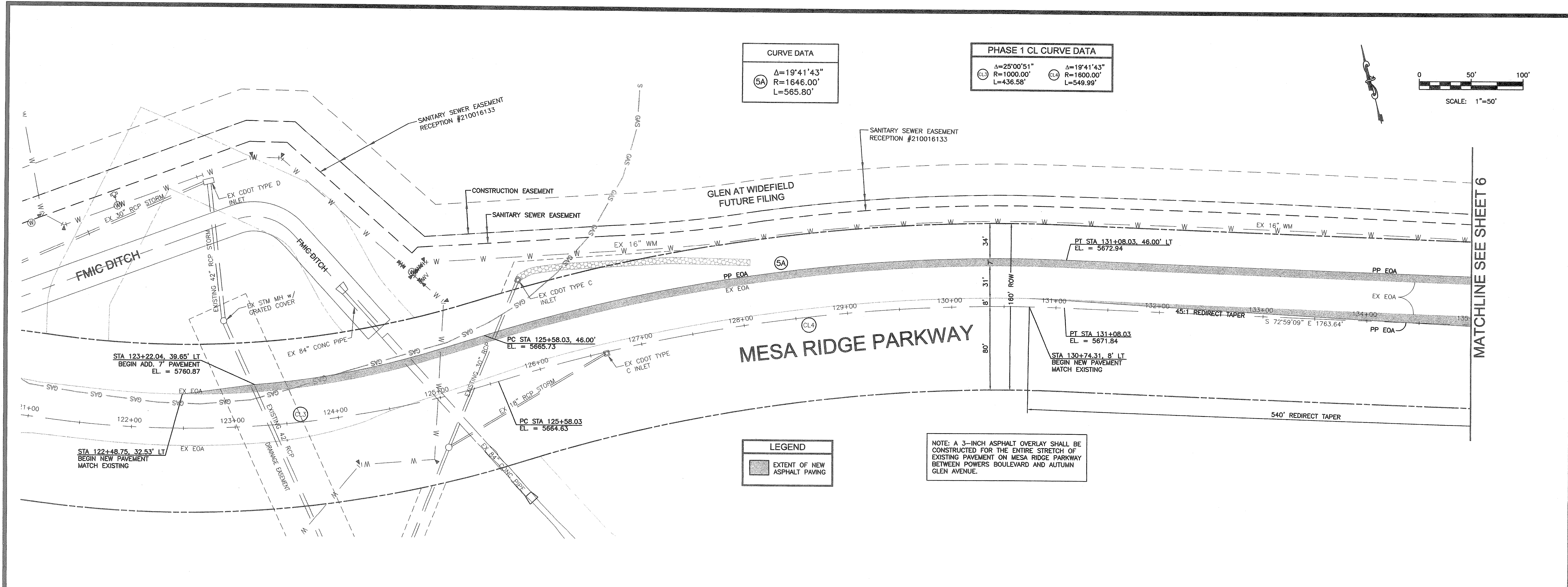
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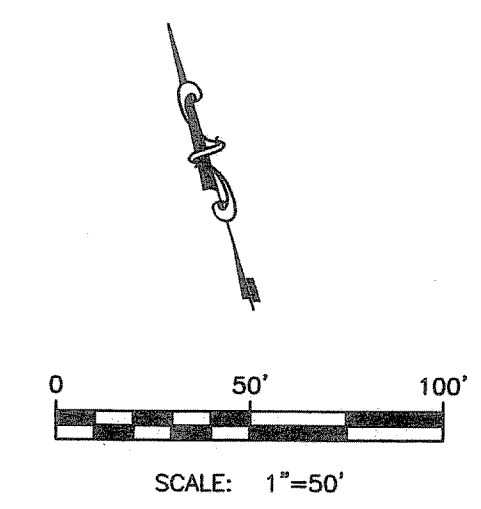
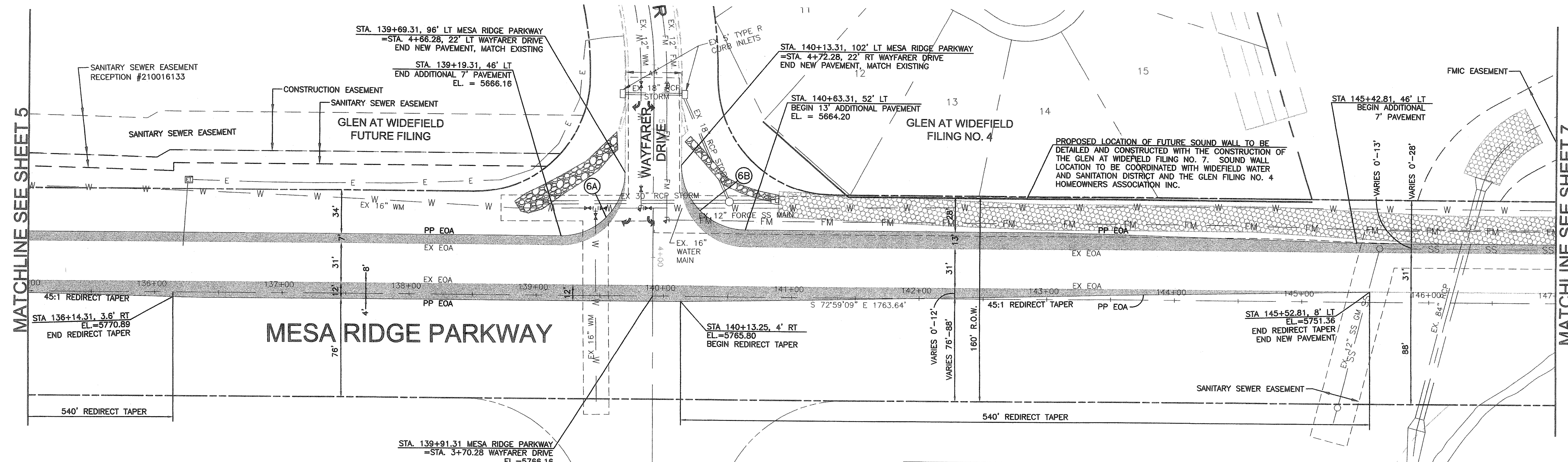


Kiowa
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**MESA RIDGE PARKWAY
ROADWAY DESIGN
PLAN AND PROFILE -- STA. 122+00.00 TO 135+00.00**
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SHEET
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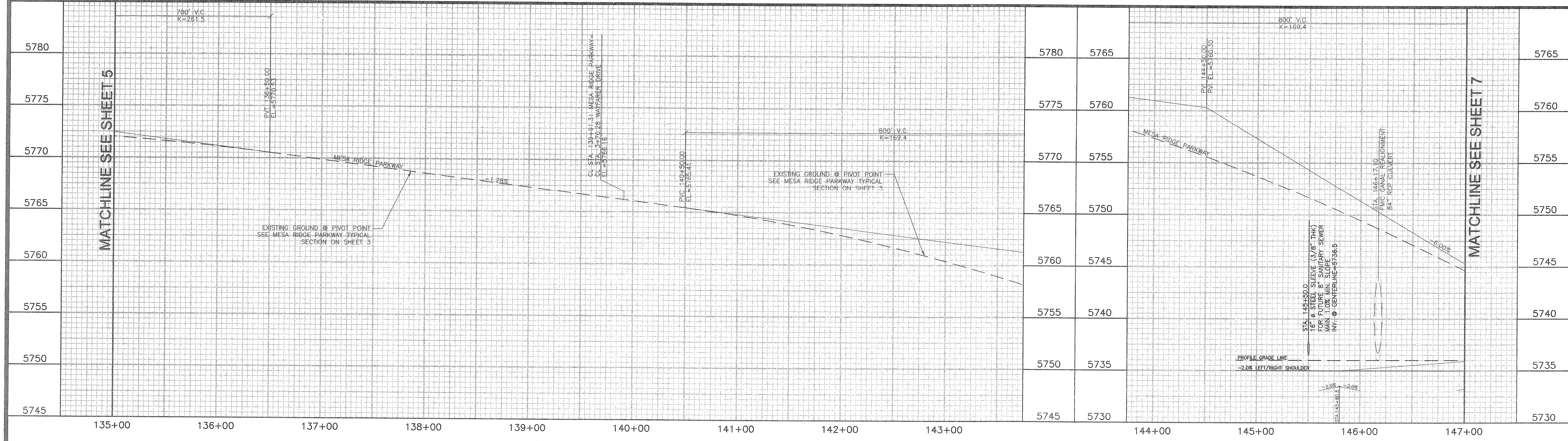
LEGEND

	EXTENT OF NEW ASPHALT PAVING
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NOTE: A 3-INCH ASPHALT OVERLAY SHALL BE CONSTRUCTED FOR THE ENTIRE STRETCH OF EXISTING PAVEMENT ON MESA RIDGE PARKWAY BETWEEN POWERS BOULEVARD AND AUTUMN GLEN AVENUE.

CURVE DATA

Ⓐ	Δ=89°59'58"
	R=50.00'
	L=78.54'
Ⓑ	Δ=90°00'00"
	R=50.00'
	L=78.54'



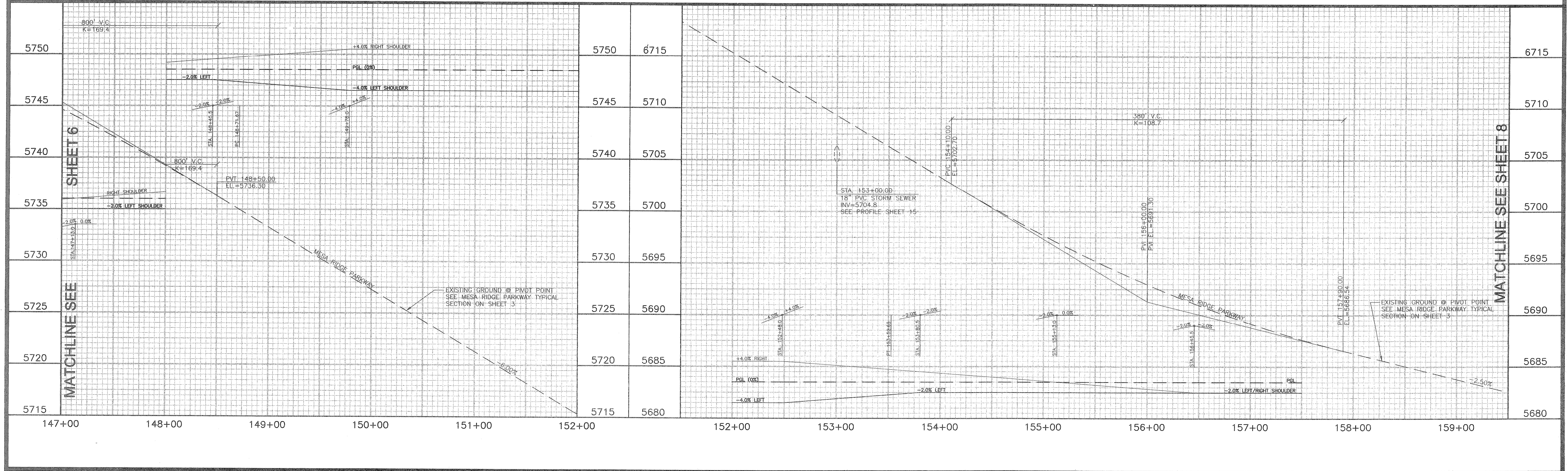
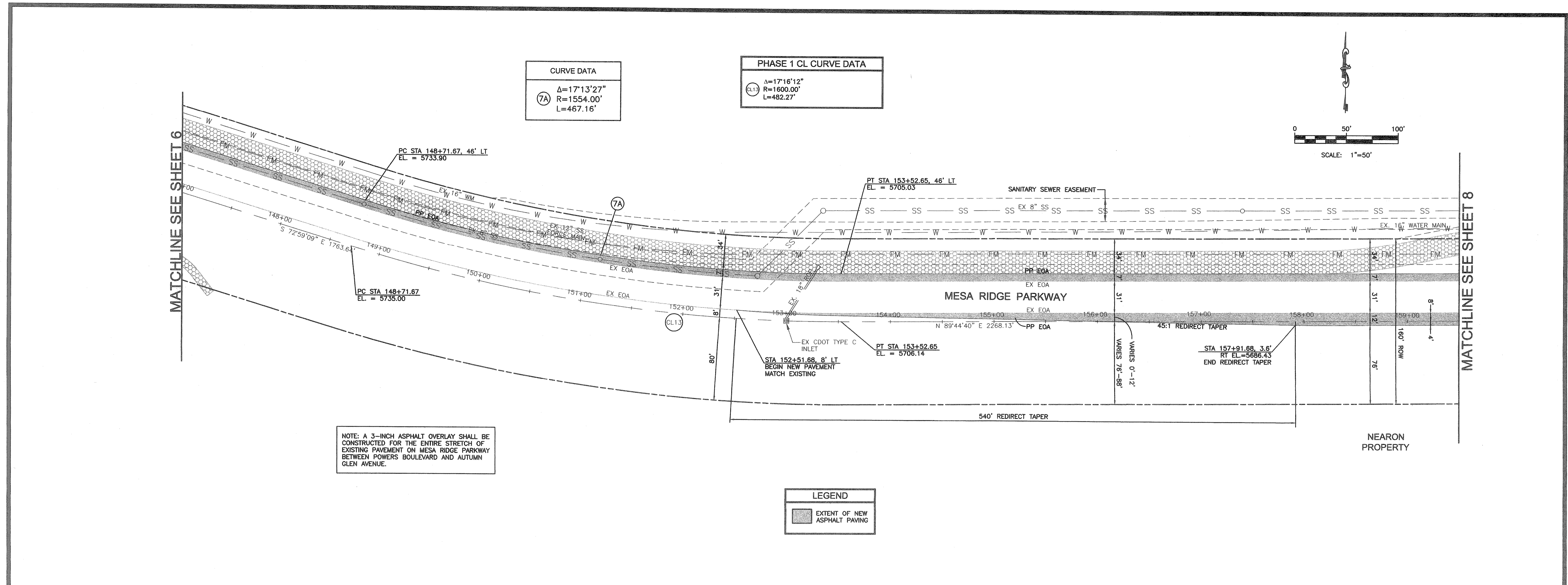
**MESA RIDGE PARKWAY
ROADWAY DESIGN**
PLAN AND PROFILE -- STA. 135+00.00 TO 147+00.00
El Paso County, Colorado

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Date: December 8, 2010
Design: JGD
Drawn: RLA
Check: AWMc
Revisions:

SHEET
6
OF 23 SHEETS

**MESA RIDGE PARKWAY
ROADWAY DESIGN**
PLAN AND PROFILE -- STA. 147+00.00 TO 159+50.00
El Paso County, Colorado

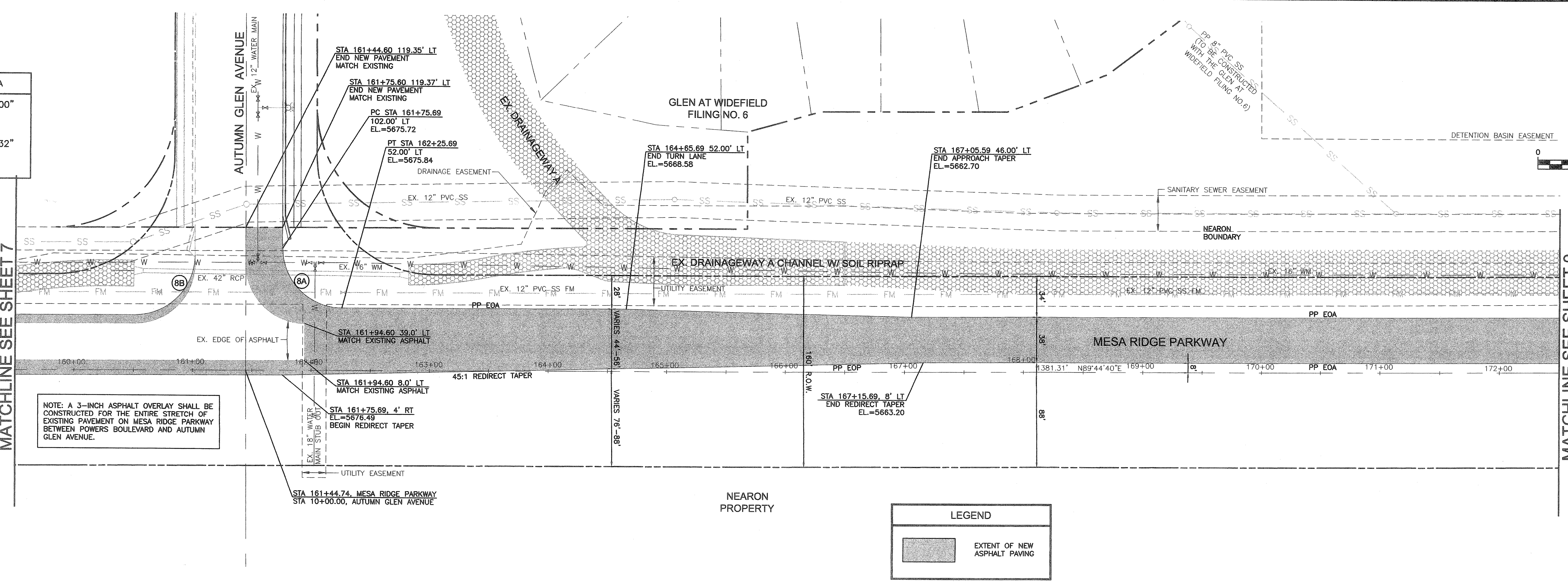
Project No.: 08082
Date: December 8, 2010
Design: JGD
Drawn: RLA
Check: AWMc
Revisions:



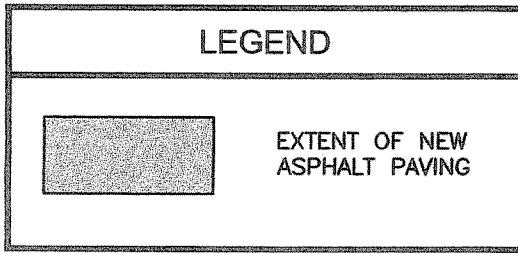
CURVE DATA	
(8A)	$\Delta=90^{\circ}00'00''$ $R=50.00'$ $L=78.54'$
(8B)	$\Delta=90^{\circ}02'32''$ $R=50.00'$ $L=78.58'$

MATCHLINE SEE SHEET 7

MATCHLINE SEE SHEET 9

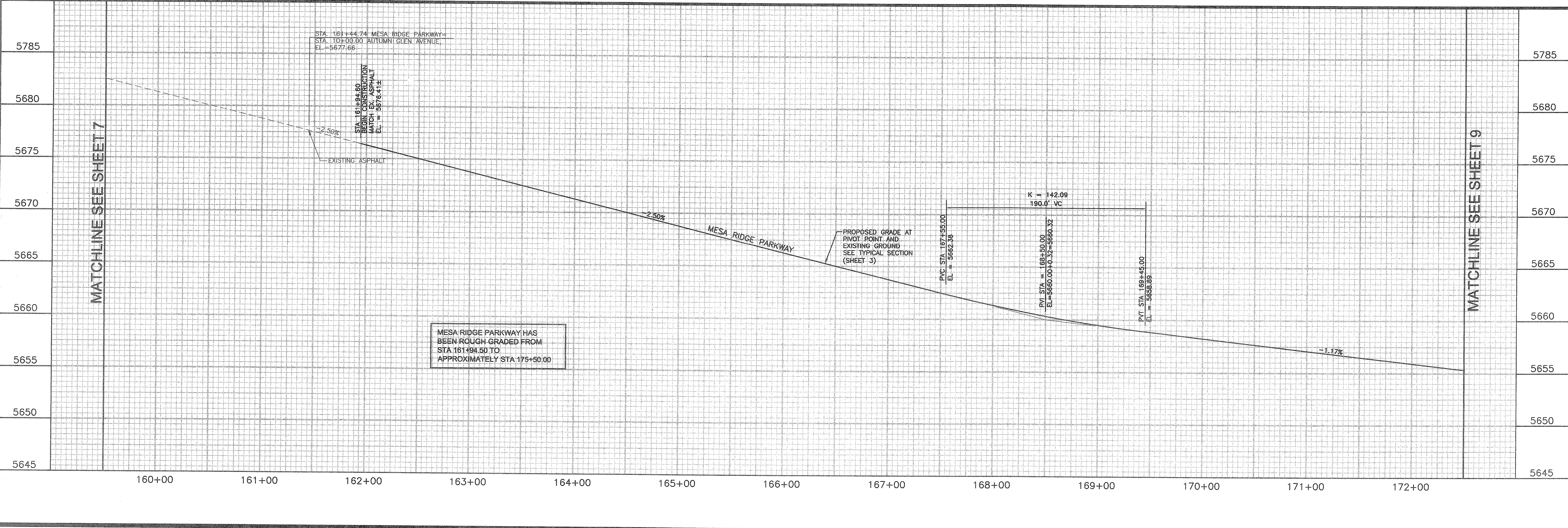


NOTE: A 3-INCH ASPHALT OVERLAY SHALL BE CONSTRUCTED FOR THE ENTIRE STRETCH OF EXISTING PAVEMENT ON MESA RIDGE PARKWAY BETWEEN POWERS BOULEVARD AND AUTUMN GLEN AVENUE.



MATCHLINE SEE SHEET 7

MATCHLINE SEE SHEET 9



**MESA RIDGE PARKWAY
ROADWAY DESIGN**

PLAN AND PROFILE -- STA. 159+50.00 TO 172+50.00
El Paso County, Colorado

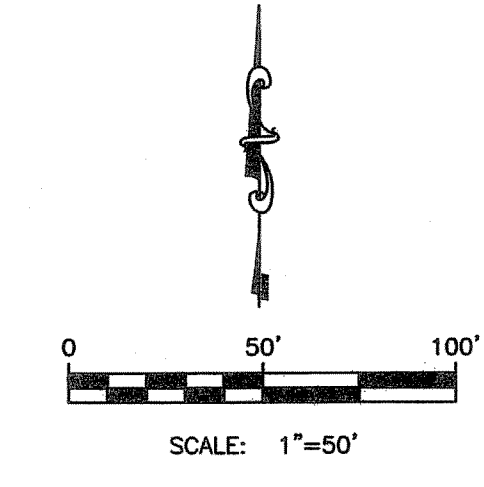
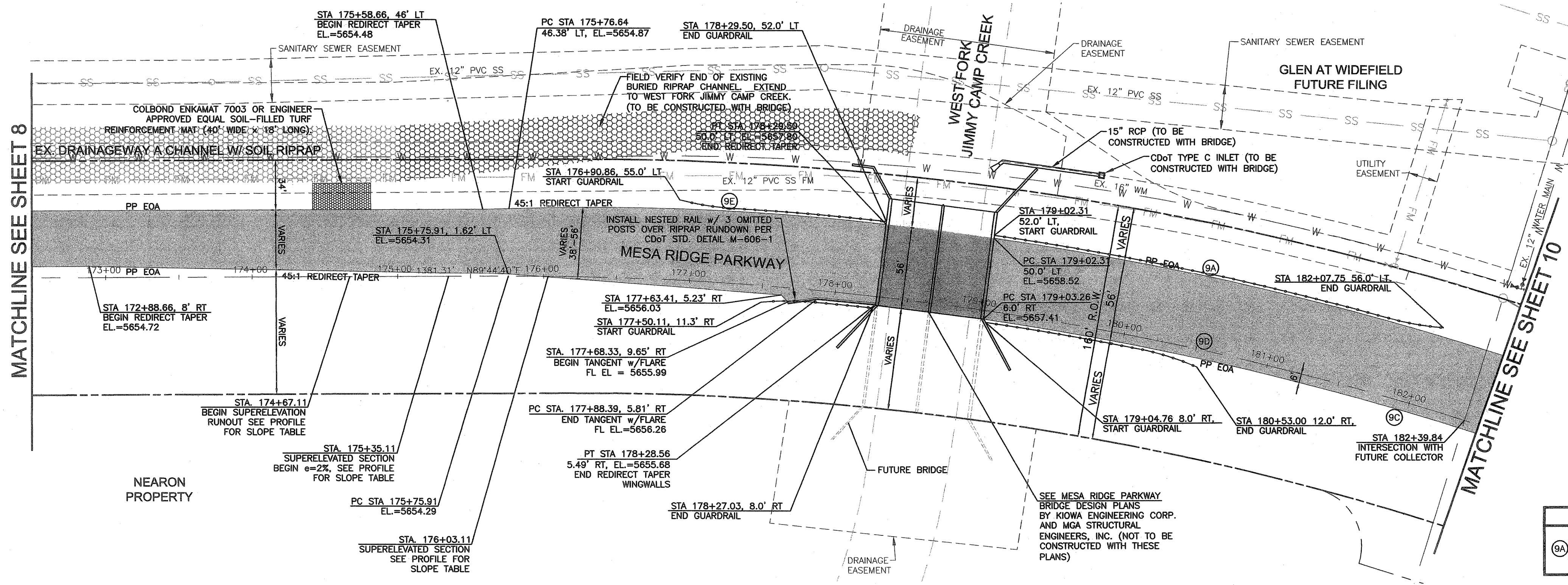
Project No.:	08082
Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
Check:	AWMc
Revisions:	

SHEET
8
OF 23 SHEETS

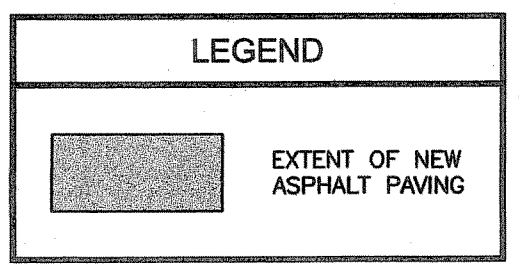
Kiowa
Engineering Corporation

1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

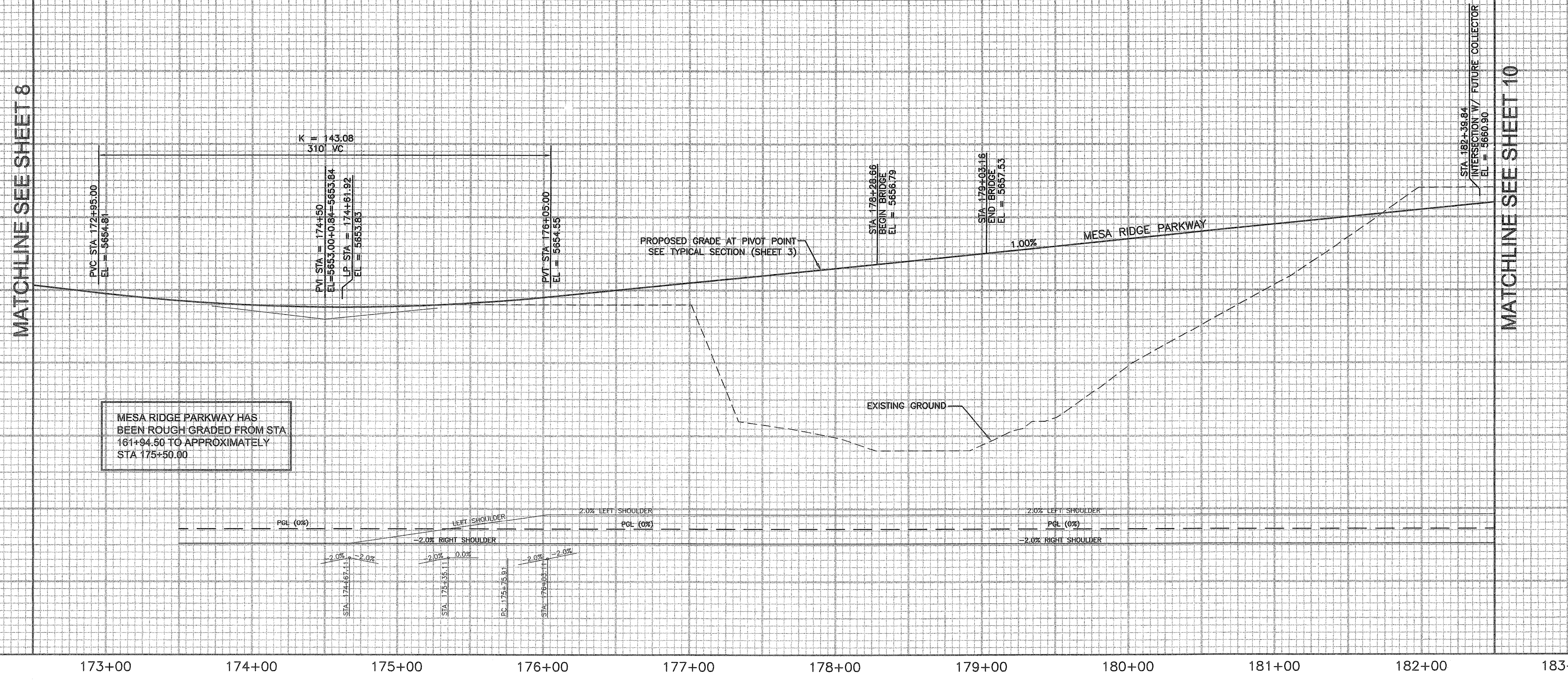
08082RD-08-10-PP.dwg/Dec 08, 2010/2:38pm



NOTE: GUARDRAIL SHALL BE TYPE 3 W-BEAM (TYP.). END ANCHORAGE (FLARED) FOR ALL GUARDRAILS AT BRIDGE SHALL BE SLOTTED RAIL TERMINAL (SRT-350). SEE CDOT STD DETAIL M-606-1.



CURVE DATA			
(9A)	$\Delta=07^{\circ}08'27''$ $R=2200.00'$ $L=274.19'$	(9C)	$\Delta=25^{\circ}28'50''$ $R=2144.00'$ $L=953.47'$
(9D)	$\Delta=34^{\circ}12'05''$ $R=2150.00'$ $L=1283.39'$	(9E)	$\Delta=6^{\circ}32'29''$ $R=1735.02'$ $L=258.65'$



**MESA RIDGE PARKWAY
ROADWAY DESIGN**
PLAN AND PROFILE -- STA. 172+50.00 TO 182+50.00
El Paso County, Colorado

Project No.:	08082
Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
Check:	AWMc
Revisions:	

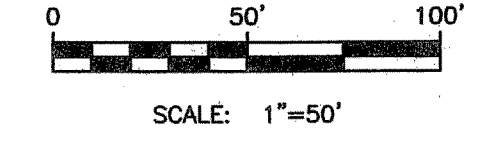
080820-08-10-PP.dwg/0cc 08, 2010/2:35pm

MATCHLINE SEE SHEET 9

FUTURE COLECTOR

GLEN AT WIDEFIELD
FUTURE FILING

100' COLORADO INTERSTATE
GAS COMPANY EASEMENT

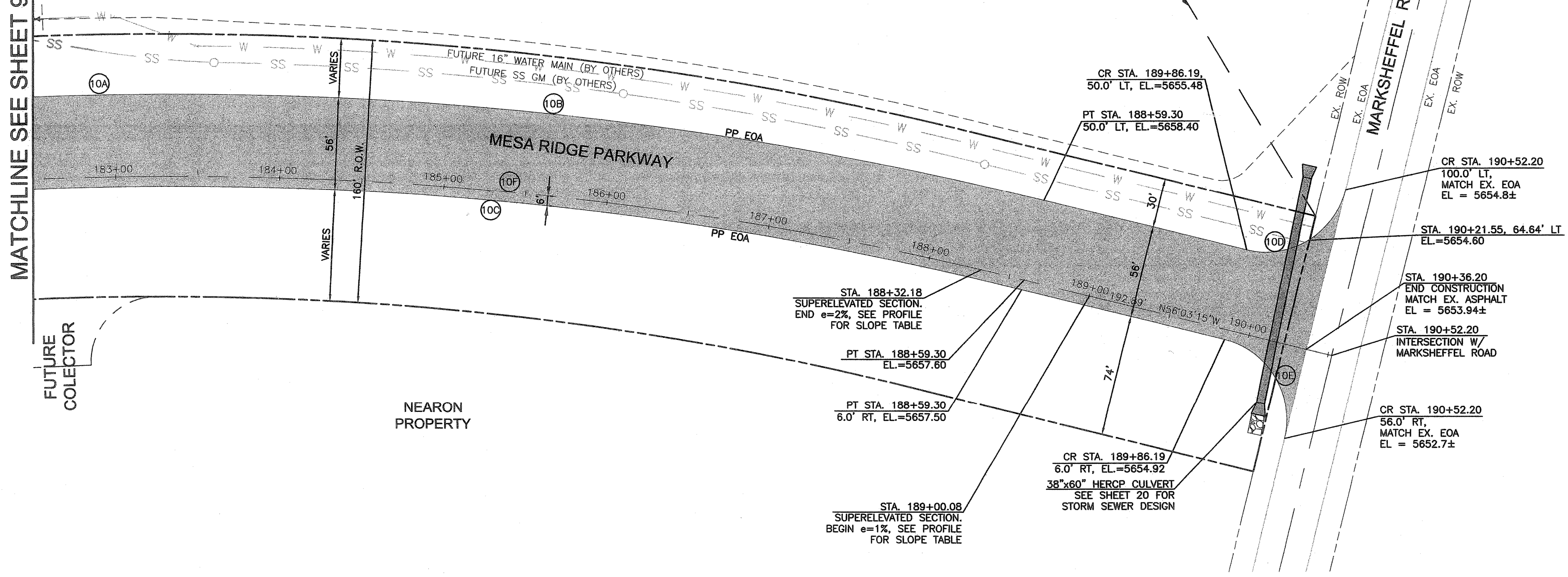


LEGEND

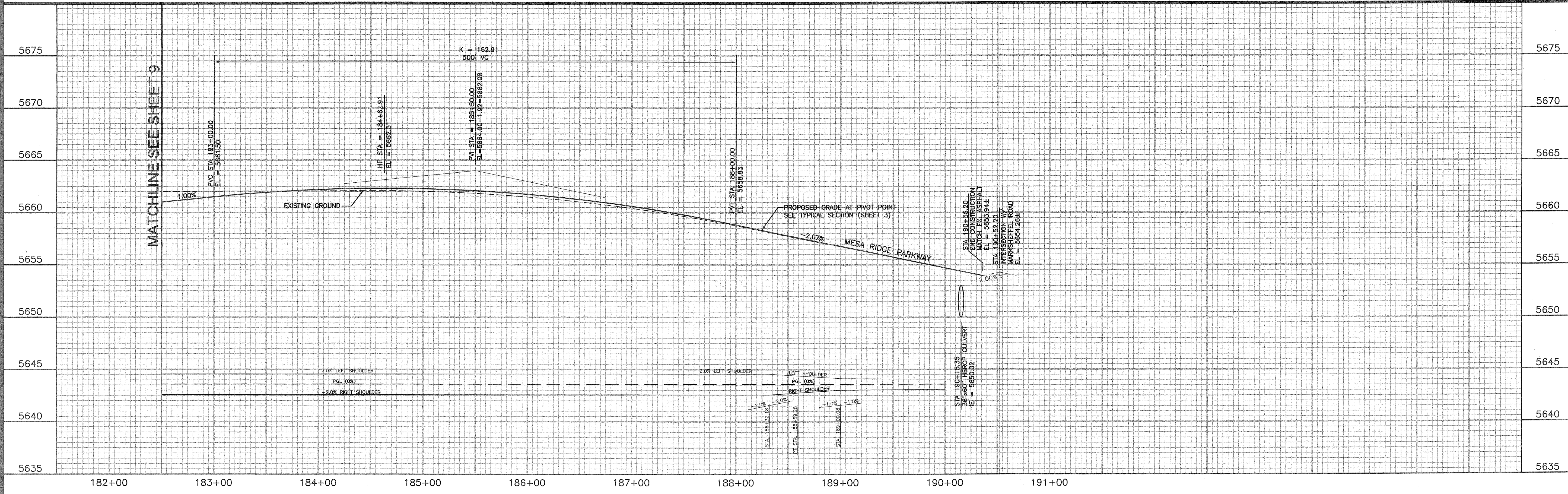
	EXTENT OF NEW ASPHALT PAVING
--	------------------------------

CURVE DATA

10A Δ=88°12'39" R=50.00' L=76.98'	10B Δ=14°40'19" R=2200.00' L=563.37'	10C Δ=27°28'08" R=2144.00' L=1027.88'
10D Δ=90°00'00" R=50.00' L=78.54'	10E Δ=90°00'00" R=50.00' L=78.54'	10F Δ=34°12'05" R=2150.00' L=1283.39'



MATCHLINE SEE SHEET 9



**MESA RIDGE PARKWAY
ROADWAY DESIGN
PLAN AND PROFILE -- STA. 182+50.00 TO 190+36.20**
El Paso County, Colorado

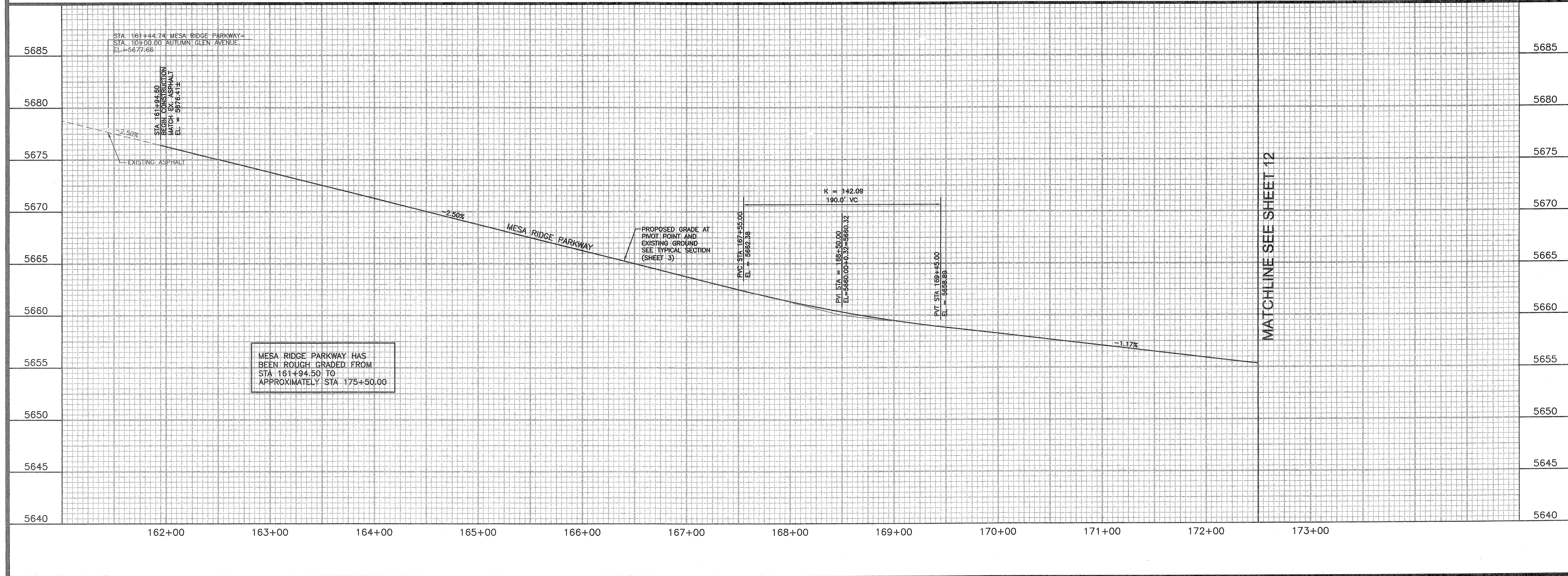
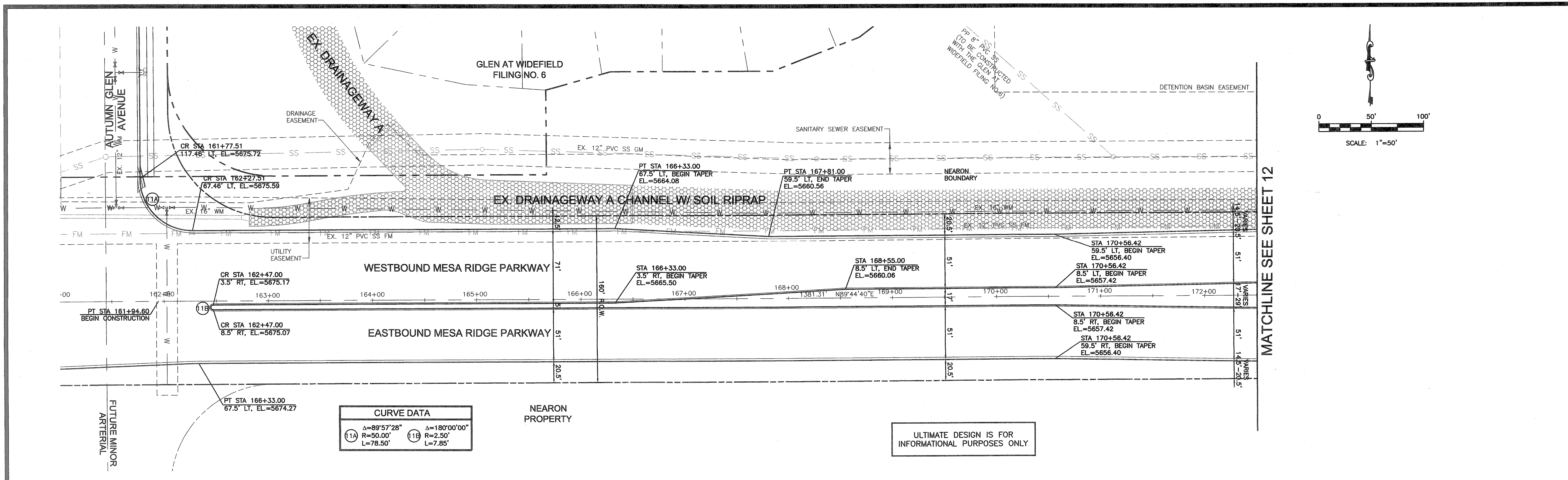
Project No.:	08082
Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
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Revisions:	

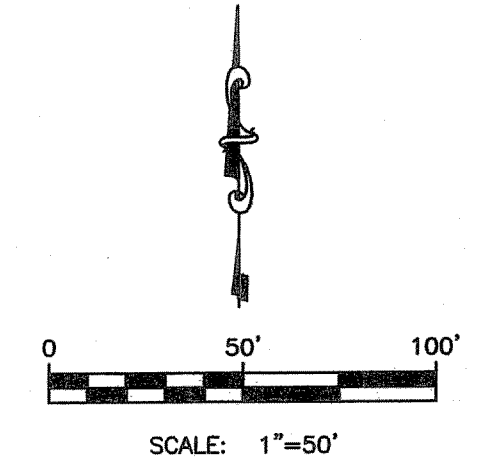
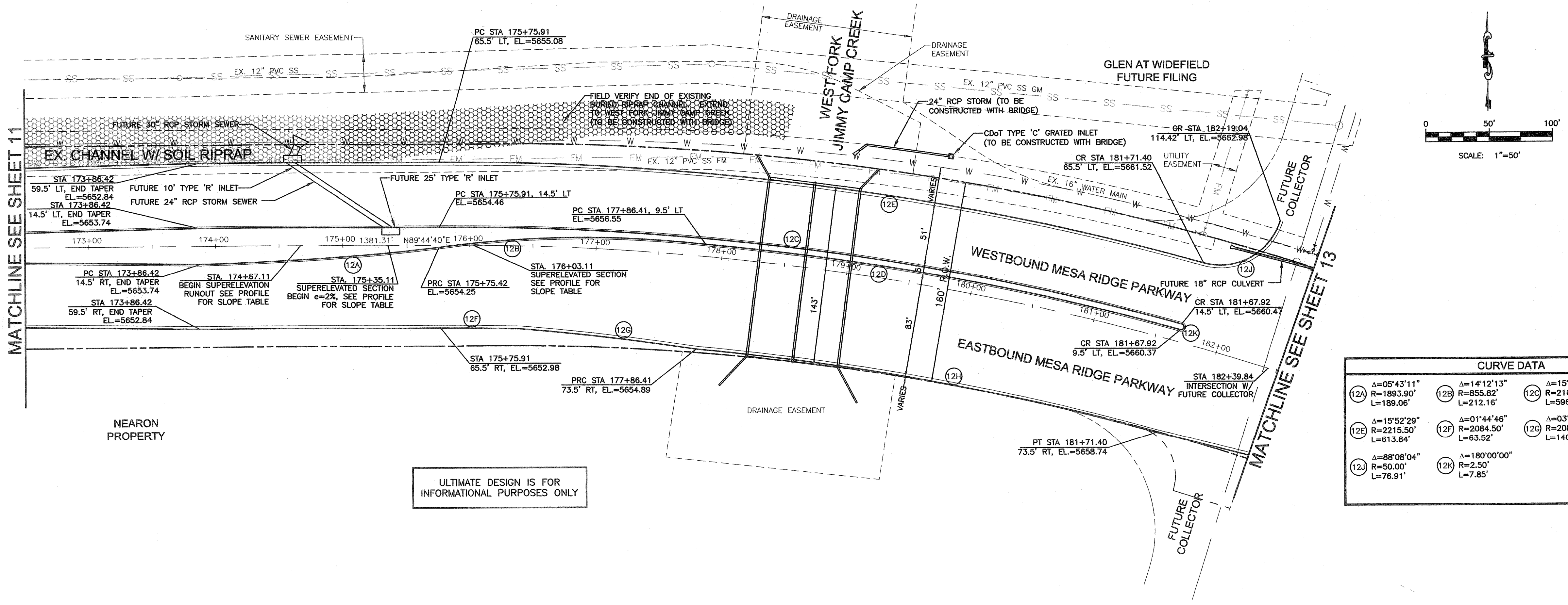
SHEET
10
OF 23 SHEETS

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 690-7342

**MESA RIDGE PARKWAY
ROADWAY DESIGN
PLAN AND PROFILE (ULTIMATE DESIGN) -- STA. 161+94.60 TO 172+50.00**
El Paso County, Colorado

Project No.:	08082
Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
Check:	AWMc
Revisions:	





CURVE DATA			
(12A) Δ=05°43'11" R=1893.90' L=189.06'	(12B) Δ=14°12'13" R=855.82' L=212.16'	(12C) Δ=15°46'37" R=2164.50' L=596.02'	(12D) Δ=10°10'02" R=2159.50' L=383.21'
(12E) Δ=15°52'29" R=2215.50' L=613.84'	(12F) Δ=01°44'46" R=2084.50' L=63.52'	(12G) Δ=03°52'06" R=2081.67' L=140.54'	(12H) Δ=10°15'34" R=2076.50' L=371.82'
(12I) Δ=88°08'04" R=50.00' L=76.91'	(12K) Δ=180°00'00" R=2.50' L=7.85'		

ULTIMATE DESIGN IS FOR INFORMATIONAL PURPOSES ONLY

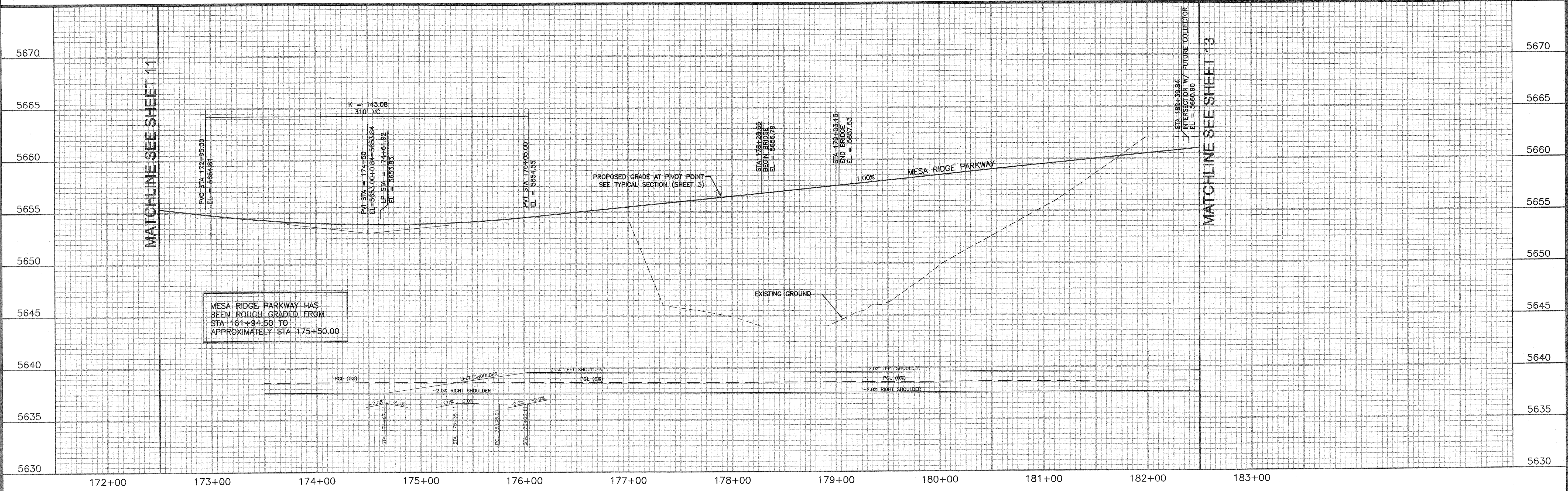
MATCHLINE SEE SHEET 11

MATCHLINE SEE SHEET 13

NEARON PROPERTY

MATCHLINE SEE SHEET 11

MATCHLINE SEE SHEET 13



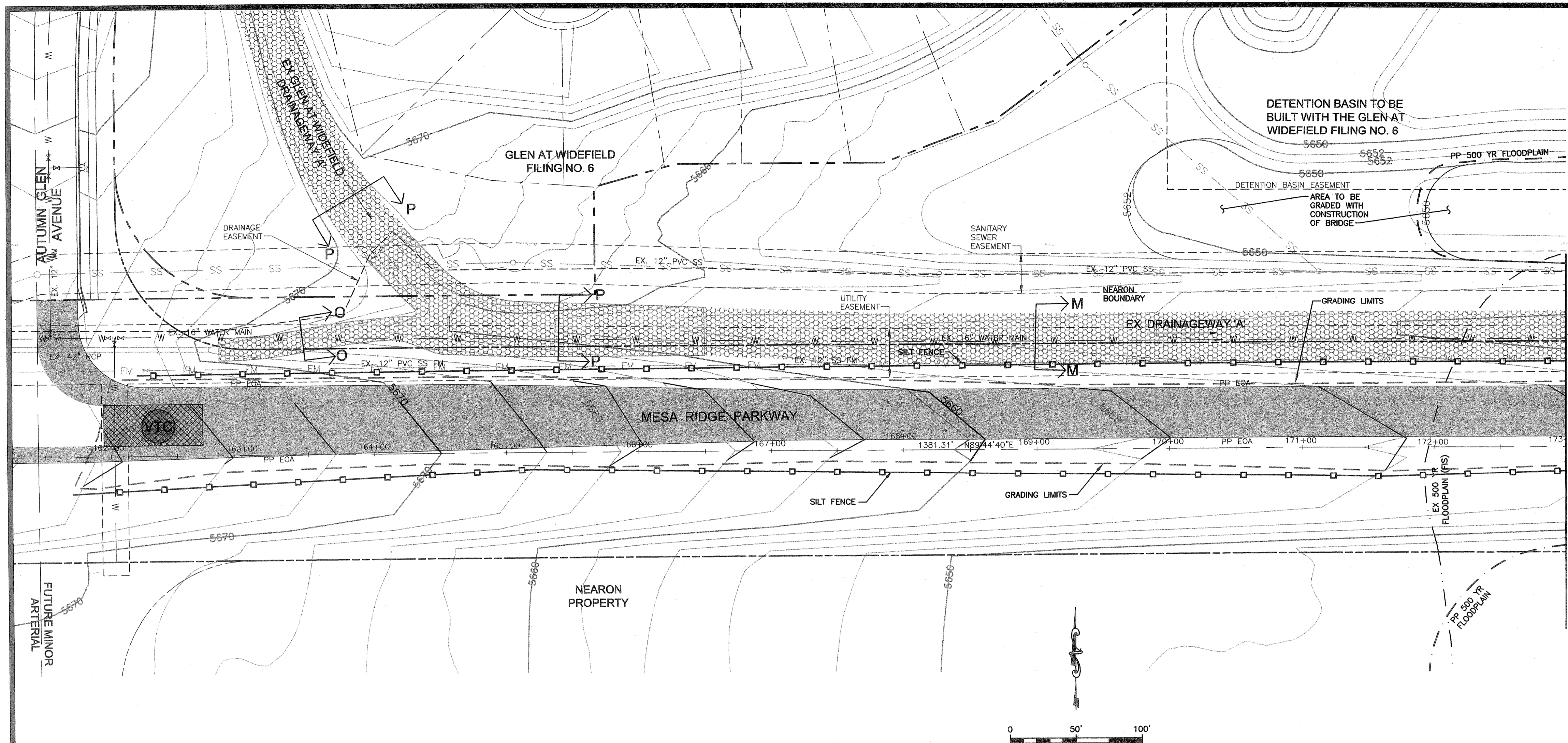
MESA RIDGE PARKWAY HAS BEEN ROUGH GRADED FROM STA 181+94.50 TO APPROXIMATELY STA 175+50.00

**MESA RIDGE PARKWAY
ROADWAY DESIGN
PLAN AND PROFILE (ULTIMATE DESIGN) -- STA. 172+50.00 TO 182+50.00**
El Paso County, Colorado

Project No.:	08082
Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
Check:	AWMc
Revisions:	

SHEET
12
OF 23 SHEETS

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 690-7342

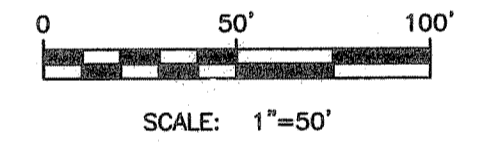


STANDARD EPC GRADING AND EROSION CONTROL NOTES

- 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.
- 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 to regulations and standards must be requested, and approved in writing.
- A separate Stormwater Management Plan (SWMP) for this project shall be completed and an Erosion and Stormwater Quality Control Permit (ESQCP) issued prior to commencing construction. During construction the SWMP shall be the responsibility of the designated Stormwater Manager. The SWMP shall be located on site at all times and shall be kept up to date with work progress and changes in the field.
- Once the ESQCP has been issued, the contractor may install the initial stage erosion and sediment control BMP's as indicated on the 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 DSD Inspections staff.
- Soil erosion control measures for all slopes, channels, ditches, or any disturbed land area shall be completed within 21 calendar days after final grading, or earth disturbance, has been completed. Disturbed areas and stockpiles, which are not at final grade but will remain dormant for longer than 30 days, shall also be mulched within 21 days after interim grading. And area that is going to remain an interim for more than 60 days shall also be seeded. All temporary soil erosion control measures and BMP's shall be maintained until permanent soil erosion control measures are implemented and established.
- Temporary soil erosion control facilities shall be removed and earth disturbance areas graded and stabilized with permanent soil erosion control measures pursuant to standards and specification prescribed in the DCM Volume II and the Engineering Criteria Manual (ECM) appendix I.
- All persons engaged with earth disturbance shall implement and maintain acceptable soil erosion and sediment control measures including BMP's in conformance with the erosion control technical standards of the Drainage Criteria Manual (DCM) Volume II and in accordance with the Stormwater Management Plan (SWMP).
- All temporary erosion control facilities including BMP's and all permanent facilities intended to control erosion of any earth disturbance operations shall be installed as defined in the approved plans, the SWMP and the DCM Volume II and maintained throughout the duration of the earth disturbance operation.
- Any earth disturbance shall be conducted in such a manner so as to effectively reduce 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.
- Any temporary or permanent facility designed and constructed for the conveyance of stormwater around, through, or from the earth disturbance area shall be designed to limit the discharge to a non-erosive velocity.
- Concrete wash water shall be contained and disposed of in accordance with the SWMP. No wash water shall be discharged to or allowed to runoff to State Waters, including any surface or subsurface storm drainage system or facilities.
- Erosion control blanketing is to be used on slopes steeper than 3:1.
- Building, construction, excavation, or other 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. BMP's may be required by El Paso County Engineering if deemed necessary, based on specific conditions and circumstances.
- Vehicle tracking of soils and construction debris off-site shall be minimized. Materials tracked offsite shall be cleaned up and properly disposed of immediately.
- 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.
- The owner, site developer, contractor, and/or their authorized agents shall be responsible for the removal of all construction debris, dirt, trash, rock, sediment, and sand that may accumulate in the storm sewer or other drainage conveyance 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 chemicals are to be used by the contractor, which have the potential to be released in stormwater unless permission for the use of a specific chemical is granted in writing by the ECM Administrator. In granting the use of such chemicals, special conditions and monitoring may be required.
- Bulk storage structures for petroleum products and other chemicals shall have adequate protection so as to contain all spills and prevent any spilled material from entering State Waters, including any surface or subsurface storm drainage system or facilities.
- No person shall cause the impediment of stormwater flow in the flow line of the curb and gutter or in the ditchline.
- Individuals 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 included in the DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the Contractor prior to the construction (NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and laws, rules, or regulations of other Federal, State, or County Agencies, the more restrictive laws, rules, or regulations shall apply.
- Individuals 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 included in the DCM Volume II and the ECM Appendix I. All appropriate permits must be obtained by the Contractor prior to the construction (NPDES, Floodplain, 404, fugitive dust, etc.). In the event of conflicts between these requirements and laws, rules, or regulations of other Federal, State, or County Agencies, the more restrictive laws, rules, or regulations shall apply.
- All construction traffic must enter/exit the site at approved construction access points.
- Prior to actual construction the permittee shall verify the location of existing utilities.
- A water source shall be available on site during earthwork operations and utilized as required to minimize dust from earthwork equipment and wind.
- The soils report for this site entitled *Subsurface Soil Investigation The Glen at Widefield, Filing #6, Widefield, Colorado* has been prepared by Soil Testing and Engineering, Inc. and shall be considered a part of these plans.
- At least ten days prior to the anticipated start of construction, for projects that will disturb 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, Colorado 80246-1530
Attn: Permits Unit

EROSION CONTROL INSPECTION AND MAINTENANCE

A THOROUGH INSPECTION OF THE EROSION CONTROL PLAN/STORMWATER MANAGEMENT SYSTEM SHALL BE PERFORMED EVERY 14 DAYS AS WELL AS AFTER ANY RAIN OR SNOWMELT EVENT THAT CAUSES SURFACE EROSION:
 * WHEN STRAW BALE BARRIERS HAVE SILTED UP TO HALF THEIR HEIGHT, THE SILT SHALL BE REMOVED, FINAL GRADE REESTABLISHED AND SLOPES RESEDED IF NECESSARY. ANY STRAW BALES THAT HAVE SHIFTED OR DECAYED SHALL BE REPAIRED OR REPLACED.
 * ANY ACCUMULATED TRASH OR DEBRIS SHALL BE REMOVED FROM OUTLETS. AN INSPECTION AND MAINTENANCE LOG SHALL BE KEPT.



LEGEND

	SILT FENCE
	GRADING LIMITS
	EROSION CONTROL BALES
	VEHICLE TRACKING
	INLET PROTECTION
	ASPHALT PAVING
	CURLEX HEAVY DUTY EROSION CONTROL BLANKET BY AMERICAN EXCELSIOR OR EQUAL

SEE DETAILS SHEET 17-19

CONTRACTOR SHALL PLACE STAGING AND WASHOUT AREAS IN APPROPRIATE LOCATIONS

STATEMENTS

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 PLAN.

Andrew W. McCord, P.E. 250671057
 FOR AND ON BEHALF OF KIOWA ENGINEERING CORPORATION
 DATE: 12/9/10

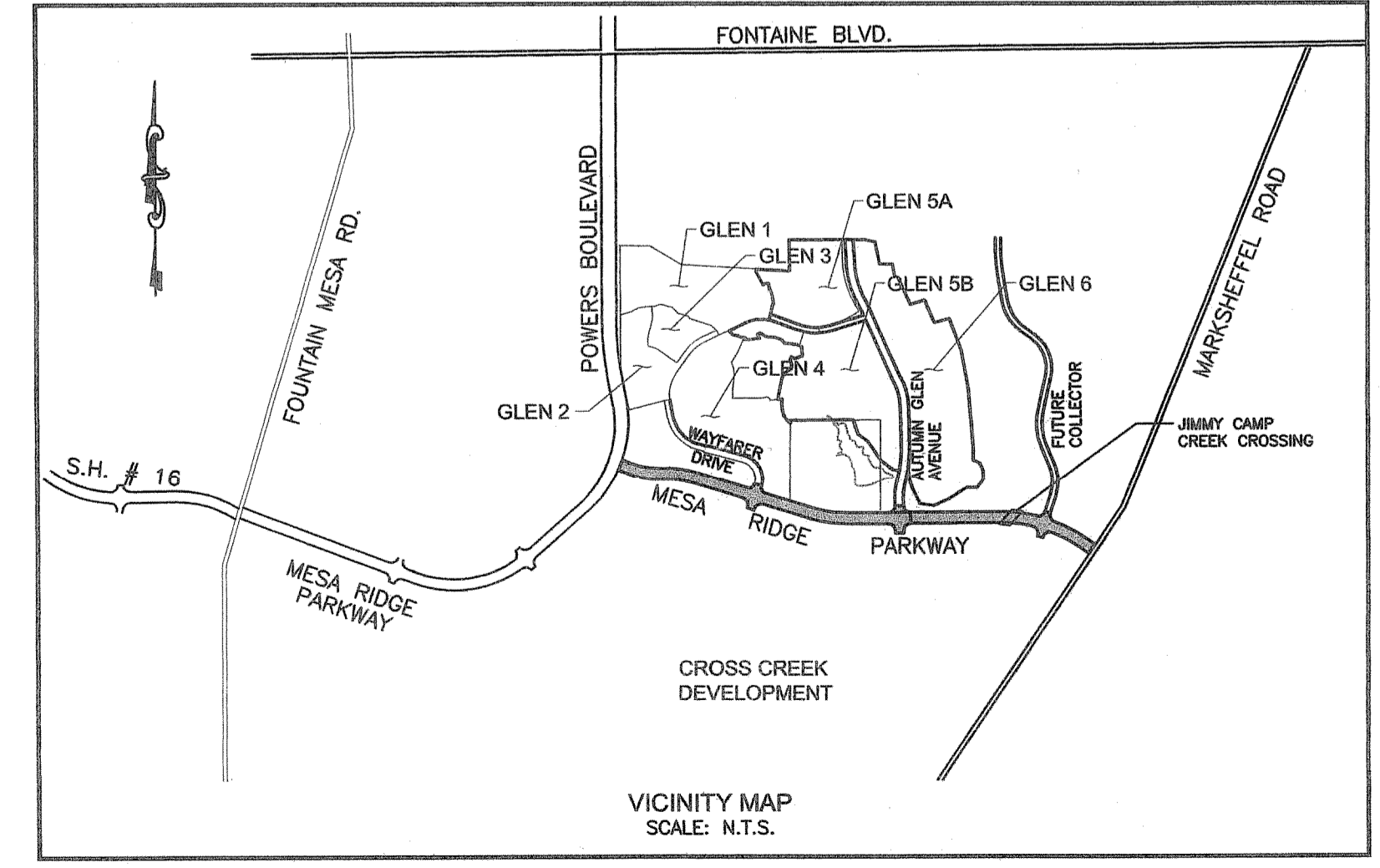
OWNER'S STATEMENT
 I, THE OWNER/DEVELOPER, WILL COMPLY WITH THE REQUIREMENTS OF THE GRADING AND EROSION CONTROL PLAN.

BY: [Signature]
 TITLE: [Signature]
 ADDRESS: New Generation Homes, 111 South Tejon St., #222, Colorado Springs, Colorado 80903

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 ENGINEERING CRITERIA MANUAL, LAND DEVELOPMENT CODE, AND DRAINAGE CRITERIA MANUAL, VOLUMES 1 & 2, AS AMENDED.

Andre Brackin, P.E.
 COUNTY ENGINEER/ECM ADMINISTRATOR
 DATE: 1-18-11



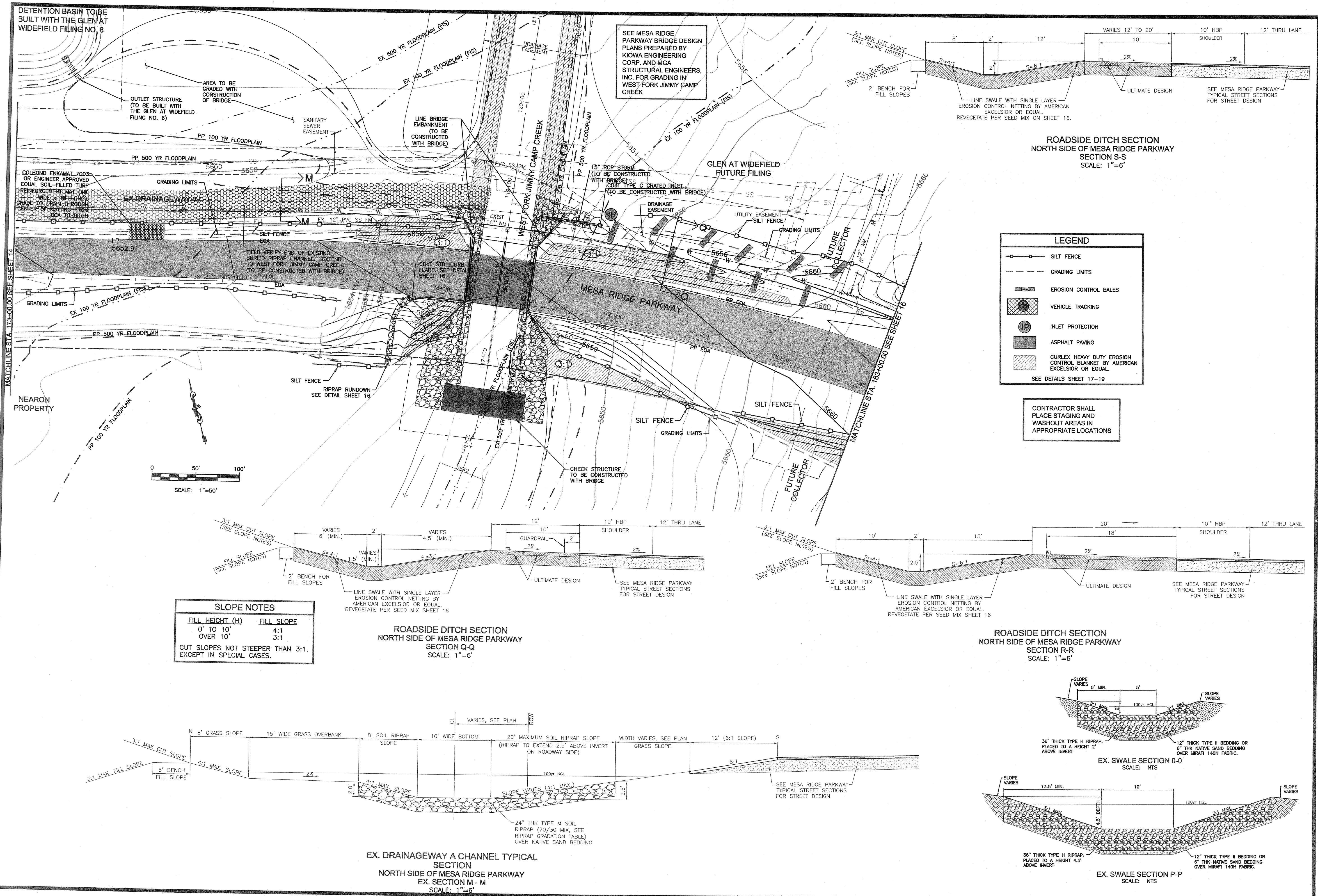
PROJECT SPECIFIC GRADING AND EROSION CONTROL NOTES

- All earthwork required of this construction shall be completed in accordance with all applicable sections of the Project Specifications and Soil Investigation Report (Geotechnical Report).
- Rubbish including timber, concrete rubble, trees, brush, and asphalt shall not be backfilled adjacent to any of the structures or be in the placement of any unconsolidated fill. The Contractor shall be responsible for the removal and hauling of such materials to a suitable spoil area. Costs associated with the removal of such materials shall be paid for as documented in the Project Specifications.
- Excess excavation shall become the property of the Contractor and shall be disposed of at the Contractor's expense. The cost of haulage and spoiling of excess excavated materials shall be paid for as documented in the Project Specifications.
- Water shall be used as a dust palliative as required and shall be included in the cost for earthwork item(s). No separate payment will be made for dust control associated with the site construction.
- The road grades shall be cleared of vegetation and the topsoil stockpiled for later use.
- All grading shall be in conformance with the Geotechnical Report for the area.
- Placement of fill for roadway embankments shall be completed in conformance with the Geotechnical Report.
- Grading contours shown on this plan are to final grade.
- Compaction under filled areas, including roadway and detention basin embankments, shall be 95 percent of the maximum Standard Proctor Density (ASTM D698) at two (2) percent of optimum moisture content.
- No rubble or debris shall be placed in the backfill under any of the proposed buildings, streets, curb & gutter, sidewalk and drainage structures or within five (5) feet of a building footprint. Properly graded rubble may be used in some locations as specified and verified by the Geotechnical Engineer.
- Contractor is responsible for reviewing the site prior to bidding to verify site conditions.
- Contractor is responsible for providing erosion control measures as approved by the El Paso County DSD Engineering Division and as may be required by the El Paso County Inspector.
- All slopes equal to or greater than 3:1 shall require erosion control blanket, single netted fabric, American Excelsior or equal.
- The Developer is responsible for maintaining erosion control measures until a mature stage of vegetation is established.
- All soils used for fill must be approved by a representative of the Geotechnical Engineer.
- All natural ground to be excavated, wetland, and riparian shall be protected prior to placing fill. The Contractor is solely responsible for the design, maintenance and operation of any required dewatering system. The Contractor shall perform such independent investigation as he deems necessary to satisfy himself as to the subsurface groundwater conditions and unstable soil conditions to be encountered throughout the construction. Contractor shall coordinate the dewatering system with El Paso County when associated with public facilities.
- No fill shall be placed, spread or rolled while it is frozen, thawing or during unfavorable weather conditions. When the work is interrupted by heavy rain, fill operations shall not be resumed until a representative of the Geotechnical Engineer indicates that the moisture content and density of the previously placed fill are as specified. Fill surfaces may be scarified and recompact after rainfall if necessary, to obtain proper moisture density relation.
- Additional erosion control structures and/or grading may be required at the time of construction.
- Sediment removal for erosion control facilities shall be performed continuously for proper function.
- Base mapping was provided by Pinnacle Land Surveying. The date of the survey was: April 17, 2001
- Proposed Construction Schedule:
 Begin Construction: May 2010
 End Construction: April 2011
 Total Site Area = 26.0 Acres
- Area to be disturbed = 8.0 Acres (est.)
 Existing 100-year runoff coefficient = 0.40
 Proposed 100-year runoff coefficient = 0.80
 Existing Hydrological Soil Groups: B & C
 (B-Fort Collins loam; B-Nelson-Tassel Fine Sandy Loams; C-Nunn clay loam)
- Site is currently undeveloped and covered with native grasses on moderate to steep slopes (1%-6%). Site is located in the West Fork Jimmy Camp Creek Drainage Basin.

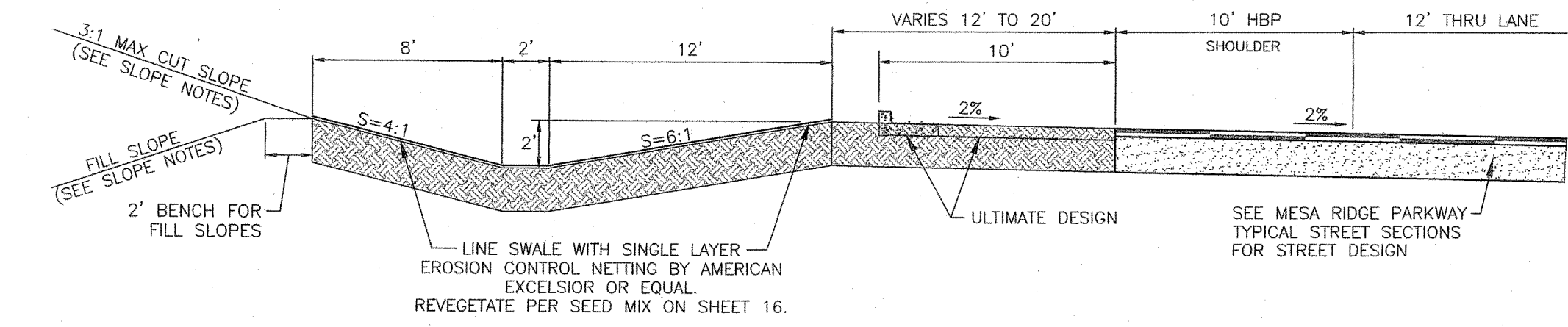
Kiowa
 Engineering Corporation
 1604 South 21st Street
 Colorado Springs, Colorado 80904
 (719) 530-7342

**MESA RIDGE PARKWAY
 ROADWAY DESIGN
 GRADING AND EROSION CONTROL PLAN**
 El Paso County, Colorado

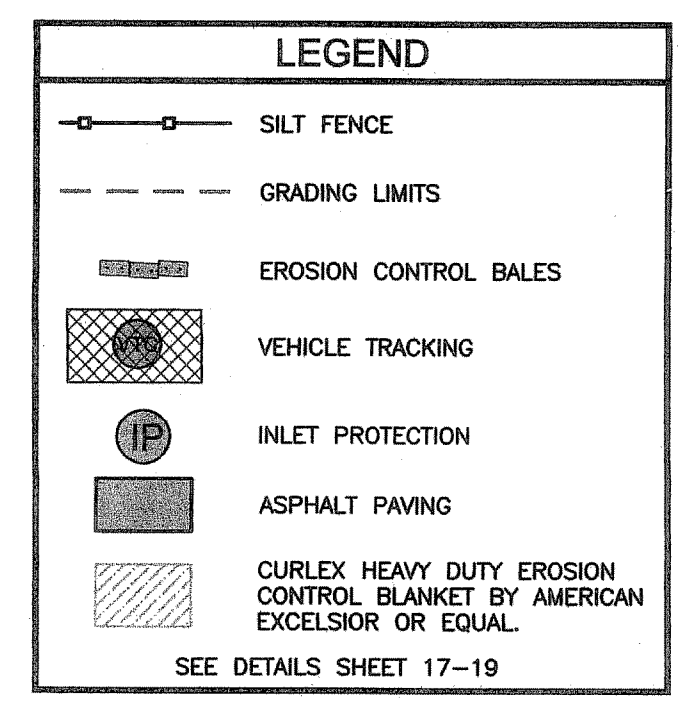
Project No.: 08082
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14
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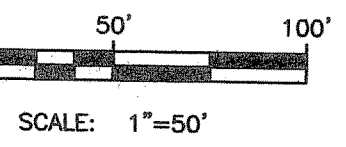
SEE MESA RIDGE PARKWAY BRIDGE DESIGN PLANS PREPARED BY KIOWA ENGINEERING CORP. AND MGA STRUCTURAL ENGINEERS, INC. FOR GRADING IN WEST FORK JIMMY CAMP CREEK



ROADSIDE DITCH SECTION
NORTH SIDE OF MESA RIDGE PARKWAY
SECTION S-S
SCALE: 1"=6'

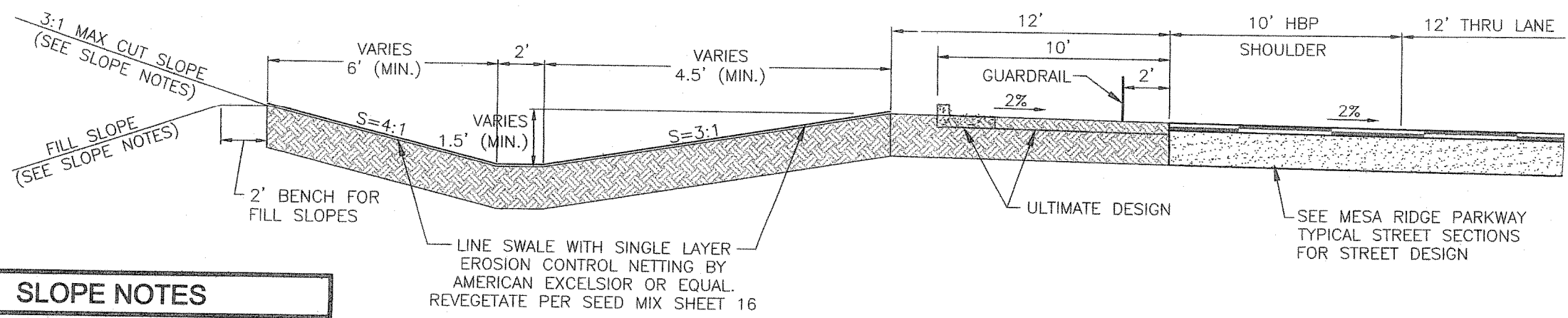


CONTRACTOR SHALL PLACE STAGING AND WASHOUT AREAS IN APPROPRIATE LOCATIONS

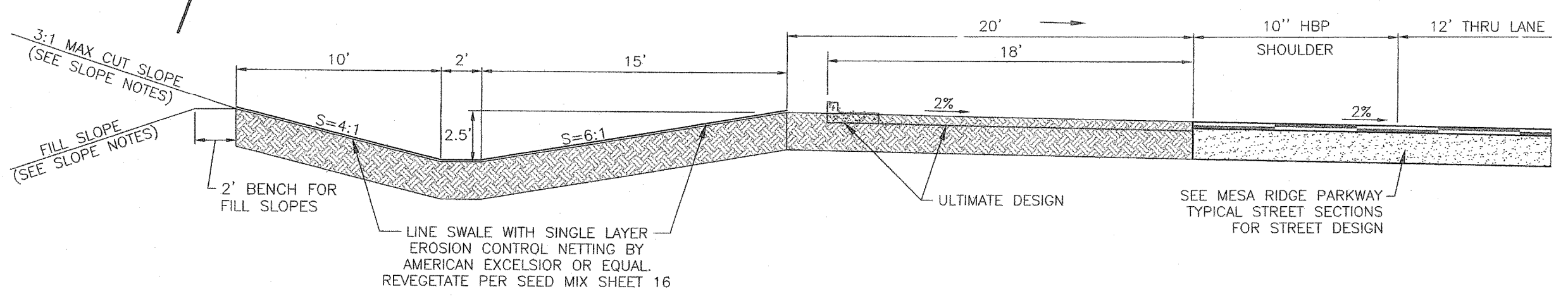


SCALE: 1"=50'

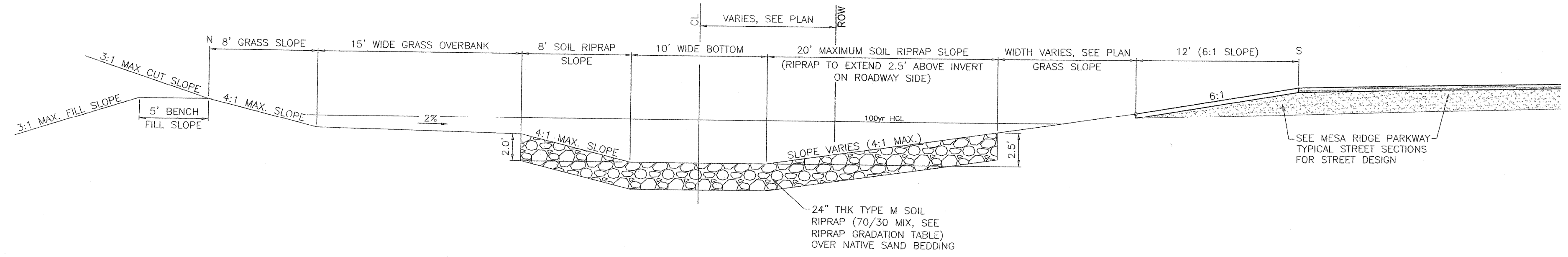
SLOPE NOTES	
FILL HEIGHT (H)	FILL SLOPE
0' TO 10'	4:1
OVER 10'	3:1
CUT SLOPES NOT STEEPER THAN 3:1, EXCEPT IN SPECIAL CASES.	



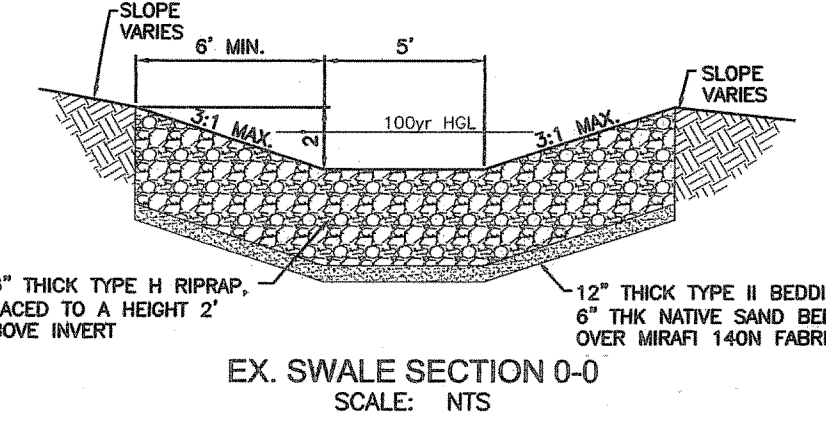
ROADSIDE DITCH SECTION
NORTH SIDE OF MESA RIDGE PARKWAY
SECTION Q-Q
SCALE: 1"=6'



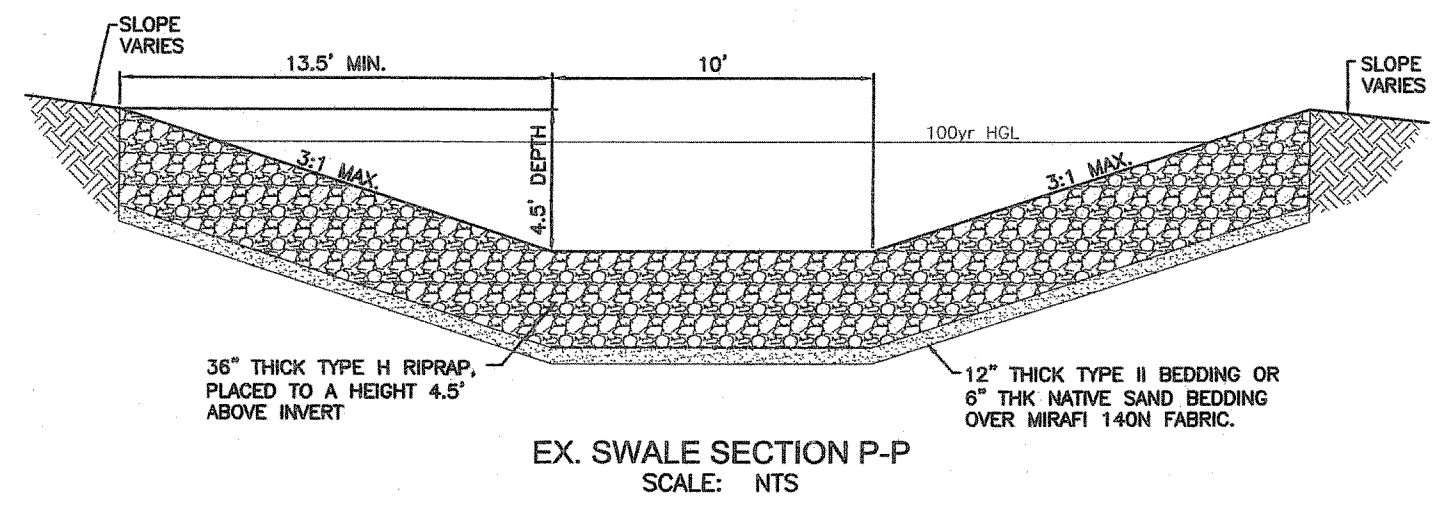
ROADSIDE DITCH SECTION
NORTH SIDE OF MESA RIDGE PARKWAY
SECTION R-R
SCALE: 1"=6'



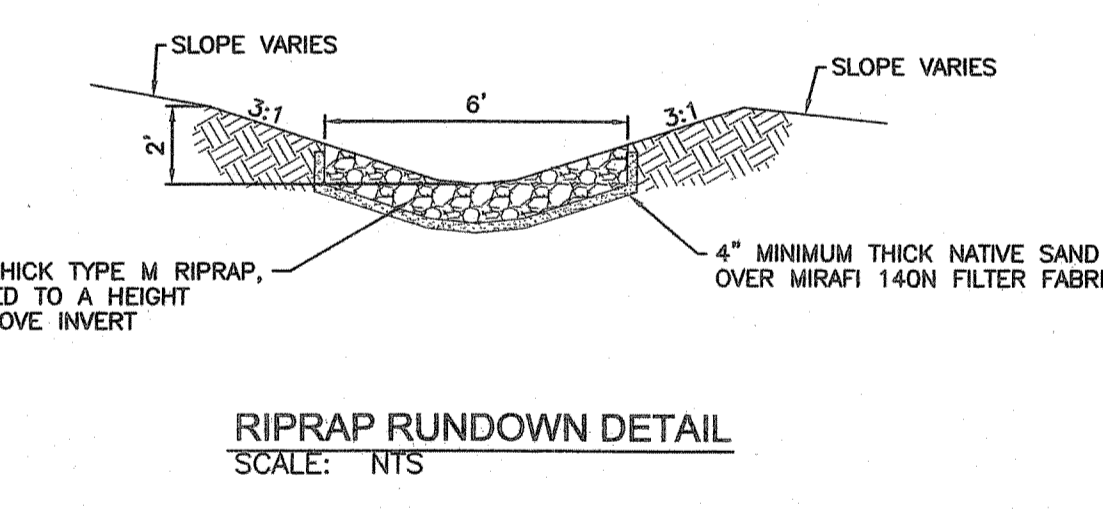
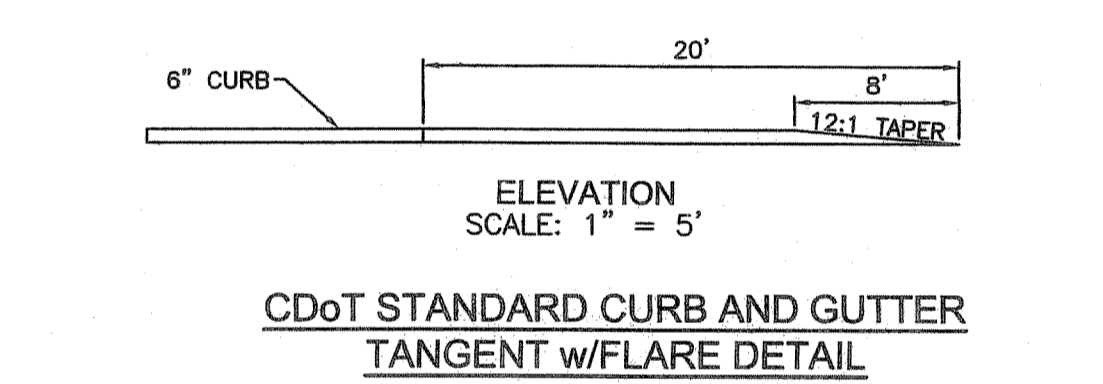
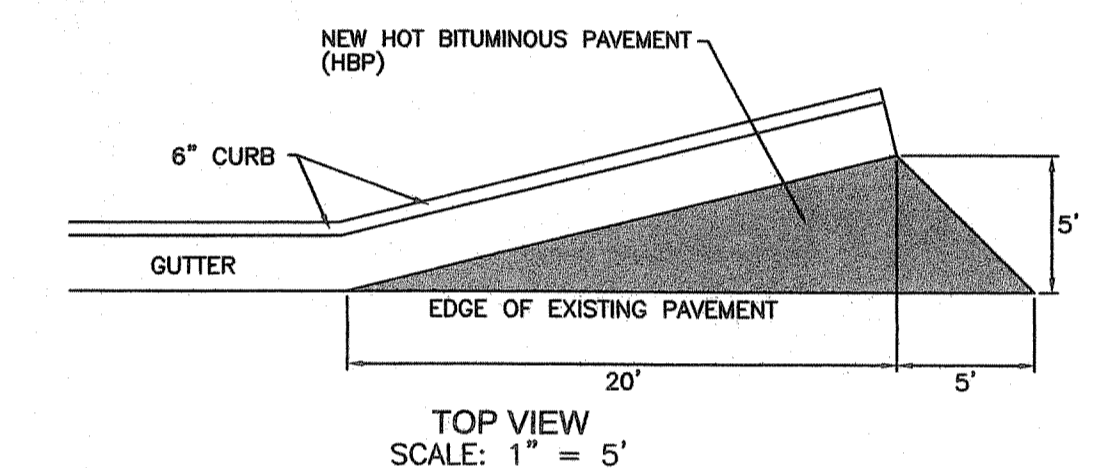
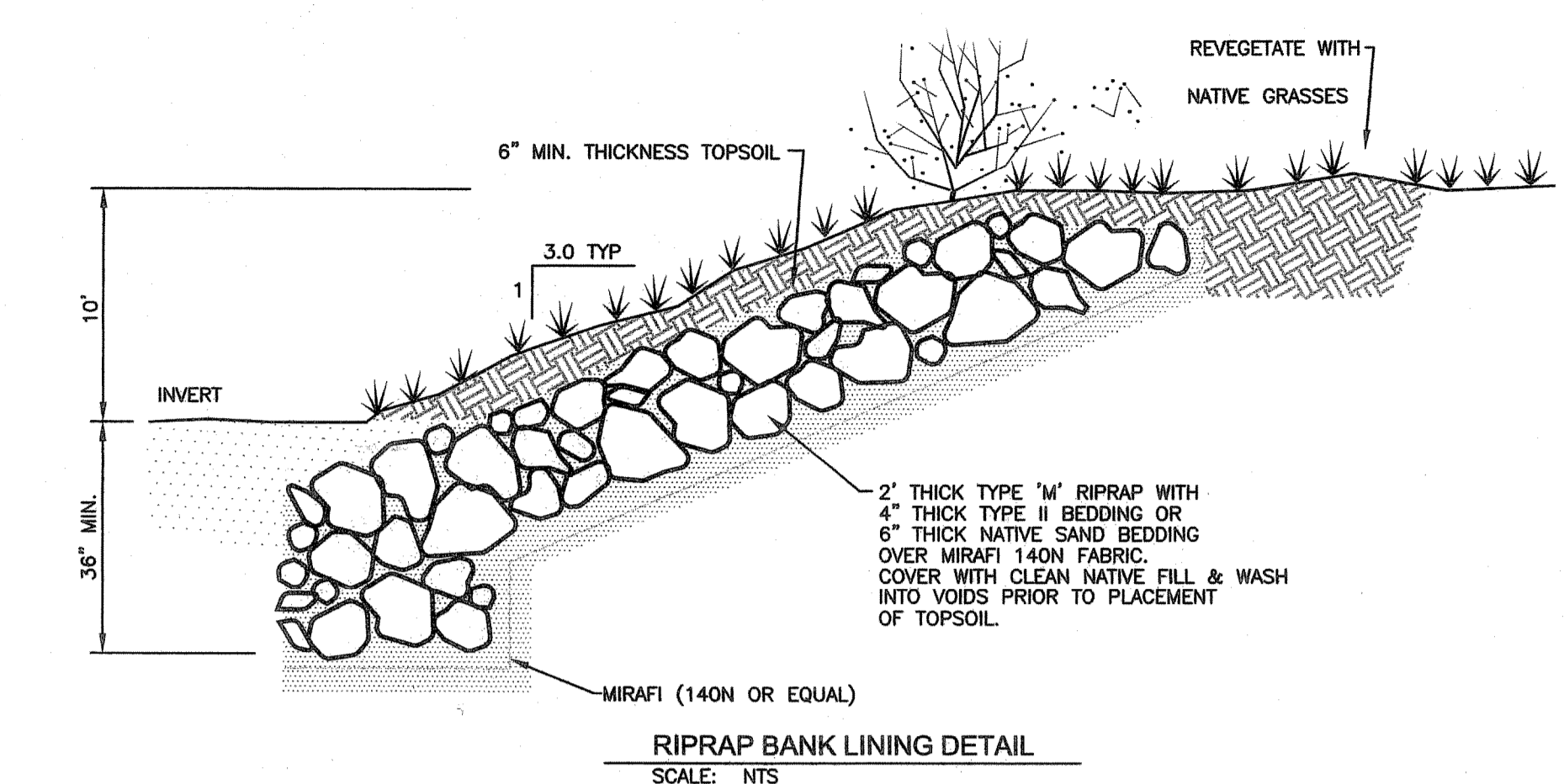
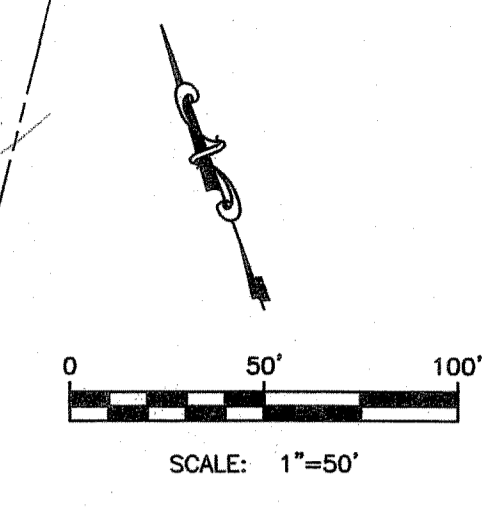
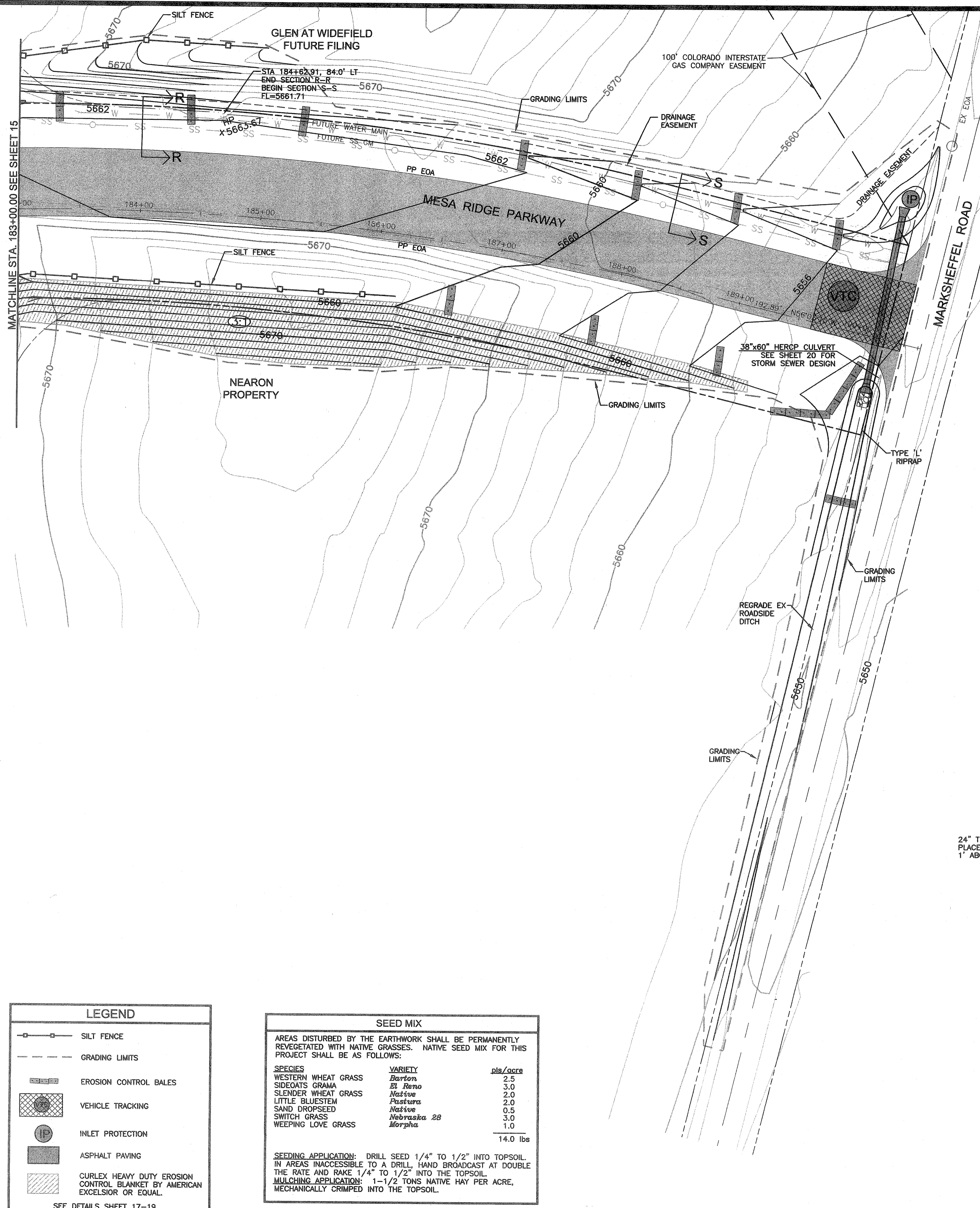
EX. DRAINAGEWAY A CHANNEL TYPICAL SECTION
NORTH SIDE OF MESA RIDGE PARKWAY
EX. SECTION M - M
SCALE: 1"=6'



EX. SWALE SECTION 0-0
SCALE: NTS



EX. SWALE SECTION P-P
SCALE: NTS



CLASSIFICATION AND GRADATION OF ORDINARY RIPRAP

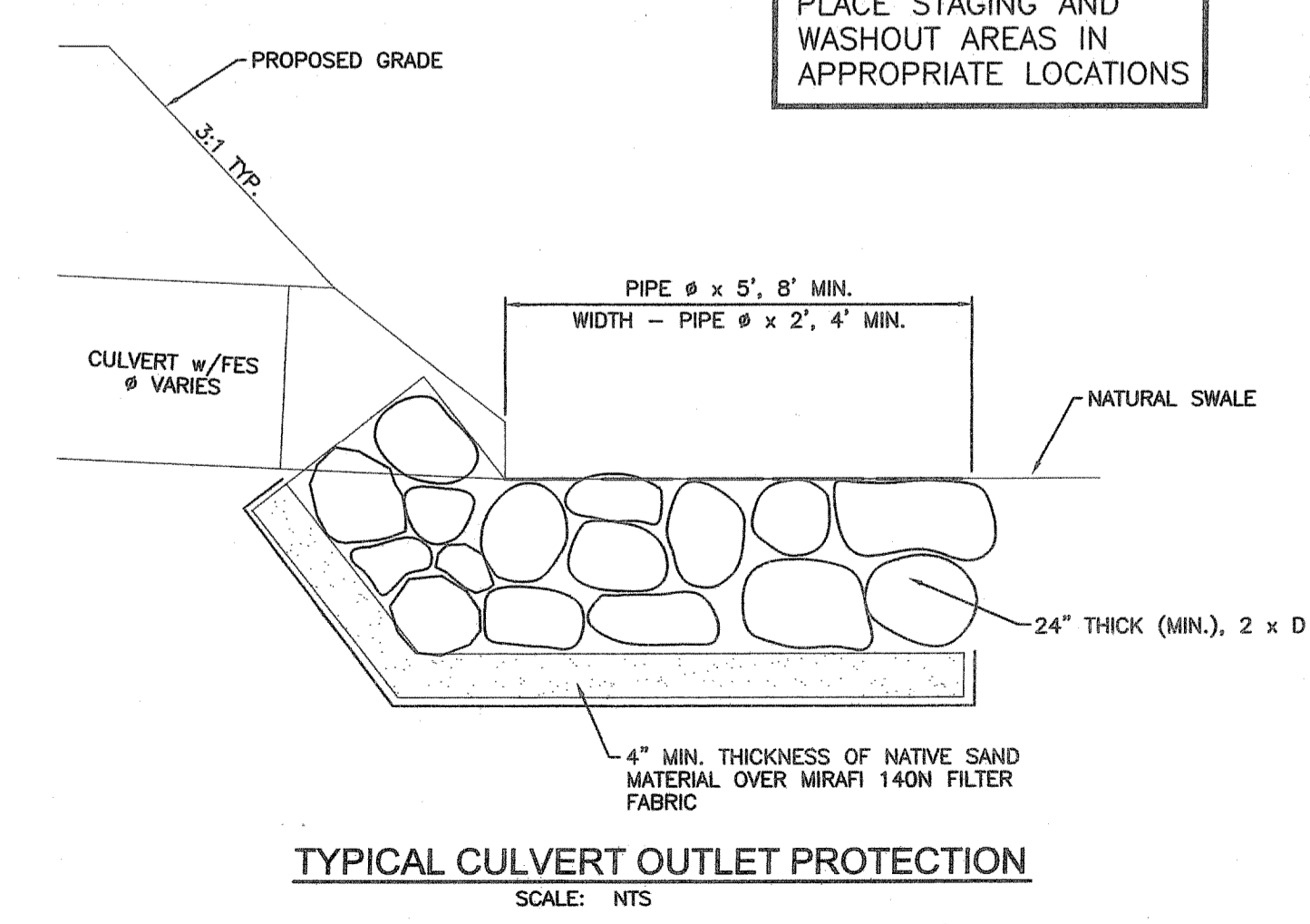
RIPRAP DESIGNATION	% SMALLER THAN GIVEN SIZE BY WEIGHT	INTERMEDIATE ROCK DIMENSION (INCHES)	d ₅₀ * (INCHES)
TYPE VL	70-100	12	6**
	50-70	9	
	35-50	6	
	2-10	2	
TYPE L	70-100	15	9**
	50-70	12	
	35-50	9	
	2-10	3	
TYPE M	70-100	21	12**
	50-70	18	
	35-50	12	
	2-10	4	
TYPE H	100	30	18
	50-70	24	
	35-50	18	
	2-10	6	
TYPE VH	100	42	24
	50-70	33	
	35-50	24	
	2-10	9	

* d₅₀ = MEAN PARTICLE SIZE (INTERMEDIATE DIMENSION) BY WEIGHT
 ** MIX VL, L AND M RIPRAP WITH 30% (BY VOLUME) TOPSOIL AND BURY IT WITH 6+ INCHES OF TOPSOIL, ALL VIBRATION COMPACTED AND REVEGETATE.
 (TABLE MD-7: CLASSIFICATION AND GRADATION OF ORDINARY RIPRAP, UDFCD, DRAINAGE CRITERIA MANUAL, VOL. 1)

OPINION OF COST FOR EROSION CONTROL REQUIREMENTS

ITEM	QUANTITY	UNIT	UNIT COST	AMOUNT
VEHICLE TRACKING CONTROL	2	EA	\$1,000.00	\$2,000.00
SILT FENCE	4,426	LF	\$1.50	\$6,639.00
INLET PROTECTION	3	EA	\$150.00	\$450.00
STRAW BALE BARRIER	474	LF	\$1.75	\$711.00
SEEDING AND MULCH	4.7	AC	\$900.00	\$4,230.00
TEMPORARY DIVERSION DIKE	1	EA	\$1,000.00	\$1,000.00
RIPRAP DIVERSION DIKE	58.7	CY	\$79.00	\$4,916.75
MAINTENANCE (25% OF EROSION CONTROL)	1	LS	\$4,916.75	\$4,879.25
TOTAL				\$24,583.75

CONTRACTOR SHALL PLACE STAGING AND WASHOUT AREAS IN APPROPRIATE LOCATIONS



LEGEND

- SILT FENCE
- GRADING LIMITS
- EROSION CONTROL BALES
- VEHICLE TRACKING
- INLET PROTECTION
- ASPHALT PAVING
- CURLLEX HEAVY DUTY EROSION CONTROL BLANKET BY AMERICAN EXCELSIOR OR EQUAL

SEE DETAILS SHEET 17-19

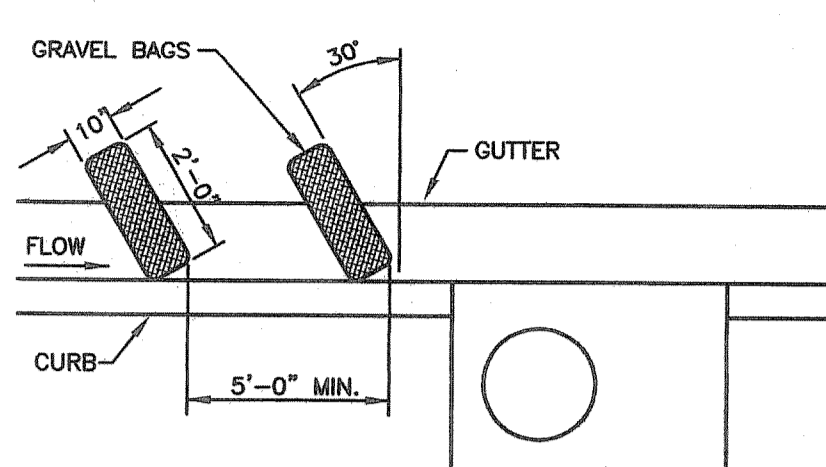
SEED MIX

AREAS DISTURBED BY THE EARTHWORK SHALL BE PERMANENTLY REVEGETATED WITH NATIVE GRASSES. NATIVE SEED MIX FOR THIS PROJECT SHALL BE AS FOLLOWS:

SPECIES	VARIETY	pls/acre
WESTERN WHEAT GRASS	Barton	2.5
SIDEWAYS GRAMA	El Reno	3.0
SLENDER WHEAT GRASS	Native	2.0
LITTLE BLUESTEM	Pastura	2.0
SAND DROPSEED	Native	0.5
SWITCH GRASS	Nebraska 28	3.0
WEeping LOVE GRASS	Korymba	1.0
		14.0 lbs

SEEDING APPLICATION: DRILL SEED 1/4" TO 1/2" INTO TOPSOIL IN AREAS INACCESSIBLE TO A DRILL, HAND BROADCAST AT DOUBLE THE RATE AND RAKE 1/4" TO 1/2" INTO THE TOPSOIL.
 MULCHING APPLICATION: 1-1/2 TONS NATIVE HAY PER ACRE, MECHANICALLY CRIMPED INTO THE TOPSOIL.

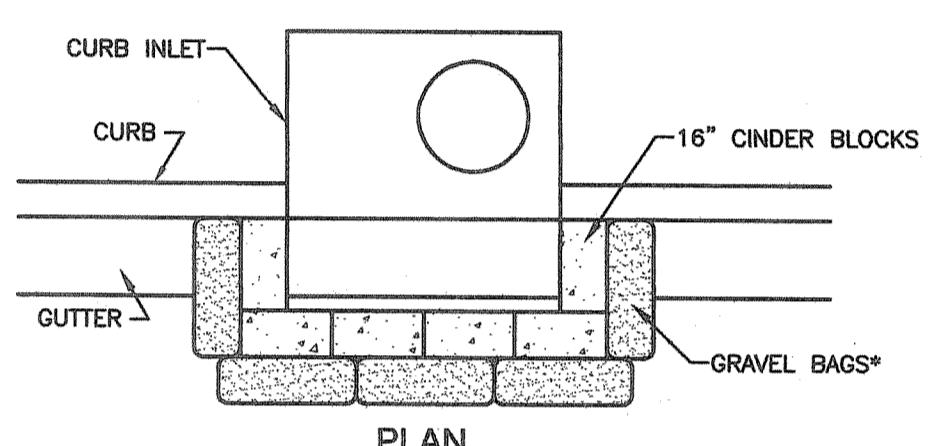
NOTE: DETAILS SHOWN MAY NOT BE REQUIRED FOR THIS PROJECT. REFER TO GRADING AND EROSION CONTROL PLAN.



CURB SOCK INLET PROTECTION

NTS

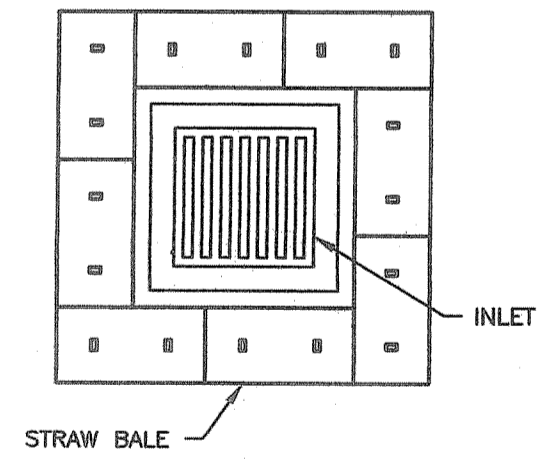
- INSTALLATION REQUIREMENTS**
1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.
 2. BAGS ARE TO BE MADE OF 1/4" WIRE MESH (USED WITH GRAVEL ONLY) OR GEOTEXTILE.
 3. WASHED SAND OR GRAVEL 3/4 INCH TO 4 INCHES IN DIAMETER IS PLACED INSIDE THE SOCK.
 4. PLACEMENT OF THE SOCK IS TO BE 30 DEGREES FROM PERPENDICULAR IN THE OPPOSITE DIRECTION OF FLOW.
 5. AT LEAST 2 CURB SOCKS IN SERIES IS REQUIRED.
- MAINTENANCE REQUIREMENTS**
1. CONTRACTOR SHALL INSPECT INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
 2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED OR REPLACED.
 3. SEDIMENT SHALL BE REMOVED WHEN GUTTER WIDTH IS FILLED.
 4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.



BLOCK AND GRAVEL BAG INLET PROTECTION

NTS

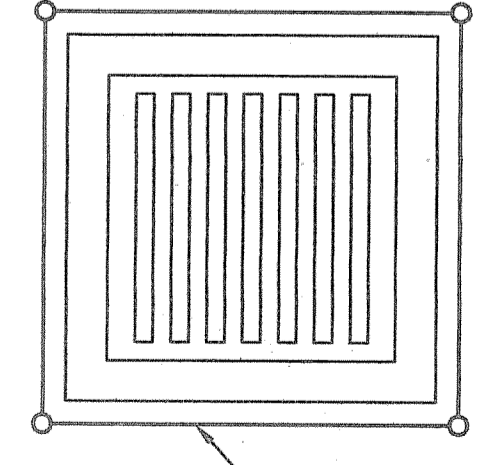
- INSTALLATION REQUIREMENTS**
1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.
 2. CONCRETE BLOCKS ARE TO BE LAID AROUND THE INLET IN A SINGLE ROW ON THEIR SIDES, ABUTTING ONE ANOTHER WITH THE OPEN ENDS OF THE BLOCK FACING OUTWARD.
 3. GRAVEL BAGS ARE TO BE PLACED AROUND THE CONCRETE BLOCKS CLOSELY ABUTTING ONE ANOTHER SO THERE ARE NO GAPS.
 4. GRAVEL BAGS ARE TO CONTAIN WASHED SAND OR GRAVEL APPROXIMATELY 3/4" IN DIAMETER.
 5. BAGS ARE TO BE MADE OF 1/4" WIRE MESH (USED WITH GRAVEL ONLY) OR GEOTEXTILE.
- MAINTENANCE REQUIREMENTS**
1. CONTRACTOR SHALL INSPECT INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
 2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED OR REPLACED.
 3. SEDIMENT SHALL BE REMOVED WHEN SEDIMENT HAS ACCUMULATED TO APPROXIMATELY 1/2 THE DESIGN DEPTH OF THE TRAP.
 4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.
- NOTE:** AN ALTERNATE 3/4" TO 1" GRAVEL FILTER OVER A WIRE SCREEN MAY BE USED IN PLACE OF GRAVEL BAGS. THE WIRE MESH SHALL EXTEND ABOVE THE TOP OF THE CONCRETE BLOCKS AND THE GRAVEL PLACED OVER THE WIRE SCREEN TO THE TOP OF THE CONCRETE BLOCKS.



STRAW BALE INLET PROTECTION

NTS

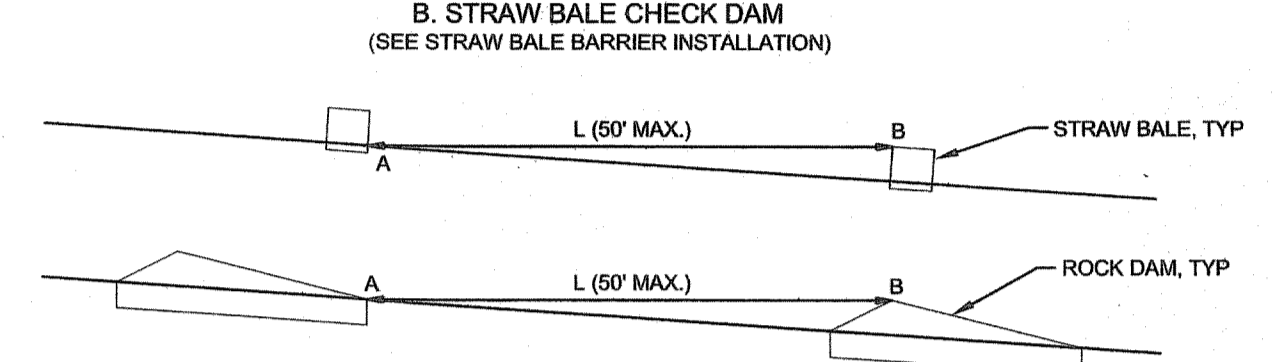
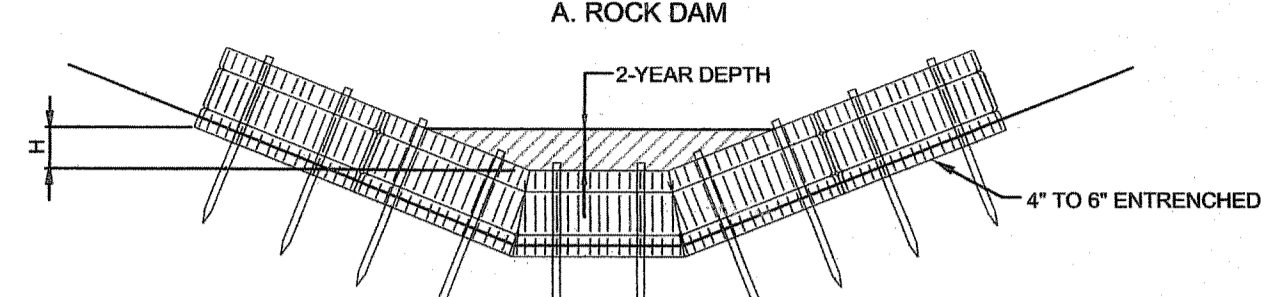
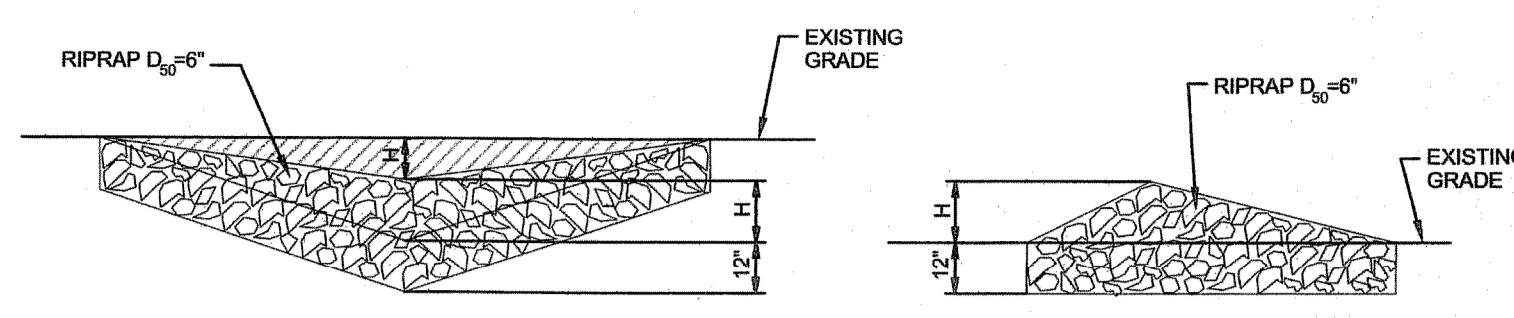
- INSTALLATION REQUIREMENTS**
1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.
 2. BALES ARE TO BE PLACED IN A SINGLE ROW AROUND THE INLET WITH THE END OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.
 3. SEE STRAW BALE BARRIER DETAILS AND NOTES FOR INSTALLATION REQUIREMENTS.
- MAINTENANCE REQUIREMENTS**
1. CONTRACTOR SHALL INSPECT STRAW BALE INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
 2. DAMAGED OR INEFFECTIVE INLET PROTECTION SHALL PROMPTLY BE REPAIRED OR REPLACING BALES IF NECESSARY, AND UNENTRENCHED BALES NEED TO BE REPAIRED WITH COMPACTED BACKFILL MATERIAL.
 3. SEDIMENT SHALL BE REMOVED FROM BEHIND STRAW BALES WHEN IT ACCUMULATES TO APPROXIMATELY 1/3 THE HEIGHT OF THE BARRIER.
 4. INLET PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED WITHIN THE DRAINAGE AREA AS APPROVED BY THE CITY.



FILTER FABRIC INLET PROTECTION

NTS

- INSTALLATION REQUIREMENTS**
1. INLET PROTECTION SHALL BE INSTALLED IMMEDIATELY AFTER CONSTRUCTION OF INLET.
 2. SEE SILT FENCE DETAILS AND NOTES FOR INSTALLATION REQUIREMENTS.
 3. POSTS ARE TO BE PLACED AT EACH CORNER OF THE INLET AND AROUND THE EDGES AT A MAXIMUM SPACING OF 3 FEET.
- MAINTENANCE REQUIREMENTS**
1. CONTRACTOR SHALL INSPECT STRAW BALE INLET PROTECTION IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
 2. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE INLET PROTECTION SHALL BE PROMPTLY REPAIRED OR REPLACED.
 3. SEDIMENT SHALL BE REMOVED FROM BEHIND FILTER FABRIC WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.
 4. FILTER FABRIC PROTECTION SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED IN THE DRAINAGE AREA AS APPROVED BY THE CITY.

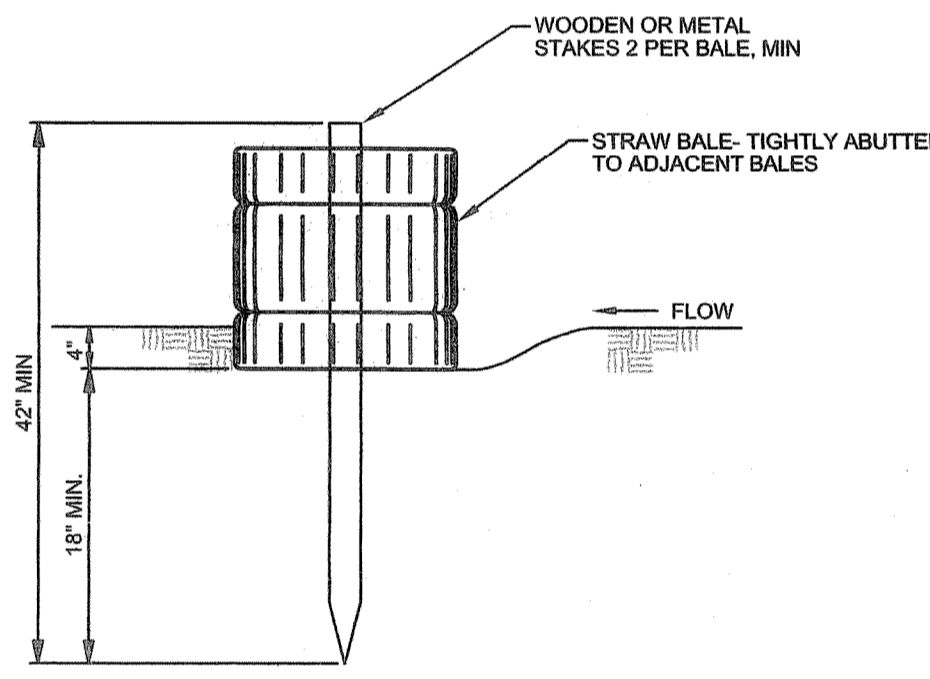


L= THE DISTANCE SUCH THAT POINTS A AND B ARE AT THE SAME ELEVATION.

CHECK DAM

NTS

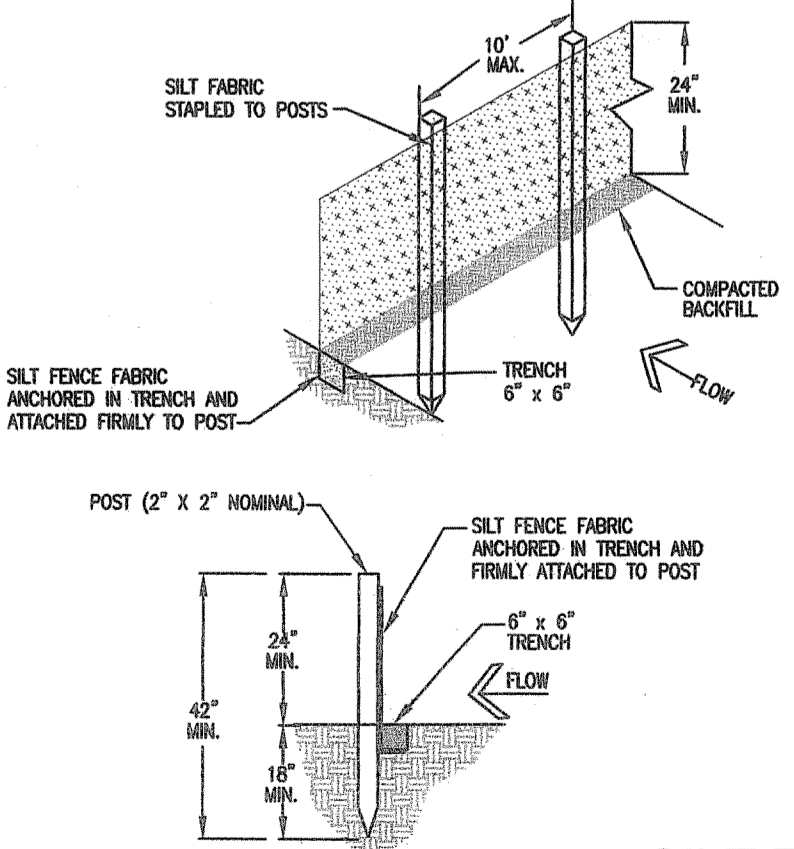
- INSTALLATION REQUIREMENTS**
1. STRAW BALES USED AS CHECK DAMS ARE TO MEET THE REQUIREMENTS STATED IN THE STRAW BALE BARRIER DETAILS AND NOTES.
 2. THE "H" DIMENSION SHALL BE SELECTED TO PROVIDE WEIR FLOW CONVEYANCE FOR 2-YEAR FLOW OR GREATER.
 3. STRAW BALE CHECKS TO BE INSTALLED AT 50-FOOT MAXIMUM INTERVALS ALONG TEMPORARY OR PERMANENT GRASSLINED SWALES.
- MAINTENANCE REQUIREMENTS**
1. REGULAR INSPECTIONS ARE TO BE MADE OF ALL CHECK DAMS, ESPECIALLY AFTER STORM EVENTS.
 2. REPLACE STONE AS NECESSARY TO MAINTAIN THE CORRECT HEIGHT OF THE DAM.
 3. ACCUMULATED SEDIMENT AND DEBRIS IS TO BE REMOVED FROM BEHIND THE DAMS AFTER EACH STORM OR WHEN HALF OF THE ORIGINAL HEIGHT OF THE DAM IS REACHED.
 4. CHECK DAMS ARE TO REMAIN IN PLACE AND OPERATIONAL UNTIL THE DRAINAGE AREA AND CHANNEL ARE PERMANENTLY STABILIZED.
 5. WHEN CHECK DAMS ARE REMOVED THE CHANNEL LINING OR VEGETATION IS TO BE RESTORED.



STRAW BALE BARRIER

NTS

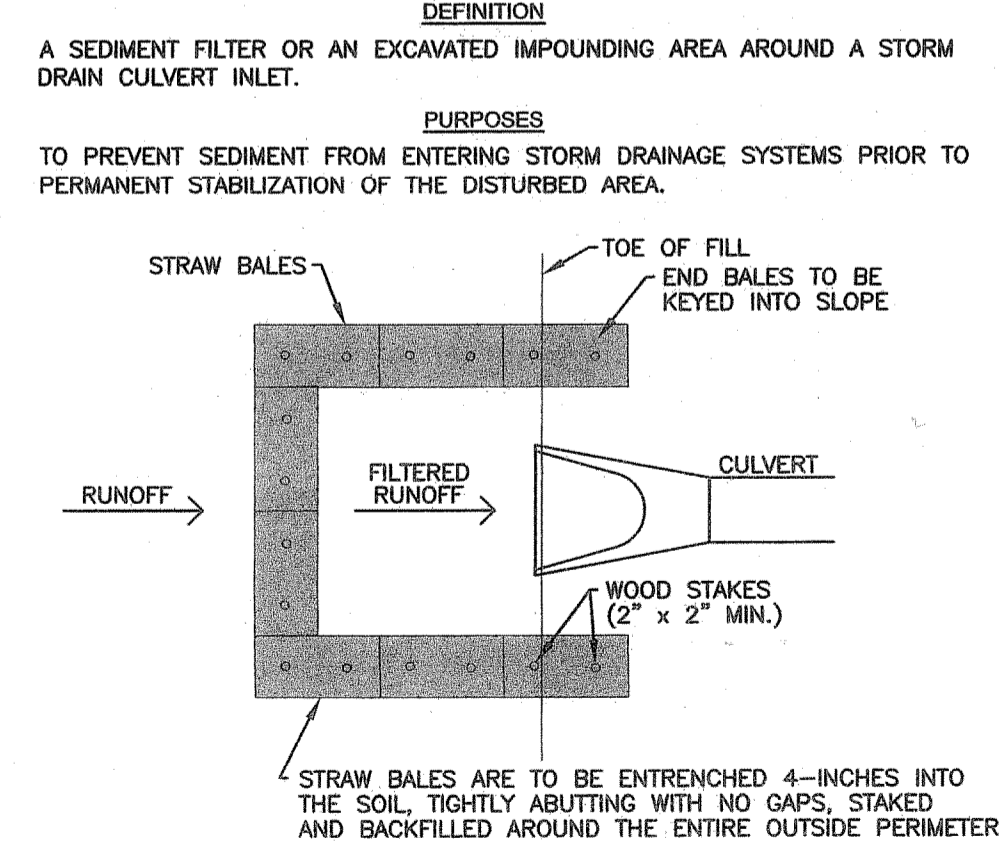
- INSTALLATION REQUIREMENTS**
1. STRAW BALE BARRIERS SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
 2. BALES SHALL CONSIST OF APPROXIMATELY 5 CUBIC FEET OF CERTIFIED WEED FREE HAY OR STRAW AND WEIGH NOT LESS THAN 35 POUNDS.
 3. BALES ARE TO BE PLACED IN A SINGLE ROW WITH THE END OF THE BALES TIGHTLY ABUTTING ONE ANOTHER.
 4. EACH BALE IS TO BE SECURELY ANCHORED WITH AT LEAST TWO STAKES AND THE FIRST STAKE IS TO BE DRIVEN TOWARD THE PREVIOUSLY LAID BALE TO FORCE THE BALES TOGETHER.
 5. STAKES ARE TO BE A MINIMUM OF 42 INCHES LONG. METAL STAKES SHALL BE STANDARD "T" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD STAKES SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
 6. BALES ARE TO BE BOUND WITH EITHER WIRE OR STRING AND ORIENTED SUCH THAT THE BINDINGS ARE AROUND THE SIDES AND NOT ALONG THE TOPS AND BOTTOMS OF THE BALE.
 7. GAPS BETWEEN BALES ARE TO BE CHINKED (FILLED BY WEDGING) WITH STRAW OR THE SAME MATERIAL OF THE BALE.
 8. END BALES ARE TO EXTEND UPSLOPE SO THE TRAPPED RUNOFF CANNOT FLOW AROUND THE ENDS OF THE BARRIER.
- MAINTENANCE REQUIREMENTS**
1. CONTRACTOR SHALL INSPECT STRAW BALE BARRIERS IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
 2. DAMAGED OR INEFFECTIVE BARRIERS SHALL PROMPTLY BE REPAIRED, REPLACING BALES IF NECESSARY, AND UNENTRENCHED BALES NEED TO BE REPAIRED WITH COMPACTED BACKFILL MATERIAL.
 3. SEDIMENT SHALL BE REMOVED FROM BEHIND STRAW BALE BARRIERS WHEN IT ACCUMULATES TO APPROXIMATELY 1/2 THE HEIGHT OF THE BARRIER.
 4. STRAW BALE BARRIERS SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.



SILT FENCE DETAIL

NTS

- INSTALLATION REQUIREMENTS**
1. SILT FENCES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES AT THE LOCATIONS SHOWN ON THE GRADING AND EROSION CONTROL PLAN (GEC).
 2. WHEN JOINTS ARE NECESSARY, SILT FENCE GEOTEXTILE SHALL BE SPLICED TOGETHER ONLY AT SUPPORT POST AND SECURELY SEALED.
 3. METAL POSTS SHALL BE "STUDDED TEE" OR "U" TYPE WITH MINIMUM WEIGHT OF 1.33 POUNDS PER LINEAR FOOT. WOOD POSTS SHALL HAVE A MINIMUM DIAMETER OR CROSS SECTION DIMENSION OF 2 INCHES.
 4. THE FILTER MATERIAL SHALL BE FASTENED SECURELY TO METAL OR WOOD POSTS USING WIRE TIES, OR TO WOOD POSTS WITH 3/4" LONG #9 HEAVY-DUTY STAPLES. THE SILT FENCE GEOTEXTILE SHALL NOT BE STAPLED TO EXISTING TREES.
 5. WHILE NOT REQUIRED, WIRE MESH FENCE MAY BE USED TO SUPPORT THE GEOTEXTILE. WIRE FENCE SHALL BE FASTENED SECURELY TO THE UPSLOPE SIDE OF THE POSTS USING HEAVY-DUTY WIRE STAPLES AT LEAST 3" LONG. THE WIRES OR HOG RINGS. THE WIRE SHALL EXTEND INTO THE TRENCH A MINIMUM OF 6" AND SHALL NOT EXTEND MORE THAN 3" ABOVE THE ORIGINAL GROUND SURFACE.
 6. ALONG THE TOE OF FILLS, INSTALL THE SILT FENCE ALONG A LEVEL CONTOUR AND PROVIDE AN AREA BEHIND THE FENCE FOR RUNOFF TO POND AND SEDIMENT TO SETTLE. A MINIMUM DISTANCE OF 5 FEET FROM THE TOE OF THE FILL IS RECOMMENDED.
 7. THE HEIGHT OF THE SILT FENCE FROM THE GROUND SURFACE SHALL BE MINIMUM OF 24 INCHES AND SHALL NOT EXCEED 36 INCHES; HIGHER FENCES MAY IMPOUND VOLUMES OF WATER SUFFICIENT TO CAUSE FAILURE OF THE STRUCTURE.
- MAINTENANCE REQUIREMENTS**
1. CONTRACTOR SHALL INSPECT SILT FENCES IMMEDIATELY AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL. DAMAGED, COLLAPSED, UNENTRENCHED OR INEFFECTIVE SILT FENCES SHALL BE PROMPTLY REPAIRED OR REPLACED.
 2. SEDIMENT SHALL BE REMOVED FROM BEHIND SILT FENCE WHEN IT ACCUMULATES TO HALF THE EXPOSED GEOTEXTILE HEIGHT.
 3. SILT FENCES SHALL BE REMOVED WHEN ADEQUATE VEGETATIVE COVER IS ATTAINED AS APPROVED BY THE CITY.



CULVERT INLET PROTECTION

NTS

- DEFINITION**
- A SEDIMENT FILTER OR AN EXCAVATED IMPOUNDING AREA AROUND A STORM DRAIN CULVERT INLET.
- PURPOSES**
- TO PREVENT SEDIMENT FROM ENTERING STORM DRAINAGE SYSTEMS PRIOR TO PERMANENT STABILIZATION OF THE DISTURBED AREA.

STRAW BALES ARE TO BE ENTRENCHED 4-INCHES INTO THE SOIL, TIGHTLY ABUTTING WITH NO GAPS, STAKED AND BACKFILLED AROUND THE ENTIRE OUTSIDE PERIMETER

Kiowa
Engineering Corporation
1604 South 21st Street
Colorado Springs, Colorado 80904
(719) 630-7342

MESA RIDGE PARKWAY
ROADWAY DESIGN
EROSION CONTROL DETAILS
El Paso County, Colorado

Project No.:	08082
Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
Check:	AWMc
Revisions:	

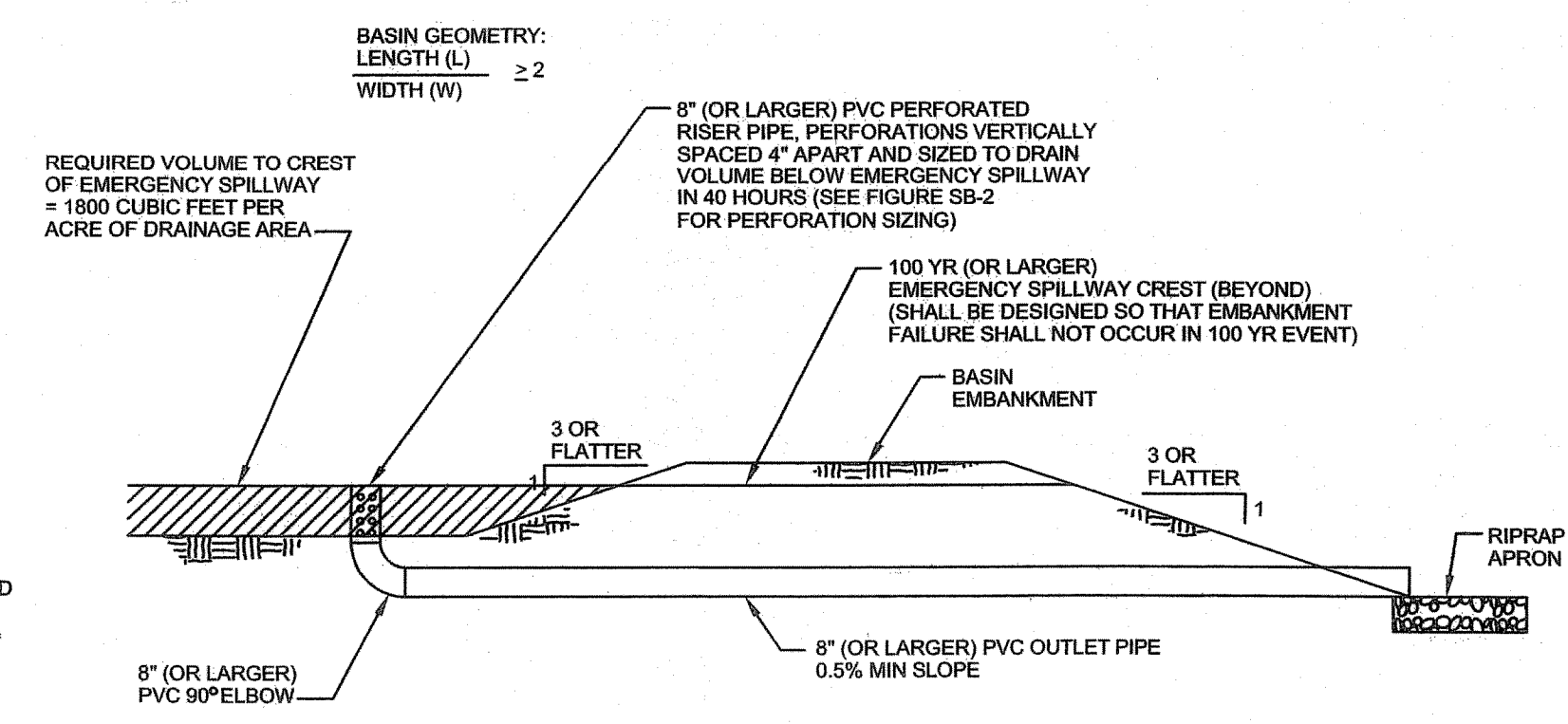
NOTE: DETAILS SHOWN MAY NOT BE REQUIRED FOR THIS PROJECT. REFER TO GRADING AND EROSION CONTROL PLAN.

INSTALLATION REQUIREMENTS

1. SEDIMENT BASINS SHALL BE INSTALLED BEFORE ANY CLEARING AND/OR GRADING IS UNDERTAKEN.
2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.
3. THE OUTLET OF THE BASIN SHALL BE DESIGNED TO DRAIN ITS VOLUME IN 40 HOURS.
4. THE OUTLET IS TO BE LOCATED AT THE FURTHEST DISTANCE FROM THE INLET OF THE BASIN. Baffles MAY BE NEEDED TO INCREASE THE FLOW LENGTH AND SETTLING TIME.
5. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.
6. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
7. WHEN A BASIN IS INSTALLED NEAR A RESIDENTIAL AREA, FOR SAFETY REASONS, A SIGN SHALL BE POSTED AND THE AREA SECURED WITH A FENCE.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SEDIMENT BASINS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
2. SEDIMENT BASINS SHALL BE CLEANED OUT BEFORE SEDIMENT HAS FILLED HALF THE VOLUME OF THE BASIN.
3. SEDIMENT BASINS SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.



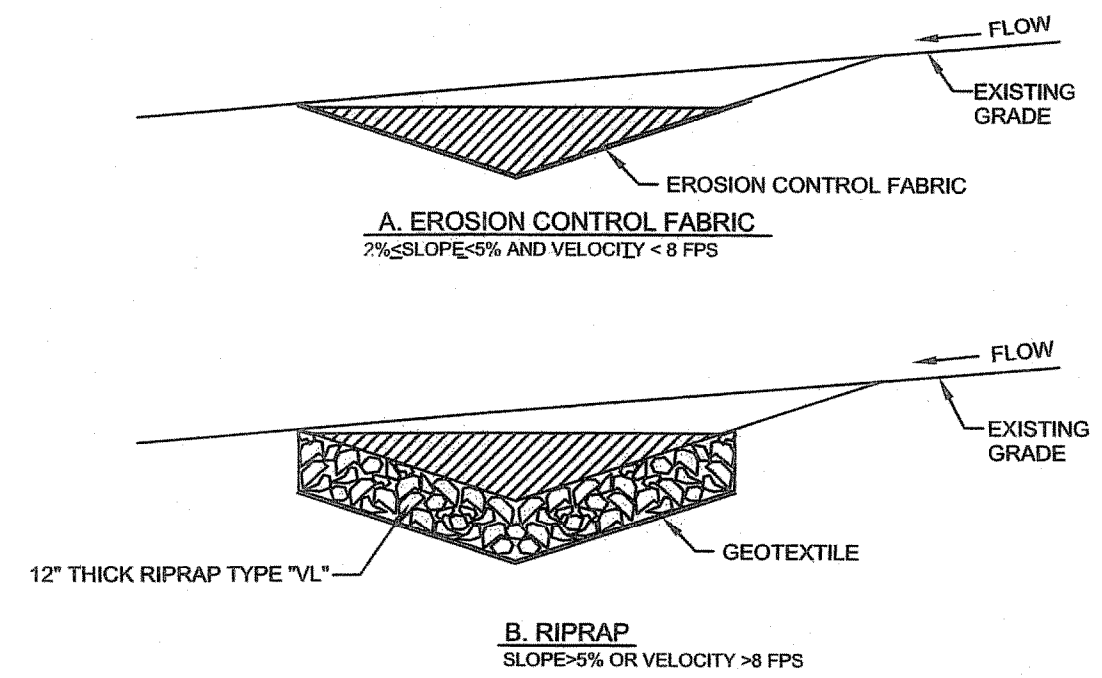
TEMPORARY SEDIMENT BASIN
NTS

INSTALLATION REQUIREMENTS

1. REFER TO THE MANUFACTURER'S INSTALLATION SPECIFICATIONS FOR PROPER INSTALLATION OF EROSION CONTROL FABRIC LINING.
2. SWALES WITH EASILY ERODIBLE SOILS AND SLOPES LESS THAN 2%, SHALL BE LINED WITH EROSION CONTROL FABRIC.
3. VELOCITIES FOR EROSION CONTROL FABRICS SHALL NOT EXCEED 8 FPS. SWALES WITH VELOCITIES GREATER THAN 8 FPS SHALL BE LINED WITH RIP RAP.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SWALE LININGS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
2. DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.
3. REFER TO THE EROSION CONTROL BLANKETS FACTSHEET FOR PROPER MAINTENANCE.
4. DISPLACED RIPRAP OR COARSE AGGREGATE IS TO BE REPLACED AS SOON AS POSSIBLE.
5. SWALE LININGS ARE TO REMAIN IN PLACE AND BE PROPERLY MAINTAINED UNTIL THE TEMPORARY SWALE IS REMOVED.



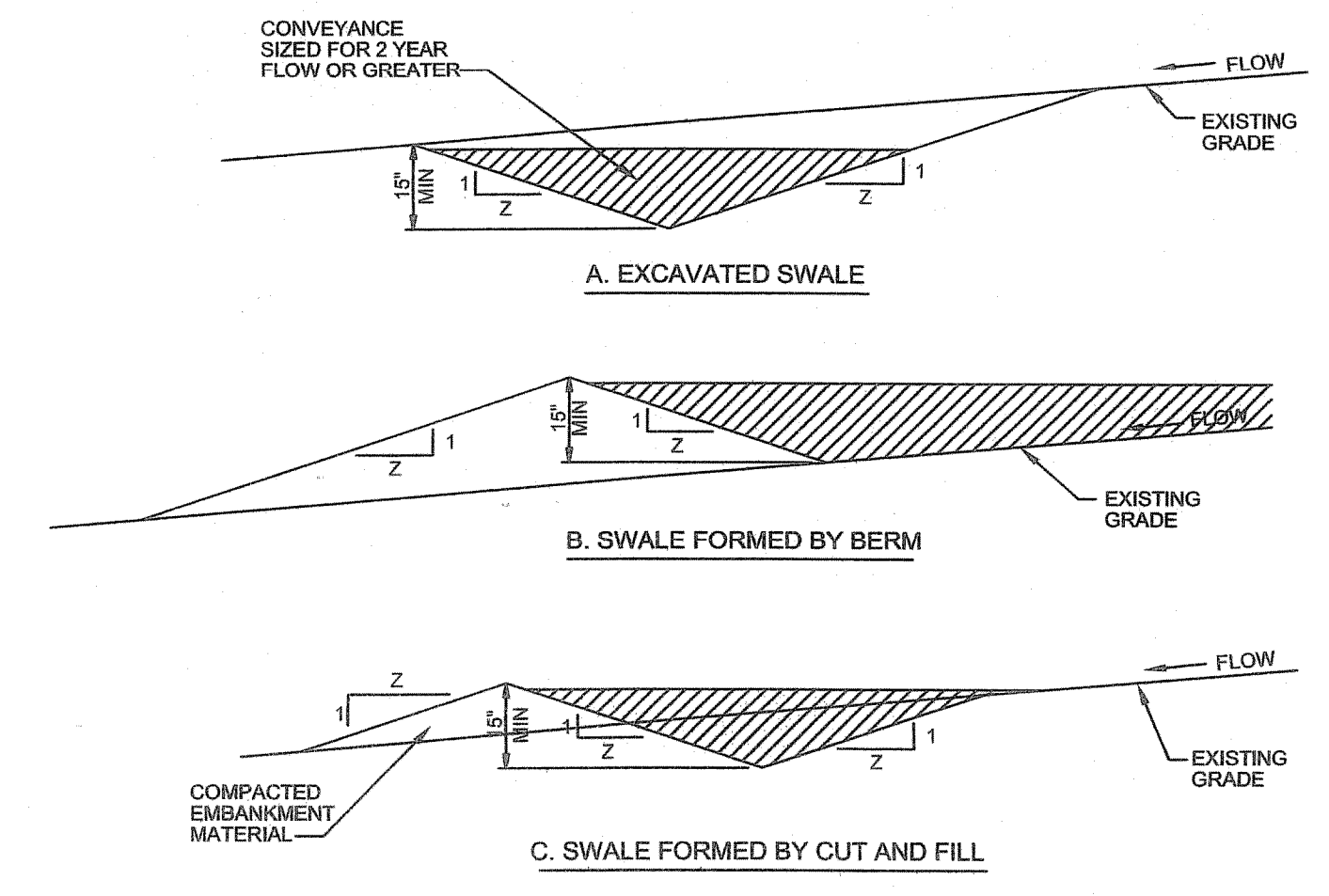
SWALE LINING
NTS

INSTALLATION REQUIREMENTS

1. TEMPORARY SWALES SHALL BE INSTALLED PRIOR TO ANY LAND DISTURBING ACTIVITIES.
2. THE AREA UNDER WHICH THE EMBANKMENT IS TO BE INSTALLED SHALL BE CLEARED, GRUBBED, AND STRIPPED OF ALL VEGETATION AND ROOT MAT.
3. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.
4. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
5. SWALES WITH SLOPE > 2% SHALL BE LINED. SEE FIGURE 13W-3.
6. SWALES ARE TO DRAIN INTO A SEDIMENT BASIN OR OTHER STABILIZED OUTLET.
7. Z SHALL BE 3 OR GREATER.

MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT SWALES AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
2. SWALES SHALL BE ROUTINELY CLEARED OF ANY DEBRIS OR ACCUMULATION OF SEDIMENT.
3. ERODED SLOPES OR DAMAGED LININGS SHALL IMMEDIATELY BE REPAIRED.
4. TEMPORARY SWALES SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.



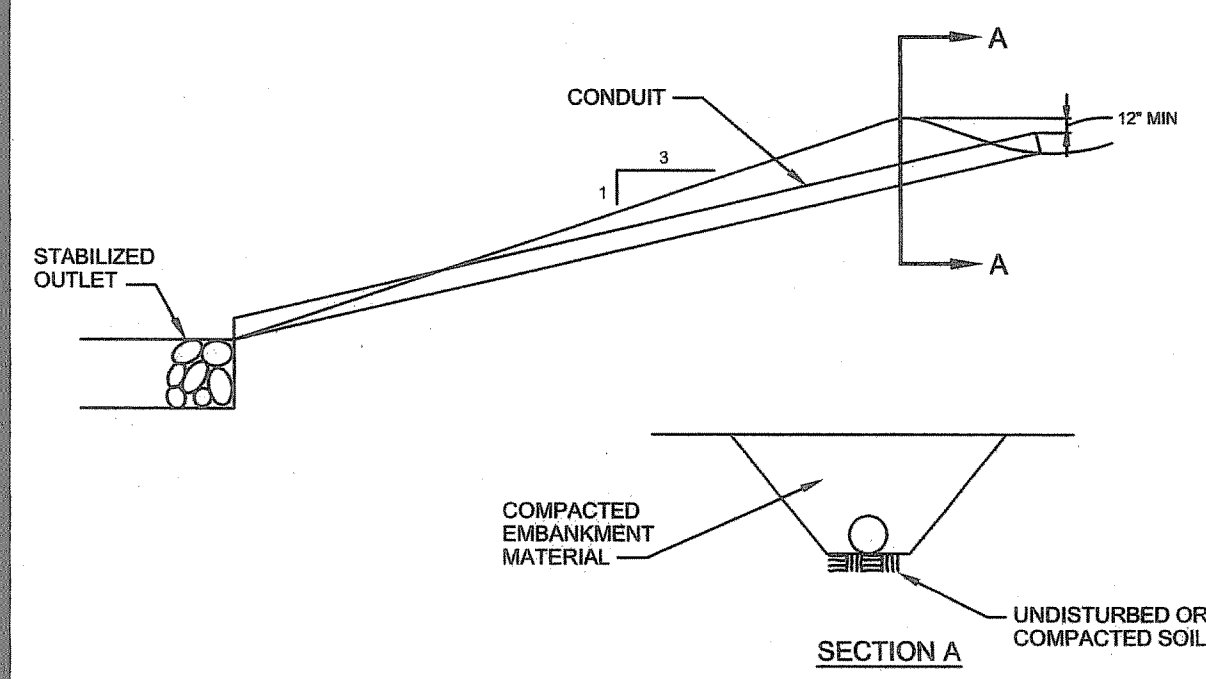
TEMPORARY SWALE
NTS

INSTALLATION REQUIREMENTS

1. THE SLOPE DRAIN IS TO BE DESIGNED TO CONVEY THE PEAK RUNOFF FOR THE 2-YEAR STORM.
2. PIPE MATERIAL MAY INCLUDE CORRUGATED METAL, OR RIGID OR FLEXIBLE PLASTIC.
3. EMBANKMENT MATERIAL SHALL CONSIST OF SOIL WITH A MINIMUM OF 15% PASSING A #200 SIEVE. EXCAVATED SOIL CAN BE USED IF IT MEETS THIS REQUIREMENT.
4. EMBANKMENT IS TO BE COMPACTED TO AT LEAST 90% OF MAXIMUM DENSITY AND WITHIN 2% OF OPTIMUM MOISTURE CONTENT ACCORDING TO ASTM D 698.
5. SLOPE DRAIN SECTIONS ARE TO BE SECURELY FASTENED TOGETHER AND HAVE WATERTIGHT FITTINGS.
6. THE OUTLET IS TO BE STABILIZED AND, UNLESS THE DRAIN DISCHARGES DIRECTLY TO A SEDIMENT BASIN, A TEMPORARY SURFACE IS TO BE PROVIDED TO CONVEY FLOWS DOWNSTREAM.
7. IMMEDIATELY STABILIZE ALL AREAS DISTURBED BY INSTALLATION OR REMOVAL OF THE PIPE SLOPE DRAIN.

MAINTENANCE REQUIREMENTS

1. INLET AND OUTLET POINTS ARE TO BE CHECKED REGULARLY, AND AFTER HEAVY STORMS FOR CLOGGING AND OVERCHARGING. ANY BREAKS IN THE PIPE ARE TO BE PROMPTLY REPAIRED, AND CLOGS REMOVED AS NEEDED.
2. WATER IS NOT TO BYPASS OR UNDERCUT THE INLET OR PIPE. IF THESE PROBLEMS DO EXIST, THE HEADWALL NEEDS TO BE REINFORCED WITH COMPACT EARTH OR SANDBAGS.
3. THE OUTLET POINT IS TO BE FREE OF EROSION, AND, IF NECESSARY, ADDITIONAL OUTLET PROTECTION SHOULD BE INSTALLED.
4. CONSTRUCTION TRAFFIC IS NOT TO CROSS THE SLOPE DRAIN AND MATERIALS ARE NOT TO BE PLACED ON IT.
5. THE SLOPE DRAIN IS TO REMAIN IN PLACE UNTIL THE SLOPE HAS BEEN COMPLETELY STABILIZED OR UP TO 30 DAYS AFTER PERMANENT SLOPE STABILIZATION.



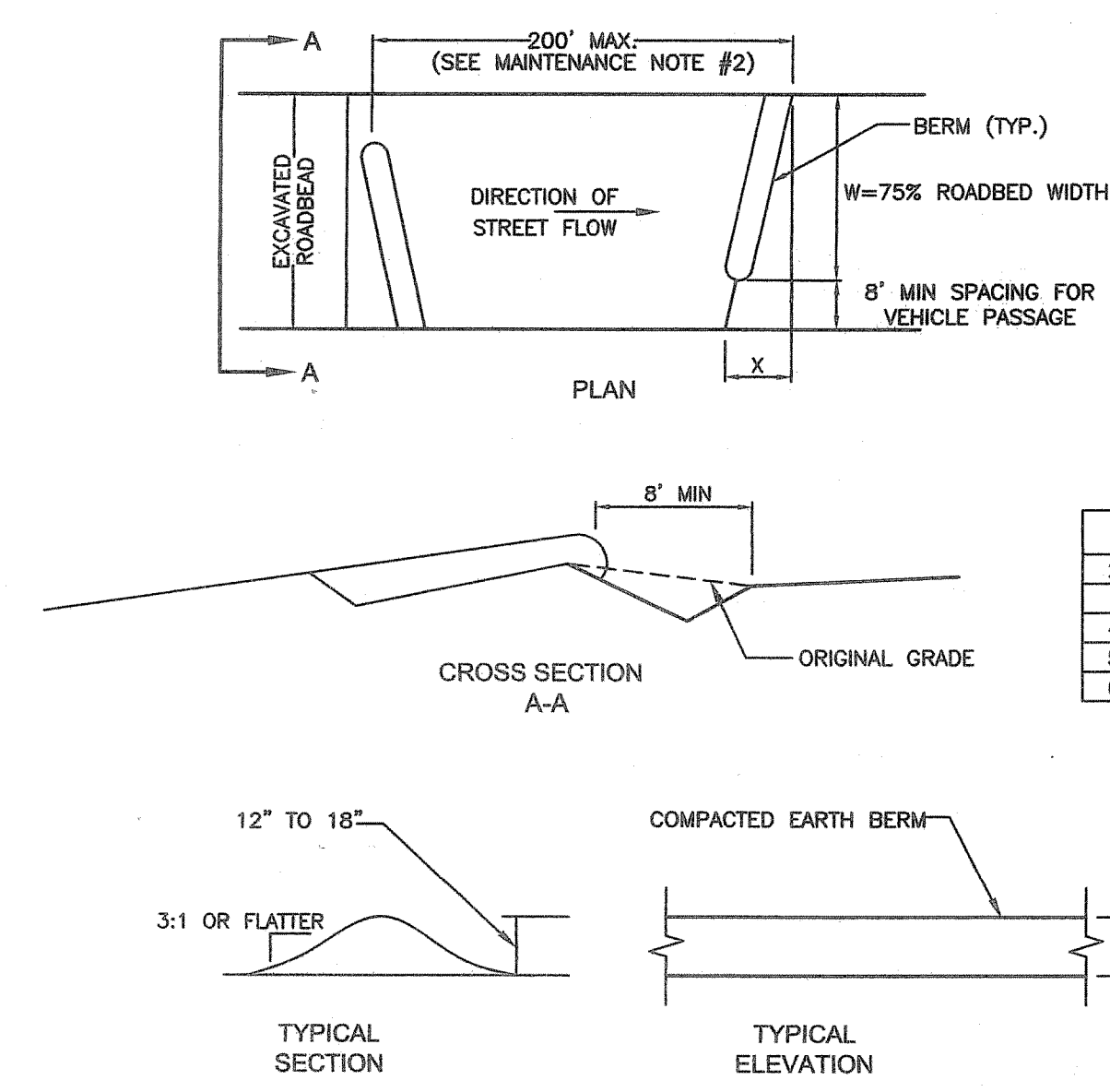
TEMPORARY SLOPE DRAIN
NTS

INSTALLATION REQUIREMENTS

1. TEMPORARY SOIL BERMS SHALL BE GRADED ALONG BOTH SIDES OF A ROUGH CUT STREET TO DIVERT SEDIMENT-LADEN RUNOFF & SLOW THE VELOCITY OF STORM RUNOFF.
2. ALTERNATE MATERIALS SUCH AS CURB SOCKS OR SILT FENCES MAY BE USED WHERE LARGE FLOWS ARE NOT EXPECTED.
3. REQUIREMENTS FOR AND SPACING OF VELOCITY REDUCERS FOR STREETS WITH GRADES OF LESS THAN 4% SHALL BE AS SHOWN ON THE EROSION CONTROL PLAN.

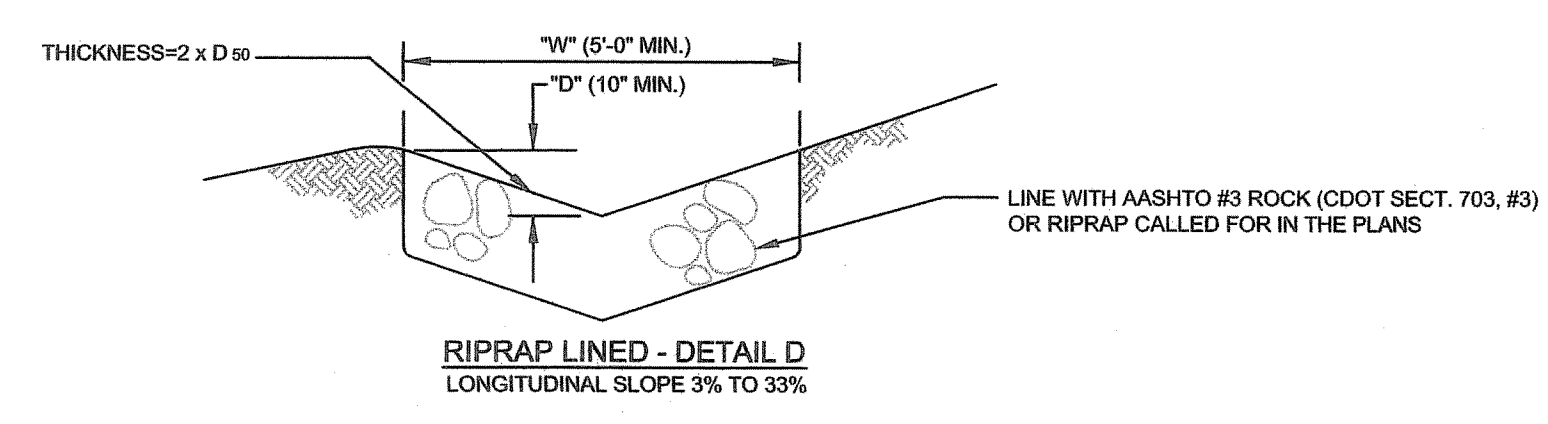
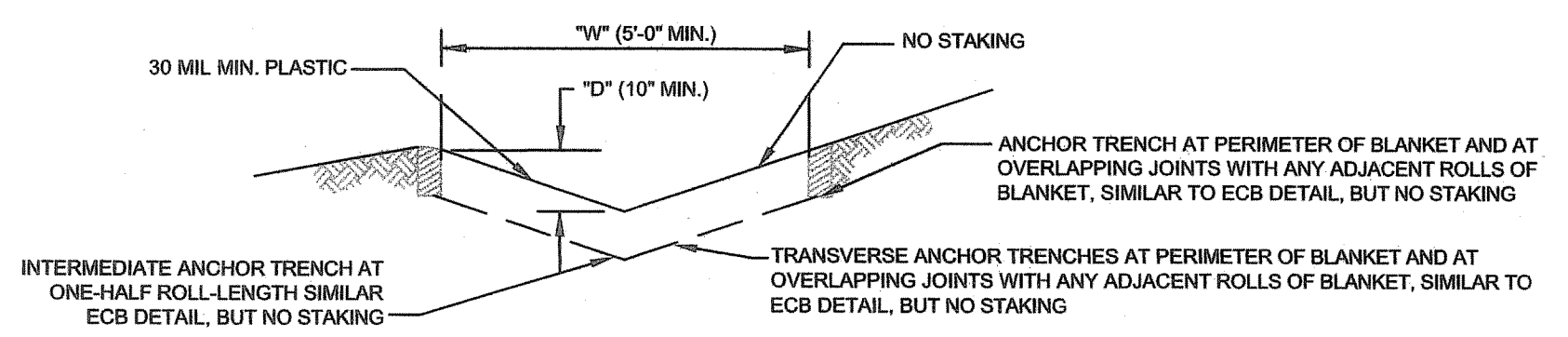
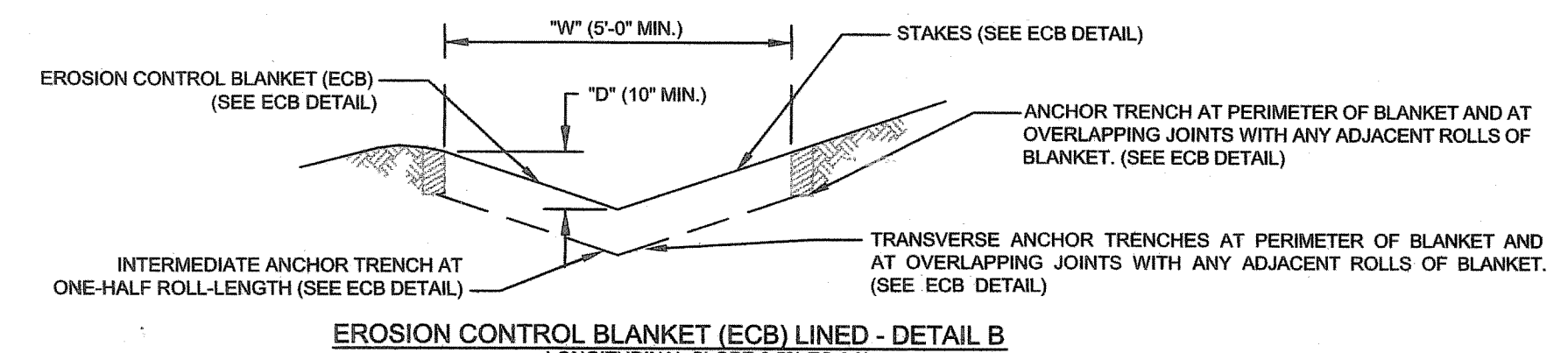
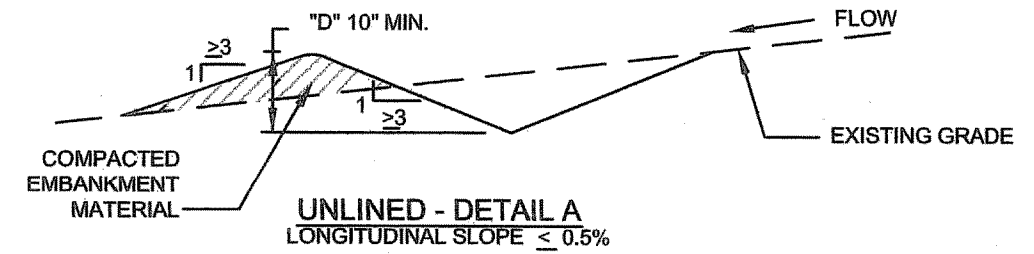
MAINTENANCE REQUIREMENTS

1. CONTRACTOR SHALL INSPECT BERMS AFTER EACH RAINFALL, AT LEAST DAILY DURING PROLONGED RAINFALL, AND WEEKLY DURING PERIODS OF NO RAINFALL.
2. BERMS SHALL BE ROUTINELY CLEARED OF ANY DEBRIS OR ACCUMULATION OF SEDIMENT.
3. ERODED BERMS SHALL IMMEDIATELY BE REPAIRED.
4. TEMPORARY BERMS SHALL REMAIN OPERATIONAL AND PROPERLY MAINTAINED UNTIL THE SITE AREA IS PERMANENTLY STABILIZED WITH ADEQUATE VEGETATIVE COVER AND/OR OTHER PERMANENT STRUCTURE AS APPROVED BY THE CITY.



ROUGH-CUT STREET CONTROL
NTS FOR STREET SLOPES > 4%

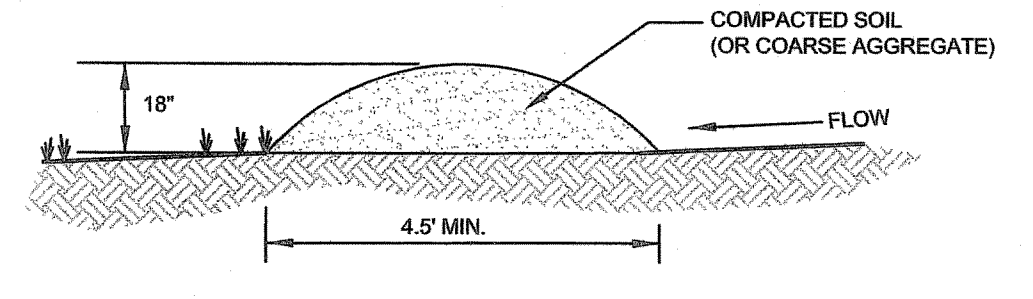
NOTE: DETAILS SHOWN MAY NOT BE REQUIRED FOR THIS PROJECT. REFER TO GRADING AND EROSION CONTROL PLAN.



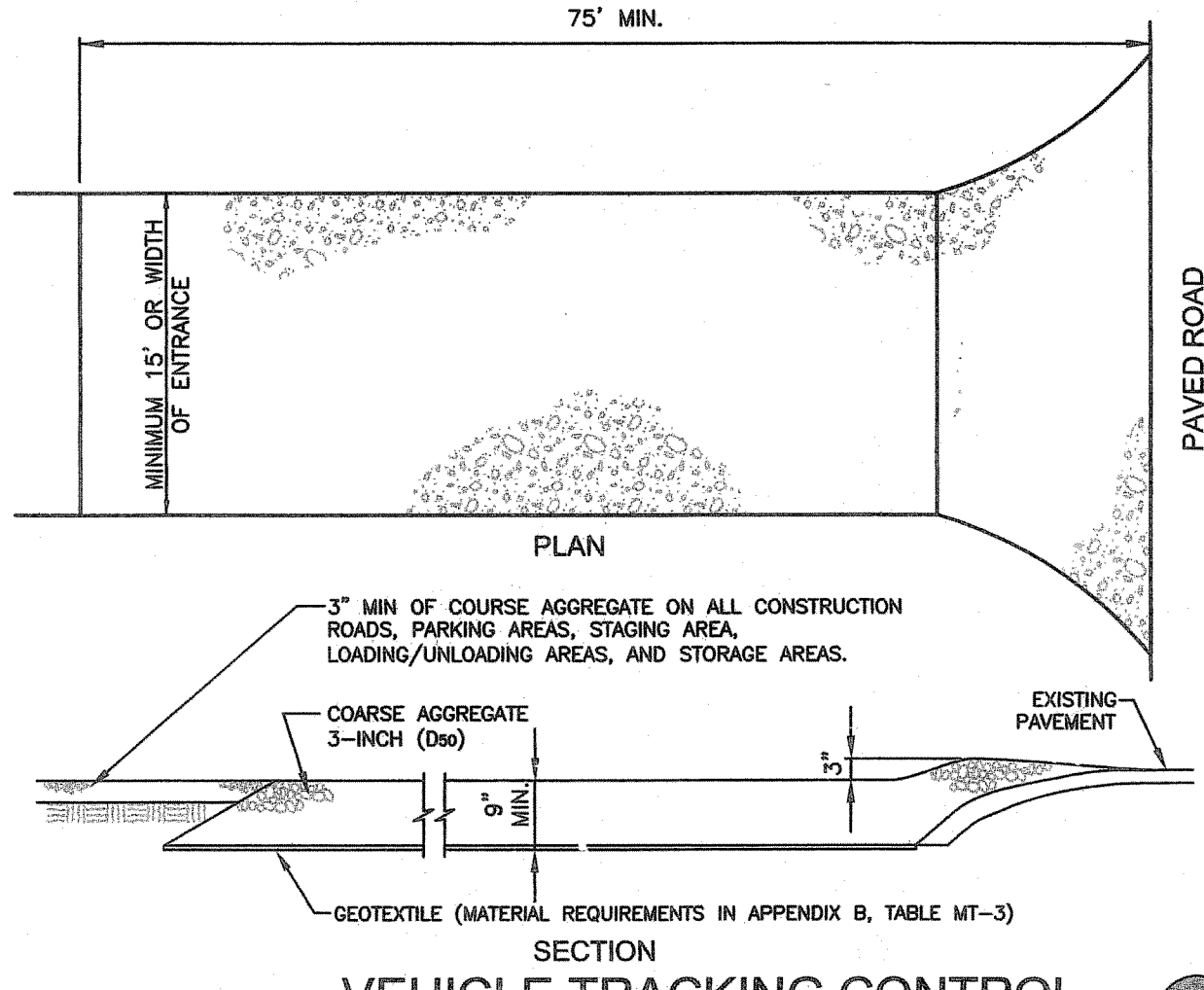
TEMPORARY DIVERSION DIKE
NTS

- INSTALLATION REQUIREMENTS**
- SEE GEC FOR:
 - LOCATION OF DIVERSION DITCH.
 - TYPE OF DITCH (UNLINED, ECB LINED, PLASTIC LINED OR RIPRAP LINED).
 - LENGTH OF EACH TYPE OF DITCH.
 - DEPTH, "D", AND WIDTH, "W" DIMENSIONS.
 - FOR ECB LINED DITCH, EROSION CONTROL BLANKET TYPE (SEE ECB DETAIL).
 - FOR RIPRAP LINED DITCH, SIZE OF RIPRAP "D₅₀".
 - SEE DRAINAGE PLANS FOR DETAILS OF ANY PERMANENT CONVEYANCE FACILITIES OR DIVERSION DITCHES EXCEEDING A 2-YEAR FLOW RATE OF 10 CFS.
 - DIVERSION DITCHES INDICATED ON INITIAL SWMP PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
 - FOR ECB LINED DITCHES, INSTALLATION OF EROSION CONTROL BLANKET SHALL CONFORM TO THE REQUIREMENTS OF THE ECB DETAIL.
 - IN LOCATIONS WHERE CONSTRUCTION TRAFFIC MUST CROSS A DIVERSION DITCH, THE PERMITTEES SHALL INSTALL A TEMPORARY CULVERT WITH A MINIMUM DIAMETER OF 12-INCHES.

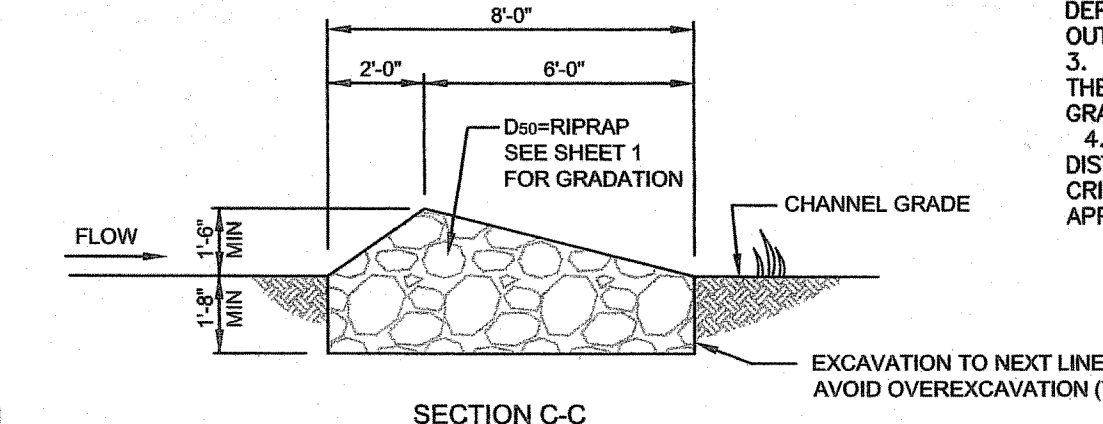
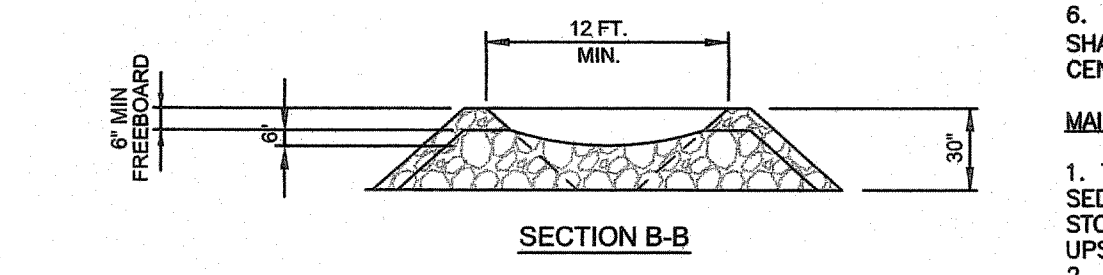
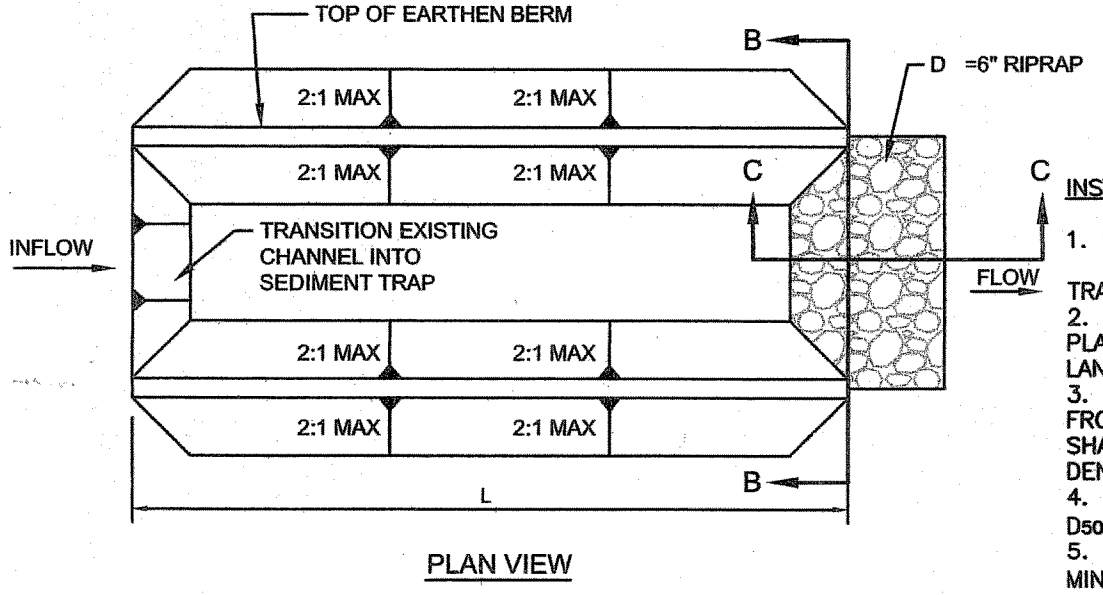
- MAINTENANCE REQUIREMENTS**
- THE SWMP MANAGER SHALL INSPECT DIVERSION DITCHES WEEKLY AND DURING AND AFTER ANY STORM. MAKE REPAIRS AS NECESSARY.
 - DIVERSION DITCHES ARE TO REMAIN IN PLACE UNTIL THE END OF CONSTRUCTION, OR IF APPROVED BY LOCAL JURISDICTION MAY BE LEFT IN PLACE.
 - IF DIVERSION DITCHES ARE REMOVED, DISTURBED AREA SHALL BE COVERED WITH TOPSOIL, DRILL SEED, HAY CRIMPED MULCH OR OTHERWISE STABILIZED IN A MANNER APPROVED BY LOCAL JURISDICTION.



TEMPORARY BERM
NTS



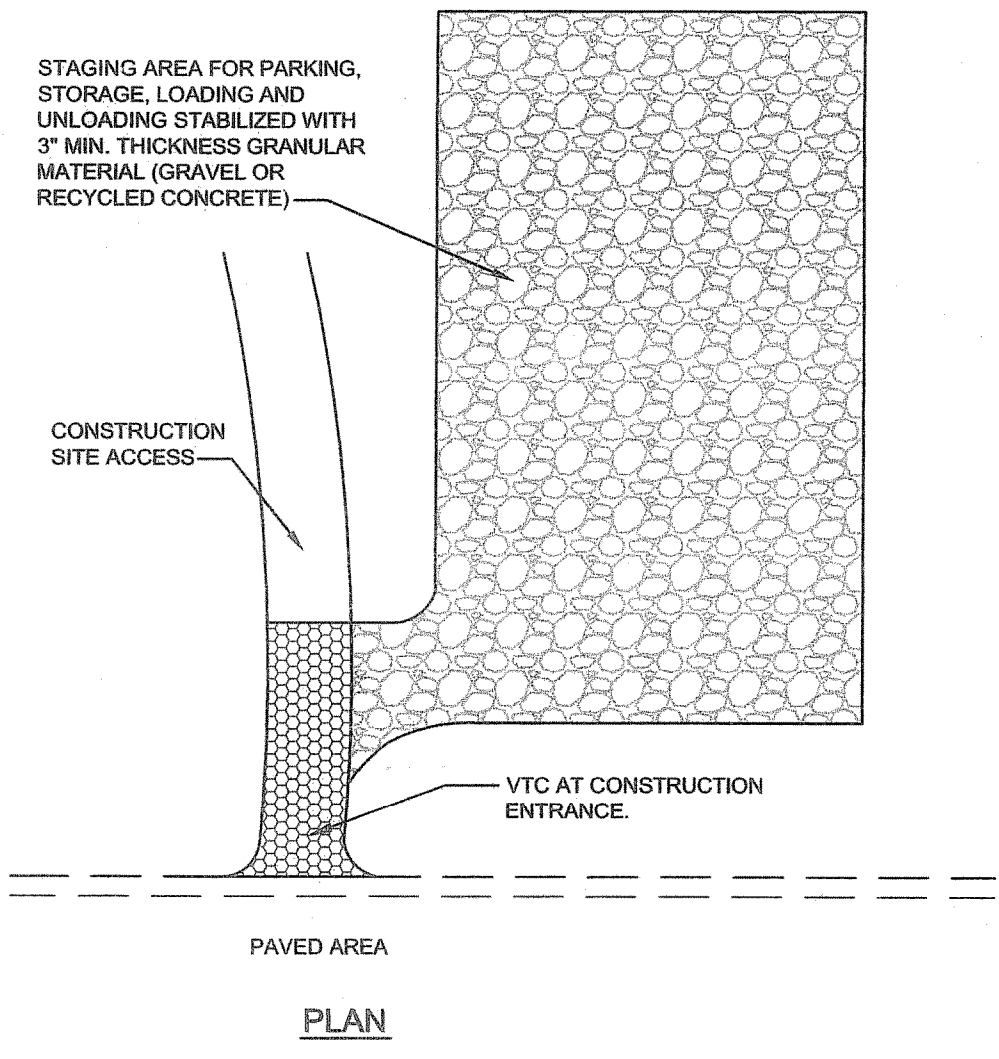
VEHICLE TRACKING CONTROL
NTS



SEDIMENT TRAP
NTS

- INSTALLATION REQUIREMENTS**
- ALL ENTRANCES TO THE CONSTRUCTION SITE ARE TO BE STABILIZED PRIOR TO CONSTRUCTION BEGINNING.
 - 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.
 - AREAS TO BE STABILIZED ARE TO BE PROPERLY GRADED AND COMPACTED PRIOR TO LAYING DOWN GEOTEXTILE AND STONE.
 - CONSTRUCTION ROADS, PARKING AREAS, LOADING/UNLOADING ZONES, STORAGE AREAS, AND STAGING AREAS ARE TO BE STABILIZED.
 - CONSTRUCTION ROADS ARE TO BE BUILT TO CONFORM TO SITE GRADES, BUT SHOULD NOT HAVE SIDE SLOPES OR ROAD GRADES THAT ARE EXCESSIVELY STEEP.

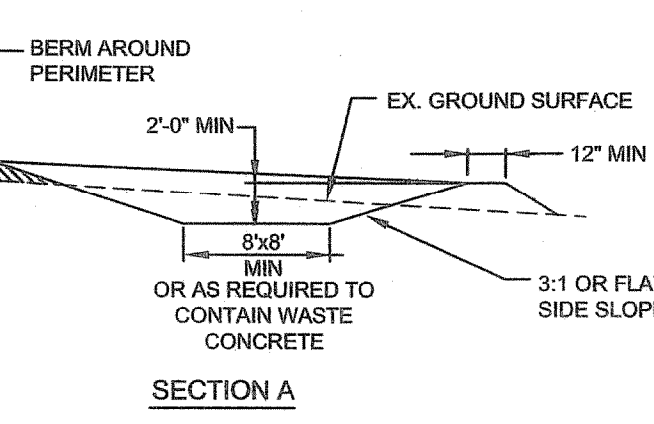
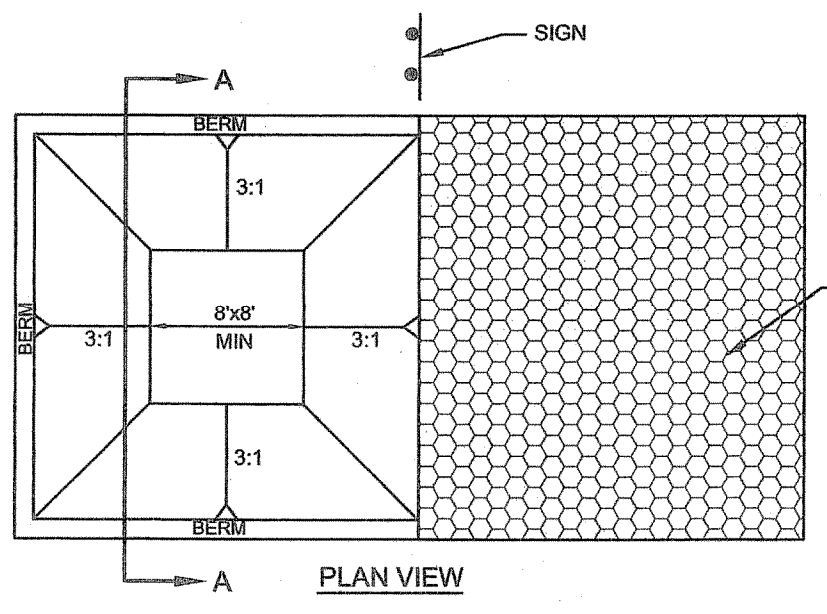
- MAINTENANCE REQUIREMENTS**
- REGULAR INSPECTIONS ARE TO BE MADE OF ALL STABILIZED AREAS, ESPECIALLY AFTER STORM EVENTS.
 - STONES ARE TO BE REAPPLIED PERIODICALLY AND WHEN REPAIR IS NECESSARY.
 - SEDIMENT TRACKED ONTO PAVED ROADS IS TO BE REMOVED DAILY BY SHOVELING OR SWEEPING. SEDIMENT IS NOT TO BE WASHED DOWN STORM SEWER DRAINS.
 - STORM SEWER INLET PROTECTION IS TO BE IN PLACE, INSPECTED, AND CLEANED IF NECESSARY.
 - OTHER ASSOCIATED SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED TO ENSURE GOOD WORKING CONDITION.



STABILIZED STAGING AREA
NTS

- INSTALLATION REQUIREMENTS**
- SEE GEC FOR GENERAL LOCATION OF STAGING AREA. CONTRACTOR MAY MODIFY LOCATION AND SIZE OF STABILIZED STAGING AREA WITH COUNTY APPROVAL.
 - STABILIZED STAGING AREA SHALL BE LARGE ENOUGH TO FULLY CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
 - IF REQUIRED BY THE COUNTY, SITE ACCESS ROADS SHALL BE STABILIZED IN THE SAME MANNER AS THE STAGING AREA.
 - STAGING AREA SHALL BE STABILIZED PRIOR TO ANY OTHER OPERATIONS ON THE SITE.
 - THE STABILIZED STAGING AREA SHALL CONSIST OF A MINIMUM OF 3" OF GRANULAR MATERIAL (GRAVEL OR RECYCLED CONCRETE).

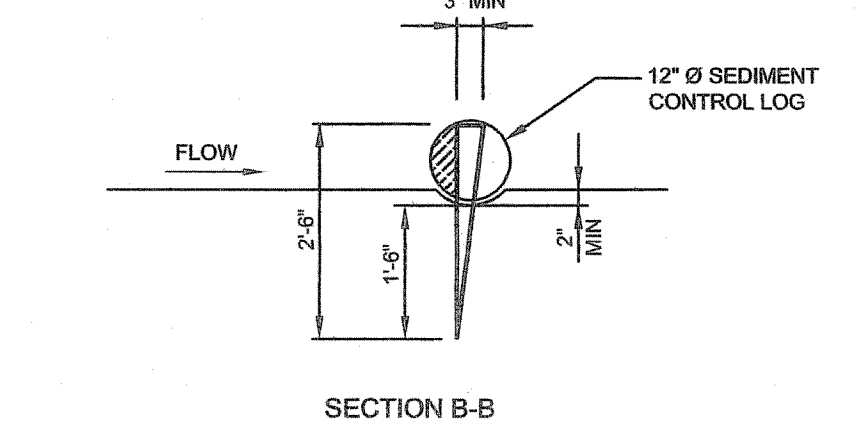
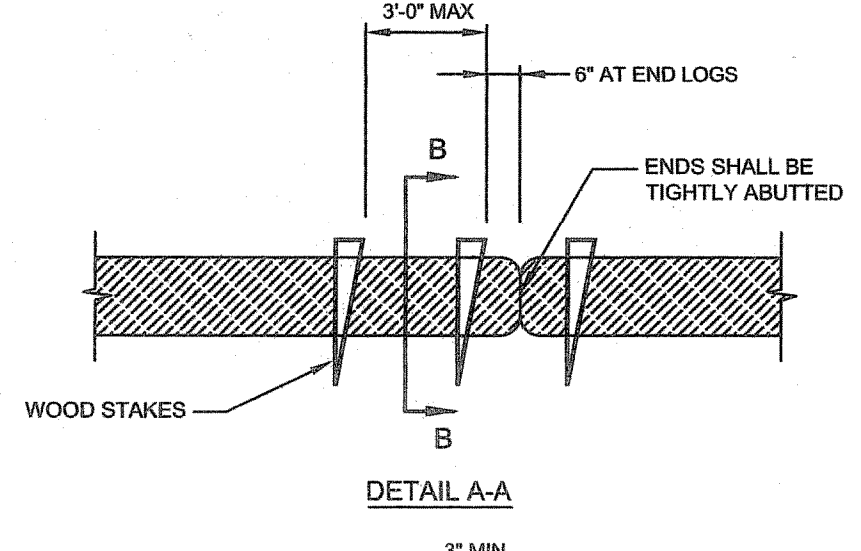
- MAINTENANCE REQUIREMENTS**
- THE GESC MANAGER SHALL INSPECT THE STABILIZED STAGING AREA WEEKLY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
 - GESC MANAGER SHALL PROVIDE ADDITIONAL THICKNESS OF GRANULAR MATERIAL IF ANY RUTTING OCCURS OR UNDERLYING SUBGRADE BECOMES EXPOSED.
 - STABILIZED STAGING AREA SHALL BE ENLARGED IF NECESSARY TO CONTAIN PARKING, STORAGE, AND UNLOADING AND LOADING OPERATIONS.
 - ANY ACCUMULATED DIRT OR MUD SHALL BE REMOVED FROM THE SURFACE OF THE STABILIZED STAGING AREA.
 - THE STABILIZED STAGING AREA SHALL BE REMOVED AT THE END OF CONSTRUCTION. THE GRANULAR MATERIAL SHALL BE REMOVED OR, IF APPROVED BY THE COUNTY, USED ON SITE, AND THE AREA TOPSOILED, DRILL SEED AND CRIMP MULCHED OR OTHERWISE STABILIZED.



CONCRETE WASHOUT AREA
NTS

- INSTALLATION REQUIREMENTS**
- SEE GEC FOR LOCATIONS OF CONCRETE WASHOUT AREA.
 - THE CONCRETE WASHOUT AREA SHALL BE INSTALLED PRIOR TO ANY CONCRETE PLACEMENT SITE.
 - VEHICLE TRACKING CONTROL IS REQUIRED AT THE ACCESS POINT.
 - SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE AT THE WASHOUT AREA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CONCRETE WASHOUT AREA TO OPERATORS OF CONCRETE TRUCKS AND PUMP RIGS.
 - EXCAVATED MATERIAL SHALL BE UTILIZED IN PERIMETER BERM CONSTRUCTION.

- MAINTENANCE REQUIREMENTS**
- THE CONCRETE WASHOUT AREA SHALL BE REPAIRED AND ENLARGED OR CLEANED OUT AS NECESSARY TO MAINTAIN CAPACITY FOR WASTED CONCRETE.
 - AT THE END OF CONSTRUCTION, ALL CONCRETE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF AT AN APPROVED WASTE SITE.
 - WHEN THE CONCRETE WASHOUT AREA IS REMOVED, COVER THE DISTURBED AREA WITH TOPSOIL, DRILL SEED AND CRIMP MULCH OR OTHERWISE STABILIZE IN A MANNER APPROVED BY THE LOCAL JURISDICTION.
 - INSPECT WEEKLY, AND DURING AND AFTER ANY STORM EVENT.

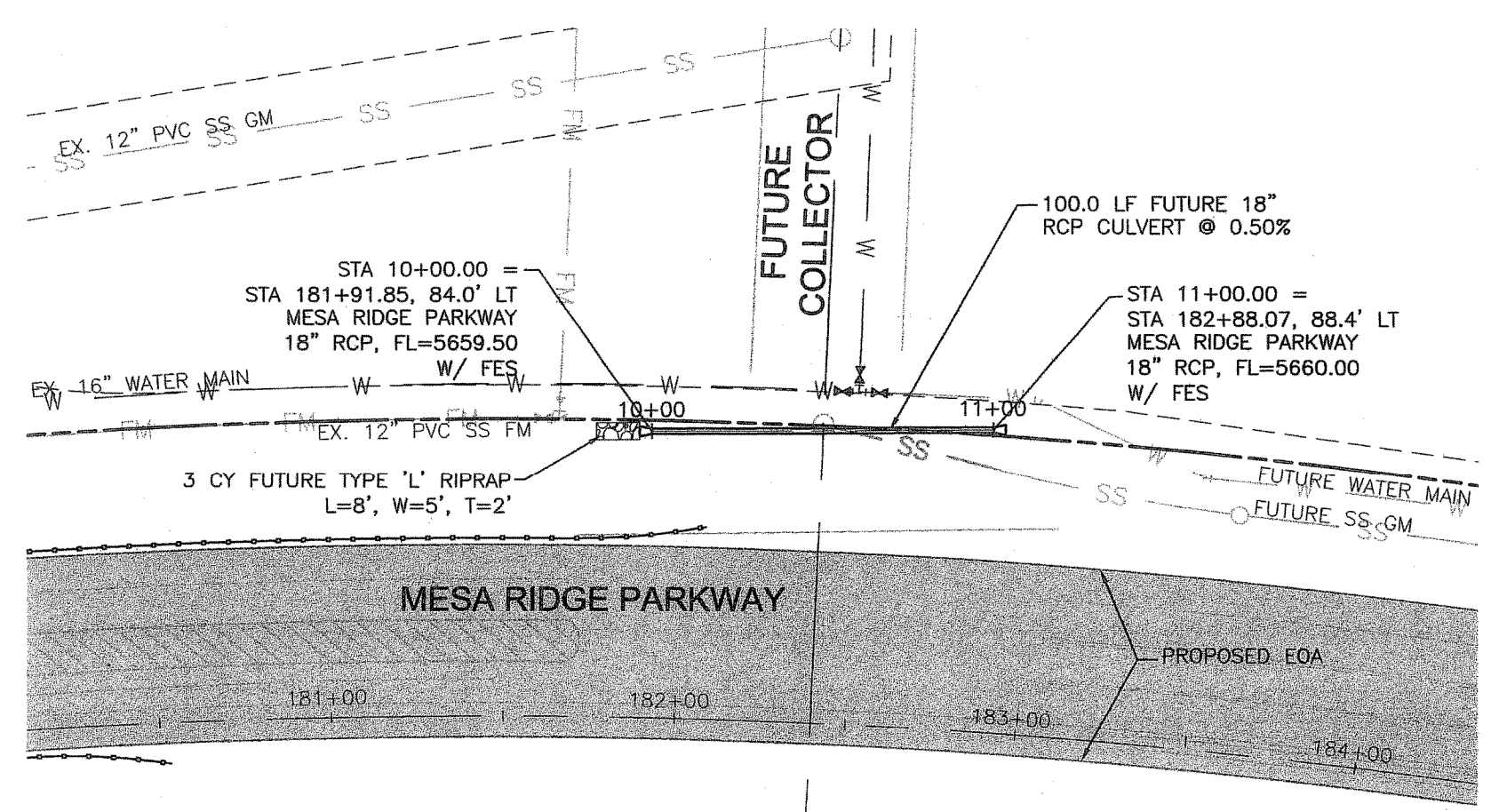


SEDIMENT CONTROL LOG
NTS

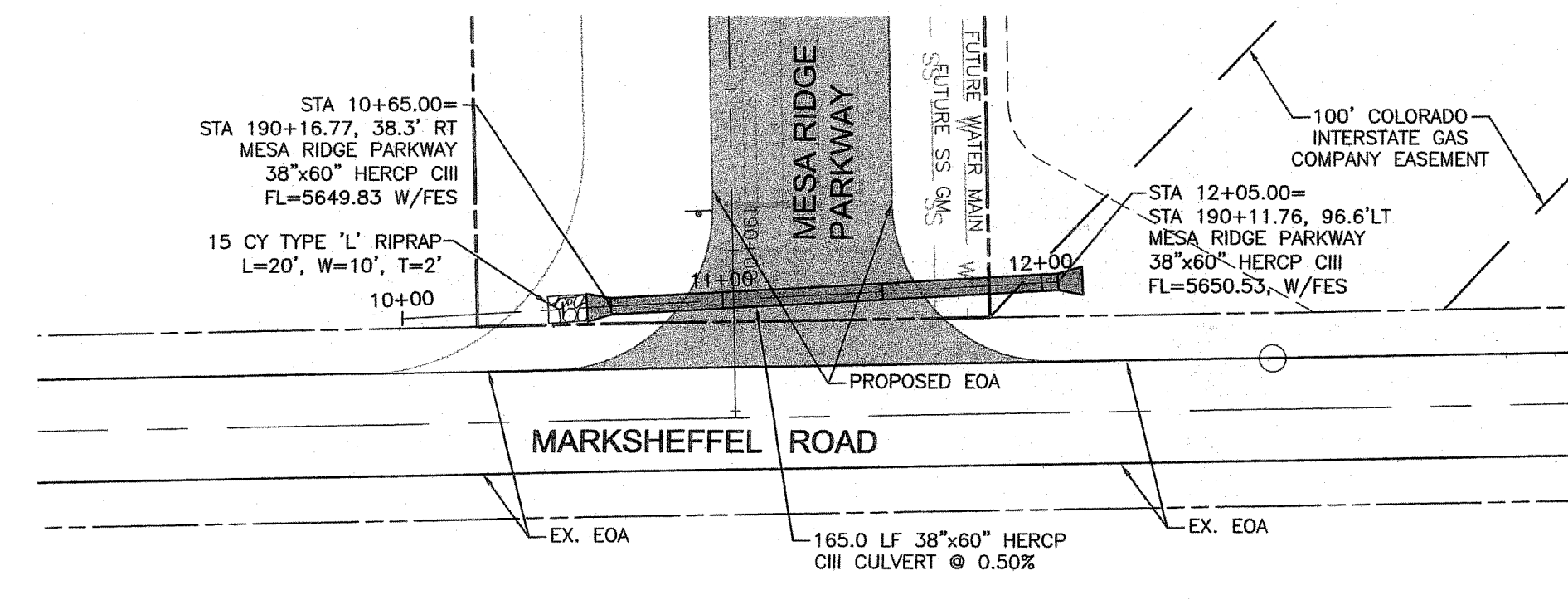
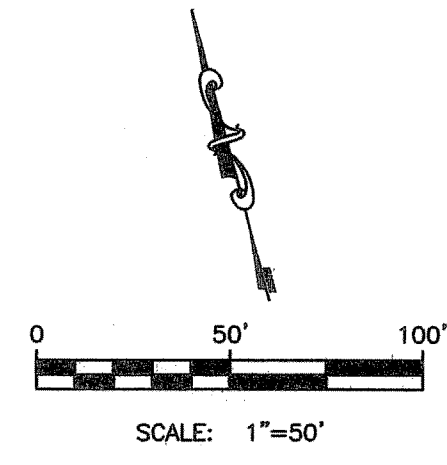
- INSTALLATION REQUIREMENTS**
- SEE GEC FOR:
 - LOCATION, LENGTH AND WIDTH OF SEDIMENT CONTROL LOG.
 - SEDIMENT CONTROL LOGS INDICATED ON INITIAL GESC PLAN SHALL BE INSTALLED PRIOR TO ANY LAND-DISTURBING ACTIVITIES.
 - SEDIMENT CONTROL LOGS SHALL CONSIST OF STRAW, COMPOST, EXCELSIOR, OR COCONUT FIBER.
 - NOT FOR USE IN CONCENTRATED AREAS.
 - THE SEDIMENT CONTROL LOG SHALL BE TRENCHED INTO THE GROUND A MINIMUM OF 2".

- MAINTENANCE REQUIREMENTS**
- THE GESC MANAGER SHALL INSPECT SEDIMENT CONTROL LOGS DAILY, DURING AND AFTER ANY STORM EVENT AND MAKE REPAIRS OR CLEAN OUT UPSTREAM SEDIMENT AS NECESSARY.
 - SEDIMENT ACCUMULATED UPSTREAM OF SEDIMENT CONTROL LOGS SHALL BE REMOVED WHEN THE UPSTREAM SEDIMENT DEPTH IS WITHIN HALF THE HEIGHT OF THE CREST OF LOG.
 - SEDIMENT CONTROL LOGS SHALL BE REMOVED AT THE END OF CONSTRUCTION. IF ANY DISTURBED AREA EXISTS AFTER REMOVAL, IT SHALL BE DRILLED, SEED, AND CRIMP MULCHED OR OTHERWISE STABILIZED IN A MANNER APPROVED BY THE COUNTY.

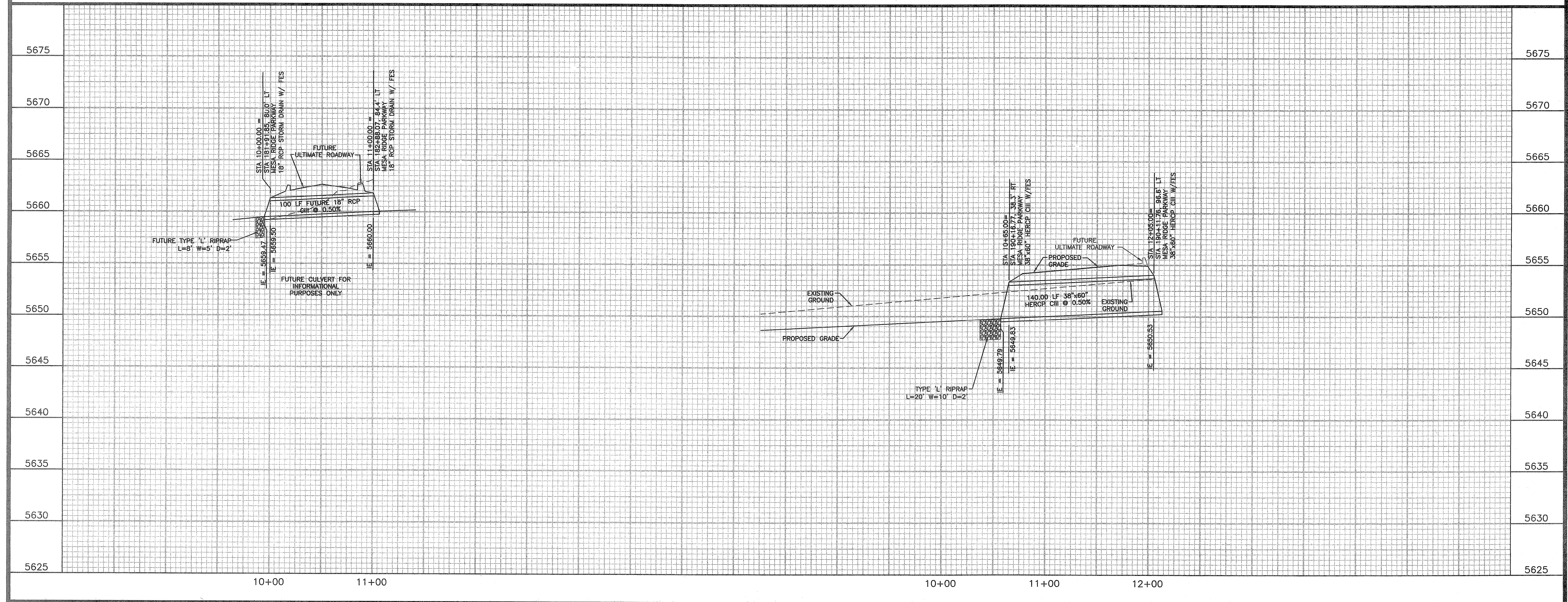
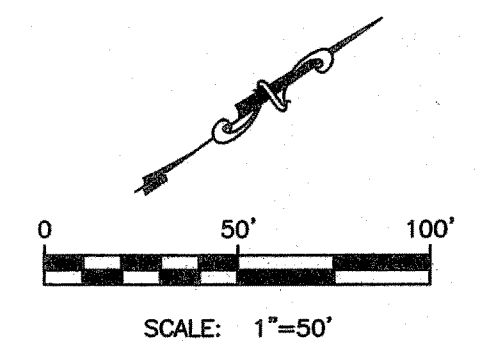
Project No.:	08082
Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
Check:	AWMc
Revisions:	



STA 182+40±
MESA RIDGE PARKWAY



MESA RIDGE PARKWAY
AT MARKSHEFFEL ROAD

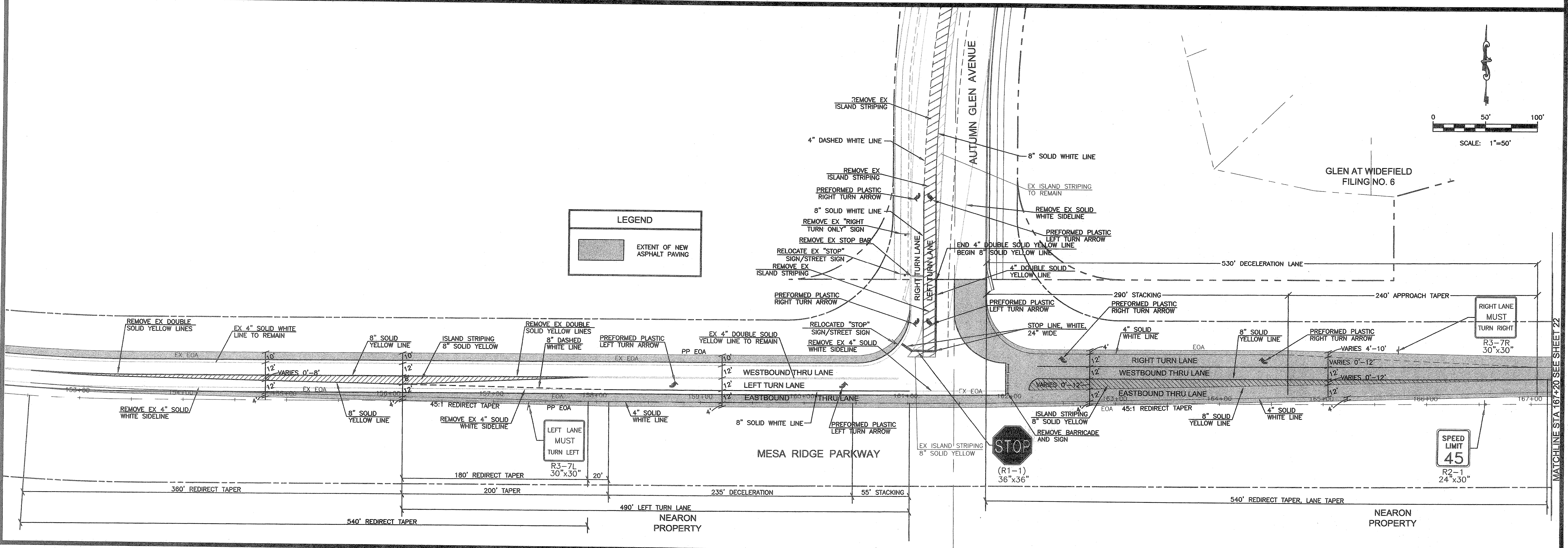
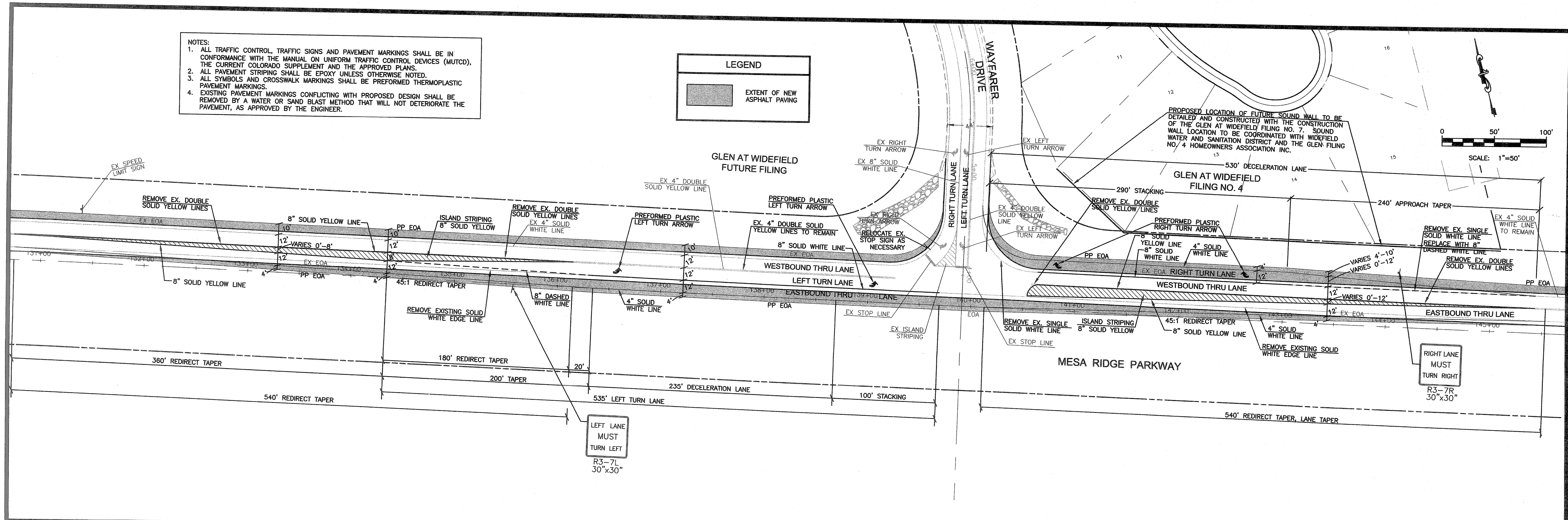
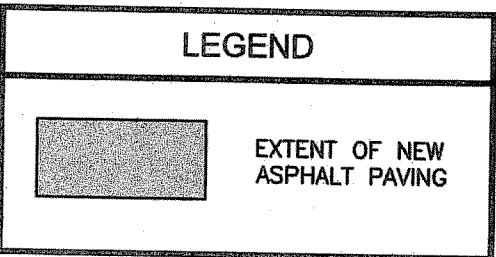


**MESA RIDGE PARKWAY
ROADWAY DESIGN
STORM SEWER PLAN AND PROFILE**
El Paso County, Colorado

Project No.:	08082
Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
Check:	AWMc
Revisions:	

SHEET
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OF 23 SHEETS

NOTES:
 1. ALL TRAFFIC CONTROL, TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE CURRENT COLORADO SUPPLEMENT AND THE APPROVED PLANS.
 2. ALL PAVEMENT STRIPING SHALL BE EPOXY UNLESS OTHERWISE NOTED.
 3. ALL SYMBOLS AND CROSSWALK MARKINGS SHALL BE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS.
 4. EXISTING PAVEMENT MARKINGS CONFLICTING WITH PROPOSED DESIGN SHALL BE REMOVED BY A WATER OR SAND BLAST METHOD THAT WILL NOT DETERIORATE THE PAVEMENT, AS APPROVED BY THE ENGINEER.



Kiowa
 Engineering Corporation
 1604 South 21st Street
 Colorado Springs, Colorado 80904
 (719) 630-7942

**MESA RIDGE PARKWAY
 ROADWAY DESIGN
 WAYFARER & AUTUMN GLEN INTERSECTIONS SIGNAGE & STRIPING PLAN**
 El Paso County, Colorado

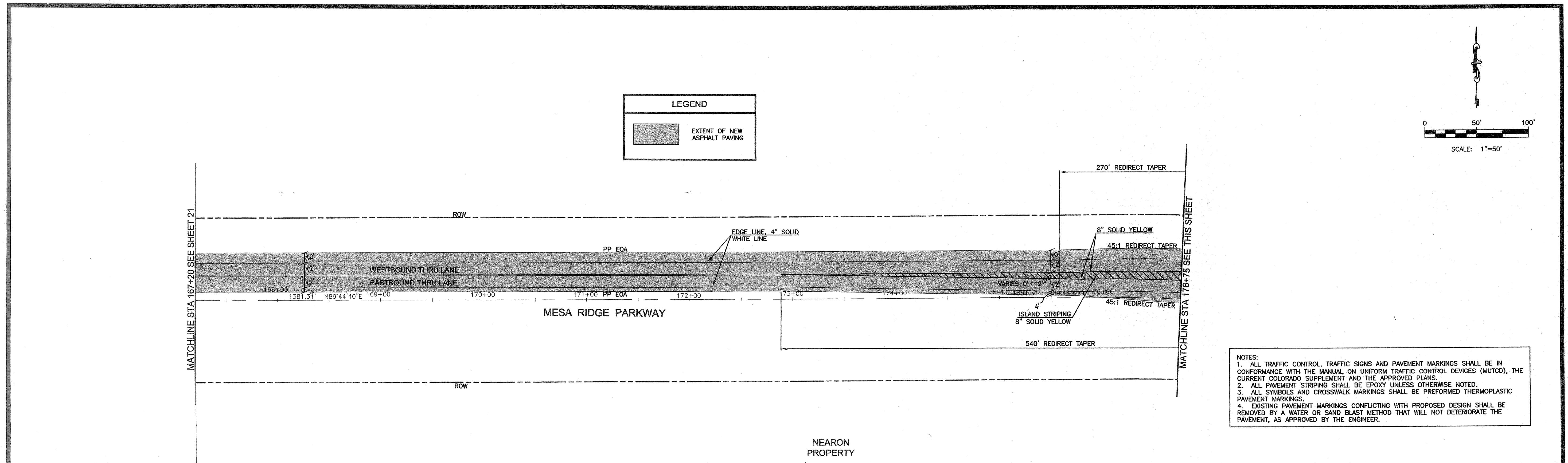
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Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
Check:	AWMc
Revisions:	

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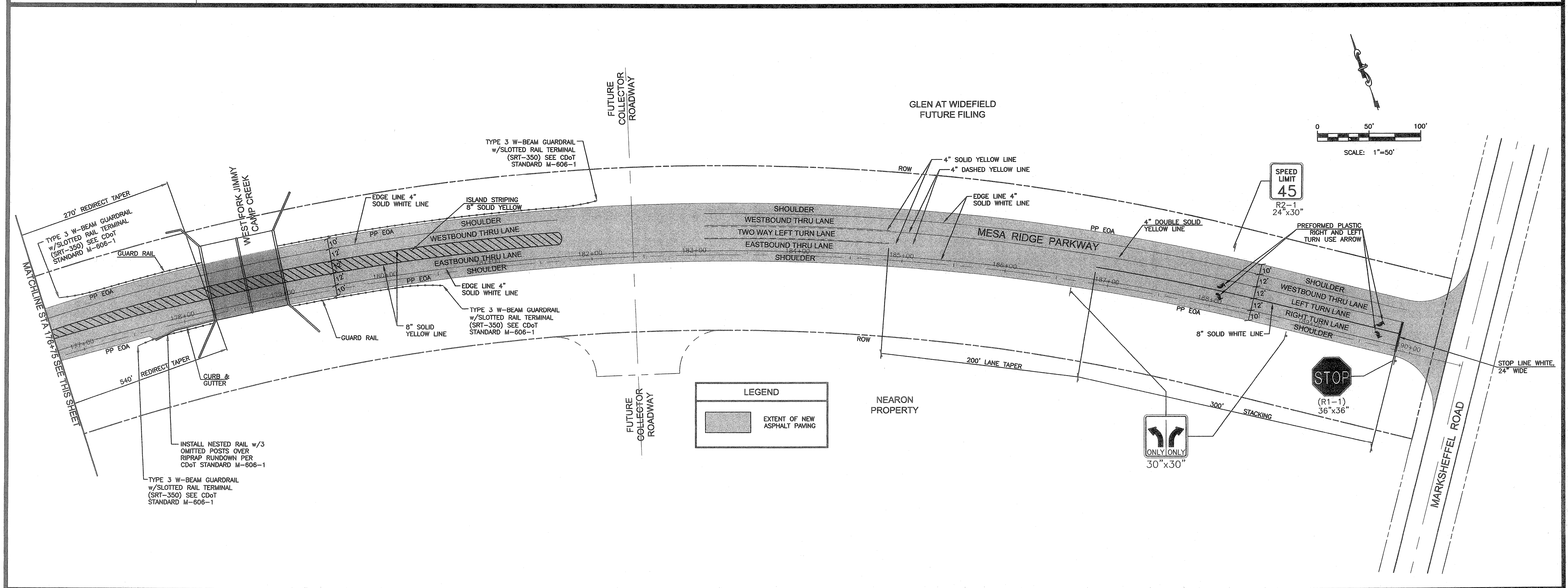
**MESA RIDGE PARKWAY
ROADWAY DESIGN
SIGNAGE AND STRIPING PLAN**
El Paso County, Colorado

Project No.: 08082
Date: December 8, 2010
Design: JGD
Drawn: RLA
Check: AWMc
Revisions:

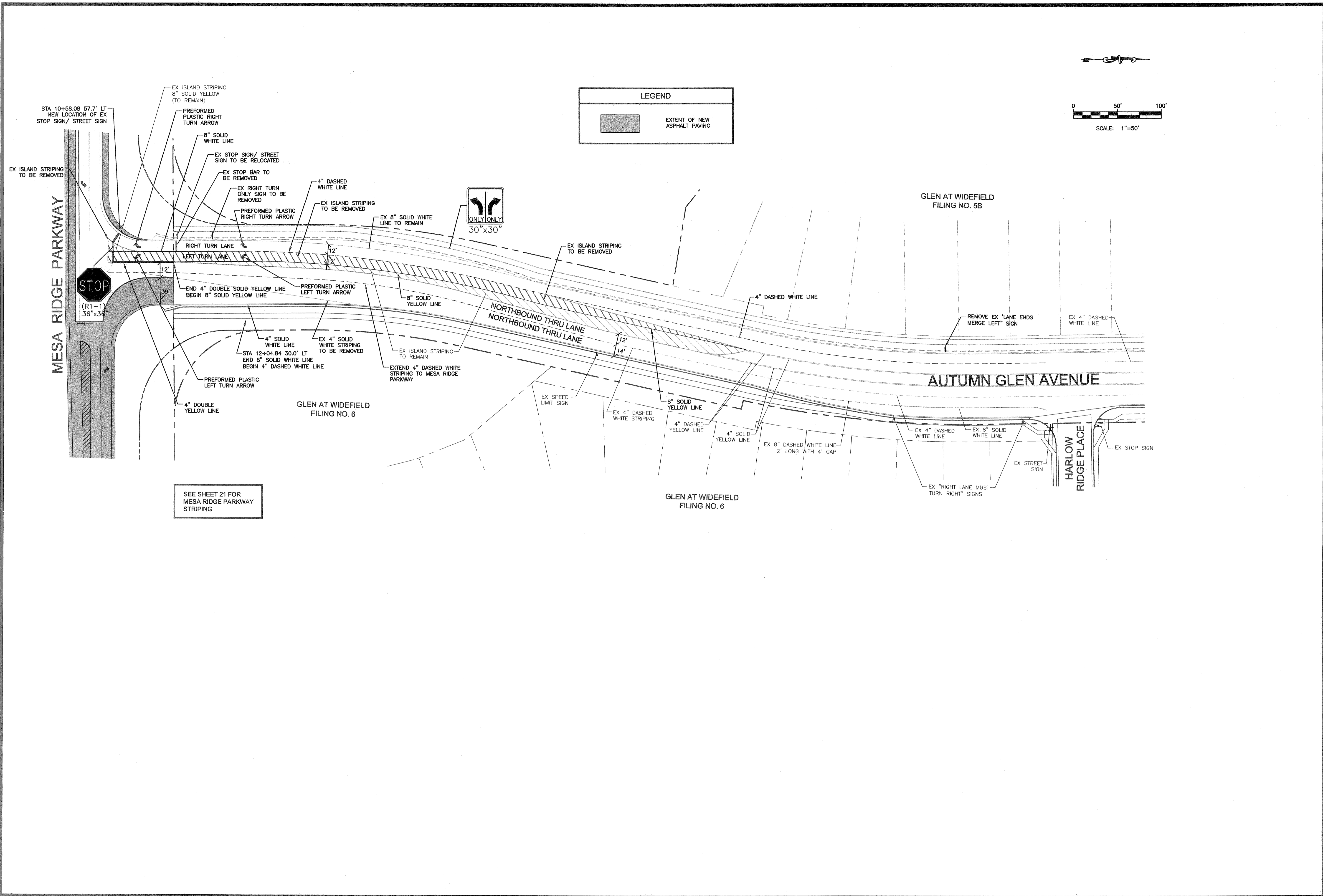
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OF 23 SHEETS



- NOTES:
1. ALL TRAFFIC CONTROL, TRAFFIC SIGNS AND PAVEMENT MARKINGS SHALL BE IN CONFORMANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), THE CURRENT COLORADO SUPPLEMENT AND THE APPROVED PLANS.
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 3. ALL SYMBOLS AND CROSSWALK MARKINGS SHALL BE PREFORMED THERMOPLASTIC PAVEMENT MARKINGS.
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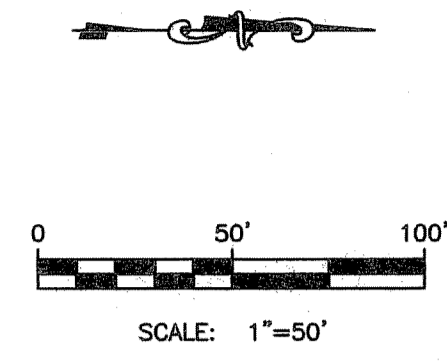


**MESA RIDGE PARKWAY
ROADWAY DESIGN
AUTUMN GLEN AVENUE SIGNAGE AND STRIPING PLAN**
El Paso County, Colorado



LEGEND

[Shaded Area] EXTENT OF NEW ASPHALT PAVING



SEE SHEET 21 FOR
MESA RIDGE PARKWAY
STRIPING

Project No.:	08082
Date:	December 8, 2010
Design:	JGD
Drawn:	RLA
Check:	AWMc
Revisions:	

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OF 23 SHEETS