BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

30% PLANS OF PROPOSED

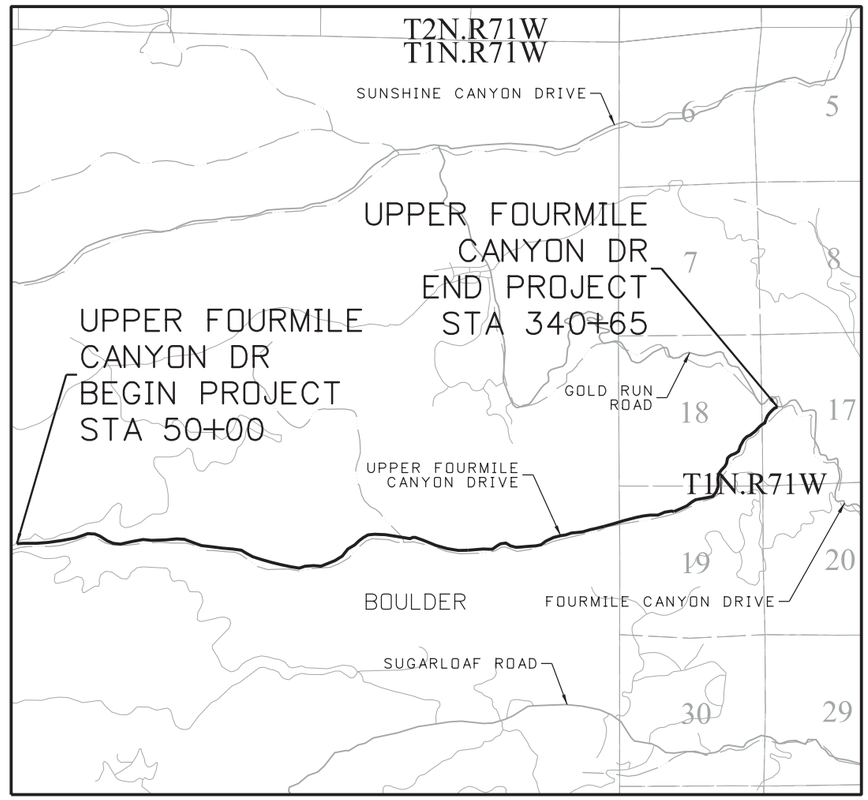
UPPER FOURMILE CANYON DRIVE CONSTRUCTION
SUNSET TO SALINA JUNCTION
BOULDER COUNTY

BOULDER COUNTY PROJECT NO. 4041.SEPT12C37

TABULATION OF LENGTH & DESIGN DATA

STATION	FEET	
	ROADWAY	STRUCTURE
BEGIN UPPER FOURMILE CANYON DR CONSTRUCTIO STA 50+00.00 (HCL UPPER FOURMILE) END UPPER FOURMILE CANYON DR CONSTRUCTION STA 340+65.00 (HCL UPPER FOURMILE)	29,065.00	
TOTAL	29,065.00	
SUMMARY OF PROJECT LENGTH	FEET	MILES
ROADWAY (NET LENGTH)	29,065.00	5.50
MAJOR STRUCTURE (NET LENGTH)	0.00	0.00
PROJECT GROSS LENGTH	29,065.00	5.50

DESIGN DATA	UPPER FOURMILE CANYON DR
ROADWAY CLASSIFICATION	LOCAL
EXISTING SURFACE TYPE	UNPAVED & PAVED
MINIMUM RADIUS OF CURVE	145.00'
MAXIMUM GRADE	4.17%
MINIMUM S.S.D HORIZONTAL	EXISTING
MINIMUM S.S.D. VERTICAL	EXISTING
DESIGN SPEED	20 MPH
CLEAR ZONE DISTANCE	EXISTING
MAXIMUM SUPERELEVATION (emax)	2%



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PROJECT LOCATION MAP

0 0.5 1 2
(MILES)

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	RIGHT OF WAY
	RIGHT OF WAY PLANS (NOT INCLUDED IN 30% SUBMITTAL)

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS: NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
JWM	JWM	JAT	09/01/15

UPPER FOURMILE CANYON DRIVE
TITLE SHEET

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 1

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COLORADO
DEPARTMENT OF TRANSPORTATION

M&S STANDARDS PLANS LIST

July 04, 2012

Revised on April 30, 2015

ALL OF THE M&S STANDARD PLANS, AS SUPPLEMENTED AND REVISED, APPLY TO THIS PROJECT WHEN USED BY DESIGNATED PAY ITEM OR SUBSIDIARY ITEM.

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CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County
Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
STANDARDS PLANS LIST

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 2

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GENERAL NOTES:

1. PROJECT BENCHMARK: ALL ELEVATIONS SHOWN ON THESE PLANS ARE REFERENCED TO THE PROJECT BENCHMARKS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SAFEGUARDING THE PROJECT BENCHMARKS AND OTHER SURVEY MONUMENTS. DAMAGED MONUMENTS SHALL BE REESTABLISHED AND REPLACED BY THE LICENSED LAND SURVEYOR AT THE EXPENSE OF THE PARTY RESPONSIBLE FOR THE DAMAGE.

2. GEOTECHNICAL INFORMATION FOR THIS PROJECT IS BASED UPON THE GEOTECHNICAL INVESTIGATION REPORT XXXX, BY YEH AND ASSOCIATES, DATED MM/DD/YYYY. THE CONTRACTOR SHALL PERFORM WORK IN ACCORDANCE WITH THE GEOTECHNICAL RECOMMENDATIONS.

3. IN THE EVENT THE CONTRACTOR ALLOWS, AUTHORIZES, APPROVES OR CONSTRUCTS ITEMS THAT DIFFER FROM THE APPROVED PLANS, SPECIFICATIONS OR OTHER CONTRACT DOCUMENTS, WITHOUT WRITTEN APPROVAL BY THE ENGINEER, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY LIABILITY ARISING FROM SUCH CHANGES.

4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING SAFEGUARDS, SAFETY DEVICES, PROTECTIVE EQUIPMENT, AND ANY OTHER NEEDED ACTION TO PROTECT THE LIFE, HEALTH AND SAFETY OF THE PUBLIC AND TO PROTECT PROPERTY IN CONNECTION WITH THE PERFORMANCE OF WORK COVERED BY THE CONTRACTOR.

5. THE CONTRACTOR SHALL CONTACT THE UTILITY NOTIFICATION CENTER OF COLORADO FOR LOCATION OF UNDERGROUND GAS, ELECTRIC AND COMMUNICATION UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION (1-800-922-1987) OR 811 THE CONTRACTOR SHALL NOTIFY OTHER APPLICABLE UTILITY COMPANIES AS WELL TO OBTAIN FIELD LOCATES OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION.

6. LOCATIONS OF UNDERGROUND UTILITIES AS SHOWN ON THE PLANS WERE TAKEN FROM THE RECORDS OF THE CONTROLLING AGENCIES OR FROM AGENCY MARKINGS IN THE FIELD. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR COMPLETENESS OR ACCURACY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE EXISTENCE AND/OR LOCATION OF ALL UNDERGROUND UTILITIES AND PARTICIPATE IN THE RESOLUTION OF ANY CONFLICTS PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE JOB SITE CONDITIONS THROUGHOUT THE DURATION OF CONSTRUCTION, INCLUDING SAFETY OF ALL PERSONS AND PROTECTION OF PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED ONLY TO WORKING HOURS. THE CONTRACTOR SHALL DEFEND INDEMNIFY AND HOLD THE OWNER, THE ENGINEER AND THE GOVERNING JURISDICTION HARMLESS FOR ANY AND ALL LIABILITY, IN CONNECTION WITH THE PERFORMANCE OF WORK, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER, THE ENGINEER OR THE GOVERNING JURISDICTION.

8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANING NEARBY PUBLIC OR PRIVATE STREETS OF MUD AND DEBRIS, DUE TO CONSTRUCTION ACTIVITIES, ON A DAILY BASIS OR AS DIRECTED BY THE ENGINEER. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF OTHER WORK.

9. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE COLORADO DEPARTMENT OF TRANSPORTATION, STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION DATED 2011; AND AS SUBSEQUENTLY REVISED; THE CDOT STANDARD PLANS M&S STANDARDS DATED JULY, 2012 AND REVISED PROJECT SPECIAL CONDITIONS; AND THE BOULDER COUNTY MULTI-MODAL TRANSPORTATION STANDARDS; AND THE BOULDER COUNTY STORM DRAINAGE CRITERIA MANUAL.

10. THE CONTRACTOR SHALL HAVE: ONE (1) SIGNED COPY OF THE PLANS ACCEPTED BY THE BOULDER COUNTY ENGINEER, ONE (1) COPY OF THE CONSTRUCTION SPECIFICATIONS FOR THE PROJECT, ONE (1) COPY OF THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD PLANS (M&S STANDARDS), AND ONE (1) COPY OF THE COLORADO DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION AT THE JOB SITE AT ALL TIMES.

11. CONTRACTORS NEED TO USE THE DESIGN PLANS IN CONJUNCTION WITH THE DIGITAL TERRAIN MODEL (DTM). IN THE EVENT OF A CONFLICT, DESIGN PLANS SHALL ALWAYS TRUMP DATA FROM THE DTM.

12. CONTRACTOR TO CONTACT ENGINEER IN THE EVENT OF A DISCREPANCY BETWEEN CRITERIA PRIOR TO CONSTRUCTION.

GENERAL NOTES CONT'D:

13. FOR PRELIMINARY PLAN QUANTITIES OF MATERIALS, THE FOLLOWING RATES OF APPLICATION WERE USED:
    HOT MIX ASPHALT.....@ 110 LBS./SQ.YD./INCH
    AGGREGATE BASE COURSE CLASS 6.....@ 133 LBS./CU.FT.
    TACK COAT DILUTED EMULSIFIED ASPHALT .....@ 0.10 GALS/SQ.YD. (DILUTED)

14. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL CONTAIN ALL WORK WITHIN THE RIGHT OF WAY AND TEMPORARY AND PERMANENT EASEMENTS AS SHOWN ON THE PLANS AND CROSS SECTIONS (ROW SHOWN ON PLANS IS APPROXIMATE AND SHOULD BE VERIFIED IN THE FIELD). ANY DISTURBANCE BEYOND THESE LIMITS SHALL BE RESTORED TO ORIGINAL CONDITION BY THE CONTRACTOR AT CONTRACTOR'S OWN EXPENSE. CONSTRUCTION ACTIVITIES IN ADDITION TO NORMAL CONSTRUCTION SHALL INCLUDE THE PARKING OF VEHICLES OR EQUIPMENT, DISPOSAL OF LITTER, AND ANY OTHER ACTION WHICH WOULD ALTER EXISTING CONDITIONS.

15. THE DECISION TO BRACE, SHORE OR SHEET PILE FOR STRUCTURE EXCAVATION SHALL BE ENTIRELY THE CONTRACTOR'S RESPONSIBILITY. HOWEVER, IF THE ENGINEER IS OF THE OPINION THAT AT ANY POINT THE TRENCH WALLS ARE NOT PROPERLY SUPPORTED; THE ENGINEER MAY ORDER THE PLACEMENT OF ADDITIONAL SUPPORTS BY AND AT THE EXPENSE OF THE CONTRACTOR. COMPLIANCE WITH SUCH ORDER SHALL NOT RELIEVE OR RELEASE THE CONTRACTOR FROM RESPONSIBILITIES FOR THE SAFETY OF THE WORK. ALL WORK SHALL BE IN ACCORDANCE WITH ALL STATE AND FEDERAL OSHA REGULATIONS. THE CONTRACTOR SHALL TAKE NOTE THAT EXISTING UTILITIES NEAR THE PROPOSED EXCAVATION SHALL BE PROTECTED DURING CONSTRUCTION. TEMPORARY SHORING IS RECOMMENDED TO LIMIT TRENCH WIDTH AND POTENTIAL DAMAGE TO EXISTING UTILITIES.

16. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE ACCEPTANCE AND CONTROL OF ALL SURFACE AND SUBSURFACE DRAINAGE AND GROUNDWATER ENTERING THE PROJECT AREA. THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING DEWATERING IF NEEDED AT NO ADDITIONAL COSTS TO THE PROJECT. DEWATERING METHODS SHALL BE APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL OBTAIN A CONSTRUCTION DEWATERING PERMIT FOR ALL CONSTRUCTION ACTIVITIES.

17. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES BY USING EVERY REASONABLE MEANS, INCLUDING FIELD LOCATION OF THE UTILITY. REPAIR OF DAMAGE TO THE EXISTING UTILITIES DURING CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL DOCUMENT THE CONDITION OF EXISTING UTILITIES (VISIBLE FACILITIES) WITH THE ENGINEER AND UTILITY REPRESENTATIVES PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES.

18. ALL EXISTING UTILITY FACILITIES TO REMAIN IN PLACE WITHIN THE CONSTRUCTION LIMITS SHALL BE PROTECTED BY THE CONTRACTOR.

19. THE SULFATE EXPOSURE CLASS FOR THIS PROJECT IS CLASS 0.

20. THE CONTRACTOR SHALL OBTAIN, AT HIS EXPENSE, ALL PERMITS REQUIRED TO PERFORM THE PROPOSED WORK PRIOR TO CONSTRUCTION.

21. STATIONING LATH WILL BE REMOVED AS DIRECTED AND AT NO ADDITIONAL COST TO THE PROJECT.

22. IT IS ESTIMATED THAT 1134 GALLONS OF EMULSIFIED ASPHALT WILL BE REQUIRED. THIS IS NOT PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

23. IT IS ESTIMATED THAT 80 HOURS OF BLADING WILL BE REQUIRED FOR THIS PROJECT.

24. IT IS ANTICIPATED THAT PUBLIC INFORMATION SERVICES WILL BE REQUIRED FOR THIS PROJECT.

25. IT IS ANTICIPATED THAT CONSTRUCTION SURVEYING WILL BE REQUIRED FOR THIS PROJECT.

26. IT IS ANTICIPATED THAT MOBILIZATION WILL BE REQUIRED FOR THIS PROJECT.

27. IT IS ESTIMATED THAT 1 SANITARY FACILITY WILL BE REQUIRED FOR THIS PROJECT.

28. IT IS ESTIMATED THAT 10 HOURS OF PROOF ROLLING WILL BE REQUIRED AS DIRECTED BY THE ENGINEER.

29. IT IS ESTIMATED THAT 10 HOURS OF WILDLIFE BIOLOGIST WILL BE REQUIRED FOR THE PROJECT.

30. IT IS ESTIMATED THAT 20 HOURS OF REMOVAL OF NESTS WILL BE REQUIRED FOR THE PROJECT.

GENERAL NOTES CONT'D:

31. IT IS ESTIMATED THAT XX ACRES OF CLEARING AND GRUBBING WILL BE REQUIRED FOR THIS PROJECT AND PAID FOR AS ONE LUMP SUM.

32. IT IS ESTIMATED THAT XX HOURS OF HERBICIDE APPLICATION WILL BE REQUIRED FOR THIS PROJECT.

33. THE INTENT OF THIS CONTRACT IS TO RESTORE THE AREA AFFECTED BY THE 2013 FLOOD TO PRE- FLOOD CONDITIONS AND AS MODIFIED BY THESE PLANS

34. THE CONTRACTOR SHALL REMOVE DEBRIS AS NEEDED FOR CONSTRUCTION OF THE PROJECT. ALL WORK ASSOCIATED WITH THIS CONSTRUCTION ACTIVITY WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE CLEARING AND GRUBBING IN ITEM 201.

35. THE CONTRACTOR SHALL TAKE PRECAUTIONARY MEASURES TO PROTECT THE EXISTING VEGETATION INSIDE AND OUTSIDE THE PROJECT LIMITS. THE CONTRACTOR SHALL FENCE ALL VEGETATION TO BE UNDISTURBED PRIOR TO COMMENCING WORK. ANY COST INCURRED FOR DAMAGE OF SUCH MATERIAL DUE TO CONSTRUCTION SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

36. THE CONTRACTOR MUST KEEP ALL EQUIPMENT OPERATION A MINIMUM OF 10 FEET FROM EXISTING OVERHEAD ELECTRIC LINES. IF THIS IS NOT FEASIBLE, OR CONDITIONS WARRANT ADDITIONAL PROTECTION OR POLE STABILIZATION, THE CONTRACTOR MUST CONTACT THE UTILITY OWNER TO ARRANGE PROTECTIVE COVERING AND POLE STABILIZATION. A MINIMUM OF 48 HOURS NOTICE IS REQUIRED.

37. IT IS ESTIMATED THAT 1 FIELD OFFICE WILL BE REQUIRED FOR THIS PROJECT

38. CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH BOULDER COUNTY AT LEAST 72 HOURS PRIOR TO START OF CONSTRUCTION. THOSE IN ATTENDANCE SHALL INCLUDE ENGINEER, CONTRACTOR AND ANY OTHER AFFECTED AGENCIES. CONSTRUCTION PLANS WILL BE DISTRIBUTED AT THE PRE-CONSTRUCTION MEETING.

PAVEMENT CONSTRUCTION NOTES:

1. DILUTED EMULSIFIED ASPHALT FOR THE TACK COAT SHALL CONSIST OF 1 PART WATER AND 1 PART EMULSIFIED ASPHALT. RATES OF APPLICATION SHALL BE DETERMINED BY THE ENGINEER AT THE TIME OF APPLICATION. TACK COAT SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE COST OF THE WORK.

2. WATER SHALL BE USED AS A DUST PALLIATIVE WHERE REQUIRED. LOCATIONS SHALL BE AS DIRECTED BY THE ENGINEER. THIS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF CONSTRUCTION.

3. ANY LAYER OF HOT MIX ASPHALT THAT IS TO HAVE A SUCCEEDING LAYER PLACED THEREON SHALL BE COMPLETED FULL WIDTH BEFORE SUCCEEDING LAYER IS PLACED.

4. ASPHALT JOINTS SHALL FALL ON LANE LINES, SHOULDERS LINES OR MEDIAN LINES, EXCEPT WHERE STATED IN THE PLANS.

5. PRIOR TO PLACING HOT MIX ASPHALT, THE PAVED SURFACE SHALL BE SWEPT AND CLEANED. THIS WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE COST OF THE HOT MIX ASPHALT PAVEMENT ITEM.

6. THE CONTRACTOR MAY USE AN EXPOSED LONGITUDINAL JOINT FOR A MAXIMUM OF 1 DAY. THE JOINT SHALL CONSIST OF A VERTICAL FACE 1 INCH DEEP, AND AT THE BOTTOM OF THE VERTICAL FACE, A 3:1 SLOPE TO EXISTING PAVEMENT (OR SUBGRADE). THE MAXIMUM DEPTH OF THE 3:1 SLOPE SHALL BE 2 INCHES. AT THE END OF THE FOLLOWING DAY, PLACEMENT OF THE HMA ON THE ADJACENT LANE IS REQUIRED.

7. THE FOLLOWING SHALL BE FURNISHED WITH EACH BITUMINOUS PAVER:
   A. A SKI TYPE DEVICE AT LEAST 30 FEET IN LENGTH
   B. SHORT SKI OR SHOE
   C. 1500 FEET OF CONTROL LINE AND STAKES

EARTHWORK/GRADING:

1. DEPTH OF MOISTURE-DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
   BASES OF CUTS AND FILLS - 1 FOOT
   FULL DEPTH OF ALL EMBANKMENTS ON THIS PROJECT.

2. EXCAVATION REQUIRED FOR COMPACTION OF BASES OF CUTS AND FILLS WILL BE CONSIDERED AS SUBSIDIARY TO THAT OPERATION AND WILL NOT BE PAID FOR SEPARATELY.

3. GRADING WILL BE INSPECTED BY AN OWNER'S REPRESENTATIVE DURING ALL EXCAVATIONS TO EVALUATE CHANGING CONDITIONS.

4. TYPE OF COMPACTION FOR THIS PROJECT WILL BE AASHTO T-180. WATER FOR COMPACTION WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE INCLUDED IN THE WORK.

DRAINAGE NOTES:

1. REFERENCE POINTS FOR INSTALLATION OF DRAINAGE FEATURES ARE DETAILED ON THE DRAINAGE DETAILS SHEET.

2. THE DEFINITION OF PIPE LENGTHS CALLED OUT IN THE DRAINAGE PLANS ARE DETAILED ON THE DRAINAGE DETAILS SHEET.

3. PIPE MATERIAL WILL BE REINFORCED CONCRETE PIPE (RCP) UNLESS OTHERWISE NOTED ON THE PLANS. STRENGTH CLASS OF ALL RCP SHALL BE IN ACCORDANCE WITH CDOT M-603-2 AND SECTION 706.02 OF THE STANDARD SPECIFICATIONS.

4. THE CONTRACTOR IS REQUIRED TO KEEP EXISTING CULVERTS FUNCTIONAL AND MAINTAIN PROPER STORMWATER CONVEYANCE UNTIL PROPOSED DRAINAGE FACILITIES ARE CONSTRUCTED AND FUNCTIONING PROPERLY. REMOVAL OR ABANDONMENT OF THE EXISTING STORM DRAIN SYSTEMS SHALL BE AT THE DISCRETION OF THE CONTRACTOR IN ACCORDANCE WITH CONSTRUCTION PHASING.

5. SIGNED AND SEALED SHOP DRAWINGS FOR ALL NON CDOT STANDARD DRAINAGE STRUCTURES ARE REQUIRED.

6. INFORMATION SHOWN REPRESENTS THE FINAL STORM DRAIN SYSTEM AND CULVERTS. PHASING OF INSTALLATION AND INSTALLATION METHODS TO ACCOMMODATE CONSTRUCTION SCHEDULES IS AT THE DISCRETION OF THE CONTRACTOR.

7. UNLESS OTHERWISE NOTED, EXISTING DRAINAGE FACILITIES SHALL REMAIN AND BE PROTECTED IN PLACE.

8. THE DECISION TO BRACE, SHORE, OR SHEET PILE EXCAVATIONS SHALL BE ENTIRELY THE CONTRACTOR'S RESPONSIBILITY. ALL WORK SHALL BE IN ACCORDANCE WITH ALL STATE AND FEDERAL O.S.H.A. REGULATIONS. THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES AND STRUCTURES NEAR THE PROPOSED EXCAVATION DURING CONSTRUCTION.

9. ALL CONCRETE DRAINAGE PIPE SHALL CONFORM TO CLASS 0 RCP (SP0) AS DEFINED BY TABLE 624-1 OF THE STANDARD SPECIFICATIONS. THIS WILL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN THE 603 PIPE PAY ITEMS.

SIGNING AND PAVEMENT MARKING NOTES

1. ALL SIGNING AND PAVEMENT MARKINGS SHALL BE INSTALLED AS INDICATED IN THE ROADWAY SITE PLANS, THE LATEST MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND CDOT STANDARDS AND SPECIFICATIONS.

2. POST LENGTHS ARE PROVIDED FOR ESTIMATING PURPOSES ONLY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT POST LENGTHS NECESSARY TO MEET SPECIFIED PANEL HEIGHTS.

3. THE LOCATION OF SIGNS IS APPROXIMATE. THE FINAL LOCATION OF THE SIGNS IS TO BE APPROVED BY THE ENGINEER.

4. ANY DAMAGE DONE TO THE EXISTING UTILITIES DURING THE PLACEMENT OF THE SIGNS IS THE RESPONSIBILITY OF THE CONTRACTOR.

ENVIRONMENTAL NOTES:

1. IF AN ACTIVE NEST CONTAINING EGGS OR YOUNG BIRDS IS FOUND, ALL WORK THAT COULD RESULT IN ABANDONMENT OR DESTRUCTION OF THE NEST WILL BE AVOIDED UNTIL THE YOUNG HAVE FLEDGED OR THE NEST IS UNOCCUPIED AS DETERMINED BY A QUALIFIED BIOLOGIST. TREE TRIMMING AND/OR REMOVAL ACTIVITIES SHALL BE COMPLETED BEFORE BIRDS BEGIN TO NEST OR AFTER THE YOUNG HAVE FLEDGED. IN COLORADO, MOST NESTING AND REARING ACTIVITIES OCCUR BETWEEN APRIL 1 AND AUGUST 31, HOWEVER, SINCE SOME BIRDS NEST AS EARLY AS FEBRUARY, A NESTING BIRD SURVEY SHALL BE CONDUCTED BY A BIOLOGIST BEFORE ANY TREE TRIMMING OR REMOVAL ACTIVITIES BEGIN. THE CONTRACTOR SHALL FOLLOW THE PROVISIONS OF THE MIGRATORY BIRD TREATY ACT (MBTA) THROUGHOUT THE DURATION OF CONSTRUCTION. IF CONSTRUCTION RELATED ACTIVITIES OCCUR BETWEEN FEBRUARY 15 AND AUGUST 31 THEN A PRE-CONSTRUCTION SURVEY FOR NESTING BIRDS MUST BE COMPLETED BY A QUALIFIED BIOLOGIST. NO CONSTRUCTION ACTIVITIES WILL OCCUR WITHIN 50 FEET OF AN ACTIVE NEST UNTIL THE NEST BECOMES INACTIVE OR THE YOUNG HAVE FLEDGED. A PRE-CONSTRUCTION SURVEY FOR NESTING RAPTORS MUST BE COMPLETED WITHIN A HALF MILE BUFFER OF THE PROJECT LIMITS. IF ANY NESTING RAPTORS OCCUR WITHIN THE BUFFER AREA, THEN CPW "RECOMMENDED BUFFER ZONES AND SEASONAL RESTRICTIONS FOR COLORADO RAPTORS" GUIDELINES SHOULD BE FOLLOWED. CPW MAY REDUCE THE BUFFER REQUIREMENTS BASED ON CONDITIONS OF THE STUDY AREA AND TYPE OF WORK BEING DONE, BUT MUST BE CONSULTED FOR APPROVAL PRIOR TO CONSTRUSTION WITHIN THE RECOMMENDED BUFFER ZONE OF AN ACTIVE NEST.

2. REMOVAL OF EXISTING TREES AND VEGETATION DURING CONSTRUCTION WILL BE LIMITED. ACCESS ROUTES, STAGING AREAS, ETC. WILL BE LOCATED WITHIN PREVIOUSLY DISTURBED AREAS TO THE EXTENT POSSIBLE. DISTURBED AREAS WILL BE RESTORED USING NATIVE PLANT MATERIALS.

3. FOLLOW REGIONAL STORMWATER GUIDELINES AND DESIGN BEST MANAGEMENT PRACTICES (BMPS) TO CONTROL CONTAMINATION, EROSION, AND SEDIMENTATION DURING AND AFTER CONSTRUCTION.

4. AVOID SPREADING NOXIOUS WEEDS BY MINIMIZING SOIL DISTURBANCE TO THE MAXIMUM EXTENT POSSIBLE, CLEANING CONSTRUCTION EQUIPMENT, AND RE-SEEDING OF ALL DISTURBED SOIL WITH A CERTIFIED WEED-FREE SEED MIX. USE NATIVE, WEED-FREE SEEDS, PLANTS, AND MULCH TO RE-VEGETATE ALL AREAS OF DISTURBANCE.

5. THE CONTRACTOR WILL TAKE APPROPRIATE MEASURES TO PREVENT, MINIMIZE, AND CONTROL THE SPILL OF HAZARDOUS MATERIALS IN THE CONSTRUCTION AREA. THE USE OF CONSTRUCTION EQUIPMENT WITHIN SENSITIVE AREAS WILL BE MINIMIZED OR ELIMINATED. ALL CONSTRUCTION MATERIALS USED FOR THIS PROJECT WILL BE REMOVED AS SOON AS THE WORK SCHEDULE PERMITS. ANY UNANTICIPATED HAZARDOUS MATERIALS AND/OR PETROLEUM CONTAMINATION ENCOUNTERED DURING CONSTRUCTION WILL BE HANDLED ACCORDING TO APPLICABLE FEDERAL AND STATE REGULATIONS FOR HANDLING EMERGENCY DISCOVERY OF HAZARDOUS MATERIALS.

6. ONCE CONSTRUCTION BEGINS, IF ANY SUBSURFACE ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED (E.G., ARTIFACTS SUCH AS [BUT NOT LIMITED TO] HISTORIC TRASH SUCH AS BOTTLES, DISHWARE, HOUSEHOLD OR MINING ITEMS, ETC; PREHISTORIC STONE TOOLS SUCH AS PROJECTILE POINTS OR OTHER FLAKED STONE ITEMS; OR HISTORIC OR PREHISTORIC FEATURES, SUCH AS FOUNDATIONS, STONE WALL REMAINS, MINE ADITS OR PROSPECT PITS, HEARTHS, ETC.), WORK SHOULD BE IMMEDIATELY HALTED IN THE VICINITY OF THE FIND, AND A QUALIFIED PROFESSIONAL ARCHAEOLOGIST SHOULD BE PROMPTLY NOTIFIED TO EXAMINE THE ARTIFACTS SECURED AND WORK SHOULD NOT RESUME UNTIL THE DISCOVERY CAN BE EVALUATED AND/OR REMOVED BY A QUALIFIED ARCHAEOLOGIST. IF BONES OF POTENTIAL HUMAN ORIGIN ARE ENCOUNTERED DURING CONSTRUCTION, GROUND-DISTURBING WORK MUST BE STOPPED IN THE VICINITY OF THE DISCOVERY, AND THE BOULDER COUNTY SHERIFF AND CORONER, AND THE COLORADO STATE ARCHAEOLOGIST SHOULD BE PROMPTLY NOTIFIED. WORK CANNOT RESUME NEAR HUMAN REMAINS UNTIL CLEARANCE IS GRANTED.

7. ONCE CONSTRUCTION BEGINS, IF ANY SUBSURFACE PALEONTOLOGICAL MATERIALS ARE ENCOUNTERED (E.G., VERTEBRATE, INVERTEBRATE, OR PLANT FOSSILS), WORK SHOULD BE HALTED IMMEDIATELY IN THE VICINITY OF THE FIND, AND A QUALIFIED PROFESSIONAL PALEONTOLOGIST SHOULD BE PROMPTLY NOTIFIED TO EXAMINE THE ARTIFACTS OR FEATURE. THE SITE OF THE FIND SHOULD BE SECURED AND WORK SHOULD NOT RESUME UNTIL THE DISCOVERY CAN BE EVALUATED AND/OR REMOVED BY A QUALIFIED PALEONTOLOGIST. IF WARRANTED, ADDITIONAL PALEONTOLOGIST TESTING OR DATA RECOVERY MAY BE NECESSARY BEFORE WORK CAN BE RESUMED IN THE VICINITY OF THE FIND.

8. LOCATE ACCESS ROUTES, STAGING AREAS, AND WORK AREAS WITHIN PREVIOUSLY DISTURBED OR MODIFIED AREAS WHEN FEASIBLE.

ENVIRONMENTAL NOTES CONT'D:

9. TEMPORARY LIGHTING WILL BE USED WITH DIRECTIONAL SHIELDING TO FOCUS THE LIGHTING ONTO THE DRIVING SURFACE OR PROJECT CONSTRUCTION AREA. ALL PERMANENT LIGHTING MUST BE DARK-SKY COMPLIANT. LIGHTING WILL BE LIMITED TO THE EXTENT NECESSARY TO MEET SAFETY REQUIREMENTS.

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BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

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JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GENERAL NOTES
(2 OF 2)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 4

TO ESTABLISH GEOMETRIC CONTROL FOR THE CONSTRUCTION OF THIS PROJECT, THE DEPARTMENT HAS PROVIDED THE FOLLOWING INFORMATION:

	Format *
■ Horizontal Control	Plans
■ Vertical Control	Plans
■ Roadway Alignment	Plans
☐ Original Terrain Data	
☐ Other:	

* Specify the information format, ie., plan sheet, computer disk, computer printout, or other. The information marked is either contained on the plans or is available from the Engineer.

TYPE OF PROJECT

- ☐ Landscaping
- ☐ Signalization
- ☐ Safety Improvement
- ☐ Asphalt Overlay
- ☐ Concrete Overlay
- ☐ Minor Widening
- ☐ Major Reconstruction
- ☐ New Roadway Construction
- ☐ Bridge Replacement
- ☐ Bridge Widening
- ☐ New Bridge
- ■ Other: Flood Recovery and Restoration

SURVEY WORK TO BE PERFORMED BY OTHERS: _____

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 625:

- ___ ■ Establish and Maintain Project Centerline or Engineer Approved Offset Line(s)
- ___ ■ Verification and Maintenance of Horizontal and Vertical Control
- ___ ■ Verify or Determine existing grades and alignments
- ___ ☐ Verify or Determine existing topography
- ___ ☐ GPS/RTS (Global Positioning System/Robotic Total Station) Construction Machine Control
- ___ ☐ Clearing and Grubbing Limits (Section 201)
- ___ ☐ Removal Limits (Section 202)
- ___ ☐ Reset Items (Section 210)
- ___ ■ Excavation and Embankment (Section 203)
  - ___ ■ Excavation
    - ___ ■ Unclassified
    - ___ ☐ Stripping
    - ___ ☐ Muck
    - ___ ■ Rock
    - ___ ☐ Borrow
    - ___ ☐ Other: _____
    - ___ ■ Potholing
  - ___ ■ Embankment
  - ___ ☐ Site Grading
  - ___ ☐ Erosion Control (Perm)
  - ___ ☐ Other: _____
  - ___ ■ As Staked Earthwork Quantities (See General Notes)

	Slope Staking (Y/N)	Grid (Y/N)	Grade (Y/N)	Special Interval
Excavation	Y	N	Y	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-
Embankment	Y	N	Y	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

- ___ ☐ Landscaping
  - ___ ☐ Top Soil (Section 207)
  - ___ ☐ Seeding (Section 212)
  - ___ ☐ Mulching (Section 213)
  - ___ ☐ Planting (Section 214)
  - ___ ☐ Herbicide (Section 217)
  - ___ ■ Other: Seeding Boundaries
- ___ ☐ Erosion Control (Section 208)
  - ___ ☐ Seeding (Temp)
  - ___ ☐ Silt Fence
  - ___ ☐ Erosion Bales
  - ___ ☐ Erosion Logs
  - ___ ☐ Riprap (Temp)
  - ___ ☐ Other: _____
- ___ ■ Roadway Bases
  - ___ ☐ Untreated Subgrade
  - ___ ☐ Treated Subgrade
  - ___ ■ Aggregate Base Course (Section 304)
  - ___ ☐ Reconditioning
  - ___ ☐ PMBB - Plant Mix Bituminous Base
  - ___ ☐ Other: _____

	Grid (Y/N)	Grade (Y/N)	Special Interval	Special Offset
Roadway Bases	-	-	-	-
	-	-	-	-
	N	Y	-	-
	-	-	-	-
	-	-	-	-
	-	-	-	-

- ___ ■ Pavements
  - ___ ■ HMA - Hot Mix Asphalt (Section 403)
  - ___ ☐ Concrete (Section 412)
  - ___ ☐ Heating & Scarifying Treatment
  - ___ ☐ Prime Coat, Tack Coat & Rejuvenating Agent (Section 407)
  - ___ ☐ Seal Coat or Chip Seal (Section 409)
  - ___ ☐ Other: _____

	Grid (Y/N)	Special Interval	Special Offset
Pavements	N	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-
	-	-	-

- ___ ■ Roadway Elements
  - ___ ☐ Curb and Gutter (Section 609)
  - ___ ☐ Drop inlets - alignment and grades (Section 604)
  - ___ ■ Retaining Walls
  - ___ ■ Guard Rail (Section 606)
  - ___ ☐ Sidewalk (Section 608)
  - ___ ☐ Overlay Stationing
  - ___ ☐ Other: _____

	Tangent Interval	Curve Interval	Special Offset
Curb & Gutter	-	-	-

	Left Interval	Center Interval	Right Interval
Stationing	-	-	-

- ___ ■ Riprap (Perm) (Section 506)
- ___ ☐ Slope and Ditch Paving (Section 507)
- ___ ■ Minor Structures
  - ___ ■ Structure Excavation limits (Section 206)
  - ___ ■ Culverts (Section 603)
  - ___ ■ Culverts w/ Headwalls and Wingwalls (Section 601)
  - ___ ■ Concrete Box Culverts w/ Headwalls and Wingwalls
  - ___ ■ Pipes (Section 603)
    - ___ ☐ Sanitary Sewer
    - ___ ■ Storm Sewer
    - ___ ☐ Water
    - ___ ☐ Irrigation
    - ___ ☐ Miscellaneous
  - ___ ■ Manholes (Section 604)
  - ___ ☐ Inlets (Section 604)
  - ___ ☐ Permanent Water Quality BMP (Section 208)
  - ___ ☐ Other: _____
- ___ ■ Major Structures - Overhead Signs (Section 614), Concrete Box Culverts, Bridges - and all other structures assigned a structure number
  - ___ ■ Structure Excavation limits (Section 206)
  - ___ ■ Concrete Box Culverts (Section 603) w/ Headwalls and Wingwalls (Section 601)
  - ___ ☐ Piling locations and cut off elevations (Section 502)
  - ___ ☐ Caisson locations and elevations (Section 503)
  - ___ ☐ Footing locations, alignment, and elevations
  - ___ ☐ Abutment/Pier locations, alignment, and elevations
  - ___ ☐ Wingwall skew angles/offsets
  - ___ ☐ Structural concrete form locations
  - ___ ☐ Substructure As-constructed survey required for Bridges (Subsection 601 .12) and Overhead signs (S-614-50)
  - ___ ☐ Bridge expansion joint(s) alignment and grade (longitudinal and transverse)
  - ___ ☐ Deck grades at Girder 10th or "n" th point locations and elevations
  - ___ ☐ Slope and Ditch Paving (Section 507)
  - ___ ■ Other: Retaining Walls, Moment Slab
- ___ ■ Fencing (Section 607)
  - ___ ☐ Temporary
  - ___ ■ Permanent
  - ___ ☐ Sound Barrier
  - ___ ☐ Other: _____
- ___ ■ Delineators (Section 612)
  - ___ ☐ Temporary
  - ___ ■ Permanent
- ___ ☐ Lighting (Section 613) and Traffic Control Devices (Permanent) (Section 614)
  - ___ ☐ Signal pole locations and elevations
  - ___ ☐ Light pole locations and elevations
  - ___ ☐ Sign locations
  - ___ ☐ Field verify sign post locations, elevations, and lengths before fabrication.
  - ___ ☐ Other: _____
- ___ ■ Pavement Marking (Section 627)
  - ___ ☐ Striping (Temp)
  - ___ ■ Striping (Perm)
  - ___ ☐ Symbols
  - ___ ☐ Other: _____
- ___ ☐ Temporary Lighting and Construction Traffic Control Devices (Section 630)
  - ___ ☐ Signal pole locations and elevations (Temp)
  - ___ ☐ Light pole locations and elevations (Temp)
  - ___ ☐ Sign Locations (Temp)
  - ___ ☐ Other: _____
- ___ ■ All Easements (Temp Staking by P.L.S. Only)
- ___ ■ Right of Way (Temp Staking by P.L.S. Only)

WORK PERFORMED BY THE CONTRACTOR'S SURVEYOR UNDER SECTION 629:

- ___ ☐ Monumentation (Section 629)
  - ___ ☐ Control
  - ___ ☐ Right of Way
  - ___ ☐ Land corners, Aliquot corners
  - ___ ☐ Easements
  - ___ ☐ Reference the specified existing monuments:** _____
  - ___ ☐ Replace the specified existing monuments: ** _____
  - ___ ☐ Locate monuments. It is estimated ___ hours are required.

NOTE: All 629 items shall include adequate research, calculations, and evaluations of evidence for monuments to be set.

** A Tabulation of Survey Monuments may be provided on the plans.

GENERAL NOTES:

1. Unless indicated otherwise on this Survey Tabulation Sheet, all survey work and staking intervals shall be done in accordance with the latest edition of the CDOT Survey Manual.
2. Adequate information for establishing lines, grades, and locations for all work items have been specified on the plans. Any additional information required to stake the item or element shall be generated by the Contractor's surveyor.
3. The Contractor's surveyor shall provide an estimate of the man-hours necessary to complete the work items indicated on this sheet. A copy of this sheet, with the estimated man-hours written on the blank line to the left of the specified items, shall be submitted with the Survey Schedule to the Engineer 3 days prior to the Presurvey Conference - Construction Survey.
4. Stakes and Monuments which are damaged or destroyed by the progress of construction shall be replaced by the Contractor at no additional cost to the Department.
5. The Contractor shall furnish an As Staked (or GPS/RTS Construction Machine Control) Earthwork Quantity report to the Engineer prior to completion of twenty percent (20%) of the planned earthwork in any phase as per the CDOT Survey Manual. A printed copy of the As Staked (or GPS/RTS Construction Machine Control) Earthwork data report and a computer disk with that information on it, in the specified format shall be submitted to the Engineer. The Contractor shall field verify original ground cross sections at a maximum 500 feet intervals.
6. Prior to beginning work on any subsequent operation, such as placing base course or paving, the Contractor shall certify in writing to the Engineer that the final grade is within specified tolerance.
7. The Contractor's surveyor shall perform all field surveying and calculations necessary to tie plan grades into field grades.
8. The Contractor shall coordinate construction staking on the project with any utility work.
9. Fieldbooks shall contain daily records of points set and or measurements observed. The information recorded shall contain: date, crew members' names, point no., description, staking information, and sketches. If the survey information is collected electronically, information recorded shall be provided to the Project Engineer in a hard copy format that is intuitive, clear and related to the supplemental information recorded in the field books. All linear surveys, such as slope stakes and blue tops, shall have the station and offset information related to the measured information. Non-linear surveys such as structures staking shall have sketches relating electronic information, such as point numbers, to the sketch.
10. The Contractor's surveyor shall submit the following fieldbooks to the Engineer:
    - ■ Horizontal Control (Primary & Secondary)
    - ■ Vertical Control (i.e. Benchmarks)
    - ■ Property Pin Ties
    - ☐ Horizontal Alignment
    - ☐ Grading
    - ☐ Slope Staking
    - ☐ Minor Structures
    - ☐ Major Structures
    - ☐ One fieldbook for each work category shown on this sheet
    - ☐ Other Fieldbook(s): _____

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ENGINEERING DIVISION

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UPPER FOURMILE CANYON DRIVE
SURVEY TABULATIONS

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 5

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SUMMARY OF EARTHWORK QUANTITIES

EMBANKMENT MATERIAL (COMPLETE IN PLACE)	CUBIC YARDS
ROADWAY - REGULAR EMBANKMENT	
REPLACEMENT OF MUCK	
TOTAL	0
STRUCTURE EXCAVATION	CUBIC YARDS
CULVERTS HEADWALL & WINGWALL	
TOTAL	0
STRUCTURE EXCAVATION (SPECIAL)	
ROCK EXCAVATION	
BRIDGES	
WALLS	
TOTAL	0
MUCK EXCAVATION	CUBIC YARDS
AS DIRECTED BY THE ENGINEER	
TOTAL	0
FOR INFORMATION ONLY	
UNCLASSIFIED EXCAVATION	CUBIC YARDS
ROADWAY	
TOTAL	0
COMPACTION (AASHTO T180)	CUBIC YARDS
TOTAL EMBANKMENT (NET)	0
TOTAL	0
EARTHWORK QUATITIES BALANCE	
UNCLASSIFIED EXCAVATION	CUBIC YARDS
TOTAL UNCLASSIFIED EXCAVATION	0
TOTAL FROM CONTRACTORS SOURCE	0
EMBANKMENT (NET)	
TOTAL	0
EMBANKMENT (NET) TIMES COMPACTION FACTOR (1.15)	
TOTAL	0

TABULATION OF REMOVALS, RESETS AND ADJUSTMENTS

ALIGNMENT	STATION TO STATION	REMOVAL OF ASPHALT MAT	REMOVAL OF GUARDRAIL	REMOVAL OF TREES	REMOVE AND RESET TRAFFIC SIGNS	REMOVE AND RESET MAIL BOXES	REMOVE AND RESET FENCE	REMOVAL OF PIPE	REMOVAL OF BRIDGE	REMARKS
		SY	LF	EA	EA	EA	LF	LF	EA	
									0	
	TOTALS	0	0	0	0	0	0	0	0	

TABULATION OF SURFACING QUANTITIES

ALIGNMENT	STATION TO STATION	HOT MIX ASPHALT (GRADING SX) (75) (PG 58-28)	AGGREGATE BASE COURSE (CLASS 6)	NOTES
		TON	CY	
	TO			INCLUDES REQUIRED DRIVE ENTRANCES
	TO			
	TOTALS	0	0	

TABULATION OF GUARDRAIL

ALIGNMENT	STATION TO STATION	SIDE	GUARDRAIL TYPE 3 (6-3)	END ANCHORAGE TYPE 3K	END ANCHORAGE TYPE 3D
			LF	EACH	EACH
	TO		0.0		
	TO		0.0		
	TO		0.0		
	TO		0.0		
	TO		0.0		
	TO		0.0		
	TOTALS		0.0	0	0

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UPPER FOURMILE CANYON DRIVE
ROADWAY TABULATIONS (1 OF 2)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 6

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PAVEMENT SIGNING AND MARKING LEGEND

	NEW	EXISTING
SINGLE POST MOUNTED SIGN		
EDGE LINE, WHITE, 4"		
CENTER LINES, YELLOW, 4"		

TABULATION OF PAVEMENT MARKINGS

ALIGNMENT	STATION		MARKING TYPE	PAVEMENT MARKINGS						DESCRIPTION
				DBL YELLOW SOLID 4 IN			WHITE SOLID 4 IN			
	FROM	TO		LF	SF	GAL	LF	SF	GAL	
			CENTER							
			EDGE							
			CENTER							
			EDGE							
			TOTAL (GAL)			0			0	ROUNDED UP TO NEXT FULL GALLON

TABULATION OF SIGNS

SIGN NO.	ALIGNMENT	STATION	DIRECTION	SIGN CODE	SIGN PANEL SIZE			BACKGROUND COLOR	LEGEND	SIGN PANEL			STEEL SIGN SUPPORT (2-INCH ROUND) (POST AND SOCKET)	REMARKS
										CLASS I	CLASS II	CLASS III		
					W"	x	H"			SF			EACH	
									TOTAL	0.00	0.00	0.00	0	

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UPPER FOURMILE CANYON DRIVE
ROADWAY TABULATIONS (2 OF 2)

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TABULATION OF DRAINAGE STRUCTURES

ID	LOCATION	STATION-OFF SET	INLET TYPE C (5 FOOT)	MANHOLE SLAB BASE (10 FOOT)	MANHOLE SLAB BASE (20 FOOT)	LINE		PIPE INVERT ELEVATIONS		GRADE (%)	REINFORCED CONCRETE PIPE (COMPLETE IN PLACE)							REINFORCED CONCRETE END SECTION							4x12 FOOT CONCRETE BOX CULVERT (PRECAST)	4x7 FOOT CONCRETE BOX CULVERT	CONCRETE SLOPE AND DITCH PAVING (REINFORCED)	RIPRAP (12 INCH)	RIPRAP (18 INCH)	GUTTER TYPE 2 (2 FOOT)	GEOTEXTILE (DRAINAGE) (CLASS 1)	EMBANKMENT PROTECTOR TYPE 3	DESCRIPTION
											18 INCH	30 x 19 INCH	38 x 24 INCH	60 x 38 INCH	53 x 34 INCH	76 x 48 INCH	60 INCH	18 INCH	30 x 19 INCH	38 x 24 INCH	60 x 38 INCH	53 x 34 INCH	76 x 48 INCH	60 INCH									
			EA	EA	EA	FROM	TO	UPPER	LOWER		LF							EA							LF		CY	CY	CY	LF	SY	EA	
P-UFM-100	UPPER FOURMILE	124+64.48						7407.75	7407.38	1.68					22.00							2											SPOT IMPROVEMENT 2
P-UFM-101	UPPER FOURMILE	148+63.83						7322.24	7321.43	3.60				23.00							2												SPOT IMPROVEMENT 4
P-UFM-102	UPPER FOURMILE	185+28.75						7187.65	7184.36	8.22															40								SPOT IMPROVEMENT 7
P-UFM-103	UPPER FOURMILE	189+80						7172.69	7172.49	0.80					26.00							2											SPOT IMPROVEMENT 8
P-UFM-104	UPPER FOURMILE	200+28.37						7127.20	7125.78	5.97					24.00							2											SPOT IMPROVEMENT 9
P-UFM-105	UPPER FOURMILE	221+58.30						7044.61	7042.49	5.79		37.00							1														SPOT IMPROVEMENT 13
P-UFM-106	UPPER FOURMILE	221+95.81						7040.98	7039.23	5.52						32.00							1										SPOT IMPROVEMENT 13
P-UFM-107	UPPER FOURMILE	236+38.73						6975.41	6974.29	2.49																45							SPOT IMPROVEMENT 14
P-UFM-108	UPPER FOURMILE	253+49.11						6902.83	6900.39	7.07							35.00							2									SPOT IMPROVEMENT 17
P-UFM-109/ P-UFM-109a	UPPER FOURMILE	262+49.43	1					6865.50	6863.57	2.44	79.00							2															SPOT IMPROVEMENT 19
P-UFM-112	UPPER FOURMILE	266+40.00						6854.51	6853.91	2.35			26.00							2													
P-UFM-110a	UPPER FOURMILE	267+61.84						6851.59	6851.24	1.82					19.00							2											SPOT IMPROVEMENT 20
P-UFM-110b	UPPER FOURMILE	267+61.84						6851.59	6851.24	1.82					19.00							2											SPOT IMPROVEMENT 20
P-UFM-113/ P-UFM-113a	UPPER FOURMILE	280+60.00	1					6804.04	6801.86	3.53																							
E-UFM-111	UPPER FOURMILE	325+99.41						6654.31	6651.96	6.14								2															PAVE IMPROVEMENT 2
P-UFM-114	UPPER FOURMILE	340+20.00						6596.74	6596.51	1.20	19.00								2														
		TOTAL	2	0	0						98	37	26	23	110	32	35	4	3	2	2	10	1	2	40	45	0	0	0	0	0	0	

30% SET

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BOULDER COUNTY TRANSPORTATION DEPARTMENT
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KMH	JWM	MRW	09/01/15

UPPER FOURMILE CANYON DRIVE
DRAINAGE TABULATIONS
(1 OF 1)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 8

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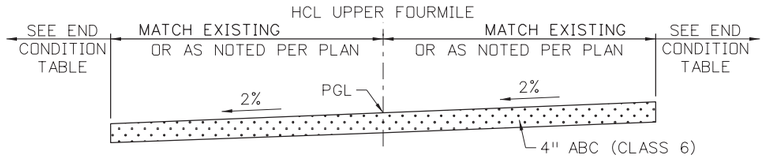
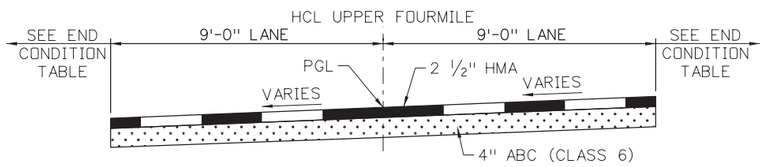


TYPICAL SECTION - UPPER FOURMILE CANYON DR

NTS
STA 50+00.00 TO STA 258+20.00
STA 281+40.00 TO STA 320+20.00



TYPICAL SECTION - UPPER FOURMILE CANYON DR

NTS
STA 258+20.00 TO STA 281+40.00
STA 320+20.00 TO STA 340+65.00

HCL	SPOT OR PAVEMENT IMPROVEMENT *	STATION		OFFSET	END CONDITION TREATMENT
		FROM	TO		
UPPER FOURMILE	SI 1	51+20.00	52+65.00	LT	DETAIL A
UPPER FOURMILE	SI 1	51+20.00	52+65.00	RT	DETAIL B
UPPER FOURMILE	SI 2	124+50.00	125+25.00	LT	DETAIL A
UPPER FOURMILE	SI 2	124+50.00	125+25.00	RT	DETAIL B
UPPER FOURMILE	SI 3	138+00.00	139+50.00	LT	DETAIL A
UPPER FOURMILE	SI 3	138+00.00	139+50.00	RT	DETAIL B
UPPER FOURMILE	SI 4	150+20.00	151+75.00	LT	DETAIL A
UPPER FOURMILE	SI 4	150+20.00	151+75.00	RT	DETAIL B
UPPER FOURMILE	SI 5	167+20.00	170+25.00	LT	DETAIL A
UPPER FOURMILE	SI 5	167+20.00	170+25.00	RT	DETAIL B
UPPER FOURMILE	SI 6	179+85.00	181+70.00	LT	DETAIL C
UPPER FOURMILE	SI 6	179+85.00	181+70.00	RT	DETAIL B
UPPER FOURMILE	SI 7	184+70.00	185+75.00	LT	DETAIL C
UPPER FOURMILE	SI 7	184+70.00	185+75.00	RT	DETAIL A
UPPER FOURMILE	SI 8	189+35.00	190+35.00	LT	DETAIL A
UPPER FOURMILE	SI 8	189+35.00	190+35.00	RT	DETAIL B
UPPER FOURMILE	SI 9	197+80.00	200+50.00	LT	DETAIL A
UPPER FOURMILE	SI 9	197+80.00	200+50.00	RT	DETAIL B
UPPER FOURMILE	SI 10	204+55.00	205+85.00	LT	DETAIL A
UPPER FOURMILE	SI 10	204+55.00	205+85.00	RT	DETAIL B
UPPER FOURMILE	SI 11	209+30.00	209+90.00	LT	DETAIL A
UPPER FOURMILE	SI 11	209+30.00	209+90.00	RT	DETAIL B
UPPER FOURMILE	SI 12	212+90.00	214+65.00	LT	DETAIL C
UPPER FOURMILE	SI 12	212+90.00	214+65.00	RT	DETAIL B
UPPER FOURMILE	SI 13	217+80.00	223+15.00	LT	DETAIL A
UPPER FOURMILE	SI 13	217+80.00	223+15.00	RT	DETAIL D
UPPER FOURMILE	SI 14	236+30.00	240+90.00	LT	DETAIL A
UPPER FOURMILE	SI 14	236+30.00	240+90.00	RT	DETAIL A
UPPER FOURMILE	SI 15	246+60.00	248+90.00	LT	DETAIL A
UPPER FOURMILE	SI 15	246+60.00	248+90.00	RT	DETAIL B
UPPER FOURMILE	SI 16	250+85.00	253+30.00	LT	DETAIL A
UPPER FOURMILE	SI 16	250+85.00	253+30.00	RT	DETAIL B
UPPER FOURMILE	SI 17	253+30.00	254+35.00	LT	DETAIL A
UPPER FOURMILE	SI 17	253+30.00	254+35.00	RT	DETAIL A
UPPER FOURMILE	SI 18	255+65.00	257+85.00	LT	DETAIL A
UPPER FOURMILE	SI 18	255+65.00	257+85.00	RT	DETAIL B
UPPER FOURMILE	PI 1	258+20.00	265+00.00	LT	DETAIL A
UPPER FOURMILE	PI 1	265+00.00	266+50.00	LT	DETAIL C
UPPER FOURMILE	PI 1	266+50.00	267+50.00	LT	DETAIL A
UPPER FOURMILE	PI 1	267+50.00	268+00.00	LT	DETAIL C
UPPER FOURMILE	PI 1	268+00.00	276+50.00	LT	DETAIL A
UPPER FOURMILE	PI 1	276+50.00	280+50.00	LT	DETAIL C
UPPER FOURMILE	PI 1	280+50.00	281+40.00	LT	DETAIL A
UPPER FOURMILE	PI 1	258+20.00	281+40.00	RT	DETAIL A
UPPER FOURMILE	SI 22	283+90.00	284+70.00	LT	DETAIL A
UPPER FOURMILE	SI 22	283+90.00	284+70.00	RT	DETAIL B
UPPER FOURMILE	SI 23	286+25.00	289+15.00	LT	DETAIL A
UPPER FOURMILE	SI 23	286+25.00	289+15.00	RT	DETAIL B
UPPER FOURMILE	SI 24	303+60.00	384+30.00	LT	DETAIL A
UPPER FOURMILE	SI 24	303+60.00	384+30.00	RT	DETAIL B
UPPER FOURMILE	SI 25	308+40.00	309+45.00	LT	DETAIL A
UPPER FOURMILE	SI 25	308+40.00	309+45.00	RT	DETAIL B
UPPER FOURMILE	PI 2	320+20.00	340+50.00	LT	DETAIL C
UPPER FOURMILE	PI 2	340+50.00	340+65.00	LT	DETAIL A
UPPER FOURMILE	PI 2	320+20.00	340+65.00	RT	DETAIL A

END CONDITION TABLE

NOTES:

1. ROADWAY SUPERELEVATION VARIES, SEE PROFILE SHEETS.
2. SEE DRAINAGE PLANS FOR ROADSIDE DITCH LOCATION
3. SEE STRUCTURAL SHEETS FOR RETAINING WALL DETAILS

30% SET

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UPPER FOURMILE CANYON DRIVE
TYPICAL SECTIONS (1 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 9

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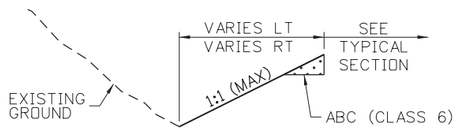
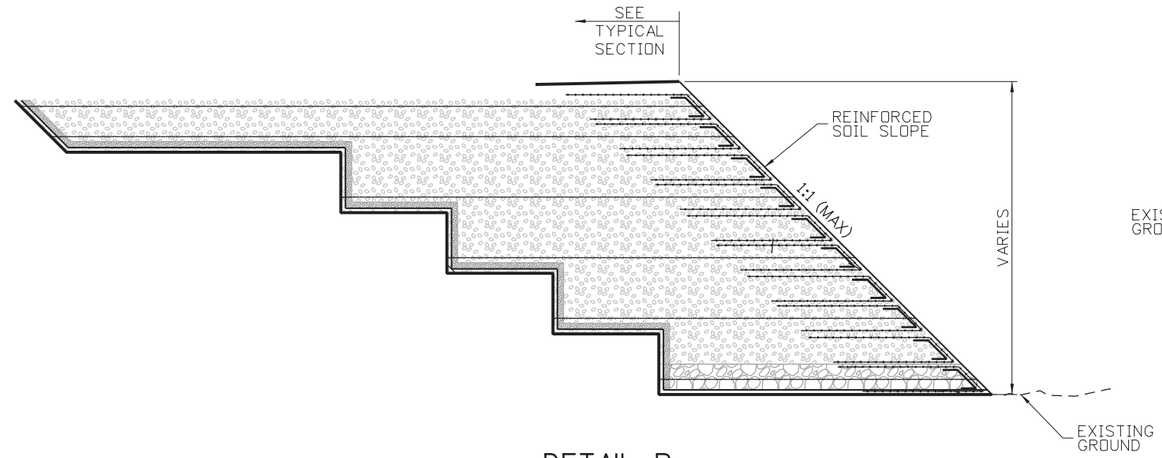
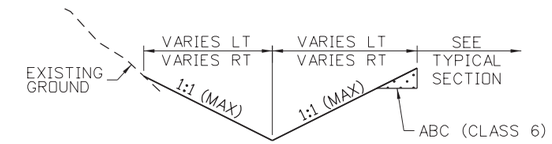


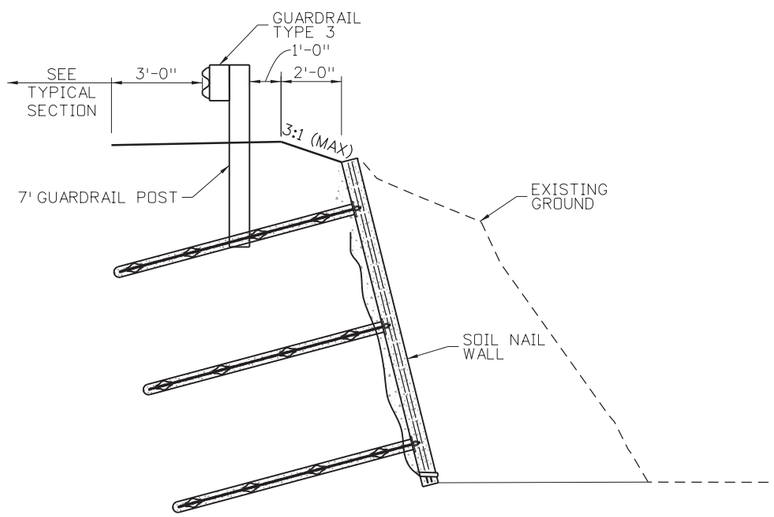
DETAIL A



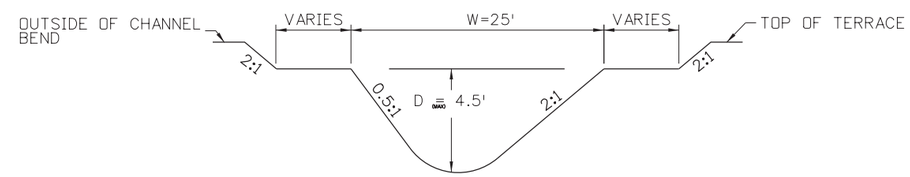
DETAIL B



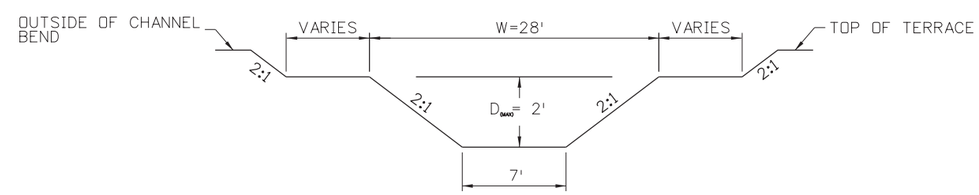
DETAIL C



DETAIL D



SECTION A-A
TYPICAL POOL CROSS-SECTION



SECTION B-B
TYPICAL BANKFULL CROSS-SECTION

NOTES:

1. SEE END CONDITION STATION LIMITS ON SHEET 1 OF 2.
2. ROADWAY SUPERELEVATION VARIES, SEE PROFILE SHEETS.
3. SEE DRAINAGE PLANS FOR ROADSIDE DITCH LOCATION
4. SEE STRUCTURAL SHEETS FOR RETAINING WALL DETAILS

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Boulder County
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UPPER FOURMILE CANYON DRIVE
TYPICAL SECTIONS (2 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 10

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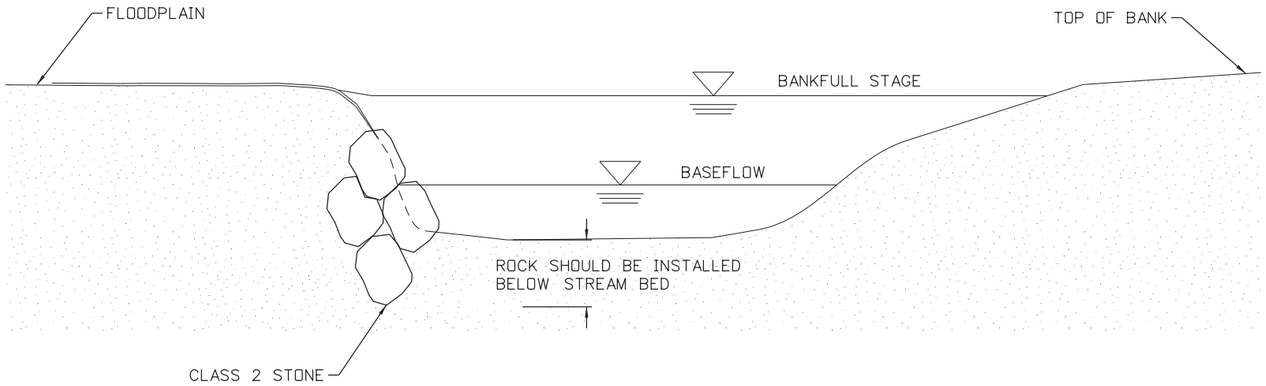
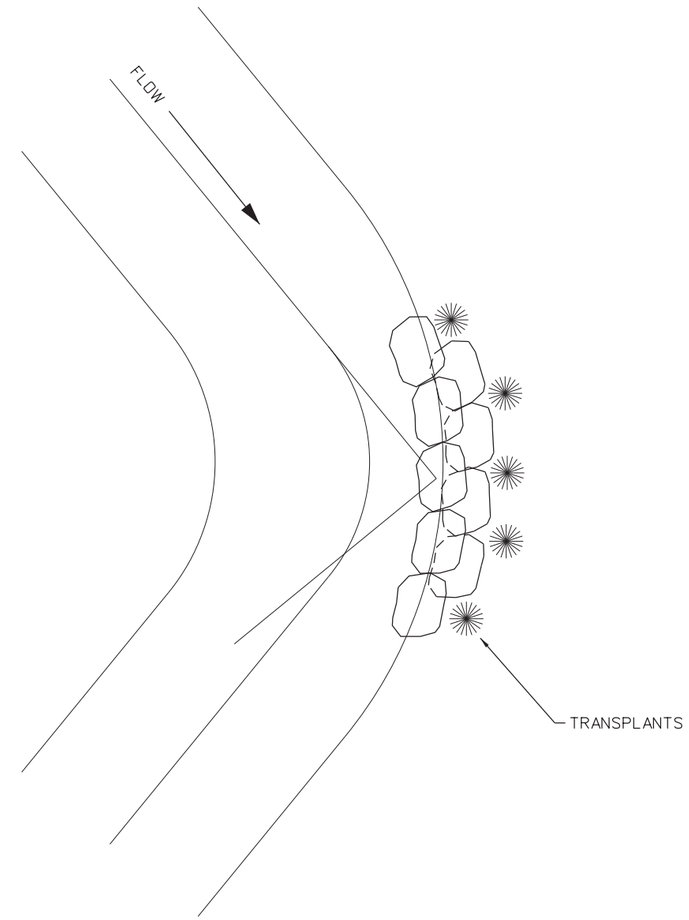
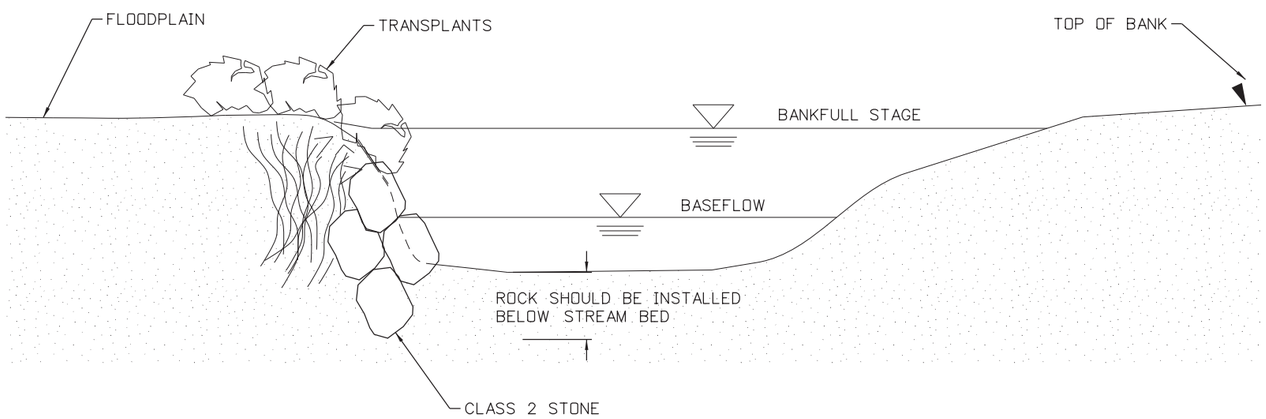
BOULDER BANK PROTECTION
CROSS SECTION VIEW
NTS



BOULDER BANK PROTECTION
PLAN VIEW
NTS



BOULDER BANK PROTECTION WITH TRANSPLANTS
CROSS SECTION VIEW
NTS



NOTES:

1. TRENCHING METHOD:
IF THE CLASS 2 CANNOT BE DRIVEN INTO THE BANK OR THE BANK NEEDS TO BE RECONSTRUCTED, THE TRENCHING METHOD SHOULD BE USED. THIS METHOD REQUIRES THAT A TRENCH BE EXCAVATED FOR THE CLASS 2. ONE-THIRD OF THE CLASS 2 SHOULD REMAIN BELOW NORMAL BASE FLOW CONDITIONS.

2. DRIVEN METHOD:
CLASS 2 SHOULD BE LAIN IN THE STREAMBED AND THEN DRIVEN INTO THE BANK WITH A HORIZONTAL AND DOWNWARD FORCE.

30% SET

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UPPER FOURMILE CANYON DRIVE
TYPICAL SECTIONS
(SHEET 3 OF 3)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 11

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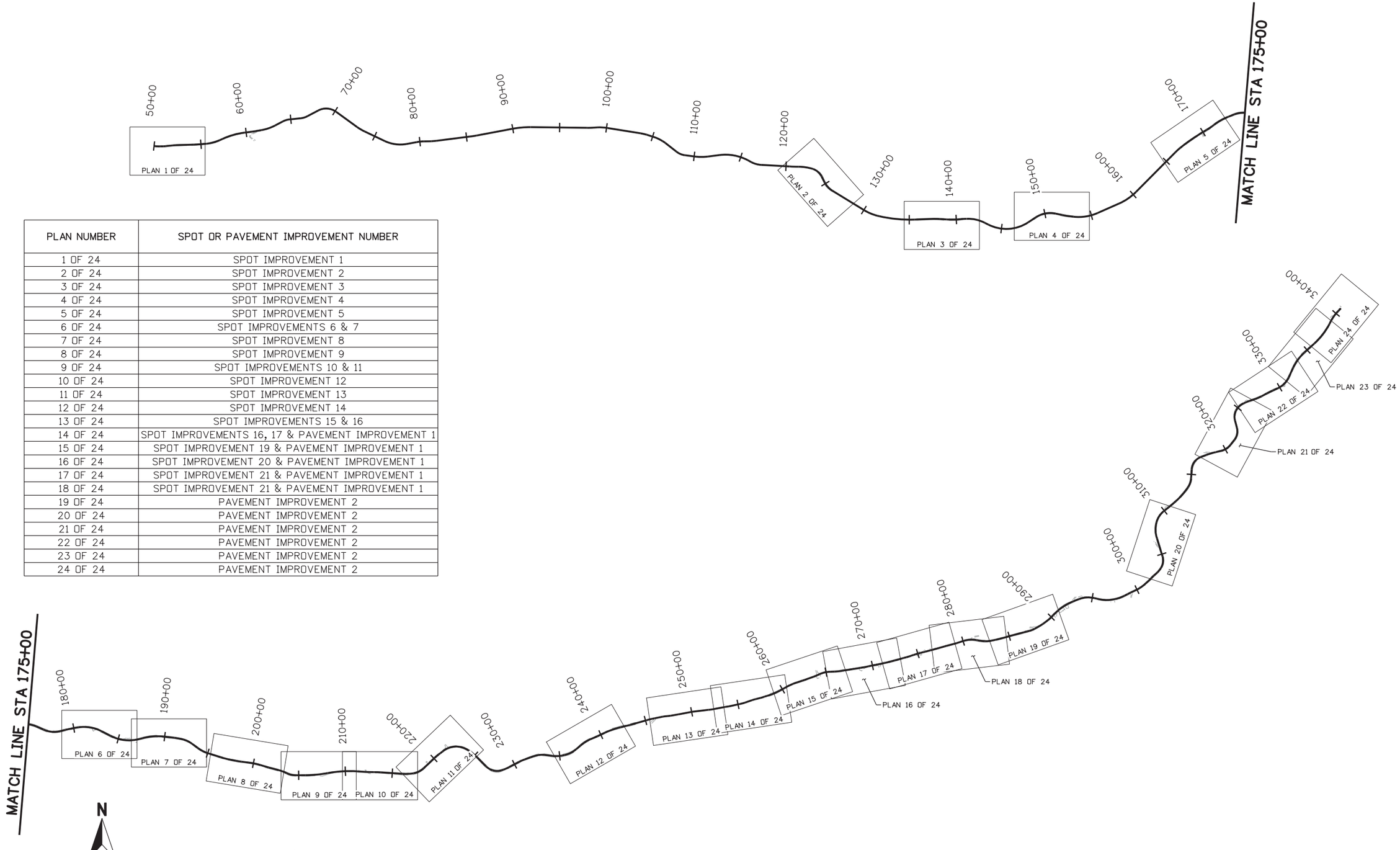
NOTES:

1. SHEET NUMBERING APPLIES TO REMOVALS, ROADWAY AND DRAINAGE PLANS.



PLAN NUMBER	SPOT OR PAVEMENT IMPROVEMENT NUMBER
1 OF 24	SPOT IMPROVEMENT 1
2 OF 24	SPOT IMPROVEMENT 2
3 OF 24	SPOT IMPROVEMENT 3
4 OF 24	SPOT IMPROVEMENT 4
5 OF 24	SPOT IMPROVEMENT 5
6 OF 24	SPOT IMPROVEMENTS 6 & 7
7 OF 24	SPOT IMPROVEMENT 8
8 OF 24	SPOT IMPROVEMENT 9
9 OF 24	SPOT IMPROVEMENTS 10 & 11
10 OF 24	SPOT IMPROVEMENT 12
11 OF 24	SPOT IMPROVEMENT 13
12 OF 24	SPOT IMPROVEMENT 14
13 OF 24	SPOT IMPROVEMENTS 15 & 16
14 OF 24	SPOT IMPROVEMENTS 16, 17 & PAVEMENT IMPROVEMENT 1
15 OF 24	SPOT IMPROVEMENT 19 & PAVEMENT IMPROVEMENT 1
16 OF 24	SPOT IMPROVEMENT 20 & PAVEMENT IMPROVEMENT 1
17 OF 24	SPOT IMPROVEMENT 21 & PAVEMENT IMPROVEMENT 1
18 OF 24	SPOT IMPROVEMENT 21 & PAVEMENT IMPROVEMENT 1
19 OF 24	PAVEMENT IMPROVEMENT 2
20 OF 24	PAVEMENT IMPROVEMENT 2
21 OF 24	PAVEMENT IMPROVEMENT 2
22 OF 24	PAVEMENT IMPROVEMENT 2
23 OF 24	PAVEMENT IMPROVEMENT 2
24 OF 24	PAVEMENT IMPROVEMENT 2

30% SET

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UPPER FOURMILE CANYON DRIVE
PLAN INDEX

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 12

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NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (2 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

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UPPER FOUR MILE CANYON DRIVE
GEOMETRIC LAYOUT
(1 OF 22)

PROJECT NO: 4041.SEPT12C37 SHEET NO: 13

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HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
		POB	50+00.00	256821.42	11100.26						
UFM-L-1						S 83° 32'02" E	15.04				
		PC	50+15.04	256819.73	11115.20						
	UFM-C-1	PI	50+39.41	256816.98	11139.42			350.00	48.66	7° 57'57"	LEFT
		PT	50+63.70	256817.62	11163.78						
UFM-L-2						N 88° 30'01" E	36.53				
		PC	51+00.22	256818.58	11200.29						
	UFM-C-2	PI	51+13.81	256818.93	11213.87			350.00	27.16	4° 26'45"	LEFT
		PT	51+27.38	256820.34	11227.38						
UFM-L-3						N 84° 03'16" E	75.39				
		PC	52+02.77	256828.15	11302.36						
	UFM-C-3	PI	52+15.44	256829.46	11314.97			350.00	25.34	4° 08'55"	RIGHT
		PT	52+28.11	256829.86	11327.64						
UFM-L-4						N 88° 12'11" E	197.41				
		PC	54+25.52	256836.05	11524.96						
	UFM-C-4	PI	54+73.40	256837.55	11572.81			1400.00	95.71	3° 55'02"	LEFT
		PT	55+21.23	256842.32	11620.45						
UFM-L-5						N 84° 17'09" E	38.56				
		PC	55+59.79	256846.15	11658.81						
	UFM-C-5	PI	56+33.39	256853.48	11732.04			450.00	145.90	18° 34'33"	LEFT
		PT	57+05.69	256883.75	11799.12						
UFM-L-6						N 65° 42'36" E	29.92				
		PC	57+35.60	256896.06	11826.39						
	UFM-C-6	PI	58+61.61	256947.89	11941.24			850.00	250.19	16° 51'53"	RIGHT
		PT	59+85.80	256964.18	12066.19						
UFM-L-7						N 82° 34'29" E	76.51				
		PC	60+62.31	256974.07	12142.06						
	UFM-C-7	PI	60+79.78	256976.32	12159.39			850.00	34.94	2° 21'19"	LEFT
		PT	60+97.25	256979.29	12176.60						
UFM-L-8						N 80° 13'10" E	65.56				
		PC	61+62.81	256990.43	12241.21						
	UFM-C-8	PI	62+40.47	257003.62	12317.74			500.00	154.09	17° 39'26"	LEFT
		PT	63+16.89	257039.41	12386.67						
UFM-L-9						N 62° 33'44" E	95.22				
		PC	64+12.11	257083.28	12471.17						
	UFM-C-9	PI	64+50.09	257100.78	12504.88			200.00	75.07	21° 30'20"	RIGHT
		PT	64+87.18	257104.71	12542.66						
UFM-L-10						N 84° 04'04" E	120.40				
		PC	66+07.58	257117.15	12662.41						
	UFM-C-10	PI	66+46.97	257121.22	12701.59			200.00	77.79	22° 17'02"	LEFT
		PT	66+85.36	257139.85	12736.30						
UFM-L-11						N 61° 47'02" E	125.11				
		PC	68+10.47	257199.00	12846.54						
	UFM-C-11	PI	69+23.35	257252.37	12946.01			180.00	201.64	64° 11'07"	RIGHT
		PT	70+12.12	257186.07	13037.37						
UFM-L-12						S 54° 01'51" E	276.78				
		PC	72+88.90	257023.50	13261.38						
	UFM-C-12	PI	73+35.26	256996.27	13298.90			500.00	92.46	10° 35'43"	LEFT
		PT	73+81.36	256976.40	13340.79						
UFM-L-13						S 64° 37'34" E	239.04				
		PC	76+20.41	256873.96	13556.78						
	UFM-C-13	PI	77+42.58	256821.61	13667.17			380.00	236.42	35° 38'50"	LEFT
		PT	78+56.83	256843.40	13787.39						
UFM-L-14						N 79° 43'36" E	109.46				

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (1 OF 22) FOR ALIGNMENT GRAPHICS.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(2 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 14

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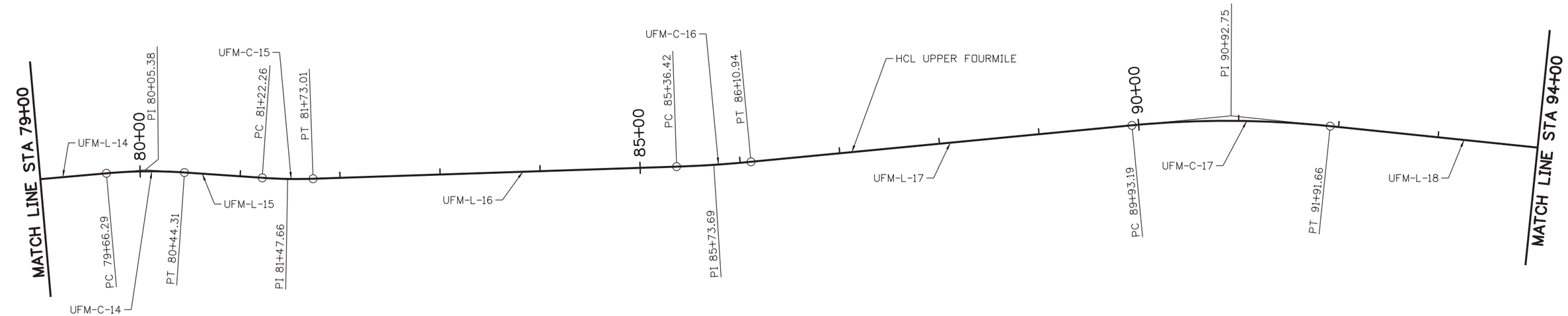

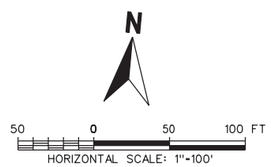

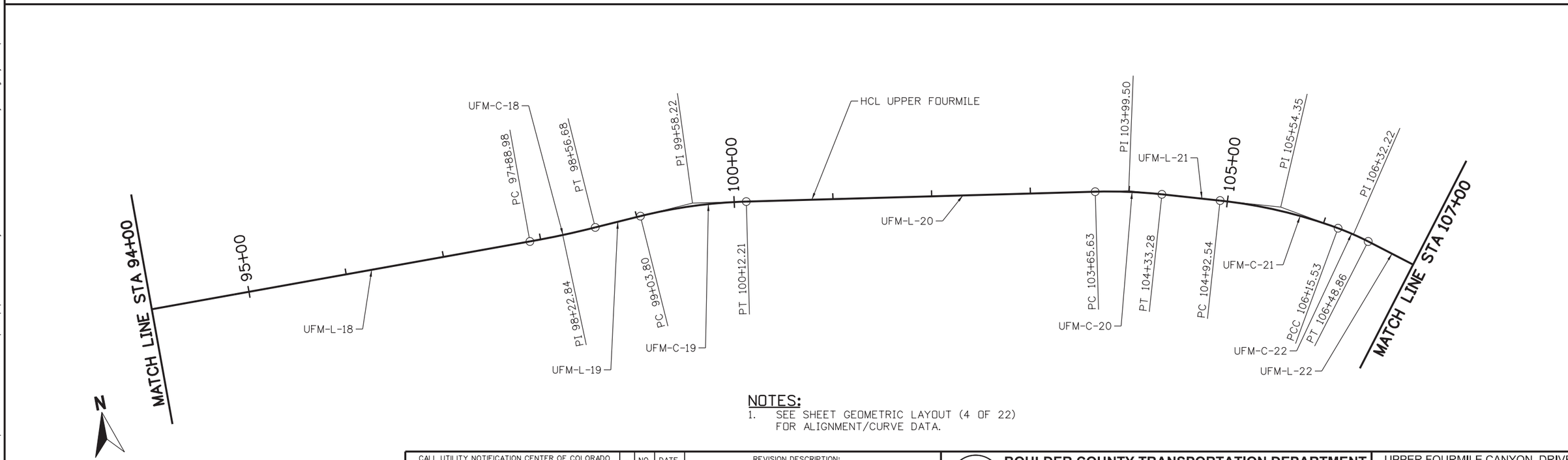

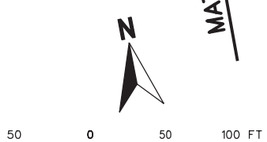

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (4 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(3 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 15

john.miller 12:13:31 PM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\05_Roadway\DGN\UFM_GEO_LAYOUT02.dgn

HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
UFM-L-14						N 79° 43'36" E	109.46				
		PC	79+66.29	256862.92	13895.10						
	UFM-C-14	PI	80+05.38	256869.89	13933.56			500.00	78.02	8° 56'25"	RIGHT
		PT	80+44.31	256870.80	13972.64						
UFM-L-15						N 88° 40'01" E	77.95				
		PC	81+22.26	256872.61	14050.57						
	UFM-C-15	PI	81+47.66	256873.20	14075.96			500.00	50.74	5° 48'53"	LEFT
		PT	81+73.01	256876.36	14101.15						
UFM-L-16						N 82° 51'08" E	363.41				
		PC	85+36.42	256921.58	14461.74						
	UFM-C-16	PI	85+73.69	256926.22	14498.73			1200.00	74.53	3° 33'30"	LEFT
		PT	86+10.94	256933.15	14535.35						
UFM-L-17						N 79° 17'38" E	382.25				
		PC	89+93.19	257004.16	14910.95						
	UFM-C-17	PI	90+92.75	257022.65	15008.77			1000.00	198.46	11° 22'16"	RIGHT
		PT	91+91.66	257021.50	15108.32						
UFM-L-18						S 89° 20'06" E	597.32				
		PC	97+88.98	257014.56	15705.60						
	UFM-C-18	PI	98+22.84	257014.17	15739.47			1000.00	67.71	3° 52'45"	LEFT
		PT	98+56.68	257016.07	15773.28						
UFM-L-19						N 86° 47'09" E	47.12				
		PC	99+03.80	257018.71	15820.32						
	UFM-C-19	PI	99+58.22	257021.76	15874.66			500.00	108.41	12° 25'23"	RIGHT
		PT	100+12.21	257013.05	15928.38						
UFM-L-20						S 80° 47'28" E	353.41				
		PC	103+65.63	256956.49	16277.23						
	UFM-C-20	PI	103+99.50	256951.07	16310.67			500.00	67.65	7° 45'08"	RIGHT
		PT	104+33.28	256941.19	16343.08						
UFM-L-21						S 73° 02'20" E	59.26				
		PC	104+92.54	256923.90	16399.76						
	UFM-C-21	PI	105+54.35	256905.87	16458.88			500.00	122.99	14° 05'38"	RIGHT
		PCC	106+15.53	256873.99	16511.83						
	UFM-C-22	PI	106+32.22	256865.38	16526.13			275.00	33.33	6° 56'37"	RIGHT
		PT	106+48.86	256855.11	16539.27						
UFM-L-22						S 52° 00'05" E	154.05				

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (3 OF 22) FOR ALIGNMENT GRAPHICS.

30% SET

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811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(4 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 16

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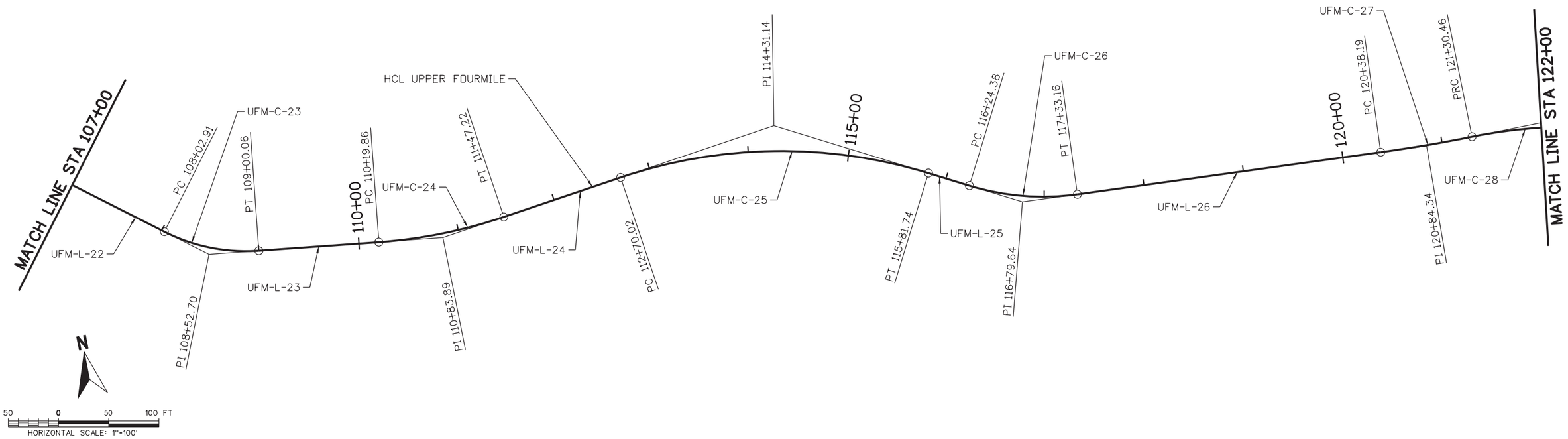

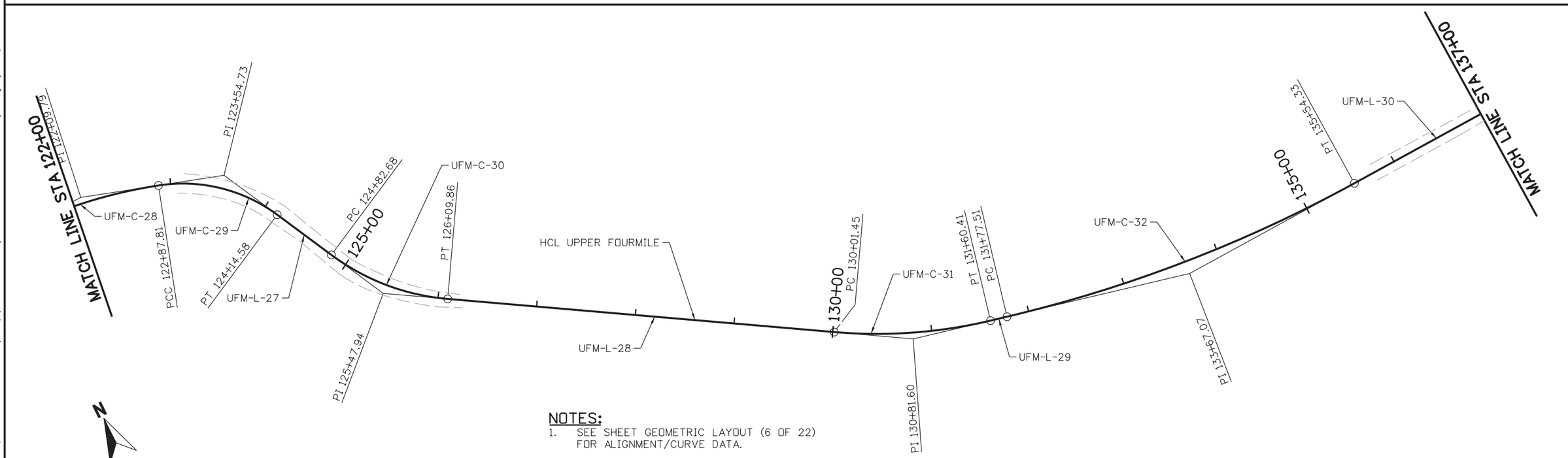

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (6 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(5 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 17

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HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
UFM-L-22						S 52° 00'05" E	154.05				
		PC	108+02.91	256760.27	16660.67						
	UFM-C-23	PI	108+52.70	256729.62	16699.90			180.00	97.14	30° 55'15"	LEFT
		PT	109+00.06	256723.48	16749.31						
UFM-L-23						S 82° 55'20" E	119.81				
		PC	110+19.86	256708.72	16868.20						
	UFM-C-24	PI	110+83.89	256700.83	16931.74			500.00	127.36	14° 35'40"	LEFT
		PT	111+47.22	256709.21	16995.22						
UFM-L-24						N 82° 29'00" E	122.80				
		PC	112+70.02	256725.27	17116.96						
	UFM-C-25	PI	114+31.14	256746.35	17276.69			500.00	311.72	35° 43'13"	RIGHT
		PT	115+81.74	256670.20	17418.67						
UFM-L-25						S 61° 47'47" E	42.63				
		PC	116+24.38	256650.05	17456.25						
	UFM-C-26	PI	116+79.64	256623.94	17504.95			250.00	108.78	24° 55'52"	LEFT
		PT	117+33.16	256620.78	17560.13						
UFM-L-26						S 86° 43'39" E	305.03				
		PC	120+38.19	256603.37	17864.66						
	UFM-C-27	PI	120+84.34	256600.73	17910.74			1500.00	92.28	3° 31'29"	LEFT
		PRC	121+30.46	256600.94	17956.89						
	UFM-C-28	PI	122+09.79	256601.29	18036.22			500.00	157.34	18° 01'49"	RIGHT
		PCC	122+87.81	256577.06	18111.75						
	UFM-C-29	PI	123+54.73	256556.63	18175.48			160.00	126.77	45° 23'50"	RIGHT
		PT	124+14.58	256496.91	18205.68						
UFM-L-27						S 26° 49'29" E	68.10				
		PC	124+82.68	256436.14	18236.41						
	UFM-C-30	PI	125+47.94	256377.90	18265.87			230.00	127.18	31° 40'58"	LEFT
		PT	126+09.86	256343.81	18321.52						
UFM-L-28						S 58° 30'27" E	391.58				
		PC	130+01.45	256139.25	18655.42						
	UFM-C-31	PI	130+81.60	256097.37	18723.78			500.00	158.97	18° 12'59"	LEFT
		PT	131+60.41	256078.96	18801.79						
UFM-L-29						S 76° 43'26" E	17.10				
		PC	131+77.51	256075.04	18818.44						
	UFM-C-32	PI	133+67.07	256031.51	19002.93			1400.00	376.82	15° 25'18"	LEFT
		PT	135+54.33	256038.60	19192.35						
UFM-L-30						N 87° 51'16" E	185.44				

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (5 OF 22) FOR ALIGNMENT GRAPHICS.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS: NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT (6 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 18

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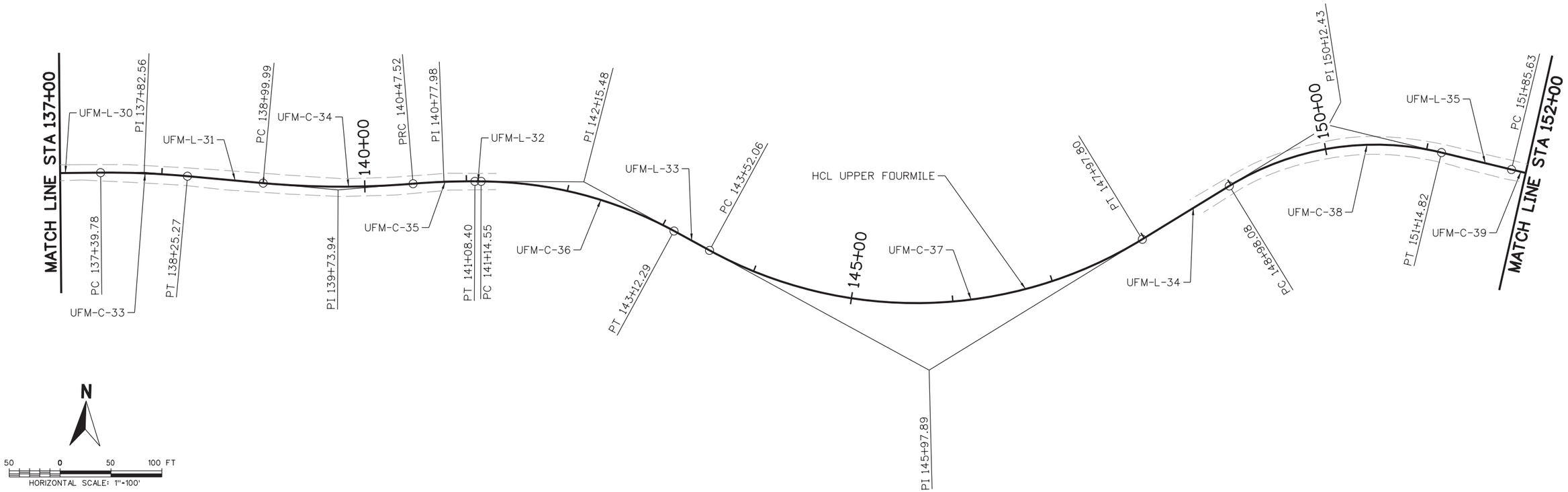

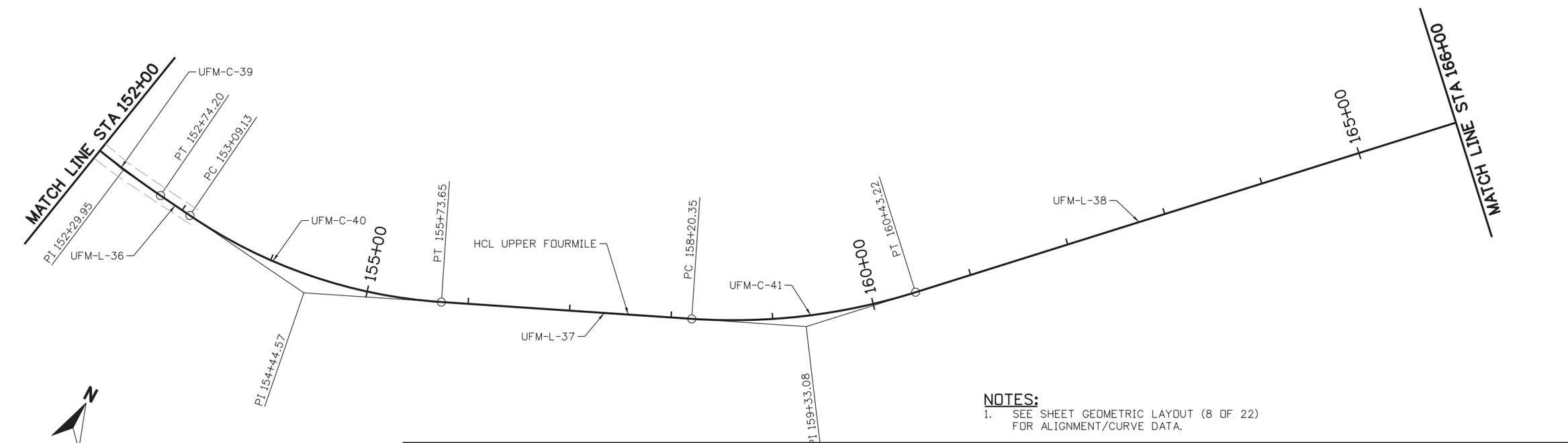

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (8 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(7 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 19

john.miller 12:15:19 PM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\05_Roadway\DGN\UFM_GEO_LAYOUT04.dgn

HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
UFM-L-30						N 87° 51'16" E	185.44				
		PC	137+39.78	256045.55	19377.66						
	UFM-C-33	PI	137+82.56	256047.15	19420.42			850.00	85.50	5° 45'47"	RIGHT
		PT	138+25.27	256044.45	19463.12						
UFM-L-31						S 86° 22'57" E	74.72				
		PC	138+99.99	256039.73	19537.68						
	UFM-C-34	PI	139+73.94	256035.07	19611.49			850.00	147.53	9° 56'41"	LEFT
		PRC	140+47.52	256043.22	19684.99						
	UFM-C-35	PI	140+77.98	256046.57	19715.26			700.00	60.88	4° 58'58"	RIGHT
		PT	141+08.40	256047.29	19745.71						
UFM-L-32						N 88° 39'20" E	6.15				
		PC	141+14.55	256047.43	19751.86						
	UFM-C-36	PI	142+15.48	256049.80	19852.76			400.00	197.74	28° 19'28"	RIGHT
		PT	143+12.29	256004.01	19942.71						
UFM-L-33						S 63° 01'12" E	39.77				
		PC	143+52.06	255985.96	19978.16						
	UFM-C-37	PI	145+97.89	255874.44	20197.23			425.00	445.74	60° 05'32"	LEFT
		PT	147+97.80	256008.73	20403.14						
UFM-L-34						N 56° 53'16" E	100.28				
		PC	148+98.08	256063.51	20487.13						
	UFM-C-38	PI	150+12.43	256125.98	20582.91			275.00	216.74	45° 09'28"	RIGHT
		PT	151+14.82	256102.11	20694.75						
UFM-L-35						S 77° 57'16" E	70.81				
		PC	151+85.63	256087.34	20764.00						
	UFM-C-39	PI	152+29.95	256078.09	20807.35			900.00	88.57	5° 38'20"	LEFT
		PT	152+74.20	256073.14	20851.39						
UFM-L-36						S 83° 35'36" E	34.93				
		PC	153+09.13	256069.24	20886.10						
	UFM-C-40	PI	154+44.57	256054.13	21020.69			500.00	264.52	30° 18'44"	LEFT
		PT	155+73.65	256109.01	21144.51						
UFM-L-37						N 66° 05'40" E	246.70				
		PC	158+20.35	256208.98	21370.04						
	UFM-C-41	PI	159+33.08	256254.66	21473.10			600.00	222.87	21° 16'57"	LEFT
		PT	160+43.22	256334.64	21552.56						
UFM-L-38						N 44° 48'43" E	593.94				

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (7 OF 22) FOR ALIGNMENT GRAPHICS.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(8 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 20

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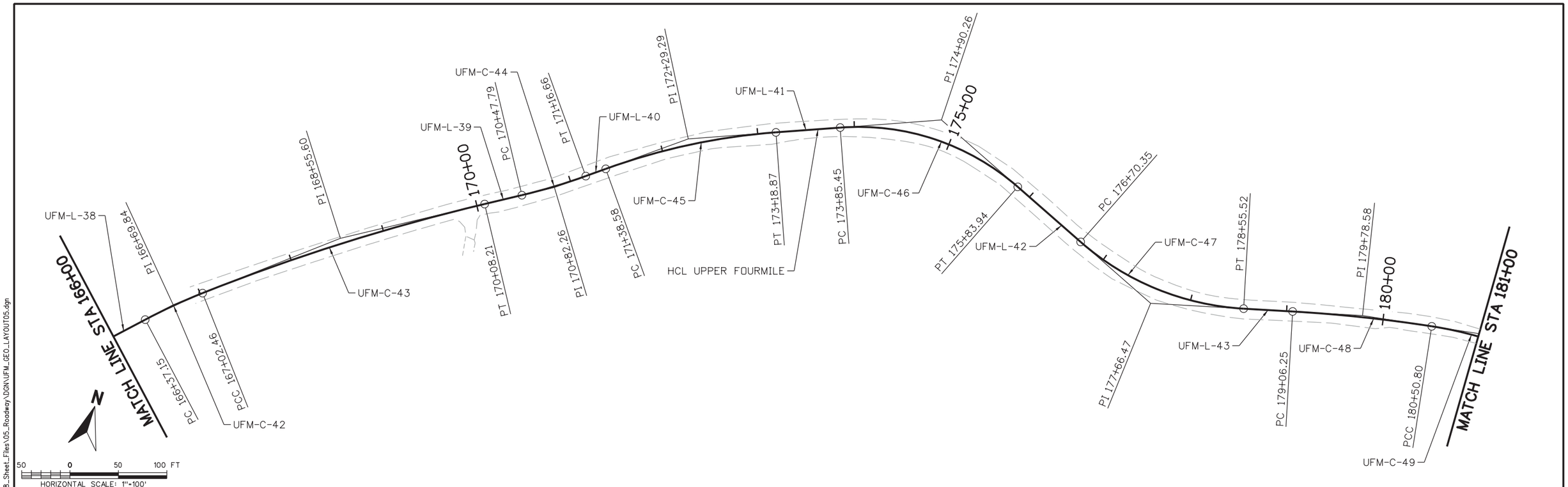

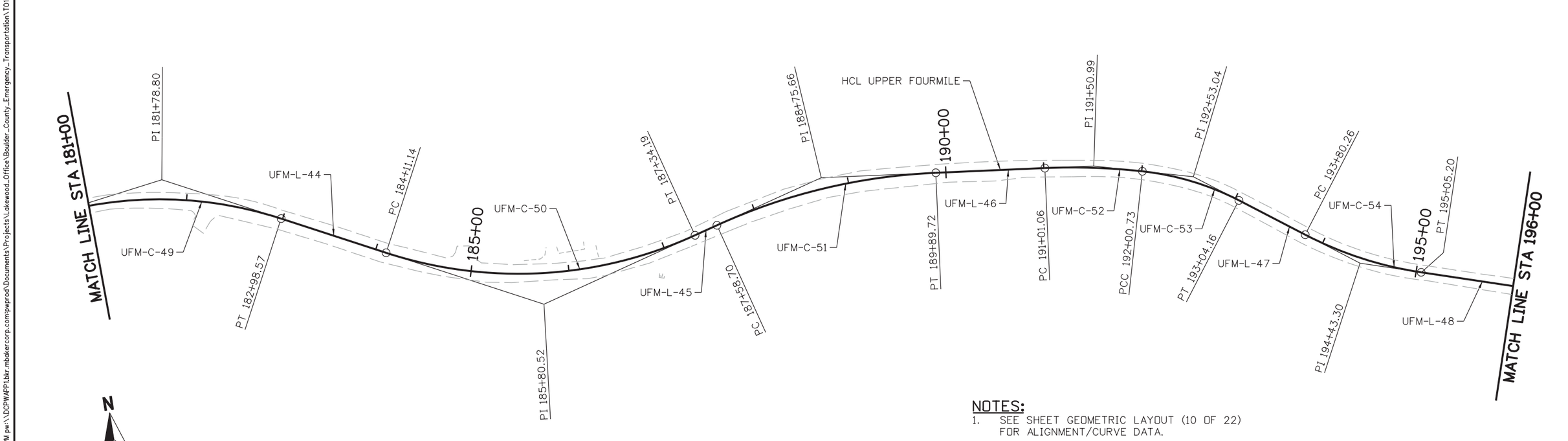

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (10 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(9 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 21

john.miller 12:16:17 PM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\05_Roadway\DGN\UFM_GEO_LAYOUT05.dgn

HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
UFM-L-38						N 44° 48'43" E	593.94				
		PC	166+37.15	256755.99	21971.15						
	UFM-C-42	PI	166+69.84	256779.18	21994.19			600.00	65.30	6° 14'09"	RIGHT
		PCC	167+02.46	256799.73	22019.60						
	UFM-C-43	PI	168+55.60	256896.01	22138.70			2100.00	305.75	8° 20'32"	RIGHT
		PT	170+08.21	256973.99	22270.51						
UFM-L-39						N 59° 23'24" E	39.58				
		PC	170+47.79	256994.14	22304.57						
	UFM-C-44	PI	170+82.26	257011.69	22334.24			600.00	68.87	6° 34'35"	LEFT
		PT	171+16.66	257032.53	22361.70						
UFM-L-40						N 52° 48'49" E	21.92				
		PC	171+38.58	257045.78	22379.17						
	UFM-C-45	PI	172+29.29	257100.61	22451.44			660.00	180.29	15° 39'06"	RIGHT
		PT	173+18.87	257133.90	22535.81						
UFM-L-41						N 68° 27'55" E	66.57				
		PC	173+85.45	257158.34	22597.74						
	UFM-C-46	PI	174+90.26	257196.81	22695.23			250.00	198.49	45° 29'26"	RIGHT
		PT	175+83.94	257154.26	22791.02						
UFM-L-42						S 66° 02'39" E	86.41				
		PC	176+70.35	257119.17	22869.98						
	UFM-C-47	PI	177+66.47	257080.14	22957.82			280.00	185.17	37° 53'30"	LEFT
		PT	178+55.52	257103.29	23051.11						
UFM-L-43						N 76° 03'51" E	50.72				
		PC	179+06.25	257115.51	23100.34						
	UFM-C-48	PI	179+78.58	257132.93	23170.54			1500.00	144.55	5° 31'18"	RIGHT
		PCC	180+50.80	257143.51	23242.10						
	UFM-C-49	PI	181+78.80	257162.24	23368.72			400.00	247.77	35° 29'23"	RIGHT
		PT	182+98.57	257103.98	23482.70						
UFM-L-44						S 62° 55'28" E	112.58				
		PC	184+11.14	257052.74	23582.93						
	UFM-C-50	PI	185+80.52	256975.64	23733.75			435.00	323.04	42° 32'57"	LEFT
		PT	187+34.19	257020.83	23896.99						
UFM-L-45						N 74° 31'35" E	24.51				
		PC	187+58.70	257027.37	23920.61						
	UFM-C-51	PI	188+75.66	257058.58	24033.33			600.00	231.02	22° 03'39"	RIGHT
		PT	189+89.72	257045.16	24149.51						
UFM-L-46						S 83° 24'46" E	111.34				
		PC	191+01.06	257032.39	24260.12						
	UFM-C-52	PI	191+50.99	257026.66	24309.72			660.00	99.67	8° 39'09"	RIGHT
		PCC	192+00.73	257013.53	24357.90						
	UFM-C-53	PI	192+53.04	256999.78	24408.37			280.00	103.43	21° 09'54"	RIGHT
		PT	193+04.16	256968.74	24450.47						
UFM-L-47						S 53° 35'43" E	76.10				
		PC	193+80.26	256923.57	24511.72						
	UFM-C-54	PI	194+43.30	256886.16	24562.46			380.00	124.94	18° 50'17"	LEFT
		PT	195+05.20	256867.13	24622.56						
UFM-L-48						S 72° 26'00" E	140.56				

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (9 OF 22) FOR ALIGNMENT GRAPHICS.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(10 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 22

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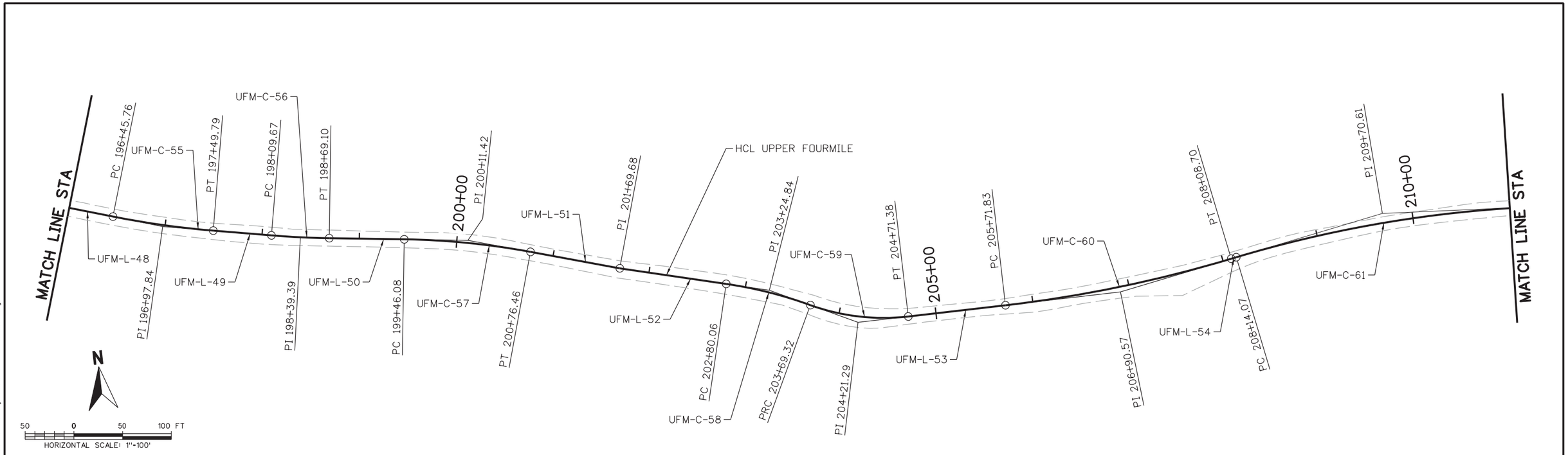

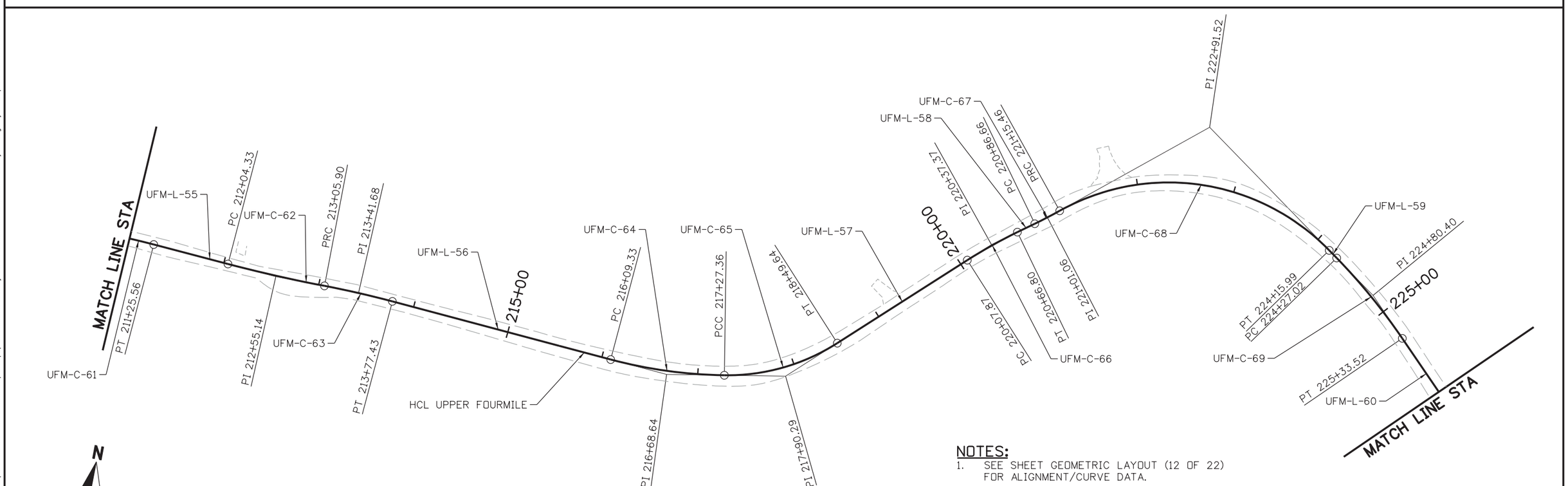

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (12 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(11 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 23

john.miller 12:17:14 PM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\05_Roadway\DGN\UFM_GEO_LAYOUT06.dgn

HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
UFM-L-48						S 72° 26'00" E	140.56				
		PC	196+45.76	256824.71	24756.56						
	UFM-C-55	PI	196+97.84	256808.99	24806.21			900.00	104.03	6° 37'21"	LEFT
		PT	197+49.79	256799.11	24857.33						
UFM-L-49						S 79° 03'21" E	59.88				
		PC	198+09.67	256787.74	24916.12						
	UFM-C-56	PI	198+39.39	256782.10	24945.30			900.00	59.43	3° 47'00"	LEFT
		PT	198+69.10	256778.39	24974.80						
UFM-L-50						S 82° 50'21" E	76.98				
		PC	199+46.08	256768.80	25051.18						
	UFM-C-57	PI	200+11.42	256760.65	25116.01			780.00	130.39	9° 34'41"	RIGHT
		PT	200+76.46	256741.83	25178.59						
UFM-L-51						S 73° 15'40" E	93.21				
		PI	201+69.68	256714.98	25267.85					2° 07'31"	LEFT
UFM-L-52						S 75° 23'11" E	110.38				
		PC	202+80.06	256687.13	25374.66						
	UFM-C-58	PI	203+24.84	256675.84	25418.00			440.00	89.26	11° 37'24"	RIGHT
		PRC	203+69.32	256656.04	25458.17						
	UFM-C-59	PI	204+21.29	256633.06	25504.78			220.00	102.07	26° 34'56"	LEFT
		PT	204+71.38	256633.38	25556.75						
UFM-L-53						N 89° 39'17" E	100.45				
		PC	205+71.83	256633.98	25657.19						
	UFM-C-60	PI	206+90.57	256634.70	25775.93			1350.00	236.86	10° 03'11"	LEFT
		PT	208+08.70	256656.13	25892.72						
UFM-L-54						N 79° 36'06" E	5.38				
		PC	208+14.07	256657.10	25898.01						
	UFM-C-61	PI	209+70.61	256685.35	26051.98			1260.00	311.49	14° 09'51"	RIGHT
		PT	211+25.56	256675.07	26208.18						
UFM-L-55						S 86° 14'03" E	78.77				
		PC	212+04.33	256669.90	26286.78						
	UFM-C-62	PI	212+55.14	256666.56	26337.48			1500.00	101.57	3° 52'47"	LEFT
		PRC	213+05.90	256666.66	26388.28						
	UFM-C-63	PI	213+41.68	256666.73	26424.06			1000.00	71.53	4° 05'54"	RIGHT
		PT	213+77.43	256664.25	26459.76						
UFM-L-56						S 86° 00'56" E	231.90				
		PC	216+09.33	256648.13	26691.09						
	UFM-C-64	PI	216+68.64	256644.01	26750.26			480.00	118.03	14° 05'20"	LEFT
		PCC	217+27.36	256654.42	26808.66						
	UFM-C-65	PI	217+90.29	256665.46	26870.61			210.00	122.28	33° 21'42"	LEFT
		PT	218+49.64	256708.75	26916.28						
UFM-L-57						N 46° 32'02" E	158.24				
		PC	220+07.87	256817.60	27031.12						
	UFM-C-66	PI	220+37.37	256837.89	27052.53			500.00	58.93	6° 45'09"	RIGHT
		PT	220+66.80	256855.53	27076.18						
UFM-L-58						N 53° 17'11" E	19.86				
		PC	220+86.66	256867.40	27092.10						
	UFM-C-67	PI	221+01.06	256876.01	27103.64			500.00	28.80	3° 18'03"	LEFT
		PRC	221+15.46	256885.27	27114.68						
	UFM-C-68	PI	222+91.52	256998.47	27249.52			230.00	300.53	74° 51'58"	RIGHT
		PT	224+15.99	256897.86	27394.00						
UFM-L-59						S 55° 08'54" E	11.03				
		PRC	224+27.02	256891.56	27403.05						
	UFM-C-69	PI	224+80.40	256861.05	27446.86			615.00	106.49	9° 55'17"	RIGHT
		PT	225+33.52	256823.46	27484.75						
UFM-L-60						S 45° 13'37" E	134.55				

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (11 OF 22) FOR ALIGNMENT GRAPHICS.

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30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

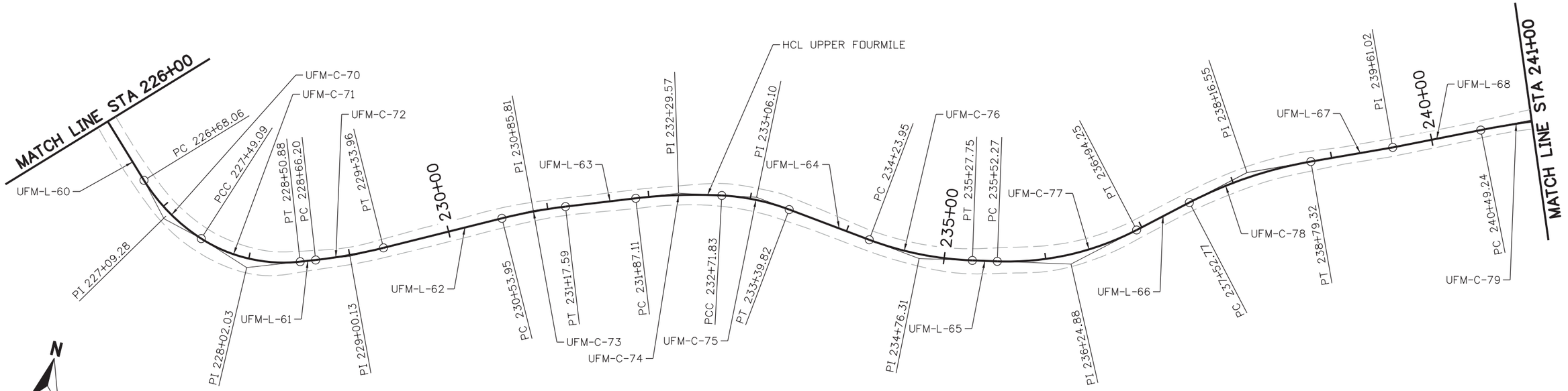
REVISIONS: NO.	DATE	REVISION DESCRIPTION:

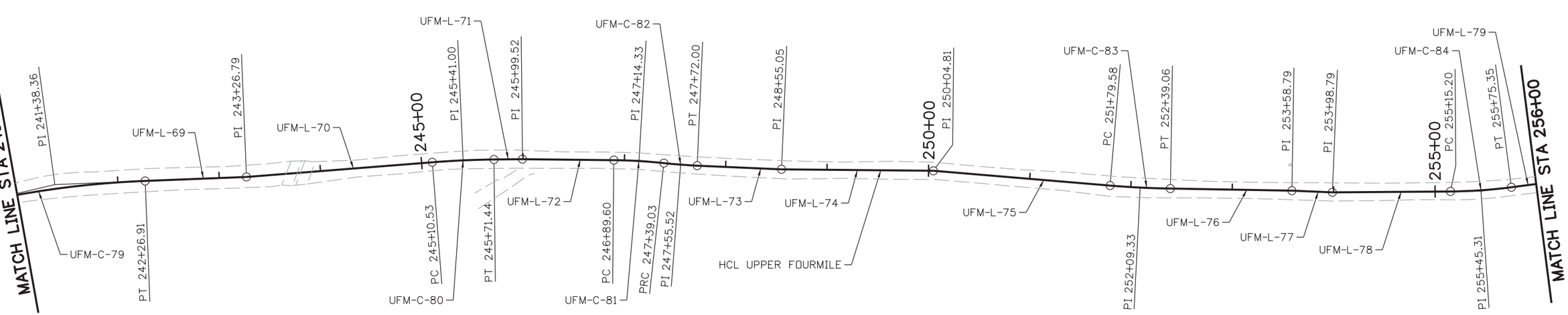
BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION
Boulder County
Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT (12 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 24





NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (14 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(13 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 25

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HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
UFM-L-60						S 45° 13'37" E	134.55				
		PC	226+68.06	256728.70	27580.27						
	UFM-C-70	PI	227+09.28	256699.67	27609.52			180.00	81.02	25° 47'27"	LEFT
		PCC	227+49.09	256686.27	27648.49						
	UFM-C-71	PI	228+02.03	256669.05	27698.56			150.00	101.79	38° 52'54"	LEFT
		PT	228+50.88	256687.07	27748.34						
UFM-L-61						N 70° 06'02" E	15.32				
		PC	228+66.20	256692.28	27762.75						
	UFM-C-72	PI	229+00.13	256703.83	27794.65			500.00	67.76	7° 45'51"	LEFT
		PT	229+33.96	256719.58	27824.70						
UFM-L-62						N 62° 20'11" E	119.99				
		PC	230+53.95	256775.30	27930.98						
	UFM-C-73	PI	230+85.81	256790.09	27959.20			500.00	63.63	7° 17'31"	RIGHT
		PT	231+17.59	256801.18	27989.07						
UFM-L-63						N 69° 37'42" E	69.52				
		PC	231+87.11	256825.38	28054.24						
	UFM-C-74	PI	232+29.57	256840.16	28094.04			500.00	84.72	9° 42'31"	RIGHT
		PCC	232+71.83	256848.02	28135.77						
	UFM-C-75	PI	233+06.10	256854.36	28169.45			220.00	67.99	17° 42'22"	RIGHT
		PT	233+39.82	256850.16	28203.46						
UFM-L-64						S 82° 57'25" E	84.13				
		PC	234+23.95	256839.84	28286.96						
	UFM-C-76	PI	234+76.31	256833.42	28338.92			320.00	103.80	18° 35'09"	LEFT
		PT	235+27.75	256843.90	28390.22						
UFM-L-65						N 78° 27'26" E	24.52				
		PC	235+52.27	256848.80	28414.25						
	UFM-C-77	PI	236+24.88	256863.33	28485.39			275.00	141.98	29° 34'52"	LEFT
		PT	236+94.25	256911.09	28540.09						
UFM-L-66						N 48° 52'34" E	58.51				
		PC	237+52.77	256949.57	28584.16						
	UFM-C-78	PI	238+16.55	256991.52	28632.21			410.00	126.56	17° 41'09"	RIGHT
		PT	238+79.32	257016.89	28690.74						
UFM-L-67						N 66° 33'43" E	81.69				
		PI	239+61.02	257049.39	28765.69					1° 20'26"	LEFT
UFM-L-68						N 65° 13'18" E	88.23				
		PC	240+49.24	257086.36	28845.79						
	UFM-C-79	PI	241+38.36	257123.71	28926.70			920.00	177.67	11° 03'53"	RIGHT
		PT	242+26.91	257144.84	29013.27						
UFM-L-69						N 76° 17'11" E	99.88				
		PI	243+26.79	257168.52	29110.30					2° 15'09"	LEFT
UFM-L-70						N 74° 02'02" E	183.74				
		PC	245+10.53	257219.06	29286.95						
	UFM-C-80	PI	245+41.00	257227.44	29316.25			900.00	60.91	3° 52'40"	RIGHT
		PT	245+71.44	257233.82	29346.04						
UFM-L-71						N 77° 54'42" E	28.08				
		PI	245+99.52	257239.70	29373.49					1° 13'45"	RIGHT
UFM-L-72						N 79° 08'27" E	90.08				
		PC	246+89.60	257256.67	29461.96						
	UFM-C-81	PI	247+14.33	257261.33	29486.25			500.00	49.43	5° 39'51"	RIGHT
		PRC	247+39.03	257263.57	29510.88						
	UFM-C-82	PI	247+55.52	257265.06	29527.31			500.00	32.97	3° 46'40"	LEFT
		PT	247+72.00	257267.63	29543.59						
UFM-L-73						N 81° 01'38" E	83.06				
		PI	248+55.05	257280.59	29625.63					1° 54'39"	LEFT
UFM-L-74						N 79° 06'59" E	149.76				

HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
		PI	250+04.81	257308.86	29772.70					4° 12'23"	RIGHT
UFM-L-75						N 83° 19'22" E	174.77				
		PC	251+79.58	257329.19	29946.29						
	UFM-C-83	PI	252+09.33	257332.64	29975.83			900.00	59.48	3° 47'11"	LEFT
		PT	252+39.06	257338.05	30005.09						
UFM-L-76						N 79° 32'11" E	119.73				
		PI	253+58.79	257359.79	30122.82					1° 21'12"	RIGHT
UFM-L-77						N 80° 53'23" E	40.00				
		PI	253+98.79	257366.12	30162.32					2° 47'08"	LEFT
UFM-L-78						N 78° 06'15" E	116.41				
		PC	255+15.20	257390.12	30276.23						
	UFM-C-84	PI	255+45.31	257396.33	30305.70			500.00	60.16	6° 53'36"	LEFT
		PT	255+75.35	257406.03	30334.21						
UFM-L-79						N 71° 12'39" E	81.92				

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (13 OF 22) FOR ALIGNMENT GRAPHICS.

30% SET

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CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS: NO.	DATE	REVISION DESCRIPTION:

Boulder County

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(14 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 26

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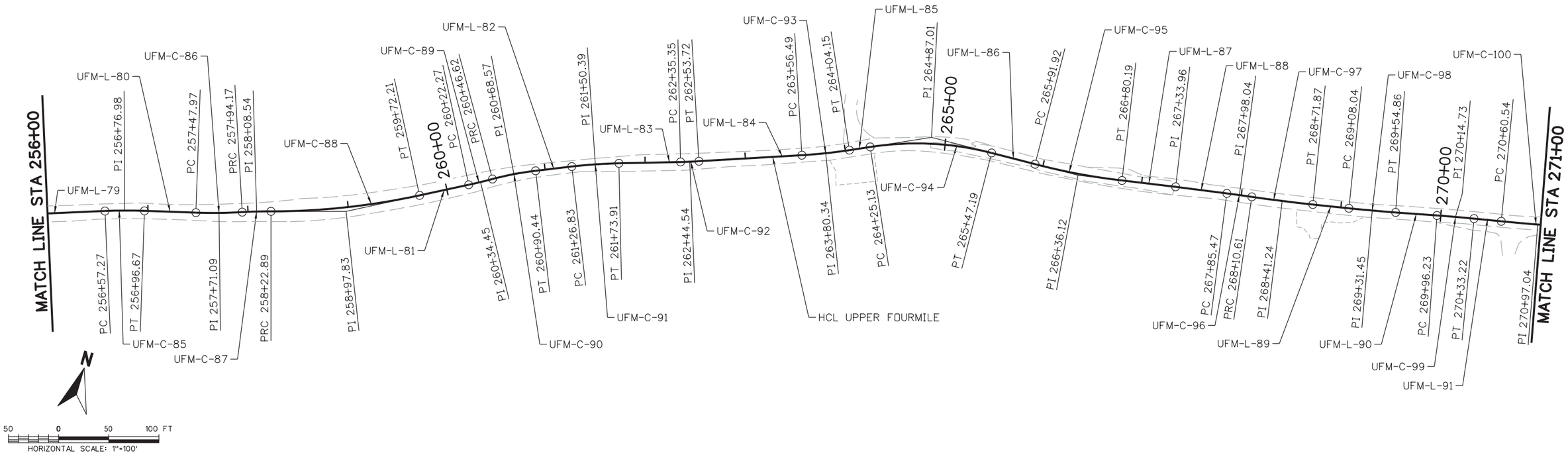

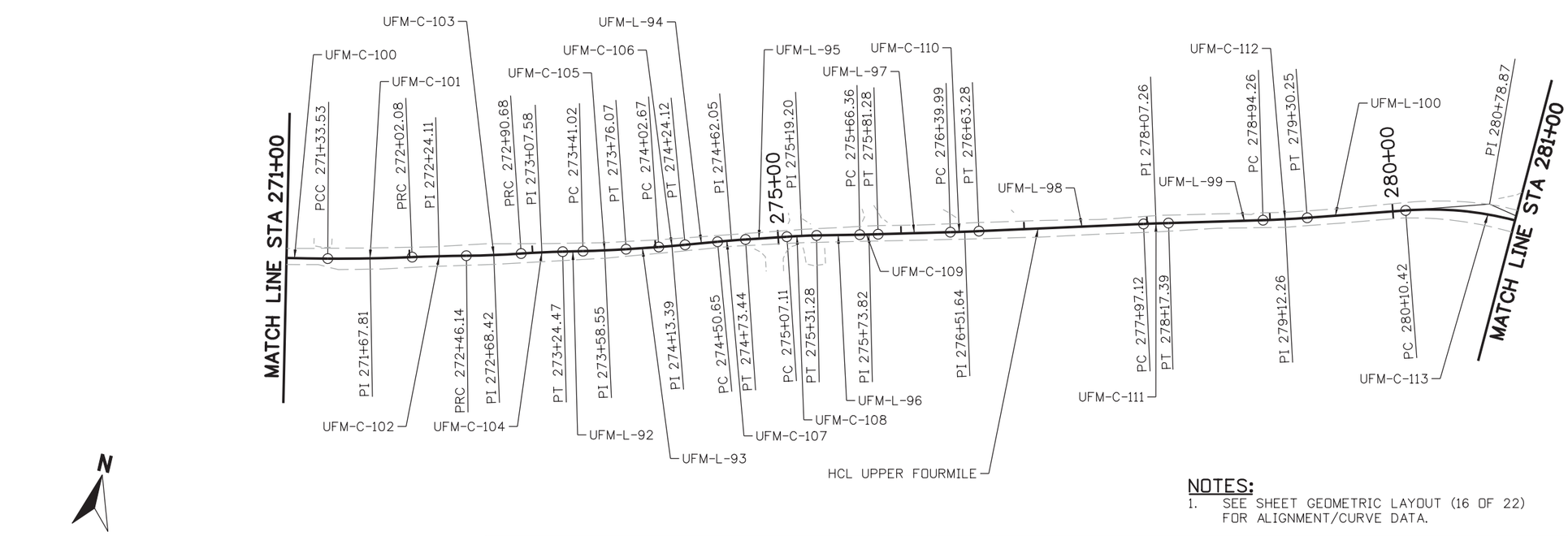

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (16 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(15 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 27

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HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
UFM-L-79						N 71° 12'39" E	81.92				
		PC	256+57.27	257432.41	30411.76						
	UFM-C-85	PI	256+76.98	257438.76	30430.42			500.00	39.39	4° 30'52"	RIGHT
		PT	256+96.67	257443.62	30449.51						
UFM-L-80						N 75° 43'31" E	51.31				
		PC	257+47.97	257456.27	30499.24						
	UFM-C-86	PI	257+71.09	257461.97	30521.64			500.00	46.20	5° 17'41"	LEFT
		PRC	257+94.17	257469.71	30543.42						
	UFM-C-87	PI	258+08.54	257474.52	30556.96			500.00	28.72	3° 17'27"	RIGHT
		PRC	258+22.89	257478.55	30570.74						
	UFM-C-88	PI	258+97.83	257499.56	30642.68			700.00	149.31	12° 13'18"	LEFT
		PT	259+72.21	257535.32	30708.54						
UFM-L-81						N 61° 29'59" E	50.06				
		PC	260+22.27	257559.20	30752.53						
	UFM-C-89	PI	260+34.45	257565.01	30763.24			500.00	24.36	2° 47'29"	LEFT
		PRC	260+46.62	257571.34	30773.65						
	UFM-C-90	PI	260+68.57	257582.74	30792.40			300.00	43.82	8° 22'08"	RIGHT
		PT	260+90.44	257591.29	30812.62						
UFM-L-82						N 67° 04'38" E	36.39				
		PC	261+26.83	257605.46	30846.13						
	UFM-C-91	PI	261+50.39	257614.64	30867.83			500.00	47.08	5° 23'41"	RIGHT
		PT	261+73.91	257621.73	30890.29						
UFM-L-83						N 72° 28'19" E	61.44				
		PC	262+35.35	257640.24	30948.88						
	UFM-C-92	PI	262+44.54	257643.00	30957.64			500.00	18.37	2° 06'17"	LEFT
		PT	262+53.72	257646.09	30966.29						
UFM-L-84						N 70° 22'02" E	102.77				
		PC	263+56.49	257680.62	31063.09						
	UFM-C-93	PI	263+80.34	257688.63	31085.55			500.00	47.66	5° 27'39"	LEFT
		PT	264+04.15	257698.75	31107.15						
UFM-L-85						N 64° 54'23" E	20.98				
		PC	264+25.13	257707.64	31126.15						
	UFM-C-94	PI	264+87.01	257733.89	31182.19			300.00	122.06	23° 18'40"	RIGHT
		PT	265+47.19	257735.81	31244.04						
UFM-L-86						N 88° 13'03" E	44.73				
		PC	265+91.92	257737.20	31288.76						
	UFM-C-95	PI	266+36.12	257738.58	31332.94			650.00	88.27	7° 46'50"	LEFT
		PT	266+80.19	257745.92	31376.52						
UFM-L-87						N 80° 26'13" E	53.78				
		PI	267+33.96	257754.86	31429.55					0° 38'10"	RIGHT
UFM-L-88						N 81° 04'23" E	51.51				
		PC	267+85.47	257762.85	31480.43						
	UFM-C-96	PI	267+98.04	257764.80	31492.85			1500.00	25.14	0° 57'37"	RIGHT
		PRC	268+10.61	257766.54	31505.30						
	UFM-C-97	PI	268+41.24	257770.79	31535.64			1500.00	61.26	2° 20'23"	LEFT
		PT	268+71.87	257776.27	31565.78						
UFM-L-89						N 79° 41'37" E	36.17				
		PC	269+08.04	257782.74	31601.37						
	UFM-C-98	PI	269+31.45	257786.93	31624.40			1500.00	46.82	1° 47'18"	LEFT
		PT	269+54.86	257791.83	31647.29						
UFM-L-90						N 77° 54'19" E	41.37				
		PC	269+96.23	257800.50	31687.75						
	UFM-C-99	PI	270+14.73	257804.38	31705.83			1500.00	36.99	1° 24'46"	RIGHT
		PT	270+33.22	257807.81	31724.00						
UFM-L-91						N 79° 19'05" E	27.33				

HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
		PC	270+60.54	257812.87	31750.86						
	UFM-C-100	PI	270+97.04	257819.64	31786.72			2000.00	72.99	2° 05'28"	LEFT
		PCC	271+33.53	257827.71	31822.32						
	UFM-C-101	PI	271+67.81	257835.28	31855.75			1500.00	68.55	2° 37'06"	LEFT
		PRC	272+02.08	257844.38	31888.80						
	UFM-C-102	PI	272+24.11	257850.23	31910.04			1500.00	44.06	1° 40'59"	RIGHT
		PRC	272+46.14	257855.45	31931.45						
	UFM-C-103	PI	272+68.42	257860.73	31953.09			800.00	44.53	3° 11'22"	LEFT
		PRC	272+90.68	257867.20	31974.40						
	UFM-C-104	PI	273+07.58	257872.12	31990.57			800.00	33.79	2° 25'13"	RIGHT
		PT	273+24.47	257876.34	32006.93						
UFM-L-92						N 75° 31'21" E	16.55				
		PC	273+41.02	257880.48	32022.95						
	UFM-C-105	PI	273+58.55	257884.86	32039.92			800.00	35.05	2° 30'37"	LEFT
		PT	273+76.07	257889.98	32056.69						
UFM-L-93						N 73° 00'44" E	26.60				
		PC	274+02.67	257897.75	32082.13						
	UFM-C-106	PI	274+13.39	257900.89	32092.38			800.00	21.45	1° 32'10"	LEFT
		PT	274+24.12	257904.29	32102.55						
UFM-L-94						N 71° 28'34" E	26.54				
		PC	274+50.65	257912.72	32127.71						
	UFM-C-107	PI	274+62.05	257916.34	32138.52			800.00	22.79	1° 37'55"	RIGHT
		PT	274+73.44	257919.65	32149.42						
UFM-L-95						N 73° 06'29" E	33.67				
		PC	275+07.11	257929.44	32181.64						
	UFM-C-108	PI	275+19.20	257932.95	32193.20			500.00	24.16	2° 46'08"	RIGHT
		PT	275+31.28	257935.90	32204.92						
UFM-L-96						N 75° 52'37" E	35.08				
		PC	275+66.36	257944.46	32238.94						
	UFM-C-109	PI	275+73.82	257946.28	32246.18			1500.00	14.92	0° 34'12"	LEFT
		PT	275+81.28	257948.17	32253.39						
UFM-L-97						N 75° 18'25" E	58.71				
		PC	276+39.99	257963.06	32310.19						
	UFM-C-110	PI	276+51.64	257966.02	32321.45			1500.00	23.28	0° 53'21"	LEFT
		PT	276+63.28	257969.14	32332.66						
UFM-L-98						N 74° 25'04" E	133.84				
		PC	277+97.12	258005.10	32461.59						
	UFM-C-111	PI	278+07.26	258007.82	32471.35			1500.00	20.27	0° 46'27"	RIGHT
		PT	278+17.39	258010.41	32481.15						
UFM-L-99						N 75° 11'31" E	76.87				
		PC	278+94.26	258030.06	32555.46						
	UFM-C-112	PI	279+12.26	258034.66	32572.87			800.00	36.00	2° 34'42"	LEFT
		PT	279+30.25	258040.04	32590.05						
UFM-L-100						N 72° 36'49" E	80.17				
		PC	280+10.42	258063.99	32666.55						
	UFM-C-113	PI	280+78.87	258084.44	32731.87			270.00	134.06	28° 26'53"	RIGHT
		PT	281+44.48	258071.31	32799.04						

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (15 OF 22) FOR ALIGNMENT GRAPHICS.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE)
GEOMETRIC LAYOUT
(16 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 28

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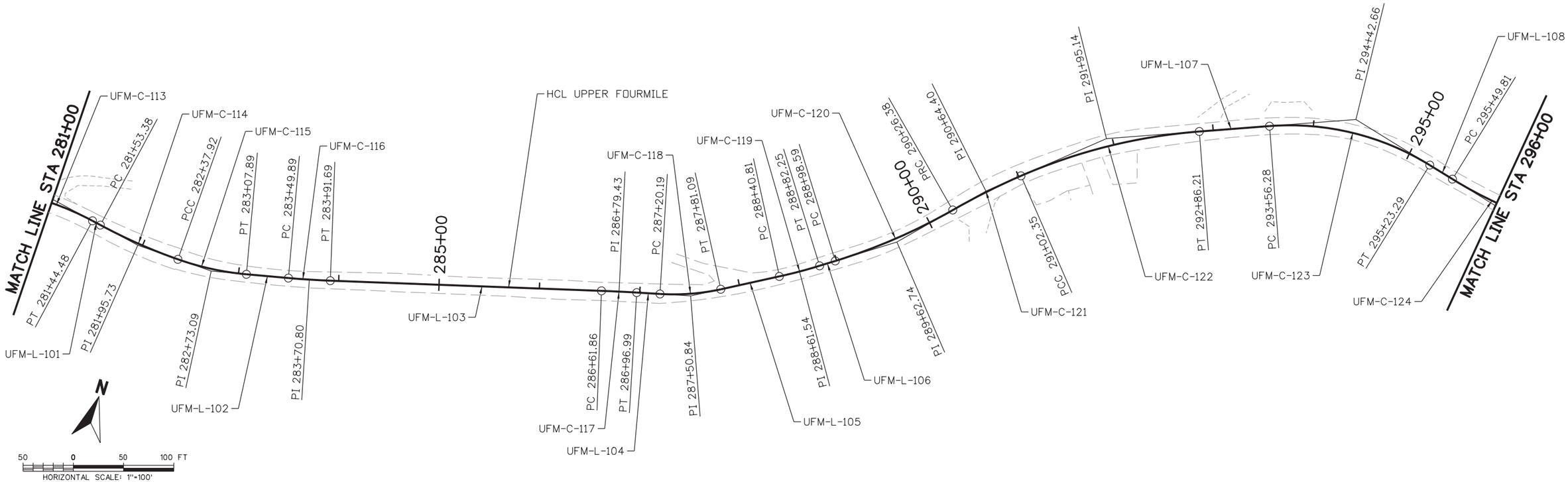

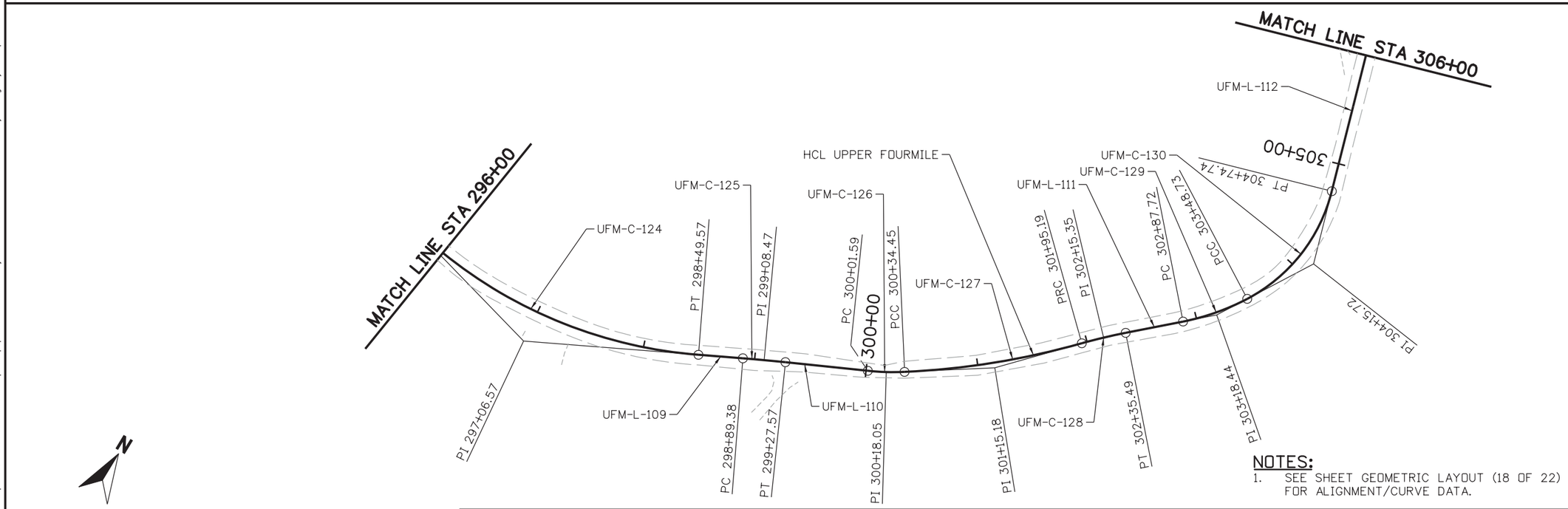

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (18 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

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811
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Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(17 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 29

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HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
		PC	280+10.42	258063.99	32666.55						
	UFM-C-113	PI	280+78.87	258084.44	32731.87			270.00	134.06	28° 26'53"	RIGHT
		PT	281+44.48	258071.31	32799.04						
UFM-L-101						S 78° 56'18" E	8.90				
		PC	281+53.38	258069.60	32807.77						
	UFM-C-114	PI	281+95.73	258061.48	32849.34			550.00	84.54	8° 48'25"	LEFT
		PCC	282+37.92	258059.81	32891.66						
	UFM-C-115	PI	282+73.09	258058.43	32926.80			280.00	69.96	14° 19'00"	LEFT
		PT	283+07.89	258065.78	32961.18						
UFM-L-102						N 77° 56'17" E	42.01				
		PC	283+49.89	258074.55	33002.26						
	UFM-C-116	PI	283+70.80	258078.92	33022.71			800.00	41.80	2° 59'38"	LEFT
		PT	283+91.69	258084.35	33042.90						
UFM-L-103						N 74° 56'39" E	270.16				
		PC	286+61.86	258154.53	33303.79						
	UFM-C-117	PI	286+79.43	258159.10	33320.75			1500.00	35.13	1° 20'31"	RIGHT
		PT	286+96.99	258163.26	33337.82						
UFM-L-104						N 76° 17'10" E	23.20				
		PC	287+20.19	258168.76	33360.35						
	UFM-C-118	PI	287+50.84	258176.03	33390.13			220.00	60.90	15° 51'41"	LEFT
		PT	287+81.09	258191.15	33416.78						
UFM-L-105						N 60° 25'29" E	59.71				
		PC	288+40.81	258220.62	33468.71						
	UFM-C-119	PI	288+61.54	258230.86	33486.75			500.00	41.44	4° 44'56"	LEFT
		PT	288+82.25	258242.55	33503.87						
UFM-L-106						N 55° 40'33" E	16.34				
		PC	288+98.59	258251.76	33517.36						
	UFM-C-120	PI	289+62.74	258287.94	33570.35			580.00	127.79	12° 37'24"	LEFT
		PRC	290+26.38	258334.82	33614.14						
	UFM-C-121	PI	290+64.40	258362.60	33640.10			700.00	75.97	6° 13'06"	RIGHT
		PCC	291+02.35	258387.41	33668.91						
	UFM-C-122	PI	291+95.14	258447.96	33739.23			550.00	183.86	19° 09'12"	RIGHT
		PT	292+86.21	258482.08	33825.52						
UFM-L-107						N 68° 25'27" E	70.07				
		PC	293+56.28	258507.85	33890.68						
	UFM-C-123	PI	294+42.66	258539.61	33971.02			265.00	167.01	36° 06'34"	RIGHT
		PT	295+23.29	258517.94	34054.64						
UFM-L-108						S 75° 27'59" E	26.52				
		PC	295+49.81	258511.28	34080.31						
	UFM-C-124	PI	297+06.57	258471.94	34232.05			415.00	299.76	41° 23'08"	LEFT
		PT	298+49.57	258542.75	34371.90						
UFM-L-109						N 63° 08'53" E	39.81				
		PC	298+89.38	258560.73	34407.42						
	UFM-C-125	PI	299+08.47	258569.35	34424.46			1500.00	38.18	1° 27'30"	RIGHT
		PT	299+27.57	258577.54	34441.70						
UFM-L-110						N 64° 36'23" E	74.03				
		PC	300+01.59	258609.29	34508.58						
	UFM-C-126	PI	300+18.05	258616.34	34523.45			220.00	32.85	8° 33'21"	LEFT
		PCC	300+34.45	258625.54	34537.10						
	UFM-C-127	PI	301+15.18	258670.62	34604.07			700.00	160.75	13° 09'26"	LEFT
		PRC	301+95.19	258729.76	34659.01						
	UFM-C-128	PI	302+15.35	258744.53	34672.74			500.00	40.30	4° 37'06"	RIGHT
		PT	302+35.49	258758.15	34687.60						
UFM-L-111						N 47° 30'42" E	52.22				

HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
		PC	302+87.72	258793.42	34726.11						
	UFM-C-129	PI	303+18.44	258814.18	34748.77			210.00	61.01	16° 38'47"	LEFT
		PCC	303+48.73	258840.55	34764.53						
	UFM-C-130	PI	304+15.72	258898.05	34798.90			150.00	126.01	48° 07'59"	LEFT
		PT	304+74.74	258962.03	34779.01						
UFM-L-112						N 17° 16'04" W	202.01				

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (17 OF 22) FOR ALIGNMENT GRAPHICS.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
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REVISIONS: NO.	DATE	REVISION DESCRIPTION:

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Michael Baker INTERNATIONAL

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT (18 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 30

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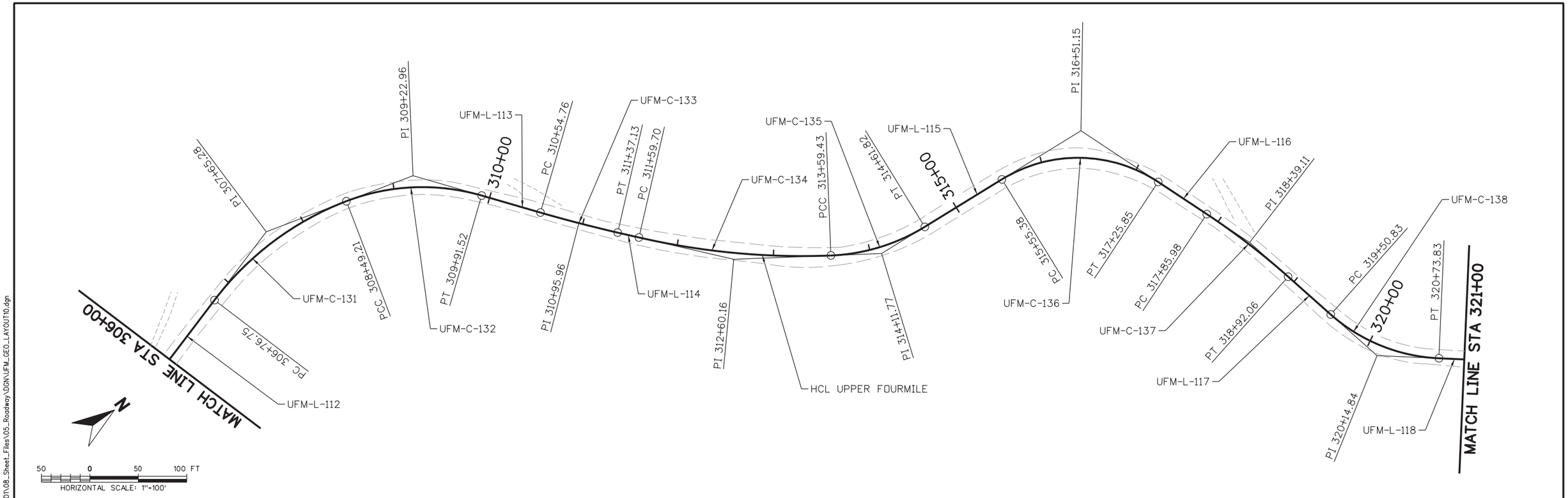

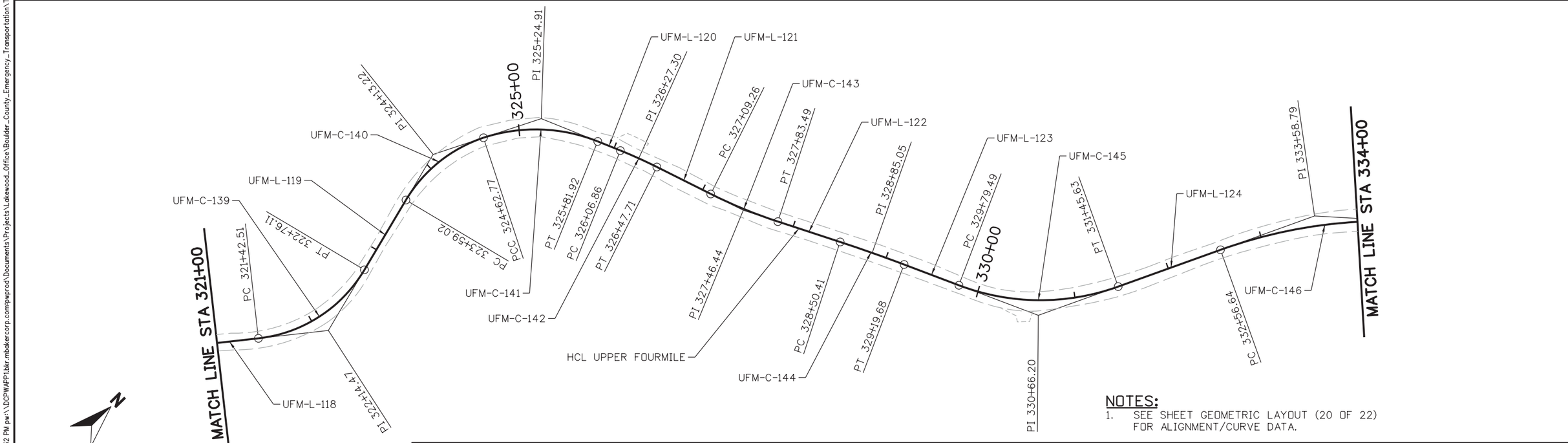

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (20 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

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REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(19 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 31

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HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
UFM-L-112						N 17° 16'04" W	202.01				
		PC	306+76.75	259154.93	34719.05						
	UFM-C-131	PI	307+65.28	259239.47	34692.77			310.00	172.46	31° 52'31"	RIGHT
		PCC	308+49.21	259325.13	34715.10						
	UFM-C-132	PI	309+22.96	259396.49	34733.69			220.00	142.31	37° 03'41"	RIGHT
		PT	309+91.52	259442.23	34791.54						
UFM-L-113						N 51° 40'08" E	63.24				
		PC	310+54.76	259481.45	34841.15						
	UFM-C-133	PI	310+95.96	259507.00	34873.46			1500.00	82.37	3° 08'47"	LEFT
		PT	311+37.13	259534.28	34904.33						
UFM-L-114						N 48° 31'21" E	22.57				
		PC	311+59.70	259549.23	34921.24						
	UFM-C-134	PI	312+60.16	259615.77	34996.50			750.00	199.73	15° 15'29"	LEFT
		PCC	313+59.43	259699.76	35051.60						
	UFM-C-135	PI	314+11.77	259743.53	35080.31			200.00	102.40	29° 20'04"	LEFT
		PT	314+61.82	259795.76	35083.90						
UFM-L-115						N 3° 55'48" E	93.56				
		PC	315+55.38	259889.09	35090.31						
	UFM-C-136	PI	316+51.15	259984.64	35096.88			150.00	170.47	65° 06'51"	RIGHT
		PT	317+25.85	260018.89	35186.31						
UFM-L-116						N 69° 02'39" E	60.13				
		PC	317+85.98	260040.40	35242.47						
	UFM-C-137	PI	318+39.11	260059.40	35292.08			750.00	106.08	8° 06'15"	RIGHT
		PT	318+92.06	260071.22	35343.88						
UFM-L-117						N 77° 08'54" E	58.78				
		PC	319+50.83	260084.29	35401.18						
	UFM-C-138	PI	320+14.84	260098.53	35463.59			180.00	123.00	39° 09'02"	LEFT
		PT	320+73.83	260148.97	35502.99						
UFM-L-118						N 37° 59'52" E	68.68				
		PC	321+42.51	260203.09	35545.27						
	UFM-C-139	PI	322+14.47	260259.80	35589.58			145.00	133.60	52° 47'24"	LEFT
		PT	322+76.11	260329.38	35571.20						
UFM-L-119						N 14° 47'32" W	82.91				
		PC	323+59.02	260409.54	35550.04						
	UFM-C-140	PI	324+13.22	260461.95	35536.20			145.00	103.75	40° 59'44"	RIGHT
		PCC	324+62.77	260510.59	35560.13						
	UFM-C-141	PI	325+24.91	260566.34	35587.57			170.00	119.16	40° 09'35"	RIGHT
		PT	325+81.92	260591.26	35644.50						
UFM-L-120						N 66° 21'47" E	24.94				
		PC	326+06.86	260601.26	35667.35						
	UFM-C-142	PI	326+27.30	260609.45	35686.07			500.00	40.85	4° 40'51"	RIGHT
		PT	326+47.71	260616.09	35705.40						
UFM-L-121						N 71° 02'38" E	61.55				
		PC	327+09.26	260636.08	35763.61						
	UFM-C-143	PI	327+46.44	260648.16	35798.77			500.00	74.23	8° 30'21"	LEFT
		PT	327+83.49	260665.31	35831.77						
UFM-L-122						N 62° 32'17" E	66.92				
		PC	328+50.41	260696.17	35891.15						
	UFM-C-144	PI	328+85.05	260712.15	35921.88			1500.00	69.27	2° 38'45"	RIGHT
		PT	329+19.68	260726.69	35953.33						
UFM-L-123						N 65° 11'02" E	59.81				
		PC	329+79.49	260751.79	36007.61						
	UFM-C-145	PI	330+66.20	260788.18	36086.32			235.00	166.14	40° 30'20"	LEFT
		PT	331+45.63	260866.97	36122.52						

HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
UFM-L-124						N 24° 40'42" E	111.01				
		PC	332+56.64	260967.84	36168.87						
	UFM-C-146	PI	333+58.79	261060.67	36211.52			500.00	201.54	23° 05'40"	RIGHT
		PT	334+58.18	261129.33	36287.17						

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (19 OF 22) FOR ALIGNMENT GRAPHICS.

30% SET

CALL UTILITY NOTIFICATION CENTER OF COLORADO
811
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(20 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 32

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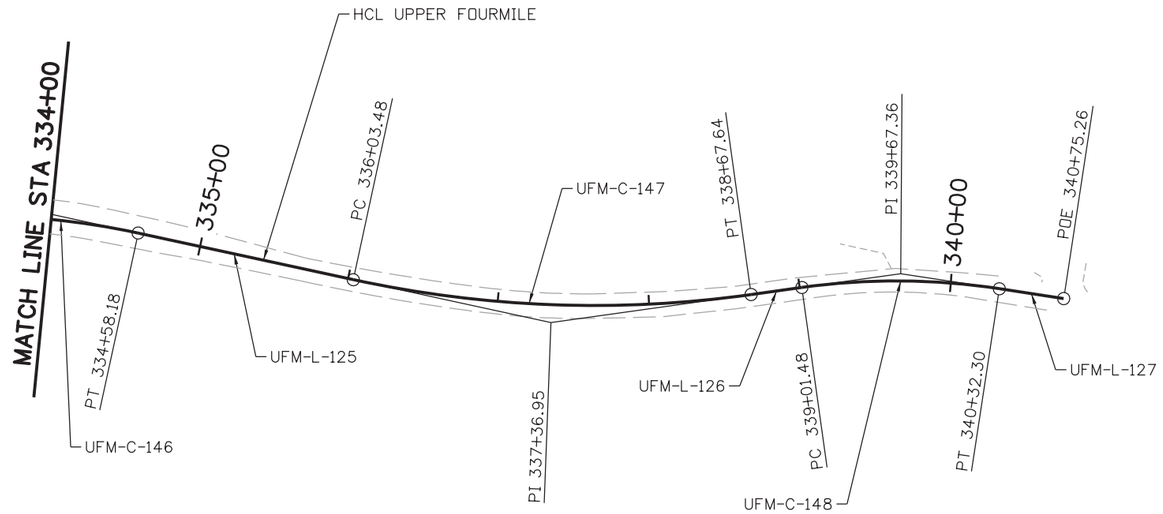

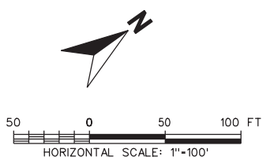

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (22 OF 22) FOR ALIGNMENT/CURVE DATA.

30% SET

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811

CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

Boulder County

Michael Baker INTERNATIONAL

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT
(21 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 33

john.miller 12:23:34 PM pw:\\DCPWAPP1.bkr.mbakercorp.com:pwprod\Documents\Projects\Lakewood_Office\Boulder_County_Emergency_Transportation\T01\08_Sheet_Files\05_Roadway\DGN\UFM_GEO_LAYOUT11.dgn

HORIZONTAL ALIGNMENT DATA (HCL UPPER FOURMILE CANYON DRIVE)

LINE NUMBER	CURVE NUMBER	POINT TYPE	STATION	NORTHING	EASTING	BEARING	DISTANCE (FEET)	RADIUS (FEET)	LENGTH (FEET)	CURVE DELTA	CURVE DIRECTION
		PC	332+56.64	260967.84	36168.87						
	UFM-C-146	PI	333+58.79	261060.67	36211.52			500.00	201.54	23° 05'40"	RIGHT
		PT	334+58.18	261129.33	36287.17						
UFM-L-125						N 47° 46'22" E	145.31				
		PC	336+03.48	261226.98	36394.77						
	UFM-C-147	PI	337+36.95	261316.68	36493.59			750.00	264.16	20° 10'49"	LEFT
		PT	338+67.64	261434.96	36555.41						
UFM-L-126						N 27° 35'33" E	33.84				
		PC	339+01.48	261464.95	36571.08						
	UFM-C-148	PI	339+67.36	261523.34	36601.60			450.00	130.82	16° 39'24"	RIGHT
		PT	340+32.30	261570.52	36647.56						
UFM-L-127						N 44° 14'57" E	42.96				
		POE	340+75.26	261601.29	36677.54						

NOTES:

1. SEE SHEET GEOMETRIC LAYOUT (21 OF 22) FOR ALIGNMENT GRAPHICS.

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CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE, OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

REVISIONS:	NO.	DATE	REVISION DESCRIPTION:

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DESIGNED:	CAD:	CHECKED:	DATE:
JAT	JWM	LDW	09/01/15

UPPPER FOURMILE CANYON DRIVE
GEOMETRIC LAYOUT (22 OF 22)

PROJECT NO: 4041.SEPT12C37 | SHEET NO: 34

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