NOTES:

1. REMOVAL OF PIPES SHALL INCLUDE ALL RELATED END SECTIONS, REMOVALS AND APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE, EROSION CONTROL, OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.

2. FOR DITCH SIZE, EXTS, AND PROTECTION SEE DRAINAGE DITCH DETAILS SHEET.

3. FOR DIMENSIONS AND SPECIFICATIONS REGARDING INLET/OUTLET PROTECTION, PADS, AND RUNDOWNS SEE DRAINAGE DETAILS.

4. RIPRAP MAY BE OMITTED OR MODIFIED TO PROTECT TREES FROM DAMAGE OR REMOVAL, AS DIRECTED BY THE ENGINEER.

5. MATERIALS LISTED UPON DRAWING SHEETS.

6. MACHINERY NOTIFICATION CENTER OF COLORADO CALL 2-BUSINESS DAYS IN ADVANCE FOR THE NOTICE OF WORKING IN THE NEIGHBORHOOD.
NOTES:

1. REMOVAL OF PIPES SHALL INCLUDE ALL RELATED END SECTIONS, HEADWALLS AND APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE, EROSION CONTROL OR PUBLIC SAFETY. IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.

2. FOR DITCH SIZE, EXTENTS, AND PROTECTION, SEE DRAINAGE DITCH DETAILS SHEET.

3. FOR DIMENSIONS AND SPECIFICATIONS REGARDING INLET/OUTLET PROTECTION, TAPS, AND PRESCRIPTION ROW SEE DRAINAGE DETAILS.

4. RIPRAP MAY BE OMITTED OR MODIFIED TO PROTECT TREES FROM DAMAGE OR REMOVAL, AS DIRECTED BY THE ENGINEER.
1. Removal of pipes shall include all related end sections, headwalls and appurtenances and shall not adversely affect drainage, erosion control or public safety in the interim until permanent improvements are installed.

2. For ditch size, extents, and protection see drainage ditch details sheet.

3. For dimensions and specifications regarding inlet/outlet protection, pads, and rundown see drainage details.

4. Riprap may be omitted or modified to protect trees from damage or removal as directed by the engineer.
NOTES:

1. REMOVAL OF PIPES SHALL INCLUDE ALL RELATED END SECTIONS, MEDIAN WALLS AND APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE, EROSION CONTROL OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.

2. FOR DITCH SIZE, EXTENTS AND PROTECTION SEE DRAINAGE DITCH DETAILS SHEET.

3. FOR DIMENSIONS AND SPECIFICATIONS REGARDING INLET/OUTLET PROTECTION, PADS, AND RUNDOWNS SEE DRAINAGE DETAILS.

4. RIPRAP MAY BE OMITTED OR MODIFIED TO PROTECT RELATED END SECTIONS, HEADWALLS AND REMOVAL OF PIPES SHALL INCLUDE ALL RELATED END SECTIONS, MEDIAN WALLS AND APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE, EROSION CONTROL OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.

5. For construction

6. ADJUSTMENTS ARE COMMONLY MADE TO PROTECT APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE, EROSION CONTROL OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.

7. RIPRAP WALL PROTECTION, SECTION 4-D SEE DRAINAGE DETAILS.

8. For construction

9. Riprap Wall Protection, Section 4-D SEE DRAINAGE DETAILS.

10. For construction

11. Riprap Wall Protection, Section 4-D SEE DRAINAGE DETAILS.
NOTES:

1. REMOVAL OF PIPES SHALL INCLUDE ALL RELATED END SECTIONS, HEADWALLS AND APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE, EROSION CONTROL OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.

2. FOR DITCH SIZE, EXTENTS, AND PROTECTION SEE DRAINAGE DITCH DETAILS SHEET.

3. FOR DIMENSIONS AND SPECIFICATIONS REGARDING DRAINAGE DITCH DETAILS SHEET.

4. RIPRAP MAY BE CHANGED OR MODIFIED TO PROTECT TREES FROM DAMAGE OR REMOVAL, AS DIRECTED BY THE ENGINEER.
REMOVAL OF PIPES SHALL INCLUDE ALL RELATED END SECTIONS, HEADWALLS AND APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE, EROSION CONTROL OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.

FOR DITCH SIZE, EXTENTS, AND PROTECTION SEE DRAINAGE DITCH DETAILS SHEET.

FOR DIMENSIONS AND SPECIFICATIONS REGARDING INLET/OUTLET PROTECTION, PADS, AND RUNDOWNS SEE DRAINAGE DETAILS.

RIPRAP MAY BE OMITTED OR MODIFIED TO PROTECT TREES FROM DAMAGE OR REMOVAL, AS DIRECTED BY THE ENGINEER.

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

FOR CONSTRUCTION

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

FOURMILE CANYON DR (NORTH)
DRAINAGE PLANS (1 OF 7)

DATE: 9/18/18

PROJECT NO: 4043.SEPT12C36

SHEET NO: JAM

FOR CONSTRUCTION
NOTES:

1. REMOVAL OF PIPES SHALL INCLUDE ALL RELATED END SECTIONS, HEADWALLS, AND APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE, EROSION CONTROL, OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.

2. FOR DITCH SIZE, EXTENTS, AND PROTECTION SEE DRAINAGE DITCH DETAILS SHEET.

3. FOR DIMENSIONS AND SPECIFICATIONS REGARDING INLET/OUTLET PROTECTION, PADS, AND RUNDOWNS SEE DRAINAGE DETAILS.

4. RIPRAP MAY BE OMITTED OR MODIFIED TO PROTECT TREES FROM DAMAGE OR REMOVAL, AS DIRECTED BY THE ENGINEER.
NOTES:

1. REMOVAL OF PIPES SHALL INCLUDE ALL RELATED END SECTIONS, HEADWALLS AND APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE EROSION CONTROL OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.

2. FOR DITCH SIZE, EXTENTS, AND PROTECTION SEE DRAINAGE Ditch DETAILS SHEET.

3. FOR DIMENSIONS AND SPECIFICATIONS REGARDING INLET/OUTLET PROTECTION, PADS, AND RUNDOWNS SEE DRAINAGE DETAILS.

4. RIPRAP MAY BE OMITTED OR MODIFIED TO PROTECT TREES FROM DAMAGE OR REMOVAL AS DIRECTED BY THE ENGINEER.
NOTES:
1. REMOVAL OF PIPES SHALL INCLUDE ALL RELATED END SECTIONS, HEADWALLS AND APPURTENANCES AND SHALL NOT ADVERSELY EFFECT DRAINAGE, EROSION CONTROL OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.
2. FOR DITCH SIZE, PATENTS, AND PROTECTION SEE DRAINAGE DITCH DETAILS SHEET.
3. FOR DIMENSIONS AND SPECIFICATIONS REGARDING PIPE/OUTLET PROTECTION, PADS, AND RUNDOWNS SEE DRAINAGE DETAILS.
4. RIPRAP MAY BE OMITTED OR MODIFIED TO PROTECT TREES FROM DAMAGE OR REMOVAL, AS DIRECTED BY THE ENGINEER.
NOTES:

1. Removal of pipes shall include all related end sections, headwalls, and appurtenances and shall not adversely affect drainage, erosion control, or public safety in the interim until permanent improvements are installed.

2. For ditch sizes, extents, and protection see drainage ditch details sheet.

3. For dimensions and specifications regarding inlet/outlet protection, pads, and rundowns see drainage details.

4. Riprap may be omitted or modified to protect trees from damage or removal, as directed by the Engineer.
NOTES:
1. REMOVAL OF TIERPS SHALL INCLUDE ALL RELATED EBD SECTIONS, HEADWALLS AND APPURTENANCES AND SHALL NOT ADVERSELY AFFECT DRAINAGE, EROSION CONTROL OR PUBLIC SAFETY IN THE INTERIM UNTIL PERMANENT IMPROVEMENTS ARE INSTALLED.
2. FOR DITCH SIZE, EXTENTS, AND PROTECTION SEE DRAINAGE DITCH DETAILS SHEET.
3. FOR DIMENSIONS AND SPECIFICATIONS REGARDING INLET/OUTLET PROTECTION, PADS, AND RUNDOWNS SEE DRAINAGE DETAILS.
4. RIPRAP MAY BE OMITTED OR MODIFIED TO PROTECT TREES FROM DAMAGE OR REMOVAL, AS DIRECTED BY THE ENGINEER.
PROTECT IN PLACE
EXISTING ELECTRIC AD SET
JAM
EMR
FOURMILE CANYON DR (SOUTH)
DRAINAGE PROFILES
05/04/18
(2 OF 2)
JPZ
P-S-107
5920
5930
5940
5950

CANYON DR.
FOURMILE IN V = 5929.86
30" x 19" RCP
68 + 62.98, 21.71' LT
62 + 31.25, 21.71' RT
3.04%
30" x 19" RCP
REQ'D 37 LF OF
14 CFS
6 CFS
@ 3.04%

PROJECT NO:
DATE:
CAD:
CHECKED:
REVISION DESCRIPTION:
REV.
SHEET NO:

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

FOR
CONSTRUCTION
9/18/18

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

GROUND EXISTING PROPOSED GRADE
SEE DRAINAGE DITCH DETAILS
DITCH CH-S-106
INV=5931.14
SEE DRAINAGE DITCH DETAILS
RIPRAP OUTLET PROTECTION

GROUND EXISTING PROPOSED GRADE
SEE DRAINAGE DITCH DETAILS
DITCH CH-S-108
INV=5939.75
SEE DRAINAGE DITCH DETAILS
RIPRAP OUTLET PROTECTION

GROUND EXISTING PROPOSED GRADE
SEE DRAINAGE DITCH DETAILS
DITCH CH-S-110
INV=5968.84
SEE DRAINAGE DITCH DETAILS
RIPRAP OUTLET PROTECTION

GROUND EXISTING PROPOSED GRADE
SEE DRAINAGE DITCH DETAILS
DITCH CH-S-113
INV=5999.71
SEE DRAINAGE DITCH DETAILS
RIPRAP OUTLET PROTECTION

IN V = 5930.04
30" x 19" RCP
68 + 30.06, 25.64' LT
72 + 30.06, 26.54' RT
3.56%
24" RCP
REQ'D 41 LF OF
18 CFS
8 CFS
@ 3.56%

IN V = 5939.96
30" RCP
72 + 32.09, 26.37' RT
3.04%
24" RCP
REQ'D 49 LF OF
32 CFS
14 CFS
@ 3.04%

IN V = 5938.10
PRECAST TOE WALL 30" RCP WITH
72 + 30.06, 25.64' LT
3.04%
24" RCP
REQ'D 41 LF OF
32 CFS
14 CFS
@ 3.04%

IN V = 5939.96
30" RCP
72 + 32.09, 26.37' RT
3.04%
24" RCP
REQ'D 49 LF OF
32 CFS
14 CFS
@ 3.04%

IN V = 5938.10
PRECAST TOE WALL 30" RCP WITH
72 + 30.06, 25.64' LT
3.04%
24" RCP
REQ'D 49 LF OF
32 CFS
14 CFS
@ 3.04%

IN V = 5939.96
30" RCP
72 + 32.09, 26.37' RT
3.04%
24" RCP
REQ'D 49 LF OF
32 CFS
14 CFS
@ 3.04%

IN V = 5938.10
PRECAST TOE WALL 30" RCP WITH
72 + 30.06, 25.64' LT
3.04%
24" RCP
REQ'D 49 LF OF
32 CFS
14 CFS
@ 3.04%
Utilities of Underground Member or Excavate for the Marking Advancement Before You Dig, Grade, Call 2-Business Days in
Call Utility Notification Center of Colorado

Revisions:

Sheet No: 4043.SEPT12C36

P-N-100

HW 10-YR = 6411.11
HW 100-YR = 6412.63

STA: 217+25.23, 18.88' RT
HEADWALL N-A

Q 100 = 63 CF
Q 10 = 31 CF
@ 9.02%
42" RCP

TW 10-YR = 6390.19
TW 100-YR = 6393.92

HCL: N FOURMILE

P-N-103

STA: 223+85.64
HCL: N FOURMILE

Q 100 = 5 CF
Q 10 = 3 CF
@ 2.11%
18" RCP

TW 10-YR = 6431.14
TW 100-YR = 6435.33

IN V = 6436.30
STA 223+85.68, 15.25' LT
WALL N-3

F O U R M I L E  C R E E K

CANYON DR.
FOURMILE

P-N-104

STA: 228+94.51
HCL: N FOURMILE

Q 100 = 16 CF
Q 10 = 8 CF
@ 5.18%
24" RCP

TW 10-YR = 6453.70
TW 100-YR = 6458.35

IN V = 6462.50
GRADE EL = 6462.50
AND SLOPE AND DITCH PAVING WITH CLOSE MESH GRADE TYPE C (5 FOOT)
STA 228+94.51
IN-N-104

P-N-106

STA: 232+75.91
HCL: N FOURMILE

Q 100 = 14 CF
Q 10 = 7 CF
@ 1.81%
24" RCP

TW 10-YR = 6470.42
TW 100-YR = 6476.53

IN V = 6478.52
GRADE EL = 6478.52
AND SLOPE AND DITCH PAVING WITH CLOSE MESH GRADE TYPE C (10 FOOT)
STA 232+84.98, 30.97' LT
IN-N-106

EXISTING GROUND
PROPOSED GRADE
P-N-100
HCL: N FOURMILE
STA: 217+25.19

EXISTING GROUND
PROPOSED GRADE
P-N-103
HCL: N FOURMILE
STA: 223+45.64

EXISTING GROUND
PROPOSED GRADE
P-N-104
HCL: N FOURMILE
STA: 228+45.61

EXISTING GROUND
PROPOSED GRADE
P-N-106
HCL: N FOURMILE
STA: 233+75.91

SOIL RIPRAP WALL PROTECTION
SEE DRAINAGE DETAILS
INV=6456.73
EXISTING GROUND
PROPOSED GRADE
INV=6454.31
SEE DRAINAGE DETAILS
RIPRAP PAD
300 DRAINAGE DETAILS
INV=6454.31

SOIL RIPRAP WALL PROTECTION
SEE DRAINAGE DETAILS
INV=6436.65
EXISTING GROUND
PROPOSED GRADE
INV=6437.13
SEE DRAINAGE DITCH DETAILS

DITCH CH-N-100
SEE DRAINAGE DITCH DETAILS
INV=6409.75
EXISTING GROUND
PROPOSED GRADE

DITCH CH-N-103
SEE DRAINAGE DITCH DETAILS
INV=6437.13
EXISTING GROUND
PROPOSED GRADE

DITCH CH-N-106
SEE DRAINAGE DITCH DETAILS
INV=6478.52
EXISTING GROUND
PROPOSED GRADE

SOIL RIPRAP WALL PROTECTION
SEE DRAINAGE DETAILS
INV=6479.86
EXISTING GROUND
PROPOSED GRADE
INV=6480.63
SEE DRAINAGE DITCH DETAILS

PRECAST TOE WALL
24" RCP WITH
STA 228+84.98, 30.97' LT
F E S -104-N-D

PRECAST TOE WALL
24" RCP WITH
STA 232+75.91
F E S -106-N-D

PRECAST TOE WALL
24" RCP WITH
STA 232+84.98, 30.97' LT
F E S -106-N-D

DRAINAGE PROFILES (1 OF 3)

FOR CONSTRUCTION
9/18/18

DRAWN/REV: 4/13/18
CHECKED: 4/23/18
DESIGNED: 4/25/18
ENGINEERING DIVISION
BOULDER COUNTY TRANSPORTATION DEPARTMENT
Utilities of underground member or excavate for the marking advance before you dig, grade, call 2-business days in Call Utility Notification Center of Colorado.

**Revision Description:**

- **Inv = 6526.00**
  - STA: 242+72.39
  - HCL: N Fourmile
  - driveway
  - Sta 242+93.74, 21.98' RT
  - FES - N - 112 - U
  - Q100 = 9 CFs
  - Q10 = 5 CFs
  - @ 3.52%
  - 18" RCP
  - REQ'D 36 LF OF P-N-112

- **Inv = 6527.24**
  - STA: 250+94.24, 22.63' LT
  - wing wall N-F 2
  - Sta 250+67.21, 28.58' LT
  - Q100 = 7 CFs
  - Q10 = 5 CFs
  - @ 9.98%
  - 24" RCP
  - REQ'D 26 LF OF P-N-116

- **Inv = 6525.79**
  - STA: 252+86.46, 25.00' RT
  - headwall N-H
  - Sta 252+96.91
  - HCL: N Fourmile
  - Q100 = 3 CFs
  - Q10 = 2 CFs
  - @ 8.59%
  - 24" RCP
  - REQ'D 41 LF OF P-N-117
1. SEE DRAINAGE PLANS FOR ADDITIONAL NOTES.
SECTION A-A

LIMITS OF DEPRESSION (6 FOOT MINIMUM)

MINIMUM 21" FILTER MATERIAL (CLASS A)

LIMITS OF DEPRESSION (3 FOOT MINIMUM)

MINIMUM 24" TOP 12" OF BOULDER TO REMAIN UNBURIED (TYP)

NOTES:
1. ELEVATIONS PROVIDED ARE FOR TOP OF BOULDER.
2. SEE CONTROL POINT TABLE FOR BOULDER LOCATIONS.
3. VOIDS BETWEEN 36" BOULDERS SHALL BE FILLED WITH COMPACTED NATIVE MATERIAL. THE COST OF WORK AND MATERIAL SHALL BE INCLUDED IN THE COST OF WORK.

POINTER TABLE P-N-108

<table>
<thead>
<tr>
<th>PT #</th>
<th>ALIGNMENT</th>
<th>STATION</th>
<th>OFFSET</th>
<th>ELEV.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP-34</td>
<td>N FOURMILE</td>
<td>238+20.53</td>
<td>94.91'</td>
<td>6525.88</td>
<td>LIMIT OF 9&quot; SOIL RIPRAP</td>
</tr>
<tr>
<td>DP-35</td>
<td>N FOURMILE</td>
<td>238+41.45</td>
<td>117.86'</td>
<td>6530.34</td>
<td>LIMIT OF 9&quot; SOIL RIPRAP</td>
</tr>
<tr>
<td>DP-36</td>
<td>N FOURMILE</td>
<td>238+31.95</td>
<td>117.38'</td>
<td>6528.50</td>
<td>LIMIT OF BOULDER DEPRESSION</td>
</tr>
<tr>
<td>DP-37</td>
<td>N FOURMILE</td>
<td>238+26.97</td>
<td>122.00'</td>
<td>6528.50</td>
<td>LIMIT OF BOULDER DEPRESSION</td>
</tr>
<tr>
<td>DP-38</td>
<td>N FOURMILE</td>
<td>238+22.33</td>
<td>135.52'</td>
<td>6529.93</td>
<td>LIMIT OF 9&quot; SOIL RIPRAP</td>
</tr>
<tr>
<td>DP-39</td>
<td>N FOURMILE</td>
<td>238+17.99</td>
<td>129.52'</td>
<td>6527.50</td>
<td>LIMIT OF BOULDER DEPRESSION</td>
</tr>
<tr>
<td>DP-40</td>
<td>N FOURMILE</td>
<td>238+10.83</td>
<td>129.95'</td>
<td>6528.76</td>
<td>LIMIT OF 9&quot; SOIL RIPRAP</td>
</tr>
</tbody>
</table>

NOTE: ELEVATIONS PROVIDED ARE FOR FINISHED GRADE
SOIL RIPRAP WITH MULCH

NOTES:
1. SOIL RIPRAP AND RIPRAP DETAILS ARE APPLICABLE TO SLOPED AREAS REFER TO THE DRAINAGE PLANS FOR ACTUAL LOCATIONS AND LIMITS.
2. MIX UNIFORM 65% RIPRAP BY VOLUME WITH 35% OF APPROVED SOIL OR GRAVEL BY VOLUME PRIOR TO PLACEMENT.
3. PLACE SOIL RIPRAP OR RIPRAP MIX TO RESULT IN SECURED INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE COMPACT AND LEVEL TO ELIMINATE ALL Voids AND ROCKS PROJECTING ABOVE DESIGN RIPRAP TOP GRADE.
4. CRIMP OR TACKIFY MULCH ON SOIL RIPRAP OR AS CALLED FOR IN THE PLANS AND SPECIFICATIONS.
5. SEE STORMWATER MANAGEMENT PLAN FOR SEEDING MUSHT AND DETAILS.
6. BENCH RIPRAP AS NECESSARY TO MATCH EXISTING GRADE AND PLACE STONE-SOIL OR STONE-GRAVEL MIX TO RESULT IN SECURED INTERLOCKED ROCK AT THE DESIGN THICKNESS AND GRADE COMPACT AND LEVEL TO ELIMINATE ALL Voids AND ROCKS PROJECTING ABOVE FINISHED GRADE.

TOEWALL DETAIL

NOTES:
1. SEE RIPRAP RUNDOWN TABLE BELOW FOR RIPRAP SIZE AND THICKNESS.
2. PLACE 6 INCHES OF FILTER MATERIAL (CLASS A) BELOW RIPRAP RUNDOWN.

CULVERT TYPICAL

NOTES:
FLUX DIRECTION MAY VARY.
SEE DRAINAGE PLANS.
NOTE:

- Taper bench width to tie into existing ground when outside wall limits.
- Topsoil shall not be placed below the OHWM/2-YR WSEL.

1. Topsoil shall not be placed below the OHWM/2-YR WSEL.

**SECTION A-A**

- Existing stacked boulder wall
- Retaining wall
- See retaining wall plans for limits

**SECTION B-B**

- Existing stacked boulder wall
- Retaining wall
- See retaining wall plans for limits

**SECTION C-C**

- Taper topsoil to tie into existing ground
- Soil riprap
- (D50 = 24 inch)
- 4' thick

**SECTION D-D**

- Soil riprap
- (D50 = 24 inch)
- 4' thick
- Riprap
- (D50 = 24 inch)
- 4' thick

**NOT TO SCALE**

- Existing stacked boulder wall
- Riprap wall protection
- Not to scale

- Soil riprap
- (D50 = 24 inch)
- 4' thick
- Riprap
- (D50 = 24 inch)
- 4' thick

**PLANS FOR LIMITS**

- See retaining wall
- Retaining wall
- PLANS FOR LIMITS

**NOTES:**

- Geotextile
- Elevation
- 2 YR Water Surface Elevation
- In prior to reaching
- Taper bench width to tie into existing ground
- Existing stacked boulder wall
- OHWM/2-YR WSEL.
- Topsoil shall not be placed when outside wall limits.
- To tie into existing ground
- Taper bench width to
- OHWM/2-YR WSEL.

**ADJUSTMENTS:**

- Geotextile
- Soil riprap
- (D50 = 24 inch)
- 4' thick
- Riprap
- (D50 = 24 inch)
- 4' thick
- Riprap
- (D50 = 24 inch)
- 4' thick

**RETAINING WALL**

- Soil riprap
- (D50 = 24 inch)
- 4' thick
- Riprap
- (D50 = 24 inch)
- 4' thick
- Riprap
- (D50 = 24 inch)
- 4' thick

**ENGINEERING DIVISION**

- Boulder County Transportation Department
- Designed:
- Project No:
- Date:
- Cad:
- Checked:
- Revision:
- Description:
- Date:
- No.
- Sheet No:
- Plans for limits
- See retaining wall
- Retaining wall
- Plans for limits

**REVISIONS:**

- No.
- Sheet 3 of 3
- Drainage Details
- Fourmile Canyon Dr
- Elevation
- 2 Yr Water Surface Elevation
- In prior to reaching
- Taper bench width to tie into existing ground
- Existing stacked boulder wall
- OHWM/2-YR WSEL.
- Topsoil shall not be placed when outside wall limits.
- To tie into existing ground
- Taper bench width to
- OHWM/2-YR WSEL.
### DRAINAGE GRADING POINT TABLE

<table>
<thead>
<tr>
<th>PT #</th>
<th>ALIGNMENT</th>
<th>STATION</th>
<th>OFFSET</th>
<th>ELEV.</th>
<th>DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>DP-01</td>
<td>S FOURMILE</td>
<td>52+45.89</td>
<td>35.04'</td>
<td>5869.19</td>
<td>FINISHED GRADE ELEVATION (P-S-100)</td>
</tr>
<tr>
<td>DP-02</td>
<td>S FOURMILE</td>
<td>52+50.51</td>
<td>47.87'</td>
<td>5870.00</td>
<td>FINISHED GRADE ELEVATION (P-S-100)</td>
</tr>
<tr>
<td>DP-03</td>
<td>S FOURMILE</td>
<td>52+55.11</td>
<td>47.83'</td>
<td>5870.00</td>
<td>FINISHED GRADE ELEVATION (P-S-100)</td>
</tr>
<tr>
<td>DP-04</td>
<td>S FOURMILE</td>
<td>52+58.24</td>
<td>39.63'</td>
<td>5867.00</td>
<td>FINISHED GRADE THALWEG (P-S-100)</td>
</tr>
<tr>
<td>DP-05</td>
<td>S FOURMILE</td>
<td>52+70.18</td>
<td>18.57'</td>
<td>5880.00</td>
<td>FINISHED GRADE ELEVATION (P-S-100)</td>
</tr>
<tr>
<td>DP-06</td>
<td>S FOURMILE</td>
<td>56+41.35</td>
<td>29.92'</td>
<td>5880.05</td>
<td>FINISHED GRADE ELEVATION (P-S-100)</td>
</tr>
<tr>
<td>DP-07</td>
<td>S FOURMILE</td>
<td>56+47.23</td>
<td>29.76'</td>
<td>5880.05</td>
<td>FINISHED GRADE ELEVATION (P-S-100)</td>
</tr>
<tr>
<td>DP-08</td>
<td>S FOURMILE</td>
<td>56+49.54</td>
<td>18.57'</td>
<td>5880.00</td>
<td>FINISHED GRADE ELEVATION (P-S-100)</td>
</tr>
<tr>
<td>DP-09</td>
<td>S FOURMILE</td>
<td>56+49.21</td>
<td>28.36'</td>
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<td>217+45.71</td>
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<td>6524.07</td>
<td>FINISHED GRADE ELEVATION (P-N-111)</td>
</tr>
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</table>
NOTES:
1. FOR EXCAVATION AND BACKFILL DETAILS, REFER TO M-206-1. FOR PRECAST BOX CULVERT HEADWALL DETAILS, REFER TO M-400-1. FOR "W", "a", AND OTHER WINGWALL DETAILS, REFER TO M-400-2. FOR "W", SEE HEADWALL AND WINGWALL DATA TABLE.
2. FOR ARCHITECTURAL DETAILS, SEE STRUCTURES PLANS.
3. SEE HEADWALL AND WINGWALL DATA TABLE.
4. TOE WALL MAY BE OMITTED WHEN FOOTINGS ARE ON BEDROCK AS PERMITTED BY THE ENGINEER.
5. ALL CONCRETE SHALL BE CONCRETE CLASS D.
6. FOR LEDGER AND MECHANICAL ANCHORS, SEE STRUCTURES PLANS.
7. STRUCTURAL CONCRETE COATING SHALL BE DARK BROWN, FEDERAL STANDARD 595C COLOR NO. 30045 OR APPROVED EQUAL.
8. STRUCTURAL CONCRETE COATING LIMITS ALSO APPLY AT END OF HEADWALL/WINGWALL.
9. FOR CUT STONE VENEER DETAILS, SEE STRUCTURES PLANS.
### HEADWALL AND WINGWALL DATA TABLE

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<th>DATE</th>
<th>L (FEET)</th>
<th>ELEV. M B</th>
<th>ELEV. M T</th>
<th>FINISHED. DATE</th>
<th>GRADE</th>
<th>FINISHED. DATE</th>
<th>GRADE</th>
<th>FINISHED. DATE</th>
<th>GRADE</th>
<th>FINISHED. DATE</th>
<th>GRADE</th>
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PIPE CULVERT HEADWALL DATA TABLE

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<th>CULVERT CL</th>
<th>SKEW</th>
<th>H (FEET)</th>
<th>T (FEET)</th>
<th>W1 (FEET)</th>
<th>W2 (FEET)</th>
<th>L1 (FEET)</th>
<th>L2 (FEET)</th>
<th>ELEV. mT</th>
<th>INVERT ELEV</th>
<th>ELEV A</th>
<th>ELEV B</th>
<th>ELEV C</th>
<th>ELEV D</th>
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<td>1.00</td>
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<td>S-C</td>
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NOTES:
1. FOR ADDITIONAL INFORMATION, MATERIAL AND DIMENSIONS, REFER TO CDOT STANDARD PLAN NO. M-601-12.
2. SEE PIPE CULVERT HEADWALL DATA TABLE FOR PARAMETER VALUES.
3. ELEV. mT IS TAKEN AT THE TOP OF HEADWALL ON THE CENTERLINE OF THE PIPE CULVERT. THE TOP OF HEADWALL SHALL BE CONSTRUCTED 0" +/- ABOVE EDGE OF PAVEMENT IN ALL OTHER AREAS NOT NOTED.
4. ALL CONCRETE SHALL BE CLASS D.
<table>
<thead>
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<th>Description</th>
<th>Quantity</th>
<th>Unit</th>
<th>Notes</th>
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<tr>
<td>CUT STONE VENEER</td>
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<td>BRIDGE RAIL TYPE 3</td>
<td>196</td>
<td>LF</td>
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<tr>
<td>DRILLED CAISSON (30 INCH)</td>
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<tr>
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<td>CONCRETE CLASS D (WALL)</td>
<td>672</td>
<td>LF</td>
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<td>REINFORCING STEEL (EPOXY COATED)</td>
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<td>TOTALS</td>
<td>4,475</td>
<td>CY</td>
<td>151,452</td>
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</table>

**Note:**
- The table above summarizes the approximate quantities for various construction items.
- The table includes descriptions such as "cut stone veneer," "bridge rail type 3," "drilled caisson (30 inch)," etc.
- The quantities are listed in thousands of units, with some notes on unit types and totals.
- The notes section includes details such as "equivalent to Federal Standard 595C COLOR 10059.
- The table is part of a larger document, possibly related to engineering projects or construction plans.
- The image contains a diagram, possibly illustrating the locations or sections of the described structures.
- The document appears to be part of a larger set of sheets, with references to other sheets and dates (5/4/18, 9/18/18).

**Additional Information:**
- The text includes references to coordinates and other technical details, suggesting it's a report or plan for construction work.
- The document contains engineering specifications and notes, possibly for a construction or transportation project.
NOTES:
1. SEE GEOMETRIC LAYOUT (2 OF 2) FOR ALIGNMENT DATA.
2. FOR ROADWAY ALIGNMENT AND INFORMATION, REFER TO ROADWAY PLANS.
### WALL S-1 HORIZONTAL ALIGNMENT DATA TABLE

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<th>CURVE NUMBER</th>
<th>POINT TYPE</th>
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<th>EASTING</th>
<th>BEARING</th>
<th>DISTANCE</th>
<th>RADIUS</th>
<th>LENGTH</th>
<th>DELTA</th>
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<td>47177.86</td>
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<td>13.04&quot;</td>
<td>12°03'01&quot;E</td>
<td>13.04&quot;</td>
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<tr>
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### WALL S-2 HORIZONTAL ALIGNMENT DATA TABLE

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<th>EASTING</th>
<th>BEARING</th>
<th>DISTANCE</th>
<th>RADIUS</th>
<th>LENGTH</th>
<th>DELTA</th>
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### REVIEWS:
- **DATE**: 5/4/18
- **REVISION DESCRIPTION**: 05/04/2018
- **ENGINEERING DIVISION**: BOULDER COUNTY TRANSPORTATION DEPARTMENT
- **DESIGNED**: PROJECT NO:
- **CHECKED**: DATE:
- **UTILITIES**: OR EXCAVATE FOR THE MARKING ADVANCE BEFORE YOU DIG, GRADE, CALL 2-BUSINESS DAYS IN CALL UTILITY NOTIFICATION CENTER OF COLORADO
NOTES:
1. SEE GEOMETRIC LAYOUT (2 OF 2) FOR ALIGNMENT DATA.
2. FOR ROADWAY ALIGNMENT AND INFORMATION, REFER TO ROADWAY PLANS.
### WALL N-1 HORIZONTAL ALIGNMENT DATA TABLE

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