NOTES:
1. FOR FINISHED GRADING REFER TO DRAINAGE PLANS.
2. FOR REMOVALS, UTILITY, AND GUARDRAIL INFORMATION REFER TO ROADWAY PLANS.
3. FOR ROADWAY GEOMETRICS, REFER TO ROADWAY PLANS.
4. FOR WALL TYPICAL SECTION, SEE TYPICAL SECTIONS SHEET.
5. FOR WALL HCL DATA, SEE GEOMETRIC SECTIONS SHEET.
6. EXPANSION JOINT LOCATIONS AND WEEP HOLES ARE TO BE APPROVED AS PART OF HCL DRAWINGS. SEE CUT STONE VENEER DETAILS FOR ADDITIONAL INFORMATION.
NOTES:
1. FOR FINISHED GRADING REFER TO FINISHED GRADE.
2. FOR REMOVALS, UTILITY, AND EXPANSION Joints REFER TO ROADWAY PLANS.
3. FOR ROADWAY GEOMETRIES REFER TO ROADWAY PLANS.
4. FOR WALL TYPICAL SECTIONS SEE TYPICAL SECTIONS SHEET.
5. FOR WALL MEL DATA SEE GEOMETRIC LAYOUT SHEET.
6. EXPANSION JOINT LOCATIONS AND FIELD Holes ARE TO BE APPROVED AS PART OF SHOP DRAWINGS. SEE CUT STONE VENEER DETAILS FOR ADDITIONAL INFORMATION.

GENERAL LAYOUT (1 OF 2)

SEGMENT

ELEVATION

TAKEN AT RETAINING WALL S-4 / F.F. WALL
BRIDGE RAIL NOT SHOWN

BASEMENT

OUTLINE OF FOOTING

EXISTING TREE (TYP.)

TYPICAL SECTIONS SHEET. FOR WALL TYPICAL SECTION,

REFER TO ROADWAY PLANS.

AND GUARDRAIL INFORMATION FOR REMOVALS, UTILITY,

TO DRAINAGE PLANS.

FOR FINISHED GRADING REFER 1.

SEE TYPICAL SECTIONS SHEET. FOR ROADWAY GEOMETRIES, SEE 4.

REFER TO ROADWAY PLANS.

ADDITIONAL INFORMATION.

VENEER DETAILS FOR DRAWINGS. SEE CUT STONE VENEER DETAILS FOR ADDITIONAL INFORMATION.

BRIDGE RAIL NOT SHOWN

TAKEN AT HCL WALL S-4 / F.F. WALL

MEL S FOURMILE

FOOTING OUTLINE OF RAIL TYPE 3

TRANSMITION TYPE 3L

EXPANSION JOINT LOCATIONS AND FIELD Holes ARE TO BE APPROVED AS PART OF SHOP DRAWINGS. SEE CUT STONE VENEER DETAILS FOR ADDITIONAL INFORMATION.

SEE TYPICAL SECTIONS SHEET. FOR ROADWAY GEOMETRIES, SEE 4.

REFER TO ROADWAY PLANS.

AND GUARDRAIL INFORMATION FOR REMOVALS, UTILITY,

TO DRAINAGE PLANS.

FOR FINISHED GRADING REFER 1.

SEE TYPICAL SECTIONS SHEET. FOR ROADWAY GEOMETRIES, SEE 4.

REFER TO ROADWAY PLANS.

AND GUARDRAIL INFORMATION FOR REMOVALS, UTILITY,

TO DRAINAGE PLANS.

FOR FINISHED GRADING REFER 1.
**NOTES:**

1. For cut stone veneer details, refer to architectural details sheet.

2. The contractor shall not disturb the existing ground conditions except as necessary to install the wall foundation and complete finished grading.

**KEYNOTES:**

1. Structural concrete shall be painted brown, equivalent to Federal Standard 595C Color 10059.

2. See drainage details for riprap wall protection.
NOTES:
1. FOR CUT STONE VENEER DETAILS, REFER TO ARCHITECTURAL DETAILS SHEET.
2. THE CONTRACTOR SHALL NOT DISTURB THE EXISTING GROUND CONDITIONS EXCEPT AS NECESSARY TO INSTALL THE WALL FOUNDATION AND COMPLETE FINISHED GRADING.

KEYNOTES:
1. STRUCTURAL CONCRETE SHALL BE PAINTED BROWN, EQUIVALENT TO FEDERAL STANDARD 595C COLOR 10059.
2. SEE DRAINAGE DETAILS FOR RIPRAP WALL PROTECTION.
NOTES:
1. FOR FINISHED GRADING REFER TO FINISHED GRADING REFER TO ROADWAY PLANS.
2. FOR ROADWAY GEOMETRIES, REFER TO ROADWAY PLANS.
3. FOR ROADWAY GEOMETRIES, REFER TO ROADWAY PLANS.
4. FOR WALL TYPICAL SECTION, SEE TYPICAL SECTIONS SHEET.
5. FOR WALL MCL DATA, SEE GENERAL LAYOUT SHEET.
6. EXPANSION JOINT LOCATIONS AND WEEP HOLES ARE TO BE APPROVED AS PART OF SHOP DRAWINGS. SEE CUT STONE VENEER DETAILS FOR ADDITIONAL INFORMATION.

ELEVATION

SEGMENT

TOP OF WALL

FINISHED GRADE

BOTT. OF KEY

BOTT. OF WALL

SLOPE

SHAPE

ELEVATION

224+00

TRANSLATION TYPE 3L

PLAN

TRANSITION TYPE 3L

SCALE: 1"=20'

SECTIONS SHEET.

PRESCRIPTIVE ROW

GEOMETRIC LAYOUT SHEET.

FOR WALL HCL DATA, SEE GENERAL LAYOUT SHEET.

REFER TO ROADWAY PLANS.

AND GUARDRAIL INFORMATION FOR REMOVALS, UTILITY, TO DRAINAGE PLANS.

FOR FINISHED GRADING REFER TO ROADWAY PLANS.

FOR REMOVALS, UTILITY, AND GUARDRAIL INFORMATION REFER TO ROADWAY PLANS.

FOR ROADWAY GEOMETRIES, REFER TO ROADWAY PLANS.

FOR WALL TYPICAL SECTION, SEE TYPICAL SECTIONS SHEET.

FOR WALL MCL DATA, SEE GENERAL LAYOUT SHEET.

EXPANSION JOINT LOCATIONS AND WEEP HOLES ARE TO BE APPROVED AS PART OF SHOP DRAWINGS. SEE CUT STONE VENEER DETAILS FOR ADDITIONAL INFORMATION.

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION
FOURMILE CANYON OR RETAINING WALL N-3
GENERAL LAYOUT

REF: SHEET NO:
CAD:
CHECKED:
REVISION DESCRIPTION:
DATE:
TRAFFIC SPECIFICATIONS:
ENGINEERING DIVISION
BOULDER COUNTY TRANSPORTATION DEPARTMENT
DESIGNED:
PROJECT NO:
DATE:
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

FOR CONSTRUCTION

REVISION DESCRIPTION

MCD

SEGMENT

TOP OF WALL

FINISHED GRADE

BOTT. OF KEY

BOTT. OF WALL

SLOPE

SHAPE

ELEVATION

224+00

TRANSITION TYPE 3L

PLAN

TRANSITION TYPE 3L

SCALE: 1"=20'

SECTIONS SHEET.

PRESCRIPTIVE ROW

GEOMETRIC LAYOUT SHEET.

FOR WALL HCL DATA, SEE GENERAL LAYOUT SHEET.

REFER TO ROADWAY PLANS.

AND GUARDRAIL INFORMATION FOR REMOVALS, UTILITY, TO DRAINAGE PLANS.

FOR FINISHED GRADING REFER TO ROADWAY PLANS.

FOR REMOVALS, UTILITY, AND GUARDRAIL INFORMATION REFER TO ROADWAY PLANS.

FOR ROADWAY GEOMETRIES, REFER TO ROADWAY PLANS.

FOR WALL TYPICAL SECTION, SEE TYPICAL SECTIONS SHEET.

FOR WALL MCL DATA, SEE GENERAL LAYOUT SHEET.

EXPANSION JOINT LOCATIONS AND WEEP HOLES ARE TO BE APPROVED AS PART OF SHOP DRAWINGS. SEE CUT STONE VENEER DETAILS FOR ADDITIONAL INFORMATION.

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION
FOURMILE CANYON OR RETAINING WALL N-3
GENERAL LAYOUT

REF: SHEET NO:
CAD:
CHECKED:
REVISION DESCRIPTION:
DATE:
TRAFFIC SPECIFICATIONS:
ENGINEERING DIVISION
BOULDER COUNTY TRANSPORTATION DEPARTMENT
DESIGNED:
PROJECT NO:
DATE:
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
EXISTING GROUND (B.F. WALL)
FINISHED GRADE (F.F. WALL)
FINISHED GRADE
RAIL TYPE 3 1'-3" BRIDGE
PGL LANE 11'-0"
LANE
HCL & F.F. WALL BOTT. OF FOOTING TOP OF WALL
CUT STONE VENEER RIPRAP TOP OF SOIL 4'-0"
4" ABC 3" HMA
(SEE DESIGN DATA TABLE)
FOOTING WIDTH 1'x1'-6" KEY 3"
BAND 2 1 9
CRS-SLP VARIES (SEE DESIGN DATA TABLE)
DESIGN HEIGHT VARIES (SEE DESIGN DATA TABLE)
DATA TABLE)
TOP OF WALL DATA TABLE
ROADWAY HCL ROADWAY HCL ROADWAY WALL HCL TOP OF WALL ELEVATION
230435.93 230435.93 230435.93 230435.93 6474.88
230436.11 230436.11 230436.11 230436.11 6473.62
230442.95 230442.95 230442.95 230442.95 6471.40
230451.68 230451.68 230451.68 230451.68 6470.36
230460.41 230460.41 230460.41 230460.41 6468.33
229448.05 229448.05 229448.05 229448.05 6466.32
229466.90 229466.90 229466.90 229466.90 6464.10
229485.55 229485.55 229485.55 229485.55 6462.99
230485.84 230485.84 230485.84 230485.84 6461.47
FOOTING DATA TABLE
HCL STATION BOTTOM OF FOOTING ELEVATION SLOPE STEP HEIGHT
4000+00.00 6462.58 -10.00% 0.00'
4000+19.17 6453.50 0.00% 0.00'
4000+90.75 6453.50 0.00% 0.00'
4001+40.50 6453.50 10.00% 0.00'
4001+96.00 6459.05 0.00% 0.00'
DESIGN DATA TABLE
SEGMENT SEGMENT STATION RANGE HEIGHT DESIGN DESIGN FOOTING FOOTING SEGMENT
1 4000+00.00 4000+19.17 11 ft 10° 7.50 ft 19.17 ft
2 4000+19.17 4000+42.66 12 ft 5° 8.75 ft 23.49 ft
3 4000+42.66 4000+63.74 13 ft 5° 9.50 ft 21.08 ft
4 4000+63.74 4000+84.37 14 ft 0° 7.75 ft 20.63 ft
5 4000+84.37 4000+96.93 15 ft 0° 8.50 ft 12.56 ft
6 4000+96.93 4001+16.65 14 ft 0° 7.75 ft 19.72 ft
7 4001+16.65 4001+36.38 13 ft 0° 7.25 ft 19.73 ft
8 4001+36.38 4001+45.75 12 ft 0° 7.00 ft 9.37 ft
9 4001+45.75 4001+52.38 11 ft 0° 6.25 ft 6.63 ft
10 4001+52.38 4001+59.03 10 ft 5° 6.00 ft 6.65 ft
11 4001+59.03 4001+65.66 9 ft 10° 7.25 ft 6.63 ft
12 4001+65.66 4001+72.27 8 ft 10° 6.00 ft 6.61 ft
13 4001+72.27 4001+78.91 7 ft 10° 4.75 ft 6.64 ft
14 4001+78.91 4001+85.54 6 ft 10° 4.25 ft 6.63 ft
15 4001+85.54 4001+92.16 5 ft 10° 4.00 ft 6.62 ft
16 4001+92.16 4001+96.00 4 ft 15° 3.75 ft 3.84 ft
KEYNOTES:
(1) SEE DRAINAGE DETAILS FOR RIPRAP WALL PROTECTION

TOP OF WALL DATA TABLE
ROADWAY HCL ROADWAY HCL ROADWAY WALL HCL TOP OF WALL ELEVATION
230435.93 230435.93 230435.93 230435.93 6474.88
230436.11 230436.11 230436.11 230436.11 6473.62
230442.95 230442.95 230442.95 230442.95 6471.40
230451.68 230451.68 230451.68 230451.68 6470.36
230460.41 230460.41 230460.41 230460.41 6468.33
229448.05 229448.05 229448.05 229448.05 6466.32
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4000+90.75 6453.50 0.00% 0.00'
4001+40.50 6453.50 10.00% 0.00'
4001+96.00 6459.05 0.00% 0.00'
DESIGN DATA TABLE
SEGMENT SEGMENT STATION RANGE HEIGHT DESIGN DESIGN FOOTING FOOTING SEGMENT
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2 4000+19.17 4000+42.66 12 ft 5° 8.75 ft 23.49 ft
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4 4000+63.74 4000+84.37 14 ft 0° 7.75 ft 20.63 ft
5 4000+84.37 4000+96.93 15 ft 0° 8.50 ft 12.56 ft
6 4000+96.93 4001+16.65 14 ft 0° 7.75 ft 19.72 ft
7 4001+16.65 4001+36.38 13 ft 0° 7.25 ft 19.73 ft
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15 4001+85.54 4001+92.16 5 ft 10° 4.00 ft 6.62 ft
16 4001+92.16 4001+96.00 4 ft 15° 3.75 ft 3.84 ft
KEYNOTES:
(1) SEE DRAINAGE DETAILS FOR RIPRAP WALL PROTECTION
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

TYPICAL HORIZONTAL LOG

<table>
<thead>
<tr>
<th>Boring No.</th>
<th>Material Description</th>
<th>Penetration Resistance</th>
<th>Sample Type</th>
<th>Graphic</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Groundwater Levels</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*eg: A value of 50/3 or 50:3 indicates that 50 blows were applied to the sampler, with a penetration of 3 inches.

Granite
Quartz Pegmatite
Weathered Bedrock

Asphalt
Boulders

USCS Poorly-graded Gravel
USCS Well-graded Gravel
USCS Clayey Sand
USCS Silty Sand

Material Description
Graphics (see Legend)

Penetration Resistance (Blows per foot or 3/8 inches of penetration)*

Grading

Typical Borehole Log

Penetration Resistance:

Blows per foot or 3/8 inches of penetration.

*eg: A value of 50/3 or 50:3 indicates that 50 blows were applied to the sampler, with a penetration of 3 inches.
PLAN

ELEVATION
TAKEN AT HCL WALL S-3 / F.F. WALL

FOR CONSTRUCTION

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION
RETAINING WALL S-3
ENGINEERING GEOLOGY

FOLKSTONE CANYON DR

ENGINEERING GEOLOGY

Yeh and Associates, Inc.
Consulting Engineers & Scientists
PLAN

240'-0" LIMITS OF RETAINING WALL S-5 AND BRIDGE RAIL TYPE 3

ELEVATION TAKEN ALONG HCL WALL S-5 / F.F. WALL
Plan

196'-0", LIMITS OF RETAINING WALL N-4 & BRIDGE RAIL TYPE 3

BOTT. OF FOOTING
BOTT. OF KEY
TOP OF WALL
FINISHED GRADE (F.F. WALL)
EXISTING GROUND

ELEVATION
TAKEN ALONG HCL WALL N-4 / F.F. WALL

Fourmile Creek

HCL N Fourmile

F.F. WALL

10 FT

SCALE: 1"=20'

Background: Yeh and Associates, Inc. Consulting Engineers & Scientists

Boring Location

FOR CONSTRUCTION

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

Yeh and Associates, Inc.
Consulting Engineers & Scientists

Fourmile Canyon Dr

FOR CONSTRUCTION

REVISIONS:

DESIGNED:
PROJECT NO:
DATE:
CAD:
CHECKED:

REVISION DESCRIPTION:
DATE

11:24:38 AM 5/4/18
pw:\DCPWAPPl3.rmbake.com:pw\transport\308_Sheets\01_Geotech\DG\138067_Geotech_MW.dgn

REVISIONS:

5043.SEPT12C36

RETAINING WALL N-4

BOULDER COUNTY TRANSPORTATION DEPARTMENT
ENGINEERING DIVISION

BOTT. OF KEY
BOTT. OF FOOTING
TOP OF WALL
FINISHED GRADE (F.F. WALL)
EXISTING GROUND
6550
6550
6540
6530
6520
6510
6500

MATCH LINE STA 500+70.00

TOP OF WALL
afiaii
IADA

FINISHED GRADE
(F.F. WALL)

FINISHED GRADE
(HCL WALL)

EXISTING GROUND

YA-W244

BOTT. OF FOOTING

ELEVATION
TAKEN AT HCL WALL N-5 / F.F. WALL
THE DOVETAIL ANCHORS SHALL BE 303 SV-SEISMIC-NOTCH AS NO. TOOL SEALANT TO A ROUNDED SURFACE AND THE REQUIRED ALL WORK NECESSARY FOR THE INSTALLATION OF CUT STONE FIELD BEND WIRE SO THAT TAILS ARE EMBEDDED IN THE MIDDLE VENEER LIMITS EXTEND TO 1'-6" MINIMUM BELOW FINISHED GRADE. CONCRETE SURFACES SHALL BE PREPARED IN ACCORDANCE WITH CUT STONE VENEER SHALL BE ANCHORED TO THE WALL. WIRE SHALL BE 9 GAGE PLAIN COLD-DRAWN STEEL WIRE.

DOVETAIL SLOTS SHALL BE TYPE 305 AS MANUFACTURED. VENEER PATTERN SHALL NOT BE BROKEN WITH A VERTICAL CHECKED:

MORTAR JOINTS SHALL BE 2" MAXIMUM THICKNESS UNLESS BMT REINFORCING STEEL IN STRUCTURAL CONCRETE NOT SHOWN. CUT STONE VENEER SHALL BE DAKOTA TOP ROCK AS SUPPLIED. MATERIAL FOR DOVETAIL ANCHORS SHALL BE 12 GAUGE HOT-DIPPED GALVANIZED STEEL.

VENEER (TYP.)

SCALE: …" = 1'-0"

KEYNOTES:

1. JOINT SEALANT TO A ROUNDED SURFACE AND THE REQUIRED ALL WORK NECESSARY FOR THE INSTALLATION OF CUT STONE FIELD BEND WIRE SO THAT TAILS ARE EMBEDDED IN THE MIDDLE VENEER LIMITS EXTEND TO 1'-6" MINIMUM BELOW FINISHED GRADE. CONCRETE SURFACES SHALL BE PREPARED IN ACCORDANCE WITH CUT STONE VENEER SHALL BE ANCHORED TO THE WALL. WIRE SHALL BE 9 GAGE PLAIN COLD-DRAWN STEEL WIRE.

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VENEER (TYP.)
NOTES

1. FOUNTAIN & PILING WEB PERPENDICULAR TO F.F. WALL AS SHOWN.

2. TEMPORARY CASINGS MAY BE REQUIRED TO PREVENT CAVING OF GRANULAR SOILS AND/OR TO REDUCE DRAINAGE OR INFILTRATION OF GROUND WATER. TEMPORARY CASINGS AND Dewatering shall be incidental to Item 503 Drilled Caisson.

3. DRILLED CAISSON CONCRETE SHALL BE CONCRETE CLASS BZ.

KEYNOTES

1. 2" CLEAR PER PLAN.

2. 1" MINIMUM CLEAR.
### WALL N-1 SOLDIER PILE DATA TABLE

<table>
<thead>
<tr>
<th>STATION</th>
<th>ELEVATION</th>
<th>HEIGHT</th>
<th>WALL N-1</th>
<th>WALL N-2</th>
<th>STATION</th>
<th>ELEVATION</th>
<th>WALL N-1</th>
<th>WALL N-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000+02</td>
<td>13.54 FT.</td>
<td>0.16 FT.</td>
<td>6406.05</td>
<td>6415.41</td>
<td>1001+33</td>
<td>1.71 FT.</td>
<td>6401.75</td>
<td>6430.57</td>
</tr>
<tr>
<td>209</td>
<td>13.54 FT.</td>
<td>0.16 FT.</td>
<td>6406.05</td>
<td>6415.41</td>
<td>1001+33</td>
<td>1.71 FT.</td>
<td>6401.75</td>
<td>6430.57</td>
</tr>
</tbody>
</table>

### WALL N-2 SOLDIER PILE DATA TABLE

<table>
<thead>
<tr>
<th>STATION</th>
<th>ELEVATION</th>
<th>HEIGHT</th>
<th>WALL N-1</th>
<th>WALL N-2</th>
<th>STATION</th>
<th>ELEVATION</th>
<th>WALL N-1</th>
<th>WALL N-2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1000+02</td>
<td>13.54 FT.</td>
<td>0.16 FT.</td>
<td>6406.05</td>
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<td>6415.41</td>
<td>1001+33</td>
<td>1.71 FT.</td>
<td>6401.75</td>
<td>6430.57</td>
</tr>
</tbody>
</table>
NOTES:
1. FACING CONCRETE SHALL BE CONCRETE CLASS D (WALL).
2. WEEP HOLES SHALL BE 3 INCH DIAMETER SCHEDULE 40 PVC PIPE POSITIONED 6 INCHES CLEAR ABOVE FINISHED GRADE (F.F. WALL). PROVIDE 1 INCH CLEAR TO REDISTRIBUTION.
3. DECOMPOSED DRAIN SHALL BE SECURED TO PREVENT MOVEMENT DURING OPERATIONS.
4. ALL ELEMENTS ASSOCIATED WITH LAGGING, DECOMPOSED DRAIN, AND WEEP HOLES SHALL BE INCLUDED IN ITEM 601 CONCRETE CLASS D (WALL).
5. THE CONTRACTOR SHALL DESIGN LAGGING TO SPAN BETWEEN SOLDIER PILES. THE CONTRACTOR SHALL SUBMIT DESIGN CALCULATIONS AND WORKING DRAWINGS SEALLED BY THE CONTRACTOR'S ENGINEER FOR INFORMATION ONLY 10 DAYS BEFORE THE START OF WORK.
6. FOR ARCHITECTURAL DETAILS AND ASSOCIATED ENGEMTED ELEMENTS, REFER TO CUT STONE VENEER SHEETS.
7. F.F. WALL SHALL BE PLUMB. SEE SOLDIER PILE DETAIL FOR INCIDENTAL CONCRETE QUANTITIES NOT SHOWN.
8. DRILLED CAISSON SHALL BE INSTALLED TO MINIMUM TIP ELEVATION SPECIFIED IN DATA TABLE ON SOLDIER PILE WALL DETAILS (2 OF 3). IF ROCK IS ENCOUNTERED BEFORE HITTING THE SPECIFIED TIP ELEVATION AND VERIFIED BY A GEOTECHNICAL ENGINEER THE MINIMUM EMBEDMENT REQUIRED SHALL BE 5' INTO THE ROCK LAYER BUT NOT DEEPER THAN THE MINIMUM REQUIRED TIP ELEVATION.

FOR CONSTRUCTION
MCD BMT SPO 05/04/2018
NOTES:
1. THIS SHEET GIVES THE MINIMUM EXTENT OF EARTHWORK. THE CONTRACTOR MAY ELECT TO EXTEND THE STRUCTURE EXCAVATION AND STRUCTURE BACKFILL BEYOND THE LIMITS SHOWN. ANY ADDITIONAL EXCAVATION BEHIND THE WALL SHALL BE BACKFILLED WITH STRUCTURE BACKFILL (CLASS 1). ANY ADDITIONAL EXCAVATION OR BACKFILL BEYOND THE LIMITS SHOWN ON THIS SHEET WILL BE THE RESPONSIBILITY OF THE CONTRACTOR AND WILL NOT BE MEASURED OR PAID FOR.

2. EXCAVATION AND BACKFILL IN THE DRILLED HOLE OF THE CAISSON SHALL NOT BE PAID FOR SEPARATELY BUT INCLUDED IN ITEM 503 DRILLED CAISSON.

3. FOR DRAINAGE DETAILS, SEE SOLDIER PILE WALL DETAILS.

KEYNOTES:
(1) DIMENSION SHOWN IS USED FOR QUANTITY PURPOSES ONLY AND APPLIES FROM BEGINNING TO END OF WALL.

LEGEND:
PAY LIMITS OF STRUCTURE EXCAVATION
FIELD FIT DETAIL FOR END OF WALL AT EXISTING BRIDGE

SCALE 1" = 5'-0"

EXISTING PRIVATE ACCESS BRIDGE (PROTECT IN PLACE)

TOP EXISTING GROUND

MATCH EXISTING GROUND

EXISTING FOOTING

APPROX. BOTTOM OF EXISTING FOOTING

FIELD FIT SLOPE

BOTTOM OF FOOTING

NOTES:
1. FOR EXISTING STRUCTURE LOCATIONS, SEE GENERAL LAYOUT SHEETS.
2. THE CONTRACTOR IS RESPONSIBLE FOR STABILITY OF EXISTING STRUCTURES DURING CONSTRUCTION.
3. ALTERNATIVE DETAILS MAY BE PROVIDED FOR APPROVAL.
4. THE CONTRACTOR SHALL BE PREPARED TO ADDRESS UNKNOWNS SUCH AS LIMITS OF EXISTING STRUCTURES AND ADJUSTMENT OF WALL REINFORCEMENT TO ACCOMMODATE FIELD CONDITIONS.

KEYNOTES:
- LIMITS OF EXISTING BRIDGE SUPERSTRUCTURE, SUBSTRUCTURE AND FOUNDATION TO BE PROTECTED IN PLACE ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. ALL WORK TO PROTECT THE EXISTING STRUCTURES DURING EXCAVATION SHALL BE INCLUDED IN THE COST OF ITEM 206 STRUCTURE EXCAVATION. THE CONTRACTOR SHALL INSTALL THE PROPOSED WALL FOOTING TO THE LIMITS SHOWN ON THE PLANS. IF THE EXISTING BRIDGE STRUCTURE INTERFERES WITH THE LOCATION OF THE PROPOSED WALL FOOTING, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO COMMENCING WORK ON THE INSTALLATION OF THE WALL FOOTING. AT NO POINT SHALL THE CONTRACTOR BE PERMITTED TO EXCAVATE BENEATH EXISTING STRUCTURE LOCATIONS, SEE GENERAL LAYOUT SHEETS.
- IF THE EXISTING BRIDGE STRUCTURE INTERFERES WITH THE LOCATION OF THE PROPOSED WALL FOOTING, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO COMMENCING WORK ON THE INSTALLATION OF THE WALL FOOTING. AT NO POINT SHALL THE CONTRACTOR BE PERMITTED TO EXCAVATE BENEATH EXISTING STRUCTURE LOCATIONS, SEE GENERAL LAYOUT SHEETS.

ACCESS BRIDGE

EXISTING PRIVATE ACCESS BRIDGE (PROTECT IN PLACE)

TOP EXISTING GROUND

MATCH EXISTING GROUND

EXISTING FOOTING

APPROX. BOTTOM OF EXISTING FOOTING

FIELD FIT SLOPE

BOTTOM OF FOOTING

NOTES:
1. FOR EXISTING STRUCTURE LOCATIONS, SEE GENERAL LAYOUT SHEETS.
2. THE CONTRACTOR IS RESPONSIBLE FOR STABILITY OF EXISTING STRUCTURES DURING CONSTRUCTION.
3. ALTERNATIVE DETAILS MAY BE PROVIDED FOR APPROVAL.
4. THE CONTRACTOR SHALL BE PREPARED TO ADDRESS UNKNOWNS SUCH AS LIMITS OF EXISTING STRUCTURES AND ADJUSTMENT OF WALL REINFORCEMENT TO ACCOMMODATE FIELD CONDITIONS.

KEYNOTES:
- LIMITS OF EXISTING BRIDGE SUPERSTRUCTURE, SUBSTRUCTURE AND FOUNDATION TO BE PROTECTED IN PLACE ARE APPROXIMATE AND SHALL BE FIELD VERIFIED BY THE CONTRACTOR. ALL WORK TO PROTECT THE EXISTING STRUCTURES DURING EXCAVATION SHALL BE INCLUDED IN THE COST OF ITEM 206 STRUCTURE EXCAVATION. THE CONTRACTOR SHALL INSTALL THE PROPOSED WALL FOOTING TO THE LIMITS SHOWN ON THE PLANS. IF THE EXISTING BRIDGE STRUCTURE INTERFERES WITH THE LOCATION OF THE PROPOSED WALL FOOTING, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO COMMENCING WORK ON THE INSTALLATION OF THE WALL FOOTING. AT NO POINT SHALL THE CONTRACTOR BE PERMITTED TO EXCAVATE BENEATH EXISTING STRUCTURE LOCATIONS, SEE GENERAL LAYOUT SHEETS.
- IF THE EXISTING BRIDGE STRUCTURE INTERFERES WITH THE LOCATION OF THE PROPOSED WALL FOOTING, THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO COMMENCING WORK ON THE INSTALLATION OF THE WALL FOOTING. AT NO POINT SHALL THE CONTRACTOR BE PERMITTED TO EXCAVATE BENEATH EXISTING STRUCTURE LOCATIONS, SEE GENERAL LAYOUT SHEETS.
NOTES:
1. FINISHED GRADE AT THE FRONT FACE OF WALL SHALL BE 3'-0" MIN. ABOVE BOTTOM OF FOOTING.
2. WALL HEIGHT MAY EXCEED DESIGN HEIGHT BY UP TO 6 INCHES IN ACCORDANCE WITH CDOT STANDARD PLAN NO. W-501-20.
3. ALL CONCRETE SHALL BE CLASS D (WALL).
4. WALL DRAINAGE SHALL BE PROVIDED WHERE HOLES NOT SHOWN, SLOPE 2% TO DRAIN. ALL DRAINAGE ITEMS SHALL BE INCLUDED WITH ITEM 601, CLASS D (BOX CULVERT).
5. VENEER DETAILS INCLUDING ENHANCED ELEMENTS NOT SHOWN, SEE CUT STONE VENEER DETAILS.
6. SOIL TOP MAP NOT SHOWN, FOR ADDITIONAL DETAILS, SEE DRAINAGE PLANS.

KEYNOTES:
(1) OPTIONAL SPLICE.
(2) FOR FOOTING WIDTHS, SEE DESIGN DATA TABLES ON GENERAL LAYOUT SHEETS.

FOR INFORMATION ONLY

WINGWALL TYPICAL SECTION
SCALE: 1" = 1'-0"
NOTES:
1. THIS SHEET GIVES THE MINIMUM EXTENT OF EARTHWORK. THE CONTRACTOR MAY ELECT TO EXTEND THE STRUCTURE EXCAVATION AND STRUCTURE BACKFILL BEYOND THE LIMITS SHOWN. ANY ADDITIONAL EXCAVATION BEHIND THE WALL SHALL BE BACKFILLED WITH STRUCTURE BACKFILL (CLASS 1). ANY ADDITIONAL EXCAVATION OR BACKFILL BEYOND THE LIMITS SHOWN ON THIS SHEET WILL BE PERFORMED BY THE CONTRACTOR AND WILL NOT BE MEASURED OR PAID FOR.

2. EXCAVATION AND BACKFILL IN THE DRILLED HOLE OF THE CAISSON SHALL NOT BE PAID FOR SEPARATELY BUT INCLUDED IN ITEM 503 DRILLED CAISSON.

3. FOR DRAINAGE DETAILS, SEE SPREAD FOOTING WALL DETAILS.

LEGEND:
- PAY LIMITS OF STRUCTURE EXCAVATION
- LIMITS OF STRUCTURE BACKFILL (CLASS 1)
NOTES:
1. FOR PIPE BLOCKOUT LOCATIONS, SEE GENERAL LAYOUT SHEETS.
2. BRIDGE RAIL SHOP DRAWINGS SHALL IDENTIFY PIPE BLOCKOUT LOCATIONS.
3. THE FINAL DIMENSIONS, LOCATION, ELEVATION, AND INTERCEPT SLOPE OF THE PIPE-RUN (TO THE WALL) SHALL BE SUBMITTED BY THE CONTRACTOR TO THE ENGINEER.
4. THE CONTRACTOR IS TO SURVEY AND STAKE THE PIPE-RUN INFORMATION IN THE FIELD, PRIOR TO CONSTRUCTION.
5. ALTERNATE THROUGH-PIPE DETAILS MAY BE SUBMITTED FOR ENGINEER APPROVAL.

RIGID PIPE BLOCKOUT DETAIL
N.T.S.
**NOTES:**

1. All tubes shall be fabricated from ASTM A500 Grade B steel. All posts, base plates, and anchor bolts shall be fabricated from ASTM A36 steel. All splices and expansion devices for tubes shall be fabricated from ASTM A500, Grade B steel. The above material, W-beam, and all anchor bolts and miscellaneous bolts, nuts, and washers shall be galvanized and powder coated after fabrication in accordance with Section 509 and 606. Concrete reinforcing steel and structural steel elements shall conform to the requirements of Sections 609, 602, and 509 respectively.

2. Post anchors, encased in concrete, shall be ASTM A36 steel, and need not be galvanized.

3. Posts, post anchors, base plates, anchor bolts, miscellaneous bolts, nuts, washers, tubes, tube expansion devices, tube splices, end plates, W-beam, W-beam expansion device, curb concrete (Class D), and curb reinforcing steel shall be included in Item No. 606 bridge rail Type 3.

4. The backing tubes shall be shop bent or fabricated to fit horizontal curve when the radius is less than 1,500 feet.

5. Tubes shall be continuous over no less than two posts. No welded butt splices will be allowed in the tube sections.

6. Posts shall be perpendicular to the longitudinal roadway curve.

7. Contractor shall provide terminal section (flared) when no approach guardrail is used with the cost included in Item No. 606 bridge rail Type 3.

8. For additional details, see Standard Plan No. M-606-L.

9. Prior to fabrication of this item, three sets of working drawings which comply with the requirements of Section 105 shall be submitted to the engineer for information only.

10. Terminal and transition included with roadway quantities.

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**INFORMATION ONLY**

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<th>DESCRIPTION</th>
<th>UNIT</th>
<th>F/E</th>
<th>L/B</th>
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<tr>
<td>Concrete Class D</td>
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<td>Reinforcing Steel</td>
<td>LU</td>
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<td>Bridge Rail Type 3 - W-beam</td>
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</table>

**DESCRIPTION**

**UNIT**

- Concrete Class D: CU TO
- Reinforcing Steel: LU
- Bridge Rail Type 3 - W-beam: LIN, FT

**SCALE:** N.T.S.

**SHEET NO:** 138067 WALL 55.dgn

**DATE:** 05/04/2018

**ENGINEERING DIVISION**

**BOULDER COUNTY TRANSPORTATION DEPARTMENT**

**PROJECT NO:** 4043.SEPT12C36

**DESIGNED BY:**

**CHECKED BY:**

**REVISION DESCRIPTION:**

**PROJECT NO:** 4043.SEPT12C36

**FILE DATE:** 05/04/2018

**REVISION:**

**SHEET NO:** 138067 WALL 55.dgn

**CALL OUT INFORMATION:**

- Contact: 811 Utility Notification Center of Colorado
- Website: www.811call.com

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**FOR CONSTRUCTION:**

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- Website: www.811call.com
END PLATE

MIN.

1"

7"

9"

6"

2"

1"

W6x20 & BASE PL

W6x20 & BASE PL

1/8 HOLE (TYP.)

VERTICAL SLOT

1"x1" SLOTS AT-

BAR 1/4"x1"x9" (TYP.)

ANCHOR DETAIL

BACKING TUBE DETAIL

VIEW

W-Beam Expansion Device Detail

Splice bolts not shown

W6x20 & BASE PL

1/8 HOLE (TYP.)

1/4" HOLE (TYP.)

E 1/4"x1/2" HOLE (TYP.)

BAR 2"x1/4" (TYP.)

SPLICE

VIEW A

TUBE SPlice DETAIL

BAR 5/8"x2"x2"-C

TUBE SPlices SLOT ALL TUBES. STAGGER TOP AND BOTTOM SPLICES INTO DIFFERENT POST SPACINGS. EXCEPT AT EXPANSION JOINT, PLACE OPPOSITE ENDS OF SAME POST SPACE. (RANGE OF MOTION = 1'-0" AT BRIDGE EXPANSION DEVICE.)

Q 1/4"x1/2" SLOTS AT-

Q SPlice

E SPlice

W6x20 & BASE PL

1/8 HOLE (TYP.)

M.S. BOLTS, HEX NUTS, WASHERS AND LOCK WASHERS

BAR 5/8"x2"x2"-C

4"

4"

4"

4"

4"

4"

4"

W6x20 & BASE PL

1/8 HOLE (TYP.)

Q SPlice

W6x20 & BASE PL

1/8 HOLE (TYP.)