PRELIMINARY & FINAL DRAINAGE PLAN

CARRIAGE MEADOWS SOUTH
AT
LORSON RANCH
FILING NO. 2

DECEMBER, 2018
REV. JUNE 18, 2019

PUDSP-19-005

See comment letter.

Prepared for:

Lorson, LLC
212 N. Wahsatch Ave, Suite 301
Colorado Springs, Colorado 80903
(719) 635-3200

Prepared by:

Core Engineering Group, LLC
15004 1ST Avenue South
Burnsville, MN 55306
(719) 570-1100

Project No. 100.046

CORE
ENGINEERING GROUP

Engineering Review
09/02/2019 10:47:23 PM
dsdrice
JeffRice@elpasoco.com
(719) 520-7877
EPC Planning & Community Development Department

Summary of Comments on Microsoft Word - 100.046-PDR&FDR

Page: 1

Author: dsdrice Subject: text box Date: 8/23/2019 10:59:42 AM
PUDSP-19-005

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:30:24 AM
added

Author: dsdrice Subject: Text Box Date: 9/2/2019 11:47:14 PM
See comment letter.

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:30:30 AM
noted

Author: dsdrice Subject: EPC ENG Review Date: 9/2/2019 11:47:26 PM

Design Point 4
Design point 4 is pipe flow for the proposed 24" RCP from Rubicon Trail to the existing CDOT type "D" inlet, and includes upstream flow from basins G1.1 through G1.5, and the combined peak flow at this location on the west side of Rubicon Trail was used to size the proposed 24" RCP at a minimum slope of 0 .50%. Design point 4 contains 5.68 acres and generates a peak developed flow of 9.7cfs for the 5-year storm event and 21.3cfs for the 100-year storm event. These flows will be routed westerly via proposed 24" RCP at a minimum of 0.50% slope and is designed to handle the flow from this design point.

Design Point 5
Design point 5 is the pipe and overland flow from basins G1.1 through G1.5a, contains 6.69 acres and generates a peak developed flow of 11.5cfs for the 5-year storm event and 25.2cfs for the 100-year storm event. These flows will be routed westerly via an existing 24 RCP at 0.80% slope designed to handle the flow from this design point. Runoff then continues west to existing detention pond G1.7. The existing storm sewer has been designed to handle 14.9cfs/29.2cfs per the Carriage Meadows South Filing 1 FDR.

Design Point 6
Design point 6 includes upstream flow from basins G1.6 and G1.7, and the combined peak flow at this low point on the east side of Carriage Meadows Drive was used to verify the size and capacity of the existing 15' type "R" inlet. Design point 6 contains 2.75 acres and generates a peak developed flow of 6.2cfs for the 5-year storm event and 12.7cfs for the 100-year storm event. Inlet DP-6 is an existing 15' type "R" inlet. The 6.2cfs for the 5-year event requires a ponding depth of 0.43' (5.1") and the 12.7cfs for the 100-year event requires a ponding depth of 0.55' (6.6"). These flows will be routed westerly via existing 30" RCP at 0.80% slope, this pipe is designed to handle the flow from this design point. Runoff then continues to existing detention pond G1.7.

Design Point 7
Design point 7 is the total peak flow from this development, which includes basins G1.1 through G1.7, contains 9.44 acres and generates a peak developed flow of 17.2cfs for the 5-year storm event and 36.8cfs for the 100-year storm event. These flows will be routed westerly via existing 30" RCP at 0.80% slope, this pipe has been designed to handle these peak flows. Runoff then continues to existing detention pond G1.7. Pond G1.7 is only a detention pond constructed to reduce the flows from future commercial areas west of Carriage Meadows Drive. Runoff from this design point flows south through Pond G1.7 and into Pond G1/G2 which is a full spectrum detention pond including WQ treatment designed to treat all the developed runoff from this development. The existing storm sewer has been designed to handle 24.3cfs/46.5cfs per the Carriage Meadows South Filing 1 FDR.

6.0 DETENTION AND WATER QUALITY POND

All Detention and water quality necessary for Carriage Meadows South Townhomes is provided in existing Detention (Pond G1/G2) constructed as part of Carriage Meadows South at Lorson Ranch Filing No. 1. Additional detention and water quality is not required at this time. See Appendix E for Excerpts from the FDR

see comment on calculation sheet

The total site area is 5.32 acres and is contained within the 96-acre tributary area of Detention Pond G1/G2. See Appendix E for pond watershed and spreadsheets.

7.0 FOUR STEP PROCESS

The site has been developed to minimize wherever possible the rate of developed runoff that will leave the site and to provide water quality management for the runoff produced by the site as proposed on

Page: 9

Author: dsdrice Subject: Text Box Date: 9/2/2019 11:46:53 PM
see comment on calculation sheet

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:31:36 AM
added text to state outlet structure constructed to accomodate runoff from this subdivision.

the development plan. The following four step process should be considered and incorporated into the storm water collection system and storage facilities where applicable.

Step 1: Employ Runoff Reduction Practices
Carriage Meadows South at Lorson Ranch Filing No. 2 has employed several methods of reducing runoff.

- The street configuration was laid out to minimize the length of streets. Many streets are straight and perpendicular resulting in lots with less wasted space.
- Open space tracts of land act as a buffer between lots and Jimmy Camp Creek
- Jimmy Camp Creek has a natural sand bottom and vegetated slopes has been preserved through this site
- All developed areas drain to WQ ponds.
- Lorson Ranch Metro District requires the townhome association to maintain landscaping
- Full Spectrum Detention Pond G1/G2 has been constructed to provide detention and water quality for this subdivision. The full spectrum detention pond mimics existing storm discharges

Step 2: Implement BMP's that Slowly Release the Water Quality Capture Volume
Treatment and slow release of the water quality capture volume (WQCV) is required. Carriage Meadows South at Lorson Ranch Filing No. 2 will utilize Pond G1/G2 which is a full spectrum stormwater detention pond which includes Water Quality Volume and a WQ outlet structure.

Step 3: Stabilize Drainageways
Jimmy Camp Creek is a major drainageway located east of this site. JCC has been stabilized per county criteria in 2006. The design included a natural sand channel bottom and armored sides.

Step 4: Implement Site Specific & Source Control BMP's
There are no potential sources of contaminants that could be introduced to the County's MS4. During construction the source control will be provided with the proper installation of erosion control BMPs to limit erosion and transport of sediment. Area disturbed by construction will be seeded and mulched. Cut and fill slopes will be reseeded, and the slopes equal to or greater than three-to-one will be protected with erosion control fabric. Silt fences will be placed at the bottom of re-vegetated and rough graded slopes. Inlet protection will be used around proposed inlets. In addition, temporary sediment basins will be constructed so runoff will be treated prior to discharge. Construction BMPs in the form of vehicle tracking control, sediment basins, concrete washout area, rock socks, buffers, and silt fences will be utilized to protect receiving waters.

8.0 DRAINAGE AND BRIDGE FEES

Carriage Meadows South Filing No. 2 is located within the Jimmy Camp Creek drainage basin which is currently a fee basin in El Paso County. Current El Paso County regulations require drainage and bridge fees to be paid for platting of land as part of the plat recordation process. Lorson Ranch Metro District will be constructing the major drainage infrastructure as part of the district improvements.

Carriage Meadows South Townhomes contains approximately 5.32 acres. The 5.32 acres has already paid drainage/bridge fees in 2017 as part of the Carriage Meadows South Filing No. 1 final plat. The following table provides a breakdown of the drainage fees that have been paid for this site.

See ECM I.7.2.

This should be "Step 4: Consider Need for Industrial and Commercial BMPs "
Revise as appropriate.

Page: 10

Author: dsdrice Subject: Callout Date: 8/23/2019 3:58:57 PM
This should be "Step 4: Consider Need for Industrial and Commercial BMPs " Revise as appropriate.

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:43:13 AM
steps revised per ECM I.7.2

Author: dsdrice Subject: Cloud+ Date: 8/23/2019 3:59:54 PM
See ECM I.7.2.

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:43:19 AM
noted

were

The 2017 drainage fees are $15,720, bridge fees are $735 and Drainage Surety fees are $7,000 per impervious acre and were calculated as follows:

Page: 11

Author: dsdrice Subject: Callout Date: 8/23/2019 4:06:00 PM

were

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:43:42 AM

changed text

Table 8.1: 2017 Drainage/Bridge Fees Paid For This Site

Type of Land Use	Total Area (ac)	Imperviousness	Drainage Fee	Bridge Fee	Surety Fee
Residential	5.32	65%	$54,360	$2,542	$24,206
		Total	$54,360	$2,542	$24,206

Table 8.2: Public Drainage Facility Costs (non-reimbursable)

Item	Quantity	Unit	Unit Cost	Item Total
24" Storm	293	LF	$40	$11,720
Inlets	2	EA	$3,0000	$6,000
			Subtotal	$17,720
			Eng/Cont 15%)	$2,658
			Total Est. Cost	$20,378

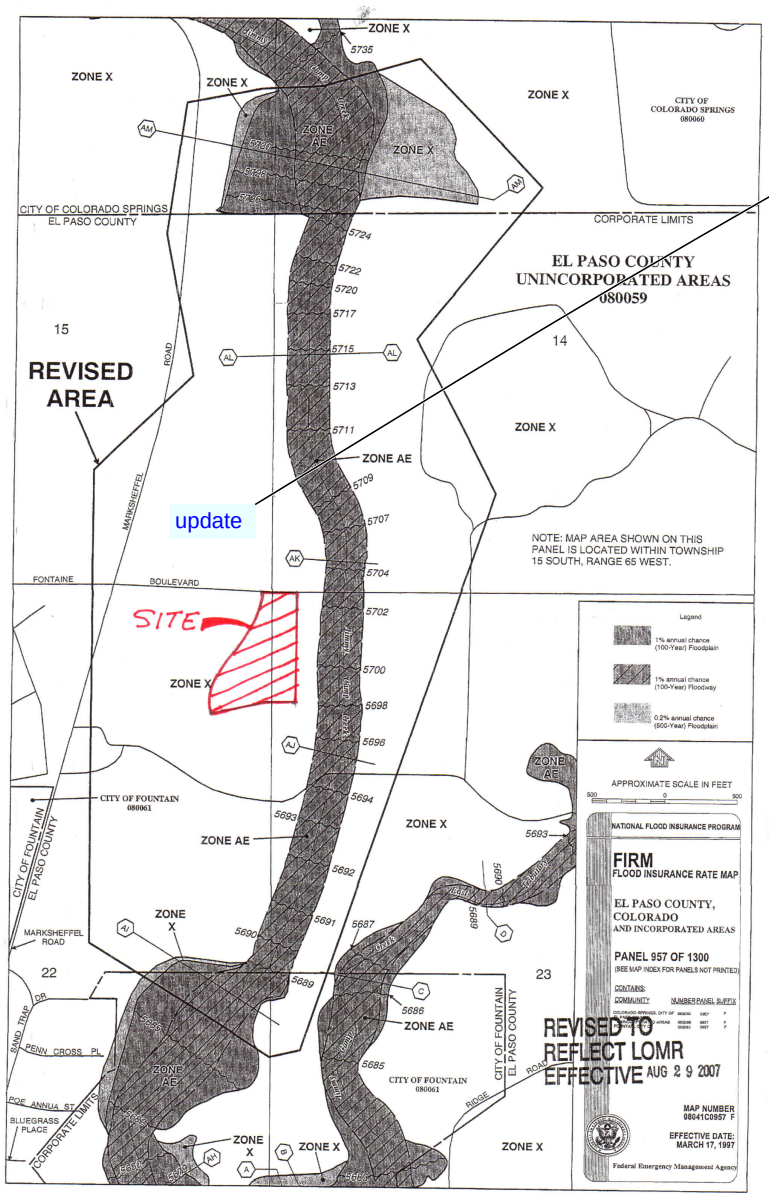
Table 8.3: Private Drainage Facility Costs (non-reimbursable)

Item	Quantity	Unit	Unit Cost	Item Total
12" PVC	490	LF	$20	$9,800.00
15" PVC	156	LF	$25	$3,900.00
Area Inlets	7	EA	$150	$1,050.00
			Subtotal	$14,750.00
			Eng/Cont 15%)	$2,212.50
			Total Est. Cost	$16,960.50

9.0 CONCLUSIONS

This drainage report has been prepared in accordance with the City of Colorado Springs/El Paso County Drainage Criteria Manual. The proposed development and drainage infrastructure will not cause adverse impacts to adjacent properties or properties located downstream. Several key aspects of the development discussed above are summarized as follows:

- Developed runoff will be conveyed via curb/gutter and storm sewer facilities
- Jimmy Camp Creek has been realigned within this study area



Page: 22

Author: dsdrice Subject: Text Box Date: 9/2/2019 11:27:43 PM

update

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:51:10 AM

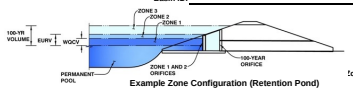
new firm inserted

Detention Basin Outlet Structure Design

UD-Detention, Version 3.07 (February 2017)

Project:

Basin ID:



Example Zone Configuration (Retention Pond)

	Stage (ft)	Zone Volume (ac-ft)	Outlet Type
Zone 1 (WQCV)	2.06	2.577	Orifice Plate
Zone 2 (EURV)	4.54	6.236	Orifice Plate
Zone 3 (100-year)	5.88	3.918	Weir&Pipe (Restrict)
		12.731	Total

User Input: Orifice at Underdrain Outlet (typically used to drain WQCV in a Filtration BMP)

Underdrain Orifice Invert Depth =	N/A	ft (distance below the filtration media surface)	
Underdrain Orifice Diameter =	N/A	inches	

Calculated Parameters for Underdrain

Underdrain Orifice Area =	N/A	ft^2
Underdrain Orifice Centroid =	N/A	feet

User Input: Orifice Plate with one or more orifices or Elliptical Slot Weir (typically used to drain WQCV and/or EURV in a sedimentation BMP)

Invert of Lowest Orifice =	0.00	ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Orifice Plate =	4.54	ft (relative to basin bottom at Stage = 0 ft)
Orifice Plate: Orifice Vertical Spacing =	18.20	inches
Orifice Plate: Orifice Area per Row =	22.12	sq. inches (use rectangular openings)

Calculated Parameters for Plate

WQ Orifice Area per Row =	1.536E-01	ft^2
Elliptical Half-Width =	N/A	feet
Elliptical Slot Centroid =	N/A	feet
Elliptical Slot Area =	N/A	ft^2

User Input: Stage and Total Area of Each Orifice Row (numbered from lowest to highest)

	Row 1 (required)	Row 2 (optional)	Row 3 (optional)	Row 4 (optional)	Row 5 (optional)	Row 6 (optional)	Row 7 (optional)	Row 8 (optional)
Stage of Orifice Centroid (ft)	0.00	1.51	3.03					
Orifice Area (sq. inches)	22.12	22.12	22.12					

	Row 9 (optional)	Row 10 (optional)	Row 11 (optional)	Row 12 (optional)	Row 13 (optional)	Row 14 (optional)	Row 15 (optional)	Row 16 (optional)
Stage of Orifice Centroid (ft)								
Orifice Area (sq. inches)								

User Input: Vertical Orifice (Circular or Rectangular)

	Not Selected	Not Selected	
Invert of Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)
Depth at top of Zone using Vertical Orifice =	N/A	N/A	ft (relative to basin bottom at Stage = 0 ft)
Vertical Orifice Diameter =	N/A	N/A	inches

Calculated Parameters for Vertical Orifice

	Not Selected	Not Selected	
Vertical Orifice Area =	N/A	N/A	ft^2
Vertical Orifice Centroid =	N/A	N/A	feet

User Input: Overflow Weir (Dropbox) and Grate (Flat or Sloped)

	Zone 3 Weir	Not Selected	
Overflow Weir Front Edge Height, Ho =	4.15	N/A	ft (relative to basin bottom at Stage = 0 ft)
Overflow Weir Front Edge Length =	4.00	N/A	feet
Overflow Weir Slope =	6.00	N/A	H:V (enter zero for flat grate)
Horiz. Length of Weir Sides =	10.00	N/A	feet
Overflow Grate Open Area % =	70%	N/A	%, grate open area/total area
Debris Clogging % =	50%	N/A	%

Calculated Parameters for Overflow Weir

	Zone 3 Weir	Not Selected	
Height of Grate Upper Edge, H_t =	5.82	N/A	feet
Over Flow Weir Slope Length =	10.14	N/A	feet
Grate Open Area / 100-yr Orifice Area =	4.02	N/A	should be ≥ 4
Overflow Grate Open Area w/o Debris =	28.39	N/A	ft^2
Overflow Grate Open Area w/ Debris =	14.19	N/A	ft^2

User Input: Outlet Pipe w/ Flow Restriction Plate (Circular Orifice, Restrictor Plate, or Rectangular Orifice)

	Zone 3 Restrictor	Not Selected	
Depth to Invert of Outlet Pipe =	0.20	N/A	ft (distance below basin bottom at Stage = 0 ft)
Outlet Pipe Diameter =	36.00	N/A	inches
Restrictor Plate Height Above Pipe Invert =	36.00		inches

Calculated Parameters for Outlet Pipe w/ Flow Restriction Plate

	Zone 3 Restrictor	Not Selected	
Outlet Orifice Area =	7.07	N/A	ft^2
Outlet Orifice Centroid =	1.50	N/A	feet
Half-Central Angle of Restrictor Plate on Pipe =	3.14	N/A	radians

User Input: Emergency Spillway (Rectangular or Trapezoidal)

Spillway Invert Stage=	8.00	ft (relative to basin bottom at Stage = 0 ft)
Spillway Crest Length =	50.00	feet
Spillway End Slopes =	4.00	H:V
Freeboard above Max Water Surface =	1.00	feet

Calculated Parameters for Spillway

Spillway Design Flow Depth=	1.15	feet
Stage at Top of Freeboard =	10.15	feet
Basin Area at Top of Freeboard =	3.37	acres

Routed Hydrograph Results

Design Storm Return Period =	WQCV	EURV	2 Year	5 Year	10 Year	25 Year	50 Year	100 Year	500 Year
One-Hour Rainfall Depth (in) =	0.53	1.07	1.16	1.44	1.68	1.92	2.16	2.42	0.00
Calculated Runoff Volume (acre-ft) =	2.577	8.814	6.842	8.912	10.804	13.017	14.962	17.363	0.000
OPTIONAL Override Runoff Volume (acre-ft) =									
Inflow Hydrograph Volume (acre-ft) =	2.577	8.806	6.841	8.905	10.803	13.008	14.953	17.352	#N/A
Predevelopment Unit Peak Flow, q (cfs/acre) =	0.00	0.00	0.01	0.03	0.11	0.29	0.44	0.65	0.00
Predevelopment Peak Q (cfs) =	0.0	0.0	0.5	2.9	10.2	27.6	42.0	62.5	0.0
Peak Inflow Q (cfs) =	31.0	103.1	80.7	104.2	125.7	150.4	171.9	199.4	#N/A
Peak Outflow Q (cfs) =	1.5	4.0	3.0	4.2	10.4	22.8	36.7	55.6	#N/A
Ratio Peak Outflow to Predevelopment Q =	N/A	N/A	N/A	1.4	1.0	0.8	0.9	0.9	#N/A
Structure Controlling Flow =	Plate	Overflow Grate 1	Plate	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	Overflow Grate 1	#N/A
Max Velocity through Grate 1 (fps) =	N/A	0.01	N/A	0.0	0.2	0.7	1.1	1.8	#N/A
Max Velocity through Grate 2 (fps) =	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	#N/A
Time to Drain 97% of Inflow Volume (hours) =	38	62	57	62	63	62	61	60	#N/A
Time to Drain 99% of Inflow Volume (hours) =	40	67	61	67	69	69	69	68	#N/A
Maximum Ponding Depth (ft) =	1.93	4.29	3.60	4.32	4.80	5.25	5.58	5.73	#N/A
Area at Maximum Ponding Depth (acres) =	2.01	2.74	2.60	2.75	2.86	2.95	3.00	3.05	#N/A
Maximum Volume Stored (acre-ft) =	2.301	8.104	6.290	8.186	9.902	10.870	11.852	12.881	#N/A

Can this be adjusted? Is the outlet structure designed to be updated with each additional development?

Page: 50

Author: dsdrice Subject: Cloud+ Date: 9/2/2019 11:45:51 PM

Can this be adjusted? Is the outlet structure designed to be updated with each additional development?

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:52:11 AM

This would be hard to adjust since the outlet structure designed/built for full buildout.

Page: 54

Author: dsdrice Subject: Callout Date: 8/23/2019 4:19:40 PM

See comment letter regarding interim and ultimate improvements.

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:54:41 AM

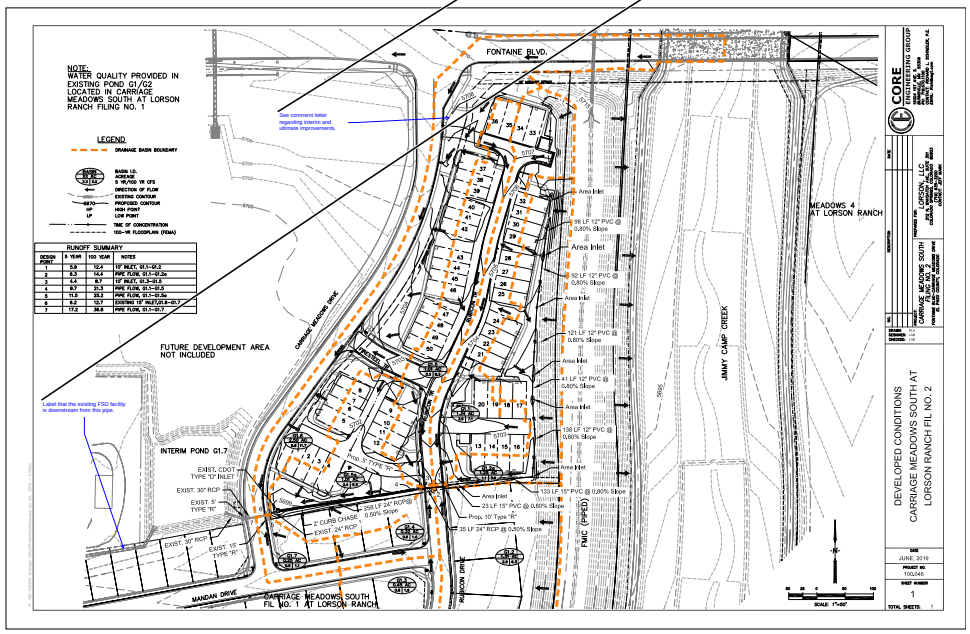
rt turn lane improvements shown

Author: dsdrice Subject: Callout Date: 9/2/2019 11:32:40 PM

Label that the existing FSD facility is downstream from this pipe.

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 8:54:23 AM

Label added



Summary of Comments on P:\100\100.046\preliminary plan\constr\100.046 prelim cover sheet C0.1 (1)

Page: 1

Author: dsdrice Subject: EPC ENG Review Date: 8/23/2019 10:48:40 AM

CONSTRUCTION PLANS
FOR

CARRIAGE MEADOW SOUTH AT LORSON RANCH FILING NO. 2

STREET/STORM SEWER AND UTILITY CONSTRUCTION PLANS

Know what's below. Call before you dig.
CALL 2-BUSINESS DAYS IN ADVANCE BEFORE YOU DIG, GRADE OR EXCAVATE FOR THE MARKING OF UNDERGROUND MEMBER UTILITIES

Engineering Review
08/23/2019 9:48:40 AM
dsdrice
JeffRice@elpasoco.com
(719) 520-7877
EPC Planning & Community Development Department

VICINITY MAP
NO SCALE

LEGEND

- STREET R.O.W.
- PROPOSED STORM SEWER

SHEET INDEX

SHEET NO.	SHEET DESCRIPTION
C0.1	COVER SHEET
C0.2 ~ C0.3	NOTES (GENERAL, UTILITY)
C0.4	TYPICAL SECTIONS
C2.1 ~ C2.2	HORIZONTAL CONTROL PLAN
C3.1	UTILITY SERVICE PLAN
C5.1	SIGNAGE PLAN
C6.1 ~ C6.4	STREET/STORM SEWER PLAN AND PROFILES
C8.1 ~ C8.4	SANITARY SEWER/WATERMAIN PLAN AND PROFILES
C10.1 ~ C10.3	STREET/STORM DETAILS
C12.1 ~ C12.2	SEWER/WATER DETAILS

DEVELOPER'S STATEMENT

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

BUSINESS NAME LORSON, LLC

BY JEFF MARK DATE

TITLE MANAGER

ADDRESS 212 N. WAHSATCH AVE. SUITE 301
COLORADO SPRINGS, CO 80903

WATER / SANITARY
WIDEFIELD WATER AND SANITATION DISTRICT
8495 FONTAINE BLVD.
COLORADO SPRINGS, CO 80925
719-390-7111

CABLE
COMCAST
P.O. BOX 173838
DENVER, CO 80217
970-641-4774

ELECTRIC
MOUNTAIN VIEW ELECTRIC
11140 E. WOODMEN RD.
COLORADO SPRINGS, CO 80831
719-495-2283

SECURITY FIRE PROTECTION DISTRICT
400 SECURITY BOULEVARD
SECURITY, CO 80911
719-392-7121

TELEPHONE
CENTURYLINK
7925 INDUSTRY ROAD
COLORADO SPRINGS, CO 80939
719-278-4651

GAS
BLACK HILLS ENGERGY
7060 ALLEGRE ST.
FOUNTAIN, CO 80817
719-393-6639

EL PASO COUNTY
PLANNING AND COMMUNITY DEVELOPMENT
2880 INTERNATIONAL CIRCLE
COLORADO SPRINGS, CO 80910
719-520-6300

PREPARED FOR:
LORSON, LLC
N. WAHSATCH AVE., SUITE 301
COLORADO SPRINGS, CO 80903
719-635-3200
CONTACT: JEFF MARK

PREPARED BY:
CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
719-570-1100
CONTACT: RICHARD L. SCHINDLER P.E.

BASIS OF BEARING

BEARINGS ARE BASED ON THE SOUTH LINE OF THE NORTH HALF OF SECTION 23, TOWNSHIP 15 SOUTH, RANGE 65 WEST OF THE 6TH PRINCIPAL MERIDIAN AS BEING SOUTH 8941'52" WEST. THE EAST QUARTER CORNER OF SAID SECTION 23 IS A FOUND 3-1/2" ALUMINUM CAP MONUMENT AND THE WEST QUARTER CORNER OF SAID SECTION 23 IS A FOUND 2-1/2" ALUMINUM CAP MONUMENT

BENCHMARK

FIMS MONUMENT F204 LOCATED AT THE NORTHWEST CORNER OF FONTAINE BLVD AND COTTONWOOD GROVE DR. ELEVATION 5724.072 (N.G.V.D. 29)

TRAFFIC CONTROL NOTE

THE CONTRACTOR SHALL PROVIDE ALL TRAFFIC CONTROL DEVICES AND MONITORING NECESSARY TO SAFELY COMPLETE THE WORK SHOWN IN THESE CONSTRUCTION DOCUMENTS IN CONFORMANCE WITH M.U.T.C.D. GUIDELINES. THE CONTRACTOR SHALL COMPLETE ALL NECESSARY WORK FOR PLAN REVIEW, PERMITS AND PROCESSING. TRAFFIC CONTROL WILL NOT BE PAID SEPARATELY BUT IS INCLUDED IN THE COST OF THE PROJECT.

DISTRICT APPROVAL (WATER)

THE WIDEFIELD WATER AND SANITATION DISTRICT RECOGNIZES THE DESIGN ENGINEER AS HAVING RESPONSIBILITY FOR THE DESIGN. THE WIDEFIELD WATER AND SANITATION DISTRICT HAS LIMITED ITS SCOPE OF REVIEW ACCORDINGLY.

WIDEFIELD WATER AND SANITATION DISTRICT
WATER DESIGN APPROVAL

DATE ____________ BY ____________

PROJECT NO. ____________

IN CASE OF ERRORS OR OMISSIONS WITH THE WATER DESIGN AS SHOWN ON THIS DOCUMENT THE STANDARDS AS DEFINED IN THE "RULES AND REGULATIONS FOR INSTALLATION OF WATER MAINS AND SERVICES" SHALL RULE.

APPROVAL EXPIRES 180 DAYS FROM DESIGN APPROVAL

DISTRICT APPROVAL (WASTEWATER)

THE WIDEFIELD WATER AND SANITATION DISTRICT RECOGNIZES THE DESIGN ENGINEER AS HAVING RESPONSIBILITY FOR THE DESIGN. THE WIDEFIELD WATER AND SANITATION DISTRICT HAS LIMITED ITS SCOPE OF REVIEW ACCORDINGLY.

WIDEFIELD WATER AND SANITATION DISTRICT
WATER DESIGN APPROVAL

DATE ____________ BY ____________

PROJECT NO. ____________

IN CASE OF ERRORS OR OMISSIONS WITH THE WATER DESIGN AS SHOWN ON THIS DOCUMENT THE STANDARDS AS DEFINED IN THE "RULES AND REGULATIONS FOR INSTALLATION OF WATER MAINS AND SERVICES" SHALL RULE.

APPROVAL EXPIRES 180 DAYS FROM DESIGN APPROVAL

PUDSP-19-005

FIRE DISTRICT APPROVAL

THE NUMBER OF FIRE HYDRANTS AND HYDRANT LOCATIONS TOGETHER WITH THE MAIN SIZES INDICATED ON THIS WATER INSTALLATION PLAN ARE ADEQUATE TO SATISFY THE REQUIREMENTS OF THE SECURITY FIRE PROTECTION DISTRICT'S FIRE AND RESCUE DEPARTMENT. THIS APPROVAL IS BASED ON THE INFORMATION IN THESE PLANS, SPECIFICATIONS AND SUPPLEMENTAL INFORMATION PROVIDED BY THE DESIGN ENGINEER WHOSE SIGNATURE APPEARS IN THESE PLANS, AND THE WIDEFIELD WATER AND SANITATION DISTRICT.

SIGNED ________________________________ DATE ________
BY FIRE PROTECTION CHIEF OR COORDINATOR

CONSTRUCTION APPROVAL

COUNTY PLAN REVIEW IS PROVIDED ONLY FOR GENERAL CONFORMANCE WITH COUNTY DESIGN CRITERIA. THE COUNTY IS NOT RESPONSIBLE FOR THE ACCURACY AND ADEQUACY OF THE DESIGN, DIMENSIONS, AND/OR ELEVATIONS WHICH SHALL BE CONFIRMED AT THE JOB SITE. THE COUNTY THROUGH THE APPROVAL OF THIS DOCUMENT ASSUMES NO RESPONSIBILITY FOR COMPLETENESS AND/OR ACCURACY OF THIS DOCUMENT.

FILED IN ACCORDANCE WITH THE REQUIREMENTS OF THE EL PASO COUNTY LAND DEVELOPMENT CODE, DRAINAGE CRITERIA MANUALS VOLUME 1 AND 2, AND ENGINEERING CRITERIA MANUAL AS AMENDED. IN ACCORDANCE WITH ECM SECTION 1.12, THESE CONSTRUCTION DOCUMENTS WILL BE VALID FOR CONSTRUCTION FOR A PERIOD OF 2 YEARS FROM THE DATE SIGNED BY THE EL PASO COUNTY ENGINEER. IF CONSTRUCTION HAS NOT STARTED WITHIN THOSE TWO YEARS THE PLANS WILL NEED TO BE RESUBMITTED FOR APPROVAL, INCLUDING PAYMENT OF REVIEW FEES AT THE PLANNING AND COMMUNITY DEVELOPMENT DIRECTOR'S DISCRETION

JENNIFER IRVINE, COUNTY ENGINEER/ECM ADMINISTRATOR DATE
CONDITIONS:

ENGINEER'S APPROVAL

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

RICHARD L. SCHINDLER, P.E. # 33997
FOR AND ON BEHALF OF CORE ENGINEERING GROUP

CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
PH: 719-659-7800
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceg1.com

NO.	DESCRIPTION	DATE

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
(719) 635-3200
CONTACT: JEFF MARK

PROJECT: CARRIAGE MEADOWS SOUTH AT LORSON RANCH FILING NO. 2
FONTAINE BLVD-CARRIAGE MEADOWS DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

COVER SHEET
STREET/STORM SEWER AND UTILITY PLANS

DATE: JUNE 18, 2019

PROJECT NO. 100.046

SHEET NUMBER C0.1

TOTAL SHEETS: 21

Page: 6

Author: dsdrice Subject: Line Date: 8/23/2019 9:40:43 AM

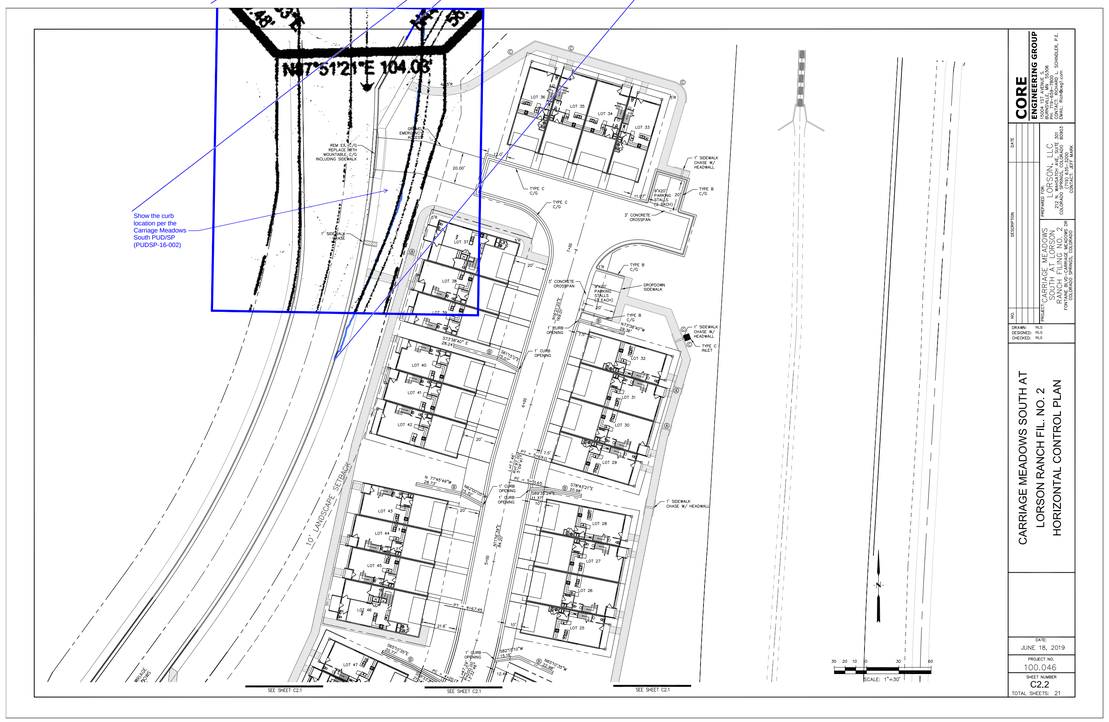
Author: dsdrice Subject: Snapshot Date: 8/30/2019 12:21:38 PM

Author: dsdrice Subject: Highlight Date: 8/30/2019 12:21:27 PM
provide improvements

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 7:27:38 AM
new turn lane provided

Author: dsdrice Subject: Callout Date: 8/23/2019 9:47:34 AM
Show the curb location per the Carriage Meadows South PUD/SP (PUDSP-16-002)

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 7:27:25 AM
new curb shown



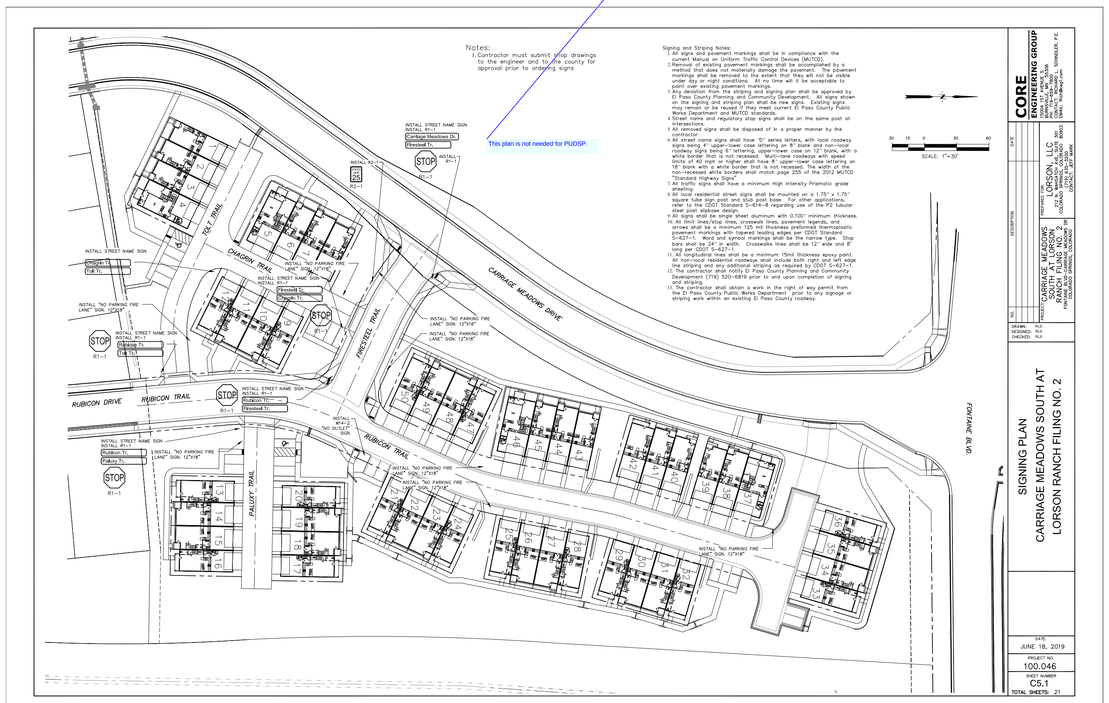
Page: 8

Author: dsdrice Subject: Text Box Date: 8/23/2019 10:40:36 AM

This plan is not needed for PUDSP.

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 7:28:12 AM

noted. we wanted full construction plans



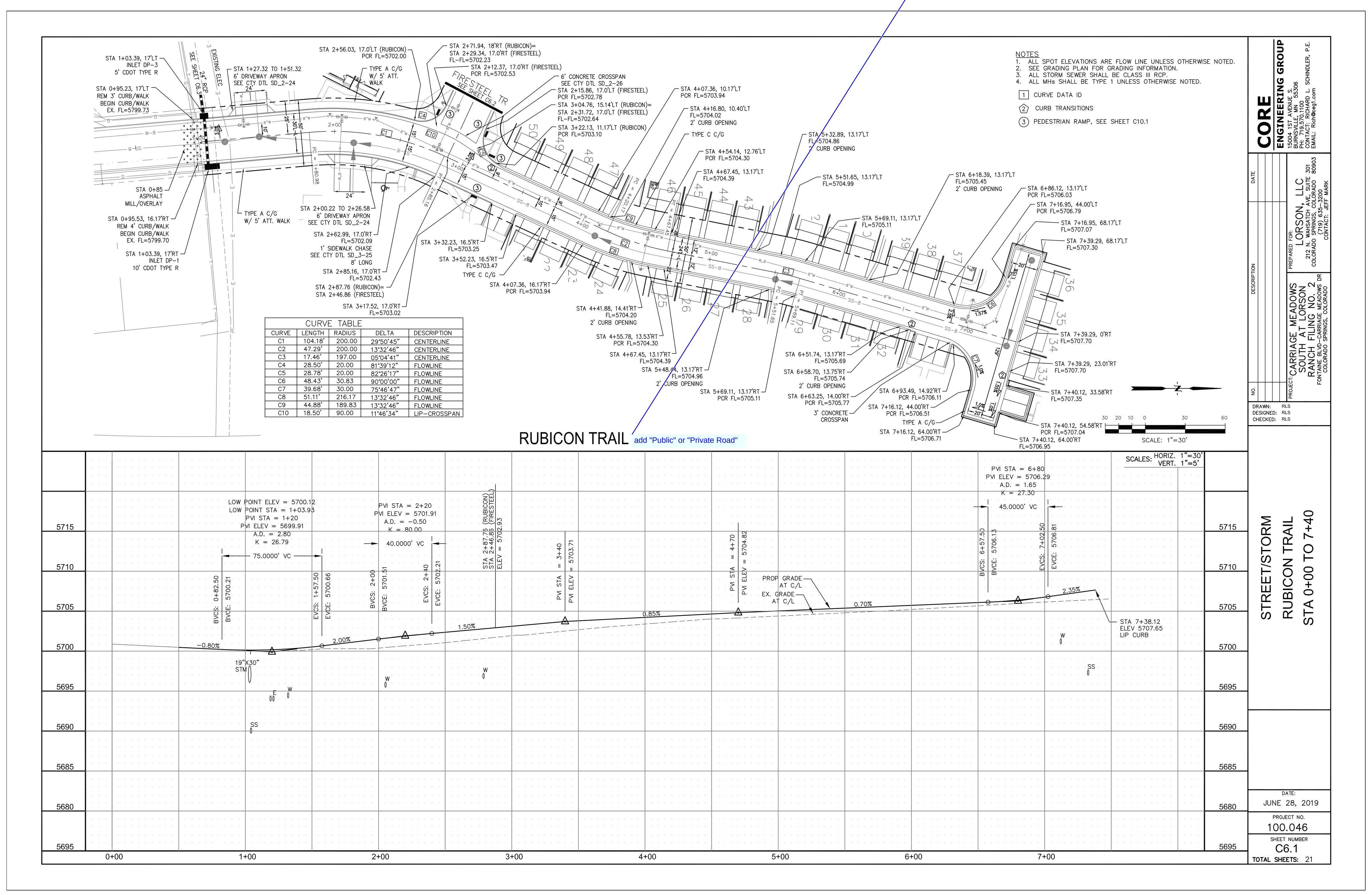
Page: 9

Author: dsdrice Subject: Text Box Date: 8/23/2019 10:41:49 AM

add "Public" or "Private Road"

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 7:28:21 AM

note added



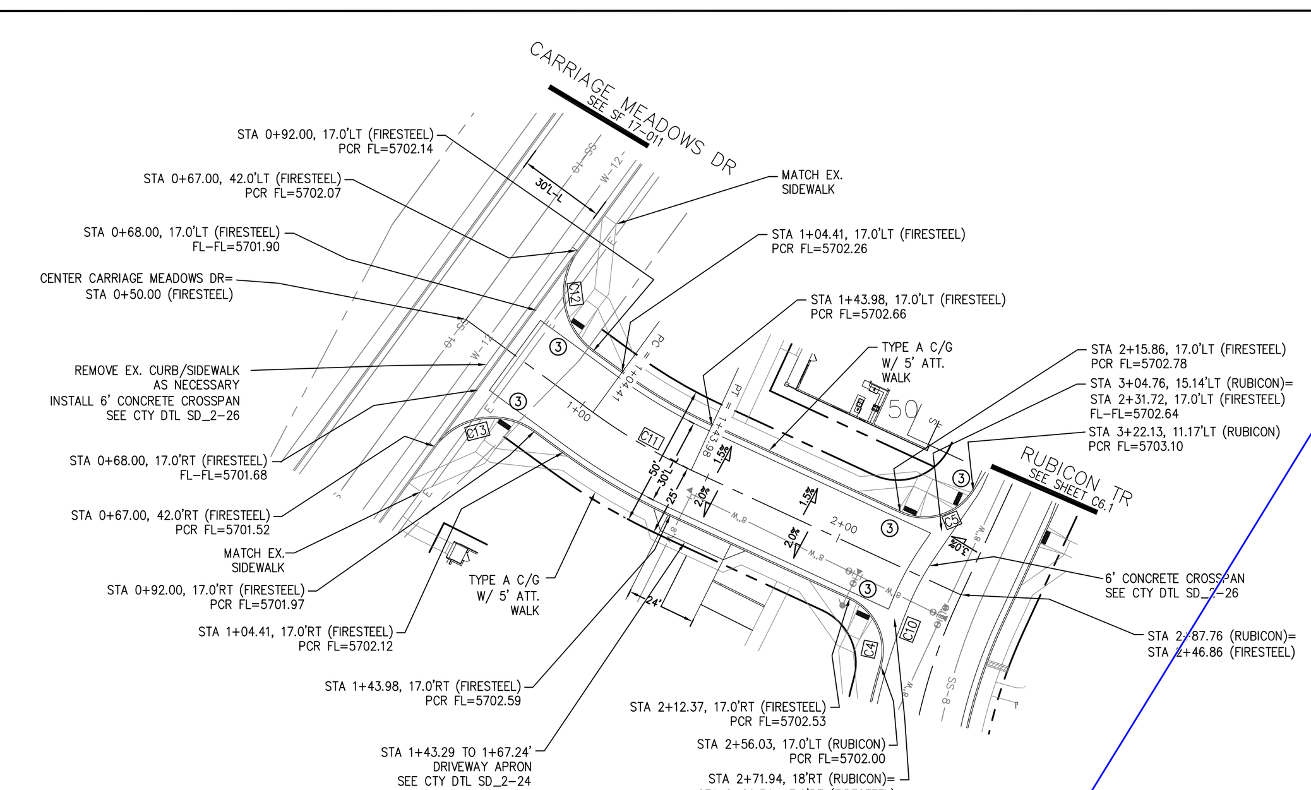
Page: 10

Author: dsdrice Subject: Text Box Date: 8/23/2019 10:42:10 AM

add "Public" or "Private Road"

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 7:28:29 AM

note added



FIRESTEEL TRAIL add "Public" or "Private Road"

NOTES
1. ALL SPOT ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE NOTED.
2. SEE GRADING PLAN FOR GRADING INFORMATION.
3. ALL STORM SEWER SHALL BE CLASS III RCP.
4. ALL MHs SHALL BE TYPE 1 UNLESS OTHERWISE NOTED.

1 CURVE DATA ID

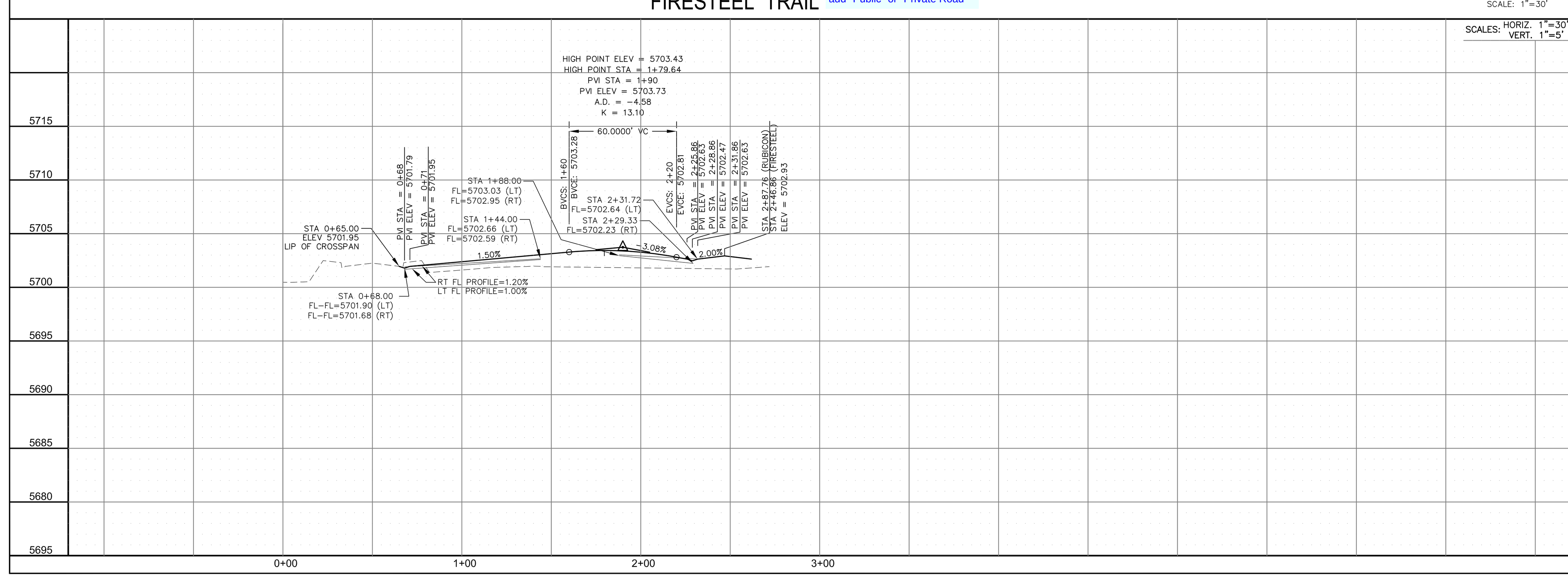
2 CURB TRANSITIONS

3 PEDESTRIAN RAMP, SEE SHEET C10.1

CURVE TABLE

CURVE	LENGTH	RADIUS	DELTA	DESCRIPTION
C4	28.50'	20.00	81°39'12"	FLOWLINE
C5	28.78'	20.00	82°26'17"	FLOWLINE
C10	18.50'	90.00	11°46'34"	LIP–CROSSPAN
C11	39.57'	200.00	11°20'11"	CENTERLINE
C12	39.27'	25.00	90°00'00"	FLOWLINE
C13	39.27'	25.00	90°00'00"	FLOWLINE

SCALE: 1"=30'



CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
PH: 719.570.1100
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceg1.com

PREPARED FOR:
LORSON, LLC
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
(719) 635-3200
CONTACT: JEFF MARK

PROJECT: CARRIAGE MEADOWS SOUTH AT LORSON RANCH FILING NO. 2
FONTAINE BLVD–CARRIAGE MEADOWS DR
COLORADO SPRINGS, COLORADO

NO. | DESCRIPTION | DATE

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

STREET/STORM
FIRESTEEL TRAIL
STA 0+00 TO 2+50

DATE: JUNE 28, 2019

PROJECT NO. 100.046

SHEET NUMBER C6.2

TOTAL SHEETS: 21

Page: 11

Author: dsilnice Subject: Callout Date: 8/23/2019 10:45:19 AM

with watertight joints

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 7:28:39 AM

joint note added

Author: dsilnice Date: 8/23/2019 10:43:50 AM

NOTES:
1. ALL SPOT ELEVATIONS ARE FLOW LINE UNLESS OTHERWISE NOTED.
2. SEE GRADING PLAN FOR GRADING INFORMATION.
3. ALL STORM SEWER TO BE RCP CLASS III UNLESS OTHERWISE NOTED.
4. ALL MHs SHALL BE TYPE 'S' UNLESS OTHERWISE NOTED.

1 CURVE DATA ID

2 CURB TRANSITIONS

3 PEDESTRIAN RAMP, SEE SHEET C10.1

with watertight joints

CARRIAGE MEADOWS DR
SEE SHEET C4.1

RUBICON TR
SEE SHEET C4.1

12" STORM SEWER
SEE SHEET C4.1

EXISTING ELEC - VERIFY LOCATION PRIOR TO CONSTRUCTION

EXISTING 24" RCP

STA 0+42.00 EXISTING 110' TYPE R INLET

STA 0+67.55 CONNECT TO EXISTING CDOT TYPE D INLET

PUBLIC STORM SEWER IN 25' PUBLIC DRAINAGE/UTILITY EASEMENT

STA 3+28.20 (STORM)= STA 1+03.39, 17'LT (RUBICON) 5' CDOT TYPE R INLET

STA 3+35.20 CROSS 8" WTR

STA 3+87.29 INLET 4 15"X15" NYOPLAST INLINE INLET WITH DOME GRATE

STA 3+92.20 (STORM)= STA 1+02.39, 17'R (RUBICON) INLET DP-1 5' CDOT TYPE R INLET TO PUBLIC STORM SEWER (EGIN PRIVATE STORM SEWER OWNED BY LORSON RANCH METRO DISTRICT

STA 3+46.57 CROSS 8" SAN

STA 4+89.05 CROSS ELECTRIC

PRIVATE STORM SEWER OWNED BY LORSON RANCH METRO DISTRICT IN DRAINAGE ESMT

STA 5+20.64 INLET 5 CDOT TYPE C WITH CLOSE MESH GRATE

30 20 10 0 30 40

SCALE: 1"=30'

STORM SEWER

SCALES: HORIZ. 1"=30'
VERT. 1"=5'

5715 5710 5705 5700 5695 5690 5685 5680 5695

0+00 1+00 2+00 3+00

CARRIAGE MEADOWS DR

EX. INLET RIM 5694.17 INVERT (D) 5687.17

EX. INLET DP-4 RIM 5695.04 INVERT (D) 5687.37

PROP GRADE AT C/L

EXIST. GRADE AT C/L

CONNECT TO EXISTING CDOT TYPE D INLET

L=100'R
HG=-5.9%

90 DEG

24" RCP

202.66LF

Q5=9.7cfs
Q100=21.3cfs

Q5=13.0cfs
Q100=25.2cfs

EX. 25.55LF 24" RCP AT 0.8%

RUBICON TRAIL

INLET DP-3 RIM 5695.29 INVERT (D) 5685.79

INLET DP-2 RIM 5695.40 INVERT (D) 5685.90

INLET 4 RIM 5692.79 INVERT (D) 5683.29

INLET 5 RIM 5692.64 INVERT (D) 5683.70

Q5=1.3cfs
Q100=3.4cfs

153.36LF

90 DEG

15"HDPE

90 DEG

Q5=1.0cfs
Q100=4.0cfs

Q5=6.3cfs
Q100=14.4cfs

25.08LF 15" HDPE STM AT 0.8%

15"X15" HERCP AT 0.3%

STA 3+35.20 CROSS 8" WTR VERTICAL CLEARANCE=1.36'

STA 3+46.57 CROSS 8" SAN VERTICAL CLEARANCE=1.76'

STA 4+89.05 CROSS ELECTRIC TOP ELEC=5694.77 CLEARANCE=4.47'

CORE ENGINEERING GROUP
50 LINDEN STREET, SUITE 201
FORT COLLINS, CO 80524
PH: (970) 568-7288
CONTACT: Nicholas J. Schindler, P.E.
EMAIL: NSchindler@coreengineering.com

NO.	DESCRIPTION	DATE
	PREPARED FOR: LORSON, LLC 212 N. WAHSATCH AVE. SUITE 301 COLORADO SPRINGS, CO 80903 CONTACT: BILL GUMAN	
	PROJECT: CARRIAGE MEADOWS SOUTH AT LORSON, FILING 1 AND 3 PDP/SDP, ROAD DRAINAGE, WORKING DRAWINGS	

DESIGNED: RLS
DRAWN: RLS
CHECKED: RLS

STORM SEWER
STA 0+67.55 TO 5+20.64

DATE: JUNE 28, 2019
PROJECT NO.: 100.046
SHEET NUMBER: C6.3
TOTAL SHEETS: 21

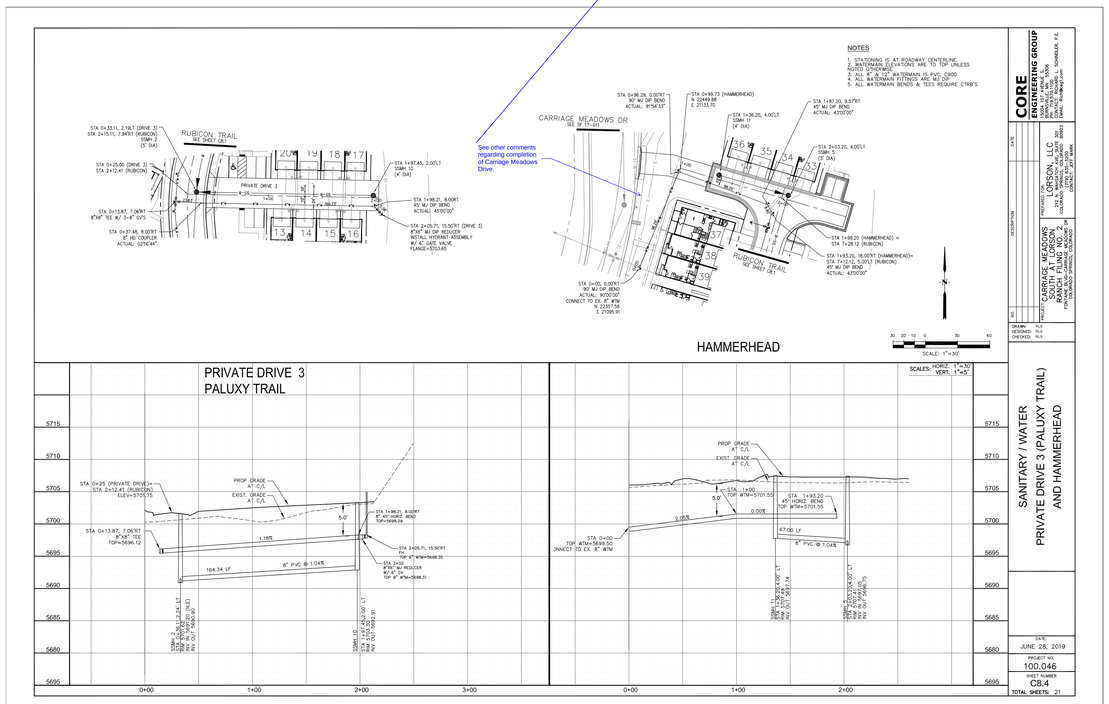
Page: 16

Author: dsilice Subject: Callout Date: 8/23/2019 10:47:41 AM

See other comments regarding completion of Carriage Meadows Drive.

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 7:28:50 AM

noted.



Page: 2

Author: dsdrice Subject: Text Box Date: 8/19/2019 11:03:38 AM

Update GEC notes

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 9:07:31 AM

Updated notes provided

CONSTRUCTION NOTES

1. ALL WORK SHALL COMPLY WITH THE CODES AND POLICIES FOR EL PASO COUNTY.
2. EXISTING TOPOGRAPHIC INFORMATION SHOWN ON THIS GRADING PLAN WAS OBTAINED FROM AERIAL CONTOURS AND PREVIOUS CONSTRUCTION DOCUMENTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO EXAMINE THE SITE AND BE FAMILIAR WITH THE EXISTING CONDITIONS.
3. DEPTH OF MOISTURE–DENSITY CONTROL FOR THIS PROJECT SHALL BE AS FOLLOWS:
   BASE OF ALL CUTS AND FILLS – 12 INCHES,
   FULL DEPTH OF ALL EMBANKMENTS
4. THE CONTRACTOR IS RESPONSIBLE FOR THE RE–ESTABLISHMENT OF ALL SURVEY MONUMENTS DISTURBED WITHIN THE PROJECT LIMITS.
5. THE CONTRACTOR SHALL PROTECT ALL WORK AREAS AND FACILITIES FROM FLOODING AT ALL TIMES. AREAS AND FACILITIES SUBJECTED TO FLOODING, REGARDLESS OF THE SOURCE OF WATER, SHALL BE PROMPTLY DEWATERED AND RESTORED.
6. PRIOR TO PAVING OPERATIONS, THE ENTIRE SUBGRADE SHALL BE PROOF–ROLLED WITH A LOADED 988 FRONT–END LOADER OR SIMILAR HEAVY RUBBER TIRED VEHICLE (GVW OF 50,000 POUNDS WITH 18 KIP PER AXLE AT TIRE PRESSURES OF 90 PSI) TO DETECT ANY SOFT OR LOOSE AREAS. IN AREAS WHERE SOFT OR LOOSE SOILS, PUMPING OR EXCESSIVE MOVEMENT IS OBSERVED, THE EXPOSED MATERIALS SHALL BE OVER–EXCAVATED TO A MINIMUM DEPTH OF TWO FEET BELOW PROPOSED FINAL GRADE OR TO A DEPTH AT WHICH SOILS ARE STABLE. AFTER THIS HAS BEEN COMPLETED, THE EXPOSED MATERIALS SHALL BE SCARIFIED TO A DEPTH OF 12 INCHES AND MOISTURE CONDITIONED. THE SUBGRADE SHALL THEN BE UNIFORMLY COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY (ASTMM D–698) AT 0 TO +4.0% OF OPTIMUM MOISTURE CONTENT FOR A–6 AND A–7–6 SOILS ENCOUNTERED. OTHER SUBGRADE TYPES SHALL BE UNIFORMLY COMPACTED TO A MINIMUM OF 95% OF MODIFIED PROCTOR DENSITY (ASTM D–1557) AT PLUS OR MINUS 2.0% OF OPTIMUM MOISTURE CONTENT. AREAS WHERE STABLE NATURAL SOILS ARE ENCOUNTERED AT PROPOSED SUBGRADE ELEVATION SHALL ALSO BE SCARIFIED (18 INCHES FOR A–7–6 SOILS BELOW FULL–DEPTH ASPHALT CONCRETE) AND COMPACTED AS OUTLINED ABOVE PRIOR TO PAVING OPERATIONS. SUBGRADE FILL SHALL BE PLACED IN SIX–INCH LIFTS AND UNIFORMLY COMPACTED, MEETING THE REQUIREMENTS AS PREVIOUSLY DESCRIBED.
7. SUBGRADE MATERIALS DEEMED UNSUITABLE BY THE ENGINEER SHALL BE EXCAVATED, DISPOSED OF AND REPLACED WITH APPROVED MATERIALS.
8. FILL SHALL BE PLACED IN 8–INCH MAXIMUM LOOSE LIFTS AND SHALL BE COMPACTED PRIOR TO SUCCESSIVE LIFTS.
9. THE CONTRACTOR IS RESPONSIBLE FOR PREVENTING AND CONTROLLING EROSION DURING CONSTRUCTION ACTIVITIES AT ALL TIMES DURING GRADING AND CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE THE FOLLOWING EROSION AND SEDIMENT CONTROL MEASURES:
   – HAY BALE BARRIERS WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
   – SILT FENCE WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
   – TEMPORARY SEDIMENTATION BASINS WHERE NEEDED AND/OR AS DIRECTED BY THE ENGINEER.
   – MULCHING AND SEEDING OF EXCESSIVE SLOPED AREAS AS NEEDED OR AS DIRECTED BY THE ENGINEER.
   – TEMPORARY VEHICLE TRACKING CONTROL AS NEEDED AND/OR DIRECTED BY THE ENGINEER.
   – CONCRETE WASH AREAS.
   – INLET PROTECTION.
   THESE AND ALL EROSION CONTROL BEST MANAGEMENT PRACTICES AS SHOWN IN THE GRADING AND EROSION CONTROL PLANS SHALL BE STRICTLY ADHERED TO.
10. FINISHED CONTOURS/SPOT ELEVATIONS SHOWN HEREON REPRESENT FINISHED GRADES. ALL PAVEMENT SUBGRADES ARE BASED ON THE COMPOSITE ASPHALT PAVEMENT RECOMMENDATIONS MADE IN THE "GEOTECHNICAL STUDY" FOR THIS PROJECT.

EL PASO COUNTY STANDARD CONSTRUCTION NOTES:

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

STANDARD NOTES FOR EL PASO COUNTY GRADING AND EROSION CONTROL PLANS

1. CONSTRUCTION MAY NOT COMMENCE UNTIL A CONSTRUCTION PERMIT IS OBTAINED FROM PCD AND A PRECONSTRUCTION CONFERENCE IS HELD WITH PCD INSPECTIONS.
2. STORMWATER DISCHARGES FROM CONSTRUCTION SITES SHALL NOT CAUSE OR THREATEN TO CAUSE POLLUTION, CONTAMINATION, OR DEGRADATION OF STATE WATERS. ALL WORK AND EARTH DISTURBANCE SHALL BE DONE IN A MANNER THAT MINIMIZES POLLUTION OF ANY ON–SITE OR OFF SITE WATERS, INCLUDING WETLANDS.
3. NOTWITHSTANDING ANYTHING DEPICTED IN THESE PLANS IN WORDS OR GRAPHIC REPRESENTATION, ALL DESIGN AND CONSTRUCTION RELATED TO ROADS, STORM DRAINAGE AND EROSION CONTROL SHALL CONFORM TO THE STANDARDS AND REQUIREMENTS OF THE MOST RECENT VERSION OF THE RELEVANT ADOPTED EL PASO COUNTY STANDARDS, INCLUDING THE LAND DEVELOPMENT CODE, THE ENGINEERING CRITERIA MANUAL, THE DRAINAGE CRITERIA MANUAL, AND THE DRAINAGE CRITERIA MANUAL VOLUME 2. ANY DEVIATIONS FROM REGULATIONS AND STANDARDS MUST BE REQUESTED, AND APPROVED, IN WRITING.
4. A SEPARATE STORMWATER MANAGEMENT PLAN (SWMP) FOR THIS PROJECT SHALL BE COMPLETED AND AN EROSION AND STORMWATER QUALITY CONTROL PERMIT (ESQCP) ISSUED PRIOR TO COMMENCING CONSTRUCTION. DURING CONSTRUCTION THE SWMP IS THE RESPONSIBILITY OF THE DESIGNATED STORMWATER MANAGER, SHALL BE LOCATED ON SITE AT ALL TIMES AND SHALL BE KEPT UP TO DATE WITH WORK PROGRESS AND CHANGES IN THE FIELD.
5. ONCE THE ESQCP HAS BEEN ISSUED, THE CONTRACTOR MAY INSTALL THE INITIAL STAGE EROSION AND SEDIMENT CONTROL BMPS AS INDICATED ON THE GEC. A PRECONSTRUCTION MEETING BETWEEN THE CONTRACTOR, ENGINEER, AND EL PASO COUNTY WILL BE HELD PRIOR TO ANY CONSTRUCTION. IT IS THE RESPONSIBILITY OF THE APPLICANT TO COORDINATE THE MEETING TIME AND PLACE WITH COUNTY DSD INSPECTIONS STAFF.
6. SOIL EROSION CONTROL MEASURES FOR ALL SLOPES, CHANNELS, DITCHES, OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 21 CALENDAR DAYS AFTER FINAL GRADING, OR FINAL EARTH DISTURBANCE, HAS BEEN COMPLETED. DISTURBED AREAS AND STOCKPILES WHICH ARE NOT AT FINAL GRADE BUT WILL REMAIN DORMANT FOR LONGER THAN 30 DAYS SHALL ALSO BE MULCHED WITHIN 21 DAYS AFTER INTERIM GRADING. AN AREA THAT IS GOING TO REMAIN IN AN INTERIM STATE FOR MORE THAN 60 DAYS SHALL ALSO BE SEEDED. ALL TEMPORARY SOIL EROSION CONTROL MEASURES AND BMPS SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED.
7. TEMPORARY SOIL EROSION CONTROL FACILITIES SHALL BE REMOVED AND EARTH DISTURBANCE AREAS GRADED AND STABILIZED WITH PERMANENT SOIL EROSION CONTROL MEASURES PURSUANT TO STANDARDS AND SPECIFICATION PRESCRIBED IN THE DCM VOLUME II AND THE ENGINEERING CRITERIA MANUAL (ECM) APPENDIX I.
8. ALL PERSONS ENGAGED IN EARTH DISTURBANCE SHALL IMPLEMENT AND MAINTAIN ACCEPTABLE SOIL EROSION AND SEDIMENT CONTROL MEASURES INCLUDING BMPS IN CONFORMANCE WITH THE EROSION CONTROL TECHNICAL STANDARDS OF THE DRAINAGE CRITERIA MANUAL (DCM) VOLUME II AND IN ACCORDANCE WITH THE STORMWATER MANAGEMENT PLAN (SWMP).
9. ALL TEMPORARY EROSION CONTROL FACILITIES INCLUDING BMPS AND ALL PERMANENT FACILITIES INTENDED TO CONTROL EROSION OF ANY EARTH DISTURBANCE OPERATIONS, SHALL BE INSTALLED AS DEFINED IN THE APPROVED PLANS, THE SWMP AND THE DCM VOLUME II AND MAINTAINED THROUGHOUT THE DURATION OF THE EARTH DISTURBANCE OPERATION.
10. ANY EARTH DISTURBANCE SHALL BE CONDUCTED IN SUCH A MANNER SO AS TO EFFECTIVELY REDUCE ACCELERATED SOIL EROSION AND RESULTING SEDIMENTATION. ALL DISTURBANCES SHALL BE DESIGNED, CONSTRUCTED, AND COMPLETED SO THAT THE EXPOSED AREA OF ANY DISTURBED LAND SHALL BE LIMITED TO THE SHORTEST PRACTICAL PERIOD OF TIME.
11. ANY TEMPORARY OR PERMANENT FACILITY DESIGNED AND CONSTRUCTED FOR THE CONVEYANCE OF STORMWATER AROUND, THROUGH, OR FROM THE EARTH DISTURBANCE AREA SHALL BE DESIGNED TO LIMIT THE DISCHARGE TO A NON–EROSIVE VELOCITY.
12. CONCRETE WASH WATER SHALL BE CONTAINED AND DISPOSED OF IN ACCORDANCE WITH THE SWMP. NO WASH WATER SHALL BE DISCHARGED TO OR ALLOWED TO RUNOFF TO STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
13. EROSION CONTROL BLANKETING SHALL BE USED ON SLOPES STEEPER THAN 3:1.
14. BUILDING, CONSTRUCTION, EXCAVATION, OR OTHER WASTE MATERIALS SHALL NOT BE TEMPORARILY PLACED OR STORED IN THE STREET, ALLEY, OR OTHER PUBLIC WAY, UNLESS IN ACCORDANCE WITH AN APPROVED TRAFFIC CONTROL PLAN. BMP'S MAY BE REQUIRED BY EL PASO COUNTY PCD IF DEEMED NECESSARY, BASED ON SPECIFIC CONDITIONS AND CIRCUMSTANCES.
15. VEHICLE TRACKING OF SOILS AND CONSTRUCTION DEBRIS OFF–SITE SHALL BE MINIMIZED. MATERIALS TRACKED OFFSITE SHALL BE CLEANED UP AND PROPERLY DISPOSED OF IMMEDIATELY.
16. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL WASTES FROM THE CONSTRUCTION SITE FOR DISPOSAL IN ACCORDANCE WITH LOCAL AND STATE REGULATORY REQUIREMENTS. NO CONSTRUCTION DEBRIS, TREE SLASH, BUILDING MATERIAL WASTES OR UNUSED BUILDING MATERIALS SHALL BE BURIED, DUMPED, OR DISCHARGED AT THE SITE.
17. THE OWNER, SITE DEVELOPER, CONTRACTOR, AND/OR THEIR AUTHORIZED AGENTS SHALL BE RESPONSIBLE FOR THE REMOVAL OF ALL CONSTRUCTION DEBRIS, DIRT, TRASH, ROCK, SEDIMENT, AND SAND THAT MAY ACCUMULATE IN THE STORM SEWER OR OTHER DRAINAGE CONVEYANCE SYSTEM AND STORMWATER APPURTENANCES AS A RESULT OF SITE DEVELOPMENT.
18. THE QUANTITY OF MATERIALS STORED ON THE PROJECT SITE SHALL BE LIMITED, AS MUCH AS PRACTICAL, TO THAT QUANTITY REQUIRED TO PERFORM THE WORK IN AN ORDERLY SEQUENCE. ALL MATERIALS STORED ON–SITE SHALL BE STORED IN A NEAT, ORDERLY MANNER, IN THEIR ORIGINAL CONTAINERS, WITH ORIGINAL MANUFACTURER'S LABELS.
19. NO CHEMICALS ARE TO BE USED BY THE CONTRACTOR, WHICH HAVE THE POTENTIAL TO BE RELEASED IN STORMWATER UNLESS PERMISSION FOR THE USE OF A SPECIFIC CHEMICAL IS GRANTED IN WRITING BY THE ECM ADMINISTRATOR. IN GRANTING THE USE OF SUCH CHEMICALS, SPECIAL CONDITIONS AND MONITORING MAY BE REQUIRED.
20. BULK STORAGE STRUCTURES FOR PETROLEUM PRODUCTS AND OTHER CHEMICALS SHALL HAVE ADEQUATE PROTECTION SO AS TO CONTAIN ALL SPILLS AND PREVENT ANY SPILLED MATERIAL FROM ENTERING STATE WATERS, INCLUDING ANY SURFACE OR SUBSURFACE STORM DRAINAGE SYSTEM OR FACILITIES.
21. NO PERSON SHALL CAUSE THE IMPEDIMENT OF STORMWATER FLOW IN THE FLOW LINE OF THE CURB AND GUTTER OR IN THE DITCHLINE.
22. INDIVIDUALS SHALL COMPLY WITH THE "COLORADO WATER QUALITY CONTROL ACT" (TITLE 25, ARTICLE 8, CRS), AND THE "CLEAN WATER ACT" (33 USC 1344), IN ADDITION TO THE REQUIREMENTS INCLUDED IN THE DCM VOLUME II AND THE ECM APPENDIX I. ALL APPROPRIATE PERMITS MUST BE OBTAINED BY THE CONTRACTOR PRIOR TO CONSTRUCTION (NPDES, FLOODPLAIN, 404, FUGITIVE DUST, ETC.). IN THE EVENT OF CONFLICTS BETWEEN THESE REQUIREMENTS AND LAWS, RULES, OR REGULATIONS OF OTHER FEDERAL, STATE, OR COUNTY AGENCIES, THE MORE RESTRICTIVE LAWS, RULES, OR REGULATIONS SHALL APPLY.
23. ALL CONSTRUCTION TRAFFIC MUST ENTER/EXIT THE SITE AT APPROVED CONSTRUCTION ACCESS POINTS.
24. PRIOR TO ACTUAL CONSTRUCTION THE PERMITTEE SHALL VERIFY THE LOCATION OF EXISTING UTILITIES.
25. A WATER SOURCE SHALL BE AVAILABLE ON SITE DURING EARTHWORK OPERATIONS AND UTILIZED AS REQUIRED TO MINIMIZE DUST FROM EARTHWORK EQUIPMENT AND WIND.
26. THE SOILS REPORT FOR THIS SITE HAS BEEN PREPARED BY RMG AND SHALL BE CONSIDERED A PART OF THESE PLANS.
27. AT LEAST TEN DAYS PRIOR TO THE ANTICIPATED START OF CONSTRUCTION, FOR PROJECTS THAT WILL DISTURB 1 ACRE OR MORE, THE OWNER OR OPERATOR OF CONSTRUCTION ACTIVITY SHALL SUBMIT A PERMIT APPLICATION FOR STORMWATER DISCHARGE TO THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT, WATER QUALITY DIVISION. THE APPLICATION CONTAINS CERTIFICATION OF COMPLETION OF A STORMWATER MANAGEMENT PLAN (SWMP), OF WHICH THIS GRADING AND EROSION CONTROL PLAN MAY BE A PART. FOR INFORMATION OR APPLICATION MATERIALS CONTACT:

   COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT
   WATER QUALITY CONTROL DIVISION
   WQCD – PERMITS
   4300 CHERRY CREEK DRIVE SOUTH
   DENVER, CO 80246–1530
   ATTN: PERMITS UNIT

Update GEC notes

CORE ENGINEERING GROUP
15004 1ST AVENUE S.
BURNSVILLE, MN 55306
PH: 719–659–7800
CONTACT: RICHARD L. SCHINDLER, P.E.
EMAIL: Rich@ceg1.com

NO.	DESCRIPTION	DATE

PREPARED FOR: LORSON, LLC
212 N. WAHSATCH AVE, SUITE 301
COLORADO SPRINGS, COLORADO 80903
(719) 635–3200
CONTACT: JEFF MARK

PROJECT: CARRIAGE MEADOWS SOUTH AT LORSON RANCH FILING NO. 2
FONTAINE BLVD–CARRIAGE MEADOWS DR
COLORADO SPRINGS, COLORADO

DRAWN: RLS
DESIGNED: RLS
CHECKED: RLS

EARLY SITE GRADING AND EROSION CONTROL PLAN NOTES

DATE: JUNE 18, 2019

PROJECT NO. 100.046

SHEET NUMBER C0.2

TOTAL SHEETS: 14

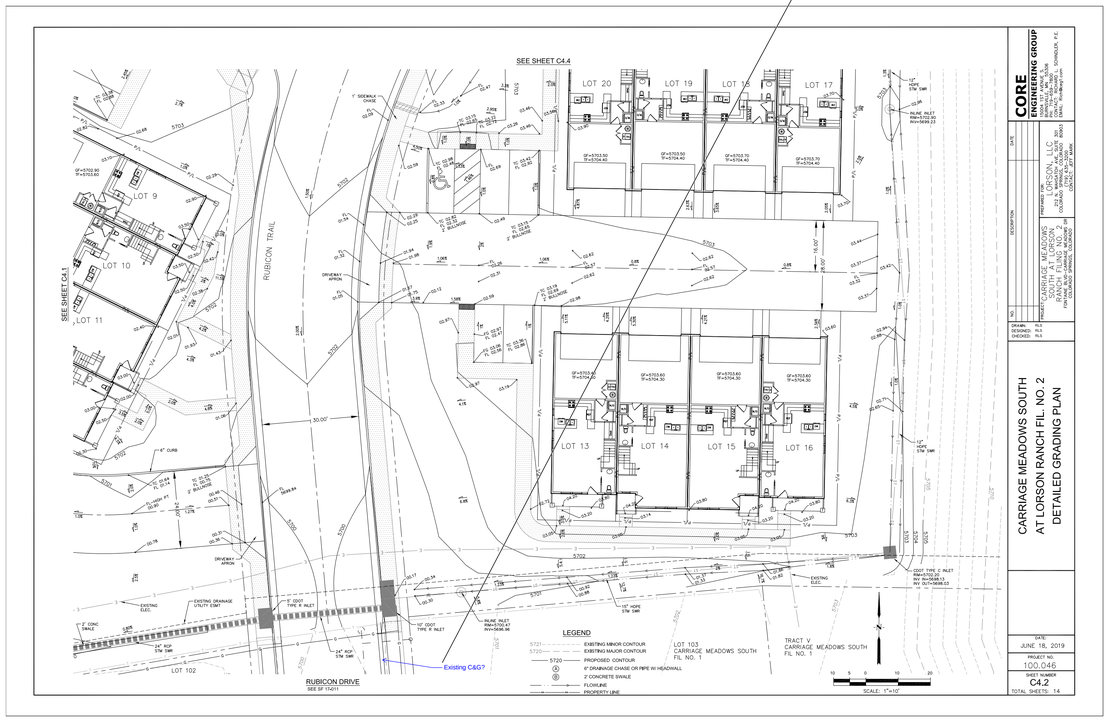
Page: 5

Author: dsdrice Subject: Callout Date: 8/22/2019 4:22:29 PM

Existing C4/G7

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 9:17:02 AM

existing curb labeled.



Author: dsdrice Subject: Callout Date: 8/23/2019 10:49:49 AM

See other comments regarding completion of Carriage Meadows Drive.

Author: RSchindler Subject: Sticky Note Date: 10/14/2019 9:17:11 AM

rt turn shown

Author: dsdrice Date: 8/22/2019 4:16:33 PM


LEGEND
EXISTING MINOR CONTOUR
EXISTING MAJOR CONTOUR
PROPOSED CONTOUR
FLOWLINE
PROPERTY LINE
CARRIAGE MEADOWS DRIVE
See other comments regarding completion of Carriage Meadows Drive.
LOT 33
LOT 34
LOT 35
LOT 36
LOT 37
LOT 38
LOT 39
RUBICON TRAIL
SEE SHEET C4.7
CORE
ENGINEERING GROUP
LORSON, LLC
CARRIAGE MEADOWS SOUTH AT LORSON RANCH FIL. NO. 2
GRADING AND EROSION CONTROL PLAN
JUNE 18, 2019
100.046
C4.8
TOTAL SHEETS: 14