TOWN OF CASTLE ROCK COLORADO

TECHNICAL MEMORANDUM

To: Mark Marlowe, P.E., Director, Castle Rock Water

Thru: Tim Friday, P.E., Assistant Director, TFF (initial)

Jeanne Stevens, P.E., Engineering Manager, JMS (initial)

David Van Dellen, P.E., Stormwater Manager, DV (initial)

From: Kevin Buffington, E.I., Plan Review Engineer

Date: April 10, 2019

Title: Technical Criteria Variance Application

Name: Castle Rock Industrial Park – Untreated Runoff

Number: TCV19-0020 and CD16-0019

Legal Description: Hillside at Castle Rock: TRACT IN SW1/4 3-8-67 & IN SE1/4SE1/4 4-8-67 46.72 AM/L LSP 3561 and TRACT IN SE1/4SW1/4 3-8-67 4.878 AM/L

Summary: Due to the topography constraints of the site and surrounding areas, 6.1% of the site (3.07 acres) will not convey to the full-spectrum detention pond. Of this area, less than 1.0 acre will be developed as impervious area.

Recommendation: ____X_____ **Approve** _____ **Deny**

Discussion: Section 13.1.4 of the Storm Drainage Design and Technical Criteria Manual: *New Development projects shall require that full-spectrum detention be provided for the entire site.*

Staff has reviewed the attached variance request and finds that it meets the general intent of the MS4 permit section I, part E.4.c.iv.(A)1 which allows for up to 20% of the area of the site to discharge untreated subject to physical constraints, not to exceed 1.0 acre. The applicable untreated area of the development is 0.49 acres.

For these reasons, I recommend approval of this variance.

Cc: Engineering Office Assistant (once finalized)

Development Services
100 N. Wilcox Street
Castle Rock, CO 80104
720-733-2200 FAX 720-733-2231

NO. TCV19-0020

DATE: 4/19/2019

TECHNICAL CRITERIA VARIANCE APPLICATION

DEVELOPMENT

Hillside at Castle Rock

LEGAL DESCRIPTION OF SUBJECT PROPERTY:

TRACT IN SW1/4 3-8-67 & IN SE1/4SE1/4 4-8-67 46.72 AM/L LSP 3561 46.7 acres
TRACT IN SE1/4SW1/4 3-8-67 4.878 AM/L 4.9 acres

VARIANCE REQUESTED:

Code Section(s) 14.1 of TOCR Storm Drainage Design and Technical Criteria Manual

Describe the Variance Requested:

The entire development site is captured and treated through a WQCV facility with the exception of offsite pervious areas and 0.49 acres of developed impervious area.

1. Describe the exceptional situation or condition that exists

Basins D1 and D2 are tributary to existing culverts in Wolfensberger Rd that convey runoff to the major drainage channel on the south side of Wolfensberger Road. Providing water quality and detention is not possible due to existing IREA lines and utility easement, which would obstruct pond and pipe installation. Basin D4 overlays the paved intersection of Grayside Circle and Wolfensberger Road. Stormwater improvements would be too low in elevation to convey runoff to the proposed Detention Pond A.

2. Describe the difficulty or hardship that would be created by a strict enforcement of the code

A. Basins D1 and D2 are not tributary to Detention Pond A.

B. Existing IREA utilities near the surface along the southern boundary of the site (north of the Wolfensberger right of way) control grade and prevent the installation of drainage channels or detention ponds and pipes in this area.

C. Basin D4 is too low in elevation to drain to Detention Pond A.

TCV19-0020

3. Describe why there would not be any adverse impact on public health, safety and welfare

Sub-Basins D1, D2, and D3 are mainly open-space areas and represent a very small portion of developed area. Since most of the basins are landscaped area, runoff will be very similar to historic flow rates. The runoff will pass through native grasses and roadside ditches, which will provide some bioretention of pollutants.

Additional Information:

1. *Attach an improvement survey.*
2. *Attach a drawing showing the intended uses.*
3. *Provide any other information helpful to discussion.*

PROPERTY OWNER

Name: Wolfensberger Property Group, LLC.

Address: 9116 W. Bowles Ave., Unit 15
Littleton, CO 80123

Phone #: (303) 979-9858
Fax #: _____

APPLICANT'S REPRESENTATIVE (If applicable)

Name: Troy W. Denning P.E.

Address: 9800 Mt. Pyramid Ct, Suite 400
Englewood, CO 80112

Phone: (720) 895-1363
Fax: _____

Signature of Applicant

For Staff Use Only

Staff Recommendation: Approved ☑ Yes ☐ No

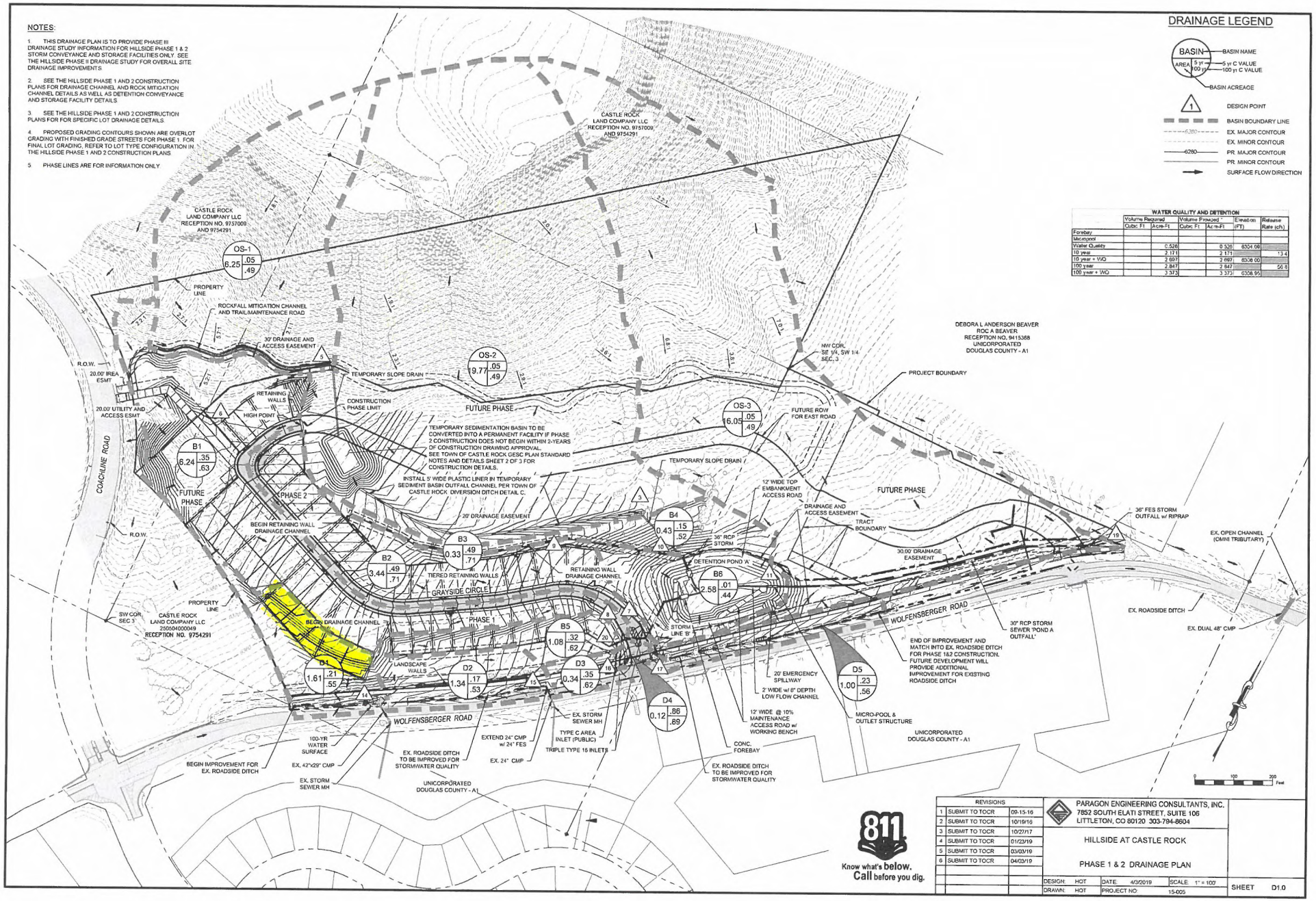
Signature

- ☐ Public Works Director
- ☑ Utilities Director Castle Rock Water
- ☐ Parks & Recreation Director
- ☐ Development Services Director

5-2-19
Date

Comments

Conditions of Acceptance


NOTES:
1. THIS DRAINAGE PLAN IS TO PROVIDE PHASE III DRAINAGE STUDY INFORMATION FOR HILLSIDE PHASE 1 & 2 STORM CONVEYANCE AND STORAGE FACILITIES ONLY. SEE THE HILLSIDE PHASE II DRAINAGE STUDY FOR OVERALL SITE DRAINAGE IMPROVEMENTS.
2. SEE THE HILLSIDE PHASE 1 AND 2 CONSTRUCTION PLANS FOR DRAINAGE CHANNEL AND ROCK MITIGATION CHANNEL DETAILS AS WELL AS DETENTION CONVEYANCE AND STORAGE FACILITY DETAILS.
3. SEE THE HILLSIDE PHASE 1 AND 2 CONSTRUCTION PLANS FOR FOR SPECIFIC LOT DRAINAGE DETAILS.
4. PROPOSED GRADING CONTOURS SHOWN ARE OVERLOT GRADING WITH FINISHED GRADE STREETS FOR PHASE 1. FOR FINAL LOT GRADING, REFER TO LOT TYPE CONFIGURATION IN THE HILLSIDE PHASE 1 AND 2 CONSTRUCTION PLANS.
5. PHASE LINES ARE FOR INFORMATION ONLY.
DRAINAGE LEGEND
BASIN
AREA
5 yr
100 yr
BASIN NAME
5 yr C VALUE
100 yr C VALUE
BASIN ACREAGE
DESIGN POINT
BASIN BOUNDARY LINE
EX. MAJOR CONTOUR
EX. MINOR CONTOUR
PR. MAJOR CONTOUR
PR. MINOR CONTOUR
SURFACE FLOW DIRECTION
WATER QUALITY AND DETENTION
Volume Required
Volume Provided
Elevation
Release Rate (cfs)
Cubic Ft
Acre-Ft
Forebay
Micropool
Water Quality
0.526
0.526
6304.00
10 year
2.171
2.171
13.4
10 year + WQ
2.697
2.697
6308.00
100 year
2.847
2.847
56.8
100 year + WQ
3.373
3.373
6308.95
CASTLE ROCK LAND COMPANY LLC RECEPTION NO. 9757009 AND 9754291
OS-1 6.25 .05 .49
OS-2 19.77 .05 .49
OS-3 16.05 .05 .49
B1 6.24 .35 .63
B2 3.44 .49 .71
B3 0.33 .49 .71
B4 0.43 .15 .52
B5 1.08 .32 .62
B6 2.58 .01 .44
D1 1.61 .21 .55
D2 1.34 .17 .53
D3 0.34 .35 .62
D4 0.12 .86 .89
D5 1.00 .23 .56
PROPERTY LINE
ROCKFALL MITIGATION CHANNEL AND TRAIL/MAINTENANCE ROAD
30' DRAINAGE AND ACCESS EASEMENT
R.O.W.
20.00' IREA ESMT
20.00' UTILITY AND ACCESS ESMT
RETAINING WALLS
HIGH POINT
TEMPORARY SLOPE DRAIN
CONSTRUCTION PHASE LIMIT
FUTURE PHASE
TEMPORARY SEDIMENTATION BASIN TO BE CONVERTED INTO A PERMANENT FACILITY IF PHASE 2 CONSTRUCTION DOES NOT BEGIN WITHIN 2-YEARS OF CONSTRUCTION DRAWING APPROVAL. SEE TOWN OF CASTLE ROCK GESC PLAN STANDARD NOTES AND DETAILS SHEET 2 OF 3 FOR CONSTRUCTION DETAILS.
INSTALL 5' WIDE PLASTIC LINER IN TEMPORARY SEDIMENT BASIN OUTFALL CHANNEL PER TOWN OF CASTLE ROCK DIVERSION DITCH DETAIL C.
COACHLINE ROAD
PHASE 2
PHASE 1
BEGIN RETAINING WALL DRAINAGE CHANNEL
20' DRAINAGE EASEMENT
TIERED RETAINING WALLS
GRAYSIDE CIRCLE
BEGIN DRAINAGE CHANNEL
LANDSCAPE WALLS
SW COR. SEC 3
CASTLE ROCK LAND COMPANY LLC 2505040000049 RECEPTION NO. 9754291
DEBORA L ANDERSON BEAVER ROC A BEAVER RECEPTION NO. 9415388 UNICORPORATED DOUGLAS COUNTY - A1
NW COR. SE 1/4, SW 1/4 SEC. 3
PROJECT BOUNDARY
FUTURE ROW FOR EAST ROAD
TEMPORARY SLOPE DRAIN
12' WIDE TOP EMBANKMENT ACCESS ROAD
DRAINAGE AND ACCESS EASEMENT
TRACT BOUNDARY
36" RCP STORM
DETENTION POND 'A'
RETAINING WALL DRAINAGE CHANNEL
STORM LINE 'B'
30.00' DRAINAGE EASEMENT
36" FES STORM OUTFALL w/ RIPRAP
EX. OPEN CHANNEL (OMNI TRIBUTARY)
EX. ROADSIDE DITCH
EX. DUAL 48" CMP
30" RCP STORM SEWER 'POND A OUTFALL'
END OF IMPROVEMENT AND MATCH INTO EX. ROADSIDE DITCH FOR PHASE 1&2 CONSTRUCTION. FUTURE DEVELOPMENT WILL PROVIDE ADDITIONAL IMPROVEMENT FOR EXISTING ROADSIDE DITCH
WOLFENSBERGER ROAD
20' EMERGENCY SPILLWAY
2' WIDE w/ 6" DEPTH LOW FLOW CHANNEL
12' WIDE @ 10% MAINTENANCE ACCESS ROAD w/ WORKING BENCH
MICRO-POOL & OUTLET STRUCTURE
UNICORPORATED DOUGLAS COUNTY - A1
CONC. FOREBAY
EX. ROADSIDE DITCH TO BE IMPROVED FOR STORMWATER QUALITY
EX. STORM SEWER MH
TYPE C AREA INLET (PUBLIC)
TRIPLE TYPE 16 INLETS
EXTEND 24" CMP w/ 24" FES
EX. 24" CMP
100-YR WATER SURFACE
EX. 42"x29" CMP
BEGIN IMPROVEMENT FOR EX. ROADSIDE DITCH
EX. STORM SEWER MH
UNICORPORATED DOUGLAS COUNTY - A1
0 100 200 Feet
811 Know what's below. Call before you dig.
REVISIONS
1 SUBMIT TO TOCR 09-15-16
2 SUBMIT TO TOCR 10/19/16
3 SUBMIT TO TOCR 10/27/17
4 SUBMIT TO TOCR 01/23/19
5 SUBMIT TO TOCR 03/05/19
6 SUBMIT TO TOCR 04/03/19
PARAGON ENGINEERING CONSULTANTS, INC.
7852 SOUTH ELATI STREET, SUITE 106
LITTLETON, CO 80120 303-794-8604
HILLSIDE AT CASTLE ROCK
PHASE 1 & 2 DRAINAGE PLAN
DESIGN: HOT
DRAWN: HOT
DATE: 4/3/2019
PROJECT NO: 15-005
SCALE: 1" = 100'
SHEET D1.0