

June 22, 2022

Town of Castle Rock  
100 North Wilcox Street  
Castle Rock, CO 80104

## Drainage Conformance Letter

**RE: Eternal Rock Church**  
**Lot 2 – Phelps Subdivision – Drainage Conformance Letter**

To Whom it may Concern,

The purpose of this letter is to illustrate how the proposed development and grading activities on Lot 2 are in general conformance within the Town of Castle Rock – Storm Drainage Design and Technical Criteria Manual standards dated June 2019.

The current application proposes the addition of:

- An access drive cut off of the private drive on the west side of the site.
- An access drive cut off of Phelps Drive on the south side of the site.
- Phelps street section modified along the south side of the site to match the existing street section west of the site.
- Three additional parking stalls on the east side of the parking area along with an addition of a trash enclosure.
- Four landscape islands within the parking area.
- Three sidewalk chase drains.
- Modified landscaping on the north side of the building.

With the above additions the imperviousness of the site is proposed to increase slightly by an area of ~ 665 square feet and a total site percentage of ~2.30% (See tables below)

| <b>IMPERVIOUS AREAS:</b>          | <b>AREA (SF)</b> |
|-----------------------------------|------------------|
| Concrete pavement to be Increased | 1,116            |
| Concrete pavement to be Removed   | 451              |
|                                   |                  |
| Net Impervious Area Added         | 665              |

|                         |        |
|-------------------------|--------|
| Existing Impervious %   | 79.55% |
| Proposed Impervious %   | 81.84% |
|                         |        |
| Net Impervious Increase | 2.30%  |

## **GENERAL DRAINAGE PLAN**

The proposed drainage will essentially remain the same:

- Runoff on the north side of the building will traverse across pervious landscape area acting as a grass buffer before discharging through a 1.5' sidewalk chase in the curb and gutter of South Street and be conveyed off site to the west via curb and gutter.
- Runoff on the south side of the building will traverse across the impervious concrete parking and drive isle to the curb and gutter and be conveyed off site to the west via curb and gutter and 1.5' sidewalk chase.
  - Additional landscape islands have been added to the parking lot to disconnect impervious areas and promote infiltration.
- Runoff on the west side of the building will traverse to a 1.5' sidewalk chase in the curb and gutter of the Private drive and be conveyed south to Phelps Drive and will follow the curb and gutter off site to the west.
- Runoff on the east side of the building will traverse across pervious landscape area acting as a grass buffer before being discharged off site onto Perry Street.

## **CASTLE ROCK – FOUR STEP PROCESS**

- Per direction of the Pre App the Four Step process for stormwater quality is described below:
  - Step 1 – Reduce Runoff Volume to the Maximum Extent Practicable.
    - This site is utilizing landscape islands and landscape planning where practical to reduce the amount of pavement and roof area that is directly connected to inlets and storm sewer.
  - Step 2 – Provide Water Quality Capture Volume and Flood Control Detention
    - This site is a constrained existing site. The WQCV and Flood Control is proposed to mimic existing conditions.
  - Step 3 – Utilize Stream Channel Stabilization Techniques.
    - Runoff from this site does not directly connect to any stream within the site boundary or adjacent to the site.
  - Step 4 – Undertake Source Control
    - During and after construction, potential pollutants that could be encountered include, but are not limited to vehicle fueling, concrete waste, hydraulic oil / fluids, antifreeze / coolant, paints, and stains, sediment, trash, portable toilet waste, and cleaning solvents.
      - Structural Source Controls:
        - This site will utilize proper sanitary sewer connections

- Provision of designated storage and material handling areas
- Provision of proper waste receptacles
- Non – Structural Controls:
  - General good housekeeping practices (proper material storage, clean and orderly work areas)
  - Preventative maintenance
  - Recycling programs
  - Spill prevention and response

## SUMMARY

The imperviousness, runoff coefficients, drainage patterns, and runoff flows will essentially remain the same as the previous site with only an additional impervious area of 0.02 acres or 2.3% additional imperviousness for the site.

In summary, it is our opinion that the slightly modified, imperviousness, runoff coefficients, drainage patterns, and runoff flows are in general conformance with the Town of Castle Rock. The existing storm infrastructure downstream from the site will not be negatively impacted by the proposed development.

Please feel free to contact me at 303-257-7653 or [todd@terraformas.com](mailto:todd@terraformas.com) with any questions or comments.



Todd A. Johnson, P.E, President  
For and on behalf of:  
**Terra Forma Solutions, Inc.**

## **ENCLOSURES**

Town of Castle Rock – Summary of Water Quality Conformance to MS4 Permit



## Summary of Water Quality Conformance to MS4 Permit

The purpose of this worksheet is to verify that proposed site plan is in conformance with the Town of Castle Rock's MS4 permit and to track any exclusions made.

**Project Name** Eternal Rock Church

**Project Owner** Eternal Rock Church

**Project Location** 2 Phelps Street, Castle Rock, CO 80104

**ToCR Project Number** \_\_\_\_\_

**Total Size of Site** 0.665 acres

**Total Size of Common Plan of Development** \_\_\_\_\_ acres

**Check all that apply:**

☒ **Project within Plum Creek Basin**

☐ **Project within Cherry Creek Basin**

**Estimated construction completion date** 10/2021

1. The water quality control measure(s) for applicable development sites shall meet one of the following base design standards as per the SDDTCM Section 14.4. Please select all design standards that were applied to meet conformance with the MS4 on this site?

- ☐ WQCV standard
- ☐ Pollutant removal standard
- ☐ Runoff reduction standard
- ☐ Applicable site draining to regional WQVC control measure (accepts drainage prior to discharging to WOTS)
- ☐ Applicable site draining to regional WQVC control facility (with receiving pervious area control measure upstream of WOTS)
- ☒ Constrained redevelopment sites standard
  - Imperviousness of existing site 0.529 / 0.665 (Imp. Ac/Site Ac) = 80 %
  - Variance required TCV No. \_\_\_\_\_
- ☐ Existing control measure with WQCV per previous criteria standards
  - Reference Construction Permit No. \_\_\_\_\_
- ☐ No control measures provided (See Permanent WQ Worksheet for applicability)

## Summary of Water Quality Conformance to MS4 Permit

2. Was an exclusion to water quality applied as per SDDTCM Section 13.1.5? ☐ Yes ☒ No

i. If yes, please select all that apply, provide total excluded area(s) and submit variance, as applicable:

☐ Pavement management site

Excluded area: \_\_\_\_\_ acres

Variance required TCV No. \_\_\_\_\_

☐ Excluded roadway redevelopment

Excluded area: \_\_\_\_\_ acres

Variance required TCV No. \_\_\_\_\_

☐ Excluded existing roadway areas

Excluded area: \_\_\_\_\_ acres

Variance required TCV No. \_\_\_\_\_

☐ Above ground and below ground utilities

☐ Large lot single family home

☐ Non-residential and non-commercial infiltration

Excluded area: \_\_\_\_\_ acres

Variance required TCV No. \_\_\_\_\_

☐ Land disturbance for land to remain undeveloped

Excluded area: \_\_\_\_\_ acres

Variance required TCV No. \_\_\_\_\_

☐ Stream Stabilization Sites

Excluded area: \_\_\_\_\_ acres

Variance required TCV No. \_\_\_\_\_

☐ Trails

Excluded area: \_\_\_\_\_ acres

Variance required TCV No. \_\_\_\_\_

☐ Oil and Gas Exploration

3. For Development and Redevelopment sites, following any exclusions claimed above, was any portion of the site excluded up to 20% of the site and not to exceed one acre? If so, how much?

Excluded area: 0.03 \_\_\_\_\_ acres

Total Site area: 0.665 \_\_\_\_\_ acres, 4.5 %

4. For Constrained sites, following any exclusions claimed above, was any portion of the site excluded up to 50% of the site? If so, how much?

Excluded area: 0.03 \_\_\_\_\_ acres

Total Site area: 0.665 \_\_\_\_\_ acres, 4.5 %

## Permanent Water Quality Determination Worksheet (Taken from 2019 SDDTCM Sections 13.1.4 and 13.1.5)

| Project:   |                                                                                                                                                                                                                                                                                                                                                                                                       | Project#      |                                                                     | Applicant:                                                                                                                                                                                                                                                                                                                                                                                                           |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|---------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Section    | Questions                                                                                                                                                                                                                                                                                                                                                                                             | Response      | Check those that apply                                              | Instructions                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>1</b>   | <b>Non-applicable Sites</b>                                                                                                                                                                                                                                                                                                                                                                           |               |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 1.1        | Will the project result in a temporary disturbance of greater than one acre?                                                                                                                                                                                                                                                                                                                          | No<br>Yes     | <input type="checkbox"/><br><input checked="" type="checkbox"/>     | Proceed to section 1.2.<br>Proceed to section 2.                                                                                                                                                                                                                                                                                                                                                                     |
| 1.2        | Is the project part of a larger common plan of development or sale where multiple separate and distinct construction activities may be taking place at different times on different schedules, but remain related and are within 1/4 mile of each other? (A common plan of development will generally be documented on a site development plan, master plan, or equivalent, for the property/project) | No<br><br>Yes | <input type="checkbox"/><br><br><input type="checkbox"/>            | Proceed to section 1.3.<br><br>Proceed to section 2.                                                                                                                                                                                                                                                                                                                                                                 |
| 1.3        | Is the project within the Cherry Creek Watershed?                                                                                                                                                                                                                                                                                                                                                     | Yes<br>No     | <input type="checkbox"/><br><input type="checkbox"/>                | Permanent water quality control measures may be required. Refer to Water Quality Control Regulation 72.7 for details and allowable exclusions.<br>Permanent water quality control measures are not required.                                                                                                                                                                                                         |
| <b>2</b>   | <b>Applicable Site Types and Exclusions by Variance</b>                                                                                                                                                                                                                                                                                                                                               |               |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 2.1        | Does the project have more than 35% impervious area on the existing site?                                                                                                                                                                                                                                                                                                                             | No<br>Yes     | <input type="checkbox"/><br><input checked="" type="checkbox"/>     | Project is an applicable Development Site. Proceed to section 3.<br>Proceed to 2.2.                                                                                                                                                                                                                                                                                                                                  |
| 2.2        | Does the project have greater than 75% impervious area on the existing site?                                                                                                                                                                                                                                                                                                                          | No<br>Yes     | <input type="checkbox"/><br><input checked="" type="checkbox"/>     | Project is an applicable Redevelopment Site. Proceed to section 3.<br>Project is an applicable Constrained Redevelopment Site. Proceed to 2.3.                                                                                                                                                                                                                                                                       |
| 2.3        | Will 100% of the runoff from the existing and proposed site be captured and treated using one or more of the allowable design standards for permanent water quality?                                                                                                                                                                                                                                  | Yes<br><br>No | <input type="checkbox"/><br><br><input checked="" type="checkbox"/> | No further action required.<br><br>Proceed to 2.4.                                                                                                                                                                                                                                                                                                                                                                   |
| 2.4        | Do any other water quality exclusions apply to the site?                                                                                                                                                                                                                                                                                                                                              | No<br><br>Yes | <input type="checkbox"/><br><br><input checked="" type="checkbox"/> | Portions of the project are excluded. Proceed with design in accordance with Constrained Redevelopment standards and apply for <b>variance</b> for <u>Constrained Redevelopment Sites</u> .<br>Proceed to section 3. Following approval of other exclusions, design remaining site in accordance with Constrained Redevelopment standards and apply for <b>variance</b> for <u>Constrained Redevelopment Sites</u> . |
| <b>3</b>   | <b>Applicable Sites with Other Exclusions by Variance</b>                                                                                                                                                                                                                                                                                                                                             |               |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>3.1</b> | <b>Category 1: Roadways, bridges and trails only</b>                                                                                                                                                                                                                                                                                                                                                  |               |                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 3.1.1      | Is the project a bike or pedestrian trail?                                                                                                                                                                                                                                                                                                                                                            | Yes<br>No     | <input type="checkbox"/><br><input type="checkbox"/>                | Proceed to next line.<br>Proceed to 3.1.2.                                                                                                                                                                                                                                                                                                                                                                           |
|            | Is the trail for a roadway?                                                                                                                                                                                                                                                                                                                                                                           | Yes<br>No     | <input type="checkbox"/><br><input type="checkbox"/>                | Proceed to 3.1.2.<br>Project is excluded. Submit <b>variance</b> for <u>Trails Excluded from Permanent Water Quality Requirements</u> .                                                                                                                                                                                                                                                                              |
| 3.1.2      | Is the project primarily used for parking or access to parking?                                                                                                                                                                                                                                                                                                                                       | Yes<br>No     | <input type="checkbox"/><br><input type="checkbox"/>                | This exclusion does not apply. Permanent water quality is required.<br>Proceed to 3.1.3.                                                                                                                                                                                                                                                                                                                             |
| 3.1.3      | Does the project add impervious area?                                                                                                                                                                                                                                                                                                                                                                 | No<br>Yes     | <input type="checkbox"/><br><input type="checkbox"/>                | Project is excluded. Submit <b>variance</b> for <u>Pavement Management Sites Excluded from Permanent Water Quality Requirements</u> .<br>Proceed to 3.1.4.                                                                                                                                                                                                                                                           |

| Section    | Questions                                                                                                                                                                                                                                                                                                                                                                                        | Response  | Check those that apply                                          | Instructions                                                                                                                                                                                                                                                          |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-----------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.1.4      | Does the project add more than 8.25 feet of paved width at any location to the existing roadway?                                                                                                                                                                                                                                                                                                 | No<br>Yes | <input type="checkbox"/><br><input type="checkbox"/>            | Project is excluded. Submit <b>variance</b> for <u>Roadway Redevelopment Sites Excluded from Permanent Water Quality Requirements</u> .<br>Proceed to next line.                                                                                                      |
|            | Does the project add more than one acre of paved area per mile to an existing roadway?                                                                                                                                                                                                                                                                                                           | No<br>Yes | <input type="checkbox"/><br><input type="checkbox"/>            | Project is excluded. Submit <b>variance</b> for <u>Roadway Redevelopment Sites Excluded from Permanent Water Quality Requirements</u> .<br>Proceed to next line.                                                                                                      |
|            | Does the project increase the width by two times or more, on average, of the original roadway area?                                                                                                                                                                                                                                                                                              | No<br>Yes | <input type="checkbox"/><br><input type="checkbox"/>            | Existing areas of site are excluded only. Submit <b>variance</b> for <u>Existing Roadway Surfaces Only Excluded from Permanent Water Quality Requirements</u> .<br>This exclusion does not apply. Permanent water quality is required.                                |
| <b>3.2</b> | <b>Category 2: Non-residential and non-commercial projects only</b>                                                                                                                                                                                                                                                                                                                              |           |                                                                 |                                                                                                                                                                                                                                                                       |
| 3.2.1      | Is the project associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities, including activities necessary to prepare a site for drilling and the movement and placement of drilling equipment?                                                                                                                                          | Yes<br>No | <input type="checkbox"/><br><input type="checkbox"/>            | Project is excluded. Submit <b>variance</b> for <u>Oil and Gas Exploration Sites Excluded from Permanent Water Quality Requirements</u> .<br>Proceed to 3.2.2.                                                                                                        |
| 3.2.2      | Is the project for stream stabilization?                                                                                                                                                                                                                                                                                                                                                         | Yes<br>No | <input type="checkbox"/><br><input type="checkbox"/>            | Project is excluded. Submit <b>variance</b> for <u>Stream Stabilization Sites Excluded from Permanent Water Quality Requirements</u> .<br>Proceed to 3.2.3.                                                                                                           |
| 3.2.3      | Is the project for installation or maintenance of aboveground or underground utilities or infrastructure that does not permanently alter the terrain, ground cover, or drainage patterns from those present prior to the construction activity including activities to install, replace or maintain utilities under roadways or other paved areas that return the surface to the same condition? | Yes<br>No | <input type="checkbox"/><br><input type="checkbox"/>            | Project is excluded. Submit <b>variance</b> for <u>Aboveground and Underground Utilities Excluded from Permanent Water Quality Requirements</u> .<br>Proceed to 3.2.4.                                                                                                |
| 3.2.4      | Is the project on undeveloped land (land with no human-made structures such as buildings or pavement) that will remain undeveloped after the project?                                                                                                                                                                                                                                            | Yes<br>No | <input type="checkbox"/><br><input type="checkbox"/>            | Project is excluded. Submit <b>variance</b> for <u>Sites with Land Disturbances to Undeveloped Land that will Remain Undeveloped Excluded from Permanent Water Quality Requirements</u> .<br>Proceed to 3.2.5.                                                        |
| 3.2.5      | Will the post-project condition result in surface water discharge during the 80th percentile storm runoff event?                                                                                                                                                                                                                                                                                 | No<br>Yes | <input type="checkbox"/><br><input type="checkbox"/>            | Project is excluded. Submit <b>study</b> along with <b>variance</b> for <u>Non-residential and Non-commercial Infiltration Conditions Excluded from Permanent Water Quality Requirements</u> .<br>This exclusion does not apply. Permanent water quality is required. |
| <b>3.3</b> | <b>Category 3: Residential, Agricultural and Commercial projects</b>                                                                                                                                                                                                                                                                                                                             |           |                                                                 |                                                                                                                                                                                                                                                                       |
| 3.3.1      | Is the project a single-family residential lot, or agricultural zoned lands, greater than or equal to 2.5 acres in size per dwelling unit?                                                                                                                                                                                                                                                       | Yes<br>No | <input type="checkbox"/><br><input checked="" type="checkbox"/> | Proceed to next line.<br>Proceed to 3.3.2.                                                                                                                                                                                                                            |
|            | Is the project site greater than 10% impervious?                                                                                                                                                                                                                                                                                                                                                 | No<br>Yes | <input type="checkbox"/><br><input checked="" type="checkbox"/> | Project is excluded. Submit <b>variance</b> for <u>Large Lot Single Family Sites Excluded from Permanent Water Quality Requirements</u> .<br>Proceed to next line.                                                                                                    |
|            | Is the project site greater than 20% impervious?                                                                                                                                                                                                                                                                                                                                                 | Yes<br>No | <input type="checkbox"/><br><input checked="" type="checkbox"/> | This exclusion does not apply. Permanent water quality is required.<br>Proceed to next line.                                                                                                                                                                          |
|            | Will the post-project condition result in surface water discharge during the 80th percentile storm runoff event?                                                                                                                                                                                                                                                                                 | No<br>Yes | <input checked="" type="checkbox"/><br><input type="checkbox"/> | Project is excluded. Submit <b>study</b> along with <b>variance</b> for <u>Large Lot Single Family Sites Excluded from Permanent Water Quality Requirements</u> .<br>This exclusion does not apply. Permanent water quality is required.                              |
|            |                                                                                                                                                                                                                                                                                                                                                                                                  |           |                                                                 |                                                                                                                                                                                                                                                                       |

| Section | Questions                                                                                               | Response | Check those that apply              | Instructions                                                                                                                                                                                                                       |
|---------|---------------------------------------------------------------------------------------------------------|----------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.3.2   | Will 100% of the runoff from the residential or commercial site be captured?                            | Yes      | <input type="checkbox"/>            | This exclusion does not apply. Permanent water quality is required.                                                                                                                                                                |
|         |                                                                                                         | No       | <input checked="" type="checkbox"/> | Proceed to next line.                                                                                                                                                                                                              |
|         | Is all or a portion of the site undeveloped or will it remain undeveloped after construction?           | Yes      | <input type="checkbox"/>            | This portion of the project is excluded. Submit <b>variance</b> for <u>Sites with Land Disturbance to Undeveloped Land that will Remain Undeveloped Excluded from Permanent Water Quality Requirements</u> . Proceed to next line. |
|         |                                                                                                         | No       | <input checked="" type="checkbox"/> | Proceed to next line.                                                                                                                                                                                                              |
|         | Is the remaining untreated impervious area greater than 20% of the site?                                | Yes      | <input type="checkbox"/>            | This exclusion does not apply. Permanent water quality is required.                                                                                                                                                                |
|         |                                                                                                         | No       | <input checked="" type="checkbox"/> | Proceed to next line.                                                                                                                                                                                                              |
|         | Is the remaining untreated impervious area greater than one acre?                                       | Yes      | <input type="checkbox"/>            | This exclusion does not apply. Permanent water quality is required.                                                                                                                                                                |
|         |                                                                                                         | No       | <input checked="" type="checkbox"/> | Proceed to next line.                                                                                                                                                                                                              |
|         | Is it practicable to capture runoff from portions of the site that will not drain to a control measure? | No       | <input checked="" type="checkbox"/> | Document justification demonstrating that it is not practicable to capture runoff from this portion of the site in the <b>drainage report</b> . No further action is needed.                                                       |
|         |                                                                                                         | Yes      | <input type="checkbox"/>            | This exclusion does not apply. Permanent water quality is required.                                                                                                                                                                |