



Board of Adjustment Staff Report

Meeting Date: June 7, 2018

Agenda Item: 8C

SPECIAL USE PERMIT CASE NUMBER: WSUP18-0006 (Arrowcreek Middle School Grading)

BRIEF SUMMARY OF REQUEST: To approve a special use permit for major grading of an area of approximately ±28.4 acres with ±247,980 cubic yards of cuts and ±251,748 cubic yards of fill to facilitate the construction of a new Middle School

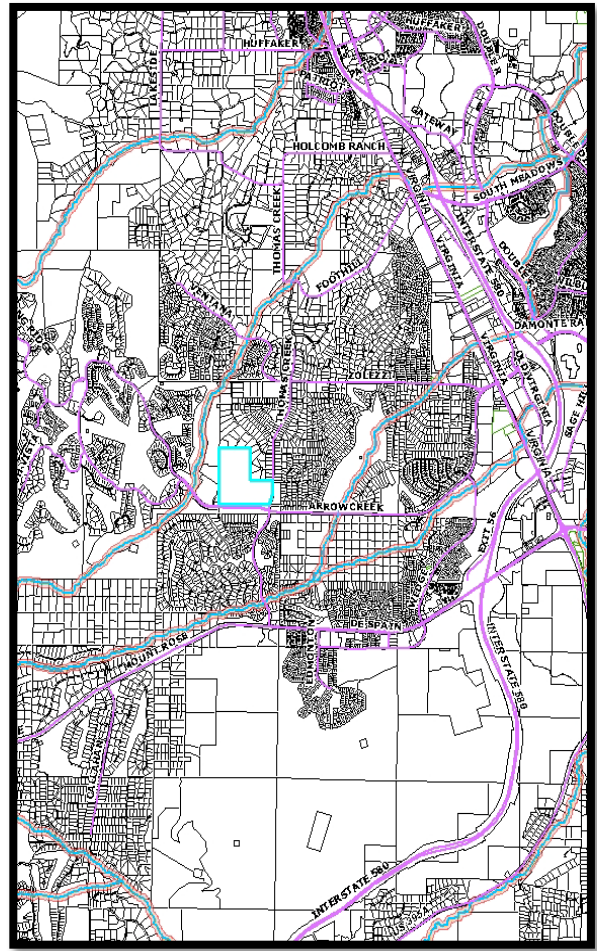
STAFF PLANNER:

Planner's Name: Julee Olander
Phone Number: 775.328.3627
E-mail: jolander@washoecounty.us

CASE DESCRIPTION

For possible action, hearing, and discussion to approve a special use permit for major grading of an area of approximately ±28.4 acres with ±247,980 cubic yards of cuts and ±251,748 cubic yards of fill and to allow slopes greater than 10 feet in height to facilitate the construction of a new Middle School

Applicant:	Washoe County School District
Property Owner:	United States of America
Location:	North side of Arrowcreek Parkway, west of the intersection with Thomas Creek Road and east of Crossbow Court
APN:	049-010-29
Parcel Size:	±91.46 acres
Master Plan:	Suburban Residential
Regulatory Zone:	Low Density Suburban (LDS)
Area Plan:	Southwest Area Plan
Citizen Advisory Board:	South Truckee Meadows/Washoe Valley
Development Code:	Authorized in Article 438, Grading and Article 810, Special Use Permits
Commission District:	2 – Commissioner Lucey



STAFF RECOMMENDATION

APPROVE

APPROVE WITH CONDITIONS

DENY

POSSIBLE MOTION

I move that, after giving reasoned consideration to the information contained in the staff report and information received during the public hearing, the Washoe County Board of Adjustment approve, with conditions, Special Use Permit Case Number WSUP18-0006 for Washoe County School District, having made all five findings in accordance with Washoe County Code Section 110.810.30

(Motion with Findings on Page 11)

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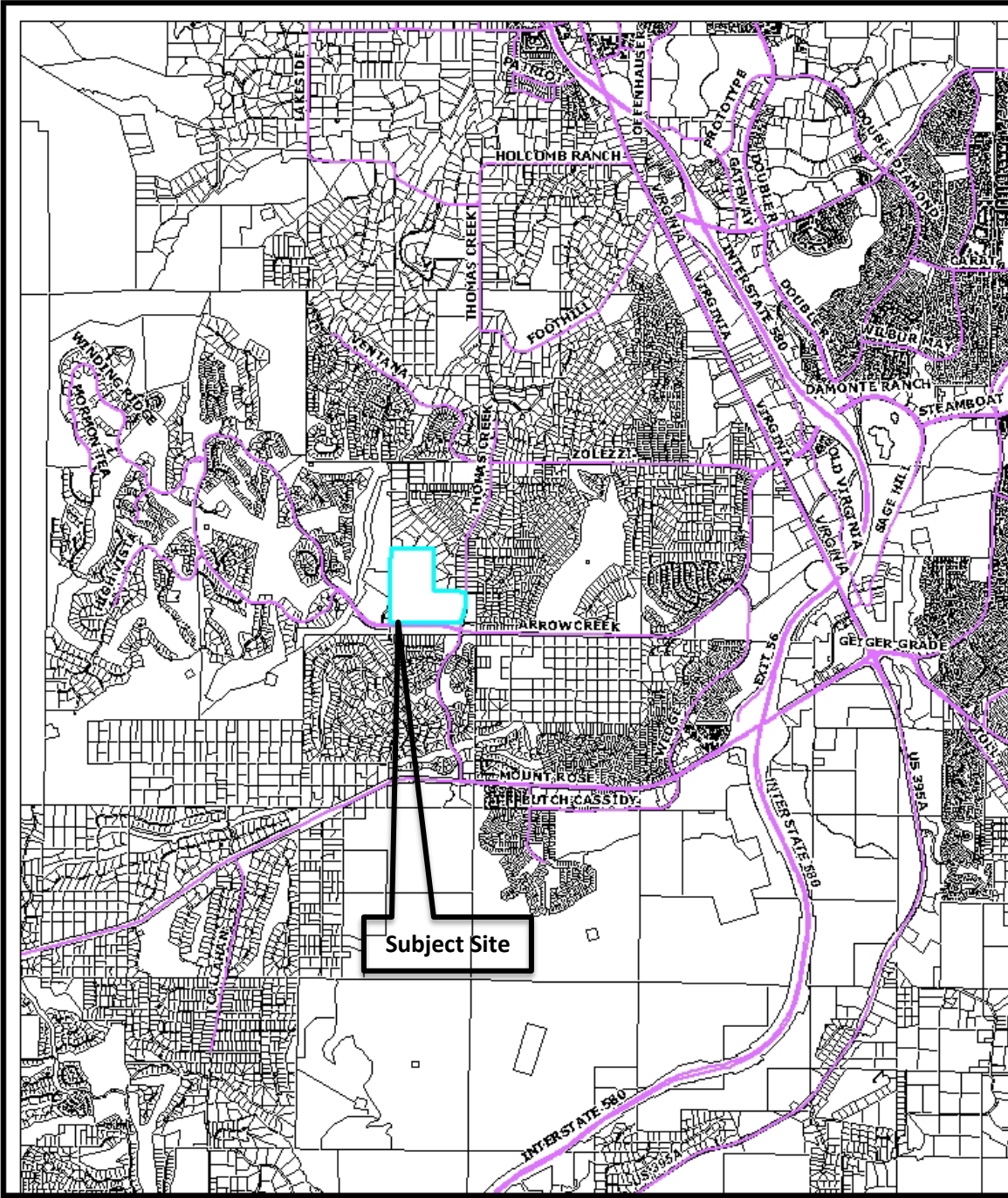
Special Use Permit

The purpose of a Special Use Permit is to allow a method of review to identify any potential harmful impacts on adjacent properties or surrounding areas for uses that may be appropriate within a regulatory zone; and to provide for a procedure whereby such uses might be permitted by further restricting or conditioning them so as to mitigate or eliminate possible adverse impacts. If the Board of Adjustment grants an approval of the Special Use Permit, that approval is subject to Conditions of Approval. Conditions of Approval are requirements that need to be completed during different stages of the proposed project. Those stages are typically:

- Prior to permit issuance (i. e. a grading permit, a building permit, etc.)
- Prior to obtaining a final inspection and/or a certificate of occupancy on a structure
- Prior to the issuance of a business license or other permits/licenses
- Some Conditions of Approval are referred to as “Operational Conditions.” These conditions must be continually complied with for the life of the business or project.

The Conditions of Approval for Special Use Permit Case Number WSUP18-0006 are attached to this staff report and will be included with the Action Order.

The subject property has a regulatory zone of Low Density Suburban (LDS). The proposed grading, an area of approximately ±28.4 acres, with ±247,980 cubic yards of cuts and ±251,748 cubic yards of fill to facilitate construction of a new middle school, is permitted in all regulatory zones with a Special Use Permit (SUP) in accordance with Washoe County Code (WCC) Section 110.438.35. Therefore, the applicant is seeking approval of this SUP from the Board of Adjustment.



Vicinity Map



Looking west from site



Looking west from site, adjacent to residences



Looking east from site

Project Evaluation

The proposed use on the site, a middle school to be established by the Washoe County School District (WCSD), is allowed by right without discretionary review in accordance with Article 440, *Public School Facilities Design Standards*, of the Washoe County Development Code. That portion of Code reads, in relevant part, as follows:

“The Public School Facilities (Education Use Type) are allowed, without discretionary review, in all regulatory zones, with the exception of “Industrial” and “Open Space,” subject to one or more site plan review meetings between the Washoe County Planning and Development Division and the Washoe County School District.”

It was determined that, the site required grading is in excess of the thresholds of “Major Grading” in accordance with Article 438, *Grading Standards*, of the Washoe County Development Code, specifically, the thresholds that will be exceeded include: 1) Grading on slopes of less than (flatter than) fifteen (15%) percent of more than four (4) acres on a parcel of any size; the WCSD is proposing to grade approximately ±28.4 acres, and 2) Excavation of five thousand (5,000) cubic yards or more whether the material is intended to be permanently located on the project site or temporarily stored on site for relocation to another site; the WCSD is proposing to excavate approximately ±247,980 cubic yards of cuts and ±251,748 cubic yards of fill. There will be no import or export of earthen material and the grading is design to balance on site.

The ±91.46 acre subject site is vacant with low growing native vegetation and no trees. The site is currently owned by the U. S. Forest Service and there has been minimal disturbance on the site. There are a number of aspects of the proposed grading that are important to emphasize. The applicant requested after the application was submitted; to vary the natural slopes by more than 10 feet in elevation (See Exhibit B). WCC Section 110.438.45 (c) states that, “Finish grading shall not vary from the natural slope by more than ten (10) feet in elevation. Exposed finish grade slopes greater than ten (10) feet in height may be allowed upon the approval of a director’s modification of

standards by the Director of the Community Development upon recommendation by the County Engineer.” In addition WCC Section 110.810.20(e) states that, “The Planning Commission, Board of Adjustment, or a hearing examiner may take action to approve, approve with conditions, modify, modify with conditions, or deny the special use permit request. The Planning Commission, Board of Adjustment, or a hearing examiner may also vary standards of the Development Code as part of the approval of a special use permit application...” The WCSD is seeking to grade slopes greater than ten feet in height. The Board of Adjustment is a higher level of review than the Director of the Planning and Building Division (i.e. Community Development as stated in the Code). It is the opinion of staff that the Board of Adjustment has the authority to approve the requested slopes, with the approval of the Special Use Permit. It is also the opinion of staff that grading of slopes greater than ten feet in height will not create a detriment to the surrounding area as those slopes will be substantially screened from view from adjacent residences by the topography of the area and by the future construction of the middle school.

A proposed condition of approval has been included to require revegetation of all areas disturbed by grading activities. That condition includes the provision that juniper tree seeds of the type common to the subject site will be included in the revegetation seed mix. Over time native trees may help to further mitigate the visual impact of graded slopes.

The application indicates that the design of the grading will minimize the impact to the neighboring residential and the fill slopes will not exceed 3:1 slope. The visual impact of the grading will be screened from public view, adjacent roadways, and neighboring properties with extensive landscaping that includes over ±5.6 acres to be landscaped with 566 trees and 2,492 shrubs. There will be a mixture of deciduous and conifer trees and all areas that are disturbed will be seeded with native revegetation seed mix and temporary irrigation. Because the subject site is adjacent to existing residences, hours of operation for grading have been included in the proposed conditions of approval. Working hours are proposed to be limited to the hours: between 7 a.m. and 7 p.m. during the week; between 9 a.m. and 7 p.m. on Saturday; and no grading activity is permitted on Sunday.

It is the evaluation of staff that the proposed grading is consistent with the Master Plan and the Southwest Truckee Meadows Area Plan as there are no specific Policies or Action Programs included in the Southwest Truckee Meadows Area Plan that are applicable to the proposed grading for a public middle school. Further, staff believes that adequate roadways and utilities will be provided to the site, as the grading is intended to create appropriate access and facilitate construction of a public middle school. There are challenges to developing the site, however, given careful consideration of the configuration of grading proposed to facilitate construction of a public middle school, the site can be considered suitable for the development proposed. Likewise, given careful consideration and meaningful conditions of approval, it is the opinion of staff that approval of the proposed special use permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area. There is no military installation within the required notice area for this special use permit. Given this evaluation staff recommends approval of the Special Use Permit, subject to the imposition of the proposed conditions of approval included at Exhibit A to this report.

South Truckee Meadows/Washoe Valley Citizen Advisory Board (STM/WV CAB)

The proposed project was presented by the applicant’s representative at the regularly scheduled Citizen Advisory Board meeting on May 3, 2018. The CAB minutes (see Exhibit C) reflect discussion on the following items:

- Traffic in the area and snow removal
- Ownership of the site
- Dust and stormwater management
- Views from houses adjacent to site

- Flooding

Reviewing Agencies

The following agencies received a copy of the project application for review and evaluation.

- Bureau of Land Management
- US Forest Service
- State of Nevada
 - Department of Environmental Protection
 - Division of Forestry
 - Department of Wildlife
- Washoe County Community Services Department
 - Planning and Building Division
 - Geographic Information Systems
 - Engineering and Capital Projects Division
 - Utilities/Water Rights
 - Parks and Open Spaces
 - Traffic Engineer
- Washoe County Health District
 - Air Quality Management Division
 - Environmental Health Services Division
 - Emergency Medical Services
- Washoe County Regional Animal Services
- Washoe County Sheriff Office
- Truckee Meadows Fire Protection District
- Regional Transportation Commission
- Washoe-Storey Conservation District
- Washoe County School District
- City of Reno
- Nevada Historic Preservation

Four out of the twenty-two above listed agencies/departments provided comments and/or recommended conditions of approval in response to their evaluation of the project application. A **summary** of each agency's comments and/or recommended conditions of approval and their contact information is provided. The Conditions of Approval document is attached to this staff report (refer to Exhibit A) and will be included with the Action Order.

- Washoe County Planning and Building Division addressed the hours of construction, revegetation, and visual mitigation standards for the project.
Contact: Julee Olander, 775.328.3627, jolander@washoecounty.us
- Washoe County Engineering and Capital Projects Division addressed the requirement for complete construction drawings, Stormwater Discharge Permit, a hydrology report, and

technical standards for proposed roadways and drainage features associated with the project.

Contact: Leo Vesely & Walt West, 775.328.2313 (Leo) & 775.328.2310 (Walt), lvesely@washoecounty.us & wwest@washoecounty.us

- Washoe County Health District addressed the requirement for dust control permit.

Contact: Mike Wolf, 775.328.7206, mwolf@washoecounty.us

- Nevada Department of Environmental Protection addressed the requirement for construction stormwater and dust control permit.

Contact: Patrick Mohn, 775.687.9419, pmohn@ndep.nv.gov

Staff Comment on Required Findings

WCC Section 110.810.30, Article 810, *Special Use Permits*, requires that all of the following findings be made to the satisfaction of the Washoe County Board of Adjustment before granting approval of the request. Staff has completed an analysis of the special use permit application and has determined that the proposal is in compliance with the required findings as follows.

1. Consistency. That the proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the Southwest Area Plan.

Staff Comment: There are no specific Policies or Action Programs included in the Master Plan or Southwest Area Plan that are applicable to the proposed grading for a public Middle School, therefore the proposed grading is found to be consistent.

2. Improvements. That adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven.

Staff Comment: Adequate roadways, sanitation, water supply, drainage, and other necessary facilities and utilities will be provided to the site, as the grading is intended to create appropriate access and facilitate construction of a public Middle School.

3. Site Suitability. That the site is physically suitable for grading to facilitate a public Middle School, and for the intensity of such a development.

Staff Comment: Given careful consideration of the configuration of grading proposed to facilitate construction of a public Middle School, the site can be considered suitable for the development proposed.

4. Issuance Not Detrimental. That issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area.

Staff Comment: Given careful consideration and meaningful conditions of approval, it is the opinion of staff that approval of the proposed special use permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area.

5. Effect on a Military Installation. Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

Staff Comment: There is no military installation within the area of required notice for this special use permit.

Recommendation

Those agencies which reviewed the application recommended conditions in support of approval of the project. Therefore, after a thorough analysis and review, Special Use Permit Case Number WSUP18-0006 is being recommended for approval with conditions. Staff offers the following motion for the Board consideration.

Motion

I move that, after giving reasoned consideration to the information contained in the staff report and information received during the public hearing, the Washoe County Board of Adjustment approve with conditions Special Use Permit Case Number WSUP18-0006 for Washoe County School District, having made all five findings in accordance with Washoe County Code Section 110. 810. 30:

1. Consistency. That the proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the Southwest Area Plan;
2. Improvements. That adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven;
3. Site Suitability. That the site is physically suitable for grading to facilitate a public Middle School, and for the intensity of such a development;
4. Issuance Not Detrimental. That issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area;

Appeal Process

Board of Adjustment action will be effective 10 calendar days after the written decision is filed with the Secretary to the Board of Adjustment and mailed to the applicant, unless the action is appealed to the Washoe County Board of County Commissioners, in which case the outcome of the appeal shall be determined by the Washoe County Board of County Commissioners . Any appeal must be filed in writing with the Planning and Building Division within 10 calendar days from the date the written decision is filed with the Secretary to the Board of Adjustment and mailed to the applicant.

Applicant: Washoe County School District
Attn: Adam Searcy and Mike Boster
14101 Old Virginia Rd.
Reno, NV 89521
e-mail: adam.searcy@washoecschools.net
mboster@washoeschools.net

Owner: United States of America
Attn: Bill Dunkelberger
Sparks, NV 89431
e-mail: wadunkelberger@fs.fed.us

Representatives: Lumos & Associates
Attn: Angela Fuss
9222 Prototype Drive
Reno, NV 89512
e-mail: afuss@lumosinc.com



Conditions of Approval

Special Use Permit Case Number WSUP18-0006

The project approved under Special Use Permit Case Number WSUP18-0006 shall be carried out in accordance with the Conditions of Approval granted by the Board of Adjustment on June 7, 2018. Conditions of Approval are requirements placed on a permit or development by each reviewing agency. These Conditions of Approval may require submittal of documents, applications, fees, inspections, amendments to plans, and more. These conditions do not relieve the applicant of the obligation to obtain any other approvals and licenses from relevant authorities required under any other act.

Unless otherwise specified, all conditions related to the approval of this Special Use Permit shall be met or financial assurance must be provided to satisfy the conditions of approval prior to issuance of a grading or building permit. The agency responsible for determining compliance with a specific condition shall determine whether the condition must be fully completed or whether the applicant shall be offered the option of providing financial assurance. All agreements, easements, or other documentation required by these conditions shall have a copy filed with the County Engineer and the Planning and Building Division.

Compliance with the conditions of approval related to this Special Use Permit is the responsibility of the applicant, his/her successor in interest, and all owners, assignees, and occupants of the property and their successors in interest. Failure to comply with any of the conditions imposed in the approval of the Special Use Permit may result in the institution of revocation procedures.

Washoe County reserves the right to review and revise the conditions of approval related to this Special Use Permit should it be determined that a subsequent license or permit issued by Washoe County violates the intent of this approval.

For the purpose of conditions imposed by Washoe County, “may” is permissive and “shall” or “must” is mandatory.

Conditions of Approval are usually complied with at different stages of the proposed project. Those stages are typically:

- Prior to permit issuance (i.e., grading permits, building permits, etc.).
- Prior to obtaining a final inspection and/or a certificate of occupancy.
- Prior to the issuance of a business license or other permits/licenses.
- Some “Conditions of Approval” are referred to as “Operational Conditions.” These conditions must be continually complied with for the life of the project or business.

The Washoe County Commission oversees many of the reviewing agencies/departments with the exception of the following agencies.

- **The DISTRICT BOARD OF HEALTH, through the Washoe County Health District, has jurisdiction over all public health matters in the Health District. Any conditions set by the Health District must be appealed to the District Board of Health.**

FOLLOWING ARE CONDITIONS OF APPROVAL REQUIRED BY THE REVIEWING AGENCIES. EACH CONDITION MUST BE MET TO THE SATISFACTION OF THE ISSUING AGENCY.

Washoe County Planning and Building Division

1. The following conditions are requirements of Planning and Building, which shall be responsible for determining compliance with these conditions.

Contact Name – Julee Olander, 775.328.3627, jolander@washoecounty.us

- a. The applicant shall demonstrate substantial conformance to the plans approved as part of this special use permit. The Planning and Building Division shall determine compliance with this condition.
- b. The applicant shall submit complete construction plans and building permits shall be issued within two years from the date of approval by Washoe County. The applicant shall complete construction within the time specified by the building permits. Compliance with this condition shall be determined by the Planning and Building Division.
- c. The applicant shall attach a copy of the action order approving this project to all administrative permit applications (including building permits) applied for as part of this special use permit.
- d. All areas disturbed by grading activities shall be revegetated using a seed mix of native plants. The seed mix shall include juniper tree seeds.
- e. All retaining walls constructed of concrete materials shall be painted or stained a solid, muted color to blend in with the surrounding geology.
- f. All retaining walls constructed of rock brought from offsite shall be painted or stained a solid, muted color to blend in with the surrounding geology.
- g. All retaining walls constructed of rock from subject site are not required to be painted or stained a solid, muted color to blend in with the surrounding geology.
- h. All boulders recovered during grading on site or exposed on site shall be placed on cut and filled slopes among the required landscaping.
- i. The entire perimeter of the project site shall be fenced with temporary construction fencing to inhibit unauthorized access during grading activities.
- j. Grading and construction activity shall be limited to the following hours: between 7 a.m. and 7 p.m. during the week; between 9 a.m. and 7 p.m. on Saturday; and no grading activity is permitted on Sunday.
- k. All trash and similar debris within the project area shall be removed.
- l. A note shall be placed on all construction drawings and grading plans stating:

NOTE

Should any cairn or grave of a Native American be discovered during site development, work shall temporarily be halted at the specific site and the Sheriff's Office as well as the State Historic Preservation Office of the Department of Conservation and Natural Resources shall be immediately notified per NRS 383.170.

- m. The following **Operational Conditions** shall be required for the life of the:

- i. This special use permit shall remain in effect until or unless it is revoked or is inactive for one year.
- ii. Failure to comply with the Conditions of Approval shall render this approval null and void. Compliance with this condition shall be determined by the Planning and Building Division.
- iii. The applicant and any successors shall direct any potential purchaser/operator of the site and/or the special use permit to meet with the Planning and Building Division to review Conditions of Approval prior to the final sale of the site and/or the special use permit. Any subsequent purchaser/operator of the site and/or the special use permit shall notify the Planning and Building Division of the name, address, telephone number, and contact person of the new purchaser/operator within 30 days of the final sale.

Washoe County Engineering and Capital Projects

2. The following conditions are requirements of the Engineering Division, which shall be responsible for determining compliance with these conditions.

Contact Name – Leo Vesely, 775.328.2313, ivesely@washoecounty.us

- a. A complete set of construction improvement drawings, including an on-site grading plan, shall be submitted when applying for a building/grading permit. Grading shall comply with best management practices (BMP's) and shall include detailed plans for grading, site drainage, erosion control (including BMP locations and installation details), slope stabilization, and mosquito abatement. Placement or removal of any excavated materials shall be indicated on the grading plan. Silts shall be controlled on-site and not allowed onto adjacent property.
- b. For construction areas larger than 1 acre, the developer shall obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit and submit a copy to the Engineering Division prior to issuance of a grading permit.
- c. The developer shall complete and submit the Construction Permit Submittal Checklist and pay the Construction Stormwater Inspection Fee prior to obtaining a grading permit.
- d. If material is to be exported from the site, the plans shall note where exported materials will be taken and a grading permit shall be obtained for the import site. Exported materials shall not be sold without the proper business license.
- e. A grading bond of \$2,000/acre of disturbed area shall be provided to the Engineering Division prior to any grading.
- f. Cross-sections indicating cuts and fills shall be submitted when applying for a grading permit. Estimated total volumes shall be indicated.
- g. All disturbed areas left undeveloped for more than 30 days shall be treated with a dust palliative. Disturbed areas left undeveloped for more than 45 days shall be revegetated. Methods and seed mix must be approved by the County Engineer with technical assistance from the Washoe-Storey Conservation District. The applicant shall submit a revegetation plan to the Washoe-Storey Conservation District for review.

DRAINAGE (COUNTY CODE 110.416, 110.420, and 110.421)

Contact Name- Walter West, 775.328.2310, wwest@washoecounty.us

- h. A detailed hydrology/hydraulic report prepared by a registered engineer shall be submitted to the Engineering Division for review and approval. The report shall include the locations, points of entry and discharge, flow rates and flood limits of all 5- and 100-

year storm flows impacting both the site and offsite areas and the methods for handling those flows. The report shall include all storm drain pipe and ditch sizing calculations and a discussion of and mitigation measures for any impacts on existing offsite drainage facilities and properties.

- i. Any increase in storm water runoff resulting from the development and based upon the 5-year and 100-year storm shall be detained on site to the satisfaction of the County Engineer. The proposed detention pond dam with retaining wall shall provide for emergency overflow of the 100-year storm. The spillway and downstream channel shall be designed to protect from scour and erosion.
- j. Sediment loading to the detention basin shall be estimated and accounted for with the design of the detention basin.
- k. With the submittal of the plans for a grading permit, the design shall incorporate Low Impact Development (LID) design features for the project if LID practices are suitable for this site. LID improvements shall retain onsite non-stormwater discharge (e.g. nuisance flow from landscaping irrigation) and a minimum 2-year return frequency storm volume. The retained volume shall be designed to percolate in accordance with and Washoe County Engineering and Health District requirements.
- l. Standard reinforced concrete headwalls or other approved alternatives shall be placed on the inlet and outlet of all drainage structures and rip rap shall be used to prevent erosion at the inlets and outlets of all pipe culverts to the satisfaction of the County Engineer.
- m. The developer shall provide pretreatment for petrochemicals and silt for all storm drainage from the site to the satisfaction of the County Engineer.

Nevada Department of Environmental Protection

3. The following conditions are requirements of the Nevada Department of Environmental Protection, which shall be responsible for determining compliance with these conditions.

Contact Name – Patrick Mohn, 775.687.9419, pmohn@ndep.nv.gov

- a. Grading and excavation will require both Construction Stormwater and dust control permit, to be obtained prior to the initiation of clearing, grading, and excavation activities.

Washoe County Health District

4. The following conditions are requirements of the Nevada Department of Environmental Protection, which shall be responsible for determining compliance with these conditions.

Contact: Mike Wolf, 775.328.7206, mwolf@washoecounty.us

- a. A dust control permit will be required to be obtained before any work begins.

*** End of Conditions ***



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www.LumosInc.com

Reno
9222 Prototype Drive
Reno, Nevada
775.827.6111

April 25, 2018

Julee Olander
Washoe County Community Services
1001 E. 9th Street
Reno, NV 89512

Re: Middle School at Arrowcreek Special Use Permit

Dear Julee,

The letter has been provided as an addendum to the Middle School at Arrowcreek special use permit package that was submitted earlier this month. As part of the special use permit request, the applicant is asking to vary the grading requirements from Article 110.438.45(c) and allowing exposed finish grade slopes greater than ten feet in height. The Director of Community Development may allow a director's modification of standards upon the recommendation by the County Engineer.

The proposed grading will result in a maximum cut of 30 feet in height and a maximum fill of 32 feet in height. The site has been designed with a maximum wall height of 8 feet and designed with manufactured block. The majority of the grading will be needed to allow for the development of the proposed building, parking lot and sports fields. Significant landscaping and revegetation has been incorporated into the site design to help screen the earthwork.

Please contact me at 771-6408 if you have any questions.

Sincerely,

A handwritten signature in black ink that reads "Angela Fuss".

Angela Fuss, AICP
Planning Group Manager



South Truckee Meadows/Washoe Valley Citizen Advisory Board

DRAFT: Approval of these draft minutes, or any changes to the draft minutes, will be reflected in writing in the next meeting minutes and/or in the minutes of any future meeting where changes to these minutes are approved by the CAB. Minutes of the regular meeting of the South Truckee Meadows/Washoe Valley Citizen Advisory Board held May 3, 2018 6:00 p.m. the South Valleys Library at 15650A Wedge Parkway, Reno, Nevada.

1. *CALL TO ORDER/ DETERMINATION OF QUORUM - Meeting was called to order at by Steven Kelly at 6:00 p.m.

Member Present: Jim Rummings, Steven Kelly, Kimberly Rossiter. A quorum was determined.

Absent: Bob Vaught (alternate, not excused), Patricia Phillips (not excused), Jason Katz (excused).

2. *PLEDGE OF ALLEGIANCE - Steven Kelly led the Pledge of Allegiance.

3. *PUBLIC COMMENT -

Sherryl Sanders said she is here on behalf of Home Means Nevada to discuss human trafficking and homelessness. Rent is sky rocking, and people are living in weekly hotels. 27 people died of homelessness last year in our area. There are only band aids for these problems. She said they are focusing on priorities which include: Increase investment in affordable housing, support homeless services, and ensure economic growth for families in our community. Home Means Nevada is a non-partisan organization. Provide ongoing communication to help economic justice, housing, and homelessness. The more voters to engage, the more influence on elected officials.

Chief Charles Moore of Truckee Meadows Fire Protection District said the Fire District conducted a pilot program for green waste as an alternative to pile burning and disposal at the landfill; 750 tons green waste was collected. The green waste was taken to a green waste recycler who turned it into soil. With the success of the program, the program will be conducted twice a year. Look for an announcement for late May regarding the next green waste program. Also, look for an announcement regarding the opening of Station 14 located at Foothill Drive and Broken Hill Drive. There will be a grand opening mid-July, and antipant operating out of that station by mid-June.

Pablo Nava-Duran encouraged the board to pass the vote for the Washoe County School District to improve the schools in the Arrowcreek community. The other schools in the area are overcrowded, and this school will relieve overcrowding.

4. APPROVAL OF AGENDA FOR THE MEETING OF MAY 3, 2018– Jim Rummings moved to approve the agenda for **APRIL 5, 2018**. Kimberly Rossiter seconded the motion to approve the agenda for **MAY 3, 2018**. Motion passed unanimously.

5. APPROVAL OF THE MINUTES FOR THE MEETING OF APRIL 5, 2018– Jim Rummings moved to approve the minutes of **APRIL 5, 2018**. Kimberly Rossiter seconded the motion to approve the minutes. Motion passed unanimously.

6. DEVELOPMENT PROJECTS– The project description is provided below with links to the application or you may visit the Planning and Building Division website and select the Application Submittals page: https://www.washoecounty.us/csd/planning_and_development/index.php.

6.A. Special Use Permit Case Number WSUP18-0006 (Arrowcreek Middle School Grading) – Request for community feedback, discussion and possible action to forward community and Citizen Advisory Board comments to Washoe County staff on a request for major grading of an area of approximately ±28.4 acres involving ±247,980 cubic yards of cuts and ±251,748 cubic yards of fill to facilitate the construction of a new Middle School. (for Possible Action)

- **Applicant/Property Owner:** Washoe County School District/United States of America
- **Location:** On the north side of Arrowcreek Parkway, west of the intersection with Thomas Creek Road and east of Crossbow Court
- **Assessor’s Parcel Number:** 049-010-29
- **Staff:** Julee Olander, Planner 775-328-3627; jolander@washoecounty.us

Angela Fuss, project representative, gave an overview:

- Grading permit triggered the Special Use Permit
- 60 acres, US Forest Service. Education Land Grant Act – transfer land for school purpose.
- Input, Land Grant and Environmental processes
- June/July US Forest Service will Quit Claim the school to the District
- Deed restriction says the land has to be used for school.
- Cuts and fills – 3,700 cu yards of dirt for fill.
- Located next to Hunsberger Elementary off of Arrowcreek Parkway
- She showed a map of slopes/grading
- 8 foot wall will be constructed
- Site design considered the following aspects: identified fault lines, setback requirements, topography, the site design follows area plan.
- Grading plan includes screening with trees and shrubs
- This application doesn’t include aspects of the school, but addresses the grading only.

Public Comment:

Chris Hemlein asked about the management when the grading takes place. She asked about the timeline of grading and building construction. She wanted to know who is responsible for dust control, storm water run-off management so the neighbors aren’t affected in the area.

Kimberly Gomez said she is concerned about Arrowcreek Middle School. She said Thomas Creek was originally a farm road. It’s a narrow, two lane road. There are blind spots on that road. She is concerned that the road will be used as ingress or egress for the school. She wants to see a traffic study conducted. The road was congested during the fire. She said she is concerned with flooding. She said there is an open lot behind her home, and she wants to know if that lot will be used to stage equipment. It’s very windy in that area which means a lot of dust. She wants to know more about the traffic.

Mary Love said her property backs up to that school site. The entire land will be a huge school. She wants to know where the building will be constructed in relationship to the height. She asked they will build it on the hill with empty land. She asked if the land be the parking lot. She said all they will see a massive school. It will be 10 feet height. She asked how far they will cut into the land. The trees are great, but the building will be cutting off the view. She said she is concerned about the plans. She wants the school district to be honest with

the public. Please listen to the people who will be directly impacted. She asked what will happen with the 15 foot easement behind her house. There are a lot unanswered questions.

Craig Meckley said he lives adjacent to the property. Odyssey is the engineer for the project. He said he wants to know how the grading plans are going to address the flood issues. Q&D Construction built Arrowcreek 15 years ago. It changed the grading of the property. He said he has been in contact with Duke Lindeman with Washoe County Roads. Heavy rain has flowed through his property on four different occasions. He said he is a license landscape architecture for the State of Nevada and understands how water flows. He was told by the architect that issues have been addressed. He said he wants to know what's going to happen to the easement. The neighbors use the easement to walk their dogs. He said he has had a discussion with his legal team; they request to see a grading plan.

Angela Fuss responded to the public comment:

- This is a special use permit is the preliminary stage
- This application will go to the Board of Adjustments and then permits have to be submitted.
- Washoe County School District is responsible for the dust control per NDEP, Health District.
- Northeast corner of the property is set aside for detention of storm water.
- There will be a 20-25 foot grade change.
- There will not be an increasing storm water runoff. She said this project will be better for neighbors with increased storm water drainage.
- There is a traffic engineer involved; there will be improvements made at the Thomas and Arrowcreek intersection.
- In regards to the concerns about height, Angela said she has hard copies of the grading plan with contours, and she can address specific concerns with individuals after the meeting in regards to their property location.

A public member (whose name was not stated) asked about blind spot on Evening Song. She said she has seen accidents when it's icy and there are rollovers. Angela said this application is for grading only. There is a traffic engineer onboard who is developing recommendations. She said the biggest intersection they are focusing on is the Arrowcreek and Thomas Creek. Crossbow and Thomas Creek will have speed zone speed limit.

A public member (whose name was not stated) asked when the US Forest Service will make their decision. It's a foregone conclusion they will grant the land. Steven Kelly said that this board can't answer those questions.

A public member (his name was inaudible) said he is concerned about the dangerous road near Pine Middle school.

A public member (whose name was not stated) said Evening Song and Thomas Creek roads are old farm roads. When they plow, the snow fills the bike lane. Many people skid on that road. When you get an influx of traffic, it will be dangerous. No one is concerned for Evening Song. Please address this concern.

Jim Rummings asked how the county will coordinate with highway patrol. Roger Pelham, Washoe County Planner, said we are only discussing the grading application. Traffic is part of the development discussion. It's out of purview for tonight's discussion. It's allowed use. All codes have to be complied with.

MOTION: Jim Rummings recommend the application proceed through County in order to meet all the County requirements for approval. Kimberly Rossiter seconded the recommendation. Motion passed unanimously.

7. *CHAIRMAN/BOARD MEMBER ITEMS - No items were discussed.

8. *PUBLIC COMMENT – Limited to no more than three (3) minutes. Anyone may speak pertaining to any matter either on or off the agenda. The public are requested to submit a Request to Speak form to the Board Chairman. Comments are to be addressed to the Board as a whole.

Sherryl Sanders said she encourages voter registration in our area. Make our voters and officials aware of the homeless situation. She had a pledge form for people to sign to get involved. She had Home Means Nevada talking points with facts about the issues. Growth in the area has caused rent to sky rocket which means an increase in homelessness. The homeless are being served on Record Street. It affects all of us. It's environmental, economic, and social issue. Because we are gracious to the homeless, we are attracting the homeless. She said they are meeting with Bob Lucey on the May 16, 5:30 p.m. location is TBD. She encouraged everyone to take a look at the materials.

ADJOURNMENT - Meeting adjourned at 6:43 p.m.

Number of CAB members present: 3

Number of Public Present:

Presence of Elected Officials:

Number of staff present: 1

From: [Wolf, Mike](#)
To: [Olander, Julee](#)
Subject: RE: April Agency Review Memo II
Date: Thursday, May 17, 2018 3:41:36 PM

Both require dust control permits

Michael Wolf, CEM

Permitting and Enforcement Branch Chief | Air Quality Management Division | Washoe County Health District
mwolf@washoecounty.us | O: (775) 784-7206 | 1001 E. Ninth St., Bldg. B, Reno, NV 89512

OurCleanAir.com



 Please consider the environment before printing this e-mail.

From: Olander, Julee
Sent: Thursday, May 17, 2018 3:25 PM
To: Rubio, Wesley S; Wolf, Mike
Subject: FW: April Agency Review Memo II

Any conditions for Arrowcreek Middle School?

Julee Olander

Planner | Washoe County Community Services Department | Planning & Building Division
jolander@washoecounty.us | (775) 328-3627 | F(775)328-6133 | 1001 E. Ninth St., Bldg. A, Reno, NV 89512



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From: Fagan, Donna
Sent: Thursday, April 19, 2018 1:10 PM
To: Wolf, Mike; English, James; Rubio, Wesley S; Dayton, Brittany
Cc: Cona, Denise; Health – EHS Front Desk
Subject: April Agency Review Memo II

Mike, James, Wes, and Brittany,

Please find the attached Agency Review Memo with cases received this month by CSD, Planning and Building..

You've been asked to review the items as noted below. Click on the highlighted item descriptions for a link to the application.

Please send any comments or conditions to the planner for that item.

Mike: Item 1

James/Wes: Item 1 and 2

Brittany: Item 1

Thank you,
Donna

Donna Fagan

Office Support Specialist ½Washoe County Community Services Department ½Planning and Building Division
dfagan@washoecounty.us ½zo 775.328.3616 ½f 775.328.6133 ½1001 E. Ninth St., Bldg. A, Reno, NV 89520



Olander, Julee

From: Lawson, Jacqueline
Sent: Monday, April 23, 2018 3:46 PM
To: Olander, Julee
Cc: Dayton, Brittany
Subject: FW: April Agency Review Memo II
Attachments: April Agency Review Memo II.pdf

Hello Julee,

The EMS Program does not have any comments for Special Use Permit Case Number WSUP18-0006 (Arrowcreek Middle School Grading) included in April Agency Review Memo II (item 1). Please let me know if you have any questions.

Thank you

Jackie

From: Fagan, Donna
Sent: Thursday, April 19, 2018 1:10 PM
To: Wolf, Mike; English, James; Rubio, Wesley S; Dayton, Brittany
Cc: Cona, Denise; Health – EHS Front Desk
Subject: April Agency Review Memo II

Mike, James, Wes, and Brittany,

Please find the attached Agency Review Memo with cases received this month by CSD, Planning and Building..

You've been asked to review the items as noted below. Click on the highlighted item descriptions for a link to the application.

Please send any comments or conditions to the planner for that item.

Mike: Item 1

James/Wes: Item 1 and 2

Brittany: Item 1

Thank you,
Donna

Donna Fagan

Office Support Specialist | Washoe County Community Services Department | Planning and Building Division
dfagan@washoecounty.us | o 775.328.3616 | f 775.328.6133 | 1001 E. Ninth St., Bldg. A, Reno, NV 89520





WASHOE COUNTY

COMMUNITY SERVICES DEPARTMENT

Engineering and Capital Projects

1001 EAST 9TH STREET
PO BOX 11130
RENO, NEVADA 89520-0027
PHONE (775) 328-3600
FAX (775) 328.3699

Date: May 10, 2018

To: Julie Olander, Planning and Building Division

From: Walter H. West, P.E., Engineering and Capitol Projects Division

Re: Arrowcreek Middle School Special Use Permit for Grading WSUP18-0006
APN 049-010-29

GENERAL PROJECT DISCUSSION

Washoe County Engineering and Capital Project staff has reviewed the above referenced application. The proposed project consists of a single parcel for a proposed Washoe County School District middle school and is located on approximately 91.5 acres along the north side of Arrowcreek Parkway and west of Thomas Creek Road. This application is for grading only. The Engineering and Capital Projects Division recommends approval with the following comments and conditions of approval which supplement applicable County Code and are based upon our review of the site and the special use permit application prepared by Odyssey Engineering Incorporated. The County Engineer shall determine compliance with all the following conditions of approval.

For questions related to sections below, please see the contact name provided.

GENERAL CONDITIONS

Contact Information: Walter West, P.E. (775) 328-2310

1. A complete set of construction improvement drawings, including an on-site grading plan, shall be submitted when applying for a building/grading permit. Grading shall comply with best management practices (BMP's) and shall include detailed plans for grading, site drainage, erosion control (including BMP locations and installation details), slope stabilization, and mosquito abatement. Placement or removal of any excavated materials shall be indicated on the grading plan. Silts shall be controlled on-site and not allowed onto adjacent property.
2. For construction areas larger than 1 acre, the developer shall obtain from the Nevada Division of Environmental Protection a Stormwater Discharge Permit and submit a copy to the Engineering Division prior to issuance of a grading permit.
3. The developer shall complete and submit the Construction Permit Submittal Checklist and pay the Construction Stormwater Inspection Fee prior to obtaining a grading permit.
4. If material is to be exported from the site, the plans shall note where exported materials will be taken and a grading permit shall be obtained for the import site. Exported materials shall not be sold without the proper business license.
5. A grading bond of \$2,000/acre of disturbed area shall be provided to the Engineering Division prior to any grading.



INTEGRITY



EFFECTIVE
COMMUNICATION



QUALITY
PUBLIC SERVICE

Subject: Arrowcreek Middle School Special Use Permit for Grading WSUP18-0006
Date: May 11, 2018
Page: 2

6. Cross-sections indicating cuts and fills shall be submitted when applying for a grading permit. Estimated total volumes shall be indicated.
7. All disturbed areas left undeveloped for more than 30 days shall be treated with a dust palliative. Disturbed areas left undeveloped for more than 45 days shall be revegetated. Methods and seed mix must be approved by the County Engineer with technical assistance from the Washoe-Storey Conservation District. The applicant shall submit a revegetation plan to the Washoe-Storey Conservation District for review.

DRAINAGE (COUNTY CODE 110.416, 110.420, and 110.421)

Contact Information: Walter West, P.E. (775) 328-2310

1. A detailed hydrology/hydraulic report prepared by a registered engineer shall be submitted to the Engineering Division for review and approval. The report shall include the locations, points of entry and discharge, flow rates and flood limits of all 5- and 100-year storm flows impacting both the site and offsite areas and the methods for handling those flows. The report shall include all storm drain pipe and ditch sizing calculations and a discussion of and mitigation measures for any impacts on existing offsite drainage facilities and properties.
2. Any increase in storm water runoff resulting from the development and based upon the 5-year and 100-year storm shall be detained on site to the satisfaction of the County Engineer. The proposed detention pond dam with retaining wall shall provide for emergency overflow of the 100-year storm. The spillway and downstream channel shall be designed to protect from scour and erosion.
3. Sediment loading to the detention basin shall be estimated and accounted for with the design of the detention basin.
4. With the submittal of the plans for a grading permit, the design shall incorporate Low Impact Development (LID) design features for the project if LID practices are suitable for this site. LID improvements shall retain onsite non-stormwater discharge (e.g. nuisance flow from landscaping irrigation) and a minimum 2-year return frequency storm volume. The retained volume shall be designed to percolate in accordance with and Washoe County Engineering and Health District requirements.
5. Standard reinforced concrete headwalls or other approved alternatives shall be placed on the inlet and outlet of all drainage structures and rip rap shall be used to prevent erosion at the inlets and outlets of all pipe culverts to the satisfaction of the County Engineer.
6. The developer shall provide pretreatment for petrochemicals and silt for all storm drainage from the site to the satisfaction of the County Engineer.

From: Patrick Mohn
To: [Olander, Julee](#)
Subject: RE: April Agency Review Memo II
Date: Thursday, April 19, 2018 1:21:39 PM
Attachments: [image001.gif](#)

Julee,

The NDEP was asked to review Item 1, which is a Special Use Permit case, WSUP18-0006 for the Arrowcreek Middle School grading. Since the SUP request is for grading only, the only comment that the NDEP has is that a Construction Stormwater permit may be required, and also a dust control permit from the local agency prior to commencement of grading activities.

Pat Mohn, P.E.
NDEP-BWPC
775-687-9419

From: Fagan, Donna [DFagan@washoecounty.us]
Sent: Thursday, April 19, 2018 12:57 PM
To: Patrick Mohn
Subject: April Agency Review Memo II

Hi Pat,

Please find the attached Agency Review Memo with a cases received this month by CSD, Planning and Building..

You've been asked to review item #1. Click on the highlighted item descriptions for a link to the application.

Please send any comments or conditions to the planner for that item.

Thank you,
Donna

Donna Fagan
Office Support Specialist •Washoe County Community Services Department •Planning and Building Division
dfagan@washoecounty.us<<mailto:dfagan@washoecounty.us>> •o 775.328.3616 •f 775.328.6133 •1001 E. Ninth St.,
Bldg. A, Reno, NV 89520

[WC_logo3]<<http://www.washoecounty.us/>>



WASHOE COUNTY
COMMUNITY SERVICES
INTEGRITY COMMUNICATION SERVICE

P.O. Box 11130
Reno, Nevada 89520-0027
Phone: (775) 328-3600
Fax: (775) 328-3699

April 19, 2018

TO: Julee Olander, Planner, CSD, Planning & Development Division

FROM: Vahid Behmaram, Water Management Planner Coordinator, CSD

SUBJECT: Special Use Permit Case Number WSUP18-0006 (Arrowcreek Middle School Grading) APN: 049-010-29

Project description:

The applicant is proposing major grading of an area of approximately ± 28.4 acres with $\pm 247,980$ cubic yards of cuts and $\pm 251,748$ cubic yards of fill to facilitate the construction of a new Middle School.

The Community Services Department (CSD) recommends approval of this project with the following Water Rights conditions:

- 1) No Conditions.

From: Retired Renocop@earthlink.net
To: [Olander, Julee](#)
Cc: [Boyce Lands Bil](#)
Subject: RE: Special Use Permit Case Number WSUP18-0006
Date: Tuesday, May 01, 2018 9:21:59 AM

I still need the staff report but am opposed to WCSD spending taxpayer money and to Reno approving a permit on grading when they don't own the land! If the owner- US Government is doing the grading then maybe OK but if the WCSD is the applicant doing the grading on land they don't own, I'm strongly opposed. What if the deal falls through? Anything can happen with the US Govt. Then we are stuck with a dust bowl.

At a minimum make approval contingent and only after the land is formally transferred. I have heard the rhetoric from WCSD before. "is acquiring" "will take ownership". Well come back when you do!

I note too that this is for a middle school directly on known earthquake faults!

I'm out of town but please pass on my concerns to the CAB.

Jeff Church
775 544 7366
renocop@earthlink.net

-----Original Message-----

From: "Olander, Julee"
Sent: May 1, 2018 8:55 AM
To: "Retired Renocop@earthlink.net"
Subject: RE: Special Use Permit Case Number WSUP18-0006

Jeff,

I asked the School District your question and here is their answer-

WCSD is acquiring the property from the USFS through the Education Land Grant Act (ELGA) process, which makes federal lands available to school districts for school use. We applied about a year ago and we're in the final month or so of the process, having completed all of the requirements of the Act with the USFS. The USFS web page for the transfer is [here](#). WCSD will take ownership via a quitclaim from the USFS in June or July, so 60 acres will become WCSD property, though this SUP is only for the grading acreage noted.

Let me know if you have further questions.

Julee Olander

Planner | Washoe County Community Services Department | Planning & Building Division

jolander@washoecounty.us | (775) 328-3627 | F(775)328-6133 | 1001 E. Ninth St., Bldg. A, Reno, NV 89512



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From: Retired Renocop@earthlink.net [mailto:renocop@earthlink.net]

Sent: Monday, April 30, 2018 5:24 PM

To: Olander, Julee

Cc: Boyce Lands Bil

Subject: Special Use Permit Case Number WSUP18-0006

May I see the report on this? Who owns the land. How do we know that the US Govt will be turned over to WCSD or has it?

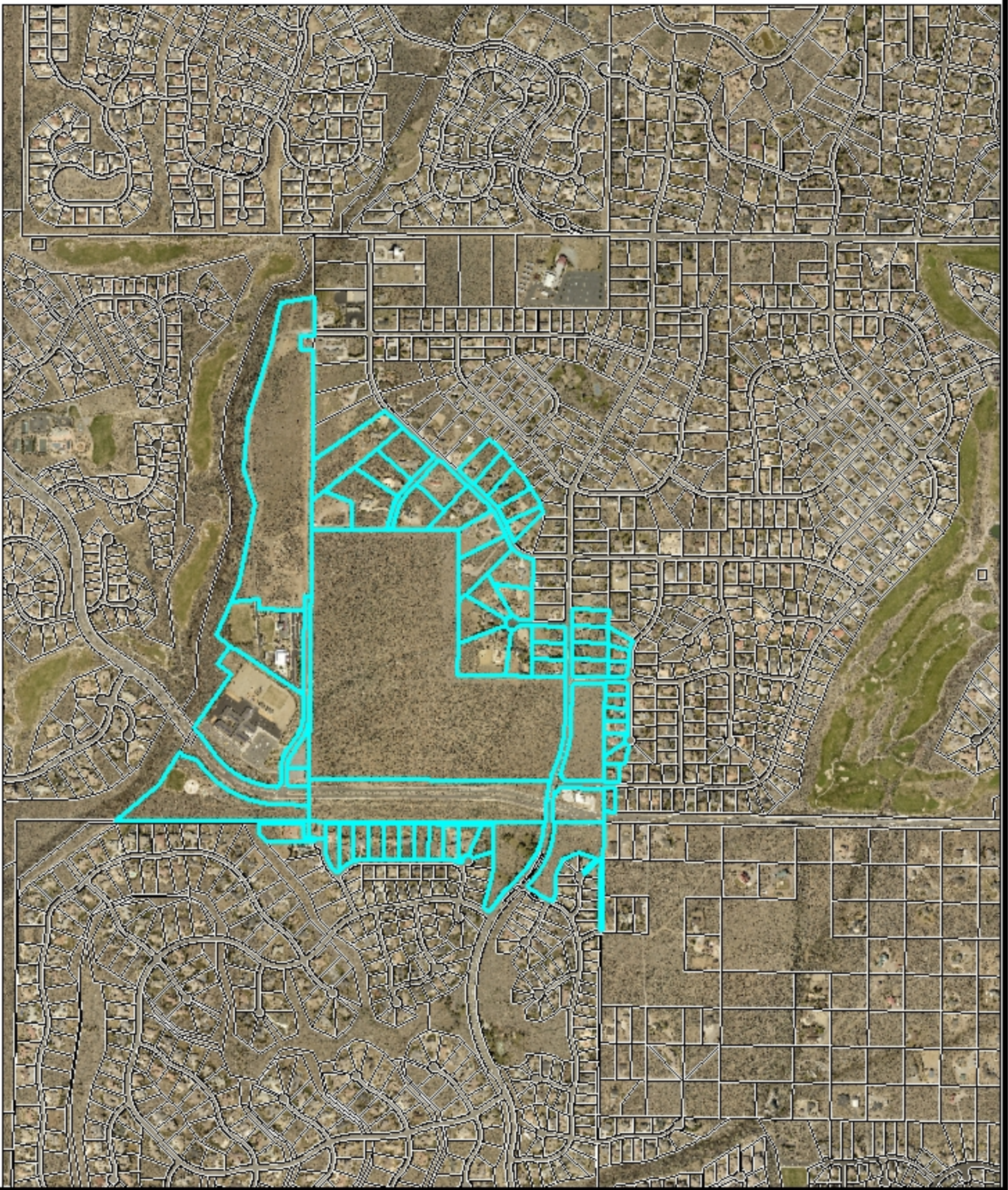
My fear is that, at Washoe taxpayer expense the school district does all this work, the land transfer falls thru and we are stuck with a dusty eye sore as has happened in the past.

Jeff

CAB AGENDA May 3rd:

6.A. Special Use Permit Case Number WSUP18-0006 (Arrowcreek Middle School Grading) – Request for community feedback, discussion and possible action to forward community and Citizen Advisory Board comments to Washoe County staff on a request for major grading of an area of approximately ±28.4 acres involving ±247,980 cubic yards of cuts and ±251,748 cubic yards of fill to facilitate the construction of a new Middle School. (for Possible Action) •

Applicant/Property Owner: Washoe County School District/United States of America • Location: On the north side of Arrowcreek Parkway, west of the intersection with Thomas Creek Road and east of Crossbow Court • Assessor's Parcel Number: 049-010-29 • Staff: Julee Olander, Planner; 775-328-3627; jolander@washoecounty.us



WSUP18-0006 (Arrowcreek Middle School Grading)
67 Parcels Noticed



0 500 1,000



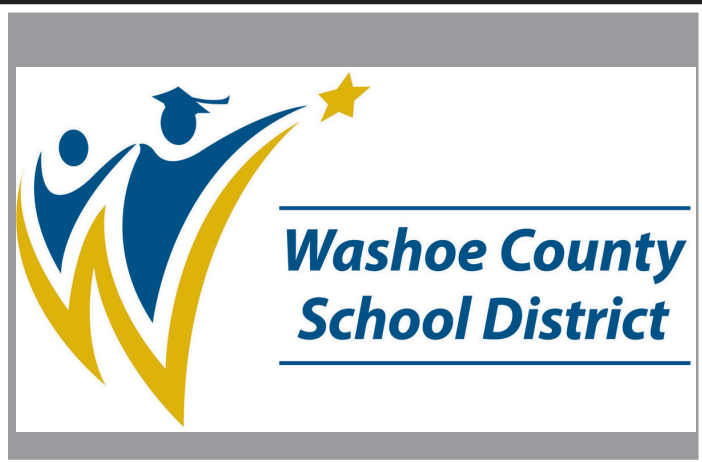
Feet

Community Services
Department



Post Office Box 11130
Reno, Nevada 89501

9222 Prototype Drive
Reno, Nevada 89521
Tel. 775.827.6111
Fax 775.827.6122
www.LumosInc.com



ARROWCREEK MIDDLE SCHOOL SPECIAL USE PERMIT

April 16, 2018

Prepared by:



WSUP18-0006
EXHIBIT G

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Washoe County Development Application	A
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Maps

Slope Map.....	Map Pocket
Grading Plan	Map Pocket
Cross Sections	Map Pocket
Cut/Fill Map	Map Pocket
Landscape Plan	Map Pocket

Project Request

Project Summary

Commissioner District: 2
Applicant: Washoe County School District
APN Number: 049-010-29
Request: This is a request for a Special Use Permit to allow grading per Washoe County Development Code Section 110.438.35(a).
Zoning: Low Density Suburban (LDS)
Master Plan: Suburban Residential
Planning Area: Southwest Truckee Meadows Planning Area

Project Background

In November of 2016, Washoe County voters approved WC-1, which gives the Washoe County School District (WCSD) funding to repair and renovate older schools, and to build new schools to address overcrowding. This approval came at a time when population growth within Washoe County has placed a strain on the School District resources and has led to overcrowding in many local schools. As the community is coming out of one of the worst recessions in history, the WCSD is working to address overcrowding in schools. Construction of a new middle school in south Reno has been identified as a high priority and immediate need for the community.

The WCSD has submitted an application requesting conveyance of 60 acres of U.S. Forest Service land through the Education Land Grant Act, which authorizes the Secretary of Agriculture to convey National Forest System lands to a public school district for use for educational purposes.

The WCSD is in the process of designing a new middle school located in south Reno. The proposed site (APN 049-010-29) is zoned Low Density Suburban (LDS), and has a master plan designation of Suburban Residential. The parcel is located in the Southwest Truckee Meadows Planning Area.

The site is located north of Arrowcreek Parkway and west of Thomas Creek Road. The west edge of the parcel abuts Crossbow Court, and is directly adjacent to Hunsberger Elementary and Sage Ridge Schools. The site is surrounded by single family homes to the north, east and south, with a vacant parcel on the northern third of the parcel's west edge and a vacant parcel at its southeastern edge. The property also abuts a 2.43-acre parcel owned by the Truckee Meadows Water Authority, at its northwestern corner.

The proposed use as a WCSD middle school, is allowed by right without discretionary review, in accordance with Article 440, Public School Facilities Design Standards, of the Washoe County

Development Code. Development of the site requires grading that exceeds the thresholds of "Major Grading" in accordance with Article 438, Grading Standards, of the Washoe County Development Code, specifically:

- 1) Grading on slopes of less than fifteen percent of more than four acres on a parcel of any size.
- 2) Excavation of five thousand cubic yards or more, whether the material is intended to be permanently located on the project site or temporarily stored on a site for relocation to another final site.

The proposed developed area of approximately 28.4 acres will result in $\pm 247,980$ cubic yards of cut and $\pm 251,748$ cubic yards of fill. This will result in $\pm 3,767$ cubic yards of overall fill for the project. The cut/fill slopes have been minimized with the addition of 8-foot tall retaining walls. The walls have been designed to create varying curvilinear contours, which breaks up the appearance of a manufactured slope. This is also in accordance with the Southwest Truckee Meadows Area Plan, which requires grading to complement the original contours of the landscape and minimize disruption of the natural topography.

The grading has been visually minimized through extensive landscaping that includes over ± 5.6 acres of landscape area. A total of 566 trees and 2,492 shrubs are included in the landscape design, which will help to screen the grading from public view on the adjacent roadways and neighboring properties. The mix of trees will include both deciduous and coniferous varieties measuring 1"-2" caliper shade and ornamental trees and 5'-7' tall evergreens. All disturbed areas will be seeded with a native revegetation seed mix and temporary irrigation.

This special use permit application is for grading only, and does not include specific information on the proposed school use. However, background information has been provided to better explain the uniqueness of the property use and parcel ownership.

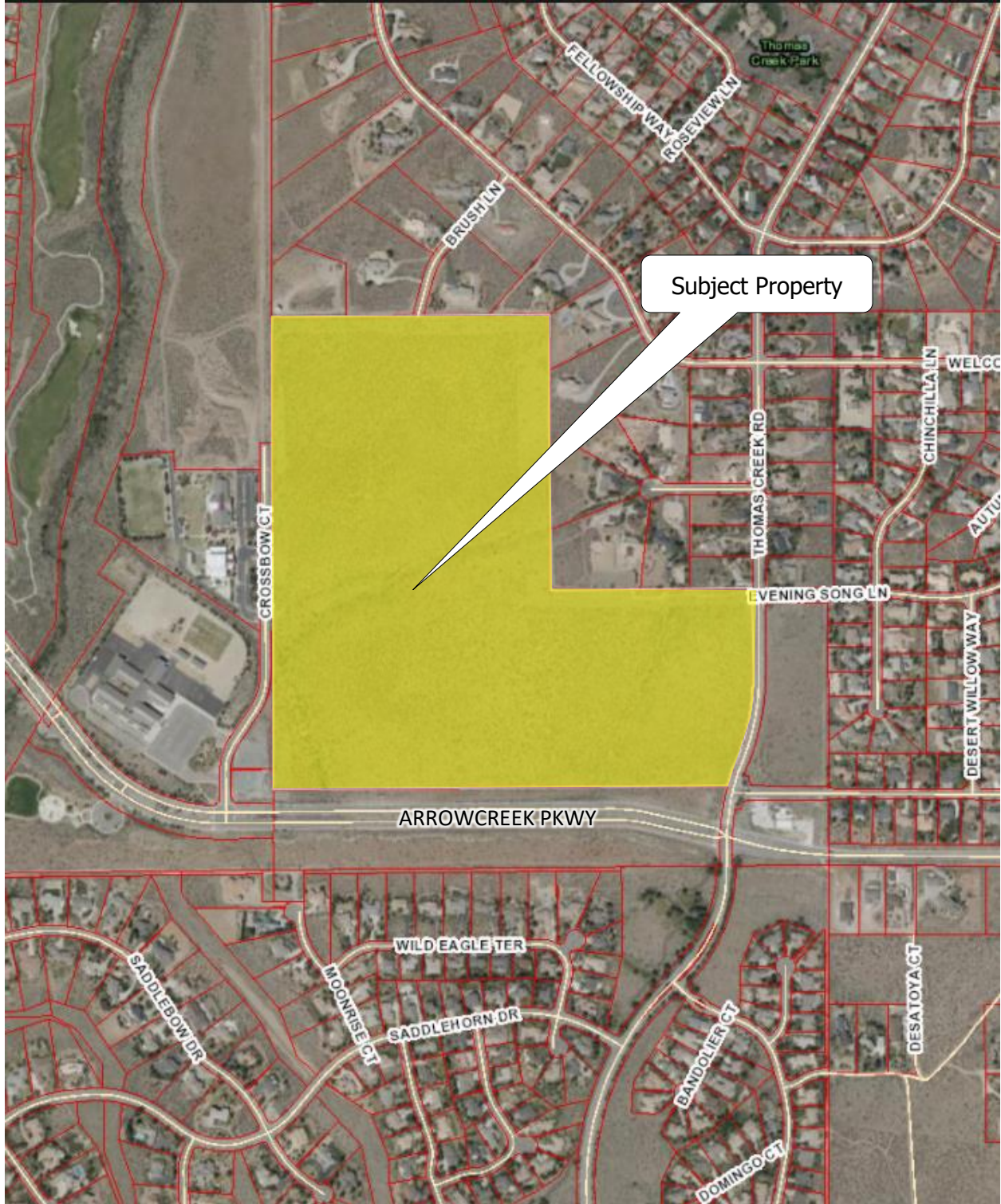


Figure 1 - Vicinity Map



View of the property facing west.



View of the property facing east.

Figure 5 - Site Photographs



Figure 6 - Site Photographs

Special Use Permit Findings

Prior to approving an application for a special use permit, the Planning Commission, Board of Adjustment or a hearing examiner shall find that all of the following are true:

1. Consistency – The proposed use is consistent with the action programs, policies, standards and maps of the Master Plan and the applicable area plan;

The proposed project is in conformance with Washoe County Master Plan and the Southwest Truckee Meadows Area Plan. There are no specific Policies or Action Programs included in the Southwest Truckee Meadows Area Plan that are applicable to the proposed grading for a public Middle School. However, the proposed project is consistent with the following Policies related to grading and provision of schools:

SW.5.2 – The Washoe County Departments of Community Development and Public Works will establish and oversee compliance with design standards for grading that minimize the visual impact of all residential and non-residential hillside development, including road cuts and driveways.

SW.5.3 – The grading design standards referred to in Policy SW.5.2 will, at a minimum, ensure that disturbed areas shall be finished and fill slopes will not exceed a 3:1 slope, and that hillside grading will establish an undulating naturalistic appearance by creating varying curvilinear contours.

Goal Eight – The Southwest Truckee Meadows planning area will contain an extensive system of trails that integrates other recreational facilities, the Regional Trail System, public lands, schools and transit facilities. This trail system will contribute to the preservation and implementation of community character.

SW.20.3.h – Proposed amendments shall complement the long range plans of facilities providers for transportation, water resources, schools and parks, as reflected in the policy growth level established in Policy 1.2.

SW.20.3.i – If the proposed intensification results in existing public school facilities exceeding design capacity and compromises the Washoe County School District's ability to implement the neighborhood school philosophy for elementary facilities, then there must be a current capital improvement plan or rezoning plan in place that would enable the District to absorb the additional enrollment. The Washoe County Planning Commission, upon request of the Washoe County School Board of Trustees, may waive this finding.

2. Improvements – Adequate utilities, roadway improvements, sanitation, water supply, drainage, and other necessary facilities have been provided, the proposed improvements are properly related to existing and proposed roadways, and an adequate public facilities determination has been made in accordance with Division Seven;

Adequate roadways, sanitation, water supply, drainage and other necessary facilities and utilities will be provided to the site, as the grading is intended to create appropriate access and facilitate construction of a public Middle School.

3. Site Suitability – The site is physically suitable for the type of development and for the intensity of development;

The property has some topographic constraints that require grading. However, the grading plan has been designed to minimize visual impacts by means of retaining walls and the additional of a significant amount of landscaping. The proposed developed area of approximately 28.4 acres will result in $\pm 3,767$ cubic yards of overall fill for the project. The cut/fill slopes have been minimized with the addition of 8-foot tall retaining walls. The walls have been designed to create varying curvilinear contours, which breaks up the appearance of a manufactured slope. This is also in accordance with the Southwest Truckee Meadows Area Plan, which requires grading to complement the original contours of the landscape and minimize disruption of the natural topography. The grading has been visually minimized through extensive landscaping that includes over ± 5.6 acres of landscape area. A total of 566 trees and 2,492 shrubs have been included in the landscape design, which will help to screen the grading from public view on the adjacent roadways and neighboring properties.

4. Issuance Not Detrimental – Issuance of the permit will not be significantly detrimental to the public health, safety or welfare; injurious to the property or improvements of adjacent properties; or detrimental to the character of the surrounding area;

Issuance of the permit will not be significantly detrimental to the public health, safety or welfare of the surrounding area. Consideration has been given to the neighboring property through the overall site design. This includes placement of the buildings and play fields away from the residential properties. The extensive landscaping will help to mitigate the grading impacts and screen the development from public view.

5. Effect on a Military Installation – Issuance of the permit will not have a detrimental effect on the location, purpose or mission of the military installation.

The proposed project has no effect on the location, purpose or mission of military installation. There are no military installations in the area.

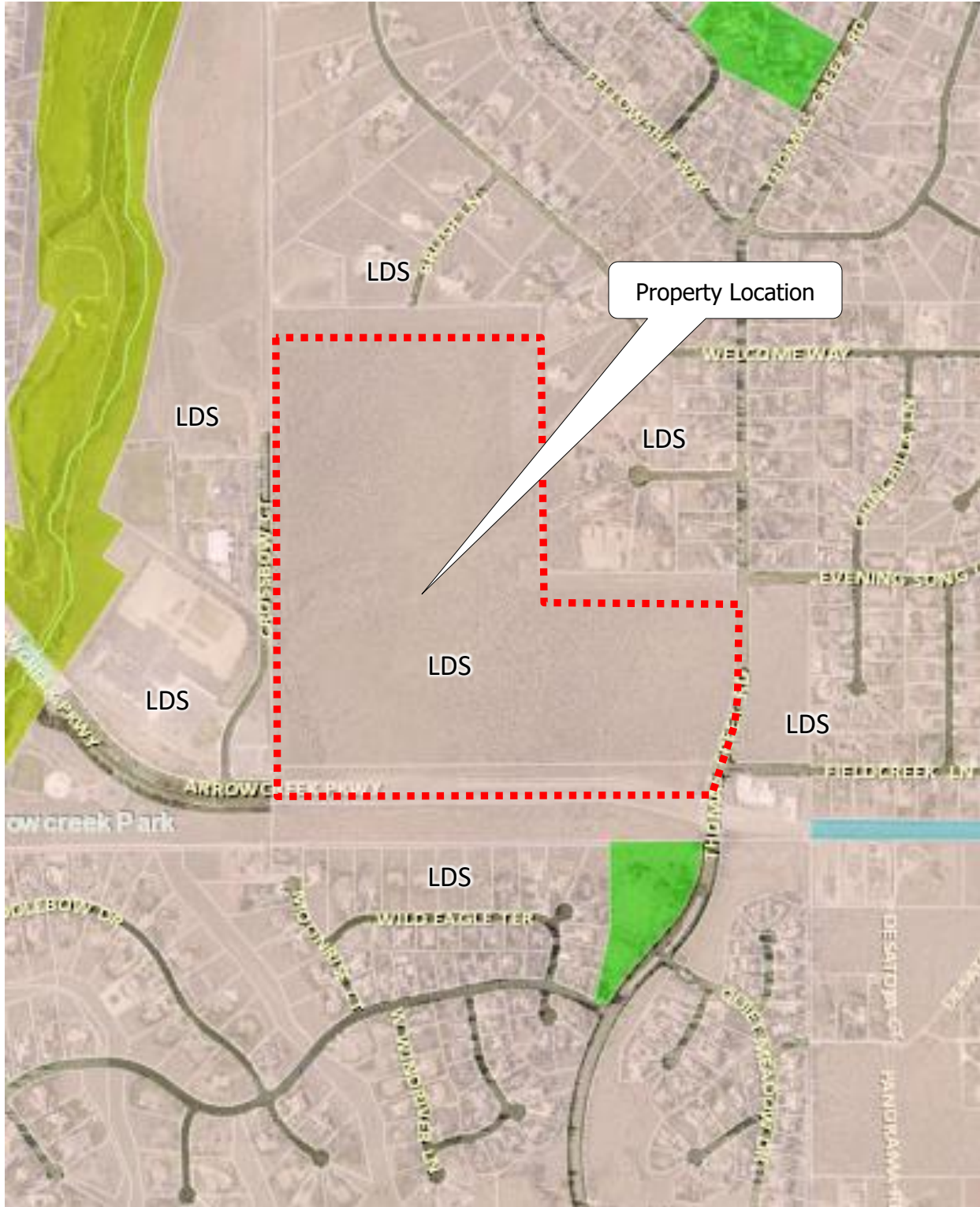


Figure 7 - Zoning Map

Washoe County Development Application

Your entire application is a public record. If you have a concern about releasing personal information, please contact Planning and Building staff at 775.328.6100.

Project Information		Staff Assigned Case No.: _____	
Project Name:			
Project Description:			
Project Address:			
Project Area (acres or square feet):			
Project Location (with point of reference to major cross streets AND area locator):			
Assessor's Parcel No.(s):	Parcel Acreage:	Assessor's Parcel No.(s):	Parcel Acreage:
Section(s)/Township/Range:			
Indicate any previous Washoe County approvals associated with this application:			
Case No.(s).			
Applicant Information (attach additional sheets if necessary)			
Property Owner:		Professional Consultant:	
Name:		Name:	
Address:		Address:	
Zip:		Zip:	
Phone: Fax:		Phone: Fax:	
Email:		Email:	
Cell: Other:		Cell: Other:	
Contact Person:		Contact Person:	
Applicant/Developer:		Other Persons to be Contacted:	
Name:		Name:	
Address:		Address:	
Zip:		Zip:	
Phone: Fax:		Phone: Fax:	
Email:		Email:	
Cell: Other:		Cell: Other:	
Contact Person:		Contact Person:	
For Office Use Only			
Date Received: Initial:		Planning Area:	
County Commission District:		Master Plan Designation(s):	
CAB(s):		Regulatory Zoning(s):	

fully executed
copy 28 NOV. 2017



USDA Forest Service

OMB 0596-0217
FS-1500-19

MODIFICATION OF GRANT OR AGREEMENT		PAGE	OF PAGES
		1	2
1. U.S. FOREST SERVICE GRANT/AGREEMENT NUMBER: 17-CO-11041710-062		2. RECIPIENT/COOPERATOR GRANT or AGREEMENT NUMBER, IF ANY:	
4. NAME/ADDRESS OF U.S. FOREST SERVICE UNIT ADMINISTERING GRANT/AGREEMENT (unit name, street, city, state, and zip + 4): Byron Keely 1249 S. Vinnell Way, Suite 200 Boise, ID 83709 208-373-4266 byrondkeely@fs.fed.us		5. NAME/ADDRESS OF U.S. FOREST SERVICE UNIT ADMINISTERING PROJECT/ACTIVITY (unit name, street, city, state, and zip + 4): David Drake 1200 Franklin Way Sparks NV, 89431 775-352-1246 ddrake@fs.fed.us	
6. NAME/ADDRESS OF RECIPIENT/COOPERATOR (street, city, state, and zip + 4, county): Mike Boster 14101 Old Virginia Road, Reno NV, 89521 775-789-3810 mboster@washoeschools.net		7. RECIPIENT/COOPERATOR'S HHS SUB ACCOUNT NUMBER (For HHS payment use only):	
8. PURPOSE OF MODIFICATION			
CHECK ALL THAT APPLY:	This modification is issued pursuant to the modification provision in the grant/agreement referenced in item no. 1, above.		
<input checked="" type="checkbox"/>	CHANGE IN PERFORMANCE PERIOD: expire date changed from 12/31/2017 to 12/31/2018		
<input type="checkbox"/>	CHANGE IN FUNDING:		
<input type="checkbox"/>	ADMINISTRATIVE CHANGES:		
<input type="checkbox"/>	OTHER (Specify type of modification):		
Except as provided herein, all terms and conditions of the Grant/Agreement referenced in 1, above, remain unchanged and in full force and effect.			
9. ADDITIONAL SPACE FOR DESCRIPTION OF MODIFICATION (add additional pages as needed): Title: ARROWCREEK SCHOOL - ELGA.			
10. ATTACHED DOCUMENTATION (Check all that apply):			
<input type="checkbox"/>	Revised Scope of Work		
<input type="checkbox"/>	Revised Financial Plan		
<input type="checkbox"/>	Other:		
11. SIGNATURES			
AUTHORIZED REPRESENTATIVE: BY SIGNATURE BELOW, THE SIGNING PARTIES CERTIFY THAT THEY ARE THE OFFICIAL REPRESENTATIVES OF THEIR RESPECTIVE PARTIES AND AUTHORIZED TO ACT IN THEIR RESPECTIVE AREAS FOR MATTERS RELATED TO THE ABOVE-REFERENCED GRANT/AGREEMENT.			
11.A. Washoe County Schools District SIGNATURE	11.B. DATE SIGNED	11.C. U.S. FOREST SERVICE SIGNATURE	11.D. DATE SIGNED
	11/28/17		11/28/2017
(Signature of Signatory Official)		(Signature of Signatory Official)	
11.E. NAME (type or print): PETE ETCHART		11.F. NAME (type or print): WILLIAM A. DUNKELBERGER	
11.G. TITLE (type or print): Chief Operations Officer		11.H. TITLE Humboldt-Toiyabe Forest Supervisor	
12. G&A REVIEW			
12.A. The authority and format of this modification have been reviewed and approved for signature by:			12.B. DATE SIGNED
 BYRON KEELY U.S. Forest Service Grants & Agreements Specialist			11/28/2017



Burden Statement

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0217. The time required to complete this information collection is estimated to average 30 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

FOREST SERVICE
BILL FOR COLLECTION

PAGE: 1

Doc. Date : 06/29/2017

ENCLOSE A COPY OF THIS BILL WITH YOUR CHECK OR MONEY ORDER. DO NOT SEND CASH. PLEASE INCLUDE BILL NO. AND CUSTOMER NUMBER ON YOUR CHECK OR ON YOUR ONLINE BILL PAYMENT.

MAIL PAYMENT TO:
US Forest Service C/O Citibank
P.O. Box 301550
Los Angeles CA 90030-1550
Or pay online at www.fs.fed.us/billpay

MAKE CHECK PAYABLE TO:
FOREST SERVICE

TO:
WASHOE COUNTY SCHOOL DISTRICT
14101 OLD VIRGINIA ROAD
RENO NV 89521-0000 US

PAYER INDICATE
AMOUNT ENCLOSED:

NET AMOUNT DUE : \$ 35,876.00

Work contingent upon collection.

FMMI BILL NUMBER : 3002416458

CUSTOMER NUMBER : 6019002

REFERENCE CONTRACT/PERMIT/AGREEMENT NUMBER :
NRMG-17-CO-11041710-062

DESCRIPTION :

REMARKS :
RE: 3700007956
NOTE :
PLEASE SEND ALL CORRESPONDENCE, INQUIRIES, AND CHANGE OF ADDRESS
TO :
ASC - BUDGET & FIN
101B SUN AVE NE
ALBUQUERQUE NM 87109 US

PRINCIPAL :	\$	35,876.00
INTEREST :	\$	0.00
ADMINISTRATIVE COST :	\$	0.00
PENALTY :	\$	0.00
AMOUNT DUE :	\$	35,876.00
AMOUNT CREDITED :	\$	0.00
NET AMOUNT DUE :	\$	35,876.00

LATE FEES DO NOT APPLY FOR BILLINGS IN ADVANCE OF RECEIPT OF GOODS OR SERVICES.

PROJECT TITLE: ARROWCREEK SCHOOL ELGA
Customer POC: PETE ETCHART 775-851-5672 petchart@washoeschools.net
Forest Service POC: DAVID DRAKE Phone: 775-355-5357 Email: ddrake@fs.fed.us
Forest Service Billing POC: ASC B&F RACA 1-877-372-7248 Option #1
Forest Service Agreement 17-CO-11041710-062
_G

LINE	LINE INFORMATION	AMOUNT
000010	FS.RA.0417.CW.FS62.7062A 17XX	\$ 35,876.00



WASHOE COUNTY SCHOOL DISTRICT
 425 EAST NINTH STREET - P.O. BOX 30425
 RENO, NEVADA 89520

VENDOR NAME U S D A FOREST SERVICE
VENDOR NO. 897731
CHECK DATE 07/14/17
CHECK NO. 480650

Washoe County
 School District

DATE	DESCRIPTION	ACCOUNT NUMBER	PO NUMBER	AMOUNT
06/29/17	3002416458	42 000 4100 63401 000 0000		35,876.00

REMOVE DOCUMENT ALONG THIS PERFORATION

THE BACK OF THIS CHECK CONTAINS A SECURITY MARK - DO NOT ACCEPT WITHOUT HOLDING AT AN ANGLE VERIFY SECURITY MARK



Washoe County
 School District

WASHOE COUNTY SCHOOL DISTRICT
GENERAL DISBURSEMENT ACCOUNT
 425 EAST NINTH STREET
 P.O. BOX 30425
 RENO, NEVADA 89520

Wells Fargo Bank, Nevada, N.A.
 5340 Kietzke Lane, Suite 201
 Reno, NV 89511

94-7074
 3272

NO. 480650

VOID IF NOT CASHED WITHIN 180 DAYS

PAY TO THE ORDER OF
U S D A FOREST SERVICE
PO BOX 301550
LOS ANGELES, CA 90030-1550

DATE
 07/14/17

AMOUNT
 *****\$35,876.00

PAY THIRTY-FIVE THOUSAND EIGHT HUNDRED SEVENTY-SIX DOLLARS AND ZERO CENTS ***

TO THE ORDER OF
 U S D A FOREST SERVICE
 PO BOX 301550
 LOS ANGELES, CA 90030-1550

Washoe County School District
CPA, CHIEF FINANCIAL OFFICER
James S. Council
 SUPERINTENDENT

0000480650 321270742067027918



United States
Department of
Agriculture

Forest
Service



Humboldt-Toiyabe National Forest



Carson Ranger District
1536 South Carson Street
Carson City, NV 89701
775-882-2766

File Code: 5570
Date: May 11, 2017

Michael S. Boster
Washoe County School District, School Planner
14101 Old Virginia Road
Reno, NV 89521

Dear Mr. Boster,

Enclosed is my response to your ELGA application that I received April 27, 2017.

Sincerely,


IRENE DAVIDSON
District Ranger



Mr. Michael S. Boster,
Washoe County School District
Capital Projects
14101 Old Virginia Road
Reno, NV. 89521

Dear Mr. Boster:

This letter Acknowledges receipt of your recent Educational Land Grant Act Application (ELGA) to acquire 60 acres of National Forest System (NFS) lands within the Humboldt Toiyabe National Forest.

I received your application on May 27, 2017 and have reviewed it to ensure we have a complete application package.

Following is a list of minimum requirements necessary for an application package to be complete.

1. A legal description of the land requested, including appropriate maps that accurately depict the area requested.
2. A statement that the conveyed NFS land will be used for a public or publicly funded elementary or secondary school to provide grounds or facilities for that school.
3. Documentation that the total acreage requested is the minimum amount necessary for the intended purpose.
4. Documentation of other alternatives considered, such as, private, local governmental, or State lands, and the reason(s) why they cannot accommodate this need.
5. Documentation that the conveyed land is within the applicant school district and contiguous to an existing school. If either of these two conditions is not met, the applicant school district must:
 - a. Demonstrate the objective educational benefit which will be served by the conveyance, and
 - b. Provide documentation on how access to the conveyed land will be obtained.
6. Documentation that the school district is financially capable of completing the proposed project.
7. Reasons why the applicant school district feels that the conveyance of NFS lands for educational purposes outweigh the public objectives and values that would be served by keeping the land in the National Forest System.
8. A development plan that describes the proposed public educational use of the conveyed land, the type(s) of facilities that will be constructed and their location, proposed access, utility routes, environmental controls during construction, and estimated construction times. The development plan must be included in the environmental assessment of the proposed conveyance.

After reviewing your application and weighing it against these criteria I have determined it to be complete as it meets the minimum requirements set forth in the Forest Service Handbook (FSH) 5509.11 Chapter 30 sec 34.12 – Application Content. If a decision on the proposal is not made within 120 days, the Forest Service will provide a written explanation as to why a decision has not been made and give a revised timeframe for a final decision on the project.

The next steps will be to set up a cooperative agreement between Washoe County School District and the Forest Service for payment of cost incurred as a result of this project. You will be required to pay a nominal fee of \$10 per acre conveyed, plus all Forest Service costs directly associated with the project, that the Forest Service may incur to evaluate and process the application, including costs associated with National Environmental Policy Act (NEPA) compliance, document preparation, surveys, posting of property monuments, markers, or posts, and so forth. Costs incurred by the Forest Service in the evaluation and processing of an ELGA application are payable by the school district regardless of whether or not the conveyance is approved.

It is my understanding the school district will contract with a third party to perform the necessary NEPA studies and the Forest Service will provide the criteria to be used including what documents or reports will be needed. The Forest Service will review the documents produced by the school districts contractors and approve them when they are sufficient for the Forest Service to make a decision on.

As a part of the public notice and comment the Forest Service requires a name of the proposed school, I understand there is a process required by the school district for this but it is imperative we meet this requirement please take whatever actions are necessary to ensure we can meet this legal requirement.

A couple of other item to be aware of are a reversionary interest in the United States will be retained in all land conveyed under this law which will vest if a school district attempts to convey the land to another party or where the lands are devoted to another use different from the use for which the land is conveyed by the United States, and a conveyance under this law may not convey mineral or water rights. If necessary, the exact acreage and legal description shall be determined by a survey satisfactory to the Secretary at the expense of the applicant.

Sincerely,



Irene Davidson
DISTRICT RANGER



The Mason Valley News

"The Only Newspaper in the World that Gives a Damn About Yerington"

Order Confirmation for Ad #: 0002718638

Customer: WASHOE CO SCHOOL DISTRICT
Address: 14101 OLD VIRGINIA RD
 RENO NV 89521 USA
Acct. #: REN-313227
Phone: 7758508025

 WASHOE CO SCHOOL DISTRICT
Ordered By: Krystal Higgins

OrderStart Date: 02/09/2018

Order End Date: 02/09/2018

<u>Tear Sheets</u>	<u>Affidavits</u>	<u>Blind Box</u>	<u>Promo Type</u>	<u>Materials</u>	<u>Special Pricing</u>	<u>Size</u>
0	1					2 X 50.00

<u>Net Amount</u>	<u>Tax Amount</u>	<u>Total Amount</u>	<u>Payment Method</u>	<u>Payment Amount</u>	<u>Amount Due</u>
\$327.00	\$0.00	\$327.00	Credit Card	\$0.00	\$327.00

Ad Order Notes:

Sales Rep: ncampbell

Order Taker: ncampbell

Order Created 02/07/2018

Product	# Ins	Start Date	End Date
REN-Gazette Journal	1	02/09/2018	02/09/2018
02-09-18, REN-rgj.com	1	02/09/2018	02/09/2018
02-09-18,			

* ALL TRANSACTIONS CONSIDERED PAID IN FULL UPON CLEARANCE OF FINANCIAL INSTITUTION

Text of Ad: 02/07/2018

The Carson Ranger District of the Humboldt-Toiyabe National Forest (Forest) is initiating a comment period for a preliminary Environmental Assessment (EA) for the proposed Education Land Grant Act Transfer of National Forest System Land to Washoe County School District #52446, displaying the proposed action and potential effects of the project. The Forest is proposing to convey approximately 60 acres of National Forest System land in accordance with the Educational Land Grant Act (ELGA) to the Washoe County School District (WCSD). If conveyed, the WCSD would use the land to develop a school campus. The Project Area is located in southwest Reno, Washoe County at the intersection of Thomas Creek Road and Arrowcreek Parkway. Specifically, the project area is located at T. 18 N., R. 19 E., Sec. 24 S ½E ¼ excepting that portion conveyed by U.S. Patent No. 27-96-0035.

The preliminary EA, including the proposed action, is available for review and can be downloaded from the Humboldt-Toiyabe National Forest website at <https://www.fs.usda.gov/project?project=52446>. To obtain a hard copy of the preliminary EA and proposed action please contact Irene Davidson, Carson District Ranger, Humboldt-Toiyabe National Forest, 1536 S. Carson Street, Carson City, NV 89701, 775 884-8100 iridavidson@fs.fed.us.

This preliminary EA is subject to comment pursuant to 36 CFR 218, Subparts A and B. Only those who submit timely project-specific written comments during a public comment period are eligible to file an objection. Furthermore, issues raised in objections must be based on previously submitted specific written comments regarding the proposed conveyance or activity and attributed to the objector, unless the issue is based on new information that arose after the opportunities for comment. Individuals or representatives of an entity submitting comments must sign the comments or verify identity upon request.

HOW TO COMMENT AND TIMEFRAMES

The Forest Service will accept comments on the preliminary EA for 30 days following publication of the opportunity to comment legal notice in the Reno-Gazette Journal, which is the exclusive means for calculating the comment period. Commenters should not rely upon dates or timeframe information provided by any other source. It is the commenter's responsibility to ensure timely receipt of comments (36 CFR 218.25).

Please submit your comments on the proposal website, at <https://cara.ecosystem-management.org/Public/CommentInput?project=52446>. If your computer is not compatible with the website, try using a different web browser, or you can email comments to: comments-intermtn-humboldt-toiyabe-carson@fs.fed.us. All formal comments on the EA must be submitted in writing.

In cases where no identifiable name is attached to a comment, a verification of identity will be required for appeal eligibility. If using an electronic message, a scanned signature is one way to provide verification. It is the responsibility of persons providing comments to submit them by the close of the comment period. Names of commenters will be part of the public record subject to the Freedom of Information Act.

The Forest Service will host an open house forum meeting to discuss the preliminary EA and the Forest Service's decision to be made. The meeting will be held at 6:30 pm on February 22, 2018 at the South Valley Library Diamond Room, located at 15650-A Wedge Parkway, Reno, NV 89511. The meeting will include a brief introduction of the proposed land conveyance by the Forest Service followed by an opportunity to discuss with Forest staff members.

WILLIAM A. DUNKELBERGER
Forest Supervisor

No. 2718638

Feb. 9, 2018

2nd notice

15 Feb RGT Legal notice

The Mason Valley News

"The Only Newspaper in the World that Gives a Damn About Yerington"

Order Confirmation for Ad #: 0002733449

The Carson Ranger District of the Humboldt-Toiyabe National Forest (Forest) is initiating a comment period for a preliminary Environmental Assessment (EA) for the proposed Education Land Grant Act Transfer of National Forest System Land to Washoe County School District #52446, displaying the proposed action and potential effects of the project. The Forest is proposing to convey approximately 60 acres of National Forest System land in accordance with the Educational Land Grant Act (ELGA) to the Washoe County School District (WCSD). If conveyed, the WCSD would use the land to development of a school campus. The Project Area is located in southwest Reno, Washoe County at the intersection of Thomas Creek Road and Arrowcreek Parkway. Specifically, the project area is located at T. 18 N., R. 19 E., Sec. 24 S 1/2 E 1/4 excepting that portion conveyed by U.S. Patent No. 27-96-0035.

The preliminary EA, including the proposed action, is available for review and can be downloaded from the Humboldt-Toiyabe National Forest website at <https://www.fs.usda.gov/project/?project=52446>. To obtain a hard copy of the preliminary EA and proposed action please contact David Drake, Land Use Specialist, Humboldt-Toiyabe National Forest, 1200 Franklin Way, Sparks, NV, 89431, 775 352-1241 ddrake@fs.fed.us.

This preliminary EA is subject to comment pursuant to 36 CFR 218, Subparts A and B. Only those who submit timely project-specific written comments during a public comment period are eligible to file an objection. Furthermore, issues raised in objections must be based on previously submitted specific written comments regarding the proposed conveyance or activity and attributed to the objector, unless the issue is based on new information that arose after the opportunities for comment. Individuals or representatives of an entity submitting comments must sign the comments or verify identity upon request.

HOW TO COMMENT AND TIMEFRAMES

The Forest Service will accept comments on the preliminary EA for 30 days following publication of the opportunity to comment legal notice in the Reno-Gazette Journal, which is the exclusive means for calculating the comment period. Commenters should not rely upon dates or timeframe information provided by any other source. It is the commenter's responsibility to ensure timely receipt of comments (36 CFR 218.25).

Please submit your comments on the proposal website, at <https://cara.ecosystem-management.org/Public/ReadingRoom?Project=52446>. If your computer is not compatible with the website, try using a different web browser. All formal comments on the EA must be submitted in writing.

In cases where no identifiable name is attached to a comment, a verification of identity will be required for appeal eligibility. If using an electronic message, a scanned signature is one way to provide verification. It is the responsibility of persons providing comments to submit them by the close of the comment period. Names of commenters will be part of the public record subject to the Freedom of Information Act.

The Forest Service will host an open house forum meeting to discuss the preliminary EA and the Forest Service's decision to be made. The meeting will be held at 6:30 pm on February 22, 2018 at the South Valley Library Diamond Room, located at 15650-A Wedge Parkway, Reno, NV 89511.

The meeting will include a brief introduction of the proposed land conveyance by the Forest Service followed by an opportunity to discuss with Forest staff members.

WILLIAM A. DUNKELBERGER
Forest Supervisor

No. 2733449

Feb. 15, 2018



02/15/2018

<u>Materials</u>	<u>Special Pricing</u>	<u>Size</u>
		2 X 50.00

<u>Ad</u>	<u>Payment Amount</u>	<u>Amount Due</u>
	\$0.00	\$327.00

campbell Order Created 02/14/2018

# Ins	Start Date	End Date
1	02/15/2018	02/15/2018
1	02/15/2018	02/15/2018

* ALL TRANSACTIONS CONSIDERED PAID IN FULL UPON CLEARANCE OF FINANCIAL INSTITUTION

15 Feb 2018 - RGT legal notice

Special Use Permit Application for Grading Supplemental Information

(All required information may be separately attached)

Chapter 110 of the Washoe County Code is commonly known as the Development Code. Specific references to special use permits may be found in Article 810, Special Use Permits. Article 438, Grading, and Article 418, Significant Hydrologic Resources, are the ordinances specifically involved in this request.

1. What is the purpose of the grading?

2. How many cubic yards of material are you proposing to excavate on site?

3. How many square feet of surface of the property are you disturbing?

4. How many cubic yards of material are you exporting or importing? If none, how are you managing to balance the work on-site?

5. Is it possible to develop your property without surpassing the grading thresholds requiring a Special Use Permit? (Explain fully your answer.)

6. Has any portion of the grading shown on the plan been done previously? (If yes, explain the circumstances, the year the work was done, and who completed the work.)

7. Have you shown all areas on your site plan that are proposed to be disturbed by grading? (If no, explain fully your answer.)

8. Can the disturbed area be seen from off-site? If yes, from which directions, and which properties or roadways?

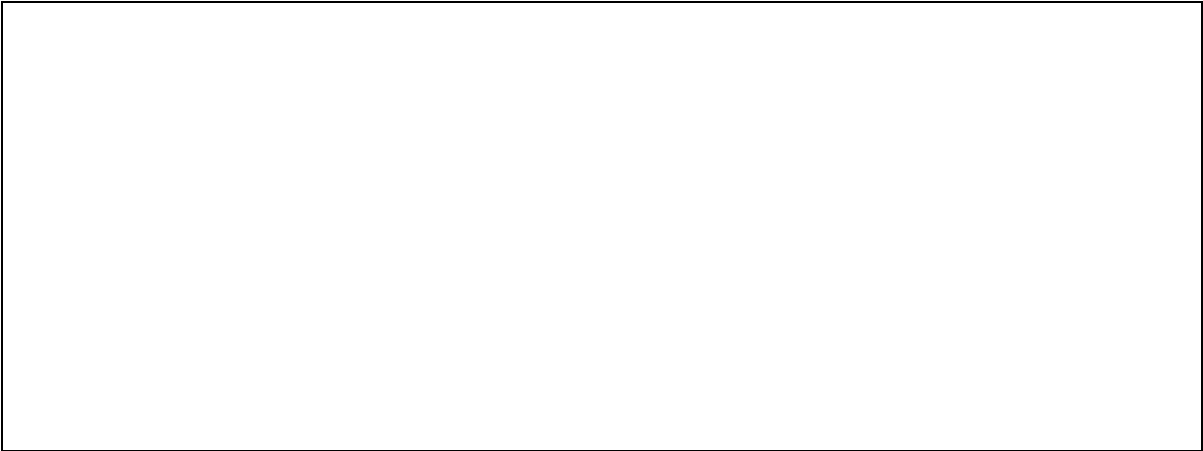
9. Could neighboring properties also be served by the proposed access/grading requested (i.e. if you are creating a driveway, would it be used for access to additional neighboring properties)?

10. What is the slope (Horizontal/Vertical) of the cut and fill areas proposed to be? What methods will be used to prevent erosion until the revegetation is established?

11. Are you planning any berms?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	If yes, how tall is the berm at its highest?
------------------------------	-----------------------------	--

12. If your property slopes and you are leveling a pad for a building, are retaining walls going to be required? If so, how high will the walls be and what is their construction (i.e. rockery, concrete, timber, manufactured block)?



13. What are you proposing for visual mitigation of the work?



14. Will the grading proposed require removal of any trees? If so, what species, how many and of what size?



15. What type of revegetation seed mix are you planning to use and how many pounds per acre do you intend to broadcast? Will you use mulch and, if so, what type?

16. How are you providing temporary irrigation to the disturbed area?

17. Have you reviewed the revegetation plan with the Washoe Storey Conservation District? If yes, have you incorporated their suggestions?

18. Are there any restrictive covenants, recorded conditions, or deed restrictions (CC&Rs) that may prohibit the requested grading?

<input type="checkbox"/> Yes	<input type="checkbox"/> No	If yes, please attach a copy.
------------------------------	-----------------------------	-------------------------------

Washoe County Treasurer
 P.O. Box 30039, Reno, NV 89520-3039
 ph: (775) 328-2510 fax: (775) 328-2500
 Email: tax@washoecounty.us

Washoe County Treasurer
 Tammi Davis

Account Detail

[Back to Account Detail](#)

[Change of Address](#)

[Print this Page](#)

Washoe County Parcel Information

Parcel ID	Status	Last Update
04901029	Active	4/14/2018 2:06:39 AM
Current Owner: UNITED STATES OF AMERICA		SITUS: 0 THOMAS CREEK RD WCTY NV
NONE RENO, NV 00000		
Taxing District		Geo CD:
Legal Description		
Range 19 Township 18 SubdivisionName _UNSPECIFIED Section 24		

Tax Bill (Click on desired tax year for due dates and further details)

Tax Year	Net Tax	Total Paid	Penalty/Fees	Interest	Balance Due
2017	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2016	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2015	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2014	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
2013	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Total					\$0.00

Important Payment Information

- **ALERTS:** If your real property taxes are delinquent, the search results displayed may not reflect the correct amount owing. Please contact our office for the current amount due.
- For your convenience, online payment is available on this site. E-check payments are accepted without a fee. However, a service fee does apply for online credit card payments. See [Payment Information](#) for details.

Pay Online

\$0.00

Pay By Check

Please make checks payable to:
WASHOE COUNTY TREASURER

Mailing Address:
 P.O. Box 30039
 Reno, NV 89520-3039

Overnight Address:
 1001 E. Ninth St., Ste D140
 Reno, NV 89512-2845

 **Payment Information**

 **Special Assessment District**

 **Installment Date Information**

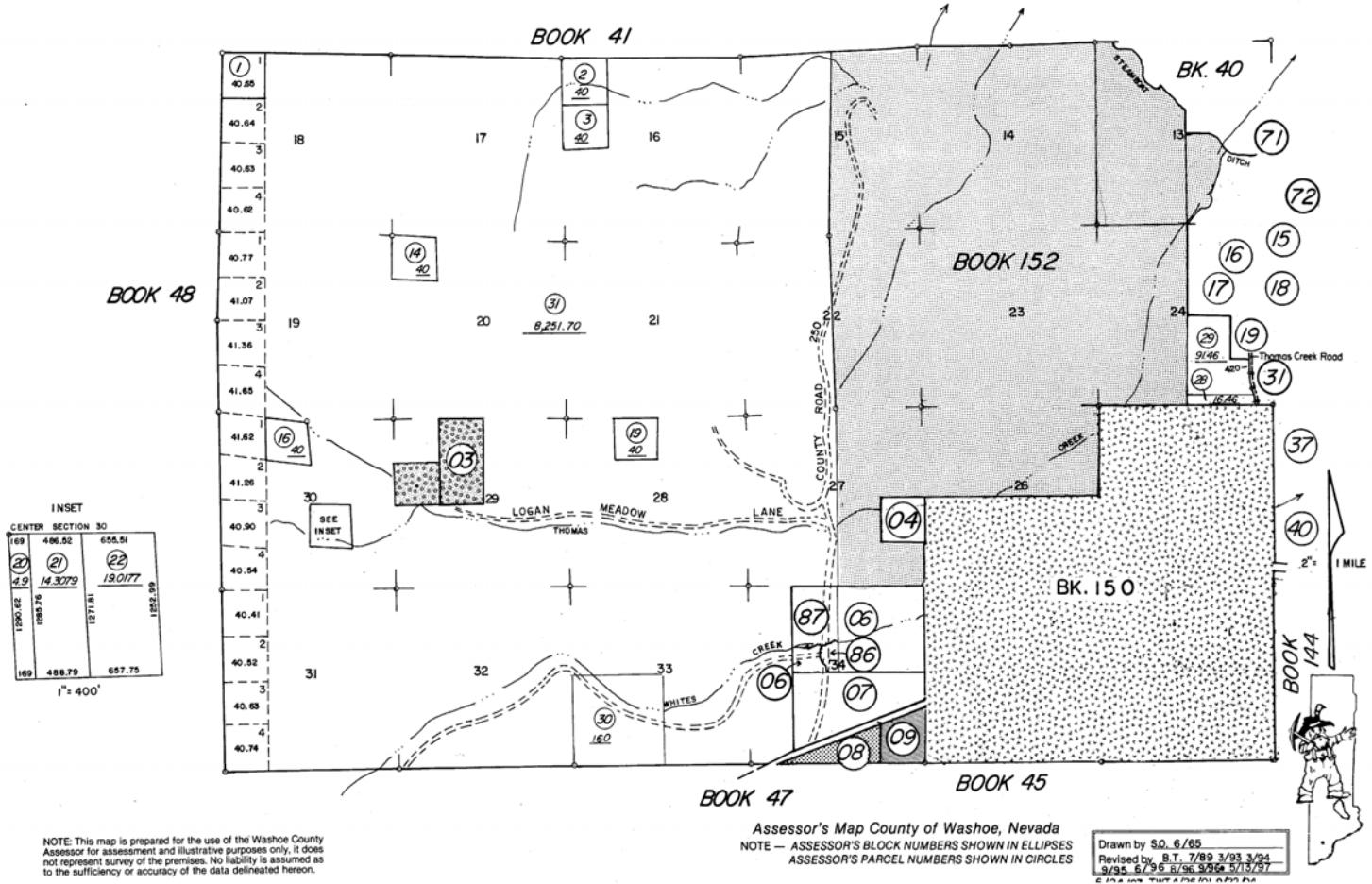
 **Assessment Information**

The Washoe County Treasurer's Office makes every effort to produce and publish the most current and accurate information possible. No warranties, expressed or implied, are provided for the data herein, its use, or its interpretation. If you have any questions, please contact us at (775) 328-2510 or tax@washoecounty.us

This site is best viewed using Google Chrome, Internet Explorer 11, Mozilla Firefox or Safari.

PORTION OF N²-T18N-R19E
 PORTION OF S²-T18N-R19E

49-01



NOTE: This map is prepared for the use of the Washoe County Assessor for assessment and illustrative purposes only. It does not represent survey of the premises. No liability is assumed as to the sufficiency or accuracy of the data delineated hereon.

**PRELIMINARY HYDROLOGIC AND HYDRAULIC
ANALYSIS REPORT**

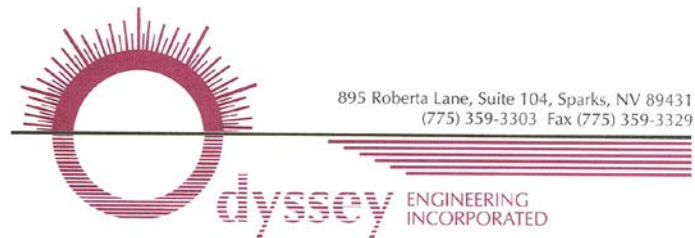
FOR

ARROW CREEK MIDDLE SCHOOL

Prepared for

Washoe County School District
Capital Projects and Facilities Management
14101 Old Virginia Road
Reno, Nevada 89521-8912

Prepared by



**Odyssey Engineering Incorporated
895 Roberta Lane, Suite 104
Reno, Nevada 89431
(775) 359-3303**

April 2018

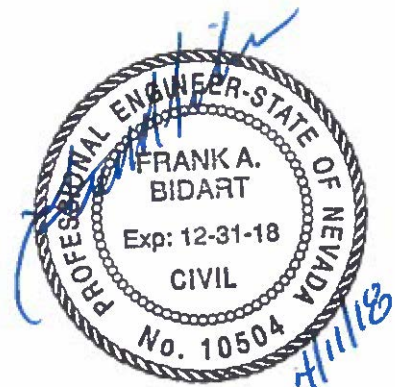


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- APPENDIX A – SUPPORTING DATA
- APPENDIX B – EXISTING HYDROLOGIC ANALYSIS
- APPENDIX C – PROPOSED HYDROLOGIC ANALYSIS
- APPENDIX D – DETENTION FACILITY ANALYSIS

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- FIGURE 2– PROPOSED HYDROLOGY DISPLAY

1 INTRODUCTION

The following report represents the preliminary hydrologic and hydraulic analysis for the Washoe County School District - Arrow Creek Middle School Project (ACMS Project) which is located east of Crossbow Court, West of Thomas Creek Road, and north of Arrow Creek Parkway. The Washoe County School District - Arrow Creek Middle School is a proposed development that includes buildings, athletic facilities, landscaping, and parking.

The ACMS Project is located within the Southwestern 1/4 of Section 24, Township 18 North, and Range 19 East. The site is undeveloped ground with native shrubs and grasses. Site topography consists of slopes from south – southeast to west – northwest, ranging from 0% to 6%. Rainfall runoff from the site flows in a north-northwesterly direction towards an existing ephemeral drainage channels towards an existing housing development and civil improvements.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Community-Panel Number 32031C3245G dated March 16, 2009, the subject property is in Zone X. Zone X is an area determined to be outside the 100-year floodplain. Reference FEMA panel in Appendix A.

The purpose of this preliminary report is to analyze the existing and proposed conditions of the subject property based on the 5-year and 100-year peak flow events. The report contains the following sections: (1) Methodology, (2) Existing Hydrology, (3) Proposed Hydrology, and (4) Conclusion.

2 METHODOLOGY

Hydrologic Method

Hydrologic analyses were performed to determine the peak discharge for the 5-year and 100-year peak flow events. *AutoDesk Storm and Sanitary Analysis (SSA)* was used to perform a *Rational Method* analysis to model the hydrologic basins that contribute in the existing and proposed conditions.

2.1 RATIONAL ANALYSIS METHOD

The on-site analysis was performed using the Rational Method. Rational Method peak flows were used to design the storm drain facilities for the proposed project. The hydrology was determined using the Truckee Meadows Regional Drainage Manual (TMRDM) and the Rational Method (Appendix A). The parameters for the Rational Method of analysis are:

1. The Drainage Area
2. Time of Concentration
3. Runoff Coefficient
4. Rainfall Intensity

The runoff coefficients were obtained from the TMRDM (Reference Appendix A). The resulting “Rational Method” developed flows determined from the above information was used to determine the proposed storm drain facilities. The rainfall characteristics were modeled using the NOAA database to determine site specific depth of precipitation (Appendix A).

2.2 HYDRAULIC ANALYSIS METHODS

Hydraulic analyses were performed using the associated hydrologic data to provide the estimates of the elevation of floods for the selected recurrence intervals. Water-surface elevations were computed in SSA using hydrodynamic routing.

3 EXISTING CONDITIONS HYDROLOGY

For the existing catchments, a time of concentration (T_C) and Rational Method coefficient were selected, based on the Rational Method (Appendix A), taking into consideration the catchment characteristics, which include catchment area, slope and length of the longest channel, watershed boundaries, urbanization, and land cover. Table 1 and Figure 2 summarize the characteristics of the on-site catchment area. Reference Appendix B for the complete Rational Method analysis. Reference Figure 1 (Existing Hydrology) in the map pocket for existing hydrological drainage and the associated 5-year and 100-year peak flow events.

Table 1 – Existing Conditions Rational Method Model Summary for the ACMS Project, Reno, NV.

Sub-Basin	Area (Ac.)	Rational Method Coefficient (C₅/C₁₀₀)	Time of Concentration (min)	Rainfall Intensity (I₅/I₁₀₀) (in/hr)	5-Year Peak Flows (cfs)	100-Year Peak Flows (cfs)
X-01	11.83	0.31/0.57	17.39	1.18/2.85	4.3	19.2
X-02	9.81	0.26/0.54	16.50	1.21/2.93	3.1	15.5
X-03	13.98	0.24/0.52	28.84	0.88/2.13	3.0	15.5
X-04	16.16	0.20/0.50	17.76	1.16/2.81	3.8	22.7
X-05	22.98	0.20/0.50	13.49	1.35/3.26	6.2	37.4
X-06	13.52	0.20/0.50	14.15	1.32/3.19	3.6	21.5
X-07	10.62	0.20/0.50	13.92	1.33/3.21	2.8	17.0
TOTAL	98.90	-----	-----	-----	26.8	148.8

The 5-year and 100-year peak flows from off-site catchments (X-01 through X-03) in the existing condition are 10.4 cfs and 50.2 cfs, respectively. The 5-year and 100-year peak flows from on-site catchment (X-04 through X-07) in the existing condition are 16.4 cfs and 98.60 cfs, respectively. Therefore, the total existing flows are 26.8 cfs and 148.8 cfs in the 5-year and 100-year peak flow events, respectively (Appendix B). The flows are discharged towards the existing ephemeral drainages and existing civil improvements.

4 PROPOSED CONDITIONS HYDROLOGY AND HYDRAULICS

4.1 PROPOSED HYDROLOGY

SSA, the hydrologic modeling software has the capacity to route the flows and analyze the attenuation throughout the system. The proposed ACMS project has discharge values of the proposed sub-basins (Table 2) which will be directed through the proposed storm drain system, existing ephemeral drainages, and the proposed detention facility.

There are six on-site proposed development sub-basins with the ACMS development area (Figures 2). The sub-areas took into account the proposed on- and off-site flows that affect the site. The calculated 5-year and 100-year peak flows can be found in Table 2. Weighted run-off coefficients were calculated for each basin (Table 2). Routing was used to determine the intensities for the off- and on-site sub-basins, the proposed storm drain systems will route and attenuate flows to the ACMS Project points of discharge (Figure 2). Figure 2 provides a comparative 100-year peak flow discharge analysis for the existing areas that currently have peak runoff. Refer to Appendix C, Hydrologic Analysis for all data and supporting calculations using the Rational Method. Reference Table 2 below for a summary of the proposed drainage conditions.

Table 2 – Proposed Rational Method Model Summary for the ACMS Project, Reno, NV.

Sub-Basin	Area (Ac.)	Rational Method Coefficient (C₅/C₁₀₀)	Time of Concentration (min)	Rainfall Intensity (I₅/I₁₀₀) (in/hr)	5-Year Peak Flows (cfs)	100-Year Peak Flows (cfs)
P-01	11.83	0.31/0.57	17.39	1.18/2.85	4.3	19.2
P-02	9.81	0.26/0.54	16.50	1.21/2.93	3.1	15.5
P-03	13.98	0.24/0.52	28.84	0.88/2.13	3.0	15.5
P-04	7.11	0.20/0.50	12.03	1.42/3.43	2.0	12.2
P-05	9.19	0.20/0.50	10.00	1.55/3.74	2.8	17.2
P-06	26.94	0.55/0.72	13.41	1.35/3.27	20.0	63.3
P-07	10.01	0.20/0.50	13.24	1.36/3.28	2.7	16.4
P-08	2.28	0.20/0.50	10.00	1.55/3.74	0.7	4.3
P-09	7.75	0.20/0.50	11.99	1.42/3.44	2.2	13.3
TOTAL	98.90	-----	-----	-----	26.8	148.8

4.2 DETENTION

The proposed detention facility is approximately eight-feet deep with an overall detention capacity of 1.26 ac-ft. During 100-year peak flow event, the proposed detention facility will have a 100-year peak flow of 37.2 cfs and will discharge 20.0 cfs with a freeboard of 1.97 feet.

5 CONCLUSIONS

The proposed improvements and the analyses presented herein are in accordance with drainage regulations presented in Chapter II – Storm Drainage, in conjunction with the *Truckee Meadows Regional Drainage Manual (TMRDM, April 30, 2009)*.

This analysis is a preliminary analysis to provide an overview of the proposed development, a comprehensive hydrologic and hydraulic analysis will be completed once the civil improvements have been completed. However, this preliminary analysis determined that the proposed project improvements, roadways, and storm water conveyance facilities, once constructed, will not adversely impact upstream or downstream properties adjacent to this site. Actually, the proposed improvements will decrease overall flows towards the existing residential development. As seen of Figure 2, the three critical discharge sites will all experience decreased runoff from the associated peak flow events.

APPENDIX A
SUPPORTING DATA



NOAA Atlas 14, Volume 1, Version 5
Location name: Reno, Nevada, USA*
Latitude: 39.4068°, Longitude: -119.7959°
Elevation: 5136.61 ft**
 * source: ESRI Maps
 ** source: USGS



POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

[PF tabular](#) | [PF graphical](#) | [Maps & aerials](#)

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)¹										
Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	1.21 (0.792-1.43)	1.52 (1.30-1.79)	2.03 (1.73-2.40)	2.52 (2.12-2.98)	3.31 (2.72-3.96)	4.04 (3.22-4.90)	4.92 (3.78-6.04)	5.98 (4.40-7.50)	7.68 (5.30-9.92)	9.24 (6.08-12.2)
10-min	0.924 (0.792-1.09)	1.16 (0.990-1.36)	1.55 (1.31-1.83)	1.91 (1.62-2.27)	2.53 (2.08-3.01)	3.08 (2.45-3.73)	3.74 (2.87-4.59)	4.55 (3.35-5.70)	5.84 (4.04-7.56)	7.03 (4.63-9.31)
15-min	0.764 (0.656-0.900)	0.956 (0.820-1.13)	1.28 (1.09-1.51)	1.58 (1.34-1.87)	2.09 (1.72-2.49)	2.55 (2.03-3.08)	3.10 (2.38-3.79)	3.76 (2.77-4.71)	4.83 (3.34-6.24)	5.81 (3.82-7.69)
30-min	0.516 (0.442-0.606)	0.644 (0.552-0.760)	0.860 (0.732-1.02)	1.07 (0.900-1.26)	1.40 (1.15-1.68)	1.72 (1.37-2.07)	2.08 (1.60-2.55)	2.53 (1.86-3.17)	3.25 (2.25-4.21)	3.91 (2.58-5.18)
60-min	0.319 (0.274-0.375)	0.398 (0.341-0.470)	0.533 (0.453-0.630)	0.659 (0.557-0.781)	0.869 (0.715-1.04)	1.06 (0.845-1.28)	1.29 (0.991-1.58)	1.57 (1.15-1.96)	2.01 (1.39-2.60)	2.42 (1.59-3.20)
2-hr	0.212 (0.187-0.243)	0.264 (0.233-0.302)	0.336 (0.294-0.386)	0.400 (0.345-0.459)	0.496 (0.416-0.572)	0.581 (0.476-0.681)	0.679 (0.542-0.809)	0.804 (0.620-0.992)	1.03 (0.756-1.31)	1.23 (0.874-1.62)
3-hr	0.170 (0.152-0.192)	0.212 (0.191-0.241)	0.265 (0.236-0.300)	0.308 (0.272-0.349)	0.367 (0.319-0.419)	0.419 (0.357-0.483)	0.478 (0.400-0.559)	0.560 (0.458-0.667)	0.703 (0.558-0.884)	0.835 (0.645-1.09)
6-hr	0.121 (0.108-0.136)	0.152 (0.135-0.171)	0.187 (0.166-0.211)	0.215 (0.190-0.243)	0.251 (0.218-0.285)	0.278 (0.239-0.318)	0.305 (0.258-0.353)	0.338 (0.280-0.396)	0.389 (0.315-0.465)	0.442 (0.351-0.551)
12-hr	0.080 (0.071-0.090)	0.101 (0.090-0.113)	0.126 (0.112-0.142)	0.146 (0.129-0.165)	0.173 (0.151-0.197)	0.193 (0.166-0.221)	0.214 (0.181-0.248)	0.235 (0.194-0.276)	0.262 (0.211-0.314)	0.284 (0.224-0.347)
24-hr	0.052 (0.047-0.059)	0.066 (0.059-0.074)	0.083 (0.075-0.094)	0.097 (0.087-0.110)	0.117 (0.104-0.132)	0.133 (0.117-0.150)	0.149 (0.130-0.170)	0.166 (0.143-0.191)	0.190 (0.161-0.220)	0.209 (0.174-0.245)
2-day	0.031 (0.028-0.036)	0.039 (0.035-0.045)	0.050 (0.045-0.058)	0.059 (0.052-0.068)	0.072 (0.062-0.082)	0.082 (0.071-0.094)	0.092 (0.079-0.107)	0.103 (0.087-0.122)	0.119 (0.098-0.142)	0.131 (0.106-0.159)
3-day	0.023 (0.021-0.026)	0.029 (0.026-0.033)	0.038 (0.034-0.043)	0.045 (0.040-0.051)	0.055 (0.048-0.063)	0.063 (0.055-0.072)	0.072 (0.062-0.083)	0.081 (0.069-0.095)	0.095 (0.078-0.111)	0.105 (0.085-0.126)
4-day	0.019 (0.017-0.022)	0.024 (0.022-0.028)	0.032 (0.028-0.036)	0.038 (0.034-0.043)	0.047 (0.041-0.053)	0.054 (0.047-0.062)	0.062 (0.053-0.071)	0.070 (0.059-0.081)	0.082 (0.068-0.096)	0.092 (0.075-0.109)
7-day	0.013 (0.011-0.015)	0.017 (0.015-0.019)	0.022 (0.019-0.025)	0.026 (0.023-0.030)	0.032 (0.028-0.037)	0.037 (0.032-0.043)	0.042 (0.036-0.049)	0.048 (0.040-0.056)	0.056 (0.046-0.066)	0.062 (0.051-0.074)
10-day	0.010 (0.009-0.012)	0.013 (0.012-0.015)	0.017 (0.015-0.020)	0.021 (0.018-0.024)	0.025 (0.022-0.029)	0.029 (0.025-0.033)	0.033 (0.028-0.038)	0.037 (0.031-0.043)	0.043 (0.036-0.051)	0.048 (0.039-0.057)
20-day	0.006 (0.006-0.007)	0.008 (0.007-0.009)	0.011 (0.010-0.012)	0.013 (0.011-0.015)	0.016 (0.014-0.018)	0.018 (0.016-0.020)	0.020 (0.017-0.023)	0.022 (0.019-0.026)	0.026 (0.022-0.030)	0.028 (0.023-0.033)
30-day	0.005 (0.005-0.006)	0.007 (0.006-0.007)	0.009 (0.008-0.010)	0.010 (0.009-0.012)	0.012 (0.011-0.014)	0.014 (0.012-0.016)	0.016 (0.014-0.018)	0.018 (0.015-0.020)	0.020 (0.017-0.023)	0.022 (0.018-0.026)
45-day	0.004 (0.004-0.005)	0.005 (0.005-0.006)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.010 (0.009-0.011)	0.011 (0.010-0.012)	0.012 (0.011-0.014)	0.013 (0.012-0.015)	0.015 (0.013-0.017)	0.016 (0.014-0.019)
60-day	0.003 (0.003-0.004)	0.005 (0.004-0.005)	0.006 (0.005-0.007)	0.007 (0.006-0.008)	0.008 (0.007-0.009)	0.009 (0.008-0.010)	0.010 (0.009-0.011)	0.011 (0.009-0.013)	0.012 (0.010-0.014)	0.013 (0.011-0.015)

¹ Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS). Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values. Please refer to NOAA Atlas 14 document for more information.

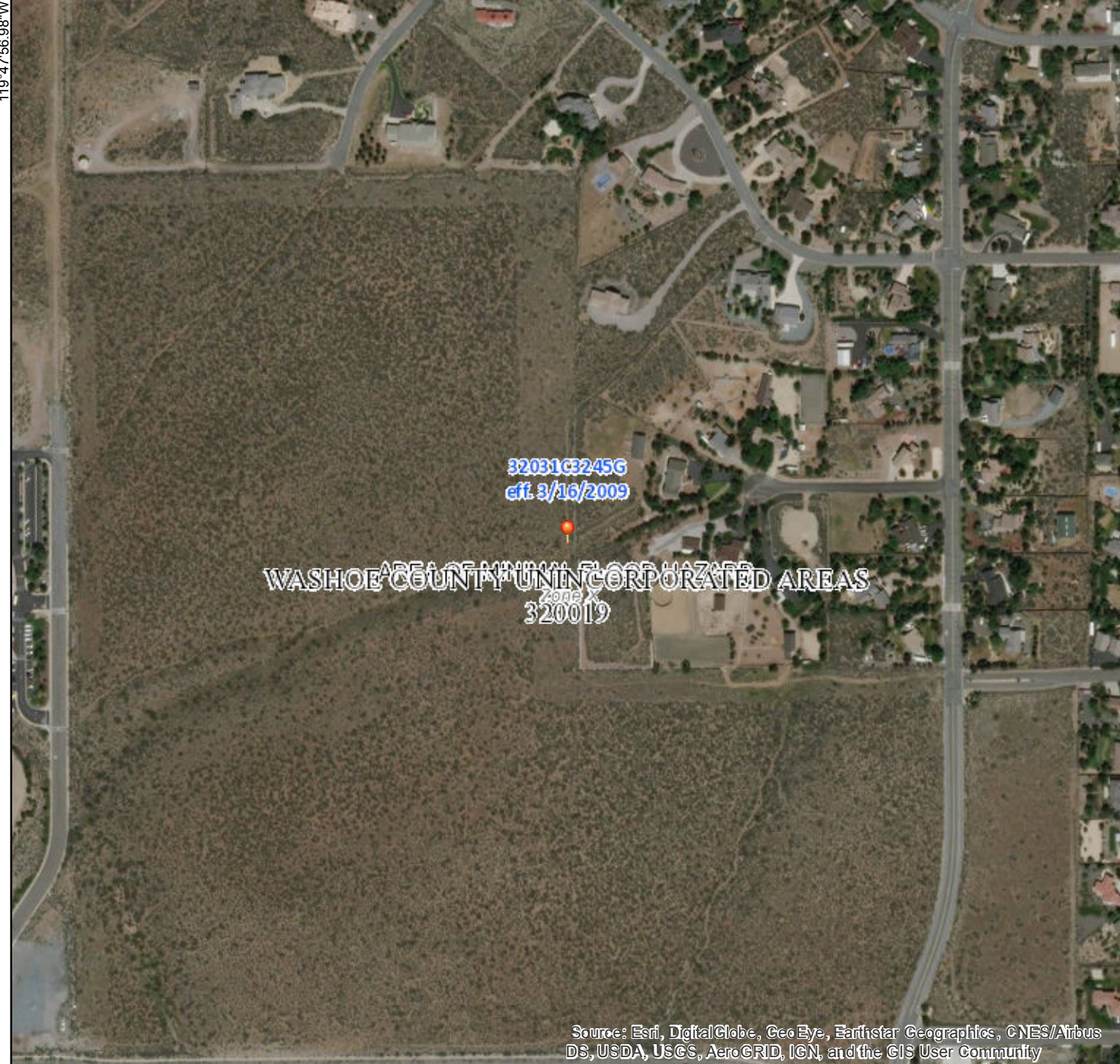
[Back to Top](#)



National Flood Hazard Layer FIRMette



39°24'45.44"N



Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS		Without Base Flood Elevation (BFE) Zone A, V, A99
		With BFE or Depth Regulatory Floodway Zone AE, AO, AH, VE, AR
OTHER AREAS OF FLOOD HAZARD		0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile Zone X
		Future Conditions 1% Annual Chance Flood Hazard Zone X
		Area with Reduced Flood Risk due to Levee. See Notes. Zone X
		Area with Flood Risk due to Levee Zone D
OTHER AREAS		Area of Minimal Flood Hazard Zone X
		Effective LOMRs
		Area of Undetermined Flood Hazard Zone D
GENERAL STRUCTURES		Channel, Culvert, or Storm Sewer
		Levee, Dike, or Floodwall
OTHER FEATURES		20.2 Cross Sections with 1% Annual Chance
		17.5 Water Surface Elevation
		Coastal Transect
		Base Flood Elevation Line (BFE)
		Limit of Study
		Jurisdiction Boundary
MAP PANELS		Digital Data Available
		No Digital Data Available
		Unmapped

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The base map shown complies with FEMA's base map accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on **4/9/2018 at 7:46:26 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: base map imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

Engineering Handbook, Section 4 (SCS, 1985). The antecedent moisture condition of the watershed is explained as follows:

The amount of rainfall in a period of 5 to 30 days preceding a particular storm is referred to as antecedent rainfall, and the resulting condition of the watershed in regard to potential runoff is referred to as an antecedent moisture condition. In general, the heavier the antecedent rainfall, the greater the direct runoff that occurs from a given storm. The effects of infiltration and evapotranspiration during the antecedent period are also important, as they may increase or lessen the effect of antecedent rainfall. Because of the difficulties of determining antecedent storm conditions from data normally available, the conditions are reduced to three cases, AMC-I, AMC-II and AMC-III.

For the Washoe County area, an AMC-II condition shall be used for determining storm runoff.

Having determined the soil group, land use and treatment class and the antecedent moisture condition, CN values can be determined from Table 702.

There will be areas to which the values in Table 702 do not apply. The percentage of impervious area for the various types of residential areas or the land use condition for the pervious portions may vary from the conditions assumed in Table 702. A curve for each pervious CN can be developed to determine the composite CN for any density of impervious area. Figure 702 has been developed assuming a CN of 98 for the impervious area. The curves in Figure 702 can help in estimating the increase in runoff as more land within a given area is covered with impervious material.

There are a number of methods available for computing the percentage of impervious area in a watershed. Some methods include using U.S. Geological Survey topographic maps, land use maps, aerial photographs, and field reconnaissance. Care must be exercised when using methods based on such parameters as population density, street density, and age of the development as a means of determining the percentage of impervious area. The available data on runoff from urban areas are not yet sufficient to validate widespread use of these methods. Therefore, the CN to be used in the Washoe County area shall be based on Table 702 or Figure 702 in this Manual. A CN computation example is included in Section 711.

704 RATIONAL FORMULA METHOD

For drainage basins that are not complex and have small drainage areas, the design storm runoff may be analyzed using the Rational Formula Method in accordance with Section 304.3. This method was introduced in 1889 and is still being used in many engineering offices in the United States. Even though this method has frequently come under academic criticism for its simplicity, no other practical drainage design method has evolved to such a level of general acceptance by practicing engineers. The Rational Formula Method, when properly understood and applied, can produce satisfactory results for determining peak discharge.

704.1 METHODOLOGY

The Rational Formula Method is based on the formula:

$$Q = CIA \tag{708}$$

Q is defined as the maximum rate of runoff in cubic feet per second (actually, Q has units of acre inches per hour, which is approximately equal to the units of cubic feet per second). C is a runoff coefficient and represents the runoff-producing conditions of the subject land area (see Section 704.5).

I is the average intensity of rainfall in inches per hour for a duration equal to the time of concentration.
A is the contributing basin area in acres.

704.2 ASSUMPTIONS

The basic assumptions made when applying the Rational Formula Method are as follows:

1. The computed maximum rate of runoff to the design point is a function of the average rainfall rate during the time of concentration to that point.
2. The maximum rate of rainfall occurs during the time of concentration, and the design rainfall depth during the time of concentration is converted to the average rainfall intensity for the time of concentration.
3. The maximum runoff rate occurs when the entire area is contributing flow. However, this assumption has been modified from time to time when local rainfall/runoff data was used to improve calculated results.

704.3 LIMITATIONS ON METHODOLOGY

The Rational Formula Method adequately approximates the peak rate of runoff from a rainstorm in a given basin. The critics of the method usually are unsatisfied with the fact that the answers are only approximations. A shortcoming of the Rational Formula Method is that only one point on the runoff hydrograph is computed (the peak runoff rate).

Another disadvantage of the Rational Formula Method is that with typical design procedures one normally assumes that all of the design flow is collected at the design point and that there is no "carry over water" running overland to the next design point. However, this is not the fault of the Rational Formula Method, but of the design procedure. The problem becomes one of routing the surface and subsurface hydrographs which have been separated by the storm sewer system. In general, this sophistication is not warranted and a conservative assumption is made wherein the entire routing occurs through the storm sewer system when this system is present.

704.4 RAINFALL INTENSITY

The rainfall intensity, I, is the average rainfall rate in inches per hour for the period of maximum rainfall of a given frequency having a duration equal to the time of concentration. After the design storm frequency has been selected, a graph should be prepared showing rainfall intensity versus time. Information on local rainfall data is presented in Section 600 of this Manual.

704.5 RUNOFF COEFFICIENT

The runoff coefficient, C, represents the integrated effects of infiltration, evaporation, retention, flow routing, and interception, all which affect the time distribution and peak rate of runoff. Determination of the coefficient requires judgment and understanding on the part of the engineer. Table 701 presents the recommended values of C for the various recurrence frequency storms. The values are presented for different surface characteristics as well as for different aggregate land uses. Variations to these values are subject to the approval of the Jurisdictional Entity.

A composite runoff coefficient is computed on the basis of the percentage of different types of surfaces in the drainage area. For homogeneous developed areas, this procedure is often applied to a typical "sample" area as a guide to selection of reasonable values of the coefficient for an entire area. Suggested coefficients with respect to surface type are also given in Table 701 under the column

labeled "Percent Impervious". Where land use features are mixed, a composite C analysis will result in more accurate results. The runoff coefficients in Table 701 also vary with recurrence frequency.

704.6 APPLICATION OF THE RATIONAL FORMULA METHOD

The first step in applying the Rational Formula Method is to obtain a topographic map and define the boundaries of all the relevant drainage basins. Basins to be defined include all basins tributary to the area of study and sub-basins within the study area. A field check and possibly field surveys should be made for each basin. At this stage of planning, the possibility for the diversion of transbasin waters should be identified.

The major storm drainage basin does not always coincide with the minor storm drainage basin. This is often the case in urban areas where a low flow will stay next to a curb and follow the lowest grade, but when a large flow occurs the water will be deep enough so that part of the water will overflow street crowns and flow into a new sub-basin. An example of how to apply the Rational Formula Method is presented in Section 711.

704.7 MAJOR STORM ANALYSIS

When analyzing the major runoff occurring within an area that has a storm sewer system sized for the minor storm, care must be used when applying the Rational Formula Method. Normal application of the Rational Method assumes that all of the runoff is collected by the storm sewer. For the minor storm design, the time of concentration is dependent upon the flow time in the sewer. However, during the major storm runoff, the sewers will probably be at capacity and would not carry the additional water flowing to the inlets. This additional water then flows overland past the inlets, generally at a lower velocity than the flow in the storm sewers.

If a separate time of concentration analysis is made for the pipe flow and surface flow, a time lag between the surface flow peak and the pipe flow peak will occur. This lag, in effect, will allow the pipe to carry a larger portion of the major storm runoff than would be predicted using the minor storm time of concentration. The basis for this increased benefit is that the excess water from one inlet will flow to the next inlet downhill, using the overland route. If that inlet is also at capacity, the water will often continue on until capacity is available in the storm sewer. The analysis of this aspect of the interaction between the storm sewer system and the major storm runoff is complex. The simplified approach of using the minor storm time of concentration for all frequency analysis is acceptable for use in Washoe County.

705 SCS UNIT HYDROGRAPH METHOD

The SCS Unit Hydrograph method was developed for the SCS by Mr. Victor Mockus. The SCS Unit Hydrograph was derived from a large number of natural unit hydrographs from watersheds varying widely in size and geographic location. The SCS Unit Hydrograph has been in use for many years and has produced satisfactory results for many applications. This method may be used for drainage areas within the Washoe County area in accordance with Section 304.3.

705.1 METHODOLOGY

The SCS Unit Hydrograph method uses the unit hydrograph theory as a basis for runoff computations. The unit hydrograph theory computes rainfall excess hydrographs for a unit amount of rainfall excess applied uniformly over a sub-basin for a given unit of time (or unit duration). The rainfall excess hydrographs are then transformed to a sub-basin hydrograph by superimposing each excess hydrograph lagged by the unit duration.

SECTION 700

STORM RUNOFF

701 INTRODUCTION

For the area within the jurisdiction of this Manual, two deterministic hydrological models can be used to predict storm runoff (Policy Section 304). These models are the Rational Formula Method and the Soil Conservation Service, U.S. Department of Agriculture (SCS) Unit Hydrograph method. The procedures for using these methods are presented in this section. The Rational Formula Method may be employed without the use of computers. Computer modeling using the U.S. Army Corps of Engineers HEC-1 or HEC-HMS Flood Hydrograph Package or other hydrologic computer modeling programs is required for the SCS method. For certain circumstances, where adequate recorded stream flow data are available and the drainage area is large (> 10 square miles), a statistical analysis may be required to predict the storm runoff peaks or for calibration of deterministic models (see Section 708).

701.1 BASIN CHARACTERISTICS

The basin characteristics needed for the subject runoff computation methods include the drainage area, soil type, the various flow path lengths, slopes, and characteristics (i.e., overland, grassed channel, gutter) and land use types. The drainage basin boundary and area may be determined from available topographic maps or site-specific mapping depending upon the level of detail required. A field investigation is recommended to verify drainage boundaries. The land use and flow path characteristics can be obtained from zoning maps, aerial photographs, field investigations, or detailed topographic maps.

702 TIME OF CONCENTRATION

The definition of the time of concentration, t_c , for the purpose of this Manual, is the time required for water to flow from the hydraulically most distant part of the drainage area to the point under consideration. For the Rational Formula Method, the time of concentration must be estimated so that the average rainfall rate for the corresponding duration can be determined from the rainfall intensity-duration-frequency curves. For the SCS Unit Hydrograph method, the time of concentration is used to determine the time-to-peak, t_p , of the unit hydrograph and subsequently, the peak runoff.

In the past, several different time of concentration equations have been used with the runoff methods discussed in the following sections. However, as both methods have the same definition of the time of concentration, and to promote consistency between the two runoff methods, the time of concentration equations presented in this section shall be used for all watersheds of total area less than one square mile and whose basin slope is less than ten percent. For larger watersheds and for watersheds with basin slopes equal to or greater than ten percent, the basin lag equation shall be used (see Section 705.3).

For urban areas, the time of concentration consists of an inlet time or overland flow time (t_i) plus the time of travel (t_t) in the storm sewer, paved gutter, roadside drainage ditch, or drainage channel. For non-urban areas, the time of concentration consists of an overland flow time (t_i) plus the time of travel in a combined form, such as a small swale, channel, or wash. The latter portion (t_t) of the time of concentration can be estimated from the hydraulic properties of the storm sewer, gutter, swale, ditch, or wash. Inlet time, on the other hand, will vary with surface slope, depression storage, surface cover,

antecedent rainfall, and infiltration capacity of the soil, as well as distance of surface flow. Thus, the time of concentration for both urban and non-urban areas shall be calculated as follows:

$$t_c = t_i + t_t \quad (701)$$

In which t_c = time of concentration (minutes)
 t_i = initial, inlet, or overland flow time (minutes)
 t_t = travel time in the ditch, channel, gutter, storm sewer, etc. (minutes)

To aid in the computation of t_c , Standard Form 2 (see Section - 1500) has been developed to organize the computation. In all drainage studies, t_c calculations should be submitted using Standard Form 2.

The initial or overland flow time, t_i , may be calculated using the following equation:

$$t_i = \frac{1.8 (1.1 - R) L_o^{1/2}}{S^{1/3}} \quad (702)$$

Where t_i = initial or overland flow time (minutes)
 R = flow runoff coefficient
 L_o = length of overland flow (feet, 500 feet maximum)
 S = average overland basin slope (percent)

Equation 702 was originally developed by the Federal Aviation Administration (FAA, 1970) for use with the Rational Formula Method. However, the equation is also valid for computation of the initial or overland flow time for the SCS Unit Hydrograph method using the appropriate flow runoff coefficient.

For the Rational Formula Method, the 5-year runoff coefficient, C_5 , presented in Table 701 shall be used as the flow runoff coefficient, R . For the SCS Unit Hydrograph method, R shall be calculated using the following equation:

$$R = .0132 CN - 0.39 \quad (703)$$

This equation was developed by converting CN factors to typical C_5 runoff coefficients.

The overland flow length, L_o , is generally defined as the length of flow over which the flow characteristics appear as sheet flow or very shallow flow in grassed swales. Changes in land slope, surface characteristics, and small drainage ditches or gullies will tend to force the overland flow into a concentrated flow condition. Thus, the initial flow time would generally end at these locations.

For longer basin lengths, initial or overland flow needs to be considered in combination with the travel time, t_t , which is calculated using the hydraulic properties of the swale, ditch, or channel. For preliminary work, travel time can be estimated with the help of Figure 701 (SCS, 1985). The time of concentration is then the sum of the initial flow time, t_i and the travel time t_t (Equation 701). The minimum t_c in Washoe County for non-urban watersheds shall be 10 minutes.

702.1 URBANIZED BASINS

Overland flow in urbanized basins can occur from the back of the lot to the street, in parking lots, in greenbelt areas, or within park areas. It can be calculated using the procedure described in Section 702 except that the travel time, t_t , to the first design point or inlet is estimated using the "Paved Area (Sheet Flow) & Shallow Gutter Flow" line in Figure 701. The time of concentration for the first design point in an urbanized basin using this procedure should not exceed the time of concentration

**RATIONAL FORMULA METHOD
RUNOFF COEFFICIENTS**

Land Use or Surface Characteristics	Aver. % Impervious Area	Runoff Coefficients	
		5-Year (C ₅)	100-Year (C ₁₀₀)
<u>Business/Commercial:</u>			
Downtown Areas	85	.82	.85
Neighborhood Areas	70	.65	.80
<u>Residential:</u> (Average Lot Size)			
1/8 Acre or Less (Multi-Unit)	65	.60	.78
1/4 Acre	38	.50	.65
1/8 Acre	30	.45	.60
1/2 Acre	25	.40	.55
1 Acre	20	.35	.50
<u>Industrial:</u>			
	72	.68	.82
<u>Open Space:</u> (Lawns, Parks, Golf Courses)			
	5	.05	.30
<u>Undeveloped Areas:</u>			
Range	0	.20	.50
Forest	0	.05	.30
<u>Streets/Roads:</u>			
Paved	100	.88	.93
Gravel	20	.25	.50
<u>Drives/Walks:</u>			
	95	.87	.90
<u>Roof:</u>			
	90	.85	.87

Notes:

1. Composite runoff coefficients shown for Residential, Industrial, and Business/Commercial Areas assume irrigated grass landscaping for all pervious areas. For development with landscaping other than irrigated grass, the designer must develop project specific composite runoff coefficients from the surface characteristics presented in this table.

VERSION: April 30, 2009	REFERENCE:	TABLE
<i>WRC ENGINEERING, INC.</i>	USDCM, DROCOG, 1969 (with modifications)	701

APPENDIX B
EXISTING HYDROLOGIC ANALYSIS

Project Description

File Name WCSD ARROW CREEK EXIST 5YR.SPF
 Description WASHOE COUNTY SCHOOL DISTRICT
 ARROW CREEK MIDDLE SCHOOL
 PRELIMINARY HYDROLOGIC ANALYSIS
 5-YR EXISTING CONDITIONS

Project Options

Flow Units CFS
 Elevation Type Elevation
 Hydrology Method Rational
 Time of Concentration (TOC) Method SCS TR-55
 Link Routing Method Hydrodynamic
 Enable Overflow Ponding at Nodes YES
 Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Apr 05, 2018 00:00:00
 End Analysis On Apr 06, 2018 00:00:00
 Start Reporting On Apr 05, 2018 00:00:00
 Antecedent Dry Days 0 days
 Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
 Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
 Reporting Time Step 0 00:05:00 days hh:mm:ss
 Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	7
Nodes.....	9
<i>Junctions</i>	4
<i>Outfalls</i>	5
<i>Flow Diversions</i>	0
<i>Inlets</i>	0
<i>Storage Nodes</i>	0
Links.....	4
<i>Channels</i>	2
<i>Pipes</i>	2
<i>Pumps</i>	0
<i>Orifices</i>	0
<i>Weirs</i>	0
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 5 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 X-01	11.83	0.3100	0.34	0.11	1.24	4.31	0 00:17:23
2 X-02	9.81	0.2600	0.33	0.09	0.85	3.09	0 00:16:30
3 X-03	13.98	0.2400	0.42	0.10	1.41	2.95	0 00:28:50
4 X-04	16.16	0.2000	0.35	0.07	1.12	3.76	0 00:17:45
5 X-05	22.98	0.2000	0.30	0.06	1.40	6.19	0 00:13:29
6 X-06	13.53	0.2000	0.31	0.06	0.84	3.56	0 00:14:09
7 X-07	10.62	0.2000	0.31	0.06	0.66	2.82	0 00:13:55

Project Description

File Name WCDSD ARROW CREEK EXIST 100YR.SPF
 Description WASHOE COUNTY SCHOOL DISTRICT
 ARROW CREEK MIDDLE SCHOOL
 PRELIMINARY HYDROLOGIC ANALYSIS
 100-YR EXISTING CONDITIONS

Project Options

Flow Units CFS
 Elevation Type Elevation
 Hydrology Method Rational
 Time of Concentration (TOC) Method SCS TR-55
 Link Routing Method Hydrodynamic
 Enable Overflow Ponding at Nodes YES
 Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Apr 05, 2018 00:00:00
 End Analysis On Apr 06, 2018 00:00:00
 Start Reporting On Apr 05, 2018 00:00:00
 Antecedent Dry Days 0 days
 Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
 Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
 Reporting Time Step 0 00:05:00 days hh:mm:ss
 Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	7
Nodes.....	9
<i>Junctions</i>	4
<i>Outfalls</i>	5
<i>Flow Diversions</i>	0
<i>Inlets</i>	0
<i>Storage Nodes</i>	0
Links.....	4
<i>Channels</i>	2
<i>Pipes</i>	2
<i>Pumps</i>	0
<i>Orifices</i>	0
<i>Weirs</i>	0
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 100 year(s)

Subbasin Summary

SN Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1 X-01	11.83	0.5700	0.82	0.47	5.55	19.20	0 00:17:23
2 X-02	9.81	0.5400	0.81	0.44	4.28	15.55	0 00:16:30
3 X-03	13.98	0.5200	1.02	0.53	7.44	15.47	0 00:28:50
4 X-04	16.16	0.5000	0.84	0.42	6.76	22.73	0 00:17:45
5 X-05	22.98	0.5000	0.73	0.37	8.41	37.42	0 00:13:29
6 X-06	13.53	0.5000	0.75	0.38	5.09	21.55	0 00:14:09
7 X-07	10.62	0.5000	0.75	0.37	3.97	17.04	0 00:13:55

APPENDIX C
PROPOSED HYDROLOGIC ANALYSIS

Project Description

File Name WCSD ARROW CREEK PROP 5YR.SPF
 Description WASHOE COUNTY SCHOOL DISTRICT
 ARROW CREEK MIDDLE SCHOOL
 PRELIMINARY HYDROLOGIC ANALYSIS
 5-YR PROPOSED CONDITIONS

Project Options

Flow Units CFS
 Elevation Type Elevation
 Hydrology Method Rational
 Time of Concentration (TOC) Method SCS TR-55
 Link Routing Method Hydrodynamic
 Enable Overflow Ponding at Nodes YES
 Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Apr 05, 2018 00:00:00
 End Analysis On Apr 06, 2018 00:00:00
 Start Reporting On Apr 05, 2018 00:00:00
 Antecedent Dry Days 0 days
 Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
 Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
 Reporting Time Step 0 00:05:00 days hh:mm:ss
 Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	9
Nodes.....	17
<i>Junctions</i>	11
<i>Outfalls</i>	5
<i>Flow Diversions</i>	0
<i>Inlets</i>	0
<i>Storage Nodes</i>	1
Links.....	12
<i>Channels</i>	7
<i>Pipes</i>	5
<i>Pumps</i>	0
<i>Orifices</i>	0
<i>Weirs</i>	0
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 5 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	P-01	11.83	0.3100	0.34	0.11	1.24	4.31	0 00:17:23
2	P-02	9.81	0.2600	0.33	0.09	0.85	3.09	0 00:16:30
3	P-03	13.98	0.2400	0.42	0.10	1.41	2.95	0 00:28:50
4	P-04	7.11	0.2000	0.28	0.06	0.41	2.02	0 00:12:01
5	P-05	9.19	0.2000	0.26	0.05	0.48	2.85	0 00:10:00
6	P-06	26.94	0.5500	0.30	0.17	4.45	20.00	0 00:13:24
7	P-07	10.01	0.2000	0.30	0.06	0.60	2.72	0 00:13:14
8	P-08	2.28	0.2000	0.26	0.05	0.12	0.71	0 00:10:00
9	P-09	7.76	0.2000	0.29	0.06	0.44	2.21	0 00:11:59

Project Description

File Name WCD ARROW CREEK PROP 100YR.SPF
 Description WASHOE COUNTY SCHOOL DISTRICT
 ARROW CREEK MIDDLE SCHOOL
 PRELIMINARY HYDROLOGIC ANALYSIS
 100-YR PROPOSED CONDITIONS

Project Options

Flow Units CFS
 Elevation Type Elevation
 Hydrology Method Rational
 Time of Concentration (TOC) Method SCS TR-55
 Link Routing Method Hydrodynamic
 Enable Overflow Ponding at Nodes YES
 Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Apr 05, 2018 00:00:00
 End Analysis On Apr 06, 2018 00:00:00
 Start Reporting On Apr 05, 2018 00:00:00
 Antecedent Dry Days 0 days
 Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
 Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
 Reporting Time Step 0 00:05:00 days hh:mm:ss
 Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	9
Nodes.....	17
<i>Junctions</i>	11
<i>Outfalls</i>	5
<i>Flow Diversions</i>	0
<i>Inlets</i>	0
<i>Storage Nodes</i>	1
Links.....	12
<i>Channels</i>	7
<i>Pipes</i>	5
<i>Pumps</i>	0
<i>Orifices</i>	0
<i>Weirs</i>	0
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 100 year(s)

Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Runoff Coefficient	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	P-01	11.83	0.5700	0.82	0.47	5.55	19.20	0 00:17:23
2	P-02	9.81	0.5400	0.81	0.44	4.28	15.55	0 00:16:30
3	P-03	13.98	0.5200	1.02	0.53	7.44	15.47	0 00:28:50
4	P-04	7.11	0.5000	0.69	0.34	2.44	12.21	0 00:12:01
5	P-05	9.19	0.5000	0.62	0.31	2.87	17.19	0 00:10:00
6	P-06	26.94	0.7200	0.73	0.52	14.06	63.33	0 00:13:24
7	P-07	10.01	0.5000	0.72	0.36	3.60	16.44	0 00:13:14
8	P-08	2.28	0.5000	0.62	0.31	0.71	4.26	0 00:10:00
9	P-09	7.76	0.5000	0.69	0.34	2.67	13.34	0 00:11:59

APPENDIX D
DETENTION FACILITY ANALYSIS

Project Description

File Name WCD ARROW CREEK PROP 100YR.SPF
 Description WASHOE COUNTY SCHOOL DISTRICT
 ARROW CREEK MIDDLE SCHOOL
 PRELIMINARY HYDROLOGIC ANALYSIS
 100-YR PROPOSED CONDITIONS

Project Options

Flow Units CFS
 Elevation Type Elevation
 Hydrology Method Rational
 Time of Concentration (TOC) Method SCS TR-55
 Link Routing Method Hydrodynamic
 Enable Overflow Ponding at Nodes YES
 Skip Steady State Analysis Time Periods NO

Analysis Options

Start Analysis On Apr 05, 2018 00:00:00
 End Analysis On Apr 06, 2018 00:00:00
 Start Reporting On Apr 05, 2018 00:00:00
 Antecedent Dry Days 0 days
 Runoff (Dry Weather) Time Step 0 01:00:00 days hh:mm:ss
 Runoff (Wet Weather) Time Step 0 00:05:00 days hh:mm:ss
 Reporting Time Step 0 00:05:00 days hh:mm:ss
 Routing Time Step 30 seconds

Number of Elements

	Qty
Rain Gages	0
Subbasins.....	9
Nodes.....	17
<i>Junctions</i>	11
<i>Outfalls</i>	5
<i>Flow Diversions</i>	0
<i>Inlets</i>	0
<i>Storage Nodes</i>	1
Links.....	12
<i>Channels</i>	7
<i>Pipes</i>	5
<i>Pumps</i>	0
<i>Orifices</i>	0
<i>Weirs</i>	0
<i>Outlets</i>	0
Pollutants	0
Land Uses	0

Rainfall Details

Return Period..... 100 year(s)

Storage Nodes

Storage Node : Stor-01

Input Data

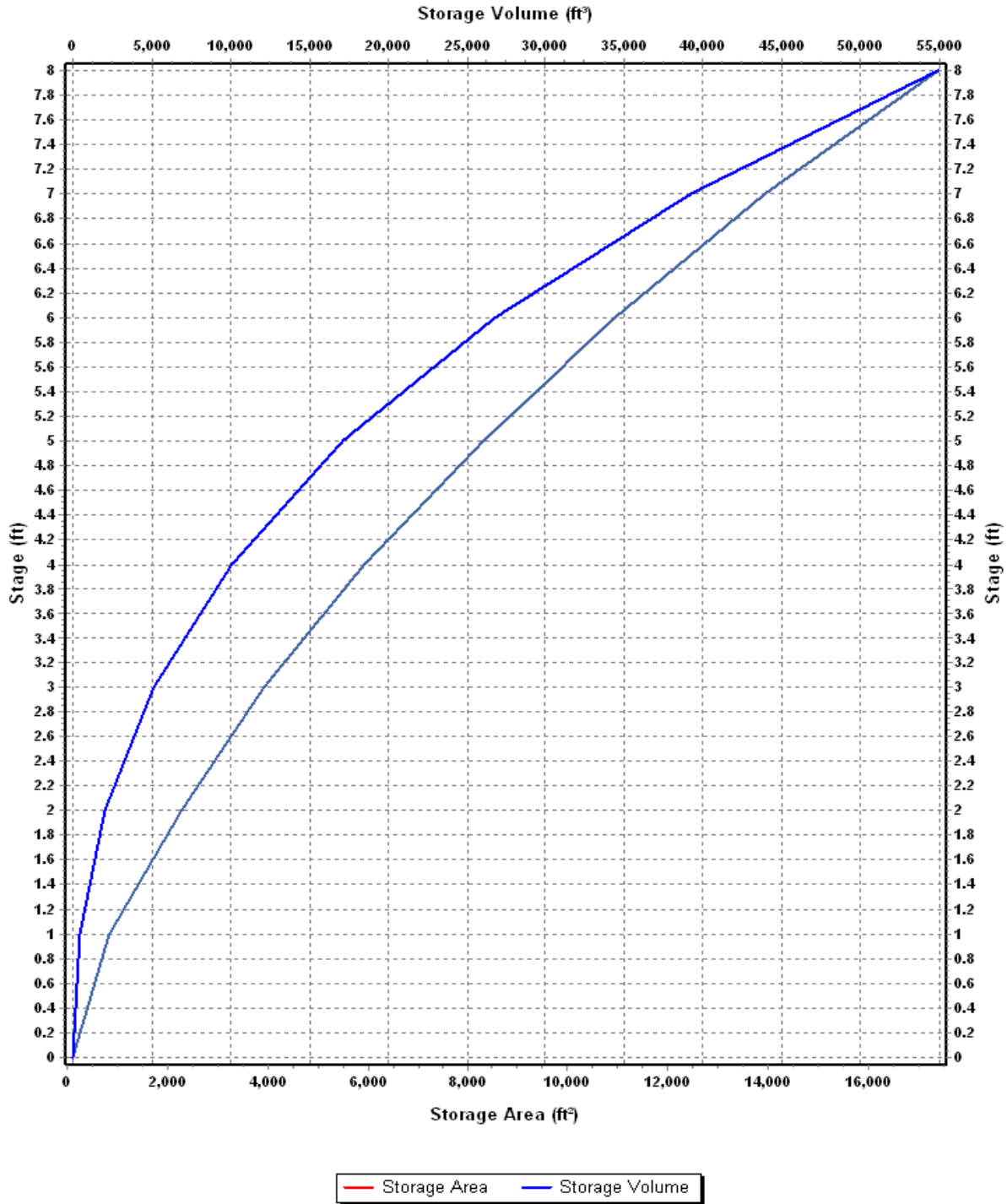
Invert Elevation (ft) 5064.00
Max (Rim) Elevation (ft) 5072.00
Max (Rim) Offset (ft) 8.00
Initial Water Elevation (ft) 5064.00
Initial Water Depth (ft) 0.00
Ponded Area (ft²) 17602.00
Evaporation Loss 0.00

Storage Area Volume Curves

Storage Curve : Storage-01

Stage	Storage Area (ft ²)	Storage Volume (ft ³)
0	109	0.000
1	843	476.00
2	2269	2032.00
3	3928	5130.50
4	5917	10053.00
5	8322	17172.50
6	10931	26799.00
7	13963	39246.00
8	17404	54929.50

Storage Area Volume Curves



Storage Node : Stor-01 (continued)

Output Summary Results

Peak Inflow (cfs)	37.20
Peak Lateral Inflow (cfs)	0.00
Peak Outflow (cfs)	19.95
Peak Exfiltration Flow Rate (cfm)	0.00
Max HGL Elevation Attained (ft)	5070.03
Max HGL Depth Attained (ft)	6.03
Average HGL Elevation Attained (ft)	5064.24
Average HGL Depth Attained (ft)	0.24
Time of Max HGL Occurrence (days hh:mm)	0 00:39
Total Exfiltration Volume (1000-ft ³)	0.000
Total Flooded Volume (ac-in)	0
Total Time Flooded (min)	0
Total Retention Time (sec)	0.00

PROFILE VIEW "SECTION A"
"SECTION A" 0+00.00 TO "SECTION A" 26+00.00

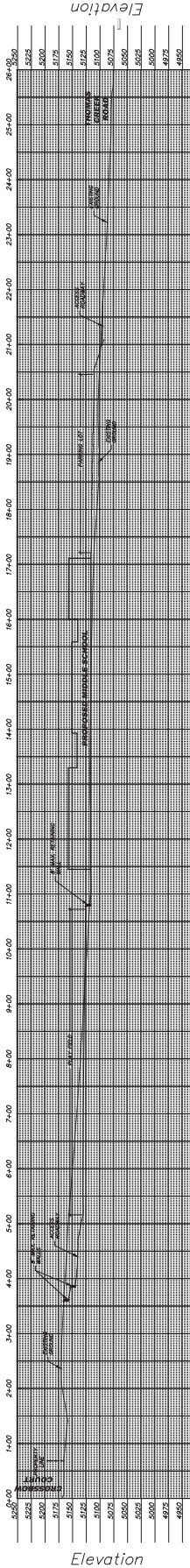
construction and materials shall building code (local and/or local) or requirements.

The design and drawings contained hereon are the property of the architect and are not to be reproduced, stored in a retrieval system, or used in any form without the prior written consent of the architect.

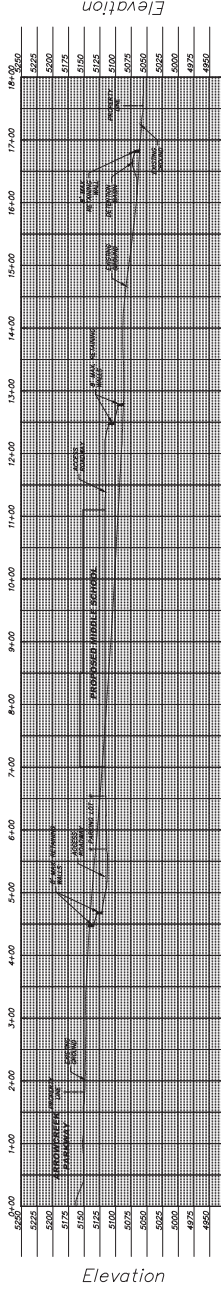


drawn: F.S.
checked: F.S.

#	Date	Description



PROFILE VIEW "SECTION B"
"SECTION B" 0+00.00 TO "SECTION B" 18+00.00



Preliminary Drawings
drawing title
Arrow Creek Middle School
Preliminary Construction Documents
job number
1703
date
12 February 2018

drawing number

C2.0

AS NOTED UNLESS OTHERWISE SPECIFIED, ALL DIMENSIONS ARE IN FEET AND INCHES.