City of Eudora Modified Public Meeting Procedure

The City of Eudora will hold its regular Planning Commission meeting on Wednesday, August 5, 2020 beginning at 7:00 P.M. Due to the concerns of spread of COVID-19, the Planning Commission meeting will be held at City Hall, but some Planning Commission members will participate remotely. To meet the spirit and intent of the Kansas Open Meetings Act (KOMA), anyone can listen to the meeting live via a conference call. This access can be gained as follows:

Dial-in number (US): (701) 802-5407
Access code: 7548666#

If anyone wishes to make a public comment, they may do so by sending or e-mailing their comment to Planning Commission Secretary, Eric Strimple by 5:00 P.M. on Wednesday, August 5, 2020. Public comments can also be mailed to the Secretary at P.O. Box 650, Eudora, Kansas 66025 (please keep in mind delivery time; if they do not arrive by 5:00 P.M. Wednesday, August 5, 2020 they will not be read), submitted via the utility bill drop box on the east side of City Hall, or e-mailed to estrimple@cityofeudoraks.gov . The public comments will be read by the Secretary during the public comment portion of the meeting. All public comments must include the name and address of the person submitting the comment. Please remember that public comment is limited to 5 minutes per person.

Members of the Planning Commission, presenters, or staff will identify themselves when speaking so that everyone will know who is speaking at the time.

AGENDA

CITY OF EUDORA PLANNING COMMISSION

Wednesday, 5 August 2020

Regular Monthly Meeting at 7:00 p.m.

City Hall, 4 East 7th Street, Eudora, Kansas 66025

Planning Commission Members

Grant Martin, Chairman Josh Harger, Vice-Chairman

Danielle Young Jason Hoover Johnny Stewart Tim Pringle Dr. Ryan Rock

Eric Strimple, Non-member Secretary

- **Call to Order: 7:00 p.m.**
- **Roll Call and Pledge of Allegiance**
- **General Business:**
  a) Swearing in of Jason Hoover, reappointed to the Planning Commission.
  b) Consider the minutes of the last regularly scheduled meetings (4 March 2020).
  c) Reports:
     i. Codes Administrator
        1. Curt Baumann
     ii. City Manager's Office
        1. Barack Matite

- **Public Comment Period:** Non-agenda Items
  Speakers limited to three (3) minutes for non-agenda items only. No action will be taken.

- **Public Hearings:**
  a) Public Hearing: Final Planned Development - Casey's General Stores, Inc.

- **New Business:**
  a) Final Planned Development application - Casey's General Stores, Inc.

- **Old Business:**
  a) Review Conditional Use Permit Application: CUP 19-00568 (Within 3 miles of Eudora in Douglas County located at 1258 E 2300 Rd.) of Hamm Quarry to expand the current quarry operations.

Calendar: Next Planning Commission meeting is Wednesday, 02 September 2020

Adjournment

Please call 785-542-3124 if unable to attend meeting, thank you.

Eudora Planning Commission Meeting Minutes

March 4, 2020

Grant Martin, Chair	Present
Danielle Young	Absent
Johnny Stewart	Present
Jason Hoover	Absent
Tim Pringle	Present
Dr. Ryan Rock	Present
Josh Harger, Vice Chair	Absent

Additional Attendees:
Curt Baumann, Codes Administrator
Dave Knopick, City Planning Consultant
Branden Boyd, Director of Public Works
Barack Matite, City Manager
Leslie Herring, Assistant City Manager

Quorum for Planning Commission noted and posted.

Meeting called to order at 7:02 PM by Chairman Martin.

The pledge of allegiance was recited.

General Business:

A. Swearing in of Dr. Ryan Rock, reappointed to the Planning Commission. Commissioner Rock was sworn in by Secretary Eric Strimple.

B. Consider minutes of the last regularly scheduled meetings, (05 February 2020)- **Commissioner Stewart made a motion to approve the 05 February 2020 meeting minutes as distributed,** Commissioner Rock seconded, all ayes, motion carried 4-0.

C. Reports

   a. Codes Administrator
      i. Curt Baumann- Baumann stated there were 20 permits with 1 new housing start. Baumann added he spoke with Roger Johnson of RD Johnson. Johnson told him that all lots in phase 5 of Shadow Ridge have been sold and the beginning steps of the next phase would be coming soon.

b. City Manager

i. City Manager, Barack Matite- Matite stated that the City Commission approved Ordinance 1106 which authorizes the CIP projects for 2020, with part of the CIP projects being the infrastructure improvements for the Nottingham project.

Matite asked Dave Knopick to update the Planning Commission on the Comprehensive Plan. Knopick stated the plan was moving along and the 1st round of input was complete. He added there were 942 responses to the online survey and that 88% of those were residents of Eudora.

Knopick said a few interesting details from the surveys included the primary reason for living in Eudora. The top three being the school district, born and raised in Eudora, or moved to Eudora. He added that population has grown by about 45% since the last Comprehensive Plan and most people were ok keeping growth about the same over the next 20 years.

Other concerns were infrastructure and commercial development. Knopick stated the next step will be a few interviews with business owners and key people in the community.

Public Comment Period: None heard

Public Hearings:

A. Public hearing: Rezoning, Use Permitted Upon Review, Preliminary Development Plan, and Preliminary Plat applications for the proposed Nottingham commercial development located at 1428 Elm Street, Eudora, KS- City Manager, Barack Matite stated the project has come before the Planning Commission as a work session. Matite added that the project is a City project and the city is in the role of owner on this project.

Phil Dougherty, Slaggie Architects and Andy Gabbert, Renaissance Infrastructure Consulting presented a Power Point presentation to the public outlining the Nottingham Center Tenant Guidelines.

The Public Hearing was opened.

Dana Chance asked who would be responsible for the landscaping. Gabbert stated that the development will have an HOA so each lot owner will provide for maintenance and pay into a system to maintain the landscaping.

Chance asked how the parking for the recreation center will be address. Gabbert stated that parking will bleed into the project site with a shared parking access. He stated that lot

5 of the project is over parked to accommodate extra parking. He added that the City is also looking at adding additional parking on the east side of the recreation center in another project as well.

Mark Grosdidier asked why 15th Street isn't going to be a thrU street in the project since it will have the stop light. He added the way it is proposed he feels that 14th Street and Locust Street will see extra traffic because of the access point into the development located there and the placement of Casey's. He stated that he feels having it go through the development would ease the traffic on 14th Street. Grant Niehus, Renaissance Infrastructure Consulting traffic engineer stated that as far as traffic, the bulk of the traffic is expected to be on Church Street. Niehus added that most of the traffic accessing Casey's will utilize Church Street.

Commissioner Stewart asked if the north and south bound turning lanes on Church Street will be part of phase 1. Gabbert said they were not part of phase 1. Niehus stated for phase 1, anything touching the west side of Church Street will be added in. He indicated there are talks about adding a right turn auxiliary lane going southbound into the property at 15th Street.

Commissioner Stewart asked what the projected traffic flow is for Casey's between 7:30 AM and 8:30 AM. Niehus stated that the estimates show approximately 150 cars in that timeframe.

Samantha Arrendondo stated that she does not want to have 15th Street go through the development because her kids walk to the recreation center to get on the school bus, play in the street with friends and ride their bikes to the park with friends. She added they moved to that area because of the kids' safety.

Julian Arredondo asked to not have more cars added to his street because he likes to play with his friends and walk to the park. Gabbert stated that the general design of the development is to push people towards using Church Street.

Mark Grosdidier asked how wide the sidewalks would be in the development. Gabbert stated they would be 5' wide.

Samantha Arrendondo asked if new sidewalks will be added on Elm Street. Gabbert stated that the plan has sidewalks along Elm, 14th and Church Streets.

Chad DiCaprio asked about lighting in the development. Gabbert stated that lights will have shields on them to stop light from going outside of the property line. He added you will still see light, but you shouldn't be getting excess light on residential property.

Dwane Richardson asked if the current entrance to the site at 16th street would stay. Gabbert said no it would be removed.

Dwane Richardson asked what the plan was for the house that is surrounded by the development. Gabbert stated the house is not part of the development at this time.

Mark Grosdidier suggested having the sidewalk go all the way through the development on 15th Street, from Church Street to Elm Street to give kids a walking path to get to the recreation center. Gabbert stated that the development is still in preliminary development and things like sidewalks may move or change in the final development plan.

Chad DiCaprio asked if electric would be underground. Dougherty stated, yes.

No other public comments were heard. Chairman Martin closed the public hearing.

New Business:

Dave Knopick, Planning Consultant presented the staff report for the Rezoning, Use Permitted Upon Review, Preliminary Development Plan, and Preliminary Plat applications for the proposed Nottingham commercial development. Knopick stated that the staff report received summarizes the four applications received. Knopick noted to the Planning Commission that they are only at the preliminary development plan and preliminary plat stage. He added these applications are the framework of the development and stated there are details that are not know yet, such as elevations, or design of the buildings, those will be part of the final plan review.

Knopick indicated the tenant criteria will have a two-fold purpose. The development team will use them as they reach out to potential buyers, and the city will use them for planning purposes.

Knopick stated thar a few deviation requests were received, which mainly relate to the setback, landscape area and parking requirements, but one deviation he wants to note is more for a process, the process is on how the Planned Overlay District operates and the definition of substantial changes and minor changes from preliminary to final plans. He stated in city code there is some very specific language on what elements trigger and what percentages require you to come back with a revised preliminary plan as part of the process. He stated what is being asked is for greater flexibility in the percentage thresholds on items because the project is at such an early stage that no one knows how this impervious surface is going to come out yet and they know there may be some deviations. He stated if the Planning Commission was ok with the deviations, they will use those percentage thresholds to determine if a revised plan would have to come back through the whole process for review.

Knopick stated staff doesn't feel any of the requested deviations appear to be excessive.

Knopick noted that the outline of the staff report and the review process the four applications have taken since the original submission on January 21, 2020. He stated the size of the vacant

land is approximately 14.65 acres and would be divided into 8 parcels and 2 tracts with three phases.

Knopick stated in the review criteria he broke out each of the four applications with sections of city code in italic, then provided staff comments under each code section. He added that the staff reporting was done from a neutral standpoint for the Planning Commission review. He stated that in all four applications staff is recommending approval.

Knopick added he doesn't see an issue with rezoning to commercial because the site is in a good location for commercial use.

Knopick said that with the Preliminary Development Plan applications he is suggesting approval with five criteria. The main one he wanted to note to the Planning Commission was #3, The preliminary plan may be adjusted to incorporate a full turn access at the mid-block drive access that is just south of Lot 1 aligning with the Sonic entrance to the east of Church. This change requires the drive to be a 3-lane section. He stated there are discussions taking place that may change the intersection into a full operational intersection, which may need another lane added to the plan. He stated #3 is in there just in case the full operational intersection may get incorporated into the final plans.

Chairman brought the four business items back to the Commission for discussion.

A. Rezoning request- Rezoning application to rezone 1428 Elm Street from (RS) Residential Single-Family District to the (C) Commercial District with a Planned Overlay District (POD). Such action would result in the CPOD zoning district designation for the property- Chairman Martin opened the item up for Planning Commission discussion. No comments were heard.

   Commissioner Stewart made a motion to recommend approval of the rezoning application from RS Residential Single-Family District to CPOD Commercial Planned Overlay District, subject to the approval of the UPUR and Preliminary Plan applications, Commissioner Pringle seconded, all ayes, motion carried, 4-0.

B. Use Permitted Upon Review – proposed Nottingham commercial development (1428 Elm Street)- Chairman Martin opened the item up for Planning Commission discussion. No comments were heard.

   Commissioner Rock made a motion to recommend approval of the UPUR application as the CPOD designation allows for a greater level of design and development review through the preliminary and final development plan process in order to address specific parameters and qualities associated with the property and the surrounding context, Commissioner Stewart seconded, all ayes, motion carried, 4-0.

C. Nottingham Center Preliminary Development Plan- Nottingham commercial development (1428 Elm Street)- Commissioner Stewart stated the full turn access is designed to drive traffic to the north out of the development on Church Street and asked if Knopick was ok with that flexibility. Knopick deferred to Branden Boyd and Grant Niehus for comment.

Boyd stated that he has concern giving full access at the intersection just south of the proposed Casey's. His concern is backing traffic up on Church Street or in the development until there is a full build out on Church Street with turn lanes. He added that he feels that the right in from Church Street will be the fastest way for people to access Casey's from the north and not turning on 14th to access the development. Niehus added that the traffic study done by RIC does not recommend a full turn intersection, but Casey's is asking for it, so they are looking into the ramifications of allowing that to happen. He also noted it wasn't a safety concern, but a stack up concern.

Knopick stated since the final lot design for Casey's hasn't been received there is a possibility of access points on the south side of Casey's changing so that is why they wanted the flexibility in the suggested motion to changing to a full turn intersection if needed.

Chairman Martin stated he understands that Casey's is driving it, but he feels it would be creating another high school / Meadowlark intersection issue, which is terrible at certain times of the day.

Commissioner Rock added that the intersection at Sonic, right across the street is already a difficult intersection and if a full turn intersection is added across the street would be adding to the issues.

Commissioner Stewart asked if the deviations on setbacks to buildings from 10' to 0' is to get buildings closer together and to be more flexible. Knopick noted that it was for interior walls and stated he feels it is to allow flexibility in between lots so you could put buildings together. Knopick stated that he doesn't see an issue to that in a commercial development.

Andy Gabbert stated an example of the setbacks would be in lot 5 where it is currently one lot with multiple stores together, someone could come in and say that they wanted land to be sold by itself, and a replat could be done without a detrimental effect to the whole development.

Phil Dougherty added if property lines are redefined, there will be concern on fire separation, whether it is an open space between buildings or a fire rated separation wall. He stated in some cases fire separation walls cannot be on property lines which is a whole other dynamic that has to be approached code wise.

Commissioner Stewart stated that he understands that Casey's is driving the request for a full turn access at the mid-block drive. City manager Matite stated there are internal conversations about what we can do right now vs waiting. He added the city knows at full build out that Church Street will need to be upgraded and if the city wants to do it now or in phases. Matite stated he will be having the conversation with the City Commission and lay out how much money the city has for the project in phase 1 and the costs of doing it now versus later. Matite added that the City will be submitting a grant to KDOT to find a way for them to help pay for improvements south of 15th Street, that are in the right-of-way.

Commissioner Stewart stated that he was ok with #3 in the proposed motion if it has the word "may" in it.

Chairman Martin stated that he wants to make sure that everyone is cognizant to what is driving the request for #3. He added there was talk of give and take and we may have to give a little with the entity for establishing the first business of the development.

Commissioner Stewart made a motion to recommend approval of the preliminary plan application, including the tenant criteria and the list of requested deviations, with the following conditions:

1. **Cleaning up any general typographical / technical errors and adding information as necessary to address staff review comments.**
2. **The property encompassed by the proposed development be platted as part of the development process in accordance with City regulations.**
3. **The preliminary plan may be adjusted to incorporate a full turn access at the mid-block drive access that is just south of Lot 1 aligning with the Sonic entrance to the east of Church. This change requires the drive to be a 3-lane section.**
4. **Addressing design and development details in a manner that meets City requirements through the final plan, final plat, public improvement plan, building / construction plan and other applicable permitting processes.**
5. **Subject to meeting all applicable federal, state and local regulations and acquiring applicable permits.**

Commissioner Rock seconded, all ayes, motion carried, 4-0.

D. Nottingham Center Preliminary Plat application- Nottingham commercial development (1428 Elm Street)- Chairman Martin opened the item up for Planning Commission discussion. No comments were heard.

Commissioner Pringle made a motion to recommend approval of the preliminary plat with the following conditions:

1. **Cleaning up any general typographical / technical errors and adding information as necessary to address staff review comments.**
2. **Preliminary plat shall incorporate references establishing a property owner association that will be responsible for shared property / development improvements and maintenance of such improvements. Specific dedications and references shall also be incorporated into final plat(s) for the development and require appropriate filing and recording establishing the association.**
3. **Preliminary plat shall incorporate references to shared parking and circulation arrangements. Such arrangements shall be noted on final plat(s) with appropriate easements / agreements filed and recorded accordingly.**

Commissioner Rock seconded, all ayes, motion carried, 4-0.

Commissioner Stewart made a motion to adjourn the meeting, Commissioner Rock seconded, all ayes, motion carried, 4-0.

Meeting adjourned 9:10 PM.

_____
Grant Martin, Chairman

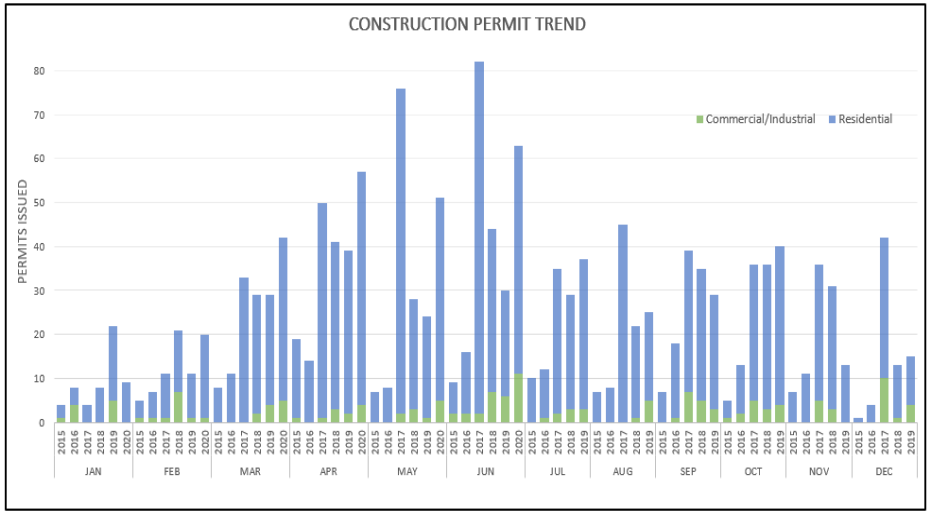
_____
Eric Strimple, Secretary

BUILDING PERMIT REPORT MARCH 2020

EUDORA KANSAS a place to grow

BUILDING PERMITS March 2020						
PERMITS	ADDRESS	LOT	BLK.	BUILDER	WORK TYPE	VALUATION
200029	712 E. 12th St	51	n/a	Randall Electric	Remodel (RS) Elec Service Upgrade	$3,000.00
200030	63 Savage Terr	63	n/a	Eaton Roofing & Exteriors	Remodel (RS) Reroof	$8,300.00
200031	1014 Pine St	4,5,6	62	Royal Fence & Design	Addition (RS) Fence	$6,925.00
200032	730 Ash St	7,8	240	Tim Durkin	Remodel (RS) Deck	$10,000.00
200033	1233 Bluestem Dr	30	n/a	Jon Dahl	Addition (RS) Fence	$1,200.00
200034	1310 Chestnut Ln	22	5	Farha Roofing	Remodel (RS) Reroof	$8,721.00
200035	736 Acorn St	8,9	97	Reddi Services	Remodel (RS) Sewer Repair	$3,500.00
200036	905 E 14th St	3	2	Aaron Steele	Addition (RS) Fence	$3,000.00
200037	1402 Church St	3,4	5	Maria Stadick	Addition (C) Banner Sign	$150.00
200038	915 Church St	16,17	183	Midwest Property	Remodel (RS) Fence	$3,300.00
200039	1034 Pine St	9,10	62	Century Roofing	Remodel (RS) Reroof	$4,000.00
200040	1117 Fir St	15,16	61	Jeff Gregory	Remodel (RS) Elec Service Upgrade	$500.00
200041	207 W 16th Ter	11	4	Jerry Cromwell Const Co	New (RS) Single Family Residence	$295,000.00
200042	607 Main St Terr	1,2,3	136	Garrison Roofing, LLC	Remodel (RS) Reroof	$9,183.00
200043	515 W. 9th St	1,2	42	Alpha Roofing, LLC	Remodel (RS) Reroof	$6,000.00
200044	1620 Maple Ter	5	4	Jerry Cromwell Const Co	New (RS) Single Family Residence	$295,000.00
200045	801 E. 10th St	1	n/a	Eudora Aces Society	Addition (C) Temporary Event Sign	$300.00
200046	1321 Church St	1	1	Eudora Aces Society	Addition (C) Temporary Event Sign	$300.00
200047	1518 Sycamore St	96	3	Alvis Shelton	Remodel (RS) Deck	$3,000.00
200048	821 E. 13th St	5	6	True Blue Plumbing LLC	Remodel (RS) HVAC	$850.00
200049	804 Main St	2,3	146	Josh Pacheco	Remodel(DC) Demo/Remod	$2,500.00
200050	1714 Hawthorne St	2	3	Mesler Roofing & Exterior	Remodel(RS) ReRoof	$5,693.00
200051	1216 Walnut St	5	34	Watts & Watts LLC	New (RS) Single Family Residence	$310,959.00
200052	1220 Walnut St	6	34	Watts & Watts LLC	New (RS) Single Family Residence	$310,959.00
200053	911 Cedar Pl	n/a	20	Bob Hamilton	Remodel (RS) Sewer Repair	$4,900.00
200054	1014 Main St	4,5	148	Moundview, LLC	Remodel (RS) Sewer Repair	$1,000.00
200055	1203 Cherry St	1,2	8	Theresa Mock	Remodel (RS) Driveway	$5,500.00
200056	19 Ithaca Ct	n/a	19	Alpha Roofing, LLC	Remodel (RS) Reroof	$5,590.00
200057	2730 Montrose Cir	4	16	Westerhouse, Inc	Remodel (RS) HVAC	$4,200.00
200058	1236 Locust St	9,10	186	Bob Hamilton	Remodel (RS) HVAC	$3,000.00
200059	1034 Pine St	9,10	62	Js Exterior & Interiors, Inc	Remodel (RS) Demo/Remodel	$70,000.00
200060	1606 16th Ct	2	n/a	AAA Fence LLC	Addition (RS) Fence	$5,000.00
200061	1420 Tamarisk Ct	21	3	Midwest Property	Addition (RS) Fence	$4,500.00
200062	1118 Cherry St	5,6	18	Tim Bruce	Remodel (RS) Demo/Remodel	$130,000.00
200063	1321 Church St	1	1	Lindsey Hoover	Addition (C) Sign	$200.00
200064	1112 W. 13th Ln	12	2	Brandi Abram	Remodel (RS) Gas Line	$300.00
200065	931 Oak St	13,14,15	95	Shamrock Hills, LLC	Remodel (RS) Reroof	$4,500.00
200066	329 Stratton Dr	2	4	Jayhawk Power Systems, Inc	Addition (RS) Emergency Generator	$8,500.00
200067	736 Acorn St	8,9	97	Downstream Plumbing	Remodel (RS) Sewer Repair	$1,600.00
200068	625 Oak St	11-14	98	Travis Pesnell	Addition (RS) Deck	$800.00
200069	1438 Maple St	9,10	128	Slavin Flatwork	Remodel (RS) Driveway	$8,000.00
200070	722 Birch St	6	215	Jacob Long	Addition (RS) Fence	$300.00
					TOTAL	$1,550,230.00

BUILDING PERMITS March 2020						
TYPE OF PERMIT ISSUED	PERMITS ISSUED THIS MONTH	PERMIT VALUE	PRIOR TOTAL PERMITS ISSUED	PRIOR TOTAL VALUATION	TOTAL PERMITS TO DATE	TOTAL VALUATION
New (RS)Single Family Units	4	$1,211,918.00	2	$728,559.00	6	$1,940,477.00
Remodel (RS)Single Family	25	$304,637.00	18	$93,278.00	43	$397,915.00
Addition (RS) Single Family	8	$30,225.00	8	$107,540.00	16	$137,765.00
New Mobilehome Units	0	$0.00	0	$0.00	0	$0.00
Remodel- Mobile Home	0	$0.00	0	$0.00	0	$0.00
Addition - Mobile Home	0	$0.00	0	$0.00	0	$0.00
New (RT) Duplex Units	0	$0.00	0	$0.00	0	$0.00
Remodel (RT) Duplex	0	$0.00	0	$0.00	0	$0.00
Addition (RT)Duplex	0	$0.00	0	$0.00	0	$0.00
New (RM) Multi-family Units	0	$0.00	0	$0.00	0	$0.00
Remodel (RM)Multi-family	0	$0.00	0	$0.00	0	$0.00
Addition (RM) Multi-family	0	$0.00	0	$0.00	0	$0.00
New (C)Commercial Units	0	$0.00	0	$0.00	0	$0.00
Remodel Commercial	1	$2,500.00	0	$0.00	1	$2,500.00
Addition Commercial	4	$950.00	1	$100.00	5	$1,050.00
New (I) Industrial Units	0	$0.00	0	$0.00	0	$0.00
Remodel Industrial	0	$0.00	0	$0.00	0	$0.00
Addition Industrial	0	$0.00	0	$0.00	0	$0.00
New (RS through I) other	0	$0.00	0	$0.00	0	$0.00
Remodel (RS through I) other	0	$0.00	0	$0.00	0	$0.00
Addition (RS) through I) other	0	$0.00	0	$0.00	0	$0.00
Miscellaneous	0	$0.00	0	$0.00	0	$0.00
Seasonal Sales	0	$0.00	0	$0.00	0	$0.00
RV's	0	$0.00	0	$0.00	0	$0.00
Right-of-Ways	0	$0.00	0	$0.00	0	$0.00
TOTAL	**42**	**$1,550,230.00**	**29**	**$929,477.00**	**71**	**$2,479,707.00**



City of Eudora Kansas

Building & Codes Department

4 East 7th Street, Eudora, KS 66025

Phone: 785-542-2153

Fax: 785-542-1237

CONSTRUCTION PERMIT TYPE:
New
Remodel
Addition
Miscellaneous

BUILDING PERMIT REPORT APRIL 2020

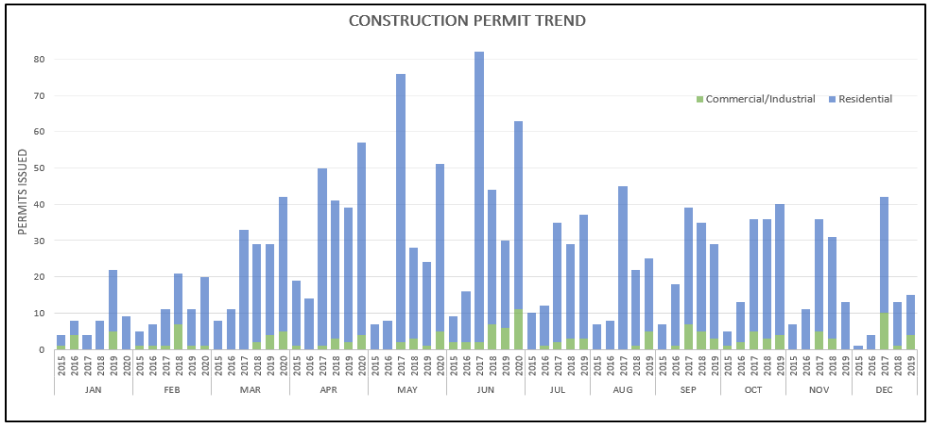
EUDORA KANSAS a place to grow

BUILDING PERMITS April 2020

PERMITS	ADDRESS	LOT	BLK.	BUILDER	WORK TYPE	VALUATION
200071	203 W 15th St	19,20	89	Dunco	Remodel (RS) HVAC	$3,216.00
200072	930 E. 14th Ct	12	1	Benton Ellsworth	Remodel (RS) Fence	$2,500.00
200073	903/905 Oak St	20	95	Visionary Homes	New (RS) Residential Duplex	$188,610.00
200074	1300 Main St	1	151	Roofing Force, LLC	Remodel (RS) Reroof	$6,510.00
200075	2629 S Fir Terr	13	4	Jerry Cromwell	New (RS) Single Family Residence	$240,306.00
200076	71 Winchester Rd	71	n/a	Nicholas Bass	Addition (RS) Fence	$2,574.00
200077	VOID	VOID	VOID	VOID	VOID	VOID
200078	501 E. 10th St #B28	28	B	Bryan Hicks	New (RS) Mobile Home	$6,000.00
200079	723/725 Locust St	15,15	170	L&E Contractor	Remodel (RS) Reroof	$7,400.00
200080	102 W. 27th St	1	1	Christopher Counts	Addition (RS) Fence	$3,000.00
200081	1221 Bluestem Dr	33	n/a	LLL&L	Remodel (RS) Fence	$4,026.00
200082	701 E. 14th Ter	6	4	Alexanders Roofing, LLC	Remodel (RS) Reroof	$5,877.00
200083	1610 Acorn Ln	6	6	Elite Fence and Conc.	Addition (RS) Fence	$3,246.00
200084	503 E. 7th St	1,2	240	Advantage H & C	Remodel (RS) HVAC	$2,095.00
200085	1727 Linden Ct	14	4	Josh Moreno	Addition (RS) Fence	$4,200.00
200086	0 10th St	n/a	n/a	Lee Mudd	R.O.W	$60,000.00
200087	1609 16th Ct	6	n/a	AAA Fence LLC	Addition (RS) Fence	$7,500.00
200088	1222-1224 Main St	5,6	150	L&E Contractor	Remodel (RS) Reroof	$4,800.00
200089	1306 Chestnut Ln	23	5	Alpha Roofing, LLC	Remodel (RS) Reroof	$8,600.00
200090	102 E. 7th St	9	171	Kristina Shepherd	Addition (RS) Fence	$1,125.00
200091	906 Cedar Pl	24	1	Garrett Thompson	Remodel (RS) Sewer Repair	$1,000.00
200092	1212 Church St	5	1	Realty Renovations	Remodel (RS) Demo/Remodel	$15,000.00
200093	1625 Acorn Ln	12	3	Miller Development	New (RS) Single Family Residence	$259,112.00
200094	1614 Acorn ln	7	6	Haley Ward	Remodel (RS) Deck Remodel	$2,000.00
200095	739 Church St	10,11	181	Crosby Plumbing Inc	Remodel (RS) Sewer Repair	$2,800.00
200096	1106 Peach St	11	5	Brandi Perry	Addition (RS) Swimming Pool	$6,200.00
200097	712 E. 14th St	2	1	Alpha Roofing, LLC	Remodel (RS) Reroof	$8,125.00
200098	815 Locust St	15,16,17	169	Bob Hamilton P & H	Remodel (RS) Sewer Repair	$4,000.00
200099	1418 Fir St	3	79	Troy Miller	Remodel (RS) Basement Egress Win	$2,000.00
200100	316 W. 26th St	4	2	Lawrence Fencing KS	Addition (RS) Fence	$4,750.00
200101	103 E. 12th St	1,2	165	Bob Hamilton P & H	Remodel (RS) Water Heater	$4,200.00
200102	1111 Cherry St	3,4	9	Windler Foundation Rep	Remodel (RS) Egress Windows	$15,950.00
200103	1608 Oak St	3	5	Michael Ortega	Addition (RS) Fence	$1,500.00
200104	509 E. 15th St	1	n/a	Cornerstone Custom	Addition (C) Fence	$7,000.00
200105	619 E. 15th St	1	1	Cornerstone Custom	Addition (RS) Fence	$3,000.00
200106	2622 S. Fir Terr	1	5	Robert Pope	Addition (RS) Fence	$1,200.00
2000107	340 Beaumont St	5	4	Westerhouse Inc	Remodel (RS) HVAC	$8,400.00
2000108	625 E 14th PL	7	5	Westerhouse Inc	Remodel (RS) HVAC	$5,600.00
200109	1657 Davis Cir	5	3	Cornerstone Custom	New(RS) Sngle Family Residence	$271,232.00
200110	1659 Davis Cir	6	3	Cornerstone Custom	New(RS) Sngle Family Residence	$271,232.00
200111	521 Birch St	16,17	208	Breanna Wuertz	Addition (RS) Fence	$1,300.00
200112	521 Birch St	16,17	208	Breanna Wuertz	Addition (RS) Swimming Pool	$200.00
200113	1118 Elm St	5,6	166	Brandy Collins	Addition (RS) Fence	$2,310.00
200114	102 Acorn St	5	2	LLL&L	Addition (RS) Fence	$3,600.00
200115	21 Ithica Ct	21	n/a	Bob Hamilton P & H	Remodel (RS) Sewer Repair	$6,500.00
200116	2225 N 1300 Rd	n/a	n/a	Pauli Homes, Inc	Remodel (RS) Demo	$10,000.00
200117	1502 Main St	1	153	Bruce Howard	Addition (RS) Fence	$1,500.00
200118	1212 Oak St	3,4	115	Richard Campbell	Remodel (RS) Bathrooms	$10,000
200119	309 Montrose Cv	8	6	Charles Brent	Addition (RS) Fence	$2,200.00
200120	1441 Arrowwood Dr	11	6	Cottonwood Roofing	Remodel (RS) Reroof	$5,500.00
200121	2302 Pheasant PL	19	1	Westerhouse Inc	Remodel (RS) HVAC	$11,013.00
200122	2719 Montrose Cir	9	5	Westerhouse Inc	Remodel (RS) HVAC	$3,689.00
200123	1321 Church St	1	1	Renee Davis	Addition (C) Banner Sign	$100.00
200124	806 E. 13th St	27	3	Stacy Kurtz	Remodel (RS) Deck Remodel	$12,300.00
200125	1100 Elm St	1,2	166	Roto Rooter Services	Remodel (RS) Sewer Repair	$7,500.00
200126	1519 Cedar St	100	n/a	Weddle & Sons Inc	Remodel (RS) Reroof	$6,139.00
200127	1731 Linden Ct	16	4	Keith Moore	Addition (RS) Fence	$3,000.00
					TOTAL	$1,542,737.00

BUILDING PERMITS April 2020

TYPE OF PERMIT ISSUED	PERMITS ISSUED THIS MONTH	PERMIT VALUE	PRIOR TOTAL PERMITS ISSUED	PRIOR TOTAL VALUATION	TOTAL PERMITS TO DATE	TOTAL VALUATION
New (RS)Single Family Units	5	$1,230,492.00	6	$1,940,477.00	11	$3,170,969.00
Remodel (RS)Single Family	29	$186,740.00	43	$397,915.00	72	$584,655.00
Addition (RS) Single Family	18	$52,405.00	16	$137,765.00	34	$190,170.00
New Mobilehome Units	1	$6,000.00	0	$0.00	1	$6,000.00
Remodel- Mobile Home	0	$0.00	0	$0.00	0	$0.00
Addition - Mobile Home	0	$0.00	0	$0.00	0	$0.00
New (RT) Duplex Units	0	$0.00	0	$0.00	0	$0.00
Remodel (RT) Duplex	0	$0.00	0	$0.00	0	$0.00
Addition (RT)Duplex	0	$0.00	0	$0.00	0	$0.00
New (RM) Multi-family Units	0	$0.00	0	$0.00	0	$0.00
Remodel (RM)Multi-family	0	$0.00	0	$0.00	0	$0.00
Addition (RM) Multi-family	0	$0.00	0	$0.00	0	$0.00
New (C)Commercial Units	0	$0.00	0	$0.00	0	$0.00
Remodel Commercial	1	$0.00	1	$2,500.00	2	$2,500.00
Addition Commercial	2	$7,100.00	5	$1,050.00	7	$8,150.00
New (I) Industrial Units	0	$0.00	0	$0.00	0	$0.00
Remodel Industrial	0	$0.00	0	$0.00	0	$0.00
Addition Industrial	0	$0.00	0	$0.00	0	$0.00
New (RS through I) other	0	$0.00	0	$0.00	0	$0.00
Remodel (RS through I) other	0	$0.00	0	$0.00	0	$0.00
Addition (RS) through I) other	0	$0.00	0	$0.00	0	$0.00
Miscellaneous	0	$0.00	0	$0.00	0	$0.00
Seasonal sales	0	$0.00	0	$0.00	0	$0.00
RV's	0	$0.00	0	$0.00	0	$0.00
Right-of-Ways	1	$60,000.00	0	$0.00	1	$60,000.00
TOTAL	**57**	**$1,542,737.00**	**71**	**$2,479,707.00**	**128**	**$4,022,444.00**



CONSTRUCTION PERMIT TYPE:
New
Remodel
Addition
Miscellaneous

City of Eudora Kansas

Building & Codes Department

4 East 7th Street, Eudora, KS 66025

Phone: 785-542-2153

Fax: 785-542-1237

BUILDING PERMIT REPORT MAY 2020

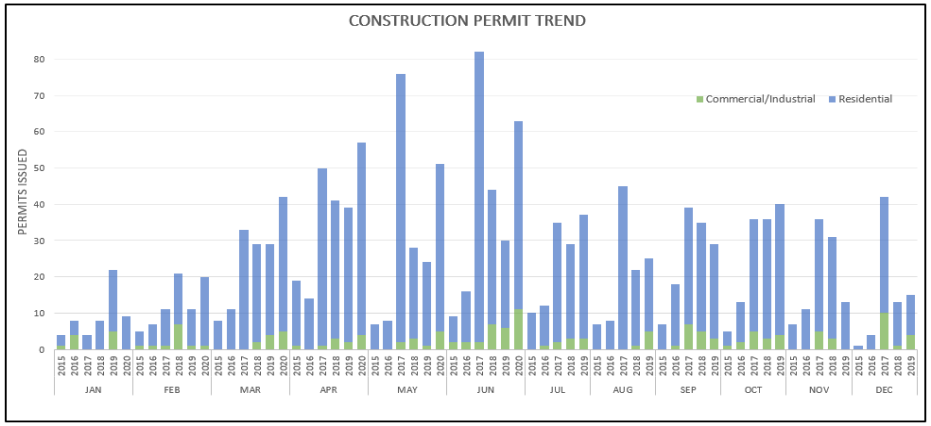
EUDORA KANSAS a place to grow

BUILDING PERMITS May 2020

PERMITS	ADDRESS	LOT	BLK.	BUILDER	WORK TYPE	VALUATION
200128	1119 Oak St	16	93	WTL Contractors	New(RS) Single Fam Res	$138,455.00
200129	1111 Cherry St	3,4	9	Westerhouse Inc	Remodel (RS) HVAC	$6,500.00
200130	304 E 6th St	11,12	208	True Blue Plbg	Remodel (RS) Water Heater	$850.00
200131	1110 Peach St	12	1	Westerhouse Inc	Remodel (RS) HVAC	$3,400.00
200132	1114 Peach St	13	1	Westerhouse Inc	Remodel (RS) HVAC	$4,200.00
200133	623 Church St	15-17	180	Lynn Electric	Remodel (RS) Electric Service	$600.00
200134	810 E. 14th Terr	2	2	JLS Construction	Addition (RS) Deck	$5,500.00
200135	2201 Country Dr	7	B	Dale Berg	Addition (RS) Fence	$1,500.00
200136	726 E. 14th Ter	15	2	Felipe Avila	Remodel (RS) Deck	$8,000.00
200137	609 E. 13th St	1	n/a	Alpha Roofing	Remodel (RS) Reroof	$4,500.00
200138	621 E. 13th St	64	n/a	KSR Roofing	Remodel (RS) Reroof	$8,455.00
200139	101 W 15th St	4	1	Chad VanDeVerde	Addition (RS) Acc Bldg	$53,000.00
200140	810 E 13th St	26	3	Innovative Design	Addition (RS) Bsmt Fin	$35,820.00
200141	402 W 9th St	11,12	64	Midwest Homes Inc	New (RS) Single Family Res	$130,410.00
200142	329 Beaumont St	4	5	Shamrock Hills LLC	Remodel (RS) ReRoof	$6,100.00
200143	1131 Acorn St	13,14	76	Dustin Helm	Addition (RS) Acc Bldg	$35,000.00
200144	1612 Oak St	4	5	Robert Terhune	Addition (RS) Fence	$3,936.00
200145	2622 S Fir Terr	1	5	Lawrence Landscape	Addition (RS) Irrigation Sys	$5,000.00
200146	1402 Church St	3,4	5	USD 491	Addition (C) Sign	$60.00
200147	1205 Maple St	19,20	115	Bob Hamilton	Remodel (RS) HVAC	$3,000.00
200148	402 E 6th St	9,10	213	Slavin flatwork	Remodel (RS) Driveway	$6,500.00
200149	2609 S. Fir Terr	8	4	Phil Ellsworth	Addition (RS) Fence	$3,304.00
200150	610 W. 10th St	1,2,19,20	43	Mesler Roofing	Remodel (C) Reroof	$3,480.00
200151	830 E 12th St	2	1	Ace Plumbing Inc	Remodel (RS) Water Heater	$1,100.00
200152	1230 Elm St	7,8	165	Slavin flatwork	Remodel (RS) Driveway	$7,500.00
200153	1004 Locust St	1,2	184	Austin Ventures	Addition (C) Sign	$60.00
200154	1004 Locust St	1,2	184	Austin Ventures	Addition (C) Sign	$20.00
200155	1504 Greenway Dr	1B	7	Allens Mechanical	Remodel (RM) Gas Line	$200.00
200156	102 E. 7th St	9,10	171	Rescue Roofing LLC	Remodel (RS) Reroof	$7,781.00
200157	211 W 16th Ter	12	4	Aquaflo Irrigation	Addition (RS) Irrigation Sys	$3,000.00
200158	817 E. 13th St	4	5	Premier Pools	Addition (RS) Swimming Pool	$42,000.00
200159	1440 Briarwood Ct	8	3	Stacey Dines	Addition (RS) Swimming Pool	$4,500.00
200160	818 E. 12th St	1	5	AAA Fence	Addition (RS) Fence	$4,700.00
200161	501 E. 10th St	5	A	Brian Hicks	New (RS) Mobile Home	$18,000.00
200162	932 W. 14th St	10	n/a	Ricky Bailey	Addition (RS) Swimming Pool	$2,224.00
200163	1115 Spruce St	17,18	35	Westerhouse Inc	Remodel (RS) HVAC	$5,500.00
200164	817 Maple Ln	5	111	Westerhouse Inc	Remodel (RS) HVAC	$2,000.00
200165	102 E. 7th St	9,10	171	Kristi Shepherd	Addition (RS) Fence	$1,000.00
200166	1503 Elm St	1,2	153	Susan Albright	Addition (RS) Fence	$6,000.00
200167	332 Beaumont St	7	4	Chris Chamberlin	Addition (RS) Fence	$3,000.00
200168	1018 E 14th Ct	15	1	Westerhouse Inc	Remodel (RS) HVAC	$5,800.00
200169	1731 Elm St	8 thru 13	155	Westerhouse Inc	Remodel (RS) HVAC	$4,500.00
200170	618 Birch St	5,6	214	Westerhouse Inc	Remodel (RS) HVAC	$2,700.00
200171	921 E 13th Ct	1	6	Josh Monhollon	Remodel (RS) Kitchen	$500.00
200172	302 Montrose Cove	1	5	Jeremy Newman	Addition(RS) Deck	$2,000.00
200173	1321 Church St	1	1	Eudora Fest	Addition(C) Sign	$250.00
200174	909 Fir St	17.18,19	63	Joe the Plumber	Remodel (RT) Gas line	$300.00
200175	1601 Acorn Ln	6	3	MIKO LLC	New (RS) Single Family Res	$237,434.00
200176	1549 Savage St	621	n/a	Alpha Roofing	Remodel (RS) ReRoof	$6,700.00
200177	1274 E 2200 Rd	1	1	Doug Garber	Remodel(RS) Egress Window	$12,000.00
200178	2225 N 1300 Rd	n/a	n/a	Pauli Homes	New (RS) Single Family Res	$406,000.00
					TOTAL	$1,254,339.00

BUILDING PERMITS May 2020

TYPE OF PERMIT ISSUED	PERMITS ISSUED THIS MONTH	PERMIT VALUE	PRIOR TOTAL PERMITS ISSUED	PRIOR TOTAL VALUATION	TOTAL PERMITS TO DATE	TOTAL VALUATION
New (RS)Single Family Units	4	$912,299.00	11	$3,170,969.00	15	$4,083,268.00
Remodel (RS)Single Family	22	$108,186.00	72	$584,655.00	94	$692,841.00
Addition (RS) Single Family	17	$211,484.00	34	$190,170.00	51	$401,654.00
New Mobilehome Units	1	$18,000.00	1	$6,000.00	2	$24,000.00
Remodel- Mobile Home	0	$0.00	0	$0.00	0	$0.00
Addition - Mobile Home	0	$0.00	0	$0.00	0	$0.00
New (RT) Duplex Units	0	$0.00	0	$0.00	0	$0.00
Remodel (RT) Duplex	1	$300.00	0	$0.00	1	$300.00
Addition (RT)Duplex	0	$0.00	0	$0.00	0	$0.00
New (RM) Multi-family Units	0	$0.00	0	$0.00	0	$0.00
Remodel (RM)Multi-family	1	$200.00	0	$0.00	1	$200.00
Addition (RM) Multi-family	0	$0.00	0	$0.00	0	$0.00
New (C)Commercial Units	0	$0.00	0	$0.00	0	$0.00
Remodel Commercial	1	$3,480.00	2	$2,500.00	3	$5,980.00
Addition Commercial	4	$390.00	7	$8,150.00	11	$8,540.00
New (I) Industrial Units	0	$0.00	0	$0.00	0	$0.00
Remodel Industrial	0	$0.00	0	$0.00	0	$0.00
Addition Industrial	0	$0.00	0	$0.00	0	$0.00
New (RS through I) other	0	$0.00	0	$0.00	0	$0.00
Remodel (RS through I) other	0	$0.00	0	$0.00	0	$0.00
Addition (RS) through I) other	0	$0.00	0	$0.00	0	$0.00
Miscellaneous	0	$0.00	0	$0.00	0	$0.00
Seasonal Sales	0	$0.00	0	$0.00	0	$0.00
R V's	0	$0.00	0	$0.00	0	$0.00
Right-of-Way	0	$0.00	1	$60,000.00	1	$60,000.00
Total	51	$1,254,339.00	128	$4,022,444.00	179	$5,276,783.00



CONSTRUCTION PERMIT TYPE:
New
Remodel
Addition
Miscellaneous

City of Eudora Kansas

Building & Codes Department

4 East 7th Street, Eudora, KS 66025

Phone: 785-542-2153

Fax: 785-542-1237

BUILDING PERMIT REPORT JUNE 2020

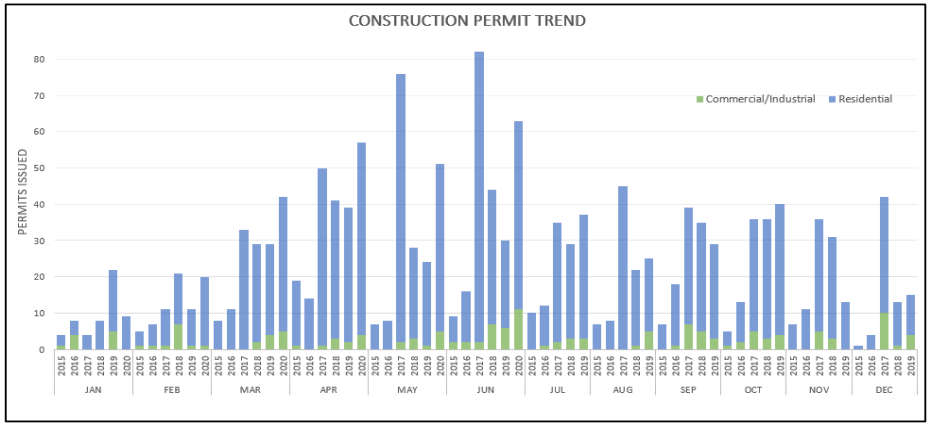
EUDORA KANSAS a place to grow

BUILDING PERMITS June 2020

PERMITS	ADDRESS	LOT	BLK.	BUILDER	WORK TYPE	VALUATION
200179	320 Beaumont St	10	4	Kevin Case	Addition (RS) Fence	$2,620
200180	714 Birch St	3,4,5	215	Theresa Grammer	Remodel (RS) Deck	$2,000
200181	707 E. 12th St	52	n/a	James Stickley	Addition (RS) Swimming Pool	$30,000
200182	1610 Maple St	3	4	Beau Ferguson	Addition (RS) Fence	$500
200183	2745 S Fir Ter	25	4	Charles Ketcham	Addition(RS) Enclosed Porch	$19,706
200184	501 E 10th St	101	E	Johnathan Percell	Addition(RS) Fence	$500
200185	115 Elm St	16,17	148	Advantage Htg & Air	Remodel (RS) HVAC	$6,290
200186	601 E 10th St	1	n/a	Jason Musick	Addition (C) Sign	$250
200187	314 E. 8th St	11,12	206	Craig Corpstein	Addition (RS) Fence	$375
200188	340 Beaumont St	5	4	Alan Von Holten	Remodel(RS) Deck Replacemen	$6,000
200189	621 Main St Ter	136	7thru10	Accessibility Solutions	Remodel (RS) Plumbing	$2,450
200190	1274 E 2200 Rd	1	1	KSR Roofing	Remodel (RS) Reroof	$7,808
200191	621 Main St Ter	136	7thru10	Accessibility Solutions	Remodel (RS) Electric Upgrade	$2,000
200192	341 Beaumont St	7	5	Gregory Baird	Remodel (RS) Deck	$3,500
200193	805 Pine St	19,20	41	Lindsey Chesnut	Addition (RS) Fence	$4,200
200194	734 Pine St	4,5,6	65	L&E Contractor	Remodel (RS) Reroof	$4,800
200195	1029 Elm St	12,13	148	Ratliff Enterprises, Inc	Remodel (RS) Reroof	$5,000
200196	1127 W. 13th Ln	7	3	Scott Vickers	Addition (RS) Swimming Pool	$7,000
200197	1127 W. 13th Ln	7	3	Scott Vickers	Remodel (RS) Fence	$3,000
200198	1012 Spruce St	4,5	43	DL Smith Electrical	Remodel (RS) Electric Upgrade	$975
200199	1421 Arrowwood Dr	6	6	James Templeton	Addition (RS) Swimming Pool	$6,000
200200	314 E 9th St	11,12	205	Mark Grosdidier	Addition (RS) Egress Windows	$10,000
200201	1605 16th Ct	7	n/a	Tom Schutt	Addition (RS) Deck landing/stairs	$2,000
200202	817 E 13th St	4	5	Tim Reazin	Remodel (RS) Deck Replacemen	$9,880
200203	1111 Cherry St	3,4	9	Tyler Cleveland	Addition (RS) Bsmt Finish	$24,000
200204	827 Locust St	12,13,14,15	169	Alpha Roofing	Remodel (RS) ReRoof	$6,900
200205	1206 Peach St	24	1	Troy Squire	Addition (RS) Swimming Pool	$8,000
200206	706 Birch St	18	206	Advantage Htg & Air	Remodel (RS) HVAC	$4,195
200207	601 E. 10th St	1	n/a	Benchmark Const	Remodel (C) Elec, Demo, Plmg	$1,500
200208	1400 Block/Church St	Various	Various	Rylie Equipment	R.O.W.	$10,000
200209	827 Elm St	6 thru 11	146	Cornerstone Family	Additon (DC) Sign	$300
200210	823 Elm St	6 thru 11	146	Cornerstone Family	Addition (DC) Sign	$1,000
200211	1701 Elm St	Various	Various	Roberta Lehmann	Addition (RS) Fence	$5,000
200212	802 Church St	1,2	205	Daniel Taylor	Addition (RS) Fence	$500
200213	1415 Maple St	1	1	AJM A/C	Remodel (RS) HVAC	$5,200
200214	730 Elm St	8,9	170	Royal Fence & Design	Addtion (RS) Fence	$5,700
200215	1404 Fir St	1	79	Donald Braa	Addition (RS) Swimming Pool	$250
200216	203 E. 9th St	1,2	183	Cheryl Baldwin	Remodel (RS) Electric Repair	$1,000
200217	1321 Church St	1	1	Eudora CPA	Addition (C) Sign	$100
200218	1402 Church St	3,4	5	Knights of Columbus	Addition (C) Wall Signs (3)	$200
200219	2710 Shadow Ridge Ct	5	4	Ron Spencer	Addition (RS) Fence/Pool	$14,500
200220	1304 Fir St	1,2	78	Mindy Transmeier	Remodel (RS) Deck Replacemen	$3,500
200221	924 Birch St	6,7	217	Larry Knight	Addition (RS) Garage Salon	$5,000
200222	313 W 26th Ln	4	4	Solar Planet Inc	Addition (RS) Solar Panels	$27,060
200223	918 Maple St	14,15	133	Advocate Construction	Remodel (RS) Reroof	$6,875
200224	230 W 27th St	18	1	Corey Pacheco	Addition (RS) Fence	$3,500
200225	1321 Church St	1	1	Zach Brooks	Addition (RS) Temp Elec Pole	$100
200226	817 E. 13th St	4	5	Tim Reazin	Remodel (RS) Fence	$2,640
200227	4103 Ash Ct	1	4	Smith Service Co	Remodel (RT) HVAC	$3,200
200228	730 Ash St	7,8	240	Tim Durkin	Remodel (RS) Panel Upgrade	$1,000
200229	103 W. 10th St	1,2	113	Jim Karleskint	Addition (C) Temporary Sign	$25
200230	530 Main St	7 thru 14	143	Jim Karleskint	Addition (C) Temporary Sign	$25
200231	509 E. 15th St	1	n/a	Aqua Sprinkler Syst	Addition (C) Irrigation System	$6,200
200232	730 Ash St	7,8	240	Tim Durkin	Addition (C) Swimming Pool	$35,000
200233	1029 Peach St	8	2	Michael Abruzzo	Remodel (RS) Bsmt Bdrm	$2,050
200234	1706 Cypress Ct	6	3	Ace Plumbing Inc	Remodel (RS) HVAC	$2,078
200235	1304 Fir St	1,2	78	Mindy Transmeier	Addition (RS) Fence	$2,000
200236	303 E. 10th St	1,2,3	203	Tom Pyle	Addition (C) Sign	$25
200237	1139 Spruce St	11,12	35	Christy Coble	Addition (RS) Fence	$500
200238	1339 Locust St	11,12	164	Rescue Roofers	Remodel (RS) Reroof	$9,500
200239	1205 Maple St	19,20	115	Bob Hamilton	Remodel (RS) Sewer Repair	$6,000
200240	1011 Pine St	17,18	43	Mark Naff	Remodel (RS) Deck Replacemen	$8,000
200241	1321 Church St	1	1	EABSA	Addition(C) Signage (4)	$160
					TOTAL	$349,637

BUILDING PERMITS June 2020

TYPE OF PERMIT ISSUED	PERMITS ISSUED THIS MONTH	PERMIT VALUE	PRIOR TOTAL PERMITS ISSUED	PRIOR TOTAL VALUATION	TOTAL PERMITS TO DATE	TOTAL VALUATION
New (RS) Single Family Units	0	$0	15	$4,083,268	15	$4,083,268
Remodel (RS) Single Family	25	$112,641	94	$692,841	119	$805,482
Addition (RS) Single Family	24	$179,011	51	$401,654	75	$580,665
New Mobilehome Units	0	$0	2	$24,000	2	$24,000
Remodel- Mobile Home	0	$0	0	$0	0	$0
Addition - Mobile Home	0	$0	0	$0	0	$0
New (RT) Duplex Units	0	$0	0	$0	0	$0
Remodel (RT) Duplex	1	$3,200	1	$300	2	$3,500
Addition (RT) Duplex	0	$0	0	$0	0	$0
New (RM) Multi-family Units	0	$0	0	$0	0	$0
Remodel (RM) Multi-family	0	$0	1	$200	1	$200
Addition (RM) Multi-family	0	$0	0	$0	0	$0
New (C) Commercial Units	0	$0	0	$0	0	$0
Remodel Commercial	1	$1,500	3	$5,980	4	$7,480
Addition Commercial	9	$41,985	11	$8,540	20	$50,525
New (I) Industrial Units	0	$0	0	$0	0	$0
Remodel Industrial	0	$0	0	$0	0	$0
Addition Industrial	0	$0	0	$0	0	$0
New (RS through I) other	0	$0	0	$0	0	$0
Remodel (RS through I) other	0	$0	0	$0	0	$0
Addition (RS through I) other	2	$1,300	0	$0	2	$1,300
Miscellaneous	0	$0	0	$0	0	$0
Seasonal Sales	0	$0	0	$0	0	$0
R V's	0	$0	0	$0	0	$0
Right of Ways	1	$10,000	1	$60,000	2	$70,000
TOTAL	**63**	**$349,637**	**179**	**$5,276,783**	**242**	**$5,626,420**



CONSTRUCTION PERMIT TYPE:
New
Remodel
Addition
Miscellaneous

City of Eudora Kansas

Building & Codes Department

4 East 7th Street, Eudora, KS 66025

Phone: 785-542-2153

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Staff Report

TO: City of Eudora Planning Commission
FROM: Dave Knopick, AICP - Planning Consultant for the City of Eudora
SUBJECT: Final Development Plan application for the proposed Casey's within the Nottingham commercial development located at 1428 Elm Street, Eudora, KS
MEETING: August 5, 2020

BACKGROUND

On June 12, 2020 the City of Eudora received a Final Development Plan for the Casey's site within the Nottingham commercial development (POD) on property addressed as 1428 Elm Street. The approved preliminary development plan for the Nottingham commercial development included a phased development approach. This proposed project is the first project within the development and is located on the northeast corner of the overall development site (the southwest corner of 14th and Church) and is within a Commercial POD zoning district which requires a final development plan per Section 16-310 of the Eudora Zoning Regulations.

The application materials were reviewed by the owner of the property (in this case the City as represented by the Nottingham development consultant team) for compliance with the approved tenant criteria and by City Staff for compliance with the applicable City of Eudora regulations and policies. Review comments were provided to the applicant and the applicant subsequently provided responses and revisions to the submitted application materials on July 7, 2020. Since July 7 the architectural and sign package has been revised at the owner's request to better address the applicable tenant criteria approved as part of the preliminary development plan. These revisions and responses were found to be acceptable by the owner in light of their applicable criteria and are included in the agenda packet.

The area proposed to be developed is approximately 1.52 acres of vacant land which is would be utilized as a convenience store with auto fueling service. The proposed future development consists of the following structural elements - a single story building of approximately 4,000 square feet, an overhead canopy covering approximately 3,700 square feet and a dumpster / recycle enclosure area of approximately 560 square feet. On-site and off-site infrastructure (roadway and utility) improvements are also anticipated and are being planned for as part of the proposed development project.

REVIEW CRITERIA / CONSIDERATIONS

In regard to the review of the final development plan application material, the City Staff has determined that the plan is consistent with the approved preliminary development plan and has found that no substantial changes are being proposed per the criteria found in Section 16-310 (8) (f) as follows:

I. *Changes in the density or intensity of residential uses greater than 5 percent.*
II. *Increases in the total floor area of all nonresidential buildings covered by the plan greater than 10 percent.*
III. *Increases of lot coverage greater than 5 percent.*

IV. Decreases of areas devoted to open space greater than 5 percent, or the substantial relocation of such areas.
V. Changes of traffic circulation patterns that will affect traffic outside of the project boundaries.
VI. Modification or removal of conditions to the preliminary development plan approval.
VII. Changes to the water or sanitary sewer plans that impact these utilities outside the project boundaries.

Although substantial changes have not been proposed, the applicant has requested a number of deviations from the approved tenant handbook criteria and the owner's development team has (at the time this report was developed) preliminarily approved such deviations subject to the completion of the owner's review. Additionally, the following deviations related to the Eudora Sign Regulations have been noted through the staff review:

Signage – Monument sign: Proposed monument sign dimensions exceed city sign regulations.

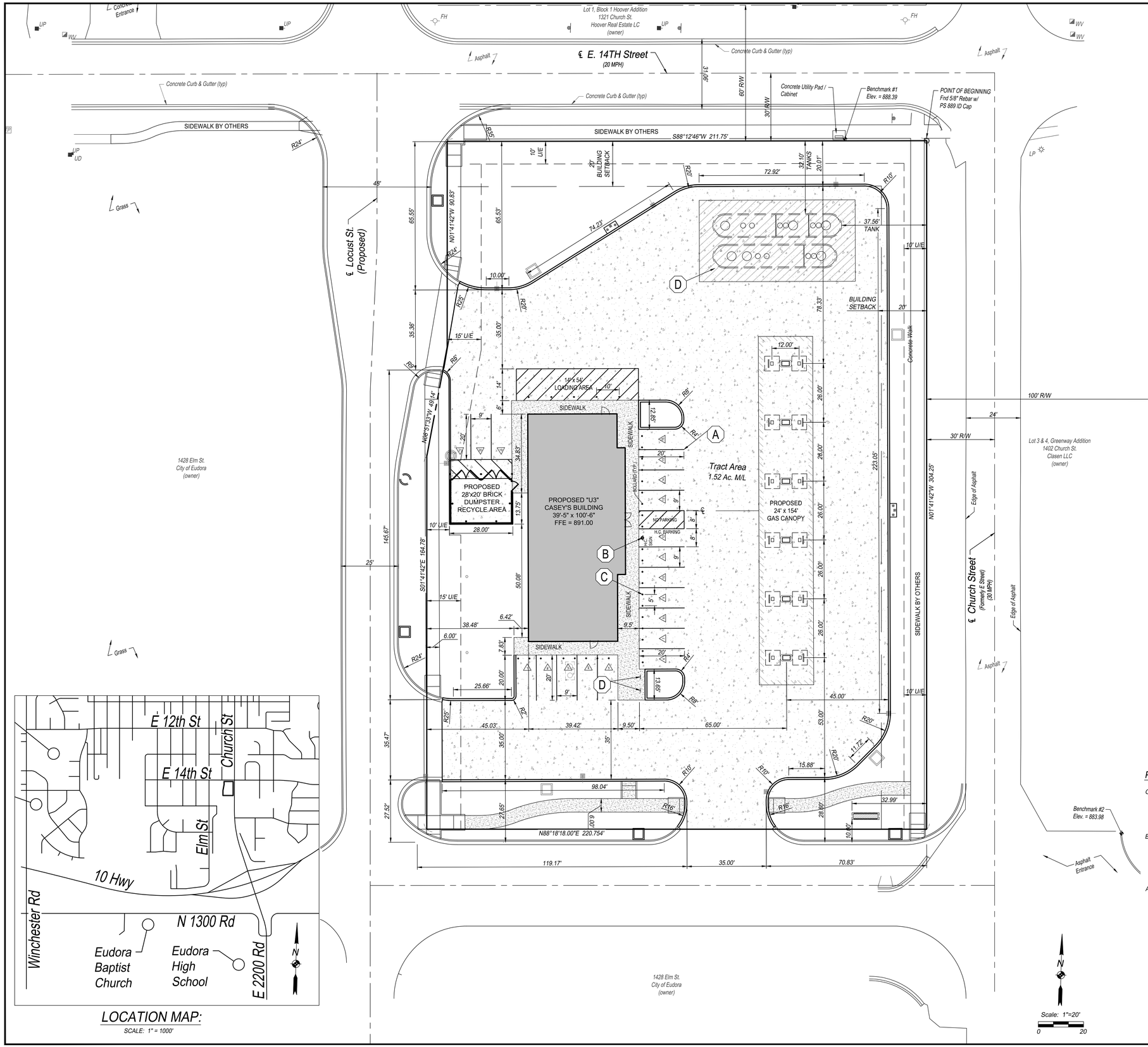
City Monument sign regulation	Casey's monument sign
Max area – 64 sq. ft	Total area – 78.24 sq. ft
Max Ht. – 6 ft	Ht. – 13 ft

Signage - Gas Canopy signs: Three signs are proposed to be attached to the gas canopy. In the past one such sign has been allowed per business.

RECOMMENDATION

The Planning Commission should hear from representatives for the application and receive / consider public comment regarding the proposed development. After hearing from those present and discussing the materials provided the Planning Commission should make a recommendation to the City Commission. Staff recommends that the Planning Commission recommend approval of the final development plan application, including the identified deviations, with the following conditions:

1. Clean up any general typographical / technical errors and add information as necessary to address previous staff review comments.
2. Plat (final plat approval and recording / filing required prior to building permit issuance) the property encompassed by the proposed development in accordance with City regulations.
3. Provide evidence of the establishment of the agency for the ownership and maintenance of any common open space and all assurances of the financial and administrative ability of such agency, as well as the provision of any covenants / restrictions (tenant criteria) as part of the final plat review and approval process.
4. Address all design, development and construction details in a manner that meets City requirements through the final plat, public improvement plan, building / construction plan and other applicable permitting processes.
5. Meet all applicable federal, state and local regulations and acquiring applicable permits.



LOCATION MAP:

SCALE: 1" = 1000'

GENERAL NOTES:

1. ALL CONSTRUCTION METHODS AND MATERIALS USED IN THE CONSTRUCTION OF THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH THE STANDARD TECHNICAL SPECIFICATIONS AND CURRENT REVISIONS ON FILE IN THE OFFICE OF THE CITY ENGINEER, CITY OF EUDORA, KANSAS.
2. UTILITIES WERE FIELD LOCATED THROUGH KANSAS ONE CALL. THE LOCATION OF ALL OVERHEAD AND UNDERGROUND UTILITIES MAY VARY FROM WHAT IS INDICATED IN THESE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE UTILITY OWNER TO LOCATE AND FLAG ALL UNDERGROUND UTILITIES WHETHER INDICATED OR NOT. NO EXCAVATION WILL BE PERMITTED IN THE AREA OF UNDERGROUND UTILITIES UNTIL ALL SUCH UTILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY.
3. ALL PERMITS AND FEES NECESSARY TO CONSTRUCT THE PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR UNLESS OTHERWISE NOTED.
4. UNLESS OTHERWISE SPECIFIED, ALL DISTURBED AREAS THAT ARE NON-HARDSCAPED SHALL BE EITHER LANDSCAPED OR SEEDED AND FERTILIZED.
5. ALL PAVEMENT REMOVAL AREAS SHALL BE SAW CUT TO FORM A STRAIGHT AND UNIFORM LINE.

SITE PLAN KEY NOTES:

- (A) PLACE PAVEMENT MARKING, 4" PAINTED, YELLOW, 90° TO SIDEWALK (TYP.) OR CURB.
- (B) INSTALL HANDICAP SIGN IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- (C) INSTALL BOLLARD (TYP). REFER TO ARCHITECTURAL PLANS FOR DETAILS.
- (D) REFER TO DETAIL ON SHEET C-601 FOR PAVEMENT SECTION ADJACENT TO UNDERGROUND TANKS.
- (E) INSTALL 2 INVERTED "U" BICYCLE RACKS (4 TOTAL BIKE PARKING SPACES). INSTALL PER MANUFACTURER'S RECOMMENDATION.

LEGEND:

- 6" CONCRETE PAVEMENT
- 6" CONCRETE SIDEWALK
- 8" CONCRETE PAVEMENT. REFER TO DETAIL ON SHEET C-601 FOR PAVEMENT SECTION ADJACENT TO UNDERGROUND TANKS
- CURB (MONOLITHIC)

LEGAL DESCRIPTION:

SURVEYORS SUGGESTED LEGAL:
A PART OF LOTS 1 THROUGH 7, INCLUSIVE AND LOTS 14 THROUGH 20, INCLUSIVE, BLOCK 188, A PART OF VACATED LOCUST STREET AND A PART OF THE VACATED ALLEY ADJACENT TO SAID LOTS, ALL IN THE CITY OF EUDORA, DOUGLAS COUNTY, KANSAS, ALL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 20; THENCE S01°41'51"E, 310.00 FEET ALONG THE EAST LINE OF SAID LOTS 14 THROUGH 20; THENCE S88°18'09"W, 225.00 FEET; THENCE N01°41'51"W, 109.58 FEET; THENCE N08°51'33"E, 136.46 FEET; THENCE N01°41'51"W, 65.92 FEET TO A POINT ON THE NORTH LINE OF SAID LOT 1; THENCE N88°12'08"E, 200.00 FEET TO THE POINT OF BEGINNING. CONTAINING 1.52 ACRES MORE OR LESS.

NOTES:

1. UTILITIES WERE FIELD LOCATED THROUGH KANSAS ONE CALL TICKET NO. 19472095, DATED OCTOBER 2, 2019 AND THROUGH OBSERVABLE FIELD EVIDENCE. WATER LINE MAP INFORMATION ALSO SHOWN BY INFORMATION PROVIDED BY THE CITY OF EUDORA.
2. ACCORDING TO THE FLOOD INSURANCE RATE MAP "FIRM" COMMUNITY PANEL NUMBER 20045C0211D, EFFECTIVE DATE OF AUGUST 5, 2010, THIS PROPERTY IS IN FLOOD ZONE "X", AREA OF MINIMAL FLOOD HAZARD.

BENCHMARKS:

THE BASIS OF THE BEARING SYSTEM FOR THIS SURVEY IS ON ASSUMED DATUM.

VERTICAL CONTROL DATUM:

BENCHMARK 1, CHISELED SQUARE CUT AT THE SOUTHEAST EDGE OF CONCRETE UTILITY PAD / CABINET, LOCATED ON THE SOUTH SIDE OF E 14TH STREET 36.1' NORTHWEST OF THE NORTHEAST CORNER OF SUBJECT TRACT BOUNDARY.
ELEVATION = 888.39, NAVD 88 DATUM

BENCHMARK 2, CHISELED SQUARE CUT ON TOP OF CONCRETE CURB, LOCATED ON THE EAST SIDE OF CHURCH STREET 86.1' NORTHEAST OF THE SOUTHEAST CORNER OF SUBJECT TRACT BOUNDARY.
ELEVATION = 883.98, NAVD 88 DATUM.

BENCHMARK 3, CHISELED SQUARE CUT AT THE NORTHWEST EDGE OF CONCRETE FIELD INLET, LOCATED ON THE EAST SIDE OF CHURCH STREET 361.0' SOUTHEAST OF THE SOUTHEAST CORNER OF SUBJECT TRACT BOUNDARY.
ELEVATION = 882.02, NAVD 88 DATUM.

PROJECT DATA:

TOTAL AREA OF LOT = 1.52 ACRES. ZONING = "RS" RESIDENTIAL SINGLE-FAMILY DISTRICT

STRUCTURE DATA: SINGLE-STORY BUILDING
GROSS SQUARE FOOTAGE = 4,160 S.F.

PROJECT CONTACT INFORMATION:

OWNER: CITY OF EUDORA
CITY MANAGER
CITY OF EUDORA, KS
ATTN: BARACK MATITE, bmatite@cityofeudora.org
PHONE: 785-690-7224

APPLICANT: CASEY'S RETAIL COMPANY
ONE SE CONVENIENCE BLVD
ANKENY, IA 50021
ATTN: JAMES VILMAIN, email: james.vilmain@caseys.com
PHONE: 515-446-6402

ENGINEER: SBB ENGINEERING, LLC
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TOPEKA, KS 66603
ATTN: JEFF LAUBACH, PE
email: jeff.laubach@sbbeng.com
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LANDSCAPE ARCHITECT: GARRETT OCHS, RLA
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email: garrettochs@gmail.com
PHONE: 913-961-6578

ARCHITECT: SCHEMMER
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OMAHA, NE 68154
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PHONE: 402-493-4800

SBB ENGINEERING
transportation • site development • surveying
101 S. Kansas Ave.
Topeka, KS 66603
Ph; 785.215.8630

SBB Proj. No. 19-222

CASEY'S CONSTRUCTION DIVISION
One Convenience Blvd., P.O. Box 3001, Ankeny, IA 50021 515-965-6100

PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.	PUBLISHED: 07/06/20
DRAWING INFORMATION: CONSTRUCTION DIVISION	REVISED ON:
DRAWN BY: JWL	CHECKED BY: JWL
DRAWING INFORMATION: SITE PLAN	C-101

FRONT ELEVATION

RIGHT ELEVATION

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EUDORA, KS

CASEY'S GENERAL STORE

BACK ELEVATION

LEFT ELEVATION

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FRONT ELEVATION

LEFT ELEVATION

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RIGHT ELEVATION

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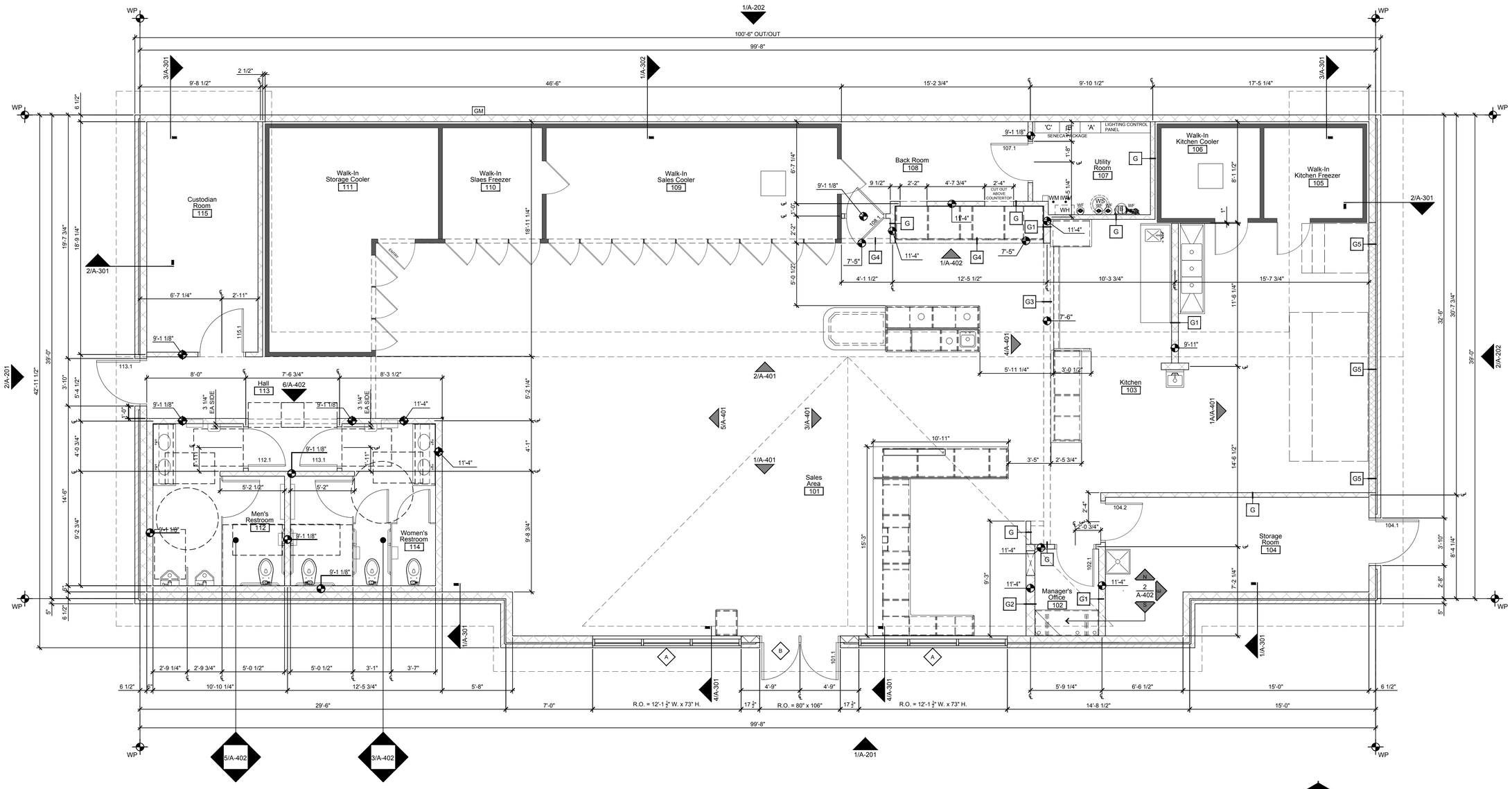
EUDORA, KS

CASEY'S GENERAL STORE



Architectural Floor Plan

1/4" = 1' - 0"

General Notes

1. REVIEW AND COORDINATE WITH ALL DETAIL PAGES REFERENCED ON THIS PLAN, NOTIFY ARCHITECT AND OWNER OF DISCREPANCIES
2. **RELATED DRAWING SHEETS**: REFER TO THE FOLLOWING:
   - A-100: WALL BLOCKING PLAN AND NOTES
   - A-601: DOOR, WINDOW & FINISH SCHEDULES AND NOTES
   - A-701: FLOOR FINISH PLAN
   - AQ-101: EQUIPMENT AND FIXTURE INSTALLATION PLAN AND SCHEDULE
   - S-101: FOOTINGS AND FOUNDATIONS PLAN
   - S-102: FIRST FLOOR BEARING WALL AND SHEAR WALL FRAMING
   - P-101: COORDINATE WITH UNDER SLAB SANITARY WORK
   - P-102: COORDINATE WITH UNDER SLAB PLUMBING WORK
3. **WORKING POINT**: THE WORKING POINT (***WP***) INDICATED ON THE DRAWINGS IS RELATIVE TO THE FACE OF SHEATHING ON THE EXTERIOR WALL AND IS A COMMON POINT OF REFERENCE WHERE EVER USED IN THESE DRAWINGS
4. INDICATES WALL AND HEADER HEIGHTS
5. KNEE WALL ABOVE COOLER / FREEZER TO BE INSTALLED $\frac{5}{8}$" BACK FROM FRONT FACE OF COOLER / FREEZER.
6. (A) WINDOW FRAME ELEVATIONS - REFER TO PLAN SHEET A-601, DETAIL 1
7. (B) DOOR TYPES - REFER TO PLAN SHEET A-601, DETAIL 2

Framing Notes

1. **FRAMING INSTRUCTIONS:**
   1.1 ALL PERIMETER FRAMED WALLS, 2x6 WD STUDS @ 16" OC, VERIFY HEIGHTS; INSULATED WITH 6"x16" WIDE FRICTION FIT INSULATION, *EXCEPT AS DIRECTED BY KEYED NOTES*.
   1.2 FRONT WALL SAME AS ABOVE, EXCEPT 2x6 WD STUDS, SEE STRUCTURAL DRAWINGS FOR FRAMING ELEVATION AND DETAILS.
   1.3 ALL INTERIOR FRAMED PARTITION WALLS, 2x4 WD STUDS @ 16" OC, VERIFY HEIGHTS; *EXCEPT AS DIRECTED BY KEYED NOTES*.
   1.4 ALL FRAMING MATERIAL: CONSTRUCTION GRADE OR BETTER.
   1.5 USE TREATED (WOLMANIZED) BOTTOM PLATE, WHEREVER MEETS CONCRETE, SEAL TO CONC FLOOR WITH CONSTRUCTION ADHESIVE.
   1.6 ALL BACKING/BLOCKING 2x6, FLUSH W/ ROUGH FRAMING; HEIGHTS INDICATED ON PLANS (BK @ xx") ARE FROM FLOOR (AFF) CENTER OF BLOCKING.
   1.7 EXTERIOR NON-COMBUSTIBLE WALL. 2x6, 18 GAGE STEEL STUDS. ENTIRE END WALL, USING STEEL TOP AND BOTTOM PLATES.
2. SEAL ALL CABINETS AND SALES COUNTER TO FLOOR.
3. DO NOT FRAME UP UTILITY ROOM WALLS UNTIL THE COMPRESSOR RACK HAS BEEN INSTALLED BY H.V.A.C.
4. H.V.A.C. EQUIPMENT INSTALLED BY CASEY'S PROVIDED INSTALLERS.
5. ALL EXTERIOR WALLS ARE SUPPLIED BY OWNER
6. ALL INTERIOR WALLS ARE TO BE SUPPLIED BY CONTRACTOR AND BUILT ON-SITE

Wall Type Construction

- **G** — **PARTITION WALL (TYP UNO)**: 3 1/2" WOOD STUDS (NOMINAL 2x4) @ 16" OC WITH TREATED (WOLMANIZED) BOTTOM PLATE ANCHORED TO FLOOR, BRACE TOP TO STRUCTURE ABOVE PER FRAMING NOTES; FACE BOTH SIDES, REFER TO FINISH SCHEDULE (A-601) FOR FACE MATERIAL AND FINISH
- **G1** — **PARTITION WALL**: 5 1/2" WOOD STUDS (NOMINAL 2x6) @ 16" OC WITH TREATED (WOLMANIZED) BOTTOM PLATE ANCHORED TO FLOOR, BRACE TOP TO STRUCTURE ABOVE PER FRAMING NOTES; FACE BOTH SIDES, REFER TO FINISH SCHEDULE (A-601) FOR FACE MATERIAL AND FINISH
- **G2** — **PARTITION WALL:** 7 1/4" WOOD STUDS (NOMINAL 2x8) @ 16" OC WITH TREATED (WOLMANIZED) BOTTOM PLATE ANCHORED TO FLOOR, BRACE TOP TO STRUCTURE ABOVE PER FRAMING NOTES; FACE BOTH SIDES, REFER TO FINISH SCHEDULE (A-601) FOR FACE MATERIAL AND FINISH
- **Gf** — **FURRED WALL**: 5 1/2" WOOD STUDS (NOMINAL 2x6) @ 16" OC WITH TREATED BOTTOM PLATE (WOLMANIZED) IN LOCATIONS INDICATED ON PLAN FOR PLUMBING LINES; FACE ONE SIDE, REFER TO FINISH SCHEDULE (A-601) FOR FACE MATERIAL AND FINISH
- **G3** — **2"x6" WOOD FLOOR TYPE TRUSS:** BEAM SUPPLIED BY STRUCTURAL COMPONENT SYSTEMS. CONTRACTOR TO SHEET SALES AREA SIDE WITH 3/4" PLYWOOD BEFORE FINISHING. RE: A-601, FINISH SCHEDULE FOR WALL FINISH MATERIAL. RE: A-401, DETAIL 4, INTERIOR ELEVATIONS
- **G4** — **NON-BEARING BULKHEAD:** 3 1/2" WOOD STUDS (NOMINAL 2x4) @ 16" O.C. BUILT ACROSS OPENINGS FOR GRAPHICS ATTACHMENT. FACE BOTH SIDES, REFER TO FINISH SCHEDULE (A-601) FOR FACE MATERIAL AND FINISH.
- **G5** — **5-1/2" NON-COMBUSTITLE METAL STUD WALL:** FRAMED TO BOTTOM OF TRUSS REFER TO A-601, FINISH SCHEDULE FOR WALL FINISH MATERIAL

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PROJECT: CASEY'S GENERAL STORE EUDORA, KS 2019 "U3" - STYLE STORE (GABLE ROOF)	PUBLISHED: 06-25-20 REVISED ON:
PROJECT NUMBER: 07164.038	DRAWING INFORMATION: FLOOR PLAN
DRAWN BY: DJK / CHECKED BY: DJK	A-101

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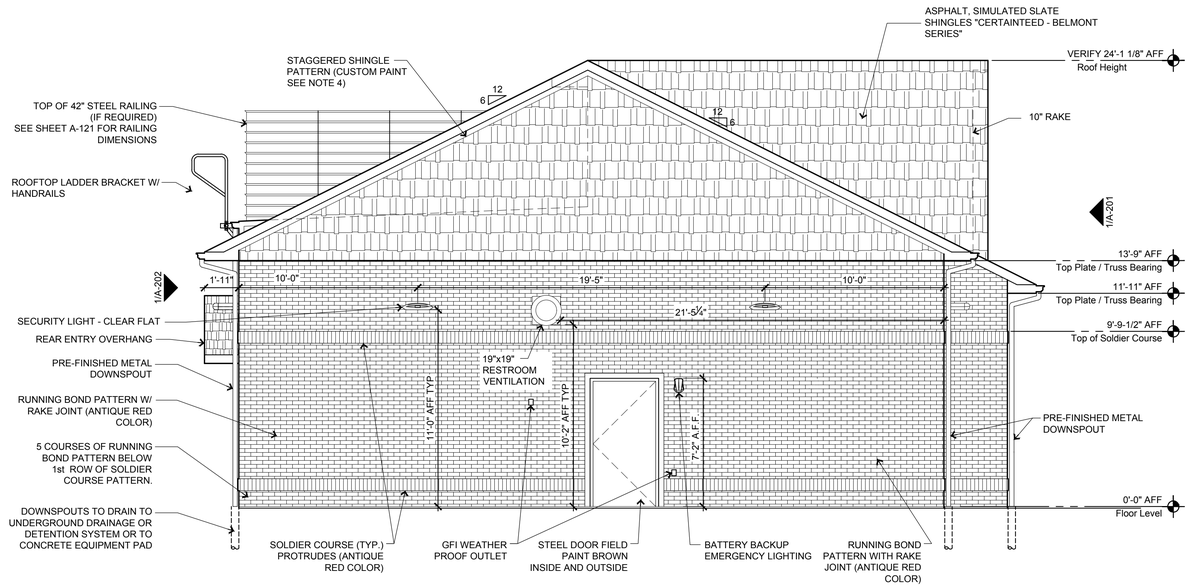


Exterior Elevation - Left Side of Building (Plan West) 2

0 4' 8'

1/4" = 1' - 0"

General Notes

1. REVIEW AND COORDINATE WITH ALL DETAIL PAGES REFERENCED ON THIS PLAN, NOTIFY ARCHITECT AND OWNER OF DISCREPANCIES
2. **RELATED DRAWING SHEETS**: REFER TO THE FOLLOWING:
   AL-101: FOR BUILDING LOCATION ON SITE
   AL-601: FOR INFORMATION RELATING TO SIGNAGE
   A-101: PRIMARY FLOOR PLAN FOR CONSTRUCTION LAYOUT
   A-121: ROOF PLAN/ROOF TOP EQUIPMENT
   A-601: DOOR & WINDOW SCHEDULES AND NOTES
   S-101: FOOTINGS AND FOUNDATIONS
   S-102: ROOF TRUSSES
3. **WORKING POINT**: THE WORKING POINT (***WP***) INDICATED ON THE DRAWINGS IS RELATIVE TO THE FACE OF SHEATHING ON THE EXTERIOR WALL AND IS A COMMON POINT OF REFERENCE WHERE EVER USED IN THESE DRAWINGS
4. **HARDIE SIDING & TRIM PAINT FORMULA:** SHERWIN WILLIAMS / SATIN FINISH

   COLOR: CUSTOM ARNING C/N ETT TAN

BAC	Blend-a-Color	OZ	32	64	128
B1	Black	-	-	1	-
N1	Raw Umber	-	23	1	1
Y3	Deep Gold	-	5	1	-

   HARDIE PLANK LAP SIDING (MECHANICAL PLATFORM):

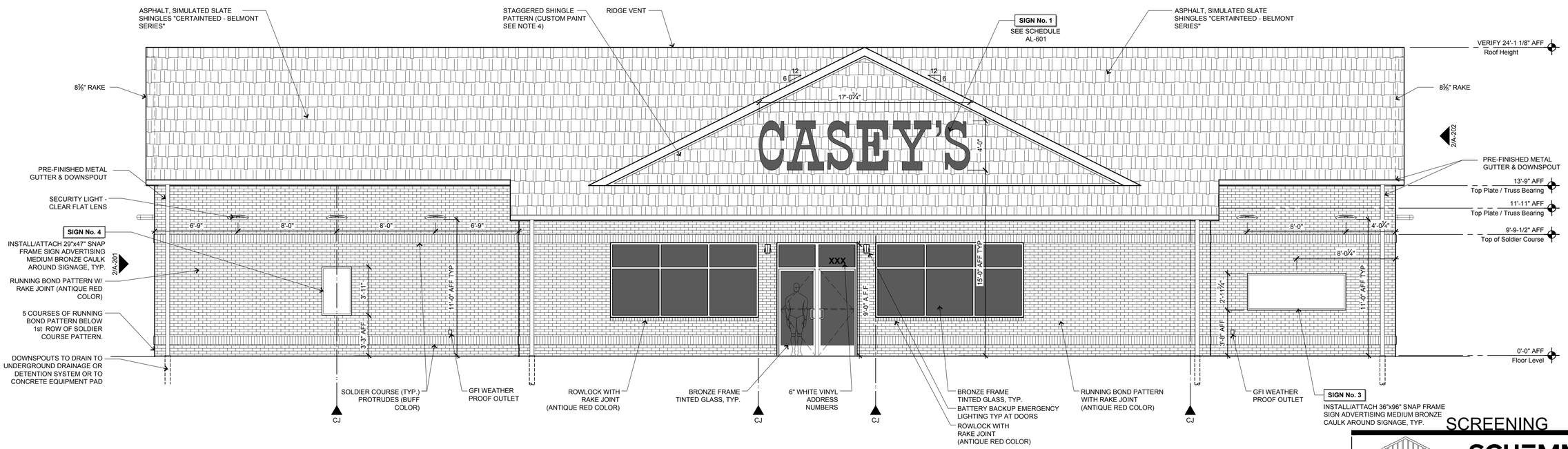
   EXTERIOR SATIN LATEX SUPER PAINT
   SHERWIN-WILLIAMS - SW 7020 - BLACK FOX

   STAGGERED SHINGLE PAINT FORMULA:

   SHERWIN-WILLIAMS "CASEY'S RED CUSTOM SHER-COLOR MATCH" (MATCHES ALPOLIC BBR RED)
   EXTERIOR SATIN LATEX - ARCHITECTURAL SUPER PAINT
   1 GALLON MIX - A89T00154
   ULTRADEEP - 640392379

	OZ	32	64	128
W1-WHITE	--	21	1	--
R2-MAROON	--	41	--	1
R3-MAGENTA	4	20	1	--
R4-NEW RED	4	44	--	--

5. ALL VENT PENETRATIONS ON BACK OF BACKSIDE OF ROOF.



Exterior Elevation - Front of Building (Plan South) 1

0 4' 8'

1/4" = 1' - 0"

SCREENING

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PROJECT: CASEY'S GENERAL STORE EUDORA, KS 2019 "U3" - STYLE STORE (GABLE ROOF)	PUBLISHED: 06-25-20 REVISED ON:
PROJECT NUMBER: 07164.038	DRAWING INFORMATION: EXTERIOR ELEVATIONS
DRAWN BY: / CHECKED BY:	A-201

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7/24/2020 11:17:30 AM Michalski, Megan

General Notes

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BAC	Blend-a-Color	OZ	32	64	128
B1	Black	-	-	1	-
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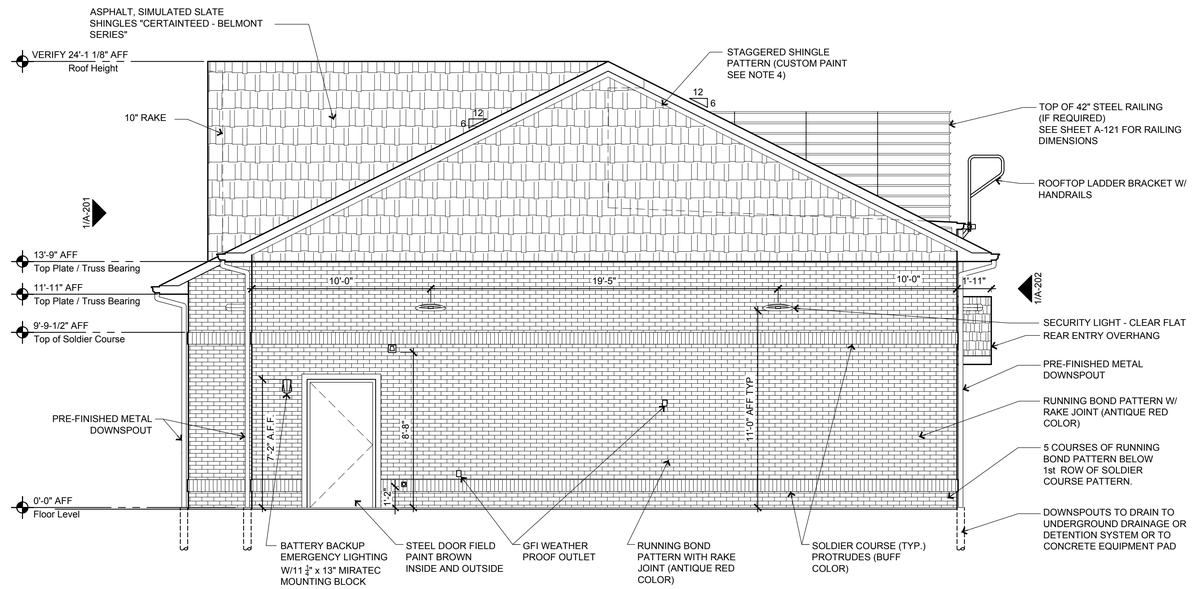
	OZ	32	64	128
W1-WHITE	--	21	1	--
R2-MAROON	--	41	--	1
R3-MAGENTA	4	20	1	--
R4-NEW RED	4	44	--	--

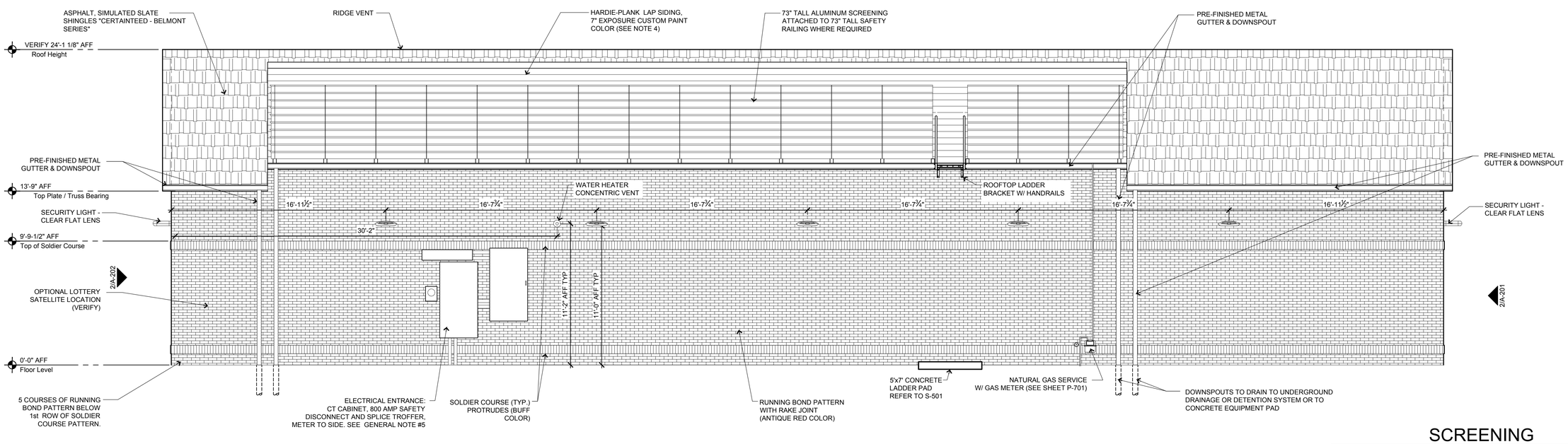
5. ALL VENT PENETRATIONS ON BACK OF BACKSIDE OF ROOF.



Exterior Elevation - Right Side of Building (Plan East) 2

0 4' 8'

1/4" = 1' - 0"



Exterior Elevation - Back of Building (Plan North) 1

0 4' 8'

1/4" = 1' - 0"

SCREENING

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PROJECT: CASEY'S GENERAL STORE EUDORA, KS 2019 "U3" – STYLE STORE (GABLE ROOF)	PUBLISHED: 06-25-20 REVISED ON:
PROJECT NUMBER: 07164.038	DRAWING INFORMATION: EXTERIOR ELEVATIONS
DRAWN BY: / CHECKED BY:	A-202

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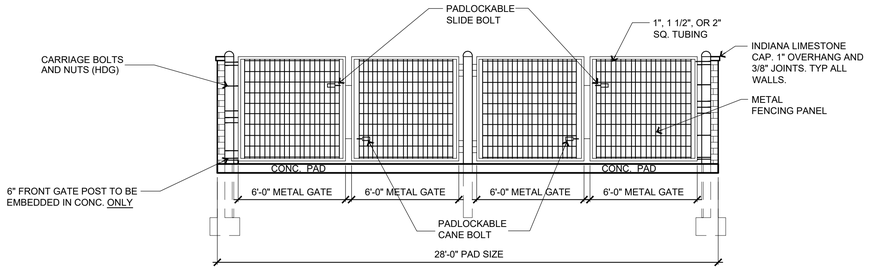
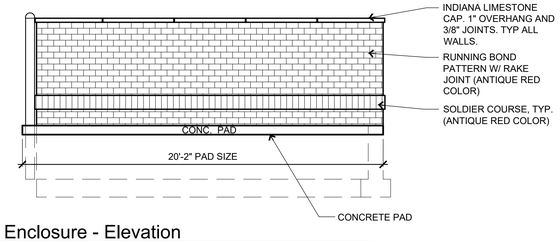
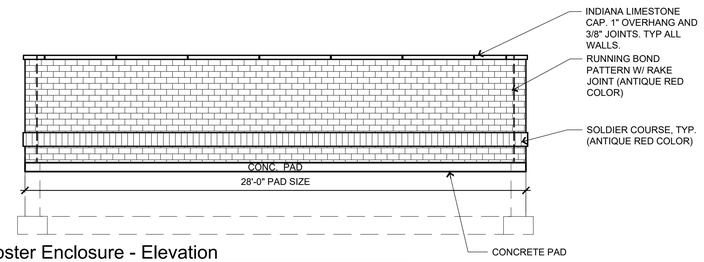


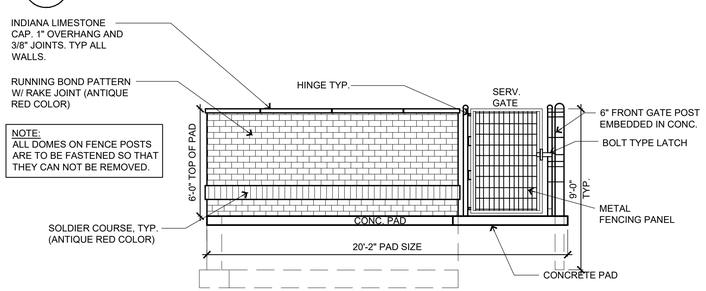
5 Dumpster Enclosure - Elevation
1/4" = 1'-0"



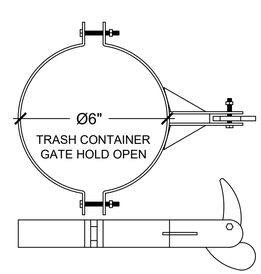
4 Dumpster Enclosure - Elevation
1/4" = 1'-0"



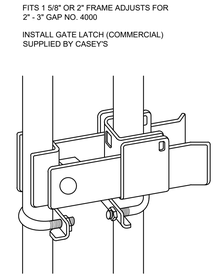
3 Dumpster Enclosure - Elevation
1/4" = 1'-0"



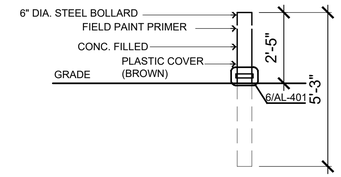
2 Dumpster Enclosure - Elevation
1/4" = 1'-0"



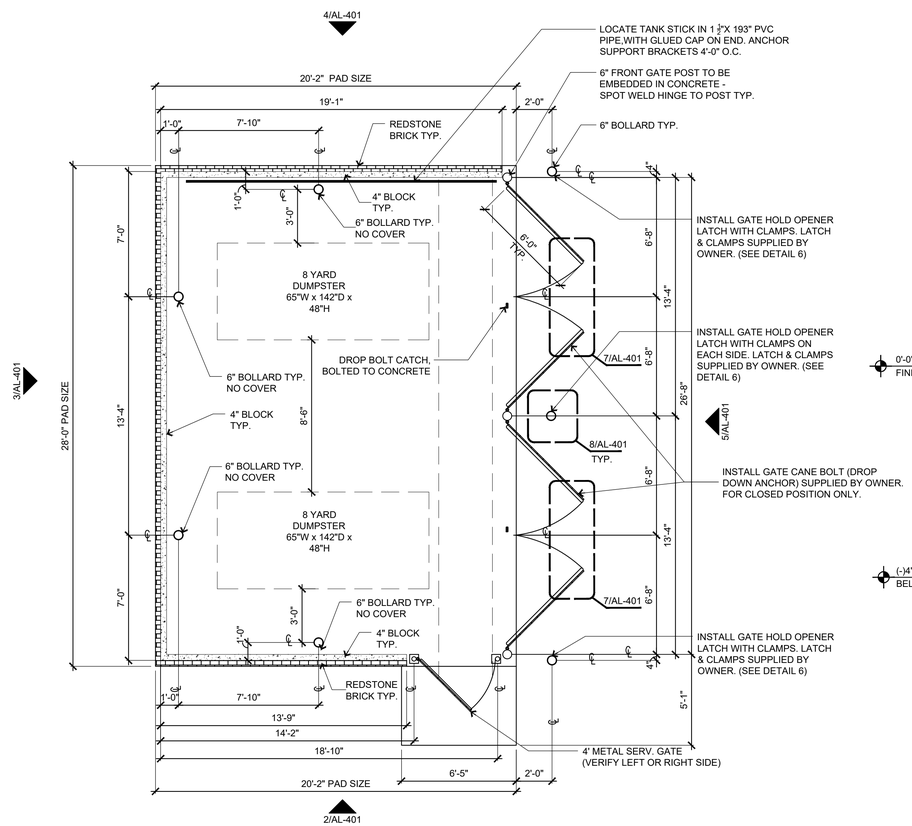
6 Gate Open Holder
No Scale



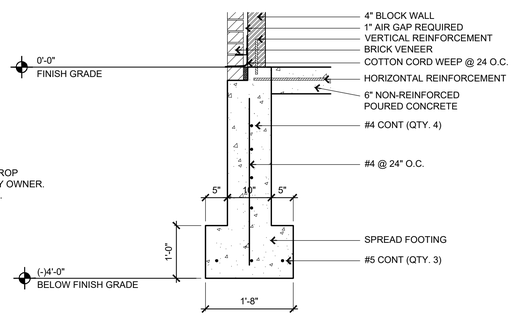
7 Commercial Double Gate Latch Detail
No Scale



8 Bollard Detail
No Scale



1 Dumpster Plan
1/4" = 1'-0"



9 Spread Footing Detail
No Scale

General Notes

1. **RELATED SHEETS**: FOR ADDITIONAL INFORMATION NOT DIRECTLY REFERENCED, SEE THE FOLLOWING SHEETS:

G-001	FOR GENERAL PROJECT NOTES
AL101	FOR GENERAL SITE PLAN

Construction Notes

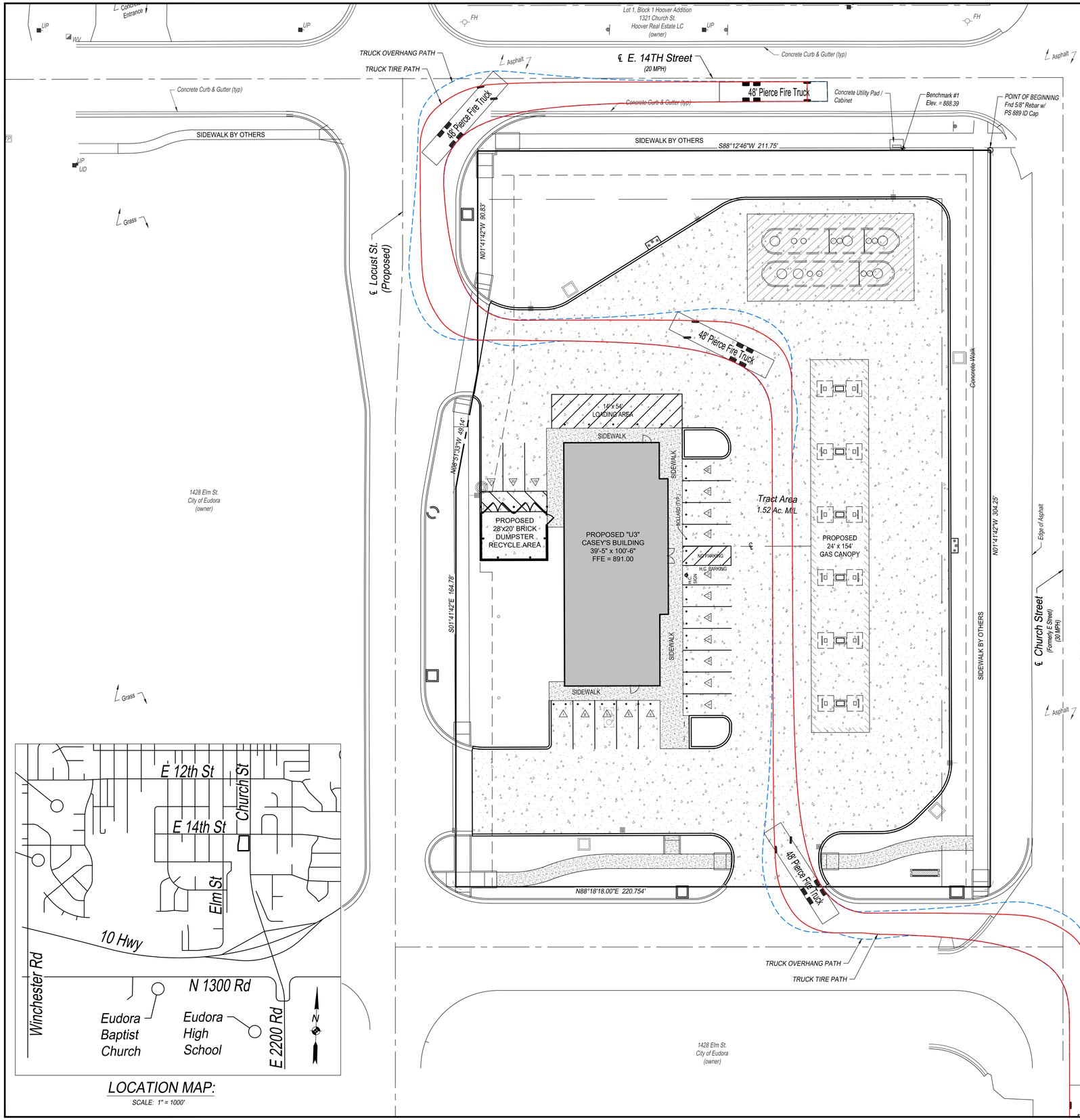
1) ALL DOMES ON FENCE POSTS ARE TO BE FASTENED SO THAT THEY CAN NOT BE REMOVED.
2) VERIFY SCREENING WITH LOCAL AUTHORITY.
3) CONTRACTOR TO PRIME ALL 6" BOLLARDS PRIOR TO FINISHED PAINT COAT.
4) DUMPSTER ENCLOSURE WALLS WILL BE 4" BLOCK PURCHASED BY CONTRACTOR

Brick Enclosure w/Metal Gates

SCHEMMER
Design with Purpose. Build with Confidence.

PROJECT: CASEY'S GENERAL STORE EUDORA, KS 2019 "U3" - STYLE STORE (GABLE ROOF)	PUBLISHED: 01-09-2020 REVISED ON:
PROJECT NUMBER: 07164.038	DRAWING INFORMATION: DUMPSTER ENCLOSURE
DRAWN BY: / CHECKED BY:	AL-401

\\schemmer\drive\projects\07164038_CAD\Arch\03_AL-401.dwg
5/25/2020 10:54:00 AM Kathern, Rebecca



LOCATION MAP:

SCALE: 1" = 1000'

GENERAL NOTES:

1. ALL CONSTRUCTION METHODS AND MATERIALS USED IN THE CONSTRUCTION OF THE IMPROVEMENTS COVERED BY THESE PLANS SHALL BE IN ACCORDANCE WITH THE STANDARD TECHNICAL SPECIFICATIONS AND CURRENT REVISIONS ON FILE IN THE OFFICE OF THE CITY ENGINEER, CITY OF EUDORA, KANSAS.
2. UTILITIES WERE FIELD LOCATED THROUGH KANSAS ONE CALL. THE LOCATION OF ALL OVERHEAD AND UNDERGROUND UTILITIES MAY VARY FROM WHAT IS INDICATED IN THESE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE UTILITY OWNER TO LOCATE AND FLAG ALL UNDERGROUND UTILITIES WHETHER INDICATED OR NOT. NO EXCAVATION WILL BE PERMITTED IN THE AREA OF UNDERGROUND UTILITIES UNTIL ALL SUCH UTILITIES HAVE BEEN LOCATED AND IDENTIFIED TO THE SATISFACTION OF ALL PARTIES AND THEN ONLY WITH EXTREME CARE TO AVOID ANY POSSIBILITY OF DAMAGE TO THE UTILITY.
3. ALL PERMITS AND FEES NECESSARY TO CONSTRUCT THE PROJECT IS THE RESPONSIBILITY OF THE CONTRACTOR UNLESS OTHERWISE NOTED.
4. UNLESS OTHERWISE SPECIFIED, ALL DISTURBED AREAS THAT ARE NON-HARDSCAPED SHALL BE EITHER LANDSCAPED OR SEEDED AND FERTILIZED.
5. ALL PAVEMENT REMOVAL AREAS SHALL BE SAW CUT TO FORM A STRAIGHT AND UNIFORM LINE.

SITE PLAN KEY NOTES:

- (A) PLACE PAVEMENT MARKING, 4" PAINTED, YELLOW, 90° TO SIDEWALK (TYP.) OR CURB.
- (B) INSTALL HANDICAP SIGN IN COMPLIANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES.
- (C) INSTALL BOLLARD (TYP). REFER TO ARCHITECTURAL PLANS FOR DETAILS.
- (D) REFER TO DETAIL ON SHEET C-601 FOR PAVEMENT SECTION ADJACENT TO UNDERGROUND TANKS.
- (E) INSTALL 2 INVERTED "U" BICYCLE RACKS (4 TOTAL BIKE PARKING SPACES). INSTALL PER MANUFACTURER'S RECOMMENDATION.

LEGEND:

- 6" CONCRETE PAVEMENT
- 6" CONCRETE SIDEWALK
- 8" CONCRETE PAVEMENT. REFER TO DETAIL ON SHEET C-601 FOR PAVEMENT SECTION ADJACENT TO UNDERGROUND TANKS
- CURB (MONOLITHIC)

LEGAL DESCRIPTION:

SURVEYORS SUGGESTED LEGAL:
A PART OF LOTS 1 THROUGH 7, INCLUSIVE AND LOTS 14 THROUGH 20, INCLUSIVE, BLOCK 188, A PART OF VACATED LOCUST STREET AND A PART OF THE VACATED ALLEY ADJACENT TO SAID LOTS, ALL IN THE CITY OF EUDORA, DOUGLAS COUNTY, KANSAS, ALL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 20; THENCE S01°41'51"E, 310.00 FEET ALONG THE EAST LINE OF SAID LOTS 14 THROUGH 20; THENCE S88°18'09"W, 225.00 FEET; THENCE N01°41'51"W, 109.58 FEET; THENCE N08°51'33"E, 136.46 FEET; THENCE N01°41'51"W, 65.92 FEET TO A POINT ON THE NORTH LINE OF SAID LOT 1; THENCE N88°12'08"E, 200.00 FEET TO THE POINT OF BEGINNING. CONTAINING 1.52 ACRES MORE OR LESS.

NOTES:

1. UTILITIES WERE FIELD LOCATED THROUGH KANSAS ONE CALL TICKET NO. 19472095, DATED OCTOBER 2, 2019 AND THROUGH OBSERVABLE FIELD EVIDENCE. WATER LINE MAP INFORMATION ALSO SHOWN BY INFORMATION PROVIDED BY THE CITY OF EUDORA.
2. ACCORDING TO THE FLOOD INSURANCE RATE MAP "FIRM" COMMUNITY PANEL NUMBER 20045C0211D, EFFECTIVE DATE OF AUGUST 5, 2010, THIS PROPERTY IS IN FLOOD ZONE "X", AREA OF MINIMAL FLOOD HAZARD.

BENCHMARKS:

THE BASIS OF THE BEARING SYSTEM FOR THIS SURVEY IS ON ASSUMED DATUM.

VERTICAL CONTROL DATUM:

BENCHMARK 1, CHISELED SQUARE CUT AT THE SOUTHEAST EDGE OF CONCRETE UTILITY PAD / CABINET, LOCATED ON THE SOUTH SIDE OF E 14TH STREET 36.1' NORTHWEST OF THE NORTHEAST CORNER OF SUBJECT TRACT BOUNDARY.
ELEVATION = 888.39, NAVD 88 DATUM

BENCHMARK 2, CHISELED SQUARE CUT ON TOP OF CONCRETE CURB, LOCATED ON THE EAST SIDE OF CHURCH STREET 86.1' NORTHEAST OF THE SOUTHEAST CORNER OF SUBJECT TRACT BOUNDARY.
ELEVATION = 883.98, NAVD 88 DATUM.

BENCHMARK 3, CHISELED SQUARE CUT AT THE NORTHWEST EDGE OF CONCRETE FIELD INLET, LOCATED ON THE EAST SIDE OF CHURCH STREET 361.0' SOUTHEAST OF THE SOUTHEAST CORNER OF SUBJECT TRACT BOUNDARY.
ELEVATION = 882.02, NAVD 88 DATUM.

PROJECT DATA:

TOTAL AREA OF LOT = 1.52 ACRES. ZONING = "RS" RESIDENTIAL SINGLE-FAMILY DISTRICT

STRUCTURE DATA: SINGLE-STORY BUILDING
GROSS SQUARE FOOTAGE = 4,160 S.F.

PROJECT CONTACT INFORMATION:

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SBB Proj. No. 19-222

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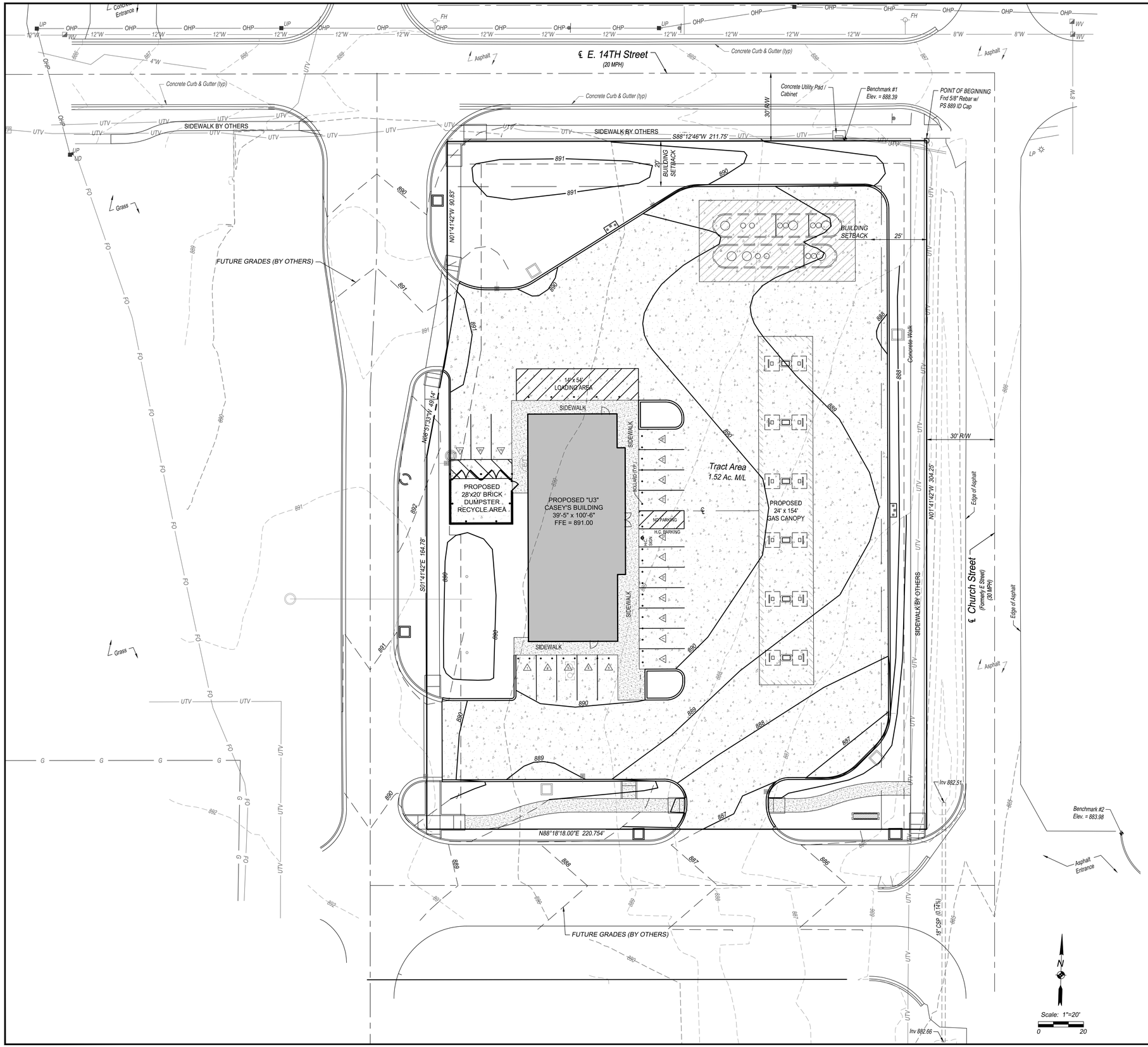
CASEY'S CONSTRUCTION DIVISION
One Convenience Blvd., P.O. Box 3001, Ankeny, IA 50021 515-965-6100

PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.	PUBLISHED: 07/06/20
DRAWING INFORMATION: CONSTRUCTION DIVISION	REVISED ON:
DRAWN BY: JWL	CHECKED BY: JWL
DRAWING INFORMATION: FIRE TRUCK TURNING MOVEMENTS	C-101A



SITE GRADING GENERAL NOTES:

1. CLEARING AND GRUBBING: PRIOR TO BEGINNING PREPARATION OF SUBGRADE, ALL AREAS UNDER PAVEMENTS OR BUILDING SHALL BE STRIPPED OF ALL TOPSOIL, VEGETATION, LARGE ROCK FRAGMENTS (GREATER THAN 6 INCHES IN ANY DIMENSION) AND ANY OTHER DELETERIOUS MATERIAL. THE ACTUAL STRIPPING DEPTH SHOULD BE BASED ON VISUAL EXAMINATION DURING CONSTRUCTION AND THE RESULTS OF PROOF-ROLLLING OPERATIONS. THE ROOT SYSTEMS OF ALL TREES (NOT DESIGNATED TO REMAIN) SHALL BE REMOVED IN THEIR ENTIRETY. STRIPPING MATERIALS SHALL NOT BE INCORPORATED INTO STRUCTURAL FILLS.

2. SUBGRADE PREPARATION: PRIOR TO PLACEMENT OF NEW FILL MATERIAL, THE EXISTING SUBGRADE SHALL BE PROOFROLLED AND APPROVED UNDER THE DIRECTION OF THE GEOTECHNICAL ENGINEER OR HIS REPRESENTATIVE.

3. PROOFROLLING: SUBSEQUENT TO COMPLETION OF STRIPPING AND OVER-EXCAVATION, ALL BUILDING AND PAVEMENT AREAS TO RECEIVE ENGINEERED FILL SHOULD BE SYSTEMATICALLY PROOF-ROLLED USING A TANDEM AXLE DUMP TRUCK LOADED TO APPROXIMATELY 20,000 POUNDS PER AXLE. ALSO, ANY FINISHED SUBGRADE AREAS TO RECEIVE PAVING SHALL BE PROOF-ROLLED WITHIN 48 HOURS OF PAVING. UNSUITABLE SOILS THAT ARE DETECTED AND THAN CAN NOT BE RE-COMPACTED SHOULD BE OVER-EXCAVATED AND REPLACED WITH CONTROLLED STRUCTURAL FILL.

LEGEND:

1225 — PROPOSED CONTOURS

1225 / 1226 — EXISTING CONTOURS

LIST OF ABBREVIATIONS:

EX.	-	EXISTING
FFE	-	FINISHED FLOOR ELEVATION
TC	-	TOP OF CURB
TG	-	TOP OF GROUND
TI	-	TOP OF INLET
TP	-	TOP OF PAVEMENT
TPE	-	TOP OF EXISTING PAVEMENT
TS	-	TOP OF SIDEWALK
BW	-	BASE OF WALL
TW	-	TOP OF WALL
TM	-	TOP OF MANHOLE
TF	-	TOP OF FOOTING

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One Convenience Blvd., P.O. Box 3001, Ankeny, IA 50021 515-965-6100

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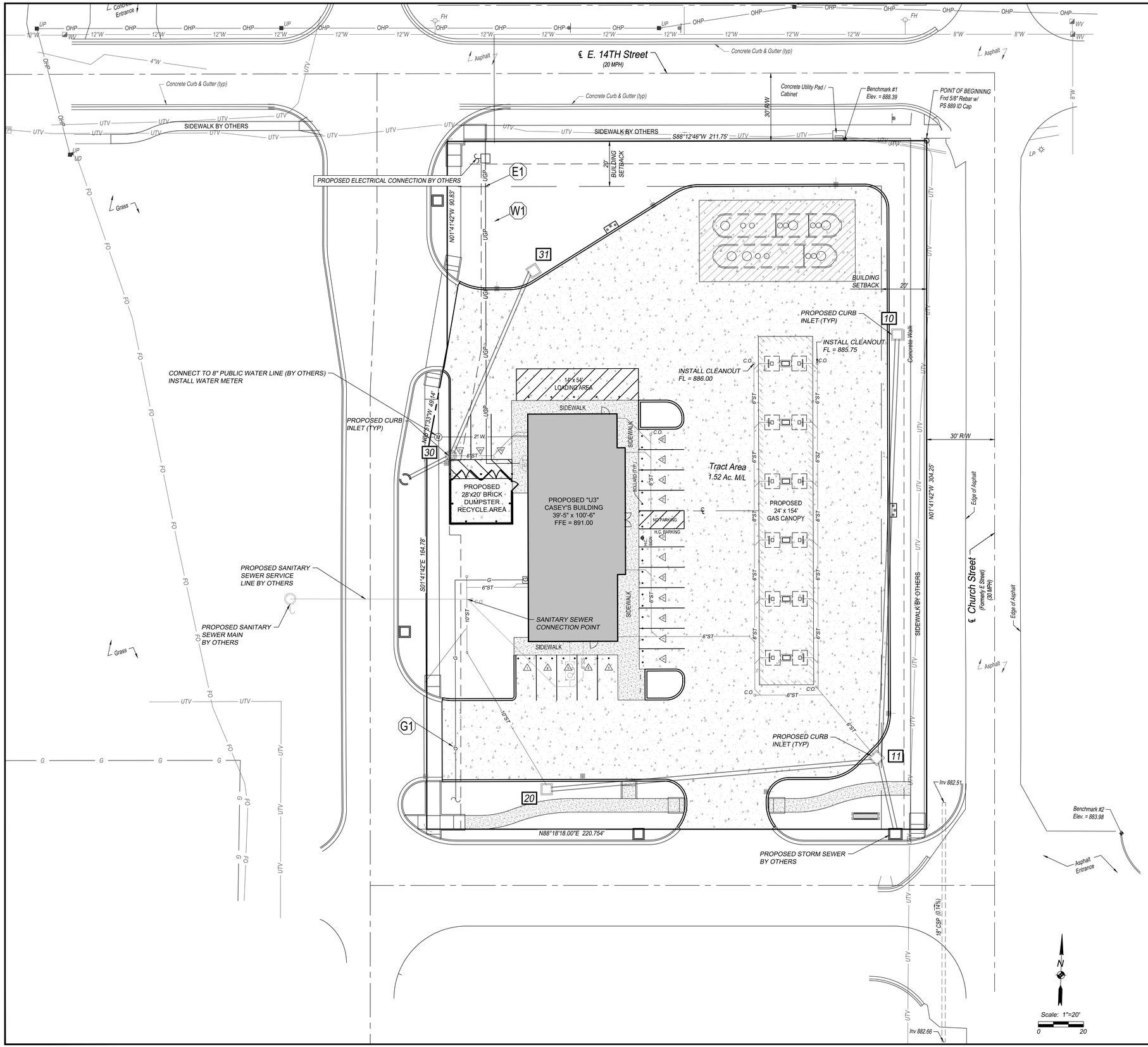
Topeka, KS 66603
Ph; 785.215.8630

PROJECT:	PUBLISHED:	DRAWING INFORMATION:
EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.	07/06/20 REVISED ON:	GRADING PLAN
DRAWING INFORMATION: CONSTRUCTION DIVISION		C-201
DRAWN BY: JWL	CHECKED BY: JWL	



SITE UTILITY KEY NOTES:

D1 TYPICAL STORM WATER DRAIN LINE FROM ROOF OR LANDSCAPE DRAIN. SEE BUILDING PLANS CONNECTION LOCATIONS. DRAIN LINES SHALL BE PVC SDR 35 OR HDPE N-12. MINIMUM SLOPE SHALL BE 1.0%

E1 PLACE ELECTRICAL AND TELEPHONE ENTRY INTO BUILDING. BUILDING ELECTRIC PLAN FOR SECONDARY CONDUIT ROUTING INSIDE BUILDING TO ELECTRIC METERS)
ELECTRIC: 3 PHASE, 800 or 1200 AMP., 120/208 VOLTS, 4 WIRE.
TELEPHONE: 20 PAIR, 8 LINES.

G1 INSTALL GAS LINE TO BUILDING ENTRY WITH 1 GAS METER. SIZE OF GAS MAIN SHALL BE AS DETERMINED BY UTILITY OR AS SHOWN ON BUILDING PLANS. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH GAS COMPANY REGARDING THE SIZE AND INSTALLATION OF GAS SERVICE LINE AND METER.

S1 6" SANITARY SEWER SERVICE LINE PIPE TO BE PVC SCHEDULE 40 AND MAINTAIN A MINIMUM SLOPE OF 1.0%.

W1 CONNECT TO EXISTING 6" WATERLINE. INSTALL 1 1/2" METER SETTING AND METER PIT. INSTALL 2" DOMESTIC WATER LINE TO BUILDING.

LEGEND:

15" CSP	EXISTING STORM SEWER
8" Sanitary Sewer	EXISTING SANITARY SEWER
4"W	EXISTING WATERLINE
6"W	EXISTING WATERLINE
OHP	EXISTING OVERHEAD POWER
UGP	EXISTING UNDERGROUND POWER
UTV	EXISTING UNDERGROUND TELEVISION
G	EXISTING GASLINE
2"W	PROPOSED WATERLINE
G	PROPOSED GASLINE
6"SS	PROPOSED SANITARY SEWER
UGP	PROPOSED UNDERGROUND POWER
6"ST	PROPOSED STORM SEWER

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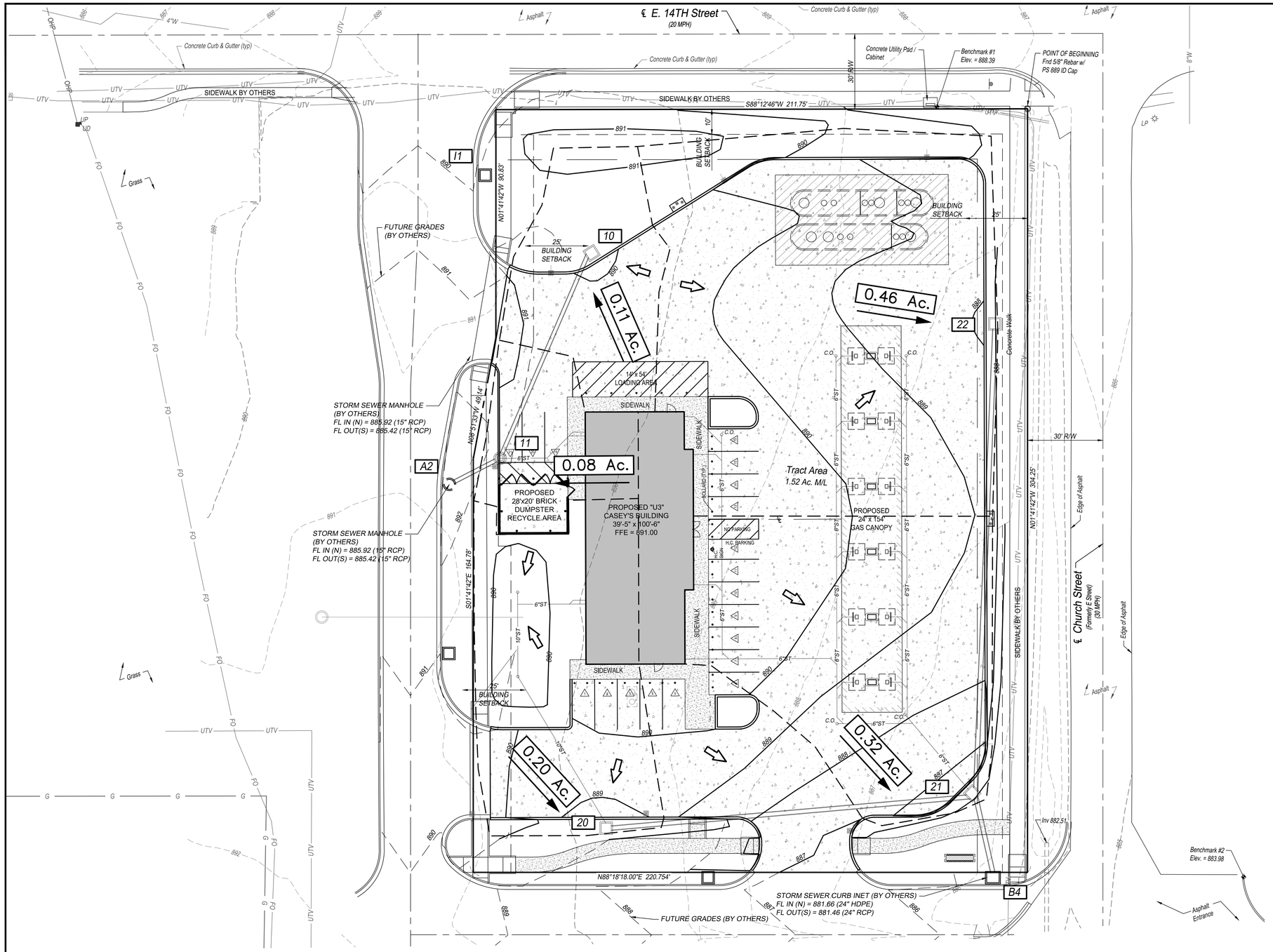
PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.	PUBLISHED: 07/06/20
DRAWING INFORMATION: CONSTRUCTION DIVISION	REVISED ON:
DRAWN BY: JWL	CHECKED BY: JWL
DRAWING INFORMATION: UTILITY PLAN	C-301



LEGEND:

- FLOW PATH DIRECTION (TYP.)
- DRAINAGE AREA BOUNDARY
- 34.40 Ac. — DENOTES DRAINAGE AREA
- X — DENOTES STRUCTURE NUMBER/LOCATION ID
- DENOTES 100-YR OVERFLOW PATH

PROPOSED RUNOFF CALCULATIONS

RUNOFF										PIPE DESIGN (Concrete n=0.013 & HDPE n=0.011)											
STR	INCREMENTAL RUNOFF COEFFICIENT "C"	INCREMENTAL AREA "A" (ACRES)	INCREMENTAL C X A	CUMULATIVE AREA "A" (ACRES)	CUMULATIVE C X A	SYSTEM TIME OF CONCENTRATION "Tc" AT STRUCTURE (MIN)	RAINFALL INTENSITY "I_{25}/I_{100}"	ANTECEDENT PRECIPIATION FACTOR	RUNOFF "Q_{25}/Q_{100}"	UPSTREAM STRUCTURE NUMBER	DOWNSTREAM STRUCTURE NUMBER	DIAMETER "D" (IN)	LENGTH "L" (FT)	UPSTREAM INVERT ELEVATION	DOWNSTREAM INVERT ELEVATION	SLOPE "S" (FT/FT)	TRAVEL TIME IN PIPE "TT"	VELOCITY FULL V_P (FPS)	RUNOFF "Q_{25}/Q_{100}"	FULL FLOW Q (CFS)	Notes
10	0.81	0.11	0.09	0.11	0.09	5.0	7.35	1.10	0.7	10	11	15	88	886.66	886.22	0.0050	0.4	3.8	0.7	4.6	
							10.32	1.25	1.1										1.1		
11	0.81	0.08	0.06	0.19	0.15	5.0	7.35	1.10	1.2	11	A2	15	20	886.02	885.92	0.0050	0.1	3.8	1.2	4.6	
							10.32	1.25	2.0										2.0		
20	0.81	0.20	0.16	0.20	0.16	5.0	7.35	1.10	1.3	20	21	15	144	884.00	882.40	0.0111	0.4	5.6	1.3	6.8	
							10.32	1.25	2.1										2.1		
21	0.81	0.32	0.26	0.98	0.79	5.0	7.35	1.10	6.4	21	B4	24	32	881.90	881.66	0.0075	0.1	6.3	6.4	19.6	
							10.32	1.25	10.2										10.2		
22	0.81	0.46	0.37	0.46	0.37	5.0	7.35	1.10	3.0	22	21	15	186	883.40	882.40	0.0054	0.8	3.9	3.0	4.7	
							10.32	1.25	4.8										4.8		

N

Scale: 1"=20'

0 20

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SBB Proj. No. 19-222

CASEY'S General Store

CASEY'S CONSTRUCTION DIVISION
One Convenience Blvd., P.O. Box 3001, Ankeny, IA 50021 515-965-6100

PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.

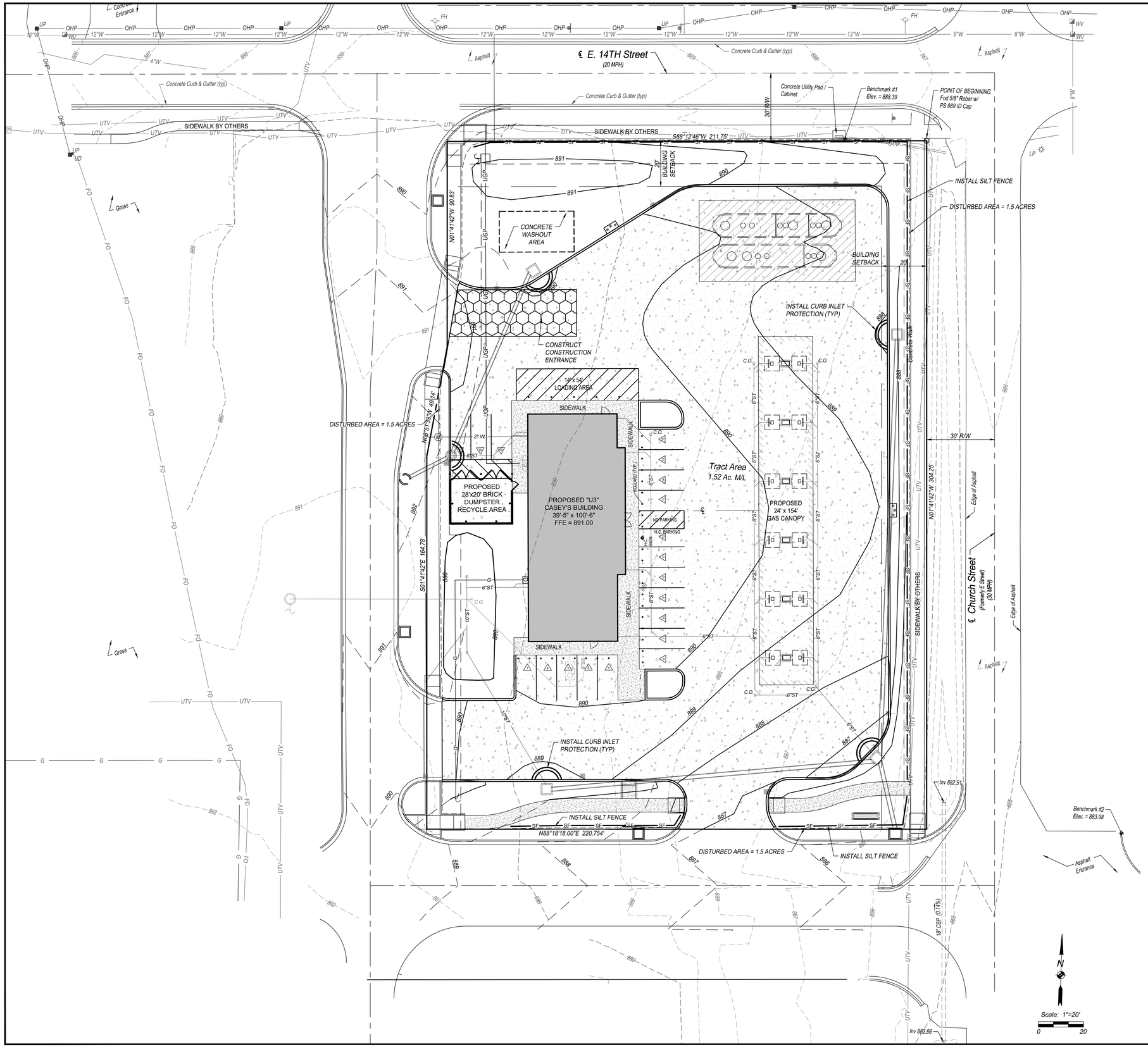
PUBLISHED: 07/06/20
REVISED ON:

DRAWING INFORMATION: CONSTRUCTION DIVISION

DRAWN BY: JWL CHECKED BY: JWL

DRAWING INFORMATION: DRAINAGE PLAN

C-302



EROSION CONTROL GENERAL NOTES:

1. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PREVENT EROSION ON THE PROJECT AND POLLUTION OF ANY DRAINAGE COURSE, AND SHALL MEET THE REQUIREMENTS OF THE STATE OF KANSAS STORMWATER RUNOFF FROM CONSTRUCTION ACTIVITIES GENERAL PERMIT NO. S-MCST-1703-1.

2. PRIOR TO COMMENCEMENT OF EARTHWORK OPERATIONS, CONTRACTOR SHALL INSTALL PERIMETER WATTLES AND CONSTRUCTION ENTRANCE AS SHOWN ON THE PLAN. THE INLET PROTECTION AND ADDITIONAL WATTLES WITHIN WORK AREA SHALL BE INSTALLED IMMEDIATELY AFTER INSTALLATION OF THE INLETS AND COMPLETION OF ROUGH GRADING.

3. EROSION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED BY THE CONTRACTOR NOT LESS THAN WEEKLY OR WITHIN 24 HOURS AFTER A RAINFALL EVENT OF 0.5 INCHES OR MORE. MAINTENANCE SHALL INCLUDE BUT NOT BE LIMITED TO SEDIMENT REMOVAL AND SILT FENCE REPAIR AND/OR REPLACEMENT. FIELD ADJUSTMENTS MAY BE MADE AS NECESSARY TO ENSURE OPTIMAL PERFORMANCE.

4. CONTRACTOR SHALL CLEAR ALL SURROUNDING PARKING LOTS AND STREETS OF ANY TRACKED DEBRIS BY SWEEPING OR SCRAPING THE EXISTING PAVEMENT BY THE END OF EACH WORKDAY AND THE CONTRACTOR SHALL CLEAN UP SOIL WASHED OFF THE CONSTRUCTION SITE AFTER A STORM BY THE END OF THE NEXT WORKDAY.

5. DURING ALL SOIL DISTURBING ACTIVITIES, THE CONTRACTOR WILL TAKE APPROPRIATE STEPS USING ACCEPTED CONSTRUCTION METHODS TO MINIMIZE THE TIME OF EXPOSURE OF UNPROTECTED SOIL AND OTHER CONSTRUCTION MATERIALS TO RAINFALL.

6. CONTRACTOR SHALL KEEP A WRITTEN LOG OF WHEN CONSTRUCTION ACTIVITIES BEGIN, EROSION AND SEDIMENT CONTROLS ARE INSTALLED, INSPECTED AND REPAIRED.

7. EROSION AND SEDIMENT CONTROL MEASURES SHALL NOT BE REMOVED UNTIL GRASS COVER HAS BEEN ESTABLISHED OR AS DIRECTED BY ENGINEER.

8. ALL AREAS SHALL BE GRADED TO FINISHED GRADE PRIOR TO SEEDING AND MULCHING. ALL AREAS NOT PART OF THE HARDSCAPE OR OTHER NOTED LANDSCAPING SHALL BE PERMANENTLY SEEDED, FERTILIZED AND MULCHED.

9. ALL WATTLES SHALL BE STRAW WATTLE WS-12 AS MANUFACTURED BY NORTH AMERICAN GREEN, OR APPROVED EQUAL. THE WATTLES SHALL BE INSTALLED PER MANUFACTURER'S RECOMMENDATIONS. THE CONTRACTOR MAY USE WATTLES AND SILT FENCE INTERCHANGEABLY IN AREAS IDENTIFIED ON THE DRAWINGS.

10. THE CONTRACTOR HAS THE OPTION TO MODIFY THE LOCATION OF THE CONSTRUCTION ENTRANCE TO FIT THE PREFERRED WORK PATTERN.

11. REQUIREMENTS FOR EROSION & SEDIMENT CONTROL SHALL BE FOLLOWED AS OUTLINED IN CHAPTER IX ARTICLE 9 OF THE CITY OF LAWRENCE CITY CODE.

WASTE DISPOSAL:

1. WASTE MATERIALS: ANY WASTE AND OTHER UNUSABLE MATERIALS WILL BE REMOVED FROM THE SITE ON A REGULAR BASIS AND PROPERLY DISPOSED OF IN AN APPROVED SITE.

2. CHEMICAL WASTE: ALL CHEMICAL WASTE MATERIALS WILL BE COLLECTED AND STORED IN A TIGHTLY SEALED METAL OR OTHER CHEMICAL RESISTANT CONTAINER. THE CONTAINER WILL MEET ALL LOCAL AND ANY STATE SOLID WASTE MANAGEMENT REGULATIONS. THE WASTE MATERIALS AND ALL DISPOSABLE MATERIALS WILL BE TRANSPORTED TO A COMMERCIAL CHEMICAL DISPOSAL FACILITY CAPABLE OF EITHER RECYCLING OR PROPERLY DISPOSING OF THE POLLUTANTS IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL REGULATIONS. THE STATE WASTE MANAGEMENT SECTION CONTACT NUMBER IS (785) 296-1600.

3. HAZARDOUS WASTE: ALL HAZARDOUS WASTE MATERIALS, SUCH AS OIL FILTERS, PETROLEUM PRODUCTS, EQUIPMENT MAINTENANCE FLUIDS AND PAINTS, SHALL NOT BE STORED ON SITE AND WILL BE DISPOSED OF IN THE MANNER SPECIFIED BY LOCAL, STATE AND/OR FEDERAL REGULATIONS. IF THERE ARE QUESTIONS REGARDING THE PROPER HANDLING OF HAZARDOUS WASTES THE CONTRACTOR SHALL IMMEDIATELY CONTACT THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT HAZARDOUS WASTE SECTION AT (785) 296-1600.

4. SANITARY WASTE: PORTABLE TOILET FACILITIES WILL BE PROVIDED ON THE PROJECT SITE AND SERVICED BY THE PROVIDER ON A REGULAR BASIS.

MATERIAL MANAGEMENT PRACTICES:

GOOD HOUSEKEEPING: THE FOLLOWING GOOD HOUSEKEEPING PRACTICES WILL BE FOLLOWED ON-SITE DURING CONSTRUCTION.

1. ALL MATERIALS STORED ON-SITE WILL BE STORED IN A NEAT, ORDERLY MANNER IN ORIGINAL CONTAINERS IF APPROPRIATE.

2. PRODUCTS WILL BE KEPT IN THEIR ORIGINAL CONTAINERS WITH THE ORIGINAL MANUFACTURER'S LABELS.

3. MANUFACTURERS' RECOMMENDATIONS FOR PROPER USE AND DISPOSAL WILL BE FOLLOWED.

SPILL PREVENTION:

1. PETROLEUM PRODUCTS: ALL ON-SITE VEHICLES WILL BE MONITORED FOR LEAKS AND RECEIVE REGULAR PREVENTATIVE MAINTENANCE TO REDUCE THE CHANCE OF LEAKAGE. PETROLEUM PRODUCTS WILL BE STORED IN TIGHTLY SEALED CONTAINERS WHICH ARE CLEARLY LABELED.

2. FERTILIZERS: FERTILIZERS USED WILL BE APPLIED ONLY IN THE MINIMUM AMOUNTS RECOMMENDED BY THE MANUFACTURER. ONCE APPLIED, FERTILIZER WILL BE WORKED INTO THE SOIL TO LIMIT EXPOSURE TO STORM WATER. FERTILIZER SHALL NOT BE STORED ON-SITE.

3. CONCRETE TRUCKS: CONCRETE TRUCKS ARE LIMITED TO A DESIGNATED AREA TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE. PROPER SIGNAGE SHALL BE INSTALLED AND MAINTAINED ON SITE DEFINING DIRECTIONS TO AND LOCATIONS OF THE SPECIFIED WASH OUT AREA. IF A WASH OUT AREA CANNOT BE DESIGNATED OR MAINTAINED ON SITE, CONCRETE WASH OUT AND DISPOSAL MAY BE PROHIBITED AT THE OWNERS DISCRETION.

LEGEND:

- SF — SILT FENCE
- CURB INLET PROTECTION
- DISTURBED AREA = 1.5 ACRES
- CONSTRUCTION ENTRANCE
- 890 / 891 — EXISTING CONTOURS
- 890 — PROPOSED CONTOURS

SBB Proj. No. 19-222

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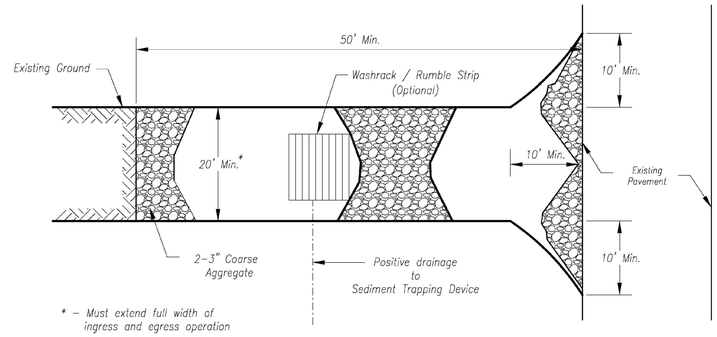
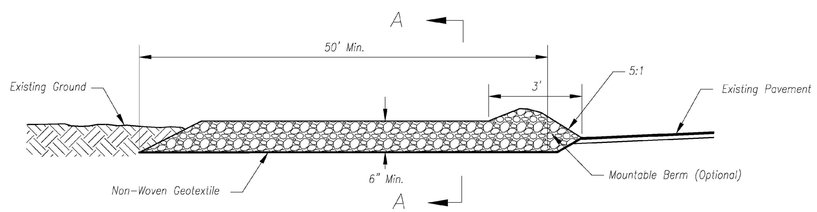
CASEY'S CONSTRUCTION DIVISION
One Convenience Blvd., P.O. Box 3001, Ankeny, IA 50021 515-965-6100

PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.	PUBLISHED: 07/06/20	DRAWING INFORMATION: EROSION CONTROL PLAN
DRAWING INFORMATION: CONSTRUCTION DIVISION	REVISED ON:	C-401
DRAWN BY: JWL / CHECKED BY: JWL		



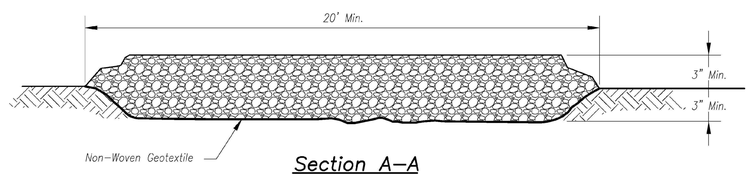
Plan View

Not to Scale



Side Elevation

Not to Scale



Section A-A

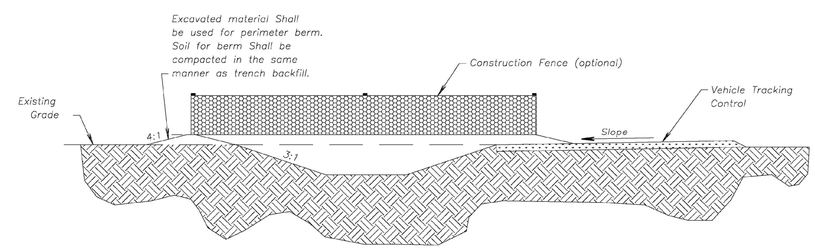
Not to Scale

Notes for Concrete Washout:

1. Concrete washout areas shall be installed prior to any concrete placement on site.
2. Concrete washout area shall include a flat subsurface pit sized relative to the amount of concrete to be placed on site. The slopes leading out of the subsurface pit shall be 3:1. The vehicle tracking pad shall be sloped towards the concrete washout area.
3. Vehicle tracking control is required at the access point to all concrete washout areas.
4. Signs shall be placed at the construction site entrance, washout area and elsewhere as necessary to clearly indicate the location(s) of the concrete washout area(s) to operators of concrete truck and pump rigs.
5. A one-piece impervious liner may be required along the bottom and sides of the subsurface pit in sandy or gravelly soils.

Maintenance for Concrete Washout:

1. Concrete washout materials shall be removed once the materials have filled the washout to approximately 75% full.
2. Concrete washout areas shall be enlarged as necessary to maintain capacity for wasted concrete.
3. Concrete washout water, wasted pieces of concrete and all other debris in the subsurface pit shall be transported from the job site in a water-tight container and disposed of properly.
4. Concrete washout areas shall remain in place until all concrete for the project is placed.
5. When concrete washout areas are removed, excavations shall be filled with suitable compacted backfill and topsoil, any disturbed areas associated with the installation, maintenance, and/or removal of the concrete washout areas shall be stabilized.



CONCRETE WASHOUT

Notes for Construction Entrance:

1. Avoid locating on steep slopes, at curves on public roads, or downhill of disturbed area.
2. Remove all vegetation and other unsuitable material from the foundation area, grade, and crown for positive drainage.
3. If slope towards the public road exceeds 2%, construct a 6- to 8-inch high ridge with 3H:1V side slopes across the foundation approximately 15 feet from the edge of the public road to divert runoff from it.
4. Install pipe under the entrance if needed to maintain drainage ditches along public roads.
5. Place stone to dimensions and grade as shown on plans. Leave surface sloped for drainage.
6. Divert all surface runoff and drainage from the entrance to a sediment control device.
7. If conditions warrant, place geotextile fabric on the graded foundation to improve stability.

Maintenance for Construction Entrance:

1. Reshape entrance as needed to maintain function and integrity of Installation. Top dress with clean aggregate as needed.

CONSTRUCTION ENTRANCE

Construction Entrance modified from 2015 Overland Park Standard Details for Erosion and Sediment Control; Concrete Washout modified from 2009 City of Great Bend Standard Drawings.

AMERICAN PUBLIC WORKS ASSOCIATION

Kansas City Metro Chapter APWA AMERICAN PUBLIC WORKS ASSOCIATION

KANSAS CITY METRO CHAPTER

CONSTRUCTION ENTRANCE AND CONCRETE WASHOUT

STANDARD DRAWING NUMBER ESC-01

ADOPTED: 10/24/2016

SBB Proj. No. 19-222

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CASEY'S General Store

CASEY'S CONSTRUCTION DIVISION
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PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.

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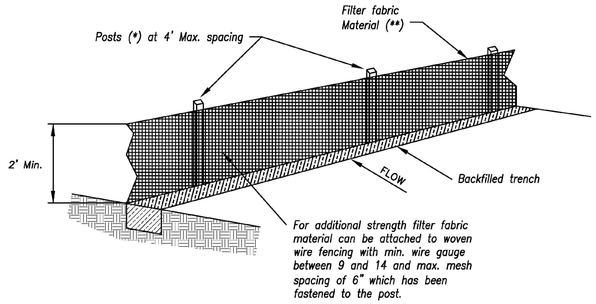
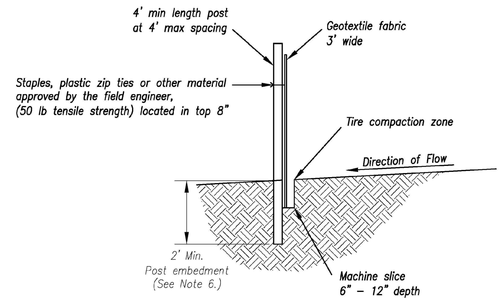
DRAWING INFORMATION: CONSTRUCTION DIVISION

DRAWN BY: JWL CHECKED BY: JWL

C-402





(*) POSTS

- MIN, LENGTH 4'
- HARDWOOD 1 3/16" x 1 3/16"
- NO.2 SOUTHERN PINE 2 5/8" x 2 5/8"
- STEEL 1.33 LB/FT

(**) – Geotextile Fabric shall meet the requirements of AASHTO M288

SILT FENCE DETAILS

Not to Scale

Notes:

1. In order to contain water, the ends of the silt fence must be turned uphill (Figure A).
2. Long perimeter runs of silt fence must be limited to 100'. Runs should be broken up into several smaller segments to minimize water concentrations (Figure A).
3. Long slopes should be broken up with intermediate rows of silt fence to slow runoff velocities.
4. Attach fabric to upstream side of post.
5. Install posts a minimum of 2' into the ground.
6. Trenching will only be allowed for small or difficult installation, where slicing machine cannot be reasonably used.

Maintenance:

1. Remove and dispose of sediment deposits when the deposit approaches ⅓ the height of silt fence.
2. Repair as necessary to maintain function and structure.

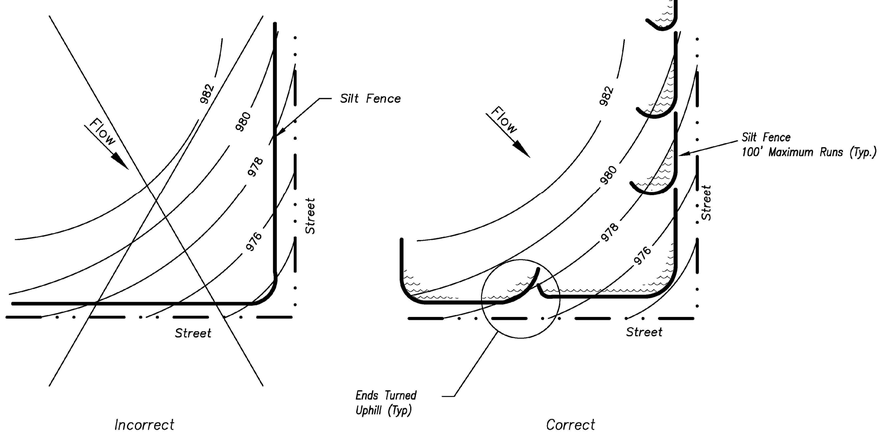
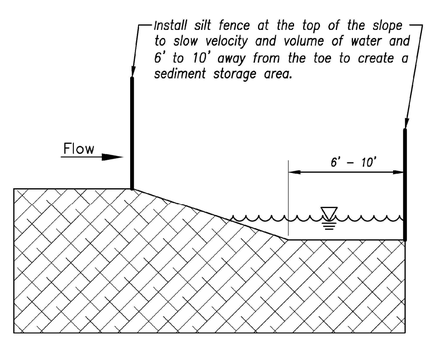
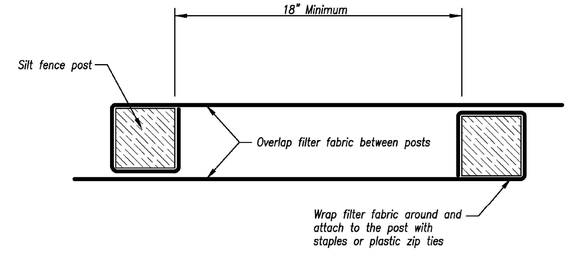


Figure A

SILT FENCE LAYOUT

Not to Scale





JOINING FENCE SECTIONS

Not to Scale

Modified from 2015 Overland Park Standard Details for Erosion and Sediment Control.

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Kansas City Metro Chapter APWA AMERICAN PUBLIC WORKS ASSOCIATION

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SILT FENCE

STANDARD DRAWING NUMBER ESC-03

ADOPTED: 10/24/2016

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PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.

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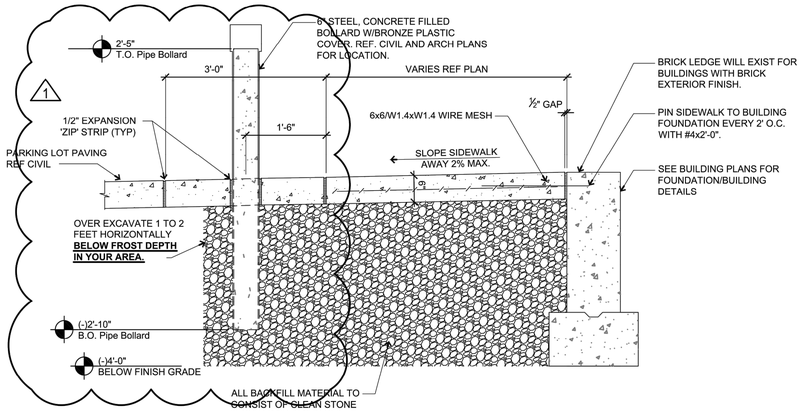
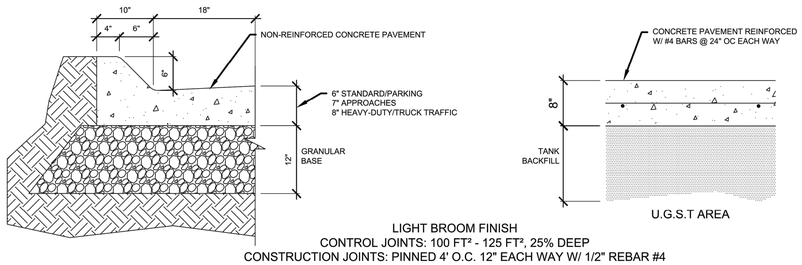
C-403



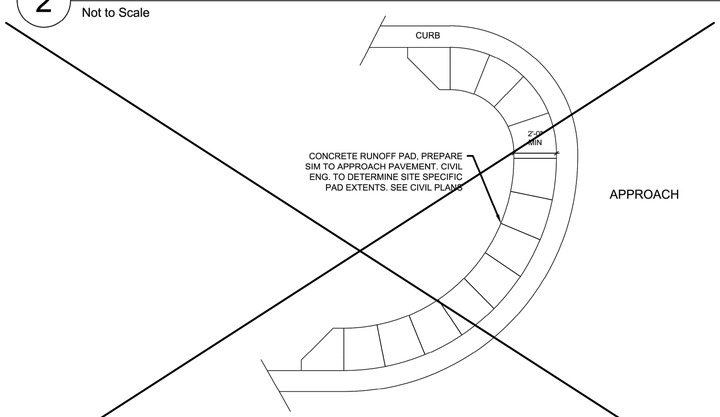
1 TYPICAL BUILDING SIDEWALK AND BOLLARD

3/4" = 1'-0"



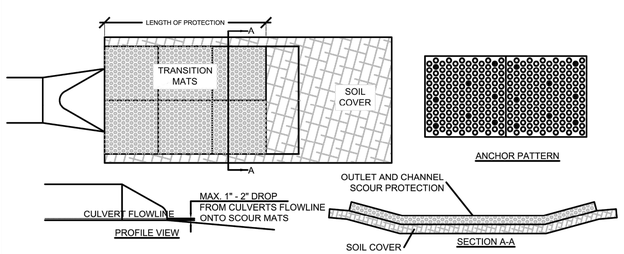
2 CONCRETE PAVING AND CURB

Not to Scale



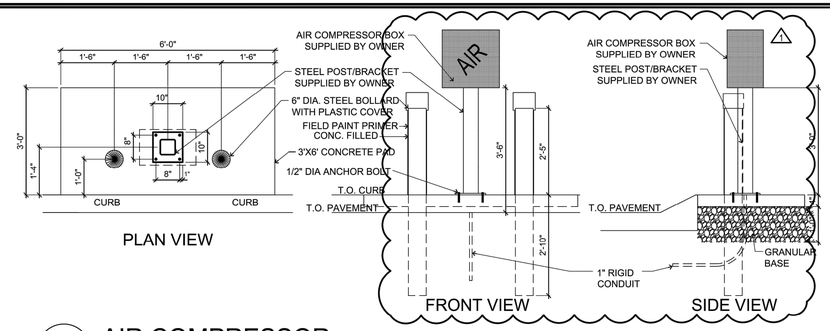
3 LANDSCAPE PROTECTOR

Not to Scale



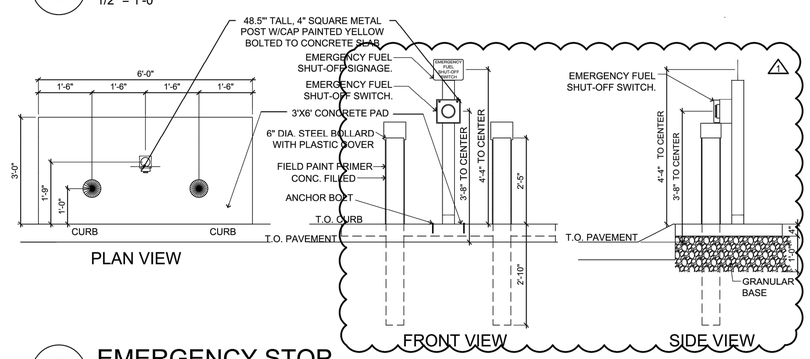
4 SCOUR STOP EROSION CONTROL

Not to Scale



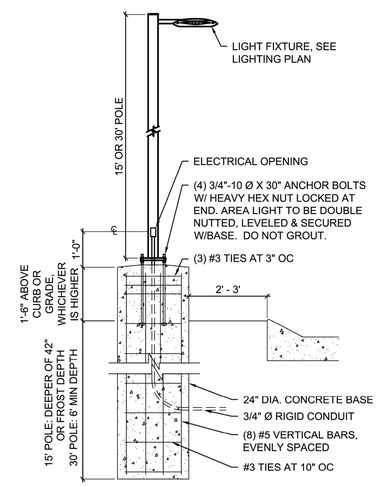
5 AIR COMPRESSOR

1/2" = 1'-0"



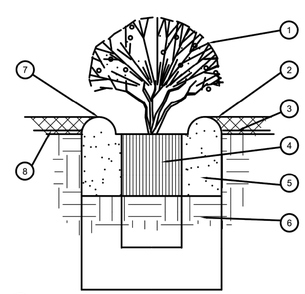
6 EMERGENCY STOP

1/2" = 1'-0"



7 AREA LIGHTING

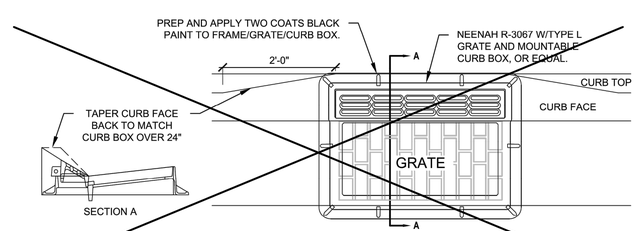
1/2" = 1'-0"



1. SHRUB, PERENNIAL, OR ORNAMENTAL GRASS.
2. GROUNDCOVER: 3" DEPTH OF 3/4" WASHED STONE OR WASHED BRICK CHIPS AS INDICATED IN LANDSCAPING PLAN.
3. FINISH GRADE.
4. ROOT BALL.
5. BACKFILL. AMEND AND FERTILIZE AS RECOMMENDED BY LOCAL SUPPLIER
6. UNDISTURBED NATIVE SOIL.
7. 3" HIGH EARTHEN WATERING BASIN.
8. HEAVY WEED FABRIC UNDER GROUNDCOVER.

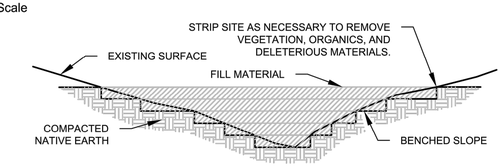
8 PLANT/SHRUB INSTALLATION

Not to Scale



9 CURB INLET

Not to Scale

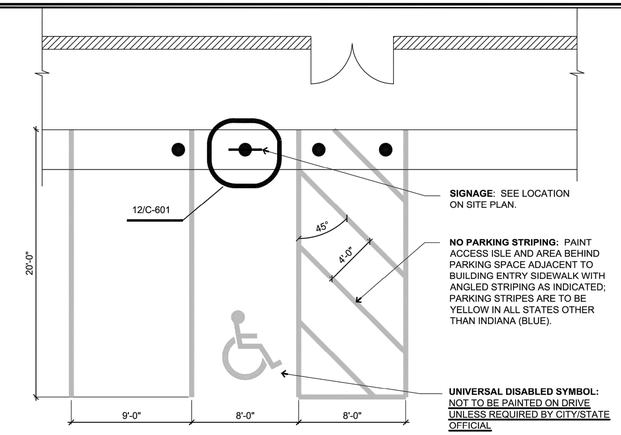


NOTES:

1. BENCH SLOPES TO MAINTAIN VERTICAL SIDE SLOPES AT FILL LIMITS +/- 3' VERTICAL TO +/- 8' HORIZONTAL.
2. COMPACTION SHALL BE IN 8" LIFTS TO 95% STANDARD PROCTOR OR OTHERWISE SPECIFIED IN GEOTECHNICAL REPORT.
3. SCARIFY ORIGINAL GROUND AND BLEND WITH FIRST LIFT ON EACH BENCH.
4. ALL FILL MATERIALS, INCLUDING FILL GENERATED ON-SITE, SHALL BE OF SUITABLE MATERIAL. UNSUITABLE FILL MATERIAL INCLUDES, BUT IS NOT LIMITED TO, SOIL THAT CONTAINS LARGE ROCKS, TREE AND PLANT ROOTS, CONCRETE, TRASH, ETC.

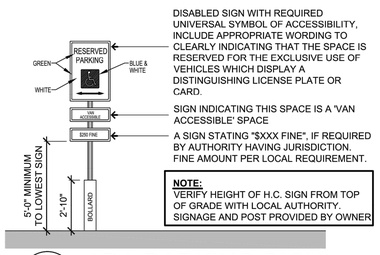
10 TYPICAL FILL SECTION

Not to Scale



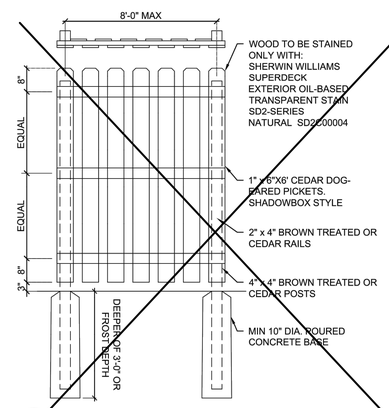
11 ADA PARKING SPACES

3/16" = 1'-0"



12 ADA PARKING SIGN

1/4" = 1'-0"



13 SCREEN/PRIVACY FENCE

1/2" = 1'-0"

GENERAL NOTES

Concrete:

1. All concrete and reinforcing work shall conform to the latest edition of the American Concrete Institute's "Standard Building Code Requirements for Reinforced Concrete," (ACI 318) and "Specifications for Structural Concrete for Buildings," (ACI 301).
2. Concrete shall use type II cement. Concrete mix designs shall meet the following requirements:

	MINIMUM 28-DAY f'c	MAXIMUM W/C RATIO	SLUMP	AIR ENTRAIN.
Exterior exposed concrete	4,000 psi	0.42	4" ± 1"	6% ± 1%

If Contractor desires to increase slump above allowable limits to facilitate placement or pumping, this shall be done utilizing a superplasticizer approved by the Ready Mix Designer at a dosage rate provided by Ready Mix Designer.

3. The Contractor shall reject any concrete that exceeds the slump limits noted above (prior to adding superplasticizer) or concrete that can not be placed within ninety (90) minutes of batch time.
4. No aluminum shall be placed in concrete.
5. All concrete is reinforced unless specifically noted as Unreinforced. Reinforce all concrete not otherwise shown with the same reinforcing as in similar sections or areas.
6. During hot weather (80 degrees F and above), the Contractor shall comply with the recommendations ACI-305 "Hot Weather Concrete". During cold weather (40 degrees and below), the Contractor shall comply with the recommendations of ACI-306 "Cold Weather Concreting".
7. The concrete mix designs are to be submitted as a formal submittal to the Owner for acceptance PRIOR to concrete being delivered to the site.
8. Verify with local authorities the required thickness of poured concrete for approaches and parking lot.

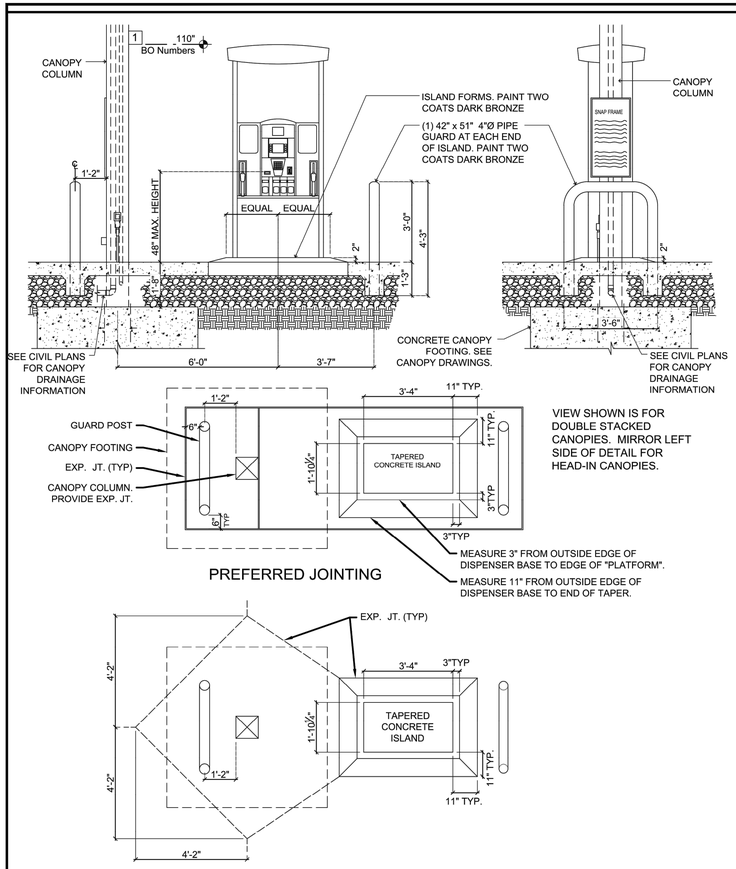
Sub-Base:

1. Sub-base Course Under Exterior Concrete Paved Surfaces: Spread and compact sub-base in 6"-9" lifts compacted to 98% Standard Proctor.

SBB Proj. No. 19-222

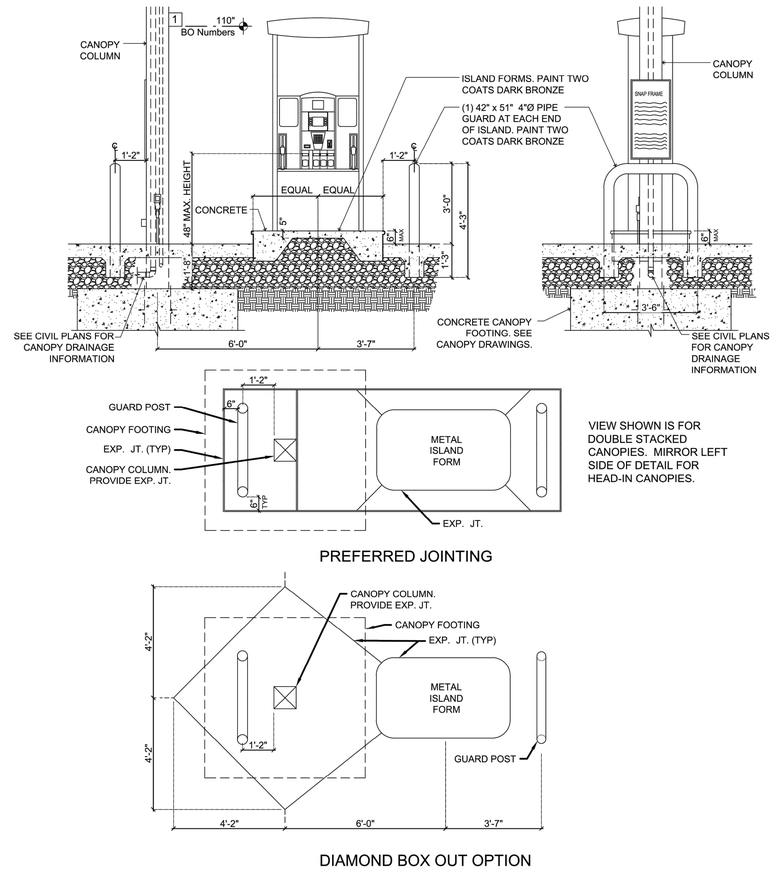
CASEY'S CONSTRUCTION DIVISION
One Convenience Blvd., P.O. Box 3001, Ankeny, IA 50021 515-965-6100

2019 CIVIL DETAILS			
PUBLISHED: 03/27/19	PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.	PUBLISHED: 07/06/20	DRAWING INFORMATION: STANDARD DETAILS
1 REVISED ON: 08/09/19		REVISED ON:	
	DRAWING INFORMATION: CONSTRUCTION DIVISION		C-601
	DRAWN BY: JWL	CHECKED BY: JWL	



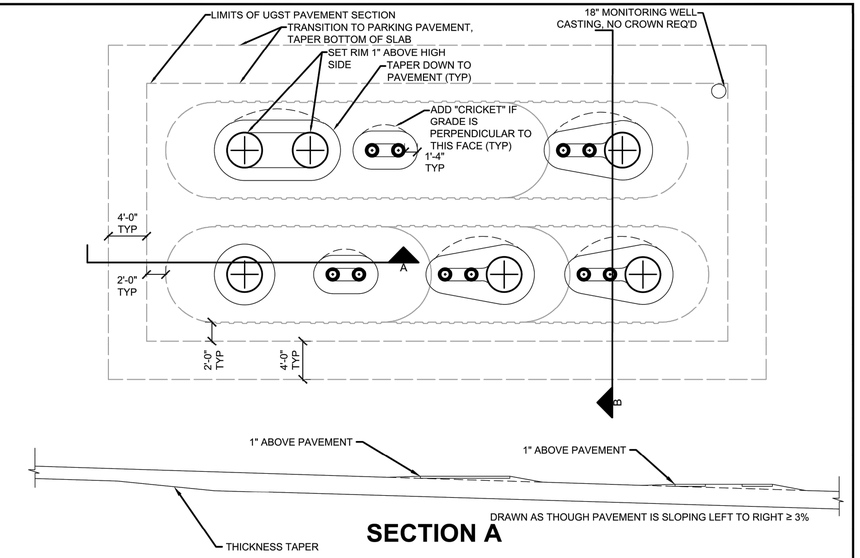
1 GAS TAPERED FUEL ISLAND (PREFERRED OPTION)

3/8" = 1'-0"



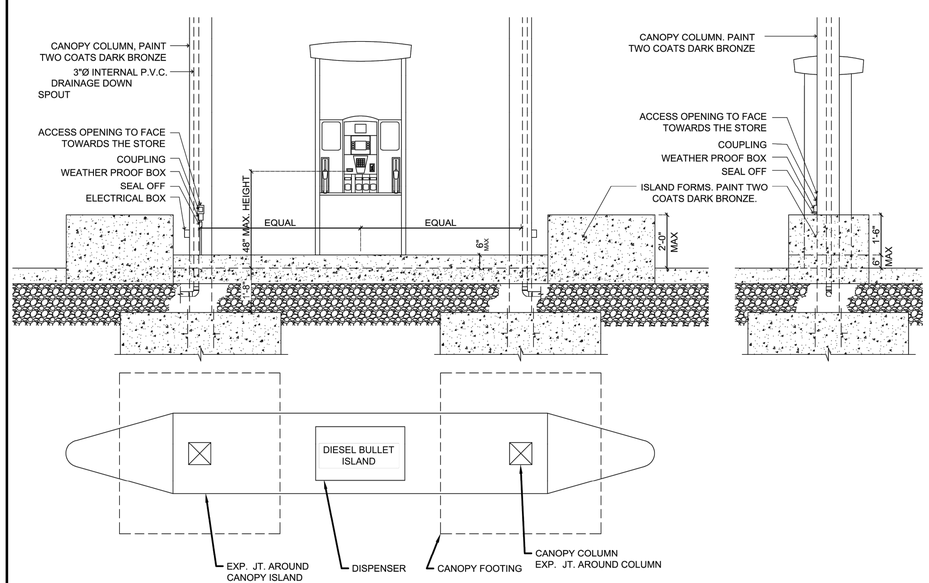
2 GAS METAL FORM ISLAND

3/8" = 1'-0"



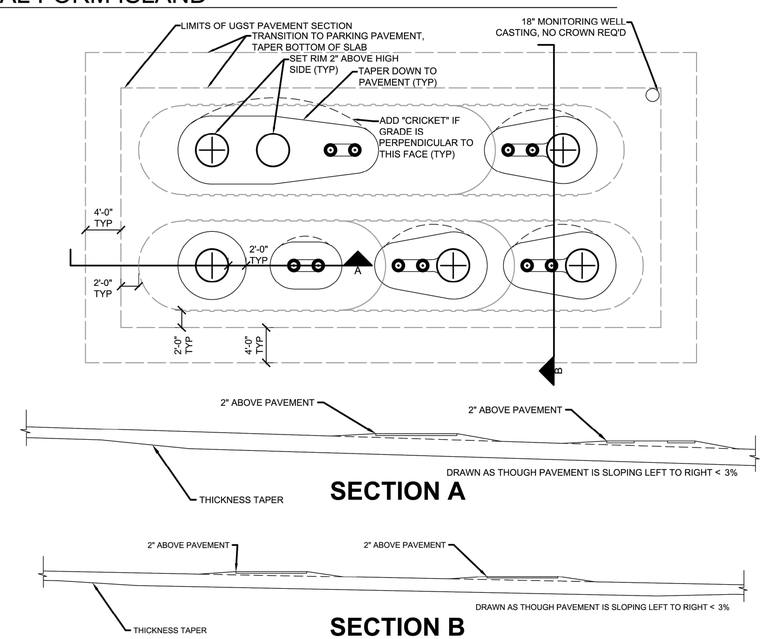
4 UGST PAVING FOR PAVEMENT SLOPE >3%

Not to Scale



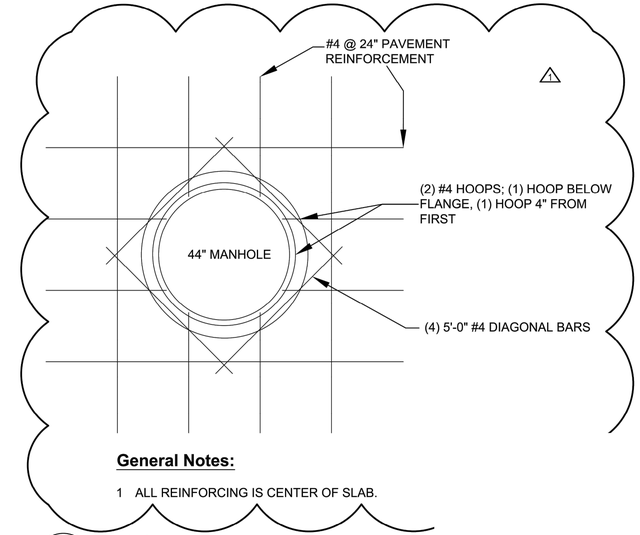
3 DIESEL BULLET ISLAND

3/8" = 1'-0"



5 UGST PAVING FOR PAVEMENT SLOPE <3%

Not to Scale



General Notes:

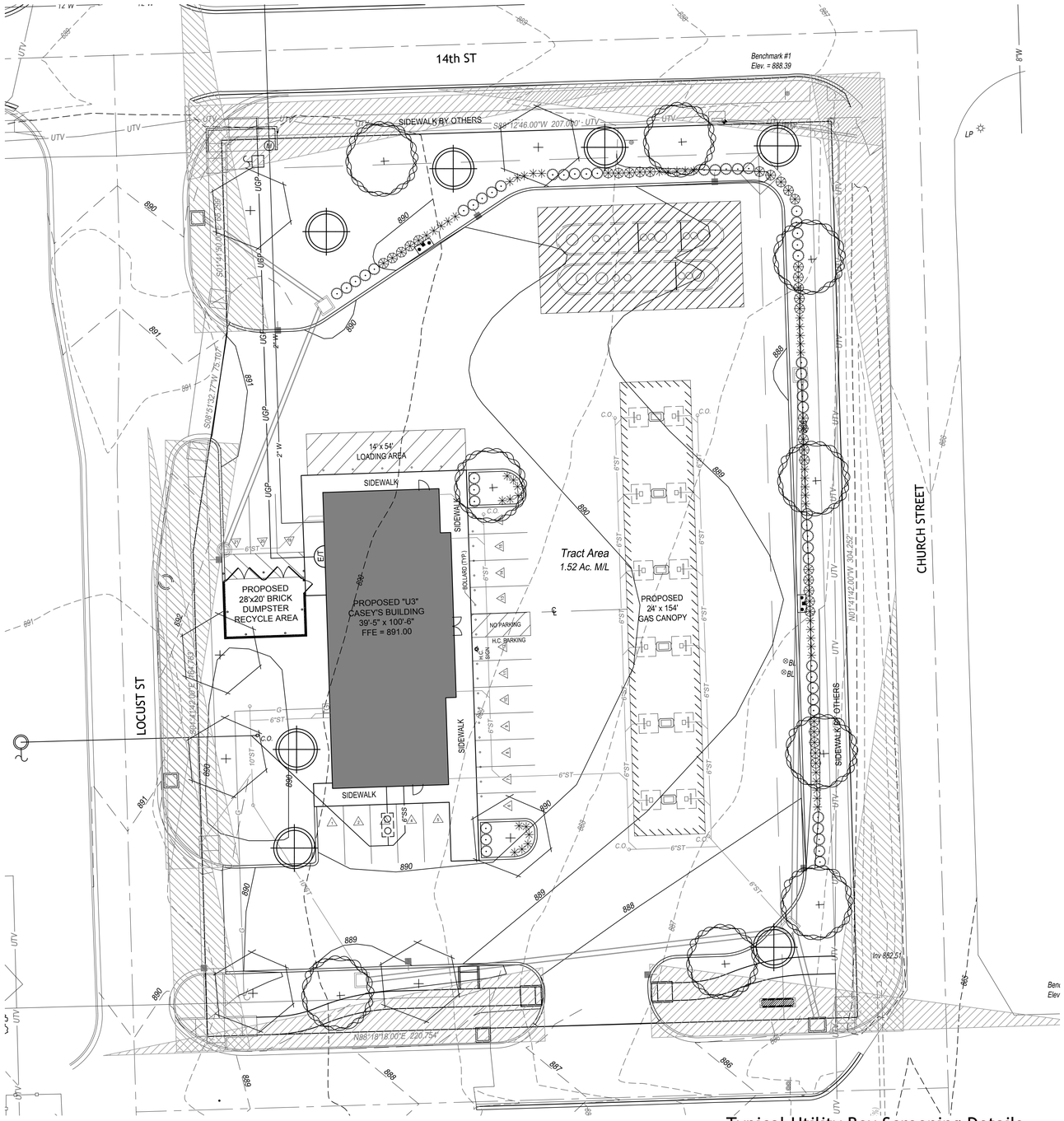
1 ALL REINFORCING IS CENTER OF SLAB.

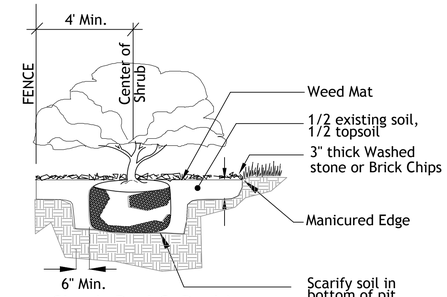
6 UGST Manhole Detail

1/2" = 1'-0"

SBB Proj. No. 19-222

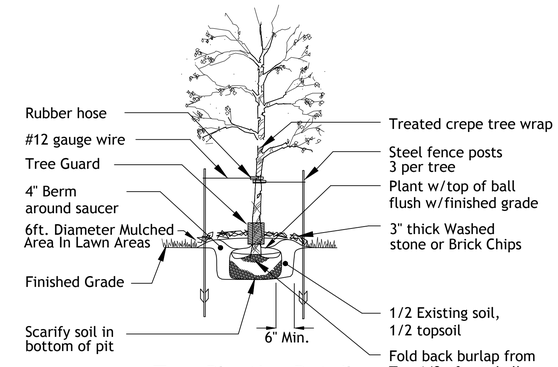
2019 CIVIL DETAILS	CASEY'S CONSTRUCTION DIVISION One Convenience Blvd., P.O. Box 3001, Ankeny, IA 50021 515-965-6100
PUBLISHED: 03/27/19	PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.
REVISED ON: 08/09/19	PUBLISHED: 07/06/20
	DRAWING INFORMATION: STANDARD DETAILS
	DRAWING INFORMATION: CONSTRUCTION DIVISION
	DRAWN BY: JWL CHECKED BY: JWL
	C-602





Shrub Bed & Parking Setback Detail

No Scale



Tree Planting Detail

No Scale

LANDSCAPE DATA

CHURCH STREET	304'	
REQUIRED		
1 SHADE PER 80'	=	4
1 SHRUB PER 4'	=	59
PROVIDED		
SHADE TREES	=	4
SHRUBS	=	65
PRIVATE ST (WEST)	305'	
REQUIRED		
1 SHADE PER 80'	=	4
PROVIDED	=	4
14th ST	207'	
REQUIRED		
1 SHADE PER 80'	=	3
1 SHRUB PER 4'	=	49
PROVIDED		
SHADE TREES	=	3
SHRUBS	=	50
PRIVATE ST (SOUTH)	221'	
REQUIRED		
1 SHADE PER 80'	=	3
PROVIDED	=	3
OPEN SPACE		
REQUIRED		
1 TREE PER 3,000sf	=	7
PROVIDED		
ORNAMENTALS	=	7

LANDSCAPE NOTES

CONTRACTOR REQUIRED TO LOCATE ALL UTILITIES BEFORE INSTALLATION TO BEGIN.

Contractor shall verify all landscape material quantities and shall report any discrepancies to the Landscape Architect prior to installation.

No plant material substitutions are allowed without Landscape Architect or Owners approval.

Contractor shall guarantee all landscape work and plant material for a period of one year from date of acceptance of the work by the Owner. Any plant material which dies during the one year guarantee period shall be replaced by the contractor during normal planting seasons.

Contractor shall be responsible for maintenance of the plants until completion of the job and acceptance by the Owner.

Successful landscape contractor shall be responsible for design that complies with minimum irrigation requirements, and installation of an irrigation system. Irrigation system to be approved by the owner before starting any installation.

All plant material shall be specimen quality stock as determined in the "American Standards For Nursery Stock" published by The American Association of Nurseryman, free of plant diseases and pest, of typical growth of the species and having a healthy, normal root system.

Sizes indicated on the plant list are the minimum, acceptable size. In no case will sizes less than specified be accepted.

All shrub beds within lawn areas to receive a manicured edge.

All shrub beds shall be mulched with 3" thick Washed stone or Brick Chips

All sod areas to be fertilized & sodded with a Turf-Type-Tall Fescue seed blend.

All seed areas shall be hydro-seeded with a Turf-Type-Tall Fescue seed blend.

Tree List

Symbol	Quantity	Common Name	Botanical Name	Size	Condition	Spacing
+	6	Honeylocust	Gleditsia Triacanthos 'Shademaster'	3" cal	BB	As Shown
+	8	Red Oak	Quercus Rubra	3" cal	BB	As Shown
+	7	Amur Maple	Acer Ginnala 'Flame'	1 1/2"cal	BB	As Shown

Shrub List

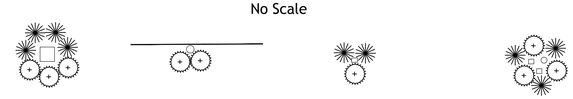
Symbol	Quantity	Common Name	Botanical Name	Size	Condition	Spacing
—	51	Seagreen Juniper	Juniperus Chinensis 'Seagreen'	24"	Container	4' o.c.
—	35	Dwarf Winged Euonymus	Euonymus Alatus 'Compactus'	24"	Container	4' o.c.
—	47	Morning Light Maiden Grass	Miscanthos Sinensis 'Morning Light'	3 gal.	Container	4' o.c.

SBB Proj. No. 19-222

SIGHT TRIANGLE

Typical Utility Box Screening Details

No Scale



Free Standing Transformer | Against Wall | Free Standing Small Box | Clustered Boxes

UTILITY BOXES SHALL BE CLUSTERED AS MUCH AS POSSIBLE

Prepared by Garrett Ochs
Landscape Architect KS 712

SBB Schmidt, Beck & Boyd Engineering / Surveying
101 S. Kansas Ave.
Topeka, KS 66603
Ph: (785) 215-8630

CASEY'S General Store

CASEY'S CONSTRUCTION DIVISION
One Convenience Blvd., P.O. Box 3001, Ankeny, IA 50021 515-965-6100

PROJECT: EUDORA, KS "U3 STORE" WEST 14th St. & CHURCH St.

PLAN ISSUED: 6-9-20
REVISED ON: 6-26-20

DRAWING INFORMATION: LANDSCAPE PLAN

DRAWING INFORMATION: CONSTRUCTION DIVISION

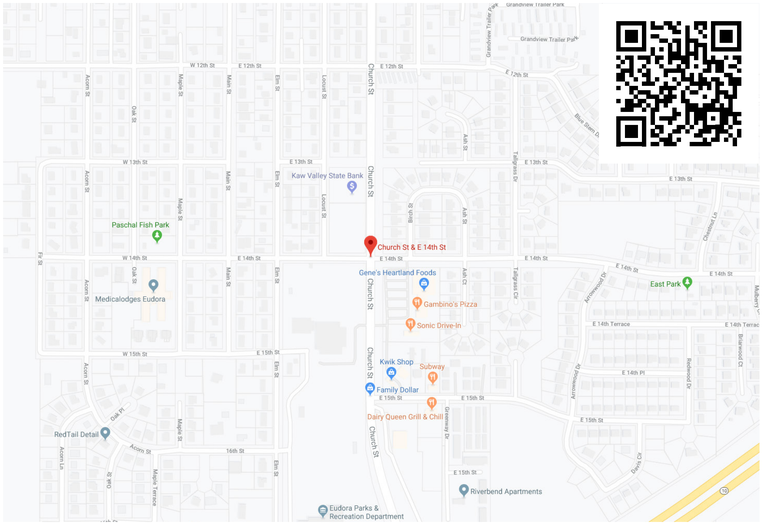
DRAWN BY: GO | CHECKED BY: GO

C-701

red leonard associates
1340 KEMPER MEADOW DR. | FOREST PARK, OH 45240 | 513-574-9500
WWW.REDLEONARD.COM

CASEY'S
CHURCH ST & EAST 14TH
EUDORA, KS

EXTERIOR LIGHTING LAYOUT



rla DIRECT
LOGIN

CLICK TO LEARN HOW TO USE YOUR INTERACTIVE SITE PLAN

CLICK FOR ADDITIONAL INFORMATION & LINKS
redleonard.com/planinfo

RL-6516-S1-R2
05/05/20

red leonard associates
1340 Kemper Meadow Dr. | Cincinnati, OH 45240 | 513-574-9500
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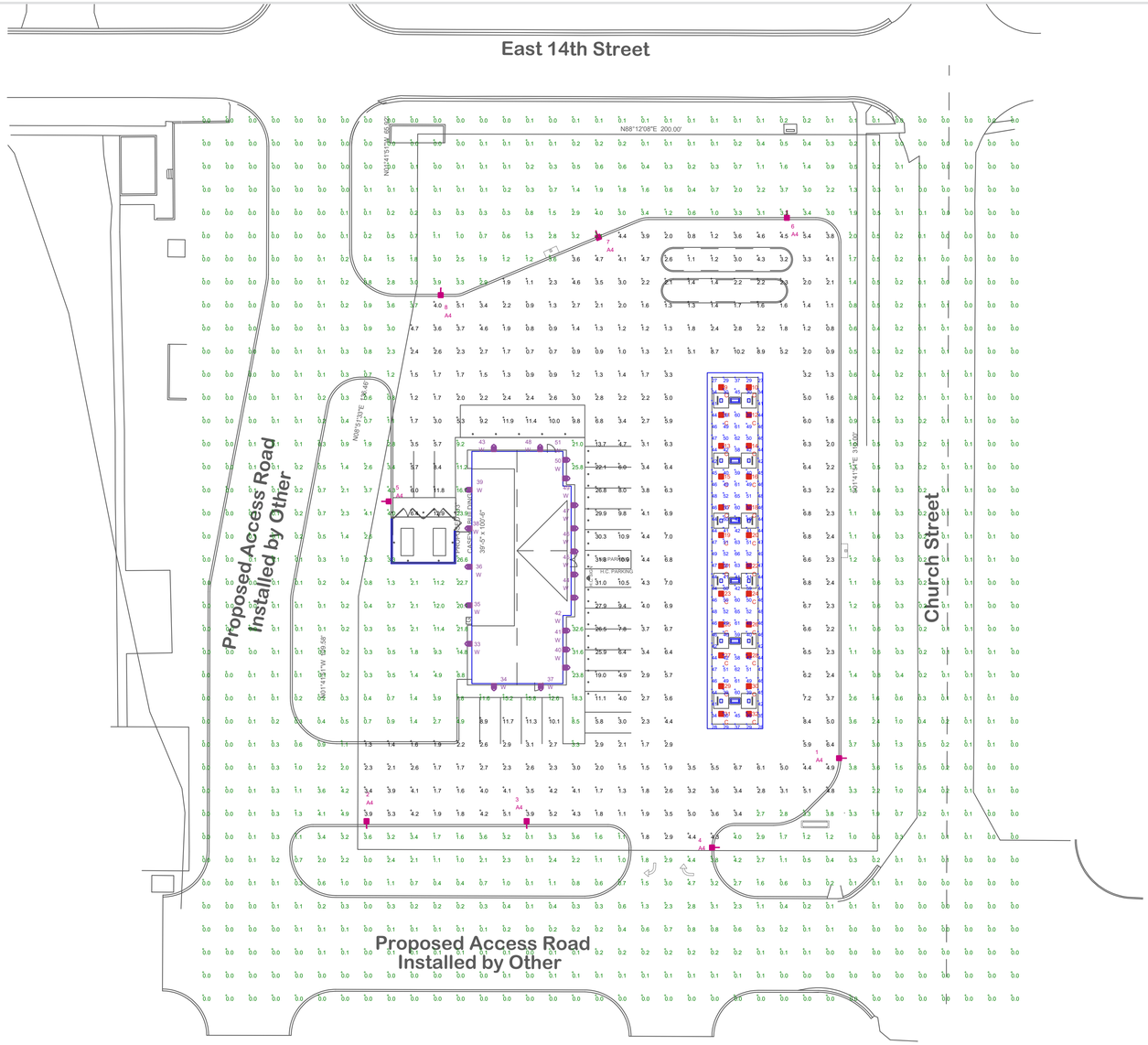

LUMINAIRE LOCATION SUMMARY		
LUM NO.	LABEL	MTG. HT.
1	A4	17
2	A4	17
3	A4	17
4	A4	17
5	A4	17
6	A4	17
7	A4	17
8	A4	17
9	C	16.5
10	C	16.5
11	C	16.5
12	C	16.5
13	C	16.5
14	C	16.5
15	C	16.5
16	C	16.5
17	C	16.5
18	C	16.5
19	C	16.5
20	C	16.5
21	C	16.5
22	C	16.5
23	C	16.5
24	C	16.5
25	C	16.5
26	C	16.5
27	C	16.5
28	C	16.5
29	C	16.5
30	C	16.5
31	C	16.5
32	C	16.5
33	W	10
34	W	10
35	W	10
36	W	10
37	W	10
38	W	10
39	W	10
40	W	10
41	W	10
42	W	10
43	W	10
44	W	10
45	W	10
46	W	10
47	W	10
48	W	10
49	W	10
50	W	10
51	W	10

FOOTCANDLE LEVELS CALCULATED AT GRADE USING INITIAL LUMEN VALUES					
LABEL	AVG	MAX	MIN	AVG/MIN	MAX/MIN
PAVED AREA	4.60	31.8	0.7	6.57	45.43
UNDEFINED AREA	1.02	32.6	0.0	N.A.	N.A.
UNDER CANOPY	46.21	66	27	1.71	2.44

NOTE: ALL AREA LIGHTS ON NEW 15 FT. POLES MOUNTED ON 2 FT. CONCRETE BASES

LUMINAIRE SCHEDULE										
SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	LLF	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	DESCRIPTION
	8	A4	SINGLE	11259	1.040	B2-U0-G2	134	1072	Cree Inc.	ARE-EDG-4M-DA-06-E-UL-BZ-700
	24	C	SINGLE	13251	1.040	B3-U0-G1	134	3216	CREE, INC.	CAN-304-SL-RS-06-E-UL-WH-700
	19	W	SINGLE	8739	1.040	B2-U0-G2	100	1900	CREE, INC.	SEC-EDG-3M-WM-06-E-UL-BZ-525

REV.	BY	DATE	DESCRIPTION
R1	BJM	2/10/20	REVISED LAYOUT PER NEW SITE PLAN
R2	JSG	5/5/20	REVISED PER NEW SITE PLAN AND BLDG CHANGE
.	.	.	.
.	.	.	.

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ILLUMINATION RESULTS SHOWN ON THIS LIGHTING APPLICATION ARE BASED ON PROJECT PARAMETERS PROVIDED BY THE MANUFACTURER LISTED, USED IN CONJUNCTION WITH LUMINAIRE TEST PROCEDURES CONDUCTED UNDER LABORATORY CONDITIONS. ACTUAL PROJECT CONDITIONS DIFFERING FROM THESE PARAMETERS MAY AFFECT FIELD RESULTS. THE CUSTOMER IS RESPONSIBLE FOR VERIFYING COMPLIANCE WITH ANY APPLICABLE ELECTRICAL, LIGHTING, OR ENERGY CODE.

SCALE: 1" = 30'
LAYOUT BY: BJM
DWG SIZE: D
DATE: 12/19/19

PROJECT NAME:
CASEY'S
EUDORA, KS
DRAWING NUMBER:
RL-6516-S1-R2

PRODUCT DETAIL & PLACEMENT

COLOR CODED LABELS, PRODUCT INFORMATION, 3D INTERACTIVE MODEL

AREA

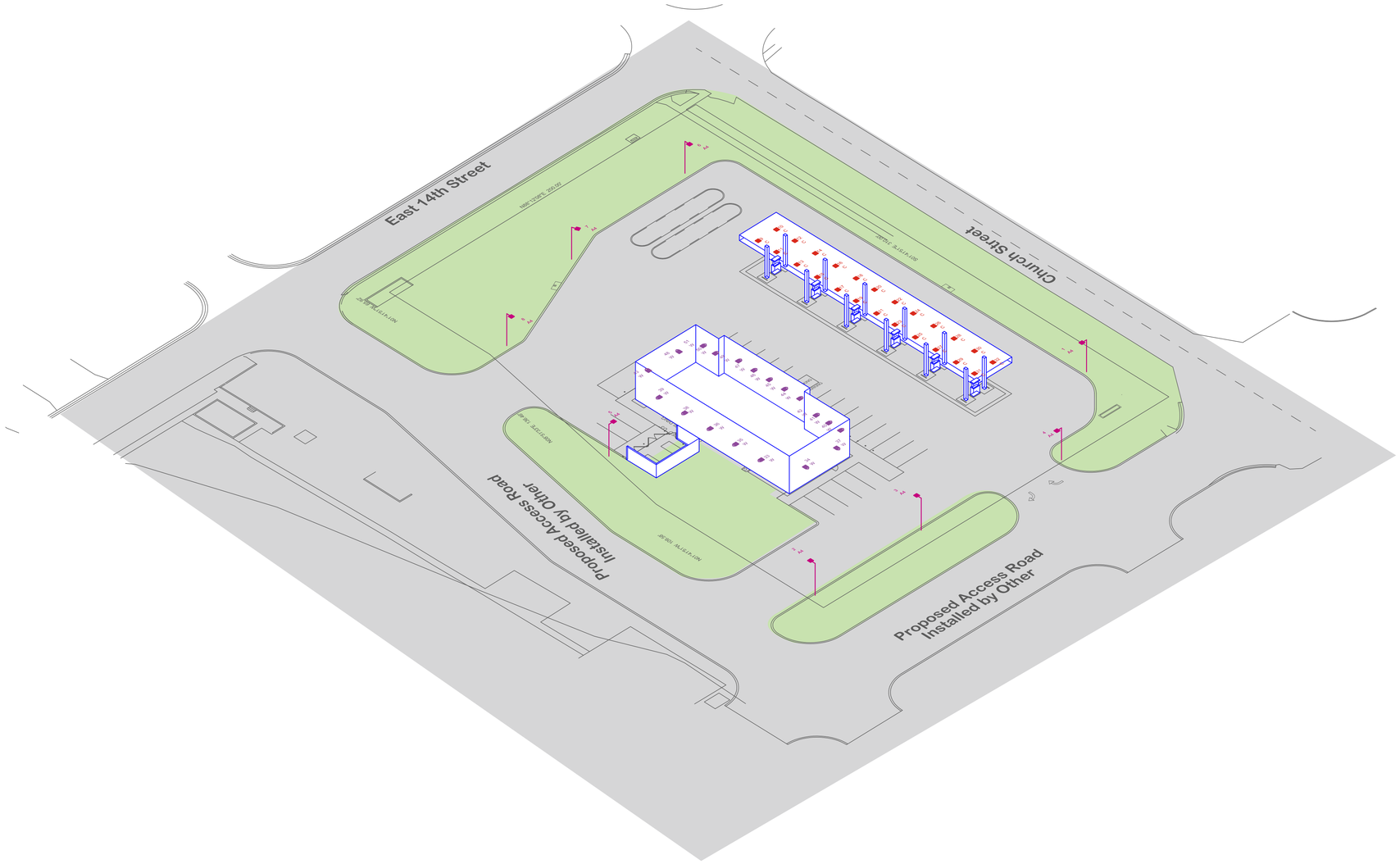
A4

CANOPY

C

WALL MOUNTED

W



LUMINAIRE SCHEDULE										
SYMBOL	QTY	LABEL	ARRANGEMENT	LUMENS	LLF	BUG RATING	WATTS/LUMINAIRE	TOTAL WATTS	MANUFACTURER	DESCRIPTION
	8	A4	SINGLE	11259	1.040	B2-U0-G2	134	1072	Cree Inc.	ARE-EDG-4M-DA-06-E-UL-BZ-700
	24	C	SINGLE	13251	1.040	B3-U0-G1	134	3216	CREE, INC.	CAN-304-SL-RS-06-E-UL-WH-700
	19	W	SINGLE	8739	1.040	B2-U0-G2	100	1900	CREE, INC.	SEC-EDG-3M-WM-06-E-UL-BZ-525

CREE TRUEWHITE® TECHNOLOGY

LEARN MORE ABOUT THE POWER OF TRUEWHITE®

WHY CREE LED?
TRUEWHITE TECHNOLOGY
EMERGENCY LIGHTING

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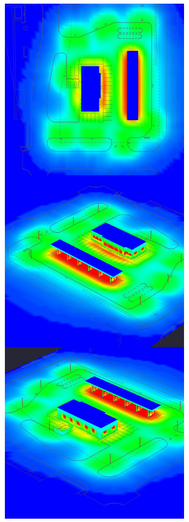
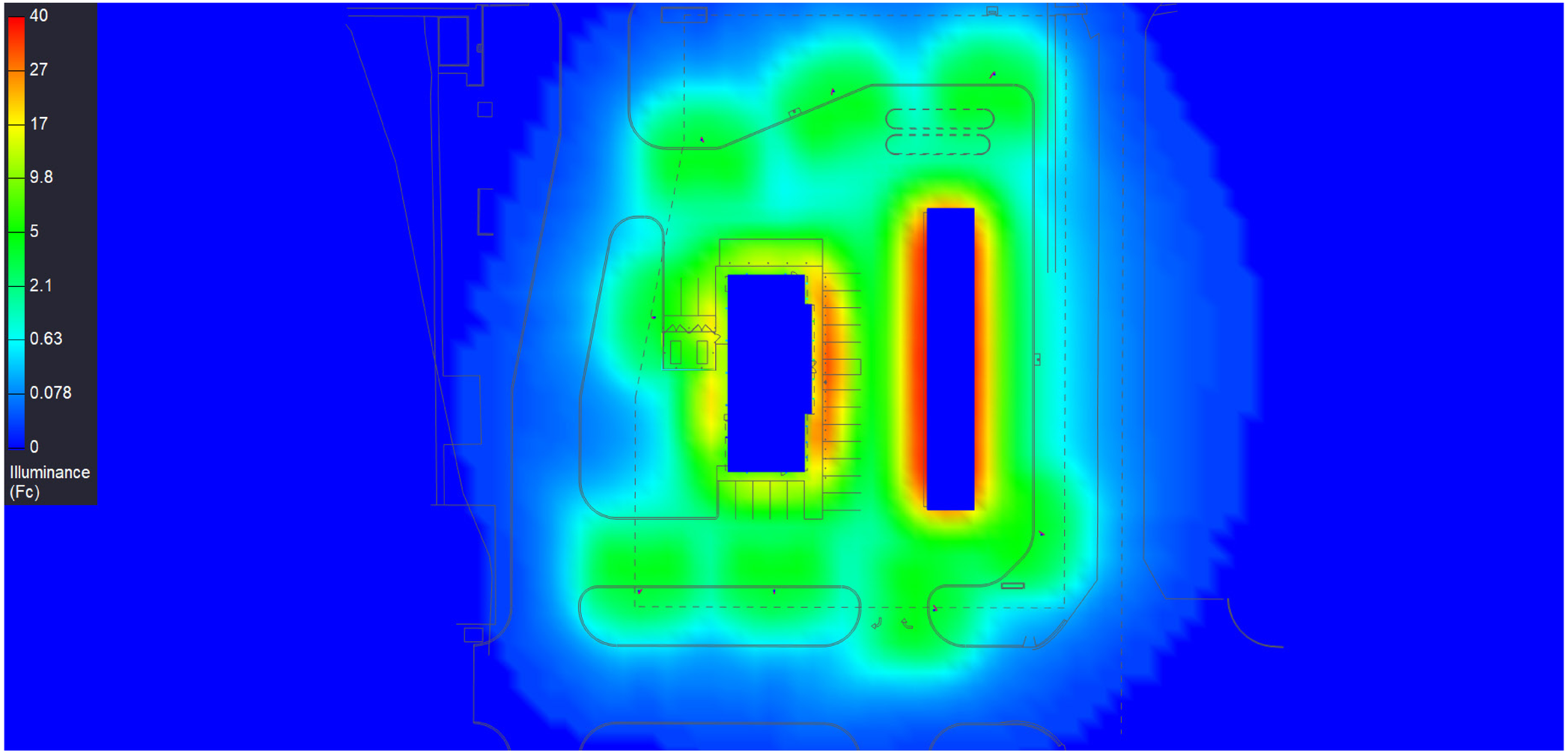
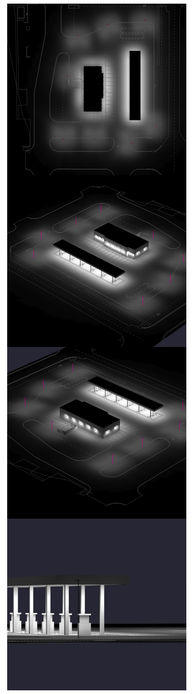
ILLUMINATION MAPPING

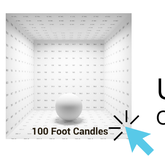
PSEUDO COLOR LIGHTING STUDY AND SLIDESHOW







ROLL CURSOR OVER IMAGES ON LEFT AND RIGHT TO VIEW LARGER



UNDERSTAND YOUR LIGHTING SOLUTION

CLICK TO VIEW AN INTERACTIVE PHOTOMETRY COMPARISON

PHOTOMETRIC COMPARISON TOOL
LIGHTING DISTRIBUTION TOOL
IP RATINGS EXPLAINED

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AREA

PRODUCT INFORMATION

SYMBOL:	QTY:	LABEL:
	8	A4

ARE-EDG-4M-DA-06-E-UL-BZ-700

Cree Edge® Series

LED Area/Flood Luminaire

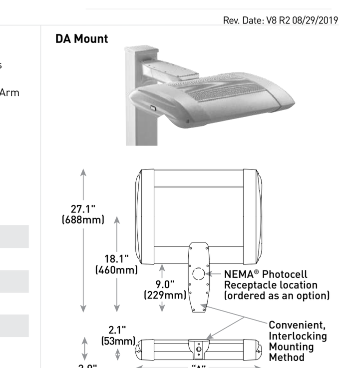
Rev. Date: V8 R2 08/29/2019

Product Description

The Cree Edge® Series has a slim, low profile design. Its rugged cast aluminum housing minimizes wind load requirements and features an integral, weathertight LED driver compartment and high performance aluminum heat sinks. Various mounting choices: Adjustable Arm, Direct Arm, Direct Arm Long, or Side Arm (details on page 2). Includes a leaf/debris guard.

Applications: Parking lots, walkways, campuses, car dealerships, office complexes, and internal roadways

DA Mount



Performance Summary

- Patented NanoOptic® Product Technology
- Assembled in the U.S.A. of U.S. and imported parts
- **CRI:** Minimum 70 CRI
- **CCT:** 4000K (+/- 300K), 5700K (+/- 500K) standard
- **Limited Warranty†:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

† See http://creelighting.com/warranty for warranty terms

LED Count (x10)	Dim. "A"	Weight
02	12.1" (306mm)	21 lbs. (10kg)
04	12.1" (306mm)	24 lbs. (11kg)
06	14.1" (357mm)	27 lbs. (12kg)
08	16.1" (408mm)	28 lbs. (13kg)
10	18.1" (459mm)	32 lbs. (15kg)
12	20.1" (510mm)	34 lbs. (15kg)
14	22.1" (560mm)	37 lbs. (17kg)
16	24.1" (611mm)	41 lbs. (19kg)

AA/DL/SA Mount - see page 22 for weight & dimensions

Accessories

Field-Installed

Bird Spikes
XA-BRDSPK

Hand-Held Remote
XA-SENSREM
- For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required

Backlight Control Shields
XA-20BLS-4
- Four-pack
- Unpainted stainless steel

Ordering Information

Example: ARE-EDG-2M-AA-12-E-UL-SV-350

Product	Optic	Mounting*	LED Count (x10)	Series	Voltage	Color Options	Drive Current	Options
				E				
ARE-EDG	**2M** Type II Medium; **2MB** Type II Medium w/BLS; **2MP** Type II Medium w/Partial BLS; **3M** Type III Medium; **3MB** Type III Medium w/BLS; **3MP** Type III Medium w/Partial BLS; **4M** Type IV Medium; **4MB** Type IV Medium w/BLS; **4MP** Type IV Medium w/Partial BLS; **5M** Type V Medium; **5S** Type V Short	**AA** Adjustable Arm; **DA** Direct Arm; **DL** Direct Long Arm	02, 04, 06, 08, 10, 12, 14, 16	E	**UL** Universal 120-277V; **UH** Universal 347-480V	**BK** Black; **BZ** Bronze; **SV** Silver; **WH** White	**350** 350mA; **525** 525mA; **700** 700mA - Available with 20-60 LEDs	**DIM** 0-10V Dimming - Control by others - Refer to Dimming spec sheet for details - Can't exceed specified drive current - Not available with PML options; **HL** Hi/Low (Dual Circuit Input) - Refer to HL spec sheet for details - Sensor not included; **P** Photocell - Refer to PML spec sheet for availability with PML options - Available with UL voltage only; **PML** Programmable Multi-Level, 20-40' Mounting Height - Refer to PML spec sheet for details - Intended for downlight applications at 0° tilt; **PML2** Programmable Multi-Level, 10-30' Mounting Height - Refer to PML spec sheet for details - Intended for downlight applications at 0° tilt; **R** NEMA® 3-Pin Photocell Receptacle - 3-pin receptacle per ANSI C136.10 - Intended for downlight applications with maximum 45° tilt - Photocell and shorting cap by others - Refer to PML spec sheet for availability with PML options; **40K** 4000K Color Temperature - Minimum 70 CRI - Color temperature per luminaire
FLD-EDG	**25** 25° Flood; **40** 40° Flood; **70** 70° Flood; **SN** Sign; **N6** NEMA® 6	**AA** Adjustable Arm; **SA** Side Arm - Available with 20-60 LEDs						

* Reference EPA and pole configuration suitability data beginning on page 19

cULus DLC

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

Cree Edge® LED Area/Flood Luminaire

Product Specifications

CONSTRUCTION & MATERIALS

- Slim, low profile, minimizing wind load requirements
- Luminaire sides are rugged die cast aluminum with integral, weathertight LED driver compartment and high performance heat sinks
- DA and DL mount utilizes convenient interlocking mounting method. Mounting is rugged die cast aluminum, mounts to 3-6" (76-152mm) square or round pole and secures to pole with 5/16-18 UNC bolts spaced on 2" (51mm) centers
- AA and SA mounts are rugged die cast aluminum and mount to 2" (51mm) IP, 2.375" (60mm) O.D. tenons
- Includes leaf/debris guard
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver, and white are available
- **Weight:** See Dimensions and Weight Charts on pages 1 and 22

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- DA and DL mounts designed with integral weathertight electrical box with terminal strips (12Ga-20Ga) for easy power hookup
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Consult factory if in-luminaire fusing is required
- **Maximum 10V Source Current:** 20 LED (350mA): 10mA; 20 LED (525 & 700mA) and 40-80 LED: 0.15mA; 100-160 LED: 0.30mA

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Enclosure rated IP66 per IEC 60529 when ordered without P or R options
- Consult factory for CE Certified products
- Certified to ANSI C136.31-2001, 3G bridge and overpass vibration standards when ordered with AA, DA and DL mounts
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- DLC qualified with select SKUs. Refer to https://www.designlights.org/search/ for most current information
- Meets Buy American requirements within ARRA
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

LED Count (x10)	System Watts 120-480V	Total Current (A) 120V	208V	240V	277V	347V	480V
350mA							
02	25	0.21	0.13	0.11	0.10	0.08	0.07
04	46	0.36	0.23	0.21	0.20	0.15	0.12
06	66	0.52	0.31	0.28	0.26	0.20	0.15
08	90	0.75	0.44	0.38	0.34	0.26	0.20
10	110	0.92	0.53	0.47	0.41	0.32	0.24
12	130	1.10	0.63	0.55	0.48	0.38	0.28
14	158	1.32	0.77	0.68	0.62	0.47	0.35
16	179	1.49	0.87	0.77	0.68	0.53	0.39
525mA							
02	37	0.30	0.19	0.17	0.16	0.12	0.10
04	70	0.58	0.34	0.31	0.28	0.21	0.16
06	101	0.84	0.49	0.43	0.38	0.30	0.22
08	133	1.13	0.66	0.58	0.51	0.39	0.28
10	171	1.43	0.83	0.74	0.66	0.50	0.38
12	202	1.69	0.98	0.86	0.77	0.59	0.44
14	232	1.94	1.12	0.98	0.87	0.68	0.50
16	263	2.21	1.27	1.11	0.97	0.77	0.56
700mA							
02	50	0.41	0.25	0.22	0.20	0.15	0.12
04	93	0.78	0.46	0.40	0.36	0.27	0.20
06	134	1.14	0.65	0.57	0.50	0.39	0.29

* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%

Cree Edge® Series Ambient Adjusted Lumen Maintenance[1]

Ambient	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Estimated[3] LMF	100K hr Estimated[3] LMF
5°C (41°F)	1.04	1.01	0.99	0.98	0.96
10°C (50°F)	1.03	1.00	0.98	0.97	0.95
15°C (59°F)	1.02	0.99	0.97	0.96	0.94
20°C (68°F)	1.01	0.98	0.96	0.95	0.93
25°C (77°F)	1.00	0.97	0.95	0.94	0.92

[1] Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED
[3] Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

CANOPY

PRODUCT INFORMATION

SYMBOL:	QTY:	LABEL:
	24	C

CAN-304-SL-RS-06-E-UL-WH-700

304 Series™

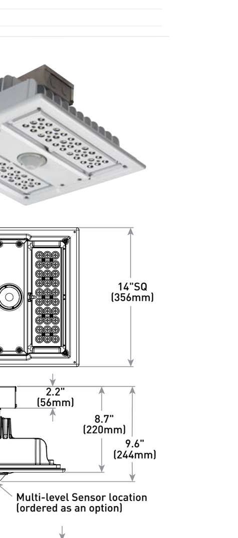
LED Recessed Canopy Luminaire

Product Description

Luminaire housing is constructed from rugged die cast aluminum components (RS Mount) or die cast and extruded aluminum components (RD Mount). LED driver is mounted in a sealed weathertight center chamber that allows for access from below the fixture. Luminaire mounts directly to the canopy deck and is secured in place with die cast aluminum trim frame. Luminaire housing is provided with factory applied foam gasket that provides a watertight seal between luminaire housing and canopy deck. Suitable for use in single or double skin canopies with 16" (406 mm) wide panels. Designed for canopies of 19-22 gauge (maximum 0.040" [1 mm] thickness).

Applications: Petroleum stations, convenience stores, drive-thru banks and restaurants, retail and grocery

RS Mount



Weight
22.0 lbs. (9.9kg)

Performance Summary

- Patented NanoOptic® Product Technology
- Assembled in the U.S.A. of U.S. and imported parts
- **CRI:** Minimum 70 CRI
- **CCT:** 4000K (+/- 300K), 5700K (+/- 500K) standard
- **Limited Warranty†:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

† See http://lighting.cree.com/warranty for warranty terms

Accessories

Field-Installed

Hand-Held Remote
XA-SENSREM
- For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required

Ordering Information

Example: CAN-304-5M-RS-04-E-UL-SV-350

Product	Optic	Mounting	LED Count (x10)	Series	Voltage	Color Options	Drive Current	Options
CAN-304				E				
CAN-304	**5M** Type V Medium; **5S** Type V Short; **PS** Petroleum Symmetric; **SL** Sparkle Petroleum	**RS** Recessed Single Skin; **RD** Recessed Double Skin	04, 06	E	**UL** Universal 120-277V; **UH** Universal 347-480V	**BK** Black; **BZ** Bronze; **SV** Silver; **WH** White	**350** 350mA; **525** 525mA; **700*** 700mA	**DIM** 0-10V Dimming - Control by others - Refer to Dimming spec sheet for details - Can't exceed specified drive current; **F** Fuse - When code dictates fusing use time delay fuse - Refer to PML spec sheet for availability with PML options; **PML** Programmable Multi-Level - Refer to PML spec sheet for details; **40K** 4000K Color Temperature - Minimum 70 CRI - Color temperature per luminaire

* 60 LED luminaire requires marked spacing: 48" x 24" x 6" (1,219mm x 610mm x 152mm); 48" (1,219mm) center-to-center of adjacent luminaires, 24" (610mm) luminaire center to side building member, 6" (152mm) top of luminaire to overhead building member

cULus RoHS DLC

US: lighting.cree.com T (800) 236-6800 F (262) 504-5415

Rev. Date: V2 10/26/2018

Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507

CREE

304 Series™ LED Recessed Canopy Luminaire

Product Specifications

CONSTRUCTION & MATERIALS

- RS Mount luminaire housing is constructed from rugged die cast aluminum and incorporates integral, high performance heatsink fins specifically designed for LED canopy applications
- RD Mount luminaire housing is constructed from rugged die cast aluminum and features high performance extruded aluminum heatsinks specifically designed for LED canopy applications
- LED driver is mounted in a sealed weathertight center chamber that allows for access from below the luminaire
- Field adjustable drive current between 350mA, 525mA and 700mA on Non-IC rated luminaires
- Luminaire housing provided with factory applied foam gasket and provides for a watertight seal between luminaire housing and canopy deck
- Mounts directly to the canopy deck and is secured in place with a die cast aluminum trim frame
- RS mount includes integral junction box which allows ease of installation without need to open luminaire
- Suitable for use in single (RS Mount) or double (RD Mount) skin canopies with 16" (406mm) wide panels
- Designed for canopies of 19-22 gauge (maximum 0.040" [1mm] thickness)
- See 228 Series™ canopy luminaires for canopies using 12" (305mm) deck sections
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultra-durable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver, and white are available

ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral weathertight electrical box with terminal strips (12Ga-20Ga) for easy power hookup
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- **10V Source Current:** 0.15mA

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Meets FCC Part 15 standards for conducted and radiated emissions
- Enclosure rated IP66 per IEC 60529
- 10kV surge suppression protection tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- DLC qualified when ordered with PS or SL optics and 525 or 700mA drive current. Please refer to www.designlights.org/QPL for most current information
- RoHS Compliant. Consult factory for additional details
- Meets Buy American requirements within ARRA
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

LED Count (x10)	System Watts 120-480V	Total Current (A) 120V	208V	240V	277V	347V	480V
350mA							
04	46	0.39	0.24	0.22	0.21	0.15	0.12
06	69	0.57	0.34	0.30	0.27	0.21	0.16
525mA							
04	71	0.59	0.35	0.31	0.28	0.21	0.16
06	101	0.84	0.49	0.43	0.38	0.30	0.22
700mA							
04	94	0.79	0.46	0.40	0.36	0.28	0.21
06	135	1.14	0.65	0.57	0.50	0.40	0.29

* Electrical data at 25°C (77°F)

304 Series™ Ambient Adjusted Lumen Maintenance[1]

Ambient	Initial LMF	25K hr Projected[2] LMF	50K hr Projected[2] LMF	75K hr Calculated[3] LMF	100K hr Calculated[3] LMF
5°C (41°F)	1.04	0.99	0.97	0.95	0.93
10°C (50°F)	1.03	0.98	0.96	0.94	0.92
15°C (59°F)	1.02	0.97	0.95	0.93	0.91
20°C (68°F)	1.01	0.96	0.94	0.92	0.90
25°C (77°F)	1.00	0.95	0.93	0.91	0.89

[1] Lumen maintenance values at 25°C are calculated per TM-21 based on LM-80 data and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions
[2] In accordance with IESNA TM-21-11, Projected Values represent interpolated value based on time durations that are within six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)
[3] In accordance with IESNA TM-21-11, Calculated Values represent time durations that exceed six times (6X) the IESNA LM-80-08 total test duration (in hours) for the device under testing ((DUT) i.e. the packaged LED chip)

US: lighting.cree.com T (800) 236-6800 F (262) 504-5415

Canada: www.cree.com/canada T (800) 473-1234 F (800) 890-7507

CREE

WALL MOUNTED

PRODUCT INFORMATION

SYMBOL:	QTY:	LABEL:
	19	W

SEC-EDG-3M-WM-06-E-UL-BZ-525

Cree Edge® Series

LED Security Wall Pack Luminaire

Rev. Date: V6 08/29/2019

Product Description

The Cree Edge® wall mount luminaire has a slim, low profile design. The luminaire end caps are made from rugged die cast aluminum with integral, weathertight LED driver compartments and high performance aluminum heat sinks specifically designed for LED applications. Housing is rugged aluminum. Includes a lightweight mounting box for installation over standard and mud ring single gang J-Boxes. Secures to wall with four 3/16" (5mm) screws (by others). Conduit entry from top, bottom, sides and rear. Allows mounting for uplight or downlight. Designed and approved for easy through-wiring. Includes leaf/debris guard.

Applications: General area and security lighting

Performance Summary

- Patented NanoOptic® Product Technology
- Assembled in the U.S.A. of U.S. and imported parts
- **CRI:** Minimum 70 CRI
- **CCT:** 4000K (+/- 300K), 5700K (+/- 500K) standard
- **Limited Warranty†:** 10 years on luminaire/10 years on Colorfast DeltaGuard® finish

† See http://creelighting.com/warranty for warranty terms

LED Count (x10)	Dim. "A"	Weight
02	9.9" (251mm)	20 lbs. (9.1kg)
04	11.9" (303mm)	22 lbs. (10.0kg)
06	13.9" (353mm)	25 lbs. (11.3kg)
08	15.9" (404mm)	27 lbs. (12.2kg)
10	17.9" (455mm)	31 lbs. (14.1kg)
12	19.9" (505mm)	32 lbs. (14.5kg)

Accessories

Field-Installed

Bird Spikes
XA-BRDSPK

Beauty Plate
WM-PLT12** - 12" (305mm) Square
WM-PLT14** - 14" (356mm) Square
- Covers holes left by incumbent wall packs

Hand-Held Remote
XA-SENSREM
- For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required

** Must specify color

Ordering Information

Example: SEC-EDG-2M-WM-06-E-UL-SV-700

Product	Optic	Mounting	LED Count (x10)	Series	Voltage	Color Options	Drive Current	Options
SEC-EDG		WM		E				
SEC-EDG	**2M** Type II Medium; **2MB** Type II Medium w/BLS; **2S** Type II Short; **2SB** Type II Short w/BLS; **3M** Type III Medium; **3MB** Type III Medium w/BLS; **4M** Type IV Medium; **4MB** Type IV Medium w/BLS	**WM** Wall Mount	02, 04, 06, 08, 10, 12	E	**UL** Universal 120-277V; **UH** Universal 347-480V; **34** 347V	**BK** Black; **BZ** Bronze; **SV** Silver; **WH** White	**350** 350mA; **525** 525mA -Available with 20-80 LEDs; **700** 700mA -Available with 20-60 LEDs	**DIM** 0-10V Dimming - Control by others - Refer to Dimming spec sheet for details - Can't exceed specified drive current - Not available with PML option; **P** Photocell - Must specify UL or 34 voltage; **PML** Programmable Multi-Level - Refer to PML spec sheet for details - Intended for downlight applications with 0° tilt; **40K** 4000K Color Temperature - Minimum 70 CRI - Color temperature per luminaire

cULus DLC

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

Cree Edge® LED Security Wall Pack Luminaire

Product Specifications

CONSTRUCTION & MATERIALS

- Slim, low profile design
- Luminaire sides are rugged die cast aluminum with integral, weathertight LED driver compartment and high performance aluminum heat sinks specifically designed for LED applications
- Housing is rugged aluminum
- Furnished with low copper, light weight mounting box designed for installation over standard and mud ring single gang J-Boxes
- Luminaire can also be direct mounted to a wall and surface wired
- Secures to wall with four 3/16" (5mm) screws (by others)
- Conduit entry from top, bottom, sides, and rear
- Allows mounting for uplight or downlight
- Designed and approved for easy through-wiring
- Includes leaf/debris guard
- Exclusive Colorfast DeltaGuard® finish features an E-Coat epoxy primer with an ultradurable powder topcoat, providing excellent resistance to corrosion, ultraviolet degradation and abrasion. Black, bronze, silver and white are available
- **Weight:** See Dimensions and Weight Chart on page 1

ELECTRICAL SYSTEM

- **Input Voltage:** 120–277V or 347–480V, 50/60Hz, Class 1 drivers
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- Integral weathertight J-Box with leads (wire nuts) for easy power hook up
- Integral 10kV surge suppression protection standard
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- Consult factory if in-luminaire fusing is required
- **Maximum 10V Source Current:** 20 LED (350mA): 10mA; 20LED (525 & 700 mA) and 40-120 LED: 0.15mA

REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed
- Suitable for wet locations
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Enclosure rated IP66 per IEC 60529 when ordered without P or PML options
- ANSI C136.2 10kV surge protection, tested in accordance with IEEE/ANSI C62.41.2
- Luminaire and finish endurance tested to withstand 5,000 hours of elevated ambient salt fog conditions as defined in ASTM Standard B 117
- DLC qualified with select SKUs. Refer to https://www.designlights.org/search/ for most current information
- Meets Buy American requirements within ARRA
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Electrical Data*

LED Count (x10)	System Watts 120-480V	Total Current (A) 120V	208V	240V	277V	347V	480V
350mA							
02	25	0.21	0.13	0.11	0.10	0.08	0.07
04	46	0.36	0.23	0.21	0.20	0.15	0.12
06	66	0.52	0.31	0.28	0.26	0.20	0.15
08	90	0.75	0.44	0.38	0.34	0.26	0.20
10	110	0.92	0.53	0.47	0.41	0.32	0.24
12	130	1.10	0.63	0.55	0.48	0.38	0.28
525mA							
02	37	0.30	0.19	0.17	0.16	0.12	0.10
04	70	0.58	0.34	0.31	0.28	0.21	0.16
06	101	0.84	0.49	0.43	0.38	0.30	0.22
08	133	1.13	0.66	0.58	0.51	0.39	0.28
700mA							
02	50	0.41	0.25	0.22	0.20	0.15	0.12
04	93	0.78	0.46	0.40	0.36	0.27	0.20
06	134	1.14	0.65	0.57	0.50	0.39	0.29

* Electrical data at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120-277V or 347-480V +/- 10%

Cree Edge® Series Ambient Adjusted Lumen Maintenance[1]

Ambient	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Estimated[3] LMF	100K hr Estimated[3] LMF
5°C (41°F)	1.04	1.01	0.99	0.98	0.96
10°C (50°F)	1.03	1.00	0.98	0.97	0.95
15°C (59°F)	1.02	0.99	0.97	0.96	0.94
20°C (68°F)	1.01	0.98	0.96	0.95	0.93
25°C (77°F)	1.00	0.97	0.95	0.94	0.92

[1] Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors. Please refer to the Temperature Zone Reference Document for outdoor average nighttime ambient conditions.
[2] In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED
[3] Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED

US: creelighting.com (800) 236-6800
Canada: creelighting-canada.com (800) 473-1234

CREE LIGHTING

DLC REBATES
CREE WARRANTY INFO
ADDITIONAL PRODUCTS

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SIGN PACKET

JACOB CLARK | SIGNAGE PROJECT BUYER
3305 SE Delaware Ave | Ankeny, IA 50021
P: 515-963-3831 | F: 515-289-5606 | E: jacob.clark@caseys.com

Eudora, KS

U3 Store

- 4' Building Signage
- 4' Canopy Signage
- 4 Product Custom Monument

07-24-20

Building & Wall Signs (U3 Store)

Sign #	Sign	Type	Location	Illumination	Dimensions				
					Height	Width	Bottom	Top	Area Ft²
1	"CASEY'S"	Surface	Building Front	Internal	4' 0"	17' 0-3/4"	See A-201	See A-201	28.25
2	DO NOT INSTALL								
3	Snap Frame	Advertising	Building Front	N/A	3' 0"	8' 0"	3' 4"	6' 8-1/2"	24
4	Snap Frame	Advertising	Building Front	N/A	3' 8"	2' 4"	2' 10"	6' 10-1/2"	8.56
								Total	60.81

Canopy

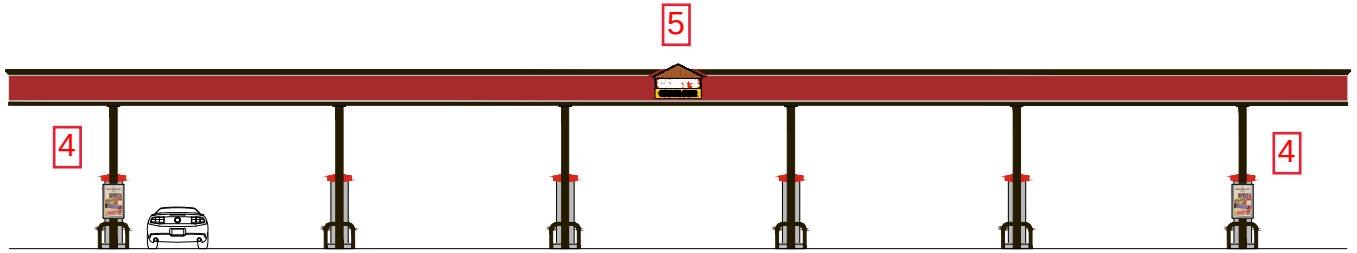
Sign #	Sign	Type	Location	Illumination	Dimensions				
					Height	Width	Bottom	Top	Area Ft²
5	House Logo	Surface	Canopy Side	Internal	4' 0"	5' 8-7/8"	17' 3-1/2"	21' 3-1/2"	17.49
5	House Logo	Surface	Canopy Side	Internal	4' 0"	5' 8-7/8"	17' 3-1/2"	21' 3-1/2"	17.49
5	House Logo	Surface	Canopy Front	Internal	4' 0"	5' 8-7/8"	17' 3-1/2"	21' 3-1/2"	17.49
4	Snap Frame	Advertising	Canopy Column	N/A	3' 8"	2' 4"	3' 0"	7' 0-1/2"	8.56
4	Snap Frame	Advertising	Canopy Column	N/A	3' 8"	2' 4"	3' 0"	7' 0-1/2"	8.56
4	Snap Frame	Advertising	Canopy Column	N/A	3' 8"	2' 4"	3' 0"	7' 0-1/2"	8.56
4	Snap Frame	Advertising	Canopy Column	N/A	3' 8"	2' 4"	3' 0"	7' 0-1/2"	8.56
								Total	86.71

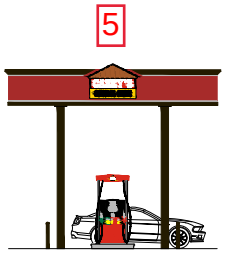
Monument Sign (4 Product)

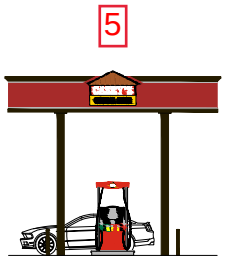
Sign #	Sign	Type	Location	Illumination	Dimensions				
					Height	Width	Bottom	Top	Area Ft²
5	House Logo	Freestanding	Street	Internal	4' 0"	5' 8-7/8"	8' 6"	12' 6"	17.49
6	Price Sign	Freestanding	Street	Internal	5' 6"	7' 7-1/2"	2' 6"	8' 0"	41.94
								Total	59.43

SIGNS 1, 3, 4

SIGNS 4, 5







GAS CANOPY

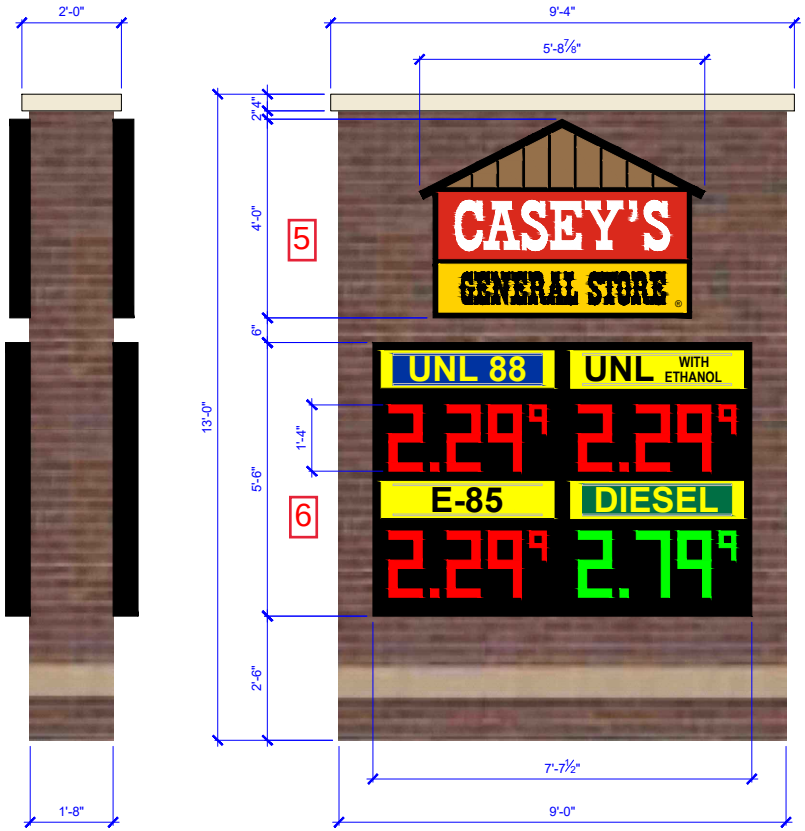
6 IN A ROW HEAD-IN

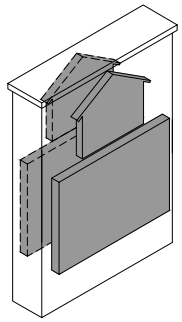
DRAWN BY: J. CLARK

DATE: 05-21-20

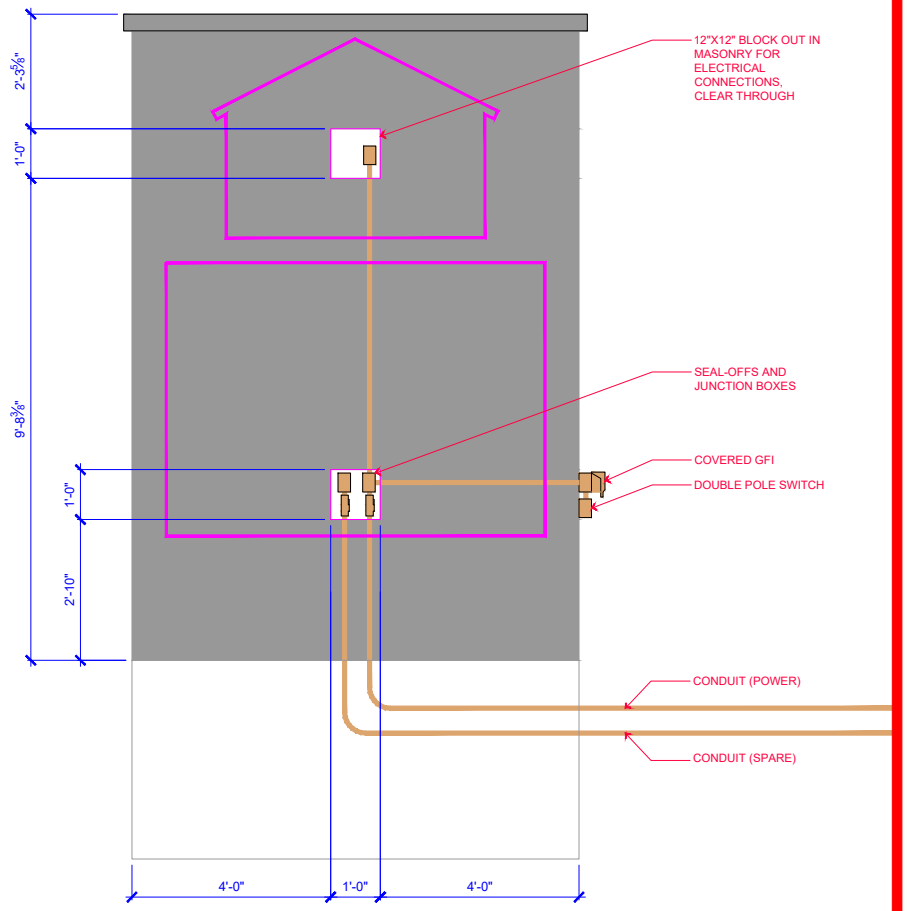
Monument Sign (4 Product)

Sign #	Sign	Type	Location	Illumination	Dimensions				
					Height	Width	Bottom	Top	Area Ft²
5	House Logo	Freestanding	Street	Internal	4' 0"	5' 8-7/8"	8' 6"	12' 6"	17.49
6	Price Sign	Freestanding	Street	Internal	5' 6"	7' 7-1/2"	2' 6"	8' 0"	41.94
								Total	59.43





STORE SIDE



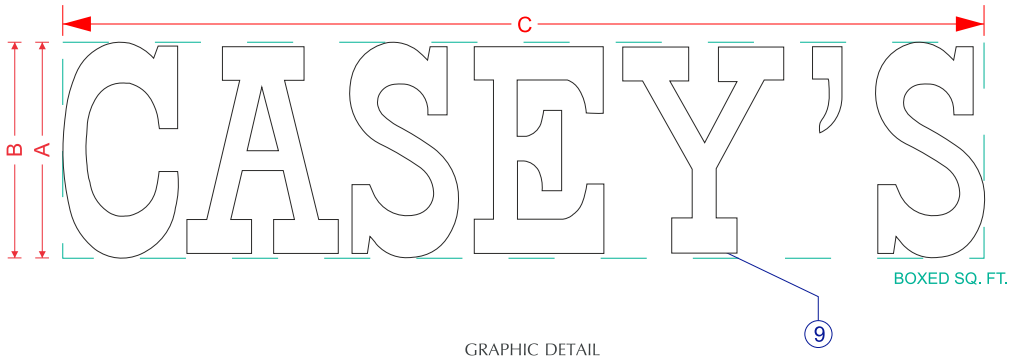
EUDORA, KS

CUSTOM MONUMENT

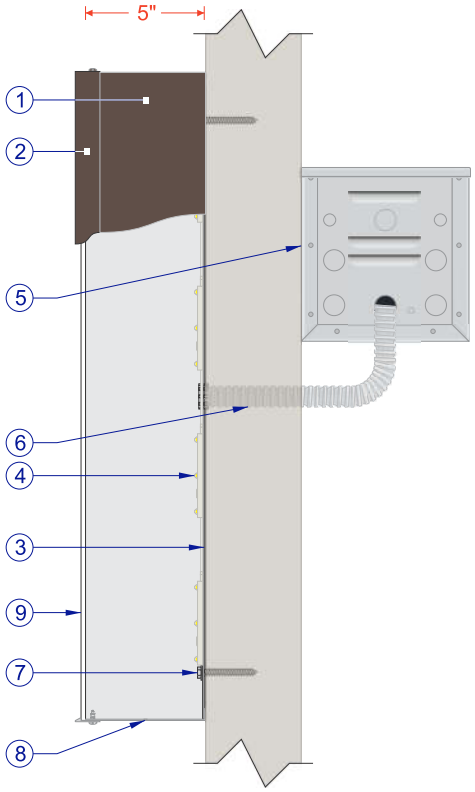
DRAWN BY: J. CLARK

DATE: 07-24-20

SIGN 1



GRAPHIC DETAIL
NOT TO SCALE



LETTER PROFILE
NOT TO SCALE

CASEY'S REMOTE CHANNEL LETTER SPECIFICATIONS	
NO.	PART/DESCRIPTION
1	.040" x 5" PREFINISHED BRONZE ALUMINUM RETURNS
2	1" BRONZE TRIM CAP
3	.063" ALUMINUM BACK
4	WHITE LED'S AS REQUIRED
5	REMOTE POWER SUPPLIES AS REQUIRED
6	ELECTRICAL OUT PROVISION: THROUGH BACK, CENTER
7	MOUNTING HARDWARE AS DETERMINED BY SITE CONDITIONS
8	DRAIN HOLES AS REQUIRED
9	1/8" 7328 WHITE ACRYLIC FACE

NOTES:

- CHANNEL LETTER INTERIORS TO BE PAINTED REFLECTIVE WHITE
- CHANNEL LETTERS TO USE 120 VOLT STANDARD POWER
- U.L. LISTED

CASEY'S REMOTE CHANNEL LETTERS						
LETTER HEIGHT "C"	OVERALL HEIGHT	OVERALL LENGTH	AMP LOAD	LUMEN OUTPUT	BOXED SQUARE FOOTAGE	ACTUAL SQUARE FOOTAGE
A	B	C				
48"	4'-0"	17'-0 3/4"	TBD	TBD	68.26	28.25

Customer: CASEY'S GENERAL STORES	Date: 12/16/16	Prepared By: RM	Note: Color output may not be exact when viewing or printing this drawing. All colors used are PMS or the closest CMYK equivalent. If these colors are incorrect, please provide the correct PMS match and a revision to this drawing will be made.
Item Number: TBD	File Name: CASEY'S REMOTE CHANNEL LETTERS		Revision: 3

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PO Box 210
Watertown, SD 57201-0210
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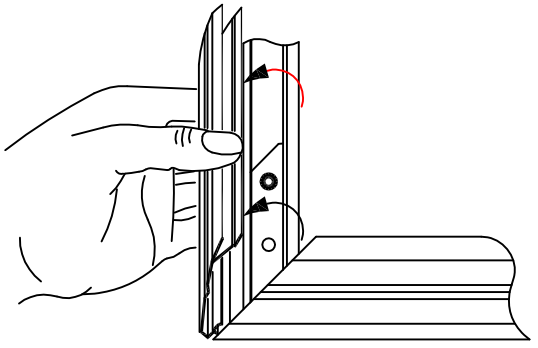
SIGN 3

INSTALLATION INSTRUCTIONS

PLEASE READ COMPLETELY BEFORE ASSEMBLY

SNAPFRAME WALL SIGN



– FIGURE 1 –
OPENING FRAME MEMBERS

STEP-BY-STEP INSTALLATION PROCEEDURE

1. Open all four sides of the snap frame by pulling the inside edge of the frame up and out (see figure 1).
2. Mark hole locations on the inside of the Extrusion at the locations shown to the left. Holes should be drilled in the location indicated in Figure 2. Use a 7/32" drill bit to drill the holes for a #10 screw.
3. Hold sign against the wall in desired position and mark hole locations on the wall through holes in the frame. SIGN MUST BE SECURED TO THE WALL WITH ALL (16) HOLES.
4. Set sign aside and drill or punch starting holes into wall. On masonry walls, drill 5/16" holes into mortar (where possible) approx. 2" deep and insert lead expansion anchor until end is flush with the wall.
5. Hold sign against wall, align all holes and secure with screws. If you are going into wood or metal, you can still use a No.10 screw. But make sure to use the appropriate one for the material you fasten to.

IMPORTANT NOTE

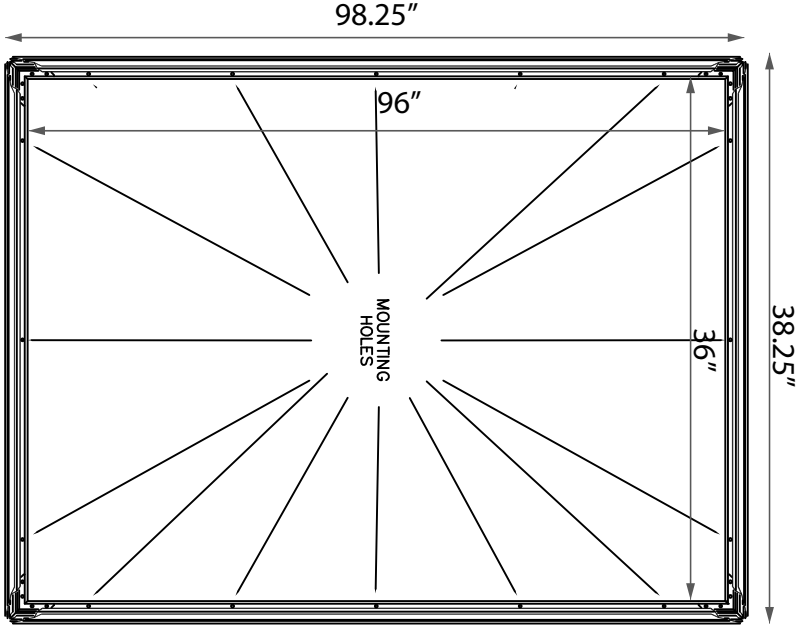
* This sign is designed for repeated changing of inserts and must be securely fastened to the wall in order to open and close the spring loaded frame members.
* USE CAUTION WHEN CLOSING SNAP FRAME MEMBERS! Hold frame by outer edge and keep finger tips away from poster grip edge.

TOOLS NEEDED

* Bubble type level (or string line) for sign positioning.
* Pencil for hole location marking.
* Drill with 5/16" masonry bit for masonry application only.
* 7/32" Metal drill bit for hole in frame.
* Phillips screwdriver.

PARTS LIST

[A] Snap frame with metal backer



26.1 SQ FT TOTAL

inside dimensions = (96"x36")
outside dimensions = (98.25"x38.25")

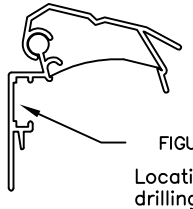
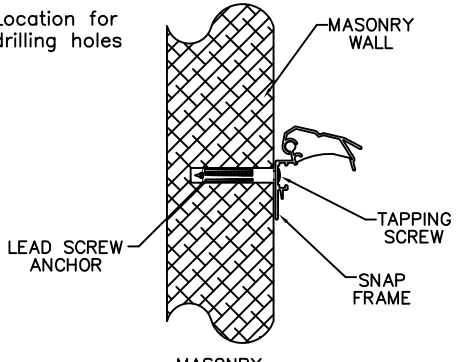


FIGURE 2 –
Location for drilling holes



MASONRY INSTALLATION

STOUT
sign company
A · DIVISION · OF · STOUT · INDUSTRIES
FOR ASSISTANCE CALL: 1-800-325-8530

ICZ01081

SIGNS 4

INSTALLATION INSTRUCTIONS

PLEASE READ COMPLETELY BEFORE ASSEMBLY

SNAPFRAME WALL SIGN

IMPORTANT NOTE

* This sign is designed for repeated changing of inserts and must be securely fastened to the wall in order to open and close the spring loaded frame members.
* USE CAUTION WHEN CLOSING SNAP FRAME MEMBERS! Hold frame by outer edge and keep finger tips away from poster grip edge.

TOOLS NEEDED

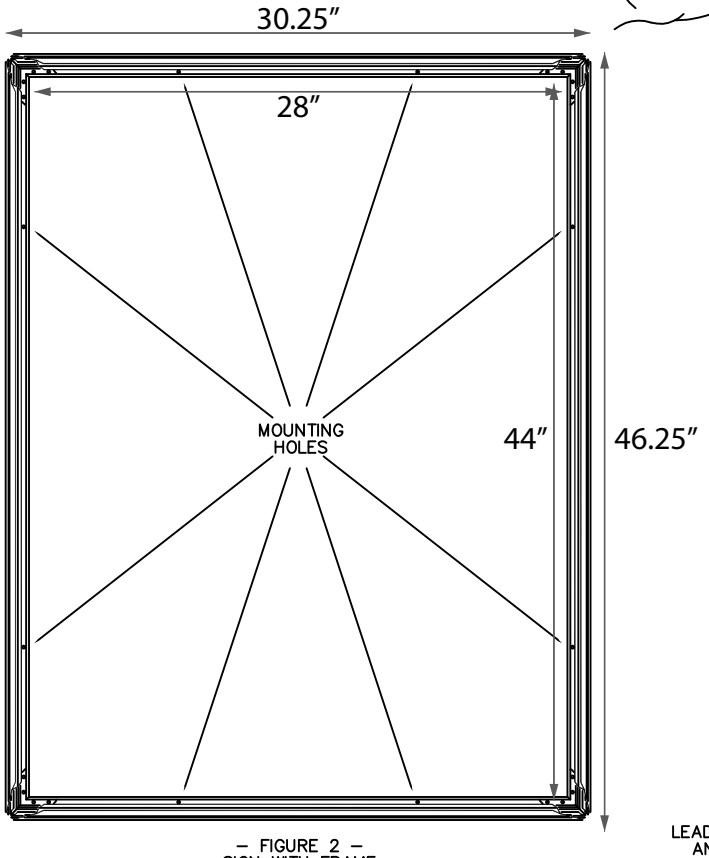
* Bubble type level (or string line) for sign positioning.
* Pencil for hole location marking.
* Drill with 5/16" masonry bit for masonry application only.
* Phillips screwdriver.

PARTS LIST

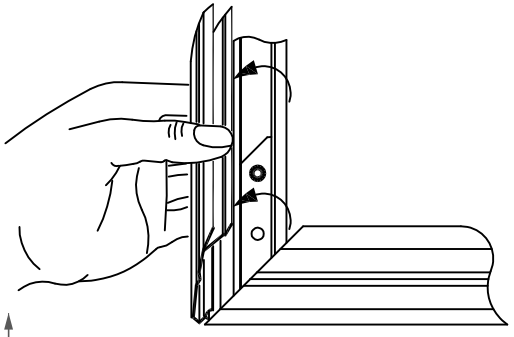
[A] Sign face with snap frame

[B] #10 x 1-3/4" tapping screws (8)

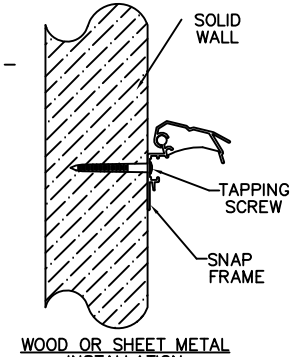
[C] #10-12 x 1" lead anchors (8)



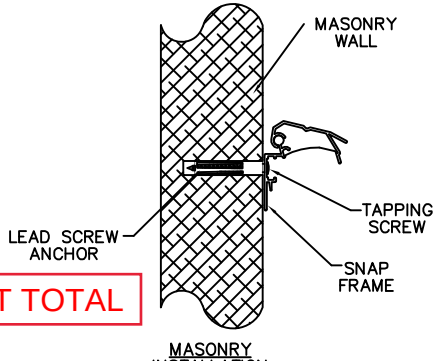
– FIGURE 2 –
SIGN WITH FRAME IN OPEN POSITION



– FIGURE 1 –
OPENING FRAME MEMBERS



WOOD OR SHEET METAL INSTALLATION



MASONRY INSTALLATION

9.72 SQ FT TOTAL

inside dimensions = (28"x44")

outside dimensions = (30.25"x46.25")

STEP-BY-STEP INSTALLATION PROCEEDURE

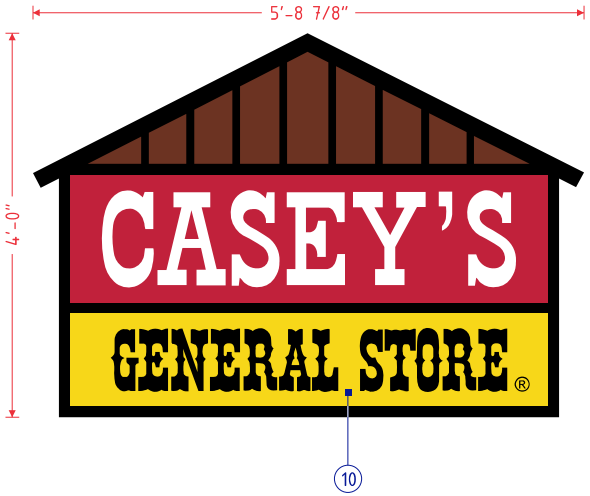
1. Open all four sides of the snap frame by pulling the inside edge of the frame up and out (see figure 1).
2. Hold sign against the wall in desired position and mark hole locations on the wall through holes in the frame.
3. Set sign aside and drill or punch starting holes into wall: On wood or sheet metal walls, use 1-3/4" tapping screws only.

   On masonry walls, drill 5/16" holes into mortar (where possible) approx. 2" deep and insert lead expansion anchor until end is flush with the wall.
4. Hold sign against wall, align all holes and secure with screws.

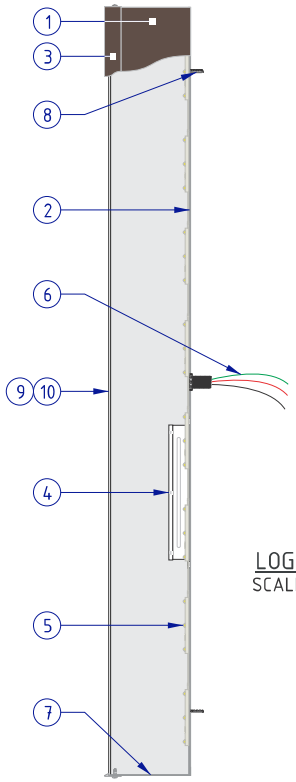
STOUT®
| sign company |
A · DIVISION · OF · STOUT · INDUSTRIES
FOR ASSISTANCE CALL: 1-800-325-8530

STDI-029
2/28/05

SIGN 5



GRAPHIC DETAIL
SCALE: 1/2" = 1'-0"



LOGO PROFILE
SCALE: 1" = 1'-0"

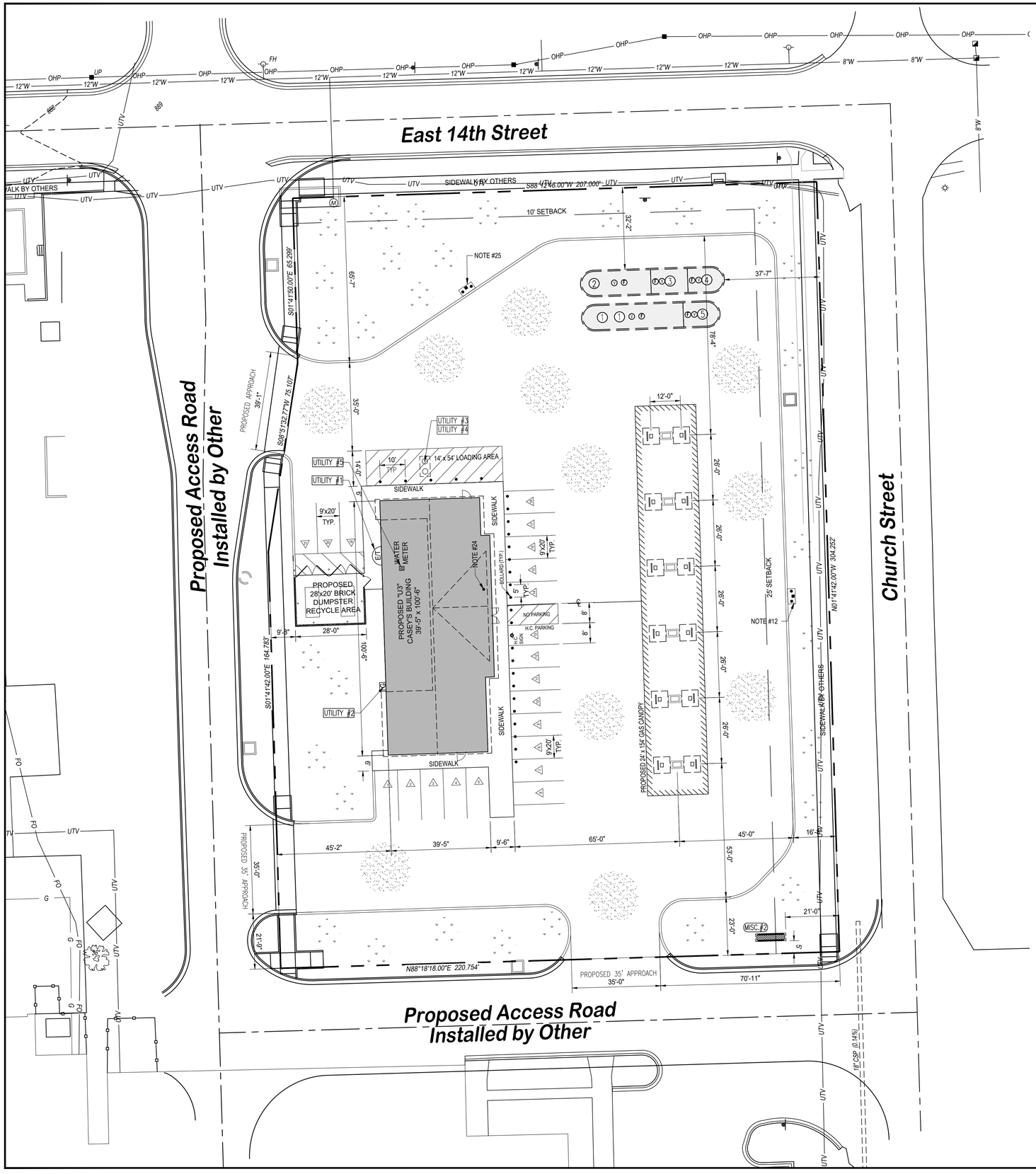
CASEY'S 4 X 5 CHANNEL LETTER LOGO SPECIFICATIONS	
NO.	PART/DESCRIPTION
1	.040" x 5" PREFINISHED BRONZE ALUMINUM RETURNS
2	.063" ALUMINUM BACK
3	1" BRONZE TRIM CAP
4	LED POWER SUPPLY AS REQUIRED
5	GE 7100K WHITE LED'S AS REQUIRED
6	ELECTRICAL OUT PROVISION: THRU BACK, CENTER
7	DRAIN HOLES AS REQUIRED
8	MOUNTING HARDWARE AS DETERMINED BY SITE CONDITIONS
9	.118" CLEAR SOLAR GRADE POLYCARBONATE FACE
10	SCREENED DECORATION (2ND SURFACE)

NOTES:

- EXTERIOR FINISH: PAINTED TO MATCH PMS 313 BRONZE
- INTERIOR FINISH: PAINTED REFLECTIVE WHITE
- FACE REMOVABLE FOR SERVICE ACCESS
- U.L. LISTED
- ELECTRICAL: .65 AMPS/120 VOLTS
- SQUARE FOOTAGE:
  BOXED = 22.96
  ACTUAL = 17.49

Customer: CASEY'S GENERAL STORES	Date: 01-18-18	Prepared By: RS/RA/AP/RA	Note: Color output may not be exact when viewing or printing this drawing. All colors used are PMS or the closest CMYK equivalent. If these colors are incorrect, please provide the correct PMS match and a revision to this drawing will be made.
Item Number: CAS-48CLLEDITLOGOF-S	File Name: CAS 4 X 5 SINGLE FACE LED CHANNEL LETTER LOGO		Revision: 4

persōna
SIGNS | LIGHTING | IMAGE
DISTRIBUTED BY SIGN UP COMPANY
700 21st Street Southwest
PO Box 210
Watertown, SD 57201-0210
1.800.843.9888 • www.personasigns.com



U.G.S.T. Notes

(F) FILL W/SPILL CONTAINMENT & OVERSPILL PROTECTION (TYP.)

(1)(2)(3)(4)(5) TURBINE ENCLOSURE TYP. CONTAINS; SUB-PUMB W/LINE LEAK DETECTION, TANK PROBE FOR FUEL MONITORING, INTERSTITIAL SENSOR AND TANK SUMP SENSOR

(V) VENT W/SPILL CONTAINMENT & EXTRACTOR

SUMP SENSOR @ EACH DISPENSER.

General Notes

1. **RELATED SHEETS**: FOR ADDITIONAL INFORMATION NOT DIRECTLY REFERENCED, SEE CIVIL PLANS DONE BY SBB ENGINEERING:

Utility Notes

UTILITY NOTE #1: ELECTRICAL (C-STORE): ELECTRICAL SERVICE ENTRANCE. ELECTRIC 3 PHASE, 800 AMP, 208/120 VOLTS, 4 WIRE. TELEPHONE 20 PAIR, 8 LINES.

UTILITY NOTE #2: GAS (C-STORE): 1.5" SCHEDULE 40 IRON PIPE GAS SERVICE CONNECTION. CONNECTION LOAD IS 680 MBH. TOTAL CONNECTED LOAD IS 680,000 BTU 618 CU/FT. HR. HOUSE PRESSURE IS 7" W.C.

UTILITY NOTE #3: SANITARY SEWER (C-STORE): 6" SCHEDULE 40 PVC SANITARY SEWER CONNECTION.

UTILITY NOTE #4: SANITARY SEWER (C-STORE): 1,000 GALLON BELOW GRADE GREASE INTERCEPTOR WITH 2 MANHOLES.

UTILITY NOTE #5: WATER (C-STORE): 2" CTS, HDPE, SDR9 C5-200 PSI WATER SERVICE CONNECTION.

Misc. Notes

Misc. #1:
DUMPSTER ENCLOSURE 6' HEIGHT BRICK TO MATCH BLDG.
4-6' METAL GATES AND 4' METAL SERVICE GATE

Misc. #2
4 PRODUCT MONUMENT PRICE SIGN - REFER TO SIGN PACKET

Vicinity Map

General Construction Notes

PETROLEUM:

1.) 2 - 30,000 GALLON DOUBLE WALL FIBERGLASS TANKS.
TANK 1 - 22,000 GALLON (87E)
TANK 2 - 14,000 GALLON (DIESEL)
TANK 3 - 8,000 GALLON (87C)
TANK 4 - 8,000 GALLON (91C)
TANK 5 - 8,000 GALLON (E85)
2.) TANK SETTING DETAILS PAGE QF-301
3.) FILL PIPE AND MANHOLE DETAIL PAGE QF-301
4.) GILBARCO WIRING PAGE QF-601
5.) GAS ISLAND SIZE - 3' x 5' W/DUAL GUARD PIPE
6.) 6 - GAS GILBARCO 700 S DISPENSERS (BLENDED)
2 = NG1 4 NOZZLES & 8 METERS EACH
4 = NF8 4 OR 6 NOZZLES & 8 METERS EACH
7.) ISLAND DETAILS PAGE AL-501
8.) ISLAND CONDUIT DETAIL PAGE E-602
9.) DO NOT PLACE PRODUCT PIPING UNDER ISLAND
10.) 18" MIN. FROM TANK PIPING TO FINISH SURFACE
11.) RUN VENT LINES UP SEPARATE CANOPY COLUMN, VERIFY
12.) ALL FUEL DISPENSERS FALL WITHIN A 100 FOOT RADIUS OF THE EMERGENCY SHUT-OFF SWITCH LOCATED INSIDE AT THE SALES COUNTER FOR THE CONVENIENCE STAFF. A SECONDARY SHUTOFF SHALL BE INSTALLED ON A POST AT THE CURB IF ALL FUEL DISPENSERS **DO NOT** FALL WITHIN A 100 RADIUS.

APPROACHES/CONCRETE:

13.) DRIVEWAY JOINTS TO BE PACKED & CAULKED
14.) CONCRETE DRIVE TROWELED WITH LIGHT BROOM FINISH
15.) CONTROL JOINTS - MIN. 100 sq.ft. - MAX. 125 sq.ft. - 25% DEEP
16.) CONSTRUCTION JOINTS - PINNED 4' O.C. 12" EACH WAY WITH 1/2" REBAR #4
17.) APPROACHES TO BE 7" NON-REINFORCED OR AS PER STATE/CITY SPEC.
18.) SLOPE MAX. 2% FOR BUILDING SIDEWALK, H.C PARKING 1:50 ALL DIRECTIONS
ALL ACCESS ISLE STRIPING AT 45 DEGREE ANGLE BEING MAX. 4' SEPARATION
19.) 2% MAX. CROSS-SLOPE IN APPROACH/SIDEWALK AREA
20.) 10" ROLL-OVER CURB TYP. - SEE STANDARD CIVIL DETAILS
21.) CANOPY FOOTING: SIZE 6'-3" LENGTH x 6'-3" WIDTH x 3'-0" DEPTH.
CONCRETE: MINIMUM COMPRESSIVE STRENGTH OF F'C-3000 p.s.i.
CONCRETE REINFORCING: ASTM A-615 GRADE 60.
REBAR CAGE: (8) #6 HORIZONTAL TIES LENGTH WISE TOP AND BOTTOM 12" MAXIMUM SPACING.
22.) SIGN BASE AND DETAILS PAGE AL-601

SITE ITEMS:

23.) VERIFY ALL UTILITY LOCATIONS AND DIMENSIONS.
24.) IRRIGATION REQUIRED WITH RAIN SENSOR MOUNTED ON BACK RAILING OF ROOF.
25.) AIR COMPRESSOR BOX, MOUNTED TO STEEL POLE, INSTALLED ON 3' x 6' CONCRETE PAD 16" FROM BACK OF CURB. 110 VOLT-60HZ-5.5 AMP. 8 GAUGE MINIMUM RECOMMENDED.

Keyed Construction Notes

NOTICE: ALL WORK IN/ON THE R.O.W. AREA IS SUBJECT TO THE CITY OF EUDORA, KS. APPROVAL AND SPECIFICATIONS.

(A) PROPOSED 20' RADIUS
(B) PROPOSED 10' RADIUS
(C) PROPOSED 2' RADIUS
(D) TIE INTO AND MATCH EXISTING PAVEMENT & FLOW LINE.
(E) 2% MAX. CROSS-SLOPE IN SIDEWALK AREA.
(F) DETECTABLE SIDEWALK MAT. VERIFY WITH CITY.

Legal Description

SURVEYORS SUGGESTED LEGAL:
A part of lots 1 through 7, inclusive and Lots 14 through 20, inclusive, Block 188, a part of vacated Locust Street and a part of the vacated alley adjacent to said lots, all in the City of Eudora, Douglas County, Kansas, all being more particularly described as follows: BEGINNING at the Northeast corner of said Lot 20; thence S01°41'51"E, 310.00 feet along the East line of said Lots 14 through 20; thence S88°18'09"W, 225.00 feet; thence N01°41'51"W, 109.58 feet; thence N08°51'33"E, 136.46 feet; thence N01°41'51"W, 65.92 feet to a point on the North line of said Lot 1; thence N88°12'08"E, 200.00 feet to the POINT OF BEGINNING. Containing 1.52 acres more or less.

Legend

MARKED PARKING SPACES (PAINT LINES AS INDICATED)

CONCRETE PAVING OR SIDEWALKS (46,075 SQ. FT.)

AREA LIGHTS (8 SHOWN) REFER TO LIGHTING PLAN RL-6516-S1-R2 DONE BY RED LEONARD

AREA TO BE SOD

TRUE NORTH PLAN NORTH

A1 Site Layout Plan
1" = 20'

SPECIAL REQUIREMENTS:
"U3 STORE WITH SCREENING"
"BRICK FRONT OF BLDG"
"BRICK TRASH ENCLOSURE"
"4 PRODUCT MONUMENT SIGN"
"SELLER TO EXTEND ALL UTILITIES TO SITE"
"PROPOSED ACCESS ROADS BY OTHER"

CASEY'S

CASEY'S CONSTRUCTION DIVISION
One Convenience Blvd., P.O. Box 3001, Ankeny, IA 50021 515-965-6100

PROJECT: EUDORA, KS. U3 STORE	PLAN DATE: 12-11-19	DRAWING INFORMATION: SITE PLAN
	REVISIONS: 12-20-19, 01-08-20, 02-04-20, 02-11-20, 04-16-20, 06-11-20	
DRAWING INFORMATION: CONSTRUCTION DIVISION		AL-101
DRAWN BY: J.VILMAIN	CHECKED BY:	

July 30, 2020

Barack Matite, City Manager
City of Eudora
4 E Seventh Street
Eudora, KS 66025

Re: Casey's General Store – Southwest Corner of 14th Street and Church Street (Deviations Requested)

Mr. Matite:

Casey's Retail Company requests the below list of deviations from the Tenant Handbook for the Building Design for the Site Plan Approval for this project. Feel free to contact me with any questions.

1. Casey's is not a "Tenant". Thus, specific requirements for Tenants in any section are not being adhered to or do not apply.
2. Section 2, Page 1 – we are not creating "outdoor" rooms or using colonnades or trellises.
3. Section 2, Page 5 – Casey's exterior elevations do not look like the Concept Elevations.
4. Section 2, Page 7 – Casey's is not using any of the Architectural Details shown.
5. Section 2, Page 8, Exterior Building Materials Palette - Simulated Slate Tile Roof is not being used. We are using an asphalt shingle roof that looks like a slate roof.
6. Section 2, Page 8, Exterior Building Materials Palette – We are using a "shake" composite siding which is not pictured.
7. Section 3, Page 2, Required Exterior Building Materials – Simulated Slate Tile Roof is not being used. We are using an asphalt shingle roof that looks like a slate roof.
8. Section 3, Page 2, Required Exterior Building Materials – Decorative wall Sconces shall be Casey's standard.
9. Section 3, Page 2, Required Exterior Building Materials – We are not using Medallions or icons with Commercial Development Identity.
10. Section 3, Page 2, Required Exterior Building Materials – We do not have Internal gutters and downspouts.
11. Section 3, Page 2, Required Exterior Building Materials – We are using a "shake" composite siding which is not listed as an acceptable material.
12. Section 3, Page 3, Roofs - Simulated Slate Tile Roof is not being used. We are using an asphalt shingle roof that looks like a slate roof.
13. Section 5, Signage. Refer to Signage Package submitted for proposed signage requested.
14. Section 7, Sustainable Building Operations and Tenant Finish Considerations – We are not complying with anything in this Section.

Sincerely,

Jeff Laubach, PE
SBB Engineering, LLC

SBB Engineering, LLC
785.215.8630 | 785.215.8634 (F) | www.sbbeng.com | 101 South Kansas Avenue | Topeka, Kansas 66603
785.260.2805 | 5040 Bob Billings Parkway | Lawrence, Kansas 66049

TO: City of Eudora Planning Commission

FROM: Dave Knopick, AICP - Planning Consultant for the City of Eudora

SUBJECT: CUP-19-00568: – Conditional Use Permit Application (Douglas County) for Hamm Eudora Quarry, located at 1258 E 2300 Rd. within 3-miles of the City of Eudora. Submitted by Hamm Inc, property owner of record.

MEETING: August 5, 2020

BACKGROUND

At the January 8, 2020 Eudora Planning Commission meeting the Commission reviewed, at the request of Douglas County, an application for a conditional use permit on a property that is located within 3 miles of Eudora's city limits. At that meeting the Planning Commission was provided the application materials that the County forwarded. No public comments were received prior to or at that meeting. As a result of that meeting the Eudora Planning Commission provided the following comments to the County for their consideration:

> *On January 8, 2020, the Eudora Planning Commission met, considered the application and decided to forward the following comments to the Lawrence – Douglas County Planning Commission for consideration. The following outlines the comments of the City of Eudora Planning Commission:*
>
> 1. *That the applicant meet and/or exceed the operational and performance requirements outlined in the application materials as a condition of the CUP.*
> 2. *That no increase in intensity or expansion of daily operations and volume of material extracted from the entire quarry site or change to the traffic ingress/egress will occur.*
> 3. *That the applicant provide sufficient details regarding the restoration of the property or conditions be added by the County to ensure that such restoration be completed in a timely fashion after termination of the permit or closing of the quarry to the satisfaction of applicable Federal, State and local requirements.*

Since the January 8, 2020 Planning Commission meeting the County has received additional information from the applicant and also received public comments. Given the context of the past few months and in light of this additional information the County has provided the Eudora Planning Commission another opportunity to review this item again and potentially modify the comments provided previously.

ANALYSIS

The applicant, Hamm Inc. (Gary Hamm), would like such Conditional Use Permit from Douglas County to allow for the expansion of quarry activity onto the described / depicted tract of land provided in the attached application information.

The 51.28 acre site is located in an Agricultural zoning district on land currently used for agriculture (row crop / timber / pasture) with a residence on the east side of the property which would be removed once quarry operations commence. The property abuts the Eudora Urban Growth Area and is located approximately ½ mile east of the current Eudora city

boundary. Douglas County has asked that the City of Eudora Planning Commission review and offer comments prior to an upcoming Douglas County Commission meeting.

The applicant is requesting the conditional use permit from Douglas County for an undefined period of time. Due to the nature of the activity it is anticipated that the request is for a permanent conditional use permit that would be in effect until the material that is to be quarried is depleted. The application materials identify the location and provide a summary of the operational plan and parameters for the existing and expanded quarry.

City of Eudora Zoning Regulations speak to the placement of such quarry use within the City Limits, as a Use Permitted Upon Review (UPUR) in the RA – Residential Agriculture District per Section 16-301 (3) (c):

> *Quarries, mines, sand and gravel pits, or excavations for the purposes of removal, screening, crushing, washing, or storage of ore, clay, stone, gravel, or similar materials.*

No special conditions for quarry activity are outlined in the zoning regulations, but concerns related to such an operation are typically related to environmental (visual aesthetic, drainage, groundwater, etc.); nuisance (odor, noise, dust, light); safety (blasting activity and material storage, securing the site); and traffic (amount, type, route) related impacts. Although the UPUR regulations do not apply outside of the City Limits, the regulations are noted here for reference purposes and indicate the type of context and under what conditions the City may potentially allow such activity within the city.

It appears from the application materials that only a physical (land) expansion of the quarry is requested in order to extend the reserves and operational lifetime of the quarry, and there is no indication of an increase in intensity or expansion of daily operations and volume of material extracted from the site or change to the traffic ingress/egress and routing.

All information and public comment received to-date for Planning Commission consideration and includes: all application materials provided by the County; the County Planning Staff Report and recommendation; written public comments received by the County and the City; and comments / questions from the City Engineering Consultant, as well as the Kansas Geological Survey and County Engineer. The City of Eudora is unaware of any specific existing or past complaints regarding the current quarry activity.

STAFF RECOMMENDATION

The Planning Commission should hear from the applicant and County Staff representatives regarding the proposed quarry expansion and the assessment of the application materials, as well as citizens that wish to speak. After hearing from those present and discussing the materials provided the Planning Commission should provide direction regarding any changes, adjustment or additions that the Commission would like to make to the comments previously provided to Douglas County.

Cook, Flatt & Strobel Engineers
2121 Moodie Road
Lawrence, Kansas 66046
785.856.9600

July 28, 2020

Hydrologic Evaluation of Quarry
Review Comments
07-28-20

Drainage Study Review Comments

After reviewing the proposed drainage study, CFS Engineers has the following comments/suggestions:

1. Provide background on the materials that are to be mined (appears primarily to be limestone), and if the site is exclusively used as a quarry, or if any concrete is also mixed. Any information about how production rotates or annual tonnage extracted and existing/previous pit depths would help.

2. Provide an Executive Summary in the report.

3. The report discusses three main hydrologic topics - 1-Stream Flows, 2-Evaporation Rates, and 3-Groundwater and Pumping Wells.

4. The Stream Flow: Drainage basin sizes check against the USGS Stream Stat program. They use TR-55 to calculate the hydrology and runoff rates contributing to the major creeks running through the quarry (numbers and factors seemed reasonable). They showed that with the presence of the quarry and the impact of the open storage ponds, that the peak runoff rates in the western "Tributary" creek and Coleman's Creek would be slightly less than the pre-operational conditions. Provide time line information on when the quarry originally opened and what the time duration would be until they anticipated finishing mining operations and turning the site over for mining reclamation once it closes down.

5. They included a section on the Water Features (the ponds) and how likely they will be holding water with regular surface water contributions countered against evaporation rates. Its not identified what the purpose of the water features is used for (assumed detention). What is planned to be used for the proposed pond control structures? Are these the open pit mines that Hamm extracts their limestone from? Between phases, will these ponds used as a source of wash water to spray down the extracted aggregate material, and then the ponds collect the sediment laden runoff to prevent it from washing directly into the streams flowing off of the site or is this the sole purpose of the wash pond? Please expand on the planned mining process.

6. The report includes a section on groundwater infiltration and pumping where the mention that the proposed pit will extend to the bottom of the Argentine Limestone layer approximately 200 ft below ground surface. They further mention that groundwater is anticipated to fill the pit to a depth of 16 to 33 ft below ground surface (so they have to be mining under water if their pit drops 200 ft). Will the groundwater be pumped out of the pit/dewatering? If so, identify the pumping point, volume and discharge location.

7. Are there concerns when excavating or dewatering about altering groundwater flows, changing groundwater elevations and/or drying-up the surrounding domestic water wells by drawing groundwater in the

vicinity of the quarry? Are there concerns with altering stream temperatures or turbidity impacts? Will there be any monitoring put in place during mining operations? If impacts are identified, is there a procedure in place to offset the impact? Are there any geologic maps available? Since its an existing quarry, is there any existing information showing past monitoring vs mining operations (like the referenced 11/6/15 plan)? Please expand and identify further in the report.

From: Ed Reboulet <reboulet@kgs.ku.edu>
Sent: Wednesday, July 29, 2020 11:54 AM
To: Barack Matite
Cc: mandel; jbutler; 'cvoigt@douglascountyks.org'
Subject: Re: City of Eudora: Request for Technical Assistance

Barack,

Speaking for the Director and my colleagues, we don't have any concerns about the proposed quarry expansion. The biggest impact will be on the nearby residents in terms of dust, noise, and vibration. In terms of groundwater, it will take multiple decades for effects to be seen at nearby domestic wells that are located down gradient from the pits and it is likely those effects will not be large (to ease their minds, domestic well users might periodically have their water analyzed). We cannot suggest additional geologic studies that could be conducted to determine if the proposed expansion would have any future impact.

Have a good day,

-Ed Reboulet

-----Original Message-----
From: Ed Reboulet <reboulet@kgs.ku.edu>
Sent: Tuesday, July 28, 2020 4:05 PM
To: Barack Matite <bmatite@cityofeudoraks.gov>
Cc: mandel <mandel@kgs.ku.edu>; jbutler <jbutler@kgs.ku.edu>
Subject: Re: City of Eudora: Request for Technical Assistance

Barack Matite,

My name is Ed Reboulet and I am a member of the Geohydrology Section at the Kansas Gelogical Survey. Your request for technical assistance was forwarded to me by Rolfe Mandel, the director of the KGS. I contacted two of my colleagues at the KGS and we have reviewed the materials you provided as well as the materials present on the City of Lawrence Planning Commission link that you sent.

A majority of the carbonate (limestone) units in this part of Kansas are composed of phylloid algae or are clean wackestone. These mostly fine grained rocks are of relatively low permeability rocks and unless they have abundant continuous fractures the new proposed pit/pond shouldn't be much of a concern for the creek or nearby domestic wells.

From the Google Earth images of the current quarry there are a couple of ponds there already. There is no indication how deep the current quarry is but it appears the water in the ponds is at a higher elevation than the creek adjacent to the quarry. Unless there is some baseline chemistry on the creek or domestic wells before the quarry opened, it would be hard to tell if the current operation has had an impact from the existing ponds. Maybe you could check with KDHE to see if there have been any reported issues in the creek or nearby domestic wells.

Let me know if you have any other questions or concerns.

-Ed

--
Ed Reboulet, P.G.

Field Hydrogeologist
Kansas Geological Survey
University of Kansas
1930 Constant Ave.
Lawrence, KS 66047-3726

Phone: 785-864-2173
Fax : 785-864-5317
email:reboulet@kgs.ku.edu

City of Lawrence
Douglas County
PLANNING & DEVELOPMENT SERVICES

CUP-19-00568
Hamm/Eudora Quarry

50 acre expansion, revised conditions, revised reclamation plan

July 1, 2020

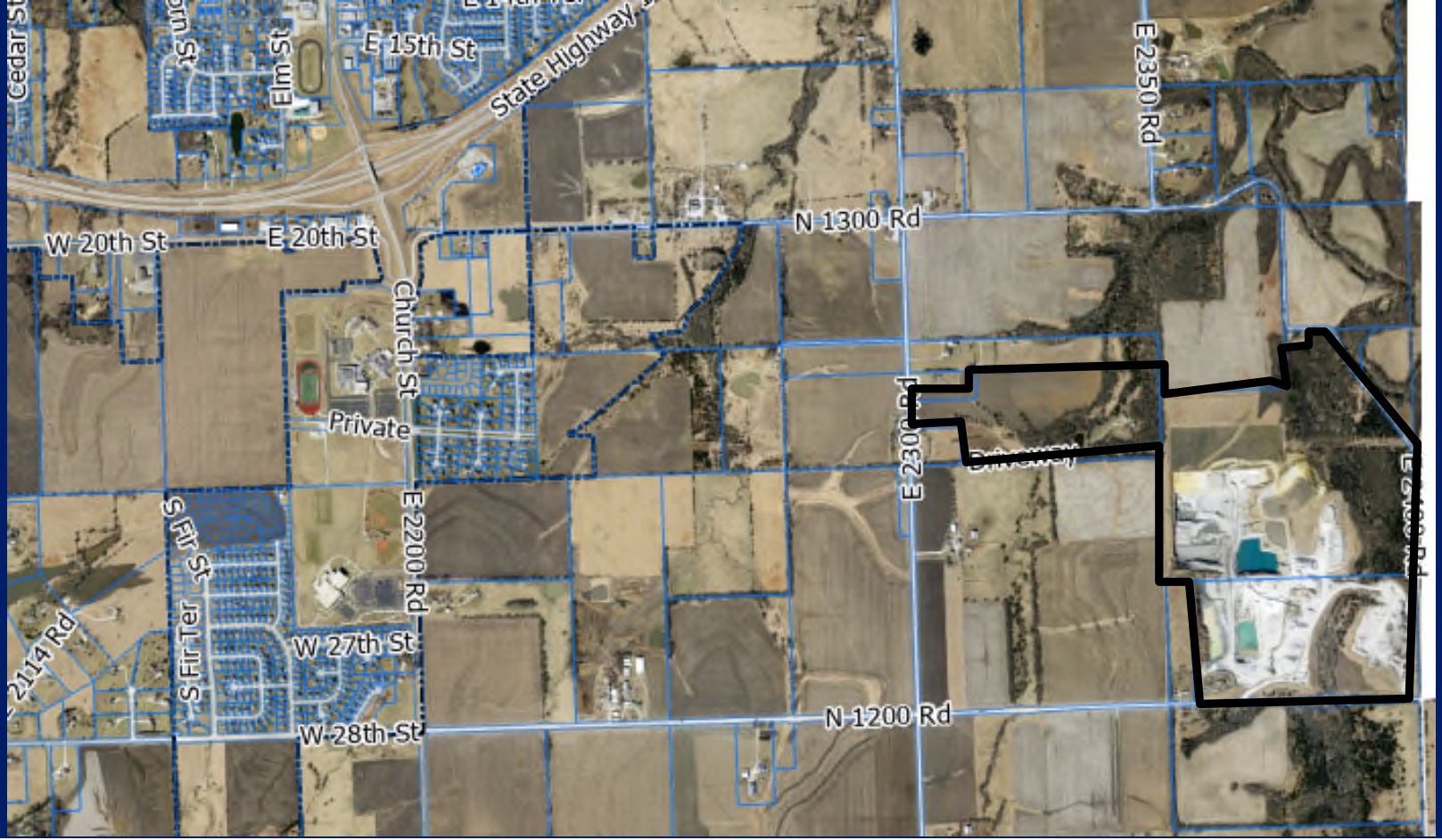
Board of County Commissioners

Expand quarry into 50 acre parcel to the west, Shelton Parcel

Increase area that can be open and mined from to 50 acres

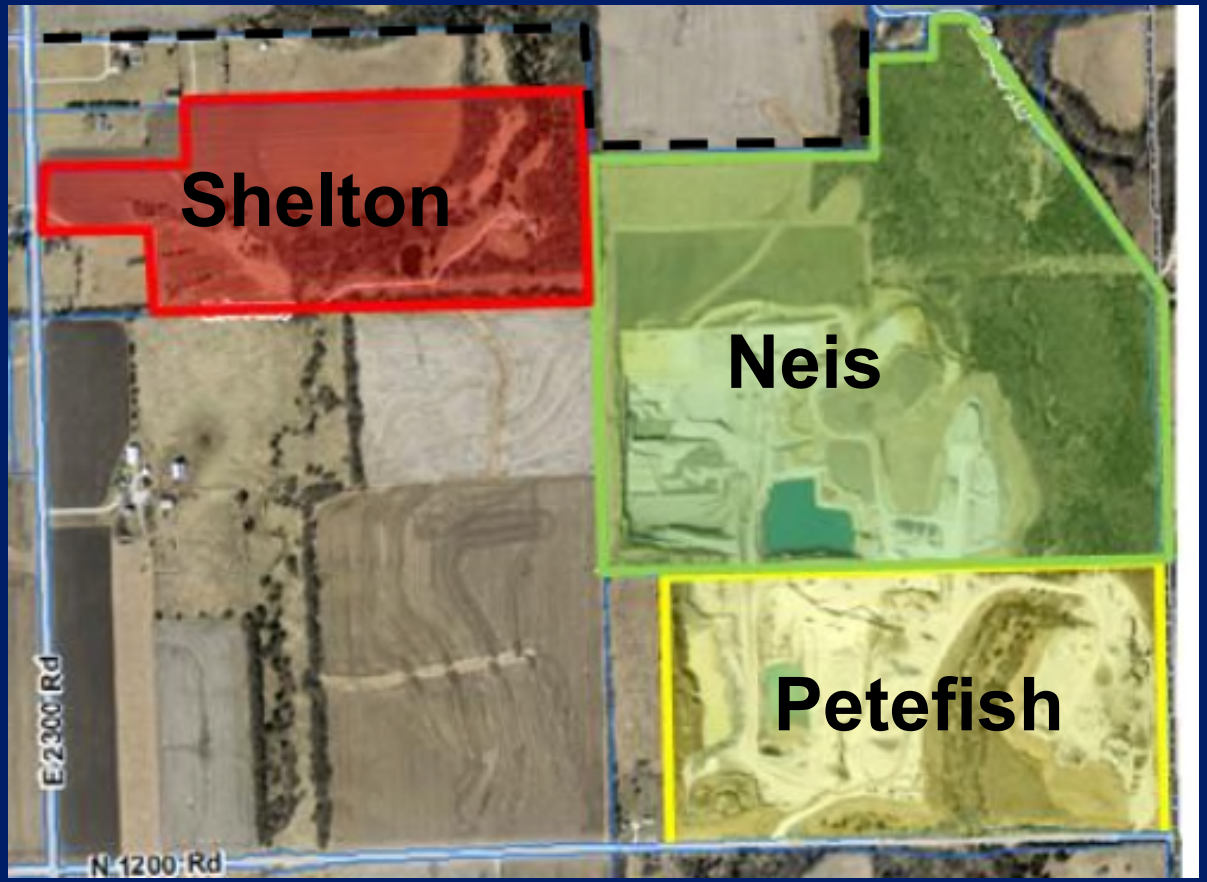
Increase Sales Hours

PROPOSED REVISIONS

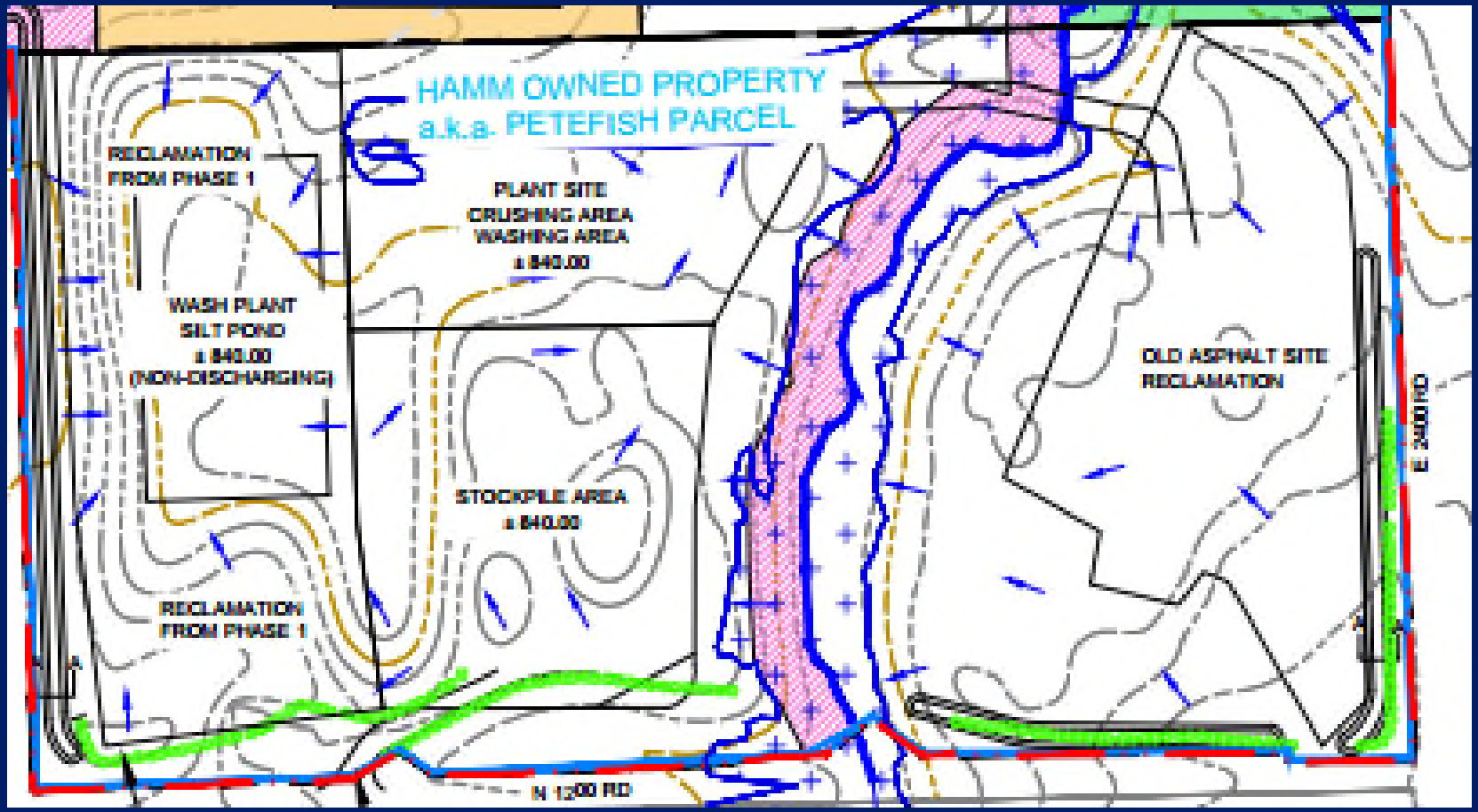

Cedar St
Elm St
E 15th St
State Highway
E 2350 Rd
W 20th St
E 20th St
N 1300 Rd
Church St
Private
E 2300 Rd
Driveway
E 2200 Rd
S Fir St
S Fir Ter
W 27th St
W 28th St
N 1200 Rd

LOCATION

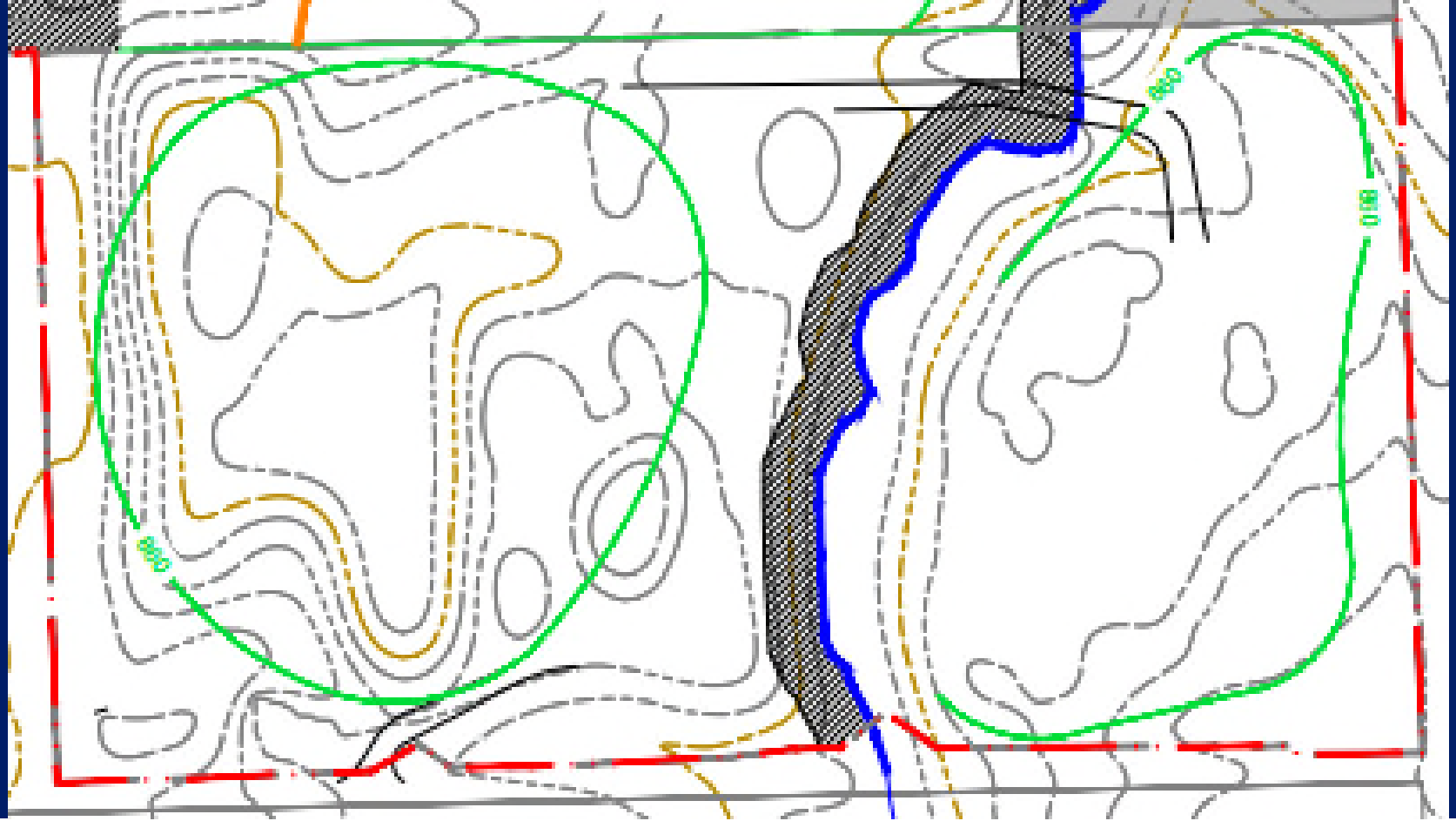
PROPERTY



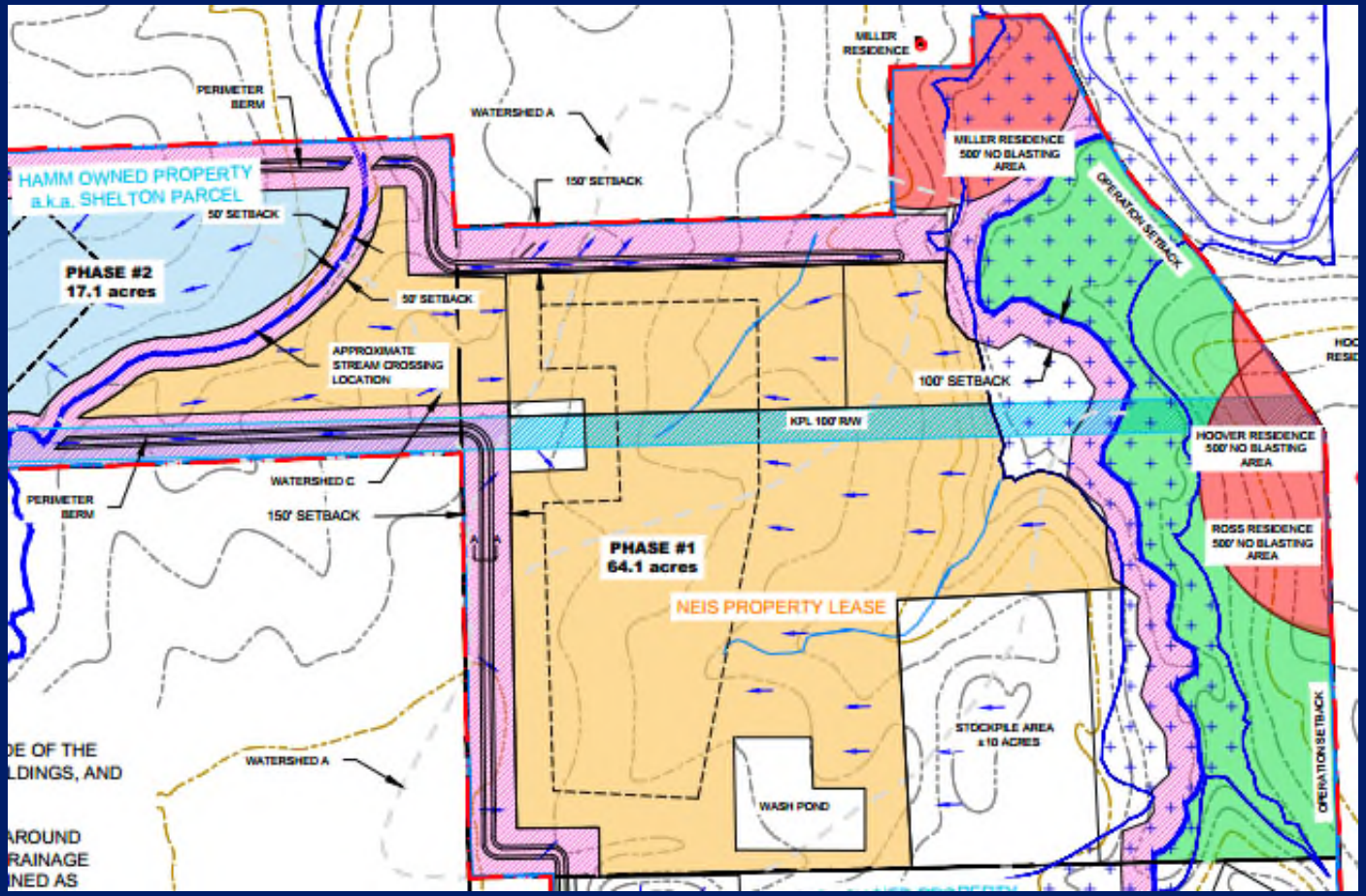
PROJECT



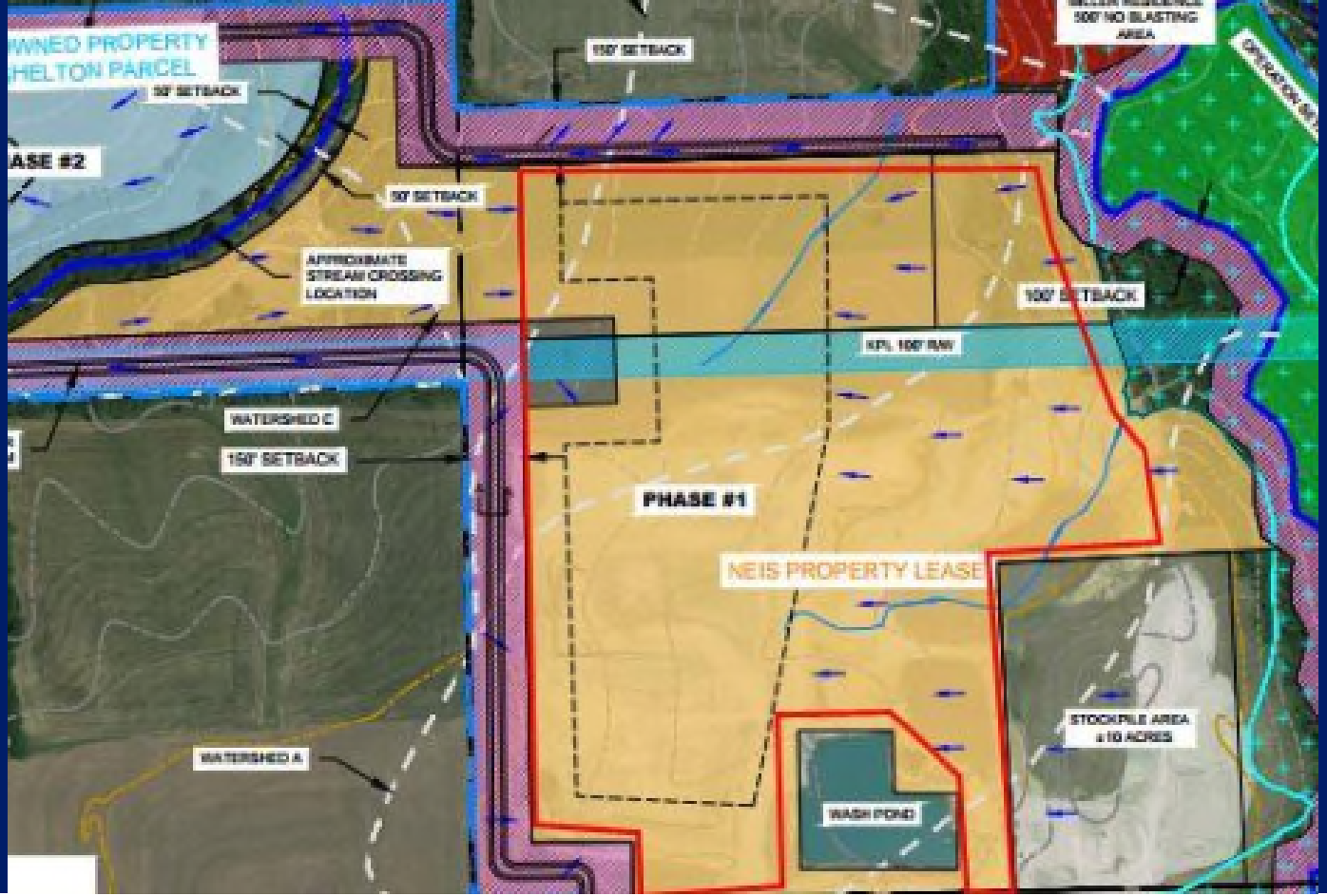
PROJECT--Petefish



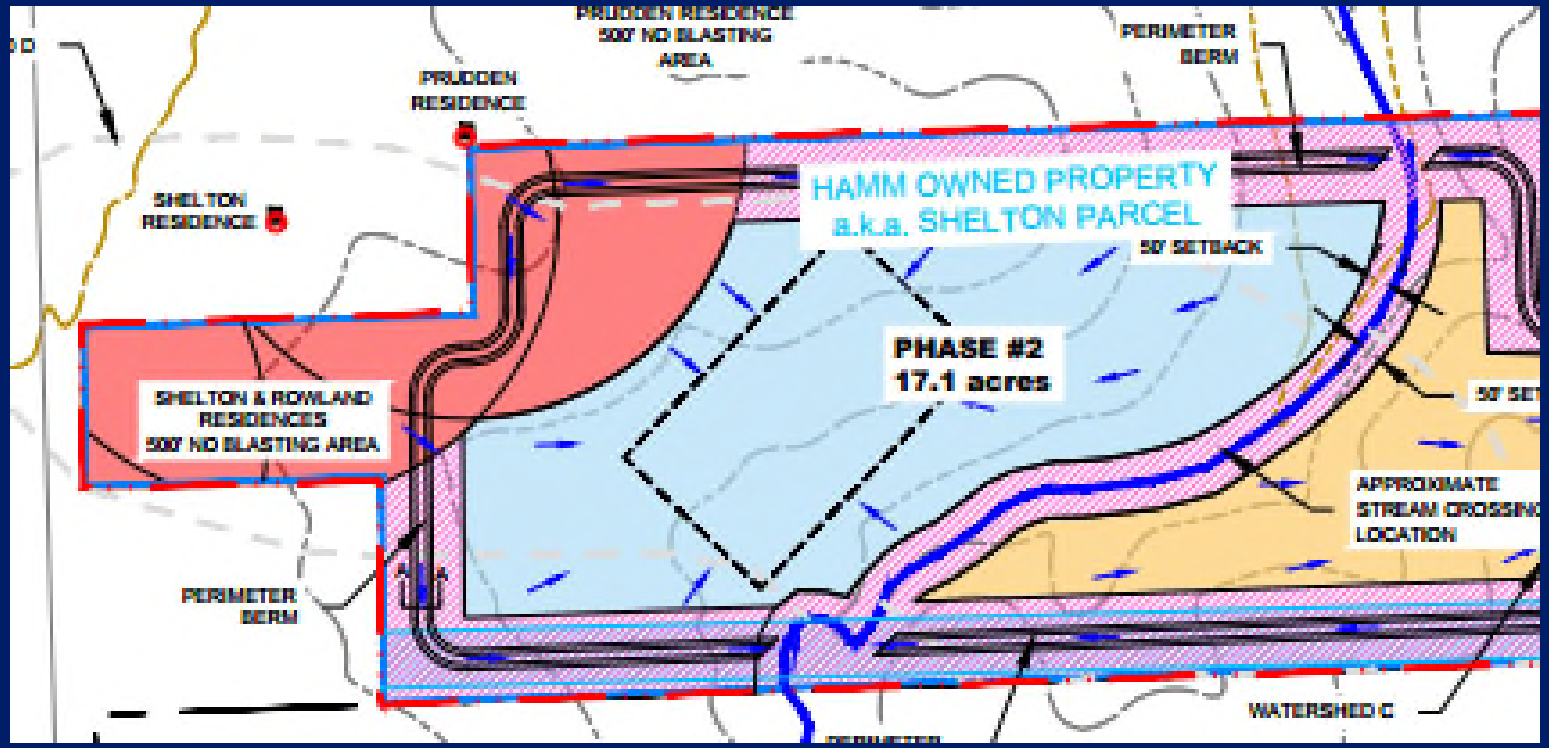
PROJECT-Petefish reclamation



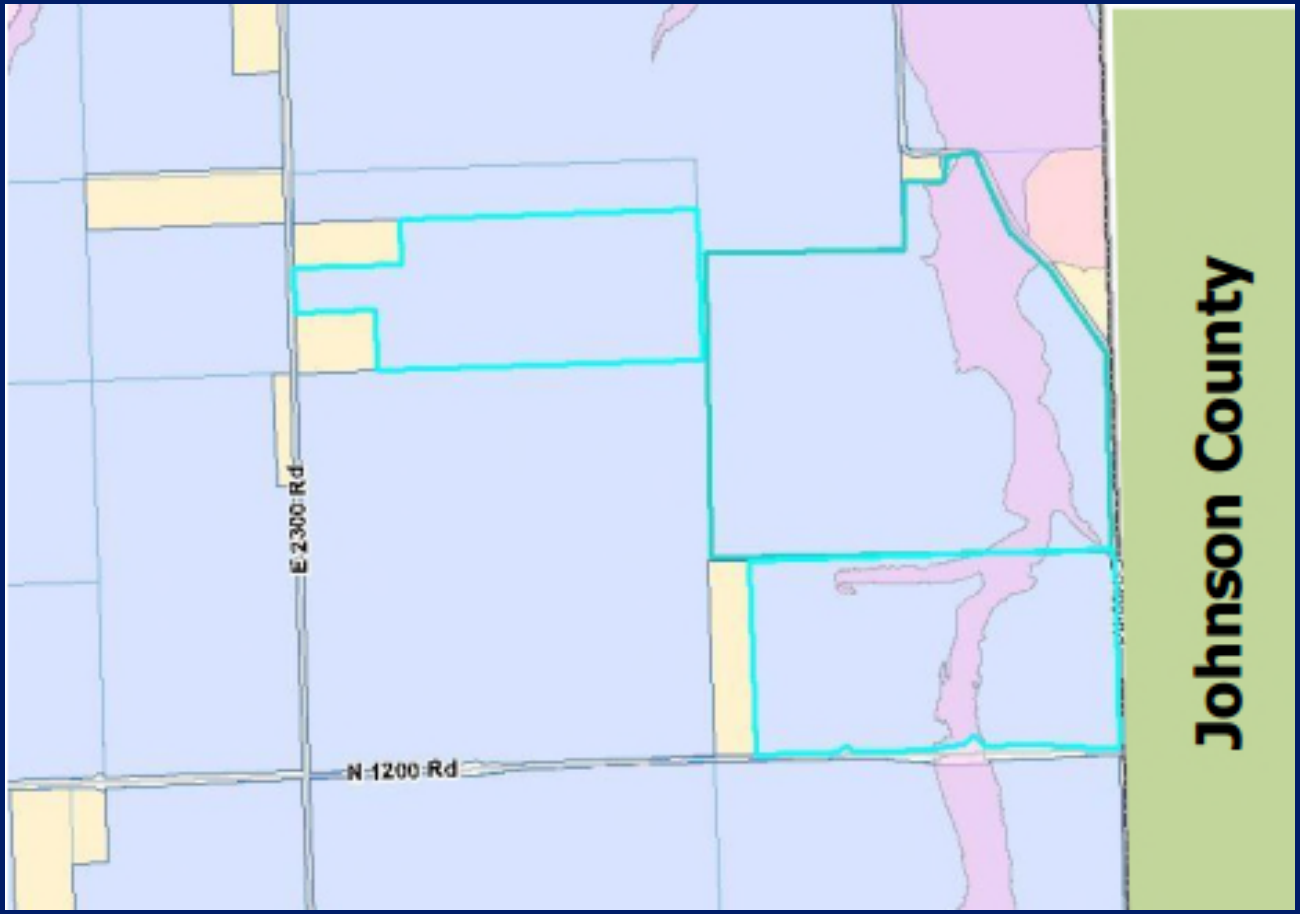
PROJECT—Phase 1



PROJECT—Phase 1

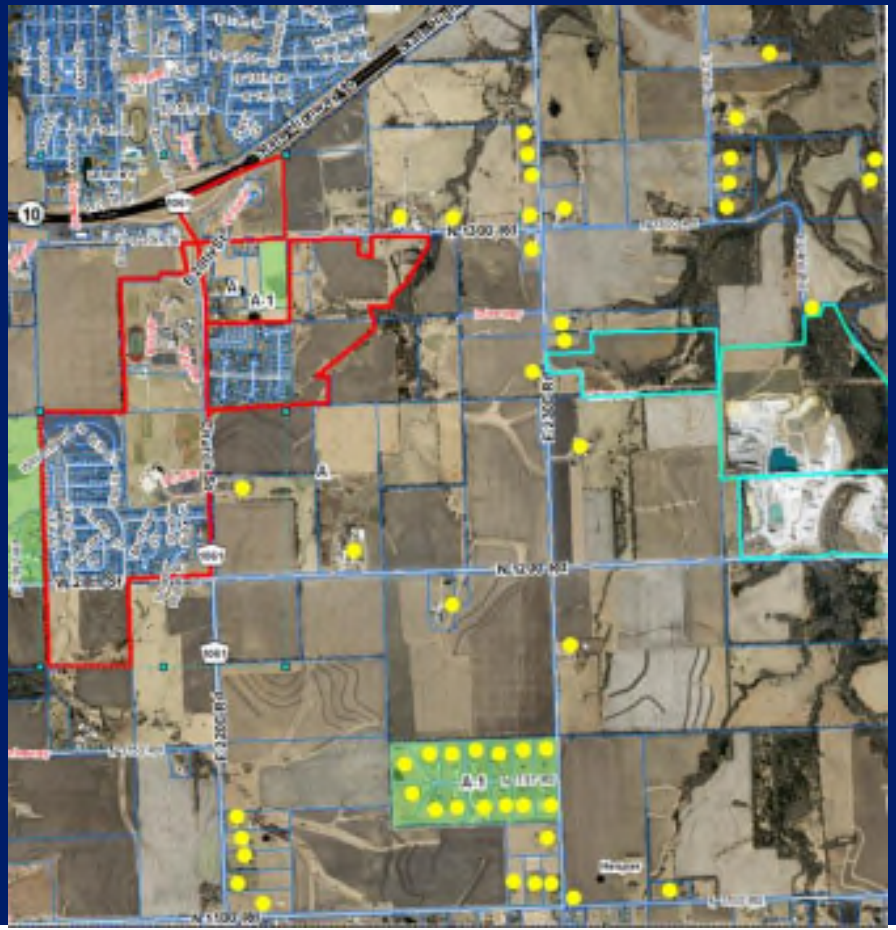


PROJECT—Phase 2

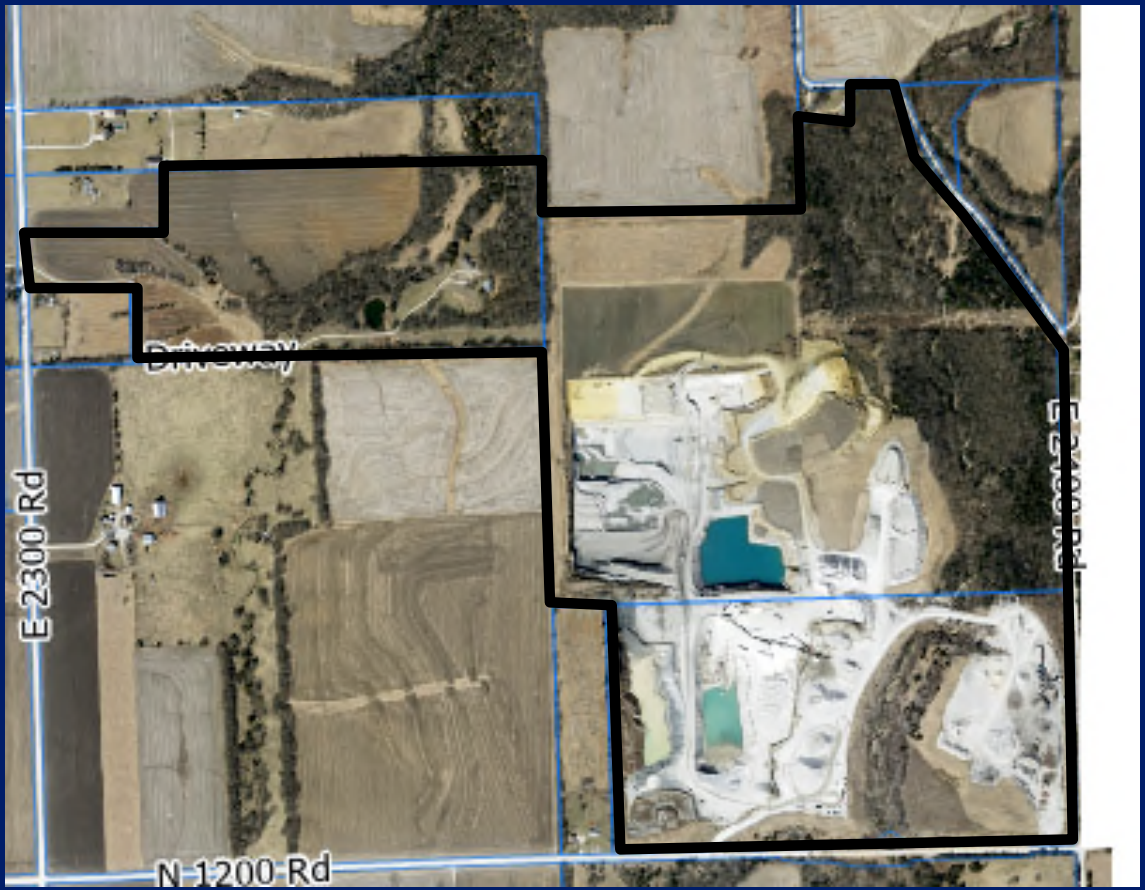


ZONING

LAND USE



CHARACTER OF AREA

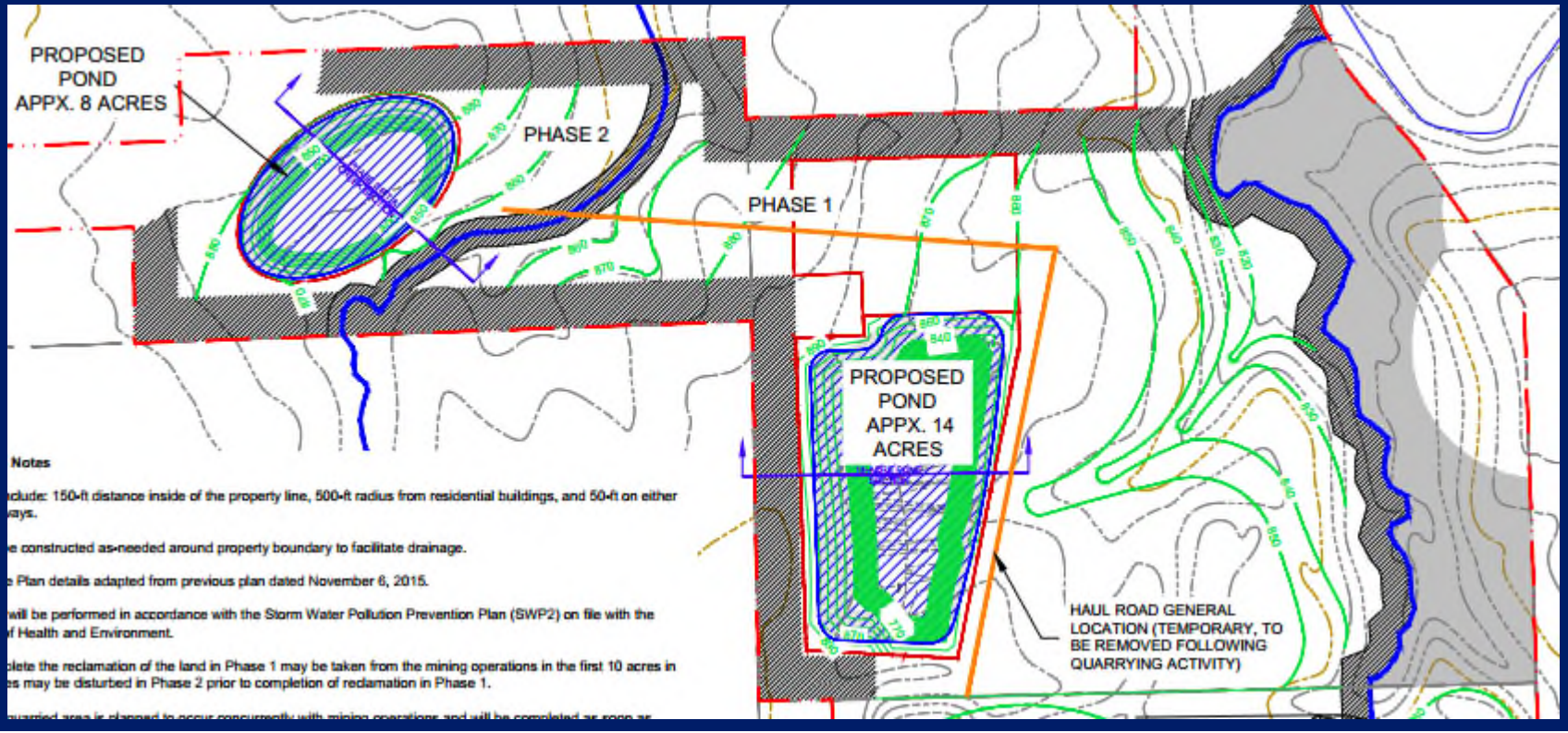


SUITABILITY OF PROPERTY

DETRIMENTAL EFFECTS

Activity	Big Springs	Hamm-Eudora Current and Proposed	Hamm-Eudora Staff Recommendation
Sales and Removal	6 a.m. to 6 p.m. Mon.-Fri. 7 a.m. to noon Sat.	6 a.m. to 9 p.m. Mon.- Sat.	*6 a.m. to 7 p.m. Mon.-Fri.* *6 a.m. to 4 p.m. Sat.*
Weekly Total	65 hours	90 hours	75 hours
Production and Extraction	6 a.m. to 10 p.m. Mon.-Th. 6 a.m. to 6 p.m. Fri.	7 a.m. to 5 p.m. Mon.-Sat. *Proposed:* *6 a.m. to 8 p.m. Mon.-Sat.*	*7 a.m. to 8 p.m. Mon.-Fri.* *7 a.m. to 5 p.m. Sat.*
Weekly Total	76 hours	60 hours *Proposed: 84*	75 hours
Total Weekly Operating Hours	141 hours	150 hours *Proposed: 174 hours*	150 hours

DETRIMENTAL EFFECTS



DETRIMENTAL EFFECTS

DETRIMENTAL EFFECTS

Minimize conversion of agricultural lands to non-agricultural uses

Proper extraction and remediation of natural materials such as sand, gravel, timber, oil, gas, and stone, are essential to sustainable development activity

COMPREHENSIVE PLAN

Operator provided 3 bids for reclamation. These bids were provided to the County Engineer who determined they were reasonable.

MID-STATES MATERIALS	$2,962.50 / ACRE
KINGS CONSTRUCTION	$2,475.00/ACRE
HURD EXCAVATING	$2,352.50/ACRE

PERFORMANCE BOND - RECLAMATION

- Maintenance only on equipment stored n the site
- No retail/wholesales sales
- CUP limited to area shown on the plan
- Burning of landscape materials prohibited
- Exterior storage may occur only in areas marked
- Debris materials must be disposed of per County Code
- Any exterior lighting in the future/Planning review
- Woodland area west of facility must remain
- Limit: 15 trucks and 5 trailers
- Participation in dust palliative program
- 10 year expiration

CONDITIONS AND

Planning Commission Recommendation

The Planning Commission voted 8 to 2 at their May 27, 2020 meeting to recommend approval based on the findings listed in the staff report and subject to the conditions and restrictions of use noted in the Staff Report subject to condition that bids for reclamation work be provided to the County Commission..

Agenda Item Report

Planning Commission - May 27 2020

Department	Staff Contact
Planning & Development Services	Mary Miller, Planner II

Recommendations

Consider approving an amended conditional use permit, CUP-19-00568, for the Hamm Eudora Quarry to expand into approximately 50 acres to the west, 1258 E. 2300 Road, and amend the conditions and restrictions of use. Submitted by Hamm Inc., for N. R. Hamm Quarry Inc., Katherine L. Neis, and Hamm Inc., property owners of record. Joint meeting with Eudora Planning Commission.

Executive Summary

The Hamm Eudora Quarry contains approximately 200 acres and is permitted with Conditional Use Permit, CUP12-16-02, This application requests the following revisions: addition of an approximately 50 acre parcel to the quarry area, expansion of the 'area that can be open, mined, and extracted from' from 30 acres to 50 acres, and longer production/extraction hours. The current quarry consists of two separate parcels: the southern parcel, commonly referred to as the 'Petefish parcel', with approximately 71 acres and the northern 124 acre parcel (the leased portion of a larger parcel), commonly referred to as the 'Neis parcel'. This application proposes the addition of a third parcel, the 51 acre parcel to the west, commonly referred to as the 'Shelton parcel'.

The applicant noted that they had nearly depleted the limestone reserves in the current quarry and found that there were additional reserves at a deeper level. In order to mine at this deeper level, they requested a larger area that can be open and mined from, 50 acres, to allow maneuvering room for the vehicles and to maintain the stability of the deeper pit. They estimate that they will be able to complete the mining of the deeper pit on the current quarry and the reserves on the proposed expansion within the original time-frame of the conditional use permit which will expire in 2033.

The changes requested with this conditional use permit will alter the phasing of the quarry. Excluding the setbacks, Phase 1 will have 64.1 acres and Phase 2 will have 17.1 acres of mineable area. As there are wetlands on the new parcel, the Shelton parcel, the applicant provided information to the Army Corps of Engineers and received a 44 Permit to fill the wetlands provided they obtain the necessary permits and make a payment into the mitigation fund.

Staff reviewed the proposed plans and application in regards to the three amendments requested by the applicant and also proposed additional revisions to the conditions and restrictions of use.

Strategic Plan Critical Success Factor

Safe, Healthy, and Welcoming Neighborhoods

Fiscal Impact

The fiscal impact to the City is $0

Action Requested

Approve the conditional use permit, CUP-19-00568, and forward to the Board of County Commissioners with the following recommendations based on the findings of fact listed in this report and subject to the condition of approval noted below and the revised conditions and restrictions of use provided in Attachment A:

1. Approval of the request to expand the quarry into the approximately 50 acre parcel to the west, 1258 E. 2300 Road.
2. Approval of the request to increase the maximum area that can be 'open, mined, and extracted from' from 30 acres to 50 acres.
3. Denial of the request to increase the production and extraction hours from 7 a.m. to 5 p.m. Monday through Saturday to 6 a.m. to 8 p.m., but approval of the following changes:

- Production and extraction hours: 7 a.m. to 8 p.m. Monday through Friday, keeping the Saturday hours of 7 a.m. to 5 p.m.
- Sales and removal hours: 6 a.m. to 7 p.m. Monday through Friday and 6 a.m. to 4 p.m. on Saturday.

Condition of Approval

The operator shall apply for and obtain a floodplain development permit for the work which occurred in the floodplain on the Neis parcel. The floodplain development permit must be obtained prior to the release of the conditional use permit.

Attachments

Staff Report
Plan Set
Hydrologic Evaluation of Quarry
Eudora Planning Commission Comments
Army Corps of Engineers Information
Reclamation Award
Reclamation Bond Letter
Page Map
Communications (Updated 5/26/20)

PLANNING COMMISSION REPORT
Regular Agenda – Public Hearing Item

PC Staff Report
5/27/20

AMENDED CONDITIONAL USE PERMIT FOR HAMM EUDORA QUARRY; 1213 E. 2400 ROAD AND 1258 E. 2300 ROAD (MKM)

CUP-19-00568: Consider an amended conditional use permit for the Hamm Eudora Quarry to expand into approximately 50 acres to the west, 1258 E. 2300 Road, and amend the conditions and restrictions of use. Submitted by Hamm Inc., for N. R. Hamm Quarry Inc., Katherine L. Neis, and Hamm Inc., property owners of record.

STAFF RECOMMENDATION: The conditional use permit application requests three revisions to the approved permit. Staff recommends the following action on each request based on the findings of fact listed in this report and subject to the conditions of approval noted below and the revised conditions and restrictions of use provided in Attachment A:

1. Approval of the request to expand the quarry into the approximately 50 acre parcel to the west, 1258 E. 2300 Road.
2. Approval of the request to increase the maximum area that can be 'open, mined, and extracted from' from 30 acres to 50 acres.
3. Denial of the request to increase the production and extraction hours from 7 a.m. to 5 p.m. Monday through Saturday to 6 a.m. to 8 p.m., but approval of the following changes:
   - Production and extraction hours: 7 a.m. to 8 p.m. Monday through Friday, keeping the Saturday hours of 7 a.m. to 5 p.m.
   - Sales and removal hours: 6 a.m. to 7 p.m. Monday through Friday, 6 a.m. to 4 p.m. on Saturday

Condition of Approval

The operator shall apply for and obtain a floodplain development permit for the work which occurred in the floodplain on the Neis parcel. The floodplain development permit must be obtained prior to the release of the conditional use permit.

Attachments:
Attachment A – Recommended Revised Conditions and Restriction of Use
Attachment B – Operation and Reclamation Plan
Attachment C – Hydrologic Study of Quarry Area
Attachment D – City of Eudora Planning Commission Letter
Attachment F – U.S. Army Corps of Engineers 44 Permit Information
Attachment G – Reclamation Awards
Attachment H – Corporate Demonstration Bond

Reason for Request:
Applicant's response: "*Expansion of mining operations.*"

KEY POINTS
- This application was submitted prior to the adoption of the *Zoning and Land Use Regulations for the Unincorporated Territory of Douglas County* on February 19, 2020 and is being processed under the provisions and regulations of the 1966 zoning regulations, as permitted

in Section 12-301-6 of the 2020 revised zoning regulations. All code citations within the body of this report are to the 1966 zoning regulations.

- The application requests the following revisions to the conditional use permit: addition of an approximately 50 acre parcel to the quarry area, expansion of the 'area that can be open, mined, and extracted from' from 30 acres to 50 acres, and longer production/extraction hours. Each request is reviewed individually in this report.

- The current quarry consists of two separate parcels: the southern parcel, commonly referred to as the 'Petefish parcel', with approximately 71 acres; and the northern 124 acre parcel (the leased portion of a larger parcel), commonly referred to as the 'Neis parcel'. This application proposes the addition of a third parcel, the 51 acre parcel to the west, commonly referred to as the 'Shelton parcel'. (Figure 1)

- The changes requested with this conditional use permit will alter the phasing of the quarry. The Petefish parcel will remain the operations area and will be reclaimed following the conclusion of quarrying activities. A portion of the Neis parcel and the portion of the Shelton parcel east of the creek will make up Phase 1 of the amended permit. The area west of the creek on the Shelton parcel will make up Phase 2. Excluding the setbacks, Phase 1 will have 64.1 acres and Phase 2 will have 17.1 acres of mineable area

- A reclamation plan for Phase 1 and the eastern portion of the Petefish parcel were submitted with this application. The existing conditions and restrictions of use require that a reclamation plan be provided for Planning review and consideration by the Board of County Commissioners prior to quarrying activities moving into the next phase. This reclamation plan would meet that requirement, provided the property is reclaimed as shown on the plan. If reclamation varies significantly from that shown on the plan, a revised reclamation plan is required. Staff is recommending a revision to this condition so the reclamation plan is submitted and approved prior to any quarrying commencing on the subject parcel. This revised condition is discussed in detail in the report.

- The conditional use permit is currently regulated by 15 restrictions of use which were applied to the original permit. Revised restrictions of use and conditions of operation are proposed with this application and staff is recommending some additional changes. Staff's recommended revised restrictions of use and conditions of approval are discussed in this report and are identified in the revised conditions provided in Attachment A.

- The performance bond for reclamation is being re-evaluated with this review in light of information on varying performance bonds for reclamation in the county. Following a recent application for another quarry in the county, CUP-18-00570, and an evaluation of the performance bonds required with conditional use permits for other quarries in Douglas County, the Planning Commission indicated that performance bonds should be re-evaluated with any new or amended conditional use permits for quarries to be provide a more uniform requirement.

- The property is within the three mile radius of the city of Eudora and the plans and application were provided to the Eudora Planning Commission. The Commission provided a letter with their comments, Attachment D. The Eudora Planning Commission had three comments: 1) that the applicant meet or exceed the requirements listed in the conditions and restrictions of use; 2) that the applicant provide sufficient details regarding the restoration of the property or restrictions or conditions be applied to ensure that restoration will be completed in a timely

fashion; and 3) that no increase in intensity or expansion of daily operations and volume of material extracted from the quarry site or change to the traffic ingress/egress will occur. These comments have been considered in the review of the application and are discussed in the report.

- The original conditional use permit, CUP-12-16-02 was approved by the Board of County Commissioners in 2003, but quarrying activity did not commence at that time, due to litigation. The review following the first year of operation for the quarry was conducted in 2015.

OTHER ACTION REQUIRED

- Approval of the conditional use permit by the Board of County Commissioners.
- Approval of a floodplain development permit for work which is now located within the floodplain prior to the release of the conditional use plans to Zoning and Codes.
- If the Board of County Commissioners approve the conditional use permit, issuance of a permit for the conditional use by the Zoning and Codes Office when all conditions of approval have been met.

Public Communications

Arthur Neis, owner of property north of the proposed addition to the quarry, contacted staff several times to discuss his concerns with the quarrying activity. The southern boundary of his property is shown with dashed lines in Figure 1. One of his principal concerns is the possible impact the quarry could have on the flow in the streams that run through his property. His concerns are discussed throughout the review in this staff report and are summarized in Attachment E.

Project Summary

The current conditional use permit for the Hamm Eudora Quarry contains approximately 200 acres (128 acres on property leased from Katherine Neis and approximately 71.6 acres on the former Petefish Quarry). A large portion of the Neis property located east of Coleman Creek is designated as a 'non-quarrying' area. Approximately 90 acres on the Neis parcel are within the quarrying area, including setbacks. The Petefish parcel was a nonconforming quarry that was established prior to the adoption of the zoning regulations in 1966. This portion of the quarry was not included with the original conditional use permit but the permit included a condition that the Petefish quarry would be reclaimed with the newly permitted quarry.

Figure 1. Quarry property
Petefish Parcel (71.6 acres)—Operation site
Neis Parcel (128 acres)—approximately
Shelton Parcel/proposed (51.2 acres)

Quarrying activity no longer occurs on the Petefish parcel and it is included in the conditional use permit as it contains the scale house and stockpiles as well as a settling pond. An area east of

Coleman Creek on the Petefish parcel was permitted to be utilized as a location for a temporary asphalt plant with the 2015 operation plan. A temporary asphalt plant will no longer be located here so this portion of the property is planned to be reclaimed in 2020. The portion of the Petefish parcel west of the creek contains stockpiles, the scale house, sediment pond, and employee parking. This portion will be the last area of the quarry to be reclaimed as it will be used throughout the life of the quarry. The stockpile area and the haul road on the Neis parcel will also be reclaimed with this final reclamation as these will be used for both phases.

While the overall quarry area is approximately 200 acres (250 acres with the addition of the Shelton parcel), the actual area that can be mined from is less due to the setback restrictions applied with the conditional use permit. The approximate area that would be available for mining is 81.2 acres (64.1 acres in Phase 1 and 32 acres in Phase 2).

The application materials note that the reserves of marketable rock in the Eudora quarry have been nearly depleted but core testing indicates that deeper reserves are present in the Farley and Argentine ledges. (Figure 2). The applicant noted that in order to mine at this deeper depth, a larger open area is necessary to allow maneuvering room and also to maintain the stability of the deeper pit.

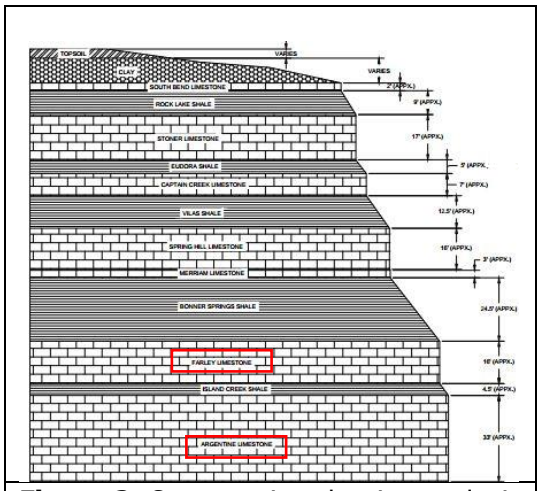


Figure 2. Cross section showing geologic formations in the area. New reserves are available in the Farley and Argentine ledges.

The application is requesting the following amendments to the Hamm Quarry conditional use permit:

1. The addition a 50.7 acre parcel, Shelton parcel, at 1258 E. 2300 Road. The various parcels of the quarry are shown in Figure 1.

2. Revision of Condition No. IX to increase the area that can be open and mined from a maximum of 30 acres to 50 acres.

3. Revision of Condition No. III to expand the hours of production and extraction from 7 AM to 5 PM, Monday through Saturday to 6 AM to 8 PM, Monday through Saturday.

QUARRY BACKGROUND

7/9/2003: Board of County Commissioners approved and adopted findings of fact on July 9, 2003 for CUP-12-16-02, conditional use permit for the Hamm Eudora Quarry, containing the Petefish and Neis parcels. The findings of fact noted that the existing quarry, the Petefish parcel, was included in the conditional use permit only so that it would be reclaimed with the remainder of the quarry.

7/8/2008: The conditional use permit plan was released to the Zoning and Codes Office for issuance of a permit following conclusion of litigation. The action letter noted that a screening and fencing plan needed to be submitted and approved prior to commencement of operations.

10/28/2009: The first 5 year compliance review as required in the restrictions of use. Quarrying activity had not yet commenced so the review focused on the restrictions of use

which had been met and those restrictions or conditions that needed to be completed prior to the commencement of quarrying.

4/16/2014: The second 5 year compliance review (named CUP-14-00064 for tracking purposes) was provided to the County Commission. The Commission approved the screening and fencing plans, reclamation plan for the existing quarry (Petefish), revised access locations, and accepted the 5 year compliance review.

9/3/2015: 1st year of operation review as required in the restrictions of use (named CUP-15-00165 for tracking purposes) was provided to the County Commission. The Commission approved a revised reclamation plan allowing an additional 5 acre stockpile area in the location of Cuts 1 and 2.

Ongoing: CUP-19-00492, 5 year review, due in 2020. This review is ongoing and is not associated with the current application.

Current: CUP-19-00568, an amended conditional use permit application requesting to expand the area of the quarry, increase the area that can be opened and mined from, and extend operating hours.

As the quarry property is bounded on the east by the Douglas/Johnson County border, notice of the Planning Commission meeting and public hearing for this conditional use permit was mailed to property owners within the notification area in Johnson County and the application and plans were provided to the Johnson County Planning Office for comments. At the time this report was written, no comments had been provided from Johnson County residents or the Johnson County Planning Office. The property is within the 3 mile radius of the city of Eudora; therefore, the plans and application were sent to the Eudora Planning Commission. They provided a letter which is included as an attachment and their concerns are discussed in the following review.

I. ZONING AND USES OF PROPERTY NEARBY

Current Zoning and Land Use:	AG-1 (Agricultural) district with F-F (Floodway Fringe) overlay district; *Mining and Excavation,* permitted with a conditional use permit, with *Agriculture* and woodland.
Surrounding Zoning and Land Use:	To the north: AG-1 (Agricultural) district with F-F (Floodway Fringe) overlay district; *Agriculture*, *Detached Dwelling,* and woodland To the west: AG-1 (Agricultural) and AG-2 (Transitional Agricultural) districts with F-F (Floodway Fringe) overlay district; *Agriculture* and *Detached Dwellings* To the south: AG-1 (Agricultural) and AG-2 (Transitional Agricultural) districts and F-F (Floodway Fringe) overlay district; *Agriculture* and *Detached Dwelling* To the east; RUR (Johnson County: Rural, Agricultural uses and single family dwellings, 10-acre minimum lot size) district; *Agriculture* and a single-family residence (Figure 3)

The nearby area consists primarily of agricultural land uses, rural residences, and woodland. Figure 3b shows the location of the nearby residences and the required quarry setbacks.

Staff Finding – Most of the land in the nearby area is zoned and used for agriculture. However, there are residential land uses nearby which are considered when establishing setbacks and restrictions of use. The applicant is proposing a 500 foot setback from all residences, in addition to other setbacks measured from the quarry property line. These setbacks will be discussed later in this report. With proper setbacks and conditions restricting the use, the changes requested with this application should be compatible with the existing nearby zoning districts and land uses.

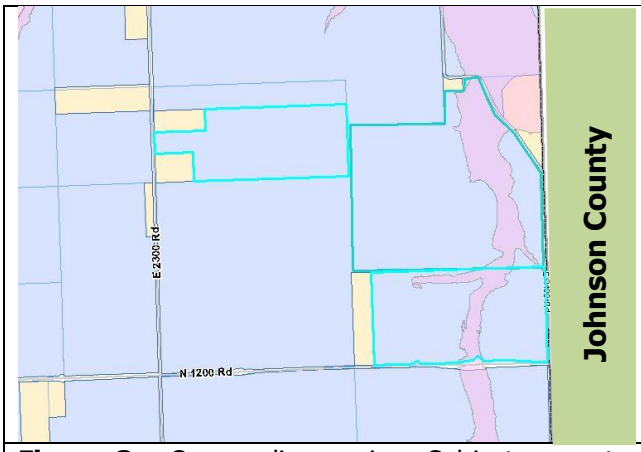


Figure 3a. Surrounding zoning. Subject property outlined.

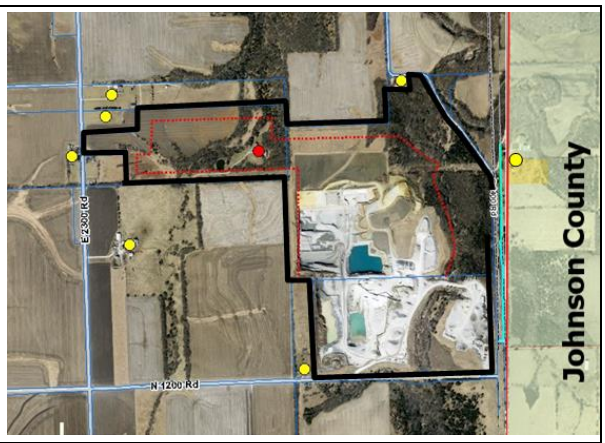


Figure 3b. Surrounding land use. Residences marked with yellow dots, those owned by Hamm, Inc. marked with red. Approximate setbacks shown in red.

II. CHARACTER OF THE AREA

The quarry property is located within 3 miles of Eudora's city limits. Properties in the area that are within the Eudora city limits are outlined in red in Figure 3. For the purpose of this review the 'area' is considered the area bounded by E. 2200 Road (Church Street) on the west, N. 1100 Road on the south, and approximately ¼ mile south of K-10 Highway to the north. (Figure 4) This is a rural area in close proximity to the Eudora city limits; therefore, there is a mix of agricultural, rural residential, and urban residential uses in the area. The Eudora High School is just west of E. 2200 Road (Church Street). The mix of uses establishes the character of this area.

Access to the plant site is taken from N. 1200 Road. A limited quarry access at the existing access on E. 2300 Road is proposed with this application. The limited access would include quarry management personnel, surveying crews, and third party crews such as seismology or blasting crews and would serve as a field access while the site is being farmed. No large quarry equipment or haul trucks would be allowed to use this limited access point. The township trustee noted they had no concerns with the limited use of the access point on E. 2300 Road but noted that no heavy quarry equipment or trucks would be permitted. This requirement is included in the recommend restrictions or conditions of use.

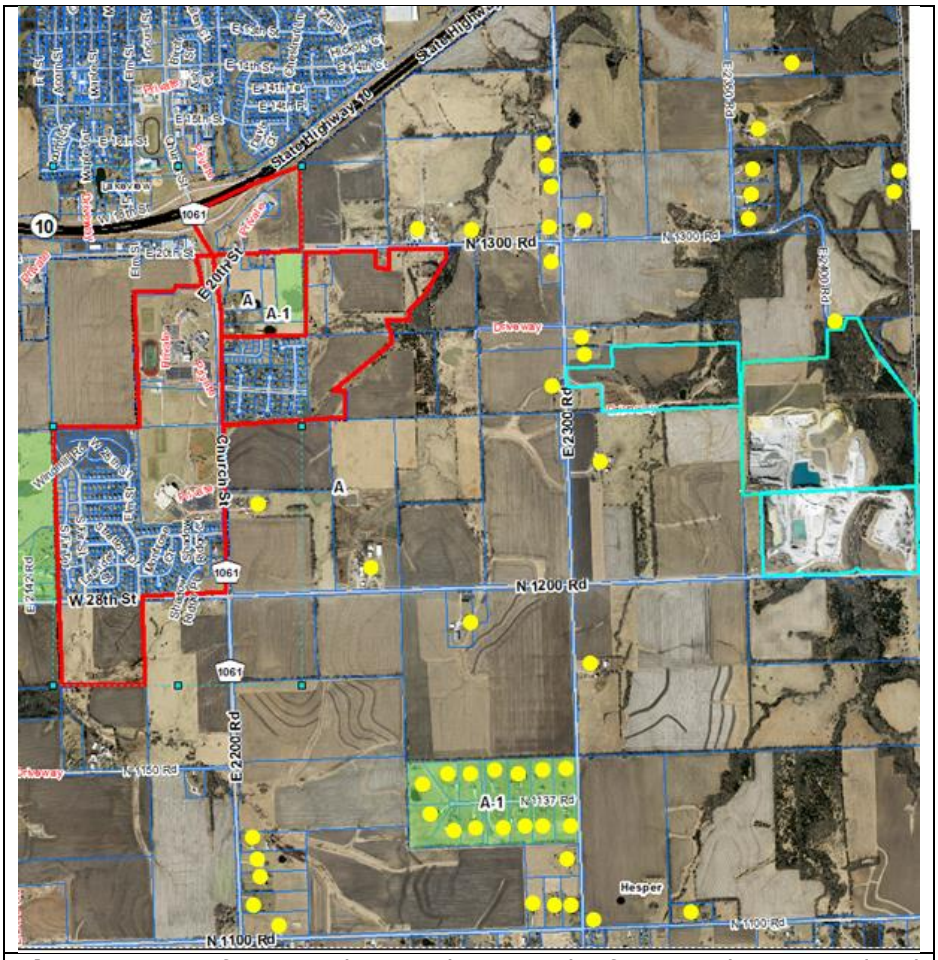


Figure 4. Map of area. Eudora city limits south of K-10 Highway is outlined in red, residences are marked with yellow dots and the subject property is outlined in blue. The area east of the quarry is within Johnson County.

The following truck route was established with the approval of the conditional use permit for the Hamm Quarry in 2002: N. 1200 Road west to County Route 1061/E. 2200 Road (Church Street). (Figure 5) No changes are being proposed to the truck route. County Route 1061/E. 2200 Road is a principal arterial that connects to K-10 Highway to the north and various principal arterials to the south.

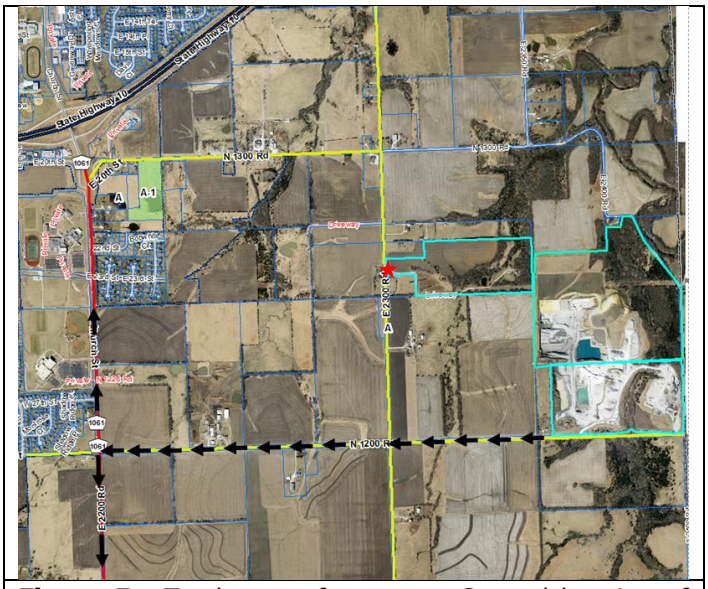


Figure 5. Truck route for quarry. General location of limited access point on E. 2300 Road marked with star.

The area to the east of the quarry, within Johnson County, is also a mix of agricultural and residential uses. The eastern portion of the Hamm Quarry is not being mined and the expansion is being requested along the west side of the quarry which would be further from the Johnson County properties.

The property contains floodplain as shown in Figure 2. When the conditional use permit was approved in 2002, floodplain was located on the property as shown in Figure 6a. The county hadn't adopted floodplain management regulations at that time, so a floodplain development permit was not required. The quarrying activity was kept out of the floodplain with the exception of a haul road. The 2010 revised floodplain maps show floodplain extending into the quarried area. (Figure 6b) Per the floodplain management regulations which were adopted in 2015, a floodplain development permit is required with this amended permit for the portion of the quarry that lies within the floodplain. The County Floodplain Administrator determined that stockpiles in this floodplain area would be acceptable as they would provide risk only to the quarry; but required that a setback be added for the floodplain adjacent to Coleman Creek as shown in Figure 6b. This change has not yet been made to the plans and is listed as a condition of approval.

Figure 6a. Floodplain shown on 2001 FEMA Federal Insurance Rate Maps

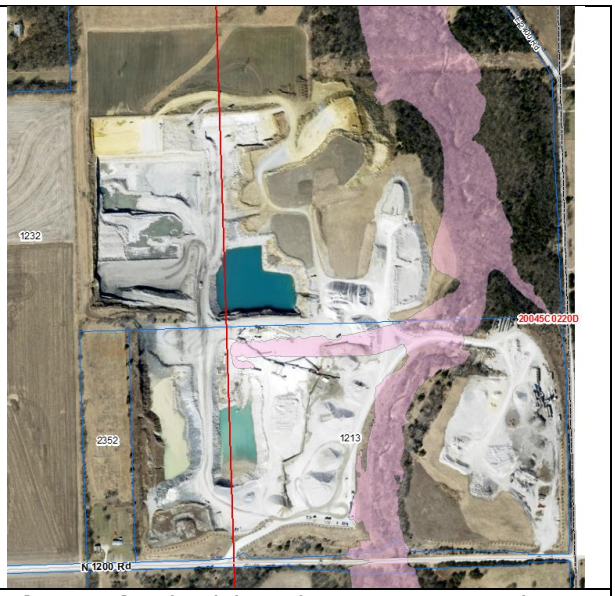


Figure 6b. Floodplain shown on 2010 and 2015 FEMA Federal Insurance Rate Maps

The following conditions were applied with the original conditional use permit to ensure compatibility with the character of the surrounding area:

<u>Condition XI. Site Access and Road Restrictions</u>
This condition prohibited direct access to County Road E. 2400 Road and restricted the access for transport truck traffic and hauling of rock to N. 1200 Road. A truck route was established to ensure heavy truck and equipment traffic used the N. 1200 Road to access the principal arterial, County Route 1061/E. 2200 road. This condition also required the quarry to provide materials and construction assistance to improve N. 1200 Road from E. 2400 Road to County Route 1061/E.2200 Road (Church Street). These improvements were made prior to the commencement of quarrying activity. Other road maintenance provisions included dust control for N. 1200 Road during periods of quarry activity and the payment of a 10 cent per ton of rock hauled from the permitted property. The County Engineer indicated that these road improvements and provisions have been met. He indicated that the fees provided by the quarry were used for 2019 improvements to the intersection of N. 1200 Road and County Route 1061/E.2200 Road (Church Street).

This condition also notes that Hamm Quarries shall take the lead to communicate and cooperate with the Douglas County Public Works Director and Eudora city and school officials on traffic controls on County Road during periods of quarry activity.

In addition to these conditions/restrictions, operating hours, blasting hours, seismograph monitoring of blasting, and operational setbacks were established to minimize the impact on nearby properties. A change is being proposed to the operating hours and this is discussed in detail later in this report.

Staff Finding – The quarry is located in a rural area in close proximity to the city limits of Eudora. A platted rural residential subdivision is located in the area along with several rural residences. Some of the nearby properties within the Eudora city limits are undeveloped, while others are developed with residential neighborhoods. The public high school located just to the west of E. 2200 Road/Church Street was developed following the approval of the quarry conditional use permit. While there are off-site impacts associated with mining uses, quarries can be compatible with nearby land uses provided adequate conditions and restrictions of use are applied. The truck route will keep quarry truck traffic on the higher classification road system and should prevent traffic through the residential areas. The conditions and restrictions of use proposed with this permit should result in a project that, while not without impact, is compatible with nearby land uses.

III. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED

Applicant's response:
"Property will extend reserves which will allow quarrying operations to continue."

The application proposes the addition of a new parcel, referred to as the Shelton parcel, to the quarry area. This parcel is well suited for agricultural uses and is currently being used for agriculture. Due to the reserves of limestone and the infrastructure put in place for the adjacent quarrying activity, the Shelton parcel is also well suited for the proposed quarry use.

Portions of the Shelton parcel contain soils classified by the NRCS (Natural Resource Conservation Service) as 'Prime Farmland' but is not classified as soil types I or II, which the comprehensive plan identifies as 'High Quality Soils'. (Figure 7) The prime farmland designated area along E. 2300 Road is within the operation setback and will not be mined. The prime farmland designated areas along the creek are smaller, fragmented areas. Consideration of the quarry application in light of the prime farmland requires an evaluation of the natural resources present on the site. The property will be returned to agricultural uses following the completion of the quarry activity, but the reclaimed agricultural land is not expected to be retain the characteristics of prime farmland. Given the small, fragmented nature of the prime farmland areas (approximately 3 acres on the west side of the creek and 4 acres on the east side) the preservation of the prime farmland may be of lesser importance than the extraction of the limestone resources. Following reclamation, the land will be suitable for agricultural land uses even though the prime farmland designation may be lost.

The property within the existing quarry on the Neis parcel contains mining, processing, and stockpile areas and is not currently suitable for any other use. This property will be reclaimed for agricultural purposes following the quarrying activity.

Figure 7a. Land classified as Prime Farmland by the NRCS is shown in green. (Shelton parcel outlined)

Figure 7b. Land classified as High Quality Agricultural Soils (Class I and II) shown in orange.

Staff Finding – A conditional use permit does not change the base, underlying zoning. The suitability of the property for agricultural or other uses permitted in the AG-1 (Agricultural) district will not be altered. The proposed 50 acre addition is suitable for the uses permitted in the A (Agricultural) zoning district and will continue to be used for agriculture before and after quarrying. The quarrying activity will result in the loss of 2 areas of prime farmland (3 acres and 4 acres each); however, these small fragmented areas of prime farmland are not seen as a critical resource. The property, due to the reserves of limestone and the infrastructure put in place for adjacent quarrying activity, is also well suited for the proposed quarry use. The current quarry property is not suited for any other use permitted in the Agricultural district as it is currently being mined, but it will be suitable for agricultural purposes when reclamation is complete.

IV. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Staff Finding – County Zoning Regulations were adopted in 1966; the property within this application has been zoned "A (Agricultural)" since that adoption. The proposed 50 acre addition to the quarry is currently used for agricultural purposes and contains a residence. Hamm Inc. owns this residence and intends to demolish it prior to the quarrying activity. The Neis parcel was used for agricultural purposes until the approval of a conditional use permit, CUP-7-2-90, for a quarry in 1993. Quarrying operations began on this portion in 2014. The southern portion of the quarry, commonly referred to as the Petefish Quarry, was in operation prior to 1966.

V. EXTENT TO WHICH REMOVAL OF RESTRICTIONS WILL DETRIMENTALLY AFFECT NEARBY PROPERTY

Applicant's Response:

"Hamm has been mining at this location since the late 80's. There will not be any significant changes, blasting and removal of material will continue as they have in the past."

Section 19-01 of the County Zoning Regulations recognize that, "*certain uses may be desirable when located in the community, but that these uses may be incompatible with other uses permitted in a district…when found to be in the interest of the public health, safety, morals and general welfare of the community may be permitted, except as otherwise specified in any district from which they are prohibited."* The proposed use falls under Use No. 5, *Mining and Excavation,* listed in Section 19-4 Conditional Uses Enumerated, of the *Douglas County Zoning Regulations.*

Mining is an activity which can have a significant impact off-site due primarily to the noise associated with production and heavy truck traffic. Increasing the borders of the quarry would extend the quarry activities and off-site impacts to the west. The applicant is proposing a 500 foot setback for mining and blasting from nearby residences, similar to the previously permitted portion of the quarry (Figure 8). Due to the irregular shape of the parcel, the 500 foot residential

setback is less restrictive than the 150 foot perimeter setback, and does not require the protection of any additional quarry area. The owners of these residences have not contacted the Planning Office regarding the conditional use permit application. A 50-foot wide setback will be provided on each side of the creek through the property, which is a tributary of Coleman Creek, maintaining a 100-foot stream corridor to minimize the impact of the quarrying activity on the stream.

Figure 8. Setbacks proposed for the expanded quarry area, Shelton Parcel. 150 foot setback along the perimeter and 500 foot setback from existing residences.

Traffic

No changes are being proposed to the truck route, but the existing access point on E. 2300 Road is planned as a 'limited access' to allow farm access to the Shelton parcel and limited quarry access. This limited access, discussed later in this report, would allow smaller vehicles to access the Shelton parcel directly but would not create additional traffic for the area.

Increase in Production Hours

The conditional use permit requests that production and extraction operating hours be extended from the current hours (7 a.m. to 5 p.m. Monday through Saturday) to 6:00 a.m. to 8:00 p.m. Monday through Saturday. The applicant noted the extended production and extraction hours would allow them to be more competitive with the other large quarry in the county.

Evaluation of this request requires that consideration be given to nearby land uses as production and extraction activity in the early morning or evening hours would involve the use of lighting and audible warning systems on the vehicles which could have an impact on nearby properties. The Neis parcel is more isolated than the proposed Shelton parcel, with one residence to the north that is separated from the quarrying activity by woodland.

Big Springs Quarry and the Hamm Eudora Quarry currently have similar overall operating hours, with the Hamm Eudora Quarry with 9 more hours a week, as shown in the following table. Increasing the production and extraction time as requested would result in 174 hours of weekly operation time, or 33 hours more than Big Springs Quarry. The overall operating hours are very similar; however, the distribution of the hours between sales and removal and production and extraction varies significantly. In order to maintain the intensity of the use, any increase in production and extraction hours should be balanced with a decrease in sales and removal hours, with no increase in the total operating hours. The following table shows the comparison of the two quarries operating hours, the hours proposed with the conditional use permit, and staff's

recommendation. Staff's recommendations that vary from the current operating hours are highlighted.

Activity	Big Springs	Hamm-Eudora Current and Proposed	Hamm-Eudora Staff Recommendation
Sales and Removal	6 a.m. to 6 p.m. Mon.-Fri. 7 a.m. to noon Sat.	6 a.m. to 9 p.m. Mon.- Sat.	*6 a.m. to 7 p.m. Mon.-Fri.* *6 a.m. to 4 p.m. Sat.*
Weekly Total	65 hours	90 hours	75 hours
Production and Extraction	6 a.m. to 10 p.m. Mon.-Th. 6 a.m. to 6 p.m. Fri.	7 a.m. to 5 p.m. Mon.-Sat. *Proposed:* *6 a.m. to 8 p.m. Mon.-Sat.*	*7 a.m. to 8 p.m. Mon.-Fri.* *7 a.m. to 5 p.m. Sat.*
Weekly Total	76 hours	60 hours *Proposed: 84*	75 hours
Total Weekly Operating Hours	141 hours	150 hours *Proposed: 174 hours*	150 hours

The recommended changes to the operation hours will:

1) Maintain the overall operating hours of 150 hours;
2) Maintain the starting time for the 'production and extraction' activities rather than allowing it to start an hour earlier;
3) Reduce the 'sales and removal' activities with fewer evening hours;
4) The current conditions allow the operator to request additional production and extraction hours from the Board of County Commissioners when needed. This condition will be revised to also allow additional sales and removal hours, when approved by the Board of County Commissioners.

In staff's opinion, the recommended operating hours would create a more similar situation to that permitted at the other large quarry while maintaining the intensity of the use by shifting hours from sales and removal to production and extraction but not increasing the overall hours of the quarry. No comments were received from nearby property owners, so staff is unaware of any issues with the current operating hours.

Ponds

Each phase will be reclaimed with a pond, which will vary in location and size depending on the actual amount of limestone that is removed. With the deeper quarrying operations, the pond that will remain on Phase 1 will be approximately 185 feet deep and the pond on Phase 2 will be approximately 60 feet deep. The reclamation plan shows the land being graded with no slopes over 3:1. This 3:1 slope would be maintained on the pond banks for approximately 25 feet below the planned water level in the Phase 1 pond and approximately 5 feet below the planned water level in the Phase 2 pond.

The applicant provided the attached hydrologic study which analyzed the various factors which would affect the time needed for the ponds to fill. The County Engineer reviewed the study and noted that the ponds are expected to fill to the planned water level within 6 to 8 years. In the meantime, this pond could be a hazard to wildlife, livestock, or owners/users of the property due to the depth and the steepness of the sides. Until the pond has filled to the planned water level, the slopes of the side would not permit an exit for anyone or anything that fell in. The County Engineer recommended that the pits on both Phase 1 and Phase 2 be fenced with 'No Trespassing' signage until they have filled with water to the planned water level. As the study indicates it may

take 6 to 8 years for the ponds to fill up to the planned water level, where the more gradual slopes would permit an exit, the fence and signage would need to be maintained on the site beyond the life of the conditional use permit. The County Counselor suggested that Hamm Inc. enter into an agreement with the Board of County Commissioners to maintain the fencing and signage until such time that the water is at the planned water level. This agreement is required with the revised conditions and restrictions of use.

The restrictions of use for the quarry will remain as they've been since the original conditional use permit was approved in 2003; with the exception of conditions related to the requested changes and other conditions recommended by staff. The following requirements are being added to minimize detrimental impact to nearby properties:

- A lighting plan must be submitted and approved prior to the installation of permanent lighting
- Exterior lighting must be shielded to prevent off-site glare.
- A notification process for the pre-blast and hydrologic survey.
- The access point on E. 2300 Road would be restricted to 'limited quarry access'.
- An agreement must be executed which designates responsibility for fencing and signage of the ponds which will remain after quarrying until they have filled to the planned water level.

Staff Finding – The proposal requests the expansion of the quarry's boundary to include the approximately 50 acre parcel to the west which would result in a total quarry area of approximately 248 acres; to extend the hours of production from 7:00 AM to 5:00 PM Monday through Saturday to 6:00 AM to 8:00 PM Monday through Saturday; and to expand the area that can be open, mined and extracted from, from 30 acres to 50 acres. Conditions/restrictions of use which should minimize negative impact on nearby properties include a 500-foot setback from existing residences; the more restrictive 150-foot perimeter setback; pre-blasting surveys; lighting standards; limits on hours of sales, production, and blasting; established truck route; road maintenance provisions; and provisions for management of the remaining ponds until they've filled to the planned water level. While a quarry will have impacts due to the activity on the site and traffic to and from the site, measures proposed with the conditions and restrictions of use should mitigate the impact of the quarry on nearby land uses.

VI. RELATIVE GAIN TO THE PUBLIC HEALTH, SAFETY AND WELFARE BY THE DESTRUCTION OF THE VALUE OF THE PETITIONER'S PROPERTY AS COMPARED TO THE HARDSHIP IMPOSED UPON THE INDIVIDUAL LANDOWNERS

Applicant's Response:

"This will extend the life of the quarry by adding reserves which will help keep cost down to the local township and the county by having material available in Douglas County."

Evaluation of the relative gain weighs the benefits to the community-at-large vs. the benefit of the owners of the subject property.

The application is requesting that the maximum area that is allowed to be open and mined from at one time be expanded from 30 acres to 50 acres. The operator noted that allowing the larger mining area will allow the operator to safely reach and extract limestone from deeper deposits, which will increase the amount of reserves. This is in accordance with language in the 1966 Zoning Regulations which explains the purpose for permitting 'Mining and Excavation' uses:

"To assure that the continued development of all natural resources will be made possible through inclusion of known mineral deposits within zones reserved for their

> *development and production, to guarantee that these sources will not be forever lost for the benefit of Douglas Count, Kansas."* (Section 12-319-4.05 Zoning Regulations)

As the application was submitted prior to the adoption of the 2020 *Zoning and Land Use Regulations for Unincorporated Territory in Douglas County*, it is being processed under the standards of the 1966 Zoning Regulations.

Restriction of Use No. VII(d) of the original permit states, *"No more than 30 acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site."* The applicant indicated that the larger mining activity area of 50 acres would provide the maneuvering room necessary for large equipment and would be needed to safely accommodate the mining activities necessary to reach the lower levels. The materials are located in ledges and the applicant indicated that a larger area was necessary for operating at this lower level safely. The reclamation plan shows the bottom of the pit being approximately 200 feet lower than ground level. Increasing the area permitted to be open at a time would increase operating capacity and efficiency. To illustrate this, the red outlined area in Figure 9 outlines the size of the 50 acre area that would be open and mined from in Phase 1. Phase 1 has a total of approximately 64.1 acres that can be mined from and Phase 2 has a total of 17.1 acres.

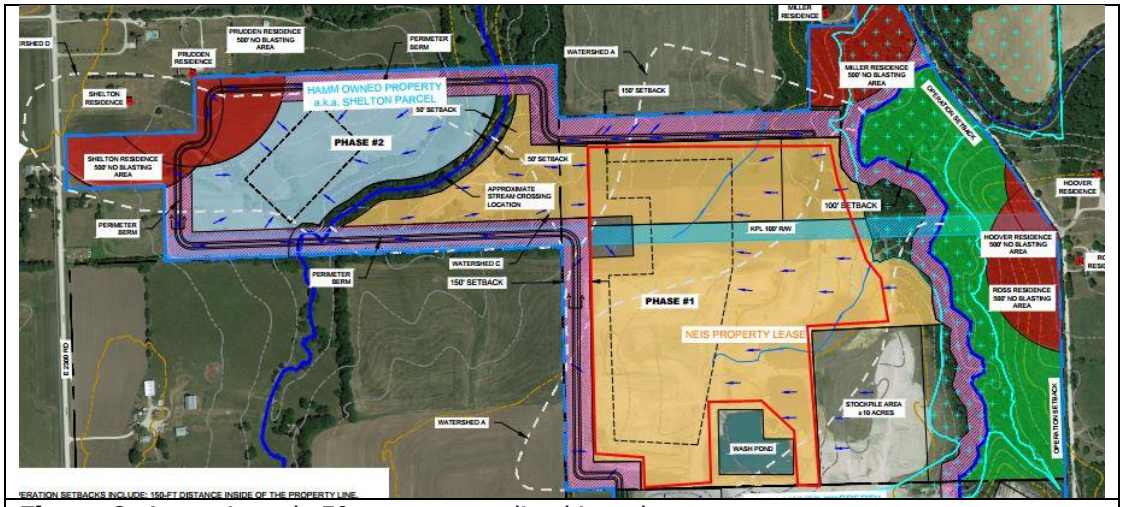


Figure 9. Approximately 50 acre area outlined in red

Expanding the quarry area to include the Shelton parcel would also permit the quarry to utilize more of the available limestone deposits in the area. The applicant indicated they anticipated completing quarrying per the time frame in the original permit (30 year time frame, expiration date: 2033). This is somewhat dependent on the market, but given an average demand the applicant feels they will complete quarrying on the properties within this permit in this time frame.

As the impacts of the quarry will be managed and limited with conditions and restrictions of use and the property will be reclaimed to a state that is suitable for agriculture, denial of the amended conditional use permit should have no beneficial impact on the public health, safety, and welfare. Approval of the conditional use permit would benefit the public health, safety, and welfare by insuring a local supply of road rock and construction gravel. One of the principal cost factors associated with construction rock and gravel is transportation; therefore, a local quarry should provide a more economical source.

If the application is denied, it will not be possible for the applicant to deplete the limestone reserves in this area.

Staff Finding – Approval of the amended conditional use permit would allow an expansion to the 50 acre parcel to the west allowing the quarry to utilize additional limestone reserves; however, this would place quarrying activities nearer to the residences and other land uses in that area. Appropriate setbacks and conditions should be applied to mitigate the impact of the quarrying activities as much as possible, similar to that on the existing quarry.

Approval of the conditional use permit would also increase the area that can be open and mined from allowing the operator to access deeper deposits of limestone safely.

The deep ponds that would remain after reclamation could have a detrimental impact on the safety of people and animals in the area until they've filled up to the planned water level so that gradual slopes would allow people or animal to exit the pond. An agreement establishing the responsibility for maintaining the fencing and signage for these ponds until they've filled to the planned water level must be provided to ensure these safety features remain in place beyond the lifespan of the conditional use permit.

With appropriate conditions and restrictions of use, there would be no beneficial impacts from the denial of the application on the public health, safety, and welfare. The hardship of denial, to both the applicant and the community, would be the inability to access the limestone reserves that are located in the area. Transportation costs are a major portion of limestone/gravel cost and having in-county quarries benefits the community with lower cost construction materials.

VII. CONFORMANCE WITH THE COMPREHENSIVE PLAN

An evaluation of the conformance of a conditional use permit request with the comprehensive plan is based on the strategies, goals, policies and recommendations contained within *Plan 2040.*

Goal 1, Chapter 2, Growth & Development: *Protect and preserve rural character through compatible design, conservation, and strong growth management principals.*

Policy 1.4 recommends that land conversion from agricultural land to other non-agricultural land use be minimized.

The subject property currently contains a residence and woodland with a wooded stream corridor on the eastern portion of the property. The remainder is used for agricultural purposes. The residence will be removed prior to the quarrying activity and a 100-foot wide stream corridor buffer will be maintained. When quarrying is complete, the property will be reclaim3ed so that it is suitable for agricultural uses. The quarry use is compliant with the comprehensive plan in that it is a temporary use and the reclamation plan ensures that the land is returned to a rural state and would be suitable for agricultural uses.

Chapter 6, Natural Resources, states that *"Proper extraction and remediation of natural materials such as sand, gravel, timber, oil, gas, and stone, are essential to sustainable development activity."*

Goal 4, Natural Resources, "*Properly manage natural resources to ensure sustainability, marketability, and environmental quality for the community."*

Policy 4.2 "Recognize the need for the extraction of local natural resources to keep construction costs economically reasonable, while mitigating impacts to the environment and surrounding land uses in the evaluation of new extraction proposals."

The comprehensive plan identifies the need to accommodate the extraction of local natural resources while mitigating impacts to the environment and surrounding land uses. The restrictions of use applied to the original conditional use permit, when extended to the new parcel to the west, should adequately mitigate impacts to the surrounding land uses. Maintaining the 100-foot wide stream corridor should minimize the impact of the quarry on the stream through the property. The quarry will obtain and maintain all necessary regulatory permits from State and Federal agencies/departments to minimize the impact of the quarry on the environment.

Staff Finding – The request to expand the area within the conditional use permit and to allow an expanded area to be open and mined from are compliant with the recommendations in *Plan 2040* that recognizes extraction of natural resources as essential and recommends that the process be managed to minimize impacts on the environment and surrounding land uses. The conditions and restrictions of use, as revised, will minimize negative impacts.

STAFF REVIEW

This application is requesting three changes to the conditional use permit:

1) Expansion of quarry area to include a 50 acre parcel located to the west;
2) Expansion of area which is permitted to be 'open and mined from' from 30 to 50 acres;
3) Change to operating hours to allow production and extraction from 7AM to 5PM to 6 AM to 8 PM Mon.-Sat

1) Quarry Expansion

Adding the approximately 50 acre parcel to the west (Shelton parcel) to the quarry will allow the applicant to access the limestone reserves in the area. As noted earlier in the report, setbacks have been established to provide a separation from the nearby residences. The perimeter of the site would be screened with a six foot tall berm, and the site will be fenced to prevent trespassing. Where needed, a 3-foot tall berm will be installed on the interior side of the 6-foot tall berm to assist in drainage. Breaks will be provided in the berm to allow for the flow of the creek and to accommodate the current drainage from the south.

2) Increase in Area to be Open, Mined, and Extracted From

The last paragraph in Restriction of Use No. 9 (IX) states that *"No more than 30 acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site."* The applicant is requesting that this restriction be revised to permit 50 acres to be open at one time.

The applicant indicated that the request to have a larger mining activity area (50 acres) opened at one time would provide the maneuvering room necessary for large equipment and would accommodate the mining activities necessary to reach the lower levels. Ledges are created to access the lower deposits and the applicant indicated that a larger area would allow them to operate at these lower depths safely. Increasing the area permitted to be open at a time would increase operating safety, capacity, and efficiency. The plan shows that the depth of the pit would be 200 feet. The County Engineer indicated the larger area was reasonable for operations within this deeper pit.

The increase in area to be openly mined from would be beneficial for the operator in allowing them more room for maneuvering the quarry vehicles and equipment. This change may allow the quarry to operate more efficiently and safely.

3) Reclamation Bond

An important component of quarries is the reclamation of the property. Adequate provisions for completion of reclamation for this site is required. A reclamation plan for both phases was submitted with this application. The reclamation plan notes a range of variation for the final elevation of 10 feet higher or lower than shown on the plan. If the reclamation varies beyond this recommended range, a revised reclamation plan would need to be submitted for Planning review and Board of County Commissioners approval prior to quarrying beyond the 10 acres in the following phase.

In 2018, an application for an amended conditional use permit for another quarry in the county, the Big Springs Quarry, included a request to reduce the performance bond for reclamation. Staff reviewed the performance bonds required for various quarries in the state and found a disparity. Some conditional use permits required that the quarry pay the state required reclamation bond and others had varied bond requirements. A table comparing the performance bond for reclamation between several quarries in the state of Kansas and other states is included with this report as an attachment. A summary of the quarries within Douglas County is below.

Big Springs Quarry CUP-7-2-90, replaced by CUP-18-00570	Bond amount reduction from 400,000 per 10 acres to $40,000 per 10 acres approved 3/20/2019	$100,000 for plant site on Phase 1, for life of quarry. $50,000 for first site excavated—up to 10 acres—($5,000 per acre)
Eudora Quarry CUP-12-16-02	Approved 2003, 129 acres	As required by KS statutes. $600 per acre, provided to the state
Harrell Quarry CUP-1-3-75	Approved 1975, 160 acres	None
Hamm-Buchheim Quarry CUP-11-5-76	Approved 1976, 73 acres	"an amount set by the BoCC" $1,500/acre for any land disturbed and not reclaimed
Globe Quarry	Pre-dated zoning, no CUP; 50 acres	As required by KS statutes. $600 per acre provided to the state

Table 1. Comparison of performance bonds for reclamation for quarries in Douglas County.

With the review and approval of the request to reduce the performance bond for the Big Springs Quarry, the Planning Commission indicated staff should review performance bonds for reclamation when other quarries amended their conditional use permits, or when new applications were submitted, in an effort to create more equitable conditions and restrictions for quarries with conditional use permits

The Kansas Department of Agriculture, Division of Conservation oversees surface mining reclamation in Kansas. A $400 per acre bond is required for reclamation of sand/gravel operations and $600 per acre for all other minerals. Staff discussed this bond amount with Scott Carlson, Kansas Mined Land Reclamation Program Manager, and he noted that this figure is inadequate for reclamation and he has been working to increase the bond amount. A 2013 letter from Scott Carlson noting that Hamm's has a replacement Corporate Demonstration Bond of $2,196,000 on file for 3,660 acres or $600 per acre was included with the conditional use permit application. A 2020 letter was later provided which notes that

Hamm's has a Corporate Demonstration Reclamation Bond of $138,515,000 for 2,086 acres. (Attachment H) Staff contacted the County Counselor for information on the Corporate Demonstration Bond but he indicated he wasn't familiar this type of bond.

The quarry is in compliance with the current reclamation performance bond required with the conditional use permit; however, the cost of reclamation has not been estimated so it isn't possible to determine if the amount of bond provided the State of Kansas would be adequate to reclaim the property as shown on the reclamation plan.

In order to create a more equitable condition, Staff recommends that, as with the Big Springs quarry, the applicant contract with three reputable businesses qualified to do this type of work, for bids. These bids would be reviewed by staff and the amount for the performance bond for reclamation would be presented to the Board of County Commissioners for approval. The bond would need to be in place prior to the commencement of quarrying with the amended conditional use permit. The new parcel, if expansion is approved, would be included in the new performance bond condition as well as the Neis parcel, if the request to increase the maximum area that can be open and mined from to 50 acres is approved.

4) Reclamation

A requirement has been added to the conditions and restrictions of use that the Planning Office be notified when quarrying on Phase 1 is nearly completed and the quarry plans to move on into the first 10 acres of Phase 2. The required studies must be submitted and approved prior to any quarrying occurring in Phase 2 and the reclamation in Phase 1 must be determined by the Planning Office to have occurred in compliance with the reclamation plan before quarrying can continue beyond the 10 acres permitted in Phase 2.

Large quarries employ sequential reclamation. This occurs when the overburden materials taken from a part of the pit is used to reclaim the previous portion of the pit. Reclamation on the Hamm Quarry will be sequential when possible, but the depth of quarrying, approximately 200 feet, requires a larger area to be open and mined in order to provide stability for the various ledges. Overburden that is removed during the early stages of mining will have to be stockpiled for use at a later time. The original conditional use permit anticipated and permitted the stockpiling of overburden.

The current plans show the portion of the Petefish parcel east of the creek as being reclaimed in 2020. Planning must be notified when reclamation is complete so the reclamation can be evaluated and documented. Given the depth of the Neis parcel pit, the sequential reclamation may not be evident until quarrying is complete and the stockpiled overburden is placed on the site.

- The operator shall contact the Planning Office prior to moving quarrying operations into Phase 2 so the partial reclamation of Phase 1 can be reviewed against the approved reclamation plan. If any changes are necessary to the approved reclamation plan, a revised reclamation plan shall be submitted for review by Planning and must be approved by the Board of County Commissioners prior to the commencement of quarrying in Phase 2.

- Up to 10 acres in Phase 2 may be quarried when the partial reclamation has been found to be in general compliance with the approved reclamation plan, or when a revised reclamation plan has been submitted and approved.

- Quarrying beyond this 10 acre limit will require Planning approval of the reclamation on Phase 1 (graded, top soil applied, and seeded/mulched).
- The operation plan and report that is required every 5 years will provide an overview of the status of the quarry and show graphically where mining is occurring and where reclamation has occurred.

The City of Eudora Planning Commission commented that the applicant provide sufficient details regarding the restoration of the property or conditions be added by the County to ensure that such restoration be completed in a timely fashion after termination of the permit or closing of the quarry to the satisfaction of applicable Federal, State, and local requirements. The provisions noted above are intended to ensure that information is provided regarding the reclamation and that reclamation shall occur prior to quarrying of more than 10 acres in the next phase. The performance bond for reclamation provides additional assurance of the completion of reclamation per the reclamation plan.

5) Access on E. 2300 Road. The revised plans propose limited quarry access from E. 2300 Road. The existing access drive would be retained and used for field access and for limited quarry access which would include quarry management staff, surveying crews, seismology crew, and blasting crew. The Eudora Township trustee approved the limited use of the access on E. 2300 Road provided no heavy quarry equipment used the access. This access would allow these smaller vehicles to access Phase 2 directly rather than through the plant site and former Phase 1. Staff recommends approval of this access point with the addition of the condition limiting the use to field and limited quarry access.

One comment provided by the City of Eudora Planning Commission was that there be no change to the traffic ingress/egress. Eudora's planning consultant noted that the Eudora Planning Commission has a "sensitivity to any increased trucking that may come through the community of Eudora". The new access on E. 2300 Road would alter the ingress/egress so that smaller vehicles associated with the quarry could enter the Shelton parcel directly, rather than needing to cross the plant site and Phase 1 to access this portion of the quarry. This change will increase safety for the quarry operation and will only permit limited access on E. 2300 Road. There will be no change to the approved truck route and this limited access would not increase the amount of trucking that occurs through the community of Eudora.

6) Impact of Quarrying on Water in Coleman Creek and Tributary
A neighboring property owner contacted Planning with concerns about the impact of quarrying on the springs and streams in the area. Staff provided the operation and reclamation plans to the Kansas Geological Survey and asked if the depth of the pit or the quarrying activities would have a negative impact on Coleman Creek, the creek crossing the Neis parcel. Kansas Geological Survey reviewed the plans and indicated there should be minimal impact on Coleman Creek. They noted that the area between the pit and the creek is almost continuous bedrock so little travel is expected between the pit and the creek. They also noted that limestone is a good pollution filter, so any water that does reach the creek should have been filtered and not negatively impact the water quality of the creek.

There are areas of wetland on the proposed Shelton parcel that are associated with the Coleman Creek tributary on this parcel and with the pond. The applicant worked with the U.S. Army Corps of Engineers regarding this wetland and provided the Army Corps of Engineers with a map of jurisdictional impacts, included with this report as an attachment. The map shows some of the ephemeral streams (those streams which flow only following a storm event), a portion of the wetland, and the pond being filled. When quarrying moves into Phase

2, a crossing will be constructed over the stream and pipes are shown accommodating the stream during that time. The Army Corps of Engineers reviewed the plan and approved these changes as noted in their Permit 44 letter, attached. While the stream on the Shelton parcel is not named on our maps, the Corps letter refers to it as Captain Creek. The letter notes that, with the conditions of the permit, the proposed activity would have minimal adverse environmental effect and requires that the applicant purchase 1638 stream credits and 0.16 wetland credits from an approved compensatory mitigation bank in the area prior to work commencing in this area. The purchase of the mitigation credits and the obtaining of any additional permits must occur prior to the commencement of quarrying in this area.

Neighbor Concerns and Comments

Concerns and comments raised by Arthur Neis that have not been discussed in this staff report are summarized below:

1. Location of the berms within the setbacks. A portion of the northern boundary of the Shelton parcel is adjacent to Mr. Neis's property. Arthur requested that the berms be placed as close to the interior of the berm as possible. The operation plan shows the location of the berms, and these have been pulled to the interior of the setback where adjacent to Arthur Neis's property.

2. What landscaping is permitted within the setbacks. There aren't specific landscaping requirements for the setbacks. The applicant indicated these would be grassed areas and the drainage areas within the berms would be maintained as grass through best management practices.

3. Location of the stream on Shelton parcel. The nearby land owner had a survey which showed the stream in a different location on the Shelton parcel. The applicant indicated they used the USGS (United States Geological Survey) topographical map to locate the stream on the plans.

4. Marking setbacks on the Site. The applicant indicated that they use a drone and a survey crew to measure the required setbacks from the property lines and the streams and mark these on the site.

5. Supreme Court recent decision on EPA Permits related to a direct discharge into navigable water. I referred this question to the County Engineer who indicated that the Army Corps of Engineers are responsible for implementing the EPA permits and noted that our conditions should include a requirement that the quarry obtain all needed permits from the Corps.

6. Water Quality included with hydrologic survey. Mr. Neis indicated he would like the pre-blast hydrologic survey to evaluate the water quality on his property. The pre-blast hydrologic survey is intended to provide an inventory of the area springs, wells, etc. and measure the quantity of water in these water features. The Kansas Department of Health and Environment enforces water protection measures on the quarry and no discharges are permitted to the adjacent stream until the water has been in a settling pond. Staff hesitates to add this as a condition, as it would be necessary to determine the testing parameters, which features are being tested for, and how the testing is to occur. If the Commission determines this would be a reasonable requirement, the pollutants which would be measured with the test should be identified. This test would be conducted prior to the commencement of quarrying in the Shelton parcel and would serve as a benchmark for later water tests the property owner may have done.

7. Information on bridge to be constructed over the creek on the Shelton parcel. While this has been referred to as a 'bridge' the crossing over the creek on the Shelton parcel will consist of three 48 inch diameter concrete pipes. The County Engineer noted that their drainage report shows the drainage area to these pipes is less than 640 acres so a Division of Water Resources permit won't be required. The U.S. Army Corps of Engineers will review their plans to install the culverts and they'll need a permit from the Corps for all the items. The pipes and other features of the crossing would not be considered 'quarry operations' and would be permitted within the stream setback.

8. Effect of traffic on E. 2300 Road on his agricultural land. Mr. Neis provided a soil study which showed that soils near E. 2300 Road were less productive than elsewhere on the property due to the pH levels and requested that the access point on E. 2300 Road be denied, or that the limited nature of the access be clearly specified. The limited nature of the access is clearly specified in the conditions and restrictions of use. As the soil pH level has been impacted by traffic, staff assumes the impact would not be limited to quarry traffic. As it wouldn't be possible to eliminate or reduce the overall traffic on E. 2300 Road, prohibiting the limited access point would not alleviate the soil quality issues.

REVISED
CONDITIONS AND RESTRICTIONS OF USE
(Deleted text shown as ~~struck through~~ and new text as **bold**)

1. **The operator shall apply for and obtain a floodplain development permit for the work which occurred in the floodplain on the Neis parcel. The floodplain development permit must be obtained prior to the release of the conditional use permit.**

2. **A County performance reclamation bond based on reclamation bids shall be provided for Phase 1 and Phase 2 as shown on the plan.**

   a. **The applicant shall contact with three reputable firms in the area, qualified to complete the reclamation, for bids on the cost of reclamation. These bids will be provided to the Planning Office and the Douglas County Public Works Office for review. Staff will provide the performance bond amount to the Board of County Commissioners with a recommendation. If approved, the conditions and restrictions of use will be revised to note the amount of the performance bond for reclamation, the size of property included in the bond, and the criteria for the release of the bond. This bond must be in place prior to the release of the conditional use permit.**

Conditions and Restrictions of Use

1. Allowed Uses
   Quarry operations on this site shall consist of only the following:
   a) Removal of overburden and the extraction and processing of limestone utilizing a portable plant and equipment.
   b) Stockpiling of topsoil, overburden, and limestone.
   c) Transportation and hauling of limestone and materials.
   d) Reclamation of the site.
   e) Blasting operations.

   The property shall not be used or requested for use as a sanitary landfill within the life of this conditional use permit.

2. Setbacks
   Operations setbacks vary around the perimeter of the site based on the submitted site plan. Required setbacks are:
   a) A minimum setback of 500 feet from existing residences shown on the site plan.
   b) A minimum setback of 150 feet from the perimeter of the site, unless otherwise specified.
   c) A minimum setback of 100 feet from the west side of Coleman Creek running through the site (Neis parcel). No quarry operations are permitted east of Coleman Creek
   d) **A minimum setback of 100 feet centered along the stream on the Shelton parcel, separating Phase 1 and 2.**
   e) The regulatory floodplain adjacent to Coleman Creek, as required by the Zoning and Codes Director.

3. Time Restrictions on Operations
   a) Removal of materials from site: ~~6 a.m. – 9 p.m., Mon. Sat~~.;
      6 a.m. – 7 p.m. Mon.-Fri
      6 a.m. – 4 p.m. Sat.
   b) Production and extraction: ~~7:00 a.m. – 5:00 p.m., Mon. Sat~~
      7 a.m. – 8 p.m. Mon.-Fri.
      7 am. – 5 p.m. Sat.
   c) Blasting: See Blasting in Condition 4

   d) No quarry operations shall take place on the following holidays or the days on which such holidays are observed by Kansas State Government: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day, the day immediately following Thanksgiving Day, and Christmas Day.

   e) If ~~production~~ demand requires additional **hours for sales and removal of product or** production and extraction ~~time~~ outside the normal schedule, application for specific additional hours of operation for a specified period may be requested of the County Commission. Additional hours of operation for limited periods **is permitted only when** ~~must be~~ approved by the County Commission.

4. Blasting
   a) Blasting will follow recognized standards of the industry. **Blasting shall be set only in sequential delays.**

   b) Blasting shall be conducted between noon and 2:00 p.m. to the maximum extent possible and allowable by weather and atmospheric conditions.

   c) Blasting between 10:00 a.m. – noon and 2:00 p.m. – 4:00 p.m. shall be allowed occasionally to allow for weather and other conditions for efficient operation of the quarry. Blasting from 10:00 a.m. and noon 8:00 a.m. – 10:00 a.m. and 4:00 p.m. to 5:30 p.m. shall be permitted only in those circumstances when conditions during other allowable periods are unfavorable.

   d) No explosives will be set in the ground overnight unguarded.

5. Pre-blast Survey and Hydrologic Study
   ~~a) Any resident or property owner within 1/2 mile of the property may request Hamm Quarries to provide a pre-blast survey of their residences, wells, springs, and outbuildings to determine the pre-blast condition, document such condition, and provide the report to the resident. Such a survey shall be paid for by Hamm Quarries and conducted by independent seismology and insurance firms.~~

   a) A pre-blast survey documenting the pre-blast condition, shall be offered to the owners of property within one-half mile of the expanded portion of the quarry, the Shelton parcel, and conducted, if the property owners request, prior to blasting on the Shelton parcel. The pre-blast survey shall be conducted by an independent seismology firm or structural engineer approved by the quarry operator and the owners of existing structures within one-half mile of the quarry site.

(Notice shall be mailed, by certified mail, to all property owners within one-half mile of the within one-half mile of the expanded portion of the quarry, the Shelton parcel, at least one month prior to the commencement of quarrying activity in that area. The letter shall indicate that a new portion of the property is about to be quarried and inform the property owner about the pre-blast survey. A copy of the letter and a list of properties which requested a survey shall be provided to the Planning Office.)

b) Hydrologic Study
A pre-blast study shall be conducted, at the operator's expense, for all wells and springs within one-half mile of the expanded portion of the quarry, the Shelton parcel and prior to blasting in the Shelton parcel, if requested by the property owner. This study is intended to provide an inventory of area residential and stock wells and springs and determine their capacities and current volumes/levels of operation prior to the commencement of quarrying operations in that phase.

(Notice shall be mailed, by certified mail, to all property owners within one-half mile of the property the expanded portion of the quarry, the Shelton parcel, at least one month prior to the commencement of quarrying activity on that parcel. The letter shall indicate that a new portion of the property is about to be quarried and inform the property owner about the pre-blast survey. A copy of the letter and a list of properties which requested a study shall be provided to the Planning Office.)

6. Blast Monitoring
   a) Hamm Quarries shall contract with an independent seismology firm to monitor blasts, at the commencement of quarrying operations, at each residence within one-half mile of the blast site to assure that the blast design will not be harmful to any structures or wells and that all associated vibrations are below currently recognized safety levels. A report on the monitoring of initial blasting shall be made available to owners of the residences and such report shall include a full frequency analysis of vibrations.

   b) After the initial blasting, Hamm Quarries shall contract for a continuous monitoring program commencing with the start of continuous regular blasting by an independent seismology firm at stations chosen by the seismology firm. A monthly report, which analyzes the impacts of daily blasting, will be available at Hamm Quarries' offices for inspection. Residents may request positioning of the seismograph to measure the impact at their property. The applicant shall not be required to conduct tests in excess of those it determines, based on the professional advice of its independent seismology firm, will provide adequate seismic readings at resident's properties. Any resident desiring to appeal the decision of the applicant concerning this condition may appeal it to the Douglas County Public Works Director who may order seismic tests at such locations as they deem appropriate under the circumstances at the expense of Hamm Quarries.

7. Fencing
   ~~A fencing and screening plan shall be submitted by the applicant and approved by the County Commission prior to commencement on the permitted property. The fence along N. 1200 Road for the existing quarry will be repaired.~~ **The perimeter of the quarry site**

shall be fenced with 5-strand barb wire as shown on the operation plan. This fencing shall be maintained for the life of the quarry.

a) A security gate and fence shall be placed at the entrance to the quarrying site on N. 1200 Road across the main haul road. The secure gate is to be locked during hours when no staff are present on the site.

b) The entrance **on N. 1200 Road** shall be signed stating:
   i) The operator's name, business address, and phone number;
   ii) Conditional use permit number; and
   iii) "No Trespassing'.

c) A security gate shall be installed on the limited access on E. 2300 Road with 'No Trespassing' signage. The secure gate is to be locked when no staff are present on the site.

8. Air Quality
The quarry operator shall adhere to air quality standards of the Kansas Department of Health and Environment (KDHE). Airborne dust produced as a result of the quarry shall be controlled by the operator and shall comply with all requirements of the Air Quality Standards and Regulations of the KDHE. Specifically, such airborne dust produced as a result of the quarrying operation shall not exceed 20 percent of opacity more than one (1) time in a one (1) year period as observed by an Official Observer of the KDHE over a five (5) minute period.

9. Other Regulatory Restrictions
   a) All applicable regulations of utility companies, Environmental Protection Agency (EPA), Kansas Department of Health and Environment (KDHE), Kansas State Board of Agriculture – Division of Water Resources (DWR), **U.S. Army Corps of Engineers,** and State Conservation Commission (SCC), and other applicable agencies shall be adhered to and subsequent revisions to these regulations shall apply.

   b) All permits needed to operate a quarry, such as a national Pollutant Discharge Elimination System Permit, Mine Identification Number, Kansas State Board of Agriculture DWR Permit to wash rock, discharge permit, etc. shall be obtained **and maintained through the life of the quarry**.

   c) **The operator shall purchase the required mitigation credits and any necessary permits required by the Army Corps of Engineers, or Kansas Department of Health and Environment for the activity associated with the wetland on the Shelton parcel and provide documentation to the Planning Office prior to the release of the conditional use permit.**

10. ~~Reclamation and Review~~ **Operation Plan**
   a) Prior to commencing operation of the quarry, the first year of operation, and every 5 years thereafter, the applicants shall submit a detailed report and plan of quarrying operations to the Planning Office and to the Douglas County Public Works Director indicating the phases of quarry operation, location of stockpile areas, estimated volume of material being extracted, and ~~a detailed monitoring and management plan~~

~~for the areas undergoing~~ **information on reclamation of the quarry: identifying the areas where reclamation is complete and where it is ongoing.**

11. **Reclamation Plan, Monitoring and Management**
    a) Detailed reclamation plans **shall be** submitted for each phase of the reclamation process for review and recommendation by the Planning Staff and approval by the County Commission **prior to the commencement of quarrying activities in that phase.** ~~The reclamation plan for the existing quarry shall be submitted prior to commencement of operations on Cuts #1-4 shown on the plan. The reclamation plan for Cuts #1-4 shall be submitted prior to opening of quarrying activities in 'Future Reserves', and each subsequent reclamation plan shall be submitted prior to the opening of the following phase of quarrying activity.~~ The property shall be reclaimed to a state similar to the existing state (or better) with reference to general topography, percent slope, and plant and animal life supported by the established ecosystem. The plan shall be reviewed by the Lawrence-Douglas County Planning Commission for recommendation to the Board of County Commissioners for **action** ~~their approval.~~

    b) ~~A performance bond in the amount required by applicable Kansas statutes with sufficient sureties shall be secured to cover reclamation activities for the existing site and proposed Cuts #1-4 as designated on the site plan and shall be filed with the Kansas State Conservation Commission (KSCC) prior to the commencement of any site preparation activities or any other work being done pursuant to the CUP. This performance bond shall remain in place for the entire life of the permit and shall not be subject to release until the plant site has been fully reclaimed and certification thereof shall have been made by the KSCC. The performance bond must meet the standards and statues of the State of Kansas.~~

    b) **Performance Bond for Reclamation.**
    In addition to the reclamation bond required by the State of Kansas, a county performance reclamation bond shall be required for the Shelton parcel, if the expansion is approved, and the Neis parcel, if an increase in the maximum mining area is approved.

    A County performance reclamation bond based on reclamation bids shall be provided for Phase 1 and Phase 2 as shown on the plan. The applicant shall contact with three reputable firms in the area, qualified to complete the reclamation, for bids on the cost of reclamation. These bids will be provided to the Planning Office and the Douglas County Public Works Office for review. Staff will provide the performance bond amount to the Board of County Commissioners with a recommendation. If approved, the conditions and restrictions of use will be revised to note the amount of the performance bond for reclamation, the size of property included in the bond, and the criteria for the release of the bond. This bond must be in place prior to the release of the conditional use permit.

12. Limit on area that can be open, mined and extracted from
    a) No more than ~~30~~ **50** acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site.

13. **<u>Phasing</u>**
The operator shall notify the Planning Office when quarrying on Phase 1 is nearly completed prior to quarrying occurring in the first 10 acres of Phase 2.

(i) The required studies must be submitted and approved and pre-blast and hydrologic surveys conducted prior to <u>any</u> quarrying occurring on the Shelton Parcel.

(ii) If the reclamation of the site is found to be out of compliance with the approved plan, a revised reclamation plan must be submitted to the Planning Office for review and forwarded to the Board of County Commissioners with a recommendation. Quarrying cannot commence in Phase 2 until a revised reclamation plan has been approved by the Commission.

(iii) Reclamation of Phase 1 must be determined by the Planning Office to have occurred in compliance with the reclamation plan before quarrying can continue beyond the 10 acres permitted in Phase 2. For this purpose, reclamation is considered complete when the site has been final graded, seeded, and mulched. Vegetation does not need to be established at this time.)

(iv) The operator shall notify Planning when reclamation of the eastern portion of Petefish parcel has occurred so the reclamation can be evaluated and documented.

14. <u>Drainage Study</u>
Prior to work progressing in each phase of the quarrying operation, a detailed grading plan showing site runoff and its relationship to the adjoining properties shall be submitted to the Planning Office for review and approval prior to work progressing in each phase.

15. <u>Site Access and Road Restrictions</u>
a) No direct access shall be permitted to E. 2400 Road.
b) The access to the site for transport truck traffic and hauling of rock shall be restricted to N. 1200 Road.
c) The route for truck traffic heading out of the site shall be west on N. 1200 Road to County Route 1061/ E. 2200 Road (Church Street).
d) The access on E. 2300 Road shall be closed with a secure gate and shall be used only for field and limited quarry access.
i) Access is limited to agricultural vehicles, and vehicles of quarry management, surveying crews, seismology crews, and blasting crew.
ii) Heavy quarry equipment is prohibited from using the access on E. 2300 Road.

e) ~~The applicant shall provide rock, culvert pipes, and construction assistance to Eudora township and Douglas County to improve N. 1200 Road from E. 2400 Road to County Road 1061 (E. 2200 Road / Church Street) in conformance with requirements of Eudora township and Douglas County Public Works Department.~~

~~i. The improvements required include replacement of four culverts according to Douglas County Public Works specifications and improvement of the road base and surface to a minimum width of 24 feet.~~

~~ii. Applicant shall pay Douglas County for costs of acquiring any additional right-of-way needed for the roadway and culvert improvements.~~

~~iii. Required road improvements shall be completed prior to any rock being extracted from the new permitted property.~~

i. Applicant shall periodically supply rock and dust control for maintenance of the township road during periods of quarry activity.

ii. Applicant shall pay Douglas County a fee of 10 cents per ton of rock hauled from the permitted property. The fee per ton amount will be indexed every year based on the Consumer Price Index for all urban consumers-all items. Funds from the fee shall be deposited by Douglas County in an account to be used by Public Works to assist in the maintenance of County roads used by trucks hauling rock from the quarry.

f) The following restrictions, regarding vehicles hauling from the site, shall be posted at the entrance to the quarry/plant site:
   i. No flat-bed trucks without sides or tailgates;
   ii. Tailgates in place and upright position; and
   iii. All trucks leaving the site must be covered by a secure tarp.

g) Hamm Quarries shall be responsible for spillage and clean-up of aggregate within one-mile of the plant site. The failure of the applicant to clean up spilled aggregate of such roads within a reasonable period of time shall be grounds for action under the Inspection/Violation/Revocation.

h) ~~Weight limitations shall be posted on appropriate roads adjacent to the quarry.~~ **The operator will not allow trucks to exceed State of Kansas legal weight limits or legally posted weight limits since different truck configurations have different legal weight limits.**

i) Hamm Quarries shall take the lead to communicate and cooperate with the Douglas County Public Works Director and Eudora city and school officials on traffic controls on county roads during periods of quarry activity.

16. <u>Noise and Light Pollution</u>

a) Vehicles used in plant operation (extraction and production) after 5:30 p.m., or ½ hour prior to sunset, shall be equipped with **manufactured lighting** ~~a strobe light~~ in addition to the back-up (audible) signal alarm. ~~During hours when it is permissible to use only a strobe light, the audible signal shall be turned off.~~

b) Permanent outdoor lighting at the plant area, mining area, and haul roads shall be shielded with a solid screen and directed down to prevent light pollution **and glare** beyond the site boundaries. ~~Lighting is restricted to low pressure sodium.~~ **If permanent lighting is proposed for the site, a lighting plan must be submitted to the Planning Office for review and approval prior to the installation of the lighting.**

c) Portable lighting fixtures used at the plant area, mining area, and haul roads shall be shielded and directed down to prevent light pollution **and glare** beyond the site boundaries.

17. Permit Attached to Operator
A change in the quarry operator shall require the conditional use permit to come back to the Planning Commission for review and to the Board of County Commissioners for re-approval.

18. Pond Maintenance
An agreement establishing the responsibility for maintaining the fencing and signage for the remaining ponds until they've filled to the planned water level must be provided to ensure these safety features remain in place beyond the lifespan of the conditional use permit. This agreement must be executed prior to any mining occurring with this conditional use permit.

19. Inspection/Violation/Revocation
The Board of County Commissioners, or the appointed representatives thereof, shall have the right, without advance notice, to enter the premises and inspect any aspect of the quarry operation for compliance with the conditions of this permit. Upon entering the premises, the County shall first request an escort by the applicant's representatives. ~~If no escort is available, the inspection may proceed immediately~~.

If the quarry is found to be out of compliance, the Zoning and Codes Director may:

a. Order the stoppage of any operation occurring in violation of the terms of this permit;

b. Order the operator to adopt such remedial measures as are necessary to comply with the terms of the conditional use permit; and/or

c. Recommend that additional action be taken pursuant to the 'Amendment or Revocation of Conditional Use Permits' section of the Zoning Regulations.

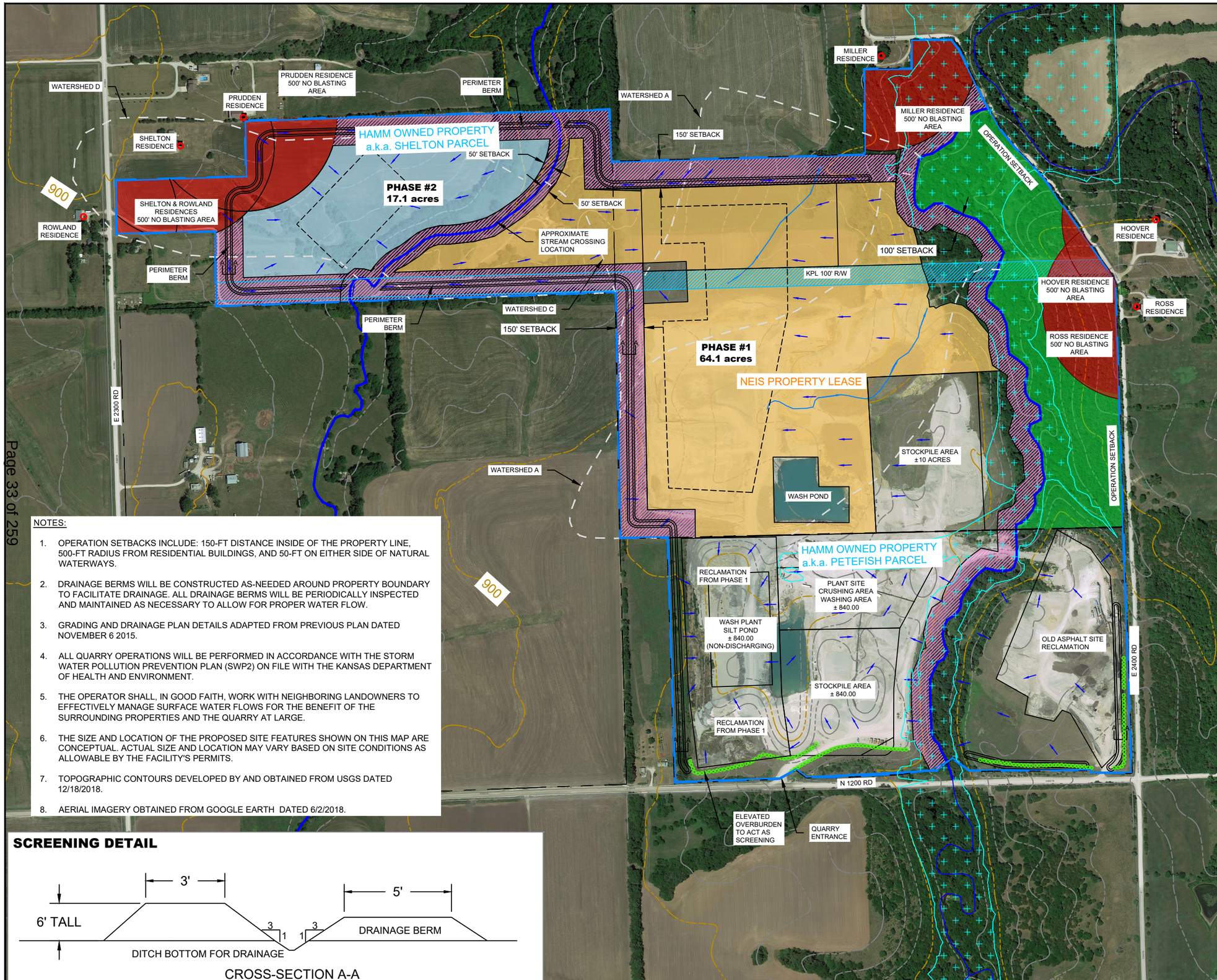
20. Reviews
a) The conditional use permit and all conditions attached thereto will be reviewed by the Planning office and a report forwarded to the County Commission every five (5) years. The applicant shall provide a report setting out quarry operations over the five year period and certifying compliance with the Conditions of Approval and Restrictions of Use.

b) At the times of such review, the County Commission shall review all conditions and Hamm Quarry's compliance therewith. If the County Commission finds that Hamm Quarries has failed to abide by any conditions listed in this document, the Commission may, after such appropriate notice to comply and opportunity to correct non-compliance within a reasonable time prior to taking action on permit revocation, revoke the conditional use permit.

~~c) For the first five year review, Hamm Quarries shall provide a property ownership list to the Planning Office which will notice property owners within 1,000 feet of the property of the Commission's review process.~~

21. Time Limit on the Conditional Use Permit
    The conditional use permit will expire in 2033 (30-year time limit), after which the owner/applicant shall be required to seek approval through a new conditional use permit approval procedure.

22. Applicant/Hamm Quarries
    Throughout these Restrictions of use, the terms 'Applicant', 'applicant', 'Hamm, Hamm Quarries, and similar designations are used interchangeably. All such terms shall refer to N.R. Hamm Quarry, Inc. or Hamm Quarry Inc. and their successors and permitted assigns.



LEGEND

- 850 — 50-FT TOPOGRAPHIC CONTOUR
- 10-ft TOPOGRAPHIC CONTOUR
- DRAINAGE FLOW DIRECTION
- WIRE PERIMETER FENCE
- BOTTOM OF MINING PIT
- CEDAR TREES
- OPERATION SETBACK
- CENTER OF 500' BLASTING RADIUS
- NATURAL CREEK/STREAM CHANNEL
- APPROXIMATE WATERSHED BOUNDARY
- ZONE A 100-YEAR FLOODPLAIN
- UNDISTURBED AREA
- PHASE #1 AREA (64.1 AC)
- PHASE #2 AREA (17.1 AC)

PLAN OF OPERATION:

PHASE 1 - 2025 (ESTIMATED)

PHASE 2 - AFTER PHASE 1 IS COMPLETED

NOTES:

1. OPERATION SETBACKS INCLUDE: 150-FT DISTANCE INSIDE OF THE PROPERTY LINE, 500-FT RADIUS FROM RESIDENTIAL BUILDINGS, AND 50-FT ON EITHER SIDE OF NATURAL WATERWAYS.
2. DRAINAGE BERMS WILL BE CONSTRUCTED AS-NEEDED AROUND PROPERTY BOUNDARY TO FACILITATE DRAINAGE. ALL DRAINAGE BERMS WILL BE PERIODICALLY INSPECTED AND MAINTAINED AS NECESSARY TO ALLOW FOR PROPER WATER FLOW.
3. GRADING AND DRAINAGE PLAN DETAILS ADAPTED FROM PREVIOUS PLAN DATED NOVEMBER 6 2015.
4. ALL QUARRY OPERATIONS WILL BE PERFORMED IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWP2) ON FILE WITH THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT.
5. THE OPERATOR SHALL, IN GOOD FAITH, WORK WITH NEIGHBORING LANDOWNERS TO EFFECTIVELY MANAGE SURFACE WATER FLOWS FOR THE BENEFIT OF THE SURROUNDING PROPERTIES AND THE QUARRY AT LARGE.
6. THE SIZE AND LOCATION OF THE PROPOSED SITE FEATURES SHOWN ON THIS MAP ARE CONCEPTUAL. ACTUAL SIZE AND LOCATION MAY VARY BASED ON SITE CONDITIONS AS ALLOWABLE BY THE FACILITY'S PERMITS.
7. TOPOGRAPHIC CONTOURS DEVELOPED BY AND OBTAINED FROM USGS DATED 12/18/2018.
8. AERIAL IMAGERY OBTAINED FROM GOOGLE EARTH DATED 6/2/2018.

SCREENING DETAIL

CROSS-SECTION A-A
NOT TO SCALE

BLACKSTONE ENVIRONMENTAL
16200 FOSTER STREET OVERLAND PARK, KS 66085
P: 913-495-9990 F: 913-648-2077

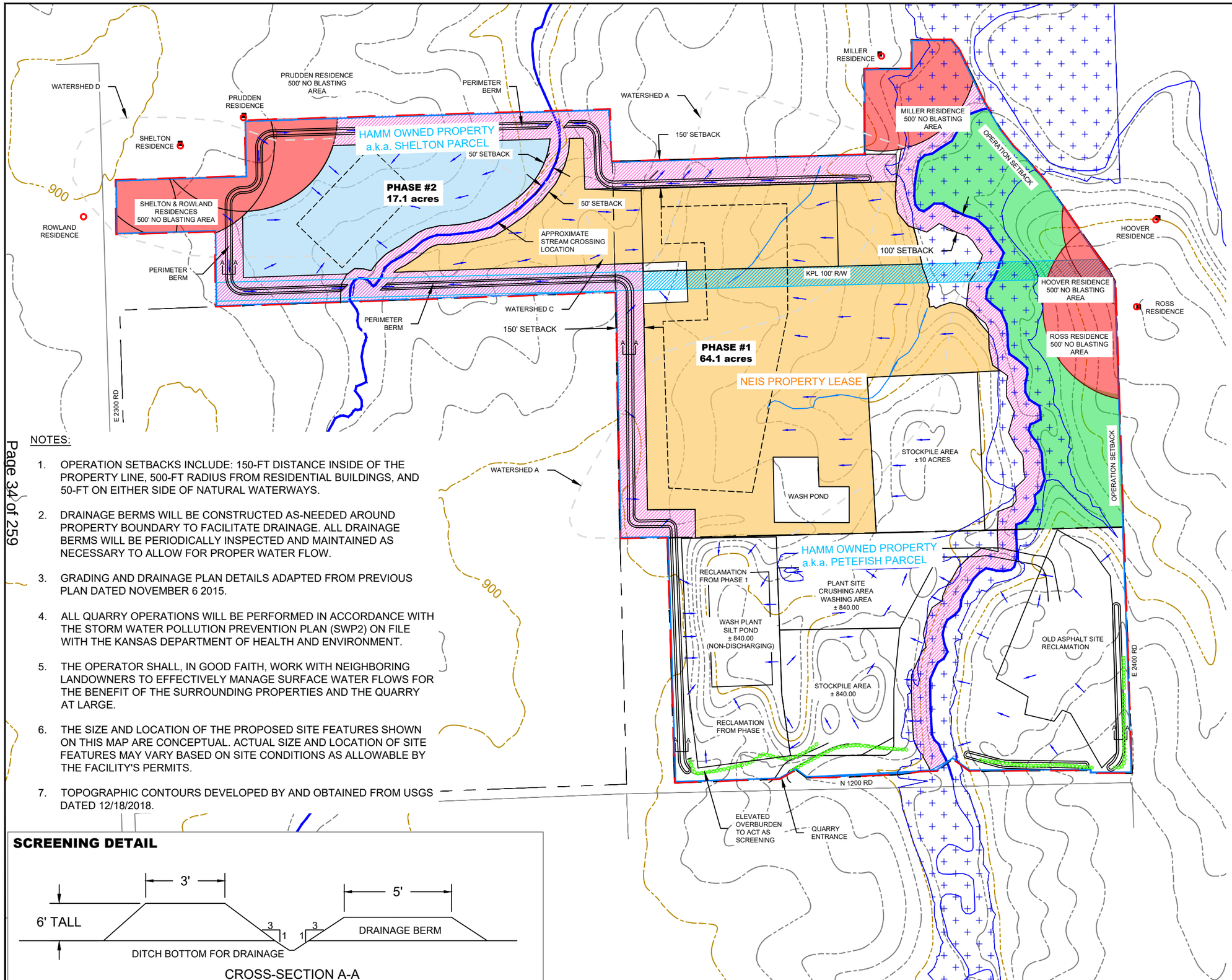
SHEET NAME: OPERATION AND DRAINAGE EXHIBIT
PROJECT NAME: QUARRY MISC.
PROJECT LOCATION: EUDORA, KS

CLIENT: NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Date 4.17.2020
Project Mgr.: KK
Designed By: AQ
Drawn By: AQ
Checked By: KK
Job No.: 2188
Rev.
Rev.
Rev.
Rev.

SHEET 1

File: D:\Egnyte\Shared\Clients\Hamm\PROJECTS\2188 - Quarry Misc. Assistance\WORKING\Eudora Quarry\CAD\GRADING AND DRAINAGE PLAN



LEGEND

- 850 — 50-FT TOPOGRAPHIC CONTOUR
- 10-FT TOPOGRAPHIC CONTOUR
- PARCEL BOUNDARY
- PROPERTY BOUNDARY
- DRAINAGE FLOW DIRECTION
- WIRE PERIMETER FENCE
- BOTTOM OF MINING PIT
- CEDAR TREES
- OPERATION SETBACK
- CENTER OF 500' BLASTING RADIUS
- NATURAL CREEK/STREAM CHANNEL
- APPROXIMATE WATERSHED BOUNDARY
- ZONE A 100-YEAR FLOODPLAIN
- UNDISTURBED AREA
- PHASE #1 AREA (64.1 AC)
- PHASE #2 AREA (17.1 AC)

PLAN OF OPERATION:

PHASE 1 - 2025 (ESTIMATED)

PHASE 2 - AFTER PHASE 1 IS COMPLETED

NOTES:

1. OPERATION SETBACKS INCLUDE: 150-FT DISTANCE INSIDE OF THE PROPERTY LINE, 500-FT RADIUS FROM RESIDENTIAL BUILDINGS, AND 50-FT ON EITHER SIDE OF NATURAL WATERWAYS.
2. DRAINAGE BERMS WILL BE CONSTRUCTED AS-NEEDED AROUND PROPERTY BOUNDARY TO FACILITATE DRAINAGE. ALL DRAINAGE BERMS WILL BE PERIODICALLY INSPECTED AND MAINTAINED AS NECESSARY TO ALLOW FOR PROPER WATER FLOW.
3. GRADING AND DRAINAGE PLAN DETAILS ADAPTED FROM PREVIOUS PLAN DATED NOVEMBER 6 2015.
4. ALL QUARRY OPERATIONS WILL BE PERFORMED IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWP2) ON FILE WITH THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT.
5. THE OPERATOR SHALL, IN GOOD FAITH, WORK WITH NEIGHBORING LANDOWNERS TO EFFECTIVELY MANAGE SURFACE WATER FLOWS FOR THE BENEFIT OF THE SURROUNDING PROPERTIES AND THE QUARRY AT LARGE.
6. THE SIZE AND LOCATION OF THE PROPOSED SITE FEATURES SHOWN ON THIS MAP ARE CONCEPTUAL. ACTUAL SIZE AND LOCATION OF SITE FEATURES MAY VARY BASED ON SITE CONDITIONS AS ALLOWABLE BY THE FACILITY'S PERMITS.
7. TOPOGRAPHIC CONTOURS DEVELOPED BY AND OBTAINED FROM USGS DATED 12/18/2018.

SCREENING DETAIL

CROSS-SECTION A-A
NOT TO SCALE

BLACKSTONE ENVIRONMENTAL
16200 FOSTER STREET OVERLAND PARK, KS 66085
P: 913-495-9990 F: 913-648-2077

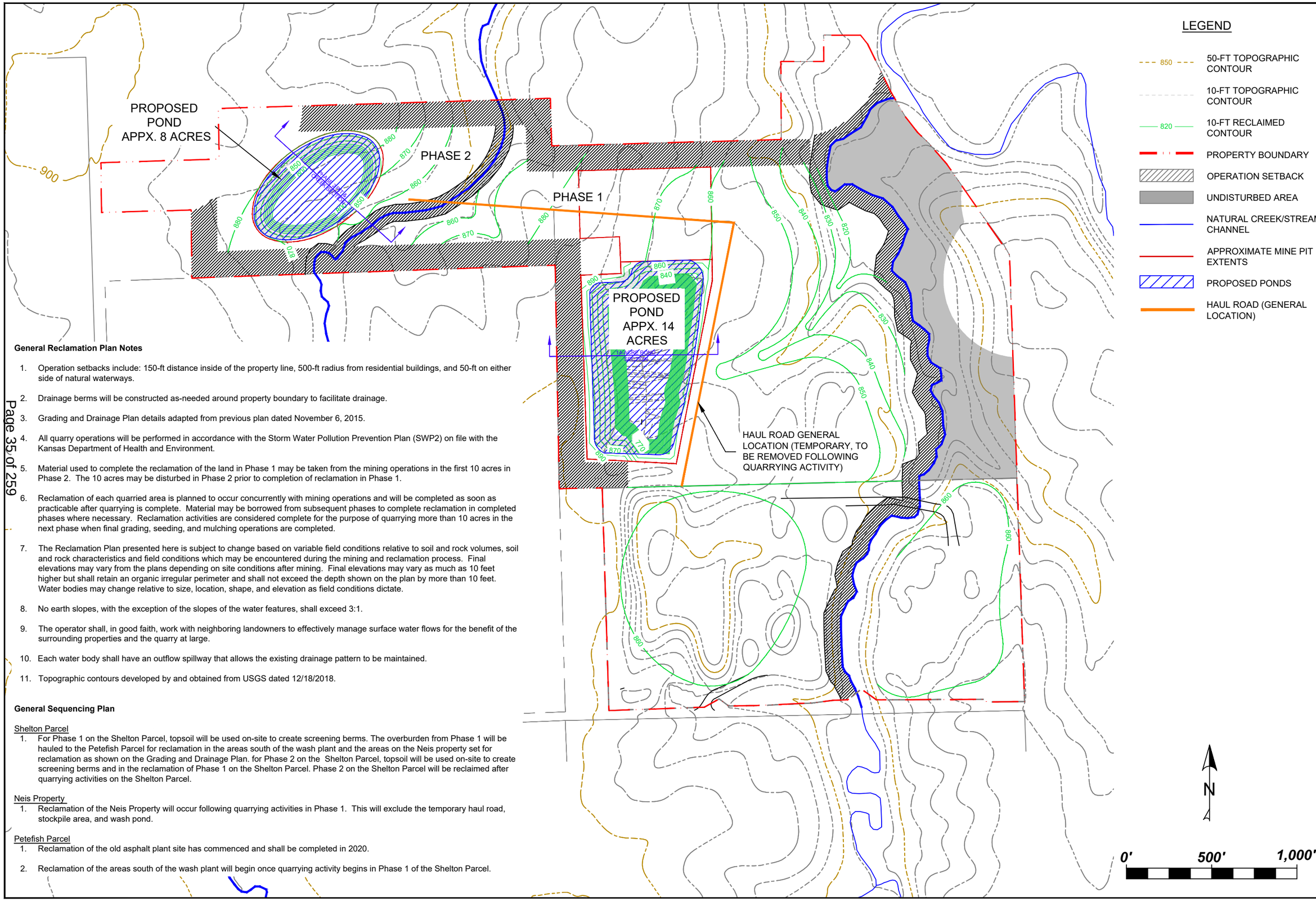
SHEET NAME: OPERATION AND DRAINAGE EXHIBIT
PROJECT NAME: QUARRY MISC.
PROJECT LOCATION: EUDORA, KS

CLIENT: NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Project Mgr.: KK	Date 4.17.2020		
Designed By: AQ	Rev.		
Drawn By: AQ	Rev.		
Checked By: KK	Rev.		
Job No.: 2188	Rev.		

SHEET 2

File: D:\Egnyte\Shared\Clients\Hamm\PROJECTS\2188 - Quarry Misc. Assistance\WORKING\Eudora Quarry\CAD\GRADING AND DRAINAGE PLAN



LEGEND

- 850 — 50-FT TOPOGRAPHIC CONTOUR
- 10-FT TOPOGRAPHIC CONTOUR
- 820 — 10-FT RECLAIMED CONTOUR
- PROPERTY BOUNDARY
- OPERATION SETBACK
- UNDISTURBED AREA
- NATURAL CREEK/STREAM CHANNEL
- APPROXIMATE MINE PIT EXTENTS
- PROPOSED PONDS
- HAUL ROAD (GENERAL LOCATION)

General Reclamation Plan Notes

1. Operation setbacks include: 150-ft distance inside of the property line, 500-ft radius from residential buildings, and 50-ft on either side of natural waterways.
2. Drainage berms will be constructed as-needed around property boundary to facilitate drainage.
3. Grading and Drainage Plan details adapted from previous plan dated November 6, 2015.
4. All quarry operations will be performed in accordance with the Storm Water Pollution Prevention Plan (SWP2) on file with the Kansas Department of Health and Environment.
5. Material used to complete the reclamation of the land in Phase 1 may be taken from the mining operations in the first 10 acres in Phase 2. The 10 acres may be disturbed in Phase 2 prior to completion of reclamation in Phase 1.
6. Reclamation of each quarried area is planned to occur concurrently with mining operations and will be completed as soon as practicable after quarrying is complete. Material may be borrowed from subsequent phases to complete reclamation in completed phases where necessary. Reclamation activities are considered complete for the purpose of quarrying more than 10 acres in the next phase when final grading, seeding, and mulching operations are completed.
7. The Reclamation Plan presented here is subject to change based on variable field conditions relative to soil and rock volumes, soil and rock characteristics and field conditions which may be encountered during the mining and reclamation process. Final elevations may vary from the plans depending on site conditions after mining. Final elevations may vary as much as 10 feet higher but shall retain an organic irregular perimeter and shall not exceed the depth shown on the plan by more than 10 feet. Water bodies may change relative to size, location, shape, and elevation as field conditions dictate.
8. No earth slopes, with the exception of the slopes of the water features, shall exceed 3:1.
9. The operator shall, in good faith, work with neighboring landowners to effectively manage surface water flows for the benefit of the surrounding properties and the quarry at large.
10. Each water body shall have an outflow spillway that allows the existing drainage pattern to be maintained.
11. Topographic contours developed by and obtained from USGS dated 12/18/2018.

General Sequencing Plan

Shelton Parcel

1. For Phase 1 on the Shelton Parcel, topsoil will be used on-site to create screening berms. The overburden from Phase 1 will be hauled to the Petefish Parcel for reclamation in the areas south of the wash plant and the areas on the Neis property set for reclamation as shown on the Grading and Drainage Plan. for Phase 2 on the Shelton Parcel, topsoil will be used on-site to create screening berms and in the reclamation of Phase 1 on the Shelton Parcel. Phase 2 on the Shelton Parcel will be reclaimed after quarrying activities on the Shelton Parcel.

Neis Property

1. Reclamation of the Neis Property will occur following quarrying activities in Phase 1. This will exclude the temporary haul road, stockpile area, and wash pond.

Petefish Parcel

1. Reclamation of the old asphalt plant site has commenced and shall be completed in 2020.
2. Reclamation of the areas south of the wash plant will begin once quarrying activity begins in Phase 1 of the Shelton Parcel.

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P: 913-495-9990 F: 913-648-2077

SHEET NAME: RECLAMATION PLAN
PROJECT NAME: QUARRY MISC.
PROJECT LOCATION: EUDORA, KS

CLIENT: NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Date 4.17.2020
Project Mgr.: KK
Designed By: AQ
Drawn By: AQ
Checked By: KK
Job No.: 2188
Rev.
Rev.
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Rev.

SHEET 3

File: D:\Egnyte\Shared\Clients\Hamm\PROJECTS\2188 - Quarry Misc. Assistance\WORKING\Eudora Quarry\CAD\GRADING AND DRAINAGE PLAN

LEGEND

850 — 10-FT TOPOGRAPHIC CONTOUR

PROPERTY BOUNDARY

NATURAL CREEK/STREAM CHANNEL

NOTES:

1. HISTORICAL TOPOGRAPHY SHOWN TO REPRESENT PRE-OPERATIONAL TOPOGRAPHIC CONDITIONS.
2. TOPOGRAPHY OBTAINED FROM AND DEVELOPED BY USGS DATED 1951.

N

0' 500' 1,000'

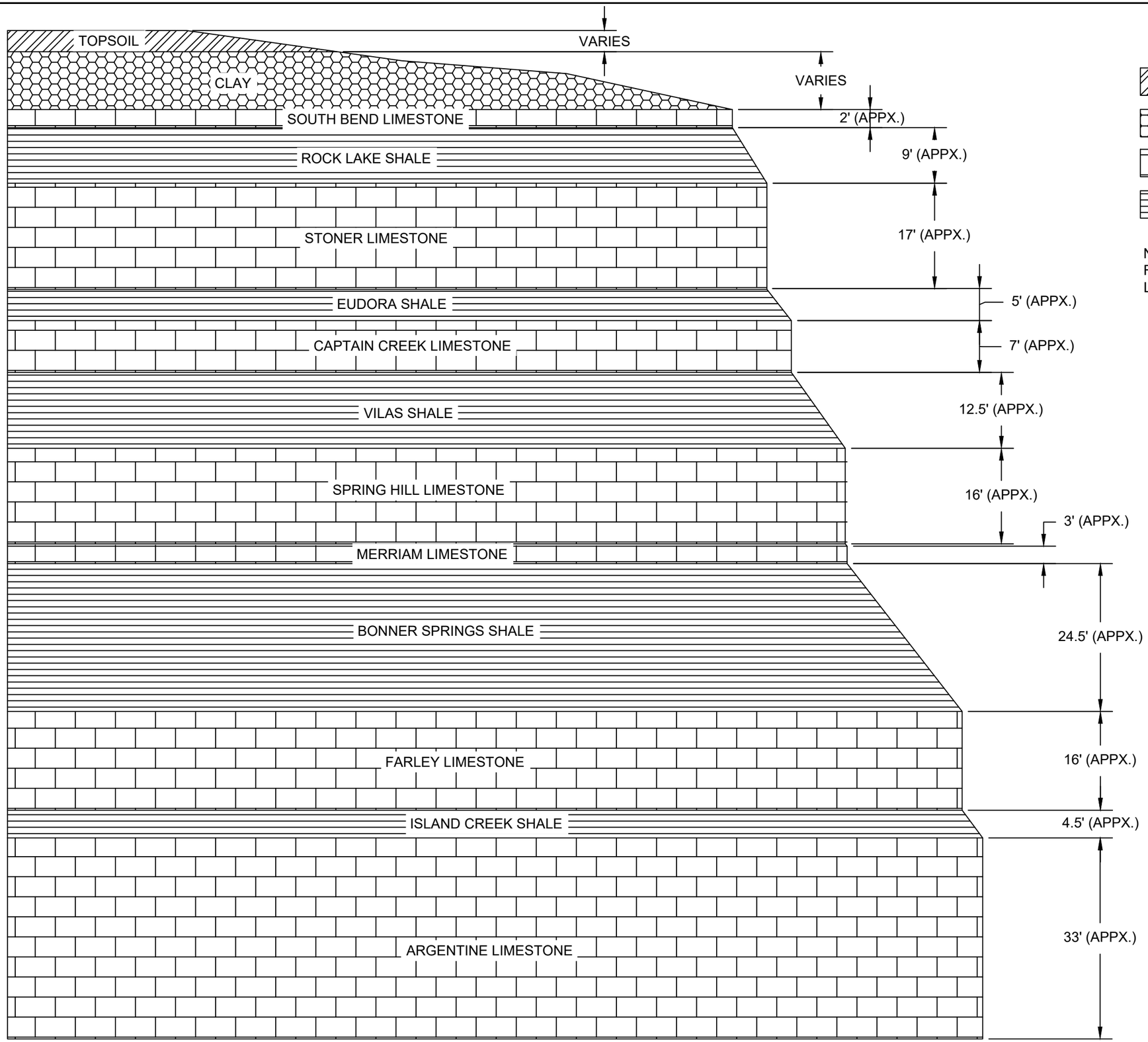
BLACKSTONE ENVIRONMENTAL
16200 FOSTER STREET OVERLAND PARK, KS 66085
P: 913-495-9990 F: 913-648-2077

SHEET NAME
PRE-OPERATIONAL TOPOGRAPHY
PROJECT NAME
QUARRY MISC.
PROJECT LOCATION
EUDORA, KS

CLIENT
NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Project Mgr.: KK	Date 5.6.2020	
Designed By: AQ	Rev.	
Drawn By: AQ	Rev.	
Checked By: KK	Rev.	
Job No.: 2188	Rev.	

SHEET
4



LEGEND

- TOPSOIL
- CLAY
- LIMESTONE
- SHALE

NOTE: DEPTHS OF GEOLOGIC FORMATIONS FROM CORE DRILLING LOGS PROVIDED BY HAMM.

BLACKSTONE ENVIRONMENTAL
16200 FOSTER STREET OVERLAND PARK, KS 66085
P: 913-495-9990 F: 913-648-2077

SHEET NAME GEOLOGY
PROJECT NAME QUARRY MISC.
PROJECT LOCATION EUDORA, KS

CLIENT
NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Project Mgr.: KK	Date 5.6.2020
Designed By: AQ	Rev.
Drawn By: AQ	Rev.
Checked By: KK	Rev.
Job No.: 2188	Rev.

SHEET
5

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LEGEND

QUARRY LIMITS

PARCEL BOUNDARY

BLACKSTONE ENVIRONMENTAL
16200 FOSTER STREET OVERLAND PARK, KS 66085
P: 913-495-9990 F: 913-648-2077

SHEET NAME PARCEL MAP
PROJECT NAME QUARRY MISC.
PROJECT LOCATION EUDORA, KS

CLIENT
NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Project Mgr.: KK	Date 5.6.2020	
Designed By: AQ	Rev.	
Drawn By: AQ	Rev.	
Checked By: KK	Rev.	
Job No.: 2188	Rev.	

SHEET
6

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Quarry Hydrological Evaluation
April 2020

Hamm Quarry
Eudora, Kansas

Prepared for:
N.R. Hamm Quarry Inc.
2364 N 1200 Road
Eudora, KS 66025

Prepared by:
Blackstone Environmental
16200 Foster Street
Overland Park, KS 66085

BLACKSTONE ENVIRONMENTAL

April 6, 2020

QUARRY HYDROLOGICAL EVALUATION
HAMM EUDORA QUARRY
EUDORA, KANSAS

Prepared for:

N.R. Hamm Quarry Inc.

2364 N 1200 Road

Eudora, KS 66025

Prepared by:

Austin Quick, E.I.T.
Project Engineer

Reviewed by:

Kyle Kukuk, P.E.
Senior Project Manager

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2 Tributary Drainage Basin Peak Runoff
3 Boring Log Summary

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2 Drainage Basin Map
3 Pre-Operational Drainage Map
4 Operational Drainage Map
5 Post-Operational Drainage Map

APPENDICES

A. Hydrological Calculations and Model Results
B. WWC-5 Well Logs

1.0 INTRODUCTION

1.1 Purpose

This hydrological evaluation for the Hamm Eudora Quarry was performed to evaluate the impact of quarrying operations on the natural watersheds and receiving streams in the quarry vicinity.

1.2 Site Location

The Hamm Eudora Quarry (Site) is located southeast of Eudora in eastern Douglas County, Kansas in Section 15, Township 12 South, Range 21 East. The Site is approximately 250 acres in size and is entirely located within the Captain Creek watershed. Two tributaries to Captain Creek intersect the Site – Coleman Creek on the eastern portion of the facility, and an unnamed tributary to Captain Creek (Tributary) on the western portion of the facility – as shown on Figure 2.

A ridge line intersects the middle portion of the Site which divides the drainage contribution from the quarry to each of these streams. Coleman Creek's total drainage area is 2,445 acres in size, of which approximately 190 acres of the Site is located within. The Tributary has a total drainage area of 608 acres, and approximately 60 acres of the Site is located within this basin. Both basins are comprised primarily of cultivated row cropland with regions of woodlands, rural residential, grasslands, and the quarry. Figure 2 shows an aerial view of the delineated drainage basins in relation to the Site.

2.0 METHODS

The U.S. Soil Conservation Service (SCS) TR-55 runoff method was used to calculate runoff from a series of design storm return periods in each drainage basin. The TR-55 method for calculating time of concentration (TOC) which accounts for sheet flow, shallow concentrated flow, and channelized flow was utilized as shown in Appendix A. The area is comprised predominantly of Type D soils and a weighted runoff curve number was calculated for each basin assuming Type D soils and based on land cover conditions. The design storm for each return period is an SCS Type-II 24-hour storm. Please refer to Appendix A for all input parameters, calculations, and model results.

The 1-, 2-, 5-, 10-, 25-, and 100-year storms were evaluated for each basin in three distinct phases of the quarry: pre-operational conditions, during quarrying activities, and post-operational conditions. During pre-operational conditions (PRE), it was assumed that the entire drainage

basin runs off into its respective receiving stream, i.e. no retention of stormwater due to quarrying pits or ponds were accounted for (see Figure 3). During quarrying activities (OP), it was assumed that the entire Phase 1 and Phase 2 areas are in the process of being quarried and are graded so the entire area flows toward the bottom of the mining pit (see Figure 4). In addition to the mining pits, there is a portion of the site which drains to an existing wash pond on the south portion of the Site. In this scenario, it is assumed these areas do not contribute to the runoff in the receiving streams. During post-operational activities (POST), it was assumed that the Site has been fully quarried and reclaimed to the elevations shown in Figure 5. These reclaimed contours aim to return the land to its natural topography except for the two proposed water features.

3.0 RESULTS

3.1 Peak Discharge

Stormwater runoff was simulated for all design storm return periods in each drainage basin under each of the three stages of the quarry life. The peak discharge in cubic feet per second (cfs) for each simulation is presented in Tables 1 and 2 below. Complete results of these simulations including total runoff volumes and hydrographs are included in Appendix A.

Table 1 - Coleman Creek Drainage Basin Peak Runoff (in cfs)

Return Period (yr)	Coleman-PRE	Coleman-OP	Coleman-POST
1	872	837	846
2	1,237	1,187	1,199
5	1,779	1,708	1,725
10	2,223	2,133	2,154
25	2,672	2,564	2,590
100	3,625	3,479	3,513

Table 2 - Tributary Drainage Basin Peak Runoff (in cfs)

Return Period (yr)	Tributary-PRE	Tributary-OP	Tributary-POST
1	239	229	229
2	335	320	321
5	477	456	457
10	594	567	568
25	710	679	680
100	957	914	915

As expected, the scenario with the highest discharge rate is the pre-operational stage for all return periods, and the scenario with the lowest discharge rate is during quarrying operations. However, this results in only a 4.2% decrease in the peak discharge (and 4.0% in total runoff volume) to Coleman Creek and a 4.5% decrease in the peak discharge (and 4.5% total runoff volume) to the Tributary.

In comparing the pre- and post-operational peak discharges, there is a 3.1% reduction in peak runoff to Coleman Creek and 4.2% reduction to the Tributary. Although this is a fairly small decrease in runoff, the reduction will likely be even smaller than this simulated value. This hydrologic model does not account for the contribution of discharges from each water feature to the receiving streams. When the ponds are at capacity and a precipitation event occurs, excess flow from the ponds will drain to their respective receiving streams.

3.2 Water Features

The facility will be reclaimed in stages as the mining pit location progresses over time. Upon completion of quarrying activities, final reclamation of the site will be completed, and the water features shown on Figure 5 will be installed. These water features, formerly the bottom of the mining pits in Phases 1 and 2, will be graded with 3H:1V side slopes near the top and will be filled with water. Based on the conceptual depth and slope grading, the pond in the Phase 1 pit will hold an estimated 1,200 acre-ft of water and the pond in the Phase 2 pit will hold an estimated 265 acre-ft of water. There are a number of mechanisms which can fill the ponds, including direct precipitation, surface runoff, natural groundwater infiltration, and pumping, if necessary.

3.2.1 Direct Precipitation and Surface Runoff

As part of post-operational activities, the drainage berms used during the operational period of the quarry will be removed and the soil will be used for site reclamation. This will help allow for the restoration of the natural drainage patterns of the basins. The reclaimed topography will allow a portion of surface runoff to flow to each of the proposed water features. The 8-acre pond will be constructed at the location of the Phase 2 mining pit within the Tributary drainage basin. This pond will have a drainage area of approximately 26.4 acres, including the surface area of the pond. The 14-acre will be constructed at the location of the deepest part of the Phase 1 mining pit with a drainage area of approximately 75.2 acres including the pond.

The annual average precipitation in Douglas County is 39.9 inches. Assuming pond water surface areas of 14 and 8 acres each, this equates to 46.6 acre-ft and 26.6 acre-feet, respectively, of annual water volume as a result of direct precipitation. Assuming a runoff ratio of 0.75 for the

remainder of each drainage area, an additional 150 acre-ft and 45 acre-ft due to surface runoff will contribute to filling each pond annually.

Evaporative losses are estimated using the TR-33 Evaporation Atlas annual lake evaporation value of 45 in./year for eastern Douglas County. Assuming 14- and 8-acre pond water surface areas, this results in 52.5 acre-ft and 30 acre-ft per year, respectively. However, the actual evaporative losses could be significantly less as the ponds fill because the water surface elevation will be below the surrounding topography. This may result in reduced wind velocities, which would reduce the rate of evaporation.

3.2.2 Groundwater Infiltration and Pumping

Review of existing boring logs for the Site show formations of alternating shale and limestone from the South Bend Limestone to the Quindaro Shale, in descending order. The borings range from 80 to 185 feet in depth below ground surface (bgs). It is understood that the proposed pit will extend to the bottom of the Argentine Limestone or approximately 200 feet bgs. Table 3 summarizes the WWC-5 boring logs in the vicinity of the Site.

The Kansas Geological Survey Water Well Completion Records (WWC-5) database shows multiple domestic wells in the area of the Site. The following table provides summary information from several nearby domestic wells. WWC-5 forms from these wells are included in Appendix B.

Table 3 – Boring Log Summary

Well ID	Direction from Site	Total Depth (ft bgs)	Yield (GPM)	SWL (ft bgs)
Prudder, M.	North	134	20	26
Workman, E.	Northeast	120	15	20
Pankey, J.L.	Northwest	60	10	25
Gabriel, R.	Southwest	43	5	16
Shoemaker, J.	Southwest	65	8	22
Turnbaugh, W.	Southwest	48	10	33
Turnbaugh, K.	Southwest	55	28	25
Katzfrey, J.	Southwest	60	27	32

Yields on domestic wells in the area range from 5-28 gpm with static water levels from 16-33 feet bgs. This information suggests water will infiltrate the pit, potentially reaching a static water level elevation in the range of 16-33 feet bgs. Additional boring logs from cores drilled on the Site in 2018 also indicate saturated conditions within the soils above bedrock, indicating a shallow unconsolidated/water table aquifer may also be a contributory source of groundwater to the pit.

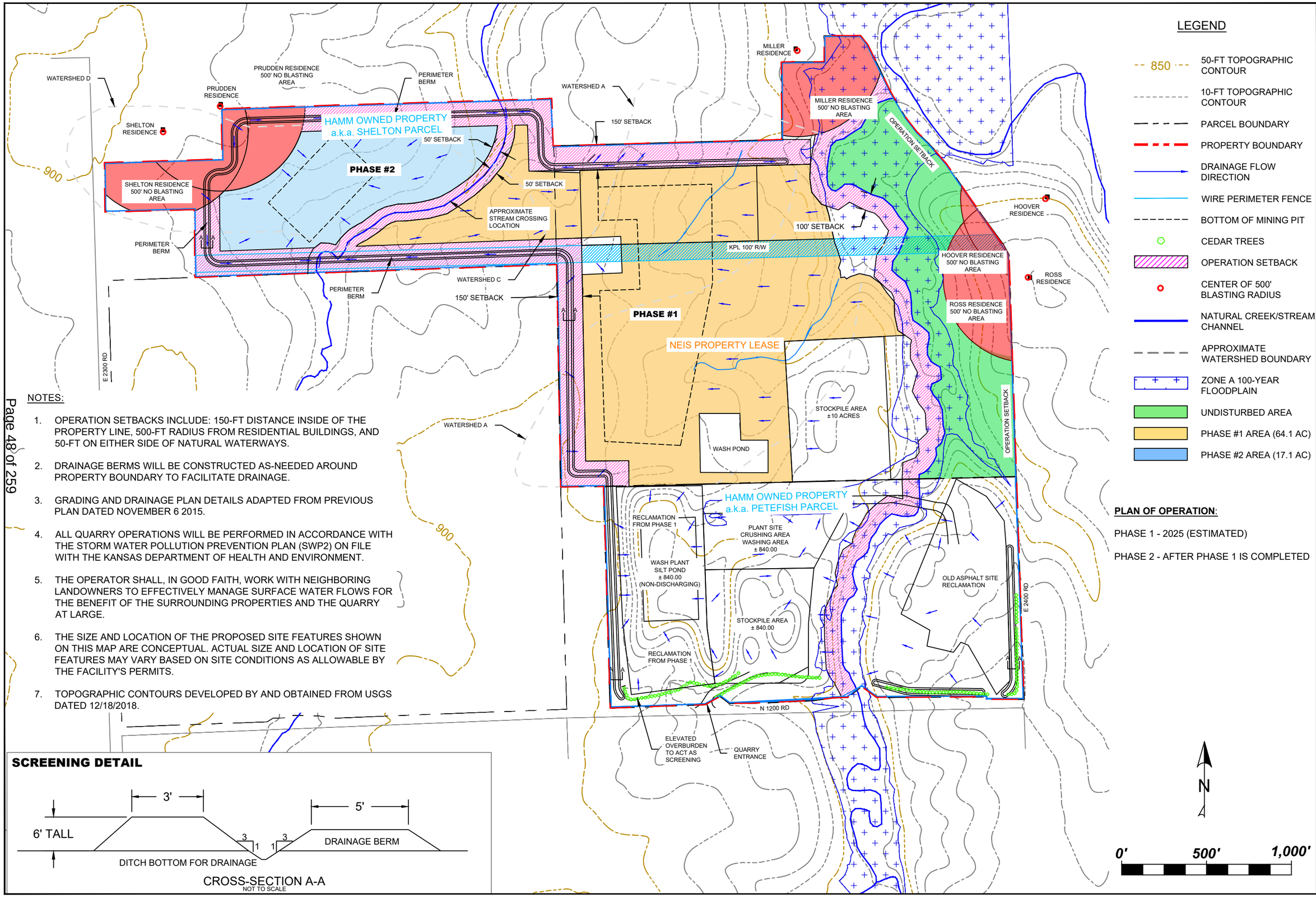
Aquifer yields of 5-28 gpm are somewhat minor, but given time the pit would likely fill, at least partially, with groundwater. Approximate fill rates could be calculated based on theoretical yields and surface area of the pit; however, it is recommended that documentation be collected of pumping rates in the pit area during quarrying activities to allow for site specific fill rate determinations.

Based on the observed pumping rates of groundwater out of the mining pit sumps, one or more groundwater pumping wells could be installed to increase the rate at which the ponds are filled. The necessity for the installation of pumping wells should be dependent on the observed pumping rates during quarrying activities.

4.0 LIMITATIONS

This report was prepared in accordance with that level of skill and care ordinarily exercised by other members of Blackstone's profession practicing in the same locality and under similar conditions when the services were provided. No warranties, express or implied, are intended or made.

FIGURES



LEGEND

- 850 — 50-FT TOPOGRAPHIC CONTOUR
- 10-FT TOPOGRAPHIC CONTOUR
- PARCEL BOUNDARY
- PROPERTY BOUNDARY
- DRAINAGE FLOW DIRECTION
- WIRE PERIMETER FENCE
- BOTTOM OF MINING PIT
- CEDAR TREES
- OPERATION SETBACK
- CENTER OF 500' BLASTING RADIUS
- NATURAL CREEK/STREAM CHANNEL
- APPROXIMATE WATERSHED BOUNDARY
- ZONE A 100-YEAR FLOODPLAIN
- UNDISTURBED AREA
- PHASE #1 AREA (64.1 AC)
- PHASE #2 AREA (17.1 AC)

PLAN OF OPERATION:

PHASE 1 - 2025 (ESTIMATED)

PHASE 2 - AFTER PHASE 1 IS COMPLETED

NOTES:

1. OPERATION SETBACKS INCLUDE: 150-FT DISTANCE INSIDE OF THE PROPERTY LINE, 500-FT RADIUS FROM RESIDENTIAL BUILDINGS, AND 50-FT ON EITHER SIDE OF NATURAL WATERWAYS.
2. DRAINAGE BERMS WILL BE CONSTRUCTED AS-NEEDED AROUND PROPERTY BOUNDARY TO FACILITATE DRAINAGE.
3. GRADING AND DRAINAGE PLAN DETAILS ADAPTED FROM PREVIOUS PLAN DATED NOVEMBER 6 2015.
4. ALL QUARRY OPERATIONS WILL BE PERFORMED IN ACCORDANCE WITH THE STORM WATER POLLUTION PREVENTION PLAN (SWP2) ON FILE WITH THE KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT.
5. THE OPERATOR SHALL, IN GOOD FAITH, WORK WITH NEIGHBORING LANDOWNERS TO EFFECTIVELY MANAGE SURFACE WATER FLOWS FOR THE BENEFIT OF THE SURROUNDING PROPERTIES AND THE QUARRY AT LARGE.
6. THE SIZE AND LOCATION OF THE PROPOSED SITE FEATURES SHOWN ON THIS MAP ARE CONCEPTUAL. ACTUAL SIZE AND LOCATION OF SITE FEATURES MAY VARY BASED ON SITE CONDITIONS AS ALLOWABLE BY THE FACILITY'S PERMITS.
7. TOPOGRAPHIC CONTOURS DEVELOPED BY AND OBTAINED FROM USGS DATED 12/18/2018.

SCREENING DETAIL

CROSS-SECTION A-A
NOT TO SCALE

BLACKSTONE ENVIRONMENTAL
16200 FOSTER STREET OVERLAND PARK, KS 66085
P: 913-495-9990 F: 913-648-2077

SHEET NAME: OPERATION AND DRAINAGE EXHIBIT
PROJECT NAME: QUARRY MISC.
PROJECT LOCATION: EUDORA, KS

CLIENT: NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Date 4.4.2020	
Rev.	
Rev.	
Rev.	
Rev.	
Project Mgr.: KK	
Designed By: AQ	
Drawn By: AQ	
Checked By: KK	
Job No.: 2188	

FIGURE 1

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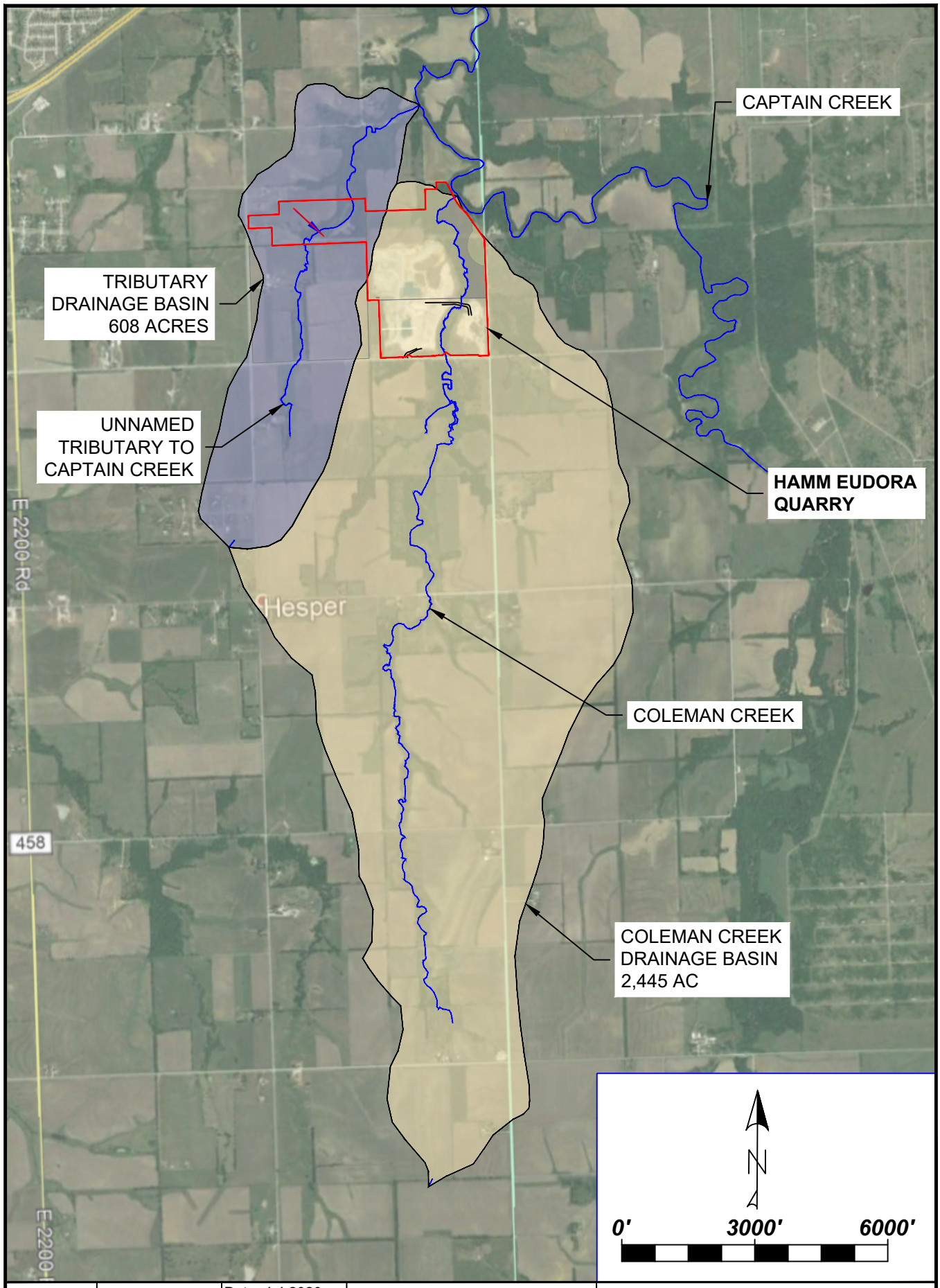

FIGURE 2	Project Mgr.: KK	Date: 4.4.2020	DRAINAGE BASIN MAP NR HAMM QUARRY INC. 2364 N 1200 RD EUDORA, KS 66025	BLACKSTONE ENVIRONMENTAL 16200 FOSTER STREET OVERLAND PARK, KS 66085 P: 913-495-9990 F: 913-648-2077
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	Checked By: KK	Rev.		
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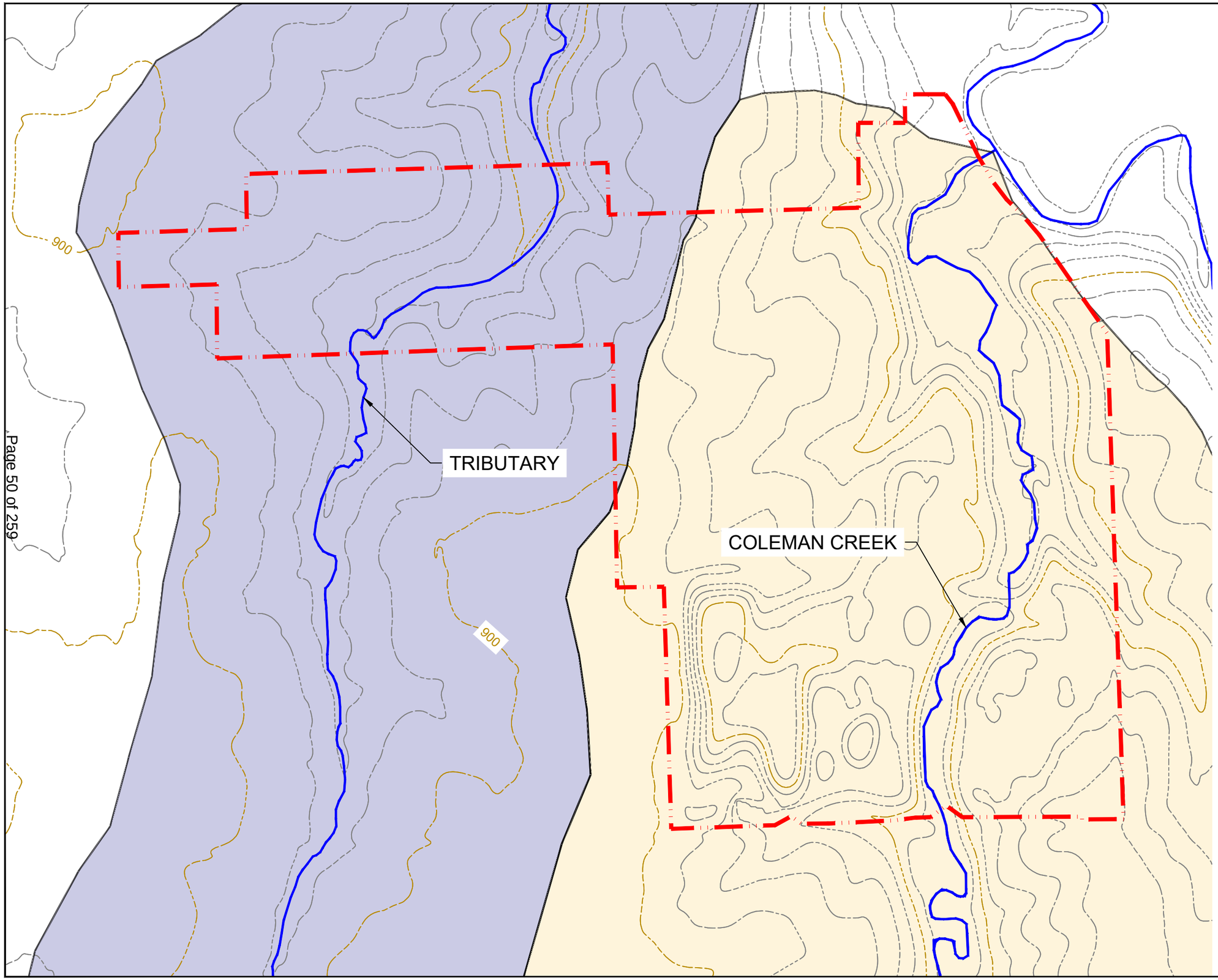

LEGEND

- 850 — 50-FT TOPOGRAPHIC CONTOUR
- 10-ft TOPOGRAPHIC CONTOUR
- QUARRY BOUNDARY
- TRIBUTARY
- COLEMAN CREEK DRAINAGE BASIN
- TRIBUTARY DRAINAGE BASIN

NOTE: TOPOGRAPHIC CONTOURS DEVELOPED BY AND OBTAINED FROM USGS DATED 12/18/2018.

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P: 913-495-9990 F: 913-648-2077

SHEET NAME
PRE-OPERATIONAL DRAINAGE MAP

PROJECT NAME
QUARRY MISC.

PROJECT LOCATION
EUDORA, KS

CLIENT
NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Project Mgr.: KK	Date 4.4.2020
Designed By: AQ	Rev.
Drawn By: AQ	Rev.
Checked By: KK	Rev.
Job No.: 2188	Rev.

FIGURE
3

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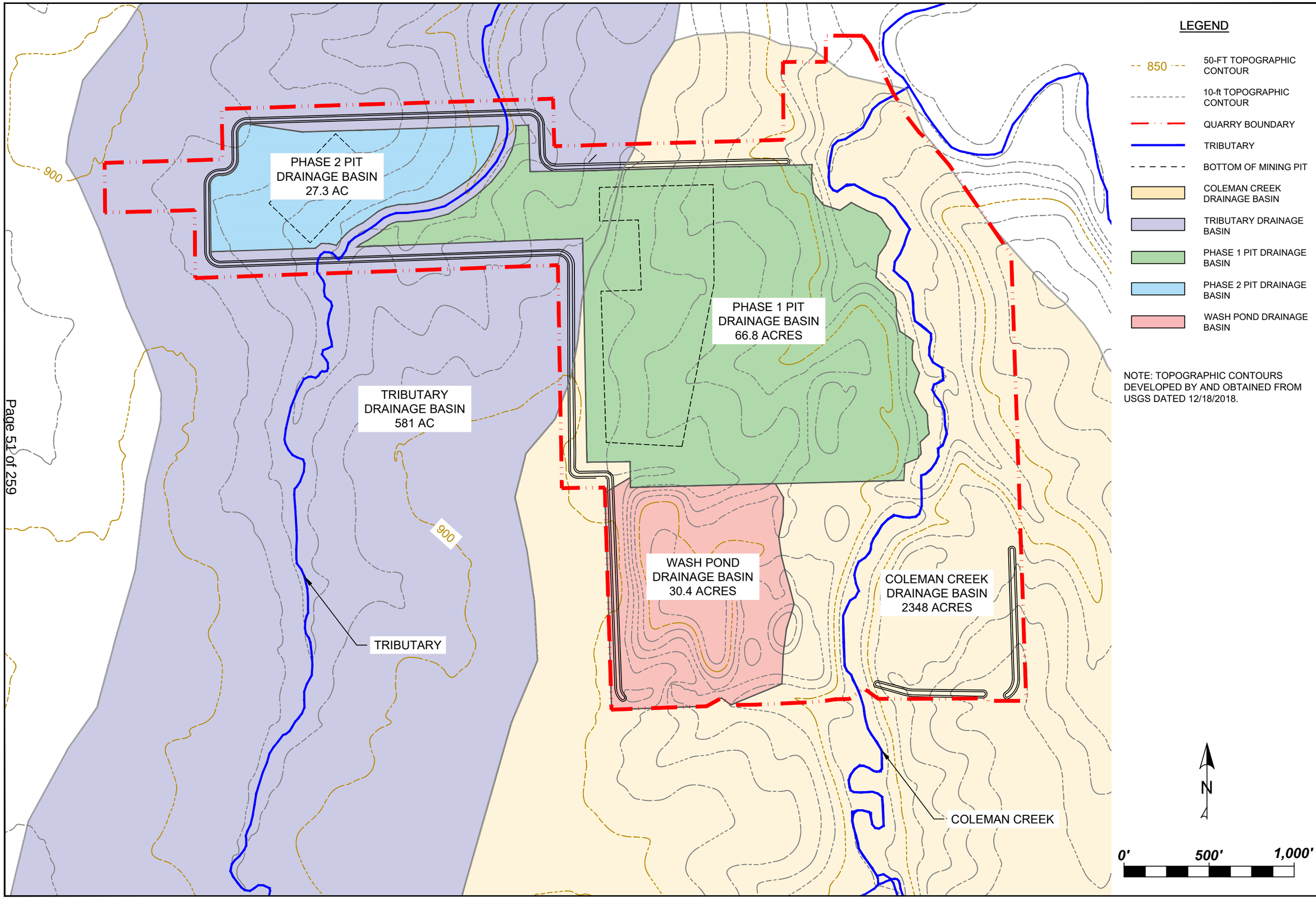

BLACKSTONE ENVIRONMENTAL
16200 FOSTER STREET OVERLAND PARK, KS 66085
P: 913-495-9990 F: 913-648-2077

SHEET NAME
OPERATIONAL DRAINAGE MAP
PROJECT NAME
QUARRY MISC.
PROJECT LOCATION
EUDORA, KS

CLIENT
NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Project Mgr.: KK	Date 4.4.2020	
Designed By: AQ	Rev.	
Drawn By: AQ	Rev.	
Checked By: KK	Rev.	
Job No.: 2188	Rev.	

FIGURE
4

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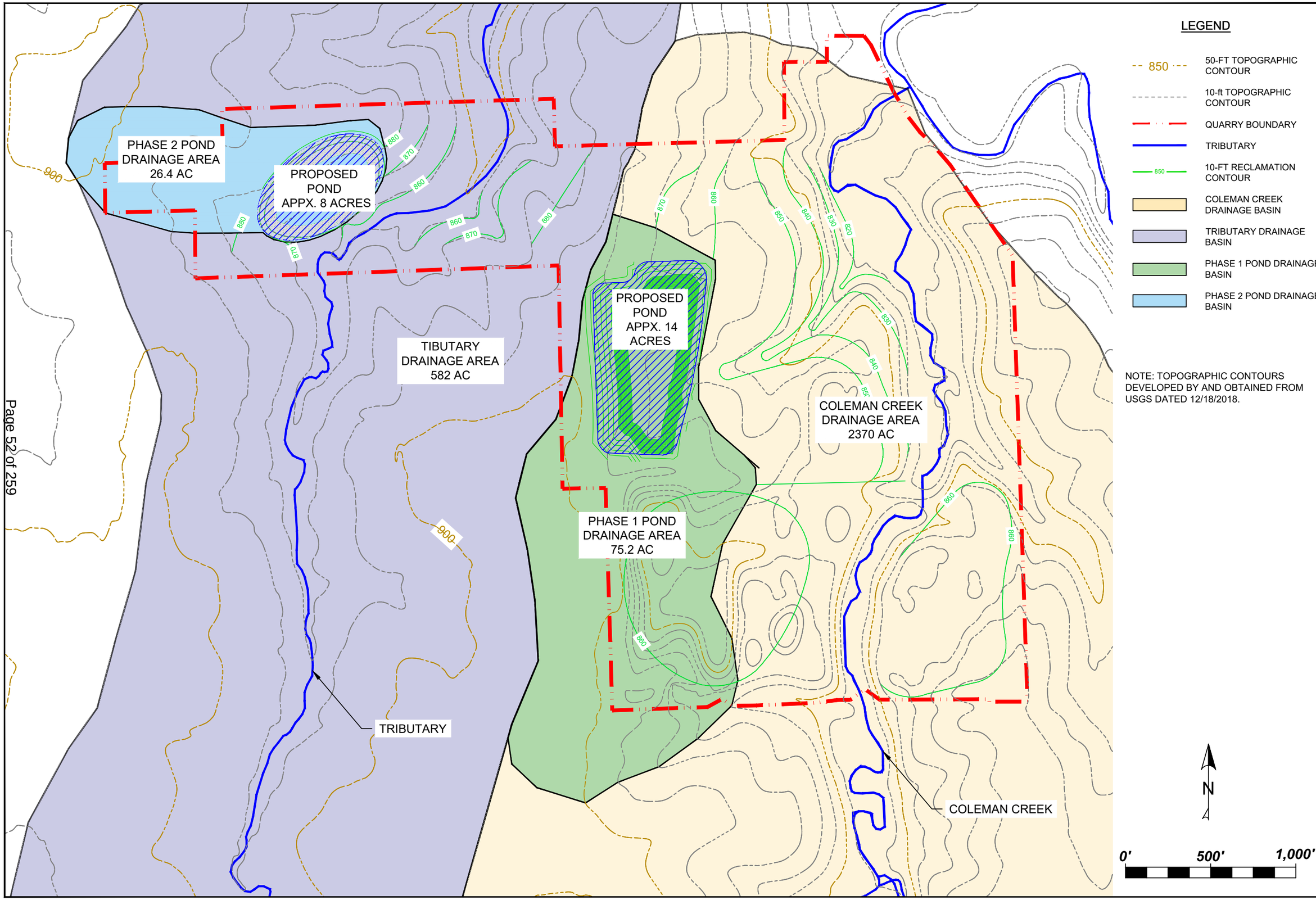

LEGEND

- 850 — 50-FT TOPOGRAPHIC CONTOUR
- 10-ft TOPOGRAPHIC CONTOUR
- QUARRY BOUNDARY
- TRIBUTARY
- 850 — 10-FT RECLAMATION CONTOUR
- COLEMAN CREEK DRAINAGE BASIN
- TRIBUTARY DRAINAGE BASIN
- PHASE 1 POND DRAINAGE BASIN
- PHASE 2 POND DRAINAGE BASIN

NOTE: TOPOGRAPHIC CONTOURS DEVELOPED BY AND OBTAINED FROM USGS DATED 12/18/2018.

BLACKSTONE ENVIRONMENTAL
16200 FOSTER STREET OVERLAND PARK, KS 66085
P: 913-495-9990 F: 913-648-2077

SHEET NAME
POST-OPERATIONAL DRAINAGE MAP

PROJECT NAME
QUARRY MISC.

PROJECT LOCATION
EUDORA, KS

CLIENT
NR HAMM QUARRY INC.
2364 N 1200 RD
EUDORA, KS 66025

Project Mgr.: KK	Date 4.4.2020	
Designed By: AQ	Rev.	
Drawn By: AQ	Rev.	
Checked By: KK	Rev.	
Job No.: 2188	Rev.	

FIGURE
5

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APPENDIX A

HYDROLOGICAL CALCULATIONS AND MODEL RESULTS

Project Description

File Name ..... Hydro-large basins.SPF

Project Options

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

Analysis Options

Start Analysis On ..... Apr 03, 2020 00:00:00
End Analysis On ..... Apr 05, 2020 00:00:00
Start Reporting On ..... Apr 03, 2020 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

Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	100-year Storm	Time Series	Q100	Cumulative	inches	Kansas	Douglas	100	7.90	SCS Type II 24-hr
2	10-year Storm	Time Series	Q10	Cumulative	inches	Kansas	Douglas	10	5.40	SCS Type II 24-hr
3	1-year Storm	Time Series	Q1	Cumulative	inches	Kansas	Douglas	1	2.90	SCS Type II 24-hr
4	25-year Storm	Time Series	Q25	Cumulative	inches	Kansas	Douglas	25	6.20	SCS Type II 24-hr
5	2-year Storm	Time Series	Q2	Cumulative	inches	Kansas	Douglas	2	3.60	SCS Type II 24-hr
6	5-year Storm	Time Series	Q5	Cumulative	inches	Kansas	Douglas	5	4.60	SCS Type II 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Coleman-OP	2346.60	84.55	2.90	1.47	3456.54	837.29	0 02:57:12
2	Coleman-POST	2369.76	84.55	2.90	1.47	3490.66	845.56	0 02:57:12
3	COLMAN-PRE	2445.00	84.55	2.90	1.47	3601.49	872.40	0 02:57:12
4	Tributary-OP	580.74	85.65	2.90	1.55	900.73	228.63	0 02:47:49
5	Tributary-POST	581.60	85.65	2.90	1.55	902.06	228.97	0 02:47:49
6	TRIBUTARY-PRE	608.00	85.65	2.90	1.55	943.01	239.36	0 02:47:49

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Subbasin Hydrology

Subbasin : Coleman-OP

Input Data

Area (ac) 2346.60
Weighted Curve Number 84.55
Rain Gage ID ..... 1-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1877.28	D	85.00
Pasture, grassland, or range, Fair	351.99	D	84.00
Woods, Fair	117.33	D	79.00
Composite Area & Weighted CN	2346.60		84.55

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft^2)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

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Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft²) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 2.90
Total Runoff (in) 1.47
Peak Runoff (cfs) 837.29
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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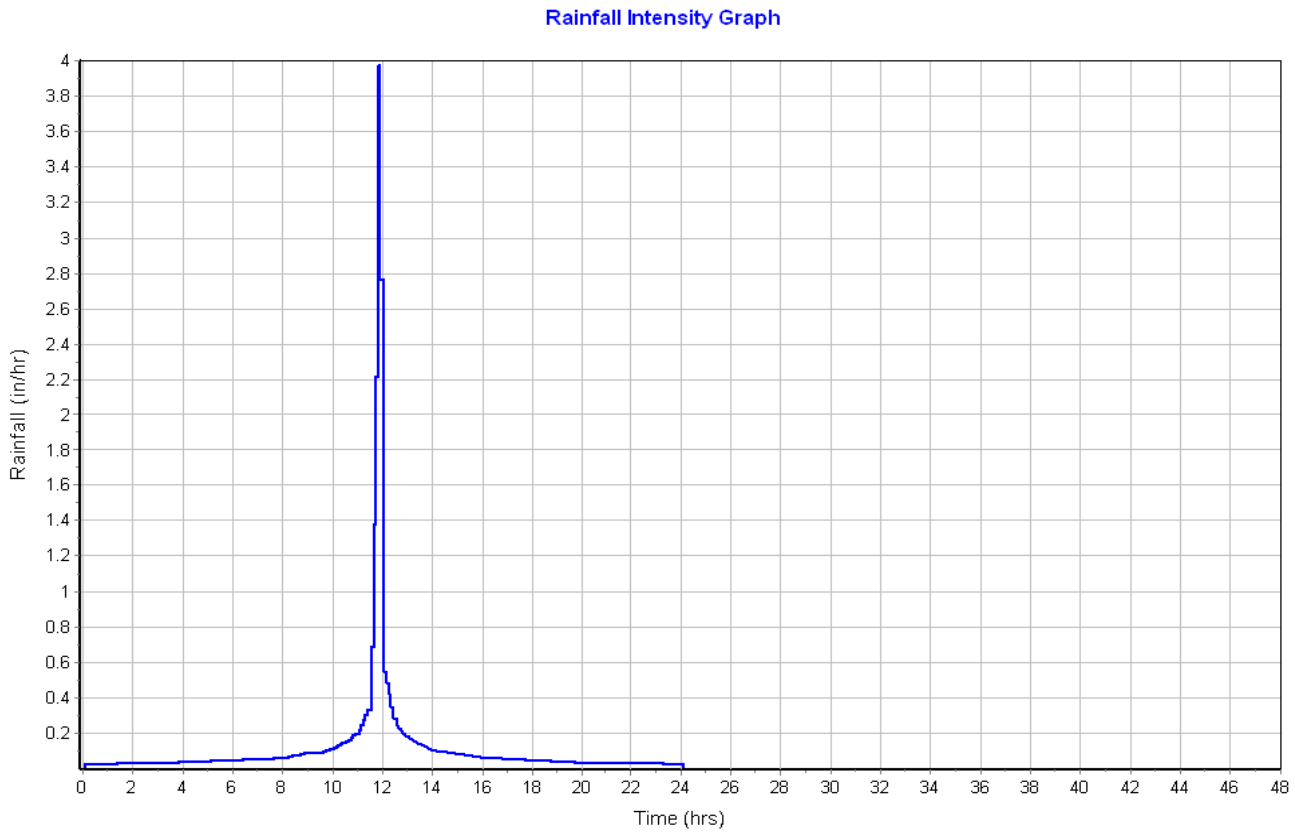
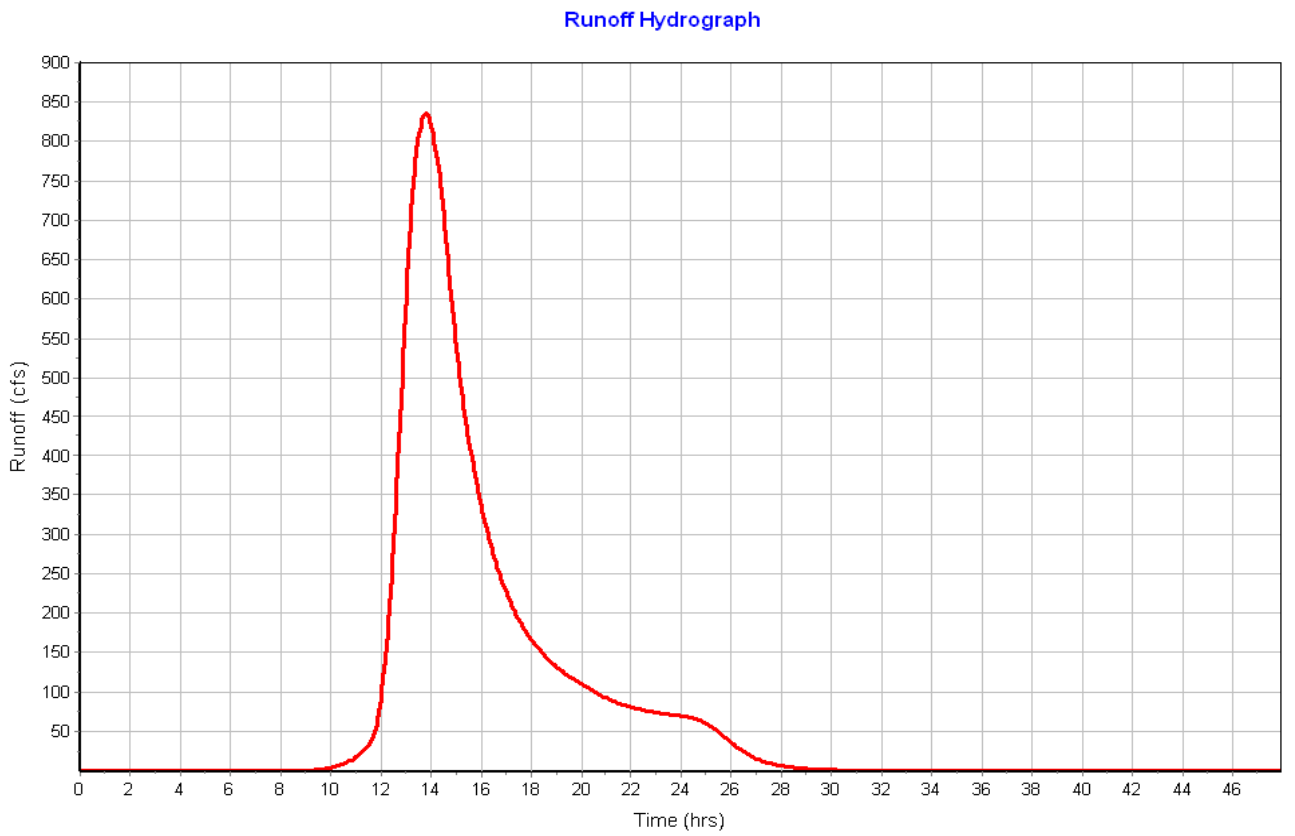
Subbasin : Coleman-OP





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Subbasin : Coleman-POST

Input Data

Area (ac) 2369.76
Weighted Curve Number 84.55
Rain Gage ID ..... 1-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1895.81	D	85.00
Pasture, grassland, or range, Fair	355.46	D	84.00
Woods, Fair	118.49	D	79.00
Composite Area & Weighted CN	2369.76		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 2.90
Total Runoff (in) 1.47
Peak Runoff (cfs) 845.56
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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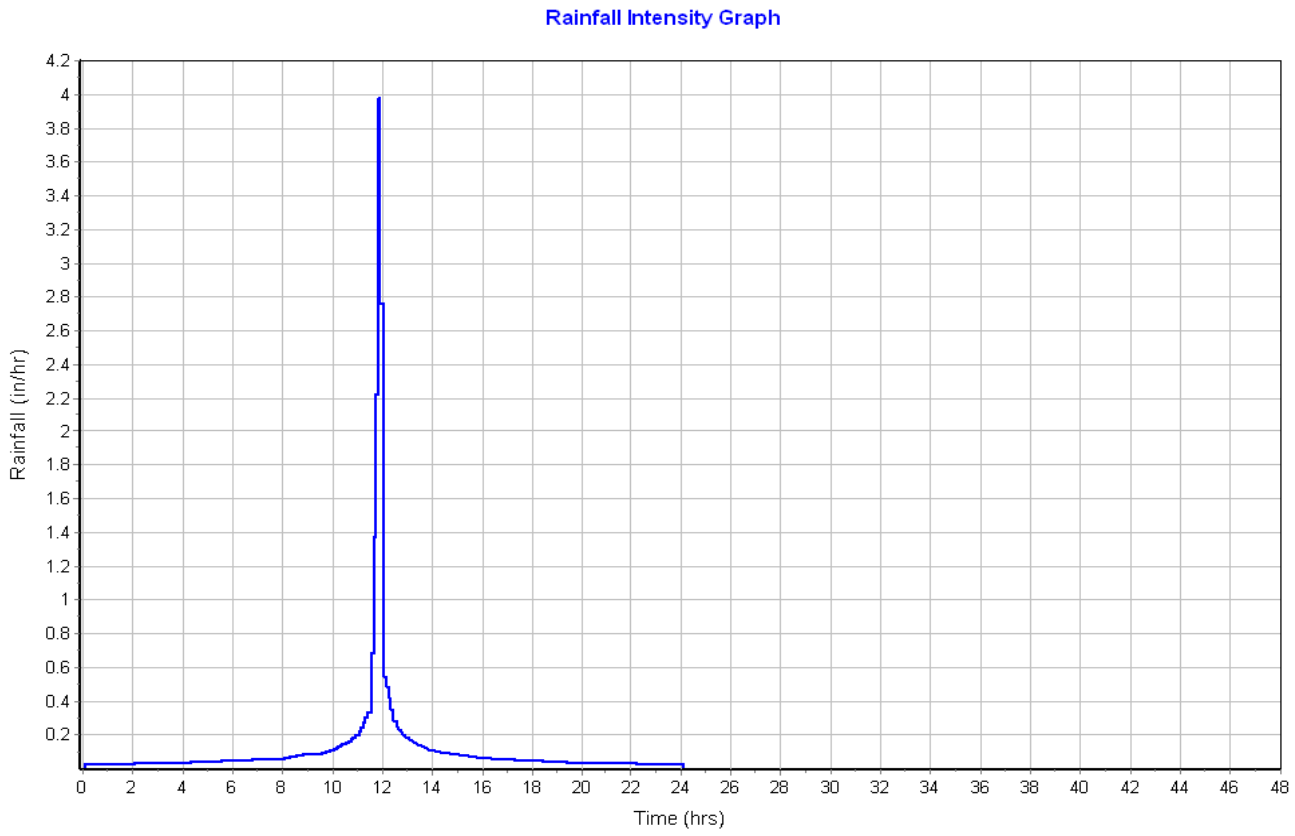
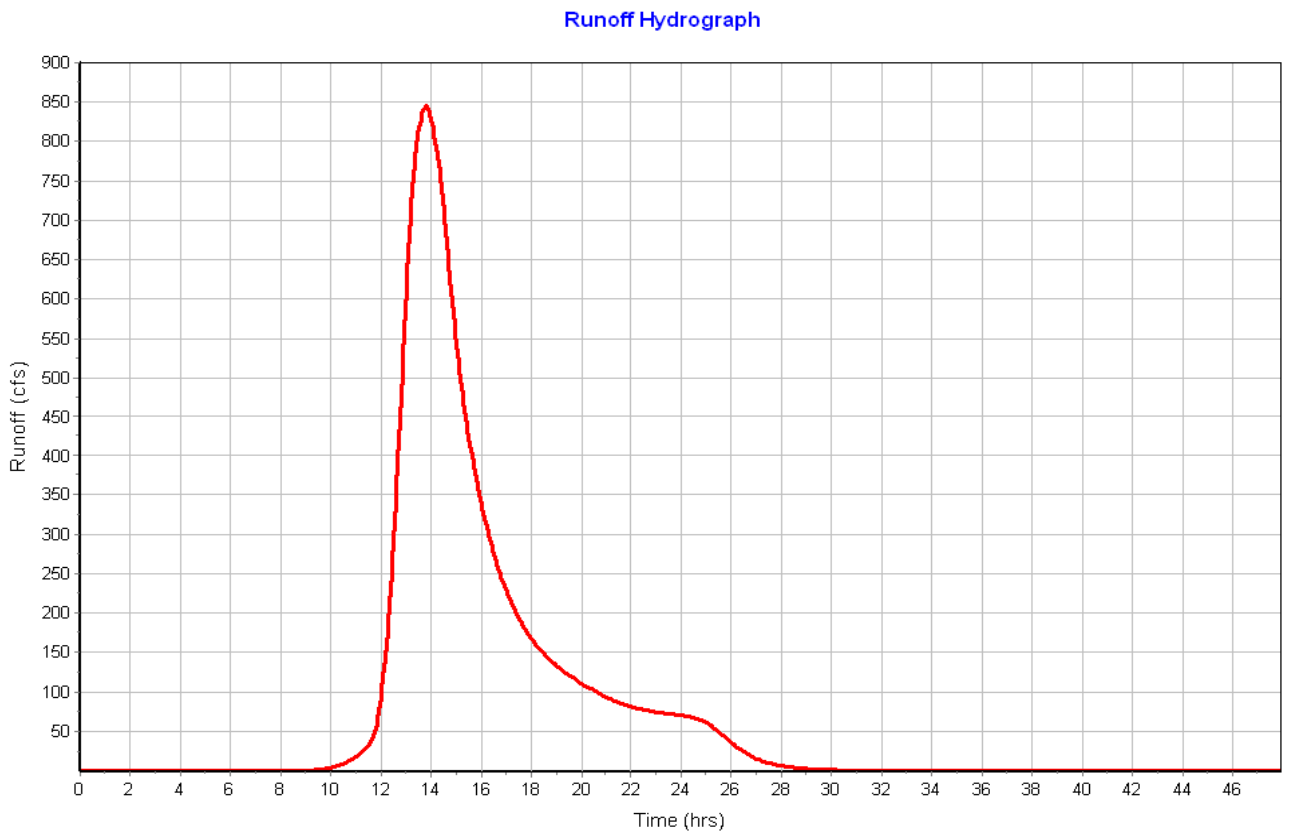
Subbasin : Coleman-POST





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Subbasin : COLMAN-PRE

Input Data

Area (ac) 2445.00
Weighted Curve Number 84.55
Rain Gage ID ..... 1-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1956.00	D	85.00
Pasture, grassland, or range, Fair	366.75	D	84.00
Woods, Fair	122.25	D	79.00
Composite Area & Weighted CN	2445.00		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 2.90
Total Runoff (in) 1.47
Peak Runoff (cfs) 872.40
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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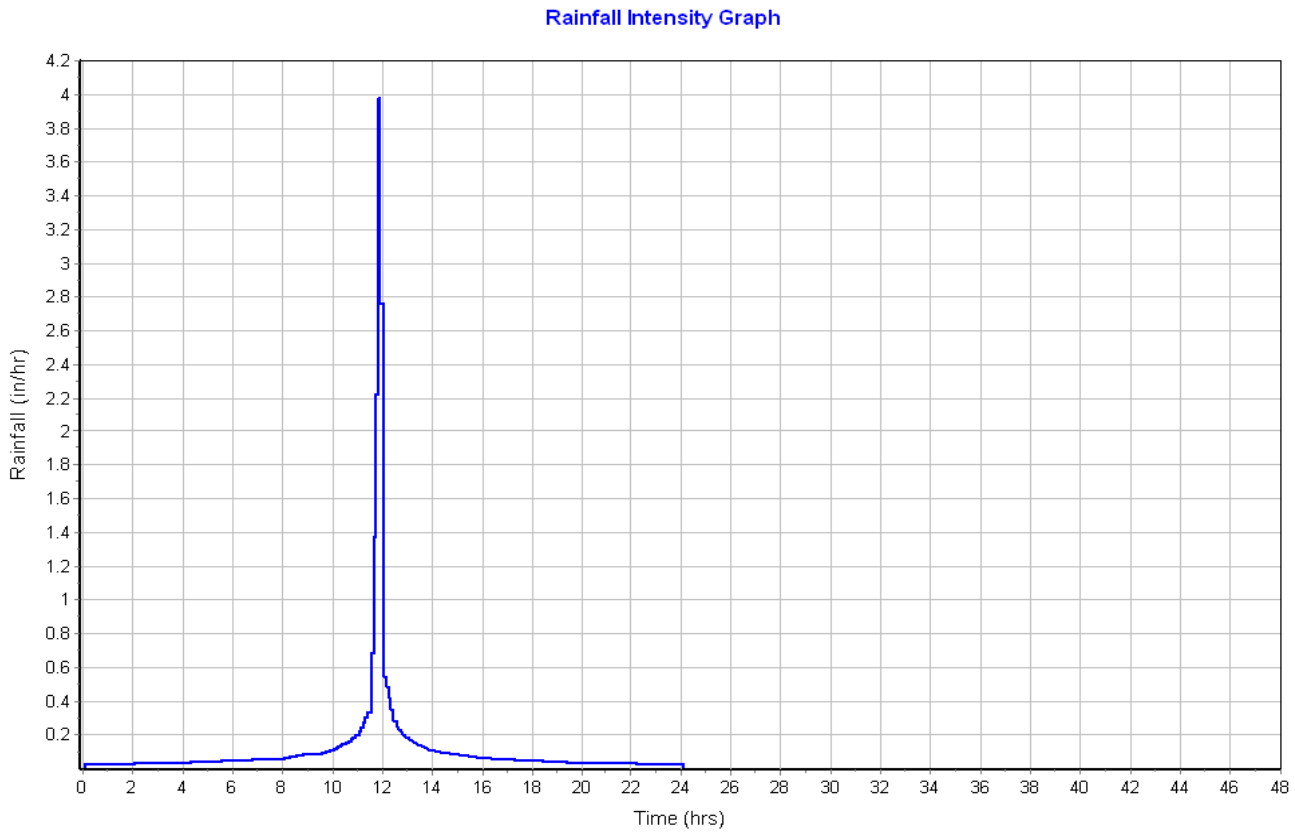
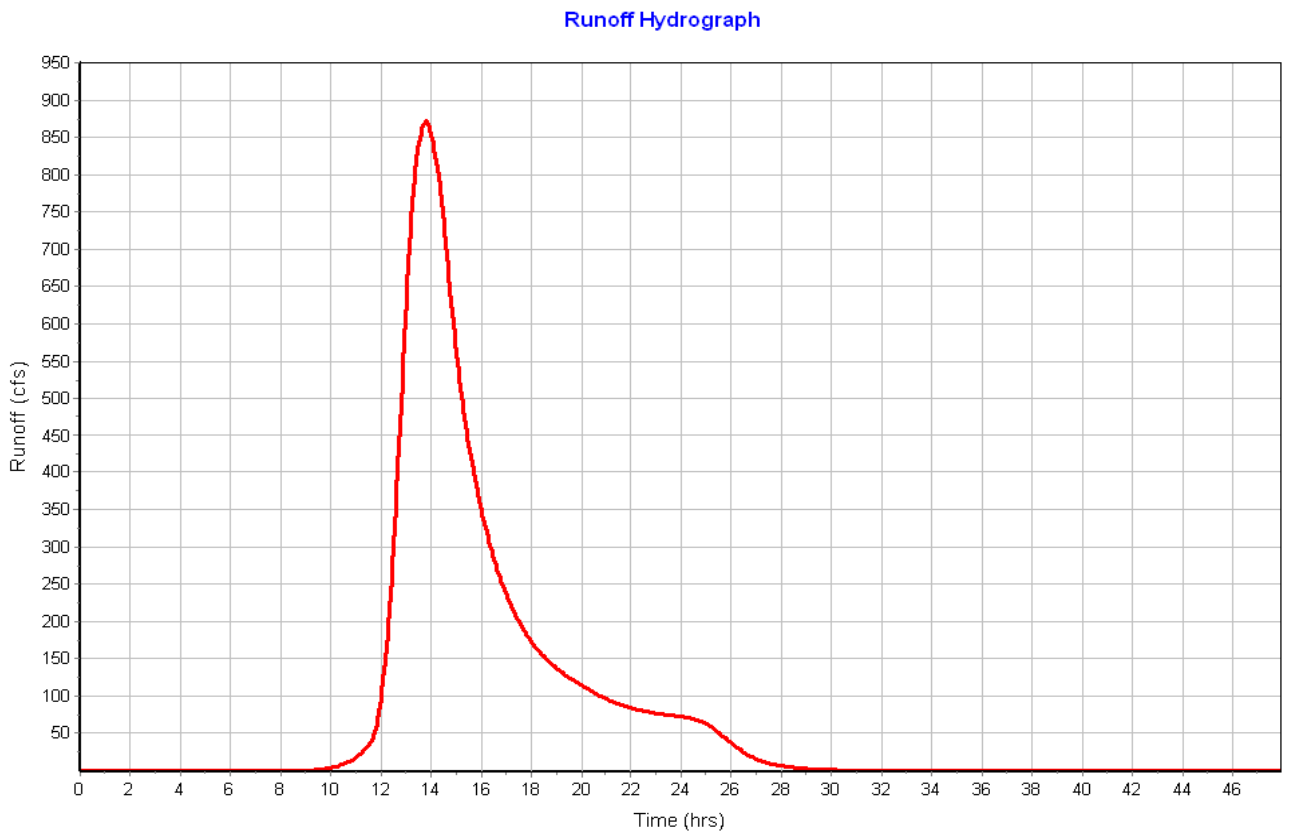
Subbasin : COLMAN-PRE





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Subbasin : Tributary-OP

Input Data

Area (ac) 580.74
Weighted Curve Number 85.65
Rain Gage ID ..... 1-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.11	D	79.00
Farmsteads	87.11	D	86.00
Pasture, grassland, or range, Poor	203.26	D	89.00
Row crops, SR + CR, Good	203.26	D	85.00
Composite Area & Weighted CN	580.74		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 2.90
Total Runoff (in) 1.55
Peak Runoff (cfs) 228.63
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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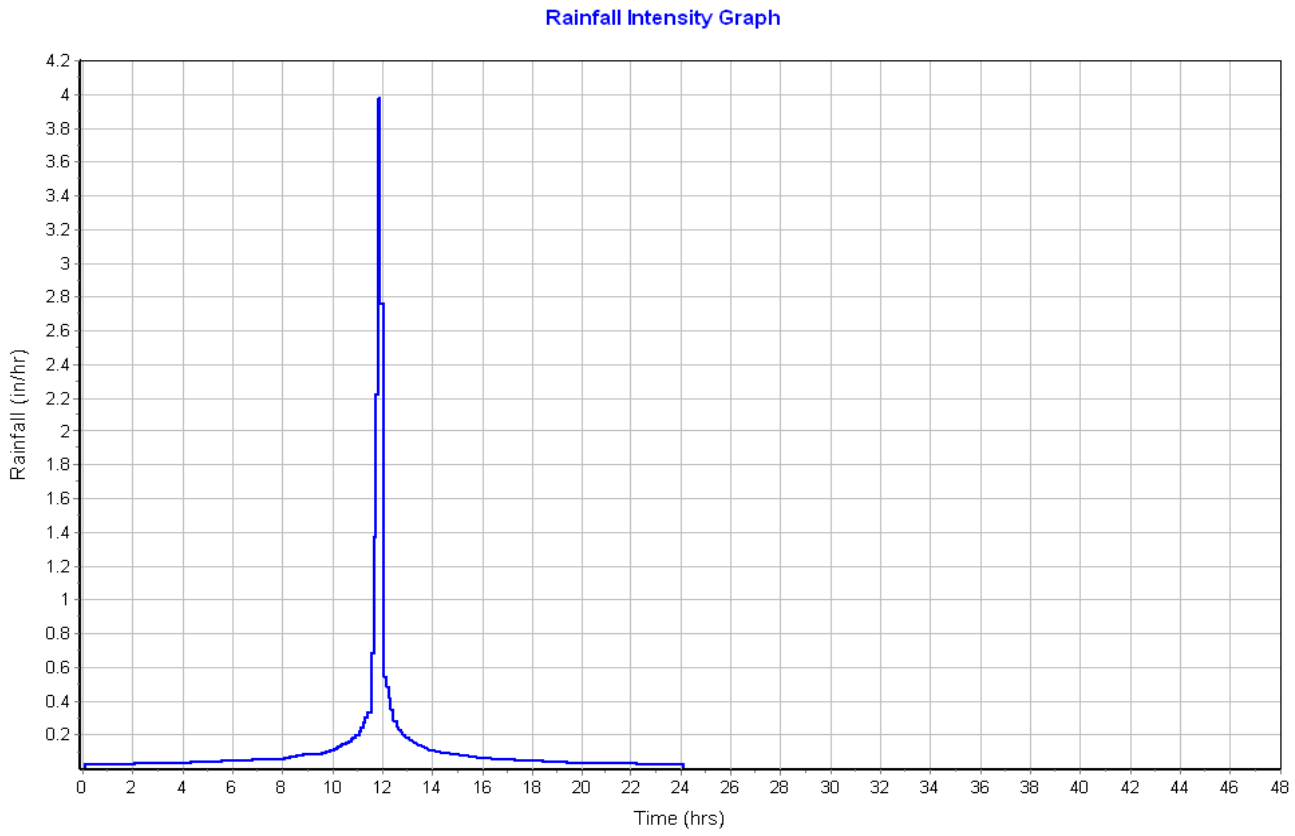
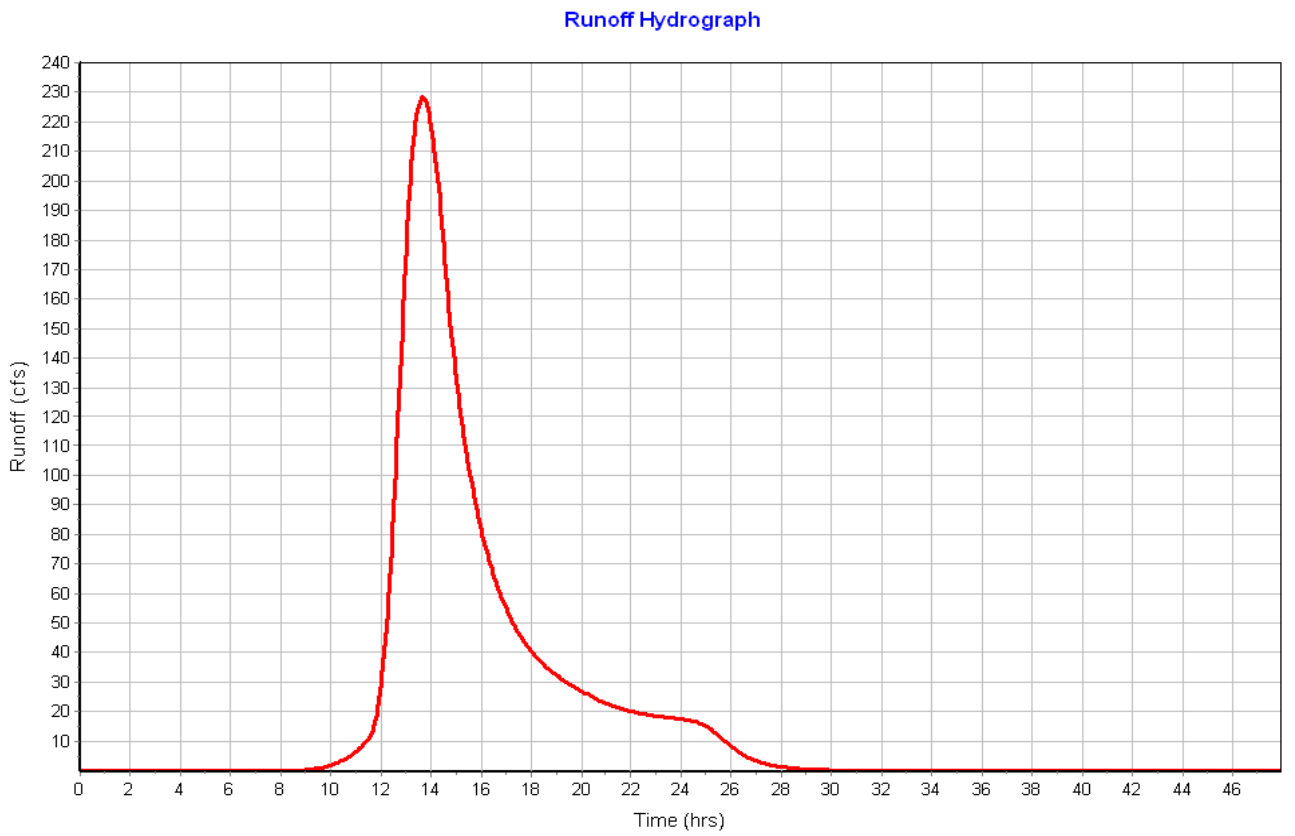
Subbasin : Tributary-OP





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Subbasin : Tributary-POST

Input Data

Area (ac) 581.60
Weighted Curve Number 85.65
Rain Gage ID ..... 1-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.24	D	79.00
Farmsteads	87.24	D	86.00
Pasture, grassland, or range, Poor	203.56	D	89.00
Row crops, SR + CR, Good	203.56	D	85.00
Composite Area & Weighted CN	581.60		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 2.90
Total Runoff (in) 1.55
Peak Runoff (cfs) 228.97
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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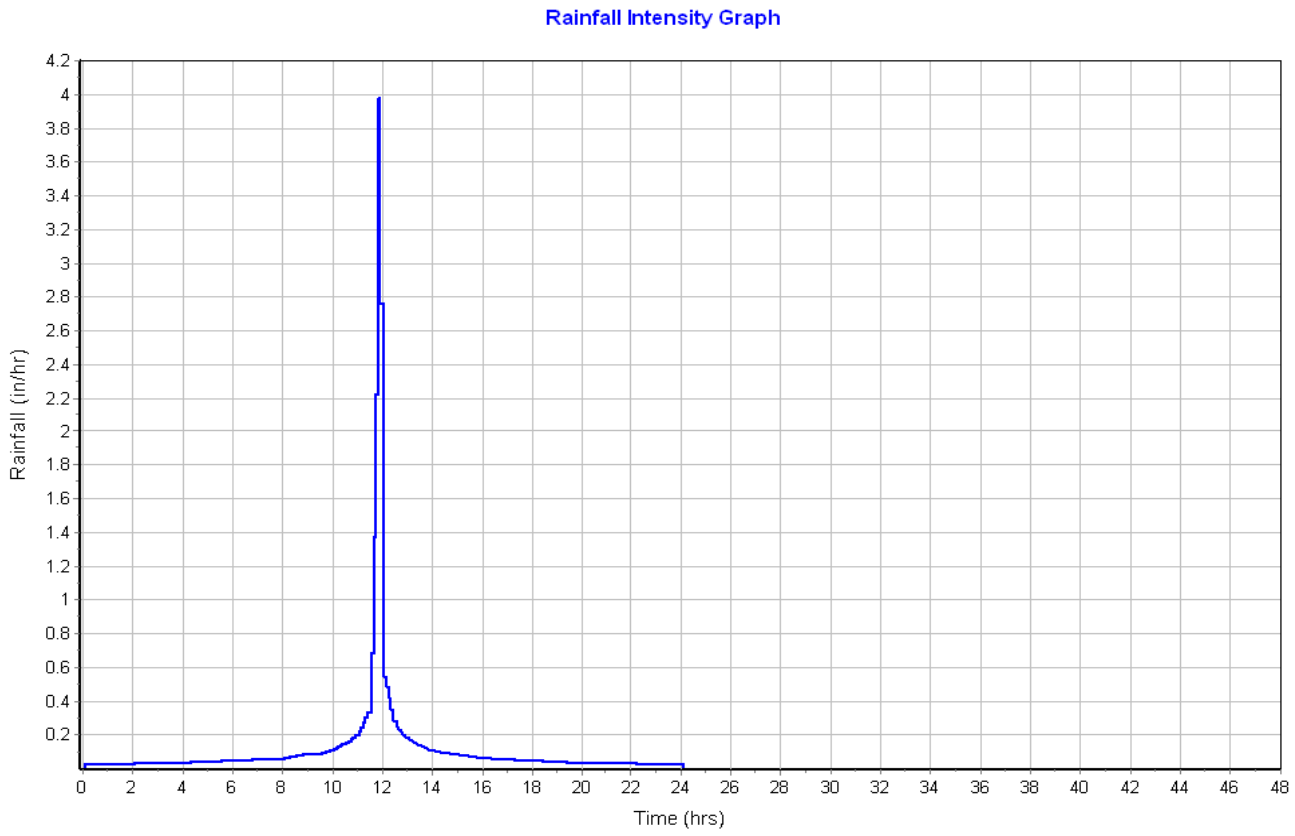
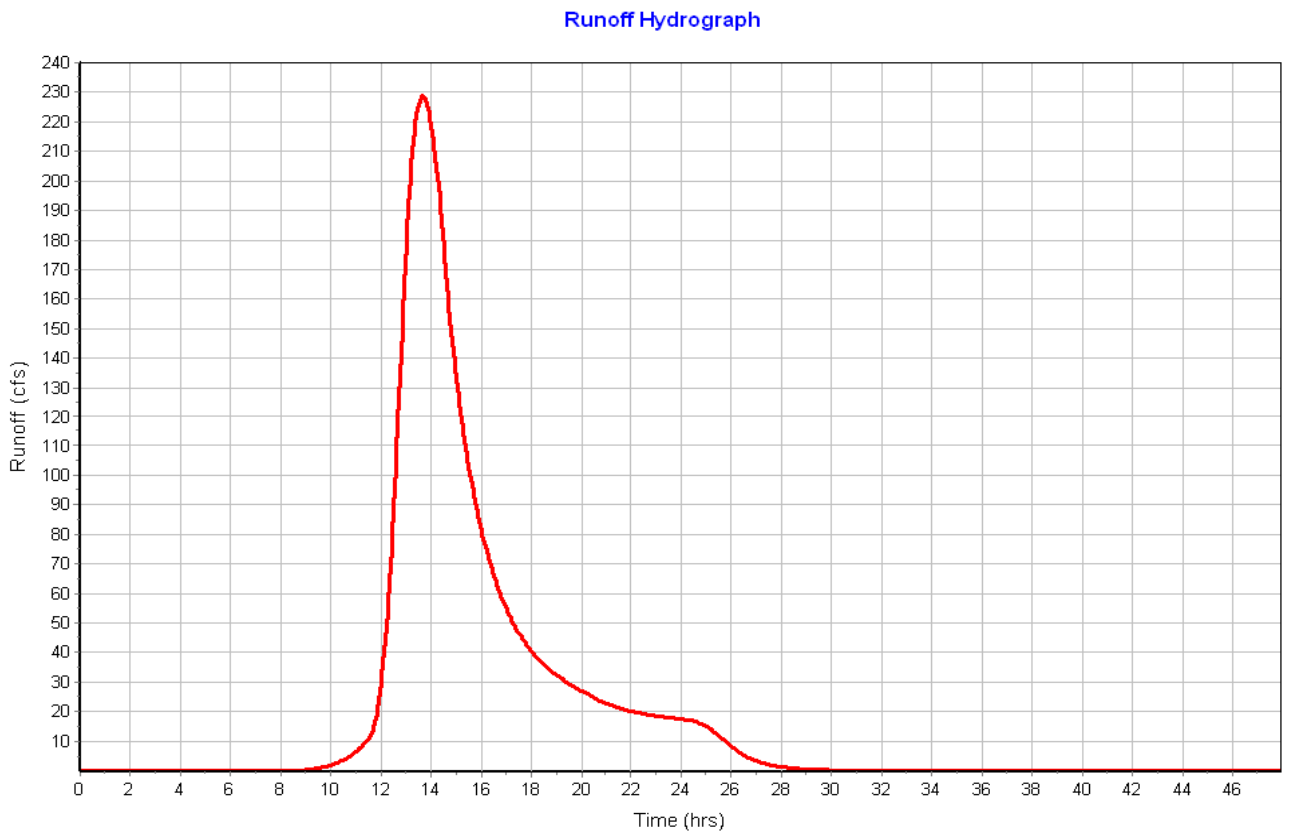
Subbasin : Tributary-POST





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Subbasin : TRIBUTARY-PRE

Input Data

Area (ac) 608.00
Weighted Curve Number 85.65
Rain Gage ID ..... 1-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	91.20	D	79.00
Farmsteads	91.20	D	86.00
Pasture, grassland, or range, Poor	212.80	D	89.00
Row crops, SR + CR, Good	212.80	D	85.00
Composite Area & Weighted CN	608.00		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 2.90
Total Runoff (in) 1.55
Peak Runoff (cfs) 239.36
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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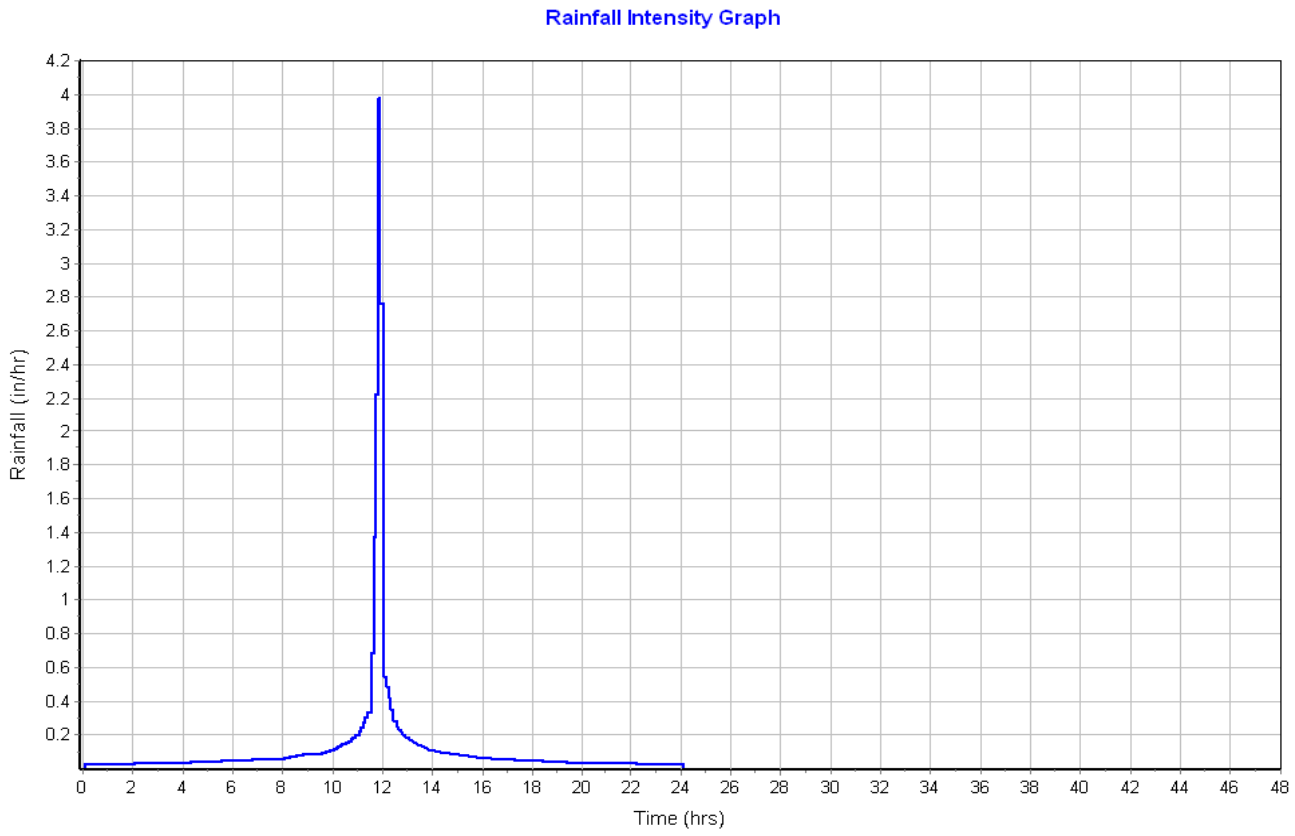
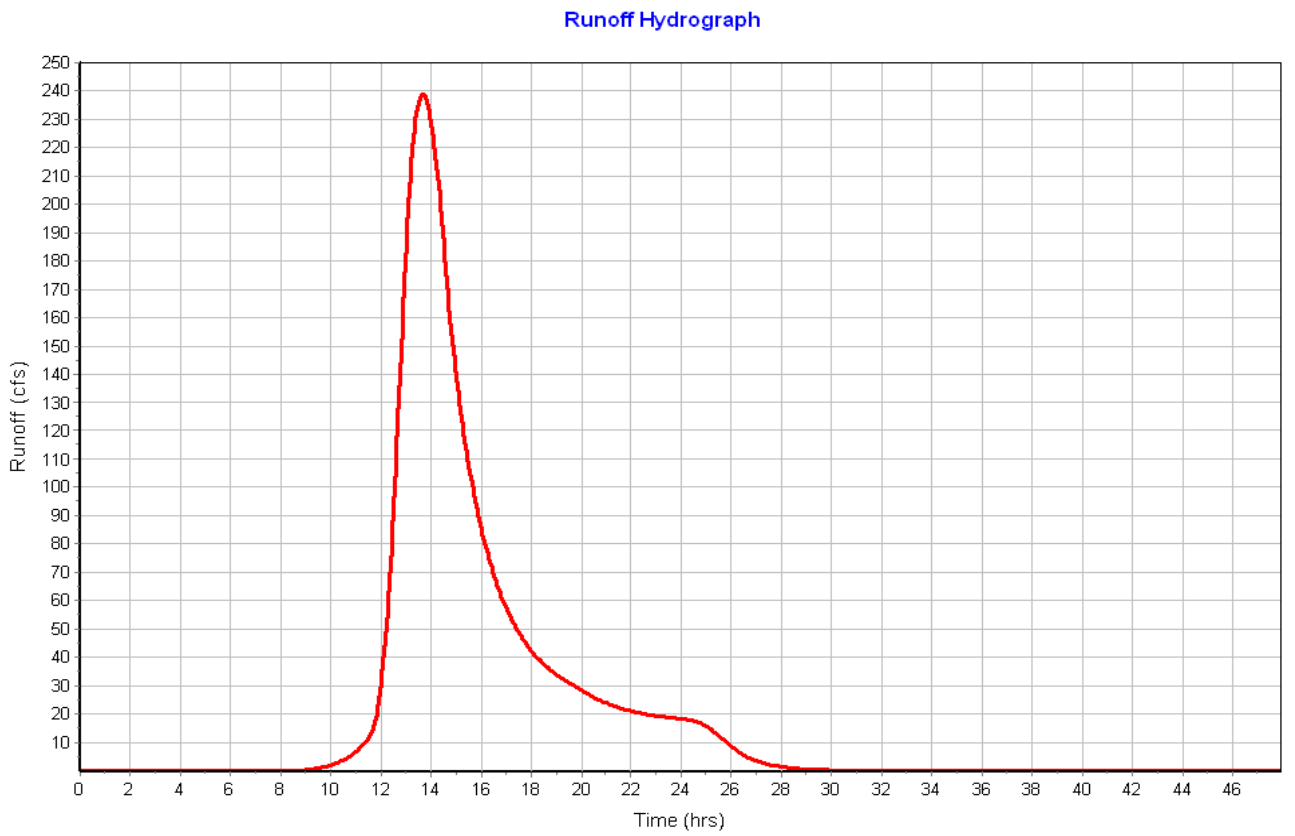
Subbasin : TRIBUTARY-PRE





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Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	100-year Storm	Time Series	Q100	Cumulative	inches	Kansas	Douglas	100	7.90	SCS Type II 24-hr
2	10-year Storm	Time Series	Q10	Cumulative	inches	Kansas	Douglas	10	5.40	SCS Type II 24-hr
3	1-year Storm	Time Series	Q1	Cumulative	inches	Kansas	Douglas	1	2.90	SCS Type II 24-hr
4	25-year Storm	Time Series	Q25	Cumulative	inches	Kansas	Douglas	25	6.20	SCS Type II 24-hr
5	2-year Storm	Time Series	Q2	Cumulative	inches	Kansas	Douglas	2	3.60	SCS Type II 24-hr
6	5-year Storm	Time Series	Q5	Cumulative	inches	Kansas	Douglas	5	4.60	SCS Type II 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Coleman-OP	2346.60	84.55	3.60	2.07	4850.42	1187.29	0 02:57:12
2	Coleman-POST	2369.76	84.55	3.60	2.07	4898.29	1199.01	0 02:57:12
3	COLMAN-PRE	2445.00	84.55	3.60	2.07	5053.82	1237.07	0 02:57:12
4	Tributary-OP	580.74	85.65	3.60	2.16	1253.24	320.38	0 02:47:49
5	Tributary-POST	581.60	85.65	3.60	2.16	1255.09	320.85	0 02:47:49
6	TRIBUTARY-PRE	608.00	85.65	3.60	2.16	1312.06	335.42	0 02:47:49

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Subbasin Hydrology

Subbasin : Coleman-OP

Input Data

Area (ac) 2346.60
Weighted Curve Number 84.55
Rain Gage ID ..... 2-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1877.28	D	85.00
Pasture, grassland, or range, Fair	351.99	D	84.00
Woods, Fair	117.33	D	79.00
Composite Area & Weighted CN	2346.60		84.55

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

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Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft²) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 3.60
Total Runoff (in) 2.07
Peak Runoff (cfs) 1187.29
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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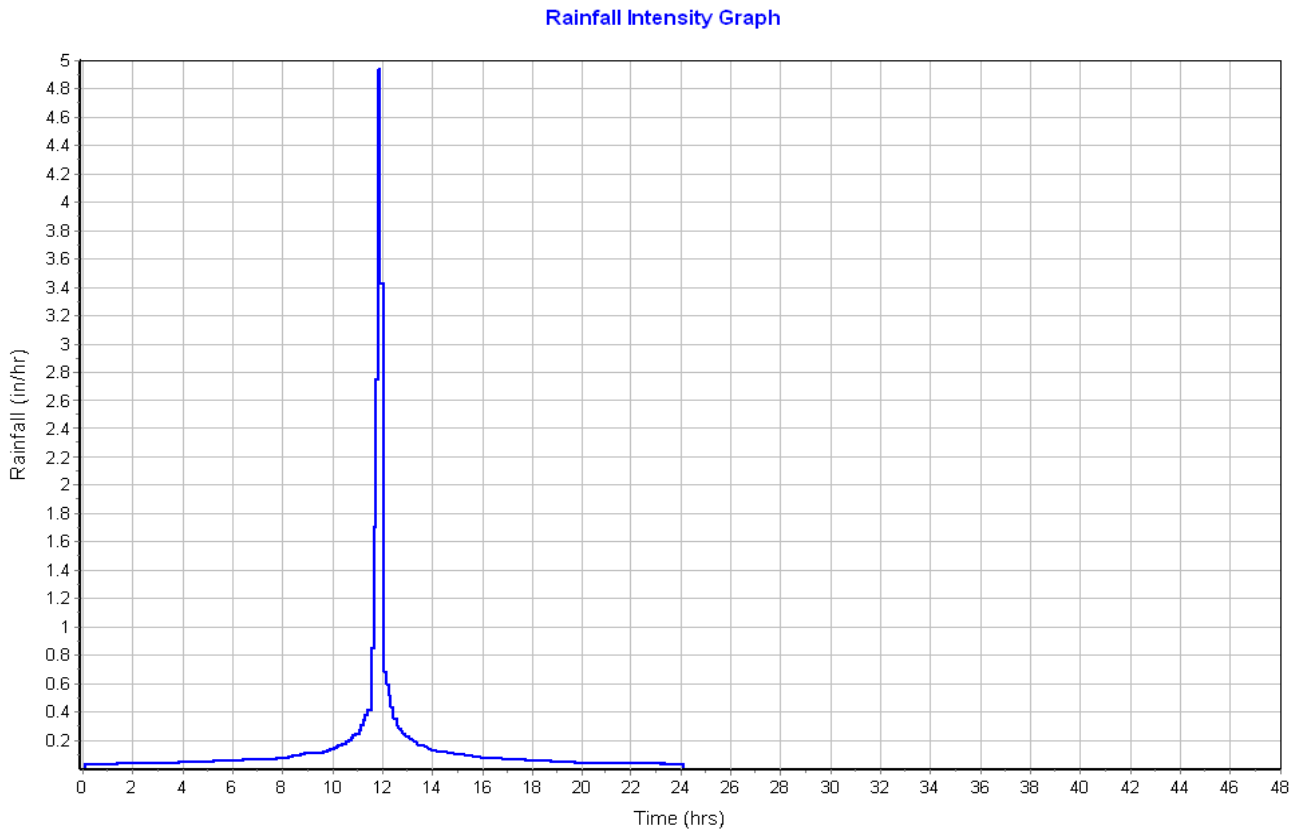
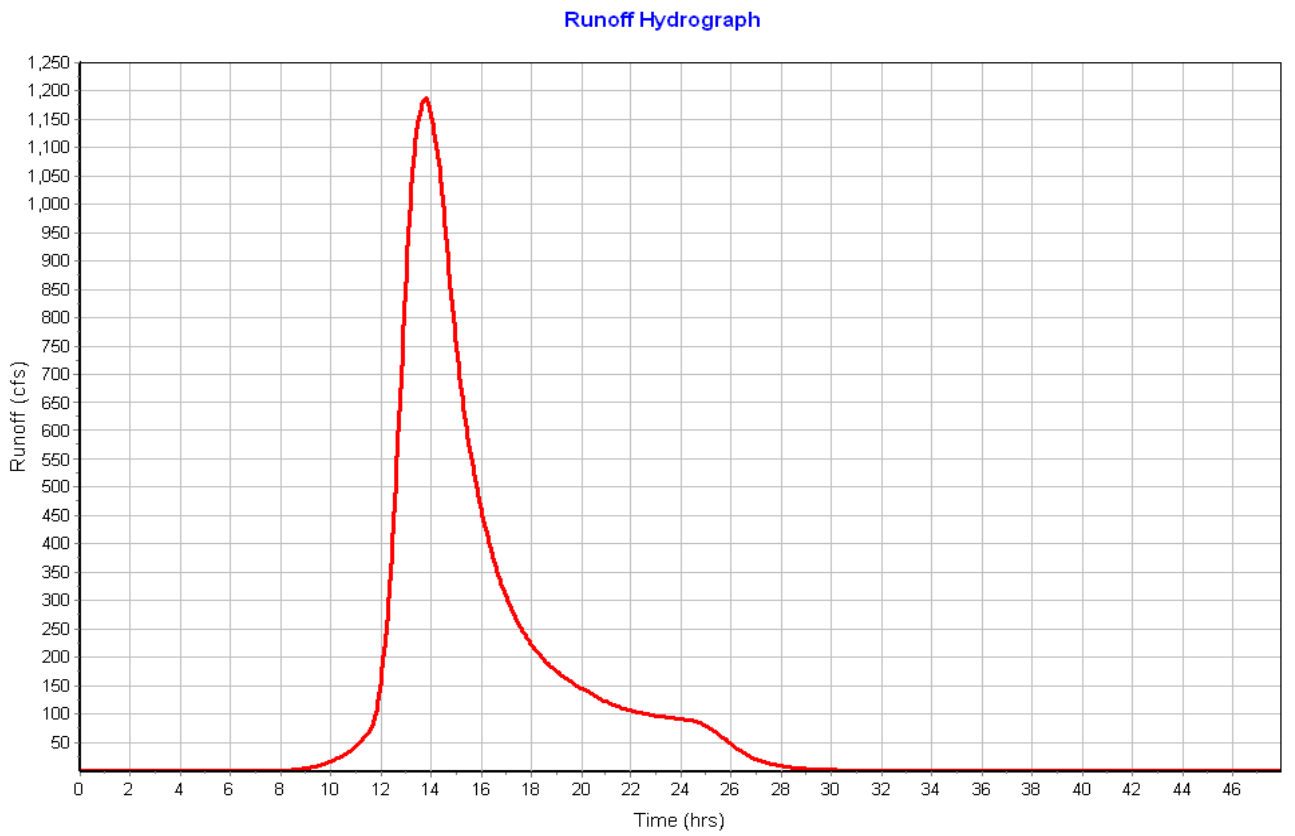
Subbasin : Coleman-OP





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Subbasin : Coleman-POST

Input Data

Area (ac) 2369.76
Weighted Curve Number 84.55
Rain Gage ID ..... 2-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1895.81	D	85.00
Pasture, grassland, or range, Fair	355.46	D	84.00
Woods, Fair	118.49	D	79.00
Composite Area & Weighted CN	2369.76		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 3.60
Total Runoff (in) 2.07
Peak Runoff (cfs) 1199.01
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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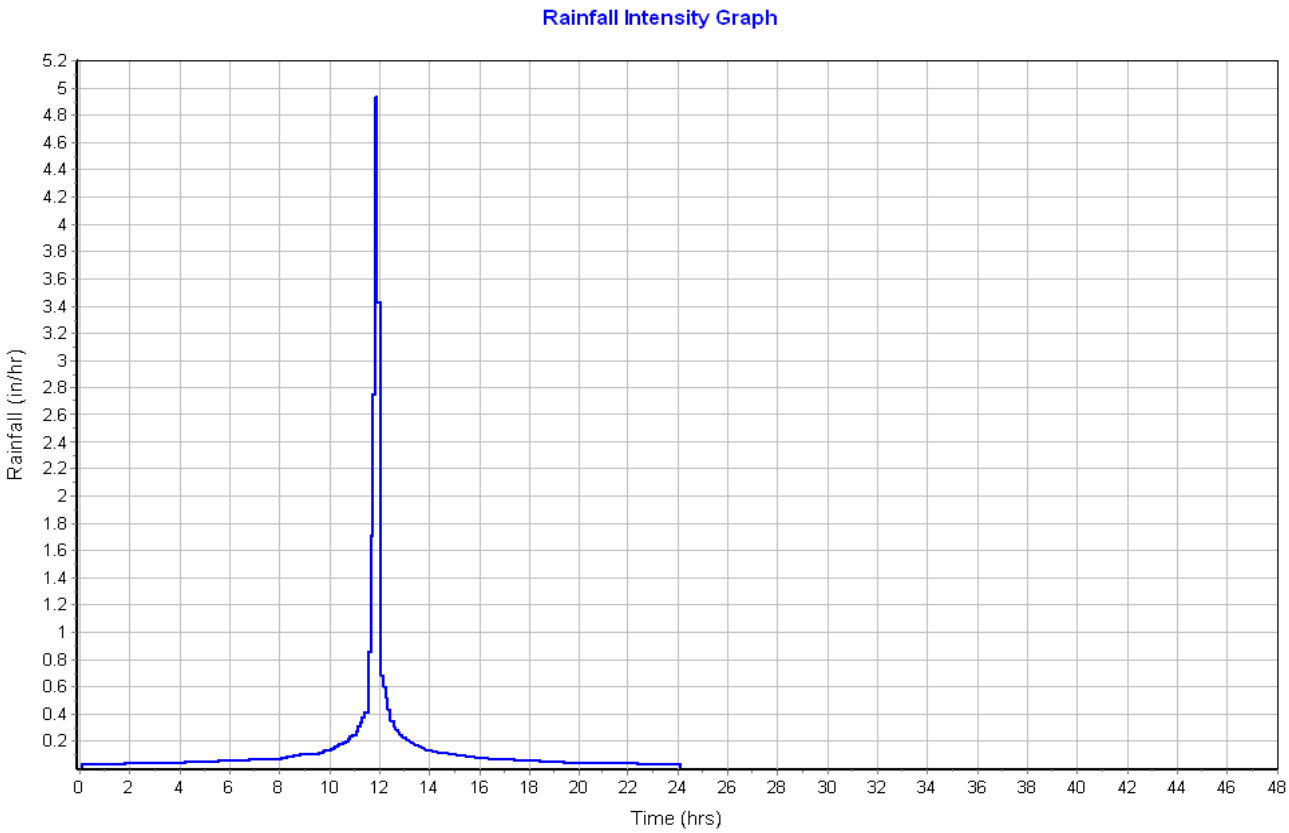
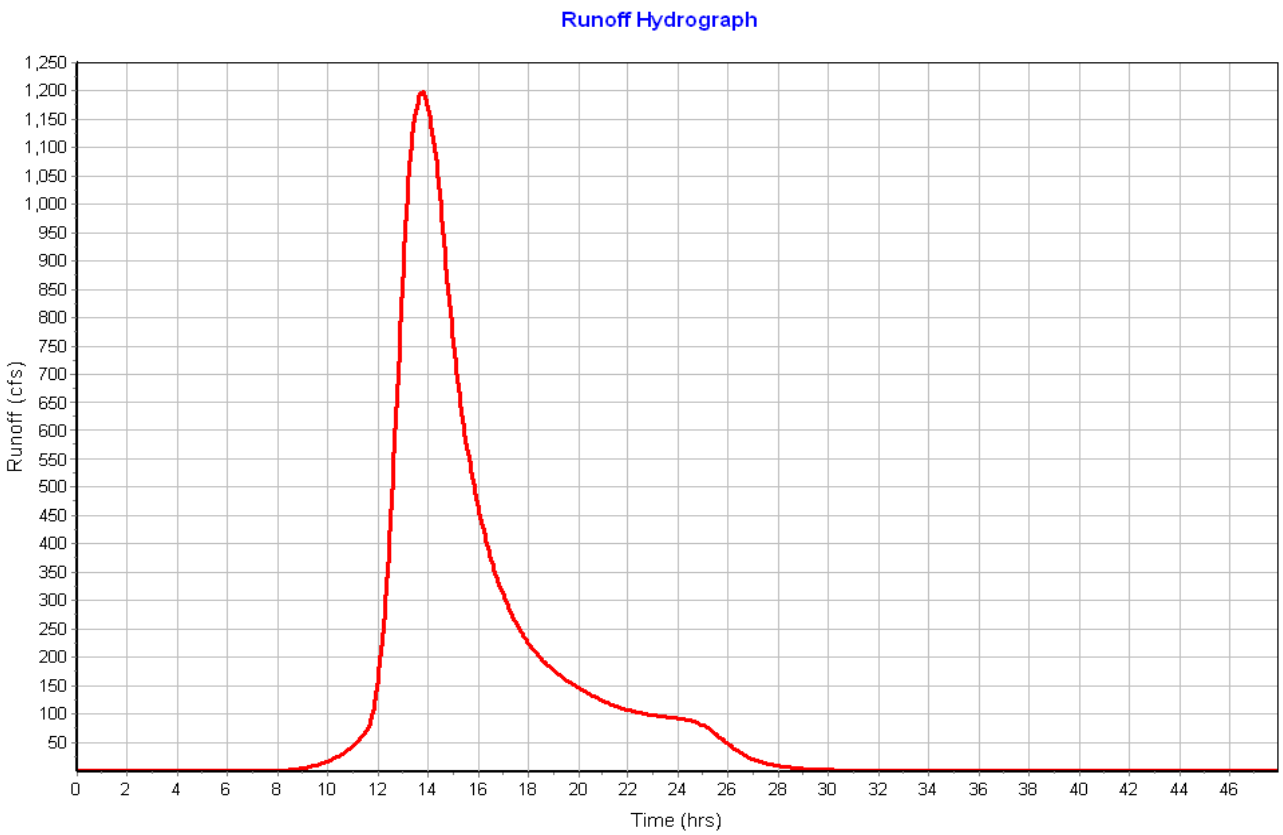
Subbasin : Coleman-POST





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Subbasin : COLMAN-PRE

Input Data

Area (ac) 2445.00
Weighted Curve Number 84.55
Rain Gage ID ..... 2-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1956.00	D	85.00
Pasture, grassland, or range, Fair	366.75	D	84.00
Woods, Fair	122.25	D	79.00
Composite Area & Weighted CN	2445.00		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 3.60
Total Runoff (in) 2.07
Peak Runoff (cfs) 1237.07
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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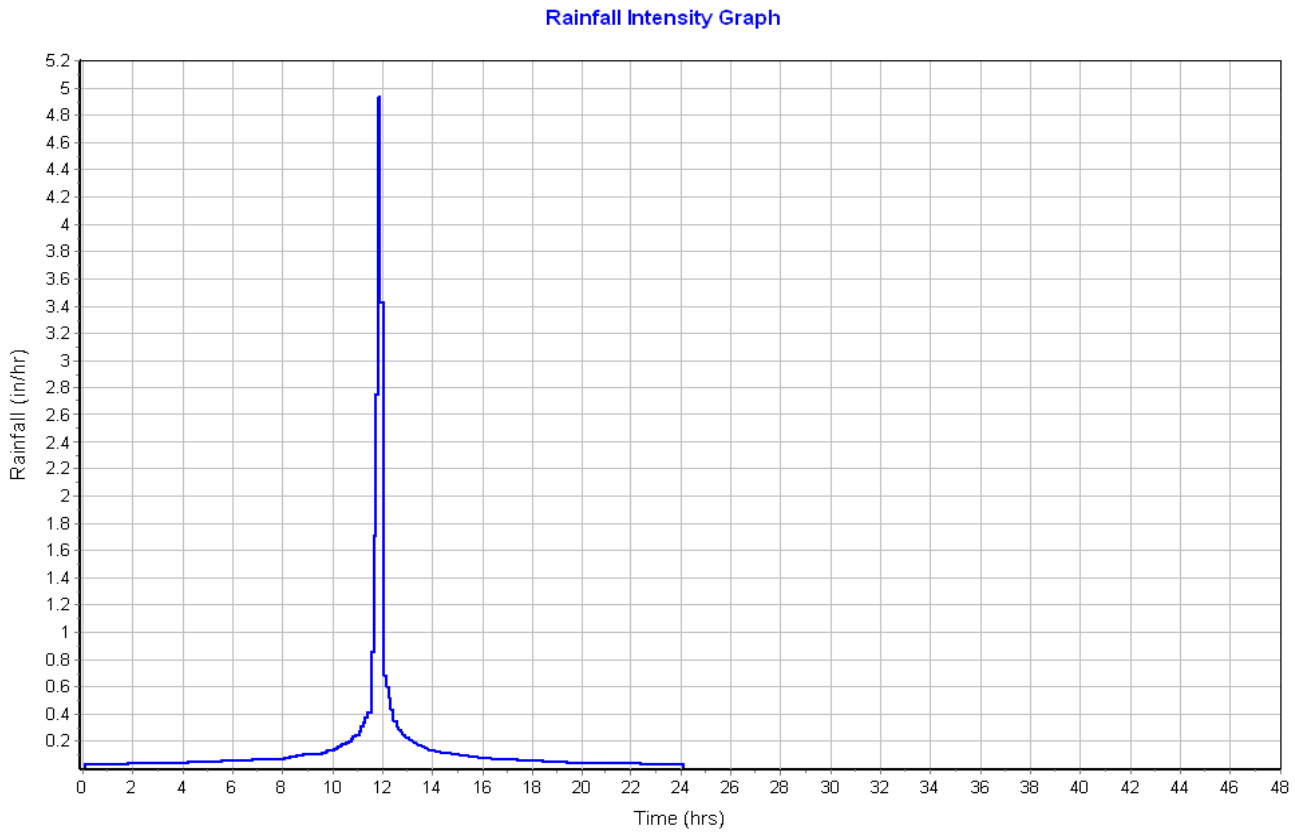
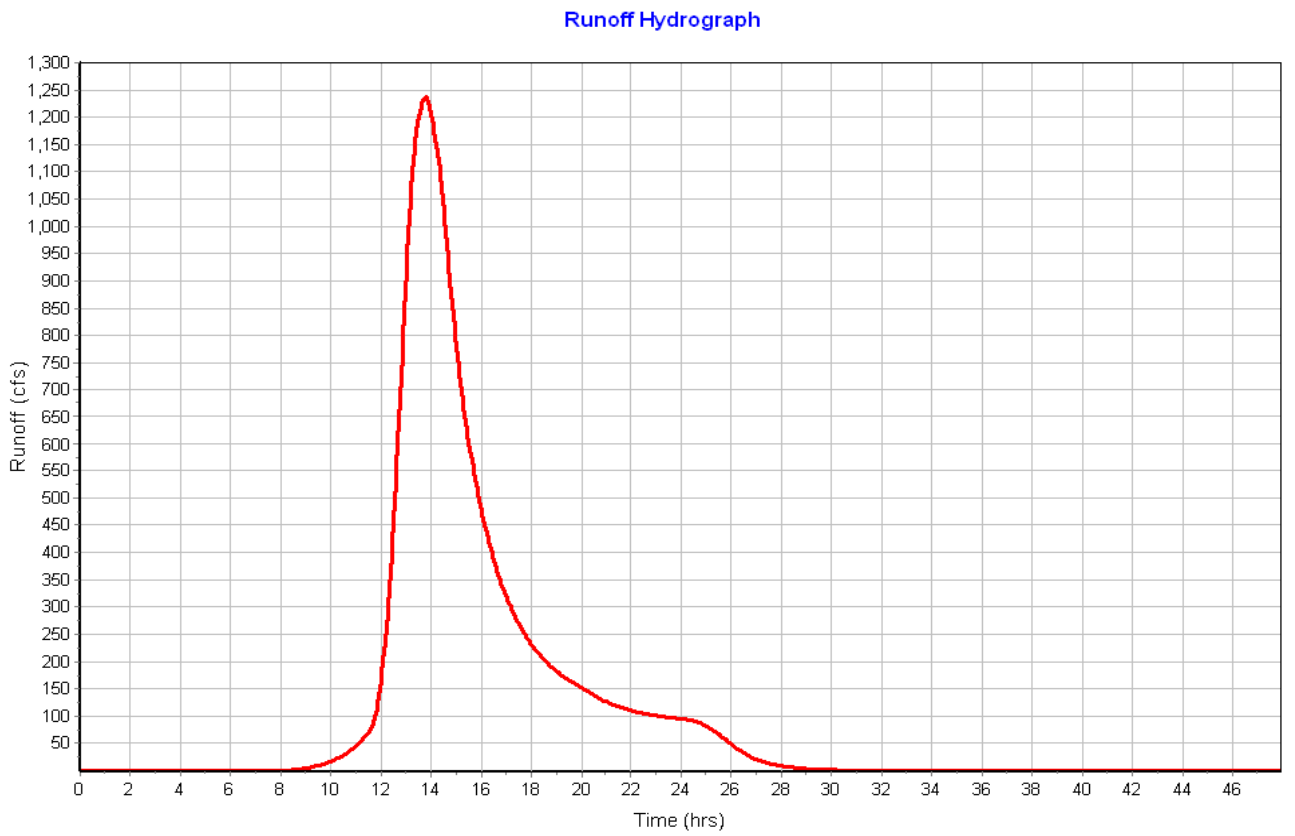
Subbasin : COLMAN-PRE





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Subbasin : Tributary-OP

Input Data

Area (ac) 580.74
Weighted Curve Number 85.65
Rain Gage ID ..... 2-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.11	D	79.00
Farmsteads	87.11	D	86.00
Pasture, grassland, or range, Poor	203.26	D	89.00
Row crops, SR + CR, Good	203.26	D	85.00
Composite Area & Weighted CN	580.74		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 3.60
Total Runoff (in) 2.16
Peak Runoff (cfs) 320.38
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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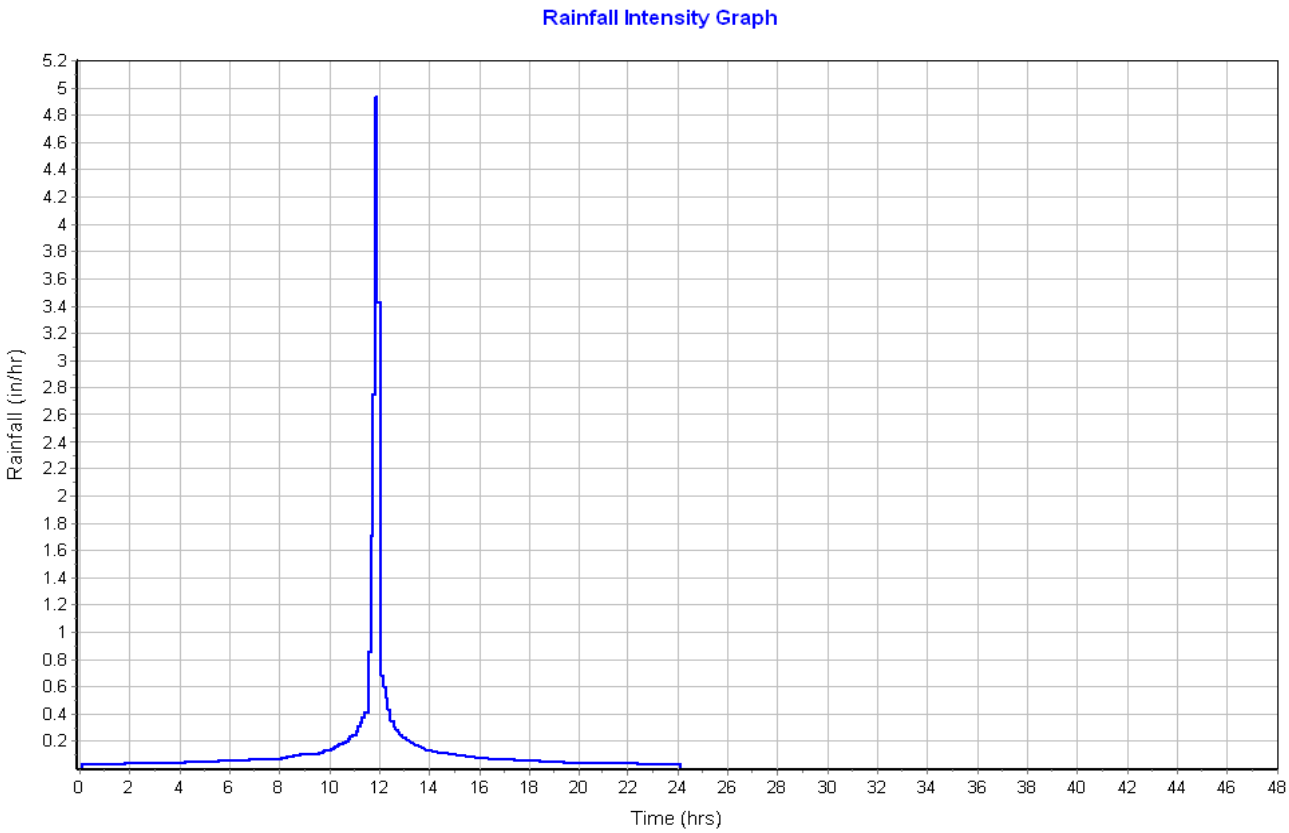
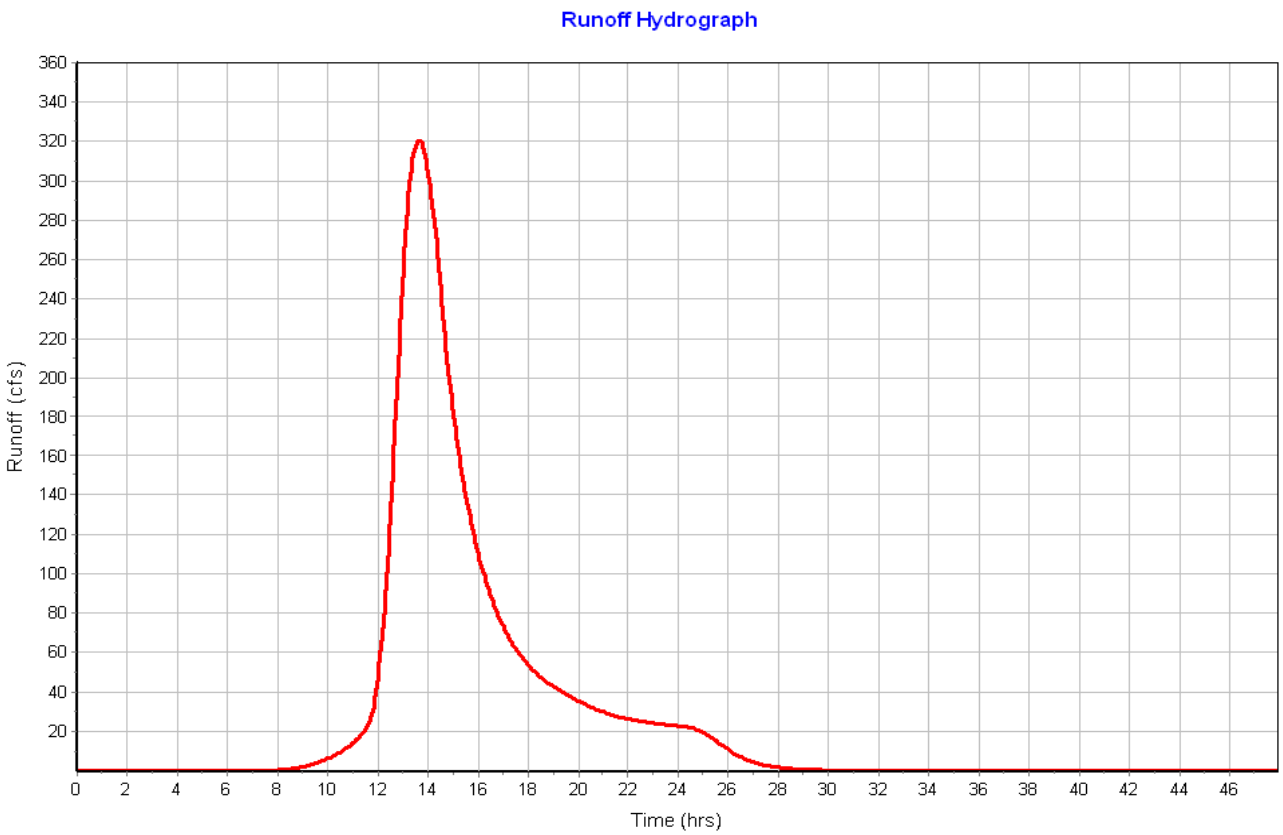
Subbasin : Tributary-OP





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Subbasin : Tributary-POST

Input Data

Area (ac) 581.60
Weighted Curve Number 85.65
Rain Gage ID ..... 2-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.24	D	79.00
Farmsteads	87.24	D	86.00
Pasture, grassland, or range, Poor	203.56	D	89.00
Row crops, SR + CR, Good	203.56	D	85.00
Composite Area & Weighted CN	581.60		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 3.60
Total Runoff (in) 2.16
Peak Runoff (cfs) 320.85
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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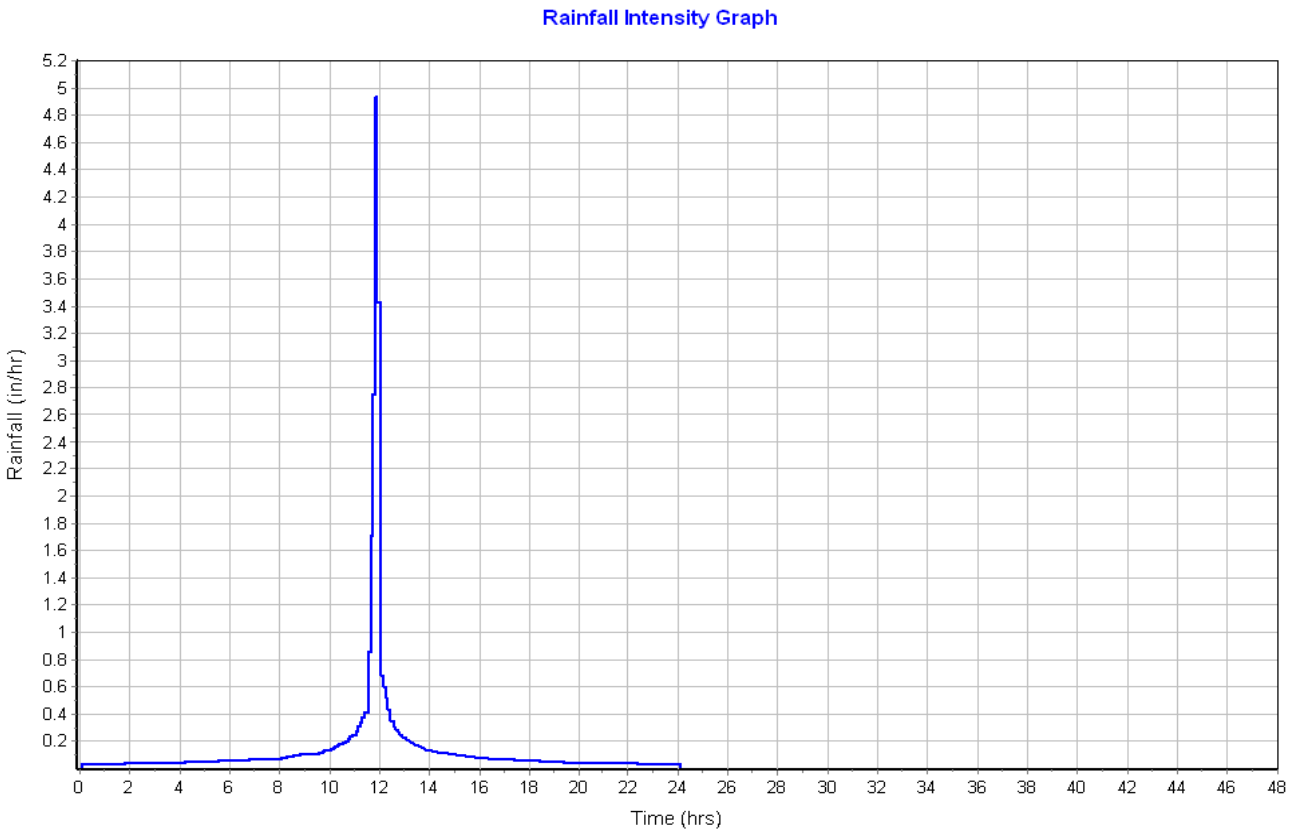
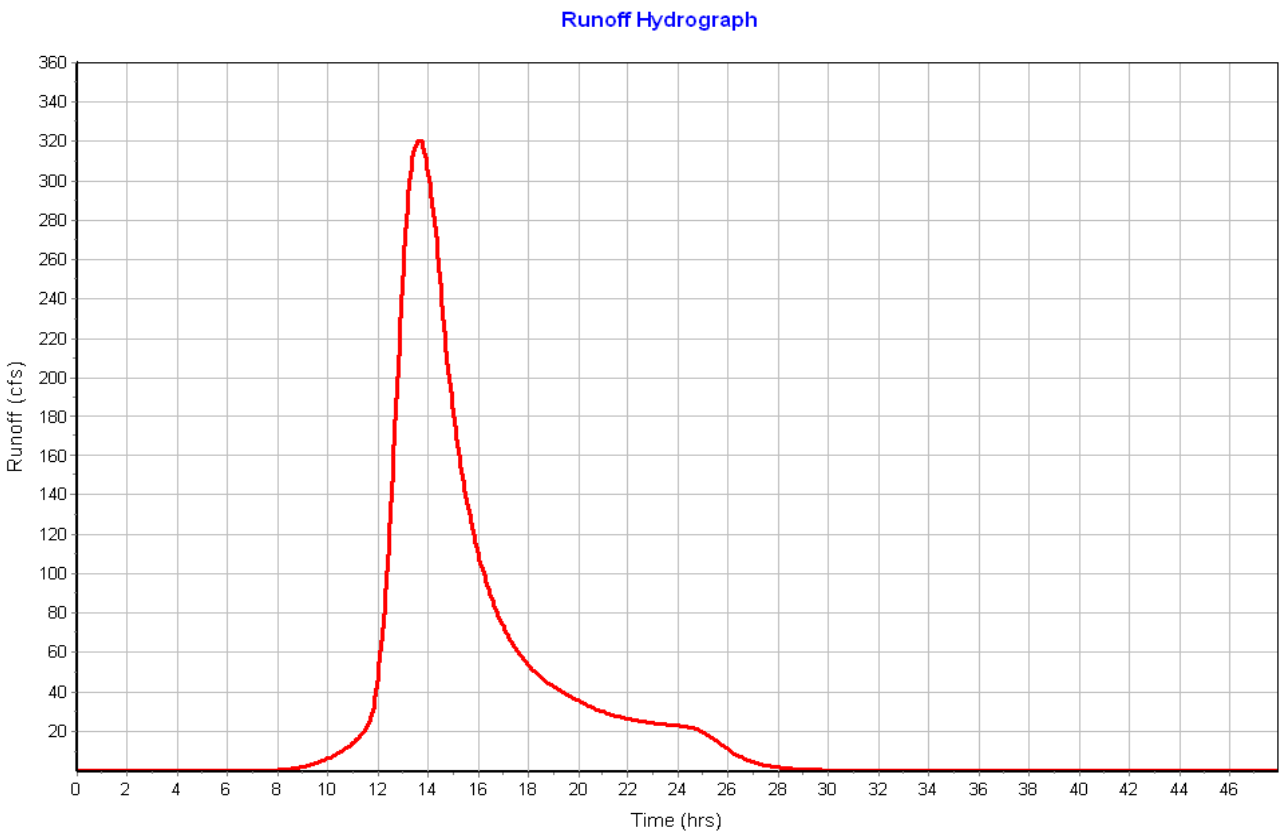
Subbasin : Tributary-POST





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Subbasin : TRIBUTARY-PRE

Input Data

Area (ac) 608.00
Weighted Curve Number 85.65
Rain Gage ID ..... 2-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	91.20	D	79.00
Farmsteads	91.20	D	86.00
Pasture, grassland, or range, Poor	212.80	D	89.00
Row crops, SR + CR, Good	212.80	D	85.00
Composite Area & Weighted CN	608.00		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 3.60
Total Runoff (in) 2.16
Peak Runoff (cfs) 335.42
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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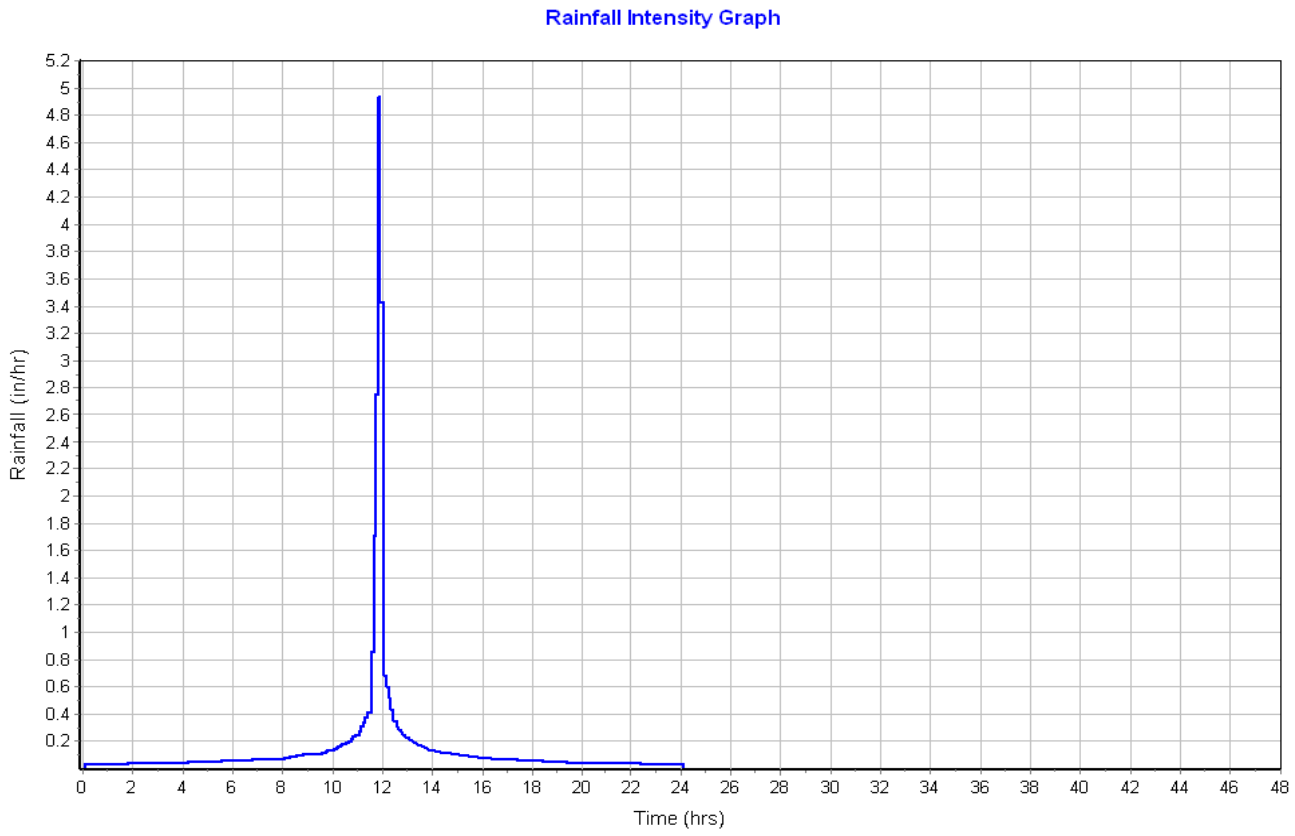
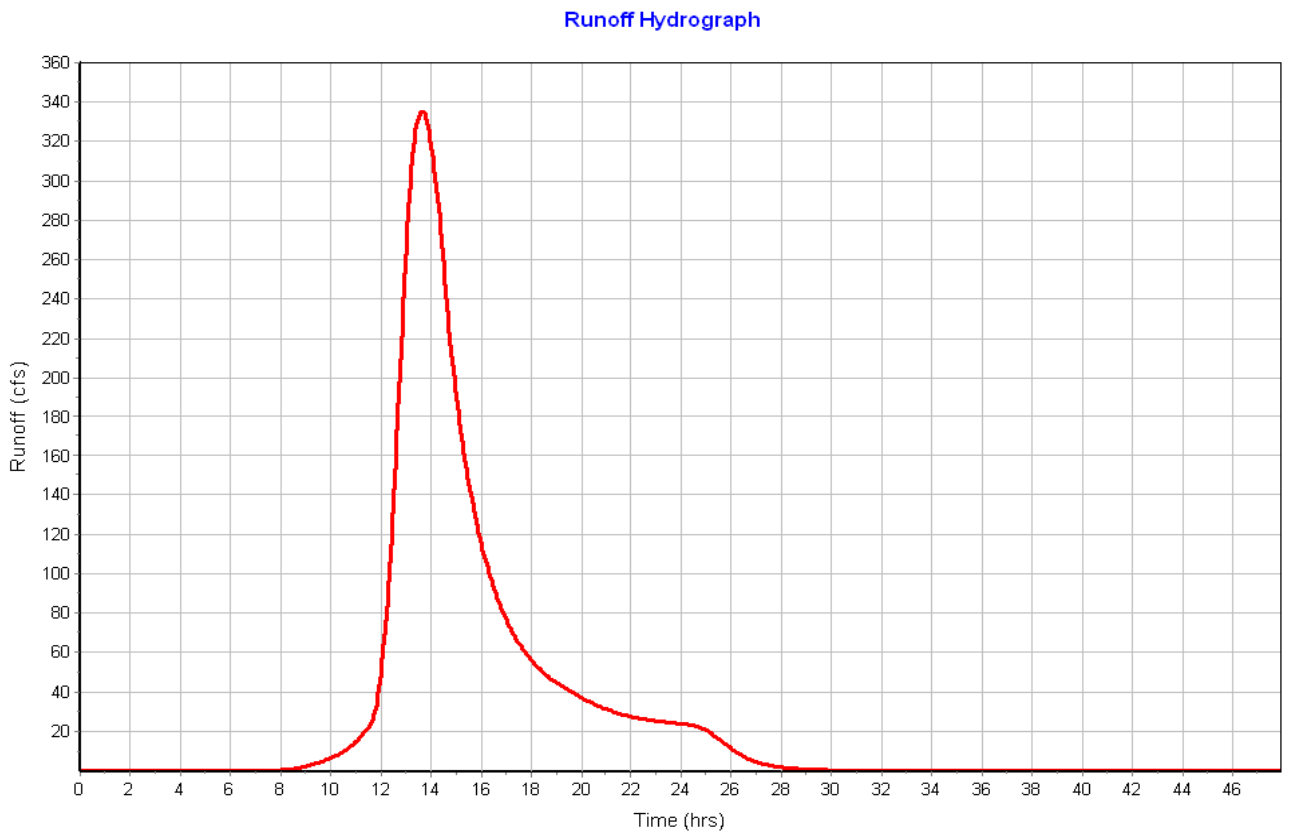
Subbasin : TRIBUTARY-PRE





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Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	100-year Storm	Time Series	Q100	Cumulative	inches	Kansas	Douglas	100	7.90	SCS Type II 24-hr
2	10-year Storm	Time Series	Q10	Cumulative	inches	Kansas	Douglas	10	5.40	SCS Type II 24-hr
3	1-year Storm	Time Series	Q1	Cumulative	inches	Kansas	Douglas	1	2.90	SCS Type II 24-hr
4	25-year Storm	Time Series	Q25	Cumulative	inches	Kansas	Douglas	25	6.20	SCS Type II 24-hr
5	2-year Storm	Time Series	Q2	Cumulative	inches	Kansas	Douglas	2	3.60	SCS Type II 24-hr
6	5-year Storm	Time Series	Q5	Cumulative	inches	Kansas	Douglas	5	4.60	SCS Type II 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Coleman-OP	2346.60	84.55	4.60	2.96	6941.24	1707.72	0 02:57:12
2	Coleman-POST	2369.76	84.55	4.60	2.96	7009.75	1724.58	0 02:57:12
3	COLMAN-PRE	2445.00	84.55	4.60	2.96	7232.31	1779.33	0 02:57:12
4	Tributary-OP	580.74	85.65	4.60	3.06	1778.23	455.87	0 02:47:49
5	Tributary-POST	581.60	85.65	4.60	3.06	1780.86	456.55	0 02:47:49
6	TRIBUTARY-PRE	608.00	85.65	4.60	3.06	1861.70	477.27	0 02:47:49

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Subbasin Hydrology

Subbasin : Coleman-OP

Input Data

Area (ac) 2346.60
Weighted Curve Number 84.55
Rain Gage ID ..... 5-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1877.28	D	85.00
Pasture, grassland, or range, Fair	351.99	D	84.00
Woods, Fair	117.33	D	79.00
Composite Area & Weighted CN	2346.60		84.55

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft^2)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

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Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft²) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 4.60
Total Runoff (in) 2.96
Peak Runoff (cfs) 1707.72
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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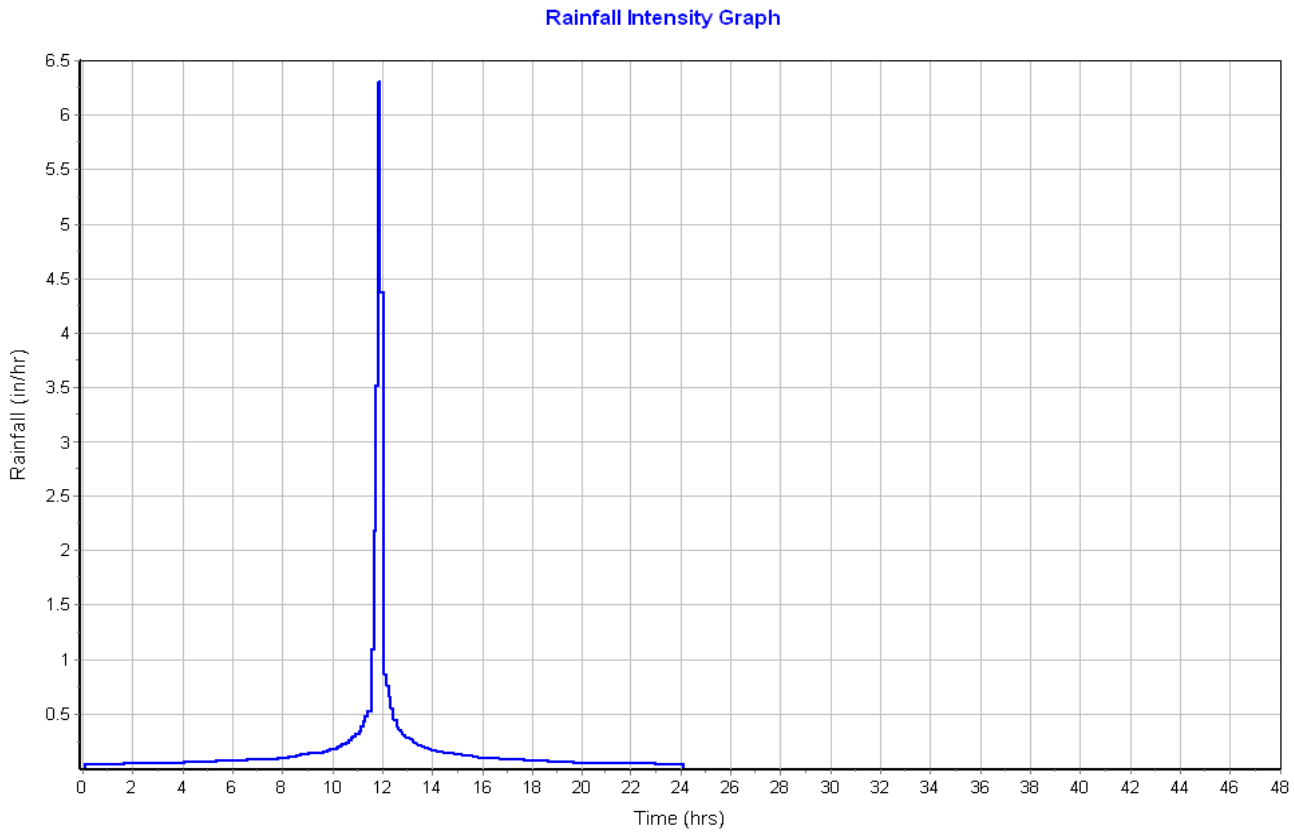
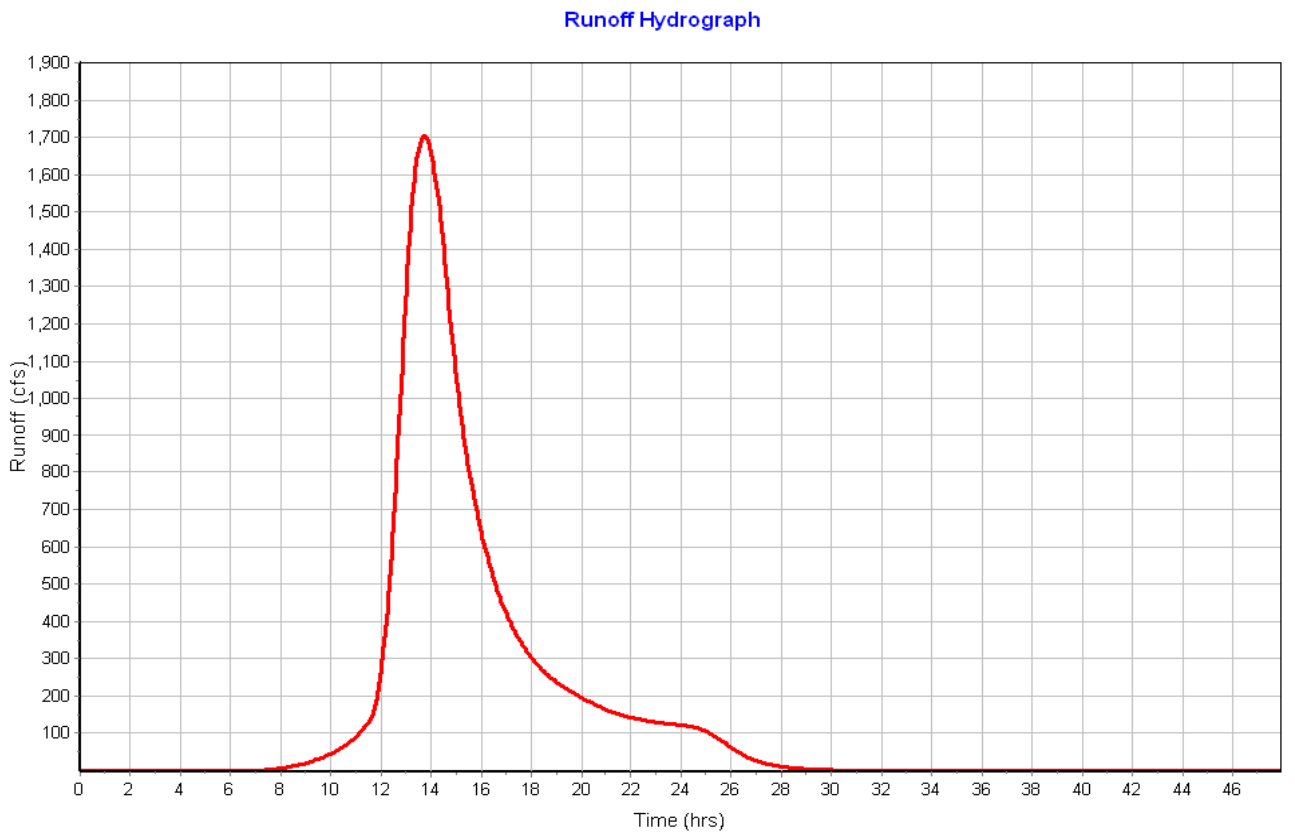
Subbasin : Coleman-OP





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Subbasin : Coleman-POST

Input Data

Area (ac) 2369.76
Weighted Curve Number 84.55
Rain Gage ID ..... 5-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1895.81	D	85.00
Pasture, grassland, or range, Fair	355.46	D	84.00
Woods, Fair	118.49	D	79.00
Composite Area & Weighted CN	2369.76		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 4.60
Total Runoff (in) 2.96
Peak Runoff (cfs) 1724.58
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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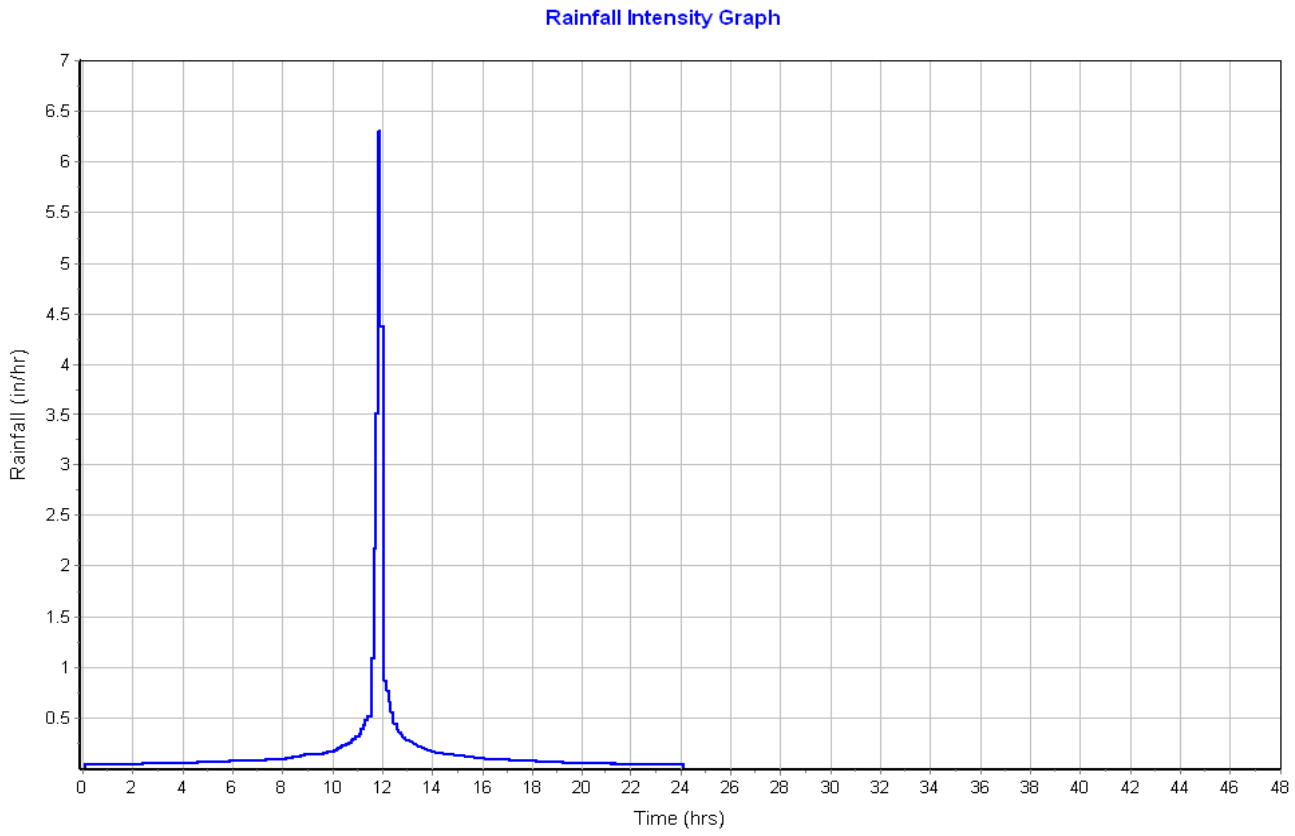
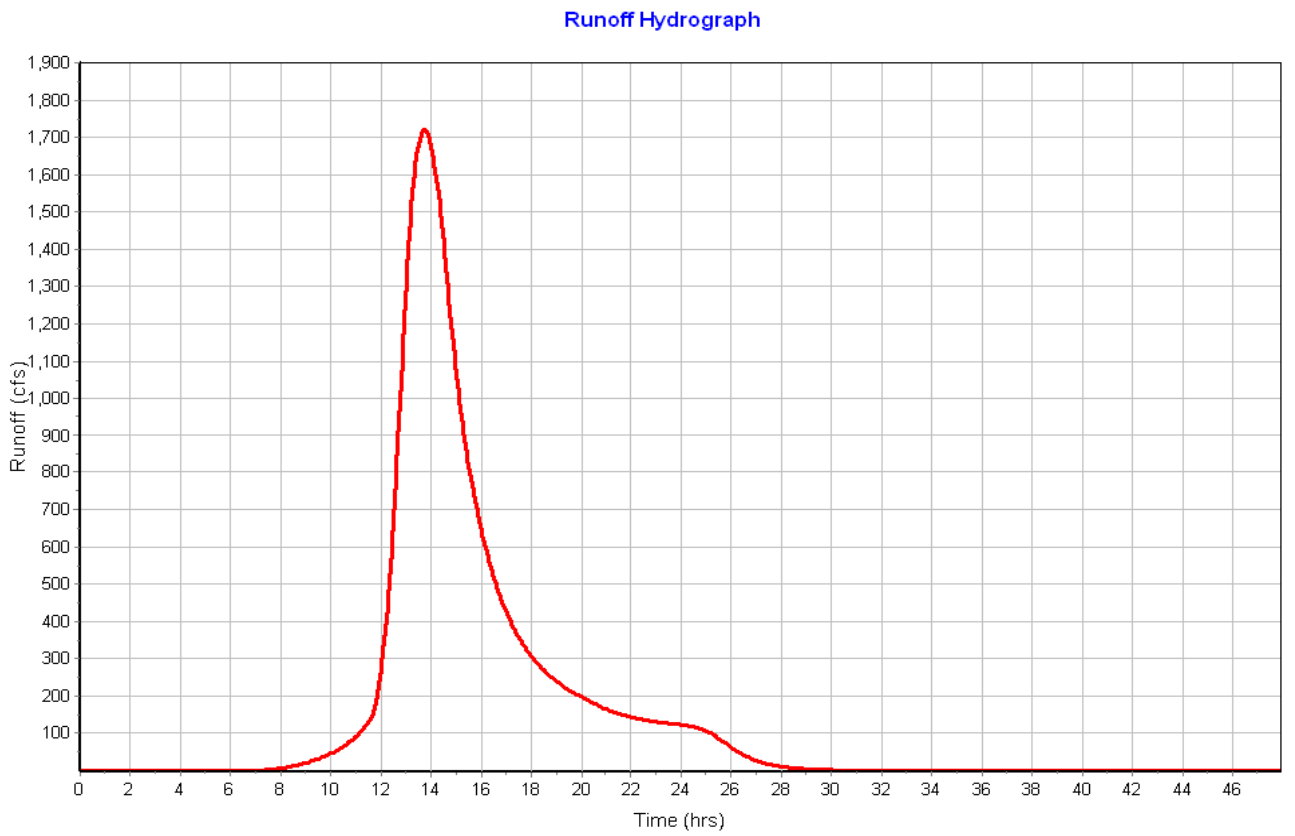
Subbasin : Coleman-POST





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Subbasin : COLMAN-PRE

Input Data

Area (ac) 2445.00
Weighted Curve Number 84.55
Rain Gage ID ..... 5-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1956.00	D	85.00
Pasture, grassland, or range, Fair	366.75	D	84.00
Woods, Fair	122.25	D	79.00
Composite Area & Weighted CN	2445.00		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 4.60
Total Runoff (in) 2.96
Peak Runoff (cfs) 1779.33
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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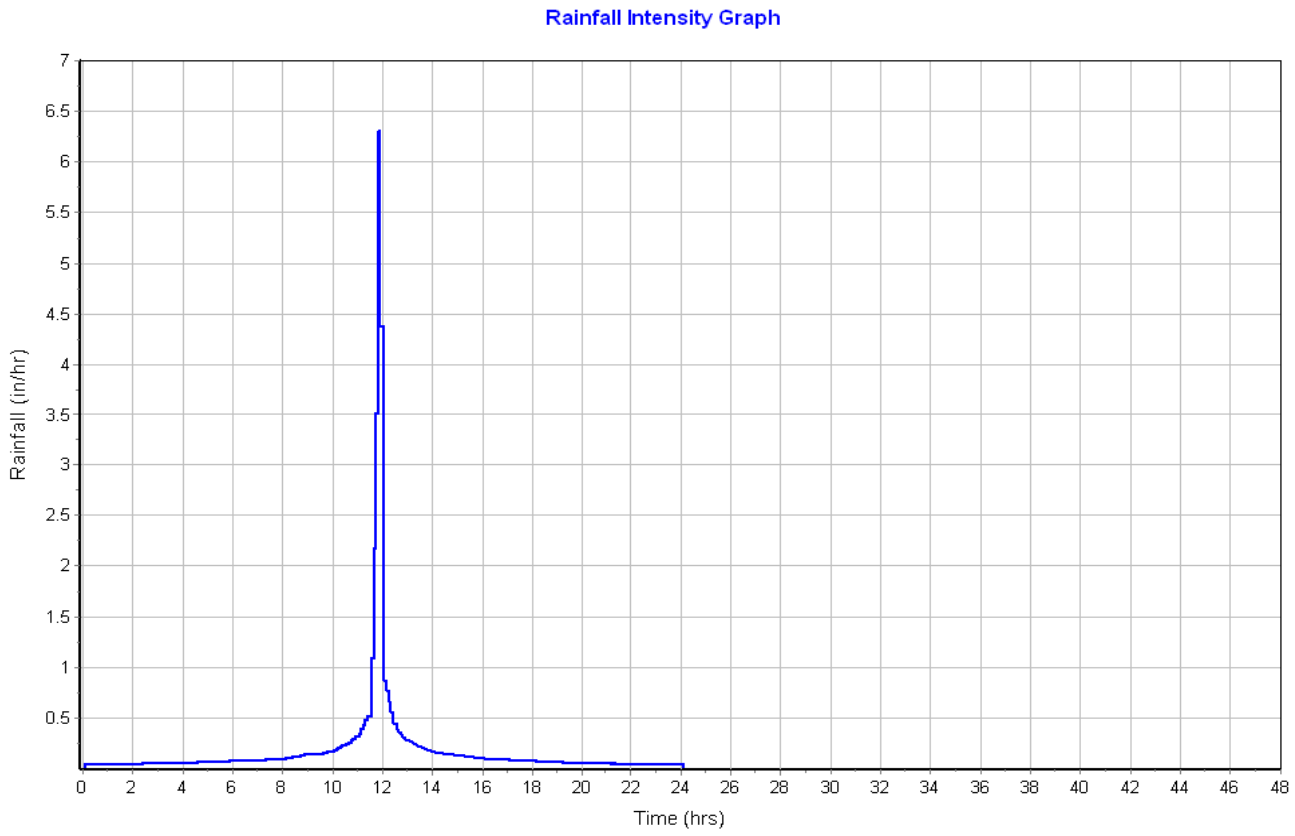
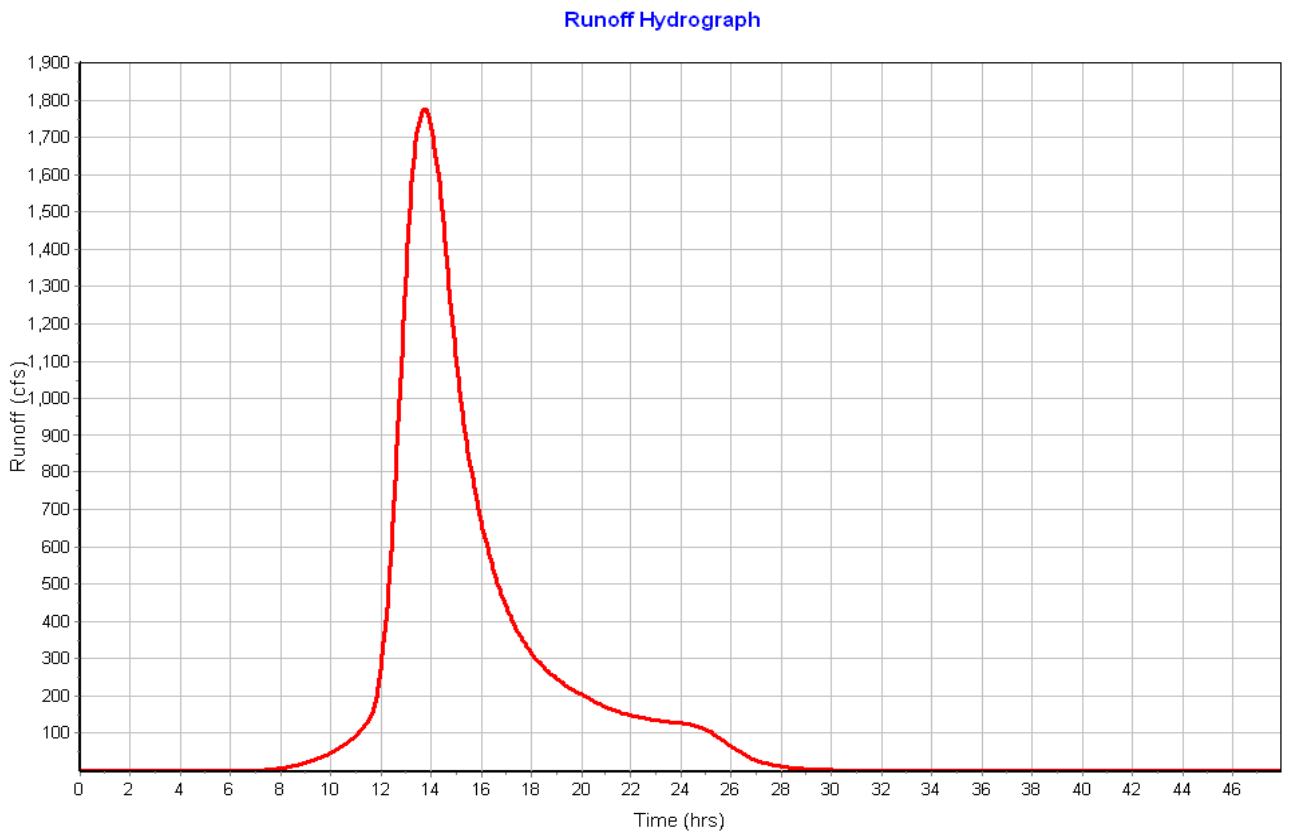
Subbasin : COLMAN-PRE





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Subbasin : Tributary-OP

Input Data

Area (ac) 580.74
Weighted Curve Number 85.65
Rain Gage ID ..... 5-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.11	D	79.00
Farmsteads	87.11	D	86.00
Pasture, grassland, or range, Poor	203.26	D	89.00
Row crops, SR + CR, Good	203.26	D	85.00
Composite Area & Weighted CN	580.74		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 4.60
Total Runoff (in) 3.06
Peak Runoff (cfs) 455.87
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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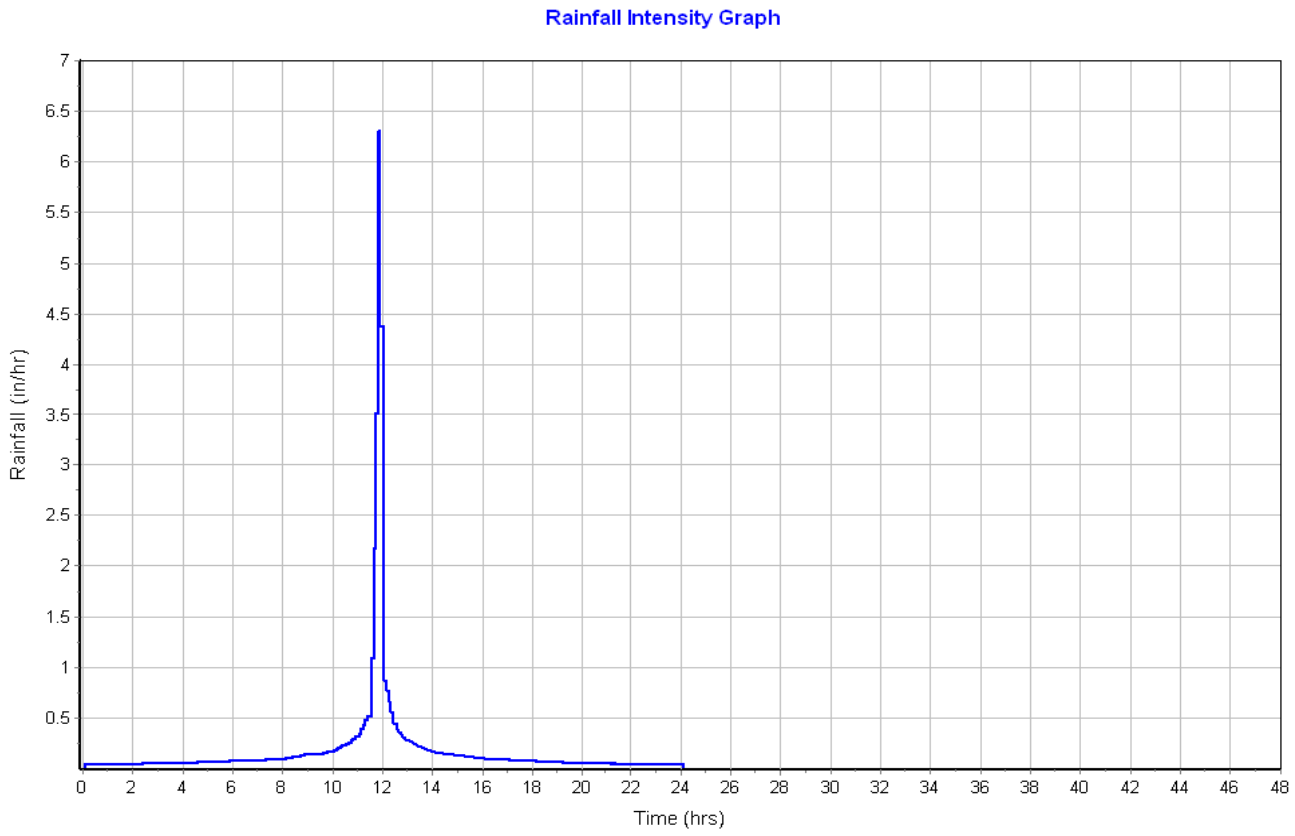
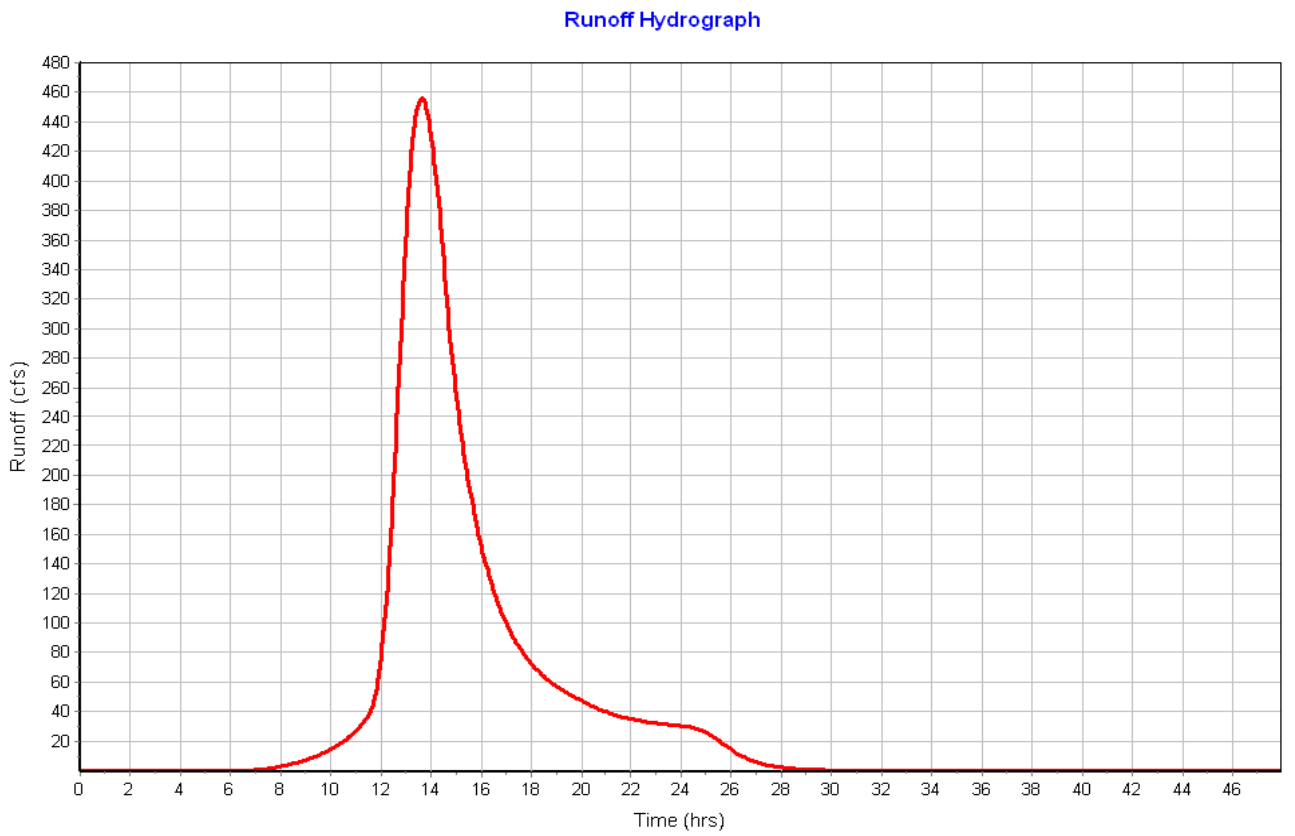
Subbasin : Tributary-OP





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Subbasin : Tributary-POST

Input Data

Area (ac) 581.60
Weighted Curve Number 85.65
Rain Gage ID ..... 5-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.24	D	79.00
Farmsteads	87.24	D	86.00
Pasture, grassland, or range, Poor	203.56	D	89.00
Row crops, SR + CR, Good	203.56	D	85.00
Composite Area & Weighted CN	581.60		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 4.60
Total Runoff (in) 3.06
Peak Runoff (cfs) 456.55
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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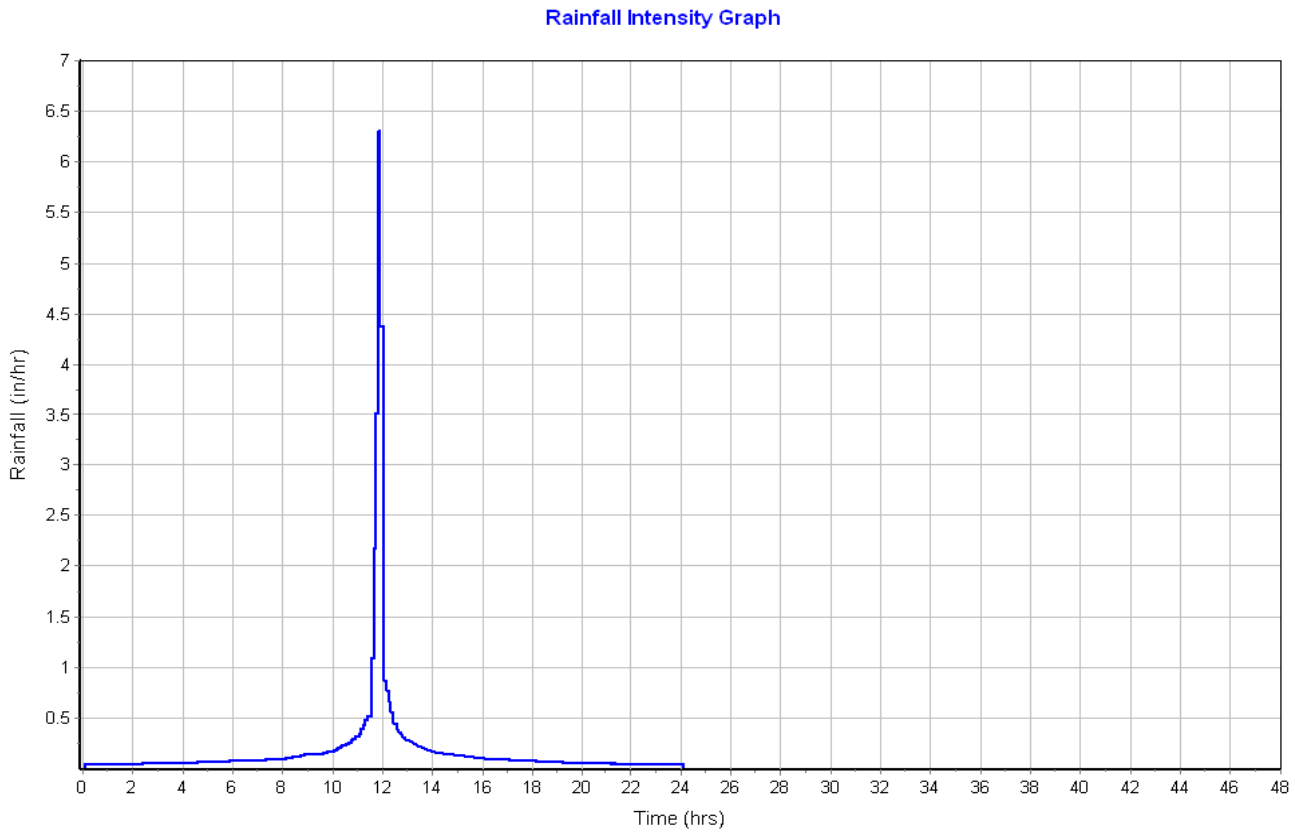
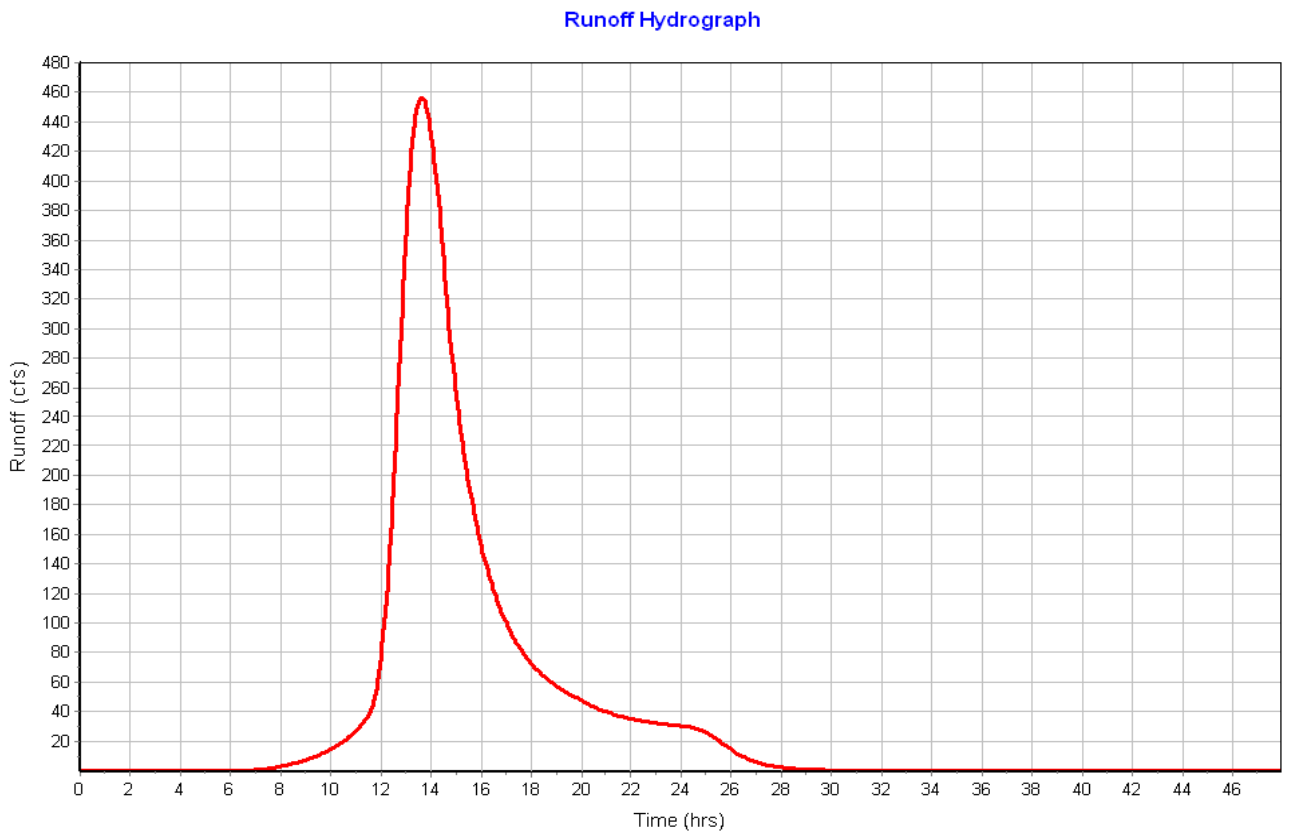
Subbasin : Tributary-POST





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Subbasin : TRIBUTARY-PRE

Input Data

Area (ac) 608.00
Weighted Curve Number 85.65
Rain Gage ID ..... 5-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	91.20	D	79.00
Farmsteads	91.20	D	86.00
Pasture, grassland, or range, Poor	212.80	D	89.00
Row crops, SR + CR, Good	212.80	D	85.00
Composite Area & Weighted CN	608.00		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 4.60
Total Runoff (in) 3.06
Peak Runoff (cfs) 477.27
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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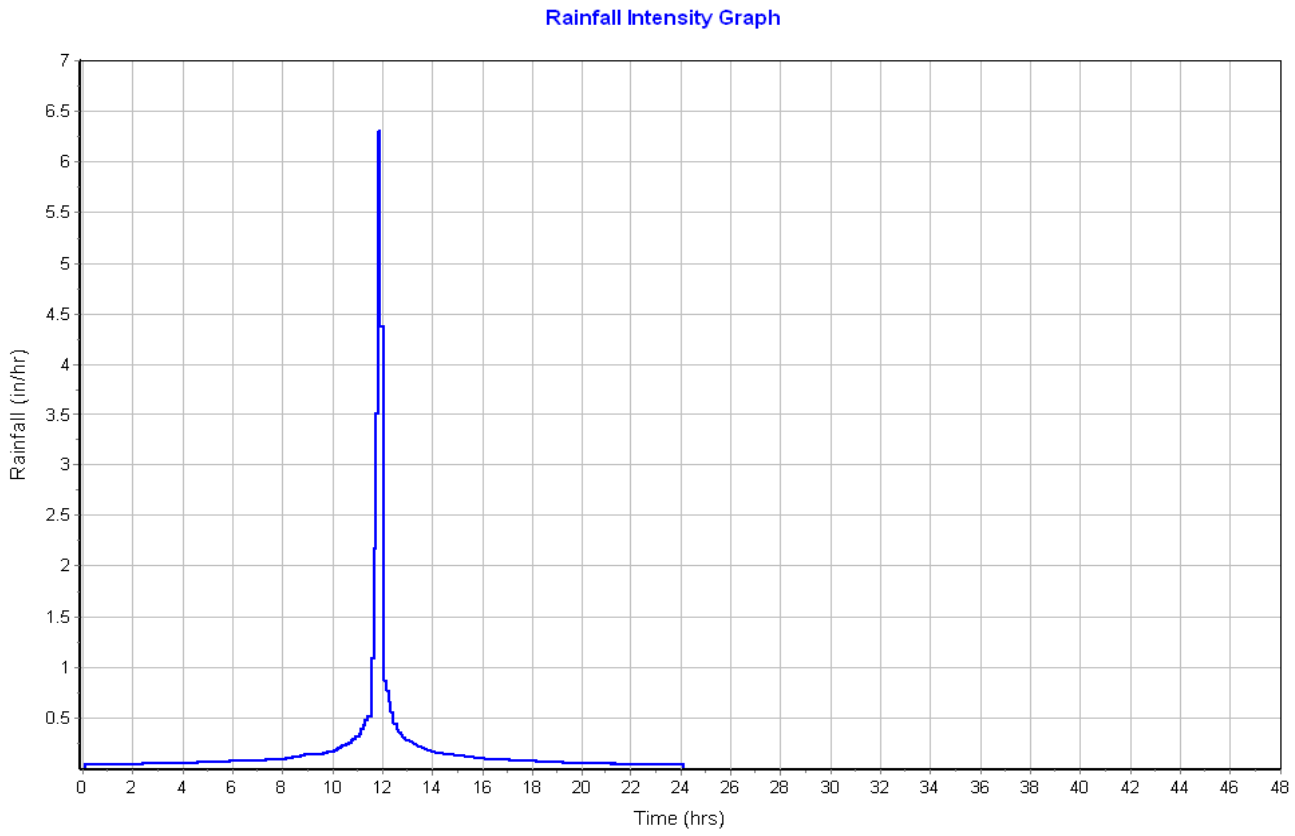
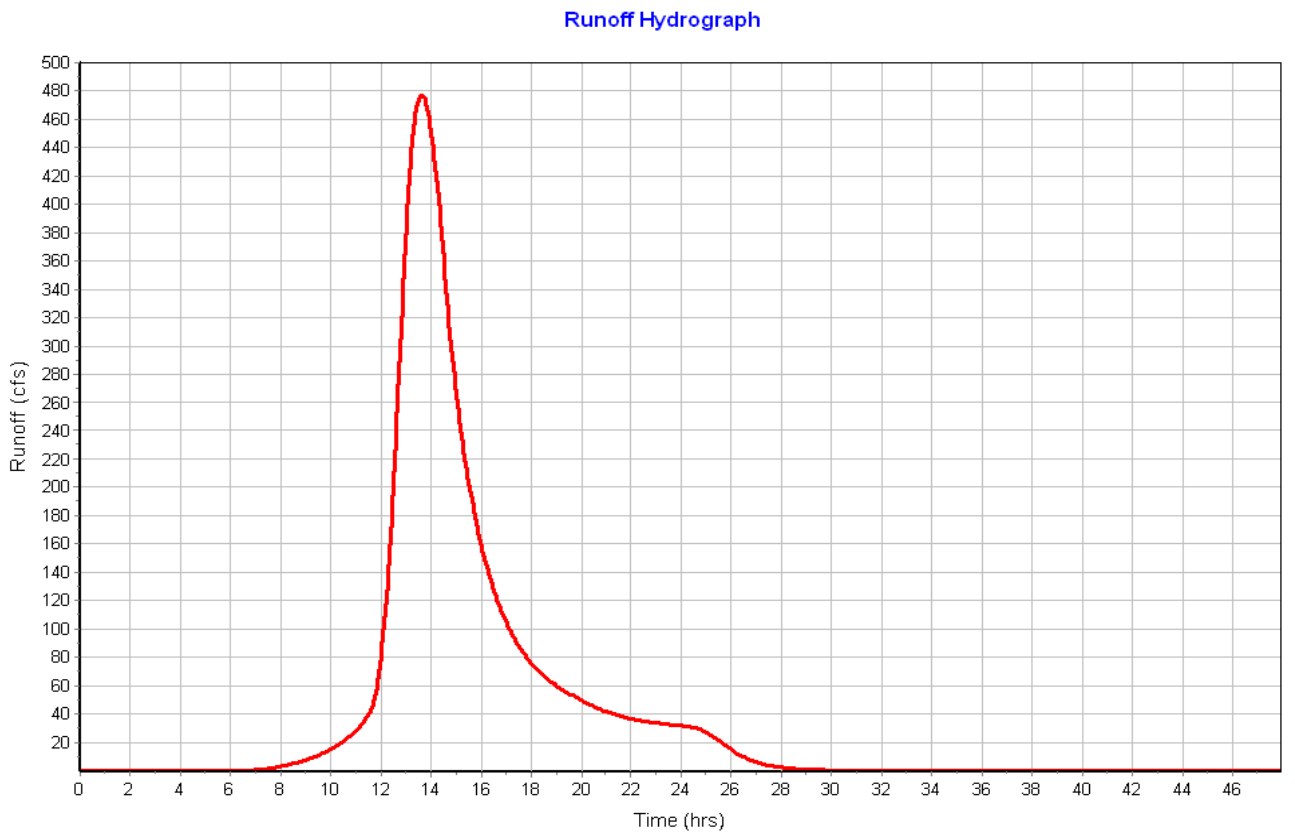
Subbasin : TRIBUTARY-PRE





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Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	100-year Storm	Time Series	Q100	Cumulative	inches	Kansas	Douglas	100	7.90	SCS Type II 24-hr
2	10-year Storm	Time Series	Q10	Cumulative	inches	Kansas	Douglas	10	5.40	SCS Type II 24-hr
3	1-year Storm	Time Series	Q1	Cumulative	inches	Kansas	Douglas	1	2.90	SCS Type II 24-hr
4	25-year Storm	Time Series	Q25	Cumulative	inches	Kansas	Douglas	25	6.20	SCS Type II 24-hr
5	2-year Storm	Time Series	Q2	Cumulative	inches	Kansas	Douglas	2	3.60	SCS Type II 24-hr
6	5-year Storm	Time Series	Q5	Cumulative	inches	Kansas	Douglas	5	4.60	SCS Type II 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Coleman-OP	2346.60	84.55	5.40	3.69	8668.34	2133.34	0 02:57:12
2	Coleman-POST	2369.76	84.55	5.40	3.69	8753.89	2154.40	0 02:57:12
3	COLMAN-PRE	2445.00	84.55	5.40	3.69	9031.83	2222.79	0 02:57:12
4	Tributary-OP	580.74	85.65	5.40	3.81	2210.30	567.22	0 02:47:49
5	Tributary-POST	581.60	85.65	5.40	3.81	2213.57	568.06	0 02:47:49
6	TRIBUTARY-PRE	608.00	85.65	5.40	3.81	2314.05	593.85	0 02:47:49

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Subbasin Hydrology

Subbasin : Coleman-OP

Input Data

Area (ac) 2346.60
Weighted Curve Number 84.55
Rain Gage ID ..... 10-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1877.28	D	85.00
Pasture, grassland, or range, Fair	351.99	D	84.00
Woods, Fair	117.33	D	79.00
Composite Area & Weighted CN	2346.60		84.55

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

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Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft²) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 5.40
Total Runoff (in) 3.69
Peak Runoff (cfs) 2133.34
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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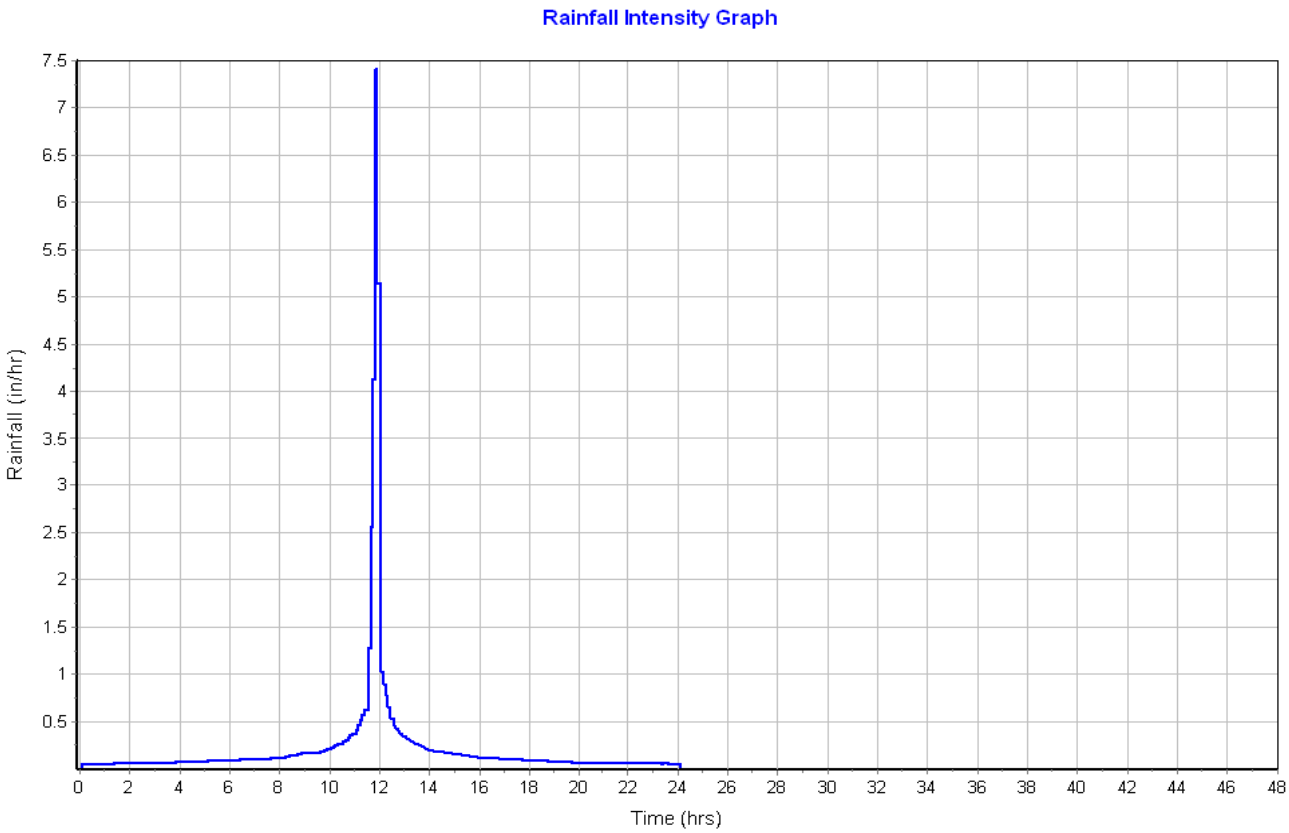
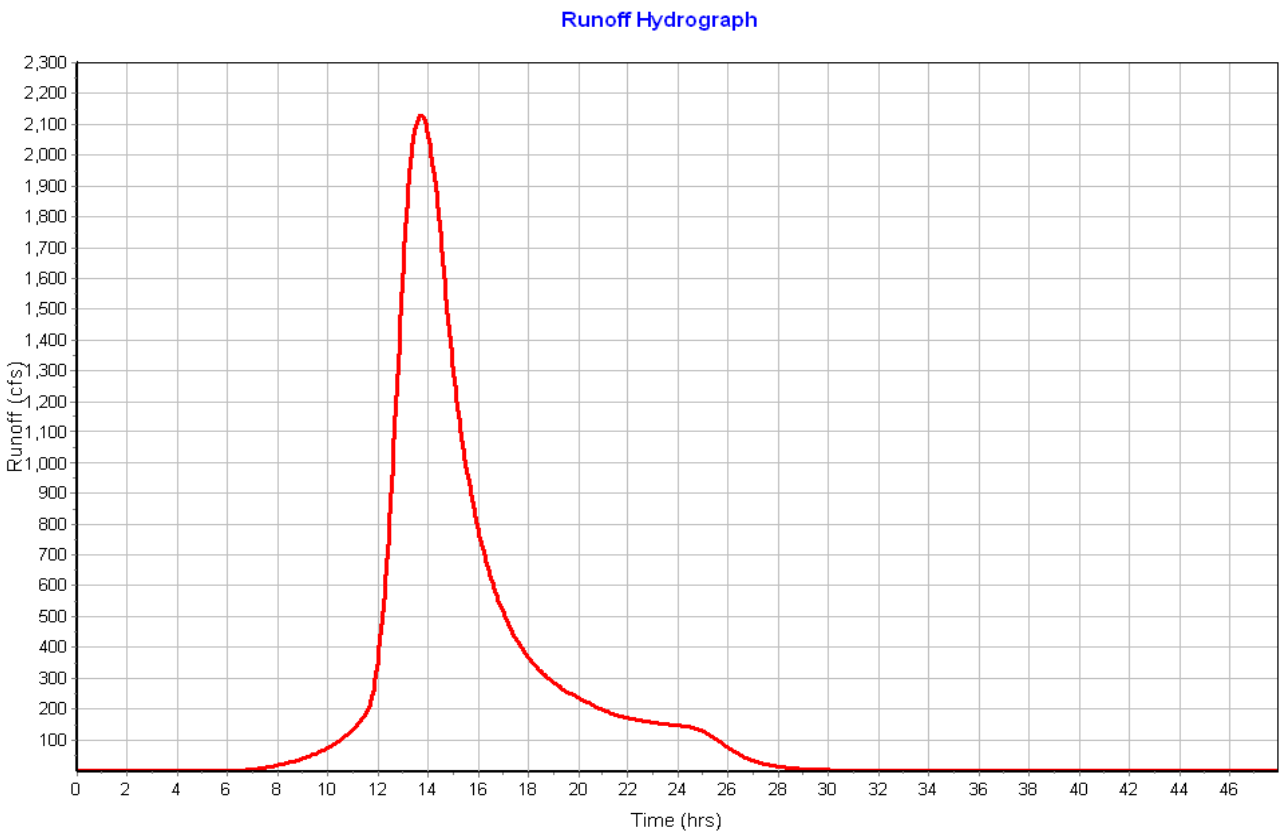
Subbasin : Coleman-OP





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Subbasin : Coleman-POST

Input Data

Area (ac) 2369.76
Weighted Curve Number 84.55
Rain Gage ID ..... 10-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1895.81	D	85.00
Pasture, grassland, or range, Fair	355.46	D	84.00
Woods, Fair	118.49	D	79.00
Composite Area & Weighted CN	2369.76		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 5.40
Total Runoff (in) 3.69
Peak Runoff (cfs) 2154.40
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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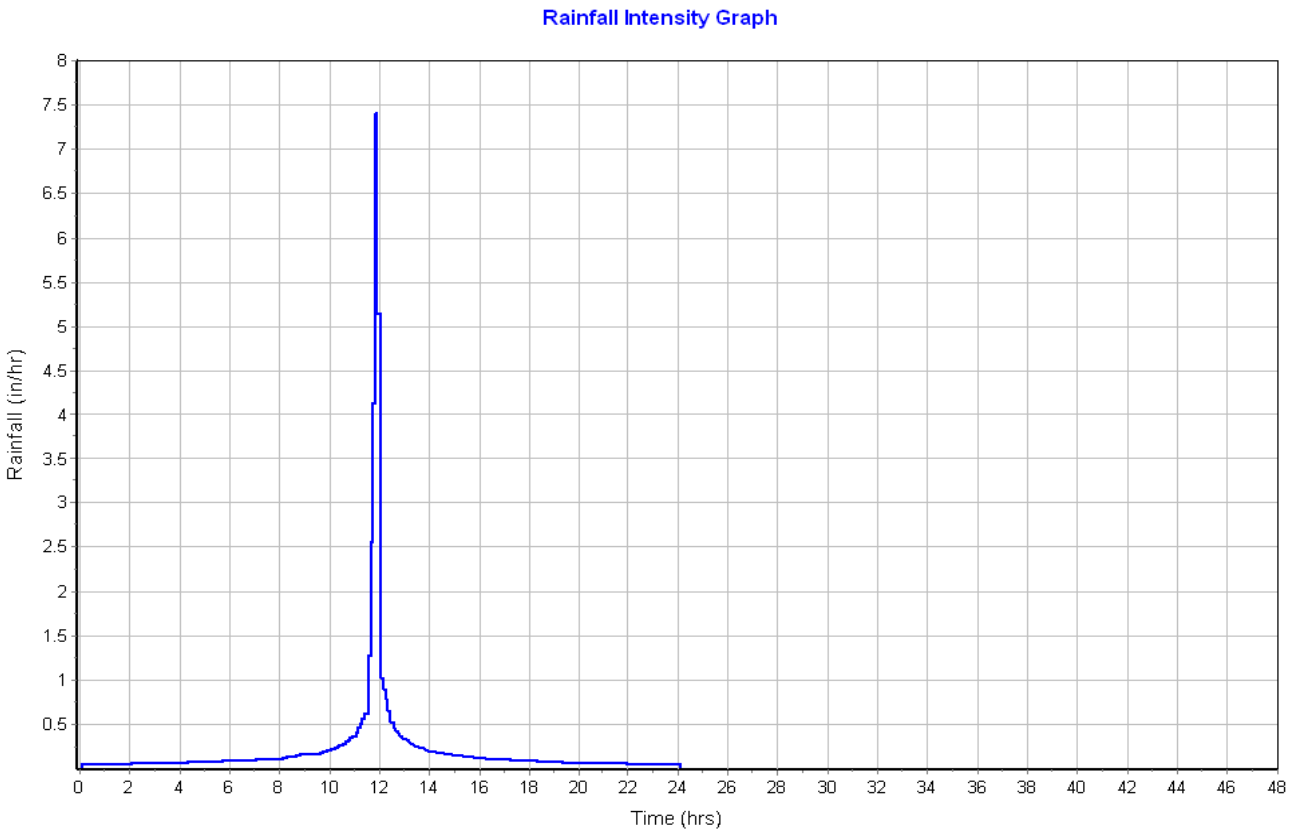
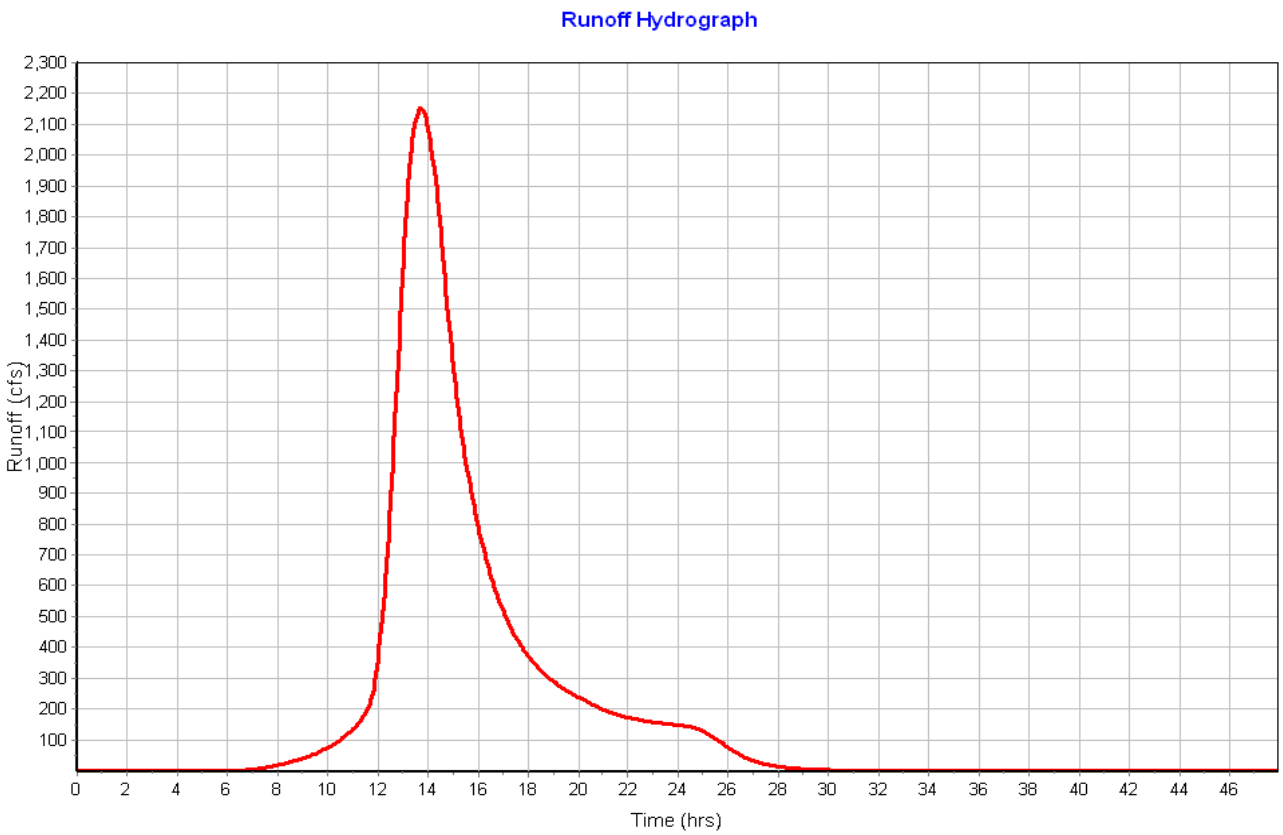
Subbasin : Coleman-POST





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Subbasin : COLMAN-PRE

Input Data

Area (ac) 2445.00
Weighted Curve Number 84.55
Rain Gage ID ..... 10-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1956.00	D	85.00
Pasture, grassland, or range, Fair	366.75	D	84.00
Woods, Fair	122.25	D	79.00
Composite Area & Weighted CN	2445.00		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 5.40
Total Runoff (in) 3.69
Peak Runoff (cfs) 2222.79
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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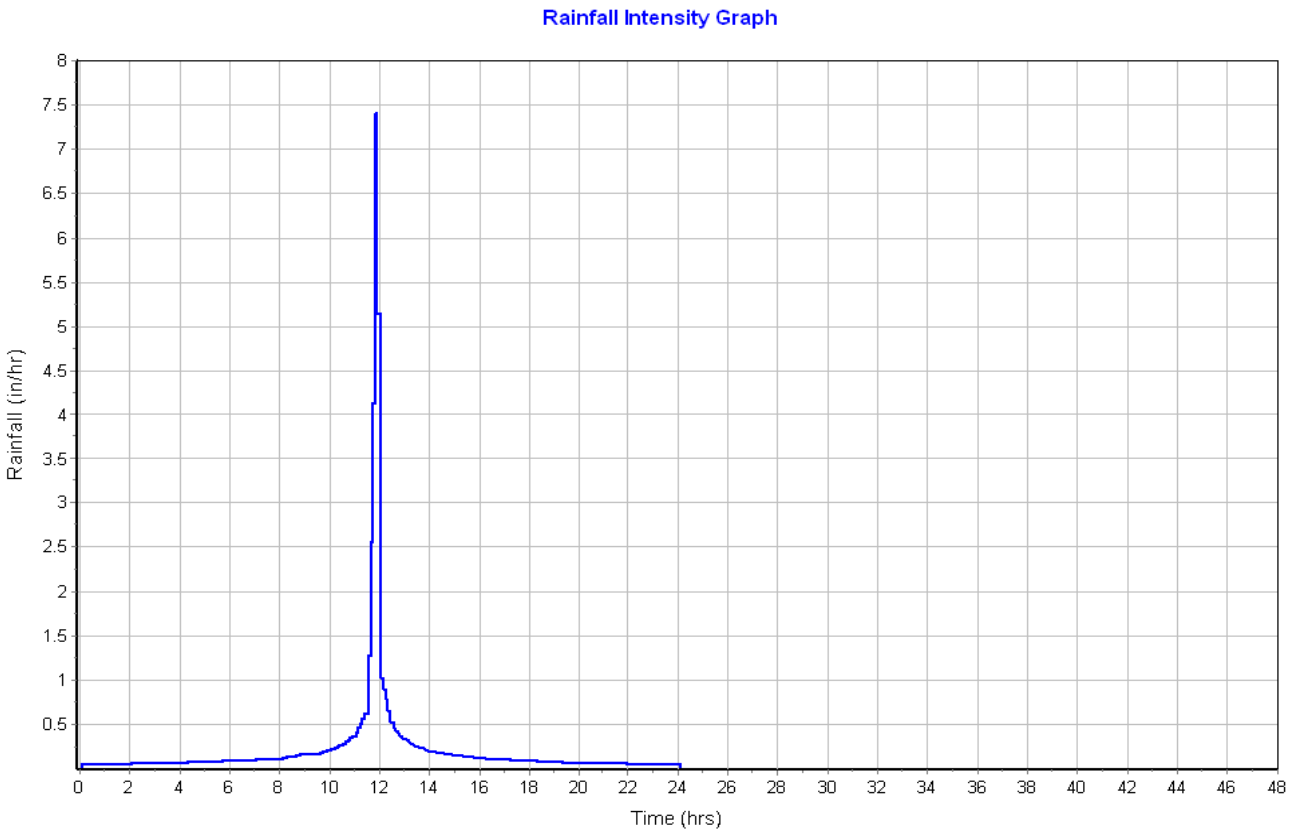
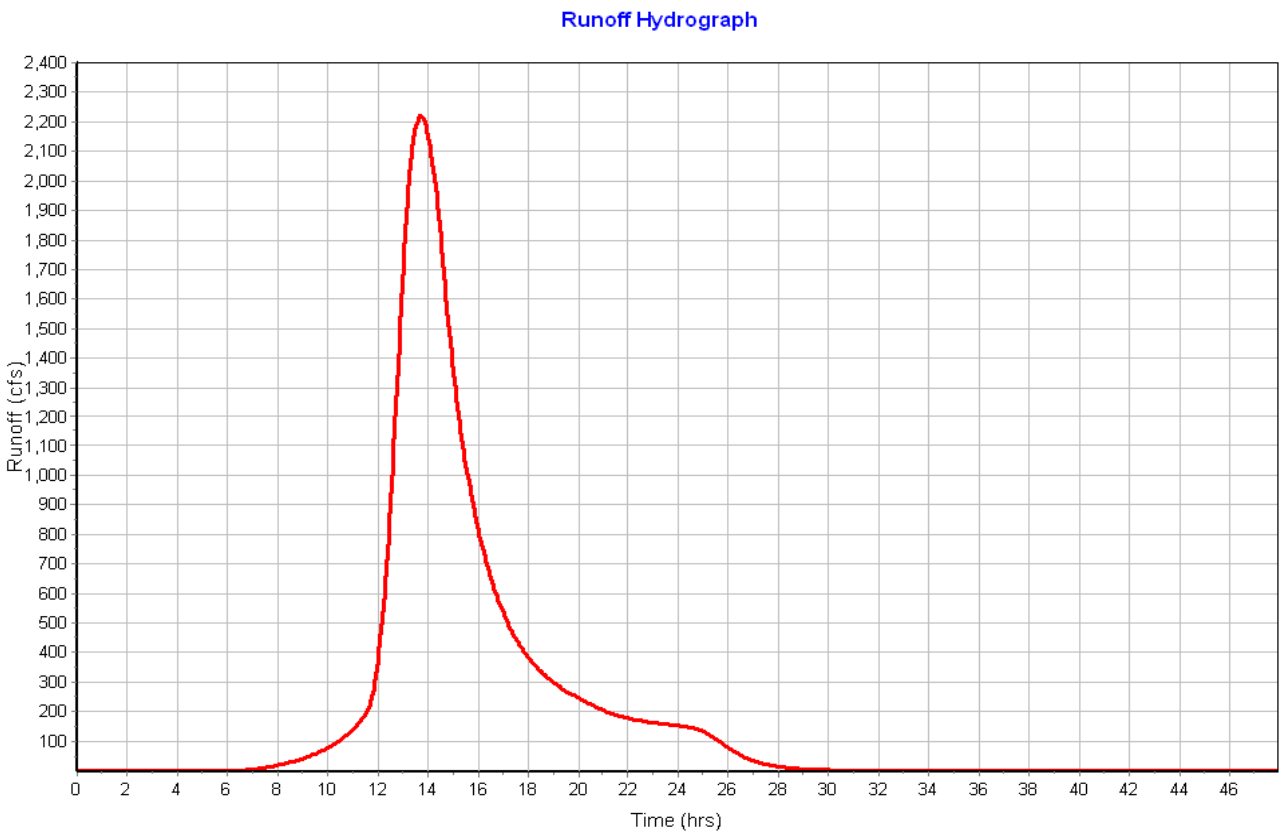
Subbasin : COLMAN-PRE





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Subbasin : Tributary-OP

Input Data

Area (ac) 580.74
Weighted Curve Number 85.65
Rain Gage ID ..... 10-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.11	D	79.00
Farmsteads	87.11	D	86.00
Pasture, grassland, or range, Poor	203.26	D	89.00
Row crops, SR + CR, Good	203.26	D	85.00
Composite Area & Weighted CN	580.74		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 5.40
Total Runoff (in) 3.81
Peak Runoff (cfs) 567.22
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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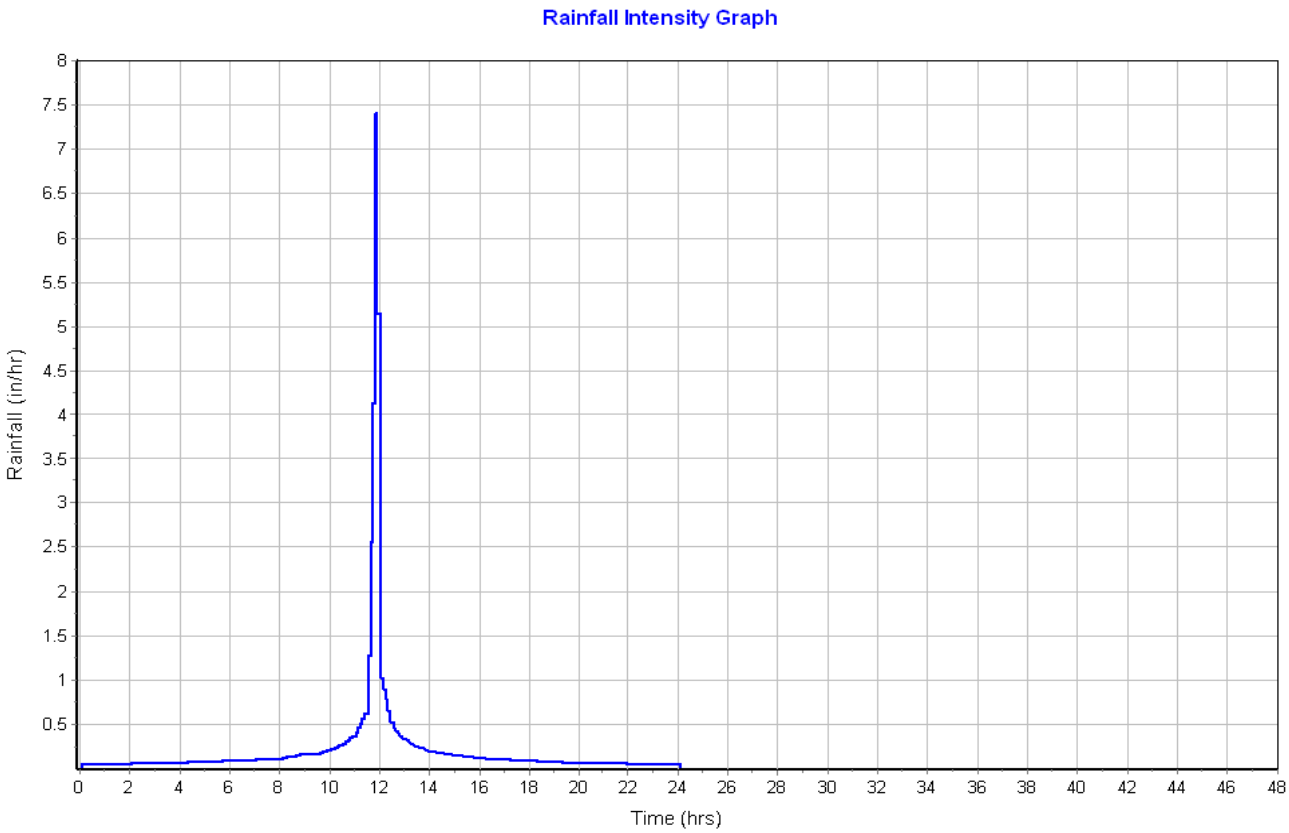
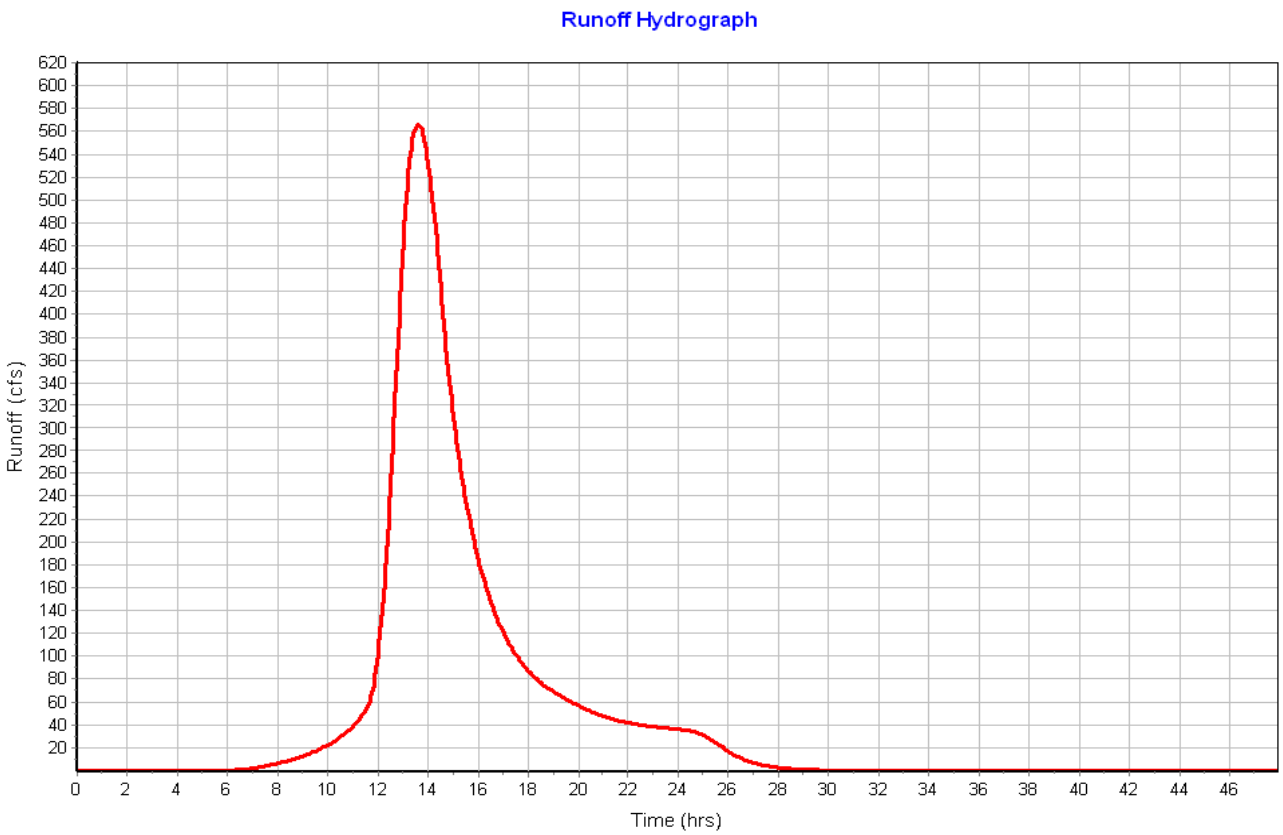
Subbasin : Tributary-OP





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Subbasin : Tributary-POST

Input Data

Area (ac) 581.60
Weighted Curve Number 85.65
Rain Gage ID ..... 10-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.24	D	79.00
Farmsteads	87.24	D	86.00
Pasture, grassland, or range, Poor	203.56	D	89.00
Row crops, SR + CR, Good	203.56	D	85.00
Composite Area & Weighted CN	581.60		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 5.40
Total Runoff (in) 3.81
Peak Runoff (cfs) 568.06
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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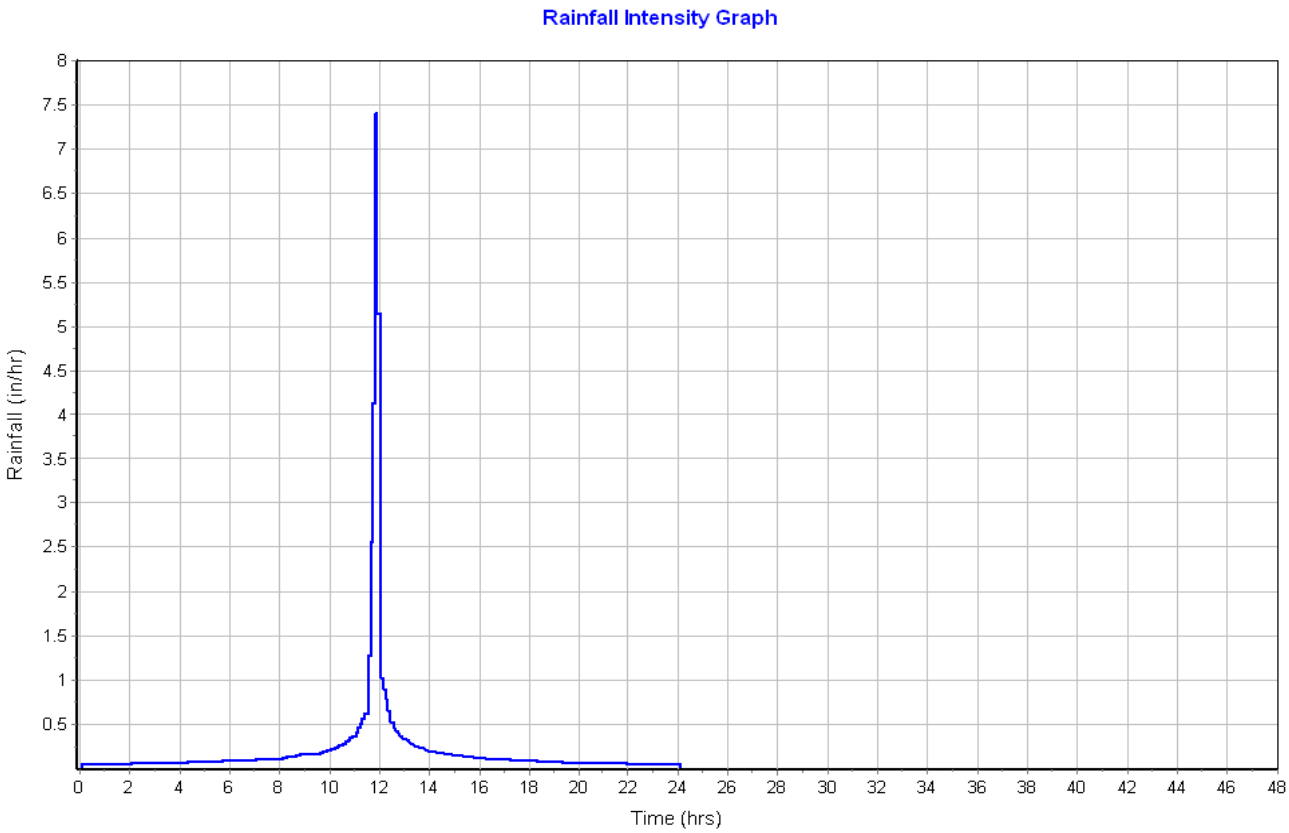
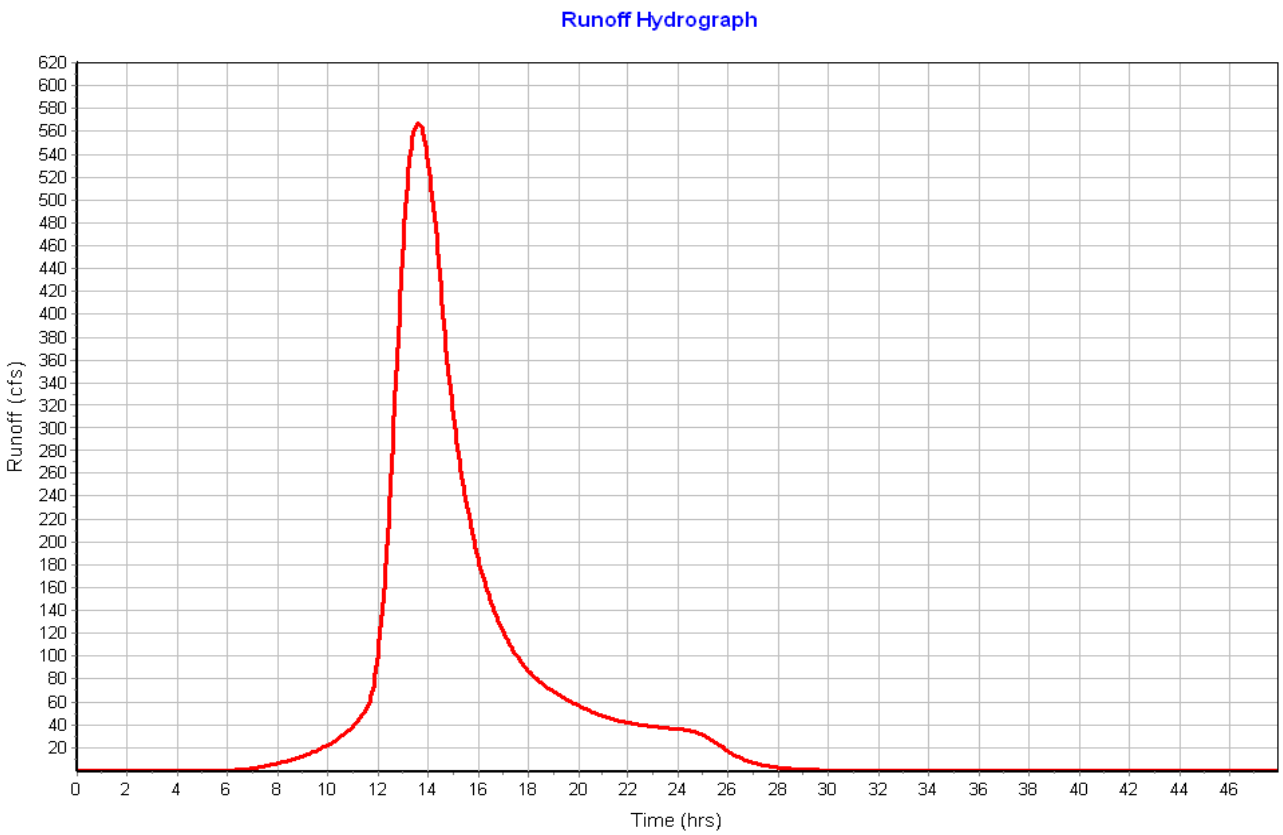
Subbasin : Tributary-POST





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Subbasin : TRIBUTARY-PRE

Input Data

Area (ac) 608.00
Weighted Curve Number 85.65
Rain Gage ID ..... 10-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	91.20	D	79.00
Farmsteads	91.20	D	86.00
Pasture, grassland, or range, Poor	212.80	D	89.00
Row crops, SR + CR, Good	212.80	D	85.00
Composite Area & Weighted CN	608.00		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 5.40
Total Runoff (in) 3.81
Peak Runoff (cfs) 593.85
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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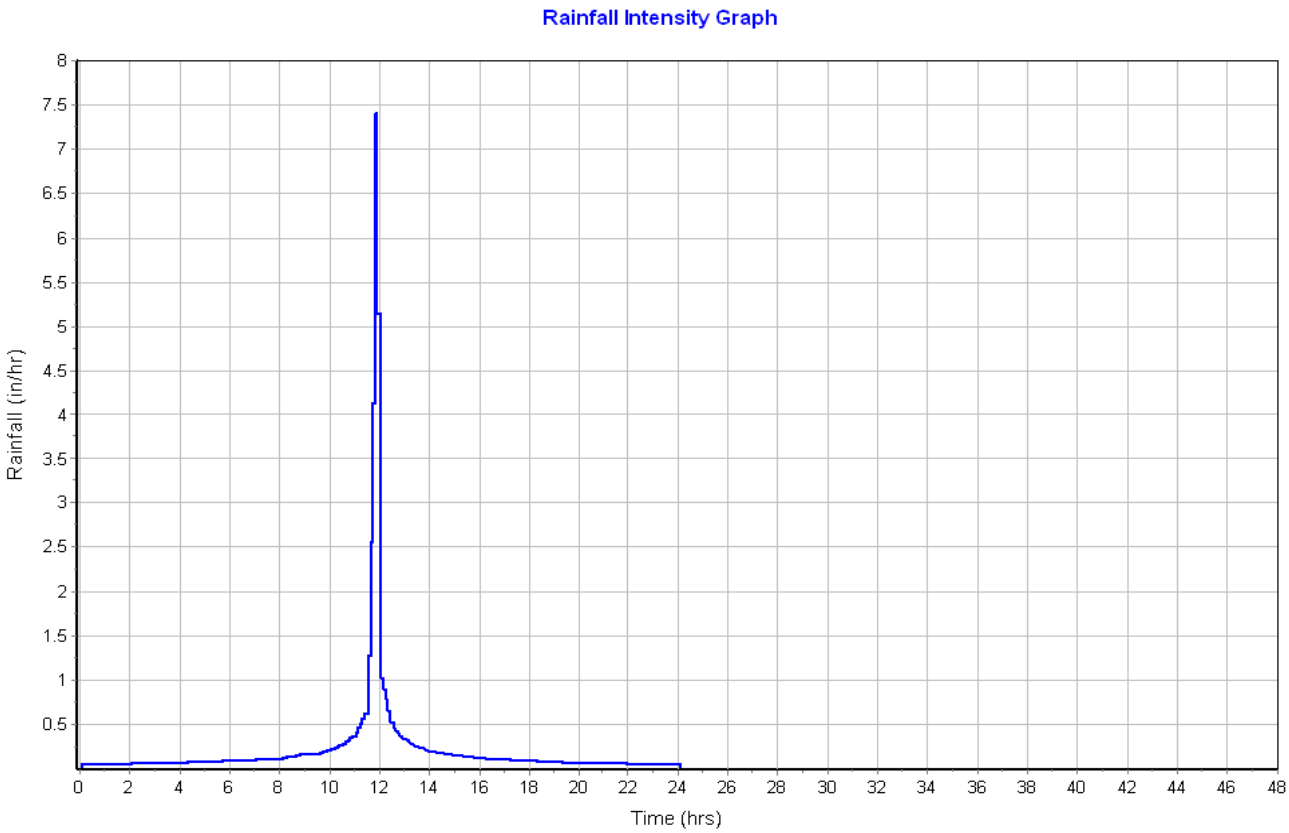
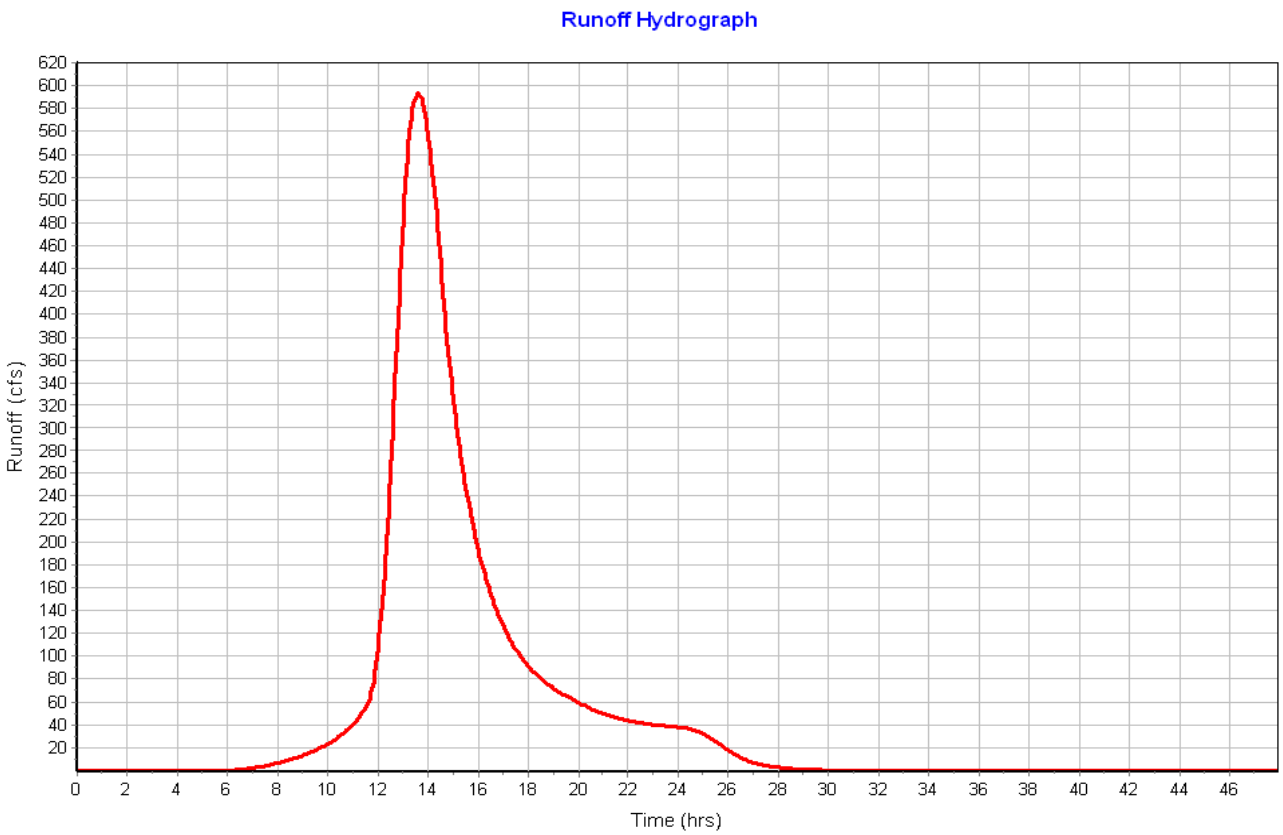
Subbasin : TRIBUTARY-PRE





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Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	100-year Storm	Time Series	Q100	Cumulative	inches	Kansas	Douglas	100	7.90	SCS Type II 24-hr
2	10-year Storm	Time Series	Q10	Cumulative	inches	Kansas	Douglas	10	5.40	SCS Type II 24-hr
3	1-year Storm	Time Series	Q1	Cumulative	inches	Kansas	Douglas	1	2.90	SCS Type II 24-hr
4	25-year Storm	Time Series	Q25	Cumulative	inches	Kansas	Douglas	25	6.20	SCS Type II 24-hr
5	2-year Storm	Time Series	Q2	Cumulative	inches	Kansas	Douglas	2	3.60	SCS Type II 24-hr
6	5-year Storm	Time Series	Q5	Cumulative	inches	Kansas	Douglas	5	4.60	SCS Type II 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Coleman-OP	2346.60	84.55	6.20	4.44	10425.94	2564.33	0 02:57:12
2	Coleman-POST	2369.76	84.55	6.20	4.44	10528.84	2589.64	0 02:57:12
3	COLMAN-PRE	2445.00	84.55	6.20	4.44	10863.14	2671.86	0 02:57:12
4	Tributary-OP	580.74	85.65	6.20	4.56	2649.34	678.56	0 02:47:49
5	Tributary-POST	581.60	85.65	6.20	4.56	2653.26	679.56	0 02:47:49
6	TRIBUTARY-PRE	608.00	85.65	6.20	4.56	2773.70	710.40	0 02:47:49

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Subbasin Hydrology

Subbasin : Coleman-OP

Input Data

Area (ac) 2346.60
Weighted Curve Number 84.55
Rain Gage ID ..... 25-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1877.28	D	85.00
Pasture, grassland, or range, Fair	351.99	D	84.00
Woods, Fair	117.33	D	79.00
Composite Area & Weighted CN	2346.60		84.55

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft²)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

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Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft²) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 6.20
Total Runoff (in) 4.44
Peak Runoff (cfs) 2564.33
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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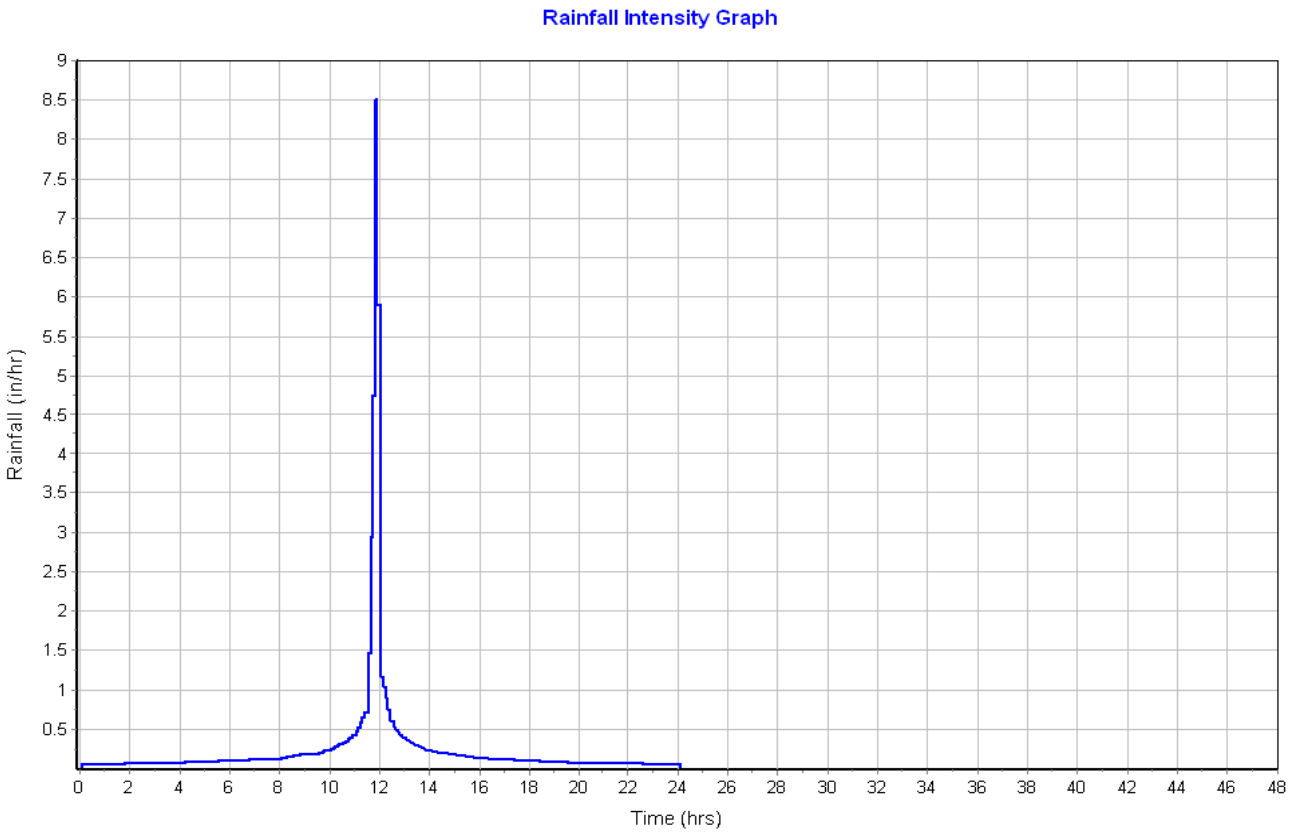
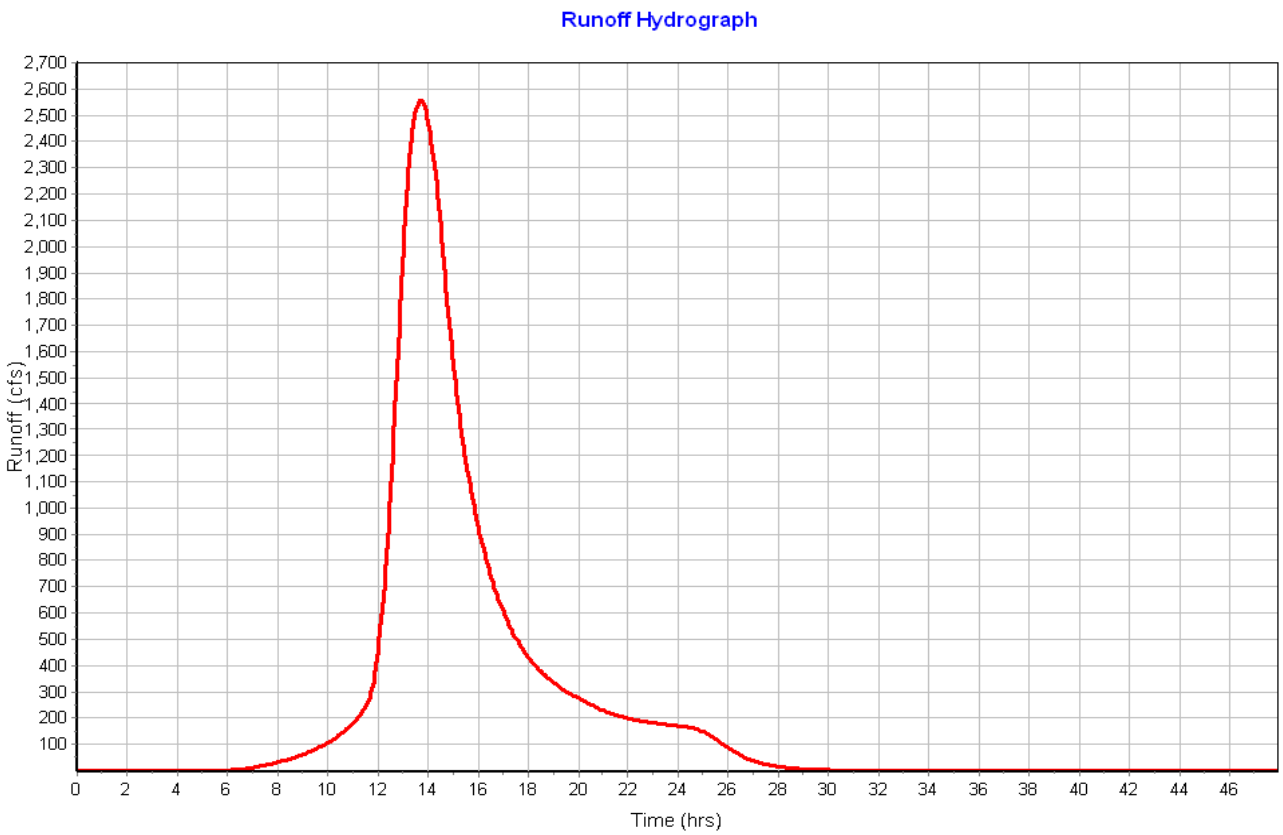
Subbasin : Coleman-OP





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Subbasin : Coleman-POST

Input Data

Area (ac) 2369.76
Weighted Curve Number 84.55
Rain Gage ID ..... 25-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1895.81	D	85.00
Pasture, grassland, or range, Fair	355.46	D	84.00
Woods, Fair	118.49	D	79.00
Composite Area & Weighted CN	2369.76		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 6.20
Total Runoff (in) 4.44
Peak Runoff (cfs) 2589.64
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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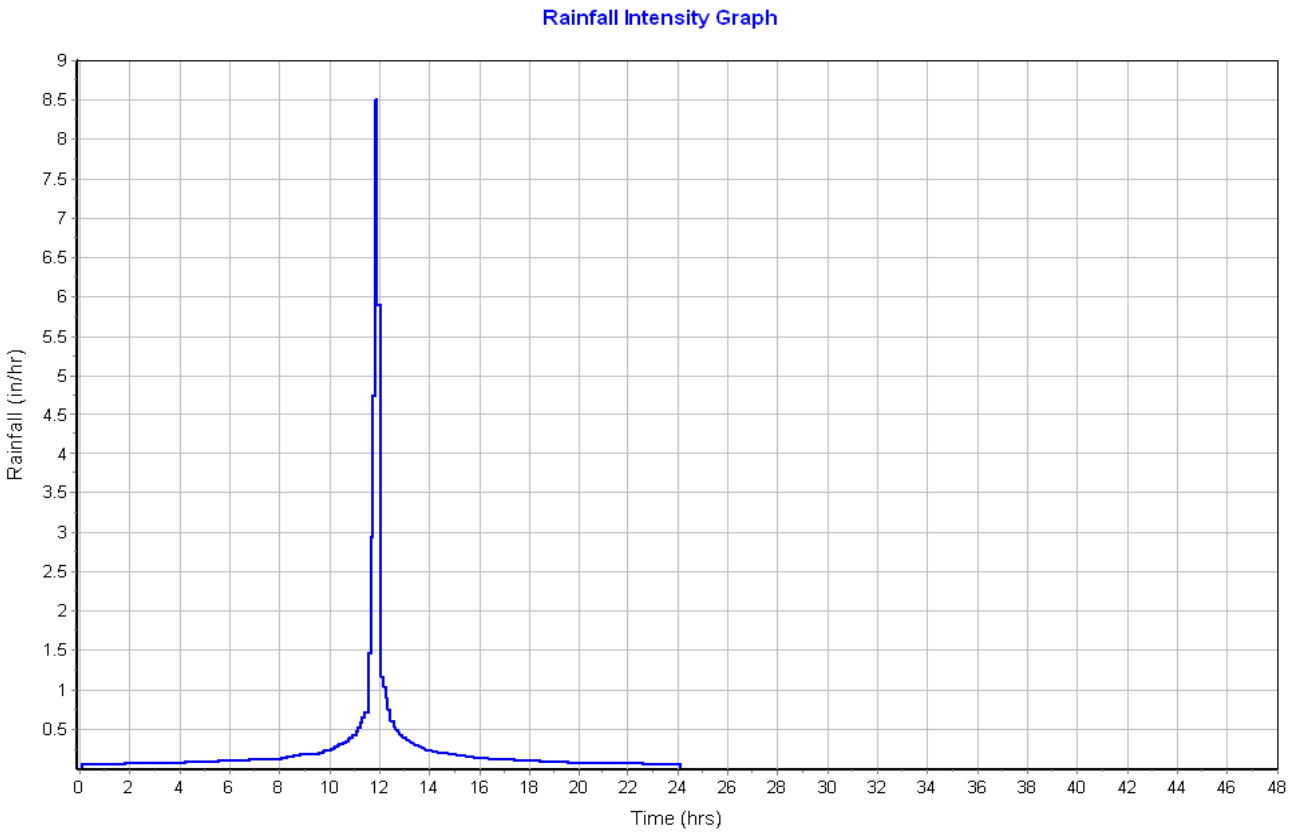
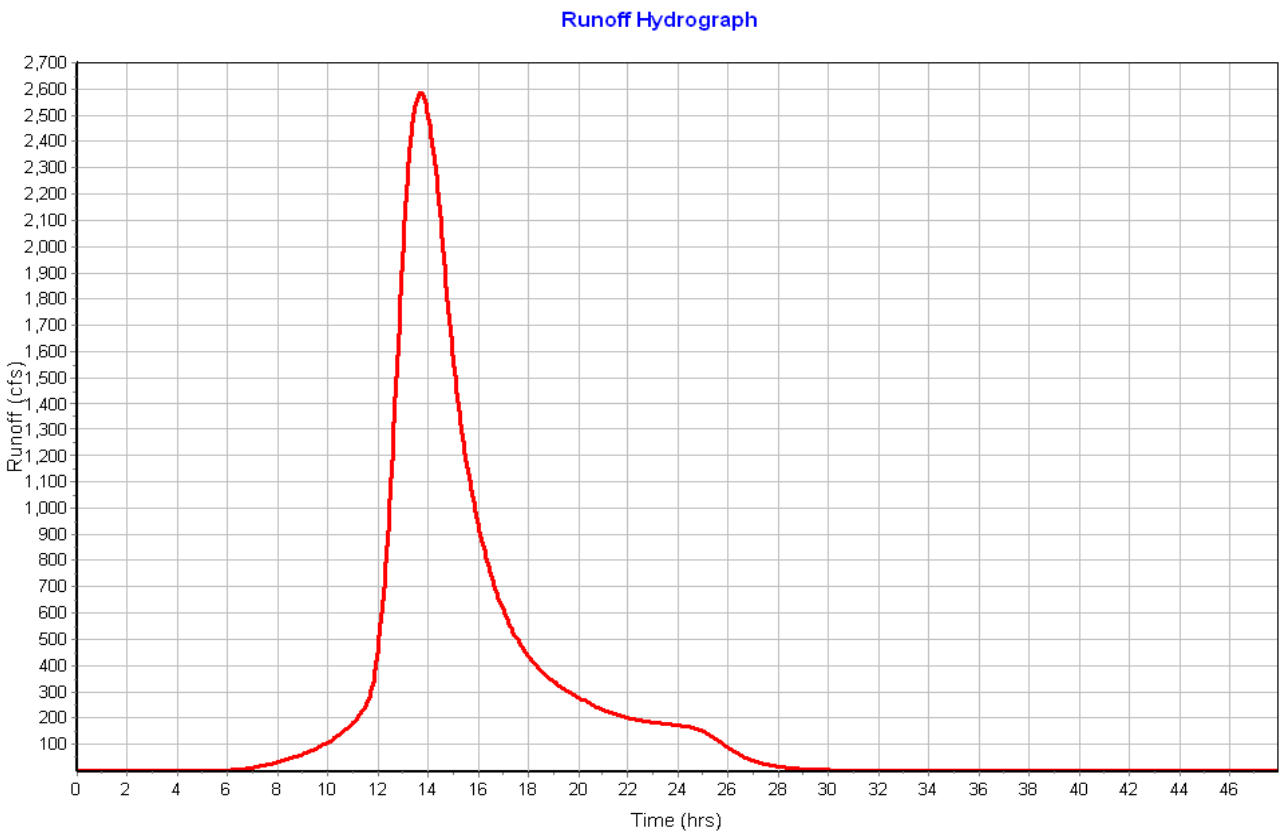
Subbasin : Coleman-POST





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Subbasin : COLMAN-PRE

Input Data

Area (ac) 2445.00
Weighted Curve Number 84.55
Rain Gage ID ..... 25-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1956.00	D	85.00
Pasture, grassland, or range, Fair	366.75	D	84.00
Woods, Fair	122.25	D	79.00
Composite Area & Weighted CN	2445.00		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 6.20
Total Runoff (in) 4.44
Peak Runoff (cfs) 2671.86
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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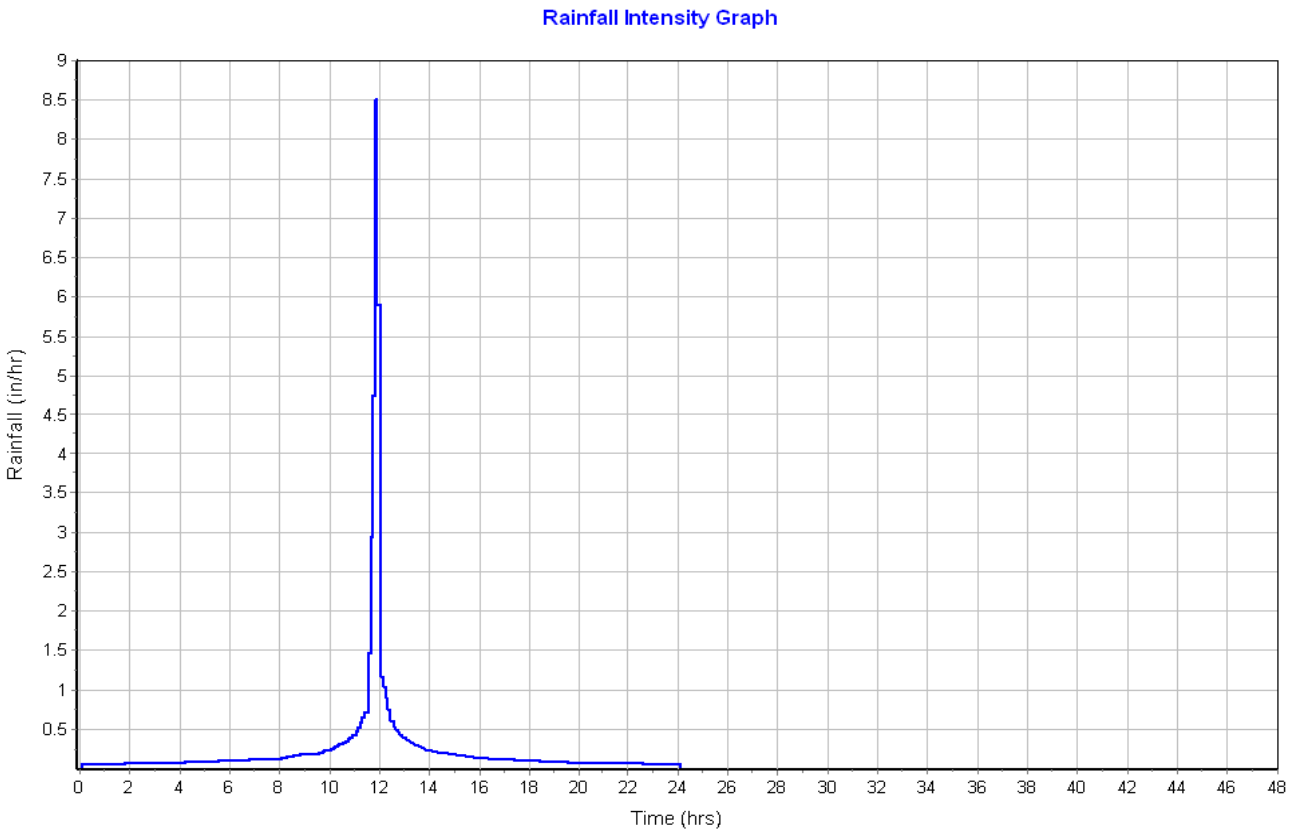
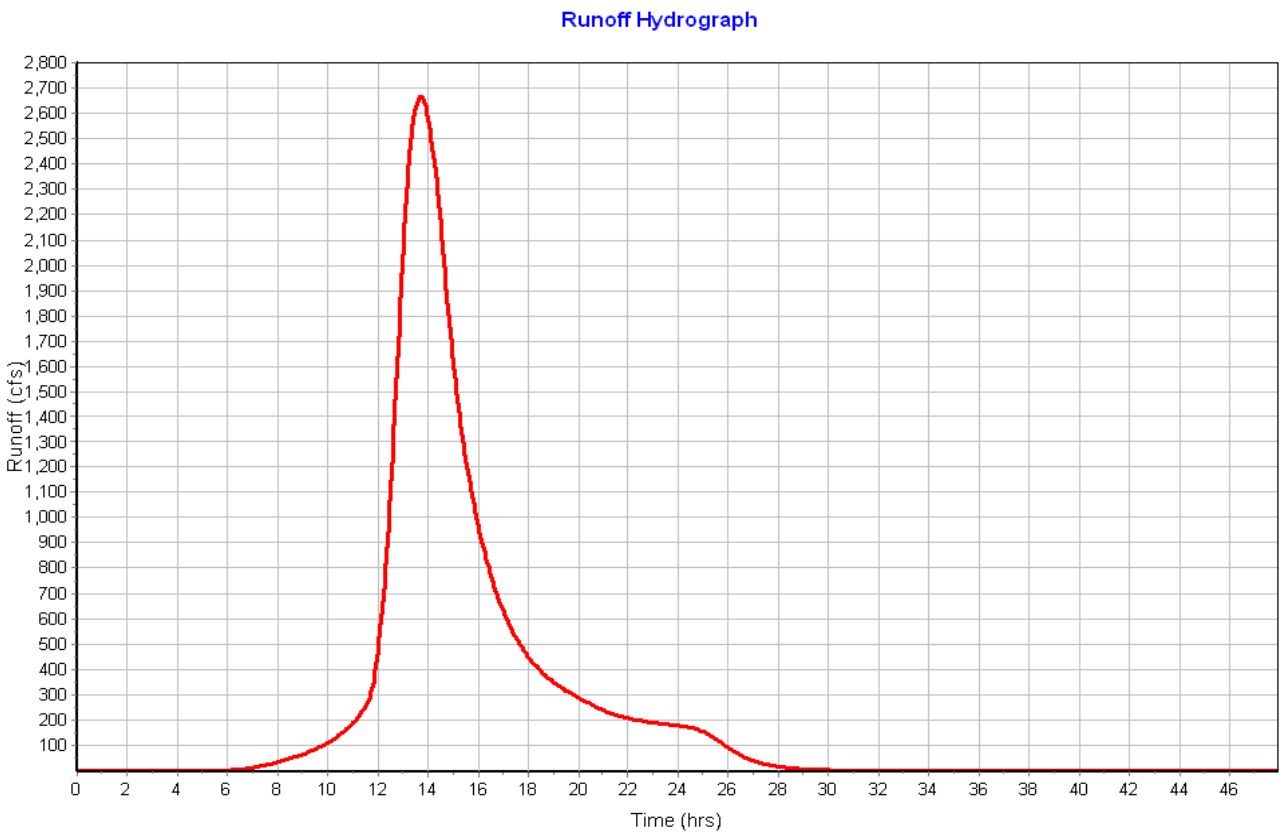
Subbasin : COLMAN-PRE





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Subbasin : Tributary-OP

Input Data

Area (ac) 580.74
Weighted Curve Number 85.65
Rain Gage ID ..... 25-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.11	D	79.00
Farmsteads	87.11	D	86.00
Pasture, grassland, or range, Poor	203.26	D	89.00
Row crops, SR + CR, Good	203.26	D	85.00
Composite Area & Weighted CN	580.74		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 6.20
Total Runoff (in) 4.56
Peak Runoff (cfs) 678.56
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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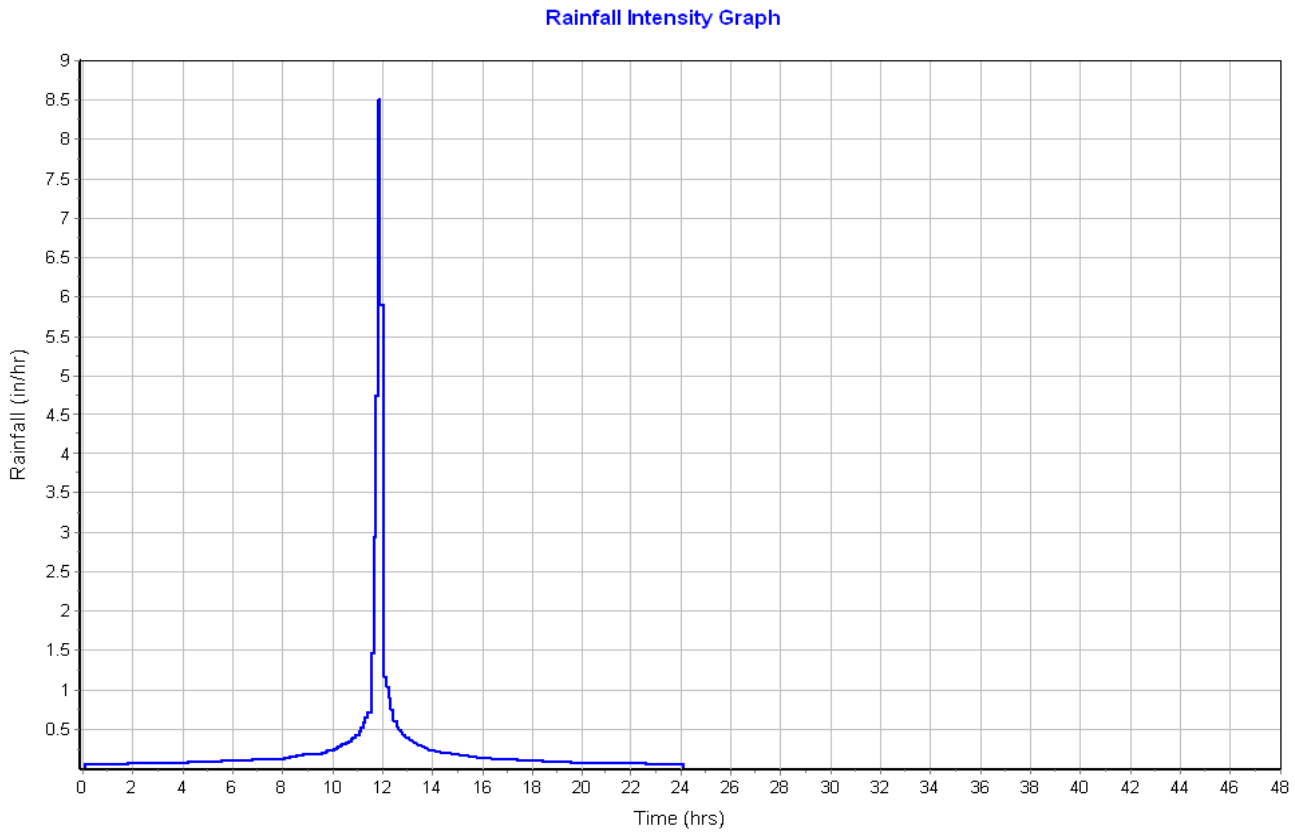
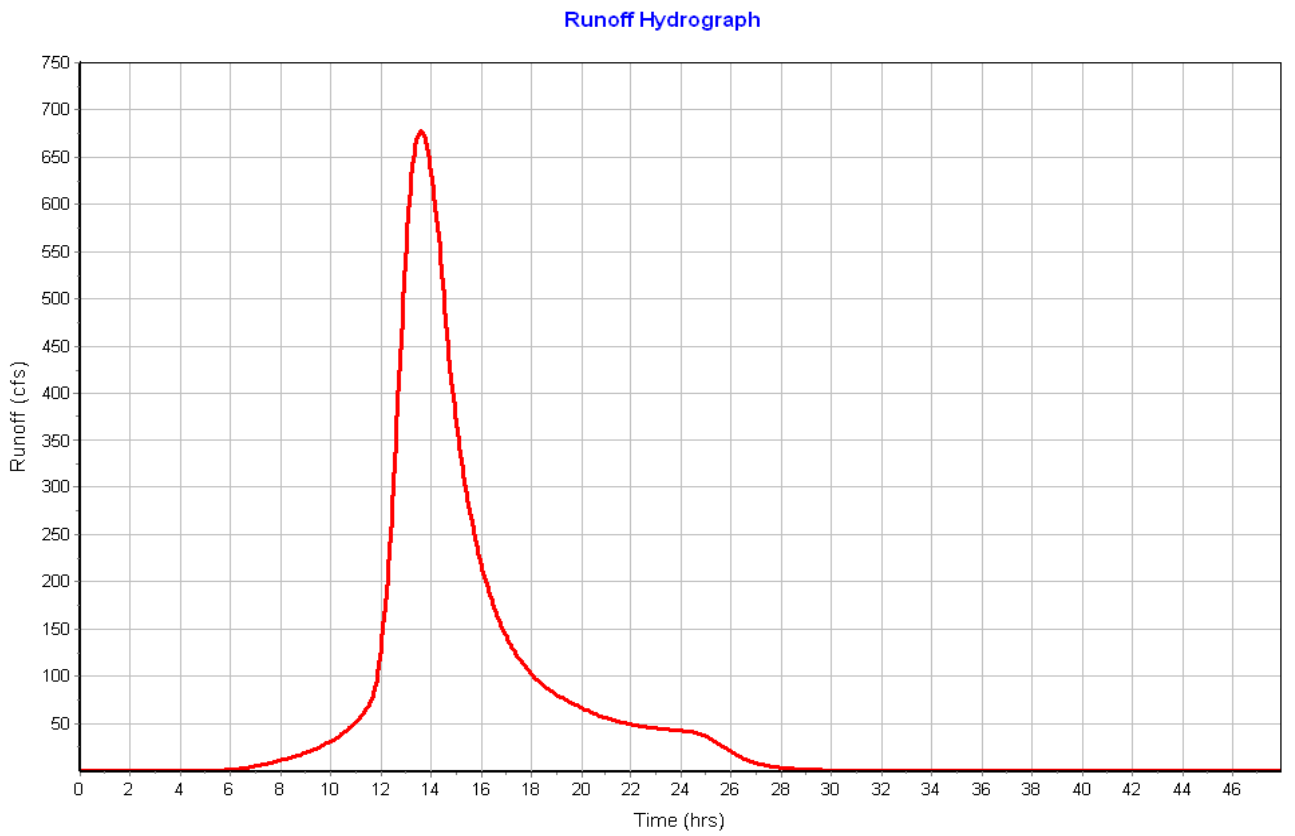
Subbasin : Tributary-OP





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Subbasin : Tributary-POST

Input Data

Area (ac) 581.60
Weighted Curve Number 85.65
Rain Gage ID ..... 25-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.24	D	79.00
Farmsteads	87.24	D	86.00
Pasture, grassland, or range, Poor	203.56	D	89.00
Row crops, SR + CR, Good	203.56	D	85.00
Composite Area & Weighted CN	581.60		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 6.20
Total Runoff (in) 4.56
Peak Runoff (cfs) 679.56
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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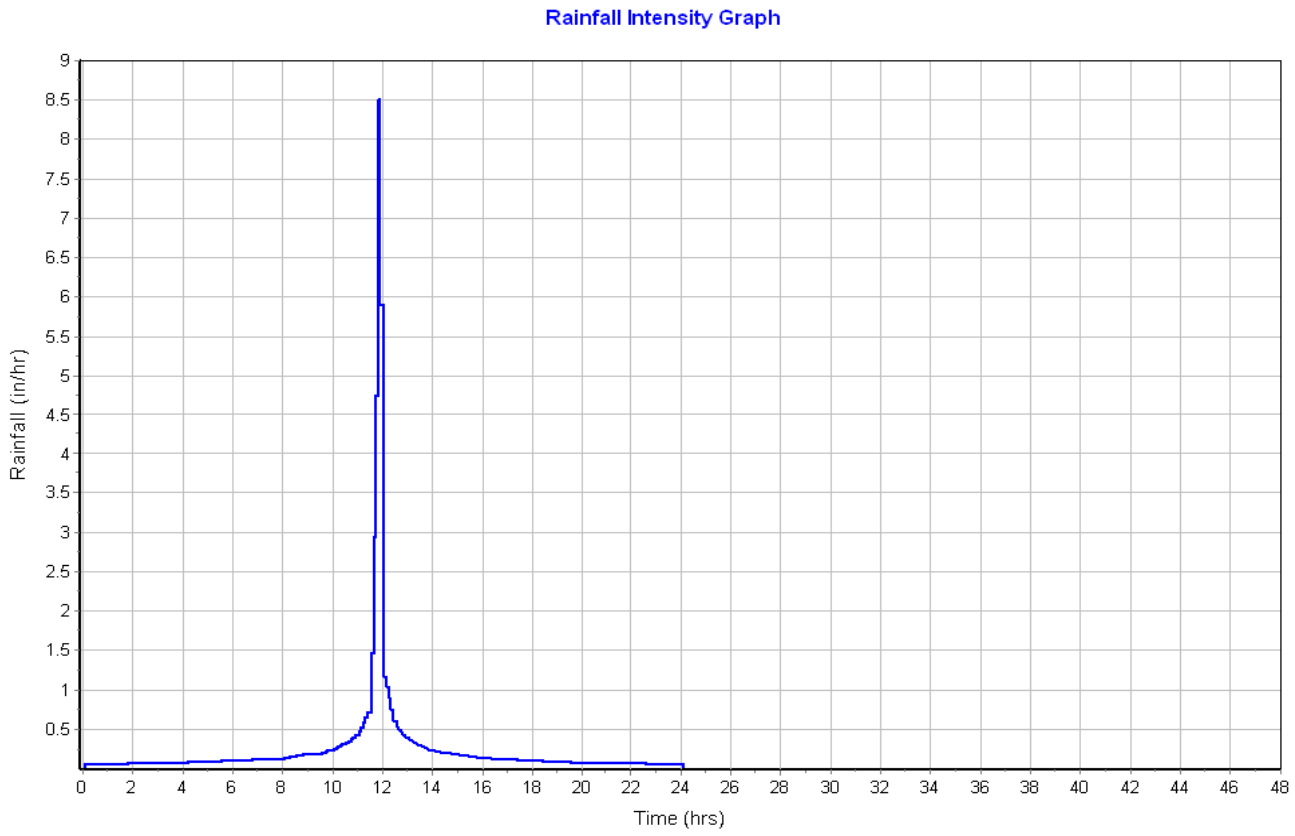
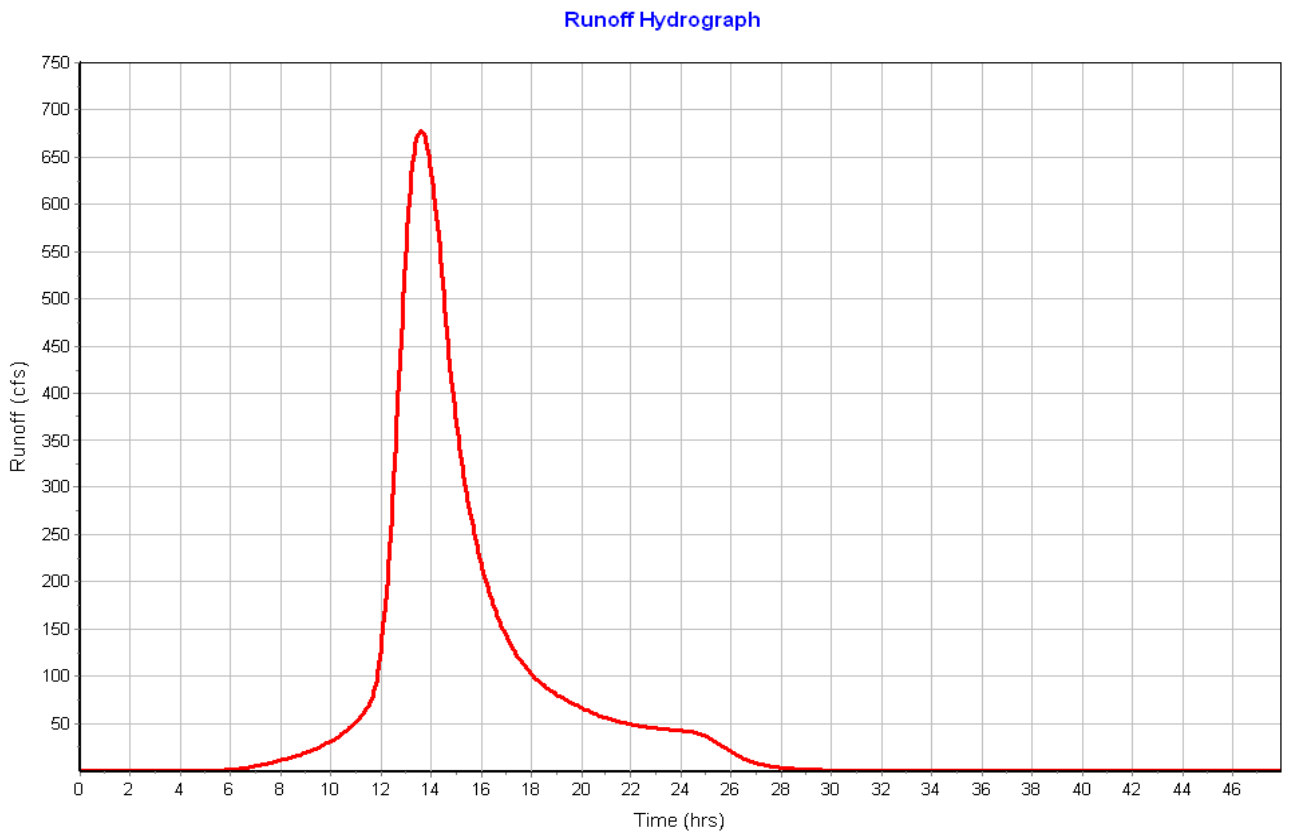
Subbasin : Tributary-POST





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Subbasin : TRIBUTARY-PRE

Input Data

Area (ac) 608.00
Weighted Curve Number 85.65
Rain Gage ID ..... 25-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	91.20	D	79.00
Farmsteads	91.20	D	86.00
Pasture, grassland, or range, Poor	212.80	D	89.00
Row crops, SR + CR, Good	212.80	D	85.00
Composite Area & Weighted CN	608.00		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 6.20
Total Runoff (in) 4.56
Peak Runoff (cfs) 710.40
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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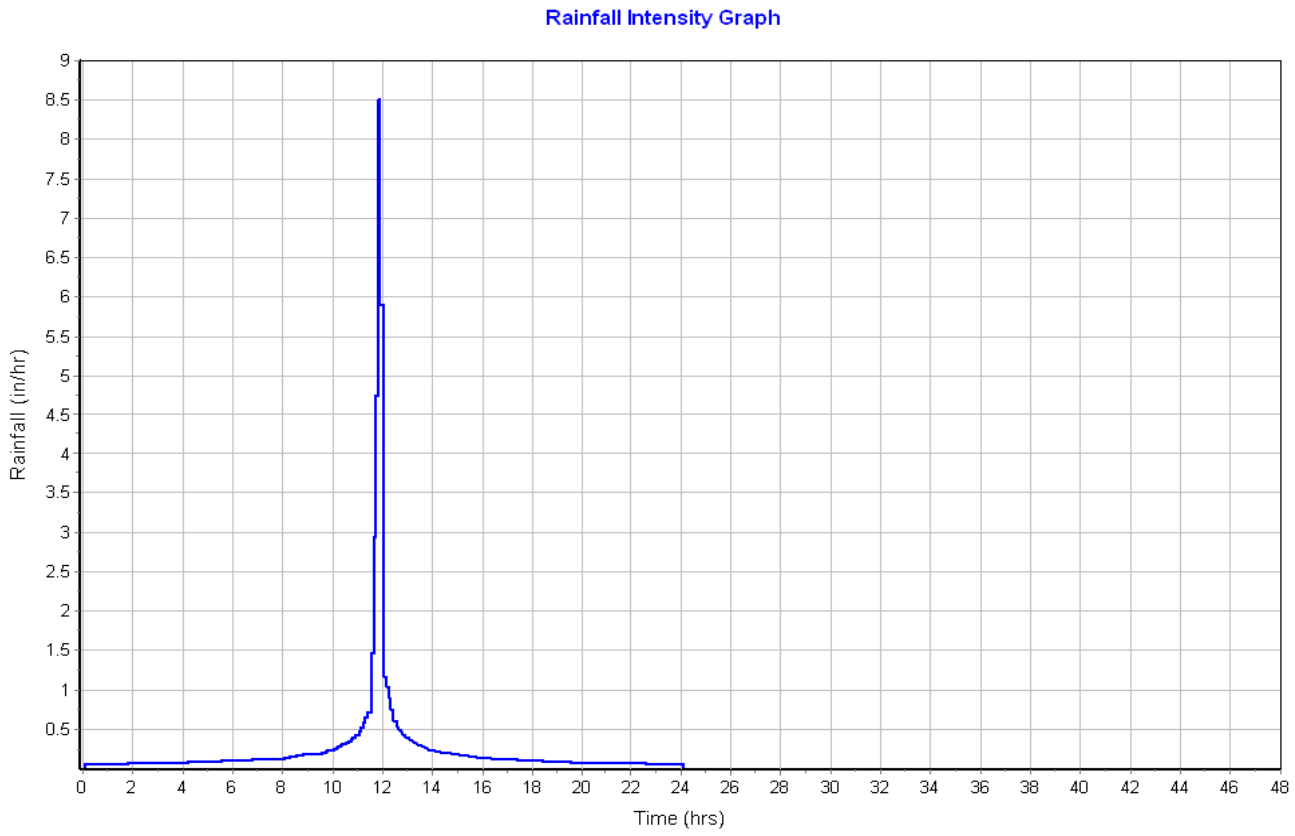
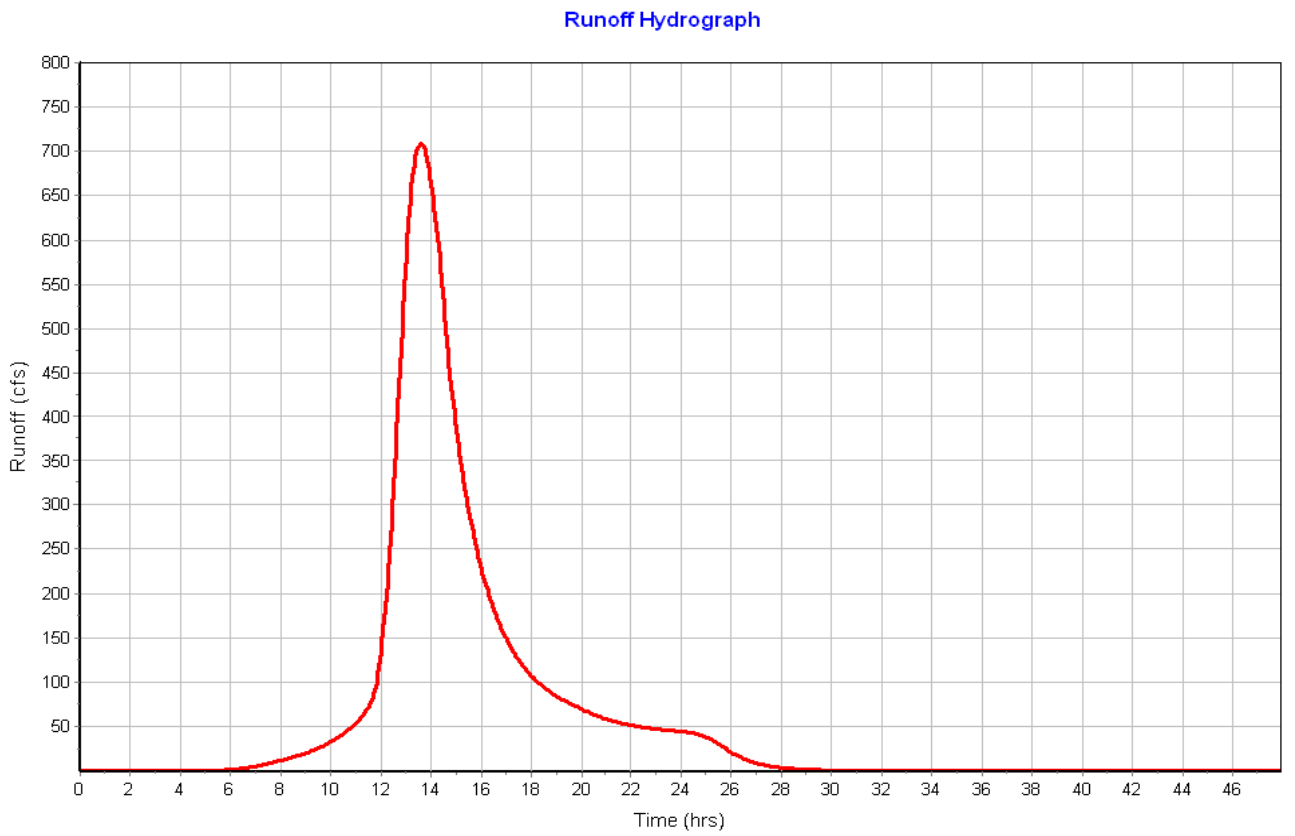
Subbasin : TRIBUTARY-PRE





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Rainfall Details

SN	Rain Gage ID	Data Source	Data Source ID	Rainfall Type	Rain Units	State	County	Return Period (years)	Rainfall Depth (inches)	Rainfall Distribution
1	100-year Storm	Time Series	Q100	Cumulative	inches	Kansas	Douglas	100	7.90	SCS Type II 24-hr
2	10-year Storm	Time Series	Q10	Cumulative	inches	Kansas	Douglas	10	5.40	SCS Type II 24-hr
3	1-year Storm	Time Series	Q1	Cumulative	inches	Kansas	Douglas	1	2.90	SCS Type II 24-hr
4	25-year Storm	Time Series	Q25	Cumulative	inches	Kansas	Douglas	25	6.20	SCS Type II 24-hr
5	2-year Storm	Time Series	Q2	Cumulative	inches	Kansas	Douglas	2	3.60	SCS Type II 24-hr
6	5-year Storm	Time Series	Q5	Cumulative	inches	Kansas	Douglas	5	4.60	SCS Type II 24-hr

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Subbasin Summary

SN	Subbasin ID	Area (ac)	Weighted Curve Number	Total Rainfall (in)	Total Runoff (in)	Total Runoff Volume (ac-in)	Peak Runoff (cfs)	Time of Concentration (days hh:mm:ss)
1	Coleman-OP	2346.60	84.55	7.90	6.06	14229.78	3478.87	0 02:57:12
2	Coleman-POST	2369.76	84.55	7.90	6.06	14370.22	3513.20	0 02:57:12
3	COLMAN-PRE	2445.00	84.55	7.90	6.06	14826.48	3624.74	0 02:57:12
4	Tributary-OP	580.74	85.65	7.90	6.19	3596.52	913.65	0 02:47:49
5	Tributary-POST	581.60	85.65	7.90	6.19	3601.85	915.00	0 02:47:49
6	TRIBUTARY-PRE	608.00	85.65	7.90	6.19	3765.34	956.53	0 02:47:49

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Subbasin Hydrology

Subbasin : Coleman-OP

Input Data

Area (ac) 2346.60
Weighted Curve Number 84.55
Rain Gage ID ..... 100-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1877.28	D	85.00
Pasture, grassland, or range, Fair	351.99	D	84.00
Woods, Fair	117.33	D	79.00
Composite Area & Weighted CN	2346.60		84.55

Time of Concentration

TOC Method : SCS TR-55

Sheet Flow Equation :

Tc = (0.007 * ((n * Lf)^0.8)) / ((P^0.5) * (Sf^0.4))

Where :

Tc = Time of Concentration (hr)
n = Manning's roughness
Lf = Flow Length (ft)
P = 2 yr, 24 hr Rainfall (inches)
Sf = Slope (ft/ft)

Shallow Concentrated Flow Equation :

V = 16.1345 * (Sf^0.5) (unpaved surface)
V = 20.3282 * (Sf^0.5) (paved surface)
V = 15.0 * (Sf^0.5) (grassed waterway surface)
V = 10.0 * (Sf^0.5) (nearly bare & untilled surface)
V = 9.0 * (Sf^0.5) (cultivated straight rows surface)
V = 7.0 * (Sf^0.5) (short grass pasture surface)
V = 5.0 * (Sf^0.5) (woodland surface)
V = 2.5 * (Sf^0.5) (forest w/heavy litter surface)
Tc = (Lf / V) / (3600 sec/hr)

Where:

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)

Channel Flow Equation :

V = (1.49 * (R^(2/3)) * (Sf^0.5)) / n
R = Aq / Wp
Tc = (Lf / V) / (3600 sec/hr)

Where :

Tc = Time of Concentration (hr)
Lf = Flow Length (ft)
R = Hydraulic Radius (ft)
Aq = Flow Area (ft^2)
Wp = Wetted Perimeter (ft)
V = Velocity (ft/sec)
Sf = Slope (ft/ft)
n = Manning's roughness

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Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft²) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 7.90
Total Runoff (in) 6.06
Peak Runoff (cfs) 3478.87
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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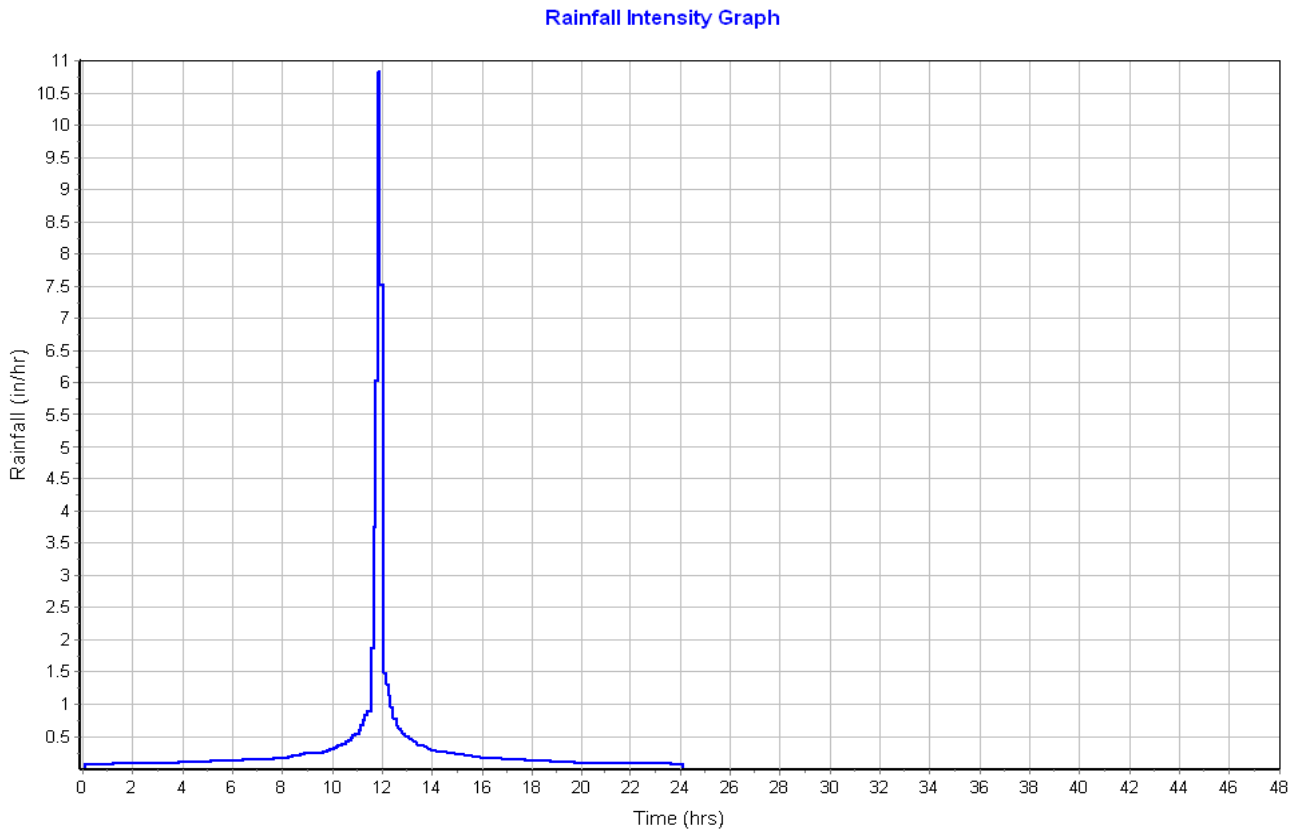
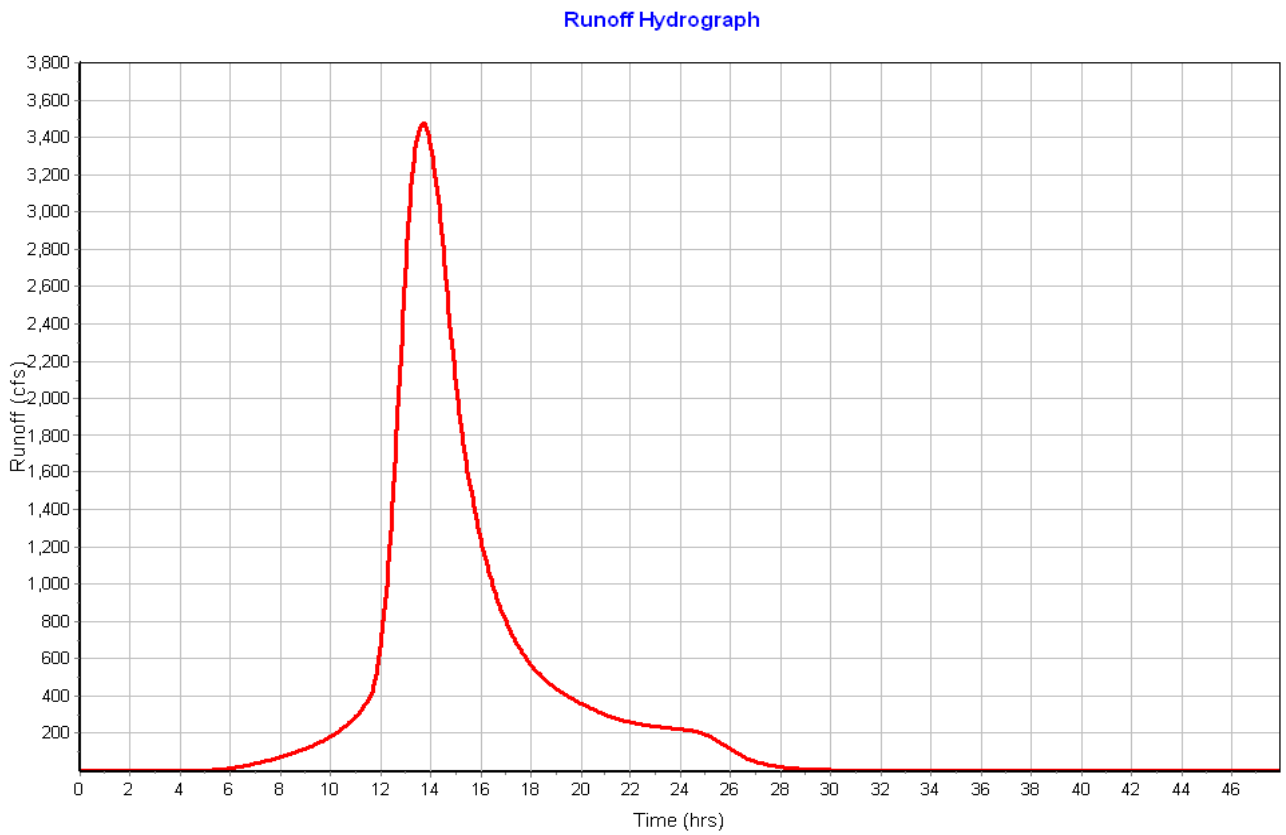
Subbasin : Coleman-OP





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Subbasin : Coleman-POST

Input Data

Area (ac) 2369.76
Weighted Curve Number 84.55
Rain Gage ID ..... 100-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1895.81	D	85.00
Pasture, grassland, or range, Fair	355.46	D	84.00
Woods, Fair	118.49	D	79.00
Composite Area & Weighted CN	2369.76		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 7.90
Total Runoff (in) 6.06
Peak Runoff (cfs) 3513.20
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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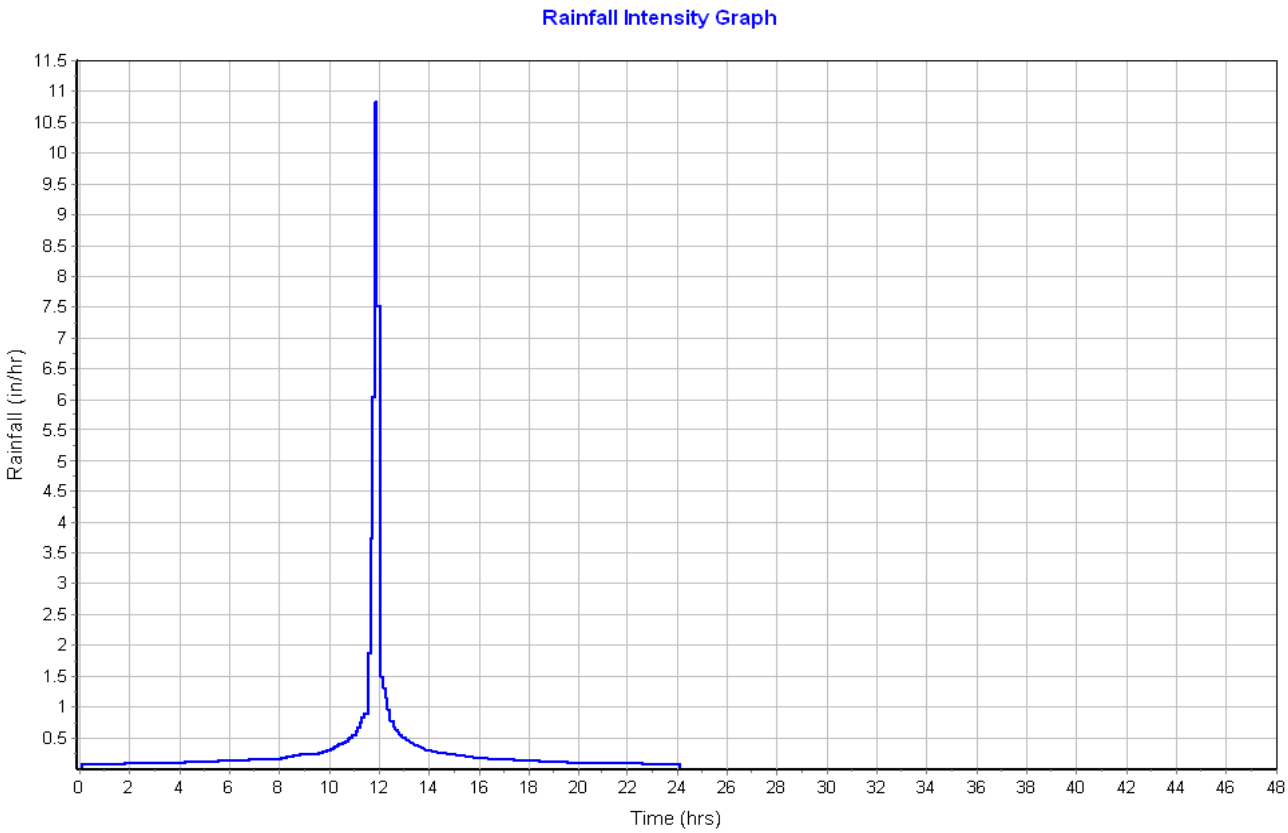
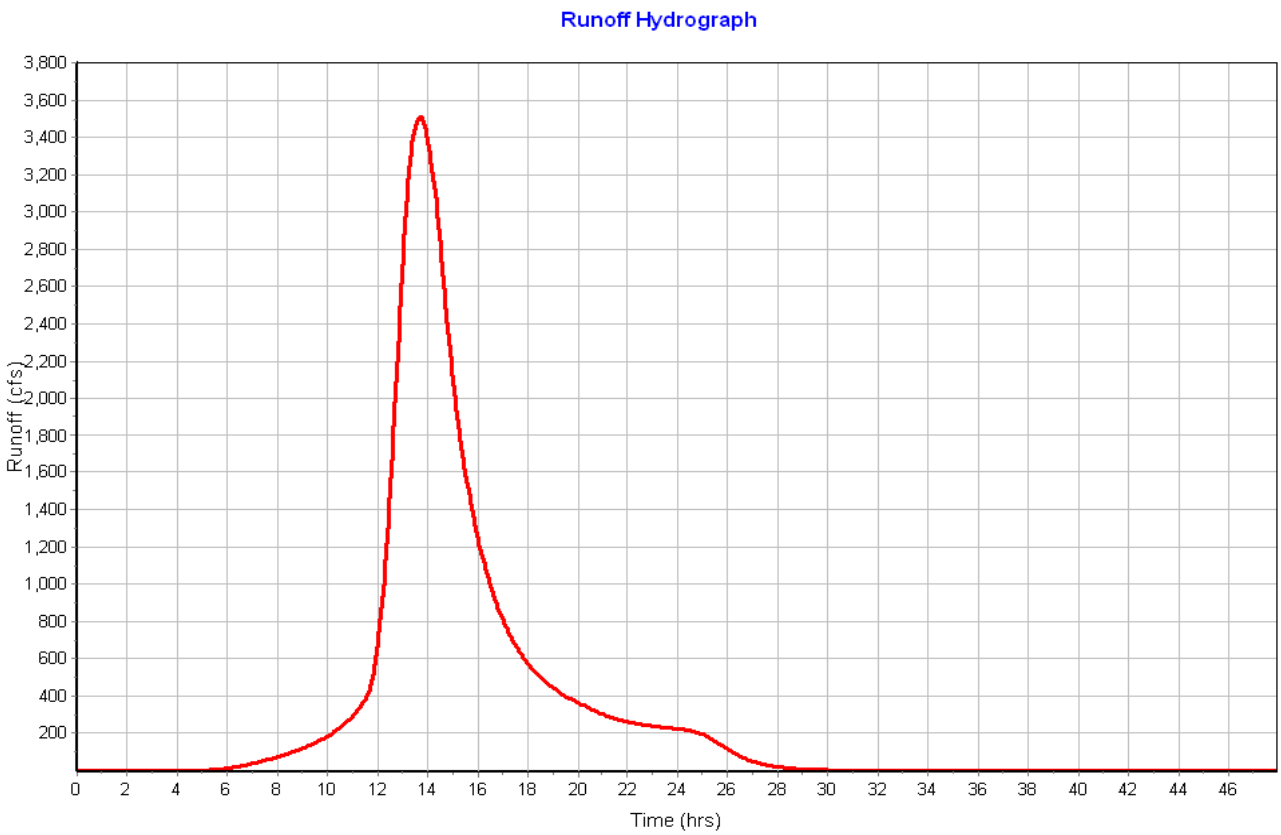
Subbasin : Coleman-POST





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Subbasin : COLMAN-PRE

Input Data

Area (ac) 2445.00
Weighted Curve Number 84.55
Rain Gage ID ..... 100-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Row crops, SR + CR, Good	1956.00	D	85.00
Pasture, grassland, or range, Fair	366.75	D	84.00
Woods, Fair	122.25	D	79.00
Composite Area & Weighted CN	2445.00		84.55

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.3	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	1	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.09	0.00	0.00
Computed Flow Time (min) :	36.95	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	3680	0.00	0.00
Slope (%) :	.95	0.00	0.00
Surface Type :	Straight rows	Unpaved	Unpaved
Velocity (ft/sec) :	0.88	0.00	0.00
Computed Flow Time (min) :	69.70	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	25130	0.00	0.00
Channel Slope (%) :	.51	0.00	0.00
Cross Section Area (ft^2) :	250	0.00	0.00
Wetted Perimeter (ft) :	75	0.00	0.00
Velocity (ft/sec) :	5.94	0.00	0.00
Computed Flow Time (min) :	70.56	0.00	0.00

Total TOC (min) 177.21

Subbasin Runoff Results

Total Rainfall (in) 7.90
Total Runoff (in) 6.06
Peak Runoff (cfs) 3624.74
Weighted Curve Number 84.55
Time of Concentration (days hh:mm:ss) 0 02:57:13

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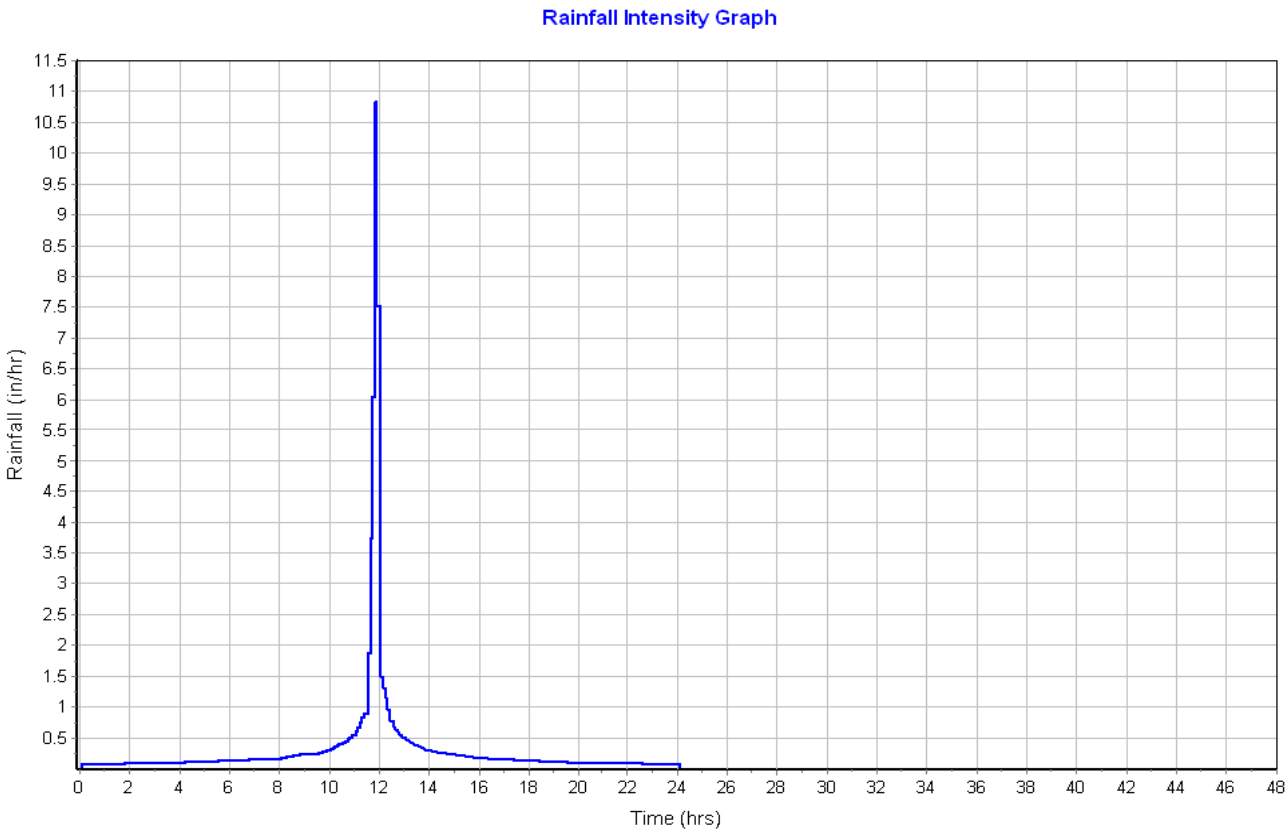
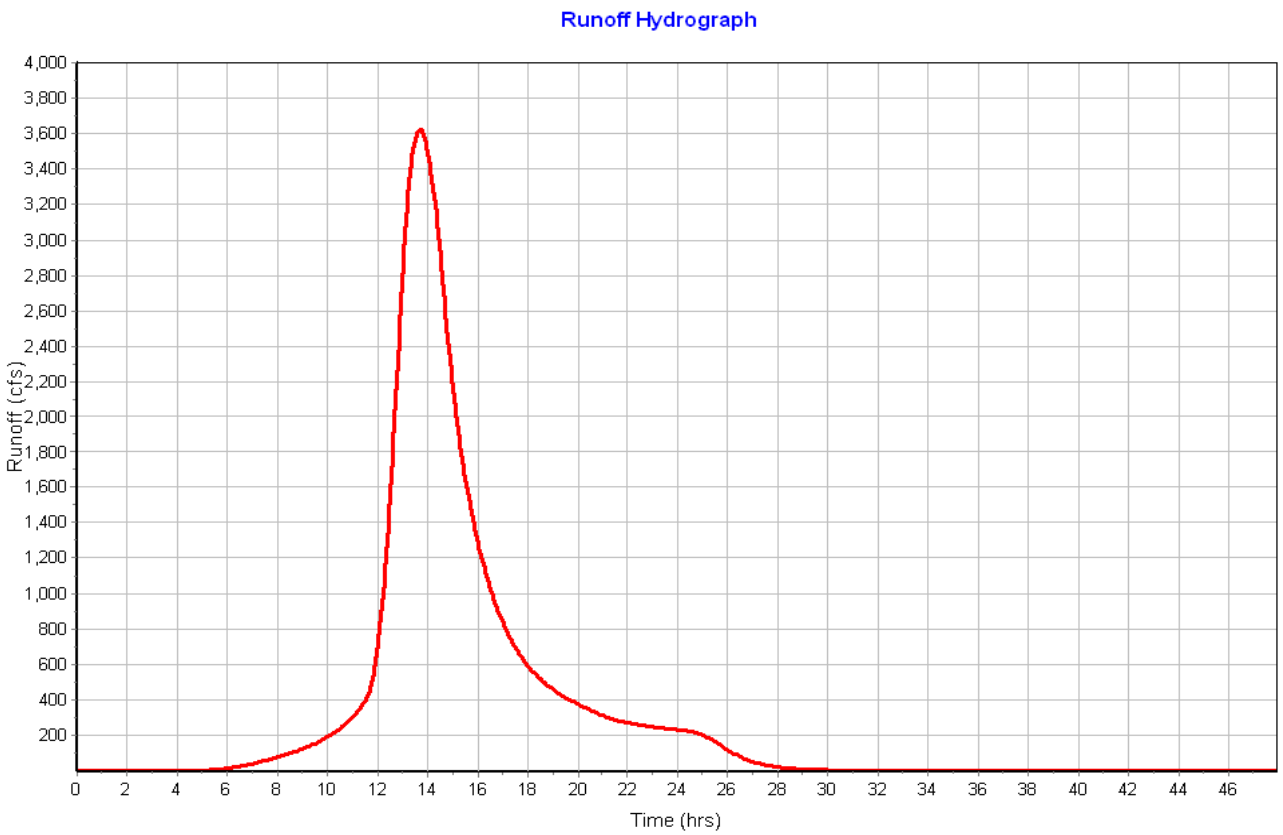
Subbasin : COLMAN-PRE





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Subbasin : Tributary-OP

Input Data

Area (ac) 580.74
Weighted Curve Number 85.65
Rain Gage ID ..... 100-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.11	D	79.00
Farmsteads	87.11	D	86.00
Pasture, grassland, or range, Poor	203.26	D	89.00
Row crops, SR + CR, Good	203.26	D	85.00
Composite Area & Weighted CN	580.74		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 7.90
Total Runoff (in) 6.19
Peak Runoff (cfs) 913.65
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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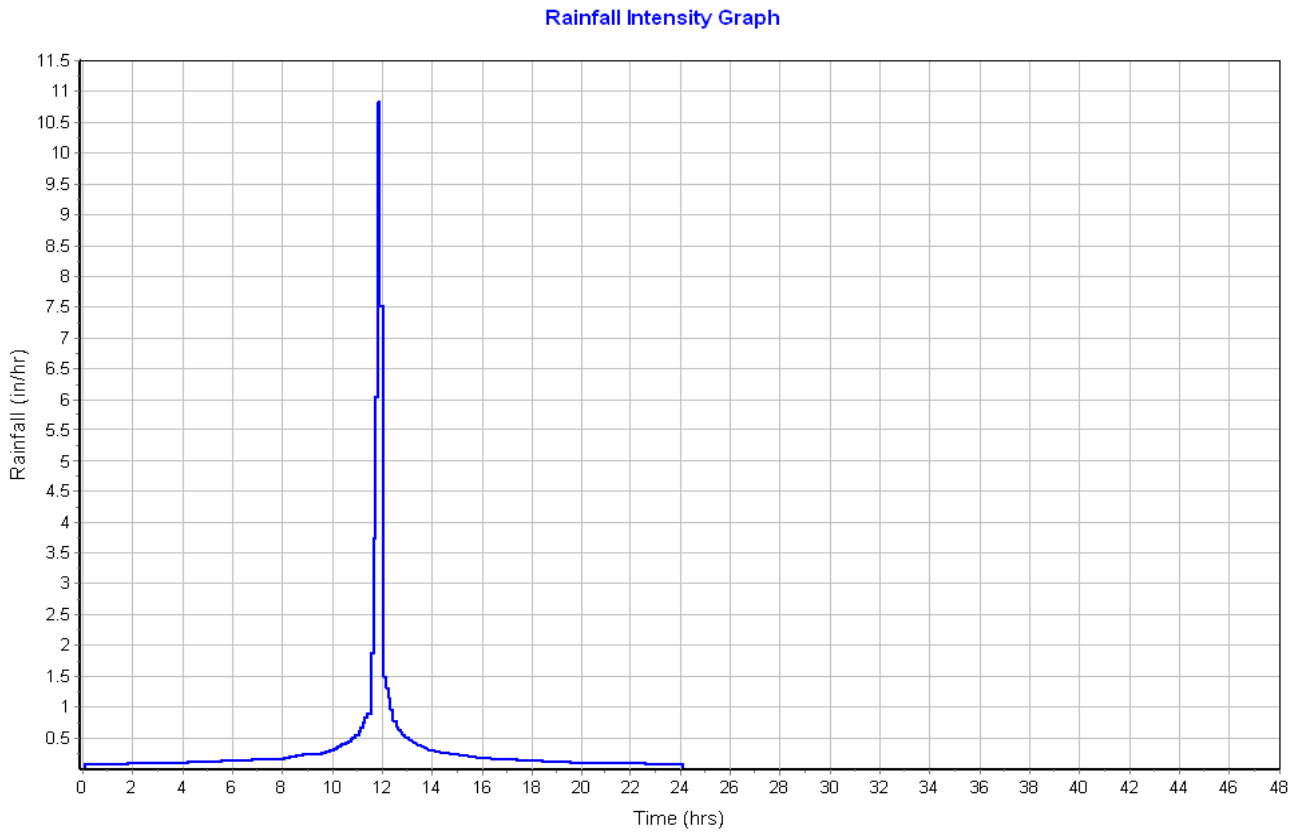
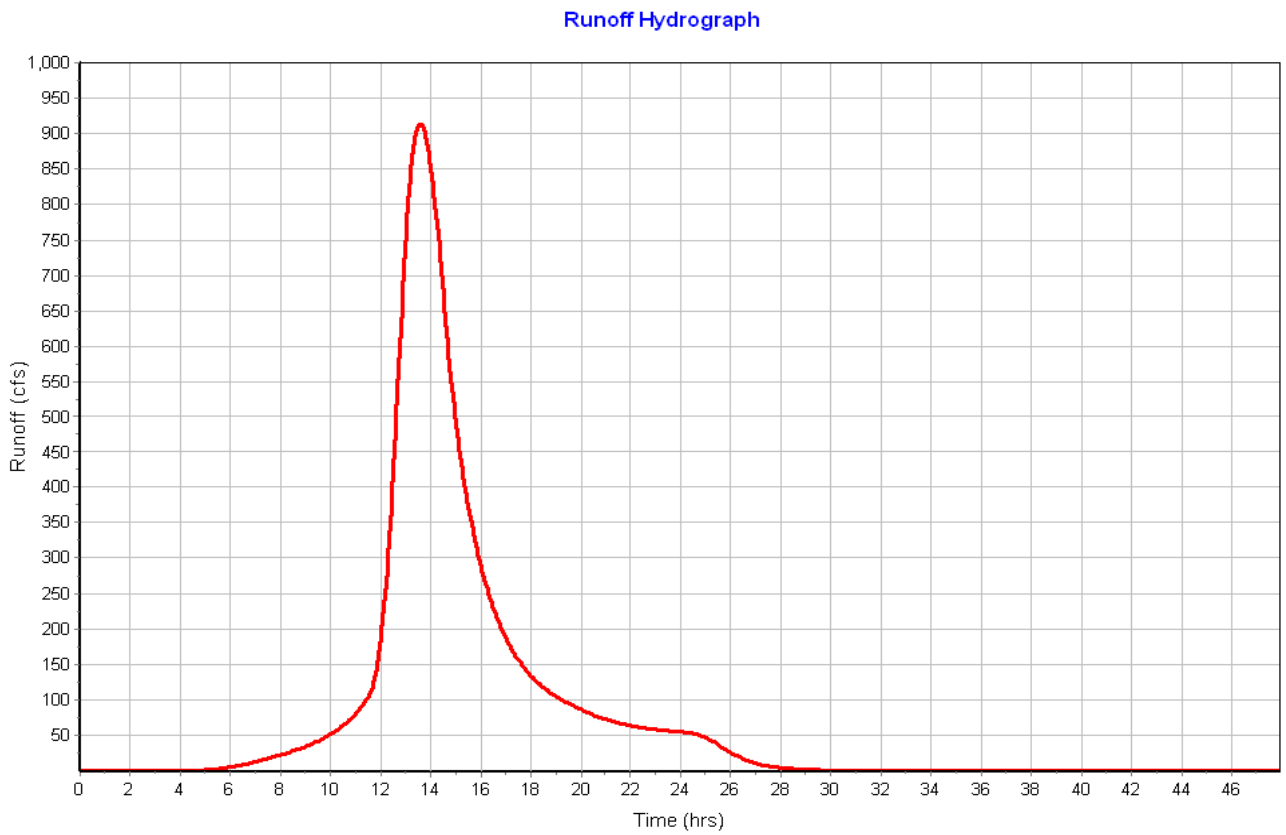
Subbasin : Tributary-OP





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Subbasin : Tributary-POST

Input Data

Area (ac) 581.60
Weighted Curve Number 85.65
Rain Gage ID ..... 100-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	87.24	D	79.00
Farmsteads	87.24	D	86.00
Pasture, grassland, or range, Poor	203.56	D	89.00
Row crops, SR + CR, Good	203.56	D	85.00
Composite Area & Weighted CN	581.60		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft^2) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 7.90
Total Runoff (in) 6.19
Peak Runoff (cfs) 915.00
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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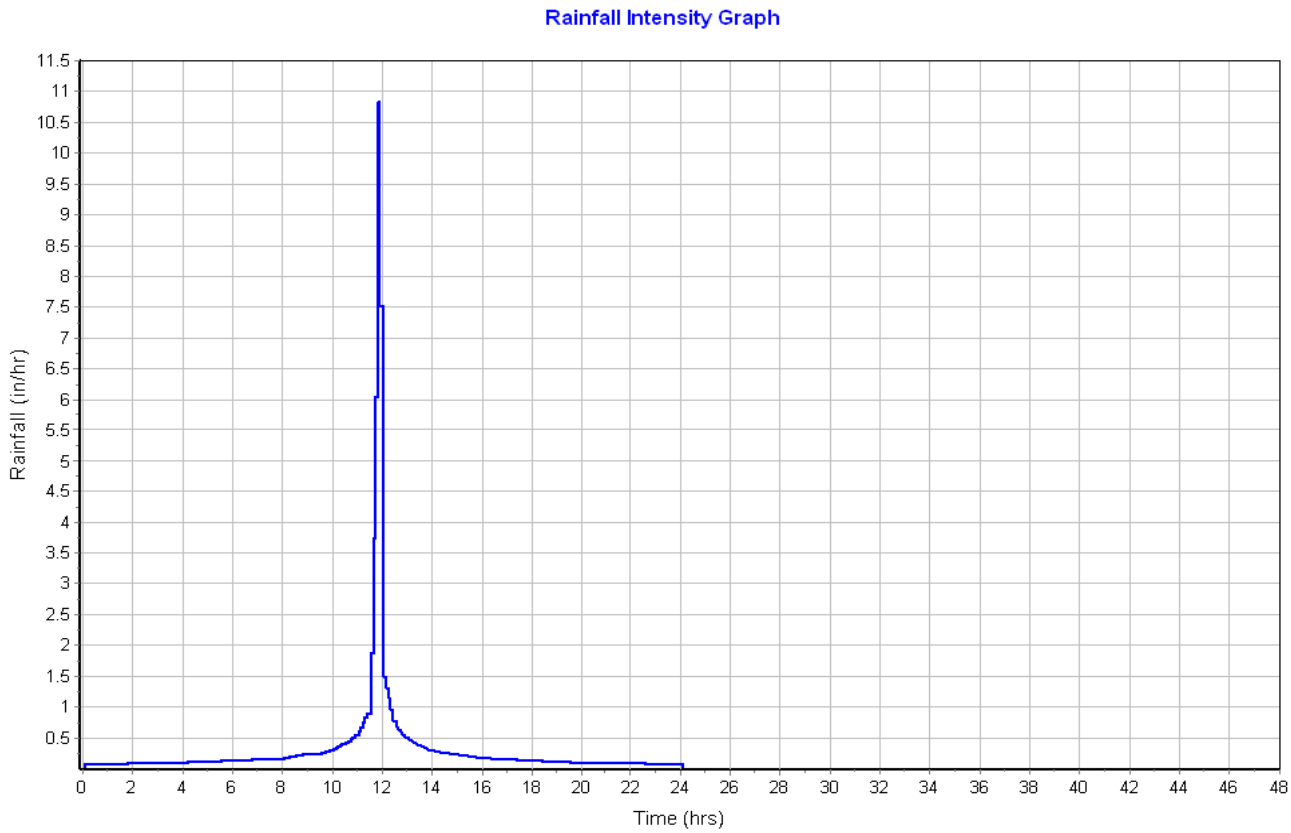
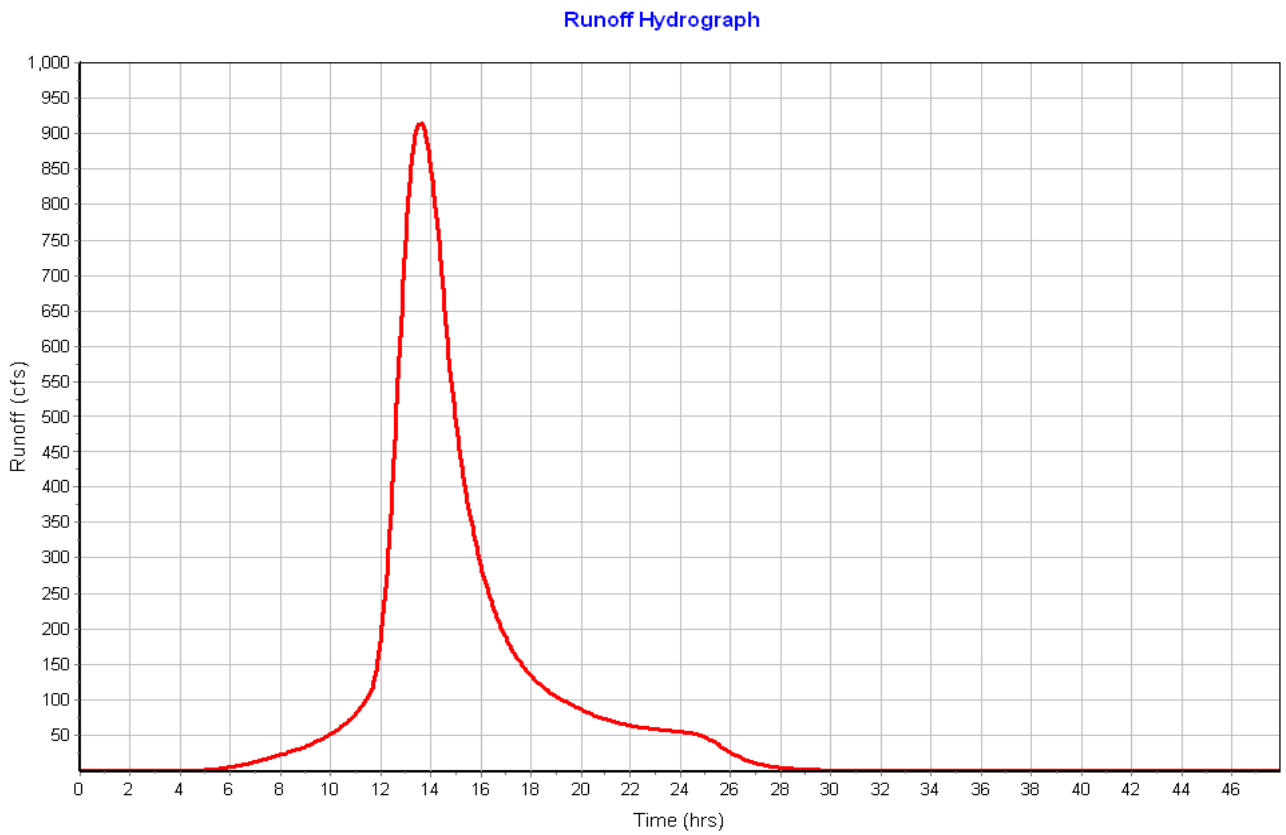
Subbasin : Tributary-POST





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Subbasin : TRIBUTARY-PRE

Input Data

Area (ac) 608.00
Weighted Curve Number 85.65
Rain Gage ID ..... 100-year Storm

Composite Curve Number

Soil/Surface Description	Area (acres)	Soil Group	Curve Number
Woods, Fair	91.20	D	79.00
Farmsteads	91.20	D	86.00
Pasture, grassland, or range, Poor	212.80	D	89.00
Row crops, SR + CR, Good	212.80	D	85.00
Composite Area & Weighted CN	608.00		85.65

Time of Concentration

Sheet Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.4	0.00	0.00
Flow Length (ft) :	200	0.00	0.00
Slope (%) :	.5	0.00	0.00
2 yr, 24 hr Rainfall (in) :	3.60	0.00	0.00
Velocity (ft/sec) :	0.05	0.00	0.00
Computed Flow Time (min) :	61.37	0.00	0.00

Shallow Concentrated Flow Computations	Subarea A	Subarea B	Subarea C
Flow Length (ft) :	2750	0.00	0.00
Slope (%) :	.62	0.00	0.00
Surface Type :	Grass pasture	Unpaved	Unpaved
Velocity (ft/sec) :	0.55	0.00	0.00
Computed Flow Time (min) :	83.33	0.00	0.00

Channel Flow Computations	Subarea A	Subarea B	Subarea C
Manning's Roughness :	.04	0.00	0.00
Flow Length (ft) :	10142	0.00	0.00
Channel Slope (%) :	.89	0.00	0.00
Cross Section Area (ft²) :	150	0.00	0.00
Wetted Perimeter (ft) :	50	0.00	0.00
Velocity (ft/sec) :	7.31	0.00	0.00
Computed Flow Time (min) :	23.12	0.00	0.00

Total TOC (min) 167.83

Subbasin Runoff Results

Total Rainfall (in) 7.90
Total Runoff (in) 6.19
Peak Runoff (cfs) 956.53
Weighted Curve Number 85.65
Time of Concentration (days hh:mm:ss) 0 02:47:50

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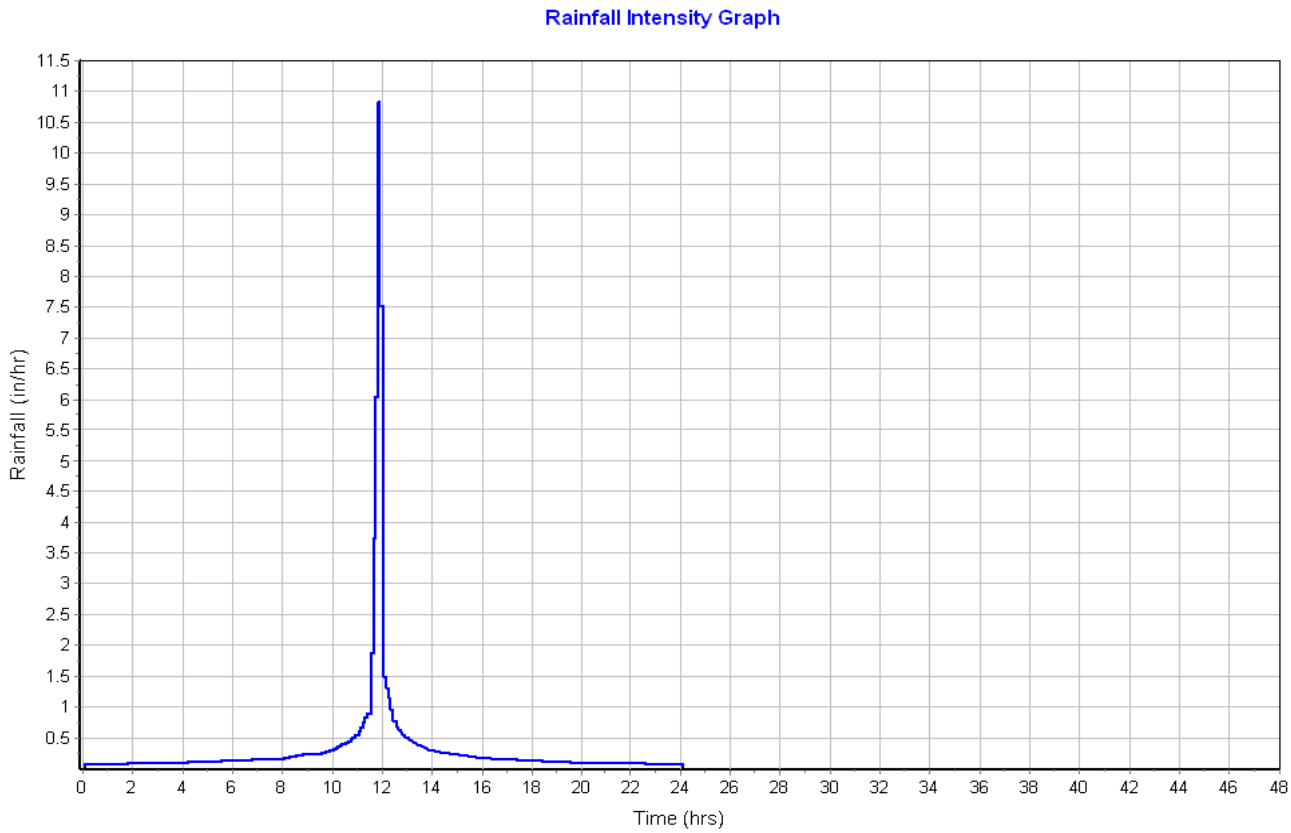
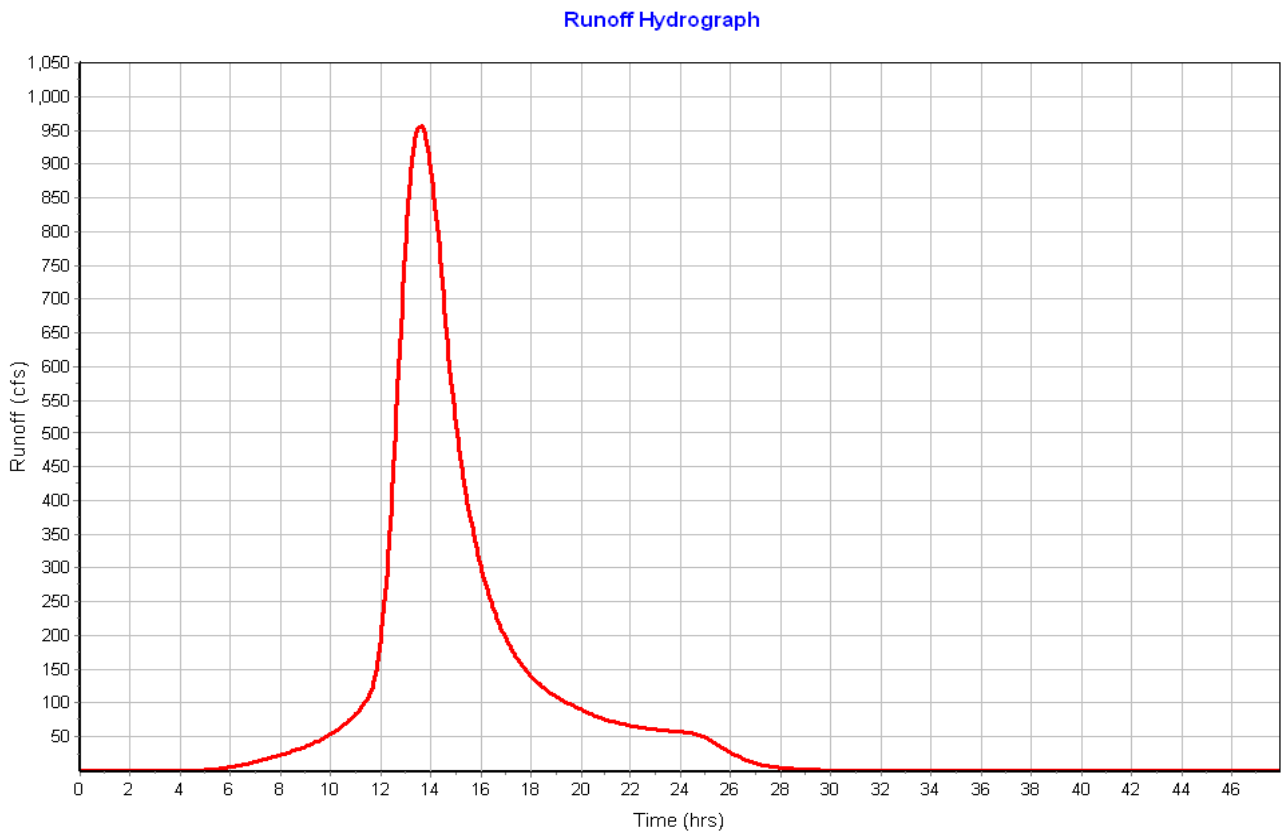
Subbasin : TRIBUTARY-PRE





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APPENDIX B

WWC-5 WELL LOGS

WATER WELL RECORD Form WWC-5 KSA 82a-1212

Appendix B - WWC5 Boring Logs

1 LOCATION OF WATER WELL: County: Douglas | Fraction: NW ¼ SW ¼ NW ¼ | Section Number: 15 | Township Number: T 13 S | Range Number: R 21 (E) W

Distance and direction from nearest town or city street address of well if located within city? 1266 E 2300 Rd. Eudora, Ks.

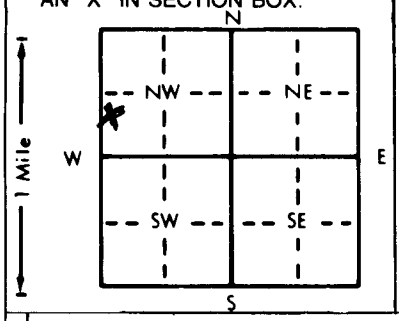
2 WATER WELL OWNER: James Leroy Pankey

RR#, St. Address, Box # : P.O Box 244

City, State, ZIP Code : Eudora, KS. 66025

Board of Agriculture, Division of Water Resources Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 60 ft. ELEVATION:

Depth(s) Groundwater Encountered 1. 16-36 ft. 2. ft. 3. ft.

WELL'S STATIC WATER LEVEL 25 ft. below land surface measured on mo/day/yr Oct. 16, 95

Pump test data: Well water was ft. after hours pumping gpm

Est. Yield 10 gpm: Well water was ft. after hours pumping gpm

Bore Hole Diameter 8 3/4 in. to 60 ft., and in. to ft.

WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)

Was a chemical/bacteriological sample submitted to Department? Yes No; If yes, mo/day/yr sample was submitted

Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)

CASING JOINTS: Glued X Clamped Welded Threaded

Blank casing diameter 5 in. to 50 ft., Dia in. to ft., Dia in. to ft.

Casing height above land surface 30 in., weight 200# lbs./ft. Wall thickness or gauge No.

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)

SCREEN-PERFORATED INTERVALS: From 50 ft. to 60 ft., From ft. to ft.

From ft. to ft., From ft. to ft.

GRAVEL PACK INTERVALS: From 60 ft. to 20 ft., From ft. to ft.

From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other

Grout Intervals: From 20 ft. to 0 ft., From ft. to ft., From ft. to ft.

What is the nearest source of possible contamination: NONE At Time OF Drilling

1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)

Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	16	Soil + Clay			
16	36	Sand			
36	42	Shale			
42	47	Limestone			
47	61	Shale + Sand - Laminated			
61	70	Limestone			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) Oct. 16, 95 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 561 This Water Well Record was completed on (mo/day/yr) Oct. 19 1995 under the business name of Evans Energy Development, Inc. by (signature) [signature]

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: Douglas | Fraction: SE ¼ NW ¼ NE ¼ | Section Number: 21 | Township Number: T 13 S | Range Number: R 21 E/W

Distance and direction from nearest town or city street address of well if located within city? 1 Mile South of Eudora, 3/4 East, Then 1/8 South

2 WATER WELL OWNER: Robert [redacted] Gabriel

RR#, St. Address, Box # : 2240 N. 1200 Rd.

City, State, ZIP Code: Eudora, Kansas 66025

Board of Agriculture, Division of Water Resources Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX: N, NW, NE, W, E, SW, SE, S; 1 Mile

4 DEPTH OF COMPLETED WELL 43 ft. ELEVATION:

Depth(s) Groundwater Encountered 1. 16-38 ft. 2. ft. 3. ft.

WELL'S STATIC WATER LEVEL 16 ft. below land surface measured on mo/day/yr 3-20-95

Pump test data: Well water was ft. after hours pumping gpm

Est. Yield 5 gpm: Well water was ft. after hours pumping gpm

Bore Hole Diameter 8 3/4 in. to 57 ft., and in. to ft.

WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)

Was a chemical/bacteriological sample submitted to Department? Yes No; If yes, mo/day/yr sample was submitted

Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)

CASING JOINTS: Glued X Clamped Welded Threaded

Blank casing diameter 5 in. to 33 ft., Dia in. to ft., Dia in. to ft.

Casing height above land surface 30 in., weight 200# lbs./ft. Wall thickness or gauge No.

TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)

SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)

SCREEN-PERFORATED INTERVALS: From 33 ft. to 43 ft., From ft. to ft.

From ft. to ft., From ft. to ft.

GRAVEL PACK INTERVALS: From 33 ft. to 20 ft., From ft. to ft.

From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other

Grout Intervals: From 20 ft. to 0 ft., From ft. to ft., From ft. to ft.

What is the nearest source of possible contamination: NONE

1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)

Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	16	Soil + Clay			
16	38	SAND - Unconsolidated			
38	50	Shale			
50	55	Lime			
55	57	Shale			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 3-20-95 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 561 This Water Well Record was completed on (mo/day/yr) 3-21-95 under the business name of EVANS ENERGY by (signature)

INSTRUCTIONS: Use typewriter or ball point pen. PLEASE PRESS FIRMLY and PRINT clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: Douglas	Fraction: SE ¼ SE ¼ SE ¼	Section Number: 21	Township Number: T 13 S	Range Number: R 21 E/W

Distance and direction from nearest town or city street address of well if located within city? 2 miles South of Eudora City Limits on 3/4 East Lot on North

2 WATER WELL OWNER: Jerry Katzfrey
RR#, St. Address, Box # : 67 Savage Court
City, State, ZIP Code : Eudora KS. 66025

Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:

N; NW; NE; W; E; SW; SE; S; 1 Mile; X

4 DEPTH OF COMPLETED WELL 60 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. 19-45 ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 32 ft. below land surface measured on mo/day/yr 4-26-94
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 27 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 8 3/4 in. to 20 ft., and 7 7/8 in. to 77 ft.
WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes No X; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued X Clamped Welded Threaded
Blank casing diameter 5 in. to 40 ft., Dia 5 in. to 50-60 ft., Dia in. to ft.
Casing height above land surface 30 in., weight lbs./ft. Wall thickness or gauge No. 200#
TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)
SCREEN-PERFORATED INTERVALS: From 40 ft. to 50 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 77 ft. to 20 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 20 ft. to 0 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination: ~~NONE~~ ~~At the time~~
1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines NONE 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? How many feet?

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	19	Soil & Clay			
19	45	Sand			
45	60	Shale			
60	70	Limestone			
70	74	Shale			
74	77	Lime			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 9-20-94 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 561 This Water Well Record was completed on (mo/day/yr) 4-21-94 under the business name of Evans Energy Dev. Inc. by (signature) [signature]

INSTRUCTIONS: Use typewriter or ball point pen. PLEASE PRESS FIRM and PRINT clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: DOUGLAS	Fraction: NW¼ SE¼ NE¼	Section Number: 15	Township Number: T 13 S	Range Number: R 21 E/W

Distance and direction from nearest town or city street address of well if located within city? 1 east 1/2 South of Baldwin

2 WATER WELL OWNER: Mitch Prudden
RR#, St. Address, Box # : Box 134
City, State, ZIP Code : Prairie Ks 66018

Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATION WELL'S LOCATION WITH AN "X" IN SECTION BOX: (N, NW, NE, W, E, SW, SE, S; 1 Mile) X

4 DEPTH OF COMPLETED WELL 134 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. 31 - 41 ft. 2. 53 - 61 ft. 3. ft.
WELL'S STATIC WATER LEVEL 26 ft. below land surface measured on mo/day/yr
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 20 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 12 in. to 132 ft., and in. to ft.
WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes No X If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued Clamped Welded Threaded
Blank casing diameter 5" in. to ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 24 in., weight lbs./ft. Wall thickness or gauge No. SCH 40
TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)
SCREEN-PERFORATED INTERVALS: From 31 ft. to 41 ft., From ft. to ft.
From 129 ft. to 132 ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 24 ft. to 132 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 4 ft. to 24 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination: 1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? N How many feet? 108 Telephon pole

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	2	top soil			
2	16	CL - BR			
16	39	FS - CS - BR			
39	46	Shale - Grey			
46	53	Limestone - Grey			
53	61	SS - Br			
61	63	Shale - Br			
63	78	LS - TAN			
78	83	Shale - Br			
83	91	LS - Br			
91	105	Shale - Br			
105	127	LS - Br			
127	132	Shale - Br			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) April 30 94 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 174 This Water Well Record was completed on (mo/day/yr) 6-13-94 under the business name of Bruner by (signature) John S. Bruner

INSTRUCTIONS: Use typewriter or ball point pen. PLEASE PRESS FIRMLY and PRINT clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

WATER WELL RECORD Form WWC-5 KSA 82a-1212

1 LOCATION OF WATER WELL: County: Douglas	Fraction: NW ¼ NE ¼ SE ¼	Section Number: 21	Township Number: T 13 S	Range Number: R 21 (E) W

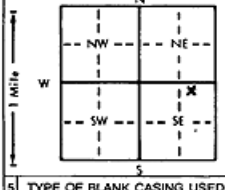
Distance and direction from nearest town or city street address of well if located within city?
2 miles South of Eudora

Appendix B - WWC5 Boring Logs

2 WATER WELL OWNER: Jeff & Dana Shoemaker
RR#, St. Address, Box # : Hesper Heights Sub.
City, State, ZIP Code : Eudora KS 66025

Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 65 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. 27 ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 22 ft. below land surface measured on mo/day/yr
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 8 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 8 ¼ in. to ft., and in. to ft.
WELL WATER TO BE USED AS: (1 Domestic) 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes No X If yes, mo/day/yr sample was submitted
Water Well Disinfected? (Yes) No

5 TYPE OF BLANK CASING USED: (2 PVC)
1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued X Clamped Welded Threaded
Blank casing diameter 5 in. to ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 24 in., weight Sch 40 lbs./ft. Wall thickness or gauge No.
TYPE OF SCREEN OR PERFORATION MATERIAL: (7 PVC)
1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE: (3 Mill slot)
1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)
SCREEN-PERFORATED INTERVALS: From 25 ft. to 40 ft., From ft. to ft.
From 60 ft. to 65 ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 24 ft. to 65 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout (3 Bentonite) 4 Other
Grout Intervals: From 4 ft. to 24 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination: (1 Septic tank)
2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? South How many feet? 150

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	2	Top soil			
2	22	Clay (Br)			
22	27	Clay (Br)			
27	40	Sand (fine, med)			
40	60	Shale			
60	65	lime (Br)			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) Sept 1994 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 174 This Water Well Record was completed on (mo/day/yr) 6-7-95 under the business name of Brewer Inc. by (signature) John S. Brewer

INSTRUCTIONS: Use typewriter or ball point pen. PLEASE PRESS FIRMLY and PRINT clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

WATER WELL RECORD Form WWC-5 KSA 82a-1212

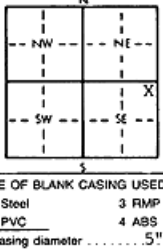
1 LOCATION OF WATER WELL: County: DOUGLAS | Fraction: NE ¼ NE ¼ SE ¼ | Section Number: 21 | Township Number: T 13 S | Range Number: R 21E E/W

Distance and direction from nearest town or city street address of well if located within city?
1 mile east of 1023 Kentucky - KWWC5

2 WATER WELL OWNER: Keith Turnbaugh
RR#, St. Address, Box # : 1917 S. 65th
City, State, ZIP Code : Kansas City, KS 66106

Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 55' ft. ELEVATION:
Depth(s) Groundwater Encountered 1. ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 28' ft. below land surface measured on mo/day/yr 1/16/98
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 25 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 12" in. to ft., and in. to ft.
WELL WATER TO BE USED AS: 1 Domestic 2 Irrigation 3 Feedlot 4 Industrial 5 Public water supply 6 Oil field water supply 7 Lawn and garden only 8 Air conditioning 9 Dewatering 10 Monitoring well 11 Injection well 12 Other (Specify below)
Was a chemical/bacteriological sample submitted to Department? Yes No X ; If yes, mo/day/yr sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 1 Steel 2 PVC 3 RMP (SR) 4 ABS 5 Wrought iron 6 Asbestos-Cement 7 Fiberglass 8 Concrete tile 9 Other (specify below)
CASING JOINTS: Glued X Clamped Welded Threaded
Blank casing diameter 5" in. to 0-40 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 24" in., weight 2.82 lbs./ft. Wall thickness or gauge No. .258
TYPE OF SCREEN OR PERFORATION MATERIAL: 1 Steel 2 Brass 3 Stainless steel 4 Galvanized steel 5 Fiberglass 6 Concrete tile 7 PVC 8 RMP (SR) 9 ABS 10 Asbestos-cement 11 Other (specify) 12 None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE: 1 Continuous slot 2 Louvered shutter 3 Mill slot 4 Key punched 5 Gauzed wrapped 6 Wire wrapped 7 Torch cut 8 Saw cut 9 Drilled holes 10 Other (specify) 11 None (open hole)
SCREEN-PERFORATED INTERVALS: From 40 ft. to 55 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 28 ft. to 55 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout 3 Bentonite 4 Other
Grout Intervals: From 4 ft. to 28 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination: 1 Septic tank 2 Sewer lines 3 Watertight sewer lines 4 Lateral lines 5 Cess pool 6 Seepage pit 7 Pit privy 8 Sewage lagoon 9 Feedyard 10 Livestock pens 11 Fuel storage 12 Fertilizer storage 13 Insecticide storage 14 Abandoned water well 15 Oil well/Gas well 16 Other (specify below)
Direction from well? Southeast How many feet? 75'

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	3	Top Soil			
3	11	Clay-Brown			
11	18	Clay-Tanish Brown			
18	23	Fine Sand, Clay-Tanish Br/ Sandy			
23	32	Fine Sand-Brown			
32	42	Fine Sand-Med Sand-Coarse Sand-Brown			
42	55	Fine Sand-Brown			
55		Limestone-Grey			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 1/16/98 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's License No. 182 This Water Well Record was completed on (mo/day/yr) 2-11-98 under the business name of STRADER DRILLING CO., INC. by (signature) Dale Asbren

INSTRUCTIONS: Use typewriter or ball point pen. *PLEASE PRESS FIRMLY* and *PRINT* clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone: 913-296-5545. Send one to WATER WELL OWNER and retain one for your records.

CORRECTION TO WATER WELL RECORD (WWC-5)

The following correction(s) was made to the attached WWC-5 log, in order to file the item or to rectify lacking or incorrect information.

Appendix B - WWC5 Boring Logs

Fraction (1/4 1/4 1/4) Section-Township-Range changed:

listed as NE, NE, SE, 21 - 13S - 12E

changed to NE, NE, SE, 21 - 13S - 21E

Other changes: Initial statements:

Changed to:

Comments:

verification method: Written description on form, position on plat map, & Eudora 1:24,000 topo. map initials: DRL date: 2/4/99

submitted by: Kansas Geological Survey, Data Resources Library, 1930 Constant Ave., Lawrence, KS 66047-3726
to: Kansas Dept of Health & Environment Bureau of Water Industrial Programs, Bldg 283, Forbes Field, KS 66620

WATER WELL RECORD Form WWC-5 KSA 82a-1212 ID No.

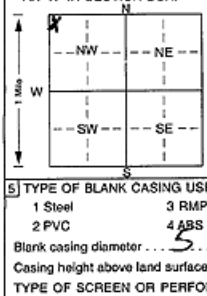
1 LOCATION OF WATER WELL:	Fraction	Section Number	Township Number	Range Number
County: Johnson	NW ¼ NW ¼ NW ¼	14	T 13 S	R 21 E/W

Distance and direction from nearest town or city street address of well if located within city?
4625 W 115 Overland Park KS 66205

2 WATER WELL OWNER: Elmer Workman
RR#, St. Address, Box # : P.O. Box 426
City, State, ZIP Code : Olathe KS 66051

Board of Agriculture, Division of Water Resources
Application Number:

3 LOCATE WELL'S LOCATION WITH AN "X" IN SECTION BOX:



4 DEPTH OF COMPLETED WELL 120 ft. ELEVATION:
Depth(s) Groundwater Encountered 1. 20-26 ft. 2. ft. 3. ft.
WELL'S STATIC WATER LEVEL 20 ft. below land surface measured on mo/day/yr 4-19-01
Pump test data: Well water was ft. after hours pumping gpm
Est. Yield 1.5 gpm: Well water was ft. after hours pumping gpm
Bore Hole Diameter 8-3/4 in. to 120 ft., and in. to ft.
WELL WATER TO BE USED AS: 5 Public water supply 8 Air conditioning 11 Injection well
(1) Domestic 3 Feedlot 6 Oil field water supply 9 Dewatering 12 Other (Specify below)
2 Irrigation 4 Industrial 7 Domestic (lawn & garden) 10 Monitoring well
Was a chemical/bacteriological sample submitted to Department? Yes No X ; If yes, mo/day/yrs sample was submitted
Water Well Disinfected? Yes X No

5 TYPE OF BLANK CASING USED: 5 Wrought iron 8 Concrete tile CASING JOINTS: Glued X Clamped
1 Steel 3 RMP (SR) 6 Asbestos-Cement 9 Other (specify below) Welded
2 PVC 4 ABS 7 Fiberglass Threaded
Blank casing diameter 5 in. to 120 ft., Dia in. to ft., Dia in. to ft.
Casing height above land surface 24 in., weight SDR 26 16.0 lbs./ft. Wall thickness or gauge No.
TYPE OF SCREEN OR PERFORATION MATERIAL: (7) PVC 10 Asbestos-cement
1 Steel 3 Stainless steel 5 Fiberglass 8 RMP (SR) 11 Other (specify)
2 Brass 4 Galvanized steel 6 Concrete tile 9 ABS 12 None used (open hole)
SCREEN OR PERFORATION OPENINGS ARE: 5 Gauzed wrapped 8 Saw cut 11 None (open hole)
1 Continuous slot (3) Mill slot 250 6 Wire wrapped 9 Drilled holes
2 Louvered shutter 4 Key punched 7 Torch cut 10 Other (specify) ft.
SCREEN-PERFORATED INTERVALS: From 110 ft. to 120 ft., From ft. to ft.
From ft. to ft., From ft. to ft.
GRAVEL PACK INTERVALS: From 120 ft. to 20 ft., From ft. to ft.
From ft. to ft., From ft. to ft.

6 GROUT MATERIAL: 1 Neat cement 2 Cement grout (3) Bentonite 4 Other
Grout Intervals: From 20 ft. to 0 ft., From ft. to ft., From ft. to ft.
What is the nearest source of possible contamination: 10 Livestock pens (14) Abandoned water well
1 Septic tank 4 Lateral lines 7 Pit privy 11 Fuel storage 15 Oil well/Gas well
2 Sewer lines 5 Cess pool 8 Sewage lagoon 12 Fertilizer storage 16 Other (specify below)
3 Watertight sewer lines 6 Seepage pit 9 Feedyard 13 Insecticide storage
Direction from well? SE How many feet? 100'

FROM	TO	LITHOLOGIC LOG	FROM	TO	PLUGGING INTERVALS
0	13	Soil & Clay			
13	26	Limestone			
26	32	Shale			
32	42	Limestone			
42	56	Shale			
56	70	Limestone			
70	96	Shale			
96	115	Limestone			
115	120	Shale			

7 CONTRACTOR'S OR LANDOWNER'S CERTIFICATION: This water well was (1) constructed, (2) reconstructed, or (3) plugged under my jurisdiction and was completed on (mo/day/year) 4-19-01 and this record is true to the best of my knowledge and belief. Kansas Water Well Contractor's Licence No. 56 This Water Well Record was completed on (mo/day/yr)
under the business name of Evans Energy Dev. Inc. by (signature) Scott A. Evans

INSTRUCTIONS: Use typewriter or ball point pen. PLEASE PRESS FIRMLY and PRINT clearly. Please fill in blanks, underline or circle the correct answers. Send top three copies to Kansas Department of Health and Environment, Bureau of Water, Topeka, Kansas 66620-0001. Telephone 785-296-5524. Send one to WATER WELL OWNER and retain one for your records. Fee of $5.00 for each constructed well.

Grant Martin, Chair
Eudora Planning Commission
4 East Seventh Street
Eudora, Kansas 66025

January 8, 2020

Caitlyn Dolar, Administrative Assistant
City of Lawrence, Planning & Development Services
1 Riverfront Plaza, STE 320
Lawrence, Kansas 66044

RE: CUP-19-00568: – Conditional Use Permit Application (Douglas County) for Hamm Eudora Quarry, located at 1258 E 2300 Rd. within 3-miles of the City of Eudora.

Dear Ms. Dolar:

I am writing this letter to you regarding the aforementioned application as the Chair of the City of Eudora Planning Commission. The Eudora Planning Commission appreciates the efforts expended by Douglas County to include the Eudora community in land use decisions. We would ask you to accept and utilize the following information and convey it to the Lawrence – Douglas County Planning Commission for consideration at their January 22, 2020 meeting.

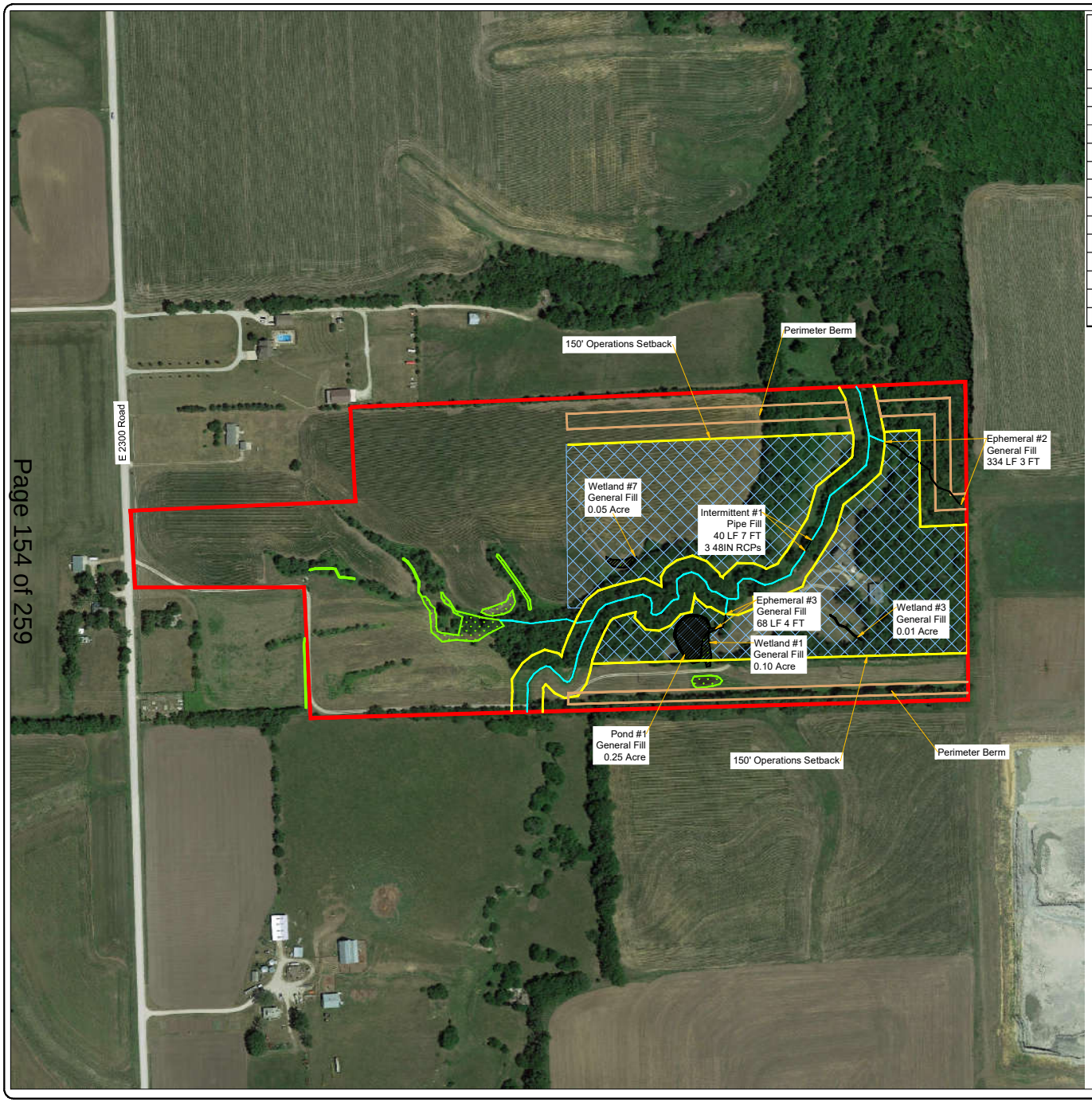
On January 8, 2020, the Eudora Planning Commission met, considered the application and decided to forward the following comments to the Lawrence – Douglas County Planning Commission for consideration. The following outlines the comments of the City of Eudora Planning Commission:

1. That the applicant meet and/or exceed the operational and performance requirements outlined in the application materials as a condition of the CUP.
2. That no increase in intensity or expansion of daily operations and volume of material extracted from the entire quarry site or change to the traffic ingress/egress will occur.
3. That the applicant provide sufficient details regarding the restoration of the property or conditions be added by the County to ensure that such restoration be completed in a timely fashion after termination of the permit or closing of the quarry to the satisfaction of applicable Federal, State and local requirements.

Thank you again for providing us this opportunity to provide meaningful input on this application and considering our comments.

Sincerely,

Grant Martin, Chair
City of Eudora Planning Commission

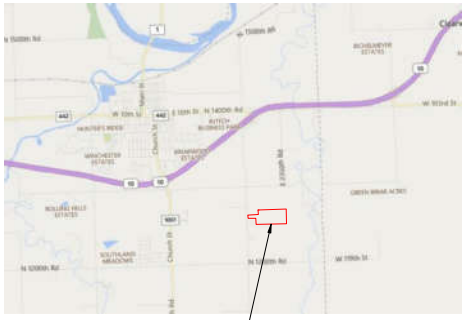


Jurisdictional Feature	General Fill		Pipe Fill	
	Length (ft)	Width (ft)	Length (ft)	Width (ft)
	Area (acres)		Area (acres)	
Wetland #1	0.10			
Wetland #3	0.01			
Wetland #7	0.05			
Total Wetland Impacts	0.16			
Ephemeral #2	334	3		
Ephemeral #3	68	4		
Total Ephemeral Impacts	402			
Intermittent #1			40	7
Total Intermittent Impacts			40	
Pond #1	0.25			
Total Pond Impacts	0.25			

Stream and Property line Setback

Perimeter Berm

Quarry Operations Area



Site Location
T13S-R21E-S15
Eudora, Douglas County, Kansas
51.59 Acres
Lat. 38.92264
Long. -95.06959

GRAPHIC SCALE
150 0 75 150 300 600
(IN FEET)
1 inch = 150 ft.

Terra Technologies
6240 W. 135th St., Ste. 100
Overland Park, Kansas
66223
Tel 913.385.9560 Fax 913.385.5295

SHEET TITLE: JURISDICTIONAL IMPACTS
PROJECT: HAMM QUARRY EXPANSION
CLIENT: HAMM INC.

REVISIONS	
DATE	DESCRIPTION

DATE 02/04/20
CHECKED BY JMK
DRAWN BY DTD
SHEET NO. JI
JOB NO. XXX

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS, KANSAS CITY DISTRICT
635 FEDERAL BUILDING
601 E. 12TH STREET
KANSAS CITY, MISSOURI 64106-2824

March 13, 2020

Regulatory Branch
(NWK-2020-153)
(Douglas, KS, NWP 44.)

Mr. John Kahl, P.E.
Terra Technologies
6240 West 135th Street, Suite 100
Overland Park, Kansas 66223

Dear Mr. Kahl:

This letter pertains to an application received February 14, 2020 on behalf of Hamm Inc. for a Department of the Army (DA) permit. The proposed work concerns the development of a surface rock mining quarry which will involve the placement of fill material within a tributary and wetlands adjacent to Captain Creek. The project is located in Section 15, Township 13 south, Range 21 east, Douglas County, Kansas.

The stream channels, pond and wetlands on the project site are considered waters of the U.S. under Section 404 of the Clean Water Act (33 U.S.C. 1344), which is administered under Federal regulations 33 CFR 320-332. Section 404 provides the Corps of Engineers with regulatory jurisdiction over all waters of the United States. These provisions require prior authorization from the Corps of Engineers for the discharge of dredged or fill material in waters of the United States, including wetlands.

We have reviewed the information furnished and have determined that your project is authorized by nationwide permit **(NWP) 44, Mining Activities,** provided you ensure that the conditions listed in the enclosed copy of excerpts from the January 6, 2017 Federal Register, Issuance of Nationwide Permits, are met. You must also comply with the Kansas City District Regional NWP Conditions posted at:
http://www.nwk.usace.army.mil/Missions/RegulatoryBranch/NationWidePermits.aspx

The Corps has determined that our permitting action complies with Section 1.3 of the Biological Opinion created as part of the Final 4(d) Rule for the northern long-eared bat (NLEB) finalized on January 5, 2016. Specifically, we have determined activities occurring within the action area will not cause prohibited take because they occur more than 150 feet from any known occupied maternity roost tree and more than 0.25 mile from the nearest known hibernacula. The Corps has notified the U.S. Fish and Wildlife Service (USFWS) of our action's distance from the nearest known NLEB habitat and they concurred with our determination. If you believe maternity roost trees or hibernacula are present within the action area, please contact the Corps of Engineers, Regulatory Branch, for further consultation with the USFWS.

The Kansas Department of Health and Environment (KDHE) has certified that this NWP will not violate existing state water quality standards provided you comply with the conditions included in their attached letter. All conditions included in the water quality certification become conditions of the NWP authorization, please carefully review all conditions associated with this NWP. If you have any questions concerning state water quality standards or compliance issues with the associated certification conditions, please contact KDHE at 785-296-5573, Bureau of Environmental Field Services, Watershed Management Section, 1000 SW Jackson Street, Suite 430, Topeka, Kansas 66612-1367.

The work has programmatic coverage under Section 401 of the Clean Water Act per the Kansas 401 water quality certification. Please advise the applicant to contact the KDHE Quarry Program Manager, (Steve Caspers, 785-296-5551), for a potential need for an amendment of the Hamm Quarry Pit De-Watering Permit (#I-KS17-PO03) at the existing quarry or obtaining a new one.

A water right from the Kansas Department of Agriculture may be required of the applicant for this proposed work. Please have the applicant contact Mr. Doug Schemm at 785-296-3495 regarding the potential project.

General condition 30 requires you to sign and submit the enclosed "Compliance Certification" within 30 days of completing the authorized activity or the completion of the implementation of any required compensatory mitigation.

This NWP verification is valid until March 18, 2022. Should your project plans change or if your activity is not complete within the specified verification term, you must contact this office for another permit determination. Although the Corps has verified your project would meet the terms and conditions of a nationwide permit, other Federal, state and/or local permits may be required. You should verify this yourself.

In order to replace the lost aquatic resources that result from the authorized project, the District Engineer has waived the 300 linear foot limit for this authorization. We have determined that the adverse environmental effects of this project are minimal, both individually and cumulatively, with the inclusion of the following special permit condition:

The applicant must purchase 1638 stream credits and 0.16 acre of wetland credits from an approved compensatory mitigation bank in the service area of the project. The current approved mitigation bank available in the service area of your project is the Kansas River and Missouri River Umbrella Bank, Site 3. The compensatory mitigation credit purchase must be completed prior to the commencement of work within our regulatory jurisdiction. You must notify the project proponent that they must submit a receipt of payment from the mitigation bank or in-lieu fee program that includes the amount of credits purchased and the date of credit purchase. Receipts submitted by authorized agents will not be accepted.

We are interested in your thoughts and opinions concerning your experience with the Kansas City District, Corps of Engineers Regulatory Program. Please feel free to complete our Customer Service Survey form on our website at:

http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. You may also call and request a paper copy of the survey which you may complete and return to us by mail.

Brian Donahue reviewed the information furnished and made this determination. If you have any questions concerning this matter, please feel free to contact him at (816) 389-3703. Please reference Permit No. NWK-2020-153 in all comments and/or inquiries relating to this project.

Enclosures

cc (electronically w/o enclosures):

Environmental Protection Agency,
Watershed Planning and Implementation Branch
U.S. Fish and Wildlife Service, Manhattan, Kansas
Kansas Department of Wildlife, Parks and Tourism
Kansas Department of Health and Environment
Kansas Department of Agriculture

US Army Corps
of Engineers
Kansas City District

Nationwide Permit No. 44
Mining Activities.

Discharges of dredged or fill material into non-tidal waters of the United States for mining activities, except for coal mining activities, provided the activity meets all of the following criteria:

(a) For mining activities involving discharges of dredged or fill material into non-tidal wetlands, the discharge must not cause the loss of greater than 1/2-acre of non-tidal wetlands;

(b) For mining activities involving discharges of dredged or fill material in non-tidal open waters (e.g., rivers, streams, lakes, and ponds) the mined area, including permanent and temporary impacts due to discharges of dredged or fill material into jurisdictional waters, must not exceed 1/2-acre; and

(c) The acreage loss under paragraph (a) plus the acreage impact under paragraph (b) does not exceed 1/2-acre.

The discharge must not cause the loss of more than 300 linear feet of stream bed, unless for intermittent and ephemeral stream beds the district engineer waives the 300 linear foot limit by making a written determination concluding that the discharge will result in no more than minimal adverse environmental effects.

The loss of stream bed plus any other losses of jurisdictional wetlands and waters caused by the NWP activity cannot exceed 1/2-acre.

This NWP does not authorize discharges into non-tidal wetlands adjacent to tidal waters.

Notification: The permittee must submit a pre-construction-notification to the district engineer prior to commencing the activity. (See general condition 32.) If reclamation is required by other statutes, then a copy of the final reclamation plan must be submitted with the pre-construction notification. (Authorities: Sections 10 and 404)

COMPLIANCE CERTIFICATION

General condition 30 of this Nationwide Permit requires that you submit a signed certification regarding the completed work and any required mitigation. This certification page satisfies this condition if it is provided to the Kansas City District at the address shown at the bottom of this page within 30 days of completing the authorized activity or the completion of the implementation of any required compensatory mitigation.

APPLICATION NUMBER: NWK-2020-153

APPLICANT: Hamm, Inc.
609 Perry Place, P.O. Box 17
Perry, Kansas 66073

PROJECT LOCATION: In tributaries and wetlands adjacent to Captain Creek located in Section 15, Township 13 south, Range 21 east, Douglas County, Kansas.

a. I certify that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions.

b. I certify that any required mitigation was completed in accordance with the permit conditions.

c. Your signature below, as permittee, indicates that you have completed the authorized project as certified in paragraphs a and b above.

_____ _____
(PERMITTEE) (DATE)

Return this certification to:

U.S. Army Corps of Engineers
Kansas City District, ODR
601 East 12th Street, Suite 402

Excerpts from the January 6, 2017 Federal Register
Nationwide Permit General Conditions

1. Navigation.

(a) No activity may cause more than a minimal adverse effect on navigation.

(b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.

(c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. Aquatic Life Movements.

No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. Spawning Areas.

Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by substantial turbidity) of an important spawning area are not authorized.

4. Migratory Bird Breeding Areas.

Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. Shellfish Beds.

No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWPs 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. Suitable Material.

No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. Water Supply Intakes.

No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. Adverse Effects From Impoundments.

If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. Management of Water Flows.

To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. Fills Within 100-Year Floodplains.

The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. Equipment.

Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. Soil Erosion and Sediment Controls.

Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. Removal of Temporary Fills.

Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. Proper Maintenance.

Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. Single and Complete Project.

The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. Wild and Scenic Rivers.

(a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. The permittee shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: http://www.rivers.gov/.

17. Tribal Rights.

No NWP activity may cause more than minimal adverse effects on tribal rights (including treaty rights), protected tribal resources, or tribal lands.

18. Endangered Species.

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify the critical habitat of such species. No activity is authorized under any NWP which "may affect" a listed species or critical habitat, unless ESA section 7 consultation addressing the effects of the proposed activity has been completed. Direct effects are the immediate effects on listed species and critical habitat caused by the NWP activity. Indirect effects are those effects on listed species and critical habitat that are caused by the NWP activity and are later in time, but still are reasonably certain to occur.

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA. If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate

documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species or designated critical habitat, the pre-construction notification must include the name(s) of the endangered or threatened species that might be affected by the proposed activity or that utilize the designated critical habitat that might be affected by the proposed activity. The district engineer will determine whether the proposed activity "may affect" or will have "no effect" to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps' determination within 45 days of receipt of a complete pre-construction notification. In cases where the non-Federal applicant has identified listed species or critical habitat that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have "no effect" on listed species or critical habitat, or until ESA section 7 consultation has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWPs.

(e) Authorization of an activity by an NWP does not authorize the "take" of a threatened or endangered species as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with "incidental take" provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where "take" means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word "harm" in the definition of "take" means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA

section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at http://www.fws.gov/ or http://www.fws.gov/ipac and http://www.nmfs.noaa.gov/pr/species/esa/ respectively.

19. Migratory Birds and Bald and Golden Eagles.

The permittee is responsible for ensuring their action complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting appropriate local office of the U.S. Fish and Wildlife Service to determine applicable measures to reduce impacts to migratory birds or eagles, including whether "incidental take" permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. Historic Properties.

(a) In cases where the district engineer determines that the activity may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places, the activity is not authorized, until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act. If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts, which may include

background research, consultation, oral history interviews, sample field investigation, and field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of section 106 of the NHPA: no historic properties affected, no adverse effect, or adverse effect. Where the non-Federal applicant has identified historic properties on which the activity might have the potential to cause effects and so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed.

(d) For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110k of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. Discovery of Previously Unknown Remains and Artifacts.

If you discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by this permit, you must immediately notify the district engineer of what you have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or

remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. Designated Critical Resource Waters.

Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, and 52 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after it is determined that the impacts to the critical resource waters will be no more than minimal.

23. Mitigation.

The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) For losses of streams or other open waters that require pre-construction notification, the district engineer may require compensatory mitigation to ensure that the activity results in no more than minimal adverse environmental effects. Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. Restored riparian areas should consist of native species. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f)).

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)).

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan only needs to address the baseline conditions at the impact site and the number of credits to be provided.

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33 CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. Safety of Impoundment Structures.

To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. Water Quality.

Where States and authorized Tribes, or EPA where applicable, have not previously certified compliance of an NWP with CWA section 401, individual 401 Water Quality Certification must be obtained or waived (see 33 CFR 330.4(c)). The district engineer or State or Tribe may require additional water quality management measures to

ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. Coastal Zone Management.

In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). The district engineer or a State may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. Regional and Case-By-Case Conditions.

The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. Use of Multiple Nationwide Permits.

The use of more than one NWP for a single and complete project is prohibited, except when the acreage loss of waters of the United States authorized by the NWPs does not exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

29. Transfer of Nationwide Permit Verifications.

If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

"When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below."

_____

(Transferee)

_____

(Date)

30. Compliance Certification.

Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. Activities Affecting Structures or Works Built by the United States.

If an NWP activity also requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a "USACE project"), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission is not authorized by NWP until the appropriate Corps office issues the section 408 permission to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. Pre-Construction Notification.

(a) Timing. Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. Also, work cannot begin under NWPs 21, 49, or 50 until the permittee has received written approval from the Corps. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures. For single and complete linear projects, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters. Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided

results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial, intermittent, and ephemeral streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45 day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required. As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-Federal permittees, if any listed species or designated critical habitat might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat, the PCN must include the name(s) of those endangered or threatened species that might be affected by the proposed activity or utilize the designated critical habitat that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-Federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an activity that requires permission from the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The standard individual permit application form (Form ENG 4345) may be used, but the completed application form

must clearly indicate that it is an NWP PCN and must include all of the applicable information required in paragraphs (b)(1) through (10) of this general condition. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination: (1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52 activities that require pre-construction notification and will result in the loss of greater than 300 linear feet of stream bed; (iii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iv) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

D. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the individual crossings of waters of the United States to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings authorized by NWP. If an applicant requests a waiver of the 300 linear foot limit on impacts to streams or of an otherwise applicable limit, as provided for in NWPs 13, 21, 29, 36, 39, 40, 42, 43, 44, 50, 51, 52, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects. For those NWPs that have a waivable 300 linear foot limit for losses of intermittent and ephemeral stream bed and a 1/2-acre limit (i.e., NWPs 21, 29, 39, 40, 42, 43, 44, 50, 51, and 52), the loss of intermittent and ephemeral stream bed, plus any other losses of jurisdictional waters and wetlands, cannot exceed 1/2-acre.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands, the prospective permittee should submit a mitigation proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters (e.g., streams). The district

engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless additional time is required to comply with general conditions 18, 20, and/or 31, or to evaluate PCNs for activities authorized by NWPs 21, 49, and 50), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

E. Further Information

1. District Engineers have authority to determine if an activity complies with the terms and conditions of an NWP.

2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.

3. NWPs do not grant any property rights or exclusive privileges.

4. NWPs do not authorize any injury to the property or rights of others.

5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

Kansas Section 401 Water Quality Certification for Clean Water Act Section 404 Nationwide Permits (Dredge and Fill) Kansas Department of Health and Environment, Bureau of Water. March 6, 2017 http://www.kdheks.gov/nps/section401.html

I. Authority

This certification is prepared pursuant to Clean Water Act (CWA) Section 401 and Kansas Administrative Regulation (K.A.R.) 28-16-28f(b)(1) by the Kansas Department of Health and Environment (KDHE).

II. Certification

All activities authorized by the U.S .Department of Army Corps of Engineers (USACE) proposed Nationwide Permits (NWP) published, in the Federal Register, and will go into effect on March 19, 2017, are not expected to result in violations of Kansas Water Quality Standards found at Kansas Administrative Regulations 28-16-28b through 28g, provided the person conducting the Corps of Engineers authorized activity adheres to the conditions set out by this certification. The public notice documenting the final issuance of the NWPs can be found at: http://www.nwk.usace.army.mil/Portals/29/docs/regulatory/publicnotices/2017-01-13%20NWP%202017%20Reissuance%20PN.pdf?ver=2017-01-13-160903-293

Additionally, Kansas Regional Conditions for NWPs have been drafted by the Kansas City District USACE in coordination with state and federal agencies. Once issued, these conditions provide a general statewide framework for requirements for permitted activities considered by the Kansas City District USACE to have minimal impacts on the aquatic ecosystem. This water quality certification provides conditions and guidance to address local water quality needs of the permitted activities.

III. Limitations of this Certification: All Section 404 activities within the borders of Indian owned and operated lands are not covered by this certification. Individuals proposing projects which impact those waters are responsible for contacting the appropriate individual at the following numbers:

a. Prairie Band Pottawatomie Indians, Planning Department, 785/966-2946

b. Kickapoo Tribe in Kansas, Environmental Office, 785/486-2601

c. Iowa of Tribe of Kansas and Nebraska, 785/595-3258

d. Sac and Fox Tribe of Missouri, 785/742-4705

IV. General Conditions

1. **Certification Retention:** Nationwide permit recipients shall retain this water quality certification on the project site through the duration of the project to accommodate inspection.

2. **KDHE Notification:** Nationwide permit recipients shall email KDHE at NPS@kdheks.gov when construction starts.

3. **Kansas Water Pollution Control General Permit for Stormwater Runoff from Construction Activities**: This certification does not relieve the applicant of the responsibility to determine if the project is subject to the requirements of a **General NPDES Permit** and to secure such permit as necessary. Questions and inquiries may be directed to:

   Kansas Department of Health and Environment
   Bureau of Water – Industrial Program Section
   1000 SW Jackson Street, Suite 420
   Topeka, Kansas 66612-1367
   Phone 785/296-5549 or FAX: 785/296-0086
   www.kdheks.gov/stormwater

4. **Project Water Quality Protection Plan:** Any person wishing to use a Section 404 Nationwide Permit shall prepare and follow a written project water quality protection plan (PWQPP.) The PWQPP shall identify components of the permitted activity (i.e. solid waste handling, fuel storage and leaks, sediment from construction etc.) which may or will result in the discharge of pollutants to waters of the state. For each component which may discharge pollutants to waters of the state, the plan shall set out the physical, structural and management measures to be implemented to prevent or minimize the discharge of pollutants to waters of the state. The PWQPP shall be posted or retained on site through the duration of the project (see Section VIII for additional information on preparing a PWPP). Activities requiring a construction stormwater permit, as described above, also require a stormwater pollution prevention plan which will serve as the PWQPP.

   The permittee is required to submit the PWQPP to KDHE only if the project impacts Outstanding National Resource, Exceptional State or Special Aquatic Life Use Waters per condition No. 5 below.

5. **Outstanding National Resource Waters, Exceptional State and Special Aquatic Life Support Use Waters:** In the event the permitted activity occurs within one half (1/2) mile of an Outstanding National Resource Water as defined pursuant to **K.A.R. 28-16-28b (yy)** and **K.A.R. 28-16-28c(a)B(3)**, an Exceptional State Water pursuant to **K.A.R.**

28-16-28b(yy) and **K.A.R. 28-16-28c(a)B(2)**, or a Special Aquatic Life Support Use Water designated pursuant to **K.A.R. 28-16-28d(b)(2)(A) and K.A.R. 28-16-28d (c),** the person responsible for initiating the activity shall submit a copy of the PWQPP to:

Kansas Department of Health and Environment
Bureau of Water - Watershed Management Section
1000 SW Jackson Street, Suite 420
Topeka, Kansas 66612-1367 or email: nps@kdhe.state.ks.us

Locations of **Outstanding National Resource Waters, Exceptional State and Special Aquatic Life Support Use Waters** can be found in the tables attached. The permittee should also be aware of the following Kansas water quality protection regulations associated with high value/ critical resource waters:

K.A.R. 28-16-28c(a)B(2) "Wherever state surface waters constitute exceptional state waters, discharges shall be allowed only if existing uses and existing water quality are maintained and protected."

K.A.R. 28-16-28c(a)B(3) "Wherever state surface waters constitute an outstanding national resource water existing uses and existing water quality shall be maintained and protected. New or expanded discharges shall not be allowed into outstanding national resource waters."

K.A.R. 28-16-28c(a)B(4) "No degradation of surface water quality by artificial sources of pollution shall be allowed if the degradation will result in harmful effects on populations of any threatened or endangered species of aquatic or semiaquatic life or terrestrial wildlife or its critical habitat as determined by the secretary of wildlife and parks pursuant to K.S.A. 32-960, and amendments thereto, and K.A.R. 115-15-3 or in the federal endangered species act, 16 U.S.C. 1532 , as amended on October 7, 1988."

6. **Solid Waste Disposal:** All solid waste materials produced during the execution of the project shall be disposed in accordance with the provisions of Kansas Solid Waste Management Statutes and regulations and applicable local regulations. Direct inquiries to:

KDHE, Bureau of Waste Management
1000 SW Jackson Street, Suite 320
Topeka, Kansas 66612-1366
Phone: 785/296-1600; FAX: 785/296-1592 www.kdheks.gov/waste/index.html

7. **Equipment Staging Areas and Project Closure:** Upon completion of the project, disturbed areas shall be expeditiously stabilized with temporary and permanent vegetation, bio-artificial ground cover or other appropriate non-polluting material. Fertilizer application to establish and maintain vegetation shall be done in a manner that will not contribute to the current nutrient load to any of the surface waters impacted by the project. The person responsible for the permitted activity shall monitor and maintain cover materials until such time as the site is stabilized. Project closure procedures shall be included in the PWQPP per condition No. IV. 4.

8. **Riparian Areas:** Minimize removal or disturbance of riparian areas (areas adjacent to water bodies). KDHE encourages the use of vegetation consistent with adjoining vegetation materials to minimize impacts from improper handling of fertilizers and pesticides.

9. **Discharge of Floatable Materials:** Pursuant to K.A.R. 28-16-28e(b)(1,3) the person responsible for executing the permitted activity shall assure good house-keeping is practiced at the site to minimize the discharge of floatable materials such as personal refuse including food containers, packing, and other materials. Appropriate measures shall be taken to capture and/or recover any floatable materials discharged to waters of the state originating with the permitted project.

10. **Fuel, Chemical and Materials Storage:** Fuel, chemical and other materials stored at the project site shall be stored in a manner that minimizes the discharge of product to waters of the state. Spill minimization and prevention measures and procedures shall be documented in the PWQPP.

11. **Spill Response, Cleanup and Reporting:** In the event a spill of fuel, chemical or other water quality degrading materials stored or transported on the site occurs, the permittee shall or with the assistance of professional response personnel, expeditiously control or contain the spill and initiate clean up procedures. The applicant shall immediately contact 911. The Kansas Department of Health and Environment shall then be notified immediately: (785) 291-3333 (24 hours a day.) These incidences should also be reported to the National Spill Response Center (1-800-424-8802. Spill response and cleanup actions shall be documented on the applicable Project Water Quality Protection Plan (WQPP). KDHE strongly encourages the permittee to establish and post a sign that includes phone contact numbers for the appropriate local emergency response unit, KDHE district office, and the project manager/owner

12. **Drinking Water Intakes:** The person responsible for the permitted activity shall avoid adverse impacts on public water supplies. Whenever permitted activities occur within one mile upstream of a public drinking water supply - surface water intake, the applicant shall contact the official in charge of the public drinking water supply to apprize the drinking water supply official of the permitted activity. The person responsible for the permitted activity shall consider the suggestions and recommendations of the public water supply official when preparing the PWQPP.

13. **Treated Wastewater Effluent Mixing Zones:** As a general guideline any Section 404 activity within one-half (1/2) mile upstream or one-half (1/2) mile downstream of a permitted wastewater effluent discharge may impact the effluent mixing zone. The person responsible for the permitted activity shall determine if the project will adversely impact the wastewater effluent mixing zones and take appropriate measures to avoid altering or changing the mixing zone. The permitted activities may include but are not limited to:

    a. The construction or placement of a recreation oriented facility or structure (i.e. boat ramp, walkway) which may require modification of the beneficial use designation to accommodate contact or non-contact recreation, thereby increasing the effluent limitations for the permit.

    b. Any activity which may alter or remove the stream channel geometry or natural oxygenation abilities of the stream such as bridge construction, channelization, stream channel substrate modification etc.

    The person responsible for the permitted Section 404 activity shall advise and describe to the waste water discharge permittee and KDHE any potential mixing zone impacts and the measures the person responsible for the Section 404 activity will take to minimize adverse impacts on the mixing zone. Inquiries should be directed to:

    Kansas Department of Health and Environment
    Bureau of Water - Municipal Programs Section
    1000 SW Jackson Street, Suite 420
    Topeka, Kansas 66612-1367
    Phone: 785/296-5527 or FAX: 785/296-0086

14. **Total Maximum Daily Load:** The permittee should be aware of their activity occurring in a watershed with a Total Maximum Daily Load (TMDL) in implementing appropriate water quality practices. Visit http://www.kdheks.gov/tmdl/planning_mgmt.htm for TMDL watershed locations, maps and other information.

V. Special Conditions for Specific Nationwide Permits

1. **Nationwide Permit #7. Outfall Structures and Maintenance (construction):** Controls shall be in place to stabilize all areas of the bed and bank around the pipe or adjacent to the outfall structure and associated intake structures that may be affected by outfall or stream flows, respectively.

2. **Nationwide Permits #3-Maintenance; #12-Utility Line Activities; and #18-Minor Discharges (pipelines included):** Hydrostatic tests for pipeline activities shall be approved prior to discharge of water used for the test. Please contact the following for new and used pipeline:

   a. New Pipe- Kansas Department of Health and Environment
   Bureau of Water Technical Services Section
   1000 SW Jackson Street, Suite 420
   Topeka, Kansas 66612-1367
   Phone 785/296-2856 785-2962856 or FAX: 785/296-0086

   b. Reused Pipe- Kansas Department of Health and Environment, Bureau of Water, Industrial Program Section Phone: 785-296-5547 or FAX: 785/296-0086

3. **Nationwide Permit #16:** The permittee shall contact Kansas Department of Health and Environment, Bureau of Water, Industrial Program Section Phone: 785-296-5547 or FAX: 785-296-0086 to inquire as to a need for a permit to discharge.

4. **Nationwide Permit #20:** The permittee should coordinate with EPA Region VII SPCC Coordinator. Phone: 913-551-7003

5. **Nationwide Permits #27 (Aquatic Habitat, Restoration, Establishment and Enhancement Activities) #29 (Residential Developments), #30 (Moist Soil Management for Wildlife), #39 (Commercial and Institutional Developments), #42 (Recreational Facilities), #43 Stormwater Management Facilities). A (Wind Energy Generative Facilities, B Water Based Renewable Energy):** Measures shall be

implemented to assure impounded waters, created by activities within the framework of these permits, avoid becoming public health threats, nuisances, generate complaints, and potentially discharge degraded water. The applicant shall prepare and implement an Operations and Maintenance Plan for facilities and landscapes (O&M), which at the minimum incorporate the following:

a. Identify individual and public property owners and their potential for being the source of nonpoint source pollution. This could include but is not limited to: commercial grounds, streets, right-of-ways, parking areas, conservation easement and **proposed** mitigation areas etc.

b. For each property as described in item A. above, indicate the applicable water quality protection measures for each category of artificial sources of pollution. The identified water quality protection measure for each category of artificial source of pollution shall be designed to ***reduce to the maximum extent practicable, the level of pollution resulting from identified pollutant sources***. Identified water quality protection quality protection measures shall be at least as effective as those set out by the Kansas Nonpoint Source Pollution Management Plan, 2010 Update, available at: http://www.kdheks.gov/nps/.

c. Strategies to assure implementation of the water quality protection measures identified under item IV. 3-10 which may include but are not limited to prohibition or restriction of activities, utilization of alternative technologies or products, information and education, financial assistance, technical assistance, enforcement and penalties. Additionally, an in-house reporting form used by staff to document degraded property conditions potentially impacting the property and needs to address them should be developed, if applicable.

d. Organizations and individuals responsible for assuring implementation of identified water quality protection measures.

6 **Nationwide Permit #s 29, 39, and 42**: The increase in impervious surface through construction of parking lots, roof tops etc., can increase velocity destabilizing the receiving unnamed tributary thus increasing sedimentation downstream. Projects should be designed to replicate pre-construction conditions so as to minimize or abate destabilization of the banks of receiving streams. In addition to stormwater detention basins, pervious pavement, pervious pavers, underground rain water catchments are strongly recommended. For more information said practices go to this

link:
http://kcmetro.apwa.net/content/chapters/kcmetro.apwa.net/file/Specifications/BMPManual_Oct2012.pdf

7. **Nationwide Permit #33**: Kansas Water Pollution Control General Permit for Stormwater Runoff from Construction Activities: This certification does not relieve the applicant of the responsibility to determine if the project is subject to the requirements of a **General NPDES Permit** and to secure such permit as necessary. Questions and inquiries may be directed to:

   Kansas Department of Health and Environment
   Bureau of Water – Industrial Program Section
   1000 SW Jackson Street, Suite 420
   Topeka, Kansas 66612-1367
   Phone 785/296-5549 or
   FAX:785/296-0086
   www.kdheks.gov/stormwater

8. Nationwide Permit #38: The permittee shall coordinate with the Kansas Department of Health and Environment – Bureau of Environmental Remediation by Phone: 785-296-1662 or Fax: 785-559-4259 or click on this link for staff emails. http://www.kdheks.gov/ber/admin.html.

   Additionally, activities authorized by NWP #38 may also require land disturbance authorization from KDHE, Industrial Program Section: Contact by Phone: 785-296-5549 or FAX: 785-296-0086.

VI. Enforcement and Penalties

This certification does not relieve the applicant of the responsibility for any discharge to waters of the state or allow for any inappropriate discharge to occur. As provided for by K.S.A. 65-171(f), failure to comply with the conditions of this certification may subject the responsible party to fines of $10,000 per violation with each day the violation occurs constituting a separate violation.

VII. Variance

If the applicant believes the conditions of this certification will result in impairment of important widespread social and economic development, the applicant is advised of the variance provisions of KAR 28-16-28b(sss) and KAR 28-16-28f(d).

VIII. Additional Information

The KDHE website contains the following information to assist the applicant in preparing a Project Water Quality Protection Plan (PWQPP) for projects not requiring a construction stormwater permit and stormwater pollution prevention plan:

1. Construction practices: http://www.dnr.mo.gov/env/wpp/wpcp-guide.htm (a cooperative work product between Missouri and Kansas)

2. PWQPP Form and Instructions: http://www.kdheks.gov/nps/resources/nwpwqppfrm.doc or http://www.kdheks.gov/nps/resources/nwpwqppfrm.pdf

3. Kansas Surface Water Register: http://www.kdheks.gov/befs/download/Current_Kansas_Surface_Register.pdf

4. Kansas Surface Water Maps: http://www.kdheks.gov/befs/download/Current_Surface_Water_Register_Maps.pdf

5. Surface Water Quality Standards- K.A.R. 28-16-28b through g: http://www.kdheks.gov/tmdl/download/KDHE_SWQS_Reg_Unofficial_032315.pdf
http://www.kdheks.gov/tmdl/download/SWQS_Tables_2015.pdf

6. KDHE District Offices- http://www.kdheks.gov/befs/dist_office.html This information can also be obtained by written communication directed to:

   Kansas Department of Health and Environment
   Bureau of Water - Watershed Management Section
   1000 SW Jackson Street, Suite 420
   Topeka, Kansas 66612-1367 or email: **nps@kdheks.gov**
   FAX 785/296-5509

ATTACHMENT 1. TABLE OF EXCEPTIONAL STATE WATERS (ESW), SPECIAL AQUATIC LIFE USE WATERS (SALU) and OUTSTANDING NATIONAL RESOURCE WATERS (ONRW), provided by Kansas Department of Health and Environment. (5/2000)
(Revised: 3/2001, 2nd 4/2004, 3rd 2/21/07, 4th 5/10/07, 5th 8/8/07, 6th 3/14/2012, 7th 3/3/2017, 8th 4/5/17, 9th 4/10/17))
(The Kansas Surface Water Register supersedes this list if discrepancies occur- http://www.kdheks.gov/befs/download/Current_Kansas_Surface_Register.pdf)

COUNTY	*EXCEPTIONAL STATE WATERS	* SPECIAL AQUATIC LIFE USE WATERS
Allen		Onion Cr. Neosho R., Marmaton R. **WETLANDS(7):** within boundaries of a point from NE corner of S34 T24 R18E, West to NW corner S35 T24 R17E, South to SW corner of S35 T24 R17E, East to SE corner of S34 T25 R18E, back north to origin ; Other: **(6)** all oxbow lakes and **WETLANDS** within NE 1/4 of S32 T26S R18E, N 1/2 and SE 1/4 of S33 T26 R18E
Anderson		Pottawatomie Cr., South Fk., Pottawatomie Cr., Little Indian Cr., , WETLANDS**(8)**: within boundaries of a point from the NE corner of S24 T21 R19E, West to the NW corner S22 T21 R18E, South to SW corner of S22 T25 R18E, back north to origin.
Atchison		Missouri R.; **WETLANDS(9):** All WETLANDS within S15 T6 R7E and S16 T6 R7E
Barber		Arkansas River, Salt Fork , Amber Cr., Bear Cr., Cottonwood Cr , Elm Cr., Inman Cr; Little Sandy Cr, South East Branch Elm Cr., North Branch Elm Cr., Medicine Lodge River, Mulberry Cr., Mule Cr., Sand Cr., Turkey Cr., Two unnamed tributaries to Medicine Lodge River, Unnamed tributary to Turkey Cr
Barton	Blood Cr., Little Cheyenne Cr.	Arkansas River, Blood Cr.; **WETLANDS(5):** Cheyenne Bottoms Preserve; Designation applies to all surface waters within the Nature Conservancy wildlife preserve in Sections 2, 11, 12, 16, 13, 22, 24, 25, 36 and parts of Sections 3, 10, 15, 14, 23,26, 34, and 35 in T18S R13W and from the NE corner of S07, west to NW 1/4 of S02 south to W 1/2 of S35 East to S31 of T18S R12W
Bourbon		Marmaton River, Mill Cr., Pawnee Cr.
Butler	Walnut River, Grouse Cr., Cottonwood River South Fork	Walnut River., Cottonwood River South Fork
Chase	Cottonwood River South Fork, Cedar Cr.	Bloody Cr., Cedar Cr., Collett Cr., Cottonwood River, Cottonwood River South Fork, Jacob Cr., Middle Cr., Shaw Cr.
Chautauqua	Caney River, Otter Cr.	Caney River
Cherokee	Neosho River, Shoal Cr., Spring R.., Unnamed tributary to Shoal Cr.	Brush Cr., Cow Cr., Labette Cr., Neosho River, Shoal Cr. Spring R., Taylor Branch, Turkey Cr., Un. Trib. to Shoal Cr. **WETLANDS(10a): 10a All cave waters** & associated springs within that portion of Cherokee County encompassed by a line that extends from NE corner of Sec. 24, T34S, R25E, due W. to NW corner of Sec. 24, T34S, R24E, then due S. to KS/OK(Sec.13 T35S, R.24E), then due E. to KS/MO border (Sec.13, T35S, 25E), then N. to point of origin. **And 10b**:All **wetlands** within those portions of Cherokee & Labette counties encompassed by a line that extends from KS/MO border at NE corner of Sec. 24, T31S, R25E due W. to NW corner of Sec.20, T31S, R25E, then due S. to NW corner of Sec.17, T33S, R25E, then due W. to NW corner of Sec.14, T33S, R21E, then due S to KS/OK border(Sec.14,T35S, R21E), then due E. to KS/MO border(Sec.13, T35S, R25E), then due S. to point of origin.
Cheyenne		Republican River South Fork

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Clark	Cimarron River: **(23)** St. Jacob's Well: NW1/4 of SW1/4 of S19 T32S R24W	Big Sandy Cr., Bluff Cr., Cimarron River, Gyp Cr., Indian Cr., Kiowa Cr. West, Rattlesnake Cr.: **(23)** Clark County State Fishing Lake
Cloud	**(25)** All surface waters within Jamestown Waterfowl Management Area	
Coffey		Frog Cr., Little Indian Cr., Neosho River, Wolf Cr.
Comanche	Cimarron River	Bluff Cr., Calvary Cr., Cimarron Cr., Kiowa Cr., Kiowa Cr. Middle, Kiowa Cr. West, Mule Cr., Nescatunga Cr., Wiggins Cr.
Cowley	Beaver Cr., Grouse Cr., Otter Cr., Walnut River	Arkansas River, Spring Cr., Walnut River
Crawford		Brush Cr., Cow Cr., Cow Cr East, First Cow Cr., Taylor Branch.
Dickinson	Lyon Cr.	Carry Cr., Lime Cr., Lyon Cr., Lyon Cr West Branch, Unnamed tributary to Lyon Cr., unnamed tributary to West Branch Lyon Cr.; (19) Herington Reservoir
Doniphan		Missouri R., Rock Creek, Wolf River
Douglas		Appanoose Cr., Buck Cr., Kansas River, West Fork Tauy Cr.; **(16)** Clinton Reservoir,
Edwards		Rattlesnake Cr.
Elk	Caney River, Fall River, Grouse Cr.	Caney River, Fall River
Ellis	Saline River	
Ellsworth	Smoky Hill River	Smoky Hill River
Finney		Arkansas River
Ford		Bluff Cr., Kiowa Cr West, Rattlesnake Cr.
Franklin		Appanoose Cr., Hickory Cr., Marais Des Cygnes River, Ottawa Cr., Pottawatomie Cr., West Fork Tauy Cr; Wilson Cr.
Geary	Lyon Cr.	Carry Cr., Davis Cr., Dry Cr., Kansas River, Lyon Cr., Thomas Cr.; **(14)** Konza Prairie Natural Area: designation applies to all surface waters within natural area
Grant	Cimarron River	Cimarron River
Greeley		Ladder Cr.
Greenwood	Fall River, Fall River East Branch, Fall River West Branch	Fall R., Fall R. East Branch, Fall R. West Br, Otter Cr, Otter Cr. South Br, Verdigris River: **(2)** Flint Hills Tallgrass Prairie Preserve, all surface waters within the Nature Conservancy Reserve: Section 22 & 23 T23S R8E
Hamilton		Arkansas River
Harper	Chikaskia River	Bluff Cr., Chikaskia River, Little Sandy Cr., Sandy Cr.
Jefferson		Buck Cr., Kansas River: **(18)** Perry Reservoir

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Johnson		Kansas River,
Kearny		Arkansas River
Kingman	Chikaskia River	Allen Cr., Chikaskia River, Chikaskia River North Fork, Duck Cr., Nester Cr., Ninnescah River South Fork, Painter Cr., Pat Cr., Sand Cr., Silver Cr., Smoots Cr., Unnamed tributary to Smoots Cr., nine separate tributaries to South Ninnescah River
Kiowa	Thompson	Calvary Cr., Kiowa Cr., Kiowa Cr Middle, Kiowa Cr West, Medicine Lodge River, Mule Cr., Rattlesnake Cr., Soldier Cr., Thompson Cr., Wiggins Cr., Unnamed tributary to Thompson Cr.
Labette		Labette Cr., Neosho River
Leavenworth		Kansas River, Missouri River
Linn	Big Sugar Cr., Marais Des Cygnes River, Middle Cr., Muddy Cr., Sugar Cr North **(12)** all surface waters within Marais des Cygnes Waterfowl Area, all WETLANDS, oxbow lakes and classified streams within Linn County extending from the Kansas/Missouri border at NE corner of S26 T19S R25E west to NW corner of S26 T19S R23E, south to SW corner of S12 T22S R23E, east to Kansas/Missouri border at SE corner of S12 T22S R25E	Big Sugar Cr., Marais Des Cygnes River, Middle Cr., Muddy Cr., Sugar Cr. North **(12)** all surface waters within Marais des Cygnes Waterfowl Area, all WETLANDS, oxbow lakes and classified streams within Linn County extending from the Kansas/Missouri border at NE corner of S26 T19S R25E west to NW corner of S26 T19S R23E, south to SW corner of S12 T22S R23E, east to Kansas/Missouri border at SE corner of S12 T22S R25E
Logan		Ladder Cr., Smoky Hill River, Twin Butte Cr.
Lyon		Cottonwood River, Elm Cr., Jacob Cr., Neosho River
Marion	Lyon Cr.	Catlin Cr., Lyon Cr., Middle Cr., Mud Cr., Spring Cr.
Marshall		Black Vermillion R, Clear Fork
Mc Pherson		**(15)** McPherson Valley Wetlands: Classification applies to all surface waters **within state owned** portions of wetlands
Meade		Big Sandy Cr., Cimarron River, Crooked Cr., Gyp Cr **(22)** Lake Meade State Park
Miami	Marais Des Cygnes River, Middle Cr.	Hickory Cr., Marais Des Cygnes River, Middle Cr., Pottawatomie Cr., Unnamed tributary to North Wea Cr. **(17)** Hillsdale Reservoir
Montgomery		Onion Cr., Verdigris River
Morris	Mill Creek, West Br.	Davis Cr., Lime Cr., Middle Cr., Mill Cr. West Br. Neosho R., Six Mile Cr., Thomas Cr.
Morton	Cimarron River, **(1 & 20)** Mallard Lake, Lake Cimarron, Point of Rocks	Cimarron River, All surface waters within the Cimarron National Grasslands

ATTACHMENT 1. TABLE OF EXCEPTIONAL STATE WATERS (ESW), SPECIAL AQUATIC LIFE USE WATERS (SALU) and OUTSTANDING NATIONAL RESOURCE WATERS (ONRW), provided by Kansas Department of Health and Environment. (5/2000)
(Revised: 3/2001, 2nd 4/2004, 3rd 2/21/07, 4th 5/10/07, 5th 8/8/07, 6th 3/14/2012, 7th 3/3/2017, 8th 4/5/17, 9th 4/10/17))
(The Kansas Surface Water Register supersedes this list if discrepancies occur- http://www.kdheks.gov/befs/download/Current_Kansas_Surface_Register.pdf)

Nemaha		Big Nemaha River South Fork
Neosho		Flat Rock Cr., Neosho River; Neosho Wildlife Area Wetlands
Osage		Appanoose Cr., Frog Cr., Long Cr. Marais Des Cygnes R,
Phillips		**(4)** Kirwin Lake; Kirwin National Wildlife Refuge; designation applies to all surface waters within wildlife refuge.
Pottawatomie		Black Vermillion River Clear Fork, Kansas River,
Pratt	**(26)** All surface waters within Texas Lake Wildlife Area	Amber Cr., Chikaskia River and North Fork, Elm Cr North, Elm Cr South East Branch, Mulberry Cr., Natrona Cr., Ninnescah River South Fork, Ninnescah River West Branch of South Fork, Painter Cr., Rattlesnake Cr., Sand Cr., Silver Cr., Turkey Cr.
Reno		Arkansas River, Goose Cr. Ninnescah River North Fork, Peace Cr., Red Rock Cr., Silver Cr., Smoots Cr., Spring Cr.,Unnamed Tributary to North Fork Ninnescah River, Unnamed Tributary to Silver Cr, Wolf Cr.; **(3)** Quivera Little Salt Marsh; All surface waters within Quivera National Wildlife Refuge
Republic	**(25)** All surface waters within Jamestown Waterfowl Management Area	
Rice		Arkansas River, Peace Cr., Rattlesnake Cr. **(3)** Quivera Big Salt Marsh and Quivera Little Salt Marsh
Riley		Deep., Honey., Little Ark, Moose, Seven mile, Spring, Swede Wildcat, and Wind Crks.. Kansas River; Konza Prairie (14)
Rush	Blood Cr.	Blood Cr.
Russell	Saline River, Smoky Hill River	Smoky Hill River
Scott		Ladder Cr.; **(24)** Lake Scott State Park, Scott Wildlife Area and feeder Springs
Sedgwick		Arkansas River, Sand Cr., Ninnescah River, Ninnescah River South Fork; Nester and Sand Cr. Unnamed Tribto North Fork Ninnescah River; Wichita Valley Center Flood Control (from confluence with Cowskin Creek to Arkansas River)
Seward		Cimarron River
Shawnee		Kansas River, Mission Cr.
Stafford		Ninnescah River NF, Peace Cr., Rattlesnake Cr.; **(3)** Quivera Big and Little Salt Marshes, All surface waters within Quivera National Wildlife Refuge
Stevens	Cimarron River	Cimarron River; All surface waters within the Cimarron National Grasslands
Sumner	Chikaskia River	Arkansas River, Bluff Cr., Chikaskia River, Ninnescah River, Spring Cr.
Wabaunsee	Deep Cr., Illinois Cr., Mill Cr., Mill Cr E and W Branches , Unnamed Tributary of Mill Cr. E Br	Deep., Dry, Elm, Hendricks, Illinois, Kuenzli, Locust, Loire, Mill, Mission, Mulberry, Nehring, Paw Paw, Pretty, Ross, Snokomo,& Spring Crks.; Mill Cr. E. and W. Branches, Mill Cr. South Branch, Unnamed Tributary of Mill Cr. East Branch; Kansas R.

ATTACHMENT 1. TABLE OF EXCEPTIONAL STATE WATERS (ESW), SPECIAL AQUATIC LIFE USE WATERS (SALU) and OUTSTANDING NATIONAL RESOURCE WATERS (ONRW), provided by Kansas Department of Health and Environment. (5/2000) (Revised: 3/2001, 2nd 4/2004, 3rd 2/21/07, 4th 5/10/07, 5th 8/8/07, 6th 3/14/2012, 7th 3/3/2017, 8th 4/5/17, 9th 4/10/17))
(The Kansas Surface Water Register supersedes this list if discrepancies occur- http://www.kdheks.gov/befs/download/Current_Kansas_Surface_Register.pdf)

Wallace		Eagletail Cr., Rose Cr., Coon Cr., Pond Cr., Capper Draw, Smoky Hill R., Willow Cr., Twin Butte Cr.
Wichita		Ladder Cr.
Wilson	Fall River	Fall River, Verdigris River
Woodson		Neosho River, Owl Cr. South, Verdigris River: **(21)**Leonards Lake & Circle Lake **(13)** WETLANDS in Woodson County Sections 3 and 11, Township 26S, Range 14E
Wyandotte		Kansas River, Missouri River

Note: All surface waters within the Cimarron National Grasslands are Outstanding National Resource Waters. The Following counties currently do not contain waters recognized as ESW, SALU or ONRW: Brown, Clay, Decatur, Gove, Graham, Gray, Harvey, Haskell, Hodgeman, Jackson, Jewell, Lane, Lincoln, Mitchell, Ness, Norton, Osborne, Ottawa, Pawnee, Rawlins, Rooks, Saline, Sheridan, Sherman, Smith, Stanton, Thomas, Trego, Washington

Kansas Regulations for "high value- waters":
Exceptional state waters, K.A.R. 28-16-28b(cc), "means any of the surface waters or surface water segments that are of remarkable quality or of significant recreational or ecological value, are listed in the surface water register and afforded the highest level of water quality protection under the anti-degradation provisions of K.A.R. 28-16-28cand the mixing zone provisions of K.A.R. 28-16-28c."

Outstanding national resource water, **K.A.R. 28-16-28b (vv)** means any of the surface waters or surface water segments of extraordinary recreational or ecological significance identified in the surface water register, as defined this regulation, and afforded the highest level of water quality protection under the anti-degradation provisions and the mixing zone provisions of K.A.R. 28-16-28c.
Special Aquatic Life Use, K.A.R. 28-16-28d(b)(2)(A) and K.A.R. 28-16-28d(c), "means either classified surface waters other than classified stream segments that contain combinations of habitat types and indigenous biota not found commonly in the state or classified surface waters other than classified stream segments that contain representative populations of threatened or endangered species

K.A.R. 28-16-28c(a)B(2)- "Wherever state surface waters constitute exceptional state waters, discharges shall be allowed only if existing uses and existing water quality are maintained and protected."

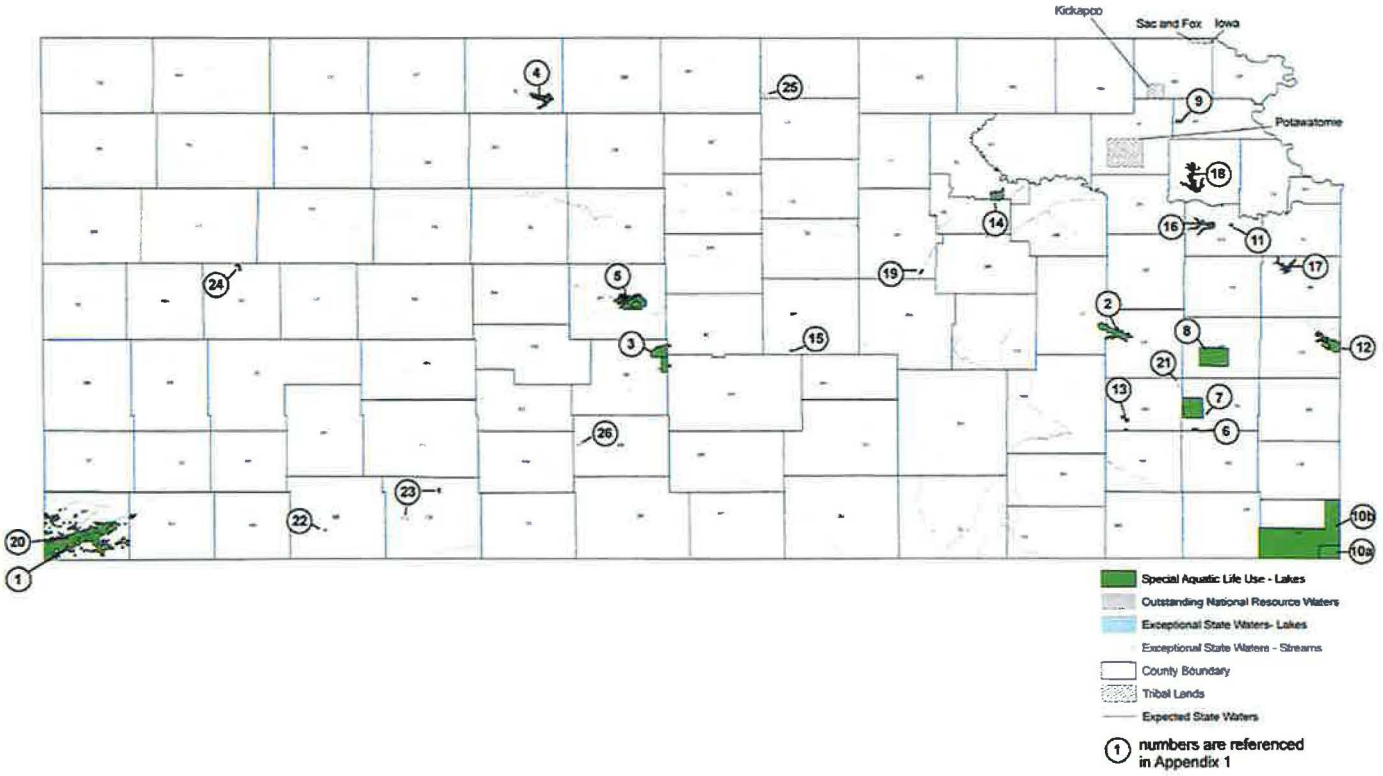
K.A.R. 28-16-28c(a)B(3) "Wherever state surface waters constitute an outstanding national resource water existing uses and existing water quality shall be maintained and protected. New or expanded discharges shall not be allowed into outstanding national resource waters."

K.A.R. 28-16-28c(a)B(4) "No degradation of surface water quality by artificial sources of pollution shall be allowed if the degradation will result in harmful effects on populations of any threatened or endangered species of aquatic or semiaquatic life or terrestrial wildlife or its critical habitat as determined by the secretary of wildlife and parks pursuant to K.S.A. 32-960, and amendments thereto, and K.A.R. 115-15-3 or in the federal endangered species act, 16 U.S.C. 1532 , as amended on October 7, 1988."

Finally, the Kansas Surface Water Standards K.A.R. 28-16-28 can be found at: http://www.kdheks.gov/tmdl/download/KDHE_SWQS_Reg_Unofficial_032315.pdf

ATTACHMENT 2. MAP OF EXCEPTIONAL STATE WATERS (ESW), SPECIAL AQUATIC LIFE USE WATERS (SALU) AND OUTSTANDING NATIONAL RESOURCE WATERS (ONRW) provided by Kansas Department of Health and Environment. (5/2000) (revised 3/2001, 2nd 4/2004, 3rd 2/21/07, 4th 5/10/07, 5th 8/8/07, 6th 2/2017) .

OUTSTANDING NATIONAL RESOURCE WATERS,
EXCEPTIONAL STATE WATERS,
AND SPECIAL AQUATIC LIFE USE WATERS



SEPTEMBER 26, 2019

GOVERNOR'S MINED LAND RECLAMATION AWARD

HAMM COMPANIES

DATE: SEPTEMBER 26, 2019

Name of Nominee: HAMM QUARRIES - SUMMIT MATERIALS, LLC
Name of Mine: HAMM - HERINGTON, QUARRY #36
Contact Person, Title/Organization: TG HAMM, STRATEGIC PLANNING MANAGER

Address: PO BOX 17, 609 PERRY PLACE
County: JEFFERSON
City: PERRY
State: KS
Zip Code: 66073

Email Address: TG.HAMM@NRHAMM.COM
Telephone Number: 785.597.5111
Fax Number: 785.597.5117

Land before reclamation.

Land during quarry operation.

Land after reclamation.

QUESTION 1

Provide a general description of the mining operations (acreage, type of mining, mineral being mined, depth, etc.)

Aggregates are the foundation of HAMM Companies. For over 60 years, our quarries have been a reliable producer of construction aggregates used in a myriad of applications. The Herington Quarry was no exception, producing nearly 1.5 million ton of useable rock since 1955. The 80-acre site was mined in two separate phases with the latter 47 acres ending in 2010. The open-pit mine consisted heavily of Cresswell limestone, typical of Dickinson County, Kansas. The depth of the Cresswell ledge was 12 feet, with the overburden ranging in average of 15 feet.

Aerial view of land, including deer trails and native trees.

QUESTION 2

Describe the following:
a. Reclamation work completed
b. Site-specific techniques or technologies employed
c. Reclamation goals and objectives
d. Specific problems and solutions
e. Unusual circumstances
f. Resources available for use
g. Size of organization

The landowner, Delbert Presslor was a retired Air Force Chief Master Sergeant, who purchased the acreage from J. Harold Jones after the original mining operations were complete. Prior to the Surface Mining and Reclamation Act of 1994, the land was sold "as-is" to Mr. Presslor, containing an open-pit of excavated ground. Delbert preferred the elevation variations which provided welcoming habitats for native animals. Mr. Presslor markedly enjoyed the great outdoors - an accomplished hunter and fisherman, he dreamed of a wildlife sanctuary for indigenous creatures such as bobcat, deer, rabbit, raccoon, squirrel, geese, quail, pheasant, turkey, dove, and duck.

When he was approached in the early 1980's to re-open the mine, Mr. Presslor saw an opportunity to create the habitat of his dreams with the help of HAMM Companies. For the next 30 years, nearly 1.5 million ton of rock was produced from the Herington Quarry, leaving 80 total acres of possibilities. Rather than restoring the land to plots suited for agriculture, Delbert worked with HAMM, the Department of Wildlife, Parks & Tourism, and the Wildlife Habitat Council to create a management plan that would promote a population increase of wildlife as well as natural plant life.

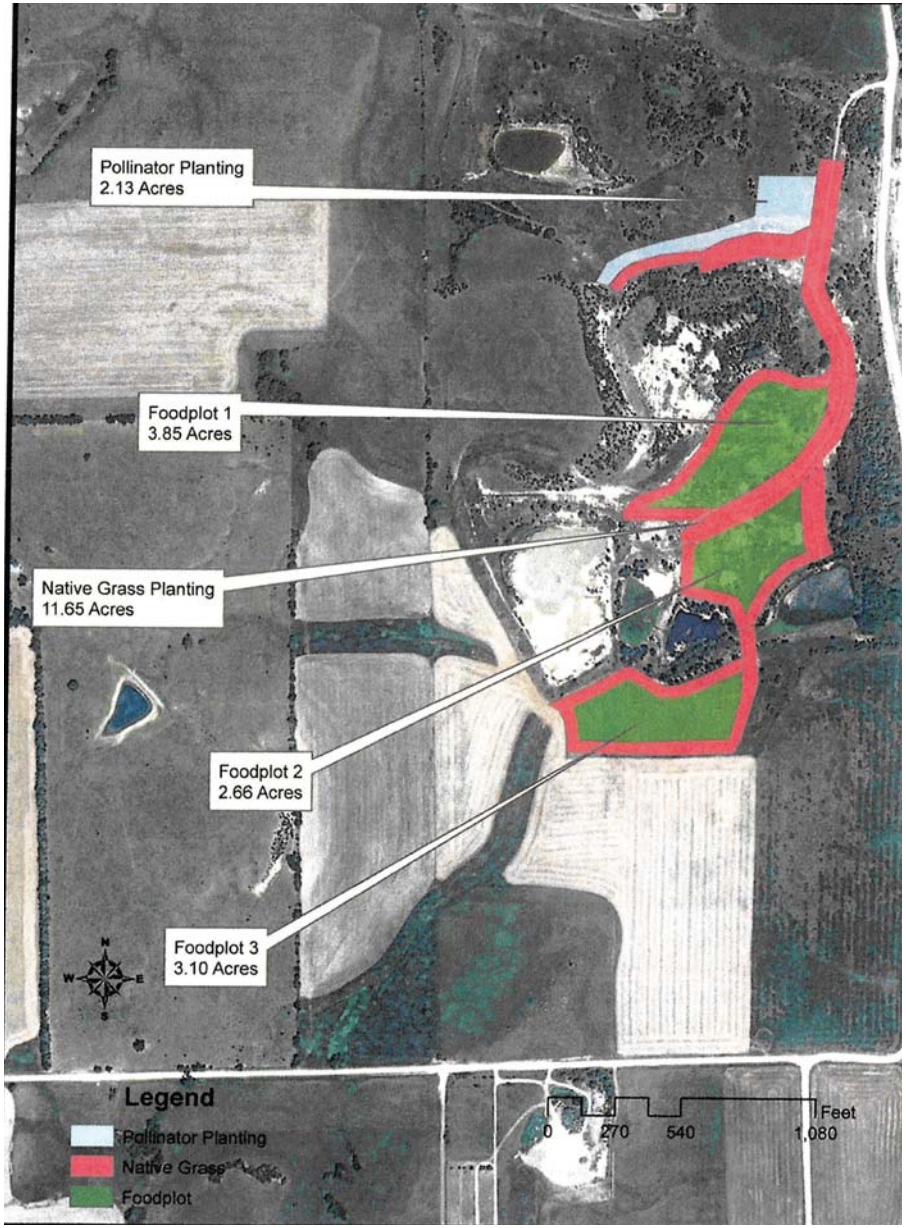
QUESTION 2

Continued

Establishing this environment would become a true team effort between all parties. Careful attention to detail was given to all aspects of reclamation including:

1. Landowner Objectives – Mr. Presslor desired to improve and create habitats on his property for all species of wildlife. Each step taken during the reclamation process was directly related to Mr. Presslor's desires.
2. Grazing – The property would greatly benefit from grazing animals to keep the grasses maintained, but because Mr. Presslor was not interested in livestock farming, the team recommended occasional disking when grass areas get too thick.
3. Burning – Specific areas of the property were identified to burn each year as an approach to keep vegetation from overgrowing and promote healthy soil conditions.
4. Food Plots – Nearly 10 acres were reserved specifically for edible vegetation for wildlife. A diverse selection of plants were chosen to attract many species such as: Turnips, Rapeseed, Chickory, Milo, Alfalfa, Yellow Sweetclover, White Sweetclover, Purple Prairie Clover, Alsike Clover, and Crimson Clover. Prior to planting each of the three food plots, the areas were sprayed twice to minimize weeds. Upon planting, the grounds were fertilized to promote healthy growth.
5. Brome Grass Management – As the area becomes dominated with brome grass, plant diversity begins to suffer as less native grass species are able to compete and are squeezed out. A careful plan for spot spraying in fall and early spring was determined in order to keep a healthy mix of vegetation growth.
6. Pollinator Planting – To insure that something is blooming during all times of the growing season, a pollinator mix consisting of nearly 50 wildflower species was planted on 2.13 acres. Adding this plot provided natural beauty as well as food sources for insects, which then attracts birds of many types who will nest nearby.
7. Roadside Berms – A berm nearly 1,500 feet long was built alongside the East side of the property, running parallel to the nearest road, in order to prevent poaching. This raised bank also provides privacy for the landowner, and assists in reducing sound pollution from the nearby road traffic and railroads.
8. Boulders/Buckshot/Gravel Piles – Unlike most reclamation sites, the landowner requested the boulder piles be left in place to create a safe habitat for the animals, especially rabbits and bobcats. In addition, any leftover buckshot and gravel piles should remain available for future use.
9. Native Grass and Forbs/Legumes Planting – A 50-foot native grass buffer was planted along each side of the interior road and along the outside of the food plots to provide excellent winter cover and travel corridors for wildlife. Grasses and Forbs/Legumes planted included: Little Bluestem, Sideoats Grama, Big Bluestem, Switchgrass, Indiangrass, Illinois Bundleflower, Purple Coneflower, Common Alfalfa, Maximillian Sunflower, Purple Prairie Clover, and Showy Partridgepea.
10. Ponds and Water Sources – Creating water holes, ponds, and small ravines would not only attract land and air dwellers, but also amphibious prey and insects that would become a critical food source. Four ponds were created from existing mining pits, grading and preparing each to effectively hold water, while directing storm water runoff and avoiding erosion along the waterways. Mr. Presslor requested one of the ponds be suitable for breeding bait fish. The southeast pond was reserved specifically for this reason and he was able to stock it shortly after establishing the area.

Reclamation plan.



QUESTION 2

Continued

Utilizing our available resources in the Wildlife Habitat Council and the Department of Wildlife, Parks and Tourism, gave us the opportunity to anticipate problems we might encounter and afforded us the ability to go in with a written plan and clear objectives. The project was not typical of our normal reclamation work, and therefore took expert opinions outside of our normal resources and lengthened our timeline because of the specific requests of the landowner. This was never seen as an obstacle, but as an opportunity to invest in the local community and give back to Mr. Presslor, who graciously furnished his land for nearly three decades.

Southern pond.

Hay meadow.

Bobcat sanctuary.

Native foxtail millet.

Wildlife habitat.

Native sunflowers.

Native grass along southern pond.

QUESTION 3

Describe the following:
a. Basis and highlights of the exemplary performance
b. On-site effectiveness of the work
c. Transferability or value of the accomplishments to other mining and reclamation operations
d. Long-term benefits to the landowner and local/regional community

Mining this property for 30 years gave us ample opportunity to know Delbert on a personal level. Not only was he the landowner, but he became a partner in our efforts. It was to our great disappointment that Mr. Presslor passed away in August 2017, just seven months before the completion of the project. Based on his wishes and his vision, we finished the project in the Spring of 2018. A year later, the Herington site is established with rich vegetation and a steady increase of wildlife inhabitants. Any given day, overlooking from the highest elevation, the land below is alive and the spirit of Mr. Presslor lives on. It was of great honor to be a part of his legacy.

Hay field & pond.

Deer tracks.

Southeast bait pond.

Wildlife sanctuary, deer trails, & ponds.

Native Cone Flowers.

Hay field.

Pond & wildlife sanctuary.

Native trees.

Aerial view of land, including deer trails, native trees, hay fields, ponds & wildlife sanctuary.
Note: Bobcat sanctuary & stock piles were left per Mr. Presslor's request.

THANK YOU

HAMM
COMPANIES

Governor's Mined Land Reclamation Award Application

Hamm Quarries, Inc. August 2014

Governor's Mined Land Reclamation Award Application

Date: 8/28/2014

Name of Nominee Hamm Quarries-Summit Materials, LLC
(Individual or Organization)

Name of Mine: Hamm-Overbrook-Gloss Quarry #06

Contact Person, Title/Organization: John Strome-General Manager

Address P.O. Box 17

County Jefferson

City Perry State KS Zip Code 66073

Email Address John.Strome@nrhamm.com

Telephone Number (785) 597-5111 Fax Number (785) 597-5117

HAMM

1. General description of the mining operations, (i.e. acreage, type of mining, mineral being mined, depth, etc.):

Hamm operated this quarry intermittently for a period of 30 years ending in 2010. During this period, 80 acres were quarried and reclaimed. This location was an open strip mine typical for Osage County Kansas. The Ervine Creek limestone formation was the ledge mined. The average depth of the Ervine Creek ledge was ten feet. The overburden ranged in depth from five feet to thirty two feet. Prior to the property be quarried it was used for hay and livestock production. The landowner requested the property be returned to hay and livestock production with 2 large ponds to be incorporated into the reclamation.

HAMM

2. Describe the reclamation work done and site specific techniques or technologies employed, goals and objectives of the reclamation (including specific problems, solutions and unusual circumstances, resources available for use, size of organization). Attach photographs if necessary:

The reclamation needed to incorporate gentle contoured flowing slopes to safely operate haying machinery. The landowner had specified that he wanted large ponds with all storm water directed to the ponds. The terrain had to be graded to direct storm water runoff to either to the north or south pond. The length of the waterways used to direct the water from the terraces to the ponds had to be graded so as not to create washouts. The property had to have new barb wire fencing constructed and divided into 3 separate pastures with gating to allow livestock transfer from each pasture. A 400 Foot long earthen windbreak needed to be constructed in the south end of the property.

3. Describe the basis and highlights of the exemplary performance, including on-site effectiveness of the work, the transferability or value of the accomplishments to other mining and reclamation operations and the long-term benefits to the landowner and local/regional community:

To look at the area there are no visible scars of prior quarry activity. The slopes were graded to greater than 5 to 1 to allow for safe hay production. The property was divided into 3 fenced fields for the rotation of either hay production or livestock production. The ponds provide water for livestock production and support wildlife habitat with recreational hunting and fishing. The final reclamation required that the reclaimed areas to be mowed and baled for hay production. The windbreak was constructed to provide livestock protection from northern winter winds.

The area east of the South Pond in Alfalfa Production

Alfalfa Mowed and Windrowed for bailing

HAMM

Wind Break for Landowner's Cattle Feeding Operation

HAMM

Slopes graded to blend into the contour of the undisturbed terrain

HAMM

HAMM

6 acre pond in the northwest corner of the property reclaimed from the final quarry pit

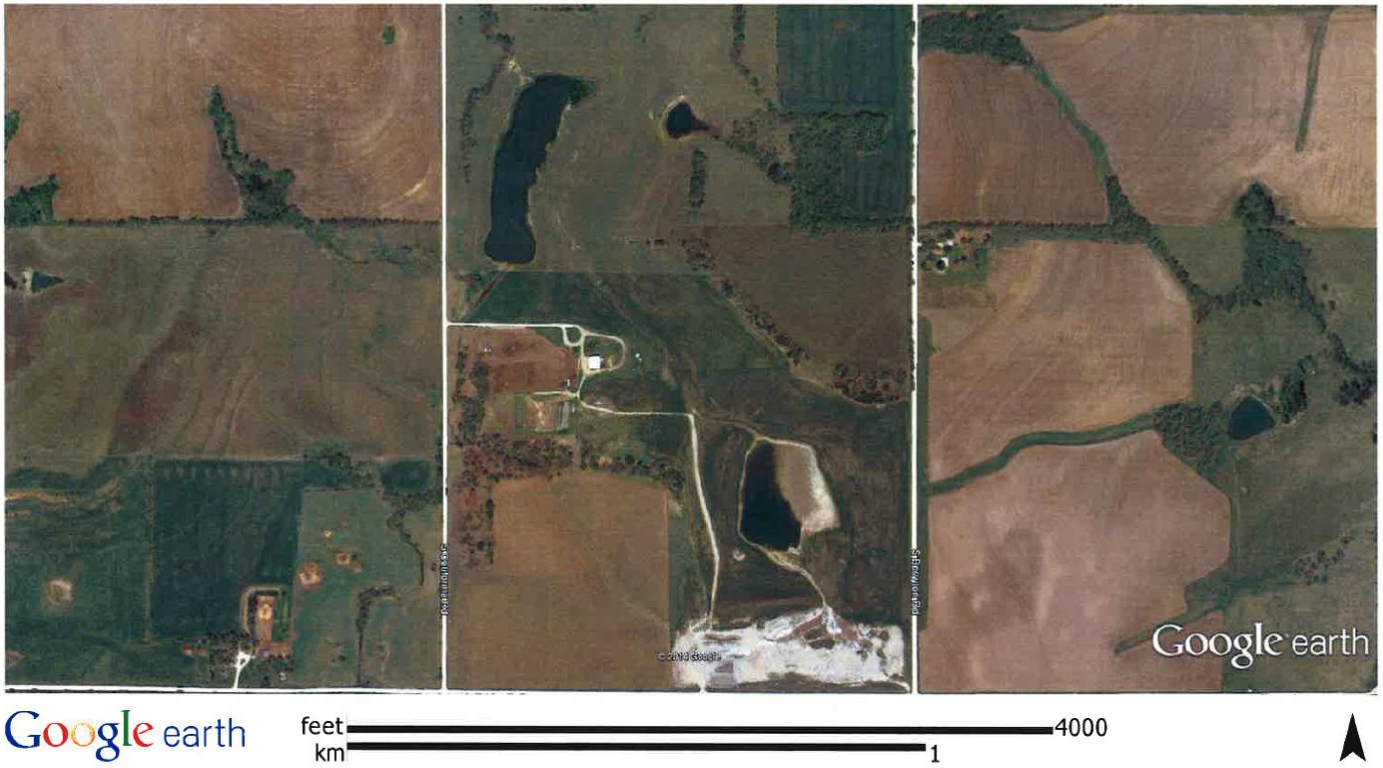
View from the south end

HAMM

View of the 6 acre pond from the north end.

Aerial View 2006

Aerial view 2014



HAMM

1320 Research Park Drive
Manhattan, KS 66502
785-564-6700
www. agriculture.ks.gov

Kansas
Department of Agriculture

900 SW Jackson, Room 456
Topeka, KS 66612
785-296-3556

Mike Beam, Secretary

Laura Kelly, Governor

March 2, 2020

TG Hamm
Hamm Quarries, Inc.
P.O. Box 17
Perry, KS 66073

Dear TG,

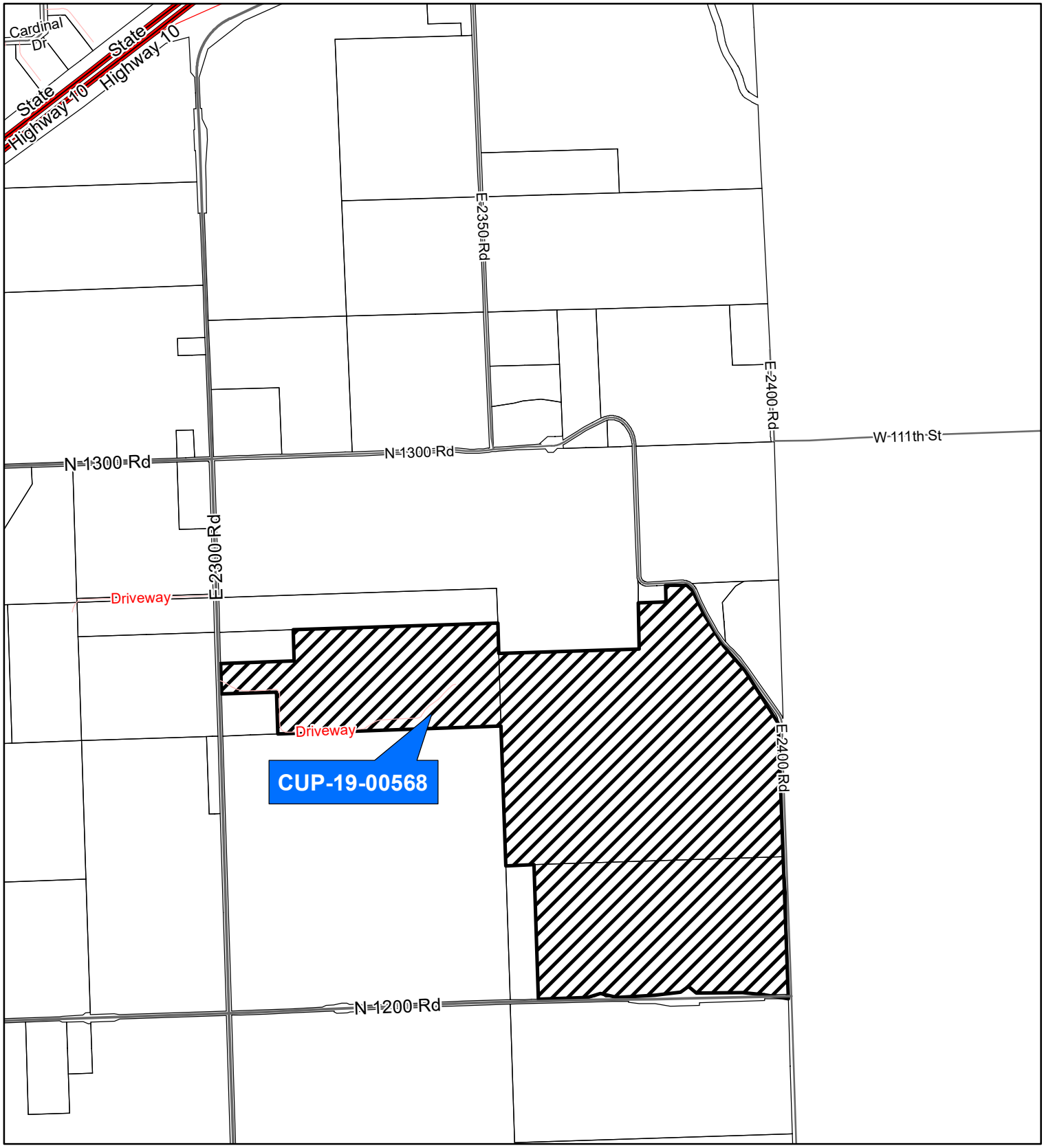
We have a Corporate Demonstration Reclamation Bond with Hamm Quarries, Inc. in the amount of $138,515,000. This corporate bond covers 2,086 acres on the quarry sites registered to Hamm Quarries, Inc. The corporate bond reflects the total acreage of quarry sites operated by Hamm Quarries, Inc. and is amended when those sites increase.

Our office, which oversees reclamation activities throughout the state, requires that Hamm Quarries, Inc. meets state requirements for reclamation. The Reclamation Bond provided by Hamm Quarries, Inc. is designed to ensure state reclamation requirements are met.

Thank you for keeping your reclamation bond current, and please call at the number listed below if you have any questions.

Sincerely,

Scott B. Carlson
Acting Director
Division of Conservation, Kansas Department of Agriculture
1320 Research Park Drive
Manhattan, KS 66502
785.564.6618
scott.carlson@ks.gov



CUP-19-00568: Consider a Conditional Use Permit to permit a 51.2 acre expansion, revised reclamation plan, and revised conditions of approval for Hamm Quarry at 1258 E. 2300 Road. The quarry currently has a conditional use permit for 129 acres, located in the northwest corner of the intersection of E. 2400 and N. 1200 Roads.

Lois Neis Windett Hamilton
52 Malaga Way
Hot Springs Village, Arkansas
May 23, 2020

Ms. Mary Miller, AICP
City/County Planner II
City of Lawrence, Planning & Development Services
Suite 320
One Riverfront Plaza
Lawrence, Ks. 66044

mmiller@lawrenceks.org

fax 785-832-3110

RE: Hamms Quarry

TO WHOM IT MAY CONCERN:

I am a granddaughter of Frederick Neis, one of the original settlers in the Hesper area and who also had ground in and around Eudora, Kansas. Over the years, I have purchased farm ground in Douglas County, some of which is north of Eudora.

I am a firm believer in the value of agriculture both to the economical well being of a community but also as it impacts the health of a community. The ten wells I have gifted to the City of Eudora are the source of the drinking water for the residents of Eudora. I mention that so you are aware that the health of the community is something I practice in my personal use of my farm ground to not only benefit myself, but to benefit the community.

Additionally several years ago, I owed land south of 1200 Road, so I am familiar with that area as well.

As the Hamms Quarry asks to extend its operation to another fifty acres, there are water resources, i.e. springs and creek beds that need to be protected from that quarry operation. When the quarry was extended into the Neis lease area, the county required a hundred foot set back from the stream on the west side. I understand in this Shelton Parcel, only a fifty foot set back is being recommended. Obviously I am concerned with clean water for the residents of Eudora, but can't help but wonder why a lesser setback would be utilized on the Shelton Parcel than the Neis lease property?

Hamms contends that the rock in this area is needed. The area is zoned for agricultural use; a quarry operation is not a

permitted use, without a CUP. Persons using property that abuts this quarry in a manner that is a permitted uses should not incur costs from that quarry CUP use. The dust and the emissions from the quarry and the generated hauling are costs that should be addressed by the quarry. The surrounding farmers working within the zoning parameters should incur no expense to address damage to their property, crops or livestock from this operation or the hauling to and from this operation.

What additional steps can the county take to prevent further problems from this operation to the agricultural community? I've seen the PH figures for my cousin's land that abuts the roadway and one possible explanation is the increase roadway usage from the hauling. I have talked with producers along 1200 Road and know their livestock operation suffer from dust pneumonia I know one neighbor on 2400 Road has treated the roadway with dust prevention controls. Why are persons using their properties within zoning parameters incurring expenses that are tied to the quarry use? I think those are matters that should be prevented so persons with permitted uses are not hurt by the CUP granted to Hamms.

I would ask that you very carefully scrutinize the CUP conditions to protect the agricultural zoned uses so those interests are not ADVERSELY impacted by any extended CUP granted to Hamms.

Thank you for your careful attention to these problems.

Sincerely,

Lois Neis Windett Hamilton

LNWH

Lois Neis Windett Hamilton

QUARRIES
CONSTRUCTION
ASPHALT
WASTE MANAGEMENT

609 Perry Place
PO Box 17
Perry, KS 66073-0017
Telephone 785-597-5111
FAX 785-597-5117

May 26, 2020

Douglas County Planning Commission
Via email: planning@lawrenceks.org
Attn: mmiler@lawrenceks.org

Planning Commissioners:

We look forward to the opportunity to address concerns about our application to expand the Eudora Quarry. We noted that on Page 20 of the staff report, there is a list of concerns raised by our neighbor, Arthur Neis. This letter is intended to provide some additional information that may help to clarify Hamm's position and address some of those concerns. This information is intended to provide clarity in advance of the hearing.

Thank you for your consideration in this process.

Gary N. Hamm (TG)
Strategic Planning Manager
Hamm, Inc. • 609 Perry Place • P.O. Box 17 • Perry, KS 66073
(m) 785-331-7951 • (p) 785-597-5111 • TG.hamm@nrhamm.com

1. Location of the berms within the setbacks. A portion of the northern boundary of the Shelton parcel is adjacent to Mr. Neis's property. Arthur requested that the berms be placed as close to the interior of the berm as possible. The operation plan shows the location of the berms, and these have been pulled to the interior of the setback where adjacent to Arthur Neis's property.
We believe this concern has been addressed. We are willing to consider any placement concerns of berms along the perimeter of the quarry.

2. What landscaping is permitted within the setbacks. There aren't specific landscaping requirements for the setbacks. The applicant indicated these would be grassed areas and the drainage areas within the berms would be maintained as grass through best management practices.
The setback areas are used for drainage improvements, berms, and screening. Planting grass along the berms and in the setback area helps to maintain the berms and drainage channels.

3. Location of the stream on Shelton parcel. The nearby land owner had a survey which showed the stream in a different location on the Shelton parcel. The

QUARRIES
CONSTRUCTION
ASPHALT
WASTE MANAGEMENT

609 Perry Place
PO Box 17
Perry, KS 66073-0017
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FAX 785-597-5117

applicant indicated they used the USGS (United States Geological Survey) topographical map to locate the stream on the plans.
A 2017 BHC Rhodes Survey prepared for Mr. Neis suggests that a creek bed immediately north of the Shelton Parcel cuts to the west on Art Neis' property instead of heading south across the Shelton Parcel. We cross-referenced the BHC map with the USGS topographical map and other aerial depictions online and we believe the creek bed is accurately represented in our Exhibits. We believe the pre-operational topography map shown as Exhibit #4 in our application is the most accurate depiction of the topography in the area.

4. Marking setbacks on the Site. The applicant indicated that they use a drone and a survey crew to measure the required setbacks from the property lines and the streams and mark these on the site.
The setbacks will be set and established by a survey crew. These setbacks are a condition of the CUP and if there is any concern about their location, the County is authorized to inspect and measure the setback, as part of the CUP.

5. Supreme Court recent decision on EPA Permits related to a direct discharge into navigable water. I referred this question to the County Engineer who indicated that the Army Corps of Engineers are responsible for implementing the EPA permits and noted that our conditions should include a requirement that the quarry obtain all needed permits from the Corps.
Any condition on the CUP that requires that Hamm obtain all necessary permits needed from the Corps is acceptable to Hamm.
Under Kansas statute and regulation, the Kansas Department of Health and Environment oversees water quality at quarry sites. The Kansas regulations also integrate the EPA's standards for mineral mining and processing. These standards and requirements are largely enforced through a Storm Water Pollution Prevention Plan (SPPP) which is submitted to KDHE, along with a range of other plans and applications in the quarry permitting process. The SPPP is specific to each site and is designed to address and protect the surface waters in the area. The Plan is reviewed and updated when sites are established and when modifications or expansions are pursued by quarry applicants. KDHE works with the applicant to develop controls that protect the surrounding waterways. Those controls can include a range of testing safeguards and site requirements to ensure that all water quality standards can be met. We expect that KDHE will require quarterly testing at the Eudora site, among other improvements. Hamm is also working with the Corps of Engineers, who is aware of the quarry expansion and has certified this site for quarry use and addressed all jurisdictional water concerns within the site.

HAMM

QUARRIES
CONSTRUCTION
ASPHALT
WASTE MANAGEMENT

609 Perry Place
PO Box 17
Perry, KS 66073-0017
Telephone 785-597-5111
FAX 785-597-5117

6. Water Quality included with hydrologic survey. Mr. Neis indicated he would like the pre-blast hydrologic survey to evaluate the water quality on his property. The pre-blast hydrologic survey is intended to provide an inventory of the area springs, wells, etc. and measure the quantity of water in these water features. The Kansas Department of Health and Environment enforces water protection measures on the quarry and no discharges are permitted to the adjacent stream until the water has been in a settling pond. Staff hesitates to add this as a condition, as it would be necessary to determine the testing parameters, which features are being tested for, and how the testing is to occur. If the Commission determines this would be a reasonable requirement, the pollutants which would be measured with the test should be identified. This test would be conducted prior to the commencement of quarrying in the Shelton parcel and would serve as a benchmark for later water tests the property owner may have done.
Water quality testing, outside of the testing that is occurring through KDHE and other regulatory agencies, causes some concern for Hamm. We believe that the tests required by KDHE, the Corps, and the EPA, are adequate to ensure that all known safeguards are being met. These tests provide a level of certainty to both the County and to the applicant, both in water quality and in the testing processes. Additional levels of testing would need to adhere to the testing standards of these agencies and would need to be rationally related to the quarrying activities.

7. Information on bridge to be constructed over the creek on the Shelton parcel. While this has been referred to as a 'bridge' the crossing over the creek on the Shelton parcel will consist of three 48 inch diameter concrete pipes. The County Engineer noted that their drainage report shows the drainage area to these pipes is less than 640 acres so a Division of Water Resources permit won't be required. The U.S. Army Corps of Engineers will review their plans to install the culverts and they'll need a permit from the Corps for all the items. The pipes and other features of the crossing would not be considered 'quarry operations' and would be permitted within the stream setback.
We agree that the oversight by the Corps of Engineers is sufficient.

8. Effect of traffic on E. 2300 Road on his agricultural land. Mr. Neis provided a soil study which showed that soils near E. 2300 Road were less productive than elsewhere on the property due to the pH levels and requested that the access point on E. 2300 Road be denied, or that the limited nature of the access be clearly specified. The limited nature of the access is clearly specified in the conditions and restrictions of use. As the soil pH level has been impacted by traffic, staff assumes the impact would not be limited to quarry traffic. As it wouldn't be possible to eliminate or reduce the overall traffic on E. 2300 Road, prohibiting the limited access point would not alleviate the soil quality issues.

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We anticipate that traffic on E 2300 Road will not change as a result of the quarry expansion. The main entrance and haul routes will continue to be on N 1200 Road. It is likely that the limited access allowed from 2300 Road, reserved for standard sized vehicles for testing, fencing concerns, and safety, will be less active than the current occupant at this property.

Mary Miller

From: Jim Gabriel <jagabriel7290@gmail.com>
Sent: Monday, May 25, 2020 10:30 AM
To: Mary Miller; adraburks@sunflower.com
Subject: N. 1200 Road/Hamms Quarry

To: Mary Miller and Adra Burks,

This letter is to give our views on the conditional use permit for Hamms Quarry. We are residents who live 1 mile west of the quarry, and are impacted by their operation on a daily basis, both personally and financially.

I live at 2267 N. 1200 Road for the past 25 years. My parents have lived on this road since the 1960s, at 2240 N. 1200 Road. Previous letters to the County Commissioners has seemed to fall on deaf ears.

While I realize Hamms and the quarry are a big business, and there is no such thing as a "perfect" working relationship, we have consistently been met with false promises and a lack of concern for homeowners and businesses along their route.

1. My father and I are generations old farmers, and that's all we know how to do. We raise corn, soybeans, wheat and cattle. Every year, we struggle with pneumonia in cattle from the dust that comes off the road. We are constantly vaccinating and doctoring cattle because of the the lack of care given to the road as promised by Hamms. Dust control is minimal, and usually only occurs if we call and ask for it. Herbicides have to be repeatedly applied because they won't work when our crops are covered in layers of dust.

2. Due to the high traffic volume, it is increasingly difficulty to navigate to our fields with farm equipment. Trucks begin running sometimes as early as 4:30 am. We have a child with some minor special needs, who struggles to sleep in his main floor bedroom because of the extra early morning noise. We've frequently needed to move him to another area of the house just so he can get a decent night's sleep.

3. Our mailboxes are constantly covered with dirt and mud.

4. The road constantly gets large potholes from little to no maintenance, and we are continually replacing tires and windshields on private and business vehicles.

5. Trucks consistently speed down the road, to the point we are unable to let our children ride their bikes down the road to their grandparents.

6. The stop sign at E. 2300 Road and N. 1200 Road is merely a suggestion. I could take a video of at least 20 trucks who run the stop sign every single day from our house.

7. The blasting from the quarry has caused an influx of snakes to us and other area residents.

8. Sadly, several drivers repeatedly throw their sack lunches or to-go bags out into the ditch in front of our house, even though Hamms supplies them with trash receptacles at the quarry.

9. We talked to a guy from Hamms and asked it it was possible to get the road bladed. His response was, "We like to keep the road in poor condition to help slow traffic."

We've sacrificed enough for their big business, and it would be nice to have our concerns heard and taken seriously. We are a "NO" vote for a conditional use permit. Enough is enough. We feel like since they are big business, they can do whatever they want and they know they can get away with it. We've endured enough. I do hope you'll take our concerns seriously.

Sincerely, Jim & Amy Gabriel, and Robert & Delores Gabriel

Mary Miller

From: Caren Rowland <caren@askmcgrew.com>
Sent: Monday, May 25, 2020 9:23 PM
To: Mary Miller
Subject: Hamm proposal 2300 Road

Mary,

As I have discussed with you earlier this year, I have never been happy with the Hamm Quarry – Eudora. They have had trucks going up and down E2300 Rd. ever since they started. It was always set up for them to use N1200 Rd. exclusively. Signs were put up on E2300 Rd. that limited the weight of trucks but they totally ignored that. I called to complain but finally gave up because it didn't do any good. Hamm pays for dust control for N1200 but **WE** pay for our dust control along E2300 Rd. and the extra traffic does not help. When the road on N1200 was being reconstructed they used E2300 Rd and Hamms put dust control AFTER the Prudden's and myself paid for our own dust control. No one offered to reimburse us for what we paid.

Another problem has been the blasting. My husband would complain about the excessive blasting. My job kept me away from the house daily but after he passed away in September of 2018, I was home most of the time. I experienced the blasting for myself. I felt two that were terrible and one I really thought the furnace or something was blowing up. I complained and I think that they contacted them. Now with the quarry moving straight east of my house what am I going to do if something happens to my well and I have a bad water system. What is their blasting going to do to my foundation? My home was built in 1898 and is in decent condition and I have definitely put a lot of money in it and try my best to keep it up and in good condition.

Now they want to put an entrance directly across the street from me!!! Hamm's have miles of road frontage on N1200 Rd and E2400 Rd. They can easily access the Shelton property from the north side of where they are currently mining and use the nice big entrance they already have and keep their traffic on N1200 Rd as it has always been. Why was all the money spent on N1200 Rd to reconstruct?? **I'm the only residence that this could happen to!!!** They have plenty of other places that they could make an entrance besides in front of my house.

I'm highly against this! I worry about what this is going to do to my property and how it could/will affect my property value.

Mitch and Pam Prudden have been out of town and do not know that there is a deadline to have something to you by 10:00am Tuesday. They will want to be involved with this and they are also very concerned about this issue. They pay for their dust control also.

Let me know if I need to do something else to be included in this process.

Thank you,
Caren

Caren Rowland
785-979-1243
Helping Buyer's and Seller's for over 25 years!

638 Illinois
Lawrence, Ks. 66044
May 22, 2020

Ms. Mary Miller, AICP
City/County Planner II
City of Lawrence Planning & Development Services
Ste 320
One Riverfront Plaza
Lawrence, Ks. 66044
mmiller@lawrenceks.org

RE: $0.10 indexed assessment

Dear Mary:

I would like my following personal observations shared with the Zoning Board and the County Commissioners as a Douglas County resident.

I had the privilege of watching the staff work with Hamm's in 2003 in trying to incorporate the Petefish Quarry into the CUP request with Hamm's leased the Neis property. During that procedure, Commissioner Charles Jones moved and the Commissioners unanimously approved a $.10 per ton levy against Hamm's for each ton removed from the new quarry site. The staff report recommendation was based on that being merely $.10 per ton in addition to Hamms providing rock and dust control along the township road during quarry activity. That $.10 per ton requirement was amended and approved so that it was subject to the consumer price index for inflation. Those funds were to be used to help "maintain county roads." This occurred in 2003 and was to be effective immediately even though Hamm's did not open up the leased parcel until after 2011.

Pursuant to my inqury, I understand Hamms is still being charged $0.10 per ton and the consumer price index has not been applied to the tonnage charge. As a Douglas County taxpayer, I am concerned Hamms Quarry is not submitting the tonnage charge to the road fund that was required as a term to obtain their CUP. That was for county roads, not just for 1200 Road. I find nothing within the records to not index those charges. The CPI is still set forth as part of the parameters of the recommended CUP.

Although Hamms Quarry is to use 1200 Road for truck access, my recollection is that Charles Jones was not just concerned about 1200 Road in discussing tonnage. There were issues of dust control on all surrounding roads. The possible deterioration of 2200 Road was also considered by the commissioners. Access to the quarry expansion both directly and indirectly were considered .

The tonnage charge was to be based on the product taken, not from the old Petefish Quarry, but from the CUP Neis lease area.. If I look at the CPI on all items take together there

have been increases each year from 2012 onward. So that $.10 should have increased each year and been collected and put in the county road fund. Additionally the county would have benefitted from the compounding that would have applied to those funds had they been collected and not been used. If the determined $.10 is applied for the first time in 2011, in 2012 it went up 2.09%. In 2013 it went up 1.6%. In 2014 it went up another 1.6%. In 2015 it went up 1.4%. In 2016 it went up 2.7 %. That alone is 9.39%.

In looking at the index charts, I recognize there may be some confusion as to how to apply the CPI. If that is the case possibly a more detailed explanation may be needed. However the $.10 per ton was what Hamms wanted to pay. Commissioner Jones recognized that over time that value would decrease and Douglas County residents should continue to receive a comparable amount, not a diluted amount based on inflation.

The CUP granted in 2003 required Hamms address the widening of 1200 Road and improvements on 2400 Road. On May 11, 2020, I was on 1200 Road which runs along the south side of the quarry during a rain storm, traveling from 2200 Road to 2400 Road. In the rain, I pulled off in the sludge to allow six large trucks to pass. That was within a two mile span. It is no longer a smooth surface and during rain it is slick surface with pot holes. When I traveled upon 1200 Road on May 8, it was dry but a source of dust clouds from every truck that met me, seriously impacting my vision. Access from 1200 Road is not perfect and the increased indexed funds should have been paid to the county if Hamms is going to have the discretionary right to have a CUP for its quarry. As Hamms asks for an extended CUP, possibly 1200 Road should be reviewed to determine if Hamms obligations for that roadway should be further modified

The CUP does not state who is to collect the tonnage and compute the tonnage or how the tonnage is to be audited. It may be that needs to be more specifically addressed. As a county taxpayer, I should be able to expect that Hamms will fully pay its obligations. If those funds exceed what is needed for that roadway, there is nothing to indicate they are not to be received and put into the county roadway funds.

Additionally I note that the CUP application required that a 20% obscurity factor not be exceeded more than once in an annual period. I do not know what documentation has been provided to staff to verify that has been met.

Since Hamms is responsible for utilizing dust preventative on the roadways surrounding the quarry, it would seem that same standard should be applied for the dust from those roadways.

So in considering Hamms CUP request, I ask the zoning board and the commissioners address the following:

a) Compute the past tonnage based on the index and have it paid to the county;

b) Identify the procedure to be utilized to audit the reported tonnage if needed;

c) Consider whether additional work is required on 1200 Road;

d) Determine if the dust is within the 20% standard for the quarry operation; and

e) Apply the 20% standard to hauling activities on the roadway;

Thank you for addressing these matters.

Sincerely,

Adra E. Burks

AEB

Mary Miller

From: Arthur Neis <veral01@att.net>
Sent: Monday, May 25, 2020 8:59 PM
To: Mary Miller
Cc: Adra Burks
Subject: Additional comments based on the PC Staff Report re Hamm Eudora Quarry Applicatioj
Attachments: 052720zoning reclamation.docx; 052720E2300 access.docx; 052720 Quarry Hydrological Evaluation issue #3.docx

Mary, I hope you were able to shift your thinking to personal matters over this long week and return in the morning rested and refreshed.

Attached are three comments at to...

Zoning and Reclamation

E 2300 Road Access

Quarry Hydrological Evaluation

Thank you for distributing these three documents to the Commissioners.

Arthur Neis

1575 Northwest 106th St
Clive, IA 50325
May 25, 2020

Ms. Mary Miller, AICP
City/County Planner II
City of Lawrence Planning & Development Services
Ste 320
One Riverfront Plaza
Lawrence, Ks. 66044

Re zoning and reclamation

Mary, Good Morning:

The first Key Point in the Hamm related Planning Commission Report notes the Application was processed under the 1966 zoning regulations, not the 2020 zoning regulation. The analysis under the 1966 regulations is understandable, as Staff did not have certainty of future regulations.

HOWEVER, the Quarry lease extends to 2033, and the estimated time to fill the ponds is 6-8 years meaning the lifespan of current Planning Commission decision at least 21 years. Considering the old previous zoning regulation lifespan, the Hamm expanded quarry operations will have a lifespan of 75 years under outdated zoning regulations.

AT A MINIMUM, the Commission should receive an analysis of the provisions of the 2020 zoning regulations that would impact the current review. The Commission is then informed as to the future impact of their decision today and will make a more informed decision.

The PC Staff Report notes relative to the Shelton Parcel a small portion of the land, 7 acres, that is suitable for farming because the soil is otherwise not classified as Type 1 or Type II. The apparent assumption is that only land the soil of which is so classified, is to be considered prime farmland/agricultural land. It is therefore easier to allow commercial use for land not so classified.

Not documented in the Report is the amount of additional land needed within the Neis leased land in order to widen the existing pit to dig significantly deeper

After commercial mining the land will be reclaimed per the Report: “Following reclamation, the land will be suitable for agricultural land uses even though the prime farmland may be lost.” (PC Staff Report, page 9). This sentence confirms that Type 1 and Type II are the definition of Prime farmland.

Is soil type a criterion for commercial versus agricultural use of land?

Given that soil type I and II are the criterion, then the economic and social structure particularly of Northeast Douglas County, is being changed.

The above sentence in the Report SHOULD STATE: "Following reclamation the land will be graded to as close to the original topography as practical. The type and quality of the land as reclaimed is unknown."

Once overburden is removed, even when used years later to reclaim the land, the quality of whatever type land was there is impossible to recover. It becomes grassland for an indeterminant number of years. Further, because of the mining pits, in the present instance, acres of farmland are permanently lost.

I find no representation by Hamm as to the resultant quality of soil.

KSA 49-407(c) addresses reclamation and farmland quality. If any of the property for which a mining permit is requested "contains prime farmland, as determined pursuant to the national surface mining control and reclamation act of 1977 (public law 95-87), the secretary, …, shall grant a permit to mine on prime farmland, if the secretary makes written findings that the operator has the technological capability to restore such mined area, within a reasonable time, to equivalent or higher levels of yield as nonmined prime farmland in the surrounding area under equivalent levels of management and can meet the soil reconstruction standards provided by the national act." Both the state and the federal government have expressed intent to protect prime farm ground. There is no located provision to ignore the need to restore that 7 acres to less than prime farm ground

There are areas in Sections 1 that require conservation. I know, as I own in Sections 15 and 13 (?). YET, through moderate and required conservation measures, Type II and Type III, and some Type IV, my crop yield is better than the USDA Douglas County average for the past several years.

Further, Type III and Type IV is very supportive of wildlife, fostering responsible hunting activities.

Authorizing the mining on the Shelton Parcel and expanding the depth of the mining on the Neis lease, is changing the quality of the land away from agricultural use, de facto.

Respectfully,

Arthur

Arhur V. Neis

1575 Northwest 106th St
Clive, IA 50325
May 25, 2020

Mary Miller, AICP
City/County Planner II
City of Lawrence Planning & Development Services
Ste 320
One Riverfront Plaza
Lawrence, Ks. 66044

Re E 2300 Road Traffic

Good Morning, Mary,

When considering the impact of more traffic, however restricted, on E 2300 Road, in addition to the comments by those of us impacted and sharing empirical evidence (soil tests in my case), studies of the impact of vehicular emissions on plant life should be considered.

Vehicular toxic emissions include oil, rubber, brake linings, gasoline, amongst other elements, which degrade into minerals in the soil effecting the nutrition of the soil and the health of the crop (which ultimately enters the food chain). Other factors impacting the soil have been shown to include age of road, speed of traffic and volume of vehicles, the latter two factors directly increasing the minerals unnaturally introduced into the soil.

These minerals decrease the desirable effect of microbial life (fungi and bacteria) and invertebrate life (bug/worm life) in the soil; the emissions cause plant stress as plants naturally absorb the degraded residual into the grain produced. Soil quality management such as no-till and cover crops for example, cannot overcome the impact of vehicle emission in my instance; and I am not alone.

"Some of the vehicular derived metals are essential nutrients for plant growth when they occur in the soil at low concentrations, but when present in greater quantities can cause metabolic anomalies (Ayodele and Oluyomi, 2011; Xia el al; 2011 as cited in De Silva, 2016)."

"The contaminants arising from vehicular emissions…have the potential to cause adverse effects on the diversity and activity of the soil microbial community (Elsgaard et al., 2001; Renella et al., 2002; as cited in De Silva, 2016).

It is documented that microbial populations are affected adversely by the presence of metals in the soil. Also, bacterial counts increase in soils further from roadsides, while fungal counts decrease.

The above draws upon “Effect of Metal Vehicle Emissions on Physiochemical and Biological Properties of a Roadside Soil”, De Silva, 2016.

I observe that acidic soil (low pH) is successfully fighting vehicular debris; soil that is alkalotic (high pH) is being overwhelmed by vehicular debris to the extend the road is an older road and experiencing relatively heavy traffic (also supported in the above study).

Today, with 11 years of actual history to report, this matter is no longer theoretical; it is reality supported by soil tests results in 2006 and 2020. And reports of residents along E 2300 and N 1200 Road.

Neither agricultural capacity should be further diminished, nor food security challenged. Nor principals of quiet enjoyment ignored.

I URGE the Commission to NOT allow any increase in operating hours or traffic on E 2300 Road and SUPPORT the recommendations from the City of Eudora.

Respectfully,

Arthur

Arthur V. Neis

1575 Northwest 106th St
Clive, IA 50325
May 25, 2020

Mary Miller, AICP
City/County Planner II
City of Lawrence Planning & Development Services
Ste 320
One Riverfront Plaza
Lawrence, Ks. 66044

Re Quarry Hydrological Evaluation

Good Morning, Mary,

The Applicant has provided a Quarry Hydrological Evaluation study dated April 6, 2020. When reviewing this study, of note is:

1. The study is a theorical series of calculations not supported by field work; it is a series of desk calculations without actual knowledge of the site-specific hydrological characteristics.
2. The study does NOT consider the Shelton Parcel pre operation but assumes the Corps of Engineers mitigation of a stream and a pond has been implemented but does not state that assumption. How the Corps considered the stream and pond and its characteristic/impact on the watershed will be known only when the Corps internal documents are reviewed. A FOIA Request has been submitted for that information.
3. The study is conditioned by "This hydrologic model does not account for the contribution of discharges from each water feature to the receiving streams."
4. The calculated result is therefore no doubt an understatement of the real result for the Shelton Parcel as it currently exists.
5. The Study calculations indicate a 4.5% decline in water runoff during operations, without considering the stream, pond and natural springs. The actual runoff is therefore higher and has an impact downstream to the unnamed tributary.
6. The Study reports a minimal recovery of water runoff after reclamation. The decline in water runoff occurring during operations is permanent.
7. The Study reports a more than 50% decline in drainage basin acres, without noting the impact of the Corps mitigation plan.

The Commission **should request** a hydrology study of the Shelton Parcel AS IS, and considering the streams, and springs, and supported by field work and at the Neis leased parcel..

Further the PC Staff Report addresses a request to "measure the quantity of water in these water features (on the Shelton Parcel)." In fact the request is for quantity and quality of water in the Shelton Parcel.

The question of **quantity** is addressed in the above comments 1 through 7.

The quantity of water from natural springs on my property was documented in 2009 and is requested to be updated now to determine any diminution in flow.

The **quality** of the water as addressed in the PC Staff report "…hesitates to add this as a condition, as it would be necessary to determine the testing parameters, which features are being tested for, and how the testing is to occur."

The analysis of water content was being performed and documented for Douglas County in a published report in 1960, "Geology and Ground-Water Resources of Douglas County, Kansas" by Howard G. O'Connor. See Table 4 of that report for a list of 15 minerals which were then the subject of testing. Since 1960, the analysis of water has become more refined and easy, and perhaps the universe of minerals evaluated expanded or contracted, but they are definable and should not be a reason for no evaluation at both point of entry to the Shelton Parcel, the point of exit from the Shelton Parcel.

The minerals in referenced Table 4 and generally the same minerals that are the result of vehicular emissions reference in my plea for no increase in traffic on E 2300 Road.

In reviewing the history of the Neis CUP request Coleman Creek setbacks, the county required a 100' setback on the west, not the current requested 50' setback. Although the 100' setback may not be sufficient, clearly water quality concerns and the loss of drainage issues would arguably not support a 50' setback.

The Commission **should require** an evaluation of water quality of the tributary. Without an evaluation prior to the CUP grant, there is no basis to determine how water quality downstream may be affected from the quarry activity.

Respectfully,

Arthur V. Neis

Mary Miller

From: Patrick Watkins <patrwatkins@gmail.com>
Sent: Friday, May 22, 2020 11:25 AM
To: elstonauction@embarqmail.com
Cc: Mary Miller
Subject: Response to Letter re: Eudora Quarry Expansion

Mark,

Thank you for your time over the phone this week. We appreciate your concerns for your family's property and would like to address the comments from your letter. Please forward this email to your siblings. If there are other questions or concerns, we'd be happy to provide a response. You can reach me at the email or phone number below.

- Accessibility to the Shelton Property: The quarry expansion into the Shelton Parcel will not create a new access point for the quarry nor will it change the traffic patterns or the traffic volume. The access point from N 1200 Road will continue to be only access point for quarrying activities allowed under the Conditional Use Permit. Limited access will be allowed to the Shelton Parcel as a farm entrance but only for smaller vehicles and safety activities, and not for quarrying activities. We anticipate access activity to the Shelton Parcel from 2300 Road will be less than what is currently occurring.

- Property values: We expect the conditions on the surrounding properties to be primarily the same. Access, volume of traffic, and quarry operations will remain consistent. The expansion of mining areas is modest in size in comparison with the existing quarry and will be accompanied by a corresponding drop in activities on the existing site. The pits and mining operations on the Shelton Parcel will be confined to a smaller area than the mining operations on the existing quarry site. The Shelton Parcel will also not include any operational facilities like a rock washing ponds, stockpiles, or aggregate plants. Following quarrying activities, all areas within the Conditional Use Permit are to be reclaimed in accordance with Kansas law and the Conditional Use Permit requirements.

- Blasting Concerns: As part of the Conditional Use Permit, prior to any quarrying activity, every property within one-half mile will again be entitled to a pre-blast survey, paid for by Hamm. All blasting on the site will be conducted by a licensed third-party blasting specialist and all blasting devices will all include a sequential delay. All properties within a half-mile will also be entitled to receive a pre-blast hydrologic study, at Hamm's expense, to inventory and assess all wells and springs. Blasting will continue to be monitored by a third-party independent seismology firm, and result will be made available to the County.

Unfortunately, we cannot consent to a deferral of the hearing date for the quarry expansion. Again, if you have additional questions or concerns, feel free to contact me directly.

Best Regards,

Patrick Watkins
Watkins Law Office
901 New Hampshire, Suite 200
Lawrence KS 66044
(785)843-0181(office)
(785)749-5652(fax)

patrwatkins@gmail.com

From: Mark Elston <elstonauction@embarqmail.com>
Sent: Wednesday, May 20, 2020 9:11 PM
To: Mary Miller <mmiller@lawrenceks.org>
Cc: nthellman@douglascountyks.org; mderusseau@douglascountyks.org; pkelly@douglascountyks.org; splinsky@douglascountyks.org; Chad Lawhorn <clawhorn@ljworld.com>
Subject: FW: Planning Commssion May 27th Hamm CUP-19-00568 Concerns
Importance: High

Mary
Can you add in the comments from our letter that #3 Blasting Concerns the church we listed is actually closer than a ½ mile and it is the Family of Faith 2295 North 1300 Rd. Eudora, KS 785-542-3353. Looking at the detailed maps of the affected areas could not find anywhere this was located or mentioned. **The map had the houses effected in Yellow but no church??**
I remember when it was built had to mid to late 1970's as we were little kids going to visit and stay with our Grandparents and I can remember Grandpa commenting about it as it was being built(manly could not believe a new Church being built on a rock road and the dust) that was just Grandpa being a Farmer!!!
Also I did receive a call shortly after talking to you today from the Hamm's Attorney and I just expressed our concerns and basically said **ONLY access is thru the Katherine Neis Estate Leased Property** and we think the Planning Commission should delay for a month until the Katherine Neis Estate has the initial first Family Meeting to discuss this and how it **drastically impacts** the Katherine Neis Estate's Property's! He seemed very respectful and responsive of maybe a delay for a month on any action by the Planning Commission on May 27th,2020 until the Family meets (especially since it was scheduled in March and the Covid 19 Pandemic has delayed the meeting)!
Thanks
Grandkids of William & Katherine Neis Estate
Cheryl/Mark/Kim

May 19, 2020

May 27th Hamm/Shelton Property Planning CUP-19-00568

To whom concern:

Cheryl Morrison/Mark Elston/Kim Elston Grandchildren of William (Bill) & Katherine Neis with concerns and vital percussions to the existing Neis Farm 1232 East 2300 Rd. Eudora, KS of the Hamm/Shelton Quarry Proposal CUP-19-00568 published in the Lawrence Journal World Legal Notices on Sunday March 1st and Sunday May 3rd to the Planning Commission May 27th, 2020.

Our Grandparent's worked their entire life as Farmers and worked for everything they earned and provided for their family and we are **so PROUD** of their efforts and take great pride today in our personal lives to exert that work ethic they instilled into us! Our Grandfather passed away in 1986 after a long courageous battle with cancer which still to this day I can remember him telling us on the 4th floor of KC Med Center dying of cancer saying he was doing these experiments for us Grandkids not to have to suffer like he was doing with cancer!!! Grandma better known as Ma kept they family farm together the best she could and passed away 12/27/2018 just shy of being 100 years old that she wanted to accomplish but fell a little short but she was so proud of her birthday January 20th Kansas Day! She was just as devoted to the Farm as Grandpa ,raising hogs until her breaking of her ankle in the mid 1970's and then turned to just helping out were needed and never complained!

We could go on with many stories but this should tell you some knowledge of the Neis Family Farm History within the Property that adjoins the Hamm/Shelton Property that is in question with you. We know Hamm has an **existing lease agreement** with the Neis Property as shown on the map. This is a **lease agreement** not ownership by Hamm at the present time as the Katherine Neis Estate (John Immel Attorney for the Estate) is in the settling process. We as Grandkids are not part of that settling process but our Mother Linda Elston (Calvin Karlin Attorney Barber Emerson, L.C.)) who is daughter of Bill/Katherine Neis is one of six heirs and has informed us of a Family Heirs Meeting (Estate's Attorney Office John immel) that was scheduled for March 19th, 2020 and the Covid 19 Pandemic hit. So our understanding from Mom at this time no rescheduling of this meeting has been rescheduled because of the Kansas Governor's mandate orders. So this is the reason we as Grandkids are voicing our concerns of the proposal of the Hamm/Shelton Property CUP-19-00568.

1. MAIN QUESTION Accessibility to this Hamm/Shelton Property?

In our opinion the ONLY way for access is thru the existing Katherine Neis Estate leased Property or off the rock County Road East 2300 in front of the Hamm/Shelton Property (and we see no amendments asking for this access?).

2. Property Values of the existing 160 acres Katherine Neis Estate that adjoins the Hamm/Shelton could be vitally be effected by this in the future for a long time! Homestead/Buildings/Etc.!

3. Blasting Concerns: Eudora High and Junior High Schools to West in sight (1 mile approximately) of the Hamm/Shelton Property CUP-19-00568 and a church to the North of the property (less ½ mile), existing homes nearby?

We are not totally opposed to the matter of the Hamm/Shelton CUP-19-00568 but want you to be aware of the impact of the Katherine Neis Property (129 acres) currently **leased** by Hamm and the

adjoining 160 acres of the Katherine Neis Estate to the Hamm/Shelton Property and we think is totally vital to any future existence of a mining process on the Hamm/Shelton Property!

In closing at the very least we would like you to consider delaying this matter until the Katherine Neis Estate can have their Family Heir Meeting at the Estates Attorney's Office to discuss. We assume that will take place very soon depending on the Kansas Governor's lifting of the mandates! We also would like any response sent to us if possible on any decisions made.

Thanks for your time and consideration

Sincerely,

Cheryl/Mark/Kim

comments on Hamm-Eudora Quarry2

Yahoo/Sent

Mary Miller <mmiller@lawrenceks.org>

To:Arthur Neis/Mary Miller

Thu, Apr 30 at 3:27 PM/ May 19, 2020

Arthur,

You've provided a number of comments throughout the review of the Hamm-Eudora Quarry CUP review. I appreciate your input and your comments have been very helpful. I've tried to respond to your emails, but I'm afraid I may have missed some. I wanted to respond to some of your comments that I may have missed in this email. (I'll provide a summary of your comments from your various emails to the Planning Commission and will include a Planning response for each. This will be available with the staff report about 1 week before the Planning Commission meeting.)

Mary, Thank you. We have had a very productive and constructive series of conversations. I very much appreciate the time and care you have devoted to the Application. Our conversations remind me of a saying at Church...We Agree to Differ, We Resolve to Love, We Unite to Serve. I look forward to reading the Staff Report.

1) Questions on wetlands, changes to the tributaries and to the pond. Also the Supreme Court decision on the Clean Water Act.

I referred these questions to the Douglas County Engineer. He informed me that the U.S. Army Corps of Engineers has jurisdiction over the water bodies and noted that the quarry would need to get the required permit from the Army Corps of Engineers. He thought they would need a JD (Jurisdictional Determination) from the Corps. TG indicated Hamm has a JD which will permit them to fill the pond and small tributaries provided they pay into a mitigation fund. He should be providing that document to me shortly. There is a condition on the CUP which requires that all local, state, and federal regulations be complied with.

Mary, following several years of analysis, in January and February 2020, the EPA and DOJ issued new regulations and definitions of wetlands and navigable waters of US, the latter being supported by a 6-3 US Supreme Court decision in April 2020.

Having received the US Army Corps of Engineers determination letter of March 13, 2020, I have asked for the Corps' file of its' investigation because the determination letter raises a few more concerns. A review of that material, which may not be available until about the time of the Commission meeting, may answer these concerns.

A. Additional permits are required by the CoE before work is to begin. I urge the CUP to require such permits to be filed and made public, confirming compliance with the normal CUP requirement to require all appropriate Federal and State permits.

B. Drawing provided by Terra Technologies (reviewer for the Corps of Engineers,) defines the area of Quarry Operations as the east half of the Shelton Parcel. Why is the west half, which includes the pit and additional drain fields, excluded from the review?

C. The stream flowing from south to north through the Shelton Parcel has a 50' setback on either side. I assume the setback is from the highwater mark which means the total setback is perhaps 140'+. A bridge must be built over this stream. Is the bridge's substructure permitted in the setback?

D. The **2002** CUP was issued without examining the two streams running into Coleman Creek that are on the northern portion of the Neis lease. Given the Corps position on the Shelton Parcel, it would seem that a similar evaluation now needs to be made of that area.

E. Because the stream which is under Corps jurisdiction and also because of the downstream impact north of the Shelton Parcel, a testing of the water quality of the stream entering the Shelton property and also exiting the Shelton property should be required in the CUP. This testing should be done now and draw upon comparative baselines from previous work done by the State of Kansas and the Corps.

F. In **2009,** the County, Hamm and my counsel conducted a survey and determination of ground water emissions on my property prior to beginning blasting and operations. The conclusion of the independent contractor was "Individually, the springs on the Neis property are relatively small, with estimated flows less than 5 gallons per minute. Cumulatively, however, they are an important source of water feeding the streams in the area." I will again request a study of the ground water emissions on my property, consistent to the 2009 survey.

2) Placement of the berms.

The small, 3 ft tall berms, are shown on the detail being located to the interior of the quarry. TG confirmed this is how they would be constructed. They will be in the center of the setback, except where they are adjacent to your property and Hamm will pull them back as close to the interior edge of the setback as possible. The berms will be shown on the plans with breaks on the north and south side for the creek and also as needed to accommodate the existing stormwater flow from the south.

Mary, thank you. And I know you will also address the berms adjacent to my property and the Shelton Parcel.

3) Limited use access on E. 2300 Road.

The township has approved the use of E. 2300 Road for limited quarry access but indicated that heavy equipment or haul trucks would not be acceptable. The condition for the limited use of this access will prohibit heavy quarry equipment or haul trucks and will note that 'limited quarry access' means managerial staff, survey crews, seismology crews, and blasting crews.

You provided soil sample information and suggested that the quarry traffic be limited to reduce the damage caused to agricultural lands by traffic. The county typically looks at the impact of traffic on the integrity of the road, the capability of the road to accommodate the traffic, and the amount of dust that may be generated. The county hasn't passed any regulations limiting overall traffic to avoid soil pollution. I'm recommending approval of the limited access on 2300 Road as it will allow these smaller vehicles to access Phase 2 without having to travel through the plant site and Phase 1. If the commission feels it appropriate to limit traffic to address pollution, they can set their own condition.

Mary, the soil testing on my farmland was conducted in 2015 and 2020, provided essentially the same results… the 150 foot strip of land fronting on E2300 Road had substantially more Ph than recommended for good growth conditions.

The land is zoned for agricultural usage, and it would seem appropriate for the County to regulate land use including roads, consistently with zoning.

The City of Eudora Planning Commission noted that the property in question borders on Eudora's Urban Growth Area. It voted 7-0 on January 8 and confirmed at its February meeting, "**That no increase in intensity or expansion of daily operation and volume of material extracted from the entire quarry site or change to the traffic ingress/egress will occur."** On May 18, 2020, the Eudora City Clerk confirmed the Commission "hasn't adopted changes to its February recommendations."

I have contacted the Township and advised them of my situation and asked that they reconsider their actions.

4) Timing of demolition of house on Phase 2 and construction/planning of bridge over creek on Shelton parcel.

A 500 foot setback is not required for the house on the Shelton parcel as it is owned by Hamm. A demolition permit will be required prior to the demolition of the structure, but the timing will be determined by Hamm. The bridge across the creek will be needed only when quarrying commences in Phase 2. As regulations may change before then, plans will not be required until the bridge is needed.

Mary, the key question now for the CUP is to define what is possible in the setback areas. Per item 3 above, the berms are permitted. Are bridge abutments and substructures (item 1. C above) also permitted in the setback areas to the stream which is covered by the Clean Water Act?

5) Location of the stream and the deeper limestone reserves.

The boring on the property showed that the additional reserves were available. TG noted that they used the USGS Topographic Map for the stream location. I copied the stream from the

USGS map and placed it on the aerial and on the plan. The configuration on the plan matches that on the USGS Topo Map.

6) Does the KCPL setback/right-of-way run through the Shelton Parcel?

Yes, it is located within the southern setback and is shown on the plan.

I've asked for some minor revisions to the plans and will send you a copy when they've been provided. I'll attempt to provide information related to all your comments in the staff report, but wanted to be sure I got back to you on the major points you raised. Please let me know if you would like to know how any of your other comments have been addressed/considered. I will send you a copy of the staff report when it's been made available to the Commission.

Thanks, And Thank You,

Mary Arthur

Subject: Hamm Quarry Expansion

Dear Ms. Schmeck,

I am writing you today to voice opposition to the proposed Hamm Quarry expansion at 1258 E. 2300 Road. Myself and the others undersigned (Captain Creek Land Company) own 200 acres immediately to the east of the quarry (just inside Johnson County at County Line Road and 119th Street), and as such have a great deal of interest in the Hamm expansion proposal. Our concerns are those shared by many others and include:

1. Additional truck traffic in the area and the impact on local farmers and their ability to move farm machinery on roads shared by quarry trucks/traffic
2. Increased noise from blasting and its impact on everyone in the area (including Eudora High School, Eudora Middle School, and housing in the city of Eudora)
3. The negative impact on current/future property value and anticipated urban development in the city of Eudora, particularly the city limits to the south and east
4. Environmental concerns (which are complex, go beyond the scope of this letter, yet merit further discussion)
5. *Significant concern that the Hamm Quarry expansion under current consideration is part of a larger plan to transition the 1258 E. 2300 Road operation into a landfill. This would most certainly have adverse effect on property value and city growth/expansion in Eudora. Furthermore as the largest (by land area) and immediate neighbors to the east of the existing Hamm Quarry, Captain Creek Land Company is quite worried about the prospect of a landfill, the negative impact it would have on our property value, and what rights we would have relative to damages in the event a landfill became a reality.*

It is unfortunate that the Covid pandemic has hindered our ability to meet and discuss the Hamm proposal in person as was originally planned. We are hopeful that at some point in the near future such dialogue can occur so that the Hamm proposal can be fully vetted and the entire scope of their intentions can be revealed.

Respectfully,

Captain Creek Land Company, LLC
Nick Alphs
Bill Rieke
John Kubicki
Tim Dwyer, MD

July 29, 2020

TO: City of Eudora Planning Commission –
Grant Martin, Johnny Stewart, Jason Hoover,
Tim Pringle, Ryan Rock, Danielle Young, Josh Harger
cc: Nancy Thellman, Commissioner

FROM: Catherine Ellsworth, Eudora resident

RE: Hamm Quarry Expansion Permit Application (CUP-19-00568)

I'm writing to ask you, earnestly and with sincere concern for our community, to recommend denying Hamm's Conditional Use Permit currently under consideration by the Douglas County Commissioners. I have no ulterior motives, not profit or relationships.

1. The mining operation is too big and too close.

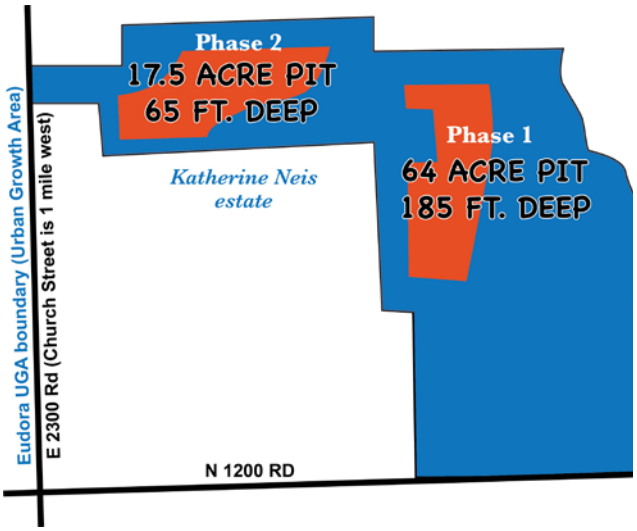
Now you finally know: the proposed mining operation is enormous. It's two phases of open-pit mining, Phase 1 is 64 acres 185 feet deep and Phase 2, at this point (without the additional Katherine Neis estate), is estimated to be 65 feet deep. The deepest lake in Kansas is 75 feet deep, the deepest point in the Mississippi River is 200 feet deep (which is the depth cited in their reclamation portion). Add to that, the fact that the western edge of these pit-mines will be directly adjacent to the boundary of Eudora's designated Urban Growth Area and the whole idea of allowing this permit to go forward is indefensible and irresponsible.

The residents of Eudora have nothing to gain from this "expansion" and everything to lose. Hamm said themselves at the Douglas County Metropolitan Planning Commissioners meeting, there would be no additional jobs (in fact some crews, such as the Buckley employees brought in to do the blasting, are not even from the area; as for the truckers, this quarry is not the only source of limestone in the area and they will continue to haul from other locations). Just adding up the amount of limestone excavated since 2010, the Eudora quarry has provided more than 3 million tons of rock,[1] largely for projects outside our area. We've given plenty. And if one paid any attention to letters from the neighbors of the quarry, they would see that some have been forced to give much more. I think most of the people who live nearby would say, however politely, that Hamm has been less than a good neighbor (particularly since it was sold in 2009), their homes and livelihoods, livestock, fields, their security and daily lives have been detrimentally impacted by the quarry's operation for many years.

And what will the citizens of Eudora have when this quarry is exhausted? In their permit application, they added pretty PowerPoint slide shows for their mining reclamation awards of much smaller quarries only 10-12 feet deep. But in reality, as Hamm's own reclamation plan states, the townsfolk of Eudora will have, at best, a couple of deep and dangerous quarry pits. And at worst? The people who pay the highest taxes in Douglas County may very well end up having a landfill next to their homes and schools. Why would Summit Materials, the corporation that owns Hamm, carry the liability of possibly the deepest quarry pits in Kansas when they could be profiting from a lucrative dump right on the Johnson County line?

2. It feels as if an honest understanding of the permit's intention has been thwarted.

Because of what I've learned while researching this issue, the quarry and its previous Conditional Use Permits, the way this permit application has been handled, how much input from the public (and in particular neighbors) has been squelched, I've lost faith in the process, as well as some of the government entities tasked with representing the people and protecting our welfare. I hope that you will approach the upcoming proceedings with the judicious skepticism that it merits.



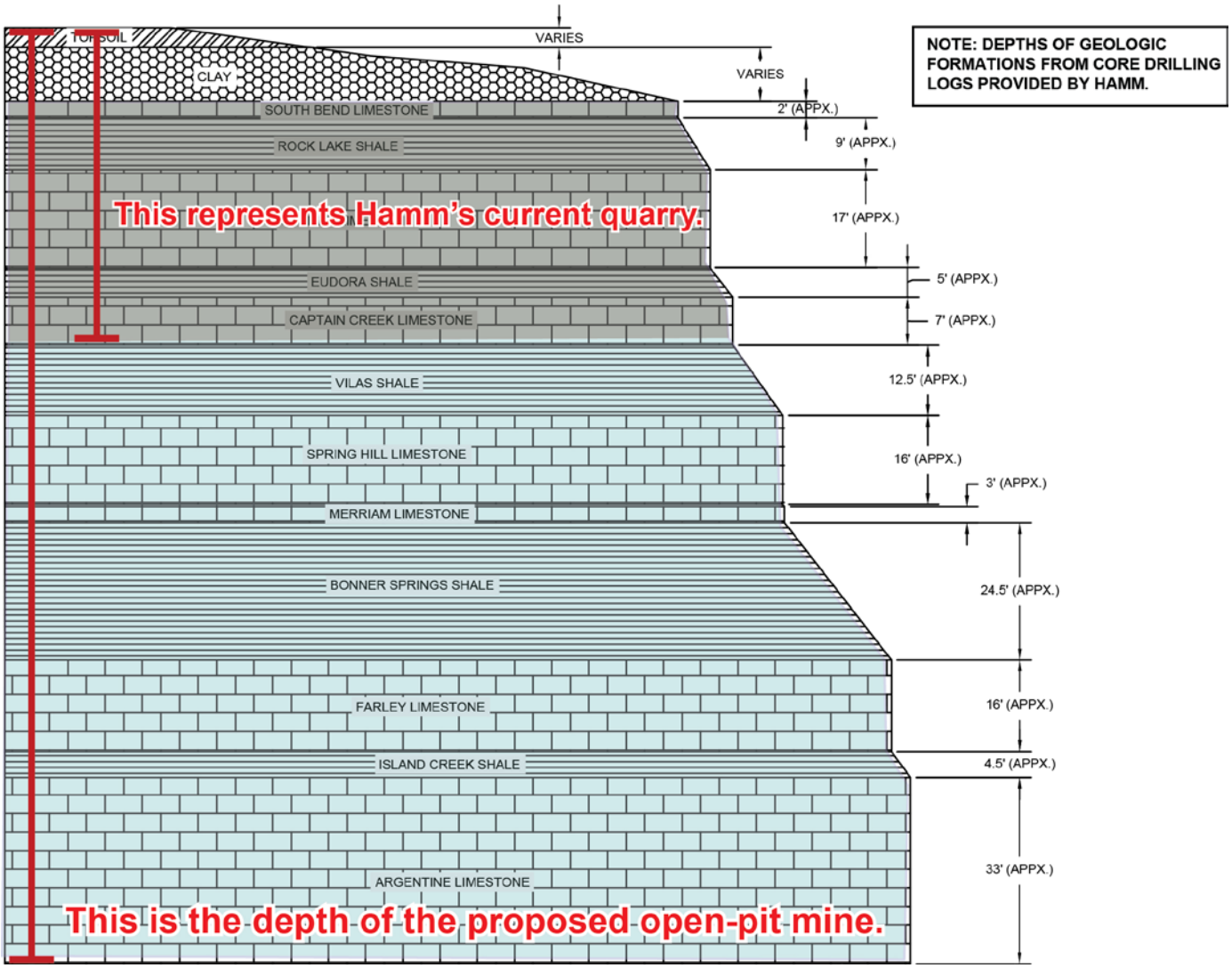
It's troubling that a precise explanation of Hamm's "expansion" has not been forthcoming – whether information has been intentionally distorted or the application process has been purposefully manipulated, I will let the evidence speak for itself – but, certainly, on the face of things, there is room for improvement.

There is the manner in which the permit was pushed through with the City of Eudora. As you are aware, the paperwork provided no quantifiable facts,[2] other than mentioning the addition of the Sheldon Parcel with some blurry scans of an old permit. The permit application, dated November 18, was reviewed by you on January 8. After that initial rush, Hamm's permit application was deferred three times until it was finally put before the Douglas County Metropolitan Planners on May 27 (during the short Memorial holiday week). In the interim, Hamm had added a lot more material to their application. I understand that you did not attend because you were under the impression it was just the addition of the Shelton acreage. But the Douglas County Planner, Mary Miller, indicated that she had reached out verbally to Eudora's planning consultant, Dave Knopik, for some clarification regarding your recommendations. According to Miller, the consultant said that you were under the impression that the application only extended the area and the time frame, but would not be increasing the amount of quarrying. Of the conversation, she said, "He noted that the Eudora Planning Commission and staff in general has a sensitivity to any increased trucking that may come thru the community of Eudora — or other increases in the intensity of the activity…" adding that the applicant is "just expanding what they are going to be able to do."[3]

It may be noteworthy that, just as you did not receive what was later provided to the Metropolitan Planners, the vague forms that you were given at the end of 2019 were not included in any subsequent material, not in the packets created for the Metropolitan Planners or the 279-page document for the Douglas County Commissioners; they only re-appeared after Barack Matite requested that they be added to the Commissioners' Agenda Packet for the July 8 discussion.

And, frankly, Hamm's Agenda Packet,[4] throughout its iterations, has not been not without problems. I would like to point out a few significant flaws: the title and summary of the request, the characterization of the location, and the implication that overall there was little community concerns regarding the quarry expansion.

The title of this permit application is called: "Consider an amended conditional use permit for the Hamm Eudora Quarry to expand into approximately 50 acres to the west…" There is no mention of the scale or depth until much later. On page 5, it states that the permit request seeks to 1) add the Sheldon parcel, 2) allow more acreage to be mined at one time, and 3) add hours of operation. There is mention of the necessity of a wider pit in order to mine the deeper layers of limestone, although that depth is not articuluated. There's a small picture (a larger version of which is on page 38 in the Blackstone material). *ibid (pg5)*

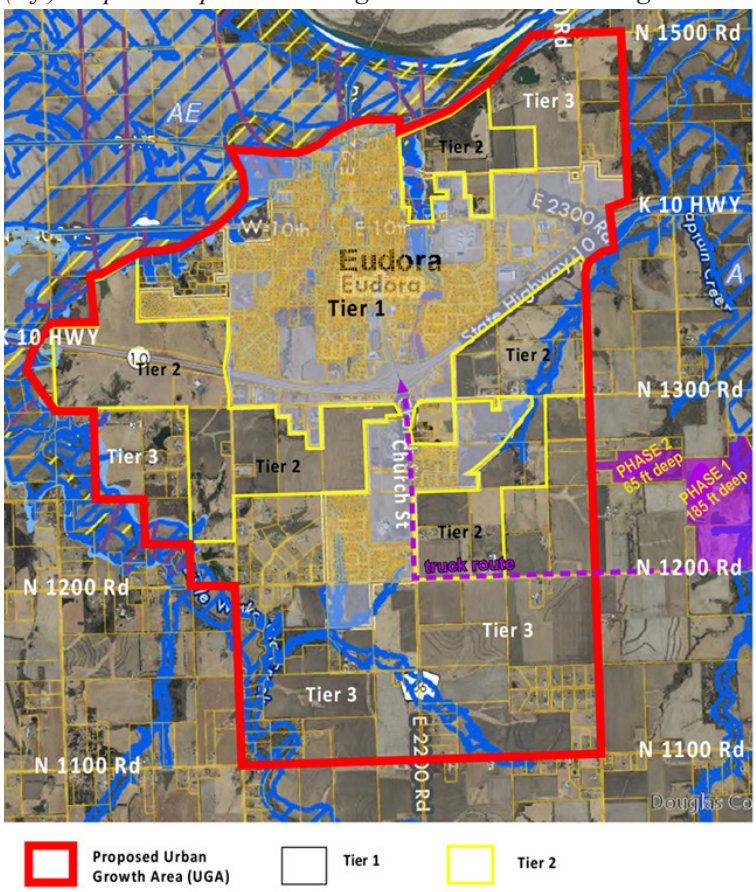


Then, in spite of recent collaboration[5] between Eudora and Douglas County to designate our projected Urban Growth Areas, the location of the quarry expansion was not characterized as a likely area for future growth *(see also agenda report, pages 6-8)*. Below is a side-by-side comparison of the map that our City Manager worked on with Douglas County officials and the map those same officials used in the permit report.

And finally, good-faith efforts were not made to inform the community of Eudora or provide them with appropriate representation in this process. Three-Mile Resolution 80-5 indicates that the County has a duty to: 1.) *notify AND arrange a joint hearing* between the city and Metropolitan-Douglas County Planners (not just seek recommendations; it is especially important during the current quarantine that adequate efforts are made to support an equitable process) and 2.) ensure that this joint review should take place *"following PROPER notice to the public."* Only after these obligations have been met should the Douglas County Commissioners "receive a recommendation *from EACH planning commission* for their consideration during the final review process".[6] Emailing a vague permit application to the City of Eudora does not seem to fulfill the spirit of this resolution.

At the end of the day, what I find most unsettling is the fact that almost nobody in our area knew anything at all about the expansion, let alone the shocking increase in the size and depth of Hamm's mining operation. In the past, the county has received letters from concerned property owners in the vicinity of the quarry, yet there appears to have been very little effort made to reach out to even those individuals.

(left) Map developed at meetings with Eudora and Douglas County. (right) Map used in report for Hamm's permit application.



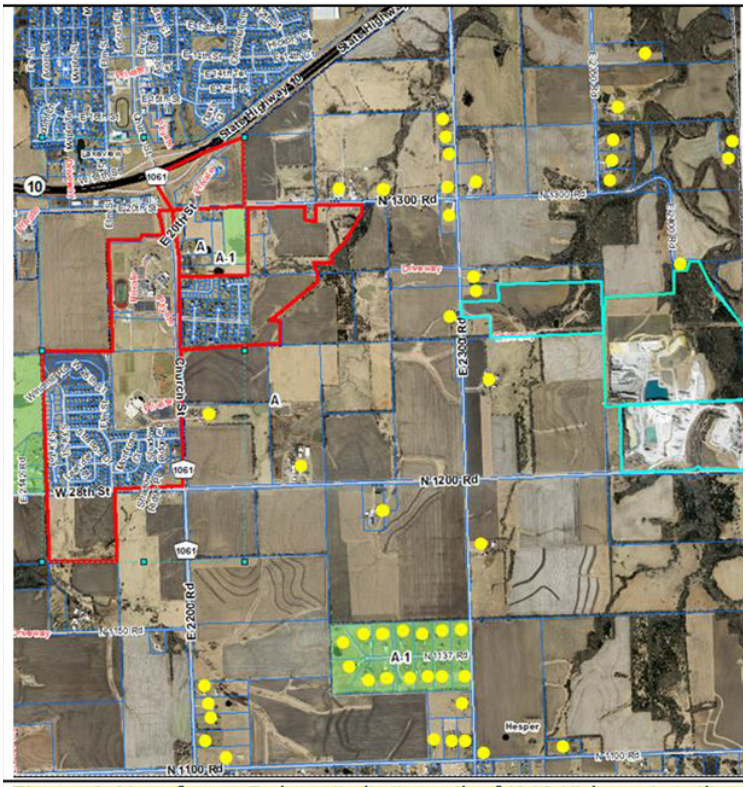


Figure 4. Map of area. Eudora city limits south of K-10 Highway is outlined in red, residences are marked with yellow dots and the subject property is outlined in blue. The area east of the quarry is within Johnson County.

This is compounded by the fact that the property owners on the other side of the road, just at the edge of Johnson County, who will also be greatly impacted by the expansion, have been completely left out of the process from the beginning. Even if that is a legal out, it's still not right. The permit report also said "The eastern portion of the Hamm Quarry is not being mined and the expansion is being requested along the west side of the quarry which would be further from the Johnson County properties." But Phase 1 is the 64-acre mine on the leased Neis Parcel! It's mind boggling.

I just want you to ask yourselves: Why has it gone like this?

3. Corporations are going to do what corporations do.

You also know by now that Hamm is actually owned by Summit Materials[7] and it has been since 2009. Hamm was their flagship acquisition and Kansas continues to be a source of great revenue. In 2019, Summit made $342 million, more than $44 million of that from Kansas. This quarry expansion might be bad news for us, but for them it means big money. And while the rest of us get on with our lives, working hard, taking care of our families and homes, a corporation has the motivation and manpower to amplify their influence. They are skilled at getting their way. Words become twisted. A theoretical hydrology evaluation based solely on statistically analysis gets referred to as a report or study, without the collection of any on-site data. Concepts like environmental impact and economic benefit are conflated. Political clout is wrapped in acts of good will.

At the July 8th meeting, Hamm's representatives solicited support from a few of Eudora's community leaders in praise of their donations and field trips. I don't begrudge the local people at all, this a well-documented strategy that businesses use to manipulate government processes. There is a large body of research that confirms the connection between corporate contributions and a given non-profit's expressed point of view.It's a thing. (Summit also used their donation to Bluejacket Trail in some of its promotional material for shareholders.[7]) And, why is the same company that owns a quarry so stingy with providing gravel for the road its trucks use, but so seemingly generous when it come to charitable giving? As a 2019 analysis from the Washington Post explains, "when a firm donates to a nonprofit group, it's associated with a two- to four-fold increase in the likelihood that the nonprofit group will comment on the same proposed rule as the firm. 'The magnitude of this effect is large,' the researchers wrote." [8] It becomes a matter of ROI: Return on Investment.

If you're still not sure of this company's attitude regarding this town, just keep in mind the words of their lawyer when faced with a meeting to "educate" the community of Eudora about the quarry expansion:

> *"I would note, that, more specifically, it's likely, you know, in our experience in these situations, that we're gonna get a lot of negative feedback from neighbors -- and in no way -- should our willingness to meet with Eudora, should it return a negative result, have a DISPOSITIVE result for our CUP application. I'd like to have the same sort of hearing we've had up to this point."*

I bet he does.

APPENDIX/FOOTNOTES

1. Hamm Lawyer's spreadsheet re rock levies - June 30, 2020.

Eudora Quarry Figures

Year	Tonage	Royalty	Royalty Paid
2010	96,872.00	0.10	9,687.20
2011	113,169.00	0.10	11,316.90
2012	87,119.00	0.10	8,711.90
2013	228,707.00	0.10	22,870.70
2014	241,137.00	0.10	24,113.70
2015	310,826.00	0.10	31,082.60
2016	377,761.00	0.10	37,776.10
2017	454,159.00	0.10	45,415.90
2018	517,298.00	0.10	51,729.80
2019	584,713.00	0.10	58,471.30
Total	3,011,761.00		301,176.10

2. The main page of the permit application (CUP-19-00568) sent to the Eudora City Planners in 2019.

City of Lawrence Douglas County
PLANNING & DEVELOPMENT SERVICES

SHEET A
(Type or Print)

Lawrence Douglas County Metropolitan Planning Office
6 East 6th Street, P.O. Box 708, Lawrence, KS 66044
(785) 832-3150 Fax (785) 832-3160
www.lawrenceks.org

Please respond to the following questions to the best of your knowledge (Attach additional sheets if needed)

1. Reason for This Request?

Expansion of Mining operations.

2. What Is the Suitability of Subject Property for the Uses to Which it Has Been Restricted?

Property will extend reserves, which will allow Quarrying operations to continue.

3. To What Extent Will Removal of Restrictions Detrimentally Affect Nearby Property?

Hamm has been mining at this location since the late 80's. There will not be any significant changes, blasting and removal of material Will continue as they have in the past.

4. What Is the Relative Gain to the Public Health, Safety, and Welfare by the Destruction of the Value of the Petitioner's Property as Compared to the Hardship Imposed upon the Individual Landowners?

This will extend the life of the quarry by adding reserves. Which will help keep cost down to the local township and the county by Having material available in Douglas county.

5. How Does Your Request Conform with the Comprehensive Plan, *Horizon 2020*?

3. [at 1:37] Douglas County Metropolitan Planning Commissioners, video of May 27, 2020 meeting; review of Hamm CUP-19-00568 1:33 — 3:10. LINK: *https://www.youtube.com/watch?v=8mMM3wz50wY&feature=youtu.be*

4.

DOUGLAS COUNTY'S AGENDA ITEM REPORT: "Consider a Conditional Use Permit, CUP-19-00568, for an expansion of Hamm Quarry" pgs 1-22

(my highlights & notes)

AGENDA ITEM REPORT

Date: July 1, 2020
To: Board of County Commissioners
From: Denny Ewert,
Department: Planning Department
Subject: Consider a Conditional Use Permit, CUP-19-00568, for an expansion of Hamm Quarry, 1258 E. 2300 Rd.

THE DESCRIPTION DODGES THIS PERMIT'S ACTUAL *INTENTION,* WHICH IS TO CHANGE THE INTENSITY* AND DEPTH (AS COMPARED TO CURRENT EXCAVATION):
PHASE 1 = 64 ACRES, 185 FT DEEP (ON NEIS PARCEL,
PHASE 2 = 17.5 ACRES, 65 FT DEEP (ON SHELDON PARCEL)

BACKGROUND INFORMATION:

Please see attached staff report. * *TO DATE, HAMM HAS NOT BEEN FORTHRIGHT ABOUT "INTENSITY".*

The Conditional Use Permit was approved by the Douglas County Lawrence Metropolitan Planning Commission at their May 27, 2020 meeting.

LEVIES COLLECTED REVEAL DRAMATIC CHANGES IN AMOUNT OF ROCK SOLD.; AND NO TANGIBLE TRAFFIC STUDIES HAVE BEEN DONE (ALTHOUGH THEY COULD HAVE QUANTIFIED # OF TRUCKS).

The Board of County Commissioners will need to disclose ex parte communications.

RECOMMENDATION:

Consider approving a Conditional Use Permit, CUP-19-00568, to permit a 51.2 acre expansion* of Hamm Quarry and a revised reclamation plan at 1258 E. 2300 Road and revise various conditions of approval. ***(*Nothing about two pit mines 65-185 ft deep.)***

PLANNING COMMISSION REPORT
Regular Agenda – Public Hearing Item

PC Staff Report
5/27/20

AMENDED CONDITIONAL USE PERMIT FOR HAMM EUDORA QUARRY; 1213 E. 2400 ROAD AND 1258 E. 2300 ROAD (MKM)

THIS TITLE IS MISLEADING - THEY PURCHASED 50 ACRES, BUT IT WON'T BE MINED UNTIL PHASE 2.

CUP-19-00568: ***Consider an amended conditional use permit for the Hamm Eudora Quarry to expand into approximately 50 acres to the west,*** 1258 E. 2300 Road, and amend the conditions and restrictions of use. Submitted by Hamm Inc., for N. R. Hamm Quarry Inc., Katherine L. Neis, and Hamm Inc., property owners of record.

STAFF RECOMMENDATION: The conditional use permit application requests three revisions to the approved permit. Staff recommends the following action on each request based on the findings of fact listed in this report and subject to the conditions of approval noted below and the revised conditions and restrictions of use provided in Attachment A:

1. ***Approval of the request to expand the quarry into the approximately 50 acre parcel to the west,*** * 1258 E. 2300 Road.
2. Approval of the request to increase the maximum area that can be 'open, mined, and extracted from' from 30 acres to 50 acres. (A HINT, BUT NOT ACTUAL INFORMATION)
3. Denial of the request to increase the production and extraction hours from 7 a.m. to 5 p.m. Monday through Saturday to 6 a.m. to 8 p.m., but approval of the following changes:
   - Production and extraction hours: 7 a.m. to 8 p.m. Monday through Friday, keeping the Saturday hours of 7 a.m. to 5 p.m.
   - Sales and removal hours: 6 a.m. to 7 p.m. Monday through Friday, 6 a.m. to 4 p.m. on Saturday

Condition of Approval

The operator shall apply for and obtain a floodplain development permit for the work which occurred in the floodplain on the Neis parcel. The floodplain development permit must be obtained prior to the release of the conditional use permit.

THE ADDITION OF PROPERTY DOES NOT ADEQUATELY EXPLAIN THE INTENDED USE OF THIS PERMIT. PHASE 1 (185 FT DEEP) IS ON EXISTING NEIS PARCEL; THE 50-ACRE SHELDON PARCEL IS IN PHASE 2.

Attachments:
Attachment A – Recommended Revised Conditions and Restriction of Use
Attachment B – Operation and Reclamation Plan
Attachment C – Hydrologic Study of Quarry Area
Attachment D – City of Eudora Planning Commission Letter
Attachment F – U.S. Army Corps of Engineers 44 Permit
Information Attachment G – Reclamation Awards
Attachment H – Corporate Demonstration Bond

This was not actually a "study" but rather a theoretical evaluation based on precipitation statistics; no on-site data was collected.

By their own account, this "reclamation" will be several quarry pits up to 200 ft deep; the Hamm PowerPoint slide shows included here are about two small quarries 10-12 ft deep.

Reason for Request:

Applicant's response: *"Expansion of mining operations."*

By applying for the permit on November 18, they effectively circumvented the changes in zoning regs.

KEY POINTS

- This application was submitted prior to the adoption of the *Zoning and Land Use Regulations for the Unincorporated Territory of Douglas County* on February 19, 2020 and is being processed under the provisions and regulations of the 1966 zoning regulations, as permitted

in Section 12-301-6 of the 2020 revised zoning regulations. All code citations within the body of this report are to the 1966 zoning regulations.

- The application requests the following revisions to the conditional use permit: addition of an approximately 50 acre parcel to the quarry area, expansion of the 'area that can be open, mined, and extracted from' from 30 acres to 50 acres, and longer production/extraction hours. Each request is reviewed individually in this report.

- The current quarry consists of two separate parcels: the southern parcel, commonly referred to as the 'Petefish parcel', with approximately 71 acres; and the northern 124 acre parcel (the leased portion of a larger parcel), commonly referred to as the 'Neis parcel'. This application proposes the addition of a third parcel, the 51 acre parcel to the west, commonly referred to as the 'Shelton parcel'. (Figure 1) *That's not a forthright characterization of this permit application; to begin qualifying the true intent under "Phases" is misleading.*
- The changes requested with this conditional use permit will alter the phasing of the quarry. The Petefish parcel will remain the operations area and will be reclaimed following the conclusion of quarrying activities. A portion of the Neis parcel and the portion of the Shelton parcel east of the creek will make up Phase 1 of the amended permit. The area west of the creek on the Shelton parcel will make up Phase 2. Excluding the setbacks, Phase 1 will have 64.1 acres and Phase 2 will have 17.1 acres of mineable area *First mention of Phase 1 and 2, but still avoids explanation of depth.*
- A reclamation plan for Phase 1 and the eastern portion of the Petefish parcel were submitted with this application. The existing conditions and restrictions of use require that a reclamation plan be provided for Planning review and consideration by the Board of County Commissioners prior to quarrying activities moving into the next phase. This reclamation plan would meet that requirement, provided the property is reclaimed as shown on the plan. If reclamation varies significantly from that shown on the plan, a revised reclamation plan is required. Staff is recommending a revision to this condition so the reclamation plan is submitted and approved prior to any quarrying commencing on the subject parcel. This revised condition is discussed in detail in the report.

- The conditional use permit is currently regulated by 15 restrictions of use which were applied to the original permit. Revised restrictions of use and conditions of operation are proposed with this application and staff is recommending some additional changes. Staff's recommended revised restrictions of use and conditions of approval are discussed in this report and are identified in the revised conditions provided in Attachment A.

- The performance bond for reclamation is being re-evaluated with this review in light of information on varying performance bonds for reclamation in the county. Following a recent application for another quarry in the county, CUP-18-00570, and an evaluation of the performance bonds required with conditional use permits for other quarries in Douglas County, the Planning Commission indicated that performance bonds should be re-evaluated with any new or amended conditional use permits for quarries to be provide a more uniform requirement. *In truth, it is exactly adjacent to Eudora's designated Urban Growth Area. The county has this map (they worked on it with our City Manager), why didn't they use it in these materials?*
- The property is <u>within the three mile radius of the city of Eudora</u> and the plans and application were provided to the Eudora Planning Commission. The Commission provided a letter with their comments, Attachment D. The Eudora Planning Commission had three comments: 1) that the applicant meet or exceed the requirements listed in the conditions and restrictions of use; 2) that the applicant provide sufficient details regarding the restoration of the property or restrictions or conditions be applied to ensure that restoration will be completed in a timely

Eudora Quarry Figures	
Year	Tonage
2010	96,872.00
2011	113,169.00
2012	87,119.00
2013	228,707.00
2014	241,137.00
2015	310,826.00
2016	377,761.00
2017	454,159.00
2018	517,298.00
2019	584,713.00

*They continue to claim there has been -- and will be -- **no increase in intensity,** however levy amounts show rock sales have more than doubled in 5 years.*

fashion; and 3) that no increase in intensity or expansion of daily operations and volume of material extracted from the quarry site or change to the traffic ingress/egress will occur. These comments have been considered in the review of the application and are discussed in the report.

- The original conditional use permit, CUP-12-16-02 was approved by the Board of County Commissioners in 2003, but quarrying activity did not commence at that time, due to litigation. The review following the first year of operation for the quarry was conducted in 2015. = CUP-15-00165 -- then was was CUP-14-00064 in 2014

OTHER ACTION REQUIRED

- Approval of the conditional use permit by the Board of County Commissioners.
- Approval of a floodplain development permit for work which is now located within the floodplain prior to the release of the conditional use plans to Zoning and Codes.
- If the Board of County Commissioners approve the conditional use permit, issuance of a permit for the conditional use by the Zoning and Codes Office when all conditions of approval have been met.

Public Communications

Arthur Neis, owner of property north of the proposed addition to the quarry, contacted staff several times to discuss his concerns with the quarrying activity. The southern boundary of his property is shown with dashed lines in Figure 1. One of his principal concerns is the possible impact the quarry could have on the flow in the streams that run through his property. His concerns are discussed throughout the review in this staff report and are summarized in Attachment E.

This actually belongs under "Quarry Background" not "Project Summary"

Here it is just clutter which feels like more mind-numbing camouflage.

Project Summary ??

The current conditional use permit for the Hamm Eudora Quarry contains approximately 200 acres (128 acres on property leased from Katherine Neis and approximately 71.6 acres on the former Petefish Quarry). A large portion of the Neis property located east of Coleman Creek is designated as a 'non-quarrying' area. Approximately 90 acres on the Neis parcel are within the quarrying area, including setbacks. The Petefish parcel was a nonconforming quarry that was established prior to the adoption of the zoning regulations in 1966. This portion of the quarry was not included with the original conditional use permit but the permit included a condition that the Petefish quarry would be reclaimed with the newly permitted quarry.

Figure 1. Quarry property

Petefish Parcel (71.6 acres)—Operation site

Neis Parcel (128 acres)—approximately

Shelton Parcel/proposed (51.2 acres)

Quarrying activity no longer occurs on the Petefish parcel and it is included in the conditional use permit as it contains the scale house and stockpiles as well as a settling pond. An area east of

A legible diagram doesn't appear until page 36...
When do they state depth?

Coleman Creek on the Petefish parcel was permitted to be utilized as a location for a temporary asphalt plant with the 2015 operation plan. A temporary asphalt plant will no longer be located here so this portion of the property is planned to be reclaimed in 2020. The portion of the Petefish parcel west of the creek contains stockpiles, the scale house, sediment pond, and employee parking. This portion will be the last area of the quarry to be reclaimed as it will be used throughout the life of the quarry. The stockpile area and the haul road on the Neis parcel will also be reclaimed with this final reclamation as these will be used for both phases.

Project summary begins here: but contains no mention of depth, other than tiny diagram below.

While the overall quarry area is approximately 200 acres (250 acres with the addition of the Shelton parcel), the actual area that can be mined from is less due to the setback restrictions applied with the conditional use permit. The approximate area that would be available for mining is 81.2 acres (64.1 acres in Phase 1 and 32 acres in Phase 2).

The application materials note that the reserves of marketable rock in the Eudora quarry have been nearly depleted but core testing indicates that deeper reserves are present in the Farley and Argentine ledges. (Figure 2). The applicant noted that in order to mine at this deeper depth, a larger open area is necessary to allow maneuvering room and also to maintain the stability of the deeper pit.

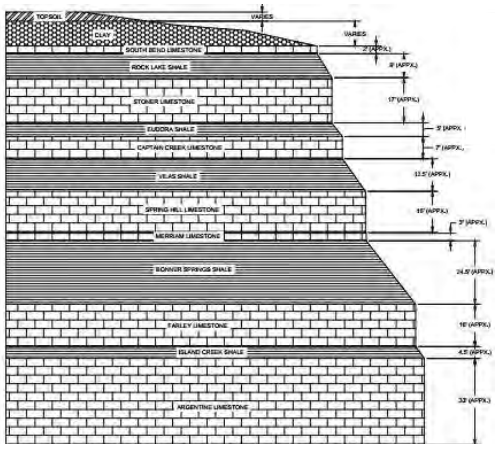


Figure 2. Cross section showing geologic formations in the area. New reserves are available in the Farley and Argentine ledges.

The application is requesting the following amendments to the Hamm Quarry conditional use permit:

"a larger open area is necessary", as in a pit-mine?

1. The addition a a50.7 acre parcel, Shelton parcel, at 1258 E. 2300 Road. The various parcels of the quarry are shown in Figure 1.

2. Revision of Condition No. IX to increase the area that can be open and mined from a maximum of 30 acres to 50 acres.

3. Revision of Condition No. III to expand the hours of production and extraction from 7 AM to 5 PM, Monday through Saturday to 6 AM to 8 PM, Monday through Saturday.

QUARRY BACKGROUND

7/9/2003: Board of County Commissioners approved and adopted findings of fact on July 9, 2003 for CUP-12-16-02, conditional use permit for the Hamm Eudora Quarry, containing the Petefish and Neis parcels. The findings of fact noted that the existing quarry, the Petefish parcel, was included in the conditional use permit only so that it would be reclaimed with the remainder of the quarry.

NOT RECLAIMED AS YET... *SEE NEXT PAGE... (2014 CUP-14-00064 Set up Petefish for Asphalt Plant, Scale House, Stockpile.)

7/8/2008: The conditional use permit plan was released to the Zoning and Codes Office for issuance of a permit following conclusion of litigation. The action letter noted that a screening and fencing plan needed to be submitted and approved prior to commencement of operations.

10/28/2009: The first 5 year compliance review as required in the restrictions of use. Quarrying activity had not yet commenced so the review focused on the restrictions of use

PLEASE SEE LAST PAGE.

which had been met and those restrictions or conditions that needed to be completed prior to the commencement of quarrying.

4/16/2014: The second 5 year compliance review (named CUP-14-00064 for tracking purposes) was provided to the County Commission. The Commission approved the screening and fencing plans, reclamation plan for the existing quarry (Petefish), revised access locations, and accepted the 5 year compliance review.

That would be the Asphalt-Plant style of reclamation…

9/3/2015: 1st year of operation review as required in the restrictions of use (named CUP-15-00165 for tracking purposes) was provided to the County Commission. The Commission approved a revised reclamation plan allowing an additional 5 acre stockpile area in the location of Cuts 1 and 2.

Ongoing: CUP-19-00492, 5 year review, due in 2020. This review is ongoing and is not associated with the current application. ***(Because the review hasn't been done.)***

Current: CUP-19-00568, an amended conditional use permit application requesting to expand the area of the quarry, increase the area that can be opened and mined from, and extend operating hours.

As the quarry property is bounded on the east by the Douglas/Johnson County border, notice of the Planning Commission meeting and public hearing for this conditional use permit was mailed to property owners within the notification area in Johnson County and the application and plans were provided to the Johnson County Planning Office for comments. At the time this report was written, no comments had been provided from Johnson County residents or the Johnson County Planning Office. The property is within the 3 mile radius of the city of Eudora; therefore, the plans and application were sent to the Eudora Planning Commission. They provided a letter which is included as an attachment and their concerns are discussed in the following review.

New mining parcel would be one mile east of Church St. Plans provided to Eudora contained few details.

I. ZONING AND USES OF PROPERTY NEARBY

Current Zoning and Land Use:	AG-1 (Agricultural) district with F-F (Floodway Fringe) overlay district; *Mining and Excavation,* permitted with a conditional use permit, with *Agriculture* and woodland.
Surrounding Zoning and Land Use:	To the north: AG-1 (Agricultural) district with F-F (Floodway Fringe) overlay district; *Agriculture*, *Detached Dwelling,* and woodland Yup. Nothing but the UGA of a city one mile away. To the west: AG-1 (Agricultural) and AG-2 (Transitional Agricultural) districts with F-F (Floodway Fringe) overlay district; *Agriculture* and *Detached Dwellings* To the south: AG-1 (Agricultural) and AG-2 (Transitional Agricultural) districts and F-F (Floodway Fringe) overlay district; *Agriculture* and *Detached Dwelling* To the east; RUR (Johnson County: Rural, Agricultural uses and single family dwellings, 10-acre minimum lot size) district; *Agriculture* and a single-family residence (Figure 3)

*No one in Eudora was notified because planning commissioners took Hamm's word that they were just expanding the boundaries of the existing mining operation.
(see minutes from theirJan 8 mtg.)

The nearby area consists primarily of agricultural land uses, rural residences, and woodland. Figure 3b shows the location of the nearby residences and the required quarry setbacks.

Staff Finding – Most of the land in the nearby area is zoned and used for agriculture. However, there are residential land uses nearby which are considered when establishing setbacks and restrictions of use. The applicant is proposing a 500 foot setback from all residences, in addition to other setbacks measured from the quarry property line. These setbacks will be discussed later in this report. With proper setbacks and conditions restricting the use, the changes requested with this application should be compatible with the existing nearby zoning districts and land uses.

Hmm, except for subdivisions, schools, rec trail, park, and a retirement home... one mile west.

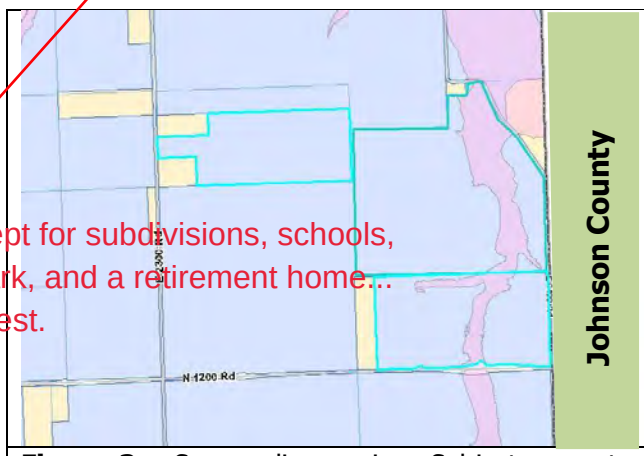


Figure 3a. Surrounding zoning. Subject property outlined.

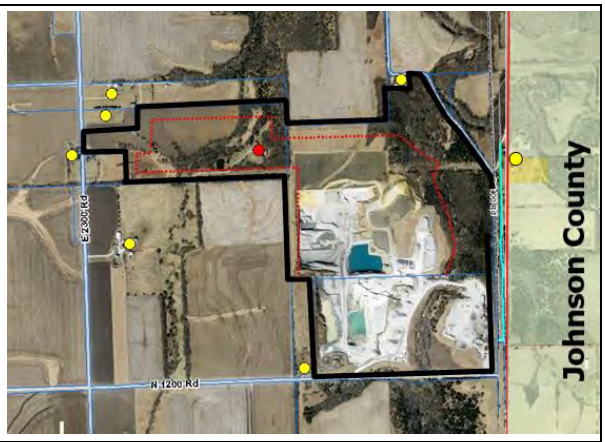


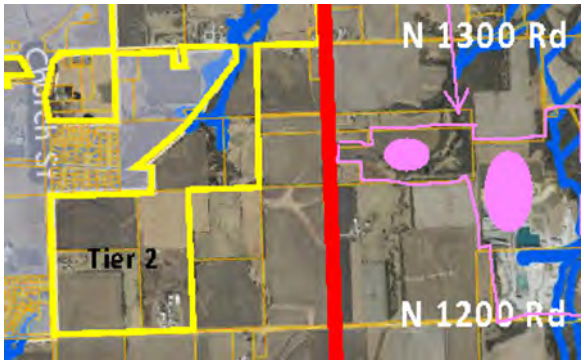
Figure 3b. Surrounding land use. Residences marked with yellow dots, those owned by Hamm, Inc. marked with red. Approximate setbacks shown in red.

II. CHARACTER OF THE AREA

The quarry property is located within 3 miles of Eudora's city limits. Properties in the area that are within the Eudora city limits are outlined in red in Figure 3. For the purpose of this review the 'area' is considered the area bounded by E. 2200 Road (Church Street) on the west, N. 1100 Road on the south, and approximately ¼ mile south of K-10 Highway to the north. (Figure 4) This is a rural area in close proximity to the Eudora city limits; therefore, there is a mix of agricultural, rural residential, and urban residential uses in the area. The Eudora High School is just west of E. 2200 Road (Church Street). The mix of uses establishes the character of this area.

"Just west" if one means the High School AND Middle School, (plus the Eudora-DeSoto Tech Ed center, sports facilities, and the performing arts center are ON Church Street, but yes, on the west SIDE of the street.

Access to the plant site is taken from N. 1200 Road. A limited quarry access at the existing access on E. 2300 Road is proposed with this application. The limited access would include quarry management personnel, surveying crews, and third party crews such as seismology or blasting crews and would serve as a field access while the site is being farmed. No large quarry equipment or haul trucks would be allowed to use this limited access point. The township trustee noted they had no concerns with the limited use of the access point on E. 2300 Road but noted that no heavy quarry equipment or trucks would be permitted. This requirement is included in the recommend restrictions or conditions of use.



Throughout 2019 and early 2020, the Douglas County Commissioners and the Planner had worked extensively with the City of Eudora to work up a zoning map, laying out the Urban Growth Area (UGA) and tiers for residential growth. (At right, cropped, with mining shown in lavendar.)

Many details have been changed over the years thru additional permits (blasting times, reclamation plans, etc.)

But apparently the truck route going down Church Street* is sacrosanct.

*Church Street, aka E 2200 Road / Route 1061.

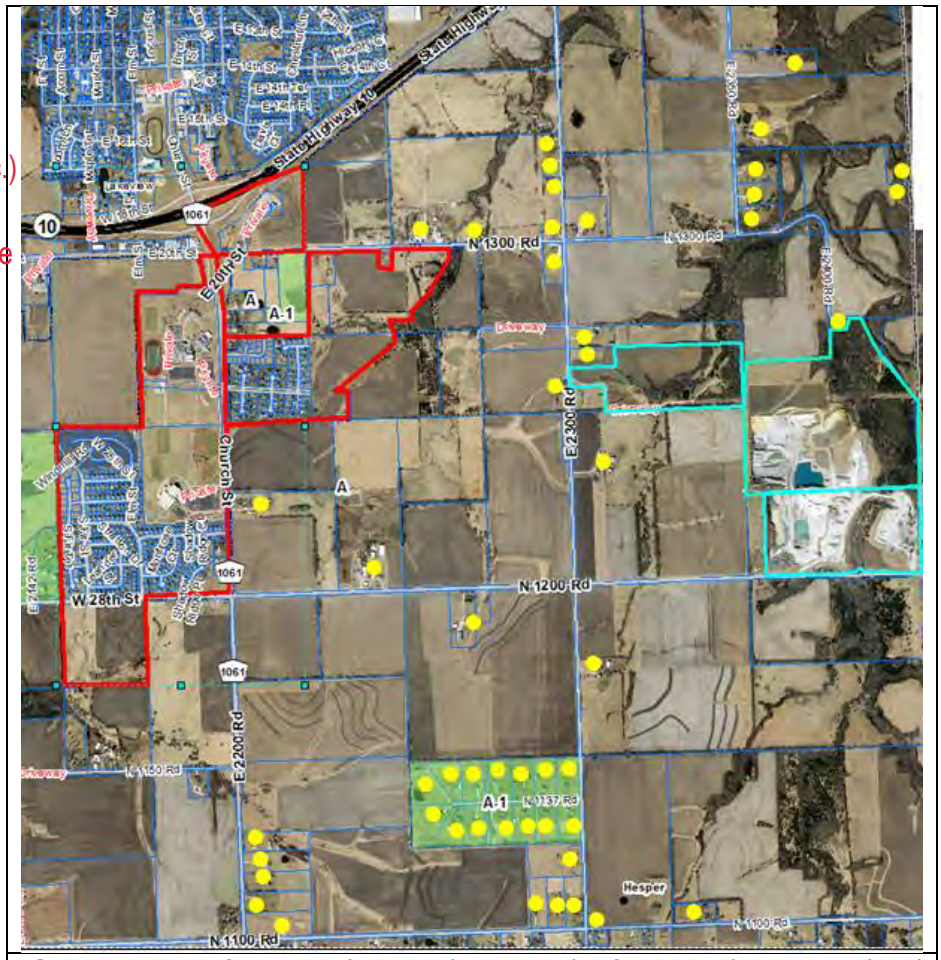


Figure 4. Map of area. Eudora city limits south of K-10 Highway is outlined in red, residences are marked with yellow dots and the subject property is outlined in blue. The area east of the quarry is within Johnson County.

The following truck route was established with the approval of the conditional use permit for the Hamm Quarry in 2002: N. 1200 Road west to County Route 1061/E. 2200 Road (Church Street). (Figure 5) No changes are being proposed to the truck route. County Route 1061/E. 2200 Road is a principal arterial that connects to K-10 Highway to the north and various principal arterials to the south.

The area to the east of the quarry, within Johnson County, is also a mix of agricultural and residential uses. The eastern portion of the Hamm Quarry is not being mined and the expansion is being requested along the west side of the quarry which would be further from the Johnson County properties.

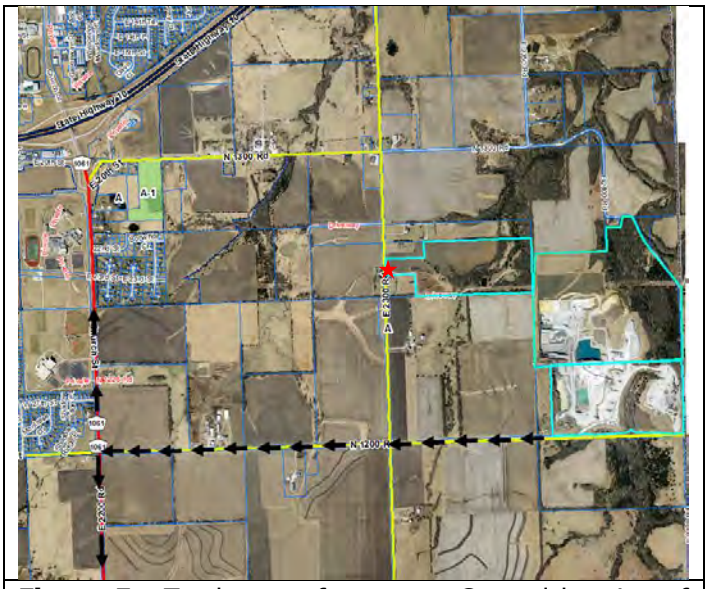


Figure 5. Truck route for quarry. General location of limited access point on E. 2300 Road marked with star.

The property contains floodplain as shown in Figure 2. When the conditional use permit was approved in 2002, floodplain was located on the property as shown in Figure 6a. The county hadn't adopted floodplain management regulations at that time, so a floodplain development permit was not required. The quarrying activity was kept out of the floodplain with the exception of a haul road. The 2010 revised floodplain maps show floodplain extending into the quarried area. (Figure 6b) Per the floodplain management regulations which were adopted in 2015, a floodplain development permit is required with this amended permit for the portion of the quarry that lies within the floodplain. The County Floodplain Administrator determined that stockpiles in this floodplain area would be acceptable as they would provide risk only to the quarry; but required that a setback be added for the floodplain adjacent to Coleman Creek as shown in Figure 6b. This change has not yet been made to the plans and is listed as a condition of approval.

Hydrology report has a text box over floodplain that extends into quarry.

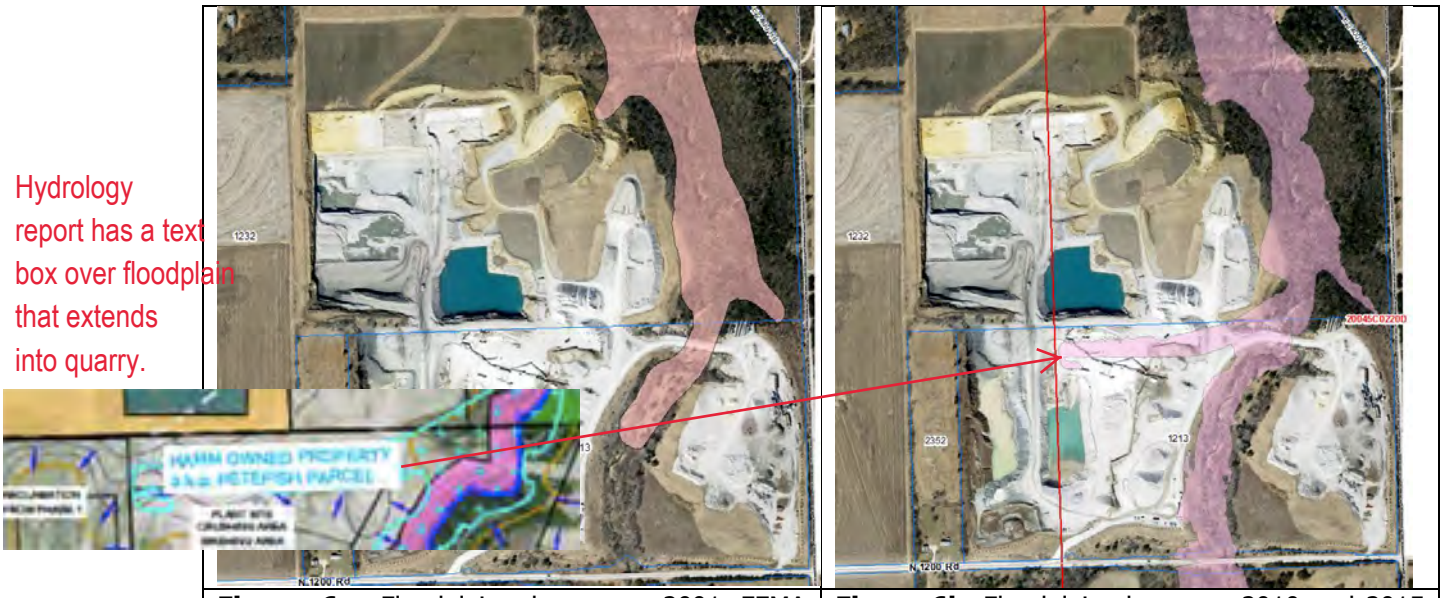


Figure 6a. Floodplain shown on 2001 FEMA Federal Insurance Rate Maps

Figure 6b. Floodplain shown on 2010 and 2015 FEMA Federal Insurance Rate Maps

The following conditions were applied with the original conditional use permit to ensure compatibility with the character of the surrounding area:

Condition XI. Site Access and Road Restrictions

This condition prohibited direct access to County Road E. 2400 Road and restricted the access for transport truck traffic and hauling of rock to N. 1200 Road. A truck route was established to ensure heavy truck and equipment traffic used the N. 1200 Road to access the principal arterial, County Route 1061/E. 2200 road. This condition also required the quarry to provide materials and construction assistance to improve N. 1200 Road from E. 2400 Road to County Route 1061/E.2200 Road (Church Street). These improvements were made prior to the commencement of quarrying activity. Other road maintenance provisions included dust control for N. 1200 Road during periods of quarry activity and the payment of a 10 cent per ton of rock hauled from the permitted property. The County Engineer indicated that these road improvements and provisions have been met. He indicated that the fees provided by the quarry were used for 2019 improvements to the intersection of N. 1200 Road and County Route 1061/E.2200 Road (Church Street).

This condition also notes that Hamm Quarries shall take the lead to communicate and cooperate with the Douglas County Public Works Director and Eudora city and school officials on traffic controls on County Road during periods of quarry activity.

In addition to these conditions/restrictions, operating hours, blasting hours, seismograph monitoring of blasting, and operational setbacks were established to minimize the impact on nearby properties. A change is being proposed to the operating hours and this is discussed in detail later in this report.

Staff Finding – The quarry is located in a rural area in close proximity to the city limits of Eudora. A platted rural residential subdivision is located in the area along with several rural residences. Some of the nearby properties within the Eudora city limits are undeveloped, while others are developed with residential neighborhoods. The public high school located just to the west of E. 2200 Road/Church Street was developed following the approval of the quarry conditional use permit. While there are off-site impacts associated with mining uses, quarries can be compatible with nearby land uses provided adequate conditions and restrictions of use are applied. The truck route will keep quarry truck traffic on the higher classification road system and should prevent traffic through the residential areas. The conditions and restrictions of use proposed with this permit should result in a project that, while not without impact, is compatible with nearby land uses.

III. SUITABILITY OF SUBJECT PROPERTY FOR THE USES TO WHICH IT HAS BEEN RESTRICTED

Applicant's response:
"Property will extend reserves which will allow quarrying operations to continue."

The application proposes the addition of a new parcel, referred to as the Shelton parcel, to the quarry area. This parcel is well suited for agricultural uses and is currently being used for agriculture. Due to the reserves of limestone and the infrastructure put in place for the adjacent quarrying activity, the Shelton parcel is also well suited for the proposed quarry use.

Portions of the Shelton parcel contain soils classified by the NRCS (Natural Resource Conservation Service) as 'Prime Farmland' but is not classified as soil types I or II, which the comprehensive plan identifies as 'High Quality Soils'. (Figure 7) The prime farmland designated area along E. 2300 Road is within the operation setback and will not be mined. The prime farmland designated areas along the creek are smaller, fragmented areas. Consideration of the quarry application in light of the prime farmland requires an evaluation of the natural resources present on the site. The property will be returned to agricultural uses following the completion of the quarry activity, but the reclaimed agricultural land is not expected to be retain the characteristics of prime farmland. Given the small, fragmented nature of the prime farmland areas (approximately 3 acres on the west side of the creek and 4 acres on the east side) the preservation of the prime farmland may be of lesser importance than the extraction of the limestone resources. Following reclamation, the land will be suitable for agricultural land uses even though the prime farmland designation may be lost.

The property within the existing quarry on the Neis parcel contains mining, processing, and stockpile areas and is not currently suitable for any other use. This property will be reclaimed for agricultural purposes following the quarrying activity.

Figure 7a. Land classified as Prime Farmland by the NRCS is shown in green. (Shelton parcel outlined)

Figure 7b. Land classified as High Quality Agricultural Soils (Class I and II) shown in orange.

Staff Finding – A conditional use permit does not change the base, underlying zoning. The suitability of the property for agricultural or other uses permitted in the AG-1 (Agricultural) district will not be altered. The proposed 50 acre addition is suitable for the uses permitted in the A (Agricultural) zoning district and will continue to be used for agriculture before and after quarrying. The quarrying activity will result in the loss of 2 areas of prime farmland (3 acres and 4 acres each); however, these small fragmented areas of prime farmland are not seen as a critical resource. The property, due to the reserves of limestone and the infrastructure put in place for adjacent quarrying activity, is also well suited for the proposed quarry use. The current quarry property is not suited for any other use permitted in the Agricultural district as it is currently being mined, but it will be suitable for agricultural purposes when reclamation is complete.

IV. LENGTH OF TIME SUBJECT PROPERTY HAS REMAINED VACANT AS ZONED

Staff Finding – County Zoning Regulations were adopted in 1966; the property within this application has been zoned "A (Agricultural)" since that adoption. The proposed 50 acre addition to the quarry is currently used for agricultural purposes and contains a residence. Hamm Inc. owns this residence and intends to demolish it prior to the quarrying activity. The Neis parcel was used for agricultural purposes until the approval of a conditional use permit, CUP-7-2-90, for a quarry in 1993. Quarrying operations began on this portion in 2014. The southern portion of the quarry, commonly referred to as the Petefish Quarry, was in operation prior to 1966.

V. EXTENT TO WHICH REMOVAL OF RESTRICTIONS WILL DETRIMENTALLY AFFECT NEARBY PROPERTY

Applicant's Response:
"Hamm has been mining at this location since the late 80's. There will not be any significant changes, blasting and removal of material will continue as they have in the past."

Section 19-01 of the County Zoning Regulations recognize that, "*certain uses may be desirable when located in the community, but that these uses may be incompatible with other uses permitted in a district…when found to be in the interest of the public health, safety, morals and general welfare of the community may be permitted, except as otherwise specified in any district from which they are prohibited."* The proposed use falls under Use No. 5, *Mining and Excavation,* listed in Section 19-4 Conditional Uses Enumerated, of the *Douglas County Zoning Regulations.*

Mining is an activity which can have a significant impact off-site due primarily to the noise associated with production and heavy truck traffic. Increasing the borders of the quarry would extend the quarry activities and off-site impacts to the west. The applicant is proposing a 500 foot setback for mining and blasting from nearby residences, similar to the previously permitted portion of the quarry (Figure 8). Due to the irregular shape of the parcel, the 500 foot residential

setback is less restrictive than the 150 foot perimeter setback, and does not require the protection of any additional quarry area. The owners of these residences have not contacted the Planning Office regarding the conditional use permit application. A 50-foot wide setback will be provided on each side of the creek through the property, which is a tributary of Coleman Creek, maintaining a 100-foot stream corridor to minimize the impact of the quarrying activity on the stream.

Figure 8. Setbacks proposed for the expanded quarry area, Shelton Parcel. 150 foot setback along the perimeter and 500 foot setback from existing residences.

Traffic

No changes are being proposed to the truck route, but the existing access point on E. 2300 Road is planned as a 'limited access' to allow farm access to the Shelton parcel and limited quarry access. This limited access, discussed later in this report, would allow smaller vehicles to access the Shelton parcel directly but would not create additional traffic for the area.

Increase in Production Hours

The conditional use permit requests that production and extraction operating hours be extended from the current hours (7 a.m. to 5 p.m. Monday through Saturday) to 6:00 a.m. to 8:00 p.m. Monday through Saturday. The applicant noted the extended production and extraction hours would allow them to be more competitive with the other large quarry in the county.

Evaluation of this request requires that consideration be given to nearby land uses as production and extraction activity in the early morning or evening hours would involve the use of lighting and audible warning systems on the vehicles which could have an impact on nearby properties. The Neis parcel is more isolated than the proposed Shelton parcel, with one residence to the north that is separated from the quarrying activity by woodland.

Big Springs Quarry and the Hamm Eudora Quarry currently have similar overall operating hours, with the Hamm Eudora Quarry with 9 more hours a week, as shown in the following table. Increasing the production and extraction time as requested would result in 174 hours of weekly operation time, or 33 hours more than Big Springs Quarry. The overall operating hours are very similar; however, the distribution of the hours between sales and removal and production and extraction varies significantly. In order to maintain the intensity of the use, any increase in production and extraction hours should be balanced with a decrease in sales and removal hours, with no increase in the total operating hours. The following table shows the comparison of the two quarries operating hours, the hours proposed with the conditional use permit, and staff's

recommendation. Staff's recommendations that vary from the current operating hours are highlighted.

Activity	Big Springs	Hamm-Eudora Current and Proposed	Hamm-Eudora Staff Recommendation
Sales and Removal	6 a.m. to 6 p.m. Mon.-Fri. 7 a.m. to noon Sat.	6 a.m. to 9 p.m. Mon.- Sat.	*6 a.m. to 7 p.m. Mon.-Fri.* *6 a.m. to 4 p.m. Sat.*
Weekly Total	65 hours	90 hours	75 hours
Production and Extraction	6 a.m. to 10 p.m. Mon.-Th. 6 a.m. to 6 p.m. Fri.	7 a.m. to 5 p.m. Mon.-Sat. *Proposed:* *6 a.m. to 8 p.m. Mon.-Sat.*	*7 a.m. to 8 p.m. Mon.-Fri.* *7 a.m. to 5 p.m. Sat.*
Weekly Total	76 hours	60 hours *Proposed: 84*	75 hours
Total Weekly Operating Hours	141 hours	150 hours *Proposed: 174 hours*	150 hours

The recommended changes to the operation hours will:

1) Maintain the overall operating hours of 150 hours;
2) Maintain the starting time for the 'production and extraction' activities rather than allowing it to start an hour earlier;
3) Reduce the 'sales and removal' activities with fewer evening hours;
4) The current conditions allow the operator to request additional production and extraction hours from the Board of County Commissioners when needed. This condition will be revised to also allow additional sales and removal hours, when approved by the Board of County Commissioners.

In staff's opinion, the recommended operating hours would create a more similar situation to that permitted at the other large quarry while maintaining the intensity of the use by shifting hours from sales and removal to production and extraction but not increasing the overall hours of the quarry. No comments were received from nearby property owners, so staff is unaware of any issues with the current operating hours.

Ponds

Each phase will be reclaimed with a pond, which will vary in location and size depending on the actual amount of limestone that is removed. With the deeper quarrying operations, the pond that will remain on Phase 1 will be approximately 185 feet deep and the pond on Phase 2 will be approximately 60 feet deep. The reclamation plan shows the land being graded with no slopes over 3:1. This 3:1 slope would be maintained on the pond banks for approximately 25 feet below the planned water level in the Phase 1 pond and approximately 5 feet below the planned water level in the Phase 2 pond.

The applicant provided the attached hydrologic study which analyzed the various factors which would affect the time needed for the ponds to fill. The County Engineer reviewed the study and noted that the ponds are expected to fill to the planned water level within 6 to 8 years. In the meantime, this pond could be a hazard to wildlife, livestock, or owners/users of the property due to the depth and the steepness of the sides. Until the pond has filled to the planned water level, the slopes of the side would not permit an exit for anyone or anything that fell in. The County Engineer recommended that the pits on both Phase 1 and Phase 2 be fenced with 'No Trespassing' signage until they have filled with water to the planned water level. As the study indicates it may

take 6 to 8 years for the ponds to fill up to the planned water level, where the more gradual slopes would permit an exit, the fence and signage would need to be maintained on the site beyond the life of the conditional use permit. The County Counselor suggested that Hamm Inc. enter into an agreement with the Board of County Commissioners to maintain the fencing and signage until such time that the water is at the planned water level. This agreement is required with the revised conditions and restrictions of use.

The restrictions of use for the quarry will remain as they've been since the original conditional use permit was approved in 2003; with the exception of conditions related to the requested changes and other conditions recommended by staff. The following requirements are being added to minimize detrimental impact to nearby properties:

- A lighting plan must be submitted and approved prior to the installation of permanent lighting
- Exterior lighting must be shielded to prevent off-site glare.
- A notification process for the pre-blast and hydrologic survey.
- The access point on E. 2300 Road would be restricted to 'limited quarry access'.
- An agreement must be executed which designates responsibility for fencing and signage of the ponds which will remain after quarrying until they have filled to the planned water level.

Staff Finding – The proposal requests the expansion of the quarry's boundary to include the approximately 50 acre parcel to the west which would result in a total quarry area of approximately 248 acres; to extend the hours of production from 7:00 AM to 5:00 PM Monday through Saturday to 6:00 AM to 8:00 PM Monday through Saturday; and to expand the area that can be open, mined and extracted from, from 30 acres to 50 acres. Conditions/restrictions of use which should minimize negative impact on nearby properties include a 500-foot setback from existing residences; the more restrictive 150-foot perimeter setback; pre-blasting surveys; lighting standards; limits on hours of sales, production, and blasting; established truck route; road maintenance provisions; and provisions for management of the remaining ponds until they've filled to the planned water level. While a quarry will have impacts due to the activity on the site and traffic to and from the site, measures proposed with the conditions and restrictions of use should mitigate the impact of the quarry on nearby land uses.

VI. RELATIVE GAIN TO THE PUBLIC HEALTH, SAFETY AND WELFARE BY THE DESTRUCTION OF THE VALUE OF THE PETITIONER'S PROPERTY AS COMPARED TO THE HARDSHIP IMPOSED UPON THE INDIVIDUAL LANDOWNERS

Applicant's Response:
"This will extend the life of the quarry by adding reserves which will help keep cost down to the local township and the county by having material available in Douglas County."

Evaluation of the relative gain weighs the benefits to the community-at-large vs. the benefit of the owners of the subject property.

The application is requesting that the maximum area that is allowed to be open and mined from at one time be expanded from 30 acres to 50 acres. The operator noted that allowing the larger mining area will allow the operator to safely reach and extract limestone from deeper deposits, which will increase the amount of reserves. This is in accordance with language in the 1966 Zoning Regulations which explains the purpose for permitting 'Mining and Excavation' uses:

> *"To assure that the continued development of all natural resources will be made possible through inclusion of known mineral deposits within zones reserved for their*

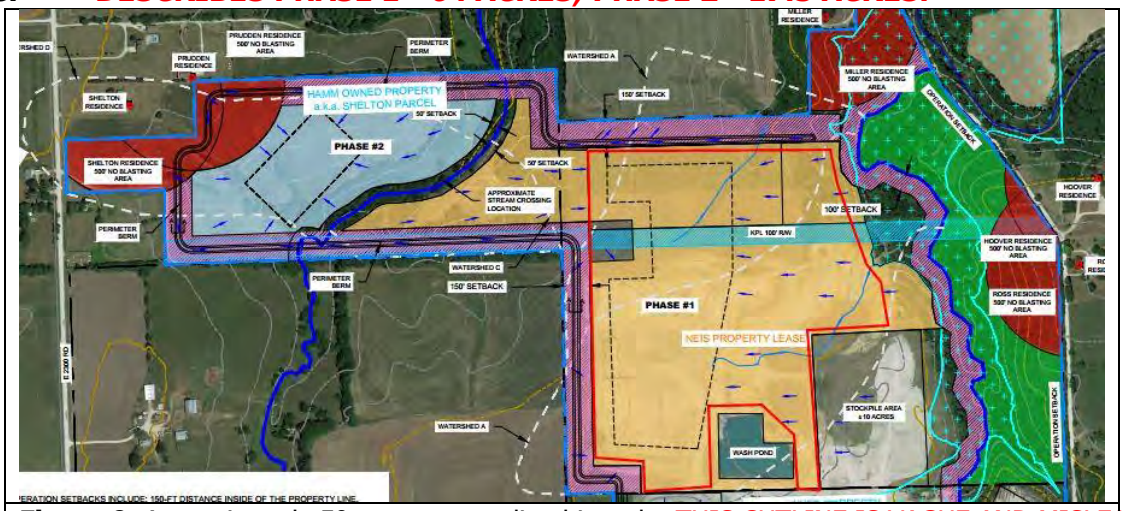
PERMIT APPLICATION WAS SUBMITTED NOVEMBER 18.

development and production, to guarantee that these sources will not be forever lost for the benefit of Douglas Count, Kansas." (Section 12-319-4.05 Zoning Regulations)

As the application was submitted prior to the adoption of the 2020 *Zoning and Land Use Regulations for Unincorporated Territory in Douglas County* , it is being processed under the standards of the 1966 Zoning Regulations.

MEANING "PLAN 2040"?

Restriction of Use No. VII(d) of the original permit states, *"No more than 30 acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site."* The applicant indicated that the larger mining activity area of 50 acres would provide the maneuvering room necessary for large equipment and would be needed to safely accommodate the mining activities necessary to reach the lower levels. The materials are located in ledges and the applicant indicated that a larger area was necessary for operating at this lower level safely. The reclamation plan shows the bottom of the pit being approximately 200 feet lower than ground level. Increasing the area permitted to be open at a time would increase operating capacity and efficiency. ***To illustrate this, the red outlined area in Figure 9 outlines the size of the 50 acre area that would be open and mined from in Phase 1. Phase 1 has a total of approximately 64.1 acres that can be mined from and Phase 2 has a total of 17.1 acres.*** ***DESCRIBES PHASE 1 - 64 ACRES; PHASE 2 - 17.5 ACRES.***



FINALLY DESCRIBES ACTUAL PIT MINE… BUT NOT IN THE CUTLINE OF DIAGRAM.

Figure 9. Approximately 50 acre area outlined in red - *THIS CUTLINE IS VAGUE AND MISLEADING.*

Expanding the quarry area to include the Shelton parcel would ***also*** permit the quarry to utilize more of the available limestone deposits in the area. The applicant indicated they anticipated completing quarrying per the time frame in the original permit (30 year time frame, expiration date: 2033). This is somewhat dependent on the market, but given an average demand the applicant feels they will complete quarrying on the properties within this permit in this time frame. *LAWYER TOLD WILLEY IT ADDED 5 YEARS? [at 59 on video]*

As the impacts of the quarry will be managed and limited with conditions and restrictions of use and the property will be reclaimed to a state that is suitable for agriculture, denial of the amended conditional use permit should have no beneficial impact on the public health, safety, and welfare. Approval of the conditional use permit would benefit the public health, safety, and welfare by insuring a local supply of road rock and construction gravel. One of the principal cost factors associated with construction rock and gravel is transportation; therefore, a local quarry should provide a more economical source.

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If the application is denied, it will not be possible for the applicant to deplete the limestone reserves in this area.

Staff Finding – Approval of the amended conditional use permit would allow an expansion to the 50 acre parcel to the west allowing the quarry to utilize additional limestone reserves; however, this would place quarrying activities nearer to the residences and other land uses in that area. Appropriate setbacks and conditions should be applied to mitigate the impact of the quarrying activities as much as possible, similar to that on the existing quarry.

Approval of the conditional use permit would also increase the area that can be open and mined from allowing the operator to access deeper deposits of limestone safely.

The deep ponds that would remain after reclamation could have a detrimental impact on the safety of people and animals in the area until they've filled up to the planned water level so that gradual slopes would allow people or animal to exit the pond. An agreement establishing the responsibility for maintaining the fencing and signage for these ponds until they've filled to the planned water level must be provided to ensure these safety features remain in place beyond the lifespan of the conditional use permit.

With appropriate conditions and restrictions of use, there would be no beneficial impacts from the denial of the application on the public health, safety, and welfare. The hardship of denial, to both the applicant and the community, would be the inability to access the limestone reserves that are located in the area. Transportation costs are a major portion of limestone/gravel cost and having in-county quarries benefits the community with lower cost construction materials.

VII. CONFORMANCE WITH THE COMPREHENSIVE PLAN

An evaluation of the conformance of a conditional use permit request with the comprehensive plan is based on the strategies, goals, policies and recommendations contained within *Plan 2040.*

Goal 1, Chapter 2, Growth & Development: *Protect and preserve rural character through compatible design, conservation, and strong growth management principals.*

Policy 1.4 recommends that land conversion from agricultural land to other non-agricultural land use be minimized.

The subject property currently contains a residence and woodland with a wooded stream corridor on the eastern portion of the property. The remainder is used for agricultural purposes. The residence will be removed prior to the quarrying activity and a 100-foot wide stream corridor buffer will be maintained. When quarrying is complete, the property will be reclaim3ed so that it is suitable for agricultural uses. The quarry use is compliant with the comprehensive plan in that it is a temporary use and the reclamation plan ensures that the land is returned to a rural state and would be suitable for agricultural uses.

Chapter 6, Natural Resources, states that *"Proper extraction and remediation of natural materials such as sand, gravel, timber, oil, gas, and stone, are essential to sustainable development activity."*

Goal 4, Natural Resources, "*Properly manage natural resources to ensure sustainability, marketability, and environmental quality for the community."*

Policy 4.2 "Recognize the need for the extraction of local natural resources to keep construction costs economically reasonable, while mitigating impacts to the environment and surrounding land uses in the evaluation of new extraction proposals."

The comprehensive plan identifies the need to accommodate the extraction of local natural resources while mitigating impacts to the environment and surrounding land uses. The restrictions of use applied to the original conditional use permit, when extended to the new parcel to the west, should adequately mitigate impacts to the surrounding land uses. Maintaining the 100-foot wide stream corridor should minimize the impact of the quarry on the stream through the property. The quarry will obtain and maintain all necessary regulatory permits from State and Federal agencies/departments to minimize the impact of the quarry on the environment.

Staff Finding – The request to expand the area within the conditional use permit and to allow an expanded area to be open and mined from are compliant with the recommendations in *Plan 2040* that recognizes extraction of natural resources as essential and recommends that the process be managed to minimize impacts on the environment and surrounding land uses. The conditions and restrictions of use, as revised, will minimize negative impacts.

STAFF REVIEW

This application is requesting three changes to the conditional use permit:

1) Expansion of quarry area to include a 50 acre parcel located to the west;
2) Expansion of area which is permitted to be 'open and mined from' from 30 to 50 acres;
3) Change to operating hours to allow production and extraction from 7AM to 5PM to 6 AM to 8 PM Mon.-Sat

1) Quarry Expansion

Adding the approximately 50 acre parcel to the west (Shelton parcel) to the quarry will allow the applicant to access the limestone reserves in the area. As noted earlier in the report, setbacks have been established to provide a separation from the nearby residences. The perimeter of the site would be screened with a six foot tall berm, and the site will be fenced to prevent trespassing. Where needed, a 3-foot tall berm will be installed on the interior side of the 6-foot tall berm to assist in drainage. Breaks will be provided in the berm to allow for the flow of the creek and to accommodate the current drainage from the south.

2) Increase in Area to be Open, Mined, and Extracted From

The last paragraph in Restriction of Use No. 9 (IX) states that *"No more than 30 acres may be open, mined and extracted from at any one time on the quarry site, exclusive of the plant site."* The applicant is requesting that this restriction be revised to permit 50 acres to be open at one time.

The applicant indicated that the request to have a larger mining activity area (50 acres) opened at one time would provide the maneuvering room necessary for large equipment and would accommodate the mining activities necessary to reach the lower levels. Ledges are created to access the lower deposits and the applicant indicated that a larger area would allow them to operate at these lower depths safely. Increasing the area permitted to be open at a time would increase operating safety, capacity, and efficiency. The plan shows that the depth of the pit would be 200 feet. The County Engineer indicated the larger area was reasonable for operations within this deeper pit.

The increase in area to be openly mined from would be beneficial for the operator in allowing them more room for maneuvering the quarry vehicles and equipment. This change may allow the quarry to operate more efficiently and safely.

3) Reclamation Bond

An important component of quarries is the reclamation of the property. Adequate provisions for completion of reclamation for this site is required. A reclamation plan for both phases was submitted with this application. The reclamation plan notes a range of variation for the final elevation of 10 feet higher or lower than shown on the plan. If the reclamation varies beyond this recommended range, a revised reclamation plan would need to be submitted for Planning review and Board of County Commissioners approval prior to quarrying beyond the 10 acres in the following phase.

In 2018, an application for an amended conditional use permit for another quarry in the county, the Big Springs Quarry, included a request to reduce the performance bond for reclamation. Staff reviewed the performance bonds required for various quarries in the state and found a disparity. Some conditional use permits required that the quarry pay the state required reclamation bond and others had varied bond requirements. A table comparing the performance bond for reclamation between several quarries in the state of Kansas and other states is included with this report as an attachment. A summary of the quarries within Douglas County is below.

Big Springs Quarry CUP-7-2-90, replaced by CUP-18-00570	Bond amount reduction from 400,000 per 10 acres to $40,000 per 10 acres approved 3/20/2019	$100,000 for plant site on Phase 1, for life of quarry. $50,000 for first site excavated—up to 10 acres—($5,000 per acre)
Eudora Quarry CUP-12-16-02	Approved 2003, 129 acres	As required by KS statutes. $600 per acre, provided to the state
Harrell Quarry CUP-1-3-75	Approved 1975, 160 acres	None In 2003, the bond started out at $1,000 an acre, but Hamm's lawyer requested lowering it.
Hamm-Buchheim Quarry CUP-11-5-76	Approved 1976, 73 acres	"an amount set by the BoCC" $1,500/acre for any land disturbed and not reclaimed
Globe Quarry	Pre-dated zoning, no CUP; 50 acres	As required by KS statutes. $600 per acre provided to the state

Table 1. Comparison of performance bonds for reclamation for quarries in Douglas County.

With the review and approval of the request to reduce the performance bond for the Big Springs Quarry, the Planning Commission indicated staff should review performance bonds for reclamation when other quarries amended their conditional use permits, or when new applications were submitted, in an effort to create more equitable conditions and restrictions for quarries with conditional use permits

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The Kansas Department of Agriculture, Division of Conservation oversees surface mining reclamation in Kansas. A $400 per acre bond is required for reclamation of sand/gravel operations and $600 per acre for all other minerals. Staff discussed this bond amount with Scott Carlson, Kansas Mined Land Reclamation Program Manager, and he noted that this figure is inadequate for reclamation and he has been working to increase the bond amount. A 2013 letter from Scott Carlson noting that Hamm's has a replacement Corporate Demonstration Bond of $2,196,000 on file for 3,660 acres or $600 per acre was included with the conditional use permit application. A 2020 letter was later provided which notes that

Hamm's has a Corporate Demonstration Reclamation Bond of $138,515,000 for 2,086 acres. (Attachment H) Staff contacted the County Counselor for information on the Corporate Demonstration Bond but he indicated he wasn't familiar this type of bond.

The quarry is in compliance with the current reclamation performance bond required with the conditional use permit; however, the cost of reclamation has not been estimated so it isn't possible to determine if the amount of bond provided the State of Kansas would be adequate to reclaim the property as shown on the reclamation plan.

In order to create a more equitable condition, Staff recommends that, as with the Big Springs quarry, the applicant contract with three reputable businesses qualified to do this type of work, for bids. These bids would be reviewed by staff and the amount for the performance bond for reclamation would be presented to the Board of County Commissioners for approval. The bond would need to be in place prior to the commencement of quarrying with the amended conditional use permit. The new parcel, if expansion is approved, would be included in the new performance bond condition as well as the Neis parcel, if the request to increase the maximum area that can be open and mined from to 50 acres is approved.

4) Reclamation

A requirement has been added to the conditions and restrictions of use that the Planning Office be notified when quarrying on Phase 1 is nearly completed and the quarry plans to move on into the first 10 acres of Phase 2. The required studies must be submitted and approved prior to any quarrying occurring in Phase 2 and the reclamation in Phase 1 must be determined by the Planning Office to have occurred in compliance with the reclamation plan before quarrying can continue beyond the 10 acres permitted in Phase 2.

Large quarries employ sequential reclamation. This occurs when the overburden materials taken from a part of the pit is used to reclaim the previous portion of the pit. Reclamation on the Hamm Quarry will be sequential when possible, but the depth of quarrying, approximately 200 feet, requires a larger area to be open and mined in order to provide stability for the various ledges. Overburden that is removed during the early stages of mining will have to be stockpiled for use at a later time. The original conditional use permit anticipated and permitted the stockpiling of overburden.

The current plans show the portion of the Petefish parcel east of the creek as being reclaimed in 2020. Planning must be notified when reclamation is complete so the reclamation can be evaluated and documented. Given the depth of the Neis parcel pit, the sequential reclamation may not be evident until quarrying is complete and the stockpiled overburden is placed on the site.

- The operator shall contact the Planning Office prior to moving quarrying operations into Phase 2 so the partial reclamation of Phase 1 can be reviewed against the approved reclamation plan. If any changes are necessary to the approved reclamation plan, a revised reclamation plan shall be submitted for review by Planning and must be approved by the Board of County Commissioners prior to the commencement of quarrying in Phase 2.

- Up to 10 acres in Phase 2 may be quarried when the partial reclamation has been found to be in general compliance with the approved reclamation plan, or when a revised reclamation plan has been submitted and approved.

- Quarrying beyond this 10 acre limit will require Planning approval of the reclamation on Phase 1 (graded, top soil applied, and seeded/mulched).
- The operation plan and report that is required every 5 years will provide an overview of the status of the quarry and show graphically where mining is occurring and where reclamation has occurred.

The City of Eudora Planning Commission commented that the applicant provide sufficient details regarding the restoration of the property or conditions be added by the County to ensure that such restoration be completed in a timely fashion after termination of the permit or closing of the quarry to the satisfaction of applicable Federal, State, and local requirements. The provisions noted above are intended to ensure that information is provided regarding the reclamation and that reclamation shall occur prior to quarrying of more than 10 acres in the next phase. The performance bond for reclamation provides additional assurance of the completion of reclamation per the reclamation plan.

5) Access on E. 2300 Road. The revised plans propose limited quarry access from E. 2300 Road. The existing access drive would be retained and used for field access and for limited quarry access which would include quarry management staff, surveying crews, seismology crew, and blasting crew. The Eudora Township trustee approved the limited use of the access on E. 2300 Road provided no heavy quarry equipment used the access. This access would allow these smaller vehicles to access Phase 2 directly rather than through the plant site and former Phase 1. Staff recommends approval of this access point with the addition of the condition limiting the use to field and limited quarry access.

One comment provided by the City of Eudora Planning Commission was that there be no change to the traffic ingress/egress. Eudora's planning consultant noted that the Eudora Planning Commission has a "sensitivity to any increased trucking that may come through the community of Eudora". The new access on E. 2300 Road would alter the ingress/egress so that smaller vehicles associated with the quarry could enter the Shelton parcel directly, rather than needing to cross the plant site and Phase 1 to access this portion of the quarry. This change will increase safety for the quarry operation and will only permit limited access on E. 2300 Road. There will be no change to the approved truck route and this limited access would not increase the amount of trucking that occurs through the community of Eudora.

6) Impact of Quarrying on Water in Coleman Creek and Tributary
A neighboring property owner contacted Planning with concerns about the impact of quarrying on the springs and streams in the area. Staff provided the operation and reclamation plans to the Kansas Geological Survey and asked if the depth of the pit or the quarrying activities would have a negative impact on Coleman Creek, the creek crossing the Neis parcel. Kansas Geological Survey reviewed the plans and indicated there should be minimal impact on Coleman Creek. They noted that the area between the pit and the creek is almost continuous bedrock so little travel is expected between the pit and the creek. They also noted that limestone is a good pollution filter, so any water that does reach the creek should have been filtered and not negatively impact the water quality of the creek.

There are areas of wetland on the proposed Shelton parcel that are associated with the Coleman Creek tributary on this parcel and with the pond. The applicant worked with the U.S. Army Corps of Engineers regarding this wetland and provided the Army Corps of Engineers with a map of jurisdictional impacts, included with this report as an attachment. The map shows some of the ephemeral streams (those streams which flow only following a storm event), a portion of the wetland, and the pond being filled. When quarrying moves into Phase

2, a crossing will be constructed over the stream and pipes are shown accommodating the stream during that time. The Army Corps of Engineers reviewed the plan and approved these changes as noted in their Permit 44 letter, attached. While the stream on the Shelton parcel is not named on our maps, the Corps letter refers to it as Captain Creek. The letter notes that, with the conditions of the permit, the proposed activity would have minimal adverse environmental effect and requires that the applicant purchase 1638 stream credits and 0.16 wetland credits from an approved compensatory mitigation bank in the area prior to work commencing in this area. The purchase of the mitigation credits and the obtaining of any additional permits must occur prior to the commencement of quarrying in this area.

Neighbor Concerns and Comments

Concerns and comments raised by Arthur Neis that have not been discussed in this staff report are summarized below:

1. Location of the berms within the setbacks. A portion of the northern boundary of the Shelton parcel is adjacent to Mr. Neis's property. Arthur requested that the berms be placed as close to the interior of the berm as possible. The operation plan shows the location of the berms, and these have been pulled to the interior of the setback where adjacent to Arthur Neis's property.

2. What landscaping is permitted within the setbacks. There aren't specific landscaping requirements for the setbacks. The applicant indicated these would be grassed areas and the drainage areas within the berms would be maintained as grass through best management practices.

3. Location of the stream on Shelton parcel. The nearby land owner had a survey which showed the stream in a different location on the Shelton parcel. The applicant indicated they used the USGS (United States Geological Survey) topographical map to locate the stream on the plans.

4. Marking setbacks on the Site. The applicant indicated that they use a drone and a survey crew to measure the required setbacks from the property lines and the streams and mark these on the site.

5. Supreme Court recent decision on EPA Permits related to a direct discharge into navigable water. I referred this question to the County Engineer who indicated that the Army Corps of Engineers are responsible for implementing the EPA permits and noted that our conditions should include a requirement that the quarry obtain all needed permits from the Corps.

6. Water Quality included with hydrologic survey. Mr. Neis indicated he would like the pre-blast hydrologic survey to evaluate the water quality on his property. The pre-blast hydrologic survey is intended to provide an inventory of the area springs, wells, etc. and measure the quantity of water in these water features. The Kansas Department of Health and Environment enforces water protection measures on the quarry and no discharges are permitted to the adjacent stream until the water has been in a settling pond. Staff hesitates to add this as a condition, as it would be necessary to determine the testing parameters, which features are being tested for, and how the testing is to occur. If the Commission determines this would be a reasonable requirement, the pollutants which would be measured with the test should be identified. This test would be conducted prior to the commencement of quarrying in the Shelton parcel and would serve as a benchmark for later water tests the property owner may have done.

7. Information on bridge to be constructed over the creek on the Shelton parcel. While this has been referred to as a 'bridge' the crossing over the creek on the Shelton parcel will consist of three 48 inch diameter concrete pipes. The County Engineer noted that their drainage report shows the drainage area to these pipes is less than 640 acres so a Division of Water Resources permit won't be required. The U.S. Army Corps of Engineers will review their plans to install the culverts and they'll need a permit from the Corps for all the items. The pipes and other features of the crossing would not be considered 'quarry operations' and would be permitted within the stream setback.

8. Effect of traffic on E. 2300 Road on his agricultural land. Mr. Neis provided a soil study which showed that soils near E. 2300 Road were less productive than elsewhere on the property due to the pH levels and requested that the access point on E. 2300 Road be denied, or that the limited nature of the access be clearly specified. The limited nature of the access is clearly specified in the conditions and restrictions of use. As the soil pH level has been impacted by traffic, staff assumes the impact would not be limited to quarry traffic. As it wouldn't be possible to eliminate or reduce the overall traffic on E. 2300 Road, prohibiting the limited access point would not alleviate the soil quality issues.

5.

EUDORA'S WORK WITH DOUGLAS COUNTY ON DESIGNATING FUTURE GROWTH AREAS & ZONING

WORK SESSION 08-21-19

The Board held a work session to discuss the City of Eudora Urban Growth Area (UGA).

Attendees included: Commissioners Derusseau, Thellman and Kelly; Barack Matite, Eudora City Manager; Dave Knopick, City of Eudora Planning Consultant; Sarah Plinsky, Interim County Administrator; Mary Miller, Lawrence-Douglas County Metropolitan Planning Staff; and Tonya Voigt, Co-Director of Zoning and Codes.

Matite asked the County Commission to consider a letter of request to recognize the revised designed Eudora Urban Growth Area for the purposes of applying the Douglas County Subdivision Regulations specific to the UGA. Matite presented a draft map with a proposed Tier 1, 2 and 3 system for development areas. Tier 1 would serve as a community within the city limits or surrounding city limits. Tier 2 would be property adjacent to the City limits, and Tier 3 would be land beyond the growth scope. The hope was that the design would be incorporated into the Horizon 2040 plan for the County. Tier 2 would require signing an annexation agreement or required immediate annexation. Tier 3 would be developed to rural standards with a 20-acre minimum or larger.

Discussion included:

· The Comprehensive Plan has not been adopted yet. The City of Eudora is working from a plan that has not been formalized. This proposed design would be a big assumption.

· The County is working on subdivision regulations for next year and a new flood study to identify issues with flooding.

· Under the current regulations, because Tier 1, 2 and 3 have not been approved, the entire UGA would be under the same regulations as Lawrence and Douglas County. Cluster developments would be allowed in both Tier 2 and 3 until new regulations have been set.

· One thing the County wants to prevent in the UGA is flooding. There are three watersheds in the UGA with old floodplain maps. We have a request with the State to have a new map model. We don't want to put buildings in areas that shouldn't be developed.

· The City of Eudora wants to put development closer to their city, and use city utilities. The City of Eudora wants to send a clear message to land developers not to expect city utilities outside the Tier 2 area.

· The City of Eudora would prefer clustered areas for utility extension as opposed to houses on 5-acre lots in the unincorporated area. It's more difficult to string utilities to many areas. They prefer to be as rural as possible.

· It was suggested that Eudora Tier 3 be called The Urban Reserve instead. This area would not be expected to grow until Tiers 1 and 2 are exhausted.

· Saving prime farmland is a great value to the County. More than that, planned infrastructure saves the County money as opposed to scattering houses on small parcels across the County.

· City of Eudora plans to tweak the UGA map and define lines and terminology to match the Comprehensive Plan and return to the Board of County Commissioners in the future with an interlocal agreement for consideration.

RECESS 08-21-19

At 5:03 p.m., the Board recessed until the 5:30 p.m. Business Meeting.

EUDORA
KANSAS
a place to grow

August 13, 2019

Board of County Commissioners
Douglas County Courthouse
1100 Massachusetts Street
Lawrence, Kansas 66044

Dear Commissioners:

Re: Eudora's Urban Growth Area (UGA)

Please consider this letter as a formal request to the Board of County Commissioners to recognize the **revised designated** Eudora urban growth area for the purposes of applying the Douglas County Subdivision Regulations specific to urban growth areas. Following your directive, we will continue to work with your staff to draft an interlocal agreement which will be approved by you and the Eudora City Commission.

Attached to the letter is the staff report that was provided to both Eudora Planning Commission and Eudora City Commission as they discussed this matter, and ultimately, approving the revised map.

Your staff was instrumental in this effort and I appreciate their time and commitment on this issue. I look forward to discussing this issue further at the upcoming work session on August 21st.

Sincerely,

Barack Matite
City Manager

City of Eudora • P.O. Box 650 • Eudora, Kansas 66025
Phone 785-542-2153 • Fax 785-542-1237 • www.cityofeudoraks.gov

Staff Report – Item

TO: City of Eudora Planning Commission
FROM: Dave Knopick, AICP - Planning Consultant for the City of Eudora
SUBJECT: Urban Growth Area (UGA) consideration / recommendation
MEETING: August 7, 2019

BACKGROUND

Douglas County has approached the City of Eudora in regard to identifying a designated Urban Growth Area (UGA) for Eudora. This area would encompass the immediate geographic area surrounding Eudora and be utilized by the County and the City to guide the implementation of land use / development polices and regulations in unincorporated areas near Eudora.

I think maybe this should be Plan 2040?

The Lawrence / Douglas County Comprehensive Plan – Horizon 2020 - identifies UGA's as a growth management tool to be used to encourage and direct growth and land use development of certain densities and intensities to areas that are in close proximity to current city limits or are seen as potentially annexable lands near the city limits. Land that is in the unincorporated portion of Douglas County and outside of the identified UGA's is considered to be rural area that is not planned to develop or to support urban densities of development in the planning period associated with the comprehensive plan. The Horizon 2020 Plan is currently in the update process.

Adopting a UGA for the City of Eudora is important for several planning reasons:

- Identifying the desired growth direction / location for Eudora so that property owners and developers can make sound investment decisions related to future development expectations.
- Matching land development density / intensity with the appropriate level of infrastructure and service support.
- Encouraging logical and cost-effective public infrastructure system expansion – roads, utilities, public services, etc.
- Coordinating land use, growth and development decision making between the City of Eudora and Douglas County.

ANALYSIS

At the June Planning Commission meeting the Commission discussed the potential UGA boundary for the City of Eudora and made several adjustments to the County proposal per Planning Commission direction. The revised boundary was provided to the County and staff from Eudora and Douglas County met to review / refine the proposed UGA boundary. The attached maps reflect the resulting UGA boundary proposed for Eudora to-date.

Additionally the following tier system within the UGA was presented the Planning Commission in June based on the current infrastructure / utility availability or future provision of infrastructure and utilities in an efficient and cost-effective manner.

Tier 1 land is prioritized for development at any time.
- Area within Eudora City Limits or islands of unincorporated area surrounded by the City
- Readily serviceable with utilities (water, sewer, storm water) with minor system enhancements
- Serviceable by fire with current infrastructure
- Develop to suburban and urban standards per adopted plans and policies

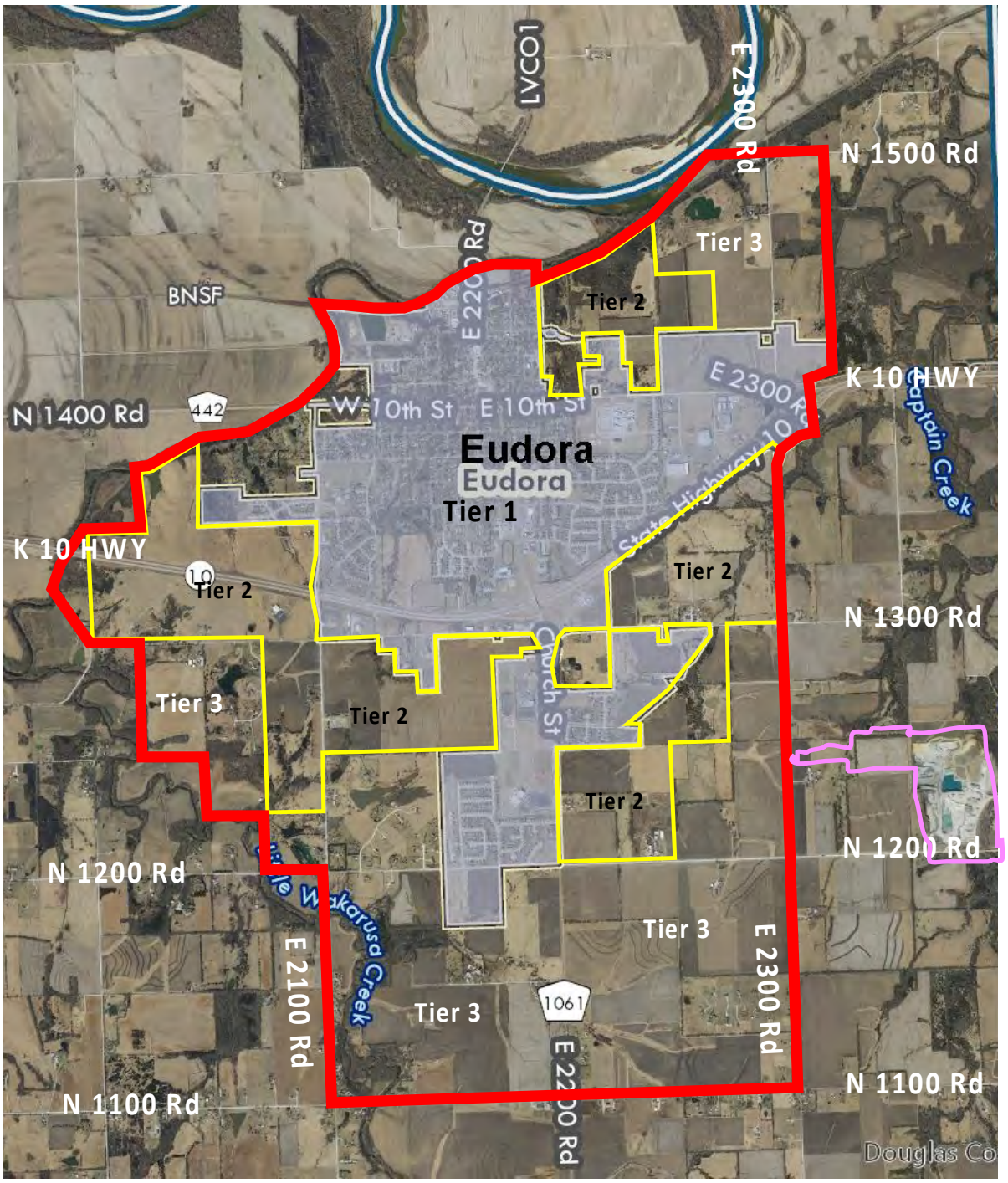
Tier 2 land shall be annexed when the need to accommodate demand is established.
- Within the UGA, adjacent to or near existing City Limits requiring annexation or annexation agreement and acceptance of future benefit district implementation (as needed)
- Readily serviceable with utilities with minor system enhancements necessary for development
- Readily serviceable by fire with current infrastructure and/or minor adjustments
- Develop to suburban and urban standards per adopted plans and policies

Tier 3 land is not designated to be annexed within this plan's time horizon.
- Develop to rural standards (20 acre parcels or larger) while planning for future urban growth at a point beyond the time horizon of the comprehensive plan
- Major utility system enhancements, expansions, extensions necessary for development (e.g. treatment plant, water tower, major distribution or collection line)
- Requires investment in fire infrastructure and personnel

At the July Planning Commission meeting the Planning Commission reviewed the UGA map and tier system as presented above and in the attached maps. County staff was present at that meeting to discuss how the UGA and tier system benefits future City and County Planning. The Planning Commission reached a consensus that no changes to the tier system or maps were necessary and asked that the item be brought back for a vote at the next Planning Commission meeting.

STAFF RECOMMENDATION
Planning Commission to take action recommending approval of the UGA map / tier system for use in Douglas County planning efforts and the Eudora Comprehensive Plan.

Suggested motion:
The Eudora Planning Commission recommends that the Urban Growth Area (UGA) Map and the associated tier system, as presented, be approved by the Eudora City Commission and forwarded to the Douglas County Commission for incorporation into the current update of the Douglas County Comprehensive Plan noting that the UGA map and tier system will also be incorporated into the updated Eudora Comprehensive Plan.



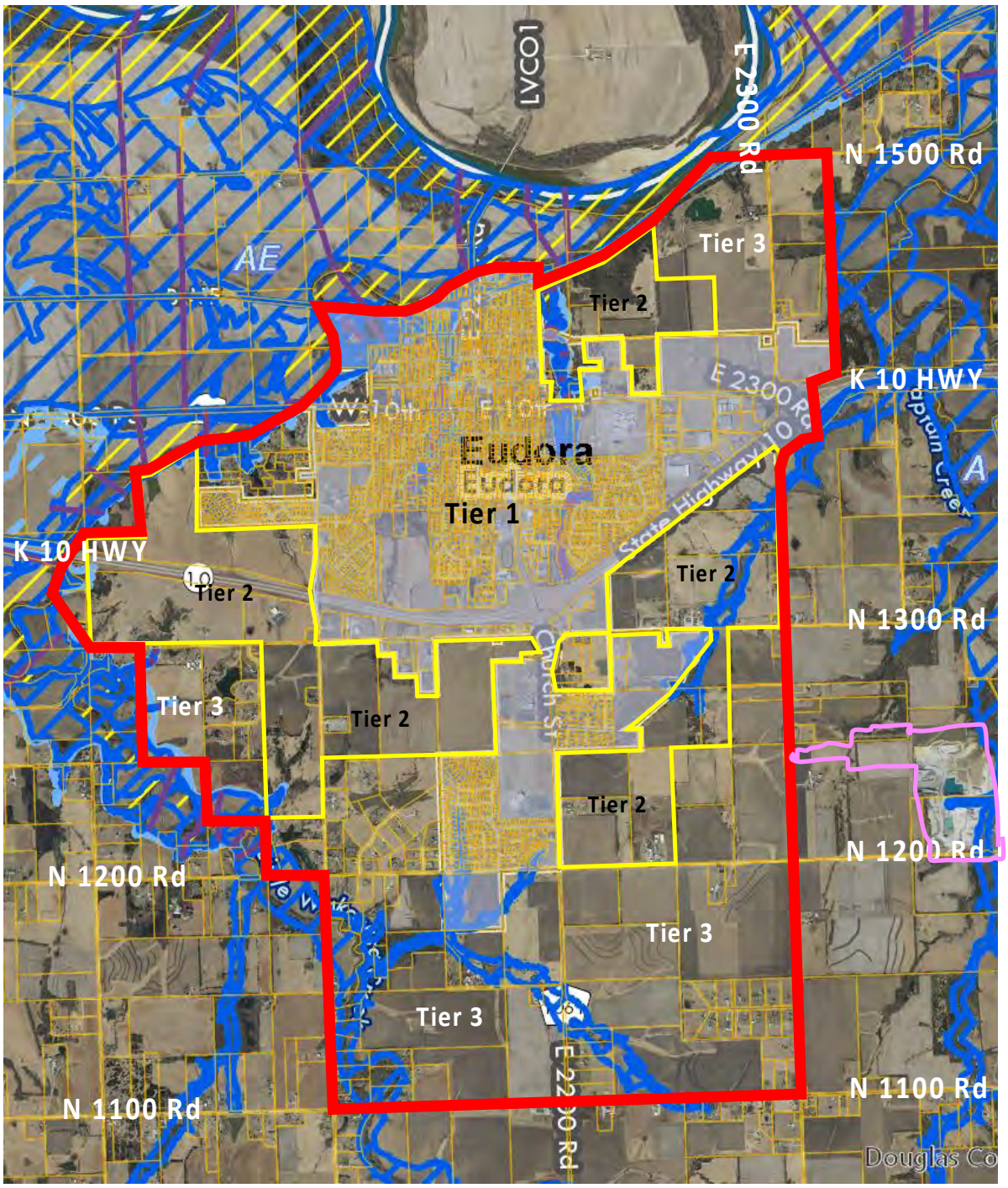
City of Eudora Future Growth Policy Map

Proposed Urban Growth Area (UGA)

Tier 1

Tier 2

06/25/19 DRAFT



City of Eudora Future Growth Policy Map

Proposed Urban Growth Area (UGA)

Tier 1

Tier 2

06/25/19 DRAFT

EUDORA UGA BOUNDARY DISCUSSION
June 19, 2019

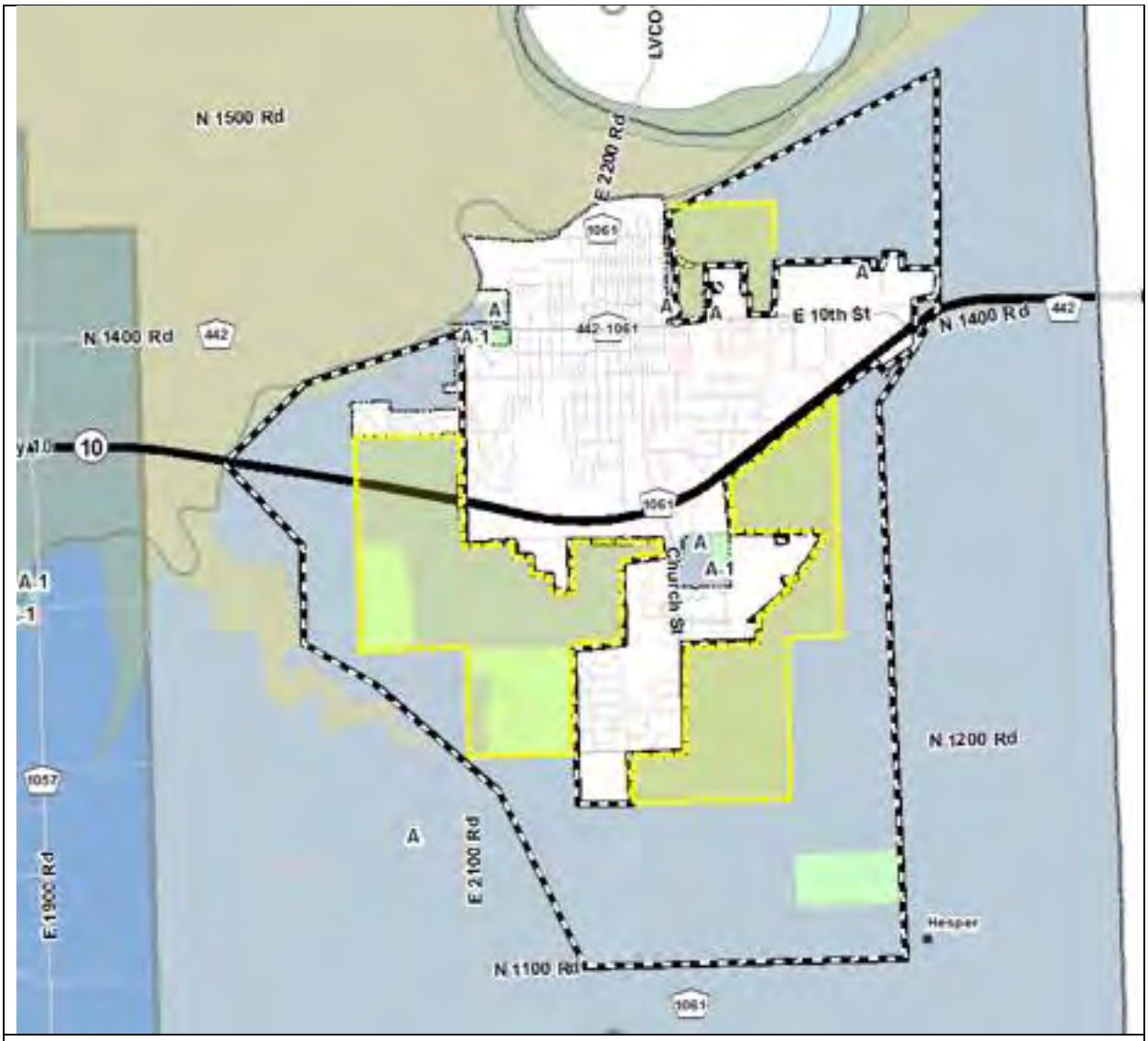


Figure 1. Eudora's proposed boundary in white and black dashes, county staff in yellow. The UGA avoids the Valley Channel Zoning. Three subdivisions zoned A-1 are included in both, with the larger Eudora UGA including a subdivision zoned A-1 to the south.

- Eudora proposed boundary: approximately 3,516 acres or 5.5 square miles.
- Staff's concept boundary: approximately 1,260 acres or 2 square miles

Land within the UGA is land that is expected to be annexed into the City within the next 20 years. Higher density rural uses are recommended for this area. When properties develop, annexation agreements are required and recorded with the Register of Deeds.

1) Is it feasible that the City of Eudora will annex all the land within their proposed boundary within the next 20 years?

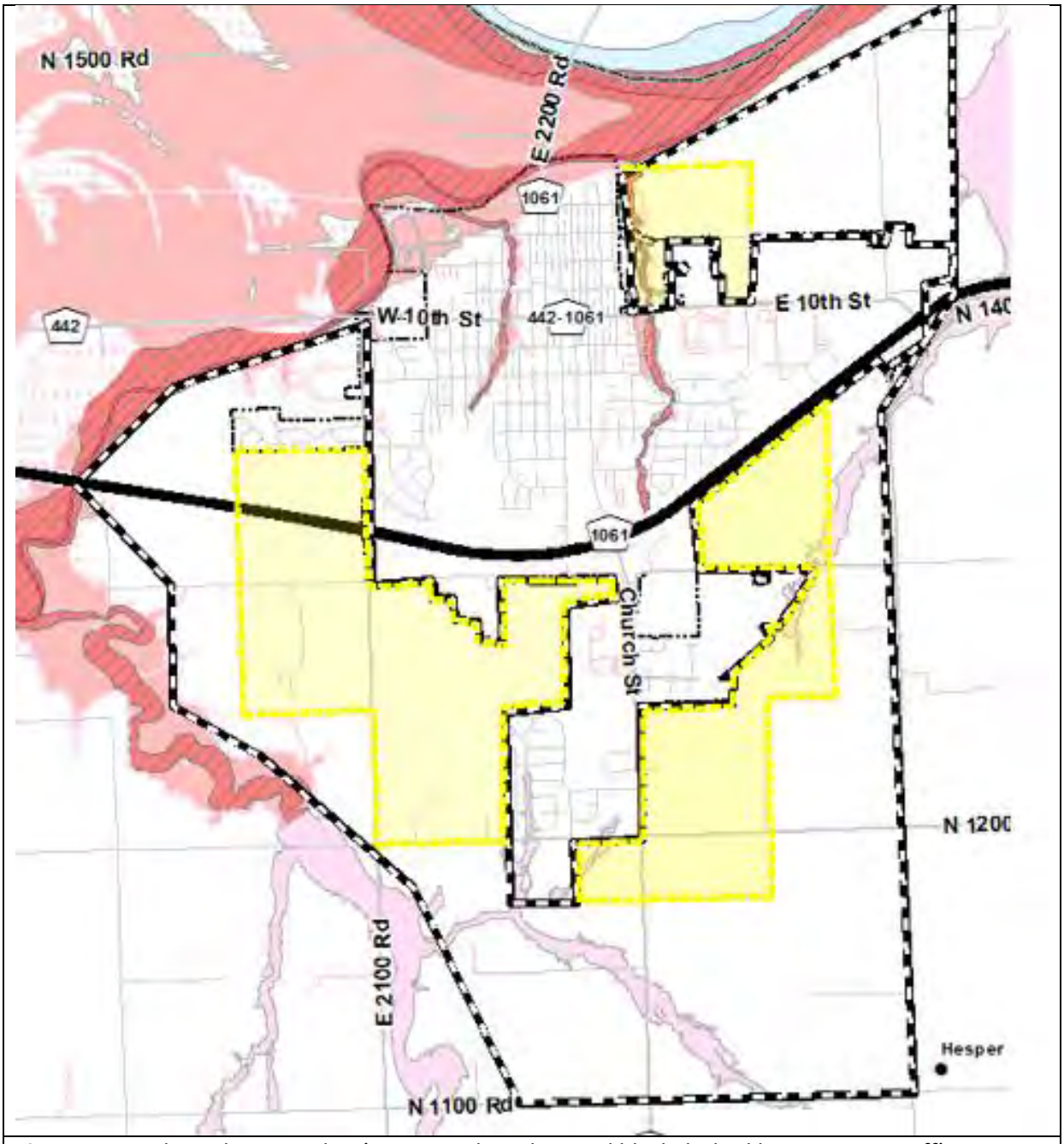


Figure 2. UGA boundaries, Eudora's proposed in white and black dashed lines, county staff's in yellow, both generally avoid the floodplain. The smaller, staff map avoids the majority of the floodplain.

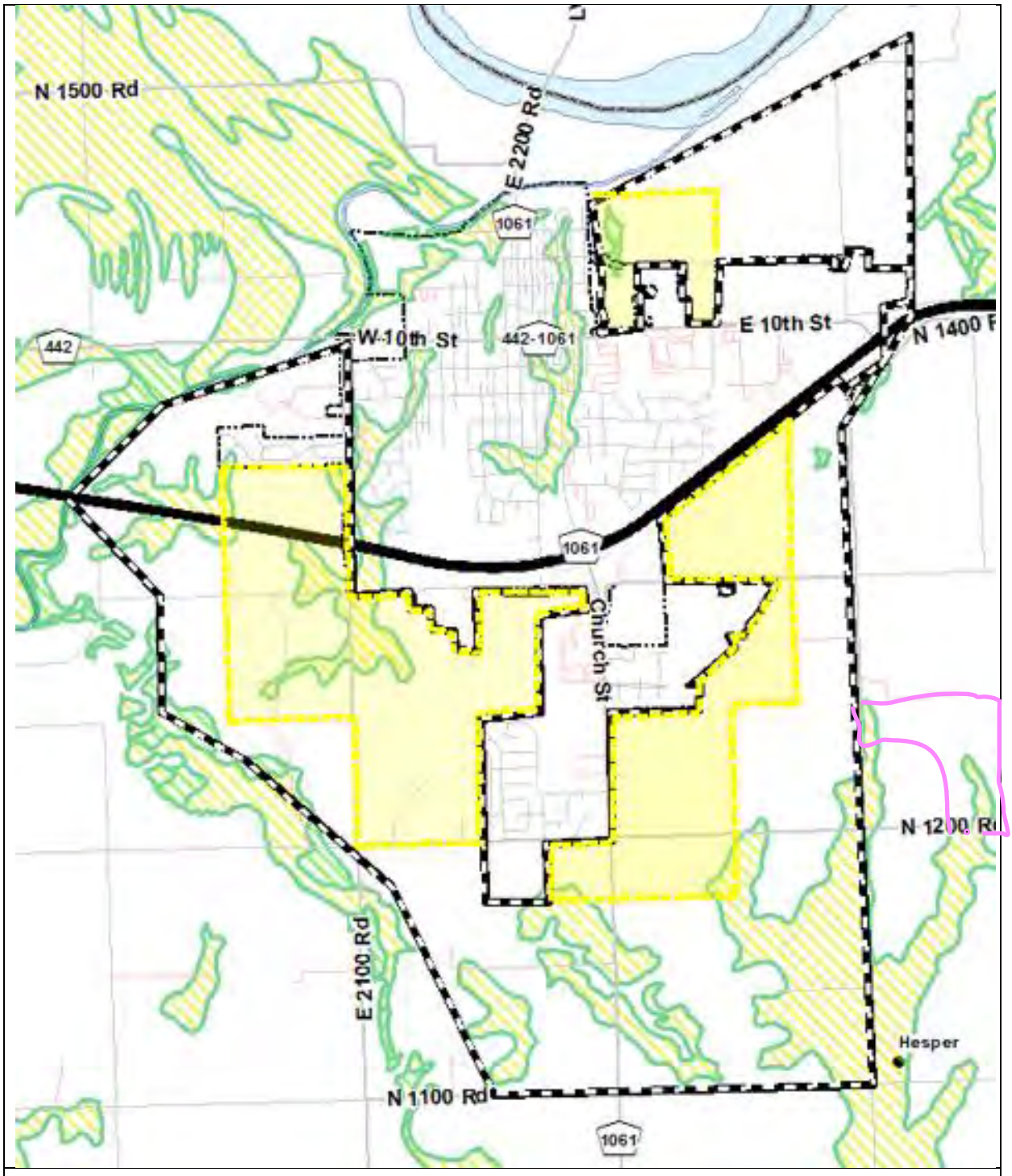


Figure 3. Some high quality ag soils near the west side of Eudora are included in both boundaries. The smaller staff boundary avoids the high quality agricultural soils to the south.

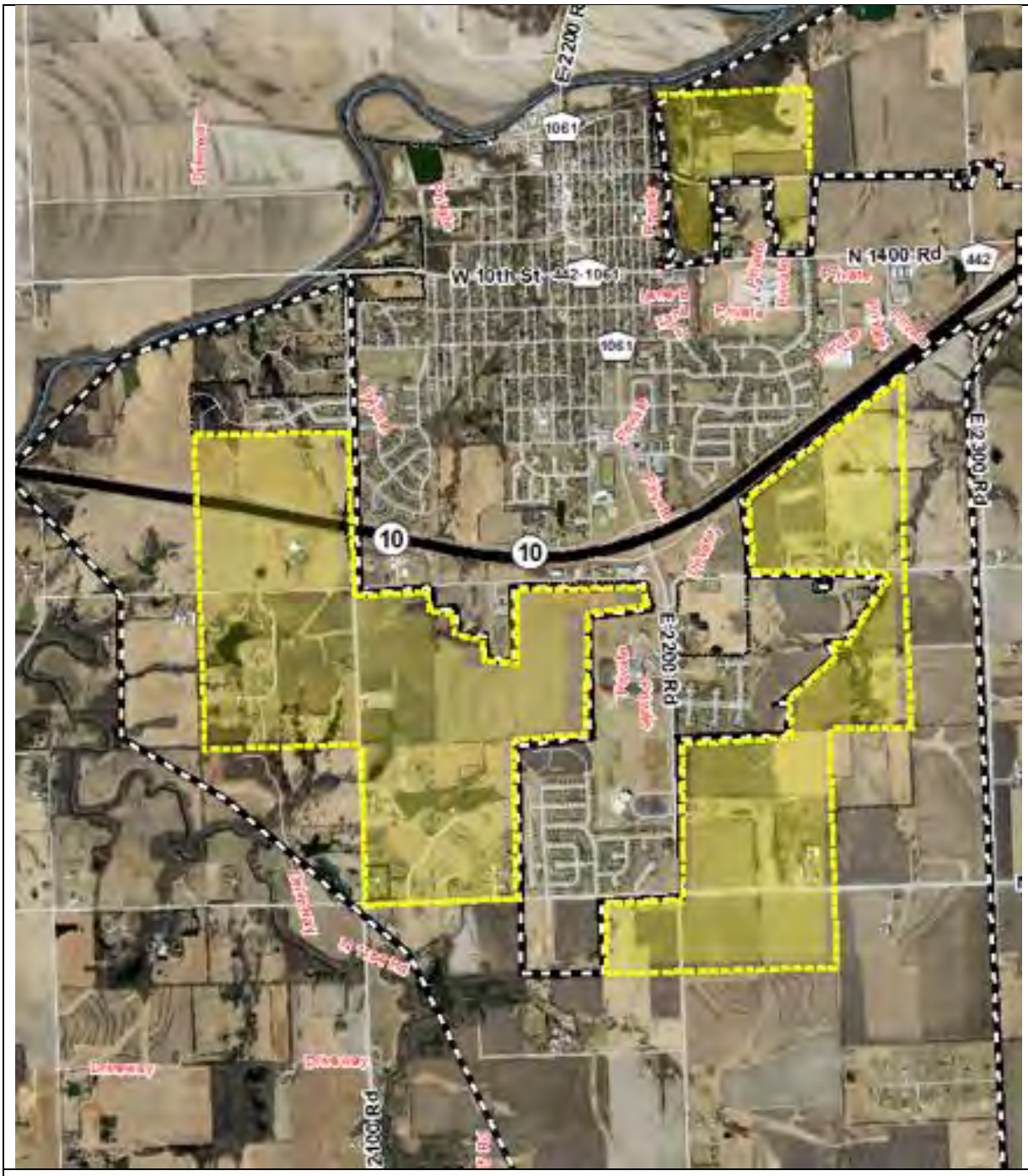


Figure 4. Aerial view of area and proposed boundaries.

County and planning staff's concerns with Eudora's proposed boundary:

1) Loss of prime and working farmland with the larger boundary.
2) West end is very near the Lawrence UGA. May be better to have a clear delineation between the Lawrence and Eudora UGAs to the west of Eudora.
3) The southern proposed boundary could remove considerable prime farmland from production.
4) Extending the east boundary to E. 2300 Road may be reasonable. This reduces the loss of prime agricultural soils and would be closer to the main body of Eudora.
5) Zoning and Codes has concerns with the number of additional building permits that could be applied for with the larger boundary. Staffing issues limit the number of permits that can be revised and projects that can be inspected.
6) The northeastern area outside staff's concept boundary could remove a large portion of farm area from production. Given the location between floodway and floodplain this may be appropriate as open space to provide a buffer from the floodway.
7) The southern movement of Eudora may be creating a form of sprawl. Staff would recommend slowing the growth to the south to allow the density of the remainder of the city to increase before moving further southward.

6.

DOUGLAS COUNTY RESOLUTION 80-5

R E S O L U T I O N No. 80-5

WHEREAS, on this 14th day of January, 1980, the Board of County Commissioners of Douglas County, Kansas, has met at regular session, the following commissioners being present: Beverly A. Bradley, Chairman; and Robert Neis, Member; and,

WHEREAS, the Board of County Commissioners of Douglas County, Kansas, pursuant to K.S.A. 19-2918, 19-2918(c), and 19-2919, has adopted zoning and subdivision regulations for the unincorporated territory of Douglas County, Kansas, and,

WHEREAS, the City Councils of Baldwin City, Eudora, and Lecompton have approved a proposal to establish a review process for zoning and subdivision requests within three (3) miles of their corporate boundaries.

NOW, THEREFORE, in accordance with the foregoing, the Board of County Commissioners of Douglas County, Kansas, hereby establish the following policy for review of zoning and subdivision requests within three (3) miles of a corporate city's limits:

Whenever a development proposal requiring zoning and subdivision review is located in the unincorporated portion of Douglas County and within three (3) miles of the corporate city limits of the cities of Baldwin City, Eudora, or Lecompton, <u>it shall be the responsibility of the Lawrence-Douglas County Planning Commission to notify the affected city and arrange a joint hearing of both planning commissions to review said development proposal. Said hearing shall be held at the Douglas County Courthouse following proper notice to the public. Following said hearing, the Board of County Commissioners shall receive a recommendation from each planning commission for their consideration during the final review process.</u>

THE BOARD OF COUNTY COMMISSIONERS
OF DOUGLAS COUNTY, KANSAS

Beverly A. Bradley

Beverly A. Bradley, Chairman

Robert Neis

Robert Neis, Member

ATTEST:

D. E. Mathia

D. E. Mathia, County Clerk

APPENDIX/FOOTNOTES

7. Re: Summit Materials

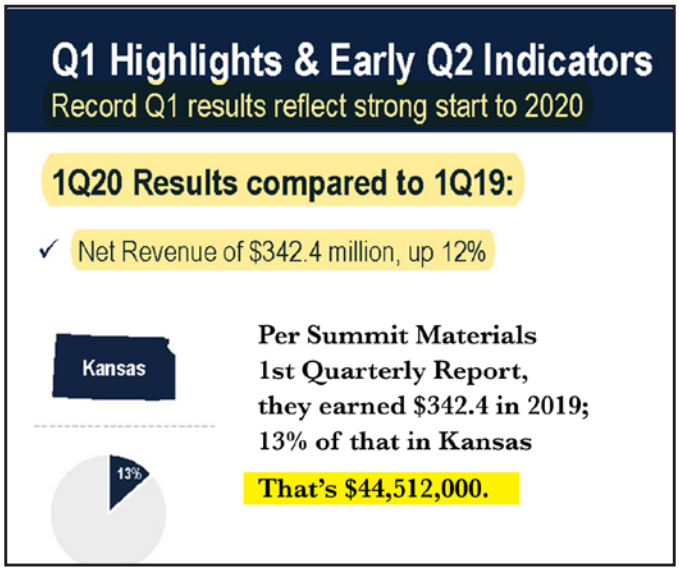
Blackstone, Silverhawk, Tom Hill and Management Form Summit Materials

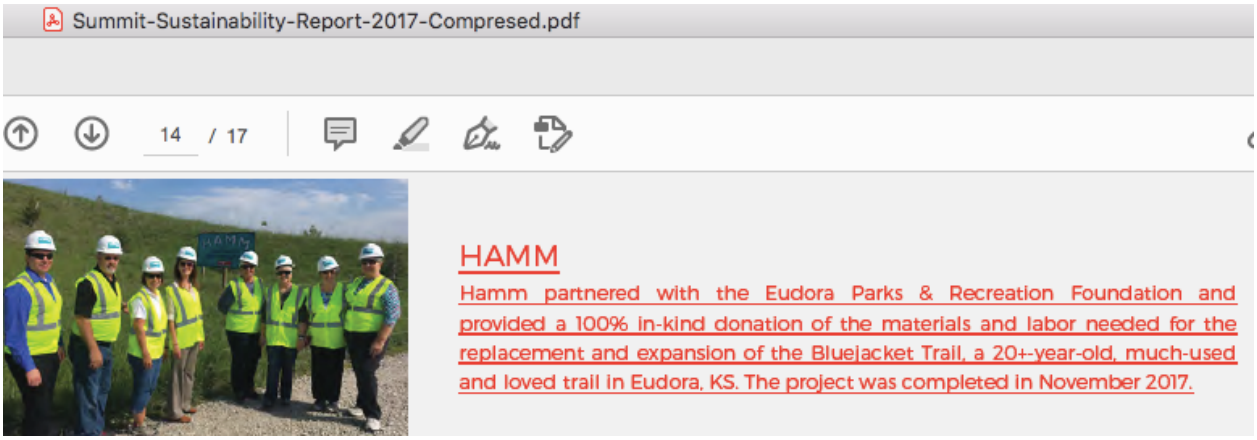
08 September 2009

Tom Hill, CEO, to lead company with support of Blackstone, Silverhawk and Charles "Chip" Goodyear

Washington, DC, September 8, 2009 – Summit Materials, LLC has been formed to develop a leading business in the aggregates and heavy-side building materials sector through strategic acquisitions. The company was founded by its CEO Tom Hill and a group of investors that include members of its management team, Blackstone Capital Partners (an affiliate of The Blackstone Group), Silverhawk Capital Partners and Charles "Chip" Goodyear, former CEO of BHP Billiton. The investors have made a commitment to Summit Materials of up to $780 million. In conjunction with its formation, Summit Materials has announced its acquisition of Hamm, Inc., a privately-held aggregates, landfill, asphalt and construction company located in Perry, Kansas. Hamm is Summit Materials' first acquisition and is a platform company for future growth and development in the Midwest.

Commenting on Summit Materials, CEO Tom Hill said "We are excited about the first class management team we have recruited to Summit Materials, all of whom I have worked with or known for many years. Summit Materials' partnership with Blackstone and Silverhawk has given us a strong capital base and significant strategic resources. Additionally, I am excited about Chip Goodyear's investment and participation on our Board; his experience will be invaluable to Summit Materials as we build our business. Our management team and our investors believe now is a great time to invest in the sector and build a large and profitable new company in the aggregates and heavy-side building materials industry".





8.

WASHINGTON POST ARTICLE:
"Massive new study traces how corporations use charitable donations to tilt regulations in their favor"

January 17, 2019

The Washington Post

Massive new study traces how corporations use charitable donations to tilt regulations in their favor

By **Christopher Ingraham**

Jan. 17, 2019 at 10:50 a.m. CST

https://www.washingtonpost.com/business/2019/01/17/massive-new-study-traces-how-corporations-use-charitable-donations-tilt-regulations-their-favor/

Back in 2011, when AT&T and T-Mobile were attempting to gain approval from the Federal Communications Commission for an ultimately doomed $39 billion merger deal, an unusual coalition of interest groups submitted comment to the agency in support of the merger: the NAACP. The Gay & Lesbian Alliance Against Defamation (GLAAD). A homeless shelter in Louisiana. The Asian Pacific Islander American Scholarship Fund.
The groups were united by two common threads. The first was their lack of any apparent stake in telecommunications policy. The second was the fact that they had all recently received donations from AT&T, in some cases totaling six figures or more.

Although AT&T denied any quid pro quo over its contributions to nonprofit groups, the donations raised eyebrows on Capitol Hill and elsewhere. The president of GLAAD resigned over the contributions, as did a number of board members. Ultimately, the merger fell through.

While it's tempting to write off the incident as a one-time blunder — heavy-handed corporate lobbying gone amok — new research from Marianne Bertrand at the University of Chicago and others finds that's not the case. Merging charitable-giving data of Fortune 500 companies with a complete record of public comments submitted to the federal government on proposed regulations between 2003 and 2015, Bertrand and her colleagues are able to trace how individual corporations influence the rulemaking process via nonprofit donations.

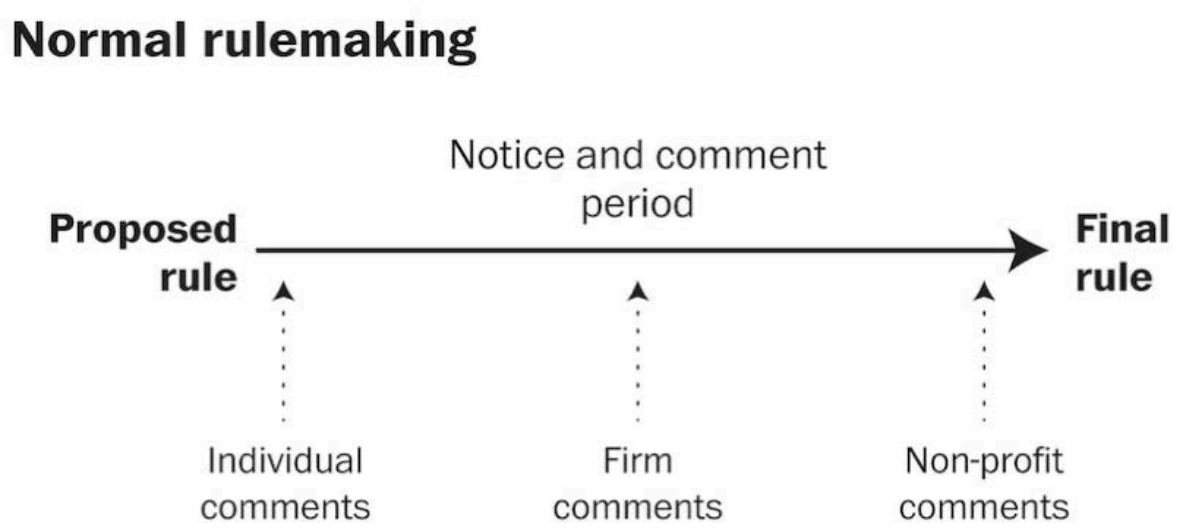
The data set compiled by the researchers demonstrates three crucial findings:

First, after a firm donates to a nonprofit organization, that group becomes more likely to comment on rules that the firm has also commented on. Second, the organization's comments in those cases have more similarities with the firm's comments than with comments from other nonprofit organizations not receiving money from the firm. And finally, when a firm and its grantees comment on a rule together, regulators' final remarks on the rule are more likely to be in line with the firm's comments on the rule.

The research "unearth[s] a channel of influence going from corporations to policymaking that was not measured before," co-author Matilde Bombardini said in an email, "both in terms of monetary magnitude and impact on the agency's views on the various regulations."

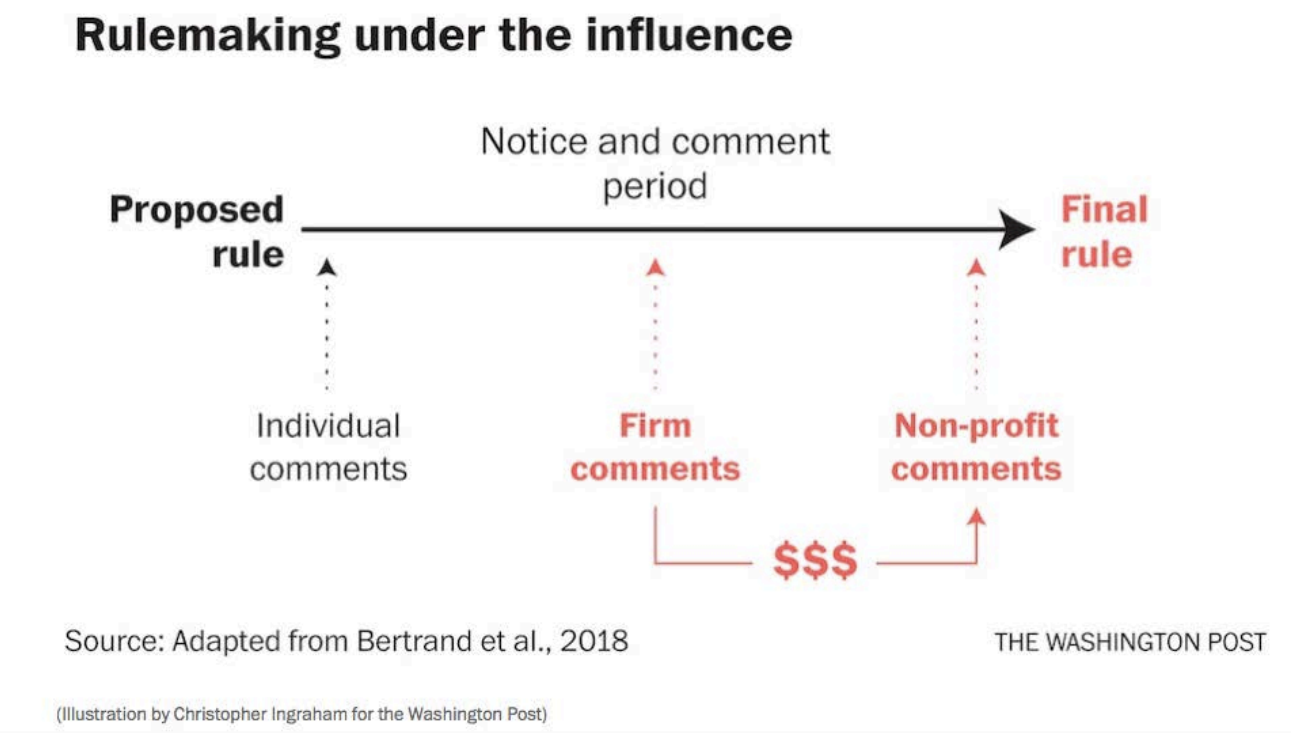
The paper exclusively considers federal rulemaking, which is the process by which agencies deliberate on how laws and policies are interpreted and carried out in the real world. When an agency proposes a rule (for instance, a telecom merger approval, the addition of a new drug to a list of controlled substances or the applicability of mandatory rest requirements for different types of workers) it typically allows public comment on the proposal for a period of 30 to 60 days. Individuals and other interested parties — including lawmakers, businesses and nonprofit organizations — are allowed to weigh in on the proposal.

At the end of the period, the agency issues a final rule. The rule may be unchanged from its initial iteration, or it may be altered or even withdrawn completely based on the public input received. A conceptual diagram of the process would look something like this:



But Bertrand and her colleagues found evidence that, in many cases, the process is not that simple. Comments received from businesses and ostensibly independent entities may be linked by money that flows well outside the process. When that happens, the final rule is more likely to reflect the donating corporation's views.

"Naturally firms favor profits — i.e., private benefit — over the social good," study co-author Raymond Fisman said in an email. "So Coke wants to sell more soft drinks even if [there are] increases in obesity. Supposedly independent nonprofits are meant to provide input that acts as a counterweight. If they're co-opted, they won't."



To draw these conclusions, Bertrand and her colleagues first identified 629 charitable foundations operated by 474 firms appearing on the Fortune 500 or Standard & Poor's 500 composite index lists at any point from 1995 to 2016. Using IRS data, they then identified all 225,180 nonprofit entities receiving gifts of greater than $5,000 from these charitable foundations from 1998 to 2015.

Next they pulled the complete set of public comments on proposed rules submitted to regulations.gov between 2003 and 2016. They were then able to identify not only when individual corporations commented on a proposed rule, but also when nonprofit organizations that firm had donated to commented on the same rule.

They found that when a firm donates to a nonprofit group, it's associated with a two- to four-fold increase in the likelihood that the nonprofit group will comment on the same proposed rule as the firm. "The magnitude of this effect is large," the researchers wrote, with some degree of understatement.

When relationships like these surface publicly, as in the case of the proposed AT&T/T-Mobile merger, the nonprofit organizations involved usually say that donations do not influence their policy work. “One of the unique things about the NAACP is that financial support does not determine our civil rights positions,” the head of the North Carolina chapter of the NAACP told Politico in 2011. Similarly, a GLAAD spokesman said, “We do not make policy decisions based on what’s best for our corporate sponsors.”

Smaller groups make similar claims. “Their money that they gave was in no way connected with what we did,” the director of the Louisiana homeless shelter told the Center for Public Integrity about AT&T’s $50,000 donation to the group five months before it commented on the merger. “No one leveraged me or anything,” said the director of the Asian Pacific Islander American Scholarship Fund.

But the researchers found that when a nonprofit organization comments on a rule that a donor company also comments on, the language of the comments tends to mirror each other. Using machine learning techniques, the researchers analyzed the language of these comment pairs and found that they were significantly more similar to each other than pairs of comments selected at random from a given docket.

A corporate donation, in other words, made a nonprofit group considerably more likely to support that corporation’s view in regulatory matters.

Using similar techniques, they at last turned to the language used by regulators in drawing up and discussing the final rules. They find, again, that when a firm and nonprofit groups it has donated to comment on a proposed rule, the language used in these regulatory discussions tends to more closely mirror the language of the firm’s comments than it would otherwise.

What this work does, in effect, is trace the path of influence from a corporate donation to an ostensibly independent nonprofit group’s comment and all the way through to a final regulatory outcome. “It’s presenting an important link between corporate donors and the public policy conversation,” John Wonderlich, executive director of the Sunlight Foundation, said in an interview.

Nonprofit organizations often present themselves as independent entities not aligned with any particular for-profit interests. They are “providers of nonpartisan, technical expertise and are commonly expected to offer more neutral input into the lawmaking and rulemaking process, with a focus on cost-benefit analysis and broader societal interests,” Bertrand and her colleagues write.

But their research shows how corporations can influence nonprofit organizations' input into the policymaking process, which can “distort the outcome of the political process away from the public good and towards private interests,” as they put it. Policymaking ends up reflecting the interests of the people who have enough money to make their voices stand out. Government becomes less representative. Authorities make decisions that benefit the wealthy few, rather than the broader society.

“The biggest losers are constituents who end up getting their perspectives drowned,” Wonderlich said.

Arthur Neis
1575 NW 106th St
Clive, IA 50325

E 2300 Eudora comment

One of the proposals to modify the CUP for Hamm Eudora Quarry would allow a gate for access to their new parcel, called Shelton Parcel, from E 2300 Road. The CUP restricts access to specific use vehicles for agriculture, quarry management, surveying crews, seismology crews and blasting crews. The access is to be the same point as at present and would be a locked gate.

On the days of operation, logically, the management personnel would be at the office located off N 1200 Road in the Petefish Quarry and would retain the keys for access by the various crews, which would first report to the management office to get the key and return it after completion of their work. Because the various crews would typically work on an as needed basis, while there would be some increase on E 2300 Road, it should not be dramatic. However, that is an assumption.

There is also the assumption that haul trucks do not use E 2300 Road. To validate those assumptions, what traffic studies are available for E 2300 Road, and how current are those studies? Current studies may be needed to establish a baseline of use. And by expanding the road points surveyed to N 1200 Road before and after the E 2300 Road intersection, an indication would be available of traffic that turns off N 1200 Road onto E 2300 Road.

E 2300 Road is the eastern boundary of the City of Eudora Urban Growth Area, tier 3, planned for later in the 20-year planning period, 2040. The Quarry CUP expires in 2033. Eudora and the County have interests to plan now for the future.

As urbanization continues and traffic increases, there will be increased impact on agricultural land productivity due to increased soil contamination. The current results are to diminish productivity from the soil next to E 2300 Road which is currently heavily traveled, relatively, and not on N 1300 Road or N 2350 Road or E 2400 Road, less traveled, boundaries to my farm. The result is increased cost to manage the soil impacted by minerals and chemicals that are slow to be absorbed and broken down.

To date, residential development has been south of N 1200 Road. See figure 4 in the County Staff Report, noting 2 missing homes on N 1300 Road near E 2400 Road, and a church at the SW corner of N 1300 Road and E 2300 Road.

The City of Eudora and the County working together can assure an orderly growth that does not disrupt the flow of services from either.

July 18, 2020

Mr. Barack Matite, City Manager
City of Eudora, Kansas
12 East 7th St
Eudora, KS. 66025

Good Morning Mr. Matite,

During the discussions about the Hamm Quarry expansion, concern has been expressed about the haul truck traffic, dust, "slurry" created when it rains on N 1200 Road from E 2350 Road to E 2200 Road. This note looks at these concerns.

The Quarry has been in operation for decades, and more intensely since 2009. Contractors needing aggregate normally require constant flow of materials on designated days. It is natural that at certain times, multiple haul trucks will be required to run in tandem in the normal course of business. Dust and road conditions managed adequately in the existing CUP, appear to need renewed attention as to implementation. The following observations are shared, some of which may already have been addressed by your City Planner.

1. The road will naturally deteriorate over time, from seasonal freezing and thawing and at an increasing rate given the heavy haul truck traffic. Hamm has been assessed and paid a fee to the County in recognition of its impact, which since 2010 is $310,000+. The new County Engineer should be able to determine plans and time to reconstruct the road base and the surface and provide that information for review.
2. Dust control is a separate concern. Road base reconstruction and the surface will help but not resolve all dust issues. A review of the present protocol and timing to spread dust control with the new County Engineer may clarify whether dust control application time frames are consistent with dust generated from the season of quarry operations. And as particular residents are concerned, they need to know the specific County office to contact and expect a reasonably timely reply; plus, the need to contact their County Commissioner if there is no timely response.
3. Contractors establish schedules to which subcontractors must comply. The recommended changes in operating hours recognizes business reality and consistency of hours applied throughout the County.

N 1200 Road is the southern boundary of Tier 2 (E 2250) of the Eudora 20-year planning horizon, 2040. The quarry CUP expires in 13 years, 2033. The City and County both share an interest in proper care and maintenance of N 1200 Road.

Very Truly Yours,

Arthur

Arthur Veral Neis
515-724-1332

CC: Mary Miller, City/County Planner

From: syed jamal <syedj99@gmail.com>
Sent: Saturday, July 18, 2020 10:07 PM
To: Pam Schmeck <pschmeck@cityofeudoraks.gov>
Subject: Hamm Quarry

Hello Pam:
Good evening..
Hope you are doing well.
As an educator, a scientist, and a community leader, I am deeply disturbed by plans to expand limestone quarrying in Eudora.
The health hazards from particulate matter have been extensively reported all over the world.
There are many peer-reviewed articles on health hazards from limestone quarrying. In Puerto Rico, this article found significant noise pollution and diesel exhaust emissions besides the dangers from exposure to particulate matter.
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3885176/#:~:text=Multiple%20studies%20have%20shown%20that,7%2C%2019%2C%2021).
I have also attached a paper about the long-term effects of limestone mining in Meghalaya, India.
Can you please take the different stakeholders in confidence, and look at the science before granting the company a free rein?

Thanks and regards
Syed Jamal
1104 Prescott Dr
Lawrence, KS 66049

LIMESTONE MINING AND ITS ENVIRONMENTAL IMPLICATIONS IN MEGHALAYA, INDIA

R. E. Lamare and O. P. Singh*

Department of Environmental Studies, North-Eastern Hill University, Shillong-793022, Meghalaya, India

***For Correspondence:** *opsinghnehu@gmail.com

ABSTRACT

Meghalaya, a small state in north eastern region of India is abundantly blessed with coal and limestone. About 9% of the country's total limestone reserves are distributed in the state. Mining is carried out by open cast method of mining which is taking place at both large scale and small scale levels. The limestone mined is used chiefly for the manufacturing of cement, lime and edible lime etc. Scientific studies revealed that loss of forest cover, pollution of water, soil and air, depletion of natural flora and fauna, reduction in biodiversity, erosion of soil, instability of soil and rock masses, changes in landscape and degradation of agriculture land are some of the conspicuous environmental implications of limestone mining. In this paper we have reviewed the status of limestone mining and its environmental implications in Meghalaya, India. Results on impact of limestone mining on quality of water, soil and air, degradation of forest and availability of water are summarized and discussed. Based on overall impact of limestone mining in the area it is suggested that all stakeholders particularly the owners of mines and cement plants should give necessary attention to environmental issues prevailing in the area. Initiatives for proper management of natural resources such as water, soil and forest should be taken to halt further loss of forest cover and top soil and to prevent deterioration of water quality, soil degradation, air and noise pollution.

Keywords: Limestone mining, Cement Plants, Environment Issues and Problems, Meghalaya.

INTRODUCTION

India is a diverse country endowed with potentially rich mineral resources. According to the Indian Mineral Yearbook Report (2013), India produces around 90 minerals. Of these, 4 are fuel minerals, 11 metallic minerals, 52 non-metallic and 23 minor minerals (building and other materials). This indicates that the mining industry in India is a very important industry essential for the economic development of the country. Limestone is a non-metallic mineral and is a raw ingredient required for the manufacturing of cement, an important construction material. The total estimated resources of limestone of all categories and grades in India are 184,935 million tonnes. Of this, 14,926 million tonnes (8%) are under reserves category and 170,009 million tonnes (92%) are under remaining resources category. The state of Karnataka alone accounts for about 28% of the total limestone resources in India followed by Andhra Pradesh (20%), Rajasthan (12%), Gujarat (11%), Meghalaya (9%), Chhattisgarh (5%) and remaining 15% by other states.

However in terms of production, the state with maximum production is Andhra Pradesh accounting about 21% of the total cement production, followed by Rajasthan (20%), Madhya Pradesh (13%), Tamil Nadu (9%), Gujarat, Karnataka and Chhattisgarh (8% each), Himachal Pradesh and Maharashtra (4% each) and the remaining 5% is contributed by Odisha,

Meghalaya, Uttar Pradesh, Jharkhand, Kerala, Bihar, Assam and Jammu & Kashmir (Indian Mineral Yearbook Report, 2014). In India, cement industry alone consumed about 76% of the limestone produced, whereas 16% is used by iron and steel industry, 4% by chemical industries and remaining 4 % is used in sugar, paper, fertilizer and ferro-manganese industries. India is the second largest cement producing country in the world after China. There were 178 large cement plants having an installed capacity of 318.94 million tonnes in 2012-13 in addition to mini and white cement plants having estimated capacity of around 6 million tonnes per annum (Indian Minerals Yearbook, 2014).

Meghalaya, one of the eight states of North-Eastern Region (NER) of India lies between 25002'E - 26007'N latitude and 89049'E and 92050' E longitude. The geographical area of the state is 22,429 sq. Km with a total population of 29, 64,007 (Census, 2011). It comprises of three hill regions namely Khasi Hills, Jaintia Hills and Garo Hills. Currently the state is divided into 11 districts i.e. Garo Hills (5 districts), Khasi Hills (4 districts) and Jaintia Hills (2 districts). Undulating topography dissected by numerous rivers and streams are the characteristic features of the state. The state is blessed with rich and diverse natural resources, both renewable and non-renewable. Major renewable resources include water, forest, a variety of flora and fauna etc. Important non-renewable resources present in Meghalaya are coal, limestone, granite, uranium, kaolin, clay, glass sand etc. Of these, mining of coal and limestone has been taking place at large scale. Mining and exploitation of minerals have provided opportunity for a variety of employment and livelihood options to the local people. Besides, it has also contributed towards industrial and economic development of the state. On the other hand, exploitation of rocks and minerals including limestone has affected the local environment at its various stages of mining, processing and utilisation. In this article an attempt has been made to review the available information on limestone mining and its environmental implications in Meghalaya.

Geology of Limestone in Meghalaya

Geologically, the state of Meghalaya comprises of five different rock units namely: Pre-Cambrian gneissic complex with acid and basic intrusive, Shillong Group of rocks, Lower Gondwana rocks, Sylhet Traps and Cretaceous– Tertiary sedimentary rocks.

Limestone is distributed predominantly in the southern fringe of Meghalaya plateau and falls under the rocks formation units of Cretaceous–Tertiary sedimentary rock, which is divided into three groups i.e. the Khasi group, the Jaintia Group and the Garo group. The Jaintia Group is further sub divided into three formations which include the Longpar (lower), the Shella (middle) and the Kopili (upper) formations. The Shella formation is further subdivided into six members: the upper Sylhet Limestone (Prang limestone), upper Sylhet sandstone (Narpuh Sandstone), middle Sylhet Limestone (Umlatdoh limestone), middle Sylhet sandstone (Lakadong sandstone), lower Sylhet Limestone (Lakadong limestone) and lower Sylhet sandstone. The limestone deposited in Jaintia Hills possesses all the above three members of Sylhet limestone with alternating bands of limestone and sandstone. However, the limestone deposit in Cherrapunjee belongs to the lower Sylhet member (Lakadong limestone) of Shella formation consisting of limestone layers in the upper part of the hill and dolomite in the lower portion. Thus, the limestone rocks found in Meghalaya belong to the Shella formations of the Jaintia Group of Cretaceous –Tertiary sedimentary rocks of Eocene geological age (Sarma, 2003; DMR Profile, 2016).

Limestone Reserves in Meghalaya

Next to coal, limestone is the most abundantly found and extracted mineral in Meghalaya. Various grades and extent of limestone rocks are found in the southern fringe of the state extending for about 200 Km from Jaintia Hills in the east to Garo Hills in the west. According to Tripathi et al. (1996), the maximum limestone reserve in Meghalaya is reported in Jaintia Hills (55%), followed by Khasi Hills (38%) and Garo Hills (7%). Quality of limestone deposited in Meghalaya varies from cement to chemical grade in nature. In the Indian Mineral Yearbook (2012), it is reported that Meghalaya possesses about 9% of the country's total limestone reserve. However, as per the

present status of cement grade limestone reserve report (2014), India possesses about 123,829.64 million tonnes of cement grade limestone. Out of which, about 14959 million tonnes (i.e. 12% of the country reserve) of limestone is present in Meghalaya. The geographical distribution of limestone in Meghalaya is depicted in Figure 1. It is mainly distributed in the districts of East Jaintia Hills, West Jaintia Hills, East Khasi Hills, West Khasi Hills and South Garo Hills.

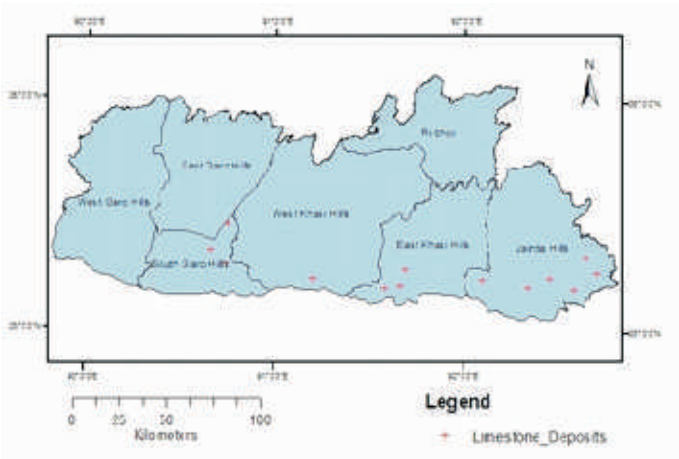


Fig. 1. Map showing distribution of limestone deposits in Meghalaya

Chemical Composition of Limestone

Limestone rocks are sedimentary in origin and classified as non-metallic mineral with inorganic origin in nature. The two most important constituents of limestone are calcite (calcium carbonate, CaCO3) and dolomite. Limestone often contain small amount of impurities such as magnesium, iron, manganese and lead. Dolomite is a carbonate of calcium and magnesium [CaMg(CO3)2]. Limestone is used in a wide range of industries. It has been utilised by man for thousands of years. However, it is a primary ingredient and raw material for cement manufacturing industries. Besides, it has many uses ranging from building material to white paints and fillers. It is also used as a chemical feedstock for the production of lime having numerous uses.

The limestone found in different parts of Meghalaya varies in chemical composition to some extent and thus differs in quality ranging from cement to chemical grade in nature. Generally, the CaO content of limestone found in Meghalaya is 53% (Kharkongor and Dutta, 2014). The chemical composition of various types of limestone found in Meghalaya is presented in Table 1.

Table 1. Chemical composition of limestone rocks at different locations in Meghalaya

Major chemical compounds in %	Jaintia Hills					
	Lakadong	**Lumshnong**	**Nongkhlieh**	**Nongtalang**	**Sutnga**	**Syndai**
CaO	42.27-53.89	40.69-54.67	40.46-53.88	46.33	48.75-53.09	42.00-49.60
MgO	1.25-5.58	0.20-11.55	0.36-7.12	3.51	0.72 - 3.41	0.56 - 2.07
SiO_2	0.14-3.12	0.04-17.20	0.16-10.00	-	-	-
Fe_2O_3	0.26-1.59	0.04---3.87	0.07-4.91	-	-	1.73 - 2.31
Al_2O_3	0.22-2.61	0.05-5.71	0.16-6.37	-	-	-
R_2O_3	-	-	-	-	0.48 - 5.40	-
Al	-	-	-	9.07	1.08 - 3.78	6.11-13.90
	East Khasi Hills					
	Cherrapunjee	**Komorrah**	**Laitryngew**	**Mawlong-Ishamati**	**Shella**	
CaO	44.33-53.53	51.97-54.95	52.02-54.41	51.91-53.04	48.15-53.98	
MgO	0.33-4.21	0.76-2.98	0.15-2.25	0.43 - 4.76	0.72-6.85	
SiO_2	-	0.46-1.90	-	0.56 - 2.78	0.38-5.20	
Fe_2O_3	-	0.28-1.11	-	0.38 - 0.48	0.28-1.72	
Al_2O_3	-	0.16-0.56	-	0.26 - 1.06	0.48-2.18	
R_2O_3	0.31-2.17	-	-	-	-	
Al	1.43-12.39	-	3.00	-	-	

SO_3	-	-	-	-	Trace
P_2O_5	-	-	-	-	Trace
Na_2O	-	-	-	-	Upto 0.25
K_2O	-	-	-	-	Upto 0.25
	West Khasi Hills		**West Garo Hills**		
	Borsora		**Darrang-Era-Aning**		**Siju-Artheka**
CaO	41.86-53.32		38.00-51.35		46.90
MgO	0.48-6.10		0.55-4.04		1.72
SiO_2	0.36-4.52		0.66-6.61		-
Fe_2O_3	0.64-5.78		0.43-5.28		0.47
Al_2O_3	1.14-6.55		0.24-27.05		2.69

History of Limestone Mining and Cement Plants establishment in Meghalaya

The history of limestone mining in Khasi Hills of Meghalaya seems very old. As per the Assam District Gazetteers published in 1906, limestone quarrying and trading in Khasi Hills have existed as early as in eighteenth century and it was a lucrative business to the people of Sylhet in Bangladesh and Khasi Hills of Meghalaya. From the earliest days of British rule, it is described that the lime quarries were situated all along the southern face of the Khasi Hills. Limestone was mostly used to make lime by burning it all along the banks of the Surma River. It was also reported that lime transportation from Khasi Hills to Sylhet was done during the rainy seasons by using the natural mode of transportation (i.e. through river) using a flat bottom canoe. This attracted a large number of Europeans who largely controlled the limestone mining, production and trading of lime in this part of India (Allen, 1906). Thus, limestone mining in Meghalaya is taking place for long time, however earlier it was small scale and for local uses only mainly for the production of edible lime.

Later, limestone was used for the production of cement after establishment of cement manufacturing industries in Meghalaya. The Mawmluh-Cherra Cements Limited (MCCL) was the first cement manufacturing unit in the state. It was originally established by some unknown industrialists in Cherrapunjee in 1955 under the banner name of Assam Cements Limited. The company was later acquired by the Government of Assam in 1964 and thereafter by the Government of Meghalaya in 1974 (Dolloi, 1992). This indicates that large scale mining of limestone in Cherrapunjee for the production of Cement started quite early. Later, the Lafarge Umiam Mining Pvt. Ltd., (LUMPL) began extensive limestone mining in Shella-Nongtrai area of East Khasi Hills of Meghalaya for its utilisation in Chhatak, Bangladesh by Lafarge Surma Cement Ltd., (LSC). The limestone mined form Meghalaya is transported to Bangladesh via a 17 Km long cross border Conveyer belt. This activity has been performed in the area since 2005. The LSC start producing and selling cement from 2006. However, mining of limestone was halt in 2007 by the Supreme Court of India in this area due to the pending environmental clearance from the court. However, later in 2011 mining in the area was resumed.

The origin of limestone mining in Jaintia Hills of Meghalaya is not very well documented. The Jaintia Cement Limited was the first private cement manufacturing plant established in Sutnga Village in 1986. Extensive mining of limestone in Jaintia Hills, Meghalaya started after 2004 after establishment of Cement Manufacturing Company Limited (Star Cement) in Lumshnong and then followed by other privately owned cement manufacturing units in the area. However, utilisation of limestone in Garo Hills for cement production started in 1991. Presently, more than a dozen of cement manufacturing plants are in operation in the state.

METHOD OF MINING

Limestone extraction in Meghalaya is carried out by open cast method of mining. It is taking place at both large scale and small scale levels. The large scale extraction of limestone is taking place in Jaintia Hills mainly for the manufacturing of cement. While both large scale and small scale mining are in practice in

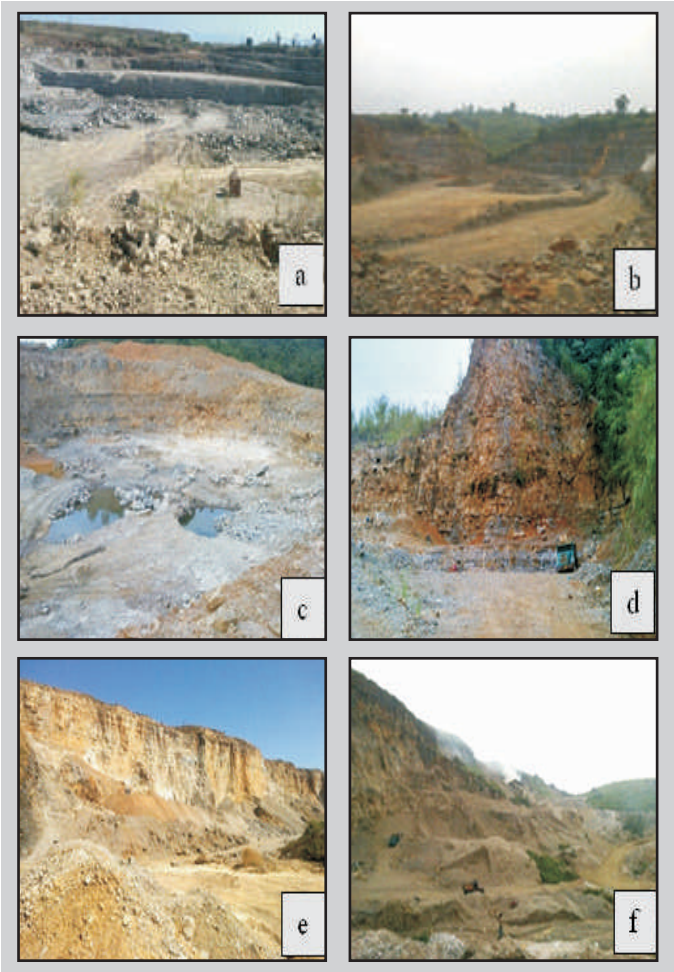


Fig. 2. Photographs showing open cast mining of limestone done by (a, b) cement companies; (c, d) locals in Jaintia Hills; (e, f) ASM limestone mining in Sohra, Meghalaya.

Sohra, East Khasi Hills (EKH) for production of cement, quicklime and edible lime.

The mining in Jaintia Hills is mostly done by cement industries. However, due to unique land holding system in Meghalaya, mining of limestone is also carried out by individual land owners. The mining process carried out by the cement industries is efficient being mechanical using heavy machinery for excavation. On the other hand, extraction by individual land owners is semi-mechanical and slow. Generally, extraction of limestone involves mechanical removal of overburden (using bulldozers), manual drilling the blast holes, blasting of rocks, manual shattering (sizing) of the limestone rock and then finally loading and transportation of limestone to the cement plants. Figure 2 shows different types of open cast mining of limestone in Meghalaya.

In Sohra (Cherrapunjee), limestone is being extracted both at large and small scale levels. The small scale extraction of limestone is done manually by individuals using minimal machinery and thus categorised as Artisanal and Small Scale mining (ASM). The extraction of limestone from the hillocks in Sohra (EKH) is carried out by several land owners sharing the entire Mawmluh hills. The limestone beds are drilled for blast holes using drilling machines, after which the rocks undergo blasting. The limestone rocks undergo manual sizing, so as to obtain a rock pieces of suitable size for easy transportation and processing in small vertical kilns. Mining is carried out by the people who are directly involved in the production of quicklime and edible lime. The processed lime is exported to the paper industry in the neighbouring states. The processed lime is also used for whitewashing of houses and walls. Other by-products (pulverised form of lime) obtained in the process of production of lime at ASM levels are used as soil conditioner in agricultural fields. Mining of limestone in Meghalaya is also done for other minor uses such as construction of temporary roadbed to the quarrying sites, cement plants and adjacent locality; house construction etc. Large scale mining is also done in Sohra, (EKH) by adopting mechanical methods for production of cement but by MCCL.

Cement Plants in Meghalaya

In last decade a number of cement plants were established in Meghalaya with maximum numbers found in Jaintia Hills alone. Presently, the cement plants are the main consumers of limestone rocks found in the state. The cement manufactured in Meghalaya is utilized in the state as well as transported to other states of the country. A list of cement plants operating in Meghalaya is given in Table 2.

Limestone Mining Leases in Meghalaya

In recent years, Government of Meghalaya has also granted limestone mining leases to several companies for mining of limestone, its utilisation and ultimately

Table 2. List of Major Cement Plants operating in Meghalaya

Sl. No	Company Name	Brand Name	Group	Location/Village (District)
1	Adhunik Cement Ltd	Adhunik Cement	-	Thangskai (EJH)
2	Amrit Cement Industries Limited	Amrit Cement	Amrit Group	Umlaper (EJH)
3	Cement Manufacturing Company Limited	Star Cement	Shyam Group	Lumshnong (EJH)
12	Cosmo Cement Ltd.	Cosmo Cement	-	Nongkhlieh (EJH)
13	Goldstone Cement Ltd.	Goldstone Cement	-	Musiang Lamare (EJH)
4	Green Valley Industries Limited	Max Cement	GNG Group	Nongsning (EJH)
5	Hill Cement Company Limited	Taj Cement	-	Mynkree (EJH)
6	Jaintia Cement Limited	Jaintia Cement	-	Sutnga (EJH)
7	Jud Cement Limited	Best Cement	Ud Group	Wahiajer (EJH)
8	Mawmluh-Cherra Cement Limited	Mawmluh-Cherra Cement	PSU	Mawmluh (EKH)
9	Meghalaya Cement Limited	Topcem	Prithvi Group	Thangskai (EJH)
10	RNB Cement Pvt. Ltd.	Magic cement	RNB Group	Barapani (Ri-Bhoi)
11	Virgo Cement Ltd.	Virgo Cement	-	Damas (EGH)

NB: EJH- East Jaintia Hill; EGH - East Garo Hill; EKH- East Khasi Hill

for manufacturing of cement. A list of mining leases granted to different companies operating in Meghalaya is given in Table 3. In addition to leases granted by the government, mining of limestone is rampant because of the unique land ownership in the state. Hence, mining in Meghalaya is predominantly in private hands. The extraction/mining of the rocks and minerals is carried out by the individual land owners in whatever way they deem fit and profitable. In most cases, the method of mining carried out was found unscientific, disruptive and degrading to the environment. Lack of reclamation responsibility and stringent regulated mining procedure further magnify the consequences of mining in Meghalaya.

Environmental Impact of Limestone Mining

Exploitation of rocks and minerals affect environment at its various stages of mining, processing and utilisation irrespective of its scale of mining. Denudation of forest, water depletion, pollution of water, soil and air, depletion of natural flora and fauna, reduction in biodiversity, erosion of soil, instability of soil and rock masses, changes in landscape and degradation of agriculture land are some of the conspicuous environmental implications of mining. The severity of environmental problems depends on the extent of mining and ecological sensitivity of the mining site. Both terrestrial and aquatic ecosystems are affected and the effects could extend beyond the boundaries of the mining area and be for a long term. Nartey et al. (2012) also reported that limestone quarrying in the Manya Krobo District of Ghana do have some negative effects on the environment. Impacts includes lowering of water tables, habitat destruction, encroachment of waste into agricultural land, destruction of buildings due to cracks, pollution of rivers, loss of biodiversity, destruction of crops, unclean rain water harvested from roofs and health related problems include inhalation of dust resulting in respiratory tract infections.

Table 3. Limestone mining leases granted by Government of Meghalaya

Sl. No	District	Name of Lessee	Location	Lease Period (Years)	Area in Hectare	Year Granted
1	East Khasi Hills	Mawmluh Cherra Cement Ltd.	Mawmluh	20	139.67	2001
		Komorrah Limestone Mining Co.	Komorrah	20	240.55	2003
		Lafarge Umiam Mining Pvt. Ltd	Nongtrai	30	100	2001
		M/S K. Singh Wann & Son	Ichamati Mawkhlain	20	4.56	2006
2	Jaintia Hills	M/S Adhunik Cement Ltd.	Mootang Thangskai Block -1	20	4.9	2009
			Block -2	20	4.9	2009
			Block -4	20	4.9	NA
		M/S JUD Cement LTD	Wahiajer Narpuh	30	4.76	2009
		Cement Manufacturing Co. Ltd	Lumshnong	20	4.96	2005
				20	4.7	2006
				20	4.85	2006
		Meghalaya Cement Ltd	Moiong, Chiehruphi	20	4.8	2007
			Khliehjri, Thangskai	20	4.9	2006
3	West Khasi Hills	Anderson Mineral Pvt. Ltd	Lalghat Cherragoan	20	60	2007

Source: Directorate of Mineral Resources Portal, Government of Meghalaya (2016)

Scientific studies on impact of coal and limestone mining on different aspects of the environment have been done in both Khasi and Jaintia Hills regions of Meghalaya. Water quality deterioration (Swer and Singh, 2003); reduction in aquatic biodiversity (Swer and Singh, 2004; Mylliemngap and Ramanujam, 2011); diminishing plant diversity due to change in land use land cover (LULC) (Sarma and Kushwaha 2005; Sarma et al, 2010); forest cover changes (Lele and Joshi, 2009; Somendro and Singh, 2015) and degradation in agriculture field and its productivity (Gupta et al, 2002) due to coal mining have been extensively studied in Meghalaya. Recently, Chabukdhara and Singh (2016) reviewed the environmental issues of coal mining in northeast India. Similarly, impact of limestone mining and its processing for cement manufacturing has been investigated with reference to general environment and LULC change (Chakraborty and Sudhakar, 2014; Somendro and Singh, 2015) and water and soil quality (Lamare and Singh, 2014, 2015 and 2016a, b).

The vital ecological issues related to mining of limestone rocks are discussed below and various environmental problems observed as the results of limestone mining in Meghalaya are shown in Figure 3.

Changes in Land Use and Land Cover (LULC)

Geographic information system (GIS) combined with remote sensing (RS) has been widely used as a powerful and cost-effective tool for detecting and analyzing the spatio-temporal changes in LULC. In Meghalaya, Chakraborty and Sudhakar (2014) analyzed LULC changes in Jaintia Hills to focus the impact of limestone mining and cement manufacturing activities leading to the loss of forest cover during 2005 and 2011.

They observed striking changes in LULC which were implicated with limestone mining and expansion of the cement manufacturing units. The conversion of

Fig. 3. Photographs showing (a) – Loss of forest cover; (b) – Creation of waste land by siltation; (c) - Encroachment of overburden into the forest area; (d) – ASM waste disposal forming a hill of lime waste dumping area; (e) – removal of top soil and landscape deterioration; (f) – encroachment of ASM waste into the nearby local streams; (g) - intrusion of mine waste such as rocks, pebbles and sand into the nearby streams; and (h) - local streams showing high turbidity due to its location near the cement plants; (i, j) - Blue colour of water of Lukha River during winter months.

forest area into non-forest area was observed. The total loss of forest in the area was found to be around 1265.36 ha from 2005 to 2011 within a radius of 5 km. They suggested for immediate necessary steps to control conversion of forest land into non-forest land. It is also known that forest depletion and land degradation have inevitable associations with extensive loss of habitat and biodiversity. Forest depletion is also intimately linked with loss of top layer of fertile soil and productivity. Recently, LULC was analyzed by Somendro and Singh (2015) in Jaintia Hills, Meghalaya during 1987 to 1999 and 1999 to 2013.

The study reported loss of forest cover and change in forest categories caused by various human activities such as mining of coal and limestone, industrial expansion, infrastructural development and built up area etc.

Further, a study covering north eastern region (NER) using satellite data was carried out during 1972 to1999 by Lele and Joshi (2009) to analyse the change in forest cover. They reported highest changes in forest cover in Meghalaya, Nagaland and Tripura. Reduction of forest cover in Meghalaya was attributed to extensive mining and shifting cultivation. Sarma and Kushwaha (2005) investigated the impact of mining on land use/land cover in Jaintia Hills during 1975–2007 and revealed extensive loss of vegetation and forest cover due to mining.

Similar studies have also been done in other parts of the country. Rajwar (1982) reported that unscientific and uncontrolled method of limestone mining in Mussoorie mountains have caused various adverse environmental impacts on the surrounding area leaving the region appeared scarred with irregular patches, loss of vegetation cover, emergence and growth of xerophytes, instability of the mountains and aesthetic degradation of the area. Likewise, limestone mining in Dehradun district was also reported to have consequences on forest cover. Depletion in plant diversity due to the stripping off, random digging and quarrying in the hills has also been reported (Sikka et al., 1984).

Degradation of Soil

Mining of rocks and mineral has an irreversible impact on soil both in terms of its quantity and quality. Excavation of land leads to loss of top fertile soil and alters the quality of soil in surrounding areas in terms of its physical, chemical and microbiological properties (Ghose, 2004). Removal of top soils is the basic operations involved in mining processes resulting into elimination of seed bank and root stocks (Parrotta *et al.*, 1997), depletion of

organic matter and nutrient contents (Akala and Lal, 2001; Panwar, 1999), modification of soil texture and structure (Grunwald *et al.*, 1988; Norland, 1993) and drastic deterioration in quality of soil (Adewole and Adesina, 2011).

Literature review revealed limited studies on impact of limestone mining on soil quality. Lamare and Singh (2015) reported land degradation and alteration of landscape topography by dumping of overburden/spoils and lime waste material due to artisanal and small scale limestone mining in Meghalaya. Further, excavation of limestone resulted in removal of fertile top soil and generation of spoil and overburden deteriorated the aesthetic beauty of the proximate landscape.

Sharma *et al.* (2013) emphasised that continuous mining of limestone in Solan District of Himachal Pradesh has induced dilapidation of the land environment of the area and deterioration of soil quality. This is chiefly due to the negative effects of mining activities such as deforestation, mining, and dumping of mining waste etc. Intensive quarrying of limestone in Mussoorie Mountains was reported to have led to loss of top soil and consequently acceleration of soil erosion in the area resulting into siltation of nearby rivers and streams and agricultural fields (Rajwar, 1982). Similarly, the soil regime of Madukkarai Limestone mine was also reported to be affected either directly or indirectly indicating low nutrient content compared to the soil in agricultural areas (Ravichandran *et al.*, 2009). Hanief et al. 2007 reported alteration in soil texture due to limestone mining in Sirmaur district of Himachal Pradesh. They found high percentage of sand and drastically low percentage of silt and clay in the mining affected soil. Sulphate content in the soil near limestone mines and cement plants in Rajasthan was reported to be high (GSI, 2009).

Etim and Adie (2012) reported that mining of limestone supported leaching of metals from the top soil into the surrounding area. Soil samples were found to range from uncontaminated to moderately contaminated categories in terms of heavy metal contamination coupled with low organic matter content. In contrast to these findings, Afeni et al. (2012) reported no significant adverse impact was observed on quality of soil in Nigeria, due to limestone exploitation.

Changes in Water Quality

Mining is known to affect water resources severely both in terms of its quantity and quality. Changes in water levels and flow, availability of potable and irrigation water, changes in sediment flow and deposition, degradation of water quality, reduction and degradation of habitat of aquatic flora and fauna and decrease in abundance and diversity of aquatic species are some of the adverse impacts of mining. Miller (1999) pointed out that water resources, undoubtedly are being polluted, diverted and disturbed from their natural conditions as a result of mining activity. As any other mining, the mining of limestone rocks is also reported to cause alteration in the quality of surface water and shallow groundwater (Naja *et al*. 2010). Iwanoff (2006) found high content of calcium, bicarbonates, sodium and chloride salts in the water of streams and rivers receiving a significant volume of mine water generated from open cast limestone mining areas in Northern Germany.

Deterioration of water quality due to limestone mining is also reported from India. Ravichandran *et al.* (2009) reported deterioration of water quality in Madukkarai limestone mine which was found responsible for exceeding the standard limit for water quality parameters like total dissolved solids, total hardness and chloride. However, no significant adverse impact of limestone mining on water quality was found in lower Himalayas (Prasad and Bose, 2001), Biramitrapur, Orissa (Mishra et al. 2004) and Vijayraghovgarh village, Madhya Pradesh (Ahmed *et al.*, 2007) and Chandrapur, Maharastra (Soni, 2007).

Assessment of water quality in limestone mining areas of Meghalaya was carried out in East Jaintia Hills (Lamare and Singh, 2014, 2016a, b) and East Khasi Hills (Lamare and Singh, 2015). In East Jaintia Hills, water samples of streams near limestone mining and cement plants were analysed. It was found that both limestone mining and cement plants have negative impact on the physicochemical characteristic of water of the area. Study found

elevated levels of pH, conductivity, dissolve solids, hardness, calcium and sulphate in affected streams. It was also reported that Cement plants have contributed more towards water quality degradation than the limestone mining in East Jaintia Hills, Meghalaya.

Further, seasonal variation in water quality of Lukha River (Wah Lukha), a major river in East Jaintia Hills, Meghalaya was reported (Lamare and Singh, 2016b). For last 7-8 years water of the river turns deep blue in appearance during winter months. Activities such as mining of limestone and coal, manufacturing of cement, deforestation etc. occurring in the catchment were found responsible for seasonal changes in water quality of Lukha River. Acid mine drainage (AMD) from coal mining areas and powdery sediment, most likely originating from cement plants were suspected causing precipitation of aluminum and such other compounds which give deep blue appearance to water colour due to scattering of light. Physicochemical analysis revealed that river water possesses low pH and high electrical conductivity, turbidity, total solids and high concentration of calcium and sulfate.

Impact of Artisanal and Small Scale Mining (ASM) of limestone rocks in Sohra, Khasi Hills, Meghalaya was found to be localized near the limestone mining area (Lamare and Singh, 2015). High pH, EC and sulfate values were found remarkably above the standard range of water quality and recognized as the factors responsible for deterioration of water quality. Based on water quality index analysis, water at some locations was found not fit for drinking and other domestic uses throughout the year. CGWB (2012) also reported that coal mining; limestone quarrying and cement factories are the main anthropogenic activities causing problems to the environment of Meghalaya and in particular, chiefly the water bodies.

Impact on Air Quality

The main issue with mining in relation to air quality is generation of dust particles (Ghose and Majee, 2000). In mining or quarrying, different activities taking place are known to have an impact on air quality. Long term exposures to various air pollutants have significant health related problems (Sunyer, 2001). Relatively, less work has been done on air pollution in relation to limestone mining. Rajwar (1983) found that the limestone quarrying elevates dust concentration and consequently affects physiology of plants. In addition, health related problems were reported by Mishra *et al.* (2004) as a result of limestone mining.

Activities involved during limestone extraction like drilling, blasting, loading and transportation generate dust into the surrounding area causing air pollution mainly suspended particulate matter (SPM). The gaseous pollutant released into the air are attributed by the motorized machine involved during the entire processes i.e. bulldozer, drilling machines, dumper and transportation vehicles. No data is available to on air quality of the limestone mining areas of Meghalaya. But, wide spread limestone mining and presence of large number of cement plants in Meghalaya are likely to have significant impact on air quality of the area.

Noise and Vibrations Problems

Extraction of limestone involves activities like drilling of blast holes, blasting of rock beds using explosives and transportation. These activities generate hefty and annoying noise pollution to the inhabitants and likely to have an adverse health impacts. In addition, multiple undesirable effects such as geological displacement and destabilisation of the area, drying up of spring water, decrease of water table, weakening of the rocks formation leading to slopes failures and increase probability of landslides. No information is available on noise pollution in limestone mining areas of Meghalaya.

Water Scarcity

Region with Karst topography are reported to have problems of water scarcity due to absence or lack of surface streams and availability of groundwater at a greater depth (Legard, 1973). In Meghalaya, only a few surface water bodies are present in limestone deposit areas. Some water bodies are found above ground for certain distances and then they disappear due to flowing underground and then again emerge at some point somewhere else. Such phenomena lead to

water scarcity in the area. Mining of limestone and establishment of cement plants in the region have further aggravated the water scarcity in the area. The small natural streams near the mining vicinity are seen to have been deviated or covered with rocks, gravels, pebbles and sand. Excessive silting in all water bodies was also found in the area. Water bodies near the cement plants were found contaminated and water is not fit for human consumption (Lamare and Singh, 2014, 2016a).

Based on the field observation and feedback received from the local inhabitants, it was found that area is facing the problem of water scarcity particularly in winter months. The main causes are drying up of water sources and their contamination. However, in some villages due to limited access to portable drinking water, people have no choice but to use the polluted water for drinking and other domestic purposes. Many perennial streams and rivulets, in recent years have turned seasonal.

Other concomitant Problems

In East Jaintia Hills, Meghalaya various other concomitant problems were viewed due to the limestone mining and cement plants operating in the area. This area was formerly known for orange cultivation and production. However, due to land use land cover changes taking place in the area many orchards of oranges were found destroyed. Further, it was found that due to unknown reasons the orange trees in this area no longer bear healthy flowers and fruits and thus many farmers have stopped orange cultivation.

People residing in the hilly areas have the practice of harvesting rain water for drinking purposes. However, after the establishment of cement plants in the area, this practice has declined drastically due to the daily deposition of dust on the roof top causing the contamination of collected water. Decline of traditional agricultural practices to certain extent due to the quick revenue obtained from mining of limestone is another serious problem in the area. The locality situated adjacent to the cement plants experience deposition of thick dust throughout the year especially during dry season. Thus, the vegetation cover found here is no longer lush green and shows reduced plants growth. Cement dust falling on the soil are known to have effects such as change in the soil pH making it more alkaline and unfavourable for certain plants species and also causing leaf injury or death in plants due to blocking of light for photosynthesis (Darley, 1966; Lerman and Darley, 1975). Local inhabitants are also of the opinion that caves in this area possess very less number of fishes in recent years leading to drastic decline of cave fishing by the local people.

CONCLUSION

Based on above information it can be concluded that limestone mining in Meghalaya has impacted various components of environment and the life and livelihood of the local population. It is therefore attention of all concerned stakeholders; particularly the owners of mines and cement plants are drawn for proper management and conservation of the environment in order to halt further loss of forest cover and top soil and to prevent deterioration of water quality, soil degradation, air and noise pollution for the healthy environment and sustainable development of the region.

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Ben & Nicole Eaton
959 E 2300 Rd.
Eudora, KS 66025

July 24, 2020

Eudora Planning Commissioners
VIA EMAIL: pschmeck@cityofeudoraks.gov (City Clerk)

RE: Hamm Rock Quarry; Expansion Permit
Permit #: CUP-19-00568

Dear Commissioners:

We are writing as concerned citizens relating to the expansion permit filed by the Hamm Rock Quarry. Please place this letter in for the Commissioners review for the meeting scheduled on August 5, 2020.

We are residents of rural Eudora, Kansas, approximately 3 miles south of the current quarry location. Unfortunately, we had no notice that this proposal was occurring until something was mentioned on social media. While Johnson County residents were notified, by mail, concerning this proposal, residents of Douglas County and Eudora, Kansas, were not. The "secretive" operative to get this passed is unsettling.

Our largest concern for this permit is the influx of traffic that additional mining may occur for the city of Eudora. The truck route is to utilize N1200 Road and E2200 Road (Church Street), to gain access to K-10 or U.S. 56. Those trucks going north to K-10 must pass the Middle School and the High School. Being the parent of a newly-licensed high school driver, the current traffic scares me – especially for a fresh, inexperienced driver – let alone if the traffic is to be increased. Unfortunately, the conditional use permit approved this truck route for the Hamm Quarry – in 2002. The new (current) high school was not opened until 2003, and then classroom additions to both the Middle School and High school were approved in 2007. Then, in 2010, the Eudora-DeSoto Technical Education Center opened at the high school. The population of Eudora, in 2002, was 4,895 people. The population in 2018 – 6,384. According to the 2010 Census, there were 6,136 people in Eudora – 31% of residents were under the age of 18.

Our point is this – the previous conditional use permit for the truck route was prior to the increased traffic already focused to that area of Eudora. The citizens of Eudora, Kansas have had multiple complaints of the way that traffic is already when school is in session, let alone if additional dump trucks and other heavy equipment are traveling through the area. The trucks may not go through residential areas, but they will still impede the traffic on Church Street, including those that are traveling to school. A thorough traffic survey must be done to determine what improvements are necessary to handle the current traffic flow, let alone increased traffic with heavy equipment and dump trucks. Lastly, what happens when there needs to be road work done on the truck route? It must be directed elsewhere. When the repair was done at the corner of E2200 Road (Church Street) and N1200 Road, the trucks were directed to go north on E2300 Road. This road is nothing but gravel. There is a bridge that is not designed to handle the weight of these trucks. The gravel roads are not built for heavy traffic – which puts a burden on the township to maintain the roads to be safe for regular passenger vehicles.

Being a rural resident, we are not on rural water, but on well water. We are quite concerned about how an expansion of a business that already can have harmful effects on natural resources and the environment may affect us relating to our water. Looking at the map of wells that are in the area around

Hamm Quarry (which, if like our residence, there are plenty of older homesteads that the wells were dug before Douglas County started tracking them), there are plenty of people that solely obtain their water from their wells. Having to rebuild wells, or even hauling water, is a great expense – one that we cannot burden. If there is a chance that our well water will be affected by the expansion of this Quarry, I cannot sit back and allow it to happen without making my concerns known.

Further, while we are not impacted like the immediate neighbors of the Quarry, we are concerned of the noise level of the blasting. As mentioned, we live three miles away. However, there are certain times that we can hear and/or feel the impact of these blasts – I can only imagine what it is like for those that live nearer to the Quarry. This blasting could be detrimental to the foundation of people's homes. Further, for the pets, livestock, or even wildlife nearby, the sound decibels of the blasting is horrendous for their hearing. For instance, Captain Creek Ranch is immediately to the east, just inside the Johnson County line. Many individuals board their dogs at this facility because they are in the country – without having to add to the stress of being in a boarding facility already. Adding more blasting may cause this business to close.

If the Quarry is allowed to be expanded, what will happen when they need to expand more or move because the resources have been depleted? We will have a 185-foot hole and a 65-foot hole (in addition to the "ponds" that are already on the property, that took many years to "fill in") that will cause hazardous conditions. What can be done to repurpose this? Another deep watering hole? Will it be habitable? It will be a wasteland with no purpose, taking away valuable farm land or potential residential areas that can expand our town.

We share many of the concerns in the other letters that have been presented to the County Commissioners as well as the City of Eudora – all that have to deal with the traffic, and the environmental impacts on not only the surrounding residences, but on the agricultural businesses that are nearby. Please take note of all of our concerns and give us the chance for our voices to be heard – not just listening to the sounds of money or big business.

Thank you.

Sincerely,

Ben & Nicole Eaton

Cc: Douglas County Board of Commissioners, listed specifically:

Patrick Kelly, 1st District Commissioner
VIA EMAIL: pkelly@douglascountyks.org

Nancy Thellman, 2nd District Commissioner
VIA EMAIL: nthellman@douglascountyks.org

Michelle Derusseau, 3rd District Commissioner
VIA EMAIL: mderusseau@douglascountyks.org

From: Jim Gabriel <jagabriel7290@gmail.com>
Sent: Tuesday, July 28, 2020 10:18 PM
To: Pam Schmeck <pschmeck@cityofeudoraks.gov>
Subject: Hamms Quarry concerns

Dear Pamela and Eudora Planning Commission Members,

My name is Jim Gabriel, and I've been a Eudora resident my entire 47 years. My family has been in Eudora for 5 generations, and I've lived at 2267 N. 1200 Road for over 26 years. I'm writing to all of you to voice my concerns about Hamms Quarry. Previous letters to some of the Douglas County Commissioners seem to have fallen on deaf ears. I know Hamms is a large company with big money, but previous attempts to get them to follow-through on promises made, and concerns with how their business affects my livelihood, seems to be nothing more than laughable to them. I'm praying somebody will listen to not only the effects their business has on my family's life, but also the impact it will have on Eudora Residents in the not so distant future.

They have made repeated promises to the County Commission to conduct continuous dust control on our road. Two times a year does not account for the constant dust that is causing respiratory illnesses to my cattle, and affecting my crops closest to the roadside. The trucks start running as early as 5 AM on some days, and as late as 11 PM. I have three elementary age kids who struggle with sleeping when the trucks run those early and late hours. My children can no longer ride their bikes to their grandparents just down the road, because the volume of truck traffic makes it unsafe for them to do so. This also includes weekends. We are constantly picking up trash from fast food restaurants that drivers throw from their trucks into our ditch. These issues pale in comparison to what will happen if they continue to blast deeper, and either drain or contaminate our water well. This will also affect most everyone in the surrounding area who are also on the well.

Hamms parent company also owns a waste management company. It is no secret that rock quarries often end up as landfills when they are no longer used for mining. This will drastically destroy our property values if a landfill were to go in just east of town, not to mention the odor that would end up in the city limits anytime the wind blows.

I realize we're just the "little guy", and Hamms throws a lot of money at the Eudora School Foundation and other organizations to make themselves look good. I'm sure my own kids would be enamored by a field trip to the quarry, but that doesn't make up for the lack of concern or respect this big business has for the area residents. I'm not blind to the real reason Hamms has given away their "financial smoke screens"...aka, charitable donations, to entice the City of Eudora to see them as a welcome neighbor. In all reality, they intend to do whatever they want to do, and when the grim reality sets in, it will be too late to do anything about it.

Thank you all for your time.

Sincerely, Jim Gabriel

*Please forward this to the Planning Commission Members.

To the Eudora planning commission,

My name is Gary Beers and I live at 39530 W. 119th St. Eudora Kansas. I want to voice my opposition to any expansion of the Hamms quarry on 1200 Road. There has been no notification to any of us that are in Johnson County but have a Eudora address about this expansion. We are the closest neighbors and have to deal with the quarry daily. My farm is a 1/4mile East of the quarry on 119th St.

The 4 owners of the farm property directly east of the quarry across County line Road, the owner of the farm directly southeast of the corner of 1200N and County line, the two owners of the farm 1/2 mile east on 119th St., nor I have been Notified of this expansion. This directly contradicts what was reported on Hamms permit application. This would not be the first time Hamms has not been truthful or followed through on their promises.

I have lived here and dealt with the quarry since 1984, my grandfather since 1939. As the quarry grew and truck traffic has increased to 200 to 300 trucks per day they promised to supply the township with rock to keep up the road. At one time they said they would asphalt the road to keep down dust and potholes, neither has happened. It is the roughest 2 mile stretch of road in Douglass or Johnson County. I have five cars and trucks and one semi and all but one have cracked windshields from rock trucks passing me. They promised to apply dust control which has happened Infrequently over the years.

I cannot move farm machinery down the 2 mile stretch of road because it is too narrow to safely pass by a semi rock truck and the ditches are too washed out and steep to pull over. A loaded rock truck will not share the road!

Loaded trucks run east to County line Road and then turn south and north to travel on County line. They continue north on County line and cross over a bridge not rated for 80,000 pounds and travel a very narrow road with three Blind 90° corners to come out on 2350 Road to get to 10 highway. Hamms told us truck traffic would never be allowed to head east out of Quarry.

Their asphalt plant which is to have limited hours, runs all night. I have personally witnessed trucks lined up for a 1/4 mile on 1200N waiting to get in the quarry to load at 2 AM.

The noise is a constant drone as they crush and grind rock and when the asphalt plant is running it becomes even more pronounced. The blasting can be felt through the ground and at times has shook the house. The foundation of the Petefish house

directly southeast across the corner has been completely cracked and destroyed to the point that the house is unlivable.

The request by Hamms to dig 200 feet deep could only be for one purpose as they will not have the overburden or topsoil to reclaim the ground. I believe Hamms intention is to open a landfill which will only bring a huge increase in road traffic on roads never designed for it. Debris will fall along the 2 mile drive to the site and be blown around on the surrounding farms. Not to mention the smell. The water table for our wells could be effected. The surrounding properties values would plummet and we would be left to deal with the mess. Eudora and Eudora township roads would suffer the increase in rock truck and trash truck traffic which would then have to be constantly repaired at higher and higher cost to taxpayers. If this project is allowed to go forward Hamms will laugh all the way to the bank and we will all suffer the consequences!

I am pleading with you to do the right thing and protect our farms and farm families who have been a part of this community for years and years and in my case since the founding of Eudora.

Thank You
Gary Beers

Dispatch Information			
Request ID Number:	224	Request Location:	Church st Church St Eudora, Ks
Date Printed:	7/15/2020 4:27:37 PM		
Assigned to:	Rhodes, Jeffery		
Priority:	Normal		
Request Type:	Eudora App	From Richard Herries	

Original Request Information	
Date Submitted:	8/17/2019
Original Notes:	The trucks from the Hamm Quarry are destroying Church St from 28th street to 10 Hwy. They are also a nuisance during school drop off and pick up. Is Hamm going to pay to rebuild the road, no! They might get the contract to repair and make more $ for destroying the road. Once again that will be a nuisance as a major thoroughfare will be shut down to repair it. Church street was in great shape until 2 years ago when the trucks started running on it. If the trucks are going on 10 Hwy not sure why they don';t take they don';t go down the gravel road to the other Eudora exit. sorry don';t know names of roads or exit numbers. This is something that needs to be looked into before it becomes a bigger problem

Start	Stop	Work Performed
Total Time:		

Parts Used / Follow Up Needed

Signature

Date