

2019 Road Work List version 3 (9/1/19)

Summary

Brief expenditure summaries:

- List seeks to work up to and within the recent cash-flow and budget our Treasurer created about Road Maintenance, which corresponds with the July BOD motion, which is a total of \$15,000.00. On August 31, 2019 the Special Assessment passed for a rake and gravel purchase which will add approximately \$2000 to the \$15,000 being able to be spent on prioritized road maintenance, so those expenditure decisions will be forthcoming.
- The gist is this: The July heavy rain created unusual damage and added critical repair costs to contend with. Altogether, our \$15,000 budget is projected to get filled ditches cleared, culverts cleared, several heavy erosion spots dealt with, and most road sections that were washed flat can have crowns restored to them, and this includes a \$1000.00 buffer for overages. It also includes fall raking and a couple of the worst ditch erosion spots repaired. There are no general gravel placement expenditures provided within our \$15,000 budget; gravel placement is secondary in priority to critical watershed maintenance and there is not enough money to spend on gravel at this time. Regarding gravel, as can be seen in the Treasurer's August 14, 2019 Update of Cash Flow which includes \$15,000 for road maintenance, we are projected to end this fiscal year with approximately \$14,000 left in cash-on-hand (as long as plowing and other categories don't go over budget); it is proposed that with our severely limited budget we wait until spring to spend remaining cash-on-hand on gravel placements. Because of the 8/31/19 passing of the Special Assessment which will allow new additional gravel expenditures, some of #2 priority items on the list which involve gravel placements may be acted on.
- The reader will note that next to each work item under Divisions below there is a number 1-3 and then a dollar amount. The number designates the priority from highest to lowest for performing the duty, and the dollar amount is of course the projected amount to perform the duty. Priorities #1 all deal only with critical watershed repairs (culvert cleaning, road crowning, road plane erosion control and repair, then ditch erosion control repair). Priorities 1.5 are erosion control measures/repairs that are strongly needed but take an immediate back seat to #1 when pressed to have to make budget choices. Priorities #2 are next and involve more extensive ditch erosion control and road plane erosion repair/crowning (adding gravel to assist). Priorities #3 are lowest and involve capital improvements and other items that stand out as needed maintenance or improvement.
- Work List totals:
 - \$10,450.00 All #1s
 - \$839.57 sales tax on #1s
 - \$1000.00 expenditure buffer
 - \$12,296.45 total above
 - \$2954.00 All #1.5s
 - \$239.27 sales tax on #1.5
 -
 - \$15,489.72 TOTAL**

- All of the above fits within the budget. The following Work List items do not fit into the budget:
 - \$26,359.10 all #2, with sales tax
 - \$29,087.55 all #3, with sales tax
 - other gravel expenditures, including yearly gravel replenishment due to wear from traffic.
- All work items were assessed in May 2019 and revised again in late July/first week of August after the severe rain storm most of the Ranch endured. The List will be modified as work and the season progresses. The List is not meant to be an absolutely complete list of all possible road work items desired throughout the Ranch but rather seeks to highlight especially the main priorities within current plausible budgets. All #1 and #1.5 work items on the list have been scheduled and planned with work contractors and work will commence from late August forward. The Road Committee has decided that while it is not desirable to work on roads when road conditions are relatively dry we will commence work nonetheless, as it is possible there may not be better ground moisture before snow comes and it is important to make sure critical watershed tasks are completed going into winter. Road Committee representatives will monitor work as it progresses and consider halting work if conditions are just too obviously negative.

General Notes to Work Contractors

- Call for locate for power lines for ALL ditching before pulling ditches! Contractors are not expected to administer this free of charge, so if such work is performed we will expect charges for man hour labor and travel mileage if necessary to deal with locating.
- All gravel placement should be laid to promote center road crowning. This means that if the product will not be machined after placement to create crown then truck spread the product by ½-lapping two runs down the center of the road, or one load straight down the center, depending upon preferred circumstances.
- Place safety 'road work' signs up where prudent (blind sight areas especially).
- If possible and affordable, grade up hill, to promote restoring road product that has eroded down hill and to maximize grader machine operation capability.
- Many roads do not have good gradable top coat gravel for a grader, so if the grader work asked to be done involves crowning, restoration, and ditching because there are bad existing watershed properties then please proceed with grading. But if water sheds OK as-is and the road will suffer because the grader will dig up the bouldery surface then please don't grade.

Division 1

1. **#1.5 / \$1350.00** At .2 miles down Point Drive from where it intersects with 399 Nine Mile Road: fix erosive conditions on some sandy embankments above the ditch. Reestablish ditch, install (2) loads of rip rap in the ditch and up the embankment where obvious sloughing has occurred recently and washed through the culvert. Likely using a hoe?
2. **#1.5 / cost included in #1 above** If #1 above involves the hoe, use the hoe to clear some of the siltation in the ditch on the outlet side of the culvert in #1.
3. **#1 / \$95.00** Machine clear the culvert outlet at the intersection of Sunset Ridge and Canyon

View.

Division 2

No immediate repair work identified. Due to severe budget constraints we have placed the following potential work items on Allen Drive on a low priority status:

1. Ideally deepen a few short sections of ditch.
2. Improve some sections of road crowning to improve watershedding to the sides of the road. The original road construction in this region needs to be raised and crowned by placing additional gravel down the center of the roads in order to improve any watershedding characteristics without deteriorating the road edges gravel to a muddy point (in other words, if we try to grade a crown to the center by cutting the road edges we'll remove/destroy the existing surface gravel in the edges and expose a fair portion of the road to subsoil erosive muddy conditions). The road needs installation of thick layers of appropriate-sized road gravel in the center of the road; this will preserve road edge gravel (erosion resistance and traffic bearing capacity) and will give elevation to the road such that ditches can be effective. This would also allow the potential installation of a culvert at a flat/low spot at about .46 Allen Drive, but the small amount of watershed in this area (and therefore the small amount of negative impact to the road) renders this improvement low priority.
3. Due to original road construction relative to the region's soil composition and high water table, pretty much all of Division 2 roads are in lower capacity to support traffic weight; in other words, they're prone to being mushy when wet compared to other typical Ranch road sections. In order to cure this we'd have to install many tens of thousands of dollars of larger road ballast gravel and then a top coat; such an endeavor will be kept in mind and may be acted on in short sections over a period of many years.

Division 3

1. Ditch with grader (and any associated road plane erosion/crown repair if the material in the road can bear it):
 1. **#1 / \$590.00** On Wagon Wheel, from .46 and further approximately .25 miles, reestablish the ditch and crown and fix road plane erosion.
 2. **#1 / cost included above** Reestablish ditch on first .20 miles of Wagon Wheel, below the steep grade.
2. **#2 / \$1308.00** Install (4) loads of 5/8"-minus on Wagon Wheel, from .46 and further approximately .25 miles wherever most needed.
3. **#2 / \$729.00** On the first grade of Wagon Wheel just off of Nine Mile Road, starting at approximately .15 where the road planes flat and turns right, going downhill from there install (1) load of Chris Wolley 1 1/4"-minus down the center of the road and then come back over that with (1) load 5/8"-minus. Walk down with truck.
4. **#2 / \$196.00** Install approximately 1.25 cu. yards of 5/8"-minus in a sump spot in Wagon Wheel at the top of the grade at about the .3 mile mark (contact Kirk for access to this small amount of needed gravel). This is probably a job involving hand shoveling and placing the gravel. Pack the grave; placement with a car/truck.

Division 4

1. Ditch with grader (and any associated road plane erosion/crown repair if the material in the road can bear it):
 1. **#1 / \$1550.00** On Sunset Ridge, starting about .2 miles up from the Old Tressle intersection and going approximately 200' up road.
 2. **#1 / cost included above** Cut a ditch across the private driveway on Old Tressle road about .15 miles east of the Sunset Ridge intersection, on the north side of the road (obvious washover spot).
 3. **#1 / cost included above** Cut a ditch across the private driveway on Old Tressle road at .29 miles west of the corner where the giant residential rockery is, and grade out any needful washover in the general area.
 4. **#1 / cost included above** Restore ditch at top of Pine Bluff just below and up to where it intersects with Old Tressle.
 5. **#1 / cost included above** Cut ditch across private drive washover at "44 Pine Bluff", smooth out the erosion across the road if the grader can do it.
 6. **#1 / cost included above** Restore ditch on the first grade of Pine Bluff, about .2 miles from Chesaw Road.
 7. **#1 / cost included above** Restore ditch on Pine Bluff at about .35 miles up from Chesaw Road.
 8. **#1 / \$650.00** On Point Drive, at .30 from Nine Mile Road across from Wagon Wheel Division 3, restore the filled ditch going down the slope into the gulley, grade the road in this area to what degree it needs any crowning and will not excessively pull up road base by using a grader.
 9. **#2 / \$981.00** On point Drive, at about .85 from Nine Mile Road (just above the Eagles Nest intersection) install (3) loads of 5/8"-minus gravel crowned in the center of the road. This will elevate the road section to allow better installation and maintenance of ditches.
 10. **#1 / cost included above** On Point Drive at about .60 (starting just past the intersection with Crest Drive) restore the filled ditch, and continue up through to intersection with Meadowlark Spur as needed and able.
 11. **#1 / cost included above** Restore the ditches and repair road plane erosion on the steep grade on Crest Drive.
 12. **#2 / cost not yet estimated** If buried power and phone lines in the shallow ditches allow, potentially install ditches in a very short section at the top of Crest Drive (prior long-time work contractor Tim Roberts has repeatedly refused to perform this ditching in the past because of his alleged knowledge of shallow lines). Most of Crest Drive was originally constructed on surfaced bedrock, is extremely narrow, and has steep erosive embankments, all of which caused the developer to choose to install power and phone very shallow in ditches in this area. Further, the local watershed area (potential volume of water flow) is very small and at the end of a road... all of these these factors place this potential work item as a lower priority.
 13. **#1 / \$250.00** Restore the ditches and repair road plane erosion between .15 and .55 on Old Tressle from the Chesaw Road.
 14. **#2 / \$5050.00** Restore ditches and repair road plane erosion between .7 and .95 on Old Tressle from Chesaw Road. This area of repair is unique, as it involves controversy over

the owner of Lot 20 (Division 4) literally killing barren approximately 1.5 to 2 acres of that Lot – which has been maintained like this for 10+ years (?) – therefore causing that land section to have severely reduced erosion resistance capacity and in turn burden the ditches, roads, and culverts in the area with excessive water flow amount and speed, and also excessive siltation from the land and erosion in ditches. Minimum current repair recommended for the easement:

1. install (6) loads of rip rap shale in approximately 300 lineal feet of deeply eroded ditch, deliberately machining in place the rip rap to armor the ditches durably.
2. Grader work to facilitate, if necessary. No gravel placement is included.
2. Using (2) loads of rip rap:
 1. **#1.5 / \$950.00** Install approximately 150' lineal feet of eroded depth ditch on Sunset Ridge, starting about .2 miles up from the Old Tressle intersection.
 2. **#1.5 / cost included above** Install remainder of rip rap into a downhill embankment erosion spot on the south side of Old Tressle about .15 miles east of the Sunset Ridge intersection.
3. **#1.5 / \$654.00** Install (2) loads of 5/8"-minus at the top of Pine Bluff to restore some of the recent erosion.
4. **#2 / \$725.00** Install (2) loads of 5/8"-minus at about .35 Pine Bluff, just below the bend in the road where the double wide modular and garage driveway entrance is, to restore crown on road.
5. **#2 / \$150.00** Using a hoe remove the recently dropped timber slash that is cluttering the ditch at the .1 mile point of Old Tressle from Chesaw Road.
6. **#2 / \$3300.00** Install (12) loads of either 5/8"-minus or the same amount of machined pit run on an approximately 500' section of Point Drive; this would be installed on the most needful stretch in the first ½ mile from Nine Mile Road.
7. **#2 / \$550** Install (1) load of rip rap in the deeply eroded ditch at .30 on Point Drive from Nine Mile Road (grader repair for this ditch area is enumerated at 1.7 above).
8. **#2 / \$981.00** Install (3) loads of 5/8"-minus on Point from just past the Eagles Nest intersection up through to the Meadowlark Spur intersection.
9. **#2 / \$327.00** Install (1) load of 5/8"-minus on the eroded slope of .40 Old Tressle from Chesaw Road.
10. **#2 / \$600.00** Install 1-2 loads of rip rap in the eroded ditch at .40 Old Tressle Road.

Division 5

1. Ditch and grade with grader:
 1. **#1 / \$375.00** Reestablish various ditches throughout the creek crossing ravine area, and grade the road for smoothing and crowning.
 2. **#1 / \$550.00** Restore ditch, repair erosion and road crowning on Canam Road about .25 miles west from the Blue Grouse intersection. This is through a steep embanked and erosive winded area of road.
2. **#3 / \$14,000** Approximately 200' from the culdesac at the end of Mallard Drive there is a 250' stretch of road that is extremely narrow and is a winter snow plowing and driving safety hazard. The uphill embankment side of the road is encroaching the road width with siltation, and the downhill embankment side is erosive; together these dynamics have narrowed the

road significantly. Solution: excavate the uphill embankment 7' inward and transport the fill to a nearby roadside storage spot for future fill use (some of the fill can be brought and placed at the culdesac to increase it's turning diameter, as it is currently narrow). For information-sake, the measured and calculated volume of dirt is (130) 10-yard dump truck loads, x 40 minutes to excavate and transport each load, x \$150.00 per hour = \$13,000. Then add another roughly \$1000 for machine time and gravel to get the road stabilized again.

3. **#2 / \$1925.00** Raise low road section at approximately .2 miles down Meadowlark Road from the Mallard Drive intersection: Use a combination of harvested fines from the creek ravine (some piled already by the silver tarp, and the rest to be harvested from the sloughage at the obvious steep erosive embankment on the south side of the creek) and layer that with harvested roadside ribbons of large pit run from Mallard Drive roadside between 1.5 and 1.75 mile points. Grade to mix layers, and truck pack as necessary.
4. **#2 / \$570.00** Fill low spot in road on Meadowlark Road at approximately .5 mile spot, just past the residence that has the garage right next to the road. Use either a pit run with fines of layer one load of larger pit run with creek ravine fines sloughage. Grade and truck pack as necessary.
5. **#2 / \$735.00** Install (2) loads of 5/8"-minus on the steep boulder-laden slope at the 1.5 mark point of Mallard Drive at the intersection with Meadowlark road. Truck pack as necessary.
6. **#1 / \$1455.00** Fix deep erosion ditch just above the cattle grate on Mallard Drive at approximately .2 miles past the intersection with Blue Grouse: hoe dig a 2' deep ditch where the ditch belongs, place that removed material in the erosion channel in the road, truck or hoe pack that, then place approximately 1.5 loads of rip rap in the ditch to prevent future erosion. Place the remaining rip rap in a pile, for future use, at designated spot jst above the cattle grate on the southeast side of the road (consult with Kirk before placement, as this area is used for other reasons also that we do not want to thwart). Place (1) load of 5/8"-minus down the road, for crowning and road restoration (substitute for a larger diameter product if it seems the road needs more ballast because its too soft from the ditch restoration).
7. **#3 / approximately \$25,000.00** There is a section of Mallard Drive between mile .9 and 1.2 – going through some flat land – that has (3) sections of road that were originally constructed lower than the surrounding watershed level. This same condition exists for an adjacent Blue Grouse Road section. Over the years this has resulted in these sections being subject to washover by run-off. This means that in these sections (in their current construction) ditches and culverts would be physically unable to function if they were installed, so in order to cure this we need to raise the roadbeds by about 12" and install several culverts. Historically the consequence of this current negative condition has been no more than drivers having to drive through some occasional standing or overflowing water and has not resulted in blockage of roads or undue repair costs, and it has left several uncomfortable pot holes and depressions in the roads where washover occurs. While we would like to install some topcoat gravel and also potentially fill in the potholes/depressions, such expenditures are somewhat futile without raising the roadbed height first (water just keeps running over the same areas, and expensive topcoat gravel would just get covered over one day when the roadbed gets raised). So the desired plan at this time is to over the years take a short section at a time and raise it with appropriate ballast layers and finally install a top coat, as budgets allow.

Division 6

1. **#2 / \$981.00** Install (3) loads of 5/8"-minus in a thin lift on top of the most boulderhead-showing stretches of Corral Drive.

Division 7

1. Ditch and grade with a grader:
 1. **#1 / \$250.00** On Horse Trail Drive from .25 to the end, reestablish ditches, crown the road, and repair road plane erosion.
 2. **#1 / \$140.00** On West Corral Drive, starting at approximately 500' past the hairpin corner at the Gold Rush intersection, reestablish the ditch for about 100' running.
 3. **#1 / \$100.00** On West Corral Drive at 1.75 miles from Chesaw Road, pull a short section of ditch.
 4. **#1 / cost included above** On West Corral Drive, 700' past the Big Rock intersection, reestablish a short section of ditch.
 5. **#1 / \$250.00** On West Corral Drive, at about 3.35, there's a wide steep corner that drains a lot of road water to a ditch and downstream culvert; reestablish that ditch that has been silted in.
 6. **#1 / \$150.00** On Big Rock road at the intersection with Outback, reestablish the very short ditch section immediately in front of the actual giant rock right next to the road, allowing ditch flow to make it to the culvert right there. PLEASE take care not to disturb the expensive surface gravel in front of that residence gate right there, and please take a moment to remove the ground reflectors staked out in the area before you ditch if they're in your way.
2. **#2 / \$1515.00** Install (5) loads of pit run on the upper end of Horse Trail Drive.
3. **#2 / \$303.00** On West Corral Drive at 1.75 miles from Chesaw Road, install (1) load of pit run down the middle of the road in order to reestablish crown.
4. **#2 / \$1308.00** On West Corral at 3.20, starting at the base of the narrow steep incline, install (4) loads of 5/8"-minus.
5. **#3 / \$5600.00** On West Corral, at about 3.65 starting just past the white vinyl rail fence right next to the road, there's a steep section full of bedrock right up to the surface of the road; there are no existing ditches, and the road is gullied, acting like a ditch itself. This road needs to be raised and have ditches established:
 1. Install 8"-12" thick of graduating ballast sized rock and cap off with 5/8"-minus.
 2. Install rip rap in ditches.
6. **#3 / \$5600.00** On Outback Road, for a 480' stretch of road that is before and after Silver Spur, that section is full of bedrock right up to the surface of the road; there are no existing ditches, and the road is gullied, acting like a ditch itself. This road needs to be raised and have ditches established:
 1. Install 8"-12" thick of graduating ballast sized rock and cap off with 5/8"-minus.
 2. Install rip rap in ditches.
7. **#3 / \$400.00** On Big Rock road about 500' uphill from the West Corral intersection, drop a large fir tree leaning out into the road.

Division 8

1. Ditch and grade with a grader:
 1. **#1 / \$170.00** The entrance to Big Horn Ridge “paved” road (Canyon View Lane), right before and after the nice wood gate at the entrance. This road is located at .3 miles down Longhorn Rd from the Chesaw road.
2. **#2 / \$350.00** At the entrance to Big Horn Ridge “paved” road (Canyon View Lane), where it intersects with Longhorn Rd, there is a channeled erosion spot where the west side of Canyon View dumps its water over the edge onto Longhorn; this spot needs some rip rap installed on that dump embankment. There is an existing pile of excess rip rap just across the road and slightly north; use that. Then use some more of that rip rap to fill a deep erosion ditch at about 85' up Canyon View from the Longhorn intersection, such ditch just upslope of a culvert entrance.
3. **#2 / \$1400.00** On Longhorn Rd, at about .3, where a culvert inlet exists on the west side of the road right by a private driveway apron, that hillside feeding the ditch and culvert is a sandy and erosive. Using larger rip rap bolster the culvert inlet area.
4. **#1 / \$85.00** Order and install Canyon View road signs (entrance to Big Horn Ridge) and pole at intersection with Longhorn Rd.
5. **#2 / \$327.00** Install (1) load of 5/8”-minus on the short steep grade on Longhorn at the 1.5 mark approaching a residence private driveway (terribly boulderheaded road section).
6. **#3 / \$654.00** On Gold Rush Ridge road, about .6 miles past the intersection with Lake View Spur and Cougar Drive, there's a steep downslope section of road starting at where a nice green roofed residence with brown siding exists that is a terribly boulderheaded road section:
 1. Install (1) load of 1 1/4”-minus right down the center of the road,
 2. then cap that off with (1) load of 5/8” minus.
7. **#3 / \$654.00** On Cougar Drive just prior to the pond there's a stretch of road that needs binding gravel:
 1. Install (1) load of 1 1/4”-minus right down the center of the road,
 2. then cap that off with (1) load of 5/8” minus.
8. **#1 / \$375.00** On Gold Rush Ridge road at about .5 miles from the intersection with West Corral there's a wide left turn that has a very silty hillside on the left, and you can see that prior workers have installed a ditch concept that is above-grade. This ditch needs a little repair work with a hoe, as it has become silted in and has a break in the center of it where water is now washing across the road.
9. **#2 / \$1054.00** At the very beginning of Gold Rush Ridge where it intersects with West Corral... this road confluence unavoidably creates a challenging watershed maintenance condition where upper West Corral dumps some of its water onto Gold Rush and has eroded the road plane and also deeply eroded the Gold Rush ditch:
 1. deliver (1) load of rip rap to the site, use ½ of it in the deep eroded ditch, and place the other half aside at the obvious wideout flat spot at the road intersection for future use (place this as tightly to the east as possible in the flat spot because the flat spot is used for other maintenance staging purposes and we need too conserve the space available).
 2. Install (2) loads of 5/8” minus in the center of Gold Rush at the beginning, going downslope, to create a good road crown. Maybe one load will be enough... adjust if necessary.

10. Order and install a Canyon View Lane sign at the entrance to Canyon View Lane.

Other Tasks and Costs

1. **#1 / \$1000.00** Machine clear (hoe) plugged culvert inlets and outlets (all these are marked at location with a blue flagged wood stake in the ground, and they're marked on a map).
2. **#1 / \$2000.00** Fall gravel raking, where necessary to reestablish crowns and eliminate washboard.
3. **#1 / \$240.00** "Call For Locate" labor/time costs and mileage charged by contractor (this is having the PUD come out and mark where power lines are in ditches we will dig into).
4. **#1 / \$175.00** Purchase 100lbs of highland grass seed for volunteers to plant/spread along roadsides and ditches that would benefit from vegetation erosion control.
5. **#1** 8.1% sales tax on all charges.