
PROJECT: 19-1584 REST, CHUMSTICK CRK CULVERTS - RM 0.52 AND RM 1.48

Sponsor: Chelan Co Natural Resource Program: FBRB Coordinated Pathway Status: Active

Project Start Date: 07/01/2019 Agreement End Date: 12/31/2023

Final Report Status: Accepted 02/05/2024

Description

PROJECT AGREEMENT DESCRIPTION

This project will remove two fish passage barrier culverts and replace it with structures that meets WDFW fish passage criteria on RM 0.52 and RM 1.48 on Chumstick Creek, tributary to the Wenatchee River in WRIA 45. This project will increase the quantity and quality of accessible off-channel rearing and over-wintering habitat for juvenile steelhead, spring Chinook, and coho salmon in Chumstick Creek.

FINAL PROJECT DESCRIPTION

Overall this project allowed for the correction of the last two fish passage barrier culverts on Chumstick Creek. Chumstick Creek is a tributary to the Wenatchee River in WRIA 45 in Chelan County Washington. There were two separate project sites included in this proposal. One at river mile (RM) 1.48 referred to as the Alpenview Project Site, and one at RM 0.52 referred to as the Motteler Road Project Site. The original scope included the removal of a culvert and the installation of a new fish passable structure for each project site. CCNRD staff coordinated all necessary site assessments (cultural resources, geotechnical etc.), design development and permit development and submittal for each site. Each project site underwent a number of redesigns in order to meet permit conditions which impacted the cost and timeline of the overall project.

For the Alpenview project, it was determined during the initial design development survey work by Waterfall Engineering that the culvert no longer met the criteria as a fish passage barrier. Originally the culvert was assessed as countersunk creating a slope barrier but by the time design was initiated it was identified that some beaver activity below the culvert had created opportunity for sediment to accumulate which sufficiently raised the bed in the channel approach to the culvert such that there was no longer a slope barrier for fish passage. Waterfall Engineering assessed the condition of the culvert and existing size which was deemed in good condition, and therefore recommended an alternative design approach. The alternative design approach called for the install of 3 engineered log jam structures and channel re-grading immediately downstream of the culvert that would act to retain sediment and maintain suitable grade approach to the culvert. This design approach was presented by Chelan County and Waterfall Engineering to USFWS Fisheries Biologist (match funder) and the Fish Barrier Removal Board (FBRB) Biologist who considered the merits of the design. It was presented to the FBRB Board who voted in favor of undertaking this design. The USFWS provided a letter of support in favor of the design as well. Therefore the project was ultimately changed from a culvert replacement to an instream habitat modification. The design advanced to final design stage smoothly and was permitted and ready to go out to construction bids winter 2020. In the fall of 2020, a change in FEMA policy known as the "No Net Rise" precipitated the need for a new floodplain development permit for projects within the regulatory floodway. It was determined that both the Alpenview and Motteler Road projects are in the classified floodway for Chumstick Creek and must meet the requirement of causing no change in Base Flood Elevations at the Q-100 as a result of the project, or else a formal Letter of Map Revision would be required by FEMA and the County. For Alpenview Road project, modifications were required of the design in order to meet this new policy. This required additional bank excavation at each engineered log jam to accommodate bankfull elevations (BFE) at the Q-100 in order to meet the FEMA no-rise policy. Additionally, Waterfall Engineering and Chelan County had to prepare a technical memo showing the hydraulic modelling results to support the no-net rise. A planting and access plan was developed to minimize bank and riparian disturbance for the project. The change in the design precipitated new permit applications be revised and submitted to the Army Corps of Engineers and the Washington Department of Fish and Wildlife. Due to these constraints, the project required extensions to the timeline to accommodate these significant change. All construction elements as shown on the final designs as well as final planting, was completed in September of 2022.

For the Motteler Road project, the original scope called for the replacement of an undersized corrugated pipe arch culvert (10.9ft. span by 6.9 ft. rise) with a bridge. The existing culvert was assessed by Washington Department of Fish and Wildlife as a fish passage barrier due to slope (1.25 % slope barrier). This project will replace the arch culvert with a fish passage friendly structure which was originally design as a bridge. The project advanced with the bridge designs to final design and permits were submitted in 2020. Similar to the Alpenview project, the change in the FEMA "no-rise" policy, resulted in significant changes to the design at the Motteler Road project. It was determined that some minor changes to the design such as removal of the habitat features was required in order to meet the new policy. The updated designs were submitted to Chelan County Public Works who is the owner of the bridge. Public Works project engineer had multiple design changes and did not accept the hydrology analysis utilized by Waterfall Engineering for the project. After updated hydraulic analysis by Waterfall Engineering a new Q-100 was accepted for the project from public works and the design engineer, though this resulted in design changes that resulted in a shift from a bridge to an inverted 3-sided box culvert would be the new preferred design for Motteler Road. The final project included the removal of the arch culvert and the installation of a 24'x12' concrete box culvert and all associated channel and bank grading in Fall of 2022. However, due to the early onset of snow, final grading, paving and planting was postponed until May-June 2023. Final planting occurred in May 2023 and final grading and paving of the new crossing occurred in June 2023. Since that time, CCNRD has worked to close out the construction contract with the Contractor for the Motteler project, waiting on final L&I release in order to release retainage and final payment to the Contractor. Delays in this process has resulted in additional time extension amendments.

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Narrative

CCNRD has been working on a multi-year barrier correction effort within the Chumstick Creek drainage in order identify and eventually replace all barriers within the drainage. As part of this effort, these two crossings were identified as the last remaining barriers to fish passage barrier on Chumstick Creek, making them a high priority for the Fish Barrier Removal Board, WDFW, USFWS and the Upper Columbia Salmon Recovery RTT. Each project site had a unique set of characteristics, design considerations and differences in landowner experiences, requiring involved and dynamic coordination for design and permit development.

Pat Powers with Waterfall Engineering was the contracted design firm for both project sites. The Conceptual analysis explored the design alternatives and potential costs for addressing each site. Both sites underwent significant design changes mid project, significantly impacting project timeline and construction costs for each as detailed in the Final Project Description. CCNRD then pursued all permitting requirements and site assessments necessary to gain authorization for construction and coordinated the bid procedures for selecting Contractors to complete the work at each site. Both sites were constructed in 2022.

East Slope Earthworks was the lowest responsible bidder for the Alpenview Project Site and therefore was awarded the construction contract for that work. Construction occurred in September 2022, Hannah Pygott was the Contracting Officer for CCNRD and acted as the primary onsite supervisor during construction. Pat Powers, the Engineer (Waterfall Engineering) was onsite for key construction elements including the installation of the LWD structures and conducted final site approval. There were no change orders associated with this site work and the project was built as designed.

Environmental Engineering and Remediation Group (ERRG) was the was the lowest responsible bidder for the Motteler Project Site and therefore was awarded the construction contract for that work. There were a number of challenges during construction of that site's work, stemming from contractor performance, instream flows, ground water infiltration and weather. The original timeline for project construction was anticipated to be less than 1-month, with all project elements completed by mid-September 2022. Challenges during construction coupled with the early onset of winter resulted in project completion being delayed until June 2023. There were three change orders during construction, reflecting additional costs associated with paving, utility work, and change of the date of substantial completion to allow for final paving in spring of 2023 due to weather. All change orders fell within the available funding for the project.

Additional time extensions have been issued for this project since completion of physical work due to delays associated with L&I review and closeout of the project.

There were a number of lessons learned throughout the duration of this project and for each site. Challenges associated with meeting the FEMA no net rise policy, and redesign due to disagreements associated with the appropriate design flow target were unforeseen. Additionally, the Alpenview project changed from a slope barrier at the time of grant application to the time of initial design development which precipitated an entirely new project approach. Overall, the project was successful and has complemented a larger effort to restore fish passage and improve habitat quality and accessibility throughout the Chumstick Creek Drainage.

Worksites

Worksite #1: Chumstick Creek Crossings

Worksite Address (Optional)

Street Address 10430 Motteler Road

City Leavenworth

State, Zip WA 98826

Worksite Details

Worksite #1: Chumstick Creek Crossings

Worksite Name Chumstick Creek Crossings

WORKSITE DESCRIPTION

The first crossing is located where Motteler Road crosses Chumstick Creek at RM 0.52. The second crossing is located at AlpenView Drive Crossing at RM 1.48 over Chumstick Creek.

Geographic Coordinates

From mapped point: Latitude 47.608103 Longitude -120.647241

For Directions: Latitude 47.608012 Longitude -120.647271

SITE ACCESS DIRECTIONS

For the Motteler Road Crossing: From Highway 2 in Leavenworth, take Chumstick Highway heading north-west. In 0.5 miles turn right onto North Road, and then take the first left onto Motteler Road.

For the AlpenView Road Crossing: From Leavenworth, head north-west on Chumstick highway for 2.4 miles. Turn right onto AlpenView Drive (private road), from Chumstick Highway. The crossing is the first culvert on AlpenView drive.

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Properties

Worksite #	Worksite Name	Property Name	Sponsor Verified	RCO Verified	RCO Verified Map
1	Chumstick Creek Crossings	Alpenview Drive RM 1.48	✓ Clarification	✓	N/A
1	Chumstick Creek Crossings	Motteler Road RM 0.52	✓	✓	N/A

Restoration Metrics

Worksite: Chumstick Creek Crossings (#1)

	Current Agreement	Final
Targeted salmonid ESU/DPS (A.23)	<input type="checkbox"/> No Salmon ESU or Steelhead DPS <input checked="" type="checkbox"/> Chinook Salmon-Upper Columbia River Spring-run ESU <input type="checkbox"/> Chinook Salmon-Upper Columbia River summer/fall-run ESU <input type="checkbox"/> Chinook Salmon-unidentified ESU <input checked="" type="checkbox"/> Steelhead-Upper Columbia River DPS <input type="checkbox"/> Steelhead/Trout-unidentified DPS	<input type="checkbox"/> No Salmon ESU or Steelhead DPS <input checked="" type="checkbox"/> Chinook Salmon-Upper Columbia River Spring-run ESU <input type="checkbox"/> Chinook Salmon-Upper Columbia River summer/fall-run ESU <input type="checkbox"/> Chinook Salmon-unidentified ESU <input checked="" type="checkbox"/> Steelhead-Upper Columbia River DPS <input type="checkbox"/> Steelhead/Trout-unidentified DPS
Targeted species (non-ESU species)	None Unknown Brook Trout Brown Trout Bull Trout Cutthroat Forage Fish Kokanee Lamprey <input checked="" type="checkbox"/> Rainbow Searun Cutthroat	None Unknown Brook Trout Brown Trout Bull Trout Cutthroat Forage Fish Kokanee Lamprey <input checked="" type="checkbox"/> Rainbow Searun Cutthroat
Project Identified In a Plan or Watershed Assessment (C.0.c)	Wenatchee Watershed sub-basin plan (NPCC 2004), Upper Columbia Salmon Recovery Plan (UCSRB 2007) and Wenatchee Watershed Detailed Implementation Plan (WWPU 2008).	<i>Not Collected at Closure</i>
Type Of Monitoring (C.0.d.1)	<input checked="" type="checkbox"/> Implementation Monitoring None	<input checked="" type="checkbox"/> Implementation Monitoring None
Monitoring Location (C.0.d.2)	<input type="checkbox"/> No monitoring completed <input type="checkbox"/> Downstream <input checked="" type="checkbox"/> Onsite <input type="checkbox"/> Upslope <input type="checkbox"/> Upstream	<input type="checkbox"/> No monitoring completed <input type="checkbox"/> Downstream <input checked="" type="checkbox"/> Onsite <input type="checkbox"/> Upslope <input type="checkbox"/> Upstream

Fish Passage Improvement

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Miles Of Stream Made Accessible (FBRB)		14.29
Miles Of Stream Made Accessible (SRFB) (C.2.b.1)	14.29	14.29
Habitat made accessible (2489)	<i>Collected on Application</i>	<i>Not Collected at Closure</i>
Additional barriers (2490)	<i>Collected on Application</i>	<i>Not Collected at Closure</i>
Type Of Barrier (C.2.b.3)	<input type="checkbox"/> Boulders or rock barriers <input type="checkbox"/> Bridge <input checked="" type="checkbox"/> Culvert <input type="checkbox"/> Debris <input type="checkbox"/> Diversion Dam <input type="checkbox"/> Ford <input type="checkbox"/> Landslide <input type="checkbox"/> Logs <input type="checkbox"/> Push-Up Dam <input type="checkbox"/> Weir <input type="checkbox"/> Wood Or Concrete Dam <input type="checkbox"/> None	<input type="checkbox"/> Boulders or rock barriers <input type="checkbox"/> Bridge <input checked="" type="checkbox"/> Culvert <input type="checkbox"/> Debris <input type="checkbox"/> Diversion Dam <input type="checkbox"/> Ford <input type="checkbox"/> Landslide <input type="checkbox"/> Logs <input type="checkbox"/> Push-Up Dam <input type="checkbox"/> Weir <input type="checkbox"/> Wood Or Concrete Dam <input type="checkbox"/> None
Number of blockages / impediments / barriers impeding passage (C.2.b.4)	1	1
Describe the current barrier (2486)	<i>Collected on Application</i>	<i>Not Collected at Closure</i>
Passage problem (2487)	<i>Collected on Application</i>	<i>Not Collected at Closure</i>
Passability (2488)	<i>Collected on Application</i>	<i>Not Collected at Closure</i>
Bridge installed or improved (C.2.g.1)		
Miles of stream made accessible by bridge installation/repair (C.2.g.3)	14.29	14.29
Number of bridges (C.2.g.2)	2	1
Total cost for Bridge installed or improved	\$477,858	<i>Not Collected at Closure</i>

Cultural Resources

Cultural resources

Total cost for Cultural resources	\$13,500	<i>Not Collected at Closure</i>
Acres surveyed for cultural resources	0.01	0.50
Note: This is an approximate combined total between each site. Actual area can be determined from the final Cultural Resources Report		

Permits

Obtain permits

Total cost to Obtain permits	\$11,500	<i>Not Collected at Closure</i>
Number of permits required for implementation of project	2	3
Note: This total is somewhat subjective as there were difference permit requirements for each project and review/consultation was required in instances where a permit was not issued.		

Architectural & Engineering

Architectural & Engineering (A&E)

Total cost for Architectural & Engineering (A&E)	\$71,620	<i>Not Collected at Closure</i>
Did A&E costs exceed billed amount (Yes/No)	<i>Collected at Closure</i>	No

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Overall Metrics

	Current Agreement	Final
Completion Date		
Projected date of completion	10/01/2020	06/30/2023
Project Goals		
Goals, purpose, and expected benefits (A.17)	This project will benefit steelhead, Chinook, and Coho by removing barriers to upstream off channel rearing and over-winter habitat.	All goals and project implementation metrics for this project were met. There is no physical fish use data to quantify the change of fish use post construction.

Restoration Costs

	Final amounts include a pending billing Date of Last Released Billing 10/20/2023	
	Proposed	Final
Worksite: Chumstick Creek Crossings (#1)		
	SPLIT OUT FINAL TOTAL BELOW	
	\$574,478	\$528,676
Fish Passage Costs (C.2.a)	\$477,858	\$443,866
Cultural Resource Costs	\$13,500	\$0
Permits Costs	\$11,500	\$9,982
Architectural & Engineering Costs	\$71,620	\$74,828
	Difference	\$0

Billed Summary

	Final amounts include a pending billing Date of Last Released Billing 10/20/2023				
Category	Project Agreement		Totals To Date		
	RCO	Total	Expended	Non Reimbursable	Total Billed
Restoration					
Construction	401,912.58	472,858.00	370,686.35	83,162.00	453,848.35
AA&E	86,373.42	101,620.00	74,827.67		74,827.67
Restoration Total	488,286.00	574,478.00	445,514.02	83,162.00	528,676.02
Total	488,286.00	574,478.00	445,514.02	83,162.00	528,676.02

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Sponsor Match

	Proposed	Final
Project Funding		
Federal Funds		
State Funds (A.11)	\$488,286.00	\$421,109.33
Pending Billing - RCO Share Approved	Collected at Closure	\$24,404.69

Match Details

Match Category	Match Type	Proposed	Final
Other Monetary Funding	Grant - Federal		Unable to tie Billed match to Proposed match. Please make corrections as needed, or leave if correct.
Amount		N/A	
Funding Organization			
Grant Program			
Other Monetary Funding	Grant - Federal		Unable to tie Billed match to Proposed match. Please make corrections as needed, or leave if correct.
Amount		N/A	
Funding Organization			
Grant Program			
Other Monetary Funding	Grant - Federal		
Amount		\$83,192.00	\$83,162.00
Funding Organization			US Fish & Wildlife Service - Portland (USFWS)
Grant Program			F19AC00400
Donated Unpaid Labor	Donated General Labor		
Amount		\$3,000.00	\$0.00
Funding Organization			
Number of Hours		Collected at Closure	
Valuation Method		Collected at Closure	RCO Standard Labor Rate

Project Funding Total	\$488,286.00	85.00 %	\$445,514.02	84.27 %
Sponsor Match Total	\$86,192.00	15.00 %	\$83,162.00	15.73 %
Project Total	\$574,478.00	100.00 %	\$528,676.02	100.00 %
Total Billed			\$528,676.02	
Difference			\$0.00	

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Attachments

PHOTOS (JPG, GIF)
















Photos (JPG, GIF)



589957 # 589958 # 589959 # 589960 # 589961

PROJECT DOCUMENTS AND PHOTOS

Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Share
	12/26/2023	Photo	IMG_6996.JPEG; Post Con	HannahP	IMG_6996.jpeg, 589970 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_6995.JPEG; Post Con	HannahP	IMG_6995.jpeg, 589969 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_6994.JPEG; Post Con	HannahP	IMG_6994.jpeg, 589968 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_6993.JPEG; Post Con	HannahP	IMG_6993.jpeg, 589967 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_6992.JPEG; Post Con	HannahP	IMG_6992.jpeg, 589966 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_4653.JPEG; Post Con	HannahP	IMG_4653.jpeg, 589965 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_4633.JPEG; Post Con	HannahP	IMG_4633.jpeg, 589964 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_8224.JPEG; Precon	HannahP	IMG_8224.jpeg, 589963 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_8219.JPEG; Precon	HannahP	IMG_8219.jpeg, 589962 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_8150.JPEG; Precon	HannahP	IMG_8150.jpeg, 589961 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_8136.JPEG; Precon	HannahP	IMG_8136.jpeg, 589960 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_8128.JPEG; Precon	HannahP	IMG_8128.jpeg, 589959 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_8127.JPEG; Precon	HannahP	IMG_8127.jpeg, 589958 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Photo	IMG_8126.JPEG; Precon	HannahP	IMG_8126.jpeg, 589957 Final Report, 02/05/2024, Accepted	✓
	12/26/2023	Design document	Motteler As Builts - 110223.pdf	HannahP	Motteler As Builts - 110223.pdf, 589956 Final Report, 02/05/2024, Accepted	✓

Certify & Submit

Status History

Report Status	Date	User	Note
Accepted	02/05/2024	John Foltz	
Submitted	01/30/2024	Sofia Bjorklund	
Draft	12/11/2023	Hannah Pygott	

PROJECT: 19-1584 REST, CHUMSTICK CRK CULVERTS - RM 0.52 AND RM 1.48

Sponsor: [Chelan Co Natural Resource](#) Program: FBRB Coordinated Pathway Status: Active

Project Start Date: 07/01/2019 Agreement End Date: 12/31/2023

PROPERTY: Alpenview Drive RM 1.48 (1: Chumstick Creek Crossings)

Property Basics

Acquisition ☐ Restoration ☒

Property Location

Property Name	Alpenview Drive RM 1.48	Property Description	
Property Address (optional)	The actual project work occurred on Chelan County owned property. No private property was utilized.	Associated Worksite	Chumstick Creek Crossings (#1)
City	Leavenworth		
State	WA Zip 98826		

Landowner

Landowner Name	Tom & Cheryl Phillips
Address (optional)	1484 Alpenview Drive
City	Leavenworth
State	WA Zip 98826
Landowner Type	Private

Control and Tenure

Instrument Type	Landowner Agreement
Timing	Proposed
Term Type	Fixed # of years
# Yrs	10
Expiration Date	06/30/2033
Note	10 years from project completion.

Parcel Numbers

County Name	Parcel Number	Mapped	Notes (optional)
Chelan	251831000095	Not applicable	
Chelan	251831210260	Not applicable	This is the actual parcel in which the work occurred.

Recording Numbers

Instrument Type	Recording Number	Notes
No recordings		

Sponsor Clarification

The original project designs included the removal of an existing culvert at this site which would have required multiple landowner acknowledgements and agreements. The redesigned work was able to be completed via property owned by Chelan County as listed above and did not require any use or disturbance to the other property listed aside from that below ordinary high water mark.

☒ The above information is correct and complete

RCO Notes

☒ Property data verified by RCO Staff

Property Report: Alpenview Drive RM 1.48 (Worksite #1: Chumstick Creek Crossings)

Attachments

PHOTOS (JPG, GIF)
Photos (JPG, GIF)

PROJECT DOCUMENTS AND PHOTOS
Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
No attachments match filter criteria						

PROJECT: 19-1584 REST, CHUMSTICK CRK CULVERTS - RM 0.52 AND RM 1.48

Sponsor: [Chelan Co Natural Resource](#) Program: FBRB Coordinated Pathway Status: Active

Project Start Date: 07/01/2019 Agreement End Date: 12/31/2023

PROPERTY: Motteler Road RM 0.52 (1: Chumstick Creek Crossings)

Property Basics

Acquisition ☐ Restoration ☒

Property Location

Property Name Motteler Road RM 0.52

Property Address
(optional)

City

State

Zip

Property Description This project will include final design, permitting, and construction to remove and replace a partial fish barrier at Motteler Road which crosses Chumstick Creek near RM 0.52.

Associated Worksite Chumstick Creek Crossings (#1)

Landowner

Landowner Name Chelan County Public Works

Address
(optional) 316 Washington Street, Suite 402

City Wenatchee

State WA Zip 98801

Landowner Type Local

Control and Tenure

Instrument Type Public Use Agreement

Timing Existing

Term Type Fixed # of years

Yrs 10

Expiration Date 06/30/2031

Note

Parcel Numbers

County Name	Parcel Number	Mapped	Notes (optional)
No parcels			

Recording Numbers

Instrument Type	Recording Number	Notes
No recordings		

Sponsor Clarification

☒ The above information is correct and complete

RCO Notes

☒ Property data verified by RCO Staff

Property Report: Motteler Road RM 0.52 (Worksite #1: Chumstick Creek Crossings)

Attachments

PHOTOS (JPG, GIF)
Photos (JPG, GIF)

PROJECT DOCUMENTS AND PHOTOS
Project Documents and Photos

File Type	Attach Date	Attachment Type	Title	Person	File Name, Number Associations	Shared
	11/10/2020	Design document	WDFW Motteler Road Design Comments_CCNRD 11-09-2020	MarcD	WDFW Motteler Road Design Comments_CCNRD 11-09-2020.xlsx, 454549 Property: Motteler Road RM 0.52	✓