

Design Review Comments - PIH

Program: Z546590000/0311031
Name: Seward Highway: MP 25.5-36
 Trail River to Sterling Wye
Design Manager: Christopher Bentz
Design Engineer: DOT&PF (Valentine, Barkshire)
 R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
1	ARRC	1	Andrew Gallagher	The roadway (as it currently exists) is too close to the railroad. If there is a reasonable opportunity to do so, ADOT&PF should consider relocating the roadway.	Alignment modifications are not proposed under this project.		JDF	Small alignment modifications were done in select areas to avoid impacts to the ARRC. Since alignment modifications are not warranted as part of the 3R analysis and limited budget, further alignment modifications will not be considered.
2	ARRC	1	Andrew Gallagher	There are various cross sections showing a skim-fill on the steep slope between the Seward Highway and ARRC. Please ensure these will be cleaned up in later plan set revisions.	Many cross sections are showing 1:1 slopes beyond the guardrail. Will coordinate with DOT Materials to determine necessary measures to ensure slope stability if steeper slopes are required		JDF	Design has been revised to eliminate skim fills through small revisions to the alignment and changes to the typical sections. All slopes steeper than 2:1 will be stabilized.
3	ARRC	F 01	Andrew Gallagher	Please remove note to re-establish pullout at 31+00 to 34+00 LT.	Will do.		JDF	Note removed.
4	ARRC	F 01	Andrew Gallagher	Proposed sizes of ADOT&PF culverts P1-05 and P1-06 are 36-inch. Downstream ARRC culvert must be upsized to 36-inch.	ARRC Storm Water Drainage Memo addresses these two culverts and recommends no additional H&H analysis necessary at these locations due to attenuation by the buffering characteristics of the pond.		JDF	ARRC Storm Water Drainage Memo addresses these two culverts and recommends no additional H&H analysis necessary at these locations due to attenuation by the buffering characteristics of the pond.
5	ARRC	F 03	Andrew Gallagher	Proposed ADOT&PF culvert P3-08 outfall is 53 feet from the ARRC tracks with no existing ARRC culvert in place. New culvert under ARRC tracks is required along with an established flow path that directs storm water under ARRC tracks as expeditiously as possible.	P3-08 is shown approximately 100 feet south of the culvert that it replaces. Design will be revised to install P3-08 at the original location.		JDF	The culvert location will remain. A new ARRC culvert and rip rap channel will be installed immediately downstream to manage water through the ARRC ROW. Additionally the proposed highway culvert is a replacement and maintains historical drainage patterns.
6	ARRC	F 03	Andrew Gallagher	The fill embankment shown between the Seward Highway and ARRC tracks at Sta. 99+00 is too close to the ARRC tracks. Please revise.	Will evaluate steepening fill in this area .		JDF	See response to comment 1. The design in this area has been revised.
7	ARRC	F 04	Andrew Gallagher	The fill embankment shown between the Seward Highway and ARRC tracks between Sta. 105+00 and 105+25 is too close to the ARRC tracks. Please revise.	Will evaluate steepening fill in this area .		JDF	See response to comment 1. The design in this area has been revised.
8	ARRC	F 04	Andrew Gallagher	Proposed ADOT&PF culvert P4-01 outfall is 63 feet from the ARRC tracks with no existing ARRC culvert in place. The relocation of existing ADOT&PF 24-inch culvert will result in increase in storm water flows onto ARRC ROW. New culvert under ARRC tracks is required along with an established flow path that directs storm water under ARRC tracks as expeditiously as possible.	Discuss. P4-01 shares same outfall location as existing pipe that it replaces. The only change is to its inlet location on the upstream side of highway embankment in order to align it perpendicular to the roadway. Is the change in skew of concern? If so, replacement can be installed at same orientation as existing. Was this comment intended for P4-05 instead? P4-05 is shown approximately 50 feet to the north of the culvert that it replaces. Will revise design to install P4-05 pipe at original location at STA 120+45. ARRC Storm Water Drainage Memo addresses this culvert and recommends no additional H&H analysis necessary at this location since there is no change to drainage area or original flow pattern.		ZDK	Old P4-01 has been removed and all drainage from the crest at STA 114+00 will flow South to New P6-02 and under ARRC embankment via New RP6-03. Remiander will flow North from STA 114+00 to New P8-801 and RP8-01.
9	ARRC	Z 002	Andrew Gallagher	Please add "ARRC Technical Standards for Roadway, Trail, and Utility Facilities in the ARRC Right-of-Way" to the list of design standards.	Will do		JDF	Added.

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10	ARRC	Z 005	Andrew Gallagher	Please verify that removal of the Roycroft Lake Dam will not impact flows onto the ARRC ROW.	The Roycroft Lake Dam will not be removed as part of this project.		JDF	The Roycroft Lake Dam will not be removed as part of this project.
1	M	General	Ashley DeVore	Project year changes throughout planset from 2020 to 2023. Revise for consistency	Will revise		JDF	Project year corrected.
2	M	A02	Ashley DeVore	D sheets show D11, but there should be D12.	Will revise		JDF	Revised.
3	M	B01, B04, B05	Ashley DeVore	Pavement Structural Section No. 1 "existing ground" should be "existing pavement"	Will revise		JDF	Since the revised Typical Sections go down to the existing base course or sub-base in all locations (rather than just planing and leaving some pavement) the "Existing Ground" call-out seems more correct for the revised typical sections and will remain.
4	M	B07	Ashley DeVore	Slope Exception Table: Consider adding "H" to the "Slope Height" header for correlation to detail.	Will add "H"		JDF	This table has been removed since the typical has been revised.
5	M	C01/D sheets	Ashley DeVore	Removal of Sidewalk-is there a summary table for this item?	Will add summary table		ZDK	No removal of sidewalk exists. Removal of pavement applies to the pathway.
6	M	C01	Ashley DeVore	Correct Pay Item number for Geotextile, Erosion Control, Class I to 631.0002.001. Also correct on D sheets.	Will update Geotextile, Erosion Control, Class I to 631.0002.0001		JDF	Pay Item number updated.
7	M	C01	Ashley DeVore	For Asphalt Binder pay items (both) add "V" to end of binder grade. PG 52-40V	Will add		JDF	"V" added to the end of the grades shown in the binder pay items.
8	M	C01	Ashley DeVore	Verify quantities between C sheets and totals on D sheets for pay items: • 201.0003.0000 Clearing and Grubbing • 202.0004.0000 Removal of Culvert Pipe • 202.2023.0000 Pavement Planing-significantly different total shown on D sheets. Possibly missing sections? • 611.0002.0001 Riprap, Class I • 611.0002.0002 Riprap, Class II • 619.2017.0000 High Performance Turf Reinforcement Mat • 634.0001.0001 Geogrid, Stabilization, Class I	• 201.0003.0000 – Will adjust rounding factor on D02 • 202.0004.0000 – Will include 10% contingency on D4 and correct C01 • 202.2023.0000 – Pavement Planing: Error in quantity calculation identified and will be fixed. • 611.0002.0001 – Table spans D06 and D07. Will revise table to display row quantities rounded to 0.1 instead of 1. Pay item total is correct and matches C01. • 611.0002.0002 – Table spans D06 and D07. Will revise table to display row quantities rounded to 0.1 instead of 1. C01 quantity is correct. Will correct D07 totals. • 619.2017.0000 – Will correct D8 • 634.0001.0001 – Will correct D9		JDF	Corrected inconsistencies between C-Sheets, D-Sheets, Engineer's Estimate, and Specs.
9	M	C02	Ashley DeVore	Table of Estimating Factors: 306.0002.XXXX pay item needs to be completed, and "V" needs to be added to end of PG grade for binder.	Will add		JDF	Table of estimating factors updated.

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10	M	C02	Ashley DeVore	Table of Estimating Factors: add "V" to end of PG grade for binder 401.0004.5240.	Will add		JDF	Table of estimating factors updated.
11	M	D0	Ashley DeVore	Verify totals of Earthwork Summary. Type A and Type C seem to not be accurate.	Will adjust rounding on C01 to match D0.		JDF	Totals of earthwork updated to reflect latest design and verified. C and D sheets updated accordingly.
12	M	D7	Ashley DeVore	Update AASHTOware number for Geotextile to 631.0002.0001	Will update		JDF	Updated.
13	M	D8	Ashley DeVore	Correct spelling of "High Performance Turn Reinforcement Mat" to have "Turf" in both tables.	Will correct		JDF	Corrected.
14	M	E9	Ashley DeVore	Consider citing specific Standard Plan to reference in Culvert Plan detail for easier reference.	Will coordinate with DOT&PF design team regarding citing specific standard plans throughout planset.		JDF	Cited where applicable.
15	M	E11/ E13	Ashley DeVore	Text font changes on these pages.	Will correct		JDF	Corrected.
16	M	E13/E15/E16	Ashley DeVore	Update references from "Standard Drawing" to "Standard Plan" • E13 Approach Typical Detail • E15 Notes 2, 5, 6, and Thrie Beam/ Barrier Detail Section A-A detail • E16 Mail Box Turnout For Grouped Boxes	Will update • E13 – Standard Plan D-06.10 • E15 – Standard Plan G-05.11W, G-47.00, G-9.04W, G-32.01, G-29.00 • E16 – Standard Plan M-20.15 Will add bold standard plans to plan list on A02		JDF	Detail sheets revised and no longer include references. Elsewhere in plan set, all references to Standard Drawings corrected to Standard Plans.
17	M	E17	Ashley DeVore	I know these were grabbed from another project, but if going to be template for future drawings, Note 6 has the abbreviation "HTPRM" and "HPTRM" verify which is accurate and also add to abbreviations for planset.	Will correct to "HPTRM" and add to abbreviation list		JDF	Corrected.
18	M	F29-F33 F61-F64	Ashley DeVore	Page numbers are out of order.	Will reorder sheetset		JDF	Plan sheets reordered.
19	M	H 04	Ashley DeVore	Note 1 and detail reference Standard Drawing, revise to reference Standard Plan.	Will update Note 1 to Standard Plan S-05.02 and will update detail to Standard Plan L-30.11		JDF	Corrected reference to revised standard plans.
20	M	H 04	Ashley DeVore	Standard Plan referenced has requirements for soil type for applicability of the Standard Plan. Verify the soil types meet this requirement, or consider making detail part of the planset and not referencing the Standard Plan	Discuss. This foundation will be used for a minor, breakaway structure. Is there a specific reason to believe that soils are not conducive to using the standard plan at this location? Existing topography in the area appears to be hard rock or gravelly soils. We have similar foundations in the ground nearby and no failures have been noticed.	AD – Not concerned about it being inadequate but the note in the standard plan says it is only applicable for the specified soil types, so if the contractor opens it up and finds other materials then it is not longer applicable.	JDF	Revised standard plans looks to account for varying soil conditions. Resolves the issue.

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21	M	H 07	Ashley DeVore	<ul style="list-style-type: none"> PT, T, and Pulley Detail: Correct spelling of "Thur" to "Thru" on top callout of detail. Fonts are different. Some are bold some aren't. Revise for consistency. 	Will correct spelling and revise font		JDF	Corrected.
22	M	H 08	Ashley DeVore	Asphalt Pathway Notes: reference Standard Drawing update to Standard Plan.	Will correct to Standard Plan I-21.12 and will add to plan list on A02		JDF	Corrected.
1	U	1	Dan Smith	Survey to confirm the elevation of all utility crossings meet the required clearance heights per AK Highway Preconstruction Manual Table 1130-1 & 1140.3.1.c.	Overhead utility crossings have been surveyed and meet clearance height requirements.		JDF	Overhead utility crossings have been surveyed and meet clearance height requirements.
2	U	1	Dan Smith	Permits are necessary for work in ARRC ROW and/or within 20 feet of ARRC track. (https://www.alaskarailroad.com/real-estate/permitting)	Agreed. Coordination with ARRC is ongoing		JDF	Agreed. Coordination with ARRC is ongoing
3	U	1	Dan Smith	ATT has facilities in the project limits (in the rail bed), but no conflicts are anticipated.	Concur.		ZDK	Conflicts needing shore in place at several ARRC cross culvert locations will now be required. To be included in ARRC agreement.
4	U	1	Dan Smith	CEA and TelAlaska have facilities in the project limits that may require utility relocation agreements.	Thank you		JDF	Concur. Ongoing coordination with Utilities.
5	U	1	Dan Smith	If agreements become necessary, utility one-line designs and estimates will require approximately three months. Final utility design and drafting of agreements will require four to six months.	Will include this timeline in the project schedule		JDF	Understood. Will include this timeline in the project schedule.
6	U	1	Dan Smith	Utility relocation work is expected to occur concurrently with construction activities.	Acknowledged.		JDF	Understood.
7	U	A	Dan Smith	Is schedule to be added for Section 603, Culverts and Storm Drains?	Pipe tables are provided in the F sheets		JDF	Pipe tables are provided in the D sheets.
8	U	Y	Dan Smith	If agreements become necessary, 651 Control of Work-Supplemental Requirements will need to be added.	Concur		JDF	Understood. Ongoing coordination with the Utilities section.
9	U	D03-D04	Dan Smith	Removal of Culvert Pipe: Do any of the removed culverts get replaced?	Yes. Please see pipe tables in the F sheets.		JDF	Yes, see pipe tables provided in the D sheets for summary of which pipes will be replaced.
10	U	F03	Dan Smith	Work near overhead lines. Use caution	Thank you		JDF	Understood, Thank you!

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11	U	F04	Dan Smith	Work near overhead lines. Use caution.	Thank you		JDF	Understood, Thank you!
12	U	F08	Dan Smith	A load center was permitted at Depot Road. Underground electric is not shown on drawing. (Permit # 1-30000-15-017)	Additional survey will be requested		JDF	Additional survey in the area of Depot Road picked up underground electrical lines. No CEA underground lines in the area.
13	U	F08	Dan Smith	Ditch linear grading ~Sta.215+00 to 217+00, RT. Minimize disturbance at utility poles to extent possible.	Will investigate and revise as necessary		JDF	Design in this area has been revised. The pathway is now closer to these poles, but will fill rather than excavate around poles. Power pole at 215+20 RT will need to be relocated. Additionally the power meter and UE to the fire station at 217+00 will need to be adjusted as well.
14	U	F13	Dan Smith	Guardrail ~Sta.358+40, LT. Adjust post spacing to avoid underground utilities.	Will add G-29.00 for long-span guardrail and remove top detail from E15. Specifications will address adjusting post spacing to accommodate utilities.		JDF	G-rail run removed.
15	U	F13	Dan Smith	Culvert ~Sta.359+20: Does this pipe get removed, replaced or adjusted? Changes in size or alignment may trigger relocation agreement.	At this time, this pipe will not be removed, replaced, or adjusted.		JDF	Bank of culverts will not be removed, replaced, or adjusted by this project.
16	U	F14	Dan Smith	Guardrail ~Sta.360+20, LT. Adjust post spacing to avoid underground utilities.	Will add G-29.00 for long-span guardrail and remove top detail from E15. Specifications will address adjusting post spacing to accommodate utilities.		JDF	G-rail run removed.
17	U	H 09 / H17	Dan Smith	Will a new load center be needed for flashing beacon near Depot Road?	Not at this time		JDF	Yes a new load center will be required due to ditching needs.
18	U	K 01	Dan Smith	Will a new load center be needed for ATR near Fish Creek Hatchery?	Not at this time		JDF	Potentially, however the load center won't be relocated.
1	TD	C01	Gerard Billinger	Engineers Estimate and Estimate of Quantities do not match.	Will correct		JDF	Engineers Estimate, Estimate of Quantities, and Summary Tables Corrected.
2	TD	D01-D02	Gerard Billinger	201.0009.0000, shouldn't this number be 201.0003.0000 for acres? Estimate of Quantities shows as 201.0009.0000.	Yes, will correct		JDF	Pay Item updated.
3	TD	D02	Gerard Billinger	202.0004.0000 is Removal of Culvert Pipe. Shows removal of pipe, water. Check total estimate shows 7,400 plan set shows 7102.	Will correct heading and verify quantity.		JDF	Pay Item updated.
4	TD	D03-D04	Gerard Billinger	202.2008.0000 is Removal of Pipe, Water. Shows Removal of Culvert Pipe.	Will correct heading		JDF	Pay Item updated.

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5	TD	D07	Gerard Billinger	Check the pay item quantity 611 against the Estimate of Quantities items need correction.	Will correct 611.0002.0002 quantity on D07		JDF	Engineers Estimate, Estimate of Quantities, and Summary Tables Corrected.
6	TD	D08	Gerard Billinger	619.2017.0000 total does not match estimate of quantities. One shows 13,600 other shows 13,400.	Will correct D08		JDF	Item total updated.
7	TD	D09	Gerard Billinger	634.0001.0001 totals does not match estimate of quantities.	Will correct D09		JDF	Estimate of Quantities and Summary Tables Corrected.
8	TD	H 09	Gerard Billinger	Appears the junction box and flashing beacon symbols are not the proper scale.	Will correct scale		JDF	Resolved scaling issues in latest revision.
9	TD	H 09	Gerard Billinger	Note 4 should show 7C#14 cable not 7C#12 as noted.	Will correct		ZDK	No longer applicable.
10	TD	H 09	Gerard Billinger	In Junction Box Schedule, expand the column for the j-box so that the name j-box is one all one word. And add "Existing" to the Type 2 in type column for jbox 0 as this jbox looks to be existing.	Will do		JDF	Revised H09 sheet to reflect comment.
11	TD	H 00 All Sheets	Gerard Billinger	Is it possible to use a different scale, so that double yellow and project centerline are distinguishable, along with No Passing Zones for north /south. This would allow the speed markings in roadway to be seen as well. This scale is hard to see even when using blow up areas. Might be just from viewing a PDF file as well.	Agreed. Will revise to improve clarity. May revise linetype scales to see speed markings better. Likely will adjust scale of blow up areas. Given the length of the project, increasing the scale of the H sheets would result in a significant number of sheets.		JDF	Changed 100 plan views with 20 scale windows where striping is changing. Also added tables noting where striping changes on each plan view page.
12	TD	H 00 All Sheets	Gerard Billinger	Add stationing where double yellow stops and skip starts. +??. In both upper and lower view ports.	Will do.		JDF	Added tables to plan views noting where striping is changing.
13	TD	H 14	Gerard Billinger	Lower view port, suggest adding a callout with stationing where the 6" pavement markings begin and end.	Will do		JDF	Changed 100 plan views with 20 scale windows where striping is changing. Also added tables noting where striping changes on each plan page.
14	TD	H 18	Gerard Billinger	Lower viewport mile marker shows 26 on one side and the other side is showing 30.	Will correct 26 to 30		JDF	Revised Mile marker to MP 30
15	TD	H 22	Gerard Billinger	Sign 55 appears to be in roadway.	Will relocate		JDF	Sign #55 removed as location changed to a slow vehicle turnout lane.
16	TD	H 22	Gerard Billinger	Mile marker shows 26 on one side and the other side is showing 32.	Will correct 26 to 32		JDF	Corrected mile marker to both showing MP 32

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17	TD	H 23	Gerard Billinger	Is sign 61 and 62 a wildlife viewing area or a camera sign?	Signs 61 and 63 are wildlife viewing signs. Will confirm correct sign type. Sign 62 is a 511 sign		JDF	These signs were combined with Sterling Hwy Jct sign and arrow plate and distance added post.
N/A	RW (Statewide)		Heather O'Clary	No comments regarding design from me. Just general cautions: Region ROW should work closely with ROW Review Appraiser early for appraisal scope given Vince's comment of some appraisal challenges and in tandem with Environmental in case any relocations are considered at any stage. If ROW is tight, as Valentine noted, that could lead to unanticipated expansion of acquisitions if we run into uneconomic remnants, etc., which could lead to relocations (even if temporary). Caution that "utility" is broadly defined in statute and regs and generally includes private users (as opposed to a formal utility company or cooperative).		Some appraisal scope issues may require full acquisitions. Need to work closely with ROW and Environmental. Utilities can be considered all of the above and would be permitted by the region even if it's privately owned. Vince can help with scope. When we are finalizing designs and getting ready to acquire, Vince can look at the outlines and help give some warnings on what might be challenges and unanticipated delays.	ZDK	Thank you.
1	C	1	Jacob Gondek	For B sheets consider adding geotextile at bottom of Selected Material, Type A. The last few projects in the area has received material that meets spec but tends to pump even with low moisture content. May need a discussion with Materials.	Discuss. Does Materials support revising typical section to include geotextile at bottom of all Selected Material, Type A? Does it make sense to create a contingent sum item that defines the conditions that would trigger use of geotextile? Otherwise will leave to be directed by project engineer and make sure contingency built into quantity is 10%.	AD – JG please explain what you are seeing. If A is pumping, Geotextile at the bottom shouldn't be impacting it. Is A not clean or is bad material pumping through to the A? JG - 37-52 location. Pit at MP 42 Seward Highway may be used for this project as well. Material meets spec but assumed to possibly have a high moisture content since there is pumping coming through the material. Testing did not show high moisture content. No great solution from Construction or Materials on that project. Could be a future discussion but an issue in the area and something we should be aware of. MM – There has been issues with Type A material pumping in some pits from this area. Need future discussion JG – Yes, need a separate meeting to discuss this for this project and the current passing lane project.	JDF	1. Typical sections have been revised per discussions with Materials. Since the typical section now uses 1' of Select A on top of 2' of Select E. and Select E has a higher porosity than Select A, geotextile will not be used under shoulder widening sections since wicking is less of a concern.
2	C	B 01	Jacob Gondek	General Notes: 1. Verify "Matting material" is defined.	Will define		JDF	Clarified to High Performance Turf Reinforcement Matt (HPTRM)
3	C	B 05	Jacob Gondek	Existing Pathway typical – what is the parameters for "varies" on the	Will remove repetitive "varies" from the slope		JDF	Revised Typical Sections now keep pathway now at a constant offset from the roadway with defining dimensions shown.
4	C	C 01	Jacob Gondek	Consider deleting Item 618.0003.0000 and make subsidiary to 618.0002.0000.	Will do		ZDK	Leave as is.
5	C	C 01	Jacob Gondek	Consider deleting Item 301.0003.00D1 and add quantity to 301.001.00D1	Will do		JDF	Pay Item 301.0003.00D1 has been changed to 301.0003.00E1 and will remain in the estimate. Aggregate Surface Course E-1 is used as a component of the Foamed Asphalt Stabilized Base Course due to its higher fines content than D-1.
6	C	D 08	Jacob Gondek	Replace "Turn" with "Turf" under 619.2017.0000 title.	Will correct		JDF	Corrected.

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7	C	D 08	Jacob Gondek	619.2017.0000 – Are quantities less than 10 SY's realistic for installation purposes?	Will revise smallest quantities to 10 SY, equivalent to a 5' x 18' rectangle.	KV – Quantity was based on a trapezoidal shape but will likely be installed as long sheets and rectangles, so we will reevaluate what these quantities really look like. JG - Will be paying more than it's worth for an odd shape instead of material available	JDF	Design revised to avoid small quantities of HPTRM. Short, small slopes will be flattened or stabilized with alternate techniques such as covering them in ditch lining.
8	C	E 13	Jacob Gondek	Approach Radius Table – Should be a given but may want to consider clarifying if radius dimensions are inner or outer radii.	Will consider		ZDK	Approach radius table will remain unchanged. Approach summary tables list driveway radiuses and ditch conditions.
9	C	E 15	Jacob Gondek	Title of sheet should be updated.	Will update		JDF	Detail sheet deleted; replaced by Alaska Standard Drawing. Verified all other detail titles are correct.
10	C	F 04	Jacob Gondek	Call out missing for pipe P4-04.	Will add		JDF	Pipe callouts added.
11	C	H 20 and H 21	Jacob Gondek	Sign No. 44, 45, 46, 47, 48, 49, 50, 51: there was a sign project in Summer 2020 that may have replaced these signs already. Please check	Will check		JDF	Will keep sign replace in project. Project timeline places construction no sooner that 2028 and potentially later.
12	C	H 39	Jacob Gondek	Signs No. 101 and 103 are duplicates of Sign #3 and #4 of Seward Hwy: MP 36-52 Project that will be installed Summer 2021.	Will remove from sign summary		JDF	Will keep sign replace in project. Project timeline places construction no sooner that 2028 and potentially later.
1	H	1	Jake Ciugo	This summer a site visit is needed to finalize recommendations intended to reduce or eliminate known icing issues and determine if embankment protection is needed from station 453+50 RT to 459+50 RT.	Concur.		JDF	Stream realignment incorporated for highway embankment stablization.
2	H	1	Jake Ciugo	If culverts are removed or abandoned and not replaced ensure this will not cause or exacerbate icing issues. Refer to draft icing recommendations for locations with known icing. Also, consider how watershed boundaries may change and potential impacts to downstream property.	Drainage design is ongoing. Design intent is to increase diameter to 36" or install thaw wire at all icing locations identified in the culvert recommendations. Will review drainage design against recommendations. Will include icing locations as part of summer field review.		JDF	Changes to drainage patterns that result from culvert removals or relocations have been analyzed. To address icing concerns, most cross culverts will be increased in diameter to 36" and/or have thaw wire installed.

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3	H	1	Jake Ciufu	<p>1. HDPE culverts are acceptable at locations with FHWA Abrasion Levels 1 or 2. Abrasion level depends on bedload and water velocity during a ~2-year event. Check design based on this criterion. I can assist as needed.</p> <p>2. Minimum culvert slope is 0.5%. Absolute minimum is 0.3%.</p> <p>3. When culverts daylight mid-foreslope provide an energy dissipater from the culvert outlet to the toe of fill.</p> <p>4. Verify riprap size is adequate for some of the steeper culverts.</p> <p>5. Verify culvert extensions match existing culvert slopes and material types. CMP to HDPE connection requires a special detail.</p>	<p>1. Will coordinate with you separately to check that criteria is met.</p> <p>2. Noted. Will review design against these minimum criteria.</p> <p>3. This is the design intent. Will review as design progresses.</p> <p>4. Will coordinate with you separately to discuss riprap sizing methods and definition of "steep." Design intent is to daylight culverts at toe of slope unless doing so would extend outside ROW or result in excessively steep culverts. If either is the case, will daylight within the foreslope at a moderate slope and armor to the toe or edge of ROW (whichever is earlier).</p> <p>5. Will verify. Design intent is to connect like with like. Do you have an example detail you prefer? Discuss extensions versus replacements.</p>	<p>Widened shoulder requires culvert extensions. KV believes culvert recommendations were developed for the 1R not the 3R, so service life was expected to be 10 years. Do culvert recommendations need to be revisited now that 3R will be extending that design life much longer? JC - A lot of them are original culverts from the early 50s. Expecting them to last 80+ years is unreasonable. They are thicker steel than modern steel, but should do another inspection on all culverts we intend to leave. Should be able to accomplish in a day or two this summer. KV - as part of this site visit, would like to consider the concept of extensions. All are currently 20' long based on concerns from M&O and minimum provided from JC. Some cut back far enough to make that junction point under the shoulder. JC - minimum length is due to the fact that we don't want a culvert prone to moving in the future. Embedding in the embankment minimizes probability of movement. Length can be reduced less if necessary but would need to be looked at case by case. ZK - would recommend not using shorter extensions. Found a lot of problems/failing pipe extensions under the path. Suggested sliplining after extending to increase design life to 50-70. Banding may be difficult since corrugations now may not match previous 50s. Standard bands may not fit JC - extending and lining may be more cost effective if deep. KV - will evaluate culverts and cost/benefit of lining vs. replacement</p>	JDF	<p>1. All culverts checked for anticipated abrasion levels and pipe material selected accordingly.</p> <p>2. All cross-highway culverts meet or exceed the 0.5% minimum criteria.</p> <p>3. This is the design intent. See updated culvert summary table, F-Sheets and drainage details for the revised energy dissipator design.</p> <p>4. Riprap size assigned appropriately base on grade and anticipated volumes.</p> <p>5. The design will replace rather than extend all culverts except one. This culvert is CMP that was installed within the last 15 years.</p>
4	H	A 02	Jake Ciufu	Should end of project be MP 36?	Will check and revise as appropriate.		JDF	End MP is correct. Mile Post 36 is roughly at 560+00 and Mile Post 37 is roughly at 613+00.
5	H	B 01	Jake Ciufu	<p>1. Armored Ditch Detail: Show dimensions for Ditch Lining perpendicular to slope. Also, refer to riprap summary table.</p> <p>2. Using design guidance in HEC-15 or HEC-23, determine if a granular filter is needed for the proposed ditch lining or riprap. If a filter is necessary, it is common (in ditches) to increase the thickness of the armor material by 50% rather than installing a filter.</p>	<p>1. Will do.</p> <p>2. Will increase thickness to 1'.</p>		JDF	<p>1. Detail has been deleted.</p> <p>2. Filter material and geotextile base on bore logs in the surrounding area of each culvert and the notes in the erosion protection details.</p>
6	H	B 05	Jake Ciufu	Fix shoulder grading label (left side of typical section).	Will do.		JDF	Corrected.
7	H	B 06	Jake Ciufu	Consider removing this typical section and adding a second pavement structural section label on B5 with a station range in parentheses.	Will consider.		JDF	No longer applicable. Typical sections revised based on latest materials recommendations; there is now only one structural section used from 258+00 to EOP.
8	H	B 07	Jake Ciufu	Revise notes to refer to correct summary table name.	Will update name of summary table sheets D10-D12 and update notes appropriately.		JDF	Summary table reference updated.
9	H	C 01	Jake Ciufu	<p>1. Selected Material rather than Borrow is used throughout the E-sheets.</p> <p>2. Add culvert cleaning pay item. Many of the existing culverts that will remain or be extended need to be cleaned. Refer to recommendations for specific locations.</p> <p>3. If the intent is to install end sections provide locations and show in F-sheets.</p> <p>4. If unit prices are similar, consider using one end section pay item for each size. Specifications already require end section material to match pipe material</p>	<p>1. Will revise.</p> <p>2. Will do.</p> <p>3. Will do. Design intent is to use end sections within clear zone and slopes shallower than 2.5:1. Design intent is to skip end sections in slopes steeper than 2.5:1 and outside of clear zone (i.e. at toe of a big fill).</p> <p>4. Will consider. Construction: is this preferred? (same question as Zach Kay question 32.4)</p>	<p>4. Construction preference? JG- no issue with one item. AD - Can we let the contractor decide if they want to use CSP or HDPE? ZK - Depending on bedload, CSP is used. HDPE is standard otherwise. KV- CSP is listed for the culvert extensions but all new pipes are HDPE. Will verify that HDPE is okay for all locations it is called out (based on abrasion). JG- Is there a drastic unit price difference? AD - Labor should be the same and price difference in material should be similar. Will go with combined</p>	JDF	<p>1. Summary table and pay items revised to say "Select Material."</p> <p>2. Updated design removes and replaces almost all pipes. Culvert cleaning not applicable under updated design.</p> <p>3. End sections now shown on plans/summary table.</p> <p>4. Pay item revised to be by size only, rather than size and material.</p>

Design Review Comments - PIH

Program: Z546590000/0311031
 Name: Seward Highway: MP 25.5-36 Trail River to Sterling Wye
 Design Manager: Christopher Bentz
 Design Engineer: DOT&PF (Valentine, Barkshire) R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
10	H	D 03	Jake Ciugo	Provide specifications requiring abandoned culverts to be filled with concrete slurry. This is needed to prevent a void from developing under the road.	Will do.		JDF	Pipes scheduled to be abandoned in place will be fill with low strength flowable material per section 205.
11	H	E 01	Jake Ciugo	It is recommended that the channel width just downstream of the culvert closely match the culvert span. The intent is to prevent a point bar from developing and to ensure adequate depth for adult salmon. Construct the low flow channel along the outside of the bend where it would tend to naturally occur.	Discuss.	JC was concerned about 17' culvert to 22' wider downstream – Wide shallow flow may not be conducive for salmon swimming upstream. HA – should channel be narrower along bend to tie back into existing channel? JC – yes that was the intent. It's done on E06 – build berm and fill in scour hole. Would recommend reconstructing stream bank to narrow it up. R&M will do. JC - Low flow channel will probably naturally develop outside of the bend but could also design it that way. HA – Typical section will have stream banks so will shape channel to follow right hand edge and follow the turn.		Proposed channel widths and low flow location were chosen to transition and closely match existing stream geometry.
12	H	E 02	Jake Ciugo	1. Upstream Open Channel Section: a. Are topsoil and seed intended on 2:1 slope? b. Height of 1.5:1 slope is unknown. c. Verify riprap voids will be filled below OHW. 2. H&H report states banks will be constructed inside fish passage culverts. Revise design or revise the report. 3. Downstream Open Channel Section: There are four different materials specified in this section (class II riprap, waterway bed fill, selected material, and topsoil/seed). Simplify by specifying one or two materials. Topsoil/Seed and Selected Material are to be placed below the existing top of bank. Ensure these materials will not be eroded during or after construction.	1a. Yes. Will revise detail to point out topsoil and seed. 1b. Will revise detail. 1c. Will change riprap to waterway bed fill in details. 2. Will add banks to culvert details. 3. Will simplify sections		1a. Topsoil and seeding will occur on all finished slopes as dictated by general notes. 1b. Added dimension. 1c. Changed riprap to waterway bed fill. 2. Kept section as is to closely match existing channel. 3. Changed riprap to waterway bed fill and removed topsoil and seed label.	
13	H	E 05	Jake Ciugo	1. Stationing appears to be incorrect. 2. I recommend the width of the downstream riprap be at least equal to the culvert span. 3. Provide widths and slopes for upstream riprap channels. 4. Little Carter Creek does not need to pass fish. Are low flow channels still necessary?	1. It appears the stationing for the upper and lower open channel sections are flipped. Will revise. 2. Riprap width narrows from culvert outlet to match existing channel. Will extend full width riprap further downstream. 3. Will do. 4. Channel is required to route flows to culvert inlet.		1. Revised 2. Riprap width narrows from culvert outlet to match existing channel. 3. Done 4. Kept v-channel design to allow streams to flow into culvert.	
14	H	E 06	Jake Ciugo	1. The cut limits just upstream of P16-01 do not match what is shown in the typical section on sheet E7. 2. Upstream of the culvert, reconstruct banks to closely match the culvert span and to provide a smooth transition.	1. Will revise. 2. Will do.		1. Revised 2. Revised	
15	H	E 07	Jake Ciugo	1. Upstream Channel Section: a. Ensure top soil and seed will not wash out during construction. Consider vegetative mat. b. Provide width for Waterway Bed Fill.	1a. Will revise detail to provide a more stable bank. 1b. Will do		1a. Revised 1b. Revised	
16	H	E 08	Jake Ciugo	Provide erosion protection around the sides of the downstream headwall.	Will coordinate with DOT&PF design team.			Updated design to construct a 2:1 embankment slope and moved stream away from roadway.
17	H	E 09	Jake Ciugo	1. Provide a new typical section for the downstream channel. 2. Headwall bedding is specified on the Standard Plan. No need to provide it here. This comment applies to all fish passage details.	1. Will do. 2. Will do.		1. Done 2. Removed structural fill linework and hatching.	

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18	H	E 10	Jake Ciufu	<ol style="list-style-type: none"> 1. Provide riprap dimensions in summary tables as specified. 2. Rather than multiple labels, consider adding a note, "Riprap Class and Dimensions Specified in Summary Tables." 3. Add note, "Riprap Slope Shall be 2:1 or Flatter." 4. Section A-A: provide riprap slope above the culvert inlet. 	<ol style="list-style-type: none"> 1. Will do. 2. Will replace repeated labels with one note. 3. Will do. 4. Will do. Likely "Match Existing" 		ZDK	Details reworked. Now E08 & E09. <ol style="list-style-type: none"> 1. Riprap class and quantities in D Summaries. 2. Labeled appropriately. 3. 1.5:1 or flatter recommended by previous hydrologist and proven to work. 4. Match existing.
19	H	E 10	Jake Ciufu	Moose Creek Embankment Protection: <ol style="list-style-type: none"> 1. I recommend flattening the riprap slope to 2:1. Especially since it is embedded in the road embankment. This will ensure long term stability with minimal maintenance. This will require a shift in the Moose Creek alignment. 2. Reference point D should be keyed in below the expected scour depth. A sacrificial toe is an acceptable alternative but will require more riprap to account for losses. 3. Riprap/filter dimensions should be shown perpendicular to slope. 4. 1' of freeboard is recommended between the 50-year WSE and top of riprap. 5. Consider geotextile between the road embankment and top of riprap. 6. Riprap is considered flexible erosion protection. It will adjust to distortions and individual stone displacements without complete failure. In this case the expected movement may impact the road embankment. This should be considered when designing the road embankment. 	<ol style="list-style-type: none"> 1. Discuss. Moose Creek is pinched between a steep (natural) backslope and the highway. There really isn't anywhere to relocate the creek to. Existing slope is almost 1:1. Will re-evaluate with intent to use the shallowest possible riprap slope (preferably 2:1) at the cost of installing a steeper fill slope above. Materials: can you help us identify a slope stabilization method to make the upper fill slope steeper than 1:1 (without prohibiting guardrail installation) or retaining wall type? Construction: Do you have any insight into slope stabilization methods or retaining wall types that are particularly well or poorly suited to these site constraints? Ideally the method used would not require extensive temporary excavation behind the final face of wall (maintain one or both lanes of traffic), would be relatively fast to construct (minimizing traffic impacts), and would be compatible with driving guardrail posts. 2. This is the design intent. Scour depth not yet known. 3. Will replace labels with dimensions measured perpendicular to slope. 4. Will evaluate and provide if possible. 5. Will add geotextile. 6. Will coordinate with Materials. 	KV - No room to relocate the stream. Embankment detail as designed is showing a 1:1 slope. Needs Materials input to make this slope stable. JC recommends 2:1. AD - will be drilling a test hole at roadway embankment at this location. Will be going off assumptions but a steeper slope is going to need a lot of reinforcement to stabilize. Will likely need some sort of wall to hold back the roadway to build out the riprap. What kind of options do we have at this location? JC - Past experience with riprap, anything steeper than 2:1 doesn't perform well - requires a lot of maintenance and falls into stream. Embedding it in the Seward Highway could cause the highway to move. Potentially go to 1.5:1 but nothing steeper with flowing water although depends on the force applied by the water. Stream is roughly parallel to the roadway, but some bends that direct the flow into the highway which could cause rock movement. Needs to be able to withstand 50 year flow. Is it worth shifting the road alignment? KV - Understanding up until recently that alignment adjustments are off the table. ZK - Similar situation on 17-22. Mitch Miller suggested putting in rock grotto and pinning with mesh at the location. Run longitudinally and pin the whole slope back. Anchored pinned mesh was designed for anything steeper than 1.5:1 (overburden slopes). Areas where there were streams coming off the mountain but riprap isn't stable at 1:1 so pinned it with the mesh. JC - Will pins hold up on the road embankment? (MM - they will) Mitch - ZK gave a good summary. Pinned mesh should work KV - concerned about rock grotto all the way to the creek and constantly exposing it to the running water. Should only stabilize upper slope with it and use unpinned riprap on lower slope? MM - Would have to look it up, but there are stainless and galvanized options so corrosion resistant. 99% sure corrosion wouldn't be an issue. KV - More concerned that as riprap settles, the mesh system may lose integrity. MM - Rocks should stay contained. Further discussion will be necessary. MM - would like to see cross sections at 25' intervals at this location	ZDK	Stream realignment incorporated for highway embankment stabilization. See updated design.
20	H	E 11	Jake Ciufu	<ol style="list-style-type: none"> 1. Are end sections used on this project? 2. Minimum cover requirements are given in the Standard Plans. I suggest removing minimum cover from the Pipe Inlet Depression Detail. 	<ol style="list-style-type: none"> 1. Design intent is to use end sections within clear zone and slopes shallower than 2.5:1. Design intent is to skip end sections in slopes steeper than 2.5:1 and outside of clear zone (i.e. at toe of a big fill). 2. Will do. 		JDF	<ol style="list-style-type: none"> 1. Yes, estimate, summary table, and plans updated to show end sections. 2. The pipe inlet depression detail gives a bit more detail as to how to achieve adequate cover should a change occur in the field. All pipes checked for adequate cover during the design process.
21	H	F-sheets	Jake Ciufu	Pipe Summary Tables: <ol style="list-style-type: none"> 1. Show invert elevations to the nearest hundredth. 2. Show pipe lengths to the nearest tenth. 3. Rather than "Start" and "End" refer to culvert ends as "Inlet" and "Outlet". 4. Provide absolute values for offset and pipe slope. 	<ol style="list-style-type: none"> 1. Will do. 2. Will do. 3. Will do. 4. Will do. 5. Will do. 		JDF	1-5. Summary table updated.
22	H	F-sheets	Jake Ciufu	Riprap hatch is used where ditch lining is specified.	Will revise ditch lining hatch.		JDF	Hatching revised.
23	H	F 02	Jake Ciufu	P2-02: Verify culvert ends align with natural channel.	Will do. May end up installing P2-02 at existing location and skew due to concerns from ARRC about changes to drainage patterns.		JDF	Inlet realigned to match natural channel. Outlet moved in conjunction with channel realignment work and coordination with the ARRC about downstream impacts.

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24	H	F 08	Jake Ciufo	1. Upsize P8-03, P8-05, and P8-07 to 36" diameter due to historical icing problems. 2. Can P8-08 be a ditch instead? Ensure DOT will have permanent access to maintain and replace in the future.	1. Will attempt to do so if possible Providing a deeper ditch for larger pipes may result in unacceptable impacts outside our existing ROW (such as impacts to septic systems and structures). If these pipes cannot be upsized, will provide thaw wires. 2. Will evaluate but is unlikely due to current use as a parking lot. P8-08 is placed ~5' parallel to and 5' offset from what we think is a parcel line (did not plot). Intent is to acquire a ~10' drainage easement along parcel line.		JDF	1. Upsizing pipes in this area is not feasible due to the topographic constraints and challenges with minimum cover and storm drain structure knockout sizing. 2. This area is used as a parking lot and the property owners have requested continued drive-through access between lots. The new design concept uses a more direct drainage route with a small storm drain system rather than open ditching.
25	H	F 09	Jake Ciufo	Provide an energy dissipater for P9-04.	Will do.		JDF	Energy dissipator added.
26	H	F 13	Jake Ciufo	Will P13-02 be replaced or lined? If replaced verify culvert outlet matches natural downstream channel.	Will verify. If CIPP as shown in remarks, will correct plan view.		JDF	This culvert will be replaced. The roadway embankment will be widened in this area, so the culvert will be longer than the original and will tie into the existing channel accordingly.
27	H	F 17	Jake Ciufo	1. Detail is needed to show riprap layout around culvert inlet (station 451+00 RT). 2. I recommend removing the approach culvert at station 456+50 RT and reestablishing an open channel. This will reduce maintenance efforts, improve fish passage, and reduce flooding/erosion potential. 3. A site visit is needed to determine if embankment protection is needed near P17-01. Can the proposed fill slope be reduced?	1. Will add. 2. Discuss. Driveway will be blocked by guardrail; culvert serves no purpose. Parcel is accessible from Toklat Way. Culvert removal estimated to be roughly \$40k during scoping for EVOS grant 3. Discuss. Concur that a site visit is needed. R&M: aren't fill slopes currently shown ~2:1? P17-01 outlet work should be done in coordination with Moose Creek embankment protection.	2. KV – thinks this is a good suggestion but open for discussion. JC – CB any objection? \$40k to remove a culvert is significant, but includes stream reconstruction. No objections 3. Will be helpful to have more detailed cross sections 450+50-459+00 and possibly a site visit. Stabilizing steep embankment slopes MF – should include stabilization effort to culvert 17-01. Using similar details/methods Can be discussed in another meeting.	JDF	1. Pipe being replaced and appropriate details include in current design. 2. Removed as part of the stream realignment. 3. Stream realignment flattens slope between creek and highway and stabilizes the stream banks.
28	H	Y 04	Jake Ciufo	603: I am working to update the CIPP specs. Please coordinate with me in the future to obtain the latest and greatest.	Will do.		ZDK	No longer applicable.
29	H	Y 01	Jake Ciufo	703: Require the Contractor to place riprap prior to filling voids with Finer Material. This is necessary to ensure adequate boulder to boulder contact.	We believe this is covered in spec 690-3.03.		ZDK	690 specs cover filling voids as well as 611 for riprap.
1	RW	1	Julia Fleming	Continue coordinating with Eric Fuglestad to finalize parcel needs. Parcel plats for permanent acquisitions have not yet been drafted.	Will do		ZDK	Parcel Plats created and ROW A&A started.
2	RW	A 01	Julia Fleming	Remove R1E on North Arrow, and add R2W.	Will do		ZDK	Corrected.
3	RW	A 02	Julia Fleming	Since we are mapping for this project, General Note 2 can be removed. Add R sheets to Index table.	Will remove Note 2 and add R sheets to Index.		ZDK	Removed and Indexed.

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 Trail River to Sterling Wye

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4	RW	A 02	Julia Fleming	Suggest using "Begin Project" rather than "Begin Paving" at 23+00.	Will change to "Begin Project"		ZDK	Corrected.
5	RW	D 01	Julia Fleming	Trees cleared in ROW easements belong to underlying land owners. Suggest distinguishing private from public properties for clearing purposes. (Maybe in the 'remarks' column?) Work with Eric Fuglestad to determine where these areas are.	Will distinguish private/public		ZDK	Most of the ROW will be in fee after ROW A&A. Private trees within permanent and temporary interests can be negotiated by the property owner through acquisitions. Timber will be made available to the public for use per our clearing and grubbing specs.
6	RW	F All	Julia Fleming	On all sheets where we show the line distinguishing hwy ROW from ARRC ROW, place the text identifying each on their respective side of the line.	Will correct		ZDK	All Row properly labeled.
7	RW	F All	Julia Fleming	Show line-work for numerous TCPs needed for approaches.	Will do		ZDK	Updated.
8	RW	F 02	Julia Fleming	Show ARRC ROW connecting to Hwy ROW 69+50 RT.	Will do		ZDK	Updated.
9	RW	F 04	Julia Fleming	Show ROW lines in the top viewport.	Will do		ZDK	Updated.
10	RW	F 07 – F09	Julia Fleming	These sheets are pretty cluttered.	Agreed. Will provide separate pipe summary sheets for F07 and F08		ZDK	Pipe summary tables moved to the D Sheets to reduce clutter and provide clarity in the plans.
11	RW	F 07	Julia Fleming	No proposed acquisition shown for slopes outside ROW at 179+00 to 181+00 LT, 197+30 to 202+20 RT, and 203+50 RT. Coordinate with Eric Fuglestad with regard to acquisition needs here.	Currently evaluating options to redesign the slopes at these stations to decrease the ROW impact. Coordination with E.Fuglestad and Materials is ongoing.		ZDK	Slope modified and ROW required in parcel plats.
12	RW	F 07	Julia Fleming	There are a couple of areas where slopes are fairly close to ROW (200+00 to 200+50 LT and 201+80 to 202+60 LT). Will TCEs be needed here?	Likely		ZDK	Profile adjusted to decrease ROW impacts. TCE will not be required. Work can be done from our side of the line.
13	RW	F 07	Julia Fleming	Part of riprap for pipes P7-09 and P7-18 is outside ROW. Permanent acquisition required for this work. Riprap for pipes P7-02, P7-14, P7-33, and P7-20 are close to/on ROW line. Will TCEs be necessary for installation?	Final drainage design is still ongoing. Will evaluate the possibility of staying within ROW at P7-09 and P7-18. TCEs will likely be necessary at these locations.		ZDK	All pipes and Riprap are within existing ROW and or ROW/Easements to be aquired. All necessary TCP's shown in the plans.
14	RW	F 08	Julia Fleming	Slopes outside ROW at 204+00 to 205+50 RT, 206+60 to 207+60 LT, 208+25 to 212+30 RT, 216+25 LT, and 219+00 LT. No proposed acquisition areas shown. Coordinate with Eric Fuglestad with regard to acquisition needs here.	Currently evaluating options to redesign the slopes at these stations to decrease the ROW impact. Coordination with E.Fuglestad and Materials is ongoing.		ZDK	All parcel plats complete, fill/cut slopes are within proposed acquisition areas or TCP's.
15	RW	F 08	Julia Fleming	Pipe P8-08 is outside ROW. Permanent interest will be needed for this work. Riprap for pipes P8-02 and P8-12 appear to very close/on ROW. Will TCEs be necessary?	Concur. Hoping to acquire drainage easement for P8-08. The parcel just south of Depot Road appears to be State owned, so I do not believe P8-02 will need a TCE. P8-12 may. Will know for certain once drainage design is complete.		ZDK	Redesigned with proposed drainage easment to the lake.

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16	RW	F 09	Julia Fleming	Slopes outside ROW at 230+50 to 231+25 LT. Coordinate with Eric Fuglestad with regard to acquisition needs here.	Currently evaluating options to redesign the slopes at these stations to decrease the ROW impact. Coordination with E.Fuglestad and Materials is ongoing.		ZDK	All parcel plats complete, fill/cut slopes are within proposed acquisition areas or TCP's.
17	RW	F 13 – F14	Julia Fleming	Showing property lines at 357+00 to 362+00 LT in ROW- This is accurate, but not consistent. Since we're including R sheets, suggest not showing property lines inside ROW in the F sheets for clarity.	Will do.		ZDK	Property lines trimmed to ROW boundary. All property boundaries turned off at PS&E. Only ROW shown.
18	RW	F 17	Julia Fleming	Showing proposed guardrail outside ROW at 463+00 RT. Permanent interest would need to be acquired for this work.	Will evaluate if impacts can be kept within existing ROW.		ZDK	G-rail redesigned to stay within ROW.
19	RW	F 18	Julia Fleming	Showing proposed slopes outside ROW on either side of Baneberry Ridge Lane. Permanent interest would need to be acquired for this work.	Will evaluate if impacts can be kept within existing ROW.		ZDK	All parcel plats complete, fill/cut slopes are within proposed acquisition areas or TCP's.
20	RW	F 21	Julia Fleming	Consider expanding the proposed parcel on the east side of Ewe Loop to ensure adequate room for slopes.	Will do.		ZDK	Expanded.
21	RW	F 21	Julia Fleming	Riprap for pipes P21-02 and P21-03 is over the ROW. Permanent interest needed for this work.	Final drainage design is still ongoing. Will evaluate the possibility of staying within ROW P21-02 and P21-03. TCEs will likely be necessary at these locations.		ZDK	All pipes and Riprap are within existing ROW and or ROW/Easements to be aquired. All necessary TCP's shown in the plans.
22	RW	H 16	Julia Fleming	Proposed Sign 20 outside ROW.	Will evaluate if sign 20 can be moved to an alternate location within ROW.		ZDK	Now sign #26, relocated into proposed ROW acquisition.
1	HD	1	Noah King	Justify, in a humanistic context, the decision to not include a separated multi-use pathway along the entire length of the project.	The existing 6' shoulder width north of Moose Pass and proposed 6' shoulder width south of Moose Pass will accommodate pedestrian access throughout the project corridor without the need of a separated multi-use pathway.		JDF	The existing 6' shoulder width north of Moose Pass and proposed 6' shoulder width south of Moose Pass will accommodate pedestrian access throughout the project corridor without the need of a separated multi-use pathway.
2	HD	H 17	Noah King	Are warning tiles warranted where the pathway crosses approaches?	Per Scott Thomas: CR practice has been not to provide detectable warning tiles at pathway/sidestreet crossings of flush pathways until PROWAG 2011 is adopted.		JDF	Replacing in kind to match previous school zone project.
3	HD	H 17	Noah King	Sta 205~, 210/11, RT. Avoid placing junction boxes in pathway.	Will evaluate alternate location		ZDK	Junction boxes will be placed in the pathway due to drainage and ROW constraints.
4	HD	H 09	Noah King	Crosswalk detail reference – Should be H17 not H18.	Will revise		JDF	Revised plans views to 100 scale and added 20 scale views of Moose Pass School zone area to better show striping and crosswalk features.
5	HD	F 09	Noah King	Sta. 252+00, RT. Will existing pathway be re-paved?	No.		JDF	Yes, the existing pathway from approximately STA 183+00 to 258+00 RT will be rehabilitated.

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Name: Seward Highway: MP 25.5-36
 Trail River to Sterling Wye
Design Manager: Christopher Bentz
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 R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
1	TS	DSR PDF 40	Scott Thomas	App C, 3R Analysis. P 2 of 3. Vertical Curves. While not in 3R method – the designer can refer to AASHTO GB to also check sag curves against headlight sight distance using 1 degr headlight angles – a rare case when they don't, and an ideal situation to improve upon with little impact to ROW when possible.	Noted for future projects. The 3R Analysis has been signed as final and no revisions are anticipated.		JDF	Since the 3R Analysis has been signed as final and no revisions are anticipated, this will be noted for future projects and checked where profile modifications are being made for other design reasons.
2	TS	DSR PDF 62	Scott Thomas	Will intersection and driveway sight distance be brought up to minimums as quoted in 1120.1 of the HPCM, 2005?	Will evaluate sight distance for all intersections and driveways. Clearing limits will be revised to include sight triangles. Obstructions (ie trees) may exist outside of DOT&PF's ROW. Existing crest vertical curves that do not meet current standards may also obstruct sight triangles. Project is not modifying profile. Will provide warning signs for intersections where intersection sight distance will not be met. Will revise DSR to clarify		ZDK	All driveway ISD and SSD verified. Only two driveways didn't meet ISD and one at STA 50+00 didn't meet ISD or SSD. Hidden driveway sign added as this is a power line access trail point and get very little use.
3	TS	DSR PDF 66	Scott Thomas	While not required, if a vertical profile change can introduce a new segment of passing sight distance of 1000 ft or so with very low cost, this can sometimes be a low impact safety improvement over sites that are slightly below requirements.	Will evaluate if any opportunities for this type of low-cost safety improvements exist within the project corridor.		JDF	No new passing opportunities were added due to project costs. Two slow vehicle turnouts were incorporated into existing pullout area north of Moose Pass Town site. See G Sheets.
4	TS	H 00	Scott Thomas	Recommend to be evaluated in determining centerline striping, using the design plan and profile as a design opportunity to check on real conditions rather than adopting historical striping that may lack a recent historical record of inspection.	Will evaluate passing sight distance against plan and profile and revise centerline striping as appropriate.		JDF	Passing sight distance evaluated against plan and profile. Revised centerline striping appropriately. Will keep pay item 642.2008.000 to ensure passing sight distance meets requirements.
5	TS	Z 03	Scott Thomas	There are Regional passing zone specials to be added to support pay items. Recommend adding CR passing sight distance method/documentation to the special provisions. It is not yet provided here.	Will add.		JDF	Applicable Regional Special Provisions added to the Specifications.
6	TS	C 02	Scott Thomas	We support Section 642.2008.000 Passing sight distance survey. DOTPF errs towards credible passing zones in undeveloped rural segments meeting sight distance. Duplicating existing striping or automatic double yellow is not supported with any background engineering analysis.	See response to comment 4. Will continue including pay item 642.2008.0000.		JDF	See response to comment 4.
7	TS	D 05	Scott Thomas	How much opportunity is there for buried in backslope terminals per Std Plan G-16? This could reduce the parallel terminal inventory to be repaired by M&O.	Std Plan G-16.00 requires a specific ditch section that does not match existing typical section and prescribes very specific flare rates and lengths. Are there plans to update G-16.00 to provide more design flexibility?		JDF	Standard Plan G-16.00 requires a specific ditch section that does not match existing typical section and prescribes very specific flare rates and lengths. This ditch width and depth would not allow for proper catchment near rock cuts or be deep enough to allow cover over culvert pipes. In the
8	TS	D 07	Scott Thomas	CR practice has been not to provide detectable warning tiles at pathway/sidestreet crossings of flush pathways until PROWAG 2011 is adopted. No objection to this plan's use at a school zone crosswalk.	Thank you.		JDF	Understood. Detectable warning tiles will only be provided at the entrances to the crosswalk that goes across the Seward Highway at Depot Rd.
9	TS	E 04	Scott Thomas	Is there room for an SRT driveway treatment next to Little Carter Creek? Is an SRT required?	Guardrail is currently planned over Little Carter Creek both sides of the highway, with a SRT at the Carter Lake Trailhead. Guardrail shown on F15.		JDF	Design revised using slope flattening to eliminate guard rail near the Carter Lake Trailhead.
10	TS	E 13	Scott Thomas	Request labeling culvert end –sections lest they be implied as not required?	Will do.		JDF	Revised plans show culvert end sections in the summary table and the plan view.
11	TS	E 15	Scott Thomas	Pin connections may require updates to follow new G-46 fabrication of barrier.	E15 will be removed from planset. Will add detail for transition between new rail and old rail. Transition rail at connection to Trail River Bridge is outside of project limits and will be removed from project.		JDF	E15 details removed. Using Alaska Standard Plan G-27.00, G-29.01, and G-32.04. Covers long span and bridge rail transition.

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12	TS	E 15	Scott Thomas	Long span w-beam is now a Std Plan G-29, so the top detail should be removed in favor of the Std Plan.	Will do.		JDF	Understood. Detail removed.
13	TS	E 16	Scott Thomas	Mailbox relocation requires sending a planset to USPS and coordinating with contacts documented on draft procedures pending at Preconstruction Engineer's office.	Will do.		ZDK	Many ROW parcels to purchase. Will coordinate between PS&E and Cert.
14	TS	F All	Scott Thomas	With guardrail replacement, has Length of Need been rechecked? FHWA has required us to recheck rather than replace existing termini.	Guardrail extents currently shown are approximate, to be revisited after PIH. Length of Need for all guardrail will be rechecked and documented in a memo that will be appended to the DSR.		JDF	Length of Need has been checked for all runs of guard rail.
15	TS	F 07	Scott Thomas	Is an SRT needed in the 35 zone at Sta 183+00?	Will evaluate.		ZDK	Design modified through grading and slope flattening to barn roof. G-rail currently removed. May be added back as a change in ROW conditions with parallel end terminals and embankment stabilization.
16	TS	F 10	Scott Thomas	Could the pathway extend to 258+00 some kind of public termini in the road ROW? It currently is a "force off" the highway.	The existing pathway continues north to Upper Trail Lake. The project is only improving the pathway where parallel to the highway, and not extending all the way to the terminus.		JDF	Pathway termini modified to allow pedestrians to leave the pathway and continue onto the highway shoulder at 258+00 rather than being forced outside of the highway ROW.
17	TS	F All	Scott Thomas	Has guardrail been considered at Test Level 4 for trucks? Would it be feasible and can it be compared with DOTPF considerations for the Kenai River Sterling Hwy segments under design now?	No. This should be a regional rather than a project-level consideration. This could be implemented by the project if adopted on a region-wide or system-wide basis.		JDF	No. This should be a regional rather than a project-level consideration. This could be implemented by the project if adopted on a region-wide or system-wide basis.
18	TS	F 15	Scott Thomas	Can slopes be flattened to avoid new guardrail at Carter Lake Trailhead access? Double sided rail at turning points is desirably avoided if feasible.	Discuss. Will evaluate but avoidance may not be feasible. Desire to avoid guardrail is in conflict with desire to minimize impacts to Carter Lake Trail (Section 4(f) resource), desire to minimize culvert lengths and skew, and desire to stay within existing ROW. DNR has previously expressed concern about simply clearing between the road and the trail. Environmental: Would slope flattening (which would significantly expand fill limits) near the Carter Lake impact the environmental commitments for this project?	Scott would like reconsideration at Carter Lake Trailhead to try and eliminate narrowing the road with the guardrail. Will follow up with DNR. Will need to discuss the safety tradeoffs for the motorists on the road vs. impacts to trail and/or creek. Someone waiting to turn left has nowhere to go if a car behind them is not stopping.	JDF	See response to comment 9.
19	TS	F 53, 54	Scott Thomas	Are there ROW considerations for SRT's?	Yes, SRTs as currently shown extend outside existing ROW. Will re-evaluate terminals when revisiting guardrail length of need.		ZDK	Yes, however all SRG's have been removed from the project. All G-rail DOT&PF is maintaining is with proposed ROW.
20	TS	H 01	Scott Thomas	The centerline gap and the dimension arrows for stripes to center vs edge of stripe are difficult to see. It is hard to tell where the arrows start and stop on the center or the edge of markings. Agree to have this detail consistent with Cooper Landing striping. We have documented double tanker lane use shown to work within lane when driving the speed limit.	Will revise. Noted.		JDF	Changed 100 plan views with 20 scale windows where striping is changing. Also added tables noting where striping changes on each plan page.
21	TS	H 08	Scott Thomas	Is it more desirable to embed detectable tiles or depress them into the concrete?	Will revisit detail.		ZDK	Tiles embeded in concrete. See H14 Plan Sheet.

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22	TS	H 09	Scott Thomas	Note for crosswalk – details are not on Sheet H18. Maybe H 17?	Will revise note to reference H08 and H17.		JDF	Revised plans views to 100 scale and added 20 scale views of Moose Pass School zone area onto sheet H09 & H10 better show striping and crosswalk features.
23	TS	H 10	Scott Thomas	End terminal Sta 48+00 – is the slope behind the terminal 4:1 or flatter for 50 ft or traversable per G-20? Is there Length of Need above/ahead of the ARRC tracks?	Will evaluate.		ZDK	All G-rail LON is met and all necessary slope flattening layed out in the plans.
24	TS	H 11	Scott Thomas	End terminal Sta 55+50 – same question – are G-20 slopes met behind terminal and is LON above ARRC met?	Will evaluate.		ZDK	All G-rail LON is met and all necessary slope flattening layed out in the plans.
25	TS	H 16	Scott Thomas	Consider W14-3 NO PASSING ZONE (triangle pennant) signs across from DO NOT PASS signs.	Will consider adding.	Revisit when Claire is up to speed on adding this to project it would be her call	ZDK	Added per MUTCD.
26	TS	H 16	Scott Thomas	Sign 18. D9-109 POST OFFICE is an ASDS sign and the arrow is to be a subplate rather than built in.	Will revise.	Will revise to as stated once we have sign block built by M. Flickenger	ZDK	Revised to current standard.
27	TS	H 16	Scott Thomas	Sign 19. Is this a YIELD today? Next street down is a STOP. Request we consider the differences between the streets in the 35 MPH zone and whether they are all the same or some are different.	Yes, this is currently a YIELD sign. Will replace with a STOP sign.		JDF	Revised sign to Stop sign.
28	TS	F 07	Scott Thomas	Sta 183. Can an SRT be done at the full 180 degrees as shown?	Will evaluate appropriate end treatment as part of guardrail re-evaluation.		ZDK	No, removed from project.
29	TS	H 17	Scott Thomas	School zone crosswalk and down arrows. The ATMS Fig 7B.100 requires the down arrow on the RT side of approaching traffic SB for maximum visibility.. Specify FYG colors in the remarks column for S signs. So they won't be just yellow.	Will revise.		JDF	Added school zone signs in both direction on separate post. Down arrows properly located.
30	TS	H 17	Scott Thomas	Specify the distance between crosswalk ladder bars – 2 ft as well.	Will specify distance. Using exactly 2.0' spacing results in bars lining up oddly with lane lines, wheelpaths, and detectable warning tiles in this modified striping section. Propose to use a consistent spacing width (at least 1.5' and no more than 2.5').		JDF	Added 20 scale views with proper striping call-outs.
31	TS	H 17	Scott Thomas	Sign 23 We usually work in the school type in the name guide sign – Moose Pass "Elementary"...	Existing sign (installed ~2015) states "MOOSE PASS ELEMENTARY." However the Kenai Peninsula Borough School District's webpage indicates that the school serves K-8 students. The webpage and sign on the building both title it as simply "Moose Pass School." Will review ATM for requirements and call KPBSD to determine preference. Will revise as appropriate.		JDF	Revise Moose Pass Elementary arrow plate
32	TS	H 17	Scott Thomas	Sign 27 200 ft – adds to clutter due to limited spacing and is not required. Recommend deletion.	Will do.		ZDK	Removed.

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33	TS	H 17	Scott Thomas	Speed Stencils 35 MPH fall within the 20 MPH school zone. Can we move them south such that there are not and overlap?	Probably. Will evaluate and revise if possible.		JDF	Revised speed limit pavement stencil layout to stay outside school zone
34	TS	H 17	Scott Thomas	NB signs next to path. Do they fit within the buffer or do they have to go outside the path? Look like they were in the buffer historically. If outside as shown Sta 205-207 the path could be used like a RT lane by some motorists. Consider a larger buffer at the intersection to prevent a RT lane. Maybe a large sweep in the path? Or a textured buffer?	Discuss. This segment of pathway from Post Office Road to Depot Road may be switched with the ditch due to concerns about proposed cut near septic and well (would be fill instead). This would widen the buffer, provide adequate room for signs between the shoulder and pathway, and further discourage off-road use of the pathway as a RT lane. If pathway remains at current location, installing the signs within the buffer would contradict S-05.02 which shows a standard offset of 12' from shoulder to near edge of sign. Note 1 on S-05.02 states that the minimum distance from edge of shoulder to near edge of sign is 6' where the shoulder width is 6' or greater. Where the pathway is parallel to the highway, the shoulder is 2.5' wide and the buffer is 6' wide.	ST- Back to behaviors – if signs are outside of the path will people use the path as a turn lane? Need to balance the space available – define a pathway vs. a road. KV – current 6' wide 4:1 slope, in this specific section we are looking at swapping the ditch between the road/path and this should provide room for the signs. ST – as you approach main intersection in community, we lose definition and people drive all over the path. Appreciates that we are looking at options. KV – Aren't planning on doing this near Post Office Road. Is it a concern at that spot too? ST – Yes, how do we get a normal size buffer or distinguish a definition from the path. Signs/ditches/curb KV – can't move the ditch everywhere. ST - look at Sutton and see what options there are. Probably won't be a problem in Moose Pass but in a busier community it would be.	JDF	Relocated school beacon signs and hardware outside of pathway to meet standard plan S-05.02 offsets.
35	TS	H 17	Scott Thomas	Sta 207 – does the pathway have stripes in front of the STOP bar on the sidestreet? Or are those dimension lines?	Intent is to provide guide skip stripes defining pathway across approach due to width. Will provide striping detail in future plansets.		JDF	Revised striping better match CR-T-01.20 intersection striping.
36	TS	H 17	Scott Thomas	Concur with No-Passing zone in speed zone, and can delete 642 passing SD measurement in that area if not already done so. It is a community zone with higher driveway density.	Discuss. Does allowing passing within the 45 mph sections bracketing the 35mph speed zone encourage passing where vehicles should be decelerating? The 45mph zones are each ~1 mile long, winding, and through increased residential density relative to the 55mph sections to the north and south. Propose to extend No-Passing zone to include 45 mph zones for vehicles approaching Moose Pass regardless to sight distance. Will review MUTCD & ATMS to determine if passing can be and allowed for vehicles departing Moose Pass if sufficient sight distance is available. Will reduce quantity of 642.2008.0000 to exclude no passing zone.	ST – In context the 45 transitions are on curves and probably don't have passing zones either. Doesn't see the need to try and make them into passing zones when they are not tangent. Does not object to extending the No-Passing zone	JDF	Passing sight distance evaluated against plan and profile. Revised centerline striping appropriately. Will keep pay item 642.2008.0000 to ensure passing sight distance meets requirements.
37	TS	H 18	Scott Thomas	Seems signs 31 – Moose Pass would be outside of the 35 MPH zone and speed zone ahead sign.	Moose Pass sign shown for installation in same location as existing. Will evaluate moving sign north.		ZDK	Moose Pass Signs relocated just before NB & SB 35 MPH speed zones for consistency.
38	TS	H 18	Scott Thomas	Convert Sign 33 to W3-5 advance speed zone warning sign SB, same as NB	Will do.		JDF	revised sign to W3-5A

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39	TS	H 19	Scott Thomas	Convert Sign 40 to W3-5 advance speed zone warning sign SB, same as NB	Will do.		JDF	revised sign to W3-5A
40	TS	H 00 All	Scott Thomas	Request guardrail post top delineators with M&O review and concurrence for plowing. We're able to use them well in Cooper Landing.	Discuss. M&O do you concur with addition of guardrail post top delineators?	ST - We agreed to be careful in the mountains due to their specific needs. Case by case depending on M&O plowing needs CB – Regional detail used to have max 500' elevation note? ST – Now a standard plan but has to be decided if it is a good location or not. The 500' was a check to review each segment with M&O. CC – Will talk with the station about post top delineators and get back with us	ZDK	Added via notes in D Summary and specs.
41	TS	H 20	Scott Thomas	Sign 41(now#46). If a curve signs is warranted SB, then there has to be one NB.	Will verify and add/remove as appropriate.	will need to add new W3-5A to post #40	JDF	Added sign as suggested.
42	TS	H 21	Scott Thomas	If a STOP sign is warranted on the north driveway, is one required on the south driveway?	Will revise.		JDF	This location turned into a Slow vehicle turnout lane with a scenic pull out. Changed striping accordingly.
43	TS	H 23	Scott Thomas	Sign 58. Consider a 2 line sign. We are now using a JCT RT # symbol at all major junctions, consistent with the signs used at the WYE southbound. Recommend this be built into the guide sign.	Will revise.	Need to ask M. Flickinger about this when sign shop drawings are created	ZDK	Revised to current standard.
44	TS	H 23	Scott Thomas	Sign 63. Camera. Request we provide a distance or arrow subplate to provide some indication of proximity to pullout.	Will add.		JDF	Added arrow plate and distance as suggested.
45	TS	H 21	Scott Thomas	Does this pullout have P parking signs or advance guide signs? This is a common request. DOTPF is working to increase advance notice of pullout opportunities on main highways.	Will add.		JDF	With change to SVT lane, added advance signing for turnout as needed.
46	TS	H 23	Scott Thomas	Signs 64, 68. The trailhead may not qualify for large wedge signs, but may qualify for 4 icon RCIA signs. Review with Traffic Design squad for consistency. DOTPF does not support the icon first and name second and encourages USFS to provide more guidance by naming the trail and using the icon with it well ahead. The second sign, an icon, is a confirmation sign or trailblazer in the event the access is not obvious or in a restricted sight distance area	Will coordinate with Traffic Design squad and revise as appropriate.	Discuss with M. Flickinger or TD to settle direction	ZDK	Revised as appropriate.
47	TS	H 23	Scott Thomas	It appears the passing zone qualifies onto this sheet from the previous page. Please check P&P using AASHTO methods and ATMS minimum distance criteria..	Will evaluate and revise as appropriate.		JDF	Passing sight distance evaluated against plan and profile. Revised centerline striping appropriately.

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48	TS	H 24, 25	Scott Thomas	Signs 74, 77. The trailhead may not qualify for large wedge signs, but may qualify for 4 icon RCIA signs. Review with Traffic Design squad for consistency. DOTPF does not support the icon first and name second and encourages USFS to provide more guidance by naming the trail and using the icon with it well ahead. The second sign, an icon, is a confirmation sign or trailblazer in the event the access is not obvious or in a restricted sight distance area. We won't need a hiker and a picnic sign in advance on separate posts.	Will coordinate with Traffic Design squad and revise as appropriate.	Discuss with M. Flickinger or TD to settle direction	ZDK	Revised as appropriate.
49	TS	H 24	Scott Thomas	These 50 MPH S curves do not have chevrons, while the next set south does. Review the differences in geometry to see if we are consistent in meeting the ATMS/MUTCD requirements for chevrons?	Will evaluate and revise as appropriate.	Need to evaluate S curve from 385+00 to 400+00 for adding chevron signage	JDF	Checked curve with ATM chevron criteria, resulting in addition of chevron signs to curve from Sta. 385+60 to Sta. 392+00.
50	TS	H 26	Scott Thomas	Sign 79, both directions – specify FYG for school bus stop – in remarks column of summary. See Traffic Safety squad for sight distance recommendations for this sign.	Will add FYG in remarks. Will coordinate placement with Traffic Safety squad.	Coordinate with Traffic Design on placement	JDF	Added "Install Fluorescent yellow green sign color" to remarks column of sign in sign summary that will need fluorescent coloring.
51	TS	H 27	Scott Thomas	Sign 86 Hill grade – do we meet the qualifications for a sustained hill grade sign SB?	Will evaluate and revise as appropriate.		JDF	Will keep sign as alignment profile downgrades 5% for approximately 5000 feet. Will add supplemental plate showing grades and 1 mile to post installation.
52	TS	H 87	Scott Thomas	Ped sign meets past correspondence and review recommendations. Not a required sign. But retention is recommended. Recommend FY color in remarks in summary tables, be clear it is not FYG.	Thank you. Will revise summary.		JDF	Added fluorescent sign color to remarks column of summary table for this sign.
53	TS	H 31	Scott Thomas	Sign 102 – can we achieve 200 to 400 ft spacing between signs? Can the offset for 2 post guide signs be increased from 12 foot min per Std Plans to 15 ft to edge of sign throughout – this is an M&O consideration?	Will revise placement and summary.		JDF	Moved sign to station 590+00.
54	TS	H 32	Scott Thomas	Sign 4. Change Neighborhood Watch remark to "Remove and Salvage" While not a DOTPF sign – it may be used elsewhere or require a permit. I see you've made notes to this effect on H40.	Will do.		JDF	Added remove and salvage to remarks column of sign summary tables.
55	TS	H 33	Scott Thomas	Sign 23, 24 – Recommend remark to "fabricate as one panel" to minimize framing and wind/snow damage.	Will do.		JDF	Added "Fabricate as one panel" to sign remarks column of summary tables.
56	TS	H 34	Scott Thomas	Sign 31 Recommend a remark to place I-221 guide sign 15 foot off pavement instead of 12 foot per Std Plan.	Will do.		ZDK	Changed to single post two row text sign design.
57	TS	H 31	Scott Thomas	Sign 102 Recommend a remark to place D1-200 guide sign 15 foot off pavement instead of 12 foot per Std Plan.	Will revise placement and summary.		JDF	Added 15 foot offset from edge of pavement to remarks column of summary table for this sign.
58	TS	Z 03	Scott Thomas	There are Regional 643 special for your consultation with Constrction. None are shown here.	Thank you. Will include all applicable regional specials in specifications. Regional special was not provided because no changes by project are currently proposed.		JDF	Specs include all applicable regional specials in specifications. Regional special was not provided because no changes by project are currently proposed.

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59	TS	Z 03	Scott Thomas	There are Regional 606 Specials.	Thank you. Will include all applicable regional specials in specifications. Regional special was not provided because no changes by project are currently proposed.		JDF	See response to comment 58.
60	TS	Z 03	Scott Thomas	There are Regional 660 Specials.	Thank you. Will include all applicable regional specials in specifications. Regional special was not provided because no changes by project are currently proposed.		JDF	See response to comment 58.
1	HD	Y01	Zach Kay	1. Consider removing all or abandoning remainder of water/sewer pipe instead of just plugging off. At least back to the nearest service connection point or valve. 2. Missing 202-5.01 BASIS OF PAYMENT 3. Item 202.2008.____, recommend adding "Excavation and backfill will be paid for under section 204. 4. Remove duplicate item number and "Add the following" under basis of payment. Combine remainder with the first Item 202.2008.____.	1. Discuss. The water and sewer pipes may pre-date the highway and may be allowed to remain. Does ROW or Utilities have any new insight on this? 2. Will add. 3. Will consider 4. Will do.	KV – understanding now is that we don't actually own ROW in this area and are in private property, so these connections may actually predate us. DS – Does not have any permitting for the sewer and water, so they think it may be more of a ROW issue. JF - Danika will be looking into this as well as a number of other encroachments. There is some extensive research work necessary CB – Will be following up with Danika and Utilities. Capping at ROW limits may be the extent of what we do. JF – will send an email to Danika and we'll connect as well. KV – If there is no direct utility – just a private owner. Are there concerns with capping at ROW? ZK - Worried capping at ROW may lead to water filling/leaking at cap. Sewer may contain asbestos depending on age. May need to replace the crossing in general. Will be interesting to resolve. Vince – These are nightmare situations. Good luck. If you can flush a toilet in the before situation you probably need to after too	ZDK	1. Abandoned Estes Family water lines. To be dealt with during ROW negotiations. 2. Corrected. 3. Abandoned Estes Family water lines. To be dealt with during ROW negotiations. 4. No longer applicable.
2	HD	Y01	Zach Kay	1. Correct pay item # to 501.2007.____. 2. Headwall, Type I/II?	1. Will do. 2. Will do.		ZDK	Corrected.
3	HD	Y02	Zach Kay	Recommend removing language under 602-3.02, deleting subsection 602-3.03, and Replace with "Per Subsection 204-3.02". Section 204 now covers diversion, dewatering, and rewatering. Will have to add the fish relocation part into 204.	Will revise as necessary.		ZDK	Remain for clarity.
4	HD	Y03	Zach Kay	Basis of Payment: why is removal of pavement subsidiary to 602 Pay Items? Recommend deleting.	Will do.		ZDK	Deleted.
5	HD	Y04-Y10	Zach Kay	Recommend using language from CIPP Liners from Minnesota Tudor-15th PP, Boniface Tudor-JBER PP, or Muldoon Debarr-36th PP. Additionally CR is currently trying to draft regional provisions to standardize how we do CIPP. To come in the near-ish future.	Will coordinate with J.Ciufo who is working on these specifications.		ZDK	No longer applicable. All pipes being replaced.
6	HD	Y11	Zach Kay	Missing the first part of CR608.1, Subsection 608-1.01 and 608.2.01.	Will revise.		ZDK	Revised.

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7	HD	Y16	Zach Kay	Recommend paying from waterway bed fill and vegetative mat as their own items. Ton for bed fill and Square Yard for mat.	Discuss. Will coordinate with Construction Section and review other projects using similar materials.	MF - Consistent with the way it was done on Seward 100-105. No current issues paying this way that Marc is aware of. ZK was concerned that LF was a strange method - fill bedding is essential riprap with fines (ton) + vegetative matting (sy). Seemed odd, not necessarily against it but curious on Construction's opinion. MF - Longer stream realignments on 100-105, so it may make more sense to change the unit to make it easier. AD - Sterling shoulder widening - Paid by LF and wasn't an issue. Easiest way for Construction.	ZDK	Revised to different pay items.
8	HD	Y18	Zach Kay	Section 703: What percent of riprap and finer material for waterway bed fill?	Will revise per H&H report.		ZDK	Revised in specs to select material with ratio.
9	HD	X Sheets	Zach Kay	1. 1:1 rock cuts are difficult, if not impossible to drill and shoot/blast. Any steeper than 0.75:1 the drill bit for blasting holes starts to walk and can't maintain directional control. Recommend 0.75:1 as the flattest rock cut slope. 0.5:1 is preferable is possible. 2. Show the entire structural assembly in cross section. Helps provide clarity for the datum and lets you see what the different assembly parts are doing. 3. Try to avoid little sliver cuts, especially near a steep edge. Try to daylight with a 2% drainage slope. See redlines. 4. Will likely require matting on really long 2:1 slopes for erosion protection, unless bedrock.	1. Discuss. Construction/Materials: is this consistent with your experience? 2. Will do 3. Will evaluate 4. Will coordinate with Materials to ensure slope stability	MM - 1:1 will not be drilled like a standard rock cut. They drill vertically at varying depths towards centerline to produce the slope. Final slope is shaped by a dozer breaking the material off at 1:1. Can be built just not using a normal rock blasting technique. 1:1 is based on the structure of the rock and will be based on Craig's recommendations. This was done at Trail River and turned out well. Just don't want to overdrill and undercut because then you get slab failures that work their way up the slope. KV - Will make sure the specs don't require preshear vs the multilift drilling/blasting method	JDF	1. Rock cuts revised per latest geotechnical recommendations. 1:1 rock cuts will be used in areas as noted in the recommendations. Technique to construct flatter rock cuts differs from technique to cut steeper rock cuts. Step blasting will likely be required in flatter cuts. 2. Entire structural section assembly is shown in cross-sections. 3. Grade to drain will be used in areas to avoid small, sliver cuts. See updated Typical and Cross-sections. 4. Ongoing coordination with Materials regarding slope stability, will revise design and implement stabilization techniques accordingly.
10	HD	X12-X13	Zach Kay	Consider special ditch from STA 30+50 to 35+00 LT to tie into existing drainage behind pullout.	Will evaluate		JDF	Drainage design in the area revised to reestablish, widen, and deepen the ditch in this area.
11	HD	X19-X21	Zach Kay	Sliver fill from STA 59+00 to 63+50 RT is not a constructible slope and would be very difficult to build.	Agreed. Will evaluate options to avoid sliver fills.		JDF	Slopes in this area have been revised. Slopes are now at 2:1 or flatter to ensure wider, constructable fills.
12	HD	X21-X23	Zach Kay	Consider ditching from STA 67+00 to 69+00 RT. See redlines.	Will consider		JDF	Flat bottom ditch will be established in this area.

Design Review Comments - PIH

Program: Z546590000/0311031
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 Trail River to Sterling Wye

Design Manager: Christopher Bentz
 Design: DOT&PF (Valentine, Barkshire)
 Engineer: R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
13	HD	X25-26	Zach Kay	Consider shifting alignment toward the west to avoid sliver fill from widening on RT. Recommend flattening the curve slightly from PC 68+39.59 to PT 71+77.14.	Discuss. 3R Safety Analysis indicates that realignment is not warranted from a safety perspective. Alignment modifications are not proposed under this project. Will evaluate if this is possible without cut slopes extending outside of ROW. This curve does not meet current minimums. Adjustments to alignment would require bringing curve all the way up to current standards.	KV -Will evaluate if this is something that would be a win-win (farther from ARRC, stay within ROW, reduce ROW acquisitions, etc.) ZK – Worried about constructability of sliver fills. Would have to remove significant portion of the embankment to build. Not sure if current curve standards are necessary since 3R report is saying is it fine as is (doesn't actually know this for sure). ST – We should check 3R requirements. Thinks minor changes can be made if we are not making it worse. MM – Wouldn't recommend a slope like that. Couldn't build and make it last. Fills could maybe be reinforced at the top to catch and tie in with existing. Try to avoid sliver fills if possible. If can't avoid, need a detail showing how to do it. May required cutting down at the toe much wider and excavating into existing slope or steep reinforced fill at the toe to get a flatter slope up to the shoulder. Over steeping can't happen everywhere - may need retaining walls in some situations. KV – Will look at eliminating the sliver fills or identify constraints at which we could steeped upper slope (with Materials). Is there a height/depth gauge on what is acceptable? MM – Max 3', maybe. Can put little MSE walls in as long as we know where they can go so they can be drilled ST – 3R chapter is written to always consider an alternative to meeting current standards using cost analysis. Lots of flexibility to do less than current standards but not less than what is out there (depending on cost analysis) ZK – Already looking at mass excavation on the opposite side - a little extra is probably cheaper than putting in a wall.	JDF	The model used to create the cross-sections has been corrected. The previous model was using a profile that differed from the existing ground and resulted in more sliver fills. The alignment and profile in this area will match the existing conditions. The revised model shows the widths of fill are all greater than 8-10' wide and should be stable/constructable.
14	HD	X32-X33	Zach Kay	Recommend tying into existing drainage from STA 91+50 to 95+00 LT. Likely will need a special ditch. See redlines.	Will do		JDF	Drainage design in the area revised to reestablish, widen, and deepen the ditch in this area.
15	HD	X34-X36	Zach Kay	Recommend grade to drain at 2% STA 99+50 to 102+00 RT. See redlines.	Will do		JDF	Revised design in this area to grade to drain at 2% or steeper away from the roadway.
16	HD	X37	Zach Kay	Consider alignment shift west to avoid sliver fill from STA 104+50 to 106+00 RT.	See response to comment 13 regarding realignment.		JDF	Alignment and profile moved to west and lowered in this area to eliminate sliver fills.
17	HD	X39-X42	Zach Kay	Consider alignment shift west to avoid sliver fill from STA 112+00 to 116+50 RT.	See response to comment 13 regarding realignment.		JDF	Alignment and profile moved to west and lowered in this area to eliminate sliver fills.
18	HD	X59-X61	Zach Kay	Superelevation does not match existing from STA 164+00 to 173+50. Additionally the sections show your profile being lower than existing.	Will compare existing profile to proposed. Will check superelevation and transitions. Currently planning to match existing superlevation.		JDF	Profile and superelevation adjusted. Profile now matches existing. Super Elevation for this curve will be reestablished to current standards.
19	HD	X61-X63	Zach Kay	Recommend forcing 3:1 from STA 174+50 to 178+50 RT to avoid guardrail and break in guardrail at driveway 178+38 RT. Place short radius guardrail at north corner of driveway 178+38 RT. See redlines.	Will evaluate. 3:1 slopes will likely create significant ROW impact		JDF	10:1 barn roof design eliminates g-rail.

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20	HD	X66-X67	Zach Kay	Recommend special ditching from STA 195+50 to 198+50 LT to establish ditch drainage. See redlines.	Will evaluate		JDF	Drainage design in the area revised. Special ditching not used in this area since there are no known issues with ponding at this location. The drainage basin area feeding this area is quite small and this area is wooded and should allow for infiltration. This area is at a sag in the road and is maintaining historical drainage patterns.
21	HD	X68-X69	Zach Kay	1. Recommend special ditch from STA 203+50 to 207+50 LT to tie into varying existing drainage ditch. See redlines. 2. Recommend not ditching over the triple culvert battery, STA 210+00 to 211+00 LT/RT. 3. Recommend special ditch from STA 212+00 to 215+00 RT to tie into varying existing drainage ditch. See redlines.	1. Will evaluate 2. Agreed. Cross sections will be corrected 3. Agreed. Proposed special ditch shown in F sheets, but not integrated into cross sections at this time.		JDF	1. Drainage design in this area revised. Special ditching and a small storm drain network used to drain water into the lake. 2. No ditching will be carried over these culverts. Corridor model and cross sections revised to reflect this change. 3. Drainage design in this area revised to ensure adequate drainage. Special ditching not needed to drain this area.
22	HD	X75-X78	Zach Kay	Recommend adjusting pathway profile from 241+00 to 252+00 RT as needed to avoid sliver fills and grade to drain at 2% to avoid ditching along the steeper embankment. See redlines.	Discuss. Goal was to create a consistent offset distance and slope between the road and the path, but eliminating sliver fills may be more practical.	Will look into this.	JDF	The pathway profile will parallel the roadway profile. The pathway will either grade to drain or fill toward the lake. Where fill slopes are necessary and catch without going into the lake, the contractor will excavate and reconstruct the slope (see updated B-sheets) since this will result in the best long-term stability of the embankment and the most consistent roadway prism since the embankment will be wider underneath the pathway. Where fill slopes would extend into the lake, the foreslope has been steepened to catch the top of the old embankment and will require stabilization.
23	HD	A01	Zach Kay	1. Route number is showing CDS #. Should be 1020000X000 per map 49. 2. Latitude and longitude should be in degrees, minutes, & seconds, not decimal form. 3. Check for updated design designations. They differ quite a lot from Seward Hwy MP 17-22.5 Rehab.	1. Will revise 2. Will revise 3. A01 matches signed design designations on file for this project. Will check that the design designations are still reasonable.		JDF	1. Updated Route Number 2. Updated Latitude and Longitude Format 3. Design designations match what is signed and on file for this project. After assessment, no revisions or updates were made.
24	HD	A02	Zach Kay	1. Recommend adding to note No. 5, "In rock cut sections, topsoil and seed are unnecessary for rock ditch bottoms. In locations with 2:1 slopes, use Mulch – HECP BFM in conjunction with topsoil and seed. 2. Recommend adding note No. 8, "For parallel guardrail terminals, use and end offset of 2 feet". 3. Recommend adding note No. 9, "Field adjust pipe inlets as necessary to accommodate and changes encountered during blasting. Maintain existing drainage course at outlet. 4. Add AK STD. Plan G-29.00.	Will add 1-4		JDF	1-4. Notes and Standard Plans have been updated with these additions.
25	HD	B Sheets	Zach Kay	1. Replace ALL "Borrow, Type C" with "Select Material, Type C". 2. Don't duplicate structural sections. Show only one time throughout the B sheets. Causes problems with addendums and change orders.	Will do		JDF	1. References to "Borrow, Type C" have been replaced with "Select Material, Type C" 2. Duplicate instances of structural sections have been deleted.

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Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
26	HD	B01	Zach Kay	<p>1. Note No. 1, recommend deleting height requirement and mat all 1.5:1 slopes. Especially overburden slopes. Will need steel wire mesh for slopes steeper than 1.5:1.</p> <p>2. Top typical section: show fill condition on left per cross sections.</p> <p>3. Top typical section: Consider deleting barn roof fill and just doing 4:1 and 3:1 slopes as needed, with 4:1 being the primary. Cross sections show that places where the 3:1 barn roof apply are small and have space for 4:1 except a few select areas.</p> <p>4. Pavement Structural Section No. 1: Combine the middle two multileaders. Add "Then place HMA" after 2" pavement planing. See in house pavement preservation jobs for an example.</p>	<p>1. Will do. Will add note about steel wire mesh</p> <p>2. Will do</p> <p>3. Will review cross sections and consider deleting barn roof fill</p> <p>4. Will do</p>		JDF	<p>1. Notes have been updated.</p> <p>2-4. Typical sections have been revised and updated. The barn roof typical sections maximized due to SRG terminals being recinded.</p>
27	HD	B02	Zach Kay	<p>1. Recommend 1.5:1 typical overburden slope and optimize areas for 2:1 where possible. 2:1 likely won't fit in most cases. You will end up chasing the mountain or needing a monster ROW take.</p> <p>2. Show triangulation lines for determining where the toe of overburden slope starts. See Seward Hwy 17-22.5 project.</p> <p>3. Don't show construction "benches" or define the width. Rock surface and geotechnical data will be too inconsistent for that. By not defining the "bench", the risk is taken off of DOT and reduces potential for contractor claims.</p> <p>4. Note No. 5, update pay item name to Stabilization, Overburden Wire Mesh – Pinned.</p>	<p>1. Will modify as appropriate once Material investigation is completed this summer</p> <p>2. Will do</p> <p>3. Will remove bench</p> <p>4. Will do</p>		JDF	<p>1. Overburden slopes have been modeled and updated to reflect the latest geotechnical data. Slopes vary from 1:1 to 2:1 to best fit within the ROW. Since there are similar amounts of 1.5:1 and 2:1 slopes and the 2:1 slope does not require additional details, the Typical case remains at 2:1 with a 1.5:1 exception.</p> <p>2. Triangulation lines have been added.</p> <p>3. Benches and other specific details removed. The rock cut typical is quite similar to that used on the Seward Hwy MP 17-22 project, which shows no benching.</p> <p>4. Note has been updated.</p>
28	HD	B03	Zach Kay	<p>1. Why 11.5' lanes? Recommend staying consistent through the whole corridor with a 12' lane width and use 2' shoulders instead of 2.5' in this section.</p> <p>2. Recommend 1.5% cross slope on the pathway. Pathways are supposed to be ± 2%, but constructing at 2% doesn't give any wiggle room.</p>	<p>1. Traffic calming measure through Moose Pass, implemented in coordination with Traffic Safety. Narrowing the lane widths and widening the striping will hopefully encourage drivers to slow down. Matches striping in Cooper Landing currently being studied.</p> <p>2. Will consider</p>		JDF	<p>1. Traffic calming measure through Moose Pass, implemented in coordination with Traffic Safety. Narrowing the lane widths and widening the striping will hopefully encourage drivers to slow down. Matches striping in Cooper Landing currently being studied. The lanes striped as 11.5' wide will remain.</p> <p>2. The pathway cross slope will remain at 2% max.</p>
29	HD	B03-B04	Zach Kay	<p>1. Recommend placing guardrail and/or guardrail widening between the road and the pathway. Right now you have a pinch point for pedestrian/vehicular collisions and nowhere for the pedestrian to escape. Guardrail can be placed past the hinge point per AK STD Plan if you want to take the widening out to reduce impact.</p> <p>2. Fill condition missing on project RT. Shown in cross sections.</p>	<p>1. Will move guardrail adjacent to the road</p> <p>2. Will add fill condition</p>		JDF	<p>1. Guard Rail has been repositioned to be in the buffer between the road and pathway.</p> <p>2. Fill conditions added to typical sections where applicable.</p>
30	HD	B05	Zach Kay	<p>Existing Pathway RT Fly Out: What is the intent of this typical? Are you clearing and grubbing between the existing path? If so a typical wouldn't be needed, a simple remark in the summary table would suffice.</p>	<p>The Fly Out illustrates that the slope tie in point must match the existing elevation in areas the existing pathway is to remain.</p>		JDF	<p>The design of the pathway in this area has changed; the pathway now remains at a constant vertical and horizontal offset from the road until it terminates. The pathway flyout is no longer applicable and has been removed.</p>
31	HD	B07	Zach Kay	<p>1. Recommend deleting barn roof for all approaches and using 3:1 foreslopes. 4:1 isn't need for approaches.</p> <p>2. Typical without ditch: what happens if you have cut on both sides of the approach? Does the water still drain?</p> <p>3. Summary table doesn't specify which typical to use for each approach.</p> <p>4. Use aggregate base course, grading D-1 for unpaved instead of surface course. No point in tracking two different pay items for essentially the same thing.</p>	<p>1. Will reevaluate approach typicals, assuming 6:1 or 4:1 around the radius return and then 3:1 beyond clear zone.</p> <p>2. Typical with a ditch will be used in cases where cut occurs on both sides. Will revise typical without ditch to show fill condition.</p> <p>3. Will add</p> <p>4. Will do</p>	<p>Ryan Norkoli has asked for surface course to be E-1 rather than D-1 for several other projects recently (not discussed in meeting - passed on by Bbarkshire 7/19/2021)</p>	JDF	<p>1. Approaches have been updated to use a constant 3:1 foreslope instead of the barn roof.</p> <p>2. Approach typical sections have been updated to better present different scenarios of cut/fill on one or both sides.</p> <p>3. Summary table updated to include the driveway typical information.</p> <p>4. Aggregate Surface Course is required as a component for the mainline FASBC since it has more fines than D-1. Since this pay item is already required, it will be used for the surface of approaches as well.</p>

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 Engineer: R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
32	HD	C01-C02	Zach Kay	1. Recommend deleting Special Ditch Item and making subsidiary to unclassified excavation. 2. Recommend using Pay Item 203.2027.0000 Stabilization, Overburden Wire Mesh – Pinned instead of 203.0017.0000. What you are building isn't rockfall mitigation. 3. Add Pay Item 603.2034.0000, Liner Prepare Pipe, LF. Pay for preparation and cleaning prior to CIPP install. 4. Recommend using 603.0020.____ pay item series for end sections. Specs state they have to match pipe and end sections with like material. Will reduce your pay item numbers. 5. Recommend combining Driveway and Approach items to just use Pay Item 639.2000.0000. 6. Pilot Car hours seem low given the amount of crossing culverts you have. 7. 402.0001.STE1 and 618.0002.0000 estimating factors are missing.	1. Will do if preferred by Construction. 2. Will update in coordination with Materials. 3. Will add 4. Will consider. Construction: do you have a preference for this pay item? (same question as Jake Ciufo question #9.4) 5. Will do 6. Will increase Pilot Car hours 7. Will add	1. No objection from construction. 2. Will coordinate with Materials 4. Previously discussed	JDF	1. Special Ditch Pay Item Deleted. Special ditching made subsidiary to unclassified excavation. 2. Pay Item updated to 203.2027.0000. 3. This pay item is no longer applicable since the project will be replacing pipes instead of lining them. 4. Pay Item Updated. 5. Kept two items. One for approach reconstruction and one for repaving aprons in the norht section. 6. Pilot car hours increased. 7. Estimating factors added.
33	HD	D02	Zach Kay	Show new mailbox locations on the F sheets and the exact offset in the summary table.	Will do		JDF	1. New Mailbox locations added to F-Sheets; summary table updated to include exact offsets.
34	HD	D05	Zach Kay	Add Notes: 1. Install flexible delineators and guardrail reflectors per standard plan G-00.05 on all guardrail runs. 2. Guardrail flexible delineators and guardrail reflectors are to be spaced as follows: a. 50' on tangents. b. 12.5' on curves starting 100' before the point of curvature (PC) and 100' after the point of tangency (PT).	Will do		JDF	Notes added to D-Sheets.
35	HD	E Sheets	Zach Kay	1. If you plan to use an alignment for the channel and pipe, you have to define its location (i.e. bearings, radius, BOP, EOP, PC, PI, and PT). Recommend using sectional style detail instead of alignment and profile. See Seward Hwy 17-22.5 pipe details R&M designed. 2. Recommend not using profile vertical exaggeration, makes everything read and look funny. 3. Will need riprap geometry points and elevations for all large crossing pipe details.	1. Discuss. 2. Discuss. 3. Will do.	1. MF – 17-22.5 showed culvert details as plan/section views. Marc prefers the grid to scale off distances/heights, which is more difficult with section view. ZK - Using the alignment requires the location to be defined. Currently no bearings/location to geolocate it against mainline alignment. MF - Want to be consistent within this project. JC - prefers profile view, but is used to looking at it this way (generally stationing increasing in the downstream direction) – On Sterling Shoulder Widening, Construction thought it was confusing because profile view looks downstation instead of upstation, which is inconsistent with typical sections. P17-01 may need to be flipped to be consistent with the F sheet view. Will coordinate as design progress 2. KV prefers exaggeration, ZK does not, JC is fine with either way. Exaggeration stretches it out and looks a little strange but makes it easier to see. There is not really a standard. R&M - Exaggeration of 5 on this project, 17-22.5 used a factor of 2. ZK prefers 2 or even 1. Less awkward to mentally grasp when it isn't vertically exaggerated and stretched. Will compromise with 2.	JDF	1. Alignments/profiles better present the designs of more complex channels and preferred in most scenarios; cross-section views used on simpler channels where appropriate. Labels added to alignments to define location in space. 2. Profiles revised to minimize the use of vertical exaggeration in profile views. Some vertical exaggeration may still be needed to properly present details of the design. 3. Layout points added to channels where needed.

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36	HD	E01	Zach Kay	1. Recommend not placing riprap above the culvert on the downstream end. 2. Guardrail is missing from plan view. 3. Recommend geogrid to build back the deep pipe excavation.	1. Please clarify. Profile shows riprap up to crown of pipe. 2. Will update and coordinate with DOT&PF design. 3. Discuss.	1. Riprap over pipe in plan view but only to the crown in profile view. R&M - Plan view is trying to show the width of the riprap at the crown of the pipe. Intent is to build it as shown in the profile but the 3' thickness may be making the plan view confusing. ZK – recommending trimming the hatch within the rectangle. 3. R&M was curious of the purpose – to reinforce sides of trench? 17-22.5 used geogrid for slopes steeper than 2:1. Zach meant laterally and thought it might be good to stabilize the trench. R&M should provide a similar trench detail to E17. Don't define slopes because contractor will do it with 4:1 or trench box. R&M will reference sheet E17.	ZDK	1. Leave as is. 2. Updated. 3. Stable at 2:1.
37	HD	E02	Zach Kay	Bottom open channel typical section. Recommend using all waterway bed fill for ease of construction. It is riprap class II with fines.	Will do.			Changed riprap to waterway bed fill.
38	HD	E03	Zach Kay	1. Recommend deleting first and last hook bolts. The Contractor will have to cut an elongated or slotted hole in the pipe to fit. 2. Recommend not showing rebar transverse "L" shaped and longitudinal rebar spacing in the elevation view. Section A-A dictates their location. 3. Recommend not showing exact measurements of "L" shaped rebar. Fabricator will build this bar based off 3" clear and bar overlap shown in section A-A. 4. Recommend adding note No. 8: Extend structural fill 4'-6" on the front and sides of the footing.	1. Will confirm with R&M structural engineer. 2. Will confirm with R&M structural engineer. 3. Will confirm with R&M structural engineer. 4. Will add dimensions for structural fill extents. What is the basis for 4'-6"?	R&M - Did not have time to discuss with structural engineer. Headwall detail adopted from standard plan, just slightly larger. Will confirm all structural details with in house engineer. Wondering where 4'6" came from. ZK - Standard plan doesn't really show it properly. Fred worked with Mitch Miller to extend structural fill to front and sides of standard plan to. Depth of 3' – 1.5:1 slope (3' down, 4.5' over). Lake Street gave the option to excavate or straight cut. Whole area will be open to cast or set if precast. R&M will show it.		1. Deleted those hook bolts. 2. Left as is to be consistent with standard plan. 3. Left as is to be consistent with standard plan. 4. Added dimensions for structural fill
39	HD	E04	Zach Kay	Consider a smoother design and grading plan with contours zoomed in at 1" = 10' scale for the unique riprap channel(s) at the inlet.	Will add layout points and consider regrading area.			These tributaries are pretty irregular and variable with a lot of gravel bed load. Added layout labels and note saying to grade to drain and as directed by engineer.
40	HD	E05	Zach Kay	1. Probably will need a section for each leg of the inlet side. 2. Will seeded 2:1 cut slopes hold up in these channel sections or should we consider establishing a full riprap channel?	1. Will do. 2. Will consider reshaping inlet riprap and extending riprap out to slope limits.			1. Updated section to show each leg. 2. Slopes should be stable at 2:1.

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41	HD	E06	Zach Kay	1. Consider impacts of temporary water diversion at this location. 2. Inlet cut area is large. Shouldn't the riprap run up the cut slopes for erosion protection?	1. Discuss. 2. Will extend riprap out to slope limits.	Applies to all locations (E06, E08) close to alignment of original pipe so water will need to be diverted somewhere (adjacent pipe, cofferdam w/ pump, etc.). This will take time. MF - On past projects R&M has come up with diversion plans just to pull them out later and leave it up to the contractor. Asked construction how much effort should be put in at this time. JG - Leave it to the contractor to divert. Spec has language in it about diversions and fish. ZK - Could model and put in TCP just as a suggestion. KV - put back armored so that it is not an erosion issue in the future. ZK suggested skewing the pipe so it is offset from existing and existing could be used as temporary diversion. JC - would want to consider long term impacts of skewing since cutting off stream bank could cause it to steepen the slope which could cause it to cut - possibly installing the pipe lower could help but could cause a head cut with impacts upstream.		1. Pipe location moved to accommodate temporary diversion. 2. Not applicable any longer.
42	HD	E07	Zach Kay	1. Open Channel Typical Section does not represent the large cut shown on the plan sheet. 2. Will seeded 2:1 cut slopes hold up or should erosion control measures be put in place to protect?	1. Will revise. 2. Will extend riprap out to slope limits			1. Revised section. 2. Slopes should be stable at 2:1.
43	HD	E08	Zach Kay	1. Consider impacts of temporary water diversion at this location. 2. Consider up / downstream erosion protection for the fill embankment and channel realignment from STA 459+20 to 457+20 RT.	1. Discuss. 2. Will coordinate with DOT&PF design team (reference sheet E10).			1. Pipe location moved to accommodate temporary diversion. 2. From past coordination and meetings, stream channel was moved away from away to accommodate a 2:1 or flatter slope and not needing riprap along embankment.
44	HD	E09	Zach Kay	Open Channel, will seeded 2:1 cut slopes hold up or should erosion control measures be put in place to protect?	Will extend riprap out to slope limits.			Slopes should be stable at 2:1.
45	HD	E10	Zach Kay	Moose Creek Embankment Protection. Consider channel realignment to establish a better slope or potentially stabilize with geogrid.	See response to JCiufo comment 19.		ZDK	Stream realignment incorporated for highway embankment stabilization.
46	HD	E14	Zach Kay	Delete ** note under Approach Plan View. You defined this in the approach summary table.	Will delete		JDF	Deleted.
47	HD	E15	Zach Kay	Recommend deleting detail. Standard plan G-29.00 covers this.	Agreed. Will do		JDF	Detail deleted.

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 R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
48	HD	Mainline F Sheets	Zach Kay	<ol style="list-style-type: none"> 1. Recommend moving all pipe summary data to the D sheets. The tables are covering vital information for different functional groups with no profile to absorb the tables. 2. Utility research and updates appear to be needed in certain areas. 3. Change station frequency to 500' for major and 100' for minor tics for 50 scale plans. 4. Recommend replacing entirely or lining after extension of certain existing pipes shown on the plans. These pipes are old and attaching new pipe extensions onto 1950's pipes may prove challenging. 5. Recommend replacing or lining any existing pipe that doesn't fit the previous comment or is already being replaced. There will not be another project in this area of this size for a long time. Meaning whatever pipe repairs you skip now will have to be done with a later pavement preservation project, which is over programmed. If you spend the money on this project, you should be able to forget about pipe repair or replacement in this area for the next 50+ years. 6. Be careful changing natural drainage patterns. Try to maintain natural drainage at all pipe outlets, especially if the drainage continues to the Alaska Railroad tracks. ARRC will make you replace any pipe downstream if you change the natural drainage or upsize an upstream highway crossing culvert. 7. Pipe end sections are missing from plan views. 8. Guardrail face should always be at the edge of pavement. Plans show gaps between pavement edge and guardrail face. 9. Recommend not swapping in and out of flat bottom ditches unless you have to. Stay consistent for long stretches if possible. 10. Check all length of need calculations. 11. Recommend using alternate guardrail terminal widening as it has a smaller footprint. Will need to model these in the pavement preservation area to see impacts. 	<ol style="list-style-type: none"> 1. Discuss. Agreed sheets are generally too cluttered, but intend to move pipe summaries to a separate F sheet where critical information is obscured (esp. F07/F08). Seems beneficial to have pipe summaries easily accessible on the F sheets. Construction: do you have preference of whether Pipe summaries are located in the D or F sheets? 2. Will add missing information. 3. Will do. 4. Will revisit pipe recommendations and evaluate the cost/benefit of sliplining vs. full replacement. Hydrology: pipe replacement recommendations were prepared under the 1R project for a design life of 10 years with the expectation that a 3R project would be coming through later. Do recommendations need to be revisited for the longer service life expected now that this work is happening under the 3R project? Extensions are generally 20' long per recommendation from HY and M&O. This puts some of the junction points within the structural section of the roadway. Is this junction point within the structural section a concern? 5. See above #4 6. Concur, have received comments from ARRC to that effect. Will move replacement culverts back to their original locations and review to ensure existing drainage patterns are maintained. 7. Will add pipe end sections 8. Will move guardrail face to the pavement edge 9. Only including flat bottom ditches at rock cut locations, but will review and minimize swapping where practical 10. Will do 11. Will evaluate alternate guardrail terminal widening 	<p>KV – planning to move F07-F08 to a separate table to clear up sheets but still maintain in F sheets. Construction preference on pipe sheet location?</p> <p>JG – No preference</p> <p>KV – Should all be moved not just F07 and F08?</p> <p>ZK – Pipe tables are covering information that other sections will need to be able to see. Would like to see them all moved to D sheets.</p> <p>Will move to the D sheets</p>	JDF	<ol style="list-style-type: none"> 1. Pipe summary table relocated to D-Sheets. 2. Ongoing work with Utilities to ensure information presented in plans is the most up to date. 3. Updated station label frequency. 4/5. Pipes will be removed/replaced instead of lining since design life of 3R project is longer than the 1R design life that the recommendations were originally made. 6. Current design intends to maintain natural drainage patterns where possible. Deviations from existing drainage patterns will be done where deemed best after thorough assessment. Drainage changes upstream of the ARRC will be done in coordination with the ARRC. 7. Corrected. Pipe end sections now shown in plan views. 8. Corrected. Guard rail face now shown at edge of pavement. 9. Ditch designs/typical sections revised for consistency. 10. Length of Need calculations checked and verified for updated guard rail designs. 11. Design revised to use alternate guard rail terminal widening.
49	HD	F01	Zach Kay	<ol style="list-style-type: none"> 1. May destabilize riprap berm from STA 35+50 to 37+00 LT with the cut shown in the cross sections. Consider alternate drainage designs. 2. Crossing pipe at 32+00 will need to be replaced to fit the new ditching. 	<ol style="list-style-type: none"> 1. Will evaluate options at this location 2. Will replace 		JDF	<ol style="list-style-type: none"> 1. Drainage design for channel revised. 2. Pipe at 32+00 will be replaced.
50	HD	F02	Zach Kay	<ol style="list-style-type: none"> 1. P2-02 inlet does not align with the drainage. 2. STA 65+50 to 73+75 LT: Why are you protecting a 4:1 slope? This guardrail run likely isn't needed based on the cross sections. 	<ol style="list-style-type: none"> 1. Will skew pipe back to original location to align with drainage 2. Agreed. LON calculations have not been completed. For the most part, the plans currently show replacement guardrail at existing locations plus approximations where new guardrail is anticipated. Will review all guardrail prior to PS&E. 		JDF	<ol style="list-style-type: none"> 1. P2-02 reset. 2. Design revised in this area. Guardrail limits updated based on severity of foreslopes and LON calculations. No guard rail planned for project LT in this area.
51	HD	F03	Zach Kay	<ol style="list-style-type: none"> 1. Short radius guardrail needed at 77+50 RT. Guardrail run does not meet LON based on cross sections. 2. Why shift P3-08 from its existing location? Is that the new natural low point? 3. Recommend obliterating wide gravel area north of 94+50 RT driveway. 	<ol style="list-style-type: none"> 1. Will add short radius guardrail at 77+50 RT. Will evaluate LON 2. P3-08 will be moved back to its existing location 3. Will do 		JDF	<ol style="list-style-type: none"> 1. Driveway shifted to remove SRG. 2. Drainage design near this pipe revised; the pipe has been set in a new location that works best with the updated design. 3. This area will be obliterated.
52	HD	F04	Zach Kay	<ol style="list-style-type: none"> 1. Where does the driveway at 119+08 LT go? Can we just delete it? 2. Recommend shifting P4-05 to STA 120+25 ish to align with existing drainage pattern at outlet and special ditch from STA 121+00 to 120+25 for drainage ditch. 	<ol style="list-style-type: none"> 1. Driveway at 119+08 LT does not appear to go anywhere, however there was an existing driveway, so it seemed appropriate to replace. Will verify with ROW if driveway is permitted and replacement is required. 2. Will evaluate 		JDF	<ol style="list-style-type: none"> 1. Driveway will be removed. 2. Drainage design, special ditching, and pipe location in this area revised.

Design Review Comments - PIH

Program: Z546590000/0311031
Design Manager: Christopher Bentz
Name: Seward Highway: MP 25.5-36
 Trail River to Sterling Wye
Design Engineer: DOT&PF (Valentine, Barkshire)
 R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
53	HD	F05	Zach Kay	<ol style="list-style-type: none"> 1. Consider pipe and riprap realignment at outlet of P4-06. See redlines. Maintain existing drainage at outlet. 2. Consider Ditch Dike at north side of P5-02 inlet to help train the ditch water. There is a large gap between P4-06 and P5-02. Check downstream impacts of new crossing pipe. 3. If you remove the crossing pipe at 146+60 ish, what happens to the drainage upstream shown above the adjacent driveway? 4. Recommend pipe and riprap realignment at inlet of P5-10. Remove smaller culvert upstream and run riprap right up to it. See redlines. 	<ol style="list-style-type: none"> 1. Will evaluate 2. Will consider. 3. Ditch will direct flow to P5-07 4. Will evaluate 		JDF	<ol style="list-style-type: none"> 1. Drainage design revised to include rip rap channel at outlet. 2. Typical section now includes flat bottom ditch on inlet side and sits near a natural low point in the road; ditch dikes not needed. P5-02 is not a new culvert; replaces an existing 24" culvert. Per R&M's 2021 Inspection report, the cross culverts at ~131+25 and ~135+25 drain small basins and do not show signs of any significant flows. Downstream impacts of the updated design are not expected to be significant, since the additional flow to culvert at ~135+25 will be minimal and this pipe drains into a boggy area. 3. Drainage design around this pipe revised; pipe will be replaced not removed. 4. Adjacent property holds water rights to this stream and runs a small hydro-electric plant off it. Design revised to minimize impacts to this property.
54	HD	F06	Zach Kay	<ol style="list-style-type: none"> 1. Consider shifting driveway at STA 154+44 north and shortening as much as possible within our ROW. 2. P6-08, P6-09, P6-10, & P6-11 all show HDPE for pipe type, but appear to be attaching to original CSP. Change to CSP. 3. Why skew the energy dissipators at P6-07 and P6-09 outlets? Recommend straitening if possible. 	<ol style="list-style-type: none"> 1. Will evaluate 2. Will revise 3. Aligned with direction of flow, will review. 		JDF	<ol style="list-style-type: none"> 1. Driveway to remain at ~154+44. The design was revised based on feedback from property owners; shortening the driveway would not meet their needs and impact the stream channel. 2. These pipes are now slated for full replacement, not extensions. Pipe materials will remain as HDPE, or will be changed to CSP if the culvert has less than 2' of cover in the final design. 3. Energy dissipators and rip rap channels revised to be in-line with culverts.
55	HD	F07	Zach Kay	<ol style="list-style-type: none"> 1. Recommend deleting 2nd property access at STA 180+44, 186+88, 188+27, 193+67, & 202+80 LT, along with their associated approach pipes. All one property and driveways are too close together. 200' spacing minimum. Likely isn't permitted. 2. Recommend deleting P7-04 and ditching through stub out to nowhere. 3. Joint driveway at STA 183+00 RT may not be possible without an easement for southern properties. Likely why the existing sneaks by in front of the ROW line. Also make sure there is 25' of straight guardrail between the SRG's per the STD Plan. 	<ol style="list-style-type: none"> 1. Provided one driveway per parcel, not necessarily per structure. Will coordinate with ROW to see if duplicate driveways are permitted. 2. Will do if stub out is not permitted. 3. Will coordinate with ROW on access. Will verify straight guardrail length 		JDF	<ol style="list-style-type: none"> 1. Most driveways will remain since one driveway is allowed per-parcel. Edge clearances are not ideal but allowable given the narrow frontages. 2. Ditch added. 3. Joint driveway shifted to be on property line. Short radius terminal not needed based on length of need.

Design Review Comments - PIH

Program: Z546590000/0311031
Name: Seward Highway: MP 25.5-36
 Trail River to Sterling Wye
Design Manager: Christopher Bentz
Design Engineer: DOT&PF (Valentine, Barkshire)
 R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
56	HD	F08	Zach Kay	<ol style="list-style-type: none"> 1. A Street is named Leora Ave per KPB parcel viewer. 2. Driveway off of A Street to the store should be a parking lot. See redlines. 3. Recommend 10' widening for tie into existing parking lot at the lodge rather than a traditional approach, due to know ditching. See redlines. 4. Recommend shifting the outlet of P8-08 to better align to the drainage slough near the lake. Also you will likely need a drainage easement to place this pipe. Probably easier to obtain than a take. See redlines. 5. Recommend deleting access at 211+17 LT and constructing a new one from street access that is platted in KPB parcel viewer. See redlines for Alyestes Ave. 6. Recommend shifting P8-12 to STA 211+90 ish to align with drainage slough near the lake and special ditch back from STA 215+50 LT/RT to drain. This will simplify the drainage and put the water somewhere it can go. Will likely need a drainage easement. Cross sections show you have the grade and space to do it. Currently P8-12 is pointed at a flat gravel lot. As a result you can move P18-30 and use it under the driveway at STA 214+28 LT. See redlines. 7. Recommend deleting 2nd access at STA 214+49 RT. They have another access at 217+87 RT. Access at 217+87 should be commercial access width. 8. Recommend combining P8-16 and P8-18 into one pipe under both driveways with no ditch in between. 	<ol style="list-style-type: none"> 1. Will update 2. Driveway was intended to lead to parking on the north side of the store, although parking on the south side may be more accessible. Will review 3. Discuss. Isn't it standard to create an approach instead of leaving a wide open area for access? 4. P8-08 alignment shown ~5' offset from and parallel to what is thought to be parcel boundary. This has been discussed with ROW and intent is to acquire a ~10' drainage easement along edge of parcel to maintain pipe. 5. Discuss. There is currently no approach at Alyestes Ave. While it is ideal to provide access off a side street, creating a side street to do so does not reduce the number of approaches on the Seward Highway. 6. Will review P8-12 location and ditching. 7. This is the fire station. Would like to maintain two access points since garage bays face each side. Will upgrade to commercial widths 8. Will do 	<ol style="list-style-type: none"> 3. ZK - Would need ditching to direct people to use the approach. Design team will revise this approach. 4. KV - Plan is for easement take 5. ZK - Platted for a loop so if it were to be developed it would be better to have the side street stubout established. Better to establish future access now. ST - Questioned parking at Store. KV - Our shoulder has been used as parking/access in many areas. We are proposing to give the parcel two access points off the Seward Highway. ST - Check how we solved this in Bird to Indian. What do we have to do vs what can we provide? This is probably not going to be done as shown until we talk to the owner. ZK - Knife shop had the same situation, built parking access to the side which was adequate to address the concerns. MF (R&M) - Happy to talk about some of the solutions they came up with at Boretide Road KV - Will look into establishing Alyestes Drive. ZK - Alyestes Ave would accommodate future development in the area MM - Survey crew needs to go back down? When cutting next to private property if they could keep an eye out for septic systems. Drain fields are often near ROW and cause for saturated/unpleasant soil conditions. KV - Survey will pick up this information this summer 	JDF	<ol style="list-style-type: none"> 1. Name updated. 2. Approach and store access revised. Parking for the store will be provided outside of ROW, not parallel parking within the ROW on Leora Avenue. Store access and store parking expected to be revised further based on outcomes of ROW negotiations. 3. Depot road design revised to be less impactful. The new design will tie into the north-west lodge parking lot/frontage without a ditch. 4. Drainage design revised. Culvert realigned and outlet set to better match existing drainage point. Will seek a drainage easement rather than a take. 5. Alyestes Avenue will be established and the lots to the north and south of this point will have access off this street, consolidating two approaches into one. 6. P8-12 shifted based on updated design. Culvert will drain to slough, inlet set at appropriate location based on updated design of Alyestes Ave and special ditching. 7. This is the station of the Moose Pass Fire Company. Will maintain two commercial size access points since garage bays face each side. 8. Driveway designs revised with greater spacing so combining culverts no longer practical. Two separate culverts will remain.
57	HD	F08	Zach Kay	<ol style="list-style-type: none"> 9. Recommend deleting P8-21 and special ditch back to P8-19 from driveway at STA 221+45 LT. See redlines. 10. Recommend deleting P8-25 and special ditching to P8-27 from driveway at STA 221+45 LT. See redlines. 11. Recommend P8-28 & P8-29 and special ditching to P9-01. See redlines. 	Will evaluate deleting P8-21, P8-25, P8-28, and P8-29.		JDF	<ol style="list-style-type: none"> 9-11. Drainage design in this area revised to utilize some of the suggested special ditching to minimize the number of culverts.
58	HD	F09	Zach Kay	<ol style="list-style-type: none"> 1. Consider combining driveway 231+55 LT and 233+94 LT into the street area platted for it. See redlines. 2. Is the driveway at 234+56 LT needed? Vacant house in our ROW? 3. Recommend deleting P9-05. P9-04 is right there and no need to drain under. 4. Recommend deleting driveway at 248+25 LT as they have a second access @ 245+70 LT. 	<ol style="list-style-type: none"> 1. Will review with ROW to determine preference 2. Will verify with ROW 3. Will verify that P9-05 isn't to convey southward ditch flow to low point at P9-04 inlet. If it isn't, will delete. If it is, will evaluate special ditching to reduce number of culverts. 4. See response on comment 55.1 		JDF	<ol style="list-style-type: none"> 1. Design updated to combine some driveways onto platted area for Warburton Ct. The driveway at 231+55 LT will remain since it cannot be combined into Warburton Ct due to a conflict with a septic system and property owner concerns about winter maintenance. 2. Driveway at 234+56 LT will be removed. Access to this area will be through Warburton Ct. Collapsed structure will be removed. 3. Drainage design in this area revised to minimize the culverts. 4. Due to length of frontage, property may keep a second access point as long as it meets clearance requirements.
59	HD	F10	Zach Kay	<ol style="list-style-type: none"> 1. SRG warranted on SE corner of driveway STA 257+85 RT. Doesn't look like you meet your LON here. 2. Recommend deleting 2nd access at STA 260+84 LT and special ditch from driveway 260+07 LT to P10-04. They have access at 260+07LT 	<ol style="list-style-type: none"> 1. Will evaluate LON 2. Will remove second access and add special ditch to P10-04 		JDF	<ol style="list-style-type: none"> 1. Slopes flattened around this approach to eliminate the need for an SRG and reduce the length of guardrail needed. 2. The property has sufficient length of frontage to allow for a second driveway. The second driveway will be shifted to allow for adequate spacing between driveways.

Design Review Comments - PIH

Program: Z546590000/0311031
Name: Seward Highway: MP 25.5-36 Trail River to Sterling Wye
Design Manager: Christopher Bentz
Design Engineer: DOT&PF (Valentine, Barkshire) R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
60	HD	F12-F13	Zach Kay	<ol style="list-style-type: none"> 1. Consider simplifying drainage in between pullout and highway from STA 333+00 to 335+75 RT. Recommend deleting P12-03 & P12-04 or Crossing pipe & P13-01 and special ditch one way or the other. Can rework pullout a little to suit your needs for drainage. 2. Recommend deleting 2nd access to power line trail at STA 350+35 LT as they have access from STA358+10 LT. They connect per imagery. 3. Check downstream impacts of shifting P13-02 outlet. Recommend matching existing outlet. 4. Consider a wider approach apron from utility substation access. See redlines. 	<ol style="list-style-type: none"> 1. Will reevaluate drainage design at pullout and pullout design. Currently matches existing patterns. Two separate gullies on LT side of highway drain to P12-04 and P13-01. 2. Will do 3. Will evaluate 4. Discuss. Is it necessary to "fit existing" approaches? Current design approach is to match standard commercial width and reduce the area traffic can come in and out. May not want a wider/inviting approach at this location. 	<p>ZK - Even if you put pavement on the middle, people will drive on the gravel anyway. Increasing the width will help keep gravel off the roadway</p> <p>KV – We are frequently trying to narrow approaches elsewhere in Moose Pass</p> <p>ZK – If you are ditching it is fine.</p> <p>BB – Still need to model approaches.</p>	JDF	<ol style="list-style-type: none"> 1. Pullout redesigned into slow vehicle turnout without ditch/buffer area; drainage design revised accordingly. 2. Maintaining utility access point at this location. 3. Drainage design modified. New culvert alignment ties into channel downstream of existing culvert outlet and does not create a different channel for the water. 4. To reduce run-on-run-off traffic at this approach, the approach width will be reduced to the maximum allowable commercial width.
61	HD	F14	Zach Kay	<ol style="list-style-type: none"> 1. Consider redoing pullout from STA 372+00 to 377+00 LT. Potentially a slow vehicle turnout. 2. Consider deleting 2nd access at 383+18 RT. 	<ol style="list-style-type: none"> 1. Will consider restoring existing pull out to scenic turnout standards and evaluate if there is room for an SVT within constraints. 2. Approach 383+18 RT does not actually appear to go anywhere. Will verify removal with ROW 		JDF	<ol style="list-style-type: none"> 1. Pullout will be reestablished as a slow vehicle turnout. 2. Second access point is not in use and will be deleted.
62	HD	F15	Zach Kay	<ol style="list-style-type: none"> 1. Which direction does Moose creek flow? E01 shows different flow direction. 2. Consider slope and pipe designs for P15-01 and P15-02 that don't require guardrail. Currently none there now. 	<ol style="list-style-type: none"> 1. (from DOT&PF): Moose Creek flows south. F15 is oriented with south on the left side of the sheet, following roadway stationing. E01 is oriented with north on the right side of the sheet, following creek stationing. R&M: consider flipping viewport orientation 180 degrees. 2. (from R&M): Will coordinate with DOT&PF design team. 		JDF	<ol style="list-style-type: none"> 1. Flow arrows and creek named added to basemap. 2. Guard rail being added in this location due to crash history and severity of roadside hazards. Changes to design to eliminate these guardrail run at now P21-02 is not cost-effective and will not be pursued. Now P22-01, slope flattening to remove g-rail incorporated.
63	HD	F16	Zach Kay	<ol style="list-style-type: none"> 1. Recommend narrowing extremely large existing gravel approach apron and special ditch to drain. See redlines. 2. Consider slope and pipe design for P16-01 that don't require guardrail. Currently none there now. 	<ol style="list-style-type: none"> 1. (from DOT&PF): Will consider. 2. (from R&M): Will coordinate with DOT&PF design team. 		JDF	<ol style="list-style-type: none"> 1. Wide gravel approach will be narrowed to standard commercial approach width. 2. 4:1 foreslopes included and g-rail removed.
64	HD	F17	Zach Kay	<ol style="list-style-type: none"> 1. Recommend obliterating random gravel pullout from STA 446+50 to 450+00 LT and STA 457+75 to 459+00 LT behind guardrail. 2. Consider special ditch to drain from Toklat Way to the east toward the creek. 	<ol style="list-style-type: none"> 1. Will evaluate obliteration versus upgrade to scenic turnout/SVT at 446+50 to 450+00 LT. Will obliterate 457+75 to 459+00 LT behind guardrail. 2. Will consider 		JDF	<ol style="list-style-type: none"> 1. Areas will be obliterated. 2. Drainage design around Toklat Way updated. Special ditching not needed to allow for adequate drainage of the area.
65	HD	F18	Zach Kay	<ol style="list-style-type: none"> 1. What does the driveway at STA 476+45 RT lead to? Do they have access from adjacent side street like Baneberry Ridge Lane? Consider removing if so. 2. P18-02: Is this pipe our responsibility? Will likely require ROW to replace. 	<ol style="list-style-type: none"> 1. Will investigate and coordinate with ROW if appropriate. 2. Unsure if it is our responsibility. P18-02 replaces an existing pipe in poor condition. May have prescriptive rights. 		JDF	<ol style="list-style-type: none"> 1. Property has access primary access off side road. Driveway will be removed. 2. This pipe will not be replaced. The other crossing pipe underneath the apron Baneberry Ridge Lane will be replaced and upsized.
66	HD	F20	Zach Kay	Don't pave 2nd access at STA 537+38 LT. Likely unpermitted and hardly used based on grass growth.	Will remove second access		JDF	Second access will be removed.
67	HD	F21	Zach Kay	Recommend deleting 3rd driveway at 554+82 LT. Leads to the back of the lot just to the east and is likely unpermitted.	See response on comment 55.1		JDF	Doesn't meet corner clearance so it won't be paved but will remain.

Design Review Comments - PIH

Program: Z546590000/0311031
Name: Seward Highway: MP 25.5-36
 Trail River to Sterling Wye
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 R&M (Frutiger, Goentzel, & Arnett)

Comment Number	Section	Sheet/Page #	Comment By	Comment	Response	Meeting Note	Adjudicated By	Final Response
68	HD	Appr. F Sheets	Zach Kay	1. Don't use tiny vertical curves in driveway design. Not constructible and actual construction will always have natural rounding to it. 2. Left profiles are descending as you move away from mainline center. Should always start at the centerline and increase in station away from the mainline. 3. Plan views for straight perpendicular or skewed approaches do not need to be shown unless there are unique geometry changes that cannot be put in a summary approach table (i.e. curves, tapers, grading points, etc.). Recommend deleting all plan views that meet this condition and compiling driveways that just need profiles together. Approach detail sheet dictates how to construct these with only the profile. 4. BOP and EOP station labels missing from all plan views. Required to show in order to properly geolocate the driveway alignment.	1. Will review driveway designs and remove tiny vertical curves 2. Driveways were previously laid out as described but revised to comply with drafting guide which specifies stationing should increase from south to north and west to east. Will revisit drafting guide and standards are revise if appropriate. 3. Will do 4. Will add		JDF	1. Driveway designs have been updated and small vertical curves have been eliminated where feasible. 2. Driveway alignment stationing has been updated to start at the mainline and proceed outward. 3. Some approach plan views have been removed through the use of the approach detail and summary table. 4. Driveway BOP and EOP alignment labels have been added.
69	HD	Z4	Zach Kay	1. 2 nd paragraph: Recommend replacing "or a 2:1 when guardrail is required" with "or guardrail when a 2:1 is required".	Updated.		JDF	Updated.
70	HD	Z5	Zach Kay	2. 2 nd paragraph: Recommend replacing "Areas requiring rock cuts will have flat bottom or V-ditches of varying widths to satisfy minimum clear zone or rock catchment width requirements. Rock cuts will be made at a 0.75:1 or flatter, with a 5-foot wide horizontal bench every 30' high." with "Areas requiring rock cuts will have flat bottom or V-ditches of varying widths to satisfy minimum clear zone or rock catchment width requirements and rock cuts will be made at a 0.75:1 or flatter slope". You won't be showing benches so don't define them.	Clarified and updated to new typical section.		JDF	Clarified and updated to new typical section.
71	HD	F10	Zach Kay	3. Do you tweak the typical sections and update the DSR before finalizing?			JDF	3. Typical sections updated prior to finalizing DSR.
72	HD	Z6	Zach Kay	4. Statement about horizontal and vertical alignment remaining may not be true if you shift in select areas to avoid sliver fills. Reword after your decision is made.	Updated.		JDF	Updated.
73	HD	Z8	Zach Kay	5. There is a bridge on this project????	Clarified.		JDF	Clarified.