

# ALASKA RAILROAD CORPORATION

**ENGINEERING SERVICES** 

P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

# MP 52.14 RETAINING STRUCTURES

SEPTEMBER 2020



# MP 35 MP 45 MP 50 PROJECT LOCATION MP 55 MP 60

### **INDEX OF SHEETS**

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# ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

MP 52.14

RETAINING WALL REPLACEMENT



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REV.	DATE	BY	REVISION	APPROVED (

### **PROJECT NOTES**

- ALL WORK MUST BE DONE IN ACCORDANCE WITH APPLICABLE FEDERAL, STATE, AND LOCAL LAWS. INCLUDING ASSOCIATED REGULATIONS AND PROJECT PERMIT STIPULATIONS.
- 2. CONTRACT WORK SHALL BE PERFORMED PER CURRENT AREMA MANUAL FOR RAILWAY ENGINEERING (MRE) OR AS MODIFIED BY THE SPECIFICATIONS.
- 3. ALL WORK SHALL COMPLY WITH APPLICABLE LOCAL AND STATE CODES AND ALL OTHER REGULATIONS OF AGENCIES HAVING JURISDICTION.
- 4. THE CONTRACTOR SHALL COORDINATE ALL WORK WITH ALASKA RAILROAD CORPORATION.
- 5. AN ESTIMATED THREE (3) WEEK WINDOW OF TIME IS AVAILABLE FOR CONSTRUCTION. THE CONTRACTOR SHALL PLAN AND COORDINATE WORK TO BE COMPLETED WITHIN THIS TIME FRAME.
- 6. ALL TRACK WORK IS TO BE PERFORMED BY ALASKA RAILROAD CORPORATION FORCES.
- 7. COORDINATES ARE PROVIDED FOR INFORMATIONAL PURPOSES ONLY, ESTABLISHING SURVEY CONTROL SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
- 8. CONSTRUCTION ACTIVITIES SHALL NOT DISRUPT RAILROAD OPERATIONS AND SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS. ALL WORK TO BE SCHEDULED WITH ACCORDANCE WITH THE CONSTRUCTION SCHEDULE AND CONSTUCTION STAGING PLANS.
- 9. DISPOSAL OF ALL MATERIALS SHALL BE IN ACCORDANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS.
- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL EXISTING CONDITIONS, DIMENSIONS AND ELEVATIONS AT THE SITE AND MUST ADAPT THEIR WORK TO ACTUAL CONDITIONS IN A MANNER APPROVED BY THE ENGINEER.
- 11. SHALLOW OR EXPOSED BEDROCK IS PRESENT THROUGHOUT THE PROJECT AREA. MECHANICAL ROCK EXCAVATION OR BLASTING NESCESSARY TO COMPLETE PROJECT EXCAVATIONS IS SUBSIDIARY TO PAY ITEM 3.
- 12. ALTERATIONS OF CONSTRUCTION PLANS AND DETAILS IS NOT PERMITTED WITHOUT EXPRESS WRITTEN PERMISSION OF ALASKA RAILROAD CORPORATION CHIEF ENGINEER.
- 13. DESIGN LIVE LOAD IS COOPER E-80 PLUS IMPACT FOR EQUIPMENT WITHOUT HAMMER BLOW PER THE 2020
- 14. UTILITY LOCATIONS SHOWN ON THESE PLANS MAY NOT BE CORRECT OR COMPLETE. IT IS THE CONTRACTOR'S RESPONSIBILTY TO VERIFY UTILITY LOCATIONS. THE CONTRACTOR SHALL COORDINATE CONSTUCTION ACTIVITIES WITH THE RESPECTIVE UTILITY COMPANIES.
- 15. ALL STRUCTURAL STEEL TO BE ASTM A709 GRADE 50 UNLESS OTHERWISE NOTED.
- 16. ALL STEEL SHEET PILE SHALL BE A572 GRADE 50 UNLESS OTHERWISE NOTED
- 17. ALL STRUCTURAL STEEL TO BE HOT-DIP GALVANIZED.
- 18. ANCHOR RODS SHALL BE THREADED RODS MEETING THE CURRENT REQUIREMENTS OF ASTM A722 SPECIFICATIONS GRADE 150.
- 19. ALL STRUCTURAL HARDWARE, INCLUDING ANCHOR RODS, PLATES, HEAVY HEX NUTS AND HARDENED WASHERS ARE TO BE GALVANIZED PER ASTM A-153 OR B-695.
- 20. CEMENT GROUT FOR ROCK ANCHORS SHALL HAVE A MINIMUM: 1 DAY COMPRESSIVE STRENGTH OF 4.500 PSI 7 DAY COMPRESSIVE STRENGTH OF 11,000 PS 28 DAY COMPRESSIVE STRENGTH OF 15,000 PSI PER ASTM C-942, PTI GS 4.4.2 AND MEET THE REQUIREMENT OF THE CEMENT GROUT SPECIAL PROVISIONS.
- 21. ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 4,000 PSI.
- 22. CONCRETE SURFACE SEALER SHALL BE APPLIED TO ALL EXPOSED SURFACES OF CONCRETE.
- 23. THE RETAINING WALL WAS DESIGNED FOR SEISMIC SITE CLASS B.
- 24. WELDING ELECTRODES FOR ARC WELDING SHALL MEET THE CURRENT REQUIREMENTS OF THE SPECIFICATIONS FOR MILD STEEL ARC-WELDING ELECTODES SERIES E70, AWS 5.1, AND LOW HYDROGEN CLASSIFICATION FOR SMAW AND AWS 5.17 FOR SAW.
- 25. STRUCTURAL FASTENERS SHALL BE 7/8" DIAMETER ASTM A325 HIGH-STRENGTH BOLTS, UNLESS NOTED OTHERWISE, WHICH SHALL BE TIGHTENED USING THE TURN-OF-NUT METHOD TO OBTAIN A MINIMUM TENSION OF 39 KIPS. ALL OPEN HOLES SHALL BE 15/16" FOR 7/8" DIAMETER BOLTS, UNLESS OTHERWISE NOTED.



DESIGNED BY:

CHECKED BY:

APPROVED BY: \_\_ AWK

DRAWN BY:

### ALASKA RAILROAD CORPORATION

ENGINEERING SERVICES

P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

MP 52.14 RETAINING WALL REPLACEMENT

**GENERAL NOTES** 

09/05/20



REV.	DATE	BY	REVISION

If this sheet is smaller than  $22'' \times 34''$ ,

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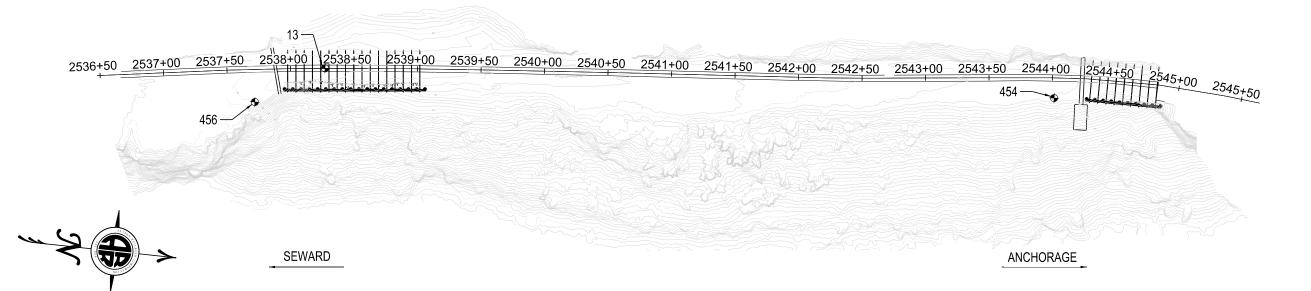
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2 \_ <sub>OF</sub> \_ 15

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## NOTES:

- 1. HORIZONTAL AND VERTICAL DATUM IS ALASKA STATE PLANE ZONE 4, GEOID128 PER SERVBASE CONTROL.
- 2. TOPOGRAPHIC INFORMATION GATHERED JUNE 10TH, 2020.
- 3. CONTOURS SHOWN PER NOV. 2018 UAV DIGITAL SERVICE MODEL. ELEVATIONS SHOWN ARE TO THE TOP OF VEGETATION, BUILDINGS, CARS AND OTHER ELEVATED FEATURES.
- 4. CENTERLINE AND STATIONING PER ARRC CAD.



**PLAN VIEW** SCALE 1" = 40'

### **2019 CONTROL POINT LIST**

POINT	NORTHING	EASTING	STATION	OFFSET	ELEVATION	DESCRIPTION
13	2441958.59	1811059.59	2538+27.23	0.14 LT	358.58	SET PK
454	2442530.93	1811007.03	2544+1.59	15.81 RT	345.91	FND. YPC-RBR 8201
456	2441907.56	1811093.19	2537+71.31	25.60 RT	359.71	FND. YPC-RBR 8201

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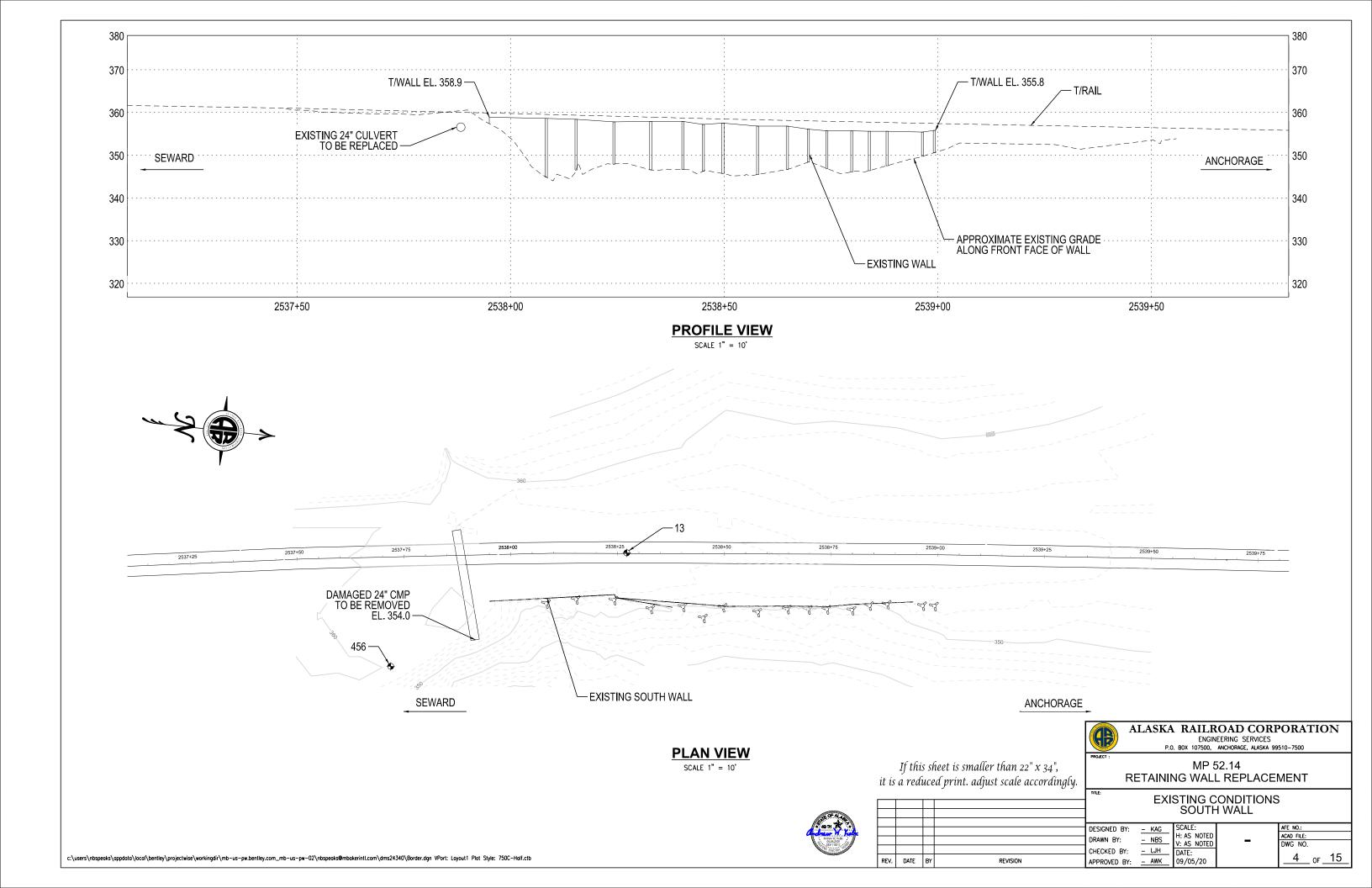
MP 52.14 RETAINING WALL REPLACEMENT

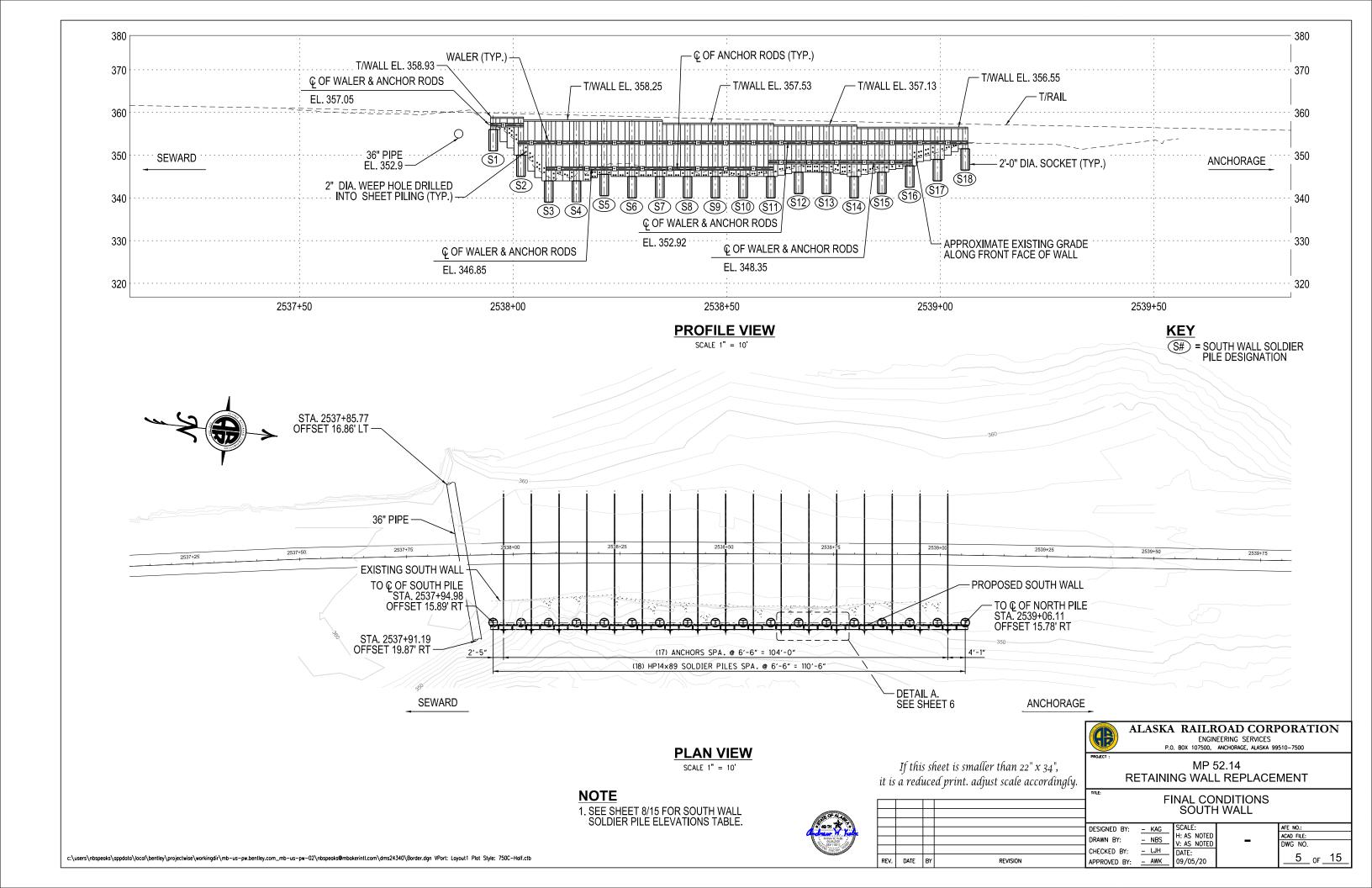
SITE PLAN

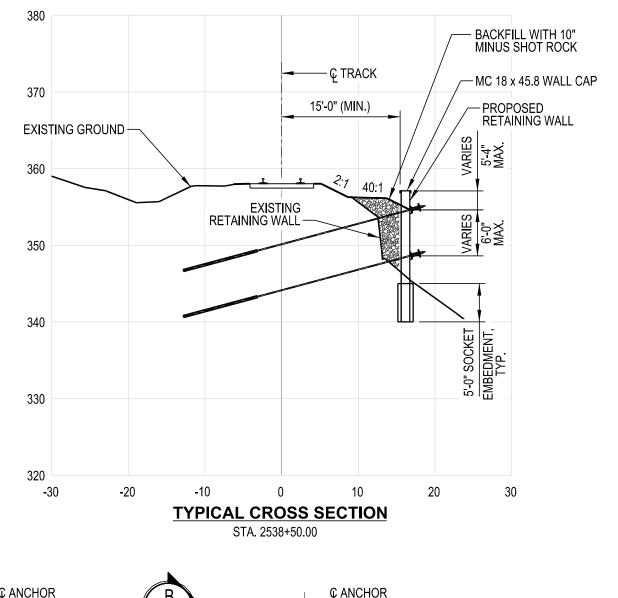
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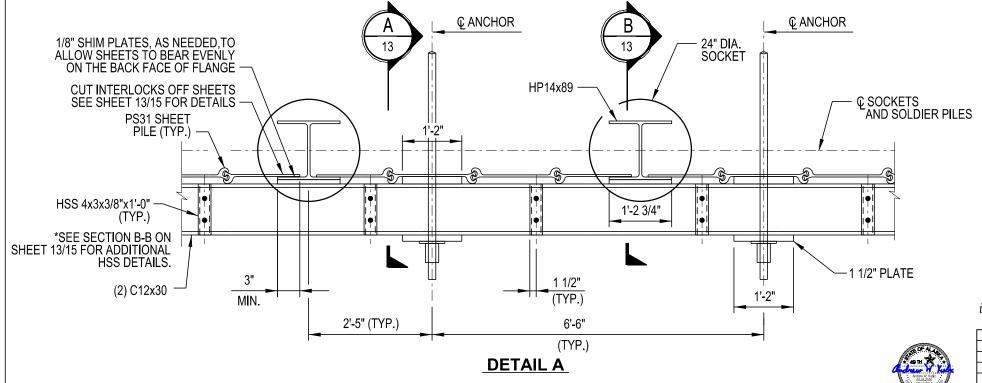
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# DATE BY REVISION

# ALASKA RAILROAD CORPORATION

NOTES:

PROVIDE MATERIAL AND WORKMANSHIP IN ACCORDANCE WITH THE SPECIAL PROVISIONS AND

2. BACKFILL BEHIND SHEETING TO ANCHOR ROD LEVEL PRIOR TO INSTALLING ROCK ANCHORS.

4. SEE SHEET 13/15 FOR ROCK DOWEL DETAIL.

3. SEE SHEET 13/15 FOR SECTION A-A AND SECTION B-B.

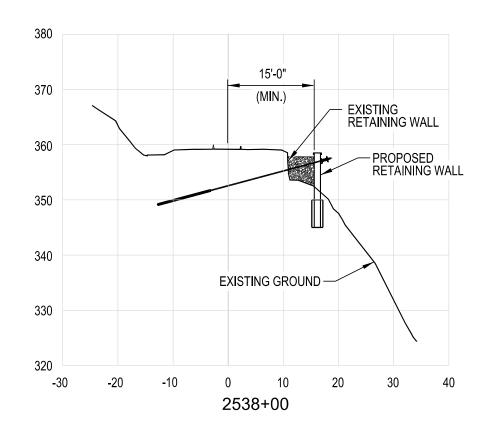
STANDARD SPECIFICATIONS.

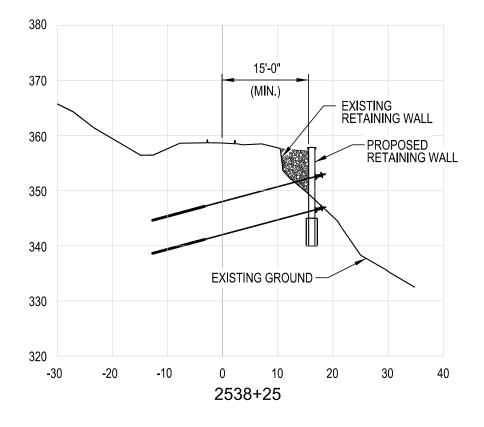
ENGINEERING SERVICES
P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500

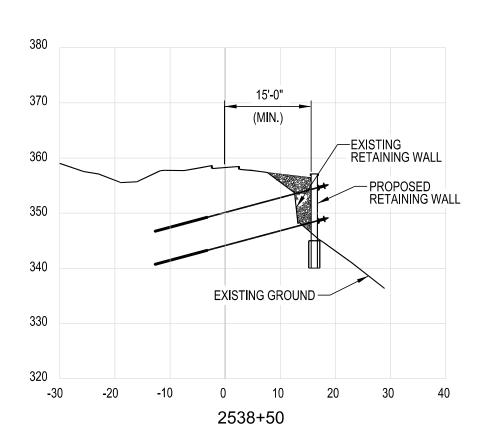
MP 52.14 RETAINING WALL REPLACEMENT

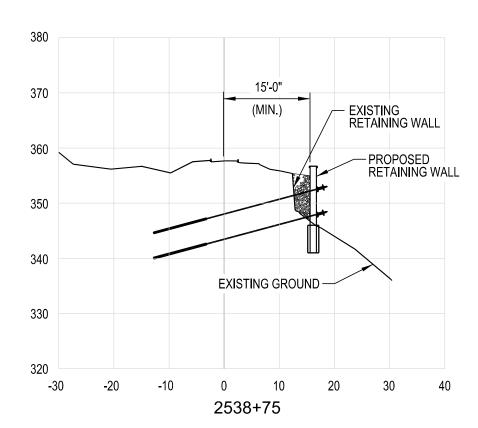
> TYPICAL DETAILS SOUTH WALL

SCALE: AFE NO.: ACAD FILE: DWG NO. DESIGNED BY: - KAG H: AS NOTED DRAWN BY: NBS V: AS NOTED CHECKED BY: \_ LJH 6 <sub>0F</sub> 15 APPROVED BY: \_ AWK\_ 09/05/20









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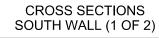
# ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500 MP 52.14

DESIGNED BY:

CHECKED BY:

DRAWN BY:

RETAINING WALL REPLACEMENT





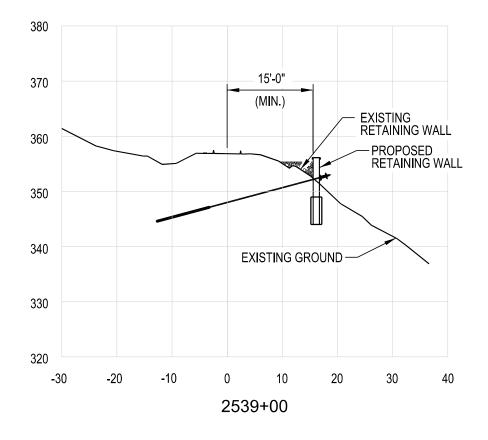
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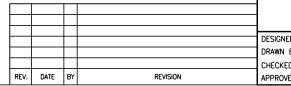
SOLDIER PILE	TOP OF SOLDIER PILE ELEVATION	TOP OF ROCK SOCKET ELEVATION	BOTTOM OF ROCK SOCKET ELEVATION
S1	358.89	356.00	351.00
S2	358.89	350.00	345.00
S3	358.21	344.00	339.00
S4	358.21	344.00	339.00
S5	358.21	345.50	340.50
S6	358.21	345.00	340.00
S7	358.21	345.00	340.00
S8	357.49	345.00	340.00
S9	357.49	345.00	340.00
S10	357.49	345.00	340.00
S11	357.49	345.00	340.00
S12	357.09	346.00	341.00
S13	357.09	346.00	341.00
S14	357.09	345.00	340.00
S15	356.51	346.00	341.00
S16	356.51	347.50	342.50
S17	356.51	349.00	344.00
S18	356.51	351.50	346.50

## **SOUTH WALL SOLDIER PILE ELEVATIONS**



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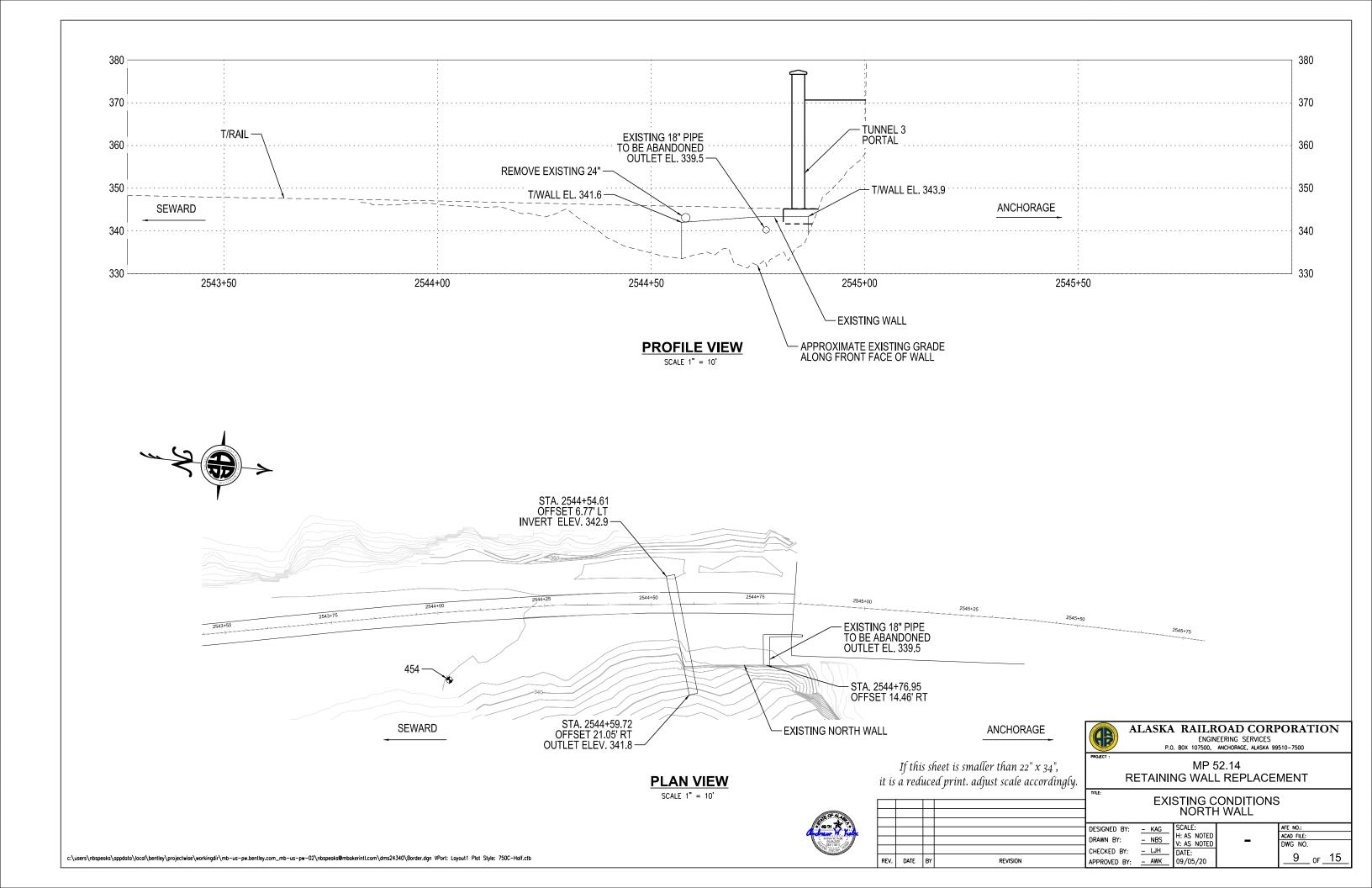


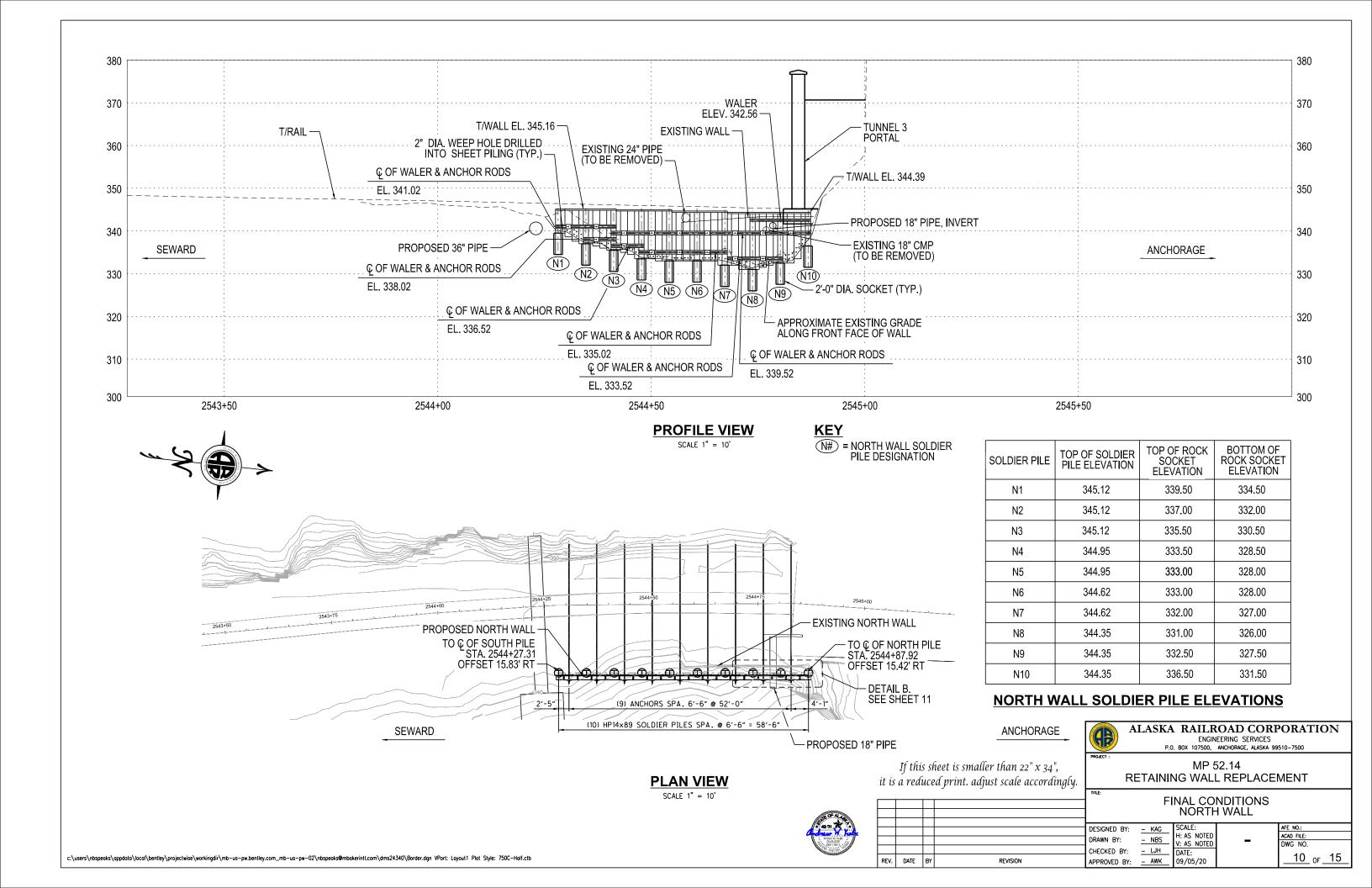
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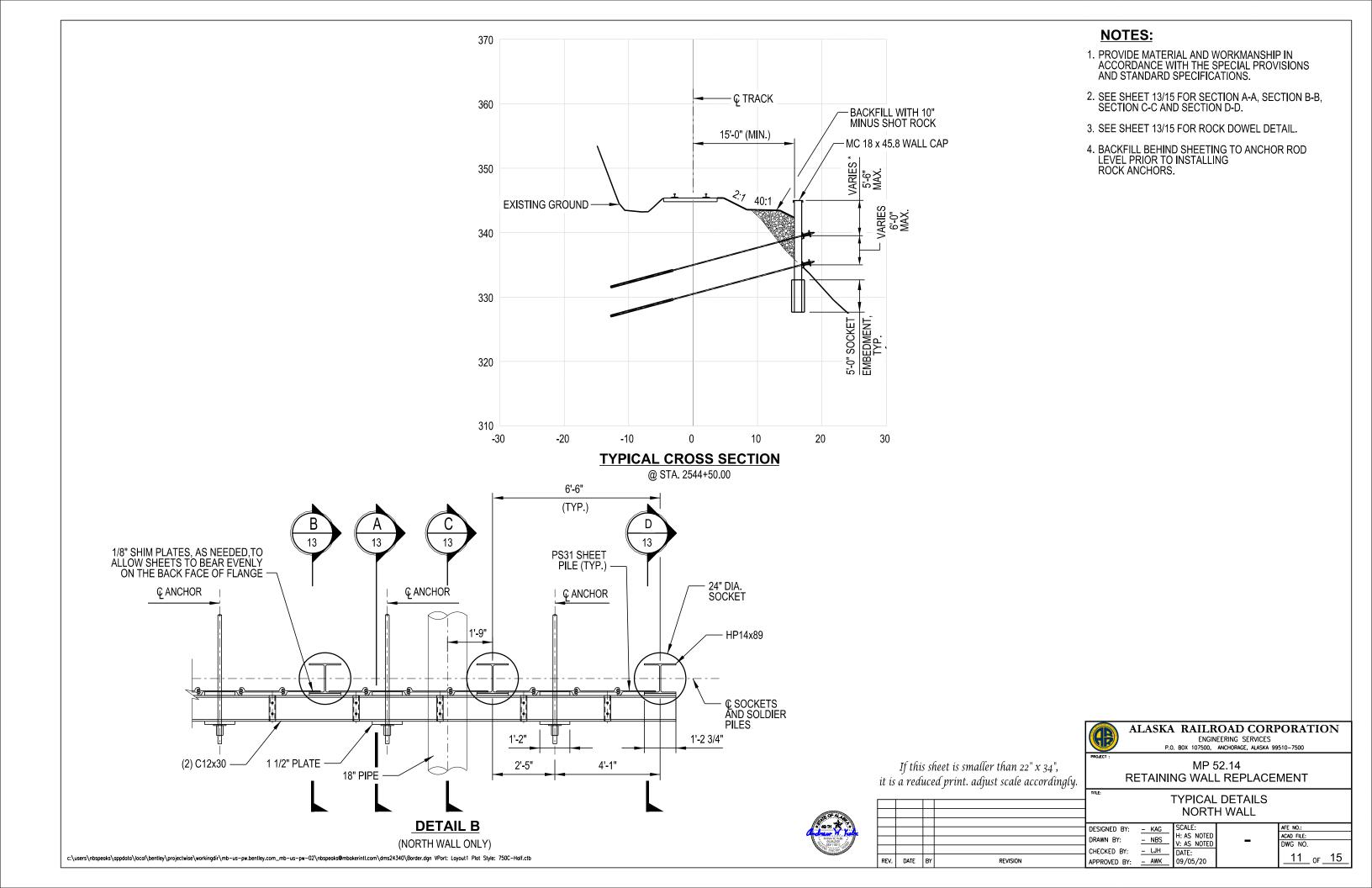
MP 52.14 RETAINING WALL REPLACEMENT

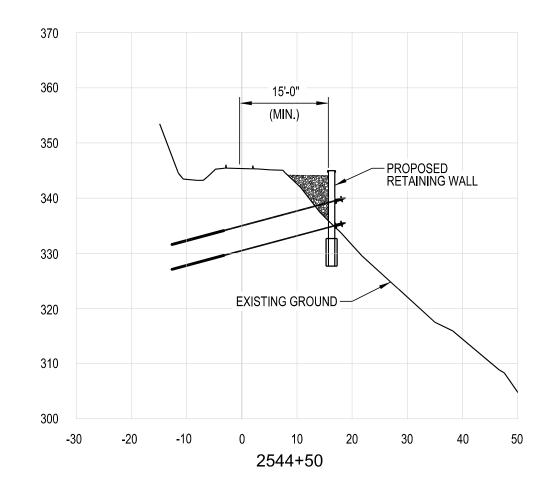
CROSS SECTIONS SOUTH WALL (2 OF 2)

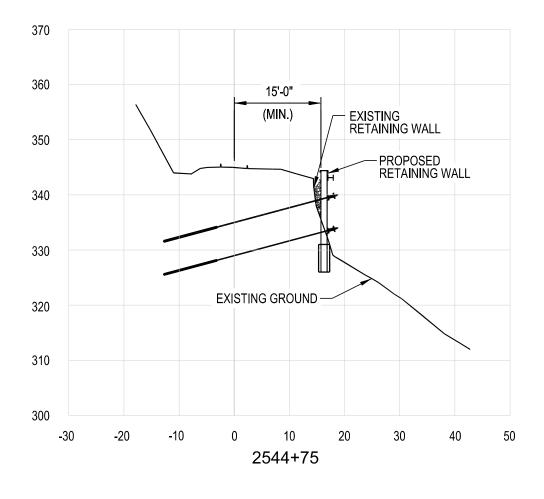
- KAG - NBS SCALE: H: AS NOTED V: AS NOTED AFE NO.: ACAD FILE: DWG NO. DESIGNED BY: DRAWN BY: CHECKED BY: – LJH 8 <sub>0F</sub> 15 APPROVED BY: \_\_ AWK\_\_









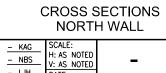


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MP 52.14 RETAINING WALL REPLACEMENT

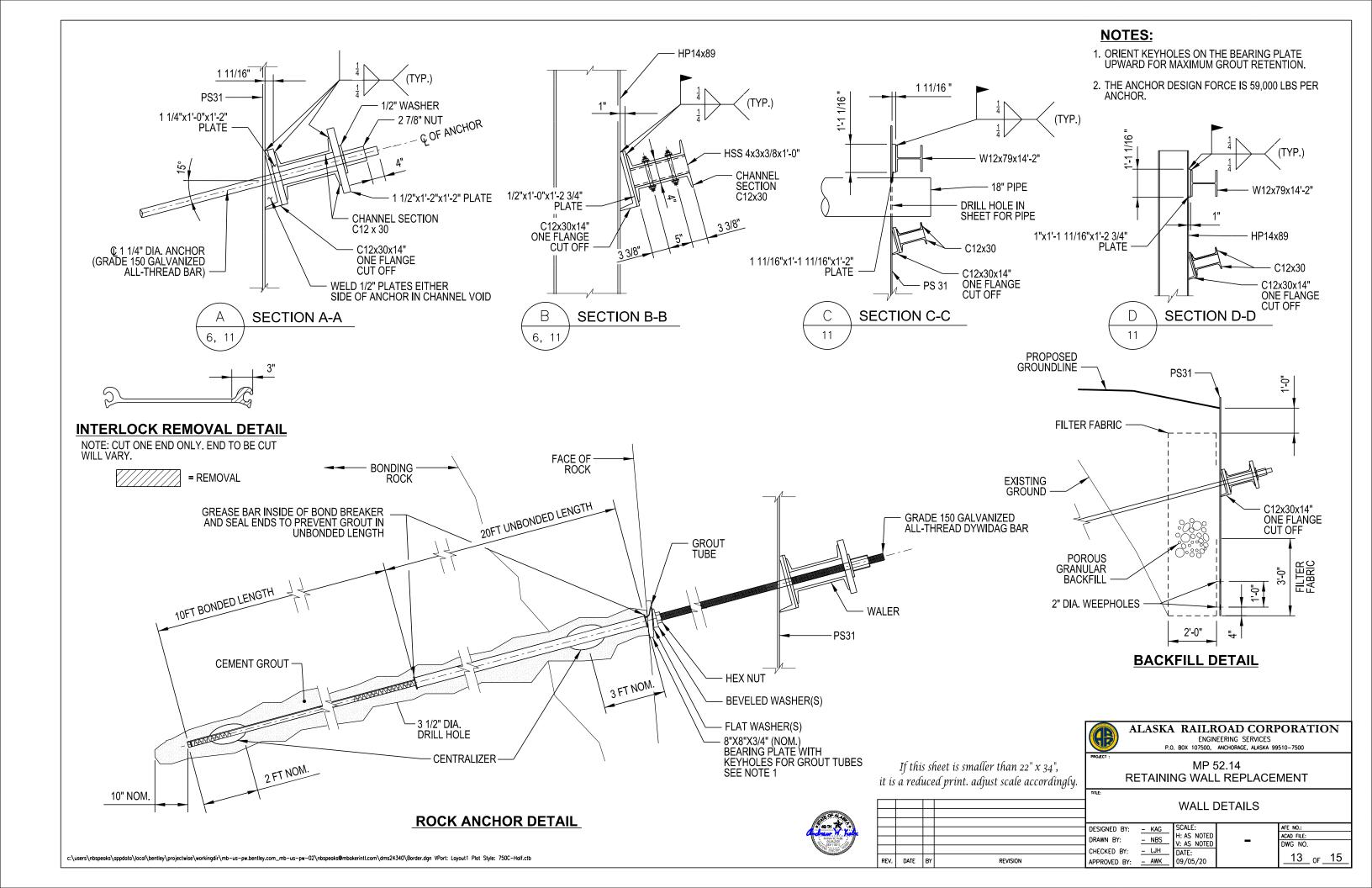


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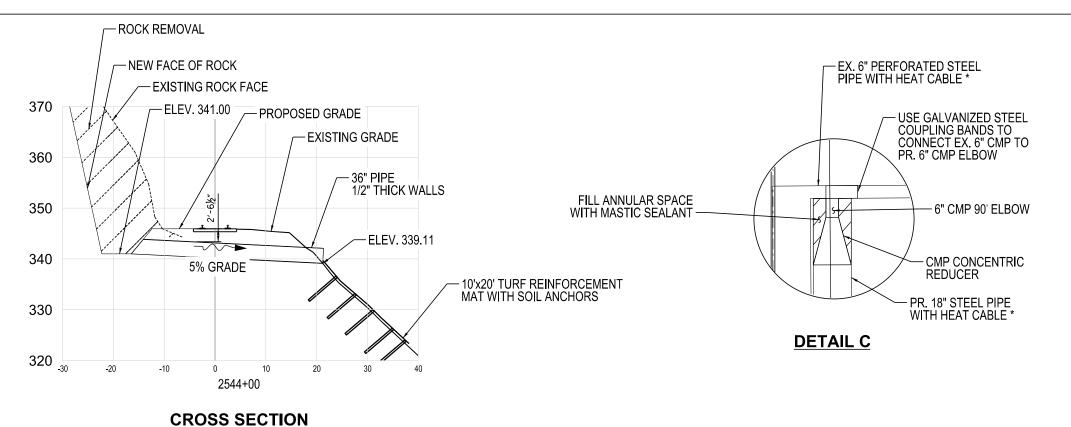
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### NOTE: TURF REINFORCEMENT MATERIAL CAN BE OMITTED IF BEDROCK IS IDENTIFIED BY GEOTECHNICAL EXPLORATION. 390 PROPOSED GRADE 380 EXISTING GRADE -BALLAST SUB-BALLAST AGGREGATE BASE COURSE, GRADING D-1 PER SUBSECTION 703-2.03 - 36" PIPE 1/2" THICK WALLS 370 36" PIPE 1/2" THICK WALLS 360 PROPOSED DITCH EXCAVATION - 10'x20' TURF REINFORCEMENT MAT WITH SOIL ANCHORS EXCAVATION LIMIT, SLOPE AS REQUIRED 5% GRADE 3'-0" 3'-0" FOR STABILITY (TYP.) BEDDING MATERIAL 350 SUBBASE, PER SUBSECTION 204-2.01 **TYPICAL TRENCHING DETAIL** 340 330 -30 -20 -10 0 10 20 30 STA. 2537+88.00 **CROSS SECTION** SCALE 1" = 10' STA. 2537+85.77 OFFSET 16.86' LT ELEV. 355.09 36" PIPE 2537+75 2539+25 2537+50 PROPOSED SOUTH WALL **EXISTING SOUTH WALL** SEWARD - STA. 2537+91.19 OFFSET 19.87' RT ELEV. 353.14 ANCHORAGE ALASKA RAILROAD CORPORATION ENGINEERING SERVICES P.O. BOX 107500, ANCHORAGE, ALASKA 99510-7500 10'x20' TURF REINFORCEMENT **PLAN VIEW** MAT WITH SOIL ANCHORS -If this sheet is smaller than $22" \times 34"$ , MP 52.14 SCALE 1" = 10' RETAINING WALL REPLACEMENT it is a reduced print. adjust scale accordingly. DRAINAGE PLAN SOUTH WALL SCALE: DESIGNED BY: - KAG H: AS NOTED V: AS NOTED ACAD FILE: DWG NO. DRAWN BY: NBS – LJH CHECKED BY: 14 <sub>OF</sub> 15 c:\users\nbspeaks\appdata\local\bentley\projectwise\workingdir\mb-us-pw.bentley.com\_mb-us-pw-02\nbspeaks@mbakerintl.com\dms24340\Border.dgn VPort: Layout1 Plot Style: 750C-Half.ctb APPROVED BY: \_\_ AWK DATE BY REVISION 09/05/20



SCALE 1" = 10'

# NOTE: 1. TURF REINFORCEMENT MATERIAL CAN BE OMITTED IF BEDROCK IS IDENTIFIED BY GEOTECHNICAL EXPLORATION. 2. HEAT CABLE REMOVAL AND INSTALLATION

TO BE COORDINATED DIRECTLY WITH AARC.

