Twin Cities Ironworkers Apprenticeship & Training
Local 512 · A.G.C.
835 Pierce Butler Route · St. Paul, Minnesota 55104
JATC Office Phone: 651-489-3829 · JATC Office Fax: 651-489-1440
Larry Gilbertson *Director of Training* email: larry@iw512jac.com

Attention: Payroll Department

Enclosed is the following wage information regarding Ironworkers Local No. 512 apprentices:

- Applicable wage and percentage rates for apprentices effective May 1, 2015
- .List of apprentices graduating to journeyperson status effective May 1, 2015.
- List of apprentices with the applicable pay and percentage rates for Regions A, B and C. Please use this updated list because there may be first year apprentices that have received credit for past work experience and education since the last mailing.
- Apprentice Performance Report – please have the foreman/superintendent complete one for each apprentice and email or fax back to the Training Center. This will enable us to ensure that the apprentices are receiving the necessary training for the job.

Please adjust your payroll records accordingly.

In addition, we would like to email the wage information to your company instead of via mail. Please email Lori at lori@iw512jac.com the email address you would like to use to receive information on apprentices' wages. Thank you.

If you have any questions, please contact me.

Sincerely,

Larry Gilbertson
Director of Training

APPRENTICE WAGE SCALE

The wage scale listed below is effective 5/1/15 to 10/31/15.

Regions A, B & C wages are as follows:

PERIOD	%	REGION A RATE EFFECTIVE 5/1/15	REGION B RATE EFFECTIVE 5/1/15	REGION C RATE EFFECTIVE 5/1/15
1st - 6 months	70	$24.85	$21.73	$20.86
2nd - 6 months	75	$26.63	$23.28	$22.35
3rd - 6 months	80	$28.40	$24.83	$23.84
4th - 6 months	85	$30.17	$26.38	$25.33
5th - 6 months	90	$31.95	$27.94	$26.82
6th - 6 months	95	$33.72	$29.49	$28.31

Apprentices receive all fringe benefits listed below:

	DEFINED BENEFIT PENSION	DEFINED CONTRIBUTION PENSION	HEALTH & WELFARE	APPRENTICE/ TRAINING FUND	IMPACT	FAIR CONTRACTING FOUNDATION	TOTAL PACKAGE
Region A	$9.75	$5.00	$7.90	$0.80	$0.27	$0.02	$23.74
Region B	$9.75	$5.00	$7.90	$0.80	$0.27	$0.02	$23.74
Region C	$9.75	$5.00	$7.90	$0.80	$0.27	$0.02	$23.74

Region A Journeyman rate is $35.50 effective 5/1/15
Region B Journeyman rate is $31.04 effective 5/1/15
Region C Journeyman rate is $29.80 effective 5/1/15

May 1, 2015

The following seventy (70) graduating apprentices from Regions A, B and C will be upgraded to journeyperson status effective May 1, 2015.

REGION A

1. Arnal, Mike
2. Bertilson, Jesse
3. Blair, Nate
4. Bourgal II, Tom
5. Breitenbucher, Dan
6. Buchanan, Robert
7. Burke, Sam
8. Conrad, Nick
9. Cook, Brian
10. Cooke, Cody
11. Dalager, Dale
12. DeMarre, Nick
13. Dinsmore, William
14. Downs, Megan
15. Duscher, Brian
16. Filipczak, Michael
17. Haack, Nate
18. Hackett, BillieRae
19. Hellquist, Jon
20. Hite, Jr., Todd
21. Jochim, Michael
22. Johnson, Ivan
23. Justen, Tyler
24. Linder, Glen
25. Mangum, Matt
26. Maull, Damell
27. Mickle Van Sickle, Shawn
28. Miskavige, Jacob
29. Miskavige, Jr., Tim
30. Monson, Neil
31. Novotny, Dustin
32. Pearson, Matt
33. Pederson, Jordan
34. Peters, Ben
35. Rodeck, Ryan
36. Roden, Derek
37. Sanders, Andrew
38. Sanders, Garrett
39. Seidel, Buster
40. Sigala, Alex
41. Sozio, Chris
42. Steffens, Alex
43. Stellick, Kyle
44. Tripp, Jeremiah
45. Vieths, Stephen
46. Warner, Joe
47. West, Dakota

REGION B

1. Anderson, Isaac
2. Asuma, Michael
3. Bragee, Matt
4. Buskala, Ashlee
5. Fischer, Andrew
6. Godbout, Jamie
7. Johnson, Marcus
8. Koivisto, Shay
9. Landwehr, Matt
10. Larson, Tyler
11. Lyons II, James
12. Olson, Dain
13. Pearson, Ken
14. Povhe, Ben
15. Prentice, Grant
16. Spindler, Cole
17. Switzer, Tom
18. Trader, Erik
19. Vollmer, Jake

REGION C

1. Early, Sean
2. Morris, Russell
3. Roden, Tyler
4. Gross, Kurtis

REGION A APPRENTICES
ST. PAUL, MN

95%=$33.72

1. Billings, George
2. O'Reilly, Adam
3. Sobtzak, James

90%=$31.95

1. Cook, Cory
2. Dulas, BJ (William)
3. Fidler, Melinda
4. Gill, Raivadus
5. Holtzbauer, Justin
6. Horsley, Kristofer
7. Jacobs, Mitchell
8. Johnson, Brian
9. Johnson, Jesse
10. Kuchta, Karl
11. Lanphear, Joseph
12. Latkiewicz, Michael
13. Lemieux, Andy
14. Lentsch, Rory
15. Mahowald, Matthew
16. Merritt, Anthony
17. Moebakken, Edward
18. Monn, Thomas
19. Mooney, Michael
20. Nelson, Nicholas
21. Neubauer, Daniel
22. New, Michael
23. Norby, Alex
24. Nordlund, Andrea
25. Peters, Mike
26. Phillips, Jeremy
27. Pieper, Brian
28. Ricks, Lane
29. Rodriguez-Garcia, Edwin
30. Ryan, John
31. Schneider, Heidi
32. Smith, Juan
33. Stover, Lorina
34. Sutton, Casey
35. Tricola, Paul
36. Waldner, Matthew
37. Wild, Eric

REGION A APPRENTICES
ST. PAUL, MN

85%=$30.17

1. Andersen, Adam
2. Andraschko, Ryan
3. Billings, Jeremiah
4. Blue, Sireena
5. Burns, Joe
6. Carvajal, Adrian
7. Cavazos, Fernando
8. Clowe, Kasey
9. D'Ambra, Joseph
10. Darst, Ashley
11. Davis, Dominic
12. Drake, Alexander
13. Folk, Doug
14. Green, Lance
15. Haviken, Tim
16. Hedican, Patrick
17. Jackson, Jason
18. Johnson, Keith
19. Kackman, Aaron
20. Kampa, Daniel
21. Kath, Brandon
22. Klimstra, Travis
23. Kray, Tim
24. Martin, Christopher
25. Massie, Alonzo
26. McPartland, Ryan
27. Meyer, Maxwell
28. Moore, Jr., Toussaint
29. Neubauer, Adam
30. Palacios, Cecilio
31. Peterson, Joseph
32. Petron, Seith
33. Reichert, Jedidiah
34. Reinardy, Randy
35. Rosales, Miguel
36. Shoutz, Brandon
37. Smith, Juan
38. Stoehr, Joe
39. Strong, Brandon
40. Tator, Michael
41. Teigland, Reid
42. Twidt, Kelly
43. Walker, Victor
44. Wallack, Daniel
45. Warner, Jeffrey
46. Yang, Jerry
47. Ziebol, Kellan
48. Ziegler, Robert

REGION A APPRENTICES
ST. PAUL, MN

80%=$28.40

1. Berg, Kyle
2. Berglund, Christopher
3. Birdsall, Shawn
4. Blakesley, Jared
5. Brown, Nashaw
6. Buck, Colin
7. Carpenter, Daniel
8. Casey, Sean
9. Christiansen, Chad
10. Christofferson, Cory
11. Danaher, Joshua
12. Fitzpatrick, James
13. Frank, Eric
14. Gapen, Dan
15. Goerger, Adam
16. Graddy, Devon
17. Hamm, Allan
18. Hanninen, Cody
19. Hilde, Ryan
20. Hillmyer, Tim
21. Hostutler, Blake
22. Hylton, Matthew
23. Johnson, Brandon
24. Johnson, Joseph
25. Kleinsasser, Wyatt
26. Kolstad, Cody
27. Korum, Anthony
28. Kotzer, Ryan
29. Kuck, Jesse
30. Lewis-Alvarez, David
31. Lindell, Luke
32. Lopez, Roger
33. Lubansky, Luke
34. Lusignan, Torey
35. Lyseth, Andrew
36. McCabe, Jon
37. Megega, Valeriy
38. Messerschmidt, Ryan
39. Milbrandt, Michael
40. Minor, Derek
41. Neumann, Jesse
42. Nierman, Sam
43. Novak, Nathaniel
44. O'Brien, Jacob
45. Pearl, Mollie
46. Peterson, Matthew
47. Pogones, Jesse
48. Reinardy, Jared
49. Rodriguez, Cris
50. Rosenbush, Nathan
51. Ruzynski, Rusty
52. Sapp, Matthew
53. Schwantes, James
54. Scott, Sylvester
55. Smith, Ivan
56. Swain, Keegan
57. Tufigno, Charles
58. Turner, Brenda
59. Walther, Jennifer
60. Wheeler, Kyle
61. Wissler, Michael
62. Workman, Christopher
63. Yang, Kim
64. Zachman, Jayson
65. Zinos, Alexander

REGION A APPRENTICES
ST. PAUL, MN

75%=$26.63

1. Barnes, Bert
2. Coyer, Travis
3. DeBace, Mark
4. Deschene, Adam
5. Garletz, Joe
6. Gossman, Payten
7. Goodsky, Jordan
8. Hansen, Wyatt
9. Heroff, Jr., Keith
10. Howell, Aaron
11. Huebscher, Jeffery
12. Johnson, Andrew
13. Johnson, Justin
14. Kinches, Tara
15. Kopaygorodskiy, Eduard
16. Leseman, Zachary
17. Mahowald, Nicholas
18. Mahowald, Stuart
19. Martin, Marandus
20. Meeks, Zachery
21. Metobo, Polycarp
22. Moncada, Genry
23. Montgomery, Justen
24. O'Malley, Jonathan
25. Palmer, Brandon
26. Petty, Dennis
27. Pitoscia, Matthew
28. Pliego-Quintero, Juan
29. Potter, Lawrence
30. Roquemore II, Freeman
31. Sell, Chad
32. Sherry, Todd
33. Shrader, Tyler
34. Shrode, Andria
35. Smith, Richard
36. Swenson, Brody
37. Thole, Mark
38. Tweten, Trent
39. Ugro, Michael
40. Wolff, Caleb
41. Yingling, Ross

REGION A APPRENTICES
ST. PAUL, MN

70%=$24.85

1. Abston, Trent
2. Albertson, Levi
3. Asquith, Sarah
4. Baker, Jacob
5. Bauman, Grace
6. Bettis, Kenneth
7. Bondeson, Brandon
8. Booth, Matthew
9. Cembrinski, Ryan
10. Cobb, Josef
11. Davies, Max
12. Demanou, Jean
13. Din, Makara
14. Donaghue, Russell
15. Dougherty, Jason
16. Duerst, Jack
17. Ellis, Mitchell
18. Ellison, Patrick
19. Epperson, Aron
20. Farnsworth, Philip
21. Finch, Walter
22. Freeman, Winston
23. Guild, Michael
24. Hamilton, Demetrius
25. Hendrickson, Wesley
26. Jackson, Debra
27. Jensen, Kody
28. Johnson, Andrew
29. Johnson, Caleb
30. Johnson, Jake
31. Junker, Jordan
32. Kaufer, Corey
33. Koch, Matthew
34. Koller, Brandon
35. Kujawa, Jed
36. Larson, Troy
37. Laulunen, Ebbelisa
38. LeMay, Michael
39. Linders, Jordan
40. Lochen, Shani
41. Marten, Derek
42. Martinez Perez, William
43. McCloskey, Jonathan
44. Meyer, Edward
45. Mitchell, Robert
46. Munion, Patrick
47. Nervig, Matthew
48. Neumann, Martin
49. Neumann, Paul
50. Neuschwander, Jake
51. Nguyen, Caophi
52. Nordman, Alan
53. Palmer, Nicholas
54. Patton-Alvarez, Alonzo
55. Paxton, Jason
56. Peace, Brian
57. Pearson, Dante
58. Porter, Joseph
59. Potts, Garet
60. Rathbun, Trevor
61. Rivera, John
62. Robeck, Kyle
63. Rogerson, Demontez
64. Ruschmeier, Ryan
65. Rust, Jack
66. Saas, Brandon
67. Sames, Luke
68. Sanders, Andrew
69. Scherber, Travis
70. Schickling, Eric
71. Scott, Matthew
72. Sebion, Riley
73. Seifert, Travis
74. Smith, Fabian
75. Smoczyk, Paul
76. Stamper, Travis
77. Teigland, Robert
78. Thompson, Dylan
79. Toney, Patrick
80. Trevino, Jesus
81. Tschida, Jacob
82. Turcotte, Nathane

REGION A APPRENTICES
ST. PAUL, MN

70%=$24.85

83. Turner, Michael
84. Vandevere, Sheila
85. Weinke, Maxwell
86. Welch, Travis
87. Whitman, Mark
88. Wigand, Jason
89. Weiland, Dustin
90. Wright, Eliot
91. Wright, Ryan
92. Zahler, Benjamin

REGION B APPRENTICES
HERMANTOWN, MN

95%=$29.49

1. Anderson, Dean
2. Betts, Casey
3. Bishop, Scott
4. Buffalo, Kurt
5. Edblom, Adam
6. Harju, Jordan
7. Higgins, Michael
8. Johnson, Dakota
9. Lahti, Stuart
10. Nikunen, Evan
11. Nylund, Timothy
12. Olson, Erik
13. Rahja, Dustin
14. Salo, Trevor
15. Schaefer, Josh
16. Seppanen, Peter
17. Smith, Tony
18. Stokes, Micah
19. Templer, Colton
20. VanGuilder, Shawn
21. Worth, Jeff

90%=$27.94

1. Arnold, Tyler
2. Badavinac, Bron
3. Buse, Kelly
4. Carswell, Jeff
5. Christianson, Jorn
6. Harris, Josh
7. Hatfield, Chad
8. Hicks, Derek
9. Jensen, Nicholas
10. Kolb, Taylor
11. Kraemer, Derek
12. Mendoza, Joseph
13. Morse, Travis
14. Nichols, Jeremy
15. Sebesta, Jared
16. Torgerson, Jared
17. Wekseth, Cody

85%=$26.38

1. Engen, Katie
2. Kowitz, Benjamin

REGION B APPRENTICES
HERMANTOWN, MN

80%=$24.83

1. Almer, Garrett
2. Bean, Kyle
3. Bonstell, Justin
4. Conaway, Patrick
5. Cooper, Jonathan
6. Davin, Nathan
7. Fallos, Jake
8. Fogelberg, David
9. Forrest, Thomas
10. Gibson II, Thomas
11. Gustafson, Tyler
12. Hink, William
13. Holecek, Adam
14. Jaksa, Hector
15. Johnson, Greg
16. Johnson, Jerod
17. Jokinen, Chaise
18. Kolb, Jonathan
19. Lovdahl, Zachary
20. MacDougall, Chad
21. McConnell, Jonathan
22. Palmisano, Anthony
23. Pitzen, Clay
24. Prasnicki, Cody
25. Rinta, Dustin
26. Shamp, Barry
27. Turkula, Joshua
28. Tveiten, Curtis

75%=$23.28

1. Olson, Jeff
2. Pederson, Brandon

REGION B APPRENTICES
HERMANTOWN, MN

70%=$21.73

1. Allen, Aaron
2. Almer, Wade
3. Anderson, Anthony
4. Anderson, Cody
5. Anderson, Jacob
6. Anderson, Jason
7. Anderson, Zachary
8. Ayers, Justin
9. Barnes, Nicholas
10. Bates, Garrett
11. Benepe Bischoff, Jonathan
12. Berg, Andy
13. Bober, Tanner
14. Bock, Nicholas
15. Bryant, Jared
16. Burnside, Jaye
17. Carlson, Daniel
18. Cordero, George
19. Cortes, Rodrigo
20. Couture, Joseph
21. Emery, Kendall
22. Erickson, Michael
23. Evanson, Beau
24. Eyer, Mickey
25. Fabini, Laura
26. Fenhouse, Joshua
27. Feth, Josiah
28. Fisher, Kyle
29. Forsman, Kenny
30. Frey, Jason
31. Gaare, Philip
32. Gavol, Ezekiel
33. Gunderson, Bruce
34. Harrison, Jr., Gregory
35. Hart, Lukas
36. Huffman, Joshua
37. Humphrey, Justice
38. Isham, William
39. Jackman, Tyler
40. Jackson, Jacob
41. Johnson, Tristan
42. Johnson, Zachary
43. Johnston, Christopher
44. Kuhlman, Walker
45. Laine, Peter
46. Lamoreaux, James
47. Lamoreaux, William
48. Lamphier, Scott
49. Larsen, Taylor
50. LeBrasseur, Corey
51. LeFebvre, Ben
52. LePage, Robert
53. Lincoln, Joseph
54. Lind, Bradley
55. Lind, Brian
56. Littlehawk, Jeremiah
57. Lueck, Kyle
58. Mackenhausen, Hunter
59. Manee, Patric
60. Manning, Kent
61. Martin, Gregory
62. McGregor, Matthew
63. McQuade, Robert
64. Mehtala, Scott
65. Meyer, Justin
66. Miller, Dinero
67. Olson, Trent
68. Ortloff, Bryce
69. Parson, Kurt
70. Perry, Dustin
71. Perry, Jeremy
72. Petersen, Tanner
73. Peterson, Joseph
74. Petrey, Tyler
75. Pletschett, Taylor
76. Podgorsek, Matthew
77. Poissant, Matthew
78. Povhe, Bradley
79. Quade, Daniel
80. Ressler, John
81. Rivord, Tylor
82. Roske, Shawn
83. Saari, Travis
84. Salo, Spencer
85. Sanoski, Matthew
86. Shumate, Jeremy
87. Singewald, Brandon
88. Skaggs, Nicholas
89. Slocum, Kanyon
90. Smerz, Mitchell
91. Sojka, Steve
92. Spolar, Cory
93. Stolfa, David
94. Suonvieri, Evan
95. Tassoni, Anthony
96. Terry, William
97. Trunt, Luke
98. Turkula, Justin
99. Tyson, Cody

REGION B APPRENTICES
HERMANTOWN, MN

70%=$21.73

100. Ullyott, Jr., Scot

101. Villeneuve, Braden

102. Wagner, Zach

103. Walker, Tyrone

104. Wehmanen, Nicholas

105.White, Darrell

106. Wichterman, Daniel

107. Wilhelm, Jeremy

108. Winger, Richard

109. Zakula, Aaron

110. Zakula, Jeffrey

111. Zoltak IV, Elmer

REGION C APPRENTICES
MANDAN, ND

95%=$28.31

1. Ackerman, John
2. Fender, William
3. Hayes, Joey
4. Kalstabakken, Marvel
5. Medina, Jose
6. Salgado, Henry

90%=$26.82

1. Augustin, Jakob
2. Bachiochi, Jake
3. Hatten, Michael
4. Loken, Christopher
5. Medina, Jose
6. Salgado, Henry
7. Singelton, Matt
8. Snyder, Matt
9. Voegele, Brandon
10. Warren, Jeremy
11. Zinke, Lane

80%=$23.84

1. Alanis, Rueben
2. Bachler, Ryan
3. Branstietter, Ben
4. Gappert, Dillan
5. Green, Dustin
6. Gustin, Damen
7. Komrosky, Edwin
8. Lux, Dylan
9. Matheson, Michael
10. Miltich, Jacob
11. Owens, Phil
12. Pfeiffer, David
13. Poitra, Jacob
14. Poitra, Jr., Duane
15. Rawley, Jonah
16. Winiecki, Derek
17. Zinke, Logan

REGION C APPRENTICES
MANDAN, ND

70%=$20.86

1. Airhart, Joseph
2. Bjerkness, Brandon
3. Estable-Mora, Juan
4. Grounds, Jon
5. Herbst, Jeff
6. Linstad, Cody
7. Lobato, Julian
8. Mittlesteadt, Matthew
9. Olson, Lee
10. Pavlicek, Zach
11. Peltier, Wyatt
12. Pike, Zach
13. Pritchard, Jeremiah
14. Runge, Ryan
15. Runge, Ryan
16. Schweigert, Eric

APPRENTICE WORK PERFORMANCE REPORT

CONFIDENTIAL

Apprentice: _____ Region A Region B Region C

Training Period 1st year, 2nd year or 3rd year (Circle applicable training period if known)

Employer: _____

Scoring – 0 = poor.....10 = best

ATTENDANCE & TARDINESS
RATING: 0 1 2 3 4 5 6 7 8 9 10
COMMENTS:

ON THE JOB PERFORMANCE (Reliability)
RATING: 0 1 2 3 4 5 6 7 8 9 10
COMMENTS:

ATTITUDE (Positive Attitude, Shows Leadership Ability)
RATING: 0 1 2 3 4 5 6 7 8 9 10
COMMENTS:

INITIATIVE & PRODUCTIVITY (Ambition & Effort)
RATING: 0 1 2 3 4 5 6 7 8 9 10
COMMENTS:

COMPREHENSION & ABILITY (Shows interest in learning job)
RATING: 0 1 2 3 4 5 6 7 8 9 10
COMMENTS:

COOPERATION & CONDUCT (Ability to work with others)
RATING: 0 1 2 3 4 5 6 7 8 9 10
COMMENTS:

SAFETY & AWARENESS
RATING: 0 1 2 3 4 5 6 7 8 9 10
COMMENTS:

QUALITY OF WORK & ACCURACY
RATING: 0 1 2 3 4 5 6 7 8 9 10
COMMENTS:

TOOLS: FEW SOME MANY CONDITION: POOR OK EXCELLENT

COMMENTS: _____

REVIEWED BY Forman/Supervisor _____ DATE: _____

PLEASE MAIL OR FAX THIS REPORT TO THE FOLLOWING:

Twin Cities Ironworkers Apprenticeship & Training Program
835 Butler Route – St. Paul, MN. 55104
JATC Office & Training Center Phone: 651-489-3829 – Fax: 651-489-1440
Pete Teigland, Training Coordinator – Region A
Brian Nelson – Training Coordinator – Region B

BUILDING WAGE RATES

Duluth/Cloquet Local #1091

Effective May 1, 2015:

Class	(Taxable) Wages	(Taxable) Vacation	H & W	Pension	Trng/Appr	LECET	SAFE		Total
1	$ 23.54	$ 2.10	$ 7.55	$ 6.40	$ 0.22	$ 0.08	$ 0.15	.....	$ 40.04
2	$ 23.64	$ 2.10	$ 7.55	$ 6.40	$ 0.22	$ 0.08	$ 0.15	.....	$ 40.14
3	$ 23.94	$ 2.10	$ 7.55	$ 6.40	$ 0.22	$ 0.08	$ 0.15	.....	$ 40.44
4	$ 24.24	$ 2.10	$ 7.55	$ 6.40	$ 0.22	$ 0.08	$ 0.15	.....	$ 40.74
5	$ 21.19	$ 2.10	$ 7.55	$ 6.40	$ 0.22	$ 0.08	$ 0.15	.....	$ 37.69

Example: Apprentice at 80% of Class 1 ONLY

Class 1	$ 18.83	$ 2.10	$ 7.55	$ 6.40	$ 0.22	$ 0.08	$ 0.15	.....	$ 35.33

Foreman/Leadman $1.50 above highest classification employed in.

Effective May 1, 2016 - $1.25 increase per hour

*** Vacation is a taxable wage and shall be paid for all hours worked and at 1 1/2 or 2 times the hourly rate when overtime is worked.

"All" Fringes are to be sent to :

Minnesota Laborers' Fringe Benefits Fund
P. O. Box 124
Minneapolis, MN 55440-0124
(651) 256-1800

HIGHWAY HEAVY WAGE RATES
District 2A - Duluth Local #1091

Effective May 1, 2015:

Class	(Taxable) Wages	(Taxable) Vacation	H & W	Pension	Trng/Appr	LECET	FCF		Total
1	$ 28.11	$ 2.30	$ 7.55	$ 6.50	$ 0.22	$ 0.08	$ 0.02	.....	$ 44.78
2	$ 28.31	$ 2.30	$ 7.55	$ 6.50	$ 0.22	$ 0.08	$ 0.02	.....	$ 44.98
3	$ 28.46	$ 2.30	$ 7.55	$ 6.50	$ 0.22	$ 0.08	$ 0.02	.....	$ 45.13
4	$ 28.56	$ 2.30	$ 7.55	$ 6.50	$ 0.22	$ 0.08	$ 0.02	.....	$ 45.23
5	$ 28.81	$ 2.30	$ 7.55	$ 6.50	$ 0.22	$ 0.08	$ 0.02	.....	$ 45.48
6	$ 30.61	$ 2.30	$ 7.55	$ 6.50	$ 0.22	$ 0.08	$ 0.02	.....	$ 47.28
7	$ 24.56	$ 2.30	$ 7.55	$ 6.25	$ 0.22	$ 0.08	$ 0.02	.....	$ 40.98

Increase May 1, 2016: $1.57 Allocation of increase TBD

Example: Apprentice at 80% of Class 1 ONLY

Class 1	$ 22.49	$ 2.30	$ 7.55	$ 6.50	$ 0.22	$ 0.08	$ 0.02	.....	$ 39.16

Pipelayer, Laser Beam (sewer, water, gas) Classification 6 rate.
Foreman/Leadman $1.50 above highest classification employed in.
General Foreman $2.25 above Foreman scale (appointed at employers discretion).

*** Vacation is a taxable fringe and part of the gross wage, it shall be paid for all hours worked and at 1 1/2 or 2 times the hourly rate when overtime is worked

"All" Fringes are to be sent to :

Minnesota Laborers' Fringe Benefits Fund
P. O. Box 124
Minneapolis, MN 55440-0124
(651) 256-1800

NORTH CENTRAL STATES
Regional Council of
CARPENTERS

LOCAL 1348 MILLWRIGHT AGREEMENT

NORTHERN MINNESOTA

MILLWRIGHTS & MACHINE ERECTOR WAGE RATES

Effective May 3, 2015

Classification		Percent (%)	Gross Wages	Deductions		Fringe Benefits					Total Package
				Savings	Dues	Health	DB Pension	DC Pension	Apprentice/ Education	Industry Promo Fund	
General Foreman	F + $1.75	100%	$36.57	-$3.50	$1.46	$6.33	$5.90	$1.90	$0.60	$0.05	$51.35
Foreman	JP + $2.25	100%	$34.82	-$3.50	$1.39	$6.33	$5.90	$1.90	$0.60	$0.05	$49.60
Journeyperson		100%	$32.57	-$3.50	$1.30	$6.33	$5.90	$1.90	$0.60	$0.05	$47.35
Apprentice	6001-7000	95%	$30.94	-$3.50	$1.24	$6.33	$5.90	$1.90	$0.60	$0.05	$45.72
	5001-6000	90%	$29.31	-$3.50	$1.17	$6.33	$5.90	$1.90	$0.60	$0.05	$44.09
	4001-5000	85%	$27.68	-$3.50	$1.11	$6.33	$5.90	$1.90	$0.60	$0.05	$42.46
	3001-4000	80%	$26.06	-$3.50	$1.04	$6.33	$5.90	$1.90	$0.60	$0.05	$40.84
	2001-3000	75%	$24.43	-$3.50	$0.98	$6.33	$5.90	$1.90	$0.60	$0.05	$39.21
	1001-2000	70%	$22.80	-$3.50	$0.91	$6.33	$5.90	$1.90	$0.60	$0.05	$37.58
	0 - 1000	65%	$21.17	-$3.50	$0.85	$6.33	$5.90	$1.90	$0.60	$0.05	$35.95

Covering the following Counties in the State of Minnesota, Aitkin, Becker, Beltrami, Carlton, Cass, Clearwater, Cook, Lake, Crow Wing, Hubbard, Itasca, Kittson, Koochiching, Lake of the Woods, Manomen, Marshall, Norman, Otter Tail, Pennington, Red Lake , Roseau, St. Louis, Wadena, Wilkin and that part of Clay County outside of a 5 mile radius of Moorhead and that part of Polk County outside of a 5 mile radius of East Grand Forks. In Wisconsin the County of Douglas and that portion of Bayfield County west of Highway 63, and west of a line drawn between Drummond and Herbster and the Lake Superior shore, including the cities of Drummond and Herbster.

May 1, 2016 Increase: $1.75 Allocation TBD

May 7, 2017 Increase: $1.85 Allocation TBD

INTERNATIONAL UNION OF OPERATING ENGINEERS, LOCAL No. 49
FOR THE:

HIGHWAY AND HEAVY WAGES EFFECTIVE MAY 1, 2015

EASTERN METROPOLITAN ZONE-(ZONE 1) *-See Wage District Map-*

Group	Wages	1 ½% of Gross Wages Excluding Fringes	H/W	HRA	Pension	Appren.	Totals	FCF $.02	"Voluntary" **NOT** Incl. in total Pkg IPF $.04
1	$34.78	**	$8.70	$1.00	$7.70	$.50	$52.68	$.02	$.04
2	33.78	**	8.70	1.00	7.70	.50	51.68	.02	.04
3	33.23	**	8.70	1.00	7.70	.50	51.13	.02	.04
4	32.93	**	8.70	1.00	7.70	.50	50.83	.02	.04
5	29.89	**	8.70	1.00	7.70	.50	47.79	.02	.04
6	28.68	**	8.70	1.00	7.70	.50	46.58	.02	.04

REMAINDER OF EASTERN ZONE-(ZONE 2) *-See Wage District Map-*

Group	Wages	1 ½% of Gross Wages Excluding Fringes	H/W	HRA	Pension	Appren.	Totals	FCF $.02	"Voluntary" **NOT** Incl. in total Pkg IPF $.04
1	$32.12	**	$8.70	$1.00	$7.70	$.50	$50.02	$.02	$.04
2	31.12	**	8.70	1.00	7.70	.50	49.02	.02	.04
3	30.67	**	8.70	1.00	7.70	.50	48.57	.02	.04
4	30.37	**	8.70	1.00	7.70	.50	48.27	.02	.04
5	27.80	**	8.70	1.00	7.70	.50	45.70	.02	.04
6	26.93	**	8.70	1.00	7.70	.50	44.83	.02	.04

WESTERN ZONE-(ZONE 3) *-See Wage District Map-*

Group	Wages	1 ½% of Gross Wages Excluding Fringes	H/W	HRA	Pension	Appren.	Totals	FCF $.02	"Voluntary" **NOT** Incl. in total Pkg IPF $.04
1	$26.85	**	$8.70	$1.00	$7.70	$.50	$44.75	$.02	$.04
2	25.85	**	8.70	1.00	7.70	.50	43.75	.02	.04
3	24.92	**	8.70	1.00	7.70	.50	42.82	.02	.04
4	24.61	**	8.70	1.00	7.70	.50	42.51	.02	.04
5	22.90	**	8.70	1.00	7.70	.50	40.80	.02	.04
6	22.30	**	8.70	1.00	7.70	.50	40.20	.02	.04

INTERNATIONAL UNION OF OPERATING ENGINEERS, LOCAL NO. 49
RATES FOR THE:

BUILDERS AGREEMENT – MINNESOTA

WAGES EFFECTIVE MAY 1, 2015 - ZONE 1

Group	Wages	1 ½% of Gross Wages Excluding Fringes	H&W	HRA	Pension	Appren-ticeship Training	Total	FCF $.02***	"Voluntary" **NOT** Included In Total Pkg C.A.F. $.04**
1	$37.74	*	$8.70	$.25	$7.70	$.50	$54.89	$.02	$.04
2	$37.40	*	$8.70	$.25	$7.70	$.50	$54.55	$.02	$.04
3	$35.99	*	$8.70	$.25	$7.70	$.50	$53.14	$.02	$.04
4	$35.65	*	$8.70	$.25	$7.70	$.50	$52.80	$.02	$.04
5	$35.48	*	$8.70	$.25	$7.70	$.50	$52.63	$.02	$.04
6	$33.97	*	$8.70	$.25	$7.70	$.50	$51.12	$.02	$.04
7	$32.85	*	$8.70	$.25	$7.70	$.50	$50.00	$.02	$.04
8	$30.84	*	$8.70	$.25	$7.70	$.50	$47.99	$.02	$.04

WAGES EFFECTIVE MAY 1, 2015 - ZONE 2

Group	Wages	1 ½% of Gross Wages Excluding Fringes	H&W	HRA	Pension	Appren-ticeship Training	Total	FCF $.02***	"Voluntary" **NOT** Included In Total Pkg C.A.F. $.04**
1	$35.85	*	$8.70	$.25	$7.70	$.50	$53.00	$.02	$.04
2	$35.53	*	$8.70	$.25	$7.70	$.50	$52.68	$.02	$.04
3	$34.20	*	$8.70	$.25	$7.70	$.50	$51.35	$.02	$.04
4	$33.88	*	$8.70	$.25	$7.70	$.50	$51.03	$.02	$.04
5	$33.72	*	$8.70	$.25	$7.70	$.50	$50.87	$.02	$.04
6	$32.30	*	$8.70	$.25	$7.70	$.50	$49.45	$.02	$.04
7	$31.24	*	$8.70	$.25	$7.70	$.50	$48.39	$.02	$.04
8	$29.35	*	$8.70	$.25	$7.70	$.50	$46.50	$.02	$.04

Local 106 Painters & Drywall Wage Rates
Effective May 4, 2015

Journeyperson Wage Rates:

Res., Comm. & Indus. Repaint	Base	Health & Welfare	Pension	Annuity	FTI/UM	FTI/NT'L	FCF	LMCI	MPWEA	STAR	DC82/FCF	Total	Vac *	Check-off Dues**
Class I	$27.86	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$44.08	$2.70	$1.74
Class II	$28.46	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$44.68	$2.70	$1.76

New Comm. & New Indus.	Base	Health & Welfare	Pension	Annuity	FTI/UM	FTI/NT'L	FCF	LMCI	MPWEA	STAR	DC82/FCF	Total	Vac *	Check-off Dues**
Class I	$29.36	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$45.58	$2.70	$1.80
Class II	$29.96	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$46.18	$2.70	$1.82

Foremen in charge of five (5) or more journeypersons shall be paid $1.00 per hour over the journeyperson rate.
Fair Contracting Foundation: $0.01 paid by employer, $0.01 paid by employee from Total Package.

Painter Apprentice

Hours	%	Base	Health & Welfare	Pension	Annuity	FTI/UM	FTI/NT'L	FCF	LMCI	MPWEA	STAR	DC82/FCF	Total	Vac *	Check-off Dues**
0-1000	50	$14.68	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$30.90	$2.70	$1.28
1001-2000	55	$16.15	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$32.37	$2.70	$1.33
2001-3000	60	$17.62	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$33.84	$2.70	$1.38
3001-4000	70	$20.55	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$36.77	$2.70	$1.49
4001-5000	80	$23.49	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$39.71	$2.70	$1.59
5001-6000	90	$26.42	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$42.64	$2.70	$1.69

Drywall Taper Appr

Hours	%	Base	Health & Welfare	Pension	Annuity	FTI/UM	FTI/NT'L	FCF	LMCI	MPWEA	STAR	DC82/FCF	Total	Vac *	Check-off Dues**
0-500	50	$14.98	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$31.20	$2.70	$1.29
501-1000	60	$17.98	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$34.20	$2.70	$1.40
1001-1500	70	$20.97	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$37.19	$2.70	$1.50
1501-2000	75	$22.47	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$38.69	$2.70	$1.55
2001-2500	80	$23.97	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$40.19	$2.70	$1.61
2501-3000	85	$25.47	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$41.69	$2.70	$1.66
3001-3500	90	$26.96	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$43.18	$2.70	$1.71
3501-4000	95	$28.46	$6.85	$5.15	$3.50	$0.37	$0.10	$0.01	$0.10	$0.03	$ 0.10	$0.01	$44.68	$2.70	$1.76

*This Vacation Contribution is included in the taxable wage listed above, then deducted and remitted along with your Health & Welfare contribution.

PLUMBERS & STEAMFITTERS LOCAL #11

4402 AIRPARK BLVD.
DULUTH, MN 55811

JEFFREY DAVEAU SR.
BUSINESS MANAGER

218-727-2199 PHONE
218-727-2298 FAX

WAGE & BENEFIT REVISION EFFECTIVE MAY 4, 2015

BUILDING TRADES JOURNEYMAN

Base Pay	**$34.79**
Savings Fund	2.00
Dues Check off	.96
Building Fund	.20
Organizing Fund	.15
UA-PEC	.05
Local PAC	.01
Death Assessment	.01
Total Taxable	**$38.17**

Fringes	
Health & welfare	**6.85**
H R Fund	**.15**
Local Pension	**6.00**
National Pension	.78
Money Purchase	3.50
Training Fund	.50
International Training Fund	.10
Industry Fund	.35
H.V.A.C	.25
Total Fringes	**$18.48**
Total package	**$56.65**

Foreman $2.50 over Base Pay
General Foreman $3.50 over Base Pay

WAGES AS OF 5-4-2015	JOURNEYMAN	95%	90%	85%	80%	75%	70%
TAXABLE		⬇	⬇	⬇	⬇	⬇	⬇
BASE PAY	$ 34.79	$ 33.05	$ 31.31	$ 29.57	$ 27.83	$ 26.09	$ 24.35
SAVINGS FUND	$ 2.00	$ 1.90	$ 1.80	$ 1.70	$ 1.60	$ 1.50	$ 1.40
UNION DUES & ASSESSMENTS	$ 1.38	$ 1.38	$ 1.38	$ 1.38	$ 1.38	$ 1.38	$ 1.38
TOTAL TAXABLE	$ 38.17	$ 36.33	$ 34.49	$ 32.65	$ 30.81	$ 28.97	$ 27.13
FRINGES							
TRAINING FUND	$ 0.50	$ 0.50	$ 0.50	$ 0.50	$ 0.50	$ 0.50	$ 0.50
H R FUND	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.15
HVAC	$ 0.25	$ 0.25	$ 0.25	$ 0.25	$ 0.25	$ 0.25	$ 0.25
UA TRAINING FUND	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10
HEALTH & WELFARE	$ 6.85	$ 6.85	$ 6.85	$ 6.85	$ 6.85	$ 6.85	$ 6.85
UA PENSION	$ 0.78	$ -	$ -	$ -	$ -	$ -	$ -
LOCAL PENSION	$ 6.00	$ 6.00	$ 6.00	$ 6.00	$ 6.00	$ 6.00	$ 6.00
MONEY PURCHASE	$ 3.50	$ 3.33	$ 3.15	$ 2.98	$ 2.80	$ 2.63	$ 2.45
INDUSTRY DEVELOPMENT	$ 0.35	$ 0.35	$ 0.35	$ 0.35	$ 0.35	$ 0.35	$ 0.35
TOTAL FRINGES	$ 18.48	$ 17.53	$ 17.35	$ 17.18	$ 17.00	$ 16.83	$ 16.65
TOTAL PACKAGE	$ 56.65	$ 53.86	$ 51.84	$ 49.83	$ 47.81	$ 45.80	$ 43.78
WAGES AS OF 5-4-2015	65%	60%	55%	50%	45%	40%	
TAXABLE	⬇	⬇	⬇	⬇	⬇	⬇	
BASE PAY	$ 22.61	$ 20.87	$ 19.13	$ 17.40	$ 15.66	$ 13.92	
SAVINGS FUND	$ 1.30	$ 1.20	$ 1.10	$ 1.00	$ 0.90	$ 0.80	
UNION DUES AND ASSESSMENTS	$ 1.38	$ 1.38	$ 1.38	$ 1.38	$ 1.38	$ 1.38	
TOTAL TAXABLE	$ 25.29	$ 23.45	$ 21.61	$ 19.78	$ 17.94	$ 16.10	
FRINGES							
TRAINING FUND	$ 0.50	$ 0.50	$ 0.50	$ 0.50	$ 0.50	$ 0.50	
HR FUND	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.15	$ 0.15	
HVAC	$ 0.25	$ 0.25	$ 0.25	$ 0.25	$ 0.25	$ 0.25	
UA TRAINING FUND	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10	$ 0.10	
HEALTH & WELFARE	$ 6.85	$ 6.85	$ 6.85	$ 6.85	$ 6.85	$ 6.85	
UA PENSION	$ -	$ -	$ -	$ -	$ -	$ -	
LOCAL PENSION	$ 6.00	$ 6.00	$ 6.00	$ 6.00	$ 6.00	$ 6.00	
MONEY PURCHASE	$ 2.28	$ -	$ -	$ -	$ -	$ -	
INDUSTRY DEVELOPMENT	$ 0.35	$ 0.35	$ 0.35	$ 0.35	$ 0.35	$ 0.35	
TOTAL FRINGES	$ 16.48	$ 14.20	$ 14.20	$ 14.20	$ 14.20	$ 14.20	
TOTAL PACKAGE	$ 41.77	$ 37.65	$ 35.81	$ 33.98	$ 32.14	$ 30.30	

WAGE BREAKDOWN FOR LOCAL UNION # 11 APPRENTICES - BEGINNING MAY 4, 2015

Wages/Benefits Roofers Local Union 96 - Duluth Area

Effective July 1, 2014
Through June 30, 2015

Classification	Basic Hourly Wage	Vac. After Taxes	Assess. After Taxes	Taxable Wage Rate	National Pension Rate	Educ Fund Rate	Annuity Fund Rate	Health/ Welfare Rate	H&W HRA Rate	Appr. Training Rate	Roofing Industry Rate	Total Cost to Employer
Journeyman	28.65	2.50	0.50	31.65	3.40	0.03	3.09	7.10	0.50	0.25	0.30	46.32
Foreman	30.40	2.50	0.50	33.40	3.65	0.03	3.09	7.10	0.50	0.25	0.30	48.32
Apprentice Percentages Based on Hours Worked for Advancement:												
45% A 0-250	14.04		0.20	14.24	0.25	0.03				0.25	0.30	15.07
45% B 251-1500	13.74		0.50	14.24	0.25	0.03		5.50		0.25	0.30	20.57
50% 1501-2500	15.33		0.50	15.83	0.25	0.03	0.25	6.50		0.25	0.30	23.41
Freeze Unless 144 Hours (Phase 1) of Related Training is Completed												
60% 2501-3000	18.49		0.50	18.99	0.50	0.03	0.50	7.10	0.50	0.25	0.30	28.17
70% 3001-3500	21.66		0.50	22.16	0.50	0.03	0.50	7.10	0.50	0.25	0.30	31.34
75% 3501-4000	23.24		0.50	23.74	0.50	0.03	0.50	7.10	0.50	0.25	0.30	32.92
80% 4001-4500	22.32	2.50	0.50	25.32	0.75	0.03	0.75	7.10	0.50	0.25	0.30	35.00
Freeze Unless 288 Hours (Phase 2) of Related Training is Completed												
85% 4501-5000	23.90	2.50	0.50	26.90	0.75	0.03	0.75	7.10	0.50	0.25	0.30	36.58
90% 5001-5500	25.49	2.50	0.50	28.49	1.00	0.03	0.75	7.10	0.50	0.25	0.30	38.42
95% 5501-6000	27.07	2.50	0.50	30.07	1.00	0.03	0.75	7.10	0.50	0.25	0.30	40.00

Advancement to Journeyman if All Related Training (Phase 3) is Completed and **6000** Hours Worked

Due: July 1, 2015: $0.80

Expiration date: June 30, 2016

DULUTH
COMMERCIAL & INDUSTRIAL
SHEET METAL WAGE RATES

EFFECTIVE MAY 4, 2015 - April 30, 2016

SOUTHERN ST. LOUIS, AITKIN, CARLTON, LAKE, COOK, AND DOUGLAS COUNTIES

			TAXABLE BASE*	SASMI	Health Fund	NATL PENSION	SUPP. PENSION	LOCAL 10 PENSION	FCF & LOCAL T.F.	SMOHI NEMI & ITI	LOCAL I.F. & DRUG TESTING	TOTAL PACKAGE
Journeyman			$31.56	$1.61	$9.02	$10.45	$2.15	$0.45	$0.64	$0.17	$0.23	$56.28
Foreman			33.56	1.61	9.02	10.45	2.15	0.45	0.64	0.17	0.23	58.28
General Foreman			35.56	1.61	9.02	10.45	2.15	0.45	0.64	0.17	0.23	60.28
Apprentice	HOURS											
	0-1000	55	17.36	1.01	9.02	5.75	1.18	0.25	0.64	0.17	0.23	35.61
	1001-2000	59	18.62	1.06	9.02	6.17	1.27	0.27	0.64	0.17	0.23	37.45
	2001-3000	63	19.88	1.11	9.02	6.58	1.35	0.28	0.64	0.17	0.23	39.26
	3001-4000	68	21.46	1.18	9.02	7.11	1.46	0.31	0.64	0.17	0.23	41.58
	4001-5000	72	22.72	1.23	9.02	7.52	1.55	0.32	0.64	0.17	0.23	43.40
	5001-6000	76	23.99	1.29	9.02	7.94	1.63	0.34	0.64	0.17	0.23	45.25
	6001-7000	80	25.25	1.34	9.02	8.36	1.72	0.36	0.64	0.17	0.23	47.09
	7001-8000	84	26.51	1.40	9.02	8.78	1.81	0.38	0.64	0.17	0.23	48.94
Classified worker												
	0-500	45	14.20	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00	14.84
Plan B Single	501-on	45	14.20	0.00	2.69	2.45	0.00	0.00	0.64	0.00	0.00	19.98
Plan B Family	501-on	45	10.35	0.00	6.54	2.45	0.00	0.00	0.64	0.00	0.00	19.98

*The Taxable Base Pay rate includes $2.58 Vacation and Organizing deduction for journeymen and $1.58 for apprentices. The Vacation Fund deduction is $2.00 per hour for journeymen ($1.00 per hour for apprentices) and $.58 per hour for Organizing for both Journeymen and apprentices. For classified workers, the Vacation Fund deduction is $.55 per hour and there is a $.23 deduction for Organizing for a total deduction of $.78.

SASMI NOTE: The SASMI rate for Foreman and General Foreman are the same as the rate for Journeymen and there is no longer a different SASMI rate for overtime hours on any classification. All SASMI hours are paid at the straight time rate.

The current IRS mileage rate is $.575

April 17, 2015

Contract expires May 1, 2016

Shawn Broadrick
Business Manager

Brian W. Dunn
Financial Secretary-Treasurer

James E. Tucker
President-Organizer

SPRINKLER FITTERS

Minnesota Breakdown of Wage and Benefit Package

Wage Rate	4/1/13	7/1/13	4/1/14	4/1/15
	$31.88	$32.52	$33.17	$33.83

Foreman's Rate: $2.75 above journeyman scale
General Foreman: $5.00 above journeyman scale (22+ men on job)
Local Union 669 has a 5% dues check-off; 2 1/2% for Apprentices Class 1-4

Extended Benefit Fund: $.25 per hour for all hours worked payable to Local Union 669
Industry Advancement-State of Minnesota
Class 5 and higher $.25 per hour for all hours worked payable to Local Union 669

Benefit Package

Health & Welfare 4/1/13	$8.42 per hour for all hours worked
Health & Welfare 1/1/14	$8.52 per hour for all hours worked
Health & Welfare 1/1/15	<To be determined>
Health & Welfare 1/1/16	<To be determined>
Pension 4/1/13	$5.50 per hour for all hours worked
Pension 1/1/14	$5.75 per hour for all hours worked
Pension 1/1/15	$5.90 per hour for all hours worked
Pension 1/1/16	$6.05 per hour for all hours worked
Education 4/1/13	$ .35 per hour for all hours worked
International Training Fund 4/1/13	$ .10 per hour for all hours worked
Industry Promotion 4/1/13	$ .25 per hour for all hours worked
Supplemental Pension 4/1/13	$2.50 per hour for all hours worked

Travel Expenses	4/1/13	4/1/14	4/1/15
0-60 miles	No expenses	No expenses	No expenses
60-80 miles	$15.00	$16.50	$17.50
80-100 miles	$25.00	$26.50	$27.50
100+ miles	$75.00	$80.00	$80.00

If you should have any additional questions, please feel free to contact Business Agent James Westby at (507) 493-5671 or this office.

Created June 2013

Road Sprinkler Fitters Local Union No. 669
7050 Oakland Mills Road • Suite 200 • Columbia, Maryland 21046
(410) 381-4300 • fax: (301) 621-8045 • www.sprinklerfitters669.org

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SPECIAL PROVISIONS
City Job Number: 1531
2016 Citywide Patch & Sidewalk
April 29, 2016

The following forms and regulations/rules/statutes and interpretations, which are incorporated by reference in this contract, are available on the World Wide Web at the sites listed below. The City of Duluth will use its best efforts to ensure that the most recent, applicable forms and regulations/rules/statutes and interpretations are included on the web sites provided; however, if you are the successful bidder, prior to signing the contract, you are responsible for comparing the versions of the forms and regulations/rules/statutes and interpretations attached to the contract which you are signing with the versions on the web to ensure conformity. Hard copies of all forms are available at the Engineering Division.

THE VERSIONS OF THE FORMS AND REGULATIONS/RULES/STATUTES and INTERPRETATION ATTACHED TO THE CONTRACT WILL BE CONTROLLING.

FORM	FUND	WEB SITE
Affidavit of Non-Collusion (required by awarded contractor only)	All	http://www.duluthmn.gov/engineering/standard-construction-specifications/construction-documents/
Affirmative Action Policy Statement/Certificate - EEO (required by awarded contractor only)	All	http://www.duluthmn.gov/engineering/standard-construction-specifications/construction-documents/
Certified Payroll Form WH347	All	http://www.dol.gov/whd/forms/
Contractor's Haul Route	All	http://www.duluthmn.gov/engineering/standard-construction-specifications/construction-documents/
Debarment/Suspension Notice (most current version)	All	http://www.dot.state.mn.us/bidlet/howtobid.html
IC-134 Contractor Affidavit - Form	All	http://www.revenue.state.mn.us/Forms_and_Instructions/ic134.pdf
IC-134 Contractor Affidavit – Online	All	https://www.mndor.state.mn.us/tp/contractoraffidavit/
MN Rules 5200.1105	All	https://www.revisor.mn.gov/rules/?id=5200.1105
MN Rules 5200. 1106	All	https://www.revisor.mn.gov/rules/?id=5200.1106
MN Statutes 177.41 to 177.44	All	https://www.revisor.mn.gov/statutes/?id=177
Notice to Bidders - Prompt Payment to Subs – CITY (MS 471.425)	All	http://www.duluthmn.gov/engineering/standard-construction-specifications/construction-documents/
One-Call Instructions	All	http://www.duluthmn.gov/engineering/standard-construction-specifications/construction-documents/
Request to Sublet TP-21834	All	http://www.dot.state.mn.us/const/labor/forms.html
Request to Sublet Summary	All	http://www.dot.state.mn.us/const/labor/forms.html
Responsible Contractor Certification (MS 16C.285)	All	http://www.duluthmn.gov/engineering/standard-construction-specifications/construction-documents/
Statement of Compliance Form (8-2013)	All	http://www.dot.state.mn.us/const/labor/forms.html
Supplemental General Conditions Part II 4/15/11	All	http://www.duluthmn.gov/engineering/standard-construction-specifications/construction-documents/

SPECIAL PROVISIONS
City Job Number: 1531
2016 Citywide Patch & Sidewalk
April 29, 2016

SP-1 NOTICE TO ALL BIDDERS

The 2016 Edition of the City of Duluth Public Works & Utilities Department/Engineering Division "Construction Standards" book and any addendums or supplements is incorporated by reference and is deemed to be a part hereof as if fully incorporated and set forth herein. The 'Construction Standards' is available on the City website at: http://www.duluthmn.gov/engineering/standard-construction-specifications/.

SP-2 SCOPE OF WORK

Bituminous and concrete Pavement restoration and/or replacement needed due to prior city utility repairs. Work also includes sidewalk replacement for individual owners at various locations throughout the city. Mobilization, and Erosion Control will be considered incidental to the bid items.

As of bidding, the city has 12 known utility repair sites and estimates an additional 10 sidewalk or repair sites to be added depending on the quantity of utility repairs that are yet to occur this Spring and Summer. The approximate location and size of the known sites are attached to the bid documents for the contractor's information.

Pavement marking will be performed by the city.

SP-3 (1710) TRAFFIC CONTROL

Traffic Control required for the pavement restoration at the 46th Ave. West, Woodcrest, College Street and the Mt. Royal sites will be measured on a per each basis, and paid under the bid items "Traffic Control-46th Ave. West", "Traffic Control-Woodcrest", "Traffic Control-College Street", or "Traffic Control-Mt. Royal" based on the sites included in Attachment B regardless of the layout required as indicated in the latest edition of MnDOT's "Temporary Traffic control Zone Layouts Field Manual".

Traffic control required to perform the utility patch or sidewalk work at the other locations will be considered incidental to the bid items for that work.

SP-4 CONTACT INFORMATION

Questions regarding this project should be directed to: Cindy Voigt, City Engineer at 730-5071 or Paul Wictor, Senior Engineering Technician at 730-5085

SP-5 (1806) DETERMINATION AND EXTENSION OF CONTRACT TIME

The Contract Time will be determined in accordance with the provisions of MN/DOT 1806 and the following:

1. Construction operations shall be started on or before May 31,2016 or within ten (10) calendar days after the date of **Notice to Proceed**, whichever is later.

2. Substantial Completion. All work under this Contract shall be substantially complete on or before October 15, 2016. For this project, Substantial Completion shall be deemed to include ALL work in the Contract, except the following items: Bituminous Patch.

3. Final Completion. ALL work required under this Contract shall be complete on or before November 11, 2016.

4. The third exemption listed under the second paragraph of the provisions of MN/DOT 1806.3 is modified to the extent that the phrase "(3) During the inclusive period from November 15 through April 15, except as specified in 1806.1..." is deleted.

5. No work which will restrict or interfere with traffic shall be performed between 12:00 noon on the day preceding and 6:30 a.m. on the day following any consecutive combination of a Saturday, Sunday, and legal holiday without written permission from the Engineer.

   (A) If the Contractor chooses not to work at all on the day preceding the holiday period, no working day charges will be assessed.

   (B) If the Contractor chooses to work prior to 12:00 noon on the day preceding the holiday period or if the Contractor obtains written permission to work after 12:00 noon on the day preceding the holiday period, working day charges will be assessed only for the actual hours worked.

6. When all, or a portion, of the Contract Time is specified as a calendar completion date, the time is presumed to have been determined by considering the Proposal quantities, normal weather for the locality and season of the year, and the necessity of having the work completed by the specified date. The time may be extended by the Engineer only if the delay is considered "Excusable" in accordance with MN/DOT 1806.2 Types of Delays.

SP-6 (1807) FAILURE TO COMPLETE WORK ON TIME

The provisions of MN/DOT 1807 shall apply in full to both the Substantial Completion Date and the Final Completion Date.

SP-7 (2211) AGGREGATE BASE – QUALITY COMPACTION

Utility trenches have been backfilled to the top of subgrade with aggregate base by the city. Prior to placement of bituminous by the contractor, the contractor shall compact the area to be paved by hand tamping methods where conventional rollers are not feasible, in accordance with MN/DOT 2105.3F2, Quality Compaction Method.

SP-8 (2301/2521/2531) CONCRETE PLACEMENT RESTRICTION (EXPOSURE TO SALT)

In addition to the pertinent provisions of MN/DOT and the City of Duluth Construction Standards, the following restriction applies to all concrete "flatwork" (i.e. curb, curb and gutter, sidewalk, driveways, pavement) that is typically exposed to road salt and/or deicing chemicals:

The Contractor shall not place concrete flatwork **after October 15th** without the written approval of the City's Chief Engineer of Transportation.

SP-8.1 The provisions of MN/DOT 2301.3L3b Quality Assurance Cores (QAC) will not apply if the Contractor and Project Engineer verify and agree that the forms and grade as constructed will result in a finished product with the thickness specified on the plan prior to placing concrete. If the Contractor fails to verify the thickness with the Project Engineer prior to performing the work, the Contractor shall be responsible for complying with all the Thickness Requirements as indicated in MN/DOT 2301.3L.

SP-8.2 (2301) MINOR CONCRETE STRUCTURES

This item will be used for the construction of steps, retaining walls and other miscellaneous concrete structures. The concrete shall be 3F52 and payment shall include all concrete, all excavation and removals, and all reinforcement steel, and forming and finishing necessary for completed unit in place. Payment for steps shall be computed based on a cubic yard basis.

SP-8.3 Prior to opening areas to traffic, the contractor shall sweep the road with a power pick-up broom if requested by the Engineer. Use water to control dust at the discretion of the Engineer.

SP-9 (2302) DRILL AND GROUT REINFORCEMENT BAR (EPOXY COATED)

This work shall consist of drilling, grouting, and inserting No. 4 epoxy coated reinforcement bars (for longitudinal joints) or 1" dowel bars (for transverse joints) in accordance with the provisions of MnDOT 2302 and the following:

Drill holes with an approved drill assembly into the face of the concrete slab for reinforcement bars or dowel bars. Space the holes as shown in the appropriate standard details attached to the specifications.

Clean and dry the drilled holes and place an approved non shrink grout or epoxy bonding agent into the drilled holes in a manner that will completely fill the void, then furnish and install the dowel or reinforcement bars into the holes.

Furnish and install 30 inch No. 4 epoxy coated reinforcement bars in the longitudinal direction in conformance with Specification 3301 and details. Furnish and install 1" dowel bars at transverse joints as directed by the Engineer or as indicated on the plans in conformance with Specification 3302.

When placing concrete adjacent to in-place concrete pavement joints, protect all ends of transverse joints to the satisfaction of the Engineer to prevent concrete mortar from infiltrating into the existing joints and causing compression spalls.

Do not remove any preformed joint filler used in the re-establishment of joints in repairs, except by sawing or as allowed by the Engineer.

Measurement will be made by the number of epoxy coated reinforcement bars or dowel bars that are furnished, installed, and grouted in place as specified. Payment will be made under Item 2302.602 (Drill and Grout Reinforcement Bars No.4 (Epoxy Coated) or Dowel Bar 1") at the Contract bid price per each, which shall be payment in full for all costs incidental thereto.

SP-10 (2302) PAVEMENT REPLACEMENT (TYPE CX or C1-LV)

Saw cut the concrete pavement full depth as indicated on the plans prior to removal. Removal of the concrete pavement must take place within 48 hours of the full depth saw cutting, unless otherwise allowed by the Engineer.

Repair or replace any damage to the adjacent pavement that occurs during the removal process to the satisfaction of the Engineer and at no cost to the City.

Place concrete mix 3RHE52 in accordance with MnDOT standard sheets "Pavement Replacement Type (CX)" or "Spot Full Depth Repair Type (C1-LV)" attached.

Provide a finished surface tolerance that does not vary by more than 1/8 inch from the existing pavement surface as measured with a straight edge placed over the joint. Replace or grind the repair as necessary to correct deficiencies.

Provide a finished surface tolerance that does not vary by more than 1/8 inch in any direction as measured with a 10 foot straight edge. Replace or grind the repair as necessary to correct deficiencies.

Restore contraction joints by green sawing to the depth in accordance with MnDOT standard sheets attached.

Saw and seal joints and curb in accordance with MnDOT standard sheets attached.

SP-11 (2401) SAWING CONCRETE & BRICK SIDEWALK

This work shall consist of sawing concrete and brick sidewalk in accordance with the applicable specifications of MN/DOT 2104 and the following:

The sawcut shall be to the full depth of the concrete and brick. Any bricks damaged by the saw overcut shall be replaced with salvaged brick. The replacement of brick shall be incidental to the sawing of the concrete and brick sidewalk.

The outside of the new sawcut shall be used as the edge of the concrete pedestrian curb ramp.

SP-12 (2360) ASPHALTIC CONCRETE PAVEMENT

The provisions of MN/DOT 2360 and section 2360 of the City's Construction Standard shall apply in full as supplemented and modified by the provisions in Appendix A.

SP-13 (2360) BITUMINOUS PATCH 3.5"

This work shall consist of performing bituminous pavement removal and replacement at various locations city wide. Work shall include saw cutting the pavement full depth, removal of the pavement within 48 hours of saw cutting, removal of existing aggregate base if the subgrade is unsuitable as directed by the Engineer, and placement of 2" bituminous base, bituminous tack coat, and 1.5" bituminous wear course. The Engineer will work with the Contractor to determine the extent of the repair area prior to saw cutting, which typically is one foot wider on all sides than existing conditions, and be squared off with existing curb and joint lines. Contractor shall only remove pavement from the patch areas that he can complete and restore with bituminous pavement the same working day.

Measurement will be made by area in square yards. If the Engineer directs the contractor to remove unsuitable subgrade material and replace and compact additional Class 5, the Class 5 will be paid for separately under item 2211.501 Aggregate Base Class 5. Excavation and removal of unsuitable soils will be considered incidental to the Aggregate Base Class 5 bid item.

Payment will be made under item 2360.603, Bituminous Patch 3.5", at the Contract bid price per each square yard, for 3.5" of bituminous wear course placed in two separate lifts which shall be compensation in full for all costs incidental thereto, including but not limited to: mobilization, traffic control, saw cutting, pavement removal, bituminous placement and tack coat.

SP-14 (2565) ADJUST HANDHOLE FRAME AND COVER

This work consists of adjusting of existing hand hole frames and covers to match the new concrete walk which has been modified with the installation of a new pedestrian curb ramp. This work shall be in accordance with the applicable MN/DOT Standard Specifications, as detailed in the plans, and the following:

This work shall consist of:

1) Removing the frame and cover;
2) Remove concrete from walls of hand hole so that the frame and cover will stand clear of the hand hole and be flush with the modified concrete walk;
3) Replace the frame and cover, making sure it is supported by at least 2 inches above the hand hole concrete by material that can be removed after the sidewalk concrete is set.

Measurement will be made by each hand hole adjusted under Item 2565.602, Adjust Hand hole Frame and Cover, as specified.

- END -

APPENDIX A

MN/DOT State Aid Tech Memo No.16-SA-01 Specification2360-Plant Mixed Asphalt Pavement- Design Guidelines

MINNESOTA DEPARTMENT OF TRANSPORTATION
State Aid Division
Technical Memorandum No. 16-SA-01
January 8, 2016

To: County Engineers (Distribution 618)
City Engineers (Distribution 650)
MnDOT District State Aid Engineers
MnDOT District Materials Engineers
SALT Consultant list

From: Mitch Rasmussen, P.E.
Assistant Commissioner, State Aid

Subject: **Specification 2360 - Plant Mixed Asphalt Pavement - Design Guidelines**

Expiration
This Technical Memorandum supersedes Technical Memorandum No. 10-SA-02 and will expire on July 1, 2025 unless superseded prior to this date.

Implementation
The guidelines contained in this Technical Memorandum are effective immediately for all Federal Aid and State Aid projects that contain specification 2360 - Plant Mixed Asphalt Pavement.

Modification(s) to specification 2360 - Plant Mixed Asphalt Pavement shall be requested by the local agency in a letter to the District State Aid Engineer. The request for modification letter shall include justification for the specification deviation(s). The request for modification to the specification shall include at a minimum an explanation of the situation, why the modification is necessary and how this modification will provide a better product. A copy of the request for modification letter shall be retained in the respective local agency project file.

Introduction
Over the past decade, MnDOT and local agencies have been specifying gyratory mix design for their asphalt pavements. Technical Memorandum No. 04-SA-01 "Bituminous Specification Implementation" was a beginning directive toward moving Federal Aid and State Aid projects to gyratory mix design and Technical Memorandum 10-SA-02 "Specification 2360 - Plant Mixed Asphalt Pavement - Design Guidelines" provided guidance and information to designers to follow established best design practices, for selection of appropriate bituminous mixture and asphalt binder grade(s), and reduce bituminous specification ambiguities for contractors bidding State Aid and Federal Aid projects.

Plan reviews for construction projects show that gyratory designed mixes are being specified. However, there has been a recent change in the PG Binder specification with the switch to AASHTO M 332 – *Standard Specification for Performance-Graded Asphalt Binder Using MSCR (Multiple Stress Creep Recovery)*. Therefore, additional guidance is warranted to ensure that the correct PG (performance graded) binder(s) are specified.

Purpose
The main two purposes of this Technical Memorandum are to: First, provide guidance in following established best design practices to ensure that public funds are spent as efficiently as possible. Second, to provide designers with the most current information regarding the appropriate choice of bituminous mixture(s) and asphalt binder grade(s) when specify them on projects.

Guidelines

To further standardize bituminous pavement specifications, all State Aid (including Federal Aid) projects should follow the most current criteria for asphalt pavement mix design and PG binder selection. At the present time, the most current documents are: "Design Criteria 2360" dated April 4, 2014 and "MnDOT PG Binder Guidelines" dated November 12, 2015. Both of these publications can be found at the MnDOT Bituminous Engineering webpage under Design and on the State Aid Pavement webpage under Pavement Design.

Typically each year in January, the MnDOT Bituminous Unit prepares a memo which contains recent specification changes and reminders. Please see the current bituminous specification updates on the State Aid Construction webpage for this information and for the most current 2360 - Plant Mixed Asphalt Pavement specification before starting your bituminous pavement design.

Following is a list of items that designers should watch closely to ensure these items are correct in the plan.

1. Superpave (gyratory design) considers the top four inches (top three inches for local agencies with traffic levels <3 million ESAL's) to be wear. Bituminous mixture placed below the top 4 inches or (top 3 inches for local agencies with traffic levels <3 million ESAL's) is considered nonwear.

2. A PG 58(H, V, E) -34°C should be specified in the top four inches (top three inches for local agencies with traffic levels <3 million ESAL's) for new construction, reclaiming and cold in-place recycling projects. Pavement management data shows thermal cracking may be reduced up to 90% when a PG 58(H, V, E) -34°C is used in the top four inches of the pavement structure. Reduced thermal cracking should lead to longer pavement life.

3. A PG 58S -28°C should be specified in bituminous mix placed as an overlay on existing asphalt pavements. The typical moderate to high degree of thermal cracking associated with older pavements makes the use of more expensive 58x -34°C binders less beneficial.

4. Do not specify a PG 58(H, V, E) -34°C below four inches (top three for local agencies with <3 million ESAL's) in the pavement structure unless, because of small quantities, it makes economic sense to specify the same binder grade for the entire pavement structure. Typically, specify a PG 58S -28°C below four inches (top three inches for local agencies with traffic levels <3 million ESAL's) in the pavement structure. Research at MnROAD has shown that the pavement typically does not reach temperatures below -28° Celsius at these depths. The use of a more expensive asphalt binder below these depths is usually not warranted.

5. Be careful when specifying the aggregate size (A, B, C, D). Aggregate sizes **A** and **B** are specified most often. Aggregate size **A** is ½ inch minus and aggregate size **B** is ¾ inch minus. There has been a shift recently to aggregate size **A** as the aggregate specified most often in the wearing course mixtures. Although aggregate size **B** will accommodate RAP more readily than aggregate size **A**, splitting of RAP into two sizes appears to diminish this. See specification 2360.1 **A3** Mixture Designations for further clarification.

6. Be careful when specifying air voids in the mixture. A nonwear mixture will always have 3.0 percent air voids. Mainline wear mixtures have 4.0 percent air voids and shoulder wear mixes will have 3.0 percent air voids. The Engineer should consider modifying mainline wear traffic level 2 mixtures to 3.0 percent air voids for low-volume local agency pavements having <0.3 million ESAL's. Use 4.o percent air voids on higher volume facilities.

7. Use the maximum density specification for bituminous compaction on the mainline of County State Aid Highways. Achieving the required density is essential to constructing longer lasting

pavements. It is highly recommended to not write out the ride specification as ride should not be sacrificed for density. Well compacted roads with good ride quality are desirable. Ordinary compaction should be limited to layers identified in the typical sections with a minimum planned thickness of less than 1½ inches, thin lift leveling, wedging layers, patching layers, driveways and areas that cannot be compacted with standard highway construction equipment. See specification 2360.6C Ordinary Compaction Method for further information.

8. Bikeway trail mixture designation should be SPWEB230B. See the Bicycle Path Design State Aid web page for additional guidance.

   http://www.dot.state.mn.us/stateaid/bicycle.html

9. Recycled asphalt pavement (RAP) has been successfully used for many years in MnDOT and local agency bituminous mixtures. The use of RAP is encouraged in both non-wear and wear courses.

10. Warm mix asphalt use is permissible on State Aid projects (including Federal Aid) provided that the requirements of the 2360 specification are met. There may be economical and environmental incentives to use this type of bituminous mix.

Rules of Thumb

- Minimize the number of mixtures and PG grades on any one project. Typically, it is not economical to specify another bituminous mixture for quantities less than 2000 tons.

- The top four inches (three inches for local agencies with traffic levels <3 million ESAL's) of bituminous mixture should have the same PG grade. Typically in the top four inches, (three inches for local agencies with traffic levels <3 million ESAL's) specify PG 58(H, V, E) -34°C for new construction, reclaiming, and cold in-place recycling. In the case where small quantities are involved, it may make economic sense to specify the same binder grade for the entire pavement structure.

- Bituminous mixture placed as an overlay or below four inches from the surface (three inches for local agencies with traffic levels <3 million ESAL's) should be the same PG grade. Typically, specify PG 58S -28°C. This is because the common high crack frequency associated with older pavements does not make the more expensive binders economical.

Questions

For special or unique design considerations, please contact your District State Aid Engineer for guidance.

For information on the technical contents of this memorandum, please contact John Garrity, MnDOT Bituminous Engineer at (651)366-5577 or Joel Ulring, State Aid Pavement Engineer at (651)366-3831.

Links

A link to all active and historical State Aid for Local Transportation Technical Memoranda can be found at:

State Aid Tech Memos: http://www.dot.state.mn.us/stateaid/tech-memos.html

A link to the current bituminous design publications can be found at:

MnDOT: http://www.dot.state.mn.us/materials/bituminousdesignpage.html

State Aid: http://www.dot.state.mn.us/stateaid/pavement.html

November 12, 2015

MnDOT PG Binder Guidelines-MSCR

The new PG designations are different from the previous asphalt binder specification. Following AASHTO M332 (MSCR) the New PG grading designations for Minnesota will all be PG58, followed by traffic loading designation and minimum pavement design temperature. For example: PG58S-XX, PG58H-XX, PG58V-XX, and PG58E-XX.

S, H, V or E grade designations must be specified for standard, high, very high or extremely high traffic loading, respectively.

Type of Construction	Recommended Asphalt Binder for < 3 Million ESALs (20 yr)	Recommended Asphalt Binder for 3 - 10 Million ESALs (20 yr)	Recommended Asphalt Binder for > 10 Million ESALs (20 yr)
Overlay Wearing Mixture (Top 4")[3]	PG 58S-28	PG 58S-28[1]	PG 58H-28[1]
New Construction[2] Wearing Mixture (Top 4")[3]	PG 58H-34	PG 58H-34[1]	PG 58V-34[1]
All Non-Wear Mixture **(Below 4" from Surface)**	PG 58S-28		

Recommended Binder Grade for Shoulders:		
With Traffic	**With No Traffic**	**Next to Concrete Mainline and Concrete Curb and Gutter**
Generally, use the same binder grade as the mainline, but, not to exceed PG 58H-xx.	PG 58S-28 or PG 52S-34 (match the mainline low PG number)	PG 58S-28 or PG 58H-28

NOTES: When varying from these guidelines or for further clarification, consult the MnDOT Bituminous Office.

1. Selecting a higher PG grade and/or mixture type (traffic level), for higher ESALs within the category, will provide better resistance to rutting. Contact the Bituminous Engineer for guidance.
2. New construction includes: reconstruction, rubblization, CIR, reclaiming (FDR)
3. For Non-Trunk Highway with traffic levels <3 million ESAL, consider modifying the "top 4" criteria to top 3".
4. With concurrence of the Bituminous Office the designer may allow, by Special Provision, the Contractor's option to use PG 64S-22 on overlay construction when both of the following conditions are met:
    a. Overlay thickness 3" or less and,
    b. Average inplace crack/joint spacing 30ft. or less

The Special Provision shall limit the allowable RAP usage to 15% for mixtures specifying PG 64S-22.

Rules of Thumb

- Minimize the number of PG grades on any one project.
- The top 4" should be the same PG grade. Typically, specify PG xxx-34 for new construction. Typically, specify PG xxx-28 for overlay construction.
- Below 4" from the surface should be the same PG grade, typically, specify PG 58**S**-28.

Considerations

- For non-trunk highway with traffic levels < 3 million ESAL, consider modifying the top 4" criteria described under "Rules of Thumb" to top 3" criteria.
- For temporary construction (2 years or less) consider using PG 64S-22 when PG 58**H**-28 or PG 58**V**-34 is otherwise recommended.
- For special or unique design considerations contact the Bituminous Office.

Asphalt Binder Grade Designation

The PG Binder Grade letters should be used in all bituminous mixture designations, regardless of the specification number. These letters and PG Grade are listed below:

Binder Grades and Allowable Subtitutions

A = PG 52S-34
B = PG 58**S**-28 allowed as substitute for PG 58-28
C = PG 58H-34 allowed as substitute for PG 58-34 & PG 58-34(PMB)
E = PG 58H-28 allowed as substitute for PG 64-28 & PG 64-28(PMB)
F = PG 58V-34 allowed as substitute for PG 64-34 & PG 64-34(PMB)
H = PG 58V-28 allowed as substitute for PG 70-28 & PG 70-28(PMB)
I = PG 58E-34 allowed as substitute for PG 70-34
L = PG 64S-22
M = PG 49S-34

ATTACHMENT A

MNDOT

CPR DETAILS REVISED AUG-26-2015

Minnesota Department of Transportation
Office of Materials & Road Research
1400 Gervais Avenue, MS 645
Maplewood, MN 55109

Memo

TO: Design Engineers
Maintenance Engineers
Materials Engineers
Resident Engineers
State Aid Engineers
Concrete Paving Association of Minnesota

FROM: Maria A. Masten, Concrete Engineer

DATE: March 29, 2016 **(CPR Details Revised AUG-26-2015)**

SUBJECT: Concrete Pavement Rehabilitation (CPR) Standards and Special Provisions

REVISIONS OF NOTE:

1. **All CPR repair details that require reinforcing steel contain revisions to the rebar sizing from metric [mm] back to standard 1/8th inch bar sizing.**

   For example, a metric size No.13 bar [13mm] is now a No.4 bar (1/2 inch). CPR details with rebar sizing (metric to standard) revisions include Type BE, Type CD-HV, Type CX, Type CD-LV, Type C1-LV, Type C2-LV, and Type CA-LV. In addition, the "How to Repair Details" also contains metric to standard rebars sizing revisions. These details include, Catch Basin Repair, Curb and Gutter Repair, and Sidewalk / Median Walk Repair.

2. **Changed the basis of payment on the Type A1 repair detail to *"Incidental."***

   Within the limits of Types B (partial depth repairs) and Type C (full depth repairs), the Contractor is required to reestablish and seal all cracks and joints, in accordance with the Type A1 repair detail. For reference, always include the Type A1 repair detail with the basis of payment stated as "Incidental" in the plan set. Unless the project is sealing the in place joints outside Type B&C repairs limits. If so, include the Type A1 repair detail with the basis of payment stated as "Lineal Foot."

   In other words, the project would measure for payment, cracks and joints outside the limits of the Type B & C repairs that receive either a Type A1 repair (saw and seal) or Type A2 repair (clean and seal). Performing Type A1 repair on cracks and joint within the limits of Type B & C repairs would remain incidental.

Contact the Concrete Engineering Unit for further clarification as to the intended use of Type A1 (Incidental vs. Lineal Foot) and the Type A2 (Lineal Foot) repairs.

3. **Type CD-HV repair detail increased the drill and grout dowel bar diameters from 1-inch dowel bars and increased the diameter to 1.25-inch dowel bars.**

4. **Type CD-HV repair detail now has a note clarifying the number of drill and grout dowel bars required. The note states "Add an additional dowel bar per side for each 1 foot increase in lane width/pay quantity."**

5. **Both Type CD-HV and CD-LV repair detail and 2302 special provisions requires the drill bit diameter be minimum of 1/8th inch greater in diameter than the diameter of the specified dowel bar.**

   Most (if not all) manufactures of non-shrink grout or epoxy adhesive used to anchor dowel bars/reinforcing steel to the in place concrete pavement require an 1/8th to 1/4th inch oversized drilled hole and filling the back hole ½ to ¾ full of either non-shrink grout or epoxy adhesive.

   The 1/8th to 1/4th inch drill hole oversizing allows the non-shrink grout or epoxy adhesive injected in the drill hole to push out the air around the bar and less likely to create a piston effect by trapping compressed air at the back of the drill hole.

   Another effect of not drilling sufficient size holes is, the Contractors dowel bar installer begins to "dip and stick" the dowels bars. This is likely due to the inadequate space between the dowel bar and the drill hole walls, making it very hard if not impossible to force the grout or epoxy adhesive from the back of the hole out and around the dowel bar when the bar is installed into the drill hole.

6. **Both the Type CD-HV and Type CD-LV repair details have added a note clarifying the required length of the transverse epoxy coated No. 4 rebar. The note states "No.4 epoxy coated rebar length is equal to the width of the repair, minus 2 feet."**

7. **One-inch dowel bars used in the Type CX repair and supplied in dowel bar assemblies (Standard Plate 1103) now have a CPR pay item, 2302 Dowel Bars (each). If a project has both concrete paving (2301) and CPR (2302) work, the designer should separately tabulate the paving dowel bars (2301) and the CPR (1.0") dowel bars (2302) used in Type CX repairs. NOTE: The CD-HV drill & grout dowels increased 1.25" but the dowels supplied in dowel bar assemblies (Standard Plate 1103) remain 1.0" dowel bars.**

8. **For continuity purposes, all CPR repair details are now dated AUG-26-2015.**

CONTRACTOR MIX DESIGN REQUIREMENTS:

Starting in the fall of 2015, projects administered under the 2016 edition of MnDOT's Standard Specification for Construction requires the Contractor to design most concrete mixtures, in accordance with specification 2461. With this new requirement, all CPR concrete batched from a ready mix plant will have revised concrete grade designations. In other words, all Type C repairs that required concrete grades 3A32/3A32HE will now have concrete grades 3R52/3RHE52. In addition, the "How to Repair Details" requires a Contractor designed concrete grade 3F52 (was grade 3A32 concrete).

Partial depth Type B repairs traditionally utilized MnDOT designed concrete grade 3U18. Type B repairs will remain unchanged and require MnDOT designed concrete grade 3U18. The individual material weights (mix design) for bagged 3U18 are stated in MnDOT Standard Specifications 3105. The contractor can also batch and mix 3U18 on site utilizing a mobile mixer. Batch weights for the mobile mixer are stated in 2302 CPR Special Provision.

DESIGNER NOTES:

1. **Determination of whether to seal joints and cracks on repair projects.**

   If a roadways speed limit is **50 mph or greater**, the Concrete Engineering Unit recommends **not** resealing joints and cracks outside the limits of the **Type B & C** repairs.

2. **Use of HV vs. LV Designations:**

   (a) Details that contain the HV (High Volume) designation are for state projects on Interstate highways or Trunk highways.
   (b) Details that contain LV (Low Volume) designation are for State Aid Projects and Local Aid Projects Only. However, State/Local Aid projects can also utilize repair details designated as HV.
   (c) Contact the Concrete Engineering Unit if you have questions about the HV vs. LV designation and the proper application of the CD-LV versus CD-HV Full Depth repairs.
   (d) Repairs that do not contain the LV or HV extensions are suited for all projects.

CONCRETE REHABILITATION STANDARDS LOCATION:

The Concrete Rehabilitation Standards are in a Microstation V8 (*.dgn) file and are available for downloading as boilerplates on the Concrete Office website at: http://www.dot.state.mn.us/materials/concretepavement.html.

There is also an Adobe Acrobat (*.pdf) file of the Concrete Rehabilitation Standards available on the website for viewing and printing purposes. There is not currently a Metric version of the Concrete Pavement Rehabilitation Standards.

SPECIAL PROVISIONS LOCATION:

To obtain the Special Provisions for CPR (which include method of measurement and basis of payment), dowel bar retrofit, or concrete grinding, you will need to go to the MnDOT Special Provisions Website and download from the SP2016 file.

http://www.dot.state.mn.us/pre-letting/prov/index.html

- SP2016-122 ~ (2302) Concrete Pavement Rehabilitation (CPR)
- SP2016-123 ~ (2302) Concrete Grinding (**with Ride Incentives**)
- SP2016-124 ~ (2302) Concrete Grinding (**without Ride Incentives**)
- SP2016-39 ~ (1717) Air, Land and Water Pollution (Concrete Grinding)***

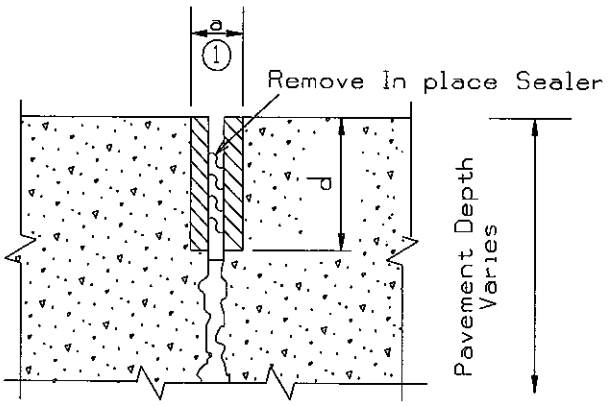
***Always include Provision (1717) on projects using either SP2016-123 or SP2016-124**

If you have any questions regarding CPR, please contact Gordy Bruhn at 651-366-5523 or myself.

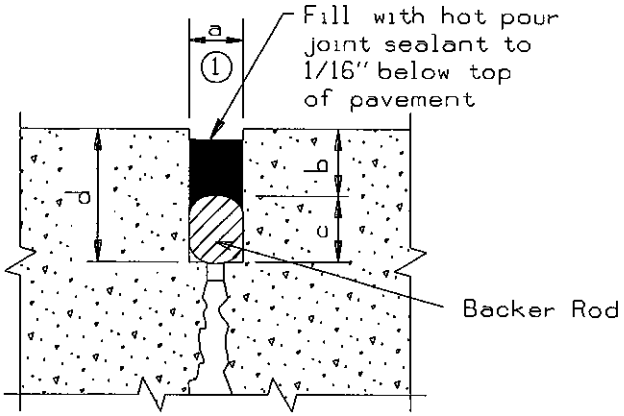
VARIABLE WIDTH JOINT CRACK REPAIR / JOINT REPAIR (TYPE A1)

DESCRIPTION: IN NEWLY CONSTRUCTED REPAIRS OR IN PLACE JOINTS OR CRACKS.
SAW, CLEAN, SEAL TRANSVERSE AND / OR LONGITUDINAL PAVEMENT JOINTS OR CRACKS.

SECTION REMOVAL



SECTION INSTALLATION



AREA TO BE REMOVED BY SAWING, IN PLACE JOINT OR CRACK MAY CONTAIN JOINT SEALER

NOTES

* On roadways with posted speed limits of 45 mph or greater the maximum recommended "a" dimension is 5/8 inch. (1)

JOINT WIDTH (INCHES)	SEALANT BEAD THICKNESS (INCHES)	BACKER ROD DIAMETER (INCHES)	MINIMUM JOINT DEPTH (INCHES)	ESTIMATED QUANTITY	ESTIMATED QUANTITY
a	b	c	d	(ft/gal)	(lb/lf)
1/4	1/4	3/8	11/16	268	0.035
3/8	3/8	1/2	15/16	119	0.079
1/2	1/2	5/8	1-3/16	67	0.140
5/8	5/8	3/4	1-7/16	43	0.219
3/4	3/4	7/8	1-11/16	30	0.316
7/8	7/8	1.0	1-15/16	22	0.430
1.0	1.0	1-1/8	2-3/16	17	0.562
1-1/8	1-1/8	1-1/4	2-7/16	13	0.711
1-1/4	1-1/4	1-3/8	2-11/16	11	0.877

WORK TO BE DONE

1. Remove in place joint sealant, if applicable.
2. Saw both joint faces to configuration shown then immediately water flush the joint or crack.
3. Clean and dry joint or crack by sandblasting and air blasting.
4. Furnish and install backer rod of appropriate diameter in joint or crack opening. Furnish and install backer rod when joints are 1/4" wide or greater.
5. Fill joint or crack with Joint and Crack Sealer (Specification 3725 Hot Poured).
6. To prevent tracking of the Joint and Crack Sealer use tissue paper if necessary.

BASIS OF PAYMENT

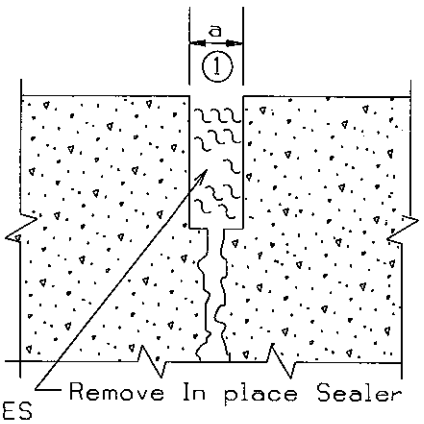
2302 Joint Repair (Type A1) (Lin. Ft.)

S.P. NO. DATE: AUG-26-2015 SHEET OF SHEETS

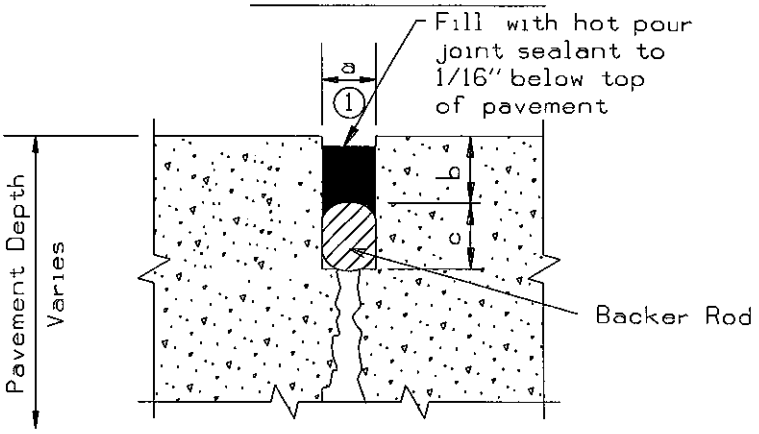
VARIABLE WIDTH IN PLACE JOINT OR CRACK REPAIR / JOINT REPAIR (TYPE A2)

DESCRIPTION: REMOVE IN PLACE JOINT SEALER, CLEAN AND SEAL TRANSVERSE AND / OR LONGITUDINAL PAVEMENT JOINTS OR CRACKS.

SECTION REMOVAL



SECTION INSTALLATION



NOTES

* On roadways with posted speed limits of 45 mph or greater the maximum recommended "a" dimension is 3/4 inch. (1)

JOINT WIDTH (INCHES)	SEALANT BEAD THICKNESS (INCHES)	BACKER ROD DIAMETER (INCHES)	MINIMUM JOINT DEPTH (INCHES)	ESTIMATED QUANTITY	ESTIMATED QUANTITY
a	b	c	d	(ft/gal)	(lb/lf)
1/4	1/4	3/8	11/16	268	0.035
3/8	3/8	1/2	15/16	119	0.079
1/2	1/2	5/8	1-3/16	67	0.140
5/8	5/8	3/4	1-7/16	43	0.219
3/4	3/4	7/8	1-11/16	30	0.316
7/8	7/8	1.0	1 15/16	22	0.430
1.0	1.0	1 1/8	2 3/16	17	0.562
1 1/8	1 1/8	1 1/4	2 7/16	13	0.711
1 1/4	1 1/4	1 3/8	2 11/16	11	0.877

WORK TO BE DONE

1. Remove in place joint sealant, if applicable.
2. Clean and dry joint or crack by sandblasting and air blasting.
3. Furnish and install backer rod of appropriate diameter in joint or crack opening. Furnish and install backer rod when joints are 1/4" wide or greater.
4. Fill joint or crack with Joint and Crack Sealer (Specification 3725 Hot Poured).
5. To prevent tracking of the Joint and Crack Sealer use tissue paper if necessary.

BASIS OF PAYMENT

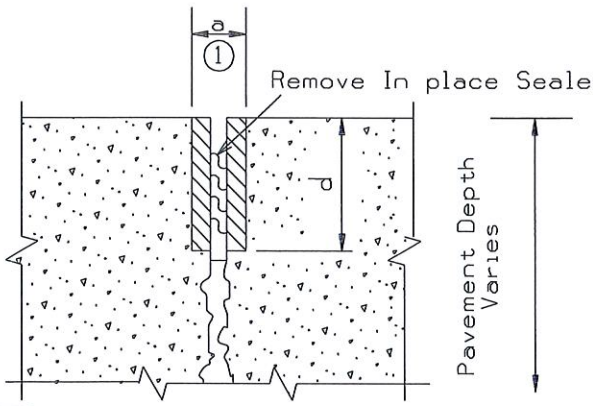
2302 Joint Repair (Type A2) (Lin. Ft.)

S.P. NO. DATE: AUG-26-2015 SHEET OF SHEETS

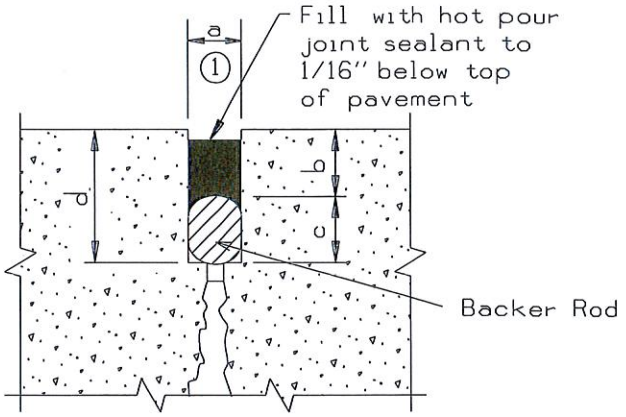
VARIABLE WIDTH JOINT CRACK REPAIR / JOINT REPAIR (TYPE A1)

DESCRIPTION: IN NEWLY CONSTRUCTED REPAIRS OR IN PLACE JOINTS OR CRACKS.
SAW, CLEAN, SEAL TRANSVERSE AND / OR LONGITUDINAL PAVEMENT JOINTS OR CRACKS.

SECTION REMOVAL



SECTION INSTALLATION



AREA TO BE REMOVED BY SAWING, IN PLACE JOINT OR CRACK MAY CONTAIN JOINT SEALER

NOTES

* On roadways with posted speed limits of 45 mph or greater the maximum recommended "a" dimension is 5/8 inch. (1)

JOINT WIDTH (INCHES) a	SEALANT BEAD THICKNESS (INCHES) b	BACKER ROD DIAMETER (INCHES) c	MINIMUM JOINT DEPTH (INCHES) d	ESTIMATED QUANTITY (ft/gal)	ESTIMATED QUANTITY (lb/lf)
1/4	1/4	3/8	11/16	268	0.035
3/8	3/8	1/2	15/16	119	0.079
1/2	1/2	5/8	1-3/16	67	0.140
5/8	5/8	3/4	1-7/16	43	0.219
3/4	3/4	7/8	1-11/16	30	0.316
7/8	7/8	1.0	1-15/16	22	0.430
1.0	1.0	1-1/8	2-3/16	17	0.562
1-1/8	1-1/8	1-1/4	2-7/16	13	0.711
1-1/4	1-1/4	1-3/8	2-11/16	11	0.877

WORK TO BE DONE

1. Remove in place joint sealant, if applicable.
2. Saw both joint faces to configuration shown then immediately water flush the joint or crack.
3. Clean and dry joint or crack by sandblasting and air blasting.
4. Furnish and install backer rod of appropriate diameter in joint or crack opening. Furnish and install backer rod when joints are 1/4" wide or greater.
5. Fill joint or crack with Joint and Crack Sealer (Specification 3725 Hot Poured).
6. To prevent tracking of the Joint and Crack Sealer use tissue paper if necessary.

BASIS OF PAYMENT

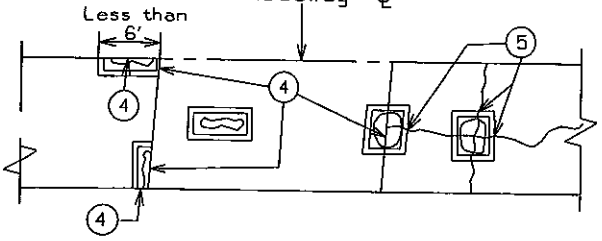
Incidental

S.P. NO. DATE: AUG-26-2015 SHEET OF SHEETS

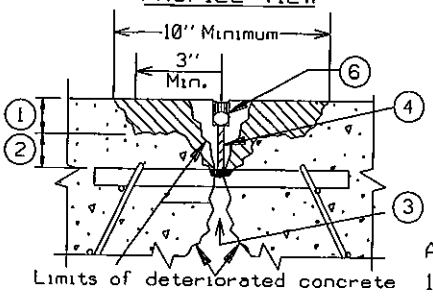
PARTIAL DEPTH REPAIR (TYPE BA)

DESCRIPTION: REMOVE CONCRETE, REESTABLISH JOINTS AND CRACKS, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS AND CRACKS.

PLAN VIEW



PROFILE VIEW



AREA TO BE REMOVED
10" Min. Dimension (Width & Length)

NOTES

* Joint and crack reestablishment is required. Furnish and install preformed joint filler prior to concrete placement.
* Sawing for the initial joint establishment is not allowed.
* Furnish preformed joint filler of a width equal to the existing transverse joint or crack ¼" minimum thickness (Standard Spec. 3702). (4) Wax coated cardboard is allowed on cracks that are ¼" or less in width. (5)
* Chipping hammers are limited to a maximum weight of 35 pounds.

WORK TO BE DONE

1. Remove all concrete to limits shown in detail, including all unsound concrete by milling (1) and chipping hammers. (2) Taper all sides of the repair 30° - 60° from vertical and to a minimum depth of 2". (1)
2. If the end of the dowel bar is exposed, remove the dowel.
3. Clean exposed surface by sandblasting and air blasting
4. Place duct tape as a bond breaker on exposed dowel bars.
5. Provide joint compression relief in the void below the exposed dowel bar by furnishing and placing clean concrete sand level with the top of the dowel bars. (3)
6. Provide joint compression relief above the dowel bars by furnishing and installing preformed joint filler. (4)

   AND / OR

   Reestablish the crack through the repair by furnishing and installing wax coated cardboard. (5)
7. Apply bonding grout immediately prior to concrete placement. Re-sandblast and air blast if the bonding grout dries before the concrete is placed.

   AND / OR

   The Contractor may use water to precondition the in place concrete prior to placing concrete backfill. Reapply water if concrete dries prior to placing concrete backfill.
8. Furnish & place Concrete Mix Number 3U18. Vibrate, finish to grade and slope, edge addjacent to joint filler, Seal edges with grout and apply cure.
9. Saw and seal joints and cracks in accordance with. Joint Repair (Type A1) detail. (6) (Incidental)

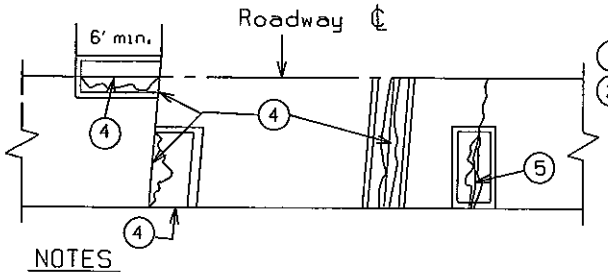
BASIS OF PAYMENT

2302 Partial Depth Repair (Type BA) (Sq. Ft.)

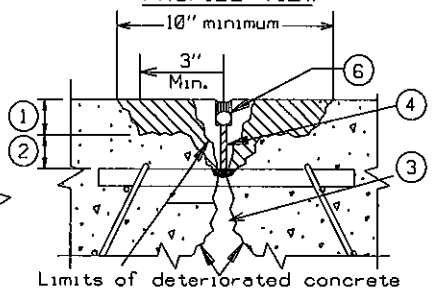
JOINT AND CRACK REPAIR (TYPE B3)

DESCRIPTION: REMOVE CONCRETE, REESTABLISH JOINTS AND CRACKS, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS AND CRACKS.

PLAN VIEW



PROFILE VIEW



AREA TO BE REMOVED
10" Min. Width
6 Lin. Ft. Min. Length

NOTES

- Joint and crack reestablishment is required. Furnish and install preformed joint filler prior to concrete placement.
- Sawing for the initial joint establishment is not allowed when placed over random cracks.
- Furnish preformed joint filler of a width equal to the existing transverse joint or crack ¼" minimum thickness (Standard Spec. 3702). (4) Wax coated cardboard is allowed on cracks that are ¼" or less in width. (5)
- Chipping hammers are limited to a maximum weight of 35 pounds.

WORK TO BE DONE

1. Remove all concrete to limits shown in detail, including all unsound concrete by milling (1) and chipping hammers. (2) Taper all sides of the repair 30° - 60° from vertical and to a minimum depth of 2". (1)
2. If the end of the dowel bar is exposed, remove the dowel.
3. Clean exposed surface by sandblasting and air blasting
4. Place duct tape as a bond breaker on exposed dowel bars.
5. Provide joint compression relief in the void below the exposed dowel bar by furnishing and placing clean concrete sand level with the top of the dowel bars. (3)
6. Provide joint compression relief above the dowel bars by furnishing and installing preformed joint filler. (4)

AND / OR

6A. Reestablish the crack through the repair by furnishing and installing wax coated cardboard. (5)

7. Apply bonding grout immediately prior to concrete placement. Re-sandblast and air blast if the bonding grout dries before the concrete is placed.

AND / OR

The Contractor may use water to precondition the in place concrete prior to placing concrete backfill. Reapply water if concrete dries prior to placing concrete backfill.

8. Furnish & place Concrete Mix Number 3U18. Vibrate, finish to grade and slope, edge addjacent to joint filler, Seal edges with grout and apply cure.
9. Saw and seal joints and cracks in accordance with. Joint Repair (Type A1) detail. (6) (Incidental)

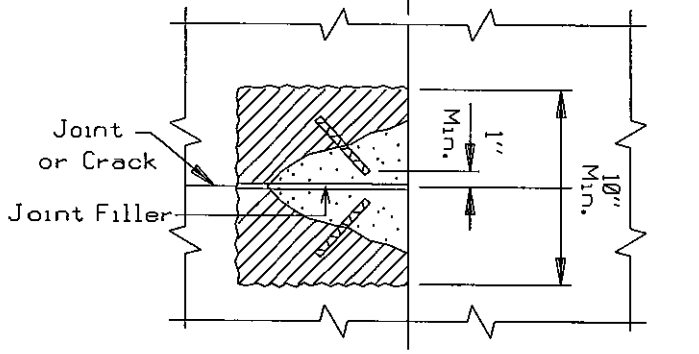
BASIS OF PAYMENT

2302 Joint and Crack repair (Type B3) (Lin. Ft.)

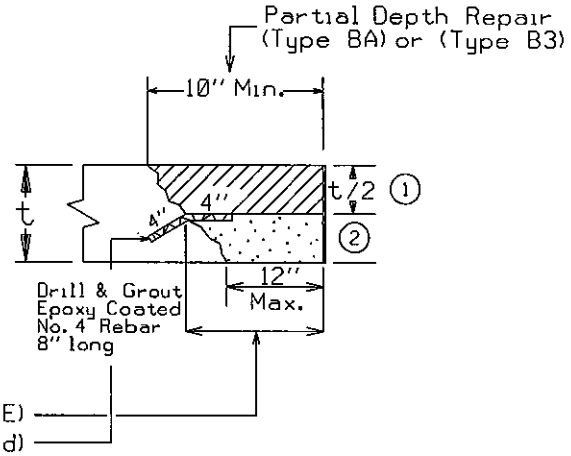
PARTIAL DEPTH REPAIR SPECIAL (TYPE BE)

DESCRIPTION: REMOVE CONCRETE, INSTALL REINFORCEMENT BARS, FURNISH & PLACE CONCRETE, SAW AND SEAL JOINTS.

PLAN VIEW



PROFILE VIEW



Paid as Partial Depth Repair Special (Type BE)
(Only when reinforcement bars are installed)

Paid as Partial Depth Repair (Type BA) or (Type B3)

NOTES

* Do not use this repair in the wheel paths, use the Full Depth Repair (Type CD).
* Joint and crack reestablishment is required. Furnish and install preformed joint filler prior to concrete placement.
* Sawing for the initial joint establishment is not allowed.
* Furnish joint filler in a single piece for the full depth of the repair.
* Furnish preformed joint filler of a width equal to the existing transverse joint or cracks ¼" minimum thickness (Standard Spec. 3702). Wax coated cardboard is allowed on cracks that are ¼" or less in width.
* Chipping hammers are limited to a maximum weight of 35 pounds.

WORK TO BE DONE

1. See Partial Depth Repair (Type BA) or Crack and Joint Repair (Type B3) details for additional information.
2. Remove all concrete to limits shown in the details, including all unsound concrete, by milling (1) and chipping hammers. (2)
3. Remove in place reinforcement bars and dowel bars as needed.
4. Clean exposed surface by sandblasting and air blasting.
5. Drill & grout reinforcement bars.
6. Reestablish the crack through the repair by furnishing and installing wax coated cardboard.
7. Apply bonding grout immediately prior to concrete placement. Re-sandblast and air blast if the bonding grout dries before the concrete is placed.

AND / OR

7a. The Contractor may use water to precondition the in place concrete prior to placing concrete backfill. Reapply water if concrete dries prior to placing concrete backfill.

8. Furnish, place, and vibrate Concrete Mix No. 3U18.

BASIS OF PAYMENT

2302 Partial Depth Repair (Type BA) (Sq. Ft.)

OR

2302 Crack and Joint Repair (Type B3) (Lin. Ft.)

2302 Partial Depth Repair Special (Type BE) (Sq. Ft.)

(1 Sq. Ft. Minimum)

S.P. NO.

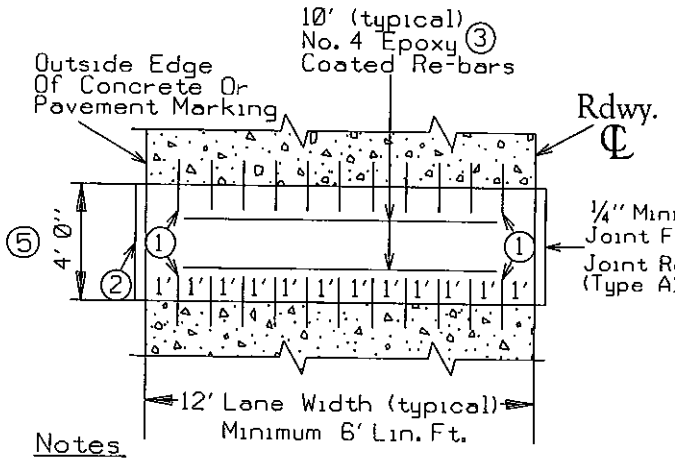
DATE: AUG-26-2015

SHEET OF SHEETS

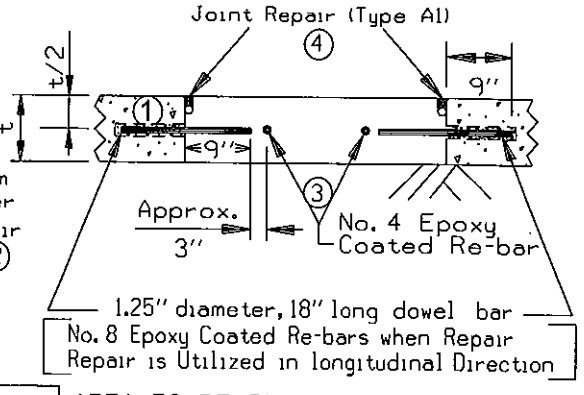
FULL DEPTH REPAIR (TYPE CD-HV)

DESCRIPTION: REMOVE CONCRETE, PLACE REINFORCEMENT BARS AND DOWELS, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS.

PLAN VIEW



PROFILE VIEW



AREA TO BE REMOVED

Notes

* When repairing random cracks on newly constructed concrete pavements, contact the Concrete Engineering Unit for recommendations.
* This repair is also used on tied longitudinal joints (2' on each side of the joint). Replace dowels with 18" long No. 8 epoxy coated reinforcement bars. Furnish and install reinforcement bars (epoxy coated) at 1' Centers. Install ½" joint filler at the up and down stream ends of the longitudinal repair. ②
* Add an additional dowel bar per side for each 1 foot increase in lane width/pay quantity.
* Drill in place pavement utilizing drill bit(s) with a stated or measured diameter of of at least one eighth inch larger diameter than D&G dowel bar/re-bar diameter. ①
* If repair is placed over an existing skewed contraction joint, match existing contraction joint skew, unless otherwise allowed by the Engineer.
* No. 4 epoxy coated re-bar ③ length is equal to the width of the repair, minus 2 feet.

WORK TO BE DONE

1. Saw cut to full depth and remove concrete pavement. Restore and compact in place base.
2. Drill in place concrete pavement for dowels bars or epoxy coated reinforcement bars on longitudinal repairs. ①
3. Furnish and install dowels or reinforcement bars Secure the dowel bars or reinforcement bars to the in place concrete by using an approved non shrink grout or epoxy adhesive. Coat free end of dowel bars with form coating material meeting Spec. 3902. ①
4. Clean the vertical surfaces of the in place concrete.
5. Furnish and install joint filler. ②
6. Furnish and place Concrete Mix Number 3R52.
7. Furnish and install reinforcement bars in plastic concrete, 3" from end of dowel bar at mid depth. ③
8. Vibrate, finish to grade and slope, edge, texture, and apply cure.
9. Saw and seal joints in accordance with Joint Repair (Type A1) detail. ② ④ (Incidental)

BASIS OF PAYMENT

2302 Full Depth Repair (Type CD-HV) (Lin. Ft.)

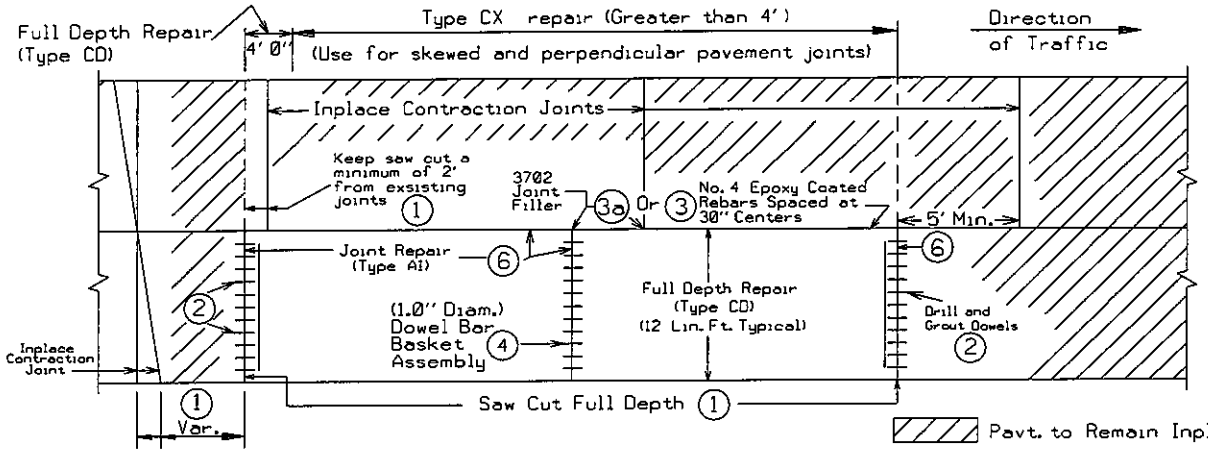
Note

Measurement for payment is made along a single transverse saw cut.

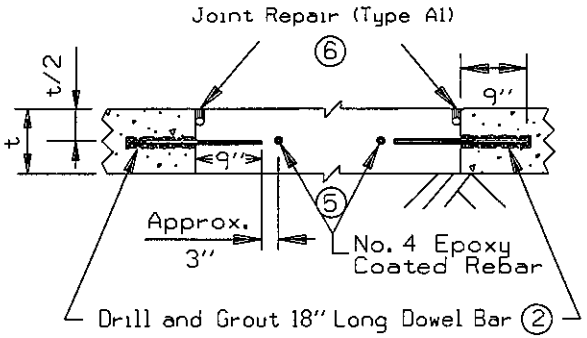
If this repair is placed at a skew, the standard 4 foot dimension is measured perpendicular from the saw cut. ⑤

PAVEMENT REPLACEMENT (TYPE CX)

DESCRIPTION: REMOVE CONCRETE, RESTORE AND COMPACT BASE, PLACE DOWELS AND REINFORCEMENT BARS, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS.



PROFILE VIEW



Refer to the Type CD Repair Detail for Dowel Bar Diam. and Other Info.

Notes

- Place saw cut at least 2' up stream or 5' down stream from any transvers joints in the adjacent lane.
- Drill concrete pavement utilizing a drill bit diameter an > 1/8-inch larger than dowel/re-bar bar diameter. (2)
- Dowel bar basket required when longitudinal length of the repair is > 15'. Place dowel bar assemblies at 15' centers, when repair length exceeds 30'. (4)

WORK TO BE DONE

1. See Full Depth Repair (Type CD) for additional information.
2. Saw full depth & remove in place concrete pavement. Restore and compact in place base. (1)
3. Drill in place concrete for dowel bars. Eliminate inside 5 dowels for (Type CD-LV) repairs (2)
4. Furnish and install dowels. Secure dowels to the in place concrete with a approved non shrink grout or epoxy adhesive. (2) Coat free end of dowels with a form coating material meeting Spec. 3902.
5. If matching in place transverse joints, drill and grout epoxy coated tie bars into the adjacent lane. Drill and grout reinforcement bars not require if repair length is under 75'. (3)

OR

5a. Isolate all transverse pavement joints and cracks. Furnish and install joint filler 3702 between the adjacent in place lane and the (Type CX) repair. (3a) (Incidental)

6. As needed, furnish (1.0" Diam.) Dowel Bar Assemblies, in accordance with Standard Plate 1103. (4)
7. Clean vertical surfaces of in place concrete.
8. Place epoxy coated supplemental reinforcing bars over culverts as needed, See Standard Plate 1070.
9. Furnish and place Concrete Mix Number 3R52.
10. Furnish and install epoxy coated rebars in conc. repair, located 3" from end of dowel bar. (5)
11. Vibrate, finish to grade and slope, edge, texture, and apply cure.
12. Green saw joints over dowel bar baskets. (4)
13. Saw and seal joints in accordance with Joint Repair (Type A1) detail. (6) (Incidental)

BASIS OF PAYMENT

- 2302 Full Depth Repair (Type CD) (Lin.Ft.)
- 2301 Drill and Grout Reinforcement Bars (Epoxy Coated) (Each)
- 2302 Dowel Bar (Each)
- 2301 Supplemental Reinforcement Bars (Epoxy Coated) (Pound)
- 2302 Pavement Replacement (Type CX) (Sq. Yd.)

S.P. NO.

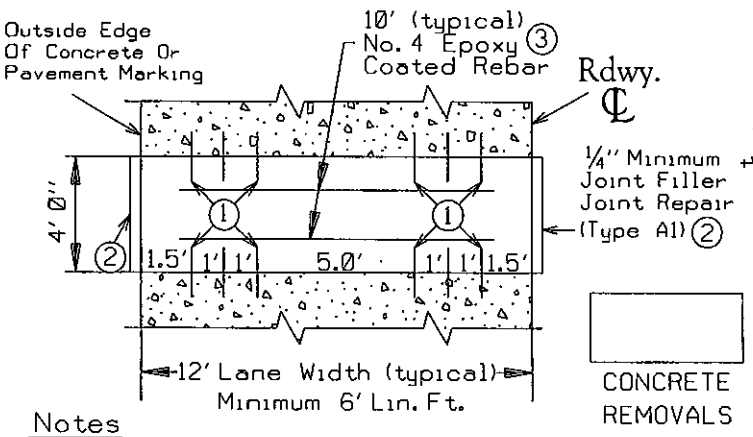
DATE: AUG-26-2015

SHEET OF SHEETS

FULL DEPTH REPAIR (TYPE CD-LV)

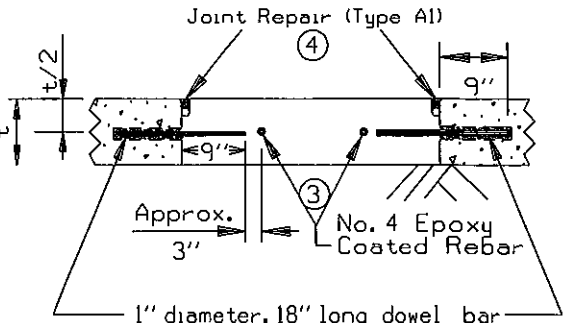
DESCRIPTION: REMOVE CONCRETE, PLACE REINFORCEMENT BARS AND DOWELS, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS.

PLAN VIEW



CONCRETE REMOVALS

PROFILE VIEW



No. 8 Epoxy Coated Rebars when Repair Repair is Utilized in longitudinal Direction

Notes

* When repairing random cracks on newly constructed concrete pavements, contact the Concrete Engineering Unit for recommendations.
* When the roadway width is 16' or greater, add an additional set of 4 dowels. Install additional dowels at mid point of the roadway.
* Drill in place pavement utilizing drill bit(s) with a stated or measured diameter of of at least one eighth inch larger in diameter than D&G dowel/re-bar diameters. ①
* This repair is also used on tied longitudinal joints (2' on each side of the joint). Replace dowels with 18" long No. 8 epoxy coated reinforcement bars. Furnish and install reinforcement bars (epoxy coated) at 2' Centers. Install ½" joint filler at the up and down stream ends of the longitudinal repair. ②
* If repair is placed over an existing skewed contraction joint, match existing contraction joint skew, unless otherwise allowed by the Engineer.
* No. 4 epoxy coated rebar ③ length is equal to the width of the repair, minus 2 feet.

WORK TO BE DONE

1. Saw cut to full depth and remove concrete pavement. Restore and compact in place base.
2. Drill in place concrete pavement for dowels or epoxy coated reinforcement bars longitudinal repairs. ①
3. Furnish and install dowels or reinforcement bars Secure the dowel bars or reinforcement bars to the in place concrete by using an approved non shrink grout or epoxy adhesive. Coat free end of dowel bars with form coating material meeting Spec. 3902. ①
4. Clean the vertical surfaces of the in place concrete.
5. Furnish and install joint filler. ②
6. Furnish and place Concrete Mix Number 3R52.
7. Furnish and install reinforcement bars in plastic concrete, 3" from end of dowel bar at mid depth. ③
8. Vibrate, finish to grade and slope, edge, texture, and apply cure.
9. Saw and seal joints in accordance with Joint Repair (Type A1) detail. ② ④ (Incidental)

BASIS OF PAYMENT

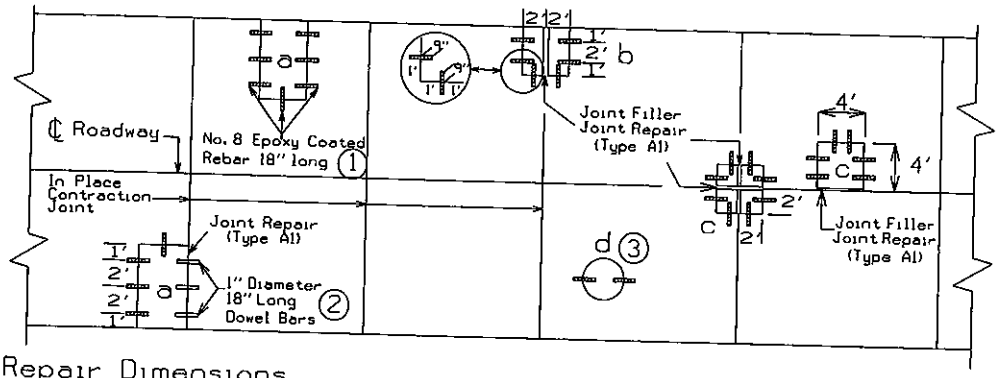
2302 Full Depth Repair (Type CD-LV) (Lin. Ft.)

S.P. NO. DATE: AUG-26-2015 SHEET OF SHEETS

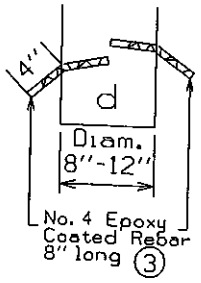
SPOT FULL DEPTH REPAIR TYPE (C1-LV)

DESCRIPTION: SAW CONCRETE, REMOVE CONCRETE. PLACE REINFORCING AND DOWELS AS REQUIRED. FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS.

PLAN VIEW



SECTION



Repair Dimensions

a) Exterior Edge, 3' 6" x 6' min. for a one half lane repair.

b) Exterior edge at a joint location, 4' x 4' min. size.

c) Interior edge at centerline, 4' x 4' min. size.

d) Gas line or exploratory core hole 4" diameter minimum size and 12" diameter maximum size.

AREA TO BE REMOVED

Notes

* Drill in place pavement utilizing drill bit(s) with a stated or measured diameter of of at least one eighth inch larger in diameter than D&G dowel/re-bar diameters. (1)(2)(3)

WORK TO BE DONE

1. Saw cut to full depth and remove concrete pavement. Restore and compact in place base.
2. Drill in place concrete at 2' C. to C.: for No. 8 epoxy coated reinforcement bars (1) or, 1" dowel bars (2) or, No. 4 epoxy coated reinforcement bars. (3)
3. Furnish and install epoxy coated reinforcement bars or dowel bars. Secure the reinforcement bars or dowel bars to the in place concrete by using an approved non shrink grout or epoxy adhesive. Coat free end ofdowel bars with a form coating material meeting Specification 3902.
4. Clean the vertical surfaces of the in place concrete.
5. Furnish and install joint filler.
6. Furnish and place Concrete Mix Number 3R52 or furnish and place 3U18 for core hole "d" repairs.
7. Vibrate, finish to grade and slope, edge, texture, and apply cure.
8. Saw and seal joints in accordance with Joint Repair (Type A1) detail. (Incidental)

BASIS OF PAYMENT

2302 Spot Full Depth Repair (Type C1-LV) (Sq. Ft.)

S.P. NO.

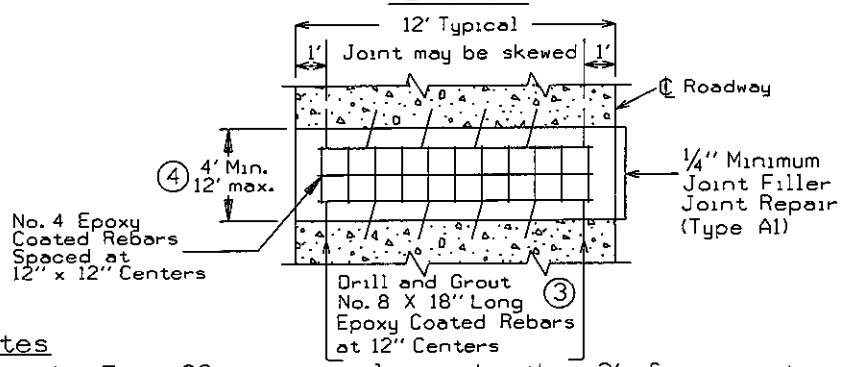
DATE: AUG-26-2015

SHEET OF SHEETS

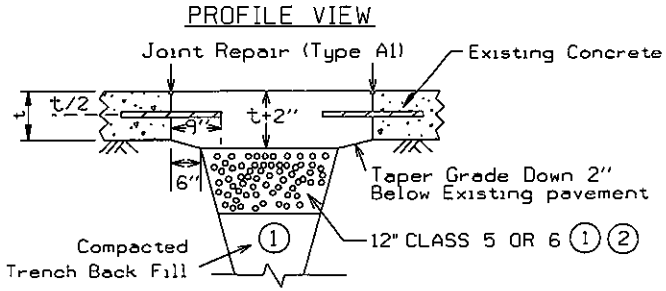
UTILITY TRENCH FULL DEPTH REPAIR (TYPE C2-LV)

DESCRIPTION: SAW FULL DEPTH AND REMOVE CONCRETE, FURNISH AND INSTALL REINFORCEMENT BARS, FURNISH AND PLACE CONCRETE, SAW OR FORM JOINTS, SAW AND SEAL JOINTS.

PLAN VIEW



PROFILE VIEW



AREA TO BE REMOVED 12" CLASS 5 OR 6 (Incidental)

Notes

* When the Type C2 repair is located within 2' of an existing contraction joint, widen the Type C2 repair as needed to remove the existing contraction joint. When a contraction joint is removed, replace the No. 8 epoxy coated rebar with 1" diameter dowels bars. Drill and grout dowels in accordance with the Full Depth Repair (Type CD-LV or CD-HV).
* Check the plan for method of compaction. If a method of compaction is not stated in the plans use the quality compaction method in accordance with MnDOT Specification 2105. ①
* Construct Class 5 or 6 aggregate base in accordance with MnDOT Specification 2211. Class 5 or 6 aggregate is incidental to the Utility Trench Full Depth Repair (Type C2). ②
* Furnish and installed No. 8 reinforcement bars either straight or skewed at 20°. ③
* When the length of the repair exceeds 12', Contact the Concrete Engineering Unit for recommendations. ④
* Drill in place pavement utilizing drill bit(s) with a stated or measured diameter of of at least one eighth inch larger in diameter than D&G dowel/re-bar diameters. ③

WORK TO BE DONE

1. Saw cut full depth and remove concrete pavement.
2. Excavate utility trench, back fill utility trench with in situ soils. Back fill trench to 14" below the bottom of existing pavement.
3. Furnish and place 12" class 5 or 6 aggregate base.
4. Drill in place concrete for No. 8 epoxy coated reinforcement bars.
5. Furnish and install epoxy coated reinforcement bars. Secure the reinforcement bars to the in place concrete with an approved non - shrink grout or epoxy adhesive.
6. Furnish and install preformed joint filler.
7. Furnish and install No. 4 epoxy coated supplemental steel spaced at 12" Centers
8. Furnish & place Concrete Mix Number 3R52. Vibrate, finish to grade and slope, edge forms and joint filler, apply texture and cure.
9. Saw and seal joints in accordance with Joint Repair (Type A1) detail. (Incidental)

BASIS OF PAYMENT

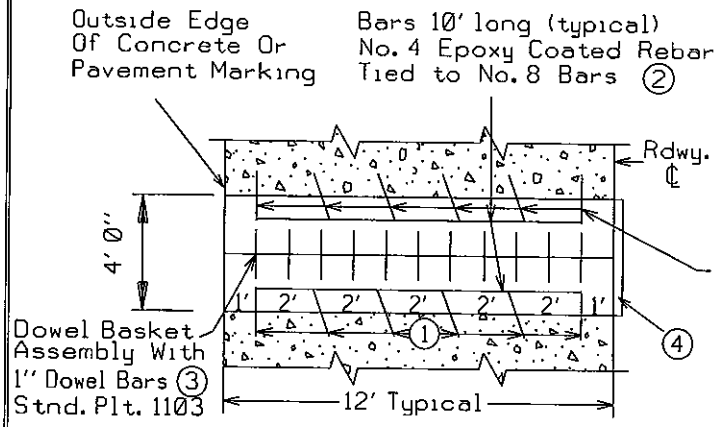
2302 Utility Trench Full Depth Repair (Type C2) (Sq. Yd.)

S.P. NO. DATE: AUG-26-2015 SHEET OF SHEETS

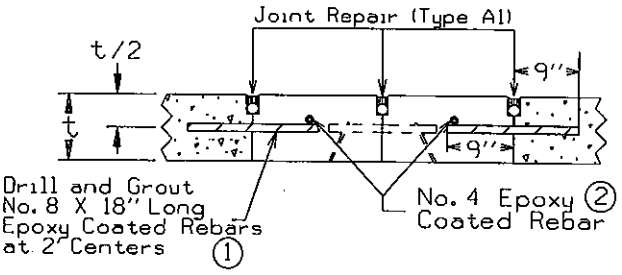
FULL DEPTH REPAIR (TYPE CA-LV)

DESCRIPTION: SAW CONCRETE, REMOVE CONCRETE. PLACE REINFORCING AND DOWELS BAR ASSEMBLY, FURNISH AND PLACE CONCRETE, SAW AND SEAL JOINTS.

PLAN VIEW



PROFILE VIEW



AREA TO BE REMOVED
Minimum dimension - 1 lane wide

Notes

* The Contractor may use the Full Depth Repair (Type CD-LV) in lieu of the Full Depth Repair (Type CA-LV).
* The No. 8 reinforcement bars maybe skewed at 20° or straight at the discretion of the Contractor. (1)
* Drill in place pavement utilizing drill bit(s) with a stated or measured diameter of of at least one eighth inch larger in diameter than D&G dowel/re-bar diameters. (1)
* For skewed repairs, eliminate a tie bar at centerline edge with acute angle.
* No. 4 epoxy coated rebar (2) length is equal to the width of the repair, minus 2 feet.

WORK TO BE DONE

1. Saw cut to full depth and remove concrete pavement. Restore and compact in place base.
2. Drill in place concrete at 2' Centers for No. 8 epoxy coated reinforcement bars. (1)
3. Furnish and install epoxy coated reinforcement bars Secure the reinforcement bars to the in place concrete by using an approved non shrink grout or epoxy adhesive. (1)
4. Furnish and install No. 4 epoxy coated reinforcing bars tied to the D&G No. 8 bars. (2)
5. Furnish and install dowel bar assembly with 1" diameter dowel bars. (3) Coat dowel bars with a form coating material meeting Spec. 3902
6. Furnish and install joint filler. (4)
7. Furnish and place Concrete Mix Number 3R52. Vibrate, finish to grade, slope, edge, texture, and apply cure.
8. Saw and seal joints in accordance with Joint Repair (Type A1) detail. (Incidental)

BASIS OF PAYMENT

2302 Full Depth Repair (Type CA-LV), (lin. ft.)

S.P. NO.

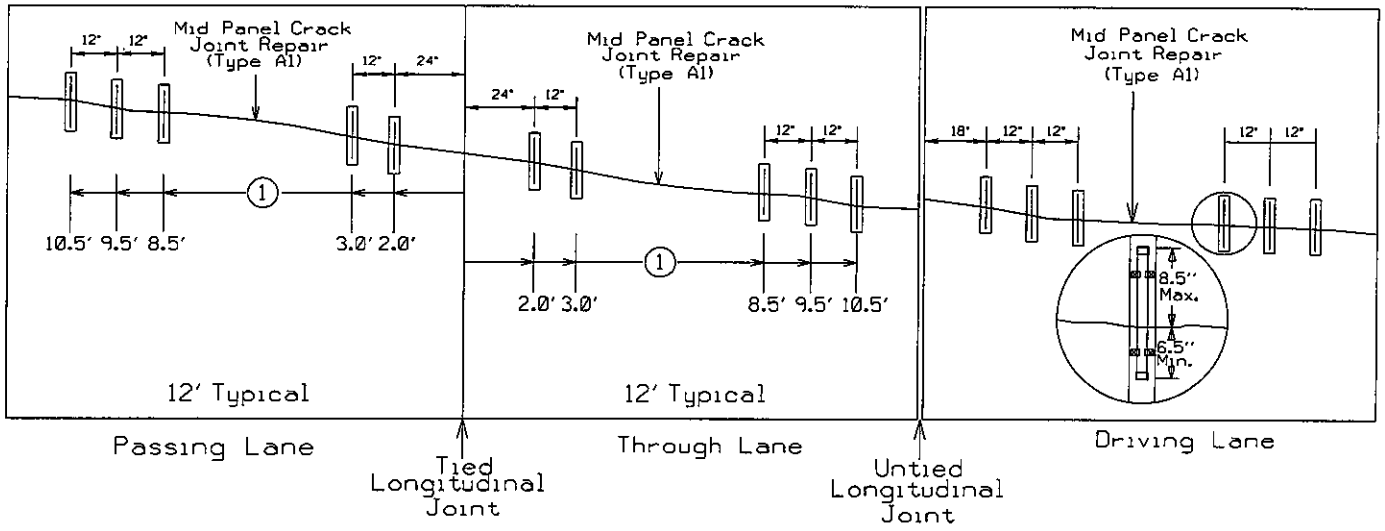
DATE: AUG-26-2015 SHEET OF SHEETS

DOWEL BAR RETROFIT

DESCRIPTION: THIS REPAIR IS INTENDED TO BE USED TO ESTABLISH/RESTORE LOAD TRANSFER AT TRANSVERSE JOINTS OR CRACKS.

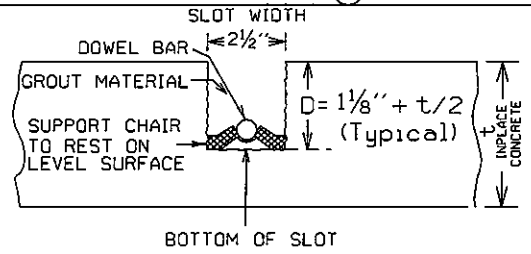
PLAN VIEW

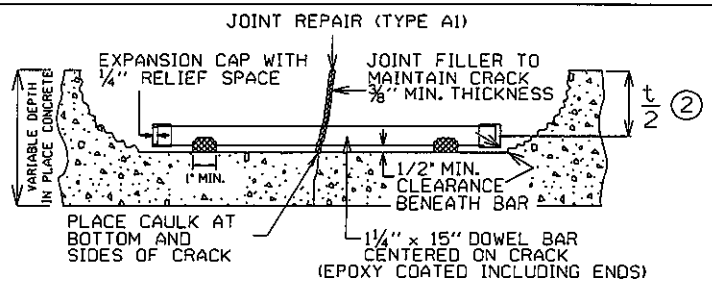
TYPICAL DOWEL BAR RETROFIT LAYOUT

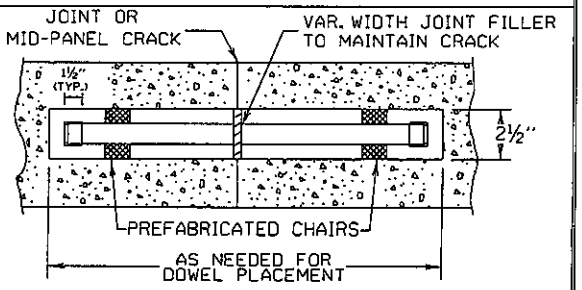


Notes:

- Not recommended for cracks that are ¾" or greater in width, use Full Depth Repair (Type CD)
- Chipping hammers are limited to a maximum weight of 35 pounds.
- Move retrofit dowels as needed to avoid in place dowel bars.
- Always measure from the roadway center line for dowel bar offsets. (1)
- For pavements of 8" or under contact the Concrete Engineering Unit for dowel bar depth and minimum cover recommendations. (2)







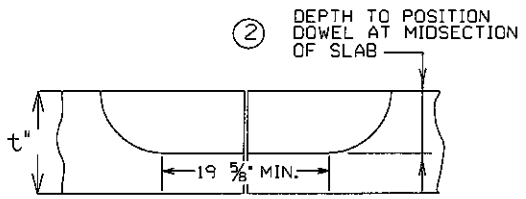
S.P. NO.

DATE: AUG-26-2015

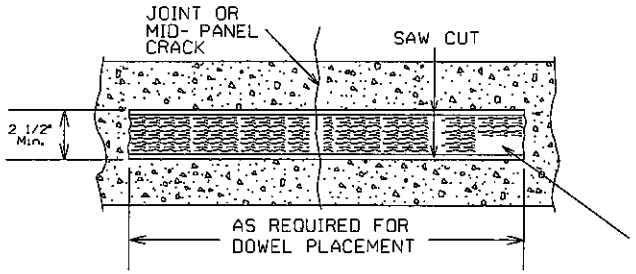
SHEET OF SHEETS

DOWEL BAR RETROFIT DETAILS
Sheet 2 of 2

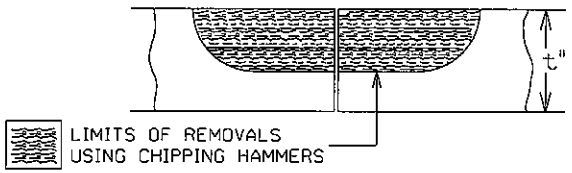
STEP 1
SAW SLOT FOR EACH DOWEL BAR.
(AVOID IN- PLACE DOWEL BARS)



STEP 1 AND 2
PLAN VIEW



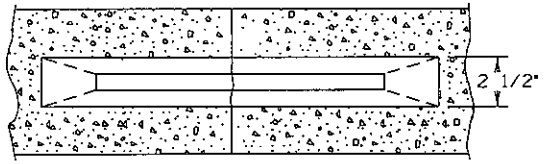
STEP 2
REMOVE CONCRETE BETWEEN SAW CUTS.
INCLUDING CONCRETE TO FORM KERF.



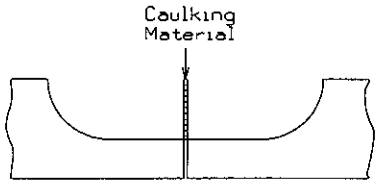
STEP 3
CLEAN EXPOSED SURFACES INSIDE THE SLOT BY SANDBLASTING, AIR BLASTING, AND VACUUM.

NOTE

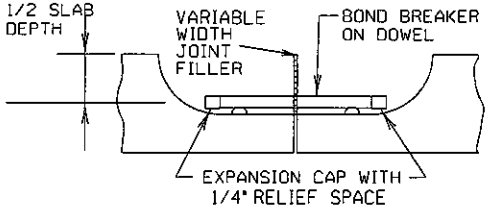
CONTINUE TO SANDBLAST UNTIL THE VERTICAL SIDES ARE ROUGH TO THE TOUCH.



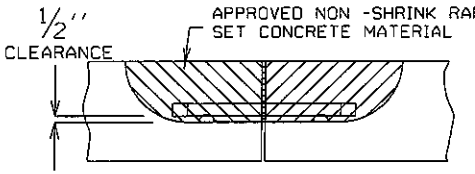
STEP 4
TO KEEP THE PATCHING MATERIAL FROM LEAKING INTO THE JOINT OR CRACK.
SEAL THE CRACK WITHIN THE SLOT WITH CAULKING MATERIAL. PLACE THE JOINT FILLER IN CONJUNCTION WITH THE CRACK SEALER.



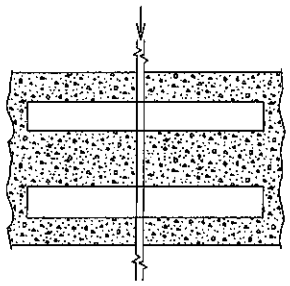
STEP 5
FURNISH AND INSTALL DOWEL BARS
ALIGN DOWELS PARALLEL WITH THE PAVEMENT SURFACE AND CENTERLINE OF THE ROADWAY.
FURNISH AND INSTALL JOINT FILLER TO MAINTAIN CRACK THROUGH THE SLOT.



STEP 6
MOISTEN INSIDE OF SLOT WITH WATER.
(STANDING WATER IS NOT ALLOWED)
FURNISH AND PLACE APPROVED NON -SHRINK RAPID SET CONCRETE MATERIAL FOR DOWEL BAR RETROFIT REPAIRS, AND APPLY CURE.
(EDGING ONLY REQUIRED ALONG THE JOINT FILLER)



STEP 7
SAW AND SEAL THE JOINT OR CRACK THE ENTIRE ENTIRE WIDTH OF THE LANE IN ACCORDANCE WITH WITH JOINT REPAIR (TYPE A1) (INCIDENTAL)



BASIS OF PAYMENT

2302.602 RETROFIT DOWEL BAR (EACH)

S.P. NO.

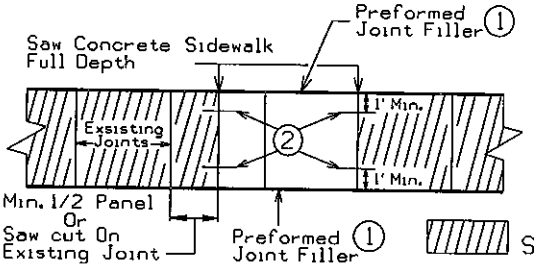
DATE: AUG-26-2015

SHEET OF SHEETS

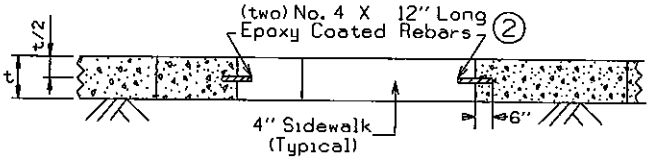
REPAIR SIDEWALK OR MEDIAN WALK

DESCRIPTION: REMOVE CONCRETE. RESTORE BASE. PLACE REINFORCING STEEL. FURNISH AND PLACE CONCRETE. REFORM JOINTS AS NECESSARY.

PLAN VIEW



PROFILE VIEW



SIDEWALK TO REMAIN IN PLACE

SIDEWALK TO BE REMOVED

Notes

* Place preformed joint filler when sidewalk is placed adjacent to concrete curb and gutter. See Standard Plate 7035 for further information on joint filler placement and joint layout. ①

* Where the sidewalk doubles as a driveway, place 6" Concrete Driveway Pavement for private driveways or 8" Conctete Driveway Pavement for commercial driveways. See Standard Plate 7035 for further information.

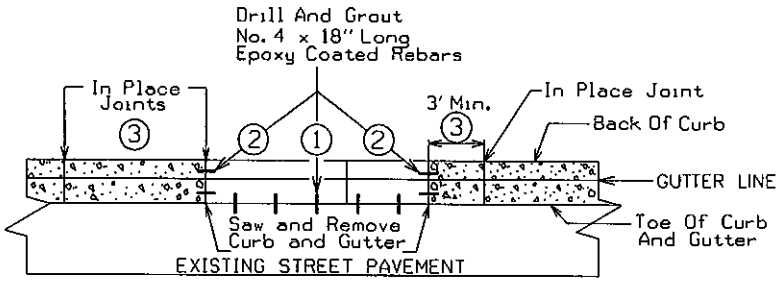
WORK TO BE DONE	BASIS OF PAYMENT
1. Saw cut concrete walk full depth. (Incidental)	2104 Remove Sidewalk (Sq. Ft.)
2. Remove concrete sidewalk, restore and compact in place base.	
3. Drill in place concrete sidewalk for No. 4 epoxy coated reinforcement bars.	2301 Drill and Grout Reinforcement Bars (Epoxy Coated) (Each)
4. Furnish and install two epoxy coated reinforcement bars at each end of the removal area. Secure the reinforcement bars to the in place concrete by using an approved non shrink grout or epoxy adhesive. ②	
5. Clean the vertical surfaces of the in place concrete.	2521_____ inch Concrete Walk (Sq. Ft.) And / Or 2531_____ inch Concrete Driveway Pavement (Sq. Yd.)
6. Furnish and install joint filler.	
7. Furnish and place Concrete Mix Number 3F52.	
8. Vibrate, finish to grade and slope, edge, texture, and apply cure.	
9. Restore joints by green sawing or hand tooling the plastic concrete to match the in place joint pattern.	

S.P. NO. DATE: AUG-26-2015 SHEET OF SHEETS

CURB AND GUTTER REPAIR

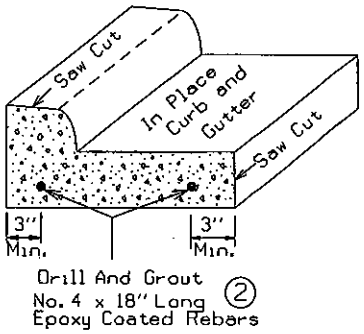
DESCRIPTION: REMOVE CONCRETE. RESTORE BASE. PLACE REINFORCING STEEL. FURNISH AND PLACE CONCRETE. REFORM JOINTS AS NECESSARY.

PLAN VIEW



AREA TO BE REMOVED

CROSS SECTION VIEW



Notes

* When the existing pavement is concrete, drill and grout reinforcement bars at 30" centers. (1)
* Locate saw cut to leave a minimum of 3' of in place curb and gutter between an existing joint and the proposed saw cut. If the 3' minimum can not be maintained, place the saw cut over the existing joint. (3)

WORK TO BE DONE

1. Saw cut curb and gutter full depth. (Incidental)
2. Remove curb and gutter, restore and compact in place base.

→ 2104 Remove Concrete Curb and Gutter (Lin. Ft.)

3. Drill in place concrete pavement and curb and gutter for No. 4 epoxy coated reinforcement bars. (1) (2)
4. Furnish and install epoxy coated reinforcement bars. Secure the reinforcement bars to the in place concrete by using an approved non shrink grout or epoxy adhesive.

→ 2301 Drill and Grout Reinforcement Bars (Epoxy Coated) (Each)

5. Clean the vertical surfaces of the in place concrete.
6. Furnish and place Concrete Mix Number 3F52.
7. Vibrate, finish to grade and slope, edge, texture, and apply cure.
8. Restore joints by green sawing or hand tooling the plastic concrete to match the in place joint pattern.

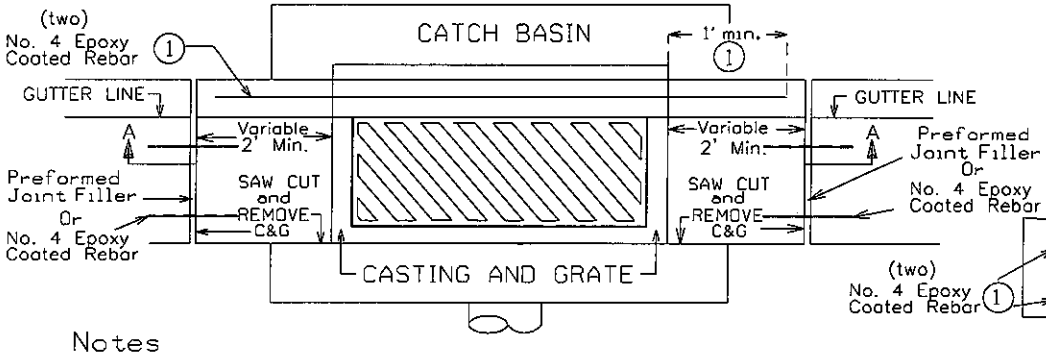
→ 2531 Concrete Curb and Gutter, Design --------- (Lin. Ft.)

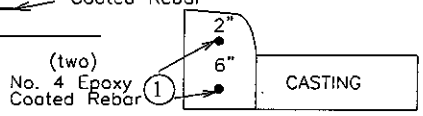
S.P. NO. DATE: AUG-26-2015 SHEET OF SHEETS

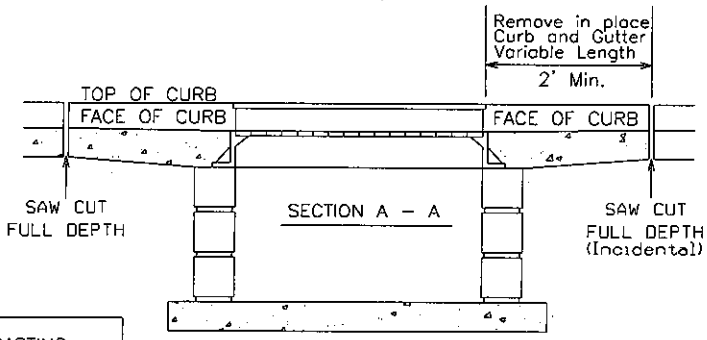
CATCH BASIN REPAIR

DESCRIPTION: SAW AND REMOVE IN PLACE CURB AND GUTTER, RESTORE AND COMPACT BASE, DRILL AND GROUT REINFORCEMENT BARS ADJUST FRAME OR RING CASTINGS, PLACE FORMS FOR CURB AND GUTTER, PLACE CONCRETE CURB AND GUTTER, SAW AND SEAL JOINTS.

PLAN VIEW







Notes

* This detail is intended to fix sunken catch basins and the adjacent curb and gutter.
* If the existing curb is integral with the concrete pavement, saw pavement full depth parallel to the curb face and at a offset distance equal to or greater than the width of the casting.
* If concrete curb extends in back of the casting. Place two No. 4 epoxy coated rebars behind the casting. Extend reinforcement bars at least 1' foot beyond the limits of the casting. (1)

WORK TO BE DONE

1. Define curb and gutter for removal. Remove any low spots that do not have positive flow into the catch basin.
2. Saw cut curb and gutter full depth. (Incidental)
3. Remove the in place curb and gutter. Do not damage the casting assembly during curb and gutter removals.
4. Salvage casting, remove deteriorated rings, add adjusting rings as needed, set casting, grout rings and casting.
5. When the existing pavement is concrete, drill and grout No. 4 reinforcement bars, 18" long, installed at 2' centers and placed 9" into existing concrete pavement.
6. Compact in place base and set forms for curb and gutter.
7. Furnish and place Concrete Mix Number 3F52.
8. Vibrate, finish to grade and slope, edge, texture, and apply cure.
9. Saw and seal longitudinal joints in accordance with Joint Repair (Type A1). (Incidental)

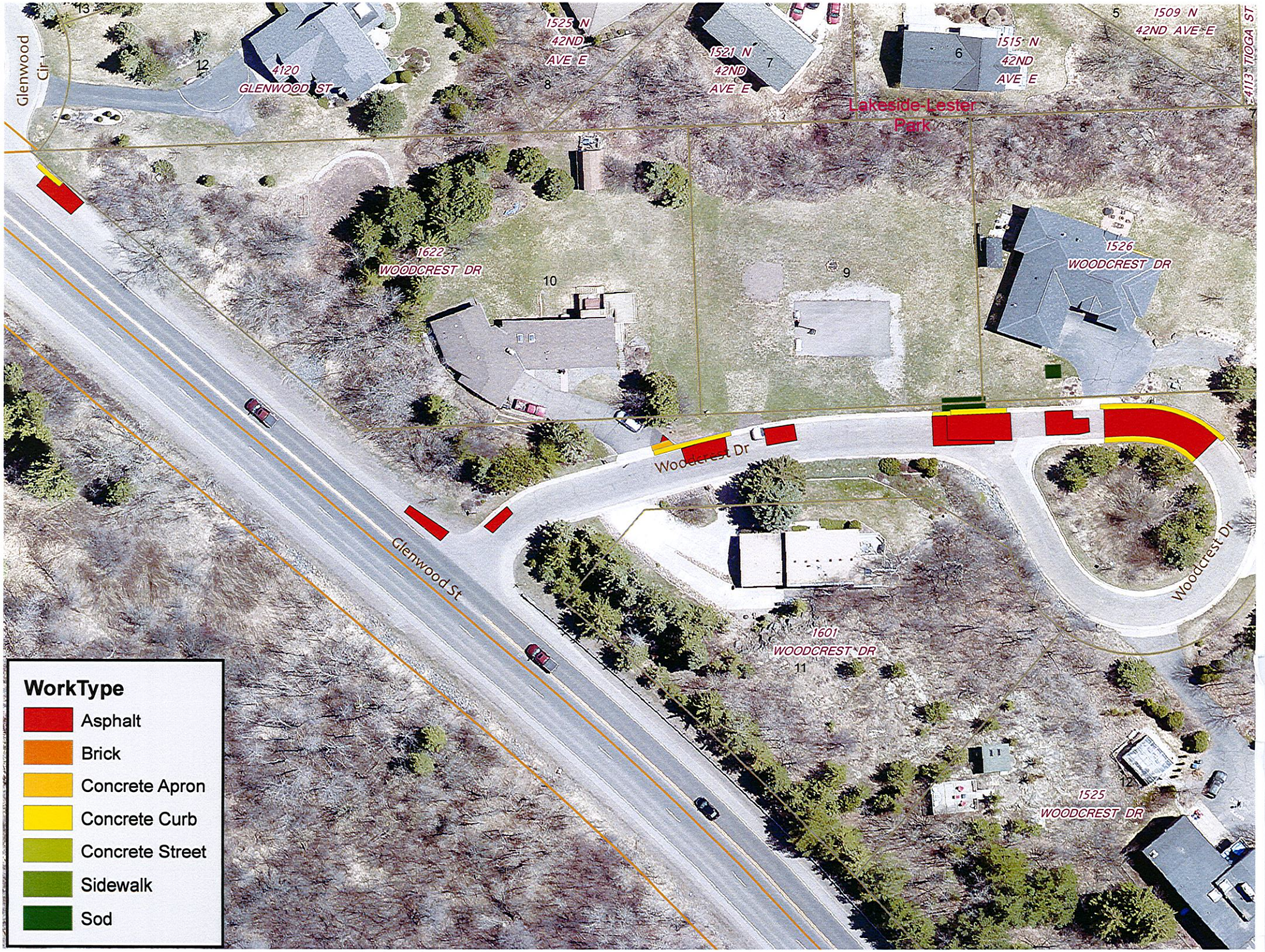
BASIS OF PAYMENT

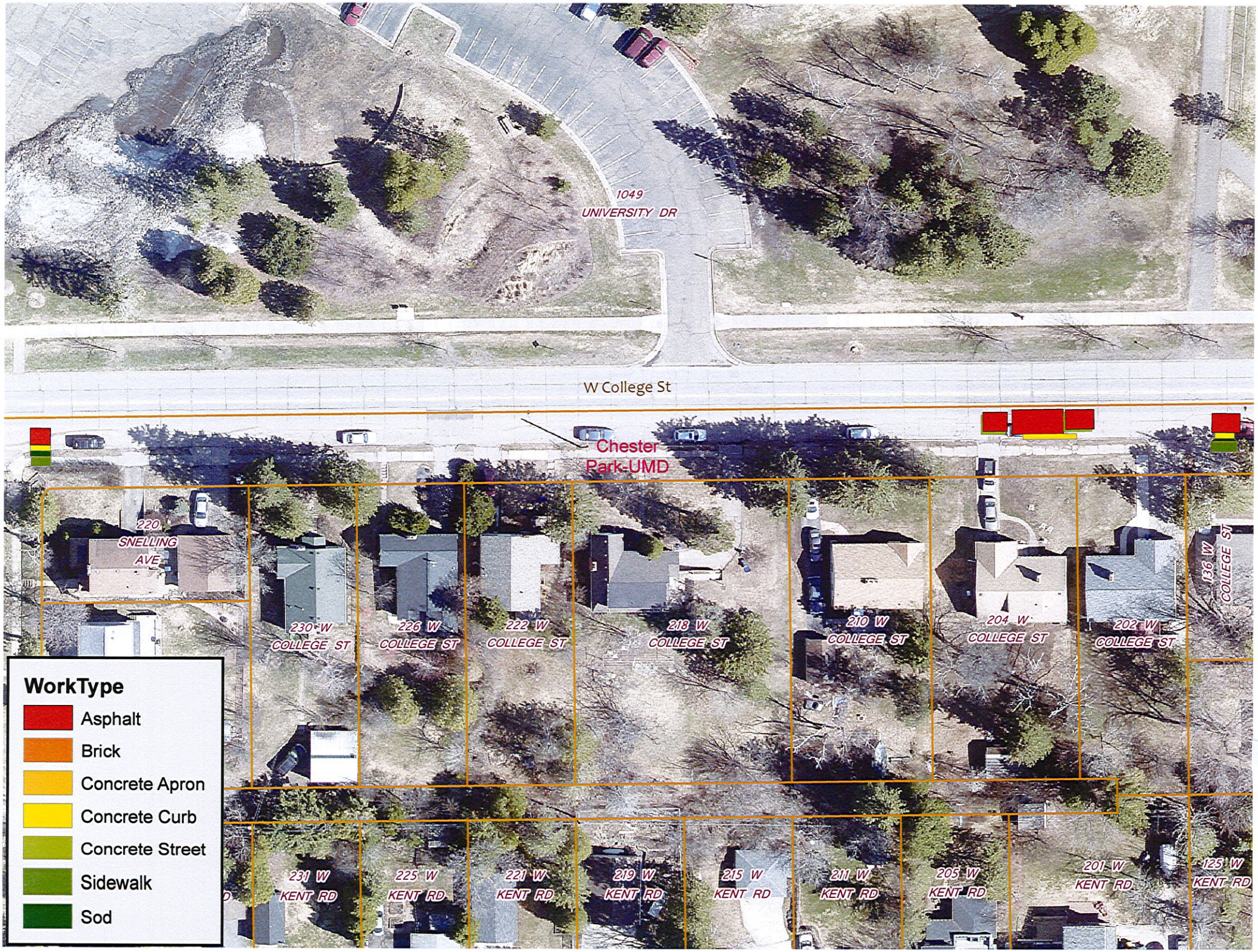
2104	Remove Curb and Gutter (Lin. Foot)
2506	Adjust Frame or Ring Casting (Each)
2301	Drill and Grout Reinforcement Bars (Epoxy Coated)(Each)
2531	Concrete Curb and Gutter, Design _____ (Lin. Foot)

S.P. NO. DATE: AUG-26-2015 SHEET OF SHEETS

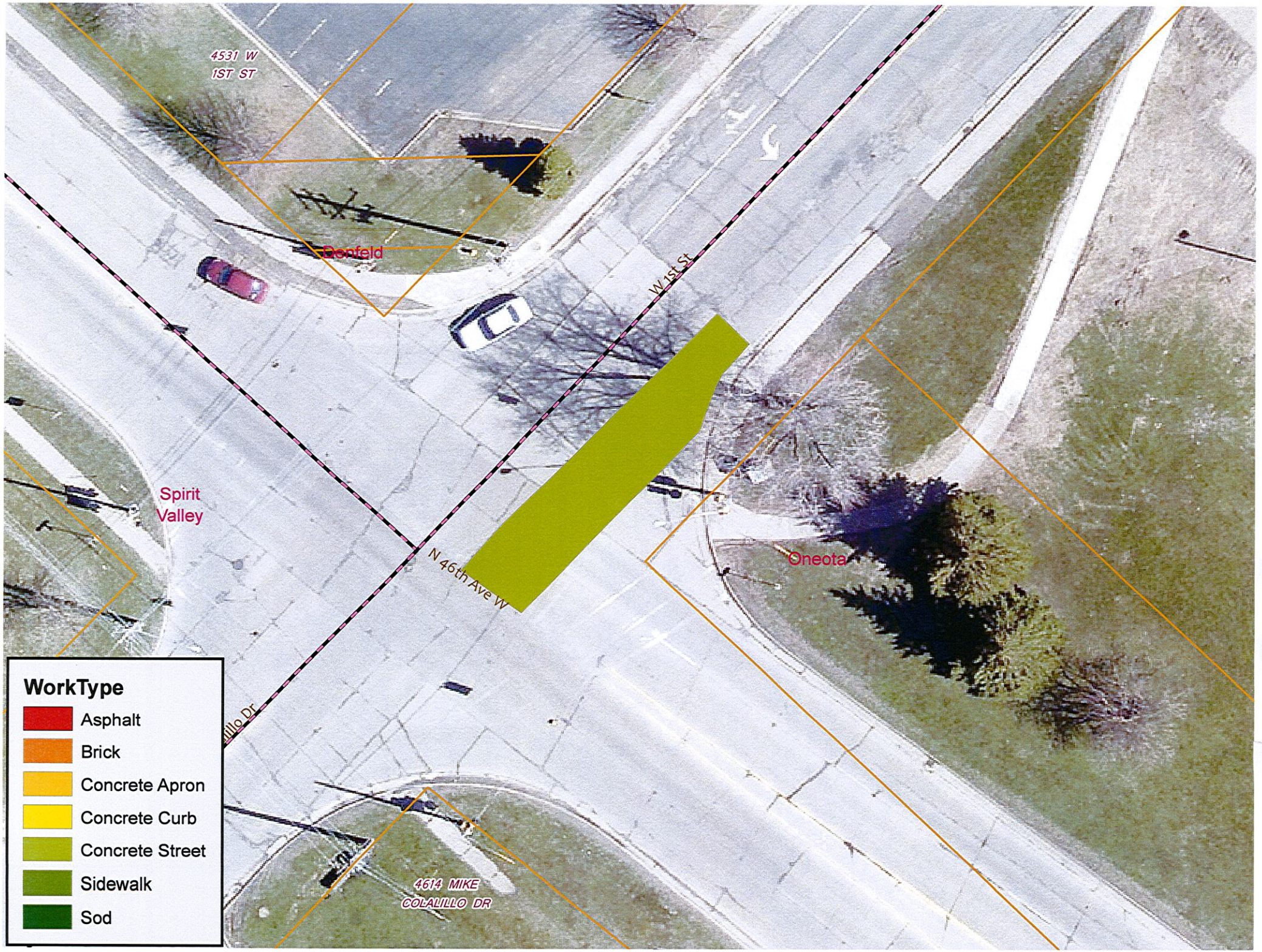
ATTACHMENT B

PATCH SITES


Glenwood Cir
13
12
4120 GLENWOOD ST
1525 N 42ND AVE E
8
1521 N 42ND AVE E
7
6
1515 N 42ND AVE E
5
1509 N 42ND AVE E
4113 TIOGA ST
Lakeside-Lester Park
8
7
1622 WOODCREST DR
10
9
1526 WOODCREST DR
Woodcrest Dr
Glenwood St
Woodcrest Dr
1601 WOODCREST DR
11
12
1525 WOODCREST DR
WorkType
Asphalt
Brick
Concrete Apron
Concrete Curb
Concrete Street
Sidewalk
Sod


1049
UNIVERSITY DR
W College St
Chester
Park-UMD
220
SNELLING
AVE
230 W
COLLEGE ST
226 W
COLLEGE ST
222 W
COLLEGE ST
218 W
COLLEGE ST
210 W
COLLEGE ST
204 W
COLLEGE ST
202 W
COLLEGE ST
136 W
COLLEGE ST
231 W
KENT RD
225 W
KENT RD
221 W
KENT RD
219 W
KENT RD
215 W
KENT RD
211 W
KENT RD
205 W
KENT RD
201 W
KENT RD
125 W
KENT RD
WorkType
Asphalt
Brick
Concrete Apron
Concrete Curb
Concrete Street
Sidewalk
Sod


50 E SAINT MARIE ST
66 E SAINT MARIE ST
1600 WOODLAND AVE
Mount Royal Shopping Cir
Chester
Park-
200 MOUNT ROYAL SHOPPING CIR
70 E SAINT MARIE ST
WorkType
Asphalt
Brick
Concrete Apron
Concrete Curb
Concrete Street
Sidewalk
Sod


4531 W
1ST ST
Denfeld
W 1st St
Spirit
Valley
N 46th Ave W
Oneota
4614 MIKE
COLALILLO DR
WorkType
Asphalt
Brick
Concrete Apron
Concrete Curb
Concrete Street
Sidewalk
Sod