



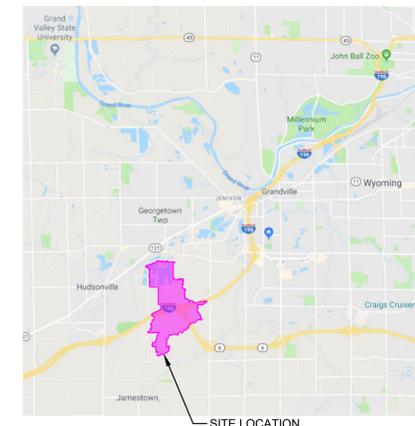
CORY BISHOP DRAIN DRAINAGE DISTRICT

PART OF SECTIONS 26, 27, 34 & 35, T6N, R13W, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 & 3, T5N, R13W, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

JOE BUSH

OTTAWA COUNTY WATER RESOURCES COMMISSIONER

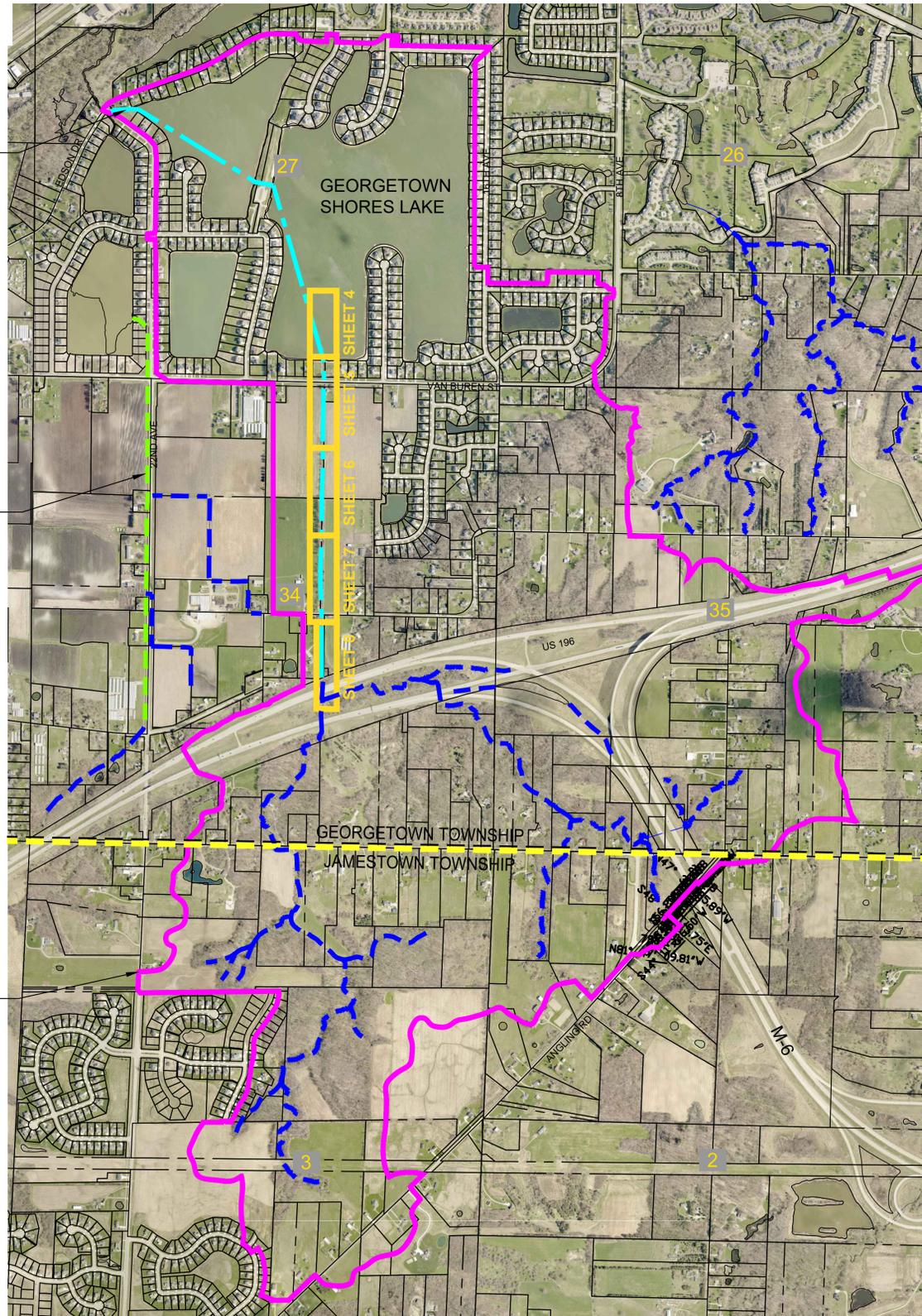
LOCATION MAP



CORY BISHOP DRAIN CENTERLINE

TOTTEN DRAIN CENTERLINE

CORY BISHOP DRAIN DRAINAGE DISTRICT BOUNDARY



SHEET INDEX

- | | |
|--------------------------|---|
| ADMINISTRATIVE SETS ONLY | 1. COVER SHEET |
| CONTRACT No. 1 | 2. DISTRICT BOUNDARY AND ROUTE AND COURSE EXHIBIT |
| | 3. DISTRICT BOUNDARY AND ROUTE AND COURSE DESCRIPTION |
| CONTRACT No. 2 | 4. LAKE DREDGING PLAN |
| | 5. PLAN & PROFILE - STA 1+00 TO STA 11+00 |
| | 6. PLAN & PROFILE - STA 11+00 TO STA 21+00 |
| | 7. PLAN & PROFILE - STA 21+00 TO STA 31+00 |
| | 8. PLAN & PROFILE - STA 31+00 TO STA 40+00 |
| | 9. DETAIL SHEET |
| | 10. SESC SHEET |

LIST OF CONTACTS

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 FAX: (616) 994-4529
 waterresourcescommissioner@miottawa.org

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 jolman@ottawacorc.com

AT&T
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 st5947@aol.com

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 315 DAVIS STREET
 GRAND HAVEN, MI 49417
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 PHONE: (616) 835-5154
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 GRAND HAVEN, MI 49417
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 mcehillr@engdot.com

JAMESTOWN TOWNSHIP
 KEN BERGWERFF
 TOWNSHIP SUPERVISOR
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 HUDSONVILLE, MI 49426
 PHONE: (616) 898-8376 ext. 17
 kbergwerff@twp.jamestown.mi.us

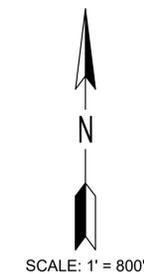
GEORGETOWN TOWNSHIP
 JIM WIERENGA
 TOWNSHIP SUPERVISOR
 1515 BALDWIN STREET
 P.O. BOX 769
 HUDSONVILLE, MI 49429-0769
 PHONE: (616) 226-6008
 JWierenga@georgetown-mi.gov

CONSUMERS ENERGY
 ATTN: MICHELE ANDREE
 LVD ENGINEERING DESIGN
 NORTON SHORES SERVICE CENTER
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 michele.andree@cmsenergy.com

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 1708 EATON DRIVE
 GRAND RAPIDS, MI 49417-2820
 tsubka@michiganutilities.com

LEGEND

- CORY BISHOP DRAIN DRAINAGE DISTRICT BOUNDARY
- CORY BISHOP DRAIN CENTERLINE
- OTHER COUNTY DRAINS IN DISTRICT
- OTHER WATERCOURSES
- MUNICIPAL BOUNDARY
- PARCEL LINE
- SECTION LINE OR QUARTER SECTION LINE
- SECTION NUMBER
- SHEET LOCATION



RYAN C. McENHILL, PE #56096

DATE

COVER SHEET

NO.	REVISIONS	DATE	BY	DATE	BY

4063 Grand Oak Drive Suite A109
 Lansing, MI 48911
 517.887.1100

16930 Robbins Road Suite 105
 Grand Haven, MI 49417
 616.743.7070
 engdot.com



JOE BUSH
 OTTAWA COUNTY WATER RESOURCES COMMISSIONER
 CORY BISHOP DRAIN DRAINAGE DISTRICT
 PART OF SECTIONS 26, 27, 34 & 35, T6N, R13W, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 & 3, T5N, R13W, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

PROJECT NO.

17028

SHEET NO.

1 OF 10



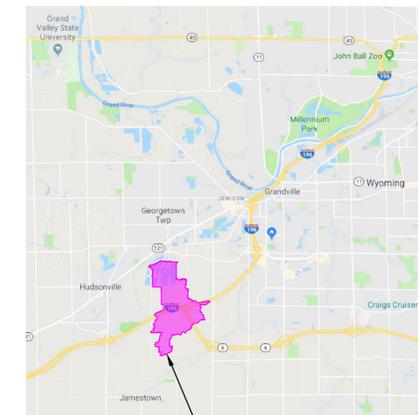
CORY BISHOP DRAIN DRAINAGE DISTRICT

PART OF SECTIONS 26, 27, 34 & 35, T6N, R13W, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 & 3, T5N, R13W, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

JOE BUSH

OTTAWA COUNTY WATER RESOURCES COMMISSIONER

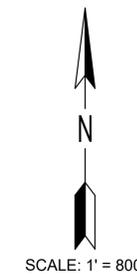
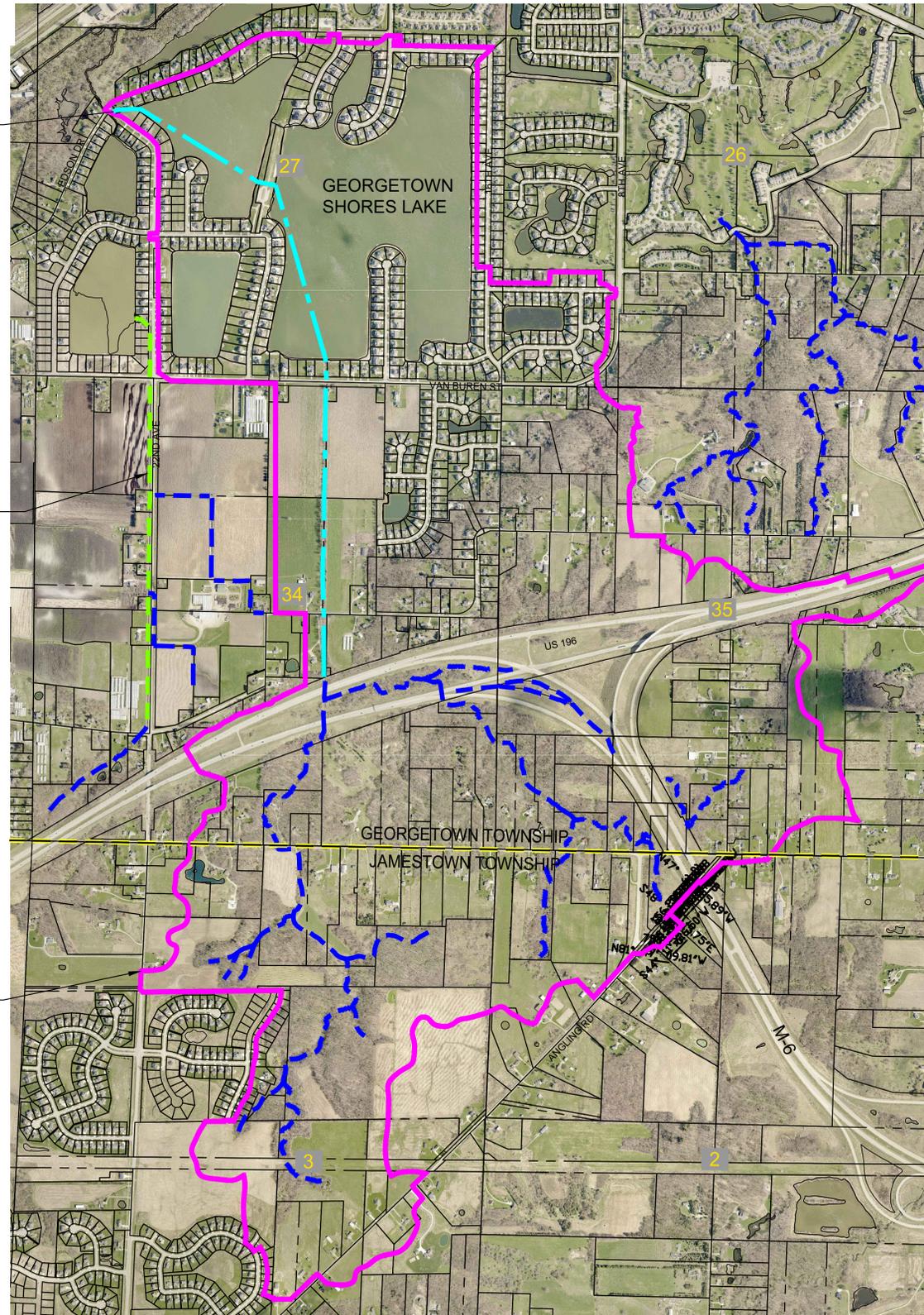
LOCATION MAP



CORY BISHOP DRAIN CENTERLINE

TOTTEN DRAIN CENTERLINE

CORY BISHOP DRAIN DRAINAGE DISTRICT BOUNDARY



LEGEND

- CORY BISHOP DRAIN DRAINAGE DISTRICT BOUNDARY
- - - CORY BISHOP DRAIN CENTERLINE
- - - OTHER COUNTY DRAINS IN DISTRICT
- - - OTHER WATERCOURSES
- - - MUNICIPAL BOUNDARY
- - - PARCEL LINE
- - - SECTION LINE OR QUARTER SECTION LINE
- 12 SECTION NUMBER

NO.	REVISIONS	DATE	BY	DATE	BY

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Lansing, MI 48911
517.867.1100

16930 Robbins Road Suite 105
Grand Haven, MI 49417
616.743.7070
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JOE BUSH
OTTAWA COUNTY WATER RESOURCES COMMISSIONER
CORY BISHOP DRAIN DRAINAGE DISTRICT
PART OF SECTIONS 26, 27, 34 & 35, T6N, R13W, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 & 3, T5N, R13W, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

PROJECT NO.
17028

SHEET NO.
2 OF 10

DRAINAGE DISTRICT BOUNDARY AND ROUTE AND COURSE EXHIBIT



CORY BISHOP DRAIN DRAINAGE DISTRICT

PART OF SECTIONS 26, 27, 34 & 35, T6N, R13W, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 & 3, T5N, R13W, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

JOE BUSH

OTTAWA COUNTY WATER RESOURCES COMMISSIONER

CORY BISHOP DRAIN

DRAINAGE DISTRICT BOUNDARY DESCRIPTION

THAT PART OF SECTIONS 26, 27, 34, AND 35, TOWNSHIP 6 NORTH, RANGE 13 WEST, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 AND 3, TOWNSHIP 5 NORTH, RANGE 13 WEST, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

BEGINNING AT A POINT 1403 FEET EAST AND 36 FEET NORTH FROM THE NORTHWEST CORNER OF SAID SECTION 34, THENCE N 0°21' W 1337 FEET, THENCE N 2°03' W 178 FEET, THENCE N 89°28' W 79 FEET, THENCE N 70°07' W 11 FEET, THENCE N 0°42' E 54 FEET, THENCE N 36°31' E 9 FEET, THENCE N 89°46' E 77 FEET, THENCE N 12°26' E 50 FEET, THENCE N 0°42' E 807 FEET, THENCE N 5°37' W 125 FEET, THENCE N 16°37' W 22 FEET, THENCE N 40°34' W 104 FEET, THENCE N 49°16' W 37 FEET, THENCE N 54°14' W 334 FEET, THENCE N 57°44' W 55 FEET, THENCE N 70°20' W 171 FEET, THENCE N 65°58' W 22 FEET, THENCE N 18°57' E 23 FEET, THENCE N 30°30' E 5 FEET, THENCE N 44°59' E 33 FEET, THENCE N 49°05' E 68 FEET, THENCE N 57°38' E 16 FEET, THENCE N 64°06' E 90 FEET, THENCE N 68°07' E 61 FEET, THENCE N 70°17' E 907 FEET, THENCE N 68°07' E 61 FEET, THENCE N 59°15' E 415 FEET, THENCE N 63°28' E 86 FEET, THENCE N 67°45' E 114 FEET, THENCE N 71°08' E 19 FEET, THENCE N 78°50' E 71 FEET, THENCE N 85°28' E 23 FEET, THENCE S 89°46' E 229 FEET, THENCE N 88°26' E 55 FEET, THENCE S 58°18' E 9 FEET, THENCE 120 FEET ALONG THE ARC OF A 82 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 45°31' E 109.5 FEET, THENCE S 87°35' E 175 FEET, THENCE N 89°18' E 92 FEET, THENCE N 1°28' E 80 FEET, THENCE S 88°51' E 114 FEET, THENCE S 1°24' W 84 FEET, THENCE S 87°50' E 374 FEET, THENCE 193 FEET ALONG THE ARC OF A 194 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 63°09' E 185 FEET, THENCE S 88°54' E 134 FEET, THENCE S 16°29' E 9 FEET, THENCE S 0°6' E 49 FEET, THENCE S 83°02' W 11 FEET, THENCE N 89°59' W 59 FEET, THENCE S 11°30' W 8 FEET, THENCE S 0°08' E 40 FEET, THENCE S 88°53' E 1113 FEET, THENCE S 22°29' W 28 FEET, THENCE S 47°16' W 207 FEET, THENCE S 0°17' W 2239 FEET, THENCE S 36°52' E 40 FEET, THENCE N 89°59' E 130 FEET, THENCE S 4°42' E 28 FEET, THENCE SOUTH 151 FEET, THENCE S 88°32' E 104 FEET, THENCE S 89°48' E 566 FEET, THENCE N 23°50' E 22 FEET, THENCE N 0°39' E 108 FEET, THENCE N 89°37' E 89 FEET, THENCE S 89°20' E 480 FEET, THENCE S 17°14' E 20 FEET, THENCE S 1°21' W 104 FEET, THENCE S 72°33' E 10.0 FEET, THENCE S 78°46' E 48 FEET, THENCE 73 FEET ALONG THE ARC OF 116.5 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 56°42' E 71.7 FEET, THENCE S 38°40' E 17 FEET, THENCE S 89°58' E 44 FEET, THENCE S 72°24' E 7 FEET, THENCE S 0°18' E 67 FEET, THENCE S 7°35' W 11 FEET, THENCE 20.5 FEET ALONG THE ARC OF A 20.4 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 39°02' W 19.7 FEET, THENCE 19.7 FEET ALONG THE ARC OF A 53 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 78°39' E 19.7 FEET, THENCE S 89°23' W 35 FEET, THENCE 26.7 FEET ALONG THE ARC OF A 20 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 51°13' W 24.7 FEET, THENCE S 13°02' W 11 FEET, THENCE S 0°05' W 328 FEET, THENCE S 2°53' W 102 FEET, THENCE S 7°40' W 168 FEET, THENCE S 41°05' W 86 FEET, THENCE 113 FEET ALONG THE ARC OF A 182 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 6°27' E 111 FEET, THENCE 46 FEET ALONG THE ARC OF A 107 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 0°45' W 45.6 FEET, THENCE S 14°13' E 36 FEET, THENCE S 20°51' E 51 FEET, THENCE TO A POINT ON THE NORTH LINE OF SAID SECTION 35 SAID POINT LYING 1114 FEET EAST FROM THE NORTHWEST CORNER OF SAID SECTION 35, THENCE S 22°56' E 38 FEET, THENCE 102.6 FEET ALONG THE ARC OF A 199.3 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 37°38' E 101.5 FEET, THENCE S 54°32' E 168 FEET, THENCE S 65°48' E 43 FEET, THENCE 47 FEET ALONG THE ARC OF A 70 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 85°21' E 46.1 FEET, THENCE N 75°41' E 20 FEET, THENCE 31 FEET ALONG THE ARC OF A 75 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 89°50' E 37.8 FEET, THENCE S 75°58' E 40 FEET, THENCE 53 FEET ALONG THE ARC OF A 135.4 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 89°11' E 52.7 FEET, THENCE 34.2 FEET ALONG THE ARC OF A 151.5 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 9°03' E 34.2 FEET, THENCE 44.8 FEET ALONG THE ARC OF A 42.7 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 24°35' W 42.8 FEET, THENCE 33.3 FEET ALONG THE ARC OF A 29.6 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 20°53' W 31.6 FEET, THENCE S 15°08' E 31 FEET, THENCE 34.7 FEET ALONG THE ARC OF A 70.7 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 8°58' E 34.4 FEET, THENCE 35.1 FEET ALONG THE ARC OF A 36.2 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 21°49' E 33.7 FEET, THENCE S 52°23' E 13 FEET, THENCE 41.0 FEET ALONG THE ARC OF A 94.2 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 78°15' W 40.6 FEET, THENCE 29.0 FEET ALONG THE ARC OF A 20.3 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 51°43' W 26.6 FEET, THENCE S 10°48' W 69 FEET, THENCE 36.7 FEET ALONG THE ARC OF A 49.9 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 10°49' E 35.9 FEET, THENCE 42.4 FEET ALONG THE ARC OF A 55.1 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 12°07' E 41.4 FEET, THENCE S 27°32' W 12 FEET, THENCE S 52°10' W 20 FEET, THENCE 78.4 FEET ALONG THE ARC OF A 56.0 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 17°07' W 72.2 FEET, THENCE S 20°46' E 28 FEET, THENCE 50.4 FEET ALONG THE ARC OF A 107 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 5°21' E 50.0 FEET, THENCE S 0°32' W 111 FEET, THENCE 109.1 FEET ALONG THE ARC OF A 327.7 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 10°17' E 108.6 FEET, THENCE S 7°14' E 52 FEET, THENCE 42.0 FEET ALONG THE ARC OF A 38.9 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 22°50' W 40.0 FEET, THENCE 103.8 FEET ALONG THE ARC OF A 125.7 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 21°26' W 100.9 FEET, THENCE S 0°22' E 269 FEET, THENCE S 6°54' E 237 FEET, THENCE S 89°03' E 333 FEET, THENCE S 72°05' E 30 FEET THENCE S 9°18' W 99 FEET, THENCE S 64°32' E 84 FEET, THENCE S 63°46' E 46 FEET, THENCE S 66°25' E 25 FEET, THENCE S 72°40' E 34 FEET, THENCE S 74°45' E 43 FEET, THENCE S 66°21' E 28 FEET, THENCE 240 FEET ALONG THE ARC OF A 184.3 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 23°47' E 223.3 FEET, THENCE S 13°48' W 58 FEET, THENCE N 35°11' E 150 FEET, THENCE N 41°17' E 49 FEET, THENCE 124.3 FEET ALONG THE ARC OF A 174.5 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 70°22' E 121.6 FEET, THENCE N 88°26' E 67 FEET, THENCE 89.7 FEET ALONG THE ARC OF A 118 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 67°36' E 87.6 FEET, THENCE S 46°52' E 64 FEET, THENCE S 65°49' E 23 FEET, THENCE S 63°24' E 30 FEET, THENCE S 66°26' E 41 FEET, THENCE S 59°07' E 36 FEET, THENCE S 51°07' E 52 FEET, THENCE S 45°18' E 120 FEET, THENCE S 49°18' E 27 FEET, THENCE 139 FEET ALONG THE ARC OF A 289.2 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 64°56' E 137.6 FEET, THENCE S 79°35' E 79 FEET, THENCE 302.4 FEET ALONG THE ARC OF A 652.2 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 86°46' E 299.7 FEET, THENCE N 74°10' E 102 FEET, THENCE 172.6 FEET ALONG THE ARC OF A 1215.2 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 81°31' E 172.4 FEET, THENCE 225.2 FEET ALONG THE ARC OF A 960 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 76°02' E 224.6 FEET, THENCE N 70°49' E 118 FEET, THENCE S 17°14' E 78 FEET, THENCE N 73°00' E 488 FEET, THENCE S 18°41' E 93 FEET, THENCE N 70°50' E 401 FEET, THENCE S 16°38' E 97 FEET, THENCE S 3°58' W 24 FEET, THENCE S 30°15' W 21 FEET, THENCE S 63°15' W 77 FEET, THENCE 169.7 FEET ALONG THE ARC OF A 478 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 48°57' W 168.8 FEET, THENCE S 41°24' W 46 FEET, THENCE S 52°56' W 92 FEET, THENCE S 61°34' W 105 FEET, THENCE 127 FEET ALONG THE ARC OF A 909.4 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 54°17' W 127 FEET, THENCE 263 FEET ALONG THE ARC OF A 530.0 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 63°30' W 260.0 FEET, THENCE 260.8 FEET ALONG THE ARC OF A 490.3 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 89°04' W 257.7 FEET, THENCE N 70°21' W 49 FEET, THENCE 191 FEET ALONG THE ARC OF A 326 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 83°34' W 188.4 FEET, THENCE S 79°33' W 104 FEET, THENCE S 73°07' W 126 FEET, THENCE S 70°42' W 80 FEET, THENCE S 1°52' E 61 FEET, THENCE 103 FEET ALONG THE ARC OF A 563.8 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 9°04' E 103 FEET, THENCE 82.5 FEET ALONG THE ARC OF A 105.5 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 32°05' E 80.5 FEET, THENCE S 55°08' E 54 FEET, THENCE 125.9 FEET ALONG THE ARC OF A 185.2 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 33°45' E 123.5 FEET, THENCE 58.2 FEET ALONG THE ARC OF A 85.7 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 5°51' W 57.0 FEET, THENCE 56 FEET ALONG THE ARC OF A 270.0 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 32°08' W 56.0 FEET, THENCE S 38°55' W 38 FEET, THENCE 252.1 FEET ALONG THE ARC OF A 267.7 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 16°30' W 243.0 FEET, THENCE S 11°01' E 203 FEET, THENCE 172.8 FEET ALONG THE ARC OF A 234.9 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 35°30' E 168.9 FEET, THENCE S 55°27' E 88.0 FEET, THENCE 121 FEET ALONG THE ARC OF A 119.5 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 26°58' E 115.9 FEET, THENCE S 1°43' E 89 FEET, THENCE S 3°51' E 19 FEET, THENCE 65.3 FEET ALONG THE ARC OF A 130.2 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 16°28' E 64.7 FEET, THENCE 56.8 FEET ALONG THE ARC OF A 90.3 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 55°36' E 55.9 FEET, THENCE S 75°38' E 132 FEET, THENCE 48.7 FEET ALONG THE ARC OF A 32.9 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 33°52' E 44.3 FEET, THENCE S 8°43' W 64 FEET, THENCE 218.3 FEET ALONG THE ARC OF A 368.4 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 10°24' E 215.1 FEET, THENCE S 23°38' E 84 FEET, THENCE S 18°55' E 47 FEET, THENCE S 12°28' E 151 FEET, THENCE S 16°29' E 86 FEET, THENCE 137.3 FEET ALONG THE ARC OF A 326.7 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 28°26' E 136.2 FEET, THENCE 255.5 FEET ALONG THE ARC OF A 1152.8 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 84°20' W 255.0 FEET, THENCE N 88°54' W 134 FEET, THENCE 178.9 FEET ALONG THE ARC OF A 331.9 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 77°28' W 176.7 FEET, THENCE S 65°17' W 128 FEET, THENCE S 63°47' W 118 FEET, THENCE S 36°52' W 339.3 FEET TO A POINT ON THE NORTH LINE OF SAID SECTION 2, SAID POINT LYING 504.9 FEET EAST FROM THE NORTH 1/4 CORNER OF SAID SECTION 2, THENCE CONTINUING S 36°52' W 69.7 FEET, THENCE S 84°03' W 369 FEET, THENCE N 89°25' W 147 FEET, THENCE S 47°40' W 338 FEET, THENCE N 48°10' W 27 FEET, THENCE S 42°30' W 496 FEET, THENCE S 48°23' E 194 FEET, THENCE S 44°11' W 353 FEET, THENCE N 82°04' W 79 FEET, THENCE S 60°49' W 109 FEET, THENCE S 50°28' W 46 FEET, THENCE S 88°50' W 102 FEET, THENCE S 42°30' W 670 FEET, THENCE N 44°22' W 269 FEET, THENCE S 77°39' W 188 FEET, THENCE 175.2 FEET ALONG THE ARC OF A 186.1 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 48°16' W 168.8 FEET, THENCE S 20°45' W 121 FEET, THENCE 114.9 FEET ALONG THE ARC OF A 546.7 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 31°19' W 114.7 FEET, THENCE 95.4 FEET ALONG THE ARC OF A 445.0 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 27°30' W 95.2 FEET, THENCE S 29°13' W 25 FEET, THENCE 61.5 FEET ALONG THE ARC OF A 45.1 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 67°25' W 56.9 FEET, THENCE 155.0 FEET ALONG THE ARC OF A 297.7 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 65°13' W 153.3 FEET, THENCE N 60°58' W 120 FEET, THENCE N 47°02' W 66 FEET, THENCE 102.2 FEET ALONG THE ARC OF A 78.8 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 82°36' W 95.2 FEET, THENCE S 64°46' W 127 FEET, THENCE S 70°41' W 46 FEET, THENCE S 74°32' W 173 FEET, THENCE S 80°28' W 76 FEET, THENCE 81.3 FEET ALONG THE ARC OF A 146.8 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 67°24' W 80.3 FEET, THENCE S 53°58' W 41 FEET, THENCE 119.9 FEET ALONG THE ARC OF A 172.2 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 75°08' W 117.5 FEET, THENCE N 86°34' W 11 FEET, THENCE 75.7 FEET ALONG THE ARC OF A 278.2 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 79°39' W 75.5 FEET, THENCE 81.2 FEET ALONG THE ARC OF A 133.1 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 50°27' W 80.0 FEET, THENCE 181.1 FEET ALONG THE ARC OF A 89.4 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 89°56' W 151.7 FEET, THENCE 111.8 FEET ALONG THE ARC OF A 450.0 FOOT RADIUS CURVE TO THE LEFT THEN LONG CHORD OF SAID CURVE BEARING S 26°19' W 115.5 FEET, THENCE 69.9 FEET ALONG THE ARC OF A 132.7 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 0°58' W 69.1 FEET, THENCE S 14°11' E 62 FEET, THENCE 115 FEET ALONG THE ARC OF A 333.3 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 2°34' E 114.5 FEET, THENCE S 3°51' W 48 FEET, THENCE 73.5 FEET ALONG THE ARC OF A 261.1 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 10°34' W 73.3 FEET, THENCE 57.7 FEET ALONG THE ARC OF A 100.9 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 37°47' W 56.9 FEET, THENCE S 56°59' W 37 FEET, THENCE S 60°13' W 74 FEET, THENCE S 54°29' W 49 FEET, THENCE 121.0 FEET ALONG THE ARC OF A 496 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 46°42' W 120.7 FEET, THENCE 95 FEET ALONG THE ARC OF A 136.8 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 17°36' W 93.1 FEET, THENCE S 5°10' E 95 FEET, THENCE SOUTH 103 FEET, THENCE S 2°19' W 208 FEET, THENCE 401.0 FEET ALONG THE ARC OF A 720.8 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 9°07' E 395.9 FEET, THENCE 150.7 FEET ALONG THE ARC OF A 308.0 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 71°20' E 147.6 FEET, THENCE 251.7 FEET ALONG THE ARC OF A 566.4 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 86°05' E 249.7 FEET, THENCE S 45°42' W 202 FEET, THENCE S 24°07' E 26 FEET, THENCE S 40°31' E 156 FEET, THENCE S 39°55' W 112 FEET, THENCE 119.0 FEET ALONG THE ARC OF A 110.5 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 8°32' W 113.3 FEET, THENCE S 24°16' E 58 FEET, THENCE 68.2 FEET ALONG THE ARC OF A 92.9 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 3°25' E 66.7 FEET, THENCE 275 FEET ALONG THE ARC OF A 624.6 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 29°39' W 272.8 FEET, THENCE 156.7 FEET ALONG THE ARC OF A 240.2 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 62°18' W 153.9 FEET, THENCE S 78°32' W 92 FEET, THENCE 158.1 FEET ALONG THE ARC OF A 332.3 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 65°10' W 156.6 FEET, THENCE S 49°19' W 36 FEET, THENCE 91.4 FEET ALONG THE ARC OF A 272.3 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 60°17' W 91 FEET, THENCE S 67°06' W 34 FEET, THENCE 48.3 FEET ALONG THE ARC OF A 167 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 57°58' W 48.2 FEET, THENCE 43.2 FEET ALONG THE ARC OF A 75.9 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING S 28°48' W 42.6 FEET, THENCE S 11°10' W 57 FEET, THENCE 73.9 FEET ALONG THE ARC OF A 73.2 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 39°46' W 70.8 FEET, THENCE 146.2 FEET ALONG THE ARC OF A 297.6 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 82°55' W 144.7 FEET, THENCE N 82°53' W 132 FEET, THENCE N 44°27' W 153 FEET, THENCE S 46°23' W 416 FEET, THENCE S 89°18' W 196 FEET, THENCE N 14°21' W 17 FEET, THENCE N 70°45' W 117 FEET, THENCE N 16°07' E 92 FEET, THENCE N 10°38' E 77 FEET, THENCE N 3°02' E 111 FEET, THENCE N 9°07' W 145 FEET, THENCE N 23°26' W 59 FEET, THENCE N 30°21' W 72 FEET, THENCE S 59°29' W 86 FEET, THENCE N 33°32' W 47 FEET, THENCE N 46°32' W 42 FEET, THENCE N 54°55' W 28 FEET, THENCE N 60°51' W 22 FEET, THENCE N 4°37' E 136 FEET, THENCE 444 FEET ALONG THE ARC OF A 1209 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 2°18' W 441.4 FEET, THENCE 194.8 FEET ALONG THE ARC OF A 530.9 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 3°05' W 193.7 FEET, THENCE 109.2 FEET ALONG THE ARC OF A 304.5 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 61°52' W 108.6 FEET, THENCE 212.2 FEET ALONG THE ARC OF A 270.7 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING S 87°00' W 103.4 FEET, THENCE N 83°51' W 188 FEET, THENCE 74.3 FEET ALONG THE ARC OF A 318.1 RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 76°24' W 74.1 FEET, THENCE 100.3 FEET ALONG THE ARC OF A 95.0 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 42°21' W 95.7 FEET, THENCE N 12°03' W 87 FEET, THENCE N 22°03' W 47 FEET, THENCE N 26°11' W 80 FEET, THENCE 122.8 FEET ALONG THE ARC OF A 120.9 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 2°55' E 103.5 FEET, THENCE N 24°51' E 169 FEET, THENCE N 32°09' E 110 FEET, THENCE N 26°07' E 29 FEET, THENCE EAST 212 FEET, THENCE N 10°15' E 13 FEET, THENCE N 89°14' E 68 FEET, THENCE N 1°42' E 10 FEET, THENCE EAST 90 FEET, THENCE N 24°52' E 220 FEET, THENCE N 35°28' E 97 FEET, THENCE N 22°38' E 88 FEET, THENCE N 8°53' E 141 FEET, THENCE N 8°09' E 134 FEET, THENCE N 12°47' E 133 FEET, THENCE 104.9 FEET ALONG THE ARC OF A 471.3 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 0°17' E 104.7 FEET, THENCE 125.2 FEET ALONG THE ARC OF A 194.1 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 13°48' E 123.1 FEET, THENCE N 33°50' E 33.5 FEET, THENCE N 37°52' E 109 FEET, THENCE N 33°49' E 216 FEET, THENCE 214.6 FEET ALONG THE ARC OF A 349.7 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 14°22' E 211.3 FEET, THENCE S 89°19' W 1581 FEET, THENCE N 37°13' W 45 FEET, THENCE N 2°54' E 208 FEET, THENCE 223.8 FEET ALONG THE ARC OF A 940.3 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 85°31' E 223.3 FEET, THENCE 141.7 FEET ALONG THE ARC OF A 193 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 56°27' E 138.5 FEET, THENCE 101.2 FEET ALONG THE ARC OF A 404.0 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 31°12' E 100.9 FEET, THENCE 77.1 FEET ALONG THE ARC OF A 167.6 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 10°18' E 76.4 FEET, THENCE N 8°40' W 10 FEET, THENCE 24.3 FEET ALONG THE ARC OF A 28.2 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 34°46' E 23.5 FEET, THENCE N 66°11' W 40 FEET, THENCE 174.8 FEET ALONG THE ARC OF A 84.1 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 3°08' W 145.0 FEET, THENCE 91.8 FEET ALONG THE ARC OF A 397.7 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 65°05' E 91.6 FEET, THENCE 74.6 FEET ALONG THE ARC OF A 239.7 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 60°17' E 69.6 FEET, THENCE 70.4 FEET ALONG THE ARC OF A 100.8 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 31°09' E 69.0 FEET, THENCE 135.6 FEET ALONG THE ARC OF A 358.7 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 2°36' E 134.8 FEET, THENCE 133.6 FEET ALONG THE ARC OF A 165.5 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 33°41' W 130.1 FEET, THENCE N 53°04' W 57 FEET, THENCE 102.8 FEET ALONG THE ARC OF A 92.8 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 21°32' W 97.6 FEET, THENCE N 10°15' E 62 FEET, THENCE 58.3 FEET ALONG THE ARC OF A 318.2 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 0°19' E 58.3 FEET, THENCE 77.3 FEET ALONG THE ARC OF A 83.9 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 18°47' E 74.6 FEET, THENCE N 44°18' E 146 FEET, THENCE 130.9 FEET ALONG THE ARC OF A 153.5 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 17°41' E 127.0 FEET, THENCE N 3°00' E 44 FEET, THENCE 158.0 FEET ALONG THE ARC OF A 183.5 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 22°17' E 153.2 FEET, THENCE N 45°43' E 74 FEET, THENCE 168.5 FEET ALONG THE ARC OF A 189.7 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 19°01' E 163.1 FEET, THENCE 54.8 FEET ALONG THE ARC OF A 42.1 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 33°12' E 51.0 FEET, THENCE N 72°25' E 35 FEET, THENCE N 79°13' E 80 FEET, THENCE 61 FEET ALONG THE ARC OF A 187.1 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 88°09' E 60.7 FEET, THENCE 65.3 FEET ALONG THE ARC OF A 57.1 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 28°50' E 61.8 FEET, THENCE N 2°40' W 47 FEET, THENCE N 7°41' E 131 FEET, THENCE N 2°04' W 48 FEET, THENCE 70.8 FEET ALONG THE ARC OF A 58.1 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 35°12' W 66.4 FEET, THENCE N 72°42' W 260 FEET, THENCE N 31°24' W 325 FEET, THENCE N 48°20' E 122 FEET, THENCE N 55°32' E 57 FEET, THENCE N 52°28' E 81 FEET, THENCE N 62°04' E 55 FEET, THENCE N 70°42' E 94 FEET, THENCE N 63°28' E 50 FEET, THENCE N 54°14' E 80 FEET, THENCE N 62°48' E 100 FEET, THENCE N 57°14' E 65 FEET, THENCE N 72°15' E 154 FEET, THENCE N 69°21' E 126 FEET, THENCE N 63°46' E 47 FEET, THENCE 35.7 FEET ALONG THE ARC OF A 133.9 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 78°08' E 35.6 FEET, THENCE 35 FEET ALONG THE ARC OF A 151.2 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 80°02' E 35 FEET, THENCE 39.2 FEET ALONG THE ARC OF A 54.9 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 49°49' E 38.4 FEET, THENCE N 33°07' E 11 FEET, THENCE 24.3 FEET ALONG THE ARC OF A 38.3 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 54°25' E 24.2 FEET, THENCE 66.9 FEET ALONG THE ARC OF A 271 FOOT RADIUS CURVE TO THE LEFT THE LONG CHORD OF SAID CURVE BEARING N 64°56' E 66.7 FEET, THENCE 232.6 FEET ALONG THE ARC OF A 2357.3 FOOT RADIUS CURVE TO THE RIGHT THE LONG CHORD OF SAID CURVE BEARING N 64°14' E 232.5 FEET, THENCE N 65°05' E 87 FEET, THENCE NORTH 811 FEET THENCE N 88°33' W 340 FEET, THENCE NORTH 2606 FEET, THENCE N 88°31' W 1201 FEET, THENCE N 54°47' W 161.3 FEET MORE OR LESS TO THE POINT OF BEGINNING.

CONTAINING 1399.8 ACRES MORE OR LESS.

THE BASIS OF THIS DESCRIPTION WAS THE OTTAWA COUNTY GIS MAPPING SYSTEM SUBJECT TO ITS ACCURACY.

CORY BISHOP DRAIN

ROUTE AND COURSE

BEGINNING AT A POINT 2593 Feet South And 2040 FEET WEST FROM THE NORTHEAST CORNER OF SECTION 3

BM #1 ELEV = 621.26
 SET SPIKE SE SIDE UTILITY POLE
 40' N OF C VAN BUREN ST 45' W
 OF C CORY BISHOP DRAIN

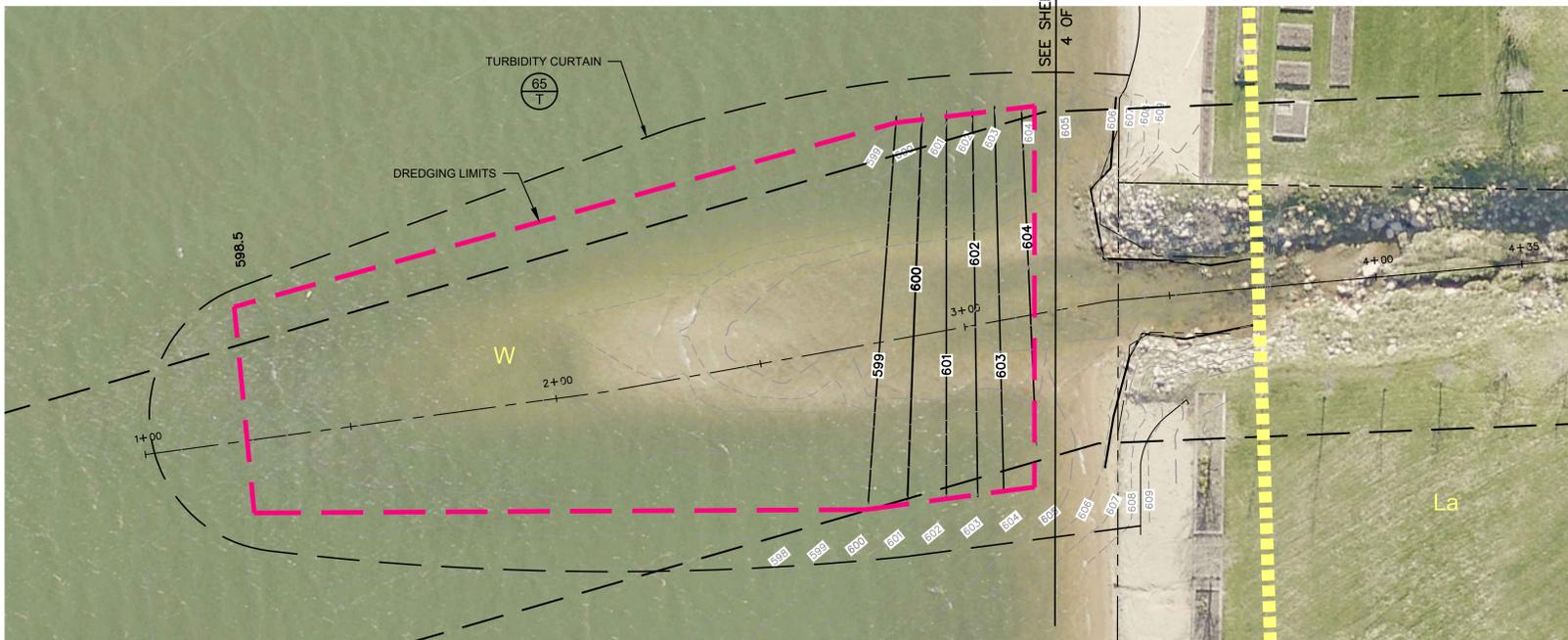
BM #2 ELEV = 621.18
 SET SPIKE SE SIDE UTILITY POLE
 40' S OF C VAN BUREN ST 20' E
 OF C CORY BISHOP DRAIN

811 Know what's below.
 Call before you dig.

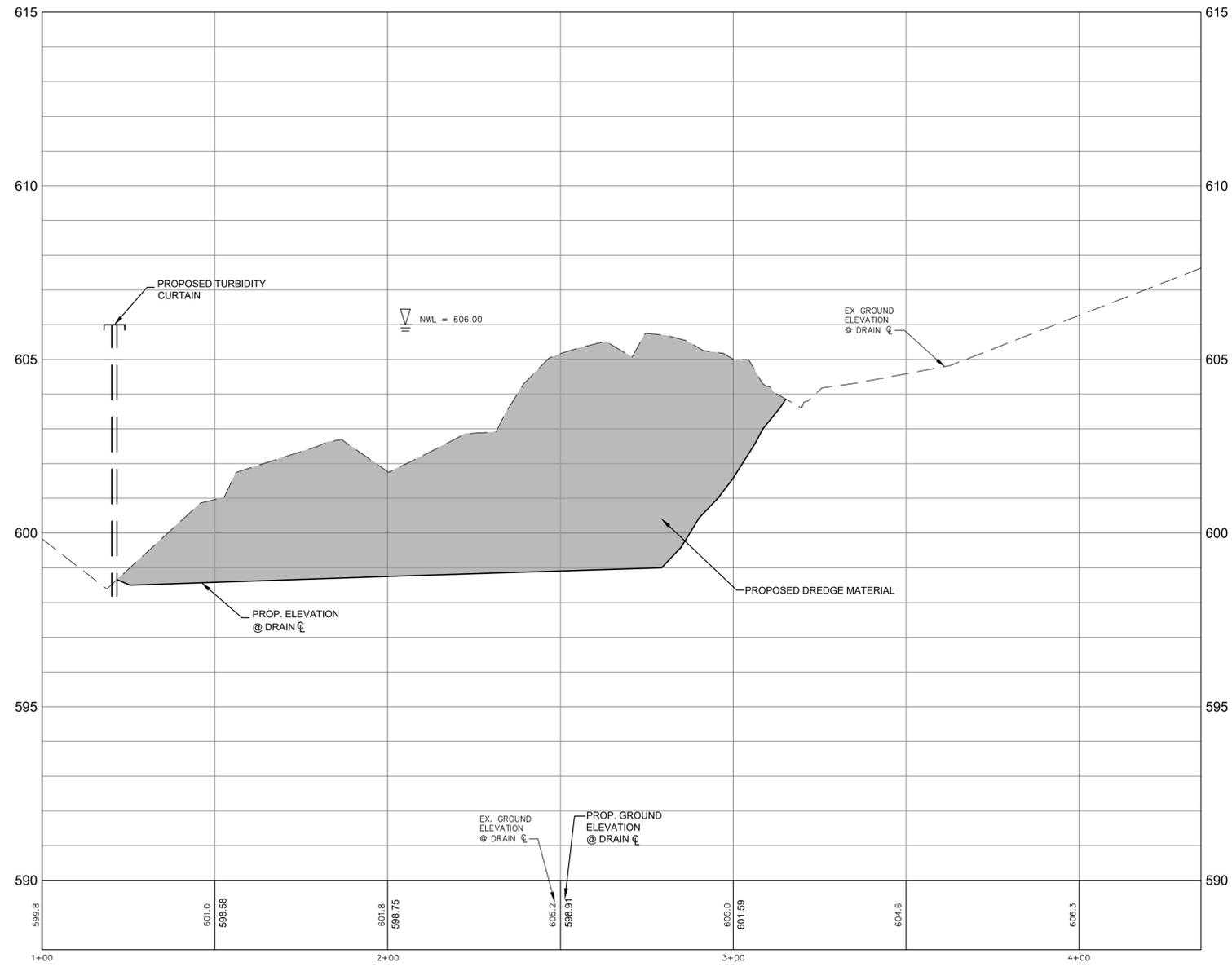
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NO.	REVISIONS	DATE	BY	DATE	BY

SOIL TYPES AND ABBREVIATIONS	
La	LACOTA SILT LOAM
KoA	KIBBIE LOAM: 0 TO 2 PERCENT SLOPES
Sn	SHOALS LOAM
MuF3	MORLEY CLAY LOAM: 25 TO 45 PERCENT SLOPES, SEVERELY ERODED
TknabE	TEKENINK: SPINKS LOAMY SANDS, 18 TO 35 PERCENT SLOPES.
W	WATER



CONTRACT No. 1 WORK



LEGEND

- = PROPERTY LINE OR R.O.W. LINE
- - - = DRAIN EASEMENT LINE
- - - = EXISTING DRAIN C
- = EXISTING SPOT ELEVATION
- = EXISTING CONTOUR ELEVATION
- BM = BENCH MARK LOCATION
- 21813 CENTENNIAL DR PVT 33-70-01-15-300-016 = PROPERTY ID
- (X/T) = TEMPORARY SESC MEASURE
- (X/P) = PERMANENT SESC MEASURE
- = PROPOSED CONTOUR ELEVATION
- - - = DREDGING LIMITS
- - - = TURBIDITY CURTAIN
- La--- = SOIL TYPE

4063 Grand Oak Drive Suite A109
 Lansing, MI 48911
 517.867.1100

18930 Robbins Road Suite 105
 Grand Haven, MI 49417
 616.743.7070
 engdol.com



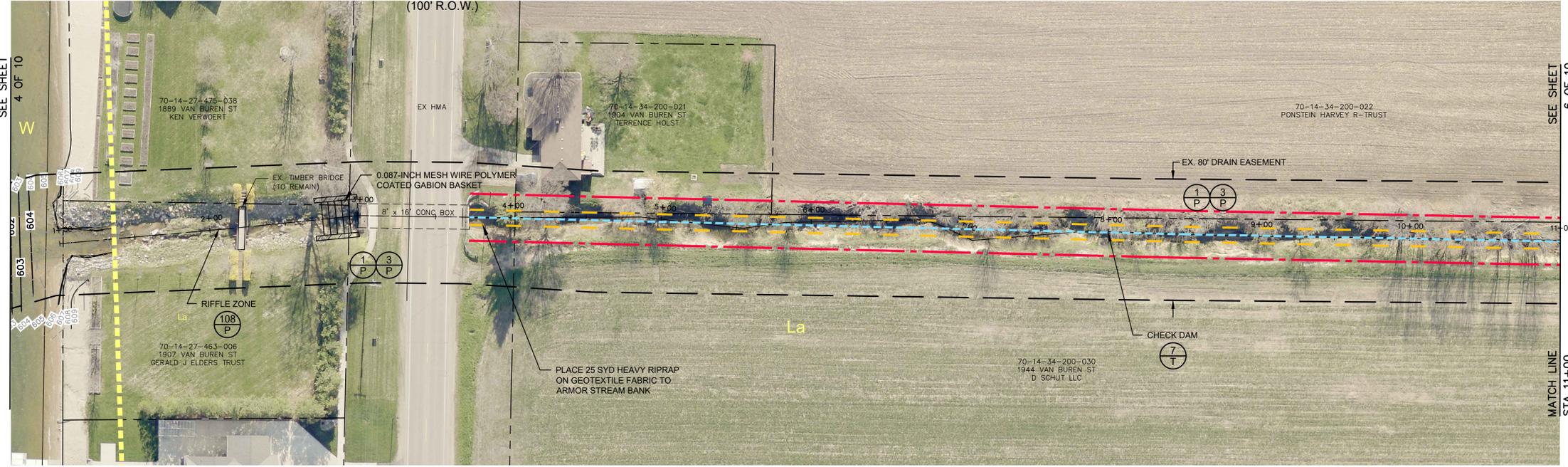
JOE BUSH
 OTTAWA COUNTY WATER RESOURCES COMMISSIONER
 CORY BISHOP DRAIN DRAINAGE DISTRICT
 PART OF SECTIONS 26, 27, 34 & 35, T6N, R13W, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 & 3, T5N, R13W, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

PROJECT NO.
17028

SHEET NO.
4 OF 10

LAKE DREDGING PLAN

VAN BUREN STREET
(100' R.O.W.)



BM #1 ELEV = 621.26
SET SPIKE SE SIDE UTILITY POLE
40' N OF CL VAN BUREN ST 45' W
OF CL CORY BISHOP DRAIN

BM #2 ELEV = 621.18
SET SPIKE SE SIDE UTILITY POLE
40' S OF CL VAN BUREN ST 20' E
OF CL CORY BISHOP DRAIN

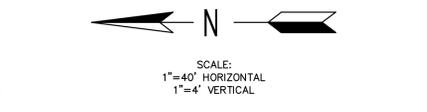
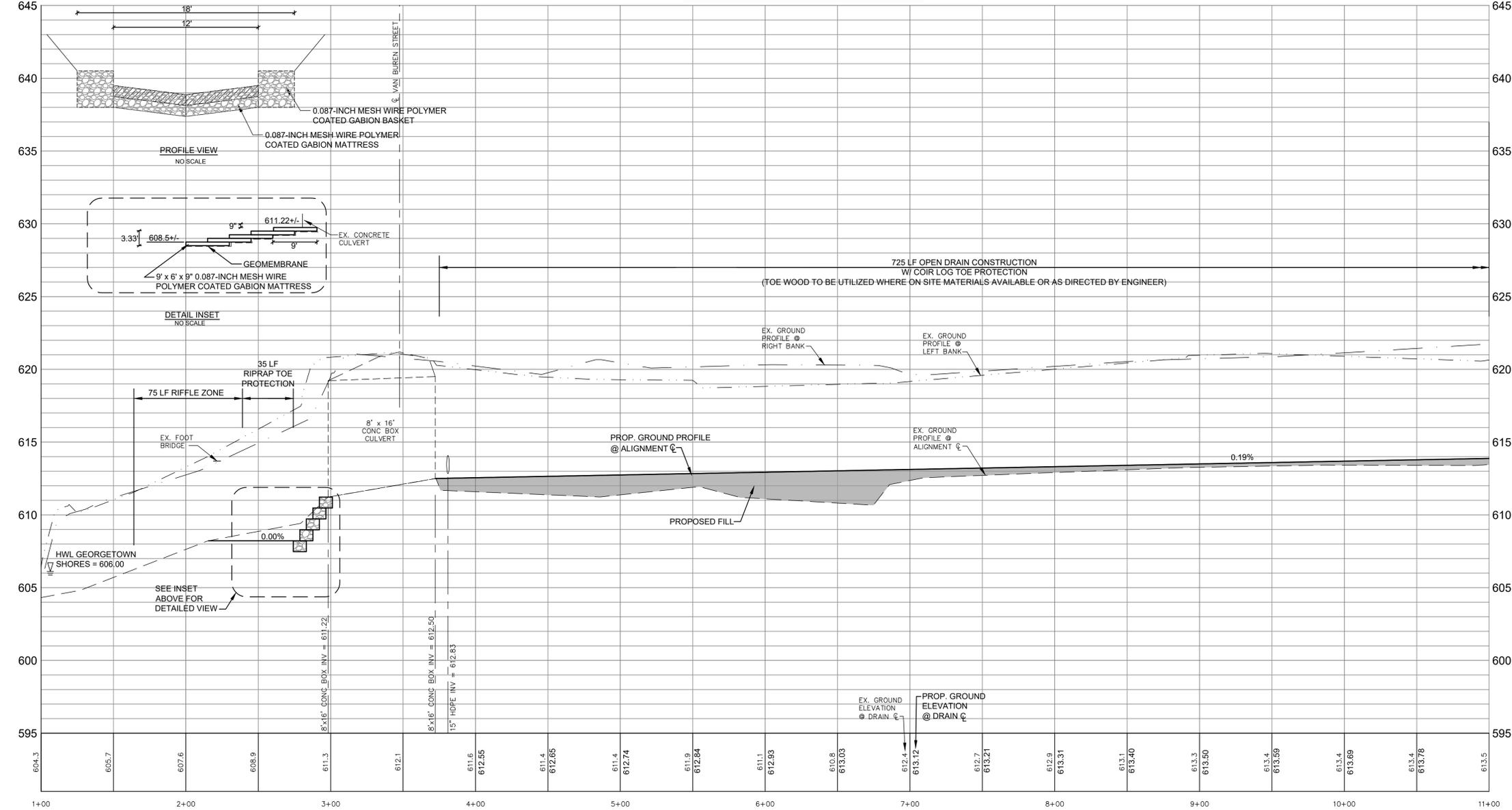
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SOIL TYPES AND ABBREVIATIONS	
La	LACOTA SILT LOAM
KoA	KIBBIE LOAM: 0 TO 2 PERCENT SLOPES
Sn	SHOALS LOAM
MuF3	MORLEY CLAY LOAM: 25 TO 45 PERCENT SLOPES. SEVERELY ERODED
TknabE	TEKENINK: SPINKS LOAMY SANDS. 18 TO 35 PERCENT SLOPES.
W	WATER

- GENERAL NOTES:
- ALL TREES TO BE MARKED BY ENGINEER PRIOR TO REMOVAL.
 - LEVEL, SEED, AND MULCH SPOILS WITH OPEN CHANNEL SEED MIX. SPOILS SHALL NOT BE GREATER THAN 18 INCHES IN HEIGHT IN ANY GIVEN AREA.
 - ALL TREES REMOVED MUST HAVE LOGS STACKED IN EASEMENT AREA LIMITS. ALL OTHER WOODY MATERIAL MUST BE CHIPPED OR REMOVED FROM THE SITE. ALL TREES REMOVED FROM THE DRAIN BOTTOM MUST BE CUT FLUSH.
 - PROPERTY OWNERS MUST BE NOTIFIED 7 DAYS PRIOR TO ANY ACCESS AND TREE REMOVALS ON THEIR PROPERTY. SITE ACCESS IS RESTRICTED TO EXISTING DRAIN EASEMENTS, TEMPORARY ACCESS EASEMENTS, AND PUBLIC RIGHTS OF WAY SHOWN ON DRAWINGS. ALL OTHER ACCESS TO THE SITE SHALL BE APPROVED BY THE OTTAWA COUNTY WATER RESOURCES COMMISSIONER.
 - TEMPORARY SESC MEASURES MUST BE IN PLACE AT 500 FOOT INCREMENTS TO CONTROL SEDIMENT TRANSPORT.

- SHEET SPECIFIC NOTES:
- SPOILS GENERATED THIS SHEET TO BE LEVELED ALONG EITHER OF THE DRAIN SO AS TO NOT AFFECT EXISTING DRAINAGE PATTERNS OR WITHIN AN APPROVED UPLAND AREAS.
 - WORK MAY BE PERFORMED FROM EITHER SIDE OF DRAIN.

CONTRACT No. 2 WORK



LEGEND

- = PROPERTY LINE OR R.O.W. LINE
- = EDGE OF PAVEMENT
- X-X- = FENCE
- = EXISTING GUARDRAIL
- WETLANDS (AS MARKED BY OTHERS)
- +850 = EXISTING SPOT ELEVATION
- = EXISTING CONTOUR ELEVATION
- = EDGE OF WOODS
- = DECIDUOUS TREE
- = CONIFEROUS TREE
- = BUSH
- = STUMP
- GAS --- = EXISTING GAS LINE
- = EXISTING STORM SEWER
- = EXISTING SANITARY SEWER
- = EXISTING MANHOLE
- ⊕ = EXISTING STORM CATCH BASIN
- ⊙ = EXISTING WELL LOCATION
- ⊗ = EXISTING WATER VALVE
- ⊘ = EXISTING CURB STOP / METER
- ⊚ = EXISTING CATCH BASIN
- ⊛ = BENCH MARK LOCATION
- △ = EXISTING SIGN
- ⊞ = EXISTING MAILBOX
- ⊟ = EXISTING LIGHT POLE
- ⊠ = EXISTING GUY ANCHOR
- ⊡ = EXISTING UTILITY POLE
- ⊢ = EXISTING TELEPHONE PEDESTAL
- = EXISTING DRAIN CL
- = PROPOSED DRAIN CL
- = PROPOSED TOP OF BANK
- = PROPOSED TOE OF SLOPE
- La --- = SOIL TYPE

PLAN & PROFILE
STA 1+00 TO STA 11+00

DATE	BY	DATE	BY
5/29/18	SPM	5/29/18	SPM

4063 Grand Oak Drive Suite A109
Lansing, MI 48911
517.867.1100

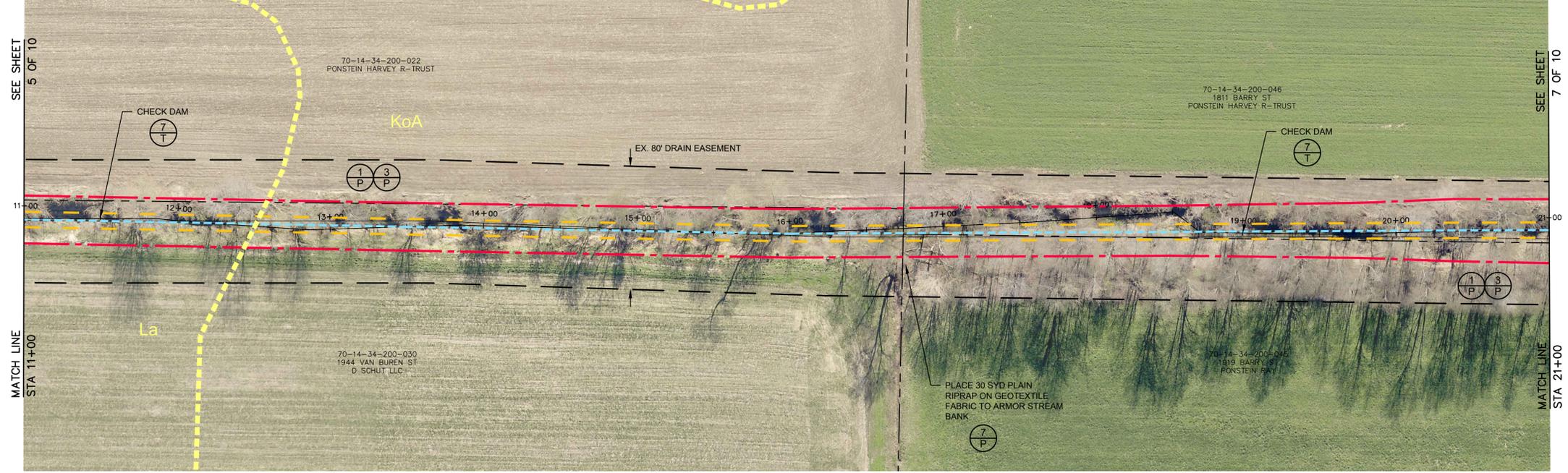
16930 Robbins Road Suite 105
Grand Haven, MI 49417
616.743.7070
engdot.com



JOE BUSH
OTTAWA COUNTY WATER RESOURCES COMMISSIONER
CORY BISHOP DRAIN DRAINAGE DISTRICT
PART OF SECTIONS 26, 27, 34 & 35, T6N, R13W, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 & 3, T5N, R13W, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

PROJECT NO.
17028

SHEET NO.
5 OF 10



BM #2 ELEV = 621.18
 SET SPIKE SE SIDE UTILITY POLE
 40' S OF E VAN BUREN ST 20' E
 OF E CORY BISHOP DRAIN

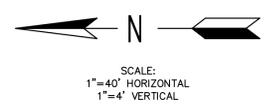
BM #3 ELEV = 635.32
 SPIKE SE SIDE UTILITY POLE 30' N
 OF E BARRY ST 50' W OF E CORY
 BISHOP DRAIN

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

SOIL TYPES AND ABBREVIATIONS	
La	LACOTA SILT LOAM
KoA	KIBBIE LOAM: 0 TO 2 PERCENT SLOPES
Sn	SHOALS LOAM
MuF3	MORLEY CLAY LOAM: 25 TO 45 PERCENT SLOPES. SEVERELY ERODED
TknabE	TEKENINK: SPINKS LOAMY SANDS. 18 TO 35 PERCENT SLOPES.
W	WATER

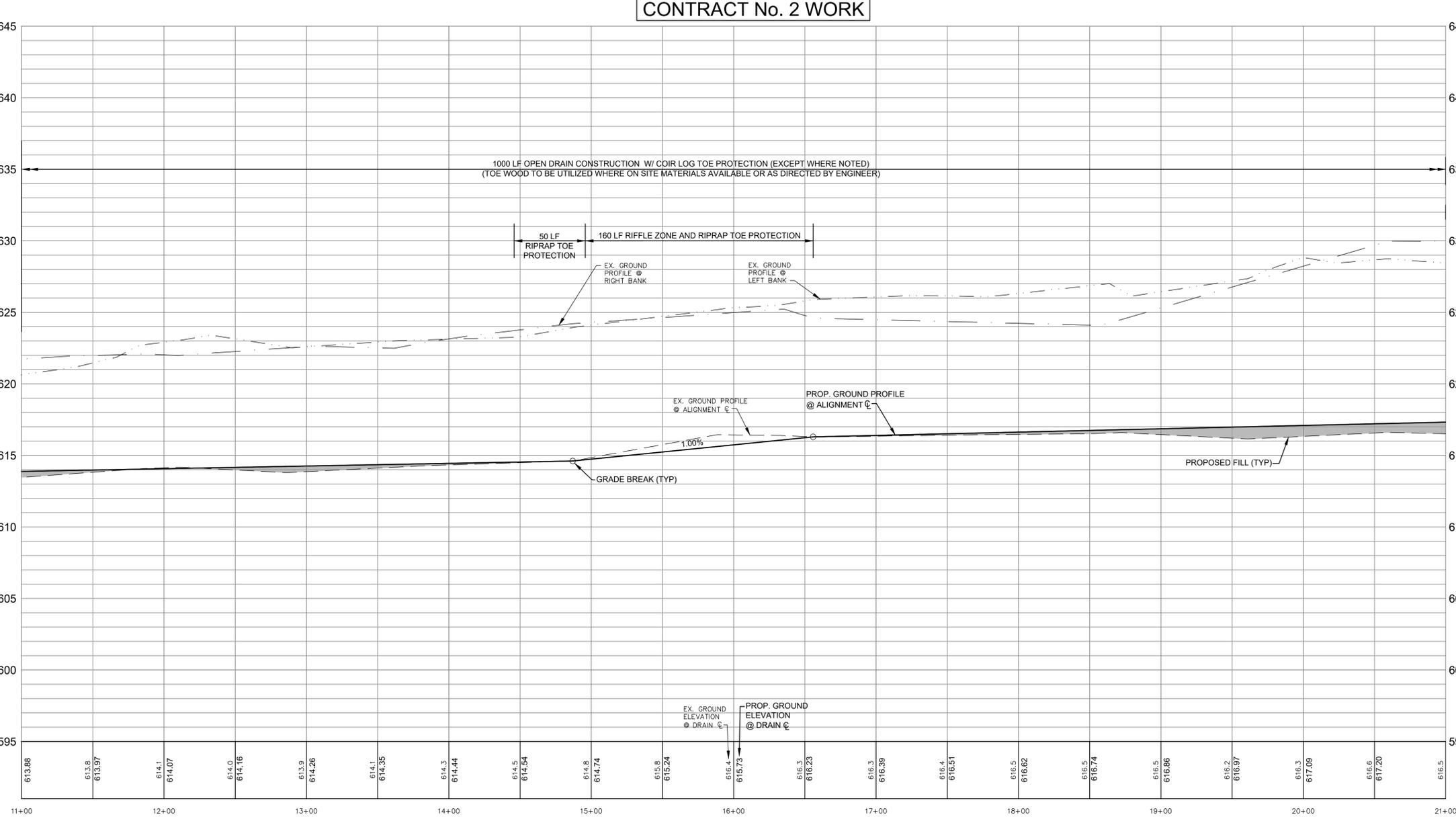
- GENERAL NOTES:
- ALL TREES TO BE MARKED BY ENGINEER PRIOR TO REMOVAL.
 - LEVEL SEED, AND MULCH SPOILS WITH OPEN CHANNEL SEED MIX. SPOILS SHALL NOT BE GREATER THAN 18 INCHES IN HEIGHT IN ANY GIVEN AREA.
 - ALL TREES REMOVED MUST HAVE LOGS STACKED IN EASEMENT AREA LIMITS. ALL OTHER WOODY MATERIAL MUST BE CHIPPED OR REMOVED FROM THE SITE. ALL TREES REMOVED FROM THE DRAIN BOTTOM MUST BE CUT FLUSH.
 - PROPERTY OWNERS MUST BE NOTIFIED 7 DAYS PRIOR TO ANY ACCESS AND TREE REMOVALS ON THEIR PROPERTY. SITE ACCESS IS RESTRICTED TO EXISTING DRAIN EASEMENTS, TEMPORARY ACCESS EASEMENTS, AND PUBLIC RIGHTS OF WAY SHOWN ON DRAWINGS. ALL OTHER ACCESS TO THE SITE SHALL BE APPROVED BY THE OTTAWA COUNTY WATER RESOURCES COMMISSIONER.
 - TEMPORARY SESC MEASURES MUST BE IN PLACE AT 500 FOOT INCREMENTS TO CONTROL SEDIMENT TRANSPORT.

- SHEET SPECIFIC NOTES:
- SPOILS GENERATED THIS SHEET TO BE LEVELED ALONG EITHER OF THE DRAIN SO AS TO NOT AFFECT EXISTING DRAINAGE PATTERNS OR WITHIN AN APPROVED UPLAND AREAS.
 - WORK MAY BE PERFORMED FROM EITHER SIDE OF DRAIN.



LEGEND

- PROPERTY LINE OR R.O.W. LINE
- EDGE OF PAVEMENT
- X- FENCE
- o-o- EXISTING GUARDRAIL
- WETLANDS (AS MARKED BY OTHERS)
- +860 EXISTING SPOT ELEVATION
- 860 EXISTING CONTOUR ELEVATION
- EDGE OF WOODS
- DECIDUOUS TREE
- CONIFEROUS TREE
- BUSH
- STUMP
- GAS- EXISTING GAS LINE
- SS- EXISTING STORM SEWER
- SS- EXISTING SANITARY SEWER
- EXISTING MANHOLE
- ⊕ EXISTING STORM CATCH BASIN
- ⊙ EXISTING WELL LOCATION
- ⊗ EXISTING WATER VALVE
- ⊙ EXISTING CURB STOP / METER
- ⊕ EXISTING CATCH BASIN
- ⊙ EXISTING BENCH MARK LOCATION
- △ EXISTING SIGN
- ⊕ EXISTING MAILBOX
- * EXISTING LIGHT POLE
- < EXISTING GUY ANCHOR
- EXISTING UTILITY POLE
- ⊕ EXISTING TELEPHONE PEDESTAL
- - - EXISTING DRAIN
- - - PROPOSED DRAIN
- - - PROPOSED TOP OF BANK
- - - PROPOSED TOE OF SLOPE
- La SOIL TYPE



CONTRACT No. 2 WORK

PLAN & PROFILE
 STA 11+00 TO STA 21+00

DATE	BY	REVISIONS
5/29/18	SPM	

4063 Grand Oak Drive Suite A109
 Lansing, MI 48911
 517.867.1100

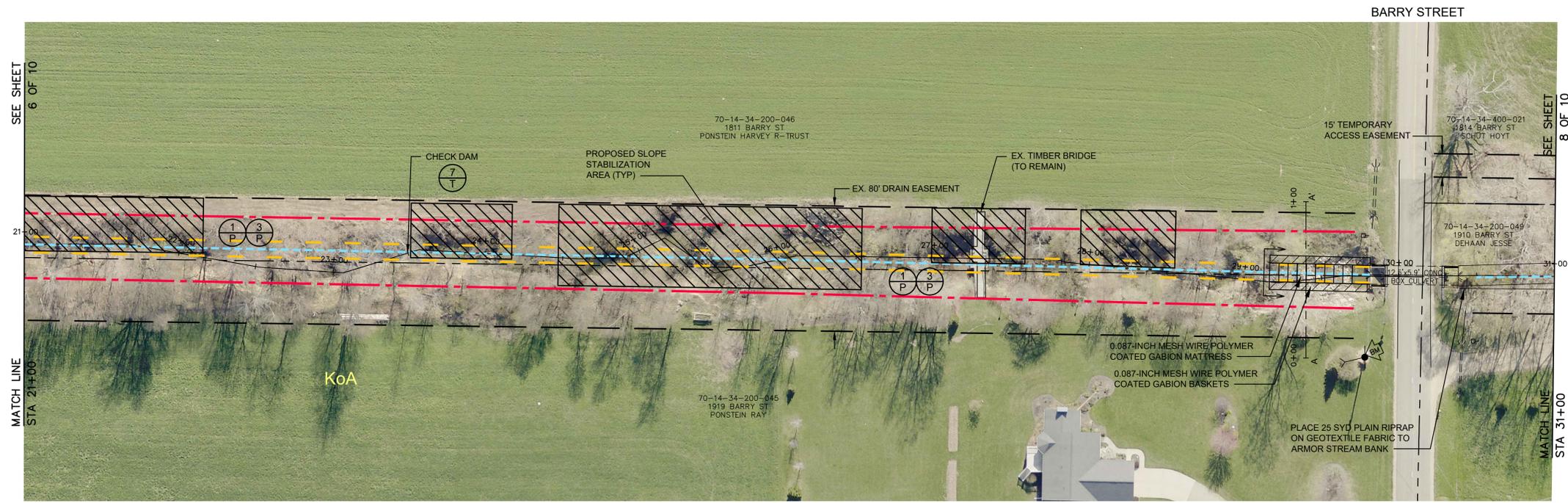
16930 Robbins Road Suite 105
 Grand Haven, MI 49417
 616.743.7070
 engdol.com



JOE BUSH
 OTTAWA COUNTY WATER RESOURCES COMMISSIONER
 CORY BISHOP DRAIN DRAINAGE DISTRICT
 PART OF SECTIONS 26, 27, 34 & 35, T6N, R13W, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 & 3, T5N, R13W, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

PROJECT NO.
17028

SHEET NO.
6 OF 10

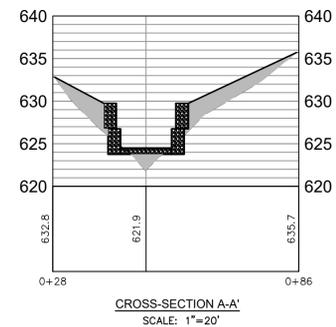


BM #3 ELEV = 635.32
 SPIKE SE SIDE UTILITY POLE 30' N
 OF E BARRY ST 50' W OF E CORY
 BISHOP DRAIN

BM #4 ELEV = 663.59
 3/4" GALVANIZED BOLT W/
 ROUNDED HEADSET IN S'LY END OF
 HEADWALL 4630' W OF SPLIT OF
 WB I-196 & EB M-6 RAMP N'LY
 SIDE OF WB I-196

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE
 SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN
 INDEPENDENTLY VERIFIED BY THE OWNER OR ITS
 REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE
 EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE
 COMMENCING WORK, AND AGREES TO BE FULLY
 RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE
 OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY
 LOCATE AND PRESERVE ANY AND ALL UNDERGROUND
 UTILITIES.

SOIL TYPES AND ABBREVIATIONS	
La	LACOTA SILT LOAM
KoA	KIBBIE LOAM: 0 TO 2 PERCENT SLOPES
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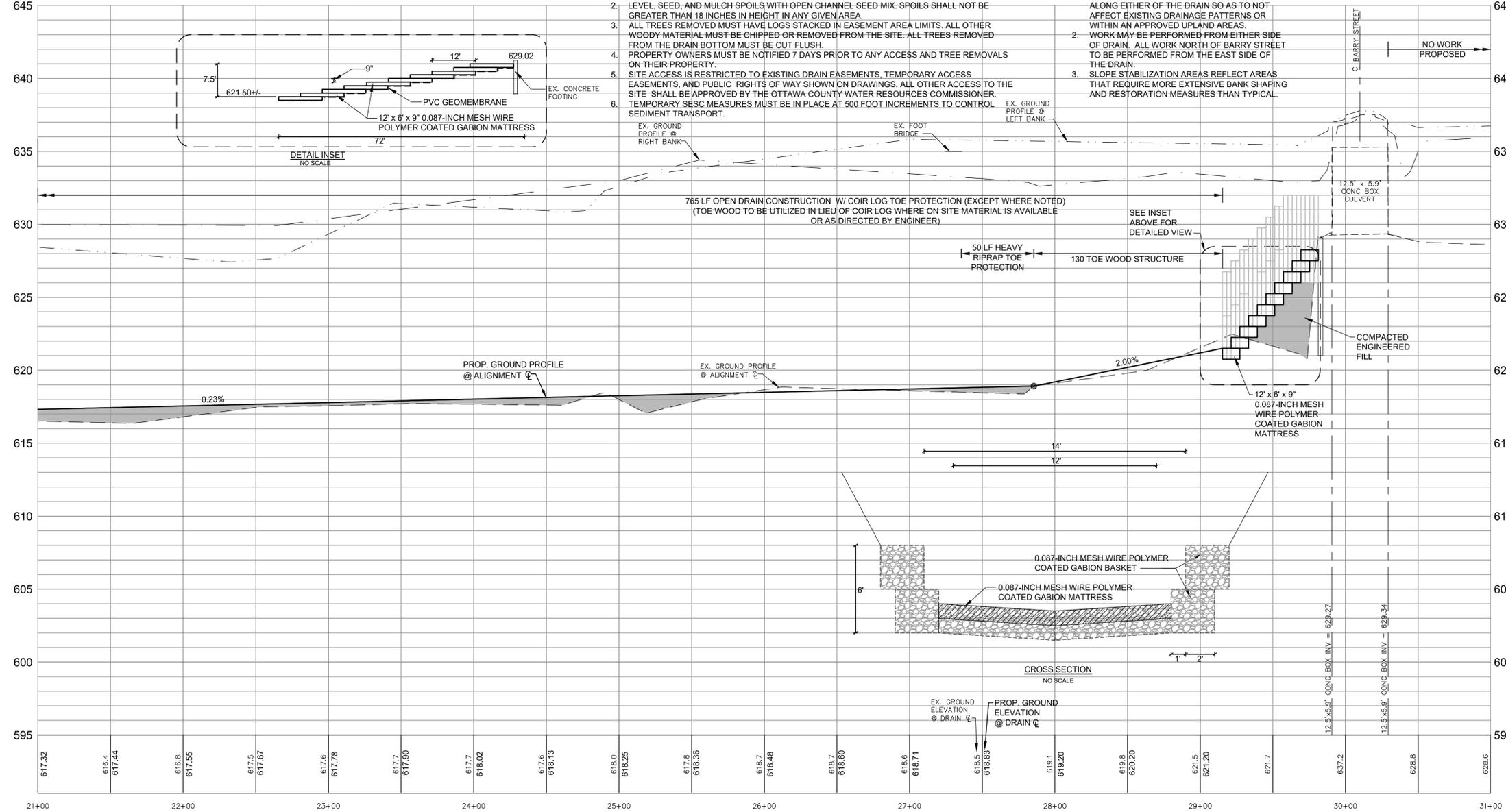
CONTRACT No. 2 WORK

GENERAL NOTES:

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SHEET SPECIFIC NOTES:

- SPOILS GENERATED THIS SHEET TO BE LEVELLED ALONG EITHER OF THE DRAIN SO AS TO NOT AFFECT EXISTING DRAINAGE PATTERNS OR WITHIN AN APPROVED UPLAND AREAS.
- WORK MAY BE PERFORMED FROM EITHER SIDE OF DRAIN. ALL WORK NORTH OF BARRY STREET TO BE PERFORMED FROM THE EAST SIDE OF THE DRAIN.
- SLOPE STABILIZATION AREAS REFLECT AREAS THAT REQUIRE MORE EXTENSIVE BANK SHAPING AND RESTORATION MEASURES THAN TYPICAL.



LEGEND

- PROPERTY LINE OR R.O.W. LINE
- EDGE OF PAVEMENT
- X --- FENCE
- EXISTING GUARDRAIL
- WETLANDS (AS MARKED BY OTHERS)
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR ELEVATION
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- DECIDUOUS TREE
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- EXISTING UTILITY POLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING DRAIN
- PROPOSED DRAIN
- PROPOSED TOP OF BANK
- PROPOSED TOE OF SLOPE
- SOIL TYPE
- SLOPE STABILIZATION AREA

**PLAN & PROFILE
 STA 21+00 TO STA 31+00**

811 Know what's below. Call before you dig.

4063 Grand Oak Drive Suite A109
 Lansing, MI 48911
 517.867.1100

16930 Robbins Road Suite 105
 Grand Haven, MI 49417
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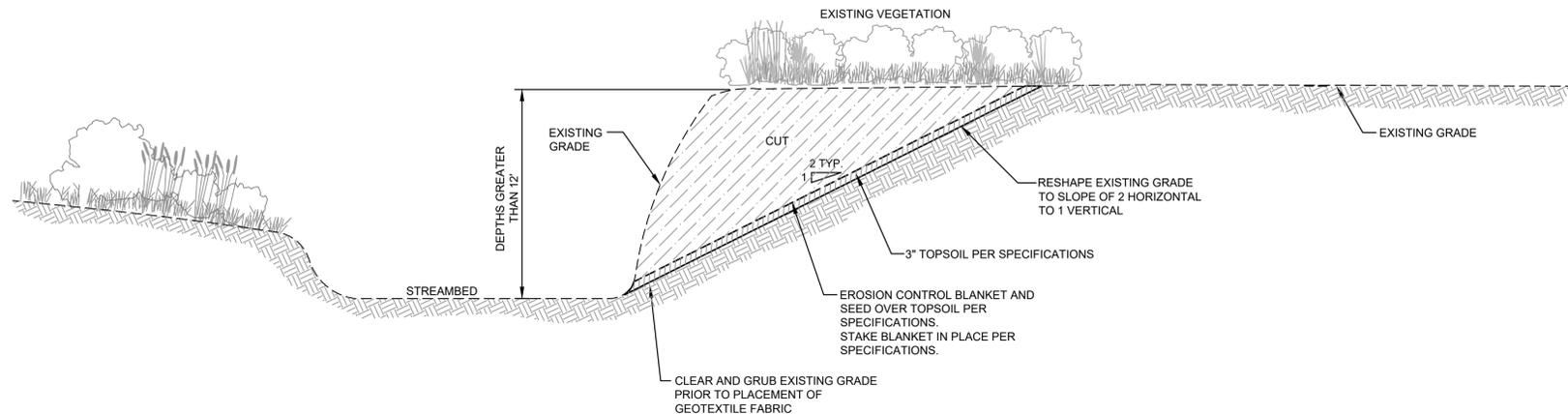
Eng
 Engineering & Surveying

JOE BUSH
 OTTAWA COUNTY WATER RESOURCES COMMISSIONER

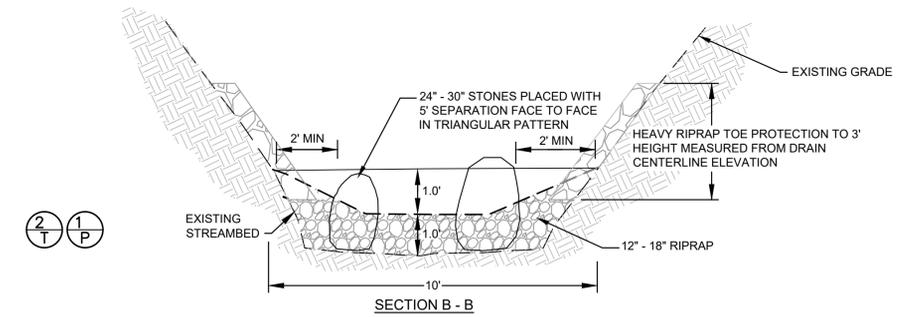
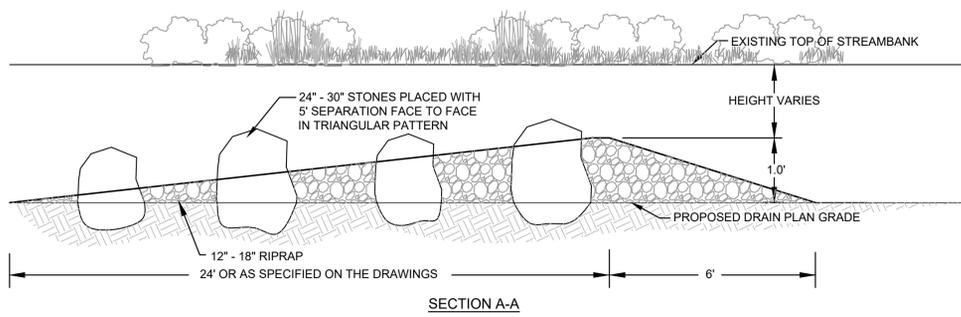
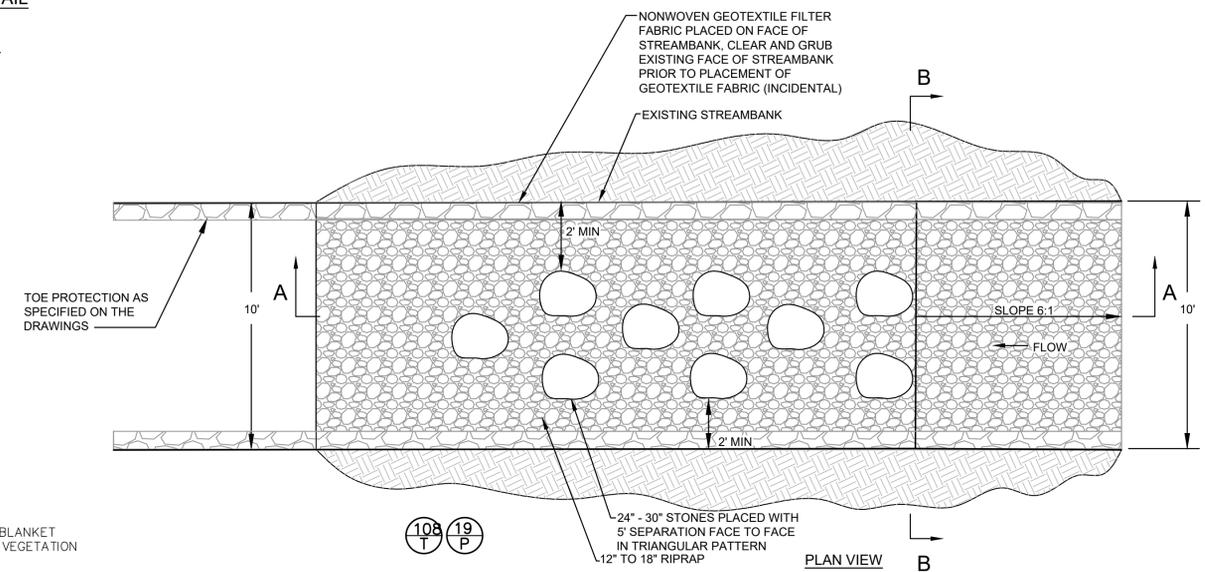
CORY BISHOP
 DRAIN DRAINAGE DISTRICT
 PART OF SECTIONS 26, 27, 34 & 35, T6N, R13W, GEORGETOWN TOWNSHIP AND PART OF SECTIONS 2 & 3, T5N, R13W, JAMESTOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN

PROJECT NO.
17028

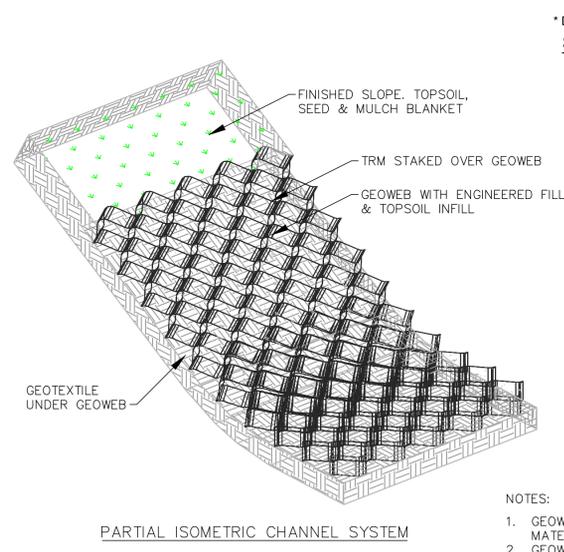
SHEET NO.
7 OF 10



85 STREAM RESTORATION DETAIL
SLOPE STABILIZATION & STREAMBANK TAPERING
 NO SCALE

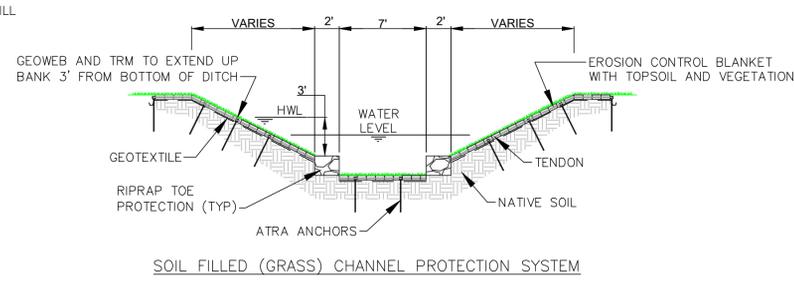


108 STREAM RESTORATION DETAIL
RIFFLE ZONE
 NO SCALE



PARTIAL ISOMETRIC CHANNEL SYSTEM

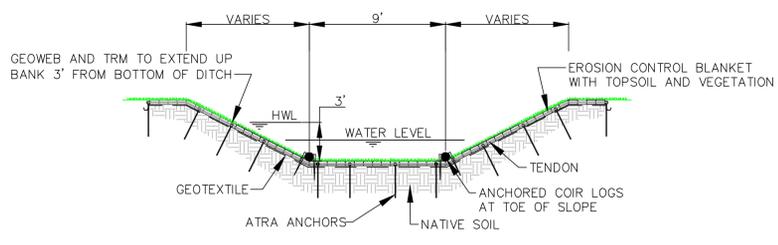
* DEPTH OF FLOW CHANNEL = 18"
 STA. 32+65 TO 36+18



SOIL FILLED (GRASS) CHANNEL PROTECTION SYSTEM

- NOTES:
1. GEOWEB SECTIONS SHALL BE FILLED WITH THE SPECIFIED MATERIAL WHICH IS SUITABLE FOR THE HYDRAULIC CONDITIONS.
 2. GEOWEB ANCHORAGE SHALL BE AS SPECIFIED AND ADEQUATE TO PREVENT SLIDING.
 3. ATRA ANCHOR LENGTH AND PATTERN SHALL BE AS SPECIFIED.
 4. TENDON TYPE AND PATTERN SHALL BE AS SPECIFIED.
 5. PROVIDE GEOTEXTILE SEPARATION LAYER AND INSTALL PER MANUFACTURER'S RECOMMENDATIONS.
- * MINIMIZE IMPACT TO TREES, EXISTING VEGETATION, AND STABILIZED SOIL SLOPES EXCEPT WHERE NOTED.

STA. 3+25 TO 28+15



OPEN DRAIN CLEANOUT AND CONSTRUCTION DETAILS
 NO SCALE

NO.	REVISIONS	DATE	BY	DATE	BY

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 Lansing, MI 48911
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 Grand Haven, MI 49417
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SHEET NO.
9 of 10

DETAIL SHEET

