



Economic Development Authority Board (EDA)

Regular Meeting – Township Hall

Tuesday June 19, 2018

5:15 p.m.

AGENDA

1. CALL TO ORDER
2. ROLL CALL
3. APPROVAL OF AGENDA
4. APPROVAL OF REGULAR MEETING MINUTES MAY 15, 2018
5. PUBLIC COMMENT
6. REPORTS
 - A. ACCOUNTS PAYABLE APPROVAL – MAY
EAST DDA DISTRICT #248
WEST DDA DISTRICT #250
WEST DDA GO DEBT SERVICE #396
 - B. MAY FINANCIAL REPORTS: INCOME/EXPENSE STATEMENT; BALANCE SHEET
EAST DDA DISTRICT #248
WEST DDA DISTRICT #250
WEST DDA GO DEBT SERVICE #396
 - C. BOARD MEMBER EXPIRATION MATRIX
7. NEW BUSINESS
 - A. FY 2017 AUDIT PRESENTATION INFORMATIONAL ONLY – ALI BARNES, YEO & YEO
 - B. CONTRACT APPROVAL WITH ISABELLA ROAD COMMISSION – LINCOLN RD SOUTH OF BRIDGE TO BROOMFIELD RD
 - C. WATER / SEWER PROJECT UPDATE
8. PENDING BUSINESS
9. ADJOURNMENT UNTIL NEXT REGULAR EDA MEETING: JULY 17, 2018

**Charter Township of Union
Economic Development Authority Board (EDA)
Regular Board Meeting
Tuesday May 15, 2018**

MINUTES

CALL TO ORDER

Chairman Kequom called to order EDA Board Meeting at 5:17 p.m.

ROLL CALL

Present: Bacon, Hunter, Johnson, Zalud, Kequom, Gunning, Barz, Figg

Excused: Smith, Coyne, Chowdhary

Absent:

Others Present: Sherrie Teall – Finance Director, Amy Peak-Building Dept. Clerk

APPROVAL OF AGENDA

MOTION by **Zalud** SUPPORTED by **Barz** to APPROVE the agenda as amended, adding Broadleaf control discussion to NEW BUSINESS ITEM A. MOTION CARRIED 8-0.

APPROVAL OF MINUTES

MOTION by **Figg** SUPPORTED by **Bacon** to APPROVE minutes from the April 17, 2018 regular meeting as presented.

MOTION CARRIED 8-0.

PUBLIC COMMENT

Dick Figg, 1239 E Broomfield Rd – commented EDA should do a better job of informing the public on all the projects that they are involved in and getting that information out in to the community.

PRESENTATION

REPORTS

ACCOUNTS PAYABLE/ FINANCIAL STATEMENTS

Finance Director Teall reviewed the accounts payable for the East DDA.

MOTION by **Zalud** SUPPORTED by **Johnson** to APPROVE the East DDA payables 04/18/2018 – 05/15/2018 in the amount of \$722.42 as presented. MOTIONED CARRIED 8-0.

Finance Director Teall reviewed financial reports.

February Financial reports were RECEIVED AND FILED by Chairman Kequom.

NEW BUSINESS

A. Discussion on broadleaf control for Pickard St squares and Jameson ball field and common area.

MOTIONED by **Zalud** SUPPORT by **Figg** to approve Broadleaf control, for Jameson Park and squares on Pickard for an amount not to exceed \$2,500.00 and to be decided by Township staff. Motion Carried 8-0

PENDING BUSINESS

GENERAL DISCUSSION:

Finance Director Teall mentioned there are still some ongoing street light repairs on Pickard. Also looking at the hanging basket mechanism replacement.

Reminder of the next scheduled EDA meeting on June 19, 2018.

Meeting was adjourned by Chairman Kequom at 5:45 p.m.

APPROVED BY

Secretary Chowdhary

(Recorded by Amy Peak)

| Check Date | Bank | Check | Vendor | Vendor Name | Description | Amount |
|------------------------|------|--------|--------|---------------------------------|---|---|
| Bank 248 EDDA CHECKING | | | | | | |
| 05/31/2018 | 248 | 36 (E) | 00146 | CONSUMERS ENERGY PAYMENT CENTER | 1940 S ISABELLA 2027 FLORENCE 4923 E PICKARD 4675 E PICKARD 4592 E PICKARD #B 4592 E PICKARD #A 5771 PICKARD #B 577 E PICKARD #A 5770 E PICKARD #B 5770 E PICKARD #A 5325 E PICKARD 2029 2ND 5157 E PICKARD #B 5157 E PICKARD #A 4900 E PICKARD | 41.97 35.56 40.48 32.83 24.80 41.38 24.80 47.30 24.80 65.67 57.69 59.74 24.80 32.38 36.70 |
| | | | | | | 590.90 |
| 06/19/2018 | 248 | 4023 | 01203 | ART REACH OF MID MICHIGAN | NEW BANNERS - 2018 | 4,500.00 |
| 06/19/2018 | 248 | 4024 | 00072 | BLOCK ELECTRIC | INSTALL NEW HOOPS ON LIGHT POLES INSTALL NEW BANNERS | 1,540.00 1,700.00 |
| | | | | | | 3,240.00 |
| 06/19/2018 | 248 | 4025 | 01580 | ECKERT'S GREENHOUSE | LIGHT POLE HOOPS FOR FLOWER HANGING | 2,585.00 |
| 06/19/2018 | 248 | 4026 | 00257 | GOURDIE-FRASER, INC. | WATER MAIN LOOP ENGINEERING-PMT #1 SEWER PUMP STATION #1 ENGINEERING-PMT #1 | 12,750.50 4,479.00 |
| | | | | | | 17,229.50 |
| 06/19/2018 | 248 | 4027 | 00450 | M M I | PARK BENCH/GROUND MAINT-APR 2018 | 428.85 |
| 06/19/2018 | 248 | 4028 | 00538 | PRICE MINI STORAGE | ANNUAL STORAGE LEASE-2018 | 550.00 |
| 06/19/2018 | 248 | 4029 | 01090 | SIMPLY ENGRAVING | DDA NAME PLATE - D. COYNE | 7.00 |
| 06/19/2018 | 248 | 4030 | 00649 | THIELEN TURF IRRIGATION, INC. | START UP IRRIGATION SYSTEM | 82.10 |

248 TOTALS:

Total of 9 Disbursements:

29,213.35

| Check Date | Bank | Check | Vendor | Vendor Name | Description | Amount |
|------------|------|-------|--------|-------------|-------------|--------|
|------------|------|-------|--------|-------------|-------------|--------|

Bank 250 WDDA CHECKING

| | | | | | | |
|------------|-----|-----|-------|----------------------|--------------------------------|----------|
| 06/19/2018 | 250 | 220 | 00257 | GOURDIE-FRASER, INC. | PUMP STATION #14 UPGRADE/REHAB | 4,048.00 |
|------------|-----|-----|-------|----------------------|--------------------------------|----------|

250 TOTALS:

| | | | | | | |
|--------------------|--|--|--|--|--|----------|
| Total of 1 Checks: | | | | | | 4,048.00 |
|--------------------|--|--|--|--|--|----------|

| | | | | | | |
|---------------------|--|--|--|--|--|------|
| Less 0 Void Checks: | | | | | | 0.00 |
|---------------------|--|--|--|--|--|------|

| | | | | | | |
|---------------------------|--|--|--|--|--|----------|
| Total of 1 Disbursements: | | | | | | 4,048.00 |
|---------------------------|--|--|--|--|--|----------|

PERIOD ENDING 05/31/2018

| GL NUMBER | DESCRIPTION | YTD BALANCE | 2018 | | YTD BALANCE | % BDGT USED |
|---------------------------------------|-------------------------------------|-------------------|-----------------|---------------------|-------------------|-------------|
| | | 05/31/2017 | ORIGINAL BUDGET | 2018 AMENDED BUDGET | 05/31/2018 | |
| | | NORMAL (ABNORMAL) | | | NORMAL (ABNORMAL) | |
| Fund 248 - EDDA OPERATING | | | | | | |
| Revenues | | | | | | |
| Dept 000 - NONE | | | | | | |
| 248-000-402.000 | CURRENT PROPERTY TAX | 0.00 | 387,500.00 | 387,500.00 | 0.00 | 0.00 |
| 248-000-402.001 | PROPERTY TAX REFUNDS-MTT | 0.00 | (4,000.00) | (4,000.00) | 0.00 | 0.00 |
| 248-000-402.100 | PRIOR YEARS PROPERTY TAXES | 0.00 | (250.00) | (250.00) | 0.00 | 0.00 |
| 248-000-420.000 | DELQ PERSONAL PROPERTY CAPT | 420.88 | 2,000.00 | 2,000.00 | 0.00 | 0.00 |
| 248-000-445.000 | INTEREST ON TAXES | 0.00 | 500.00 | 500.00 | 0.00 | 0.00 |
| 248-000-573.000 | STATE AID REVENUE-LCSA | 0.00 | 30,000.00 | 30,000.00 | 0.00 | 0.00 |
| 248-000-665.000 | INTEREST EARNED | 613.78 | 6,300.00 | 6,300.00 | 6,492.07 | 103.05 |
| 248-000-671.000 | OTHER REVENUE | 0.00 | 100.00 | 100.00 | 32.54 | 32.54 |
| Total Dept 000 - NONE | | 1,034.66 | 422,150.00 | 422,150.00 | 6,524.61 | 1.55 |
| TOTAL REVENUES | | 1,034.66 | 422,150.00 | 422,150.00 | 6,524.61 | 1.55 |
| Expenditures | | | | | | |
| Dept 000 - NONE | | | | | | |
| 248-000-801.000 | PROFESSIONAL & CONTRACTUAL SERVICES | 1,448.75 | 5,570.00 | 5,570.00 | 1,021.75 | 18.34 |
| 248-000-801.003 | SIDEWALK SNOWPLOWING | 375.00 | 5,500.00 | 5,500.00 | 2,350.00 | 42.73 |
| 248-000-801.004 | RIGHT OF WAY LAWN MOWING | 800.00 | 13,000.00 | 13,000.00 | 0.00 | 0.00 |
| 248-000-801.005 | IRRIGATION / LIGHTING REPAIRS | 2,347.46 | 11,200.00 | 11,200.00 | 3,245.47 | 28.98 |
| 248-000-801.007 | FLOWER / LANDSCAPE MAINTENANCE | 3,928.00 | 18,000.00 | 18,000.00 | 4,125.00 | 22.92 |
| 248-000-801.015 | STREET LIGHT BANNERS/CHRISTMAS | 5,900.00 | 23,600.00 | 23,600.00 | 6,390.50 | 27.08 |
| 248-000-826.000 | LEGAL FEES | 0.00 | 500.00 | 500.00 | 0.00 | 0.00 |
| 248-000-880.000 | COMMUNITY PROMOTION | 0.00 | 5,000.00 | 5,000.00 | 5,000.00 | 100.00 |
| 248-000-900.000 | PRINTING & PUBLISHING | 246.78 | 250.00 | 250.00 | 0.00 | 0.00 |
| 248-000-917.000 | WATER & SEWER QTR. BILLING | 0.00 | 12,500.00 | 12,500.00 | 0.00 | 0.00 |
| 248-000-920.000 | ELECTRIC/NATURAL GAS | 4,463.16 | 10,500.00 | 10,500.00 | 4,242.07 | 40.40 |
| 248-000-935.000 | PROPERTY/LIABILITY INSURANCE | 1,162.85 | 1,400.00 | 1,400.00 | 1,206.98 | 86.21 |
| 248-000-940.000 | LEASE/RENT | 550.00 | 700.00 | 700.00 | 550.00 | 78.57 |
| 248-000-955.000 | MISC. | 0.00 | 0.00 | 0.00 | 7.00 | 100.00 |
| 248-000-967.000 | PROJECTS | 0.00 | 150,000.00 | 150,000.00 | 0.00 | 0.00 |
| Total Dept 000 - NONE | | 21,222.00 | 257,720.00 | 257,720.00 | 28,138.77 | 10.92 |
| Dept 336 - FIRE DEPARTMENT | | | | | | |
| 248-336-830.000 | PUBLIC SAFETY - FIRE PROTECTION | 0.00 | 61,600.00 | 61,600.00 | 0.00 | 0.00 |
| Total Dept 336 - FIRE DEPARTMENT | | 0.00 | 61,600.00 | 61,600.00 | 0.00 | 0.00 |
| Dept 728 - ECONOMIC DEVELOPMENT | | | | | | |
| 248-728-967.200 | WATER SYSTEM PROJECTS | 0.00 | 0.00 | 135,000.00 | 12,750.50 | 9.44 |
| 248-728-967.300 | SEWER SYSTEM PROJECTS | 0.00 | 0.00 | 215,000.00 | 4,479.00 | 2.08 |
| 248-728-967.400 | STREET/ROAD PROJECTS | 0.00 | 0.00 | 160,000.00 | 0.00 | 0.00 |
| Total Dept 728 - ECONOMIC DEVELOPMENT | | 0.00 | 0.00 | 510,000.00 | 17,229.50 | 3.38 |
| TOTAL EXPENDITURES | | 21,222.00 | 319,320.00 | 829,320.00 | 45,368.27 | 5.47 |

User: SHERRIE

DB: Union

PERIOD ENDING 05/31/2018

| GL NUMBER | DESCRIPTION | YTD BALANCE 05/31/2017 | | 2018 | | YTD BALANCE 05/31/2018 | | % BDGT USED |
|--------------------------------|-------------|---------------------------|-------------|--------------------|------------------------|---------------------------|-------------|----------------|
| | | NORMAL | (ABNORMAL) | ORIGINAL BUDGET | 2018 AMENDED BUDGET | NORMAL | (ABNORMAL) | |
| Fund 248 - EDDA OPERATING | | | | | | | | |
| TOTAL REVENUES | | | 1,034.66 | 422,150.00 | 422,150.00 | | 6,524.61 | 1.55 |
| TOTAL EXPENDITURES | | | 21,222.00 | 319,320.00 | 829,320.00 | | 45,368.27 | 5.47 |
| NET OF REVENUES & EXPENDITURES | | | (20,187.34) | 102,830.00 | (407,170.00) | | (38,843.66) | 9.54 |

PERIOD ENDING 05/31/2018

| GL NUMBER | DESCRIPTION | YTD BALANCE | | 2018 | | YTD BALANCE | | % BDGT USED |
|---------------------------------------|---------------------------------------|-------------|------------|-----------------|---------------------|-------------|------------|-------------|
| | | NORMAL | (ABNORMAL) | ORIGINAL BUDGET | 2018 AMENDED BUDGET | NORMAL | (ABNORMAL) | |
| Fund 250 - WDDA OPERATING | | | | | | | | |
| Revenues | | | | | | | | |
| Dept 000 - NONE | | | | | | | | |
| 250-000-402.000 | CURRENT PROPERTY TAX | 0.00 | | 490,000.00 | 490,000.00 | | 0.00 | 0.00 |
| 250-000-402.001 | PROPERTY TAX REFUNDS-MTT | 0.00 | | (4,000.00) | (4,000.00) | | 0.00 | 0.00 |
| 250-000-420.000 | DELQ PERSONAL PROPERTY CAPT | 0.00 | | 600.00 | 600.00 | | 0.00 | 0.00 |
| 250-000-445.000 | INTEREST ON TAXES | 0.00 | | 250.00 | 250.00 | | 0.00 | 0.00 |
| 250-000-665.000 | INTEREST EARNED | 684.95 | | 1,700.00 | 1,700.00 | | 704.87 | 41.46 |
| Total Dept 000 - NONE | | 684.95 | | 488,550.00 | 488,550.00 | | 704.87 | 0.14 |
| TOTAL REVENUES | | 684.95 | | 488,550.00 | 488,550.00 | | 704.87 | 0.14 |
| Expenditures | | | | | | | | |
| Dept 000 - NONE | | | | | | | | |
| 250-000-801.000 | PROFESSIONAL & CONTRACTUAL SERVICES | 0.00 | | 870.00 | 870.00 | | 0.00 | 0.00 |
| 250-000-967.000 | PROJECTS | 0.00 | | 150,000.00 | 150,000.00 | | 0.00 | 0.00 |
| 250-000-967.400 | STREET/ROAD PROJECTS | 100,000.00 | | 0.00 | 170,000.00 | | 0.00 | 0.00 |
| Total Dept 000 - NONE | | 100,000.00 | | 150,870.00 | 320,870.00 | | 0.00 | 0.00 |
| Dept 336 - FIRE DEPARTMENT | | | | | | | | |
| 250-336-830.000 | PUBLIC SAFETY - FIRE PROTECTION | 0.00 | | 39,500.00 | 39,500.00 | | 0.00 | 0.00 |
| Total Dept 336 - FIRE DEPARTMENT | | 0.00 | | 39,500.00 | 39,500.00 | | 0.00 | 0.00 |
| Dept 728 - ECONOMIC DEVELOPMENT | | | | | | | | |
| 250-728-967.300 | SEWER SYSTEM PROJECTS | 0.00 | | 0.00 | 200,000.00 | | 4,048.00 | 2.02 |
| 250-728-967.500 | SIDEWALK PROJECTS | 0.00 | | 0.00 | 20,000.00 | | 0.00 | 0.00 |
| Total Dept 728 - ECONOMIC DEVELOPMENT | | 0.00 | | 0.00 | 220,000.00 | | 4,048.00 | 1.84 |
| Dept 996 - TRANSFER OUT | | | | | | | | |
| 250-996-999.396 | TRANSFER OUT TO WDDA G/O DEBT SERVICE | 0.00 | | 272,642.00 | 272,642.00 | | 0.00 | 0.00 |
| Total Dept 996 - TRANSFER OUT | | 0.00 | | 272,642.00 | 272,642.00 | | 0.00 | 0.00 |
| TOTAL EXPENDITURES | | 100,000.00 | | 463,012.00 | 853,012.00 | | 4,048.00 | 0.47 |
| Fund 250 - WDDA OPERATING: | | | | | | | | |
| TOTAL REVENUES | | 684.95 | | 488,550.00 | 488,550.00 | | 704.87 | 0.14 |
| TOTAL EXPENDITURES | | 100,000.00 | | 463,012.00 | 853,012.00 | | 4,048.00 | 0.47 |
| NET OF REVENUES & EXPENDITURES | | (99,315.05) | | 25,538.00 | (364,462.00) | | (3,343.13) | 0.92 |

PERIOD ENDING 05/31/2018

| GL NUMBER | DESCRIPTION | YTD BALANCE | | 2018 | | YTD BALANCE | | % BDGT USED |
|--|--------------------------|--------------|------------|-----------------|---------------------|--------------|-------------|-------------|
| | | NORMAL | (ABNORMAL) | ORIGINAL BUDGET | 2018 AMENDED BUDGET | NORMAL | (ABNORMAL) | |
| Fund 396 - WDDA G/O DEBT SERVICE FUND | | | | | | | | |
| Revenues | | | | | | | | |
| Dept 000 - NONE | | | | | | | | |
| 396-000-665.000 | INTEREST EARNED | 4.29 | | 30.00 | | 30.00 | 1.50 | 5.00 |
| Total Dept 000 - NONE | | 4.29 | | 30.00 | | 30.00 | 1.50 | 5.00 |
| Dept 961 - TRANSFER IN | | | | | | | | |
| 396-961-699.250 | TRANSFER IN FROM WDDA | 0.00 | | 272,642.00 | | 272,642.00 | 0.00 | 0.00 |
| Total Dept 961 - TRANSFER IN | | 0.00 | | 272,642.00 | | 272,642.00 | 0.00 | 0.00 |
| TOTAL REVENUES | | 4.29 | | 272,672.00 | | 272,672.00 | 1.50 | 0.00 |
| Expenditures | | | | | | | | |
| Dept 906 - DEBT SERVICE | | | | | | | | |
| 396-906-991.000 | BOND - PRINCIPAL | 0.00 | | 31,130.00 | | 31,130.00 | 0.00 | 0.00 |
| 396-906-996.000 | BOND - INTEREST | 0.00 | | 243,870.00 | | 243,870.00 | 0.00 | 0.00 |
| 396-906-996.001 | BOND - PAYING AGENT FEES | 0.00 | | 800.00 | | 800.00 | 0.00 | 0.00 |
| Total Dept 906 - DEBT SERVICE | | 0.00 | | 275,800.00 | | 275,800.00 | 0.00 | 0.00 |
| TOTAL EXPENDITURES | | 0.00 | | 275,800.00 | | 275,800.00 | 0.00 | 0.00 |
| Fund 396 - WDDA G/O DEBT SERVICE FUND: | | | | | | | | |
| TOTAL REVENUES | | 4.29 | | 272,672.00 | | 272,672.00 | 1.50 | 0.00 |
| TOTAL EXPENDITURES | | 0.00 | | 275,800.00 | | 275,800.00 | 0.00 | 0.00 |
| NET OF REVENUES & EXPENDITURES | | 4.29 | | (3,128.00) | | (3,128.00) | 1.50 | 0.05 |
| TOTAL REVENUES - ALL FUNDS | | | | | | | | |
| | | 1,723.90 | | 1,183,372.00 | | 1,183,372.00 | 7,230.98 | 0.61 |
| TOTAL EXPENDITURES - ALL FUNDS | | | | | | | | |
| | | 121,222.00 | | 1,058,132.00 | | 1,958,132.00 | 49,416.27 | 2.52 |
| NET OF REVENUES & EXPENDITURES | | (119,498.10) | | 125,240.00 | | (774,760.00) | (42,185.29) | 5.44 |

Fund 248 EDDA OPERATING

| GL Number | Description | Balance |
|---|-------------------------|---------------------|
| *** Assets *** | | |
| 248-000-001.000 | CASH | 3,427.06 |
| 248-000-002.000 | SAVINGS | 584,423.87 |
| 248-000-003.001 | CERTIFICATE OF DEPOSIT | 504,454.66 |
| Total Assets | | 1,092,305.59 |
| *** Liabilities *** | | |
| 248-000-202.000 | ACCOUNTS PAYABLE | 28,622.45 |
| 248-000-214.101 | DUE TO GENERAL FUND | 10.00 |
| Total Liabilities | | 28,632.45 |
| *** Fund Balance *** | | |
| 248-000-370.379 | RESTRICTED FUND BALANCE | 1,102,516.80 |
| Total Fund Balance | | 1,102,516.80 |
| Beginning Fund Balance | | 1,102,516.80 |
| Net of Revenues VS Expenditures | | (38,843.66) |
| Ending Fund Balance | | 1,063,673.14 |
| Total Liabilities And Fund Balance | | 1,092,305.59 |

Fund 250 WDDA OPERATING

| GL Number | Description | Balance |
|---|-------------------------|-------------------|
| *** Assets *** | | |
| 250-000-001.000 | CASH | 5,278.37 |
| 250-000-002.000 | SAVINGS | 739,741.14 |
| 250-000-002.001 | SHARES | 53.70 |
| Total Assets | | 745,073.21 |
| *** Liabilities *** | | |
| 250-000-202.000 | ACCOUNTS PAYABLE | 4,048.00 |
| Total Liabilities | | 4,048.00 |
| *** Fund Balance *** | | |
| 250-000-370.379 | RESTRICTED FUND BALANCE | 744,368.34 |
| Total Fund Balance | | 744,368.34 |
| Beginning Fund Balance | | 744,368.34 |
| Net of Revenues VS Expenditures | | (3,343.13) |
| Ending Fund Balance | | 741,025.21 |
| Total Liabilities And Fund Balance | | 745,073.21 |

Fund 396 WDDA G/O DEBT SERVICE FUND

| GL Number | Description | Balance |
|---|-------------------------|-----------------|
| *** Assets *** | | |
| 396-000-001.000 | CASH | 3,131.58 |
| Total Assets | | 3,131.58 |
| *** Liabilities *** | | |
| Total Liabilities | | 0.00 |
| *** Fund Balance *** | | |
| 396-000-370.379 | RESTRICTED FUND BALANCE | 3,130.08 |
| Total Fund Balance | | 3,130.08 |
| Beginning Fund Balance | | 3,130.08 |
| Net of Revenues VS Expenditures | | 1.50 |
| Ending Fund Balance | | 3,131.58 |
| Total Liabilities And Fund Balance | | 3,131.58 |

Board Expiration Dates

| Planning Commission Board Members (9 Members) 3 year term | | | |
|---|-----------|---------------|-----------------|
| # | F Name | L Name | Expiration Date |
| 1-BOT Representative | | | 11/20/2020 |
| 2-Chair | Phil | Squatrito | 2/15/2020 |
| 3- Vice Chair | Bryan | Mielke | 2/15/2021 |
| 4-Secretary | Alex | Fuller | 2/15/2020 |
| 5 - Vice Secretary | Mike | Darin | 2/15/2019 |
| 6 | Stan | Shingles | 2/15/2021 |
| 7 | Ryan | Buckley | 2/15/2019 |
| 8 | Denise | Webster | 2/15/2020 |
| 9 | Doug | LaBelle II | 2/15/2019 |
| Zoning Board of Appeals Members (5 Members, 2 Alternates) 3 year term | | | |
| # | F Name | L Name | Expiration Date |
| 1-Chair | Tim | Warner | 12/31/2019 |
| 2-PC Rep / Vice Chair | Bryan | Mielke | 2/18/2021 |
| 3-Vice Secretary | Jake | Hunter | 12/31/2019 |
| 4 | Andy | Theisen | 12/31/2019 |
| 5 | Paul | Gross | 12/31/2018 |
| Alt. #1 | John | Zerbe | 12/31/2019 |
| Alt. #2 | Taylor | Sheahan-Stahl | 2/15/2021 |
| Board of Review (3 Members) 2 year term | | | |
| # | F Name | L Name | Expiration Date |
| 1 | Doug | LaBelle II | 12/31/2018 |
| 2 | James | Thering | 12/31/2018 |
| 3 | Bryan | Neyer | 12/31/2018 |
| Alt #1 | Mary Beth | Orr | 1/25/2019 |
| Citizens Task Force on Sustainability (4 Members) 2 year term | | | |
| # | F Name | L Name | Expiration Date |
| 1 | Laura | Coffee | 12/31/2018 |
| 2 | Mike | Lyon | 12/31/2018 |
| 3 | Jay | Kahn | 12/31/2018 |
| 4 | Phil | Mikus | 11/20/2020 |
| Construction Board of Appeals (3 Members) 2 year term | | | |
| # | F Name | L Name | Expiration Date |
| 1 | Colin | Herron | 12/31/2019 |
| 2 | Richard | Klumpp | 12/31/2019 |
| 3 | Andy | Theisen | 12/31/2019 |
| Hannah's Bark Park Advisory Board (2 Members from Township) 2 year term | | | |
| 1 | Mark | Stuhldreher | 12/31/2018 |
| 2 | John | Dinse | 12/31/2019 |
| Chippewa River District Library Board 4 year term | | | |
| 1 | Ruth | Helwig | 12/31/2019 |
| 2 | Lynn | Laskowsky | 12/31/2021 |



Board Expiration Dates

| EDA Board Members (11 Members) 4 year term | | | |
|---|---------|-----------|-----------------|
| # | F Name | L Name | Expiration Date |
| 1 | Thomas | Kequom | 4/14/2019 |
| 2 | James | Zalud | 4/14/2019 |
| 3 | Richard | Barz | 2/13/2021 |
| 4 | Robert | Bacon | 1/13/2019 |
| 5 | Ben | Gunning | 11/20/2020 |
| 6 | Marty | Figg | 6/22/2022 |
| 7 | Sarvjit | Chowdhary | 1/20/2022 |
| 8 | Cheryl | Hunter | 6/22/2019 |
| 9 | Vance | Johnson | 2/13/2021 |
| 10 | Michael | Smith | 2/13/2021 |
| 11 | David | Coyne | 3/26/2022 |
| Mid Michigan Area Cable Consortium (2 Members) | | | |
| # | F Name | L Name | Expiration Date |
| 1 | Kim | Smith | 12/31/2020 |
| 2 | Vacant | | |
| Cultural and Recreational Commission (1 seat from Township) 3 year term | | | |
| # | F Name | L Name | Expiration Date |
| 1 | Brian | Smith | 12/31/2019 |
| Sidewalks and Pathways Prioritization Committee (2 year term) | | | |
| # | F Name | L Name | Expiration Date |
| 1 BOT Representative | Phil | Mikus | 7/26/2019 |
| 2 PC Representative | Denise | Webster | 8/15/2018 |
| 3 Township Resident | Sherrie | Teall | 8/15/2019 |
| 4 Township Resident | Jeremy | MacDonald | 10/17/2018 |
| 5 Member at large | Barbara | Anderson | 8/15/2019 |

Charter Township of Union

Financial Statements

December 31, 2017



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Board of Trustees

Ben Gunning, Supervisor

Lisa Cody, Clerk

Kim Rice, Treasurer

Bill Hauck, Trustee

Tim Lannen, Trustee

Phil Mikus, Trustee

Norm Woerle, Trustee

Other Officers and Officials

Mark Stuhldreher, Township Manager

Sherrie Teall, Finance Director

Independent Auditors' Report

Management and Board of Trustees
Charter Township of Union
Mt. Pleasant, Michigan

Report on the Financial Statements

We have audited the accompanying financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Charter Township of Union, as of and for the year ended December 31, 2017, and the related notes to the financial statements, which collectively comprise the Township's basic financial statements as listed in the table of contents.

Management's Responsibility for the Financial Statements

Management is responsible for the preparation and fair presentation of these financial statements in accordance with accounting principles generally accepted in the United States of America; this includes the design, implementation, and maintenance of internal control relevant to the preparation and fair presentation of financial statements that are free from material misstatement, whether due to fraud or error.

Auditors' Responsibility

Our responsibility is to express opinions on these financial statements based on our audit. We conducted our audit in accordance with auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards*, issued by the Comptroller General of the United States. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the financial statements. The procedures selected depend on the auditors' judgment, including the assessment of the risks of material misstatement of the financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers internal control relevant to the entity's preparation and fair presentation of the financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control. Accordingly, we express no such opinion. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of significant accounting estimates made by management, as well as evaluating the overall presentation of the financial statements.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions.

Opinions

In our opinion, the financial statements referred to above present fairly, in all material respects, the respective financial position of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of the Charter Township of Union, as of December 31, 2017, and the respective changes in financial position, and, where applicable, cash flows thereof for the year then ended in accordance with accounting principles generally accepted in the United States of America.

Other Matters:

Required Supplementary Information

Accounting principles generally accepted in the United States of America require that the management's discussion and analysis and budgetary comparison information, as identified in the table of contents, be presented to supplement the basic financial statements. Such information, although not a part of the basic financial statements, is required by the Governmental Accounting Standards Board, who considers it to be an essential part of financial reporting for placing the basic financial statements in an appropriate operational, economic, or historical context. We have applied certain limited procedures to the required supplementary information in accordance with auditing standards generally accepted in the United States of America, which consisted of inquiries of management about the methods of preparing the information and comparing the information for consistency with management's responses to our inquiries, the basic financial statements, and other knowledge we obtained during our audit of the basic financial statements. We do not express an opinion or provide any assurance on the information, because the limited procedures do not provide us with sufficient evidence to express an opinion or provide any assurance.

Other Supplementary Information

Our audit was conducted for the purpose of forming opinions on the financial statements that collectively comprise Charter Township of Union's basic financial statements. The other supplementary information, as identified in the table of contents, is presented for purposes of additional analysis and is not a required part of the basic financial statements.

The other supplementary information, as identified in the table of contents, is the responsibility of management and was derived from and relates directly to the underlying accounting and other records used to prepare the basic financial statements. The other supplementary information has been subjected to the auditing procedures applied in the audit of the basic financial statements and certain additional procedures, including comparing and reconciling such information directly to the underlying accounting and other records used to prepare the basic financial statements or to the basic financial statements themselves, and other additional procedures in accordance with auditing standards generally accepted in the United States of America. In our opinion, the other supplementary information, as identified in the table of contents, is fairly stated, in all material respects, in relation to the basic financial statements as a whole.

Found at end of
this report

Other Reporting Required by *Government Auditing Standards*

In accordance with *Government Auditing Standards*, we have also issued our report dated May 7, 2018 on our consideration of Charter Township of Union's internal control over financial reporting and on our tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements and other matters. The purpose of that report is solely to describe the scope of our testing of internal control over financial reporting and compliance and the results of that testing, and not to provide an opinion on the effectiveness of Charter Township of Union's internal control over financial reporting or on compliance. That report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering Charter Township of Union's internal control over financial reporting and compliance.

Yeo & Yeo, P.C.

Alma, Michigan
May 7, 2018

This section of the Charter Township of Union's annual financial report presents our discussion and analysis of the Township's financial performance during the fiscal year ended December 31, 2017.

FINANCIAL HIGHLIGHTS

- The Township's combined total net position is \$30.2 million for the fiscal year ended December 31, 2017, compared to \$29.0 million last fiscal year.
- Total net position increased by \$1.2 million.
- In the Township's governmental activities, revenues generated \$2.7 million, while expenses were \$2.3 million.
- In the Township's business-type activities, revenues generated \$4.2 million, while expenses were \$3.5 million.
- The total cost of all the Township's programs, including governmental and business-type activities was \$5.9 million, down \$0.7 million from last fiscal year.

OVERVIEW OF THE FINANCIAL STATEMENTS

This discussion and analysis is intended to serve as an introduction to the Township's basic financial statements. The Township's basic financial statements are comprised of three components:

- 1) government-wide financial statements
- 2) fund financial statements
- 3) notes to the financial statements

This report also contains required supplementary information and other supplementary information in addition to the basic financial statements.

Government-wide Financial Statements

The government-wide statements are designed to provide readers with an overview of the Township's finances, as a whole, in a manner similar to a private sector business. The *statement of net position* presents information on all of the Township's assets and liabilities, with the difference between the two reported as net position. The *statement of activities* presents all of the Township's revenues and expenses, and is reported based on when the event occurs that creates the revenue or expense, regardless of when cash is received or paid.

The government-wide statements of the Charter Township of Union are divided into two categories:

1) **Governmental Activities** – Most of the Township’s basic services are included here, such as public safety, fire protection, public works, parks and recreation, community development, and general administration. Property taxes, state shared revenue, and charges for services finance most of these activities.

2) **Business-type Activities** – The Township’s business-type activities include water and sewer. Fees are charged to customers to recover all or a significant portion of certain services each fund provides.

Fund Financial Statements

The fund financial statements provide more detailed information about the Township’s most significant funds, not the Township as a whole. A fund is a grouping of related accounts that is used to maintain control over resources that have been segregated for specific activities or objectives. The township uses fund accounting to ensure and demonstrate compliance with finance-related legal requirements.

Charter Township of Union has three types of funds:

Governmental Funds – Many of the Township’s basic services are included in governmental funds which focus on how cash and other financial assets that can be readily converted into cash flow in and out. The funds also show the balances left at year-end that are available for spending.

The governmental funds focus on a short-term view, rather than the long-term focus of the government-wide statements, so additional information is provided after each of the governmental fund statements that explain the relationship or differences between the fund and government-wide statements.

The Township maintains 4 individual governmental funds. Separate information is provided for the General Fund and Fire Protection Fund, each of which are considered to be a “major” fund. Data from the 2 other governmental funds, the Public Improvement Fund and the Tribal Grants Fund, are combined into a single column labeled “non-major governmental funds”.

The Township adopts an annual budget for each of its governmental funds. Budgetary comparison statements have been provided for the major funds to demonstrate compliance with those budgets.

Proprietary Funds – Proprietary funds are used to report services where the Township charges a fee to the customer to recover most or all of the cost of the service rendered. Proprietary funds provide both long and short-term financial information. The two types of proprietary funds are enterprise and internal service funds. The Township does not have any internal service funds.

The Township has 2 enterprise funds, the Water Fund and the Sewer Fund. The proprietary fund financial statements provide separate information for the Water Fund and Sewer Fund, which are considered to be major funds of the Township.

Fiduciary Funds – Fiduciary funds are used to account for resources held for the benefit of parties outside the Township. Fiduciary funds are not reflected in the Government-wide financial statements because the resources of those funds are not available to support the Township’s own programs.

Notes to the Financial Statements

The notes provide additional information that is essential to a full understanding of the data provided in the government-wide and fund financial statements.

Other Information

In addition to the basic financial statements and accompanying notes, this report also presents certain *required supplementary information* concerning budgetary information for the Township. The combining statements referred to earlier in connection with non-major governmental funds are presented immediately following the required supplementary information.

TOWNSHIP’S SUMMARY OF NET POSITION

The following summarizes the Township’s net position at December 31, 2017 and 2016:

The Township’s total combined net position for the fiscal year ended December 31, 2017 is \$30.2 million, made up of \$24.2 million in business-type activities, and \$6.0 million in governmental activities.

Combined unrestricted net assets, the part of net assets that can be used to finance day-to-day operations, is \$10.1 million. Business-type activities unrestricted total is \$6.6 million, while the unrestricted governmental activities net asset total is \$3.5 million.

A portion of the Township’s net position (61%) reflects its investment in capital assets (e.g. land, buildings, equipment); less any related debt used to acquire those assets that is still outstanding. The Township uses these capital assets to provide services to the community; consequently, these assets are not available for future spending. Although the Township’s investment in its capital assets is reported net of related debt, it should be noted that the resources needed to repay this debt must be provided from other sources, since the capital assets themselves cannot be used to liquidate these liabilities.

Charter Township of Union Net Position

| | Governmental Activities | | Business-type Activities | | Total Primary Government | |
|---|-------------------------|--------------|--------------------------|---------------|--------------------------|---------------|
| | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 |
| Assets | | | | | | |
| Current assets | \$ 6,121,899 | \$ 5,727,594 | \$ 6,970,150 | \$ 6,718,907 | \$ 13,092,049 | \$ 12,446,501 |
| Capital assets | 1,014,472 | 1,088,611 | 25,803,018 | 26,317,550 | 26,817,490 | 27,406,161 |
| Total assets | 7,136,371 | 6,816,205 | 32,773,168 | 33,036,457 | 39,909,539 | 39,852,662 |
| Deferred outflows of resources | | | | | | |
| Deferred amount on refunding | - | - | 154,986 | 193,732 | 154,986 | 193,732 |
| Total assets and deferred outflows of resources | 7,136,371 | 6,816,205 | 32,928,154 | 33,230,189 | 40,064,525 | 40,046,394 |
| Liabilities | | | | | | |
| Current liabilities | 107,680 | 205,137 | 742,433 | 888,746 | 850,113 | 1,093,883 |
| Long-term liabilities | 27,094 | 37,664 | 7,978,781 | 8,843,872 | 8,005,875 | 8,881,536 |
| Total liabilities | 134,774 | 242,801 | 8,721,214 | 9,732,618 | 8,855,988 | 9,975,419 |
| Deferred inflows of resources | | | | | | |
| Property taxes | 1,012,984 | 1,011,745 | - | - | 1,012,984 | 1,011,745 |
| Total liabilities and deferred inflows of resources | 1,147,758 | 1,254,546 | 8,721,214 | 9,732,618 | 9,868,972 | 10,987,164 |
| Net position | | | | | | |
| Net investment in capital assets | 976,808 | 1,041,187 | 17,428,524 | 16,926,530 | 18,405,332 | 17,967,717 |
| Restricted | 1,455,937 | 1,416,894 | 200,463 | 337,622 | 1,656,400 | 1,754,516 |
| Unrestricted | 3,555,868 | 3,103,578 | 6,577,953 | 6,233,419 | 10,133,821 | 9,336,997 |
| Total net position | \$ 5,988,613 | \$ 5,561,659 | \$ 24,206,940 | \$ 23,497,571 | \$ 30,195,553 | \$ 29,059,230 |

TOWNSHIP'S SUMMARY OF CHANGES IN NET POSITION

The following summarizes the Township's changes in net position for the fiscal years ended December 31, 2017 and 2016:

Governmental Activities

Net position for governmental activities increased by \$0.4 million during the year ended December 31, 2017, compared to a \$0.3 million decrease last year.

The Township's total governmental revenue is \$2.7 million, an increase of \$0.1 million over the prior year. The increase is due to an increase in state shared revenue in 2017.

Expenses for governmental activities totaled \$2.3 million, a decrease of \$0.6 million from the prior year. The decrease was due to fewer street and road projects being completed in 2017.

Business-type Activities

Net position for business-type activities increased by \$0.7 million during the year ended December 31, 2017, compared to a \$0.6 million increase last year.

Total revenue from business-type activities was \$4.2 million, which was no increase over the prior year.

Expenses for business-type activities totaled \$3.5 million, a decrease of \$0.1 million from the prior year. The decrease was due to a decrease in debt service costs and water and sewer system repair costs in 2017.

Charter Township of Union Change in Net Position

| | Governmental Activities | | Business-type Activities | | Total Primary Government | |
|------------------------------------|-------------------------|---------------------|--------------------------|----------------------|--------------------------|----------------------|
| | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 |
| Revenues | | | | | | |
| Program Revenues | | | | | | |
| Charges for services | \$ 278,338 | \$ 386,719 | \$ 4,147,019 | \$ 4,102,540 | \$ 4,425,357 | \$ 4,489,259 |
| Operating grants and contributions | 59,743 | 3,186 | 4,553 | - | 64,296 | 3,186 |
| General revenues | | | | | | |
| Property taxes | 1,056,263 | 1,095,790 | - | - | 1,056,263 | 1,095,790 |
| State shared revenue | 1,127,555 | 1,050,237 | - | - | 1,127,555 | 1,050,237 |
| Unrestricted investment earnings | 56,724 | 30,111 | 78,690 | 78,535 | 135,414 | 108,646 |
| Cable franchise fees | 132,360 | 79,671 | - | - | 132,360 | 79,671 |
| Miscellaneous | 29,923 | 14,242 | 16,705 | 18,730 | 46,628 | 32,972 |
| Total revenues | <u>2,740,906</u> | <u>2,659,956</u> | <u>4,246,967</u> | <u>4,199,805</u> | <u>6,987,873</u> | <u>6,859,761</u> |
| Expenses | | | | | | |
| General government | 774,511 | 788,356 | - | - | 774,511 | 788,356 |
| Public safety | 951,161 | 972,369 | - | - | 951,161 | 972,369 |
| Public works | 339,543 | 1,015,379 | - | - | 339,543 | 1,015,379 |
| Community and economic development | 114,689 | 22,312 | - | - | 114,689 | 22,312 |
| Recreation and culture | 130,518 | 134,257 | - | - | 130,518 | 134,257 |
| Interest on long-term debt | 3,530 | 2,772 | - | - | 3,530 | 2,772 |
| Sewer | - | - | 2,188,197 | 2,199,626 | 2,188,197 | 2,199,626 |
| Water | - | - | 1,349,401 | 1,420,178 | 1,349,401 | 1,420,178 |
| Total expenses | <u>2,313,952</u> | <u>2,935,445</u> | <u>3,537,598</u> | <u>3,619,804</u> | <u>5,851,550</u> | <u>6,555,249</u> |
| Change in net position | 426,954 | (275,489) | 709,369 | 580,001 | 1,136,323 | 304,512 |
| Net position - beginning of year | <u>5,561,659</u> | <u>5,837,148</u> | <u>23,497,571</u> | <u>22,917,570</u> | <u>29,059,230</u> | <u>28,754,718</u> |
| Net position - end of year | <u>\$ 5,988,613</u> | <u>\$ 5,561,659</u> | <u>\$ 24,206,940</u> | <u>\$ 23,497,571</u> | <u>\$ 30,195,553</u> | <u>\$ 29,059,230</u> |

Charter Township of Union's Funds

Analysis of the Charter Township of Union's major funds begins on page 4-4, following the government-wide financial statements. The fund financial statements provide detailed information about the most significant individual funds, not the Township as a whole. Funds are created to help manage money for specific purposes, as well as show accountability for certain activities, such as specific property tax millages and restricted receipts from federal and state sources.

The General Fund is the chief operating fund of the Township and one of two governmental funds that is considered a major fund. It pays for most of the Township's governmental services. Its major components of revenue are property taxes and state shared revenue. At the end of the current fiscal year, unassigned fund balance of the General Fund was \$3.5 million. **As a measure of the General Fund's liquidity, it may be useful to compare unassigned fund balance to total fund expenditures. Unassigned fund balance represents approximately 227% of total General Fund expenditures including transfers to other funds. The fund balance of the General Fund increased by about \$456,000 during the current fiscal year due to increased revenue sharing, increased interest earned, reduced benefits for elected officials, no elections expenditures, reduced capital outlay and fewer contributions to road projects.**

The fund balance of the Fire Fund increased by about \$30,000 during the current fiscal year, this amount is being set aside for the future purchase of a new fire truck.

The Water and Sewer Funds are the Township's two major Proprietary Funds. The net position of the Sewer Fund increased by approximately \$316,000 during the year. The increase was partly due to an increase in user charges and interest earned on investments. The net position of the Water Fund increased by approximately \$165,000 during the year. The increase was partly due to an increase in connection fees and interest earned on investments.

General Fund Budgetary Highlights

Budgets reflect best estimates of the next year's financial events. Budget amendments are often required to adjust for unexpected events and timing differences between when events are anticipated to happen and when they actually occur. The statements, schedules and notes included in the financial statements present comparisons of original budget, amended budget and actual revenues and expenditures.

The Charter Township of Union had no issues balancing the budget in the past several years, and this year was no exception. The Township continues to grow and remains financially strong with General Fund revenues increasing each year, and overall General Fund expenditures being well under budget. The expenditures in the 2017 original budget were estimated \$327,281 higher than revenues. However, this estimated shortfall was amended to expected revenues in excess of expenditures of \$116,455.

One of the biggest challenges the Township faces in budgeting revenues is estimating building and zoning permit fees which fluctuate from year to year. As the Township grows, it is uncertain if new construction will increase or decrease when compared to past years. Another challenge is budgeting expenditures for Township contributions to the Isabella County Road Commission for several road construction projects. The road projects are a large part of the Township's general fund budget, and the projects can take more than one year to complete. The General Fund

budget is amended mid-year when the progress on the various projects is easier to estimate. In 2017, the Township reduced the budgeted amounts for public works by \$247,850, due to completed road projects that cost less than expected or road projects that were not expected to be complete at year-end. Overall, when the 2017 budget was amended, total estimated revenues increased \$154,313 and total estimated expenditures were reduced by \$289,423, changing the estimated surplus (deficit) for the year from (\$327,281) to \$116,455.

In the fiscal year 2017, the General Fund budget for revenues increased by approximately \$154,000 from the original budget to the final amended budget. This was partly due to the State grant that the Township received to help with costs related to the flood event in the area in June 2017. The amended budget for State grants was \$56,000 higher than the original budget of \$0 for State grants. In addition, State revenue sharing and interest income were higher than expected when the original budget was created. We amended the budget for state Revenue sharing mid-year by about \$42,000 when we were certain the revenues were coming in higher than originally expected. Interest rates have been increasing for the Certificates of Deposit that we purchase/renew and the Township has also increased the investments in CD's in 2017 which required a General Fund budget amendment for interest earned of \$31,000. We also increased our budget for Other Revenue by \$30,000 when we realized we would be reimbursed by our insurance company for certain legal expenditures that we incurred during the year.

General Fund appropriations decreased by \$289,000 from original budget to final amended budget in fiscal year 2017. Following are some of the notable details for these changes:

In the General Government area, the budget was increased \$54,000 for additional attorney fees expected for the year. Also, the Manager's department budget was increased \$54,000 for amounts contributed to the Cable Consortium. These expenditures had been budgeted/netted with cable franchise fee revenue in the original general fund budget.

The original budget for public works was reduced by \$247,850 based on better estimates received from the Road Commission for road project completion in 2017. With the information received mid-year, we reduced the budget for road projects by \$153,000. The original budget for sidewalks was reduced by \$95,000 due to no new sidewalk projects commencing or in process during the 2017 fiscal year as we had hoped when the original budget was created.

In the Community and Economic Development area, the original budget for the Planning Dept. was reduced by \$66,000 when it was determined that dev review implementation would not occur in 2017.

In the Capital Outlay area, the 2017 budget was reduced by \$42,000 for a recycling depot that was not expected to be built in 2017.

None of the departments in the General Fund were over budget for the year.

CAPITAL ASSETS

The Charter Township of Union's primary government has \$26,817,490 invested in capital assets net of depreciation. Capital assets include all tangible assets that exceed \$5,000 in value and have an expected useful life of greater than two years. Capital assets include land, land improvements, sidewalks, buildings, equipment, vehicles and sewer and water systems. The Township uses straight line depreciation ranging from

three to fifty years useful life. From fiscal year 2016 to 2017, net capital assets decreased \$74,139 for Governmental Activities and decreased \$514,532 for Business-type Activities. Additional details of capital assets can be found in the Notes to Financial Statements beginning on page 4-25. A summary of the capital assets for the Township's primary government follows:

| | Governmental Activities | | Business-type Activities | | Total Primary Government | |
|--------------------------------------|-------------------------|--------------|--------------------------|---------------|--------------------------|---------------|
| | 2017 | 2016 | 2017 | 2016 | 2017 | 2016 |
| Capital assets not being depreciated | | | | | | |
| Land | \$ 160,650 | \$ 160,650 | \$ 275,780 | \$ 275,780 | \$ 436,430 | \$ 436,430 |
| Capital assets being depreciated | | | | | | |
| Land improvements | 329,743 | 329,743 | 41,964 | 41,964 | 371,707 | 371,707 |
| Building & improvements | 1,089,260 | 1,089,260 | 202,927 | 202,927 | 1,292,187 | 1,292,187 |
| Machinery and equipment | 251,973 | 251,973 | 1,680,215 | 1,555,735 | 1,932,188 | 1,807,708 |
| Vehicles | 314,821 | 314,821 | 413,185 | 402,545 | 728,006 | 717,366 |
| Water system | - | - | 13,110,949 | 12,912,087 | 13,110,949 | 12,912,087 |
| Sewer system | - | - | 13,719,285 | 13,596,909 | 13,719,285 | 13,596,909 |
| Wastewater treatment plant | - | - | 12,567,029 | 12,567,029 | 12,567,029 | 12,567,029 |
| Total capital assets | 2,146,447 | 2,146,447 | 42,011,334 | 41,554,976 | 44,157,781 | 43,701,423 |
| Less: accumulated depreciation | (1,131,975) | (1,057,836) | (16,208,316) | (15,237,426) | (17,340,291) | (16,295,262) |
| Capital assets, net | \$ 1,014,472 | \$ 1,088,611 | \$ 25,803,018 | \$ 26,317,550 | \$ 26,817,490 | \$ 27,406,161 |

LONG-TERM DEBT

Bonded Debt

The Township's current debt outstanding has been issued to fund capital improvements for new water and sewer infrastructure. For the total primary government, \$1,004,000 of the debt was retired in 2017. In addition, bond discounts were amortized in the amount of \$6,539 for the year.

The Business-type Activities of the Township have \$8,516,301 in outstanding bonded debt as of December 31, 2017. Of the outstanding debt, \$3,081,650 is general obligation bonded debt, and \$5,434,651 is revenue bonds. The general obligation bonded debt is indirect debt issued by Isabella County on the Township's behalf. The revenue bonded debt is direct debt issued by the Township itself.

Currently, there is no bonded debt outstanding for the Governmental Activities of Charter Township of Union.

Capital Lease Debt

In 2016, the Charter Township of Union entered into a capital lease agreement with Xerox for the purchase of seven new copiers that are used in primary government operations. At December 31, 2017, the Governmental Activities had \$37,664 in long-term debt outstanding on the lease and Business-type Activities had \$13,179 in long-term debt outstanding on the lease.

Compensated Absences

In the Governmental Activities, the liability for compensated absences increased by \$3,448 for the year. In Business-type Activities, the accrual for compensated absences decreased by \$2,869. In 2017, a leave time payout occurred when a long-term employee of the waste water treatment plant unexpectedly died, which contributed to the reduction.

A summary of the long-term debt outstanding for the Township's primary government follows:

| | <u>Governmental Activities</u> | | <u>Business-type Activities</u> | | <u>Total Primary Government</u> | |
|--------------------------|--------------------------------|------------------|---------------------------------|---------------------|---------------------------------|---------------------|
| | <u>2017</u> | <u>2016</u> | <u>2017</u> | <u>2016</u> | <u>2017</u> | <u>2016</u> |
| General obligation bonds | \$ - | \$ - | \$ 8,516,301 | \$ 9,513,762 | \$ 8,516,301 | \$ 9,513,762 |
| Capital lease | 37,664 | 47,424 | 13,179 | 16,594 | 50,843 | 64,018 |
| Compensated absences | <u>14,358</u> | <u>10,910</u> | <u>68,121</u> | <u>70,990</u> | <u>82,479</u> | <u>81,900</u> |
| | <u>\$ 52,022</u> | <u>\$ 58,334</u> | <u>\$ 8,597,601</u> | <u>\$ 9,601,346</u> | <u>\$ 8,649,623</u> | <u>\$ 9,659,680</u> |

CURRENT ECONOMIC EVENTS

The Township's budget for the next fiscal year is balanced with no property tax rate increase for general operations; the millage for fire protection services is 2.0 mills. Total expenditures in the General Fund for the next fiscal year are estimated to be \$1.8 million. Included in those expenditures are contributions to the Isabella County Road Commission for road maintenance in the amount of \$162,700 for repairs to the Meridian Road bridge, three brine applications to the gravel roads, to improve four miles of gravel roads, and to refresh two miles of limestone on Deerfield Road in the Township. In addition, the Township is contributing \$10,000 to the City of Mt. Pleasant for airport improvements. The Township is working on a project with the Isabella County Road Commission to improve the safety of certain intersections of Isabella Road. The total project is expected to cost \$1.3 million and will be shared by MDOT, Isabella County Road Commission, the Township and possibly the Saginaw Chippewa Indian Tribe.

In 2018, the Township expects to receive about the same amount of General Fund revenues compared to 2017. However, there is always uncertainty in state revenue sharing levels. State shared sales tax revenue is made up of two components. The constitutional component is 13% of the gross collections of the 6% state sales tax. This portion cannot be adjusted by the legislature. Beginning in fiscal year 2014, the Township became eligible for the statutory portion of the State's revenue sharing. The municipality must embrace accountability and transparency and publish a performance "dashboard" that is readily available to the public. This "dashboard" can be found on the Township's website. The Township has

consistently met the requirements. Charter Township of Union anticipates qualifying for next year's funding, but State funding for this portion is uncertain from year to year. The Township budgets for the last several fiscal years were prepared with recognition of stagnant revenue sharing proceeds. In the past year, however, the Township did experience an increase in revenue sharing, so management will be watching that closely to see if the increases continue into 2018 and budget appropriately.

In 2018, the Township is planning to update the zoning code. The Township has not updated the code for many years. \$50,000 is in the current budget for this project.

The Charter Township of Union completed the process of updating and adopting the community master plan in February 2018. The master plan considers the physical characteristics, population and housing, community services available, roadways and transportation available and existing land use to set goals and objectives for future land use and development. The plan addresses such items as zoning requirements, funding sources and capital improvements necessary to develop mutually beneficial and cohesive communities.

Township management is looking forward to using the master plan as well as the updated zoning code to help plan and guide future economic growth in the Township.

REQUESTS FOR INFORMATION

This financial report is designed to provide our citizens and taxpayers with a general overview of the Township's finances. If you have questions about this report or would like additional information, contact the Township finance office at 989-772-4600. Additional information can also be obtained at the Township's website, www.uniontownshipmi.com.

Charter Township of Union
Statement of Net Position
December 31, 2017

| | Primary Government | | | Component Units |
|---|----------------------------|-----------------------------|---------------|--------------------|
| | Governmental Activities | Business-type Activities | Total | |
| Assets | | | | |
| Cash and cash equivalents | \$ 4,695,151 | \$ 5,661,209 | \$ 10,356,360 | \$ 1,853,000 |
| Receivables | | | | |
| Taxes | 571,860 | - | 571,860 | 251,969 |
| Customers | 36,563 | 928,994 | 965,557 | - |
| Special assessments | 147,250 | 112,008 | 259,258 | - |
| Accrued interest and other | 1,315 | 1,932 | 3,247 | 246 |
| Due from other units of government | 427,792 | 4,553 | 432,345 | 747,234 |
| Due from fiduciary funds | 44,188 | - | 44,188 | - |
| Prepaid items | 197,780 | 60,991 | 258,771 | 1,207 |
| Restricted assets | | | | |
| Cash and cash equivalents | - | 200,463 | 200,463 | - |
| Capital assets not being depreciated | 160,650 | 275,780 | 436,430 | - |
| Capital assets, net of accumulated depreciation | 853,822 | 25,527,238 | 26,381,060 | 125,150 |
| | | | | |
| Total assets | 7,136,371 | 32,773,168 | 39,909,539 | 2,978,806 |
| | | | | |
| Deferred outflows of resources | | | | |
| Deferred amount on refunding | - | 154,986 | 154,986 | - |
| | | | | |
| Total assets and deferred outflows of resources | 7,136,371 | 32,928,154 | 40,064,525 | 2,978,806 |

Charter Township of Union
Statement of Net Position
December 31, 2017

| | Primary Government | | | Component Units |
|---|----------------------------|-----------------------------|-------------------|--------------------|
| | Governmental Activities | Business-type Activities | Total | |
| Liabilities | | | | |
| Accounts payable | \$ 52,160 | \$ 71,098 | \$ 123,258 | \$ 4,437 |
| Accrued and other liabilities | 11,135 | 52,515 | 63,650 | 101,557 |
| Due to other units of government | 19,457 | - | 19,457 | - |
| Noncurrent liabilities | | | | |
| Due within one year | 24,928 | 618,820 | 643,748 | 30,178 |
| Due in more than one year | 27,094 | 7,978,781 | 8,005,875 | - |
| Total liabilities | 134,774 | 8,721,214 | 8,855,988 | 136,172 |
| Deferred inflows of resources | | | | |
| Property taxes | 1,012,984 | - | 1,012,984 | 999,203 |
| Total liabilities and deferred inflows of resources | 1,147,758 | 8,721,214 | 9,868,972 | 1,135,375 |
| Net position | | | | |
| Net investment in capital assets | 976,808 | 17,428,524 | 18,405,332 | 125,150 |
| Restricted | | | | |
| Fire | 1,125,583 | - | 1,125,583 | - |
| Tribal grants | 29,907 | - | 29,907 | - |
| Capital projects | 300,447 | - | 300,447 | - |
| Bond required reserves | - | 200,463 | 200,463 | - |
| East DDA | - | - | - | 1,102,518 |
| West DDA | - | - | - | 615,763 |
| Unrestricted | 3,555,868 | 6,577,953 | 10,133,821 | - |
| Total net position | \$ 5,988,613 | \$ 24,206,940 | \$ 30,195,553 | \$ 1,843,431 |

Charter Township of Union
Statement of Activities
For the Year Ended December 31, 2017

| Functions/Programs | Program Revenues | | | | Net (Expense) Revenue and Changes in Net Position | | | Component Unit |
|---------------------------------------|---------------------|-------------------------|--|--|--|-----------------------------|----------------------|---------------------|
| | Expenses | Charges for Services | Operating Grants and Contributions | Capital Grants and Contributions | Primary Government | | | |
| | | | | | Governmental Activities | Business-type Activities | Total | |
| Primary government | | | | | | | | |
| Governmental activities | | | | | | | | |
| General government | \$ 774,511 | \$ 151,391 | \$ 54,302 | \$ - | \$ (568,818) | \$ - | \$ (568,818) | \$ - |
| Public safety | 951,161 | 101,296 | 5,441 | - | (844,424) | - | (844,424) | - |
| Public works | 339,543 | 25,651 | - | - | (313,892) | - | (313,892) | - |
| Community and economic development | 114,689 | - | - | - | (114,689) | - | (114,689) | - |
| Recreation and culture | 130,518 | - | - | - | (130,518) | - | (130,518) | - |
| Interest on long-term debt | 3,530 | - | - | - | (3,530) | - | (3,530) | - |
| Total governmental activities | <u>2,313,952</u> | <u>278,338</u> | <u>59,743</u> | <u>-</u> | <u>(1,975,871)</u> | <u>-</u> | <u>(1,975,871)</u> | <u>-</u> |
| Business-type activities | | | | | | | | |
| Sewer | 2,188,197 | 2,533,400 | 2,436 | - | - | 347,639 | 347,639 | - |
| Water | 1,349,401 | 1,613,619 | 2,117 | - | - | 266,335 | 266,335 | - |
| Total business-type activities | <u>3,537,598</u> | <u>4,147,019</u> | <u>4,553</u> | <u>-</u> | <u>-</u> | <u>613,974</u> | <u>613,974</u> | <u>-</u> |
| Total primary government | <u>\$ 5,851,550</u> | <u>\$ 4,425,357</u> | <u>\$ 64,296</u> | <u>\$ -</u> | <u>(1,975,871)</u> | <u>613,974</u> | <u>(1,361,897)</u> | <u>-</u> |
| Component units | | | | | | | | |
| East Downtown Development Authority | \$ 178,163 | \$ - | \$ 55,909 | \$ - | - | - | - | (122,254) |
| West Downtown Development Authority | 579,650 | - | - | - | - | - | - | (579,650) |
| Total component units | <u>\$ 757,813</u> | <u>\$ -</u> | <u>\$ 55,909</u> | <u>\$ -</u> | | | | <u>(701,904)</u> |
| General revenues | | | | | | | | |
| Property taxes | | | | | 1,056,263 | - | 1,056,263 | 939,981 |
| State shared revenue | | | | | 1,127,555 | - | 1,127,555 | - |
| Unrestricted investment earnings | | | | | 56,724 | 78,690 | 135,414 | 8,947 |
| Cable franchise fees | | | | | 132,360 | - | 132,360 | - |
| Miscellaneous | | | | | 29,923 | 16,705 | 46,628 | 68 |
| Total general revenues | | | | | <u>2,402,825</u> | <u>95,395</u> | <u>2,498,220</u> | <u>948,996</u> |
| Change in net position | | | | | 426,954 | 709,369 | 1,136,323 | 247,092 |
| Net position - beginning of year | | | | | 5,561,659 | 23,497,571 | 29,059,230 | 1,596,339 |
| Net position - end of year | | | | | <u>\$ 5,988,613</u> | <u>\$ 24,206,940</u> | <u>\$ 30,195,553</u> | <u>\$ 1,843,431</u> |

See Accompanying Notes to the Financial Statements

Charter Township of Union
Governmental Funds
Balance Sheet
December 31, 2017

| | <u>General</u> | Special | Nonmajor | Total |
|------------------------------------|---------------------|---------------------|-------------------|---------------------|
| | | Revenue Fund | | |
| | | Fire | Funds | Funds |
| Assets | | | | |
| Cash and cash equivalents | \$ 3,303,995 | \$ 1,208,052 | \$ 183,104 | \$ 4,695,151 |
| Receivables | | | | |
| Taxes | 232,670 | 339,190 | - | 571,860 |
| Customers | 36,563 | - | - | 36,563 |
| Special assessments | - | - | 147,250 | 147,250 |
| Accrued interest and other | 1,055 | 260 | - | 1,315 |
| Due from other units of government | 427,792 | - | - | 427,792 |
| Due from fiduciary funds | 44,188 | - | - | 44,188 |
| Prepaid items | 23,030 | 174,750 | - | 197,780 |
| | | | | |
| Total assets | <u>\$ 4,069,293</u> | <u>\$ 1,722,252</u> | <u>\$ 330,354</u> | <u>\$ 6,121,899</u> |
| Liabilities | | | | |
| Accounts payable | \$ 52,111 | \$ 49 | \$ - | \$ 52,160 |
| Accrued and other liabilities | 11,135 | - | - | 11,135 |
| Due to other units of government | 19,457 | - | - | 19,457 |
| | | | | |
| Total liabilities | <u>82,703</u> | <u>49</u> | <u>-</u> | <u>82,752</u> |

**Charter Township of Union
Governmental Funds
Balance Sheet
December 31, 2017**

| | <u>Special Revenue Fund</u> | | Nonmajor Governmental Funds | Total Governmental Funds |
|--|---------------------------------|--------------------------------|-----------------------------------|--------------------------------|
| | <u>General</u> | <u>Fire</u> | | |
| Deferred inflows of resources | | | | |
| Property taxes | \$ 416,364 | \$ 596,620 | \$ - | \$ 1,012,984 |
| Special assessments | - | - | 147,250 | 147,250 |
| Total deferred inflows of resources | <u>416,364</u> | <u>596,620</u> | <u>147,250</u> | <u>1,160,234</u> |
| Fund Balances | | | | |
| Non-spendable | | | | |
| Prepaid items | 23,030 | 174,750 | - | 197,780 |
| Restricted for | | | | |
| Fire | - | 950,833 | - | 950,833 |
| Tribal grants | - | - | 29,907 | 29,907 |
| Capital projects | - | - | 153,197 | 153,197 |
| Unassigned | 3,547,196 | - | - | 3,547,196 |
| Total fund balances | <u>3,570,226</u> | <u>1,125,583</u> | <u>183,104</u> | <u>4,878,913</u> |
| Total liabilities, deferred inflows of resources, and fund balances | <u><u>\$ 4,069,293</u></u> | <u><u>\$ 1,722,252</u></u> | <u><u>\$ 330,354</u></u> | <u><u>\$ 6,121,899</u></u> |

**Charter Township of Union
Governmental Funds
Reconciliation of Fund Balances of Governmental Funds
to Net Position of Governmental Activities
December 31, 2017**

| | |
|---|-----------------------------------|
| Total fund balances for governmental funds | \$ 4,878,913 |
| Total net position for governmental activities in the statement of net position is different because: | |
| Capital assets net of accumulated depreciation used in governmental activities are not financial resources and therefore are not reported in the funds. | 853,822 |
| Capital assets not being depreciated used in governmental activities are not financial resources and therefore are not reported in the funds. | 160,650 |
| Certain receivables are not available to pay for current period expenditures and, therefore are deferred in the funds. | 147,250 |
| Certain liabilities are not due and payable in the current period and are not reported in the funds. | |
| Compensated absences | (14,358) |
| Long-term liabilities applicable to governmental activities are not due and payable in the current period and accordingly are not reported as fund liabilities. | <u>(37,664)</u> |
| Net position of governmental activities | <u><u>\$ 5,988,613</u></u> |

Charter Township of Union
Governmental Funds
Statement of Revenues, Expenditures and Changes in Fund Balances
For the Year Ended December 31, 2017

| | General | Special Revenue Fund Fire | Nonmajor Governmental Funds | Total Governmental Funds |
|------------------------------------|---------------------|---------------------------------|-----------------------------------|--------------------------------|
| Revenues | | | | |
| Taxes | \$ 461,104 | \$ 595,159 | \$ - | \$ 1,056,263 |
| Licenses and permits | 58,116 | - | - | 58,116 |
| State revenue sharing | 1,127,555 | - | - | 1,127,555 |
| Other state grants | 54,302 | 5,441 | - | 59,743 |
| Charges for services | 81,504 | 101,171 | - | 182,675 |
| Fines and forfeitures | 617 | - | - | 617 |
| Interest income | 43,639 | 12,064 | 1,021 | 56,724 |
| Rental income | 10,630 | - | - | 10,630 |
| Cable franchise fees | 132,360 | - | - | 132,360 |
| Other revenue | 48,036 | - | 43,709 | 91,745 |
| Total revenues | 2,017,863 | 713,835 | 44,730 | 2,776,428 |
| Expenditures | | | | |
| Current | | | | |
| General government | 722,543 | - | - | 722,543 |
| Public safety | 250,827 | 684,000 | - | 934,827 |
| Public works | 339,017 | - | - | 339,017 |
| Community and economic development | 114,511 | - | - | 114,511 |
| Recreation and culture | 112,311 | - | - | 112,311 |
| Capital outlay | 9,626 | - | - | 9,626 |
| Debt service | | | | |
| Principal retirement | 9,760 | - | - | 9,760 |
| Interest and fiscal charges | 3,530 | - | - | 3,530 |
| Total expenditures | 1,562,125 | 684,000 | - | 2,246,125 |
| Net change in fund balance | 455,738 | 29,835 | 44,730 | 530,303 |
| Fund balance - beginning of year | 3,114,488 | 1,095,748 | 138,374 | 4,348,610 |
| Fund balance - end of year | \$ 3,570,226 | \$ 1,125,583 | \$ 183,104 | \$ 4,878,913 |

See Accompanying Notes to the Financial Statements

Charter Township of Union
Governmental Funds
Reconciliation of the Statement of Revenues, Expenditures and Changes in Fund Balances
of Governmental Funds to the Statement of Activities
For the Year Ended December 31, 2017

| | |
|---|---------------------------------|
| Net change in fund balances - Total governmental funds | \$ 530,303 |
| Total change in net position reported for governmental activities in the statement of activities is different because: | |
| Governmental funds report capital outlays as expenditures. However, in the statement of activities the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense. | |
| Depreciation expense | (74,139) |
| Revenues in the statement of activities that do not provide current financial resources are not reported as revenue in the funds. | |
| Special assessments | (35,522) |
| Expenses are recorded when incurred in the statement of activities. | |
| Compensated absences | (3,448) |
| Bond proceeds are reported as financing sources in the governmental funds and thus contribute to the change in fund balance. In the statement of net position, however, issuing debt increases long-term liabilities and does not affect the statement of activities. Similarly, repayment of principal is an expenditure in the governmental funds but reduces the liability in the statement of net position. | |
| Repayments of long-term debt | <u>9,760</u> |
| Change in net position of governmental activities | <u><u>\$ 426,954</u></u> |

Charter Township of Union
Proprietary Funds
Statement of Net Position
December 31, 2017

| | Enterprise Funds | | |
|---|-------------------|-------------------|-------------------|
| | Sewer | Water | Total |
| Assets | | | |
| Current assets | | | |
| Cash and cash equivalents | \$ 2,613,334 | \$ 3,047,875 | \$ 5,661,209 |
| Receivables | | | |
| Customers | 596,820 | 332,174 | 928,994 |
| Special assessments, current | 29,396 | 14,820 | 44,216 |
| Accrued interest and other | 1,000 | 932 | 1,932 |
| Due from other units of government | 2,436 | 2,117 | 4,553 |
| Prepaid items | 34,713 | 26,278 | 60,991 |
| Total current assets | <u>3,277,699</u> | <u>3,424,196</u> | <u>6,701,895</u> |
| Noncurrent assets | | | |
| Restricted assets | | | |
| Cash and cash equivalents | | | |
| USDA RRI reserve | 85,463 | - | 85,463 |
| USDA bond reserve | 115,000 | - | 115,000 |
| Special assessments receivable, deferred | 26,468 | 41,324 | 67,792 |
| Capital assets not being depreciated | 258,680 | 17,100 | 275,780 |
| Capital assets, net of accumulated depreciation | <u>16,595,811</u> | <u>8,931,427</u> | <u>25,527,238</u> |
| Total noncurrent assets | <u>17,081,422</u> | <u>8,989,851</u> | <u>26,071,273</u> |
| Total assets | 20,359,121 | 12,414,047 | 32,773,168 |
| Deferred outflows of resources | | | |
| Deferred amount on refunding | <u>154,986</u> | <u>-</u> | <u>154,986</u> |
| Total assets and deferred outflows of resources | <u>20,514,107</u> | <u>12,414,047</u> | <u>32,928,154</u> |

Charter Township of Union
Proprietary Funds
Statement of Net Position
December 31, 2017

| | Enterprise Funds | | |
|---|----------------------|----------------------|----------------------|
| | Sewer | Water | Total |
| Liabilities | | | |
| Current liabilities | | | |
| Accounts payable | \$ 43,814 | \$ 27,284 | \$ 71,098 |
| Accrued and other liabilities | 29,813 | 22,702 | 52,515 |
| Current portion of noncurrent liabilities | 496,667 | 122,153 | 618,820 |
| Total current liabilities | 570,294 | 172,139 | 742,433 |
| Noncurrent liabilities | | | |
| Long-term debt net of current portion | 6,512,545 | 1,466,236 | 7,978,781 |
| Total liabilities | 7,082,839 | 1,638,375 | 8,721,214 |
| Net position | | | |
| Net investment in capital assets | 10,038,255 | 7,390,269 | 17,428,524 |
| Restricted for | | | |
| Bond required reserves | 200,463 | - | 200,463 |
| Unrestricted | 3,192,550 | 3,385,403 | 6,577,953 |
| Total net position | <u>\$ 13,431,268</u> | <u>\$ 10,775,672</u> | <u>\$ 24,206,940</u> |

Charter Township of Union
Proprietary Funds
Statement of Revenues, Expenses and Changes in Fund Net Position
For the Year Ended December 31, 2017

| | Enterprise Funds | | |
|---------------------------|------------------|------------------|------------------|
| | Sewer | Water | Total |
| Operating revenue | | | |
| Customer fees | \$ 2,378,952 | \$ 1,446,750 | \$ 3,825,702 |
| Connection fees | 154,448 | 123,753 | 278,201 |
| Rental income | - | 43,116 | 43,116 |
| Other revenue | 6,782 | 9,923 | 16,705 |
| | | | |
| Total operating revenue | <u>2,540,182</u> | <u>1,623,542</u> | <u>4,163,724</u> |
| | | | |
| Operating expenses | | | |
| Personnel services | 665,375 | 543,638 | 1,209,013 |
| Supplies | 116,496 | 59,733 | 176,229 |
| Contractual services | 106,686 | 68,900 | 175,586 |
| Utilities | 229,781 | 122,544 | 352,325 |
| Repairs and maintenance | 119,414 | 133,307 | 252,721 |
| Other expenses | 26,488 | 19,015 | 45,503 |
| Depreciation | 649,329 | 342,011 | 991,340 |
| | | | |
| Total operating expenses | <u>1,913,569</u> | <u>1,289,148</u> | <u>3,202,717</u> |
| | | | |
| Operating income | <u>626,613</u> | <u>334,394</u> | <u>961,007</u> |

Charter Township of Union
Proprietary Funds
Statement of Revenues, Expenses and Changes in Fund Net Position
For the Year Ended December 31, 2017

| | Enterprise Funds | | |
|--|----------------------|----------------------|----------------------|
| | Sewer | Water | Total |
| Nonoperating revenue (expenses) | | | |
| State grant | \$ 2,436 | \$ 2,117 | \$ 4,553 |
| Interest income | 38,650 | 40,040 | 78,690 |
| Gain on disposal of assets | - | 5,000 | 5,000 |
| Interest expense | (274,628) | (65,253) | (339,881) |
| | | | |
| Total nonoperating revenues (expenses) | (233,542) | (18,096) | (251,638) |
| | | | |
| Change in net position | 393,071 | 316,298 | 709,369 |
| | | | |
| Net position - beginning of year | 13,038,197 | 10,459,374 | 23,497,571 |
| | | | |
| Net position - end of year | <u>\$ 13,431,268</u> | <u>\$ 10,775,672</u> | <u>\$ 24,206,940</u> |

Charter Township of Union
Proprietary Funds
Statement of Cash Flows
For the Year Ended December 31, 2017

| | Enterprise Funds | | |
|---|---------------------|---------------------|---------------------|
| | Sewer | Water | Total |
| Cash flows from operating activities | | | |
| Receipts from customers | \$ 2,528,693 | \$ 1,607,708 | \$ 4,136,401 |
| Payments to suppliers | (554,736) | (407,833) | (962,569) |
| Payments to employees | (668,015) | (544,150) | (1,212,165) |
| Net cash provided by operating activities | 1,305,942 | 655,725 | 1,961,667 |
| Cash flows from noncapital financing activities | | | |
| State grant | 2,436 | 2,117 | 4,553 |
| Cash flows from capital and related financing activities | | | |
| Proceeds from special assessments | 22,418 | 13,815 | 36,233 |
| Purchases/construction of capital assets | (226,332) | (250,476) | (476,808) |
| Principal and interest paid on long-term debt | (1,201,551) | (152,701) | (1,354,252) |
| Proceeds from sale of capital assets | - | 5,000 | 5,000 |
| Net cash used by capital and related financing activities | (1,405,465) | (384,362) | (1,789,827) |
| Cash flows from investing activities | | | |
| Interest received | 37,650 | 39,108 | 76,758 |
| Net change in cash and cash equivalents | (59,437) | 312,588 | 253,151 |
| Cash and cash equivalents - beginning of year | 2,873,234 | 2,735,287 | 5,608,521 |
| Cash and cash equivalents - end of year | <u>\$ 2,813,797</u> | <u>\$ 3,047,875</u> | <u>\$ 5,861,672</u> |

Charter Township of Union
Proprietary Funds
Statement of Cash Flows
For the Year Ended December 31, 2017

| | Enterprise Funds | | |
|--|---------------------|---------------------|---------------------|
| | Sewer | Water | Total |
| Statement of Net Position classification | | | |
| Cash and cash equivalents | \$ 2,613,334 | \$ 3,047,875 | \$ 5,661,209 |
| Restricted assets | | | |
| Cash and cash equivalents | | | |
| USDA RRI reserve | 85,463 | - | 85,463 |
| USDA bond reserve | 115,000 | - | 115,000 |
| | <u>\$ 2,813,797</u> | <u>\$ 3,047,875</u> | <u>\$ 5,861,672</u> |
| Reconciliation of operating income to net cash provided by operating activities | | | |
| Operating income | \$ 626,613 | \$ 334,394 | \$ 961,007 |
| Adjustments to reconcile operating income to net cash from operating activities | | | |
| Depreciation and amortization expense | 693,035 | 343,590 | 1,036,625 |
| Changes in assets and liabilities | | | |
| Receivables (net) | (9,053) | (13,717) | (22,770) |
| Due from other units of government | (2,436) | (2,117) | (4,553) |
| Prepaid items | (3,359) | (1,711) | (5,070) |
| Accounts payable | 3,782 | (4,202) | (420) |
| Accrued and other liabilities | 326 | (609) | (283) |
| Compensated absences | (2,966) | 97 | (2,869) |
| | <u>\$ 1,305,942</u> | <u>\$ 655,725</u> | <u>\$ 1,961,667</u> |

Charter Township of Union
Fiduciary Funds
Statement of Fiduciary Net Position
December 31, 2017

| | Current Tax Collection Fund | Imprest Payroll Fund | Total Agency Funds |
|----------------------------------|-----------------------------------|-------------------------|--------------------------|
| Assets | | | |
| Cash and cash equivalents | \$ 3,155,933 | \$ 5,890 | \$ 3,161,823 |
| Prepaid items | - | 38,940 | 38,940 |
| Total assets | <u>\$ 3,155,933</u> | <u>\$ 44,830</u> | <u>\$ 3,200,763</u> |
| Liabilities | | | |
| Accrued and other liabilities | \$ - | \$ 642 | \$ 642 |
| Due to other funds | - | 44,188 | 44,188 |
| Due to other units of government | 3,155,933 | - | 3,155,933 |
| Total liabilities | <u>\$ 3,155,933</u> | <u>\$ 44,830</u> | <u>\$ 3,200,763</u> |

Charter Township of Union
Combining Statement of Component Units
Statement of Net Position
December 31, 2017

| | East Downtown Development Authority | West Downtown Development Authority | Total |
|---|--|--|---------------------|
| Assets | | | |
| Cash and cash equivalents | \$ 1,105,502 | \$ 747,498 | \$ 1,853,000 |
| Receivables | | | |
| Taxes | 16,914 | 235,055 | 251,969 |
| Accrued interest and other | 246 | - | 246 |
| Due from other units of government | 380,532 | 366,702 | 747,234 |
| Prepaid items | 1,207 | - | 1,207 |
| Capital assets, net of accumulated depreciation | 116,640 | 8,510 | 125,150 |
| Total assets | <u>1,621,041</u> | <u>1,357,765</u> | <u>2,978,806</u> |
| Liabilities | | | |
| Accounts payable | 4,437 | - | 4,437 |
| Accrued interest payable | - | 101,557 | 101,557 |
| Noncurrent liabilities | | | |
| Due within one year | - | 30,178 | 30,178 |
| Total liabilities | <u>4,437</u> | <u>131,735</u> | <u>136,172</u> |
| Deferred inflows of resources | | | |
| Property taxes | 397,446 | 601,757 | 999,203 |
| Total liabilities and deferred inflows of resources | <u>401,883</u> | <u>733,492</u> | <u>1,135,375</u> |
| Net position | | | |
| Net investment in capital assets | 116,640 | 8,510 | 125,150 |
| Restricted | | | |
| East DDA | 1,102,518 | - | 1,102,518 |
| West DDA | - | 615,763 | 615,763 |
| Total net position | <u>\$ 1,219,158</u> | <u>\$ 624,273</u> | <u>\$ 1,843,431</u> |

Charter Township of Union
Combining Statement of Component Units
Statement of Activities
For the Year Ended December 31, 2017

| | Program Revenues | | Net (Expense) Revenue and Changes in Net Position | | |
|-------------------------------------|------------------|------------------------------------|---|--------------------------------|---------------------|
| | Expenses | Operating Grants and Contributions | East | West | Total |
| | | | Downtown Development Authority | Downtown Development Authority | |
| Component units | | | | | |
| East Downtown Development Authority | \$ 178,163 | \$ 55,909 | \$ (122,254) | \$ - | \$ (122,254) |
| West Downtown Development Authority | 579,650 | - | - | (579,650) | (579,650) |
| Total component units | \$ 757,813 | \$ 55,909 | (122,254) | (579,650) | (701,904) |
| General revenues | | | | | |
| Property taxes | | | 444,883 | 495,098 | 939,981 |
| Interest income | | | 7,333 | 1,614 | 8,947 |
| Miscellaneous | | | 68 | - | 68 |
| Total general revenues | | | 452,284 | 496,712 | 948,996 |
| Change in net position | | | 330,030 | (82,938) | 247,092 |
| Net position - beginning of year | | | 889,128 | 707,211 | 1,596,339 |
| Net position - end of year | | | <u>\$ 1,219,158</u> | <u>\$ 624,273</u> | <u>\$ 1,843,431</u> |

Note 1 - Summary of Significant Accounting Policies

Reporting entity

The Charter Township of Union, Michigan was organized as a Township under provisions of the constitution and general law of the State of Michigan. The Township is one of sixteen townships in Isabella County. The Township is governed by an elected Township Board which consists of a Supervisor, Clerk, Treasurer, and four Trustees and provides services to its residents in many areas including water and sewer, general government, fire protection and prevention, maintenance of highway, streets and bridges, and community enrichment.

The accompanying financial statements present the government and its component units, entities for which the government is considered to be financially accountable. Although blended component units are legal separate entities, in substance, they are part of the government's operations. Each discretely presented component unit is reported in a separate column in the government-wide financial statements to emphasize that it is legally separate from the government (see discussion below for description).

Discretely Presented Component Units – The component unit column in the entity wide financial statements includes the financial data of the Township's East Downtown Development Authority and West Downtown Development Authority. These units are reported in a separate column to emphasize that they are legally separate from the Township. The members of the Governing Board of the Downtown Development Authorities are appointed by the Board of Trustees. The budgets and expenditures of the Downtown Development Authorities must be approved by the Board of Trustees. The Township also has the ability to significantly influence operations of the Downtown Development Authorities. The Downtown Development Authorities do not issue any other form of financial statements except as contained in the Charter Township of Union annual financial statements.

In 2014, the Township created a Brownfield Redevelopment Authority ("Authority") to promote the redevelopment of environmentally distressed, functionally obsolete and/or blighted areas of the Township. The Authority has not yet had any financial activity.

Government-wide and fund financial statements

The government-wide financial statements (i.e., the statement of net position and the statement of activities) report information on all of the nonfiduciary activities of the primary government and its component units. *Government activities*, which normally are supported by taxes and intergovernmental revenues, are reported separately from *business-type activities*, which rely to a significant extent on fees and charges for support. Likewise, the *primary government* is reported separately from certain legally separate *component units* for which the primary government is financially accountable.

The statement of activities demonstrates the degree to which the direct expenses of a given function or segments are offset by program revenues. *Direct expenses* are those that are clearly identifiable with a specific function or segment. *Program revenues* include 1) charges to customers or applicants who purchase, use, or directly benefit from goods, services, or privileges provided by a given function or segment and 2) grants and contributions that are restricted to meeting the operational or capital requirements of a particular function or segment. Taxes and other items not properly included among program revenues are reported instead as *general revenues*.

Separate financial statements are provided for governmental funds, proprietary funds, and fiduciary funds, even though the latter are excluded from the government-wide financial statements. Major individual governmental funds and major individual enterprise funds are reported as separate columns in the fund financial statements.

Measurement focus, basis of accounting, and financial statement presentation

The government-wide financial statements are reported using the *economic resources measurement focus* and the *accrual basis of accounting*, as are the proprietary fund and fiduciary fund financial statements. Revenues are recorded when earned and expenses are recorded when a liability is incurred, regardless of the timing of related cash flows. The Township's property taxes are recognized as revenues in the fiscal year following the year for which they are levied. Grants and similar items are recognized as revenue as soon as all eligibility requirements imposed by the provider have been met.

Governmental fund financial statements are reported using the *current financial resources measurement focus* and the *modified accrual basis of accounting*. Revenues are recognized as soon as they are both measurable and available. Revenues are considered to be *available* when they are collectible within the current period or soon enough thereafter to pay liabilities of the current period. For this purpose, the government considers revenues to be available if they are collected within 60 days of the end of the current fiscal period. Expenditures generally are recorded when a liability is incurred, as under accrual accounting. However, debt service expenditures, as well as expenditures related to compensated absences and claims and judgments, are recorded only when payment is due.

Property taxes, sales taxes, franchise taxes, licenses, and interest associated with the current fiscal period are all considered to be susceptible to accrual and so have been recognized as revenues of the current fiscal period. Only the portion of special assessments receivable due within the current fiscal period is considered to be susceptible to accrual as revenue of the current period. All other revenue items are considered to be measurable and available only when cash is received by the government.

The government reports the following major governmental funds:

The General Fund is the Township's primary operating fund. It accounts for all financial resources of the general government, except those required to be accounted for in another fund.

The Fire Fund accounts for resources used to provide fire services to residents of the Township and the surrounding area.

The government reports the following major proprietary funds:

The Sewer Fund accounts for the activities of the sewage collection system.

The Water Fund accounts for the activities of the water distribution system.

Additionally, the government reports the following:

The Nonmajor Special Revenue Fund accounts for the proceeds of a specific revenue source requiring separate accounting because of administrative requirements.

The Capital Projects Fund accounts for the proceeds of special assessments, and the improvements made with those funds.

The Agency Fund accounts for assets held by the Township acting as an agent for individuals and/or other funds. The Township's agency funds include the Current Tax Collection Fund and an Imprest Payroll Fund.

As a general rule the effect of interfund activity has been eliminated from the government-wide financial statements. Exceptions to this general rule are payments-in-lieu of taxes where the amounts are reasonably equivalent in value to the interfund services provided and other charges between the government's water and sewer function and various other functions of the government. Elimination of these charges would distort the direct costs and program revenues reported for the various functions concerned.

Amounts reported as *program revenues* include 1) charges to customers or applicants for goods, services, or privileges provided, 2) operating grants and contributions, and 3) capital grants and contributions, including special assessments. Internally dedicated resources are reported as *general revenues* rather than as program revenues. Likewise, general revenues include all taxes.

Proprietary funds distinguish *operating* revenues and expenses from *nonoperating* items. Operating revenues and expenses generally result from providing services and producing and delivering goods in connection with a proprietary fund's principal ongoing operations. The principal operating revenues of the sewer and water funds are charges to customers for sales and services. The government also recognizes as operating revenue the portion of tap fees intended to recover the cost of connecting new customers to the system. Operating expenses for sewer and water funds include the cost of sales and services, administrative expenses, and depreciation on capital assets. All revenues and expenses not meeting this definition are reported as nonoperating revenues and expenses.

Assets, liabilities, and net position or equity

Deposits – Cash and cash equivalents are considered to be cash on hand, demand deposits, and short-term investments with a maturity of three months or less when acquired. Certificate of deposits are stated at cost which approximates fair value.

Receivables and payables – In general, outstanding balances between funds are reported as “due to/from other funds.” Activity between funds that is representative of lending/borrowing arrangement outstanding at the end of the fiscal year is referred to as “advances to/from other funds.” Any residual balances outstanding between the governmental activities and the business-type activities are reported in the government-wide financial statements as “internal balances.”

All trade and property tax receivables are shown as net of allowance for uncollectible amounts. The Township considers all accounts receivable to be fully collectible; accordingly, no allowance for uncollectible amounts is recorded. Property taxes are levied on each December 1st on the taxable valuation of property as of the preceding December 31st. Although the Township's 2017 tax is levied and collectible on December 1, 2017, it is the Township's policy to recognize revenues from the current tax levy in the subsequent year when the proceeds of the levy are budgeted and made available for the financing of Township operations. Taxes are considered delinquent on March 1st of the following year, at which time penalties and interest are assessed.

The 2016 taxable valuation of the government totaled \$355,935,227, on which ad valorem taxes consisted of 1.000 mills for operating purposes and 2.000 mills for fire services. This resulted in \$355,935 for operating expenses and \$711,870 for fire services, exclusive of East Downtown Development and West Downtown Development tax captures, as well as any Michigan Tax Tribunal or Board of Review adjustments.

Prepaid items – Certain payments to vendors reflect costs applicable to future fiscal years. For such payments in governmental funds the Township follows the consumption method, and they therefore are capitalized as prepaid items in both entity-wide and fund financial statements.

Restricted assets – Certain bonds of the Enterprise Funds require amounts to be set aside for a bond reserve and future operations and maintenance. These amounts have been classified as restricted cash.

Capital assets – Capital assets, which include property, plant and equipment, are reported in the applicable governmental or business-type activities column in the government-wide financial statements. Capital assets are defined by the government as assets with an initial individual cost of more than \$5,000 and an estimated useful life in excess of more than two years. Such assets are recorded at historical cost or estimated historical cost, if purchased or constructed.

The reported value excludes normal maintenance and repairs which are essentially amounts spent in relation to capital assets that do not increase the capacity or efficiency of the item or extend its useful life beyond the original estimate. In the case of donations the government values these capital assets at the estimated fair value of the item at the date of its donation.

Property, plant and equipment are depreciated using the straight-line method over the following useful lives:

| | |
|----------------------------|---------------|
| Land improvements | 10 - 20 years |
| Buildings and improvements | 7 - 50 years |
| Machinery and equipment | 5 - 25 years |
| Vehicles | 5 - 20 years |
| Water and sewer systems | 10 - 50 years |

Deferred outflows of resources – A deferred outflow of resources is a consumption of net position by the government that is applicable to a future reporting period. Deferred amounts on bond refundings are included in the government-wide financial statements. The amounts represent the difference between the reacquisition price and the net carrying amount of the prior debt.

Compensated absences – It is the Township’s policy to permit employees to accumulate earned but unused vacation and sick pay benefits. Policies are as follows:

Employees hired on or before December 31, 2014 who give proper resignation after 20 years of service will be paid for 50% of their accumulated but unused sick leave days.

Employees whose employment relationship with the Township ends receive pay for earned and credited, but unused vacation leave if the employee retires in accordance with the retirement plan in effect or if the employee resigns from employment and a minimum of 2 weeks advance written notice is given to the Township.

Vacation and sick pay is accrued when incurred in the government-wide and proprietary financial statements. A liability for these amounts is reported in governmental funds only if they have matured, for example, as a result of employee resignations and retirements.

Long-term obligations – In the government-wide financial statements, and proprietary fund types in the fund financial statements, long-term debt and other long-term obligations are reported as liabilities in the applicable governmental activities, business-type activities, or proprietary fund type statement of net position. Bond premiums and discounts are deferred and amortized over the life of the bonds using the effective interest method. Bonds payable are reported net of the applicable bond premium or discount.

In the fund financial statements, governmental fund types recognize bond premiums and discounts, as well as bond issuance costs, during the current period. The face amount of debt issued is reported as other financing sources. Premiums received on debt issuances are reported as other financing sources while discounts on debt issuances are reported as other financing uses. Issuance costs, whether or not withheld from the actual debt proceeds received, are reported as debt service expenditures.

Deferred inflows of resources – A deferred inflow of resources is an acquisition of net position by the government that is applicable to a future reporting period. For governmental funds this includes unavailable revenue in connection with receivables for revenues that are not considered available to liquidate liabilities of the current period. Property taxes billed during the month of December will be used to finance the following year's operations. As such, these taxes are recorded as deferred inflows in each respective fund as of December 31.

Fund Equity – In the fund financial statements, governmental funds report fund balance in the following categories:

Non-spendable – assets that are not available in a spendable form.

Restricted – amounts that are legally imposed or otherwise required by external parties to be used for a specific purpose.

Committed – amounts constrained on use imposed by the government's highest level of decision-making, its Board of Trustees. A fund balance commitment may be established, modified, or rescinded by a resolution of the Board of Trustees.

Assigned – amounts intended to be used for specific purposes, as determined by the Board of Trustees. The Board

of Trustees has not approved a policy indicating who is to assign amounts to a specific purpose. As a result, this authority is retained by the Board of Trustees. Residual amounts in governmental funds other than the general fund are automatically assigned by their nature.

Unassigned – all other resources; the remaining fund balances after non-spendable, restrictions, commitments and assignments.

The Township has not adopted a policy that defines the order of usage for fund balance amounts classified as restricted, committed, assigned, or unassigned. In the absence of such a policy, resources with the highest level of restriction will be used first.

Upcoming Accounting and Reporting Changes

The Governmental Accounting Standards Board has released the following Statements.

Statement No. 83, *Certain Asset Retirement Obligations* establishes criteria for determining the timing and pattern of recognition of a liability and a corresponding deferred outflow of resources for asset retirement obligations (AROs). An ARO is a legally enforceable liability associated with the retirement of a tangible capital asset. The requirements of this Statement are effective for the fiscal year ending December 31, 2019.

Statement No. 84, *Fiduciary Activities* improves the guidance regarding the identification of fiduciary activities for accounting and financial reporting purposes and how those activities should be reported. The criteria generally is on (1) is the government controlling the assets of the fiduciary activity and (2) the beneficiaries with whom a fiduciary relationship exists. The four fiduciary funds that should be reported, if applicable: (1) pension (and other employee benefit) trust funds, (2) investment trust funds, (3) private-purpose trust funds, and (4) custodial funds. Custodial funds generally will report fiduciary activities that are not held in a trust or similar arrangement that meets

specific criteria. The requirements of this Statement are effective for the fiscal year ending December 31, 2019.

Statement No. 85, *Omnibus 2017* addresses practice issues that were identified during implementation and application of certain GASB Statements. This statement covers issues related to blending component units, goodwill, fair value measurement and application, and postemployment benefits (pensions and other postemployment benefits), which is effective for the fiscal year ending December 31, 2018.

Statement No. 86, *Certain Debt Extinguishment Issues* is to improve consistency in accounting and financial reporting for in-substance defeasance of debt. The statement provides uniform guidance for derecognizing debt that is defeased in substance, regardless of how cash and other monetary assets placed in an irremovable trust for the purpose of extinguishing that debt were acquired. The effective date is for the fiscal year ending December 31, 2018.

The Township is evaluating the impact that the above GASBs will have on its financial reporting.

Note 2 - Stewardship, Compliance and Accountability

Budgetary information

The government is subject to the budgetary control requirements of the Uniform Budgeting Act (P.A. 621 of 1978, as amended). Annual budgets are adopted on a basis consistent with accounting principles generally accepted in the United States of America for the General Fund and all Special Revenue Funds. All annual appropriations lapse at fiscal year end.

Prior to December 31, the Township Manager submits to the Board of Trustees a proposed operating budget for the fiscal year commencing the following January 1. Public hearings are held to obtain taxpayer comments and the budget is legally enacted through passage of an ordinance prior to December 31.

The budget document presents information by fund, activity, department, and line items. The legal level of budgetary control adopted by the governing body is the activity level. The Township Manager is authorized to transfer budgeted amounts between line items within an activity; however, any revisions that alter the total expenditures of an activity must be approved by the Board of Trustees.

Amounts encumbered for purchase orders, contracts, etc. are not tracked during the year. Budget appropriations are considered to be spent when goods are received or services rendered.

Note 3 - Deposits and Investments

At year end the government's deposits were reported in the financial statements as follows:

| | Cash and Cash Equivalents | Restricted Cash and Cash Equivalents | Total |
|--------------------------|------------------------------|--|----------------------|
| Governmental activities | \$ 4,695,151 | \$ - | \$ 4,695,151 |
| Business-type activities | 5,661,209 | 200,463 | 5,861,672 |
| Total primary government | 10,356,360 | 200,463 | 10,556,823 |
| Fiduciary funds | 3,161,823 | - | 3,161,823 |
| Component unit | 1,853,000 | - | 1,853,000 |
| Total | <u>\$ 15,371,183</u> | <u>\$ 200,463</u> | <u>\$ 15,571,646</u> |

The breakdown between deposits and investments is as follows:

| | Primary Government | Fiduciary Funds | Component Units | Total |
|--|-----------------------|---------------------|---------------------|----------------------|
| Bank deposits (checking and savings accounts, money markets and certificates of deposit) | \$ 10,556,423 | \$ 3,161,823 | \$ 1,853,000 | \$ 15,571,246 |
| Petty cash and cash on hand | 400 | - | - | 400 |
| | <u>\$ 10,556,823</u> | <u>\$ 3,161,823</u> | <u>\$ 1,853,000</u> | <u>\$ 15,571,646</u> |

Interest rate risk – The Township will minimize interest rate risk, which is the risk that the market value of securities in the portfolio will fall due to changes in market rate interest rates, by structuring the investment portfolio to attain a market average rate of return while taking into account investment risk constraints and liquidity needs.

Credit risk – State statutes authorize the government to make deposits and invest in the accounts of federally insured banks, credit unions, and savings and loan associations which have an office in Michigan. The local unit is allowed to invest in bonds, securities and other obligations of the United States, or any agency or instrumentality of the United States. United States government or federal agency obligations; repurchase agreements; bankers acceptance of United States Banks; commercial paper rated within the two highest classifications which mature not more than 270 days after the date of purchase; obligations of the State of Michigan or any of its political subdivisions, which are rated as investment grade; and mutual funds composed of investment vehicles that are legal for direct investment by local units of government in Michigan.

The investment policy adopted by the government authorizes investment in bonds and securities of the United States government and bank accounts and certificates of deposit, but not the remainder of State statutory authority as listed above.

Concentration of credit risk – The government has no policy that would limit the amount that may be issued in any one issuer.

Custodial credit risk – deposits – In the case of deposits, this is the risk that in the event of bank failure, the government’s deposits may not be returned to it. The government does not have a policy for custodial credit risk. As of year end, \$16,219,791 was exposed to custodial credit risk because it was uninsured and uncollateralized.

Note 4 - Receivables

The only receivables not expected to be collected within one year are as follows:

| | Due After One Year | Fund |
|---------------------------|-----------------------|-------------------------|
| Primary government | | |
| Special assessments | \$ 67,951 | Public Improvement Fund |
| Special assessments | 26,468 | Sewer Fund |
| Special assessments | 41,324 | Water Fund |
| | <u>\$ 135,743</u> | |

Note 5 - Capital Assets

At year end capital assets activity of the primary government for the current year was as follows:

| | Beginning Balance | Increases | Decreases | Ending Balance |
|---|----------------------|-------------|-----------|-------------------|
| Governmental activities | | | | |
| Capital assets not being depreciated | | | | |
| Land | \$ 160,650 | \$ - | \$ - | \$ 160,650 |
| Capital assets being depreciated | | | | |
| Land improvements | 329,743 | - | - | 329,743 |
| Buildings, additions and improvements | 1,089,260 | - | - | 1,089,260 |
| Machinery and equipment | 251,973 | - | - | 251,973 |
| Vehicles | 314,821 | - | - | 314,821 |
| Total capital assets being depreciated | 1,985,797 | - | - | 1,985,797 |
| Less accumulated depreciation for | | | | |
| Land improvements | 258,157 | 13,490 | - | 271,647 |
| Buildings, additions and improvements | 387,441 | 21,896 | - | 409,337 |
| Machinery and equipment | 164,118 | 19,265 | - | 183,383 |
| Vehicles | 248,120 | 19,488 | - | 267,608 |
| Total accumulated depreciation | 1,057,836 | 74,139 | - | 1,131,975 |
| Net capital assets being depreciated | 927,961 | (74,139) | - | 853,822 |
| Governmental activities capital assets, net | \$ 1,088,611 | \$ (74,139) | \$ - | \$ 1,014,472 |

| | Beginning Balance | Increases | Decreases | Ending Balance |
|--|----------------------|--------------|-----------|-------------------|
| Business-type activities | | | | |
| Capital assets not being depreciated | | | | |
| Land | \$ 275,780 | \$ - | \$ - | \$ 275,780 |
| Capital assets being depreciated | | | | |
| Land improvements | 41,964 | - | - | 41,964 |
| Buildings, additions and improvements | 202,927 | - | - | 202,927 |
| Machinery and equipment | 1,555,735 | 124,480 | - | 1,680,215 |
| Vehicles | 402,545 | 31,090 | 20,450 | 413,185 |
| Water system | 12,912,087 | 198,862 | - | 13,110,949 |
| Sewer system | 13,596,909 | 122,376 | - | 13,719,285 |
| Wastewater treatment plant | 12,567,029 | - | - | 12,567,029 |
| Total capital assets being depreciated | 41,279,196 | 476,808 | 20,450 | 41,735,554 |
| Less accumulated depreciation for | | | | |
| Land improvements | 28,434 | 1,323 | - | 29,757 |
| Buildings, additions and improvements | 103,820 | 8,556 | - | 112,376 |
| Machinery and equipment | 784,591 | 107,367 | - | 891,958 |
| Vehicles | 207,616 | 24,183 | 20,450 | 211,349 |
| Water system | 4,381,226 | 280,981 | - | 4,662,207 |
| Sewer system | 6,884,227 | 296,515 | - | 7,180,742 |
| Wastewater treatment plant | 2,847,512 | 272,415 | - | 3,119,927 |
| Total accumulated depreciation | 15,237,426 | 991,340 | 20,450 | 16,208,316 |
| Net capital assets being depreciated | 26,041,770 | (514,532) | - | 25,527,238 |
| Business-type capital assets, net | \$ 26,317,550 | \$ (514,532) | \$ - | \$ 25,803,018 |

Capital assets activity of the component units for the current year was as follows:

| Component Units | Beginning Balance | Increases | Decreases | Ending Balance |
|---|-------------------|-------------|-----------|----------------|
| East Downtown Development Authority | | | | |
| Capital assets being depreciated | | | | |
| Land improvements | \$ 233,279 | \$ - | \$ - | \$ 233,279 |
| Less accumulated depreciation for | | | | |
| Land improvements | 104,976 | 11,663 | - | 116,639 |
| East Downtown Development Authority capital assets, net | \$ 128,303 | \$ (11,663) | \$ - | \$ 116,640 |
| West Downtown Development Authority | | | | |
| Capital assets being depreciated | | | | |
| Land improvements | \$ 15,473 | \$ - | \$ - | \$ 15,473 |
| Less accumulated depreciation for | | | | |
| Land improvements | 6,190 | 773 | - | 6,963 |
| West Downtown Development Authority capital assets, net | \$ 9,283 | \$ (773) | \$ - | \$ 8,510 |
| Total component units | \$ 137,586 | \$ (12,436) | \$ - | \$ 125,150 |

Depreciation expense was charged to programs of the primary government as follows:

Governmental activities

| | |
|-------------------------------|---------------|
| General government | \$ 47,303 |
| Public safety | 13,156 |
| Recreation and culture | 13,680 |
| Total governmental activities | <u>74,139</u> |

Business-type activities

| | |
|--------------------------------|---------------------|
| Sewer | 649,329 |
| Water | 342,011 |
| Total business-type activities | <u>991,340</u> |
| Total primary government | <u>\$ 1,065,479</u> |

Depreciation expense was charged to the following programs for component units:

| | |
|-------------------------------------|------------------|
| East Downtown Development Authority | \$ 11,663 |
| West Downtown Development Authority | 773 |
| Total component units | <u>\$ 12,436</u> |

Note 6 - Interfund Receivables and Payables

The imprest payroll fund, a fiduciary fund, owes the general fund \$44,188 at December 31, 2017. The imprest payroll fund pays health insurance during the month prior to the coverage month. Funds of the Township which record benefits expense for employees record the expense in the month of coverage and transfer amounts to the imprest payroll fund during that month.

Note 7 - Capital Lease

The Township has a lease for copy machines. The future minimum lease payments are as follows:

| Year ending December 31, | |
|---|------------------|
| 2018 | \$ 17,940 |
| 2019 | 17,940 |
| 2020 | 17,940 |
| 2021 | <u>4,485</u> |
| Total minimum lease payments | 58,305 |
| Less amount representing interest | <u>(7,462)</u> |
| Present value of minimum lease payments | <u>\$ 50,843</u> |
| | |
| Asset | |
| Machinery and equipment | \$ 73,731 |
| Less accumulated depreciation | <u>(25,806)</u> |
| Total | <u>\$ 47,925</u> |

Note 8 - Long-Term Debt

The government issues bonds to provide for the acquisition and construction of major capital projects. General obligation bonds are direct obligations and pledge the full faith and credit of the government. Other long-term obligations include a capital lease and compensated absences. Long-term obligation activity is summarized as follows:

| | Beginning Balance | Additions | Reductions | Ending Balance | Due Within One Year |
|---------------------------------------|----------------------|------------------|---------------------|---------------------|------------------------|
| Governmental activities | | | | | |
| Capital leases | \$ 47,424 | \$ - | \$ 9,760 | \$ 37,664 | \$ 10,570 |
| Compensated absences | 10,910 | 25,781 | 22,333 | 14,358 | 14,358 |
| Total governmental activities | <u>\$ 58,334</u> | <u>\$ 25,781</u> | <u>\$ 32,093</u> | <u>\$ 52,022</u> | <u>\$ 24,928</u> |
| Business-type activities | | | | | |
| Bonds and notes payable | | | | | |
| General obligation bonds | | | | | |
| 2004 Sewer Revenue Refunding Bonds | \$ 475,000 | \$ - | \$ 475,000 | \$ - | \$ - |
| 2009 Wastewater Refunding Bonds | 1,890,000 | - | 355,000 | 1,535,000 | 365,000 |
| 2010 Water Revenue Bonds | 1,655,000 | - | 85,000 | 1,570,000 | 90,000 |
| 2011 Sanitary Sewer System (Phase I) | 1,026,000 | - | 16,000 | 1,010,000 | 17,000 |
| 2011 Sanitary Sewer System (Phase II) | 4,497,651 | - | 73,000 | 4,424,651 | 75,000 |
| | <u>9,543,651</u> | <u>-</u> | <u>1,004,000</u> | <u>8,539,651</u> | <u>547,000</u> |
| Less deferred amounts | | | | | |
| for issuance discounts | (29,889) | - | (6,539) | (23,350) | - |
| Total bonds payable | <u>9,513,762</u> | <u>-</u> | <u>997,461</u> | <u>8,516,301</u> | <u>547,000</u> |
| Capital leases | 16,594 | - | 3,415 | 13,179 | 3,699 |
| Compensated absences | 70,990 | 70,080 | 72,949 | 68,121 | 68,121 |
| Total business-type activities | <u>\$ 9,601,346</u> | <u>\$ 70,080</u> | <u>\$ 1,073,825</u> | <u>\$ 8,597,601</u> | <u>\$ 618,820</u> |
| Component units | | | | | |
| General obligation bonds | | | | | |
| 1991 WDDA Series II | \$ 63,654 | \$ - | \$ 32,526 | \$ 31,128 | \$ 31,128 |
| Less deferred amounts | | | | | |
| for issuance discounts | (1,900) | - | (950) | (950) | (950) |
| Total component units | <u>\$ 61,754</u> | <u>\$ -</u> | <u>\$ 31,576</u> | <u>\$ 30,178</u> | <u>\$ 30,178</u> |

Significant details regarding outstanding long-term debt are presented below:

Primary Government

| | |
|--|----------------------------|
| \$4,130,000 Wastewater Refunding Bonds Series 2009 dated August 27, 2009, due in annual installments ranging from \$365,000 to \$405,000 through April 1, 2021, with an interest rate ranging from 3.75 to 4.00 percent, payable semi-annually. | \$ 1,535,000 |
| \$2,105,000 General Obligation Water Revenue Bonds Series 2010 dated July 21, 2010, due in annual installments ranging from \$90,000 to \$155,000 through October 1, 2030, with an interest rate ranging from 3.00 to 4.40 percent, payable semi-annually. | 1,570,000 |
| \$1,100,000 Sewer System Revenue Bonds dated November 1, 2011, due in annual installments ranging from \$17,000 to \$47,000 through May 1, 2051, with an interest rate of 3.25 percent, payable semi-annually. | 1,010,000 |
| \$1,424,5110 Sewer System Revenue Bonds dated July 17, 2013, due in annual installments ranging from \$75,000 to \$189,000 through May 1, 2051, with an interest rate of 2.75 percent, payable semi-annually. | <u>4,424,651</u> |
| | <u><u>\$ 8,539,651</u></u> |

Component Units

| | |
|---|-------------------------|
| \$949,982 West Downtown Development Authority Bonds Series II dated August 20, 1991, due in one installment of \$31,128 due on August 1, 2018, with an interest rate of 8.25 percent. | <u><u>\$ 31,128</u></u> |
|---|-------------------------|

Annual debt service requirements to maturity for the above obligations are as follows:

| Year Ending December 31, | Business-type Activities | | Component Unit | |
|-----------------------------|--------------------------|---------------------|------------------|-------------------|
| | Principal | Interest | Principal | Interest |
| 2018 | \$ 547,000 | \$ 273,245 | \$ 31,128 | \$ 243,870 |
| 2019 | 564,000 | 255,153 | - | - |
| 2020 | 587,000 | 235,381 | - | - |
| 2021 | 609,000 | 206,015 | - | - |
| 2022 | 213,000 | 191,426 | - | - |
| 2023 - 2027 | 1,184,000 | 845,466 | - | - |
| 2028 - 2032 | 1,088,000 | 627,816 | - | - |
| 2033 - 2037 | 741,000 | 491,632 | - | - |
| 2038 - 2042 | 852,000 | 379,894 | - | - |
| 2043 - 2047 | 979,000 | 251,470 | - | - |
| 2048 - 2052 | 1,075,000 | 103,714 | - | - |
| 2053 | 100,651 | 2,768 | - | - |
| | <u>\$ 8,539,651</u> | <u>\$ 3,863,980</u> | <u>\$ 31,128</u> | <u>\$ 243,870</u> |

During 2017, the Township paid the remaining \$475,000 balance of the Sewer Revenue Refunding Bond Series 2004 early. The bond was previously set to mature during 2019.

Compensated Absences

Individual employees have vested rights upon termination of employment to receive payment for unused sick and vacation time. The dollar amount of these vested rights including related payroll taxes, which have been accrued on the financial statements in the government-wide financial statements, amounted to \$14,358 for governmental activities. Resources from the general fund will be used to liquidate this liability. The business-type activities reported a liability of \$68,121. Resources from the sewer and water funds will be used to liquidate this liability.

Deferred Amount on Refunding

The Township issued bonds in 2009 to advance refund and retire previously issued bonds. The advance refunding resulted in a difference between the reacquisition price and the net carrying amount of the old debt of \$464,957. This amount, less accumulated amortization, is reported in the accompanying statement of net position as a deferred outflow of resources and is being charged to activities through fiscal year 2021. The balance at December 31, 2017 is \$154,986.

Note 9 - Risk Management

The Township participates in a pool, the Michigan Municipal League Workers' Compensation Fund, with other municipalities for workers' compensation losses. The pool is organized under Public Act 317 of 1969, as amended. In the event the pool's claims and expenses for a policy year exceed the total normal annual premiums for said years, all members of the specific pool's policy year may be subject to special assessment to make up the deficiency. The Township has not been informed of any special assessments being required.

The Township also participates in a pool, the Michigan Township Participating Plan with other municipalities for various risks of loss including general, employee benefits, public officials, law enforcement, inland marine, crime, auto, boiler and machinery, and EDP liability, errors and omissions, and property and casualty losses. The pool is organized under Public Act 138 of 1982, as amended. In the event the pool's claims and expenses for a policy year exceed the total normal annual premiums for said years, all members of the specific pool's policy year may be subject to special assessment to make up the deficiency. The Township has not been informed of any special assessments being required.

Note 10 - Employee Retirement and Benefit Systems

Defined contribution plan

The Township participates in a defined contribution plan administered by Municipal Employees' Retirement System. The plan is available for all full-time employees, excluding elected officials. The Township is required to contribute 7.5 percent of each participant's annual compensation. Employees are required to contribute 2.5 percent of their annual compensation. Contributions can be made by employees on a pre-tax basis. Upon early retirement or termination of service, other than because of death, disability, or normal retirement, benefits in the plan vest at 100% after twenty months of service.

For the year ended December 31, 2017, the Township's total payroll was \$1,287,742. The current year employer contribution was \$84,268. Employee contributions for the year ended December 31, 2017, totaled \$28,072.

Note 11 - Contingent Liabilities

Amounts received or receivable from grant agencies are subject to audit and adjustment by grantor agencies, principally the federal government. Any disallowed claims, including amounts already collected, may constitute a liability of the applicable funds. The amount, if any, of expenditures that may be disallowed by the grantor cannot be determined at this time, although the government expects such amounts, if any, to be immaterial.

Note 12 - Contractual Commitments

The Township has contracted with the City of Mount Pleasant for fire protection. The contract currently runs through 2018. The Township's future anticipated operating revenues are expected to be sufficient to cover this commitment.

The remaining contractual commitment is as follows:

| | |
|-----------------------------|-------------------|
| Year Ending December 31, | |
| <hr/> | |
| 2018 | <u>\$ 699,000</u> |

Charter Township of Union
Required Supplementary Information
Budgetary Comparison Schedule
General Fund
For the Year Ended December 31, 2017

| | Budgeted Amounts | | Actual | Actual |
|------------------------|------------------|------------------|------------------|---------------------------------|
| | Original | Final | | Over (Under) Final Budget |
| Revenues | | | | |
| Taxes | | | | |
| Property taxes | \$ 302,000 | \$ 294,591 | \$ 295,430 | \$ 839 |
| Other taxes | 5,500 | 5,500 | 4,481 | (1,019) |
| Penalties and interest | 4,000 | 5,600 | 5,919 | 319 |
| Administration fee | 152,465 | 153,965 | 155,274 | 1,309 |
| Licenses and permits | 115,000 | 61,000 | 58,116 | (2,884) |
| State revenue sharing | 1,036,248 | 1,078,500 | 1,127,555 | 49,055 |
| State grants | - | 56,000 | 54,302 | (1,698) |
| Charges for services | 80,000 | 81,200 | 81,504 | 304 |
| Fines and forfeitures | 1,500 | 800 | 617 | (183) |
| Interest income | 10,000 | 41,000 | 43,639 | 2,639 |
| Rental income | 8,150 | 10,900 | 10,630 | (270) |
| Cable franchise fees | 79,900 | 130,000 | 132,360 | 2,360 |
| Other revenue | 16,000 | 46,020 | 48,036 | 2,016 |
| Sale of fixed assets | 500 | 500 | - | (500) |
| | <u>1,811,263</u> | <u>1,965,576</u> | <u>2,017,863</u> | <u>52,287</u> |
| Total revenues | | | | |

Charter Township of Union
Required Supplementary Information
Budgetary Comparison Schedule
General Fund
For the Year Ended December 31, 2017

| | Budgeted Amounts | | Actual | Actual Over (Under) Final Budget |
|--------------------------------|------------------|-----------|-----------|---|
| | Original | Final | | |
| Expenditures | | | | |
| General government | | | | |
| Township board | \$ 67,981 | \$ 54,098 | \$ 46,212 | \$ (7,886) |
| Supervisor | 20,418 | 20,418 | 16,516 | (3,902) |
| Manager | 78,579 | 132,356 | 96,003 | (36,353) |
| Accounting | 154,945 | 151,634 | 133,002 | (18,632) |
| Clerk | 35,506 | 30,306 | 28,039 | (2,267) |
| Data processing | 55,000 | 55,000 | 20,218 | (34,782) |
| Treasurer | 38,606 | 31,466 | 28,603 | (2,863) |
| Assessor | 208,070 | 214,475 | 202,794 | (11,681) |
| Elections | 9,100 | 3,100 | - | (3,100) |
| Buildings and grounds | 67,200 | 68,200 | 62,704 | (5,496) |
| Attorney | 41,000 | 95,000 | 88,452 | (6,548) |
| Total general government | 776,405 | 856,053 | 722,543 | (133,510) |
| Public safety | | | | |
| Building inspection department | 253,440 | 258,124 | 250,827 | (7,297) |

Charter Township of Union
Required Supplementary Information
Budgetary Comparison Schedule
General Fund
For the Year Ended December 31, 2017

| | Budgeted Amounts | | Actual | Actual Over (Under) Final Budget |
|---|------------------|--------------|--------------|---|
| | Original | Final | | |
| Public works | | | | |
| Department of public works | \$ 681,950 | \$ 434,100 | \$ 339,017 | \$ (95,083) |
| Community and economic development | | | | |
| Planning | 196,843 | 130,157 | 114,511 | (15,646) |
| Recreation and culture | | | | |
| Parks and recreation | 177,906 | 142,487 | 112,311 | (30,176) |
| Capital outlay | 52,000 | 14,900 | 9,626 | (5,274) |
| Debt service | | | | |
| Principal retirement | - | 9,600 | 9,760 | 160 |
| Interest and fiscal charges | - | 3,700 | 3,530 | (170) |
| Total debt service | - | 13,300 | 13,290 | (10) |
| Total expenditures | 2,138,544 | 1,849,121 | 1,562,125 | (286,996) |
| Excess (deficiency) of revenues over expenditures | (327,281) | 116,455 | 455,738 | 339,283 |
| Fund balance - beginning of year | 3,114,488 | 3,114,488 | 3,114,488 | - |
| Fund balance - end of year | \$ 2,787,207 | \$ 3,230,943 | \$ 3,570,226 | \$ 339,283 |

Charter Township of Union
Required Supplementary Information
Budgetary Comparison Schedule
Fire Fund
For the Year Ended December 31, 2017

| | Budgeted Amounts | | Actual | Actual Over (Under) Final Budget |
|--------------------------------------|---------------------|---------------------|---------------------|---|
| | Original | Final | | |
| Revenues | | | | |
| Taxes | \$ 605,000 | \$ 595,240 | \$ 595,159 | \$ (81) |
| Other state grants | - | 6,500 | 5,441 | (1,059) |
| Charges for services | 98,075 | 101,100 | 101,171 | 71 |
| Interest income | 4,500 | 11,500 | 12,064 | 564 |
| | | | | |
| Total revenues | 707,575 | 714,340 | 713,835 | (505) |
| | | | | |
| Expenditures | | | | |
| Current | | | | |
| Public safety | 684,000 | 684,000 | 684,000 | - |
| | | | | |
| Excess of revenues over expenditures | 23,575 | 30,340 | 29,835 | (505) |
| | | | | |
| Fund balance - beginning of year | 1,095,748 | 1,095,748 | 1,095,748 | - |
| | | | | |
| Fund balance - end of year | <u>\$ 1,119,323</u> | <u>\$ 1,126,088</u> | <u>\$ 1,125,583</u> | <u>\$ (505)</u> |

Charter Township of Union
Other Supplementary Information
Combining Balance Sheet
Nonmajor Governmental Funds
December 31, 2017

| | Special Revenue Fund | Capital Projects Fund | Total Nonmajor Governmental Funds |
|---|----------------------------|--------------------------|--|
| | Tribal 2% | Public Improvement | |
| Assets | | | |
| Cash and cash equivalents | \$ 29,907 | \$ 153,197 | \$ 183,104 |
| Special assessments | - | 147,250 | 147,250 |
| Total assets | \$ 29,907 | \$ 300,447 | \$ 330,354 |
| Deferred inflows of resources | | | |
| Special assessments | \$ - | \$ 147,250 | \$ 147,250 |
| Fund Balances | | | |
| Restricted | | | |
| Tribal grants | 29,907 | - | 29,907 |
| Capital projects | - | 153,197 | 153,197 |
| Total fund balances | 29,907 | 153,197 | 183,104 |
| Total deferred inflows of resources and fund balances | \$ 29,907 | \$ 300,447 | \$ 330,354 |

Charter Township of Union
Other Supplementary Information
Combining Statement of Revenues, Expenditures and Changes in Fund Balances
Nonmajor Governmental Funds
For the Year Ended December 31, 2017

| | Special Revenue Fund | Capital Projects Fund | Total Nonmajor Governmental Funds |
|--------------------------------------|----------------------------|--------------------------|--|
| | Tribal 2% | Public Improvement | |
| Revenues | | | |
| Interest income | \$ 203 | \$ 818 | \$ 1,021 |
| Other revenue | - | 43,709 | 43,709 |
| Total revenues | 203 | 44,527 | 44,730 |
| Fund balance - beginning of year | 29,704 | 108,670 | 138,374 |
| Fund balance - end of year | \$ 29,907 | \$ 153,197 | \$ 183,104 |

Charter Township of Union
Component Unit - East Downtown Development Authority
Balance Sheet
December 31, 2017

Assets

| | |
|------------------------------------|--------------------------------|
| Cash and cash equivalents | \$ 1,105,502 |
| Receivables | |
| Taxes | 16,914 |
| Accrued interest and other | 246 |
| Due from other units of government | 380,532 |
| Prepaid items | <u>1,207</u> |
| Total assets | <u><u>\$ 1,504,401</u></u> |

Liabilities

| | |
|------------------|-----------------|
| Accounts payable | <u>\$ 4,437</u> |
|------------------|-----------------|

Deferred inflows of resources

| | |
|----------------|----------------|
| Property taxes | <u>397,446</u> |
|----------------|----------------|

Fund Balances

| | |
|-------------------------|----------------------|
| Non-spendable | |
| Prepaid items | 1,207 |
| Restricted | |
| East DDA | <u>1,101,311</u> |
| Total fund balances | <u>1,102,518</u> |

| | |
|--|----------------------------|
| Total liabilities, deferred inflows of resources and fund balances | <u><u>\$ 1,504,401</u></u> |
|--|----------------------------|

**Charter Township of Union
East Downtown Development Authority
Reconciliation of Fund Balances of Component Unit
to Net Position of Component Unit
December 31, 2017**

Total fund balance for component unit fund \$ 1,102,518

Total net position for component unit activities in the statement of net position is different because:

Capital assets net of accumulated depreciation used in the government wide statements are not financial resources and therefore are not reported in the funds.

116,640

Net position of component unit

\$ 1,219,158

Charter Township of Union
Component Unit - East Downtown Development Authority
Statement of Revenues, Expenditures and Changes in Fund Balances
For the Year Ended December 31, 2017

Revenues

| | | |
|--------------------|----|---------|
| Taxes | \$ | 444,883 |
| Other state grants | | 55,909 |
| Interest income | | 7,333 |
| Other revenue | | 68 |
| | | 508,193 |
| Total revenues | | 508,193 |

Expenditures

| | | |
|------------------------------------|----|-----------|
| Current | | |
| Public safety | | 61,665 |
| Community and economic development | | 104,835 |
| | | 166,500 |
| Total expenditures | | 166,500 |
| Net change in fund balance | | 341,693 |
| Fund balance - beginning of year | | 760,825 |
| Fund balance - end of year | \$ | 1,102,518 |

**Charter Township of Union
 East Downtown Development Authority
 Reconciliation of the Statement of Revenues, Expenditures and Changes in Fund Balances
 of Component Units to the Statement of Activities
 For the Year Ended December 31, 2017**

| | |
|--|---------------------------------|
| Net change in fund balances - total component unit fund | \$ 341,693 |
| <p>Total change in net position reported for component unit activities in the statement of activities is different because:</p> <p>Governmental funds report capital outlays as expenditures. However, in the government wide statements the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense.</p> | |
| Depreciation expense | <u>(11,663)</u> |
| Change in net position of component unit | <u><u>\$ 330,030</u></u> |

Charter Township of Union
Component Unit - West Downtown Development Authority
Balance Sheet
December 31, 2017

| | <u>Operating</u> | <u>Debt Service</u> | <u>Total</u> |
|---|---------------------|-------------------------|---------------------|
| Assets | | | |
| Cash and cash equivalents | \$ 744,368 | \$ 3,130 | \$ 747,498 |
| Receivables | | | |
| Taxes | 235,055 | - | 235,055 |
| Due from other units of government | <u>366,702</u> | <u>-</u> | <u>366,702</u> |
| Total assets | <u>\$ 1,346,125</u> | <u>\$ 3,130</u> | <u>\$ 1,349,255</u> |
| Deferred inflows of resources | | | |
| Property taxes | <u>\$ 601,757</u> | <u>\$ -</u> | <u>\$ 601,757</u> |
| Fund Balances | | | |
| Restricted | | | |
| West DDA | 744,368 | - | 744,368 |
| Debt service | <u>-</u> | <u>3,130</u> | <u>3,130</u> |
| Total fund balances | <u>744,368</u> | <u>3,130</u> | <u>747,498</u> |
| Total deferred inflows of resources and fund balances | <u>\$ 1,346,125</u> | <u>\$ 3,130</u> | <u>\$ 1,349,255</u> |

**Charter Township of Union
West Downtown Development Authority
Reconciliation of Fund Balances of Component Unit
to Net Position of Component Unit
December 31, 2017**

| | |
|---|-------------------|
| Total fund balance for component unit fund | \$ 747,498 |
| Total net position for component unit activities in the statement of net position is different because: | |
| Capital assets net of accumulated depreciation used in the government wide statements are not financial resources and therefore are not reported in the funds. | 8,510 |
| Certain liabilities are not due and payable in the current period and are not reported in the funds. | |
| Accrued interest | (101,557) |
| Long-term liabilities applicable to component unit activities are not due and payable in the current period and accordingly are not reported as fund liabilities. | |
| Bonds payable | (31,128) |
| Discount on bonds | 950 |
| | 950 |
| Net position of component unit | \$ 624,273 |

Charter Township of Union
Component Unit - West Downtown Development Authority
Statement of Revenues, Expenditures and Changes in Fund Balances
For the Year Ended December 31, 2017

| | <u>Operating</u> | <u>Debt Service</u> | <u>Total</u> |
|---|-------------------|-------------------------|-------------------|
| Revenues | | | |
| Taxes | \$ 495,098 | \$ - | \$ 495,098 |
| Interest income | 1,582 | 32 | 1,614 |
| Total revenues | <u>496,680</u> | <u>32</u> | <u>496,712</u> |
| Expenditures | | | |
| Current | | | |
| Public safety | 39,507 | - | 39,507 |
| Community and economic development | 300,400 | - | 300,400 |
| Debt service | | | |
| Principal retirement | - | 32,526 | 32,526 |
| Interest and fiscal charges | - | 233,274 | 233,274 |
| Total expenditures | <u>339,907</u> | <u>265,800</u> | <u>605,707</u> |
| Excess (deficiency) of revenues over expenditures | <u>156,773</u> | <u>(265,768)</u> | <u>(108,995)</u> |
| Other financing sources (uses) | | | |
| Transfers in | - | 260,000 | 260,000 |
| Transfers out | (260,000) | - | (260,000) |
| Total other financing sources and uses | <u>(260,000)</u> | <u>260,000</u> | <u>-</u> |
| Net change in fund balance | (103,227) | (5,768) | (108,995) |
| Fund balance - beginning of year | <u>847,595</u> | <u>8,898</u> | <u>856,493</u> |
| Fund balance - end of year | <u>\$ 744,368</u> | <u>\$ 3,130</u> | <u>\$ 747,498</u> |

**Charter Township of Union
West Downtown Development Authority
Reconciliation of the Statement of Revenues, Expenditures and Changes in Fund Balances
of Component Units to the Statement of Activities
For the Year Ended December 31, 2017**

Net change in fund balances - total component unit fund \$ (108,995)

Total change in net position reported for component unit activities in the statement of activities is different because:

Governmental funds report capital outlays as expenditures. However, in the government wide statements the cost of those assets is allocated over their estimated useful lives and reported as depreciation expense.

Depreciation expense (773)

Expenses are recorded when incurred in the statement of activities.

Accrued interest (4,746)

Bond proceeds are reported as financing sources in the component unit funds and thus contribute to the change in fund balance. In the statement of net position, however, issuing debt increases long-term liabilities and does not affect the statement of activities. Similarly, repayment of principal is an expenditure in the component unit funds but reduces the liability in the statement of net position.

Repayments of long-term debt 32,526
Amortization of discount (950)

Change in net position of component unit \$ (82,938)

Report on Internal Control Over Financial Reporting and on Compliance and Other Matters Based on an Audit of Financial Statements Performed in Accordance With *Government Auditing Standards*

Independent Auditors' Report

Management and the Board of Trustees
Charter Township of Union
Mt. Pleasant, Michigan

We have audited, in accordance with the auditing standards generally accepted in the United States of America and the standards applicable to financial audits contained in *Government Auditing Standards* issued by the Comptroller General of the United States, the financial statements of the governmental activities, the business-type activities, the aggregate discretely presented component units, each major fund, and the aggregate remaining fund information of Charter Township of Union as of and for the year ended December 31, 2017, and the related notes to the financial statements, which collectively comprise Charter Township of Union's basic financial statements, and have issued our report thereon dated May 7, 2018.

Internal Control Over Financial Reporting

In planning and performing our audit of the financial statements, we considered Charter Township of Union's internal control over financial reporting (internal control) to determine the audit procedures that are appropriate in the circumstances for the purpose of expressing our opinions on the financial statements, but not for the purpose of expressing an opinion on the effectiveness of Charter Township of Union's internal control. Accordingly, we do not express an opinion on the effectiveness of Charter Township of Union's internal control.

A *deficiency in internal control* exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent, or detect and correct, misstatements on a timely basis. A *material weakness* is a deficiency, or a combination of deficiencies, in internal control, such that there is a reasonable possibility that a material misstatement of the entity's financial statements will not be prevented, or detected and corrected on a timely basis. A *significant deficiency* is a deficiency, or a combination of deficiencies, in internal control that is less severe than a material weakness, yet important enough to merit attention by those charged with governance.

Our consideration of internal control was for the limited purpose described in the first paragraph of this section and was not designed to identify all deficiencies in internal control that might be material weaknesses or significant deficiencies. Given these limitations, during our audit we did not identify any deficiencies in internal control that we consider to be material weaknesses. However, material weaknesses may exist that have not been identified.

Compliance and Other Matters

As part of obtaining reasonable assurance about whether Charter Township of Union's financial statements are free from material misstatement, we performed tests of its compliance with certain provisions of laws, regulations, contracts, and grant agreements, noncompliance with which could have a direct and material effect on the determination of financial statement amounts. However, providing an opinion on compliance with those provisions was not an objective of our audit, and accordingly, we do not express such an opinion. The results of our tests disclosed no instances of noncompliance or other matters that are required to be reported under *Government Auditing Standards*.

Purpose of this Report

The purpose of this report is solely to describe the scope of our testing of internal control and compliance and the results of that testing, and not to provide an opinion on the effectiveness of the entity's internal control or on compliance. This report is an integral part of an audit performed in accordance with *Government Auditing Standards* in considering the entity's internal control and compliance. Accordingly, this communication is not suitable for any other purpose.

Yeo & Yeo, P.C.

Alma, Michigan
May 7, 2018

REQUEST FOR EDA BOARD ACTION

To: Mark Stuhldreher - Township Manager

DATE: June 13, 2018

FROM: Kim Smith – Public Works Coordinator

DATE FOR BOARD CONSIDERATION: June 19, 2018

ACTION REQUESTED: Approval of contract with Isabella County Road Commission in the amount of \$330,000 for the reconstruction of Lincoln Road south of Lincoln Road bridge to Broomfield Road intersection and, approval of a budget amendment to the West Downtown Development Authority Fund in the amount of \$230,000

Current Action Emergency _____

Funds Budgeted: If Yes _____ Account # _____ No N/A _____

Finance Approval MDS

BACKGROUND INFORMATION

In February of 2018, the Economic Development Authority Board (EDA) approved a 2018/2019 Project List for both the East and West DDA Districts. As part of this list a project to help fund the Isabella County Lincoln Road reconstruction from the Lincoln Road Bridge to the Broomfield Road Intersection was approved. This project will reconstruct Lincoln Road, add additional lanes, and add traffic signaling at the intersection of Lincoln and Broomfield Roads.

SCOPE OF SERVICES

JUSTIFICATION

This project is located within the boundaries of the WDDA and will improve the overall road condition, road capacity, and safety in this area.

PROJECT IMPROVEMENTS

Board of Trustees goals addressed by this agreement (From Policy 1.0: Global End).

- Community well-being and common good
- Safety
- Commerce

COSTS

\$330,000.00

PROJECT FUNDING

The funding for this project will be split as follows:

| | |
|---------------------------|-----------------------|
| WDDA Fund | \$330,000.00 |
| Township General Fund* | \$166,699.86 |
| ICRC | \$166,699.86 |
| MDOT Grant | \$750,000.00 |
| State Funding – Hauck | \$600,000.00 |
| Total Project Cost | \$2,013,399.72 |

Funds for this project were not included in the 2018 WDDA Fiscal Year Budget. A budget amendment is required by the EDA Board and the Board of Trustees. The source of funds is existing fund balance.

*Approval of Contract and obligation of Township General Funds anticipated at the June 25, 2018, Township Board of Trustees meeting.

PROJECT TIME TABLE

Acquisition of easements will begin in 2018 with construction anticipated to begin in 2019.

RESOLUTION

Approval of contract with Isabella County Road Commission in the amount of \$330,000 for the reconstruction of Lincoln Road south of Lincoln Road Bridge to Broomfield Road intersection and, approval of a budget amendment to the West Downtown Development Authority Fund in the amount of \$230,000

Resolved by _____ Seconded by _____

- Yes:
- No:
- Absent:

TOWNSHIP PARTICIPATION CONTRACT

This Agreement is made and entered into by and between the Board of County Road Commissioners for the County of Isabella, hereinafter referred to as the "**Road Commission**" and **UNION Township EDA**, hereinafter referred to as the "**Township**", for the following improvements:

| Project No. 459-014-711435 Lincoln Rd – Broomfield Intersection to Bridge | <u>Contracted Cost</u> | <u>Contingency</u> | <u>TOTALS</u> |
|---|------------------------|---------------------|----------------------|
| Estimated Cost | \$1,830,363.38 | \$183,036.34 | \$2,013,399.72 |
| STATE FUNDING-HAUCK | (600,000.00) | (0.00) | (600,000.00) |
| MDOT GRANT (S) | (750,000.00) | (0.00) | (750,000.00) |
| Unfunded Portion | \$480,363.38 | \$183,036.34 | \$ 663,399.72 |
| | | | |
| I.C.R.C. Share | \$ 75,181.69 | \$ 91,518.17 | \$ 166,699.86 |
| UNION TOWNSHIP EDA SHARE | \$330,000.00 | \$ 0.00 | \$ 330,000.00 |
| UNION TOWNSHIP SHARE | \$ 75,181.69 | \$ 91,518.17 | \$ 166,699.86 |

Note – Design & Construction Engineering Costs are also included in the ICRC's total Share

Payment as stated above will be due upon receipt of invoice. The Road Commission is hereby authorized to add to the unpaid balance a service charge of one percent (1%) per month on the unpaid balance of any and all of said sums remaining unpaid after thirty (30) days. Projects which carryover between fiscal years may be billed at the ratio of costs incurred to date. Carryover projects are those which require extensive work to be deemed complete.

The undersigned Township officials, by executing this agreement, certify they are authorized to enter into this agreement on behalf of the Township.

UNION TOWNSHIP EDA

ISABELLA COUNTY ROAD COMMISSION

By: _____
Supervisor

By: _____
Manager

By: _____
Clerk

By: _____
Board Secretary

Board Approval on: _____

Board Approval on: _____



June 13, 2018

DDA Water & Sewer Projects Progress Report

Project Description: Pickard Road Water Main Loop – Pickard Rd. to Summerton Rd. north to Entrance SCIT Water Park/Greensuites

Project OPC: \$268,432.50

Project Status:

Engineered Drawings and Specifications Commenced/Preliminary Design Completed

Permits Applied For:

- MDEQ Act 399 Permit
- Isabella County Road Commission
- Isabella County Soil Erosion
- Isabella County Drain Commission

Activities Performed During this Reporting Period:

Engineering Contract Approved 4-17-2018

Site survey performed by GFA to gather information for design purposes

Engineering Design

- Preliminary Engineering (100%)
- Topo Survey (90%)

Plans and Specifications Submitted to DDA Board 6-19-2018 meeting

Activities Planned for Next Reporting Period:

Project Bidding

Issues/Resolution:

Requested DEQ variance for placement of water main in right-of-way - awaiting response formal response from DEQ - verbal approval received 6-13-2018

(requested variance distance between sanitary sewer and storm sewer due to large amount of utilities/fiber optic in right-of-way)

Project Changes:

bid documents will reflect bids to open cut/directional drill Pickard Road (as designed) as well as include bid for directionally drilling entire water main on Pickard Road



June 13, 2018

DDA Water & Sewer Projects Progress Report

Project Description: Pump Station #1 Rehabilitation & Upgrade

Project OPC: \$428,525.00

Project Status:

Engineered Drawings and Specifications Commenced

Activities Performed During this Reporting Period:

Engineering Contract Approved 4-17-2018

Site survey performed by GFA to gather information for design purposes

Engineering Design

 Preliminary Engineering (15%)

 Topo & Easement Survey (69%)

Activities Planned for Next Reporting Period:

Continue engineering and design

Issues/Resolution:

NA

Project Changes:

NA



June 13, 2018

DDA Water & Sewer Projects Progress Report

Project Description: Pump Station #14 - May Street Rehabilitation & Upgrade

Project OPC: \$277,550.00

Project Status:

Engineered Drawings and Specifications Commenced

Activities Performed During this Reporting Period:

Engineering Contract Approved 4-17-2018

Site survey performed by GFA to gather information for design purposes

Engineering Design

 Preliminary Engineering (19%)

 Topo & Easement Survey (87%)

Activities Planned for Next Reporting Period:

Continue engineering and design

Issues/Resolution:

NA

Project Changes:

NA

PLANS PREPARED FOR: CHARTER TOWNSHIP OF UNION PICKARD/SUMMERTON ROAD WATER MAIN LOOP

CLIENT / AGENCY

CHARTER TOWNSHIP OF UNION
2010 SOUTH LINCOLN ROAD
MT. PLEASANT, MI 48853
989.772.4600

ENGINEER

ENGINEERING
SURVEYING
TESTING & OPERATIONS

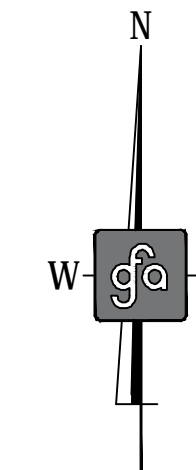
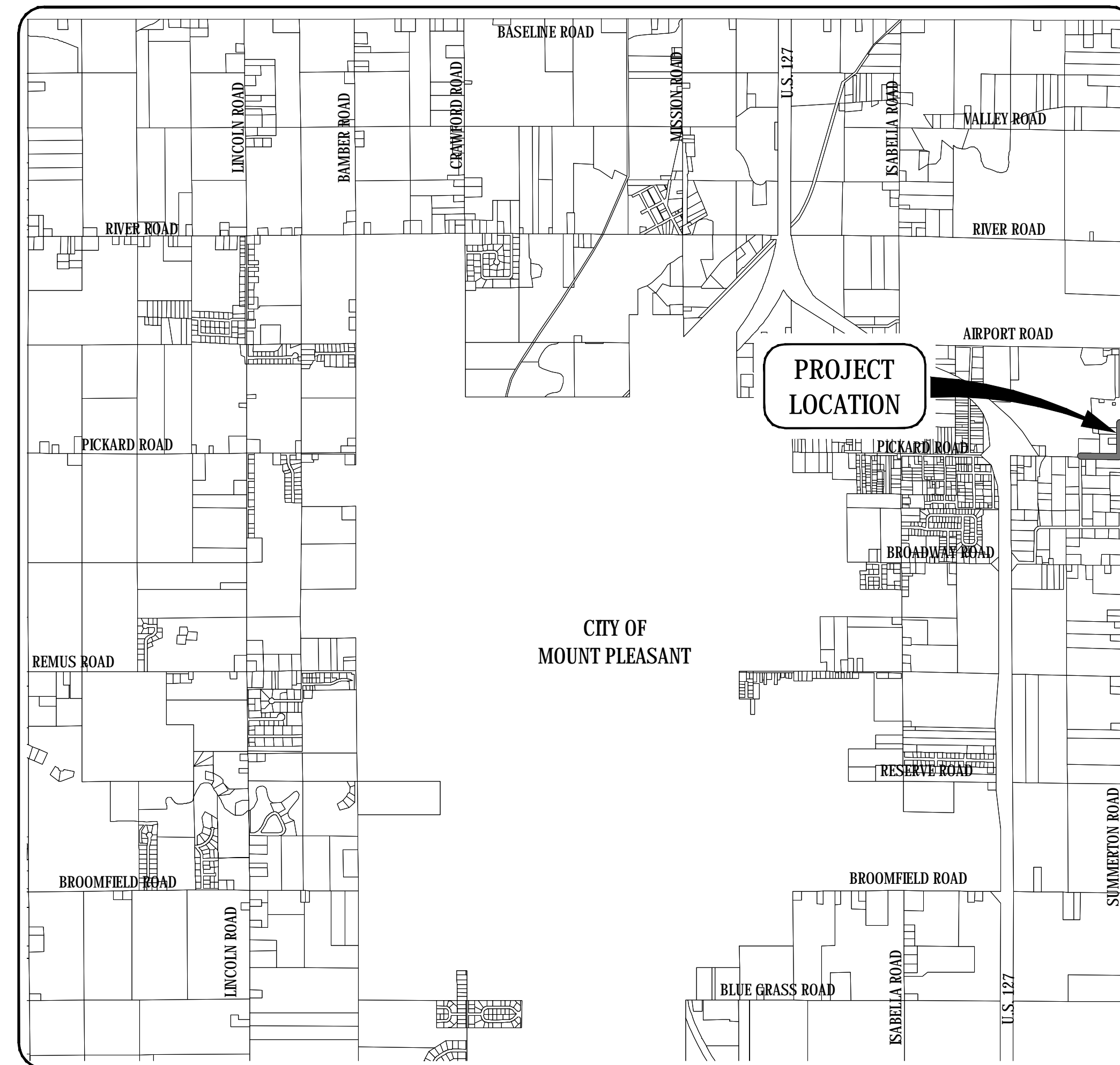


123 West Front Street
Traverse City, MI 49684

<http://gfa.tc>

231.946.5874 (p)

231.946.3703 (f)



LOCATION MAP

UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN
SCALE: NOT TO SCALE

PUBLIC AGENCIES AND UTILITIES

PUBLIC AGENCIES

CHARTER TOWNSHIP OF UNION
Telephone: 989.772.4600

UNION TOWNSHIP D.P.W.
Telephone: 989.772.4600

ISABELLA COUNTY ROAD COMMISSION
Telephone: 989.773.7131

ISABELLA COUNTY DRAIN COMMISSION
Telephone: 989.772.0911

MICHIGAN DEPARTMENT OF TRANSPORTATION (M.D.O.T.)
Telephone: 989.773.7756

CONSUMERS ENERGY
Telephone: 989.791.5903

DTE ENERGY
Telephone: 231.592.3244

UTILITY AGENCIES

CHARTER COMMUNICATIONS
Telephone: 989.775.6846

VERIZON
Telephone: 989.463.0459

EMERGENCY SERVICES

EMERGENCY CALLS
911

EMERGENCY AMBULANCE SERVICE
911

POLICE AGENCIES
EMERGENCY SERVICE: 911
Isabella County Sheriff: Telephone: 989.772.5911
Michigan State Police: Telephone: 989.773.5951

FIRE DEPARTMENTS
EMERGENCY SERVICE: 911
City of Mt. Pleasant: Telephone: 989.941.2340
Union Township: Telephone: 989.941.2238

MSS DIG
Telephone: 1.800.482.7171

SHEET INDEX

- C1.1 COVER SHEET
- C1.2 GENERAL NOTES
- C2.1 PLAN AND PROFILE SHEET
- C2.2 PLAN AND PROFILE SHEET
- C3.1 WATER MAIN DETAILS



GENERAL NOTES

- ALL ELEVATIONS ARE BASED ON LOCAL DATUM.
- SPECIAL CARE SHALL BE TAKEN IN EXCAVATING IN THE PROXIMITY OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL SECURE ASSISTANCE FROM THE APPROPRIATE UTILITY COMPANY IN LOCATING ITS LINES. THE CONTRACTOR SHALL ALSO: PROVIDE SUPPORT FOR ANY UTILITY WITHIN THE EXCAVATION, PROVIDE PROPER COMPACTION UNDER ANY UNDERMINED UTILITY STRUCTURE AND, IF NECESSARY, INSTALL TEMPORARY SHEETING OR USE A TRENCH BOX TO MINIMIZE THE EXCAVATION. THE CONTRACTOR SHALL PROTECT AND SAVE HARMLESS FROM DAMAGE ALL UTILITIES, WHETHER PRIVATELY OR PUBLICLY OWNED, ABOVE OR BELOW GROUND SURFACE, WHICH MAY BE ENCOUNTERED DURING CONSTRUCTION, AT NO ADDITIONAL COST TO THE OWNER.
- THE LOCATION OF EXISTING PUBLIC UTILITIES AND UNDERGROUND STRUCTURES SUCH AS PIPE LINES, ELECTRIC CONDUITS, SEWERS AND WATER LINES, OF RECORD ARE SHOWN ON THE PLANS. THE INFORMATION SHOWN IS BELIEVED TO BE REASONABLY CORRECT AND COMPLETE. HOWEVER, NEITHER THE CORRECTNESS NOR THE COMPLETENESS OF SUCH INFORMATION IS GUARANTEED. PRIOR TO THE START OF ANY OPERATIONS IN THE VICINITY OF ANY UTILITIES, THE CONTRACTOR SHALL NOTIFY THE UTILITY COMPANIES AND MISS DIG AND REQUEST THAT THEY STAKE OUT THE LOCATIONS OF THE UTILITIES IN QUESTION. THE CONTRACTOR SHALL COORDINATE THE RELOCATION OF ANY UTILITIES WITH THE UTILITY PROVIDER. COST OF REPAIR FOR ANY DAMAGED UTILITY LINES THAT IS PROPERLY STAKED SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE LAWS AND REGULATIONS GOVERNING THE FURNISHING AND USE OF SAFEGUARDS, SAFETY DEVICES AND PROTECTION EQUIPMENT. THE CONTRACTOR SHALL TAKE ANY NECESSARY PRECAUTIONS TO PROTECT THE LIFE AND HEALTH OF EMPLOYEES AND THE PUBLIC IN THE PERFORMANCE OF THE WORK.
- FOR PROTECTION OF UNDERGROUND UTILITIES AND IN CONFORMANCE WITH PUBLIC ACT 53, 1974, THE CONTRACTOR SHALL DIAL 1-800-482-7171 A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING EACH EXCAVATION IN AREAS WHERE PUBLIC UTILITIES HAVE NOT BEEN PREVIOUSLY LOCATED. MEMBERS WILL THIS BE ROUTINELY NOTIFIED. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO MAY NOT BE PART OF THE "MISS DIG" ALERT SYSTEM.
- CONTRACTOR IS RESPONSIBLE TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO PERFORMING ANY WORK.
- ALL WORK WORK IS TO BE PERFORMED WITHIN THE PUBLIC RIGHT-OF-WAY AND/OR ESTABLISHED EASEMENTS. ANY WORK OUTSIDE OF THESE LIMITS SHALL BE APPROVED AND COORDINATED WITH THE PROPERTY OWNER. DOCUMENTATION OF THIS ARRANGEMENT TO BE PROVIDED TO THE CITY/VILLAGE/TOWNSHIP.
- EXISTING PROPERTY CORNERS ARE IDENTIFIED ON THE PLANS. IF A PROPERTY CORNER IS DISTURBED DURING CONSTRUCTION IT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE BY A PROFESSIONAL LAND SURVEYOR.
- CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT TO ANY MAILBOXES DISTURBED DURING CONSTRUCTION AND SHALL NOT INTERFERE WITH MAIL SERVICE. ALL DISTURBED MAILBOXES SHALL BE PLACED IN ORIGINAL LOCATION AND AT AN ELEVATION DETERMINED BY THE POSTAL SERVICE.
- LOCAL TRAFFIC SHALL BE MAINTAINED AT ALL TIMES.
- CONTRACTOR SHALL RESTORE ALL LAWS, LANDSCAPE PLANTINGS, SIDEWALKS, COMMERCIAL SIGNS, ETC., AS REQUIRED AT NO ADDITIONAL COST TO THE OWNER.
- CONTRACTOR SHALL PROVIDE ADEQUATE SUPPORT FOR UTILITY POLES AS NECESSARY. CONTRACTOR SHALL CONSULT WITH THE UTILITY COMPANY PRIOR TO ANY DISTURBANCE OF UTILITY POLE OR ANCHORING SYSTEM.

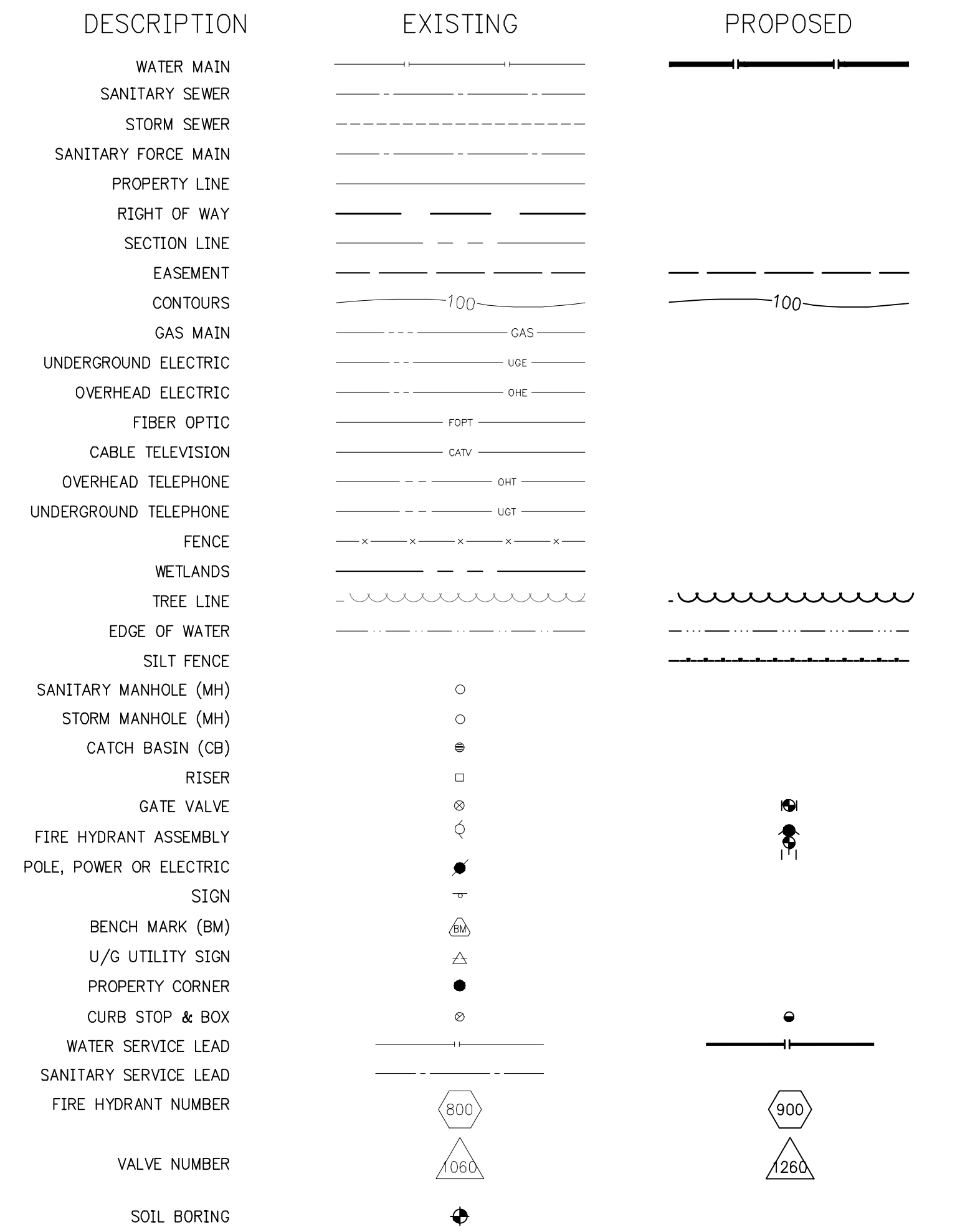
WATERMAIN NOTES

- ALL CONSTRUCTION MATERIALS AND PROCEDURES MUST CONFORM WITH CURRENT DPW STANDARDS, SPECIFICATIONS AND DETAILS.
- THE CONTRACTOR SHALL NOTIFY THE ENGINEER 48 HOURS PRIOR TO THE START OF CONSTRUCTION OF THE WATER MAIN. CONTRACTOR SHALL ISSUE A WORK SCHEDULE TO THE ENGINEER PRIOR TO THE START OF WATER MAIN CONSTRUCTION.
- ALL WATER MAIN SHALL BE 12" C900 PVC, MEETING CURRENT AWWA STANDARDS, UNLESS OTHERWISE NOTED ON THE PLANS.
- WATER MAIN SHALL HAVE A MINIMUM OF SIX (6) FEET OF COVER BELOW EXISTING OR PROPOSED GRADE, UNLESS NOTED OTHERWISE ON THE PLANS.
- THE ALIGNMENT OF THE PROPOSED WATER MAIN IS PROVIDED FOR REFERENCE ONLY. CONTRACTOR MAY DEVIATE/DEFLECT AS NECESSARY TO AVOID CONFLICTS FOR EASIER CONSTRUCTION. COST FOR ADDITIONAL PIPE, FITTINGS, ETC. ARE INCLUDED IN THE COST OF THE PROJECT.
- LENGTH OF WATER MAIN SHALL BE DETERMINED ON A CASE BY CASE BASIS IN ORDER TO CONSTRUCT ACCORDING TO THE PLANS AND SPECIFICATIONS. COSTS FOR THE MAIN ARE INCLUDED IN THE COSTS OF THE PROJECT.
- RETAINER GLANDS SHALL BE USED ON ALL MECHANICAL JOINT FITTINGS.
- BURLAP, PLASTIC OR POLY (20 MILLS) OR APPROVED EQUAL SHALL BE PLACED BETWEEN THE CONCRETE THRUST BLOCK AND DEAD-END MAINS OR DEAD-END PLUGS, TEES, HYDRANTS AND CROSSES TO FACILITATE THE REMOVAL OF THE THRUST BLOCK FOR FUTURE EXTENSION AND MAINTENANCE.
- A PHYSICAL GAP SHALL BE MAINTAINED BETWEEN THE PROPOSED WATER MAIN AND THE EXISTING WATER MAIN UNTIL ALL WATER MAIN TESTING HAS BEEN COMPLETED AND APPROVED BY THE ENGINEER AND THE DPW.
- THE CONTRACTOR SHALL COORDINATE THE CONNECTION TO THE EXISTING WATER MAIN WITH THE DPW AND THE ENGINEER. THE DPW SHALL BE GIVEN A MINIMUM OF 24 HOURS NOTICE PRIOR TO ANY CONNECTIONS.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN WATER FOR FLUSHING AND TESTING PURPOSES. CONTRACTOR SHALL COORDINATE WITH THE DPW. IF WATER IS OBTAINED FROM THE CITY/VILLAGE/TOWNSHIP WATER SYSTEM, THE DPW SHALL BE GIVEN 24 HOURS NOTICE PRIOR TO USING ANY WATER FROM THE TOWNSHIP WATER SYSTEM.
- TO FACILITATE WATER SAMPLING, THE CONTRACTOR MAY INSTALL TWO (2) INCH CORPORATION STOPS AND TYPE K COPPER TUBE FROM THE TWO (2) INCH CORPORATION TO APPROXIMATELY FOUR (4) FEET ABOVE THE FINISH GRADE IN LOCATIONS APPROVED BY THE FIELD ENGINEER. AFTER THE WATER MAIN HAS BEEN FLUSHED AND SATISFACTORY BACTERIOLOGICAL ANALYSIS TESTS HAVE PASSED, THE TYPE 'K' COPPER TUBE SHALL BE REMOVED AND THE TWO (2) INCH CORPORATION WILL BE CLOSED. CONTRACTOR WILL INFORM THE FIELD REPRESENTATIVE/CONSTRUCTION REPRESENTATIVE TO ALLOW HIM TO WITNESS THE REMOVING OF THE COPPER TUBING AND THE CLOSING OF THE CORPORATION.
- PRIOR TO PIGGING AND FLUSHING ALL LINES SHALL BE CHARGED WITH WATER.
- ALL PERMANENT BLOW-OFF ASSEMBLIES SHALL BE CUT OFF BELOW GRADE AFTER TESTING IS COMPLETE. THE STANDING WATER WITHIN THE BLOW-OFF SHALL BE PUMPED OUT OF THE RISER CAPPED, BOLTED AND BURIED.
- CONTRACTOR SHALL PROPERLY DISPOSE OF CHLORINATED WATER USED IN TESTING OPERATIONS.
- ACTUAL WATER MAIN, HYDRANT AND GATE VALVE LOCATIONS SHALL BE FIELD STAKED PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE FIRE HYDRANTS AND VALVE BOXES TO THE FINISHED GRADE.
- THE CONTRACTOR MUST OBTAIN APPROVAL BEFORE DIRECTING ANY FLUSHING AND TESTING WATERS TO ANY COUNTY STORM WATER DRAINAGE DITCH SYSTEM. CONTRACTOR SHALL PROTECT THE DITCH FROM EROSION WHICH MAY REQUIRE THE USE AN ENERGY DISSIPATER ON THE DISCHARGE OF THE FLUSHING VALVE. ALL FLUSHING WATERS SHALL BE CONTAINED WITHIN THE DITCH AND SHALL NOT IMPACT THE ROADWAY OR ADJACENT LANDOWNERS. IF NOT APPROVED, AN ALTERNATE METHOD MUST BE DETERMINED AND APPROVED. ALL COSTS ASSOCIATED WITH FLUSHING, TESTING, AND DISCHARGING ARE INCLUDED IN THE COST OF THE PROJECT.
- WATER SERVICE LEADS SHOWN ARE FOR REFERENCE ONLY. ACTUAL LOCATIONS SHALL BE DETERMINED BY THE DPW AND ENGINEER PRIOR TO PLACEMENT, IF APPLICABLE.
- CONTRACTOR MUST MAINTAIN A MINIMUM HORIZONTAL SEPARATION OF TEN (10) FEET FROM ALL SANITARY SEWER AND STORM SEWER WHEN INSTALLING THE WATER MAIN, AS MEASURED FROM OUTSIDE TO OUTSIDE.
- CONTRACTOR MUST MAINTAIN A MINIMUM VERTICAL SEPARATION OF EIGHTEEN (18) INCHES AT ALL SANITARY SEWER AND STORM SEWER CROSSINGS WHEN INSTALLING THE WATER MAIN, AS MEASURED FROM OUTSIDE TO OUTSIDE.
- IT WILL BE REQUIRED THAT THE CONTRACTOR INSTALL ALL NEW WATER MAIN BELOW EXISTING WATER MAIN WHEN A CROSSING IS ENCOUNTERED. MAINTAIN A MINIMUM SIX (6) INCH SEPARATION FROM EXISTING WATER MAIN WITH PROPER BACKFILL/COMPACTION.
- FIRE HYDRANT ASSEMBLY SHALL CONSIST OF:
1-12"x6" TEE
1-6" GATE VALVE
1-FIRE HYDRANT
- CONTRACTOR TO MAINTAIN WATER SERVICE TO CUSTOMERS AT ALL TIME WITH THE EXCEPTION OF LEAD TRANSFERS, IF APPLICABLE.
- CONTRACTOR TO PROTECT EXISTING WATER MAIN AND SERVICES DURING THE INSTALLATION OF THE PROPOSED WATER MAIN. IF EXISTING WATER MAIN IS DAMAGED, CONTRACTOR IS TO REPAIR TO MAINTAIN SERVICE TO RESIDENCE. ALL COST FOR THIS ARE INCLUDED IN THE COST OF THE PROJECT.
- ALL OPERATIONS OF EXISTING EQUIPMENT, VALVES, ETC. TO BE PERFORMED BY THE DPW STAFF ONLY.
- CONTRACTOR TO SUBMIT A CONSTRUCTION SCHEDULE AND SEQUENCE FOR APPROVAL PRIOR TO PERFORMING ANY WORK.

SOIL EROSION AND STORM WATER CONTROL NOTES

- THE CONTRACTOR SHALL PROVIDE TEMPORARY SOIL EROSION CONTROL MEASURES PER P.A. 451 AS AMENDED. WITH THE USE OF SILT FENCE AND OTHER TEMPORARY MEASURES THE CONTRACTOR SHALL PROTECT THE ADJACENT AREA FROM ACCELERATED EROSION AND SEDIMENTATION FLOWS RESULTING FROM CONSTRUCTION. THE CONTRACTOR SHALL INSTALL ADDITIONAL TEMPORARY AND PERMANENT SOIL EROSION CONTROL MEASURES, IF DIRECTED BY THE ENGINEER OR SOIL EROSION CONTROL OFFICER, AT NO ADDITIONAL COST TO THE PROJECT.
- INSTALLATION AND MAINTENANCE OF TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.
- SHOULD ADDITIONAL SOIL EROSION CONTROL MEASURES BE DETERMINED TO BE NECESSARY BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE OWNER'S ENGINEER THEY SHALL BE IN PLACE NO LATER THAN 24 HOURS FROM THE TIME OF NOTIFICATION TO THE GENERAL CONTRACTOR FOR THE PROJECT. IF NOT PLACED IN 24 HOURS OR LESS ALL ON SITE CONSTRUCTION WILL BE HALTED UNTIL SUCH MEASURES ARE INSTALLED AND APPROVED BY EITHER THE SOIL EROSION CONTROL OFFICER OR THE OWNER'S ENGINEER.
- ALL DISTURBED NON-HARD SURFACE AREAS TO BE STABILIZED WITH TOPSOIL, SEEDED, FERTILIZED AND MULCHED. DISTURBED AREAS SHALL BE TOPSOILED TO A DEPTH NOT LESS THAN FOUR (4) INCHES. SLOPES BETWEEN 1 ON 3 AND 1 ON 2 SHALL BE SODED AND STAKED OR RECEIVE SEED WITH MULCH BLANKET.
- IF REQUESTED BY THE ENGINEER OR SOIL EROSION CONTROL OFFICER, A WATER TRUCK SHALL BE KEPT ON STAND-BY ON SITE DURING THE CONSTRUCTION PHASE OF THE PROJECT. THE WATER TRUCK SHALL BE USED AS DIRECTED BY THE ENGINEER OR SOIL EROSION CONTROL OFFICER TO CONTROL WIND EROSION.
- ALL NEW STORM DRAINAGE PIPE SHALL BE CORRUGATED GALVANIZED STEEL PIPE, HDPE OR APPROVED EQUAL.
- A MINIMUM OF TWO (2) FEET OF COVER FROM FINISHED ELEVATIONS SHALL BE MAINTAINED OVER ALL STORM DRAIN PIPES.
- ALL DRAINAGE PIPES THAT OUTLET AT GROUND SURFACE SHALL INCLUDE END SECTIONS.
- ALL EXISTING STORM DRAINS WITHIN THE CONSTRUCTION ZONE TO BE INSTALLED/MONITORED WITH SILT SACKS. SACKS TO BE PULLED AS NEEDED TO KEEP SEDIMENT OUT.
- EXISTING STORM DRAINAGE DITCHES SHALL BE REBUILT IF FILLED IN OR REMOVED DURING CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE TO REPAIR OR REPLACE, AS REQUIRED, ALL DRAINAGE CULVERTS DAMAGED DURING CONSTRUCTION AND SHALL BE CONSIDERED INCIDENTAL TO THE PROJECT.
- IF CULVERTS ARE ENCOUNTERED DURING EXCAVATION THEY SHALL BE REUSED IF NOT DAMAGED. IF DAMAGED, THE CULVERT SHALL BE REPLACED WITH NEW. ALL CULVERTS IDENTIFIED HAVE BEEN PLACED ON THE DRAWINGS. SOME CULVERTS MIGHT BE ENCOUNTERED THAT ARE NOT DISCLOSED ON THE PLANS. ALL COSTS ASSOCIATED WITH LOCATING AND REPAIRING/REPLACING ARE INCLUDED IN THE COST OF THE PROJECT.
- THE CONTRACTOR SHALL REMOVE ALL SEDIMENT OR SOILS THAT HAVE BEEN DROPPED, WASHED ONTO OR TRACKED OUT ONTO PUBLIC RIGHT-OF-WAY OR PRIVATE ROADS AT THE END OF EACH WORKING DAY OR AFTER EACH RAIN EVENT ON NON-WORK DAYS.
- ALL REMOVED TOPSOIL WILL BE STOCKPILED WITHIN THE PROJECT AREA. IF ADDITIONAL TOPSOIL IS AVAILABLE AFTER TOPSOILING THE CONSTRUCTION AREA, IT WILL BE STOCKPILED WITHIN 1000 FEET OF THE CONSTRUCTION AREA AS DIRECTED BY THE OWNER OR ENGINEER.
- THE CONTRACTOR SHALL REPAIR ALL WASHOUTS AND EROSION DURING THE GUARANTEE PERIOD OF ONE (1) YEAR AT NO ADDITIONAL COST TO THE OWNER.
- ALL RESTORATION SHALL OCCUR WITHIN FIVE (5) DAYS OF FINAL GRADE.

PLAN LEGEND



DRAWINGS NOT TO BE USED FOR CONSTRUCTION WITHOUT THE SIGNATURE OF THE ENGINEER

<http://gfa.io>
ENGINEERING SURVEYING TESTING & OPERATIONS
 231.946.8874 (p)
 231.946.9703 (f)

123 West Front Street
 Traverse City, MI 49684

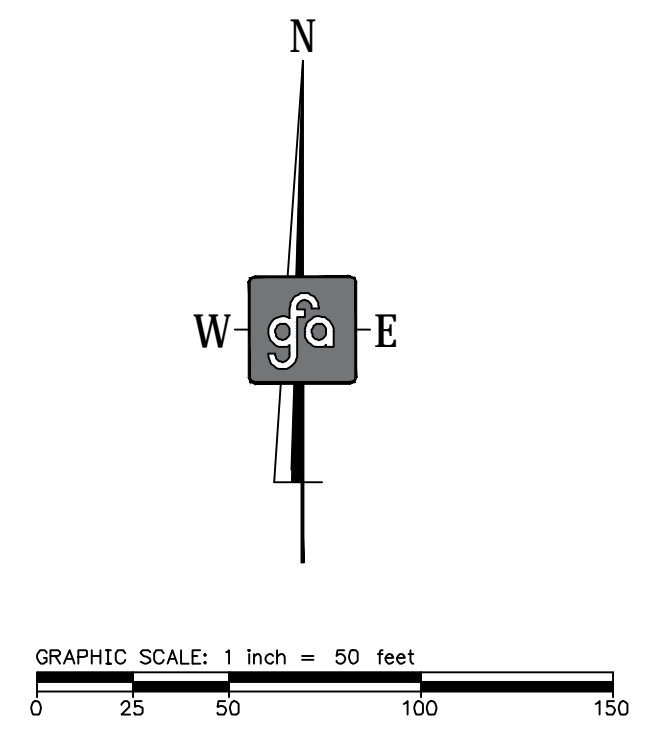
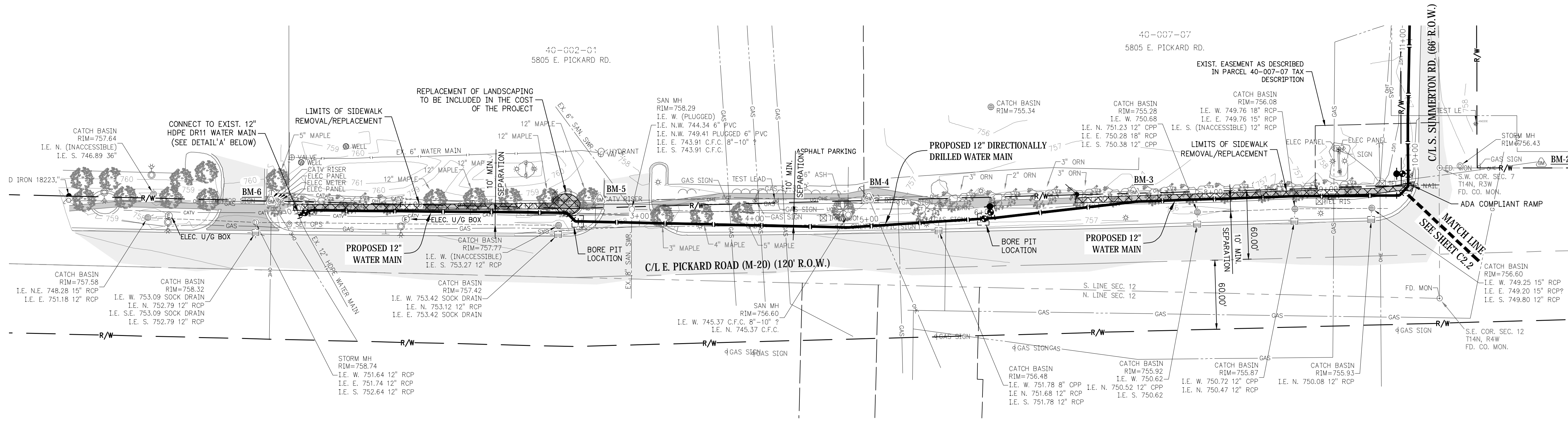
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CHARTER TOWNSHIP OF UNION
PICKARD/SUMMERTON ROAD WATER MAIN LOOP
GENERAL NOTES
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

| | |
|--------------------------------|----------------------------|
| PREPARED BY: CRAIG GOODRICH | CHECKED BY: C. BALLANCE |
| DATE: 18112 | DRAWN BY: K. ROBYLSKI |

18112
C1.2

These documents are prepared in accordance with the contractual terms and conditions for this project.

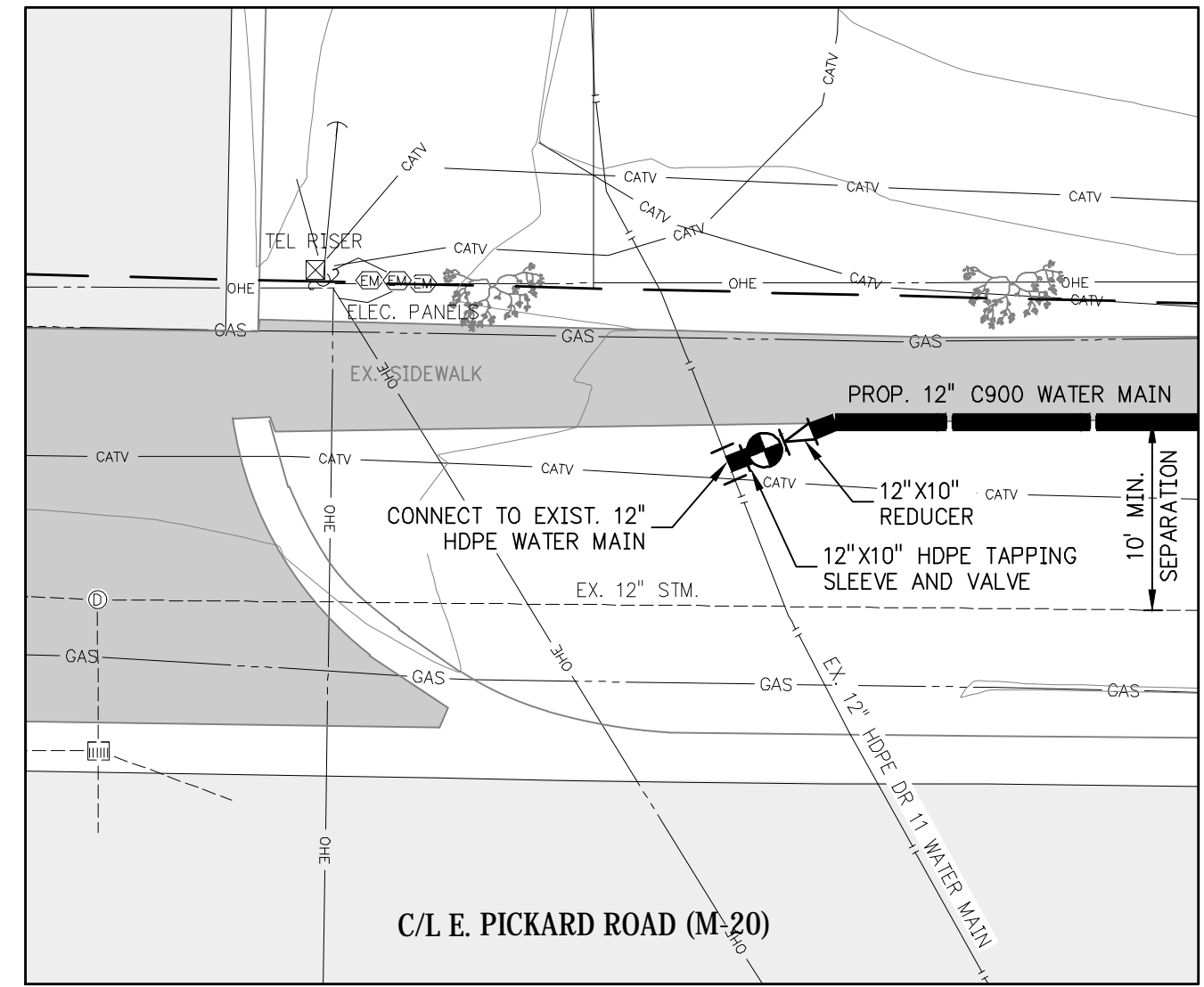


BENCHMARKS

- BM-2:
R.R. SPIKE IN CUT OFF POLE
ELEV.= 758.43 (LOCAL DATUM)
- BM-3:
BENCH TIE IN UTILITY POLE
ELEV.= 757.49 (LOCAL DATUM)
- BM-4:
BENCH TIE IN UTILITY POLE
ELEV.= 757.77 (LOCAL DATUM)
- BM-5:
BENCH TIE IN UTILITY POLE
ELEV.= 759.36 (LOCAL DATUM)
- BM-6:
R.R. SPIKE IN UTILITY POLE
ELEV.= 759.71 (LOCAL DATUM)

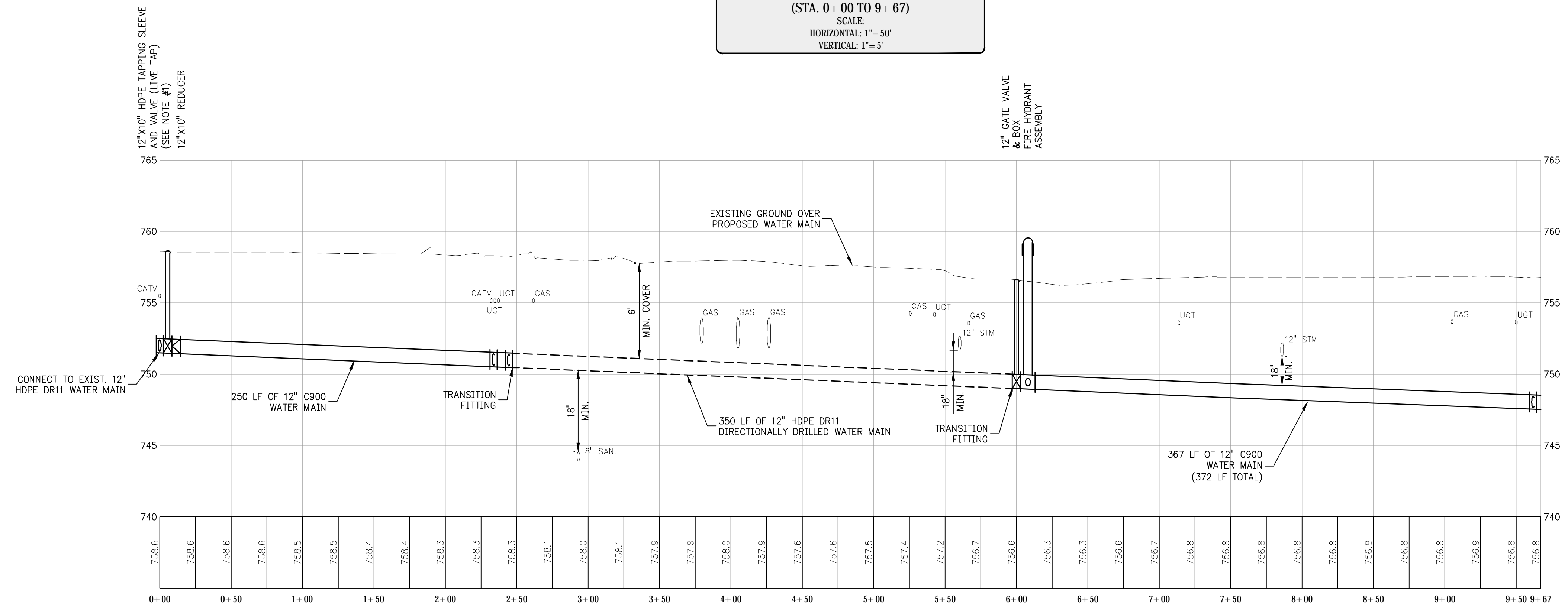
NOTES

1. 12"x10" TAPPING SLEEVE SHALL BE MANUFACTURED BY ROMAC INDUSTRIES, MODEL SST-H, HDPE SPECIFIC OR ENGINEER APPROVED EQUAL.



PICKARD RD. WATER MAIN PROFILE (STA. 0+00 TO 9+67)

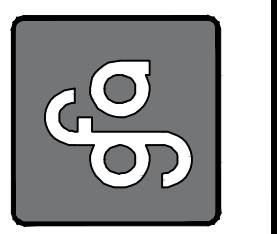
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HORIZONTAL: 1"=50'
VERTICAL: 1"=5'

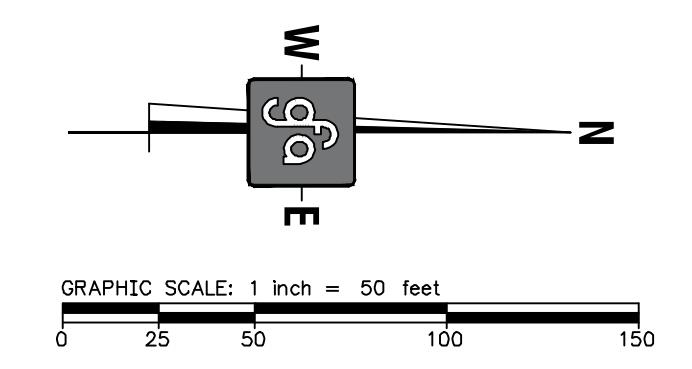
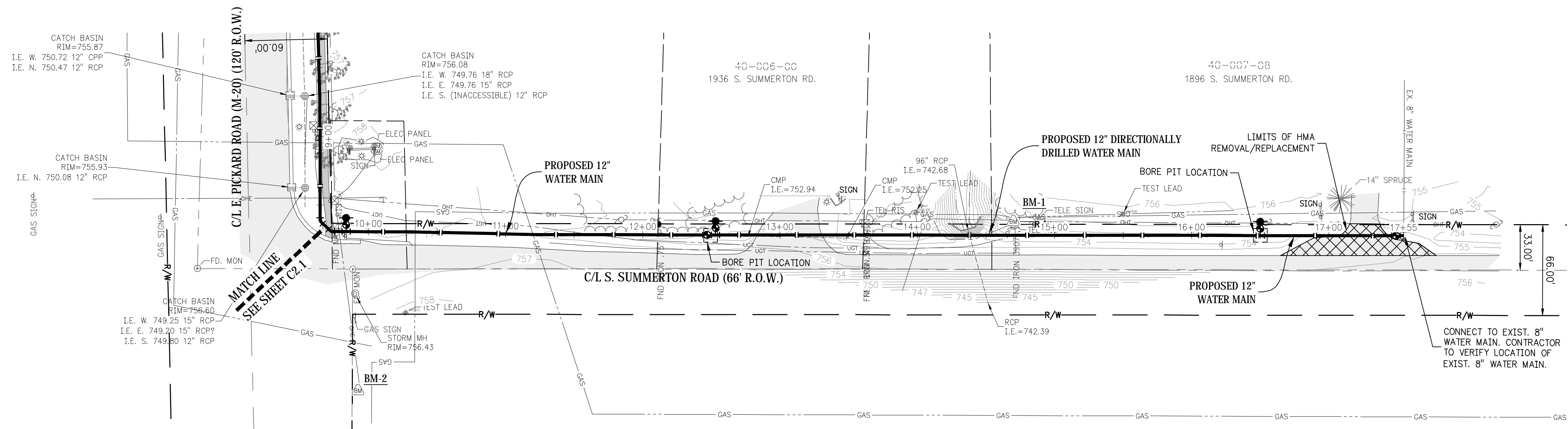


CHARTER TOWNSHIP OF UNION
PICKARD/SUMMERTON ROAD WATER MAIN LOOP
PLAN AND PROFILE SHEET

UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

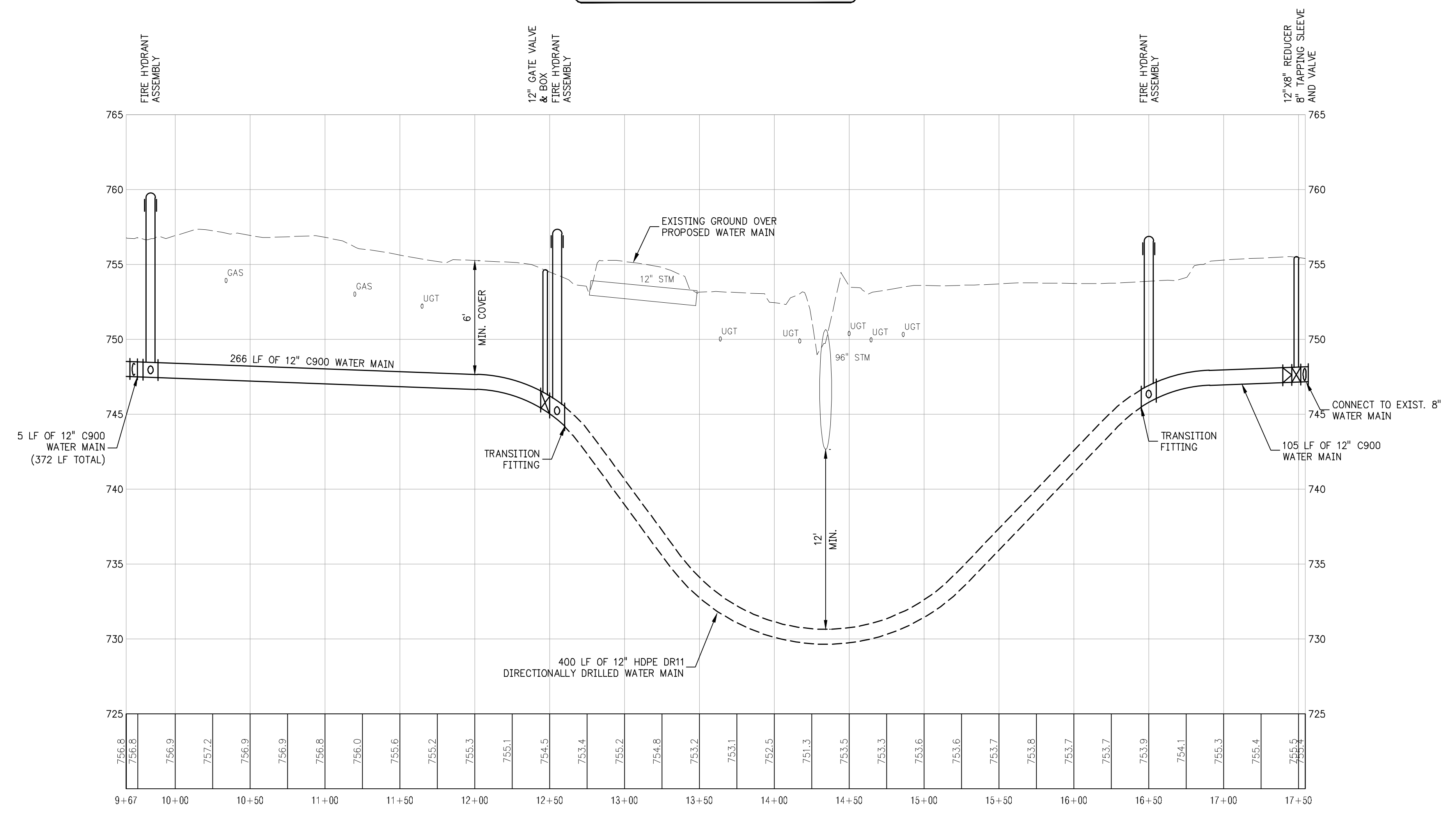
These documents are prepared in accordance with the contractual terms and conditions for this project.





BENCHMARKS
 BM-1:
 R.R. SPIKE IN UTILITY POLE
 ELEV. = 755.06 (LOCAL DATUM)
 BM-2:
 R.R. SPIKE IN CUT OFF POLE
 ELEV. = 758.43 (LOCAL DATUM)

**SUMMERTON RD. WATER MAIN PROFILE
 (STA. 9+67 TO 17+55)**
 SCALE:
 HORIZONTAL: 1" = 50'
 VERTICAL: 1" = 5'



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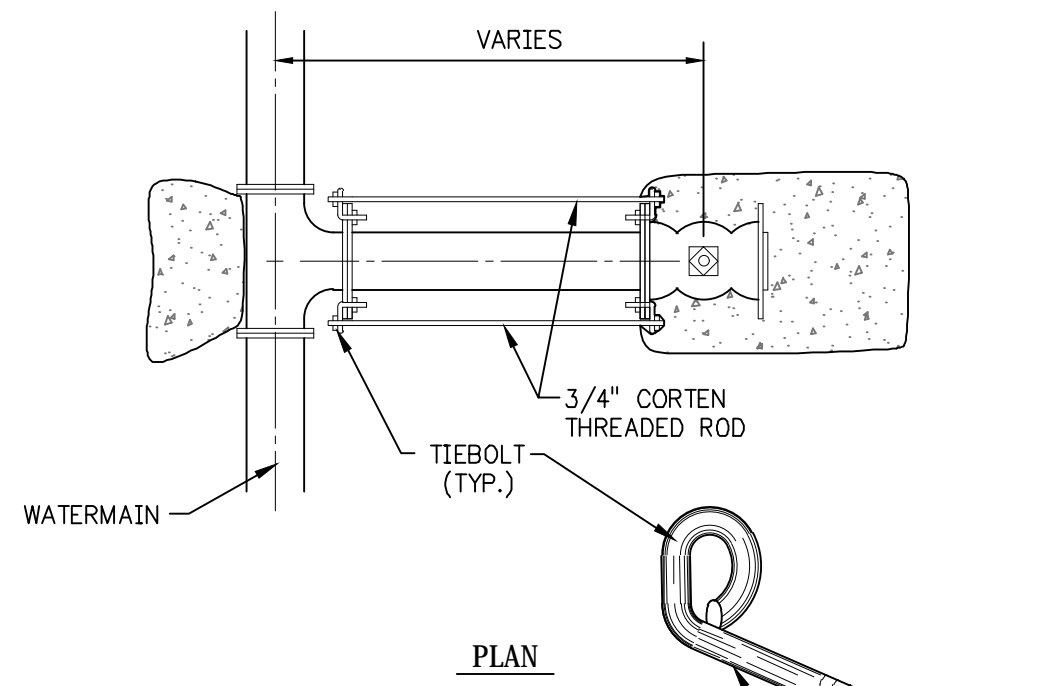
CHARTER TOWNSHIP OF UNION
PICKARD/SUMMERTON ROAD WATER MAIN LOOP
 PLAN AND PROFILE SHEET
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN

PROJECT NO. 18112
 SHEET NO. C2.2

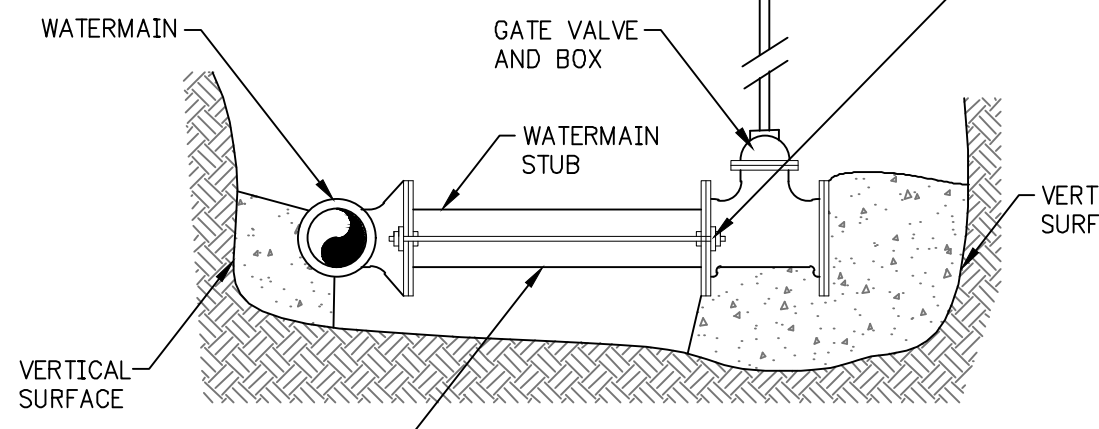
PREPARED BY: CRAIG GOODRICH
 CHECKED BY: C. BALLANCE
 DATE: 10/15/2014

ENGINEERING SURVEYING TESTING & OPERATIONS
 123 West Front Street
 Traverse City, MI 49684
 http://gfa.tc
 231.946.8874 (p)
 231.946.3708 (f)

These documents are prepared in accordance with the contractual terms and conditions for this project.

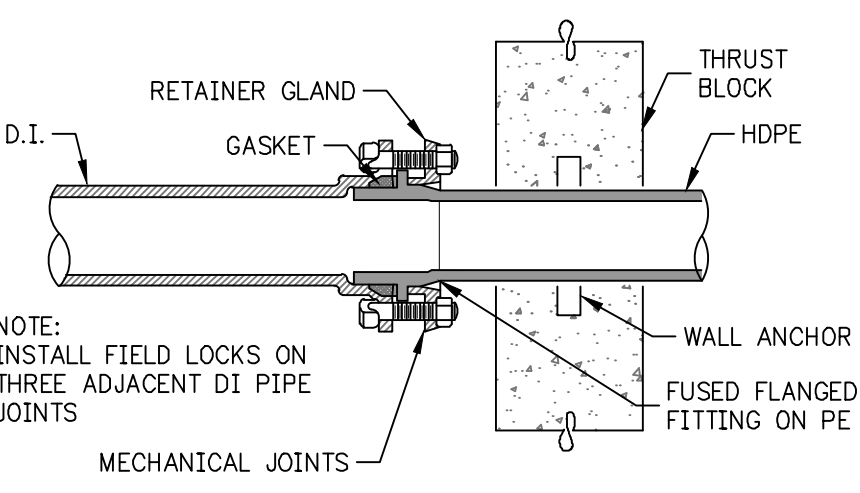


ALL MECHANICAL JOINTS REQUIRE RETAINER GLANDS



THRUST RESTRAINT DETAIL FOR ALL VALVES ON STUBBED LINES

NO SCALE



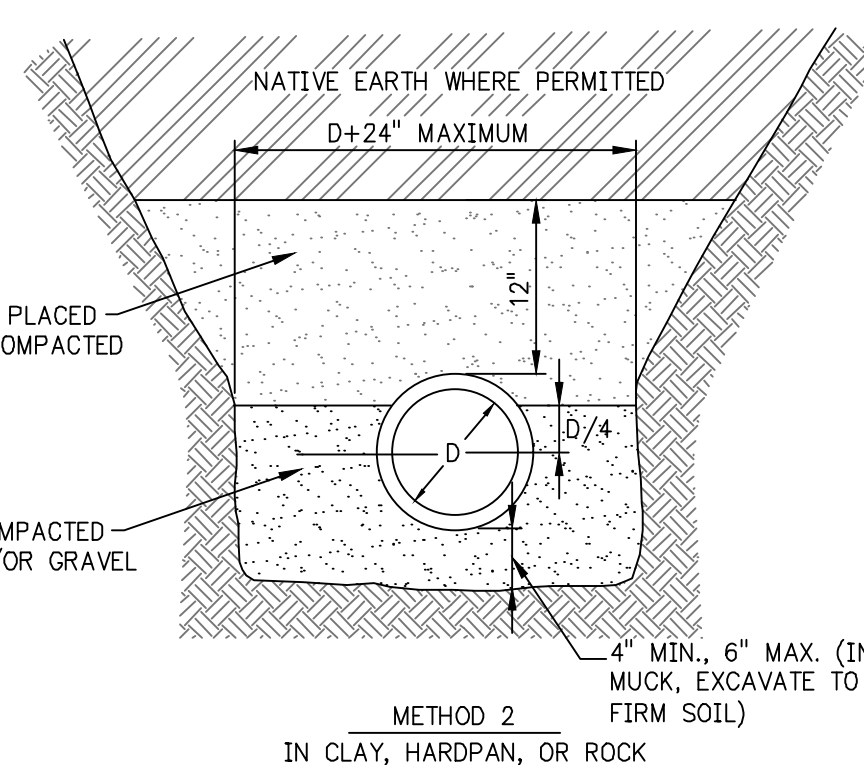
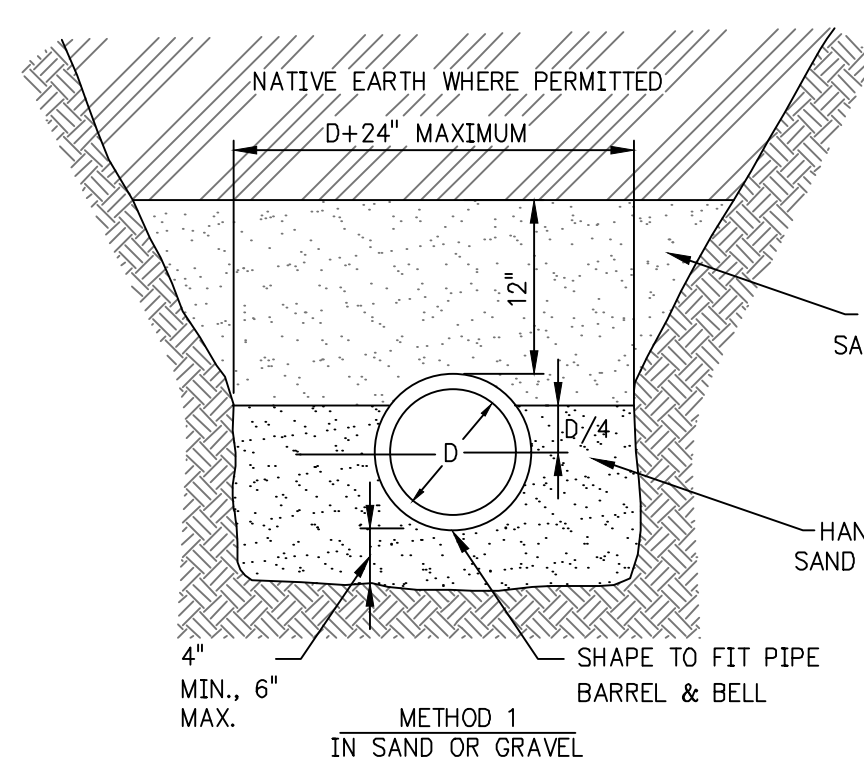
NOTE: ALL MECHANICAL JOINTS REQUIRE RETAINER GLANDS.

HDPE TO DI (MJ) ADAPTER DETAIL

NO SCALE

NOTE: ALL BACKFILL MATERIAL SHALL CONFORM TO AWWA C600 OR C605 AS APPROPRIATE.

NOTE: WATERMAIN TRENCHES NEED TO PROVIDE A MINIMUM WIDTH OF PIPE DIAMETER PLUS 16 INCHES FOR 8 INCH TO 18 INCH DIAMETER PLASTIC/FLEXIBLE PIPE MATERIALS. FOR 18 INCH AND LARGER PIPE DIAMETERS, THE MINIMUM TRENCH WIDTH IS 1.25 TIMES THE PIPE DIAMETER PLUS 12 INCHES FOR PLASTIC/FLEXIBLE PIPE MATERIALS.

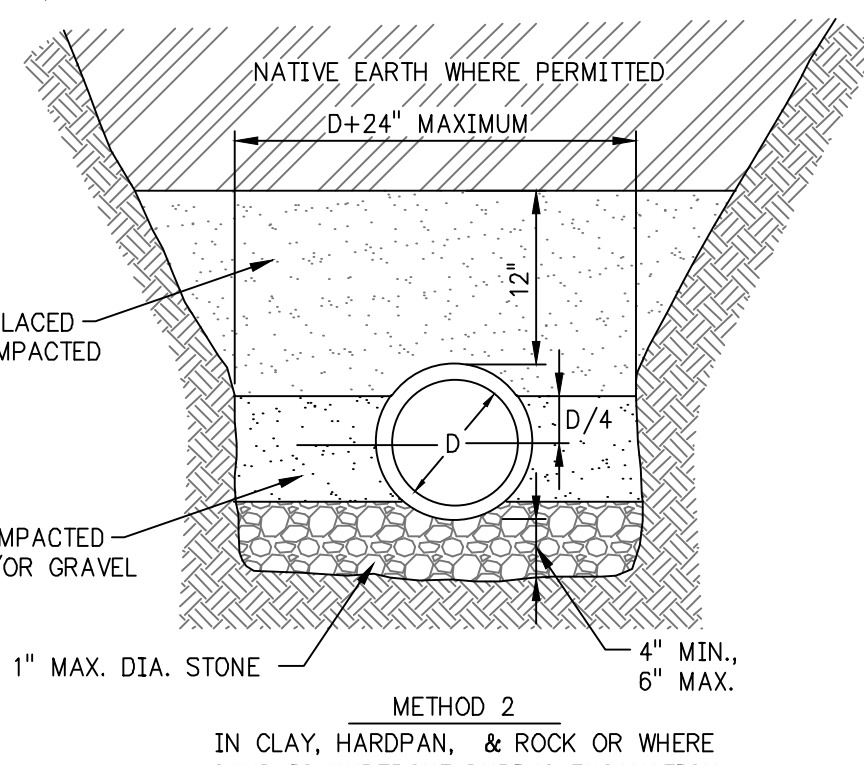
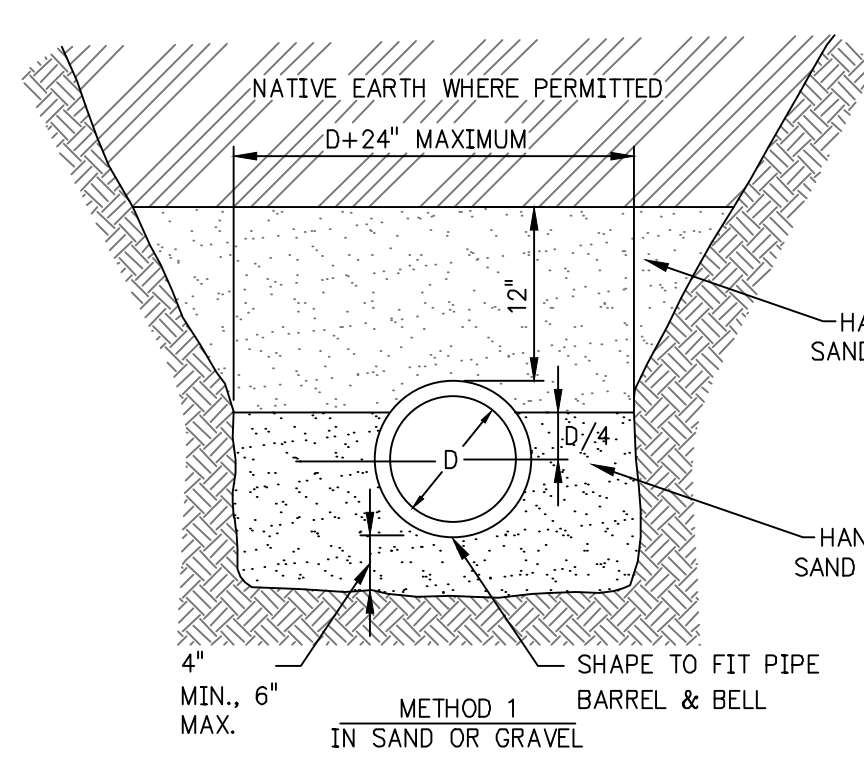


PIPE BEDDING DETAIL (CLASS A)

NO SCALE

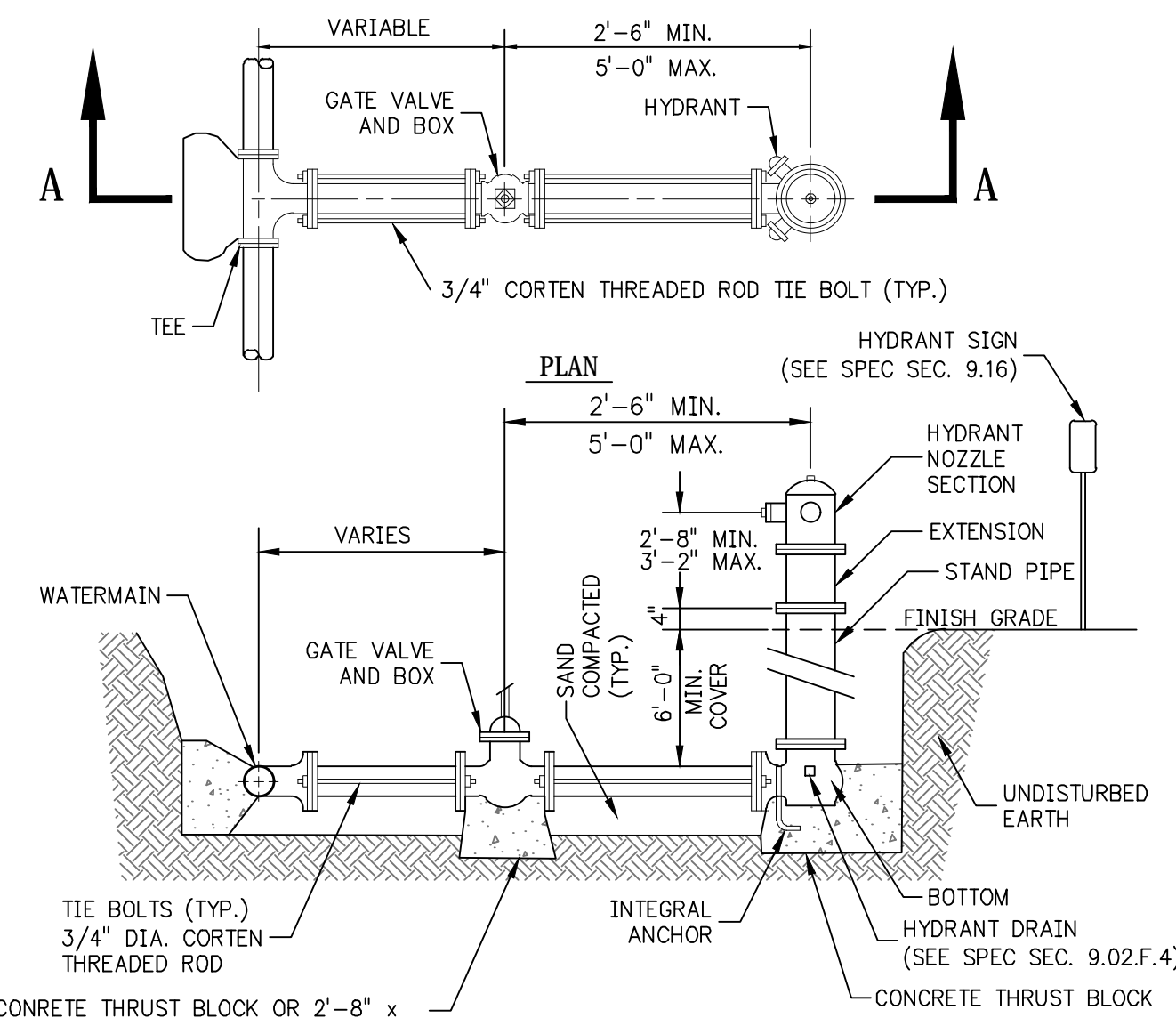
NOTE: ALL BACKFILL MATERIAL SHALL CONFORM TO AWWA C600 OR C605 AS APPROPRIATE.

NOTE: WATERMAIN TRENCHES NEED TO PROVIDE A MINIMUM WIDTH OF PIPE DIAMETER PLUS 16 INCHES FOR 8 INCH TO 18 INCH DIAMETER PLASTIC/FLEXIBLE PIPE MATERIALS. FOR 18 INCH AND LARGER PIPE DIAMETERS, THE MINIMUM TRENCH WIDTH IS 1.25 TIMES THE PIPE DIAMETER PLUS 12 INCHES FOR PLASTIC/FLEXIBLE PIPE MATERIALS.



PIPE BEDDING DETAIL (CLASS B)

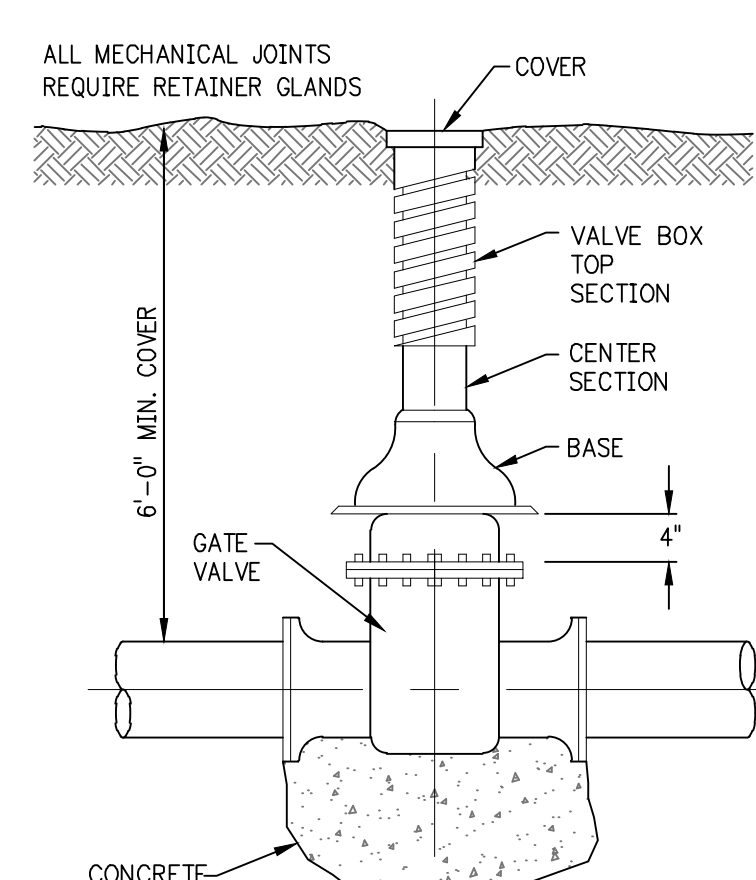
NO SCALE



SECTION A-A HYDRANT ASSEMBLY DETAIL

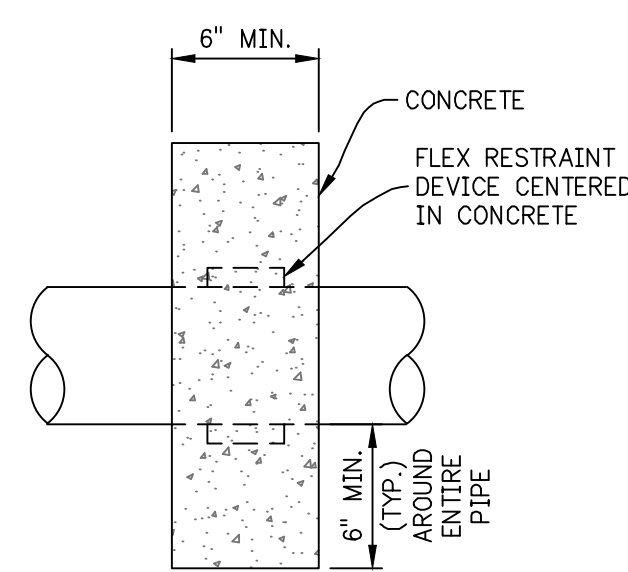
NO SCALE

NOTE: ALL MECHANICAL JOINTS REQUIRE RETAINER GLANDS



VALVE BOX INSTALLATION DETAIL

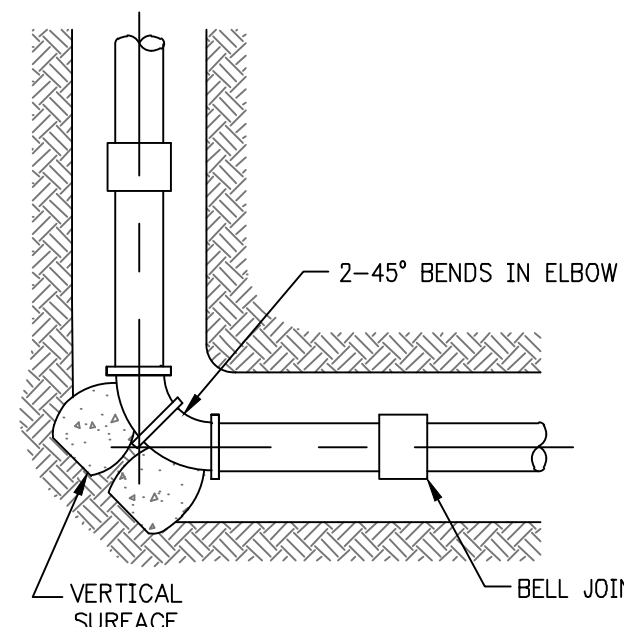
NO SCALE



NOTE: TO BE PLACED AT EACH SERVICE LEAD AND WHERE SPECIFIED BY FIELD ENGINEER, AS SUPPLIED BY CENTRAL PLASTICS, OR EQUAL, PER PIPE MANUFACTURER'S SPECIFICATIONS.

SERVICE LEAD THRUST RESTRAINT DETAIL

(APPLICABLE FOR HDPE/PVC WATERMAIN ONLY) NO SCALE

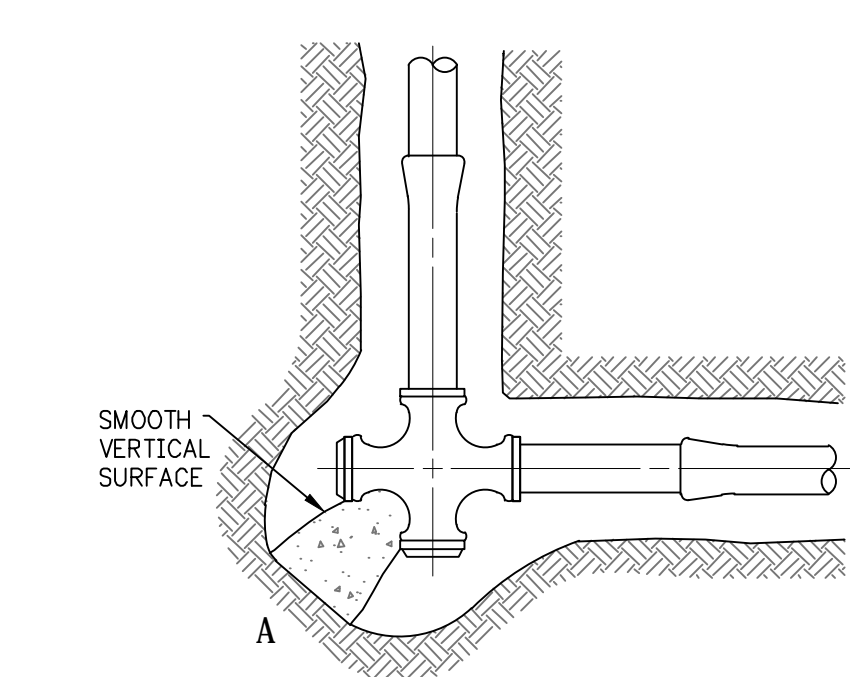


TYPICAL BEND DETAIL

NO SCALE

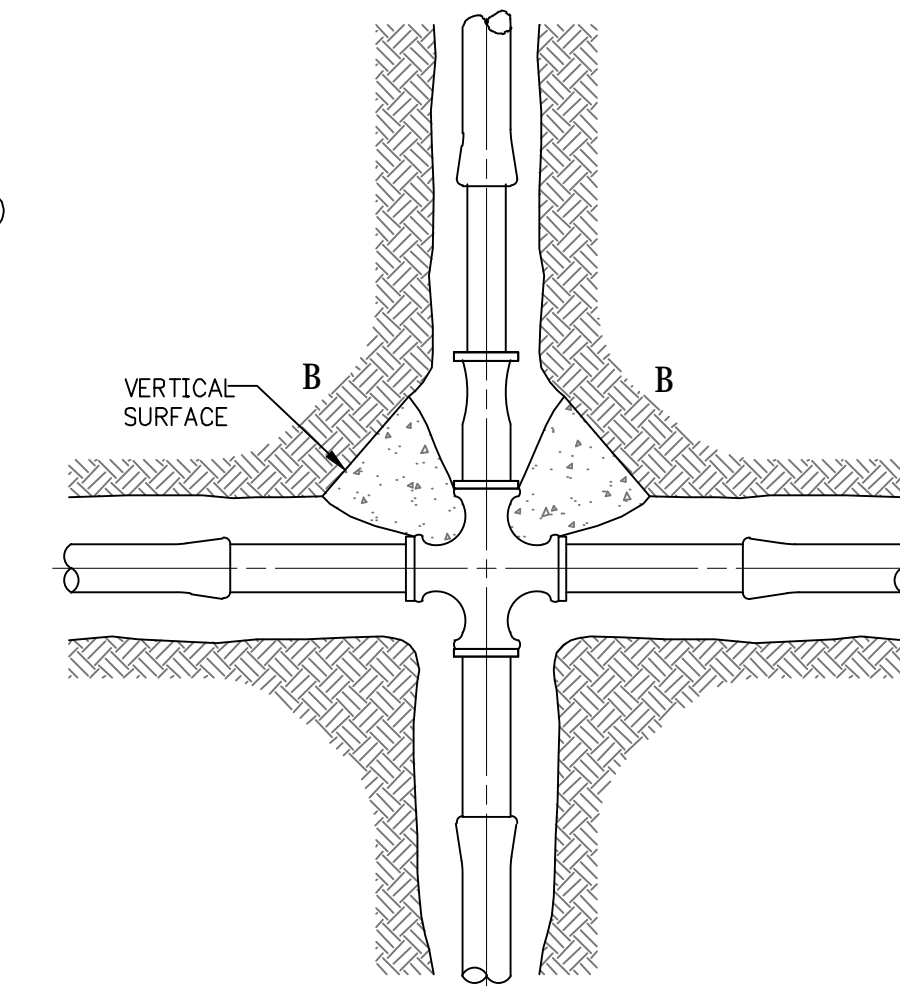
| PIPE SIZE | MIN. BEARING SURFACE ON UNDISTURBED SOIL FOR THRUST BLOCKS | |
|-----------|--|---------------|
| | SURFACE A | |
| 4" | 1'-9" x 1'-4" | = 2.3 SQ.FT. |
| 6" | 2'-3" x 2'-0" | = 4.5 SQ.FT. |
| 8" | 2'-8" x 2'-8" | = 7.1 SQ.FT. |
| 10" | 3'-0" x 3'-0" | = 9.0 SQ.FT. |
| 12" | 3'-8" x 3'-8" | = 13.5 SQ.FT. |
| 16" | 5'-0" x 5'-0" | = 25 SQ.FT. |

ALL MECHANICAL JOINTS REQUIRE RETAINER GLANDS



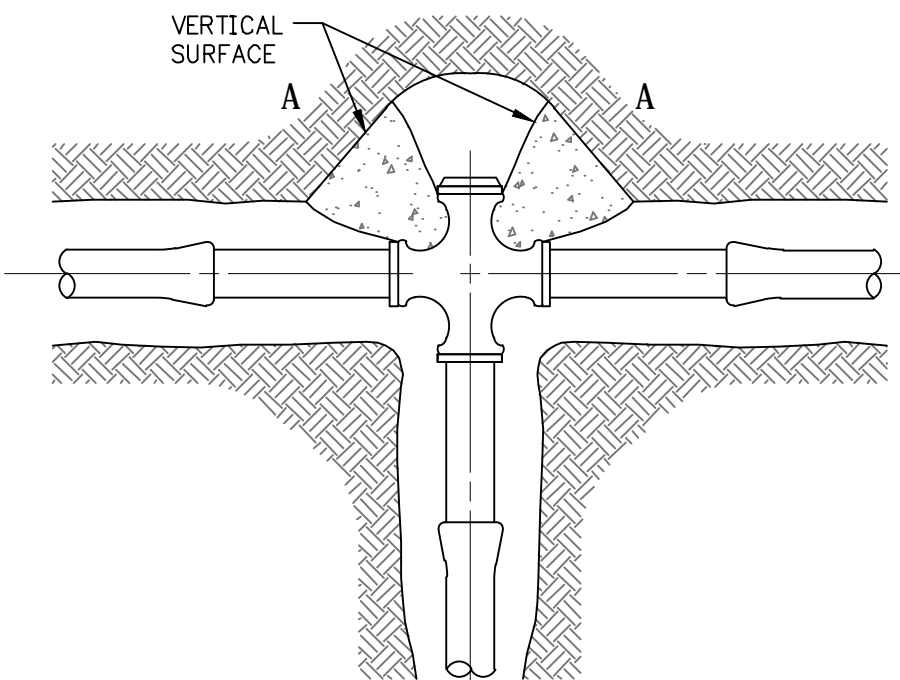
CROSS WITH 2 PLUGS DETAIL

NO SCALE



CROSS AND REDUCER DETAIL

NO SCALE



TYPICAL CROSS AND PLUG DETAIL

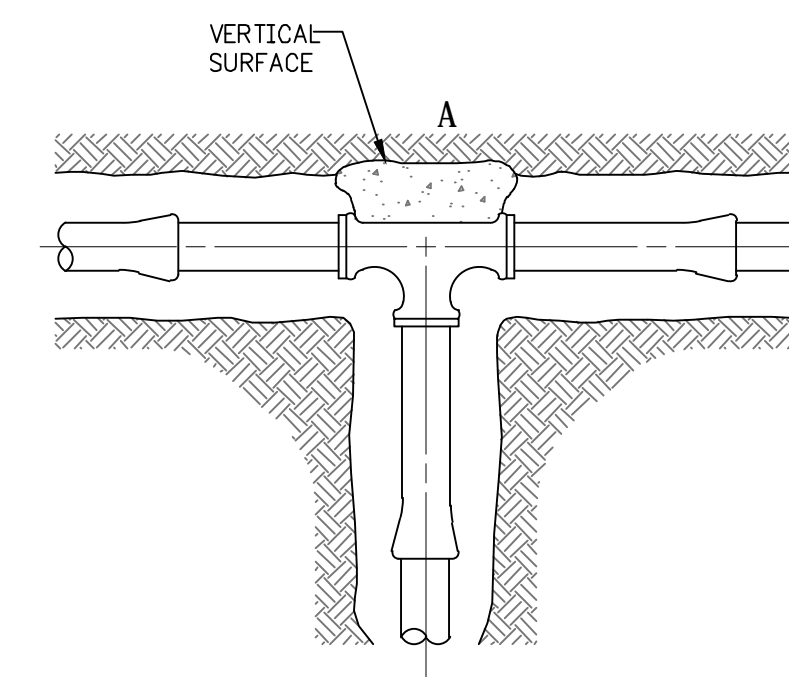
NO SCALE

| PIPE SIZE | MIN. BEARING SURFACE ON UNDISTURBED SOIL FOR THRUST BLOCKS | |
|-----------|--|----------------|
| | SURFACE A | |
| 4" | 1'-9" x 1'-4" | = 2.3 SQ. FT. |
| 6" | 2'-3" x 2'-0" | = 4.5 SQ. FT. |
| 8" | 2'-8" x 2'-8" | = 7.1 SQ. FT. |
| 10" | 3'-0" x 3'-0" | = 9.0 SQ. FT. |
| 12" | 3'-8" x 3'-8" | = 13.5 SQ. FT. |

ALL MECHANICAL JOINTS REQUIRE RETAINER GLANDS

| PIPE SIZE | MIN. BEARING SURFACE ON UNDISTURBED SOIL FOR THRUST BLOCKS | |
|-----------|--|--------------|
| | SURFACE B | |
| 4" | 0'-6" x 0'-6" | = 0.3 SQ.FT. |
| 6" | 0'-10" x 0'-10" | = 0.6 SQ.FT. |
| 8" | 1'-0" x 1'-0" | = 0.8 SQ.FT. |
| 10" | 1'-4" x 1'-4" | = 1.8 SQ.FT. |
| 12" | 1'-8" x 1'-8" | = 2.8 SQ.FT. |
| 16" | 2'-0" x 2'-0" | = 4.0 SQ.FT. |

ALL MECHANICAL JOINTS REQUIRE RETAINER GLANDS

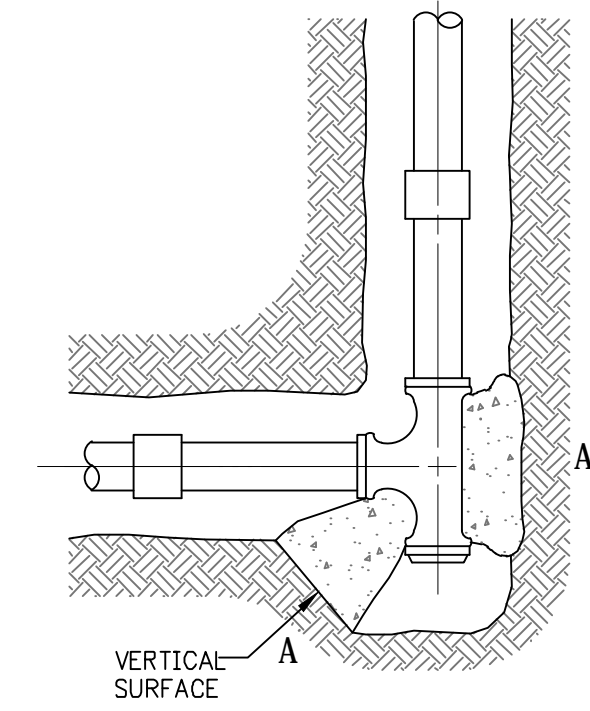


TYPICAL TEE CONNECTION DETAIL

NO SCALE

| PIPE SIZE | MIN. BEARING SURFACE ON UNDISTURBED SOIL FOR THRUST BLOCKS | |
|-----------|--|----------------|
| | SURFACE A | |
| 4" | 1'-6" x 1'-6" | = 2.3 SQ. FT. |
| 6" | 1'-9" x 1'-9" | = 3.1 SQ. FT. |
| 8" | 2'-4" x 2'-4" | = 5.4 SQ. FT. |
| 10" | 2'-8" x 2'-8" | = 7.1 SQ. FT. |
| 12" | 3'-0" x 3'-0" | = 9.0 SQ. FT. |
| 16" | 4'-5" x 4'-5" | = 19.5 SQ. FT. |

ALL MECHANICAL JOINTS REQUIRE RETAINER GLANDS

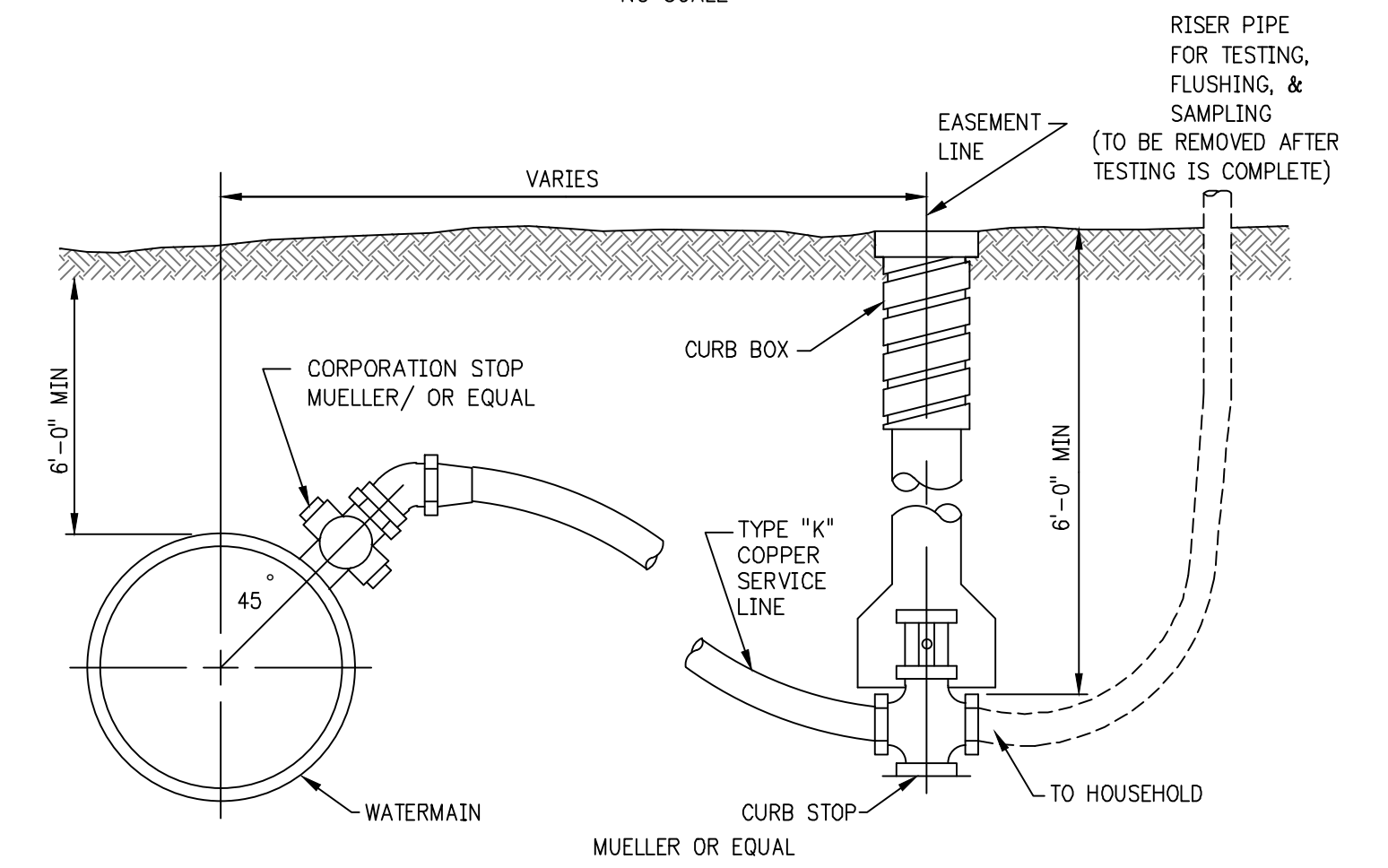


TYPICAL TEE AND PLUG DETAIL

NO SCALE

| PIPE SIZE | MIN. BEARING SURFACE ON UNDISTURBED SOIL FOR THRUST BLOCKS | |
|-----------|--|----------------|
| | SURFACE A | |
| 4" | 1'-4" x 0'-8" | = 0.9 SQ. FT. |
| 6" | 1'-8" x 1'-4" | = 2.2 SQ. FT. |
| 8" | 2'-0" x 1'-9" | = 3.5 SQ. FT. |
| 10" | 2'-4" x 2'-4" | = 5.4 SQ. FT. |
| 12" | 2'-8" x 2'-8" | = 7.1 SQ. FT. |
| 16" | 3'-8" x 3'-8" | = 13.5 SQ. FT. |

ALL MECHANICAL JOINTS REQUIRE RETAINER GLANDS

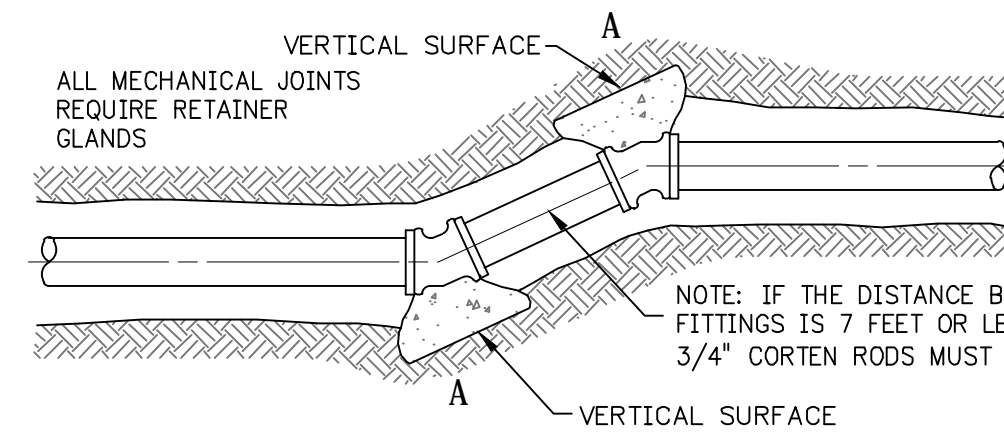


NOTE: ALL 2" BLOWOFFS AT WATERMAIN STUBS TO BE LOCATED BY ENGINEER/FIELD REPRESENTATIVE.

SERVICE CONNECTION DETAIL

NO SCALE

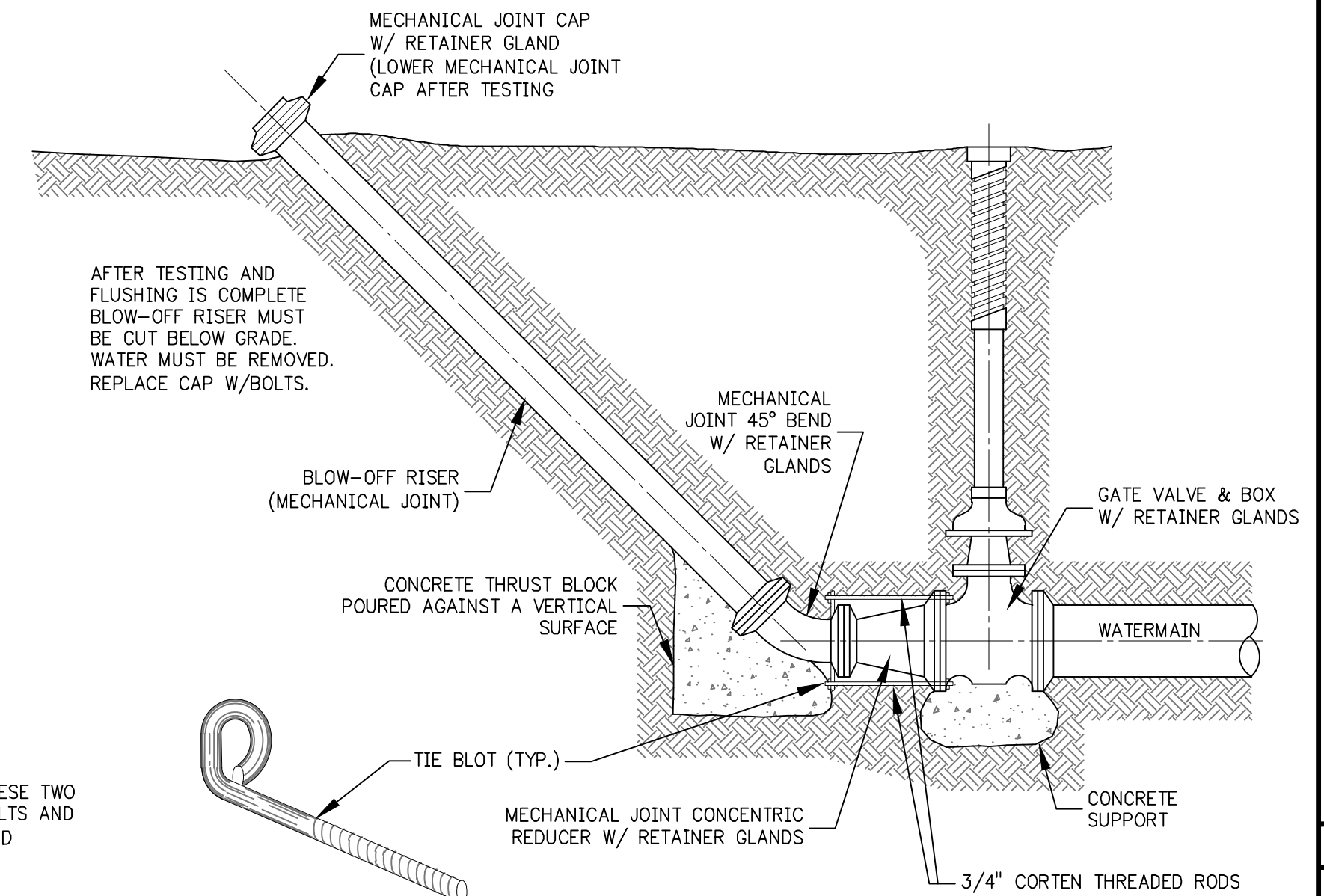
| DEGREE OF BEND IN ELBOW | PIPE SIZE | MIN. BEARING SURFACE ON UNDISTURBED SOIL FOR THRUST BLOCKS | |
|-------------------------|-----------|--|----------------|
| | | SURFACE A | |
| 45° | 4" | 1'-4" x 1'-0" | = 1.3 SQ. FT. |
| 45° | 6" | 1'-8" x 1'-4" | = 2.2 SQ. FT. |
| 45° | 8" | 2'-0" x 2'-0" | = 4.0 SQ. FT. |
| 45° | 10" | 2'-4" x 2'-4" | = 5.4 SQ. FT. |
| 45° | 12" | 2'-8" x 2'-8" | = 7.1 SQ. FT. |
| 45° | 16" | 3'-8" x 3'-8" | = 13.5 SQ. FT. |
| 22.5° OR 11.25° | 4" | 1'-0" x 0'-8" | = 0.7 SQ. FT. |
| 22.5° OR 11.25° | 6" | 1'-4" x 1'-0" | = 1.3 SQ. FT. |
| 22.5° OR 11.25° | 8" | 1'-8" x 1'-4" | = 2.2 SQ. FT. |
| 22.5° OR 11.25° | 10" | 1'-8" x 1'-8" | = 2.8 SQ. FT. |
| 22.5° OR 11.25° | 12" | 1'-10" x 1'-10" | = 3.4 SQ. FT. |
| 22.5° OR 11.25° | 16" | 2'-8" x 2'-8" | = 7.1 SQ. FT. |



TYPICAL OFFSET DETAIL

NO SCALE

NOTE: IF THE DISTANCE BETWEEN THESE TWO FITTINGS IS 7 FEET OR LESS THE BOLTS AND 3/4" CORTEN RODS MUST BE UTILIZED



BLOW-OFF DETAIL

NO SCALE

<http://gfa.ic>
 231.946.5874 (p)
 231.946.3703 (f)

ENGINEERING SURVEYING TESTING & OPERATIONS
 123 West Front Street
 Traverse City, MI 49684
 CHARTER TOWNSHIP OF UNION
 PICKARD/SUMMERTON ROAD WATER MAIN LOOP
 WATER MAIN DETAILS
 UNION TOWNSHIP, ISABELLA COUNTY, MICHIGAN
 THESE DOCUMENTS ARE PREPARED IN ACCORDANCE WITH THE CONTRACTUAL TERMS AND CONDITIONS FOR THIS PROJECT.
 PREPARED BY: CRAIG GOODRICH
 CHECKED BY: C. BALLANCE
 DATE: 11/11/11
 18112
 C3.1



Engineering
Surveying
Testing &
Operations

123 West Front Street
Traverse City, Michigan 49684
231.946.5874 
231.946.3703 

CONTRACT DOCUMENTS AND TECHNICAL SPECIFICATIONS FOR

PICKARD ROAD/SUMMERTON ROAD WATER MAIN LOOP



GFA PROJECT NO.: 18112
DATE: MAY 2018

PROJECT SPECIFICATIONS

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**CHARTER TOWNSHIP OF UNION
MT. PLEASANT, MICHIGAN
PICKARD/SUMMERTON ROAD WATER MAIN LOOP**

ADVERTISEMENT FOR BIDS

Sealed Bids for the construction of the **Pickard/Summerton Road Water Main Loop, Project No. 18112** will be received, by **The Charter Township of Union**, at the office of **The Charter Township of Union, 2010 S. Lincoln Rd., Mt. Pleasant, MI 48858**, until **[insert time for receipt of Bids]** local time on **[insert date for receipt of Bids]**, at which time the Bids received will be publicly opened and read.

The Project consists of installation of approximately 993 lineal feet of 12" C900 water main along Pickard Rd and South Summerton Road, and additional 750 lineal feet of 12" HDPE DR-11 water main will be directionally drilled in this area. Work shall include water main, hydrants, valves and appurtenances, and all connections to existing water main. All work to be done by method of open-cut and installed within public right-of-way, unless otherwise noted on the plans.

Bids will be received for a single prime Contract. Bids shall be on a lump sum and unit price basis, as indicated in the Bid Form.

The Issuing Office for the Bidding Documents is: **GFA, 123 W. Front St., Traverse City, MI 49684; phone 231-946-5874 or cindy@gfa.tc**. Prospective Bidders may examine the Bidding Documents at the Issuing Office on Mondays through Fridays between the hours of **8 am to 5 pm**, and may obtain copies of the Bidding Documents from the Issuing Office as described below.

Bidding Documents also may be examined at the office of the **Charter Township of Union, 2010 S. Lincoln Rd., Mt. Pleasant, MI 48858** on Mondays through Fridays between the hours of 8 am to 5 pm.

Printed copies of the Bidding Documents may be obtained from the Issuing Office, during the hours indicated above, upon receipt of a non-refundable payment of **\$100** for each set. Checks for Bidding Documents shall be payable to "**Gourdie Fraser, Inc.**". Upon request and receipt of the payment indicated above plus a non-refundable shipping charge **if the bidder has requested "Overnight" shipping**, the Issuing Office will transmit the Bidding Documents via delivery service. Partial sets of Bidding Documents will not be available from the Issuing Office. Neither Owner nor Engineer will be responsible for full or partial sets of Bidding Documents, including Addenda if any, obtained from sources other than the Issuing Office.

Alternatively, Bidding Documents are also available on compact disc or through a File Sharing site (as portable document format (PDF) files) for a non-refundable charge of **\$25**, including shipping via overnight express service.

For a list of planholders, please visit the GFA website at www.gfa.tc - go into the Project Center, then Planholders Lists, then select the appropriate Project.

Bidders are responsible to research Addendums and Acknowledge Addendums on the Bid form. Addendums will be posted, at least three (3) days prior to Bid Opening, on the GFA website at www.gfa.tc - go into the Project Center, then Advertisements, then select the appropriate Project.

Each Bidder must deposit with their Bid, security in the amount and form as specified by the conditions provided in the Information for Bidders. Bids not accompanied by a proper Bid bond or certified check in the amount stated in the documents, or received after the above date and time will not be considered. Fax transmittals of Bids or Bid bonds will not be accepted.

The Owner reserves the right to waive any informalities or to reject any or all Bids.
No Bidder may withdraw their Bid within 90 days after the actual date of Bid opening.

Owner: Charter Township of Union

By: Craig Goodrich

Title: Project Manager

Date: [Date of initial publication of Advertisement]

+ + END OF ADVERTISEMENT FOR BIDS + +

ARTICLE 1 – DEFINED TERMS

- 1.01 Terms used in these Instructions to Bidders have the meanings indicated in the General Conditions and Supplementary Conditions. Additional terms used in these Instructions to Bidders have the meanings indicated below:
- A. *Issuing Office* – The office from which the Bidding Documents are to be issued.

ARTICLE 2 – COPIES OF BIDDING DOCUMENTS

- 2.01 Complete sets of the Bidding Documents may be obtained from the Issuing Office in the number and format stated in the advertisement or invitation to bid.
- 2.02 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Engineer assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.
- 2.03 Owner and Engineer, in making copies of Bidding Documents available on the above terms, do so only for the purpose of obtaining Bids for the Work and do not authorize or confer a license for any other use.

ARTICLE 3 – QUALIFICATIONS OF BIDDERS

- 3.01 To demonstrate Bidder's qualifications to perform the Work, Bidder shall submit with its Bid (a) written evidence establishing its qualifications such as financial data, previous experience, and present commitments, and (b) the following additional information:
- A. **Bidder's Experience Form, included in these specifications**
- 3.02 A Bidder's failure to submit required qualification information as requested may disqualify Bidder from receiving an award of the Contract.
- 3.03 No requirement in this Article 3 to submit information will prejudice the right of Owner to seek additional pertinent information regarding Bidder's qualifications.
- 3.04 Bidder is advised to carefully review those portions of the Bid Form requiring Bidder's representations and certifications.

ARTICLE 4 – SITE AND OTHER AREAS; EXISTING SITE CONDITIONS; EXAMINATION OF SITE; OWNER'S SAFETY PROGRAM; OTHER WORK AT THE SITE

- 4.01 *Site and Other Areas*
- A. The Site is identified in the Bidding Documents. By definition, the Site includes rights-of-way, easements, and other lands furnished by Owner for the use of the Contractor. Any additional lands required for temporary construction facilities, construction equipment, or storage of materials and equipment, and any access needed for such additional lands, are to be obtained and paid for by Contractor.
- 4.02 *Existing Site Conditions*
- A. Subsurface and Physical Conditions; Hazardous Environmental Conditions
1. The Supplementary Conditions identify:
- a. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site.

- b. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities).
 - c. reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site.
 - d. Technical Data contained in such reports and drawings.
2. Owner will make copies of reports and drawings referenced above available to any Bidder on request. These reports and drawings are not part of the Contract Documents, but the Technical Data contained therein upon whose accuracy Bidder is entitled to rely, as provided in the General Conditions, has been identified and established in the Supplementary Conditions. Bidder is responsible for any interpretation or conclusion Bidder draws from any Technical Data or any other data, interpretations, opinions, or information contained in such reports or shown or indicated in such drawings.
3. If the Supplementary Conditions do not identify Technical Data, the default definition of Technical Data set forth in Article 1 of the General Conditions will apply.
- B. Underground Facilities: Information and data shown or indicated in the Bidding Documents with respect to existing Underground Facilities at or adjacent to the Site are set forth in the Contract Documents and are based upon information and data furnished to Owner and Engineer by owners of such Underground Facilities, including Owner, or others.
- C. Adequacy of Data: Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to subsurface conditions, other physical conditions, and Underground Facilities, and possible changes in the Bidding Documents due to differing or unanticipated subsurface or physical conditions appear in Paragraphs 5.03, 5.04, and 5.05 of the General Conditions. Provisions concerning responsibilities for the adequacy of data furnished to prospective Bidders with respect to a Hazardous Environmental Condition at the Site, if any, and possible changes in the Contract Documents due to any Hazardous Environmental Condition uncovered or revealed at the Site which was not shown or indicated in the Drawings or Specifications or identified in the Contract Documents to be within the scope of the Work, appear in Paragraph 5.06 of the General Conditions.

4.03 *Site Visit and Testing by Bidders*

- A. Bidder shall conduct the required Site visit during normal working hours, and shall not disturb any ongoing operations at the Site.
- B. On request, and to the extent Owner has control over the Site, and schedule permitting, the Owner will provide Bidder access to the Site to conduct such additional examinations, investigations, explorations, tests, and studies as Bidder deems necessary for preparing and submitting a successful Bid. Owner will not have any obligation to grant such access if doing so is not practical because of existing operations, security or safety concerns, or restraints on Owner's authority regarding the Site.
- C. Bidder shall comply with all applicable Laws and Regulations regarding excavation and location of utilities, and comply with all terms and conditions established by Owner or by property owners or other entities controlling the Site with respect to schedule, access, existing operations, security, liability insurance, and applicable safety programs.
- D. Bidder shall fill all holes and clean up and restore the Site to its former condition upon completion of such explorations, investigations, tests, and studies.

4.04 The following permits are currently being pursued by owner.

1. MDEQ Act 399 (No Fee)
2. Isabella County Soil Erosion & Sedimentation Control (Fee paid by Owner)
3. Isabella County Road Commission ROW (Fee paid by Owner)
4. MDOT ROW (Fee paid by owner)

Contractor shall be responsible for all insurance and bonding associated with all permits.

Contractor shall be responsible for all other permits and all associated fees including:

1. Local plumbing, mechanical and electrical permit and associated fees and inspection

4.05 *Owner's Safety Program*

- A. Site visits and work at the Site may be governed by an Owner safety program. As the General Conditions indicate, if an Owner safety program exists, it will be noted in the Supplementary Conditions.

4.06 *Other Work at the Site*

- A. Reference is made to Article 8 of the Supplementary Conditions for the identification of the general nature of other work of which Owner is aware (if any) that is to be performed at the Site by Owner or others (such as utilities and other prime contractors) and relates to the Work contemplated by these Bidding Documents. If Owner is party to a written contract for such other work, then on request, Owner will provide to each Bidder access to examine such contracts (other than portions thereof related to price and other confidential matters), if any.

ARTICLE 5 – BIDDER'S REPRESENTATIONS

5.01 It is the responsibility of each Bidder before submitting a Bid to:

- A. examine and carefully study the Bidding Documents, and any data and reference items identified in the Bidding Documents;
- B. visit the Site, conduct a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfy itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work;
- C. become familiar with and satisfy itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work;
- D. carefully study all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings;
- E. consider the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and the Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder's safety precautions and programs;

- F. agree, based on the information and observations referred to in the preceding paragraph, that at the time of submitting its Bid no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of its Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents;
- G. become aware of the general nature of the work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents;
- H. promptly give Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder discovers in the Bidding Documents and confirm that the written resolution thereof by Engineer is acceptable to Bidder;
- I. determine that the Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work; and
- J. agree that the submission of a Bid will constitute an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 6 – INTERPRETATIONS AND ADDENDA

- 6.01 All questions about the meaning or intent of the Bidding Documents are to be submitted to Engineer in writing. Interpretations or clarifications considered necessary by Engineer in response to such questions will be issued by Addenda delivered to all parties recorded as having received the Bidding Documents. Questions received less than seven days prior to the date for opening of Bids may not be answered. Only questions answered by Addenda will be binding. Oral and other interpretations or clarifications will be without legal effect.
- 6.02 Addenda may be issued to clarify, correct, supplement, or change the Bidding Documents. **Bidders are responsible to research Addenda and Acknowledge Addenda on the Bid form. Addenda will be posted, at least three (3) days prior to Bid Opening, on the Gourdie-Fraser website at www.gfa.tc, use the "Bids" tab at the top of the page to go into the Project Center. Failure of any Bidder to obtain any such addenda or interpretation shall not relieve such Bidder from any obligation under his Bids as submitted. All Addenda, so issued, shall become part of the Contract Documents.**

ARTICLE 7 – BID SECURITY

- 7.01 A Bid must be accompanied by Bid security made payable to Owner in an amount of 5% percent of Bidder's maximum Bid price (determined by adding the base bid and all alternates) and in the form of a certified check, bank money order, or a Bid bond (EJCDC Form C-430, 2013 Edition) issued by a surety meeting the requirements of Paragraphs 6.01 and 6.02 of the General Conditions.
- 7.02 The Bid security of the apparent Successful Bidder will be retained until Owner awards the contract to such Bidder, and such Bidder has executed the Contract Documents, furnished the required contract security, and met the other conditions of the Notice of Award, whereupon the Bid security will be released. If the Successful Bidder fails to execute and deliver the Contract Documents and furnish the required contract security within 15 days after the Notice of Award, Owner may consider Bidder to be in default, annul the Notice of Award, and the Bid security of that Bidder will be forfeited. Such forfeiture shall be Owner's exclusive remedy if Bidder defaults.

- 7.03 The Bid security of other Bidders that Owner believes to have a reasonable chance of receiving the award may be retained by Owner until the earlier of seven days after the Effective Date of the Contract or 61 days after the Bid opening, whereupon Bid security furnished by such Bidders will be released.
- 7.04 Bid security of other Bidders that Owner believes do not have a reasonable chance of receiving the award will be released within seven days after the Bid opening.

ARTICLE 8 – LIQUIDATED DAMAGES

- 8.01 Provisions for liquidated damages, if any, for failure to timely attain a Milestone, Substantial Completion, or completion of the Work in readiness for final payment, are set forth in the Agreement.

ARTICLE 9 – SUBSTITUTE AND “OR-EQUAL” ITEMS

- 9.01 **The Contract for the Work, if awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents, and those “or-equal” or substitute materials and equipment subsequently approved by Engineer prior to the submittal of Bids and identified by Addendum. No item of material or equipment will be considered by Engineer as an “or-equal” or substitute unless written request for approval has been submitted by Bidder and has been received by Engineer at least 15 days prior to the date for receipt of Bids in the case of a proposed substitute and 5 days prior in the case of a proposed “or-equal.” Each such request shall comply with the requirements of Paragraphs 7.04 and 7.05 of the General Conditions. The burden of proof of the merit of the proposed item is upon Bidder. Engineer’s decision of approval or disapproval of a proposed item will be final. If Engineer approves any such proposed item, such approval will be set forth in an Addendum issued to all prospective Bidders. Bidders shall not rely upon approvals made in any other manner. Substitutes and “or-equal” materials and equipment may be proposed by Contractor in accordance with Paragraphs 7.04 and 7.05 of the General Conditions after the Effective Date of the Contract.**
- 9.02 **All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.**
- 9.03 **If an award is made, Contractor shall be allowed to submit proposed substitutes and “or-equals” in accordance with the General Conditions.**

The Contract for the Work, as awarded, will be on the basis of materials and equipment specified or described in the Bidding Documents without consideration during the bidding and Contract award process of possible substitute or “or-equal” items. In cases in which the Contract allows the Contractor to request that Engineer authorize the use of a substitute or “or-equal” item of material or equipment, application for such acceptance may not be made to and will not be considered by Engineer until after the Effective Date of the Contract.

All prices that Bidder sets forth in its Bid shall be based on the presumption that the Contractor will furnish the materials and equipment specified or described in the Bidding Documents, as supplemented by Addenda. Any assumptions regarding the possibility of post-Bid approvals of “or-equal” or substitution requests are made at Bidder’s sole risk.

ARTICLE 10 – SUBCONTRACTORS, SUPPLIERS, AND OTHERS

- 10.01 A Bidder shall be prepared to retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of the Work if required by the Bidding Documents (most commonly in the Specifications) to do so. If a prospective Bidder objects to retaining any such Subcontractor, Supplier, or other individual or entity, and the concern is not relieved by an Addendum, then the prospective Bidder should refrain from submitting a Bid.
- 10.02 The apparent Successful Bidder, and any other Bidder so requested, shall within five days after Bid opening, submit to Owner a list of the Subcontractors or Suppliers proposed for the following portions of the Work: **Directional Drilling**.
- If requested by Owner, such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification for each such Subcontractor, Supplier, or other individual or entity. If Owner or Engineer, after due investigation, has reasonable objection to any proposed Subcontractor, Supplier, individual, or entity, Owner may, before the Notice of Award is given, request apparent Successful Bidder to submit an acceptable substitute, in which case apparent Successful Bidder shall submit a substitute, Bidder's Bid price will be increased (or decreased) by the difference in cost occasioned by such substitution, and Owner may consider such price adjustment in evaluating Bids and making the Contract award.
- 10.03 If apparent Successful Bidder declines to make any such substitution, Owner may award the Contract to the next lowest Bidder that proposes to use acceptable Subcontractors, Suppliers, or other individuals or entities. Declining to make requested substitutions will constitute grounds for forfeiture of the Bid security of any Bidder. Any Subcontractor, Supplier, individual, or entity so listed and against which Owner or Engineer makes no written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Engineer subject to subsequent revocation of such acceptance as provided in Paragraph 7.06 of the General Conditions.
- 10.04 **Contractor shall not be required to employ any Subcontractor, Supplier, individual, or entity against whom Contractor has reasonable objection.**
- 10.06 **The Contractor shall not award work to Subcontractor(s) in excess of the limits stated in SC 7.06.**

ARTICLE 11 – PREPARATION OF BID

- 11.01 The Bid Form is included with the Bidding Documents.
- A. All blanks on the Bid Form shall be completed in ink and the Bid Form signed in ink. Erasures or alterations shall be initialed in ink by the person signing the Bid Form. A Bid price shall be indicated for each section, Bid item, alternate, adjustment unit price item, and unit price item listed therein.
- B. If the Bid Form expressly indicates that submitting pricing on a specific alternate item is optional, and Bidder elects to not furnish pricing for such optional alternate item, then Bidder may enter the words "No Bid" or "Not Applicable."
- 11.02 A Bid by a corporation shall be executed in the corporate name by a corporate officer (whose title must appear under the signature), accompanied by evidence of authority to sign. The corporate address and state of incorporation shall be shown.

- 11.03 A Bid by a partnership shall be executed in the partnership name and signed by a partner (whose title must appear under the signature), accompanied by evidence of authority to sign. The partnership's address for receiving notices shall be shown.
- 11.04 A Bid by a limited liability company shall be executed in the name of the firm by a member or other authorized person and accompanied by evidence of authority to sign. The state of formation of the firm and the firm's address for receiving notices shall be shown.
- 11.05 A Bid by an individual shall show the Bidder's name and address for receiving notices.
- 11.06 A Bid by a joint venture shall be executed by an authorized representative of each joint venturer in the manner indicated on the Bid Form. The joint venture's address for receiving notices shall be shown.
- 11.07 All names shall be printed in ink below the signatures.
- 11.08 The Bid shall contain an acknowledgment of receipt of all Addenda, the numbers of which shall be filled in on the Bid Form.
- 11.09 Postal and e-mail addresses and telephone number for communications regarding the Bid shall be shown.
- 11.10 The Bid shall contain evidence of Bidder's authority and qualification to do business in the state where the Project is located, or Bidder shall covenant in writing to obtain such authority and qualification prior to award of the Contract and attach such covenant to the Bid. Bidder's state contractor license number, if any, shall also be shown on the Bid Form.
- 11.11 **Each Bid must be submitted in a sealed envelope addressed to The Charter Township of Union. Each sealed envelope containing a Bid must be plainly marked on the outside as "Bid for Pickard/Summerton Road Water Main Loop" and the envelope should bear on the outside the name of the Bidder, Bidder address, Bidder license number, if applicable. If forwarded by mail, the sealed envelope containing the Bid must be enclosed in another envelope and received prior to the designated time for receipt of Bids.**

ARTICLE 12 – BASIS OF BID

12.01 *Unit Price*

- A. Bidders shall submit a Bid on a unit price basis for each item of Work listed in the unit price section of the Bid Form.
- B. The "Bid Price" (sometimes referred to as the extended price) for each unit price Bid item will be the product of the "Estimated Quantity" (which Owner or its representative has set forth in the Bid Form) for the item and the corresponding "Bid Unit Price" offered by the Bidder. The total of all unit price Bid items will be the sum of these "Bid Prices"; such total will be used by Owner for Bid comparison purposes. The final quantities and Contract Price will be determined in accordance with Paragraph 13.03 of the General Conditions.
- C. Discrepancies between the multiplication of units of Work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.

ARTICLE 13 – SUBMITTAL OF BID

- 13.01 With each copy of the Bidding Documents, a Bidder is furnished a copy of the Bid Form, and, if required, the Bid Bond Form. An unbound copy of the Bid Form is to be completed and submitted

with the Bid security and the other documents required to be submitted under the terms of Article 7 of the Bid Form.

- 13.02 A Bid shall be received no later than the date and time prescribed and at the place indicated in the advertisement or invitation to bid and shall be enclosed in a plainly marked package with the Project title (and, if applicable, the designated portion of the Project for which the Bid is submitted), the name and address of Bidder, and shall be accompanied by the Bid security and other required documents. If a Bid is sent by mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in a separate package plainly marked on the outside with the notation "BID ENCLOSED." A mailed Bid shall be addressed to **The Charter Township of Union, 2010 S. Lincoln, Mt. Pleasant, MI 48858.**
- 13.03 Bids received after the date and time prescribed for the opening of bids, or not submitted at the correct location or in the designated manner, will not be accepted and will be returned to the Bidder unopened.

ARTICLE 14 – MODIFICATION AND WITHDRAWAL OF BID

- 14.01 A Bid may be withdrawn by an appropriate document duly executed in the same manner that a Bid must be executed and delivered to the place where Bids are to be submitted prior to the date and time for the opening of Bids. Upon receipt of such notice, the unopened Bid will be returned to the Bidder.
- 14.02 If a Bidder wishes to modify its Bid prior to Bid opening, Bidder must withdraw its initial Bid in the manner specified in Paragraph 16.01 and submit a new Bid prior to the date and time for the opening of Bids.

ARTICLE 15 – OPENING OF BIDS

- 15.01 Bids will be opened at the time and place indicated in the advertisement or invitation to bid and, unless obviously non-responsive, read aloud publicly. An abstract of the amounts of the base Bids and major alternates, if any, will be made available to Bidders after the opening of Bids.

ARTICLE 16 – BIDS TO REMAIN SUBJECT TO ACCEPTANCE

- 16.01 All Bids will remain subject to acceptance for the period of time stated in the Bid Form, but Owner may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

ARTICLE 17 – EVALUATION OF BIDS AND AWARD OF CONTRACT

- 17.01 Owner reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. Owner will reject the Bid of any Bidder that Owner finds, after reasonable inquiry and evaluation, to not be responsible. If Bidder purports to add terms or conditions to its Bid, takes exception to any provision of the Bidding Documents, or attempts to alter the contents of the Contract Documents for purposes of the Bid, then the Owner will reject the Bid as nonresponsive; provided that Owner also reserves the right to waive all minor informalities not involving price, time, or changes in the Work.
- 17.02 If Owner awards the contract for the Work, such award shall be to the responsible Bidder whose bid, conforming with all terms and conditions of the Instructions to Bidders is lowest price and other factors considered.

17.03 Evaluation of Bids

- A. In evaluating Bids, Owner will consider whether or not the Bids comply with the prescribed requirements, and such alternates, unit prices, and other data, as may be requested in the Bid Form or prior to the Notice of Award.
 - B. In the comparison of Bids, alternates will be applied in the same order of priority as listed in the Bid Form. To determine the Bid prices for purposes of comparison, Owner shall announce to all bidders a "Base Bid plus alternates" budget after receiving all Bids, but prior to opening them. For comparison purposes alternates will be accepted, following the order of priority established in the Bid Form, until doing so would cause the budget to be exceeded. After determination of the Successful Bidder based on this comparative process and on the responsiveness, responsibility, and other factors set forth in these Instructions, the award may be made to said Successful Bidder on its base Bid and any combination of its additive alternate Bids for which Owner determines funds will be available at the time of award.
- 17.04 In evaluating whether a Bidder is responsible, Owner will consider the qualifications of the Bidder and may consider the qualifications and experience of Subcontractors and Suppliers proposed for those portions of the Work for which the identity of Subcontractors and Suppliers must be submitted as provided in the Bidding Documents.
- 17.05 Owner may conduct such investigations as Owner deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

ARTICLE 18 – BONDS AND INSURANCE

- 18.01 Article 6 of the General Conditions, as may be modified by the Supplementary Conditions, sets forth Owner's requirements as to performance and payment bonds and insurance. When the Successful Bidder delivers the Agreement (executed by Successful Bidder) to Owner, it shall be accompanied by required bonds and insurance documentation.

ARTICLE 19 – SIGNING OF AGREEMENT

- 19.01 When Owner issues a Notice of Award (EJCDC Form C-510, 2013 Edition) to the Successful Bidder, it shall be accompanied by the unexecuted counterparts of the Agreement along with the other Contract Documents as identified in the Agreement. Within 15 days thereafter, Successful Bidder shall execute and deliver the required number of counterparts of the Agreement (and any bonds and insurance documentation required to be delivered by the Contract Documents) to Owner. Within ten days thereafter, Owner shall deliver one fully executed counterpart of the Agreement to Successful Bidder, together with printed and electronic copies of the Contract Documents as stated in Paragraph 2.02 of the General Conditions.

ARTICLE 20 - EQUAL EMPLOYMENT OPPORTUNITY

- 20.01 Attention of Bidders is particularly called to the requirement for ensuring that employees and applicants for employment are not discriminated against because of their race, color, religion, sex or national origin.

ARTICLE 1 – BID RECIPIENT

- 1.01 This Bid is submitted to: _____
- 1.02 The undersigned Bidder proposes and agrees, if this Bid is accepted, to enter into an Agreement with Owner in the form included in the Bidding Documents to perform all Work as specified or indicated in the Bidding Documents for the prices and within the times indicated in this Bid and in accordance with the other terms and conditions of the Bidding Documents.

ARTICLE 2 – BIDDER’S ACKNOWLEDGEMENTS

- 2.01 Bidder accepts all of the terms and conditions of the Instructions to Bidders, including without limitation those dealing with the disposition of Bid security. This Bid will remain subject to acceptance for 90 days after the Bid opening, or for such longer period of time that Bidder may agree to in writing upon request of Owner.

ARTICLE 3 – BIDDER’S REPRESENTATIONS

- 3.01 In submitting this Bid, Bidder represents that:
 - A. Bidder has examined and carefully studied the Bidding Documents, and any data and reference items identified in the Bidding Documents, and hereby acknowledges receipt of the following Addenda:

| <u>Addendum No.</u> | <u>Addendum, Date</u> |
|---------------------|-----------------------|
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |
| _____ | _____ |

- B. Bidder has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and satisfied itself as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
- C. Bidder is familiar with and has satisfied itself as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
- D. Bidder has considered the information known to Bidder itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Bidding Documents; and any Site-related reports and drawings identified in the Bidding Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Bidder; and (3) Bidder’s safety precautions and programs.
- E. Bidder agrees, based on the information and observations referred to in the preceding paragraph, that no further examinations, investigations, explorations, tests, studies, or data are necessary for the determination of this Bid for performance of the Work at the price bid and within the times required, and in accordance with the other terms and conditions of the Bidding Documents.

- F. Bidder is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Bidding Documents.
- G. Bidder has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Bidder has discovered in the Bidding Documents, and confirms that the written resolution thereof by Engineer is acceptable to Bidder.
- H. The Bidding Documents are generally sufficient to indicate and convey understanding of all terms and conditions for the performance and furnishing of the Work.
- I. The submission of this Bid constitutes an incontrovertible representation by Bidder that Bidder has complied with every requirement of this Article, and that without exception the Bid and all prices in the Bid are premised upon performing and furnishing the Work required by the Bidding Documents.

ARTICLE 4 – BIDDER’S CERTIFICATION

4.01 Bidder certifies that:

- A. This Bid is genuine and not made in the interest of or on behalf of any undisclosed individual or entity and is not submitted in conformity with any collusive agreement or rules of any group, association, organization, or corporation;
- B. Bidder has not directly or indirectly induced or solicited any other Bidder to submit a false or sham Bid;
- C. Bidder has not solicited or induced any individual or entity to refrain from bidding; and
- D. Bidder has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for the Contract. For the purposes of this Paragraph 4.01.D:
 - 1. “corrupt practice” means the offering, giving, receiving, or soliciting of any thing of value likely to influence the action of a public official in the bidding process;
 - 2. “fraudulent practice” means an intentional misrepresentation of facts made (a) to influence the bidding process to the detriment of Owner, (b) to establish bid prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 - 3. “collusive practice” means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish bid prices at artificial, non-competitive levels; and
 - 4. “coercive practice” means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

ARTICLE 5 – BASIS OF BID

- 5.01 Bidder will complete the Work in accordance with the Contract Documents for the following price(s):

BID FORM

| Item No. | Description | Unit | Estimated Quantity | Bid Unit Price | Bid Price |
|--|--|------|--------------------|----------------|-----------|
| 1 | Mobilization | LS | 1 | | |
| 2 | Water Main, PVC C900, 12" | LF | 1,100 | | |
| 3 | Water Main, HDPE DR-11, Directional Drill, 12" | LF | 825 | | |
| 4 | Connect to Existing Water Main, 12" | EA | 1 | | |
| 5 | Connect to Existing Water Main, 8" | EA | 1 | | |
| 6 | Gate Valve & Box, 8" | EA | 2 | | |
| 7 | Fire Hydrant Assembly | EA | 4 | | |
| 8 | Sidewalk Removal & Replacement | SF | 3,100 | | |
| 9 | Sidewalk Ramp, ADA Compliant | SF | 50 | | |
| 10 | Driveway Patch, Asphalt | SY | 265 | | |
| 11 | Site Restoration | LS | 1 | | |
| Total of All Unit Price Bid Items | | | | | \$ |

Bidder acknowledges that (1) each Bid Unit Price includes an amount considered by Bidder to be adequate to cover Contractor's overhead and profit for each separately identified item, and (2) estimated quantities are not guaranteed, and are solely for the purpose of comparison of Bids, and final payment for all unit price Bid items will be based on actual quantities, determined as provided in the Contract Documents.

Total of Unit Price Bids = Total Bid Price \$ _____

ARTICLE 6 – TIME OF COMPLETION

- 6.01 Bidder agrees that the Work will be substantially complete and will be completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions on or before the dates or within the number of calendar days indicated in the Agreement.
- 6.02 Bidder accepts the provisions of the Agreement as to liquidated damages.

ARTICLE 7 – ATTACHMENTS TO THIS BID

- 7.01 The following documents are submitted with and made a condition of this Bid:
- A. Required Bid Bond or Security;
 - B. Bidder’s Experience Form/List of Subcontractors

ARTICLE 8 – DEFINED TERMS

8.01 The terms used in this Bid with initial capital letters have the meanings stated in the Instructions to Bidders, the General Conditions, and the Supplementary Conditions.

ARTICLE 9 – BID SUBMITTAL

BIDDER: *[Indicate correct name of bidding entity]*

By: _____
[Signature]

[Printed name]

(If Bidder is a corporation, a limited liability company, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____
[Signature]

[Printed name]

Title: _____

Submittal Date: _____

Address for giving notices:

Telephone Number: _____

Fax Number: _____

Contact Name and e-mail address: _____

Bidder’s License No.: _____

(where applicable)

BID BOND

Any singular reference to Bidder, Surety, Owner or other party shall be considered plural where applicable.

BIDDER (*Name and Address*):

SURETY (*Name, and Address of Principal Place of Business*):

OWNER (*Name and Address*):

BID

Bid Due Date:

Description (*Project Name— Include Location*):

BOND

Bond Number:

Date:

Penal sum _____ \$ _____
(Words) (Figures)

Surety and Bidder, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Bid Bond to be duly executed by an authorized officer, agent, or representative.

BIDDER

SURETY

Bidder's Name and Corporate Seal (Seal)

Surety's Name and Corporate Seal (Seal)

By: _____ By: _____
Signature Signature (Attach Power of Attorney)

Print Name Print Name

Title Title

Attest: _____ Attest: _____
Signature Signature

Title Title

*Note: Addresses are to be used for giving any required notice.
Provide execution by any additional parties, such as joint venturers, if necessary.*

1. Bidder and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to pay to Owner upon default of Bidder the penal sum set forth on the face of this Bond. Payment of the penal sum is the extent of Bidder's and Surety's liability. Recovery of such penal sum under the terms of this Bond shall be Owner's sole and exclusive remedy upon default of Bidder.
2. Default of Bidder shall occur upon the failure of Bidder to deliver within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents.
3. This obligation shall be null and void if:
 - 3.1 Owner accepts Bidder's Bid and Bidder delivers within the time required by the Bidding Documents (or any extension thereof agreed to in writing by Owner) the executed Agreement required by the Bidding Documents and any performance and payment bonds required by the Bidding Documents, or
 - 3.2 All Bids are rejected by Owner, or
 - 3.3 Owner fails to issue a Notice of Award to Bidder within the time specified in the Bidding Documents (or any extension thereof agreed to in writing by Bidder and, if applicable, consented to by Surety when required by Paragraph 5 hereof).
4. Payment under this Bond will be due and payable upon default of Bidder and within 30 calendar days after receipt by Bidder and Surety of written notice of default from Owner, which notice will be given with reasonable promptness, identifying this Bond and the Project and including a statement of the amount due.
5. Surety waives notice of any and all defenses based on or arising out of any time extension to issue Notice of Award agreed to in writing by Owner and Bidder, provided that the total time for issuing Notice of Award including extensions shall not in the aggregate exceed 120 days from the Bid due date without Surety's written consent.
6. No suit or action shall be commenced under this Bond prior to 30 calendar days after the notice of default required in Paragraph 4 above is received by Bidder and Surety and in no case later than one year after the Bid due date.
7. Any suit or action under this Bond shall be commenced only in a court of competent jurisdiction located in the state in which the Project is located.
8. Notices required hereunder shall be in writing and sent to Bidder and Surety at their respective addresses shown on the face of this Bond. Such notices may be sent by personal delivery, commercial courier, or by United States Registered or Certified Mail, return receipt requested, postage pre-paid, and shall be deemed to be effective upon receipt by the party concerned.
9. Surety shall cause to be attached to this Bond a current and effective Power of Attorney evidencing the authority of the officer, agent, or representative who executed this Bond on behalf of Surety to execute, seal, and deliver such Bond and bind the Surety thereby.
10. This Bond is intended to conform to all applicable statutory requirements. Any applicable requirement of any applicable statute that has been omitted from this Bond shall be deemed to be included herein as if set forth at length. If any provision of this Bond conflicts with any applicable statute, then the provision of said statute shall govern and the remainder of this Bond that is not in conflict therewith shall continue in full force and effect.
11. The term "Bid" as used herein includes a Bid, offer, or proposal as applicable.

BIDDER'S EXPERIENCE FORM

LIST OF SIMILAR PROJECTS SUCCESSFULLY COMPLETED IN MICHIGAN

| Contract With/ Project Name/Year | Reference Name Phone # | Original Price/ Final Price | Subcontractors |
|---|-----------------------------------|--|-----------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

BIDDER'S LIST OF SUBCONTRACTOR(S)

| Name | Address | Work to be Performed |
|-------------|----------------|-----------------------------|
| | | |
| | | |
| | | |
| | | |
| | | |

This form shall be completed and submitted with the Bid Form.

NOTICE OF AWARD

Date of Issuance:

Owner:

Owner's Contract No.:

Engineer:

Engineer's Project No.:

Project:

Contract Name:

Bidder:

Bidder's Address:

TO BIDDER:

You are notified that Owner has accepted your Bid dated [_____] for the above Contract, and that you are the Successful Bidder and are awarded a Contract for:

[describe Work, alternates, or sections of Work awarded]

The Contract Price of the awarded Contract is: \$ _____ *[note if subject to unit prices, or cost-plus]*

[] unexecuted counterparts of the Agreement accompany this Notice of Award, and one copy of the Contract Documents accompanies this Notice of Award, or has been transmitted or made available to Bidder electronically. *[revise if multiple copies accompany the Notice of Award]*

a set of the Drawings will be delivered separately from the other Contract Documents.

You must comply with the following conditions precedent within 15 days of the date of receipt of this Notice of Award:

1. Deliver to Owner [] counterparts of the Agreement, fully executed by Bidder.
2. Deliver with the executed Agreement(s) the Contract security *[e.g., performance and payment bonds]* and insurance documentation as specified in the Instructions to Bidders and General Conditions, Articles 2 and 6.
3. Other conditions precedent (if any):

Failure to comply with these conditions within the time specified will entitle Owner to consider you in default, annul this Notice of Award, and declare your Bid security forfeited.

Within ten days after you comply with the above conditions, Owner will return to you one fully executed counterpart of the Agreement, together with any additional copies of the Contract Documents as indicated in Paragraph 2.02 of the General Conditions.

Owner:

Authorized Signature

By:

Title:

Copy: Engineer

**AGREEMENT
BETWEEN OWNER AND CONTRACTOR
FOR CONSTRUCTION CONTRACT (STIPULATED PRICE)**

THIS AGREEMENT is by and between Charter Township of Union (“Owner”) and _____ (“Contractor”).

Owner and Contractor hereby agree as follows:

ARTICLE 1 – WORK

1.01 Contractor shall complete all Work as specified or indicated in the Contract Documents.

ARTICLE 2 – THE PROJECT

2.01 The Project, of which the Work under the Contract Documents is a part, is generally described as follows: Pickard/Summerton Road Water Main Loop

ARTICLE 3 – ENGINEER

3.01 The part of the Project that pertains to the Work has been designed by Gourdie-Fraser, Inc.

3.02 The Owner has retained Gourdie-Fraser, Inc. (“Engineer”) to act as Owner’s representative, assume all duties and responsibilities, and have the rights and authority assigned to Engineer in the Contract Documents in connection with the completion of the Work in accordance with the Contract Documents.

ARTICLE 4 – CONTRACT TIMES

4.01 *Time of the Essence*

A. All time limits for Milestones, if any, Substantial Completion, and completion and readiness for final payment as stated in the Contract Documents are of the essence of the Contract.

4.02 *Contract Times: Days*

A. The Work will be substantially completed within 90 calendar days after the date when the Contract Times commence to run as provided in Paragraph 4.01 of the General Conditions, and completed and ready for final payment in accordance with Paragraph 15.06 of the General Conditions within 30 days after the date when the Contract Times commence to run.

B. Parts of the Work shall be substantially completed on or before the following Milestone(s):

1. No Milestones Assigned

4.03 *Liquidated Damages*

A. Contractor and Owner recognize that time is of the essence as stated in Paragraph 4.01 above and that Owner will suffer financial and other losses if the Work is not completed and Milestones not achieved within the times specified in Paragraph 4.02 above, plus any extensions thereof allowed in accordance with the Contract. The parties also recognize the delays, expense, and difficulties involved in proving in a legal or arbitration proceeding the

actual loss suffered by Owner if the Work is not completed on time. Accordingly, instead of requiring any such proof, Owner and Contractor agree that as liquidated damages for delay (but not as a penalty):

1. Substantial Completion: Contractor shall pay Owner \$ 500 for each day that expires after the time (as duly adjusted pursuant to the Contract) specified in Paragraph 4.02.A above for Substantial Completion until the Work is substantially complete.
2. Completion of Remaining Work: After Substantial Completion, if Contractor shall neglect, refuse, or fail to complete the remaining Work within the Contract Times (as duly adjusted pursuant to the Contract) for completion and readiness for final payment, Contractor shall pay Owner \$ 500 for each day that expires after such time until the Work is completed and ready for final payment.
3. Liquidated damages for failing to timely attain Substantial Completion and final completion are not additive and will not be imposed concurrently.

ARTICLE 5 – CONTRACT PRICE

5.01 Owner shall pay Contractor for completion of the Work in accordance with the Contract Documents the amounts that follow, subject to adjustment under the Contract:

- A. For all Unit Price Work, an amount equal to the sum of the extended prices (established for each separately identified item of Unit Price Work by multiplying the unit price times the actual quantity of that item):

| Unit Price Work | | | | | |
|-----------------|--|------|--------------------|------------|----------------|
| Item No. | Description | Unit | Estimated Quantity | Unit Price | Extended Price |
| 1 | Mobilization | LS | 1 | | |
| 2 | Water Main, PVC C900, 12" | LF | 1,100 | | |
| 3 | Water Main, HDPE DR-11, Directional Drill, 12" | LF | 825 | | |
| 4 | Connect to Existing Water Main, 12" | EA | 1 | | |
| 5 | Connect to Existing Water Main, 8" | EA | 1 | | |
| 6 | Gate Valve & Box, 8" | EA | 2 | | |
| 7 | Fire Hydrant Assembly | EA | 4 | | |
| 8 | Sidewalk Removal & Replacement | SF | 3,100 | | |

| Unit Price Work | | | | | |
|---|------------------------------|------|--------------------|------------|----------------|
| Item No. | Description | Unit | Estimated Quantity | Unit Price | Extended Price |
| 9 | Sidewalk Ramp, ADA Compliant | SF | 50 | | |
| 10 | Driveway Patch, Asphalt | SY | 265 | | |
| 11 | Site Restoration | LS | 1 | | |
| Total of all Extended Prices for Unit Price Work (subject to final adjustment based on actual quantities) | | | | | \$ |

The extended prices for Unit Price Work set forth as of the Effective Date of the Contract are based on estimated quantities. As provided in Paragraph 13.03 of the General Conditions, estimated quantities are not guaranteed, and determinations of actual quantities and classifications are to be made by Engineer.

- B. For all Work, at the prices stated in Contractor's Bid, attached hereto as an exhibit.

ARTICLE 6 – PAYMENT PROCEDURES

6.01 Submittal and Processing of Payments

- A. Contractor shall submit Applications for Payment in accordance with Article 15 of the General Conditions. Applications for Payment will be processed by Engineer as provided in the General Conditions.

6.02 Progress Payments; Retainage

- A. Owner shall make progress payments on account of the Contract Price on the basis of Contractor's Applications for Payment on or about the 25th day of each month during performance of the Work as provided in Paragraph 6.02.A.1 below, provided that such Applications for Payment have been submitted in a timely manner and otherwise meet the requirements of the Contract. All such payments will be measured by the Schedule of Values established as provided in the General Conditions (and in the case of Unit Price Work based on the number of units completed) or, in the event there is no Schedule of Values, as provided elsewhere in the Contract.
1. Prior to Substantial Completion, progress payments will be made in an amount equal to the percentage indicated below but, in each case, less the aggregate of payments previously made and less such amounts as Owner may withhold, including but not limited to liquidated damages, in accordance with the Contract
 - a. 95 percent of Work completed (with the balance being retainage); and
 - b. 95 percent of cost of materials and equipment not incorporated in the Work (with the balance being retainage).
- B. Upon Substantial Completion of the entire construction to be provided under the Contract Documents, Owner shall pay an amount sufficient to increase total payments to Contractor to 100 percent of the Work completed, less such amounts set off by Owner pursuant to Paragraph 15.01.E of the General Conditions, and less 200 percent of Engineer's estimate of the value of Work to be completed or corrected as shown on the punch list of items to be completed or corrected prior to final payment.

6.03 *Final Payment*

- A. Upon final completion and acceptance of the Work in accordance with Paragraph 15.06 of the General Conditions, Owner shall pay the remainder of the Contract Price as recommended by Engineer as provided in said Paragraph 15.06.

ARTICLE 7 – INTEREST

7.01 All amounts not paid when due shall bear interest at the rate of 5.75 percent per annum.

ARTICLE 8 – CONTRACTOR’S REPRESENTATIONS

- 8.01 In order to induce Owner to enter into this Contract, Contractor makes the following representations:
- A. Contractor has examined and carefully studied the Contract Documents, and any data and reference items identified in the Contract Documents.
 - B. Contractor has visited the Site, conducted a thorough, alert visual examination of the Site and adjacent areas, and become familiar with and is satisfied as to the general, local, and Site conditions that may affect cost, progress, and performance of the Work.
 - C. Contractor is familiar with and is satisfied as to all Laws and Regulations that may affect cost, progress, and performance of the Work.
 - D. Contractor has carefully studied all: (1) reports of explorations and tests of subsurface conditions at or adjacent to the Site and all drawings of physical conditions relating to existing surface or subsurface structures at the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings, and (2) reports and drawings relating to Hazardous Environmental Conditions, if any, at or adjacent to the Site that have been identified in the Supplementary Conditions, especially with respect to Technical Data in such reports and drawings.
 - E. Contractor has considered the information known to Contractor itself; information commonly known to contractors doing business in the locality of the Site; information and observations obtained from visits to the Site; the Contract Documents; and the Site-related reports and drawings identified in the Contract Documents, with respect to the effect of such information, observations, and documents on (1) the cost, progress, and performance of the Work; (2) the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor; and (3) Contractor’s safety precautions and programs.
 - F. Based on the information and observations referred to in the preceding paragraph, Contractor agrees that no further examinations, investigations, explorations, tests, studies, or data are necessary for the performance of the Work at the Contract Price, within the Contract Times, and in accordance with the other terms and conditions of the Contract.
 - G. Contractor is aware of the general nature of work to be performed by Owner and others at the Site that relates to the Work as indicated in the Contract Documents.
 - H. Contractor has given Engineer written notice of all conflicts, errors, ambiguities, or discrepancies that Contractor has discovered in the Contract Documents, and the written resolution thereof by Engineer is acceptable to Contractor.
 - I. The Contract Documents are generally sufficient to indicate and convey understanding of all terms and conditions for performance and furnishing of the Work.

ARTICLE 9 – CONTRACT DOCUMENTS

9.01 Contents

- A. The Contract Documents consist of the following:
1. This Agreement (pages 1 to ____, inclusive).
 2. Performance bond (pages ____ to ____, inclusive).
 3. Payment bond (pages ____ to ____, inclusive).
 4. Other bonds.
 - a. ____ (pages ____ to ____, inclusive).
 5. General Conditions (pages ____ to ____, inclusive).
 6. Supplementary Conditions (pages ____ to ____, inclusive).
 7. Specifications as listed in the table of contents of the Project Manual.
 8. Drawings (not attached but incorporated by reference) consisting of ____ sheets with each sheet bearing the following general title: ____ [or] the Drawings listed on the attached sheet index.
 9. Addenda (numbers ____ to ____, inclusive).
 10. Exhibits to this Agreement (enumerated as follows):
 - a. Contractor's Bid (pages ____ to ____, inclusive).
 11. The following which may be delivered or issued on or after the Effective Date of the Contract and are not attached hereto:
 - a. Notice to Proceed (pages ____ to ____, inclusive).
 - b. Work Change Directives (pages ____ to ____, inclusive).
 - c. Change Orders (pages ____ to ____, inclusive).
- B. The documents listed in Paragraph 9.01.A are attached to this Agreement (except as expressly noted otherwise above).
- C. The Contract Documents may only be amended, modified, or supplemented as provided in the General Conditions.

ARTICLE 10 – MISCELLANEOUS

10.01 Terms

- A. Terms used in this Agreement will have the meanings stated in the General Conditions and the Supplementary Conditions.

10.02 Assignment of Contract

- A. Unless expressly agreed to elsewhere in the Contract, no assignment by a party hereto of any rights under or interests in the Contract will be binding on another party hereto without the written consent of the party sought to be bound; and, specifically but without limitation, money that may become due and money that is due may not be assigned without such consent (except to the extent that the effect of this restriction may be limited by law), and unless specifically stated to the contrary in any written consent to an assignment, no

assignment will release or discharge the assignor from any duty or responsibility under the Contract Documents.

10.03 *Successors and Assigns*

- A. Owner and Contractor each binds itself, its successors, assigns, and legal representatives to the other party hereto, its successors, assigns, and legal representatives in respect to all covenants, agreements, and obligations contained in the Contract Documents.

10.04 *Severability*

- A. Any provision or part of the Contract Documents held to be void or unenforceable under any Law or Regulation shall be deemed stricken, and all remaining provisions shall continue to be valid and binding upon Owner and Contractor, who agree that the Contract Documents shall be reformed to replace such stricken provision or part thereof with a valid and enforceable provision that comes as close as possible to expressing the intention of the stricken provision.

10.05 *Contractor's Certifications*

- A. Contractor certifies that it has not engaged in corrupt, fraudulent, collusive, or coercive practices in competing for or in executing the Contract. For the purposes of this Paragraph 10.05:
1. "corrupt practice" means the offering, giving, receiving, or soliciting of anything of value likely to influence the action of a public official in the bidding process or in the Contract execution;
 2. "fraudulent practice" means an intentional misrepresentation of facts made (a) to influence the bidding process or the execution of the Contract to the detriment of Owner, (b) to establish Bid or Contract prices at artificial non-competitive levels, or (c) to deprive Owner of the benefits of free and open competition;
 3. "collusive practice" means a scheme or arrangement between two or more Bidders, with or without the knowledge of Owner, a purpose of which is to establish Bid prices at artificial, non-competitive levels; and
 4. "coercive practice" means harming or threatening to harm, directly or indirectly, persons or their property to influence their participation in the bidding process or affect the execution of the Contract.

10.06 *Other Provisions*

- A. Owner stipulates that if the General Conditions that are made a part of this Contract are based on EJCDC® C-700, Standard General Conditions for the Construction Contract, published by the Engineers Joint Contract Documents Committee®, and if Owner is the party that has furnished said General Conditions, then Owner has plainly shown all modifications to the standard wording of such published document to the Contractor, through a process in the Supplementary Conditions.

IN WITNESS WHEREOF, Owner and Contractor have signed this Agreement.

This Agreement will be effective on _____ (which is the Effective Date of the Contract).

1.

OWNER:

CONTRACTOR:

By: _____

By: _____

Title: _____

Title: _____

(If Contractor is a corporation, a partnership, or a joint venture, attach evidence of authority to sign.)

Attest: _____

Attest: _____

Title: _____

Title: _____

Address for giving notices:

Address for giving notices:

License No.: _____
(where applicable)

(If Owner is a corporation, attach evidence of authority to sign. If Owner is a public body, attach evidence of authority to sign and resolution or other documents authorizing execution of this Agreement.)

NOTE TO USER: Use in those states or other jurisdictions where applicable or required.

NOTICE TO PROCEED

Owner: _____ Owner's Contract No.: _____
Contractor: _____ Contractor's Project No.: _____
Engineer: _____ Engineer's Project No.: _____
Project: _____ Contract Name: _____
Effective Date of Contract: _____

TO CONTRACTOR:

Owner hereby notifies Contractor that the Contract Times under the above Contract will commence to run on [_____, 20__]. *[see Paragraph 4.01 of the General Conditions]*

On that date, Contractor shall start performing its obligations under the Contract Documents. No Work shall be done at the Site prior to such date. In accordance with the Agreement, [the date of Substantial Completion is _____, and the date of readiness for final payment is _____] *or* [the number of days to achieve Substantial Completion is _____, and the number of days to achieve readiness for final payment is _____].

Before starting any Work at the Site, Contractor must comply with the following:
[Note any access limitations, security procedures, or other restrictions]

Owner:

Authorized Signature

By:

Title:

Date Issued:

Copy: Engineer

PERFORMANCE BOND

CONTRACTOR *(name and address)*:

SURETY *(name and address of principal place of business)*:

OWNER *(name and address)*:

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location)*:

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract)*:

Amount:

Modifications to this Bond Form: None See Paragraph 16

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Performance Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

2. If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Paragraph 3.

3. If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after:

3.1 The Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor, and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Paragraph 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor, and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

3.2 The Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

3.3 The Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

4. Failure on the part of the Owner to comply with the notice requirement in Paragraph 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

5. When the Owner has satisfied the conditions of Paragraph 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owners concurrence, to be secured with performance and payment bonds executed by a

qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Paragraph 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor, and with reasonable promptness under the circumstances:

5.4.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

5.4.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

6. If the Surety does not proceed as provided in Paragraph 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Paragraph 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

7. If the Surety elects to act under Paragraph 5.1, 5.2, or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication for:

7.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

7.2 additional legal, design professional, and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Paragraph 5; and

7.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

8. If the Surety elects to act under Paragraph 5.1, 5.3, or 5.4, the Surety's liability is limited to the amount of this Bond.

9. The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors, and assigns.

10. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.

11. Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this paragraph are void or prohibited by law, the minimum periods of limitations available to sureties as a defense in the jurisdiction of the suit shall be applicable.

12. Notice to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

13. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

14. Definitions

14.1 Balance of the Contract Price: The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made including allowance for the Contractor for any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper

payments made to or on behalf of the Contractor under the Construction Contract.

14.2 Construction Contract: The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

14.3 Contractor Default: Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

14.4 Owner Default: Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

14.5 Contract Documents: All the documents that comprise the agreement between the Owner and Contractor.

15. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

16. Modifications to this Bond are as follows:

PAYMENT BOND

CONTRACTOR *(name and address):*

SURETY *(name and address of principal place of business):*

OWNER *(name and address):*

CONSTRUCTION CONTRACT

Effective Date of the Agreement:

Amount:

Description *(name and location):*

BOND

Bond Number:

Date *(not earlier than the Effective Date of the Agreement of the Construction Contract):*

Amount:

Modifications to this Bond Form: None See Paragraph 18

Surety and Contractor, intending to be legally bound hereby, subject to the terms set forth below, do each cause this Payment Bond to be duly executed by an authorized officer, agent, or representative.

CONTRACTOR AS PRINCIPAL

SURETY

Contractor's Name and Corporate Seal *(seal)*

Surety's Name and Corporate Seal *(seal)*

By: _____
Signature

By: _____
Signature *(attach power of attorney)*

Print Name

Print Name

Title

Title

Attest: _____
Signature

Attest: _____
Signature

Title

Title

Notes: (1) Provide supplemental execution by any additional parties, such as joint venturers. (2) Any singular reference to Contractor, Surety, Owner, or other party shall be considered plural where applicable.

1. The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors, and assigns to the Owner to pay for labor, materials, and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.
2. If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies, and holds harmless the Owner from claims, demands, liens, or suits by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.
3. If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Paragraph 13) of claims, demands, liens, or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials, or equipment furnished for use in the performance of the Construction Contract, and tendered defense of such claims, demands, liens, or suits to the Contractor and the Surety.
4. When the Owner has satisfied the conditions in Paragraph 3, the Surety shall promptly and at the Surety's expense defend, indemnify, and hold harmless the Owner against a duly tendered claim, demand, lien, or suit.
5. The Surety's obligations to a Claimant under this Bond shall arise after the following:
 - 5.1 Claimants who do not have a direct contract with the Contractor,
 - 5.1.1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
 - 5.1.2 have sent a Claim to the Surety (at the address described in Paragraph 13).
 - 5.2 Claimants who are employed by or have a direct contract with the Contractor have sent a Claim to the Surety (at the address described in Paragraph 13).
6. If a notice of non-payment required by Paragraph 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Paragraph 5.1.1.
7. When a Claimant has satisfied the conditions of Paragraph 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:
 - 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and
 - 7.2 Pay or arrange for payment of any undisputed amounts.
 - 7.3 The Surety's failure to discharge its obligations under Paragraph 7.1 or 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Paragraph 7.1 or 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.
8. The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Paragraph 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.
9. Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.
10. The Surety shall not be liable to the Owner, Claimants, or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to or give notice on behalf of Claimants, or otherwise have any obligations to Claimants under this Bond.
11. The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders, and other obligations.
12. No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the

Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Paragraph 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

13. Notice and Claims to the Surety, the Owner, or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.
14. When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.
15. Upon requests by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

16. Definitions

16.1 **Claim:** A written statement by the Claimant including at a minimum:

1. The name of the Claimant;
2. The name of the person for whom the labor was done, or materials or equipment furnished;
3. A copy of the agreement or purchase order pursuant to which labor, materials, or equipment was furnished for use in the performance of the Construction Contract;
4. A brief description of the labor, materials, or equipment furnished;
5. The date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
6. The total amount earned by the Claimant for labor, materials, or equipment furnished as of the date of the Claim;
7. The total amount of previous payments received by the Claimant; and
8. The total amount due and unpaid to the Claimant for labor, materials, or equipment furnished as of the date of the Claim.

16.2 **Claimant:** An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials, or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms of "labor, materials, or equipment" that part of the water, gas, power, light, heat, oil, gasoline, telephone service, or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials, or equipment were furnished.

16.3 **Construction Contract:** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

16.4 **Owner Default:** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

16.5 **Contract Documents:** All the documents that comprise the agreement between the Owner and Contractor.

17. If this Bond is issued for an agreement between a contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

18. Modifications to this Bond are as follows:

Contractor's Application for Payment No. 1

| | |
|---|--|
| To (Owner): Project: Owner's Contract No.: | Application Period: From (Contractor): Contractor Address: Contractor's Project No.: Via (Engineer): Engineer Address: Engineer's Project No.: |
|---|--|

**Application For Payment
Change Order Summary**

| Approved Change Orders | Additions | Deductions | |
|------------------------|-----------|------------|--|
| Number | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| TOTALS | | | |
| NET CHANGE BY | | | |
| CHANGE ORDERS | | | |

| | | |
|--|----|--|
| 1. ORIGINAL CONTRACT PRICE..... | \$ | |
| 2. Net change by Change Orders..... | \$ | |
| 3. Current Contract Price (Line 1 ± 2)..... | \$ | |
| 4. TOTAL COMPLETED AND STORED TO DATE (Column F total on Progress Estimates)..... | \$ | |
| 5. RETAINAGE: | | |
| a. X Work Completed..... | \$ | |
| b. X Stored Material..... | \$ | |
| c. Total Retainage (Line 5.a + Line 5.b)..... | \$ | |
| 6. AMOUNT ELIGIBLE TO DATE (Line 4 - Line 5.c)..... | \$ | |
| 7. LESS PREVIOUS PAYMENTS (Line 6 from prior Application)..... | \$ | |
| 8. AMOUNT DUE THIS APPLICATION..... | \$ | |
| 9. BALANCE TO FINISH, PLUS RETAINAGE (Column G total on Progress Estimates + Line 5.c above)..... | \$ | |

Contractor's Certification

The undersigned Contractor certifies, to the best of its knowledge, the following:

- (1) All previous progress payments received from Owner on account of Work done under the Contract have been applied on account to discharge Contractor's legitimate obligations incurred in connection with the Work covered by prior Applications for Payment;
- (2) Title to all Work, materials and equipment incorporated in said Work, or otherwise listed in or covered by this Application for Payment, will pass to Owner at time of payment free and clear of all Liens, security interests, and encumbrances (except such as are covered by a bond acceptable to Owner indemnifying Owner against any such Liens, security interest, or encumbrances); and
- (3) All the Work covered by this Application for Payment is in accordance with the Contract Documents and is not defective.

| | |
|-----------------------------|-------|
| Contractor Signature | Date: |
|-----------------------------|-------|

| | |
|--|--|
| Payment of: \$ _____ | (Line 8 or other - attach explanation of the other amount) |
| is recommended by: _____ (Engineer) _____ (Date) | |
| Payment of: \$ _____ | (Line 8 or other - attach explanation of the other amount) |
| is approved by: _____ (Owner) _____ (Date) | |
| Approved by: _____ | Funding or Financing Entity (if applicable) _____ (Date) |

Progress Estimate - Unit Price Work

Contractor's Application

| For (Contract): | | | | | | | Application Number: 1 | | | | | | | |
|---------------------|-------------|----------------------|-------|------------|--------------------------|----------------|--------------------------|-----------------------|---------------------------------|---|--|--------------------|---------------------------|--|
| Application Period: | | | | | | | Application Date: | | | | | | | |
| Item | | Contract Information | | | | B | | C | | D | E | F | G | |
| | | Item Qty | Units | Unit Price | Total Value of Item (\$) | Qty Instd Prev | Value of Work Instd Prev | Qty Instd This Period | Value of Work Instd This Period | Value of Materials Presently Stored (not in C or D) | Total Completed and Stored to Date (C + D + E) | % Complete (F / B) | Balance to Finish (B - F) | |
| Bid Item No. | Description | | | | | | | | | | | | | |
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Progress Estimate - Unit Price Work

Contractor's Application

| For (Contract): | | | | | | | | | | Application Number: 1 | | | | |
|--------------------|------------------|----------|-------|------------|----------------------|--------------------------|----------------|--------------------------|-----------------------|---------------------------------|---|--|--------------------|---------------------------|
| Application Period | | | | | | | | | | Application Date: | | | | |
| Bid Item No. | Item Description | A | | | B | | | C | | D | E | F | G | |
| | | Item Qty | Units | Unit Price | Contract Information | Total Value of Item (\$) | Qty Instd Prev | Value of Work Instd Prev | Qty Instd This Period | Value of Work Instd This Period | Value of Materials Presently Stored (not in C or D) | Total Completed and Stored to Date (C + D + E) | % Complete (F / B) | Balance to Finish (B - F) |
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| Totals | | | | | | | | | | | | | | |

CERTIFICATE OF SUBSTANTIAL COMPLETION

| | |
|-------------|---------------------------|
| Owner: | Owner's Contract No.: |
| Contractor: | Contractor's Project No.: |
| Engineer: | Engineer's Project No.: |
| Project: | Contract Name: |

This [preliminary] [final] Certificate of Substantial Completion applies to:

All Work The following specified portions of the Work:

Date of Substantial Completion

The Work to which this Certificate applies has been inspected by authorized representatives of Owner, Contractor, and Engineer, and found to be substantially complete. The Date of Substantial Completion of the Work or portion thereof designated above is hereby established, subject to the provisions of the Contract pertaining to Substantial Completion. The date of Substantial Completion in the final Certificate of Substantial Completion marks the commencement of the contractual correction period and applicable warranties required by the Contract.

A punch list of items to be completed or corrected is attached to this Certificate. This list may not be all-inclusive, and the failure to include any items on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract.

The responsibilities between Owner and Contractor for security, operation, safety, maintenance, heat, utilities, insurance, and warranties upon Owner's use or occupancy of the Work shall be as provided in the Contract, except as amended as follows: *[Note: Amendments of contractual responsibilities recorded in this Certificate should be the product of mutual agreement of Owner and Contractor; see Paragraph 15.03.D of the General Conditions.]*

Amendments to Owner's responsibilities: None
 As follows

Amendments to Contractor's responsibilities: None
 As follows:

The following documents are attached to and made a part of this Certificate: *[punch list; others]*

This Certificate does not constitute an acceptance of Work not in accordance with the Contract Documents, nor is it a release of Contractor's obligation to complete the Work in accordance with the Contract.

| | | |
|-------------------------------------|---|--|
| EXECUTED BY ENGINEER: | RECEIVED: | RECEIVED: |
| By: _____ (Authorized signature) | By: _____ Owner (Authorized Signature) | By: _____ Contractor (Authorized Signature) |
| Title: _____ | Title: _____ | Title: _____ |
| Date: _____ | Date: _____ | Date: _____ |

This document has important legal consequences; consultation with an attorney is encouraged with respect to its use or modification. This document should be adapted to the particular circumstances of the contemplated Project and the controlling Laws and Regulations.

STANDARD GENERAL CONDITIONS OF THE CONSTRUCTION CONTRACT

Prepared by



Issued and Published Jointly by



Endorsed by



These General Conditions have been prepared for use with the Agreement Between Owner and Contractor for Construction Contract (EJCDC® C-520, Stipulated Sum, or C-525, Cost-Plus, 2013 Editions). Their provisions are interrelated and a change in one may necessitate a change in the other.

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ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

1.01 *Defined Terms*

- A. Wherever used in the Bidding Requirements or Contract Documents, a term printed with initial capital letters, including the term's singular and plural forms, will have the meaning indicated in the definitions below. In addition to terms specifically defined, terms with initial capital letters in the Contract Documents include references to identified articles and paragraphs, and the titles of other documents or forms.
1. *Addenda*—Written or graphic instruments issued prior to the opening of Bids which clarify, correct, or change the Bidding Requirements or the proposed Contract Documents.
 2. *Agreement*—The written instrument, executed by Owner and Contractor, that sets forth the Contract Price and Contract Times, identifies the parties and the Engineer, and designates the specific items that are Contract Documents.
 3. *Application for Payment*—The form acceptable to Engineer which is to be used by Contractor during the course of the Work in requesting progress or final payments and which is to be accompanied by such supporting documentation as is required by the Contract Documents.
 4. *Bid*—The offer of a Bidder submitted on the prescribed form setting forth the prices for the Work to be performed.
 5. *Bidder*—An individual or entity that submits a Bid to Owner.
 6. *Bidding Documents*—The Bidding Requirements, the proposed Contract Documents, and all Addenda.
 7. *Bidding Requirements*—The advertisement or invitation to bid, Instructions to Bidders, Bid Bond or other Bid security, if any, the Bid Form, and the Bid with any attachments.
 8. *Change Order*—A document which is signed by Contractor and Owner and authorizes an addition, deletion, or revision in the Work or an adjustment in the Contract Price or the Contract Times, or other revision to the Contract, issued on or after the Effective Date of the Contract.
 9. *Change Proposal*—A written request by Contractor, duly submitted in compliance with the procedural requirements set forth herein, seeking an adjustment in Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; challenging a set-off against payments due; or seeking other relief with respect to the terms of the Contract.
 10. *Claim*—(a) A demand or assertion by Owner directly to Contractor, duly submitted in compliance with the procedural requirements set forth herein: seeking an adjustment of Contract Price or Contract Times, or both; contesting an initial decision by Engineer concerning the requirements of the Contract Documents or the acceptability of Work under the Contract Documents; contesting Engineer's decision regarding a Change Proposal; seeking resolution of a contractual issue that Engineer has declined to address; or seeking other relief with respect to the terms of the Contract; or (b) a demand or assertion by Contractor directly to Owner, duly submitted in compliance with the procedural requirements set forth herein, contesting Engineer's decision

regarding a Change Proposal; or seeking resolution of a contractual issue that Engineer has declined to address. A demand for money or services by a third party is not a Claim.

11. *Constituent of Concern*—Asbestos, petroleum, radioactive materials, polychlorinated biphenyls (PCBs), hazardous waste, and any substance, product, waste, or other material of any nature whatsoever that is or becomes listed, regulated, or addressed pursuant to (a) the Comprehensive Environmental Response, Compensation and Liability Act, 42 U.S.C. §§9601 et seq. (“CERCLA”); (b) the Hazardous Materials Transportation Act, 49 U.S.C. §§5101 et seq.; (c) the Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq. (“RCRA”); (d) the Toxic Substances Control Act, 15 U.S.C. §§2601 et seq.; (e) the Clean Water Act, 33 U.S.C. §§1251 et seq.; (f) the Clean Air Act, 42 U.S.C. §§7401 et seq.; or (g) any other federal, state, or local statute, law, rule, regulation, ordinance, resolution, code, order, or decree regulating, relating to, or imposing liability or standards of conduct concerning, any hazardous, toxic, or dangerous waste, substance, or material.
12. *Contract*—The entire and integrated written contract between the Owner and Contractor concerning the Work.
13. *Contract Documents*—Those items so designated in the Agreement, and which together comprise the Contract.
14. *Contract Price*—The money that Owner has agreed to pay Contractor for completion of the Work in accordance with the Contract Documents. .
15. *Contract Times*—The number of days or the dates by which Contractor shall: (a) achieve Milestones, if any; (b) achieve Substantial Completion; and (c) complete the Work.
16. *Contractor*—The individual or entity with which Owner has contracted for performance of the Work.
17. *Cost of the Work*—See Paragraph 13.01 for definition.
18. *Drawings*—The part of the Contract that graphically shows the scope, extent, and character of the Work to be performed by Contractor.
19. *Effective Date of the Contract*—The date, indicated in the Agreement, on which the Contract becomes effective.
20. *Engineer*—The individual or entity named as such in the Agreement.
21. *Field Order*—A written order issued by Engineer which requires minor changes in the Work but does not change the Contract Price or the Contract Times.
22. *Hazardous Environmental Condition*—The presence at the Site of Constituents of Concern in such quantities or circumstances that may present a danger to persons or property exposed thereto. The presence at the Site of materials that are necessary for the execution of the Work, or that are to be incorporated in the Work, and that are controlled and contained pursuant to industry practices, Laws and Regulations, and the requirements of the Contract, does not establish a Hazardous Environmental Condition.
23. *Laws and Regulations; Laws or Regulations*—Any and all applicable laws, statutes, rules, regulations, ordinances, codes, and orders of any and all governmental bodies, agencies, authorities, and courts having jurisdiction.
24. *Liens*—Charges, security interests, or encumbrances upon Contract-related funds, real property, or personal property.

25. *Milestone*—A principal event in the performance of the Work that the Contract requires Contractor to achieve by an intermediate completion date or by a time prior to Substantial Completion of all the Work.
26. *Notice of Award*—The written notice by Owner to a Bidder of Owner’s acceptance of the Bid.
27. *Notice to Proceed*—A written notice by Owner to Contractor fixing the date on which the Contract Times will commence to run and on which Contractor shall start to perform the Work.
28. *Owner*—The individual or entity with which Contractor has contracted regarding the Work, and which has agreed to pay Contractor for the performance of the Work, pursuant to the terms of the Contract.
29. *Progress Schedule*—A schedule, prepared and maintained by Contractor, describing the sequence and duration of the activities comprising the Contractor’s plan to accomplish the Work within the Contract Times.
30. *Project*—The total undertaking to be accomplished for Owner by engineers, contractors, and others, including planning, study, design, construction, testing, commissioning, and start-up, and of which the Work to be performed under the Contract Documents is a part.
31. *Project Manual*—The written documents prepared for, or made available for, procuring and constructing the Work, including but not limited to the Bidding Documents or other construction procurement documents, geotechnical and existing conditions information, the Agreement, bond forms, General Conditions, Supplementary Conditions, and Specifications. The contents of the Project Manual may be bound in one or more volumes.
32. *Resident Project Representative*—The authorized representative of Engineer assigned to assist Engineer at the Site. As used herein, the term Resident Project Representative or “RPR” includes any assistants or field staff of Resident Project Representative.
33. *Samples*—Physical examples of materials, equipment, or workmanship that are representative of some portion of the Work and that establish the standards by which such portion of the Work will be judged.
34. *Schedule of Submittals*—A schedule, prepared and maintained by Contractor, of required submittals and the time requirements for Engineer’s review of the submittals and the performance of related construction activities.
35. *Schedule of Values*—A schedule, prepared and maintained by Contractor, allocating portions of the Contract Price to various portions of the Work and used as the basis for reviewing Contractor’s Applications for Payment.
36. *Shop Drawings*—All drawings, diagrams, illustrations, schedules, and other data or information that are specifically prepared or assembled by or for Contractor and submitted by Contractor to illustrate some portion of the Work. Shop Drawings, whether approved or not, are not Drawings and are not Contract Documents.
37. *Site*—Lands or areas indicated in the Contract Documents as being furnished by Owner upon which the Work is to be performed, including rights-of-way and easements, and such other lands furnished by Owner which are designated for the use of Contractor.

38. *Specifications*—The part of the Contract that consists of written requirements for materials, equipment, systems, standards, and workmanship as applied to the Work, and certain administrative requirements and procedural matters applicable to the Work.
39. *Subcontractor*—An individual or entity having a direct contract with Contractor or with any other Subcontractor for the performance of a part of the Work.
40. *Substantial Completion*—The time at which the Work (or a specified part thereof) has progressed to the point where, in the opinion of Engineer, the Work (or a specified part thereof) is sufficiently complete, in accordance with the Contract Documents, so that the Work (or a specified part thereof) can be utilized for the purposes for which it is intended. The terms “substantially complete” and “substantially completed” as applied to all or part of the Work refer to Substantial Completion thereof.
41. *Successful Bidder*—The Bidder whose Bid the Owner accepts, and to which the Owner makes an award of contract, subject to stated conditions.
42. *Supplementary Conditions*—The part of the Contract that amends or supplements these General Conditions.
43. *Supplier*—A manufacturer, fabricator, supplier, distributor, materialman, or vendor having a direct contract with Contractor or with any Subcontractor to furnish materials or equipment to be incorporated in the Work by Contractor or a Subcontractor.
44. *Technical Data*—Those items expressly identified as Technical Data in the Supplementary Conditions, with respect to either (a) subsurface conditions at the Site, or physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities) or (b) Hazardous Environmental Conditions at the Site. If no such express identifications of Technical Data have been made with respect to conditions at the Site, then the data contained in boring logs, recorded measurements of subsurface water levels, laboratory test results, and other factual, objective information regarding conditions at the Site that are set forth in any geotechnical or environmental report prepared for the Project and made available to Contractor are hereby defined as Technical Data with respect to conditions at the Site under Paragraphs 5.03, 5.04, and 5.06.
45. *Underground Facilities*—All underground pipelines, conduits, ducts, cables, wires, manholes, vaults, tanks, tunnels, or other such facilities or attachments, and any encasements containing such facilities, including but not limited to those that convey electricity, gases, steam, liquid petroleum products, telephone or other communications, fiber optic transmissions, cable television, water, wastewater, storm water, other liquids or chemicals, or traffic or other control systems.
46. *Unit Price Work*—Work to be paid for on the basis of unit prices.
47. *Work*—The entire construction or the various separately identifiable parts thereof required to be provided under the Contract Documents. Work includes and is the result of performing or providing all labor, services, and documentation necessary to produce such construction; furnishing, installing, and incorporating all materials and equipment into such construction; and may include related services such as testing, start-up, and commissioning, all as required by the Contract Documents.
48. *Work Change Directive*—A written directive to Contractor issued on or after the Effective Date of the Contract, signed by Owner and recommended by Engineer, ordering an addition, deletion, or revision in the Work.

1.02 Terminology

- A. The words and terms discussed in the following paragraphs are not defined but, when used in the Bidding Requirements or Contract Documents, have the indicated meaning.
- B. *Intent of Certain Terms or Adjectives:*
1. The Contract Documents include the terms “as allowed,” “as approved,” “as ordered,” “as directed” or terms of like effect or import to authorize an exercise of professional judgment by Engineer. In addition, the adjectives “reasonable,” “suitable,” “acceptable,” “proper,” “satisfactory,” or adjectives of like effect or import are used to describe an action or determination of Engineer as to the Work. It is intended that such exercise of professional judgment, action, or determination will be solely to evaluate, in general, the Work for compliance with the information in the Contract Documents and with the design concept of the Project as a functioning whole as shown or indicated in the Contract Documents (unless there is a specific statement indicating otherwise). The use of any such term or adjective is not intended to and shall not be effective to assign to Engineer any duty or authority to supervise or direct the performance of the Work, or any duty or authority to undertake responsibility contrary to the provisions of Article 10 or any other provision of the Contract Documents.
- C. *Day:*
1. The word “day” means a calendar day of 24 hours measured from midnight to the next midnight.
- D. *Defective:*
1. The word “defective,” when modifying the word “Work,” refers to Work that is unsatisfactory, faulty, or deficient in that it:
 - a. does not conform to the Contract Documents; or
 - b. does not meet the requirements of any applicable inspection, reference standard, test, or approval referred to in the Contract Documents; or
 - c. has been damaged prior to Engineer’s recommendation of final payment (unless responsibility for the protection thereof has been assumed by Owner at Substantial Completion in accordance with Paragraph 15.03 or 15.04).
- E. *Furnish, Install, Perform, Provide:*
1. The word “furnish,” when used in connection with services, materials, or equipment, shall mean to supply and deliver said services, materials, or equipment to the Site (or some other specified location) ready for use or installation and in usable or operable condition.
 2. The word “install,” when used in connection with services, materials, or equipment, shall mean to put into use or place in final position said services, materials, or equipment complete and ready for intended use.
 3. The words “perform” or “provide,” when used in connection with services, materials, or equipment, shall mean to furnish and install said services, materials, or equipment complete and ready for intended use.
 4. If the Contract Documents establish an obligation of Contractor with respect to specific services, materials, or equipment, but do not expressly use any of the four words

“furnish,” “install,” “perform,” or “provide,” then Contractor shall furnish and install said services, materials, or equipment complete and ready for intended use.

- F. Unless stated otherwise in the Contract Documents, words or phrases that have a well-known technical or construction industry or trade meaning are used in the Contract Documents in accordance with such recognized meaning.

ARTICLE 2 – PRELIMINARY MATTERS

2.01 *Delivery of Bonds and Evidence of Insurance*

- A. *Bonds*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner such bonds as Contractor may be required to furnish.
- B. *Evidence of Contractor’s Insurance*: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract), the certificates and other evidence of insurance required to be provided by Contractor in accordance with Article 6.
- C. *Evidence of Owner’s Insurance*: After receipt of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor, with copies to each named insured and additional insured (as identified in the Supplementary Conditions or otherwise), the certificates and other evidence of insurance required to be provided by Owner under Article 6.

2.02 *Copies of Documents*

- A. Owner shall furnish to Contractor four printed copies of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies will be furnished upon request at the cost of reproduction.
- B. Owner shall maintain and safeguard at least one original printed record version of the Contract, including Drawings and Specifications signed and sealed by Engineer and other design professionals. Owner shall make such original printed record version of the Contract available to Contractor for review. Owner may delegate the responsibilities under this provision to Engineer.

2.03 *Before Starting Construction*

- A. *Preliminary Schedules*: Within 10 days after the Effective Date of the Contract (or as otherwise specifically required by the Contract Documents), Contractor shall submit to Engineer for timely review:
 - 1. a preliminary Progress Schedule indicating the times (numbers of days or dates) for starting and completing the various stages of the Work, including any Milestones specified in the Contract;
 - 2. a preliminary Schedule of Submittals; and
 - 3. a preliminary Schedule of Values for all of the Work which includes quantities and prices of items which when added together equal the Contract Price and subdivides the Work into component parts in sufficient detail to serve as the basis for progress payments during performance of the Work. Such prices will include an appropriate amount of overhead and profit applicable to each item of Work.

2.04 *Preconstruction Conference; Designation of Authorized Representatives*

- A. Before any Work at the Site is started, a conference attended by Owner, Contractor, Engineer, and others as appropriate will be held to establish a working understanding among the parties as to the Work and to discuss the schedules referred to in Paragraph 2.03.A, procedures for handling Shop Drawings, Samples, and other submittals, processing Applications for Payment, electronic or digital transmittals, and maintaining required records.
- B. At this conference Owner and Contractor each shall designate, in writing, a specific individual to act as its authorized representative with respect to the services and responsibilities under the Contract. Such individuals shall have the authority to transmit and receive information, render decisions relative to the Contract, and otherwise act on behalf of each respective party.

2.05 *Initial Acceptance of Schedules*

- A. At least 10 days before submission of the first Application for Payment a conference, attended by Contractor, Engineer, and others as appropriate, will be held to review for acceptability to Engineer as provided below the schedules submitted in accordance with Paragraph 2.03.A. Contractor shall have an additional 10 days to make corrections and adjustments and to complete and resubmit the schedules. No progress payment shall be made to Contractor until acceptable schedules are submitted to Engineer.
 - 1. The Progress Schedule will be acceptable to Engineer if it provides an orderly progression of the Work to completion within the Contract Times. Such acceptance will not impose on Engineer responsibility for the Progress Schedule, for sequencing, scheduling, or progress of the Work, nor interfere with or relieve Contractor from Contractor's full responsibility therefor.
 - 2. Contractor's Schedule of Submittals will be acceptable to Engineer if it provides a workable arrangement for reviewing and processing the required submittals.
 - 3. Contractor's Schedule of Values will be acceptable to Engineer as to form and substance if it provides a reasonable allocation of the Contract Price to the component parts of the Work.

2.06 *Electronic Transmittals*

- A. Except as otherwise stated elsewhere in the Contract, the Owner, Engineer, and Contractor may transmit, and shall accept, Project-related correspondence, text, data, documents, drawings, information, and graphics, including but not limited to Shop Drawings and other submittals, in electronic media or digital format, either directly, or through access to a secure Project website.
- B. If the Contract does not establish protocols for electronic or digital transmittals, then Owner, Engineer, and Contractor shall jointly develop such protocols.
- C. When transmitting items in electronic media or digital format, the transmitting party makes no representations as to long term compatibility, usability, or readability of the items resulting from the recipient's use of software application packages, operating systems, or computer hardware differing from those used in the drafting or transmittal of the items, or from those established in applicable transmittal protocols.

ARTICLE 3 – DOCUMENTS: INTENT, REQUIREMENTS, REUSE

3.01 *Intent*

- A. The Contract Documents are complementary; what is required by one is as binding as if required by all.
- B. It is the intent of the Contract Documents to describe a functionally complete project (or part thereof) to be constructed in accordance with the Contract Documents.
- C. Unless otherwise stated in the Contract Documents, if there is a discrepancy between the electronic or digital versions of the Contract Documents (including any printed copies derived from such electronic or digital versions) and the printed record version, the printed record version shall govern.
- D. The Contract supersedes prior negotiations, representations, and agreements, whether written or oral.
- E. Engineer will issue clarifications and interpretations of the Contract Documents as provided herein.

3.02 *Reference Standards*

- A. Standards Specifications, Codes, Laws and Regulations
 - 1. Reference in the Contract Documents to standard specifications, manuals, reference standards, or codes of any technical society, organization, or association, or to Laws or Regulations, whether such reference be specific or by implication, shall mean the standard specification, manual, reference standard, code, or Laws or Regulations in effect at the time of opening of Bids (or on the Effective Date of the Contract if there were no Bids), except as may be otherwise specifically stated in the Contract Documents.
 - 2. No provision of any such standard specification, manual, reference standard, or code, or any instruction of a Supplier, shall be effective to change the duties or responsibilities of Owner, Contractor, or Engineer, or any of their subcontractors, consultants, agents, or employees, from those set forth in the part of the Contract Documents prepared by or for Engineer. No such provision or instruction shall be effective to assign to Owner, Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, any duty or authority to supervise or direct the performance of the Work or any duty or authority to undertake responsibility inconsistent with the provisions of the part of the Contract Documents prepared by or for Engineer.

3.03 *Reporting and Resolving Discrepancies*

A. *Reporting Discrepancies:*

- 1. *Contractor's Verification of Figures and Field Measurements:* Before undertaking each part of the Work, Contractor shall carefully study the Contract Documents, and check and verify pertinent figures and dimensions therein, particularly with respect to applicable field measurements. Contractor shall promptly report in writing to Engineer any conflict, error, ambiguity, or discrepancy that Contractor discovers, or has actual knowledge of, and shall not proceed with any Work affected thereby until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.

2. *Contractor's Review of Contract Documents:* If, before or during the performance of the Work, Contractor discovers any conflict, error, ambiguity, or discrepancy within the Contract Documents, or between the Contract Documents and (a) any applicable Law or Regulation, (b) actual field conditions, (c) any standard specification, manual, reference standard, or code, or (d) any instruction of any Supplier, then Contractor shall promptly report it to Engineer in writing. Contractor shall not proceed with the Work affected thereby (except in an emergency as required by Paragraph 7.15) until the conflict, error, ambiguity, or discrepancy is resolved, by a clarification or interpretation by Engineer, or by an amendment or supplement to the Contract Documents issued pursuant to Paragraph 11.01.
 3. Contractor shall not be liable to Owner or Engineer for failure to report any conflict, error, ambiguity, or discrepancy in the Contract Documents unless Contractor had actual knowledge thereof.
- B. *Resolving Discrepancies:*
1. Except as may be otherwise specifically stated in the Contract Documents, the provisions of the part of the Contract Documents prepared by or for Engineer shall take precedence in resolving any conflict, error, ambiguity, or discrepancy between such provisions of the Contract Documents and:
 - a. the provisions of any standard specification, manual, reference standard, or code, or the instruction of any Supplier (whether or not specifically incorporated by reference as a Contract Document); or
 - b. the provisions of any Laws or Regulations applicable to the performance of the Work (unless such an interpretation of the provisions of the Contract Documents would result in violation of such Law or Regulation).

3.04 *Requirements of the Contract Documents*

- A. During the performance of the Work and until final payment, Contractor and Owner shall submit to the Engineer all matters in question concerning the requirements of the Contract Documents (sometimes referred to as requests for information or interpretation—RFIs), or relating to the acceptability of the Work under the Contract Documents, as soon as possible after such matters arise. Engineer will be the initial interpreter of the requirements of the Contract Documents, and judge of the acceptability of the Work thereunder.
- B. Engineer will, with reasonable promptness, render a written clarification, interpretation, or decision on the issue submitted, or initiate an amendment or supplement to the Contract Documents. Engineer's written clarification, interpretation, or decision will be final and binding on Contractor, unless it appeals by submitting a Change Proposal, and on Owner, unless it appeals by filing a Claim.
- C. If a submitted matter in question concerns terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work under the Contract Documents, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, then Engineer will promptly give written notice to Owner and Contractor that Engineer is unable to provide a decision or interpretation. If Owner and Contractor are unable to agree on resolution of such a matter in question, either party may pursue resolution as provided in Article 12.

3.05 *Reuse of Documents*

- A. Contractor and its Subcontractors and Suppliers shall not:
 - 1. have or acquire any title to or ownership rights in any of the Drawings, Specifications, or other documents (or copies of any thereof) prepared by or bearing the seal of Engineer or its consultants, including electronic media editions, or reuse any such Drawings, Specifications, other documents, or copies thereof on extensions of the Project or any other project without written consent of Owner and Engineer and specific written verification or adaptation by Engineer; or
 - 2. have or acquire any title or ownership rights in any other Contract Documents, reuse any such Contract Documents for any purpose without Owner's express written consent, or violate any copyrights pertaining to such Contract Documents.
- B. The prohibitions of this Paragraph 3.05 will survive final payment, or termination of the Contract. Nothing herein shall preclude Contractor from retaining copies of the Contract Documents for record purposes.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

4.01 *Commencement of Contract Times; Notice to Proceed*

- A. The Contract Times will commence to run on the thirtieth day after the Effective Date of the Contract or, if a Notice to Proceed is given, on the day indicated in the Notice to Proceed. A Notice to Proceed may be given at any time within 30 days after the Effective Date of the Contract. In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

4.02 *Starting the Work*

- A. Contractor shall start to perform the Work on the date when the Contract Times commence to run. No Work shall be done at the Site prior to such date.

4.03 *Reference Points*

- A. Owner shall provide engineering surveys to establish reference points for construction which in Engineer's judgment are necessary to enable Contractor to proceed with the Work. Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and property monuments, and shall make no changes or relocations without the prior written approval of Owner. Contractor shall report to Engineer whenever any reference point or property monument is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points or property monuments by professionally qualified personnel.

4.04 *Progress Schedule*

- A. Contractor shall adhere to the Progress Schedule established in accordance with Paragraph 2.05 as it may be adjusted from time to time as provided below.
 - 1. Contractor shall submit to Engineer for acceptance (to the extent indicated in Paragraph 2.05) proposed adjustments in the Progress Schedule that will not result in changing the Contract Times.

2. Proposed adjustments in the Progress Schedule that will change the Contract Times shall be submitted in accordance with the requirements of Article 11.
- B. Contractor shall carry on the Work and adhere to the Progress Schedule during all disputes or disagreements with Owner. No Work shall be delayed or postponed pending resolution of any disputes or disagreements, or during any appeal process, except as permitted by Paragraph 16.04, or as Owner and Contractor may otherwise agree in writing.

4.05 *Delays in Contractor's Progress*

- A. If Owner, Engineer, or anyone for whom Owner is responsible, delays, disrupts, or interferes with the performance or progress of the Work, then Contractor shall be entitled to an equitable adjustment in the Contract Times and Contract Price. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for delay, disruption, or interference caused by or within the control of Contractor. Delay, disruption, and interference attributable to and within the control of a Subcontractor or Supplier shall be deemed to be within the control of Contractor.
- C. If Contractor's performance or progress is delayed, disrupted, or interfered with by unanticipated causes not the fault of and beyond the control of Owner, Contractor, and those for which they are responsible, then Contractor shall be entitled to an equitable adjustment in Contract Times. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times. Such an adjustment shall be Contractor's sole and exclusive remedy for the delays, disruption, and interference described in this paragraph. Causes of delay, disruption, or interference that may give rise to an adjustment in Contract Times under this paragraph include but are not limited to the following:
1. severe and unavoidable natural catastrophes such as fires, floods, epidemics, and earthquakes;
 2. abnormal weather conditions;
 3. acts or failures to act of utility owners (other than those performing other work at or adjacent to the Site by arrangement with the Owner, as contemplated in Article 8); and
 4. acts of war or terrorism.
- D. Delays, disruption, and interference to the performance or progress of the Work resulting from the existence of a differing subsurface or physical condition, an Underground Facility that was not shown or indicated by the Contract Documents, or not shown or indicated with reasonable accuracy, and those resulting from Hazardous Environmental Conditions, are governed by Article 5.
- E. Paragraph 8.03 governs delays, disruption, and interference to the performance or progress of the Work resulting from the performance of certain other work at or adjacent to the Site.
- F. Contractor shall not be entitled to an adjustment in Contract Price or Contract Times for any delay, disruption, or interference if such delay is concurrent with a delay, disruption, or interference caused by or within the control of Contractor.
- G. Contractor must submit any Change Proposal seeking an adjustment in Contract Price or Contract Times under this paragraph within 30 days of the commencement of the delaying, disrupting, or interfering event.

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

5.01 *Availability of Lands*

- A. Owner shall furnish the Site. Owner shall notify Contractor of any encumbrances or restrictions not of general application but specifically related to use of the Site with which Contractor must comply in performing the Work.
- B. Upon reasonable written request, Owner shall furnish Contractor with a current statement of record legal title and legal description of the lands upon which permanent improvements are to be made and Owner's interest therein as necessary for giving notice of or filing a mechanic's or construction lien against such lands in accordance with applicable Laws and Regulations.
- C. Contractor shall provide for all additional lands and access thereto that may be required for temporary construction facilities or storage of materials and equipment.

5.02 *Use of Site and Other Areas*

- A. *Limitation on Use of Site and Other Areas:*
 - 1. Contractor shall confine construction equipment, temporary construction facilities, the storage of materials and equipment, and the operations of workers to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas permitted by Laws and Regulations, and shall not unreasonably encumber the Site and such other adjacent areas with construction equipment or other materials or equipment. Contractor shall assume full responsibility for (a) damage to the Site; (b) damage to any such other adjacent areas used for Contractor's operations; (c) damage to any other adjacent land or areas; and (d) for injuries and losses sustained by the owners or occupants of any such land or areas; provided that such damage or injuries result from the performance of the Work or from other actions or conduct of the Contractor or those for which Contractor is responsible.
 - 2. If a damage or injury claim is made by the owner or occupant of any such land or area because of the performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible, Contractor shall (a) take immediate corrective or remedial action as required by Paragraph 7.12, or otherwise; (b) promptly attempt to settle the claim as to all parties through negotiations with such owner or occupant, or otherwise resolve the claim by arbitration or other dispute resolution proceeding, or at law; and (c) to the fullest extent permitted by Laws and Regulations, indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claim, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any claim or action, legal or equitable, brought by any such owner or occupant against Owner, Engineer, or any other party indemnified hereunder to the extent caused directly or indirectly, in whole or in part by, or based upon, Contractor's performance of the Work, or because of other actions or conduct of the Contractor or those for which Contractor is responsible.
- B. *Removal of Debris During Performance of the Work:* During the progress of the Work the Contractor shall keep the Site and other adjacent areas free from accumulations of waste

materials, rubbish, and other debris. Removal and disposal of such waste materials, rubbish, and other debris shall conform to applicable Laws and Regulations.

- C. *Cleaning*: Prior to Substantial Completion of the Work Contractor shall clean the Site and the Work and make it ready for utilization by Owner. At the completion of the Work Contractor shall remove from the Site and adjacent areas all tools, appliances, construction equipment and machinery, and surplus materials and shall restore to original condition all property not designated for alteration by the Contract Documents.
- D. *Loading of Structures*: Contractor shall not load nor permit any part of any structure to be loaded in any manner that will endanger the structure, nor shall Contractor subject any part of the Work or adjacent structures or land to stresses or pressures that will endanger them.

5.03 *Subsurface and Physical Conditions*

- A. *Reports and Drawings*: The Supplementary Conditions identify:
 - 1. those reports known to Owner of explorations and tests of subsurface conditions at or adjacent to the Site;
 - 2. those drawings known to Owner of physical conditions relating to existing surface or subsurface structures at the Site (except Underground Facilities); and
 - 3. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized*: Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely upon the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer, or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, with respect to:
 - 1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences, and procedures of construction to be employed by Contractor, and safety precautions and programs incident thereto; or
 - 2. other data, interpretations, opinions, and information contained in such reports or shown or indicated in such drawings; or
 - 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions, or information.

5.04 *Differing Subsurface or Physical Conditions*

- A. *Notice by Contractor*: If Contractor believes that any subsurface or physical condition that is uncovered or revealed at the Site either:
 - 1. is of such a nature as to establish that any Technical Data on which Contractor is entitled to rely as provided in Paragraph 5.03 is materially inaccurate; or
 - 2. is of such a nature as to require a change in the Drawings or Specifications; or
 - 3. differs materially from that shown or indicated in the Contract Documents; or

4. is of an unusual nature, and differs materially from conditions ordinarily encountered and generally recognized as inherent in work of the character provided for in the Contract Documents;

then Contractor shall, promptly after becoming aware thereof and before further disturbing the subsurface or physical conditions or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), notify Owner and Engineer in writing about such condition. Contractor shall not further disturb such condition or perform any Work in connection therewith (except with respect to an emergency) until receipt of a written statement permitting Contractor to do so.

- B. *Engineer's Review:* After receipt of written notice as required by the preceding paragraph, Engineer will promptly review the subsurface or physical condition in question; determine the necessity of Owner's obtaining additional exploration or tests with respect to the condition; conclude whether the condition falls within any one or more of the differing site condition categories in Paragraph 5.04.A above; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the subsurface or physical condition in question and the need for any change in the Drawings or Specifications; and advise Owner in writing of Engineer's findings, conclusions, and recommendations.
- C. *Owner's Statement to Contractor Regarding Site Condition:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the subsurface or physical condition in question, addressing the resumption of Work in connection with such condition, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations, in whole or in part.
- D. *Possible Price and Times Adjustments:*
 1. Contractor shall be entitled to an equitable adjustment in Contract Price or Contract Times, or both, to the extent that the existence of a differing subsurface or physical condition, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. such condition must fall within any one or more of the categories described in Paragraph 5.04.A;
 - b. with respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03; and,
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
 2. Contractor shall not be entitled to any adjustment in the Contract Price or Contract Times with respect to a subsurface or physical condition if:
 - a. Contractor knew of the existence of such condition at the time Contractor made a commitment to Owner with respect to Contract Price and Contract Times by the submission of a Bid or becoming bound under a negotiated contract, or otherwise; or
 - b. the existence of such condition reasonably could have been discovered or revealed as a result of any examination, investigation, exploration, test, or study of the Site

and contiguous areas expressly required by the Bidding Requirements or Contract Documents to be conducted by or for Contractor prior to Contractor's making such commitment; or

- c. Contractor failed to give the written notice as required by Paragraph 5.04.A.
3. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
4. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the subsurface or physical condition in question.

5.05 *Underground Facilities*

- A. *Contractor's Responsibilities:* The information and data shown or indicated in the Contract Documents with respect to existing Underground Facilities at or adjacent to the Site is based on information and data furnished to Owner or Engineer by the owners of such Underground Facilities, including Owner, or by others. Unless it is otherwise expressly provided in the Supplementary Conditions:
 1. Owner and Engineer do not warrant or guarantee the accuracy or completeness of any such information or data provided by others; and
 2. the cost of all of the following will be included in the Contract Price, and Contractor shall have full responsibility for:
 - a. reviewing and checking all information and data regarding existing Underground Facilities at the Site;
 - b. locating all Underground Facilities shown or indicated in the Contract Documents as being at the Site;
 - c. coordination of the Work with the owners (including Owner) of such Underground Facilities, during construction; and
 - d. the safety and protection of all existing Underground Facilities at the Site, and repairing any damage thereto resulting from the Work.
- B. *Notice by Contractor:* If Contractor believes that an Underground Facility that is uncovered or revealed at the Site was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, then Contractor shall, promptly after becoming aware thereof and before further disturbing conditions affected thereby or performing any Work in connection therewith (except in an emergency as required by Paragraph 7.15), identify the owner of such Underground Facility and give written notice to that owner and to Owner and Engineer.
- C. *Engineer's Review:* Engineer will promptly review the Underground Facility and conclude whether such Underground Facility was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy; obtain any pertinent cost or schedule information from Contractor; prepare recommendations to Owner regarding the Contractor's resumption of Work in connection with the Underground Facility in question; determine the extent, if any, to which a change is required in the Drawings or Specifications to reflect and document the consequences of the existence or location of the Underground Facility; and advise Owner in writing of Engineer's findings, conclusions, and

recommendations. During such time, Contractor shall be responsible for the safety and protection of such Underground Facility.

- D. *Owner's Statement to Contractor Regarding Underground Facility:* After receipt of Engineer's written findings, conclusions, and recommendations, Owner shall issue a written statement to Contractor (with a copy to Engineer) regarding the Underground Facility in question, addressing the resumption of Work in connection with such Underground Facility, indicating whether any change in the Drawings or Specifications will be made, and adopting or rejecting Engineer's written findings, conclusions, and recommendations in whole or in part.
- E. *Possible Price and Times Adjustments:*
1. Contractor shall be entitled to an equitable adjustment in the Contract Price or Contract Times, or both, to the extent that any existing Underground Facility at the Site that was not shown or indicated in the Contract Documents, or was not shown or indicated with reasonable accuracy, or any related delay, disruption, or interference, causes an increase or decrease in Contractor's cost of, or time required for, performance of the Work; subject, however, to the following:
 - a. Contractor did not know of and could not reasonably have been expected to be aware of or to have anticipated the existence or actual location of the Underground Facility in question;
 - b. With respect to Work that is paid for on a unit price basis, any adjustment in Contract Price will be subject to the provisions of Paragraph 13.03;
 - c. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times; and
 - d. Contractor gave the notice required in Paragraph 5.05.B.
 2. If Owner and Contractor agree regarding Contractor's entitlement to and the amount or extent of any adjustment in the Contract Price or Contract Times, or both, then any such adjustment shall be set forth in a Change Order.
 3. Contractor may submit a Change Proposal regarding its entitlement to or the amount or extent of any adjustment in the Contract Price or Contract Times, or both, no later than 30 days after Owner's issuance of the Owner's written statement to Contractor regarding the Underground Facility in question.

5.06 *Hazardous Environmental Conditions at Site*

- A. *Reports and Drawings:* The Supplementary Conditions identify:
1. those reports and drawings known to Owner relating to Hazardous Environmental Conditions that have been identified at or adjacent to the Site; and
 2. Technical Data contained in such reports and drawings.
- B. *Reliance by Contractor on Technical Data Authorized:* Contractor may rely upon the accuracy of the Technical Data expressly identified in the Supplementary Conditions with respect to such reports and drawings, but such reports and drawings are not Contract Documents. If no such express identification has been made, then Contractor may rely on the accuracy of the Technical Data (as defined in Article 1) contained in any geotechnical or environmental report prepared for the Project and made available to Contractor. Except for such reliance on Technical Data, Contractor may not rely upon or make any claim against Owner or Engineer,

or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors with respect to:

1. the completeness of such reports and drawings for Contractor's purposes, including, but not limited to, any aspects of the means, methods, techniques, sequences and procedures of construction to be employed by Contractor and safety precautions and programs incident thereto; or
 2. other data, interpretations, opinions and information contained in such reports or shown or indicated in such drawings; or
 3. any Contractor interpretation of or conclusion drawn from any Technical Data or any such other data, interpretations, opinions or information.
- C. Contractor shall not be responsible for removing or remediating any Hazardous Environmental Condition encountered, uncovered, or revealed at the Site unless such removal or remediation is expressly identified in the Contract Documents to be within the scope of the Work.
- D. Contractor shall be responsible for controlling, containing, and duly removing all Constituents of Concern brought to the Site by Contractor, Subcontractors, Suppliers, or anyone else for whom Contractor is responsible, and for any associated costs; and for the costs of removing and remediating any Hazardous Environmental Condition created by the presence of any such Constituents of Concern.
- E. If Contractor encounters, uncovers, or reveals a Hazardous Environmental Condition whose removal or remediation is not expressly identified in the Contract Documents as being within the scope of the Work, or if Contractor or anyone for whom Contractor is responsible creates a Hazardous Environmental Condition, then Contractor shall immediately: (1) secure or otherwise isolate such condition; (2) stop all Work in connection with such condition and in any area affected thereby (except in an emergency as required by Paragraph 7.15); and (3) notify Owner and Engineer (and promptly thereafter confirm such notice in writing). Owner shall promptly consult with Engineer concerning the necessity for Owner to retain a qualified expert to evaluate such condition or take corrective action, if any. Promptly after consulting with Engineer, Owner shall take such actions as are necessary to permit Owner to timely obtain required permits and provide Contractor the written notice required by Paragraph 5.06.F. If Contractor or anyone for whom Contractor is responsible created the Hazardous Environmental Condition in question, then Owner may remove and remediate the Hazardous Environmental Condition, and impose a set-off against payments to account for the associated costs.
- F. Contractor shall not resume Work in connection with such Hazardous Environmental Condition or in any affected area until after Owner has obtained any required permits related thereto, and delivered written notice to Contractor either (1) specifying that such condition and any affected area is or has been rendered safe for the resumption of Work, or (2) specifying any special conditions under which such Work may be resumed safely.
- G. If Owner and Contractor cannot agree as to entitlement to or on the amount or extent, if any, of any adjustment in Contract Price or Contract Times, or both, as a result of such Work stoppage or such special conditions under which Work is agreed to be resumed by Contractor, then within 30 days of Owner's written notice regarding the resumption of Work, Contractor may submit a Change Proposal, or Owner may impose a set-off.
- H. If after receipt of such written notice Contractor does not agree to resume such Work based on a reasonable belief it is unsafe, or does not agree to resume such Work under such special

conditions, then Owner may order the portion of the Work that is in the area affected by such condition to be deleted from the Work, following the contractual change procedures in Article 11. Owner may have such deleted portion of the Work performed by Owner's own forces or others in accordance with Article 8.

- I. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to a Hazardous Environmental Condition, provided that such Hazardous Environmental Condition (1) was not shown or indicated in the Drawings, Specifications, or other Contract Documents, identified as Technical Data entitled to limited reliance pursuant to Paragraph 5.06.B, or identified in the Contract Documents to be included within the scope of the Work, and (2) was not created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.I shall obligate Owner to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- J. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the failure to control, contain, or remove a Constituent of Concern brought to the Site by Contractor or by anyone for whom Contractor is responsible, or to a Hazardous Environmental Condition created by Contractor or by anyone for whom Contractor is responsible. Nothing in this Paragraph 5.06.J shall obligate Contractor to indemnify any individual or entity from and against the consequences of that individual's or entity's own negligence.
- K. The provisions of Paragraphs 5.03, 5.04, and 5.05 do not apply to the presence of Constituents of Concern or to a Hazardous Environmental Condition uncovered or revealed at the Site.

ARTICLE 6 – BONDS AND INSURANCE

6.01 *Performance, Payment, and Other Bonds*

- A. Contractor shall furnish a performance bond and a payment bond, each in an amount at least equal to the Contract Price, as security for the faithful performance and payment of all of Contractor's obligations under the Contract. These bonds shall remain in effect until one year after the date when final payment becomes due or until completion of the correction period specified in Paragraph 15.08, whichever is later, except as provided otherwise by Laws or Regulations, the Supplementary Conditions, or other specific provisions of the Contract. Contractor shall also furnish such other bonds as are required by the Supplementary Conditions or other specific provisions of the Contract.
- B. All bonds shall be in the form prescribed by the Contract except as provided otherwise by Laws or Regulations, and shall be executed by such sureties as are named in "Companies Holding Certificates of Authority as Acceptable Sureties on Federal Bonds and as Acceptable Reinsuring Companies" as published in Circular 570 (as amended and supplemented) by the Financial Management Service, Surety Bond Branch, U.S. Department of the Treasury. A bond

signed by an agent or attorney-in-fact must be accompanied by a certified copy of that individual's authority to bind the surety. The evidence of authority shall show that it is effective on the date the agent or attorney-in-fact signed the accompanying bond.

- C. Contractor shall obtain the required bonds from surety companies that are duly licensed or authorized in the jurisdiction in which the Project is located to issue bonds in the required amounts.
- D. If the surety on a bond furnished by Contractor is declared bankrupt or becomes insolvent, or its right to do business is terminated in any state or jurisdiction where any part of the Project is located, or the surety ceases to meet the requirements above, then Contractor shall promptly notify Owner and Engineer and shall, within 20 days after the event giving rise to such notification, provide another bond and surety, both of which shall comply with the bond and surety requirements above.
- E. If Contractor has failed to obtain a required bond, Owner may exclude the Contractor from the Site and exercise Owner's termination rights under Article 16.
- F. Upon request, Owner shall provide a copy of the payment bond to any Subcontractor, Supplier, or other person or entity claiming to have furnished labor or materials used in the performance of the Work.

6.02 *Insurance—General Provisions*

- A. Owner and Contractor shall obtain and maintain insurance as required in this Article and in the Supplementary Conditions.
- B. All insurance required by the Contract to be purchased and maintained by Owner or Contractor shall be obtained from insurance companies that are duly licensed or authorized, in the state or jurisdiction in which the Project is located, to issue insurance policies for the required limits and coverages. Unless a different standard is indicated in the Supplementary Conditions, all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better.
- C. Contractor shall deliver to Owner, with copies to each named insured and additional insured (as identified in this Article, in the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Contractor has obtained and is maintaining the policies, coverages, and endorsements required by the Contract. Upon request by Owner or any other insured, Contractor shall also furnish other evidence of such required insurance, including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- D. Owner shall deliver to Contractor, with copies to each named insured and additional insured (as identified in this Article, the Supplementary Conditions, or elsewhere in the Contract), certificates of insurance establishing that Owner has obtained and is maintaining the policies, coverages, and endorsements required of Owner by the Contract (if any). Upon request by Contractor or any other insured, Owner shall also provide other evidence of such required insurance (if any), including but not limited to copies of policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.
- E. Failure of Owner or Contractor to demand such certificates or other evidence of the other party's full compliance with these insurance requirements, or failure of Owner or Contractor

to identify a deficiency in compliance from the evidence provided, shall not be construed as a waiver of the other party's obligation to obtain and maintain such insurance.

- F. If either party does not purchase or maintain all of the insurance required of such party by the Contract, such party shall notify the other party in writing of such failure to purchase prior to the start of the Work, or of such failure to maintain prior to any change in the required coverage.
- G. If Contractor has failed to obtain and maintain required insurance, Owner may exclude the Contractor from the Site, impose an appropriate set-off against payment, and exercise Owner's termination rights under Article 16.
- H. Without prejudice to any other right or remedy, if a party has failed to obtain required insurance, the other party may elect to obtain equivalent insurance to protect such other party's interests at the expense of the party who was required to provide such coverage, and the Contract Price shall be adjusted accordingly.
- I. Owner does not represent that insurance coverage and limits established in this Contract necessarily will be adequate to protect Contractor or Contractor's interests.
- J. The insurance and insurance limits required herein shall not be deemed as a limitation on Contractor's liability under the indemnities granted to Owner and other individuals and entities in the Contract.

6.03 *Contractor's Insurance*

- A. *Workers' Compensation:* Contractor shall purchase and maintain workers' compensation and employer's liability insurance for:
 - 1. claims under workers' compensation, disability benefits, and other similar employee benefit acts.
 - 2. United States Longshoreman and Harbor Workers' Compensation Act and Jones Act coverage (if applicable).
 - 3. claims for damages because of bodily injury, occupational sickness or disease, or death of Contractor's employees (by stop-gap endorsement in monopolist worker's compensation states).
 - 4. Foreign voluntary worker compensation (if applicable).
- B. *Commercial General Liability—Claims Covered:* Contractor shall purchase and maintain commercial general liability insurance, covering all operations by or on behalf of Contractor, on an occurrence basis, against:
 - 1. claims for damages because of bodily injury, sickness or disease, or death of any person other than Contractor's employees.
 - 2. claims for damages insured by reasonably available personal injury liability coverage.
 - 3. claims for damages, other than to the Work itself, because of injury to or destruction of tangible property wherever located, including loss of use resulting therefrom.
- C. *Commercial General Liability—Form and Content:* Contractor's commercial liability policy shall be written on a 1996 (or later) ISO commercial general liability form (occurrence form) and include the following coverages and endorsements:
 - 1. Products and completed operations coverage:
 - a. Such insurance shall be maintained for three years after final payment.

- b. Contractor shall furnish Owner and each other additional insured (as identified in the Supplementary Conditions or elsewhere in the Contract) evidence of continuation of such insurance at final payment and three years thereafter.
2. Blanket contractual liability coverage, to the extent permitted by law, including but not limited to coverage of Contractor's contractual indemnity obligations in Paragraph 7.18.
 3. Broad form property damage coverage.
 4. Severability of interest.
 5. Underground, explosion, and collapse coverage.
 6. Personal injury coverage.
 7. Additional insured endorsements that include both ongoing operations and products and completed operations coverage through ISO Endorsements CG 20 10 10 01 and CG 20 37 10 01 (together); or CG 20 10 07 04 and CG 20 37 07 04 (together); or their equivalent.
 8. For design professional additional insureds, ISO Endorsement CG 20 32 07 04, "Additional Insured—Engineers, Architects or Surveyors Not Engaged by the Named Insured" or its equivalent.
- D. *Automobile liability:* Contractor shall purchase and maintain automobile liability insurance against claims for damages because of bodily injury or death of any person or property damage arising out of the ownership, maintenance, or use of any motor vehicle. The automobile liability policy shall be written on an occurrence basis.
- E. *Umbrella or excess liability:* Contractor shall purchase and maintain umbrella or excess liability insurance written over the underlying employer's liability, commercial general liability, and automobile liability insurance described in the paragraphs above. Subject to industry-standard exclusions, the coverage afforded shall follow form as to each and every one of the underlying policies.
- F. *Contractor's pollution liability insurance:* Contractor shall purchase and maintain a policy covering third-party injury and property damage claims, including clean-up costs, as a result of pollution conditions arising from Contractor's operations and completed operations. This insurance shall be maintained for no less than three years after final completion.
- G. *Additional insureds:* The Contractor's commercial general liability, automobile liability, umbrella or excess, and pollution liability policies shall include and list as additional insureds Owner and Engineer, and any individuals or entities identified in the Supplementary Conditions; include coverage for the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of all such additional insureds; and the insurance afforded to these additional insureds shall provide primary coverage for all claims covered thereby (including as applicable those arising from both ongoing and completed operations) on a non-contributory basis. Contractor shall obtain all necessary endorsements to support these requirements.
- H. *Contractor's professional liability insurance:* If Contractor will provide or furnish professional services under this Contract, through a delegation of professional design services or otherwise, then Contractor shall be responsible for purchasing and maintaining applicable professional liability insurance. This insurance shall provide protection against claims arising out of performance of professional design or related services, and caused by a negligent error, omission, or act for which the insured party is legally liable. It shall be maintained throughout the duration of the Contract and for a minimum of two years after Substantial

Completion. If such professional design services are performed by a Subcontractor, and not by Contractor itself, then the requirements of this paragraph may be satisfied through the purchasing and maintenance of such insurance by such Subcontractor.

- I. *General provisions:* The policies of insurance required by this Paragraph 6.03 shall:
 1. include at least the specific coverages provided in this Article.
 2. be written for not less than the limits of liability provided in this Article and in the Supplementary Conditions, or required by Laws or Regulations, whichever is greater.
 3. contain a provision or endorsement that the coverage afforded will not be canceled, materially changed, or renewal refused until at least 10 days prior written notice has been given to Contractor. Within three days of receipt of any such written notice, Contractor shall provide a copy of the notice to Owner, Engineer, and each other insured under the policy.
 4. remain in effect at least until final payment (and longer if expressly required in this Article) and at all times thereafter when Contractor may be correcting, removing, or replacing defective Work as a warranty or correction obligation, or otherwise, or returning to the Site to conduct other tasks arising from the Contract Documents.
 5. be appropriate for the Work being performed and provide protection from claims that may arise out of or result from Contractor's performance of the Work and Contractor's other obligations under the Contract Documents, whether it is to be performed by Contractor, any Subcontractor or Supplier, or by anyone directly or indirectly employed by any of them to perform any of the Work, or by anyone for whose acts any of them may be liable.
- J. The coverage requirements for specific policies of insurance must be met by such policies, and not by reference to excess or umbrella insurance provided in other policies.

6.04 *Owner's Liability Insurance*

- A. In addition to the insurance required to be provided by Contractor under Paragraph 6.03, Owner, at Owner's option, may purchase and maintain at Owner's expense Owner's own liability insurance as will protect Owner against claims which may arise from operations under the Contract Documents.
- B. Owner's liability policies, if any, operate separately and independently from policies required to be provided by Contractor, and Contractor cannot rely upon Owner's liability policies for any of Contractor's obligations to the Owner, Engineer, or third parties.

6.05 *Property Insurance*

- A. *Builder's Risk:* Unless otherwise provided in the Supplementary Conditions, Contractor shall purchase and maintain builder's risk insurance upon the Work on a completed value basis, in the amount of the full insurable replacement cost thereof (subject to such deductible amounts as may be provided in the Supplementary Conditions or required by Laws and Regulations). This insurance shall:
 1. include the Owner and Contractor as named insureds, and all Subcontractors, and any individuals or entities required by the Supplementary Conditions to be insured under such builder's risk policy, as insureds or named insureds. For purposes of the remainder of this Paragraph 6.05, Paragraphs 6.06 and 6.07, and any corresponding Supplementary Conditions, the parties required to be insured shall collectively be referred to as "insureds."

2. be written on a builder's risk "all risk" policy form that shall at least include insurance for physical loss or damage to the Work, temporary buildings, falsework, and materials and equipment in transit, and shall insure against at least the following perils or causes of loss: fire; lightning; windstorm; riot; civil commotion; terrorism; vehicle impact; aircraft; smoke; theft; vandalism and malicious mischief; mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; flood; collapse; explosion; debris removal; demolition occasioned by enforcement of Laws and Regulations; water damage (other than that caused by flood); and such other perils or causes of loss as may be specifically required by the Supplementary Conditions. If insurance against mechanical breakdown, boiler explosion, and artificially generated electric current; earthquake; volcanic activity, and other earth movement; or flood, are not commercially available under builder's risk policies, by endorsement or otherwise, such insurance may be provided through other insurance policies acceptable to Owner and Contractor.
 3. cover, as insured property, at least the following: (a) the Work and all materials, supplies, machinery, apparatus, equipment, fixtures, and other property of a similar nature that are to be incorporated into or used in the preparation, fabrication, construction, erection, or completion of the Work, including Owner-furnished or assigned property; (b) spare parts inventory required within the scope of the Contract; and (c) temporary works which are not intended to form part of the permanent constructed Work but which are intended to provide working access to the Site, or to the Work under construction, or which are intended to provide temporary support for the Work under construction, including scaffolding, form work, fences, shoring, falsework, and temporary structures.
 4. cover expenses incurred in the repair or replacement of any insured property (including but not limited to fees and charges of engineers and architects).
 5. extend to cover damage or loss to insured property while in temporary storage at the Site or in a storage location outside the Site (but not including property stored at the premises of a manufacturer or Supplier).
 6. extend to cover damage or loss to insured property while in transit.
 7. allow for partial occupation or use of the Work by Owner, such that those portions of the Work that are not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
 8. allow for the waiver of the insurer's subrogation rights, as set forth below.
 9. provide primary coverage for all losses and damages caused by the perils or causes of loss covered.
 10. not include a co-insurance clause.
 11. include an exception for ensuing losses from physical damage or loss with respect to any defective workmanship, design, or materials exclusions.
 12. include performance/hot testing and start-up.
 13. be maintained in effect, subject to the provisions herein regarding Substantial Completion and partial occupancy or use of the Work by Owner, until the Work is complete.
- B. *Notice of Cancellation or Change:* All the policies of insurance (and the certificates or other evidence thereof) required to be purchased and maintained in accordance with this

Paragraph 6.05 will contain a provision or endorsement that the coverage afforded will not be canceled or materially changed or renewal refused until at least 10 days prior written notice has been given to the purchasing policyholder. Within three days of receipt of any such written notice, the purchasing policyholder shall provide a copy of the notice to each other insured.

- C. *Deductibles*: The purchaser of any required builder's risk or property insurance shall pay for costs not covered because of the application of a policy deductible.
- D. *Partial Occupancy or Use by Owner*: If Owner will occupy or use a portion or portions of the Work prior to Substantial Completion of all the Work as provided in Paragraph 15.04, then Owner (directly, if it is the purchaser of the builder's risk policy, or through Contractor) will provide notice of such occupancy or use to the builder's risk insurer. The builder's risk insurance shall not be canceled or permitted to lapse on account of any such partial use or occupancy; rather, those portions of the Work that are occupied or used by Owner may come off the builder's risk policy, while those portions of the Work not yet occupied or used by Owner shall remain covered by the builder's risk insurance.
- E. *Additional Insurance*: If Contractor elects to obtain other special insurance to be included in or supplement the builder's risk or property insurance policies provided under this Paragraph 6.05, it may do so at Contractor's expense.
- F. *Insurance of Other Property*: If the express insurance provisions of the Contract do not require or address the insurance of a property item or interest, such as tools, construction equipment, or other personal property owned by Contractor, a Subcontractor, or an employee of Contractor or a Subcontractor, then the entity or individual owning such property item will be responsible for deciding whether to insure it, and if so in what amount.

6.06 *Waiver of Rights*

- A. All policies purchased in accordance with Paragraph 6.05, expressly including the builder's risk policy, shall contain provisions to the effect that in the event of payment of any loss or damage the insurers will have no rights of recovery against any insureds thereunder, or against Engineer or its consultants, or their officers, directors, members, partners, employees, agents, consultants, or subcontractors. Owner and Contractor waive all rights against each other and the respective officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, or resulting from any of the perils or causes of loss covered by such policies and any other property insurance applicable to the Work; and, in addition, waive all such rights against Engineer, its consultants, all Subcontractors, all individuals or entities identified in the Supplementary Conditions as insureds, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, under such policies for losses and damages so caused. None of the above waivers shall extend to the rights that any party making such waiver may have to the proceeds of insurance held by Owner or Contractor as trustee or fiduciary, or otherwise payable under any policy so issued.
- B. Owner waives all rights against Contractor, Subcontractors, and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them, for:
 - 1. loss due to business interruption, loss of use, or other consequential loss extending beyond direct physical loss or damage to Owner's property or the Work caused by,

arising out of, or resulting from fire or other perils whether or not insured by Owner;
and

2. loss or damage to the completed Project or part thereof caused by, arising out of, or resulting from fire or other insured peril or cause of loss covered by any property insurance maintained on the completed Project or part thereof by Owner during partial occupancy or use pursuant to Paragraph 15.04, after Substantial Completion pursuant to Paragraph 15.03, or after final payment pursuant to Paragraph 15.06.
- C. Any insurance policy maintained by Owner covering any loss, damage or consequential loss referred to in Paragraph 6.06.B shall contain provisions to the effect that in the event of payment of any such loss, damage, or consequential loss, the insurers will have no rights of recovery against Contractor, Subcontractors, or Engineer, or the officers, directors, members, partners, employees, agents, consultants, or subcontractors of each and any of them.
- D. Contractor shall be responsible for assuring that the agreement under which a Subcontractor performs a portion of the Work contains provisions whereby the Subcontractor waives all rights against Owner, Contractor, all individuals or entities identified in the Supplementary Conditions as insureds, the Engineer and its consultants, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them, for all losses and damages caused by, arising out of, relating to, or resulting from any of the perils or causes of loss covered by builder's risk insurance and any other property insurance applicable to the Work.

6.07 *Receipt and Application of Property Insurance Proceeds*

- A. Any insured loss under the builder's risk and other policies of insurance required by Paragraph 6.05 will be adjusted and settled with the named insured that purchased the policy. Such named insured shall act as fiduciary for the other insureds, and give notice to such other insureds that adjustment and settlement of a claim is in progress. Any other insured may state its position regarding a claim for insured loss in writing within 15 days after notice of such claim.
- B. Proceeds for such insured losses may be made payable by the insurer either jointly to multiple insureds, or to the named insured that purchased the policy in its own right and as fiduciary for other insureds, subject to the requirements of any applicable mortgage clause. A named insured receiving insurance proceeds under the builder's risk and other policies of insurance required by Paragraph 6.05 shall distribute such proceeds in accordance with such agreement as the parties in interest may reach, or as otherwise required under the dispute resolution provisions of this Contract or applicable Laws and Regulations.
- C. If no other special agreement is reached, the damaged Work shall be repaired or replaced, the money so received applied on account thereof, and the Work and the cost thereof covered by Change Order, if needed.

ARTICLE 7 – CONTRACTOR'S RESPONSIBILITIES

7.01 *Supervision and Superintendence*

- A. Contractor shall supervise, inspect, and direct the Work competently and efficiently, devoting such attention thereto and applying such skills and expertise as may be necessary to perform the Work in accordance with the Contract Documents. Contractor shall be solely responsible for the means, methods, techniques, sequences, and procedures of construction.

- B. At all times during the progress of the Work, Contractor shall assign a competent resident superintendent who shall not be replaced without written notice to Owner and Engineer except under extraordinary circumstances.

7.02 *Labor; Working Hours*

- A. Contractor shall provide competent, suitably qualified personnel to survey and lay out the Work and perform construction as required by the Contract Documents. Contractor shall at all times maintain good discipline and order at the Site.
- B. Except as otherwise required for the safety or protection of persons or the Work or property at the Site or adjacent thereto, and except as otherwise stated in the Contract Documents, all Work at the Site shall be performed during regular working hours, Monday through Friday. Contractor will not perform Work on a Saturday, Sunday, or any legal holiday. Contractor may perform Work outside regular working hours or on Saturdays, Sundays, or legal holidays only with Owner's written consent, which will not be unreasonably withheld.

7.03 *Services, Materials, and Equipment*

- A. Unless otherwise specified in the Contract Documents, Contractor shall provide and assume full responsibility for all services, materials, equipment, labor, transportation, construction equipment and machinery, tools, appliances, fuel, power, light, heat, telephone, water, sanitary facilities, temporary facilities, and all other facilities and incidentals necessary for the performance, testing, start up, and completion of the Work, whether or not such items are specifically called for in the Contract Documents.
- B. All materials and equipment incorporated into the Work shall be of good quality and new, except as otherwise provided in the Contract Documents. All special warranties and guarantees required by the Specifications shall expressly run to the benefit of Owner. If required by Engineer, Contractor shall furnish satisfactory evidence (including reports of required tests) as to the source, kind, and quality of materials and equipment.
- C. All materials and equipment shall be stored, applied, installed, connected, erected, protected, used, cleaned, and conditioned in accordance with instructions of the applicable Supplier, except as otherwise may be provided in the Contract Documents.

7.04 *"Or Equals"*

- A. Whenever an item of material or equipment is specified or described in the Contract Documents by using the name of a proprietary item or the name of a particular Supplier, the Contract Price has been based upon Contractor furnishing such item as specified. The specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment, or items from other proposed suppliers under the circumstances described below.
 - 1. If Engineer in its sole discretion determines that an item of material or equipment proposed by Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, Engineer shall deem it an "or equal" item. For the purposes of this paragraph, a proposed item of material or equipment will be considered functionally equal to an item so named if:

- a. in the exercise of reasonable judgment Engineer determines that:
 - 1) it is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
 - 2) it will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
 - 3) it has a proven record of performance and availability of responsive service; and
 - 4) it is not objectionable to Owner.
 - b. Contractor certifies that, if approved and incorporated into the Work:
 - 1) there will be no increase in cost to the Owner or increase in Contract Times; and
 - 2) it will conform substantially to the detailed requirements of the item named in the Contract Documents.
- B. *Contractor's Expense:* Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.
- C. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each "or-equal" request. Engineer may require Contractor to furnish additional data about the proposed "or-equal" item. Engineer will be the sole judge of acceptability. No "or-equal" item will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an "or-equal", which will be evidenced by an approved Shop Drawing or other written communication. Engineer will advise Contractor in writing of any negative determination.
- D. *Effect of Engineer's Determination:* Neither approval nor denial of an "or-equal" request shall result in any change in Contract Price. The Engineer's denial of an "or-equal" request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents.
- E. *Treatment as a Substitution Request:* If Engineer determines that an item of material or equipment proposed by Contractor does not qualify as an "or-equal" item, Contractor may request that Engineer considered the proposed item as a substitute pursuant to Paragraph 7.05.

7.05 Substitutes

- A. Unless the specification or description of an item of material or equipment required to be furnished under the Contract Documents contains or is followed by words reading that no substitution is permitted, Contractor may request that Engineer authorize the use of other items of material or equipment under the circumstances described below. To the extent possible such requests shall be made before commencement of related construction at the Site.
 - 1. Contractor shall submit sufficient information as provided below to allow Engineer to determine if the item of material or equipment proposed is functionally equivalent to that named and an acceptable substitute therefor. Engineer will not accept requests for review of proposed substitute items of material or equipment from anyone other than Contractor.

2. The requirements for review by Engineer will be as set forth in Paragraph 7.05.B, as supplemented by the Specifications, and as Engineer may decide is appropriate under the circumstances.
3. Contractor shall make written application to Engineer for review of a proposed substitute item of material or equipment that Contractor seeks to furnish or use. The application:
 - a. shall certify that the proposed substitute item will:
 - 1) perform adequately the functions and achieve the results called for by the general design,
 - 2) be similar in substance to that specified, and
 - 3) be suited to the same use as that specified.
 - b. will state:
 - 1) the extent, if any, to which the use of the proposed substitute item will necessitate a change in Contract Times,
 - 2) whether use of the proposed substitute item in the Work will require a change in any of the Contract Documents (or in the provisions of any other direct contract with Owner for other work on the Project) to adapt the design to the proposed substitute item, and
 - 3) whether incorporation or use of the proposed substitute item in connection with the Work is subject to payment of any license fee or royalty.
 - c. will identify:
 - 1) all variations of the proposed substitute item from that specified, and
 - 2) available engineering, sales, maintenance, repair, and replacement services.
 - d. shall contain an itemized estimate of all costs or credits that will result directly or indirectly from use of such substitute item, including but not limited to changes in Contract Price, shared savings, costs of redesign, and claims of other contractors affected by any resulting change.
- B. *Engineer's Evaluation and Determination:* Engineer will be allowed a reasonable time to evaluate each substitute request, and to obtain comments and direction from Owner. Engineer may require Contractor to furnish additional data about the proposed substitute item. Engineer will be the sole judge of acceptability. No substitute will be ordered, furnished, installed, or utilized until Engineer's review is complete and Engineer determines that the proposed item is an acceptable substitute. Engineer's determination will be evidenced by a Field Order or a proposed Change Order accounting for the substitution itself and all related impacts, including changes in Contract Price or Contract Times. Engineer will advise Contractor in writing of any negative determination.
- C. *Special Guarantee:* Owner may require Contractor to furnish at Contractor's expense a special performance guarantee or other surety with respect to any substitute.
- D. *Reimbursement of Engineer's Cost:* Engineer will record Engineer's costs in evaluating a substitute proposed or submitted by Contractor. Whether or not Engineer approves a substitute so proposed or submitted by Contractor, Contractor shall reimburse Owner for the reasonable charges of Engineer for evaluating each such proposed substitute. Contractor shall also reimburse Owner for the reasonable charges of Engineer for making changes in the

Contract Documents (or in the provisions of any other direct contract with Owner) resulting from the acceptance of each proposed substitute.

- E. *Contractor's Expense*: Contractor shall provide all data in support of any proposed substitute at Contractor's expense.
- F. *Effect of Engineer's Determination*: If Engineer approves the substitution request, Contractor shall execute the proposed Change Order and proceed with the substitution. The Engineer's denial of a substitution request shall be final and binding, and may not be reversed through an appeal under any provision of the Contract Documents. Contractor may challenge the scope of reimbursement costs imposed under Paragraph 7.05.D, by timely submittal of a Change Proposal.

7.06 *Concerning Subcontractors, Suppliers, and Others*

- A. Contractor may retain Subcontractors and Suppliers for the performance of parts of the Work. Such Subcontractors and Suppliers must be acceptable to Owner.
- B. Contractor shall retain specific Subcontractors, Suppliers, or other individuals or entities for the performance of designated parts of the Work if required by the Contract to do so.
- C. Subsequent to the submittal of Contractor's Bid or final negotiation of the terms of the Contract, Owner may not require Contractor to retain any Subcontractor, Supplier, or other individual or entity to furnish or perform any of the Work against which Contractor has reasonable objection.
- D. Prior to entry into any binding subcontract or purchase order, Contractor shall submit to Owner the identity of the proposed Subcontractor or Supplier (unless Owner has already deemed such proposed Subcontractor or Supplier acceptable, during the bidding process or otherwise). Such proposed Subcontractor or Supplier shall be deemed acceptable to Owner unless Owner raises a substantive, reasonable objection within five days.
- E. Owner may require the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work. Owner also may require Contractor to retain specific replacements; provided, however, that Owner may not require a replacement to which Contractor has a reasonable objection. If Contractor has submitted the identity of certain Subcontractors, Suppliers, or other individuals or entities for acceptance by Owner, and Owner has accepted it (either in writing or by failing to make written objection thereto), then Owner may subsequently revoke the acceptance of any such Subcontractor, Supplier, or other individual or entity so identified solely on the basis of substantive, reasonable objection after due investigation. Contractor shall submit an acceptable replacement for the rejected Subcontractor, Supplier, or other individual or entity.
- F. If Owner requires the replacement of any Subcontractor, Supplier, or other individual or entity retained by Contractor to perform any part of the Work, then Contractor shall be entitled to an adjustment in Contract Price or Contract Times, or both, with respect to the replacement; and Contractor shall initiate a Change Proposal for such adjustment within 30 days of Owner's requirement of replacement.
- G. No acceptance by Owner of any such Subcontractor, Supplier, or other individual or entity, whether initially or as a replacement, shall constitute a waiver of the right of Owner to the completion of the Work in accordance with the Contract Documents.

- H. On a monthly basis Contractor shall submit to Engineer a complete list of all Subcontractors and Suppliers having a direct contract with Contractor, and of all other Subcontractors and Suppliers known to Contractor at the time of submittal.
- I. Contractor shall be fully responsible to Owner and Engineer for all acts and omissions of the Subcontractors, Suppliers, and other individuals or entities performing or furnishing any of the Work just as Contractor is responsible for Contractor's own acts and omissions.
- J. Contractor shall be solely responsible for scheduling and coordinating the work of Subcontractors, Suppliers, and all other individuals or entities performing or furnishing any of the Work.
- K. Contractor shall restrict all Subcontractors, Suppliers, and such other individuals or entities performing or furnishing any of the Work from communicating with Engineer or Owner, except through Contractor or in case of an emergency, or as otherwise expressly allowed herein.
- L. The divisions and sections of the Specifications and the identifications of any Drawings shall not control Contractor in dividing the Work among Subcontractors or Suppliers or delineating the Work to be performed by any specific trade.
- M. All Work performed for Contractor by a Subcontractor or Supplier shall be pursuant to an appropriate contractual agreement that specifically binds the Subcontractor or Supplier to the applicable terms and conditions of the Contract Documents for the benefit of Owner and Engineer.
- N. Owner may furnish to any Subcontractor or Supplier, to the extent practicable, information about amounts paid to Contractor on account of Work performed for Contractor by the particular Subcontractor or Supplier.
- O. Nothing in the Contract Documents:
 - 1. shall create for the benefit of any such Subcontractor, Supplier, or other individual or entity any contractual relationship between Owner or Engineer and any such Subcontractor, Supplier, or other individual or entity; nor
 - 2. shall create any obligation on the part of Owner or Engineer to pay or to see to the payment of any money due any such Subcontractor, Supplier, or other individual or entity except as may otherwise be required by Laws and Regulations.

7.07 Patent Fees and Royalties

- A. Contractor shall pay all license fees and royalties and assume all costs incident to the use in the performance of the Work or the incorporation in the Work of any invention, design, process, product, or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product, or device is specified in the Contract Documents for use in the performance of the Work and if, to the actual knowledge of Owner or Engineer, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by Owner in the Contract Documents.
- B. To the fullest extent permitted by Laws and Regulations, Owner shall indemnify and hold harmless Contractor, and its officers, directors, members, partners, employees, agents, consultants, and subcontractors from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals, and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the

performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device specified in the Contract Documents, but not identified as being subject to payment of any license fee or royalty to others required by patent rights or copyrights.

- C. To the fullest extent permitted by Laws and Regulations, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to any infringement of patent rights or copyrights incident to the use in the performance of the Work or resulting from the incorporation in the Work of any invention, design, process, product, or device not specified in the Contract Documents.

7.08 *Permits*

- A. Unless otherwise provided in the Contract Documents, Contractor shall obtain and pay for all construction permits and licenses. Owner shall assist Contractor, when necessary, in obtaining such permits and licenses. Contractor shall pay all governmental charges and inspection fees necessary for the prosecution of the Work which are applicable at the time of the submission of Contractor's Bid (or when Contractor became bound under a negotiated contract). Owner shall pay all charges of utility owners for connections for providing permanent service to the Work

7.09 *Taxes*

- A. Contractor shall pay all sales, consumer, use, and other similar taxes required to be paid by Contractor in accordance with the Laws and Regulations of the place of the Project which are applicable during the performance of the Work.

7.10 *Laws and Regulations*

- A. Contractor shall give all notices required by and shall comply with all Laws and Regulations applicable to the performance of the Work. Except where otherwise expressly required by applicable Laws and Regulations, neither Owner nor Engineer shall be responsible for monitoring Contractor's compliance with any Laws or Regulations.
- B. If Contractor performs any Work or takes any other action knowing or having reason to know that it is contrary to Laws or Regulations, Contractor shall bear all resulting costs and losses, and shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants, and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such Work or other action. It shall not be Contractor's responsibility to make certain that the Work described in the Contract Documents is in accordance with Laws and Regulations, but this shall not relieve Contractor of Contractor's obligations under Paragraph 3.03.
- C. Owner or Contractor may give notice to the other party of any changes after the submission of Contractor's Bid (or after the date when Contractor became bound under a negotiated contract) in Laws or Regulations having an effect on the cost or time of performance of the Work, including but not limited to changes in Laws or Regulations having an effect on procuring permits and on sales, use, value-added, consumption, and other similar taxes. If Owner and Contractor are unable to agree on entitlement to or on the amount or extent, if

any, of any adjustment in Contract Price or Contract Times resulting from such changes, then within 30 days of such notice Contractor may submit a Change Proposal, or Owner may initiate a Claim.

7.11 *Record Documents*

- A. Contractor shall maintain in a safe place at the Site one printed record copy of all Drawings, Specifications, Addenda, Change Orders, Work Change Directives, Field Orders, written interpretations and clarifications, and approved Shop Drawings. Contractor shall keep such record documents in good order and annotate them to show changes made during construction. These record documents, together with all approved Samples, will be available to Engineer for reference. Upon completion of the Work, Contractor shall deliver these record documents to Engineer.

7.12 *Safety and Protection*

- A. Contractor shall be solely responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the Work. Such responsibility does not relieve Subcontractors of their responsibility for the safety of persons or property in the performance of their work, nor for compliance with applicable safety Laws and Regulations. Contractor shall take all necessary precautions for the safety of, and shall provide the necessary protection to prevent damage, injury, or loss to:
 - 1. all persons on the Site or who may be affected by the Work;
 - 2. all the Work and materials and equipment to be incorporated therein, whether in storage on or off the Site; and
 - 3. other property at the Site or adjacent thereto, including trees, shrubs, lawns, walks, pavements, roadways, structures, other work in progress, utilities, and Underground Facilities not designated for removal, relocation, or replacement in the course of construction.
- B. Contractor shall comply with all applicable Laws and Regulations relating to the safety of persons or property, or to the protection of persons or property from damage, injury, or loss; and shall erect and maintain all necessary safeguards for such safety and protection. Contractor shall notify Owner; the owners of adjacent property, Underground Facilities, and other utilities; and other contractors and utility owners performing work at or adjacent to the Site, when prosecution of the Work may affect them, and shall cooperate with them in the protection, removal, relocation, and replacement of their property or work in progress.
- C. Contractor shall comply with the applicable requirements of Owner's safety programs, if any. The Supplementary Conditions identify any Owner's safety programs that are applicable to the Work.
- D. Contractor shall inform Owner and Engineer of the specific requirements of Contractor's safety program with which Owner's and Engineer's employees and representatives must comply while at the Site.
- E. All damage, injury, or loss to any property referred to in Paragraph 7.12.A.2 or 7.12.A.3 caused, directly or indirectly, in whole or in part, by Contractor, any Subcontractor, Supplier, or any other individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, shall be remedied by Contractor at its expense (except damage or loss attributable to the fault of Drawings or Specifications or to the acts or omissions of Owner or Engineer or anyone employed by any of them, or anyone for whose acts any of them may be liable, and not attributable, directly

or indirectly, in whole or in part, to the fault or negligence of Contractor or any Subcontractor, Supplier, or other individual or entity directly or indirectly employed by any of them).

- F. Contractor's duties and responsibilities for safety and protection shall continue until such time as all the Work is completed and Engineer has issued a notice to Owner and Contractor in accordance with Paragraph 15.06.B that the Work is acceptable (except as otherwise expressly provided in connection with Substantial Completion).
- G. Contractor's duties and responsibilities for safety and protection shall resume whenever Contractor or any Subcontractor or Supplier returns to the Site to fulfill warranty or correction obligations, or to conduct other tasks arising from the Contract Documents.

7.13 *Safety Representative*

- A. Contractor shall designate a qualified and experienced safety representative at the Site whose duties and responsibilities shall be the prevention of accidents and the maintaining and supervising of safety precautions and programs.

7.14 *Hazard Communication Programs*

- A. Contractor shall be responsible for coordinating any exchange of material safety data sheets or other hazard communication information required to be made available to or exchanged between or among employers at the Site in accordance with Laws or Regulations.

7.15 *Emergencies*

- A. In emergencies affecting the safety or protection of persons or the Work or property at the Site or adjacent thereto, Contractor is obligated to act to prevent threatened damage, injury, or loss. Contractor shall give Engineer prompt written notice if Contractor believes that any significant changes in the Work or variations from the Contract Documents have been caused thereby or are required as a result thereof. If Engineer determines that a change in the Contract Documents is required because of the action taken by Contractor in response to such an emergency, a Work Change Directive or Change Order will be issued.

7.16 *Shop Drawings, Samples, and Other Submittals*

A. *Shop Drawing and Sample Submittal Requirements:*

1. Before submitting a Shop Drawing or Sample, Contractor shall have:
 - a. reviewed and coordinated the Shop Drawing or Sample with other Shop Drawings and Samples and with the requirements of the Work and the Contract Documents;
 - b. determined and verified all field measurements, quantities, dimensions, specified performance and design criteria, installation requirements, materials, catalog numbers, and similar information with respect thereto;
 - c. determined and verified the suitability of all materials and equipment offered with respect to the indicated application, fabrication, shipping, handling, storage, assembly, and installation pertaining to the performance of the Work; and
 - d. determined and verified all information relative to Contractor's responsibilities for means, methods, techniques, sequences, and procedures of construction, and safety precautions and programs incident thereto.
2. Each submittal shall bear a stamp or specific written certification that Contractor has satisfied Contractor's obligations under the Contract Documents with respect to Contractor's review of that submittal, and that Contractor approves the submittal.

3. With each submittal, Contractor shall give Engineer specific written notice of any variations that the Shop Drawing or Sample may have from the requirements of the Contract Documents. This notice shall be set forth in a written communication separate from the Shop Drawings or Sample submittal; and, in addition, in the case of Shop Drawings by a specific notation made on each Shop Drawing submitted to Engineer for review and approval of each such variation.
- B. *Submittal Procedures for Shop Drawings and Samples:* Contractor shall submit Shop Drawings and Samples to Engineer for review and approval in accordance with the accepted Schedule of Submittals. Each submittal will be identified as Engineer may require.
1. *Shop Drawings:*
 - a. Contractor shall submit the number of copies required in the Specifications.
 - b. Data shown on the Shop Drawings will be complete with respect to quantities, dimensions, specified performance and design criteria, materials, and similar data to show Engineer the services, materials, and equipment Contractor proposes to provide and to enable Engineer to review the information for the limited purposes required by Paragraph 7.16.D.
 2. *Samples:*
 - a. Contractor shall submit the number of Samples required in the Specifications.
 - b. Contractor shall clearly identify each Sample as to material, Supplier, pertinent data such as catalog numbers, the use for which intended and other data as Engineer may require to enable Engineer to review the submittal for the limited purposes required by Paragraph 7.16.D.
 3. Where a Shop Drawing or Sample is required by the Contract Documents or the Schedule of Submittals, any related Work performed prior to Engineer's review and approval of the pertinent submittal will be at the sole expense and responsibility of Contractor.
- C. *Other Submittals:* Contractor shall submit other submittals to Engineer in accordance with the accepted Schedule of Submittals, and pursuant to the applicable terms of the Specifications.
- D. *Engineer's Review:*
1. Engineer will provide timely review of Shop Drawings and Samples in accordance with the Schedule of Submittals acceptable to Engineer. Engineer's review and approval will be only to determine if the items covered by the submittals will, after installation or incorporation in the Work, conform to the information given in the Contract Documents and be compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents.
 2. Engineer's review and approval will not extend to means, methods, techniques, sequences, or procedures of construction or to safety precautions or programs incident thereto.
 3. Engineer's review and approval of a separate item as such will not indicate approval of the assembly in which the item functions.
 4. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for any variation from the requirements of the Contract Documents unless Contractor has complied with the requirements of Paragraph 7.16.A.3 and

Engineer has given written approval of each such variation by specific written notation thereof incorporated in or accompanying the Shop Drawing or Sample. Engineer will document any such approved variation from the requirements of the Contract Documents in a Field Order.

5. Engineer's review and approval of a Shop Drawing or Sample shall not relieve Contractor from responsibility for complying with the requirements of Paragraph 7.16.A and B.
 6. Engineer's review and approval of a Shop Drawing or Sample, or of a variation from the requirements of the Contract Documents, shall not, under any circumstances, change the Contract Times or Contract Price, unless such changes are included in a Change Order.
 7. Neither Engineer's receipt, review, acceptance or approval of a Shop Drawing, Sample, or other submittal shall result in such item becoming a Contract Document.
 8. Contractor shall perform the Work in compliance with the requirements and commitments set forth in approved Shop Drawings and Samples, subject to the provisions of Paragraph 7.16.D.4.
- E. *Resubmittal Procedures:*
1. Contractor shall make corrections required by Engineer and shall return the required number of corrected copies of Shop Drawings and submit, as required, new Samples for review and approval. Contractor shall direct specific attention in writing to revisions other than the corrections called for by Engineer on previous submittals.
 2. Contractor shall furnish required submittals with sufficient information and accuracy to obtain required approval of an item with no more than three submittals. Engineer will record Engineer's time for reviewing a fourth or subsequent submittal of a Shop Drawings, sample, or other item requiring approval, and Contractor shall be responsible for Engineer's charges to Owner for such time. Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges.
 3. If Contractor requests a change of a previously approved submittal item, Contractor shall be responsible for Engineer's charges to Owner for its review time, and Owner may impose a set-off against payments due to Contractor to secure reimbursement for such charges, unless the need for such change is beyond the control of Contractor.

7.17 *Contractor's General Warranty and Guarantee*

- A. Contractor warrants and guarantees to Owner that all Work will be in accordance with the Contract Documents and will not be defective. Engineer and its officers, directors, members, partners, employees, agents, consultants, and subcontractors shall be entitled to rely on Contractor's warranty and guarantee.
- B. Contractor's warranty and guarantee hereunder excludes defects or damage caused by:
 1. abuse, modification, or improper maintenance or operation by persons other than Contractor, Subcontractors, Suppliers, or any other individual or entity for whom Contractor is responsible; or
 2. normal wear and tear under normal usage.
- C. Contractor's obligation to perform and complete the Work in accordance with the Contract Documents shall be absolute. None of the following will constitute an acceptance of Work that is not in accordance with the Contract Documents or a release of Contractor's obligation to perform the Work in accordance with the Contract Documents:

1. observations by Engineer;
 2. recommendation by Engineer or payment by Owner of any progress or final payment;
 3. the issuance of a certificate of Substantial Completion by Engineer or any payment related thereto by Owner;
 4. use or occupancy of the Work or any part thereof by Owner;
 5. any review and approval of a Shop Drawing or Sample submittal;
 6. the issuance of a notice of acceptability by Engineer;
 7. any inspection, test, or approval by others; or
 8. any correction of defective Work by Owner.
- D. If the Contract requires the Contractor to accept the assignment of a contract entered into by Owner, then the specific warranties, guarantees, and correction obligations contained in the assigned contract shall govern with respect to Contractor's performance obligations to Owner for the Work described in the assigned contract.

7.18 *Indemnification*

- A. To the fullest extent permitted by Laws and Regulations, and in addition to any other obligations of Contractor under the Contract or otherwise, Contractor shall indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to the performance of the Work, provided that any such claim, cost, loss, or damage is attributable to bodily injury, sickness, disease, or death, or to injury to or destruction of tangible property (other than the Work itself), including the loss of use resulting therefrom but only to the extent caused by any negligent act or omission of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work or anyone for whose acts any of them may be liable.
- B. In any and all claims against Owner or Engineer or any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors by any employee (or the survivor or personal representative of such employee) of Contractor, any Subcontractor, any Supplier, or any individual or entity directly or indirectly employed by any of them to perform any of the Work, or anyone for whose acts any of them may be liable, the indemnification obligation under Paragraph 7.18.A shall not be limited in any way by any limitation on the amount or type of damages, compensation, or benefits payable by or for Contractor or any such Subcontractor, Supplier, or other individual or entity under workers' compensation acts, disability benefit acts, or other employee benefit acts.
- C. The indemnification obligations of Contractor under Paragraph 7.18.A shall not extend to the liability of Engineer and Engineer's officers, directors, members, partners, employees, agents, consultants and subcontractors arising out of:
1. the preparation or approval of, or the failure to prepare or approve maps, Drawings, opinions, reports, surveys, Change Orders, designs, or Specifications; or
 2. giving directions or instructions, or failing to give them, if that is the primary cause of the injury or damage.

7.19 *Delegation of Professional Design Services*

- A. Contractor will not be required to provide professional design services unless such services are specifically required by the Contract Documents for a portion of the Work or unless such services are required to carry out Contractor's responsibilities for construction means, methods, techniques, sequences and procedures. Contractor shall not be required to provide professional services in violation of applicable Laws and Regulations.
- B. If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of Contractor by the Contract Documents, Owner and Engineer will specify all performance and design criteria that such services must satisfy. Contractor shall cause such services or certifications to be provided by a properly licensed professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, and other submittals prepared by such professional. Shop Drawings and other submittals related to the Work designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to Engineer.
- C. Owner and Engineer shall be entitled to rely upon the adequacy, accuracy, and completeness of the services, certifications, or approvals performed by such design professionals, provided Owner and Engineer have specified to Contractor all performance and design criteria that such services must satisfy.
- D. Pursuant to this paragraph, Engineer's review and approval of design calculations and design drawings will be only for the limited purpose of checking for conformance with performance and design criteria given and the design concept expressed in the Contract Documents. Engineer's review and approval of Shop Drawings and other submittals (except design calculations and design drawings) will be only for the purpose stated in Paragraph 7.16.D.1.
- E. Contractor shall not be responsible for the adequacy of the performance or design criteria specified by Owner or Engineer.

ARTICLE 8 – OTHER WORK AT THE SITE

8.01 *Other Work*

- A. In addition to and apart from the Work under the Contract Documents, the Owner may perform other work at or adjacent to the Site. Such other work may be performed by Owner's employees, or through contracts between the Owner and third parties. Owner may also arrange to have third-party utility owners perform work on their utilities and facilities at or adjacent to the Site.
- B. If Owner performs other work at or adjacent to the Site with Owner's employees, or through contracts for such other work, then Owner shall give Contractor written notice thereof prior to starting any such other work. If Owner has advance information regarding the start of any utility work at or adjacent to the Site, Owner shall provide such information to Contractor.
- C. Contractor shall afford each other contractor that performs such other work, each utility owner performing other work, and Owner, if Owner is performing other work with Owner's employees, proper and safe access to the Site, and provide a reasonable opportunity for the introduction and storage of materials and equipment and the execution of such other work. Contractor shall do all cutting, fitting, and patching of the Work that may be required to properly connect or otherwise make its several parts come together and properly integrate with such other work. Contractor shall not endanger any work of others by cutting, excavating, or otherwise altering such work; provided, however, that Contractor may cut or

alter others' work with the written consent of Engineer and the others whose work will be affected.

- D. If the proper execution or results of any part of Contractor's Work depends upon work performed by others under this Article 8, Contractor shall inspect such other work and promptly report to Engineer in writing any delays, defects, or deficiencies in such other work that render it unavailable or unsuitable for the proper execution and results of Contractor's Work. Contractor's failure to so report will constitute an acceptance of such other work as fit and proper for integration with Contractor's Work except for latent defects and deficiencies in such other work.

8.02 *Coordination*

- A. If Owner intends to contract with others for the performance of other work at or adjacent to the Site, to perform other work at or adjacent to the Site with Owner's employees, or to arrange to have utility owners perform work at or adjacent to the Site, the following will be set forth in the Supplementary Conditions or provided to Contractor prior to the start of any such other work:
 - 1. the identity of the individual or entity that will have authority and responsibility for coordination of the activities among the various contractors;
 - 2. an itemization of the specific matters to be covered by such authority and responsibility; and
 - 3. the extent of such authority and responsibilities.
- B. Unless otherwise provided in the Supplementary Conditions, Owner shall have sole authority and responsibility for such coordination.

8.03 *Legal Relationships*

- A. If, in the course of performing other work at or adjacent to the Site for Owner, the Owner's employees, any other contractor working for Owner, or any utility owner for whom the Owner is responsible causes damage to the Work or to the property of Contractor or its Subcontractors, or delays, disrupts, interferes with, or increases the scope or cost of the performance of the Work, through actions or inaction, then Contractor shall be entitled to an equitable adjustment in the Contract Price or the Contract Times, or both. Contractor must submit any Change Proposal seeking an equitable adjustment in the Contract Price or the Contract Times under this paragraph within 30 days of the damaging, delaying, disrupting, or interfering event. The entitlement to, and extent of, any such equitable adjustment shall take into account information (if any) regarding such other work that was provided to Contractor in the Contract Documents prior to the submittal of the Bid or the final negotiation of the terms of the Contract. When applicable, any such equitable adjustment in Contract Price shall be conditioned on Contractor assigning to Owner all Contractor's rights against such other contractor or utility owner with respect to the damage, delay, disruption, or interference that is the subject of the adjustment. Contractor's entitlement to an adjustment of the Contract Times is conditioned on such adjustment being essential to Contractor's ability to complete the Work within the Contract Times.
- B. Contractor shall take reasonable and customary measures to avoid damaging, delaying, disrupting, or interfering with the work of Owner, any other contractor, or any utility owner performing other work at or adjacent to the Site. If Contractor fails to take such measures and as a result damages, delays, disrupts, or interferes with the work of any such other contractor or utility owner, then Owner may impose a set-off against payments due to Contractor, and assign to such other contractor or utility owner the Owner's contractual

rights against Contractor with respect to the breach of the obligations set forth in this paragraph.

- C. When Owner is performing other work at or adjacent to the Site with Owner's employees, Contractor shall be liable to Owner for damage to such other work, and for the reasonable direct delay, disruption, and interference costs incurred by Owner as a result of Contractor's failure to take reasonable and customary measures with respect to Owner's other work. In response to such damage, delay, disruption, or interference, Owner may impose a set-off against payments due to Contractor.
- D. If Contractor damages, delays, disrupts, or interferes with the work of any other contractor, or any utility owner performing other work at or adjacent to the Site, through Contractor's failure to take reasonable and customary measures to avoid such impacts, or if any claim arising out of Contractor's actions, inactions, or negligence in performance of the Work at or adjacent to the Site is made by any such other contractor or utility owner against Contractor, Owner, or Engineer, then Contractor shall (1) promptly attempt to settle the claim as to all parties through negotiations with such other contractor or utility owner, or otherwise resolve the claim by arbitration or other dispute resolution proceeding or at law, and (2) indemnify and hold harmless Owner and Engineer, and the officers, directors, members, partners, employees, agents, consultants and subcontractors of each and any of them from and against any such claims, and against all costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such damage, delay, disruption, or interference.

ARTICLE 9 – OWNER'S RESPONSIBILITIES

9.01 *Communications to Contractor*

- A. Except as otherwise provided in these General Conditions, Owner shall issue all communications to Contractor through Engineer.

9.02 *Replacement of Engineer*

- A. Owner may at its discretion appoint an engineer to replace Engineer, provided Contractor makes no reasonable objection to the replacement engineer. The replacement engineer's status under the Contract Documents shall be that of the former Engineer.

9.03 *Furnish Data*

- A. Owner shall promptly furnish the data required of Owner under the Contract Documents.

9.04 *Pay When Due*

- A. Owner shall make payments to Contractor when they are due as provided in the Agreement.

9.05 *Lands and Easements; Reports, Tests, and Drawings*

- A. Owner's duties with respect to providing lands and easements are set forth in Paragraph 5.01.
- B. Owner's duties with respect to providing engineering surveys to establish reference points are set forth in Paragraph 4.03.
- C. Article 5 refers to Owner's identifying and making available to Contractor copies of reports of explorations and tests of conditions at the Site, and drawings of physical conditions relating to existing surface or subsurface structures at the Site.

- 9.06 *Insurance*
- A. Owner's responsibilities, if any, with respect to purchasing and maintaining liability and property insurance are set forth in Article 6.
- 9.07 *Change Orders*
- A. Owner's responsibilities with respect to Change Orders are set forth in Article 11.
- 9.08 *Inspections, Tests, and Approvals*
- A. Owner's responsibility with respect to certain inspections, tests, and approvals is set forth in Paragraph 14.02.B.
- 9.09 *Limitations on Owner's Responsibilities*
- A. The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Owner will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- 9.10 *Undisclosed Hazardous Environmental Condition*
- A. Owner's responsibility in respect to an undisclosed Hazardous Environmental Condition is set forth in Paragraph 5.06.
- 9.11 *Evidence of Financial Arrangements*
- A. Upon request of Contractor, Owner shall furnish Contractor reasonable evidence that financial arrangements have been made to satisfy Owner's obligations under the Contract Documents (including obligations under proposed changes in the Work).
- 9.12 *Safety Programs*
- A. While at the Site, Owner's employees and representatives shall comply with the specific applicable requirements of Contractor's safety programs of which Owner has been informed.
- B. Owner shall furnish copies of any applicable Owner safety programs to Contractor.

ARTICLE 10 – ENGINEER'S STATUS DURING CONSTRUCTION

- 10.01 *Owner's Representative*
- A. Engineer will be Owner's representative during the construction period. The duties and responsibilities and the limitations of authority of Engineer as Owner's representative during construction are set forth in the Contract.
- 10.02 *Visits to Site*
- A. Engineer will make visits to the Site at intervals appropriate to the various stages of construction as Engineer deems necessary in order to observe as an experienced and qualified design professional the progress that has been made and the quality of the various aspects of Contractor's executed Work. Based on information obtained during such visits and observations, Engineer, for the benefit of Owner, will determine, in general, if the Work is proceeding in accordance with the Contract Documents. Engineer will not be required to make exhaustive or continuous inspections on the Site to check the quality or quantity of the Work. Engineer's efforts will be directed toward providing for Owner a greater degree of confidence that the completed Work will conform generally to the Contract Documents. On

the basis of such visits and observations, Engineer will keep Owner informed of the progress of the Work and will endeavor to guard Owner against defective Work.

- B. Engineer's visits and observations are subject to all the limitations on Engineer's authority and responsibility set forth in Paragraph 10.08. Particularly, but without limitation, during or as a result of Engineer's visits or observations of Contractor's Work, Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work.

10.03 *Project Representative*

- A. If Owner and Engineer have agreed that Engineer will furnish a Resident Project Representative to represent Engineer at the Site and assist Engineer in observing the progress and quality of the Work, then the authority and responsibilities of any such Resident Project Representative will be as provided in the Supplementary Conditions, and limitations on the responsibilities thereof will be as provided in Paragraph 10.08. If Owner designates another representative or agent to represent Owner at the Site who is not Engineer's consultant, agent, or employee, the responsibilities and authority and limitations thereon of such other individual or entity will be as provided in the Supplementary Conditions.

10.04 *Rejecting Defective Work*

- A. Engineer has the authority to reject Work in accordance with Article 14.

10.05 *Shop Drawings, Change Orders and Payments*

- A. Engineer's authority, and limitations thereof, as to Shop Drawings and Samples, are set forth in Paragraph 7.16.
- B. Engineer's authority, and limitations thereof, as to design calculations and design drawings submitted in response to a delegation of professional design services, if any, are set forth in Paragraph 7.19.
- C. Engineer's authority as to Change Orders is set forth in Article 11.
- D. Engineer's authority as to Applications for Payment is set forth in Article 15.

10.06 *Determinations for Unit Price Work*

- A. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor as set forth in Paragraph 13.03.

10.07 *Decisions on Requirements of Contract Documents and Acceptability of Work*

- A. Engineer will render decisions regarding the requirements of the Contract Documents, and judge the acceptability of the Work, pursuant to the specific procedures set forth herein for initial interpretations, Change Proposals, and acceptance of the Work. In rendering such decisions and judgments, Engineer will not show partiality to Owner or Contractor, and will not be liable to Owner, Contractor, or others in connection with any proceedings, interpretations, decisions, or judgments conducted or rendered in good faith.

10.08 *Limitations on Engineer's Authority and Responsibilities*

- A. Neither Engineer's authority or responsibility under this Article 10 or under any other provision of the Contract, nor any decision made by Engineer in good faith either to exercise or not exercise such authority or responsibility or the undertaking, exercise, or performance of any authority or responsibility by Engineer, shall create, impose, or give rise to any duty in

contract, tort, or otherwise owed by Engineer to Contractor, any Subcontractor, any Supplier, any other individual or entity, or to any surety for or employee or agent of any of them.

- B. Engineer will not supervise, direct, control, or have authority over or be responsible for Contractor's means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or for any failure of Contractor to comply with Laws and Regulations applicable to the performance of the Work. Engineer will not be responsible for Contractor's failure to perform the Work in accordance with the Contract Documents.
- C. Engineer will not be responsible for the acts or omissions of Contractor or of any Subcontractor, any Supplier, or of any other individual or entity performing any of the Work.
- D. Engineer's review of the final Application for Payment and accompanying documentation and all maintenance and operating instructions, schedules, guarantees, bonds, certificates of inspection, tests and approvals, and other documentation required to be delivered by Paragraph 15.06.A will only be to determine generally that their content complies with the requirements of, and in the case of certificates of inspections, tests, and approvals, that the results certified indicate compliance with the Contract Documents.
- E. The limitations upon authority and responsibility set forth in this Paragraph 10.08 shall also apply to the Resident Project Representative, if any.

10.09 *Compliance with Safety Program*

- A. While at the Site, Engineer's employees and representatives will comply with the specific applicable requirements of Owner's and Contractor's safety programs (if any) of which Engineer has been informed.

ARTICLE 11 – AMENDING THE CONTRACT DOCUMENTS; CHANGES IN THE WORK

11.01 *Amending and Supplementing Contract Documents*

- A. The Contract Documents may be amended or supplemented by a Change Order, a Work Change Directive, or a Field Order.
 - 1. *Change Orders:*
 - a. If an amendment or supplement to the Contract Documents includes a change in the Contract Price or the Contract Times, such amendment or supplement must be set forth in a Change Order. A Change Order also may be used to establish amendments and supplements of the Contract Documents that do not affect the Contract Price or Contract Times.
 - b. Owner and Contractor may amend those terms and conditions of the Contract Documents that do not involve (1) the performance or acceptability of the Work, (2) the design (as set forth in the Drawings, Specifications, or otherwise), or (3) other engineering or technical matters, without the recommendation of the Engineer. Such an amendment shall be set forth in a Change Order.
 - 2. *Work Change Directives:* A Work Change Directive will not change the Contract Price or the Contract Times but is evidence that the parties expect that the modification ordered or documented by a Work Change Directive will be incorporated in a subsequently issued Change Order, following negotiations by the parties as to the Work Change Directive's effect, if any, on the Contract Price and Contract Times; or, if negotiations are unsuccessful, by a determination under the terms of the Contract Documents

governing adjustments, expressly including Paragraph 11.04 regarding change of Contract Price. Contractor must submit any Change Proposal seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 30 days after the completion of the Work set out in the Work Change Directive. Owner must submit any Claim seeking an adjustment of the Contract Price or the Contract Times, or both, no later than 60 days after issuance of the Work Change Directive.

3. *Field Orders*: Engineer may authorize minor changes in the Work if the changes do not involve an adjustment in the Contract Price or the Contract Times and are compatible with the design concept of the completed Project as a functioning whole as indicated by the Contract Documents. Such changes will be accomplished by a Field Order and will be binding on Owner and also on Contractor, which shall perform the Work involved promptly. If Contractor believes that a Field Order justifies an adjustment in the Contract Price or Contract Times, or both, then before proceeding with the Work at issue, Contractor shall submit a Change Proposal as provided herein.

11.02 *Owner-Authorized Changes in the Work*

- A. Without invalidating the Contract and without notice to any surety, Owner may, at any time or from time to time, order additions, deletions, or revisions in the Work. Such changes shall be supported by Engineer's recommendation, to the extent the change involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters. Such changes may be accomplished by a Change Order, if Owner and Contractor have agreed as to the effect, if any, of the changes on Contract Times or Contract Price; or by a Work Change Directive. Upon receipt of any such document, Contractor shall promptly proceed with the Work involved; or, in the case of a deletion in the Work, promptly cease construction activities with respect to such deleted Work. Added or revised Work shall be performed under the applicable conditions of the Contract Documents. Nothing in this paragraph shall obligate Contractor to undertake work that Contractor reasonably concludes cannot be performed in a manner consistent with Contractor's safety obligations under the Contract Documents or Laws and Regulations.

11.03 *Unauthorized Changes in the Work*

- A. Contractor shall not be entitled to an increase in the Contract Price or an extension of the Contract Times with respect to any work performed that is not required by the Contract Documents, as amended, modified, or supplemented, except in the case of an emergency as provided in Paragraph 7.15 or in the case of uncovering Work as provided in Paragraph 14.05.

11.04 *Change of Contract Price*

- A. The Contract Price may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Price shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment of Contract Price shall comply with the provisions of Article 12.
- B. An adjustment in the Contract Price will be determined as follows:
 1. where the Work involved is covered by unit prices contained in the Contract Documents, then by application of such unit prices to the quantities of the items involved (subject to the provisions of Paragraph 13.03); or
 2. where the Work involved is not covered by unit prices contained in the Contract Documents, then by a mutually agreed lump sum (which may include an allowance for overhead and profit not necessarily in accordance with Paragraph 11.04.C.2); or

3. where the Work involved is not covered by unit prices contained in the Contract Documents and the parties do not reach mutual agreement to a lump sum, then on the basis of the Cost of the Work (determined as provided in Paragraph 13.01) plus a Contractor's fee for overhead and profit (determined as provided in Paragraph 11.04.C).
- C. *Contractor's Fee*: When applicable, the Contractor's fee for overhead and profit shall be determined as follows:
1. a mutually acceptable fixed fee; or
 2. if a fixed fee is not agreed upon, then a fee based on the following percentages of the various portions of the Cost of the Work:
 - a. for costs incurred under Paragraphs 13.01.B.1 and 13.01.B.2, the Contractor's fee shall be 15 percent;
 - b. for costs incurred under Paragraph 13.01.B.3, the Contractor's fee shall be five percent;
 - c. where one or more tiers of subcontracts are on the basis of Cost of the Work plus a fee and no fixed fee is agreed upon, the intent of Paragraphs 11.04.C.2.a and 11.04.C.2.b is that the Contractor's fee shall be based on: (1) a fee of 15 percent of the costs incurred under Paragraphs 13.01.A.1 and 13.01.A.2 by the Subcontractor that actually performs the Work, at whatever tier, and (2) with respect to Contractor itself and to any Subcontractors of a tier higher than that of the Subcontractor that actually performs the Work, a fee of five percent of the amount (fee plus underlying costs incurred) attributable to the next lower tier Subcontractor; provided, however, that for any such subcontracted work the maximum total fee to be paid by Owner shall be no greater than 27 percent of the costs incurred by the Subcontractor that actually performs the work;
 - d. no fee shall be payable on the basis of costs itemized under Paragraphs 13.01.B.4, 13.01.B.5, and 13.01.C;
 - e. the amount of credit to be allowed by Contractor to Owner for any change which results in a net decrease in cost will be the amount of the actual net decrease in cost plus a deduction in Contractor's fee by an amount equal to five percent of such net decrease; and
 - f. when both additions and credits are involved in any one change, the adjustment in Contractor's fee shall be computed on the basis of the net change in accordance with Paragraphs 11.04.C.2.a through 11.04.C.2.e, inclusive.

11.05 *Change of Contract Times*

- A. The Contract Times may only be changed by a Change Order. Any Change Proposal for an adjustment in the Contract Times shall comply with the provisions of Paragraph 11.06. Any Claim for an adjustment in the Contract Times shall comply with the provisions of Article 12.
- B. An adjustment of the Contract Times shall be subject to the limitations set forth in Paragraph 4.05, concerning delays in Contractor's progress.

11.06 *Change Proposals*

- A. Contractor shall submit a Change Proposal to Engineer to request an adjustment in the Contract Times or Contract Price; appeal an initial decision by Engineer concerning the requirements of the Contract Documents or relating to the acceptability of the Work under the Contract Documents; contest a set-off against payment due; or seek other relief under

the Contract. The Change Proposal shall specify any proposed change in Contract Times or Contract Price, or both, or other proposed relief, and explain the reason for the proposed change, with citations to any governing or applicable provisions of the Contract Documents.

1. *Procedures:* Contractor shall submit each Change Proposal to Engineer promptly (but in no event later than 30 days) after the start of the event giving rise thereto, or after such initial decision. The Contractor shall submit supporting data, including the proposed change in Contract Price or Contract Time (if any), to the Engineer and Owner within 15 days after the submittal of the Change Proposal. The supporting data shall be accompanied by a written statement that the supporting data are accurate and complete, and that any requested time or price adjustment is the entire adjustment to which Contractor believes it is entitled as a result of said event. Engineer will advise Owner regarding the Change Proposal, and consider any comments or response from Owner regarding the Change Proposal.
 2. *Engineer's Action:* Engineer will review each Change Proposal and, within 30 days after receipt of the Contractor's supporting data, either deny the Change Proposal in whole, approve it in whole, or deny it in part and approve it in part. Such actions shall be in writing, with a copy provided to Owner and Contractor. If Engineer does not take action on the Change Proposal within 30 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of Engineer's inaction the Change Proposal is deemed denied, thereby commencing the time for appeal of the denial under Article 12.
 3. *Binding Decision:* Engineer's decision will be final and binding upon Owner and Contractor, unless Owner or Contractor appeals the decision by filing a Claim under Article 12.
- B. *Resolution of Certain Change Proposals:* If the Change Proposal does not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters, then Engineer will notify the parties that the Engineer is unable to resolve the Change Proposal. For purposes of further resolution of such a Change Proposal, such notice shall be deemed a denial, and Contractor may choose to seek resolution under the terms of Article 12.

11.07 Execution of Change Orders

- A. Owner and Contractor shall execute appropriate Change Orders covering:
1. changes in the Contract Price or Contract Times which are agreed to by the parties, including any undisputed sum or amount of time for Work actually performed in accordance with a Work Change Directive;
 2. changes in Contract Price resulting from an Owner set-off, unless Contractor has duly contested such set-off;
 3. changes in the Work which are: (a) ordered by Owner pursuant to Paragraph 11.02, (b) required because of Owner's acceptance of defective Work under Paragraph 14.04 or Owner's correction of defective Work under Paragraph 14.07, or (c) agreed to by the parties, subject to the need for Engineer's recommendation if the change in the Work involves the design (as set forth in the Drawings, Specifications, or otherwise), or other engineering or technical matters; and
 4. changes in the Contract Price or Contract Times, or other changes, which embody the substance of any final and binding results under Paragraph 11.06, or Article 12.

- B. If Owner or Contractor refuses to execute a Change Order that is required to be executed under the terms of this Paragraph 11.07, it shall be deemed to be of full force and effect, as if fully executed.

11.08 *Notification to Surety*

- A. If the provisions of any bond require notice to be given to a surety of any change affecting the general scope of the Work or the provisions of the Contract Documents (including, but not limited to, Contract Price or Contract Times), the giving of any such notice will be Contractor's responsibility. The amount of each applicable bond will be adjusted to reflect the effect of any such change.

ARTICLE 12 – CLAIMS

12.01 *Claims*

- A. *Claims Process:* The following disputes between Owner and Contractor shall be submitted to the Claims process set forth in this Article:
 - 1. Appeals by Owner or Contractor of Engineer's decisions regarding Change Proposals;
 - 2. Owner demands for adjustments in the Contract Price or Contract Times, or other relief under the Contract Documents; and
 - 3. Disputes that Engineer has been unable to address because they do not involve the design (as set forth in the Drawings, Specifications, or otherwise), the acceptability of the Work, or other engineering or technical matters.
- B. *Submittal of Claim:* The party submitting a Claim shall deliver it directly to the other party to the Contract promptly (but in no event later than 30 days) after the start of the event giving rise thereto; in the case of appeals regarding Change Proposals within 30 days of the decision under appeal. The party submitting the Claim shall also furnish a copy to the Engineer, for its information only. The responsibility to substantiate a Claim shall rest with the party making the Claim. In the case of a Claim by Contractor seeking an increase in the Contract Times or Contract Price, or both, Contractor shall certify that the Claim is made in good faith, that the supporting data are accurate and complete, and that to the best of Contractor's knowledge and belief the amount of time or money requested accurately reflects the full amount to which Contractor is entitled.
- C. *Review and Resolution:* The party receiving a Claim shall review it thoroughly, giving full consideration to its merits. The two parties shall seek to resolve the Claim through the exchange of information and direct negotiations. The parties may extend the time for resolving the Claim by mutual agreement. All actions taken on a Claim shall be stated in writing and submitted to the other party, with a copy to Engineer.
- D. *Mediation:*
 - 1. At any time after initiation of a Claim, Owner and Contractor may mutually agree to mediation of the underlying dispute. The agreement to mediate shall stay the Claim submittal and response process.
 - 2. If Owner and Contractor agree to mediation, then after 60 days from such agreement, either Owner or Contractor may unilaterally terminate the mediation process, and the Claim submittal and decision process shall resume as of the date of the termination. If the mediation proceeds but is unsuccessful in resolving the dispute, the Claim submittal

and decision process shall resume as of the date of the conclusion of the mediation, as determined by the mediator.

3. Owner and Contractor shall each pay one-half of the mediator's fees and costs.
- E. *Partial Approval*: If the party receiving a Claim approves the Claim in part and denies it in part, such action shall be final and binding unless within 30 days of such action the other party invokes the procedure set forth in Article 17 for final resolution of disputes.
- F. *Denial of Claim*: If efforts to resolve a Claim are not successful, the party receiving the Claim may deny it by giving written notice of denial to the other party. If the receiving party does not take action on the Claim within 90 days, then either Owner or Contractor may at any time thereafter submit a letter to the other party indicating that as a result of the inaction, the Claim is deemed denied, thereby commencing the time for appeal of the denial. A denial of the Claim shall be final and binding unless within 30 days of the denial the other party invokes the procedure set forth in Article 17 for the final resolution of disputes.
- G. *Final and Binding Results*: If the parties reach a mutual agreement regarding a Claim, whether through approval of the Claim, direct negotiations, mediation, or otherwise; or if a Claim is approved in part and denied in part, or denied in full, and such actions become final and binding; then the results of the agreement or action on the Claim shall be incorporated in a Change Order to the extent they affect the Contract, including the Work, the Contract Times, or the Contract Price.

ARTICLE 13 – COST OF THE WORK; ALLOWANCES; UNIT PRICE WORK

13.01 *Cost of the Work*

- A. *Purposes for Determination of Cost of the Work*: The term Cost of the Work means the sum of all costs necessary for the proper performance of the Work at issue, as further defined below. The provisions of this Paragraph 13.01 are used for two distinct purposes:
 1. To determine Cost of the Work when Cost of the Work is a component of the Contract Price, under cost-plus-fee, time-and-materials, or other cost-based terms; or
 2. To determine the value of a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price. When the value of any such adjustment is determined on the basis of Cost of the Work, Contractor is entitled only to those additional or incremental costs required because of the change in the Work or because of the event giving rise to the adjustment.
- B. *Costs Included*: Except as otherwise may be agreed to in writing by Owner, costs included in the Cost of the Work shall be in amounts no higher than those prevailing in the locality of the Project, shall not include any of the costs itemized in Paragraph 13.01.C, and shall include only the following items:
 1. Payroll costs for employees in the direct employ of Contractor in the performance of the Work under schedules of job classifications agreed upon by Owner and Contractor. Such employees shall include, without limitation, superintendents, foremen, and other personnel employed full time on the Work. Payroll costs for employees not employed full time on the Work shall be apportioned on the basis of their time spent on the Work. Payroll costs shall include, but not be limited to, salaries and wages plus the cost of fringe benefits, which shall include social security contributions, unemployment, excise, and payroll taxes, workers' compensation, health and retirement benefits, bonuses, sick leave, and vacation and holiday pay applicable thereto. The expenses of performing

Work outside of regular working hours, on Saturday, Sunday, or legal holidays, shall be included in the above to the extent authorized by Owner.

2. Cost of all materials and equipment furnished and incorporated in the Work, including costs of transportation and storage thereof, and Suppliers' field services required in connection therewith. All cash discounts shall accrue to Contractor unless Owner deposits funds with Contractor with which to make payments, in which case the cash discounts shall accrue to Owner. All trade discounts, rebates, and refunds and returns from sale of surplus materials and equipment shall accrue to Owner, and Contractor shall make provisions so that they may be obtained.
3. Payments made by Contractor to Subcontractors for Work performed by Subcontractors. If required by Owner, Contractor shall obtain competitive bids from subcontractors acceptable to Owner and Contractor and shall deliver such bids to Owner, who will then determine, with the advice of Engineer, which bids, if any, will be acceptable. If any subcontract provides that the Subcontractor is to be paid on the basis of Cost of the Work plus a fee, the Subcontractor's Cost of the Work and fee shall be determined in the same manner as Contractor's Cost of the Work and fee as provided in this Paragraph 13.01.
4. Costs of special consultants (including but not limited to engineers, architects, testing laboratories, surveyors, attorneys, and accountants) employed for services specifically related to the Work.
5. Supplemental costs including the following:
 - a. The proportion of necessary transportation, travel, and subsistence expenses of Contractor's employees incurred in discharge of duties connected with the Work.
 - b. Cost, including transportation and maintenance, of all materials, supplies, equipment, machinery, appliances, office, and temporary facilities at the Site, and hand tools not owned by the workers, which are consumed in the performance of the Work, and cost, less market value, of such items used but not consumed which remain the property of Contractor.
 - c. Rentals of all construction equipment and machinery, and the parts thereof, whether rented from Contractor or others in accordance with rental agreements approved by Owner with the advice of Engineer, and the costs of transportation, loading, unloading, assembly, dismantling, and removal thereof. All such costs shall be in accordance with the terms of said rental agreements. The rental of any such equipment, machinery, or parts shall cease when the use thereof is no longer necessary for the Work.
 - d. Sales, consumer, use, and other similar taxes related to the Work, and for which Contractor is liable, as imposed by Laws and Regulations.
 - e. Deposits lost for causes other than negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, and royalty payments and fees for permits and licenses.
 - f. Losses and damages (and related expenses) caused by damage to the Work, not compensated by insurance or otherwise, sustained by Contractor in connection with the performance of the Work (except losses and damages within the deductible amounts of property insurance established in accordance with Paragraph 6.05), provided such losses and damages have resulted from causes other than the negligence of Contractor, any Subcontractor, or anyone directly or

indirectly employed by any of them or for whose acts any of them may be liable. Such losses shall include settlements made with the written consent and approval of Owner. No such losses, damages, and expenses shall be included in the Cost of the Work for the purpose of determining Contractor's fee.

- g. The cost of utilities, fuel, and sanitary facilities at the Site.
- h. Minor expenses such as communication service at the Site, express and courier services, and similar petty cash items in connection with the Work.
- i. The costs of premiums for all bonds and insurance that Contractor is required by the Contract Documents to purchase and maintain.

C. *Costs Excluded:* The term Cost of the Work shall not include any of the following items:

- 1. Payroll costs and other compensation of Contractor's officers, executives, principals (of partnerships and sole proprietorships), general managers, safety managers, engineers, architects, estimators, attorneys, auditors, accountants, purchasing and contracting agents, expeditors, timekeepers, clerks, and other personnel employed by Contractor, whether at the Site or in Contractor's principal or branch office for general administration of the Work and not specifically included in the agreed upon schedule of job classifications referred to in Paragraph 13.01.B.1 or specifically covered by Paragraph 13.01.B.4. The payroll costs and other compensation excluded here are to be considered administrative costs covered by the Contractor's fee.
- 2. Expenses of Contractor's principal and branch offices other than Contractor's office at the Site.
- 3. Any part of Contractor's capital expenses, including interest on Contractor's capital employed for the Work and charges against Contractor for delinquent payments.
- 4. Costs due to the negligence of Contractor, any Subcontractor, or anyone directly or indirectly employed by any of them or for whose acts any of them may be liable, including but not limited to, the correction of defective Work, disposal of materials or equipment wrongly supplied, and making good any damage to property.
- 5. Other overhead or general expense costs of any kind and the costs of any item not specifically and expressly included in Paragraph 13.01.B.

D. *Contractor's Fee:* When the Work as a whole is performed on the basis of cost-plus, Contractor's fee shall be determined as set forth in the Agreement. When the value of any Work covered by a Change Order, Change Proposal, Claim, set-off, or other adjustment in Contract Price is determined on the basis of Cost of the Work, Contractor's fee shall be determined as set forth in Paragraph 11.04.C.

E. *Documentation:* Whenever the Cost of the Work for any purpose is to be determined pursuant to this Article 13, Contractor will establish and maintain records thereof in accordance with generally accepted accounting practices and submit in a form acceptable to Engineer an itemized cost breakdown together with supporting data.

13.02 Allowances

A. It is understood that Contractor has included in the Contract Price all allowances so named in the Contract Documents and shall cause the Work so covered to be performed for such sums and by such persons or entities as may be acceptable to Owner and Engineer.

- B. *Cash Allowances*: Contractor agrees that:
 - 1. the cash allowances include the cost to Contractor (less any applicable trade discounts) of materials and equipment required by the allowances to be delivered at the Site, and all applicable taxes; and
 - 2. Contractor's costs for unloading and handling on the Site, labor, installation, overhead, profit, and other expenses contemplated for the cash allowances have been included in the Contract Price and not in the allowances, and no demand for additional payment on account of any of the foregoing will be valid.
- C. *Contingency Allowance*: Contractor agrees that a contingency allowance, if any, is for the sole use of Owner to cover unanticipated costs.
- D. Prior to final payment, an appropriate Change Order will be issued as recommended by Engineer to reflect actual amounts due Contractor on account of Work covered by allowances, and the Contract Price shall be correspondingly adjusted.

13.03 *Unit Price Work*

- A. Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the unit price for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement.
- B. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of Bids and determining an initial Contract Price. Payments to Contractor for Unit Price Work will be based on actual quantities.
- C. Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.
- D. Engineer will determine the actual quantities and classifications of Unit Price Work performed by Contractor. Engineer will review with Contractor the Engineer's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Engineer's written decision thereon will be final and binding (except as modified by Engineer to reflect changed factual conditions or more accurate data) upon Owner and Contractor, subject to the provisions of the following paragraph.
- E. Within 30 days of Engineer's written decision under the preceding paragraph, Contractor may submit a Change Proposal, or Owner may file a Claim, seeking an adjustment in the Contract Price if:
 - 1. the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement;
 - 2. there is no corresponding adjustment with respect to any other item of Work; and
 - 3. Contractor believes that it is entitled to an increase in Contract Price as a result of having incurred additional expense or Owner believes that Owner is entitled to a decrease in Contract Price, and the parties are unable to agree as to the amount of any such increase or decrease.

ARTICLE 14 – TESTS AND INSPECTIONS; CORRECTION, REMOVAL OR ACCEPTANCE OF DEFECTIVE WORK

14.01 *Access to Work*

- A. Owner, Engineer, their consultants and other representatives and personnel of Owner, independent testing laboratories, and authorities having jurisdiction will have access to the Site and the Work at reasonable times for their observation, inspection, and testing. Contractor shall provide them proper and safe conditions for such access and advise them of Contractor's safety procedures and programs so that they may comply therewith as applicable.

14.02 *Tests, Inspections, and Approvals*

- A. Contractor shall give Engineer timely notice of readiness of the Work (or specific parts thereof) for all required inspections and tests, and shall cooperate with inspection and testing personnel to facilitate required inspections and tests.
- B. Owner shall retain and pay for the services of an independent inspector, testing laboratory, or other qualified individual or entity to perform all inspections and tests expressly required by the Contract Documents to be furnished and paid for by Owner, except that costs incurred in connection with tests or inspections of covered Work shall be governed by the provisions of Paragraph 14.05.
- C. If Laws or Regulations of any public body having jurisdiction require any Work (or part thereof) specifically to be inspected, tested, or approved by an employee or other representative of such public body, Contractor shall assume full responsibility for arranging and obtaining such inspections, tests, or approvals, pay all costs in connection therewith, and furnish Engineer the required certificates of inspection or approval.
- D. Contractor shall be responsible for arranging, obtaining, and paying for all inspections and tests required:
 - 1. by the Contract Documents, unless the Contract Documents expressly allocate responsibility for a specific inspection or test to Owner;
 - 2. to attain Owner's and Engineer's acceptance of materials or equipment to be incorporated in the Work;
 - 3. by manufacturers of equipment furnished under the Contract Documents;
 - 4. for testing, adjusting, and balancing of mechanical, electrical, and other equipment to be incorporated into the Work; and
 - 5. for acceptance of materials, mix designs, or equipment submitted for approval prior to Contractor's purchase thereof for incorporation in the Work.

Such inspections and tests shall be performed by independent inspectors, testing laboratories, or other qualified individuals or entities acceptable to Owner and Engineer.

- E. If the Contract Documents require the Work (or part thereof) to be approved by Owner, Engineer, or another designated individual or entity, then Contractor shall assume full responsibility for arranging and obtaining such approvals.
- F. If any Work (or the work of others) that is to be inspected, tested, or approved is covered by Contractor without written concurrence of Engineer, Contractor shall, if requested by Engineer, uncover such Work for observation. Such uncovering shall be at Contractor's expense unless Contractor had given Engineer timely notice of Contractor's intention to

cover the same and Engineer had not acted with reasonable promptness in response to such notice.

14.03 *Defective Work*

- A. *Contractor's Obligation:* It is Contractor's obligation to assure that the Work is not defective.
- B. *Engineer's Authority:* Engineer has the authority to determine whether Work is defective, and to reject defective Work.
- C. *Notice of Defects:* Prompt notice of all defective Work of which Owner or Engineer has actual knowledge will be given to Contractor.
- D. *Correction, or Removal and Replacement:* Promptly after receipt of written notice of defective Work, Contractor shall correct all such defective Work, whether or not fabricated, installed, or completed, or, if Engineer has rejected the defective Work, remove it from the Project and replace it with Work that is not defective.
- E. *Preservation of Warranties:* When correcting defective Work, Contractor shall take no action that would void or otherwise impair Owner's special warranty and guarantee, if any, on said Work.
- F. *Costs and Damages:* In addition to its correction, removal, and replacement obligations with respect to defective Work, Contractor shall pay all claims, costs, losses, and damages arising out of or relating to defective Work, including but not limited to the cost of the inspection, testing, correction, removal, replacement, or reconstruction of such defective Work, fines levied against Owner by governmental authorities because the Work is defective, and the costs of repair or replacement of work of others resulting from defective Work. Prior to final payment, if Owner and Contractor are unable to agree as to the measure of such claims, costs, losses, and damages resulting from defective Work, then Owner may impose a reasonable set-off against payments due under Article 15.

14.04 *Acceptance of Defective Work*

- A. If, instead of requiring correction or removal and replacement of defective Work, Owner prefers to accept it, Owner may do so (subject, if such acceptance occurs prior to final payment, to Engineer's confirmation that such acceptance is in general accord with the design intent and applicable engineering principles, and will not endanger public safety). Contractor shall pay all claims, costs, losses, and damages attributable to Owner's evaluation of and determination to accept such defective Work (such costs to be approved by Engineer as to reasonableness), and for the diminished value of the Work to the extent not otherwise paid by Contractor. If any such acceptance occurs prior to final payment, the necessary revisions in the Contract Documents with respect to the Work shall be incorporated in a Change Order. If the parties are unable to agree as to the decrease in the Contract Price, reflecting the diminished value of Work so accepted, then Owner may impose a reasonable set-off against payments due under Article 15. If the acceptance of defective Work occurs after final payment, Contractor shall pay an appropriate amount to Owner.

14.05 *Uncovering Work*

- A. Engineer has the authority to require additional inspection or testing of the Work, whether or not the Work is fabricated, installed, or completed.
- B. If any Work is covered contrary to the written request of Engineer, then Contractor shall, if requested by Engineer, uncover such Work for Engineer's observation, and then replace the covering, all at Contractor's expense.

- C. If Engineer considers it necessary or advisable that covered Work be observed by Engineer or inspected or tested by others, then Contractor, at Engineer's request, shall uncover, expose, or otherwise make available for observation, inspection, or testing as Engineer may require, that portion of the Work in question, and provide all necessary labor, material, and equipment.
 - 1. If it is found that the uncovered Work is defective, Contractor shall be responsible for all claims, costs, losses, and damages arising out of or relating to such uncovering, exposure, observation, inspection, and testing, and of satisfactory replacement or reconstruction (including but not limited to all costs of repair or replacement of work of others); and pending Contractor's full discharge of this responsibility the Owner shall be entitled to impose a reasonable set-off against payments due under Article 15.
 - 2. If the uncovered Work is not found to be defective, Contractor shall be allowed an increase in the Contract Price or an extension of the Contract Times, or both, directly attributable to such uncovering, exposure, observation, inspection, testing, replacement, and reconstruction. If the parties are unable to agree as to the amount or extent thereof, then Contractor may submit a Change Proposal within 30 days of the determination that the Work is not defective.

14.06 *Owner May Stop the Work*

- A. If the Work is defective, or Contractor fails to supply sufficient skilled workers or suitable materials or equipment, or fails to perform the Work in such a way that the completed Work will conform to the Contract Documents, then Owner may order Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, this right of Owner to stop the Work shall not give rise to any duty on the part of Owner to exercise this right for the benefit of Contractor, any Subcontractor, any Supplier, any other individual or entity, or any surety for, or employee or agent of any of them.

14.07 *Owner May Correct Defective Work*

- A. If Contractor fails within a reasonable time after written notice from Engineer to correct defective Work, or to remove and replace rejected Work as required by Engineer, or if Contractor fails to perform the Work in accordance with the Contract Documents, or if Contractor fails to comply with any other provision of the Contract Documents, then Owner may, after seven days written notice to Contractor, correct or remedy any such deficiency.
- B. In exercising the rights and remedies under this Paragraph 14.07, Owner shall proceed expeditiously. In connection with such corrective or remedial action, Owner may exclude Contractor from all or part of the Site, take possession of all or part of the Work and suspend Contractor's services related thereto, and incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere. Contractor shall allow Owner, Owner's representatives, agents and employees, Owner's other contractors, and Engineer and Engineer's consultants access to the Site to enable Owner to exercise the rights and remedies under this paragraph.
- C. All claims, costs, losses, and damages incurred or sustained by Owner in exercising the rights and remedies under this Paragraph 14.07 will be charged against Contractor as set-offs against payments due under Article 15. Such claims, costs, losses and damages will include but not be limited to all costs of repair, or replacement of work of others destroyed or damaged by correction, removal, or replacement of Contractor's defective Work.

- D. Contractor shall not be allowed an extension of the Contract Times because of any delay in the performance of the Work attributable to the exercise by Owner of Owner's rights and remedies under this Paragraph 14.07.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

15.01 Progress Payments

- A. *Basis for Progress Payments:* The Schedule of Values established as provided in Article 2 will serve as the basis for progress payments and will be incorporated into a form of Application for Payment acceptable to Engineer. Progress payments on account of Unit Price Work will be based on the number of units completed during the pay period, as determined under the provisions of Paragraph 13.03. Progress payments for cost-based Work will be based on Cost of the Work completed by Contractor during the pay period.
- B. *Applications for Payments:*
1. At least 20 days before the date established in the Agreement for each progress payment (but not more often than once a month), Contractor shall submit to Engineer for review an Application for Payment filled out and signed by Contractor covering the Work completed as of the date of the Application and accompanied by such supporting documentation as is required by the Contract Documents. If payment is requested on the basis of materials and equipment not incorporated in the Work but delivered and suitably stored at the Site or at another location agreed to in writing, the Application for Payment shall also be accompanied by a bill of sale, invoice, or other documentation warranting that Owner has received the materials and equipment free and clear of all Liens, and evidence that the materials and equipment are covered by appropriate property insurance, a warehouse bond, or other arrangements to protect Owner's interest therein, all of which must be satisfactory to Owner.
 2. Beginning with the second Application for Payment, each Application shall include an affidavit of Contractor stating that all previous progress payments received on account of the Work have been applied on account to discharge Contractor's legitimate obligations associated with prior Applications for Payment.
 3. The amount of retainage with respect to progress payments will be as stipulated in the Agreement.
- C. *Review of Applications:*
1. Engineer will, within 10 days after receipt of each Application for Payment, including each resubmittal, either indicate in writing a recommendation of payment and present the Application to Owner, or return the Application to Contractor indicating in writing Engineer's reasons for refusing to recommend payment. In the latter case, Contractor may make the necessary corrections and resubmit the Application.
 2. Engineer's recommendation of any payment requested in an Application for Payment will constitute a representation by Engineer to Owner, based on Engineer's observations of the executed Work as an experienced and qualified design professional, and on Engineer's review of the Application for Payment and the accompanying data and schedules, that to the best of Engineer's knowledge, information and belief:
 - a. the Work has progressed to the point indicated;
 - b. the quality of the Work is generally in accordance with the Contract Documents (subject to an evaluation of the Work as a functioning whole prior to or upon

Substantial Completion, the results of any subsequent tests called for in the Contract Documents, a final determination of quantities and classifications for Unit Price Work under Paragraph 13.03, and any other qualifications stated in the recommendation); and

- c. the conditions precedent to Contractor's being entitled to such payment appear to have been fulfilled in so far as it is Engineer's responsibility to observe the Work.
3. By recommending any such payment Engineer will not thereby be deemed to have represented that:
 - a. inspections made to check the quality or the quantity of the Work as it has been performed have been exhaustive, extended to every aspect of the Work in progress, or involved detailed inspections of the Work beyond the responsibilities specifically assigned to Engineer in the Contract; or
 - b. there may not be other matters or issues between the parties that might entitle Contractor to be paid additionally by Owner or entitle Owner to withhold payment to Contractor.
 4. Neither Engineer's review of Contractor's Work for the purposes of recommending payments nor Engineer's recommendation of any payment, including final payment, will impose responsibility on Engineer:
 - a. to supervise, direct, or control the Work, or
 - b. for the means, methods, techniques, sequences, or procedures of construction, or the safety precautions and programs incident thereto, or
 - c. for Contractor's failure to comply with Laws and Regulations applicable to Contractor's performance of the Work, or
 - d. to make any examination to ascertain how or for what purposes Contractor has used the money paid on account of the Contract Price, or
 - e. to determine that title to any of the Work, materials, or equipment has passed to Owner free and clear of any Liens.
 5. Engineer may refuse to recommend the whole or any part of any payment if, in Engineer's opinion, it would be incorrect to make the representations to Owner stated in Paragraph 15.01.C.2.
 6. Engineer will recommend reductions in payment (set-offs) necessary in Engineer's opinion to protect Owner from loss because:
 - a. the Work is defective, requiring correction or replacement;
 - b. the Contract Price has been reduced by Change Orders;
 - c. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible; or
 - e. Engineer has actual knowledge of the occurrence of any of the events that would constitute a default by Contractor and therefore justify termination for cause under the Contract Documents.

D. *Payment Becomes Due:*

1. Ten days after presentation of the Application for Payment to Owner with Engineer's recommendation, the amount recommended (subject to any Owner set-offs) will become due, and when due will be paid by Owner to Contractor.

E. *Reductions in Payment by Owner:*

1. In addition to any reductions in payment (set-offs) recommended by Engineer, Owner is entitled to impose a set-off against payment based on any of the following:
 - a. claims have been made against Owner on account of Contractor's conduct in the performance or furnishing of the Work, or Owner has incurred costs, losses, or damages on account of Contractor's conduct in the performance or furnishing of the Work, including but not limited to claims, costs, losses, or damages from workplace injuries, adjacent property damage, non-compliance with Laws and Regulations, and patent infringement;
 - b. Contractor has failed to take reasonable and customary measures to avoid damage, delay, disruption, and interference with other work at or adjacent to the Site;
 - c. Contractor has failed to provide and maintain required bonds or insurance;
 - d. Owner has been required to remove or remediate a Hazardous Environmental Condition for which Contractor is responsible;
 - e. Owner has incurred extra charges or engineering costs related to submittal reviews, evaluations of proposed substitutes, tests and inspections, or return visits to manufacturing or assembly facilities;
 - f. the Work is defective, requiring correction or replacement;
 - g. Owner has been required to correct defective Work in accordance with Paragraph 14.07, or has accepted defective Work pursuant to Paragraph 14.04;
 - h. the Contract Price has been reduced by Change Orders;
 - i. an event that would constitute a default by Contractor and therefore justify a termination for cause has occurred;
 - j. liquidated damages have accrued as a result of Contractor's failure to achieve Milestones, Substantial Completion, or final completion of the Work;
 - k. Liens have been filed in connection with the Work, except where Contractor has delivered a specific bond satisfactory to Owner to secure the satisfaction and discharge of such Liens;
 - l. there are other items entitling Owner to a set off against the amount recommended.
2. If Owner imposes any set-off against payment, whether based on its own knowledge or on the written recommendations of Engineer, Owner will give Contractor immediate written notice (with a copy to Engineer) stating the reasons for such action and the specific amount of the reduction, and promptly pay Contractor any amount remaining after deduction of the amount so withheld. Owner shall promptly pay Contractor the amount so withheld, or any adjustment thereto agreed to by Owner and Contractor, if Contractor remedies the reasons for such action. The reduction imposed shall be binding on Contractor unless it duly submits a Change Proposal contesting the reduction.

3. Upon a subsequent determination that Owner's refusal of payment was not justified, the amount wrongfully withheld shall be treated as an amount due as determined by Paragraph 15.01.C.1 and subject to interest as provided in the Agreement.

15.02 *Contractor's Warranty of Title*

- A. Contractor warrants and guarantees that title to all Work, materials, and equipment furnished under the Contract will pass to Owner free and clear of (1) all Liens and other title defects, and (2) all patent, licensing, copyright, or royalty obligations, no later than seven days after the time of payment by Owner.

15.03 *Substantial Completion*

- A. When Contractor considers the entire Work ready for its intended use Contractor shall notify Owner and Engineer in writing that the entire Work is substantially complete and request that Engineer issue a certificate of Substantial Completion. Contractor shall at the same time submit to Owner and Engineer an initial draft of punch list items to be completed or corrected before final payment.
- B. Promptly after Contractor's notification, Owner, Contractor, and Engineer shall make an inspection of the Work to determine the status of completion. If Engineer does not consider the Work substantially complete, Engineer will notify Contractor in writing giving the reasons therefor.
- C. If Engineer considers the Work substantially complete, Engineer will deliver to Owner a preliminary certificate of Substantial Completion which shall fix the date of Substantial Completion. Engineer shall attach to the certificate a punch list of items to be completed or corrected before final payment. Owner shall have seven days after receipt of the preliminary certificate during which to make written objection to Engineer as to any provisions of the certificate or attached punch list. If, after considering the objections to the provisions of the preliminary certificate, Engineer concludes that the Work is not substantially complete, Engineer will, within 14 days after submission of the preliminary certificate to Owner, notify Contractor in writing that the Work is not substantially complete, stating the reasons therefor. If Owner does not object to the provisions of the certificate, or if despite consideration of Owner's objections Engineer concludes that the Work is substantially complete, then Engineer will, within said 14 days, execute and deliver to Owner and Contractor a final certificate of Substantial Completion (with a revised punch list of items to be completed or corrected) reflecting such changes from the preliminary certificate as Engineer believes justified after consideration of any objections from Owner.
- D. At the time of receipt of the preliminary certificate of Substantial Completion, Owner and Contractor will confer regarding Owner's use or occupancy of the Work following Substantial Completion, review the builder's risk insurance policy with respect to the end of the builder's risk coverage, and confirm the transition to coverage of the Work under a permanent property insurance policy held by Owner. Unless Owner and Contractor agree otherwise in writing, Owner shall bear responsibility for security, operation, protection of the Work, property insurance, maintenance, heat, and utilities upon Owner's use or occupancy of the Work.
- E. After Substantial Completion the Contractor shall promptly begin work on the punch list of items to be completed or corrected prior to final payment. In appropriate cases Contractor may submit monthly Applications for Payment for completed punch list items, following the progress payment procedures set forth above.

- F. Owner shall have the right to exclude Contractor from the Site after the date of Substantial Completion subject to allowing Contractor reasonable access to remove its property and complete or correct items on the punch list.

15.04 *Partial Use or Occupancy*

- A. Prior to Substantial Completion of all the Work, Owner may use or occupy any substantially completed part of the Work which has specifically been identified in the Contract Documents, or which Owner, Engineer, and Contractor agree constitutes a separately functioning and usable part of the Work that can be used by Owner for its intended purpose without significant interference with Contractor's performance of the remainder of the Work, subject to the following conditions:
 1. At any time Owner may request in writing that Contractor permit Owner to use or occupy any such part of the Work that Owner believes to be substantially complete. If and when Contractor agrees that such part of the Work is substantially complete, Contractor, Owner, and Engineer will follow the procedures of Paragraph 15.03.A through E for that part of the Work.
 2. At any time Contractor may notify Owner and Engineer in writing that Contractor considers any such part of the Work substantially complete and request Engineer to issue a certificate of Substantial Completion for that part of the Work.
 3. Within a reasonable time after either such request, Owner, Contractor, and Engineer shall make an inspection of that part of the Work to determine its status of completion. If Engineer does not consider that part of the Work to be substantially complete, Engineer will notify Owner and Contractor in writing giving the reasons therefor. If Engineer considers that part of the Work to be substantially complete, the provisions of Paragraph 15.03 will apply with respect to certification of Substantial Completion of that part of the Work and the division of responsibility in respect thereof and access thereto.
 4. No use or occupancy or separate operation of part of the Work may occur prior to compliance with the requirements of Paragraph 6.05 regarding builder's risk or other property insurance.

15.05 *Final Inspection*

- A. Upon written notice from Contractor that the entire Work or an agreed portion thereof is complete, Engineer will promptly make a final inspection with Owner and Contractor and will notify Contractor in writing of all particulars in which this inspection reveals that the Work, or agreed portion thereof, is incomplete or defective. Contractor shall immediately take such measures as are necessary to complete such Work or remedy such deficiencies.

15.06 *Final Payment*

- A. *Application for Payment:*
 1. After Contractor has, in the opinion of Engineer, satisfactorily completed all corrections identified during the final inspection and has delivered, in accordance with the Contract Documents, all maintenance and operating instructions, schedules, guarantees, bonds, certificates or other evidence of insurance, certificates of inspection, annotated record documents (as provided in Paragraph 7.11), and other documents, Contractor may make application for final payment.

2. The final Application for Payment shall be accompanied (except as previously delivered) by:
 - a. all documentation called for in the Contract Documents;
 - b. consent of the surety, if any, to final payment;
 - c. satisfactory evidence that all title issues have been resolved such that title to all Work, materials, and equipment has passed to Owner free and clear of any Liens or other title defects, or will so pass upon final payment.
 - d. a list of all disputes that Contractor believes are unsettled; and
 - e. complete and legally effective releases or waivers (satisfactory to Owner) of all Lien rights arising out of the Work, and of Liens filed in connection with the Work.
3. In lieu of the releases or waivers of Liens specified in Paragraph 15.06.A.2 and as approved by Owner, Contractor may furnish receipts or releases in full and an affidavit of Contractor that: (a) the releases and receipts include all labor, services, material, and equipment for which a Lien could be filed; and (b) all payrolls, material and equipment bills, and other indebtedness connected with the Work for which Owner might in any way be responsible, or which might in any way result in liens or other burdens on Owner's property, have been paid or otherwise satisfied. If any Subcontractor or Supplier fails to furnish such a release or receipt in full, Contractor may furnish a bond or other collateral satisfactory to Owner to indemnify Owner against any Lien, or Owner at its option may issue joint checks payable to Contractor and specified Subcontractors and Suppliers.

B. *Engineer's Review of Application and Acceptance:*

1. If, on the basis of Engineer's observation of the Work during construction and final inspection, and Engineer's review of the final Application for Payment and accompanying documentation as required by the Contract Documents, Engineer is satisfied that the Work has been completed and Contractor's other obligations under the Contract have been fulfilled, Engineer will, within ten days after receipt of the final Application for Payment, indicate in writing Engineer's recommendation of final payment and present the Application for Payment to Owner for payment. Such recommendation shall account for any set-offs against payment that are necessary in Engineer's opinion to protect Owner from loss for the reasons stated above with respect to progress payments. At the same time Engineer will also give written notice to Owner and Contractor that the Work is acceptable, subject to the provisions of Paragraph 15.07. Otherwise, Engineer will return the Application for Payment to Contractor, indicating in writing the reasons for refusing to recommend final payment, in which case Contractor shall make the necessary corrections and resubmit the Application for Payment.

- C. *Completion of Work:*** The Work is complete (subject to surviving obligations) when it is ready for final payment as established by the Engineer's written recommendation of final payment.
- D. *Payment Becomes Due:*** Thirty days after the presentation to Owner of the final Application for Payment and accompanying documentation, the amount recommended by Engineer (less any further sum Owner is entitled to set off against Engineer's recommendation, including but not limited to set-offs for liquidated damages and set-offs allowed under the provisions above with respect to progress payments) will become due and shall be paid by Owner to Contractor.

15.07 *Waiver of Claims*

- A. The making of final payment will not constitute a waiver by Owner of claims or rights against Contractor. Owner expressly reserves claims and rights arising from unsettled Liens, from defective Work appearing after final inspection pursuant to Paragraph 15.05, from Contractor's failure to comply with the Contract Documents or the terms of any special guarantees specified therein, from outstanding Claims by Owner, or from Contractor's continuing obligations under the Contract Documents.
- B. The acceptance of final payment by Contractor will constitute a waiver by Contractor of all claims and rights against Owner other than those pending matters that have been duly submitted or appealed under the provisions of Article 17.

15.08 *Correction Period*

- A. If within one year after the date of Substantial Completion (or such longer period of time as may be prescribed by the terms of any applicable special guarantee required by the Contract Documents, or by any specific provision of the Contract Documents), any Work is found to be defective, or if the repair of any damages to the Site, adjacent areas that Contractor has arranged to use through construction easements or otherwise, and other adjacent areas used by Contractor as permitted by Laws and Regulations, is found to be defective, then Contractor shall promptly, without cost to Owner and in accordance with Owner's written instructions:
 - 1. correct the defective repairs to the Site or such other adjacent areas;
 - 2. correct such defective Work;
 - 3. if the defective Work has been rejected by Owner, remove it from the Project and replace it with Work that is not defective, and
 - 4. satisfactorily correct or repair or remove and replace any damage to other Work, to the work of others, or to other land or areas resulting therefrom.
- B. If Contractor does not promptly comply with the terms of Owner's written instructions, or in an emergency where delay would cause serious risk of loss or damage, Owner may have the defective Work corrected or repaired or may have the rejected Work removed and replaced. Contractor shall pay all claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals and all court or arbitration or other dispute resolution costs) arising out of or relating to such correction or repair or such removal and replacement (including but not limited to all costs of repair or replacement of work of others).
- C. In special circumstances where a particular item of equipment is placed in continuous service before Substantial Completion of all the Work, the correction period for that item may start to run from an earlier date if so provided in the Specifications.
- D. Where defective Work (and damage to other Work resulting therefrom) has been corrected or removed and replaced under this paragraph, the correction period hereunder with respect to such Work will be extended for an additional period of one year after such correction or removal and replacement has been satisfactorily completed.
- E. Contractor's obligations under this paragraph are in addition to all other obligations and warranties. The provisions of this paragraph shall not be construed as a substitute for, or a waiver of, the provisions of any applicable statute of limitation or repose.

ARTICLE 16 – SUSPENSION OF WORK AND TERMINATION

16.01 *Owner May Suspend Work*

- A. At any time and without cause, Owner may suspend the Work or any portion thereof for a period of not more than 90 consecutive days by written notice to Contractor and Engineer. Such notice will fix the date on which Work will be resumed. Contractor shall resume the Work on the date so fixed. Contractor shall be entitled to an adjustment in the Contract Price or an extension of the Contract Times, or both, directly attributable to any such suspension. Any Change Proposal seeking such adjustments shall be submitted no later than 30 days after the date fixed for resumption of Work.

16.02 *Owner May Terminate for Cause*

- A. The occurrence of any one or more of the following events will constitute a default by Contractor and justify termination for cause:
 - 1. Contractor's persistent failure to perform the Work in accordance with the Contract Documents (including, but not limited to, failure to supply sufficient skilled workers or suitable materials or equipment or failure to adhere to the Progress Schedule);
 - 2. Failure of Contractor to perform or otherwise to comply with a material term of the Contract Documents;
 - 3. Contractor's disregard of Laws or Regulations of any public body having jurisdiction; or
 - 4. Contractor's repeated disregard of the authority of Owner or Engineer.
- B. If one or more of the events identified in Paragraph 16.02.A occurs, then after giving Contractor (and any surety) ten days written notice that Owner is considering a declaration that Contractor is in default and termination of the contract, Owner may proceed to:
 - 1. declare Contractor to be in default, and give Contractor (and any surety) notice that the Contract is terminated; and
 - 2. enforce the rights available to Owner under any applicable performance bond.
- C. Subject to the terms and operation of any applicable performance bond, if Owner has terminated the Contract for cause, Owner may exclude Contractor from the Site, take possession of the Work, incorporate in the Work all materials and equipment stored at the Site or for which Owner has paid Contractor but which are stored elsewhere, and complete the Work as Owner may deem expedient.
- D. Owner may not proceed with termination of the Contract under Paragraph 16.02.B if Contractor within seven days of receipt of notice of intent to terminate begins to correct its failure to perform and proceeds diligently to cure such failure.
- E. If Owner proceeds as provided in Paragraph 16.02.B, Contractor shall not be entitled to receive any further payment until the Work is completed. If the unpaid balance of the Contract Price exceeds the cost to complete the Work, including all related claims, costs, losses, and damages (including but not limited to all fees and charges of engineers, architects, attorneys, and other professionals) sustained by Owner, such excess will be paid to Contractor. If the cost to complete the Work including such related claims, costs, losses, and damages exceeds such unpaid balance, Contractor shall pay the difference to Owner. Such claims, costs, losses, and damages incurred by Owner will be reviewed by Engineer as to their reasonableness and, when so approved by Engineer, incorporated in a Change Order. When

exercising any rights or remedies under this paragraph, Owner shall not be required to obtain the lowest price for the Work performed.

- F. Where Contractor's services have been so terminated by Owner, the termination will not affect any rights or remedies of Owner against Contractor then existing or which may thereafter accrue, or any rights or remedies of Owner against Contractor or any surety under any payment bond or performance bond. Any retention or payment of money due Contractor by Owner will not release Contractor from liability.
- G. If and to the extent that Contractor has provided a performance bond under the provisions of Paragraph 6.01.A, the provisions of that bond shall govern over any inconsistent provisions of Paragraphs 16.02.B and 16.02.D.

16.03 *Owner May Terminate For Convenience*

- A. Upon seven days written notice to Contractor and Engineer, Owner may, without cause and without prejudice to any other right or remedy of Owner, terminate the Contract. In such case, Contractor shall be paid for (without duplication of any items):
 - 1. completed and acceptable Work executed in accordance with the Contract Documents prior to the effective date of termination, including fair and reasonable sums for overhead and profit on such Work;
 - 2. expenses sustained prior to the effective date of termination in performing services and furnishing labor, materials, or equipment as required by the Contract Documents in connection with uncompleted Work, plus fair and reasonable sums for overhead and profit on such expenses; and
 - 3. other reasonable expenses directly attributable to termination, including costs incurred to prepare a termination for convenience cost proposal.
- B. Contractor shall not be paid on account of loss of anticipated overhead, profits, or revenue, or other economic loss arising out of or resulting from such termination.

16.04 *Contractor May Stop Work or Terminate*

- A. If, through no act or fault of Contractor, (1) the Work is suspended for more than 90 consecutive days by Owner or under an order of court or other public authority, or (2) Engineer fails to act on any Application for Payment within 30 days after it is submitted, or (3) Owner fails for 30 days to pay Contractor any sum finally determined to be due, then Contractor may, upon seven days written notice to Owner and Engineer, and provided Owner or Engineer do not remedy such suspension or failure within that time, terminate the contract and recover from Owner payment on the same terms as provided in Paragraph 16.03.
- B. In lieu of terminating the Contract and without prejudice to any other right or remedy, if Engineer has failed to act on an Application for Payment within 30 days after it is submitted, or Owner has failed for 30 days to pay Contractor any sum finally determined to be due, Contractor may, seven days after written notice to Owner and Engineer, stop the Work until payment is made of all such amounts due Contractor, including interest thereon. The provisions of this paragraph are not intended to preclude Contractor from submitting a Change Proposal for an adjustment in Contract Price or Contract Times or otherwise for expenses or damage directly attributable to Contractor's stopping the Work as permitted by this paragraph.

ARTICLE 17 – FINAL RESOLUTION OF DISPUTES

17.01 *Methods and Procedures*

- A. *Disputes Subject to Final Resolution:* The following disputed matters are subject to final resolution under the provisions of this Article:
1. A timely appeal of an approval in part and denial in part of a Claim, or of a denial in full; and
 2. Disputes between Owner and Contractor concerning the Work or obligations under the Contract Documents, and arising after final payment has been made.
- B. *Final Resolution of Disputes:* For any dispute subject to resolution under this Article, Owner or Contractor may:
1. elect in writing to invoke the dispute resolution process provided for in the Supplementary Conditions; or
 2. agree with the other party to submit the dispute to another dispute resolution process; or
 3. if no dispute resolution process is provided for in the Supplementary Conditions or mutually agreed to, give written notice to the other party of the intent to submit the dispute to a court of competent jurisdiction.

ARTICLE 18 – MISCELLANEOUS

18.01 *Giving Notice*

- A. Whenever any provision of the Contract Documents requires the giving of written notice, it will be deemed to have been validly given if:
1. delivered in person, by a commercial courier service or otherwise, to the individual or to a member of the firm or to an officer of the corporation for which it is intended; or
 2. delivered at or sent by registered or certified mail, postage prepaid, to the last business address known to the sender of the notice.

18.02 *Computation of Times*

- A. When any period of time is referred to in the Contract by days, it will be computed to exclude the first and include the last day of such period. If the last day of any such period falls on a Saturday or Sunday or on a day made a legal holiday by the law of the applicable jurisdiction, such day will be omitted from the computation.

18.03 *Cumulative Remedies*

- A. The duties and obligations imposed by these General Conditions and the rights and remedies available hereunder to the parties hereto are in addition to, and are not to be construed in any way as a limitation of, any rights and remedies available to any or all of them which are otherwise imposed or available by Laws or Regulations, by special warranty or guarantee, or by other provisions of the Contract. The provisions of this paragraph will be as effective as if repeated specifically in the Contract Documents in connection with each particular duty, obligation, right, and remedy to which they apply.

18.04 *Limitation of Damages*

- A. With respect to any and all Change Proposals, Claims, disputes subject to final resolution, and other matters at issue, neither Owner nor Engineer, nor any of their officers, directors, members, partners, employees, agents, consultants, or subcontractors, shall be liable to Contractor for any claims, costs, losses, or damages sustained by Contractor on or in connection with any other project or anticipated project.

18.05 *No Waiver*

- A. A party's non-enforcement of any provision shall not constitute a waiver of that provision, nor shall it affect the enforceability of that provision or of the remainder of this Contract.

18.06 *Survival of Obligations*

- A. All representations, indemnifications, warranties, and guarantees made in, required by, or given in accordance with the Contract, as well as all continuing obligations indicated in the Contract, will survive final payment, completion, and acceptance of the Work or termination or completion of the Contract or termination of the services of Contractor.

18.07 *Controlling Law*

- A. This Contract is to be governed by the law of the state in which the Project is located.

18.08 *Headings*

- A. Article and paragraph headings are inserted for convenience only and do not constitute parts of these General Conditions.

I. SUPPLEMENTARY CONDITIONS

Supplementary Conditions

These Supplementary Conditions amend or supplement the Standard General Conditions of the Construction Contract, EJCDC® C-700 (2013 Edition). All provisions that are not so amended or supplemented remain in full force and effect.

The terms used in these Supplementary Conditions have the meanings stated in the General Conditions. Additional terms used in these Supplementary Conditions have the meanings stated below, which are applicable to both the singular and plural thereof.

The address system used in these Supplementary Conditions is the same as the address system used in the General Conditions, with the prefix "SC" added thereto.

ARTICLE 1 – DEFINITIONS AND TERMINOLOGY

SC-1.01 *Defined Terms*

- A. If the Contract will include a Geotechnical Baseline Report (see Article 5 below), include the following definitions:

SC-1.01. Add to the list of definitions in Paragraph 1.01.A by inserting the following as numbered items in their proper alphabetical positions:

Geotechnical Baseline Report (GBR) — The interpretive report prepared by or for Owner regarding subsurface conditions at the Site, and containing specific baseline geotechnical conditions that may be anticipated or relied upon for bidding and contract administration purposes, subject to the controlling provisions of the Contract, including the GBR's own terms. The GBR is a Contract Document.

Geotechnical Data Report (GDR) — The factual report that collects and presents data regarding actual subsurface conditions at or adjacent to the Site, including Technical Data and other geotechnical data, prepared by or for Owner in support of the Geotechnical Baseline Report. The GDR's content may include logs of borings, trenches, and other site investigations, recorded measurements of subsurface water levels, the results of field and laboratory testing, and descriptions of the investigative and testing programs. The GDR does not include an interpretation of the data. If opinions, or interpretive or speculative non-factual comments or statements appear in a document that is labeled a GDR, such opinions, comments, or statements are not operative parts of the GDR and do not have contractual standing. Subject to that exception, the GDR is a Contract Document.

SC 1.01.A.8 Add the following language at the end of last sentence of Paragraph 1.01.A.8:
The Change Order form to be used on this Project is EJCDC C-941. Agency approval is required before Change Orders are effective.

SC 1.01.A.48 Add the following language at the end of the last sentence of Paragraph 1.01.A.48:

A Work Change Directive cannot change Contract Price or Contract Times without a subsequent Change Order.

SC 1.01.A.49 Add the following new Paragraph after Paragraph 1.01.A.48:

Abnormal Weather Conditions – Conditions of extreme or unusual weather for a given region, elevation, or season as determined by Engineer. Extreme or unusual weather that is typical for a given region, elevation, or season should not be considered Abnormal Weather Conditions.

ARTICLE 2 – PRELIMINARY MATTERS

SC-2.01 Delivery of Bonds and Evidence of Insurance

- A. Paragraph 2.01.B of the General Conditions requires that Contractor furnish certificates of insurance. Paragraph 6.02.C states that upon request by Owner or other named or additional insureds, Contractor must provide evidence of insurance such as copies of required policies and endorsements, and documentation of applicable self-insured retentions and deductibles. Parallel provisions apply to Owner and the insurance that Owner is required to provide. Rather than relying on this two-step process (delivery of certificates of insurance at the outset; subsequent requests for additional evidence of insurance), some contract drafters may elect to require from the outset that copies of the insurance policies, rather than certificates of insurance, be delivered to the other party. If exchange of copies of insurance policies is required, the following should be used:

SC-2.01 Delete Paragraphs 2.01 B. and C. in their entirety and insert the following in their place:

- B. Evidence of Contractor's Insurance: When Contractor delivers the executed counterparts of the Agreement to Owner, Contractor shall also deliver to Owner copies of the policies of insurance (including all endorsements, and identification of applicable self-insured retentions and deductibles) required to be provided by Contractor in Article 6. Contractor may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.**
- C. Evidence of Owner's Insurance: After receipt from Contractor of the executed counterparts of the Agreement and all required bonds and insurance documentation, Owner shall promptly deliver to Contractor copies of the policies of insurance to be provided by Owner under Article 6 (if any). Owner may block out (redact) any confidential premium or pricing information contained in any policy or endorsement furnished under this provision.**

SC-2.02 Copies of Documents

- A. If the number of printed or hard copies of the Drawings and Project Manual to be provided is different than four copies the following may be used:

SC-2.02.A. Amend the first sentence of Paragraph 2.02.A. to read as follows:

Owner shall furnish to Contractor five copies of the Contract Documents (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF).

- B. On some projects it may be useful to produce conformed Contract Documents, in which the content of Addenda and negotiated changes are merged into the appropriate Specifications, Drawings, General Conditions, or other Contract Documents. This may be especially true on private construction projects where the terms and scope are negotiated and modified significantly after the initial release of proposed Contract Documents. Conformed documents may be considerably more convenient to use during the performance of the Work and the administration of the Contract.

EJCDC advises that if conformed documents are to be prepared and made available to Contractor, sufficient time and budget must be allocated to ensure the quality and full coordination of the conformed documents, and Owner and Engineer must recognize that Contractor, Subcontractors, and Suppliers will likely rely on the conformed version of the Contract Documents rather than the source components. If conformed documents are prepared without the level of commitment necessary to allow them to be accorded the full status of "Contract Documents," and are merely for reference or convenience, they should be accompanied by clear disclaimers of their content and a warning to consult the actual source Contract Documents.

A Supplementary Condition regarding conformed documents is necessary only if the Owner intends to provide the Contractor with conformed documents that will serve as binding Contract Documents. The following may be used for that purpose:

SC-2.02 Delete Paragraph 2.02.A in its entirety and insert the following new paragraph in its place:

- A. Owner shall furnish to Contractor 2 copies of conformed Contract Documents incorporating and integrating all Addenda and any amendments negotiated prior to the Effective Date of the Contract (including one fully executed counterpart of the Agreement), and one copy in electronic portable document format (PDF). Additional printed copies of the conformed Contract Documents will be furnished upon request at the cost of reproduction.**

- C. Note: If Owner is not furnishing PDF or other electronic files of the Contract Documents, then draft (1) a Supplementary Condition that deletes the reference in 2.02.A of the General Conditions to providing the PDF files, and (2) a Supplementary Condition that deletes Paragraph 3.01.C in its entirety.

SC- 2.06.B Delete Paragraph 2.06.B and replace it with the term [Deleted].

Guidance Note, continued: If the use of electronic data, electronic media, or electronic project monitoring is planned for this Project, then the parties may develop a protocol with the assistance of the Engineer or Consensus DOCS form 200.2 may be added to the Construction Contract as an Exhibit. If Consensus DOCS form 200.2 will be used, then include the following Supplementary Condition:

SC-2.06.B Add the following language to the end of 2.06.B:

Special requirements for electronic data apply to this Project. See attached Exhibit entitled "Electronic Communications Protocol Addendum," Consensus DOCS form 200.2.

ARTICLE 4 – COMMENCEMENT AND PROGRESS OF THE WORK

SC 4.01.A Amend the last sentence of Paragraph 4.01.A by striking out the following words:

In no event will the Contract Times commence to run later than the sixtieth day after the day of Bid opening or the thirtieth day after the Effective Date of the Contract, whichever date is earlier.

SC 4.05.C.2 Amend Paragraph 4.05.C.2 by striking out the following text: “abnormal weather conditions;” and inserting the following text:

Abnormal Weather Conditions;

ARTICLE 5 – AVAILABILITY OF LANDS; SUBSURFACE AND PHYSICAL CONDITIONS; HAZARDOUS ENVIRONMENTAL CONDITIONS

SC-5.03 *Subsurface and Physical Conditions*

- A. **This is a mandatory Supplementary Condition.** Paragraph 5.03, Subsurface and Physical Conditions, of the General Conditions requires the identification of all known documents regarding subsurface and physical conditions at or adjacent to the Site (this requirement is broader than merely requiring that Contractor be given access to subsurface reports prepared for the current Project). It also requires the identification of Technical Data (upon whose accuracy Contractor may rely) contained in such documents. Use the first version of SC-5.03, presented immediately below, for the purpose of identifying the known Site condition documents. If no such documents are known, then use the second version of SC-5.03, below. Also note that if the known documents include either a geotechnical report or environmental report prepared for the Project, or both, and the Supplementary Conditions neglect to expressly identify the Technical Data, upon whose accuracy Contractor may rely, that is contained in such reports, then the default definition of Technical Data in Paragraph 1.01 of the General Conditions will apply.

Note that if Owner elects to furnish a Geotechnical Baseline Report (GBR), use the alternate SC/GBR-5.03 and SC/GBR 5.04 located in the next section of this document, rather than one of the SC-5.03 versions immediately following. If a GBR is used, it remains important to disclose known reports and tests regarding subsurface conditions; a place for doing so is provided in SC/GBR-5.03. If some Site conditions are outside the scope of the Geotechnical Baseline Report it will continue to be necessary to identify reliable Technical Data contained in such reports and drawings; however, if the Geotechnical Baseline Report or a related Geotechnical Data Report already establish the data that is worthy of reliance, it will not be necessary to make a redundant identification in SC/GBR 5.03.

SC 5.03

- A. **No reports of explorations or tests of subsurface conditions at or adjacent to the Site, or drawings of physical conditions relating to existing surface or subsurface structures at the Site, are known to Owner.**

SC-5.06 *Hazardous Environmental Conditions*

- A. **This is a mandatory Supplementary Condition.** Paragraph 5.06 of the General Conditions contemplates that Owner identify all known documents regarding Hazardous Environmental Conditions (HEC) that have been identified at or adjacent to the Site. It also requires the identification of Technical Data (upon whose accuracy Contractor may rely) contained in such documents. Use the first version of SC-5.06, presented immediately below, to identify the known HEC documents. If no HEC documents are known, then use the second version of SC-5.06, below. Also note that if the known documents include either a geotechnical report or environmental report prepared for the Project, or both, and the Supplementary Conditions neglect to expressly identify the Technical Data,

upon whose accuracy Contractor may rely, that is contained in such reports, then the default definition of Technical Data in Paragraph 1.01 of the General Conditions will apply.

SC 5.06

- A. No reports or drawings related to Hazardous Environmental Conditions at the Site are known to Owner.**
- B. Not Used.**

ARTICLE 6 – BONDS AND INSURANCE

SC-6.02 Insurance—General Provisions

- A. Paragraph 6.02.B of the General Conditions requires that all companies that provide insurance policies required under this Contract shall have an A.M. Best rating of A-VII or better, unless a different standard is indicated in the Supplementary Conditions. The A.M. Best ratings are based on the financial strength and size of the insurance company, with A-VII representing a commonly used standard. SC-6.02 is the location for noting any different standard, whether narrower or broader.

Note that in some states not all worker’s compensation insurers obtain A.M. Best ratings. The Owner may wish to include the following optional exception (modified to meet applicable provisions in the state) to the requirement in 6.02.B:

SC-6.03 Contractor’s Insurance

- A. **This is a mandatory Supplementary Condition**, because it is the location for specifying the limits of the coverages for the insurance required in Paragraph 6.03 of the General Conditions. The information set forth in this Supplementary Condition (and in all other contractual provisions regarding bonds and insurance) should be provided by Owner, either directly or through written instructions given to Engineer (see EJCDC® C-051, Engineer’s Letter to Owner Requesting Instructions Concerning Bonds and Insurance, and EJCDC® C-052, Owner’s Instructions to Engineer Concerning Bonds and Insurance).

SC 6.03 Add the following new paragraph immediately after Paragraph 6.03.J:

- K. **The limits of liability for the insurance required by Paragraph 6.03 of the General Conditions shall provide coverage for not less than the following amounts or greater where required by Laws and Regulations:**

- 1. **Workers’ Compensation, and related coverages under Paragraphs 6.03.A.1 and A.2 of the General Conditions:**

| | |
|--|-------------------|
| State of Michigan: | <u>Statutory</u> |
| Federal, if applicable (e.g., Longshoreman’s): | <u>Statutory</u> |
| Employer’s Liability: | \$ <u>100,000</u> |

- 2. **Contractor’s Commercial General Liability under Paragraphs 6.03.B and 6.03.C of the General Conditions:**

| | |
|---|---------------------|
| General Aggregate | \$ <u>1,000,000</u> |
| Products - Completed Operations Aggregate | \$ <u>1,000,000</u> |

| | | |
|---|----|------------------|
| Personal and Advertising Injury | \$ | <u>1,000,000</u> |
| Each Occurrence (Bodily Injury and Property Damage) | \$ | <u>1,000,000</u> |

3. Automobile Liability under Paragraph 6.03.D. of the General Conditions:

Bodily Injury:

| | | |
|---------------|----|------------------|
| Each person | \$ | <u>1,000,000</u> |
| Each accident | \$ | <u>1,000,000</u> |

Property Damage:

| | | |
|--------------------------|----|------------------|
| Each accident | \$ | <u>1,000,000</u> |
| <i>[or]</i> | | |
| Combined Single Limit of | \$ | <u>1,000,000</u> |

4. Excess or Umbrella Liability:

| | | |
|-------------------|----|------------------|
| Per Occurrence | \$ | <u>5,000,000</u> |
| General Aggregate | \$ | <u>5,000,000</u> |

5. Contractor's Pollution Liability:

| | | |
|-------------------|----|------------------|
| Each Occurrence | \$ | <u>1,000,000</u> |
| General Aggregate | \$ | <u>1,000,000</u> |

If box is checked, Contractor is not required to provide Contractor's Pollution Liability insurance under this Contract

6. Additional Insureds: In addition to Owner and Engineer, include as additional insureds the following: Michigan Department of Transportation

7. Contractor's Professional Liability:

| | | |
|------------------|----|------------------|
| Each Claim | \$ | <u>2,000,000</u> |
| Annual Aggregate | \$ | <u>2,000,000</u> |

ARTICLE 7 – CONTRACTOR’S RESPONSIBILITIES

SC-7.02 Labor; Working Hours

Paragraph 7.02.B of the General Conditions restricts Contractor to working during “regular hours” Monday through Friday, and no work is permitted on “legal holidays.”

- A. To provide details regarding the meaning of the terms “regular hours” and “legal holidays,” consider specifically defining them by adding the following:

SC-7.02.B. Add the following new subparagraphs immediately after Paragraph 7.02.B:

1. Regular working hours will be 6 AM – 7 PM

- B. To modify the days of the week that Contractor may work, use the following:

SC-7.02.B. Amend the first and second sentences of Paragraph 7.02.B to state “...all Work at the Site shall be performed during regular working hours, 6 AM through 7 PM. Contractor will not perform Work on any legal holiday.”

- C. If Contractor is permitted to Work outside regular hours and on weekends and holidays, whether by a contractual provision or by Owner’s consent during the course of the Project, then it is good practice to address the issue of whether Owner may charge Contractor for engineering expenses associated with the non-regular schedule. Some Owners may prefer to absorb these costs to incentivize (or at least facilitate) an aggressive schedule and timely completion; and in many cases the net additional expense may be modest. Other Owners may prefer to establish and collect a charge for the engineering services. Add the following as SC-7.02.C, making a policy choice regarding responsibility in the beginning of the sentence:

SC-7.02.C. Add the following new paragraph immediately after Paragraph 7.02.B:

Contractor shall be responsible for the cost of any overtime pay or other expense incurred by the Owner for Engineer’s services (including those of the Resident Project Representative, if any), Owner’s representative, and construction observation services, occasioned by the performance of Work on Saturday, Sunday, any legal holiday, or as overtime on any regular work day. If Contractor is responsible but does not pay, or if the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.

- D. If responsibility for costs in SC-7.02.C will be allocated to Contractor, Owner may wish to provide some specificity regarding the potential costs, through the addition of the following:

SC-7.04 “Or Equals”

SC 7.04.A Amend the third sentence of Paragraph 7.04.A by striking out the following words:

Unless the specification or description contains or is followed by words reading that no like, equivalent, or ‘or-equal’ item is permitted.

SC 7.04.A.1 Amend the last sentence of Paragraph a.3 by striking out “and;” and adding a period at the end of Paragraph a.3.

SC-7.06 Concerning Subcontractors, Suppliers, and Others

SC 7.06.A Amend Paragraph 7.06.A by adding the following text to the end of the Paragraph:

The Contractor shall not award work valued at more than fifty percent of the Contract Price to Subcontractor(s), without prior written approval of the Owner.

SC 7.06.E Amend the second sentence of Paragraph 7.06.E by striking out "Owner may also require Contractor to retain specific replacements; provided, however, that".

ARTICLE 10 – ENGINEER’S STATUS DURING CONSTRUCTION

SC-10.03 *Project Representative*

A. **This is a mandatory Supplementary Condition.** As indicated in Paragraph 10.03 of the General Conditions, in those cases in which the Engineer will provide a Resident Project Representative (RPR) during construction, the authority and responsibilities of the RPR must be specified in the Supplementary Conditions. SC-10.03.B and C, immediately below, provide a mechanism for doing so. In the alternative, in some cases Engineer will not provide RPR services, either because there will not be an RPR, or because a party other than Engineer will provide the site services. When such is the case, the second SC-10.03.B below should be used.

As indicated in Paragraph 10.03 of the General Conditions, the Owner may designate a representative or agent who is not Engineer’s consultant, agent, or employee, to represent Owner at the Site. In such case, in addition to using the second version of SC-10.03.B, below, also use SC-9.13 above.

The following suggested language, which parallels the wording of Exhibit D to EJCDC® E-500, the Agreement Between Owner and Engineer for Professional Services, is for use when Engineer will provide RPR services. It should be edited to indicate the RPR authority and responsibilities that apply to this Contract.

SC-10.03 Add the following new paragraphs immediately after Paragraph 10.03.A:

- B. The Resident Project Representative (RPR) will be Engineer's representative at the Site, will act as directed by and under the supervision of Engineer, and will confer with Engineer regarding RPR's actions.**
- 1. General: RPR's dealings in matters pertaining to the Work in general shall be with Engineer and Contractor. RPR's dealings with Subcontractors shall only be through or with the full knowledge and approval of Contractor. RPR shall generally communicate with Owner only with the knowledge of and under the direction of Engineer.**
 - 2. Schedules: Review the progress schedule, schedule of Shop Drawing and Sample submittals, and Schedule of Values prepared by Contractor and consult with Engineer concerning acceptability.**
 - 3. Conferences and Meetings: Attend meetings with Contractor, such as preconstruction conferences, progress meetings, job conferences, and other Project-related meetings, and prepare and circulate copies of minutes thereof.**
 - 4. Liaison:**
 - a. Serve as Engineer’s liaison with Contractor. Working principally through Contractor’s authorized representative or designee, assist in providing information regarding the provisions and intent of the Contract Documents.**

- b. Assist Engineer in serving as Owner's liaison with Contractor when Contractor's operations affect Owner's on-Site operations.
 - c. Assist in obtaining from Owner additional details or information, when required for proper execution of the Work.
- 5. Interpretation of Contract Documents: Report to Engineer when clarifications and interpretations of the Contract Documents are needed and transmit to Contractor clarifications and interpretations as issued by Engineer.
- 6. Shop Drawings and Samples:
 - a. Record date of receipt of Samples and Contractor-approved Shop Drawings.
 - b. Receive Samples which are furnished at the Site by Contractor, and notify Engineer of availability of Samples for examination.
 - c. Advise Engineer and Contractor of the commencement of any portion of the Work requiring a Shop Drawing or Sample submittal for which RPR believes that the submittal has not been approved by Engineer.
- 7. Modifications: Consider and evaluate Contractor's suggestions for modifications in Drawings or Specifications and report such suggestions, together with RPR's recommendations, if any, to Engineer. Transmit to Contractor in writing decisions as issued by Engineer.
- 8. Review of Work and Rejection of Defective Work:
 - a. Conduct on-Site observations of Contractor's work in progress to assist Engineer in determining if the Work is in general proceeding in accordance with the Contract Documents.
 - b. Report to Engineer whenever RPR believes that any part of Contractor's work in progress is defective, will not produce a completed Project that conforms generally to the Contract Documents, or will imperil the integrity of the design concept of the completed Project as a functioning whole as indicated in the Contract Documents, or has been damaged, or does not meet the requirements of any inspection, test or approval required to be made; and advise Engineer of that part of work in progress that RPR believes should be corrected or rejected or should be uncovered for observation, or requires special testing, inspection or approval.
- 9. Inspections, Tests, and System Start-ups:
 - a. Verify that tests, equipment, and systems start-ups and operating and maintenance training are conducted in the presence of appropriate Owner's personnel, and that Contractor maintains adequate records thereof.
 - b. Observe, record, and report to Engineer appropriate details relative to the test procedures and systems start-ups.

10. Records:

- a. Prepare a daily report or keep a diary or log book, recording Contractor's hours on the Site, Subcontractors present at the Site, weather conditions, data relative to questions of Change Orders, Field Orders, Work Change Directives, or changed conditions, Site visitors, deliveries of equipment or materials, daily activities, decisions, observations in general, and specific observations in more detail as in the case of observing test procedures; and send copies to Engineer.
- b. Record names, addresses, fax numbers, e-mail addresses, web site locations, and telephone numbers of all Contractors, Subcontractors, and major Suppliers of materials and equipment.
- c. Maintain records for use in preparing Project documentation.

11. Reports:

- a. Furnish to Engineer periodic reports as required of progress of the Work and of Contractor's compliance with the Progress Schedule and schedule of Shop Drawing and Sample submittals.
- b. Draft and recommend to Engineer proposed Change Orders, Work Change Directives, and Field Orders. Obtain backup material from Contractor.
- c. Immediately notify Engineer of the occurrence of any Site accidents, emergencies, acts of God endangering the Work, force majeure or delay events, damage to property by fire or other causes, or the discovery of any Constituent of Concern or Hazardous Environmental Condition.

12. Payment Requests: Review applications for payment with Contractor for compliance with the established procedure for their submission and forward with recommendations to Engineer, noting particularly the relationship of the payment requested to the Schedule of Values, Work completed, and materials and equipment delivered at the Site but not incorporated in the Work.

13. Certificates, Operation and Maintenance Manuals: During the course of the Work, verify that materials and equipment certificates, operation and maintenance manuals and other data required by the Contract Documents to be assembled and furnished by Contractor are applicable to the items actually installed and in accordance with the Contract Documents, and have these documents delivered to Engineer for review and forwarding to Owner prior to payment for that part of the Work.

14. Completion:

- a. Participate in Engineer's visits to the Site to determine Substantial Completion, assist in the determination of Substantial Completion and the preparation of a punch list of items to be completed or corrected.
- b. Participate in Engineer's final visit to the Site to determine completion of the Work, in the company of Owner and Contractor, and prepare a final punch list of items to be completed and deficiencies to be remedied.

- c. Observe whether all items on the final list have been completed or corrected and make recommendations to Engineer concerning acceptance and issuance of the notice of acceptability of the work.

C. The RPR shall not:

1. Authorize any deviation from the Contract Documents or substitution of materials or equipment (including "or-equal" items).
2. Exceed limitations of Engineer's authority as set forth in the Contract Documents.
3. Undertake any of the responsibilities of Contractor, Subcontractors, or Suppliers.
4. Advise on, issue directions relative to, or assume control over any aspect of the means, methods, techniques, sequences or procedures of Contractor's work.
5. Advise on, issue directions regarding, or assume control over security or safety practices, precautions, and programs in connection with the activities or operations of Owner or Contractor.
6. Participate in specialized field or laboratory tests or inspections conducted off-site by others except as specifically authorized by Engineer.
7. Accept Shop Drawing or Sample submittals from anyone other than Contractor.
8. Authorize Owner to occupy the Project in whole or in part.

ARTICLE 11 – EXECUTION OF CHANGE ORDERS

SC 11.07.C Add the following new Paragraph after Paragraph 11.07.B:

All Contract Change Orders must be concurred in by Agency before they are effective.

ARTICLE 15 – PAYMENTS TO CONTRACTOR; SET-OFFS; COMPLETION; CORRECTION PERIOD

SC-15.01 Progress Payments

SC 15.01.B Amend the second sentence of Paragraph 15.01.B.1 by striking out the following text:
"a bill of sale, invoice, or other."

SC 15.01.B.3 Add the following language at the end of paragraph 15.01.B.3:

No payments will be made that would deplete the retainage, place in escrow any funds that are required for retainage, or invest the retainage for the benefit of the Contractor.

SC 15.01.B.4 Add the following new Paragraph after Paragraph 15.01.B.3:

The Application for Payment form to be used on this Project is EJCDC C-620.

SC 15.01.D.1 Delete Paragraph 15.01.D.1 in its entirety and insert the following in its place:

The Application for Payment with Engineer's recommendations will be presented to the Owner and Agency for consideration. If both the Owner and Agency find the Application for Payment acceptable, the recommended amount less any reduction under the

provisions of Paragraph 15.01.E will become due twenty (20) days after the Application for Payment is presented to the Owner, and the Owner will make payment to the Contractor.

SC-15.02 Contractor's Warranty of Title

SC 15.02.A Amend Paragraph 15.02.A by striking out the following text: "no later than seven days after the time of payment by Owner" and insert "no later than the time of payment by Owner."

SC-15.03 Substantial Completion

A. Paragraph 15.03.A of the General Conditions requires Contractor to give notice that the Work is substantially complete; Paragraph 15.03.B requires an inspection of the Work to determine whether Engineer agrees that the Work is substantially complete. If the Work is not substantially complete, and must be inspected again at a later point, then the following Supplementary Condition, if included in the Contract, would allow Owner to recover the cost of the re-inspection.

SC 15.03.B Add the following new subparagraph to Paragraph 15.03.B:

- 1. If some or all of the Work has been determined not to be at a point of Substantial Completion and will require re-inspection or re-testing by Engineer, the cost of such re-inspection or re-testing, including the cost of time, travel and living expenses, shall be paid by Contractor to Owner. If Contractor does not pay, or the parties are unable to agree as to the amount owed, then Owner may impose a reasonable set-off against payments due under Article 15.**

Work Change Directive No.

Date of Issuance: _____ Effective Date: _____
 Owner: _____ Owner's Contract No.: _____
 Contractor: _____ Contractor's Project No.: _____
 Engineer: _____ Engineer's Project No.: _____
 Project: _____ Contract Name: _____

Contractor is directed to proceed promptly with the following change(s):
 Description:

Attachments: *[List documents supporting change]*

Purpose for Work Change Directive:

Directive to proceed promptly with the Work described herein, prior to agreeing to changes on Contract Price and Contract Time, is issued due to: *[check one or both of the following]*

- Non-agreement on pricing of proposed change.
- Necessity to proceed for schedule or other Project reasons.

Estimated Change in Contract Price and Contract Times (non-binding, preliminary):

Contract Price \$ _____ [increase] [decrease].
 Contract Time _____ days [increase] [decrease].

Basis of estimated change in Contract Price:

- Lump Sum Unit Price
- Cost of the Work Other

RECOMMENDED:

AUTHORIZED BY:

RECEIVED:

| | | |
|---------------------------------|------------------------------|-----------------------------------|
| By: _____ | By: _____ | By: _____ |
| Engineer (Authorized Signature) | Owner (Authorized Signature) | Contractor (Authorized Signature) |
| Title: _____ | Title: _____ | Title: _____ |
| Date: _____ | Date: _____ | Date: _____ |

Approved by Funding Agency (if applicable)

By: _____ Date: _____
 Title: _____

CHANGE ORDER #?? ATTACHMENT

PROJECT: _____

DATE ISSUED: _____

The following items summarize changes being made to the Contract Documents:

| ITEM NO. | COMPLETE DESCRIPTION OF CHANGES | DECREASE CONTRACT | INCREASE CONTRACT |
|----------|---------------------------------|-------------------|-------------------|
| | | | |
| | Total Decrease | \$0.00 | |
| | Total Increase | | \$0.00 |
| | Net Increase (Decrease) | \$0.00 | |

The sum of \$0.00 is hereby (deducted from) (added to) the total Contract Price.

The time provided for completion in the Contract is (un)changed.

This document shall become an amendment to the Contract and all provisions of the Contract will apply hereto.

Change Order No. _____

Date of Issuance:
Owner:
Contractor:
Engineer:
Project:

Effective Date:
Owner's Contract No.:
Contractor's Project No.:
Engineer's Project No.:
Contract Name:

The Contract is modified as follows upon execution of this Change Order:

Description:
Attachments: *[List documents supporting change]*

| CHANGE IN CONTRACT PRICE | CHANGE IN CONTRACT TIMES <i>[note changes in Milestones if applicable]</i> |
|--|---|
| Original Contract Price: \$ _____ | Original Contract Times: Substantial Completion: _____ Ready for Final Payment: _____ days or dates |
| [Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: \$ _____ | [Increase] [Decrease] from previously approved Change Orders No. ___ to No. ___: Substantial Completion: _____ Ready for Final Payment: _____ days |
| Contract Price prior to this Change Order: \$ _____ | Contract Times prior to this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates |
| [Increase] [Decrease] of this Change Order: \$ _____ | [Increase] [Decrease] of this Change Order: Substantial Completion: _____ Ready for Final Payment: _____ days or dates |
| Contract Price incorporating this Change Order: \$ _____ | Contract Times with all approved Change Orders: Substantial Completion: _____ Ready for Final Payment: _____ days or dates |

| | | |
|-------------------------------------|---|--|
| RECOMMENDED: | ACCEPTED: | ACCEPTED: |
| By: _____ Engineer (if required) | By: _____ Owner (Authorized Signature) | By: _____ Contractor (Authorized Signature) |
| Title: _____ | Title: _____ | Title: _____ |
| Date: _____ | Date: _____ | Date: _____ |

Approved by Funding Agency (if applicable)

By: _____ Date: _____
Title: _____

MAINTENANCE BOND

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

CONTRACTOR (Name and Address):

SURETY (Name and Address of Principal Place of Business):

OWNER (Name and Address):

CONTRACT

Date:

Amount:

Project Description (Name and Location):

BOND

Date (1 year from date of Acceptance by the Municipality):

Amount:

Bond Number:

Surety and Contractor, intending to be legally bound hereby, subject to the following terms, to each cause this Maintenance Bond to be duly executed on its behalf by its authorized officer, agent or representative.

KNOW ALL MEN BY THESE PRESENTS,
That we, _____

entered into a Contract with said Obligee for _____

_____ as Principal, (hereinafter called **Principal**), and _____ as Surety (hereinafter called **Surety**), are held and firmly bound into _____

in accordance with the General Conditions, the Drawings and Specifications, which Contract is by reference incorporated herein, and made a part hereof, and is referred to as the Contract..

_____ as Obligee (hereinafter called **Obligee**), in the penal sum of _____ Dollars \$ _____ for the payment whereof Principal and Surety bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents

NOW, THEREFORE, the condition of this obligation is such that, if said Principal shall maintain and remedy any defects due to faulty materials or workmanship, and pay for any damage to other Work resulting therefrom, and additional expense which shall appear within a period of _____ year(s) from the date of acceptance by the municipality of the Work provided for in the Contract, then this obligation

WHEREAS, said Principal has by written Agreement, dated _____

to be void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that said Obligee shall give Principal and Surety notice of observed defects with reasonable promptness.

Signed and sealed this _____ day of _____, 20__

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

SURETY
Company: (Corp. Seal)

Signature: _____ Signature: _____

Name and Title:

Name and Title:
(Attach Power of Attorney)

(Space is provided below for signatures of additional parties, if required).

CONTRACTOR AS PRINCIPAL
Company: (Corp. Seal)

SURETY
Company: (Corp. Seal)

Signature: _____ Signature: _____

Name and Title:

Name and Title:

NOTE: Date of Bond must not be prior to date of Substantial Completion. If Contractor is a Partnership, all partners should execute Bond.

IMPORTANT: Surety companies executing Bonds must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the state where the Project is located.

LETTER OF GUARANTEE

DATE: _____

GFA PROJECT NO.

OWNER: _____

PROJECT: _____

Gentlemen:

As the Contractor for this Project, I hereby guarantee all materials and equipment furnished and all work performed on this Project including any restoration Work necessary to be repaired or replaced.

With respect to this Project, to our personal knowledge, all payments have been made and there are no Liens on said system.

This guarantee will remain in effect for a period of one (1) year from the date of acceptance by the Municipality.

Signature:

(Contractor)

Title: _____
(Please Print or Type)

Company Name:

(Please Print or Type)

Address:

AFFIDAVIT OF COMPLETION/CONSENT OF SURETY

Name of Contractor

Address of Contractor

being duly sworn, deposes and says that they entered into a Contract with _____ on the __ day of _____, 20__, for the _____ Project.

Contractor further says that the said Contract has been completed and all indebtedness incurred by him to Subcontractors, Suppliers, and laborers in their employ has been paid in full. Contractor further says that there are no outstanding or pending Claims, Liens or actions in Law involving this Contract. Contractor further says this affidavit is furnished as an inducement to the Owner to make final payment on said Contract.

WITNESSES:

SIGNED:

Print

Print

Subscribed and sworn to before me this _____ day of _____, 20_____.

Print Name

Notary Public Sign

SEAL

My commission expires: _____

CONSENT OF SURETY

We, as Surety on the above-described Contract, hereby give our consent to the payment to the Contractor as indicated.

NAME OF SURETY COMPANY: _____

PERFORMANCE AND PAYMENT BOND NO.: _____

Date: _____

Signed: _____

Name: _____

SECTION 1

GENERAL REQUIREMENTS

1.01 PROJECT DESCRIPTION

Work includes the following major items:

Extension of approximately 993 linear feet of 12" PVC C900 water main by method of open cut and 750 lineal feet of HDPE DR-11 water main by method of directional drilling. All water main, hydrants and gate valves to be installed within the public right-of-way.

The water main will connect to the existing 12" water main on the north side of Pickard Rd. (M-20) near Mid-Michigan Community College extending east to S. Summerton Rd. then extend north to connect with the existing 8" water main adjacent to Green Suites Hotel.

1.02 DEFINITIONS

The intent of this section is to identify certain persons involved in the project.

| | |
|------------------------|---|
| DPW/Utility Department | The agency performing the system operations and maintenance typically identified as a Department of Public Works. |
| Engineer | Engineer who provided the sanitary sewage system and or water main design, plans and specifications for the owner. |
| Owner | Party who is having the sanitary sewage system and or water main facilities installed. |
| Contractor | Contractor is prime Contractor who is so identified by the Owner and is responsible for the sanitary sewage system and or water main facilities installation. |
| Township | The governing Township (Charter Township of Union). |

1.03 PRECONSTRUCTION CONFERENCE

Prior to commencement of any construction activities involving the sanitary sewer system and/or water system, a principal member representing the Owner, the Contractor, the Design Engineer, the Township Engineer and the Township DPW/Utility Department shall meet at a pre-determined location and time to discuss the project. It shall be the responsibility of the Owner or his/her Design Engineer to organize this meeting. At that time, the Contractor schedule, as well as the Township Engineer's requirements, will be discussed to obtain a mutual understanding of the project and the Township's inspection process.

1.04 LINES AND GRADES FOR CONSTRUCTION

The Owner (his Contractor and/or Engineer) shall provide adequate lines and grades for construction of the sanitary sewer and/or water main prior to installing the utilities.

1.05 PROGRESS SCHEDULE

The Owner shall, as soon as practical, prepare and submit to the Township three (3) copies of the Progress Schedule regarding sanitary sewer and/or water main construction. This schedule shall show in a clear, graphical manner the proposed date for commencement, progress and completion of the work.

1.06 INTERFERENCE WITH EXISTING SEWAGE TREATMENT WORKS

No bypassing of untreated sewage will be allowed during the construction of this project other than that which normally takes place due to stormwater overflows, etc. The Contractor shall provide a plan of work to the Township for approval before starting work on any phases of the project which might involve existing sewage facilities.

1.07 RELATIONS TO OTHER CONTRACTORS AND UTILITY FORCES

The Contractor shall so conduct his operations as not to interfere with or injure the work of other contractors or adjacent force account work, and he shall promptly make good any injury or damage which may be done to such work by him or his employees or agents.

The Contractor shall grant to other contractors and forces necessary means of access to their work.

1.08 PERMITTING AGENCIES

The Contractor shall perform all work in accordance with any and all applicable permit requirements. The Owner or his Design Engineer shall present the Township with a copy of all documentation and calculations for the permit process. The Owner will obtain the necessary permit for construction/installation prior to commencement of any work.

1.09 ACCESS TO WORK

The Township shall have access maintained to all sanitary sewer or water main work at all times. Proper notification (48 hours) shall be given to the Township prior to the start of any construction or testing.

1.10 SHOP DRAWINGS

Shop drawings of all equipment shall be issued to the Design Engineer during the shop drawing review stage for his approval. The Design Engineer shall forward these (2 copies) to the Township for his review regarding compliance with the Township requirements. The Township will not perform a technical review. That shall remain the responsibility of the Design Engineer. The Contractor should supply a minimum of six (6) copies of all equipment shop drawings to the Design Engineer. Final record shop drawings shall be issued to the Township as part of the close-out procedure in accordance with the close-out section of these specifications.

1.11 STREAM CROSSINGS

Stream crossings shall be performed in accordance with all permit requirements of the regulatory agencies and Charter Township of Union Technical Specifications.

1.12 DUST AND NOISE REDUCTION

The Contractor shall keep dust and noise from construction operations to a minimum. A dust palliative shall be used on disturbed road sections prior to surfacing if so determined by the Township.

1.13 MATERIAL CERTIFICATION

Manufacturer's certification slips shall be submitted to the Township for all pipe, manholes, fittings, etc. used in the installation of sanitary sewer or water mains. This is to verify that the product meets applicable standard specifications required.

1.14 MAINTENANCE BOND REQUIREMENTS

The Contractor shall supply the Owner and Township with a maintenance bond for 50% of the cost of the installation of the sanitary sewer and/or water system that is to be turned over to the Township. The maintenance bond shall be effective from the date of Township acceptance for a period of one (1) year.

1.15 INSURANCE REQUIREMENTS

Where the contract involves construction in a public right-of-way, the Contractor shall provide proof of insurance in the type and amounts required by the Township prior to start of the construction. In addition to the Township, the Township DPW and Township Engineer shall be named as additional insured.

1.16 ESCROW FOR TELEMETRY REQUIREMENTS

When telemetry equipment is required, the owner of the project will be required to provide an account above and beyond the construction contract price to be determined prior to approval and installation of project for standard telemetry equipment. This equipment will be integrated into the Township DPW network of monitoring systems. The types of units this may apply to include submersible lift stations, well houses, water booster stations, and pressure reducing valve vaults.

STANDARDS AND REGULATIONS

2.01 REFERENCE STANDARDS

- A. Throughout these specifications, reference is made to various standard specifications. Such reference gives the serial designation. The latest revised specification shall apply in all cases. These standard specifications, where applicable, shall be binding on all construction activities.
- B. The following specifications and standards form part of this specification to the extent indicated by reference thereto or for quality of workmanship and materials required under the contract.

| | |
|--|--------|
| American Society of Testing Materials | (ASTM) |
| American Water Works Association | (AWWA) |
| American National Standards Institute, Inc. | (ANSI) |
| Michigan Department of Transportation | (MDOT) |
| American Society of Mechanical Engineers | (ASME) |
| American Concrete Institute | (ACI) |
| National Concrete Masonry Association | (NCMA) |
| Truss Plate Institute | (TPI) |
| National Electrical Code | (NEC) |
| Michigan Department of Environmental Quality | (MDEQ) |
| National Fire Code | (NFC) |
| Underwriters Laboratories | (UL) |
| National Sanitation Foundation | (NSF) |
| International Plumbing Code | (IPC) |

2.02 REGULATORY REQUIREMENTS

- A. All construction work, alterations, repairs or mechanical installations and appliances connected herewith shall comply with all the State Rules and Regulations and local ordinances and such other statutory provisions pertaining to this class of work. Such Rules and Regulations and local ordinances are to be considered a part of these specifications by reference.
- B. All electrical work shall be in accordance with the latest edition of the National Electrical Code, the National Electrical Safety Code and applicable state and local codes. This shall not be construed to permit a lower grade of construction where the plans and specifications require workmanship or materials in excess of code requirements. All electrical equipment, wiring, cable, pre-assembled electrical panels, and materials shall be listed by Underwriters Laboratories, Inc.

3.01 CLEANUP

Before final acceptance of the sanitary sewer system or water main system work, the Contractor shall remove all false work, excavated or useless materials, and rubbish, and restore to presentable condition per the restoration specifications and satisfactory to the Township, all property, both public and private, which may have been used or damaged during the installation of the sanitary sewer or water system work.

3.02 OPERATING AND MAINTENANCE DATA

The Contractor shall furnish written instructions for the operation and maintenance of the equipment furnished at the time of submittal of shop drawings. The instructions shall be short, easy to understand, with directions specifically written for this project, describing the various possible methods of operating the equipment. The instructions shall include procedures for tests required, adjustments to be made and safety precautions to be taken with the equipment. Maintenance instructions shall include test and calibration charts, exploded views of assembled components and spare parts lists. At least six (6) instruction booklets shall be furnished for each separate piece of equipment. These shall be transmitted to the Township as part of the close out of the project. Record drawings (1 set of reproducible mylars or vellums and one (1) digital copy in AutoCad format) shall be submitted to the Township along with hydrant and valve reports, water service lead reports, and sanitary sewer lead reports, as applicable to the project.

A. Pumps

Include the manufacturer's technical specification of the pump along with the application for the pump, the manufacturer's warranty certificate, installation instructions, serial numbers for all pumps, pump performance curve, pump trouble shooting guide and the pump efficiency rating.

B. Control Panel Operation and Maintenance Manual

Include the electrical panel legend, bill of material report, catalog cut sheets indicating make and model of all general accessories, installation instructions for the control panel, recommended spare parts, installation instructions for general accessories and a maintenance frequency chart.

C. Electrical Wiring

A color coded drawing of the as-installed electrical schematic shall be submitted for all electrical work performed as part of the project.

3.03 GUARANTEE

The Contractor shall guarantee all materials and equipment furnished and work performed for a period of one (1) year from the date of Township Acceptance. The Contractor shall warrant and guarantee for a period of one (1) year from the date of Township Acceptance of the system that the completed system is free from all defects due to faulty materials or workmanship. The Contractor shall promptly make such corrections, as may be necessary including the repairs of any damage to other parts of the system resulting from such defects. The Owner or Township, if they have taken over the system, will give notice of observed defects with reasonable promptness. In the event that the Contractor should fail to make such repairs, adjustments or other work that may be made necessary by such defects, the Owner or Township may do so and charge the Contractor the cost thereby incurred. Refer to the form Letter of Guarantee to be included with final close-out documents.

The Contractor shall supply a one (1) year maintenance bond per the "General" section of these specifications.

3.04 FINAL COMPLETION/ACCEPTANCE OF PROJECT BY TOWNSHIP

A. Township Projects

Final payment will not be made to the Contractor until all close out documents have been received and approved by the Township. These items are listed below:

1. Punch list items satisfactorily completed.
2. Maintenance bond.
3. Letter of guarantee (format provided by Township).
4. Affidavit of completion/consent of surety.

B. Private Projects

The Township will not accept the facility or allow connections to or use of the facilities until the following items have been received by the Township:

1. Punch list items satisfactorily completed.
2. Maintenance bond. (Valid for a period of one year from the date of Township acceptance of the system).
3. Letter of guarantee (format provided by Township).
4. Easement descriptions.

5. Descriptions of the facilities for a bill of sale.
6. Certification by the Engineer reviewing the installation.
7. Sanitary Sewer Lead Reports (as applicable).
8. Water Service Lead Reports (as applicable).
9. Water Valve Reports (as applicable).
10. Hydrant Reports (as applicable).
11. Operation and Maintenance Manuals
12. Record Drawings
- 12A. Record Drawings (as-constructed) must include three sets of 24" x 36" drawings and a digital copy (formats listed below) including a .pdf copy of each sheet.

Digital Submittal Format Requirements: The developer shall submit to the Township a digital copy of the Record Drawings (as described in Section 3.04.B Item 12B of the Technical Specifications) in one of the following formats:

a. Drawing Interchange File (.DXF) (DWG)

- 12B. Record Drawings: Record drawings shall consist of plan and profile. Sanitary sewer leads and water service leads shall be re-drawn in the new location along with the mainline structures and piping. Hydrant, valve and manhole numbering sequences shall be obtained from the Township. Each structure installed, such as manholes, water service leads, hydrants, valves, sewer leads, bends, tees, or other structures placed shall have three (3) physical measurements from structures which are shown on the plans and apparently not to be changed. Lead measurements are to be placed on the individual reports. Sanitary sewer profiles shall include manhole number, rim and invert elevations, distances between structures, size and type of pipe. Water main profiles shall include hydrant and valve numbers, all fittings, horizontal/vertical, and the accurate depth of placement. All profiles shall show conflict with existing utilities. Sanitary sewer lead and water service lead information shall be placed in a table format on the record drawings. Each plan sheet shall have a separate table for the type of lead shown on that sheet. See Table 3.1 and Table 3.2 for examples.

SECTION 3
PROJECT CLOSE OUT

Table 3.1

| SEWER LEAD NUMBER | DISTANCE FROM DOWNSTREAM MANHOLE | DISTANCE FROM SEWER TO END OF LEAD AT PROPERTY LINE OR EASEMENT LINE | DEPTH BELOW GRADE |
|-------------------|----------------------------------|--|-------------------|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

Table 3.2

| WATER SERVICE LEAD NUMBER | DISTANCE FROM GATE VALVE OR FIRE HYDRANT. INCLUDE VALVE OR HYDRANT NUMBERS. | DISTANCE FROM WATER MAIN TO END OF LEAD AT PROPERTY LINE OR EASEMENT LINE |
|---------------------------|---|---|
| | | |
| | | |
| | | |
| | | |
| | | |

SECTION 4

EXCAVATION, TRENCHING AND BACKFILLING

4.01 SCOPE OF WORK

The work covered by this section shall consist of furnishing all materials, equipment and labor for the excavating, trenching, backfilling, and bore and jack required to install or repair sanitary sewers, water mains and other structures as shown on the plans and referred to in these specifications.

4.02 MATERIALS

A. Backfill Material

All backfill material shall be free from cinders, ashes, refuse, sod, frozen lumps, vegetable or organic material, boulders, rocks or stones or other material which, in the opinion of the Design Engineer, is unsuitable. However, from 1" above the top of the pipe to the subgrade of the pavement, material containing stones up to 3" in their greatest dimension may be used.

Where the type of backfill material is not specified, the Contractor may backfill with the excavated material provided that such material meets the requirements described above. Where excavated material is to be used for backfill and there is a deficiency due to a rejection of part thereof, the Contractor shall furnish the required amount of sand, gravel or other approved material at no additional cost.

B. Bore and Jack Materials

1. Steel Pipe

Jacked in place steel pipe shall meet the requirements of either ASTM A53, Type E or S, Grade B or ASTM A139, Grade B.

The ends of all steel pipe to be jacked shall be prepared for field welding at joints.

The nominal outside diameter and minimum wall thicknesses of steel pipe to be jacked in place shall be as shown below. Minimum wall thickness for railroad crossings may be reduced by 0.063 inch if cathodic protection is provided per railroad specifications.

SECTION 4
EXCAVATION, TRENCHING AND BACKFILLING

| Nominal Size | Nominal Outside Diameter (inches) | Minimum Wall Thickness Required (inches) | |
|--------------|-----------------------------------|--|-----------|
| | | M.D.O.T. | Railroads |
| 2" | 2.375 | 0.154 | 0.251 |
| 4" | 4.500 | 0.188 | 0.251 |
| 6" | 6.625 | 0.188 | 0.251 |
| 8" | 8.625 | 0.188 | 0.251 |
| 10" | 10.750 | 0.188 | 0.251 |
| 12" | 12.750 | 0.188 | 0.251 |
| 14" | 14.000 | 0.250 | 0.282 |
| 16" | 16.000 | 0.250 | 0.282 |
| 18" | 18.000 | 0.250 | 0.313 |
| 20" | 20.000 | 0.250 | 0.344 |
| 22" | 22.000 | 0.250 | 0.375 |
| 24" | 24.000 | 0.250 | 0.407 |
| 26" | 26.000 | 0.312 | 0.438 |
| 28" | 28.000 | 0.312 | 0.469 |
| 30" | 30.000 | 0.312 | 0.469 |
| 34" | 34.000 | 0.312 | 0.532 |

2. Grout:

Grout shall consist of a mixture of Portland cement and sand in any proportion which does not have more than 50% sand by volume.

4.03 EXECUTION

A. Excavation

Excavation includes clearing the site of the proposed work and removal of all materials to a depth which is sufficient to permit the construction of the structure or utility in accordance with the plans. Excavated materials may be temporarily stored along the trench in a manner that will not cause damage to trees, shrubbery, or other properties and that will not endanger the banks of the trench by imposing too great a load thereon.

B. Length and Width of Trench

Not more than 200' of open trench will be permitted at a time without approval from the Design Engineer and Township Engineer/Township Utility Department, unless pedestrian bridges are maintained at 200' intervals and vehicular crossings of at least one lane are maintained at 300' intervals.

Streets shall not be completely blocked without written permission from the Design Engineer and roadway officials. All fire alarm boxes and fire hydrants must be kept clear and accessible at all times.

The width of the trench shall be ample to permit the pipe to be laid and joined properly and the backfill to be placed and compacted as specified.

In order to limit excessive loads on the pipe, the maximum width of trench shall not be more than 2' greater than the nominal inside diameter of the pipe. This limitation shall apply to the width of the trench at the top of the pipe. Trenches shall be of such extra width, when required, as will permit the convenient placing of timber supports, sheeting and bracing and handling of special conditions.

C. Bracing, Sheeting and Shoring

Open cut trenches shall be sheeted and braced as required by any governing federal or state laws and municipal ordinances and as may be necessary to protect life, property or the work. When close sheeting is required, it shall be so driven as to prevent adjacent soil from entering the trench either below or through such sheeting. Where sheeting and bracing are used, the trench width shall be increased accordingly. An approved pipe laying trench box may be used in lieu of sheeting where safety of the workmen and/or protection of the work is the sole consideration, if allowed by governing authorities.

Sheeting and bracing left in place must be removed for a depth of 3' below the established finish grade or the existing surface, whichever is lower.

Trench bracing, except that which must be left in place, may be removed when the backfilling has reached the respective levels of such bracing. Sheeting, except that which has been ordered left in place, shall be removed as the backfilling progresses.

D. Pumping, Bailing and Draining

The Contractor shall provide and maintain adequate pumping and draining facilities for removal and disposal of water from trenches or other excavations. He shall provide pumping and draining facilities for bulk headed sewer sections and shall operate same until bulkheads have been removed or construction is completed, if bulkheads are to be left in place. The drainage system must be maintained until the pipe has been covered with sufficient backfill material to prevent floating of the installed pipe sections.

Where work is in ground containing an excessive amount of water, the Contractor shall provide, install and maintain a suitable dewatering system and shall so operate it to insure proper construction of the work. The determination of whether an excessive groundwater condition exists, that is, or might be detrimental to the sewer or water main construction will be made by the Design Engineer. Proper disposal of the dewatering discharge (necessary easements, permits, erosion control, etc.) shall be the responsibility of the Contractor. Contractor shall not discharge or allow any groundwater to enter existing sanitary sewage system. Any water which does enter the existing sewage system shall be the Contractor's responsibility and he will pay any and all transporting and treatment costs involved with this water according to the local municipal authority. Cost of pumping, bailing and draining shall be incidental to and included in the price of the pipe or structure placed in the excavation.

E. Excavation to Grade

The trench shall be excavated to the depth required so as to provide a uniform and continuous bearing and support for the pipe barrel. The Contractor shall excavate the last 4" of depth to grade using hand tools.

Any part of the bottom of the trench excavated below the specified grade shall be refilled with approved materials and thoroughly compacted to a minimum of 95% of the maximum dry density as determined by ASTM D698 or the Michigan Cone Method. The finished subgrade shall be prepared accurately by means of hand tools. Blocking to bring the pipe to grade will not be permitted. Bell holes in the subgrade must be provided to allow for continuous support of the pipe barrel when bell type pipe is used.

If, in the opinion of the Design Engineer (with concurrence of the Township Engineer), subgrade pipe support conditions at some locations are found to be unsatisfactory, he shall have the authority to order subgrade preparation at these locations in accordance with the provisions for special foundations in clay, rock or poor soils.

F. Special Foundation in Clay or Rock

Subgrade consisting of clay or rock shall be excavated to at least 4" and not more than 6" below the specified grade. Before the pipe is laid, the subgrade shall be prepared by backfilling with an approved granular material in 3" compacted layers. The layers shall be thoroughly tamped as directed by the Design Engineer so as to provide a uniform and continuous bearing and support for the pipe barrel with a minimum compaction of 95% of the herein defined maximum dry density. The Contractor will not be allowed extra compensation for this work.

G. Special Foundations in Poor Soil

Where the bottom of the trench at subgrade is found to consist of unstable material which will, in the opinion of the Design Engineer, not provide adequate pipe support, the Design Engineer shall have authority to require either the removal of the unstable material and replacement with approved materials or require the Contractor to construct a foundation for the pipe consisting of piling timber or other materials in accordance with plans prepared by the Design Engineer. The use of stone bedding by the Contractor to reduce dewatering requirements will not be paid as an extra.

H. Backfilling around Pipes/Hydrants

The Contractor shall use care as to not placing backfill materials on top of fire hydrants. During backfilling all fire hydrants should be "bagged" prior to backfilling around their perimeter.

From the bottom of the trench to a depth of 1' above the top of the pipe, the trench shall be backfilled by hand with sand or approved excavated materials and tamped to a minimum of 95% of the herein defined maximum dry density.

The Contractor shall use care in placing this portion of the backfill so as to make sure sufficient material has been worked under the pipe and also avoid injuring or moving the pipe. Backfilling around PVC pipe shall be done in accordance with ASTM D2321 "Standard Recommended Practice for Underground Installation of Flexible Thermoplastic Sewer Pipe".

I. Backfilling to Natural Grade

From 1' above the pipe to the grade shown on the drawing or specified herein, the trench shall be backfilled by mechanical methods approved by the Design Engineer. A minimum compaction of 85% of maximum unit weight is required, unless otherwise noted.

Provide 30" of cover above the top of the pipe before application of wheel loading and 48" before use of heavy compactors.

J. Backfill under Structures

Where the excavation is made through or under existing or proposed pavement, curb, shoulders, driveways or sidewalks or where such structures are undercut by the excavation or where noted on the plans, the entire backfill to the subgrade of the structure shall be made with granular material. The granular material backfill shall be placed in layers

and compacted to 95% of the herein defined maximum dry density throughout. This requirement shall apply to any trench that is within a one-on-three slope beneath the road from the shoulder point or back of curb line. Extra compensation will not be allowed for this work.

Granular material is defined as a material meeting granular material Class II as defined in M.D.O.T. Standard Specifications.

K. Special Backfilling Requirements

The Contractor will be required to comply with the regulations of the State Highway, Municipal or County Road Engineering Departments with regard to backfilling in their respective right-of-ways and beneath the roads, and shall be responsible for determining these regulations prior to bidding.

L. Compaction Testing

Compaction testing may be periodically performed by a source and method approved by the Township to insure that compaction requirements are being met. Compaction percentage is based on the maximum dry density as determined by ASTM D1557 or the Michigan Cone Method.

M. Boring and Jacking

The following provisions apply to the construction of sewers, force mains, water mains and house leads which cross pavements under the control of the Michigan Department of Transportation, County Road Commission, or under railroads.

1. General

Steel pipes shall be jacked in place under highways as specified in the current standards published by the Michigan Department of Transportation. Pipe jacked in place under railroads shall meet the current standards established by the affected railroad. The Design Engineer shall incorporate bore and jack requirements into the contract documents. After the pipe has been installed in the steel casing pipe, the casing pipe shall be pressure grouted with an MDOT approved flowable fill or blown full of pea stone and the ends sealed with concrete.

2. Location of Jacking Pits:

a. State Highways

SECTION 4
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The minimum distance of the jacking pit to the edge of pavement will be specified by the M.D.O.T. and placed on the plans or contract documents by the Design Engineer.

b. County Roads

On all highways, a minimum distance of 15' shall be provided from edge of pavement to the face of boring pits. Any variances from these distances will require tight sheeting and if a traffic hazard, permanent guard rail will be required.

c. Railroads

The location of the jacking pit will be specified by the Railroad and/or the Design Engineer.

3. The boring machine shall be capable of assuring a crossing with no voids.

- a. In solid clay soils the cutting head or the auger, if no head is used, may be allowed to within 1" of the front of the casing.
- b. In sandy soils the cutting head or the auger, if no head is used, must be inside the casing at least 1/2 the diameter of the casing.
- c. If the soil is both clay and sand, the same procedure as for sand shall apply.
- d. In wet, sandy or gravelly type soils that have a tendency to move or run, the cutting head and/or auger shall be pulled back to at least 3' from the front of the casing.
- e. When boring is used to facilitate jacking pipe in place, the minimum diameter of the lead auger section shall be 1/2" smaller than the inside diameter of the pipe being jacked.
- f. Trenchless pipe placement - methods such as trenchless pneumatic piercing tools utilized to perform horizontal bores must be approved by the Township prior to its use.

SECTION 5

CONCRETE WORK

5.01 SCOPE OF WORK

The work under this section shall include all materials, labor and equipment necessary to achieve a finished product, including but not limited to the items in these specifications and those shown on the working drawings. Work includes, but is not limited to building footings, floor slabs, sidewalks, curb and gutter, driveways, etc.

All procedures and materials shall be in accordance with the American Concrete Institute "Building Code Requirements for Structural Concrete" (ACI 318) and "Specifications for Structural Concrete" (ACI 301).

5.02 MATERIALS

- A. Cement: Portland cement shall conform to "Specification for Portland Cement" (ASTM C150).
- B. Aggregates: Concrete aggregates shall conform to "Specification for Concrete Aggregates" (ASTM C33). Maximum coarse aggregate size for all members less than 8" in thickness shall be $\frac{3}{4}$ ". For members with thicknesses greater than or equal to eight (8) inches, the maximum coarse aggregate size shall be 1- $\frac{1}{2}$ ".
- C. Mixing Water: All water used in concrete shall be from a potable water supply.
- D. Concrete Mix Proportions

ACI 318 shall be used for selecting concrete proportions. The Contractor shall furnish, for the Township's approval, all information necessary to show compliance with ACI 318.

ACI-318 shall be used for developing mixture portions. The Contractor shall furnish, for the Engineer's approval, all records to show that his concrete supplier is in compliance with all provisions of Section 4.3.1. If the concrete supplier is unable to furnish all records to comply with Section 4.3.1, Sections 4.3.1.2 and 4.3.2.2 can be used. If no records are available for any of the above ACI Sections, Section 4.3.3.2 shall be used to develop a concrete mix design.

5.03 EXECUTION

A. Concrete Quality

All concrete shall meet the requirements of ACI 318 be from an approved batch plant and shall have a minimum compressive strength of 2500 psi and a maximum water-cement ratio of 0.64.

Air entrainment shall be 5%, more or less, 1% for concrete with maximum aggregate size of 1-½" and shall be 6%, more or less, 1% for concrete with a maximum aggregate size of ¾".

The concrete shall be of a consistency to work easily into corners, angles of forms and around reinforcement. The slump shall not exceed 4".

B. Mixing and Placing Concrete

1. Preparation of Equipment and Place of Deposit:

- a. Before placement, all equipment for mixing and transporting the concrete shall be cleaned and all debris and ice shall be removed from the places to be occupied by the concrete. Forms shall be thoroughly wetted (except in freezing weather) or oiled and masonry filler units that will be in contact with concrete shall be well drenched (except in freezing weather).
- b. Water shall be removed from place of deposit before concrete is placed. All latents and other unsound material shall be removed from hardened concrete before additional concrete is added.
- c. Expansion joint material shall be placed at all locations where concrete is placed against a structure.

2. Mixing:

- a. Ready Mixed Concrete shall be mixed and delivered in accordance with the "Specification for Ready Mixed Concrete" (ASTM C94). Mixing and transporting equipment shall be capable of providing concrete with meets the ASTM C94 requirements for uniformity.
- b. For job mixed concrete, the mixer shall be rotated at a speed recommended by the manufacturer. If mixer performance tests are not made, each batch of 1 cubic yard

or less shall be mixed for at least 1 minute after all materials are in the mixer. The mixing time shall be increased 15 seconds for each additional cubic yard or fraction thereof. The entire batch shall be discharged before the mixer is recharged.

3. Conveying:

- a. Concrete shall be conveyed from the mixer to the place of final deposit by methods that will prevent separation or loss of materials.
- b. Conveying equipment shall be of such size and design as to ensure a nearly continuous flow of concrete at the delivery point without separation of materials or loss of plasticity.

4. Depositing:

- a. Concrete shall be deposited as nearly as possible in its final position to avoid segregation due to rehandling or flowing. Concrete shall be placed at such a rate that it is at all times plastic and flows readily. No concrete contaminated by foreign material shall be used nor shall retempered concrete be used unless approved by the Engineer.
- b. When placing is started, it shall be carried on as a continuous operation until placement of a well defined section is completed.
- c. All concrete shall be thoroughly consolidated during placement. It shall be thoroughly worked around embedded fixtures and into the corners of the forms.

5. Hot & Cold Weather Requirements:

- a. Concrete placement during hot weather shall be in accordance with "Hot Weather Concreting" (ACI 305).
- b. Concrete placement during cold weather shall be in accordance with "Cold Weather Concreting" (ACI 306). Adequate equipment shall be provided for heating concrete materials and protecting concrete during freezing or near freezing weather. No frozen materials or materials containing snow or ice shall be used.
 - 1) All reinforcement, forms, fillers and ground with which the concrete is to come in contact shall be free from snow and ice.

SECTION 5
CONCRETE WORK

- 2) Construction during cold weather shall be performed in accordance with ACI 306, "Recommended Practice for cold Weather Concreting", or as directed by the Engineer.

9.01 SCOPE OF WORK

The work covered by this section of the specifications consists of furnishing all plant, labor, materials, and equipment and in performing all operations for the installation of the watermains and appurtenances in strict accordance with these specifications.

9.02 MATERIALS

A. Pipe Materials

1. Ductile Iron Pipe and Fittings shall be designed in accordance with the latest revision of ASA specifications A 21.50 and A 21.51. The pipe shall be designed to withstand a minimum working pressure of 200 psi and a minimum hydrostatic test pressure of 300 psi. The pipe shall also be designed for a laying depth of a minimum of six feet.

All ductile iron pipe and fittings shall be coated on the outside with a bituminous coating of either coal tar or asphalt base one mil thick at the point of manufacture in accordance with the specifications of the American Water Works Association. All ductile iron pipe shall be cement lined, half thickness, in accordance with ASA specifications. The spigot ends of all pipe lengths which have been cut in the field shall be ground to a smooth surface, tapered back about 1/2 inch at an angle of 30° with the pipe centerline, and painted with two coats of asphaltum metal protective paint.

Ductile iron pipe shall conform to the dimensions set forth in the table below. Tolerances permitted to ASA specifications listed above will apply. (Design Engineer shall verify expected pressure range with Township during design phase).

| Pipe Size Nominal Inside Diameter in Inches | Outside Diameter Inches | Pipe Barrel Thickness in Inches | Thickness Class |
|--|-------------------------------|---------------------------------------|--------------------|
| 6" | 6.90 | .31 | 52 |
| 8" | 9.05 | .33 | 52 |
| 10" | 11.10 | .35 | 52 |
| 12" | 13.20 | .37 | 52 |
| 16" | 17.40 | .40 | 52 |
| 20" | 21.60 | .42 | 52 |

2. Polyethylene pipe for river crossings or wetland crossings shall be SDR 9, Class 3408 bluestripe pipe as supplied by Plexco or equal. All HDPE pipe shall be butt welded per manufacturer's requirements. All HDPE piping shall be NSF approved meeting AWWA C906-90. River crossing section shall be pressure tested independently of other watermain. This method and locations must be approved by the Township. Refer to standard details for the connection of ductile iron pipe to HDPE. This connection, a mechanical joint gate valve, 1" corporation (on the ductile iron) shall be enclosed in a pre-cast manhole. The size of the manhole will be determined by the Township. A standard EJIW 1000A shall be utilized for this structure.

Refer to MDOT specification BJ-2D, Special Provisions for Directionally Bored Pipe.

If bored pipe is specified larger than 6", it must be approved by the Township. Pipe must have and NSFPW seal.

3. Polyvinyle Chloride Pipe (PVC) 4" – 12" shall be designed in accordance with standards set forth in the latest revision of American Water Works Association Specifications (AWWA) C900 Standards, ANSI/NSF standards 14 & 61 and must bear NSF-PW identification. The pipe shall be designed to withstand a minimum working pressure of 150 psi and a minimum hydrostatic test pressure of 300 psi. The pipe shall also be designed for a laying depth of a minimum of six (6) feet.

Polyvinyle Chloride Pipe (PVC) shall conform to the dimensions set forth in the table below. Tolerances permitted in AWWA specifications listed above will apply.

| Pipe size Nominal Inside Diameter in Inches | Outside Diameter In Inches | Pipe Barrel Thickness in Inches | Pressure Class |
|--|----------------------------------|---------------------------------------|-------------------|
| 6" | 6.90 | .506 | 150 |
| 8" | 9.05 | .533 | 150 |
| 10" | 11.10 | .654 | 150 |
| 12" | 13.20 | .777 | 150 |

PVC Water main shall be John Manvilles's "Blue Brute" or approved equal.

B. Joints for Water Main pipe shall conform to the following:

1. Flanged joints for ductile iron pipe shall be made with flanges, bolts, nuts, washers and gaskets conforming to AWWA Standard C110 and ANSI Standard B 16.1. Bolts, nuts, and washers to be stainless steel.
2. Mechanical joints shall conform to ANSI Standard AWWA Standards C 110 and C 111 along with ANSI Specifications A 21.10 and A 21.11. Rubber gaskets shall conform to manufacturer's standards.
 - a. Mega Lugs shall be utilized on all mechanical joint fittings.
 - b. Lead tip gaskets will not be allowed for providing metal to metal contact at joints.
3. Rubber gasket joints for ductile iron pipe shall be of a bell and spigot type which employs a single rubber gasket to effect the joint seal. These joints shall conform to AWWA Standard C 111 and ANSI Specification A 21.11. These joints shall be similar to "Tyton" as manufactured by U.S. Pipe and Foundry Co., "Bell-Tite" as manufactured by James B. Clow and Sons, Inc. or approved equal. Gasket lube shall be used at all joint.
4. Ball joints shall be cast iron, mechanical, flexible joint tube designed to withstand a working pressure of 200 pounds and a hydrostatic test pressure of 300 pounds. Joints shall be similar to "Molox" as manufactured by the American Cast Iron Pipe Company, "Usiflex" as manufactured by U.S. Pipe

and Foundry Co., "River Crossing Pipe" James B. Clow & Sons, Inc. or an approved equal.

5. Field-Loc gaskets/Fast-Grip or equal are accepted for the use of tyton push on joints for fittings.

C. Gate Valves

Gate valves shall meet the requirements of AWWA C500 of the American Water Works Association. Valves shall be designed for not less than 150 psi working pressure and shall be tested for leakage and distortion under a hydraulic pressure of not less than 300 psi. Under such pressure, the valves shall show no leakage or distortion.

All gate valves shall be cast iron body, fully bronze mounted, bronze stem, double disc gate valves or resilient seated gate valves. Each valve shall have a clear waterway equivalent in area, when open, to that of the connecting pipe. Valves shall be made to open left (counter clockwise). All valves shall be connected to the pipeline by mechanical joints. All valves shall be operated by non-rising stems and shall have square wrench nuts.

All valves shall be furnished with a three piece adjustable valve box as specified herein unless the valve is housed in a manhole. Valves intended to be specifically used in fireline shall be designed and tested at minimum pressure of 200 psi.

D. Butterfly Valves

Butterfly valves, as called out on the plans, shall be so designed and fabricated that they will conform to AWWA Specification C 504 for Class 150B valves. The rubber valve seat shall cover the entire interior surface of the valve body and the face of the body. The valve disc shall be streamlined, free of external ribs, keyed to the shaft, provided with suitable means for positioning and shall utilize wedge type closing against the rubber liner at a full close seating angle of 90 to the axis of the pipe. Valves shall be as manufactured by Dresser Manufacturing Division, Keystone International, Inc. or an approved equal.

All Butterfly valves shall be installed in a manhole per the Standard Detail Sheet.

E. Valve Boxes

Valve boxes shall be cast iron, three-piece, adjustable type, with a 5-1/4 inch shaft. Covers shall be furnished with fingerholes and marked "WATER". Valve boxes shall be similar to that as manufactured by the East Jordan Iron Works or an approved equal. Contractors shall be responsible for adjusting valve boxes to meet finish grades once finish grades are established.

F. Fire Hydrants

At the points indicated on the drawings, there shall be installed a hydrant assembly consisting of a hydrant, a six-inch gate valve, a cast iron valve box and all piping and fittings necessary for a complete job. Gate valves shall be as specified above. Valves shall be located three feet, plus or minus, from the hydrant as shown on typical hydrant setting on drawings.

1. Hydrant barrel inside dimension to be 8-inches I.D. from top to bottom.
2. Nozzles to be on a removable head so that they may be rotated by changing the position of the top flange without removing the barrel.
3. Hydrant to be fully bronze mounted including top of operating stem where it passes through the double "O" ring seal in the bronze packing gland. Operating stem in base and valve seat of bronze.
4. The drain valve shall be plugged in all locations.

Hydrants furnished for this work shall meet the requirements of the American Water Works Association, Specification AWWA C-502-73 and any revision thereof. They shall be East Jordan Iron Works. Hydrants shall be designed for installation with six feet of cover over the connection. The diameter of the valve port in the hydrant shall be at least five inches. The hydrant shall be equipped with one four (4) inch pumper nozzles and two (2 1/2) inch pumper nozzles. Threads shall conform to national standard threads. Hydrant stems shall be built to open right (clockwise).

Hydrants shall be of the "break flange" type. The hydrant shall be so designed that all working parts, including valve and drip mechanism, may be removed from the hydrant through the barrel without the necessity of excavation. The hydrant shall be designed for a working pressure of 150 psi. Operating nuts shall be 1-3/4" size.

G. Water Service Connections

Water service connections are the water line connections which extend from the watermain to the property line or easement line of water system customers. A water service connection shall consist of a corporation stop and saddle in the watermain, a small diameter water line to the property line, a curb stop at the property line and curb box and cover. The Contractor shall place the water service connections where directed by the Design Engineer. The service line piping and fittings shall be either 1" or 2" copper tubing (CTS) size as called out on the plans. Water service connections cannot be placed under a driveway, approach, or any other obstruction.

The location and intended use of the water service connection shall be approved by the Township Utility Department prior to installation. Installation of the water service connection will be completed by the Township or a Township approved contractor.

1. Service Line Pipe and Fittings

Pipe material shall be one-inch (1") or two-inch (2") Polyvinyl Chloride Pipe (PVC), 200 psi (sdr9) Aqua Jet Tubing.

2. Corporation Stops

One-inch and two-inch corporation stops shall be Mueller or Ford for plastic. All corporation stops to be compression fittings. Corporation stops shall be in the "open" position after the service connection is complete.

3. Curb Stops

Curb stops shall be Mueller or Ford oriseal curb valves series H-10300 or equal. Curb stops shall be of the quarter turn, positive shut-off type.

4. Curb Boxes

Curb boxes shall be adjustable in height to allow for variable grade elevations. Curb boxes shall be all cast iron construction and coated inside and out with tar base enamel. A cast iron lid shall be furnished with house nut center plug and shall have "WATER" permanently stamped.

Curb boxes for one-inch (1") or two-inch (2") services shall be the threaded Minneapolis type with inch and a quarter (1 ¼") diameter shaft and arch pattern base equal to Mueller series H-10300-99002. Enlarged bases shall be included in installation, if so required, for the curb box to accommodate 2" curb stop.

5. Tracer Wire & Underground Caution Tape

Tracer wire must be brought up into all valve boxes, fire hydrant valve boxes, metering houses, metering pits, and all blow offs. All underground splices shall be butt spliced, sealed, and waterproofed. This will be done using the heat shrink method and electrical coating, or approved equal. Wire nuts and black tape will not be allowed. Underground caution tape must also be used. Must read "Caution Water Main Buried Below". This must be at a minimum depth of 1 foot and no more than two feet below finished grade.

H. Tapping Sleeve and Valve

Where shown on the plans or where a tee and valve are to be installed on an existing main under pressure, a tapping sleeve and drilling machine shall be used. After installing the sleeve and prior to drilling, the sleeve shall be pressure tested at 150 psi for five minutes. The Design Engineer and the Township of Union Department of Public Works shall be given at least 72 hours notice of all watermain live taps. All tapping sleeves shall be stainless steel with tapping valve (up style) directly bolted to sleeve.

I. Water Main Stubs

At the end of a stub, the last two pipe joints shall have Field-Loc gaskets/Fast-Grip gaskets or equal. The end of the stub shall not be tapped for flushing/sampling purposes. No galvanized pipe materials shall be allowed. A corporation shall be placed for the use of flushing and sampling. A blowoff and cap shall be installed at the Township and/or Engineers request.

9.03 INSTALLATION OF PIPE AND FITTINGS FOR WATERMAINS

All pipe and fittings shall be installed in strict accordance with the recommendations of the manufacturer. Piping and fittings for watermains shall be of the types and materials hereinbefore specified. The pipe and accessories shall be new and unused. Before installation, the pipe shall be inspected for defects and any section of pipe or fittings found to be

defective, before or after laying, will be rejected and replaced with sound pipe without additional expense to the Owner.

The interior of the pipe and fittings shall be thoroughly cleaned of foreign matter before being lowered into the trench and shall be kept clean during laying operations by plugging the ends or other approved methods. When work is not in progress, open ends of pipe and fittings shall be securely closed so that no trench water, earth, animals or other substance will enter the pipes. No pipe or fittings shall be laid in water or when the trench or weather conditions are unsuitable for work except by permission of the Township.

Ductile iron pipe and fittings used on ductile iron (except flanged pipe) shall be provided with three lead wedges at each joint, Fastite conductive (American Pipe) or equal, "Electro-bond" strips of "Cadweld" connectors or other means of providing metal-to-metal contact at the joint to allow an electric current to flow through the joint for thawing purposes.

The full length of each section of pipe shall rest solidly upon the pipe bed with recesses provided to accommodate the bells and joints. Deflections from a straight line or grade, as required by vertical curves, horizontal curves or off-sets, shall not exceed one (1) inch per lineal foot of pipe for pipe less than ten (10) inches in diameter between the centerlines extended of any two connection pipes. If the alignment requires deflections in excess of these limitations, special bends or a sufficient number of shorter lengths of pipe shall be furnished to provide the angular deflection required. For pipes 12 inches in diameter up to 24 inches in diameter, the maximum deflection per joint shall not exceed 1/2 inch per lineal foot of pipe. If necessary, special bends or shorter bends furnished to provide the angular deflection are required. Pipe deflections for diameters in excess of 24 inches shall be per manufacturer's recommendation.

When pipe is cut in the field, the outside of the cut end shall be tapered back about 1/8 inch at an angle of 30 degrees with the centerline of the pipe to remove any sharp, rough edges. Exposed edges shall be coated with two coats of asphaltum metal protective paint.

Fittings at bends in the pipe line shall be firmly wedged against the undisturbed vertical face of the trench to prevent the fittings from being blown off the lines when under pressure. Concrete thrust blocks shall be provided as shown in the standard details or directed by the Township. Mega lugs shall be installed on all bolt ups and fittings. Restraining collars and rods shall be installed were deemed necessary by the Township and/or Engineer. Mega lugs may also be utilized for restraining. Thrust blocking must also be used with mega lugs. See section 9.14 for thrust blocking specifics.

Where pipe ends are left for future connections, they shall be valved, plugged, or capped as called for on the drawings. This includes the addition of one 20' length of water main which is plugged or capped. Where connections are made between new work and existing mains, the connections shall be made by using special pipes and fittings as required to suit the actual conditions.

9.04 SETTING HYDRANTS

Under each hydrant the ground shall be excavated to a depth of at least one (1) foot below the hydrant base and over an area approximately three (3) feet square. This excavation shall be filled up to the elevation of the hydrant base with well compacted, clean, coarse gravel or crushed stone. A block shall be installed under the hydrant as needed. Refer to the standard details. During construction and prior to placing hydrants in service a plastic bag shall be placed over the hydrant in order to signify that the hydrant is not in service as well as protect the hydrant finish during construction.

Each hydrant shall be set truly plumb and held firmly braced in this position. The connection of the hydrant to the branch shall be made by mechanical joint as herein specified under jointing. After the joining has been made, a concrete thrust block shall be poured on the side opposite the branch connection, from the hydrant to the solid undisturbed earth of the excavation wall. All hydrant valves shall be secured to the hydrant connection tee with approved mega lugs.

When the concrete has become sufficiently hard, an additional one foot depth of gravel shall be spread and tamped around the hydrant. When this has been done any area remaining around hydrant area will be filled with sand backfill and compacted, taking care at all times to avoid jarring the hydrant.

Wherever it is necessary to adjust the length of the barrel to meet variations in elevation of the ground surface over the watermain and at the hydrant location, suitable extensions shall be provided for the hydrant barrel and operating stem. In all cases, the break flange shall be located at grade.

Contractor shall remove all water from fire hydrants. Water left remaining in each fire hydrant assembly will be removed by pumping prior to acceptance by the Township of Union. Thawing and/or repair of frozen hydrants shall be performed by the Contractor at no additional expenses to the Owner.

9.05 CONNECTING TO EXISTING WATERMANS

Charter Township of Union Standard Technical Specifications
Section 9 – Water mains and Appurtenances

Where connections are made between new work and existing water mains, the connections shall be made by using special pipes and fittings as required to suit the actual conditions. No connections to existing mains shall be made until the new main has been pressure tested and chlorinated. This includes any connections made to existing water mains which are greater in size than two inches. Two consecutive passing samples must be taken in accordance with the Charter Township of Union Specifications must be taken. Copies of the sample results must be submitted to Union Township. This must be completed prior to placing into service. When making the connection, swab pipe and fittings with four percent chlorine solution. The Township shall witness all connections and shall be notified 48 hours prior to the connection of new pipe to existing pipe.

9.06 DIRECTIONALLY DRILLED WATERMAIN

A. Description

This work shall consist of constructing underground crossings of a wetland using the directional drilling method of placing pipe to serve as carrier pipe.

B. Depth of Bore

The minimum depth of drill using this method shall be six feet (6') of cover below existing grade, and a minimum depth of five (5') feet below any creek bottom or other body of water unless encased in a steel casing then the pipe must be at least three feet (3') under the bottom of the existing body of water.

C. Materials

Plastic Pipe: Section 9.02 A.2. Polyethylene Pipe.

D. Construction Method

This method consists of auguring or jacking a steerable rod under the wetland; then pulling back a cone that expands the soil or a wing cutter, which cuts a hole big enough to obtain the desired diameter. The diameter of the reamer or wing cutter is not to exceed the diameter of the pipe being placed plus two-inches (2").

A drilling fluid of water and bentonite may be used in all operations of a directional drill. The use of a polymer for lubrication in the drilling fluid is acceptable.

9.07 ACCEPTANCE TESTING WATERMAIN

A. General

Prior to connecting the new watermain to an existing watermain, the new main shall be flushed, chlorinated, and pressure tested as outlined herein.

The Township shall be notified 48 hours prior to the start of a pressure test. All acceptance testing shall be witnessed by the Township or Township Design Engineer.

A physical gap of at least three (3) feet must be left between the existing and new watermain until all testing results are satisfactory. The testing sequence shall be: 1) flushing, 2) pressure test, and 3) chlorination. Water for testing may be taken from a nearby hydrant or tee connection by using fittings to accommodate a standard fire hose connection. A reduced pressure zone device (RPZ) must be used on the 2-1/2 inch connection to the main being tested. All water used for flushing must be metered with an approved Township meter and backflow preventer. A bulk water permit must be obtained by the contractor from Union Township at least 48 hours prior to testing.

B. Flushing of Mains

The watermain shall be flushed clean of sand and debris. Flushing shall be done using the "poly-pig" method of flushing. The Contractor shall furnish foam "poly-pig" swabs to be used. Prior to pigging and flushing the watermain must be charged with water.

Contractor shall insert "poly-pig" swab in the end of the new main nearest the existing watermain (or where shown on the plans). The swab shall be passed through the new main using water pressure. The minimum flushing velocity for clearing debris from the water main prior to final disinfection is 3.0 ft/sec. The swab shall be recovered at the end of the main through the blow-off assembly.

C. Pressure Testing

The watermain or sections thereof shall be tested by the Contractor in the presence of the Township and all leaks shall be made tight to meet the requirements below. The Contractor shall furnish all piping, bulkheads, pumps, gauges and other equipment required to carry out the test and shall obtain Township approval of same prior to testing.

SECTION 9
WATERMAINS AND APPURTENANCES

The section of main to be tested shall be slowly filled with water at least 24 hours prior to starting the test. Expel air through corporation stops installed at high points in line. The Contractor shall make arrangements with the operation/maintenance personnel for obtaining water for testing. All water used shall be metered and quantities reported to the operation/maintenance personnel.

At the start of testing, the main shall be pumped up to a pressure of 150 psi and the test period shall start immediately thereafter. The line shall then be maintained under this test pressure for a continuous period of two hours by pumping water into the line at frequent intervals. The volume of water so added shall be measured and considered to represent the leakage from the line under test during the intervals. All water service leads shall be tested with the mainline pipe.

The leakage per hour under the conditions of test shall not exceed the values shown in the following table:

| <u>Size of Pipe</u> | <u>Maximum Leakage Gallons Per Hour Per 100 Joints</u> |
|---------------------|--|
| 2" | 0.34 |
| 3" | 0.50 |
| 4" | 0.67 |
| 6" | 1.00 |
| 8" | 1.35 |
| 10" | 1.66 |
| 12" | 2.00 |
| 14" | 2.34 |
| 16" | 2.65 |
| 18" | 3.02 |
| 20" | 3.32 |

In the event that the leakage exceeds the specified amount, the joints in the line shall be carefully inspected for leaks and repaired where necessary. Any pipes or special casting found to be cracked shall be removed and replaced with new pieces by the Contractor. No repair clamps or bell clamps can be utilized for repairs on new construction. After this work has been done, the tests shall be repeated. Final acceptance of the lines will not be made until satisfactory tests have been passed.

Water service leads installed with mainline pipe will be included in the water main pressure test. Installed water service leads shall have a riser (extension of water service) placed at the downstream

side of the curb box. For flushing, testing, and sampling, once all tests are completed, this riser must be removed or buried 6' below grade.

Not more than 2,500 LF of watermain shall be tested at one time.

To calculate allowable leakage, compute the number of main line pipe joints including joints with valves, hydrants, and fittings. Corporation stops and service line fittings are not considered.

Where there is a considerable elevation difference in the section of watermain being tested, the test pressure shall average 150 psi over the length of main, but shall be not less than 140 psi at the highest elevation.

All main line valves and hydrant lead valves within the test section shall remain open during the pressure test.

After completion of the two hour pressure test, each valve shall be checked against test pressure.

D. Disinfecting Watermains

After completion of pressure testing and flushing of the watermain, the disinfection of the watermain shall be carried out.

A chlorine water solution, prepared by adding NSF approved hypochlorite to water, shall be applied to the watermain. The chlorine concentration in watermain shall be 50 mg/l (milligrams per liter). This will require the addition of the following quantities of chlorine solution.

Chlorine Solution Required to Produce
50 mg/l Concentration in
100 feet of Pipe

| <u>Pipe Diameter</u> | <u>1% Chlorine Solutions (Gallons)</u> |
|----------------------|--|
| 4" | 0.33 |
| 6" | 0.73 |
| 8" | 1.30 |
| 10" | 2.04 |
| 12" | 2.88 |

The chlorine solution shall be added to the pipeline at a measured rate along with water being supplied at a measured rate from the existing distribution system or other approved source of supply. The two rates shall be proportioned and closely monitored to assure that the water entering into the pipe is maintained at a minimum of 50 mg/l available chlorine. Chlorine application shall not cease until the entire main is filled with the chlorine solution (50 mg/l). The chlorinated water shall be retained in the watermain for at least 24 hours during which time all valves and hydrants shall be manipulated in order to disinfect the appurtenances. After this contact period, the main shall be flushed until the chlorine residual in the main is 0.5 mg/l or less. Chlorinated water shall be disposed of in a manner that will not damage vegetation, wildlife, or aquatic life. Under no circumstances shall chlorinated water be discharged into a natural waterway.

Examples of procedures for disinfecting water mains are as follows:

- After flushing of the chlorine from the system is complete, the filled water main shall be allowed to stand for 24 hours. Samples will then be drawn from the main from sample cocks, located approximately every 1,000 feet, for bacteriological analysis. The water main shall be allowed to stand for an additional 24 hours at which time a second set of samples shall be taken at the same intervals for bacteriological analysis.
- After disinfection and final flushing, collect 2 samples 16 hours apart, or wait 16 hours and then collect two samples 15 minutes apart.

The above described processes are acceptable methods and are intended to inform the Contractor of the steps involved in methods of disinfecting a watermain. The actual process used by the Contractor in disinfecting the watermain shall, in all cases, conform to the suggested procedures outlined in the latest version of AWWA Standard C651 which describes several acceptable procedures depending upon the situation. The Contractor shall discuss his/her proposed disinfection procedure with the Township and have it approved prior to beginning the process.

The Contractor shall supply the chlorine, all necessary equipment and labor necessary for its application. The Contractor shall make suitable arrangements with the Township for bacteriological analysis and shall be responsible for all cost incurred from bacteriological testing.

E. Continuity Testing

The system (pipeline and hydrants) shall be tested for electrical continuity and current capa. The electrical test shall be made after the hydrostatic pressure test and while the line is at normal operating pressure. Backfilling shall have been completed. The new water main must not be connected to existing during this testing operation. The line may be tested in sections from hydrant to hydrant as approved by the Township Engineer. Direct current of 400 amperes \pm 10% shall be passed through the pipe line for five minutes. Current flow through the pipe shall be measured continuously on a suitable ammeter and shall remain steady without interruption or excessive fluctuation throughout the five minute test period. Insufficient current or intermittent current or arcing, indicated by large fluctuation of the ammeter needle, shall be evidence of defective electrical contact in the pipeline. The cause shall be isolated and corrected. Thereafter, the section in which the defective test occurred shall be retested.

9.08 TRANSFER OF WATER SERVICES

Where water services are to be transferred from an existing watermain to a new watermain, as shown on the plans, Contractor shall provide corporation stop and necessary pipe and fittings. Work shall be scheduled in such a manner that transfers of service to any residence or water customer will result in the least possible interruption of water supply service. All services are 1 inch unless otherwise shown on the plans.

9.09 TRANSFER OF EXISTING HYDRANTS

Where indicated, existing hydrants are to be transferred from an existing main to a new main, as shown on the plans. Contractor shall excavate and reset the hydrant, as shown on Hydrant Assembly Detail, provide new 6-inch hydrant gate valve, 6-inch hydrant lead to new main and all fittings required for a complete installation.

9.10 HANDLING PIPE

All pipes and special castings shall be unloaded and distributed along the line of work in such a manner and with such care as will effectively avoid the cracking of any pipe or casting. Dropping directly from the truck will not be permitted. Care must also be exercised on the inside of the pipe. Wherever the outside coating may be found to have rubbed off, the part shall be thoroughly cleaned by brushing and shall then be recoated with an approved asphaltic paint or as may be required by the nature of the pipe coating. The Contractor shall keep on hand a supply of paint for such purposes.

9.11 MARKING PIPE

Each cast iron fitting shall have its weight and class designation conspicuously painted or cast on it. All other pipe materials shall have the class designation painted thereon. Where required, other designation marks shall be painted on the pipe or fittings to indicate correct location in the pipe section in conformity to a detailed layout plan.

9.12 PIPE TAPS

Pipe lines shall be tapped for corporation cocks where shown or required for testing of completed watermains. For ductile iron or steel pipe, cocks shall be threaded directly into the pipe.

9.13 BLOWOFF

Blowoffs shall be placed on all dead-end mains and shall be as shown on the plans. Permanent blow-off assemblies shall be cut off below grade after testing is complete. Standing water within the blowoff shall be pumped out of the riser, capped, bolted, and buried.

9.14 THRUST BLOCKS

Concrete thrust blocks shall be poured on hand-excavated, undisturbed soil bearing surfaces of a minimum size as shown on the standard details or increased in size according to the actual bearing values of the soil in each location, in accordance with the instructions of the Design Engineer.

Thrust blocks shall be made of 3,000 psi concrete, wet mix. Concrete thrust blocks shall be placed at all 22-1/2 degree bends or greater, dead ends, tees, reducers, hydrants and crosses, as required. Pre-case thrust blocks may be utilized for certain applications, if approved by the Township Engineer/inspector. Mega lugs shall be utilized on all mechanical joint fittings. Thrust blocks must be utilized if a mega lug is used. Approval for correct usage of thrust blocks for mega lugs and retainer glands must be obtained from the Township inspector/engineer.

9.15 PAINTING

All pipes, valves, bolts and any other portions of watermain exposed inside manholes and other structures shall be painted. If necessary, heat shall be provided to maintain good drying conditions. All items to be painted shall be dry and clean before application of the paint. Any rust or scale shall be removed by wire brushing or scraping.

9.16 SHOP DRAWINGS

Charter Township of Union Standard Technical Specifications
Section 9 – Water mains and Appurtenances

The Contractor shall furnish, as prescribed under Section "General Requirements" dimension and erection drawings and details of the watermain, valves, and other appurtenances furnished under this section. Complete details of all pipe deflections and ties to adjoining pipe shall be submitted to the Township Engineer for approval.

9.17 CERTIFICATION

The manufacturer of pipe and fittings shall furnish a certified statement that all pipe and fittings furnished by him have been inspected and tested in accordance with the applicable specifications. Pipe will be subject to inspection and approval upon delivery and no cracked, broken, damaged or defective pipe or fittings shall be laid in the work. Any piece that is found to be defective after it has been laid shall be removed by the Contractor and replaced by a sound and perfect piece.

DIRECTIONAL BORE WATERMAIN

1.01 SCOPE

This specification addresses the installation of water mains by guided boring, including connecting to existing water services or other water mains. All gate valve, gate well, and other appurtenances shall be installed using the general provisions and specifications for water main construction. The Contractor will provide all labor, components, materials, tools and appurtenances necessary or proper for the performance and completion of the contract. Inspection and payment will be by the method stipulated in the contract.

Guided boring is a method of trenchless construction using a surface launched steerable drilling tool controlled from a mobile drilling frame, and includes a field power unit, mud mixing system and mobile spoils extraction system. The drilling frame differs from microtunneling; auger boring or pipe jacking equipment. The drilling frame is set back from an access pit that has been dug at the location of a proposed gatewell (or other appurtenances) and a high-pressure fluid jet tool head that uses a mixture of bentonite clay and water is launched and guided to the correct invert elevation and line required at the gatewell. Using a real-time guidance system attached behind or within the tool head, which measures inclination, roll and azimuth, the tool head is guided through the soil to create a pilot tunnel. Tunneling may also be performed between proposed gatewells or other appurtenances. Upon reaching the pit dug at the target location, the tool head is pulled back through the tunnel. A vacuum spoils extraction system removes any excess spoils generated during the installation. The gatewells are then completed at both locations and the surface restored to the original condition.

1.02 QUALIFICATIONS

- A. Guided Boring Contractors shall have actively engaged in the installation of pipe using guided boring for a minimum of three years. The Contractor shall also have completed at least 5,000 feet of guided boring installations ranging from 6" to 24" inches in diameter, in the last year.
- B. Field supervisory personnel employed by the Guided Boring Contractor will have at least three years experience in the performance of this type of work.

1.03 SITE CONDITIONS

- A. Guided boring operations must not interfere with, interrupt or endanger the surface or activity upon the surface, and shall be located as called for on the project drawings.

- B Contractor must comply with all applicable jurisdictional codes and OSHA Requirements.
- C. When rock stratum, boulders, underground obstructions, or other soil conditions that impede the progress of drilling operations are encountered, the Contractor Project Engineer will review the situation and jointly determine the feasibility of continuing drilling operations, by making adjustments or switching to an alternate construction method.

1.04 MATERIALS

A. Pipe and Fittings

1. High Density Polyethylene Pipe (HDPE) and fittings shall be used in accordance with the material specifications. All additional appurtenances shall meet the material specifications. All additional appurtenances shall meet the materials specifications. The Engineer will specify the pipe wall thickness. The Contractor shall supply the pipe and fittings and shall include its price in the bid. All pipe installed by guided boring shall be joined by an approved butt fusion or, electrofusion technique according to the manufacturers specifications.
2. HDPE pipe shall be produced from resins meeting the requirements of ASTM D1248, designation PE3407, ASTM D3350 cell classification, PE34543C, and shall meet the requirements of AWWA C901 and C906. Material taken from HDPE pipe shall meet the minimum stability requirements as ASTM D3360. Pipe shall be blue in color or black with blue striping and be legibly marked at intervals of no more than five feet with the manufacturers name, trademark, pipe size, HDPE cell classification, appropriate legend such as SDR 11, ASTM DE035, AWWA C9091 or C9906, dates of manufacture and point of origin. The pipe shall be ductile iron pipe size. Pipe not marked as indicated above will be rejected. Pipe shall have a NSFPW seal.
3. Pipe used shall be DRISCOPIPE PRISMA, Series 4000 AWWA C906 or equivalent, with and SDR to be determined by the Engineer. The pipe shall be blue shelled on the exterior and black on the inside.

B. Drilling Fluid

1. Drilling fluid shall be a mixture of water and bentonite clay. The fluid shall be inert. The fluid should remain in the tunnel to ensure the stability of the tunnel, reduce drag on the pulled pipe, and provide backfill within the annulus of the pipe and tunnel.

2. Disposal of excess drilling fluid and spoils shall be the responsibility of the Contractor who must comply with all relevant regulations, right-of-way, work space and permit agreements., Excess drilling fluid and spoils shall be disposed at an approved location. The Contractor is responsible for transporting all excess drilling fluid and spoils to the disposal site and paying any disposal costs. Excess drilling fluid and spoils shall be transported in a manner that prevents accidental spillage onto roadways. Excess drilling fluid and spoils will not be discharged into sanitary sewers, storm drain systems, or waterways.
3. Drilling fluid returns (caused by fracturing or formations) at locations other than the entry and exit points shall be minimized. The Contractor shall immediately clean up any drilling fluid that surfaces through fracturing.
4. Mobile spoils removal equipment capable of quickly removing spoils from entry or exit pits and areas with returns caused by fracturing shall be present during guided boring operations to fulfill the requirements of paragraphs b and c above.
5. The Contractor shall be responsible for making provisions for a clean water supply for the mixing of drilling fluid. A permit to use water can be obtained from the Department of Public Works. No water may be taken from Township fire hydrants. The Contractor shall be responsible for complying with all the requirements of that permit.

1.05 EXECUTION

A. General

The Engineer must be notified immediately if any obstruction is encountered that stops forward progress of drilling operations. The Contractor and Engineer must review the situation and jointly determine the feasibility of continuing guided boring operations or switching to an alternative construction method. When it is determined that it is impossible to continue drilling operations, the Contractor will be directed how to proceed by the Project Engineer. Dewatering of pits and excavations must meet the general provisions and specification for water main construction in effect at Union Township. The type of dewatering method will be at the option of the Contractor. When water is encountered, the Contractor must provide a dewatering system of sufficient capacity to remove water, keeping any excavations free of water until the backfill operation is in progress. Dewatering shall be performed in a manner so that removal of soil particles is held to a minimum.

B. Preparation

Excavate required pits in accordance with the project drawings. The drilling procedures and equipment shall provide protection to workers, particularly against electrical shock. As a minimum, grounding mats, grounded equipment, hot boots, hot gloves, safety glasses, and hard hats will be used by crewmembers. The drilling equipment shall have an alarm system capable of detecting electrical current. Removal of trees, landscaping, pavement or concrete shall be as indicated on the Plans or as directed by the Engineer, and shall meet the general provisions and specifications of Union Township.

1. The Contractor is responsible for existing utilities, as stated under the Miss Dig System. All utilities that the boring operation may encounter shall be exposed to determine the actual depth and location. The costs of exposing utilities, whether shown on the plans or not, shall be the responsibility of the Contractor and included in the bid price for installing the new water main.

C. Guided Boring Operations

1. Equipment

- a) The drilling equipment must be capable of placing the pipe within the planned line and grade.
- b) The guidance system must have the capability of measuring inclination, roll and azimuth. The guidance system must have an independent means to ensure the accuracy of the installation. The Contractor shall demonstrate a viable method to eliminate accumulated error due to the inclinometer (pitch or accelerometer). The guidance system shall be capable of generating a plot of the borehole survey for the purpose of an as-built drawing. The guidance system must meet the following modifications.

| | | |
|--------------|---------------|------------|
| Inclination: | Accuracy | 0.06' |
| | Range | 90° |
| | Repeatability | 0.09 |
| Roll: | Accuracy | 0.1 |
| | Range | 0' to 360° |
| Azimuth: | Repeatability | 0.1 |
| | Range | 0' to 360° |

- D. The Contractor shall supply the Township with a log of the water main depth every 25' along the length of the pipe.

E. Pilot Hole Boring

1. The entry angle of the pilot hole and the boring process shall maintain a curvature that does not exceed the allowable bending radius of the product pipe.

2. Alignment Adjustments and Restarts

a) The Contractor shall follow the pipeline alignment as shown on the drawings, within the specifications stated. If adjustments are required, the Contractor shall notify the project Engineer for approval prior to making the adjustments.

b) In the event of difficulties at any time during boring operations requiring the complete withdrawal from the tunnel, the Contractor will be allowed to withdraw and abandon the tunnel by completely filling the void and begin a second attempt at a location approved by the Project Engineer; at the option of the Contractor and with the approval of the Engineer, the product pipe by trench method per the general provisions and technical specifications for construction. The number of access pits shall be kept to a minimum and the equipment must be capable of boring the following lengths in a single bore.

3. Installing Product Pipe

a) After the pilot hole is completed, the Contractor shall install a swivel to the reamer and commence pullback operations. Pre-reaming of the tunnel may be necessary and is at the option of the Contractor.

b) Reaming diameter shall not exceed 1.4 times the diameter of the product pipe being installed.

c) The product pipe being pulled into the tunnel shall be protected and supported so that it moves freely and is not damaged by stones and debris on the ground during installation.

d) Pullback forces shall not exceed the allowable pulling forces for the product pipe.

e) The Contractor shall allow sufficient length of product pipe to extend past the termination point to allow connections to adjacent pipe sections or gate valves. Pulled pipes shall be allowed 24 hours of stabilization prior to making tie-ins. The

length of extra product pipe shall be at the Contractor's discretion and cost.

- f) The Contractor shall install a Solid 10 gauge, blue in color, tracer wire at the same time as the product pipe. The tracer wire shall be connected to each hydrant at a bolt on the bottom of the hydrant barrel by use of a soldered connection, a crimped U-shaped connection, or a ring lug.
- g) The Contractor shall install a "Driscopipe AWWA C153 Mechanical Joint Adapter" type adaptor, per the manufacturer's requirements, for connecting the pipe to the specified valve and hydrant.

4. Water Service Connections

The Contractor is responsible for reconnecting existing water services as directed by the Engineer. All service leads will be to the size indicated in the plans and proposal. The service connections shall be tapped to the Main line in one of the following methods. The Method to be used shall be decided by Union Township.

- a) Mechanical Joint
 - i) The Contractor shall use a saddle clamp that is approved to be used with GDPE pipe, and shall be approved by the water superintendent.
 - ii) The saddle clamp shall be brass and must have a double strap. Single strap clamp will not be allowed.

1.06 TESTING

A. Pressure Testing Considerations

1. Guidelines for Test Methods

Leak testing shall be conducted as specified by the responsible Project Engineer or Owner. Joints may be exposed to inspect for leakage. Heat fusion joints must be properly cooled before pressure testing.

Testing may be conducted on the full system, or in sections. The test section size is determined by test equipment capability. If the pressurizing or pumping equipment is too small, it may not be possible to complete the test within allowable testing time limits. If so, higher capacity test equipment, or a smaller test section may be necessary.

Expansion joints and expansion compensators should be temporarily restrained, or isolated, or removed during the pressure test. The temperature of the test medium and the pipe test section should be the same, and should be at ambient temperature. Before applying test pressure, allow time for the test medium and the pipe test section to equalize. At temperatures above 100°F (38°C), test pressure must be reduced.

2. Test Pressure

Test pressure may be limited by valves, or other lower pressure rated components. Such components may not withstand the required test Pressure. They should be either removed, or isolated from the test section to avoid possible damage, or failure of these devices. Isolated equipment should be vented.

B. Hydrostatic Testing

1. General

Piping system pressure testing using hydrostatic procedures is recommended. The testing medium shall be clean water. The test section should be completely filled with water. Take care to bleed off any trapped air. While the test section is filling, venting at high points may be necessary to purge air pockets. Venting may be provided by loosening flanges, or by using equipment vents. Retighten any loosened flanges before applying test pressure.

2. Monitored Make-up Water Test

The test procedure consists of initial expansion, and test phases. During the initial expansion phase, the test section is pressurized to the test pressure by adding a measured amount of water. If the amount of makeup water added does not exceed Table 1 values on the facing page, leakage is not indicated.

3. Non monitored Make-Up Water Test

The test procedure consists of initial expansion, and test phases. For the initial expansion phase, make-up water is added as required to maintain the test pressure for three (3) hours. For the test phase, the test pressure is reduced by 10 psi. If the pressure remains steady) within 5% of the target value) for an hour, no leakage is indicated.

TABLE 1: TEST PHASE MAKE-UP AMOUNT

Make-Up Water Allowance (U.S. Gallon/100 ft. of Pipe)

| Nominal Pipe Size (in.) | 1 Hour Test | 2 Hour Test | 3 Hour Test |
|----------------------------|-------------|-------------|-------------|
| 1 ¼ | 0.06 | 0.10 | 0.16 |
| 1 ½ | 0.07 | 0.10 | 0.17 |
| 2 | 0.07 | 0.11 | 0.19 |
| 3 | 0.1 | 0.15 | 0.25 |
| 4 | 0.13 | 0.25 | 0.40 |
| 5 | 0.19 | 0.38 | 0.58 |
| 5 3/8 | 0.21 | 0.41 | 0.62 |
| 6 | 0.3 | 0.6 | 0.9 |
| 7 1/8 | 0.4 | 0.7 | 1.0 |
| 8 | 0.5 | 1.0 | 1.5 |
| 10 | 0.8 | 1.3 | 2.1 |
| 12 | 1.1 | 2.3 | 3.4 |
| 13 3/8 | 1.2 | 2.5 | 3.7 |
| 14 | 1.4 | 2.8 | 4.2 |
| 16 | 1.7 | 3.3 | 5.0 |
| 18 | 2.2 | 4.3 | 6.3 |
| 20 | 2.8 | 5.5 | 8.0 |
| 22 | 3.5 | 7.0 | 10.5 |
| 24 | 4.5 | 8.9 | 13.3 |
| 26 | 5.0 | 10.0 | 15.0 |
| 28 | 5.5 | 11.1 | 16.8 |
| 30 | 6.3 | 12.7 | 19.2 |
| 32 | 7.0 | 14.3 | 21.5 |
| 34 | 8.0 | 16.2 | 24.3 |
| 36 | 9.0 | 18.0 | 27.0 |
| 42 | 12.0 | 23.1 | 35.3 |
| 48 | 15.0 | 27.0 | 43.0 |
| 54 | 18.5 | 31.4 | 51.7 |

REPLACEMENT AND CLEANUP

13.01 SCOPE OF WORK

Under this item, the Contractor will restore all lawns, trees, gardens, landscape plantings, sidewalks, ramps, trails, fences, commercial signs, water courses and sand, gravel, dirt, asphalt and concrete roads, catch basins, storm sewers, building sewers, water services, water valve boxes, meter vaults, property markers (such as concrete monuments, irons, stakes, pipes, etc.), mailboxes and other items which may be damaged during the course of construction. All replacement and cleanup work will be incidental to the project except those items of work that are delineated in the bid proposal.

All restoration work shall attempt to return the existing facilities to their original condition. Substitutions, such as gravel instead of grass, will not be allowable.

The Contractor shall pay special attention to the requirements of Act 347, "Soil Erosion and Sedimentation Control". In all construction work the Contractor shall take all precautions necessary to prevent erosion and to conform to the requirements of Act 347. Should erosion occur within the guarantee period, the Contractor shall regrade and reseed the disturbed area at no additional cost to the Owner.

Replacement and cleanup operations shall follow immediately behind the construction work. The Contractor shall make every effort to keep the job site clean and free of trash and miscellaneous building materials. The Contractor shall pay special attention in order to restore commercial signs, fences, etc. and to patch and repair pavement, driveways and sidewalks immediately after the construction work. In the event that replacement and cleanup work does not proceed in a satisfactory manner, the Owner may withhold periodic payments or close the construction area until such time as the replacement and cleanup is satisfactory. An exception may be made if there are physical limitations which do not allow for immediate replacement and cleanup.

13.02 PAVEMENT RESTORATION

A. General

All permanent pavement restoration shall be done over compacted backfill and a minimum 6" thick compacted M.D.O.T. 22A gravel base. The gravel base shall be placed and maintained in accordance with the M.D.O.T. Standard Specifications. All patches shall have square, neat, saw cut edges regardless of the final surfacing method planned for that section of the pavement restoration.

No patching work shall be started until the subgrade has been properly prepared. Prior to laying the bituminous patch, the adjacent road surfaces shall be swept clean of all foreign materials and the patch area and pavement primed with Michigan Department of Transportation's approved prime coat.

A bituminous bond coat shall be placed between successive lifts of the bituminous patch and bituminous surfacing. Each lift shall be thoroughly compacted before adding the next lift. This includes running the compaction roller longitudinally along the entire length of the joints between the patch and the existing pavement.

The bituminous mixture to be furnished under these specifications shall be delivered to the paver at a temperature no lower than 285 F. Any mixture that has a temperature below 285 F at the time of "laying" shall be rejected and hauled from the project.

Temporary road patches shall be gravel or bituminous cold patch. The patches shall be maintained in a smooth condition until final repairs are made.

The Design Engineer, Township Engineer and the County Road Commission shall be notified at least two (2) working days prior to the placement of any and all final pavement overlays.

Aggregate for mixes shall conform to the Isabella County Road Commission and the Union Township current standards.

B. Bituminous Patching

Existing asphalt roads and driveways shall be patched using the current Road Commission standards. All patches shall be placed in two lifts of 165 pounds per square yard for the first course and 110 pounds per square yard for the second course or match existing thickness. A bituminous prime coat of 0.25 gallons per square yard and a tack coat of 0.10 gallons per square yard shall be used for all bituminous patches. Shoulders shall be restored to their original width and depth in accordance with M.D.O.T. Standard Specifications using M.D.O.T. 23A gravel.

C. Gravel Roads, Driveways and Shoulders

All gravel roads shall be restored in accordance with M.D.O.T. Standard Specifications using 6" of M.D.O.T. 22A gravel. Shoulders shall be restored to their original width and depth in accordance with 1984 M.D.O.T. Standard Specification 3.09 using M.D.O.T. 23A gravel.

Shoulders shall be raised on the side opposite of sewer construction to match new pavement surfaces.

D. Concrete Pavement, Sidewalk and Driveways

Concrete for restoring pavement, sidewalks, and driveways shall attain a 28-day strength of 3,500 pounds per square inch. Neat edges of patch areas shall be obtained by the use of a concrete saw. Concrete mixing aggregates and curing methods shall conform to Concrete section. Concrete patches shall match the original width and depth and in no case, a depth less than 4". Sidewalks shall have contraction joints a distance apart equal to the width of the slab.

13.03 GRASS AREA

Grass areas shall be considered as two types: A) Type 1, areas which had lawns before construction, and B) Type 2, open fields or ditches not adjacent to established lawns. The plans may specifically call for Type 1 mixtures in which case the plans will govern. If there is a question as to which mixture to use, the Design Engineer shall make the final decision.

Terraces, lawns, ditches, open fields and other grassy areas shall be topsoiled, fertilized, seeded and mulched in such a manner that a grass approximately equal in type and density of the original is obtained. Slopes between 1:3 and 1:2 shall be sodded and staked or receive seed with mulch blankets.

A. Topsoil

Topsoil furnished shall consist of dark brown or black loam, clay loam, silt loam, or sandy loam surface of fertile, friable humus soil of mineral organics, not including peat or muck. Soil shall be screened topsoil, free of stones, roots, sticks and any other extraneous materials. All topsoil furnished shall be approved by the Design Engineer. Type 1 areas shall be topsoiled to a depth of 4" and Type 2 areas to a depth of 2".

B. Seeding and Fertilizing

Areas to be seeded and fertilized shall be carefully raked to even surfaces and all stones, sticks and other debris removed.

The area to be seeded shall be fertilized with agricultural fertilizer 12-12-12 analysis, Davco or Agrico or equal, applied on the prepared surface at the rate of 20 pounds per 1,000 square feet. Fertilizer shall be harrowed or raked into the soil to a depth of not less than 1".

Seeds shall be furnished in durable bags. On each bag of seed, the vendor shall attach a tag giving name, lot number, net weight of contents,

purity and germination. All seed shall be thoroughly mixed and sown in a method which will ensure uniform distribution. Seeding during high winds or inclement weather will not be permitted. All seed is to be raked in and compacted. The seed shall be sown at the rate of five (5) pounds per 1,000 feet. The seeding mixtures shall be composed of certified seed of the purity, germination and proportions by weight as specified in the following table:

| Kind | SEEDS | | MIXTURES | |
|---------------------|----------------|---------------------|----------|--------|
| | Minimum Purity | Minimum Germination | Type 1 | Type 2 |
| Perennial Rye Grass | 98% | 90% | 20% | 50% |
| Kentucky Blue Grass | 90% | 75% | 60% | 15% |
| Creeping Red Fescue | 98% | 80% | 20% | 35% |

C. Mulching

Immediately after seeding all seeded areas, Type 1 and Type 2 shall be mulched with unweathered small grain straw or hay spread uniformly at a rate of 100 pounds per 100 square feet (two tons per acre). Hydroseeding method with similar application rate will be allowed.

D. Mulching Anchoring

All mulch shall be anchored using one of the following methods. The Contractor may use either method unless otherwise shown on the plans.

1. Method "A": The straw mulch shall be anchored by applying one of the following asphalt products at the rate shown. The asphalt may be blown on with the mulch or sprayed on immediately after the mulch is spread.

| <u>Asphalt Product</u> | <u>Application Rate</u> |
|--|-------------------------|
| Liquid Asphalt R.C. 1, 2 or 3; M.C. 2 or 3 | 0.10 gal. per S.Y. |
| Emulsified Asphalt R.S. 1 or 2; M.S. 2; or S.S. 1 | 0.04 gal. per S.Y. |

2. Method "B": A "Terra-Tak" mulch binder may be used in lieu of asphalt. Mixing and application shall be done in accordance with the manufacturer's recommendations.

3. Method "C": In areas with slopes greater than 10% or where shown on the plans, the Contractor shall place mulch netting or excelsior blanket mulch.
 - a. Mulch Netting: Mulch shall be anchored by the use of mulch netting. The light weight fibrous netting shall be properly placed over the mulch and secured to the ground using wire staples, spaced per manufacturer's recommendations.
 - b. Excelsior Blanket Mulch: An excelsior blanket shall be used in lieu of other mulch. The excelsior blanket shall be a consistent thickness of evenly distributed wood excelsior fibers, 80% of which are 6" or more in length. The top side of the blanket shall be covered with a coarse net of twisted Kraft paper or biodegradable extruded plastic mesh. Ends and sides shall be securely butted and stapled with U-shaped wire staples of a size and length suited to the soil conditions.

13.04 DITCHES

Ditches which have been grassed and maintained by the abutting property owner shall be restored to the pre-construction conditions.

Ditches in which culverts or drain tile have been installed shall have the same tile replaced, if in good condition, or a tile satisfactory to the Design Engineer installed in its place at the original line and grade.

Catch basins shall be reconstructed, if removed or damaged.

13.05 FENCE REPLACEMENT

- A. Chain Link Fence shall be replaced according to current M.D.O.T. specifications.
- B. Other Fences shall be replaced equal to and of the same type as existing.
- C. Salvaged material, if approved by the Engineer, may be used for replacement.
- D. Right-of-way fences shall be repaired/replaced as indicated on the construction drawings.

13.06 COMMERCIAL SIGNS

Commercial signs, which must be removed by the Contractor in order for work to proceed, shall be replaced and reconstructed to original condition. It is very important that replacement follow immediately behind the construction work.

13.07 BUILDING SEWERS

Building sewers shall include any and all parts of private residential, commercial or industrial sewage disposal system such as sewer pipe, septic tanks, drainfield, etc. Whenever the service of any such facility is interrupted because of the Contractor's operations, he shall provide such interim methods of sewage disposal as are required to maintain a safe, nuisance free, non-polluting construction operation.

13.08 OTHER DEBRIS

The Contractor shall remove, at his own expense from the site, any and all broken pipe, bricks, blocks, lumps of concrete, broken machinery, cans, containers, and other trash and debris.

13.09 TREES

The Contractor shall endeavor to save as many trees as possible. Cut trees, including stumps, shall be disposed of by the Contractor. Any elm tree which is removed must be burned. Tree branches which become broken shall be removed by cutting off flush with trunk and the cut on the trunk shall be painted with an approved tree paint. Where removal of a stump would result in damage to existing utilities, the stump may be removed by chipping to a depth of at least one foot below the finished ground surface.

Trees removed by the Contractor and where approved by the Engineer shall be replaced with a reasonably sized tree of the same variety. Trees along the State Highways and County Roads that fall on the property line or in the road right-of-way shall be replaced at a new location off the right-of-way.

Replacement trees of the deciduous or hardwood type shall be furnished from nursery stock, at least 2" to 2½" in diameter, and shall have the roots contained in a ball of soil and wrapped in burlap.

Replacement trees of the evergreen type may be furnished from either nursery or native stock, at least 8' – 10' in height, and shall have roots contained in a ball of soil and wrapped in burlap.