



Department of Management Services
Purchasing Division
241 West South Street
Kalamazoo, MI 49007-4796
Phone: 269.337.8020
Fax: 269.337.8500
www.kalamazoocity.org
purchasing@kalamazoocity.org

MANDATORY PRE-BID MEETING
Tuesday, January 24, 2023 at 10:00 a.m.
Kalamazoo Water Reclamation Plant -1415 Harrison Street, Kalamazoo, MI 49007
Conference Room A

INVITATION FOR BIDS (IFB)

The City of Kalamazoo, Michigan is soliciting sealed bids for:

Project Name: 2023-2024 Ransom Street Improvements **Bid Reference #: 91300-009.0**
Project partially funded with American Rescue Plan Act (ARPA) funds

IFB ISSUE DATE: January 6, 2023

BID DUE/OPENING DATE: Tuesday, February 14, 2023 at 3:00 p.m. Local Time
Facsimile Bids Will Not Be Accepted.

MAILING ADDRESS & INSTRUCTIONS

Mail To:
Purchasing Division
241 W. South Street
Kalamazoo, MI 49007

Questions for this IFB should be directed to:
Department Contact: Sohil Manjiyani, PE,
Senior Civil Engineer at
manjiyanis@kalamazoocity.org or
(269) 337-8595

Include on the Envelope the Project Name and Bid Reference Number. All Envelopes Must Be Sealed.

You are invited to submit a bid for this project. Specifications, terms, conditions and instructions for submitting bids are contained herein. This Invitation for Bids with all pages, documents and attachments contained herein, or subsequently added to and made a part hereof, submitted as a fully and properly executed bid shall constitute the contract between the City of Kalamazoo (City) and the successful bidder when approved and accepted on behalf of the City by an authorized official or agent of the City. Please review the bid document as soon as possible and note the **DEADLINE FOR QUESTIONS** in the Instructions to Bidders.

All bidders shall complete and return the Bid and Award page(s) and submit all information requested herein in order for a bid to be responsive. The bid document shall be returned in its entirety, in a properly identified and sealed envelope to the Purchasing Division at the above address. **BIDS MUST BE RECEIVED BEFORE THE DUE DATE - LATE BIDS WILL NOT BE CONSIDERED.** The City reserves the right to postpone the bid opening for its own convenience.

TABLE OF CONTENTS

Table of Contents

STATEMENT OF NO BID5

SECTION I INSTRUCTIONS FOR BIDDERS.....6

1. EXAMINATION OF BID DOCUMENT.....6

2. QUALIFICATIONS OF BIDDERS6

3. SUBSTITUTE AND “OR EQUAL” ITEMS6

4. PREPARATION OF BID6

5. EXPLANATION TO BIDDERS7

6. CASH DISCOUNTS.....7

7. WITHDRAWAL OF BIDS7

8. BIDS TO REMAIN SUBJECT TO ACCEPTANCE7

9. ALTERNATE BIDS7

10. LATE BIDS.....7

11. UNIT PRICES7

12. EVALUATION OF BIDS AND AWARD OF CONTRACT7

SECTION II BID AND AWARD9

CITY OF KALAMAZOO EX-OFFENDER POLICY CHECKLIST18

SUB-CONTRACTING INFORMATION19

REFERENCE QUESTIONNAIRE.....20

COVID-19 ADDENDUM #222

SECTION III CITY OF KALAMAZOO INDEMNITY AND INSURANCE23

SECTION IV SPECIAL REQUIREMENTS.....25

1. BID BOND/GUARANTEE25

2. WAIVERS OF LIEN25

3. SUBCONTRACTORS.....26

4. PREVAILING WAGES26

SECTION V SPECIAL CONDITIONS27

1. INTENT27

2. SCOPE OF WORK.....27

3. UNIT PRICING27

4. TEMPORARY UTILITIES28

5. PROGRESS SCHEDULE.....28

6. LIQUIDATED DAMAGES29

7. MAINTAINING TRAFFIC29

8. COORDINATING30

9. WORK HOURS	30
10. MANDATORY PRE-BID MEETING	30
11. 40 CFR PART 33: APPENDIX A TO PART 33 – TERM AND CONDITION	30
SECTION VI GENERAL CONDITIONS.....	31
1. PROJECT MANAGER’S STATUS.....	31
2. CONSTRUCTION SCHEDULE AND COORDINATION.....	31
3. PROTECTION OF WORK	31
4. PROTECTION OF PROPERTY	32
5. REMOVAL OF RUBBISH	32
6. BRICK SIDEWALK OR PAVEMENT REMOVAL	32
7. REMOVAL OF PERMANENT TRAFFIC SIGNS AND POSTS.....	32
8. PERMANENT TRAFFIC SIGN STAKING	32
9. LAWN SPRINKLER SYSTEMS.....	32
10. SALVAGING DRAINAGE STRUCTURE COVERS.....	32
11. REMOVING AND REPLACING CURB AND GUTTER	33
12. DRAINAGE INLET COVERS (K COVERS)	33
13. FLY ASH USE IN CONCRETE ITEMS.....	33
14. EXISTING WATER MAINS.....	33
15. GRADE INTERSECTIONS	33
16. UNDERGROUND UTILITIES	33
17. ADJUSTING MONUMENT BOXES	33
18. PAVEMENT REMOVAL	33
19. COLD MILLING	33
20. SITE SECURITY	34
21. SITE ACCESS	34
22. MATERIALS INSPECTION AND RESPONSIBILITY	34
23. GUARANTEE.....	34
24. SAFETY	34
25. SPECIFICATIONS FOR CONSTRUCTION.....	34
26. QUANTITIES	34
27. PRICE.....	35
28. BASIS FOR PAYMENT.....	35
29. PAY ESTIMATES	35
30. PAYMENT TO CONTRACTOR	35
31. INSPECTION OF WORK	35
32. INSPECTION OF SITE	35
33. LAYING OUT OF WORK.....	36

34. SUPERVISION	36
35. TARDINESS	36
36. ADDITIONS	36
37. INSPECTION AND TESTING	36
38. QUESTIONS.....	36
SECTION VII TERMS AND CONDITIONS.....	37
1. AWARD OF CONTRACT.....	37
2. COMPLETE CONTRACT.....	37
3. SUBCONTRACTORS – NON-ASSIGNMENT.....	37
4. TAXES.....	37
5. INVOICING.....	38
6. PAYMENTS.....	38
7. CHANGES AND/OR CONTRACT MODIFICATIONS	38
8. LAWS, ORDINANCES, AND REGULATIONS.....	38
9. RIGHT TO AUDIT.....	39
10. HOLD HARMLESS.....	39
11. DEFAULT.....	39
12. TERMINATION OF CONTRACT.....	40
13. INDEPENDENT CONTRACTOR.....	40
14. PROJECT SUPERVISOR.....	40
15. MEETINGS.....	40
16. INSPECTION OF WORKSITE.....	41
17. CONTRACT PERIOD, EXTENSIONS, CANCELLATION	41
APPENDIX A NON-DISCRIMINATION CLAUSE FOR ALL CITY OF KALAMAZOO CONTRACTS	42
APPENDIX B PREVAILING WAGES	44
PREVAILING WAGE RATES	45
APPENDIX C PROJECT MANUAL.....	47
APPENDIX D ARPA CLAUSES.....	49

STATEMENT OF NO BID

NOTE: If you DO NOT intend to bid on this commodity or service, please complete and return this form immediately. Your response will assist us in evaluating all responses for this important project and to improve our bid solicitation process.

The Purchasing Division of the City of Kalamazoo wishes to keep its bidders list file up-to-date. If, for any reason you cannot supply the commodity/service noted in this bid solicitation, this form must be completed and returned to remain on the particular bid list for future projects of this type.

If you do not respond to this inquiry within the time set for the bid opening date and time noted, we will assume that you can no longer supply this commodity/service, and your name will be removed from this bid list.

- _____ Specifications too "tight", i.e. geared toward one brand/ manufacturer only (explain below).
- _____ Specifications are unclear (explain below).
- _____ We are unable to meet specifications.
- _____ Insufficient time to respond to the Invitation for Bid.
- _____ Our schedule would not permit us to perform.
- _____ We are unable to meet bond requirements.
- _____ We are unable to meet insurance requirements.
- _____ We do not offer this product or service.
- _____ Remove us from your bidders list for this commodity or service.
- _____ Other (specify below).

REMARKS: _____

SIGNED: _____ NAME: _____
(Type or Print)

TITLE: _____ DATE: _____

FIRM NAME: _____
(if any)

ADDRESS: _____
(Street address) (City) (State) (Zip)

PHONE: _____ FAX: _____

EMAIL: _____

SECTION I INSTRUCTIONS FOR BIDDERS

1. EXAMINATION OF BID DOCUMENT

Before submitting a bid, bidders shall carefully examine the specifications and shall fully inform themselves as to all existing conditions and limitations. The bidder shall indicate in the bid the sum to cover the cost of all items included on the bid form.

2. QUALIFICATIONS OF BIDDERS

Bidder is to submit the following information with its Bid to demonstrate Bidder's qualifications to perform the Work:

- 2.1 Written evidence establishing its qualifications such as previous experience, and present commitments.
- 2.2 A written statement that Bidder is authorized to do business in the state where the Project is located, or a written certification that Bidder will obtain such authority prior to the Effective Date of the Contract.
- 2.3 All required forms under "SECTION II – BID AND AWARD."
- 2.4 All required DBE Good Faith Efforts and Certification Regarding Debarment, Suspension, and Other Responsibility Matters required under Appendix C.
- 2.5 Required ARPA clauses acceptance under Appendix D.
- 2.6 A Bidder's failure to submit required qualification information within the times indicated may disqualify Bidder from receiving an award of the Contract.
- 2.7 No requirement in this Article 3 to submit information will prejudice the right of City to seek additional pertinent information regarding Bidder's qualifications.

3. SUBSTITUTE AND "OR EQUAL" ITEMS

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.

4. PREPARATION OF BID

The bid shall be legibly prepared in ink or typed. If a unit price or extension already entered by the bidder on the Bid and Award form is to be altered, it shall be crossed out and the new unit price or extension entered above or below and initialed by the bidder with ink. The bid shall be legally signed and the complete address of the bidder given thereon.

All bids shall be tightly sealed in an envelope plainly marked SEALED BID and identified by project name, bid opening date and time. Bids opened by mistake, due to improper identification, will be so documented and resealed. The Purchasing Division will maintain and guarantee confidentiality of the contents until the specified opening date and time. Bids submitted by Fax machine will not be accepted.

5. EXPLANATION TO BIDDERS

Any binding explanation desired by a bidder regarding the meaning or interpretation of the Invitation for Bid (IFB) and attachments must be requested in writing, **at least 5 business days before the bid opening** so a reply may reach all prospective bidders before the submission of bids. Any information given to a prospective bidder concerning the IFB will be furnished to all prospective bidders as an amendment or addendum to the IFB if such information would be prejudicial to uninformed bidders. Receipt of amendments or addenda by a bidder must be acknowledged in the bid by attachment, or by letter or fax received before the time set for opening of bids. Oral explanation or instructions given prior to the opening will not be binding.

6. CASH DISCOUNTS

Discount offered for payment of less than thirty (30) days will not be considered in evaluating bids for award. Offered discounts of less than thirty (30) days will be taken if payment is made within the discount period, even though not considered in evaluation of the bid.

7. WITHDRAWAL OF BIDS

Bids may be withdrawn in person by a bidder or authorized representative, provided their identity is made known and a receipt is signed for the bid, but only if the withdrawal is made prior to the exact time set for receipt of bid. No bid may be withdrawn for at least ninety (90) days after bid opening.

8. BIDS TO REMAIN SUBJECT TO ACCEPTANCE

All Bids will remain subject to acceptance for a period of 90 days, but City may, in its sole discretion, release any Bid and return the Bid security prior to the end of this period.

9. ALTERNATE BIDS

Bidders are cautioned that any alternate bid, unless specifically requested or any changes, insertions or omissions to the terms and conditions, specifications or any other requirement of this IFB may be considered non-responsive, and at the option of the City, result in rejection of the alternate bid.

10. LATE BIDS

Any bid received at the office designated herein after the exact time specified for receipt will not be considered. (Note: The City reserves the right to consider bids that have been determined by the City to be received late due to mishandling by the City after receipt of the bid and no award has been made).

11. UNIT PRICES

If there is a discrepancy between unit prices and their extension, unit prices shall prevail.

12. EVALUATION OF BIDS AND AWARD OF CONTRACT

- 12.1 City reserves the right to reject any or all Bids, including without limitation, nonconforming, nonresponsive, unbalanced, or conditional Bids. City also reserves the right to waive all minor Bid informalities not involving price, time, or changes in the Work.
- 12.2 City will reject the Bid of any Bidder that City finds, after reasonable inquiry and evaluation, to not be responsible.
- 12.3 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, whether in the Bid itself or in a separate communication to City or Engineer, then City will reject the Bid as nonresponsive.
- 12.4 Evaluation of Bids
- 12.4.1 In evaluating Bids, City will consider whether 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.
- 12.4.2 For the determination of the apparent low Bidder when unit price bids are submitted, Bids will be compared on the basis of the total of the products of the estimated quantity of each item and unit price Bid for that item, together with any lump sum items.
- 12.5 In evaluating whether a Bidder is responsible, City 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.
- 12.6 City may conduct such investigations as City deems necessary to establish the responsibility, qualifications, and financial ability of Bidders and any proposed Subcontractors or Suppliers.

SECTION II BID AND AWARD

The undersigned having become thoroughly familiar with all of the bid/contract documents incorporated herein, the project site and the location conditions affecting the work, hereby proposes to perform everything required to be performed in strict conformity with the requirements of these documents, and to provide and furnish all the equipment, labor and materials necessary to complete, in a professional manner, the furnishing and installing of all of the following, meeting or exceeding the specifications as set forth herein for the prices as stated below.

2023-2024 RANSOM STREET IMPROVEMENTS

Base Bid: Ransom Street Improvements

Item No.	Description	Units	Quantity	Bid Unit Price	Bid Amount
1	Railroad Est. Cost to Contractor	Dlr	230,000	\$	\$
2	Mobilization, Max \$1,000,000	LSUM	1	\$	\$
3	Tree, Rem, 19 inch to 36 inch	Ea	7	\$	\$
4	Tree, Rem, 37 inch or Larger	Ea	2	\$	\$
5	Tree, Rem, 6 inch to 18 inch	Ea	9	\$	\$
6	Stump, Rem, 19 inch to 36 inch	Ea	3	\$	\$
7	Stump, Rem, 6 inch to 18 inch	Ea	7	\$	\$
8	Dr Structure, Rem	Ea	45	\$	\$
9	Sewer, Rem, Less than 24 inch	Ft	3,125	\$	\$
10	Sewer, Abandon, Greater than 24 inch	Ft	3,890	\$	\$
11	Sewer, Abandon, Less than 24 inch	Ft	3,845	\$	\$
12	Curb and Gutter, Rem	Ft	9,670	\$	\$
13	Sidewalk, Rem	Syd	5,090	\$	\$
14	Exploratory Investigation, Vertical	Ft	100	\$	\$
15	Railing, Steel Tube, Rem	Ft	140	\$	\$
16	Pavt, Rem, Modified	Syd	20,240	\$	\$
17	Subgrade Undercutting, Type II	Cyd	100	\$	\$
18	Machine Grading, Modified	Sta	38.3	\$	\$
19	Pipe Cradle, Flowable Fill	Cyd	15	\$	\$
20	Erosion Control, Inlet Protection, Fabric Drop	Ea	101	\$	\$
21	Erosion Control, Silt Fence	Ft	535	\$	\$
22	Subbase, CIP	Cyd	6,945	\$	\$
23	Aggregate Base, 6 inch	Syd	141	\$	\$
24	Aggregate Base, 8 inch	Syd	24,130	\$	\$

Item No.	Description	Units	Quantity	Bid Unit Price	Bid Amount
25	Aggregate Base, 10 inch	Syd	612	\$	\$
26	Maintenance Gravel, LM, Modified	Cyd	3,500	\$	\$
27	Sewer, CI IV, 12 inch, Tr Det B	Ft	2,096	\$	\$
28	Sewer, CI IV, 15 inch, Tr Det B	Ft	288	\$	\$
29	Sewer, CI IV, 18 inch, Tr Det B	Ft	47	\$	\$
30	Trench Undercut and Backfill	Cyd	50	\$	\$
31	Video Taping Sewer and Culv Pipe	Ft	2,876	\$	\$
32	Sewer, CI IV, 21 inch, Tr Det B	Ft	320	\$	\$
33	Sewer, C-900 PVC, 12 inch, Tr Det B	Ft	30	\$	\$
34	Sewer, C-900 PVC, 15 inch, Tr Det B	Ft	55	\$	\$
35	Sewer, PVC, 6 inch, Tr Det B	Ft	74	\$	\$
36	Dr Structure Cover, Adj, Case 1	Ea	11	\$	\$
37	Dr Structure, 24 inch dia	Ea	1	\$	\$
38	Dr Structure, 48 inch dia	Ea	63	\$	\$
39	Dr Structure, 72 inch dia	Ea	1	\$	\$
40	Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot	Ft	7	\$	\$
41	Dr Structure, Tap, 12 inch	Ea	1	\$	\$
42	Trench Drain	Ft	110	\$	\$
43	Dr Structure Cover, Type B, Modified	Ea	14	\$	\$
44	Dr Structure Cover, Type K, Modified	Ea	63	\$	\$
45	HMA Approach	Ton	1,325	\$	\$
46	HMA, 4EML	Ton	1,300	\$	\$
47	HMA, 5EML	Ton	1,300	\$	\$
48	Conc Base Cse, Nonreinf, 6 inch	Syd	141	\$	\$
49	Conc Pavt, Nonreinf, 6 inch	Syd	385	\$	\$
50	Conc Pavt, Nonreinf, 8 inch	Syd	85	\$	\$
51	Joint, Contraction, C3p	Ft	1,000	\$	\$
52	Joint, Expansion, E4	Ft	2,000	\$	\$
53	Cement	Ton	5	\$	\$
54	Retaining Wall, Poured Concrete	Syd	170	\$	\$
55	Driveway, Nonreinf Conc, 6 inch	Syd	1,365	\$	\$
56	Driveway, Nonreinf Conc, 8 inch	Syd	85	\$	\$
57	Curb and Gutter, Conc, Det C4	Ft	7,460	\$	\$
58	Driveway Opening, Conc, Det M	Ft	1,525	\$	\$

Item No.	Description	Units	Quantity	Bid Unit Price	Bid Amount
59	Brick Header, Conc	Ft	200	\$	\$
60	Curb Ramp Opening, Conc	Ft	1,185	\$	\$
61	Sidewalk, Conc, 4 inch	Sft	39,535	\$	\$
62	Sidewalk, Conc, 6 inch	Sft	7,435	\$	\$
63	Sidewalk, Conc, 8 inch	Sft	300	\$	\$
64	Curb Ramp, Conc, 6 inch	Sft	10,355	\$	\$
65	Detectable Warning Surface, Cast Iron	Ft	570	\$	\$
66	Brick Pavers, Asphalt Bed, Salvaged	Sft	1,269	\$	\$
67	Brick Pavers, Sand Bed, Salvaged	Sft	5,508	\$	\$
68	Salvage Existing Street Bricks	Syd	800	\$	\$
69	Post Hole Through Conc for Steel Post	Ea	14	\$	\$
70	Post, Steel, 3 pound	Ft	1,150	\$	\$
71	Sign, Type III, Erect, Salv	Ea	2	\$	\$
72	Sign, Type III, Rem	Ea	57	\$	\$
73	Sign, Type IIIA	Sft	248	\$	\$
74	Sign, Type IIIB	Sft	350	\$	\$
75	Reflective Panel for Permanent Sign Support, 6 foot	Ea	4	\$	\$
76	Transit Shelter, Rem, Salv, Reinstall	Ea	2	\$	\$
77	Pedestal Mounted Pedestrian Crossing Sign, Rem, Salv, Reinstall	Ea	2	\$	\$
78	Sign, Type III, Perimeter Lighted, R1-1 (LED)	Ea	4	\$	\$
79	Pavt Mrkg, Ovly Cold Plastic, 12 inch, Crosswalk	Ft	2,035	\$	\$
80	Pavt Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar	Ft	420	\$	\$
81	Pavt Mrkg, Ovly Cold Plastic, Bike, Small Sym	Ea	4	\$	\$
82	Pavt Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	Ea	6	\$	\$
83	Pavt Mrkg, Ovly Cold Plastic, Railroad Sym	Ea	4	\$	\$
84	Pavt Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	Ea	2	\$	\$
85	Pavt Mrkg, Ovly Cold Plastic, Thru and Rt Turn Arrow Sym	Ea	2	\$	\$
86	Pavt Mrkg, Ovly Cold Plastic, Thru Arrow Sym	Ea	2	\$	\$
87	Pavt Mrkg, Waterborne, 4 inch, White	Ft	635	\$	\$
88	Pavt Mrkg, Waterborne, 4 inch, Yellow	Ft	8,205	\$	\$
89	Pavt Mrkg, Waterborne, 6 inch, White	Ft	990	\$	\$
90	Pavt Mrkg, Waterborne, for Rest Areas, Parks, and Lots, 4 inch, Blue	Ft	20	\$	\$
91	Pavt Mrkg, Ovly Cold Plastic, Bike Thru Arrow Sym	Ea	4	\$	\$
92	Pavt Mrkg, Waterborne, 12 inch, Cross hatching, White	Ft	150	\$	\$

**City of Kalamazoo – Invitation for Bids
2023-2024 Ransom Street Improvements**

Item No.	Description	Units	Quantity	Bid Unit Price	Bid Amount
93	Pavt Mrkg, Waterborne, Accessible Sym	Ea	3	\$	\$
94	Barricade, Type III, High Intensity, Double Sided, Lighted, Furn	Ea	49	\$	\$
95	Barricade, Type III, High Intensity, Double Sided, Lighted, Oper	Ea	49	\$	\$
96	Pedestrian Type II Barricade, Temp	Ea	120	\$	\$
97	Minor Traf Devices	LSUM	1	\$	\$
98	Sign, Portable, Changeable Message, Furn	Ea	3	\$	\$
99	Sign, Portable, Changeable Message, Oper	Ea	3	\$	\$
100	Sign, Type B, Temp, Prismatic, Furn	Sft	559	\$	\$
101	Sign, Type B, Temp, Prismatic, Oper	Sft	559	\$	\$
102	Sign, Type B, Temp, Prismatic, Spec, Furn	Sft	102	\$	\$
103	Sign, Type B, Temp, Prismatic, Spec, Oper	Sft	102	\$	\$
104	Traf Regulator Control	LSUM	1	\$	\$
105	Pedestrian Path, Temp	Ft	8,000	\$	\$
106	Pedestrian Ramp, Temp	Ea	72	\$	\$
107	Watering and Cultivating, First Season, Min, \$8,000	LSUM	1	\$	\$
108	Watering and Cultivating, 2nd Season, Min, \$5,000	LSUM	1	\$	\$
109	Acer rubrum 'Armstrong', 2.5 inch	Ea	10	\$	\$
110	Acer rubrum 'JFS-KW78' PP25301, 2.5 inch	Ea	5	\$	\$
111	Acer saccharum 'Apollo', 2 inch	Ea	10	\$	\$
112	Amelanchier x grandiflora 'Autumn Brilliance', 2 inch	Ea	11	\$	\$
113	Amelanchier x grandiflora 'Autumn Brilliance', 8-10 Ft Ht.	Ea	2	\$	\$
114	Carpinus betulus 'Fastigiata', 2 inch	Ea	2	\$	\$
115	Ginkgo biloba 'Autumn Gold' TM, 2 inch	Ea	7	\$	\$
116	Ginkgo biloba 'Princeton Sentry', 2 inch	Ea	6	\$	\$
117	Malus x 'Adirondack', 2 inch	Ea	8	\$	\$
118	Malus x 'Royal Raindrops', 2 inch	Ea	10	\$	\$
119	Malus x 'Sutyzam', 2 inch	Ea	8	\$	\$
120	Syringa reticulata 'Ivory Silk', 2 inch	Ea	4	\$	\$
121	Syringa reticulata pekinensis 'DTR 124', 2 inch	Ea	6	\$	\$
122	Ulmus 'Frontier', 2 inch	Ea	8	\$	\$
123	Zelkova serrata 'JFS-KW1' TM, 2 inch	Ea	8	\$	\$
124	Site Preparation, Max \$22,000, Base	LSUM	1	\$	\$
125	Water, Sodding/Seeding	Unit	214	\$	\$
126	Slope Restoration, Type B, Modified	Syd	6,090	\$	\$

Item No.	Description	Units	Quantity	Bid Unit Price	Bid Amount
127	Conduit, DB, 1, 2 1/2 inch	Ft	3,640	\$	\$
128	Conduit, DB, 1, 3 inch	Ft	3,765	\$	\$
129	Conduit, DB, 1, 4 inch	Ft	2,650	\$	\$
130	Conduit, DB, 2, 3 inch	Ft	2,775	\$	\$
131	Wood Pole, Fit Up, Sec Serv Pole	Ea	6	\$	\$
132	Light Std Fdn	Ea	26	\$	\$
133	HH, Irrigation, Modified	Ea	58	\$	\$
134	HH, Lighting, Modified	Ea	26	\$	\$
135	HH, Polymer Conc	Ea	51	\$	\$
136	Water Main, 8 inch, Cut and Plug	Ea	7	\$	\$
137	Water Main, 10 inch, Cut and Plug	Ea	2	\$	\$
138	Water Main, 12 inch, Cut and Plug	Ea	2	\$	\$
139	Water Main, Insulate	Ft	160	\$	\$
140	Water Main, DI, 12 inch, Tr Det G, Install	Ft	4,295	\$	\$
141	Water Main, DI, 4 inch, Tr Det G, Install	Ft	65	\$	\$
142	Water Main, DI, 6 inch, Tr Det G, Install	Ft	130	\$	\$
143	Water Main, DI, 8 inch, Tr Det G, Install	Ft	440	\$	\$
144	Water Service, Yard, 0.75 inch, Trenchless, Install	Ft	30	\$	\$
145	Water Service, Yard, 2 inch, Trenchless, Install	Ft	60	\$	\$
146	Water Main, DI, 10 inch, Tr Det G, Install	Ft	135	\$	\$
147	Water Service, Yard, 1.25 inch, Trenchless, Install	Ft	120	\$	\$
148	Casing, 24 inch, Tr Det B	Ft	120	\$	\$
149	Water Main, DI, 12 inch, in casing	Ft	120	\$	\$
150	Curb Stop and Box, Install	Ea	33	\$	\$
151	Inline Water Valve, Temp, 10 inch	Ea	6	\$	\$
152	Inline Water Valve, Temp, 12 inch	Ea	3	\$	\$
153	Inline Water Valve, Temp, 4 inch	Ea	4	\$	\$
154	Inline Water Valve, Temp, 6 inch	Ea	10	\$	\$
155	Inline Water Valve, Temp, 8 inch	Ea	12	\$	\$
156	Meter Vault, 1.25 inch	Ea	21	\$	\$
157	Water Serv, 1.25 inch, Install	Ea	11	\$	\$
158	Water Serv, Long, 1.25 inch, Install	Ea	22	\$	\$
159	Hydrant, Rem, Modified	Ea	10	\$	\$
160	Butterfly Valve and Box, 12 inch, Install	Ea	41	\$	\$
161	Gate Valve and Box, 4 inch, Install	Ea	3	\$	\$

Item No.	Description	Units	Quantity	Bid Unit Price	Bid Amount
162	Gate Valve and Box, 6 inch, Install	Ea	11	\$	\$
163	Gate Valve and Box, 8 inch, Install	Ea	12	\$	\$
164	Hydrant Assembly, Modified, Install	Ea	14	\$	\$
165	Water Service, Yard, 0.75 inch, Conn to Ex	Ea	2	\$	\$
166	Valve Box, Install	Ea	7	\$	\$
167	Water Serv, Long, 2 inch, Install	Ea	6	\$	\$
168	Water Service, Yard, 2 inch, Conn to Ex	Ea	6	\$	\$
169	Gate Valve and Box, 10 inch, Install	Ea	6	\$	\$
170	Water Service, Yard, 1.25 inch, Conn to Ex	Ea	8	\$	\$
171	Water Serv, 2 inch, Install	Ea	1	\$	\$
172	Sanitary Sewer, PVC, 8 inch, Tr Det B2	Ft	1,204	\$	\$
173	Sanitary Structure, Rem	Ea	34	\$	\$
174	Sanitary Sewer, Serv Lead, PVC, 6 inch	Ft	869	\$	\$
175	Sanitary Structure Cover, Adj, Case 1	Ea	1	\$	\$
176	Sanitary Sewer, Conc, 42 inch, Tr Det B, Modified	Ft	3,546	\$	\$
177	Sanitary Structure, Add Depth of 48 inch dia, 8 ft to 15 ft, Mod	Ft	22	\$	\$
178	Sanitary Structure, Add Depth of 72 inch dia, 8 ft to 15 ft, Mod	Ft	80	\$	\$
179	Sanitary Structure, Add Depth of 72 inch dia, more than 15 ft, Mod	Ft	8	\$	\$
180	Sanitary Sewer, C-900 PVC, 8 inch, Tr Det B2	Ft	81	\$	\$
181	Casing, 66 inch, Tr Det B	Ft	155	\$	\$
182	Sanitary Sewer, C-900 PVC, 42 inch, in casing	Ft	155	\$	\$
183	Casing, 12 inch, Tr Det B	Ft	240	\$	\$
184	Sanitary Sewer, Serv Lead, Building Inspection	Ea	15	\$	\$
185	Sanitary Sewer Cleanout Cover	Ea	33	\$	\$
186	Sanitary Sewer Cleanout, 6 inch, Modified	Ea	33	\$	\$
187	Sanitary Structure Cover, Type Q, Modified	Ea	32	\$	\$
188	Sanitary Structure, 48 inch dia, Modified	Ea	15	\$	\$
189	Sanitary Structure, 72 inch dia, Modified	Ea	16	\$	\$
190	Sanitary Sewer, Service Tap, 42 inch main	Ea	14	\$	\$
Total of All Unit Price Base Bid Items				\$	

Alternate No. 1 – Aesthetic Landscape Components

Item No.	Description	Units	Quantity	Bid Unit Price	Bid Amount
191	Watering and Cultivating, First Season, Min, \$30,000, Alternate	LSUM	1	\$	\$
192	Watering and Cultivating, 2nd Season, Min, \$20,000, Alternate	LSUM	1	\$	\$
193	Aluminum Edging	Ft	2,820	\$	\$
194	Hardwood Mulch, 3 inch	Syd	2,690	\$	\$
195	Abies concolor 'Candicans', 8 ft	Ea	10	\$	\$
196	Achillea millefolium 'Strawberry Seduction', 1 Gal	Ea	259	\$	\$
197	Allium x 'Millenium', 1 Gal	Ea	472	\$	\$
198	Allium x 'Summer Beauty', 1 Gal	Ea	225	\$	\$
199	Aronia melanocarpa 'UCONNAM166' TM, 3 Gal	Ea	42	\$	\$
200	Calamagrostis x acutiflora 'Karl Foerster', 1 Gal	Ea	71	\$	\$
201	Coreopsis verticillata 'Hot Paprika', 1 Gal	Ea	231	\$	\$
202	Coreopsis verticillata 'Moonbeam', 1 Gal	Ea	224	\$	\$
203	Cornus sericea 'Arctic Fire', 3 Gal	Ea	35	\$	\$
204	Cornus sericea 'Balleyi', 3 Gal	Ea	1	\$	\$
205	Cornus sericea 'SMNCSBD', 3 Gal	Ea	16	\$	\$
206	Echinacea purpurea 'Magnus', 1 Gal	Ea	373	\$	\$
207	Fothergilla gardenii, 3 Gal	Ea	1	\$	\$
208	Hakonechola macra 'Albo-striata', 1 Gal	Ea	473	\$	\$
209	Hakonechola macra 'Aureola', 1 Gal	Ea	23	\$	\$
210	Hemerocallis x 'Stella de Oro', 1 Gal	Ea	140	\$	\$
211	Heuchera x 'Caramel', 1 Gal	Ea	327	\$	\$
212	Heuchera x 'Cherry Truffles', 1 Gal	Ea	142	\$	\$
213	Heuchera x 'Wildberry' TM, 1 Gal	Ea	438	\$	\$
214	Hibiscus moscheutos 'Big Red', 3 Gal	Ea	1	\$	\$
215	Hibiscus moscheutos 'Kopper King', 3 Gal	Ea	1	\$	\$
216	Hibiscus x 'Holy Grail', 2 Gal	Ea	21	\$	\$
217	Hydrangea arborescens 'NCH48' TM, 3 Gal	Ea	12	\$	\$
218	Hydrangea paniculata 'SMNHPH', 3 Gal	Ea	57	\$	\$
219	Hydrangea serrata 'SMNHSDD', 3 Gal	Ea	39	\$	\$
220	Ilex verticillata 'FarrowBPop', 3 Gal	Ea	33	\$	\$
221	Ilex verticillata 'FarrowMrP', 3 Gal	Ea	10	\$	\$
222	Itea virginica 'Sprich' TM, 2 Gal	Ea	1	\$	\$
223	Juniperus chinensis 'SMNJCHM' TM, 2 Gal	Ea	1	\$	\$

Item No.	Description	Units	Quantity	Bid Unit Price	Bid Amount
224	Juniperus communis 'Tortuga', 2 Gal	Ea	1	\$	\$
225	Juniperus conferta 'Blue Pacific', 2 Gal	Ea	1	\$	\$
226	Liriope Muscari 'Big Blue', 3.25 inch	Ea	812	\$	\$
227	Miscanthus purpurascens, 1 Gal	Ea	26	\$	\$
228	Nepeta x faassenii 'Cat's Pajamas', 1 Gal	Ea	97	\$	\$
229	Panicum virgatum 'Heavy Metal', 1 Gal	Ea	128	\$	\$
230	Panicum virgatum 'Shenandoah', 1 Gal	Ea	151	\$	\$
231	Pennisetum orientale 'Karley Rose', 1 Gal	Ea	167	\$	\$
232	Perovskia atriplicifolia 'Lisslitt', 1 Gal	Ea	106	\$	\$
233	Rudbeckia fulgida sullivantii 'Goldstrum', 1 Gal	Ea	154	\$	\$
234	Schizachyrium scoparium 'The Blues', 1 Gal	Ea	321	\$	\$
235	Sedum x 'Autumn Joy', 1 Gal	Ea	59	\$	\$
236	Spiraea media 'SMSMBK' TM, 3 Gal	Ea	82	\$	\$
237	Spiraea x 'Tracy' TM, 3 Gal	Ea	35	\$	\$
238	Sporobolus heterolepis 'Tara', 1 Gal	Ea	395	\$	\$
239	Thuja occidentalis 'Smaragd', 5 Gal	Ea	1	\$	\$
240	Viburnum carlesii 'Spice Baby', 3 Gal	Ea	1	\$	\$
241	Site Preparation, Max \$55,000, Alternate	LSUM	1	\$	\$
242	Automated Irrigation System	LSUM	1	\$	\$
Subtotal: Alternate No. 1 - Aesthetic Landscape Components				\$	

Summary of Bid

Description of Work	Amount
Subtotal: Base Bid Items	\$
Subtotal: Alternate No. 1 - Aesthetic Landscape Components	\$
Total Bid Price (Total of all Lump Sum and Unit Price Bids)	\$

Bidder shall provide all of the information as requested herein with their bid. Failure to do so and/or failure to provide post-bid requested information may be cause for rejecting the bid as non-responsive.

Work shall start after receipt by Contractor of Notice to Proceed, but not prior to **April 17, 2023** and shall achieve substantial completion of underground utility, concrete and hardscape paving, signage, asphalt leveling course and temporary pavement markings from the east side of the Rose Street intersection through the Point of Ending on or before **November 1, 2023**.

No work shall be conducted from **November 2, 2023** to **March 1, 2024**. Work on the second phase of the project from Westnedge Avenue through Rose Street shall be substantially completed, including completion of all underground work, concrete and hardscape paving, asphalt wearing course (entire project), pavement markings, and signage on or before **August 23, 2024**. The project shall be fully complete, including restoration, plantings, and punch list on or before **November 1, 2024**.

Bidder/Contractor has examined and carefully studied the bidding documents and attachments, and acknowledges receipt of the following addenda:

Addendum No: _____

Date: _____

By my signature below, I certify that the firm bidding on this contract, when making hiring decisions, does not use a past criminal conviction as a bar to or preclude a person with a criminal conviction from being considered for employment with the bidding firm unless otherwise precluded by federal or state law. I further certify that I have read and agree to be bound by the provisions of the City’s Non-Discrimination Clause found in Appendix A as updated by City Ordinance 1856.

Signed: _____ Name: _____

Title: _____

CITY OF KALAMAZOO EX-OFFENDER POLICY CHECKLIST

As part of the City’s commitment to reducing unacceptable poverty, encouraging rehabilitation, reducing recidivism and strengthening families in Kalamazoo, the City has updated its Purchasing Policy to ensure that firms with whom the City does business share in this commitment by utilizing hiring practices that do not unfairly deny people with arrest and conviction records gainful employment. *(Important: This requirement also extends to any subcontractors the bidder intends to use to fulfill the contract for goods or services being sought from the City.)*

Part I: Proof that the bidder does not inquire about an individual’s past arrest or criminal history on the bidder’s employment application form

- Attach a copy of the current application for employment being used by the bidder

Part II: Certification that the bidder does not use an individual’s past arrest or criminal history to unlawfully discriminate against them by checking one or more of the following:

- That pursuant to federal or state law bidder is precluded from hiring persons with certain criminal records from holding particular positions or engaging in certain occupations by providing a cite to the applicable statute or regulation; if checking this box, provide a citation to the applicable statute or rule upon which the bidder is relying: _____
- That bidder conducts criminal history background checks only as necessary, and only after making a conditional offer of employment; that any withdrawal of an offer of employment to an individual because of a past criminal history is job-related and consistent with business necessity after the individual has been provided an individualized assessment opportunity to review and challenge or supplement the history of past criminal conduct being relied upon by the bidder.
- That the use by bidder of criminal history background checks complies with the U.S. Equal Employment Opportunity Commission’s Enforcement Guidance on the Consideration of Arrest and Conviction Records in Employment Decisions and that the bidder has not had a determination rendered against it in past 7 years that it discriminated against a person through the use of an individual’s arrest or criminal history

I CERTIFY THAT THE ABOVE STATEMENTS ARE TRUE.

Date

Signature

Printed Name

Position

SUB-CONTRACTING INFORMATION

Using the table below provide information regarding the sub-contractors that will be working to fulfill the requirements of this contract. Submit as complete a list as possible at the time of your bid. You will have two business days after the bid opening to update the list as needed. The information provided will be used for evaluating your bid.

INSTRUCTIONS:

Nature of Contract - State a brief description of the work or product that will be provided.

BIDDER – Provide the percentage of services or construction activity that will be provided by your firm.

Subcontractors:

- Provide the Name and Address for each subcontractor providing services or construction activities for this contract.
- Provide the percentage for the dollar amount of the contract work they will be performing.

If there are not enough lines in the table below make additional copies as needed.

Subcontractor Name/Address	% Of Total Contract
BIDDER	

Does this List of Subcontractors need to be updated after the bid opening? **Yes** __ **No** __

REFERENCE QUESTIONNAIRE

Please answer the following questions completely.

1. Firm name: _____
2. Established: Year _____ Number of Employees: _____
3. Type of organization:
 - a. Individual: _____
 - b. Partnership: _____
 - c. Corporation: _____
 - d. Other: _____
4. Former firm name(s) if any, and year(s) in business:

5. Include at least 3 references of contracts for similar work performed over the last five (5) years. Include: owner, contact person and phone number and description of work performed.
 - a. Company Name: _____
Address: _____
Phone: _____
Contact: _____
Type of work or contract: _____
 - b. Company Name: _____
Address: _____
Phone: _____
Contact: _____
Type of work or contract: _____
 - c. Company Name: _____
Address: _____
Phone: _____
Contact: _____
Type of work or contract: _____

I hereby certify that all of the information provided is true and answered to the best of my ability.

Signed: _____ Name: _____
(type or print)

Title: _____ Date: _____

I hereby state that all of the information I have provided is true, accurate and complete. I hereby state that I have the authority to submit this bid which will become a binding contract if accepted by the City of Kalamazoo. I hereby state that I have not communicated with nor otherwise colluded with any other bidder, nor have I made any agreement with nor offered/accepted anything of value to/from an official or employee of the City of Kalamazoo that would tend to destroy or hinder free competition.

The firm's identification information provided will be used by the City for purchase orders, payment and other contractual purposes. If the contractual relationship is with, or the payment made to, another firm please provide a complete explanation on your letterhead and attach to your bid. Please provide for accounts payable purposes:

Tax Identification Number (Federal ID): _____

Remittance Address: _____

Financial Contact Name: _____ Financial Contact Phone Number: _____

Financial Contact Email Address: _____

I hereby state that I have read, understand and agree to be bound by all terms and conditions of this bid document.

SIGNED: _____ NAME: _____
(Type or Print)

TITLE: _____ DATE: _____

FIRM NAME: _____
(if any)

ADDRESS: _____
(Street address) (City) (State) (Zip)

PHONE: _____ FAX: _____

EMAIL ADDRESS: _____

FOR CITY USE ONLY - DO NOT WRITE BELOW

NOTE: This blanket addendum is for informational purposes only and does not need to be acknowledged by bidders in their submission.

COVID-19 ADDENDUM #2

January 1, 2022

**TO: ALL Prospective Bidders
PROJECT: ALL Upcoming Projects**

The purpose of this addendum is to clarify and/or modify the sealed bid delivery and bid opening process for all upcoming projects. All work affected is subject to all applicable terms and conditions of the Bidding and Contract Documents.

1. UPDATE TO SEALED BID DELIVERY AND BID OPENING POLICY:

Effective immediately and continuing until further notice, the City of Kalamazoo will return to IN-PERSON bid openings following City Hall guidelines, including Mask Mandate.

BIDS MUST BE RECEIVED BEFORE THE DUE DATE AND TIME – LATE BIDS WILL NOT BE CONSIDERED.

Bidders can submit sealed bids in one of the following ways:

- **Mail your bid**, to be received before the bid due date and time indicated in the bid document, to the City of Kalamazoo at the following address:
City of Kalamazoo
Purchasing Division
241 West South Street
Kalamazoo, MI 49007
- **Deliver your bid to the Treasurer’s Office Payment Drop Box** located in the northwest corner of City Hall before the bid due date and time indicated in the bid document.
- **Deliver your bid to City Hall In Person** before the bid due date and time indicated in the bid document.

All bids shall be tightly sealed in an envelope plainly marked SEALED BID and identified by project name, bid opening date and time. Bids opened by mistake, due to improper identification, will be so documented and resealed. The Purchasing Division will maintain and guarantee confidentiality of the contents until the specified opening date and time. Bids submitted by fax machine or email will not be accepted.

The Purchasing Division will post bid tabulations to the City of Kalamazoo website within 24 hours after the bid opening date and time at: <https://www.kalamazoo.org/bidopportunities>.

Questions regarding this sealed bid delivery and bid opening policy change related to the COVID-19 virus should be directed to the City of Kalamazoo at (269) 337-8020.

Sincerely,



Michelle Emig
Purchasing Division Manager

SECTION III CITY OF KALAMAZOO INDEMNITY AND INSURANCE

Contractor, or any of their subcontractors, shall not commence work under this contract until they have obtained the insurance required under this paragraph, and shall keep such insurance in force during the entire life of this contract. All coverage shall be with insurance companies licensed and admitted to do business in the State of Michigan and acceptable to the City of Kalamazoo within ten (10) days of the Notice of Award. The requirements below should not be interpreted to limit the liability of the Contractor. All deductibles and SIR's are the responsibility of the Contractor.

The Contractor shall procure and maintain the following insurance coverage:

Workers' Compensation Insurance including Employers' Liability Coverage, in accordance with all applicable statutes of the State of Michigan.

Commercial General Liability Insurance on an "Occurrence Basis" with limits of liability not less than \$1,000,000 per occurrence and aggregate. Coverage shall include the following extensions: (A) Contractual Liability; (B) Products and Completed Operations; (C) Independent Contractors Coverage; (D) Broad Form General Liability Extensions or equivalent, if not already included and (E) XCU coverage if the nature of the contract requires XC or U work.

Automobile Liability in accordance with all applicable statutes of the State of Michigan, with limits of liability not less than \$1,000,000 per occurrence, combined single limit for Bodily Injury, and Property Damage. Coverage shall include all owned vehicles, all non-owned vehicles, and all hired vehicles.

Additional Insured: Commercial General Liability and Automobile Liability, as described above, shall include an endorsement stating that the following shall be *Additional Insureds*: The City of Kalamazoo, all elected and appointed officials, all employees and volunteers, all boards, commissions, and/or authorities and board members, including employees and volunteers thereof. It is understood and agreed that by naming the City of Kalamazoo as additional insured, coverage afforded is considered to be primary and any other insurance the City of Kalamazoo may have in effect shall be considered secondary and/or excess.

To the fullest extent permitted by law the Contractor agrees to pay on behalf of, indemnify, and hold harmless the City of Kalamazoo, its elected and appointed officials, and employees against any claims, demands, suits, or loss, including all costs connected therewith, and for any damages which may be asserted, claimed, or recovered against or from the City of Kalamazoo, by reason of personal injury, including bodily injury or death and/or property damage, including loss of use thereof, caused in whole or part by any negligent act or omission by the Contractor, its employees, agents, or officers which arises out of, or is in any way connected or associated with, this contract.

INDEMNITY AND INSURANCE
Continued

Cancellation Notice: All policies, as described above, shall include an endorsement stating that it is understood and agreed that thirty (30) days, or ten (10) days for non-payment of premium, Advance Written Notice of Cancellation, Non-Renewal, Reduction, and/or Material Change shall be sent to: City of Kalamazoo, Purchasing Division, 241 W. South Street, Kalamazoo, MI 49007.

Proof of Insurance Coverage: The Contractor shall provide the City of Kalamazoo at the time that the contracts are returned by him/her for execution, or within 10 days of Notice of Award, whichever is earlier, a Certificate of Insurance as well as the required endorsements. In lieu of required endorsements, if applicable, a copy of the policy sections where coverage is provided for additional insured and cancellation notice would be acceptable. Copies or certified copies of all policies mentioned above shall be furnished, if so requested. If any of the above coverages expire during the term of this contract, the Contractor shall deliver renewal certificates and/or policies to City of Kalamazoo at least ten (10) days prior to the expiration date.

Scope of Coverage: The above requirements and conditions shall not be interpreted to limit the liability of the Contractor under this Contract, but shall be interpreted to provide the greatest benefit to the City and its officers and employees. The above listed coverages shall protect the Contractor, its employees, agents, representatives and subcontractors against claims arising out of the work performed. It shall be the Contractor's responsibility to provide similar insurance for each subcontractor or to provide evidence that each subcontractor carries such insurance in like amount prior to the time such subcontractor proceeds to perform under the contract.

SECTION IV SPECIAL REQUIREMENTS

1. BID BOND/GUARANTEE

The bid must be accompanied by a bid bond which shall not be less than five (5%) percent of the total amount of the bid. No bid will be considered unless it is accompanied by the required guarantee. The bid guarantee shall ensure the execution of the bid and award, and the furnishing of a performance bond and a labor and material bond (A and B below) by the successful bidder. (Contractors Note: A cashier's or certified check in lieu of a bid bond is **NOT** acceptable.)

A. PERFORMANCE BOND

A performance bond shall be furnished in the full amount of the contract ensuring the City of faithful performance of all the provisions of the contract, and the satisfactory performance of any equipment required hereunder. The bond shall also ensure the City against defective workmanship and/or materials.

B. LABOR AND MATERIAL (PAYMENT) BOND

A labor and material (payment) bond shall be furnished for the period covered by the contract, in the full amount of the contract for the protection of labor and material suppliers and sub-contractors.

Bonds shall be secured by a guaranty or a surety company listed in the latest issue of the U.S. Treasury, circular 570, and licensed to do business in the State of Michigan, and written in favor of the City of Kalamazoo. The amount of such bonds shall be within the maximum amount specified for such company in said circular 570. The bonds shall be accompanied by a power of attorney showing authority of the bonding agent to sign such bonds on behalf of the guaranty or surety company. The cost of the bonds shall be borne by the Contractor.

Failure of the Contractor to supply the required bonds within ten (10) days after Notice of Award, or within such extended period as the Purchasing Agent may agree to, shall constitute a default and the City of Kalamazoo may either award this contract to the next lowest bidder or re-advertise for bids and may charge against the Contractor for the difference between the amount of the bid and the amount for which a contract for the work is subsequently executed, irrespective of whether the amount thus due exceeds the amount of the bid bond. If a more favorable bid is received by re-advertising, the defaulting bidder shall have no claim against the City of Kalamazoo for a refund.

2. WAIVERS OF LIEN

Upon completion of all work and request for final payment, the Contractor shall furnish a 100% waiver of lien from each supplier and sub-contractor covering all items of the work. Failure to supply waivers of lien for the entire job upon completion and final payment request will be considered grounds for withholding final payment.

3. SUBCONTRACTORS

- A. Contractors shall state on the Bid and Award page any and all subcontractors to be associated with their bid, including the type work to be performed. Any and all subcontractors shall be bound by all of the terms, conditions and requirements of the contract; however, the prime contractor shall be responsible for the performance of the total work requirements.

- B. The Contractor shall cooperate with the City of Kalamazoo in meeting its commitments and goals with regard to maximum utilization of minority and women business enterprise, and shall use its best efforts to ensure that minority and women business enterprises have maximum practicable opportunity to compete for subcontract work under this agreement.

4. PREVAILING WAGES

The successful bidder will be required to comply with Section 2-125 of the Code of Ordinances of the City of Kalamazoo regarding prevailing wages and Appendix B attached, incorporated herein by reference. Special note: This provision applies only to projects in excess of \$100,000 for City (\$2,000 federal) funded projects.

The City's requirements as it relates to prevailing wages includes a meeting with the City's Purchasing Division **prior** to work and payroll and work monitoring during the duration of the contract. Please contact Purchasing at (269) 337-8020 if you have any questions regarding Davis-Bacon provisions.

SECTION V SPECIAL CONDITIONS

1. INTENT

It is the intent of these plans and specifications to provide for a general contractor who shall provide all labor, materials, tools and equipment necessary to perform in a professional manner for the **2023-2024 Ransom Street Improvements** as described in the specifications and bid document.

2. SCOPE OF WORK

The remaining original Ransom Street Sanitary Sewer Interceptor, Walbridge to Westnedge, is under capacity for the existing tributary area. This Project will replace the remaining entirety of the original interceptor with one which meets current engineering and regulatory standards. The existing watermain on Ransom Street is a transmission main upgrade candidate to increase the long-term reliability of the water utility. The Project will also identify and replace lead water services which may exist within the construction limits. The right-of-way corridor will also receive planned improvements. The existing Ransom Street corridor is a mix of City Local and City Major streets including sections of brick pavement. The planned intent of this Project is to extend the City Major Street designation from Burdick Street to Westnedge Avenue with alignment with Imagine Kalamazoo 2025 and the Northside Neighborhood Plan, 2018. The corridor design will also include consideration for the Northside Cultural Business District, historical brick street sections, as well as traffic flows of related anticipated corridor improvements.

A portion of the original interceptor, watermain, and right-of-way Corridor was upgraded and improved from Gull Street to Walbridge under the River's Edge Roundabout Project. This Project continues both the utility infrastructure and right-of-way corridor upgrades and improvements.

The bidder shall furnish all labor, supervision, supplies, tools, equipment, and other means necessary or proper for performing and completing the work. The bidder shall be responsible for the cleaning up of the job site and shall repair or restore all structures and property that may be damaged or disturbed during performance of the work to the satisfaction of the Public Services Department for the City of Kalamazoo.

The Contractor shall have all work included in Phase 1A, 1B, and 1C complete no later than November 1, 2023 in compliance with the City of Kalamazoo seasonal moratorium.

The Contractor shall have all work completed by November 1, 2024.

3. UNIT PRICING

The unit price, including its pro rata share of overhead, multiplied by the quantity shown shall represent the total bid and shall be held firm for the life of this contract. Any bid not conforming to this requirement may be rejected as non-responsive.

4. TEMPORARY UTILITIES

- A. Temporary or construction water will NOT be available on the sites. The Contractor must provide for drinking water.
- B. Temporary toilets: To be supplied by the Contractor as may be necessary.

5. PROGRESS SCHEDULE

- 5.1 After receipt of notification by Contractor of Notice to Proceed work shall start no earlier than **April 17, 2023. Phase 1A, 1B, and 1C on or before November 1, 2023** in compliance with the City of Kalamazoo seasonal moratorium.
- 5.2 Phase 2 work shall start no earlier than **March 1, 2024**. The project shall be substantially complete through Phase 2B on or before **August 23, 2024**.
- 5.3 Project shall have a final completion date of **November 1, 2024**.
- 5.4 Work of a similar nature may be added to this contract if agreed to by the City and the Contractor. In the event that work is added, the progress schedule for the existing work will remain unchanged. Any contract time added for additional work will be applied to that additional work only and cannot be added to items in the original contract. Any work done on the items in the original contract past the number of working days stated herein will be subject to liquidated damages regardless of any work that may be added at a later date.
- 5.5 The Contractor will be required to meet with the Public Services representatives to work out a detailed progress schedule. The schedule for this meeting will be within two weeks after contract award has been made.
- 5.6 The named sub-contractor(s) for all items shall also be present at the scheduled meeting and be required to sign the Progress Schedule to indicate their approval of the scheduled dates of work set forth in the Progress Schedule. If unable to attend the scheduled meeting, the sub-contractor shall, at a minimum, sign the Progress Schedule to indicate their approval of the dates of work. MDOT Form 1130 shall be used for schedule submission and signature of all parties.
- 5.7 The Progress Schedule shall include, as a minimum, the starting and completion dates for major items, and where specified in the bid document the date the project is to be opened to traffic as well as the final project completion date specified in the bid document. The Progress Schedule shall be coordinated with all aspects of the work occurring at the site.
- 5.8 Failure on the part of the Contractor to carry out the provisions of the Progress Schedule as established may be considered sufficient cause to prevent bidding future projects until a satisfactory rate of progress is again established.
- 5.9 The starting date and the contract time to the completion date for this project may be adjusted by Public Services without imposing liquidated damages upon the receipt of satisfactory documented evidence that unforeseen delayed delivery of critical materials will prevent the orderly prosecution of the work.
- 5.10 Any request extension of the completion date and satisfactory documented evidence of unforeseen delays shall be submitted via MDOT Form 1100A – Extension of Contract Time.
- 5.11 MDOT Standard Specifications for Construction Section 501.03.I.1, Weather Limitations, shall apply.

6. LIQUIDATED DAMAGES

Liquidated Damages will be assessed per Section 108.10C of the MDOT Standard Specifications for Construction.

7. MAINTAINING TRAFFIC

- 7.1 This work shall be in accordance with the requirements of Section 812 of the MDOT Standard Specifications for Construction, the Maintaining Traffic special provision, and as specified herein. The Contractor is advised that the current Michigan Manual of Uniform Traffic Control Devices (MMUTCD) is hereby established as governing all work in connection with traffic control devices, barricade lighting, etc. required on this project.
- 7.2 The Contractor shall furnish, erect, maintain and, upon completion of the work, remove all traffic control devices and barricade lights within the project and around the perimeter of the project for the safety and protection of through and local traffic. This includes, but is not limited to: Advance, regulatory and warning signs; barricades and channeling devices at intersecting streets on which traffic is to be maintained; barricades at the ends of the project and at right of way lines for intersecting streets which are to be closed with the first usable street on each side of the project. Traffic regulators, where required by the Engineer, are included.
- 7.3 Where the existing pavement or partial widths of new pavement are to be utilized for the maintenance of through and local traffic, channelizing devices will be required at 50' intervals or as directed by the Engineer for channeling and directing traffic through the construction area.
- 7.4 Through traffic shall be maintained utilizing sidewalk closures with detours and traffic shifts per MDOT traffic and safety details.
- 7.5 Protection of all pedestrian traffic shall be maintained at all times in accordance with the MMUTCD. Type II barricades and sidewalk detour signs shall be used in accordance with the MMUTCD at all intersections and ramps. Sidewalk detours shall direct pedestrians safely around closed sidewalk locations and shall be placed at the nearest pedestrian crossing locations still open to traffic.
- 7.6 Payment for furnishing and operating all temporary traffic control devices and traffic regulators shall be paid as pay items included in this contract and shall include all the temporary traffic control measures on all road segments.
- 7.7 Under Article 812.04.D "Operated Pay Items" the term 'Relocating' shall include the relocating of the item from any street covered by the contract to any other street covered by the contract.
- 7.8 No work shall be allowed on the following dates:
- | | |
|-----------------------|------------------------|
| 4/7/2023 and 3/29/24 | Good Friday |
| 5/29/23 and 5/27/24 | Memorial Day Holiday |
| 6/19/23 and 6/19/24 | Juneteenth |
| 7/4/23 and 7/4/24 | Fourth of July Holiday |
| 9/4/23 and 9/2/24 | Labor Day Holiday |
| 11/10/23 and 11/11/24 | Veteran's Day |
| 11/23/23 and 11/28/24 | Thanksgiving |
| 12/25/23 and 12/25/24 | Christmas |
| 1/1/24 | New Year's Day |
- 7.9 Milled surfaces will not be allowed on travel lanes for longer than 72 hours unless approved by the Project Manager. Any traffic surface within the construction area

- containing a drop off at the edge of a pavement greater than two (2) inches shall not be allowed to be opened to the public without proper wedging of the edges according to the COK standard detail. Any areas not conforming to the road levelness and profile shall be signed appropriately in accordance with the MMUTCD and best management practices.
- 7.10 Once work is initiated that includes lane restrictions or detours, that work shall be continuous until complete. If work is suspended for more than three (3) continuous working days all lane restrictions and detours shall be removed at the Contractor's expense.

Special Restrictions: Access to frontage properties shall be maintained as much as practical. Emergency access shall be maintained at all times. The Contractor shall maintain two way traffic with flag control as needed when the road is restricted to only one traffic lane.

8. COORDINATING

The Contractor's attention is called to Article 104.08 of the MDOT Standard Specifications for Construction entitled "Cooperation by Contractor" and the special provisions contained within this contract.

9. WORK HOURS

All work shall be done between the hours of 7 am to 7 pm (Monday – Saturday). Work done outside of these times will be at the discretion of the Project Manager.

No work shall be done on Sunday, unless otherwise approved by the Project Manager in writing.

The Contractor shall conduct their work in such a manner that no excavations are left open overnight. If this is not possible, the Contractor shall provide and install a temporary fence to protect the excavation, at the Contractor's expense.

10. MANDATORY PRE-BID MEETING

All prospective contractors and subcontractors are invited to attend a MANDATORY Pre-Bid Meeting with representatives from the City of Kalamazoo on Tuesday, January 24, 2023 at 10:00 a.m. local time at the Kalamazoo Water Reclamation Plant, 1415 Harrison Street, Kalamazoo, MI 49007. (Conference Room A)

11. 40 CFR PART 33: APPENDIX A TO PART 33 – TERM AND CONDITION

The contractor shall not discriminate on the basis of race, color, national origin or sex in the performance of this contract. The contractor shall carry out applicable requirements of 40 CFR part 33 in the award and administration of contracts awarded under EPA financial assistance agreements. Failure by the contractor to carry out these requirements is a material breach of this contract which may result in the termination of this contract or other legally available remedies.

SECTION VI GENERAL CONDITIONS

1. PROJECT MANAGER’S STATUS

The City Engineer (Engineer) or his/her duly authorized representative shall be the City’s Project Manager and shall have the duties and responsibilities as provided in the contract.

The Project Manager shall have the authority to reject any work or materials which do not conform to the contract and to decide questions or interpretations which may arise from the contract documents.

The Contractor shall immediately report to the Project Manager any questionable or obvious error or omission which may be apparent in the contract documents and shall not proceed with work until the Project Manager has resolved the error or omission.

2. CONSTRUCTION SCHEDULE AND COORDINATION

- 2.1 The Contractor shall supply the City with an agreeable construction schedule before commencing work on this contract. This schedule shall detail beginning and completion dates for each major component of the project.
- 2.2 The Contractor shall coordinate and cooperate with all other contractors who may be working on the site, to allow for the orderly progress of work being done.
- 2.3 The Contractor is required to keep the Project Manager fully informed of any proposed work which will tend to interfere with the existing operations at the site.
- 2.4 The Contractor shall schedule all work to accommodate the City's schedule. In the event the Contractor's schedule falls on weekends, nights or overtime work is required, no additional compensation will be allowed. All work shall be part of this contract without regard to when it is done.
- 2.5 The Contractor shall coordinate with other construction projects and contractors adjacent to the location of this project.
- 2.6 The Contractor shall notify, by door hanger/written flier (pre-approved by the Project Manager), affected residents and business of work and areas to be disturbed by construction at least 72 hours in advance. Work shall not commence until the affected residents/business have been notified and given advanced notice. The Contractor shall work to minimize impacts to those affected by the construction while still maintaining project schedule and objectives. For impacts to driveways or property access points that affect residents or businesses, resident/business shall be notified 24 hours in advance of the work taking place and coordinated with for parking and property access.

3. PROTECTION OF WORK

The Contractor shall maintain adequate protection of all his/her work from damage and shall protect all public and private abutting property from injury or loss arising in connection with this contract.

4. PROTECTION OF PROPERTY

- 4.1 The Contractor shall confine his/her equipment and operations to those areas of the work site necessary for the completion of the work, or as authorized by the Project Manager. The Contractor shall protect and preserve from damage any facilities, utilities or features including trees, shrubs and turf which are not required to be disturbed by the requirements of the work.
- 4.2 The Contractor shall be responsible to determine the location of and to protect from damage any utilities or other improvements.

5. REMOVAL OF RUBBISH

The Contractor shall daily remove all rubbish and accumulated materials due to his/her construction.

6. BRICK SIDEWALK OR PAVEMENT REMOVAL

When brick is removed from City of Kalamazoo sidewalk or pavement it shall be salvaged, unless otherwise stated in the contract. Brick to be salvaged shall be placed within the right-of-way (ROW) for pickup by the City. Brick shall not be placed or stored on any pavement, sidewalk, bike, or pedestrian areas but in ROW green space only; salvaged brick shall not be placed on private property without written approval given by the owner.

7. REMOVAL OF PERMANENT TRAFFIC SIGNS AND POSTS

The Contractor shall notify the Project Manager five (5) working days in advance of the time permanent signs must be removed to accommodate the construction. The Contractor shall remove and salvage any permanent signs that must be removed for construction.

8. PERMANENT TRAFFIC SIGN STAKING

The City shall stake the field locations for the new permanent traffic signs that the Contractor shall install under this contract. The Contractor shall call MISS DIG to arrange for staking prior to sign installation.

9. LAWN SPRINKLER SYSTEMS

- 9.1 Owners of known lawn sprinkler systems shall be notified by the contractor a minimum of 72 hours in advance of any work to be done that will affect those systems. Modifications to the systems are the responsibility of the owners and are not a part of this contract.
- 9.2 Owners of lawn sprinkler systems that were unknown to the contractor at the beginning of work and uncovered during the work for this contract, shall be notified as soon as possible and no later than 24 hours after discovery of the system. The Contractor shall coordinate with the owner for placement outside the immediate work area until modifications can take place. Modifications to the systems are the responsibility of the owners and are not a part of this contract.

10. SALVAGING DRAINAGE STRUCTURE COVERS

The City of Kalamazoo reserves the right to salvage any drainage structure covers or portions thereof which are to be removed as a result of work done under this contract. Any covers which are to be salvaged will be identified by the City. The contractor will set those items identified aside for pick up by City personnel.

11. REMOVING AND REPLACING CURB AND GUTTER

When the contract provides for streets to be milled and resurfaced, or when the existing base course is to remain in place, and replacement of curb and gutter is called for, milling or other surface removal operations will not take place until placement of the new curb and gutter, and adjacent concrete base course has been completed.

12. DRAINAGE INLET COVERS (K COVERS)

In compliance with the Clean Water Act, all inlet covers must have on their backs reminders against dumping waste into the drains.

13. FLY ASH USE IN CONCRETE ITEMS

The use of fly ash, as described in Section 901.07 of the MDOT Standard Specifications for Construction, shall not be allowed.

14. EXISTING WATER MAINS

The Contractor will be responsible for any damage to the existing water mains during the work required under this contract. This includes but is not limited to the construction of the proposed storm sewers, catch basins, leaching basins, leaching trenches, subgrade under drains, subgrade undercutting, full depth repairs, or other miscellaneous work.

15. GRADE INTERSECTIONS

All intersections are to be considered as complete units and their grades determined before construction is started.

16. UNDERGROUND UTILITIES

For protection of underground utilities, the Contractor shall dial Miss Dig at 1-800-482-7171 a minimum of 72 hours prior to excavating in the vicinity of utility lines. All “Miss Dig” participating members will thus be routinely notified. This does not relieve the Contractor of notifying utility owners who may not be part of the “Miss Dig” alert system.

17. ADJUSTING MONUMENT BOXES

It is the intent that all government corners on this project be preserved and that, where necessary, monument boxes be placed or adjusted whether shown or not.

18. PAVEMENT REMOVAL

- 18.1 Quantities: Pavement removal as called for in this proposal shall be at the discretion of the Project Manager. If, in his/her judgment, areas of pavement may be left in place or additional area added to provide the proper cross-section and base, adjustments can be made in the quantities.
- 18.2 Maintenance Gravel: Where existing asphalt pavement is designated for removal, the Contractor shall perform cold milling of the material so as to provide a supply of maintenance gravel for a traffic bearing surface needed to convey local traffic.

19. COLD MILLING

In those locations where cold milling is called for and the existing curb is to remain in place, the cold milling item shall cover removal of all asphalt up to the face of the curb. Any materials which are left due to the inability of the cold milling machine to work immediately adjacent to the face of the curb will be removed to the depth indicated on the typical cross-section by other

means approved by the Project Manager. Any extra work involved in removing said HMA material shall be considered incidental to the item of Cold Milling HMA Surface.

20. SITE SECURITY

The Contractor shall be responsible for job site security of all materials and tools provided by him/her and no claim for loss or damage will be considered by the City.

21. SITE ACCESS

The City will provide fair and reasonable access to the job site within the working schedules of both parties.

22. MATERIALS INSPECTION AND RESPONSIBILITY

- 22.1 The Project Manager shall have the right to inspect any materials to be used in carrying out the terms of the contract.
- 22.2 The City does not assume any responsibility for the contracted quality and standard of all materials, equipment, components or completed work furnished by the Contractor under this contract.
- 22.3 Any materials, equipment, components or completed work which does not comply with contract specifications, MDOT, or state codes may be rejected by the City, and shall be replaced by the Contractor at no cost to the City.
- 22.4 Any materials, equipment or components rejected shall be removed within a reasonable period of time from the premises of the City at the entire expense of the Contractor after written notice has been mailed by the City to the Contractor that such materials, equipment or components have been rejected.
- 22.5 The City of Kalamazoo has contracted for procurement of water main and appurtenances covered under Section 825 of the MDOT Standard Specifications for Construction. The Contractor is responsible for pick-up of materials from the designated storage facility within the City of Kalamazoo and shall arrange with the City of Kalamazoo for return of unused or scrap materials following completion of the work.

23. GUARANTEE

The Contractor shall guarantee all of his/her work for a period of one (1) year following the date of final acceptance of the completed work and shall repair, replace or make good any materials or work which fail to function or perform or be found defective, without cost to the city.

24. SAFETY

The Contractor shall comply with all applicable OSHA and MIOSHA regulations.

25. SPECIFICATIONS FOR CONSTRUCTION

The items of work in this contract shall conform to the Michigan Department of Transportation (MDOT) 2020 Standard Specifications for Construction, MDOT Supplemental Specifications, and/or the City of Kalamazoo Standard Specifications unless superseded by a Special Provision contained in this document.

26. QUANTITIES

The quantities shown on the Bid and Award pages are approximate only and may be subject to increase or decrease. No guarantee of maximum or minimum is given.

27. PRICE

The unit price, including its pro rata share of overhead, multiplied by the quantity shown shall represent the total bid and shall be held firm for the life of this contract. Any bid not conforming to this requirement may be rejected as non-responsive. Special attention of all bidders is called to this provision since if conditions make it necessary to revise the quantities, no limit will be fixed for such increased or decreased quantities, nor extra compensation allowed; provided the net monetary value of all such additive and subtractive changes in quantities of such items of work, i.e., difference in cost, shall not increase or decrease the original contract price by more than twenty five (25) percent. Some items of work might be increased beyond the 25% limitations as spelled out previously, upon mutual agreement.

28. BASIS FOR PAYMENT

Payment shall be based on the bid unit price for each work item and the approved constructed quantity for that work item. Due to potential differences in conditions between the plans and the field, final as built quantities may be different than contained in the bid document. The City does not guarantee quantities and will pay only for "as built" quantities approved by the Project Manager or his representative. Quantities in excess of those approved shall be at the Contractor's own expense, the City will not be responsible for excess quantities not approved. Should an item of work have to be redone, such as replacing new walk because the Contractor failed to adequately protect the wet concrete from rain or pedestrian or vehicular damage, such work shall be replaced at the Contractor's expense. Should changes in design result in the Project Manager directing the removal and reinstallation of already completed work prior to final completion and acceptance of the project, such removal and installation shall be paid for based on as-bid unit prices and the quantities removed and installed.

29. PAY ESTIMATES

The Contractor shall be responsible for the generation of invoices for payment. Payment will be generated by the City based upon an approved invoice. Frequency of payment shall be monthly unless agreed to otherwise by the Project Manager, with the invoiced period ending on the last day of the month. However, if a different frequency is approved by the Project Manager, it shall not exceed bi-weekly invoicing.

30. PAYMENT TO CONTRACTOR

The Project Manager will be responsible for approving all measured quantities of work. Once measured quantities are approved, the Contractor shall submit a pay invoice to the City of Kalamazoo Attn: Accounts Payable at 241 West South Street, Kalamazoo MI, 49007 or apinvoice@kalamazoocity.org. The contractor is required to meet with the Project Manager to verify final constructed quantities within 60 days of project completion. In the event of a disagreement the Project Manager's measured quantities shall be considered final.

31. INSPECTION OF WORK

The City may maintain inspectors on the job who shall, at all times, have access to work.

32. INSPECTION OF SITE

Each bidder shall visit the site of the proposed work and fully acquaint himself/herself with the existing conditions relating to construction, labor, and shall fully inform himself/herself as to the facilities involved and the difficulties and restrictions attending the performance of this contract. The bidder shall thoroughly examine and become familiar with the drawings, specifications, and

all other bid/contract documents. The Contractor, by the execution of this contract, shall in no way be relieved of any obligation under it due to his failure to receive or examine any form or legal instrument, or to visit the site and acquaint himself/herself with the conditions there existing. No allowance shall be made subsequently in this connection on behalf of the Contractor for any negligence of his/her part. For inspection call the Public Services Department, Engineering Division.

33. LAYING OUT OF WORK

Before submitting a bid, the Contractor shall verify all measurements and shall be responsible for the correctness of same. No extra charge or compensation will be allowed on account of differences between actual dimensions and the measurements indicated on the drawings. Any difference that may be found shall be submitted to the City Engineer for consideration before proceeding.

34. SUPERVISION

The Contractor shall employ an experienced superintendent or foreperson on the job at all times.

35. TARDINESS

Construction delays resulting from tardiness on the part of the Contractor will be reviewed by the City in the event of any request for contract extension by the Contractor.

36. ADDITIONS

Any modification to the contract shall be subject to prior approval by the Purchasing Agent. City Commission approval may also be required.

Prices for additional work required are not requested in the itemized listing contained herein for the base project. Should additional work be authorized, compensation shall be made on the basis of price or prices to be mutually agreed upon. Such additional work shall not begin until a Change Order has been approved.

37. INSPECTION AND TESTING

The Contractor shall give the Project Manager timely notice of readiness of the work for all required inspections, tests or approvals, and shall cooperate with inspections and testing personnel to facilitate required inspections or tests.

38. QUESTIONS

Bidders shall address questions regarding the specifications to Sohil Manjiyani, PE at manjiyanis@kalamazoocity.org or (269) 337-8595. (This does not relieve the requirements of Page 6, Item 3.) Questions regarding terms, conditions and other related bid requirements may be addressed to Craig Hull, Buyer, at (269) 337-8444.

SECTION VII TERMS AND CONDITIONS

1. AWARD OF CONTRACT

- 1.1 This contract will be awarded to that responsible bidder whose bid, conforming to this solicitation, will be most advantageous to the City, price and other factors considered. The City reserves the right to accept or reject any or all bids and waive informalities and minor irregularities in bids received. Other factors include, as an example but not limited to, delivery time, conformance to specifications, incidental costs such as demurrage and deposits, etc.
- 1.2 Notification of award will be in writing by the Purchasing Manager. Upon notification, the Contractor shall submit to the Purchasing Division all required insurance certificates (if required) and such other documentation as may be requested or required hereunder. Upon their receipt and subsequent approval by the City, the Purchasing Manager will forward to the Contractor a written NOTICE TO PROCEED. Work shall NOT be started until such NOTICE TO PROCEED is received by the Contractor.
- 1.3 Unilateral changes in bid prices by the bidder shall not be allowed. However, the City, at its sole option, reserves the right to negotiate with bidders in the event of, but not limited to:
 - 1) No bids received;
 - 2) A single bid being received; or
 - 3) Prices quoted are over budget and/or unreasonable.

2. COMPLETE CONTRACT

This bid document together with its addenda, amendments, attachments and modifications, when executed, becomes the complete contract between the parties hereto, and no verbal or oral promises or representations made in conjunction with the negotiation of this contract shall be binding on either party.

3. SUBCONTRACTORS – NON-ASSIGNMENT

- 3.1 Bidders shall state in writing any and all sub-contractors to be associated with this bid, including the type of work to be performed. The Contractor shall cooperate with the City of Kalamazoo in meeting its commitments and goals with regard to maximum utilization of minority and women-owned business enterprises.
- 3.2 The Contractor hereby agrees and understands that the contract resulting from this solicitation shall not be transferred, assigned or sublet without prior written consent of the City of Kalamazoo.

4. TAXES

The City of Kalamazoo is exempt from all federal excise tax and state sales and use taxes.

5. INVOICING

All original invoice(s) will be sent to the Financial Services Division, 241 W. South Street, Kalamazoo, MI 49007 or via email at apinvoice@kalamazoo-city.org. The Finance Division processes payments after receipt of an original invoice from the Contractor and approval by the department. The City of Kalamazoo's policy is to pay invoice(s) within 30 days from the receipt of the original invoice, if the services or supplies are satisfactory and the proper paperwork and procedures have been followed. **In order to guarantee payment to the vendor on a timely basis, the vendor needs to receive a purchase order number before supplying the City of Kalamazoo with goods or services.** All original, and copies of original invoice(s), will clearly state which purchase order they are being billed against.

The City of Kalamazoo is a government municipality and therefore is tax exempt from all sales tax.

The vendor is responsible for supplying the Finance Division with a copy of their W9 if they are providing a service to the City of Kalamazoo.

6. PAYMENTS

- 6.1 Upon issuance of certificates of Payment by the Architect/Engineer for labor and material incorporated in the work and the materials suitably stored at the site payment shall be made up to ninety (90%) percent of the value thereof.
- 6.2 When the cumulative total of payment is equal to fifty (50%) percent of the contract sum, subsequent payments will be made in the full amount for labor and material certified by the Architect/Engineer.
- 6.3 The amount retained shall be held until final acceptance of the work, receipt of all payrolls, releases, and waiver of liens.

7. CHANGES AND/OR CONTRACT MODIFICATIONS

- 7.1 The City reserves the right to increase or decrease quantities, service or requirements, or make any changes necessary at any time during the term of this contract, or any negotiated extension thereof. Price adjustments due to any of the foregoing changes shall be negotiated and mutually agreed upon by the Contractor and the City.
- 7.2 Changes of any nature after contract award which reflect an increase or decrease in requirements or costs shall not be permitted without prior approval by the Purchasing Agent. City Commission approval may also be required.
- 7.3 ANY CHANGES PERFORMED IN ADVANCE OF PURCHASING AGENT APPROVAL, MAY BE SUBJECT TO DENIAL AND NON-PAYMENT.

8. LAWS, ORDINANCES, AND REGULATIONS

- 8.1 The Contractor shall keep himself/herself fully informed of all local, state and federal laws, ordinances and regulations in any manner affecting those engaged or employed in the work and the equipment used. Contractor and/or employees shall, at all times, serve and comply with such laws, ordinances and regulations.
- 8.2 Any permits, licenses, certificates, or fees required for the performance of the work shall be obtained and paid for by the Contractor.
- 8.3 This contract shall be governed by the laws of the State of Michigan.

9. RIGHT TO AUDIT

The City or its designee shall be entitled to audit all of the Contractor's records, and shall be allowed to interview any of the Contractor's employees, throughout the term of this contract and for a period of three years after final payment or longer if required by law to the extent necessary to adequately permit evaluation and verification of:

- A. Contractor compliance with contract requirements,
- B. Compliance with provisions for pricing change orders, invoices or claims submitted by the Contractor or any of his payees.

10. HOLD HARMLESS

If the negligent acts or omissions of the Contractor/Vendor or its employees, agents or officers, cause injury to person or property, the Contractor/Vendor shall indemnify and save harmless the City of Kalamazoo, its agents, officials, and employees against all claims, judgments, losses, damages, demands, and payments of any kind to persons or property to the extent occasioned from any claim or demand arising therefrom.

11. DEFAULT

The City may at any time, by written notice to the Contractor, terminate this contract and the Contractor's right to proceed with the work, for just cause, which shall include, but is not limited to the following:

- A. Failure to provide insurance and bonds (when called for), in the exact amounts and within the time specified or any extension thereof.
- B. Failure to make delivery of the supplies, or to perform the services within the time specified herein, or any extension thereof.
- C. The unauthorized substitution of articles for those bid and specified.
- D. Failure to make progress if such failure endangers performance of the contract in accordance with its terms.
- E. Failure to perform in compliance with any provision of the contract.
- F. Standard of Performance
 - a. Contractor guarantees the performance of the commodities, goods or services rendered herein in accordance with the accepted standards of the industry or industries concerned herein, except that if this specification calls for higher standards, then such higher standards shall be provided.
 - b. Upon notice by the City of Contractor's failure to comply with such standards or to otherwise be in default of this contract in any manner following the Notice to Proceed, Contractor shall immediately remedy said defective performance in a manner acceptable to the City. Should Contractor fail to immediately correct said defective performance, said failure shall be considered a breach of this contract and grounds for termination of the same by the City.
 - c. In the event of any breach of this contract by Contractor, Contractor shall pay any cost to the City caused by said breach including but not limited to the replacement cost of such goods or services with another Contractor.
 - d. The City reserves the right to withhold any or all payments until any defects in performance have been satisfactorily corrected.
 - e. In the event the Contractor is in breach of this contract in any manner, and such breach has not been satisfactorily corrected, the City may bar the Contractor from being awarded any future City contracts.

- G. All remedies available to the City herein are cumulative and the election of one remedy by the City shall not be a waiver of any other remedy available to the City.

12. TERMINATION OF CONTRACT

The City may, at any time and without cause, suspend the work of this contract for a period of not more than ninety days after providing notice in writing to the Contractor. The Contractor shall be allowed an adjustment in the contract price or an extension of the contract times, or both, directly attributable to the suspension if Contractor makes an approved claim.

The City may, without prejudice to any other right or remedy of the City, and with or without cause, terminate the contract by giving seven days written notice to the Contractor. In such case the Contractor shall be paid, without duplication, for the following items:

- A. 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;
- B. 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;
- C. All documented claims, costs, losses and damages incurred in settlement of terminated contracts with Subcontractors, Suppliers and others; and
- D. Reasonable expenses directly attributable to termination.

The Contractor shall not be paid on account of loss of anticipated profits or revenue or other economic loss arising out of or resulting from such termination.

13. INDEPENDENT CONTRACTOR

At all times, the Contractor, any of his/her employees, or his/her sub-contractors and their subsequent employees shall be considered independent contractors and not as City employees. The Contractor shall exercise all supervisory control and general control over all workers' duties, payment of wages to Contractor's employees and the right to hire, fire and discipline their employees and workers. As an independent contractor, payment under this contract shall not be subject to any withholding for tax, social security or other purposes, nor shall the Contractor or his/her employees be entitled to sick leave, pension benefit, vacation, medical benefits, life insurance or workers' unemployment compensation or the like.

14. PROJECT SUPERVISOR

The Contractor shall employ an individual to act as Project Supervisor. The Project Supervisor shall be available to the Contractor's workers and the Project Manager at all times by use of a mobile phone or other reliable means. The Project Supervisor shall prepare daily work plans for the employees, monitor employee performance, attendance and punctuality; and work closely with the City's Project Manager in assuring contract compliance.

15. MEETINGS

The Contractor and/or Project Supervisor shall be available to meet with the Department Head or Project Manager at a mutually agreeable time to discuss problems, issues or concerns relative to the contract. Either party may call a meeting at any time. When such a request for a meeting is made, the meeting date shall, in no case exceed five (5) working days after the request; and, if in the sole opinion of the Department Head, the severity of the circumstance warrants, no more than one (1) working day.

16. INSPECTION OF WORKSITE

Before submitting bids or quotes for work, the Contractor shall be responsible for examining the work site and satisfying himself/herself as to the existing conditions under which he/she will be obligated to operate, or that in any way affects the work under this contract. No allowance shall be made subsequently, in behalf of the Contractor, for any negligence on his/her part.

17. CONTRACT PERIOD, EXTENSIONS, CANCELLATION

- 17.1 The contract shall be in effect for the term stated in the specifications.
- 17.2 The City may opt to extend this contract upon mutual agreement of both parties. The number of extensions shall be limited to that stated in the specifications.
- 17.3 The City may, from time to time, find it necessary to continue this contract on a month-to-month basis only, not to exceed a six (6) month period. Such month-to-month extended periods shall be by mutual agreement of both parties, with all provisions of the original contract or any extension thereof remaining in full force and effect.
- 17.4 All contracts, extensions and cost increases are subject to availability of funds and the approval of the City Commission (if required).
- 17.5 The City reserves the right to cancel the contract due to non-appropriation of funds by the City with thirty (30) days written notice.
- 17.6 Either party may terminate the contract (or any extension thereof) without cause at the end of any twelve (12) month term by giving written notice of such intent at least 60 days prior to the end of said twelve (12) month term.
- 17.7 All notices are in effect commencing with the date of mailing. Written notices may be delivered in person or sent by First Class mail; faxed or emailed to the last known address.
- 17.8 If cancellation is for default of contract due to non-performance, the contract may be canceled at any time (see Item 11, DEFAULT).

APPENDIX A NON-DISCRIMINATION CLAUSE FOR ALL CITY OF KALAMAZOO CONTRACTS

The Contractor agrees to comply with the Federal Civil Rights Act of 1964 as amended; the Federal Civil Rights Act of 1991 as amended; the Americans With Disabilities Act of 1990 as amended; the Elliott-Larson Civil Rights Act, Act. No. 453, Public Act of 1976 as amended; the Michigan Handicappers Civil Rights Act, Act No. 220, Public Act of 1976 as amended, City Ordinance 1856 and all other applicable Federal and State laws. The Contractor agrees as follows:

1. The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability, family status, sexual orientation or gender identity that is unrelated to the individual's ability to perform the duties of the particular job or position. Such action shall include, but not be limited to the following: employment, upgrading, demotion or transfer, recruitment advertising, layoff or termination; rates of pay or other forms of compensations; and selection for training, including apprenticeship.
2. The Contractor will, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, national origin, sex, age, height, weight, marital status, physical or mental disability family status, sexual orientation or gender identity that is unrelated to the individual's ability to perform the duties of the particular job or position.
3. If requested by the City, the Contractor shall furnish information regarding practices, policies and programs and employment statistics for the Contractor and subcontractors. The Contractor and subcontractors shall permit access to all books, records and accounts regarding employment practices by agents and representatives of the City duly charged with investigative duties to assure compliance with this clause.
4. Breach of the covenants herein may be regarded as a material breach of the contract or purchasing agreement as provided in the Elliott-Larsen Civil Rights Act and City Ordinance 1856.
5. The Contractor will include or incorporate by reference the provisions of the foregoing paragraphs 1 through 4 in every subcontract or purchase order unless exempted by the rules, regulations or orders of the Michigan Civil Rights Commission* and will provide in every subcontract or purchase order that said provision will be binding upon each subcontractor or seller.
6. The Contractor will not preclude a person with a criminal conviction from being considered for employment unless otherwise precluded by federal or state law. (for contracts over \$25,000)

The Elliott-Larson Civil Rights Act, Sec. 202 of Act. No. 453 of 1976 reads in part as follows:

Sec. 202. (1) An employer shall not:

- (a) Fail or refuse to hire, or recruit, or discharge or otherwise discriminate against an individual with respect to employment, compensation, or a term condition or privilege of employment because of religion, race, color, national origin, age, sex, height, weight or marital status.
- (b) Limit, segregate or classify an employee or applicant for employment in a way which deprives or tends to deprive the employee or applicant of an employment opportunity or otherwise adversely affects the status of an employee or applicant because of religion, race, color, national origin, age, sex, height, weight or marital status.
- (c) Segregate, classify or otherwise discriminate against a person on the basis of sex with respect to a term, condition or privilege of employment, including a benefit plan or system.

* Except for contracts entered into with parties employing less than three employees.
1-2010

APPENDIX B PREVAILING WAGES

Prevailing wages are applicable to this contract, therefore, rates will apply as follows:

(XX) Project is funded by City of Kalamazoo monies and is estimated to be in excess of \$100,000.00. The applicable prevailing wage rates are attached.

Specifications for projects in which the City of Kalamazoo is party for construction, alterations and/or repair including painting and decorating of public buildings or public works in or for the City of Kalamazoo and which requires or involves the employment of mechanics and/or laborers shall contain the following provisions stating the minimum wages to be paid the various classes of laborers and mechanics for the project. Prevailing wage rates determined by the U.S. Department of Labor under Davis Bacon and related acts will be used for City of Kalamazoo construction projects.

By the incorporation of prevailing wage rates within this specification, the City of Kalamazoo stipulates that:

- ✓ Contractor or his/her subcontractor shall pay all mechanics and laborers employed directly upon the site of the work, unconditionally and not less than once a week and without subsequent deduction or rebate on any account the full amount, accrued at the time of payment, computed at wage rates as incorporated herein regardless of any contractual relationship which may be alleged to exist between the contractor or subcontractor and such laborers and mechanics;
- ✓ The scale of wages to be paid shall be posted by the contractor in a prominent and easily accessible place at the site of the work;
- ✓ The Prime Contractor and all subcontractors shall submit weekly certified payrolls documenting the hours worked and wages paid by work classification. NOTE: Contactor shall not include Social Security numbers of employees on certified payrolls.
- ✓ There may be withheld from the contractor's accrued payments the amount considered necessary by the City's Contracting Official to pay to laborers and mechanics employed by the contractor or any subcontractor on the work for the difference between the rates of wages required by the contract and the rates of wages received by such laborers and mechanics except those amounts properly deducted or refunded pursuant to the terms of the Davis-Bacon Act (USC, Title 40, Sec. 276a) and interpretations thereof.

Special Note: The City's requirements as it relates to prevailing wages includes a meeting with the City's Purchasing Agent prior to starting work and the submission of weekly certified payrolls by prime contractors and all subcontractors. The City will monitor certified payrolls, work progress, and conduct interviews with the mechanics and labors employed directly upon the site during the duration of the contract Please contact the Purchasing Department at (269) 337-8020 if you have any questions regarding prevailing wage provision.

The overtime pay to which a laborer or mechanic is entitled under this contract shall be that overtime pay to which he/she is entitled by any agreement made with the contractor or subcontractor or by any applicable provision of law; but in no event shall such amount be less than the prevailing wage in the Kalamazoo community for such overtime.

Revised 4-08



PREVAILING WAGE RATES
2023-2024 Ransom Street Improvements

Bid Reference #: 91300-009.0

[January 2023]

"General Decision Number: MI20220061 10/21/2022

Superseded General Decision Number: MI20210061

State: Michigan

Construction Type: Heavy

County: Kalamazoo County in Michigan.

Heavy, Includes Water, Sewer Lines and Excavation (Excludes Hazardous Waste Removal; Coal, Oil, Gas, Duct and other similar Pipeline Construction)

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number Publication Date
 0 01/07/2022

1	02/25/2022
2	06/24/2022
3	07/15/2022
4	07/29/2022
5	10/21/2022

CARP0525-006 06/01/2021

	Rates	Fringes
CARPENTER, Includes Form Work....	\$ 25.94	20.59

ELEC0131-006 06/01/2022

	Rates	Fringes
ELECTRICIAN.....	\$ 37.66	8.95+27%

* ENGI0325-009 09/01/2022

POWER EQUIPMENT OPERATORS: Underground Construction (Including Sewer)

	Rates	Fringes
POWER EQUIPMENT OPERATOR		
GROUP 1.....	\$ 37.67	24.85
GROUP 2.....	\$ 32.78	24.85
GROUP 3.....	\$ 32.28	24.85
GROUP 4.....	\$ 32.00	24.85

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backhoe/ Excavator, Boring Machine, Bulldozer, Crane, Grader/ Blade, Loader, Roller, Scraper, Trencher (over 8 ft. digging capacity)

GROUP 2: Trencher (8-ft digging capacity and smaller)

GROUP 3: Boom Truck (non-swinging, non- powered type boom)

GROUP 4: Broom/ Sweeper, Fork Truck, Tractor, Bobcat/ Skid Steer /Skid Loader

ENGI0326-025 06/01/2022

EXCLUDES UNDERGROUND CONSTRUCTION

	Rates	Fringes
OPERATOR: Power Equipment		
GROUP 1.....	\$ 44.13	24.85
GROUP 2.....	\$ 40.83	24.85
GROUP 3.....	\$ 38.18	24.85
GROUP 4.....	\$ 36.47	24.85
GROUP 5.....	\$ 36.47	24.85
GROUP 6.....	\$ 30.61	24.85
GROUP 7.....	\$ 28.13	24.85

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Crane operator with main boom and jib 400', 300', or 220' or longer.

GROUP 2: Crane operator with main boom and jib 140' or longer, tower crane, gantry crane, whirley derrick

GROUP 3: Backhoe/Excavator; Boring Machine; Bulldozer; Crane; Grader/Blade; Loader; Roller; Scraper; Tractor; Trencher

GROUP 4: Bobcat/Skid Loader; Broom/Sweeper; Fork Truck (over 20' lift)

GROUP 5: Boom truck (non-swinging)

GROUP 6: Fork Truck (20' lift and under for masonry work)

GROUP 7: Oiler

FOOTNOTES:

Crane operator with main boom and jib 300' or longer: \$1.50 per hour above the group 1 rate.

Crane operator with main boom and jib 400' or longer: \$3.00 per hour above the group 1 rate.

IRON0340-004 06/19/2017

	Rates	Fringes
IRONWORKER, STRUCTURAL AND REINFORCING.....	\$ 24.43	24.67

LAB00334-011 09/01/2018

SCOPE OF WORK:

OPEN CUT CONSTRUCTION: Excavation of earth and sewer, utilities, and improvements, including underground piping/conduit (including inspection, cleaning, restoration, and relining)

	Rates	Fringes
LABORER		
(1) Common or General.....	\$ 20.97	12.85
(2) Mason Tender-Cement/Concrete.....	\$ 21.10	12.85
(4) Grade Checker.....	\$ 21.28	12.85
(5) Pipelayer.....	\$ 21.40	12.85

LAB00355-010 06/01/2022

EXCLUDES OPEN CUT CONSTRUCTION

	Rates	Fringes
LABORER		
Common or General; Grade Checker; Mason Tender - Cement/Concrete.....	\$ 26.70	12.95
Pipelayer.....	\$ 20.34	12.85

PAIN0312-014 06/12/2014

	Rates	Fringes
PAINTER		
Brush & Roller.....	\$ 21.75	11.94
Spray.....	\$ 22.75	11.94

PLAS0016-020 04/01/2014

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 22.31	12.83

PLUM0333-026 06/01/2020

Fort Custer

	Rates	Fringes
PLUMBER.....	\$ 38.79	23.08

PLUM0357-012 07/01/2020

Excluding Fort Custer

	Rates	Fringes
PLUMBER.....	\$ 35.20	22.35

TEAM0007-011 06/01/2020

	Rates	Fringes
TRUCK DRIVER		
Lowboy/Semi-Trailer Truck...	\$ 28.05	.50 + a+b
Tractor Haul Truck.....	\$ 27.80	.50 + a+b

FOOTNOTE:

- a. \$470.70 per week.
- b. \$68.70 daily.

* SUMI2010-059 11/09/2010

	Rates	Fringes
LABORER: Landscape.....	\$ 12.25 **	0.00
TRUCK DRIVER: Dump Truck.....	\$ 18.00	6.43
TRUCK DRIVER: Off the Road Truck.....	\$ 20.82	3.69

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.
=====

** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$15.00) or 13658 (\$11.25). Please see the Note at the top of the wage determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and

non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====

END OF GENERAL DECISIO"

"General Decision Number: MI20220001 12/23/2022

Superseded General Decision Number: MI20210001

State: Michigan

Construction Types: Highway (Highway, Airport & Bridge xxxxx and Sewer/Incid. to Hwy.)

Counties: Michigan Statewide.

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(2)-(60).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$15.00 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2022.
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$11.25 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2022.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Modification Number	Publication Date
0	01/07/2022
1	01/21/2022
2	02/11/2022

3	02/25/2022
4	03/25/2022
5	04/08/2022
6	04/15/2022
7	04/29/2022
8	05/06/2022
9	06/03/2022
10	06/10/2022
11	07/15/2022
12	07/29/2022
13	08/12/2022
14	09/02/2022
15	10/07/2022
16	10/21/2022
17	11/04/2022
18	12/23/2022

CARP0004-004 06/01/2019

REMAINDER OF STATE

	Rates	Fringes
CARPENTER (Piledriver).....	\$ 27.62	20.59

CARP0004-005 06/01/2018

LIVINGSTON (Townships of Brighton, Deerfield, Genoa, Hartland, Oceola & Tyrone), MACOMB, MONROE, OAKLAND, SANILAC, ST. CLAIR AND WAYNE COUNTIES

	Rates	Fringes
CARPENTER (Piledriver).....	\$ 30.50	27.28

ELEC0017-005 06/01/2022

STATEWIDE

	Rates	Fringes
Line Construction		
Groundman/Driver.....	\$ 29.57	7.20+32%
Journeyman Signal Tech, Communications Tech, Tower		
Tech & Fiber Optic Splicers..	\$ 43.90	7.20+32%
Journeyman Specialist.....	\$ 50.49	7.20+32%
Operator A.....	\$ 37.13	7.20+32%
Operator B.....	\$ 34.67	7.20+32%

Classifications

Journeyman Specialist: Refers to a crew of only one person working alone.
 Operator A: Shall be proficient in operating all power equipment including: Backhoe, Excavator, Directional Bore and Boom/Digger truck.
 Operator B: Shall be proficient in operating any 2 of the above mentioned pieces of equipment listed under Operator A.

ENGI0324-003 06/01/2022

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON, CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO, ISABELLA, JACKSON, LAPEER, LENAWEE, LIVINGSTON, MACOMB, MIDLAND, MONROE, MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLAIR, SANILAC, SHIAWASSEE, TUSCOLA, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
GROUP 1.....	\$ 51.02	24.85
GROUP 2.....	\$ 52.02	24.85
GROUP 3.....	\$ 49.52	24.85
GROUP 4.....	\$ 50.52	24.85
GROUP 5.....	\$ 48.02	24.85
GROUP 6.....	\$ 49.02	24.85
GROUP 7.....	\$ 47.75	24.85
GROUP 8.....	\$ 48.75	24.85
GROUP 9.....	\$ 47.30	24.85
GROUP 10.....	\$ 48.30	24.85
GROUP 11.....	\$ 46.57	24.85
GROUP 12.....	\$ 47.57	24.85
GROUP 13.....	\$ 46.21	24.85
GROUP 14.....	\$ 47.21	24.85
GROUP 15.....	\$ 45.57	24.85
GROUP 16.....	\$ 42.37	24.85
GROUP 17.....	\$ 27.89	12.00
GROUP 18.....	\$ 31.38	24.85

FOOTNOTE:

Paid Holidays: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Engineer when operating combination of boom and jib 400' or longer

GROUP 2: Engineer when operating combination of boom and jib 400' or longer on a crane that requires an oiler

GROUP 3: Engineer when operating combination of boom and jib 300' or longer

GROUP 4: Engineer when operating combination of boom and jib 300' or longer on a crane that requires an oiler

GROUP 5: Engineer when operating combination of boom and jib 220' or longer

GROUP 6: Engineer when operating combination of boom and jib 220' or longer on a crane that requires an oiler

GROUP 7: Engineer when operating combination of boom and jib 140' or longer

GROUP 8: Engineer when operating combination of boom and jib 140' or longer on a crane that requires an oiler

GROUP 9: Tower crane & derrick operator (where operator's work station is 50 ft. or more above first sub-level)

GROUP 10: Tower crane & derrick operator (where operator's work station is 50 ft. or more above first sub-level) on a crane that requires an oiler

GROUP 11: Engineer when operating combination of boom and jib 120' or longer

GROUP 12: Engineer when operating combination of boom and jib 120' or longer on a crane that requires an oiler

GROUP 13: Crane operator; job mechanic and 3 drum hoist and excavator

GROUP 14: Crane operator on a crane that requires an oiler

GROUP 15: Hoisting operator; 2 drum hoist and rubber tired backhoe

GROUP 16: Forklift and 1 drum hoist

GROUP 17: Compressor or welder operator

GROUP 18: Oiler

ENGI0324-004 06/01/2022

AREA 1: ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, EATON, HILLSDALE, IONIA, KALAMAZOO, KENT, LAKE, MANISTEE, MASON, MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH, VAN BUREN

AREA 2: ANTRIM, BENZIE, CHARLEVOIX, EMMET, GRAND TRAVERSE, KALKASKA, LEELANAU, MISSAUKEE AND WEXFORD COUNTIES:

	Rates	Fringes
OPERATOR: Power Equipment (Steel Erection)		
AREA 1		
GROUP 1.....	\$ 51.02	24.85
GROUP 2.....	\$ 47.75	24.85
GROUP 3.....	\$ 46.21	24.85
GROUP 4.....	\$ 42.37	24.85
GROUP 5.....	\$ 27.89	12.00
GROUP 6.....	\$ 31.38	24.85
AREA 2		
GROUP 1.....	\$ 51.02	24.85
GROUP 2.....	\$ 47.75	24.85
GROUP 3.....	\$ 46.21	24.85
GROUP 4.....	\$ 42.37	24.85
GROUP 5.....	\$ 27.89	12.00
GROUP 6.....	\$ 31.38	24.85

FOOTNOTES:

Crane operator with main boom and jib 300' or longer: \$1.50 additional to the group 1 rate. Crane operator with main boom and jib 400' or longer: \$3.00 additional to the group 1 rate.

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

POWER EQUIPMENT OPERATOR CLASSIFICATIONS:

GROUP 1: Crane Operator with main boom & jib 400', 300', or 220' or longer.

GROUP 2: Crane Operator with main boom & jib 140' or longer, Tower Crane; Gantry Crane; Whirley Derrick.

GROUP 3: Regular Equipment Operator, Crane, Dozer, Loader, Hoist, Straddle Wagon, Mechanic, Grader and Hydro Excavator.

GROUP 4: Air Tugger (single drum), Material Hoist Pump 6" or over, Elevators, Brokk Concrete Breaker.

GROUP 5: Air Compressor, Welder, Generators, Conveyors

GROUP 6: Oiler and fire tender

ENGI0324-005 09/01/2022

AREA 1: GENESEE, LAPEER, LIVINGSTON, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALCONA, ALLEGAN, ALGER, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KWEENAW, LAKE, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

Rates Fringes

OPERATOR: Power Equipment
(Underground construction
(including sewer))

AREA 1:

GROUP 1.....	\$ 39.38	24.85
GROUP 2.....	\$ 34.65	24.85
GROUP 3.....	\$ 33.92	24.85
GROUP 4.....	\$ 33.35	24.85
GROUP 5.....	\$ 24.90	12.05

AREA 2:

GROUP 1.....	\$ 37.67	24.85
GROUP 2.....	\$ 32.78	24.85
GROUP 3.....	\$ 32.28	24.85
GROUP 4.....	\$ 32.00	24.85
GROUP 5.....	\$ 24.90	12.05

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Backfiller tamper; Backhoe; Batch plant operator (concrete); Clamshell; Concrete paver (2 drums or larger); Conveyor loader (Euclid type); Crane (crawler, truck type or pile driving); Dozer; Dragline; Elevating grader; Endloader; Gradall (and similar type machine); Grader; Mechanic; Power shovel; Roller (asphalt); Scraper (self-propelled or tractor drawn); Side boom tractor (type D-4 or equivalent and larger); Slip form paver; Slope

paver; Trencher (over 8 ft. digging capacity); Well drilling rig; Concrete pump with boom operator; Hydro Excavator

GROUP 2: Boom truck (power swing type boom); Crusher; Hoist; Pump (1 or more - 6-in. discharge or larger - gas or diesel- powered or powered by generator of 300 amperes or more - inclusive of generator); Side boom tractor (smaller than type D-4 or equivalent); Tractor (pneu-tired, other than backhoe or front end loader); Trencher (8-ft. digging capacity and smaller); Vac Truck and End dump operator;

GROUP 3: Air compressors (600 cfm or larger); Air compressors (2 or more-less than 600 cfm); Boom truck (non-swinging, non- powered type boom); Concrete breaker (self-propelled or truck mounted - includes compressor); Concrete paver (1 drum-1/2 yd. or larger); Elevator (other than passenger); Maintenance person; Pump (2 or more-4-in. up to 6-in. discharge-gas or diesel powered - excluding submersible pumps); Pumpcrete machine (and similar equipment); Wagon drill (multiple); Welding machine or generator (2 or more-300 amp. or larger - gas or diesel powered)

GROUP 4: Boiler; Concrete saw (40 hp or over); Curing machine (self-propelled); Farm tractor (with attachment); Finishing machine (concrete); Hydraulic pipe pushing machine; Mulching equipment; Pumps (2 or more up to 4-in. discharge, if used 3 hours or more a day, gas or diesel powered - excluding submersible pumps); Roller (other than asphalt); Stump remover; Trencher (service); Vibrating compaction equipment, self-propelled (6 ft. wide or over); Sweeper (Wayne type); Water wagon and Extend-a boom forklift

Group 5: Fire Person, Oiler

* ENGI0324-006 06/01/2022

GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW, WAYNE, ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

Rates Fringes

Power equipment operators:
(AIRPORT, BRIDGE & HIGHWAY CONSTRUCTION)

GROUP 1.....	\$ 38.86	24.85
GROUP 2.....	\$ 32.13	24.85
GROUP 3.....	\$ 31.57	24.85
GROUP 4.....	\$ 31.40	24.85

POWER EQUIPMENT OPERATOR CLASSIFICATIONS

GROUP 1: Asphalt plant operator; Crane operator (does not include work on bridge construction projects when the crane operator is erecting structural components); Dragline operator; Shovel operator; Locomotive operator; Paver operator (5 bags or more); Elevating grader operator; Pile driving operator; Roller operator (asphalt); Blade grader operator; Trenching machine operator (ladder or wheel type); Auto-grader; Slip form paver; Self-propelled or tractor-drawn scraper; Conveyor loader operator (Euclid type); Endloader operator (1 yd. capacity and over); Bulldozer; Hoisting engineer; Tractor operator; Finishing machine operator (asphalt); Mechanic; Pump operator (6-in. discharge or over, gas, diesel powered or generator of 300 amp. or larger); Shouldering or gravel distributing machine operator (self-propelled); Backhoe (with over 3/8 yd. bucket); Side boom tractor (type D-4 or equivalent or larger); Tube finisher (slip form paving); Gradall (and similar type machine); Asphalt paver (self-propelled); Asphalt planer (self-propelled); Batch plant (concrete-central mix); Slurry machine (asphalt); Concrete pump (3 in. and over); Roto-mill; Swinging boom truck (over 12 ton capacity); Hydro demolisher (water blaster); Farm-type tractor with attached pan; Vacuum truck operator; Batch Plant (concrete dry batch); Concrete Saw Operator (40h.p. or over; Tractor Operator (farm type); Finishing Machine Operator (concrete); Grader Operator (self-propelled fine grade or form (concrete)).

GROUP 2: Screening plant operator; Washing plant operator; Crusher operator; Backhoe (with 3/8 yd. bucket or less); Side boom tractor (smaller than D-4 type or equivalent); Sweeper (Wayne type and similar equipment); Greese Truck; Air Compressor Operator (600 cu.ft. per min or more); Air Compressor Operator (two or more, less than 600 cfm);

GROUP 3: Boiler fire tender; Tractor operator (farm type with attachment); Concrete Breaker; Wagon Drill Operator;

GROUP 4: Oiler; Fire tender; Trencher (service); Flexplane operator; Cleftplane operator; Boom or winch hoist truck operator; Endloader operator *under 1 yd. capacity); Roller Operator (other than asphalt); Curing equipment operator (self-propelled); Power bin operator; Plant drier (6 ft. wide or over); Guard post driver operator (power driven); All mulching equipment; Stump remover; Concrete pump (under 3-in.); Mesh installer (self-propelled); End dump; Skid Steer.

 ENGI0324-007 05/01/2022

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

Rates Fringes

OPERATOR: Power Equipment		
(Steel Erection)		
Compressor, welder and forklift.....	\$ 37.40	24.60
Crane operator, main boom & jib 120' or longer.....	\$ 43.87	24.60
Crane operator, main boom		

& jib 140' or longer.....	\$ 44.17	24.60
Crane operator, main boom		
& jib 220' or longer.....	\$ 44.17	24.60
Mechanic with truck and		
tools.....	\$ 43.00	24.60
Oiler and fireman.....	\$ 35.86	24.60
Regular operator.....	\$ 41.22	24.60

ENGI0324-008 10/01/2020

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE, MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

Rates Fringes

OPERATOR: Power Equipment
(Sewer Relining)

GROUP 1.....	\$ 35.37	14.31
GROUP 2.....	\$ 33.33	14.31

SEWER RELINING CLASSIFICATIONS

GROUP 1: Operation of audio-visual closed circuit TV system, including remote in-ground cutter and other equipment used in connection with the CCTV system

GROUP 2: Operation of hot water heaters and circulation systems, water jettors and vacuum and mechanical debris removal systems

ENGI0325-012 05/01/2022

Rates Fringes

Power equipment operators -
gas distribution and duct
installation work:

GROUP 1.....	\$ 34.83	24.85
GROUP 2.....	\$ 32.55	24.85

SCOPE OF WORK: The construction, installation, treating and reconditioning of pipelines transporting gas vapors within cities, towns, subdivisions, suburban areas, or within private property boundaries, up to and including private meter settings of private industrial, governmental or other premises, more commonly referred to as ""distribution work,"" starting from the first metering station, connection, similar or related facility, of the main or cross country pipeline and including duct installation.

Group 1: Backhoe, crane, grader, mechanic, dozer (D-6 equivalent or larger), side boom (D-4 equivalent or

larger), trencher(except service), endloader (2 yd. capacity or greater).

GROUP 2: Dozer (less than D-6 equivalent), endloader (under 2 yd. capacity), side boom (under D-4 capacity), backfiller, pumps (1 or 2 of 6-inch discharge or greater), boom truck (with powered boom), tractor (wheel type other than backhoe or front endloader). Tamper (self-propelled), boom truck (with non-powered boom), concrete saw (20 hp or larger), pumps (2 to 4 under 6-inch discharge), compressor (2 or more or when one is used continuously into the second day) and trencher(service). Oiler, hydraulic pipe pushing machine, grease person and hydrostatic testing operator.

IRON0008-007 06/01/2022

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector.....	\$ 23.70	6.95
IRONWORKER		
General contracts		
\$10,000,000 or greater.....	\$ 38.14	28.70
General contracts less than \$10,000,000.....	\$ 38.14	28.70

Paid Holidays: New Year's Day, Memorial Day, July 4th, Labor Day, Thanksgiving Day & Christmas Day.

IRON0025-002 06/01/2021

ALCONA, ALPENA, ARENAC, BAY, CHEBOYGAN, CLARE, CLINTON, CRAWFORD, GENESEE, GLADWIN, GRATIOT, HURON, INGHAM, IOSCO, ISABELLA, JACKSON, LAPEER, LIVINGSTON, MACOMB, MIDLAND, MONTMORENCY, OAKLAND, OGEMAW, OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, TUSCOLA, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
Ironworker - pre-engineered metal building erector		
Alcona, Alpena, Arenac, Cheboygan, Clare, Clinton, Crawford, Gladwin, Gratiot, Huron, Ingham, Iosco, Isabella, Jackson, Lapeer, Livingston (west of Burkhardt Road), Montmorency, Ogemaw, Oscoda, Otsego, Presque Isle, Roscommon, Sanilac, Shiawassee, Tuscola & Washtenaw (west of U.S. 23).	\$ 24.26	22.11
Bay, Genesee, Lapeer, Livingston (east of Burkhardt Road), Macomb,		

Midland, Oakland, Saginaw, St. Clair, The University of Michigan, Washtenaw (east of U.S. 23) & Wayne...	\$ 25.48	23.11
IRONWORKER		
Ornamental and Structural...	\$ 36.77	29.03
Reinforcing.....	\$ 32.99	30.76

IRON0055-005 07/01/2022

LENAWEE AND MONROE COUNTIES:

	Rates	Fringes
IRONWORKER		
Pre-engineered metal buildings.....	\$ 23.59	19.35
All other work.....	\$ 33.00	27.20

IRON0292-003 06/01/2020

BERRIEN AND CASS COUNTIES:

	Rates	Fringes
IRONWORKER (Including pre-engineered metal building erector).....	\$ 31.75	22.84

* IRON0340-001 06/19/2022

ALLEGAN, ANTRIM, BARRY, BENZIE, BRANCH, CALHOUN, CHARLEVOIX,
EATON, EMMET, GRAND TRAVERSE, HILLSDALE, IONIA, KALAMAZOO,
KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA,
MISSAUKEE, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA,
OTTAWA, ST. JOSEPH, VAN BUREN AND WEXFORD COUNTIES:

	Rates	Fringes
IRONWORKER (Including pre-engineered metal building erector).....	\$ 24.59	25.43

* LAB00005-006 10/01/2022

	Rates	Fringes
Laborers - hazardous waste abatement: (ALCONA, ALPENA, ANTRIM, BENZIE, CHARLEVOIX, CHEBOYGAN, CRAWFORD, EMMET, GRAND TRAVERSE, IOSCO, KALKASKA, LEELANAU, MISSAUKEE, MONTMORENCY, OSCODA, OTSEGO, PRESQUE ISLE AND WEXFORD COUNTIES - Zone 10)		
Levels A, B or C.....	\$ 17.45	12.75
class b.....	\$ 18.64	12.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;		

Also, Level D.....\$ 16.45	12.75
class a.....\$ 17.64	12.90
Zone 10	
Laborers - hazardous waste abatement: (ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES - Zone 11)	
Levels A, B or C.....\$ 25.18	12.90
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 22.58	12.90
Laborers - hazardous waste abatement: (ALLEGAN, BARRY, BERRIEN, BRANCH, CALHOUN, CASS, IONIA COUNTY (except the city of Portland); KALAMAZOO, KENT, LAKE, MANISTEE, MASON, MECOSTA, MONTCALM, MUSKEGON, NEWAYGO, OCEANA, OSCEOLA, OTTAWA, ST. JOSEPH AND VAN BUREN COUNTIES - Zone 9)	
Levels A, B or C.....\$ 21.88	13.26
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 20.80	12.90
Laborers - hazardous waste abatement: (ARENAC, BAY, CLARE, GLADWIN, GRATIOT, HURON, ISABELLA, MIDLAND, OGEMAW, ROSCOMMON, SAGINAW AND TUSCOLA COUNTIES - Zone 8)	
Levels A, B or C.....\$ 23.74	12.95
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 20.80	12.90
Laborers - hazardous waste abatement: (CLINTON, EATON AND INGHAM COUNTIES; IONIA COUNTY (City of Portland); LIVINGSTON COUNTY (west of Oak Grove Rd., including the City of Howell) - Zone 6)	
Levels A, B or C.....\$ 26.33	12.95
Work performed in conjunction with site preparation not requiring the use of personal protective equipment;	
Also, Level D.....\$ 24.64	12.90
Laborers - hazardous waste abatement: (GENESEE, LAPEER	

AND SHIAWASSEE COUNTIES -
Zone 7)

Levels A, B or C.....\$ 24.20 13.80
Work performed in
conjunction with site
preparation not requiring
the use of personal
protective equipment;

Also, Level D.....\$ 23.20 13.80

Laborers - hazardous waste
abatement: (HILLSDALE,
JACKSON AND LENAWEЕ COUNTIES

- Zone 4)

Levels A, B or C.....\$ 27.13 14.95
Work performed in
conjunction with site
preparation not requiring
the use of personal
protective equipment;

Also, Level D.....\$ 24.17 12.90

Laborers - hazardous waste
abatement: (LIVINGSTON COUNTY
(east of Oak Grove Rd. and
south of M-59, excluding the
city of Howell); AND

WASHTENAW COUNTY - Zone 3)

Levels A, B or C.....\$ 29.93 14.20
Work performed in
conjunction with site
preparation not requiring
the use of personal
protective equipment;

Also, Level D.....\$ 28.93 14.20

Laborers - hazardous waste
abatement: (MACOMB AND WAYNE
COUNTIES - Zone 1)

Levels A, B or C.....\$ 29.93 16.90
Work performed in
conjunction with site
preparation not requiring
the use of personal
protective equipment;

Also, Level D.....\$ 28.93 16.90

Laborers - hazardous waste
abatement: (MONROE COUNTY -
Zone 4)

Levels A, B or C.....\$ 31.75 14.90
Work performed in
conjunction with site
preparation not requiring
the use of personal
protective equipment;

Also, Level D.....\$ 31.75 14.90

Laborers - hazardous waste
abatement: (OAKLAND COUNTY
and the Northeast portion of
LIVINGSTON COUNTY bordered by
Oak Grove Road on the West
and M-59 on the South - Zone
2)

Level A, B, C.....\$ 29.93 16.90
Work performed in
conjunction with site
preparation not requiring
the use of personal

protective equipment; Also, Level D.....	\$ 28.93	16.90
Laborers - hazardous waste abatement: (SANILAC AND ST. CLAIR COUNTIES - Zone 5)		
Levels A, B or C.....	\$ 26.21	16.62
Work performed in conjunction with site preparation not requiring the use of personal protective equipment; Also, Level D.....	\$ 24.75	16.35

LAB00259-001 09/01/2022

AREA 1: MACOMB, OAKLAND AND WAYNE COUNTIES
 AREA 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA,
 BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX,
 CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA,
 DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND
 TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA,
 IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT,
 KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE,
 MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE,
 MIDLAND, MISSAUKEE, MONROE, MONTCALM, MONTMORENCY, MUSKEGON,
 NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO,
 OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST.
 JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN,
 WASHTENAW AND WEXFORD COUNTIES

Rates Fringes

Laborers - tunnel, shaft and
caisson:

AREA 1		
GROUP 1.....	\$ 23.62	16.95
GROUP 2.....	\$ 23.73	19.95
GROUP 3.....	\$ 23.79	16.95
GROUP 4.....	\$ 23.97	16.95
GROUP 5.....	\$ 24.22	16.95
GROUP 6.....	\$ 24.55	16.95
GROUP 7.....	\$ 17.83	16.95
AREA 2		
GROUP 1.....	\$ 25.15	12.95
GROUP 2.....	\$ 25.24	12.95
GROUP 3.....	\$ 25.34	12.95
GROUP 4.....	\$ 25.50	12.95
GROUP 5.....	\$ 25.76	12.95
GROUP 6.....	\$ 26.07	12.95
GROUP 7.....	\$ 18.34	12.95

SCOPE OF WORK: Tunnel, shaft and caisson work of every type
and description and all operations incidental thereto,
including, but not limited to, shafts and tunnels for
sewers, water, subways, transportation, diversion,
sewerage, caverns, shelters, aquafers, reservoirs, missile
silos and steel sheeting for underground construction.

TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Tunnel, shaft and caisson laborer, dump, shanty, hog
house tender, testing (on gas) and watchman

GROUP 2: Manhole, headwall, catch basin builder, bricklayer

tender, mortar machine and material mixer

GROUP 3: Air tool operator (jackhammer, bush hammer and grinder), first bottom, second bottom, cage tender, car pusher, carrier, concrete, concrete form, concrete repair, cement invert laborer, cement finisher, concrete shoveler, conveyor, floor, gasoline and electric tool operator, gunite, grout operator, welder, heading dinky person, inside lock tender, pea gravel operator, pump, outside lock tender, scaffold, top signal person, switch person, track, tugger, utility person, vibrator, winch operator, pipe jacking, wagon drill and air track operator and concrete saw operator (under 40 h.p.)

GROUP 4: Tunnel, shaft and caisson mucker, bracer, liner plate, long haul dinky driver and well point

GROUP 5: Tunnel, shaft and caisson miner, drill runner, key board operator, power knife operator, reinforced steel or mesh (e.g. wire mesh, steel mats, dowel bars, etc.)

GROUP 6: Dynamite and powder

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LAB00334-001 09/01/2021

	Rates	Fringes
Laborers - open cut:		
ZONE 1 - MACOMB, OAKLAND AND WAYNE COUNTIES:		
GROUP 1.....	\$ 23.47	16.95
GROUP 2.....	\$ 23.58	16.95
GROUP 3.....	\$ 23.63	16.95
GROUP 4.....	\$ 23.71	16.95
GROUP 5.....	\$ 23.77	16.95
GROUP 6.....	\$ 21.22	16.95
GROUP 7.....	\$ 17.84	16.95
ZONE 2 - LIVINGSTON COUNTY (east of M-151 (Oak Grove Rd.)); MONROE AND WASHTENAW COUNTIES:		
GROUP 1.....	\$ 24.80	12.95
GROUP 2.....	\$ 24.91	12.95
GROUP 3.....	\$ 25.03	12.95
GROUP 4.....	\$ 25.10	12.95
GROUP 5.....	\$ 25.25	12.95
GROUP 6.....	\$ 22.55	12.95
GROUP 7.....	\$ 19.19	12.95
ZONE 3 - CLINTON, EATON, GENESEE, HILLSDALE AND INGHAM COUNTIES; IONIA COUNTY (City of Portland); JACKSON, LAPEER AND LENAWEE COUNTIES; LIVINGSTON COUNTY (west of M-151 Oak Grove Rd.); SANILAC, ST. CLAIR AND SHIAWASSEE COUNTIES:		
GROUP 1.....	\$ 22.99	12.95

GROUP 2.....	\$ 23.13	12.95
GROUP 3.....	\$ 23.25	12.95
GROUP 4.....	\$ 23.30	12.95
GROUP 5.....	\$ 23.44	12.95
GROUP 6.....	\$ 20.74	12.95
GROUP 7.....	\$ 17.89	12.95

ZONE 4 - ALCONA, ALLEGAN,
ALPENA, ANTRIM, ARENAC,
BARRY, BAY, BENZIE,
BERRIEN, BRANCH,
CALHOUN, CASS, CHARLEVOIX,
CHEBOYGAN, CLARE,
CRAWFORD, EMMET,
GLADWIN, GRAND TRAVERSE,
GRATIOT AND HURON
COUNTIES; IONIA COUNTY
(EXCEPT THE CITY OF
PORTLAND); IOSCO,
ISABELLA, KALAMAZOO,
KALKASKA, KENT,
LAKE, LEELANAU, MANISTEE,
MASON, MECOSTA, MIDLAND,
MISSAUKEE, MONTCALM,
MONTMORENCY, MUSKEGON,
NEWAYGO, OCEANA, OGEMAW,
OSCEOLA, OSCODA, OTSEGO,
OTTAWA, PRESQUE ISLE,
ROSCOMMON, SAGINAW, ST.
JOSEPH, TUSCOLA, VAN BUREN
AND WEXFORD COUNTIES:

GROUP 1.....	\$ 22.02	12.95
GROUP 2.....	\$ 22.15	12.95
GROUP 3.....	\$ 22.26	12.95
GROUP 4.....	\$ 22.33	12.95
GROUP 5.....	\$ 22.45	12.95
GROUP 6.....	\$ 19.67	12.95
GROUP 7.....	\$ 18.01	12.95

ZONE 5 - ALGER, BARAGA,
CHIPPEWA, DELTA,
DICKINSON, GOGEBIC,
HOUGHTON, IRON,
KEWEENAW, LUCE, MACKINAC,
MARQUETTE, MENOMINEE,
ONTONAGON AND SCHOOLCRAFT
COUNTIES:

GROUP 1.....	\$ 22.24	12.95
GROUP 2.....	\$ 22.38	12.95
GROUP 3.....	\$ 22.51	12.95
GROUP 4.....	\$ 22.56	12.95
GROUP 5.....	\$ 22.61	12.95
GROUP 6.....	\$ 19.99	12.95
GROUP 7.....	\$ 18.10	12.95

SCOPE OF WORK:

Open cut construction work shall be construed to mean work which requires the excavation of earth including industrial, commercial and residential building site excavation and preparation, land balancing, demolition and removal of concrete and underground appurtenances, grading, paving, sewers, utilities and improvements; retention, oxidation, flocculation and irrigation facilities, and also including but not limited to underground piping, conduits, steel sheeting for underground construction, and all work incidental thereto, and general excavation. For all areas

except the Upper Peninsula, open cut construction work shall also be construed to mean waterfront work, piers, docks, seawalls, breakwalls, marinas and all incidental work. Open cut construction work shall not include any structural modifications, alterations, additions and repairs to buildings, or highway work, including roads, streets, bridge construction and parking lots or steel erection work and excavation for the building itself and back filling inside of and within 5 ft. of the building and foundations, footings and piers for the building. Open cut construction work shall not include any work covered under Tunnel, Shaft and Caisson work.

OPEN CUT LABORER CLASSIFICATIONS

GROUP 1: Construction laborer

GROUP 2: Mortar and material mixer, concrete form person, signal person, well point person, manhole, headwall and catch basin builder, headwall, seawall, breakwall and dock builder

GROUP 3: Air, gasoline and electric tool operator, vibrator operator, driller, pump person, tar kettle operator, bracer, rodder, reinforced steel or mesh person (e.g., wire mesh, steel mats, dowel bars, etc.), welder, pipe jacking and boring person, wagon drill and air track operator and concrete saw operator (under 40 h.p.), windlass and tugger person and directional boring person

GROUP 4: Trench or excavating grade person

GROUP 5: Pipe layer (including crock, metal pipe, multi-plate or other conduits)

GROUP 6: Grouting man, audio-visual television operations and all other operations in connection with closed circuit television inspection, pipe cleaning and pipe relining work and the installation and repair of water service pipe and appurtenances

GROUP 7: Restoration laborer, seeding, sodding, planting, cutting, mulching and top soil grading; and the restoration of property such as replacing mailboxes, wood chips, planter boxes, flagstones, etc.

LAB00465-001 06/01/2022

LABORER: Highway, Bridge and Airport Construction

AREA 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

AREA 2: ALLEGAN, BARRY, BAY, BERRIEN, BRANCH, CALHOUN, CASS, CLINTON, EATON, GRATIOT, HILLSDALE, HURON, INGHAM, JACKSON, KALAMAZOO, LAPEER, LENAWEE, LIVINGSTON, MIDLAND, MUSKEGON, SAGINAW, SANILAC, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA AND VAN BUREN COUNTIES

AREA 3: ALCONA, ALPENA, ANTRIM, ARENAC, BENZIE, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, IONIA, IOSCO, ISABELLA, KALKASKA, KENT, LAKE, LEELANAU, MANISTEE, MASON, MECOSTA, MISSAUKEE, MONTCALM, MONTMORENCY, NEWAYGO, OCEANA, OGEMAW, OSCEOLA, OSCODA, OTSEGO, OTTAWA,

PRESQUE ISLE, ROSCOMMON AND WEXFORD COUNTIES

AREA 4: ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES

	Rates	Fringes
LABORER (AREA 1)		
GROUP 1.....	\$ 32.02	13.95
GROUP 2.....	\$ 32.15	13.95
GROUP 3.....	\$ 32.33	13.95
GROUP 4.....	\$ 32.41	13.95
GROUP 5.....	\$ 32.62	13.95
GROUP 6.....	\$ 32.92	13.95
LABORER (AREA 2)		
GROUP 1.....	\$ 26.92	12.90
GROUP 2.....	\$ 27.12	12.90
GROUP 3.....	\$ 27.36	12.90
GROUP 4.....	\$ 27.71	12.90
GROUP 5.....	\$ 27.58	12.90
GROUP 6.....	\$ 27.92	12.90
LABORER (AREA 3)		
GROUP 1.....	\$ 26.22	12.90
GROUP 2.....	\$ 26.43	12.90
GROUP 3.....	\$ 26.72	12.90
GROUP 4.....	\$ 27.16	12.90
GROUP 5.....	\$ 26.78	12.90
GROUP 6.....	\$ 27.21	12.90
LABORER (AREA 4)		
GROUP 1.....	\$ 26.22	12.90
GROUP 2.....	\$ 26.43	12.90
GROUP 3.....	\$ 26.72	12.90
GROUP 4.....	\$ 27.16	12.90
GROUP 5.....	\$ 26.78	12.90
GROUP 6.....	\$ 27.21	12.90

LABORER CLASSIFICATIONS

GROUP 1: Asphalt shoveler or loader; asphalt plant misc.; burlap person; yard person; dumper (wagon, truck, etc.); joint filling laborer; miscellaneous laborer; unskilled laborer; sprinkler laborer; form setting laborer; form stripper; pavement reinforcing; handling and placing (e.g., wire mesh, steel mats, dowel bars); mason's tender or bricklayer's tender on manholes; manhole builder; headwalls, etc.; waterproofing, (other than buildings) seal coating and slurry mix, shoring, underpinning; pressure grouting; bridge pin and hanger removal; material recycling laborer; horizontal paver laborer (brick, concrete, clay, stone and asphalt); ground stabilization and modification laborer; grouting; waterblasting; top person; railroad track and trestle laborer; carpenters' tender; guard rail builders' tender; earth retention barrier and wall and M.S.E. wall installer's tender; highway and median installer's tender (including sound, retaining, and crash barriers); fence erector's tender; asphalt raker tender; sign installer; remote control operated equipment.

GROUP 2: Mixer operator (less than 5 sacks); air or electric tool operator (jackhammer, etc.); spreader; boxperson (asphalt, stone, gravel); concrete paddler; power chain saw operator; paving batch truck dumper; tunnel mucker (highway work only); concrete saw (under 40 h.p.) and dry pack

machine; roto-mill grounds person.

GROUP 3: Tunnel miner (highway work only); finishers tenders; guard rail builders; highway and median barrier installer; earth retention barrier and wall and M.S.E. wall installer's (including sound, retaining and crash barriers); fence erector; bottom person; powder person; wagon drill and air track operator; diamond and core drills; grade checker; certified welders; curb and side rail setter's tender.

GROUP 4: Asphalt raker

GROUP 5: Pipe layers, oxy-gun

GROUP 6: Line-form setter for curb or pavement; asphalt screed checker/screw man on asphalt paving machines.

LAB01076-005 04/01/2022

MICHIGAN STATEWIDE

	Rates	Fringes
LABORER (DISTRIBUTION WORK)		
Zone 1.....	\$ 25.17	13.32
Zone 2.....	\$ 23.47	13.40
Zone 3.....	\$ 21.60	13.45
Zone 4.....	\$ 20.97	13.43
Zone 5.....	\$ 21.00	13.40

DISTRIBUTION WORK - The construction, installation, treating and reconditioning of distribution pipelines transporting coal, oil, gas or other similar materials, vapors or liquids, including pipelines within private property boundaries, up to and including the meter settings on residential, commercial, industrial, institutional, private and public structures. All work covering pumping stations and tank farms not covered by the Building Trades Agreement. Other distribution lines with the exception of sewer, water and cable television are included.

Underground Duct Layer Pay: \$.40 per hour above the base pay rate.

Zone 1 - Macomb, Oakland and Wayne

Zone 2 - Monroe and Washtenaw

Zone 3 - Bay, Genesee, Lapeer, Midland, Saginaw, Sanilac, Shiawassee and St. Clair

Zone 4 - Alger, Baraga, Chippewa, Delta, Dickinson, Gogebic, Houghton, Iron, Keweenaw, Luce, Mackinac, Marquette, Menominee, Ontonagon and Schoolcraft

Zone 5 - Remaining Counties in Michigan

PAIN0022-002 07/01/2008

HILLSDALE, JACKSON AND LENAWEE COUNTIES; LIVINGSTON COUNTY (east of the eastern city limits of Howell, not including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 25.06	14.75

FOOTNOTES: For all spray work and journeyman rigging for spray work, also blowing off, \$0.80 per hour additional (applies only to workers doing rigging for spray work on off the floor work. Does not include setting up or moving rigging on floor surfaces, nor does it apply to workers engaged in covering up or tending spray equipment. For all sandblasting and spray work performed on highway bridges, overpasses, tanks or steel, \$0.80 per hour additional. For all brushing, cleaning and other preparatory work (other than spraying or steeplejack work) at scaffold heights of fifty (50) feet from the ground or higher, \$0.50 per hour additional. For all preparatorial work and painting performed on open steel under forty (40) feet when no scaffolding is involved, \$0.50 per hour additional. For all swing stage work-window jacks and window belts-exterior and interior, \$0.50 per hour additional. For all spray work and sandblaster work to a scaffold height of forty (40) feet above the floor level, \$0.80 per hour additional. For all preparatorial work and painting on all highway bridges or overpasses up to forty (40) feet in height, \$0.50 per hour additional. For all steeplejack work performed where the elevation is forty (40) feet or more, \$1.25 per hour additional.

PAIN0312-001 06/01/2018

EXCLUDES: ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel, Salem, Saugatuck and Wayland); INCLUDES: Barry, Berrien, Branch, Calhoun, Cass, Hillsdale, Kalamazoo, St. Joseph, Van Buren

	Rates	Fringes
PAINTER		
Brush and roller.....	\$ 23.74	13.35
Spray, Sandblast, Sign		
Painting.....	\$ 24.94	13.35

PAIN0845-003 05/10/2018

CLINTON COUNTY; EATON COUNTY (does not include the townships of Bellevue and Olivet); INGHAM COUNTY; IONIA COUNTY (east of Hwy. M 66); LIVINGSTON COUNTY (west of the eastern city limits of Howell, including the city of Howell, north to the Genesee County line and south to the Washtenaw County line); AND SHIAWASSEE COUNTY (Townships of Bennington, Laingsbury and Perry):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

PAIN0845-015 05/10/2018

MUSKEGON COUNTY; NEWAYGO COUNTY (except the Townships of Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OCEANA COUNTY; OTTAWA

COUNTY (except the townships of Allendale, Blendone, Chester, Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

PAIN0845-018 05/10/2018

ALLEGAN COUNTY (Townships of Dorr, Fillmore, Heath, Hopkins, Laketown, Leighton, Manlius, Monterey, Overisel, Salem, Saugatuck and Wayland); IONIA COUNTY (west of Hwy. M-66); KENT, MECOSTA AND MONTCALM COUNTIES; NEWAYGO COUNTY (Townships of Barton, Big Prairie, Brooks, Croton, Ensley, Everett, Goodwell, Grant, Home, Monroe, Norwich and Wilcox); OSCEOLA COUNTY (south of Hwy. #10); OTTAWA COUNTY (Townships of Allendale, Blendone, Chester, Georgetown, Holland, Jamestown, Olive, Park, Polkton, Port Sheldon, Tallmadge, Wright and Zeeland):

	Rates	Fringes
PAINTER.....	\$ 25.49	13.74

FOOTNOTES: Lead abatement work: \$1.00 per hour additional.

PAIN1011-003 06/02/2022

ALGER, BARAGA, CHIPPEWA, DELTA, DICKINSON, GOGEBIC, HOUGHTON, IRON, KEWEENAW, LUCE, MACKINAC, MARQUETTE, MENOMINEE, ONTONAGON AND SCHOOLCRAFT COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 24.66	14.99

FOOTNOTES: High pay (bridges, overpasses, watertower): 30 to 80 ft.: \$.65 per hour additional. 80 ft. and over: \$1.30 per hour additional.

PAIN1474-002 06/01/2010

HURON COUNTY; LAPEER COUNTY (east of Hwy. M-53); ST. CLAIR, SANILAC AND TUSCOLA COUNTIES:

	Rates	Fringes
PAINTER.....	\$ 23.79	12.02

FOOTNOTES: Lead abatement work: \$1.00 per hour additional. Work with any hazardous material: \$1.00 per hour additional. Sandblasting, steam cleaning and acid cleaning: \$1.00 per hour additional. Ladder work at or above 40 ft., scaffold work at or above 40 ft., swing stage, boatswain chair, window jacks and all work performed over a falling height of 40 ft.: \$1.00 per hour additional. Spray gun work, pick pullers and those handling needles, blowing off by air pressure, and any person rigging (setting up and moving off the ground): \$1.00 per hour additional. Steeplejack, tanks, gas holders, stacks, flag poles, radio

towers and beacons, power line towers, bridges, etc.: \$1.00 per hour additional, paid from the ground up.

PAIN1803-003 06/01/2019

ALCONA, ALPENA, ANTRIM, ARENAC, BAY, BENZIE, CHARLEVOIX, CHEBOYGAN, CLARE, CRAWFORD, EMMET, GLADWIN, GRAND TRAVERSE, GRATIOT, IOSCO, ISABELLA, KALKASKA, LAKE, LEELANAU, MANISTEE, MASON, MIDLAND, MISSAUKEE, MONTMORENCY AND OGEMAW COUNTIES; OSCEOLA COUNTY (north of Hwy. #10); OSCODA, OTSEGO, PRESQUE ISLE, ROSCOMMON, SAGINAW AND WEXFORD COUNTIES:

Rates Fringes

PAINTER

Work performed on water, bridges over water or moving traffic, radio and powerline towers, elevated tanks, steeples, smoke stacks over 40 ft. of falling heights, recovery of lead-based paints and any work associated with industrial plants, except maintenance of industrial plants.....	\$ 25.39	14.68
All other work, including maintenance of industrial plant.....	\$ 25.39	14.68

FOOTNOTES: Spray painting, sandblasting, blowdown associated with spraying and blasting, water blasting and work involving a swing stage, boatswain chair or spider: \$1.00 per hour additional. All work performed inside tanks, vessels, tank trailers, railroad cars, sewers, smoke stacks, boilers or other spaces having limited egress not including buildings, opentop tanks, pits, etc.: \$1.25 per hour additional.

PLAS0514-001 06/01/2018

ZONE 1: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, SAGINAW, WASHTENAW AND WAYNE COUNTIES

ZONE 2: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

Rates Fringes

CEMENT MASON/CONCRETE FINISHER

ZONE 1.....	\$ 31.47	13.81
ZONE 2.....	\$ 29.97	13.81

PLUM0190-003 05/01/2015

ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GENESEE, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LIVINGSTON, LUCE, MACKINAC, MACOMB, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MONROE, MUSKEGON, NEWAYGO, OAKLAND, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, ST. CLARE, ST. JOSEPH, SANILAC, SCHOOLCRAFT, SHIAWASSEE, TUSCOLA, VAN BUREN, WASHTENAW, WAYNE AND WEXFORD COUNTIES

Rates Fringes

Plumber/Pipefitter - gas
distribution pipeline:

Welding in conjunction with gas distribution pipeline work.....	\$ 33.03	20.19
All other work:.....	\$ 24.19	12.28

TEAM0007-004 06/01/2020

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SAGINAW, SANILAC, SCHOOLCRAFT, SHIAWASSEE, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

Rates Fringes

TRUCK DRIVER

AREA 1		
Euclids, double bottoms and lowboys.....	\$ 28.05	.50 + a+b
Trucks under 8 cu. yds.....	\$ 27.80	.50 + a+b
Trucks, 8 cu. yds. and over.....	\$ 27.90	.50 + a+b
AREA 2		
Euclids, double bottomms and lowboys.....	\$ 24.895	.50 + a+b
Euclids, double bottoms and lowboys.....	\$ 28.15	.50 + a+b
Trucks under 8 cu. yds.....	\$ 27.90	.50 + a+b
Trucks, 8 cu. yds. and over.....	\$ 28.00	.50 + a+b

Footnote:

- a. \$470.70 per week
- b. \$68.70 daily

 TEAM0247-004 04/01/2013

AREA 1: ALCONA, ALGER, ALLEGAN, ALPENA, ANTRIM, ARENAC, BARAGA, BARRY, BAY, BENZIE, BERRIEN, BRANCH, CALHOUN, CASS, CHARLEVOIX, CHEBOYGAN, CHIPPEWA, CLARE, CLINTON, CRAWFORD, DELTA, DICKINSON, EATON, EMMET, GLADWIN, GOGEBIC, GRAND TRAVERSE, GRATIOT, HILLSDALE, HOUGHTON, HURON, INGHAM, IONIA, IOSCO, IRON, ISABELLA, JACKSON, KALAMAZOO, KALKASKA, KENT, KEWEENAW, LAKE, LAPEER, LEELANAU, LENAWEE, LUCE, MACKINAC, MANISTEE, MARQUETTE, MASON, MECOSTA, MENOMINEE, MIDLAND, MISSAUKEE, MONTCALM, MONTMORENCY, MUSKEGON, NEWAYGO, OCEANA, OGEMAW, ONTONAGON, OSCEOLA, OSCODA, OTSEGO, OTTAWA, PRESQUE ISLE, ROSCOMMON, SANILAC, SCHOOLCRAFT, SHIAWASSEE, SAGINAW, ST. CLAIR, ST. JOSEPH, TUSCOLA, VAN BUREN AND WEXFORD COUNTIES

AREA 2: GENESEE, LIVINGSTON, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
Sign Installer		
AREA 1		
GROUP 1.....	\$ 21.78	11.83
GROUP 2.....	\$ 25.27	11.8375
AREA 2		
GROUP 1.....	\$ 22.03	11.83
GROUP 2.....	\$ 25.02	11.8375

FOOTNOTE:

- a. \$132.70 per week, plus \$17.80 per day.

SIGN INSTALLER CLASSIFICATIONS:

GROUP 1: performs all necessary labor and uses all tools required to construct and set concrete forms required in the installation of highway and street signs

GROUP 2: performs all miscellaneous labor, uses all hand and power tools, and operates all other equipment, mobile or otherwise, required for the installation of highway and street signs

 TEAM0247-010 04/01/2018

AREA 1: LAPEER AND SHIAWASSEE COUNTIES

AREA 2: GENESEE, MACOMB, MONROE, OAKLAND, ST. CLAIR, WASHTENAW AND WAYNE COUNTIES

	Rates	Fringes
TRUCK DRIVER (Underground construction)		
AREA 1		
GROUP 1.....	\$ 23.82	19.04

GROUP 2.....	\$ 23.91	19.04
GROUP 3.....	\$ 24.12	19.04
AREA 2		
GROUP 1.....	\$ 24.12	19.04
GROUP 2.....	\$ 24.26	19.04
GROUP 3.....	\$ 24.45	19.04

PAID HOLIDAYS: New Year's Day, Memorial Day, Fourth of July, Labor Day, Thanksgiving Day and Christmas Day.

SCOPE OF WORK: Excavation, site preparation, land balancing, grading, sewers, utilities and improvements; also including but not limited to, tunnels, underground piping, retention, oxidation, flocculation facilities, conduits, general excavation and steel sheeting for underground construction. Underground construction work shall not include any structural modifications, alterations, additions and repairs to buildings or highway work, including roads, streets, bridge construction and parking lots or steel erection.

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Truck driver on all trucks (EXCEPT dump trucks of 8 cubic yards capacity or over, pole trailers, semis, low boys, Euclid, double bottom and fuel trucks)

GROUP 2: Truck driver on dump trucks of 8 cubic yards capacity or over, pole trailers, semis and fuel trucks

GROUP 3: Truck driver on low boy, Euclid and double bottom

 * SUMI2002-001 05/01/2002

	Rates	Fringes
Flag Person.....	\$ 10.10 **	0.00
LINE PROTECTOR (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE)....	\$ 22.89	13.45
LINE PROTECTOR (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE).....	\$ 20.19	13.45
Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES) Group 1.....	\$ 30.52	13.45
Pavement Marking Machine (ZONE 1: GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE) Group 2.....	\$ 27.47	13.45
Pavement Marking Machine (ZONE 2: STATEWIDE (EXCLUDING GENESEE, MACOMB, MONROE, OAKLAND, WASHTENAW AND WAYNE COUNTIES)		

Group 1.....\$ 26.92 13.45

Pavement Marking Machine
(ZONE 2: STATEWIDE (EXCLUDING
GENESEE, MACOMB, MONROE,
OAKLAND, WASHTENAW AND WAYNE)

Group 2.....\$ 24.23 13.45

WORK CLASSIFICATIONS:

PAVEMENT MARKER GROUP 1: Drives or operates a truck mounted
striper, grinder, blaster, groover, or thermoplastic melter
for the placement or removal of temporary or permanent
pavement markings or markers.

PAVEMENT MARKER GROUP 2: Performs all functions involved for
the placement or removal of temporary or permanent pavement
markings or markers not covered by the classification of
Pavement Marker Group 1 or Line Protector.

LINE PROTECTOR: Performs all operations for the protection or
removal of temporary or permanent pavement markings or
markers in a moving convoy operation not performed by the
classification of Pavement Marker Group 1. A moving convoy
operation is comprised of only Pavement Markers Group 1 and
Line Protectors.

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

** Workers in this classification may be entitled to a higher
minimum wage under Executive Order 14026 (\$15.00) or 13658
(\$11.25). Please see the Note at the top of the wage
determination for more information.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave
for Federal Contractors applies to all contracts subject to the
Davis-Bacon Act for which the contract is awarded (and any
solicitation was issued) on or after January 1, 2017. If this
contract is covered by the EO, the contractor must provide
employees with 1 hour of paid sick leave for every 30 hours
they work, up to 56 hours of paid sick leave each year.
Employees must be permitted to use paid sick leave for their
own illness, injury or other health-related needs, including
preventive care; to assist a family member (or person who is
like family to the employee) who is ill, injured, or has other
health-related needs, including preventive care; or for reasons
resulting from, or to assist a family member (or person who is
like family to the employee) who is a victim of, domestic
violence, sexual assault, or stalking. Additional information
on contractor requirements and worker protections under the EO
is available at
https://www.dol.gov/agencies/whd/government-contracts.

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

The body of each wage determination lists the classification and wage rates that have been found to be prevailing for the cited type(s) of construction in the area covered by the wage determination. The classifications are listed in alphabetical order of ""identifiers"" that indicate whether the particular rate is a union rate (current union negotiated rate for local), a survey rate (weighted average rate) or a union average rate (weighted union average rate).

Union Rate Identifiers

A four letter classification abbreviation identifier enclosed in dotted lines beginning with characters other than ""SU"" or ""UAVG"" denotes that the union classification and rate were prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2014. PLUM is an abbreviation identifier of the union which prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. 07/01/2014 is the effective date of the most current negotiated rate, which in this example is July 1, 2014.

Union prevailing wage rates are updated to reflect all rate changes in the collective bargaining agreement (CBA) governing this classification and rate.

Survey Rate Identifiers

Classifications listed under the ""SU"" identifier indicate that no one rate prevailed for this classification in the survey and the published rate is derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As this weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SULA2012-007 5/13/2014. SU indicates the rates are survey rates based on a weighted average calculation of rates and are not majority rates. LA indicates the State of Louisiana. 2012 is the year of survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. 5/13/2014 indicates the survey completion date for the classifications and rates under that identifier.

Survey wage rates are not updated and remain in effect until a new survey is conducted.

Union Average Rate Identifiers

Classification(s) listed under the UAVG identifier indicate that no single majority rate prevailed for those classifications; however, 100% of the data reported for the classifications was union data. EXAMPLE: UAVG-OH-0010 08/29/2014. UAVG indicates that the rate is a weighted union average rate. OH indicates the state. The next number, 0010 in the example, is an internal number used in producing the wage determination. 08/29/2014 indicates the survey completion date for the classifications and rates under that identifier.

A UAVG rate will be updated once a year, usually in January of each year, to reflect a weighted average of the current

negotiated/CBA rate of the union locals from which the rate is based.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour National Office because National Office has responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

=====
END OF GENERAL DECISIO"

**APPENDIX C
PROJECT MANUAL**



**THE CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC SERVICES**

ABONMARCHE PROJECT MANUAL

C-1: EGLE EQUIVALENCY PROJECTS CONTRACT BOILERPLATE LANGUAGE

American Iron & Steel Language

Build America, Buy America Contract Language

Davis-Bacon & Related Acts/Prevailing Federal Wages (**Appendix B**)

Dbe Requirements And Good Faith Efforts Worksheet (**Submit W/ Bid**)

Debarment/Suspension Certification (**Submit W/ Bid**)

C-2: STANDARD SPECIFICATIONS FOR WATER MAIN INSTALLATION

C-3: STANDARD SPECIFICATIONS FOR WASTEWATER SEWER INSTALLATION

C-4: TECHNICAL SPECIFICATIONS AND SPECIAL PROVISIONS

C-5: PROJECT PLANS

2023-2024 Ransom Street Improvements

Bid Reference #: 91300-009.0

APPENDIX C-1:

EMPLOYMENT MATTERS & HIRING

EGLE EQUIVALENCY PROJECTS CONTRACT BOILERPLATE LANGUAGEC-1.1



MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY
Finance Division

EQUIVALENCY PROJECTS CONTRACT BOILERPLATE LANGUAGE

Instructions:

The following is the required standard contract language that must appear in bidding documents of Clean Water State Revolving Fund and Drinking Water State Revolving Fund equivalency projects. Determination of equivalent vs. non-equivalent projects is made on a yearly basis as indicated in the Intended Use Plan (IUP) and will be communicated by your EGLE project manager. If you are unsure whether your project is equivalent, consult with your EGLE project manager.

- [American Iron & Steel Contract Language](#)
- [Build America, Buy America Contract Language](#)
- [Davis-Bacon and Related Acts/Prevailing Federal Wages](#)
- [Labor Standards Provisions for Federally Assisted Projects](#)
- [Disadvantaged Business Enterprise \(DBE\) Requirements](#)
- [Good Faith Efforts \(GFE\) Worksheet*](#)
- [Certification Regarding Debarment, Suspension, and Other Responsibility Matters*](#)

*Bidders should note these sections contain instructions regarding forms/information that must be completed and included with any submitted bid.

If you need this information in an alternate format, contact EGLE-Accessibility@Michigan.gov or call 800-662-9278.

EGLE does not discriminate on the basis of race, sex, religion, age, national origin, color, marital status, disability, political beliefs, height, weight, genetic information, or sexual orientation in the administration of any of its programs or activities, and prohibits intimidation and retaliation, as required by applicable laws and regulations. Questions or concerns should be directed to the Nondiscrimination Compliance Coordinator at EGLE-NondiscriminationCC@Michigan.gov or 517-249-0906.

American Iron and Steel Contract Language

The Contractor acknowledges to and for the benefit of the City of **Kalamazoo** (“Purchaser”) and the Michigan Department of Environment, Great Lakes, and Energy (the “State”) that it understands the goods and services under this Agreement are being funded with monies made available by the Clean Water State Revolving Fund and/or the Drinking Water State Revolving Fund and such laws contain provisions commonly known as “American Iron and Steel (AIS);” that requires all iron and steel products used in the project be produced in the United States (“AIS Requirements”) including iron and steel provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Purchaser and the State that (a) the Contractor has reviewed and understands the AIS Requirements, (b) all iron and steel used in the project will be and/or have been produced in the United States in a manner that complies with the AIS Requirements, unless a waiver of the requirements is approved or the State made the determination in writing that the AIS Requirements do not apply to the project, and (c) the Contractor will provide any further verified information, certification, or assurance of compliance with this paragraph, or information necessary to support a waiver of the AIS requirements, as may be requested by the Purchaser.

Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Purchaser or State to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Purchaser or State resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the State or any damages owed to the State by the Purchaser). While the Contractor has no direct contractual privity with the State, as a lender to the Purchaser for the funding of its project, the Purchaser and the Contractor agree that the State is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the State.

Build America, Buy America Contract Language

The Contractor acknowledges to and for the benefit of the **Kalamazoo** (“Owner”) and the Michigan Department of Environment, Great Lakes, and Energy (the “Funding Authority”) that it understands the goods and services under this Agreement are being funded with federal monies and have statutory requirements commonly known as “Build America, Buy America;” that requires all of the iron and steel, manufactured products, and construction materials used in the project to be produced in the United States (“Build America, Buy America Requirements”) including iron and steel, manufactured products, and construction materials provided by the Contractor pursuant to this Agreement. The Contractor hereby represents and warrants to and for the benefit of the Owner and Funding Authority (a) the Contractor has reviewed and understands the Build America, Buy America Requirements, (b) all of the iron and steel, manufactured products, and construction materials used in the project will be and/or have been produced in the United States in a manner that complies with the Build America, Buy America Requirements, unless a waiver of the requirements is approved, and (c) the Contractor will provide any further verified information, certification or assurance of compliance with this paragraph, or information necessary to support a waiver of the Build America, Buy America Requirements, as may be requested by the Owner or the Funding Authority. Notwithstanding any other provision of this Agreement, any failure to comply with this paragraph by the Contractor shall permit the Owner or Funding Authority to recover as damages against the Contractor any loss, expense, or cost (including without limitation attorney’s fees) incurred by the Owner or Funding Authority resulting from any such failure (including without limitation any impairment or loss of funding, whether in whole or in part, from the Funding Authority or any damages owed to the Funding Authority by the Owner). If the Contractor has no direct contractual privity with the Funding Authority, as a lender or awardee to the Owner for the funding of its project, the Owner and the Contractor agree that the Funding Authority is a third-party beneficiary and neither this paragraph (nor any other provision of this Agreement necessary to give this paragraph force or effect) shall be amended or waived without the prior written consent of the Funding Authority.

Davis-Bacon and Related Acts/Prevailing Federal Wages

P.L. 111-88 requires compliance with the Davis Bacon Act and adherence to the current U.S. Department of Labor Wage Decision. Attention is called to the fact that not less than the minimum salaries and wages as set forth in the Contract Documents (see Wage Decision included herein) must be paid on this project. The Wage Decision, including modifications, must be posted by the Contractor on the job site. The “Contracting Agency” or “Contracting Officer” for Davis-Bacon Wage Decision posters on jobsites is the loan applicant/bond issuer. A copy of the Labor Standards Provisions for Federally Assisted Projects is included and is hereby a part of this contract.

**SEE APPENDIX B
FOR THE APPROPRIATE
PREVAILING WAGE
DECISION(S)**

Labor Standards Provisions for Federally Assisted Projects - 29 CFR Part 5

§5.5 Contract provisions and related matters.

(a) The Agency head shall cause or require the contracting officer to insert in full in any contract in excess of \$2,000 which is entered into for the actual construction, alteration and/or repair, including painting and decorating, of a public building or public work, or building or work financed in whole or in part from Federal funds or in accordance with guarantees of a Federal agency or financed from funds obtained by pledge of any contract of a Federal agency to make a loan, grant or annual contribution (except where a different meaning is expressly indicated), and which is subject to the labor standards provisions of any of the acts listed in Sec. 5.1, the following clauses (or any modifications thereof to meet the particular needs of the agency, *Provided*, That such modifications are first approved by the Department of Labor):

(1) *Minimum wages.* (i) All laborers and mechanics employed or working upon the site of the work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of paragraph (a)(1)(iv) of this section; also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the particular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits on the wage determination for the classification of work actually performed, without regard to skill, except as provided in Sec. 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein: *Provided*, That the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under paragraph (a)(1)(ii) of this section) and the Davis-Bacon poster (WH-1321) shall be posted at all times by the contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

(ii)(A) The contracting officer shall require that any class of laborers or mechanics, including helpers, which is not listed in the wage determination, and which is to be employed under the contract shall be classified in conformance with the wage determination. The contracting officer shall approve an additional classification and wage rate and fringe benefits therefore only when the following criteria have been met:

(1) The work to be performed by the classification requested is not performed by a classification in the wage determination; and

- (2) The classification is utilized in the area by the construction industry; and
- (3) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (B) If the contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and the contracting officer agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by the contracting officer to the Administrator of the Wage and Hour Division, Employment Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (C) In the event the contractor, the laborers, or mechanics to be employed in the classification or their representatives, and the contracting officer do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), the contracting officer shall refer the questions, including the views of all interested parties and the recommendation of the contracting officer, to the Administrator for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise the contracting officer or will notify the contracting officer within the 30-day period that additional time is necessary.
- (D) The wage rate (including fringe benefits where appropriate) determined pursuant to paragraphs (a)(1)(ii) (B) or (C) of this section, shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in the classification.
- (iii) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (iv) If the contractor does not make payments to a trustee or other third person, the contractor may consider as part of the wages of any laborer or mechanic the amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program, Provided, That the Secretary of Labor has found, upon the written request of the contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the contractor to set aside, in a separate account, assets for the meeting of obligations under the plan or program.
- (2) *Withholding.* The **(write in name of Federal Agency or the loan or grant recipient)** shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld from the contractor under this contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working on the site of the

work (or under the United States Housing Act of 1937 or under the Housing Act of 1949 in the construction or development of the project), all or part of the wages required by the contract, the (Agency) may, after written notice to the contractor, sponsor, applicant, or owner, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased.

- (3) *Payrolls and basic records.* (i) Payrolls and basic records relating thereto shall be maintained by the contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working at the site of the work (or under the United States Housing Act of 1937, or under the Housing Act of 1949, in the construction or development of the project). Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found under 29 CFR 5.5(a)(1)(iv) that the wages of any laborer or mechanic include the amount of any costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.
- (ii)(A) The contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit the payrolls to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency). The payrolls submitted shall set out accurately and completely all of the information required to be maintained under 29 CFR 5.5(a)(3)(i), except that full social security numbers and home addresses shall not be included on weekly transmittals. Instead, the payrolls shall only need to include an individually identifying number for each employee (e.g., the last four digits of the employee's social security number). The required weekly payroll information may be submitted in any form desired. Optional Form WH-347 is available for this purpose from the Wage and Hour Division Web site at dol.gov/agencies/whd/government-contracts/construction/forms or its successor site. The prime contractor is responsible for the submission of copies of payrolls by all subcontractors. Contractors and subcontractors shall maintain the full social security number and current address of each covered worker, and shall provide them upon request to the (write in name of appropriate federal agency) if the agency is a party to the contract, but if the agency is not such a party, the contractor will submit them to the applicant, sponsor, or owner, as the case may be, for transmission to the (write in name of agency), the contractor, or the Wage and Hour Division of the Department of Labor for purposes of an investigation or audit of compliance with prevailing wage requirements. It is not a violation of this section for a prime contractor to require a subcontractor to provide addresses and social security numbers to the prime contractor for its own records, without weekly submission to the sponsoring government agency (or the applicant, sponsor, or owner).

- (B) Each payroll submitted shall be accompanied by a "Statement of Compliance", signed by the contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (1) That the payroll for the payroll period contains the information required to be provided under Sec. 5.5 (a)(3)(ii) of Regulations, 29 CFR part 5, the appropriate information is being maintained under Sec. 5.5 (a)(3)(i) of Regulations, 29 CFR part 5, and that such information is correct and complete.
 - (2) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in Regulations, 29 CFR part 3;
 - (3) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (C) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirement for submission of the "Statement of Compliance" required by paragraph (a)(3)(ii)(B) of this section.
- (D) The falsification of any of the above certifications may subject the contractor or subcontractor to civil or criminal prosecution under section 1001 of title 18 and section 231 of title 31 of the United States Code.
- (iii) The contractor or subcontractor shall make the records required under paragraph (a)(3)(i) of this section available for inspection, copying, or transcription by authorized representatives of the Michigan Department of Environment, Great Lakes, and Energy or the Department of Labor, and shall permit such representatives to interview employees during working hours on the job. If the contractor or subcontractor fails to submit the required records or to make them available, the Federal agency may, after written notice to the contractor, sponsor, applicant, or owner, take such action as maybe necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.
- (4) *Apprentices and trainees-* (i) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship Training, Employer and Labor Services, or with a State Apprenticeship Agency recognized by the Office, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by the Office of Apprenticeship Training, Employer and Labor Services or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated above, shall be paid not less than the

applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the jobsite in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeymen hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event the Office of Apprenticeship Training, Employer and Labor Services, or a State Apprenticeship Agency recognized by the Office, withdraws approval of an apprenticeship program, the contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (ii) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed on the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate on the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (iii) Equal employment opportunity. The utilization of apprentices, trainees and journeymen under this part shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR part 30.
- (5) *Compliance with Copeland Act requirements.* The contractor shall comply with the requirements of 29 CFR part 3, which are incorporated by reference in this contract.

- (6) *Subcontracts*. The contractor or subcontractor shall insert in any subcontracts the clauses contained in 29 CFR 5.5(a)(1) through (10) and such other clauses as the (write in the name of the Federal agency) may by appropriate instructions require, and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all the contract clauses in 29 CFR 5.5.
- (7) *Contract termination: debarment*. A breach of the contract clauses in 29 CFR 5.5 may be grounds for termination of the contract, and for debarment as a contractor and a subcontractor as provided in 29 CFR 5.12.
- (8) *Compliance with Davis-Bacon and Related Act requirements*. All rulings and interpretations of the Davis-Bacon and Related Acts contained in 29 CFR parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (9) *Disputes concerning labor standards*. Disputes arising out of the labor standards provisions of this contract shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29CFR parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the contractor (or any of its subcontractors) and the contracting agency, the U.S. Department of Labor, or the employees or their representatives.
- (10) *Certification of eligibility*. (i) By entering into this contract, the contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the contractor's firm is a person or firm ineligible to be awarded Government contracts by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (ii) No part of this contract shall be subcontracted to any person or firm ineligible for award of a Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
- (iii) The penalty for making false statements is prescribed in the U.S. Criminal Code, 18 U.S.C.1001.
- (b) *Contract Work Hours and Safety Standards Act*. The Agency Head shall cause or require the contracting officer to insert the following clauses set forth in paragraphs (b)(1), (2), (3), and (4) of this section in full in any contract in an amount in excess of \$100,000 and subject to the overtime provisions of the Contract Work Hours and Safety Standards Act. These clauses shall be inserted in addition to the clauses required by Sec. 5.5(a) or 4.6 of part 4 of this title. As used in this paragraph, the terms laborers and mechanics include watchmen and guards.
- (1) *Overtime requirements*. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics shall require or permit any such laborer or mechanic in any workweek in which he or she is employed on such work to work in excess of forty hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of forty hours in such workweek.
- (2) *Violation; liability for unpaid wages; liquidated damages*. In the event of any violation of the clause set forth in paragraph (b)(1) of this section the contractor and any subcontractor responsible there for shall be liable for the unpaid wages. In addition, such contractor and subcontractor shall be

liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic, including watchmen and guards, employed in violation of the clause set forth in paragraph (b)(1) of this section, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of forty hours without payment of the overtime wages required by the clause set forth in paragraph (b)(1) of this section.

- (3) Withholding for unpaid wages and liquidated damages. The ***(write in the name of the Federal agency or the loan or grant recipient)*** shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the contractor or subcontractor under any such contract or any other Federal contract with the same prime contractor, or any other federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime contractor, such sums as may be determined to be necessary to satisfy any liabilities of such contractor or subcontractor for unpaid wages and liquidated damages as provided in the clause set forth in paragraph (b)(2) of this section.
- (4) Subcontracts. The contractor or subcontractor shall insert in any subcontracts the clauses set forth in paragraph (b)(1) through (4) of this section and also a clause requiring the subcontractors to include these clauses in any lower tier subcontracts. The prime contractor shall be responsible for compliance by any subcontractor or lower tier subcontractor with the clauses set forth in paragraphs (b)(1) through (4) of this section.
- (c) In addition to the clauses contained in paragraph (b), in any contract subject only to the Contract Work Hours and Safety Standards Act and not to any of the other statutes cited in Sec.5.1, the Agency Head shall cause or require the contracting officer to insert a clause requiring that the contractor or subcontractor shall maintain payrolls and basic payroll records during the course of the work and shall preserve them for a period of three years from the completion of the contract for all laborers and mechanics, including guards and watchmen, working on the contract. Such records shall contain the name and address of each such employee, social security number, correct classifications, hourly rates of wages paid, daily and weekly number of hours worked, deductions made, and actual wages paid. Further, the Agency Head shall cause or require the contracting officer to insert in any such contract a clause providing that the records to be maintained under this paragraph shall be made available by the contractor or subcontractor for inspection, copying, or transcription by authorized representatives of the Michigan Department of Environment, Great Lakes, and Energy and the Department of Labor, and the contractor or subcontractor will permit such representatives to interview employees during working hours on the job.

Disadvantaged Business Enterprises (DBE) Requirements

Prime contractors bidding on this project must follow, document, and maintain documentation of their Good Faith Efforts (GFE), as listed below, to ensure that Disadvantaged Business Enterprises (DBEs) have the opportunity to participate in the project by increasing DBE awareness of procurement efforts and outreach. Bidders must make the following Good Faith Efforts for any work that will be subcontracted.

1. Ensure DBEs are made aware of contracting opportunities to the fullest extent practicable through outreach and recruitment activities. Place DBEs on solicitation lists and solicit DBEs whenever they are potential sources.
2. Make information on forthcoming opportunities available to DBEs. Arrange timeframes for contracts and establish delivery schedules, where the requirements permit, in a way that encourages and facilitates participation by DBEs in the competitive process. Whenever possible, post solicitation for bids or proposals for a minimum of 30 calendar days before the bid or proposal closing date. The DBEs should be given a minimum of 5 days to respond to the posting.
3. Consider in the contracting process whether firms competing for large contracts can be subcontracted with DBEs. Divide total requirements, when economically feasible, into smaller tasks or quantities to permit maximum participation by DBEs in the competitive process.
4. Encourage contracting with a consortium of DBEs when a contract is too large for one DBE firm to handle individually.
5. Use the services and assistance of the Small Business Administration and the Minority Business Development Agency of the U.S. Department of Commerce.

Subsequent to compliance with the Good Faith Efforts, the following conditions also apply under the DBE requirements. Completed Good Faith Efforts Worksheets, along with the required supporting documentation outlined in the instructions, must be submitted with your bid proposal. EPA form 6100-2 must also be provided at the pre-bid meeting. A copy of this form is available on the Forms and Guidance page of the EGLE Water Infrastructure Financing Section website.

1. The prime contractor must pay its subcontractor for work that has been satisfactorily completed no more than 30 days from the prime contractor's receipt of payment from the owner.
2. The prime contractor must notify the owner in writing prior to the termination of any DBE subcontractor for convenience by the prime contractor and employ the Good Faith Efforts if soliciting a replacement contractor.
3. If a DBE contractor fails to complete work under the subcontract for any reason, the prime contractor must employ the Good Faith Efforts if soliciting a replacement contractor.
4. The prime contractor must employ the Good Faith Efforts.

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Good Faith Efforts Worksheet

Bidder: _____

Subcontract Area of Work (one per worksheet): _____

Outreach Goal: Solicit a minimum of three (3) DBEs via email/letter/fax. It is recommended that various sources be used to locate the minimum number of DBEs. The Michigan Department of Transportation (MDOT) website and www.sam.gov registries may be two resources used to find a minimum of three DBEs.

List the DBEs contacted for the above area of work and complete the following information for each.

Company Name	Type of Contract	Date of Contract	Price Quote Received	Accepted or Rejected	If rejected, explain why

Explanation for Not Achieving a Minimum of Three Contacts; you may include a printout of the MDOT and www.sam.gov search results (attach extra sheets if necessary):

MITA DBE Posting Date (if applicable): _____
 (Attach a copy of the DBE advertisement)

Other Efforts (attach extra sheets if necessary):

Please include the completed worksheet and supporting documentation with the bid proposal.

Instructions to Bidders for the Completion of the Good Faith Efforts Worksheet

1. Separate worksheets must be provided for each area of work to be subcontracted out. This includes both major and minor subcontracts.
2. A minimum of three (3) DBEs must be contacted by a verifiable means of communication such as email, letter, or fax for each area of work to be subcontracted out. Copies of the solicitation letters/emails and fax confirmation sheets must be provided with the worksheet.
3. If less than three (3) DBEs exist statewide for the area of work, then provide documentation that other DBE resources were consulted. This may include the MDOT and www.sam.gov registries and an advertisement in a publication. A printout of the website searched (conducted prior to the end of the bid period) must be submitted.
4. Posting solicitations for quotes/proposals from DBEs on the MITA website (www.mitadbe.com) is highly recommended to facilitate participation in the competitive process whenever possible. The solicitation needs to identify the project and the areas of work to be subcontracted out. A copy of the MITA DBE advertisement must be submitted with the Good Faith Efforts worksheet, if used, or a printout of the resulting quotes posted to the MITA website can be submitted with this form as supporting documentation.
5. If the area of work is so specialized that no DBEs exist, then an explanation is required to support that conclusion, including the documentation required in No. 3 above.
6. The date of the DBE contact must be identified, as it is important to document that the DBE solicitation was made during the bid period and that sufficient time was given for the DBE to return a quote.
7. Each DBE firm's price quote must be identified if one was received, or N/A entered on the worksheet if a quote was not received. Copies of all quotes must be submitted with the worksheet.
8. If a quote was received, indicate if it was accepted or rejected. Justification for not accepting a quote and not using the DBE subcontractor must be provided.
9. Under Other Efforts, please indicate additional steps you have taken to obtain DBE contractors and provide the appropriate supporting documentation such as:
 - Follow-up emails, faxes, or letters.
 - Copies of announcements/postings in newspapers, trade publications, or minority media that target DBE firms.

Disadvantaged Business Enterprise (DBE) and Good Faith Efforts (GFE) Requirements Frequently Asked Questions Regarding Contractor Compliance

Q: What is the Good Faith Efforts Worksheet and how is it completed?

A: The worksheet captures efforts by the prime contractor to solicit DBEs for each area of work type that will be subcontracted out. A separate GFE Worksheet must be provided by the prime contractor for each area of work type to be subcontracted out. There are specific instructions that accompany the worksheet that prescribe minimum efforts which bidders must make in order to be in compliance with the DBE requirements.

Q: Can non-certified DBEs be used?

A: While non-certified DBEs can be used, only DBEs, MBEs, and WBEs that are certified by EPA, SBA, or MDOT (or by tribal, state and local governments, as long as their standards for certification meet or exceed the standards in EPA policy) can be counted toward the fair share goal. Proof of certification by one of these recognized and approved agencies should be sought from each DBE.

Q: How does a DBE get certified?

A: Applications to be certified by MDOT can be found at

mdotjboss.state.mi.us/MUCPWeb/eligibilityRequirements.htm

To register with the U.S. Small Business Association visit sba.gov/federal-contracting/contracting-assistance-programs/small-disadvantaged-business

To be certified by EPA, a DBE must first have sought certification through SBA, MDOT, or a tribal, state, or local organization and be unsuccessful in that attempt.

Q: If a bidder follows the MDOT DBE requirements, will the bidder comply with the SRF DBE requirements?

A: No. Federally funded highway projects utilize DBE goals, which require a certain percentage of work be performed by DBE subcontractors. For SRF projects, there is no financial goal. However, there is a solicitation effort goal. Bidders must use Good Faith Efforts for each and every area of work to be subcontracted out to obtain DBEs. The bidders are not required to use DBEs if the quotes are higher than non-DBE subcontractors. There is no required DBE participation percentage contract goal for the SRF. However, if the SRF project is part of a joint project with MDOT, the project can be excluded from SRF DBE requirements (i.e., the Good Faith Efforts Worksheet is not required) as it would be difficult to comply with both programs' requirements.

Q: Should the Good Faith Efforts Worksheet and supporting documentation be submitted with bid proposals?

A: Yes. This is a requirement to document that the contractor has complied with the DBE requirements and GFE. These compliance efforts must be done during the bidding phase and not after-the-fact. It is highly recommended that the need for these efforts and the submittal of the forms with the bid proposals be emphasized at the pre-bid meeting. Failure to show that the Good Faith Efforts were complied with during the bidding process can lead to a prime contractor being found non-responsive.

Q: What kinds of documentation should a contractor provide to document solicitation efforts?

A: Documentation can include fax confirmation sheets, copies of solicitation letters/emails, printouts of online solicitations, printouts of online search results, affidavits of publication in newspapers, etc.

Q: What if no forms are turned in with the bid proposal or forms are blank or incomplete? Should this be cause to determine that the bidder is non-responsive?

A: While the Good Faith Efforts Worksheet is important, it is more critical to confirm that the contractor complied with the DBE requirements prior to bid opening. The owner should contact the bidder as soon as deficiencies are noted for documentation of efforts taken to comply with the DBE requirements. Immediate submittal of the completed forms will be acceptable provided the Good Faith Efforts were made and it is just a matter of transferring information to the forms.

Q: How much time will compliance with GFE require in terms of structuring an adequate bidding period?

A: Due to the extent of the efforts required, a minimum of 30 calendar days is recommended between bid posting and bid opening to ensure adequate time for contractors to locate certified DBEs and solicit quotes.

Q: How does a contractor locate certified DBEs?

A: MDOT has a directory of all Michigan certified entities located at mdotjboss.state.mi.us/MUCPWeb/. Additionally, the federal System for Award Management (SAM) is another place to search and can be found at sam.gov. SAM contains information from the former Central Contractor Registration (CCR) database.

Q: If the bidder does not intend to subcontract any work, what forms, if any, must be provided with the bid proposal?

A: The bidder should complete the Good Faith Efforts Worksheet with a notation that no subcontracting will be done. However, if the bidder is awarded the contract and then decides to subcontract work at any point, then the Good Faith Efforts must be made to solicit DBEs.

Q: If the prime contractor is a DBE, does he have to solicit DBE subcontractors?

A: Yes, the DBE requirements still apply if the prime intends to subcontract work out. GFE must be used to solicit DBEs.

Q: If the area of work is one where there are less than three DBE contractors, how is the contractor to document this?

A: Copies of printouts from MDOT and SAM showing no DBEs and advertisements soliciting quotes for all subcontract areas, including the questionable areas, will be adequate if the dates on the printouts are prior to the bid or proposal closing date.

MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Certification Regarding Debarment, Suspension, and Other Responsibility Matters

The prime contractor must provide a completed *Certification Regarding Debarment, Suspension, and Other Responsibility Matters Form* with its bid or proposal package to the owner.

The prospective participant certifies, to the best of its knowledge and belief, that it and its principals:

- (1) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in transactions under federal nonprocurement programs by any federal department or agency;
- (2) Have not, within the three-year period preceding the proposal, had one or more public transactions (federal, state, or local) terminated for cause or default; and
- (3) Are not presently indicted or otherwise criminally or civilly charged by a government entity (federal, state, or local) and have not, within the three-year period preceding the proposal, been convicted of or had a civil judgment rendered against it:
 - (a) For the commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public transaction (federal, state, or local) or a procurement contract under such a public transaction;
 - (b) For the violation of federal or state antitrust statutes, including those proscribing price fixing between competitors, the allocation of customers between competitors, or bid rigging; or
 - (c) For the commission of embezzlement, theft, forgery, bribery, falsification, or destruction of records, making false statements, or receiving stolen property.

I understand that a false statement on this certification may be grounds for the rejection of this proposal or the termination of the award. In addition, under 18 U.S.C. §1001, a false statement may result in a fine of up to \$10,000 or imprisonment for up to five years, or both.

Name and Title of Authorized Representative

Name of Participant Agency or Firm

Signature of Authorized Representative

Date

I am unable to certify to the above statement. Attached is my explanation.

APPENDIX C-2:

CITY OF KALAMAZOO WATER MAIN SPECIFICATIONS

**STANDARD SPECIFICATIONS FOR WATER MAIN AND SERVICE
INSTALLATION (2021).....C-2.1**

**CITY OF KALAMAZOO
DEPARTMENT OF
PUBLIC SERVICES**

WATER RESOURCES DIVISION



PUBLIC SERVICES DEPARTMENT

WATER RESOURCES DIVISION
415 STOCKBRIDGE AVE.
KALAMAZOO, MICHIGAN 49001-2898
PHONE 269-337-8601
FAX 269-337-8533

**Standard Specifications for
Water Main and Service Installation
2021**



WATER MAIN AND WATER SERVICES

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes furnishing and installing water main systems.
- B. Reconnection of proposed water main and/or water service connections to existing water main and/or water service constructions shall be in conformance with requirements of this Section.
- C. This Section shall include furnishing, excavating, installing, testing, disinfecting, and backfilling all required water main pipe, water service pipes, water main appurtenances, water service, and other work incidental to the water main and/or water service installation unless specifically included under other Items.
- D. This work shall also consist of providing as-constructed plans of the completed work.

1.02 SUBMITTALS

- A. Submittals shall be the responsibility of the Contractor:
 - 1. Shop Drawings for Review:
 - a. Manufacturer's Shop Drawings indicating physical dimensions, and joint details for each size, type, and class of pipe, fittings and specials furnished for the project.
 - 2. Information for the Record:
 - a. Manufacturer's certification indicating that the pipe and joints meet specifications for each production run for each size, type, and class of pipe furnished. The Engineer may request test results to verify certification. Certification documents shall be according to the Source Quality Control of this Section.
 - b. Manufacturer's installation instructions.
 - c. The laboratory shall submit test certifications of pipe ordered tested under "Field Quality Control," of this Section.
 - 3. Engineer may request additional Shop Drawings or Information for the Record as required.
 - 4. **Requests for approved equals must be submitted to the Engineer for review a minimum of two (2) weeks prior to bid.**

1.03 AS CONSTRUCTED RECORD

- A. During construction the contractor shall be required to keep current a set of "as constructed" drawings. Before final payment shall be made, the contractor shall submit for approval to the City of Kalamazoo the complete set of as constructed drawings. Each set of "as constructed" drawings shall be labeled "As Constructed", dated, and contain at a minimum the following information (additional information may be required by the City of Kalamazoo):
 - 1. Note distance between all fittings (Center to Center of Fittings).
 - 2. Note Hydrant to valve, valve to main distances (Center to Center of Fittings).
 - 3. Note the type of bend used, (# of degrees), and the Direction of Bend: (Up or down), (N-S-E-W).

4. Note lengths and locations of restrained joints.
5. Details and profiles of special field situations that relate to the water distribution system shall be included.
6. Dimensional information locating each water distribution system component to real world features, such as property lines, right-of-way lines, and centerlines of roads.
7. On all cul-de-sacs with no center island, measure bends and hydrants to center of cul-de-sac. On all cul-de-sacs with a center island, measure bends and hydrants to center of the roadway.
8. When fittings/hydrants are installed as proposed, please circle the proposed listing.
9. All hydrants shall be noted as to whether or not drip valve plugs were installed.
10. When installing 12 inch or larger valves, (Butterfly Valves), indicate which side of the main the operating nut was placed, as well as gear box style with number of turns to close.
11. The contractor shall complete the service card information including a sketch of the water service installation with dimensions and location of the curb box.
12. Contractor shall GPS all valves, hydrants, fittings, as well a minimum every 3 lengths of pipe for straight runs. DWG files shall be provided to the Engineer upon completion of the project. GPS accuracy shall be subfoot.
13. **All as-built record drawings shall be completed and turned in to the Engineer within 2 weeks from completion of the installation.**

1.04 CONTRACT WORK

- A. Prior to the start of construction, the City of Kalamazoo shall be given the opportunity to provide construction services for any and all portions of the water main construction. The City of Kalamazoo shall submit an estimated cost to perform the work or will issue a bill based on time and material costs. A separate contract with the City of Kalamazoo will be needed for work to be performed by the City of Kalamazoo.
 1. City of Kalamazoo shall perform all water main taps in the water system, unless otherwise directed by the Engineer.
- B. The City of Kalamazoo Department of Public Services must approve the Contractor who will perform water main installation. A reference list of at least five (5) Type 1 supply water main projects completed by the Contractor shall be submitted in support of the Contractor's qualifications. The Department of Public Services maintains a list of Contractors approved for water main installation and can be contacted to receive a current copy of that list.
- C. The Contractor (when hired by the City) or Developer (when the Contractor is hired to perform work by the Developer), shall provide a written statement of warranty (Warranty Bond) for a period of 2 years from the date of **final acceptance** for water main work or **after meter is installed** for water service work. Warranty work shall cover any necessary cost to repair water main or appurtenance leaks and water main or appurtenance leak damage at no cost to the City of Kalamazoo. Final acceptance on all water main and appurtenance work shall not occur until all items have been inspected by the Engineer, passed all required testing, as well as receipt and approval of all as built documents. Additionally, final acceptance on a water service will only be given **once the water meter is installed**.
 1. Water service or water main warranty work shall be completed either a prequalified contractor under the inspection of the City of Kalamazoo, or by City of Kalamazoo field service crews. All warranty work shall be paid for by the Developer or the Contractor.
- D. The Contractor is responsible for field locating all work which has not yet received final acceptance by the City of Kalamazoo. All damage to work that has not received final acceptance is the responsibility of the Contractor.

PART 2 PRODUCTS

All Products shall be supplied new from the manufacturer and certified new from the supplier. No second hand or salvaged material shall be allowed. All products shall be **“Buy American”** unless otherwise specified in this section.

2.01 DUCTILE IRON

A. Ductile Iron (DI) Pipe Specifications:

1. Ductile Iron Pipe shall be manufactured in accordance with American National Standards Institute (ANSI) and American Water Works Association (AWWA) ANSI/AWWA C150/A21.50 and C151/A21.51. Pipe shall be minimum thickness Class 52 pipe. Flanged pipe shall be manufactured in accordance with ANSI/AWWA C 115/A21.15. Pipe through concrete floors or foundations shall be minimum thickness Class 53 pipe.
 - a. Water pipe must be lined with a standard thickness cement mortar lining sealed with a bituminous seal coat in accordance with ANSI/AWWA C104/A21.4, unless otherwise required. The outside of the pipe must be coated with the standard bituminous seal and each length of pipe must be marked with the following information
 - 1) Metal thickness class.
 - 2) Net weight of the pipe without lining.
 - 3) The nominal size.
 - 4) The manufacturer's identifying symbol.
 - b. Underground pipe shall be push on or mechanical joints and above ground pipe shall be flanged joints with gaskets meeting the requirements of ANSI/AWWA C111/A21.11. Nitrile or fluoroelastomer gaskets shall must be used as indicated on the plans and in locations of known or suspected soil or groundwater contamination as necessary. Gaskets provided will be specified based on the type of contamination that is encountered. Each joint shall contain serrated silicon bronze electrical continuity wedges as directed by the Engineer or authorized representative. 4 to 6 inch pipe shall use 2 wedges, 8 to 12 inch pipe shall use 3 wedges, and 16 inch and above shall use 4 wedges.
 - c. Pipe used in conjunction with Horizontal Directional Drilling operations shall be Flex-Ring or TR FLEX joints.

B. Restrained Joints

1. Restrained joints shall meet the requirements of ANSI/AWWA C111/A21.11, and AWWA/ANSI C110/A21.10 or ANSI/AWWA C153/A21.53.
2. Mechanical restrained joints shall be EBAA Iron Megalug series 1100, Romac Romagrip, Ford Series 1400, or approved equal.
 - a. Restraint devices for nominal pipe sizes 4 inch through 54 inch shall consist of multiple gripping wedges incorporated into a follower gland meeting the applicable requirements of ANSI/AWWA C110/A21.10.
 - b. The devices shall have a working pressure rating of 350 psi for 4 to 16 inch, 250 psi for 18 to 48 inch and 200 psi for the 54 inch size. Ratings are for water pressure and must include a minimum safety factor of 2 to 1 in all sizes.

- c. Gland body, wedges and wedge actuating components shall be cast from grade 65-45-12 ductile iron material in accordance with ASTM A536.
 - d. Ductile iron gripping wedges shall be heat treated within a range of 370 to 470 BHN.
 - e. Three (3) test bars shall be incrementally poured per production shift as per Underwriter's Laboratory (U.L.) specifications and ASTM A536. Testing for tensile, yield and elongation shall be done in accordance with ASTM E8.
 - f. Chemical and nodularity tests shall be performed as recommended by the Ductile Iron Society, on a per ladle basis.
 - g. All components shall be manufacture and assembled in the United States.
 - h. Coating for restraint devices shall consist of the following:
 - 1) All wedge assemblies and related parts shall be processed through a phosphate wash, rinse and drying operation prior to coating application. The coating shall consist of a minimum of two coats of liquid thermoset epoxy coating with heat cure to follow each coat.
 - 2) All casting bodies shall be surface pretreated with a phosphate wash, rinse and sealer before drying. The coating shall be electrostatically applied and heat cured. The coating shall be a polyester based powder to provide corrosion, impact and UV resistance.
 - 3) The coating system shall be MEGA-BOND by EBAA Iron, Inc. or approved equal.
3. Push on restrained joint shall be field locking gasket or Flex Ring style as manufactured by US Pipe, McWane, American USA, or approved equal. Field locking or Flex Ring gasket shall match appropriately to the manufacturer of the pipe used.
 4. Use of threaded rods or thrust blocks as a restrained joint shall not be permitted, unless approved by the Engineer.
 5. Restrained flange adapters shall be EBAA Iron Megaflange series 2100 or approved equal.
 - a. Restrained flange adapters shall be made of ductile iron conforming to ASTM A536 and have flange bolt circles that are compatible with ANSI/AWWA C110/A21.10 (125#/Class 150 Bolt Pattern).
 - b. Restraint for flange adapter shall consist of plurality of individual actuated gripping wedges to maximize restraint capability. Torque limiting actuating screws shall be used to insure proper initial set of gripping wedges.
 - c. The flange adapters shall be capable of deflection during assembly or permit lengths of pipe to be field cut to allow a minimum of 0.6 inch gap between the end of the pipe and the mating flange without affecting the integrity of the seal.
 - d. All internal surfaces of the gasket ring (wetted parts) shall be lined with a minimum of 15 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C213. The coating shall meet ANSI/NSF-61. Exterior surfaces of the gasket ring shall be coated with a minimum of 6 mils of fusion bonded epoxy conforming to the applicable requirements of ANSI/AWWA C116/A21.16.
 - e. Restraint Ring coated with MEGA-Bond Restraint Coating System.

C. Ductile Iron Pipe Fittings

1. Fittings, plugs, and gaskets must meet the requirements of ANSI/AWWA C111/A21.11, and AWWA/ANSI C110/A21.10 or ANSI/AWWA C153/A21.53. Cement mortar linings for fittings must meet the requirements of ANSI/AWWA C104/A21.4.
2. Mechanical joints shall be EBAA Iron Megalug series 1100, Romac Romagrip, or approved equal.
3. Restrained flange adapters shall be EBAA Iron Megaflange series 2100 or approved equal.

2.02 Ductile Iron Valves

- A. All underground valves in sizes from 4 inches to 10 inches shall be reduced wall, resilient-seated gate valves for water supply service meeting the requirements of AWWA C 515. Valves shall be American Flow Control Series 2500, Clow model 2638, or EJ Flowmaster Series resilient seated gate valve, Mechanical joint with rubber gaskets (per AWWA/ANSI C 111/A21.11), ductile iron body, stainless steel stem, mechanical joint restraint, and $\frac{3}{4}$ inch tee head bolts. Valves shall open right (clockwise) and be equipped with standard AWWA operating nut. Nut shall be color coded red. Valves shall have a working pressure rating of 250 psi or greater.
1. In lieu of a mechanical joint restraint, American Flow Control Series 2500 valves may be equipped with ALPHA joints.
- B. All underground valves 12 inches and larger shall be rubber-seated butterfly valves meeting the requirements of AWWA C 504. Valves shall be Pratt Groundhog Butterfly Valves, by Henry Pratt Company, Clow, M&H, or Kennedy model 4500, mechanical joint with rubber gaskets (per AWWA/ANSI C 111/A21.11), ductile iron body, mechanical joint restraint, and $\frac{3}{4}$ inch tee head bolts. Valves shall open right (clockwise) and be equipped with standard AWWA operating nut. Nut shall be color coded red. Valves shall have a working pressure rating of 250 psi or greater.
- C. All above ground or in pits/vaults valves between 3 inches and 10 inches shall be rubber seated gate valves meeting the requirements of AWWA C515. Valves shall be American Flow Control Series 2500 Resilient Wedge Gate Valve, Clow model 2638, EJ Flowmaster Series, or approved equal with flanged joint with rubber gaskets (per AWWA/ANSI C 111/A21.11), ductile iron body, stainless steel bolts, nuts and washers, stainless steel stem, and be equipped with a hand wheel to operate. Valves shall have a working pressure rating of 150 psi or greater.
- D. All above ground or in pits/vaults valves 12 inches and larger shall be rubber seated butterfly valves meeting the requirements of AWWA C504. Valves shall be by Henry Pratt Company, Clow, M&H, or Kennedy, flanged joint with rubber gaskets (per AWWA/ANSI C 111/A21.11), ductile iron body, and $\frac{3}{4}$ inch stainless steel bolts, washers and nuts. Valves shall open right (clockwise) and be equipped with standard wheel to operate. Valves shall have a working pressure rating of 150 psi or greater.
- E. All underground valves in sizes from 4 inches to 16 inches used in combination with a tapping saddle shall be reduced wall, resilient-seated gate valves for water supply service meeting the requirements of AWWA C 515. Valves shall be American Flow Control Series 2500, Clow model 2638, EJ Flowmaster Series with one flanged and one mechanical joint ends with rubber gaskets (per AWWA/ANSI C 111/A21.11), ductile iron body, stainless steel stem, mechanical joint restraint, and $\frac{3}{4}$ inch tee head bolts or approved equal. Valves shall open right (clockwise) and be equipped with standard AWWA operating nut. Nut shall be color coded red. Valves shall have a working pressure rating of 250 psi or greater.

- F. All valves used in conjunction with a fire service line shall be Mueller R-2361-6 Outside Screw and Yoke (O.S.&Y.) with sample tap or approved equal. The stem shall be type 304 stainless steel. Sample tap shall have a 4 ½ inch brass nipple, brass ball valve, and brass plug meeting NSF/ANSI Standard 61 requirements. Sample tap shall be ½ inch for 4 inch and smaller valves and ¾ inch for valves larger than 4 inch.
- G. All valves installed using the insertion style method shall be an all stainless steel body Resilient Wedge Gate Valve designed for permanent use in potable water systems. The design will allow the valve to be installed into an existing pressurized pipeline while maintaining constant pressure and service without system shutdown. No restraining devices, restraining fasteners, or transition gaskets shall be required for the installation or operation of the valve. Valves in sizes 4 inches to 12 inches shall be Hydra-Stop Insta-Valve 250 or approved equal. 16 inch valves shall be Hydra-stop Insta-Valve Plus 250 or approved equal.

2.03 HYDRANTS

- A. All fire hydrants shall be American Flow Control or EJ and shall meet the requirements of AWWA C502. Hydrants shall be provided as complete units including hydrant, hydrant marker, pipe, pipe fittings and valve meeting section 2.01, 2.03 and 2.04 requirements. Hydrants shall be supplied for a bury depth of 5.5 feet. The hydrant barrel shall be painted safety yellow by the manufacturer. Hydrant caps and operating nut shall be painted John Deere green by the manufacturer.
 - 1. American Flow Control hydrants shall be 5 ¼ inch Waterous Pacer Traffic Model WB67-250. Hydrants shall be supplied with a 16 inch upper standpipe length. The Hydrant will come equipped with a bronze upper valve washer. In lieu of a mechanical joint restraint, hydrants may be equipped with ALPHA joints.
 - 2. EJ hydrants shall be WaterMaster Model 5BR250 with snow barrel.
- B. Hydrants shall come equipped with a Carrol Drain. Drain piping shall be made of type 304 stainless steel. External port shall have removable cap for flushing hydrant. Carrol Drain assembly shall be constructed so that it is removable when replacement of assembly is necessary.
- C. Hydrants shall have two 2 ½ inch national standard hose connections, 7.5 threads per inch, OD of threads 3 1/16 inch and one 5 inch integral "STORZ" type nozzle connection. Hose nozzle cap nut, weather shield hydrant operating nut, Storz nozzle cap nut, and Carrol Drain cap nut shall be square 15/16 inch at bottom of nut tapered to 13/16 inch at top (Waterous reference #19). The hydrant mechanism shall be on a non-rising stem opening clockwise. Chains shall not be supplied with the hydrant caps.
- D. Hydrants shall be equipped drip valve, tapped for plug. The drip valve system shall be bronze. Draining system shall be positively activated by the main operating rod, meaning the drip valve will open when the hydrant is closed. Hydrant shall be provided with plug removed.
- E. Hydrants shall have a 6 inch shoe with mechanical joint connections in conformance to ANSI/AWWA C115/21.11.

2.04 FIRE HYDRANT MARKER

- A. The fire hydrant sign shall be installed on a galvanized 2 pound sign post.
- B. The fire hydrant sign shall be aluminum 8 inch x 18 inch (MDOT type III-A) with hydrant symbol and down arrow of a reflective material.
- C. Fire hydrant mounted marker whips shall be 4 feet x 3/8 inch solid pultrusion fiberglass shaft, with seven (7) 6 inch bands of E.G. reflective sheeting of alternating lime green and red color.

Marker shall have a single solid stainless steel spring with aluminum threaded insert, and use Zinc coated bolt & mounting hardware.

2.05 TAPPING SLEEVES

- A. Tapping sleeves for size on size taps or 12 inch and larger sleeves:
 - 1. Model shall be American Flow Control series 2800-C, Tyler Union, Smith-Blair series 665, Romac style SST III, Ford style FTSS, Ford MJTS, or approved equal.
 - 2. Ductile Iron Tapping Sleeves.
 - a. Sleeves shall be of construction meeting ASTM A536. Side flange seals shall be O-ring type of round cross-sectional shape.
 - b. All sleeves to include the end joint accessories and split glands necessary to assemble sleeve to pipe.
 - c. Sleeve shall be coated with asphaltic varnish in compliance with NSF-61.
 - 3. Stainless Steel Tapping Sleeves.
 - a. Sleeves shall be 18-8 type 304 Stainless Steel in accordance with AWWA C223.
 - b. Bolts, nuts, and washers shall be 18-8 Type 304 Stainless Steel. Nuts shall be heavy hex, and coated to prevent galling.
- B. Tapping sleeves smaller than 12 inch which are not size on size:
 - 1. Model shall be Smith-Blair series 665, Romac style SST III, Ford style FTSS, or approved equal.
 - 2. Sleeves shall be 18-8 type 304 Stainless Steel in accordance with AWWA C223.
 - 3. Bolts, nuts, and washers shall be 18-8 Type 304 Stainless Steel. Nuts shall be heavy hex, and coated to prevent galling.
- C. Line Stop Tapping Sleeves and appurtenances:
 - 1. Model shall be Hydra-Stop HSF 250 Patriot or approved equal
 - 2. Body shall be type 304 Stainless Steel in accordance with AWWA C223.
 - 3. Blind Flange shall be Epoxy Coated Carbon Steel or type 304 Stainless Steel.
 - 4. Bolts, Nuts and Washers shall be type 304 Stainless Steel.
 - 5. Completion Plug shall be HSF 250 Push and Pin Style, made of reinforced composite polymer.
 - 6. Completion Plug O-ring shall be BUNA-N Rubber
 - 7. Completion Plug Pins shall be SAE Grade 8, Zinc coated to prevent corrosion
 - 8. Completion Pin Plug shall be type 304 Stainless Steel, coated to prevent galling.
 - 9. Flange O-Ring shall be BUNA-N Rubber.
- D. All gaskets shall be Nitrile in compliance with NSF-61.
- E. No special tools shall be required other than standard socket wrench.
- F. Flange end pilot dimensions to be in compliance with MSS-Sp-60.

2.06 AIR RELEASE VALVES

- A. Air Release Valves – All air release valves shall be manufactured per ANSI/AWWA C512-04. Cla-Val Series 36 Combination Air Valves, or approved equal. The valves shall be of the size listed in the plans.
1. The combination air valve shall combine the operating features of both an air and vacuum valve and an air release valve in one housing. The air and vacuum valve portion shall automatically exhaust large quantities of air during the filling of the pipeline and automatically allow air to reenter the pipeline when the internal pressure of the pipeline approaches a negative value due to column separation, draining of the pipeline, or other emergency. The air release valve portion shall automatically release small amounts of air from the pipeline while it is under pressure.
 2. The inlet and outlet of the valve shall have the same cross section area. The float shall be guided by a stainless steel guide shaft and seat drip tight against a synthetic rubber seal. 4 inch and larger valves shall have dual guided shafts of hexagonal cross section and a protective discharge hood.
 3. The float shall be of all stainless steel construction and capable of withstanding maximum system surge pressure without failure. The body and cover shall be concentrically located and of ductile iron and the valve internal parts shall be stainless steel or Buna-N rubber.
 4. All 1 inch and 2 inch valves shall be NPT. All valves 4 inch and larger shall be flanged.
- B. Vent piping shall be 2 inch diameter, with copper piping below grade and galvanized piping above grade.
- C. Air vent screens shall be black PVC, with NPT threaded to match the size of the connection pipe. Screen shall be one-piece 304 Stainless, mesh size 100. Silver reflective tape shall be placed on the vent pipe.
- D. An air release valve sign shall be installed on a galvanized 2 pound sign post.
- E. The valve sign shall be aluminum 8 inch x 18 inch (MDOT type III-A) with valve symbol and down arrow of a reflective material.

2.07 REPAIR SLEEVES

- A. All repair sleeves shall be certified NSF/ANSI 61-G and 372, and be in accordance with AWWA C230. Sleeves without service tap shall be Smith – Blair model 226, PowerSeal model 3121, or approved equal. Sleeves with service tap shall be Smith – Blair model 238, PowerSeal model 3131, or approved equal.
- B. Sleeves shall use Type 304 Stainless Steel hardware in accordance with ASTM A193/A194. Sleeves shall have conductivity feature.
- C. The repair sleeves shall be of the full circle type designed to repair a fully broken (completely separated) pipe and shall be rated for a working pressure of not less than 150 psi. Repair sleeves 12 inches or under in size will have a single joint.
- D. The length of the sleeves shall not be less than 7 ½ inches. Sleeves shall have no less than three (3) guide bolts of the minimum specified length. Sleeves of longer length shall have an additional guide bolt for every two (2) inches of additional band length.
- E. Each sleeve shall consist of a sealing gasket, a non-magnetic stainless steel band with contact buttons protruding through specially prepared gaskets, clamp lugs, bolts and nuts.
- F. No welding will be permitted in the manufacture of stainless steel repair sleeves except for the addition of the tap to repair sleeve.

- G. The lugs shall not be deformed in the process of attachments to the band during assembly or during removal in the field.
- H. The gasket shall be natural rubber, nitrile or approved equal and shall be of the tapered overlap design to give a pressure tight fit on the pipe surface to form a leak tight, permanent seal when the repair sleeve is installed. The gasket shall have a grid pattern to conform pipe surface irregularities.
- I. The gasket shall have a stainless steel bridge plate flush mounted and securely bonded into the gasket during the molding of the gasket.

2.08 POLYETHYLENE ENCASEMENT

- A. Polyethylene encasement must be manufactured using 8 mil thick virgin polyethylene in accordance with ANSI/AWWA C105/A21.10. Provide the tube size recommended by the manufacturer to protect the pipe and fitting sizes. Provide adhesive tape for the polyethylene tube as recommended by the manufacturer. Tape for repairing damage to the polyethylene must have a life expectancy equal to or greater than the life expectancy of the polyethylene.

2.09 STEEL BLOW-OFF PIPE

- A. Steel pipe shall be hot dipped galvanized meeting the requirements of ASTM A53.

2.10 WATER SERVICES AND APPURTENANCES

A. Copper Service Lines

- 1. Copper pipe shall be used for service lines which are $\frac{3}{4}$ inch, 1 $\frac{1}{4}$ inch and 2-inch. All copper services shall conform to AWWA C800. Water service pipe shall be copper meeting the requirements of ASTM B88, type K.
- 2. All appurtenances on copper service lines shall be flare copper connections. Other connections may be used in lieu of flare copper connections if approved by the Engineer prior to installation.

- B. All water service appurtenances shall meet the requirements of AWWA C800 and be from The Ford Meter Box Company, Inc., A.Y. McDonald Mfg. Co., or as approved by the Engineer. All water service appurtenances for 2 inch and smaller are as follows:

1. $\frac{3}{4}$ inch services:

- a. Corporation Stop $\frac{3}{4}$ inch – FB600-3-NL or AY McDonald 74701B NL (3/4 inch)
- b. Service Saddle – Smith-Blair 311(4 to 12 inch water main), Smith-Blair 313 (16 to 24 inch water main), Romac 101U(4 to 12 inch water main), Romac 202SSU (16 to 24 inch water main), Ford F101(4 to 12 inch water main), or Ford F202(16 to 24 inch water main).
- c. Curb Stop (for use when reducing a 1 $\frac{1}{4}$ inch street service to $\frac{3}{4}$ inch yard service) – Ford B21-555-NL, C18-35-NL, and C28-33-NL
- d. Curb Stop (when using $\frac{3}{4}$ inch street service) – Ford B22-333-NL or AY McDonald 76100 NL ($\frac{3}{4}$ inch)
- e. Brass Fittings – All brass fittings such as tees, elbows, caps, nipples and similar items shall be manufactured in the U.S.A.
- f. Couplings – Ford C22-33-NL or AY McDonald 74758 NL ($\frac{3}{4}$ inch)

2. 1 $\frac{1}{4}$ inch services:

- a. Corporation Stop – Ford FB600-45-NL or AY McDonald 74701B NL (1 x 1 $\frac{1}{4}$ inch)

- b. Service Saddle – Smith-Blair 311(4 to 12 inch water main), Smith-Blair 313 (16 to 24 inch water main), Romac 101U(4 to 12 inch water main), Romac 202SSU (16 to 24 inch water main), Ford F101(4 to 12 inch water main), or Ford F202(16 to 24 inch water main).
 - c. Curb Stop – Ford B22-555-NL or AY McDonald 76100 NL (1 ¼ inch)
 - d. Brass Fittings – All brass fittings such as tees, elbows, caps, nipples and similar items shall be manufactured in the U.S.A.
 - e. Couplings – Ford C22-55-NL or AY McDonald 74758 NL (1 ¼ inch)
3. 2 inch services:
- a. Tapping Valve – Ford B11-777-NL
 - b. Service Saddle – Smith-Blair 313, Romac 202S, or Ford F202
 - c. Brass Fittings – All brass fittings such as tees, elbows, caps, nipples and similar items shall be manufactured in the U.S.A.
 - d. Couplings – Ford C44-77-NL
4. Water meters – All water meters shall be Neptune Water Meters. They shall be supplied and installed by the City of Kalamazoo.
- C. All water service appurtenances larger than 2 inch shall be in accordance with section 2.01.
- D. All multiple meter settings with more than two meters excluding the fire meter shall use a fabricated meter manifold. Fabricated manifold shall be manufactured as follows:
- 1. Water manifold shall be made using 304 Schedule 40 Stainless Steel pipe.
 - 2. Inlet and outlets shall be threaded or welded flange. End cap shall be welded flange with a blind flange for future additions.
- E. Conduit used as sleeves shall be schedule 40 PVC or approved by Engineer.

2.11 METER SETTINGS

- A. Interior meter settings shall use components from the following manufactures.
- 1. 1 inch meter – Ford KV23-454W-NL Angle Valve, Ford C38-44-2-625-NL, Brass Nipple, Apollo 94ALF-105-01A Ball Valve or approved equal
 - 2. 1½ inch and 2 inch meter – Ford FV13-777W-NL Angle Valve, Ford CF35-66NL (1 ½ inch), Ford CF 35-77-NL (2 inch), Brass Nipple, Watts LFFBV-3C Ball valve or approved equal.
 - 3. 3 inch and larger- rubber seated gate valves meeting the requirements of AWWA C515. Valves shall be American Series 2500 Resilient Wedge Gate Valve with hand wheel by American or equal flanged joint with rubber gaskets (per AWWA/ANSI C 111/A21.11), and be equipped with a hand wheel to operate, Hymax 874-56-03008812 (3 inch), 874-56-04010812 (4 inch), 874-56-06016312 (6 inch), or 874-56-08021712 (8 inch) Flange Adaptor, and flange to plain end ductile or type 304 stainless steel spool piece.
- B. Exterior meter settings shall use components from the following manufactures.
- 1. 5/8 inch meter – Ford V81-22-33-NL
 - 2. ¾ inch meter – Ford V83-22-33-NL
 - 3. 1 inch meter – Ford V84-22-55-NL Copper setter

4. 1 ½ inch and 2 inch meter – Watts LFFBV-3C Ball Valve or approved equal. Ford CF-77-1-937-NL Meter Flange, Ford C28-77-NL Coupler, and Brass Nipple.
5. 3 inch and larger – All above ground or in pits/vaults valves 3 inches and larger shall be rubber seated gate valves meeting the requirements of AWWA C515. Valves shall be American Series 2500 Resilient Wedge Gate Valve with hand wheel by American or equal flanged joint with rubber gaskets (per AWWA/ANSI C111/A21.11), and be equipped with a hand wheel to operate, Hymax 874-56-03008812 (3 inch), 874-56-04010812 (4 inch), 874-56-06016312 (6 inch), or 874-56-08021712 (8 inch) Flange Adaptor, and flange to plain end ductile or type 304 stainless steel spool piece.

2.12 FIRE SERVICE APPURTENANCES

- A. All fire service appurtenances shall meet the requirements of AWWA/ANSI C110/A21.10, AWWA C115, and be from the following manufacturers.
 1. Double Check Valve Detector Assembly – Zurn Wilkins Model 350DA or 350ADA with meter setting, AMES Colt LFC300 with meter setting, or approved equal. The City of Kalamazoo will supply the 5/8 inch water meter.
 2. Reduced Pressure Zone Assembly – When using a RPZ in lieu of double check valve for a backflow device, a Zurn Wilkins Model 375DA or 375ADA with meter setting, AMES Colt LFC500 with meter setting, or approved equal shall be required. The City of Kalamazoo will supply the 5/8 inch water meter.

2.13 METER BOXES AND VAULTS

- A. All Meter Boxes, Meter Vaults and components shall be from the following manufactures.
 1. Box – Hancor MP NL1 24 0008 - 24 inch x 48 inch or ADS24X48MP 24 inchx48 inch white corrugated meter pit or Engineer approved equal.
 2. Vault – Precast concrete meter vault shall have a 3 inch minimum wall thickness and size shall be depended on number of meters and meter size. The wall shall have steps that are equally spaced 12 inches apart. Meter vault shop drawings shall be submitted to the Engineer and approved for each installation.
 3. Meter Pit Cover – Vestal 32-497, 32-055, 32-104, and 32-046 or approved equal.
 4. Meter Vault Cover – Ford MC-24HH-MB-T

2.14 VALVE BOXES AND VAULTS

- A. Curb Stop Boxes for 1 ¼ inch Service – Bingham & Taylor Fig. No. 4901-B, 94-F with 2 ½” New Style Flush Fit Cover or approved equal. Cover shall be inscribed with the word “water”.
 1. Curb Stop Box extensions shall be cast iron and manufactured by Bingham & Taylor, capable of being mounted directly to the curb stop box.
- B. Gate Valve Box or 2 inch Service Box – the valve box shall be of adjustable length screw type. The valve box shall be a malleable iron casting conforming to subsection 908.03 of the 2012 Michigan Department of Transportation *Standard Specifications for Construction*. This valve box shall either be a two or three piece screw type and the cover shall be inscribed with the word “water.” Valve box 8550 Series (two piece) or 8560 Series (three piece) manufactured by EJ, 4905 size no. 22 manufactured by Bingham & Taylor, or approved equal.
 1. Gate Valve Box extensions shall be cast iron and manufactured by EJ or Bingham & Taylor, capable of being mounted directly to the gate valve box.
- C. Valve Vaults for Insta-Valves – Valve vaults used in conjunction with Insta-Valves shall be constructed with materials as detailed in WA-8-A of the City of Kalamazoo Standard Plans.

They shall be of the diameter specified and in accordance with subsection 823.02 of the Michigan Department of Transportation *Standard Specifications for Construction* for Gate Wells.

- D. Valve Vaults for Air Release Valves – Valve vaults used in conjunction with Air Release Valves shall be constructed with materials as detailed in the latest WA-4-Series or WA-5-Series of the City of Kalamazoo Standard Plans. They shall be of the diameter specified and in accordance with subsection 823.02 of the Michigan Department of Transportation *Standard Specifications for Construction* for Gate Wells.

2.15 BACKFILL MATERIALS

- A. Use materials meeting the requirements of section 902 of the 2012 Michigan Department of Transportation *Standard Specifications for Construction*.

2.16 BELL JOINT LEAK CLAMP

- A. Bell Joint Leak Clamps shall be Smith-Blair Model 274, Ford Meter Box FBC or MJSC style, or approved equal.
 - 1. The bell spigot ring, section connector, and range spacer shall be ductile iron 80-55-06 in accordance with ASTM 536. Fusion bonded epoxy finish shall meet application methods per AWWA C213. Spigot ring design shall be interlocking to allow ease of installation without interrupting the flow of the pipe. The bolt head pocket shall be integral for one wrench installation.
 - 2. Gasket shall be Nitrile Buna-N per ASTM D2000, and certified to NSF/ANSI 61-G & 372.
 - 3. Restraint Rods and Nuts shall be Type 304 Stainless Steel. Restraint Rod shall have rolled threads, and Nut shall be fluoropolymer coated to prevent galling.
- B. Bell encapsulating couplings shall be Ford Meter Box MJBE style.
 - 1. The coupling shall be designed to fully encapsulate the pipe bell. The coupling shall be of split mechanical joint design with independent end seal and side seal gaskets.
 - 2. All welded components shall be constructed with ASTM A 36 carbon steel.
 - 3. The end seal and side seal gaskets shall be virgin NBR formulated for water service. The gaskets shall not require field trimming, cutting or modification.
 - 4. The end seal compression ring shall be manufactured with ductile iron per ASTM A 526 Grade 65-45-12 or ASTM A 36 carbon steel.
 - 5. The coupling shall be coated to an average of 12 mills thickness with a fusion-bonded epoxy that is NSF 61 listed and meeting application methods of AWWA C213.

2.17 COUPLINGS

- A. Wide range couplings shall be Romac Alpha or approved equal.
 - 1. All cast components shall be ductile iron, meeting or exceeding ASTM A 536, grade 65-45-12
 - 2. Grippers shall be ductile iron, meeting or exceeding ASTM A 536, grade 65-45-12.
 - 3. Gaskets shall be SBR compounded for water service per ASTM D2000 and meet NSF61 classification.
 - 4. Bolts and nuts shall be 304 stainless steel.
 - 5. Body shall be epoxy coated, and NSF61 Certified.

2.18 STRUCTURE CASTINGS

- A. All 24 inch structure covers shall be a malleable iron casting conforming to subsection 908.03 of the 2012 Michigan Department of Transportation *Standard Specifications for Construction*. The structure cover shall be series 1040 manufactured by EJ, inscribed with the word "Water".

2.19 STEEL CASING PIPE AND APPURTENANCES

- A. Steel casing pipe shall meet the requirements in accordance with subsection 909.05.D of the 2012 Michigan Department of Transportation *Standard Specifications for Construction* with the exceptions listed below:

- 1. For steel casing pipe jacked under a railroad, replace in its entirety the entry for 30 inch nominal size listed in Table 909-18 with the following:

Nominal OD and Wall Thickness in Inches Jacked in Place Steel Pipe

Nominal Size	Nominal Outside Diameter	Wall Thickness
30	30.000	0.406(a)
<ul style="list-style-type: none"> a. Coated or cathodically protected (0.469 inch minimum if uncoated and unprotected) 		

- 2. Steel casing must have a minimum yield strength of 35,000 pounds per square inch (psi) and be in accordance with ASTM A53, Type E or S, Grade A or B and be designed for Cooper E80 loading requirements. In all cases, the allowable jacking strength capacity of the casing pipe shall be capable of withstanding the maximum jacking forces imposed by the operation.

- B. Stainless steel band spacer shall be Advance Products & Systems model SSIM or approved equal. The bands shall be constructed of circular stainless steel bands, which bolt together forming a shell around the carrier pipe. The spacers shall be designed with runners to support the carrier within the casing and maintain a minimum clearance of 1.00 inches between the casing inside diameter (ID) and the spacer outside diameter (OD). The spacers shall contain four modular runners – two on each half. Stainless steel bolts, nuts and washers shall be supplied with the casing spacers.

The band shall be manufacture of 8 inch wide 14-guage T-304 stainless steel. Abrasion resistant runners, having a minimum length of 7 inches and a minimum width of 1 inch, shall be attached to each band to minimize friction between the casing pipe and the carrier pipe as it is installed. Runner material shall be of glass filled polymer with compression strength of 33,000 psi, flexural strength of 40,000 psi, and tensile strength of 27,000 psi. The ends of thall runners shall be beveled to facilitate installation over rough weld beads or the welded ends of misaligned or deformed casing pipe.

Interior surfaces of the circular stainless steel band shall be lined with PVC, or EPDM alternate, having a minimum thickness of .090 inches with a harness of Durometer "A" 85-90.

Recommended position of the spacers is one placed not more than one foot from each end of the casing and pipe joint. Subsequent spacers shall be placed every 6-8 feet apart thereafter.

- C. Casing end seal shall be Advance Products & Systems model AC or approved equal. Pull-on casing end seals shall be manufactured of 1/8 inch thick neoprene rubber assuring excellent chemical resistance and resiliency. End seals must be effectively used in the temperature range of -20 degrees to 190 degrees Fahrenheit. End seals shall include ½ inch wide T304 stainless steel bandings with 100% nonmagnetic worm gear mechanism. End seals shall be seamless, have vulcanized edges, and can be pulled on at the time of construction.

PART 3 EXECUTION

3.01 CONSTRUCTION

- A. The plans show the locations of existing utilities in accordance with available data. If the work requires precise information on the location of existing utilities, the Contractor will expose utilities shown on the plans to determine the actual locations.

Do not disturb or cut into existing in-service water mains. If the operation of valves in existing water mains is required, notify the City of Kalamazoo a minimum of 3 working days in advance. Coordinate scheduling of water main connections with the City of Kalamazoo. Secure the Engineer's or authorized representative's approval of the schedule before beginning the work.

The City of Kalamazoo will open or close in service valves and provide on-site inspections for all water main and water service installations. The City of Kalamazoo will perform this work for an estimated time and material charge. The cost of opening and closing valves and on-site inspection will need a separate contract with the City of Kalamazoo prior to start of work. This does not apply to work being contracted by the City of Kalamazoo.

Minimize the out of service time for existing water mains. Make connections at night, on Sundays, or on holidays, as conditions require or as approved by the City of Kalamazoo. Minimize interference with the water supply if abandoning existing water mains and incorporating new water mains into the water system.

No trees or permanent structures shall be placed within 10 feet of the centerline of the water main or service line.

3.02 TRENCH EXCAVATION

- A. Excavate water main trenches to the lines and grades shown on the plans in accordance with modifications approved by the Engineer, or authorized representative, or to meet or bypass existing utility structures. Excavate trenches to the depths shown on the plans to provide 5 feet of cover from top of water main to the final grade. Excavate trenches to the widths shown on Michigan Department of Transportation Standard Plan R-83 Series.
- B. Excavate the bottom of the trench to the required grade to allow 6 inches of bedding for the pipe. Do not block under the pipe.
- C. Maintain trenches for water mains free of ground or surface water by pumping or as otherwise approved by the Engineer or authorized representative
- D. Install, and later remove, temporary timber bracing, as required to prevent movement or damage to new or existing water mains or adjacent utilities.
- E. During backfilling, carefully remove supports for sheeted and braced excavations to prevent earth banks or adjacent streets from collapsing.
- F. The Contractor may leave sheeting and bracing in place during backfilling and remove after completing backfilling operations. The Contractor may leave sheeting and bracing in place, if approved by the Engineer and the Contractor cuts it off 5 feet below the ground surface.

3.03 DISPOSAL

- A. Dispose of waste material as specified in section 205 of the 2012 Michigan Department of Transportation *Standard Specifications for Construction*.

3.04 LAYING OF THE PIPE

- A. Install the pipe joint restraint system in accordance with the manufacturer's recommendations, or as directed by the Engineer. Assemble the pipe in the trench. If deflections at joints are required by changes in grade, alignment, or to plumb valve stems, ensure deflections of bell and spigot joints and mechanical fitting joints do not exceed three-quarters of the maximum deflection recommended by the joint manufacturer or that allowed by AWWA C600, whichever is less. Do not store or leave tools or other objects in the pipe.
- B. Provide restrained joints as indicated on the plans. No tie rods or thrust blocks shall be allowed unless approved by the Engineer or authorized representative.
- C. Proper actuation of the gripping wedges of the mechanical joint restraint shall be ensured with torque limiting twist off nuts.
- D. The Contractor shall provide a written statement of warranty (Warranty Bond) for a period of 2 years from the date of **final acceptance (after meter is installed)**. Warranty work shall cover any necessary cost to repair water main or appurtenance leaks and water main or appurtenance leak damage at no cost to the City of Kalamazoo. Final acceptance will only be given **once the water service meter is installed**.
- E. Pipe shall be laid with bell ends facing the direction of laying, unless otherwise directed by the Engineer or authorized representative. When pipe is laid on a grade of 10 percent or greater, the laying shall start at the bottom and proceed upward with the bell ends of the pipe upgrade.
- F. Install silicon bronze wedges between all push-on joint pipes to allow for underground location and thawing of pipeline. 4 to 6 inch pipe shall use 2 wedges, 8 to 12 inch pipe shall use 3 wedges, and 16 inch and above shall use 4 wedges at each pipe joint.
- G. Pipe shall be restrained in accordance with Table 3.1.

Table 3.1 Pipe Thrust Restraint Table

NON-POLYWRAPPED PIPE								
Pipe Size (Inches)	90° Bend	45° Bend	22.5° Bend	11.25° Bend	Tee*	Reducer (One Size)	Reducer (Two Sizes)	Dead End
4	44	18	9	5	42	-	-	42
6	62	26	13	7	59	31	-	59
8	82	34	17	9	78	33	56	78
10	100	42	20	10	94	32	58	94
12	119	50	24	12	110	33	59	110
16	157	65	32	16	143	61	85	143
20	195	81	39	20	173	61	109	173
24	233	97	47	23	204	61	111	204
30	288	120	58	29	246	86	134	246
POLYWRAPPED PIPE								
Pipe Size (Inches)	90° Bend	45° Bend	22.5° Bend	11.25° Bend	Tee*	Reducer (One Size)	Reducer (Two Sizes)	Dead End
4	62	26	13	7	60	-	-	60
6	88	37	18	9	84	44	-	84
8	117	49	24	12	111	47	80	111
10	142	59	29	14	133	45	82	133
12	170	71	34	17	158	47	84	158
16	224	93	45	23	203	87	121	203
20	278	116	56	28	247	87	155	247
24	332	138	66	33	291	87	159	291
30	411	171	82	41	351	123	191	351
* Length of restraint for branch; use the size of the branch Consult Engineer for scenarios not included in table.								

3.05 INSTALLATION OF PIPE INVOLVING HORIZONTAL DIRECTIONAL DRILLING

- A. Horizontal direction drilling (HDD) is a method of trenchless construction using a surface launched steerable drill tool controlled from a mobile drilling frame, and includes a field power unit, drilling fluid mixing system, and mobile spoils extraction system. The work generally consists of three phases:
1. Drilling a pilot hole from the surface or pit at a starting point to an exit pit at the surface beyond the obstacle or area that is to be avoided.
 2. Reaming the pilot hole to make it large enough for the pipeline to be installed.
 3. Pipeline is pulled into place. During the pipe pulling operation, drilling fluid (a bentonite, water, and polymer solution) is injected to stabilize the hole, remove cuttings, and lubricate the pipe.
- B. Coordination

1. Drilling operations shall not interfere with, interrupt or endanger surface features or surface activities.
2. When rock stratum, boulders, underground obstructions, or other soil conditions that impede the progress of drilling operation are encountered, the Contractor and Engineer shall review the situation and jointly determine the feasibility of continuing drilling operations, making adjustments or switching to an alternative construction method.
3. The contractor shall familiarize themselves with the geologic characterization of the soil stratum at the proposed drilling path. The Contractor shall be responsible for informing the Engineer of any changes that are required in the directional drilling procedure due to geologic conditions.
4. Launching and recovery pits shall be as small as practical. Dewatering of pits and excavations shall be done in accordance with the City of Kalamazoo Standard Specifications. When groundwater is encountered, the Contractor shall provide a dewatering system of sufficient capacity to keep any excavation free from water until the backfill operation is in progress. Dewatering shall be performed in a manner that removal of soil particles is held to a minimum. Water from the dewatering system shall be desilted before discharge. Methods of dewatering and desilting, including all costs shall be the Contractor's responsibility and are included in the Horizontal Directional Drilling Water Main pay item.
5. Utilities shown on the plans are approximate. In areas where there is a potential conflict, the Contractor shall dig up and verify the locations and elevations of the utilities at no additional expense to the City. The Contractor shall assume full responsibility for the protection fall utilities, structures and their foundations which may be affected by the work.
6. Before beginning the drilling process, the Engineer shall stake the proposed drill path.

C. Drill Path Survey

1. The Drill path shall be walked in the presence of the Engineer and the Contractor with the guidance system that shall be used for each segment of drill path. The contractor shall locate and record any surface and subsurface magnetic variations or abnormalities and all points of interference, as well as verifying all utility locations and corresponding utility maps. Should any discrepancies arise between utility maps, field locations and guidance system findings, the Contractor shall clarify all discrepancies prior to beginning drilling operations. The drill path survey shall be performed no earlier than two days prior to commencing drilling operations. Provide the Engineer 48-hour notice of drill path survey.

D. Equipment

1. The drilling equipment shall be capable of placing the pipe within the planned line and grade without inverted slopes.
2. The drilling equipment shall be capable of pulling product pipe from either the downstream or upstream pit locations. The equipment must be adequately sized for the application.
3. The guide system shall have the capability of measuring inclination, roll and azimuth. The guidance system shall 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 borehole survey for the purpose of a record drawing. The guidance system shall meet the following specifications:

Inclination:	Accuracy	+0.05
	Range	+90
	Repeatability	+0.02
Roll:	Accuracy	+0.05
	Range	+90
Azimuth	Accuracy	+0.05
	Range	+90

4. Equipment setup requirements at the launch and recover locations shall be determined by the Contractor in accordance with the Plans and shall be submitted to the Engineer prior to commencement of drilling operations.

E. Pilot Hole Drilling

1. The entry angle of the pilot hole and the drilling process shall maintain a curvature that does not exceed the allowable bending radii of the carrier pipe per the manufacturer's recommendations.

F. The contractor shall follow the pipeline alignment as shown on the Plans, within the specification requirements. The location and depth of the drill head in relation to the profile and centerline of the alignment shall be determined at a maximum of ten-foot intervals. Acceptable tolerance shall be 0.5 feet variation from the centerline of the pipe in both vertical and horizontal directions (1-foot tolerance window).

G. In the event of difficulties at any time during drilling operation requiring the complete withdrawal from the tunnel, the Contractor shall either be allowed to withdraw and abandon the tunnel and begin a second attempt at a different location. The alternate locations shall be approved by the Engineer before the Contractor withdraws.

H. Access pits shall be at the beginning and end segments shown on the Plans. Intermittent pits shall be approved by the Engineer prior to proceeding with drilling operations. No intermittent access pits shall be allowed in Railroad Right of Ways.

I. Installing the Carrier Pipe:

1. After the pilot hole is completed, the Contractor shall install a swivel to the reamer and commence pullback operations.
2. Reaming diameter shall not exceed 1.5 times the diameter of the carrier pipe being installed.
3. The carrier 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.
4. Pullback forces shall not exceed the allowable forces for the carrier pipe.

J. The Contractor shall allow sufficient lengths of carrier pipe to extend past the termination point to allow connections to adjacent pipe sections, tees, or fittings. Pulled pipe shall be allowed 24 hours of stabilization prior to making tie-ins. The length of extra carrier pipe shall be at the Contractor's discretion.

K. Field Inspection

1. All pipe sections, specials, and jointing materials shall be carefully examined for defects and no piece shall be laid that is known to be defective. Any defective piece discovered installed shall be removed and replaced with a sound one in a manner satisfactory to the Engineer at the Contractor's expense.
2. Defective material shall be marked with an "X" in pink paint and shall be removed from the job site.

L. Drilling Fluid Containment and Disposal Requirements

1. The contractor shall contain, handle, and dispose of drilling fluids in accordance with the following requirements:
 1. All drilling fluid and fluid additives shall be disclosed, and Material Safety Data Sheets (MSDS) shall be provided to the permit agency and the Engineer upon request.
 2. Excess drilling fluid shall be confined in a containment pit at the entry and exit location until recycled or removed from the site.
 3. Precautions shall be taken to ensure that drilling fluid does not enter the roadways, streams, municipal storm or sanitary sewer lines, and/or any other drainage system or body of water.
 4. When installing below railroads, vents shall be installed on either side of the railroad tracks to direct any excess drilling fluid to a containment area and to prevent unintended surfacing of drilling fluid within the Railroad Right of Way.
 5. Unintended surfacing of drilling fluid shall be contained at the point of discharge and recycled or removed from the site.
 6. Drilling fluids that are not recycled and reused shall be removed from the site and disposed at an approved disposal site.
 7. Drilling fluids shall be completely removed from the construction site prior to backfilling or restoring the site.

3.06 ABANDONING WATER MAINS

- A. Remove and dispose of abandoned pipe, gate boxes, or other appurtenances, as necessary for placement of a new water main at no additional cost to the City of Kalamazoo. Remove portions of gate boxes to at least 3 feet below the pavement surface under the road, and to at least 12 inches below the planned grade outside the road. If the Engineer determines abandoned mains may remain in place, cap the end of pipe with cap and megalug or as directed by the Engineer or authorized representative. If shown on the plans or directed by the Engineer or authorized representative, fill abandoned water mains with non-structural flowable fill.

3.07 VALVES

- A. Prior to installation, all valves shall be fully operated open and close to verify its functionality and number of turns. Set and join valves to the water mains as required for cleaning, laying, and jointing the required type of pipe, as shown on the plans. Install valves as required by the contract, or as approved by the Engineer. Place the valve stems plumb. Install valves to not bear on the pipe. Install anchor coupling with valves installed on tees or crosses, with swivel gland located on the valve side of the anchor coupling.
- B. When installing 12 inch and larger valves (Butterfly Valves), the operating nut shall be located on the side of the valve furthest from the centerline of the roadway, unless otherwise directed by the Engineer.

3.08 LIVE TAPS TO IN SERVICE WATER MAINS

- A. Prior to tapping of the main contractor shall disinfect all pipe, appurtenances, tapping machine with chlorinated water.
- B. Contractor shall install all necessary tapping appurtenances according to manufacturer's recommendation.
- C. Contractor shall use equipment which allows the tapping machine to rinse out metal shavings and tap water main per manufacturer's recommendations. No tap 4 inches or larger shall be allowed within 4 feet from any joint, fitting, or exiting tap regardless of location of tap. 1 ¼ inch taps located within 10 feet of previous tap shall be offset 15 degrees.
- D. Once tapping is complete Contractor shall disinfect all exposed water main and appurtenances with chlorinated water.

3.09 VALVE BOXES.

- A. Provide valve boxes that do not transmit shock or stress to the valve. Place valve boxes plumb over the operating nut of the valve, with the box cover flush with the pavement, or as approved by the Engineer or authorized representative. Provide firm support for valve boxes.
- B. Valve boxes shall be installed, centered and plumbed over the operating nut of the gate valve. The area around the valve box shall be back-filled with Granular Material Class II placed in layers not to exceed 12 inches, and thoroughly compacted to the required density. The Contractor shall take due care to prevent the box from shifting during backfilling operations. The tops of the valve boxes shall be flush with the established pavement or ground surface.

3.10 ADJUSTING OR RECONSTRUCTING WATER SHUT OFFS OR VALVE BOXES

- A. Adjust and reconstruct water shutoffs or valve boxes to the final grade or as approved by the Engineer or authorized representative. Replace shutoff or gate box materials damaged during adjustment or reconstruction, as determined by the Engineer, or authorized representative, at no additional cost to the City of Kalamazoo.

3.11 WATER SERVICES

- A. Water Services shall not be connected to the water main until approved by the Engineer or authorized representative.
 - 1. The standard size for all new services shall be 1 ¼ inch. The property owner/developer may request a larger size if needed.
 - 2. ¾ inch service materials may only be used when performing repairs or partial replacements of an existing ¾ inch service, or when replacing the yard service of a ¾ inch service. When replacing a complete street side service of a ¾ inch service, a new 1 ¼ inch tap will be completed, new 1 ¼ inch street service line installed, and reduced down at the curb shut off per section 2.10.
- B. Tap water main per section 3.08.
- C. When more than two meters excluding the fire meter are required to be set on a single service line, a fabricated meter manifold shall be installed.
- D. Water Services 2 inch and Smaller
 - 1. Construct services from the distribution main to the water meter. Lay services in a straight line perpendicular to the water main unless approved by the Engineer or authorized representative. Construct service with a continuous piece of copper from the corporation stop to the curb stop and curb stop to the water meter unless

approved by the Engineer or authorized representative. Services over 300 feet will require an exterior meter setting (meter pit).

2. All couplings shall be located as close to the water main as possible, but outside roadway unless approved by the Engineer.
3. The use of thread sealant shall be not be allowed on flare fittings.
4. No splices shall be allowed for 1 ¼ inch or smaller yard services 90 feet and shorter in length.
5. Tap and curb shut off locations shall be no closer than 5 feet to edge of driveways. If a service is required to be abandoned due to improper location, service shall be fully abandoned at the water main tap location and new service installed the developer's expense. Corporation stop shall be shut off, copper piping removed, and copper disc installed on the corporation stop.
6. If finish grade changes from plan grade after installation of service, curb shutoff shall be adjusted to 5 foot bury depth at the developer's expense.
7. When the street service is installed separately from the yard service a copper disk shall be installed on the yard side of the curb valve per the manufactures recommendations as approved by the Engineer or authorized representative.

E. Water Services Greater than 2 inch

1. For services entering a building with no basement, install the stand pipe flange 12 inch from the finished floor elevation and 6 to 12 inches away from any walls. Install the flange pipe so two bolt holes are parallel from each wall (two hole). For services entering a building with a basement or into a concrete vault, install the stand pipe flange 6 to 12 inches off the wall. Install the flange pipe so that two bolt holes are parallel to the floor, normal to the wall. For all services entering a building, the service line shall be located in room located on an outside wall of the building, with enough room to maintain the service.
2. Contractor shall complete installation of service prior to pressure testing and disinfection. The Contractor shall hydrostatic test the complete fire service from the nearest outside valve to first valve (OS&Y) before installing the fire check valve per section 3.22. Service shall be cleaned, flushed and tested per section 3.23. No connection shall be made to these services until after pressure test is complete and consecutive negative bacterial test results have been received in accordance with sections 3.22 and 3.23 of this specification, and the water main approved by the Engineer or authorized representative.
3. No adapter flange or grooved pipe joint shall be used on any portion of the service to be maintained by the City of Kalamazoo, with the exception of the meter side of an OS&Y fire service valve.
4. For service lines with multiple meter settings, a valve the same size as the incoming service line shall be installed prior to the tee or manifold. If one of the meter settings is for a fire service, the valve shall be an OS&Y valve in accordance with section 2.02.F.

F. Construct the service pipe with at least 5 feet of cover, unless Engineer or authorized representative requires additional depth.

G. Make all service connections, and transfers. Maintain and protect, at no additional cost, existing service connections requiring transfer, but not shown on the plans, until reconnection or disposal.

- H. If relocating a portion of water service, shut down the water service by method approved by the Engineer or authorized representative.
- I. Service lines entry points into the structure shall be sealed with hydraulic cement or mastic putty and oakum to prevent groundwater infiltration. For ductile iron pipe services, link seals should be used as the preferred method.
- J. FIRE SERVICES
 - 1. The Contractor shall notify the Engineer or authorized representative a minimum of 3 working days prior to flushing the fire service or testing the fire system capacity.
 - 2. All fire services shall have an OS&Y valve meeting the requirements of 2.02.F installed. The sample tap on the OS&Y Valve shall be installed on the downstream side of the valve.
- K. INTERIOR METER SETTINGS (PREFERED)
 - 1. Interior valve and meter inlet connection shall be installed by the Contractor in accordance with the Engineer, or authorized representative's recommendations and final approval.
 - 2. The meter setting shall be located in a heated portion of the building. The meter setting shall not be located in a crawl space, above electrical appliance, or near an electrical panel. A clear and unobstructed access to the meter of not less than 24 inches by 24 inches shall be provided.
 - a. 1 ¼ meter settings must be placed in basements. Meter setting shall be placed in the front of the building facing the street or within three feet of the front on the side unless otherwise approved by the Engineer or authorized representative. Water Services shall not be placed under footings. If service enters house under the porch and the porch footing extends below water service, a 2 inch PVC sleeve will be required.
 - b. A ½ inch schedule 40 PVC conduit, or larger, shall be installed from the meter setting to the remote reading point. There shall be no more than 75 feet of conduit between pull boxes. There shall be no more than four (4) 90-degree bends between pull boxes. All pull boxes must be installed no more than 96 inches above the floor. Pull boxes shall not be installed in attics or crawl spaces.
 - 3. The City of Kalamazoo will install the meter, readout, readout wire, copper ground wire, outlet meter connection and valve.
- L. EXTERIOR METER SETTINGS
 - 1. Exterior meter settings shall be installed by the Contractor according to the Engineer's or authorized representative's recommendations, and in accordance with City of Kalamazoo Standard Plans. Meter settings will be required for services greater than 300 feet, slab on grade, crawl spaces, where minimum 5 foot bury depth cannot be maintained, and other reasons. Contractor shall verify proper meter location with the Engineer prior to construction.
 - 2. Meter boxes or vaults shall not be installed in any street, alley, parking area, driveway, or sidewalk. Major landscaping (shrubs, boulders, etc.) and structures (retaining walls, fences, buildings, etc.) shall not be placed within seven and a half (7.5) feet or trees shall not be planted within ten (10) feet of any meter box or vault, unless otherwise directed by the Engineer.

3. The ground surrounding meter boxes, pits and vaults shall slope away from the lid at a minimum grade of 2%
4. No plumbing or electrical connections will be allowed inside the meter box or vault, unless otherwise directed by the Engineer.
5. All tees, connections, and couplings shall be a minimum of five (5) feet downstream from the meter box or vault wall on the outlet side. Tees and connections shall not be installed between the curb stop and the meter setter or copper horn.
6. Meters shall be installed by the City of Kalamazoo upon inspection and acceptance of the meter setting.
7. Meter boxes shall be used for all 1 inch exterior meter settings. The Contractor shall install meter boxes to horizontal location and to final grade as determined by grade stakes. Meter boxes shall be installed 5 feet outside the right of way in private property. All work shall be in accordance with the current WS-8 of the City of Kalamazoo Standard Plans.
8. For services 1 ¼ inch and smaller, curb shutoffs shall be located in the right of way, centered in the curb lawn area, or as directed by the Engineer.
9. The Contractor shall install meter vaults for 1 ½ inch and larger meter settings.
10. Meters shall be installed by the City of Kalamazoo upon inspection and acceptance of the meter setting.

3.12 WATER MAINS, CUT AND PLUG

- A. All work related to water main, cut and plug shall be in accordance with section 3.06.A. If the plans show cutting and plugging water mains, arrange for the City of Kalamazoo to shut down the main. Remove the section of pipe and plug the water main as shown on the plans or as approved by the Engineer or authorized representative. Construct the required restraint as directed by the Engineer or authorized representative.

3.13 FIRE HYDRANTS

- A. Set fire hydrants at the locations shown on the plans and in accordance with City of Kalamazoo standard plans and manufacturer's recommendations or as coordinated with the City of Kalamazoo. When installed, the hydrant shall be located on the side of the water main furthest from the centerline of the roadway, unless otherwise directed by the Engineer. Equip the hydrant with auxiliary valves, as shown on the plans. Stand hydrants plumb, with side nozzles parallel to the curb, and with the pumper nozzle normal to the curb, unless otherwise directed by the Engineer. Place the nozzles at the height specified by the City of Kalamazoo.
- B. For all gate valves connected adjacent to a tee or hydrant, the anchor between the fitting or hydrant and the valve shall be a 6 inch by 13 inch swivel by solid adapter with swivel gland. The swivel gland shall be located on the hydrant side of the solid adapter.
- C. Install a valve box over hydrant valve in accordance with section 3.09.
- D. Hydrants shall have a protective cover placed over hydrants prior to backfilling to ensure the hydrant is not damaged. If hydrant is damaged, the contractor shall repair or replace the hydrant at no cost to the City.
- E. If site conditions are such that it is not desirable for hydrant drain into the surrounding soil (i.e. when hydrant has less than 10 feet of separation from a sewer, high ground water, impervious or contaminated soils, etc.), hydrant drip valve plug(s) shall be installed by the Contractor onsite. Final determination on drip valve plug installation shall be made by the

Engineer or his representative. As constructed records shall be noted whether or not the drip valve plug was installed.

3.14 FIRE HYDRANT MARKER

- A. The sign shall be located between the hydrant and curb and offset from the pumper nozzle, or as directed by the Engineer. The sign shall be placed 3 feet away from the hydrant. The sign shall be single sided or double sided as directed by the Engineer or authorized representative. The sign shall have an installed height to the bottom of the sign of 7 feet above the final grade in areas with sidewalk and 5 feet above the final grade in areas without sidewalk.
- B. A fire hydrant mounted whip may be installed in addition to fire hydrant sign if approved by the Engineer. Fire hydrant whip shall be mounted to the fire hydrant opposite the pumper nozzle in accordance with the manufacturer's specifications.

3.15 FIRE HYDRANT REMOVAL

- A. If the plans show removal of a fire hydrant, remove the entire hydrant assembly, including the following:
 - 1. Auxiliary gate valve and box, unless otherwise approved by the Engineer or authorized representative.
 - 2. Internal valve assembly;
 - 3. Top bonnet;
 - 4. Standpipe; and
 - 5. Hydrant inlet body, unless otherwise approved by the Engineer.
- B. If the City of Kalamazoo approves leaving the auxiliary gate valve and box in place, remove to at least 3 feet below the pavement surface under the road, or at least 12 inches below planned grade outside the road.
- C. Stockpile the removed material at a location accessible to the City of Kalamazoo. The City of Kalamazoo will maintain ownership of the hydrant, and will remove the assembly from the project site

3.16 RELOCATING FIRE HYDRANTS

- A. If the plans show relocating a hydrant, arrange for the City of Kalamazoo to shut down the hydrant auxiliary valve. Remove the hydrant and reinstall at the required location. Reconnect the hydrant to the water main by shutting down the main, tapping a new hydrant outlet, or using the existing outlet. Install piping as required. If the relocated hydrant does not pass testing the hydrant shall be replaced with new at no cost to the City of Kalamazoo.

3.17 MISCELLANEOUS FITTINGS

- A. Install the following at the locations shown on the plans and in accordance with good construction practices and manufactures recommendations:
 - 1. Elbows,
 - 2. Tees,
 - 3. Corporation stops,
 - 4. Blow offs,
 - 5. Pipe adapters,
 - 6. Pipe couplings,

7. Retaining glands, and
8. Other miscellaneous fittings.

3.18 AIR RELEASE VALVES AND VAULTS

- A. Construct air release valves and vaults in accordance with the current WA-4-Series and WA-5-Series of the City of Kalamazoo Standard Plans.
- B. When installing the air release valves in conjunction with new water main construction, the contractor shall use ductile iron fittings.
- C. When installing the air release vaults as a retrofit to existing water main, live taps may be performed as directed by the engineer.

3.19 BACKFILLING AND COMPACTING

- A. Backfill and compaction shall be in accordance with Michigan Department of Transportation Standard plan for utility trenches R-83-Series.
- B. Backfilling Under Existing Conduits – Where it is necessary to undercut or replace existing utility conduits and/or service lines, the excavation beneath such lines shall be backfilled the entire length with granular bedding material tamped in place in 6-inch layers to the required density. The granular bedding shall extend outward from the spring line of the conduit a distance of 2-feet on either side and thence downward at its natural slope.
- C. Backfilling with Excavated Material – Unless otherwise specified or directed, material excavated in connection with the work shall be used for backfilling and other filling purposes, if it meets all requirements given elsewhere in this specification.
- D. Backfill Immediately Following Inspection – All trenches and excavations shall be backfilled immediately after pipe is laid therein, unless otherwise directed by the Engineer or authorized representative. Under no circumstances shall water be permitted to rise in un-backfilled trenches after pipe has been placed.
- E. Service leads shall not be backfilled until the pipe ends are referenced and the Engineer or authorized representative has measured the pipe for payment.
- F. Backfilling around and over structures and pipes shall be carefully done by hand and tamped with suitable tools of approved weight to a point 1-foot above the top of pipe. Selected material or, where specified or ordered by the Engineer, special backfill material shall be used in this area. The material shall be placed in uniform layers not exceeding 6-inch in depth up each side. Each layer shall be placed, then carefully and uniformly tamped to the specified density so as to eliminate the possibility of lateral displacement of pipe or structure.
- G. Backfilling by Machinery – After the backfill has been placed and compacted around the boxes and pipe to a height of 1-foot above the top. The remainder of the trench may be backfilled by machine. The backfill material shall be deposited in horizontal layers and each layer shall be thoroughly compacted to the specified density by approved methods before a succeeding layer is placed. In no case will backfill material from a bucket be allowed to fall directly on a structure or pipe and in all cases the bucket must be lowered so that the shock of the falling material will not cause damage.

3.20 COMPACTION REQUIREMENTS

- A. Compact each layer to 95% (90% if outside the influence of the roadway) maximum density as tested by the Michigan Department of Transportation Density Testing and Inspection Manual.

3.21 COMPACTION TEST

- A. Trenches and excavation around structures shall be backfilled and consolidated in layers, as specified, to the existing ground surface. Compaction tests shall be performed on each layer immediately after compaction.
- B. Initial test series for each type of backfill material shall be continued until the method of consolidation employed has proven to attain the required compaction. Any change in the proven method of consolidations will require additional testing and field verification of compaction.
- C. Subgrade below pavements, curbs, sidewalks, and structures shall be consolidated as specified. Compaction tests shall be performed to verify specified consolidation.

3.22 HYDROSTATIC TESTING

- A. Perform hydrostatic testing of water mains in accordance with AWWA C600.
- B. Ensure City of Kalamazoo personnel witness pressure testing. Give the City of Kalamazoo personnel at least 1 full working day notice before testing.
- C. Provide the personnel, temporary timber bracing, plugs, test pumps, temporary connections to the Municipal water system, and any other required apparatus. Provide the water for hydrostatic testing if not available from the City of Kalamazoo. Water must be pumped from a measurable source in order to determine testing allowance water.
- D. Before applying test pressure, expel air from the pipe in increments of no greater than 1,000 feet. Pressure test each section of water main. If the Contractor chooses not to pressure test against an existing valve, a new valve may be installed at the expense of the Contractor.
- E. Pipe shall be pumped with water to a minimum test pressure of 150 pounds per square inch (psi) at the highest point of elevation to begin test. Test shall last for at least 2 hours, with a maximum drop of pressure of 5 psi. If the pressure drop is greater than 5 psi but less than 20 psi, a testing allowance water test shall be performed. Testing allowance water, as measured by the quantity of water pumped into the pipe to attain the pressure at which the test began must not exceed the testing allowance.
- F. Testing allowance water is determined using the following formula

$$L = \frac{SD\sqrt{P}}{148,000}$$

Where

- L= testing allowance water in gallons per hour
- S= length of pipe in feet
- D= actual pipe diameter in inches, and
- P= 150 psi

- G. If testing allowance water is above the allowable limit occurs during hydrostatic testing, remove backfill to expose pipe and repair the joints. Repeat testing after repairs are complete. If multiple leaks occur the contractor may be required to reinstall main at Contractors expense.
- H. Correct visible leaks regardless of the amount of leakage. Replace faulty pipes, fittings, gate valves, or other accessories disclosed by testing. Repeat the test until the pipes, fittings, gate valves, and other accessories meet the requirements.

3.23 DISINFECTION, FLUSHING, AND BACTERIOROLOGICAL TESTING

- A. Disinfect the water main in accordance with AWWA C651 and applicable Michigan Department of Environment, Great Lakes, and Energy (EGLE) regulations after successful hydrostatic testing.
- B. Disinfect and flush new, and portions of existing, water mains as required by the EGLE.
- C. Use blow offs, fire hydrants, or other means as shown on the plans or approved by the Engineer, or authorized representative, to flush water mains in accordance with AWWA C651, with a velocity of at least 3 feet per second. Provide hoses and other equipment and arrange a means of disposing of the water without damaging the work or adjacent property.
- D. Use the continuous feed method with chorine added simultaneously with the water. Add chlorine or liquid hypochlorite to meet the requirement of at least 25 milligrams per liter of chlorine. Slowly add the water to the main and allow it to stand for at least 24 hours. At the end of the 24-hour period, ensure the chlorine residual is a minimum of 10 milligrams per liter. If not met, re-chlorinate and flush the water main until a minimum 10 milligrams per liter residual remains after 24 hours.
- E. After completing disinfection, initially flush the water mains with water at a velocity of at least 3 feet per second to replace the entire volume of chlorinated water in the pipeline. After initial flushing, perform final flushing until the residual chlorine content meets the standard level for the water distribution system. The City of Kalamazoo may require a waiting period after flushing and before bacteriological sampling.
- F. Dispose of chlorinated water in accordance with applicable state and local requirements. If necessary, apply a reducing agent to the water to neutralize the chlorine and create a chlorine residual of no greater than 1 ppm. Dechlorination shall be in accordance with AWWA C655.
- G. After flushing, perform bacteriological testing in accordance with AWWA C651 and EGLE requirements. Test chlorine residuals before taking each bacteriological sample. Ensure the chlorine residual is less than 1.5 milligrams per liter before taking a bacteriological sample. The City of Kalamazoo will collect samples from each branch of pipe in the presence of the Engineer, or authorized representative, and contractor personnel. The City of Kalamazoo will be responsible for the transportation of the samples to a State of Michigan approved lab for testing. Two consecutive bacteriologically safe tests at 24-hour intervals for each section of pipe are required. Acceptable tests are negative for bacteria and as otherwise defined by AWWA C651 and EGLE regulations.
- H. If a bacteriological test fails, repeat disinfection, flushing, and testing.
- I. Pressure and chlorination taps shall be removed within one business day of passing tests, so main can be activated.

3.24 POLYETHYLENE ENCASEMENT

- A. Polyethylene encasement will be required for all ductile iron installations when the soil test evaluation is greater than or equal to 10 points based as indicated in AWWA/ANSI C105/A21.5 or as directed by the Engineer. Sampling of the soils is to be completed by the developer or municipality responsible for the installation.
- B. Install polyethylene encasement on water mains and fittings installed through concrete floor and foundations and as indicated on the plans in accordance with the manufacturer's installation instructions and AWWA/ANSI C105/A21.10. Appropriately sized polyethylene encasement shall be used so that there are no longitudinal splices. This may require using one or more size larger diameter encasement than the pipe installed.

- C. Polyethylene encasement shall be required for all installations when groundwater is detected in the utility trench.
- D. Polyethylene encasement shall be required for all directional drilling installations involving ductile iron pipe.

3.25 WATER INFRASTRUCTURE IN STEEL CASING

- A. Work shall be performed in accordance with section 401 of the Michigan Department of Transportation *Standard Specifications for Construction* and as detailed herein. In all cases, the Contractor shall submit a work plan detailing the following:
 - 1. Means and methods for bracing and shoring;
 - 2. Methods of maintaining and adjusting line and grade;
 - 3. Drilled/bored diameter;
 - 4. Drill hole stabilization procedures;
 - 5. Size and location of the auger head relative to the casing;
 - 6. Methods of dealing with cobbles/boulders and obstructions;
 - 7. Estimated jacking thrust required;
 - 8. Method of monitoring casing elevation;
 - 9. Thrust block design calculations;
 - 10. Record keeping system to document casing advance and jacking pressures;
 - 11. Grouting procedures;
 - 12. Temporary dewatering measures and;
 - 13. Mitigation procedures if sinkholes or settlement above the pipe occurs or excessive movement of the settlement monitors is observed.
- B. Minimum Allowable Depths.
 - 1. The minimum allowable depth of the Horizontal Auger Bore (HAB) installed casing pipe shall be in accordance with Table 3.2

Table 3.2 Minimum Allowable Depths Table	
Location	Minimum Depth
Base of Rail	6 Feet
Existing Ground	5 Feet
Roadway	5 Feet
Ditch Flowline	5 Feet

- C. Access Pits.
 - 1. Excavate jacking and receiving pits as necessary. Provide and install all sheeting, shoring, bracing and any other earth retention measures in accordance with section 704 of the Michigan Department of Transportation *Standard Specifications for Construction*. Provide site drainage and subsurface dewatering and other items associated with the operation as necessary to facilitate the proposed work.
- D. Lead Auger/Overcut Allowance.

1. A full-size auger section shall be used as the lead section of the casing. The auger shall not protrude from the leading edge of the casing. However, if soil conditions halt the movement of the casing, the auger shall be allowed to protrude not more than 1 inch in front of the casing during the boring operation. Overcut is the annular space between the excavated hole and the outside diameter of the casing pipe. The allowable overcut diameter is one inch greater than the casing pipe radius.
- E. Watertight joints.
1. Watertight joints are required to ensure the integrity of the road and railroad bed. Casing pipe shall be constructed to prevent water leakage or earth infiltration and must be certified free from any breaks or leaks throughout its entire length.
- F. Lubrication Fluids.
1. Lubrication fluids are specifically required for this method regardless of the soil conditions. Any deviations from the use of lubrication shall require prior approval for the Engineer. The Contractor shall install vents on either side of the casing pipe to prevent fracking during installation. These vents shall also be used as relief in case of a water main break. Lubrication fluids, consisting of a mixture of water and bentonite or bentonite/polymer, shall be used in the annular space between the casing being installed and the native soil to stabilize and lubricate the drill hole. Grease will not be allowed for use as lubrication for this purpose.
- G. Pipe Locating and Tracking.
1. One of the following tracking, locating, and guidance systems shall be used:
 - a. Waterline system.
 - b. Mechanical control head.
 - c. Electronic (inertial) control head.
 - d. Walkover system.
 - e. Laser guided tunnel attachment.
 - f. Laser guided pilot rod.
 2. The Contractor will be responsible for submitting their proposed pipe locating tracking method at the preconstruction meeting for approval.
- H. Settlement/Heaving Monitoring.
1. Settlement/Heaving monitoring shall be performed in a manner that will minimize the movement of the ground in front of, above, and surrounding the horizontal auger bore operation; and will minimize subsidence of the surface above and in the vicinity of the boring. The ground shall be supported in a manner to prevent loss of ground and keep the perimeter and face of the boring stable at all times, including during shutdown periods. A survey shall be performed one day prior to initiating this operation at each required monitoring location. A similar survey shall then be performed at each location, on a daily basis, until the permitted activity has been completed. All survey readings shall be recorded to the nearest one-hundredth (0.01) of a foot. Digital photographs of the pavement and rail conditions shall also be taken prior and after the pipe installation. Specific monitoring locations and requirements may also be provided for railway crossings.
- I. Ground Water Control.

1. Dewatering shall be conducted whenever there is a high ground water table level to prevent flooding and facilitate the operation. The water table elevation shall be maintained at least 1 foot below the bottom of the casing at all times. When needed, dewatering may be initiated prior to any excavation.
2. Minor water seepage or pockets of saturated soil may be effectively controlled through bailing or pumping. This control shall be accomplished without removing any adjacent soil that could weaken or undermine any access pit, its supports, or other nearby structures.
3. Larger volumes of ground water shall be controlled with one or more well points or with staged deep wells. Well points and staged deep well pumping systems shall be installed and operated without damage to property or structures, and without interference with the right of the public, owners of private property, pedestrians, vehicular traffic, or the work of other contractors. Any pumping methods used for dewatering and control of ground water and seepage shall have properly designated filters to ensure that the adjacent soil is not pumped along the water. Well diameter, well spacing and the pump's pumping rate shall provide adequate draw down of the water level. Wells shall be located to intercept ground water that otherwise would enter the access pit excavation and interfere with the work. Upon removal of a well, the hole shall be filled and grouted.
4. Existing storm sewers shall only be used to discharge water from the dewatering operation in accordance with a permit obtained from the appropriate storm sewer owner. Filters or sediment control devices shall be required to ensure that the existing system is not adversely affected by construction debris or sediment.

J. Casing End Seals/Bulkheads

1. Casing ends shall be enclosed using 1/8 inch thick synthetic rubber casing ends seals in accordance with section 2.19.C of this document. Ensure end seals are water tight and attach securely to the casing pipe and the carrier pipe (water main). Ensure end seals are acceptable to the Engineer.

K. Backfill Requirements.

1. Remove the pits and backfill the excavations as necessary with material meeting the standard specifications as approved by the Engineer.

L. Railroad Specific Requirements.

1. For Steel casing pipe jacked in place under a railroad, the following will apply in accordance with the current AREMA Manual;
 - a. When steel casing pipe is used, the joints must be fully closed by welding or mechanical means as approved by the Engineer.
 - b. Minimum cover over the casing must be at least 6.0 feet from the bottom of the railroad tie to the top of the casing pipe at its closest point.
 - c. Casing pipe must extend beyond the limits of the entire railroad right-of-way.
 - d. Jacking construction requirements must be in accordance with the current AREMA Manual, Chapter 1, Part 4.

3.26 INSTALLATION OF LINE STOPS AND INSERTION VALVES

- A. Line Stops and Insertion Valves shall be performed in the locations as detailed on the plans or as directed by the Engineer. Prior to installation of the line stop or insertion valve, coordinate the deactivation of the water main so that all customers have been given proper notification

of the shutdown. No work shall be performed without the Engineer or authorized representative present.

B. Excavate and expose the water main. Remove scale from the water main and make sure there are no flaws which would affect the seal with the saddle.

C. Line Stops

1. Install permanent line stop body on the pipeline and perform line stop according to manufacturer's instructions. Upon completion of the work associated with the line stop, reactivate the water main and install permanent blind flange on the line stop body. Ensure that all as built information is recorded and submitted as detailed in section 1.03.

D. Insertion Valves

1. Install Insertion Valve body on the pipeline and perform valve insertion according to manufacturer's instructions. Operate the valve to ensure that it is fully functional.

2. Construct valve vault as detailed in WA-8-A of the City of Kalamazoo Standard Plans. Ensure that all as built information is recorded and submitted as detailed in section 1.03.

3.27 FINAL RESTORATION

A. Contractor shall restore site to preconstruction condition or better, or as detailed on the plans.

B. Final grade shall be 5 feet above completed water main or water service line, unless otherwise approved by the Engineer. If final grade is changed greater than 6 inches from the approved plans, the Developer or Contractor shall raise or lower water main and water services so that they are maintained at 5 feet below final grade. All costs associated with this work shall be paid for by the Developer or Contractor.

PART 4 MEASUREMENT AND PAYMENT

4.01 PAY ITEMS

Measurement a payment may not apply if construction is not being funded with City of Kalamazoo funds. Please review signed construction contract for actual measurement and payment specifications.

Pay Item	Pay Unit
Water Main, DI __ inch, Tr Det __	Foot
Water Main, DI __ inch, in Casing.....	Foot
Water Main, DI __ inch, HDD.....	Foot
Gate Valve and Box, __ inch,.....	Each
Butterfly Valve and Box, __ inch.....	Each
Polyethylene Encasement.....	Foot
Water Main, __ inch, Cut and Plug	Each
Fire Hydrant	Each
Hydrant, Rem	Each
Hydrant Relocate, Case __	Each
Water Serv	Each
Water Serv, Long.....	Each
Water Serv, Conflict	Each
Water Serv, Yard	Each
Copper Tubing, Additional Length	Foot
Water Serv, 2 inch.....	Each
Water Serv, Conflict, 2 inch	Each
Copper Tubing, Additional Length, 2 inch	Foot

Steel Casing Pipe, ___inch, Jacked in Place.....Foot

4.02 MEASUREMENT OF PAY ITEMS

- A. Payment for Water Mains shall be measured based on the sizes and trench details required, along the centerline of the pipe, with no deductions for fittings. The unit price of Water Main, DI, includes the cost of the following:
 - 1. Excavation and backfill;
 - 2. Dewatering operations (trench and/or pipe);
 - 3. Provide temporary water system to maintain service during construction;
 - 4. Hydrostatic testing;
 - 5. Disinfecting and flushing the water main and bacteriological testing;
 - 6. All material, labor and equipment necessary to remedy an unsatisfactory hydrostatic test, including removing and replacing any backfill;
 - 7. Providing and installing fittings, gaskets, bracing or sheeting, blocking and miscellaneous items for installing pipe and reconnecting to the Municipal Water System;
 - 8. Preparing and providing as-constructed plans.

- D. The City of Kalamazoo may withhold payment and/or final acceptance until the City of Kalamazoo accepts the as-built plans.

- E. The cost of dewatering of trenches, pipe, or both associated with alterations to the Municipal Water System, is included in the unit price for relevant items of work.

- F. The cost of excavating, disposing of excess material, and providing, placing, and compacting the backfill, is included in the unit price for related items of work.

- G. The cost of removing or abandoning existing water mains, gate valve boxes, and other appurtenances to provide clearance for the proposed water main or roadway, is included in the unit price for relevant items of work.

- H. Payment for Gate Valves, Butterfly Valves, and Valve Boxes, shall be as follows:
 - 1. The unit prices of **Gate Valve and Box** and **Butterfly Valve and Box**, of the types and sizes required, include the cost of providing and installing the valve and valve box, complete and ready for use.

- I. Payment for water services 1 ¼ and smaller shall be as follows:
 - 1. **Water Serv** refers to services between the water main and the curb shut off no greater than 33 feet long. **Water Serv, Long** refers to services between the water main and the curb shut off greater than 33 feet long and up to 66 feet in length. **Water Serv, Yard** refers to the services between the curb shut off and the water meter setting, up to 25 feet in length. **Copper Tubing, Additional Length** refers to the additional copper tubing and work needed when services between the curb shut off and the water meter setting are over 25 feet in length, and when the length of the service between the center of the road and the curb shut off exceeds 66 feet. **Water Serv, Conflict** refers to relocating only a portion of a water service.

- J. Payment for water services 2 inches in size shall be as follows:
 - 1. **Water Serv, 2 inch** refers to the services between the water main and the water meter setting no greater than 58 feet in length. **Water Serv Conflict, 2 inch** refers to relocating only a portion of a 2 inch water service. **Copper Tubing, Additional length, 2 inch** refers to the additional copper tubing and work needed when services exceed 58

feet in length.

- K. Services with a diameter larger than 2 inches will be measured and paid for as water mains.
- L. The unit prices for **Water Serv, Water Serv, Long, Water Serv, Yard, Copper Tubing, Additional Length, Water Serv Conflict, Water Serv, 2 inch, Water Serv Conflict, 2 inch,** and **Copper Tubing, Additional Length, 2 inch**, include the cost of the following, unless otherwise accounted for in other pay items:
 - 1. Earth excavation;
 - 2. Removing pavement;
 - 3. Replacing pavement;
 - 4. Jacking and boring;
 - 5. Providing and installing type K copper tubing, service saddle, corporation stops, service stops, and service boxes;
 - 6. Disinfecting;
 - 7. Providing, placing, and compacting backfill;
 - 8. Slope Restoration to equal or better conditions; and
 - 9. Miscellaneous material, equipment, or operations.
- M. Payment for additional service connections, not shown on the plans, but maintained, protected, and reconnected or disposed of by the Contractor will be paid for as **Water Serv**, or **Water Serv, Long**.
- N. The pay item **Water Serv, Conflict** will apply only to portions of water services requiring relocation due to direct conflict with utilities, other items of work, or as otherwise approved by the City of Kalamazoo. Payment for all other relocations requiring replacement of corporation or service stops will be paid for as Water Serv or Water Serv, Long.
- O. Payment for **Water Main, __inch, Cut and Plug** includes the cost of cutting the existing water main, providing and placing the required plug, and thrust blocks.
- P. Payment for **Fire Hydrant** includes the cost of providing and installing the hydrant, hydrant valve, valve box, and all pieces between the valve and hydrant, including the coarse gravel and concrete base, fire hydrant marker at the locations shown on the plans in a ready-for-use condition unless noted otherwise.
- Q. Payment for **Hydrant, Rem** includes the cost of breaking down the auxiliary gate valve, gate box, the hydrant assembly, backfilling, and plugging the opening in the existing main.
- R. Payment for **Hydrant, Relocate, Case __** (of the case required), includes the cost of vertically adjusting the relocated hydrant to final grade and the following:
 - 1. Case 1 includes the cost of removing the hydrant, extending the existing hydrant lead from the gate valve, reinstalling the hydrant in a ready-for-use condition, adjusting the existing gate box and hydrant to final grade, and providing and installing sleeves, fittings, and joint restraints.
 - 2. Case 2 includes the cost of removing the existing hydrant, gate valve and box, and reinstalling the hydrant and gate valve in a ready-for-use condition, adjusting the existing gate box and hydrant to final grade, and providing and installing the cutting-in-sleeve, pipe coupling, tee, elbow, and joint restraints.
- S. Payment for **Steel Casing Pipe, __inch, Jacked in Place** of the size required will be paid for by the length installed. The unit price for **Steel Casing Pipe, Jacked in Place** includes the cost of excavating the pits, providing and installing sheeting, bracing, and any other safety devices, providing jacking equipment: drainage and dewatering; bulkheading and sealing the casing, providing and installing vents, grouting the annular space between the casing and native soil and any other items associated with the operation.

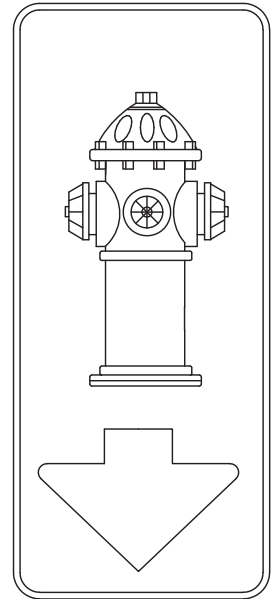
- T. Payment for **Water Main, DI, __inch, in Casing**, of the size required will be paid for by the length installed. The unit price for **Water Main, DI __inch, in Casing** shall include the cost for furnishing and installing the water main and casing spacers inside the casing.
- U. Payment for **Water Main, DI, __inch, HDD**, of the size required will be paid for by the length installed. The unit price shall include the cost of all equipment and materials, excavation and backfill, dewatering operations (trench, pit or pipe), temporary water system to maintain service during construction, hydrostatic testing, disinfecting and flushing the water mains, and bacteriological testing, all materials, labor and equipment necessary to remedy and unsatisfactory hydrostatic test, including removing and replacing any backfill, providing and install all, gaskets, bracing or sheeting, blocking and miscellaneous items for installing pipe of the required size and material and reconnecting to the water system as shown on the plans.

END OF SECTION

This page was intentionally left blank.

WA-1-D

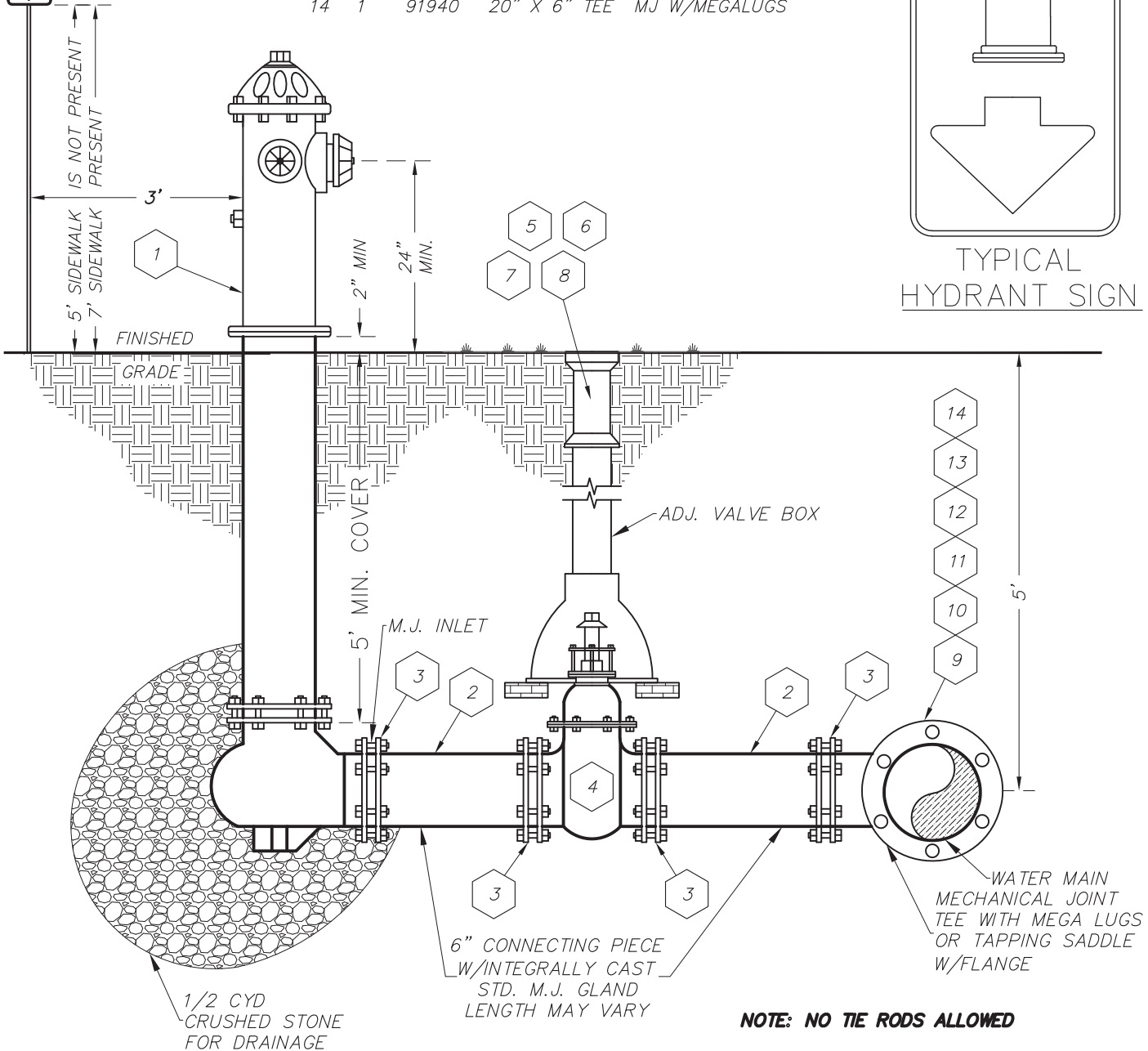
ITEM	QTY.	#	DESCRIPTION
1	1	39887	6" HYDRANT W/CARROLL DRAIN
2	2	70000	CONNECTING PIECE (13")
3	4	33801	6" GASKET (MJ)
4	1	96696	6" GATE VALVE (MJ)
5	1	08550	VALVE BOX BOTTOM
6	1	08520	VALVE BOX TOP SECTION
7	1	08500	VALVE BOX RING CASTING
8	1	08490	VALVE BOX COVER
9	1	91440	6" TEE MJ
10	1	91525	8" X 6" TEE MJ W/MEGALUGS
11	1	91750	10" X 6" TEE MJ W/MEGALUGS
12	1	91825	12" X 6" TEE MJ W/MEGALUGS
13	1	91909	16" X 6" TEE MJ W/MEGALUGS
14	1	91940	20" X 6" TEE MJ W/MEGALUGS



TYPICAL HYDRANT SIGN



DOUBLE SIDED HYDRANT SIGN



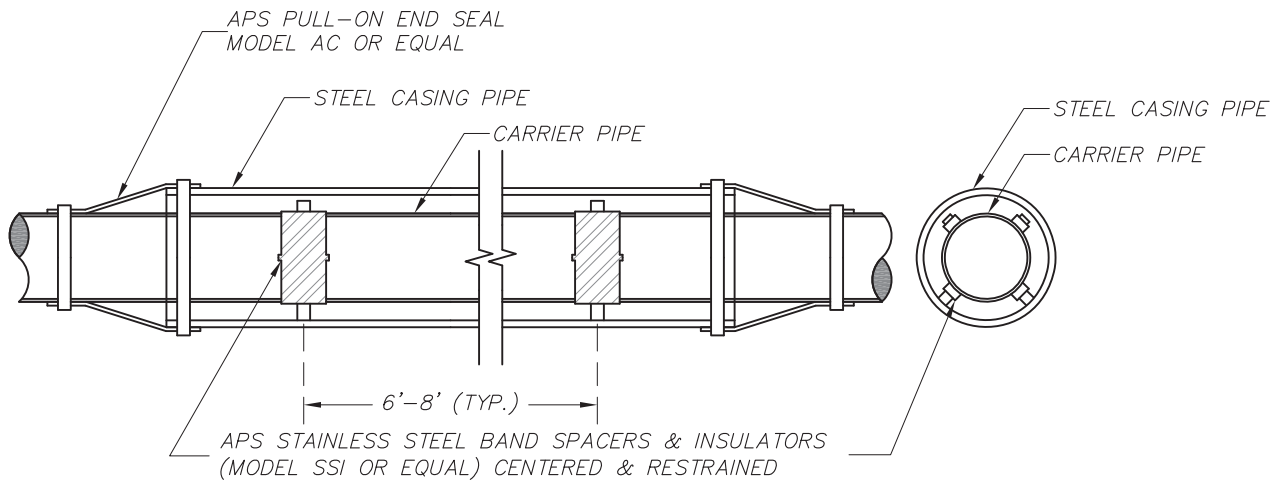
NOTE: NO TIE RODS ALLOWED



CITY OF KALAMAZOO
Department Of Public Services

TYPICAL FIRE HYDRANT & GATE VALVE DETAIL

RECOMMENDED BY	DATE
APPROVED BY	
APPROVED BY	
ACCEPTED BY	



CASING CARRIER PIPE DETAIL

SIZE CASING AND CARRIER PIPES PER PLAN AND SPECIFICATIONS

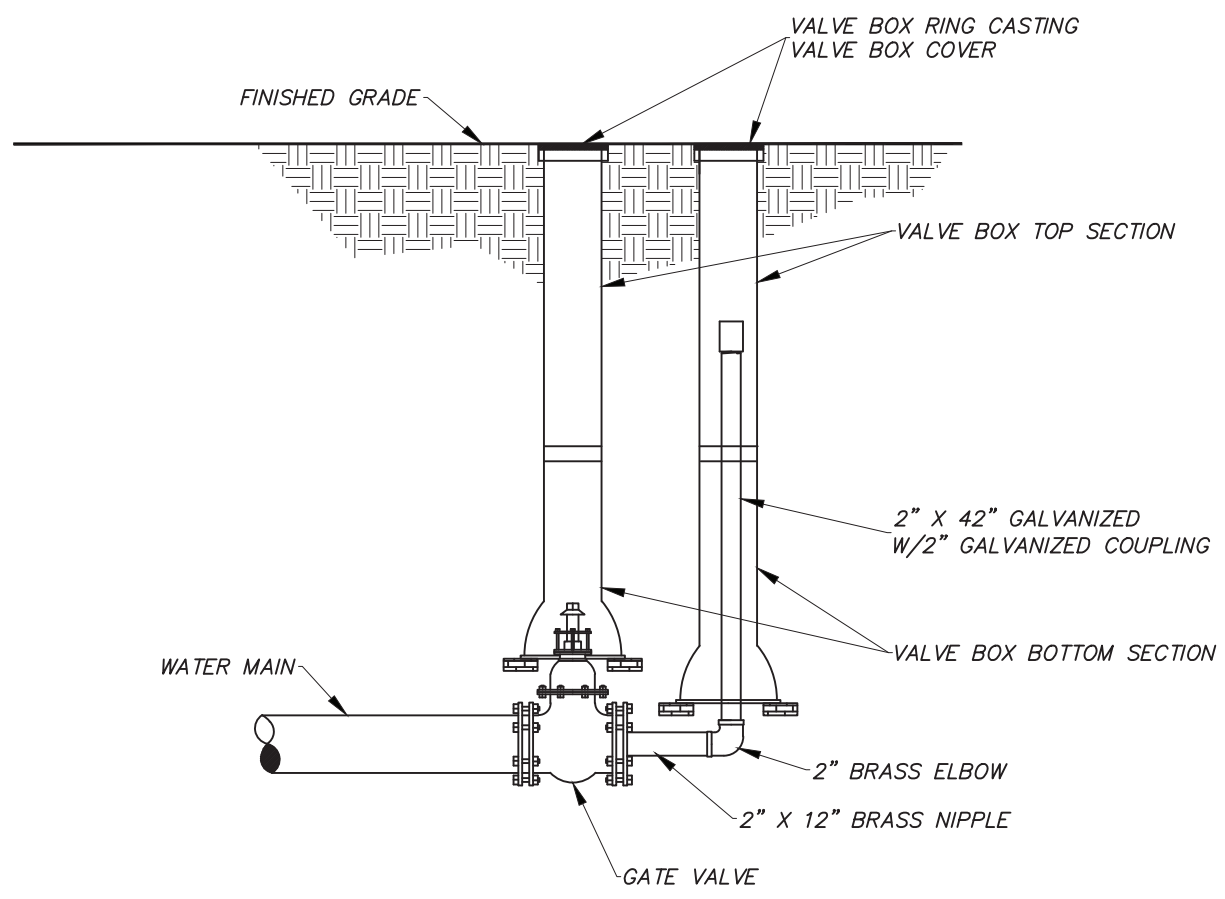
TYPICAL BAND SPACER POSITIONING:
 ONE PLACED NOT MORE THAN 1 FOOT FROM EACH END OF THE CASING AND
 PIPE JOINTS WITH SUBSEQUENT SPACERS PLACED EVERY 6-8 FEET THEREAFTER.
 FOR 18 FOOT PIPE THERE SHALL BE THREE BAND SPACERS.
 FOR 20 FOOT PIPE THERE SHALL BE FOUR BAND SPACERS.



CITY OF KALAMAZOO
 Department Of Public Services

CASING CARRIER PIPE

RECOMMENDED BY _____	DATE _____
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	

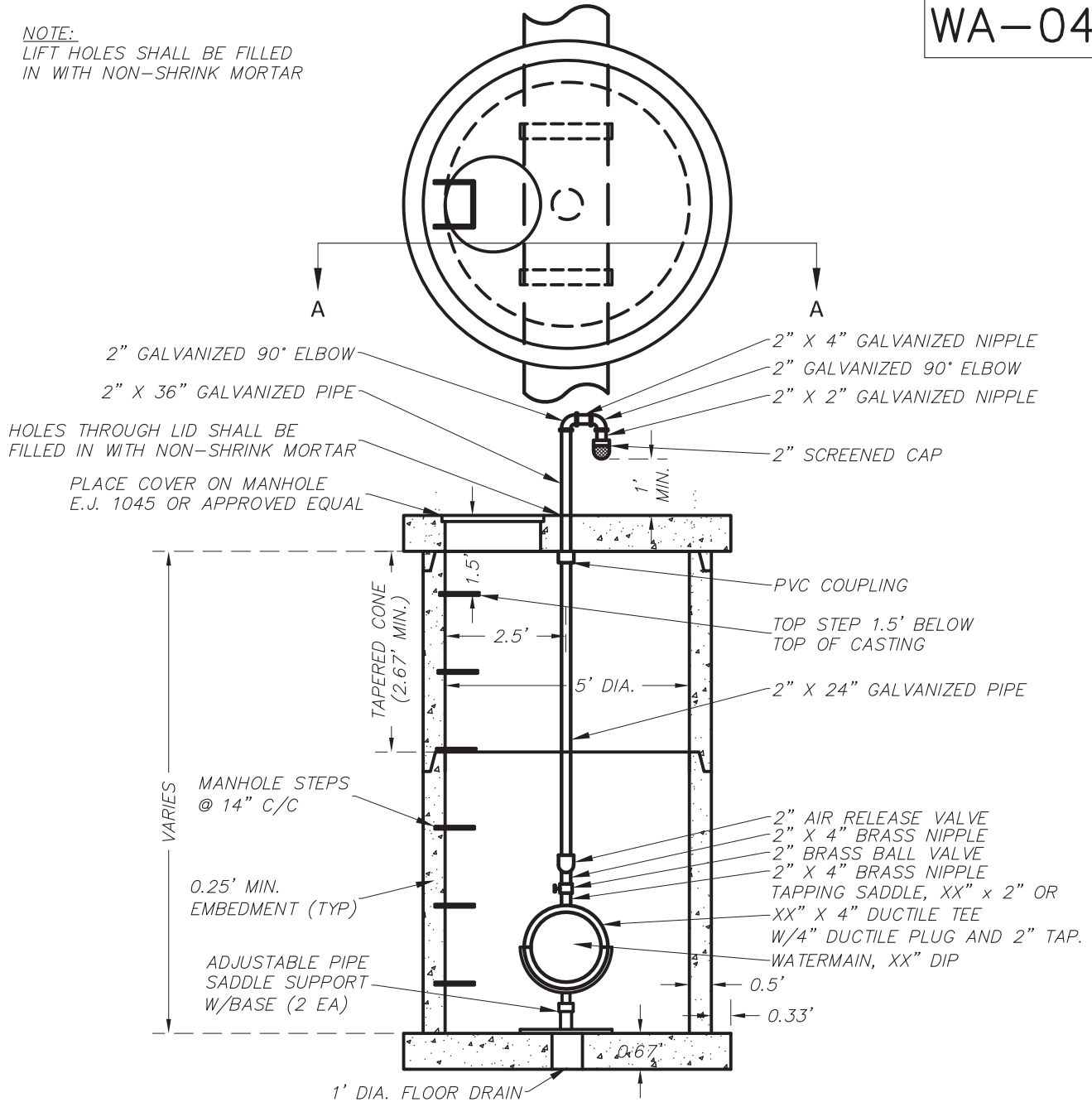


NOT TO SCALE

J:\CAD STANDARDS\STANDARD DETAILS\WATER\UPDATED DRAWINGS\ACAD DRAWINGS\WA-3-B BLOW OFF CONNECTION 2 INCH.dwg, 8/12/2016 12:01:24 PM

	CITY OF KALAMAZOO Department Of Public Services	RECOMMENDED BY _____	DATE _____
	<h2>2" BLOW OFF CONNECTION</h2>	APPROVED BY _____	
	APPROVED BY _____		
	ACCEPTED BY _____		

NOTE:
LIFT HOLES SHALL BE FILLED
IN WITH NON-SHRINK MORTAR



TYPICAL 2" AIR RELEASE MANHOLE

PRECAST REINFORCED CONCRETE SHOWN (OTHER OPTIONS INCLUDE
CONCRETE BLOCK, BRICK OR CAST IN PLACE WALL SECTIONS)

SCHEDULE OF FITTINGS

ITEM DESCRIPTION	QUANTITY
AIR RELEASE VALVE, 2"	1
GALVANIZED PIPE, 2" X 60"	1
GALVANIZED NIPPLE, 2" X 4"	1
GALVANIZED NIPPLE, 2" X 2"	1
GALVANIZED 90° ELBOW, 2"	2
PIPE SUPPORT BASE	2

ITEM DESCRIPTION	QUANTITY
TAPPING SADDLE, XX X 2"	1
BRASS BALL VALVE, 2"	1
BRASS NIPPLE, 2" X 4"	2



CITY OF KALAMAZOO
Department Of Public Services

AIR RELEASE MANHOLE

RECOMMENDED BY _____ DATE _____

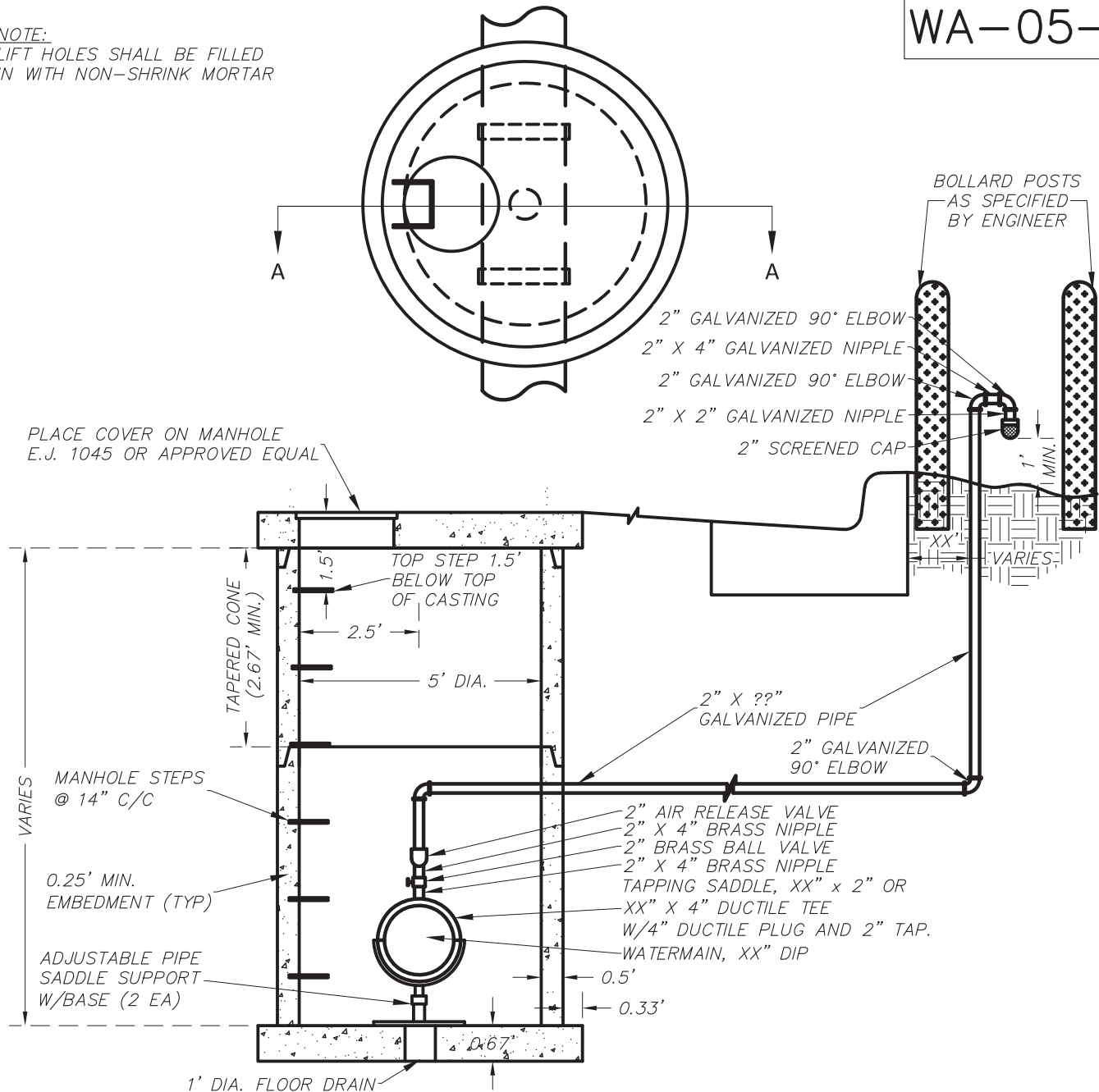
APPROVED BY _____

APPROVED BY _____

ACCEPTED BY _____

WA-05-C

NOTE:
LIFT HOLES SHALL BE FILLED
IN WITH NON-SHRINK MORTAR



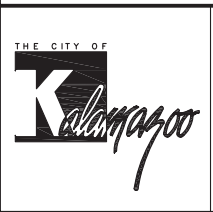
TYPICAL 2" AIR RELEASE MANHOLE

PRECAST REINFORCED CONCRETE SHOWN (OTHER OPTIONS INCLUDE
CONCRETE BLOCK, BRICK OR CAST IN PLACE WALL SECTIONS)

SCHEDULE OF FITTINGS

ITEM DESCRIPTION	QUANTITY
AIR RELEASE VALVE, 2"	1
GALVANIZED PIPE, 2" X 60"	1
GALVANIZED NIPPLE, 2" X 4"	1
GALVANIZED NIPPLE, 2" X 2"	1
GALVANIZED 90° ELBOW, 2"	2
PIPE SUPPORT BASE	2

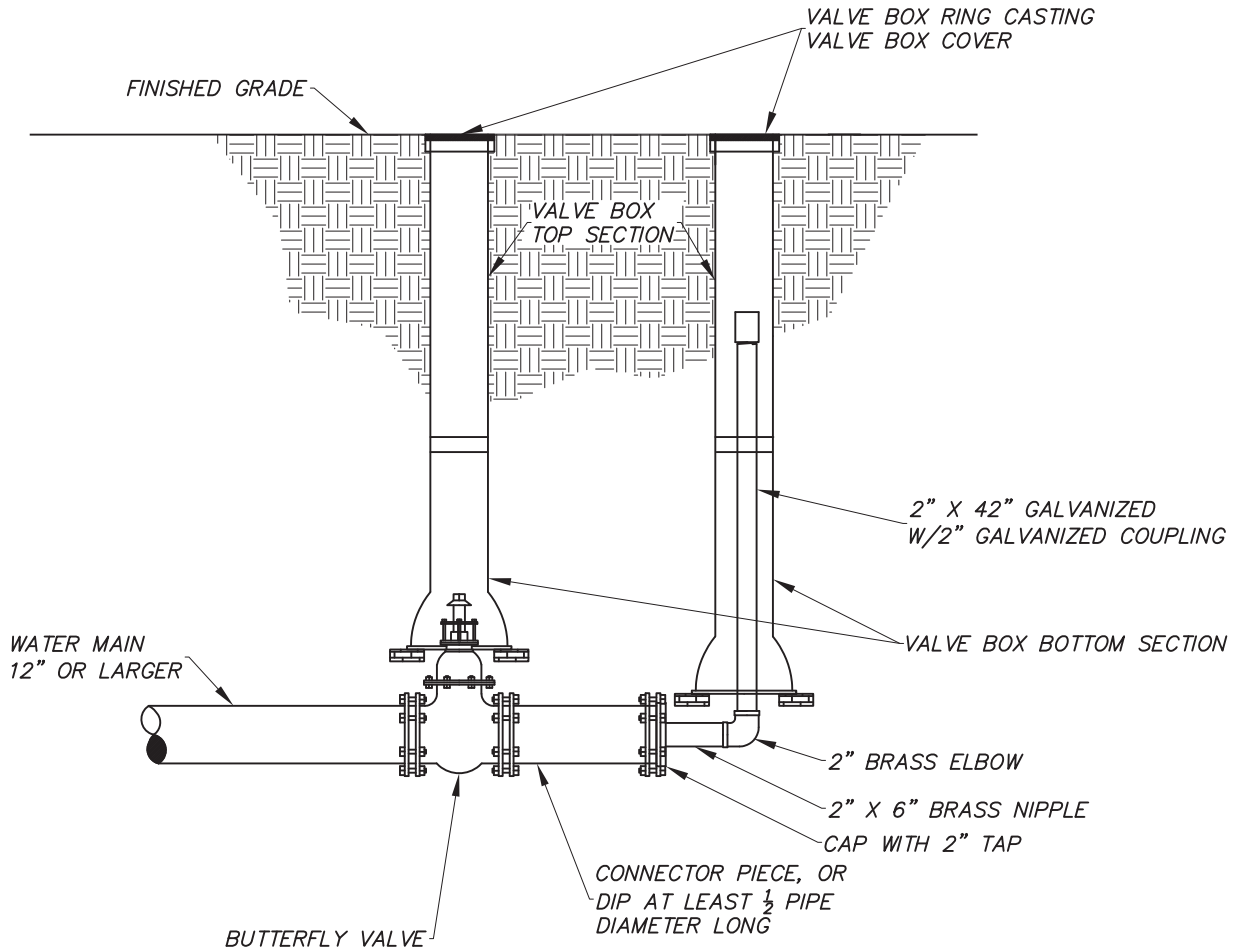
ITEM DESCRIPTION	QUANTITY
TAPPING SADDLE, XX X 2"	1
BRASS BALL VALVE, 2"	1
BRASS NIPPLE, 2" X 4"	2



CITY OF KALAMAZOO
Department Of Public Services

**AIR RELEASE MANHOLE
IN ROADWAY**

RECOMMENDED BY _____	DATE _____
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	



NOT TO SCALE

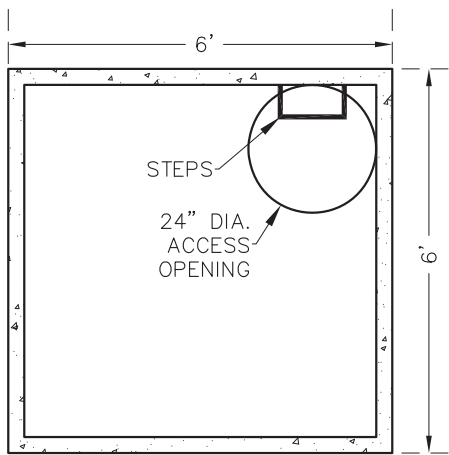


CITY OF KALAMAZOO
Department Of Public Services

**2" BLOW OFF
CONNECTION
12" OR LARGER MAIN**

RECOMMENDED BY _____
 APPROVED BY _____
 APPROVED BY _____
 ACCEPTED BY _____

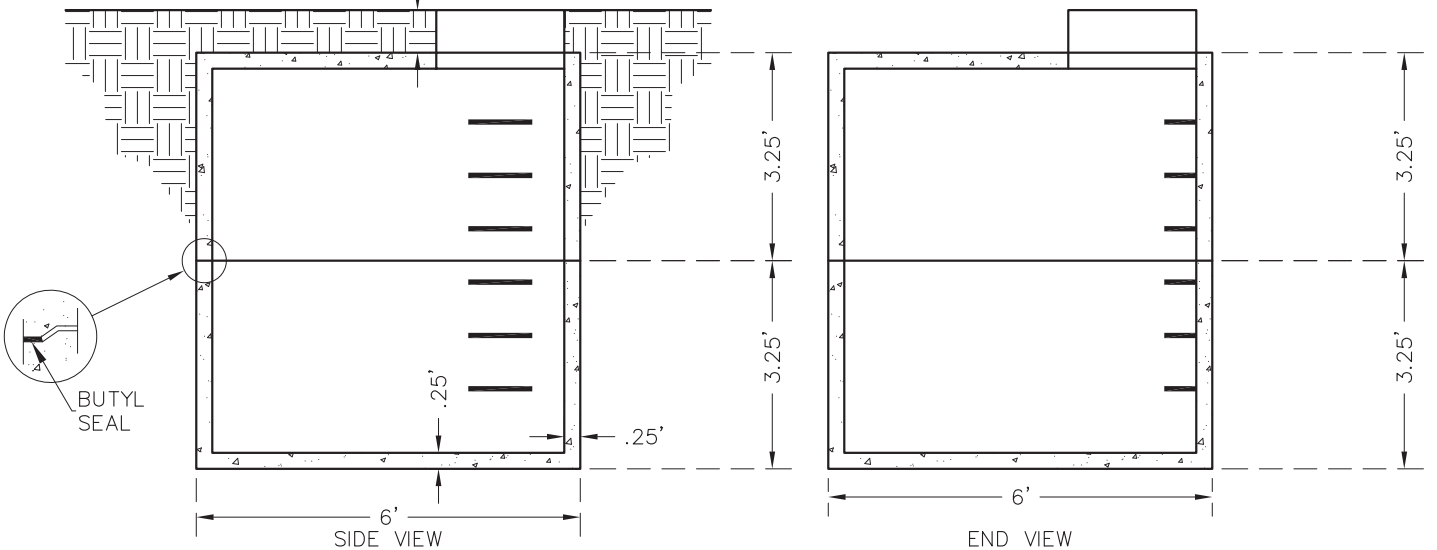
DATE



TOP VIEW

- NOTES:
1. METER VAULT DESIGN TO BE SUBMITTED AND APPROVED FOR EACH INDIVIDUAL INSTALLATION. DESIGN SHALL CONFORM TO KALAMAZOO WATER ENGINEERING STANDARDS LATEST REVISION.
 2. THE DISTANCE BETWEEN RUNGS, CLEATS AND STEPS SHALL NOT EXCEED 12 INCHES AND SHALL BE UNIFORM THROUGHOUT THE LENGTH OF THE LADDER.
 3. PLACEMENT OF CURB BOX CAN VARY FROM A MAXIMUM OF 5 FEET OUTSIDE THE PROPERTY LINE TO A MAXIMUM OF 5 FEET INSIDE THE PROPERTY LINE. PLACEMENT OF THE CURB BOX OUTSIDE THE PROPERTY LINE IS PREFERRED.
 4. ACCESS COVER - FORD MC-24-MB-T WITH AN INNER LID, VESTAL 32-055, 32-104, AND 32-046 OR APPROVED EQUAL.

TOP OF PIT TO FINAL GRADE SHALL NOT EXCEED 8"



SIDE VIEW

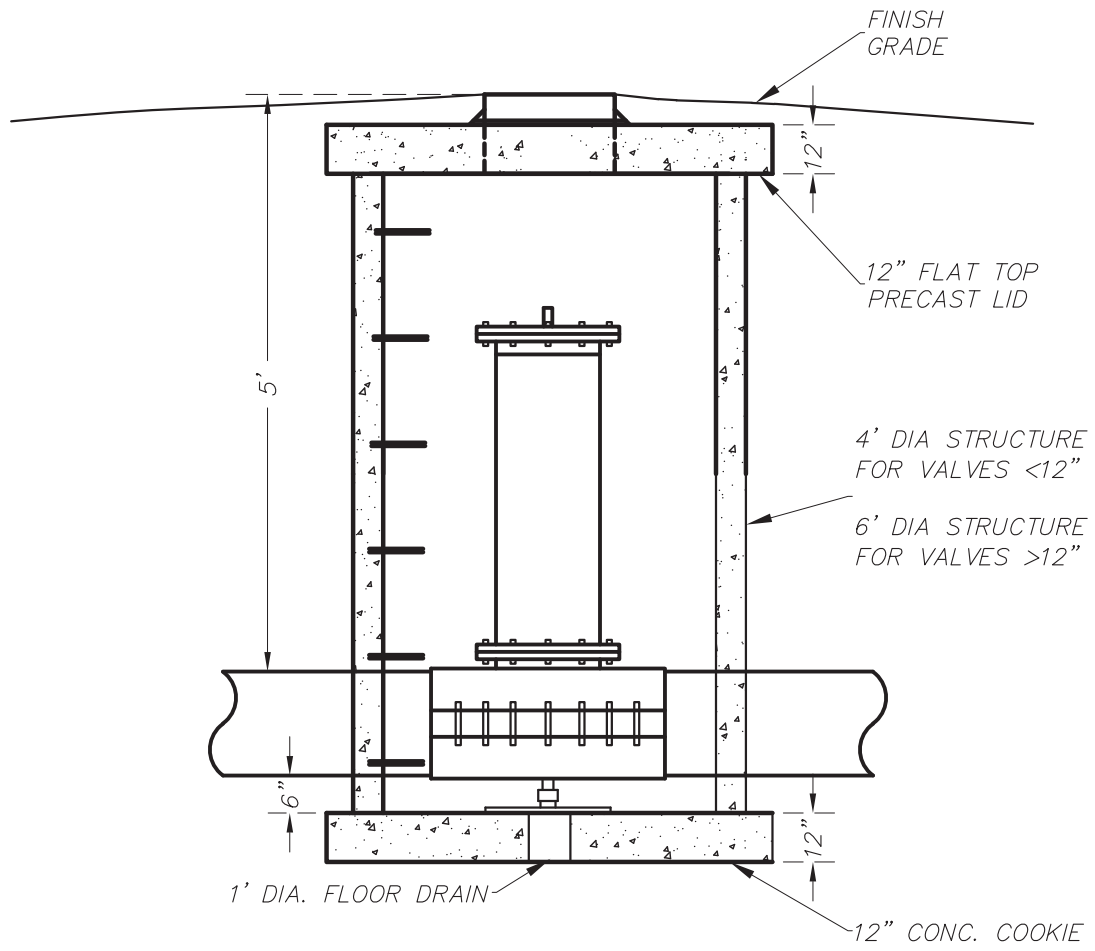
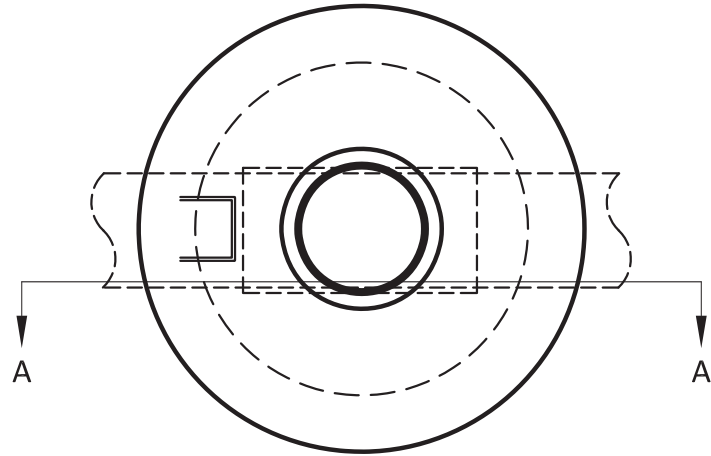
END VIEW



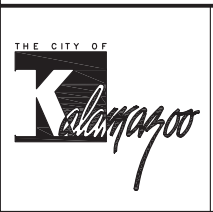
CITY OF KALAMAZOO
Department Of Public Services

STANDARD METER PIT

RECOMMENDED BY _____	DATE
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	



TYPICAL INSERTA – VALVE
PRECAST REINFORCED CONCRETE SHOWN



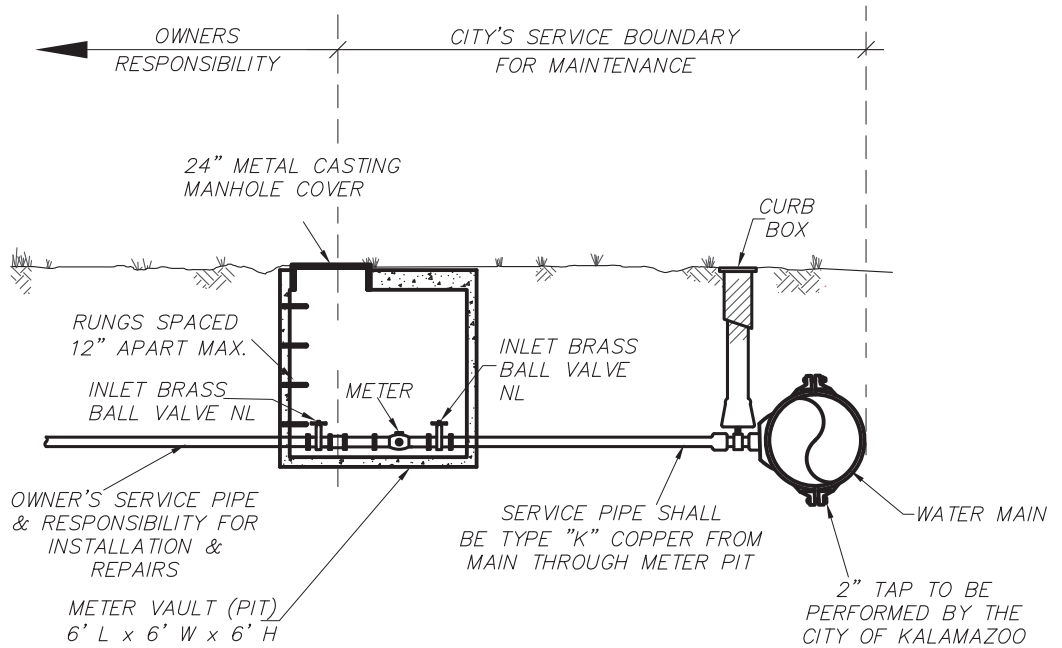
CITY OF KALAMAZOO
 Department Of Public Services

**INSERTA-VALVE
 STRUCTURE**

RECOMMENDED BY _____	DATE _____
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	

NOTES:

1. METER VAULT (PIT) DESIGN MUST BE SUBMITTED AND APPROVED FOR EACH INDIVIDUAL INSTALLATION. DESIGN SHALL CONFORM TO THE CITY OF KALAMAZOO STANDARD SPECIFICATIONS FOR WATER MAIN AND SERVICE INSTALLATION LATEST REVISION.
2. THE DISTANCE BETWEEN RUNGS, CLEATS & STEPS SHALL NOT EXCEED 12 INCHES AND SHALL BE UNIFORM THROUGHOUT THE LENGTH OF THE LADDER.
3. CURB BOX WILL BE INSTALLED AT THE WATER MAIN.
4. COVER FOR METER PIT & CURB BOX SHALL BE INSTALLED & MAINTAINED LEVEL WITH THE ADJACENT GROUND.



CITY OF KALAMAZOO
Department Of Public Services

**2" SERVICE LINE
METER VAULT**

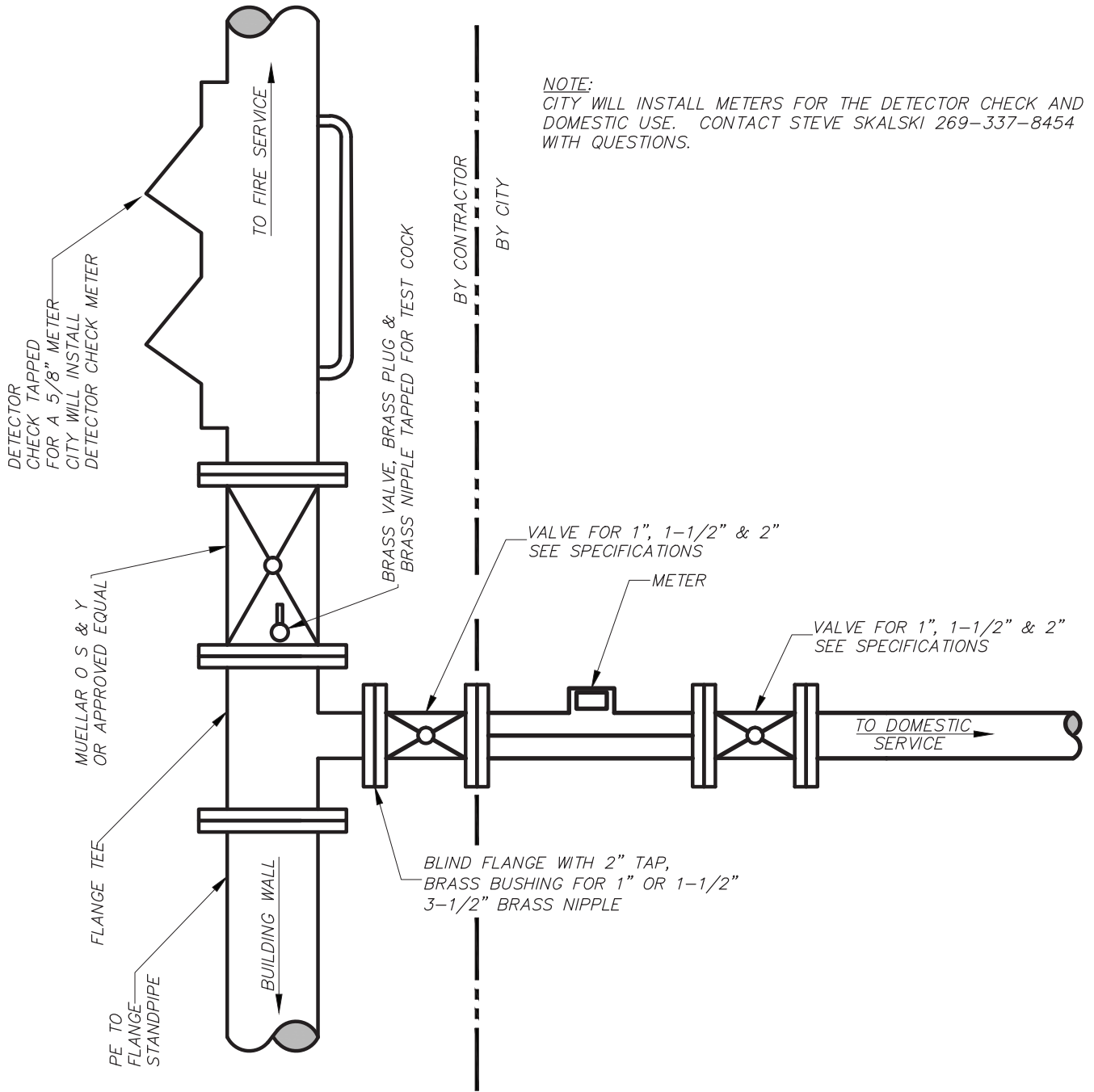
RECOMMENDED BY _____

APPROVED BY _____

APPROVED BY _____

ACCEPTED BY _____

DATE

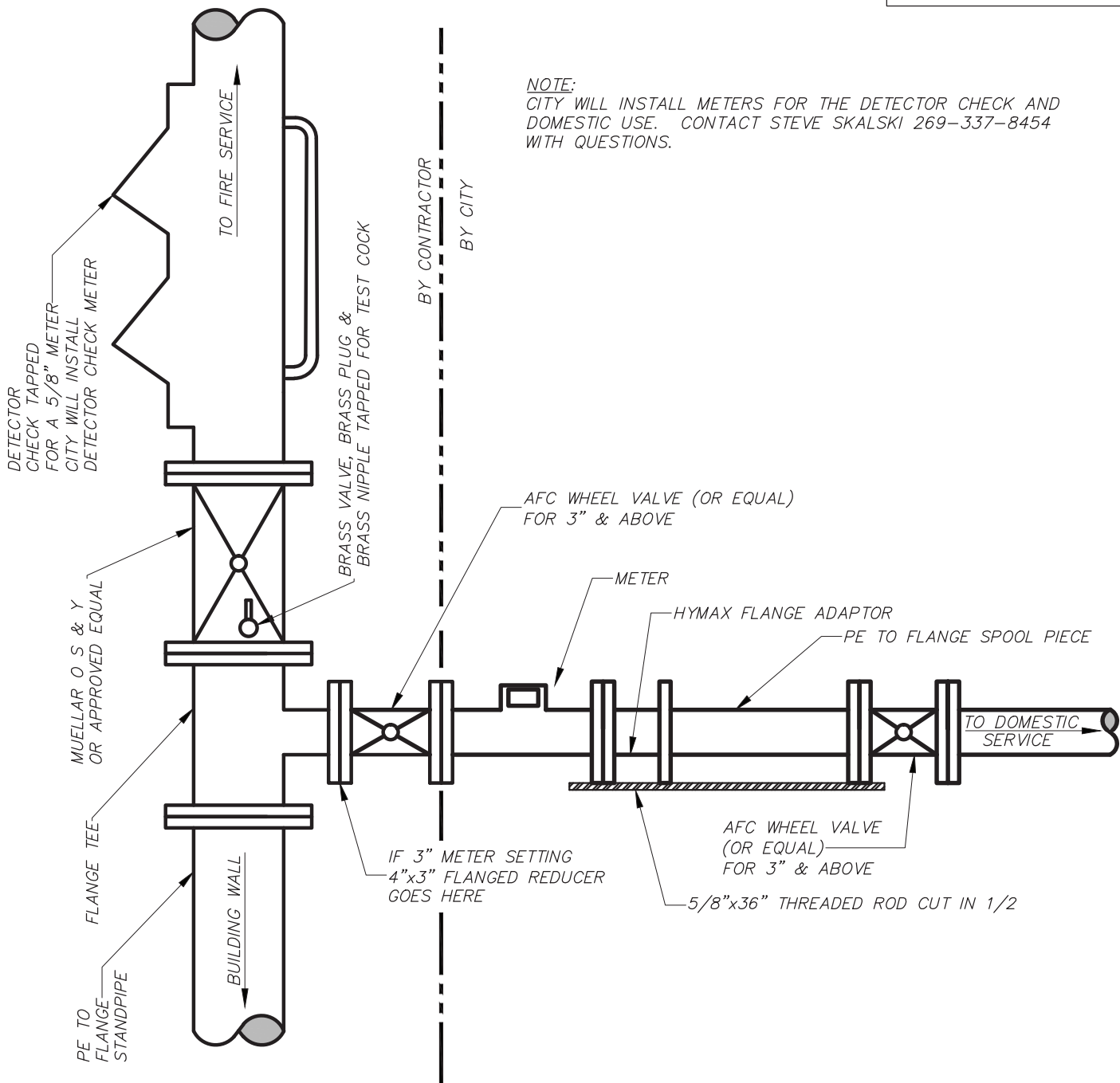


NOTE:
CITY WILL INSTALL METERS FOR THE DETECTOR CHECK AND DOMESTIC USE. CONTACT STEVE SKALSKI 269-337-8454 WITH QUESTIONS.



CITY OF KALAMAZOO
Department Of Public Services
TYPICAL FIRE SERVICE
DETAIL
1" 1-1/2" 2"

RECOMMENDED BY _____	DATE _____
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	

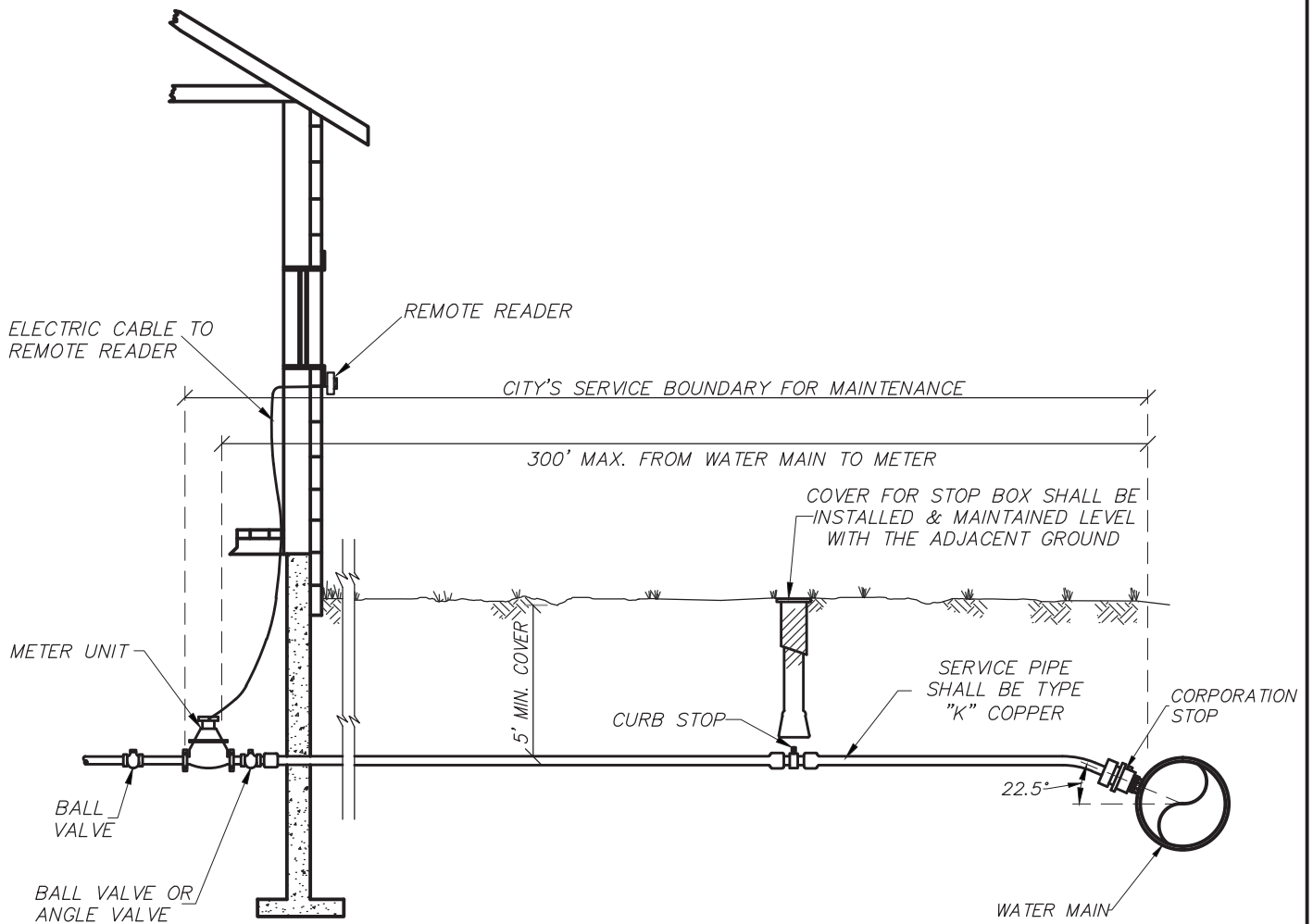


CITY OF KALAMAZOO
Department Of Public Services
**TYPICAL FIRE SERVICE
DETAIL**
3" 4" 6"

RECOMMENDED BY _____	DATE _____
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	

NOTES:

1. PLACEMENT OF STOP BOX CAN VARY FROM A MAXIMUM OF 5 FEET OUTSIDE THE PROPERTY LINE TO A MAXIMUM OF 5 FEET INSIDE THE PROPERTY LINE. PLACEMENT OF THE STOP BOX OUTSIDE THE PROPERTY LINE IS PREFERRED.
2. CITY WATER WILL REPAIR LEAKS ON SERVICE LINES WHEN NOTIFIED, FROM THE CORPORATION STOP TO METER.



9/15/2015 1:27:03 PM



CITY OF KALAMAZOO
Department Of Public Services

**SERVICE LINE, STOP BOX AND
INSIDE METER INSTALLATION
1-1/4" SERVICE & 1" METER**

	DATE
RECOMMENDED BY _____	
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	

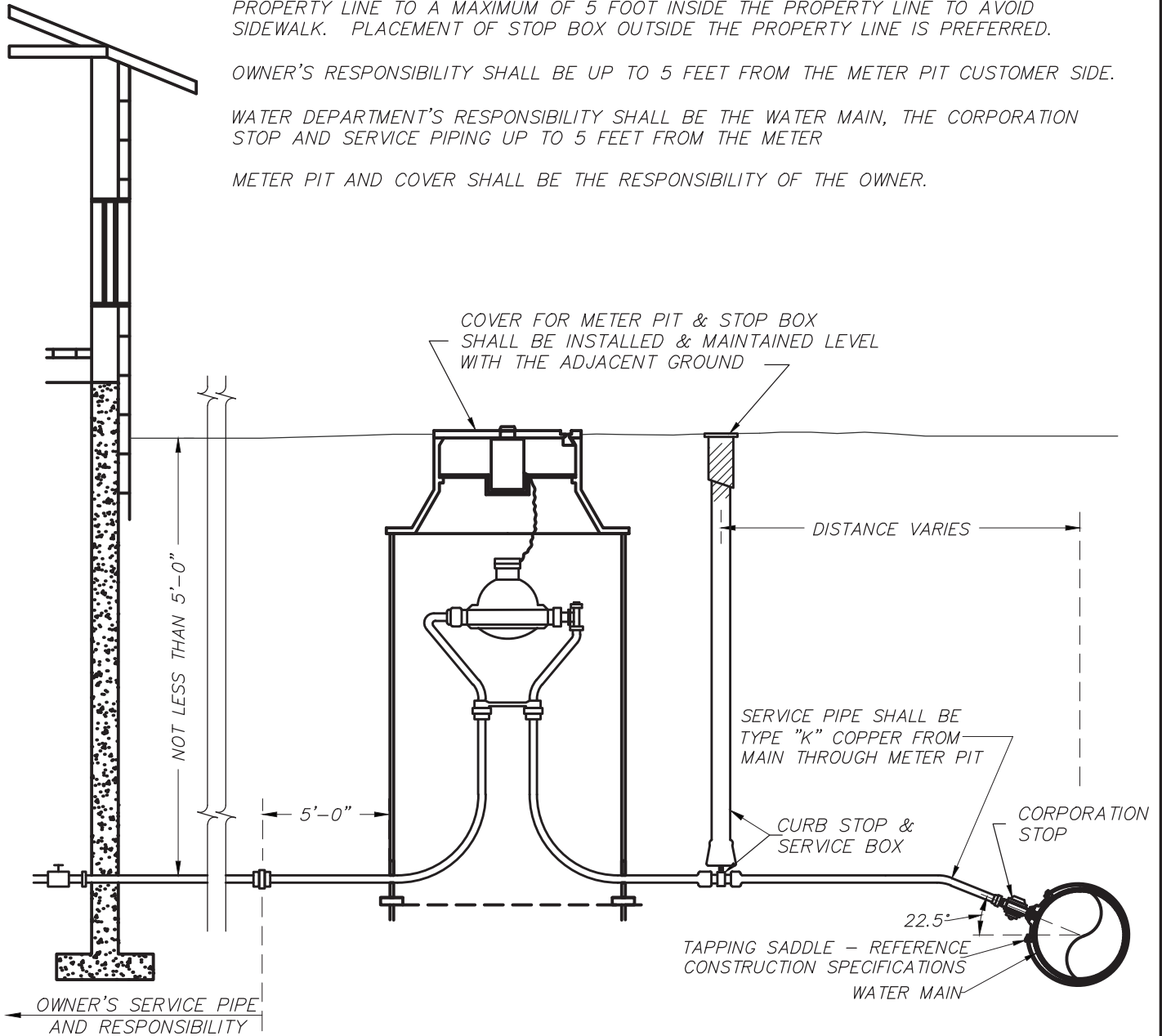
NOTES:

PLACEMENT OF STOP BOX CAN VARY FROM A MAXIMUM OF 5 FOOT OUTSIDE THE PROPERTY LINE TO A MAXIMUM OF 5 FOOT INSIDE THE PROPERTY LINE TO AVOID SIDEWALK. PLACEMENT OF STOP BOX OUTSIDE THE PROPERTY LINE IS PREFERRED.

OWNER'S RESPONSIBILITY SHALL BE UP TO 5 FEET FROM THE METER PIT CUSTOMER SIDE.

WATER DEPARTMENT'S RESPONSIBILITY SHALL BE THE WATER MAIN, THE CORPORATION STOP AND SERVICE PIPING UP TO 5 FEET FROM THE METER

METER PIT AND COVER SHALL BE THE RESPONSIBILITY OF THE OWNER.



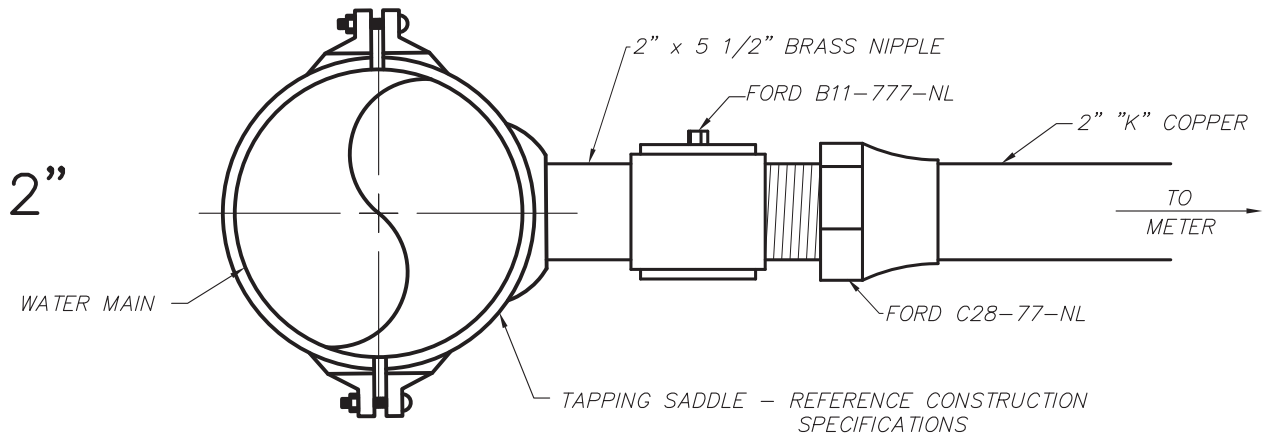
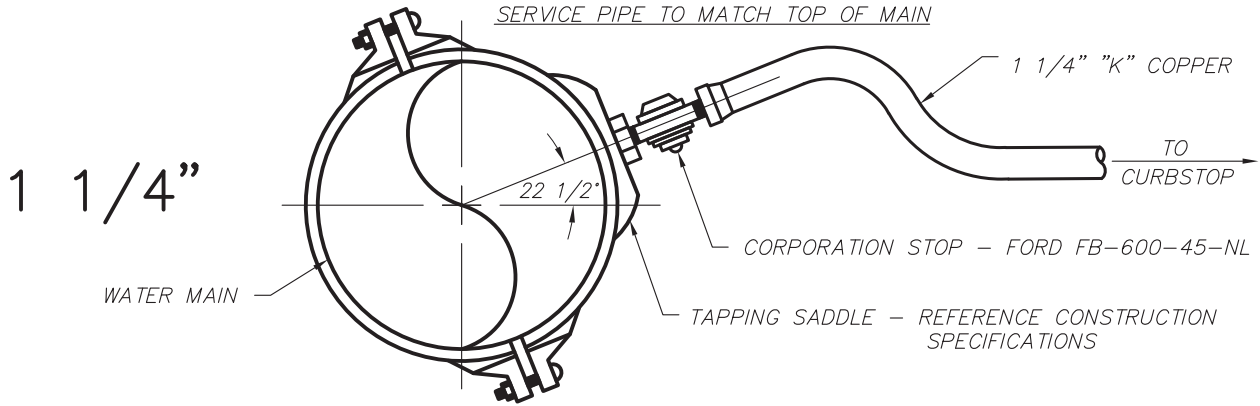
9/15/2015 12:06:36 PM



CITY OF KALAMAZOO
Department Of Public Services

**1-1/4" SERVICE LINE,
STOP BOX AND OUTSIDE
METER INSTALLATION**

RECOMMENDED BY _____	DATE
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	



CITY OF KALAMAZOO
Department Of Public Services

**WATER SERVICE
TAPPING SLEEVE**

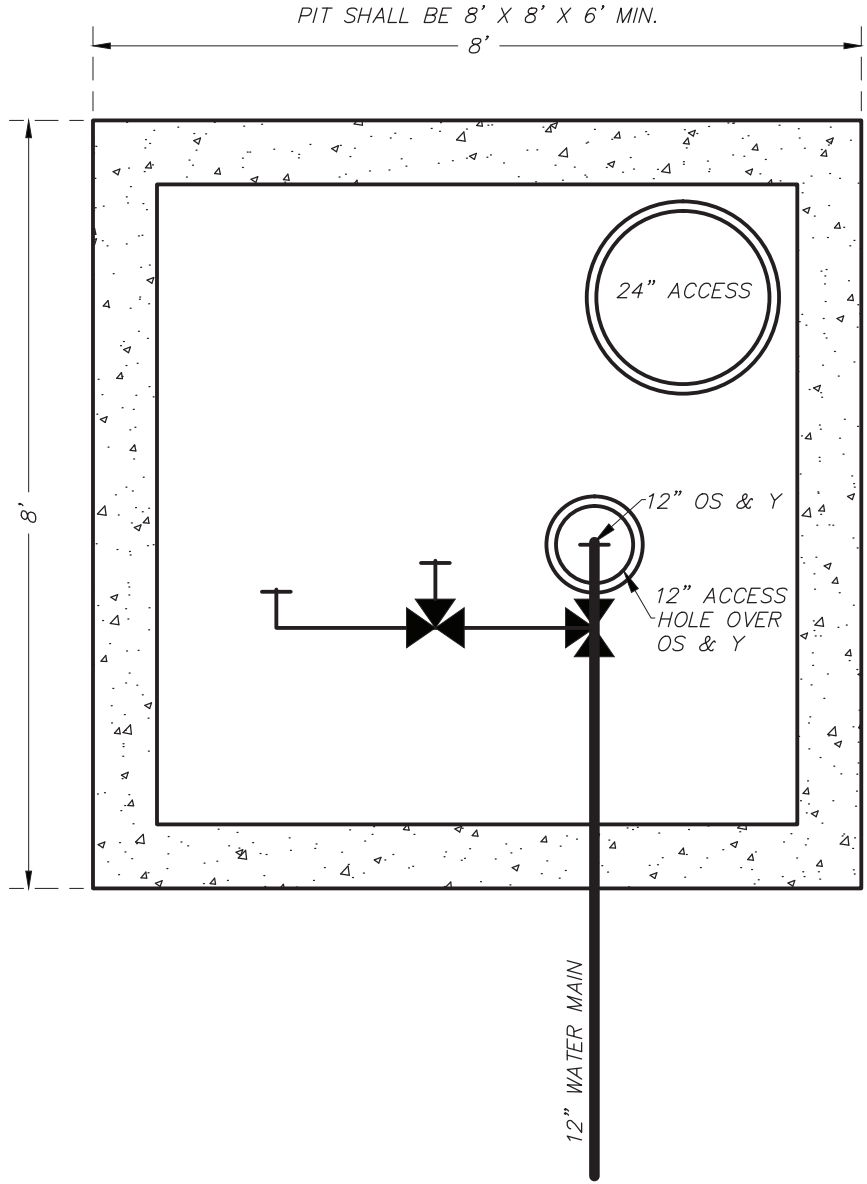
RECOMMENDED BY _____

APPROVED BY _____

APPROVED BY _____

ACCEPTED BY _____

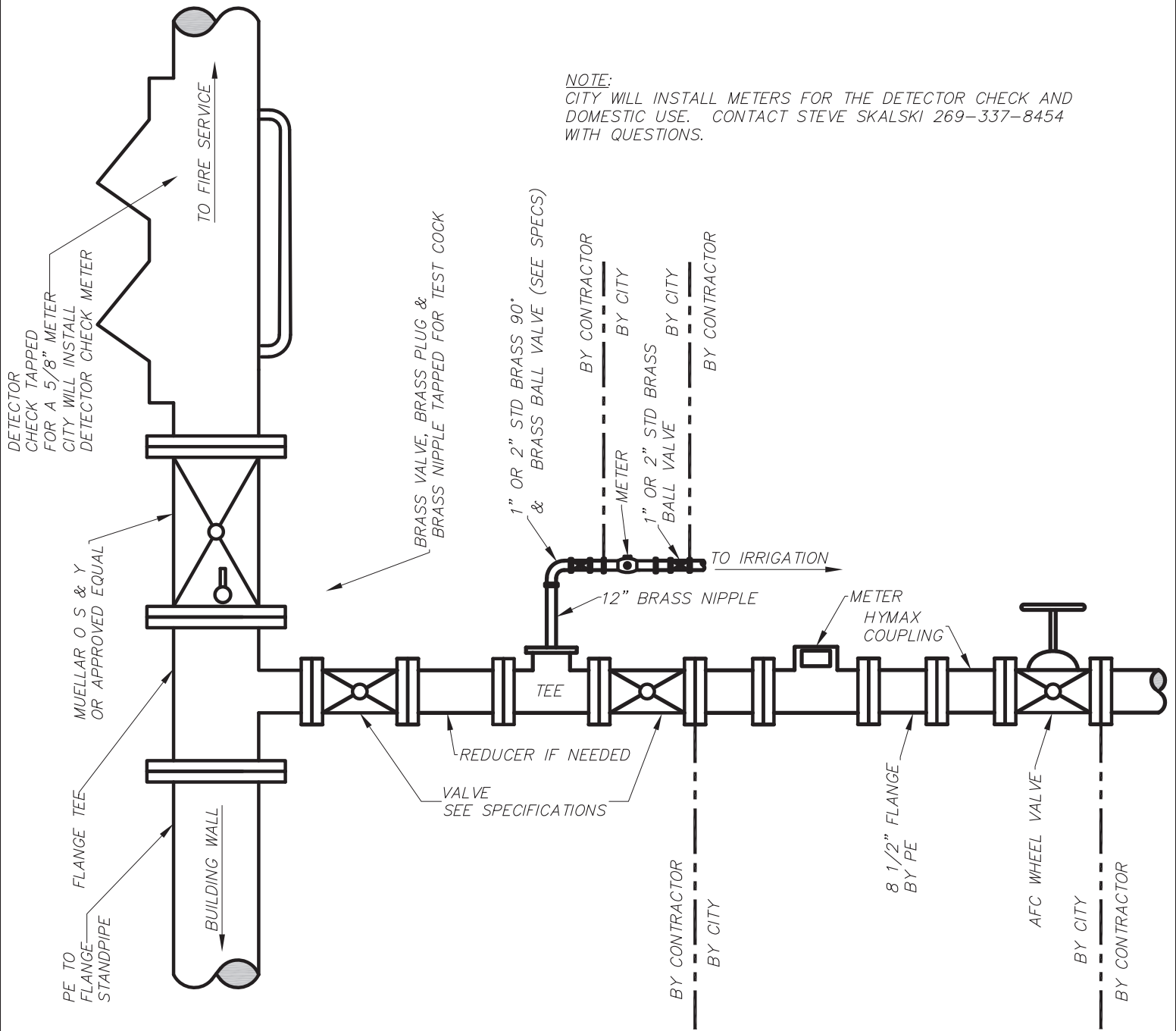
DATE



CITY OF KALAMAZOO
Department Of Public Services

12 INCH METER PIT

	DATE
RECOMMENDED BY _____	
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	



NOTE:
CITY WILL INSTALL METERS FOR THE DETECTOR CHECK AND DOMESTIC USE. CONTACT STEVE SKALSKI 269-337-8454 WITH QUESTIONS.



**TYPICAL FIRE SERVICE
DETAIL, DOMESTIC 3", 4",
& 6" & IRRIGATION 1" OR
2" VERTICAL SETTING**

RECOMMENDED BY _____

APPROVED BY _____

APPROVED BY _____

ACCEPTED BY _____

DATE

NOTE:
 CITY WILL INSTALL METERS FOR THE DETECTOR CHECK AND
 DOMESTIC USE. CONTACT STEVE SKALSKI 269-337-8454
 WITH QUESTIONS.

1" OR 2" STD. 90°
 W/1" OR 2" BRASS BALL VALVE
 OR FORD ANGLE VALVE
 (FV13-777W-NL) 2"
 (KV13-444W-NL) 1"

1" OR 2" X 12" BRASS NIPPLE

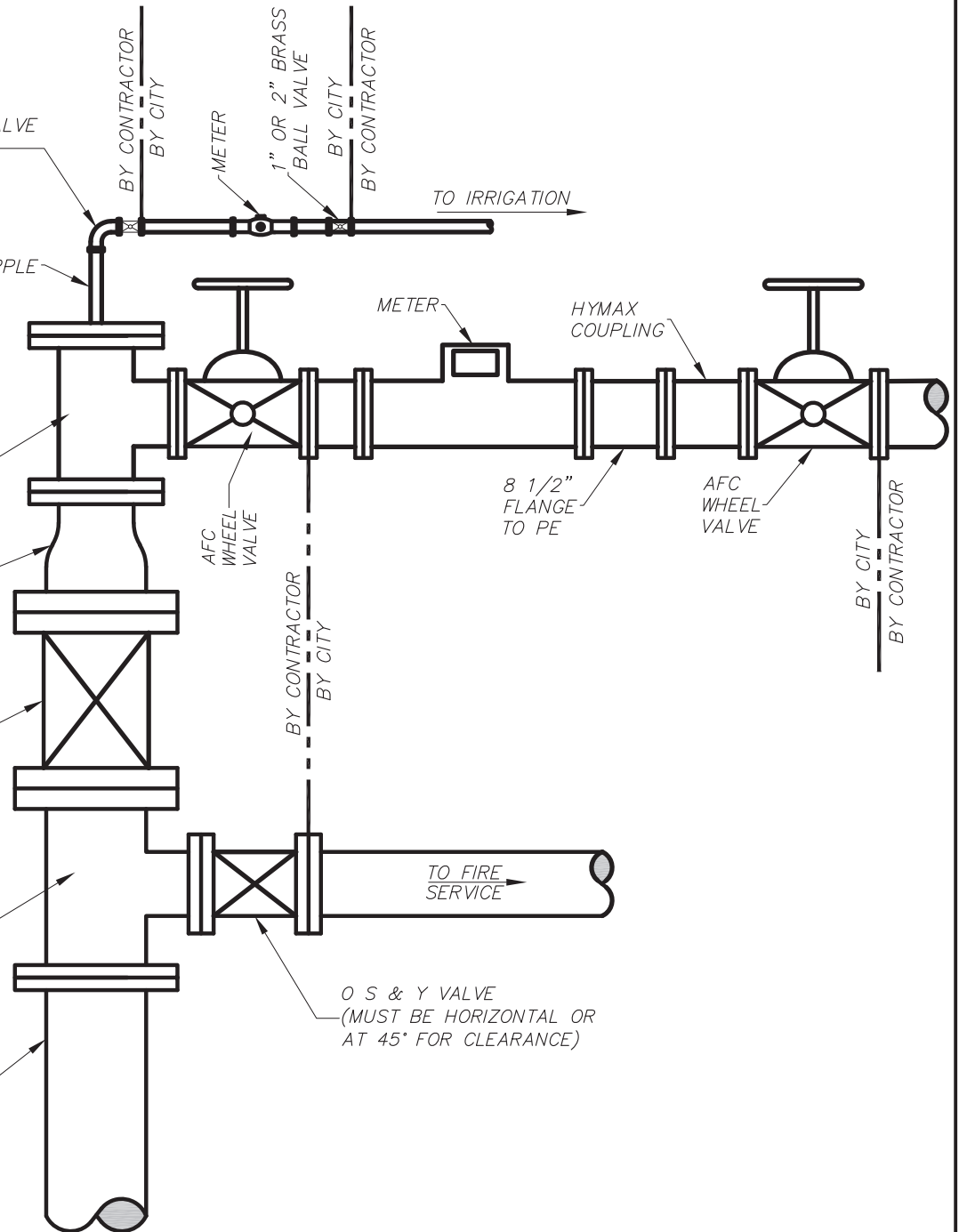
VALVE
 SEE SPECIFICATIONS

REDUCER
 (IF NEEDED)

TEE

TEE

PE TO
 FLANGE
 STANDPIPE



O S & Y VALVE
 (MUST BE HORIZONTAL OR
 AT 45° FOR CLEARANCE)

8 1/2"
 FLANGE
 TO PE

HYMAX
 COUPLING

METER

AFC
 WHEEL
 VALVE

AFC
 WHEEL
 VALVE

TO IRRIGATION

TO FIRE
 SERVICE

BY CONTRACTOR
 BY CITY

BY CONTRACTOR
 BY CITY

BY CONTRACTOR
 BY CITY

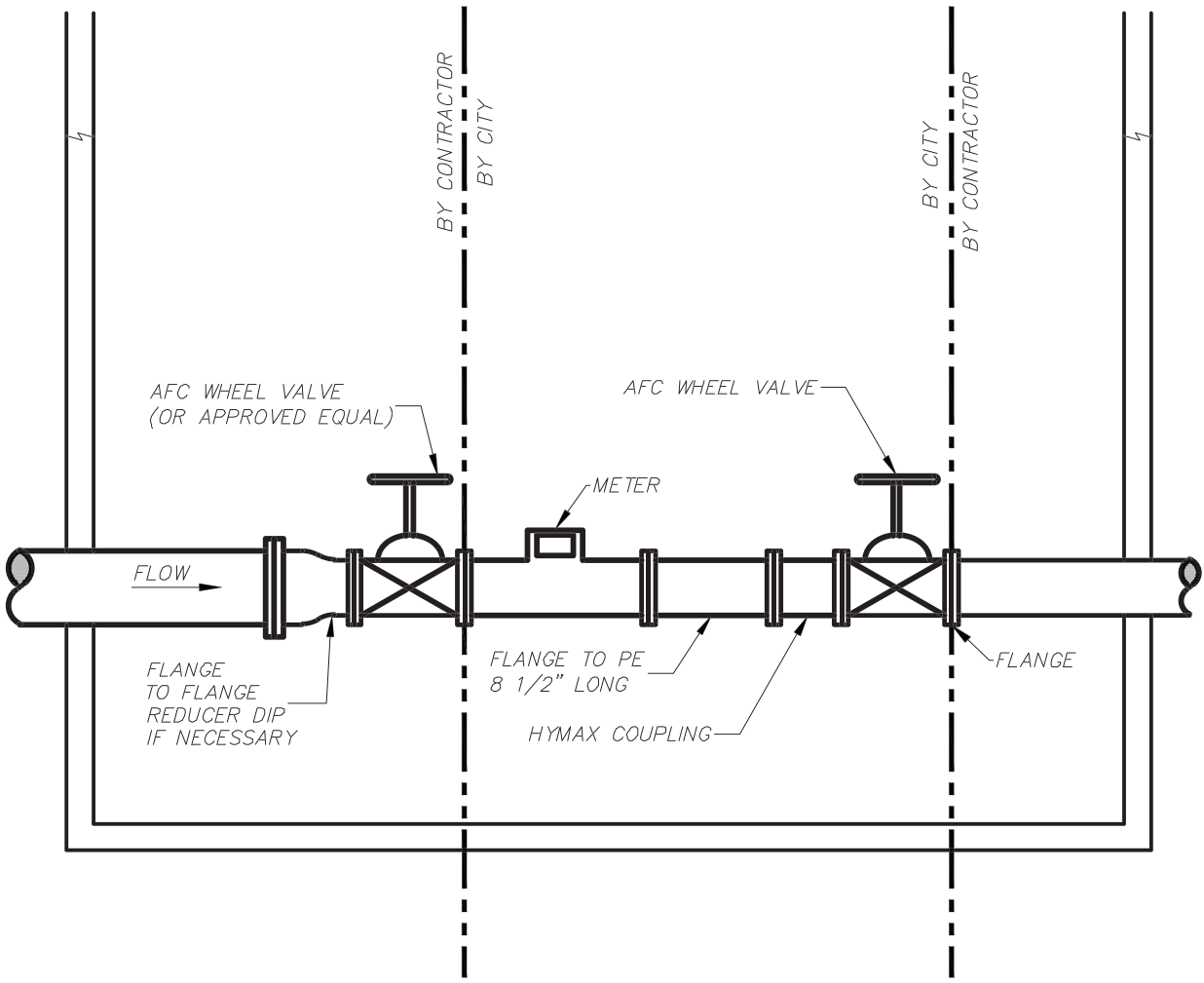
BY CONTRACTOR
 BY CITY



CITY OF KALAMAZOO
 Department Of Public Services
TYPICAL FIRE SERVICE DETAIL
HORIZONTAL SETTING
W/3", 4", OR 6" DOMESTIC
& 1" OR 2" IRRIGATION

RECOMMENDED BY _____	DATE _____
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	

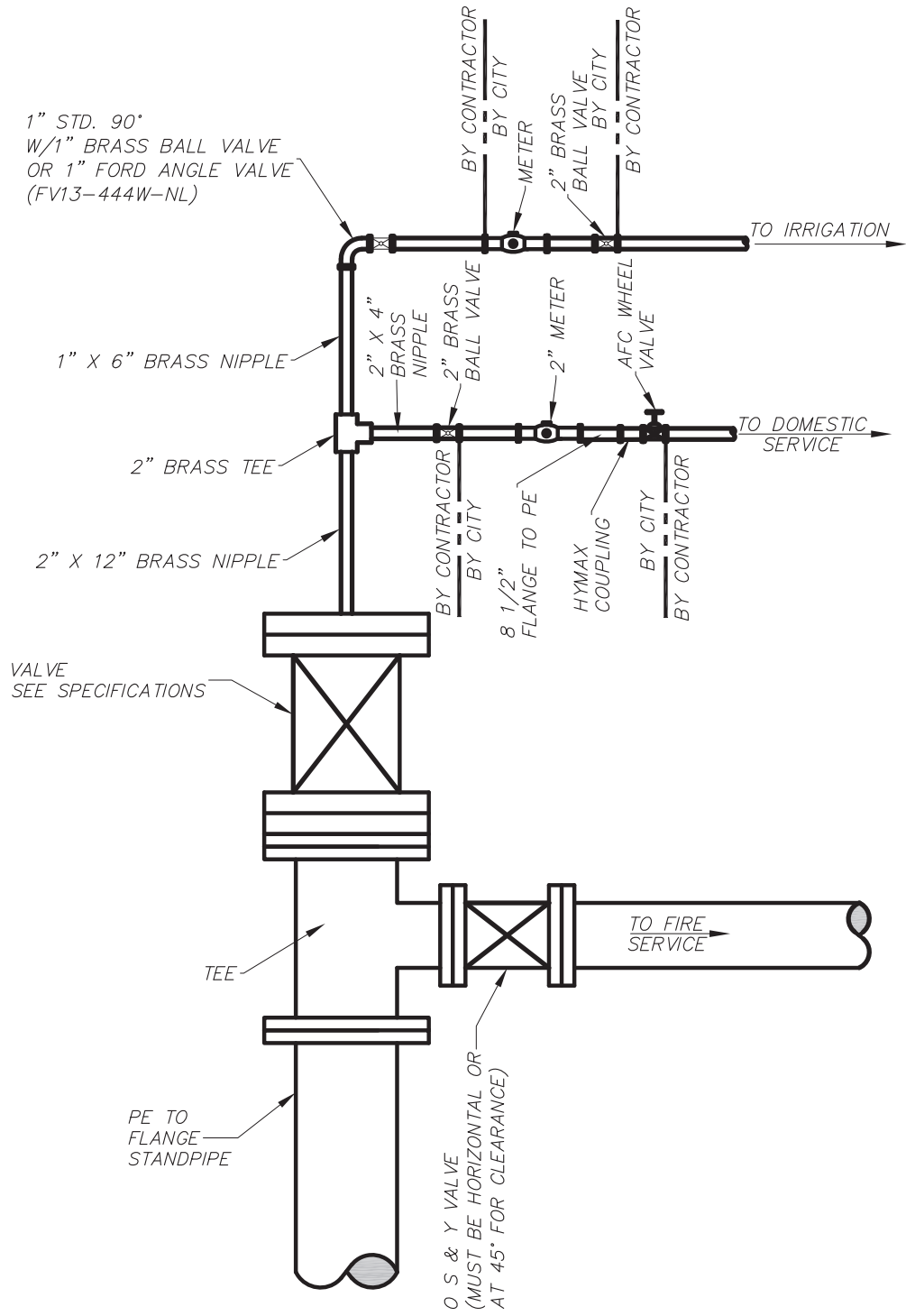
NOTE:
 CITY WILL INSTALL METERS FOR THE DETECTOR CHECK AND
 DOMESTIC USE. CONTACT STEVE SKALSKI 269-337-8454
 WITH QUESTIONS.



CITY OF KALAMAZOO
 Department Of Public Services
**PIT METER SETTING
 DETAIL FOR
 3", 4", 6" & 8"**

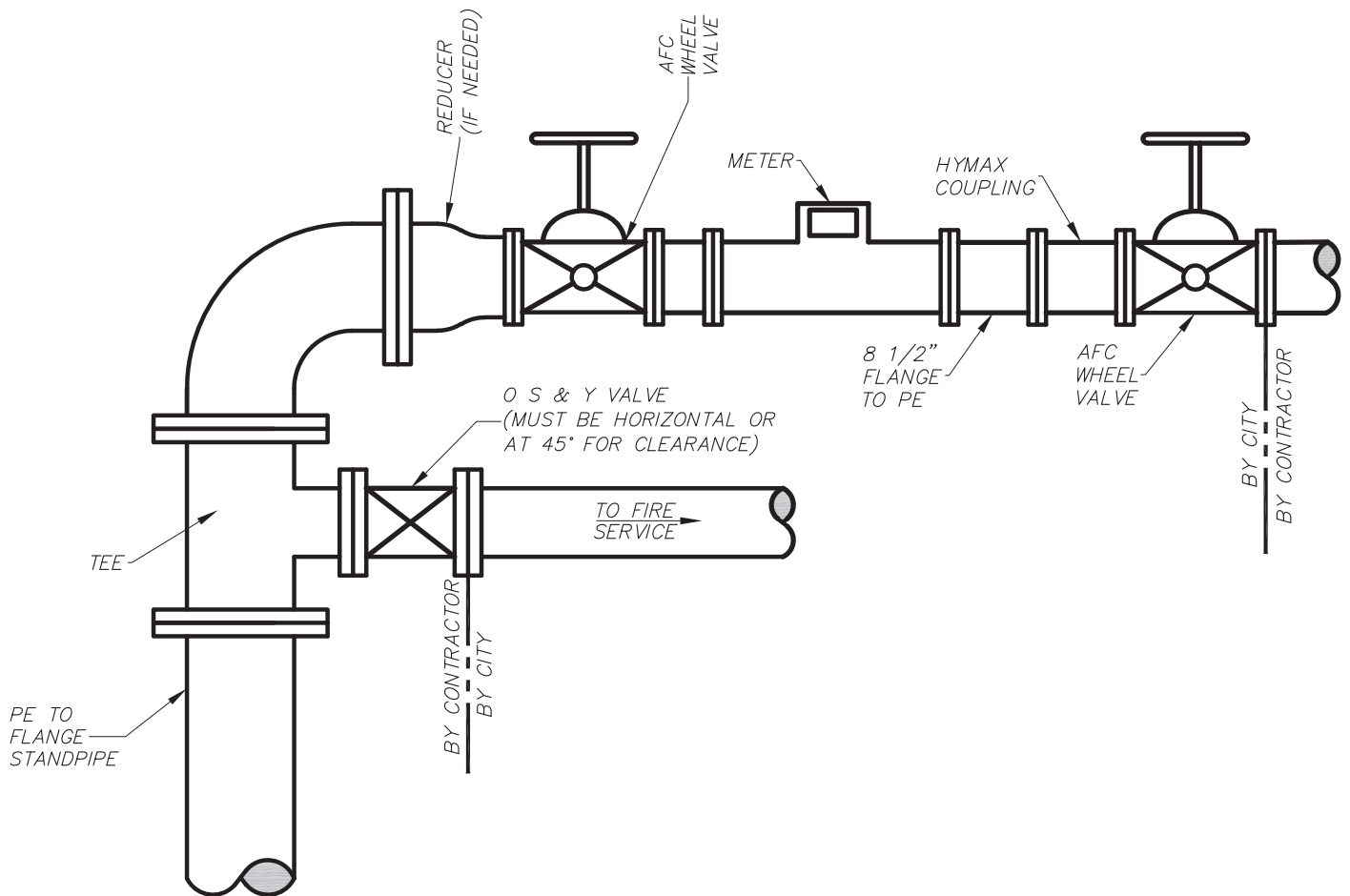
RECOMMENDED BY _____	DATE _____
APPROVED BY _____	
APPROVED BY _____	
ACCEPTED BY _____	

NOTE:
CITY WILL INSTALL METERS FOR THE DETECTOR CHECK AND DOMESTIC USE. CONTACT STEVE SKALSKI 269-337-8454 WITH QUESTIONS.



	CITY OF KALAMAZOO Department Of Public Services	RECOMMENDED BY _____	DATE
	TYPICAL FIRE SERVICE DETAIL HORIZONTAL SETTING 2" DOMESTIC 1" IRRIGATION	APPROVED BY _____	
		APPROVED BY _____	
		ACCEPTED BY _____	

NOTE:
 CITY WILL INSTALL METERS FOR THE DETECTOR CHECK AND
 DOMESTIC USE. CONTACT STEVE SKALSKI 269-337-8454
 WITH QUESTIONS.



CITY OF KALAMAZOO
 Department Of Public Services

**TYPICAL FIRE SERVICE DETAIL
 HORIZONTAL SETTING
 W/3", 4", OR 6" DOMESTIC**

RECOMMENDED BY _____

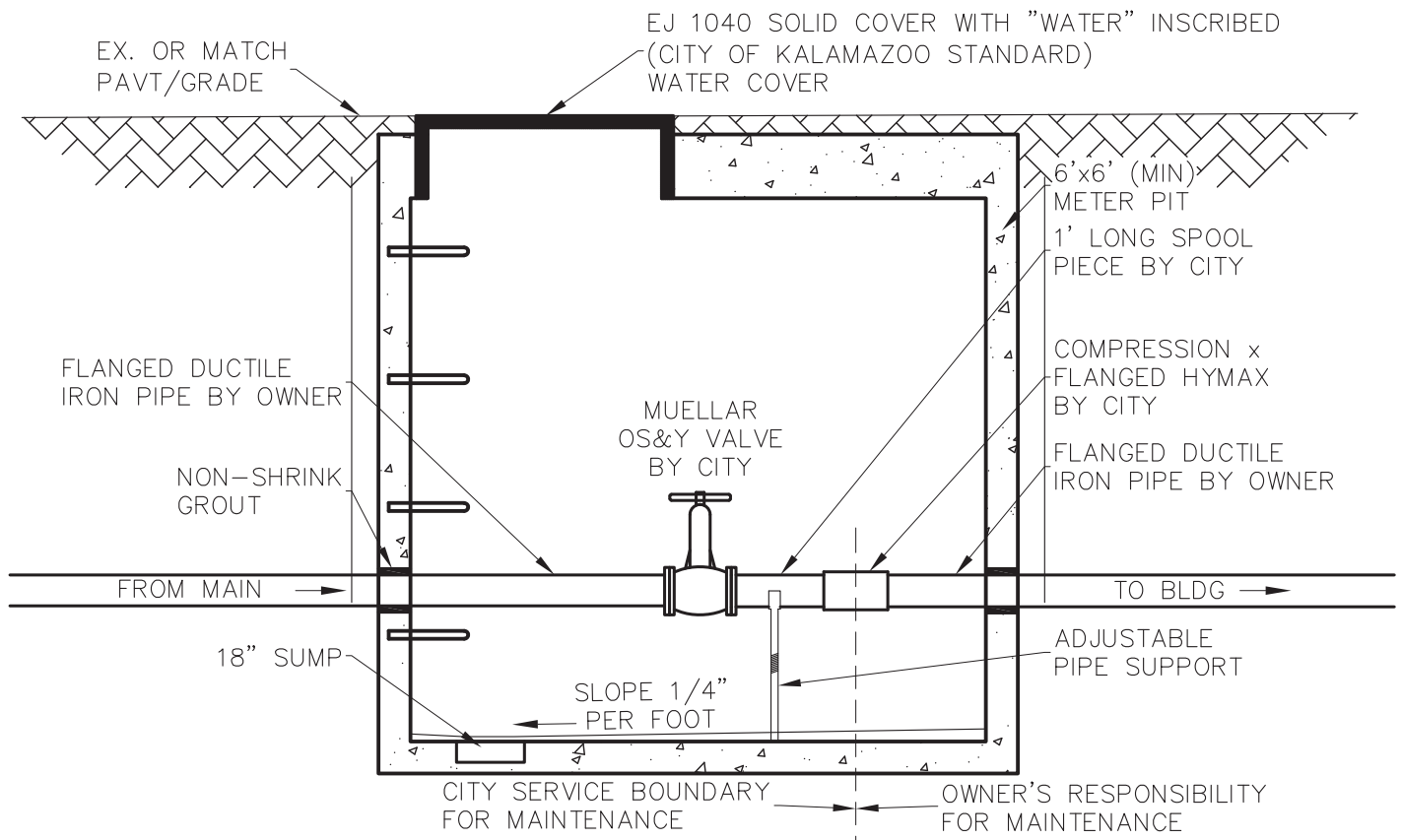
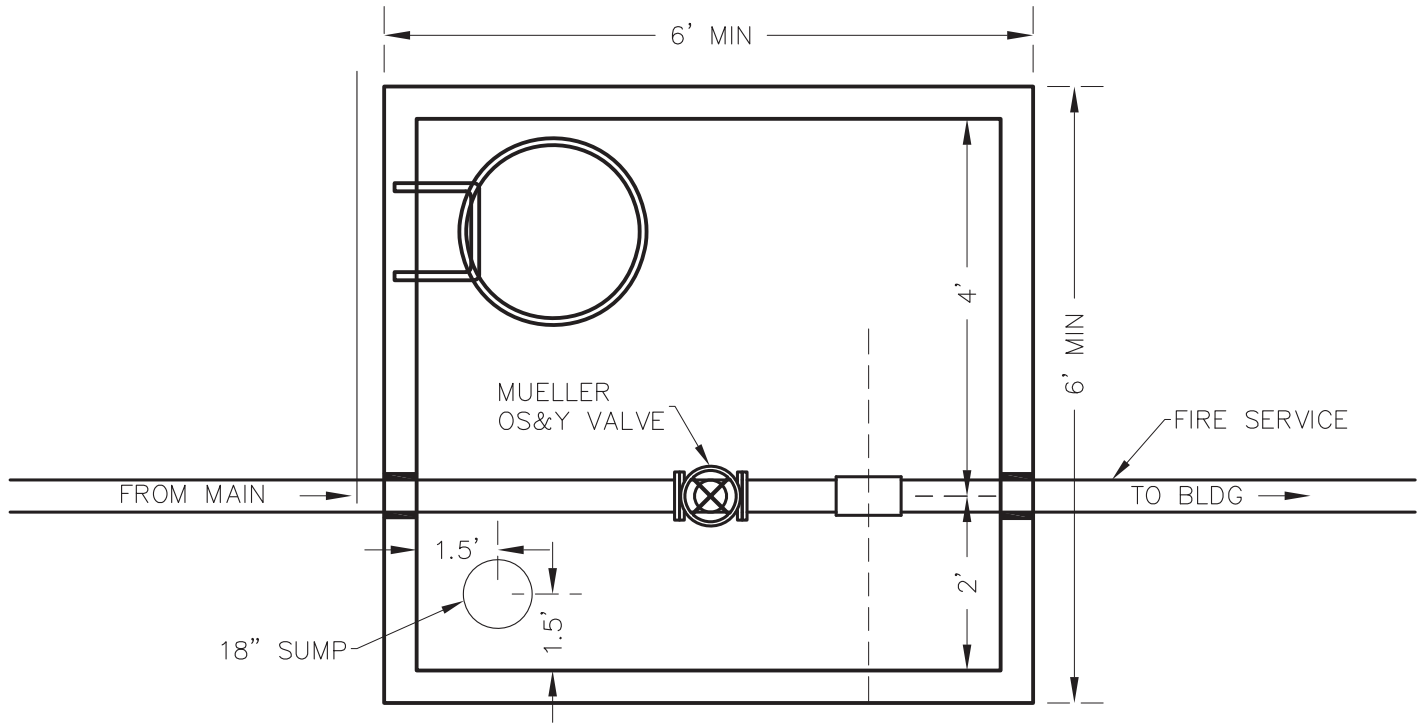
APPROVED BY _____

APPROVED BY _____

ACCEPTED BY _____

DATE

WS-16-A



	CITY OF KALAMAZOO Department Of Public Services	RECOMMENDED BY _____	DATE _____
	FIRE SERVICE IN PIT DETAIL	APPROVED BY _____	
		APPROVED BY _____	
		ACCEPTED BY _____	

APPENDIX C-3:

CITY OF KALAMAZOO WASTEWATER SEWER SPECIFICATIONS

**STANDARD SPECIFICATIONS FOR WASTEWATER SEWER INSTALLATION
(2016)C-3.1**

**CITY OF KALAMAZOO
DEPARTMENT OF
PUBLIC SERVICES**

ENGINEERING DIVISION



PUBLIC SERVICES DEPARTMENT

ENGINEERING DIVISION
415 STOCKBRIDGE AVE.
KALAMAZOO, MICHIGAN 49001-2898
PHONE 269-353-8769
FAX 269-353-8533

**Standard Specifications for
Wastewater Sewer Installation
2016**

SANITARY SEWERS

PART 1 GENERAL

1.01 SCOPE

- A. This Section includes furnishing and installing sanitary sewer systems.
- B. Reconstruction of existing sewers and house connections shall be in conformance with requirements of this Section.
- C. This Section shall include furnishing and installing all required pipe, bends or beveled pipe, tees, wyes, tee manhole base pipes, bulkheads and stoppers, jointing material, granular material for pipe bedding, concrete used for encasement or bedding, making watertight connections to existing and new sewers and existing manholes, cleaning, testing, and videotaping sewers, removing temporary bulkheads, and other work incidental to the sewer installation unless specifically included under other Items.

1.02 SUBMITTALS

- A. Submittals shall be the responsibility of the Contractor :
 - 1. Shop Drawings for Review:
 - a. Manufacturer's Shop Drawings indicating physical dimensions, and joint details for each size, type, and class of pipe, fittings and specials furnished for the project.
 - 2. Information for the Record:
 - a. Manufacturer's certification indicating that the pipe and joints meet specifications for each production run for each size, type, and class of pipe furnished. The Engineer may request test results to verify certification. Certification documents shall be according to the Source Quality Control of this Section.
 - b. Manufacturer's installation instructions.
 - c. The laboratory shall submit test certifications of pipe ordered tested under "Field Quality Control," of this Section.
 - 3. Engineer may request additional Shop Drawings or Information for the Record as required.

1.03 AS CONSTRUCTED RECORD

- A. During construction the contractor shall be required to keep current a set of "as constructed" drawings. Before final payment shall be made, the contractor shall submit for approval to the City of Kalamazoo the complete set of as constructed drawings. Each set of "as constructed" drawings shall be labeled "As Constructed", dated, and contain at a minimum the following information (additional information may be required by the City of Kalamazoo):

Structures:	Pipes:	Laterals:
1. Rim Elevations	1. Diameter	1. Address
2. Diameter	2. Length	2. Wye Station
3. Adjustment Ring Height	3. Material	3. Property Line Station
4. Cone/Top Material	4. Slope	4. Wye Elevation
5. Cone/Top Shape		5. Property Line Elevation
6. # of IN pipes		6. Wye Depth
7. # of Out pipes		7. Cleanout Depth
8. # of IN drops		8. Diameter

- 9. # of Out drops
- 10. Invert Elevations
- 11. Depth of Structure

- 9. Material
- 10. Lead Length
- 11. Riser Height
- 12. Distance from DS MH
- 13. Tie downs of CO and horizontal bends
- 14. Distance and direction from edge of house

PART 2 PRODUCTS

2.01 PIPES

A. Polyvinyl Chloride (PVC) Sewer Pipe Specifications:

1. For pipe 15-inch diameter and smaller: Pipe, fittings, and jointing systems shall conform to ASTM D-3034, except that the standard dimension ratio of the outside diameter of the pipe to wall thickness shall be 35.
2. For pipe 18-inch thru 24-inch diameter: Pipe, fittings, and jointing systems shall conform to ASTM D-3034 except that the standard dimension ratio of the outside diameter of the pipe to wall thickness shall be 26.
3. For pipe 27-inch thru 54-inch. Pipe, fittings, and jointing systems shall conform to ASTM F-1803 and UNI-B-9 (Vylon Pipe) and shall comply with the requirements for a minimum cell classification of 12364 as defined by ASTM D-1784. Impact resistance shall be 220 ft-lbs for 27-inch and 440 ft-lbs for 30-inch and larger. Test shall be per ASTM D 2444 and ASTM F 1803.
4. Joint systems shall be elastomeric seal (gasket) type. Seals shall conform to ASTM F-477 requirements. Joint materials and testing shall conform to ASTM D-3212 requirements.
5. All service connections shall be made using a wye and a bend. Tees shall be used only as directed by the Engineer. Tees and wyes shall be die cast or factory fabricated. All service pipes shall be SDR 35.

B. Reinforced Concrete Pipe (RCP):

1. Reinforced concrete pipe shall conform to ASTM C-76 pipe class as noted on the plans. Reinforced concrete pipe and specials for sanitary sewer shall conform to ASTM C-76, including the joint and joint material. Hydrogen Sulfide (H₂S) inhibitor additive shall be included in concrete mix design. Hydrogen Sulfide inhibitor shall be used in accordance with manufacturer specifications. H₂S inhibitor additive shall be manufactured by Xypex, ConShield, or Engineer approved equal.

2.02 ACCESSORIES

A. Flexible Pipe Repair Couplings:

1. Flexible repair couplings shall be made of elastomeric polyvinyl chloride boot with series 300 stainless steel shield and clamps. Couplings shall be Strong Back RC series as manufactured by Fernco Joint Sealer Co., Ferndale, Michigan; Logan Clay Pipe Co., Logan, Ohio; Mission Clay Products Corp., or equal.

B. Flexible Watertight Joints:

1. Flexible watertight joints used in connecting to existing sewers shall be a "boot" type sealed to the pipe wall with an internal expanding band and around the

connecting pipe with an external adjustable band. Other types of applicable flexible joints may be submitted for approval.

C. Granular Pipe Bedding Material:

1. Granular pipe bedding material shall be Class IIIa as specified in table 902-3 of the 2012 Michigan Department of Transportation Standard Specifications for Construction. .

2.03 REPLACEMENT DRAINS, SEWERS, AND APPURTENANCES

- A. All existing sanitary sewer pipe removed shall be replaced using pipe and joints as specified in this section. Connections to existing sewers shall be as specified in this section.

2.04 SOURCE QUALITY CONTROL

A. Pipe Manufacturer's Certification:

1. The pipe manufacturer's certificate shall state that the materials have been sampled and tested in accordance with the provision for and meet the requirements of the designated specification and shall be signed by an authorized agent of the seller or the manufacturer.
2. A test results report shall accompany that manufacturer's certificate. The report shall compare test results to Specification requirements. Test specimens shall be selected in conformance with the designated specification, except that no less than two tests shall be made for each production run of each size, type, and class of pipe furnished, and further, that in case tests are unsatisfactory, additional tests shall be made to the maximum number in the referenced ASTM Specification.

B. Profile Wall Basis of Design:

1. In addition to the above certifications, and if required by the Engineer, for pipe 18-inch and larger or greater than 20 feet in depth, the manufacturers of plastic profile wall pipes shall provide a certification that shows the basis of design for each pipe class furnished and that they are satisfactory for use as shown on the Drawings. Basis of design limits provided shall include but are not limited to; crushing resistance of pipe wall, pipe deflection, and constrained buckling resistance.
2. The following constraints shall be used as minimum conditions for the basis of design:

Safety Factor = 2

Bedding Class = ASTM D-2321 Class 1A

Loads = Soil weight (120 lb/cft)+H20

Depth of burial as shown of Drawings

Depth of submergence as indicated on soil borings or 4-feet minimum.

PART 3 EXECUTION

3.01 PREPARATION OF TRENCH

- A. The trench shall be excavated so the pipe can be laid to the alignment and grade required. Removed material (regardless of nature encountered) shall be stockpiled if approved to be reused or removed from site and disposed of according to all applicable laws and regulations.
- B. For pipes the width of trench at the top of pipe 18-inch in diameter or less shall be 36 inches. For pipe having a diameter greater than 18-inch, the width of trenches at the top of the pipe shall be two (2) times the inside diameter of the pipe. .

- C. Trenches shall be of such extra width as to permit the placing of sheeting and bracing where required. The contractor shall furnish and put in place all bracing, shoring or sheeting as may be required for the protection of the work and public or adjacent property. The bracing, shoring or sheeting shall be removed as the work progresses in such a manner as to prevent the caving in of the excavations or any damage to the sewer or structure. Any voids left by removal of said materials must be filled in with granular material as specified and compacted. This work shall be included in the pay item and will not be paid for separately.
- D. Unless otherwise indicated all sewer trenches shall be excavated below the proposed pipe invert as required to accommodate the depths of pipe bedding material as shown on Michigan Department of Transportation (MDOT) R-83 Series Standard Plans
- E. The Contractor shall at all times during construction provide and maintain ample means and devices with which to remove promptly and dispose of properly all water entering the excavations or other parts of the work and shall keep said excavations dry until the structures to be built or pipelines to be placed therein are completed. In waterbearing sand, well points and/or sheeting shall be supplied, together with pumps and other appurtenances of ample capacity to keep the excavation free of water and in compliance with government regulations.
- F. The Contractor shall dispose of water from the Work in a suitable manner without damage to adjacent property or structures and in compliance with all regulations.

3.02 PIPE INSTALLATION

- A. All loose dirt shall be removed from the bottom of the trench and the trench backfilled with specified bedding material to pipe laying grade, as detailed on the Drawings. Pipe trenches shall be excavated to the depth indicated on MDOT R-83-Series Standard Plans to provide adequate depth of pipe bedding and the pipe shall be placed and supported on bedding material the full length of the barrel. Bedding material shall then be placed 4-inch maximum depth along both sides of the pipe and tamped firmly under the pipe haunches. Hand tampers shall be used for installing bedding material around pipes smaller than 36-inch diameter and mechanical hand tampers shall be used around pipes 36-inch diameter and larger unless otherwise directed by the Engineer. The remainder of the trench shall be backfilled as specified in the R-83-series standard with a maximum size of 1.5 inches within two feet of the pipe.
- B. Concrete bedding and encasement in lieu of bedding material shall be installed as shown on the Drawings or specified.
- C. The laying of pipe in finished trenches shall be commenced at the lowest point, with the bell end or groove end laid upgrade. All pipe shall be laid with ends abutting and true to line and grade. They shall be carefully centered to form a sewer with a uniform invert of line and grade shown on the Drawings.
- D. All pipe shall be laid to lines and grades by use of a laser beam and checked for conformance. Pipes installed more than 0.04 feet above or below specified elevation shall be removed and reinstalled to grade.

3.03 PIPE JOINTS

- A. Pipe jointing surfaces shall be clean and dry when preparing surfaces for joining. Lubricants, primers, adhesives, etc., shall be used as recommended by the pipe or joint manufacturer's specifications. The jointing materials or factory fabricated joints shall then be placed, fitted, joined, and adjusted in such a manner as to obtain a watertight joint. Trenches shall be kept water-free and as dry as possible during bedding, laying, and jointing. As soon as possible after the joint is made, sufficient backfill material shall be placed along each side of the pipe to prevent movement of the pipe from any cause.

- B. Flexible Plastic Gasket Joints - Materials used for gaskets shall be as specified in this Section. Cross section size of gaskets and method of installation shall conform to the manufacturer's recommendations.

3.04 CONNECTIONS TO EXISTING SEWERS

- A. Unless indicated otherwise connections to existing sewers shall be connected in conformance with the manufacturer's recommendations as approved by the Engineer.

3.05 BACKFILLING AND COMPACTING

- A. Backfilling Under Existing Conduits - Where it is necessary to undercut or replace existing utility conduits and/or service lines, the excavation beneath such lines shall be backfilled the entire length with granular bedding material tamped in place in 6-inch layers to the required density. The granular bedding shall extend outward from the spring line of the conduit a distance of 2-feet on either side and thence downward at its natural slope.
- B. Backfilling With Excavated Material - Unless otherwise specified or directed, material excavated in connection with the work shall be used for backfilling and other filling purposes, if it meets all requirements given elsewhere in this specification. No material shall be used for backfilling that contains stones, rock, or pieces of masonry greater than 12-inch, frozen earth, debris, earth with an exceptionally high void content, organic material, or marl. No large pieces of rock or masonry greater than 1.5 inches shall be deposited closer than 24-inch from the completed outside surface of any structure or pipe.
- C. Backfill Immediately - All trenches and excavations shall be backfilled immediately after pipe is laid therein, unless otherwise directed by the Engineer. Under no circumstances shall water be permitted to rise in unbackfilled trenches after pipe has been placed.
- D. House Leads shall not be backfilled until the pipe ends are referenced and the Engineer has measured the pipe for payment.
- E. Backfilling around and over structures and pipes shall be carefully done by hand and tamped with suitable tools of approved weight to a point 1-foot above the top of pipe. Selected material or, where specified or ordered by the Engineer, special backfill material shall be used in this area. The material shall be placed in uniform layers not exceeding 6-inch in depth up each side. Each layer shall be placed, then carefully and uniformly tamped to the specified density so as to eliminate the possibility of lateral displacement of pipe or structure.
- F. Backfilling by Machinery - After the backfill has been placed and compacted around the structures and conduits to a height of 1-foot above the top. The remainder of the trench may be backfilled by machine. The backfill material shall be deposited in horizontal layers and each layer shall be thoroughly compacted to the specified density by approved methods before a succeeding layer is placed. In no case will backfill material from a bucket be allowed to fall directly on a structure or pipe and in all cases the bucket must be lowered so that the shock of the falling material will not cause damage.

3.06 COMPACTION REQUIREMENTS

- A. Compact each layer to 95% maximum density as tested by the Michigan Department of Transportation Density Testing and Inspection Manual.

3.07 COMPACTION TESTS

- A. Trenches and excavation around structures shall be backfilled and consolidated in layers, as specified, to the existing ground surface. Compaction tests shall be performed on each layer immediately after compaction.
- B. Initial test series for each type of backfill material shall be continued until the method of consolidation employed has proven to attain the required compaction. Any change in the proven method of consolidations will require additional testing and field verification of compaction.
- C. Subgrade below pavements, curbs, sidewalks, and structures shall be consolidated as specified. Compaction tests shall be performed to verify specified consolidation.
- D. Subsequent tests or series of tests shall be in locations and at depths ordered by the Engineer.

3.08 FIELD QUALITY CONTROL

- A. The Engineer may select one sample of pipe on the job site of each production run of each size and type of pipe to be tested by the Contractor's laboratory. The Contractor shall furnish the first test piece or pipe core and any additional samples required because of failures. The Contractor shall pay for tests on the first sample. Should the sample fail to meet specifications, retests shall be conducted by the Contractor's laboratory in conformance with the specifications and shall be at no additional expense to Owner.
- B. Deflection of PVC Pipe:
 - 1. Vertical Ring Deflection - Before final acceptance of sewer lines, all sections of sewer pipe 8-inch and larger specified diameter shall be measured for vertical ring deflection by the Contractor and witnessed by the Engineer. Maximum deflection under full load shall not exceed 5 percent of the ASTM designated average inside diameter as determined by the laboratory for the specified piping.
 - 2. Failures - Should a pipe exceed the allowable deflection, the Contractor shall replace those pipes and retest the section.
 - 3. Equipment used in testing shall be go-no-go pull through gauges of a type approved by the Engineer. A metal or plastic gauging ring of diameter equal to 95 percent of the specified average inside pipe diameter shall be furnished with each gauge.
 - 4. The Contractor shall furnish testing equipment and personnel and perform the required tests. Tests shall be witnessed by the Engineer.
 - 5. Use of mechanical pulling devices is not permitted.
 - 6. Deflection testing shall not be performed until the completed and accepted trench backfill has been in place for at least 30 days.
- C. Field Inspection:
 - 1. Individual sections of pipe may be rejected at any time because of defective joints, dimension variations, fractures, cracks, chips, or blisters exceeding the permissible tolerances.
 - 2. Rejected pipe shall be so marked with a lumber crayon or paint and shall be removed from the job site before the end of the following work day.

3.09 LOW PRESSURE AIR ACCEPTANCE TESTS

- A. The Contractor will perform low pressure air acceptance tests in lieu of infiltration or exfiltration tests. Test shall be made in accordance with ASTM F-1417-Plastic Gravity Sewer Lines.
1. If the air pressure required for the test is greater than 5.0 psig, the low pressure air acceptance test shall not be used.
- B. The Contractor shall furnish all equipment, materials, and labor, and conduct the tests under observation of the Engineer.
- C. Safety:
1. The air test may be dangerous if the line is improperly prepared. All plugs shall be installed and braced in such a manner to prevent blowouts. No one shall be allowed in manholes during testing.
 2. Pressurizing equipment shall include a regulator set at the maximum pressure.
- D. Line Preparation:
1. Sewers to be air tested shall be prepared and inspected as specified herein for infiltration and exfiltration tests.
 2. Where porous pipe materials are used, the pipe walls may be wetted to temporarily reduce the porosity of the material.
 3. All pipe outlets shall be plugged, braced, and the joints restrained adequately to prevent blowouts.
- E. Test Procedure:
1. Low pressure air shall be slowly introduced into the sealed line until the internal air pressure reaches 4.0 psig greater than the average back pressure of any ground water above the invert of the pipe.
 2. When a constant pressure of 4.0 psig greater than the average back pressure of any ground water above the pipe is reached, the air supply shall be throttled to maintain that internal pressure for at least 2 minutes to permit temperature equalization.
 3. When temperatures have been equalized and the pressure stabilized at 4.0 psig greater than the average back pressure of any ground water above the pipe, the air supply shall be shut off or disconnected.
 4. Decrease the pressure in the sealed line until the continuous monitoring pressure gauge reads 3.5 psig greater than the average back pressure of any ground water above the pipe. When this pressure is reached, timing shall commence with a stop watch.
 5. Determine the time, as shown on the stop watch, required for the pressure in the sealed line to drop 1.0 psig.
- F. Test Method ASTM F-1417-Plastic Gravity Sewer Line:
1. Low pressure air test method shall be the Time-Pressure Drop Method.
 2. The pressure used in the test shall be the stated pressure plus the average back pressure of any groundwater above the pipe.
 3. The time required for the pressure in the test section to drop 1.0 psig shall be measured using a stop watch. If the time is less than the time determined from

ASTM F-1417, the section fails. The table below has been reprinted from ASTM F-1417 for Contractor's information.

Pipe Diameter, Inches	Minimum Time, Min.: Sec.	Length for Minimum Time, Feet	Time for Longer Length, Sec. (L=Ft)
6	5:40	398	0.854 L
8	7:34	298	1.520 L
10	9:26	239	2.374 L
12	11:20	199	3.418 L
15	14:10	159	5.342 L
18	17:00	133	7.692 L
21	19:50	114	10.470L
24	22:40	99	13.674L

Note: Minimum time applied to all lengths less than or equal to the length shown. For more information, see ASTM F-1417, Table 1.

G. Air Pressure Adjustment For Groundwater:

1. In areas where groundwater is known to exist, the Contractor shall install a one-half inch diameter capped pipe nipple, approximately, 10-inch long, through the manhole wall on top of one of the sewer lines entering the manhole. This shall be done at the time the sewer line is installed. Immediately prior to the performance of the line acceptance test, the groundwater level shall be determined by removing the pipe cap, blowing air through the pipe nipple into the ground to clear it, and then connecting a clear plastic tube to the pipe nipple. The hose shall be held vertically and a measurement of the height in feet of water shall be taken after the water stops rising in this plastic tube.
2. The air pressure correction, for the average back pressure of the groundwater above the pipe, shall be calculated by subtracting the average invert elevation from the measured groundwater elevation and dividing the difference by 2.31 psi/ft.. This correction must be added to the test pressures stated in the test procedure.

3.10 CLOSED CIRCUIT TELEVISION INSPECTIONS (CCTV)

- A. Perform CCTV television inspections on sanitary mains and laterals per the City of Kalamazoo Standard Specifications for Closed Circuit Television Inspections of Sewer Mains, Manholes, and Laterals

PART 4 MEASUREMENT AND PAYMENT

Pay Item	Pay Unit
Sanitary Sewer, (Material), _ inch, TR Det _	Foot
Sanitary Service, (Material), _ inch, TR Det _	Foot
Sanitary Cleanout, (Material), _ inch, TR Det _	Each

Sanitary sewer shall be measured in place per foot as measured from center of manhole to center of manhole.

Sanitary service shall be measured in place per foot as measured from the wye connection to the center of each bend, tees, wyes, or plugs until the pipe terminates or is connected to the existing service. Connection to the existing service shall be considered incidental to construction and will not be paid for separately

Sanitary cleanouts shall be measured per unit installed and include the riser pipe, plug/cap, and any additional items as detailed on the drawings.

Payment for each item includes all excavation, trenching, backfilling, compacting, shoring/bracing cleaning and CCTV inspection, labor and equipment to complete pay item.

END OF SECTION

PRECAST SEWER MANHOLES

PART 1 GENERAL

1.04 SCOPE

- A. This Section includes furnishing and installing precast sewer manholes, including drops and manhole stacks of types and at locations shown on the Drawings and scheduled.
- B. This Section includes removing existing structures, additional excavation to widen and deepen trenches for manhole construction, furnishing and installing concrete of classes called for, Portland cement mortar, reinforcing steel, precast concrete pipe integral base sections, bottom riser sections, transition sections, and riser sections, eccentric cones, flat slab tops and grade rings, flexible manhole connections, pipe for drop connections, manhole steps, manhole frames and covers, plugging lifting holes, pointing joints, forming channels through manhole bottoms, making watertight connections to new and existing sewers, and other work incidental to manhole construction and testing.

1.05 SUBMITTALS

- A. Submittals shall be the responsibility of the Contractor :
 - 1. Shop Drawings for Review:
 - a. Manufacturer's Shop Drawings indicating physical dimensions, joint details, and reinforcing steel layout for each size and type of manhole components furnished for the project.
 - b. Manufacturer's certification indicating that the manhole components and joints meet specifications for each production run for each size and type furnished.
 - 2. Information for the Record:
 - a. The Engineer may request test results to verify certification. Certification documents shall be according to the Source Quality Control of this Section.
 - 3. Engineer may request additional Shop Drawings or Information for the Record as required.

PART 2 PRODUCTS

2.01 MATERIALS

- A. Type of Manhole Sections:
 - 1. Manhole Stacks - Manhole stacks shall mean 4-foot diameter manholes used for access to reinforced concrete manhole chambers and precast manhole riser tee sections.
 - 2. Type I Manholes - Type I manholes shall mean 4-foot diameter manholes with precast integral base sections for sanitary sewers. All connections to manholes shall be made with flexible water tight joints. Type I manholes are intended for installation on sewers 18-inch diameter and smaller.
 - 3. Type II Manholes - Type II manholes shall mean manholes with 5-foot diameter precast integral base sections. All connections to manholes shall be made with flexible water tight joints. Type II manholes are intended for installation on 21-inch through 30-inch diameter sewers.

4. Type III Manholes – Type III manholes shall mean manholes with precast integral base sections or precast bottoms that are larger than 5-foot diameter. The diameter of the bottom riser sections shall be as shown on the Drawings. All connections to manholes shall be made with flexible water tight joints. Type III manholes are intended for installation on pipes where the additional wall area is needed for installation of flexible joints and on 36-inch through 48-inch diameter sewers.
 5. Type IV Manholes - Type IV manholes shall mean manholes with cut-outs in the bottom riser sections installed on cast-in-place concrete bases. The diameter of the bottom riser sections shall be as shown on the Drawings. All connections to manholes shall be made with flexible water tight joints. Type IV manholes are intended for installation on sewers 48-inch diameter and larger and on existing sewers where identified on Drawings.
 6. Type S Manholes - S following manhole type shall mean the designated type manhole constructed with a precast flat slab top in lieu of a precast cone.
- B. Precast manhole sections, integral base sections, transition sections, eccentric cones, flat slab tops, and adjusting rings shall conform to ASTM C-478. Reinforcing in transition sections shall be equal to that specified for wall sections of the larger diameter.
 - C. Joints shall be manhole gaskets conforming to ASTM C-923.
 - D. The standard length of riser sections shall be 48-inch. Lengths of 32-inch or 16-inch shall be used to meet required dimensions and as specified.
 - E. Openings for connecting pipes in riser sections, bottom riser sections, and integral base sections, and for access in flat slabs shall be preformed or cored by the manufacturer, except “cut-out” openings may be made in bottom riser sections for Type IV manholes. Cut-out openings shall be made immediately after the pipe is removed from the casting form. All cored openings for sewer pipe connections shall have flexible joints.
 - F. Precast integral base sections shall be of monolithic construction. Base flat slab floors or integral floors shall have a minimum thickness of 6-inch for risers up to and including 48-inch in diameter and 8-inch for larger diameters. A layer of reinforcement shall be placed above the midpoint, and shall have a minimum area of 0.12 square inch/linear feet in both directions.

2.02 ACCESSORIES

- A. Manhole Steps - Manhole steps shall be of polypropylene plastic reinforced with a 1/2-inch No. 60 grade reinforcing rod. Steps shall be M. A. Industries Model PS-1, or equal.
 1. Specified manhole steps shall be factory installed to provide a continuous ladder of 14-inch Center-to-Center rung spacing. Steps shall be placed in the forms and cast in pipe wall or placed immediately after the pipe is removed from casting and carefully mortared in place with nonshrink mortar to insure a watertight joint. Manhole step installation shall be in compliance with OSHA regulations. If the outer surface of the pipe wall is pierced the patch shall be completely covered with a bituminous sealer.
- B. Manhole frames and covers shall be as shown on the Drawings.
 1. Where pressure tight manhole frames and covers are called for, threaded inserts shall be cast in eccentric cones or flat slab tops and holes formed or cored in adjusting rings to match bolt size and spacing specified for manhole casting.

- C. Mortar:
 - 1. Mortar used for the structures herein specified shall conform to ASTM C-270 Type S, containing no masonry cement. The mortar shall be composed of one part portland cement to two parts sand by volume.
 - 2. Non-shrinking Mortar - Materials for nonshrinking mortar shall be Sauereisen F-100, Five-Star, or equal.
- D. Cast-in-Place Concrete:
 - 1. All cast-in-place concrete used for concrete bases and for forming channels in manhole bottoms shall be Class A as shown in table 1
 - 2. All concrete used for supporting precast concrete manhole bases shall be Class B as shown in table 1

Table 1: Concrete Requirements

Concrete Class	Min 28-Day Compressive Strength (psi)	Maximum Water - Cement Ratio	Minimum Cement Content Sacks/CY	Slump Min.	Inches Max
A	4000	.45 (5.1*)	6.5	1	4
AA	3000	.53 (6*)	6	2	4
B	1750	.71 (8*)	4	1	6

* - Water in U.S. gallons per 94 -lb. sack of cement

- E. Reinforcing Steel - Reinforcing steel used in cast-in-place concrete shall meet the requirements of the City of Kalamazoo pre-cast concrete manhole drawings.
- F. Pipe for Manhole Drops - Pipe for manhole drops shall conform to specifications of Sanitary Sewer for the required size and type shown on the Drawings.

PART 3 EXECUTION

3.01 COORDINATION

- A. Location and type of manholes installed shall be as shown on the Drawings or directed.
- B. Construction shall be in conformance with details shown on the Drawings and as specified.
- C. Excavation for manhole construction shall be prepared as directed in applicable paragraphs of the Sanitary Sewer Specification.

3.02 INSTALLATION OF INTEGRAL BASE SECTIONS

- A. Class B concrete shall be poured as to provide a minimum 4-inch thick pad under the entire area of the manhole base. Place the manhole base on the pad before the concrete is completely set so that final leveling adjustment can be made. Alternatively, the manhole base may be placed on 4-inch compacted granular bedding material. Bottom sections placed on bedding shall be a minimum of 6-inch thick.

3.03 INSTALLATION OF BOTTOM RISER SECTIONS (WITHOUT INTEGRAL BASE)

- A. Unless otherwise called for on the Drawings or directed, precast bottom riser sections shall be placed with cast-in-place reinforced concrete bases.
- B. The base shall be of Class A concrete 12-inch thick minimum placed on undisturbed earth. Reinforcing shall be as shown on the Drawings.

- C. The cut-out riser section shall be blocked in place above the pipe and the concrete base poured in place. Concrete shall be extended above the lower rim of the riser wall as required to provide a watertight seal around the entire circumference of the riser section. The sewer pipe shall be bedded in concrete monolithic with the base to the first joint each way from the manholes.

3.04 CHANNELING MANHOLE BOTTOMS

- A. The bottoms of all manholes shall be channeled to conduct flow in the planned direction. The channel walls shall be formed or shaped to the full height of the crown of the outlet sewer in such a manner to not obstruct maintenance of flow in the sewers and shall match inverts of connection pipe at the manhole wall.
- B. In integral base sections (only) channels may be constructed using brick and Portland cement mortar. Mortar shall be 3/4-inch thick minimum between bricks and between bricks and concrete and 1-inch thick minimum on all exposed surfaces.

3.05 PRECAST CONCRETE RISER SECTIONS

- A. The shortest length of riser section to be incorporated into the manhole shall be installed immediately below the eccentric cone section or the flat slab top.
- B. Pipe section joints shall be pointed and lifting holes filled with nonshrinking mortar.

3.06 INSTALLATION OF MANHOLE FRAMES

- A. Manhole frames and covers shall be installed to grades shown on the Drawings or as directed.
- B. Adjustment of manhole castings shall be made using specified precast grade rings and Portland cement mortar joints or preferred bitumen seals.
- C. Each pressure tight manhole casting shall be anchored in place using four 5/8-inch stainless steel bolts with nuts as detailed on the Drawings or directed.
- D. The maximum depth of adjustment below any manhole casting shall be 12-inch and the minimum depth of adjustment shall be 4-inch
- E. In concrete pavement, separate frame from pavement with 1/2-inch thick premolded mastic joint material extending from the base of the frame to the top of the frame.

3.07 MANHOLE TESTING

- A. Each manhole shall be tested after assembly and after all lift holes have been plugged with an approved non-shrink grout, after backfilling is complete and prior to installation of any specified chimney seals.
- B. Testing shall be by drawing a vacuum on the manhole using equipment specifically designed for such testing. All pipes entering the manhole shall be plugged and braced to prevent being drawing into the manhole. A test head with necessary gauges and connections shall be placed at the inside of the top of the cone section and sealed in accordance with the manufacturer's instructions. A vacuum of 10 inches of mercury shall then be drawn and the vacuum pump shut off. With valves closed, the time shall be measured for the vacuum to drop to 9 inches. The test shall be successful if the time measured is greater than 60 seconds. If the test is unsuccessful, necessary repairs shall be made and retesting shall proceed until a satisfactory test is obtained.

PART 4 MEASUREMENT AND PAYMENT

Pay Item	Pay Unit
Sanitary Manhole, _ inch.....	Each
Sanitary Manhole, _ inch, Add Depth, 8 foot to 15 foot	Foot
Sanitary Manhole, _ inch, Add Depth, more than 15 foot.....	Foot
Sanitary Manhole, Tap, _ inch.....	Each
Sanitary Manhole Cover	Each

Payment for each item includes all excavation, trenching, backfilling, compacting, shoring/bracing cleaning and videotaping, labor and equipment to complete pay item.

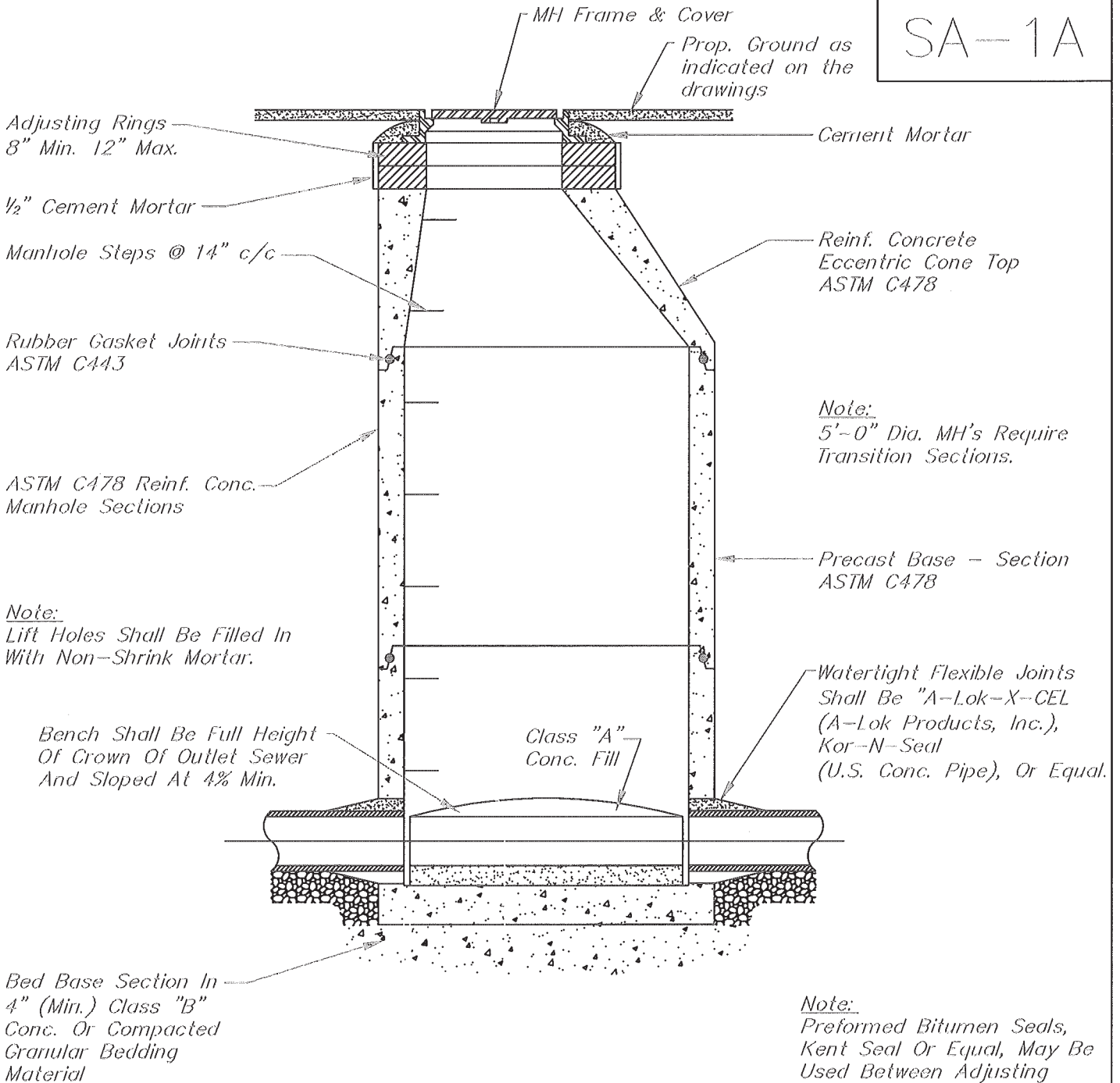
Payment for Sanitary Manhole, _ inch shall include the concrete footing and no greater than 8 feet of concrete structure depth measured from the flow line to the bottom of the chimney or adjustment rings. The price also includes the cost of temporary and/or final adjustments of structure.

Payment for Sanitary Sewer, _ inch, Add Depth, _____ shall be the cost of the structure portions which are greater than 8 feet but less than 15 feet and more than 15 feet.

END OF SECTION

This page was intentionally left blank.

SA-1A



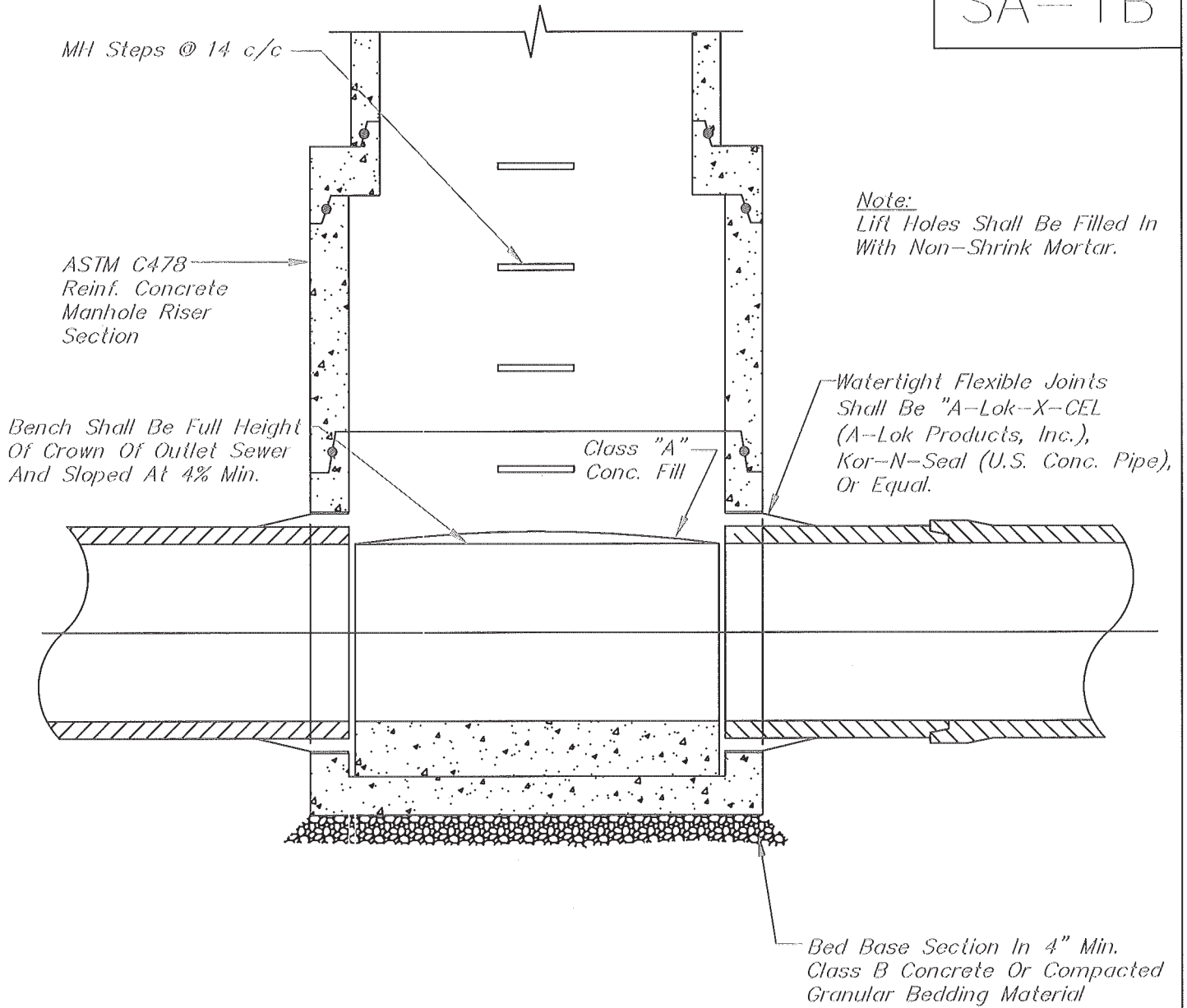
TYPE I & II MANHOLES

1/4" = 1'-0"



CITY OF KALAMAZOO
 DEPT. OF PUBLIC SERVICES
 STD. MANHOLES
 TYPE-I & II
 MARCH 2012

SA-1B

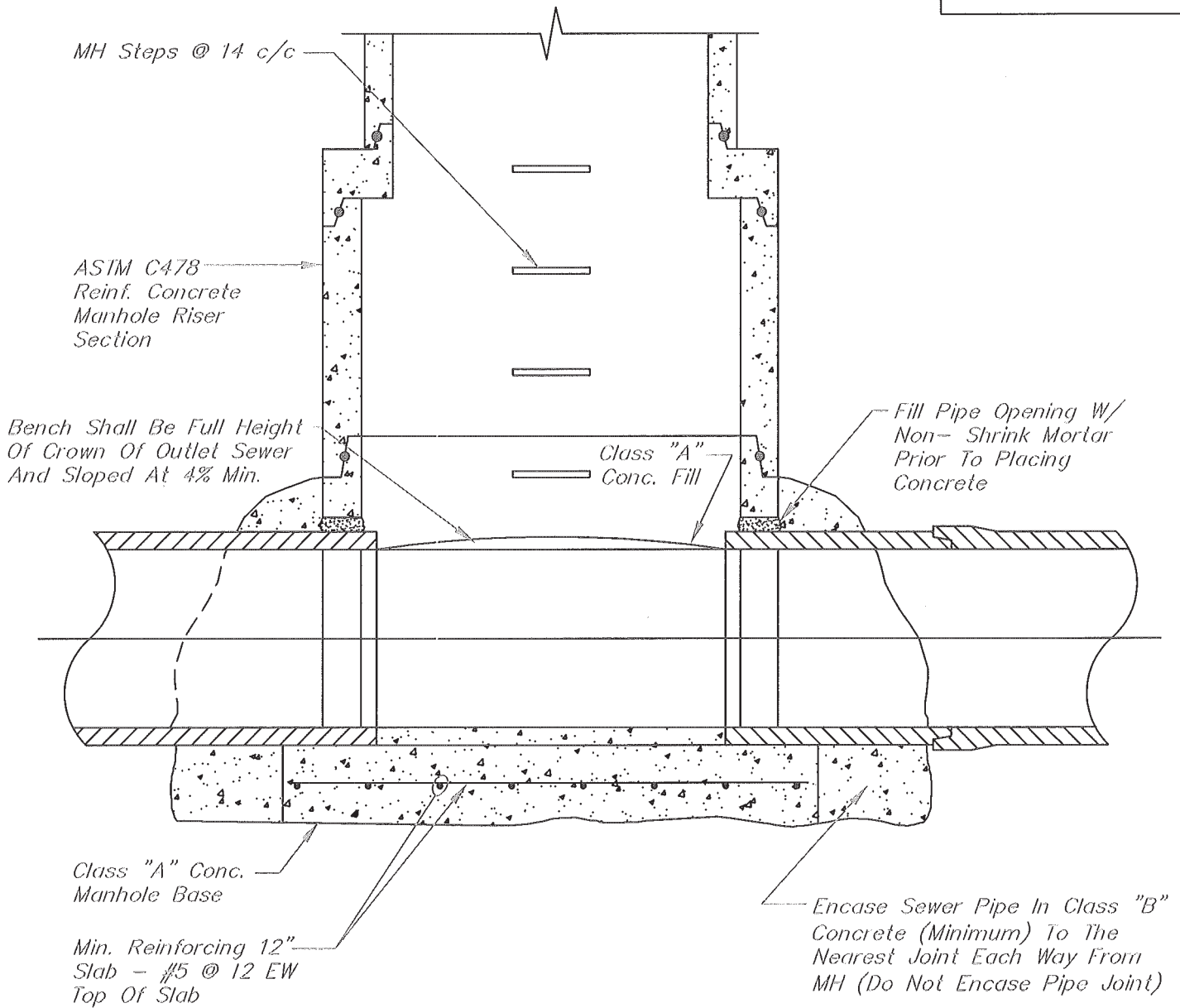


TYPE III MANHOLE
 $\frac{1}{4}'' = 1'-0''$



CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
STD. MANHOLES
TYPE-III
MARCH 2012

SA-1C



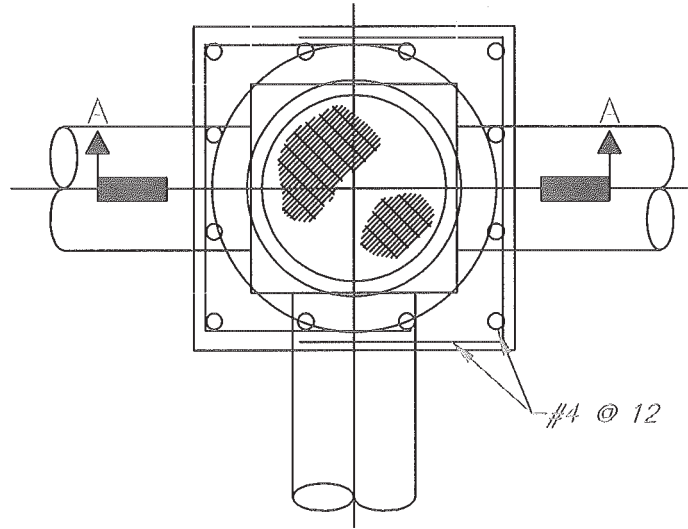
TYPE IV MANHOLE

$\frac{1}{2}'' = 1'-0''$

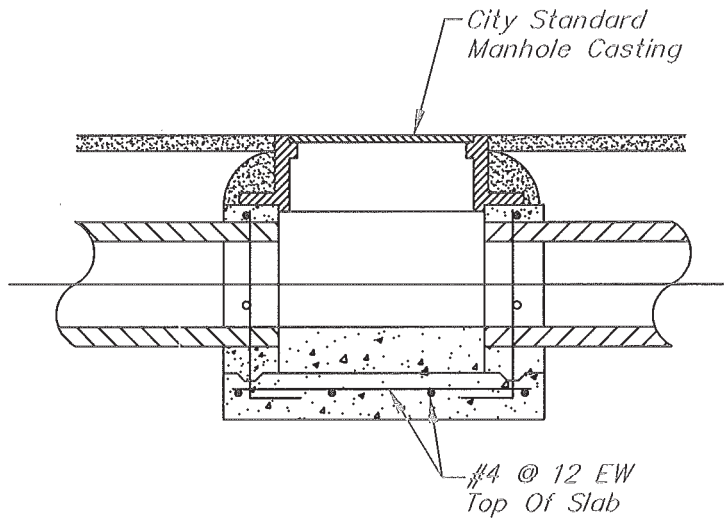


CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
STD. MANHOLES
TYPE-IV
MARCH 2012

SA-1D



PLAN



SECTION A-A

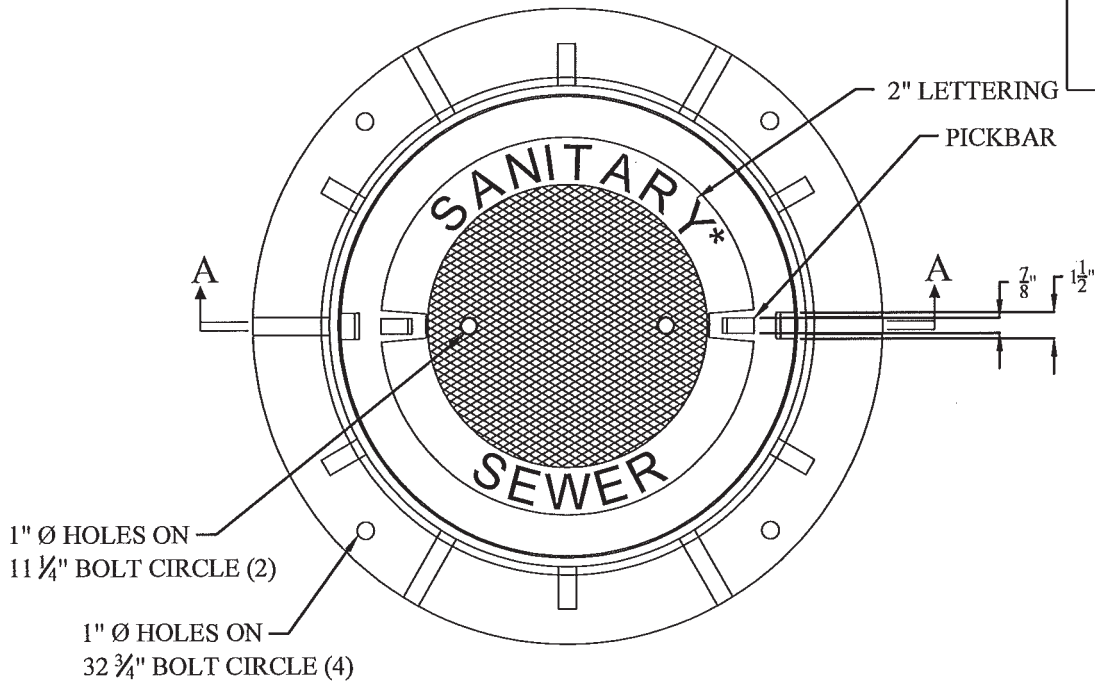
TYPE V MANHOLE

$\frac{1}{4}'' = 1' - 0''$



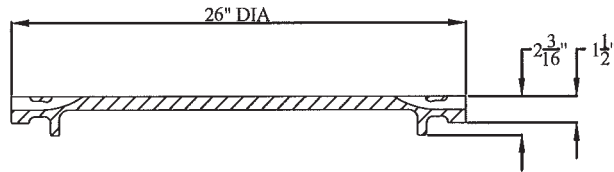
CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
STD. MANHOLES
TYPE-V
MARCH 2012

SA-2A

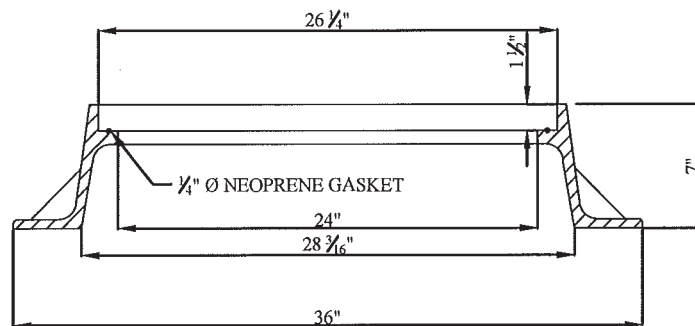


FRAME AND COVER

*WHEN USED ON STORM SEWER, THE COVER SHALL READ 'STORM SEWER'



COVER SECTION



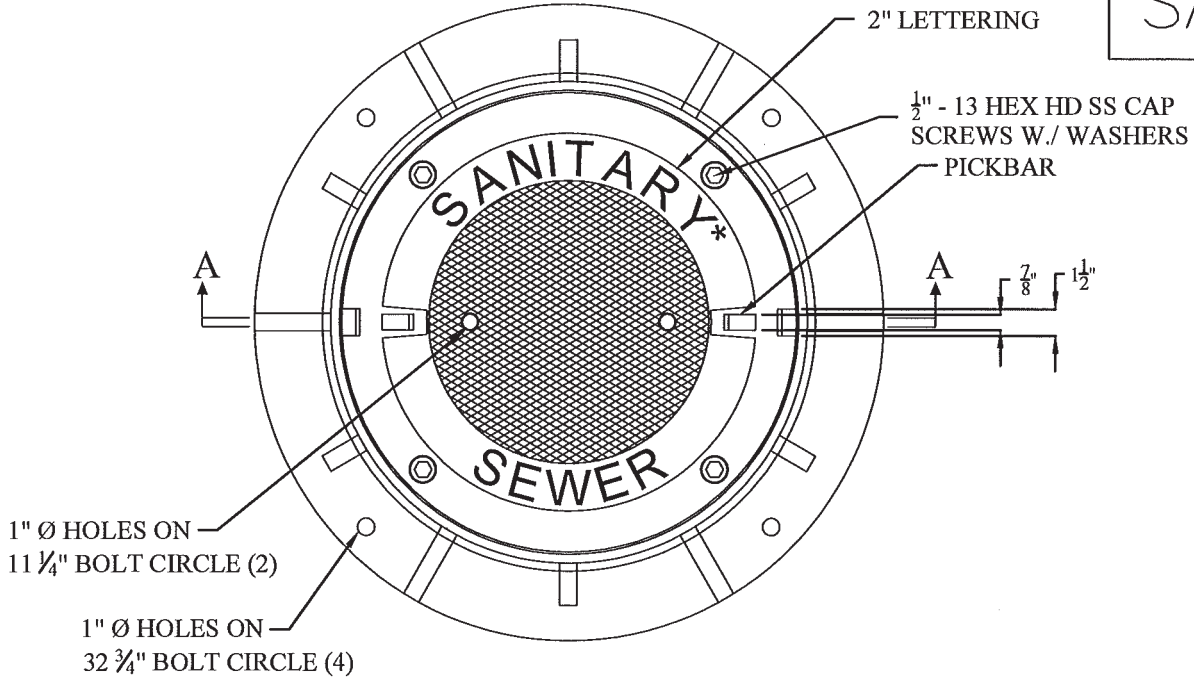
SECTION A-A

NOMINAL WEIGHT - 320 LBS



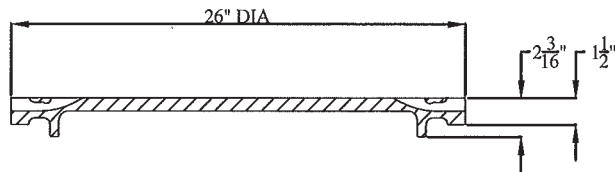
CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
SANITARY SEWER
CASTING
NOVEMBER 2012

SA-2B

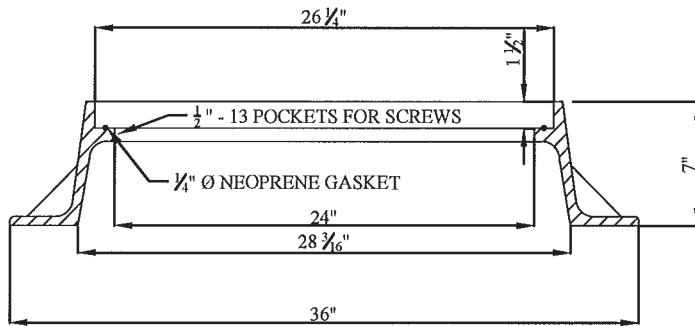


FRAME AND COVER

*WHEN USED ON STORM SEWER, THE COVER SHALL READ 'STORM SEWER'



COVER SECTION



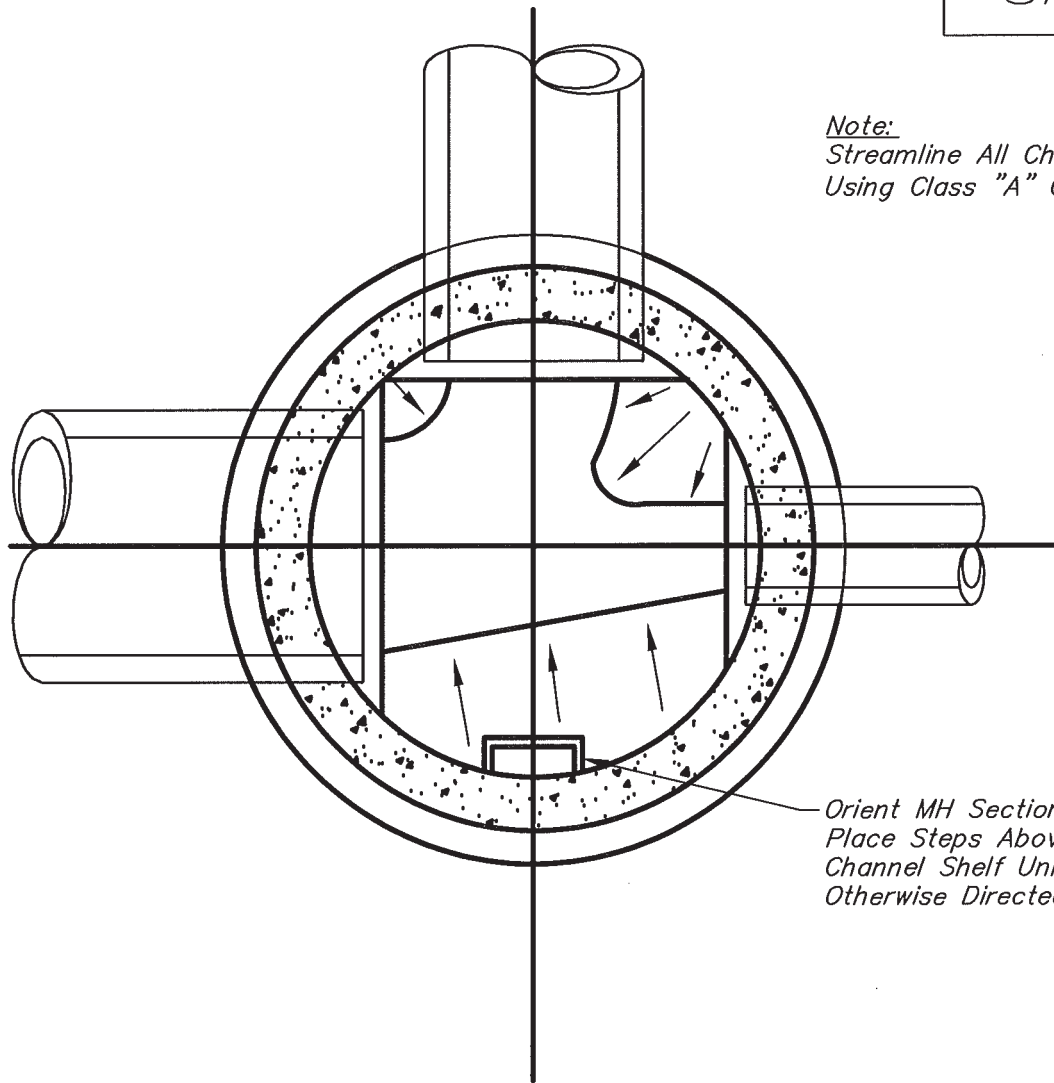
SECTION A-A

NOMINAL WEIGHT: 200 LBS.



CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
SANITARY SEWER
CASTING (LOCKING)
NOVEMBER 2012

SA-3



Note:
Streamline All Channels
Using Class "A" Conc.

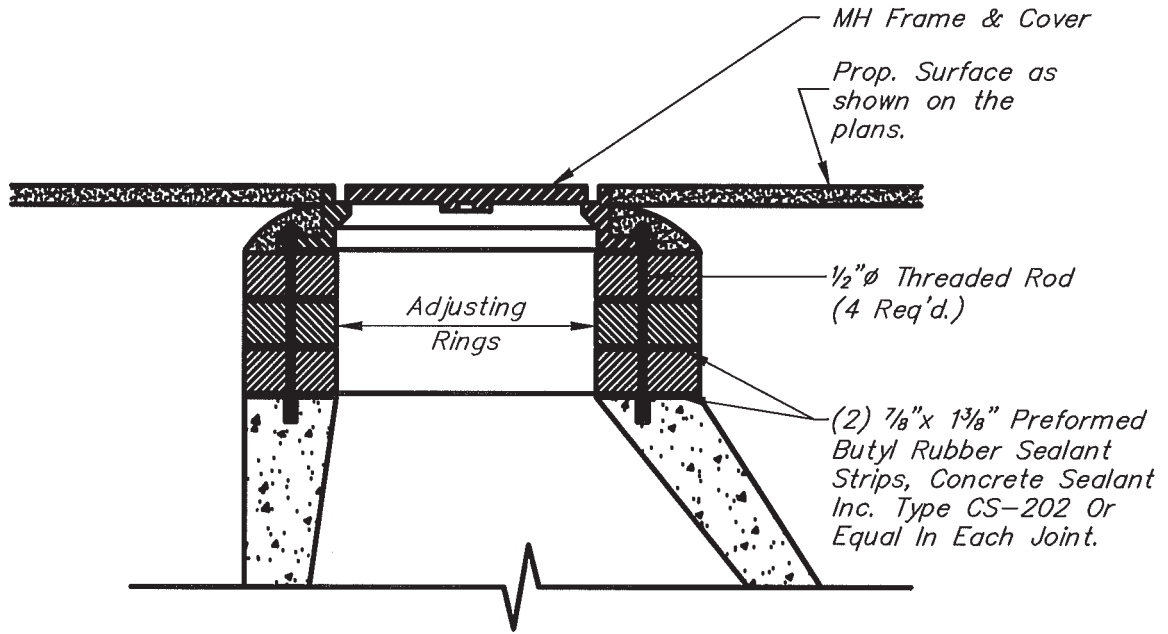
*Orient MH Sections To
Place Steps Above
Channel Shelf Unless
Otherwise Directed*

SECTIONAL PLAN
 $\frac{1}{2}''=1'-0''$



CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
FLOW CHANNEL
SECTIONAL PLAN
MARCH 2012

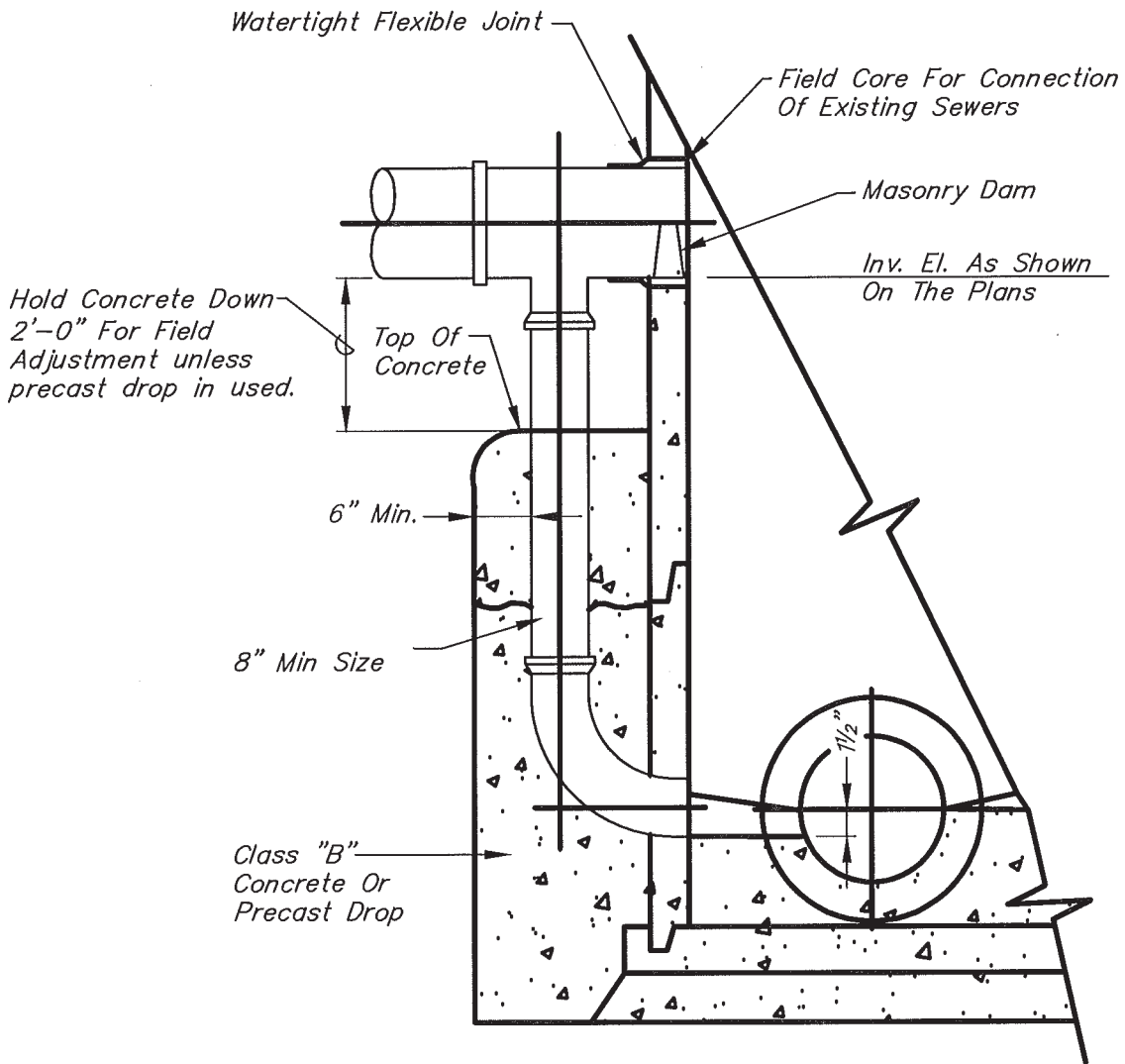
SA-4



BUTYL RUBBER SEALANT DETAIL
NTS

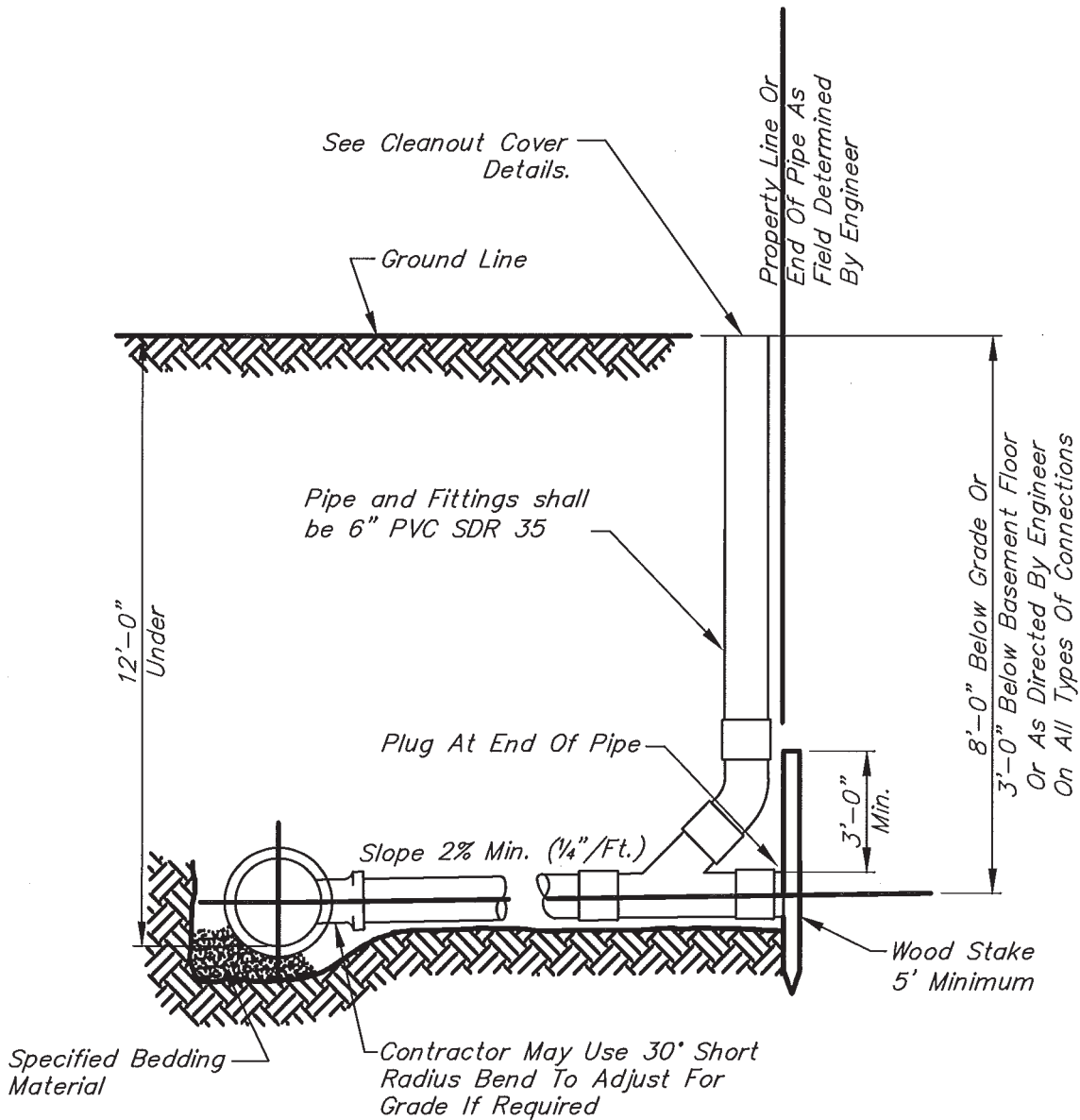


CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
BUTYL RUBBER
SEALANT DETAIL
MARCH 2012



MANHOLE WITH DROP
NTS

SA-6A



SECTION

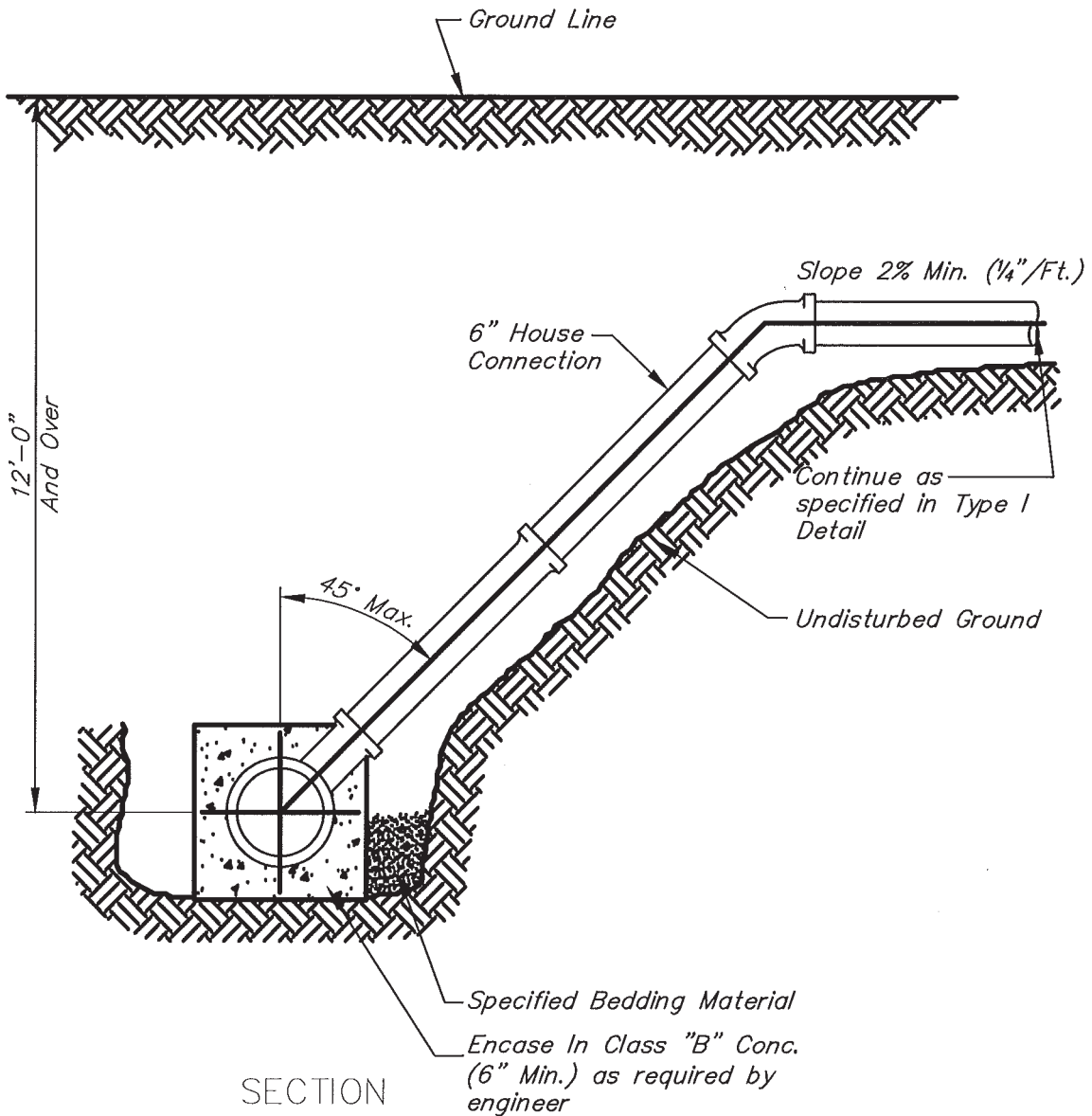
TYPE - 1

(To Be Used Where Main Sewer Is Less Than 12' In Depth)



CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
SANITARY SERVICE
TYPE - 1
MARCH 2012

SA-6B



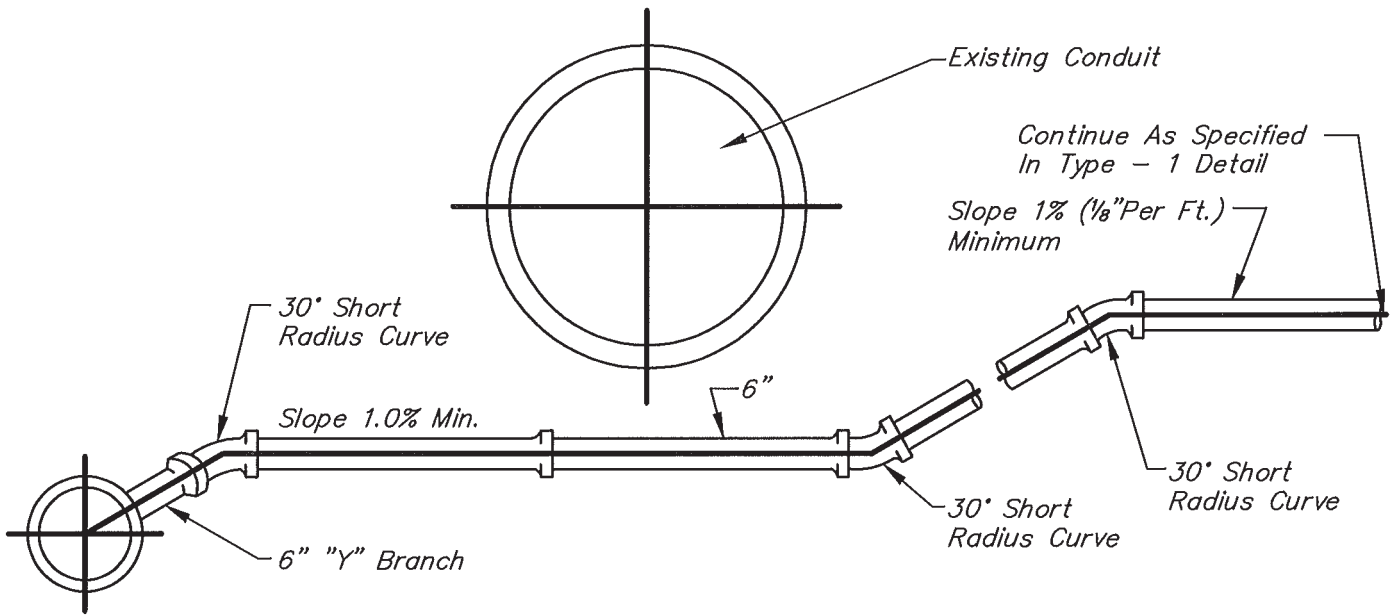
TYPE - 2

(To Be Used Where Main Sewer Is More Than 12' In Depth)



CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
SANITARY SERVICE
TYPE - 2
MARCH 2012

SA-6C



UNDER EXISTING CONDUITS

SERVICE CONNECTION DETAILS

NTS

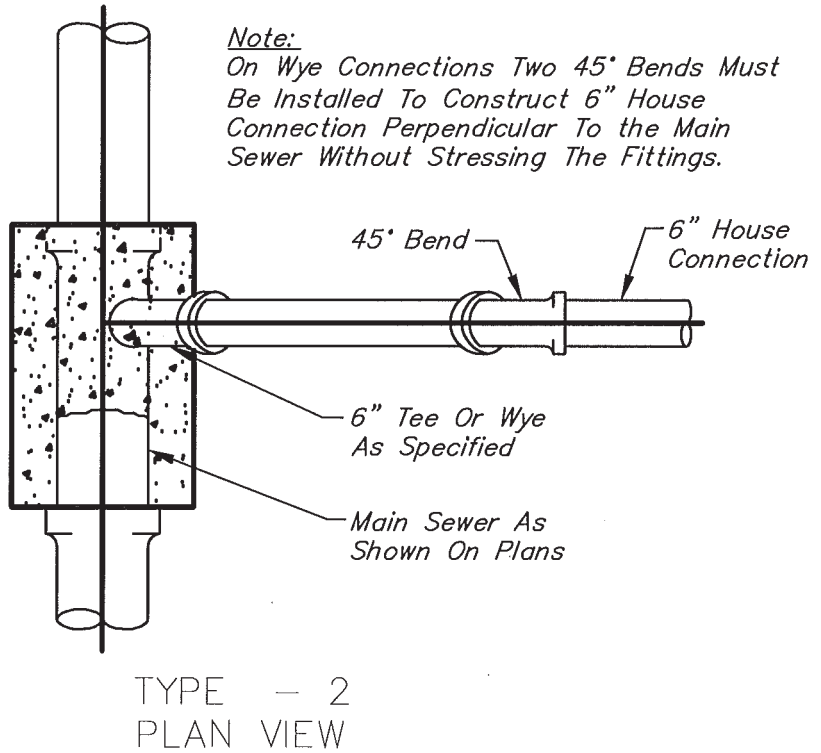
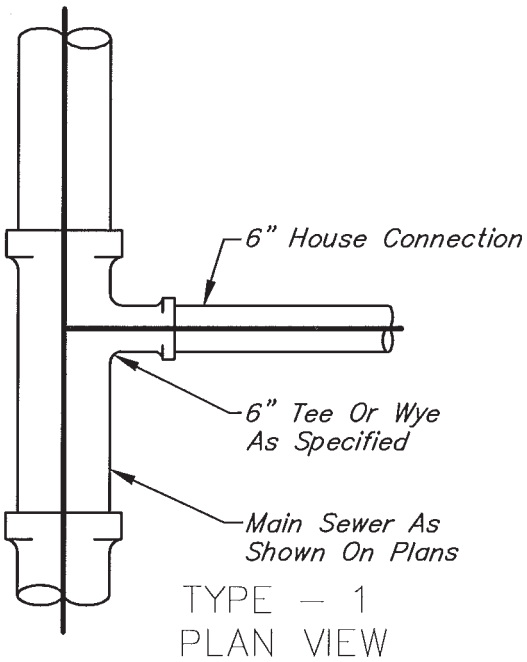


CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
SANITARY SERVICE
UNDER EXISTING
CONDUIT
MARCH 2012

SA-6D

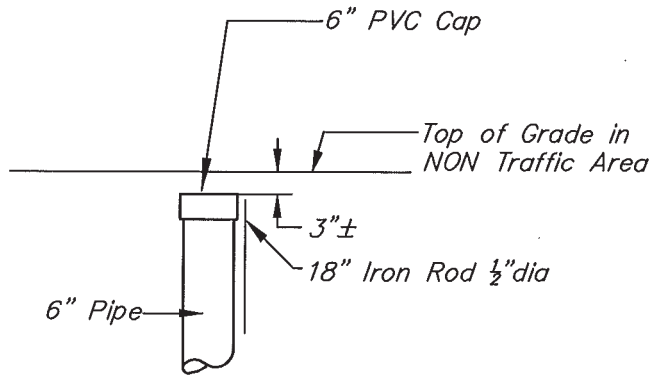
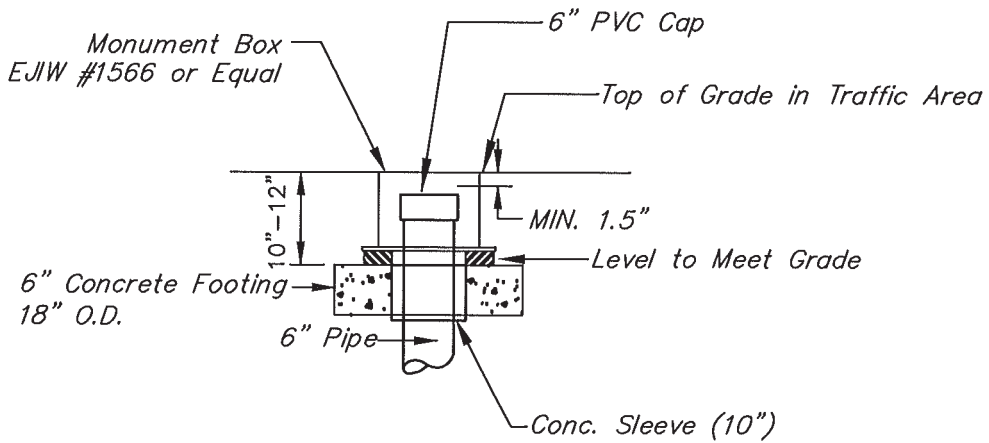
Service Connection Notes

- A. Contractor Shall Not Backfill Service Connection Until The Engineer Has Inspected And Taken Measurements, Elevations & Other Information Required For Purpose Of Record.
- B. All Tee And Wye Branches In The Main Sewer Line, Rotated More Than, 30° From Horiz. Shall Be Encased In 6" Min. Of Class "B" Concrete.
- C. Wye Branches Shall Be Used In all Connections For Sewers 18" and Smaller. Tee Branches May Be Used In Lieu Of Wye Branches For Connections To Main Sewers 18" And Larger.



CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
SANITARY SERVICE
PLAN VIEW & NOTES
MARCH 2012

SA-6E



CITY OF KALAMAZOO
DEPT. OF PUBLIC SERVICES
SANITARY CLEANOUT
COVER DETAILS
MARCH 2012

APPENDIX C-4:

TECHNICAL SPECIFICATIONS AND SPECIAL PROVISIONS

SPECIAL PROVISIONS.....C-4.1

TECHNICAL SPECIFICATION TABLE OF CONTENTS

UNIQUE SPECIAL PROVISIONS	PAGES
Maintaining Traffic.....	1/4
Coordination Clause	1/1
Utility Coordination.....	1/1
Adoption of MDOT Standard Specifications for Construction.....	1/2
Railroad Reimbursable Expenses.....	1/1
Sewer Abandon, ___ Than 24 inch.....	1/2
Railing, Steel Tube, Rem	1/1
Pavement Remove, Modified.....	1/1
Dewatering System.....	1/2
Machine Grading, Modified.....	1/2
Maintenance Gravel, Modified	1/1
Casing, ___ inch, Tr Det B.....	1/2
Polyvinyl Chloride (PVC) Sewers.....	1/2
Trench Drain	1/2
Drainage Structure Cover, Modified.....	1/2
Limestone Cap	1/3
Stone Veneer Walls	1/3
Cast Iron Detectable Warning Surfaces.....	1/2
Brick Pavers	1/3
Brick Paving Remove and Salvage.....	1/1
Transit Shelter, Remove, Salvage, and Reinstall	1/1
Pavt Mrkg, Waterborne, Accessible Sym.....	1/1
Sign, Type A, Temp, Prismatic, Special.....	1/1
Landscape Materials.....	1/4
Slope Restoration Non-Freeway Modified	1/4
Municipal Utility Handholes.....	1/1
Street Lighting	1/3
Perimeter Lit Type III Signs.....	1/2
Salvaging Perimeter Lit Pedestrian Warning Signs	1/2
Adoption of City Standard Specifications for Water Main and Service Installation.....	1/3
Pipe Cradle, Flowable Fill	1/2
Meter Vault	1/2

Water Services	1/4
Adoption of City Standard Specifications for Wastewater Sewer Installation	1/3
Sanitary Sewer, Service Tap, 42 inch Main	1/2
Sanitary Sewer Service Lead Building Inspection	1/1
Sanitary Sewer Bypass Pumping.....	1/3

MDOT NOTICE TO BIDDERS

Use of Crushed Concrete for Dense and Open-Graded Aggregates	1/1
--	-----

FREQUENTLY USED SPECIAL PROVISIONS

Vertical Exploratory Investigation.....	1/2
Erosion Control Inlet Protection, Fabric Drop	1/2
Aggregate Base Course.....	1/1
Sampling Asphalt Binder on Local Agency Projects	1/1
Recycled Hot Mix Asphalt Mixture on Local Agency Projects.....	1/2
Acceptance of Hot Mix Asphalt Mixture on local Agency Projects.....	1/7
Temporary Pedestrian Type II Barricade	1/2
Temporary Pedestrian Path	1/2
Temporary Pedestrian Ramp.....	1/2
Landscape Plants Source List	1/1
Unacceptable Plant Removal.....	1/1
Industrial By-Products and Beneficial Re-Use	1/1
Aggregate, 48G	1/1
Mixing Portland Cement Concrete	1/1
Alkali-Silica Reactivity for Fine Aggregate Used in Portland Cement Concrete	1/1
Quality Index for Portland Cement Concrete	1/4

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
**MAINTAINING TRAFFIC,
PERMANENT SIGNAGE AND PAVEMENT MARKINGS**

ABONMARCHE:MJS

1 OF 10

1/6/2023

a. Description. This work consists of all labor, materials and equipment required to maintain traffic in accordance with this special provision for the City of Kalamazoo **Ransom Street Corridor Reconstruction Project** CWSRF #: 5802-01, City of Kalamazoo, Kalamazoo County

b. General. Maintain traffic according to the 2020 Standard Specifications for Construction, including any Supplemental Specifications, and as specified herein.

1. Notify the Project Engineer a minimum of 10 business days prior to the implementation of any detours, road closures, bridge closures, ramp closures or lane closures and major traffic shifts.
2. Coordinate operations with Contractors performing work on other projects within or adjacent to the Construction Influence Area (CIA).
3. City of Kalamazoo maintenance crews and/or contract maintenance agencies may perform maintenance work within or adjacent to the Construction Influence Area (CIA). The City of Kalamazoo and/or contract maintenance agency will coordinate their operations with the Project Engineer to minimize the interference.
4. All Work shall be suspended from November 1st through March 1st of the following year.

c. Construction Influence Area (CIA). The CIA includes the right-of-way of the following roadways, within the approximate limits described below:

1. Include in the CIA the rights-of-way of any intersecting roads and ramps adjacent to the work zone for a distance noted in signing standards.

d. Traffic Restrictions

A. Work shall be prohibited on the following holidays:

- (1) New Years Day (01/01)
- (2) Memorial Day
- (3) Fourth of July
- (4) Thanksgiving (Including the following Friday)

(5) Christmas Eve (12/24)

(6) Christmas Day (12/25)

B. The City/Engineer will provide advanced notice for any festivals or Elections that will require coordination within the project limits to facilitate movement of the public.

C. All Work shall be suspended from November 1st through March 1st of the following year.

2. All work shall be conducted during daytime hours only. Noise Ordinance is in effect from 7:00 p.m. to 7:00 a.m. Night work may be permitted, at the discretion of the Owner/Engineer. However, any additional cost for lighting and/or maintaining traffic shall be borne by the Contractor.

3. Access for construction vehicles between the travel lanes and work areas will be restricted to specific locations. The number of access points and their locations will require the prior approval of the Engineer.

4. Once work is initiated that includes any lane restrictions, that work shall be continuous until completed. A lack of work activity for more than one week will require the removal and replacement of lane restrictions at the Contractors expense.

5. Where an intersection is closed or partially closed, the intersecting streets one block in advance of the construction influence area and shall remain open to traffic. No more than one two intersecting streets shall be permitted to be closed at any one time.

6. Traffic Regulators shall be used as directed by the Engineer for cross street traffic while paving through intersections. Additional flaggers used at unsignalized intersections and driveways, as directed by the Engineer, shall be included with the traffic regulator pay item.

7. Undercuts or excavations immediately adjacent to active traffic lanes shall be restored to no less than a 1 on 3 slope at the end of each working period. Fencing shall be required to protect open trenches during non-working hours and shall be provided by the Contractor as part of the utility pay item utilized. Fencing is included in the contract items and will not be paid for separately.

8. Traffic restrictions and Phases/Stages of Construction shall be as shown on the plans and in accordance with the Contract Times set forth in the agreement per contract.

e. Phase Construction. Base the traffic control required by this Special Provision for work on Ransom Street and adjacent roadways on the sequence of operations contained in the staging plans. Use an alternate traffic control plan, subject to review and approval by the Engineer.

1. Phase 1. – Complete Corridor Reconstruction from Walbridge through Burdick
 - A. Phase 1A – Walbridge to eastern edge of Pitcher Street (Pitcher intersection to remain open to traffic)
 - (1) Work Hours. Daytime Work. Night work will be permitted for rail crossings.
 - (2) Traffic Control.
 - (a) Detour shall be signed per the traffic maintenance plans.
 - (b) The intersections of Walbridge and Porter will be permitted to be closed as part of this Phase. Intersections shall only be closed when work is actively taking place in or around them. When public traffic can safely be accommodated, maintenance gravel shall be used to restore access through intersections.
 - (c) Provide and maintain access to commercial driveways to the greatest extent possible. Notify each resident and business owner with a door hanger notification card at least one week in advance of driveway closures and excavation/paving operations.
 - (3) Completion of Phase
 - (a) All Concrete Curb & Gutter, Concrete Driveways, and Aggregate Base work shall be completed prior to any work commencing on subsequent phases.
 - (b) Base/Leveling Course HMA Paving on this phase shall be completed with 15 calendar days of work beginning on a subsequent phase. The contractor shall provide Maintenance Gravel at all intersections and driveways to facilitate transitions prior to paving. The contractor shall correct any deficiencies in the aggregate base prior to paving at no additional cost to the contract.
 - (c) Wearing course pavement shall be done in a single operation for all Phase I work completed in 2023. All Paving work shall be completed by October 31, prior to the City's November 1st seasonal suspension of work.
 - B. Phase 1B – Pitcher to Eastern Edge of Burdick (Burdick intersection to remain open to traffic)
 - (1) Work Hours. Daytime Work.
 - (2) Traffic Control.

- (a) Detour shall be signed per the traffic maintenance plans.
 - (b) The intersections of Pitcher and Edwards will be permitted to be closed as part of this Phase. Intersections shall only be closed when work is actively taking place in or around them. When public traffic can safely be accommodated, maintenance gravel shall be used to restore access through intersections.
 - (c) Provide and maintain access to commercial driveways to the greatest extent possible. Notify each resident and business owner with a door hanger notification card at least one week in advance of driveway closures and excavation/paving operations.
- (3) Completion of Phase
- (a) All Concrete Curb & Gutter, Concrete Driveways, and Aggregate Base work shall be completed prior to any work commencing on subsequent phases.
 - (b) Base/Leveling Course HMA Paving on this phase shall be completed with 15 calendar days of work beginning on a subsequent phase. The contractor shall provide Maintenance Gravel at all intersections and driveways to facilitate transitions prior to paving. The contractor shall correct any deficiencies in the aggregate base prior to paving at no additional cost to the contract.
 - (c) Wearing course pavement shall be done in a single operation for all Phase I work completed in 2023. All Paving work shall be completed by October 31, prior to the City's November 1st seasonal suspension of work.
- C. Phase 1C – Burdick to Eastern Edge of Rose (Rose intersection to remain open to traffic)
- (1) Work Hours. Daytime Work.
 - (2) Traffic Control.
 - (a) Detour shall be signed per the traffic maintenance plans.
 - (b) The intersections of Burdick will be permitted to be closed as part of this Phase. Intersections shall only be closed when work is actively taking place in or around them. When public traffic can safely be accommodated, maintenance gravel shall be used to restore access through intersections.
 - (c) Provide and maintain access to commercial driveways to the greatest extent possible. Notify each resident and business owner

with a door hanger notification card at least one week in advance of driveway closures and excavation/paving operations.

- (3) Completion of Phase
 - (a) All Concrete Curb & Gutter, Concrete Driveways, and Aggregate Base work shall be completed prior to any work commencing on subsequent phases.
 - (b) Base/Leveling Course HMA Paving on this phase shall be completed with 15 calendar days of work beginning on a subsequent phase. The contractor shall provide Maintenance Gravel at all intersections and driveways to facilitate transitions prior to paving. The contractor shall correct any deficiencies in the aggregate base prior to paving at no additional cost to the contract.
 - (c) Wearing course pavement shall be done in a single operation for all Phase I work completed in 2023. All Paving work shall be completed by October 31, prior to the City's November 1st seasonal suspension of work.
 - (d) All roadway HMA pavement must be in place through the leveling course prior to the seasonal suspension of work. No exposed gravel in the roadway will be permitted over winter. Contractor shall ensure proposed project schedule permits the completion of work in accordance with seasonal work restrictions and the paving requirements.

2. Phase 2. – Complete Corridor Reconstruction from Rose through Westnedge

A. Phase 2A – Rose to western edge of Church Street (Park intersection to remain open to traffic)

- (1) Work Hours. Daytime Work.
- (2) Traffic Control.
 - (a) Detour shall be signed per the traffic maintenance plans.
 - (b) The intersections of Rose and Church will be permitted to be closed as part of this Phase. Intersections shall only be closed when work is actively taking place in or around them. When public traffic can safely be accommodated, maintenance gravel shall be used to restore access through intersections.
 - (c) Provide and maintain access to commercial driveways to the greatest extent possible. Notify each resident and business owner

with a door hanger notification card at least one week in advance of driveway closures and excavation/paving operations.

- (3) Completion of Phase
 - (a) All Concrete Curb & Gutter, Concrete Driveways, and Aggregate Base work shall be completed prior to any work commencing on subsequent phases.
 - (b) Base/Leveling Course HMA Paving on this phase shall be completed with 15 calendar days of work beginning on a subsequent phase. The contractor shall provide Maintenance Gravel at all intersections and driveways to facilitate transitions prior to paving. The contractor shall correct any deficiencies in the aggregate base prior to paving at no additional cost to the contract.
 - (c) Wearing course pavement shall be done in a single operation for all Phase II work completed in 2024. All Paving work shall be completed by October 31, prior to the City's November 1st seasonal suspension of work.

B. Phase 2B – Park through Westnedge

- (1) Work Hours. Daytime Work.
- (2) Traffic Control.
 - (a) Detour shall be signed per the traffic maintenance plans.
 - (b) The intersections of Park and Westnedge will be permitted to be closed as part of this Phase. Intersections shall only be closed when work is actively taking place in or around them. When public traffic can safely be accommodated, maintenance gravel shall be used to restore access through intersections.
 - (c) Provide and maintain access to commercial driveways to the greatest extent possible. Notify each resident and business owner with a door hanger notification card at least one week in advance of driveway closures and excavation/paving operations.
 - (d) The Kalamazoo Department of Public Safety facility at 601 N Park shall have access along Ransom maintained at all times during Construction. No excavation work or equipment shall encroach more than ½ the width of the driveway at any given time. The driveway shall be restored with maintenance gravel in a smoothly traversable condition before further excavation work is begun. An agreed upon route from the driveway through the limits of the CIA on shall be maintained at all times. Coordination will be required

throughout the project to establish response routes during various portions of the work that will need to be maintained.

- (3) Completion of Phase
 - (a) All Concrete Curb & Gutter, Concrete Driveways, and Aggregate Base work shall be completed prior to any work commencing on subsequent phases.
 - (b) Base/Leveling Course HMA Paving on this phase shall be completed with 15 calendar days of work beginning on a subsequent phase. The contractor shall provide Maintenance Gravel at all intersections and driveways to facilitate transitions prior to paving. The contractor shall correct any deficiencies in the aggregate base prior to paving at no additional cost to the contract.
 - (c) Wearing course pavement shall be done in a single operation for all Phase II work completed in 2024. All Paving work shall be completed by October 31, prior to the City's November 1st seasonal suspension of work.

f. Traffic Control Devices.

1. General.

- A. Conform all traffic control devices and their usage to the Michigan Manual of Uniform Traffic Control Devices (MMUTCD). This document can be found at the following website:

<http://mdotwas1.mdot.state.mi.us/public/tands/plans.cfm>

- B. During construction, maintain access to all commercial and residential drives.

2. Temporary Signs.

- A. Place temporary sign spacing and taper lengths as shown on attached Typical 101-GEN-SPACING-CHARTS.
- B. Place ground driven sign supports as shown on attached Traffic and Safety Standard Plan Special Detail WZD-100-A. Refer to Traffic and Safety Standard Plan WZD-125-E for portable supports.
- C. Include (#) W20-1 ("ROAD WORK AHEAD") signs in the quantities, to place on ramps or intersecting roads in advance of construction areas as the Engineer directs.
- D. Mount all temporary signs at a five-foot minimum bottom height in uncurbed areas and seven-foot minimum bottom height in curbed or pedestrian areas.

- E. Consider distances shown between construction warning, regulatory and guide signs shown on the typical as approximate. Signs may require field adjustment, as the Engineer directs.
 - F. Fabricate all temporary signs with legends and symbols flush to the signs face and do not extend beyond the sign borders or edges.
 - G. Mount all temporary signs that will be in place for more than 14 days on driven posts.
 - H. When a portable construction sign is no longer applicable, remove it or lay the sign down with legs pointed in the same direction as traffic flow and with its feet off and laid flat.
 - I. The Federal Highway Administration (FHWA) requires all signs to be NCHRP 350 crashworthy. The contractor shall submit the FHWA approved details for the temporary sign supports used on the project and have approval by the Engineer before the start of work.
 - J. Use Type C Lighted Arrows (min 48 inch x 98 inch) to merge traffic and secure by elevating the tires above the ground, or use wheel chocks or sandbags.
 - K. Temporary Sign Overlays on Overhead Signs
 - L. Fabricate install and remove temporary sign overlays on existing signs with the Pay Item for Sign, Type B, Temp, Prismatic, Furn. Do not let fastening devices such as nails, staples, screws or adhesive materials come in direct contact with reflective sheeting. Devise a method that holds the temporary overlay in place but does not come into contact with the sheeting on the face of the sign.
3. Channelizing Devices.
- A. Use plastic drum channelizing devices during daytime shoulder closures, lane closures or on ramps and local streets.
 - B. Use plastic drums with high intensity sheeting as channelizing devices during shoulder closures or lane shifts. Use plastic drums to delineate the edgeline transition into the approach end of the temporary concrete barrier.
4. Temporary Pavement Markings. Not Used
5. Permanent Pavement Markings.
- A. Permanent pavement markings consist of the following:
 - 4 inch white and 4 inch yellow Waterborne for lane lines
 - Cold Plastic for special markings, stop bars and crosswalks

- B. Fabricate all pavement markings per MDOT Pavement Marking Standards PAVE 900 through PAVE 985.
- C. Measurement and Payment. Maintain traffic according to Sections 812 and 922 of the Standard Specifications for Construction:
- D. Estimated quantities for maintaining traffic on this project is based on the suggested sequence of operations contained in the staging plans and described in this special provision. Payments for these devices are in accordance with the 2020 Standard Specifications for Construction unless otherwise specified.
- E. All cost of additional signing or maintaining traffic devices required to expedite the construction will be borne by the Contractor.

g. Special Considerations at Railroad Crossings.

1. Do not obstruct the right-hand display of the railroad signal to traffic approaching the crossing.
2. Do not extend lane closure taper(s) through the crossing. Traffic lane shifts cannot transition over the crossing.
3. Do not place construction traffic control devices in the railroad crossing or closer than 25 feet from the outside rail on either crossing approach.
4. An intermediate traffic regulator is required at the railroad crossing while it is in the zone where traffic is maintained by traffic regulator control. The traffic regulator will serve to stop traffic for vehicles traveling in the direction opposed to normal flow and prevent them from entering the crossing upon a train approaching the crossing. When the railroad crossing is in the influence zone of active construction work, but not in a lane closure, the roadway traffic regulator will give immediate preference to clearing any traffic which backup over the crossing as a result of the traffic regulator control away from the crossing. Payment for traffic regulator(s) stationed at the crossing is included in the pay item Traf Regulator Control.
5. Place a temporary stop line and sign R15-1 (crossbuck) to indicate the stopping point in advance of the crossing for vehicles traveling in a direction opposed to normal flow.
6. Roadway traffic regulator control operation is through crossing(s) with half – roadway gates will also have a railroad watchperson present to provide notice of train approach to the crossing in advance of railroad warning device activation, so the crossing may be cleared of vehicular traffic. The Contractor is responsible for contacting the applicable railroad to obtain and pay for a railroad watchperson.

7. The presence of a railroad flagger does not relieve the Contractor of the responsibility for intermediate traffic regulators.
8. No nighttime work permitted that affects the crossing without prior approval from the Railroad. If nighttime work is being performed, provide lighting to illuminate traffic regulators and railroad flaggers at the railroad crossing. Payment will be included in associated work items.

CITY OF KALAMZOO
NOTICE TO BIDDERS
COORDINATION CLAUSE

ABONMARCHE:MJS

1 OF 1

01/06/2023

Other contracts within the immediate area will be in force during the life of this contract. These include:

City of Kalamazoo: Kalamazoo Ave Reconstruction. The project is expected to begin in the 2024 construction season with the reconstruction and conversion of the corridor from its current one-way traffic configuration to a two-way configuration.

Grand Elk Railroad Grade Crossing Replacement of crossings NI# 544055R (STA 37+50.85) & NI#536565Y (STA 40+64.75). The tracks associated with these crossings will be taken out of service from approximately 11:00 am on a Friday and will be turned over to the railroad by 7:00 am the following Monday. The exact dates in the project schedule for these outages of the track will be coordinated between the contractor and the railroad. The crossings are expected to be completed on separate weekends. This time frame is allowed to install any casing required for utilities crossing under the track via open cut methods. The contractor will be required to have trenches backfilled and compacted to subgrade elevation by the time the site is turned over to railroad crews on Monday morning. The railroad's crews will complete base aggregate and crossing panel installation before opening the tracks back to service. The contractor is expected to mobilize whatever additional labor and equipment is necessary to complete the underground work at a single crossing within the 68 Hr outage of the track.

Work under this project shall be closely coordinated with roadway, railroad, and utility improvements being contracted under separate contracts by the City of Kalamazoo and the Michigan Department of Transportation. Coordinate removal and replacement of utilities, roadways and sidewalks to coincide with work on adjacent projects.

The Contractor's attention is called to the requirements of cooperation with others as covered in Article 104.07 of the Standard Specifications for Construction.

The Contractor shall take due account of all such work and shall arrange his methods of operation and storage of materials and equipment so as to cause a minimum of interference with the work to be performed by other Contractors.

The Contractor shall provide a minimum of 7 calendar days' notice in writing to property owners along the corridor that will have their driveway access or building entrance directly affected by construction activities for prolonged durations (>3 Hrs). Advanced notification and coordination of access to businesses and residences along the corridor is critical to the residents and community. Every effort shall be made to minimize these impact times and ensure that temporary measures are in place prior to the beginning planned disturbances.

No claims for extra compensation or adjustments will be allowed for coordination efforts.

CITY OF KALAMAZOO
NOTICE TO BIDDERS
UTILITY COORDINATION

ABONMARCHE:DAD

1 OF 1

01/06/2023

a. Description. The Contractor shall cooperate and coordinate construction activities with the Owners of utilities as stated in Section 104.08 of the Standard Specifications for Construction. In addition, for the protection of underground utilities, the Contractor shall follow the requirements in Section 107.12 of the Standard Specifications for Construction. Contractor delay claims, resulting from a utility, will be determined based upon Section 109.03 of the Standard Specifications for Construction.

For protection of underground utilities and in conformance with Public Act 53 of 1974, the Contractor shall dial 1-800-482-7171 or 811 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 thus be routinely notified. This does not relieve the Contractor of the responsibility of notifying utility Owners, including the City of Kalamazoo, who do not take part of the "Miss Dig" alert system.

b. Public Utilities. The following Public Utilities may have facilities located within the Right-of-Way:

Water:

City of Klamazoo
415 Stockbridge Ave.
Kalamazoo, MI 49001
P: 269-337-8215

Electric & Street Lights:

Consumers Energy
2500 East Cork St.
Kalamazoo, MI 49001
P: 269-337-2245

Telecom:

AT&T
2919 Milcork Road
Kalamazoo, MI 49001
269-823-3339

Sanitary Sewer:

City of Klamazoo
1415 Harrison St.
Kalamazoo, MI 49001
P: 269-337-5885

Gas:

Consumers Energy
2500 East Cork St.
Kalamazoo, MI 49001
P: 269-337-2266

Telecom:

Metronet
133800 E Michigan Ave.
Galesburg, MI 49053
616-239-9139

Streets/Storm Sewer:

City of Klamazoo
415 Stockbridge Ave.
Kalamazoo, MI 49001
P: 269-337-8215

Fiber Optic:

Century Link
19675 W 10 Mile Road
Southfield, MI 48075
517-812-2592

Fiber Optic:

Zayo Bandwidth
616-443-9027

Traffic:

City of Klamazoo
415 Stockbridge Ave.
Kalamazoo, MI 49001
P: 269-337-8612

The Owners of existing service facilities that are within grading or structure limits will move them to locations designated by the Engineer or will remove them entirely from the Right-of-Way. Owners of Public Utilities will not be required to move additional poles or structures in order to facilitate the operation of construction equipment unless it is determined by the Engineer that such poles or structures constitute a hazard to the public or are extraordinarily dangerous to the Contractor's operations.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
ADOPTION OF 2020 MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION

ABONMARCHE:MJS

1 of 2

01/06/2023

a. Description. This project shall be conducted in accordance with the specification and details contained within this project manual. The project manual shall be supplemented with Sections of the 2020 MDOT Standard Specifications for Construction listed herein and the latest edition of MDOT Road and Bridge Standard Plans and Special Details.

These documents may be downloaded or ordered as follows:

MDOT Standard Specifications for Construction

Electronic File: Available in PDF Format at the Link Below Cost: Free

https://www.michigan.gov/documents/mdot/MDOT_2020_Construction_Specifications_Book_WEB_728364_7.pdf

MDOT Road & Bridge Standard Plans

Electronic File: Available in PDF Format at the Link Below Cost: Free

<https://mdotjboss.state.mi.us/stdplan/standardPlansHome.htm>

This includes, but is not limited to earthwork, bases, subbases, preparation for paving, drainage, Hot Mix Asphalt Paving, and concrete paving, and incidental construction.

1. Division 1 – General Provisions (Selected Sections Only)

A. Sections 109 Measurement and Payment

B. Section 110 Mobilization –

(1) The bid price for mobilization shall be 10% of the total project cost, not to exceed the stated maximum value.

(2) Payment for Mobilization shall be modified as follows:

BASIS OF PAYMENT	PAYMENT AMOUNT
Project Startup - Initial Progress Payment	50%
The Completion of Phase 1 Work	50%

C. Closeout Procedure

(1) Final payment will be made only upon achieving the following:

(a) Completion of all work included in the original proposal or subsequent contract modifications.

(b) Final Acceptance of the Work, including completion and acceptance of any Punchlist items, and receipt of all closeout documentation as possible pending final payment.

(c) Demobilization of the Contractor's (or subcontractor's) Materials, Machinery or Equipment from the site.

(d) Final Restoration of all lawn areas, including the removal of any temporary SESC Measures.

2. Division 2 – Earthwork
3. Division 3 – Bases
4. Division 4 – Drainage Features
5. Division 5 – HMA Pavements & Surface Treatments
6. Division 6 – Portland Cement Concrete Pavements
7. Division 7 – Structures
8. Division 8 – Incidental Construction
9. Division 9 – Materials
10. Division 10 – Concrete Mixtures

b. Materials. Unless specified in the Project Manual or other special provisions, furnish materials in accordance with Division 9 of the 2020 MDOT Standard Specifications for Construction

c. Construction. See Individual Pay Items within each Division

d. Measurement and Payment. Measurement and Payment set forth in the 2020 MDOT Standard Specifications for Construction shall prevail unless specified otherwise in the Contract Documents.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
RAILROAD REIMBURSIBLE EXPENSES

ABONMARCHE:MJS

1 of 1

1/6/2023

a. Description. This work consists of providing advance notice to the Railroad and the Engineer meeting the railroad notice requirements found in the contract for providing flaggers for work on, above, or below Railroad property.

b. Materials. None specified.

c. Construction. Ensure construction methods are in compliance with the requirements in the contract and railroad safety policies.

d. Measurement and Payment. The Contractor must pay or pre-pay (if required by the Railroad) to the Railroad the full amount of the Railroad's invoice for inspection and flagging, and reimbursable construction costs for work performed by the railroad. Prior to submitting payment requests for reimbursement of flagging or construction costs to the Engineer, review for accuracy the actual costs and days worked against the billed or pre-paid amount. Resolve any inconsistencies with the Railroad prior to submitting to the Engineer. Provide to the Engineer a statement of costs paid and detailed itemization to support the actual cost paid or pre-paid amount. The Engineer will reimburse the Contractor upon satisfactory review and approval of submitted documentation for construction, inspection and flagging services. This process will continue as long as the need for flagging services exists.

Costs incurred for inspection and flagging due to the failure of the Contractor to properly notify the Railroad in advance of beginning work which may require a flagger as stated in the contract, are the responsibility of the Contractor. Any dates invoiced beyond approved Progress Clause dates or approved extension of time dates without liquidated damages will not be reimbursed unless approved otherwise by the Engineer.

Provide the Railroad a documented notice 5 days in advance when flagging is no longer needed, with a copy to the Engineer and retain a copy of this documented notification. If the notification to the Railroad is not at least 5 days in advance of no longer needing flagging, the Railroad will schedule and the Contractor must pay such flagging services until said cancellation notice is confirmed by the Railroad. Before final payment is made by the Engineer to the Contractor for the project, satisfactory evidence must be submitted indicating all bills for inspection and flagging services furnished by the Railroad have been paid. This pay item covers inspection, and flagging services provided by the Railroad. The cost of construction self-performed by the railroad for replacement of track infrastructure impacted by the project is also covered by this item.

Pay Item	Pay Unit
Railroad Est. Cost to Contractor.....	Dollar

CITY OF KALAMAZOO
 SPECIAL PROVISION
 FOR
SEWER ABANDON, ___ THAN 24 INCH

ABONMARCHE:MJS

1 of 2

01/06/2023

a. Description. This work consists of furnishing and placing non-structural flowable fill for abandoning pipes and miscellaneous structures; constructing miscellaneous bulkheads or forms; and backfilling. This specification is not intended to address flowable fill used as structural backfill. Work shall be in accordance with section 203 of the MDOT 2020 Standard Specifications for Construction.

b. Materials. Provide non-structural flowable fill consisting of a mixture of Portland cement, fly ash, sand (2NS) and water. Use materials in accordance with the standard specifications except as modified by this special provision. All non-structural flowable fill once cured is intended to be removable using conventional mechanical excavation methods.

Use either Type I or IA Portland cement in accordance with section 901 of the Standard Specifications for Construction and Class F or C fly ash as specified by *ASTM C618* except that there is no limit on loss on ignition

Produce a mix of cement, fly ash, sand, and water in the following proportions:

Portland Cement	50 pounds per cubic yard (lb/cyd)
Fly Ash	500 (lb/cyd)
Sand	2850 (lb/cyd)
Water	376 (lb/cyd)

c. Construction. Produce and deliver the non-structural flowable fill at a minimum temperature of 50 degrees Fahrenheit (F). Transport mixture to the point of placement in a revolving drum mixer or agitator.

Pipes to be abandoned shall be cut at the limits of the abandonment work and be bulkheaded. Bulkheads shall leave sufficient open space near the crown of the pipe to allow for the escape of air during filling operations, and to provide visual confirmation of complete filling of the pipe section. Bulkheads shall be completed once fill material is confirmed to fill the entire pipe.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Sewer Abandon, ___ than 24 inch.....	Ft

Sewer Abandon, Less than 24 inch will be measured over the top of the pipe from cut end to cut end of the pipe to be abandoned. This item applies to gravity sewer lines which are less than 24 inches internal diameter that are determined to be suitable for abandonment in place by the engineer.

All excavation, cutting, removal of pipe, and bulkheading, as well as furnishing and placing the flowable fill material required is included in the contract unit price for this item.

Sewer Abandon, Greater than 24 inch will be measured over the top of the pipe from cut end to cut end of the pipe to be abandoned. This item applies to gravity sewer lines which are equal to or greater than 24 inches internal diameter that are determined to be suitable for abandonment in place by the engineer. All excavation, cutting, removal of pipe, and bulkheading, as well as furnishing and placing the flowable fill material required is included in the contract unit price for this item.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
RAILING, STEEL TUBE, REM

ABONMARCHE: MJS

1 of 1

1/6/2023

a. Description. This work consists of removing steel railing and associated footings/ foundations in accordance with the standard specifications at the locations shown on the plans or as directed by the Engineer.

b. Materials. None specified.

c. Construction. The railing, including all portions of the concrete foundation and footings shall be removed, and disposed of off site by the contractor in accordance with section 204 of the Standard Specifications for Construction.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Railing, Steel Tube, Rem.....	Foot

Fence, Rem Modified will be measured as the total length of railing removed and includes removal and disposal of all concrete foundations and footings below grade.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
PAVT, REM, MODIFIED

ABONMARCHE:DAD

1 OF 1

01/06/2023

a. Description. This work shall be done in accordance with the requirements of section 204.03 of the Standard Specifications for Construction and as modified herein.

b. Materials. None Specified

c. Construction. Remove entire depth of existing HMA, concrete pavement, rubblized concrete, brick pavers, or a combination thereof, regardless of thickness as part of this pay item.

Saw cutting to construct butt joints with existing pavement and as deemed necessary by the Engineer, shall be included with this pay item. To the greatest extent possible, saw cuts and butt joints shall be smooth, flush and free from broken edges and other deterioration. All costs for secondary cuts or new saw cuts to remove deteriorated and broken down edges shall be borne by the Contractor.

Existing Roadway Cross Sections and/or soil borings in the plans provide representative samples of the existing pavement sections.

Properly dispose of all removed materials.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Pavt, Rem, Modified	Square Yard

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
DEWATERING SYSTEM

ABONMARCHE:MJS

1 of 2

1/6/2023

a. Description. This work consists of lowering the groundwater table to facilitate excavation. This work will require the use of pumps or well points, deep wells, or other measures that are utilized to control and manage groundwater.

b. Well Points and Deep Wells. Ensure groundwater control performed by deep well and/or well point pumping systems is done without damage to property or structures and without interference with the rights of the public, owners of private property, pedestrians, vehicular traffic, or the work of other contractors. Any pumping methods used for dewatering and control of groundwater and seepage must have properly designed filters to ensure that adjacent soil will not be pumped with the water, thus creating voids underground and around the face of the excavation or under existing structures. Ensure the loss of fines is limited to no more than 5 parts per million by volume in the extracted water. Ensure the filter design is reviewed and approved by the Engineer before placement.

Perform the dewatering operations in a proper and predetermined sequence with the excavation operation such that the perimeter, bottom, and face of the excavation are stable. Dewatering well diameter, pumping rate and well spacing must provide adequate drawdown of the water level. Properly locate wells to intercept groundwater that otherwise would enter the excavation and interfere with the work. Install observation wells at key locations for observation of groundwater levels during the dewatering operation and excavation. Submit a plan for locations and monitoring frequency of the observation wells to the Engineer a minimum of 7 calendar days in advance of placement of the dewatering system. Add additional wells as needed to lower the groundwater to the elevation shown on the plans.

Filters or settling devices may be required before discharge to ensure that storm sewers, sanitary sewer systems or surface waters are not adversely affected by construction debris or increased sediment load.

Discharge location shall be approved by the engineer based on design pumping rates and capacity of receiving sewer.

Due to the nature of the native sand soils, and proximity to the Kalamazoo River, a minimum dewatering rate of 200 GPM should be anticipated to adequately lower the groundwater table for utility installation. Exact system rates will need to be determined in the field by the dewatering contractor based on system configuration and seasonal groundwater conditions.

c. Construction. Lower the groundwater to a minimum of 24 inches below bottom of proposed pipe trench excavation. Determine the methods and materials required to accomplish this work, subject to approval by the Engineer before initiation or installation of the dewatering system.

The Engineer may order corrective actions to the dewatering system at any time due to

deficiencies in the system at no additional cost to the contract.

Remove the dewatering system and all associated appurtenances when no longer needed and restore the area as directed by the Engineer.

Abandon deep wells and observation wells in accordance with EGLE requirements when no longer needed.

d. Measurement and Payment. The installation and operation of the dewatering system is included in payment for the associated underground utility. No additional payment will be made for furnishing, installing, or operating dewatering systems required to install underground utilities.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
MACHINE GRADING, MODIFIED

ABONMARCHE:DAD

1 of 2

1/6/2023

a. Description. This work shall be done in accordance with the requirements of section 205 of the Standard Specifications for Construction with the following exceptions:

b. Materials. None Specified

c. Construction. Grading shall be performed over the entire roadway from slope stake line to slope stake line areas within “right-of-way” or easements, and adjacent areas (as indicated by slope stake lines) from a datum extended either direction from the bottom of the proposed base grade as indicated on the plans.

1. Item shall also include:

A. Stripping and stockpiling/disposal of topsoil.

B. Trenching, where shown on the plans along the edge of the roadway, to construct the proposed pavement section.

C. Removal of minor items including retaining walls, retired traffic signal components, underdrains, shrubs, hedges, rocks, landscaping, etc. as called for on the plans.

D. Protection of roadway items, trees, landscaping, and other improvements not designated for removal

E. Stockpiling of materials

F. Protection of all open trenches and fencing or closing disturbed areas at the end of each day’s work.

G. Grading for sidewalks.

H. Any excavation required to develop the proposed roadway cross-section.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price for the following pay item(s).

Pay Item	Pay Unit
Machine Grading, Modified.....	Station

Machine Grading, Modified will be paid at the contract unit price per Station. Payment will include stripping of topsoil, trenching, excavation, embankment, grading, and trimming of earth necessary to prepare subgrade for construction of new roadway, utilities, curbs, and sidewalks

at the lines and grades shown on the plans. Payment includes removal of minor items not paid separately.

All other pay items, including removals of existing pavement and curb as well as placement of new subbase, aggregate base, HMA pavement, etc shall be paid separately.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
MAINTENANCE GRAVEL, MODIFIED

ABONMARCHE: MJS

1 of 1

1/6/2023

a. Description. This work consists of providing all labor, materials and equipment necessary to construct and maintain a Reclaimed Asphalt Pavement (RAP) surface on a prepared or unprepared grade to maintain traffic to and from parcels influenced by pavement removal for construction of the project, and as directed by the Engineer. Removal and disposal of the RAP when no longer needed, is included in this item of work. Conduct work in accordance with section 306 of the Standard Specifications for Construction except as modified by this special provision.

b. Materials. Provide RAP of a well graded consistency, with 100% of material passes a 2-inch sieve.

c. Construction. Place maintenance gravel on an unfrozen grade at locations shown on the plans or as directed by the Engineer to provide a flush transition to the existing HMA or roadway surface or other areas where traffic is to be maintained. Compact RAP material until a uniform surface is established and the material is capable of handling traffic without pumping or yielding. Ensure a smooth transition from the temporary surface to adjacent vehicular surfaces. Maintain the surface with supplemental material if consolidation under traffic occurs, resulting in poor ride quality or discontinuity at adjoining surfaces.

Maintain the aggregate surface in a smooth, stable condition until no longer needed for maintaining traffic. When maintenance gravel is no longer needed, removal of the maintenance gravel must be coordinated with final grading and paving operations to ensure continuity of service to affected businesses.

The Contractor is responsible for removal and disposal of the material in accordance with the standard specifications. No RAP material shall be permitted to be incorporated into the base aggregate or subbase section of the roadway.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Maintenance Gravel, Modified	CYD

Maintenance Gravel, Modified includes furnishing, installing, shaping, compacting, and maintaining a temporary drive surface as directed by the engineer, and complete removal and disposal of all RAP product from site when complete. Payment will be made based on the contract unit price for the neat line area measured for application at the required depth.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
CASING, __ INCH, TR DET B

ABONMARCHE: MJS

1 of 2

1/6/2023

a. Description. This work consists of furnishing and installing steel casing for sanitary sewer, and installing owner furnished casing for water main at the locations shown on the plans. Ensure the casing wall thickness is in accordance with the railroad and municipal utility requirements specified and no substitutions are permitted.

b. Materials. Furnish materials in accordance with section 401 of the Standard Specifications for Construction with the exceptions listed below.

For steel casing pipe installed via open cut installation under a railroad replace the dimensions in Table 909-18 of the Standard Specifications for Construction for 12 inch, 24 inch and 66 inch nominal sizes with the following from Table 1-5-5 from Chapter 1 of the AREMA Design Standards :

Steel Pipe Nominal OD and Wall Thickness

Nominal Size (inch)	Nominal Outside Diameter (inch)	Wall Thickness (inch)
12	12	0.188
24	24	0.375
66	66	0.938

Steel casing pipe must have a minimum yield strength of 35,000 psi and be in accordance with *ASTM A53/A53M, Type E or S, Grade A or B.*

c. Construction. Perform work in accordance with section 401 of the Standard Specifications for Construction and as detailed herein.

Excavate crossing of tracks as necessary. Provide and install sheeting, bracing, and other earth retention measures in accordance with section 704 of the Standard Specifications for Construction. Provide site drainage and subsurface dewatering and other items associated with the operation as necessary to facilitate the work. Provide temporary night lighting as required to safely complete the work.

Due to the scheduled of the railroad and impact of down time for open cut crossing of the tracks, the casing is intended to be installed in its entirety prior to any carrier pipe section or chocks/skids being installed.

Backfill the excavation as necessary with material meeting the standard specifications as approved by the Engineer.

For steel casing pipe direct buried under a railroad, the following will apply in accordance with the current *AREMA Manual*:

1. When steel casing pipe is used, ensure the joints are fully closed by welding or mechanical means as approved by the Engineer.
2. Minimum cover over the casing must be at least 6 feet from the base of the rail to the top of the casing pipe at its closest point.
3. Casing pipe must extend beyond the limits of entire railroad right-of-way, or 30 feet from the centerline of the track, whichever is greater..
4. Ensure construction is in accordance with the current *AREMA Manual, Chapter 1, Part 5*

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Casing, __ inch, Tr Det B	Foot
Casing, __ inch, Tr Det B, Install	Foot

Casing, __ inch dia, Tr Det B1 will be measured by the length of casing pipe installed and includes all materials, equipment, tools, and labor necessary to furnish the casing pipe, excavate, place sections, field weld, and backfill the pipe. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. Any temporary night lighting required to safely complete the work and comply with the Railroads scheduled outage will be included in the cost for the casing item, no additional payment will be made for temporary facilities to support nighttime work. The carrier pipe installed within the casing will be paid for separately by standard pay item. The unit price for the carrier pipe includes the cost of casing chocks.

Casing , __ inch, Tr Det B, Install includes all materials, equipment, and labor necessary to install a steel casing pipe for water main supplied by the owner. The installation is intended to be completed via open cut trench. The contractor shall be responsible for coordinating delivery of materials purchased by the City, from the supplier to site. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. Any temporary night lighting required to safely complete the work and comply with the Railroads scheduled outage will be included in the cost for the casing item, no additional payment will be made for temporary facilities to support nighttime work. The contractor will be responsible for furnishing, placing, and compacting all aggregate materials and performing all trenching and excavation work per the plan details. The contractor shall assume ownership of excess aggregate materials and dispose of them offsite in a legal manner. The carrier pipe installed within the casing will be paid for separately by standard pay item. The unit price for the carrier pipe includes the cost of casing chocks.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
POLYVINYL CHLORIDE (PVC) SEWERS

ABONMARCHE:MJS

1 OF 2

01/06/2023

a. Description. This work consists of furnishing all labor, equipment and materials necessary to install Polyvinyl Chloride (PVC) sewer of the size and class specified in accordance with section 402 and 825 of the Standard Specifications for Construction, this special provision and as directed by the Engineer.

b. Materials. Use materials in accordance with section 402.02 of the Standard Specifications for Construction except as specified herein.

1. Pipe. ASTM D3034/ASTM F679, Polyvinyl Chloride (PVC) material, ball and spigot style rubber ring sealed gasket joints.

A. Pipe: SDR 26/PS115-PVC Type PSM Gravity Sewer Pipe for all main line, service laterals, pipe less than 8 inches, and cleanout risers.

B. Joints: ASTM D3212, elastomeric seals. Buried Pipe: all buried pipes shall be push-on joints unless otherwise designated on the plans.

Where are laid on grade of 8% or greater or where called for on the plans, joint restraint shall be in accordance with the Municipality's standard joint restraint system.

C. Fittings: ASTM F1336, PVC, of the same thickness as the pipe. ASTM F477 elastomeric seals for connecting new services to existing pipe.

2. Pipe: ANSI/AWWA C-900; Polyvinyl Chloride (PVC) material, bell and spigot style rubber ring sealed gasket joints.

A. Pipe: DR 18 Pressure Rated PVC pipe where called for on the plans

B. Joints: ASTM D3139 integral bell joint with ASTM F477 gaskets. All buried pipe shall be push-on joints unless otherwise designated on the plans.

Where joints are located within casing pipe, the joints shall be fully restrained with a bell restraint harness system meeting the requirements of ANSI/AWWA C900-16, and AWWA C600. Harness shall be EBBA Iron Works Series 2800 Bell Restraint Harness or Approved Equal.

C. Fittings: ASTM F1336, PVC, of the same thickness as the pipe. ASTM F477 elastomeric seals for connecting new services to existing pipe.

3. Cleanout Riser Covers. ASTM A48/A48M, Class 35B grey cast iron or ASTM A536 ductile iron construction. Machined flat bearing surfaces. Live Load rating of 40,000 lbs. Solid Cover, open pick slot, 10.625 inch clear opening, cast with "CLEANOUT" or "STORM."

A. Coating: Black Asphalt Dip

B. Products:

(1) EJ Co. #1564 series

(2) Engineer Approved Equal

c. Construction. Conduct the work in accordance with sections 402.03 and 825.03 of the Standard Specifications for Construction. All sewer pipe designated as AWWA C-900 will be required to be isolated and pressure tested in accordance with AWWA-C900 standards and the 10-State Standards for Waterworks and Wastewater facilities.

1. Infiltration/Exfiltration Testing

A. Low Pressure Air Test: Test newly constructed sanitary sewers in accordance with ASTM F1417.

B. Hydrostatic Test: C900 PVC or Ductile Iron Pressure Pipe installed parallel to water mains within 10-feet (horizontal) and 18-inches (vertical) shall be subjected to hydrostatic testing in accordance with AWWA-C605 standards and the 10-State Standards for Waterworks and Wastewater facilities. Install temporary mechanically restrained cap and ensure joints are properly restrained prior to testing.

C. Where newly constructed sewers must be placed into service immediately, exfiltration testing may be waived at the Engineer's sole discretion. Where exfiltration testing is waived, sewers shall be cleaned and televised in accordance with City of Kalamazoo Standard Specifications for Wastewater Sewer installation. Payment for televising of sanitary sewers is included in payment for the sanitary sewer pay items.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price in accordance with the City of Kalamazoo Standard Specifications for Wastewater Sewer Installation, and other special provisions within this contract.

CITY OF KALAMAZOO

SPECIAL PROVISION
FOR
TRENCH DRAIN

ABONMARCHE:MJS

1 of 2

1/6/2023

a. Description. This work consists of furnishing and installing modular channel section trench drains, including all necessary hardware at the locations shown on the plans. This item includes all work required to excavate, install the sections of trench drain and place backfill. Complete this work in accordance with sections 402 and 403 of the Standard Specifications for Construction, the details shown on the plans and this special provision.

b. Materials. Furnish modular channel sections made of 0% water absorbent High Density Polyethylene (HDPE). Channels shall have positive mechanical connection between the sections that will not separate during installation, and mechanically lock into the surrounding cast concrete at intervals not to exceed 10 inches. Channels shall have a smooth radiused, self-cleaning channel bottom with the options for neutral or integral slopes of at least 0.75%. Rebar clips shall be included with the channel to secure reinforcement steel that will anchor the channel in the surrounding cast concrete. Grates shall meet the requirements of ADA accessibility, H-20 Loading, and American Iron and Steel (AIS) sourcing. Grates shall attach securely to the channel sections by means of secure hardware. The materials must meet the applicable requirements specified in the following subsection and sections of the Standard Specifications for Construction:

Steel Reinforcement	905
Drainage Products	909
Portland Cement Concrete Mixtures.....	1004

The trench drain system shall be the Z886-HD system manufactured by Zurn or an approved equal. Specific part numbers for sloped and neutral channel sections of varying depths are shown in detail on the plans. The contractor shall field verify grades and notify the engineer of any variation from plan prior to installing the system.

Furnish all associated items, such as channel sections, grates, end outlets, bolts, nuts, and washers as recommended by the manufacturer of the drain and as approved by the Engineer.

Use concrete, Grade 3500 in accordance with section 1004 of the Standard Specifications for Construction for backfill.

Use reinforcing steel of the sizes shown on the plans in accordance with section 905 of the Standard Specifications for Construction.

c. Construction. Install the drain system to the line and grade shown on the plans or as directed by the Engineer. Completely encase the drain in concrete poured monolithically as shown on the plans and the manufacturers details.

Prior to placing concrete encasement, install reinforcing steel and ensure the upgrade end of the drain is closed with an end cap. Ensure the grate assembly is covered during encasement operations to prevent infiltration of concrete and other foreign material into the pipe.

Secure the trench parts in the proposed line and grade to prevent shifting or floating during the encasement stage of construction.

If positive flow or the final grade of the drain is not maintained during the encasement stage of construction, ensure the drain is removed and replaced at no additional cost to the contract.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Trench Drain	Foot

Trench Drain will be measured in place by length in feet for the limits of the system. Payment includes excavation, and all necessary hardware, including caps, elbows, couplings, rebar, and the length of trench sections and grates. Payment for Grade 3500 concrete used for the encasement of the drain and PVC storm sewer to connect to other structures is paid for separately under associated items of work.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
DRAINAGE STRUCTURE COVER, MODIFIED

ABONMARCHE:DAD

1 OF 2

01/06/2023

a. Description. This work consists of providing all labor, equipment and materials required to furnish and install new drainage structure covers as described in section 403 of the Standard Specifications for Construction, except as modified herein. This work also includes securing covers as described herein and as directed by the Engineer.

b. Materials. Provide materials in accordance with Section 403 and 908 of the Standard Specifications for Construction, except as modified herein. Drainage Structure Covers shall be manufactured by one of the following:

Neenah Foundry Company
3831 Zane Trace Drive
Columbus, OH 43228
Phone: 614-876-2671

EJ Co.
P.O. Box 439
East Jordan, MI 49727
Phone: 800-874-4100

Furnish the following products for this project.

MDOT Cover	EJ Co. Model Number	Neenah Foundry Model Number
Cover B	1040A	n/a
Cover D	5100 M1 5105 Grate on Grade or Sag M3 5105 in ADA Ramp Applications	R-3031-B
Cover E	EJ 6508	R-4340-A
Cover G	1040 Type N Grate	n/a
Cover K	7045 M2 Grate	R-3274 Type S Grate
Cover KL	EJ 7035 M6 Grate on Grade M2 Grate in Sump/Sag Locations	R-3246-C Type L Grate on Grade Type C Grate in Sump/Sag Locations
Cover Q	1040A * - 1040APT shall be used where pressure tight covers designated on the plans.	*R-1916-F shall be used where pressure tight covers designated on the plans.

Solid or vented covers shall bear the City Logo and text legend indicating the type of utility; "STORM SEWER", "SANITARY SEWER", or "WATER."

c. Construction. Construction methods must be in accordance with the standard specifications and as specified herein. All castings with bolt-down covers must have the bolts installed and tightened when the castings are installed unless directed or permitted otherwise by the Engineer. Any missing or damaged bolts must be replaced at the Contractor’s expense before acceptance of the project or for use by traffic.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Dr Structure Cover, Type ____, Modified	Each
Sanitary Structure Cover, Type Q, Modified	Each

Dr Structure Cover, Type __, Modified includes all labor, equipment and materials necessary to furnish and install new drainage structure covers as described, including bolting the covers to the frames.

Sanitary Structure Cover, Type Q, Modified includes all labor, equipment and materials necessary to furnish and install new sanitary structure covers as described, including bolting the covers to the frames.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
CAST IN PLACE CONCRETE WALLS

ABONMARCHE:DAD

1 of 3

01/06/2023

a. Description. This work consists of furnishing and constructing site cast concrete walls utilizing and aesthetic form liner and limestone caps in accordance with the standard specifications, this special provision, as detailed on the plans, other contract requirements and as directed by the Engineer.

b. Quality Assurance. Work must be performed by skilled workers with a minimum of 10 years cast in place structural concrete experience and a satisfactory record of performance on completed projects of comparable size and quality. Submit records and examples of six jobs completed, in the previous five years, in the State of Michigan and qualifications to the Engineer for review and approval.

Follow MDOT requirements for material source list, and furnish materials. Furnish submittals for review and approval by the Engineer for all materials not addressed in the 2020 MDOT Standard Specifications for Construction and the Materials Source Guide.

c. Materials. Provide materials in accordance with Section 706 of the 2020 Standard Specifications for Construction. Provide Grade 3500 concrete for footing and wall structures.

1. Form Liner. Final form liner design to be confirmed with owner prior to ordering. The liner system shall be manufactured by Reckli, Scott System, SpecFormliners or engineer-approved equal.

Provide manufacturer's submittals for proposed pattern and liner material, including release agents, adhesive, or other accessory products to the Engineer for review and approval.

2. Stain and surface protection. Stains and surface sealants/protectants shall be per form liner manufacturers specifications. Up to 4 colors will be selected by the owner for application to the patterned surface. The contractor shall apply not less than the number of coats recommended by the stain manufacturer to provide a complete, uniform color without areas of increased or decreased saturation.

3. Limestone Caps. Provide limestone caps as specified in the Special Provision for Limestone Cap.

d. Construction. Construct site cast retaining walls and seat walls in accordance with Section 706 of the 2020 MDOT Standard Specifications for Construction and as specified herein.

1. Layout and Installation. Establish lines, levels, and coursing to match existing adjacent panels. Protect from displacement.

2. Structure Embankment and Backfill. Place structure embankment and backfill in accordance with subsections 205.03 and 206.03 of the Standard Specifications for Construction

for the base below the concrete foundation and fill for the excavations required for the construction of the foundations.

3. Cast in Place Concrete Foundation and walls. Construct aggregate base, if required, in accordance with subsection 302.03 of the Standard Specifications for Construction, except as modified by the details on the plans. Form and construct the cast in place concrete foundation and walls in accordance with subsection 706.03 of the Standard Specifications for Construction and the details on the plans. Coordinate construction with the location and installation of underground utilities, conduits, concrete paving and other affected work.

4. Form Liners. Adhere form liners to concrete forms per manufacturer's instructions using specified products. Ensure edges of adjoining liner sections are neat and square to each other and aligned to perpetuate the desired pattern as seamlessly as possible. Apply release agent per manufacturer's instructions. Follow all manufacturer's instructions for vibrating and consolidating the concrete during the pour, as well as instructions for stripping the forms and finishing the surface of the wall as it sets.

5. Limestone Caps. Set limestone caps as specified in the Special Provision for Limestone Cap.

6. Protection. When installing the stone cap, protect all masonry materials against damage before and during installation.

A. Do not install masonry unless the air temperature is 36 degrees F or above. Do not heat masonry units to above 140 degrees F to remove frost or excessive moisture. Protect finished work against freezing for not less than 48 hours.

B. Cover the tops of uncompleted walls, at the conclusion of the day's work, with tarpaulins or 15# Roofer's Felt securely held in place. Clean any loose mortar when work is resumed. Thoroughly wet previously installed masonry if drying weather.

C. Patch damaged areas caused by other trades and tuck point as required, leaving work in perfect condition.

D. Cold Weather Construction. Follow the 'Recommended Practices and Guide Specifications for Cold Weather Masonry Construction's, published by the International Masonry Industry, All Weather Council.

Maintain a copy of this guide on the job site whenever masonry work is taking place and make available to the Engineer.

Store and protect materials to prevent moisture from entering. Thaw masonry sand before using.

Heat masonry units to above freezing before use without overheating.

Maintain mortar at point of use, at not less than 40 degrees F, by use of under-board heaters or by more frequent mixing of smaller mortar batches. A thermometer will be made available for use by the Engineer at all times.

7. Cleaning. Clean all exposed masonry by thoroughly wet surfaces with clear water and scrub with stiff bristle brushes using a non-abrasive, masonry cleaning solution as manufactured by ProsoCo, Sandell Construction Solutions, or Dumond Chemicals, or equivalent as approved by the Engineer, and mixed per manufacturer's directions, followed immediately by a thorough rinsing with clear water.

Protect all doors, windows, lintels, fences and other corrodible parts and sills of adjacent site features or structures during cleaning.

Protect all adjacent hardscapes when staining concrete walls to ensure no color is applied to areas other than the wall. The contractor shall replace any adjacent pavement not called to be stained at their own expense.

e. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Retaining Wall, Poured Concrete	Square Yard

Retaining Wall, Poured Concrete includes all of the labor, equipment and materials as described above that are necessary to complete the work to provide a complete finished wall as detailed in the plans. Payment for the limestone cap is included in the unit price for the wall. All reinforcement, forming, striping, and finishing of the concrete walls are included in the unit price. All site work, including excavation, backfilling, and compaction for the construction of the wall is included in the unit price. Payment also includes the disposal of excavated material and debris offsite.

CITY OF KALAMAZOO

SPECIAL PROVISION
FOR
LIMESTONE CAP

ABONMARCHE:MJS

1 of 3

01/06/2023

a. Description. This work consists of furnishing and setting new caps, and preparing the wall for a new cap. This work also consists of furnishing all materials, equipment, and labor as needed to clean joints and install sealant and backer rods. The location for the work is as shown on the plans or as directed by the Engineer.

b. Quality Assurance. Submit references and documentation of the stone supplier's and stone installer's experience to the Engineer for review and approval at least 10 workdays prior to starting the shop drawings. Ensure the cap segments are supplied by a company specializing in quarrying cut stone with a minimum of 10 years of experience. Ensure the cap is installed by a company specializing in performing work similar in nature and scope to the specified work with a minimum of 3 years of experience.

Follow MDOT requirements for material source list, and furnish materials. Furnish submittals for review and approval by the Engineer for all materials not addressed in the 2020 MDOT Standard Specifications for Construction and the Materials Source Guide.

c. Materials. Acceptance of materials will be based on general certifications in accordance with the MQAP Manual. Furnish limestone. Provide manufacturer's submittals for proposed limestone cap and appurtenances to the Engineer for review and approval. Submit a color sample to the Engineer for approval not less than 14 days prior to beginning work.

1. Limestone. Furnish medium-density select grade cut limestone with a smooth surface texture in accordance with ASTM C568/C568M. Furnish limestone cap with skateboard deterrent notches at intervals not to exceed 24 inches on center.

2. Mortar. Furnish Type N mortar in accordance with ASTM C270 using the following proportions:

A. Mix Proportions.

One part Type 1 grey Portland cement conforming to ASTM C150/C150M.

One part masonry cement conforming to ASTM C91/C91M.

Four and one half to six parts coarse sand conforming to ASTM C33/C33M.

3. Backer rod. Furnish round closed cell polyethylene foam rod conforming to ASTM D5249, Type 3 sized 25 percent larger than the joint width.

4. Joint Cleaner. Provide non-corrosive and non-staining type joint cleaner recommended by the joint sealant manufacturer that is compatible with joint forming materials.

5. Joint Sealant. Provide polyurethane sealant conforming to ASTM C 920, Grade NS, Type S, Class 25. Ensure the sealant is single component, chemical curing, non-staining, non-bleeding, capable of constant water immersion, non-sagging type; color to match adjacent surfaces;

selected from the Qualified Products List (713.02B). Ensure the sealant is used as the general sealant throughout the work.

- A. Ensure the sealant meets the following:
 - Elongation Capability. Minimum 25 percent.
 - Service Temperature Range. -40 to 180 degrees Fahrenheit (F)
 - Shore A Hardness (after aging). 30 ±5
- 6. Dowels. Provide 3/8-inch diameter, 6-inch long horizontal joint anchors and vertical dowels, fabricated from ASTM A 580, Type 302/304 stainless steel.
- 7. Shims and Spacers. Provide plastic setting shims and spacers.

d. Construction. Complete this work in accordance with the International Masonry Industry All-Weather Council Recommended Practices and Guide Specifications for Cold Weather Masonry Construction and Indiana Limestone Institute of America, Inc. standards.

1. Fabrication. Complete the cap fabrication in accordance with Indiana Limestone Institute of America, Inc. - Indiana Limestone Handbook. Protect the limestone from chipping during fabrication. Chipped limestone cap segments will not be accepted by the Engineer.

- A. Ensure thickness and face size is as shown on plans.
- B. Ensure limestone cap segment lengths are based on existing cap size.
- C. Ensure fabrication tolerances are in accordance with Indiana Limestone Institute of America, Inc. Standards.
- D. Fabricate units for uniform coloration with adjacent units and over the full area of the installation.
- E. Slope exposed top surfaces of stone for natural wash.
- F. Cut a drip slot or "V" notch in the underside of cap segments not less than 3/8 inch wide and 1/4 inch deep; full width of projection over base block masonry.
- G. Obtain the Engineer's approval prior to on-site cutting or fitting any item not shown on, or not in conformance with, the shop drawings. Do not impair the appearance or strength of stonework by cutting.

2. Delivery, Storage, and Handling. Ship and store cap segments on pallets. Protect caps from discoloration. During temporary storage on-site, at the end of the working day, or during rainy weather, cover stonework exposed to the weather with securely anchored non-staining waterproof coverings. Protect caps from chipping during shipping, storage, and on-site handling before and during installation. Chipped limestone cap segments will not be accepted by the Engineer.

3. Preparation. Verify that support work is complete and site conditions are such that work can begin on a section of the wall. Establish lines, levels, and courses. Protect from disturbance. Verify that built-in items, specified elsewhere in the contract, are properly located and sized.

Clean limestone cap segments and wall area that the cap is to be placed upon prior to installation. Do not use wire brushes or implements that will mark or damage exposed surfaces. Refer to cleaning requirements herein for additional requirements.

4. Installation. Install caps in accordance with the stone supplier's instructions and shop drawings. Place setting buttons and set the cap in full mortar setting bed to support cap over the full bearing surface. Ensure joint dimensions are as shown on the plans.

Drill 3/4 inch diameter vertical holes to accept vertical anchor dowels. Drill holes 1 inch deeper than dowel penetration. Install two 6-inch vertical dowels for each cap segment, so that each dowel extends 2 inches down into the brick masonry/concrete and 4 inch upward into the cap. Drill vertical holes not less than 1½ inch from the end of limestone cap segments.

Place mortar mesh or other approved filler material in the block masonry core, as needed to hold the mortar in the core where the dowel will be placed. Set dowel into mortared core and allow mortar to cure, stabilizing dowel, before setting the stone cap.

Fill dowel holes in limestone with mortar while setting the limestone caps. Shore up limestone cap segments until the setting bed will maintain the segments in position without movement.

Ensure the joint at the limestone setting bed is clean and is ready to receive the material. Ensure surfaces to receive sealant are dry, free of contamination, all foreign matter, laitance, and efflorescence.

5. Joints.

A. Backer Rod. Install backer rod to a depth of 1/2 inch, uniform and consistent along the entire length of joint, in preparation for sealant material.

B. Sealant. Verify that the backer rod is at the proper depth, clean and ready to receive sealant. Install sealant in accordance with the manufacturer's instructions and at the proper ambient temperatures for the actual material being installed.

6. Tolerances. Position limestone cap segments not greater than 1/4 inch from position shown on shop drawings. Ensure the maximum variation from the plane of the wall is not greater than 1/4 inch in 10 feet or 1/2 inch in 50 feet, whichever is less. Ensure the maximum variation between the face plane of adjacent cap segments is not greater than 1/16 inch.

7. Cleaning. Use non-metallic tools in cleaning operations. Remove excess mortar and clean soiled surfaces with cleaning solution upon completion of work.

8. Damaged Caps. Replace caps damaged during fabrication, handling, transportation, and installation at no additional cost to the project.

e. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay items.

Payment the Limestone Caps is included in payment for the item "Retaining Wall, Poured Conc, Veneer_" No additional payment will be made for the above-described work.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
CAST IRON DETECTABLE WARNING SURFACES

ABONMARCHE:DAD

1 OF 2

01/06/2023

a. Description. This work consists of constructing and/or reconstructing sidewalk ramps with cast iron detectable warning surfaces at the specified location(s). Complete this work according to the standard specifications and Standard Plan R-28 Series, except as modified herein.

b. Materials. Provide detectable warning surfaces for tactile and visual warning that contrast visually with adjacent walking surfaces, either light-on-dark or dark-on-light. Provide cast iron detectable warning surfaces that conform to the dimensions shown on Standard Plan R-28 Series. Furnish the following detectable warning plates.

Neenah Foundry Company
3831 Zane Trace Drive
Columbus, OH 43228
Phone: 614-876-2671
Product Name: NF Detectable Warning Plates

EJ Co.
P.O. Box 439
East Jordan, MI 49727
Phone: 800-874-4100
Product Name: EJ Cast Iron Detectable Warning Plate

Finish: **Unfinished**

c. Construction. Construct sidewalk ramps according to subsection 803.03 of the Standard Specifications for Construction and Standard Plan R-28 Series, of the thickness shown on the plans. Install detectable warning surfaces according to the manufacturer's instructions and Standard Plan R-28 Series.

When replacing gutters in addition to sidewalk ramps, transition the gutter cross-section in advance of the sidewalk ramp to meet the dimensions and profile in Standard Plan R-28-series.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Detectable Warning Surface, Cast Iron	Foot

Detectable Warning Surface, Cast Iron will be measured in place by length along the center of the 24-inch wide detectable warning material at specified locations. If the Contractor must remove the existing concrete sidewalk or sidewalk ramp in conjunction with retrofitting a detectable warning

device, the unit price for Detectable Warning Surface, Cast Iron will include the cost of removing the sidewalk, sidewalk ramp, and restoration. Payment includes all labor, materials, and equipment to install a detectable warning surface.

All concrete work required by this special provision will be measured and paid for separately.

CITY OF KALAMAZOO

SPECIAL PROVISION
FOR
BRICK PAVERS

ABONMARCHE:MJS

1 of 3

01/06/2023

a. Description. This work consists of preparing the base, furnishing and installing a sand or bituminous bed, and furnishing and installing salvaged brick pavers. This work must be performed by workers with satisfactory record of performance on completed projects of comparable size and quality. Provide references to the Engineer if requested.

b. Materials. Provide materials in accordance with Standard Specifications for Construction, the plans, and this special provision. Store granular materials in a well-drained area on a solid surface to prevent mixing with foreign materials. Do not use frozen materials or materials mixed or coated with ice or frost.

1. Pavers. Pavers shall be salvaged from the existing roadway. Ensure a variety of colors of the existing natural finishes are represented in the bricks that are salvaged.

Base Material. Use MDOT 22AA aggregate.

2. Pedestrian Bedding and Leveling Material. Use coarse sand (MDOT 2NS)

3. Vehicular Bedding and Leveling Material: Use a blend of asphalt and coarse sand in a 93:7 Sand to Asphalt ratio.

4. Vehicular Setting Bed Primer: Cut back asphalt, ASTM D 2028, grade as recommended by the asphalt paving manufacturer.

5. Asphalt Paver Adhesive: Use asbestos-free cold applied, rubberized asphalt cement, designed especially as an adhesive for paving blocks with 2% neoprene and 10% long fibers.

6. Paver Joint Filler. Use an impervious polymeric sand per manufacturer's specifications.

7. Paver Edging. Edging to be Gator Edge, Snap Edge Paver Restraint or approved equal.

c. Construction. Do not build on frozen, wet, saturated, or muddy sub-grade. Protect partially completed paving against weather damage when work is not in progress. Remove and replace completed work damaged by frost or freezing.

1. General. Provide only sound pavers free of defects that could interfere with proper installation or reduce the service life of the finished work. Minor cracks and minor chipping incidental to methods of manufacture or handling are subject to visual inspection and the Engineer's acceptance. Excessive cracks and chips will be cause for rejection.

There must be no efflorescence evident upon visual inspection of the pavers at the project site.

Protect pavers from damage, chipping, and soiling during storage. Store off the ground on pallets

or wood platforms. Do not use pavers with chips, cracks, voids, discoloration, or other visible defects exceeding the limits in ASTM C 902.

2. Base Course. Place base course materials only on an approved surface. Spread base course material in layers which when compacted will not exceed 4 inches. Compact each layer to 95 percent of maximum unit weight. Screed, level, and shape base course surface to required grade and cross section within a tolerance of 1/4 inch.

3. Pedestrian Bedding and Leveling Course. Spread bedding and leveling course materials evenly over the entire area to be paved, screed to a level that will provide a minimum 1-inch thickness when the pavers are placed and vibrated. Protect completed bedding and leveling course from damage until covered with paver units. Do not pre-compact bedding and leveling course.

4. Pedestrian Pavers. Correct any unsatisfactory substrate or installation conditions prior to placing any pavers. Use full pavers wherever possible. Where cutting is required, use the largest size pavers possible. Cut pavers to provide required pattern and to neatly fit adjoining work. Cut pavers with block splitter or other equipment designed to cut masonry with clean, sharp unchipped edges. Ragged cuts will not be accepted. Cut through the full thickness of the pavers.

Lay paver units in the pattern shown on the plans. Set all pavers flush to existing adjacent concrete curbs and adjoining work. Maintain uniform 1/16-inch to 1/8-inch joints between pavers. Vary the colors of the brick throughout the installation from the existing bricks that are salvaged.

Vibrate pavers to final grade with three or more passes of a vibrating plate compactor. After the first pass, brush joint filler material over the surface and vibrate into the joints with additional passes. Completely fill joints. After final vibrating, the surface must be true to grade and not vary by more than 1/4 inch when tested with a 10-foot straightedge at any location on the surface.

Remove and replace pavers that are broken, chipped, stained, or otherwise damaged. Provide new matching pavers, install as specified and to minimize evidence of replacement.

Clean pavers during installation and upon completion of the work. Repair damage to adjacent areas resulting from paver installation operations, as directed by the Engineer.

Remove and properly dispose of all excess material and debris upon completion of paver installation.

5. Vehicular Pavers: For concrete base preparation fill any cracks under 3/16 in. wide with mortar and sweep the surface clean.

Apply asphalt primer at a rate of 0.05 to 0.15 gal/ syd.

Bituminous setting bed shall be placed in panels between 3/4 in. high screed rails spaced at approximately 12 ft maximum. Rake and screed smooth with strike board. Use screed rails to achieve a level setting bed conforming to elevations and slope shown on the drawings. After one panel is complete, advance screed rails to the next position in readiness for screeding adjacent panels with strike board. Fill depressions left from removed screed rails and smooth to height consistent with panel. Place an area in size that will remain at least 270° F (130° C) during compaction. Compact the setting bed with a powered roller compactor to an even, nominal

thickness of 3/4 in. after compaction. Re-heat, fill, and compact low areas with setting bed materials to conform to slope and elevation shown on the drawings. Re-heat, remove, level, and compact setting bed in high areas to conform to slope and elevation shown on the drawings. Irregularities or evenness in the grade of the concrete base surface may be corrected with setting bed materials only with approval by the Engineer.

Neoprene modified asphalt adhesive shall be applied to cold asphalt setting bed with a squeegee in a thickness not exceeding 1/16 in. Do not apply pavers to adhesive until dry skin forms on surface of adhesive.

Brick Pavers shall be free from dust, dirt, and stains. Do not use soiled, cracked, or broken units. Place paving units firmly onto adhesive with joints not to exceed 1/8 in., or as recommended in manufacturer’s literature. Maintain straight pattern lines, joint lines and coursing per the drawings. Cut pavers to fit edges with a masonry saw. No cut paver shall be smaller than 1/3 of a whole unit if exposed to vehicular traffic. Firmly place all edge units on adhesive.

Joint filler and sealant shall be extended through full depth of paving units. Do not extend joints through bituminous bedding materials from joints in concrete base that control shrinkage cracking. Install joints at all building facades or other vertical surfaces. Install pre-molded joint filler as units are set in bituminous bed. Maintain top of filler 3/8 in. below exposed faces of paving units for insertion of sealant. Install joint sealant per manufacturer’s recommendations.

6. Paver Edging. Install edging per the manufacturer’s recommended installation procedures.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Brick Pavers, Asphalt Bed, Salvaged	Square Foot
Brick Pavers, Sand Bed, Salvaged	Square Foot

Brick Pavers, Asphalt Bed, Salvaged includes all materials, labor, and equipment necessary to complete the work as described. Bituminous leveling, jointing, and adhesive materials are included in payment for this item. Base aggregates and concrete base course will be paid separately. Removal, storage, and disposal of waste materials per subsection 205.03.P of the Standard Specifications for Construction is included and will not be paid for separately.

Brick Pavers, Sand Bed, Salvaged includes all materials, labor, and equipment necessary to complete the work as described. Leveling and jointing materials are included in payment for this item. Base aggregates will be paid separately. Removal, storage, and disposal of waste materials per subsection 205.03.P of the Standard Specifications for Construction is included and will not be paid for separately.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
BRICK PAVING REMOVE AND SALVAGE

ABONMARCHE:MJS

1 of 1

1/6/2023

a. Description. This work consists of removing the existing brick pavers utilizing a non-destructive method. Salvage bricks suitable for reuse and stockpile them in a secure location.

b. Materials. All materials must conform to the standard specifications.

c. Construction. Remove the existing brick pavers at the locations shown on the plans.. Neatly stockpile those bricks approved for reuse by the Engineer in a secure location. Bricks shall be neatly stacked on pallets, in a manner stable for transportation and handling. Transport and store bricks to ensure the condition after completion of the work is the same as before removal. The City at its discretion may elect to have an additional quantity of bricks salvaged, and transported to one of their facilities within the city, for storage and reuse on a future project.

Bricks not suitable for reuse must be disposed of per section 204 of the Standard Specifications for Construction. Engineer will provide representative samples of acceptable bricks for removal and salvage.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Brick, Rem and Salv	Square Yard

Brick, Rem and Salv will be measured by the surface area of bricks removed. Removal and salvage includes all labor and equipment required to complete the work as described including palletization of salvaged bricks, saw cutting required to remove bricks, removal of accumulated debris from surface of bricks, and disposal of unsatisfactory bricks and construction debris. The contractor will be responsible for delivery of any additional salvaged bricks requested by the city to be delivered to one of their facilities within the city limits. Areas selected for removal and salvage shall be reviewed and approved by the engineer ahead of the work. Areas of brick removal not called for removal and salvage will be paid for at the unit contract unit price for **Pavt, Rem, Modified**.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
TRANSIT SHELTER, REM, SALV, REINSTALL

ABONMARCHE:MJS

1 of 1

1/6/2023

a. Description. This work consists of providing all labor, equipment and materials necessary to remove, coordinate temporary storage and protection, and complete reinstallation of a surface mounted aluminum transit bus stop shelter.

b. Materials. Provide anchor rod hardware in accordance with the following:

- Anchor Rod: Hilti HAS-R 316 Stainless Steel series
Or Engineer approved Equal
- Anchor Epoxy: Hilti HIT-RE 500 V3 Epoxy Anchor
Or Engineer approved equal

c. Construction. Remove the transit shelter by loosening and removing the nuts from the embedded anchor rods. Do not cut the nuts or rods to remove, or employ any other methods which would result in damage to the shelters surface coating.

Once removed, coordinate transfer and storage of the shelter with the Metro facility located at 530 N. Rose Street, Kalamazoo, MI 49007. The shelters will be stored off site for the duration of construction in the area of the transit stop.

To reinstall, drill clean uniform holes in the concrete slab to the diameter specified by the anchor manufacturer. Clean and install epoxy and anchor rods per the manufacture's specifications. Ensure that temperatures during installation and cure time will be within the manufactures specified range. Install transit shelter on anchor rods once the epoxy has sufficiently cured.

d. Measurement and Payment. The completed work, as described, will be measured as a lump sum and paid for at the contract price using the following pay item:

Pay Item	Pay Unit
Transit Shelter, Rem, Salv, Reinstall.....	Ea

Transit Shelter, Rem, Salv, Reinstall will be paid for each individual transit shelter that is removed and reinstalled as part of the project. The item includes all tools, labor, materials, and equipment to remove, transport, store, protect, and reinstall the shelter. If the shelter is temporarily relocated and reinstalled to function as a temporary bus stop, the subsequent removal and reinstallation at the final location will be paid for as an additional instance of this item.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
PAVT MRKG, WATERBORNE, ACCESSIBLE SYM

ABONMARCHE:DAD

1 of 1

01/06/2023

a. Description. This work consists of furnishing all labor, equipment, and material required to place waterborne pavement marking symbols in accordance with the 2020 MDOT Standard Specifications for Construction and the Michigan Manual on Uniform Traffic Control Devices (MMUTCD), 2011 edition.

b. Materials. Provide glass beads and blue waterborne pavement marking material in accordance with Section 811.02 of the 2020 MDOT Standard Specifications for Construction.

c. Construction. Place waterborne pavement markings in accordance with Section 811.03 with the use of a stencil or template for consistent application of the specified symbol or legend in accordance with the MMUTCD and MDOT Pavement Marking Standards.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Pavt Mrkg, Waterborne, Accessible Sym.....	Each

CITY OF KALAMAZOO

SPECIAL PROVISION
FOR
SIGN, TYPE A, TEMP, PRISMATIC, SPEC

ABONMARCHE:MJS

1 OF 1

01/06/2023

a. Description. This work consists of furnishing installing and operating temporary traffic control signs in accordance with Section 812 of the standard specification for construction.

b. Materials. Provide materials in accordance with subsection 812.02 of the Standard Specifications for Construction. Sign backgrounds and legends shall be reflectorized, and of the color called for on the plans.

c. Construction. Install signs and provide temporary supports, hardware, and accessories in accordance with Section 812.03 of the Standard Specifications for Construction.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Sign, Type A, Temp, Prismatic, Spec, Furn	Square Foot
Sign, Type A, Temp, Prismatic, Spec, Oper	Square Foot

Sign, Type A, Temp, Prismatic, Spec, Furn includes providing the sign in operable condition with required equipment, supplemental weights, hardware, and labor, including the initial installation on the project. Payment will be made for the total area of the maximum number of signs with dissimilar sign legends in use, at one time on the project, in accordance with subsection 812.04.

Sign, Type A, Temp, Prismatic, Spec, Oper includes operating, inspecting and maintaining, relocating, and removal from the project. Payment will be made for the total area of the maximum number of signs with dissimilar sign legends in use, at one time on the project, in accordance with subsection 812.04.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
LANDSCAPE MATERIALS

ABONMARCHE:DAD

1 of 4

01/06/2023

a. Description. This work consists of furnishing and installing all plant materials, preparing the soil, fertilizer, mulch, edging, staking materials and all related items necessary to complete the work and provide maintenance in accordance with the plans and specifications. This work shall be done in accordance with Section 815 of the Standard Specifications for Construction, and as listed herein.

1. Quality Assurance

A. Source Quality Control:

- (1) General: Ship landscape materials with certificates of inspection required by governing authorities. Comply with regulations applicable to landscape materials.
- (2) Do not make substitutions: If specified landscape material is not obtainable, submit to Engineer proof of non-availability and proposal for use of equivalent material. When authorized, adjustment of contract amount will be made.
- (3) Analysis and Standards: Package standard products with manufacturer's certified analysis. For other materials, provide analysis by recognized laboratory made in accordance with methods established by the Association of Official Agriculture Chemists, wherever possible.
- (4) Trees / Shrubs / Perennials and Ornamental Grasses: To be grown in a recognized nursery in accordance with good horticultural practice. Provide healthy, vigorous stock free of disease, insects, eggs, larvae, and defects such as knots, sun scald, injuries, abrasions or disfigurement.
- (5) Sizes: Provide all plan material as shown or specified. Plant material of larger size may be used if acceptable to Engineer, and if sizes of roots or balls are increased proportionately.
- (6) Inspection: Engineer reserves the right to inspect trees and shrubs either at place of growth or at site before planting, for compliance with requirements for name, variety, size and quality.
- (7) All plant materials shall be certified by the nursery to be free of any neonicotinoid type pesticides. Neonicotinoid pesticides include but are not limited to Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, Nitenpyram, thiacloprid, Thiamethoxam. The grower shall certify that none of this class of insecticide has been used in the life of the specimen provided.

B. Planting Schedule: Submit planting schedule showing scheduled dates for planting each section of the Work. Sections to be clearly described by contractor using business and entrance drives in description. If lane closure or traffic control is required during planting or maintenance operations the contractor shall submit a traffic control plan meeting MMUTCD to the Engineer for approval two weeks prior to implementation. Traffic control work shall be included with planting items for payment purposes.

C. Maintenance Schedule: Submit schedule for maintenance as specified in Section 815.

2. Delivery, Storage and Handling

A. Packaged Materials: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, while stored at site.

B. Plant Materials:

- (1) Trees and Shrubs: Provide freshly dug trees and shrubs. Do not prune prior to delivery. Do not bend or bind tie trees or shrubs in such manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery.
- (2) Deliver trees and shrubs only that are to be planted immediately for section in which contractor is working. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist.
- (3) Label at least one tree and one shrub of each variety per section with a securely attached waterproof tag bearing legible designation of botanical and common name.
- (4) Provide perennials and ornamental grasses in proper size containers and plant immediately upon delivery.

b. Materials. Supply all plants and planting materials in accordance with Section 917 of the Standard Specifications for Construction and as modified by this special provision.

1. Packaged Materials: Deliver packaged materials in containers showing weight, analysis and name of manufacturer. Protect materials from deterioration during delivery, while stored at site.

2. Plant Materials

A. Trees and Shrubs: Provide freshly dug trees and shrubs. Do not prune prior to delivery. Do not bend or bind tie trees or shrubs in such manner as to damage bark, break branches or destroy natural shape. Provide protective covering during delivery.

- (1) All plant materials shall be certified by the nursery to be free of any neonicotinoid type pesticides. Neonicotinoid pesticides include but are not limited to Acetamiprid, Clothianidin, Dinotefuran, Imidacloprid, Nitenpyram,

thiocloprid, Thiamethoxam. The grower shall certify that none of this class of insecticide has been used in the life of the specimen provided.

B. Deliver trees and shrubs only that are to be planted immediately for section in which contractor is working. If planting is delayed more than 6 hours after delivery, set trees and shrubs in shade, protect from weather and mechanical damage, and keep roots moist.

C. Label at least one tree and one shrub of each variety per section with a securely attached waterproof tag bearing legible designation of botanical and common name.

D. Provide perennials and ornamental grasses in proper size containers and plant immediately upon delivery.

3. Miscellaneous Landscape Materials

A. Anti-Desiccant: Emulsion type, film forming agent similar to Dowax by Dow Chemical Company; Wilt Pruf by Nursery Specialty Products, Inc.; Moisturin by Root-Zone. Deliver in manufacturer's fully identified containers and mix in accordance with manufacturer's instructions.

B. Hardwood Mulch. Provide shredded hardwood mulch consisting of tree bark stripped and shredded from sawn logs with a de-barking machine. Shredded hardwood mulch must be capable of passing through a conventional mulch blower. Do not use wood chips.

C. Washed River Stone Mulch. Provide $\frac{3}{4}$ " to 1-1/2" washed river stone. Stone should be of a uniform size and color, free from dust, debris, or organic material. Color shall be natural.

D. Edging: Edging shall be commercial grade aluminum edging (1/8 inch x 4 inch) installed at all locations to contain mulch. Use Permaloc (1-800-356-9660), Curv-Rite (1-800-366-2878) or approved equal.

E. Weed Barrier. Weed barrier shall be heavy duty polypropylene intended for long-term use in exposed conditions. The minimum fabric weight shall be as specified on the plans.

F. Tree Watering Bag. Provide a slow-release watering bag with minimum 20-gallon capacity that installs around the base of each tree trunk. Use Tree Gator brand or approve equal.

c. Construction. Construction methods and application rates for planting items shall be in accordance with Sections 815 and 816 of the Standard Specifications for Construction, as detailed in the plans, and as modified by this special provision.

1. Inspection. Installer must examine subgrade, verify elevations, observe conditions under which work is to be performed, and notify CONTRACTOR (or if none, OWNER) of unsatisfactory conditions. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

2. Edging. Install aluminum edging to the lines and grades shown on the plans prior to installation of hardwood mulch.

Installation shall be in conformance with manufacturer’s recommendations. Where permitted by the manufacturer and necessary to achieve proper dimensions, cuts shall be made with a manufacturer approved saw blade intended for cutting of non-ferrous metals. Edging shall be placed such that all sawcuts and joints are located inconspicuously, out of view and away from pedestrian traffic.

3. Weed Barrier. Place weed barrier on prepared topsoil. Place with minimum of 6 in lapping to prevent gaps and place pins in staggered rows on 36 inch centers . Cut holes in fabric to accommodate plantings. Trim edges of cuts neat and discard excess material.

4. Stone or Hardwood Mulch Materials. Place stone to the lines and grades shown on the plans. Ensure the material has been placed to the specified thickness. Grade smooth.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Aluminum Edging	Foot
(<u>Botanical Name</u>), (<u>size</u>)	Each
Hardwood Mulch, __ inch	Square Yard
Washed River Stone Mulch, __ inch	Square Yard

Payment for **Aluminum Edging** will be measured in place and shall include all materials, labor, and equipment necessary to furnish, trim, and install the edging as called for in the plans.

Plants, of their respective (**Botanical Name**), (**size**) will be measured by the units shown on the plans for their and methods specified in ANSI Z60.1. Payment includes furnishing, planting, pruning, watering-in, wrapping, bracing or guying, and mulching. Payment for deciduous or ornamental trees also includes furnishing and installing slow release watering bags. Maintenance of the bags is included in payment for watering and cultivating each season.

Payment for **Hardwood Mulch, __ inch** and **Washed River Stone Mulch, __ inch** shall be made per square yard in place. Payment shall include all materials, labor and equipment necessary to supply and distribute the material evenly over the surface of the planting beds to the depth specified in the plans.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
SLOPE RESTORATION, NON-FREEWAY

ABONMARCHE:DAD

1 of 4

01/06/2023

a. Description. This work consists of preparing all lawns and slopes on non-freeway projects designated for slope restoration on the plans or as directed by the Engineer and applying topsoil, fertilizer, seed, mulch with mulch anchor, mulch blanket, high velocity mulch blanket and permanent turf reinforcement mat to those areas. Turf establishment must be in accordance with section 816 of the Standard Specifications for Construction and Standard Plan R-100 Series, except as modified herein or otherwise directed by the Engineer.

b. Materials. The materials and application rates specified in sections 816 and 917 of the Standard Specifications for Construction apply unless modified by this special provision or otherwise directed by the Engineer. The following materials must be used on this project:

1. Seeding mixture TUF unless otherwise specified on the plans.
2. Fertilizer, Chemical Nutrient, Class A
3. Topsoil Surface, Furnished, 4 inch. Remove any stones greater than 1/2 in in diameter.
4. Mulch and Mulch Anchoring. Mulch blanket and High Velocity Mulch blanket shall be in accordance with Section 907 of the Standard Specifications for Construction. Netting shall be 100% biodegradable organic fiber netting with a functional longevity of 12 months or less.
5. Permanent Turf Reinforcement Mat (TRM) must be 100 percent synthetic and consist of 100 percent ultraviolet (UV) stabilized polyolefin fibers sewn between two layers of black UV stabilized polypropylene netting with polyolefin thread. The TRM must meet the following "minimum average roll value" requirements:

Table 1: Permanent Turf Reinforcement Mat (TRM) Properties

Property	Test Method	Requirement
Mass/Unit Area	ASTM D 6566	10 oz/syd
Ultraviolet Stability @ 1000 hrs	ASTM D 4355	80 percent
Tensile Strength (MD)	ASTM D 6818	165 lbs/ft

Acceptance. Supply a Test Data Certification for the permanent TRM from one of the following manufacturers:

- Recyclex - American Excelsior Co., Arlington, TX (800) 777-7645
- P300 - North American Green, Poseyville, IN (800) 772-2040
- Landlok 450 - Propex, Inc., Chattanooga, TN (800) 621-1273
- PP5-10 - Western Excelsior, Mancos, CO (800) 833-8573

6. Heavy Duty Permanent Turf Reinforcement Mat (TRM-HD) must be 100 percent synthetic and consist of 100 percent ultraviolet (UV) stabilized polyolefin fibers sewn between

two layers of black UV stabilized polypropylene netting with polyolefin thread. The TRM must meet the following “minimum average roll value” requirements:

Table 1: Permanent Turf Reinforcement Mat (TRM) Properties

Property	Test Method	Requirement
Mass/Unit Area	ASTM D 6566	21.25 oz/syd
Ultraviolet Stability @ 1000 hrs	ASTM D 4355	100 percent
Tensile Strength (MD)	ASTM D 6818	1421 lbs/ft

Acceptance. Supply a Test Data Certification for the permanent TRM from one of the following manufacturers:

P550 - North American Green, Poseyville, IN (800) 772-2040
 Or Engineer Approved Equal

c. Construction. Construction methods must be in accordance with subsection 816.03 of the Standard Specifications for Construction. Begin this work as soon as possible after final grading of the areas designated for slope restoration but no later than the maximum time frames stated in subsection 208.03 of the Standard Specifications for Construction. It may be necessary, as directed by the Engineer, to place materials by hand.

Shape, compact and assure all areas to be seeded are weed free prior to placing topsoil. Place topsoil to the minimum depth indicated above, to meet proposed finished grade. If the area being restored requires more than the minimum depth of topsoil to meet finished grade, this additional depth must be filled using topsoil or, at the Contractor’s option, embankment. Furnishing and placing this additional material is included in this item of work.

Topsoil must be weed and weed seed free and friable prior to placing seed. Remove any stones greater than 1/2 inch in diameter or other debris. Apply seed mixture and fertilizer to prepared soil surface. Incorporate seed into top 1/2 inch of topsoil.

Apply mulch at a rate of 2 tons per acre. Place Mulch Anchoring over the mulch at a rate specified in subsection 816.03.F of the Standard Specifications for Construction. Mulch Blanket and High Velocity Mulch Blanket must be placed in accordance with subsection 816.03.H of the Standard Specifications for Construction and as shown on Standard Plan R-100 Series.

Areas constructed with the TRM must be installed on prepared (seeded) grades as shown on the plans in strict accordance with the manufacturer’s published installation guidelines. The top edge of the TRM must be anchored in a minimum 6 inch deep trench. Operation of equipment on the slope will not be allowed after placement of the TRM. No credit for splices, overlaps, tucks or wasted material will be made.

If an area washes out after this work has been properly completed and approved by the Engineer, make the required corrections to prevent future washouts and replace the topsoil, fertilizer, seed and mulch. This replacement will be paid for as additional work using the applicable contract items.

If an area washes out for reasons attributable to the Contractor’s activity or failure to take proper precautions, replacement will be at the Contractor’s expense.

The Engineer will inspect the seeded turf to ensure the end product is well established, weed free, in a vigorous growing condition, and contains the species called for in the seeding mixture.

If the seeded turf is not well established at the end of the first growing season, the Contractor is responsible to re-seed until the turf is well established and approved by the Engineer.

If weeds are determined by the Engineer to cover more than 10 percent of the total area of slope restoration, the Contractor must provide weed control in accordance with subsection 816.03.J of the Standard Specifications for Construction. Weed control will be at the Contractor's expense with no additional charges to the project.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Slope Restoration, Type __	Square Yard

Place **Slope Restoration, Type A** in all areas not described in the other types of slope restoration and will be measured by area in square yards in place. **Slope Restoration, Type A** includes all labor, equipment and materials required to install Topsoil Surface, Furnished or Salvaged; Fertilizer, Chemical Nutrient, Class A; Seeding Mixture; and Mulch and Mulch Anchoring which will not be paid for separately but is included in the contract unit price for **Slope Restoration, Type A, Modified**.

Place **Slope Restoration, Type B** parallel (6 feet minimum) to the edge of the roadway, in areas that have a 1 on 3 slope and in any ditch with a grade less than 1.5 percent, or as directed by the Engineer. **Slope Restoration, Type B** will be measured by area in square yards in place. **Slope Restoration, Type B** includes all labor, equipment and materials required to install Topsoil Surface, Furnished or Salvaged; Fertilizer, Chemical Nutrient, Class A; Seeding Mixture; and Mulch Blanket which will not be paid for separately but is included in the contract unit price for **Slope Restoration, Type B**.

Place **Slope Restoration, Type C** in areas that have a 1 on 2 slope, any ditch with a grade of 1.5 percent to 3 percent or as directed by the Engineer. **Slope Restoration, Type C** will be measured by area in square yards in place. **Slope Restoration, Type C** includes all labor, equipment and materials required to install Topsoil, Furnished or Salvaged; Fertilizer, Chemical Nutrient, Class A; Seeding Mixture; and High Velocity Mulch Blanket which will not be paid for separately but is included in the contract unit price for **Slope Restoration, Type C**.

Place **Slope Restoration, Type D** in areas that have a slope steeper than 1 on 2, any ditch with a grade steeper than 3 percent or as directed by the Engineer. **Slope Restoration, Type D** will be measured by area in square yards in place. **Slope Restoration, Type D** includes all labor, equipment and materials required to install Topsoil, Furnished or Salvaged; Fertilizer, Chemical Nutrient, Class A; Seeding Mixture; and TRM which will not be paid for separately but is included in the contract unit price for **Slope Restoration, Type D**.

Place **Slope Restoration, Type E** in areas that have a slope greater than 1 on 4, and in and ditch with a grade less than 1.5 percent or as directed by the Engineer. **Slope Restoration, Type E** will

be measured by area in square yards in place. **Slope Restoration, Type E** includes all labor, equipment and materials required to install Topsoil, Furnished (salvaging not permitted); Fertilizer, Chemical Nutrient, Class A; Seeding Mixture; and mulch anchoring for hydroseeding which will not be paid for separately but is included in the contract unit price for **Slope Restoration, Type E**.

Place **Slope Restoration, Type F** in areas that have a slope steeper than 1 on 2, any ditch with a grade 6 percent or greater or as directed by the Engineer. **Slope Restoration, Type F** will be measured by area in square yards in place. **Slope Restoration, Type F** includes all labor, equipment and materials required to install Topsoil, Furnished or Salvaged; Fertilizer, Chemical Nutrient, Class A; Seeding Mixture; and TRM-HD which will not be paid for separately but is included in the contract unit price for **Slope Restoration, Type F**.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
MUNICIPAL UTILITY HANDHOLES

ABONMARCHE:DAD

1 of 1

01/06/2023

a. Description. This work consists of furnishing the labor, materials and equipment necessary to install handholes per Section 819 of the 2020 MDOT Standard Specifications for Construction, as modified herein.

b. Materials. Provide handholes in accordance with Section 819 and 918 of the 2020 MDOT Standard Specifications for Construction and as modified herein.

1. Polymer Concrete Handholes. Shall be 17"x30" and shall indicate "Electric."

2. Lighting Handholes. Shall be 12" x 12" x12" deep and their tops shall be manufactured with the legend indicating "Street Lighting."

3. Irrigation Hand Hole. Shall be 12" x 12" x12" deep and their tops shall be manufactured with the legend indicating "Irrigation."

c. Construction. Install handholes in accordance with Section 819 of the Standard Specifications for Construction.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Hh, Polymer Conc	Each
Hh, Irrigation, Modified	Each
Hh, Lighting, Modified	Each

CITY OF KALAMAZOO

SPECIAL PROVISION
FOR
STREET LIGHTING

ABONMARCHE:DAD

1 of 2

01/06/2023

a. Description. This work consists of furnishing and installing foundations for decorative lights and poles at the locations shown on the plans, in accordance with section 819 of the Standard Specifications for Construction and as directed by the Engineer.

b. Materials. Materials shall be in accordance with the 2020 MDOT Standard Specifications for Construction and as modified herein.

Concrete, Grade S2	701
Conduit	918

1. Luminaires

A. Luminaires shall be furnished and installed by Consumers Energy

2. Street Light Pole

A. Poles shall be furnished and installed by Consumers Energy

3. Street Light Pole Foundation

A. Foundation shall be constructed in accordance with section 819 of the standard specifications for constructions and Consumers Energy standard detail. Anchor bolt configuration shall be per the pole manufacturers details and dimensions.

4. Wiring

A. Wiring will be furnished and installed by Consumers Energy

c. Construction. Install concrete bases for lighting poles at locations as indicated on the Drawings, in accordance with Section 819 and 820 of the Michigan Department of Transportation Standard Specifications for Construction, and in accordance with the Special Provisions for this Contract.

Remove light pole foundation in accordance with sections 204 and 819 of the Standard Specification for Construction.

Remove and salvage luminaires, standards, and accessories in accordance with subsection 819.03 of the standard specifications of construction. Salvaged items shall become the property of the City, and shall be delivered by the Contractor to the City garage at 691 Airway Drive. The Contractor shall protect the salvaged components to ensure no additional damage is sustained.

Terminate the existing lighting circuit to allow full operation of the remaining lights. Provide conduit, wiring, handholes, and appurtenances as required by the current edition of the NEC and

governing local authorities to maintain the existing lights in their normal operable function.

Install conduits, handholes, and electrical equipment in accordance with Section 819 and 820 of the Michigan Department of Transportation Standard Specifications for Construction and in accordance with the Special Provisions for this Contract.

Install poles plumb. Install pole base in accordance with manufacturer’s instructions and adjust plumb.

Install luminaire (containing LED) to poles and pole bases.

Bond and ground luminaries metal components and metal poles in accordance with Section 918.01.C of the Michigan Department of Transportation Standard Specifications for Construction.

Install a supplementary grounding electrode at each pole.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Light Std Fdn	Each
Rem, Salv, Light Pole	Each

Light Std Fdn paid separately in accordance with Section 819 of the Standard Specifications for Construction.

Rem, Salv, Light Pole includes all labor, equipment, and materials to remove existing foundations, salvage standards and luminaires, deliver to specified location within the City, and modify the remaining lighting circuit to operate normally without the removed lights. .

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
PERIMETER LIT TYPE III SIGNS

ABONMARCHE:MJS

1 of 2

01/06/2023

a. Description. This work includes furnishing, installing, and configuring solar-powered perimeter lit signs in accordance with Sections 810 and 820 of the Standard Specifications for Construction and as modified herein.

b. Materials. Provide materials in accordance with the following sections of the Standard Specifications for Construction:

Electrical Wiring	918
Grounding Systems	918
Type III Traffic Signs.....	919
Vehicular Traffic Signals and Mounting Assemblies.....	921

1. Solar-LED Perimeter Lit Signs.

A. General:

(1) Furnish parent sign in accordance with section 810 of the standard specification for construction.

B. Signal Controller and Power Supply

(1) Controller: Furnish solid state controller.

(2) Flash Duration: Programmable by User

(3) Flash Pattern: MMUTCD Compliant

C. Battery: Nickel Metal Hydride (NiHM)- 14,000mAh (where solar power is specified)

D. Component Housing: NEMA 4X Rated

E. LED Lighting:

(1) High Power Luxeon 1-Watt with 100,000 hour life expectancy

(2) Color:

Sign Color	LED color
White	White
Yellow/ Yellow-Green	Amber
Red	Red

F. Product:

- (1) BlinkerSign Flashing LED Sign by TAPCO (Traffic & Parking Control Co., Inc.)
- (2) Trafficalm Basic Flashing Sign System by Trafficalm
- (3) Engineer Approved Equal

c. Construction. Construct driver feedback sign in accordance with Section 820 of the Standard Specification for Construction and Michigan Department of Transportation Statewide Traffic Signal Detail SIG-320-A as modified herein.

- 1. Static Sign Face shall be as designated on the plans in accordance with the Michigan Manual on Uniform Traffic Control Devices.
- 2. Install the driver feedback sign, solar engine, control enclosure and batteries in accordance with manufacturer recommendations.
- 3. Configure display operation as directed by the Engineer.
- 4. Warranty. Furnish all warranty and instructional documentation to the Engineer and conduct a staff training to familiarize City Staff with the operation of the equipment.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Sign, Type III, Perimeter Lighted, (<u>sign legend</u>) (LED).....	Each

The unit price for **Sign, Type III, Perimeter Lighted, (sign legend) (LED)** includes furnishing, installing, and configuring the specified illuminated sign, control equipment, solar engine, and batteries to ensure proper operation of the sign. Electrical service items, post, mounting through concrete, and any addition signs shall be paid separately.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
SALVAGING PERIMETER LIT PEDESTIAN WARNING SIGNS

ABONMARCHE:MJS

1 of 1

01/06/2023

a. Description. This work includes removing, salvaging, reinstalling, and configuring solar-powered perimeter lit pedestrian crossing signs on traffic signal pedestals in accordance with Section 820 of the Standard Specifications for Construction and as modified herein.

b. Materials. None

c. Construction. Use care in salvaging the existing sign assembly components during removal, transport, storage, and reinstallation. Assembly and installation of the sign shall be in accordance with Section 820 of the Standard Specification for Construction and Michigan Department of Transportation Statewide Traffic Signal Detail SIG-070-A and SIG-320-A. The contractor will be responsible for transporting the sign to a City facility for safe storage until it is ready to be reinstalled. The contractor will then be required to transport the sign assembly back to site for reinstallation. .

d.

e. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Pedestal Mounted Pedestrian Crossing Sign, Rem, Salv, Reinstall.....	Each

The unit price for **Pedestal Mounted Pedestrian Crossing Sign, Rem, Salv, Reinstall** includes removing, salvaging, reinstalling, and configuring solar-powered perimeter lit pedestrian crossing signs on traffic signal pedestals. Transportation and handling of the sign for temporary offsite storage at a City facility is also included in payment for this item.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
**ADOPTION OF CITY OF KALAMAZOO STANDARD SPECIFICATIONS FOR WATER
MAIN AND SERVICE INSTALLATION**

ABONMARCHE:MJS

1 of 3

01/06/2023

a. Description. This project shall be conducted in accordance with the specifications and details contained within this project manual. The project manual shall be supplemented with the City of Kalamazoo Department of Public Services, Water Resource Division, Standard Specifications for Water Main and Service Installation – 2021 Edition.

These documents may be downloaded or ordered as follows:

Kalamazoo Standard Specifications for Water Main and Service Installation

Electronic File: Available in PDF Format at the Link Below

Cost: Free

<https://www.kalamazoo.org/files/assets/public/plans-amp-reports/water-main-installation-6-14-2021-sealed.pdf>

This includes, but is not limited to water main, fire hydrants, valves, boxes, services, other appurtenances and incidental construction.

1. All sections of this specification are adopted as part of the contract documents for this project, including the standard details contained within.

b. Materials. Unless specified in the Project Manual or other special provisions, materials shall be furnished by the City in accordance with Part 2 of the Kalamazoo Standard Specifications for Water Main and Service Installation. The contractor will be responsible for coordinating delivery of the materials from the City’s supplier and installing the supplied materials. Contractor shall assume full responsibility for proper protection and storage of materials received once they are onsite.

c. Construction. Unless otherwise specified in the Project Manual or other special provisions, construction shall be in accordance with Part 3 of the Kalamazoo Standard Specifications for Water Main and Service Installation.

d. Measurement and Payment. Measurement and Payment set forth in the Kalamazoo Standard Specifications for Water Main and Service Installation shall prevail except as modified herein or specified otherwise in the Contract Documents:

Pay Item	Pay Unit
Water Main, ___ inch, Cut and Plug, Install	Each
Water Main, DI, ___ inch, Tr Det G, Install	Foot
Water Main, DI, ___ inch, in Casing, Install.....	Foot

Butterfly Valve and Box, __ inch, Install	Each
Gate Valve and Box, __ inch, Install.....	Each
Valve Box, Install	Each
Fire Hydrant, Modified, Install.....	Each

Water Main, __ inch, Cut and Plug, Install includes all materials, equipment, and labor necessary to cut and remove sections existing mains, and plugs and fittings supplied by the owner. The contractor shall be responsible for coordinating delivery of materials purchased by the City, from the supplier to site. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. The contractor will be responsible for furnishing, placing, and compacting all aggregate materials and performing all trenching and excavation work per the details. The contractor shall assume ownership of excess aggregate materials and dispose of them offsite in a legal manner.

Water Main, DI, __ inch, Tr Det G, Install will be measured by the foot installed, and includes all materials, equipment, and labor necessary to install watermain and appurtenances supplied by the owner. The contractor shall be responsible for coordinating delivery of materials purchased by the City, from the supplier to site. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. The contractor will be responsible for furnishing, placing, and compacting all aggregate materials and performing all trenching and excavation work per the details. The contractor shall assume ownership of excess aggregate materials and dispose of them offsite in a legal manner. The contractor will be responsible for testing, chlorinating, and flushing the main, as well as coordinating the collection of samples for bacteria testing with the owners designated agent. The cost of abandoning existing water mains is included in this item.

Water Main, DI, __ inch, in Casing, Install will be measured by the foot installed, and includes all materials, equipment, and labor necessary to install watermain and appurtenances supplied by the owner in a steel casing furnished by the owner and installed by the contractor. The contractor shall be responsible for coordinating delivery of materials purchased by the City, from the supplier to site. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. The contractor will be responsible for furnishing, placing, and compacting all aggregate materials and performing all trenching and excavation work per the plan details. The contractor shall assume ownership of excess aggregate materials and dispose of them offsite in a legal manner.

Butterfly Valve and Box, __ inch, Install includes all materials, equipment, and labor necessary to install water system butterfly valves and boxes supplied by the owner. The contractor shall be responsible for coordinating delivery of materials purchased by the City, from the supplier to site. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. The contractor will be responsible for furnishing, placing, and compacting all aggregate materials and performing all trenching and excavation work per the plan details. The contractor shall assume ownership of excess aggregate materials and dispose of them offsite in a legal manner.

Gate Valve and Box, __ inch, Install includes all materials, equipment, and labor necessary to install water system gate valves and boxes supplied by the owner. The contractor shall be responsible for coordinating delivery of materials purchased by the City, from the supplier to site. Any dewatering required to complete the installation is included in this item, no additional payment

will be made for furnishing or operating dewatering systems. The contractor will be responsible for furnishing, placing, and compacting all aggregate materials and performing all trenching and excavation work per the plan details. The contractor shall assume ownership of excess aggregate materials and dispose of them offsite in a legal manner.

Valve Box, ___ inch, Install includes all materials, equipment, and labor necessary to install water system valve boxes supplied by the owner. The contractor shall be responsible for coordinating delivery of materials purchased by the City, from the supplier to site. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. The contractor will be responsible for furnishing, placing, and compacting all aggregate materials and performing all trenching and excavation work per the plan details. The contractor shall assume ownership of excess aggregate materials and dispose of them offsite in a legal manner. This item is intended to be used for boxes installed at the corporation stop for 2-inch water services. Tapping and installing valves and water service lines will be paid for under the applicable water service item.

Fire Hydrant, Modified, Install includes all materials, equipment, and labor necessary to install Fire hydrant, hydrant lead line, auxiliary valve, valve box, and appurtenances required for a functioning fire hydrant supplied by the owner. The contractor shall be responsible for coordinating delivery of materials purchased by the City, from the supplier to site. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. The contractor will be responsible for furnishing, placing, and compacting all aggregate materials and performing all trenching and excavation work per the plan details. The contractor shall assume ownership of excess aggregate materials and dispose of them offsite in a legal manner.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
PIPE CRADLE, FLOWABLE FILL

ABONMARCHE:MJS

1 of 1

01/06/2023

a. Description. This work consists of furnishing and placing non-structural flowable fill for backfilling pipes and miscellaneous structures. This specification is not intended to address flowable fill used as structural backfill. Work shall be in accordance with section 823 of the MDOT 2020 Standard Specifications for Construction.

b. Materials. Provide non-structural flowable fill consisting of a mixture of Portland cement, fly ash, sand (2NS) and water. Use materials in accordance with the standard specifications except as modified by this special provision. All non-structural flowable fill once cured is intended to be removable using conventional mechanical excavation methods.

Use either Type I or IA Portland cement in accordance with section 901 of the Standard Specifications for Construction and Class F or C fly ash as specified by *ASTM C618* except that there is no limit on loss on ignition

Produce a mix of cement, fly ash, sand, and water in the following proportions:

Portland Cement	50 pounds per cubic yard (lb/cyd)
Fly Ash	500 (lb/cyd)
Sand	2850 (lb/cyd)
Water	376 (lb/cyd)

c. Construction. Produce and deliver the non-structural flowable fill at a minimum temperature of 50 degrees Fahrenheit (F). Transport mixture to the point of placement in a revolving drum mixer or agitator.

Pipes to be supported shall be wrapped/covered with a non-woven geotextile fabric to prevent adhesion of the flowable fill to the pipe.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Pipe Cradle, Flowable Fill	Cyd

Pipe Cradle, Flowable Fill will be measured by the neat line trench widths and depths required to fill the pipe crossing areas as detailed on the plans. No deduction in volume will be made for pipes less than 24 inches inside diameter. No additional payment will be made for excess quantities of flowable fill placed in areas where conventional aggregate fill is deemed acceptable by the engineer. Contractor shall provide load tickets from the concrete supplier if requested by the engineer for verification of quantity placed. Furnishing and installing geotextile on pipes is included in payment for this item.

CITY OF KALAMAZOO

SPECIAL PROVISION
FOR
METER VAULT

ABONMARCHE:MJS

1 of 2

01/06/2023

a. Description. This work consists of installing/replacing the vault structure, cover, and miscellaneous fittings to connect and house a water service meter. This work shall be done in accordance with AWWA Standards, Section 823 of the 2020 MDOT Standard Specification for Construction, as well as the City of Kalamazoo Standard Specifications for Water Main and Service Installation 2021.

b. Materials. All pipe, fittings and appurtenance materials meet the requirements of the standard specifications, American National Standard Institute/American Water Works Association (ANSI/AWWA) specifications, and the Municipality's technical specifications for water mains and appurtenances. Contractor shall be responsible for coordinating any material deliveries from the owners selected material supplier to site. Contractor shall assume full responsibility for proper protection and storage of materials received once they are onsite. Precast vault structures shall meet the requirements of ASTM C478, Section 403 of the MDOT Standard Specifications of Construction, and the City of Kalamazoo Standard Specifications for Water Main and Service Installation 2021.

Vault Covers, Meter Setters, and Miscellaneous components shall be in accordance with the products specified in the City of Kalamazoo Standard Specifications for Water Main and Service Installation 2021.

Type K Copper of the required size will be furnished by the City as part of the associated pay item for water services, but any and all components (excluding the meter) required to complete the meter vault per the standard details shall be furnished and installed by the contractor at their expense.

c. Construction. Install all materials required for the contract according to AWWA standards, Section 823 of the standard specifications and the City of Kalamazoo Standard Specifications for Water Main and Service Installation 2021 as applicable.

The City of Kalamazoo will inspect the meter vault and setting prior to installing the meter to the new service. The contractor shall coordinate inspection with the City to ensure that service interruptions are minimized. This includes leave appropriate portions of the work exposed to allow for inspection prior to completion of backfilling and restoration.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item(s):

Pay Item	Pay Unit
Meter Vault, __ inch.....	Each

Meter Vault, __ inch is to be paid for each complete meter vault installed by the contractor. The price includes payment in full for furnishing all materials, labor, and equipment required to perform the work specified herein, including dewatering, excavation and backfill, bracing or sheeting and blocking of installation pit, removal of or cutting and capping the existing yard water service, service line couplings, service joints, and all other miscellaneous items necessary for the installation of the vault, cover, setter, and connection to the service lines. The City will inspect the work prior to self-performing the installation of the meter. Restoration of pavement or lawn areas will be paid for separately under the applicable contract item.

CITY OF KALAMAZOO

SPECIAL PROVISION
FOR
WATER SERVICES

ABONMARCHE:DAD

1 of 4

01/06/2023

a. Description. This work consists of installing/replacing water services defined as the water service laying between water main and the first shut off valve inside the building or 18 inches inside the building, whichever is shortest. This work includes the furnishing of all labor, equipment, and materials required for dewatering, excavation, installation, testing, backfilling, providing as-built plans, and all labor and related work necessary to complete the water service installation.

If the existing water service contains lead in any component (i.e. gooseneck, service line, etc.) the following rules shall apply:

Pipe Material from Main to curb stop	Pipe Material from curb stop to home	Replacement Conditions
Lead	Lead	Replace service line from main into structure
Lead	Galvanized	Replace service line from main into structure
Copper or Plastic	Galvanized or Lead	Replace service line from main into structure
Lead	Copper or Plastic/HDPE	Replace service line from main to curb stop
Copper or Plastic	Copper or Plastic/HDPE	Replace service line from main to curb stop

b. Materials. All pipe, fittings and appurtenance materials shall be furnished by the owner in conformance with the requirements of the standard specifications, American National Standard Institute/American Water Works Association (ANSI/AWWA) specifications, and the Municipality's technical specifications for water mains and appurtenances. Contractor shall be responsible for coordinating material deliveries from the owners selected material supplier to site. Contractor shall assume full responsibility for proper protection and storage of materials received once they are onsite.

c. Construction. Install all pipe materials required for the contract according to AWWA standards, Section 823 of the standard specifications and the Municipality's technical specifications for water mains, services, and appurtenances as applicable.

1. Locating. Locate services to be replaced as the other proposed underground utilities are constructed. Each water service crossed shall be uncovered enough so the existing material can be determined. A list shall be compiled showing the address, material, and location (i.e., X ft North of manhole #, or Sta.XX+XXX) of each service encountered. This shall be considered included with the other water service items.

2. Service replacement. The objective of water service replacement is minimizing the duration of water service disruption to each building. Contractor shall provide a written plan to the Engineer for water service disconnections and reconnections prior to beginning work. Twenty-four hours prior to any service shut down, written notice shall be placed on the building whose water may be shut down. Prior to shutting down the service, residents in the building shall be notified that the water will be off and for approximately how long they will be without service. Water services for businesses shall be replaced during non-business hours and shall be coordinated with each business so as to not impact business operations, night work may be required.

Before the existing water service is shut off, the new service shall be in the trench complete, except for final connections.

All services that are replaced shall be abandoned, meaning the existing corporation stop shall be turned off at the main, and the existing stop box shall be removed. All removed stop boxes are property of the Municipality and shall be stockpiled on site unless they direct the contractor to dispose of them. All other removed items shall become the property of the contractor and shall be disposed of properly.

All new water services shall be constructed of one piece of Type K copper, 1.25 inch or 2 inch diameter, minimum bury 5 foot 6 inches. The copper shall be laid in a straight line from the stop box to the main. An additional 1 ft of slack copper shall be installed in a gooseneck configuration at the curb stop and also at the corporation stop.

All corporation stops shall tap into the main at per the city standard details for water service taps.

The contractor shall install for each new service a new 1.25 inch or 2 inch corporation stop, new 1.25 inch or 2 inch curb stop, new curb stop box or valve box, and all fittings necessary to complete the connection to the existing service behind the curb stop at the right-of-way.

3. Trenching and Backfilling: Water services within the Right-of-Way shall be placed and backfilled as detailed in MDOT Trench Detail G unless otherwise detailed or noted on the plans.

Water Services on private property (from the Right-of-Way to the structure) shall be installed by trenchless method. The Contractor may utilize horizontal directional drilling, impact moling (piercing/missile method), or other trenchless installation acceptable to the engineer.

4. Private Water Service Connection. Private water services, connection to existing. Connect new water service to the existing first shut off valve inside the building or 18 inches inside of building, whichever is shortest.

New penetrations or amendment of existing penetrations into the structure shall be completed in accordance with the Michigan Plumbing and/or Building Code. Plumbing shall be completed by a licensed plumber and in accordance with the City of Kalamazoo plumbing permit. The Contractor shall be responsible for obtaining a plumbing permit and scheduling inspections. Contractor shall provide the permit and final inspection to the Engineer. The City of Kalamazoo permit application and fee schedule can be found at <https://www.kalamazoo.org/Business-Development/Building-Construction-Permits/Apply-for-a-Plumbing-Permit>

5. Restoration of Private Property Improvements. It is the intent of trenchless water service installation to prevent or minimize disruption to private property. Remove and replace or otherwise

amend existing landscaping and/or decorative hardscaping as directed by the Engineer. The cost for restoration of improvements shall be included with payment for the associated Private Water Service item of work.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item(s):

Pay Item	Pay Unit
Water Service, Yard, __ inch, Trenchless, Install	Foot
Water Service, Yard, __ inch, Conn to Ex	Each
Water Service, Investigation	Each
Water Serv, __ inch, Install.....	Each
Water Serv, Long, __ inch, Install.....	Each

Water Serv, Yard, __ inch, Trenchless, Install is to be measured in place along the centerline of the pipe. The price includes payment in full for furnishing all labor, and equipment required to perform the work specified herein, including dewatering, excavation and backfill, bracing or sheeting and blocking of piercing/missile pits, removal of or cutting and capping the existing yard water service, service line couplings, service joints, and all other miscellaneous items necessary for the installation of pipe and connection to the curb stop. Payment shall cover all labor and equipment necessary to install and reconnect the new service with City furnished materials.

Water Serv, Yard, __ inch, Conn to Ex is to be measured in place. The price includes payment in full for furnishing all materials, labor, and equipment required to perform the work specified herein, including dewatering, excavation and backfill, bracing or sheeting, blocking, removal of or cutting and capping the existing yard water service, service line couplings, service joints, and all other miscellaneous items necessary for the installation of pipe and connection to the meter inside the building. Unit pricing shall also include all scheduling, coordination with City for Plumbing inspection, providing inspection documentation, and inspection costs based on City fee schedule for water service sizes including application and final inspection fees. Payment shall cover all materials, labor and equipment necessary to reconnect the new service inside of the structure. The City will furnish brass angle valves, meter connectors, and ball valves to reconnect the service line to the existing meter inside the structure. Rigid piping and other miscellaneous components required to complete the connection of the service to the meter shall be furnished by the contractor at their own expense.

Water Serv, __ inch, Install and **Water Serv, Long, __ inch, Install** shall be paid at the contract unit price per each and shall include tapping the water main, installation of the corporation stop, copper pipe and fittings, curb stop, curb stop box, excavation, backfill (or trenchless installation), disposal of waste, and directional boring to the limits of the right-of-way. Also includes all labor and materials required to remove or abandon existing water service leads, curb stops, curb stop boxes or valve boxes, and corporation stops. Payment shall cover all labor and equipment necessary to install and reconnect the new service with City furnished materials.

Water Service, Investigation will be paid for each property that water service work will be completed. The price includes payment in full for providing notice to each property scheduled to have water service work completed, accessing the property to investigate the existing service materials, and to

provide an inventory to the Engineer. The Contractor will be required to locate and confirm existing materials on each side of the existing water service shutoff and provide the inventory to the Engineer.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
**ADOPTION OF CITY OF KALAMAZOO STANDARD SPECIFICATIONS FOR
WASTEWATER SEWER INSTALLATION**

ABONMARCHE:MJS

1 of 3

01/06/2023

a. Description. This project shall be conducted in accordance with the specifications and details contained within this project manual. The project manual shall be supplemented with the City of Kalamazoo Department of Public Services, Standard Specifications for Wastewater Sewer Installation – 2016 Edition.

These documents may be downloaded or ordered as follows:

Kalamazoo Standard Specifications for Water Main and Service Installation

Electronic File: Available in PDF Format in Appendix D

This includes, but is not limited to sewer main, manholes, laterals, cleanouts, other appurtenances and incidental construction.

1. All sections of this specification are adopted as part of the contract documents for this project, including the standard details contained within.

b. Materials. Unless specified in the Project Manual or other special provisions, furnish materials in accordance with Part 2 of the Kalamazoo Standard Specifications for Wastewater Sewer Installation.

1. Portland Cement Concrete Sewer Components

A. All Portland Cement Concrete sewer components, including pipe, manhole sections, adjustment rings, and field mixed mortar/grout shall contain an integral hydrogen sulfide (H₂S) inhibitor incorporated into the mix design. The hydrogen sulfide inhibitor additive shall be manufactured by Xypex, Con Shield, or engineer approved equal. Pipe and manhole sections shall otherwise be constructed in accordance with ASTM C-76, ASTM C-487, Section 825.02 of the MDOT Standard Specifications for Construction, and the City of Kalamazoo Standard Specifications for Installation of Wastewater Sewer.

c. Construction. Unless otherwise specified in the Project Manual or other special provisions, construction shall be in accordance with Part 3 of the Kalamazoo Standard Specifications for Wastewater Sewer Installation. All dewatering and bypass pumping, including transportation of pumped material for treatment, is included in the pay items for the new sewer main. No additional payment will be made for dewatering or bypass pumping operations.

d. Measurement and Payment. Measurement and Payment set forth in the Kalamazoo Standard Specifications for Wastewater Sewer Installation shall prevail except as modified herein or specified otherwise in the Contract Documents:

Pay Item	Pay Unit
Sanitary Sewer, (Matl), __ inch, Tr Det __	Foot
Sanitary Structure, Add Depth of __ inch dia, 8 foot to 15 foot, Modified	Foot
Sanitary Structure, Add Depth of __ inch dia, more than 15 foot, Modified	Foot
Sanitary Sewer Cleanout Cover	Each
Sanitary Structure, __ inch dia, Modified	Each

Sanitary Sewer, (Matl), __ inch, Tr Det __ will be measured by the foot installed, and includes all materials, equipment, and labor necessary to install sanitary sewer main in accordance with section 825 of the Standard Specifications for Construction, and the City of Kalamazoo Standard Specifications for Wastewater Sewer Installation. All concrete sanitary sewers shall contain an H₂S inhibiting admixture per the City specifications. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. Any bypass pumping, including transportation of wastewater for treatment is included in payment for this item, no additional payment will be made for furnishing and operating temporary bypass systems.

Sanitary Structure, Add Depth of __ inch dia, 8 foot to 15 foot, Modified will be measured by the foot installed, and includes all materials, equipment, and labor necessary to install precast concrete sanitary sewer manhole sections with integral H₂S inhibiting admixture in accordance with section 825 of the Standard Specifications for Construction, and the City of Kalamazoo Standard Specifications for Wastewater Sewer Installation. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. Any bypass pumping, including transportation of wastewater for treatment is included in payment for this item, no additional payment will be made for furnishing and operating temporary bypass systems.

Sanitary Structure, Add Depth of __ inch dia, more than 15 foot, Modified will be measured by the foot installed, and includes all materials, equipment, and labor necessary to install precast concrete sanitary sewer manhole sections with integral H₂S inhibiting admixture in accordance with section 825 of the Standard Specifications for Construction, and the City of Kalamazoo Standard Specifications for Wastewater Sewer Installation. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. Any bypass pumping, including transportation of wastewater for treatment is included in payment for this item, no additional payment will be made for furnishing and operating temporary bypass systems.

Sanitary Sewer Cleanout Cover will be measured by each installed, and includes all materials, equipment, and labor necessary to install sanitary cleanout covers section 825 of the Standard Specifications for Construction, and the City of Kalamazoo Standard Specifications for Wastewater Sewer Installation. Temporary and final adjustment to finished grade is included in payment for this item, no additional payment will be made for coordinating the adjustment of the covers with paving operations.

Sanitary Structure, __ inch dia, Modified will be measured by each installed, and includes all materials, equipment, and labor necessary to install precast concrete sanitary sewer manholes with integral H₂S inhibiting admixture in accordance with section 825 of the Standard Specifications for Construction, and the City of Kalamazoo Standard Specifications for

Wastewater Sewer Installation. Any dewatering required to complete the installation is included in this item, no additional payment will be made for furnishing or operating dewatering systems. Any bypass pumping, including transportation of wastewater for treatment is included in payment for this item, no additional payment will be made for furnishing and operating temporary bypass systems.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
SANITARY SEWER, SERVICE TAP, 42 INCH MAIN

ABONMARCHE: MJS

1 of 3

1/6/2023

a. Description. This work consists of tapping and connecting new sanitary service laterals to large diameter concrete sewer mains as part of the City of Kalamazoo sanitary sewer system at the locations shown on the plans. This work includes trench excavation, tapping of concrete main, furnishing and installing flexible tee coupling, and sealing the connection with a cured in place liner designed for lateral connections. Dewatering, tracer wire, bedding, backfilling, compaction, testing of the pipe, disposing of waste material, providing as-built plans, labor and related work necessary to complete the installation is also included in this item..

b. Materials. Furnish materials certified by the manufacturer to meet this special provision and be in accordance with section 825 of the Standard Specifications for Construction and any additional requirements of the City of Kalamazoo. Submit certified test reports for pipe/liner strength from the manufacturer to the Engineer upon delivery of pipe.

Service laterals shall be Polyvinyl Chloride (PVC) be in accordance with the City of Kalamazoo Standard Specifications for Wastewater Sewer Installation.

Cored service fittings shall be in accordance with ASTM C923 using Series 300 Stainless Steel hardware.

Products/Manufacturers:

Qwikseal by Fernco, Inc.
Inserta Tee by Interta Tee
Kor-N-Tee by Trelleborg Pipe Seals Milford
Or engineer approved equal

Service lateral seals shall provide a watertight seal at the connection to the main line pipe and for the length of the lateral CIPP lined. The system shall be capable of sealing a combination of of "tees" and "wyes" of varying angles. The resin shall be cured to form the tube into a hard impermeable pipe within a pipe. The system shall be capable of sealing the connection from the mainline pip to a connection lateral pipeline without the need for a cleanout. The system shall be capable of installing, curing, and reinstating the mainline pipe to lateral connection from within the mainline sewer, without the need to excavate or access the upstream portion of the pipe.

Approved manufacturers systems include:

T-Liner Shorty by LMK Technologies
Innerseal by Perma-Liner Industries, LLC
TygerPatch by Source 1 Environmental
EprosDrainLCR-B or LCR-S by Trelleborg
Engineer approved equal

Furnish bedding and backfill materials in accordance with Standard Plan R-83 Series and the standard specifications.

c. Construction. Perform all work in accordance with sections 203, 206, 402, 403 and 825 of the Standard Specifications for Construction, *ASTM D2321*, manufacturers recommendation for proprietary lining system installation, and all federal, state, and local requirements as applicable.

Coring of the concrete sewer main shall be completed in the field based on the exact location of the sanitary lateral. This is intended to eliminate any redundant cores in the main, or excess bends in the lateral to meet the main.

For installation of service lateral seals, the entire liner shall be wetout using vacuum impregnation including the lateral and mainline portions.

The system shall be loaded inside and/or on a pressure apparatus. The pressure apparatus, attached to a robotic device, shall be positioned in the mainline pipe at the service connection. The robotic device, together with a CCTV camera, shall be used to align the lateral portion of the system with the service connection opening. Air pressure, supplied to the pressure apparatus through an air hose, shall be used to invert or expand the resin impregnated CIPP into the lateral pipe, and push the main-line portion of the system against the main-line pipe (typically lined pipe). The pressure shall be adjusted to the manufacturer's recommended installation pressure to fully install the CIPP into the lateral pipe and hold the system tight to the pipe walls. Care shall be taken during the curing process not to over-stress the tube.

After lateral CIPP installation is completed, manufacturer's recommended pressure is maintained on the impregnated CIPP for the duration of the curing process. Curing method shall be compatible with the resin selected and shall be in accordance with manufacturer's recommendations. The initial cure shall be deemed to complete when the CIPP has been exposed to the UV light, heat source or held in place for the time period specified by the manufacturer. The Contractor shall cool (if heat cured) the hardened CIPP before relieving the pressure in the apparatus. Cool-down may be accomplished by the introduction of cool air into the pressure apparatus. Care shall be taken to maintain proper pressure throughout the cure and cool-down period.

If cured by ambient-cure process, the Contractor shall maintain bladder pressure until CIPP has completely cured per manufacturer's recommendations before relieving the pressure in the pressure apparatus.

The finished CIPP shall be free of dry spots, lifts and de-lamination. The system shall not inhibit the closed-circuit television post video inspection of the mainline or service lateral pipes. Frayed ends of the system shall be removed prior to acceptance.

Contractor shall maintain a visible, written log of all activities in accordance with manufacturers' recommendations and shall include time/location of wet out, time of insertion, time/location of lateral insertion, bladder pressure requirements, required cure time, actual cure time, and cool down duration.

Perform video inspection in accordance with subsection 402.03.J of the Standard Specifications for Construction.

Furnish video inspection recordings and as-built plans of the sanitary sewer to the Engineer. The cost of this is included in the cost of the sanitary sewer. Acceptable as-built plans include, but are not limited to, pipe size, pipe locations, invert elevations, tees and tie-ins.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit prices in accordance with subsection 825.04 of the Standard Specifications for Construction.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
SANITARY SEWER SERVICE LEAD BUILDING INSPECTION

ABONMARCHE:MJS

1 of 1

01/06/2023

a. Description. This work shall include investigating sanitary sewer service leads from within buildings to determine active status and location relative to the street. Dye testing of service leads will be performed as required to confirm connection location of sewer leads.

b. Materials. Use fluorescent dye for visual testing that is approved for use in municipal waste water systems.

c. Construction. At the direction of the Engineer, the contractor shall coordinate with the City and property owner to inspect internal cleanouts and pipeline locations within the building where the status or location of the sewer lead(s) are in question. Dimensions from know building features can be used to locate the sewer lead outside of the building. Supplemental dye testing may be utilized to confirm any connection points that cannot be visually verified.

d. Measurement and Payment. The completed work as described will be measured and paid for at the contract unit price using the following contract item (pay item):

Pay Item	Pay Unit
Sanitary Sewer, Serv Lead, Building Inspection.....	Each

Payment for **Sanitary Sewer, Serv Lead, Building Inspection** shall be made only with the prior approval of the Engineer. Payment will be made for each parcel where inspection is performed regardless of the number of sanitary service connections that serve the parcel. Payment shall include the Contractors coordination with the City and property owner for access to the building, the contractor's investigation of internal areas of the building to determine sanitary lead locations, and any supplemental dye testing.

CITY OF KALAMAZOO
SPECIAL PROVISION
FOR
SANITARY SEWER BYPASS PUMPING

ABONMARCHE:DAD

1 of 3

01/06/2023

a. Description. This work consists of providing all materials, labor, equipment, power, maintenance etc. to implement a temporary pumping system for the purpose of diverting the existing sanitary sewer flow around portions of the sanitary sewer and sanitary structures for the duration of the portions of the project which require such a temporary pumping system.

b. Materials. Use materials in accordance with the standard specifications as applicable and as approved by the Engineer.

c. Construction. The design, installation, and operation of the temporary pumping system is the Contractor's responsibility. The Contractor shall size the pumping system to carry the design flow rate of the pumping station under construction with average daily flow estimated at 1/4 the design pumping rate. The Contractor must employ the services of a vendor specializing in the design and operation of temporary bypass pumping systems. The vendor must provide at least five references of projects of a similar size and complexity as this project performed by his firm within the past 3 years. The bypass system must be in accordance with all applicable federal, state, and local regulations and permit requirements.

Detailed plans and a description outlining all provisions and precautions to be taken by the Contractor regarding the handling of existing sanitary sewer flow must be submitted to the Engineer. This plan must be specific and complete, including such items as schedules, locations, elevations, capacities of equipment, materials, and all other miscellaneous items necessary and/or required to ensure proper protection of the facilities, including protection of the access and bypass pumping locations from damage due to the discharge flows, and compliance with the requirements and permit conditions specified in the contract. The consequences of surface runoff and surface flood water caused by climatic conditions must be considered in designing the bypass pumping system. Construction must not begin until all provisions and requirements have been reviewed by the Municipality and approved by the Engineer.

The plan must include, but not be limited to, details of the following:

1. Measures for maintaining appropriate security for the bypass piping materials and equipment from vandalism;
2. Staging areas for pumps;
3. Sewer plugging method and types of plugs;
4. Temporary wetwells;
5. Number, size, material, location, and method of installation of suction piping;

6. Number, size, material, method of installation, and location of installation of discharge piping;
7. Bypass pump sizes, capacity, number of each size to be on site, and power requirements;
8. Calculations of static lift, friction losses, and flow velocity (pump curves showing pump operating range must be submitted);
9. Standby power generator size, location;
10. Downstream discharge plan;
11. Method of protecting discharge manholes or structures from erosion and damage;
12. Thrust and restraint block sizes and locations;
13. Sections showing suction and discharge pipe depth, embedment, select fill and special backfill;
14. Method of noise control for each pump and/or generator;
15. Any temporary pipe supports and anchoring required;
16. Design plans and computation of access to bypass pumping locations indicated on the plans;
17. Calculations for selection of bypass pumping pipe size;
18. Schedule for installation of and maintenance of bypass pumping lines;
19. Plan indicating selection location of bypass pumping line locations.
20. A phone/email based alarm system with "High Level", "Pump Failure", and "Pump On".

All pumps used must be fully automatic self-priming units that do not require the use of foot-valves or vacuum pumps in the priming system. The pumps may be electric or diesel powered. All pumps used must be constructed to allow dry running for long periods of time to accommodate the cyclical nature of sanitary effluent flows.

Bypass piping must be designed so as not to allow a surcharge of the existing inlet pipe.

The necessary stop/start controls for each pump will be provided by the Contractor.

One stand-by pump of each size must be maintained on site. Back-up pumps must be on-line and isolated from the primary system by valve.

In order to prevent the accidental spillage of flows, all discharge systems must be temporarily constructed of rigid pipe with positive, restrained joints. Under no circumstances will aluminum

“irrigation” type piping or glued PVC pipe be allowed. Discharge hose will only be allowed in short sections and by specific permission from the Engineer.

Allow 15 working days for the review and approval of bypass pumping plan/system.

Noise abatement (i.e. mufflers or enclosure systems) shall be provided for all generators or engine-driven pumping systems capable of attenuating noise to a maximum level of 75dB measured at a distance of 23 feet (7m) from the source of the noise.

d. Measurement and Payment. Bypass pumping associated with construction of sanitary sewers or wastewater collection system facilities shall be included with payment for the associated item being constructed.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

NOTICE TO BIDDERS
FOR
USE OF CRUSHED CONCRETE FOR DENSE- AND OPEN-GRADED AGGREGATES

ENV:CP

1 of 1

APPR:MAS:09-09-21

Pursuant to section 902 of the 2020 Standard Specifications for Construction, the use of crushed concrete for dense-graded aggregate, open-graded aggregate is prohibited within 100 feet of a waterbody (stream, river, county drain, wetland, lake, etc.).

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
VERTICAL EXPLORATORY INVESTIGATION FOR RELOCATION

COS:MRB

1 of 2

APPR:DMG:NAL:04-30-20
FHWA:APPR:05-06-20

a. Description. When proposed work must be relocated as directed by the Engineer, this special provision is used to compensate the Contractor to locate and expose underground infrastructure and obstructions, such as culverts, sewers and utilities. Perform this work only when conflicts are found in the planned work location. This special provision is not to compensate for the Contractor’s responsibilities in subsection 107.12 of the Standard Specifications for Construction.

b. Materials. Use Granular Material Class III in accordance with section 902 of the Standard Specifications for Construction for backfill. Use material removed during exploratory investigation for backfill only if approved by the Engineer.

c. Construction. The owner of any sewer or utility to be exposed will not take the facilities out of service during the exploratory investigation. Contact utility owners in accordance with subsection 107.12 of the Standard Specifications for Construction.

Advance the exploratory excavation using vacuum excavation, hand digging, conventional machine excavation, or a combination thereof subject to approval of the Engineer. Allow the Engineer access to document the necessary information. If the technique used to advance the excavation causes any damage to the existing facilities, immediately contact the utility owner and cease all work until an alternate method is approved by the Engineer.

Take care to protect the exposed culvert, sewer or utility from damage during construction. The Contractor is responsible for all costs associated with the repair work and out of service time of all broken or damaged existing culverts, sewers or utilities as a result of any action by the Contractor. If the exploratory investigation results in damage to utilities, contact the owner of such utility to coordinate the repair. Repair or replace culvert, sewer or utility, damaged during exploratory excavation, in accordance with the standard specifications and as approved by the Engineer.

Obtain the Engineer's approval before backfilling the excavation. Complete backfilling no later than 24 hours after approval has been given. Backfill in accordance with subsection 204.03.C of the Standard Specifications for Construction. Dispose of excess material in accordance with the standard specifications.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Exploratory Investigation, Vertical.....	Foot

Exploratory Investigation, Vertical will be measured by the foot from top of existing grade vertically to the bottom of the excavation for up to a 4-foot maximum diameter hole, or as approved by the Engineer. The excavated depth of each 4-foot maximum diameter hole will be measured separately for payment.

Exploratory Investigation, Vertical includes all costs associated with repair or replacement resulting from the Contractor's activities. Providing necessary lane, shoulder and/or sidewalk closures required to perform work will be paid for by other associated items in the contract. Restoration work will be paid for by other associated items.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
EROSION CONTROL, INLET PROTECTION, FABRIC DROP

COS:DMG

1 of 2

APPR:TWK:CP:03-11-20
FHWA:APPR:03-13-20

a. Description. This work consists of furnishing and installing acceptable alternatives to inlet protection devices (devices) listed in the *Soil Erosion and Sedimentation Control Manual* when the pay item Erosion Control, Inlet Protection, Fabric Drop is included in the contract.

This work consists of furnishing, installing, maintaining, disposing of collected material and removing devices at the locations shown on the plans or as directed by the Engineer.

b. Materials. The following devices are approved for use as acceptable alternatives:

1. Siltsack Type B, Regular Flow, by ACF Environmental, Inc.
2. Inlet Pro Sediment Bag, Standard Flow, with optional foam deflector by Hanes Geo Components.
3. Dandy Curb Bag, Dandy Bag, Dandy Curb Sack, Dandy Sack, or Dandy Pop by Dandy Products, Inc.
4. Basin Bag, Regular Flow by CSI Geoturf.
5. Flexstorm Catch-It and Flexstorm Pure used with filter bag types FX, FX+, FXO, PC, PC+ or IL.

Ensure provided devices are sized appropriately for the drainage structures in which they will be installed.

c. Construction. Install, maintain and remove the devices in accordance with the manufacturer's guidelines. Remove material collected by the devices in accordance with the manufacturer's guidelines or as directed by the Engineer.

Dispose of collected material in accordance with subsection 205.03.P of the Standard Specifications for Construction. Those devices that are no longer needed and have been removed may be reused elsewhere on the project as approved by the Engineer.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Erosion Control, Inlet Protection, Fabric Drop.....	Each

Erosion Control, Inlet Protection, Fabric Drop will be paid for as one each for each time the alternate device listed herein is installed, maintained, and removed at a separate location within the project limits.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
AGGREGATE BASE COURSE

CFS:SAG

1 of 1

APPR:TEB:JFS:02-19-20
FHWA:APPR:02-19-20

a. Description. This provision modifies the layer thickness requirements for placing and compacting aggregate base course. Delete the 6-inch maximum layer restriction in section 302 of the Standard Specifications for Construction and replace with the following:

b. Materials. None specified.

c. Construction. Construct a test strip at the start of base work. Compact all layers to a uniform depth of not more than 10 inches (+3/4 inch). If the total plan base thickness exceeds 10 inches, construct the base in layers of equal thickness. Secure the Engineer's approval for the method of placement and compaction before continuing.

If the accepted method is subsequently modified, the Engineer may require another test strip to confirm compliance with the specification. The Engineer may remove a portion of a layer when conducting density testing to assure the compaction requirements are being met full depth.

d. Measurement and Payment. All additional costs associated with constructing aggregate base course in accordance with this special provision will be included in the related Aggregate Base pay item.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
SAMPLING ASPHALT BINDER ON LOCAL AGENCY PROJECTS

CFS:TRC

1 of 1

APPR:JWB:KPK:02-19-20
FHWA:APPR:02-19-20

a. Description. This work consists of the Contractor taking samples of the asphalt binder and delivering the samples to the Engineer prior to incorporation into the hot mix asphalt mixture.

b. Materials. For informational purposes, original samples of asphalt binder will be taken by the Contractor and delivered to the Engineer prior to incorporation into the mixture. The frequency of sampling will be determined by the Engineer.

The Contractor must certify in writing that the materials used in the HMA mixture are from the same source as the materials used in developing the HMA mixture design and the bond coat is from an approved supplier as stated in the *Material Quality Assurance Procedures Manual*.

c. Construction. None specified.

d. Measurement and Payment. The cost of obtaining and delivering the samples to the Engineer will be included in the hot mix asphalt (HMA) pay items in the contract.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
RECYCLED HOT MIX ASPHALT MIXTURE ON LOCAL AGENCY PROJECTS

CFS:KPK

1 of 2

APPR:JWB:CJB:02-26-20
FHWA:APPR:03-02-20

Add the following subsection to subsection 501.02.A.2 of the Standard Specifications for Construction.

- c. **Reclaimed Asphalt Pavement (RAP) and Binder Grade Selection.** The method for determining the binder grade in HMA mixtures incorporating RAP is divided into three categories designated Tier 1, Tier 2 and Tier 3. Each tier has a range of percentages that represent the contribution of the RAP binder toward the total binder, by weight. The tiers identified below apply to HMA mixtures with the following exception: Superpave mixture types EML, EML High Stress, EMH, EMH High Stress, and EH, EH High Stress used as leveling or top course must be limited to a maximum of 27 percent RAP binder by weight of the total binder in the mixture.

Recycled materials may be used as a substitute for a portion of the new materials required to produce HMA mixtures in accordance with contract.

- **Tier 1 (0% to 17% RAP binder by weight of the total binder in the mixture).** No binder grade adjustment is made to compensate for the stiffness of the asphalt binder in RAP.
- **Tier 2 (18% to 27% RAP binder by weight of the total binder in the mixture).** For all mixtures no binder grade change will occur in Tier 2 for all shoulder and temporary road mixtures.

Ensure the required asphalt binder grade is at least one grade lower for the low temperature than the design binder grade required for the specified project mixture type. Lowering the high temperature of the binder one grade is optional. For example, if the design binder grade for the mixture type is PG 58-22, the required grade for the binder in the HMA mixture containing RAP would be a PG 52-28 or a PG 58-28.

For Marshall Mixes, no binder grade change will be required when Average Daily Traffic (ADT) is above 7000 or Commercial Average Daily Traffic (CADT) is above 700. No binder grade change will occur for EL mixtures used as leveling or top course.

The asphalt binder grade can also be selected using a blending chart for high and low temperatures. Supply the blending chart and the RAP test data used in determining the binder selection according to *AASHTO M323*.

- **Tier 3 ($\geq 28\%$ RAP binder by weight of the total binder in the mixture).** The binder grade for the asphalt binder is selected using a blending chart for high and low temperatures per *AASHTO M323*. Supply the blending chart and the RAP test data

used in determining the binder selection.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
ACCEPTANCE OF HOT MIX ASPHALT MIXTURE ON LOCAL AGENCY PROJECTS

CFS:KPK

1 of 7

APPR:CJB:JWB:02-26-20
FHWA:APPR:03-13-20

a. Description. This special provision provides sampling and testing requirements for local agency projects using the roller method and the nuclear density gauge testing. Provide the hot mix asphalt (HMA) mixture in accordance with the requirements of the standard specifications, except where modified herein.

b. Materials. Provide aggregates, mineral filler (if required), and asphalt binder to produce a mixture proportioned within the master gradation limits shown in the contract, and meeting the uniformity tolerance limits in Table 1.

Table 1: Uniformity Tolerance Limits for HMA Mixtures

Parameter		Top and Leveling Course		Base Course		
Number	Description	Range 1 (a)	Range 2	Range 1 (a)	Range 2	
1	% Binder Content	-0.30 to +0.40	±0.50	-0.30 to +0.40	±0.50	
2	% Passing	# 8 and Larger Sieves	±5.0	±8.0	±7.0	±9.0
		# 30 Sieve	±4.0	±6.0	±6.0	±9.0
		# 200 Sieve	±1.0	±2.0	±2.0	±3.0
3	Crushed Particle Content (b)	Below 10%	Below 15%	Below 10%	Below 15%	
a. This range allows for normal mixture and testing variations. The mixture must be proportioned to test as closely as possible to the Job-Mix-Formula (JMF).						
b. Deviation from JMF.						

Parameter number 2 as shown in Table 1 is aggregate gradation. Each sieve will be evaluated on one of the three gradation tolerance categories. If more than one sieve is exceeding Range 1 or Range 2 tolerances, only the one with the largest exceedance will be counted as the gradation parameter.

The master gradation should be maintained throughout production; however, price adjustments will be based on Table 1. Aggregates which are to be used in plant-mixed HMA mixtures must not contain topsoil, clay, or loam.

c. Construction. Submit a Mix Design and a JMF to the Engineer. Do not begin production and placement of the HMA until receipt of the Engineer's approval of the JMF. Maintain the binder content, aggregate gradation, and the crushed particle content of the HMA mixture within the Range 1 uniformity tolerance limits in Table 1. For mixtures meeting the definition of top or leveling course, field regress air void content to 3.5 percent with liquid asphalt cement unless specified otherwise on HMA application estimate. For mixtures meeting the definition of base course, field regress air void content to 3.0 percent with liquid asphalt cement unless specified

otherwise on HMA application estimate.

Ensure all persons performing Quality Control (QC) and Quality Assurance (QA) HMA field sampling are "Local Agency HMA Sampling Qualified" samplers. At the pre-production or preconstruction meeting, the Engineer will determine the method of sampling to be used. Ensure all sampling is done in accordance with *MTM 313 (Sampling HMA Paving Mixtures)* or *MTM 324 (Sampling HMA Paving Mixtures Behind the Paver)*. Samples are to be taken from separate hauling loads.

For production/mainline type paving, obtain a minimum of two samples, each being 20,000 grams, each day of production, for each mix type. The Engineer will sample and maintain possession of the sample. Sampling from the paver hopper is prohibited. Each sample will be divided into two 10,000 gram parts with one part being for initial testing and the other part being held for possible dispute resolution testing. Obtain a minimum of three samples for each mix type regardless of the number of days of production.

Obtain samples that are representative of the day's paving. Sample collection is to be spaced throughout the planned tonnage. One sample will be obtained in the first half of the tonnage and the second sample will be obtained in the second half of the tonnage. If planned paving is reduced or suspended, when paving resumes, the remaining sampling must be representative of the original intended sampling timing.

Ensure all persons performing testing are Bit Level One certified or Bit QA/QC Technician certified.

Ensure daily test samples are obtained, except, if the first test results show that the HMA mixture is in specification, the Engineer has the option of not testing additional samples from that day.

At the pre-production or preconstruction meeting, the Engineer and Contractor will collectively determine the test method for measuring asphalt content (AC) using *MTM 319 (Determination of Asphalt Content from Asphalt Paving Mixtures by the Ignition Method)* or *MTM 325 (Quantitative Extraction of Bitumen from HMA Paving Mixtures)*. Back calculation will not be allowed for determining asphalt content.

Ensure all labs performing local agency acceptance testing are qualified labs per the *HMA Production Manual and the Michigan Quality Assurance Procedures Manual*, and participate in the MDOT round robin process, or they must be *AASHTO Materials Reference Laboratory (AMRL)* accredited for *AASHTO T30* or *T27*, and *AASHTO T164* or *T308*. Ensure on non-National Highway System (NHS) routes, Contractor labs are made available, and may be used, but they must be qualified labs as previously stated. Contractor labs may not be used on NHS routes. Material acceptance testing will be completed by the Engineer within 14 calendar days, except holidays and Sundays, for projects with less than 5,000 tons (plan quantity) of HMA and within 7 calendar days, except holidays and Sundays, for projects with 5,000 tons (plan quantity) or more of HMA, after the Engineer has obtained the samples. QA test results will be provided to the Contractor after the Engineer receives the QC test results. Failure on the part of the Engineer or the laboratory to provide QA test results within the specified time frame does not relieve the Contractor of their responsibility to provide an asphalt mix within specifications.

The correlation procedure for ignition oven will be established as follows. Asphalt binder content based on ignition method from *MTM 319*. Gradation (*ASTM D5444*) and Crushed particle content (*MTM 117*) based on aggregate from *MTM 319*. The incineration temperature will be established

at the pre-production meeting. The Contractor will provide a laboratory mixture sample to the acceptance laboratory to establish the correction factor for each mix. Ensure this sample is provided to the Engineer a minimum of 14 calendar days prior to production.

For production/mainline type paving, the mixture may be accepted by visual inspection up to a quantity of 500 tons per mixture type, per project (not per day). For non-production type paving defined as driveways, approaches, and patching, visual inspection may be allowed regardless of the tonnage.

The mixture will be considered out-of-specification, as determined by the acceptance tests, if for any one mixture, two consecutive tests per parameter, (for Parameter 2, two consecutive aggregate gradations on one sieve) are outside Range 1 or Range 2 tolerance limits. If a parameter is outside of Range 1 tolerance limits and the second consecutive test shows that the parameter is outside of Range 2, then it will be considered to be a Range 1 out-of-specification. Consecutive refers to the production order and not necessarily the testing order. Out-of-specification mixtures are subject to a price adjustment per the Measurement and Payment section of this special provision.

Contractor operations will be suspended when the mixture is determined to be out-of-specification, but contract time will continue to run. The Engineer may issue a Notice of Non-Compliance with Contract Requirements (Form 1165), if the Contractor has not suspended operations and taken corrective action. Submit a revised JMF or proposed alterations to the plant and/or materials to achieve the JMF to the Engineer. Effects on the Aggregate Wear Index (AWI) and mix design properties will be taken into consideration. Production and placement cannot resume until receipt of the Engineer's approval to proceed.

Pavement in-place density will be measured using one of two approved methods. The method used for measuring in-place density will be agreed upon at a pre-production or preconstruction meeting.

Pavement in-place density tests will be completed by the Engineer during paving operations and prior to traffic staging changes. Pavement in-place density acceptance testing will be completed by the Engineer prior to paving of subsequent lifts and being open to traffic.

Option 1 - Direct Density Method

Use of a nuclear density gauge requires measuring the pavement density using the Gmm from the JMF for the density control target. The required in-place density of the HMA mixture must be 92.0 to 98.0 percent of the density control target. Nuclear density testing and frequency will be in accordance with the *MDOT Density Testing and Inspection Manual*.

Option 2 - Roller Method

The Engineer may use the Roller Method with a nuclear or non-nuclear density gauge to document achieving optimal density as discussed below.

Use of the density gauge requires establishing a rolling pattern that will achieve the required in-place density. The Engineer will measure pavement density with a density gauge using the Gmm from the JMF for the density control target.

Use of the Roller Method requires developing and establishing density frequency curves, and

meeting the requirements of Table 2. A density frequency curve is defined as the measurement and documentation of each pass of the finished roller until the in-place density results indicate a decrease in value. The previous recording will be deemed the optimal density. The Contractor is responsible for establishing and documenting an initial or QC rolling pattern that achieves the optimal in-place density. When the density frequency curve is used, the Engineer will run and document the density frequency curve for each half day of production to determine the number of passes to achieve the maximum density. Table 5, located at the end of this special provision, can be used as an aid in developing the density frequency curve. The Engineer will perform density tests using an approved nuclear or non-nuclear gauge per the manufacturer's recommended procedures.

Table 2: Minimum Number of Rollers Recommended Based on Placement Rate

Average Laydown Rate, Square Yards per Hour	Number of Rollers Required (a)	
	Compaction	Finish
Less than 600	1	1 (b)
601 - 1200	1	1
1201 - 2400	2	1
2401 - 3600	3	1
3601 and More	4	1

a. Number of rollers may increase based on density frequency curve.
b. The compaction roller may be used as the finish roller also.

After placement, roll the HMA mixture as soon after placement as the roller is able to bear without undue displacement or cracking. Start rolling longitudinally at the sides of the lanes and proceed toward the center of the pavement, overlapping on successive trips by at least half the width of the drum. Ensure each required roller is 8 tons minimum in weight unless otherwise approved by the Engineer.

Ensure the initial breakdown roller is capable of vibratory compaction and is a maximum of 500 feet behind the paving operations. The maximum allowable speed of each roller is 3 miles per hour (mph) or 4.5 feet per second. Ensure all compaction rollers complete a minimum of two complete rolling cycles prior to the mat temperature cooling to 180 degrees Fahrenheit (F). Continue finish rolling until all roller marks are eliminated and no further compaction is possible. The Engineer will verify and document that the roller pattern has been adhered to. The Engineer can stop production when the roller pattern is not adhered to.

d. Measurement and Payment. The completed work, as described, will be measured and paid for using applicable pay items as described in subsection 501.04 of the Standard Specifications for Construction, or the contract, except as modified below.

Base Price. Price established by the Department to be used in calculating incentives and adjustments to pay items and shown in the contract.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 1, but not the Range 2, tolerance limits, that mixture parameter will be subject to a 10 percent penalty. The 10 percent penalty will be assessed based on the acceptance tests only unless the Contractor requests that the 10,000 gram sample part retained for possible dispute resolution testing be tested. The Contractor has 4 calendar days from receipt

of the acceptance test results to notify the Engineer, in writing, that dispute resolution testing is requested. The Contractor's QC test results for the corresponding QA test results must result in an overall payment greater than QA test results otherwise the QA tests will not be allowed to be disputed. The Engineer has 4 calendar days to send the dispute resolution sample to the lab once dispute resolution testing is requested. The dispute resolution sample will be sent to an independent lab selected by the Local Agency, and the resultant dispute test results will be used to determine the penalty per parameter, if any. Ensure the independent lab is a MDOT QA/QC qualified lab or an AMRL HMA qualified lab. The independent lab must not have conflicts of interest with the Contractor or Local Agency. If the dispute testing results show that the mixture parameter is out-of-specification, the Contractor will pay for the cost of the dispute resolution testing and the contract base price for the material will be adjusted, based on all test result parameters from the dispute tests, as shown in Table 3 and Table 4. If the dispute test results do not confirm the mixture parameter is out-of-specification, then the Local Agency will pay for the cost of the dispute resolution testing and no price adjustment is required.

If acceptance tests, as described in section c. of this special provision, show that a Table 1 mixture parameter exceeds the Range 2 tolerance limits, the 10,000 gram sample part retained for possible dispute resolution testing will be sent, within 4 calendar days, to the MDOT Central Laboratory for further testing. The MDOT Central Laboratory's test results will be used to determine the penalty per mixture parameter, if any. If the MDOT Central Laboratory's results do not confirm the mixture parameter is out-of-specification, then no price adjustment is required. If the MDOT Central Laboratory's results show that the mixture is out-of-specification and the Engineer approves leaving the out-of-specification mixture in place, the contract base price for the material will be adjusted, based on all parameters, as shown in Table 3 and Table 4.

In the case that the Contractor disputes the results of the test of the second sample obtained for a particular day of production, the test turn-around time frames given would apply to the second test and there would be no time frame on the first test.

The laboratory (MDOT Central Laboratory or independent lab) will complete all Dispute Resolution testing and return test results to the Engineer, who will provide them to the Contractor, within 13 calendar days upon receiving the Dispute Resolution samples.

In all cases, when penalties are assessed, the penalty applies to each parameter, up to two parameters, that is out of specification.

Table 3: Penalty Per Parameter

Mixture Parameter out-of-Specification per Acceptance Tests	Mixture Parameter out-of-Specification per Dispute Resolution Test Lab	Price Adjustment per Parameter
No	N/A	None
Yes	No	None
	Yes	Outside Range 1 but not Range 2: decrease by 10% Outside Range 2: decrease by 25%

The quantity of material receiving a price adjustment is defined as the material produced from the time the first out-of-specification sample was taken until the time the sample leading to the first in-specification test was taken.

Each parameter of Table 1 is evaluated with the total price adjustment applied to the contract base price based on a sum of the two parameter penalties resulting in the highest total price adjustment as per Table 4. For example, if three parameters are out-of-specification, with two parameters outside Range 1 of Table 1 tolerance limits, but within Range 2 of Table 1 limits and one parameter outside of Range 2 of Table 1 tolerance limits and the Engineer approves leaving the mixture in place, the total price adjustment for that quantity of material is 35 percent.

Table 4: Calculating Total Price Adjustment

Cost Adjustment as a Sum of the Two Highest Parameter Penalties		
Number of Parameters Out-of-Specification	Range(s) Outside of Tolerance Limits of Table 1 per Parameter	Total Price Adjustment
One	Range 1	10%
	Range 2	25%
Two	Range 1 and Range 1	20%
	Range 1 and Range 2	35%
	Range 2 and Range 2	50%
Three	Range 1, Range 1 and Range 1	20%
	Range 1, Range 1 and Range 2	35%
	Range 1, Range 2 and Range 2	50%
	Range 2, Range 2 and Range 2	50%

Table 5: Density Frequency Curve Development

Tested by: _____ Date/Time: _____

Route/Location:		Air Temp:
Control Section/Job Number:		Weather:
Mix Type:	Tonnage:	Gauge:
Producer:	Depth:	Gmm:

Roller #1 Type:

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #2 Type:

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Roller #3 Type:

Pass No.	Density	Temperature	Comments
1			
2			
3			
4			
5			
6			
7			
8			
Optimum			

Summary: _____

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TEMPORARY PEDESTRIAN TYPE II BARRICADE

COS:CRB

1 of 2

APPR:CAL:CT:03-01-21
APPR:FHWA:03-08-21

a. Description. This work consists of delivering, installing, maintaining, relocating, and removing a temporary pedestrian Type II barricade section as identified in the proposal or on the plans. Use temporary pedestrian Type II barricades to close non-motorized facilities including sidewalks, bicycle paths, pedestrian paths, and shared use paths that are not part of the roadway. One pedestrian Type II barricade is defined as a barricade section at least 43 inches wide, including all supports, ballast, and hardware.

b. Materials. Provide a temporary pedestrian Type II barricade that meets the requirements of *National Cooperative Highway Research Program Report 350 (NCHRP 350)* or *Manual for Assessing Safety Hardware (MASH)*, in addition to meeting the following requirements:

1. Provide barricade sections at least 43 inches wide, designed to interconnect to ensure a continuous accessible tactile barrier. Ensure the connection includes provisions to accommodate non-linear alignment as well as variations in elevation at the installation area.

2. Ensure the top surface of the barricade is designed to function as a hand-trailing edge and has a height between 32 and 38 inches. Ensure the lower edge of the barricade is no more than 2 inches above the surface of the non-motorized facility. Ensure the top edge of the bottom rail of the barricade is a minimum of 8 inches above the surface of the non-motorized facility. The barricade may have a solid continuous face. Finally, all features on the front face of the barricade (the face in contact with pedestrians) must share a common vertical plane.

3. Equip both sides of the barricade with bands of alternating 6-inch wide orange and white vertical stripes of reflective sheeting. Two bands of sheeting 6 inches tall and a minimum of 36 inches long containing at least two orange and two white stripes each are required. One band placed near the top and one near the bottom if the barricade section has a solid face. If the barricade consists of two rails, affix one band of sheeting to each rail. Ensure the stripes of reflective sheeting are aligned vertically. Ensure this sheeting meets or exceeds the requirements of *ASTM D4956, Type IV* sheeting.

c. Construction. Construct the temporary pedestrian Type II barricade in accordance with the manufacturer's recommendations, MMUTCD, the plans, and the following requirements:

1. Install the barricade as shown on the plans and as directed by the Engineer. Interconnect all barricade sections using hinge components, if necessary, to ensure a continuous detectable edge for the entire installation. Ensure the barricade is ballasted in accordance with the manufacturer's recommendations to ensure stability during wind events and contact with pedestrians.

2. When the barricade is installed near motor vehicle traffic, ensure reflective sheeting is visible to motorists.

3. When temporary pedestrian Type II barricades are used to close a non-motorized facility, ensure a sufficient number of barricade sections are used to block the entire width of the facility. The barricade may extend outside the edge of the non-motorized facility but must not be less than the full width of the facility.

4. If sections of multiple-colored barriers are used (i.e. safety orange and white) install the sections such that the colors alternate to increase conspicuity.

5. Ensure temporary pedestrian Type II barricades are not used to close a motor vehicle facility. Ensure these barricades are not used to guide pedestrian traffic on a motor vehicle facility in the presence of active traffic. This prohibition includes bicycle/shared use lanes or shoulders in the presence of active traffic.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Pedestrian Type II Barricade, Temp	Each

Pedestrian Type II Barricade, Temp, includes delivering, installing, maintaining, relocating, and removing one barricade section that is at least 43 inches wide. Additional payment will not be made if wider sections are provided. Payment will be made on delivery for the quantity delivered to the project site, up to planned quantity. Any amount delivered exceeding plan quantity will not be paid unless approved by the Engineer. This includes all rails, supports, ballast, hinge points, reflective sheeting, and miscellaneous hardware needed to install and maintain a barricade section.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TEMPORARY PEDESTRIAN PATH

COS:CRB

1 of 2

APPR:MRB:CAL:06-25-21
FHWA:APPR:06-28-21

a. Description. This work consists of furnishing, installing, maintaining, and removing a temporary pedestrian path as identified in the proposal or on the plans. Temporary pedestrian paths, or segments thereof, will be repaired or replaced as directed by the Engineer.

b. Materials. Provide materials to construct a temporary pedestrian path in accordance with the contract, the *Public Rights-of-Way Accessibility Guidelines (PROWAG)*, the *MMUTCD*, as directed by the Engineer, and the following requirements:

1. Ensure the materials used to construct the temporary pedestrian path yields a continuous hard surface that is firm, stable and slip resistant. Ensure the path does not warp, buckle or otherwise become uneven, and materials support the weight of pedestrians as well as motorized scooters and wheelchairs. Suitable materials to construct the path include asphalt materials, Oriented Strand Board (OSB), plywood, dimensional lumber, reclaimed, or other as approved by the Engineer. Compacted soils, aggregate and sand are prohibited.

2. If asphalt materials are not used to construct the path, provide an antiskid coating, or surface treatment as directed by the Engineer.

c. Construction. Construct the temporary pedestrian path in accordance with *PROWAG*, the *MMUTCD*, the contract, the direction of the Engineer, and the following:

1. Ensure the useable surface of the path is a minimum of 48 inches wide. The maximum cross slope for the path is 2 percent. The path, including transitions to the adjacent surface at both ends, must be free of vertical discontinuities greater than 1/4 inch. Eliminate any vertical discontinuities greater than 1/4 inch up to 1/2 inch or bevel with a slope not steeper than 1:2. If a vertical discontinuity greater than 1/2 inch or a running slope greater than 1:20 occurs on the project, a Temporary Pedestrian Ramp (paid for separately) is required.

A. Ensure an anti-slip surface treatment is applied to the surface of the path, if not constructed with asphalt materials, as directed by the Engineer.

B. If the surface of the path is constructed from OSB, plywood, or dimensional lumber securely connect all sections with appropriate fasteners to ensure a continuous, uniform, and flat surface.

C. Ensure the temporary pedestrian path includes passing spaces at intervals of 200 feet maximum. The passing spaces are to be of the same material as the rest of the temporary pedestrian path. Dimension the passing spaces with a minimum width of 60 inches and minimum length of 60 inches. Passing spaces are not required if the path is already 60 inches wide.

2. Ensure all debris and construction material is cleared from the path throughout its use. Ensure snow and ice is removed; the use of an approved de-icing agent may be required.

3. Repair or replace the path, or segments thereof, if it becomes uneven, unstable, or displaces due to weather events, construction activities, or other causes as directed by the Engineer.

4. Following the use of the temporary path, the Contractor must remove and dispose all materials used to construct the path, and restore the area as directed by the Engineer.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Pedestrian Path, Temp.....	Foot

Pedestrian Path, Temp will be measured along the centerline of the path. **Pedestrian Path, Temp** includes all costs related to installation, maintenance, restoration, and removal of the path and disposal of all associated materials throughout the life of the contract. Temporary passing spaces are considered a part of the pedestrian path and are included in this pay item.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
TEMPORARY PEDESTRIAN RAMP

COS:CRB

1 of 2

APPR:MRB:CAL:02-09-21
FHWA:APPR:02-18-21

a. Description. This work consists of furnishing, installing, maintaining, relocating, and removing a temporary pedestrian ramp as identified in the proposal or on the plans. Use temporary pedestrian ramps to facilitate pedestrian travel on accessible facilities over curbs or other uneven terrain features with a vertical difference of 1/2 inch or greater. Damaged pedestrian ramps will be replaced as directed by the Engineer.

b. Materials. Provide materials to construct a temporary pedestrian ramp in accordance with the *Americans with Disabilities Act (ADA)*, *MMUTCD*, the standard specifications, and the following:

1. Ensure the material used to construct the temporary pedestrian ramp is firm, stable, slip resistant, and forms a continuous hard surface. Ensure the surface does not warp, buckle, or otherwise become uneven, and materials support the weight of pedestrians as well as motorized scooters and wheelchairs. Suitable materials to construct the surface of the ramp include asphalt materials, Oriented Strand Board (OSB) or plywood, dimensional lumber, certain reclaimed or other materials as approved by the Engineer. Compacted soils, aggregate and sand are prohibited.

2. Provide a handrail on both sides of the ramp if the ramp is not exposed to vehicle traffic and has a total rise greater than 6 inches, and a length greater than 72 inches. Ensure the handrail is between 1.25 and 1.5 inches wide and configured to be a "graspable" cross-section. See subsection c.1.A of this special provision for additional details. When the ramp is exposed to traffic, in lieu of handrails, use a protective edge 2.5 inches minimum height above the ramp surface or 1:10 flare on both sides of the ramp.

3. Ensure the surface of the ramp is free draining; in addition, provide features that allow drainage to move past the ramp installation (i.e. along the gutter pan underneath the ramp if the ramp is installed on a curb).

4. Provide materials to construct detectable edging along open sides of the ramp if required.

5. If asphalt materials are not used to construct the surface of the ramp, provide an anti-slip coating or surface treatment approved by the Engineer.

c. Construction. Construct the temporary pedestrian ramp in accordance with the manufacturer's recommendations (if applicable), *ADA*, *MMUTCD*, the plans, and the following:

1. Ensure the useable surface of the ramp is 48 inches wide and does not deflect due to pedestrian traffic. Ensure an anti-slip surface treatment is applied to the useable area of the

ramp if it is not made from asphalt materials. The maximum cross slope of the ramp is 2 percent. Ensure both ends of the ramp smoothly transitions to the adjacent surface, with 1/4 inch or less vertical difference.

Construct the ramp to maintain a longitudinal slope from 1:10 to 1:12 where possible. Otherwise, a longitudinal slope from 1:8 to 1:10 may be used for a maximum rise of 3 inches. Temporary pedestrian ramps with longitudinal slopes greater than 1:8 are prohibited.

A. Provide a handrail on both sides of the ramp if required as stated herein. Ensure the top of the handrail is between 34 and 38 inches above the surface of the ramp. Ensure a minimum width of 36 inches is maintained between the handrails, with a minimum clearance of 1.5 inches behind and 18 inches above.

Construct a structurally stable handrail that meets the requirements as defined in the *ADA* and *MMUTCD*.

2. Construct a detectable edging anytime a handrail is required, and anytime the path changes direction. This includes a turn onto the ramp from the path. Detectable edging must begin a maximum of 2.5 inches above the ramp surface and extend at least 6 inches above the ramp surface.

3. Ensure a clear space (minimum 48 inches by 48 inches) is provided above and below the ramp.

4. Avoid locating ramps in areas of drainage collection, ponding or running water, which can produce slippery or unsafe conditions. If the ramp is located over a gutter pan or other drainage structure, provide features to facilitate water movement around or under the ramp as approved by the Engineer.

5. Ensure all debris and construction material is cleared from the surface of the ramp throughout its use. Ensure snow and ice is removed; the use of an approved de-icing agent may be required. Repair or replace the ramp if it becomes uneven, unstable, or displaces due to weather events, construction activities, or other causes as directed by the Engineer.

d. Measurement and Payment. The completed work, as described, will be measured and paid for at the contract unit price using the following pay item:

Pay Item	Pay Unit
Pedestrian Ramp, Temp.....	Each

Pedestrian Ramp, Temp includes furnishing, installing and removing a temporary pedestrian ramp at the locations shown on the plans, as well as all costs for maintaining, clearing debris, deicing, reconfiguring, and relocating the temporary pedestrian ramp throughout the life of the contract.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
LANDSCAPE PLANTS SOURCE LIST

RSD:JLB

1 of 1

APPR:MRB:JN:04-09-20
FHWA APPR:04-13-20

a. Description. This work consists of submitting a Landscape Plants Source list to the Engineer at the preconstruction meeting.

b. Materials. Provide a Landscape Plants Source list to the Engineer that identifies each plant by species, size, origin and quantity specified on the project. The list will be reviewed at the preconstruction meeting. Nursery stock must come from nurseries located in Zone 4 or Zone 5 of the 2012 USDA Hardiness Zone Map for landscaping in Michigan's lower peninsula. Nursery stock for landscaping in Michigan's upper peninsula must come from nurseries located in Zone 3 or Zone 4. Nurseries located in Zone 6 of the upper Great Lakes region will be allowed as follows:

1. Located at or north of latitude 40 degrees North.
2. Zone 6b will only include nurseries located in counties that border the Great Lakes.
3. Zone 6 plants will not be accepted for use in the upper peninsula nor in the lower peninsula counties north of US-10 except for those counties bordering Lake Michigan.

Submit requests for plant substitutions to the Engineer at the preconstruction meeting. All substitution requests must be reviewed and approved by the Engineer and Landscape Architect.

c. Construction. None Specified.

d. Measurement and Payment. The completed work, as described, will not be paid for separately, but will be included in the plant material pay items.

MICHIGAN
DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION
FOR
UNACCEPTABLE PLANT REMOVAL

RSD:JLB

1 of 1

APPR:MRB:JN:04-03-20
FHWA:APPR:04-13-20

a. Description. This work consists of removing unacceptable plants in their entirety. Plants will be inspected per subsection 815.03.K of the Standard Specifications for Construction. Remove any plants considered unacceptable as defined in that subsection and identified by the Engineer.

b. Materials. None specified.

c. Construction. Removal of unacceptable plants includes complete removal of the root ball, wire basket, burlap, string, bracing, stakes and guying materials. Flush cutting of plants is prohibited. Repair ruts, voids, depressions, planting holes and turf damage resulting from plant removal and re-establish turf in these areas and where plants were removed in accordance with subsection 816.03 of the Standard Specifications for Construction and as directed by the Engineer.

Removed plants and associated materials are to be disposed of per subsection 815.03.K of the Standard Specifications for Construction.

d. Measurement and Payment. The completed work, as described, will not be paid for separately, but is considered to be included in the cost for providing the original plant material.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
INDUSTRIAL BY-PRODUCTS AND BENEFICIAL RE-USE

HYD:HLZ

1 of 1

APPR:JJG:JFS:04-02-20
FHWA:APPR:04-03-20

a. Description. For this project, regardless of the application, the use of industrial by-products covered in 2014 PA 178 is prohibited unless the use and application of a particular material is covered elsewhere in the contract.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
AGGREGATE, 46G

CFS:JJG

1 of 1

APPR:SAG:DMG:02-15-22
FHWA:APPR:02-16-22

Delete the last row of Table 902-2 in subsection 902 of the Standard Specifications for Construction in its entirety and replace with the following:

Open-graded aggregates	46G	80	45	—	—	—
---------------------------	-----	----	----	---	---	---

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
MIXING PORTLAND CEMENT CONCRETE

CFS:JFS

1 of 1

APPR:CPM:TEB:12-17-21
FHWA:APPR:12-20-21

Add the following paragraph to subsection 1001.03.E.1 of the Standard Specifications for Construction:

Weigh and batch each material into its respective weighing device within the tolerance from the individual batch weights or quantities documented in the approved JMF as follows:

- a. Cementitious Materials. Provide cementitious materials within -2.0 percent to +5.0 percent of the required weight.
- b. Aggregates. Provide aggregate within ± 3.0 percent of the required weight.
- c. Water. Provide net water to not exceed the required water quantity and the required maximum water/cementitious ratio (w/cm).
- d. Air Entraining Admixtures. Provide the necessary quantity or dosage rate per 100 pounds of cementitious material to achieve the required air content of fresh concrete.
- e. Other Admixtures. Provide water-reducing and other admixtures within ± 3.0 percent of the required quantity.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**ALKALI SILICA REACTIVITY OF FINE AGGREGATE USED IN PORTLAND
CEMENT CONCRETE**

CFS:CPM

1 of 2

APPR:TES:JFS:05-19-20
FHWA:APPR:05-27-20

a. Description. This special provision sets out the requirements for all fine aggregate used in Portland cement concrete (PCC) mixtures to be tested by an independent testing laboratory and determined to be resistant to the potential for deleterious expansion caused by alkali-silica reactivity (ASR). ASR testing is not required for concrete pavement repairs, temporary concrete pavements, and other items covered by the contract.

Except as explicitly modified by this special provision, all materials, test methods, and PCC mixture requirements of the standard specifications and the contract apply.

b. Definition. ASR is a chemical reaction which occurs over time within concrete between highly alkaline cement paste and reactive forms of silica found in some aggregates. In the presence of moisture, an expansive ASR gel is formed which can exert pressure within the concrete, causing random cracking and premature deterioration of the concrete.

c. Laboratory Requirements. The independent laboratory, including all associated testing equipment and staff performing ASR testing of aggregates, must be proficient in ASR testing in accordance with the applicable test methods and procedures. The laboratory must provide documentation to the Regions that they are qualified and proficient to conduct ASR testing in accordance with the required test procedures.

d. Laboratory Testing Requirements. Perform testing on fine aggregate proposed to be used in any PCC Job Mix Formula (JMF). The Contractor must ensure the testing is conducted in accordance with a designated standard test procedure described herein. Test results must conform to the specified criterion for one of the following standard test methods. The Rounding Method described in *ASTM E29* must be used when reporting expansion test results.

(1) Method 1. *ASTM C1293*. Concrete Prism Test. If the expansion of concrete prisms is not greater than 0.040 percent (rounded to the nearest 0.001 percent) after 1 year, the fine aggregate is considered non-deleterious to ASR and may be used in the JMF.

(2) Method 2. *ASTM C1567*. Mortar Bar Test. If no previous test data are available for the fine aggregate that shows it is resistant to ASR using Method 1, above, replace 25 to 40 percent of the Portland cement in the concrete mixture with a supplementary cementitious material (slag cement or fly ash). A blended cement meeting the requirements of *ASTM C595/C595M* containing the above Portland cement and supplementary cementitious material proportions may also be used.

Demonstrate the ability of the supplementary cementitious material to control the deleterious expansion caused by ASR by molding and testing mortar bars in accordance with the standard

test method described in *ASTM C1567* using the mix proportions and constituent sources for both the aggregates and the cementitious materials that will be used for the project. Make at least three test specimens for each cementitious materials-aggregate combination. If the average of three mortar bars for a given cementitious materials-aggregate combination produces an expansion less than 0.10 percent (rounded to the nearest 0.01 percent) at 14 days of immersion, the JMF associated with that combination will be considered non-deleterious to ASR. If the average expansion is 0.10 percent (rounded to the nearest 0.01 percent) or greater, the JMF associated with that combination will be considered not sufficient to control the deleterious expansion caused by ASR and the JMF will be rejected.

(3) Method 3. *ASTM C1260*. Mortar Bar Test. If the expansion of the mortar bars is less than 0.10 percent (rounded to the nearest 0.01 percent) at 14 days of immersion, the fine aggregate is considered non-deleterious to ASR and may be used in the concrete without the need for ASR mitigation.

The Engineer will not approve the use of the JMF if the expansion exceeds the threshold limits for the respective *ASTM* test method used. The test results and report are valid for 2 years from the completion of testing.

e. Submittals. A current ASR test report for the fine aggregate proposed to be used in the Job Mix Formula (JMF) must accompany each JMF. Ensure the ASR test report is accompanied by a certification stating which test procedure was followed and that all testing was conducted in accordance with the designated standard test procedure.

f. Measurement and Payment. All materials, labor, equipment, and laboratory facilities necessary to complete the work in accordance with this special provision is included in other contract pay items and no additional compensation will be permitted.

MICHIGAN
DEPARTMENT OF TRANSPORTATION

SPECIAL PROVISION
FOR
**QUALITY INDEX FOR PORTLAND CEMENT CONCRETE (FOR LOCAL AGENCY
PROJECTS ONLY)**

CFS:CPM

1 of 4

APPR:TES:JFS:05-28-20

FHWA:APPR:06-04-20

a. Description. This special provision establishes pay factor and price adjustments for Portland cement concrete (PCC) based on Quality Assurance (QA) testing of 28-day compressive strength and fresh concrete air content of PCC. Perform all work in accordance with the standard specifications and this special provision.

b. Materials. Mixture requirements will be in accordance with section 1004 of the Standard Specifications for Construction, unless otherwise specified in the contract.

c. Sampling. Sampling will be in accordance with subsections 1003.03.H and 1003.03.L of the Standard Specifications for Construction, except as modified herein. A sample is defined as a representative quantity of concrete taken during production which is used to measure the quality characteristics for the concrete. Compressive strength specimens for each sample consist of two cylinders, either 4-inch by 8-inch or 6-inch by 12-inch. A random number will be generated for each respective subplot. The sampling frequency for a production lot is one QA sample per subplot.

See subsection 1003.03.J in the Standard Specifications for Construction for reduced sampling and testing for small incidental quantities.

d. Quality Index Analysis. The Engineer's QA test results will be used to determine the pay factor (PF) and price adjustment (ADJ). The Contractor QC test results will be not used for PF and ADJ analysis. The Engineer will complete PF and ADJ analysis within 7 working days after completion of all 28-day compressive strength testing for the represented production lot or quantity of concrete. All values of PF and OLPF in these formulas are decimal, not percent. All values of PF and OLPF are rounded to two decimal places.

Table 1: Quality Index Parameter Specification Limits

Quality Characteristic	Specification Limits
Air Content of Fresh Concrete (percent)	5.5 – 8.5
Rejection Limit (percent)	<5.0 or >9.0
Conc. Temp. (deg. F)	45 - 90 at time of placement
Slump (max.) (inch)	See footnotes a through l in Table 1004-1 of the Standard Specifications for Construction
28-day Compressive Strength (psi)	For LSL see Table 2
Rejection Limit - 28-day Compressive Strength	See Table 2

Table 2: Quality Index Parameter Specification Limits for 28-Day Compressive Strength

Parameter	Grade of Concrete						
	3000	3500	3500HP	4000	4000HP	4500	4500HP
Lower Specification Limit (psi)	3000	3500	3500	4000	4000	4500	4500
Rejection Limit for an Individual Strength Sample Test Result (psi)	2500	3000	3000	3500	3500	4000	4000

1. Pay Factor for 28-Day Compressive Strength (PF_s). (not to exceed 1.00)

$$PF_s = (\text{QA Test Strength})/\text{LSL}$$

Where:

QA Test Strength = QA 28-day compressive strength sample test result.

LSL = Lower specification limit (see Table 2).

If the tested strength does not meet the rejection limit specified in Table 2, the Engineer will require additional evaluation as described in section e of this special provision.

2. Pay Factor for Air Content of Fresh Concrete (PF_{ac}). The pay factor for air content of fresh concrete (PF_{ac}) will be in accordance with Table 3.

Table 3: Air Content of Fresh Concrete Pay Factor (PF_{ac})

Air Content of Fresh Concrete (percent)	Pay Factor (PF_{ac})
5.5 – 8.5	1.00
5.0 – 5.4	0.50
Below 5.0	Rejection
8.6 – 9.0	0.75
Above 9.0	Rejection

If the air content of fresh concrete is below 5.0 or above 9.0 percent, the Engineer will elect to do one of the following:

A. Require removal and replacement of the entire quantity of concrete represented by the test with new testing conducted on the replacement concrete and repeat the evaluation procedure.

B. Allow submittal of a corrective action plan for the Engineer's approval. If the Engineer does not approve the plan for corrective action, subsection d.2.A. will be applied. All costs associated with plan submittal and corrective action under this subsection will be borne by the Contractor.

3. Overall Lot Pay Factor (OLPF). Use the following formula to determine the OLPF and ADJ. The OLPF will not exceed 1.00:

$$\text{OLPF} = (0.60 \times \text{PF}_s) + (0.40 \times \text{PF}_{ac})$$

Where:

PF_{ac} = Pay factor for Air Content (see Table 3)

4. Price Adjustment (ADJ). Use the following formula to determine the ADJ.

$$\text{ADJ} = (\text{OLPF} - 1)(\text{Price})$$

5. Price Adjustment for Small Incidental Quantities. Price adjustment for 28-day compressive strength deficiencies will be based on test results for the corresponding weekly QA test specimens and the pay factor (PF_s) calculated in accordance with the formula defined in subsection d.1. The price adjustment is calculated by the following equation:

$$(\text{ADJ}) = (\text{PF}_s - 1)(\text{Price})$$

Where:

ADJ = Price adjustment per pay unit to be applied to the quantity represented by the QA test.

PF_s = Pay Factor for 28-day compressive strength (not to exceed 1.00).

Price = Base price when established for the pay item or the Contractors unit price bid when concrete is included in another pay item without a base price.

e. Evaluation of Rejectable Concrete. The Engineer will require additional evaluation to decide what further action may be warranted. Acceptance for air content of fresh concrete will be based on QA test results reported at the time of concrete placement.

If the Engineer determines that non-destructive testing (NDT) is appropriate, this work will be done by the Contractor in the presence of the Engineer within 45 calendar days of concrete placement. All costs associated with this work will be borne by the Contractor. Ensure complete set of non-destructive tests is conducted (in accordance with the respective standard test method) at a minimum three randomly selected locations. If NDT is used to estimate the in-situ strength, a calibrated relationship between the project job mix formula (JMF) under evaluation and the NDT apparatus must have been established prior to NDT testing in accordance with its respective standard test method.

If the 28-day compressive strength QA test results show that the rejection limit (as specified in Table 2) has not been achieved, the quantity of concrete under evaluation will be rejected and the Engineer will require additional evaluation to decide what further action may be warranted.

Propose an evaluation plan and submit it to the Engineer for approval before proceeding. The results from NDT will be used only to decide what further action is required. This determination will be made by the Engineer, as follows:

1. For Non-structural Concrete. If no test result from non-destructive testing falls below the lower specification limit (LSL) 28-day compressive strength, the represented quantity of

concrete under evaluation will remain in place and a pay factor for 28-day compressive strength (PF_s) of 1.00 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations in accordance with section d of this special provision.

2. For Structural Concrete (including overhead sign foundations). If no test result from non-destructive testing falls below the lower specification limit (LSL), the represented quantity of concrete under evaluation will remain in place and a pay factor for 28-day compressive strength (PF_s) of 0.85 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations will be in accordance with section d of this special provision.

3. If one or more of the non-destructive test results fall below the lower specification limit (LSL) 28-day compressive strength, the Engineer may elect to do one of the following:

A. Require removal and replacement of the entire rejected quantity of concrete, including new initial tests for quality index analysis conducted in accordance with section d of this special provision.

B. Allow the Contractor to submit a plan for corrective action, for the Engineer's approval, to address the disposition of the rejected concrete. If the Engineer does not approve the plan for corrective action, subsection e.3.A of this special provision will be applied. All costs associated with plan submittal and corrective action under this subsection will be borne by the Contractor.

C. Allow the in-situ quantity of concrete under evaluation to remain in place and a pay factor (PF_s) of 0.50 will be applied for overall lot pay factor (OLPF) and price adjustment (ADJ) determinations will be in accordance with section d of this special provision.

f. Measurement and Payment. If a price adjustment is made for reasons included in this special provision, that adjustment will be made using the base price established for the specific item. If a contract unit price requires adjustment for other reasons not described in this special provision, the adjustments will be made using the original unit price and the adjustments will be cumulative.

APPENDIX C-5 PROJECT PLANS

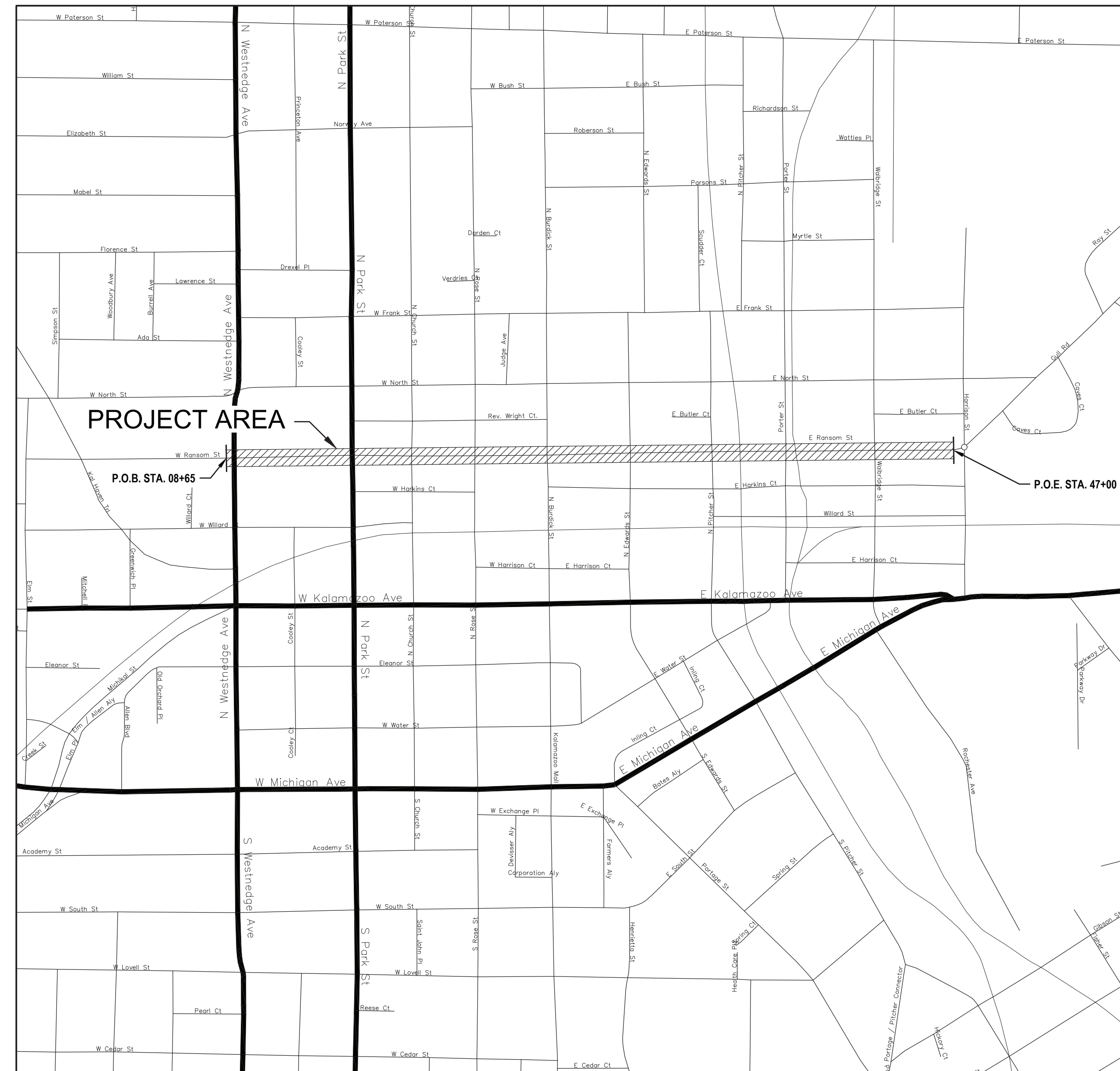
SHT NO.	INDEX OF SHEETS	DESCRIPTION
1	TITLE SHEET	
2	EXISTING ROADWAY CROSS SECTIONS	
3	PROPOSED ROADWAY CROSS SECTIONS - 1	
4	PROPOSED ROADWAY CROSS SECTIONS - 2	
5	BORING LOGS - 1	
6	BORING LOGS - 2	
7	SOIL BORING MAP	
8	STANDARD DETAILS AND NOTES	
9	SANITARY SEWER DETAILS	
10	STORM SEWER DETAILS	
11	WATER MAIN DETAILS	
12	EXISTING CONDITIONS - 1	
13	EXISTING CONDITIONS - 2	
14	REMOVAL PLAN - 1	
15	REMOVAL PLAN - 2	
16	PLAN AND PROFILE STA. 8+48 (P.O.B.) TO 12+50	
17	PLAN AND PROFILE STA. 12+50 TO 17+00	
18	PLAN AND PROFILE STA. 17+00 TO 21+50	
19	PLAN AND PROFILE STA. 21+50 TO 26+00	
20	PLAN AND PROFILE STA. 26+00 TO 30+50	
21	PLAN AND PROFILE STA. 30+50 TO 35+00	
22	PLAN AND PROFILE STA. 35+00 TO 39+50	
23	PLAN AND PROFILE STA. 39+50 TO 44+00	
24	PLAN AND PROFILE STA. 44+00 TO 46+50 (P.O.E.)	
25	PAVEMENT MARKING AND PERMANENT SIGNAGE PLAN - 1	
26	PAVEMENT MARKING AND PERMANENT SIGNAGE PLAN - 2	
27	SOIL EROSION AND SEDIMENTATION CONTROL PLAN PHASE 1	
28	SOIL EROSION AND SEDIMENTATION CONTROL PLAN PHASE 2	
29	VEHICULAR DETOUR PLAN PHASE 1	
30	VEHICULAR DETOUR PLAN PHASE 2	
31	PEDESTRIAN DETOUR PLAN PHASE 1	
32	PEDESTRIAN DETOUR PLAN PHASE 2	
33	INTERSECTION GRADING - 1	
34	INTERSECTION GRADING - 2	
35	INTERSECTION GRADING - 3	
36	INTERSECTION GRADING - 4	
37	INTERSECTION GRADING - 5	
39	GRADING PLAN - 2	
38	GRADING PLAN - 1	
40	GRADING PLAN - 3	
41	LIGHTING DETAILS	
42	CONDUIT PLAN - 1	
43	CONDUIT PLAN - 2	
44	CONDUIT PLAN - 3	
45	WATER MAIN CROSSING DETAILS - 1	
46	WATER MAIN CROSSING DETAILS - 2	
47	WATER MAIN CROSSING DETAILS - 3	
48	LANDSCAPE DETAILS	
49	LANDSCAPE PLAN STA 8+65 TO 27+27	
50	LANDSCAPE PLAN STA. 27+27 TO 47+00	
51	ALTERNATE LANDSCAPE PLAN STA 8+65 TO 27+27	
52	ALTERNATE LANDSCAPE PLAN STA. 27+27 TO 47+00	

CITY OF KALAMAZOO

RANSOM STREET IMPROVEMENTS

CWSRF PROJECT NO.: 5802-01

COUNTY	CITY	SHEET NUMBER	TOTAL SHEETS
KALAMAZOO	KALAMAZOO	1	52



PROJECT LOCATION MAP

NOT TO SCALE



COUNTY KEY
NOT TO SCALE

CITY OF KALAMAZOO OFFICIALS

DAVID ANDERSON DON COONEY JEANNE HESS CHRIS PRAEDEL QIANNA DECKER STEPHANIE HOFFMAN ESTEVEN JUAREZ JAMES K. RITSEMA JAMES BAKER, PE	MAYOR VICE MAYOR CITY COMMISSIONER CITY COMMISSIONER CITY COMMISSIONER CITY COMMISSIONER CITY COMMISSIONER CITY MANAGER DEPT OF PUBLIC WORKS DIRECTOR
---	---

LOCAL UTILITIES

KALAMAZOO POTABLE WATER: CITY OF KALAMAZOO 415 STOCKBRIDGE AVENUE, KALAMAZOO, MI 49001 ANNA CRANDALL (269) 337-8215 crandalla@kalamazoozoo.org	ELECTRIC & STREET LIGHTS: CONSUMERS ENERGY 2500 EAST CORK ST. KALAMAZOO, MI 49001 ANDRE TAYLOR (269) 337-2245 andre.taylor@cmsenergy.com	CABLE TV: CHARTER COMMUNICATIONS 4176 COMMERCIAL AVE. PORTAGE, MI 49002 BRYAN LONGCORE (269) 459-8746 bryan.longcore2@charter.com
KALAMAZOO TRAFFIC: CITY OF KALAMAZOO 415 STOCKBRIDGE AVENUE, KALAMAZOO, MI 49001 DENNIS RANDOLPH (269) 337-8612 randolphd@kalamazoozoo.org	GAS: CONSUMERS ENERGY 2500 EAST CORK ST. KALAMAZOO, MI 49001 KYLE OAK (269) 337-2366 kyle.oak@cmsenergy.com	FIBER OPTIC: CENTURY LINK 19675 W 10 MILE ROAD SOUTHFIELD, MI 48075 DAVID HUCKFELDT (517) 812-2592 dave.huckfeldt@lumen.com
KALAMAZOO STREETS/STORM: CITY OF KALAMAZOO 415 STOCKBRIDGE AVENUE, KALAMAZOO, MI 49001 ANTHONY LADD (269) 337-8215 ladda@kalamazoozoo.org	FIBER: AT&T 2919 MILLCORK ROAD KALAMAZOO, MI 49001 PHIL BARDOCZ (269) 823-3339 pb3132@att.com	FIBER OPTIC: ZAYO BANDWIDTH JOHN LUNDELL john.lundell@zayo.com GREG BABINSKI greg.babinski@zayo.com
KALAMAZOO SANITARY: CITY OF KALAMAZOO 1415 HARRISON STREET, KALAMAZOO, MI 49001 RYAN STOUGHTON (269) 337-5883 stoughtonr@kalamazoozoo.org	TELEPHONE: METRONET 133800 E. MICHIGAN AVE. GALESBURG, MI 49053 KIRK KIMMEL (616) 239-9139 kirk.kimmel@metronet.com	

MDOT STANDARD PLANS

R-28-J SIDEWALK RAMP AND DETECTABLE WARNING DETAILS
R-29-I DRIVEWAY OPENINGS & APPROACHES AND CONCRETE SIDEWALKS
R-39-K TRANSVERSE PAVEMENT JOINTS
R-40-H LOAD TRANSFER ASSEMBLIES FOR PAVEMENT JOINTS
R-42-F TYPICAL JOINT LAYOUT FOR CONCRETE PAVEMENT
R-83-C UTILITY TRENCHES
R-96-E SOIL EROSION & SEDIMENTATION CONTROL MEASURES
R-100-H SEEDING AND TREE PLANTING

TRAFFIC AND SAFETY STANDARD PLANS

WZD-100-A GROUND DRIVEN SIGN SUPPORTS FOR TEMPORARY SIGNS*
WZD-125-E TEMPORARY TRAFFIC CONTROL DEVICES*
* DENOTES SPECIAL/MODIFIED DETAIL

NOTES:

EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS OR IN THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED THEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE 2020 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.

THE IMPROVEMENTS COVERED BY THESE PLANS ARE DESIGNED IN ACCORDANCE WITH:

- AASHTO A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, 7TH EDITION
- PROPOSED PUBLIC RIGHTS-OF-WAY ACCESSIBILITY GUIDELINES
- MDOT 4R GUIDELINES
- CITY OF KALAMAZOO STREET DESIGN MANUAL
- CITY OF KALAMAZOO STANDARD SPECIFICATION FOR WATER MAIN AND SERVICE INSTALLATION, 2021 EDITION
- CITY OF KALAMAZOO STANDARD SPECIFICATIONS FOR WASTEWATER SEWER INSTALLATION, 2016 EDITION

PROJECT BEARINGS AND HORIZONTAL CONTROL ARE RELATED TO THE MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE, NORTH AMERICAN DATUM OF 1983 (2011 ADJUSTMENT).

ELEVATIONS ARE RELATED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988, AS DERIVED FROM GPS OBSERVATIONS CONNECTED TO THE MICHIGAN CONTINUOUSLY OPERATING REFERENCE STATION REAL-TIME NETWORK.

ALL PROJECT UNITS ARE BASED IN INTERNATIONAL FEET.

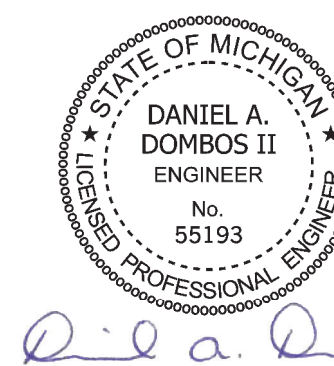
CALL MISS DIG

1-800-482-7171 OR 811

FOR PROTECTION OF THE UNDERGROUND UTILITIES, THE CONTRACTOR SHALL CALL MISS DIG A MINIMUM OF THREE FULL WORKING DAYS, EXCLUDING SATURDAYS, SUNDAYS, AND HOLIDAYS PRIOR TO BEGINNING CONSTRUCTION OPERATIONS. 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.



Know what's below.
Call before you dig.

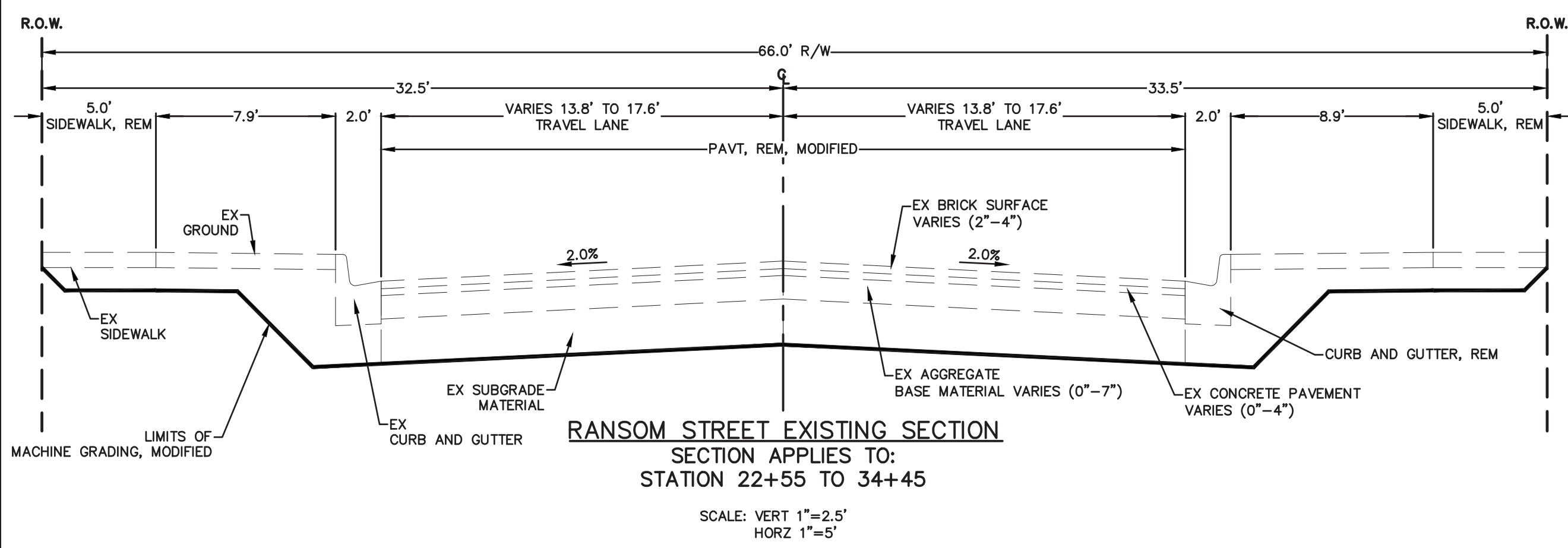
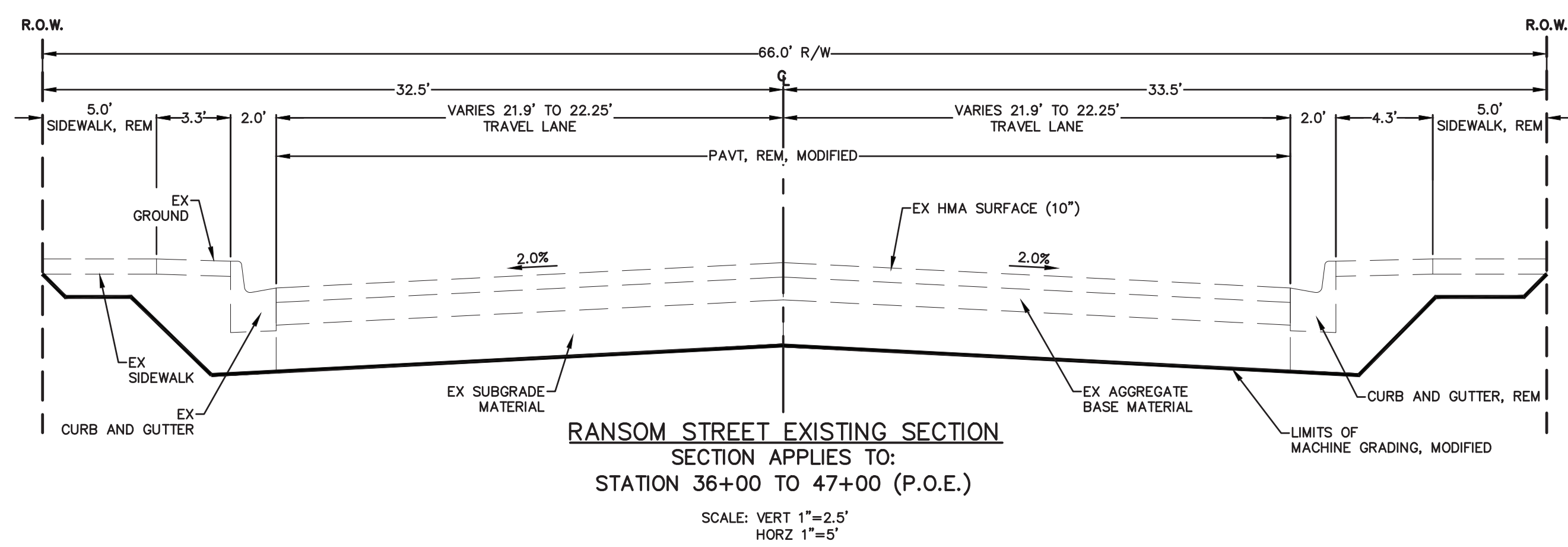
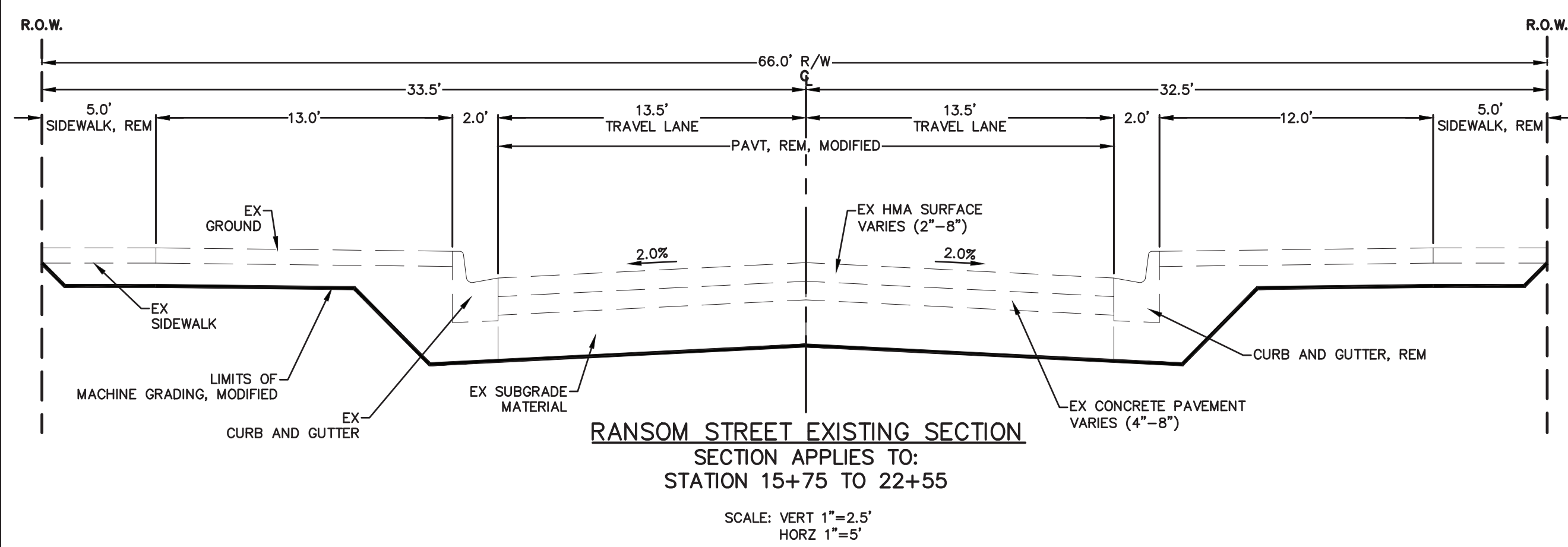
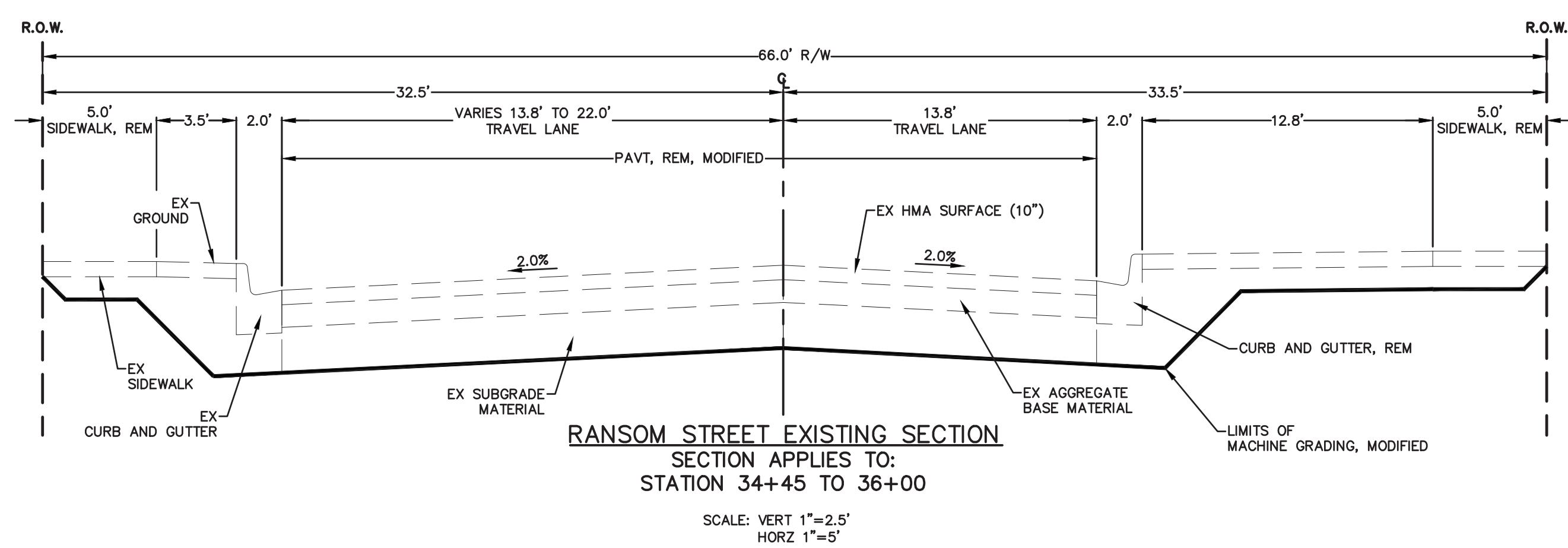
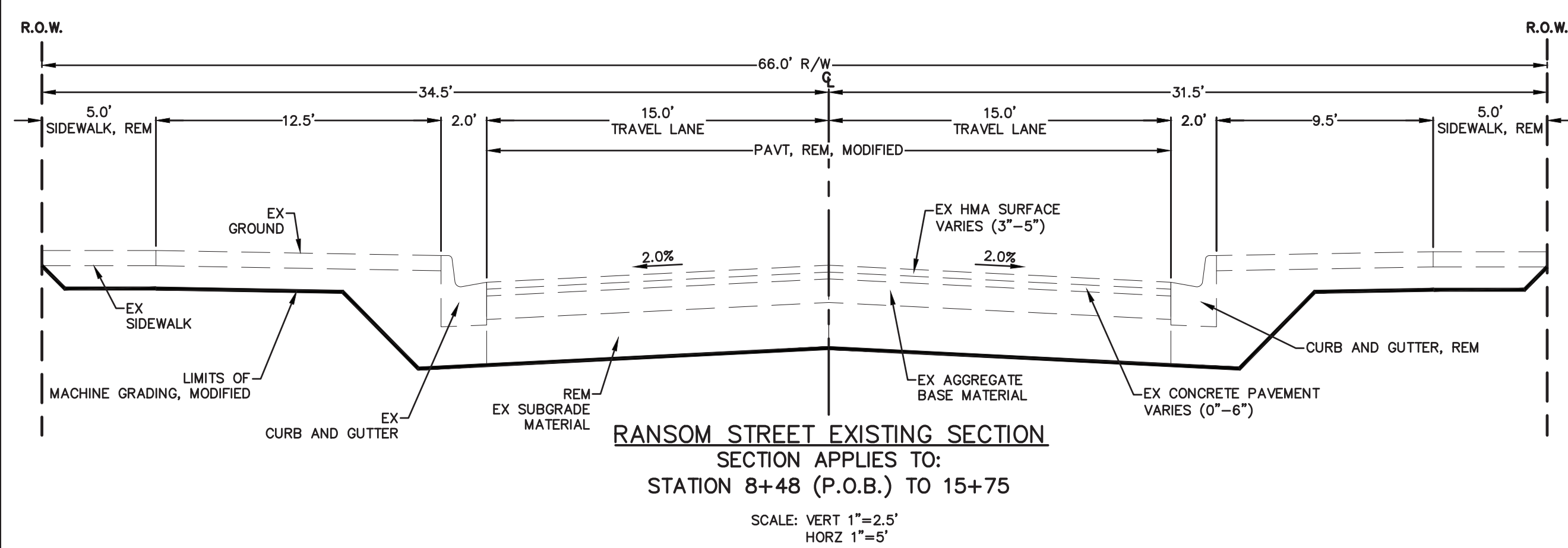


D. A. Dombos II



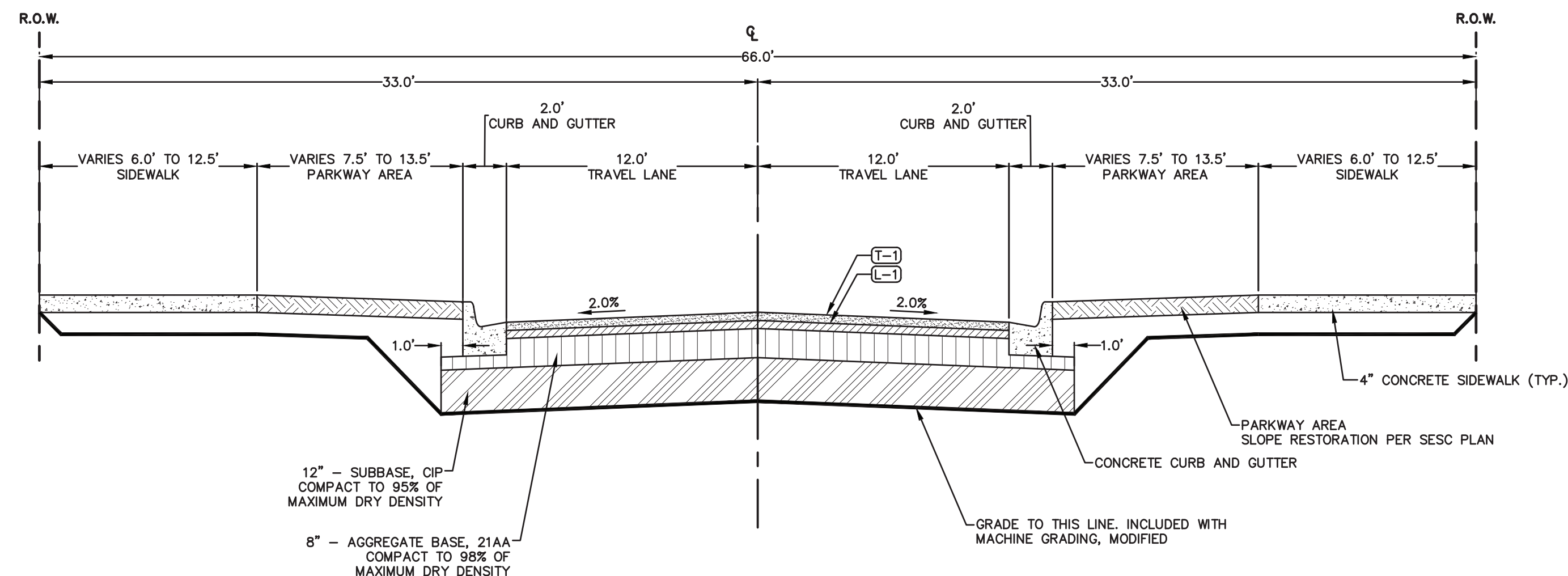
Engineering - Architecture - Land Surveying
DATE: JANUARY 2023
COPYRIGHT 2022 - ABONMARCHE CONSULTANTS, INC.

1 OF 52 RANSOM STREET IMPROVEMENTS
CITY OF KALAMAZOO
PROJECT# 22-0031

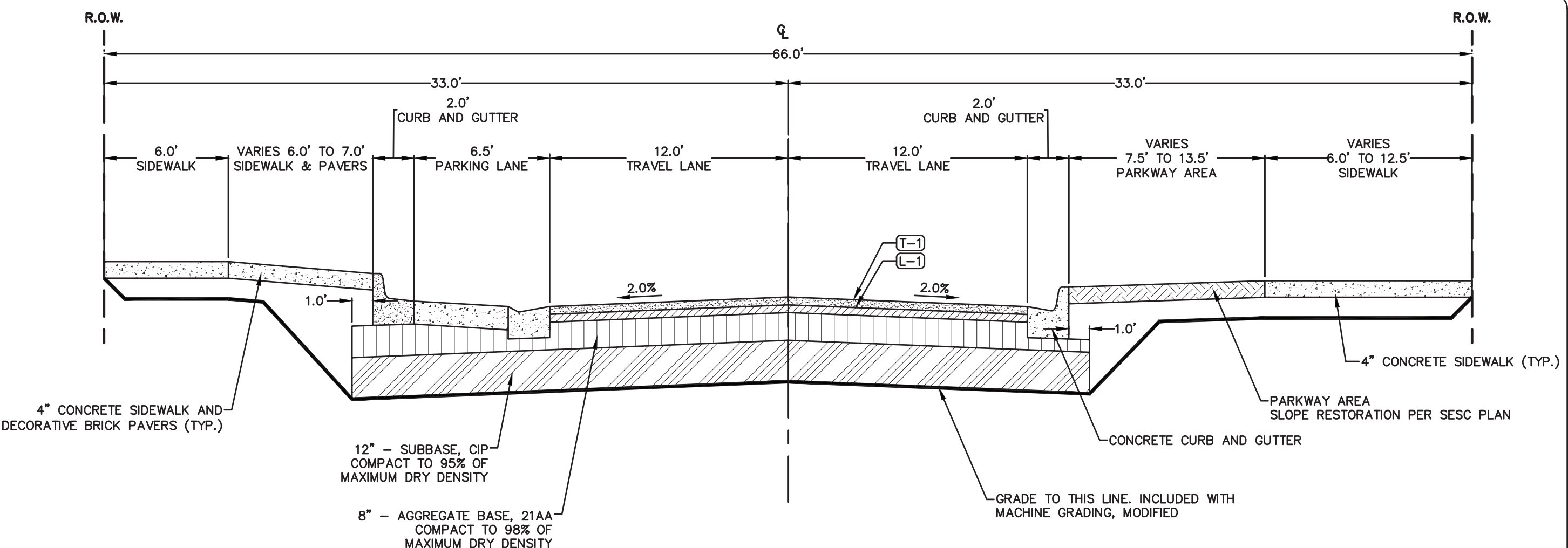


NO.	REVISION DESCRIPTION	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22

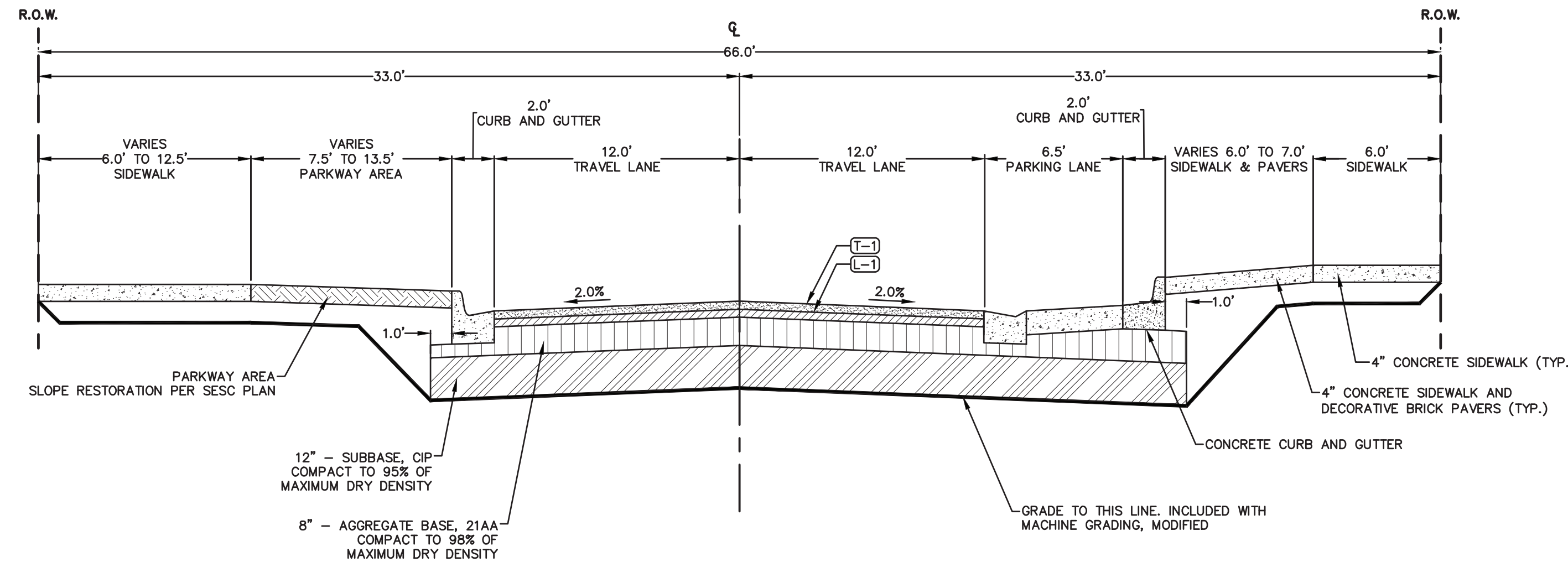
C:\p\proj\2022\220031\cadd\revision\erf\cadd\cadd\22-0031.dwg, 24.1, 1/5/2023 1:45:17 PM, mmmarc.11



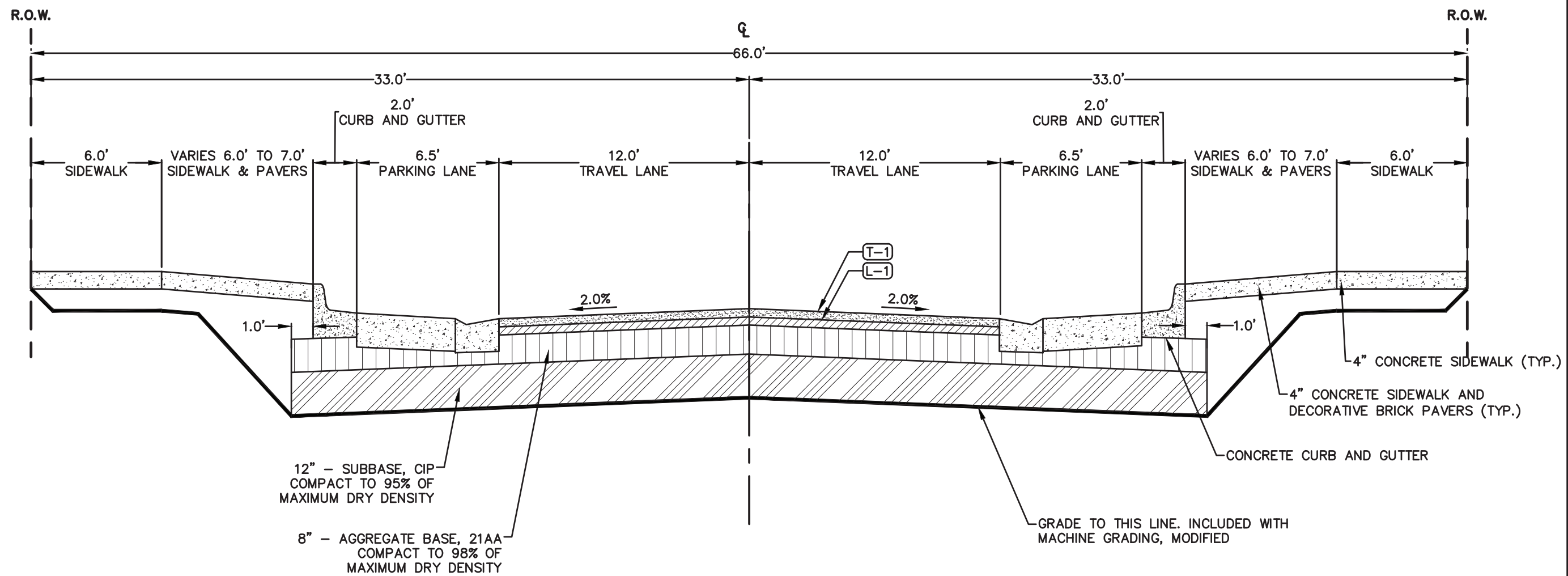
RANSOM STREET PROPOSED SECTION
 SECTION APPLIES TO:
 STATION 08+48 (P.O.B.) TO 10+15
 STATION 13+25 TO 17+50
 STATION 18+50 TO 19+60
 STATION 21+90 TO 23+25
 STATION 25+50 TO 27+25
 STATION 28+10 TO 34+50
 SCALE: VERT 1"=2.5'
 HORZ 1"=5'



RANSOM STREET PROPOSED SECTION
 SECTION APPLIES TO:
 STATION 12+60 TO 13+25
 STATION 19+60 TO 21+90
 SCALE: VERT 1"=2.5'
 HORZ 1"=5'



RANSOM STREET PROPOSED SECTION
 SECTION APPLIES TO:
 STATION 10+15 TO 12+60
 STATION 23+25 TO 25+50
 STATION 27+25 TO 28+10
 SCALE: VERT 1"=2.5'
 HORZ 1"=5'



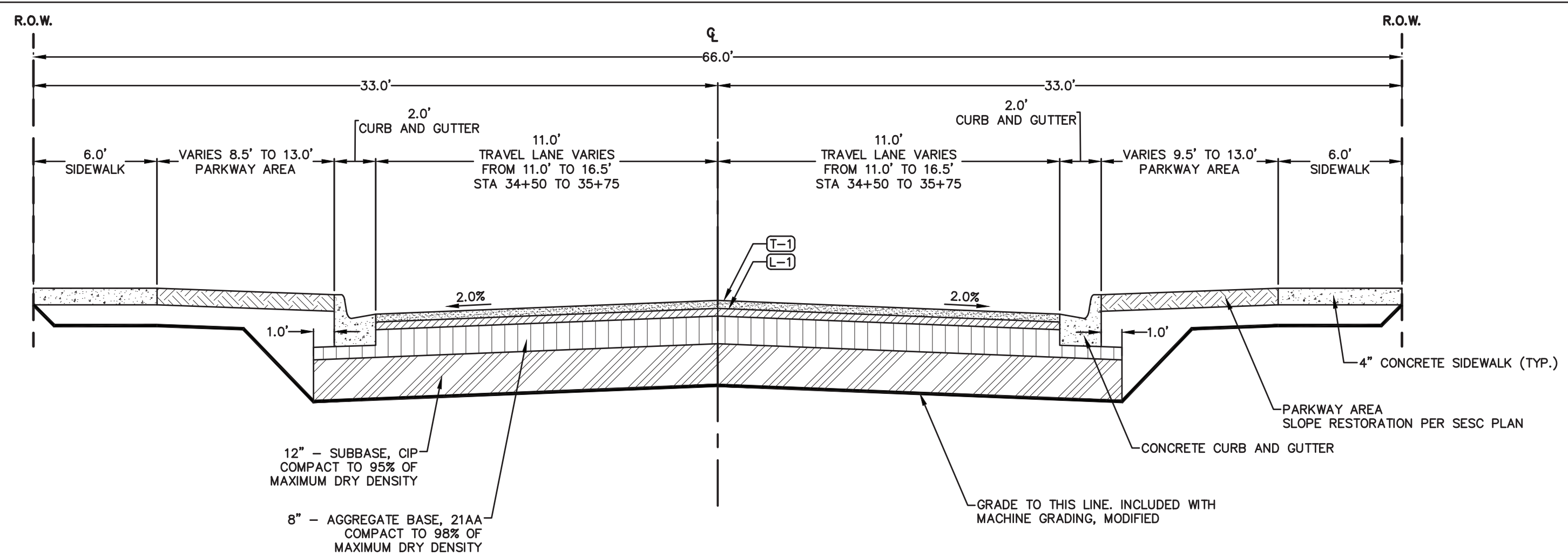
RANSOM STREET PROPOSED SECTION
 SECTION APPLIES TO:
 STATION 17+50 TO 18+50
 SCALE: VERT 1"=2.5'
 HORZ 1"=5'

HMA APPLICATION TABLE				
MIX ID	MIXTURE	RATE (LBS/SYD)	PERFORMANCE GRADE	TYPE
T-1	HMA, 5EML	220	70-28P	TOP COURSE (AW =260)
L-1	HMA, 4EML	220	70-28P	LEVELING COURSE
HA-1	HMA, 5EML	220	70-28P	HMA APPROACH TOP COURSE (AW =260)
HA-2	HMA, 4EML	220	70-28P	HMA APPROACH LEVELING COURSE
HA-3	HMA, 3EML	330	58-22	HMA APPROACH BASE COURSE
HP-1	HMA, 5EML	440 MAX	70-28P	HAND PATCHING 2 COURSES WHERE NECESSARY

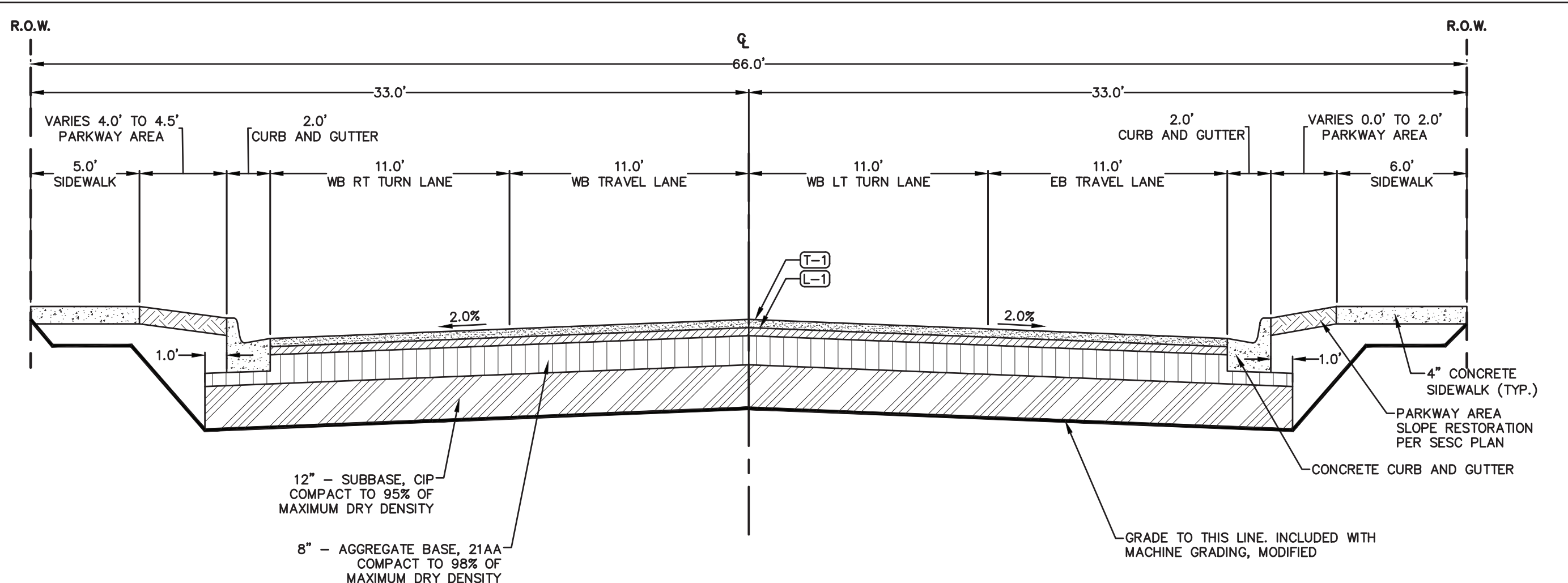
- NOTES:
- HMA BOND COAT 0.05 TO 0.15 GAL/SYD REQUIRED BETWEEN ASPHALT LIFTS. ENSURE FULL COVERAGE OF ASPHALT SURFACE WITH BOND COAT PRIOR TO PAVING. (NOT A PAY ITEM)
 - APPLY BOND COAT TO VERTICAL SURFACES OF ALL EXISTING HMA OR CONCRETE PAVEMENT, CURBS, AND GUTTERS ADJACENT TO NEW HMA PAVEMENT.
 - APPLY BOND COAT TO VERTICAL SURFACES OF PREVIOUSLY PLACED HMA PAVEMENT WITH THE TEMPERATURE OF THE PREVIOUSLY PLACED PAVEMENT FALLS BELOW 170°F OR WHEN AIR TEMPERATURE IS BELOW 50°F.
 - CHIPPING OF REMAINING ASPHALT AT BUTT JOINTS, CURB LINES, MONUMENT BOXES, WATER VALVE BOXES, AND DRAINAGE STRUCTURES SHALL BE INCLUDED IN THE PAY ITEM: "COLD MILLING, HMA SURFACE"
 - PLACE W8-1 "BUMP" WARNING SIGNS A MINIMUM OF 50 FEET IN ADVANCE OF TRANSITION MILLING LIMITS ALL NAMED CROSS STREETS.

HATCH LEGEND	
	HMA, 5EML (TOP COURSE)
	HMA, 4EML (LEVELING COURSE)
	AGGREGATE BASE, 8 INCH
	SUBBASE, CIP
	CONCRETE
	PARKWAY SPACE

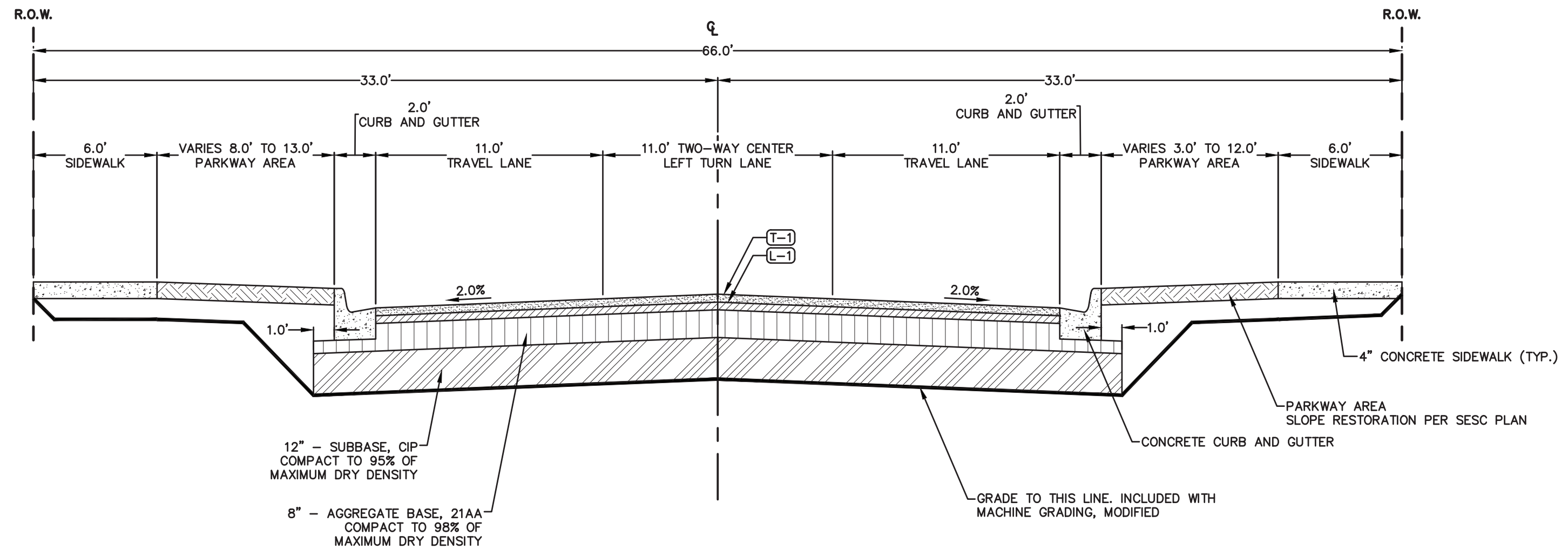
NO.	REVISION DESCRIPTION	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22



RANSOM STREET PROPOSED SECTION
SECTION APPLIES TO:
STATION 34+50 TO 35+75
SCALE: VERT 1"=2.5'
HORZ 1"=5'



RANSOM STREET PROPOSED SECTION
SECTION APPLIES TO:
STATION 45+00 TO 46+50 (P.O.E)
SCALE: VERT 1"=2.5'
HORZ 1"=5'



RANSOM STREET PROPOSED SECTION
SECTION APPLIES TO:
STATION 35+75 TO 45+00
SCALE: VERT 1"=2.5'
HORZ 1"=5'

HATCH LEGEND	
	HMA, 5EML (TOP COURSE)
	HMA, 4EML (LEVELING COURSE)
	AGGREGATE BASE, 8 INCH
	SUBBASE, CIP
	CONCRETE
	PARKWAY SPACE

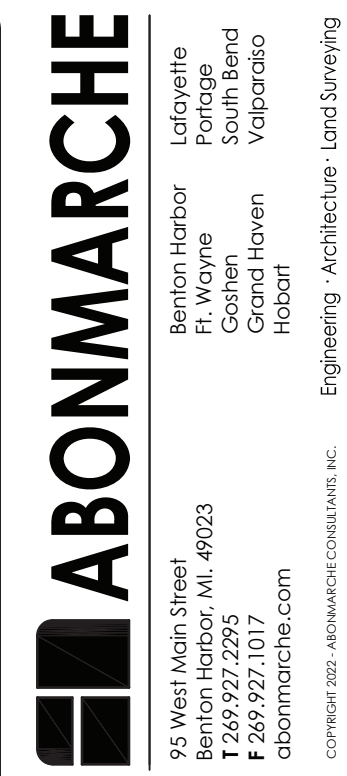
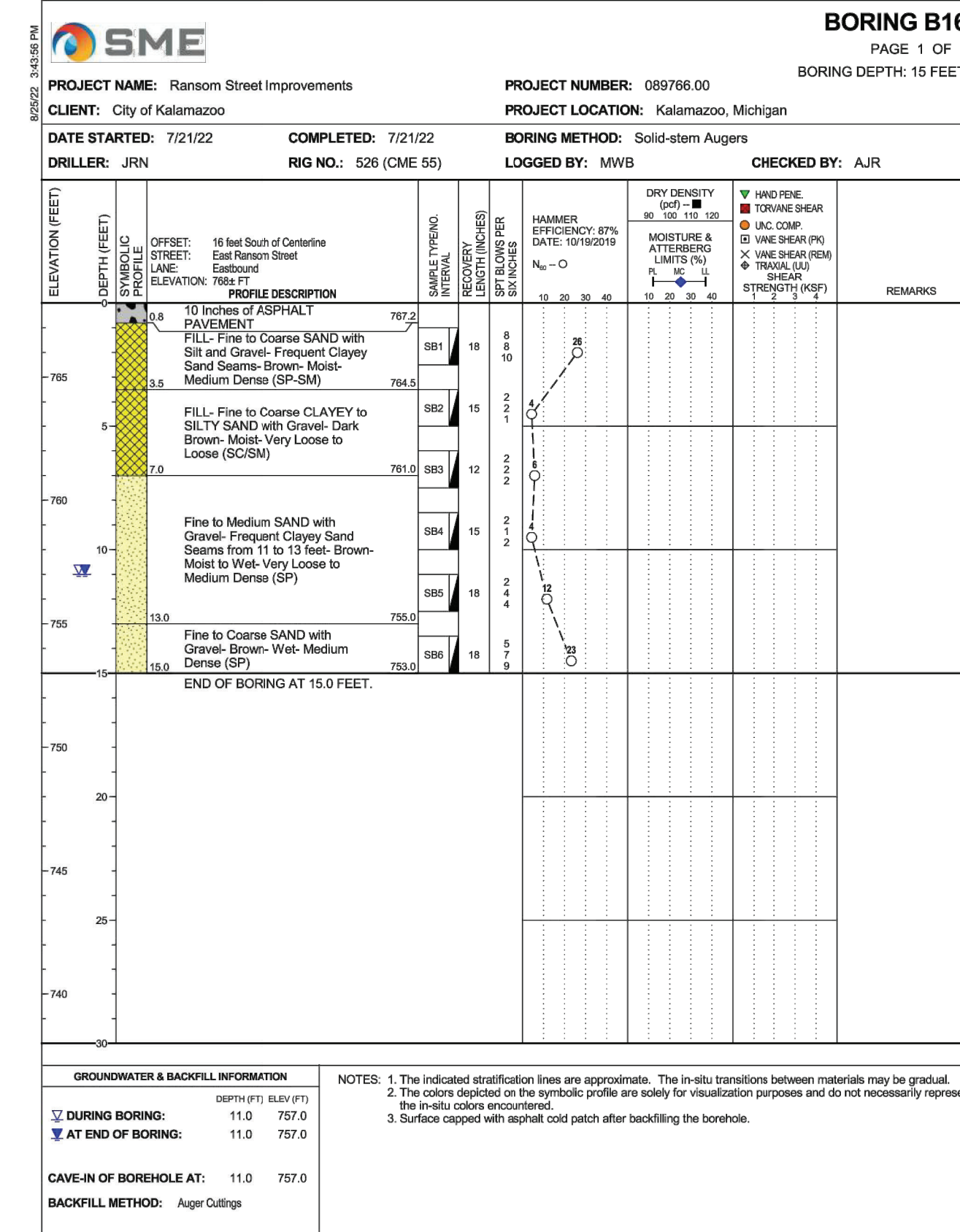
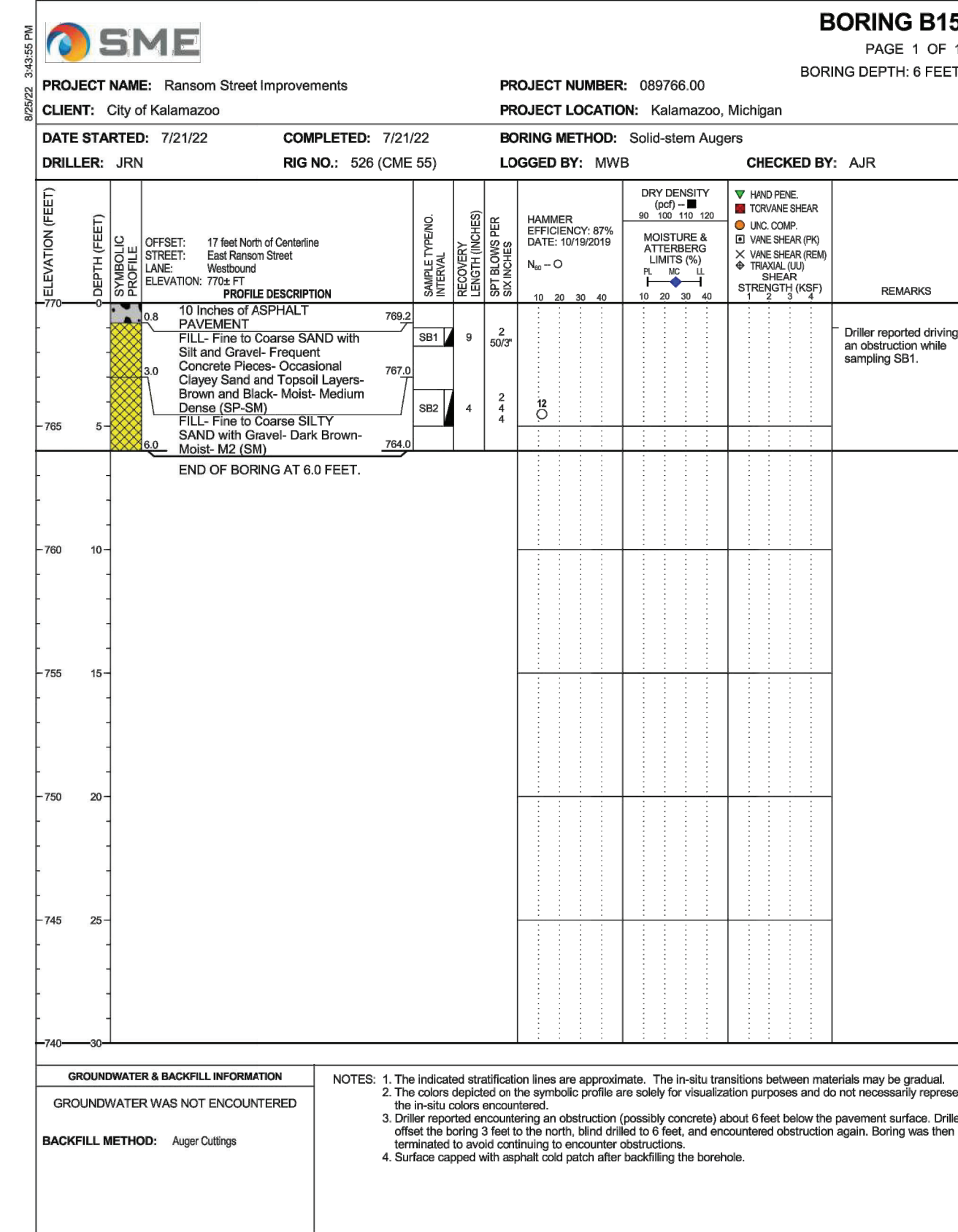
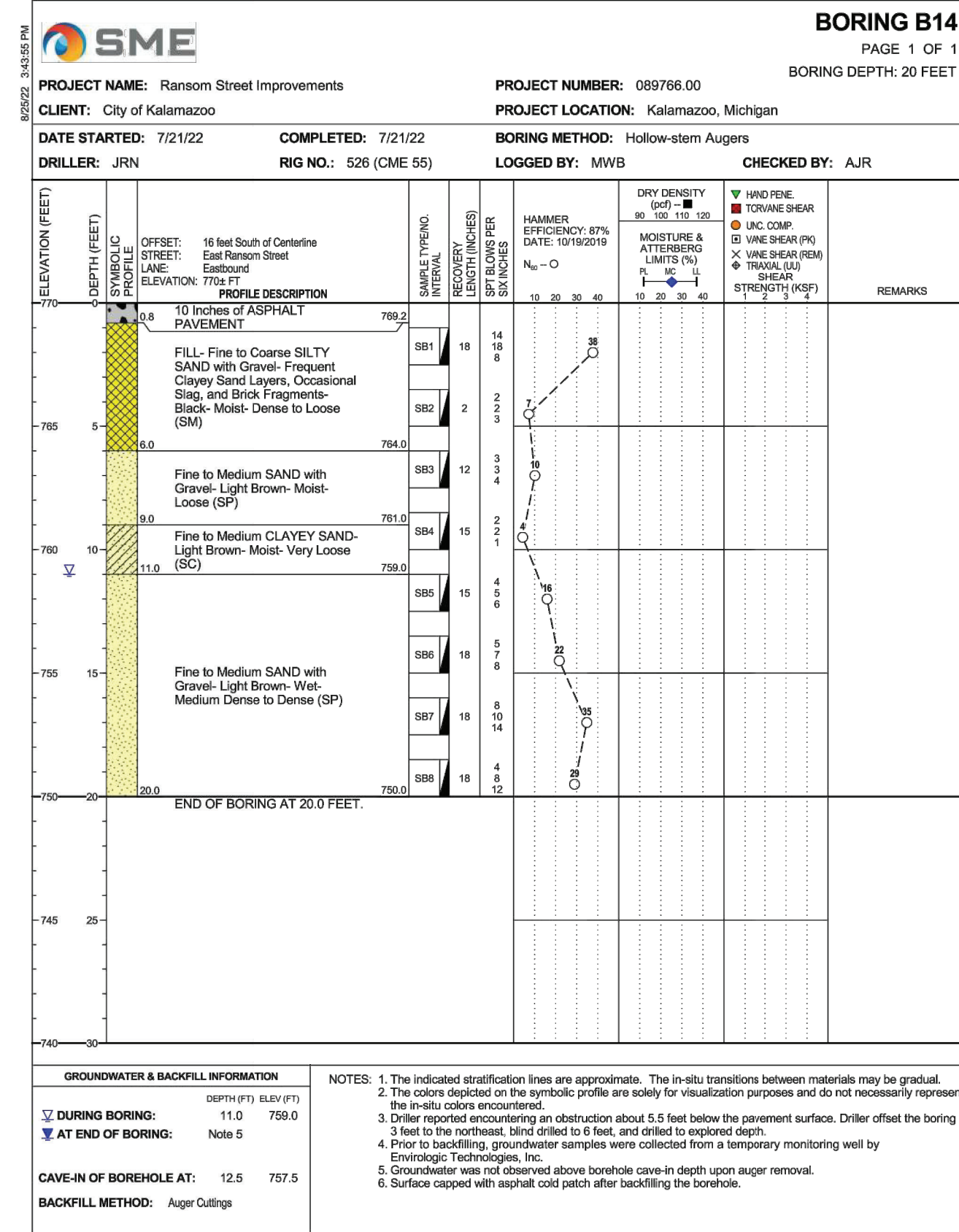
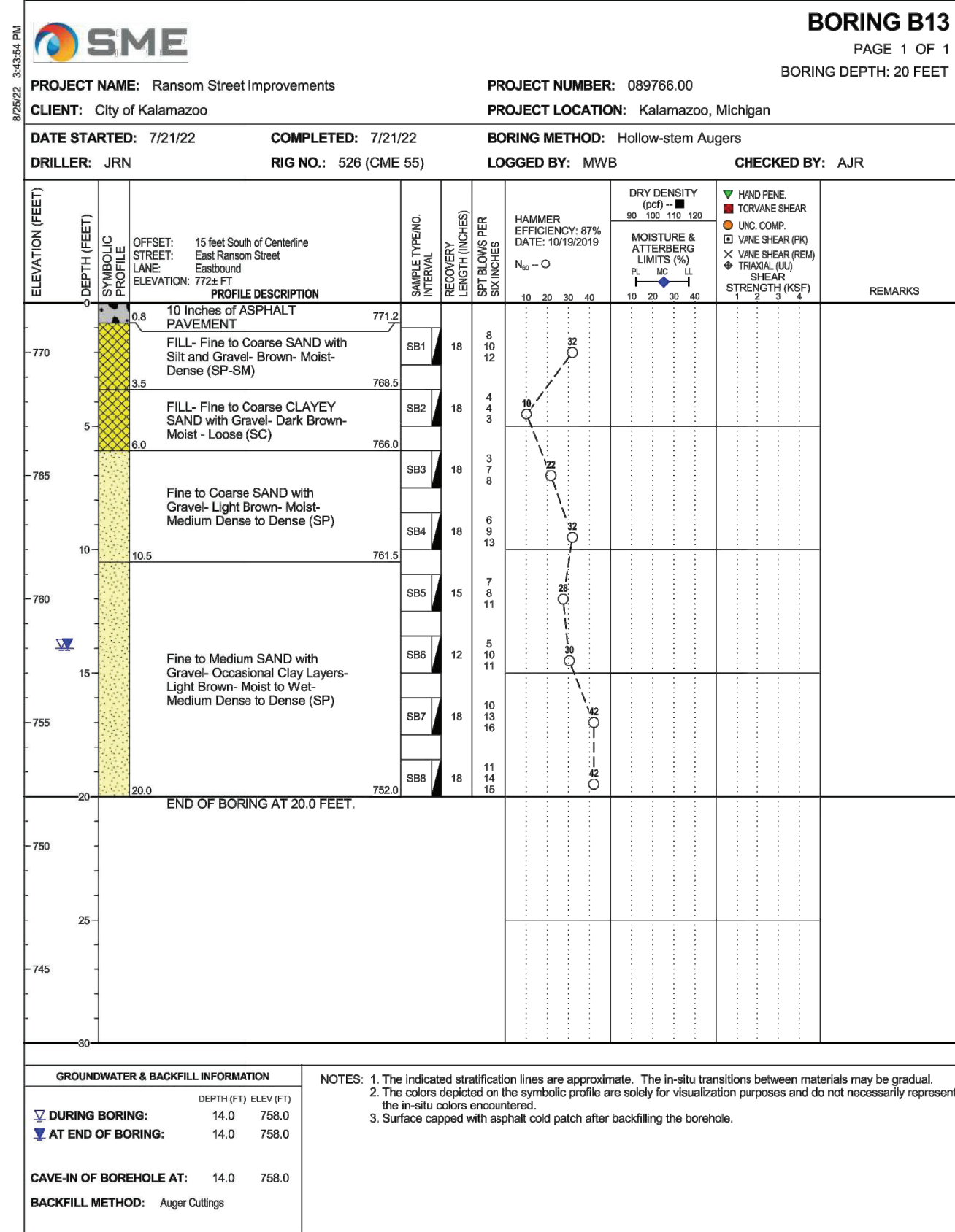
NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22

ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 269.927.2295
 info@abonmarche.com
 Engineering - Architecture - Land Surveying
 Lorraine
 Portage
 South Bend
 Haven
 Hobart
 Valparaiso

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

PROPOSED ROADWAY CROSS SECTIONS - 2

SHEET TITLE:
 PROJECT:
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:
 SIGNATURE:
 DATE:
 SCALE:
 HORZ: 1" = 20'
 VERT: 1" = 5'
 ACI JOB #
22-0031
 SHEET NO. **4 of 52**



**RANSOM STREET IMPROVEMENTS
CITY OF KALAMAZOO**

PROJECT:

SOIL BORING MAP

SHEET TITLE:

DRAWN BY: DJL
DESIGNED BY: MJS/ERF
PM REVIEW: DAD
QA/QC REVIEW:
DATE: JANUARY 2023
SEAL:

SIGNATURE:

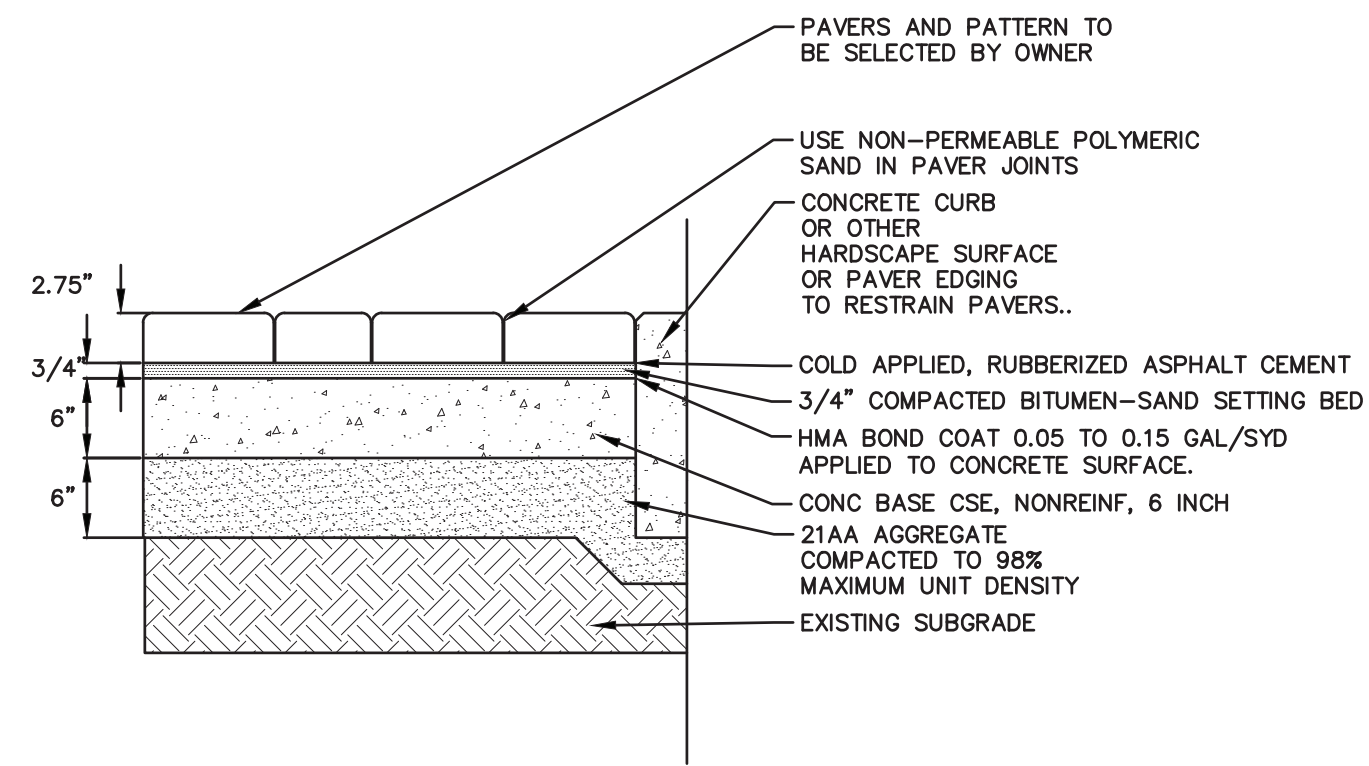
DATE:

SCALE:
HORIZ: N/A
VERT: N/A

ACI JOB #
22-0031

SHEET NO.
7 of 52

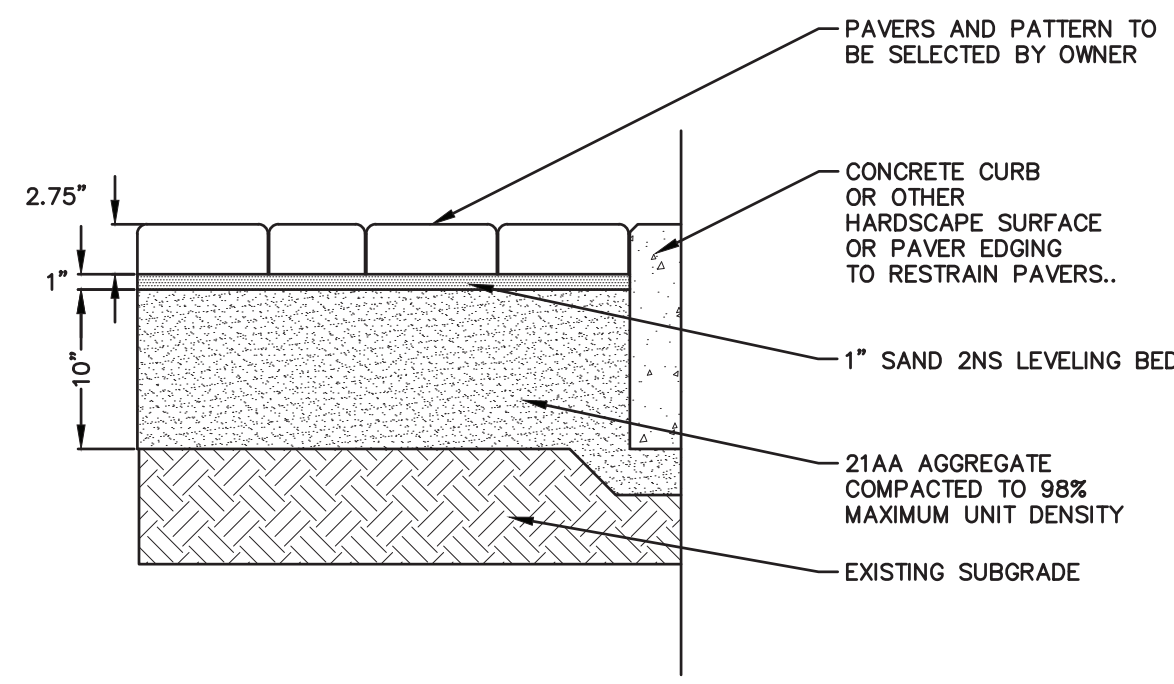
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:



- NOTE:**
- DETAIL B SHALL BE USED IN AREAS WITHOUT ADJACENT FULL HEIGHT CURBS, SUSCEPTIBLE TO VEHICULAR OFF-TRACKING, AS CALLED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
 - BOND COAT, BITUMEN-SAND BED, RUBBERIZED ASPHALT CEMENT, AND POLYMERIC JOINTING SAND ARE INCLUDED IN PAYMENT FOR ITEM "BRICK PAVERS, ASPHALT BED, SALVAGED"

BRICK PAVERS, ASPHALT BED, SALVAGED DETAIL
NOT TO SCALE

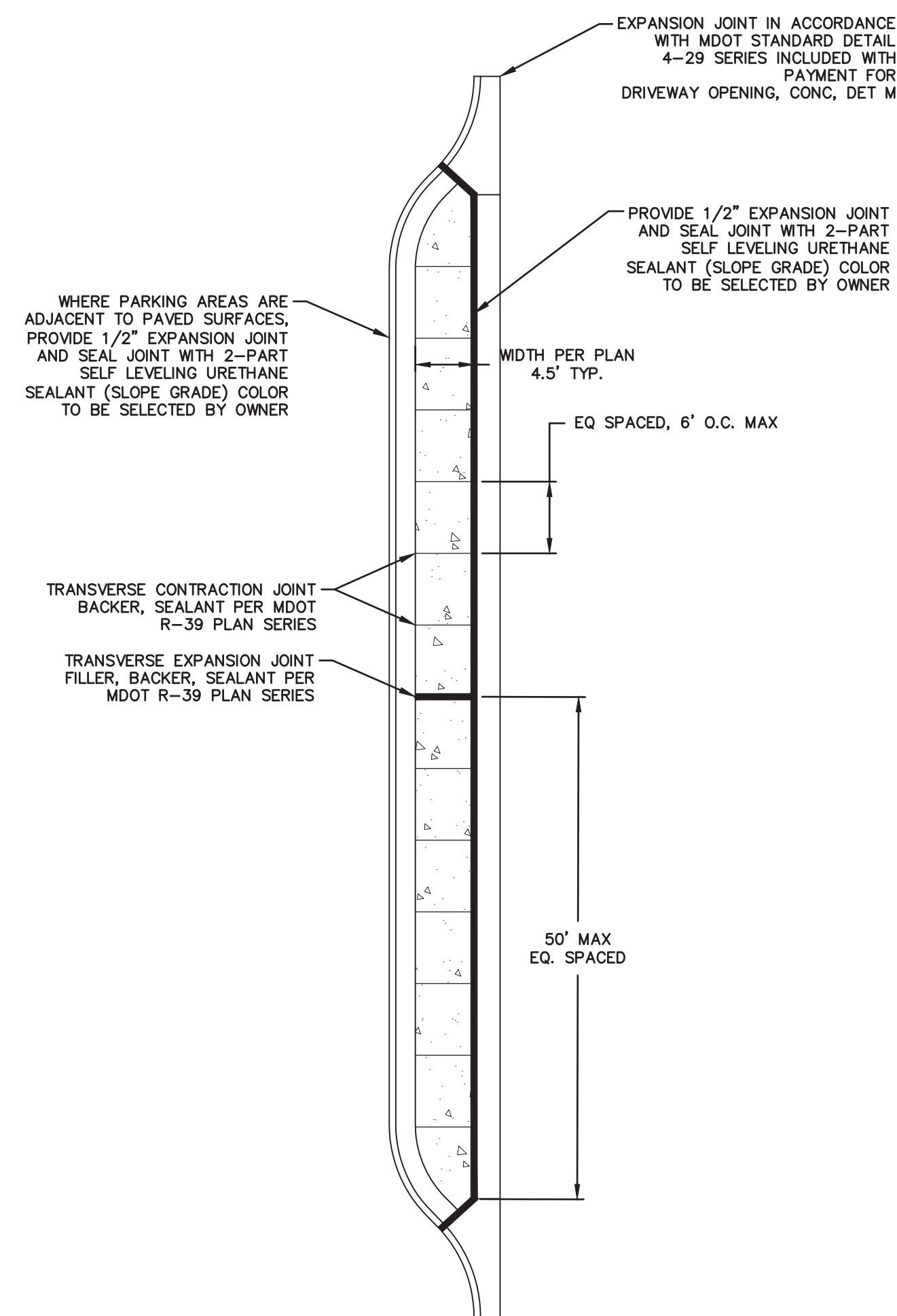
The following quantities are paid per square yard of "Brick Pavers, Asphalt Bed, Salvaged" as called on the plans.		
Item Description	Unit	QTY
Aggregate Base, 6 inch	Syd	1
Conc Base Cse, Nonreinf, 6 inch	Syd	1
Brick Pavers, Asphalt Bed, Salvaged	Sft	9



- NOTE:**
- DETAIL A SHALL BE USED IN AREAS WITH ADJACENT FULL HEIGHT CURBS, THAT ARE NOT SUSCEPTIBLE TO VEHICULAR OFF-TRACKING, AS CALLED ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
 - LEVELING SAND BED, GEOTEXTILE SEPARATOR, AND POLYMERIC JOINTING SAND ARE INCLUDED IN PAYMENT FOR ITEM "BRICK PAVERS, SAND BED, SALVAGED"

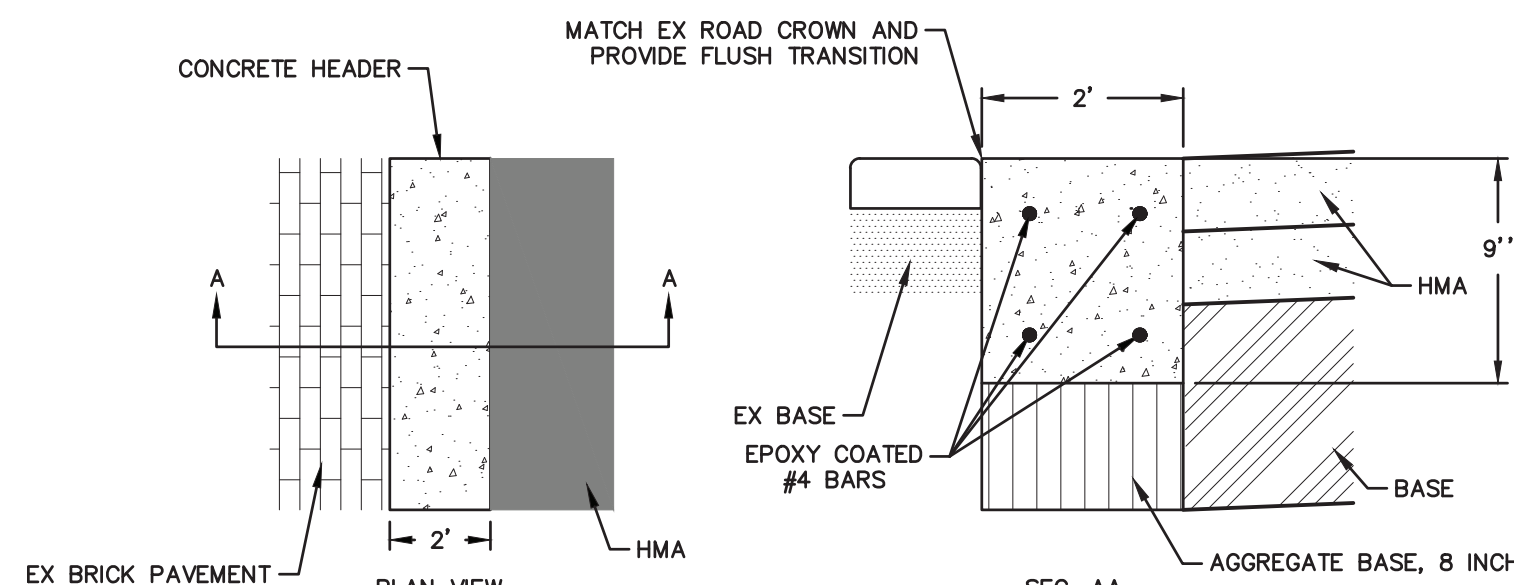
BRICK PAVERS, SAND BED, SALVAGED DETAIL
NOT TO SCALE

The following quantities are paid per square yard of "Brick Pavers, Sand Bed, Salvaged" as called on the plans.		
Item Description	Unit	QTY
Aggregate Base, 10 inch	Syd	1
Brick Pavers, Sand Bed, Salvaged	Sft	9

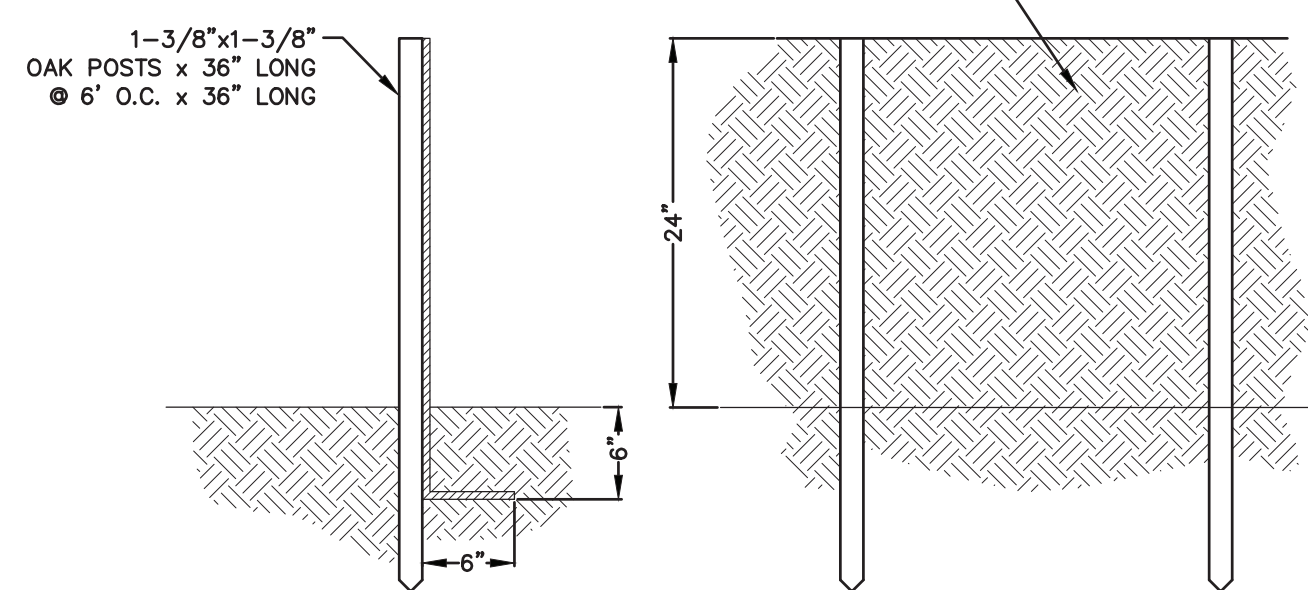


CONCRETE PAVT. NONREINF. INCH JOINTING
NOT TO SCALE

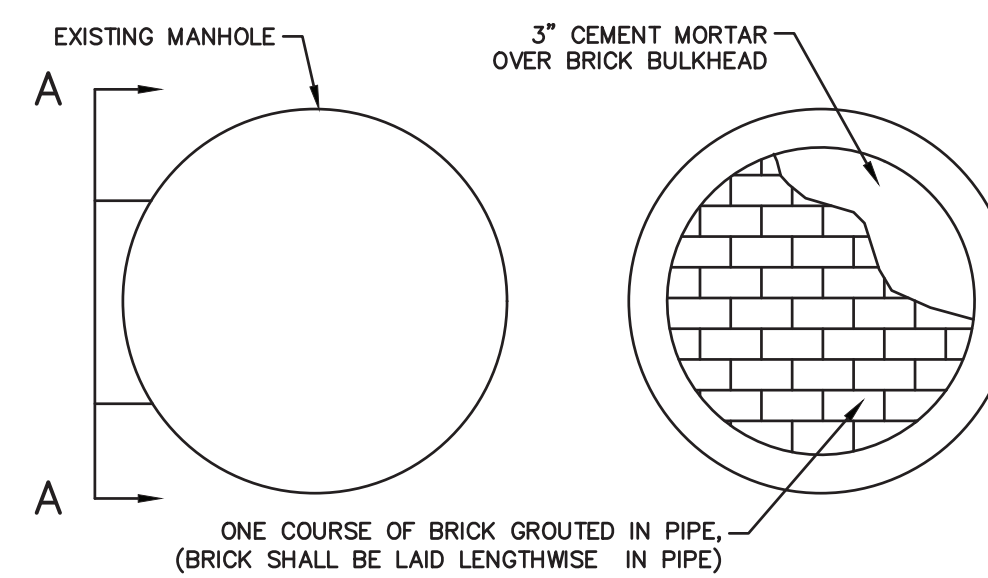
- NOTE:**
- CONTRACTION JOINTS MAY BE TOOLED DURING FINISHING. ENSURE 1/4 SLAB THICKNESS IS ACHIEVED IN THE GROOVE DEPTH.
 - EXPANSION JOINTS SHALL BE INTEGRALLY CAST WITH THE SLAB.



BRICK HEADER, CONC DETAIL
NOT TO SCALE



SILT FENCE
NOT TO SCALE



BULKHEAD DETAIL
NOT TO SCALE

STANDARD LEGEND

- = CATCH BASIN
- = CURB CATCH BASIN
- ⊕ = ELECTRIC LOCATION
- _{EMH} = ELECTRIC MANHOLE
- ⊕_{EM} = ELECTRIC METER
- ⊕_{FL} = FLAG POLE
- ⊕_{FMON} = FOUND MONUMENT
- ⊕_{FIP} = FOUND IRON PIPE
- ⊕_{FR} = FOUND IRON ROD
- ⊕_X = FOUND X
- ⊕ = GAS LOCATION
- _{GMH} = GAS MANHOLE
- ⊕_G = GAS METER
- ⊕_G = GAS VALVE
- _{MH} = GENERAL MANHOLE
- = GUARD POST
- + = GUARDRAIL
- +⊕ = GUY POLE
- = GUY WIRE
- ⊕_{LP} = LIGHT POLE
- ⊕_{MP} = MAIL BOX
- ⊕_{PP} = POWER POLE
- ⊕_{PP/D} = POWER POLE W/DROP
- ⊕_{SC} = SANITARY CLEANOUT
- _{SMH} = SANITARY MANHOLE
- ⊕_{SIR} = SET IRON ROD
- ⊕ = SIGN POST
- _{SBX} = SOIL BORING LOCATION
- _{STMH} = STORM MANHOLE
- + = STREET SIGN
- ⊕ = TELEPHONE LOCATION
- _{TMH} = TELEPHONE MANHOLE
- ⊕_{TP} = TELEPHONE POLE
- = TRAFFIC SIGN
- ⊕_{UP} = UTILITY POLE
- ⊕_{UP/D} = UTILITY POLE W/DROP
- ⊕_{UP/L} = UTILITY POLE W/STREET LIGHT
- ⊕_{CS} = WATER CURB STOP
- ⊕ = EXISTING WATER MAIN
- ⊕ = EXISTING SANITARY SEWER
- ⊕ = EXISTING STORM SEWER
- ⊕ = OVERHEAD UTILITIES
- ⊕ = GAS MAIN/LINE
- ⊕ = BURIED TELEPHONE
- ⊕ = BURIED FIBER OPTIC
- ⊕ = ELECTRICAL
- ⊕ = BURIED ELECTRICAL
- ⊕ = CHAINLINK FENCE
- ⊕ = WIRE FENCE
- ⊕ = WOOD FENCE
- ⊕ = PROP WATER MAIN
- ⊕ = PROP WATER SERVICE
- ⊕ = PROP SANITARY SERVICE
- ⊕ = PROP STORM SERVICE
- ⊕ = RIGHT OF WAY
- ⊕ = UTILITY REMOVAL

GENERAL NOTES:

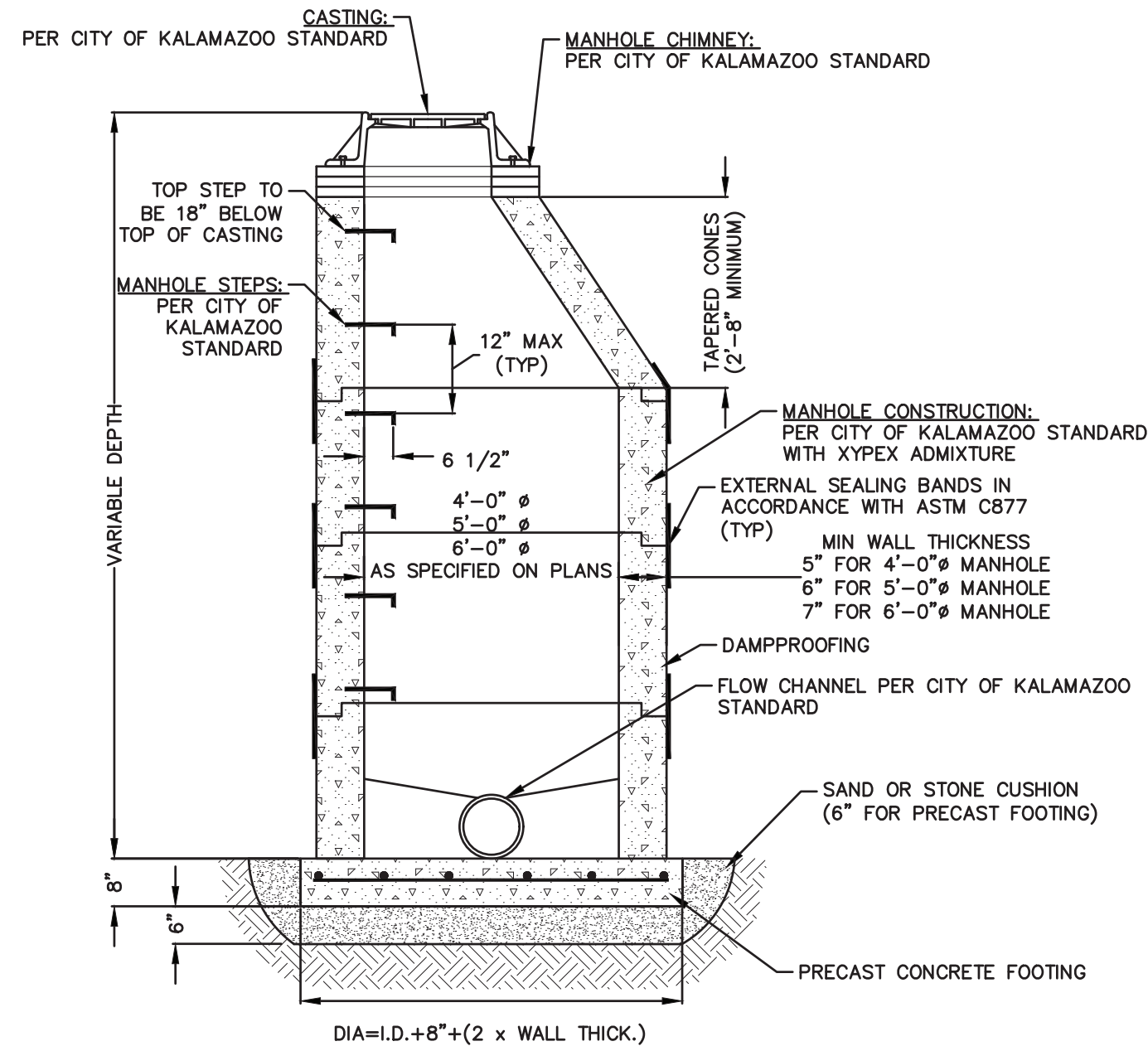
- MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, 2020 EDITION SHALL PREVAIL, UNLESS INDICATED OTHERWISE.
- THREE WORKING DAYS PRIOR TO CONSTRUCTION THE CONTRACTOR SHALL REQUEST THE LOCATIONS OF ALL UTILITIES BY CALLING MISS DIG. NO EXCAVATION IS TO BE PERFORMED UNTIL CLEARED.
- A MINIMUM OF 18" VERTICAL CLEARANCE IS REQUIRED WHERE:
 - WATER MAIN AND SANITARY SEWER CROSS
 - WATER MAIN AND STORM SEWER CROSS
- A MINIMUM OF 10' HORIZONTAL SEPARATION BETWEEN THE OUTSIDE OF PIPES OR MANHOLE STRUCTURES SHALL BE MAINTAINED WHERE WATER MAINS AND SEWERS.
- ALL TRENCH AND BEDDING SPECIFIED SHALL BE PER MDT STANDARD PLAN R-83-C, DETAIL B OR G.
- ANY EXCESS/UNSUITABLE MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR AND THEY SHALL BE RESPONSIBLE FOR THE PROPER DISPOSAL OF THIS MATERIAL.
- DEWATERING, IF REQUIRED, SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND NO EXTRA PAYMENT SHALL BE MADE THEREFORE.
- THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH "AS-RECORDED" DRAWINGS OF THE SEWERS UPON COMPLETION OF THE PROJECT.
- THE ENGINEER SHALL PROVIDE CONSTRUCTION STAKING AS DEFINED IN THE SPECIFICATIONS.
- WHEN LOWERING OF ROADWAY RESULTS IN INSUFFICIENT COVER (LESS THAN 4') OVER EXISTING WATER MAIN, INSULATION SHALL BE UTILIZED AS DIRECTED BY THE ENGINEER. PAYMENT SHALL BE INCLUDED WITH SEWER CONSTRUCTION.
- TREES NOT DESIGNATED FOR REMOVAL SHALL BE PROTECTED BY THE CONTRACTOR. DAMAGED TREES SHALL BE RESTORED TO THE ORIGINAL CONDITION AT THE CONTRACTORS EXPENSE. ALL TREES DAMAGED BEYOND SAVING AS DETERMINED BY THE ENGINEER SHALL BE REMOVED AND REPLACED WITH A NURSERY GROWN TREE AS SPECIFIED BY THE ENGINEER.
- REMOVED MANHOLE COVERS AND RIMS SHALL BECOME THE PROPERTY OF THE CITY OF KALAMAZOO AND SHALL BE DELIVERED TO THE CITY DEPT. OF PUBLIC WORKS AREA.
- REMOVAL OF ABANDONED CONFLICTING UTILITIES SHALL BE CONSIDERED INCLUDED WITH THE ITEM BEING CONSTRUCTED, INCLUDING BULKHEADING ALL PIPES 12" DIA. OR LESS (PIPES IN EXCESS OF 12" DIA. SHALL BE PAID FOR AS A SEWER BULKHEAD).
- FITTINGS, PIPE EXTENSIONS AND APPURTENANCES NECESSARY TO CONNECT EXISTING PIPES TO PROPOSED MANHOLES, SHALL BE INCLUDED IN THE UNIT PRICE FOR THE PROPOSED STRUCTURE.
- FITTINGS AND APPURTENANCES NECESSARY TO CONNECT EXISTING PIPES TO PROPOSED PIPES, SHALL BE INCLUDED IN THE UNIT PRICE FOR THE PROPOSED PIPE.
- PIPES DESIGNATED FOR REMOVAL MAY BE FILLED WITH FLOWABLE FILL AND REMAIN IN PLACE.
- WHERE PAVED SURFACES ARE ADJACENT TO THE BACK OF CURB, A 1/2" EXPANSION JOINT SHALL BE PLACED BETWEEN THE CURB AND SIDEWALK. PAYMENT IS INCLUDED IN CONCRETE SIDEWALK.
- CONCRETE WALKS, STEPS, ETC. REQUIRING REPLACEMENT SHALL BE PAID AS CONCRETE SIDEWALK.

ROADWAY:

- BACKFILL MATERIAL WITHIN THE ZONE OF INFLUENCE OF A ROADWAY SHALL BE CLASS II SAND COMPACTED TO A MINIMUM OF 95% OF MAXIMUM DRY DENSITY IN 12" MAXIMUM LIFTS.
- DRIVEWAY OPENINGS SHALL BE MDT TYPE L OR M PER STANDARD PLAN R-29-D.
- PAVEMENT DESIGNATED FOR REMOVAL SHALL BE SAWCUT FULL DEPTH AT REMOVAL LIMITS PRIOR TO REMOVAL.

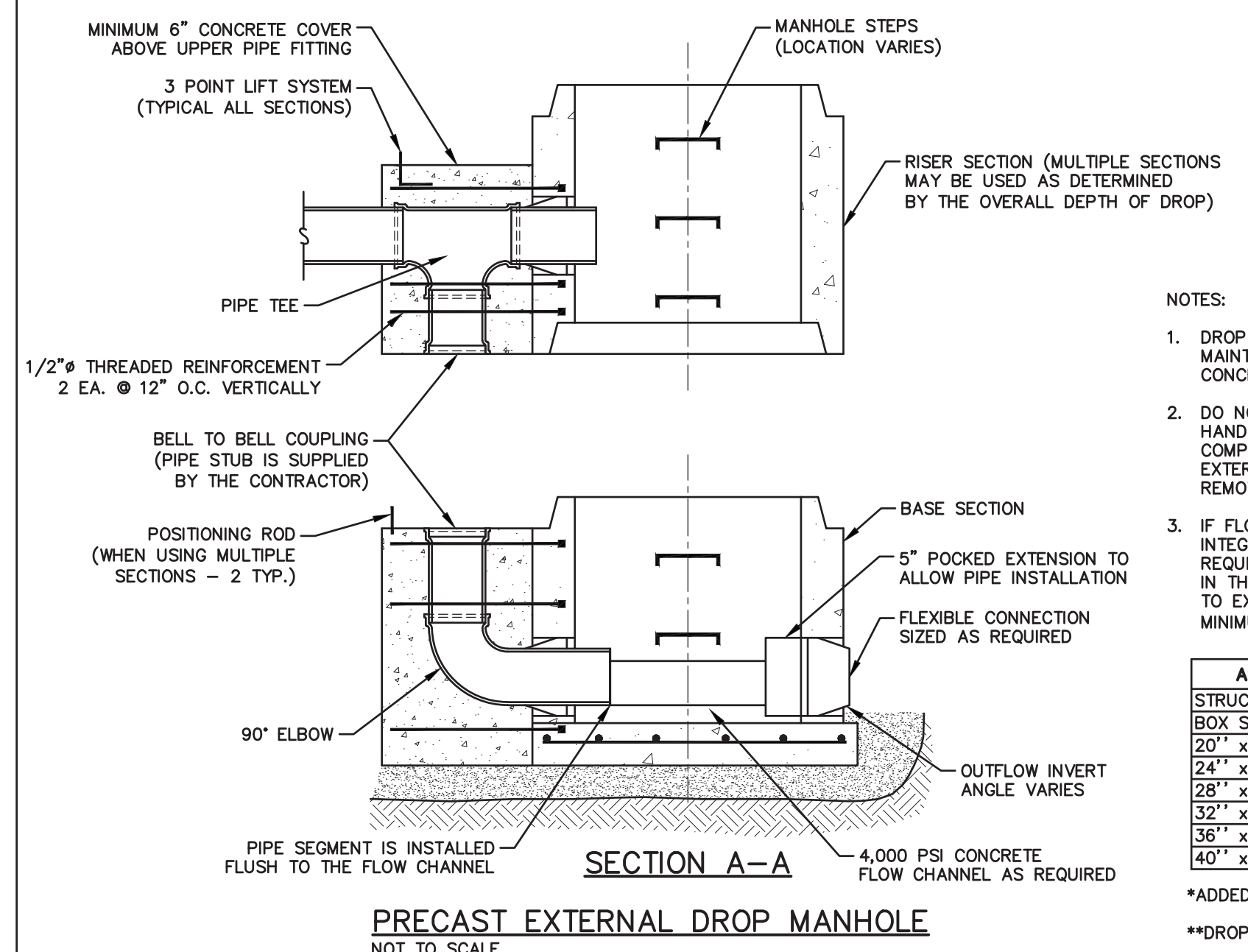
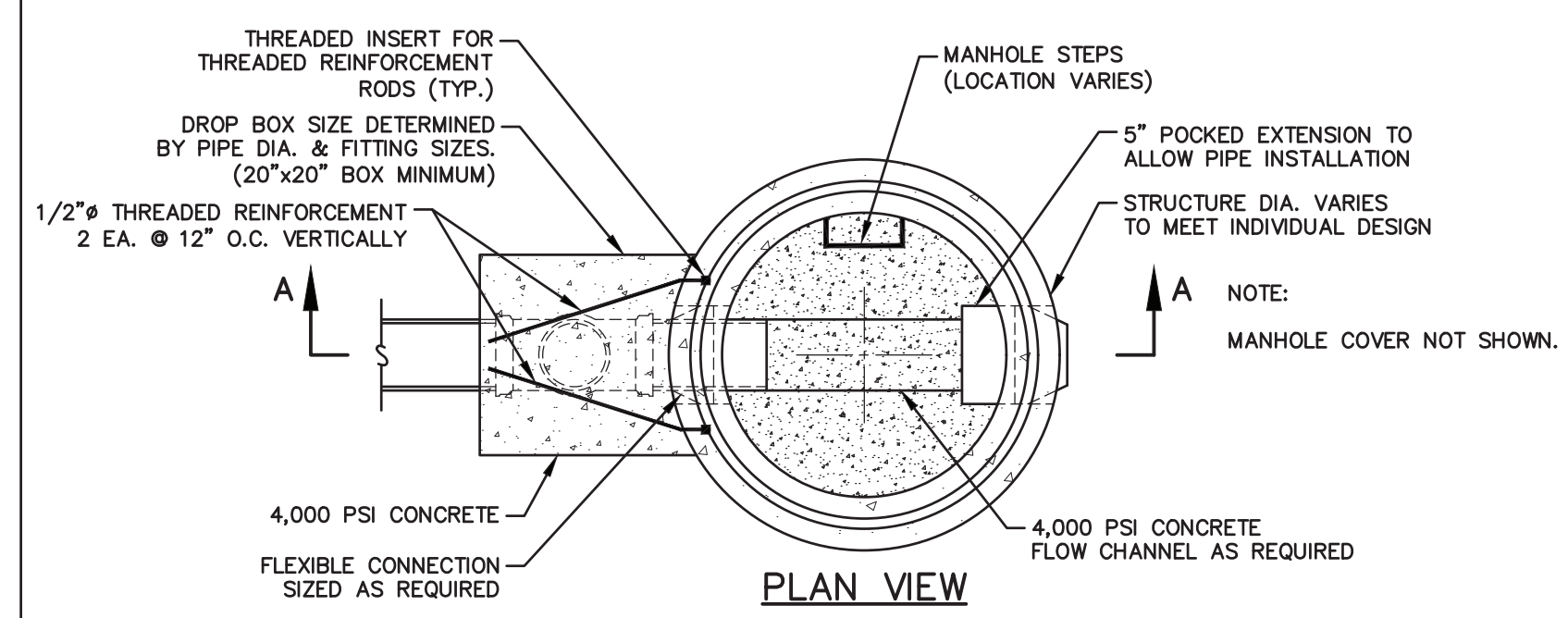
MISCELLANEOUS QUANTITIES		
THE FOLLOWING ITEMS SHALL BE DONE AS THEY APPLY THROUGHOUT THE PROJECT AS DIRECTED BY THE ENGINEER. THESE ITEMS ARE NOT DETAILED OR INCLUDED ON THE PLAN SHEETS.		
Description	Units	Quantity
Railroad Est. Cost to Contractor	Dlr	230000
Mobilization, Max \$1,000,000	LSUM	1
Exploratory Investigation, Vertical	Ft	100
Subgrade Undercutting, Type II	Cyd	100
Pipe Cradle, Flowable Fill	Cyd	15
Trench Undercut and Backfill	Cyd	50
Video Taping Sewer and Culv Pipe	Ft	2876
Joint, Contraction, C3p	Ft	1000
Joint, Expansion, E4	Ft	2000
Cement	Ton	5
Pedestrian Path, Temp	Ft	8000
Pedestrian Ramp, Temp	Ea	72
Water Main, 8 inch, Cut and Plug	Ea	7
Water Main, 10 inch, Cut and Plug	Ea	2
Water Main, 12 inch, Cut and Plug	Ea	2
Water Main, Insulate	Ft	160
Curb Stop and Box, Install	Ea	18
Inline Water Valve, Temp, 10 inch	Ea	6
Inline Water Valve, Temp, 12 inch	Ea	3
Inline Water Valve, Temp, 4 inch	Ea	4
Inline Water Valve, Temp, 6 inch	Ea	10
Inline Water Valve, Temp, 8 inch	Ea	12
Meter Vault, 1.25 inch	Ea	18
Water Serv, 1.25 inch, Install	Ea	9
Water Serv, Long, 1.25 inch, Install	Ea	9
Sanitary Sewer, Serv Lead, Building Inspection	Ea	15

3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:



- MANHOLE NOTES:**
- STEPS SHALL BE OF AN APPROVED DESIGN, MADE OF CAST IRON, ALUMINUM, OR PLASTIC COATED STEEL. RUNGS SHALL BE A MINIMUM OF 10" CLEAR LENGTH, DESIGNED TO PREVENT THE FOOT FROM SLIPPING OFF THE END AND CAPABLE OF SUPPORTING 300 POUNDS.
 - THE TOP PORTION OF THE PRECAST REINFORCED UNITS SHALL BE ECCENTRIC.
 - RESILIENT CONNECTIONS PER ASTM C923 SHALL BE USED FOR ALL PIPE ENTERING/EXITING THE MANHOLE.

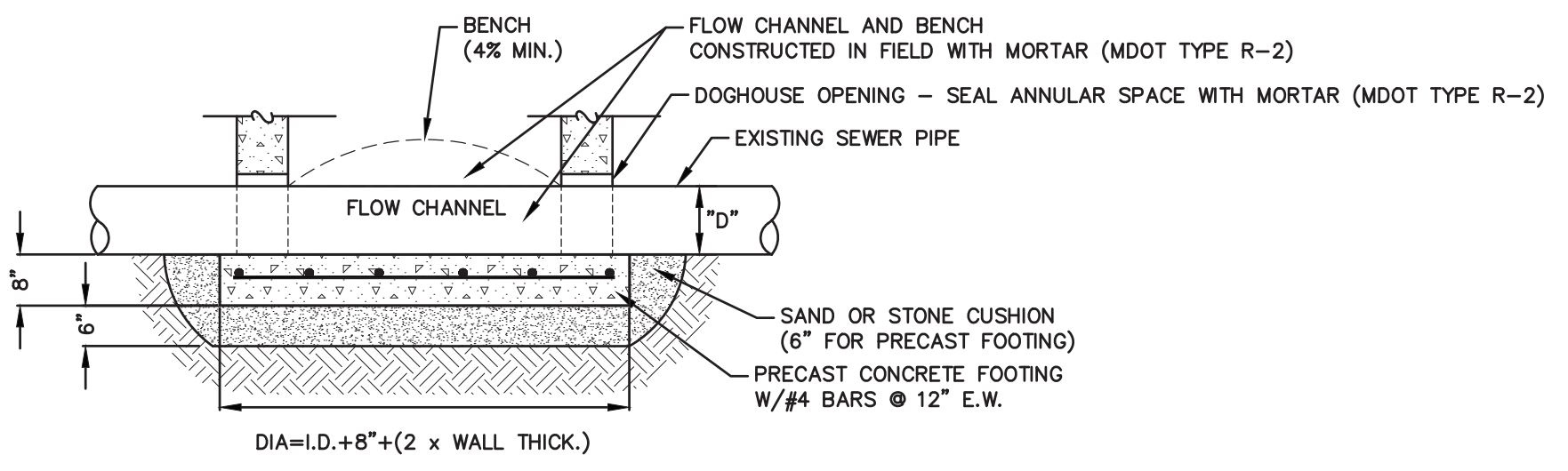
STANDARD SANITARY MANHOLE
NOT TO SCALE



- NOTES:**
- DROP PIPE IS TIED TO REINFORCING RODS TO MAINTAIN PROPER PIPE ALIGNMENT WHEN THE CONCRETE BOX IS POURED.
 - DO NOT VIBRATE BOX. CONCRETE IS TO BE HAND TAMPED DURING POUR TO INSURE PROPER COMPRESSIVE STRENGTH. HAND TROWEL EXTERNAL SURFACES AFTER BOX FORM IS REMOVED.
 - IF FLOW CHANNEL IS NOT INDICATED, AN INTEGRAL BASE BOTTOM SECTION IS NOT REQUIRED FOR A PRECAST DROP CONNECTION; IN THE CASE, THE LOOSE BASE DIA. WOULD NEED TO EXTEND BEYOND THE DROP BOX BY A MINIMUM OF 4".

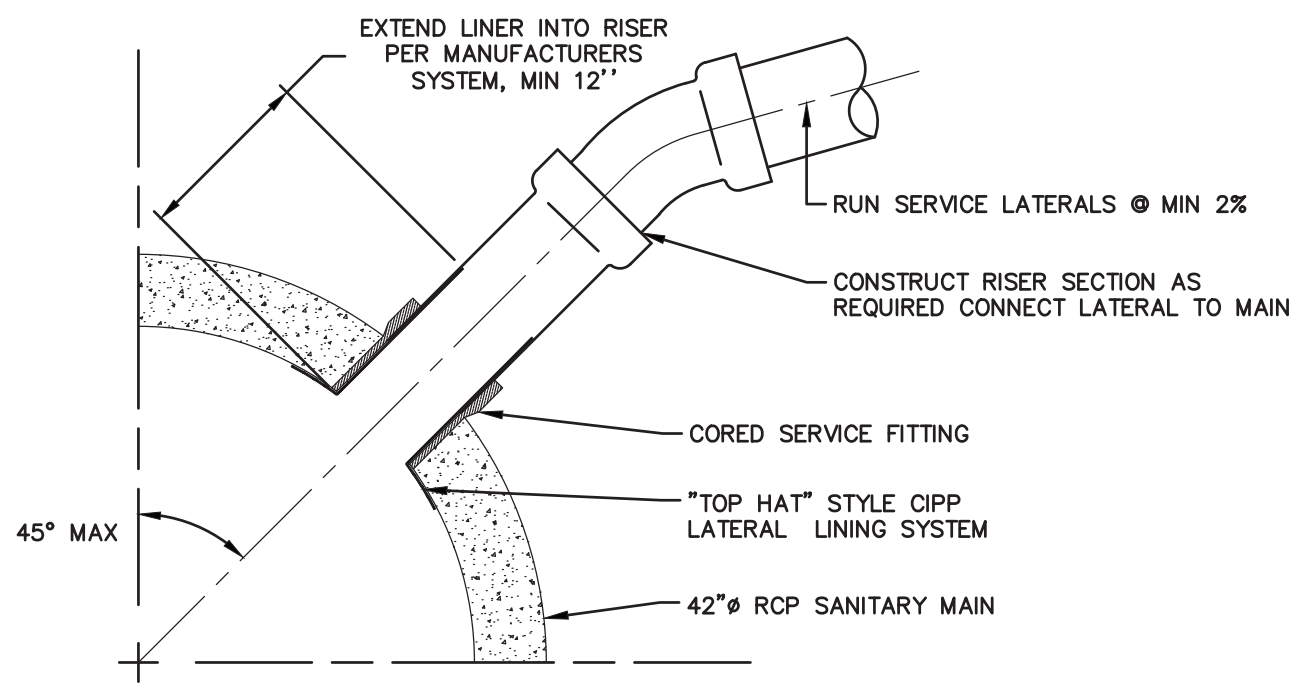
APPROX. BOX WEIGHTS (PER LINEAR FOOT)*					
STRUCTURE DIA.	48"	60"	72"	84"	96"
BOX SIZE **					
20" x 20"	410#	415#	420#	425#	425#
24" x 24"	575#	590#	595#	600#	605#
28" x 28"	770#	790#	805#	810#	820#
32" x 32"	1,020#	1,055#	1,075#	1,090#	1,100#
36" x 36"	N/A	1,260#	1,295#	1,315#	1,330#
40" x 40"	N/A	1,525#	1,575#	1,605#	1,630#

*ADDED TO INITIAL BASE AND/OR RISER WEIGHTS
**DROP BOX SIZE DETERMINED BY PIPE DIA. AND FITTING SIZES

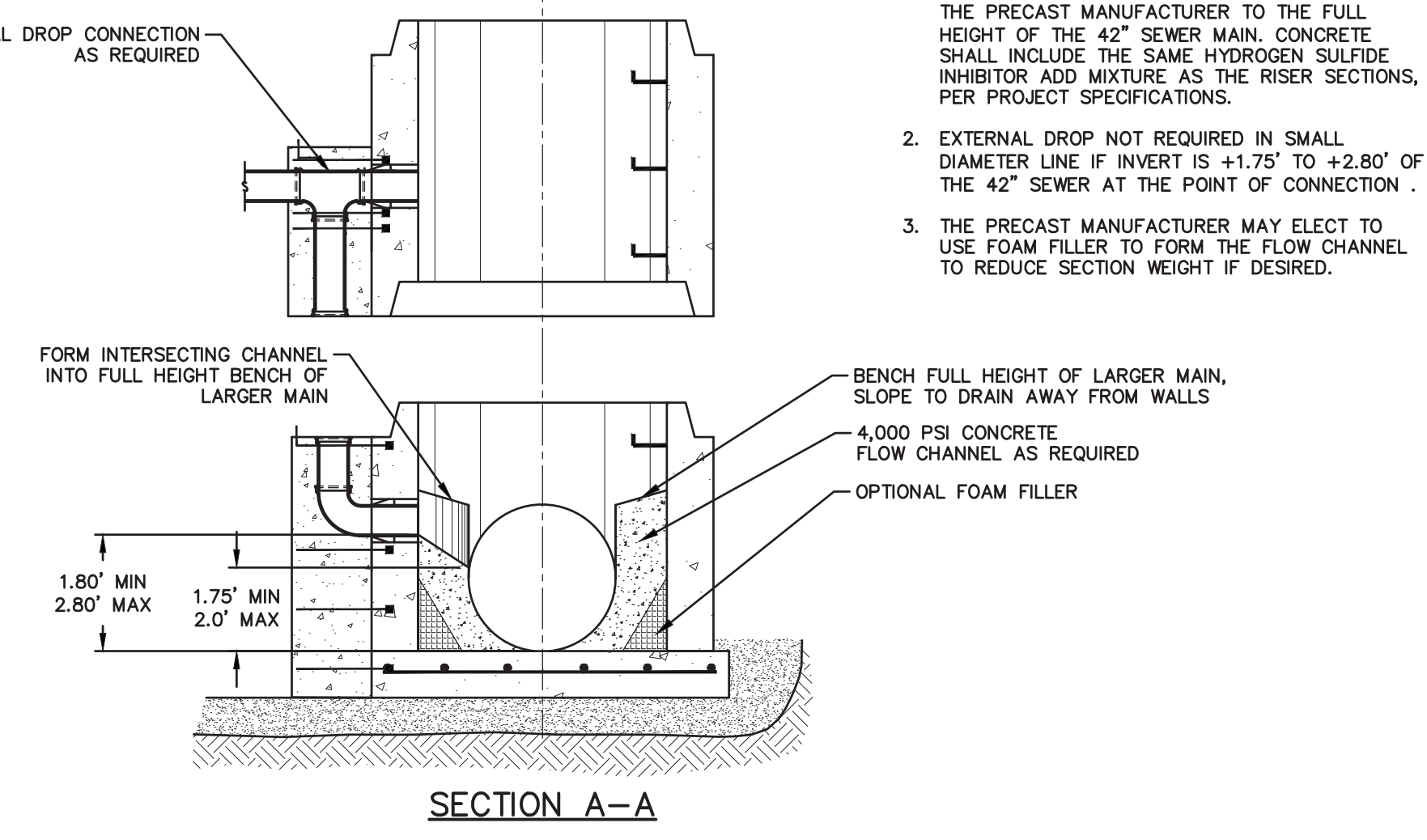
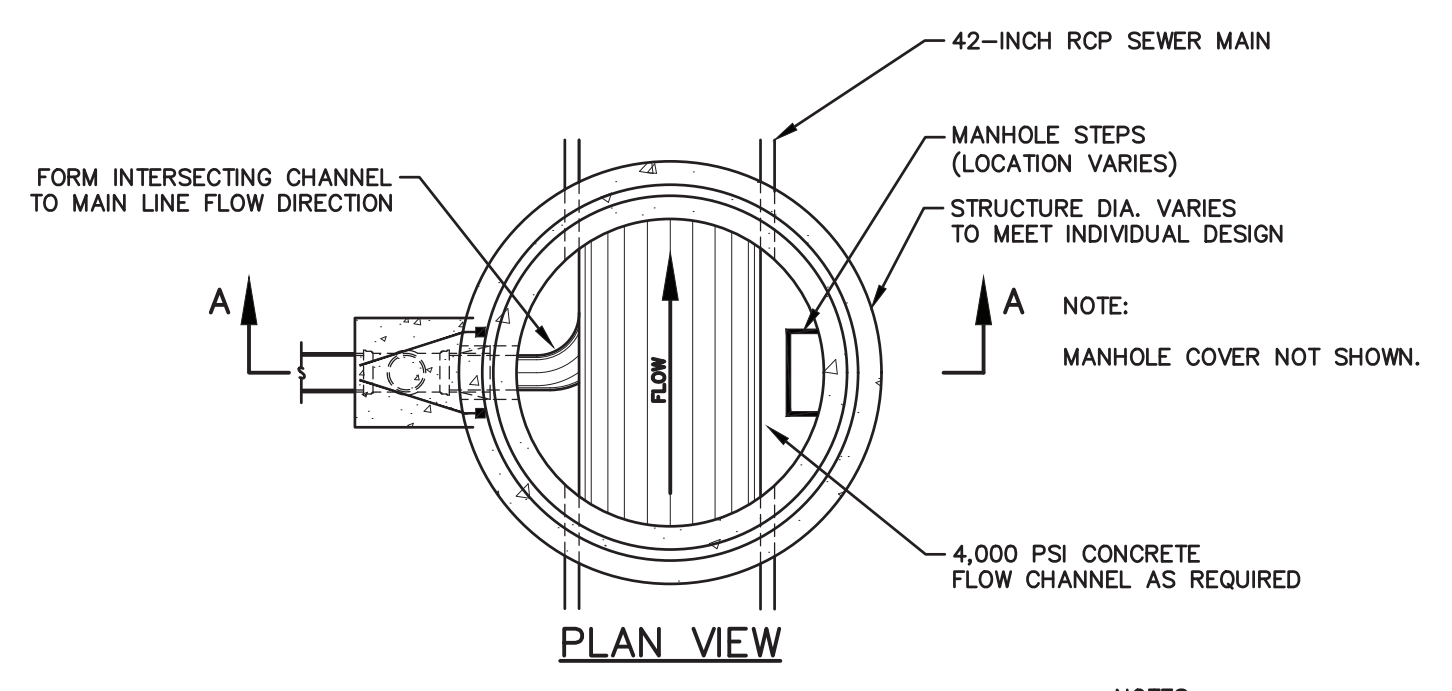


- MANHOLE NOTES:**
- STEPS SHALL BE OF AN APPROVED DESIGN, MADE OF CAST IRON, ALUMINUM, OR PLASTIC COATED STEEL. RUNGS SHALL BE A MINIMUM OF 10" CLEAR LENGTH, DESIGNED TO PREVENT THE FOOT FROM SLIPPING OFF THE END AND CAPABLE OF SUPPORTING 300 POUNDS.
 - THE TOP PORTION OF THE PRECAST REINFORCED UNITS SHALL BE ECCENTRIC.
 - RESILIENT CONNECTIONS PER ASTM C923 SHALL BE USED FOR ALL PIPE ENTERING/EXITING THE MANHOLE.

DOGHOUSE SANITARY MANHOLE
NOT TO SCALE



SANITARY SEWER SERVICE TAP TO 42-INCH MAIN
NOT TO SCALE



8-12" SANITARY CONNECTION TO 42" DIAMETER MAIN
NOT TO SCALE

SANITARY SEWER:

THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE CITY TO REQUEST A SEWER TAP. THE CITY SHALL DETERMINE THE TIME & DURATION OF THE SHUTOFF.

SANITARY MANHOLE COVERS SHALL BE PAID AS SANITARY STRUCTURE COVER. MANHOLE CASTINGS SHALL DENOTE STORM SEWER, SANITARY SEWER OR WATER.

SANITARY LATERAL CONNECTIONS TO EXISTING OR ABANDONED SEWERS SHALL BE LOCATED BY THE CONTRACTOR AND CONNECTED TO THE SEWER AS DIRECTED BY THE ENGINEER. ANY LATERALS NOT SCHEDULED FOR REPLACEMENT OR RECONNECTION, DAMAGED BY THE CONTRACTOR'S OPERATIONS SHALL BE REPLACED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

SANITARY MANHOLE COVERS SHALL BE MDOT COVER Q, AS MODIFIED IN THE SPECIAL PROVISIONS.

EXTERIOR DROP CONNECTION SHALL BE UTILIZED WHEN DIFFERENCE BETWEEN SANITARY SEWER INVERTS IS 2' OR GREATER. THE ABOVE WORK WILL BE INCLUDED WITH SEWER CONSTRUCTION.

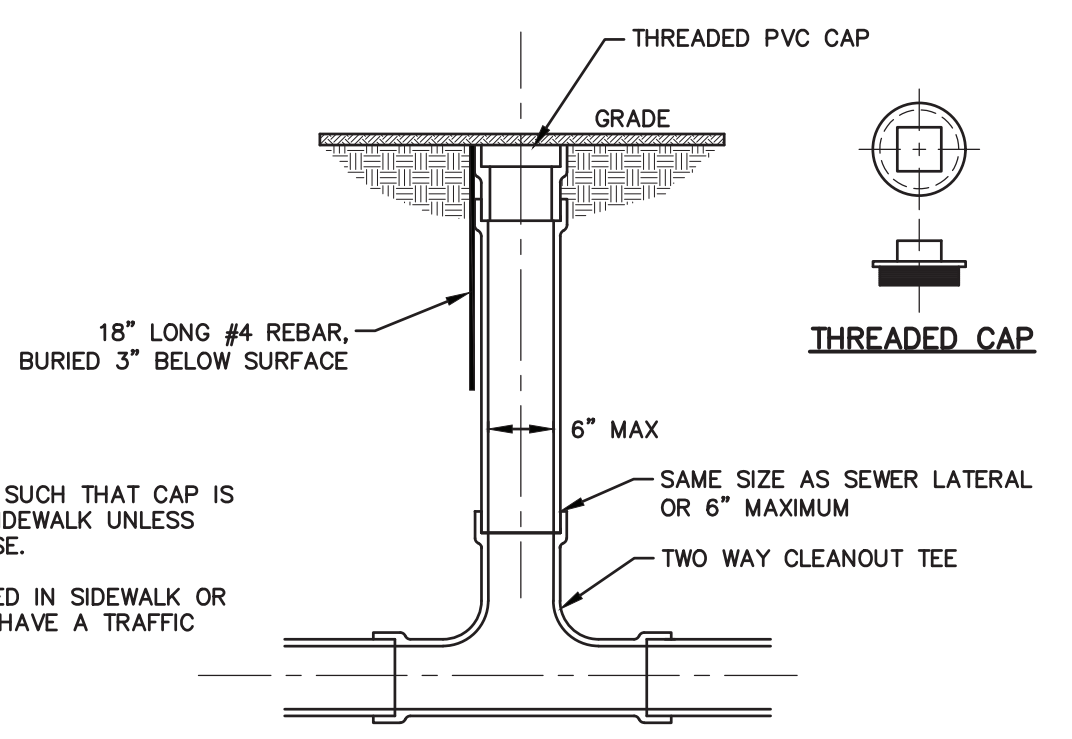
PROPOSED SANITARY MANHOLES SHALL BE 4 FEET IN DIAMETER UNLESS NOTED OTHERWISE.

SANITARY SERVICE CLEANOUTS SHALL BE INSTALLED WHERE NEW SERVICE LINES MEET EXISTING SERVICES AND AT BENDS/ GRADE CHANGES AS DIRECTED BY THE ENGINEER.

WHERE NEW SEWER IS TO REPLACE EXISTING SEWER IN THE SAME TRENCH REMOVAL OF EXISTING SEWER SHALL BE INCLUDED AS PART OF NEW SEWER ITEM.

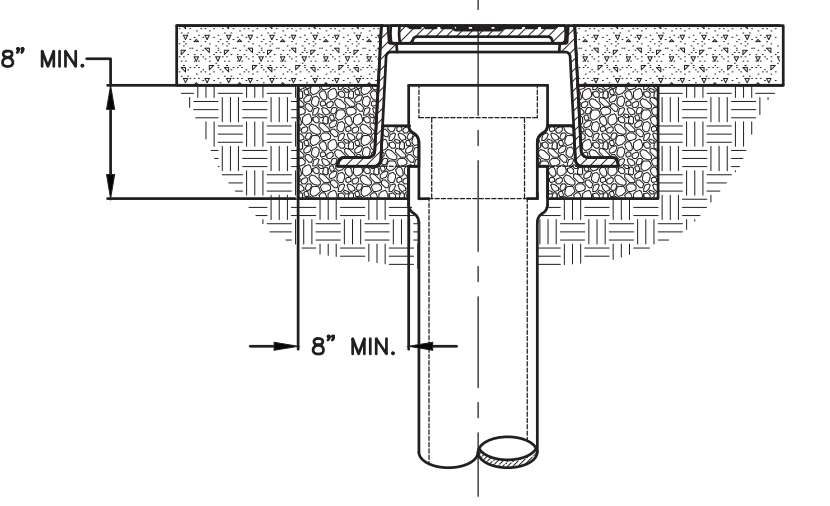
SANITARY SERVICE LATERALS INDICATED ON PLANS ARE BASED ON RECORD DRAWINGS AND AVAILABLE TELEVISIONING DATA. COORDINATE WITH CITY OF KALAMAZOO AND PROPERTY OWNER TO CONFIRM ACTIVITY OF SERVICE LATERALS DURING SEWER MAIN INSTALLATION. LATERAL INVESTIGATIONS WITHIN TRENCH ARE INCLUDED WITH PAYMENT FOR: "SANITARY SEWER, SERV LEAD, PVC, 6 INCH".

PERFORM INTERNAL BUILDING INSPECTION AND DYE TESTING AS DIRECTED BY THE ENGINEER. SANITARY SERVICE INVESTIGATIONS WITHIN BUILDINGS, INCLUDING DYE TESTING, WILL BE PAID FOR AS: "SANITARY SEWER, SERV LEAD, BUILDING INSPECTION".

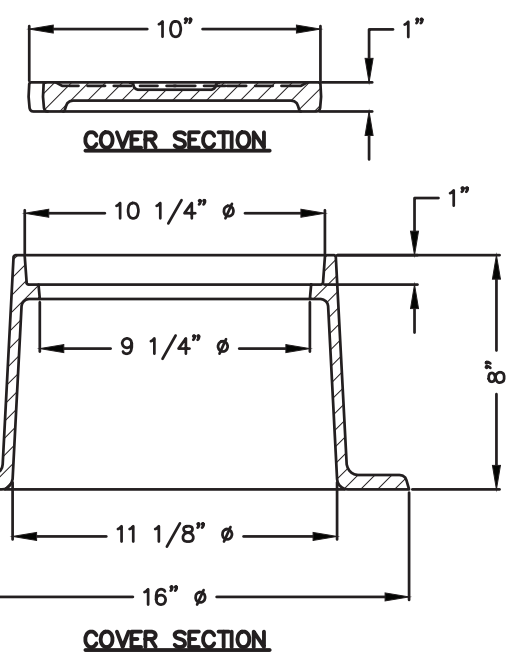
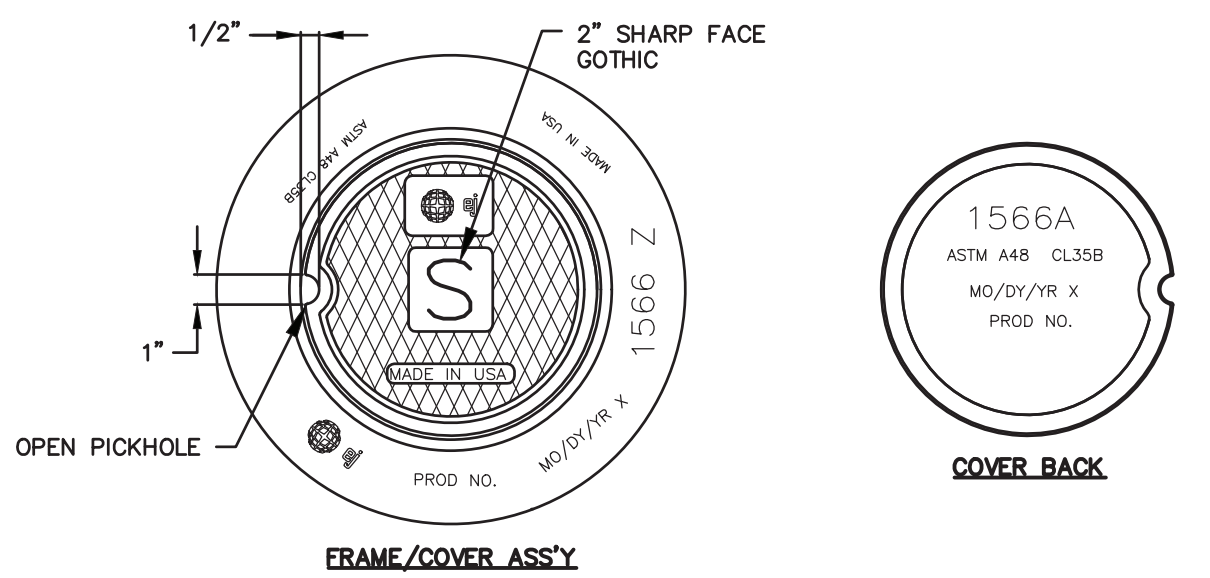


- NOTES:**
- LOCATE CLEANOUT SUCH THAT CAP IS NOT LOCATED IN SIDEWALK UNLESS DIRECTED OTHERWISE.
 - CLEANOUTS LOCATED IN SIDEWALK OR DRIVEWAYS SHALL HAVE A TRAFFIC BEARING CAP.

TYPICAL CLEANOUT DETAIL (TWO WAY)
NOT TO SCALE



SANITARY CLEANOUT COVER
NOT TO SCALE



3	ISSUED FOR BID	MJS	01/06/2023
	REVISED PER 3RD PERMIT SUBMITTAL	MJS	12/14/2022
	NOT REVISION DESCRIPTION:	MJS	11/8/22
		BY:	DATE:

ABONMARCHÉ
Engineering - Architecture - Land Surveying
195 West Main Street
Benton Harbor, MI 49023
T 269.927.2295
F 269.927.2295
abonmarche.com

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

SANITARY SEWER DETAILS

SHEET TITLE: **1566A**
ASTM A48 CL35B
MO/DY/YR X
PROD NO.

DATE: **JANUARY 2023**

SCALE: **HORIZ: AS NOTED VERT: N/A**

ACI JOB # **22-0031**

SHEET NO. **9 of 52**

STORM SEWER:

DRAINAGE STRUCTURE COVERS SHALL BE PAID AS DRAINAGE STRUCTURE COVER. MANHOLE CASTINGS SHALL HAVE STORM SEWER CAST ON STRUCTURE COVER AS APPLICABLE.

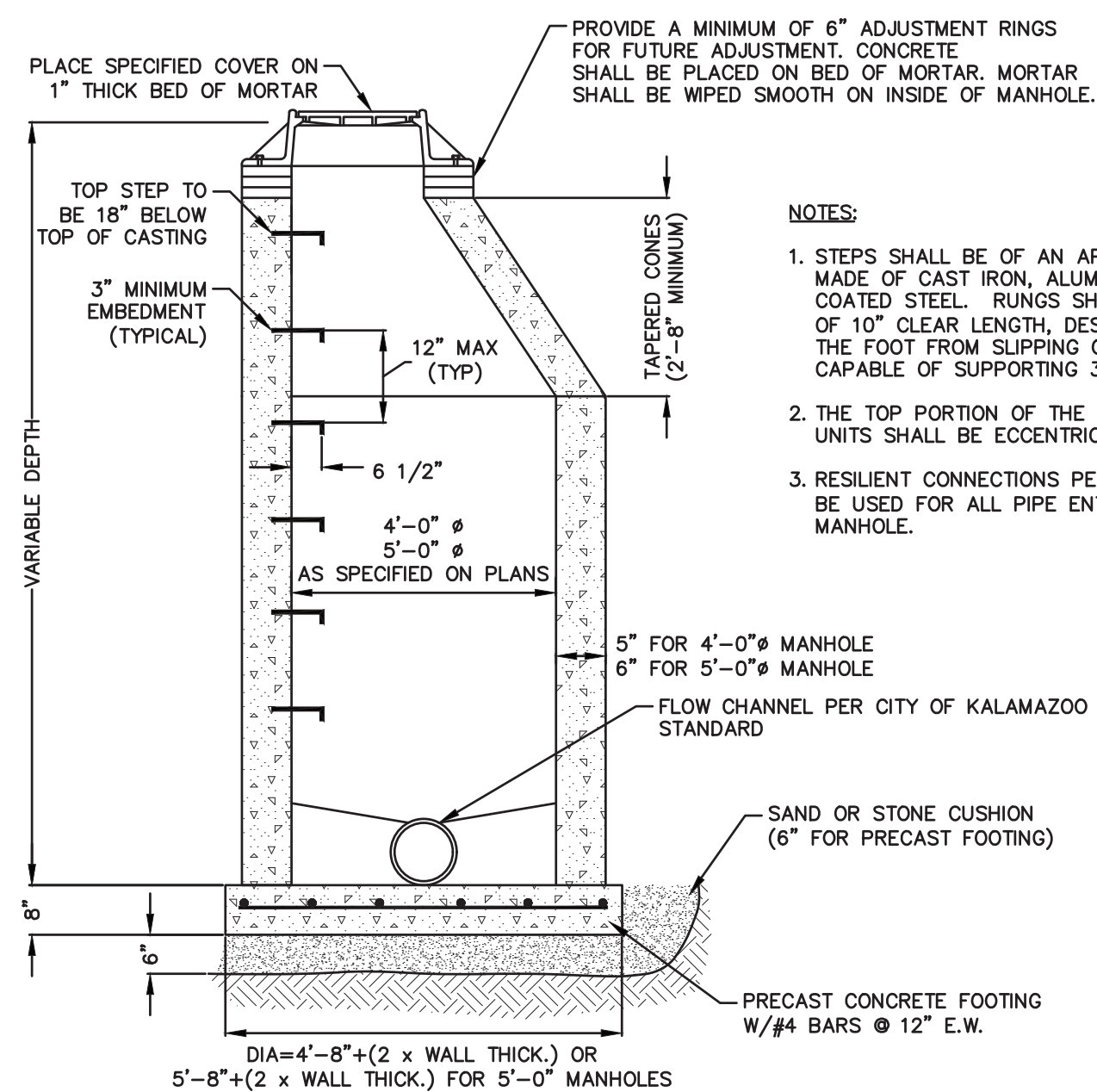
STORM MANHOLE COVERS SHALL BE MDOT COVER B, CATCH BASIN COVERS SHALL BE MDOT COVER K UNLESS NOTED OTHERWISE.

PROPOSED STORM MANHOLES SHALL BE 4 FEET IN DIAMETER UNLESS NOTED OTHERWISE.

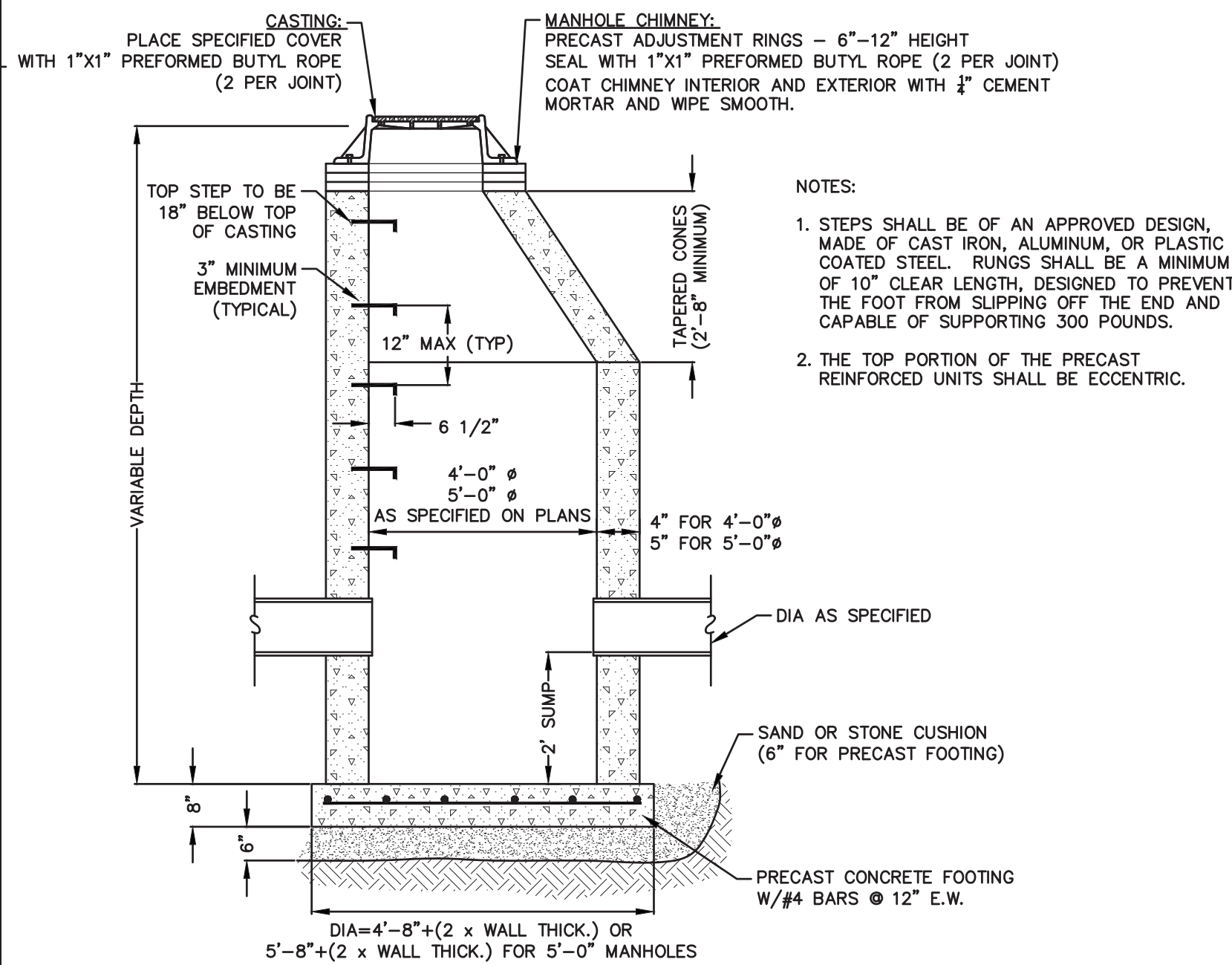
WHERE NEW SEWER IS TO REPLACE EXISTING SEWER IN THE SAME TRENCH REMOVAL OF EXISTING SEWER SHALL BE INCLUDED AS PART OF NEW SEWER ITEM.

4' DIA. CATCH BASIN WITH EUJW 7030 (DOUBLE-WIDE) CASTINGS SHALL BE FABRICATED TO PROVIDED INCREASED INLET AREA AT NO ADDITIONAL COST.

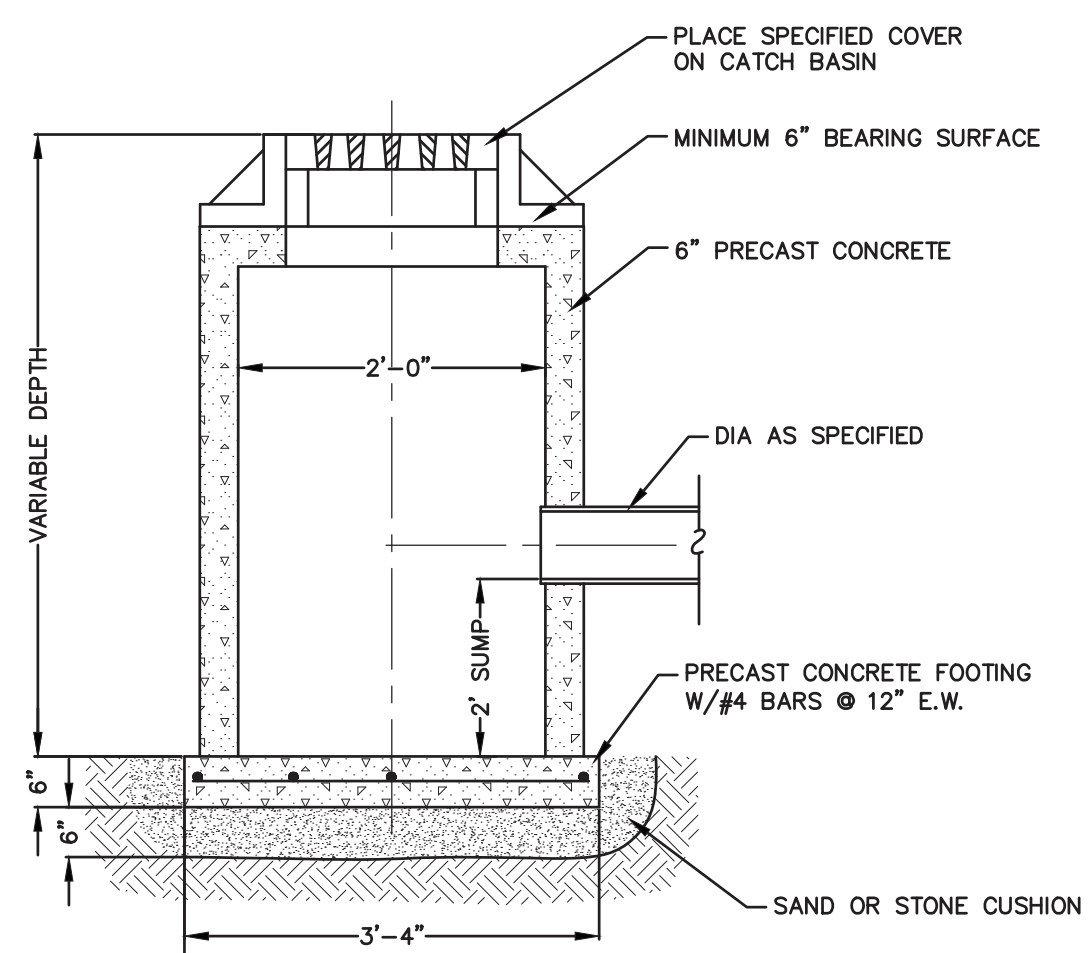
EUJW 7030 CASTINGS SHALL HAVE T1 BACK AND M2 GATES, WEIGHT FOR PAYMENT PURPOSES SHALL BE 560 LBS.



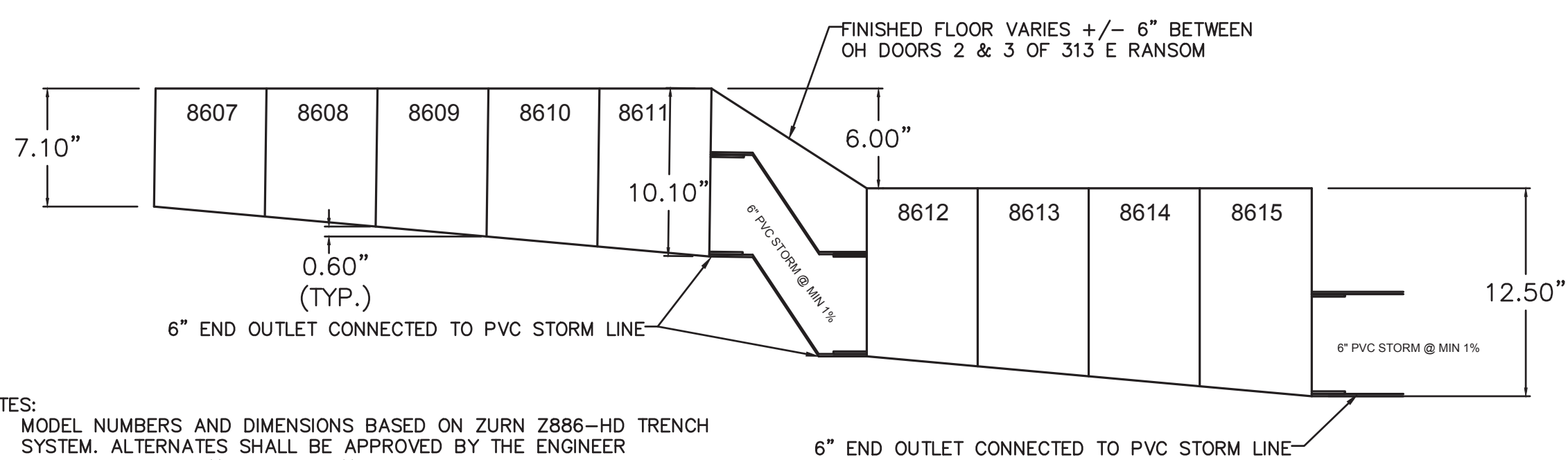
STANDARD STORM MANHOLE - 4' OR 5'
 NOT TO SCALE



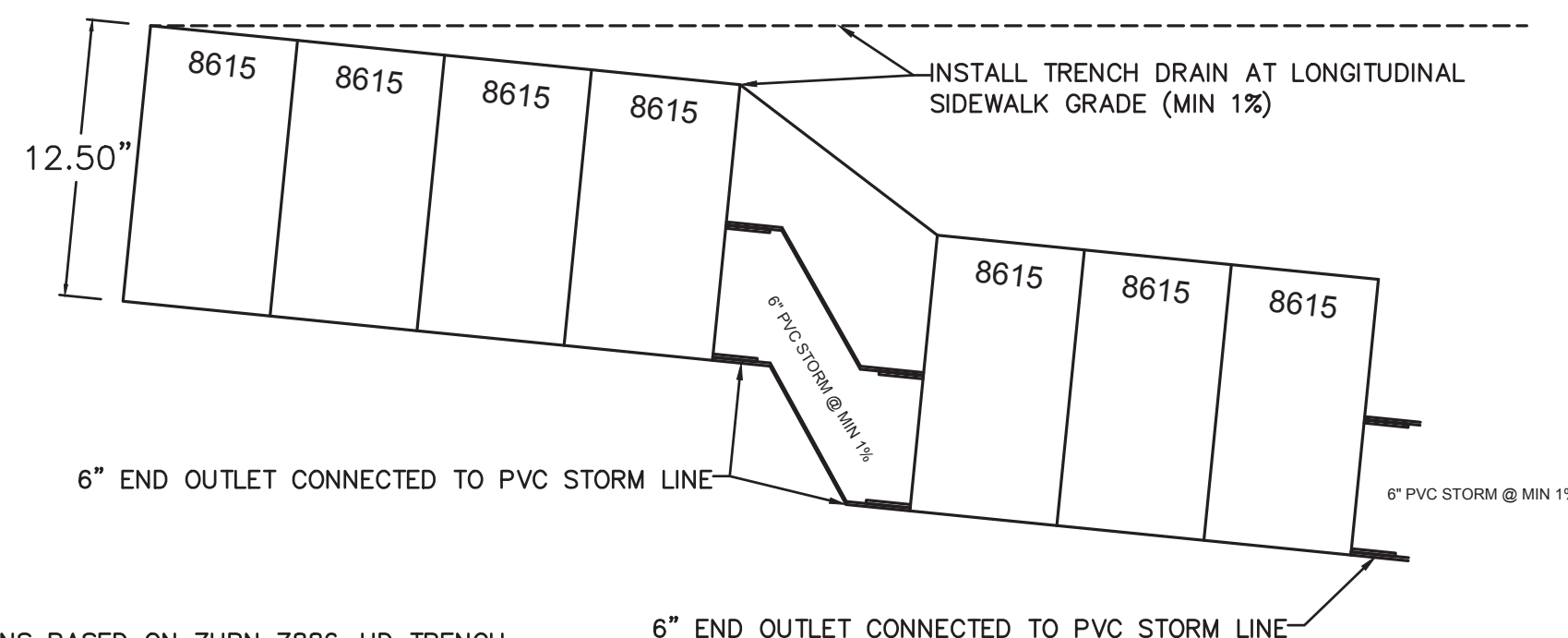
STANDARD STORM CATCH BASIN WITH SUMP - 4' OR 5'
 NOT TO SCALE



STANDARD CATCH BASIN - 2'
 NOT TO SCALE

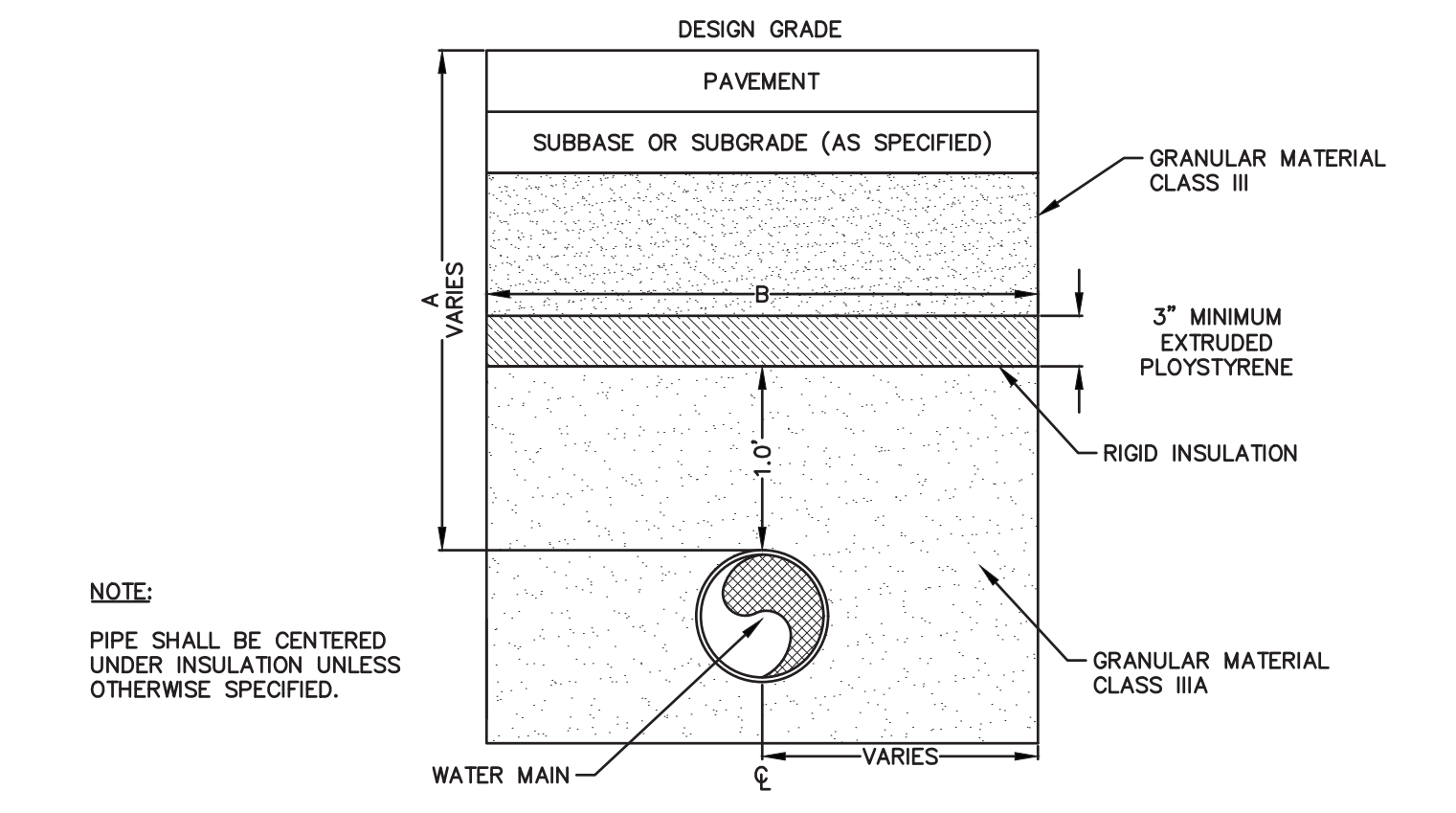
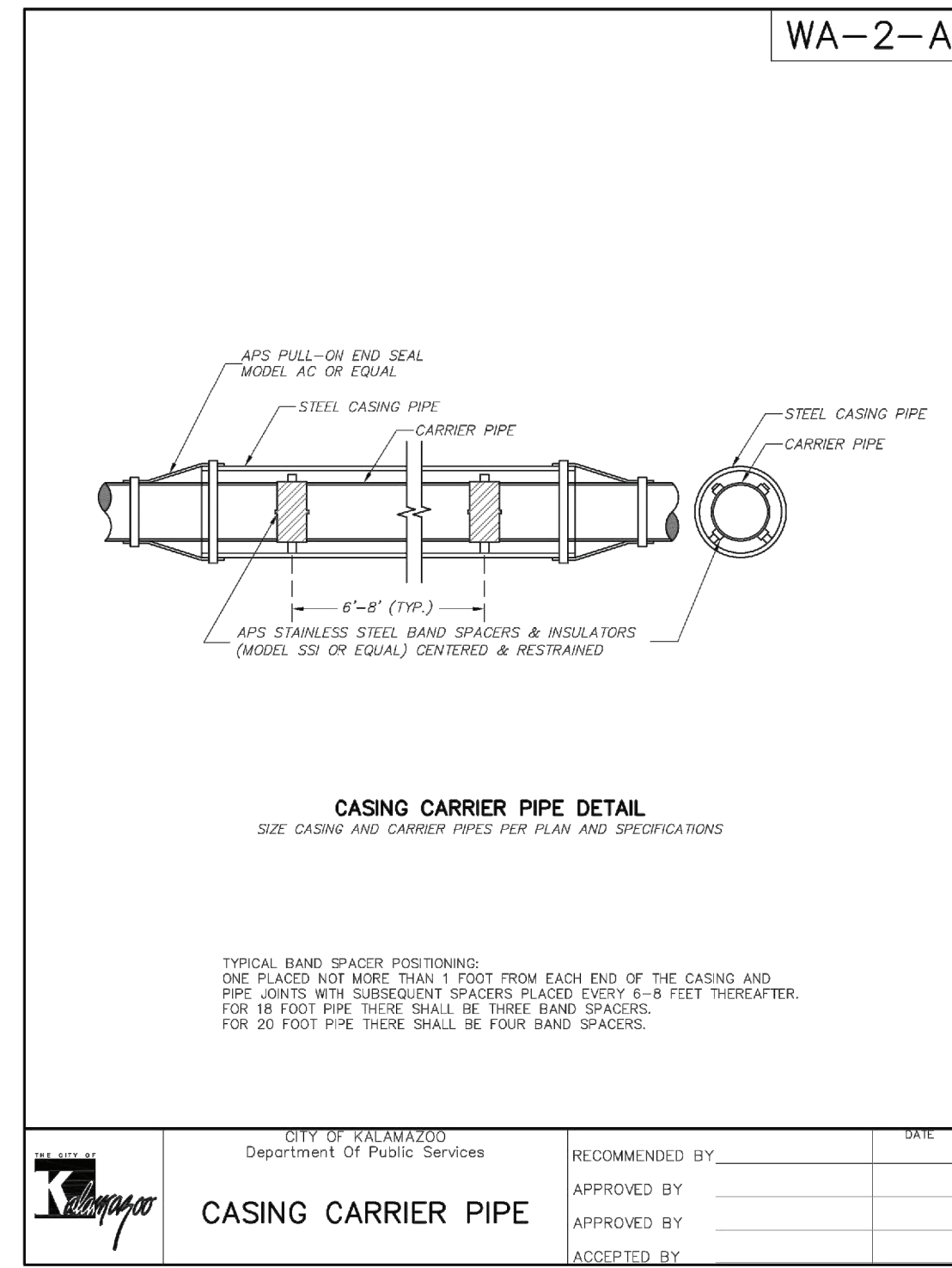
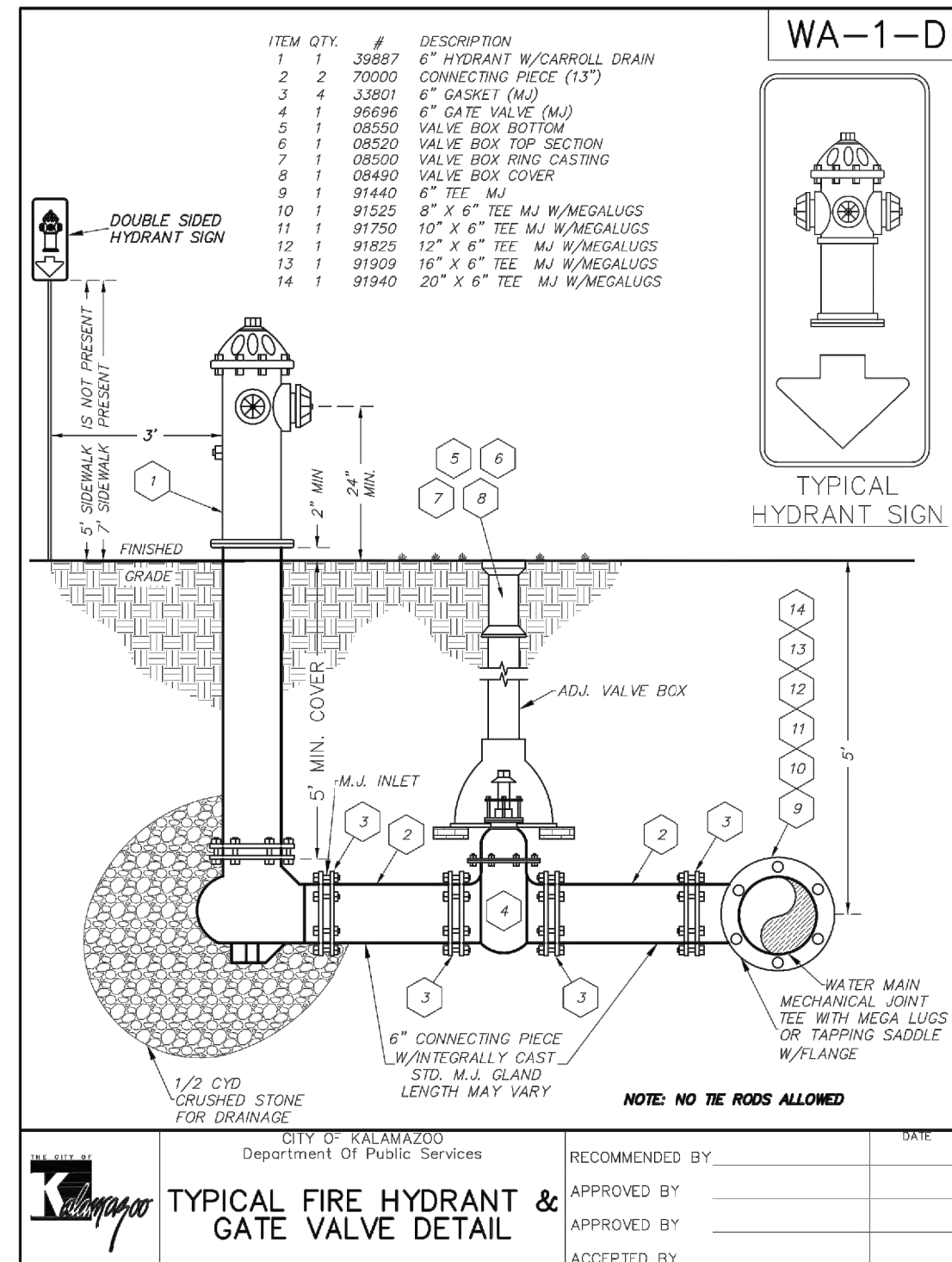


313 E. RANSOM STREET - TRENCH DRAIN DETAIL
 NOT TO SCALE

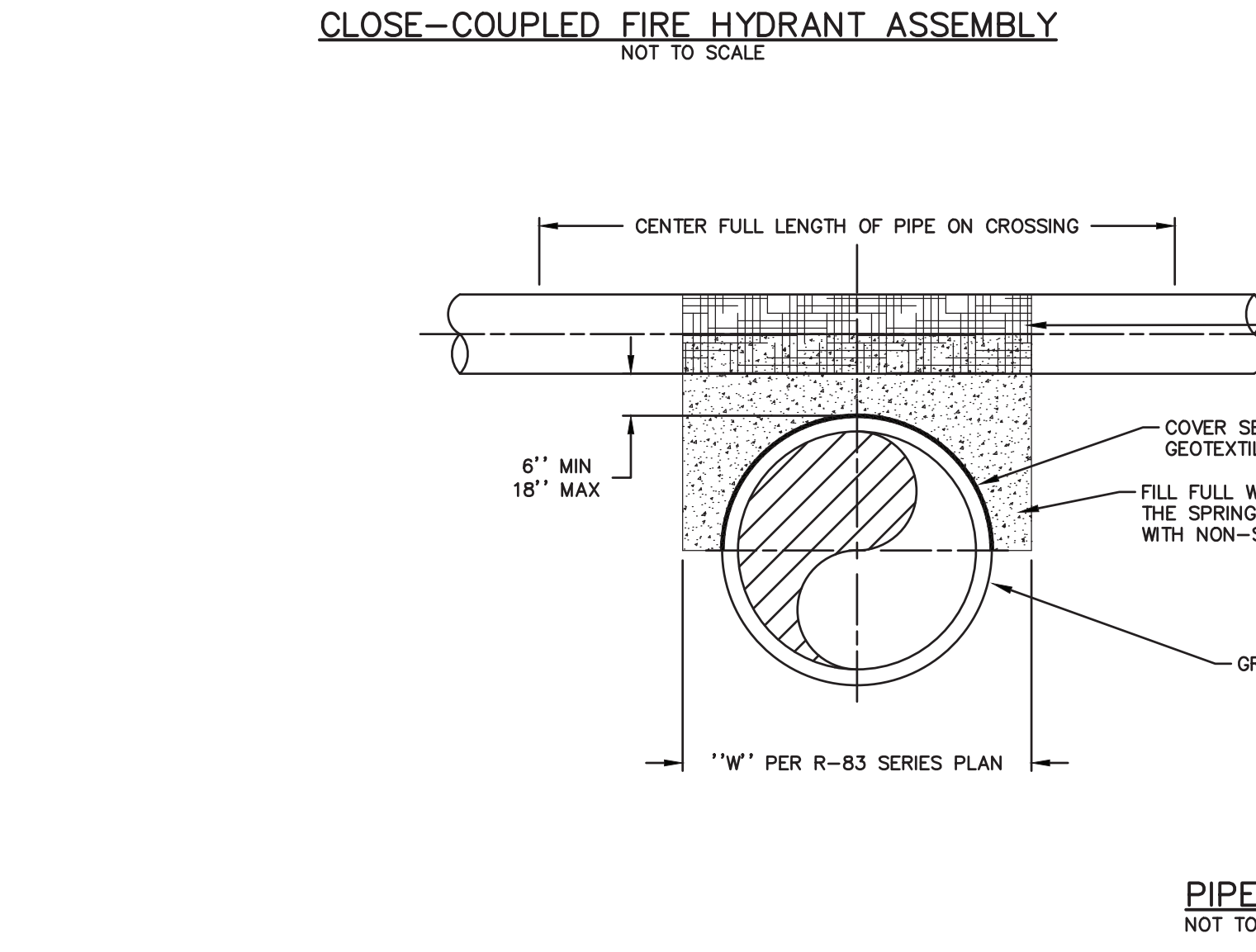
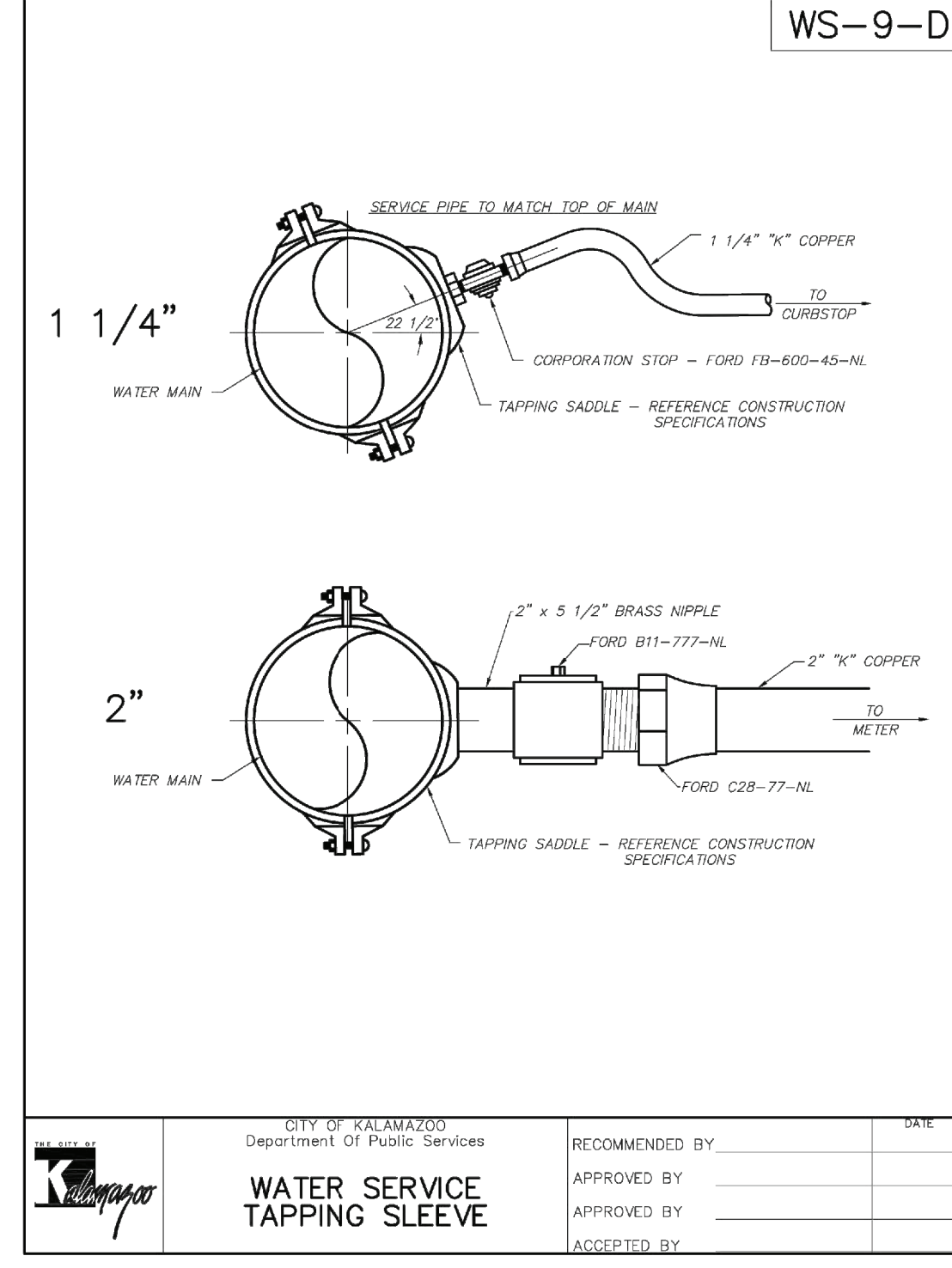
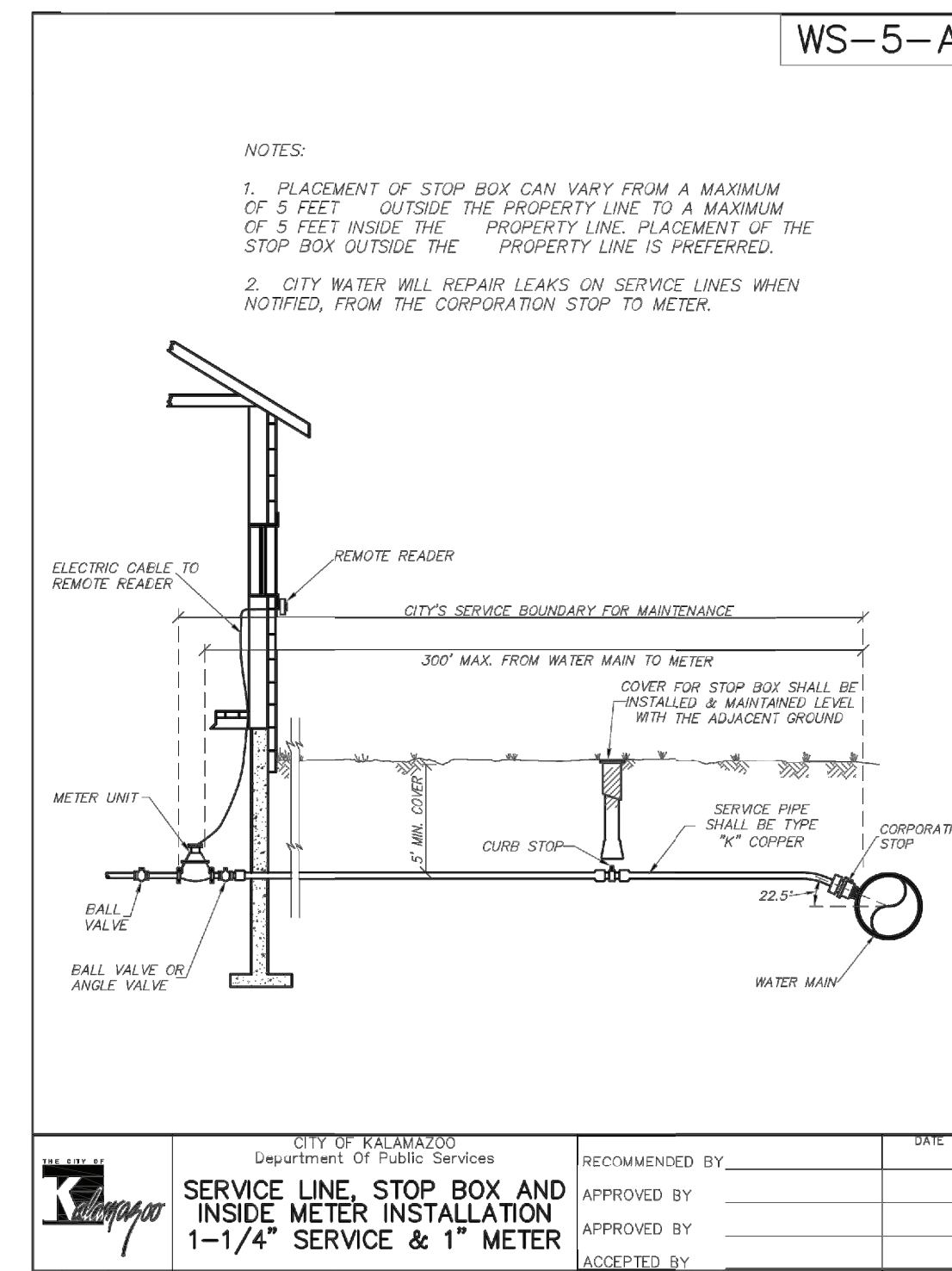
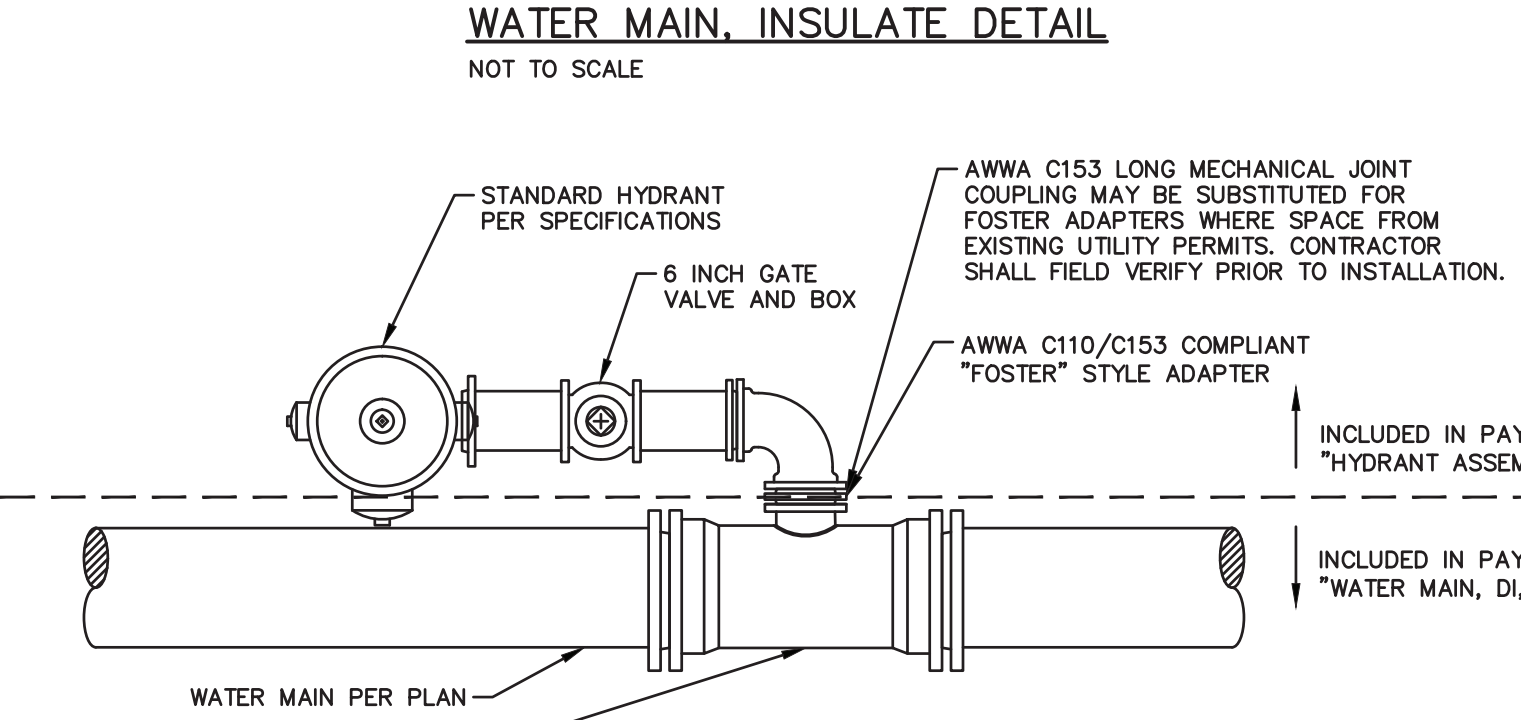


320 E. RANSOM STREET - TRENCH DRAIN DETAIL
 NOT TO SCALE

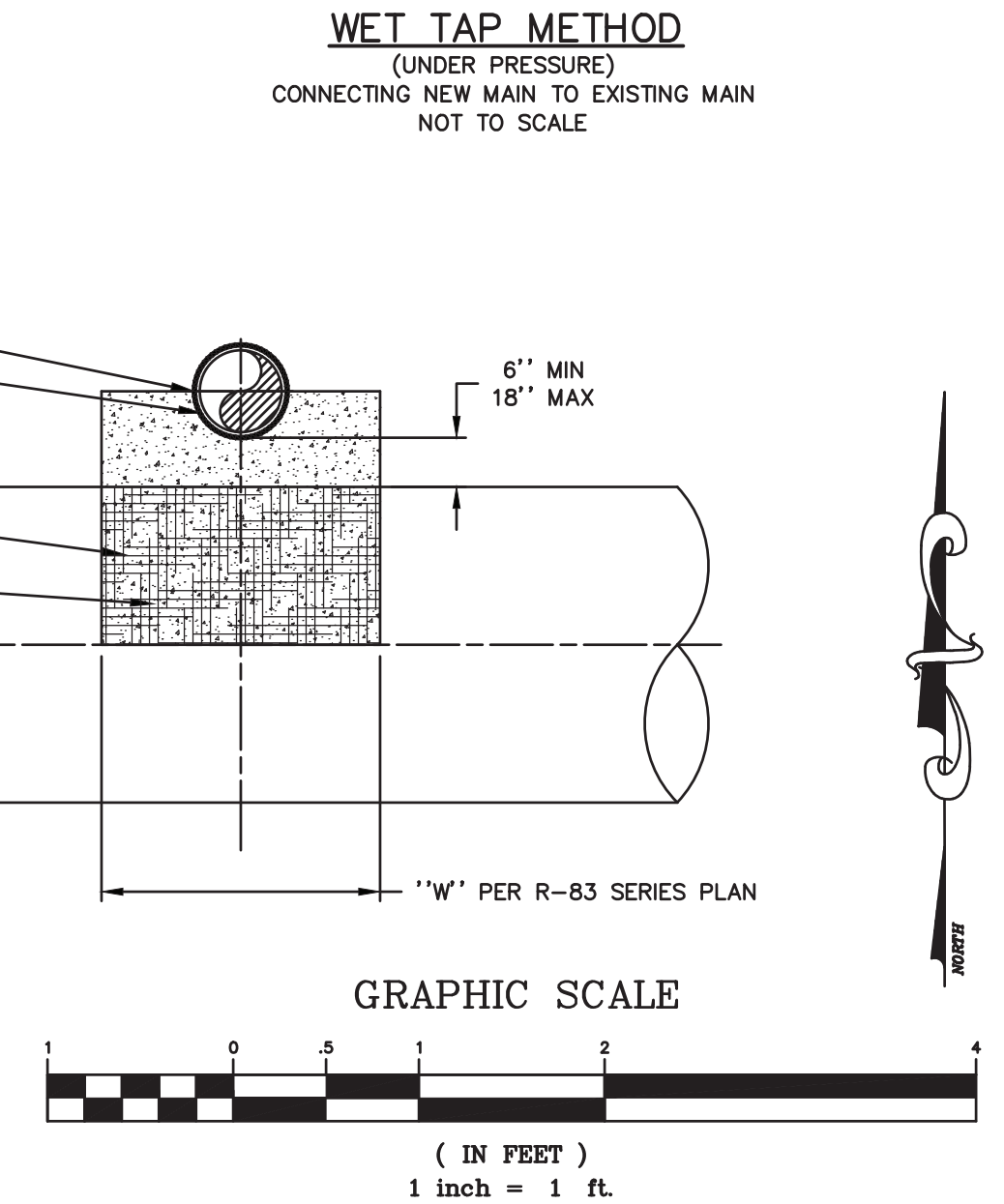
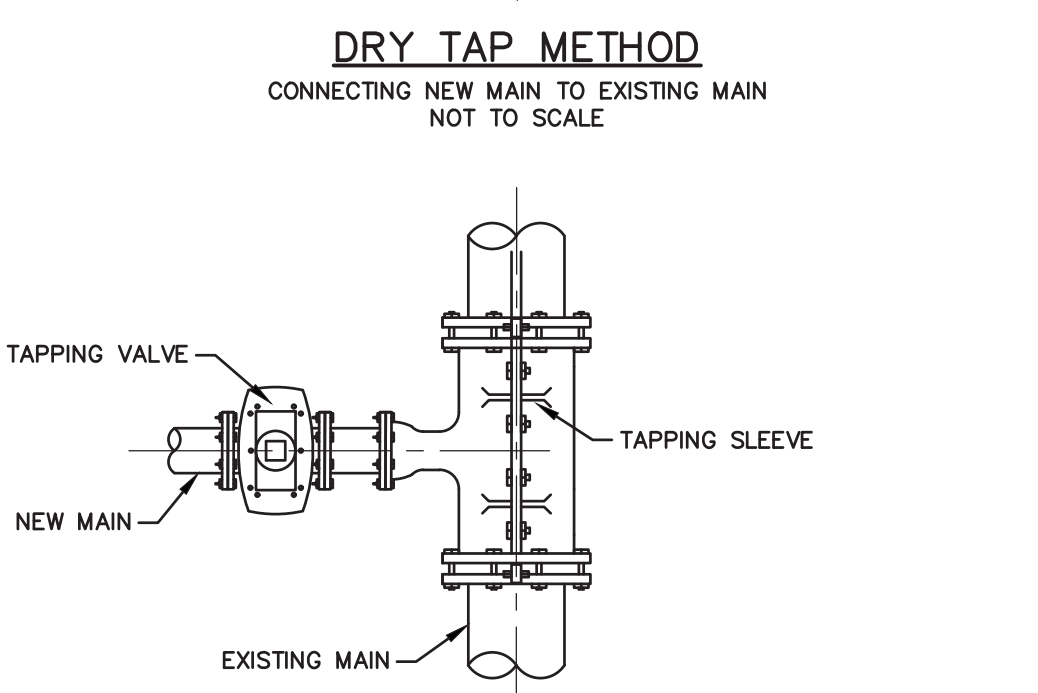
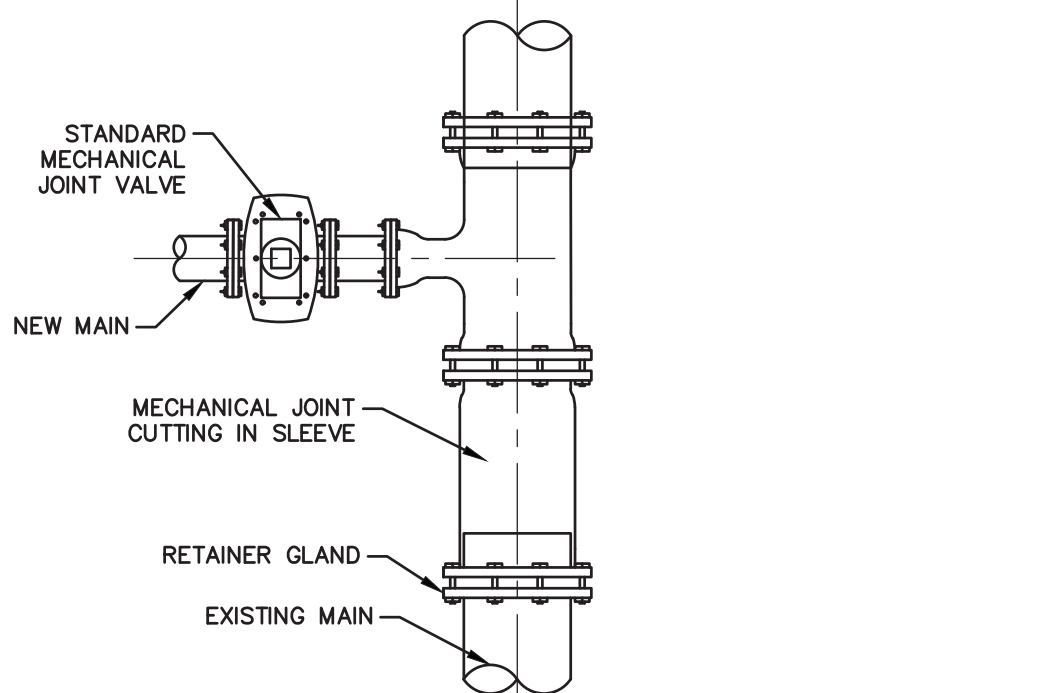
NO.	REVISION DESCRIPTION	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22



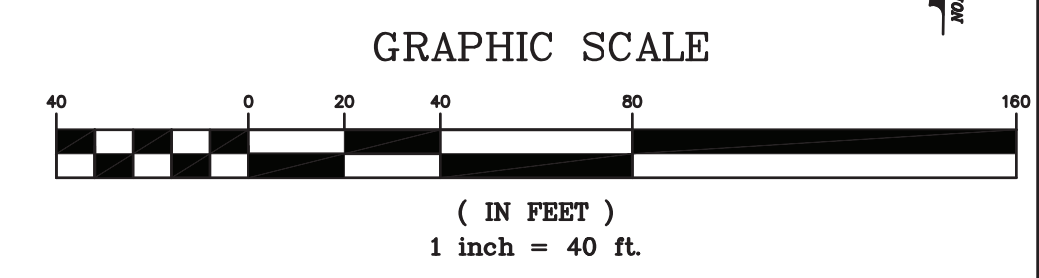
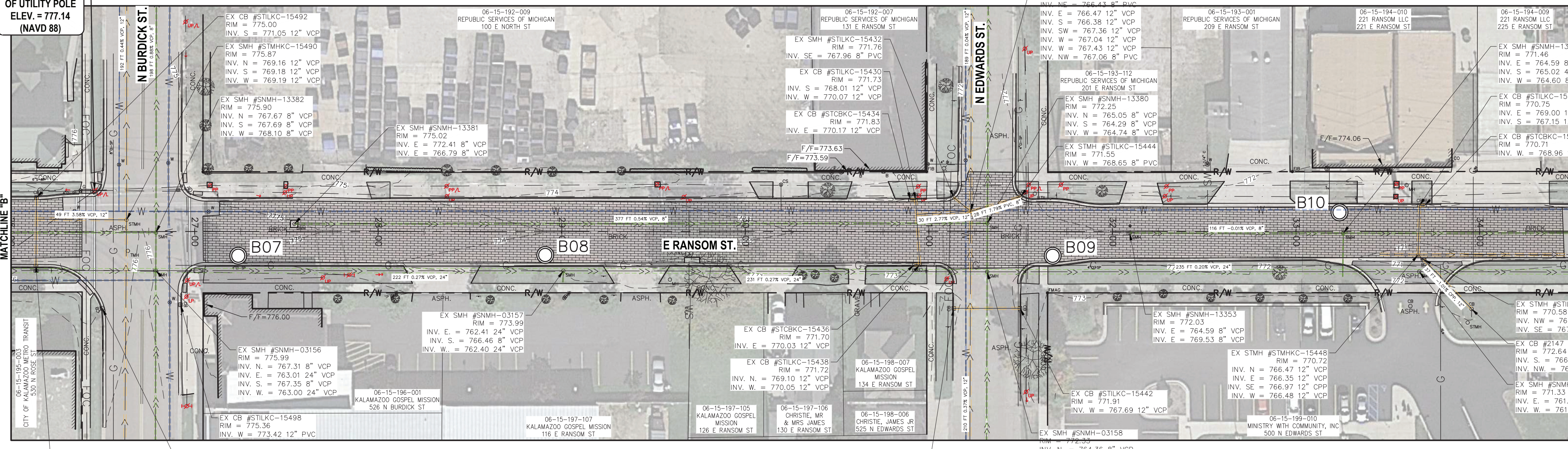
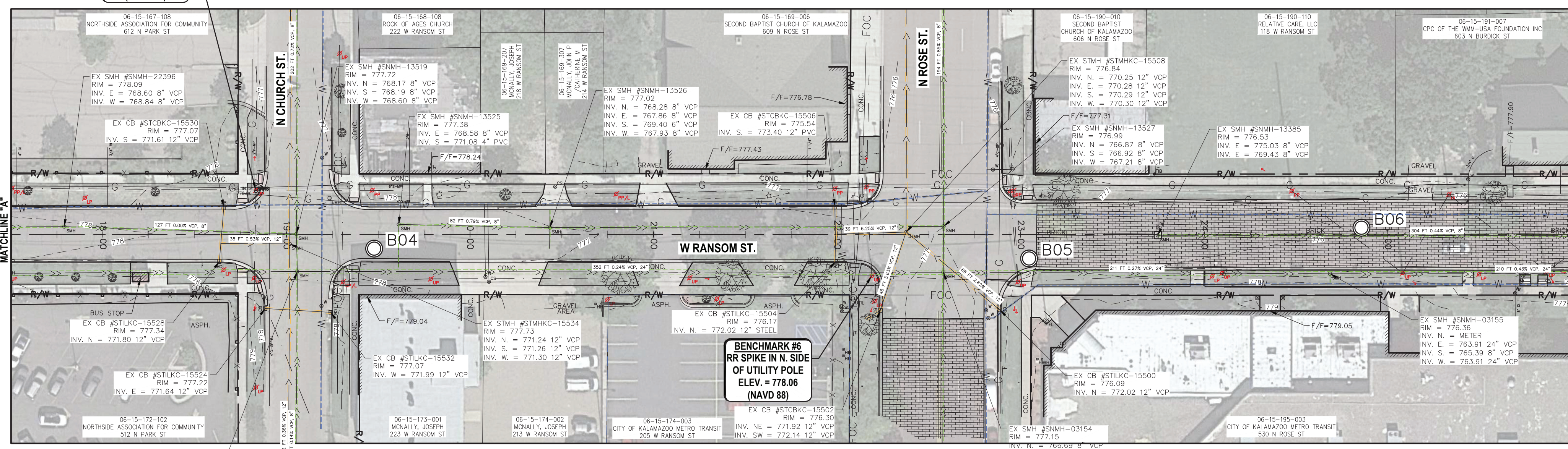
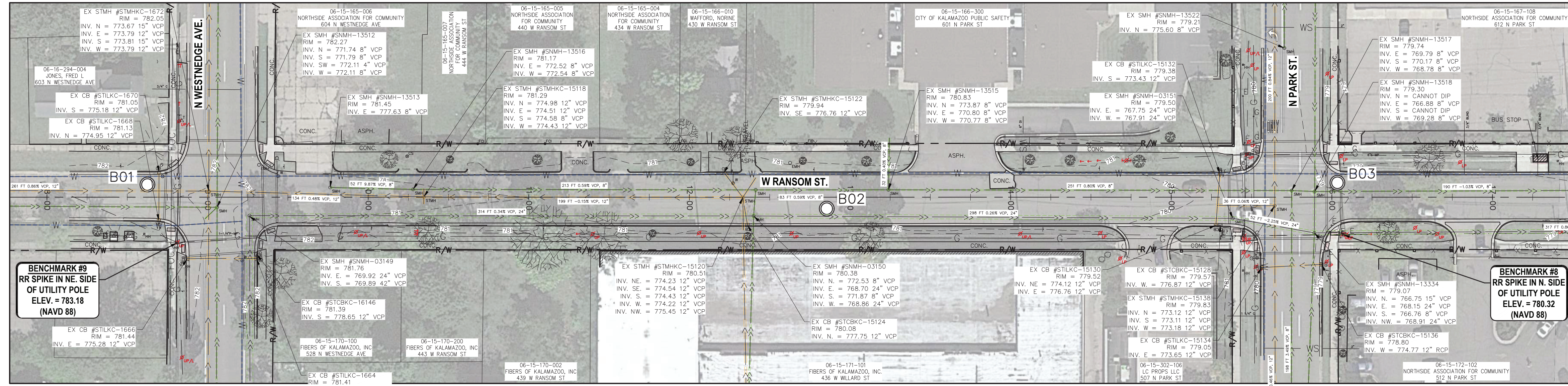
PIPE COVER, A (INCHES)	WIDTH OF INSULATION, B (INCHES)	PIPE SIZE, INCHES	WIDTH OF INSULATION, B (INCHES)
18"	84"	6"	18"
24"	72"	8"	20"
30"	60"	10"	22"
36"	48"	12"	24"
37"+	USE TABLE 2	16"	28"
		18"	30"
		24"	36"



- WATER MAIN:**
- ALL WATER MAINS AND SERVICES SHALL HAVE A MINIMUM OF 5 FEET OF COVER. WHERE 5 FEET OF COVER CANNOT BE MAINTAINED, THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING. INSULATION OF THE WATER MAIN SHALL BE PERFORMED AT THE DIRECTION OF THE ENGINEER.
 - WATER MAIN SHALL NOT BE PLACED INTO SERVICE UNTIL THE APPROPRIATE TESTING AND DISINFECTION IS COMPLETE AND APPROVED BY THE CITY.
 - THE CONTRACTOR SHALL GIVE 48 HOURS NOTICE TO THE CITY TO REQUEST A WATER SERVICE SHUTOFF OR SEWER TAP. THE CITY SHALL DETERMINE THE TIME & DURATION OF THE SHUTOFF.
 - NO EXISTING VALVE SHALL BE CLOSED WITHOUT CITY APPROVAL.
 - ABANDONING OF EXISTING WATER MAIN AND REMOVAL OF APPURTENANCES SHALL BE INCLUDED WITH NEW WATER MAIN ITEM. ABANDONING WATER MAIN SHALL INCLUDE REMOVAL OF EXISTING PIPE, BULKHEADING ENDS OF PIPE OR FILLING PIPE WITH FLOWABLE FILL.
 - WORK SHALL CONFORM TO THE CITY OF KALAMAZOO STANDARD SPECIFICATIONS FOR WATER MAIN AND SERVICE INSTALLATION, 2021.
 - MAXIMUM FEASIBLE VERTICAL AND HORIZONTAL SEPARATION SHALL BE PROVIDED WHERE WATER MAIN CROSSES SEWERS. INSTALL WATER MAIN AND FITTINGS TO MAXIMIZE LATERAL SEPARATION OF JOINTS/FITTINGS FROM THE CROSSING UTILITY. WHERE APPROPRIATE SEPARATION CANNOT BE MAINTAINED, THE CONTRACTOR SHALL MITIGATE WITH FLOWABLE FILL PIPE CRADLE, OR INSULATION OF THE WATER MAIN WITH LESS THAN 4.0' OF COVER, AS DIRECTED BY THE ENGINEER.
 - WHERE GRAVITY SEWER CROSSING PROPOSED WATER MAIN IS SPECIFIED TO MEET THE MATERIAL REQUIREMENTS OF AWWA C-900 PVC PIPE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ISOLATING AND PRESSURE TESTING THE PIPE IN ACCORDANCE WITH THE STANDARDS OF AWWA-C605 AND THE 10 STATE STANDARDS FOR WATERWORKS AND WASTEWATER FACILITIES PRIOR TO CONNECTION TO EXISTING FACILITIES.



NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22



**RANSOM STREET
 IMPROVEMENTS
 CITY OF KALAMAZOO**

EXISTING CONDITIONS - 1

SHEET TITLE: **EXISTING CONDITIONS - 1**

DRAWN BY: **DJL**

DESIGNED BY: **MJS/ERF**

PM REVIEW: **DAD**

QA/QC REVIEW:

DATE: **JANUARY 2023**

SCALE:

SIGNATURE:

DATE:

SCALE: **HORIZ: 1" = 40'**

VERT: **N/A**

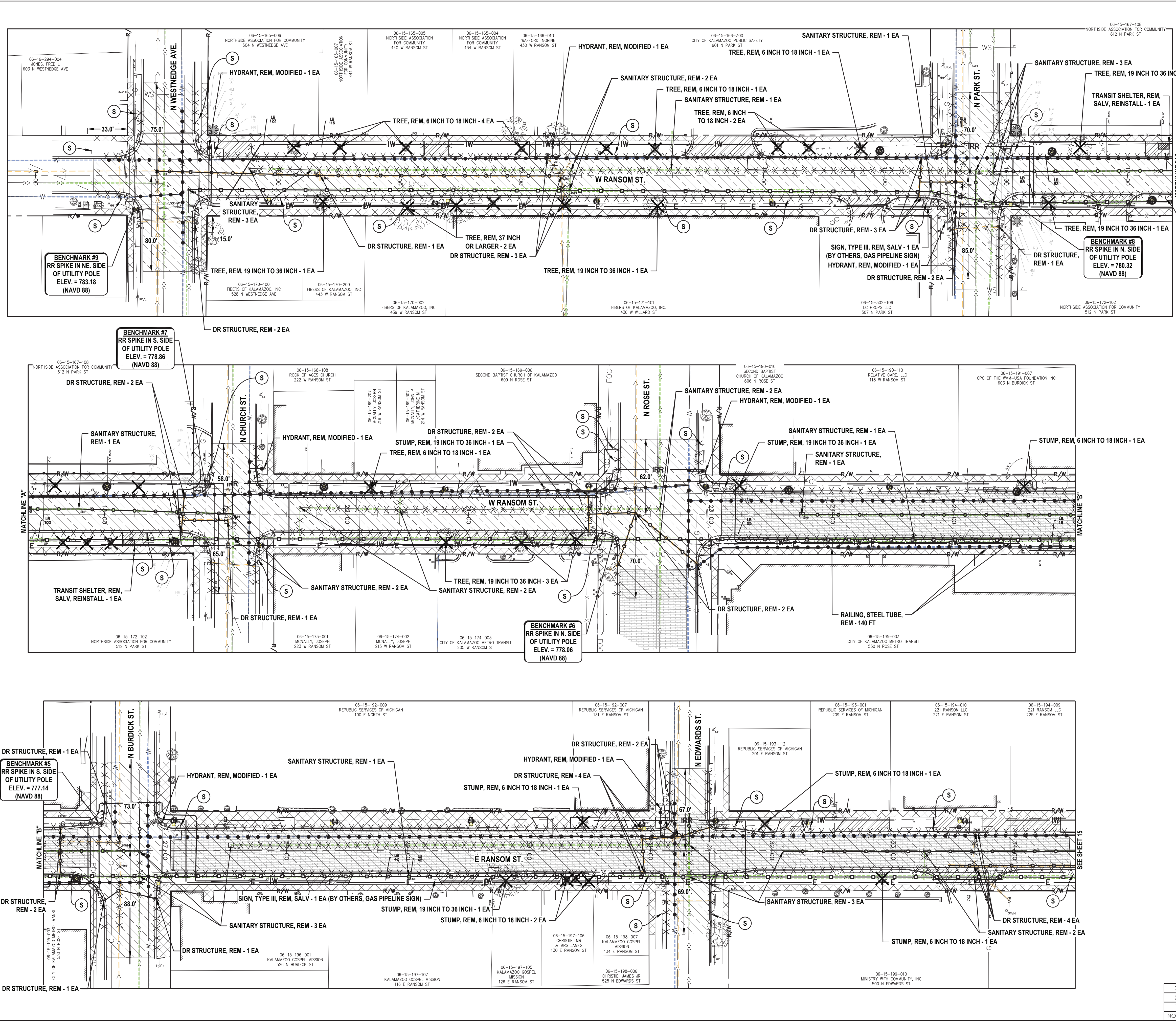
ACI JOB #:

22-0031

SHEET NO. **12 of 52**

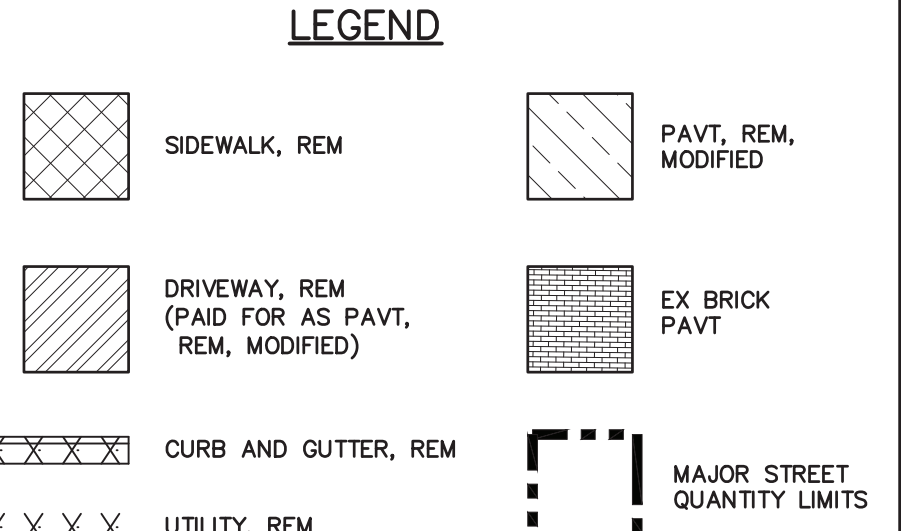
NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22

Engineering - Architecture - Land Surveying



Description	Units	Quantity	Major Street Share
Tree, Rem, 19 inch to 36 inch	Ea	7	0
Tree, Rem, 37 inch or Larger	Ea	2	0
Tree, Rem, 6 inch to 18 inch	Ea	9	0
Stump, Rem, 19 inch to 36 inch	Ea	3	1
Stump, Rem, 6 inch to 18 inch	Ea	6	5
Dr Structure, Rem	Ea	32	20
Sewer, Rem, Less than 24 inch	Ft	2725	1065
Sewer, Abandon, Greater than 24 inch	Ft	2655	0
Sewer, Abandon, Less than 24 inch	Ft	1795	855
Curb and Gutter, Rem	Ft	6830	3150
Sidewalk, Rem	Syd	3860	1830
Railing, Steel Tube, Rem	Ft	140	0
Pavt, Rem, Modified	Syd	12625	6435
Salvage Existing Street Bricks	Syd	500	0
Sign, Type III, Rem	Ea	32	12
Transit Shelter, Rem, Salv, Reinstall	Ea	2	0
Hydrant, Rem, Modified	Ea	7	0
Sanitary Structure, Rem	Ea	24	0

Description	Units	Quantity	Major Street Share
Tree, Rem, 19 inch to 36 inch	Ea	7	0
Tree, Rem, 37 inch or Larger	Ea	2	0
Tree, Rem, 6 inch to 18 inch	Ea	9	0
Stump, Rem, 19 inch to 36 inch	Ea	3	1
Stump, Rem, 6 inch to 18 inch	Ea	6	5
Dr Structure, Rem	Ea	32	20
Sewer, Rem, Less than 24 inch	Ft	2725	1065
Sewer, Abandon, Greater than 24 inch	Ft	2655	0
Sewer, Abandon, Less than 24 inch	Ft	1795	855
Curb and Gutter, Rem	Ft	6830	3150
Sidewalk, Rem	Syd	3860	1830
Railing, Steel Tube, Rem	Ft	140	0
Pavt, Rem, Modified	Syd	12625	6435
Salvage Existing Street Bricks	Syd	500	0
Sign, Type III, Rem	Ea	32	12
Transit Shelter, Rem, Salv, Reinstall	Ea	2	0
Hydrant, Rem, Modified	Ea	7	0
Sanitary Structure, Rem	Ea	24	0



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 abonmarche.com

**RANSOM STREET IMPROVEMENTS
 CITY OF KALAMAZOO**

REMOVAL PLAN - 1

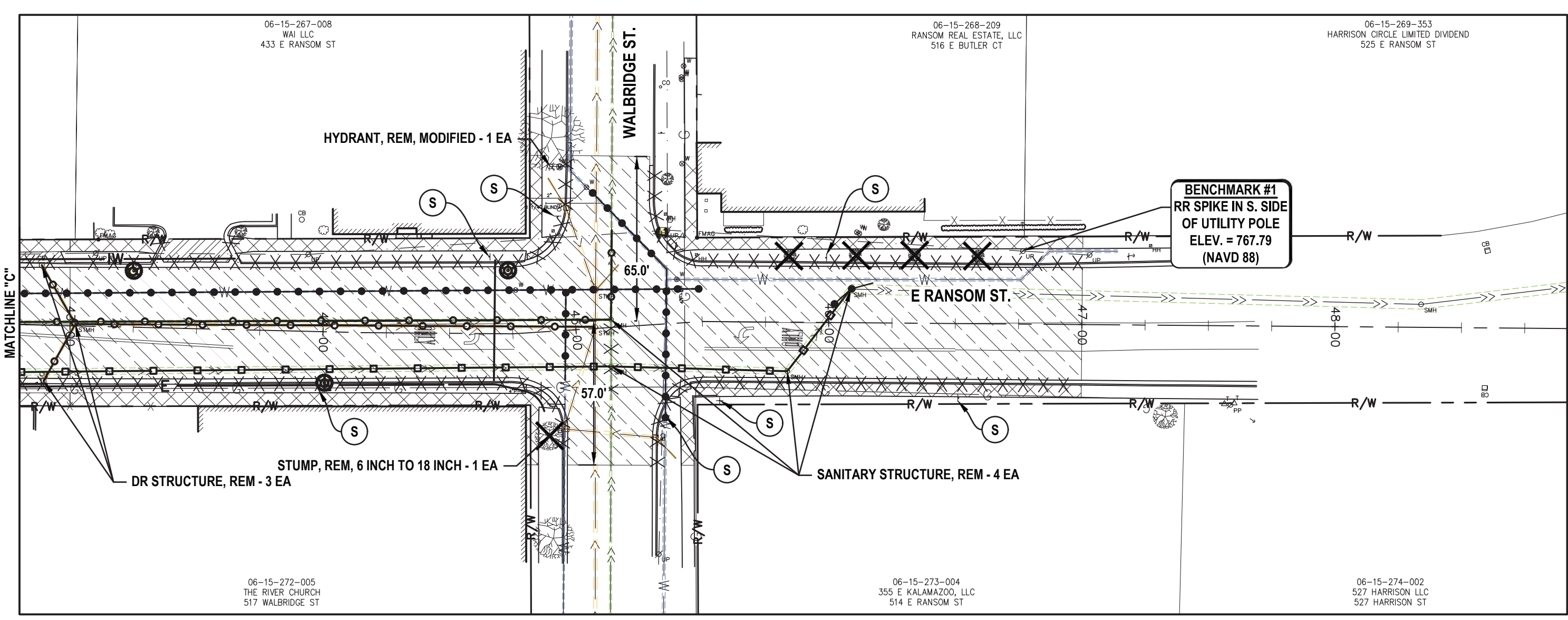
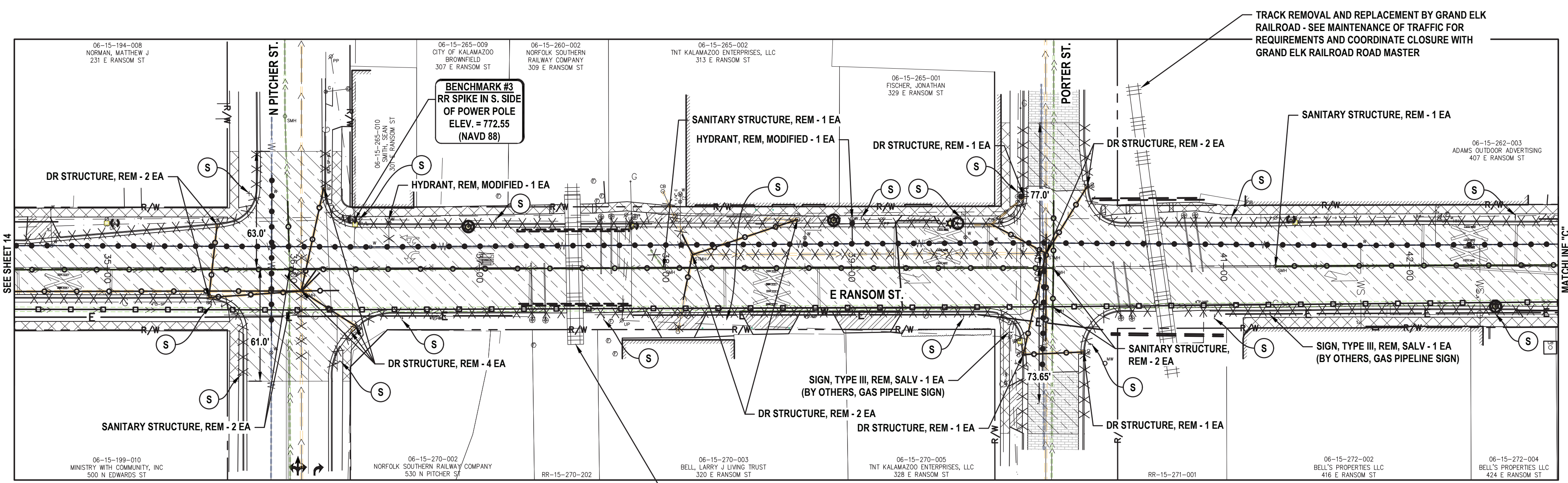
REVISIONS

DATE: JANUARY 2023

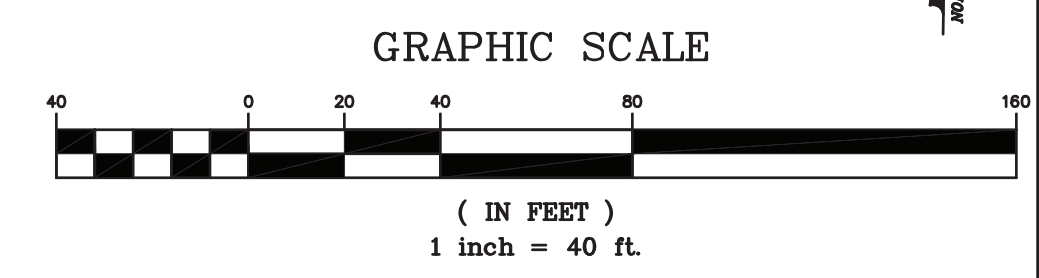
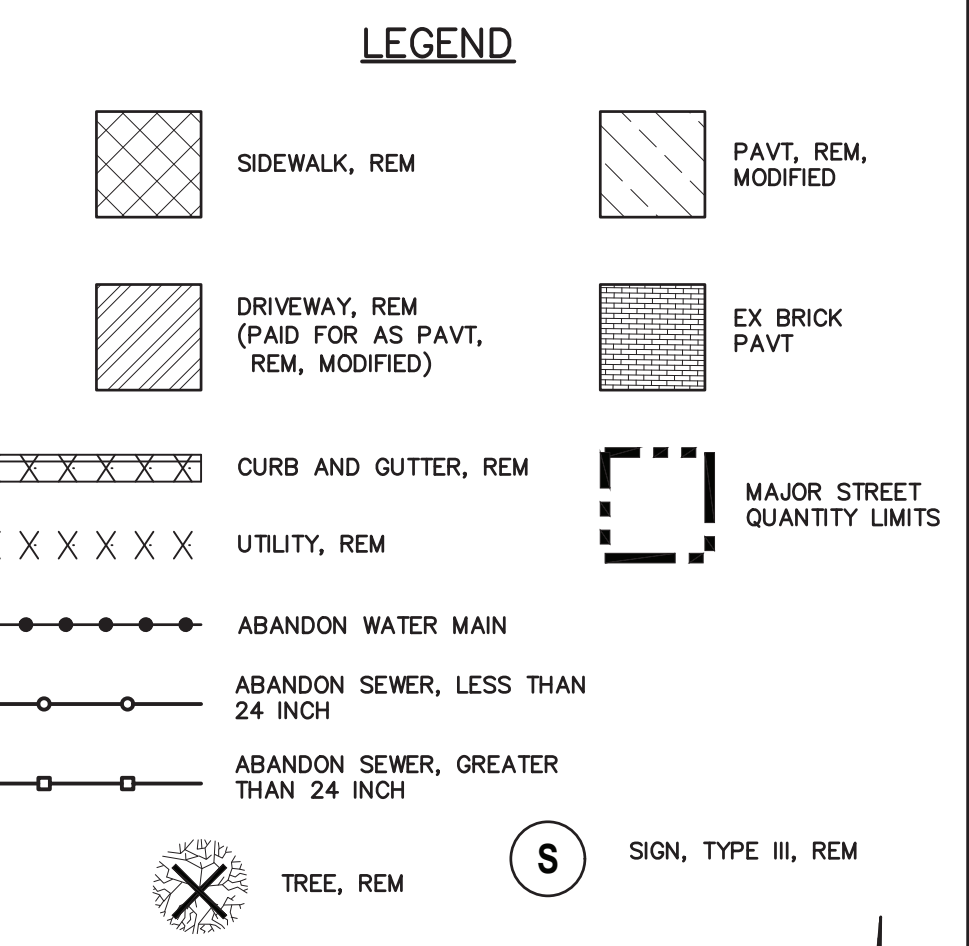
SCALE: HORIZ: 1" = 40'
VERT: N/A

22-0031

14 of 52



Description	Units	Quantity	Major Street Share
Stump, Rem, 6 inch to 18 inch	Ea	1	1
Dr Structure, Rem	Ea	13	13
Sewer, Rem, Less than 24 inch	Ft	400	400
Sewer, Abandon, Greater than 24 inch	Ft	1235	1235
Sewer, Abandon, Less than 24 inch	Ft	2050	2050
Curb and Gutter, Rem	Ft	2840	2840
Sidewalk, Rem	Syd	1230	1230
Pav, Rem, Modified	Syd	7615	7615
Salvage Existing Street Bricks	Syd	300	300
Sign, Type III, Rem	Ea	25	25
Hydrant, Rem, Modified	Ea	3	3
Sanitary Structure, Rem	Ea	10	10



NO.	REVISION DESCRIPTION	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22

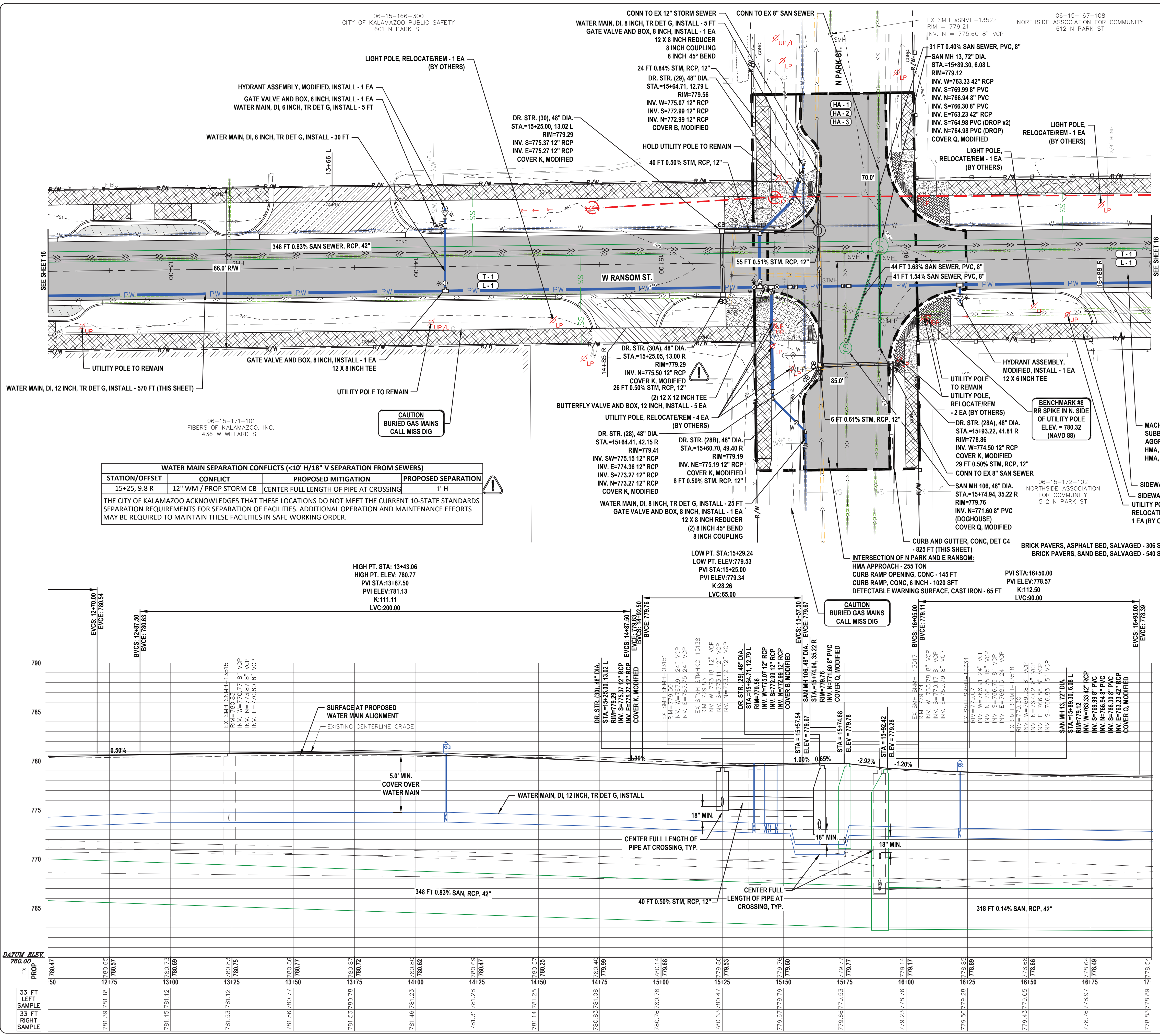
ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2295
 abonmarche.com

RANSOM STREET IMPROVEMENTS
 CITY OF KALAMAZOO

REMOVAL PLAN - 2

PROJECT: RANSOM STREET IMPROVEMENTS
 SHEET TITLE: REMOVAL PLAN - 2
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

SIGNATURE:
 DATE:
 SCALE:
 HORZ: 1" = 40'
 VERT: N/A
 ACI JOB #
22-0031
 SHEET NO.
15 of 52



Description	Units	Quantity	Major Street Share
Machine Grading, Modified	Sta	4.5	0.7
Subbase, CIP	Cyd	810	270
Aggregate Base, 6 inch	Syd	34	0
Aggregate Base, 8 inch	Syd	2845	810
Aggregate Base, 10 inch	Syd	60	0
Sewer, CI IV, 12 inch, Tr Det B	Ft	188	83
Dr Structure, 48 inch dia	Ea	6	4
Dr Structure Cover, Type B, Modified	Ea	1	1
Dr Structure Cover, Type K, Modified	Ea	5	3
HMA Approach	Ton	255	255
HMA, 4EML	Ton	115	0
HMA, SEMI	Ton	115	0
Conc Base Cse, Nonreinf, 6 inch	Syd	34	0
Conc Pavi, Nonreinf, 6 inch	Syd	35	0
Driveway, Nonreinf Conc, 6 inch	Syd	85	0
Driveway, Nonreinf Conc, 8 inch	Syd	85	0
Curb and Gutter, Conc, Det C4	Ft	825	95
Driveway Opening, Conc, Det M	Ft	290	0
Curb Ramp Opening, Conc	Ft	145	145
Sidewalk, Conc, 4 inch	Sft	5140	905
Sidewalk, Conc, 6 inch	Sft	340	0
Sidewalk, Conc, 8 inch	Sft	300	0
Curb Ramp, Conc, 6 inch	Sft	1020	1020
Detectable Warning Surface, Cast Iron	Ft	65	65
Brick Pavers, Asphalt Bed, Salvaged	Sft	306	0
Brick Pavers, Sand Bed, Salvaged	Sft	540	0
Water Main, DI, 12 inch, Tr Det G, Install	Ft	570	0
Water Main, DI, 8 inch, Tr Det G, Install	Ft	5	0
Water Main, DI, 8 inch, Tr Det G, Install	Ft	60	0
Butterfly Valve and Box, 12 inch, Install	Ea	6	0
Gate Valve and Box, 6 inch, Install	Ea	1	0
Gate Valve and Box, 8 inch, Install	Ea	3	0
Hydrant Assembly, Modified, Install	Ea	2	0
Sanitary Sewer, PVC, 8 inch, Tr Det B2	Ft	116	0
Sanitary Sewer, Serv Lead, PVC, 6 inch	Ft	87	0
Sanitary Sewer, Conc, 42 inch, Tr Det B, Modified	Ft	456	0
Sanitary Structure, Add Depth of 48 inch dia, 8 ft to 15 ft, Mod	Ft	1	0
Sanitary Structure, Add Depth of 72 inch dia, 8 ft to 15 ft, Mod	Ft	7	0
Sanitary Structure, Add Depth of 72 inch dia, more than 15 ft, Mod	Ft	2	0
Sanitary Sewer Cleanout Cover	Ea	3	0
Sanitary Sewer Cleanout, 6 inch, Modified	Ea	3	0
Sanitary Structure Cover, Type Q, Modified	Ea	2	0
Sanitary Structure, 48 inch dia, Modified	Ea	1	0
Sanitary Structure, 72 inch dia, Modified	Ea	1	0

PROPOSED SANITARY SERVICE REPLACEMENTS		
STATION	SERVICE LENGTH (FT)	42" TAP
14+25 L	25	0
14+66 R	37	0
16+65 L	25	0

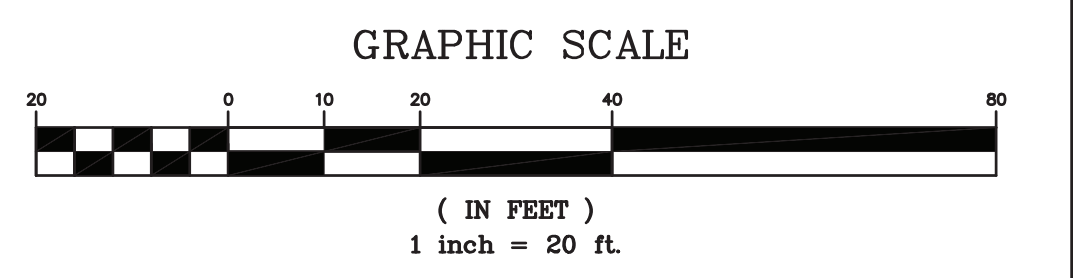
PROPOSED DRIVEWAYS			
STATION	DRIVEWAY, NONREINF CONC, 6 INCH (SYD)	DRIVEWAY, NONREINF CONC, 8 INCH (SYD)	DRIVEWAY OPENING, CONC, DET M (FT)
13+86 L		85	85
14+85 R	45		60
16+88 R	40		60

WATER MAIN SEPARATION CONFLICTS (<10' H/18" V SEPARATION FROM SEWERS)			
STATION/OFFSET	CONFLICT	PROPOSED MITIGATION	PROPOSED SEPARATION
15+25, 9.8 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CROSSING	1' H

THE CITY OF KALAMAZOO ACKNOWLEDGES THAT THESE LOCATIONS DO NOT MEET THE CURRENT 10-STATE STANDARDS SEPARATION REQUIREMENTS FOR SEPARATION OF FACILITIES. ADDITIONAL OPERATION AND MAINTENANCE EFFORTS MAY BE REQUIRED TO MAINTAIN THESE FACILITIES IN SAFE WORKING ORDER.

LEGEND

- HMA PAVEMENT
- DRIVEWAY, NONREINF CONC, 6 INCH
- DRIVEWAY, NONREINF CONC, 8 INCH
- CONC PAVT, NONREINF, 8 INCH
- SIDEWALK, CONC, 4 INCH
- SIDEWALK, CONC, 6 INCH
- SIDEWALK, CONC, 8 INCH
- BRICK PAVERS, SAND BED, SALVAGED
- HMA APPROACH PAVING LIMITS
- PROPOSED ADA TACTILE WARNING AREA
- CRITICAL TOLERANCE, ENSURE PROPER STRUCTURE CONFIGURATION/ROTATION



ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2295
 abonmarche.com

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

PROJECT: RANSOM STREET IMPROVEMENTS STA. 12+50 TO 17+00

SHEET TITLE: PLAN AND PROFILE

DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW: []
 DATE: JANUARY 2023
 SEAL: []

SIGNATURE: []
 DATE: []

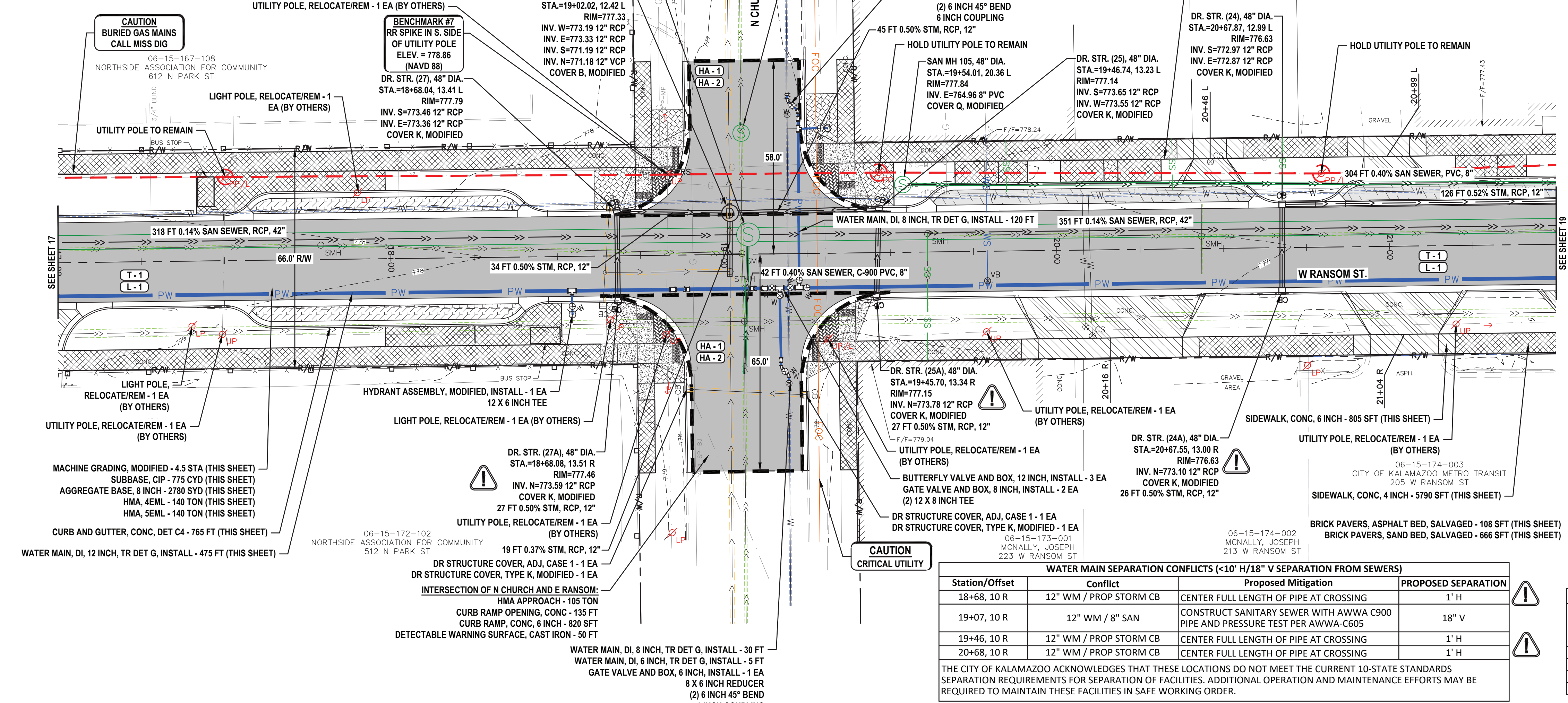
SCALE: HORIZ: 1" = 20'
 VERT: 1" = 5'

ACI JOB # 22-0031

SHEET NO. 17 of 52

NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22

PROPOSED WATER SERVICE REPLACEMENTS				
STATION	WATER SERVICE SIZE (IN)	LONG (L) OR SHORT (S)	YARD SERVICE SIZE (IN)	WATER SERVICE YARD, INCH, TRENCHLESS, INSTALL (FT)
19+79 L	2.00	L	2.00	10

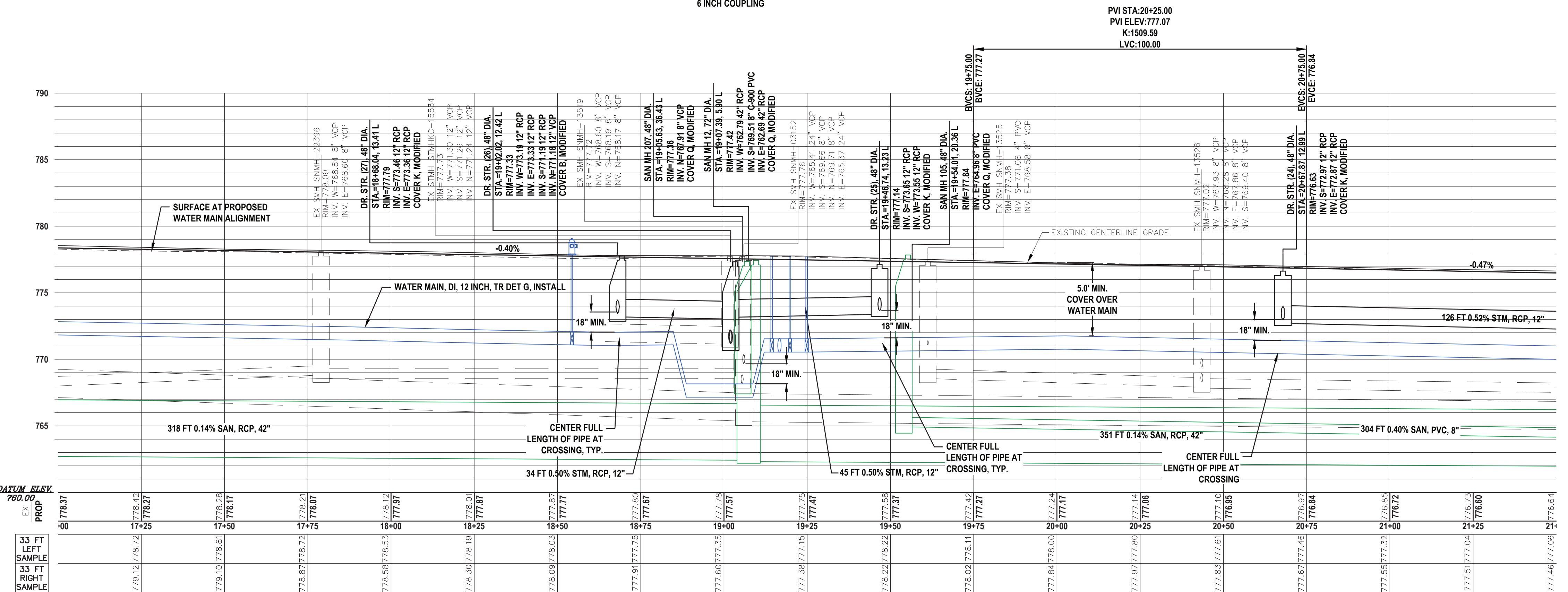


Description	Units	Quantity
Machine Grading, Modified	Sta	4.5
Subbase, CIP	Cyd	775
Aggregate Base, 6 inch	Syd	12
Aggregate Base, 8 inch	Syd	2780
Aggregate Base, 10 inch	Syd	74
Sewer, CI V, 12 inch, Tr Det B	Ft	276
Dr Structure Cover, Adj, Case 1	Ea	2
Dr Structure, 48 inch dia	Ea	7
Dr Structure Cover, Type B, Modified	Ea	1
Dr Structure Cover, Type K, Modified	Ea	9
HMA Approach	Ton	105
HMA, 4EML	Ton	140
HMA, 5EML	Ton	140
Conc Base Cse, Nonreinf, 6 inch	Syd	12
Conc Pavt, Nonreinf, 6 inch	Syd	85
Conc Pavt, Nonreinf, 8 inch	Syd	85
Driveway, Nonreinf Conc, 6 inch	Syd	145
Curb and Gutter, Conc, Det C4	Ft	840
Driveway Opening, Conc, Det M	Ft	420
Curb Ramp Opening, Conc	Ft	135
Sidewalk, Conc, 4 inch	Sft	5790
Sidewalk, Conc, 6 inch	Sft	805
Curb Ramp, Conc, 6 inch	Sft	820
Defectable Warning Surface, Cast Iron	Ft	50
Brick Pavers, Asphalt Bed, Salvaged	Sft	108
Brick Pavers, Sand Bed, Salvaged	Sft	666
Water Main, DI, 12 inch, Tr Det G, Install	Ft	475
Water Main, DI, 6 inch, Tr Det G, Install	Ft	10
Water Main, DI, 8 inch, Tr Det G, Install	Ft	75
Water Service, Yard, 2 inch, Trenchless, Install	Ft	10
Butterfly Valve and Box, 12 inch, Install	Ea	3
Gate Valve and Box, 6 inch, Install	Ea	2
Gate Valve and Box, 8 inch, Install	Ea	2
Hydrant Assembly, Modified, Install	Ea	1
Valve Box, Install	Ea	1
Water Serv. Long, 2 inch, Install	Ea	1
Water Service, Yard, 2 inch, Conn to Ex	Ea	1
Sanitary Sewer, PVC, 8 inch, Tr Det B2	Ft	197
Sanitary Sewer, Serv Lead, PVC, 6 inch	Ft	55
Sanitary Sewer, C-900 PVC, 8 inch, Tr Det B2	Ft	42
Sanitary Sewer, Conc, 42 inch, Tr Det B, Modified	Ft	450
Sanitary Structure, Add Depth of 48 inch dia, 8 ft to 15 ft, Mod	Ft	7
Sanitary Structure, Add Depth of 72 inch dia, 8 ft to 15 ft, Mod	Ft	1
Sanitary Structure, Add Depth of 72 inch dia, more than 15 ft, Mod	Ft	1
Sanitary Sewer Cleanout Cover	Ea	3
Sanitary Sewer Cleanout, 6 inch, Modified	Ea	3
Sanitary Structure Cover, Type Q, Modified	Ea	3
Sanitary Structure, 48 inch dia, Modified	Ea	2
Sanitary Structure, 72 inch dia, Modified	Ea	1

Station/Offset	Conflict	Proposed Mitigation	PROPOSED SEPARATION
18+68, 10 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CROSSING	1' H
19+07, 10 R	12" WM / 8" SAN	CONSTRUCT SANITARY SEWER WITH ANWA C900 PIPE AND PRESSURE TEST PER ANWA-C605	18" V
19+46, 10 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CROSSING	1' H
20+68, 10 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CROSSING	1' H

THE CITY OF KALAMAZOO ACKNOWLEDGES THAT THESE LOCATIONS DO NOT MEET THE CURRENT 10-STATE STANDARDS SEPARATION REQUIREMENTS FOR SEPARATION OF FACILITIES. ADDITIONAL OPERATION AND MAINTENANCE EFFORTS MAY BE REQUIRED TO MAINTAIN THESE FACILITIES IN SAFE WORKING ORDER.

PROPOSED DRIVEWAYS			PROPOSED SANITARY SERVICE REPLACEMENTS		
STATION	DRIVEWAY, NONREINF CONC, 6 INCH (SYD)	DRIVEWAY OPENING, CONC, DET M (FT)	STATION	SERVICE LENGTH (FT)	42" TAP
20+16 R	75	0.0	19+85 L	18	0
20+46 L	15	0.0	20+35 L	18	0
20+99 L	15	0.0	20+68 L	19	0
21+04 R	40	0.0			



LEGEND

- HMA PAVEMENT
- DRIVEWAY, NONREINF CONC, 6 INCH
- DRIVEWAY, NONREINF CONC, 8 INCH
- CONC PAVT, NONREINF, 8 INCH
- CONC PAVT, NONREINF, 6 INCH
- SIDEWALK RAMP, ADA
- BRICK PAVERS, ASPHALT BED, SALVAGED
- MAJOR STREET QUANTITY LIMITS
- CRITICAL TOLERANCE, ENSURE PROPER STRUCTURE CONFIGURATION/ROTATION
- CONC PAVT, NONREINF, 6 INCH
- SIDEWALK, CONC, 6 INCH
- SIDEWALK, CONC, 8 INCH
- SIDEWALK, CONC, 4 INCH
- BRICK PAVERS, SAND BED, SALVAGED
- HMA APPROACH PAVING LIMITS
- PROPOSED ADA TACTILE WARNING AREA

GRAPHIC SCALE
1 inch = 20 ft

DATE: JANUARY 2023

SCALE: HORIZ: 1" = 20'
VERT: 1" = 5'

NO. **REVISION DESCRIPTION:**

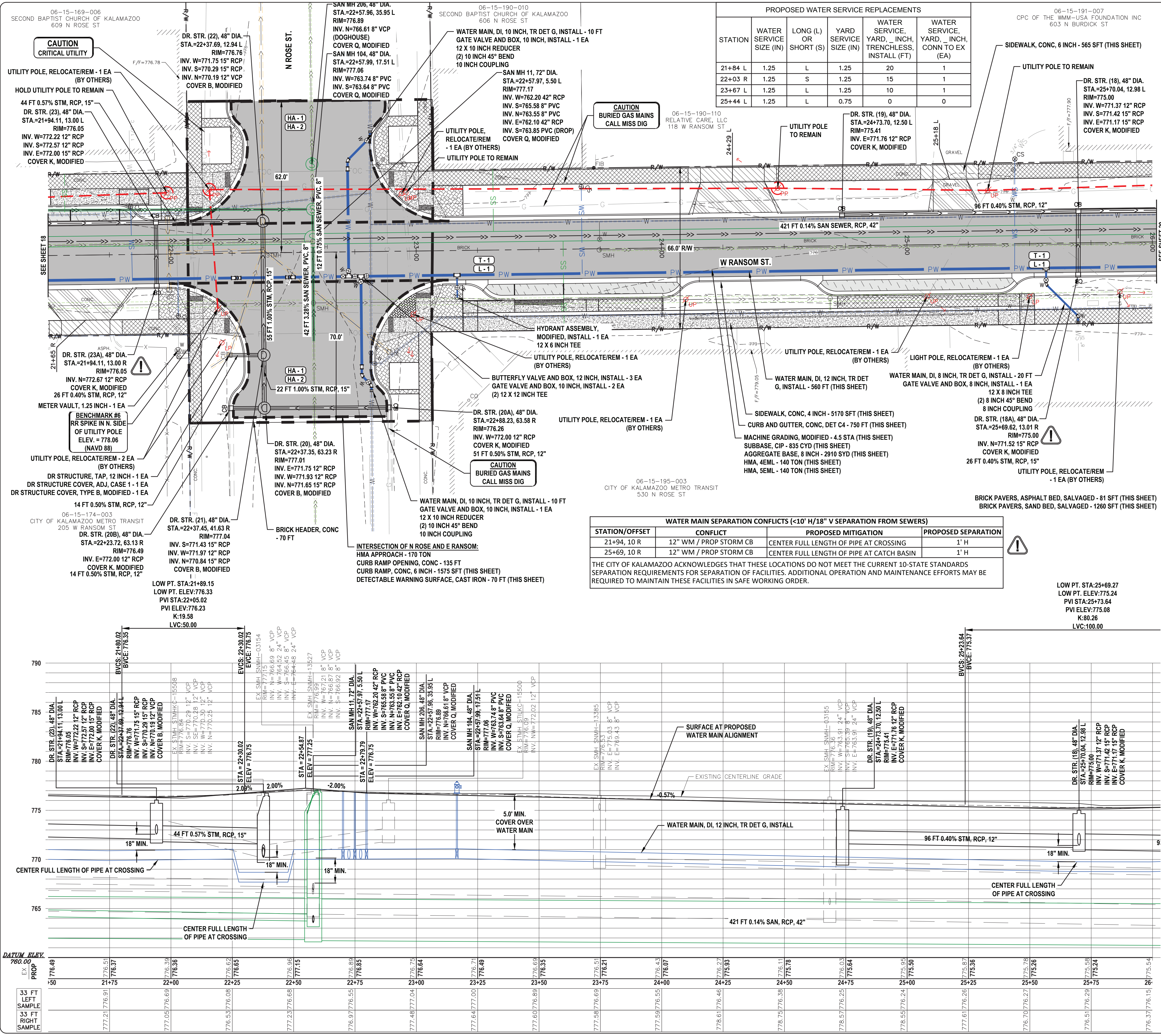
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22

ABONMARCHÉ
Engineering - Architecture - Land Surveying
205 West Main Street
Benton Harbor, MI 49023
T 269.927.2295
F 269.927.2295
abonmarche.com

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

PLAN AND PROFILE STA. 17+00 TO 21+50

22-0031
18 of 52



PROPOSED WATER SERVICE REPLACEMENTS

STATION	WATER SERVICE SIZE (IN)	LONG (L) OR SHORT (S)	YARD SERVICE SIZE (IN)	WATER SERVICE YARD, INCH, TRENCHLESS, INSTALL (FT)	WATER SERVICE YARD, INCH, CONN TO EX (EA)
21+84 L	1.25	L	1.25	20	1
22+03 R	1.25	S	1.25	15	1
23+67 L	1.25	L	1.25	10	1
25+44 L	1.25	L	0.75	0	0

WATER MAIN SEPARATION CONFLICTS (<10" H/18" V SEPARATION FROM SEWERS)

STATION/OFFSET	CONFLICT	PROPOSED MITIGATION	PROPOSED SEPARATION
21+94, 10 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CROSSING	1' H
25+69, 10 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	1' H

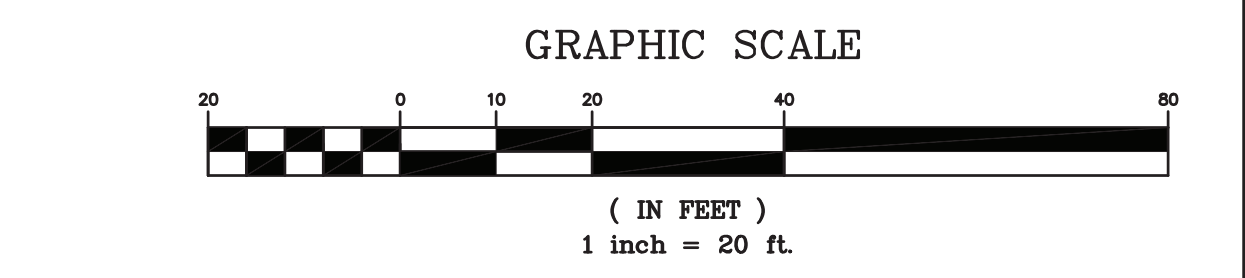
THE CITY OF KALAMAZOO ACKNOWLEDGES THAT THESE LOCATIONS DO NOT MEET THE CURRENT 10-STATE STANDARDS SEPARATION REQUIREMENTS FOR SEPARATION OF FACILITIES. ADDITIONAL OPERATION AND MAINTENANCE EFFORTS MAY BE REQUIRED TO MAINTAIN THESE FACILITIES IN SAFE WORKING ORDER.

Description	Units	Quantity	Major Street Share
Machine Grading, Modified	Sta	4.5	1.0
Subbase, CIP	Cyd	835	370
Aggregate Base, 6 inch	Syd	9	0
Aggregate Base, 8 inch	Syd	2935	1100
Aggregate Base, 10 inch	Syd	140	0
Sewer, CI IV, 12 inch, Tr Det B	Ft	302	79
Sewer, CI IV, 15 inch, Tr Det B	Ft	120	99
Dr Structure Cover, Adj, Case 1	Ea	1	1
Dr Structure, 48 inch dia	Ea	10	5
Dr Structure, Tap, 12 inch	Ea	1	1
Dr Structure Cover, Type B, Modified	Ea	4	4
Dr Structure Cover, Type K, Modified	Ea	7	2
HMA Approach	Ton	170	170
HMA, 4EML	Ton	140	30
HMA, 5EML	Ton	140	30
Conc Base Cse, Nonreinf, 6 inch	Syd	9	0
Conc Pavt, Nonreinf, 6 inch	Syd	100	0
Retaining Wall, Poured Concrete	Syd	170	0
Driveway, Nonreinf Conc, 6 inch	Syd	120	0
Curb and Gutter, Conc, Det C4	Ft	810	155
Driveway Opening, Conc Det M	Ft	250	0
Brick Header, Conc	Ft	70	70
Curb Ramp Opening, Conc	Ft	175	135
Sidewalk, Conc, 4 inch	Sf	3620	750
Sidewalk, Conc, 6 inch	Sf	565	0
Curb Ramp, Conc, 6 inch	Sf	3185	1010
Detectable Warning Surface, Cast Iron	Ft	70	50
Brick Pavers, Asphalt Bed, Salvaged	Sf	81	0
Brick Pavers, Sand Bed, Salvaged	Sf	1260	0
Water Main, DI, 10 inch, Tr Det G, Install	Ft	25	0
Water Main, DI, 12 inch, Tr Det G, Install	Ft	560	0
Water Main, DI, 8 inch, Tr Det G, Install	Ft	30	0
Water Service, Yard, 1.25 inch, Trenchless, Install	Ft	45	0
Butterfly Valve and Box, 12 inch, Install	Ea	5	0
Curb Stop and Box, Install	Ea	4	0
Gate Valve and Box, 10 inch, Install	Ea	2	0
Gate Valve and Box, 8 inch, Install	Ea	1	0
Hydrant Assembly, Modified, Install	Ea	1	0
Meter Vault, 1.25 inch	Ea	1	0
Water Serv, 1.25 inch, Install	Ea	1	0
Water Serv, Long, 1.25 inch, Install	Ea	3	0
Water Service, Yard, 1.25 inch, Conn to Ex	Ea	3	0
Sanitary Sewer, PVC, 8 inch, Tr Det B2	Ft	161	0
Sanitary Sewer, Serv Lead, PVC, 6 inch	Ft	80	0
Sanitary Sewer, Conc, 42 inch, Tr Det B, Modified	Ft	450	0
Sanitary Structure, Add Depth of 48 inch dia, 8 ft to 15 ft, Mod	Ft	9	0
Sanitary Structure, Add Depth of 72 inch dia, 8 ft to 15 ft, Mod	Ft	7	0
Sanitary Sewer Cleanout Cover	Ea	3	0
Sanitary Sewer Cleanout, 6 inch, Modified	Ea	3	0
Sanitary Sewer, Service Tap, 42 inch main	Ea	2	0
Sanitary Structure Cover, Type Q, Modified	Ea	3	0
Sanitary Structure, 48 inch dia, Modified	Ea	2	0
Sanitary Structure, 72 inch dia, Modified	Ea	1	0

STATION	PROPOSED DRIVEWAYS		PROPOSED SANITARY SERVICE REPLACEMENTS	
	DRIVEWAY, NONREINF CONC, 6 INCH (SYD)	DRIVEWAY OPENING, CONC, DET M (FT)	STATION	SERVICE LENGTH (FT)
21+65 R	45	0	21+57 L	20
24+29 L	45	0	23+32 L	20
25+18 L	30	0	23+60 R	40

LEGEND

- HMA PAVEMENT
- DRIVEWAY, NONREINF CONC, 6 INCH
- DRIVEWAY, NONREINF CONC, 8 INCH
- CONC PAVT, NONREINF, 6 INCH
- CONC PAVT, NONREINF, 8 INCH
- SIDEWALK RAMP, ADA
- BRICK PAVERS, ASPHALT BED, SALVAGED
- MAJOR STREET QUANTITY LIMITS
- CRITICAL TOLERANCE, ENSURE PROPER STRUCTURE CONFIGURATION/ROTATION
- CONC PAVT, NONREINF, 6 INCH
- SIDEWALK, CONC, 6 INCH
- SIDEWALK, CONC, 8 INCH
- SIDEWALK, CONC, 4 INCH
- SIDEWALK, CONC, 8 INCH
- BRICK PAVERS, SAND BED, SALVAGED
- HMA APPROACH PAVING LIMITS
- PROPOSED ADA TACTILE WARNING AREA



NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22

ABONMARCHÉ
 Engineering - Architecture - Land Surveying
 795 West Main Street
 Benton Harbor, MI 49023
 Phone: 269.927.2295
 Fax: 269.927.2295
 abonmarche.com

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

PLAN AND PROFILE STA. 21+50 TO 26+00

SHEET TITLE:
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

SIGNATURE:
 DATE:
 SCALE:
 HORIZ: 1" = 20'
 VERT: 1" = 5'
 ACI JOB #
22-0031
 SHEET NO.
19 of 52

06-15-191-007
CPC OF THE WMM-USA
FOUNDATION, INC.
603 N BIRDICK ST

DR. STR. (17), 48" DIA.
STA.=26+62.98, 12.78 L
RIM=775.63
INV. W=770.80 15" RCP
INV. S=769.13 15" RCP
INV. N=769.13 12" VCP
COVER B, MODIFIED

BENCHMARK #5
RR SPIKE IN S. SIDE
OF UTILITY POLE
ELEV. = 777.14
(NAVD 88)

UTILITY POLE, RELOCATE/REM - 1 EA
(BY OTHERS)

HYDRANT ASSEMBLY,
MODIFIED, INSTALL - 1 EA
12 X 6 INCH TEE

CAUTION
CRITICAL UTILITY

CAUTION
BURIED GAS MAINS
CALL MISS DIG

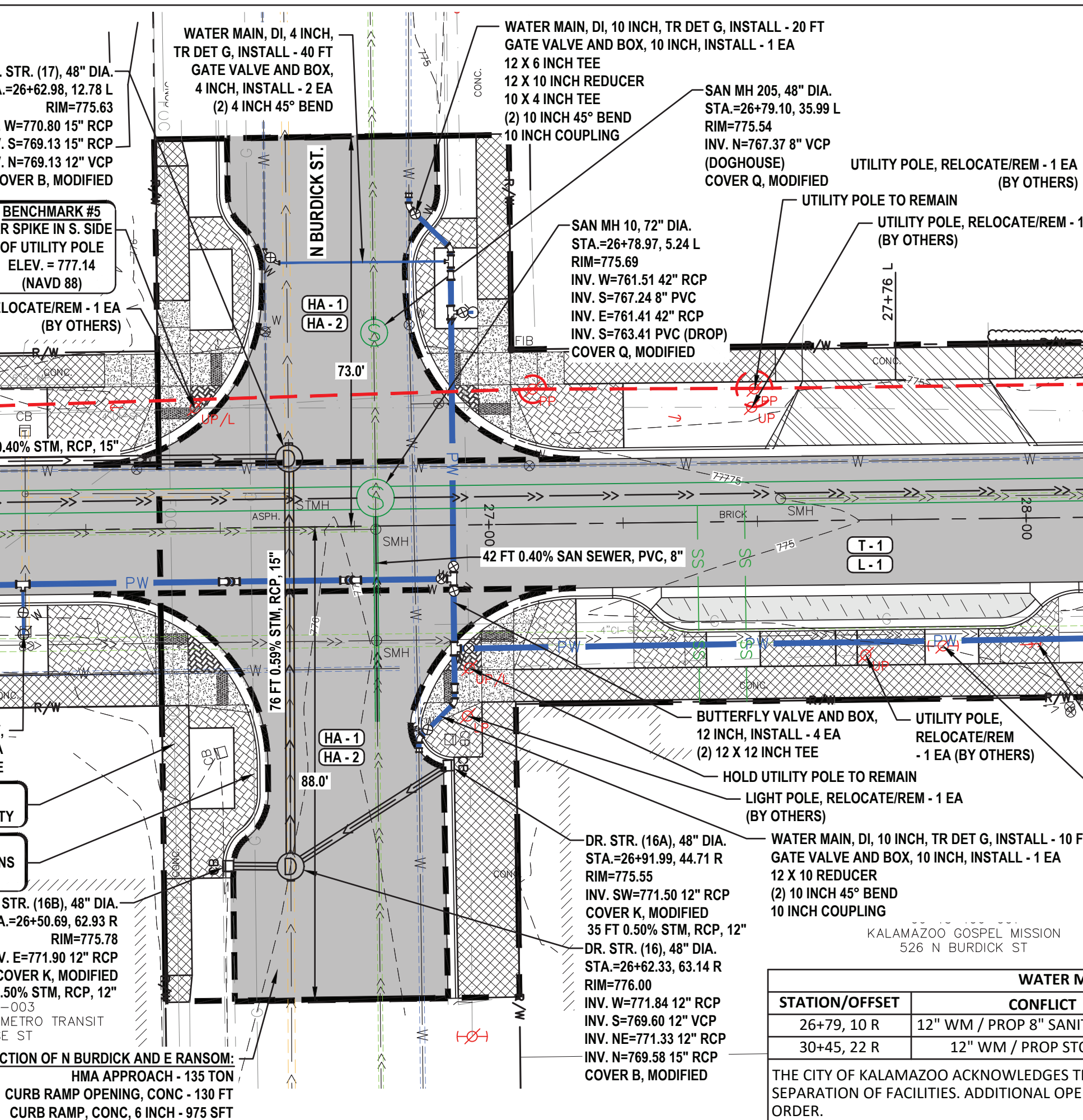
DR. STR. (16B), 48" DIA.
STA.=26+50.69, 62.93 R
RIM=775.78
INV. E=771.90 12" RCP
COVER K, MODIFIED

DR. STR. (16A), 48" DIA.
STA.=26+91.99, 44.71 R
RIM=775.55
INV. SW=771.50 12" RCP
COVER K, MODIFIED

DR. STR. (16), 48" DIA.
STA.=26+62.33, 63.14 R
RIM=776.00
INV. S=769.60 12" VCP
INV. N=771.33 12" RCP
COVER B, MODIFIED

INTERSECTION OF N BIRDICK AND E RANSOM:
HMA APPROACH - 135 TON
CURB RAMP OPENING, CONC. - 130 FT
CURB RAMP, CONC. 6 INCH - 975 SFT
DETECTABLE WARNING SURFACE, CAST IRON - 55 FT

06-15-195-003
CITY OF KALAMAZOO METRO TRANSIT
530 N ROSE ST



PROPOSED WATER SERVICE REPLACEMENTS				
STATION	WATER SERVICE SIZE (IN)	LONG (L) OR SHORT (S)	YARD SERVICE SIZE (IN)	WATER SERVICE, YARD, INCH, TRENCHLESS, INSTALL (FT)
30+40 R	1.25	S	1.25	20

06-15-192-009
REPUBLIC SERVICES OF MICHIGAN
100 E NORTH ST

WATER MAIN SEPARATION CONFLICTS (<10" H/18" V SEPARATION FROM SEWERS)				
STATION/OFFSET	CONFLICT	PROPOSED MITIGATION	PROPOSED SEPARATION	
26+79, 10 R	12" WM / PROP 8" SANITARY SEWER	INSULATE WATER MAIN WHERE 4" OF COVER CANNOT BE MAINTAINED	18" V	
30+45, 22 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	5' H	

THE CITY OF KALAMAZOO ACKNOWLEDGES THAT THESE LOCATIONS DO NOT MEET THE CURRENT 10-STATE STANDARDS SEPARATION REQUIREMENTS FOR SEPARATION OF FACILITIES. ADDITIONAL OPERATION AND MAINTENANCE EFFORTS MAY BE REQUIRED TO MAINTAIN THESE FACILITIES IN SAFE WORKING ORDER.

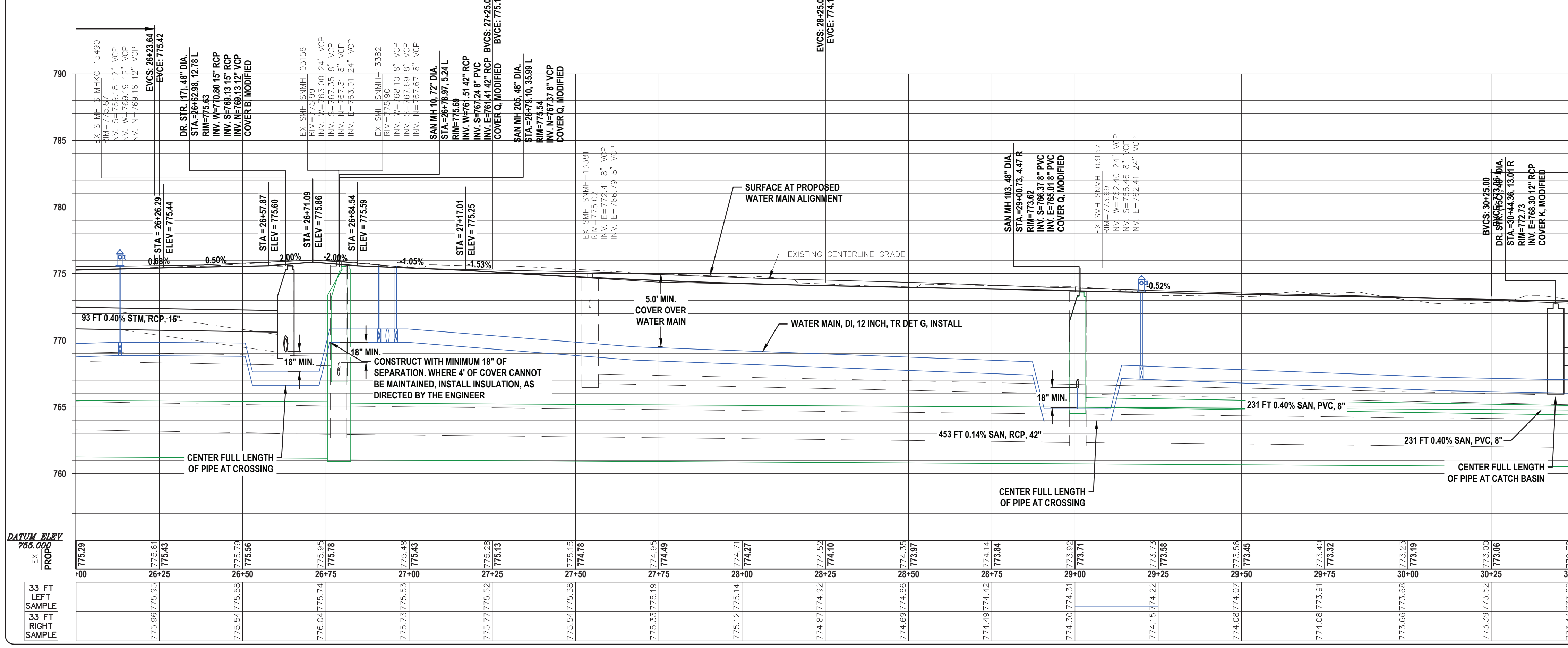
PROPOSED DRIVEWAYS			
STATION	DRIVEWAY, NONREINF CONC, 6 INCH (SYD)	DRIVEWAY OPENING, CONC, DET M (FT)	PROPOSED SANITARY SERVICE REPLACEMENTS
27+76 L	60	0	26+02 L 25 0
28+35 R	55	0	27+38 R 25 0
29+40 R	50	0	27+47 R 25 0
30+10 R	50	0	30+31 R 25 0

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST



Description	Units	Quantity	Major Street Share
Machine Grading, Modified	Syd	4.5	4.1
Subbase, CIP	Cyd	750	735
Aggregate Base, 6 inch	Syd	12	11
Aggregate Base, 8 inch	Syd	2630	2105
Aggregate Base, 10 inch	Syd	182	129
Sewer, CI IV, 12 inch, Tr Det B	Ft	53	47
Sewer, CI IV, 15 inch, Tr Det B	Ft	139	139
Dr Structure, 48 inch dia	Ea	5	5
Dr Structure Cover, Type B, Modified	Ea	2	2
Dr Structure Cover, Type K, Modified	Ea	3	3
HMA Approach	Ton	135	135
HMA, 4EML	Ton	140	120
HMA, 5EML	Ton	140	120
Conc Base Cse, Nonreinf, 6 inch	Syd	12	11
Conc Pavt, Nonreinf, 6 inch	Syd	40	40
Driveway, Nonreinf Conc, 6 inch	Syd	215	215
Curb and Gutter, Conc, Det C4	Ft	955	880
Driveway Opening, Conc, Det M	Ft	95	95
Curb Ramp Opening, Conc	Ft	130	130
Sidewalk, Conc, 4 inch	Sft	5290	4880
Sidewalk, Conc, 6 inch	Sft	955	955
Curb Ramp, Conc, 6 inch	Sft	975	975
Detectable Warning Surface, Cast Iron	Ft	55	55
Brick Pavers, Asphalt Bed, Salvaged	Sft	108	99
Brick Pavers, Sand Bed, Salvaged	Sft	1638	1161
Water Main, DI, 10 inch, Tr Det G, Install	Ft	30	0
Water Main, DI, 12 inch, Tr Det G, Install	Ft	565	0
Water Main, DI, 4 inch, Tr Det G, Install	Ft	40	0
Water Service, Yard, 1.25 inch, Trenchless, Install	Ft	20	0
Butterfly Valve and Box, 12 inch, Install	Ea	4	0
Curb Stop and Box, Install	Ea	1	0
Gate Valve and Box, 10 inch, Install	Ea	2	0
Gate Valve and Box, 4 inch, Install	Ea	1	0
Hydrant Assembly, Modified, Install	Ea	2	0
Water Serv, 1.25 inch, Install	Ea	1	0
Water Service, Yard, 1.25 inch, Conn to Ex	Ea	1	0
Sanitary Sewer, PVC, 8 inch, Tr Det B2	Ft	215	0
Sanitary Sewer, Serv Lead, PVC, 6 inch	Ft	100	0
Sanitary Sewer, Conc, 42 inch, Tr Det B, Modified	Ft	450	0
Sanitary Structure, Add Depth of 48 inch dia, 8 ft to 15 ft, Mod	Ft	2	0
Sanitary Structure, Add Depth of 72 inch dia, 8 ft to 15 ft, Mod	Ft	7	0
Sanitary Sewer Cleanout Cover	Ea	4	0
Sanitary Sewer Cleanout, 6 inch, Modified	Ea	4	0
Sanitary Structure Cover, Type Q, Modified	Ea	3	0
Sanitary Structure, 48 inch dia, Modified	Ea	2	0
Sanitary Structure, 72 inch dia, Modified	Ea	1	0

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

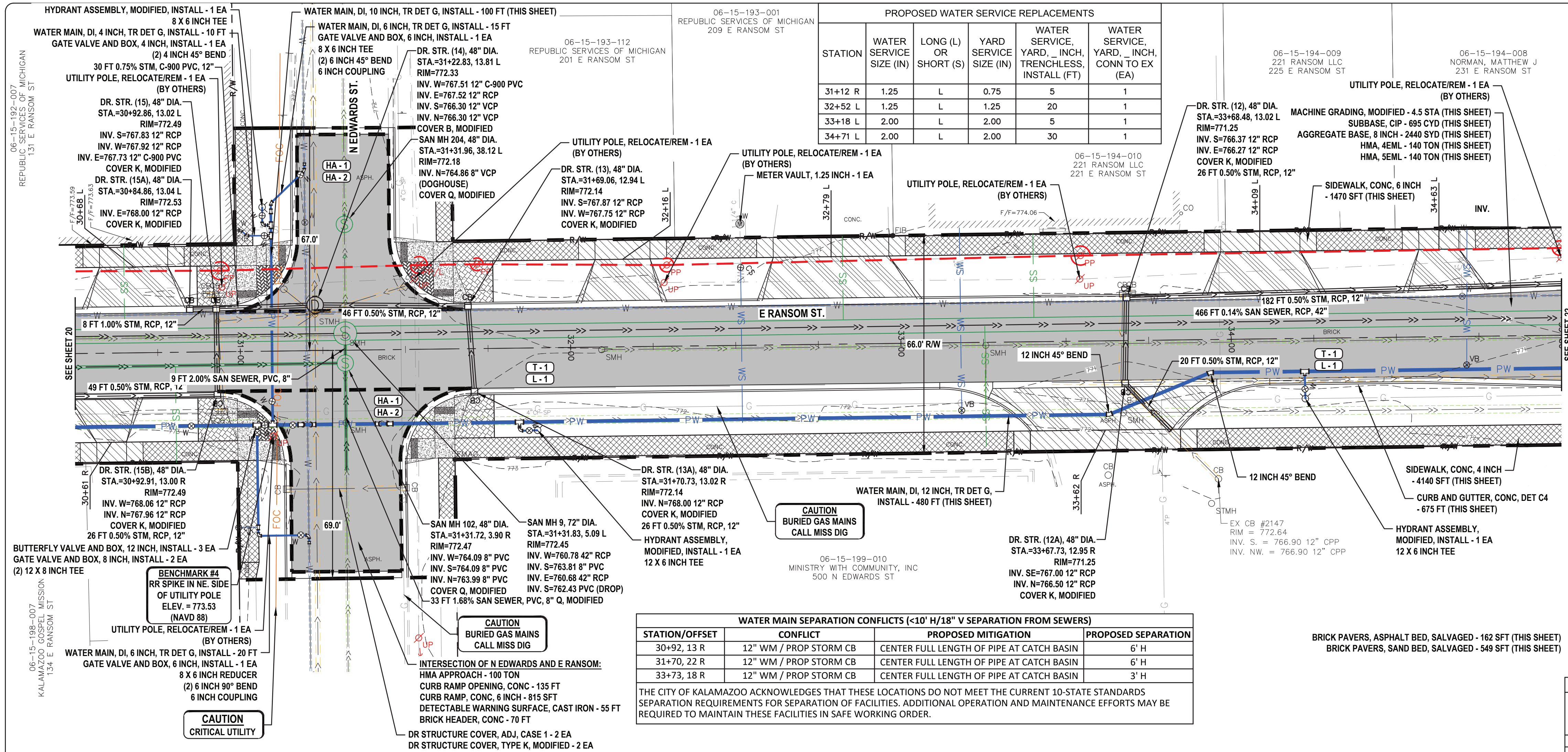
06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM ST

06-15-197-105
KALAMAZOO GOSPEL MISSION
126 E RANSOM ST

06-15-197-106
CHRISTIE, MR. & MRS JAMES
130 E RANSOM ST

BRICK PAVERS, ASPHALT BED, SALVAGED - 108 SFT (THIS SHEET)
BRICK PAVERS, SAND BED, SALVAGED - 1638 SFT (THIS SHEET)

06-15-197-107
KALAMAZOO GOSPEL MISSION
116 E RANSOM



PROPOSED WATER SERVICE REPLACEMENTS					
STATION	WATER SERVICE SIZE (IN)	LONG (L) OR SHORT (S)	YARD SERVICE SIZE (IN)	WATER SERVICE YARD, INCH, TRENCHLESS, INSTALL (FT)	WATER SERVICE YARD, INCH, CONN TO EX (EA)
31+12 R	1.25	L	0.75	5	1
32+52 L	1.25	L	1.25	20	1
33+18 L	2.00	L	2.00	5	1
34+71 L	2.00	L	2.00	30	1

WATER MAIN SEPARATION CONFLICTS (<10' H/18" V SEPARATION FROM SEWERS)			
STATION/OFFSET	CONFLICT	PROPOSED MITIGATION	PROPOSED SEPARATION
30+92, 13 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	6' H
31+70, 22 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	6' H
33+73, 18 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	3' H

THE CITY OF KALAMAZOO ACKNOWLEDGES THAT THESE LOCATIONS DO NOT MEET THE CURRENT 10-STATE STANDARDS SEPARATION REQUIREMENTS FOR SEPARATION OF FACILITIES. ADDITIONAL OPERATION AND MAINTENANCE EFFORTS MAY BE REQUIRED TO MAINTAIN THESE FACILITIES IN SAFE WORKING ORDER.

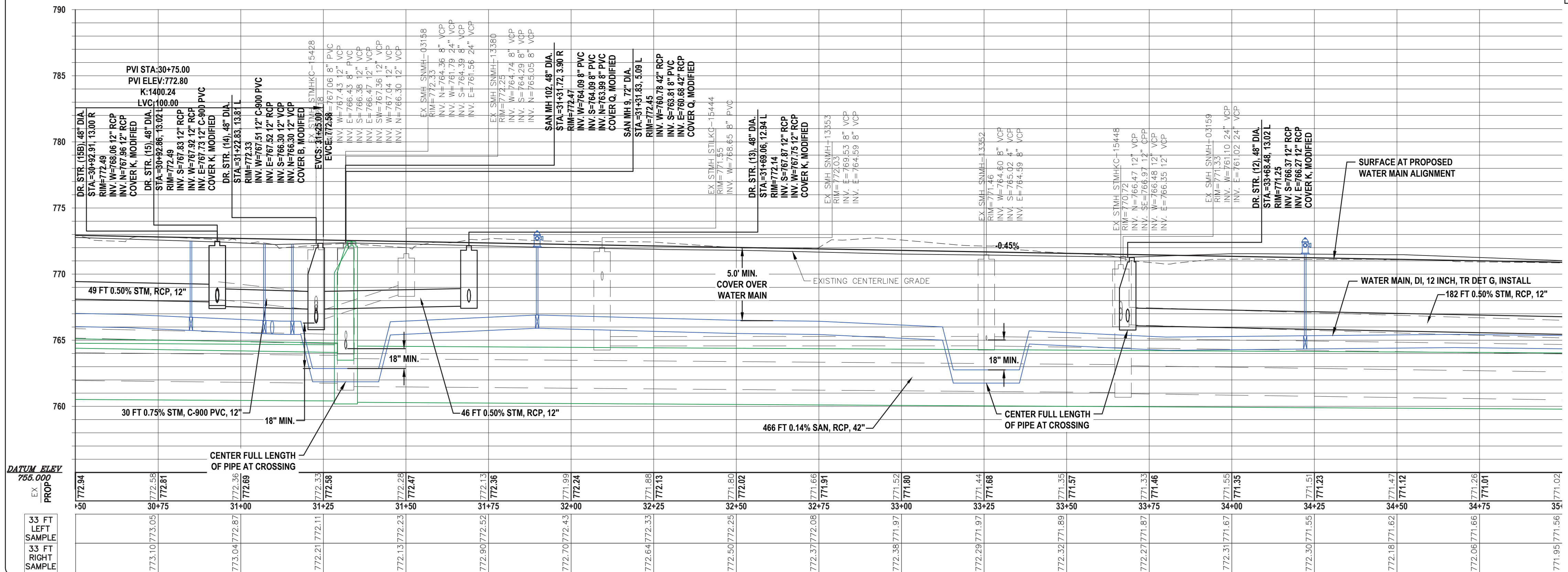
Description	Units	Quantity	Major Street Share
Machine Grading, Modified	Sta	4.5	4.5
Subbase, CIP	Cyd	695	695
Aggregate Base, 6 inch	Syd	18	0
Aggregate Base, 8 inch	Syd	2460	2460
Aggregate Base, 10 inch	Syd	61	0
Sewer, CI W, 12 inch, Tr Det B	Ft	339	339
Sewer, C-900 PVC, 12 inch, Tr Det B	Ft	30	30
Dr Structure Cover, Adj, Case 1	Ea	2	2
Dr Structure, 48 inch dia	Ea	8	8
Dr Structure Cover, Type B, Modified	Ea	1	1
Dr Structure Cover, Type K, Modified	Ea	9	9
HMA Approach	Ton	100	100
HMA, 4EML	Ton	140	140
HMA, 5EML	Ton	140	140
Conc Base Cse, Nonreinf, 6 inch	Syd	18	0
Driveway, Nonreinf Conc, 6 inch	Syd	310	310
Curb and Gutter, Conc, Det C4	Ft	860	860
Driveway Opening, Conc, Det M	Ft	105	105
Brick Header, Conc	Ft	70	70
Curb Ramp Opening, Conc	Ft	135	135
Sidewalk, Conc, 4 inch	Sft	4140	4140
Sidewalk, Conc, 6 inch	Sft	1470	1470
Curb Ramp, Conc, 6 inch	Sft	815	815
Detectable Warning Surface, Cast Iron	Ft	55	55
Brick Pavers, Asphalt Bed, Salvaged	Sft	162	0
Brick Pavers, Sand Bed, Salvaged	Sft	549	0
Water Main, DI, 12 inch, Tr Det G, Install	Ft	480	0
Water Main, DI, 4 inch, Tr Det G, Install	Ft	10	0
Water Main, DI, 6 inch, Tr Det G, Install	Ft	35	0
Water Main, DI, 8 inch, Tr Det G, Install	Ft	100	0
Water Service, Yard, 1.25 inch, Trenchless, Install	Ft	25	0
Water Service, Yard, 2 inch, Trenchless, Install	Ft	35	0
Butterfly Valve and Box, 12 inch, Install	Ea	3	0
Curb Stop and Box, Install	Ea	2	0
Gate Valve and Box, 4 inch, Install	Ea	1	0
Gate Valve and Box, 6 inch, Install	Ea	2	0
Gate Valve and Box, 8 inch, Install	Ea	2	0
Hydrant Assembly, Modified, Install	Ea	2	0
Meter Vault, 1.25 inch	Ea	1	1
Valve Box, Install	Ea	2	0
Water Serv, Long, 1.25 inch, Install	Ea	2	0
Water Serv, Long, 2 inch, Install	Ea	2	0
Water Service, Yard, 1.25 inch, Conn to Ex	Ea	2	0
Water Service, Yard, 2 inch, Conn to Ex	Ea	2	0
Sanitary Sewer, PVC, 8 inch, Tr Det B2	Ft	129	0
Sanitary Sewer, Serv Lead, PVC, 6 inch	Ft	145	0
Sanitary Sewer, Conc, 42 inch, Tr Det B, Modified	Ft	450	0
Sanitary Structure, Add Depth of 48 inch dia, 8 ft to 15 ft, Mod	Ft	1	0
Sanitary Structure, Add Depth of 72 inch dia, 8 ft to 15 ft, Mod	Ft	4	0
Sanitary Sewer Cleanout Cover	Ea	5	0
Sanitary Sewer Cleanout, 6 inch, Modified	Ea	5	0
Sanitary Sewer, Service Tap, 42 inch main	Ea	4	0
Sanitary Structure Cover, Type Q, Modified	Ea	3	0
Sanitary Structure, 48 inch dia, Modified	Ea	2	0
Sanitary Structure, 72 inch dia, Modified	Ea	1	0

PROPOSED DRIVEWAYS			PROPOSED SANITARY SERVICE REPLACEMENTS		
STATION	DRIVEWAY, NONREINF CONC, 6 INCH (SYD)	DRIVEWAY OPENING, CONC, DET M (FT)	STATION	SERVICE LENGTH (FT)	42" TAP
30+61 R	25	0	30+65 L	25	1
30+68 L	35	0	30+81 R	30	0
32+16 L	35	0	32+83 L	25	1
32+79 L	60	0	33+41 L	25	1
33+62 R	85	105	34+17 R	40	1
34+09 L	40	0			
34+63 L	30	0			

LEGEND

- HMA PAVEMENT
- DRIVEWAY, NONREINF CONC, 6 INCH
- DRIVEWAY, NONREINF CONC, 8 INCH
- CONC PAVT, NONREINF, 8 INCH
- SIDEWALK RAMP, ADA
- BRICK PAVERS, ASPHALT BED, SALVAGED
- MAJOR STREET QUANTITY LIMITS
- CRITICAL TOLERANCE, ENSURE PROPER STRUCTURE CONFIGURATION/ROTATION
- CONC PAVT, NONREINF, 6 INCH
- SIDEWALK, CONC, 6 INCH
- SIDEWALK, CONC, 8 INCH
- SIDEWALK, CONC, 4 INCH
- BRICK PAVERS, SAND BED, SALVAGED
- HMA APPROACH PAVING LIMITS
- PROPOSED ADA TACTILE WARNING AREA

GRAPHIC SCALE
1 inch = 20 ft



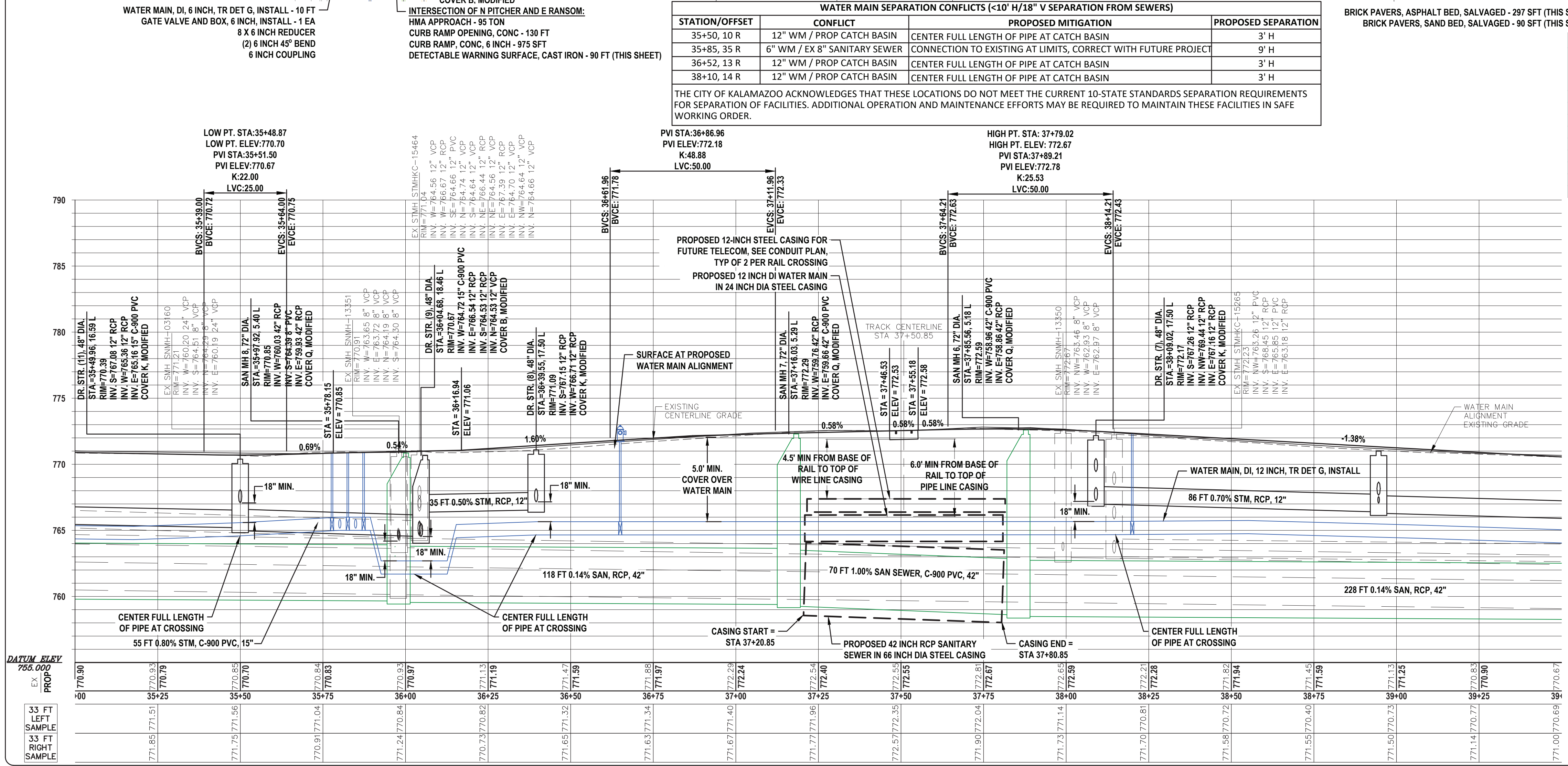
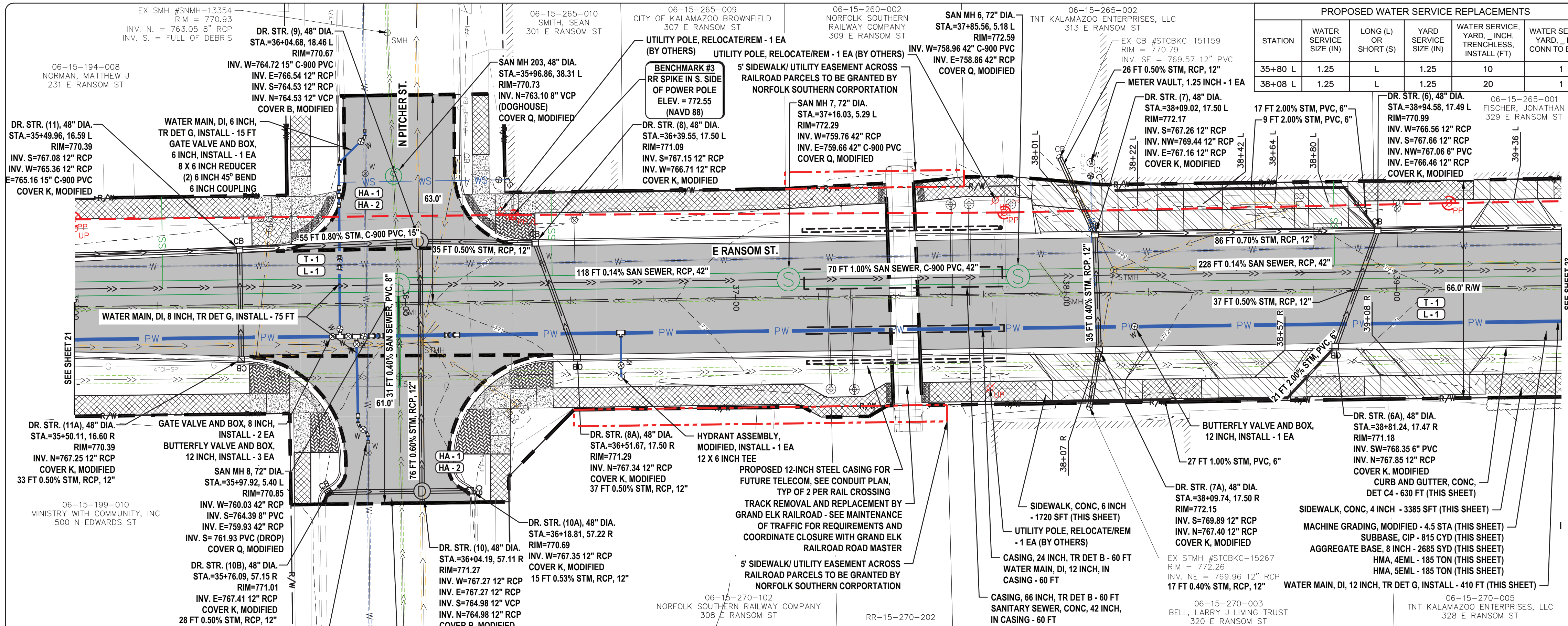
ABONMARCHÉ
 Bentley Harbor
 Portage
 South Bend
 Hobart
 Valparaiso
 Engineering - Architecture - Land Surveying

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

PLAN AND PROFILE STA. 30+50 TO 35+00

SHEET TITLE:
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:
 SIGNATURE:
 DATE:
 SCALE:
 HORIZ: 1" = 20'
 VERT: 1" = 5'
 ACI JOB #
22-0031
 SHEET NO.
21 of 52

NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22



PROPOSED WATER SERVICE REPLACEMENTS					
STATION	WATER SERVICE SIZE (IN)	LONG (L) OR SHORT (S)	YARD SERVICE SIZE (IN)	WATER SERVICE YARD, INCH, TRENCHLESS, INSTALL (FT)	WATER SERVICE, YARD, INCH, CONN TO EX (EA)
35+80 L	1.25	L	1.25	10	1
38+08 L	1.25	L	1.25	20	1

Description	Units	Quantity	Major Street Share
Machine Grading, Modified	Sta	4.5	4.5
Subbase, CIP	Cyd	815	815
Aggregate Base, 6 inch	Syd	33	0
Aggregate Base, 8 inch	Syd	2685	2685
Aggregate Base, 10 inch	Syd	10	0
Sewer, CI IV, 12 inch, Tr Det B	Ft	538	538
Sewer, C-900 PVC, 15 inch, Tr Det B	Ft	55	55
Sewer, PVC, 6 inch, Tr Det B	Ft	74	74
Dr Structure, 48 inch dia	Ea	10	10
Dr Structure, Add Depth of 48 inch dia, 8 foot to 15 foot	Ft	6	6
Trench Drain	Ft	110	110
Dr Structure Cover, Type B, Modified	Ea	2	2
Dr Structure Cover, Type K, Modified	Ea	8	8
HMA Approach	Ton	95	95
HMA, 4EML	Ton	185	185
HMA, 5EML	Ton	185	185
Conc Base Cse, Nonreinf, 6 inch	Syd	33	0
Driveway, Nonreinf, Conc, 6 inch	Syd	180	180
Curb and Gutter, Conc, Det C4	Ft	870	870
Curb Ramp Opening, Conc	Ft	130	130
Sidewalk, Conc, 4 inch	Sft	3385	3385
Sidewalk, Conc, 6 inch	Sft	1720	1720
Curb Ramp, Conc, 6 inch	Sft	975	975
Detectable Warning Surface, Cast Iron	Ft	90	90
Brick Pavers, Asphalt Bed, Salvaged	Sft	297	0
Brick Pavers, Sand Bed, Salvaged	Sft	90	0
Casing, 24 inch, Tr Det B	Ft	60	0
Water Main, DI, 12 inch, in casing	Ft	60	0
Water Main, DI, 12 inch, Tr Det G, Install	Ft	410	0
Water Main, DI, 6 inch, Tr Det G, Install	Ft	25	0
Water Main, DI, 8 inch, Tr Det G, Install	Ft	75	0
Water Service, Yard, 1.25 inch, Trenchless, Install	Ft	30	0
Butterfly Valve and Box, 12 inch, Install	Ea	3	0
Curb Stop and Box, Install	Ea	2	0
Gate Valve and Box, 6 inch, Install	Ea	2	0
Gate Valve and Box, 8 inch, Install	Ea	2	0
Hydrant Assembly, Modified, Install	Ea	1	0
Meter Vault, 1.25 inch	Ea	1	0
Water Serv, Long, 1.25 inch, Install	Ea	2	0
Water Service, Yard, 1.25 inch, Conn to Ex	Ea	2	0
Sanitary Sewer, PVC, 8 inch, Tr Det B2	Ft	31	0
Sanitary Sewer, Serv Lead, PVC, 6 inch	Ft	80	0
Casing, 66 inch, Tr Det B	Ft	70	0
Sanitary Sewer, C-900 PVC, 42 inch, in casing	Ft	70	0
Sanitary Sewer, Conc, 42 inch, Tr Det B, Modified	Ft	380	0
Sanitary Sewer Cleanout Cover	Ea	14	0
Sanitary Sewer Cleanout, 6 inch, Modified	Ea	3	0
Sanitary Sewer Service Tap, 42 inch main	Ea	3	0
Sanitary Structure Cover, Type Q, Modified	Ea	4	0
Sanitary Structure, 48 inch dia, Modified	Ea	1	0
Sanitary Structure, 72 inch dia, Modified	Ea	3	0

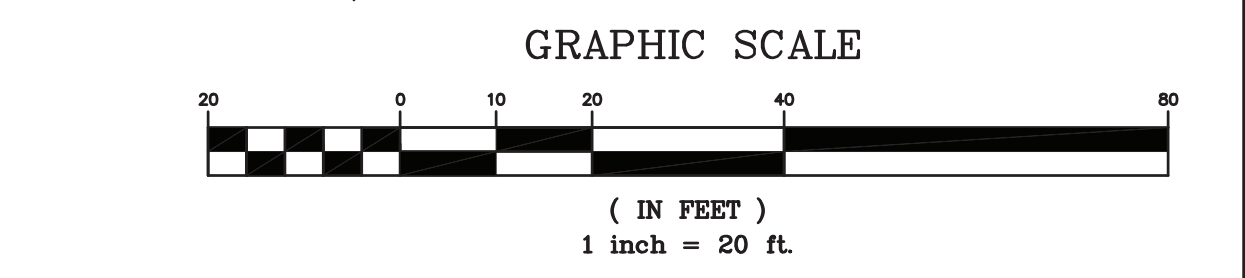
STATION/OFFSET	CONFLICT	PROPOSED MITIGATION	PROPOSED SEPARATION
35+50, 10 R	12" WM / PROP CATCH BASIN	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	3' H
35+85, 35 R	6" WM / EX 8" SANITARY SEWER	CONNECTION TO EXISTING AT LIMITS, CORRECT WITH FUTURE PROJECT	9' H
36+52, 13 R	12" WM / PROP CATCH BASIN	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	3' H
38+10, 14 R	12" WM / PROP CATCH BASIN	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	3' H

THE CITY OF KALAMAZOO ACKNOWLEDGES THAT THESE LOCATIONS DO NOT MEET THE CURRENT 10-STATE STANDARDS SEPARATION REQUIREMENTS FOR SEPARATION OF FACILITIES. ADDITIONAL OPERATION AND MAINTENANCE EFFORTS MAY BE REQUIRED TO MAINTAIN THESE FACILITIES IN SAFE WORKING ORDER.

PROPOSED DRIVEWAYS			PROPOSED SANITARY SERVICE REPLACEMENTS		
STATION	DRIVEWAY, NONREINF CONC, 6 INCH (SYD)	DRIVEWAY OPENING, CONC, DET M (FT)	STATION	SERVICE LENGTH (FT)	42" TAP (EA)
38+01 L	25	0	35+27 L	25	1
38+07 R	15	0	36+45 L	25	1
38+22 L	15	0	38+81 L	30	1
38+42 L	10	0			
38+57 R	30	0			
38+64 L	15	0			
38+80 L	10	0			
39+08 R	35	0			
39+36 L	25	0			

LEGEND

- HMA PAVEMENT
- DRIVEWAY, NONREINF CONC, 6 INCH
- DRIVEWAY, NONREINF CONC, 8 INCH
- CONC PAVT, NONREINF, 8 INCH
- SIDEWALK RAMP, ADA
- BRICK PAVERS, ASPHALT BED, SALVAGED
- MAJOR STREET QUANTITY LIMITS
- CRITICAL TOLERANCE, ENSURE PROPER STRUCTURE CONFIGURATION/ROTATION
- CONC PAVT, NONREINF, 6 INCH
- SIDEWALK, CONC, 6 INCH
- SIDEWALK, CONC, 8 INCH
- SIDEWALK, CONC, 4 INCH
- BRICK PAVERS, SAND BED, SALVAGED
- HMA APPROACH PAVING LIMITS
- PROPOSED ADA TACTILE WARNING AREA



ABONMARCHÉ
 Engineering - Architecture - Land Surveying
 795 West Main Street
 Benton Harbor, MI 49023
 269.927.2295
 abonmarche.com

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

PLAN AND PROFILE STA. 35+00 TO 39+50

SHEET TITLE: RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

DRAWN BY: DJL

DESIGNED BY: MJS/ERF

PM REVIEW: DAD

QA/QC REVIEW: DATE: JANUARY 2023

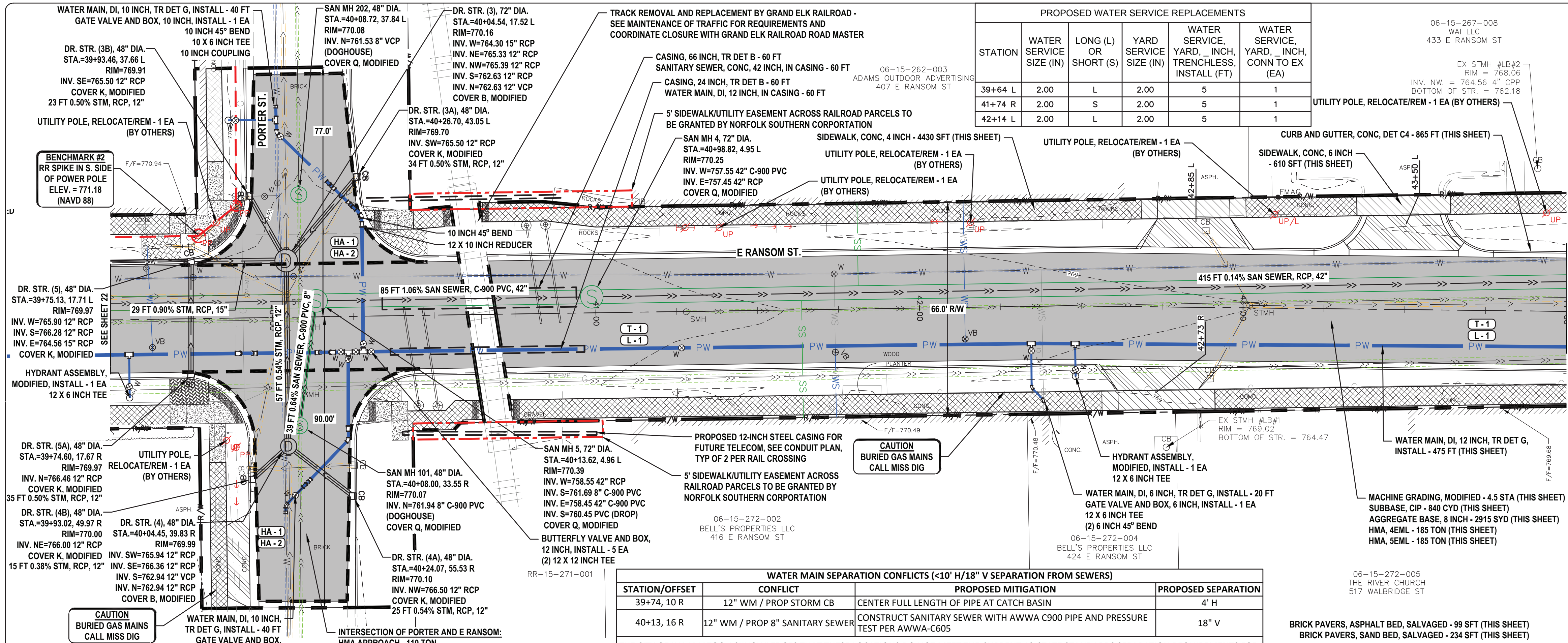
DATE: JANUARY 2023

SCALE: HORIZ: 1" = 20' VERT: 1" = 5'

ACI JOB #: 22-0031

SHEET NO.: 22 of 52

NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITAL	MJS	12/14/2022
1	EGL PERMIT SUBMITAL	MJS	11/8/22



PROPOSED WATER SERVICE REPLACEMENTS					
STATION	WATER SERVICE SIZE (IN)	LONG (L) OR SHORT (S)	YARD SERVICE SIZE (IN)	WATER SERVICE YARD, TRENCHLESS, INSTALL (FT)	WATER SERVICE YARD, INCH, CONN TO EX (EA)
39+64 L	2.00	L	2.00	5	1
41+74 R	2.00	S	2.00	5	1
42+14 L	2.00	L	2.00	5	1

WATER MAIN SEPARATION CONFLICTS (<10" H/18" V SEPARATION FROM SEWERS)			
STATION/OFFSET	CONFLICT	PROPOSED MITIGATION	PROPOSED SEPARATION
39+74, 10 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	4" H
40+13, 16 R	12" WM / PROP 8" SANITARY SEWER	CONSTRUCT SANITARY SEWER WITH AWWA C900 PIPE AND PRESSURE TEST PER AWWA-C605	18" V

THE CITY OF KALAMAZOO ACKNOWLEDGES THAT THESE LOCATIONS DO NOT MEET THE CURRENT 10-STATE STANDARDS SEPARATION REQUIREMENTS FOR SEPARATION OF FACILITIES. ADDITIONAL OPERATION AND MAINTENANCE EFFORTS MAY BE REQUIRED TO MAINTAIN THESE FACILITIES IN SAFE WORKING ORDER.

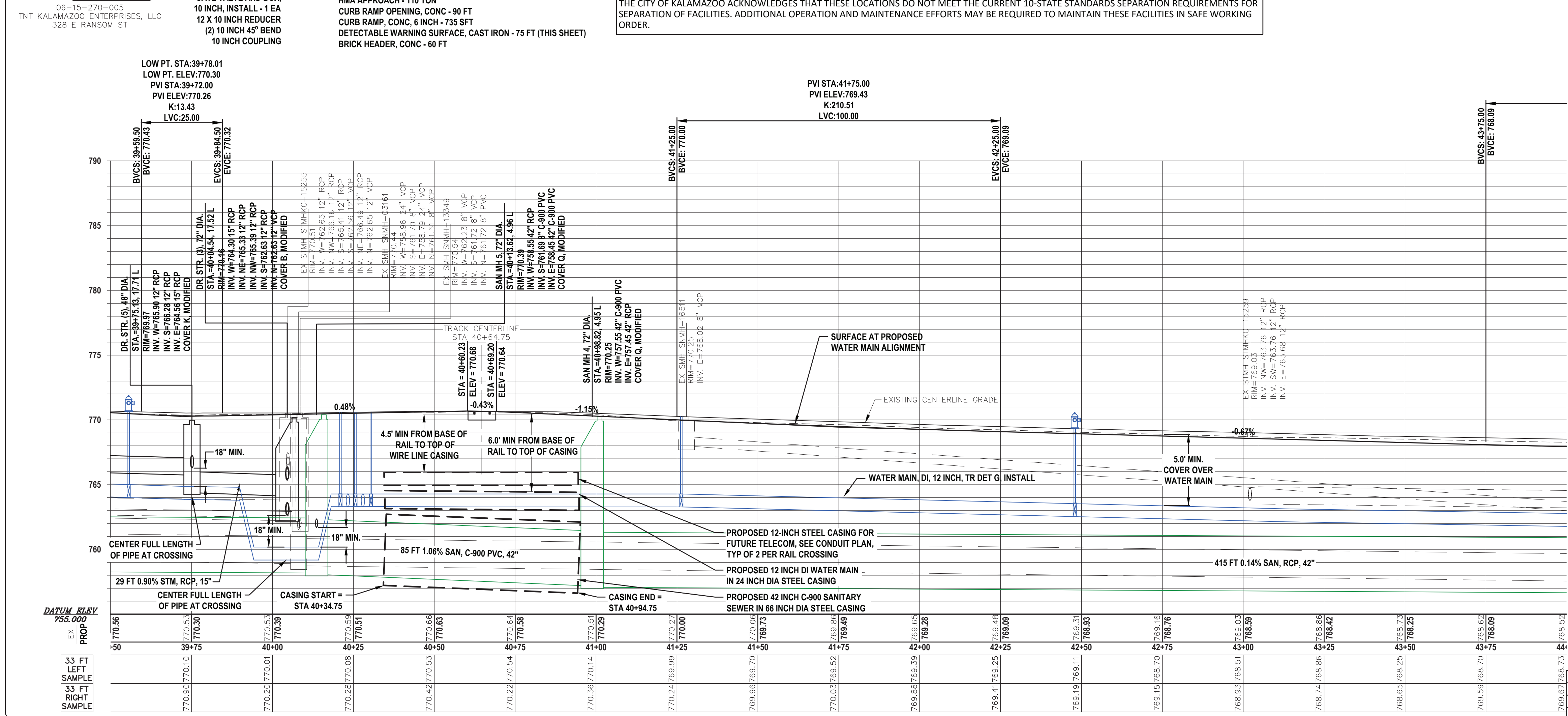
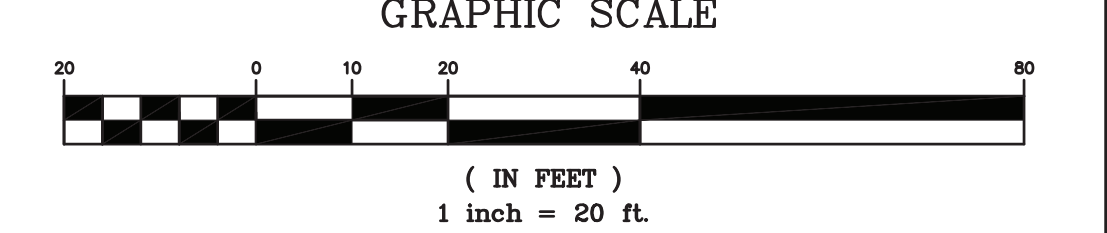
Description	Units	Quantity	Major Street Share
Machine Grading, Modified	Sta	4.5	4.5
Subbase, CIP	Cyd	840	840
Aggregate Base, 6 inch	Syd	11	0
Aggregate Base, 8 inch	Syd	2915	2915
Aggregate Base, 10 inch	Syd	26	0
Sewer, CI IV, 12 inch, Tr Det B	Ft	215	215
Sewer, CI IV, 15 inch, Tr Det B	Ft	29	29
Dr Structure, 48 inch dia	Ea	7	7
Dr Structure, 72 inch dia	Ea	1	1
Dr Structure Cover, Type B, Modified	Ea	2	2
Dr Structure Cover, Type K, Modified	Ea	6	6
HMA Approach	Ton	110	110
HMA, 4EML	Ton	185	185
HMA, 5EML	Ton	185	185
Conc Base Cse, Nonreinf, 6 inch	Syd	11	0
Driveway, Nonreinf Conc, 6 inch	Syd	115	115
Curb and Gutter, Conc, Det C4	Ft	965	965
Driveway Opening, Conc, Det M	Ft	80	80
Brick Header, Conc	Ft	60	60
Curb Ramp Opening, Conc	Ft	90	90
Sidewalk, Conc, 4 inch	Sft	4430	4430
Sidewalk, Conc, 6 inch	Sft	610	610
Curb Ramp, Conc, 6 inch	Sft	735	735
Detectable Warning Surface, Cast Iron	Ft	75	75
Brick Pavers, Asphalt Bed, Salvaged	Sft	99	0
Brick Pavers, Sand Bed, Salvaged	Sft	234	0
Casing, 24 inch, Tr Det B	Ft	60	0
Water Main, DI, 10 inch, Tr Det G, Install	Ft	80	0
Water Main, DI, 12 inch, in casing	Ft	60	0
Water Main, DI, 12 inch, Tr Det G, Install	Ft	475	0
Water Main, DI, 6 inch, Tr Det G, Install	Ft	20	0
Water Service, Yard, 2 inch, Trenchless, Install	Ft	15	0
Butterfly Valve and Box, 12 inch, Install	Ea	5	0
Gate Valve and Box, 10 inch, Install	Ea	2	0
Hydrant Assembly, Modified, Install	Ea	1	0
Valve Box, Install	Ea	3	0
Water Serv, 2 inch, Install	Ea	1	0
Water Serv, Long, 2 inch, Install	Ea	2	0
Water Service, Yard, 2 inch, Conn to Ex	Ea	3	0
Sanitary Sewer, Serv Lead, PVC, 6 inch	Ft	70	0
Casing, 66 inch, Tr Det B	Ft	85	0
Sanitary Sewer, C-900 PVC, 42 inch, in casing	Ft	85	0
Sanitary Sewer, C-900 PVC, 6 inch, Tr Det B2	Ft	39	0
Sanitary Sewer, Conc, 42 inch, Tr Det B, Modified	Ft	365	0
Sanitary Structure, Add Depth of 48 inch dia, 8 ft to 15 ft, Mod	Ft	1	0
Sanitary Structure, Add Depth of 72 inch dia, 8 ft to 15 ft, Mod	Ft	10	0
Sanitary Sewer Cleanout Cover	Ea	2	0
Sanitary Sewer Cleanout, 6 inch, Modified	Ea	2	0
Sanitary Sewer, Service Tap, 42 inch main	Ea	2	0
Sanitary Structure Cover, Type Q, Modified	Ea	4	0
Sanitary Structure, 48 inch dia, Modified	Ea	2	0
Sanitary Structure, 72 inch dia, Modified	Ea	2	0

PROPOSED DRIVEWAYS		
STATION	DRIVEWAY NONREINF CONC, 6 INCH (SYD)	DRIVEWAY OPENING, CONC, DET M (FT)
39+85 R	20	0
42+73 R	30	0
42+85 L	30	0
43+50 L	35	80

PROPOSED SANITARY SERVICE REPLACEMENTS		
STATION	SERVICE LENGTH (FT)	42" TAP (EA)
41+64 R	35	1
41+82 L	35	1

LEGEND

	HMA PAVEMENT		CONC PAVT, NONREINF, 6 INCH
	DRIVEWAY, NONREINF CONC, 6 INCH		SIDEWALK, CONC, 6 INCH
	DRIVEWAY, NONREINF CONC, 8 INCH		SIDEWALK, CONC, 8 INCH
	CONC PAVT, NONREINF, 8 INCH		SIDEWALK, CONC, 4 INCH
	SIDEWALK RAMP, ADA		BRICK PAVERS, SAND BED, SALVAGED
	BRICK PAVERS, ASPHALT BED, SALVAGED		HMA APPROACH PAVING LIMITS
	MAJOR STREET QUANTITY LIMITS		PROPOSED ADA TACTILE WARNING AREA
	CRITICAL TOLERANCE, ENSURE PROPER STRUCTURE CONFIGURATION/ROTATION		



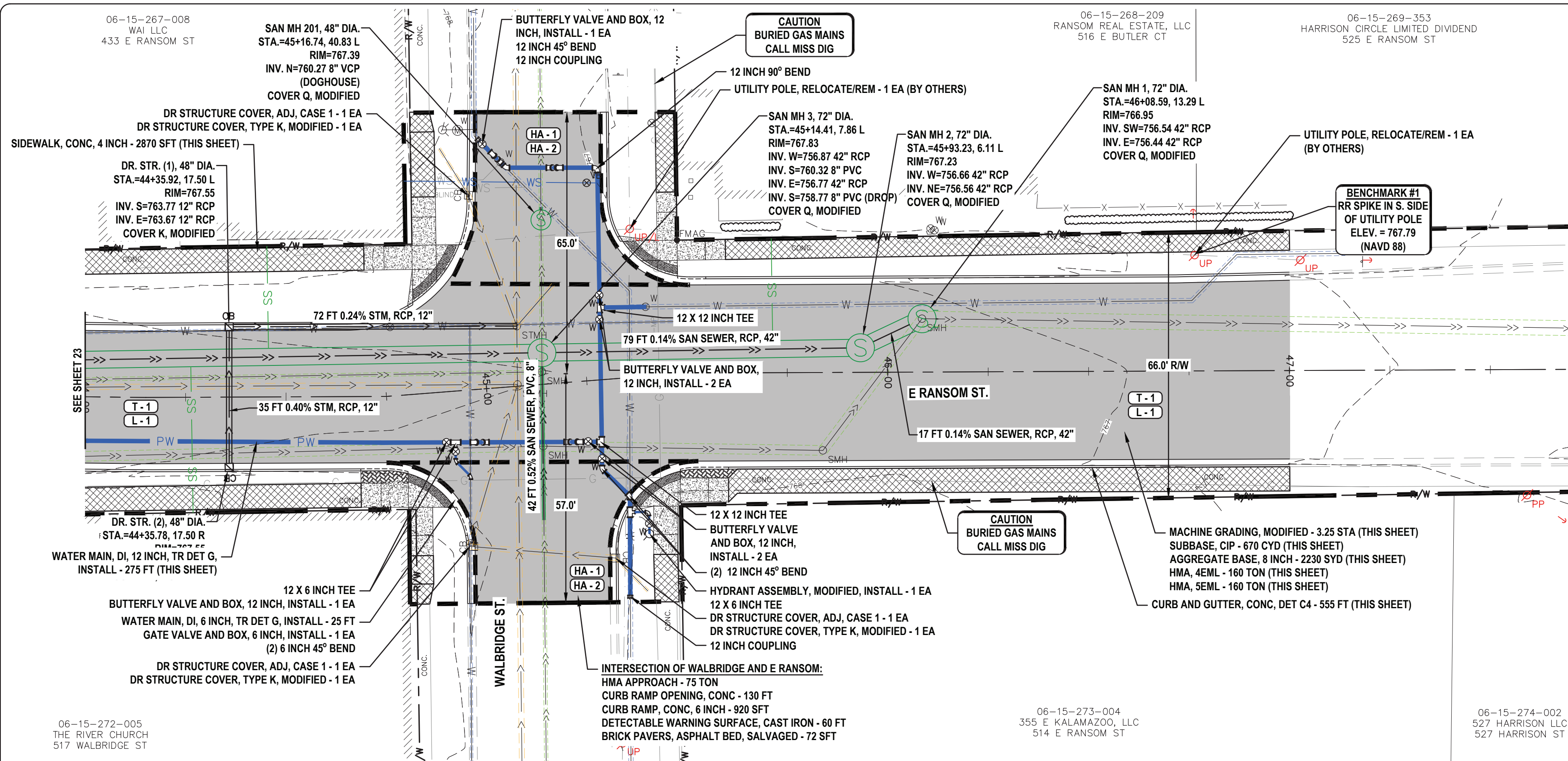
NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:		

ABONMARCHÉ
 Engineering - Architecture - Land Surveying
 795 West Main Street
 Benton Harbor, MI 49023
 Phone: 269.927.2295
 Fax: 269.927.2295
 abonmarche.com

**RANSOM STREET IMPROVEMENTS
 CITY OF KALAMAZOO**

**PLAN AND PROFILE
 STA. 39+50 TO 44+00**

SHEET TITLE:
DRAWN BY: DJL
DESIGNED BY: MJS/ERF
PM REVIEW: DAD
QA/QC REVIEW:
DATE: JANUARY 2023
SCALE:
SIGNATURE:
DATE:
SCALE:
 HORIZ: 1" = 20'
 VERT: 1" = 5'
ACI JOB #:
22-0031
SHEET NO.:
23 of 52



WATER MAIN SEPARATION CONFLICTS (<10' H/18" V SEPARATION FROM SEWERS)			
STATION/OFFSET	CONFLICT	PROPOSED MITIGATION	PROPOSED SEPARATION
44+74, 16 R	12" WM / PROP STORM CB	CENTER FULL LENGTH OF PIPE AT CATCH BASIN	2' H

THE CITY OF KALAMAZOO ACKNOWLEDGES THAT THESE LOCATIONS DO NOT MEET THE CURRENT 10-STATE STANDARDS SEPARATION REQUIREMENTS FOR SEPARATION OF FACILITIES. ADDITIONAL OPERATION AND MAINTENANCE EFFORTS MAY BE REQUIRED TO MAINTAIN THESE FACILITIES IN SAFE WORKING ORDER.

LOW PT. STA:44+35.58
 LOW PT. ELEV:767.88
 PVI STA:44+25.00
 PVI ELEV:767.75
 K=90.14
 LVC=100.00

Description	Units	Quantity	Major Street Share
Machine Grading, Modified	Sta	2.75	2.75
Subbase, CIP	Cyd	670	670
Aggregate Base, 8 inch	Syd	8	0
Aggregate Base, 6 inch	Syd	2230	2230
Sewer, CI IV, 12 inch, Tr Det B	Ft	107	107
Dr Structure Cover, Adj, Case 1	Ea	3	3
Dr Structure, 48 inch dia	Ea	2	2
Dr Structure Cover, Type K, Modified	Ea	5	5
HMA Approach	Ton	75	75
HMA, 4EML	Ton	160	160
HMA, 5EML	Ton	160	160
Conc Base Cas. Nonreinf. 6 inch	Syd	8	0
Curb and Gutter, Conc, Det C4	Ft	555	555
Curb Ramp Opening, Conc	Ft	130	130
Sidewalk, Conc, 4 inch	Sft	2870	2870
Curb Ramp, Conc, 6 inch	Sft	920	920
Detectable Warning Surface, Cast Iron	Ft	60	60
Brick Pavers, Asphalt Bed, Salvaged	Sft	72	0
Water Main, DI, 12 inch, Tr Det G, Install	Ft	300	0
Water Main, DI, 6 inch, Tr Det G, Install	Ft	15	0
Butterfly Valve and Box, 12 inch, Install	Ea	6	0
Gate Valve and Box, 6 inch, Install	Ea	1	0
Hydrant Assembly, Modified, Install	Ea	1	0
Valve Box, Install	Ea	1	0
Water Serv, Long, 2 inch, Install	Ea	1	0
Sanitary Sewer, PVC, 8 inch, Tr Det B2	Ft	42	0
Sanitary Sewer, Serv Lead, PVC, 6 inch	Ft	100	0
Sanitary Sewer, Conc, 42 inch, Tr Det B, Modified	Ft	213	0
Sanitary Structure, Add Depth of 72 inch dia, 8 ft to 15 ft, Mod	Ft	10	0
Sanitary Sewer Cleanout Cover	Ea	3	0
Sanitary Sewer Cleanout, 6 inch, Modified	Ea	3	0
Sanitary Sewer, Service Tap, 42 inch main	Ea	3	0
Sanitary Structure Cover, Type Q, Modified	Ea	4	0
Sanitary Structure, 48 inch dia, Modified	Ea	1	0
Sanitary Structure, 72 inch dia, Modified	Ea	3	0

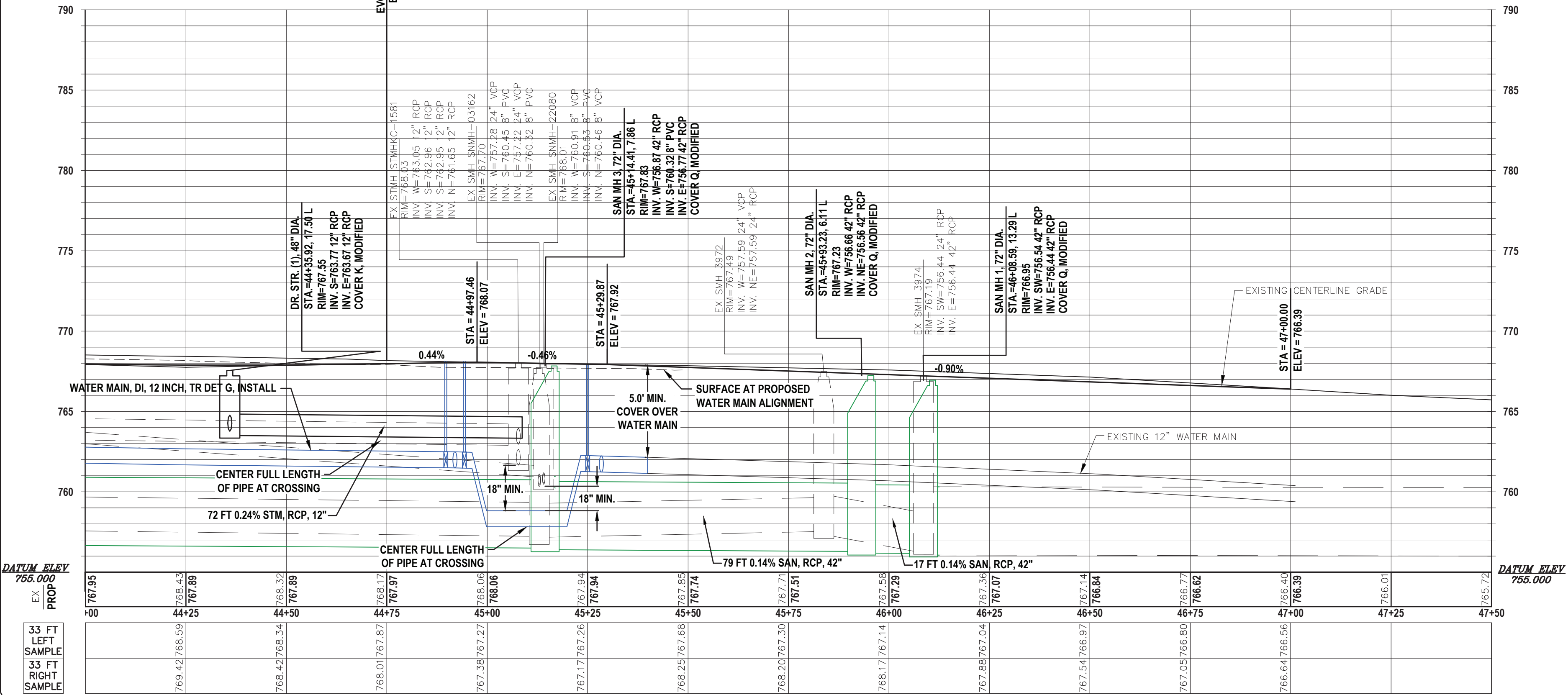
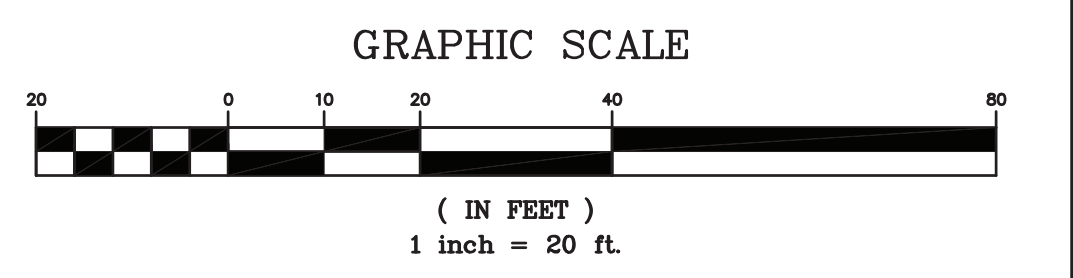
PROPOSED WATER SERVICE REPLACEMENTS					
STATION	WATER SERVICE SIZE (IN)	LONG (L) OR SHORT (S)	YARD SERVICE SIZE (IN)	WATER SERVICE, YARD, TRENCHLESS, INSTALL (FT)	WATER SERVICE, YARD, CONN TO EX (EA)
45+03 L	2.00	L	2.00	0	0

PROPOSED SANITARY SERVICE REPLACEMENTS		
STATION	SERVICE LENGTH (FT)	42" TAP (EA)
44+27 R	38	1
44+46 L	31	1
45+71 L	31	1

LEGEND

- HMA PAVEMENT
- DRIVEWAY, NONREINF CONC, 6 INCH
- DRIVEWAY, NONREINF CONC, 8 INCH
- CONC PAVT, NONREINF, 8 INCH
- SIDEWALK RAMP, ADA
- BRICK PAVERS, ASPHALT BED, SALVAGED
- MAJOR STREET QUANTITY LIMITS
- CONC PAVT, NONREINF, 6 INCH
- SIDEWALK, CONC, 6 INCH
- SIDEWALK, CONC, 8 INCH
- SIDEWALK, CONC, 4 INCH
- BRICK PAVERS, SAND BED, SALVAGED
- HMA APPROACH PAVING LIMITS
- PROPOSED ADA TACTILE WARNING AREA

CRITICAL TOLERANCE, ENSURE PROPER STRUCTURE CONFIGURATION/ROTATION



33 FT LEFT SAMPLE
 33 FT RIGHT SAMPLE

ABONMARCHÉ
 Engineering - Architecture - Land Surveying
 795 West Main Street
 Benton Harbor, MI 49023
 269.927.2295
 abonmarche.com

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

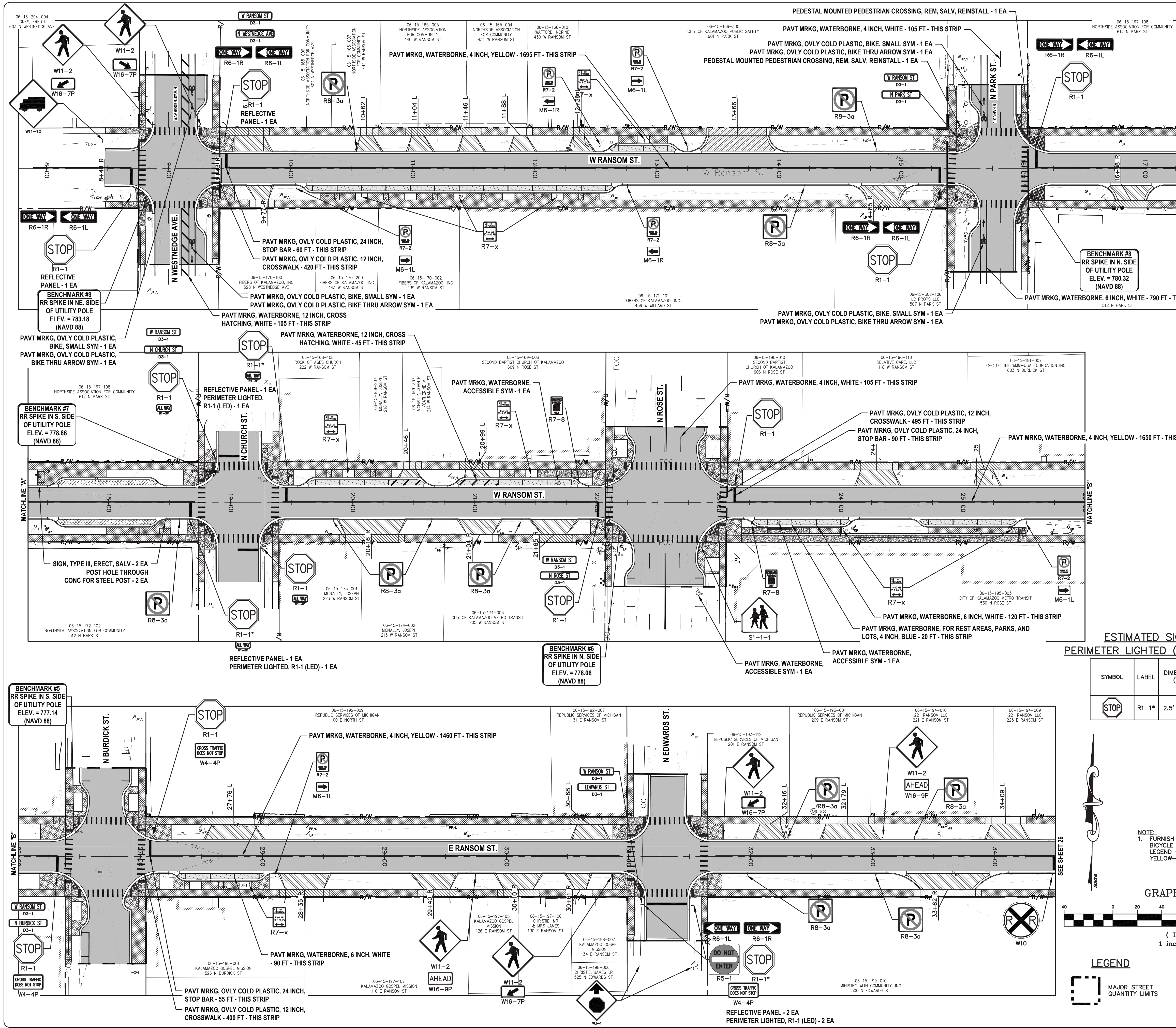
PLAN AND PROFILE STA. 44+00 TO 46+50 (P.O.E.)

DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

SIGNATURE:
 DATE:
 SCALE:
 HORIZ: 1" = 20'
 VERT: 1" = 5'
 ACI JOB #

22-0031
 SHEET NO. **24 of 52**

NO.	REVISION DESCRIPTION	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22



Description	Units	Quantity	Major Street Share
Post Hole Through Conc for Steel Post	Ea	11	4
Post, Steel, 3 pound	Ft	770	364
Sign, Type III, Erect, Salv	Ea	2	0
Sign, Type IIIA	Sft	162	125
Sign, Type IIIB	Sft	217	142
Reflective Panel for Permanent Sign Support, 6 foot	Ea	4	2
Pedestal Mounted Pedestrian Crossing Sign, Rem. Salv, Reinstall	Ea	2	2
Sign, Type III, Perimeter Lighted, R1-1 (LED)	Ea	4	2
Pavt Mrkg, Ovlv Cold Plastic, 12 inch, Crosswalk	Ft	1315	1090
Pavt Mrkg, Ovlv Cold Plastic, 24 inch, Stop Bar	Ft	205	145
Pavt Mrkg, Ovlv Cold Plastic, Bike, Small Sym	Ea	4	4
Pavt Mrkg, Waterborne, 4 inch, White	Ft	210	210
Pavt Mrkg, Waterborne, 4 inch, Yellow	Ft	4805	1580
Pavt Mrkg, Waterborne, 6 inch, White	Ft	990	855
Pavt Mrkg, Waterborne, for Rest Areas, Parks, and Lots, 4 inch, Blue	Ft	20	0
Pavt Mrkg, Ovlv Cold Plastic, Bike Thru Arrow Sym	Ea	4	4
Pavt Mrkg, Waterborne, 12 inch, Cross hatching, White	Ft	150	105
Pavt Mrkg, Waterborne, Accessible Sym	Ea	3	1

ESTIMATED SIGN TYPE IIIA QUANTITIES

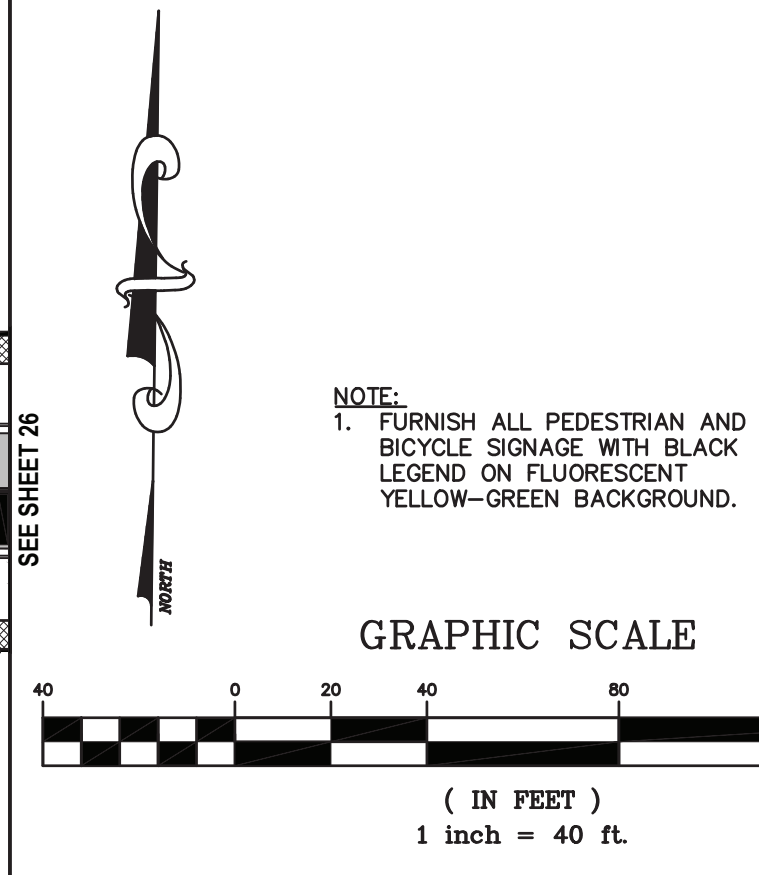
SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	COUNT (EA)	QUANTITY (SFT)
W RANSOM ST	D3-1	2.5' x 1.0' DBL SIDED	5.00	6	30
N WESTSIDE AVE	D3-1	2.5' x 1.0' DBL SIDED	5.00	1	5
N PARK ST	D3-1	2.5' x 1.0' DBL SIDED	5.00	1	5
N CHURCH ST	D3-1	2.5' x 1.0' DBL SIDED	5.00	1	5
N ROSE ST	D3-1	2.5' x 1.0' DBL SIDED	5.00	1	5
N BURDOCK ST	D3-1	2.5' x 1.0' DBL SIDED	5.00	1	5
EDWARDS ST	D3-1	2.5' x 1.0' DBL SIDED	5.00	1	5
STOP	R1-1	2.5' x 2.5'	6.25	10	62.50
ALL WAY	R5-1	2.5' x 2.5'	6.25	2	12.50
ALL WAY	R1-3P	1.0' x 0.5'	0.50	4	2.00
TOTAL SIGNAGE (SFT)					137.00

ESTIMATED SIGN TYPE IIIB QUANTITIES

SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	COUNT (EA)	QUANTITY (SFT)
P	R8-3	2.0' x 2.0'	4.0	13	52.00
ONE WAY	R6-1L	3.0' x 1.0'	3.0	6	18.00
ONE WAY	R6-1R	3.0' x 1.0'	3.0	6	18.00
WALK	W11-10	3.0' x 3.0'	9	1	9
WALK	S1-1	3.0' x 3.0'	9	1	9
WALK	W11-2	2.5' x 2.5'	6.25	2	12.50
WALK	W11-2 (GREEN)	3.0' x 3.0'	9.00	4	36
WALK	W16-7P	2.0' x 1.0'	2.00	1	2.00
WALK	W16-7P	2.0' x 1.0'	2.00	3	6
WALK	W16-7P	2.0' x 1.0'	2.00	2	4
P	R7-2	1' x 1.5'	1.50	6	9.00
M	M1-6L	1' x 0.75'	0.75	4	3.00
M	M1-6R	1' x 0.75'	0.75	2	1.50
M	R7-8	1' x 1.5'	1.50	2	3.00
M	R7-X	1' x 1.5'	1.50	9	13.50
M	W4-4P	1.0' x 1.5'	1.50	4	6.00
M	W10-1	1.5'	1.50	1	1.50
M	W3-1	2.5' x 2.5'	6.25	2	12.50
TOTAL SIGNAGE (SFT)					216.50

ESTIMATED SIGN TYPE III PERIMETER LIGHTED (LED) QUANTITIES

SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	COUNT (EA)
STOP	R1-1*	2.5' x 2.5'	6.25	4



NOTE:
1. FURNISH ALL PEDESTRIAN AND BICYCLE SIGNAGE WITH BLACK LEGEND ON FLUORESCENT YELLOW-GREEN BACKGROUND.

NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22

ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2295
 abonmarche.com

Engineering - Architecture - Land Surveying
 Brandon Harbo
 Ft. Wayne
 Coletta
 South Bend
 Hobart
 Valparaiso

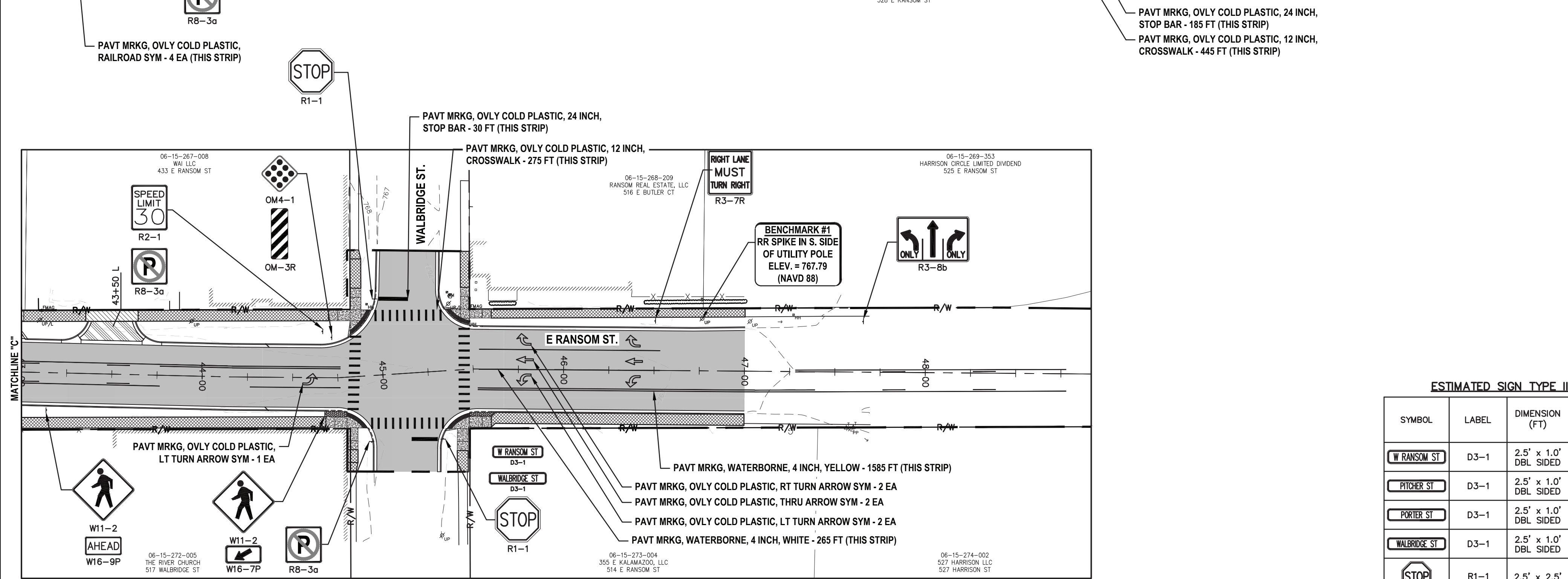
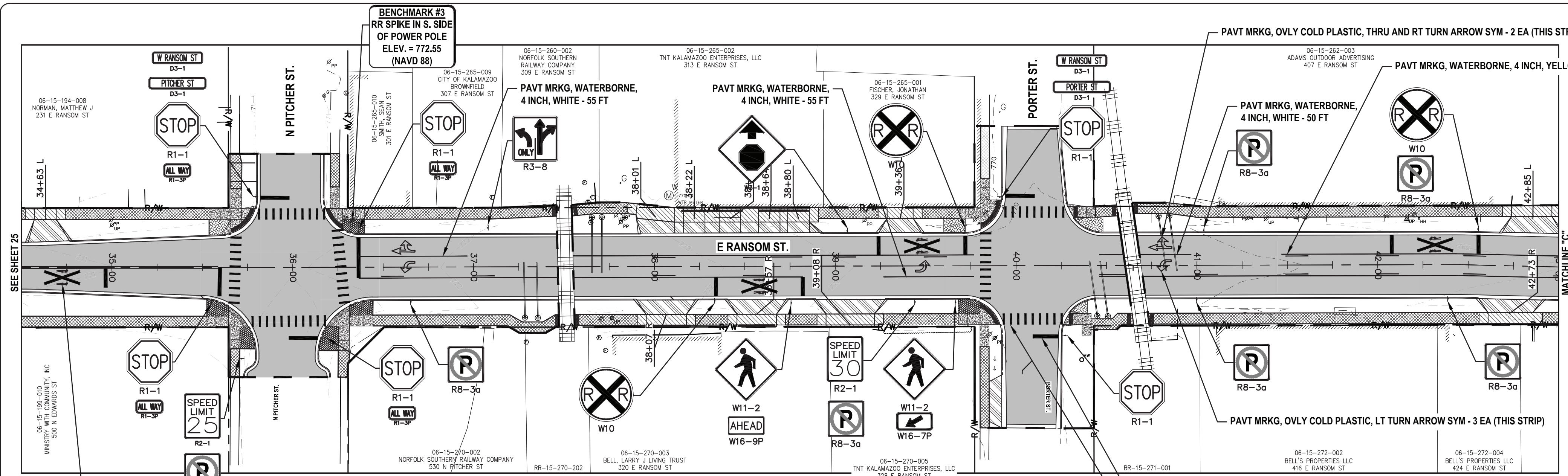
RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

PAVEMENT MARKING AND PERMANENT SIGNAGE PLAN - 1

22-0031
 SHEET NO. **25** of **52**

DATE: _____
 SCALE: _____
 HORIZ: 1" = 40'
 VERT: N/A

ACI JOB # _____



Description	Units	Quantity	Major Street Share
Post Hole Through Conc for Steel Post	Ea	3	3
Post, Steel, 3 pound	Ft	380	380
Sign, Type IIIA	Sft	86	86
Sign, Type IIIB	Sft	133	133
Pav't Mrkg, Ovly Cold Plastic, 12 inch, Crosswalk	Ft	720	720
Pav't Mrkg, Ovly Cold Plastic, 24 inch, Stop Bar	Ft	215	215
Pav't Mrkg, Ovly Cold Plastic, Lt Turn Arrow Sym	Ea	6	6
Pav't Mrkg, Ovly Cold Plastic, Railroad Sym	Ea	4	4
Pav't Mrkg, Ovly Cold Plastic, Rt Turn Arrow Sym	Ea	2	2
Pav't Mrkg, Ovly Cold Plastic, Thru and Rt Turn Arrow Sym	Ea	2	2
Pav't Mrkg, Ovly Cold Plastic, Thru Arrow Sym	Ea	2	2
Pav't Mrkg, Waterborne, 4 inch, White	Ft	425	425
Pav't Mrkg, Waterborne, 4 inch, Yellow	Ft	3400	3400

NOTE:
1. FURNISH ALL PEDESTRIAN AND BICYCLE SIGNAGE WITH BLACK LEGEND ON FLUORESCENT YELLOW-GREEN BACKGROUND.

ESTIMATED SIGN TYPE IIIB QUANTITIES

SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	QUANTITY (EA)	QUANTITY (SFT)
	R2-1	2.0' x 2.5'	5.0	1	5.00
	R2-1	2.0' x 2.5'	5.0	2	10.00
	R8-3	2.0' x 2.0'	4.0	9	36.00
	W10-1	1.5'	1.50	3	4.50
	R3-8	2.5' x 2.5'	6.25	1	6.25
	W11-2 (GREEN)	3.0' x 3.0'	9.00	4	36
	W16-7P	2.0' x 1.0'	2.00	2	4
	W16-9P	2.0' x 1.0'	2.00	2	4
	OM-3R	1.0' x 2.0'	2.00	1	2
	R3-7R	3.0' x 3.0'	9.00	1	9
	R3-8b	2.5' x 4.0'	10.00	1	10
				TOTAL SIGNAGE (SFT)	133.00

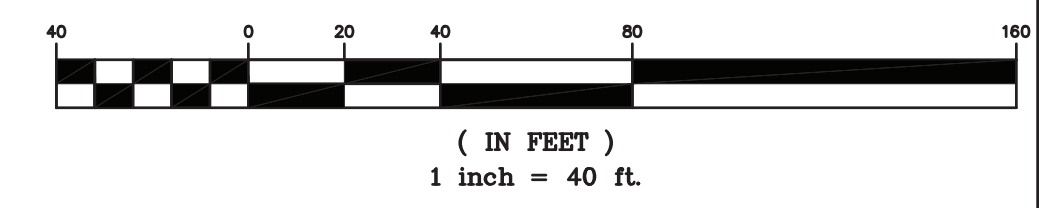
ESTIMATED SIGN TYPE IIIA QUANTITIES

SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	COUNT (EA)	QUANTITY (SFT)
	D3-1	2.5' x 1.0' DBL SIDED	5.00	3	15
	D3-1	2.5' x 1.0' DBL SIDED	5.00	1	5
	D3-1	2.5' x 1.0' DBL SIDED	5.00	1	5
	D3-1	2.5' x 1.0' DBL SIDED	5.00	1	5
	R1-1	2.5' x 2.5'	6.25	8	50.00
	R1-3P	1.0' x 0.5'	0.50	4	2.00
	OM4-1	2.0' x 2.0'	4.00	1	4.00
				TOTAL SIGNAGE (SFT)	86.00

LEGEND



GRAPHIC SCALE



ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 Phone: 269.927.2295
 Fax: 269.927.2295
 abonmarche.com

Benjamin L. Wayne
 Project Manager
 South Bend
 Michigan
 46601

Engineering - Architecture - Land Surveying

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

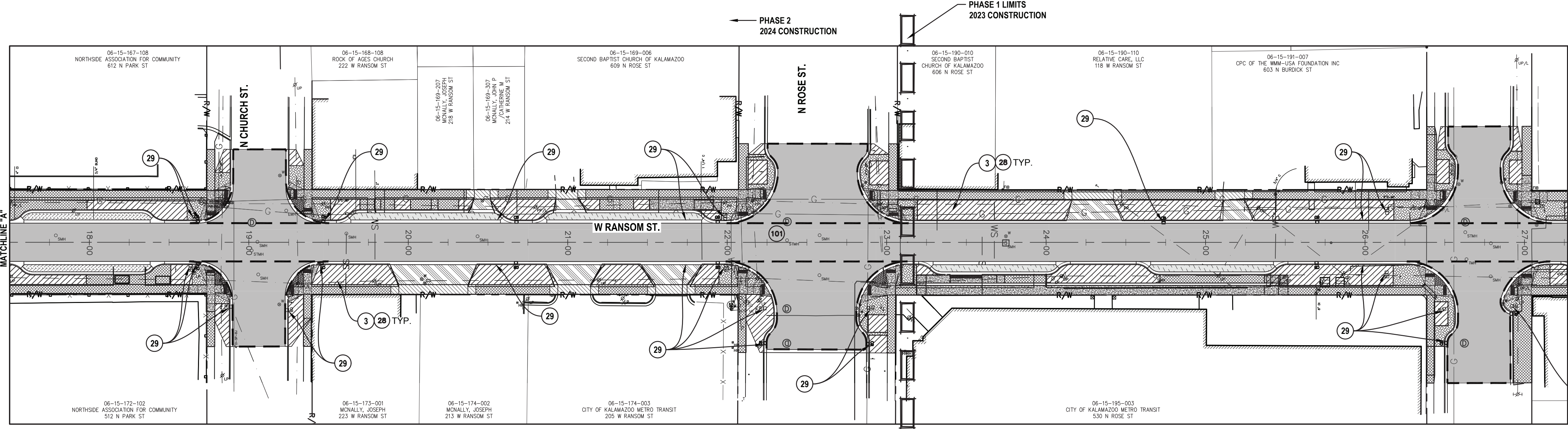
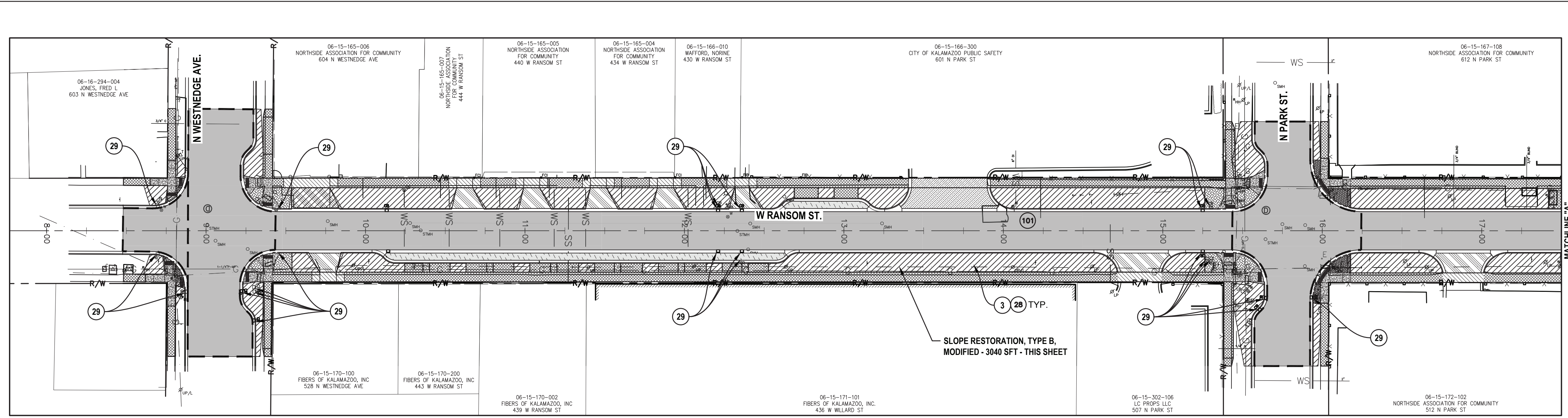
PAVEMENT MARKING AND PERMANENT SIGNAGE PLAN - 2

PROJECT TITLE:
 SHEET TITLE:
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

SIGNATURE:
 DATE:
 SCALE:
 HORIZ: 1" = 40'
 VERT: N/A
 ACI JOB #
22-0031

SHEET NO.
26 of 52

NO.	REVISION DESCRIPTION:	MJS	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22



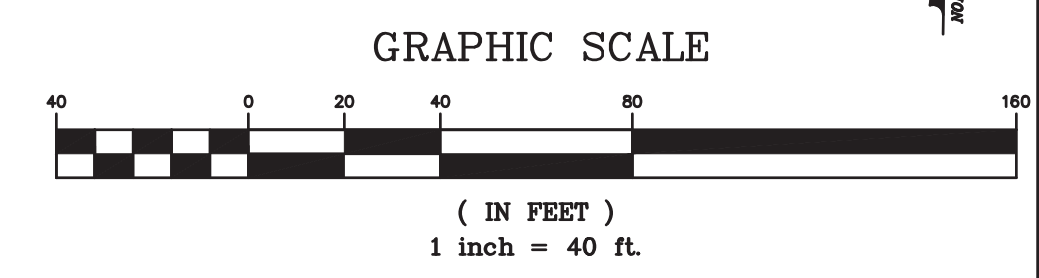
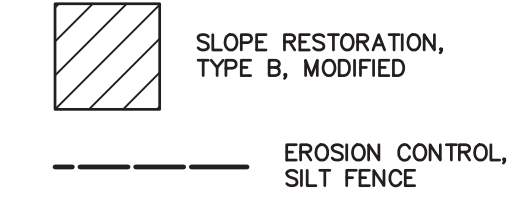
Description	Units	Quantity
Erosion Control, Inlet Protection, Fabric Drop	Ea	49
Water, Sodding/Seeding	Unit	214
Slope Restoration, Type B, Modified	Syd	2935

- NOTE:
- CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING FOR AND OBTAINING AN SESC PERMIT FROM THE CITY OF KALAMAZOO
 - ALL APPLICABLE SESC MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE
 - ALL AREAS SHALL BE PERMANENTLY RESTORED WITH SATISFACTORY VEGETATION ESTABLISHED, PRIOR TO THE REMOVAL OF ANY TEMPORARY SESC MEASURES
 - CONTRACTOR SHALL INSPECT SESC MEASURES ON A WEEKLY BASIS, OR WITHIN 24-HOURS OF ANY RAIN EVENT TO ENSURE THEY ARE IN PROPER WORKING ORDER
 - CONTRACTOR SHALL REPAIR/MAINTAIN ALL SESC MEASURES, INCLUDING REMOVAL OF ACCUMULATED SEDIMENTS, TO ENSURE THEY ARE IN PROPER WORKING ORDER

TOTAL AREA OF DISTURBANCE	
PHASE	QUANTITY (ACRES)
1	4.20
2	2.73

APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES	
KEY	DESCRIPTION
3	PERMANENT/ TEMPORARY SEEDING
28	EROSION CONTROL, SILT FENCE
28	MULCHING AND MULCH ANCHORING
29	EROSION CONTROL, INLET PROTECTION, FABRIC DROP
101	PAVEMENT

LEGEND



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

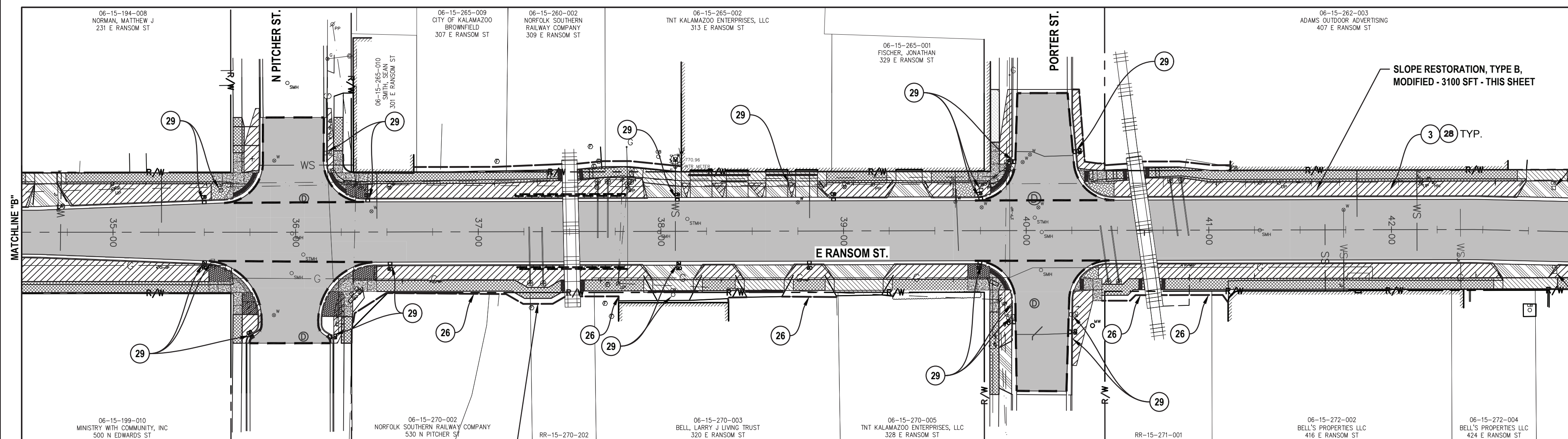
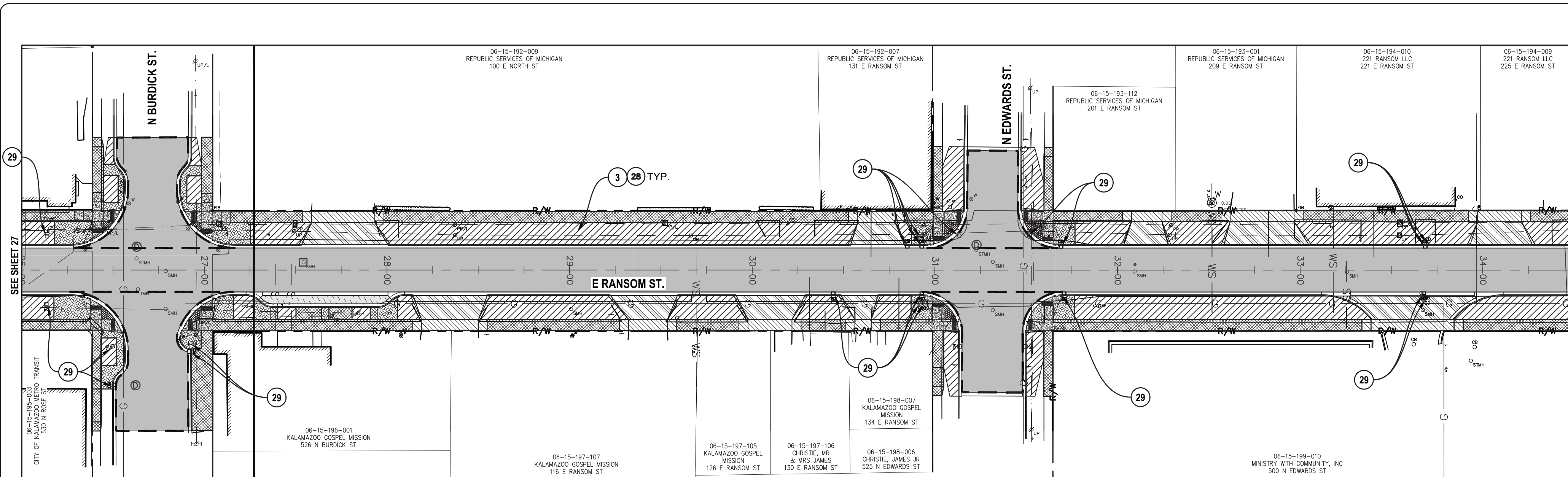
ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2295
 abonmarche.com
 Engineering - Architecture - Land Surveying

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

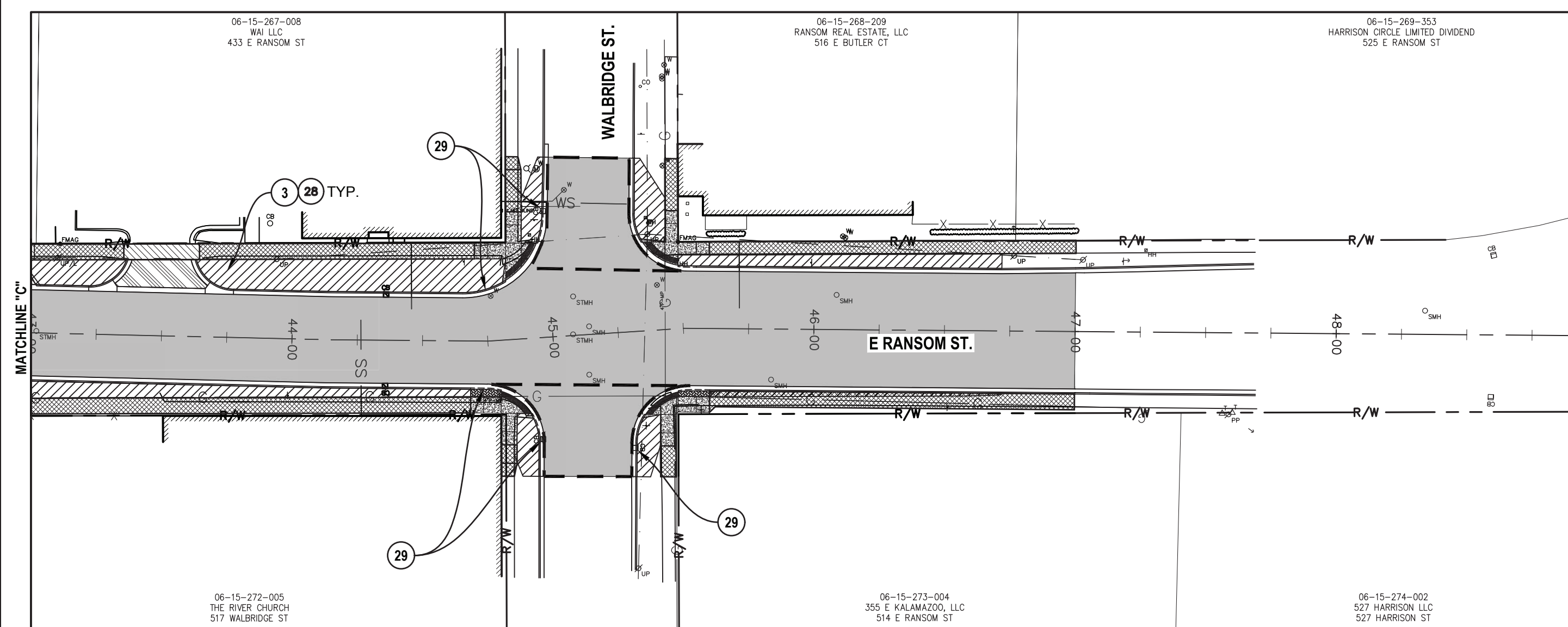
SOIL EROSION AND SEDIMENTATION PLAN PHASE 2

SHEET TITLE:
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:
 SIGNATURE:
 DATE:
 SCALE:
 HORZ: 1" = 40'
 VERT: N/A
 ACI JOB #
22-0031
 SHEET NO. **27** of **52**

C:\Project\2022\220031\220031.dwg, 01/06/2023 10:14:14 AM, mmsd, 1:1



EROSION CONTROL, SILT FENCE - 1460 SFT - THIS SHEET



Description	Units	Quantity
Erosion Control, Inlet Protection, Fabric Drop	Ea	52
Erosion Control, Silt Fence	Ft	535
Slope Restoration, Type B, Modified	Syd	3155

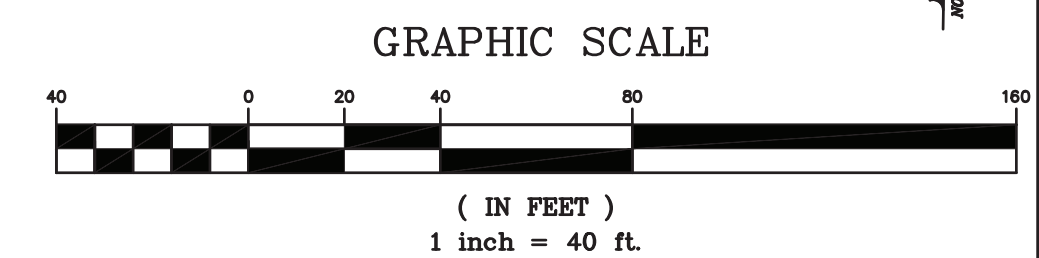
- NOTE:
- CONTRACTOR SHALL BE RESPONSIBLE FOR APPLYING FOR AND OBTAINING AN SESC PERMIT FROM THE CITY OF KALAMAZOO
 - ALL APPLICABLE SESC MEASURES SHALL BE INSTALLED PRIOR TO ANY EARTH DISTURBANCE
 - ALL AREAS SHALL BE PERMANENTLY RESTORED WITH SATISFACTORY VEGETATION ESTABLISHED, PRIOR TO THE REMOVAL OF ANY TEMPORARY SESC MEASURES
 - CONTRACTOR SHALL INSPECT SESC MEASURES ON A WEEKLY BASIS, OR WITHIN 24-HOURS OF ANY RAIN EVENT TO ENSURE THEY ARE IN PROPER WORKING ORDER
 - CONTRACTOR SHALL REPAIR/MAINTAIN ALL SESC MEASURES, INCLUDING REMOVAL OF ACCUMULATED SEDIMENTS, TO ENSURE THEY ARE IN PROPER WORKING ORDER

TOTAL AREA OF DISTURBANCE	
PHASE	QUANTITY (ACRES)
1	4.20
2	2.73

APPLICABLE SOIL EROSION AND SEDIMENTATION CONTROL MEASURES	
KEY	DESCRIPTION
3	PERMANENT/ TEMPORARY SEEDING
26	EROSION CONTROL, SILT FENCE
28	MULCHING AND MULCH ANCHORING
29	EROSION CONTROL, INLET PROTECTION, FABRIC DROP
101	PAVEMENT

LEGEND

- SLOPE RESTORATION, TYPE B, MODIFIED
- EROSION CONTROL, SILT FENCE



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHÉ
 785 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2295
 abonmarche.com

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

PROJECT:

SOIL EROSION AND SEDIMENTATION PLAN PHASE 1

SHEET TITLE:

DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

SIGNATURE:
 DATE:

SCALE:
 HORIZ: 1" = 40'
 VERT: N/A

ACI JOB # **22-0031**
 SHEET NO. **28 of 52**

Engineering - Architecture - Land Surveying

Copyright 2023 - Abonmarche Civil, Inc.



LOCATION MAP
NOT TO SCALE

MAINTAINING TRAFFIC NOTES:

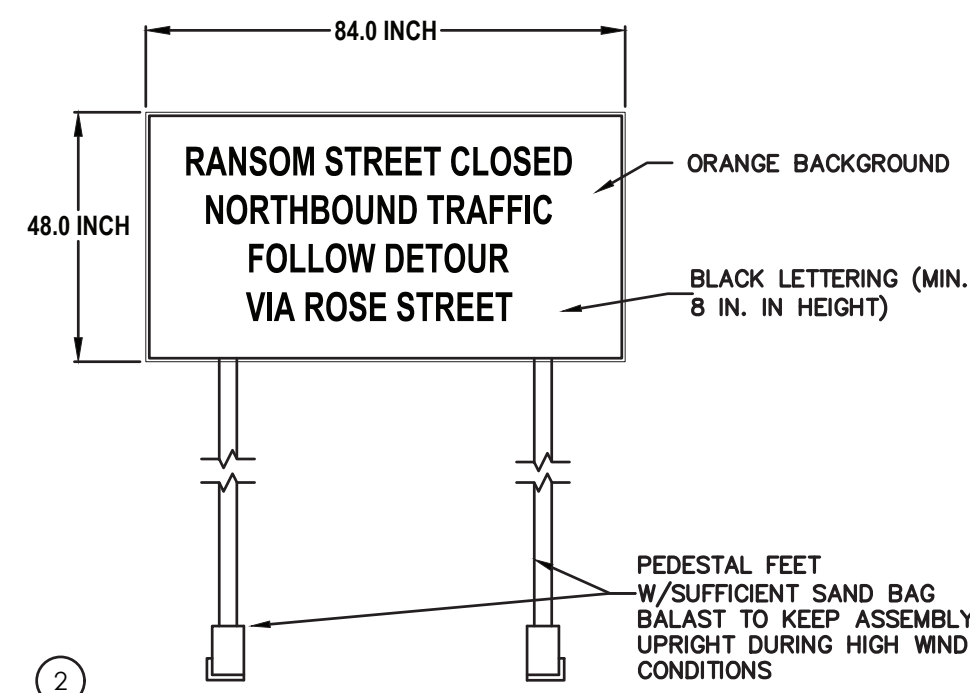
- THE CONTRACTOR SHALL PROVIDE, ERECT AND MAINTAIN ALL NECESSARY BARRICADES, SIGNS AND OTHER NECESSARY TRAFFIC CONTROL DEVICES IN ACCORDANCE WITH THE MUTCD 2011 AND THE 2020 MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- TRAFFIC SHALL BE MAINTAINED TO ALL LOCAL RESIDENCES.
- ALL WARNING SIGNS SHALL BE TYPE B, PRISMATIC.
- SIGNS WHICH ARE NO LONGER NEEDED SHALL BE COLLECTED AND STOCKPILED AT A LOCATION DESIGNATED BY THE ENGINEER WITHIN TWO WORKING DAYS.
- MDOT TYPICAL DETAIL 101-GEN-SPACING-CHARTS, 102-GEN-NOTES SHALL BE USED DURING CONSTRUCTION FOR TEMPORARY LANE CLOSURES ON CITY STREETS.
- "MAINTENANCE GRAVEL, LM, MODIFIED" HAS BEEN PROVIDED TO FACILITATE THE MAINTENANCE OF TRAFFIC DURING CONSTRUCTION. THE CONTRACTOR SHALL CONSIDER THIS QUANTITY TO BE A MAXIMUM ALLOWANCE FOR THIS ITEM. ANY ADDITIONAL MATERIAL BEYOND THE STATED QUANTITY SHALL BE CONSIDERED TO BE PROVIDED AT THE CONTRACTORS EXPENSE AND NO ADDITIONAL PAYMENT BY THE CITY SHALL BE MADE.
- THE PROJECT SHALL BE PHASED BY THE CONTRACTOR TO ENSURE THAT ACCESS TO DRIVEWAYS AND SIDE STREETS IS PROVIDED AT ALL TIMES DURING CONSTRUCTION EXCEPT FOR WHEN WORK IS BEING COMPLETED IMMEDIATELY IN FRONT OF THE AFOREMENTIONED ITEMS. CONTRACTOR SHALL ENSURE ACCESS TO RESIDENCES TO RESTORED AT THE END OF EACH WORKING DAY.
- WHERE TEMPORARY TWO-WAY TRAFFIC PATTERNS ARE IN EFFECT, PLACE TWO-WAY (W6-3) AT P.O.B. ALL SIGNALIZED INTERSECTIONS, AND AS DIRECTED BY THE ENGINEER TO ALLOW TWO-WAY TRAFFIC.
- WHERE TEMPORARY TWO-WAY TRAFFIC PATTERNS ARE IN EFFECT, BAG ALL EXISTING ONE-WAY (R6-1) SIGNS UNTIL THE ONE-WAY TRAFFIC PATTERN IS RESTORED.
- PORTABLE CHANGEABLE MESSAGE SIGNS (PCMS) SHALL BE IN PLACE AND OPERATIONAL A MINIMUM OF 2-WEEKS PRIOR TO THE START OF ANY NEW DETOUR OR TRAFFIC PATTERN.
- ONLY INSTALL TYPE III BARRICADES TO CLOSE ROAD IN ACTIVE WORK ZONES. REFER TO THE MAINTENANCE OF TRAFFIC SPECIAL PROVISION FOR LIMITATIONS ON ACTIVE WORK ZONE LIMITS IN A GIVEN PHASE.

ESTIMATED SIGN, TYPE B, TEMP, PRISMATIC, SPECIAL BLACK LEGEND ON ORANGE BACKGROUND QUANTITIES

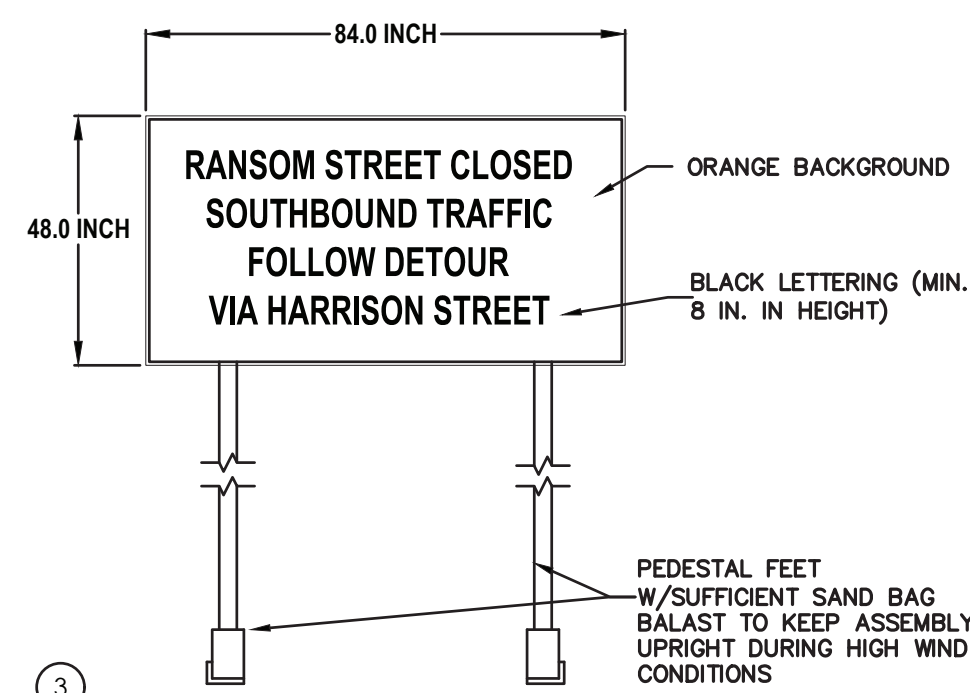
SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	DETOUR 1 QUANTITY (EA)	DETOUR 2 QUANTITY (EA)	QUANTITY (SFT)	
1	RANSOM ST	D3-1	2' x 0.5'	1.0	35	28	35.00
2	SPECIAL	2.0' x 0.5'	28.0	1	0	0	28.00
3	SPECIAL	2.0' x 0.5'	28.0	1	0	0	28.00
TOTAL SIGNAGE (SFT)						91.00	

ESTIMATED SIGN, TYPE B, TEMP, PRISMATIC BLACK LEGEND ON ORANGE BACKGROUND QUANTITIES

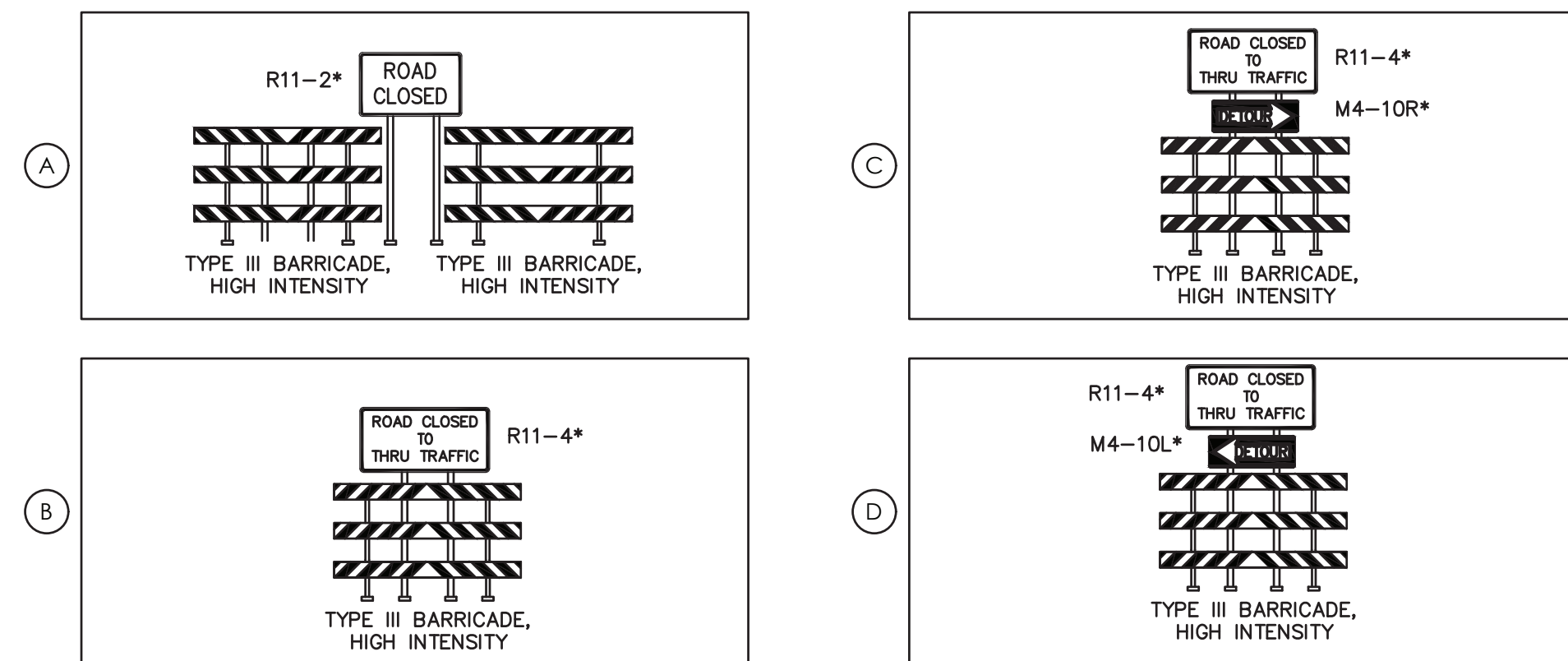
SYMBOL	LABEL	DIMENSION (FT)	AREA (SFT)	DETOUR 1 QUANTITY (EA)	DETOUR 2 QUANTITY (EA)	QUANTITY (SFT)
4	ROAD CLOSED	R11-2*	4' x 2.5'	12	10	120.00
5	ROAD CLOSED THRU TRAFFIC	R11-4*	5' x 2.5'	1	1	12.50
6	END DETOUR	M4-8a	2' x 1.5'	3	2	9.00
7	DETOUR AHEAD	W20-2	4' x 4'	11	5	176.00
8	DETOUR	M4-9	2.5' x 2'	7	14	70.00
9	DETOUR	M4-9L	2.5' x 2'	7	4	35.00
10	DETOUR	M4-9R	2.5' x 2'	8	5	40.00
11	DETOUR	M4-10L	4.0' x 1.5'	2	1	12.00
12	DETOUR	W6-3	3.0' x 3.0'	2	0	18.00
13	DETOUR	R3-2	2.0' x 2.0'	0	0	0.00
14	ONE WAY	R6-1R	3.0' x 1.0'	0	0	0.00
15	ONE WAY	R6-1L	3.0' x 1.0'	0	0	0.00
16	DETOUR	M4-9KR	2.5' x 2.5'	0	0	0.00
17	DETOUR	M4-10L	4.0' x 1.5'	0	1	6.00
TOTAL SIGNAGE (SFT)						498.50



2. TEMPORARY ROAD CLOSURE SIGNAGE DETAIL
NOT TO SCALE

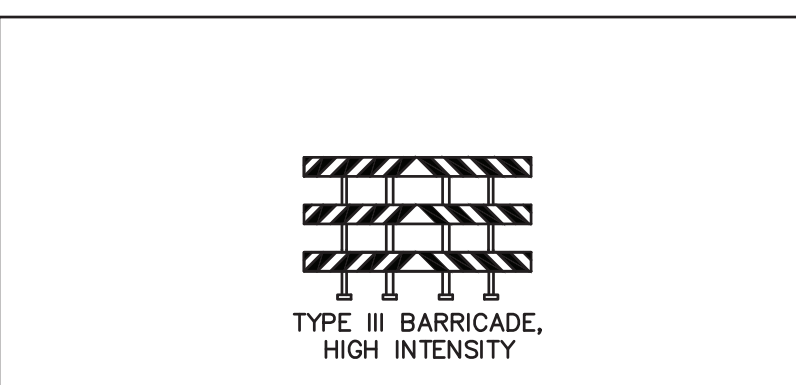


3. TEMPORARY ROAD CLOSURE SIGNAGE DETAIL
NOT TO SCALE



LEGEND

- BARRICADE, TYPE III, HIGH INTENSITY, LIGHTED
- SIGN, TYPE B, TEMP
- PLASTIC DRUM, HIGH INTENSITY
- PRIMARY DETOUR ROUTE



*NOTE: MOUNT SIGNS ON SEPARATE SUPPORTS

NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22

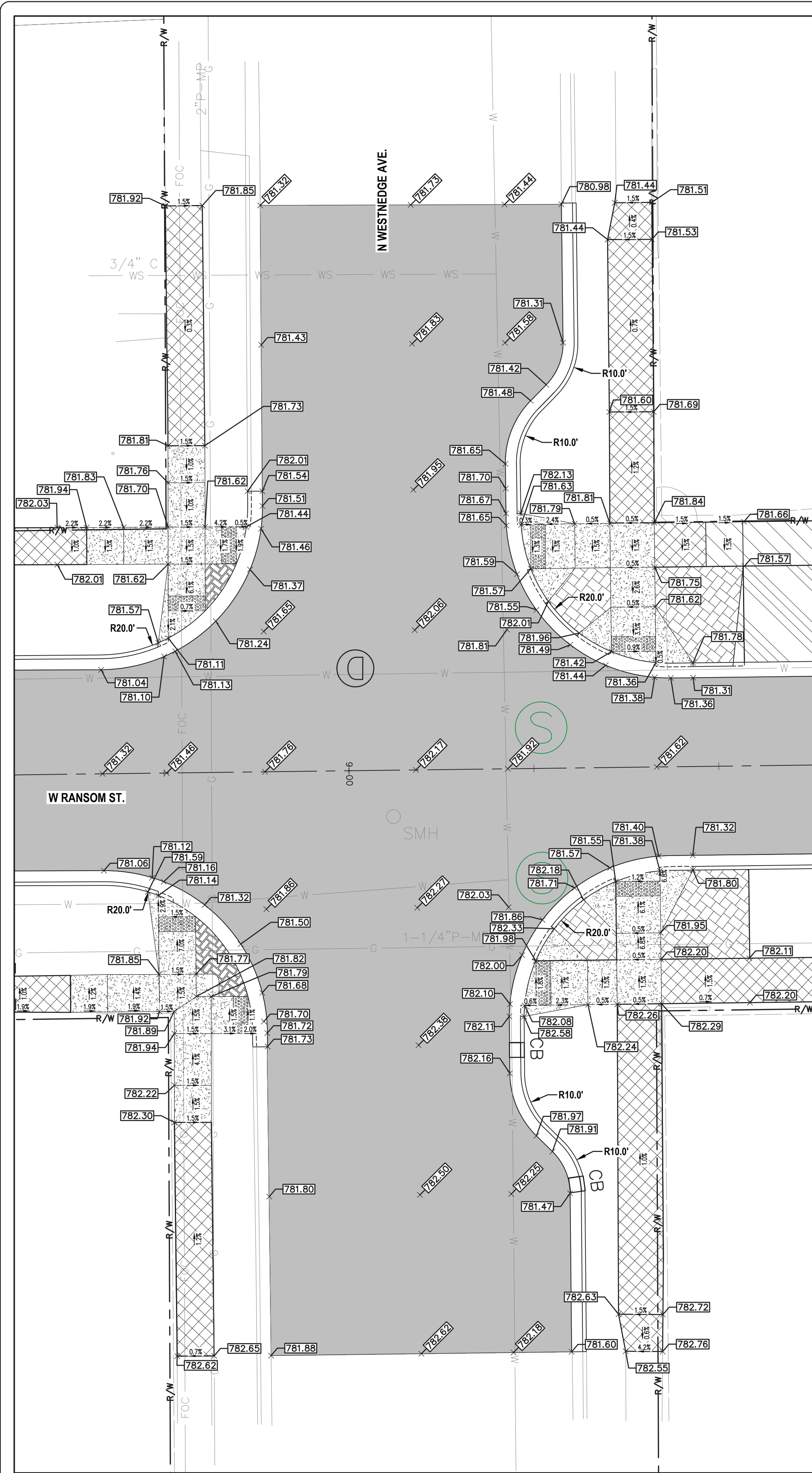
PROJECT:

VEHICULAR DETOUR PLAN PHASE 1

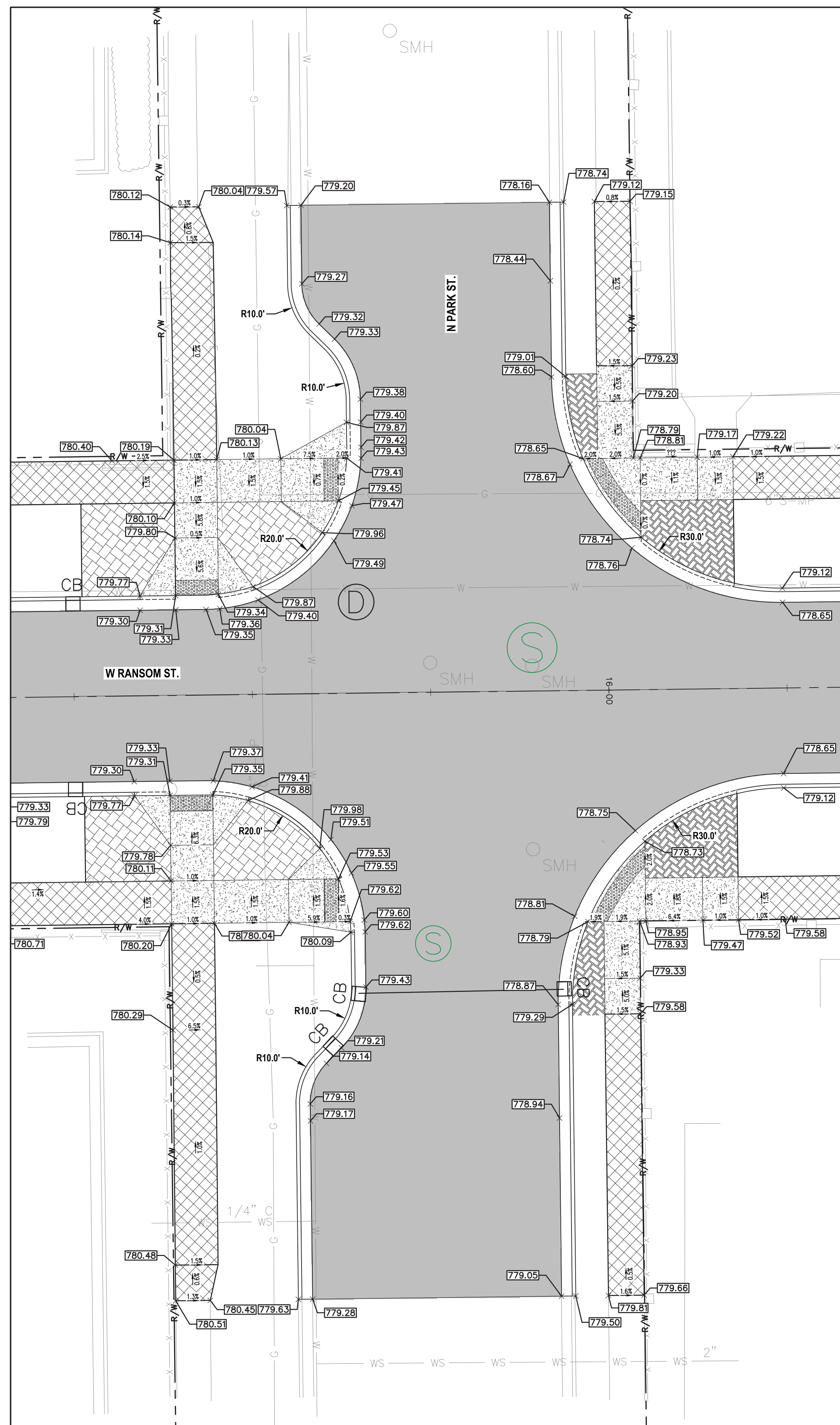
SHEET TITLE:

DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

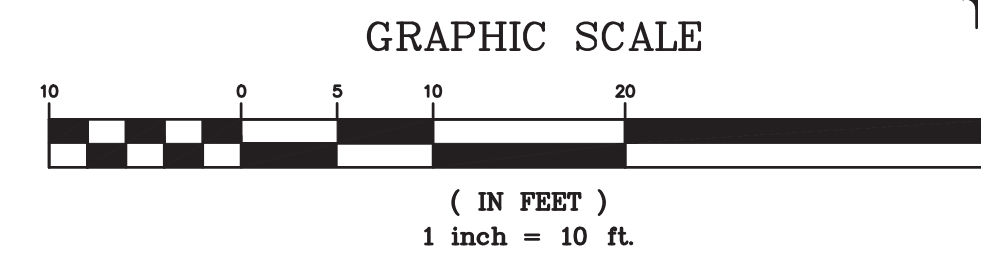
SIGNATURE:
 DATE:
 SCALE:
 HORIZ: NTS
 VERT: N/A
 ACI JOB #



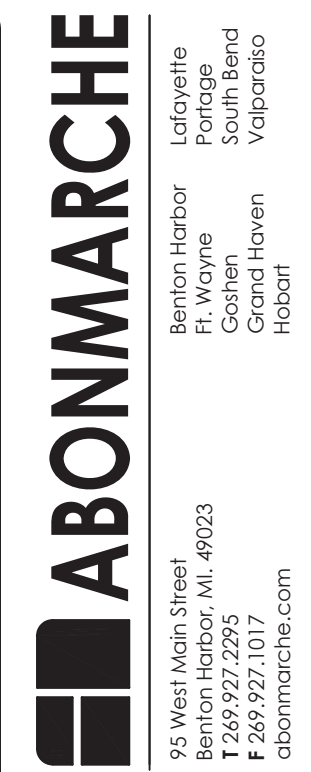
INTERSECTION GRADING DETAILS
RANSOM ST. AND N WESTNEDGE AVE.
SCALE: 1" = 10'



INTERSECTION GRADING DETAILS
RANSOM ST. AND N PARK ST.
SCALE: 1" = 10'



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:



95 West Main Street
Benton Harbor, MI 49023
T 269.927.2295
F 269.927.2295
abonmarche.com

Engineering - Architecture - Land Surveying

RANSOM STREET
IMPROVEMENTS
CITY OF KALAMAZOO

PROJECT:

INTERSECTION GRADING - 1

SHEET TITLE:

DRAWN BY: DJL
DESIGNED BY: MJS/ERF
PM REVIEW: DAD
QA/QC REVIEW:
DATE: JANUARY 2023
SEAL:

SIGNATURE:

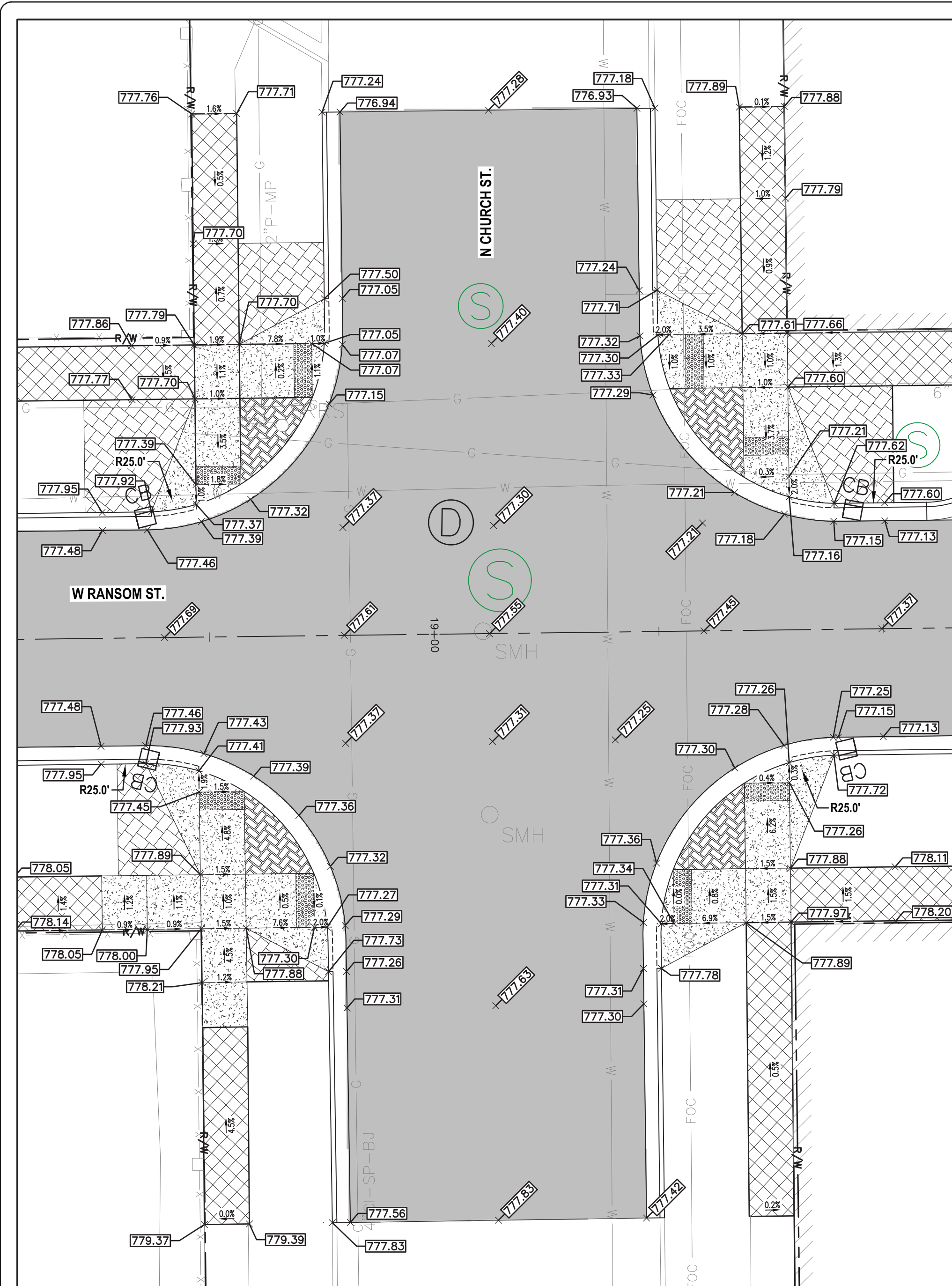
DATE:

SCALE:
HORIZ: 1" = 10'
VERT: N/A

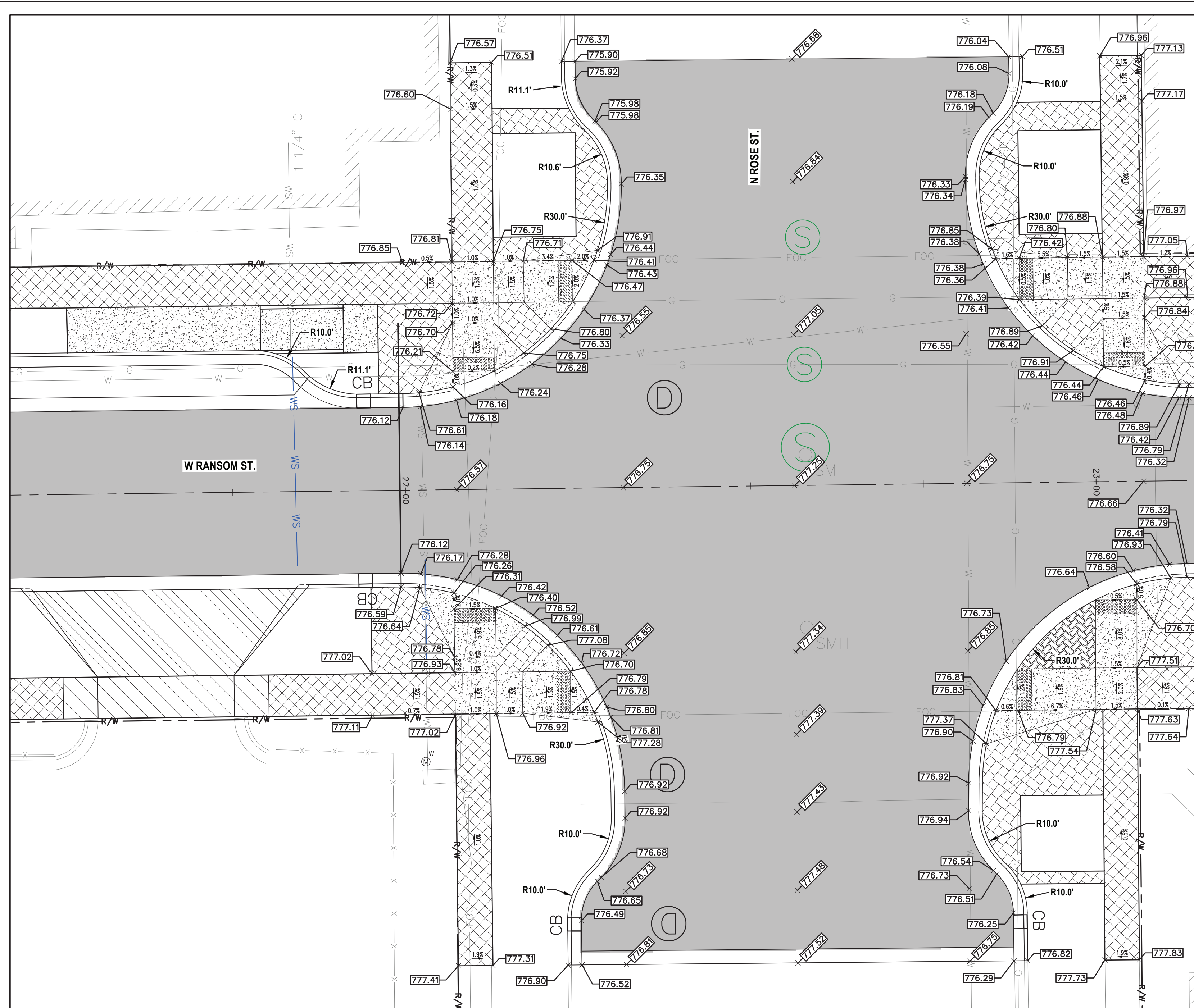
ACI JOB #

22-0031

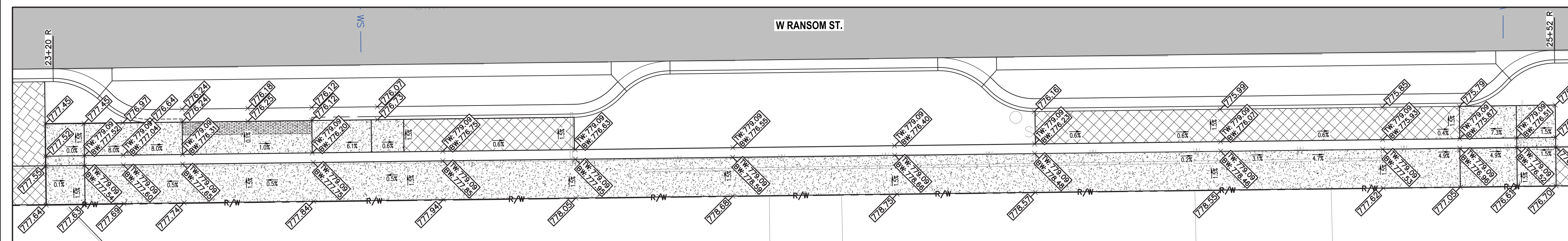
SHEET NO.
33 of 52



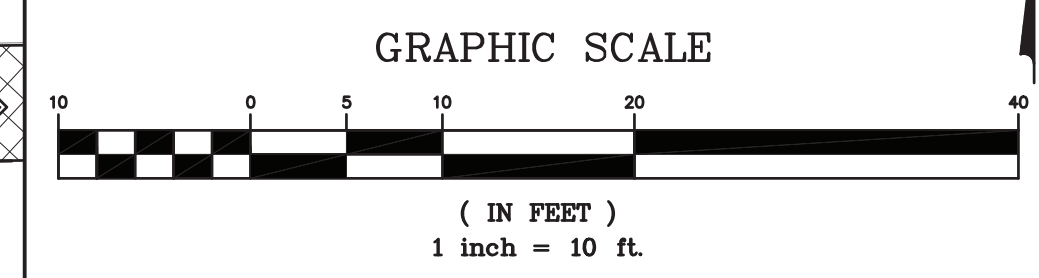
INTERSECTION GRADING DETAILS
RANSOM ST. AND N CHURCH ST.
SCALE: 1" = 10'



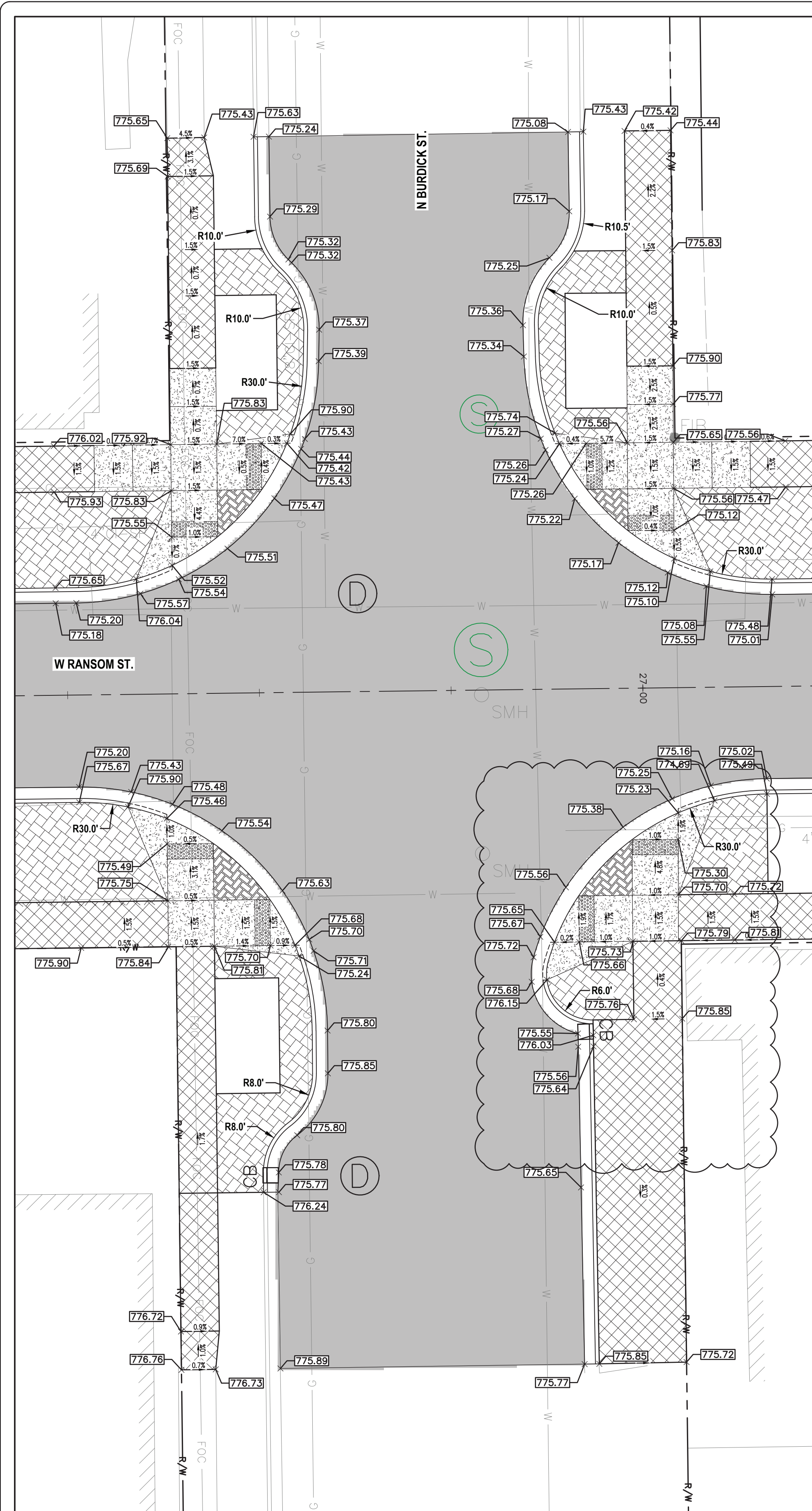
INTERSECTION GRADING DETAILS
RANSOM ST. AND N ROSE ST.
SCALE: 1" = 10'



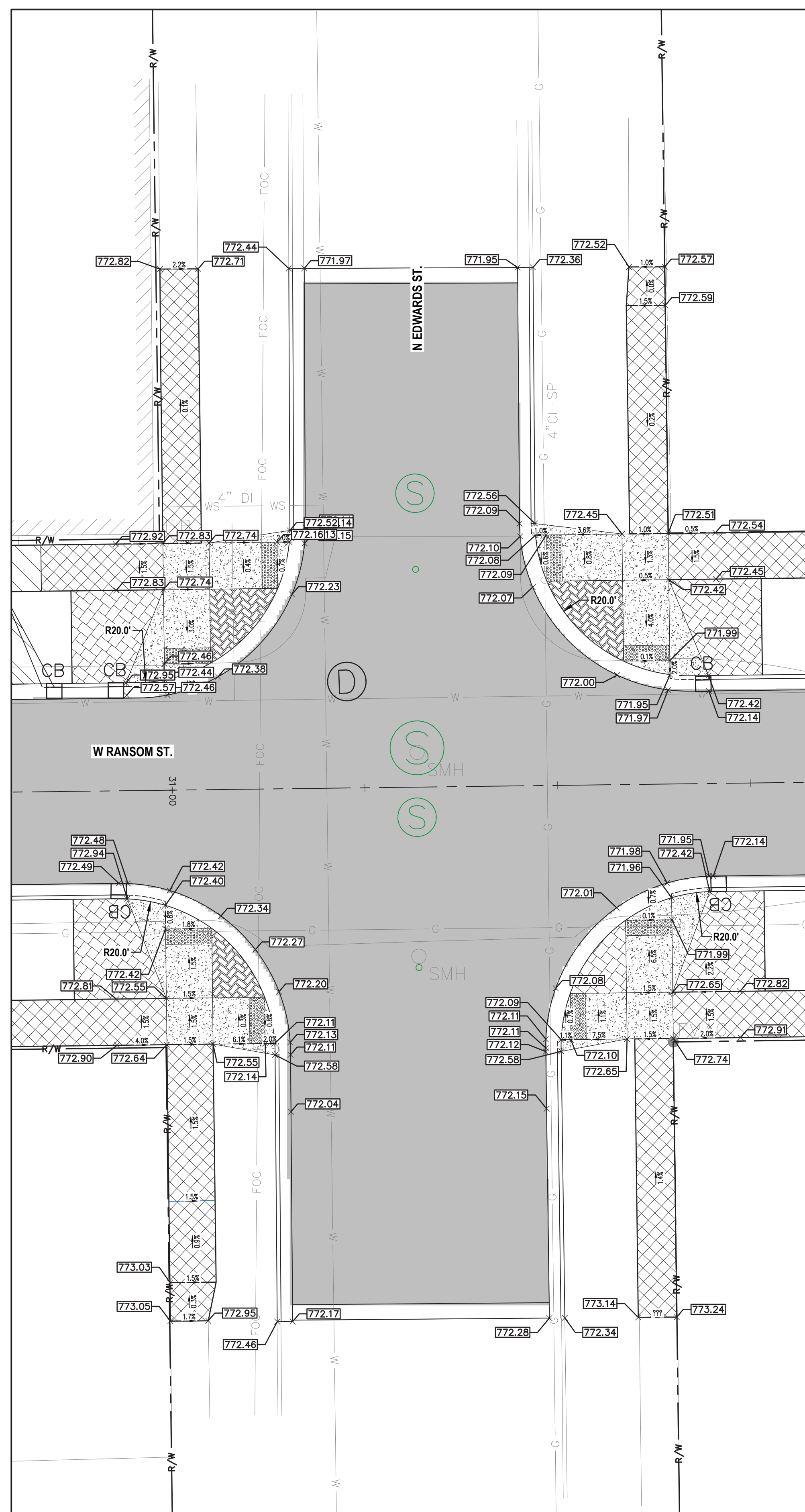
INTERSECTION GRADING DETAILS
STA. 23+20 TO 25+52
SCALE: 1" = 10'



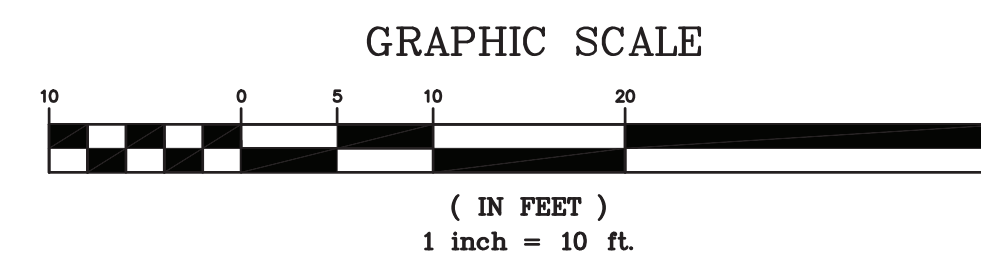
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:



INTERSECTION GRADING DETAILS
RANSOM ST. AND N BURDICK ST.
 SCALE: 1" = 10'



INTERSECTION GRADING DETAILS
RANSOM ST. AND N EDWARDS ST.
 SCALE: 1" = 10'



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

PROJECT:

INTERSECTION GRADING - 3

SHEET TITLE:

DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:

DATE: JANUARY 2023

SEAL:

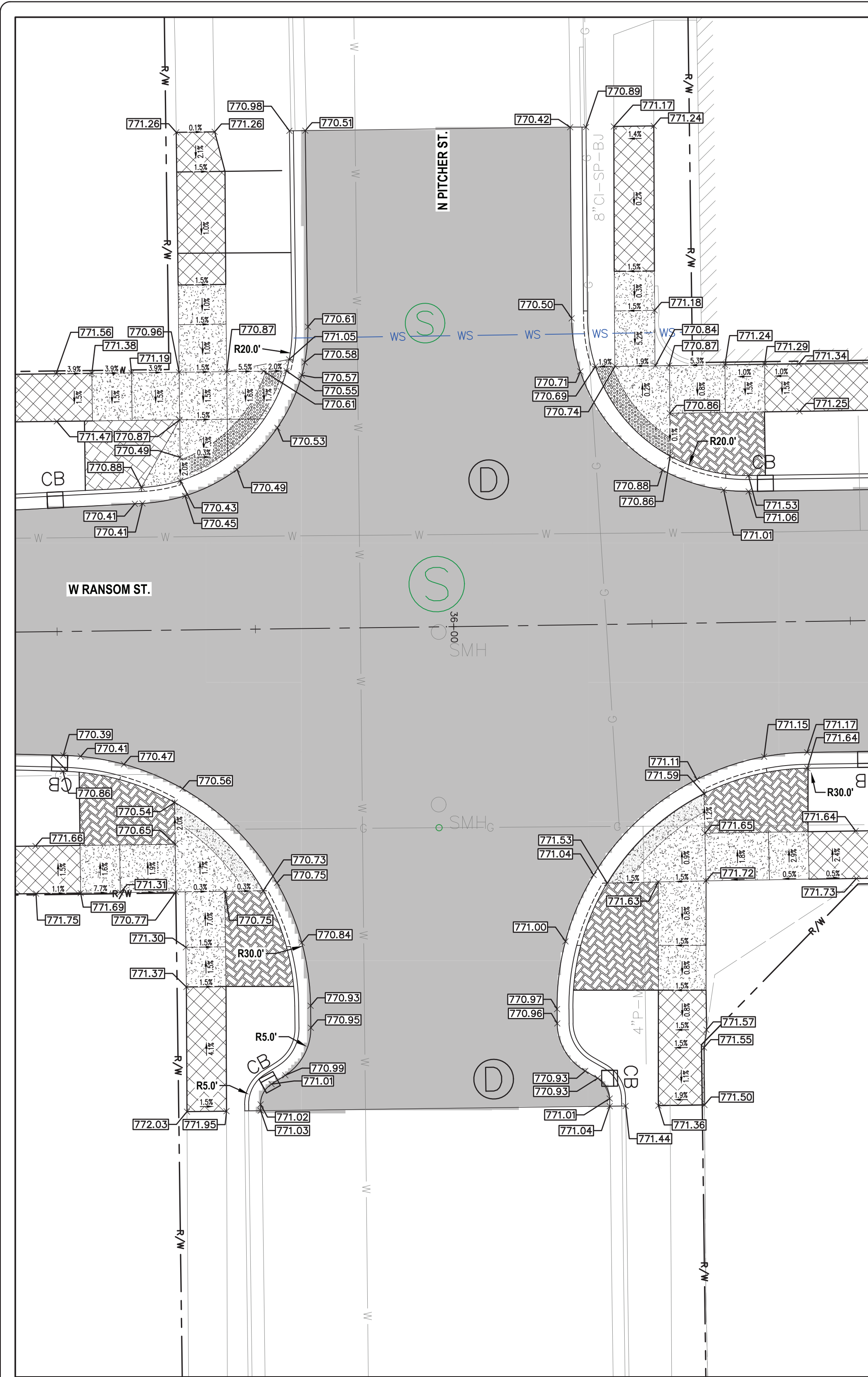
SIGNATURE:

DATE:

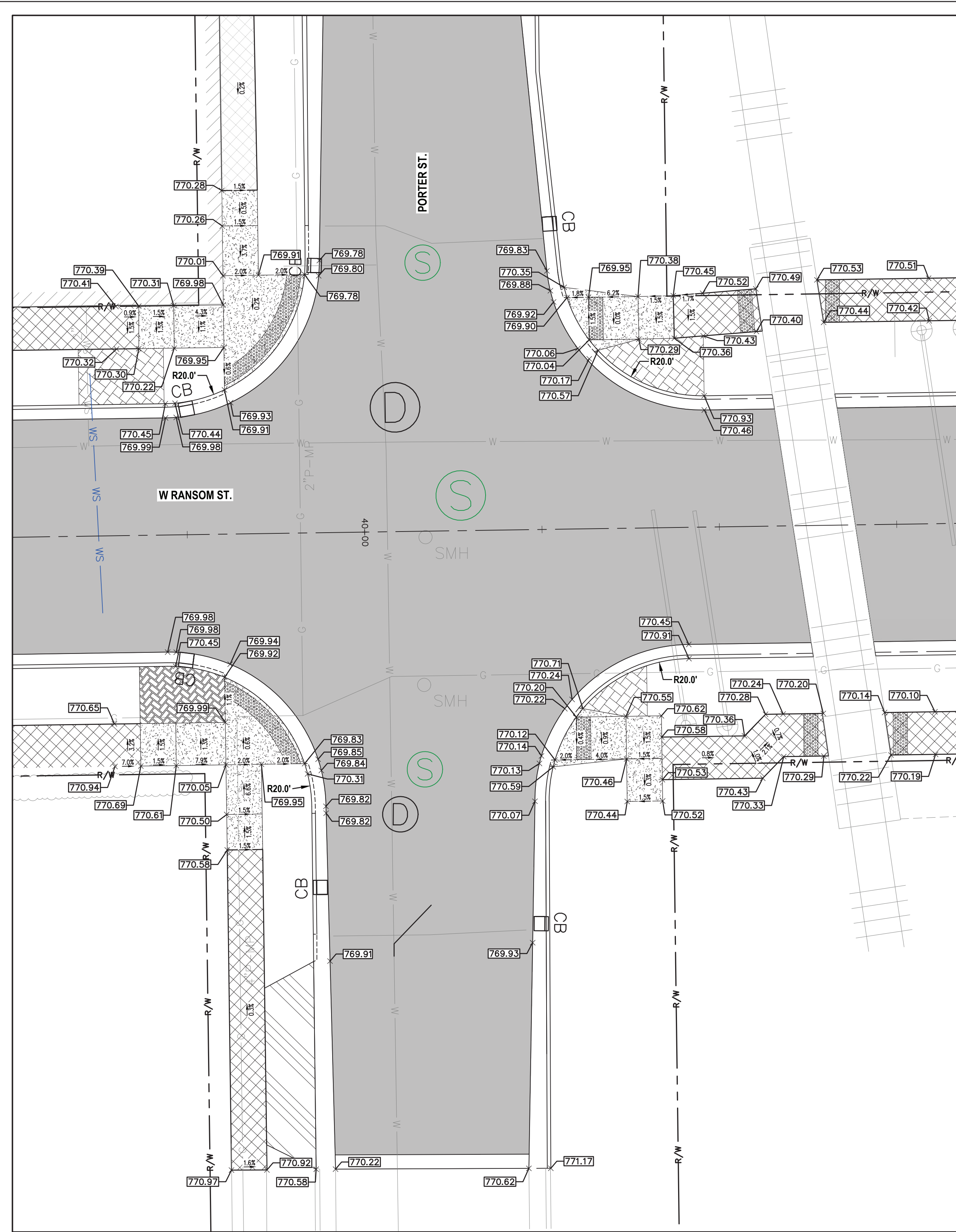
SCALE:
 HORIZ: 1" = 10'
 VERT: N/A

ACI JOB #
22-0031

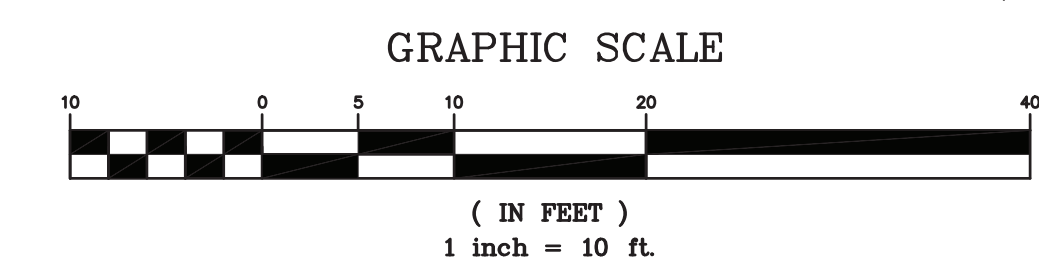
SHEET NO.
35 of 52



INTERSECTION GRADING DETAILS
RANSOM ST. AND N PITCHER ST.
SCALE: 1" = 10'



INTERSECTION GRADING DETAILS
RANSOM ST. AND PORTER ST.
SCALE: 1" = 10'



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

**RANSOM STREET
IMPROVEMENTS
CITY OF KALAMAZOO**

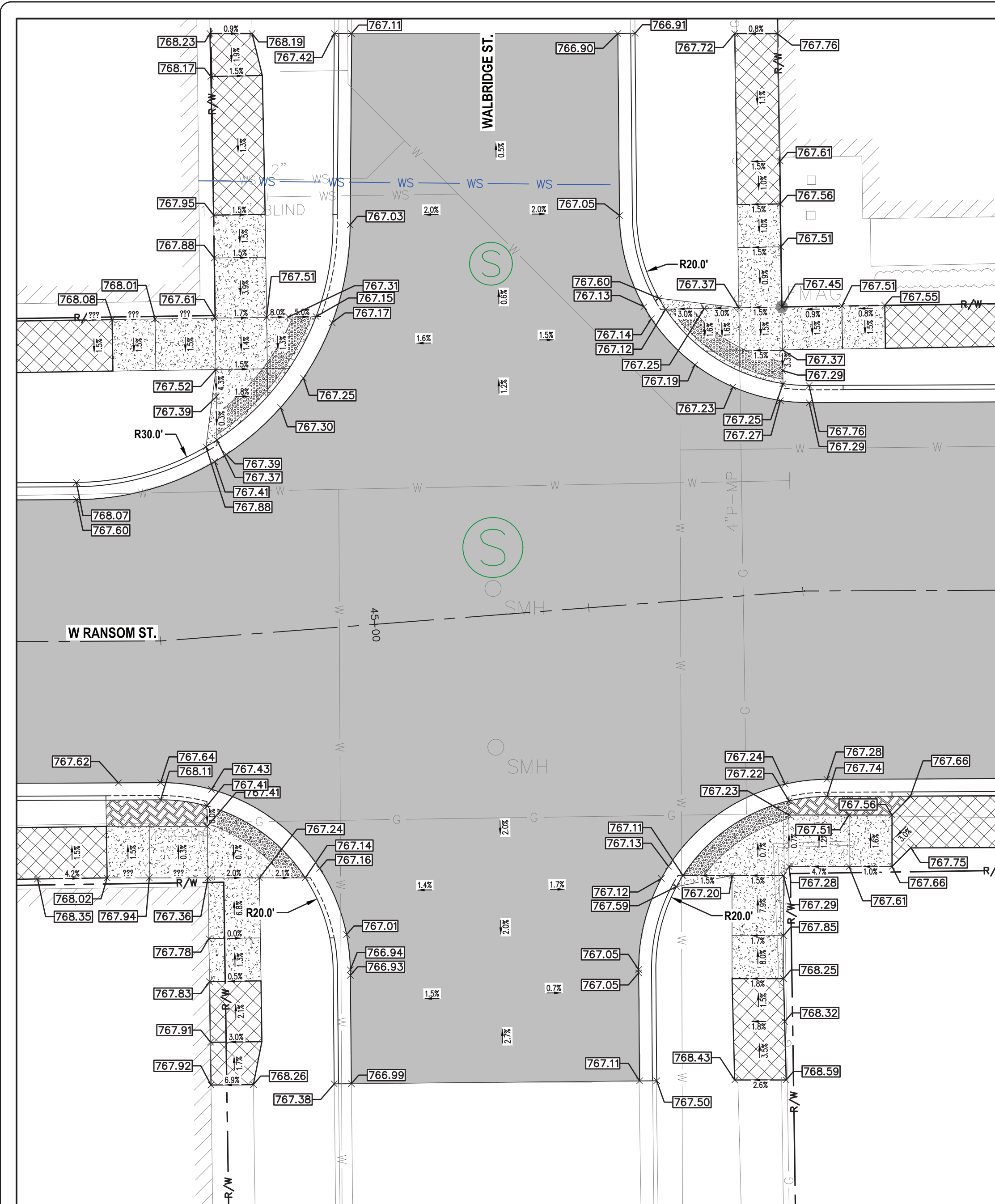
PROJECT:
INTERSECTION GRADING - 4

SHEET TITLE:
DRAWN BY:
DESIGNED BY:
PM REVIEW:
QA/QC REVIEW:
DATE:
SEAL:

SIGNATURE:
DATE:
SCALE:
HORIZ: 1" = 10'
VERT: N/A
ACI JOB #

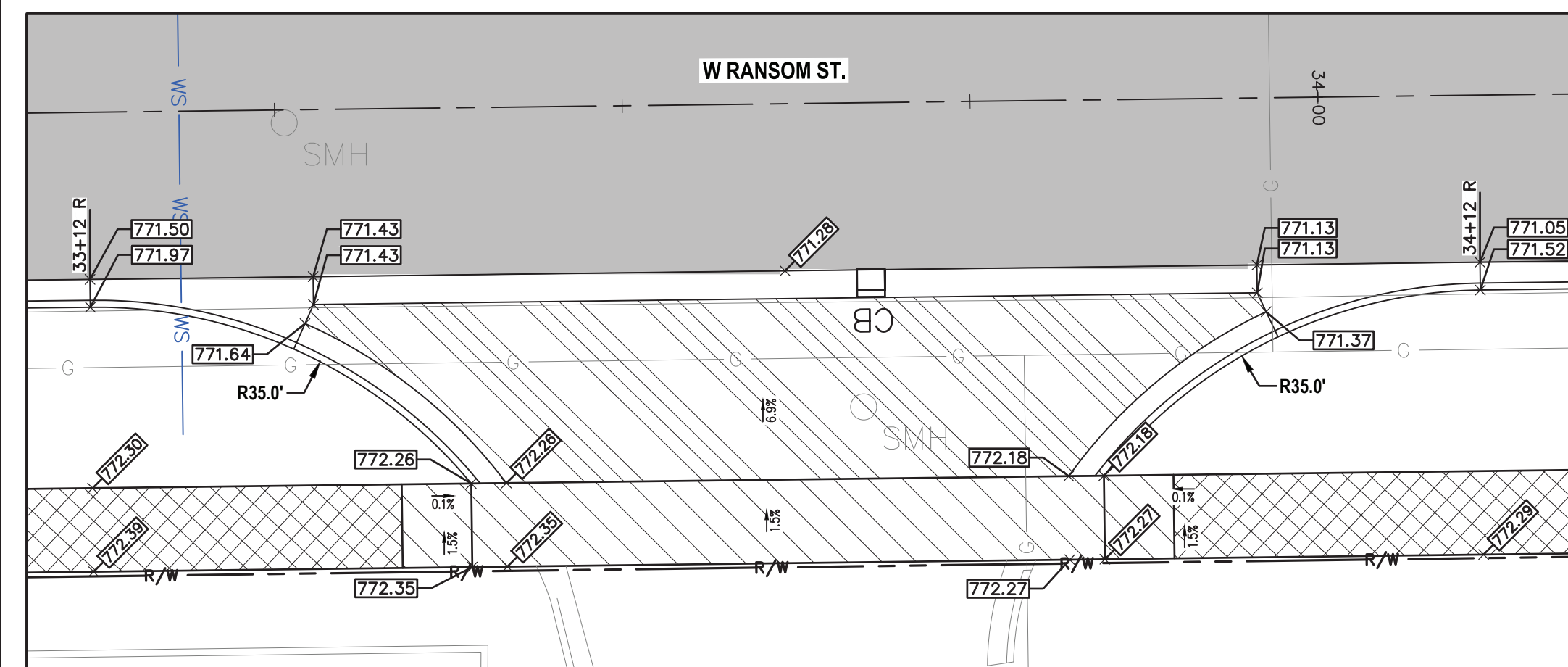
22-0031
SHEET NO.
36 of 52

C:\Project\2022\220031\220031.dwg, 1/10/2023 9:49:59 AM, 1/1



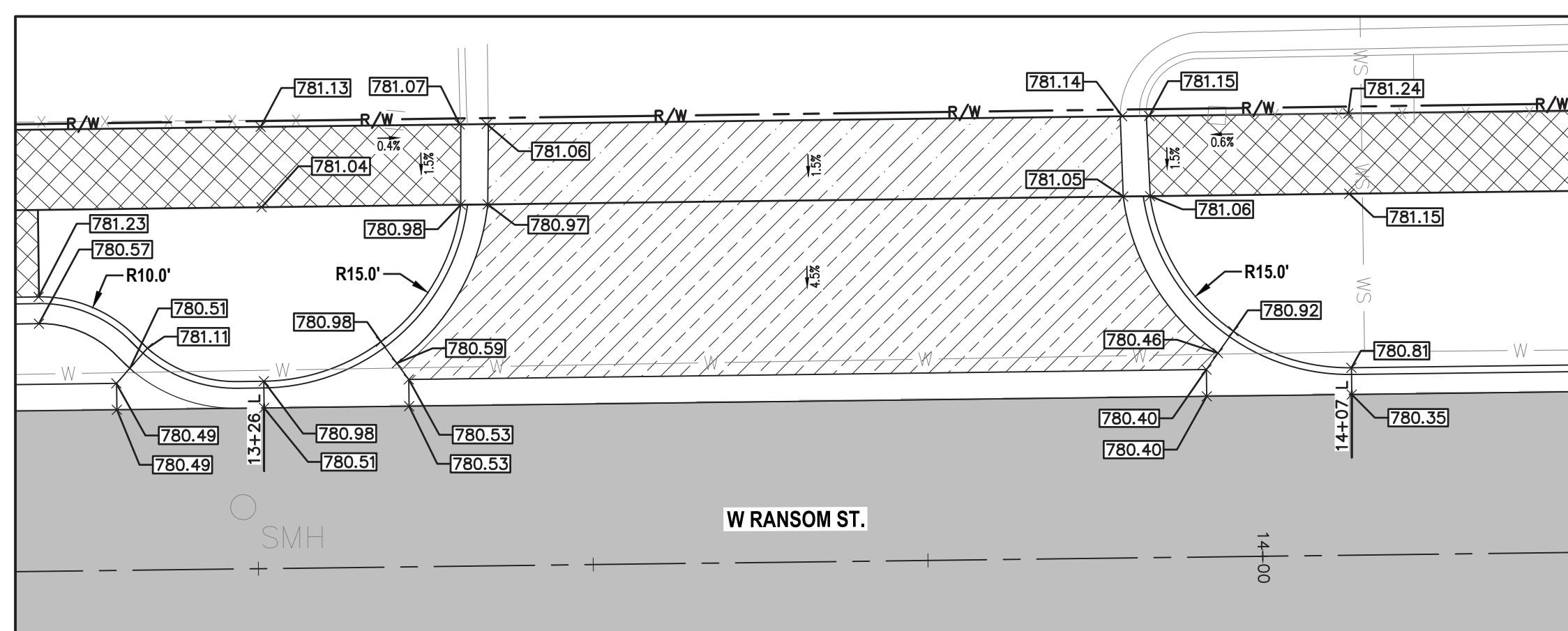
**INTERSECTION GRADING DETAILS
RANSOM ST. AND WALBRIDGE ST.**

SCALE: 1" = 10'



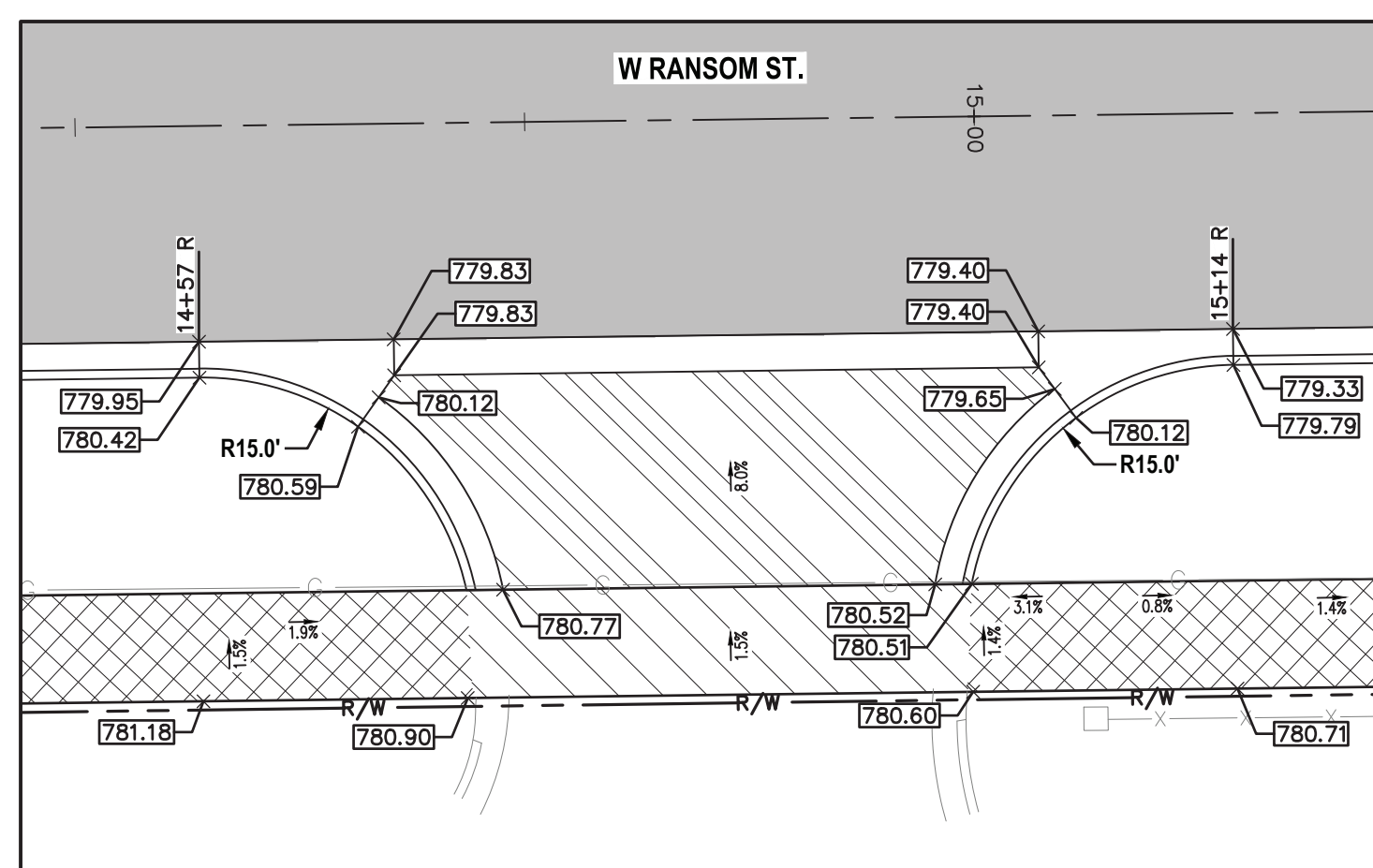
**INTERSECTION GRADING DETAILS
STA. 33+12 TO 34+12**

SCALE: 1" = 10'



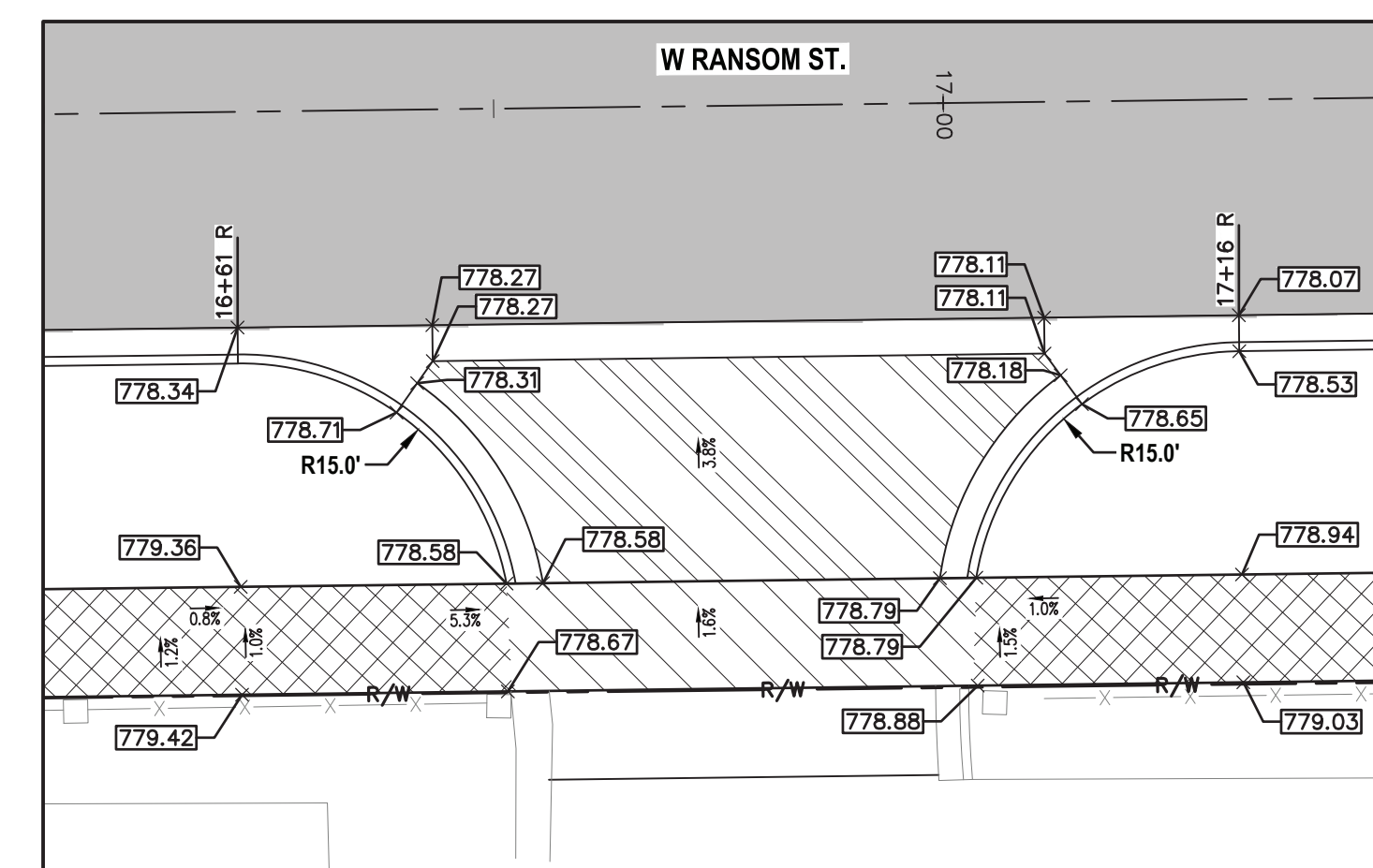
**INTERSECTION GRADING DETAILS
STA. 13+26 TO 14+07**

SCALE: 1" = 10'



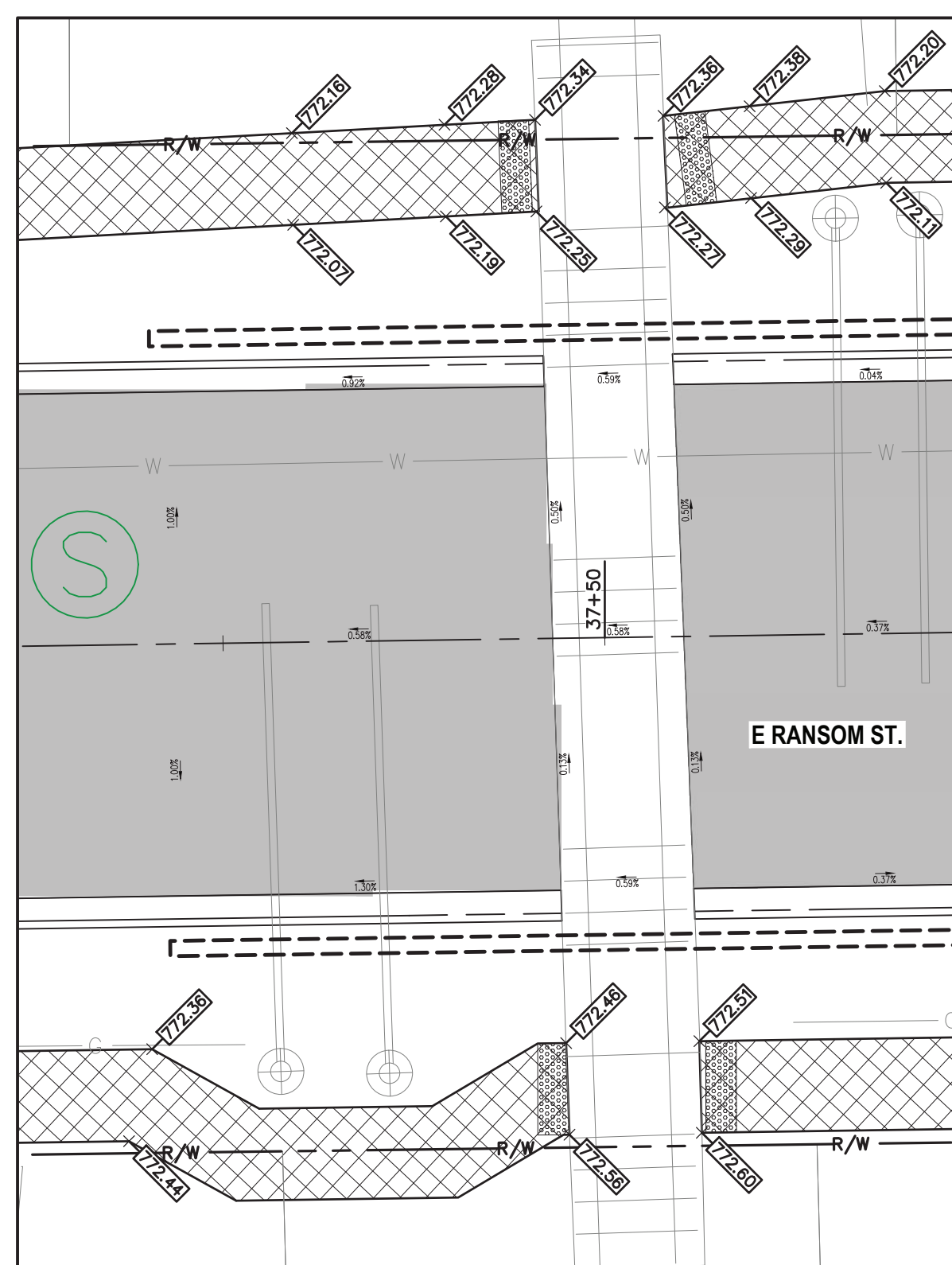
**INTERSECTION GRADING DETAILS
STA. 14+57 TO 15+14**

SCALE: 1" = 10'



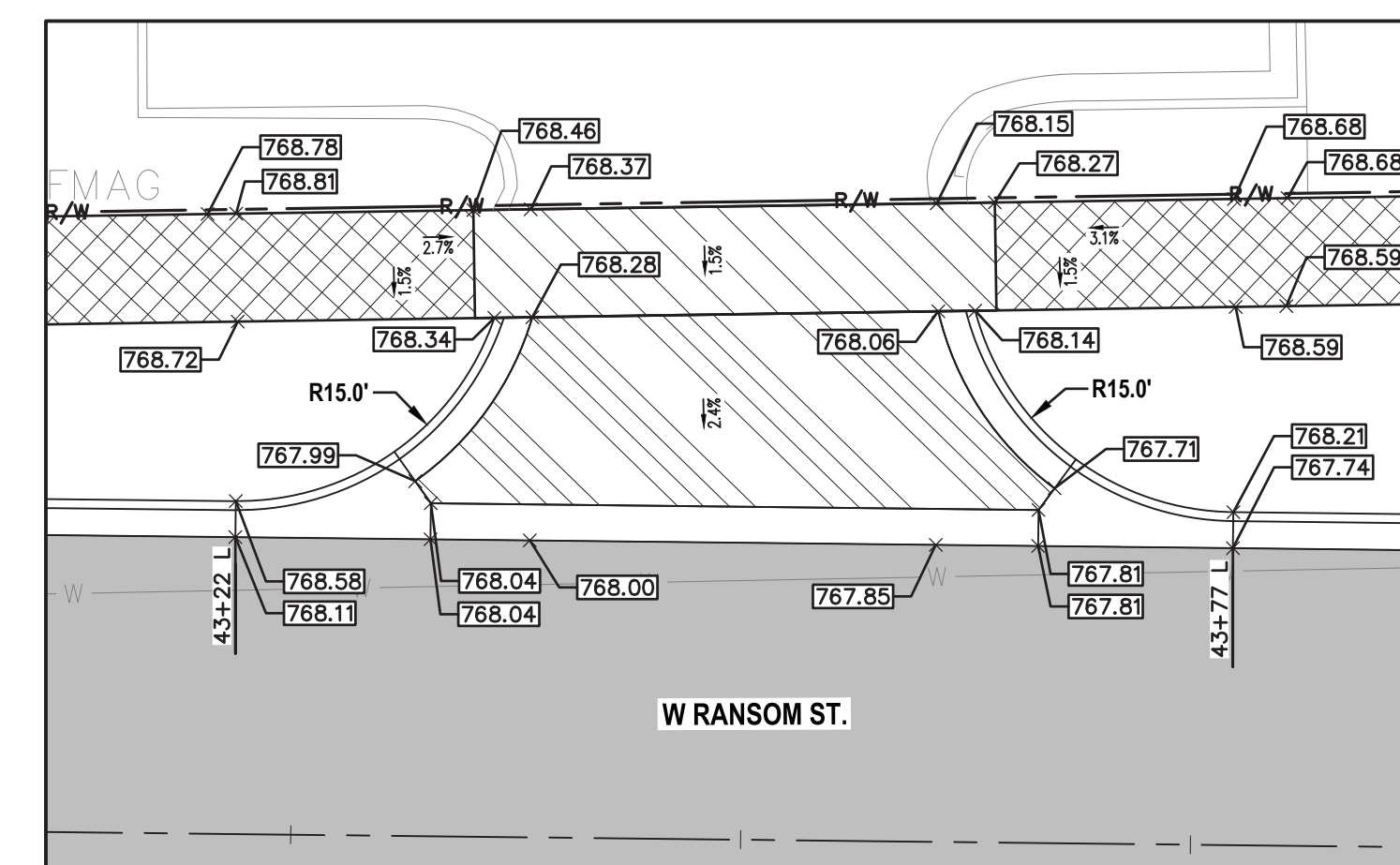
**INTERSECTION GRADING DETAILS
STA. 16+61 TO 17+16**

SCALE: 1" = 10'



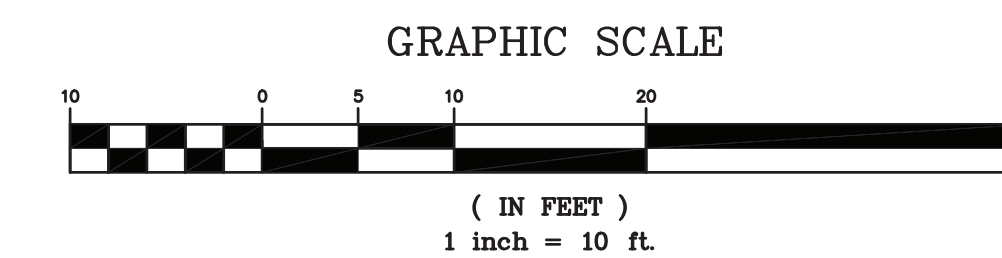
**INTERSECTION GRADING DETAILS
RAILROAD CROSSING AT STA. 37+50**

SCALE: 1" = 10'

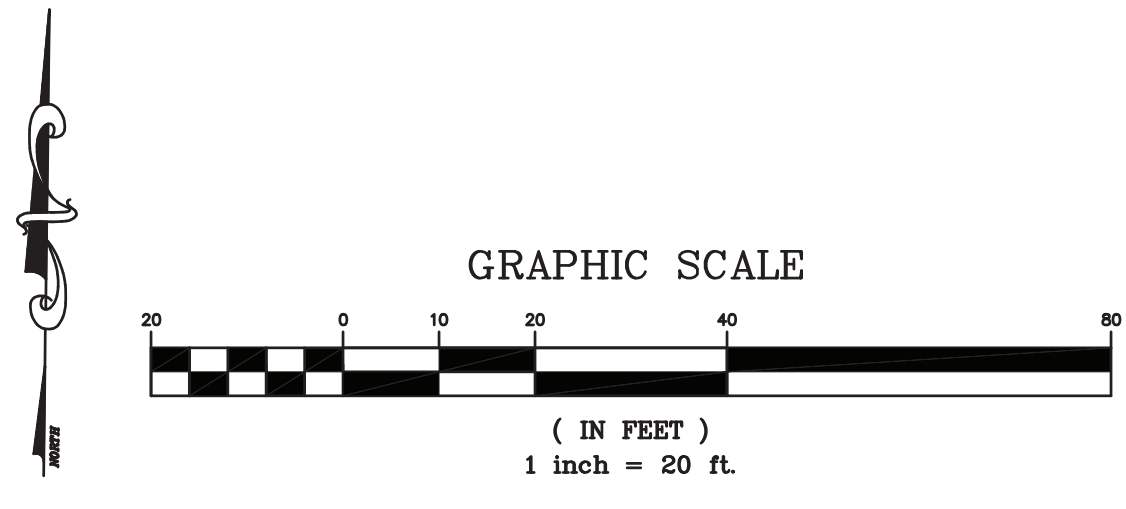
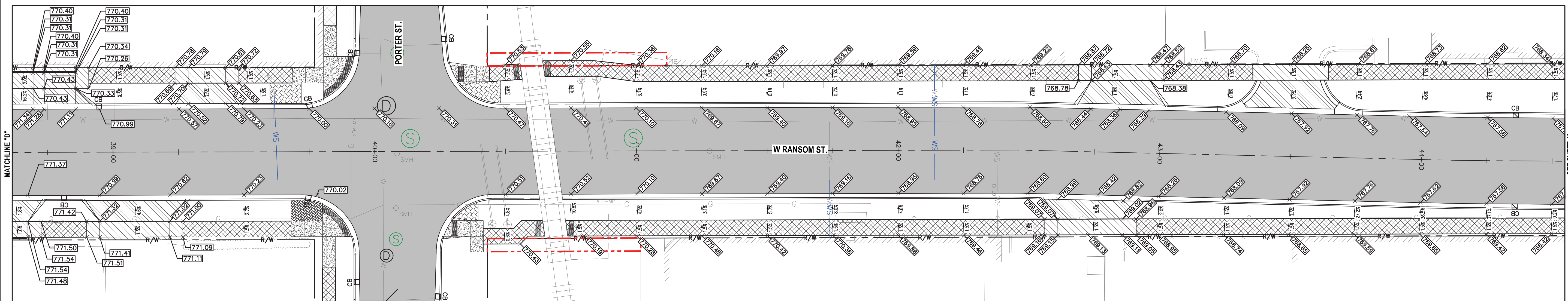
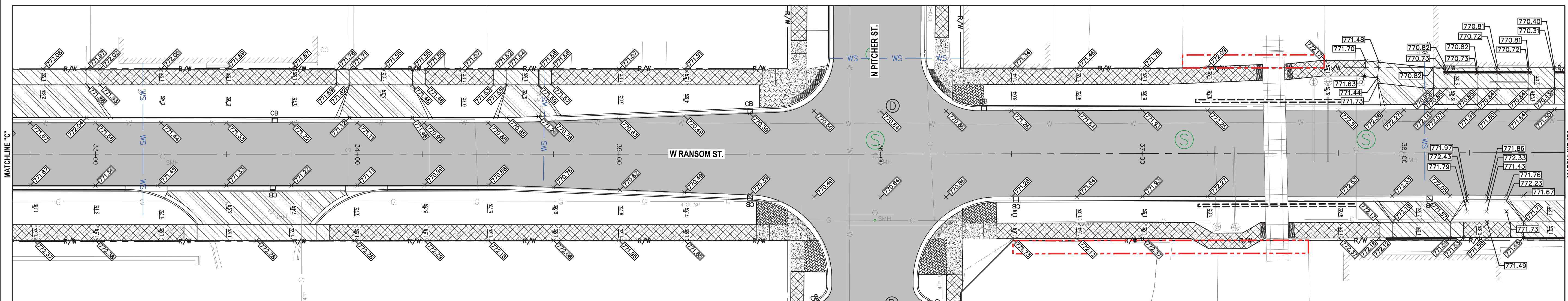
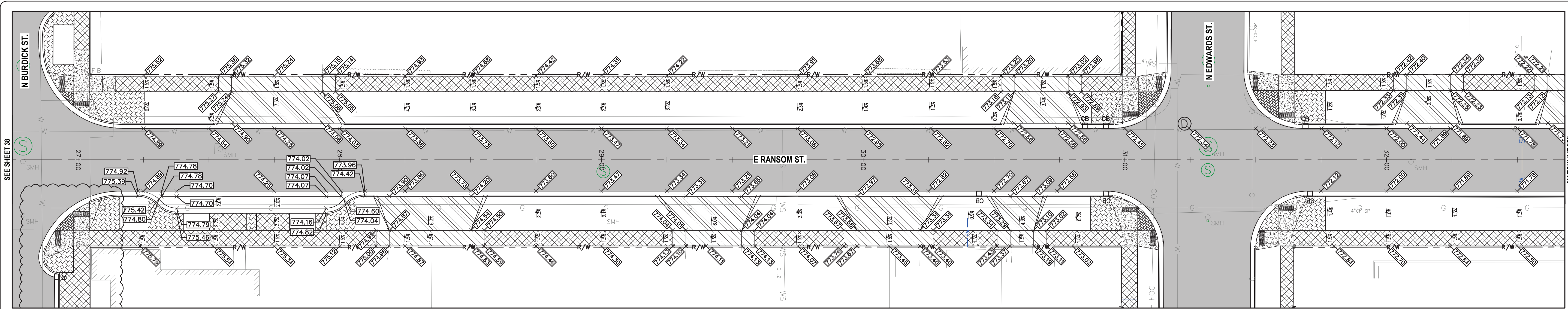


**INTERSECTION GRADING DETAILS
STA. 43+22 TO 43+78**

SCALE: 1" = 10'



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:



**RANSOM STREET
 IMPROVEMENTS
 CITY OF KALAMAZOO**

GRADING PLAN - 2

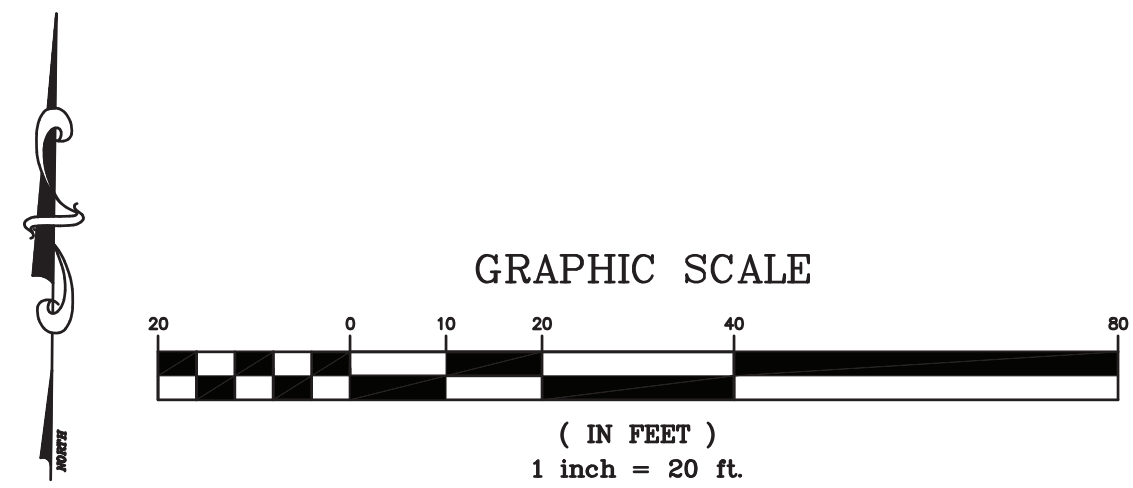
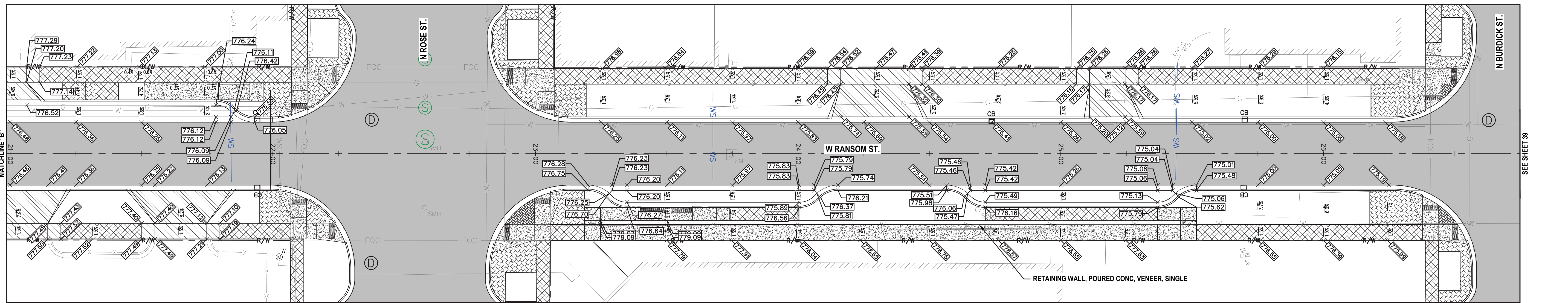
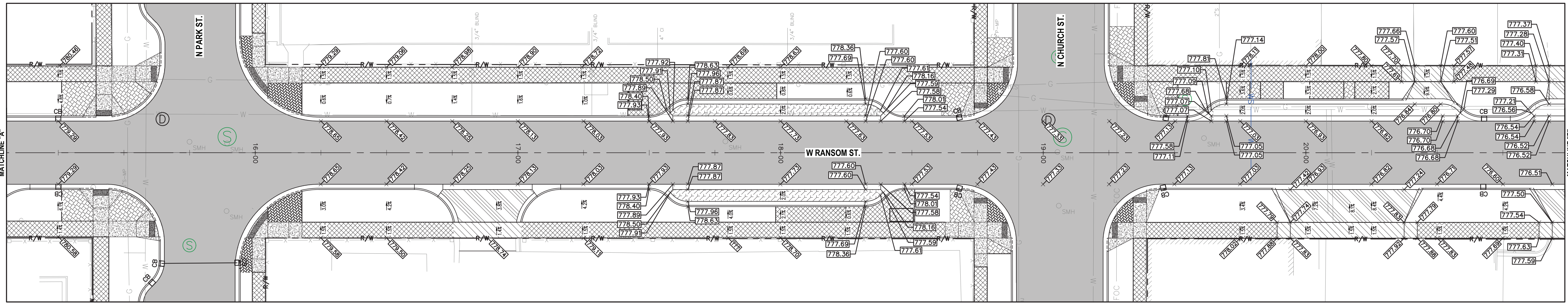
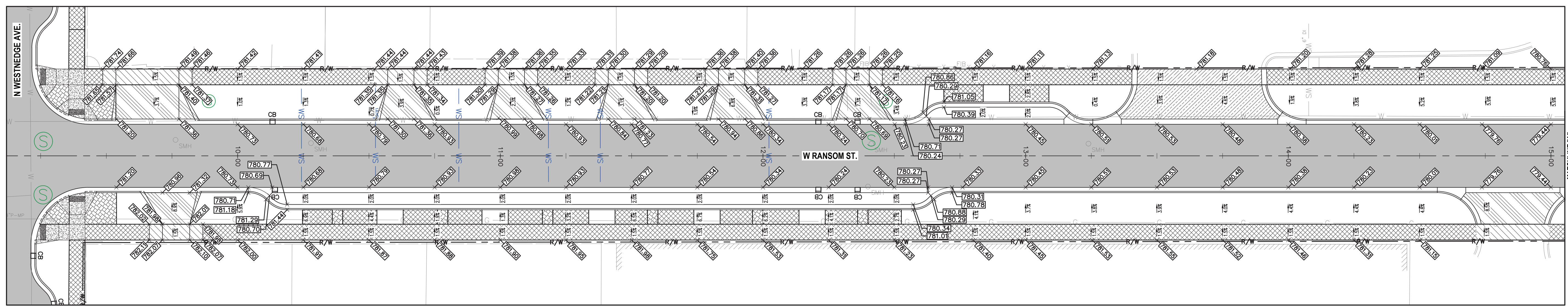
SHEET TITLE:
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

SIGNATURE:
 DATE:
 SCALE:
 HORIZ: 1" = 20'
 VERT: N/A
 ACI JOB #

22-0031
 SHEET NO. **39** of **52**

3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

C:\Project\2022\22-0031\22-0031.dwg, 01/06/2023 10:48:34 AM, mjs



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

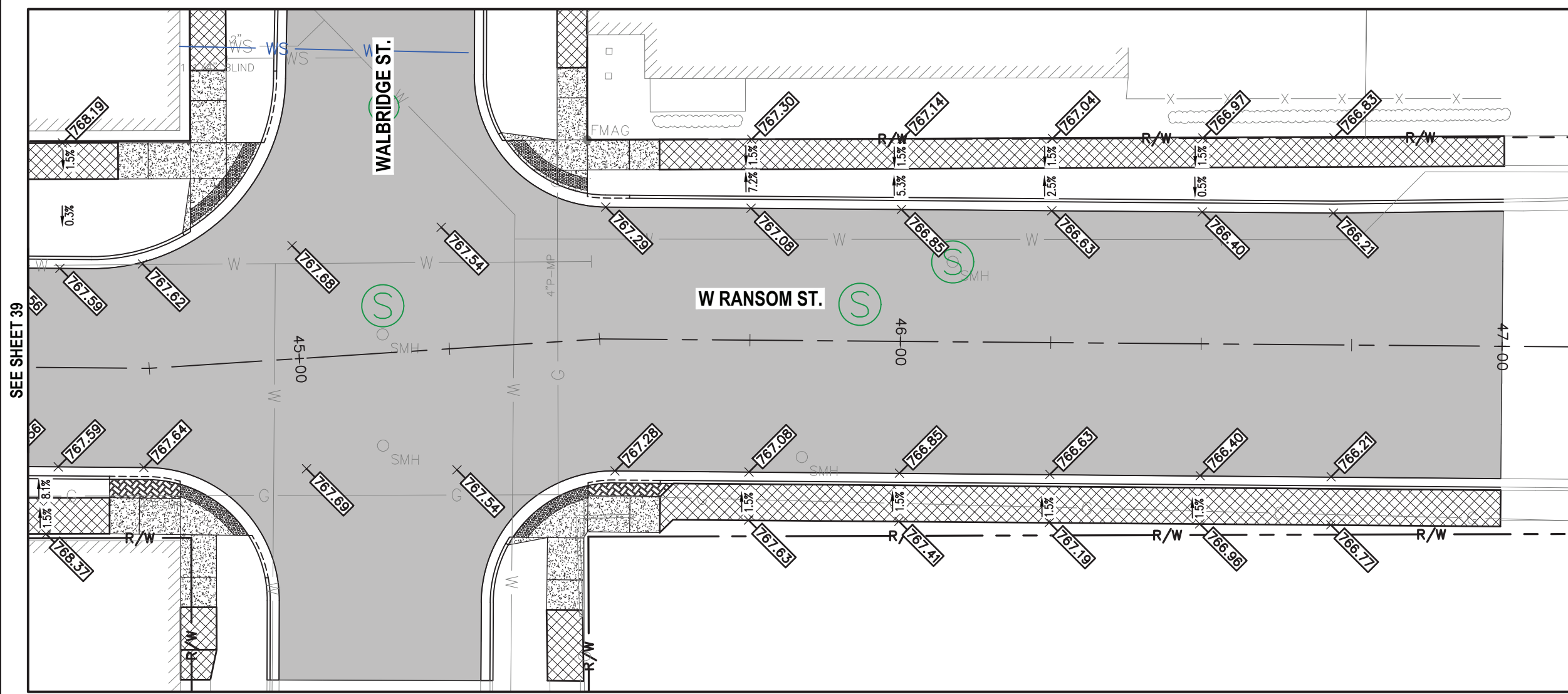
**RANSOM STREET
 IMPROVEMENTS
 CITY OF KALAMAZOO**

GRADING PLAN - 1

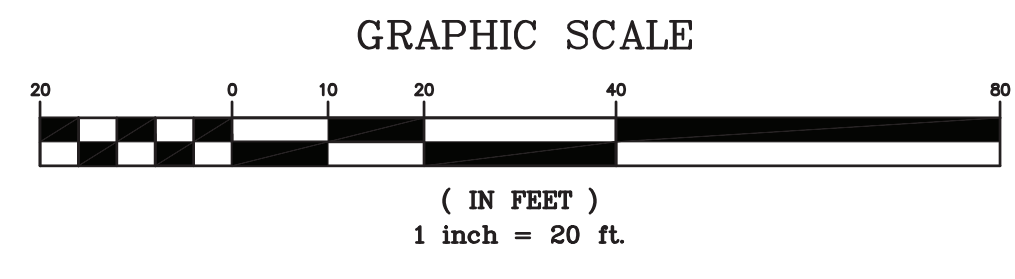
SHEET TITLE:
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

SIGNATURE:
 DATE:
 SCALE:
 HORIZ: 1" = 20'
 VERT: N/A
 ACI JOB #

22-0031
 SHEET NO. **38** of **52**



SEE SHEET 38



NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22

ABONMARCHÉ
 95 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 abonmarche.com
 abonmarche.com

Benton Harbor
 LaGrange
 Portage
 South Bend
 Valparaiso

Engineering - Architecture - Land Surveying

**RANSOM STREET
 IMPROVEMENTS
 CITY OF KALAMAZOO**

PROJECT:

GRADING PLAN - 3

SHEET TITLE:

DRAWN BY: **DJL**
 DESIGNED BY: **MJS/ERF**
 PM REVIEW: **DAD**
 QA/QC REVIEW:
 DATE: **JANUARY 2023**
 SEAL:

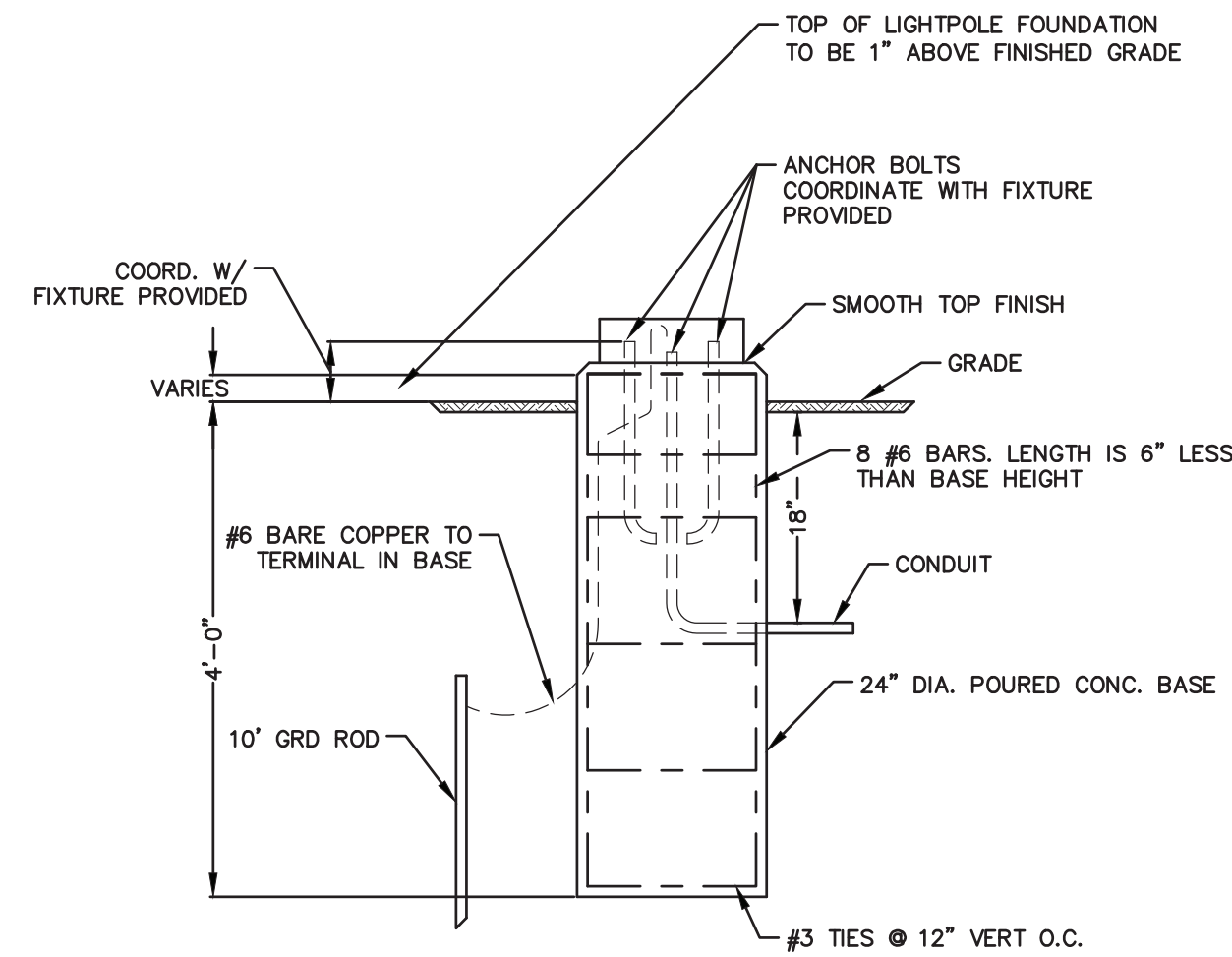
SIGNATURE:

DATE:

SCALE:
 HORZ: 1" = 20'
 VERT: N/A

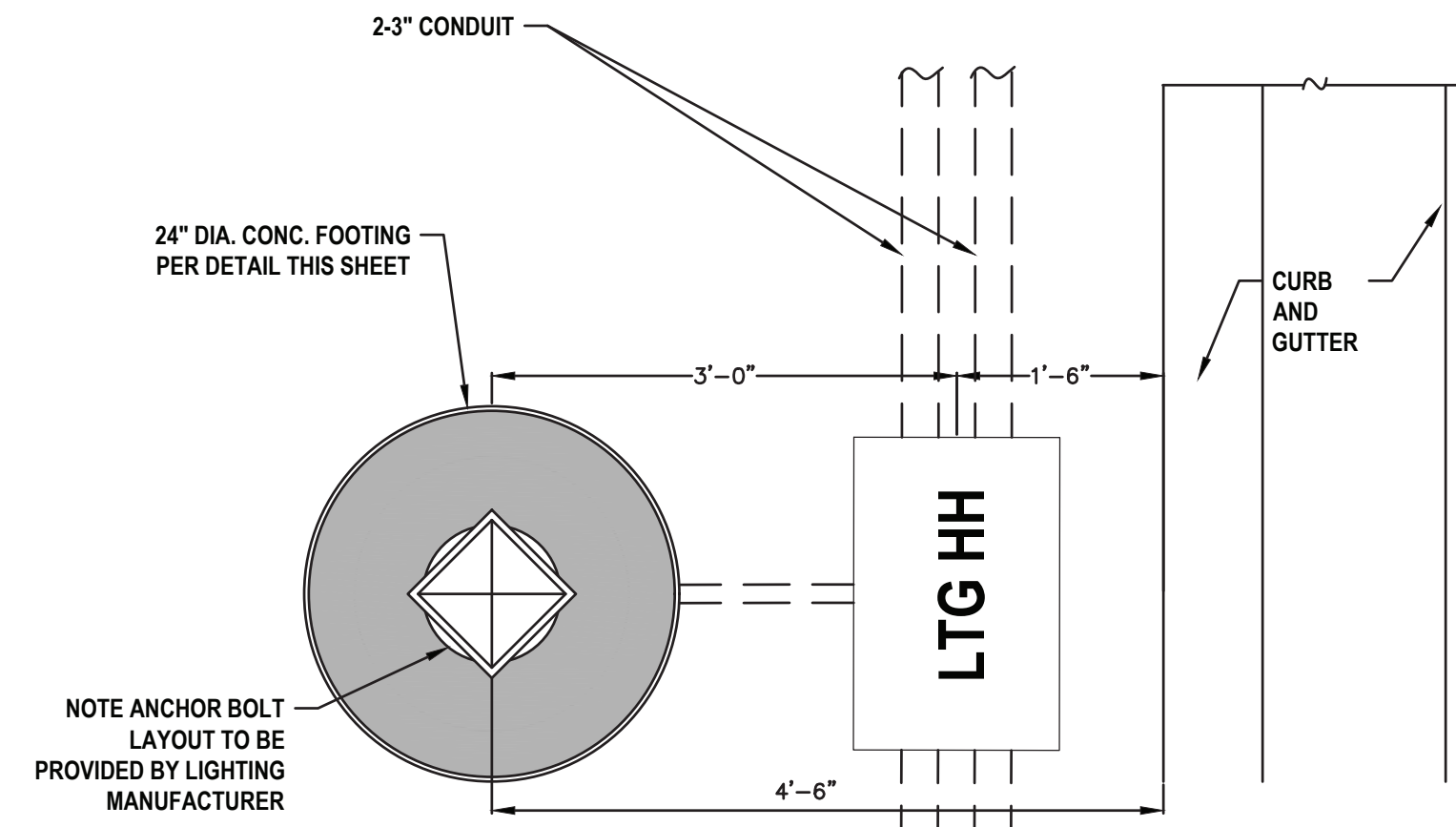
ACI JOB # **22-0031**

SHEET NO. **40** of **52**

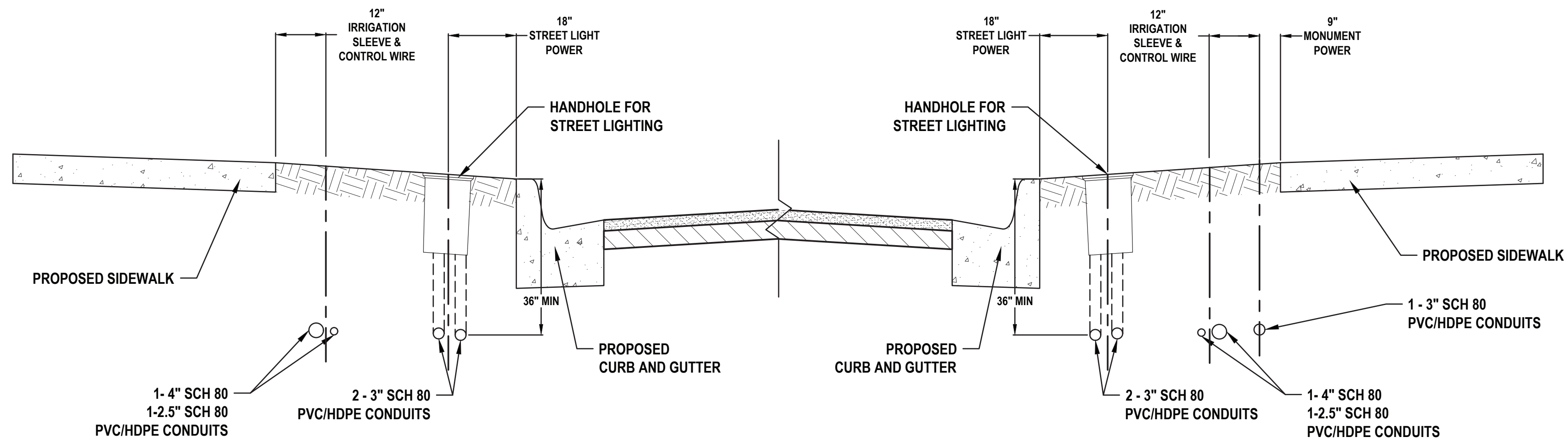


NOTE: FOUNDATION DETAIL TO BE APPROVED BY CONSUMERS ENERGY PRIOR TO FURNISHING

LIGHT BASE DETAIL
NOT TO SCALE



LIGHT POLE BASE PLAN VIEW
NOT TO SCALE



TYPICAL CONDUIT SECTION DETAIL (LOOKING EAST)

NOT TO SCALE

NOTE: CONDUIT SPACING & LOCATION IS TYPICAL FOR LENGTH OF STREETScape UNLESS OTHERWISE NOTED.

Description	Units	Quantity
Conduit, DB, 1.2 1/2 inch	Ft	3640
Conduit, DB, 1.3 inch	Ft	3765
Conduit, DB, 1.4 inch	Ft	2650
Conduit, DB, 2.3 inch	Ft	2775
Wood Pole, Fit Up, Sec Serv Pole	Ea	6
Light Std Fdn	Ea	26
HH, Irrigation, Modified	Ea	58
HH, Lighting, Modified	Ea	26
HH, Polymer Conc	Ea	51
Casing, 12 inch, Tr Det B	Ft	240

LIGHTING ELECTRICAL PLAN NOTES

- IT IS THE INTENT OF THIS CONTRACT TO PROVIDE CONDUIT, HANDHOLES, AND FOUNDATIONS COMPLETE AND READY FOR USE BY THE ELECTRIC UTILITY (CONSUMERS ENERGY) TO INSTALL, WIRE, AND COMMISSION INTO SERVICE THE STREET LIGHTING SYSTEM AS SHOWN ON THE PLANS.
- IN ACCORDANCE WITH SECTION 819 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION, PROVIDE PERSONNEL WHO ARE QUALIFIED AND EXPERIENCED IN PERFORMING THE WORK. ALL WORK SHALL BE PERFORMED WITH AN ON-SITE LICENSED JOURNEYPERMAN ELECTRICIAN FOR SUPERVISION OF THE WORK.
- PERFORM ALL WORK IN ACCORDANCE WITH THE CURRENT (ADOPTED) NATIONAL ELECTRICAL CODE (2017), PER SECTION 110-3(A) AND (B); THE WIRING, GROUNDING, AND BONDING METHODS USED SHALL BE SUITABLE FOR THE INSTALLATION AND USE IN CONFORMANCE WITH PROVISIONS OF THE NEC, AND LISTED OR LABELED EQUIPMENT SHALL BE USED OR INSTALLED IN ACCORDANCE WITH ANY INSTRUCTIONS INCLUDED IN THE LISTING OR LABELING.
- ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL MATERIALS AS SPECIFIED ON THE ELECTRICAL DRAWINGS.
- ALL PVC CONDUITS 1" THROUGH 3" SHALL BE SCHEDULE 80 PVC OR COILED HDPE. ALL PVC HOME RUNS SHALL UTILIZE LONG SWEEPS, WHILE RUNS 100' AND LESS BETWEEN HAND HOLES CAN USE STANDARD SWEEPS. USE 1/2" PVC SCHEDULE 40 OR 80 FROM HAND HOLES TO AND UP EACH POLE BASE. INSTALL A PULL LINE IN ALL PVC CONDUITS.
- FURNISH AND INSTALL CONCRETE POLE BASES AS CALLED FOR ON THE LIGHTING PLANS.
- COORDINATE WITH THE CITY OF KALAMAZOO AND ELECTRICAL UTILITY FOR INSPECTION OF WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FEES ASSOCIATED WITH INSPECTION OF THE ELECTRICAL WORK.

ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2297
 abonmarche.com
 Engineering - Architecture - Land Surveying

**RANSOM STREET
IMPROVEMENTS
CITY OF KALAMAZOO**

PROJECT:

LIGHTING DETAILS

SHEET TITLE:

DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:

DATE: JANUARY 2023

SEAL:

SIGNATURE:

DATE:

SCALE:
 HORZ: AS NOTED
 VERT: AS NOTED

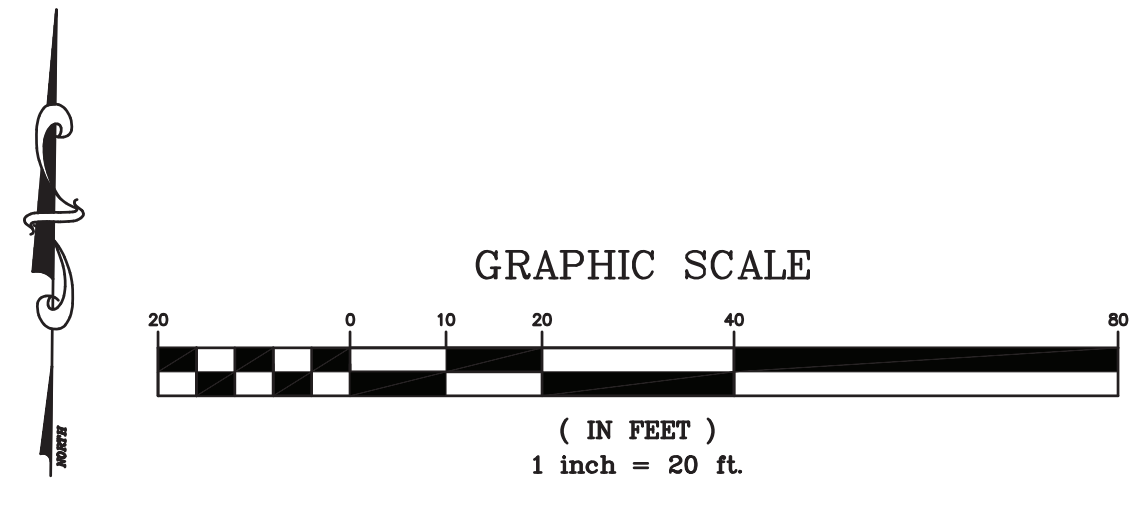
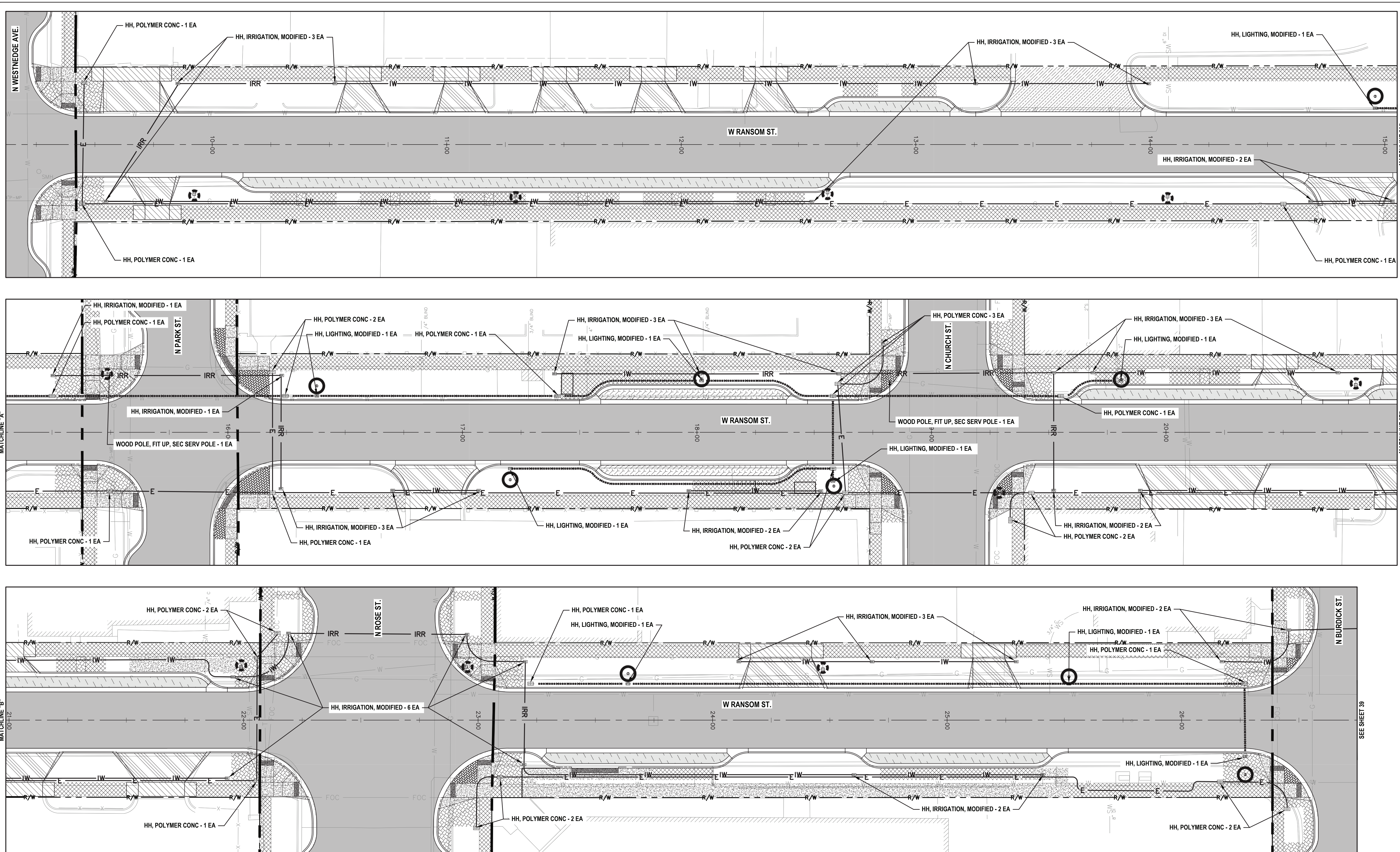
ACI JOB #

22-0031

SHEET NO.

41 of 52

NO.	REVISION DESCRIPTION	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22



LEGEND

.....	LIGHTING POWER - CONDUIT, DB, 2, 3 INCH
— IW —	IRRIGATION CONTROLLER/SUPPLY SLEEVE - CONDUIT, DB, 1, 2 1/2 INCH/CONDUIT, DB, 1, 4 INCH
— IRR —	IRRIGATION CONTROLLER - CONDUIT, DB, 1, 2 1/2 INCH
— E —	FUTURE MONUMENT/STREET FEATURE POWER - CONDUIT, DB, 1, 3 INCH
HH	HH, POLYMER CONC
LTG	HH, LIGHTING, MODIFIED
IRR	HH, IRRIGATION, MODIFIED

3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2295
 abonmarche.com
 Copyright 2023 - ABONMARCHÉ CONSULTANTS, INC.
 Engineering - Architecture - Land Surveying
 Lori G. Sweigert
 Valparaiso, Indiana

**RANSOM STREET
 IMPROVEMENTS
 CITY OF KALAMAZOO**

PROJECT:

CONDUIT PLAN - 1

SHEET TITLE:

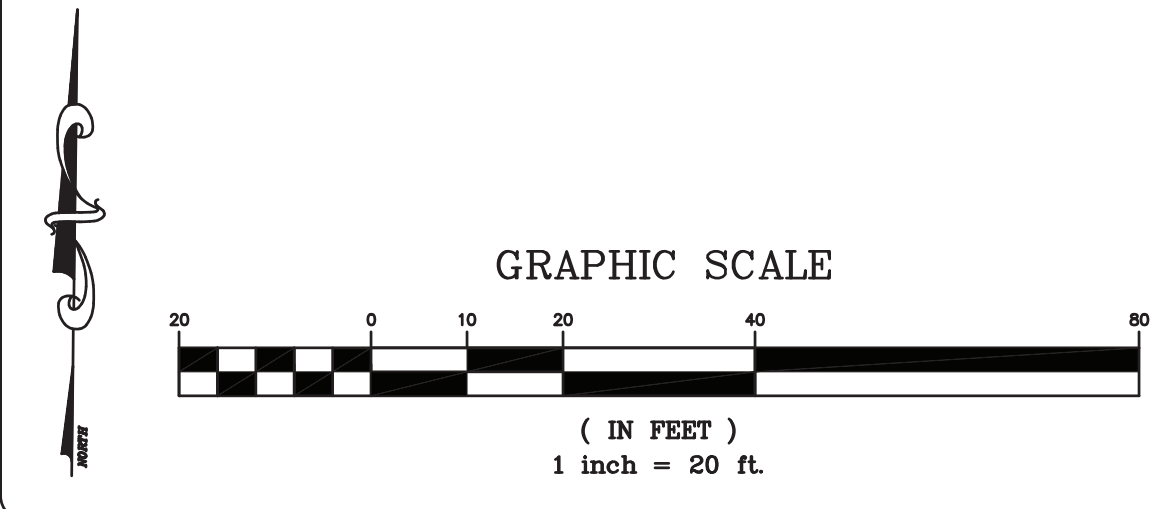
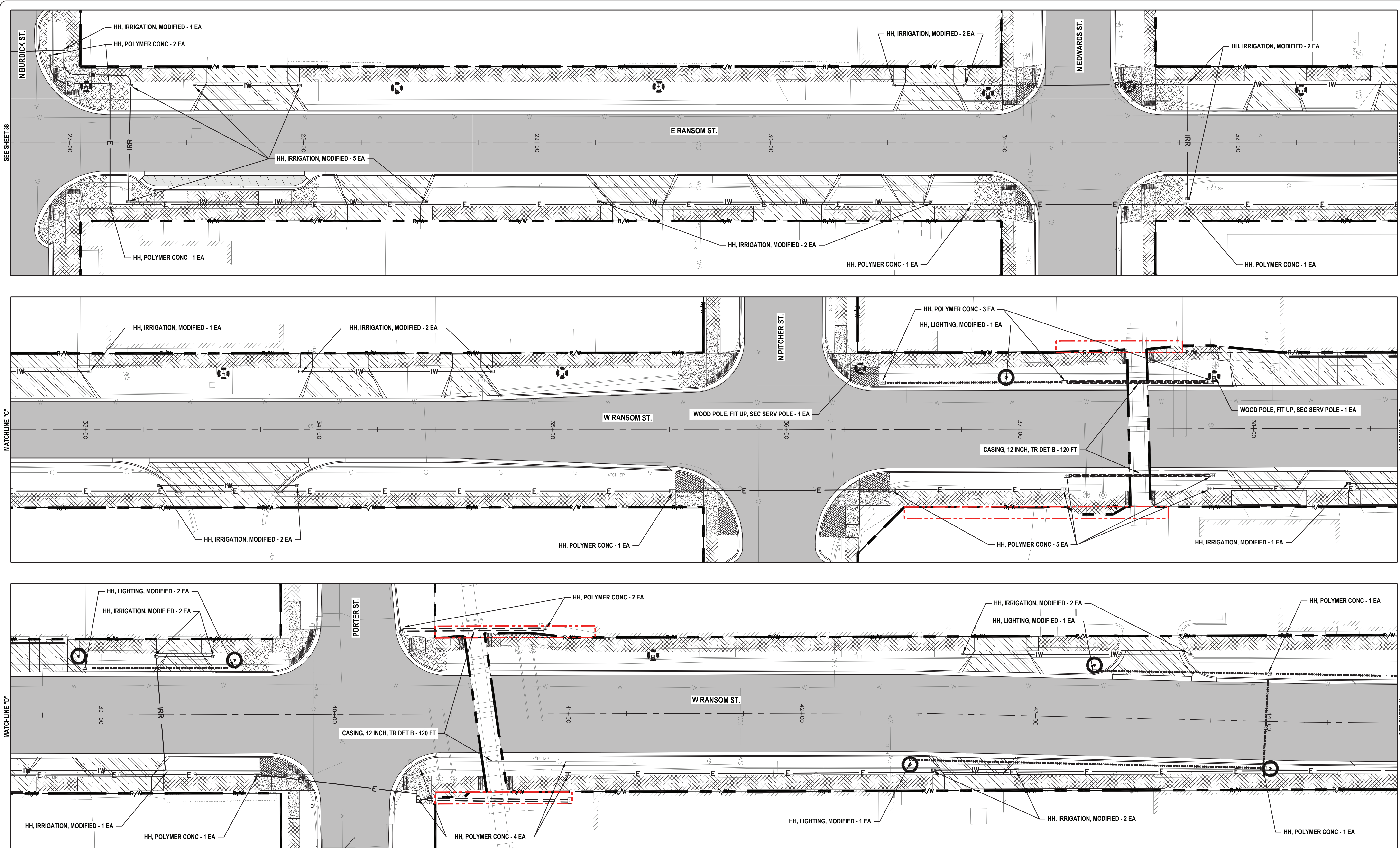
DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

SIGNATURE:
 DATE:

SCALE:
 HORIZ: 1" = 20'
 VERT: N/A

ACI JOB # **22-0031**

SHEET NO. **42** of **52**



LEGEND

.....	LIGHTING POWER - CONDUIT, DB, 2, 3 INCH
— IW —	IRRIGATION CONTROLLER/SUPPLY SLEEVE - CONDUIT, DB, 1, 2 1/2 INCH/CONDUIT, DB, 1, 4 INCH
— IRR —	IRRIGATION CONTROLLER - CONDUIT, DB, 1, 2 1/2 INCH
— E —	FUTURE MONUMENT/STREET FEATURE POWER - CONDUIT, DB, 1, 3 INCH
[HH]	HH, POLYMER CONC
[LTG]	HH, LIGHTING, MODIFIED
[IRR]	HH, IRRIGATION, MODIFIED

3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

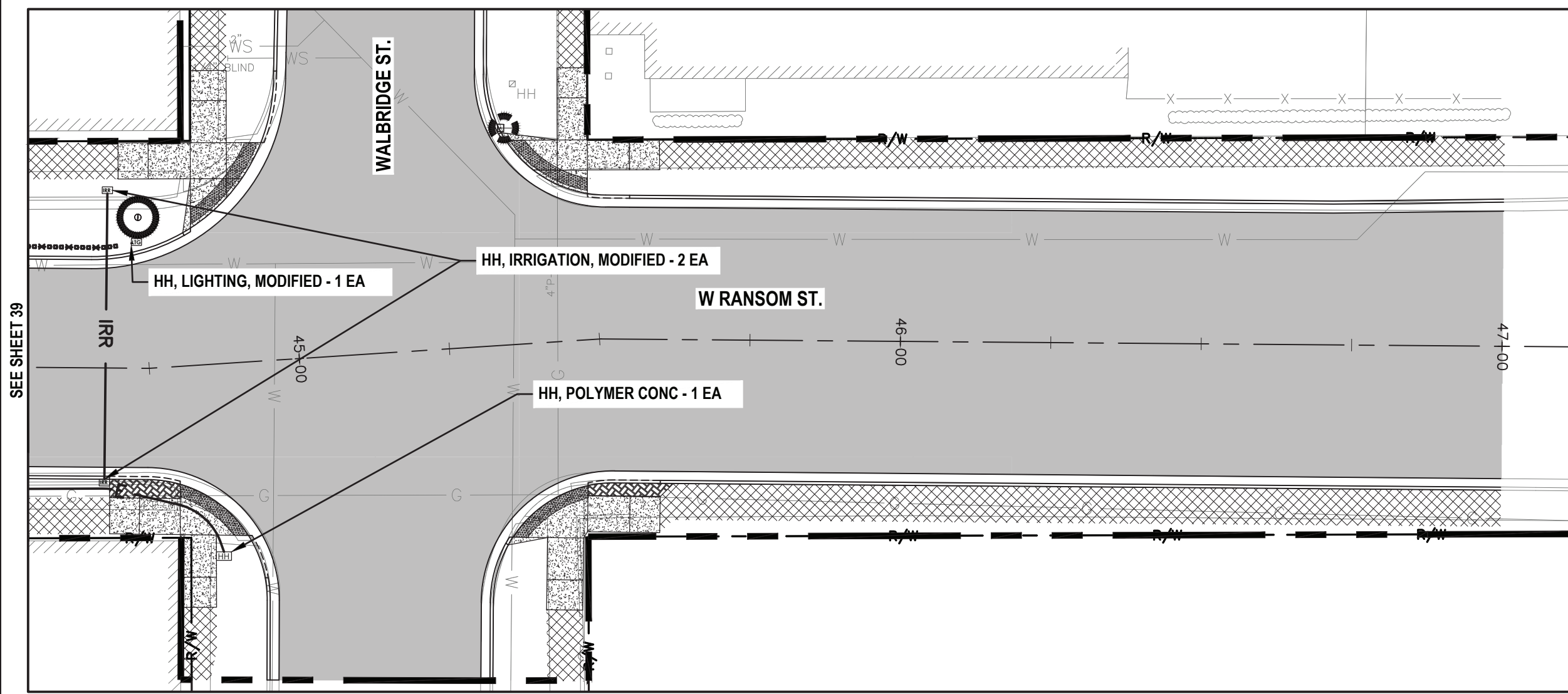
ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2295
 abonmarche.com
 Engineering - Architecture - Land Surveying

**RANSOM STREET
 IMPROVEMENTS
 CITY OF KALAMAZOO**

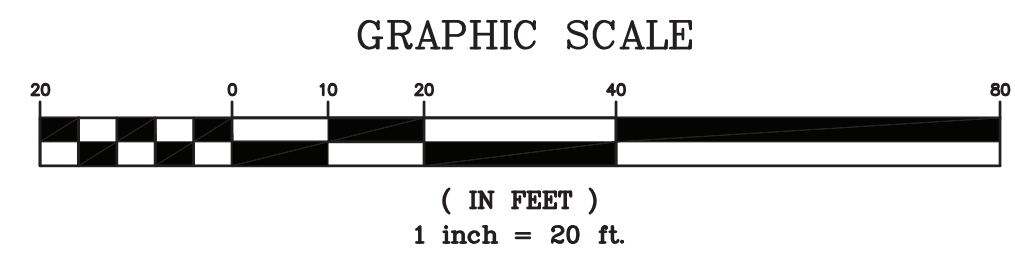
CONDUIT PLAN - 2

SHEET TITLE:
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

SIGNATURE:
 DATE:
 SCALE:
 HORIZ: 1" = 20'
 VERT: N/A
 ACI JOB #
22-0031



SEE SHEET 39



LEGEND

- LIGHTING POWER - CONDUIT, DB, 2, 3 INCH
- IW IRRIGATION CONTROLLER/SUPPLY SLEEVE - CONDUIT, DB, 1, 2 1/2 INCH/CONDUIT, DB, 1, 4 INCH
- IRR IRRIGATION CONTROLLER - CONDUIT, DB, 1, 2 1/2 INCH
- E FUTURE MONUMENT/STREET FEATURE POWER - CONDUIT, DB, 1, 3 INCH
- HH HH, POLYMER CONC
- LTG HH, LIGHTING, MODIFIED
- IRR HH, IRRIGATION, MODIFIED

3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHÉ
 95 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2295
 abonmarche.com
 Copyright 2023 Abonmarche Consulting, Inc.
 Engineering - Architecture - Land Surveying
 Bentley Harbor
 Portage
 South Bend
 Valparaiso
 Hobart

**RANSOM STREET
 IMPROVEMENTS
 CITY OF KALAMAZOO**

PROJECT:

CONDUIT PLAN - 3

SHEET TITLE:

DRAWN BY: **DJL**
 DESIGNED BY: **MJS/ERF**
 PM REVIEW: **DAD**
 QA/QC REVIEW:
 DATE: **JANUARY 2023**
 SEAL:

SIGNATURE:
 DATE:
 SCALE:
 HORIZ: 1" = 20'
 VERT: N/A
 ACI JOB #

22-0031

SHEET NO. **44** of **52**

PROJECT:

WATER MAIN CROSSING DETAILS - 2

SHEET TITLE:

DRAWN BY:

DJL

DESIGNED BY:

MJS/ERF

PM REVIEW:

DAD

QA/QC REVIEW:

DATE:

JANUARY 2023

SCALE:

HORIZ: 1" = 20'

VERT: 1" = 5'

SIGNATURE:

DATE:

SCALE:

HORIZ: 1" = 20'

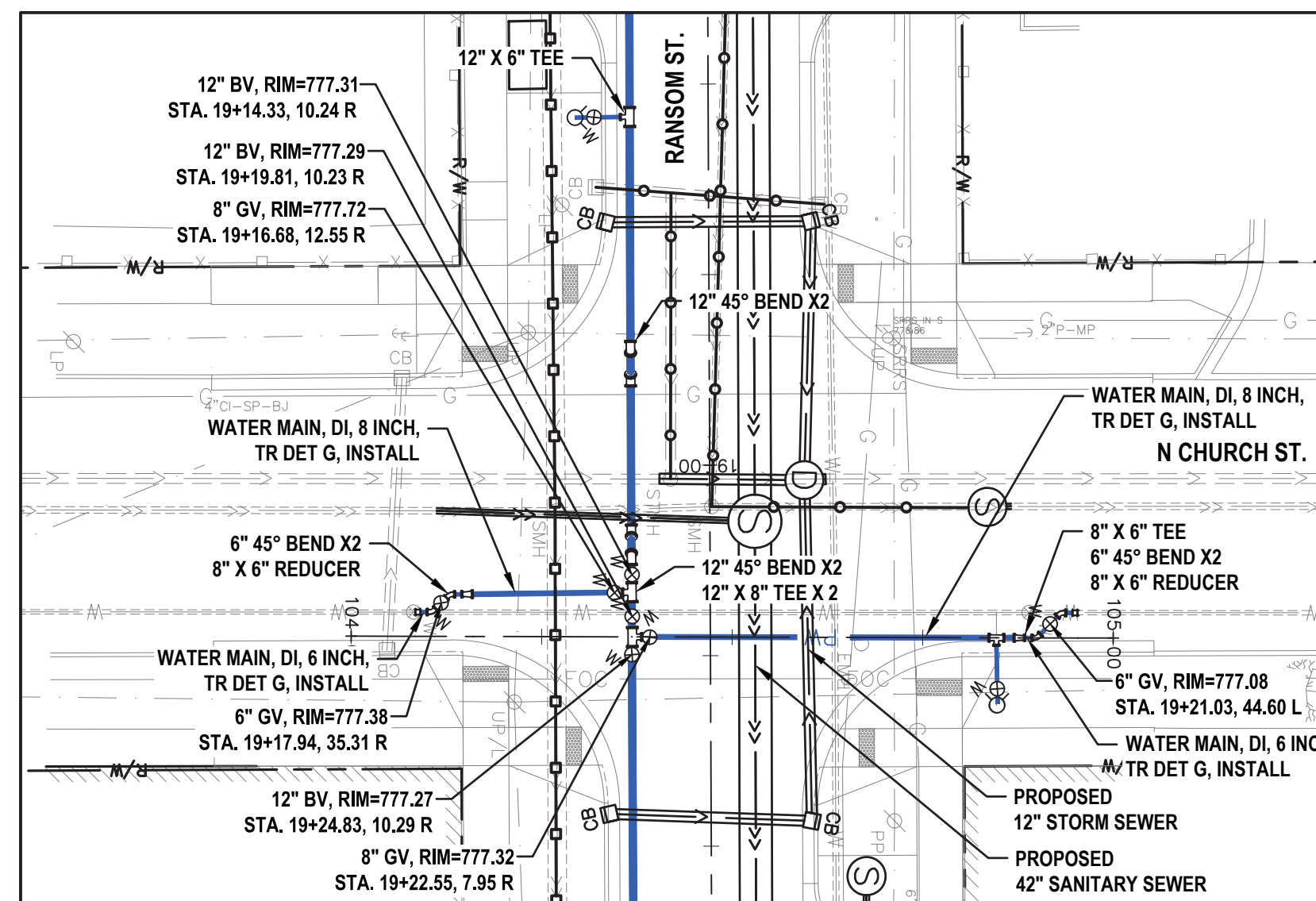
VERT: 1" = 5'

ACI JOB #

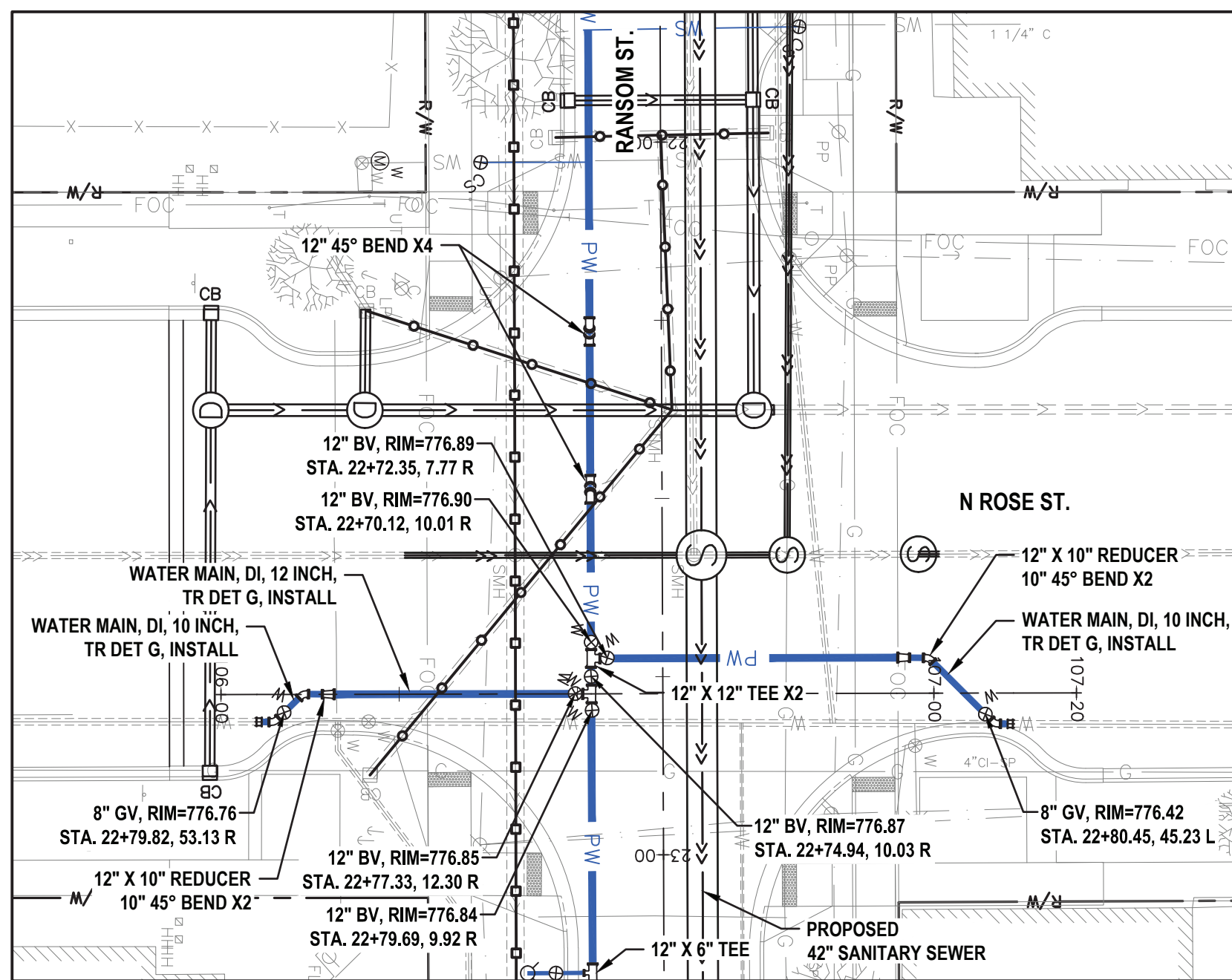
22-0031

SHEET NO.

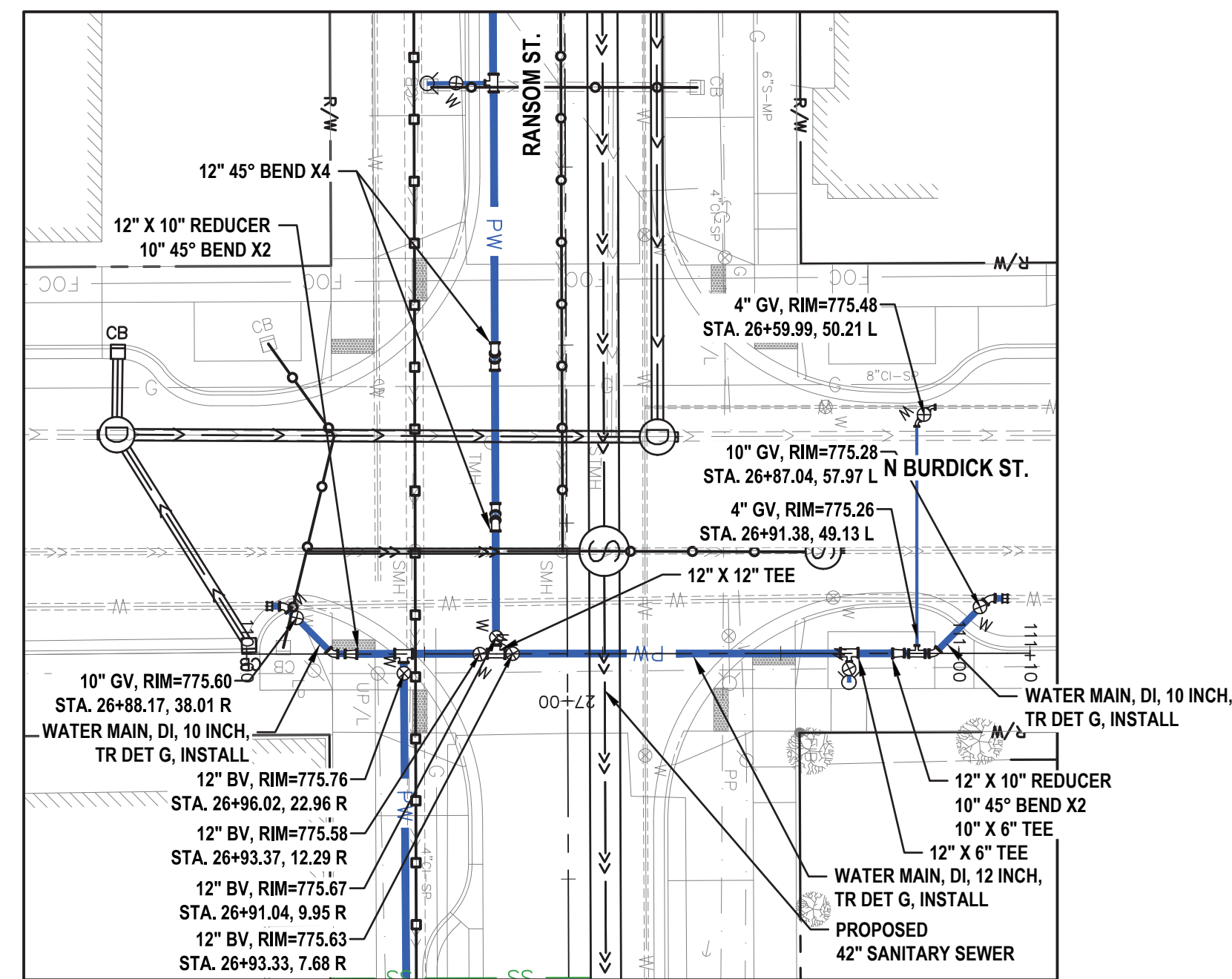
46 of 52



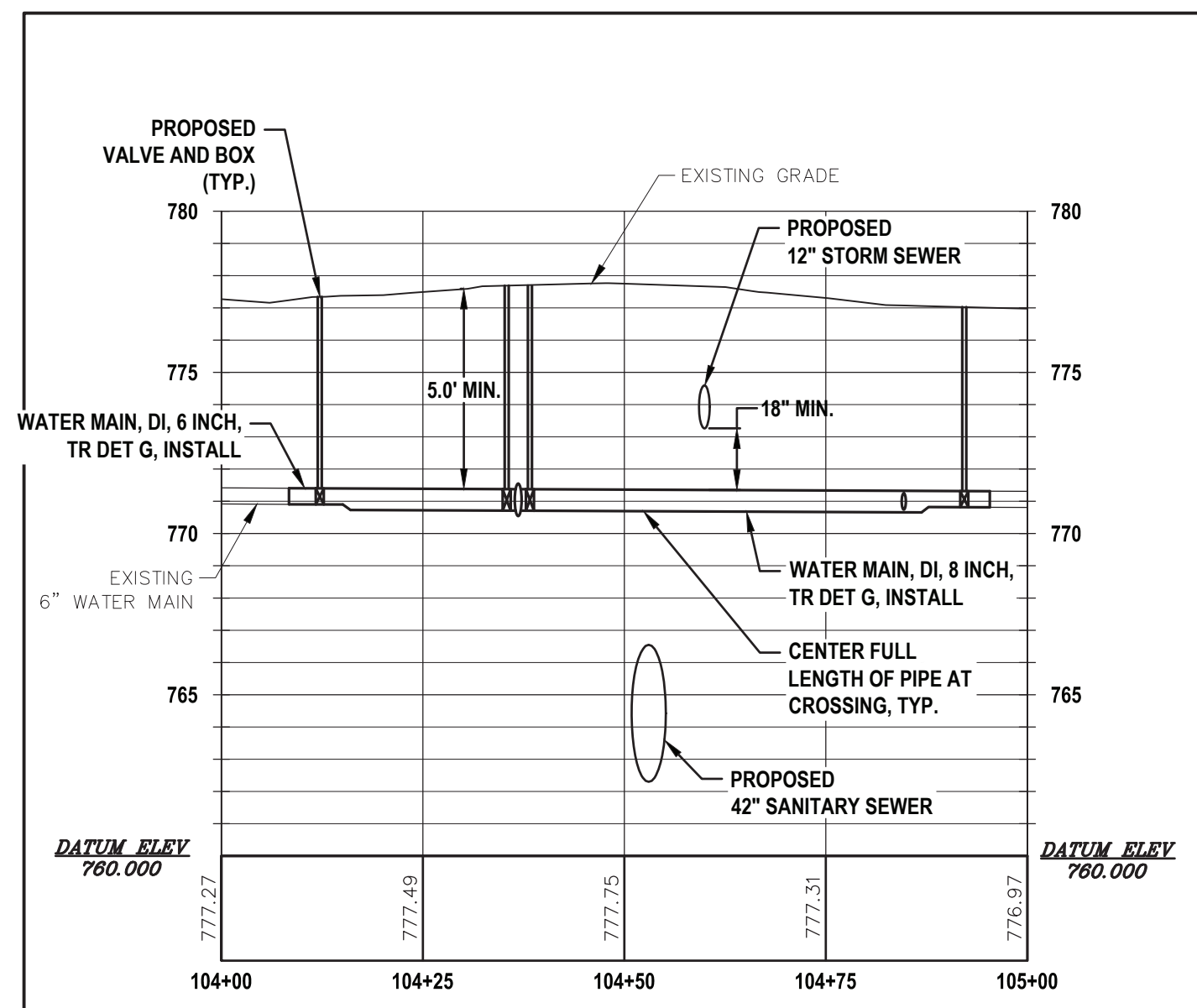
CHURCH ST. WATER MAIN, PLAN



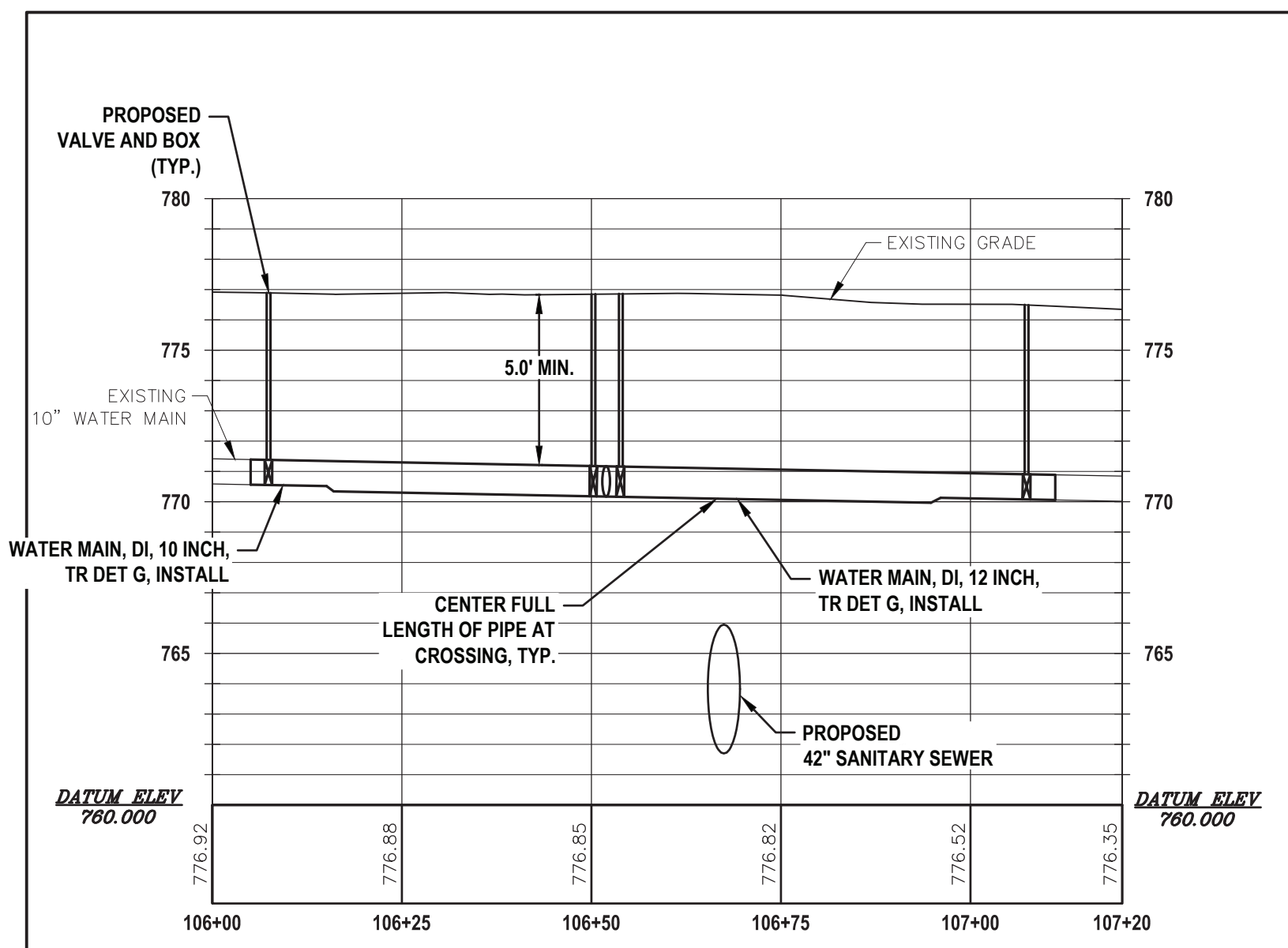
ROSE ST. WATER MAIN, PLAN



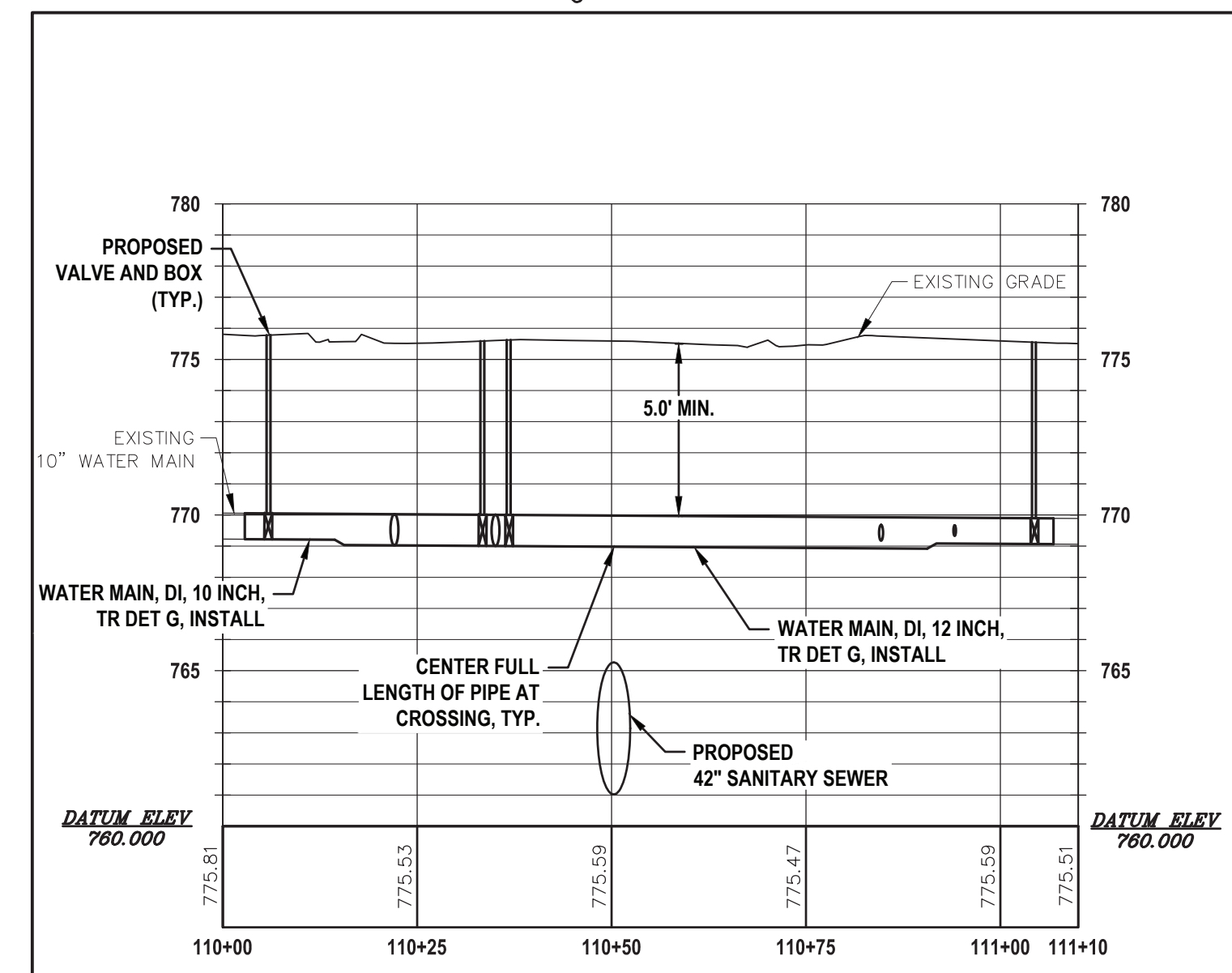
BURDICK ST. WATER MAIN, PLAN



CHURCH ST. WATER MAIN, PROFILE



ROSE ST. WATER MAIN, PROFILE



BURDICK ST. WATER MAIN, PROFILE

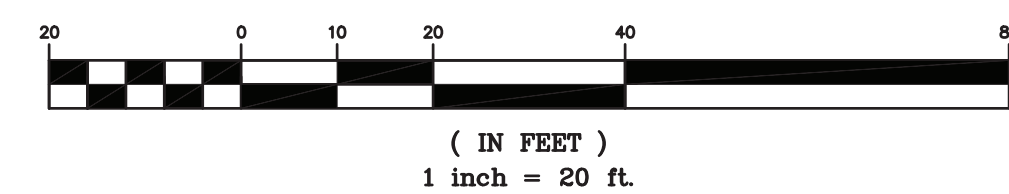
LEGEND

- ABANDON SEWER, LESS THAN 24 INCH
- ABANDON SEWER, GREATER THAN 24 INCH

NOTE: STATION AND OFFSET OF UTILITY FEATURES REFERENCE RANSOM STREET ALIGNMENT



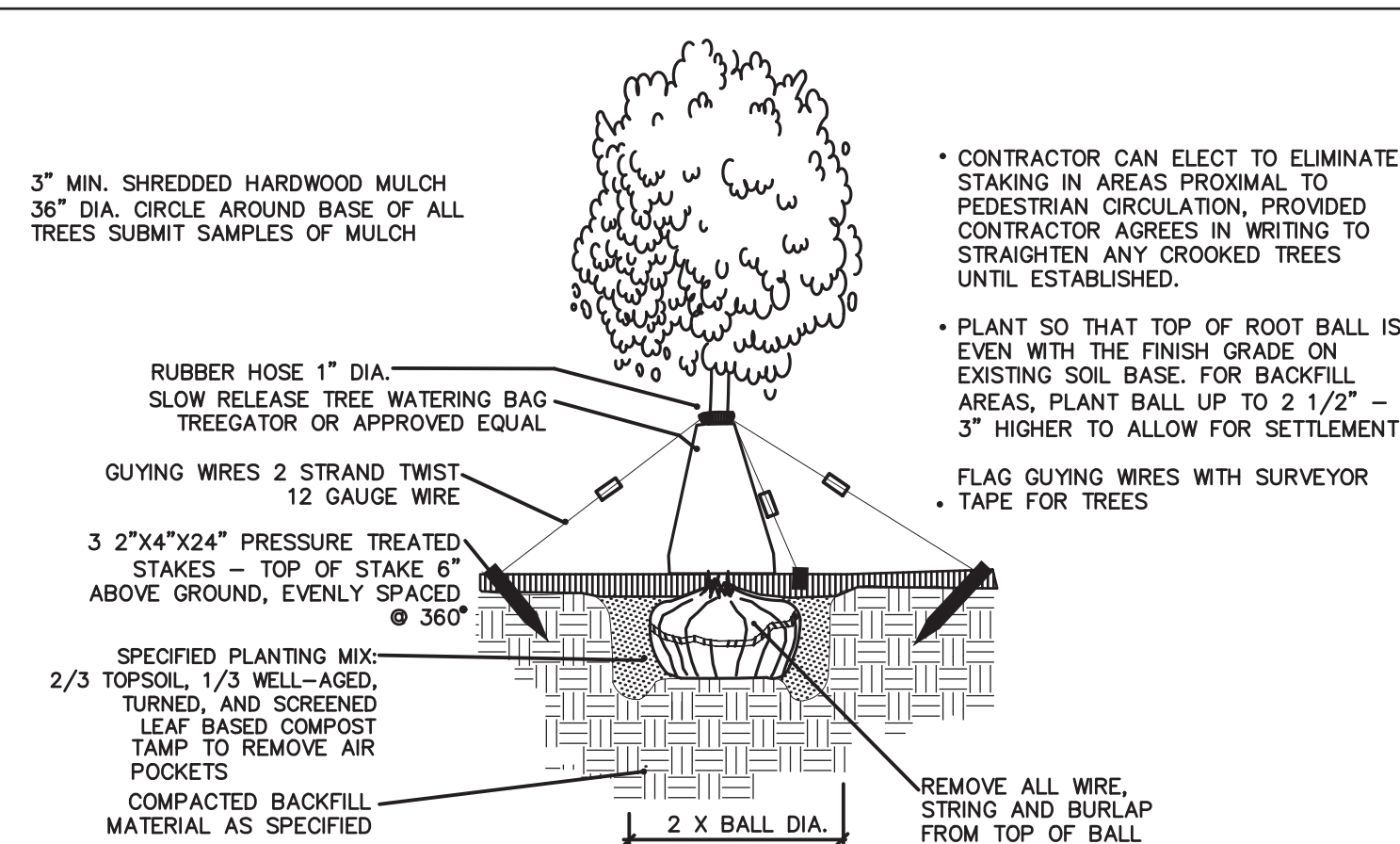
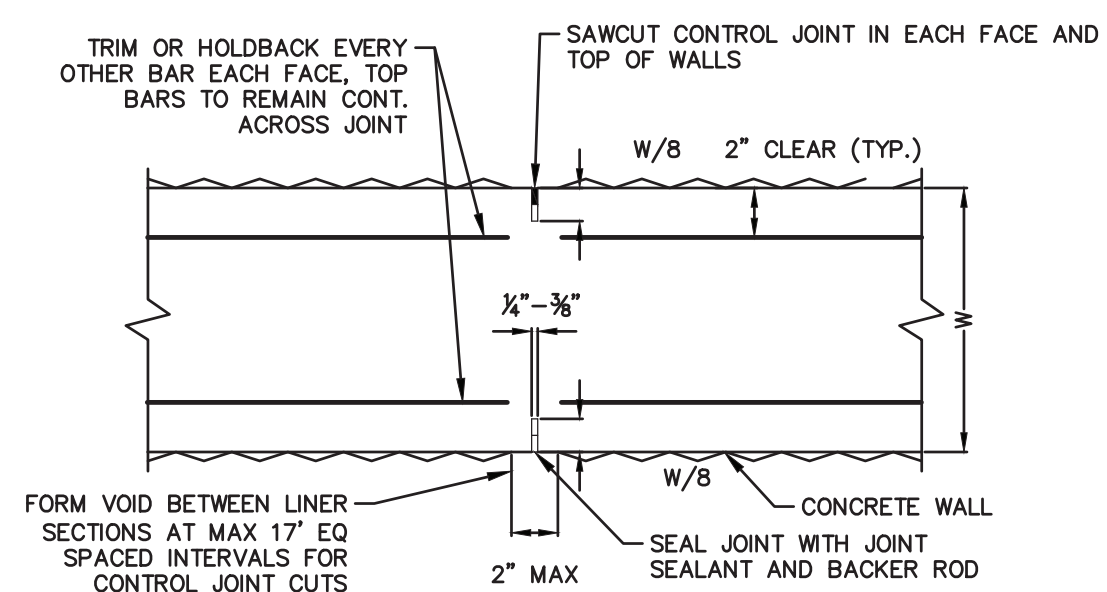
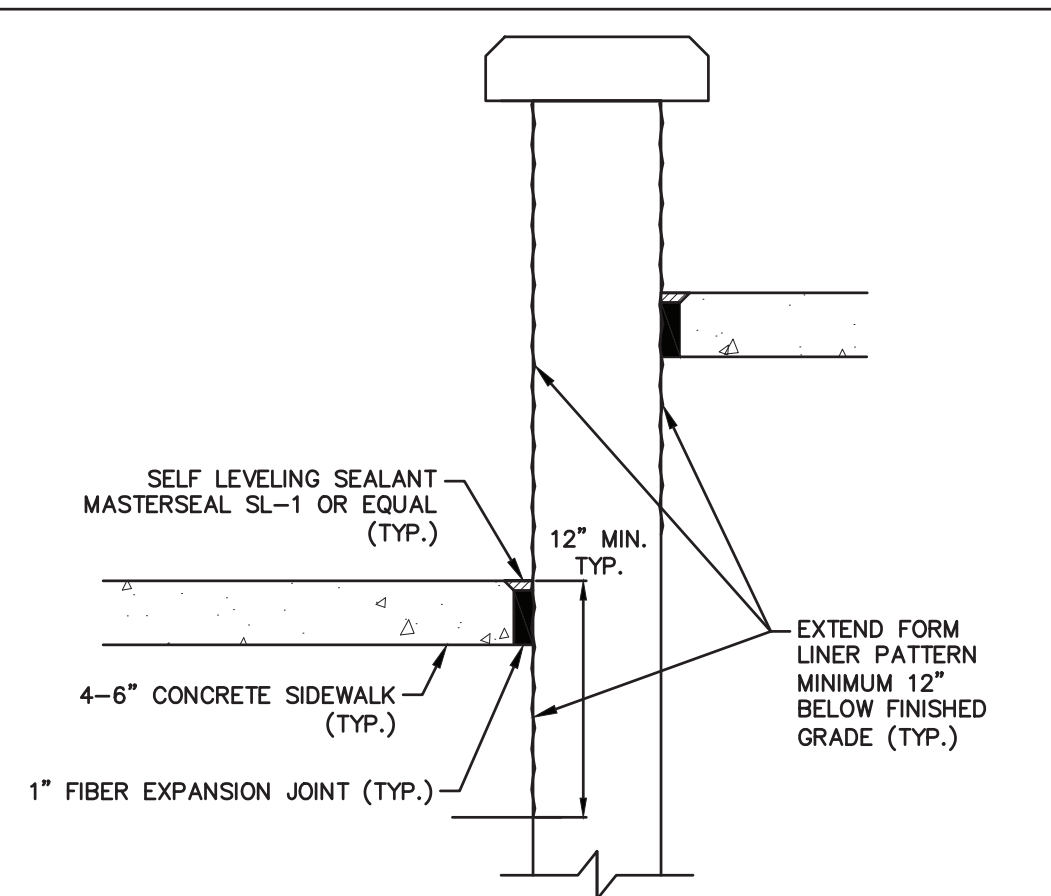
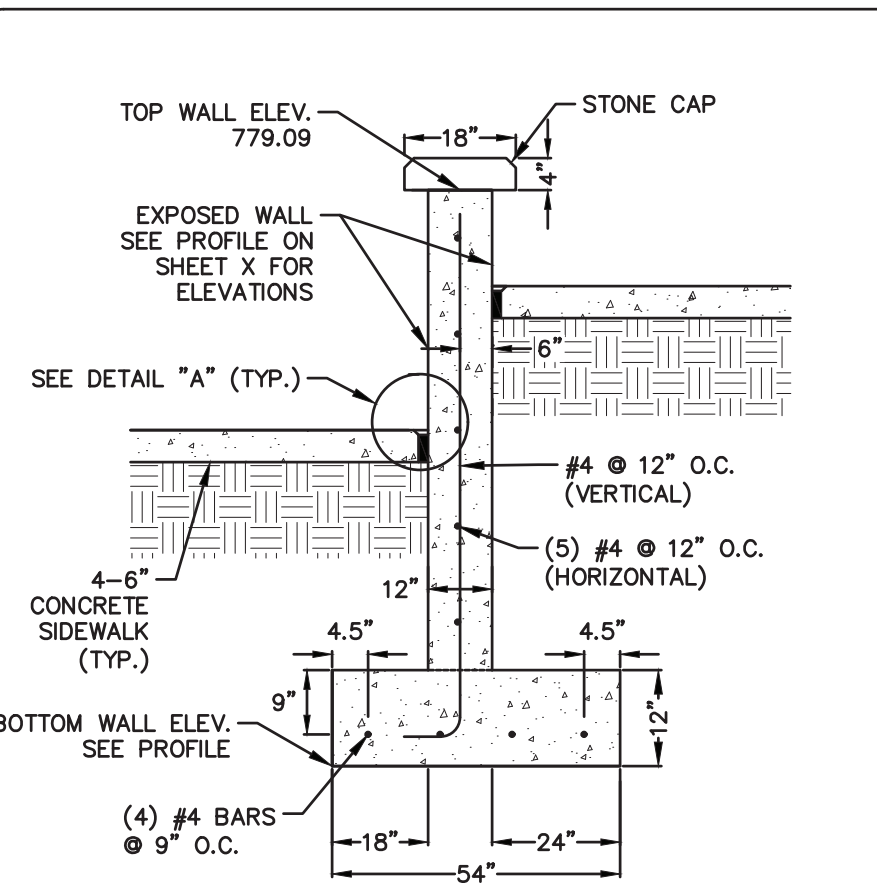
GRAPHIC SCALE



WATER MAIN SEPARATION CONFLICTS (<10' H/18" V SEPARATION FROM SEWERS)			
STATION/OFFSET	CONFLICT	PROPOSED MITIGATION	PROPOSED SEPARATION
104+07, 2.5 L	6" WM / EX STORM CB	CONNECTION TO EXISTING AT LIMITS, CORRECT WITH FUTURE PROJECT	2' H
106+06, 3.0 R	8" WM / PROP STORM CB	CONNECTION TO EXISTING AT LIMITS, CORRECT WITH FUTURE PROJECT	3' H
110+05, 5.8 L	10" WM / EX CB / EX 8" SANITARY SEWER	CONNECTION TO EXISTING AT LIMITS, CORRECT WITH FUTURE PROJECT	4' H
111+06, 6.8 L	10" WM / EX 8" SANITARY SEWER	CONNECTION TO EXISTING AT LIMITS, CORRECT WITH FUTURE PROJECT	4' H

THE CITY OF KALAMAZOO ACKNOWLEDGES THAT THESE LOCATIONS DO NOT MEET THE CURRENT 10-STATE STANDARDS SEPARATION REQUIREMENTS FOR SEPARATION OF FACILITIES. ADDITIONAL OPERATION AND MAINTENANCE EFFORTS MAY BE REQUIRED TO MAINTAIN THESE FACILITIES IN SAFE WORKING ORDER.

NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22



SHADE/ORNAMENTAL TREE PLANTING DETAIL

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
AA	10	Acer rubrum 'Armstrong'	Armstrong Red Maple	2.5' BB	6' Min. Lowest Branches
AG	5	Acer rubrum 'JFS-KW78' PP 25301	Armstrong Gold Maple	2.5' BB	6' Min. Lowest Branches
AS	10	Acer saccharum 'Apollo'	Apollo Sugar Maple	2'BB	6' Min. Lowest Branches
AB	11	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	2'BB	5' Min. Lowest Branches
AAB	2	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Apple Serviceberry	8-10' HT	
GP	6	Ginkgo biloba 'Princeton Sentry'	Princeton Sentry Ginkgo	2'BB	6' Min. Lowest Branches Certified Male Only!
GA	7	Ginkgo biloba 'Autumn Gold' TM	Autumn Gold Maidenhair Tree	2'BB	6' Min. Lowest Branches Certified Male Only!
MA	8	Malus x 'Adirondack'	Adirondack Crabapple	2'BB	6' Min. Lowest Branches
MR	10	Malus x 'Royal Raindrops'	Royal Raindrops Crabapple	2'BB	6' Min. Lowest Branches
MS	8	Malus x 'Sutyazam'	Sugar Tyme® Crabapple	2'BB	6' Min. Lowest Branches
SI	4	Syringa reticulata 'Ivory Silk'	Ivory Silk Japanese Tree Lilac	2'BB	6' Min. Lowest Branches
SE	6	Syringa reticulata pekinensis 'DTR 124'	Summer Charm® Peking Lilac	2'BB	6' Min. Lowest Branches
UF	8	Ulmus 'Frontier'	Frontier Elm	2'BB	6' min. lowest branches
ZC	8	Zelkova serrata 'JFS-KW1' TM	City Sprite Zelkova	2'BB	6' Min. Lowest Branches

Description	Units	Quantity
Watering and Cultivating, First Season, Min. \$8,000	LSUM	1
Watering and Cultivating, 2nd Season, Min. \$5,000	LSUM	1
Acer rubrum 'Armstrong', 2.5 inch	Ea	10
Acer rubrum 'JFS-KW78' PP25301, 2.5 inch	Ea	5
Acer saccharum 'Apollo', 2 inch	Ea	10
Amelanchier x grandiflora 'Autumn Brilliance', 2 inch	Ea	11
Amelanchier x grandiflora 'Autumn Brilliance', 8-10 Ft.Ht.	Ea	2
Carpinus betulus 'Fastigiata', 2 inch	Ea	2
Ginkgo biloba 'Autumn Gold' TM, 2 inch	Ea	7
Ginkgo biloba 'Princeton Sentry', 2 inch	Ea	6
Malus x 'Adirondack', 2 inch	Ea	8
Malus x 'Royal Raindrops', 2 inch	Ea	10
Malus x 'Sutyazam', 2 inch	Ea	8
Syringa reticulata 'Ivory Silk', 2 inch	Ea	4
Syringa reticulata pekinensis 'DTR 124', 2 inch	Ea	6
Ulmus 'Frontier', 2 inch	Ea	8
Zelkova serrata 'JFS-KW1' TM, 2 inch	Ea	8
Site Preparation, Max \$22,000, Base	LSUM	1

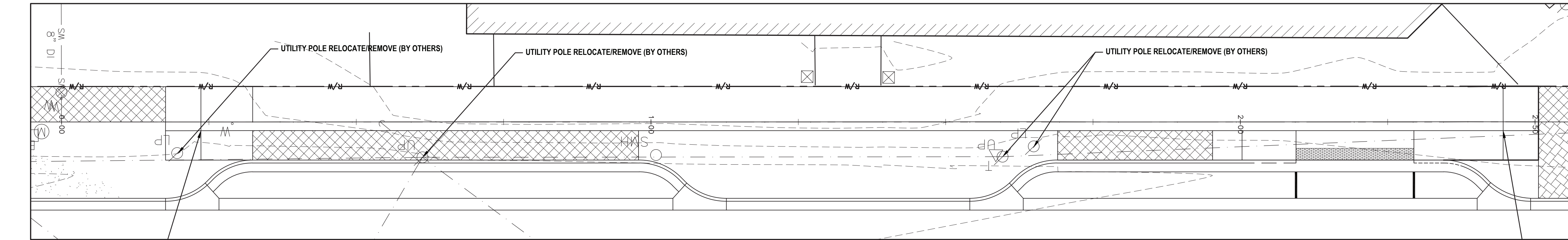
GENERAL NOTES:

- LOCATE ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE DONE TO UTILITIES. CONTRACTOR MUST CALL 1-800-382-5544 FOR UTILITY LOCATIONS TWO DAYS PRIOR TO DIGGING.
- LANDSCAPE BEDS TO RECEIVE 3" SHREDDED HARDWOOD BARK.
- APPLY PER-EMERGENT HERBICIDE TO ALL LANDSCAPE BEDS.
- CONDUCT SOIL TEST TO VERIFY FERTILITY OF TOPSOIL. AMEND SOIL IF PH IS LESS THAN 5.0 OR GREATER THAN 7.5. MAKE OTHER ADJUSTMENTS AS SOIL ANALYSIS INDICATES.
- TOPSOIL TO BE A 12" MINIMUM DEPTH IN ALL PLANTING BEDS. TOPSOIL TO BE CLEAN FRIABLE LOAM FROM LOCAL SOURCE, FREE FROM STONES OR DEBRIS OVER 1/2" IN DIA., AND FREE FROM HERBICIDE OR OTHER TOXINS.
- ALL LANDSCAPE BEDS SHALL BE EXCAVATED TO A DEPTH OF 30" TO REMOVE ALL COMPACTED DEBRIS REMAINING AS A RESULT OF PARKING GARAGE DEMOLITION. REPLACE DEBRIS WITH HIGH QUALITY FILL WITH GOOD DRAINAGE CHARACTERISTICS. ALLOW 12" DEPTH FROM PROPOSED FINISHED GRADE TO TOP OF FILL FOR TOPSOIL PLACEMENT.
- CONTRACTOR SHALL PROVIDE A TWO YEAR STRAIGHTENING GUARANTEE IN LIEU OF STAKING TREES.

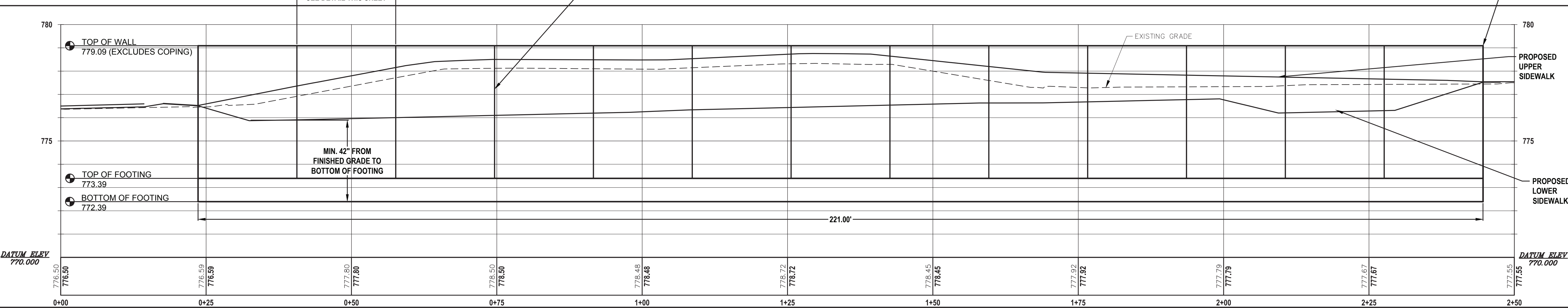
RETAINING WALL, POURED CONCRETE NOT TO SCALE

RETAINING WALL, POURED CONCRETE (DETAIL A) NOT TO SCALE

TYPICAL WALL CONTROL JOINT DETAIL - PLAN VIEW NOT TO SCALE



RETAINING WALL - PLAN VIEW



RETAINING WALL - PROFILE VIEW

ABONMARCHÉ
Landscape Architecture
795 West Main Street
Burlington, Vermont 05401
Tel: 802.249.2295
www.abonmarche.com

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

LANDSCAPE DETAILS

DRAWN BY: DJL
DESIGNED BY: MJS/ERF
PM REVIEW: DAD
QA/QC REVIEW:
DATE: JANUARY 2023
SEAL:

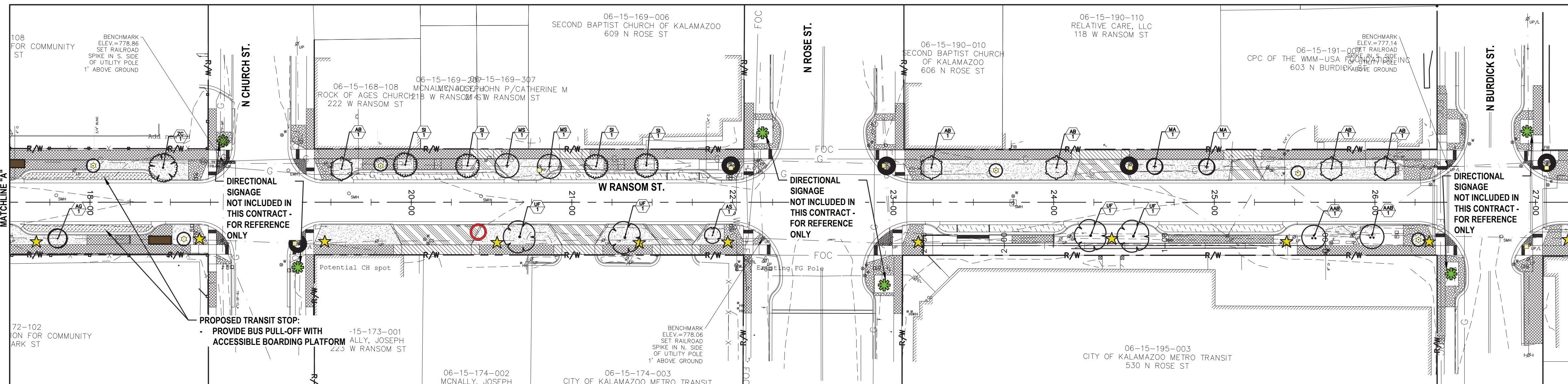
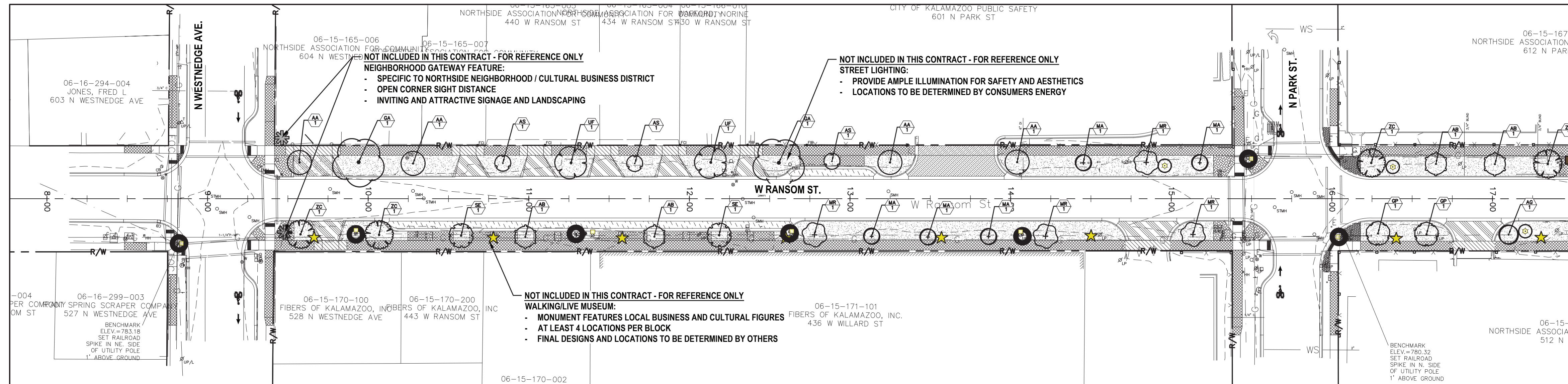
SIGNATURE:
DATE:

SCALE:
HORIZ: AS SHOWN
VERT: N/A







ACI JOB # 22-0031

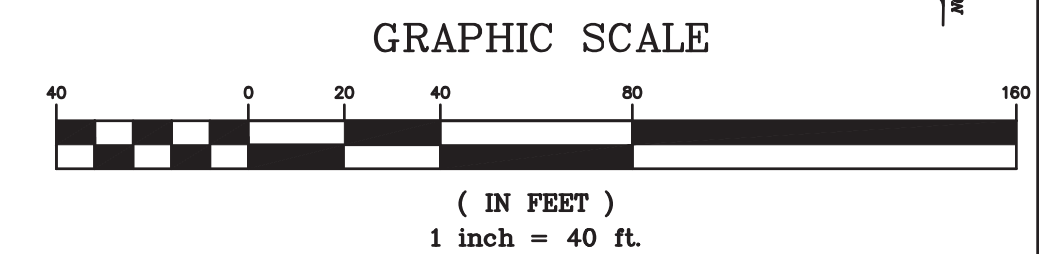
SHEET NO. 48 of 52

NO.	REVISION DESCRIPTION	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22



LEGEND

-  COBRAHEAD LIGHT
-  ORNAMENTAL STREET LIGHT
-  WALKING/LIVE MUSEUM CULTURAL MONUMENT
-  NEIGHBORHOOD GATEWAY FEATURE
-  DIRECTIONAL SIGNAGE
-  PROPOSED LAWN AREA



**RANSOM STREET
 IMPROVEMENTS
 CITY OF KALAMAZOO**

PROJECT:

**LANDSCAPE PLAN
 STA 8+65 TO 27+27**

SHEET TITLE:

DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:

DATE: JANUARY 2023

SEAL:

SIGNATURE:

DATE:

SCALE:
 HORIZ: 1" = 40'
 VERT: N/A

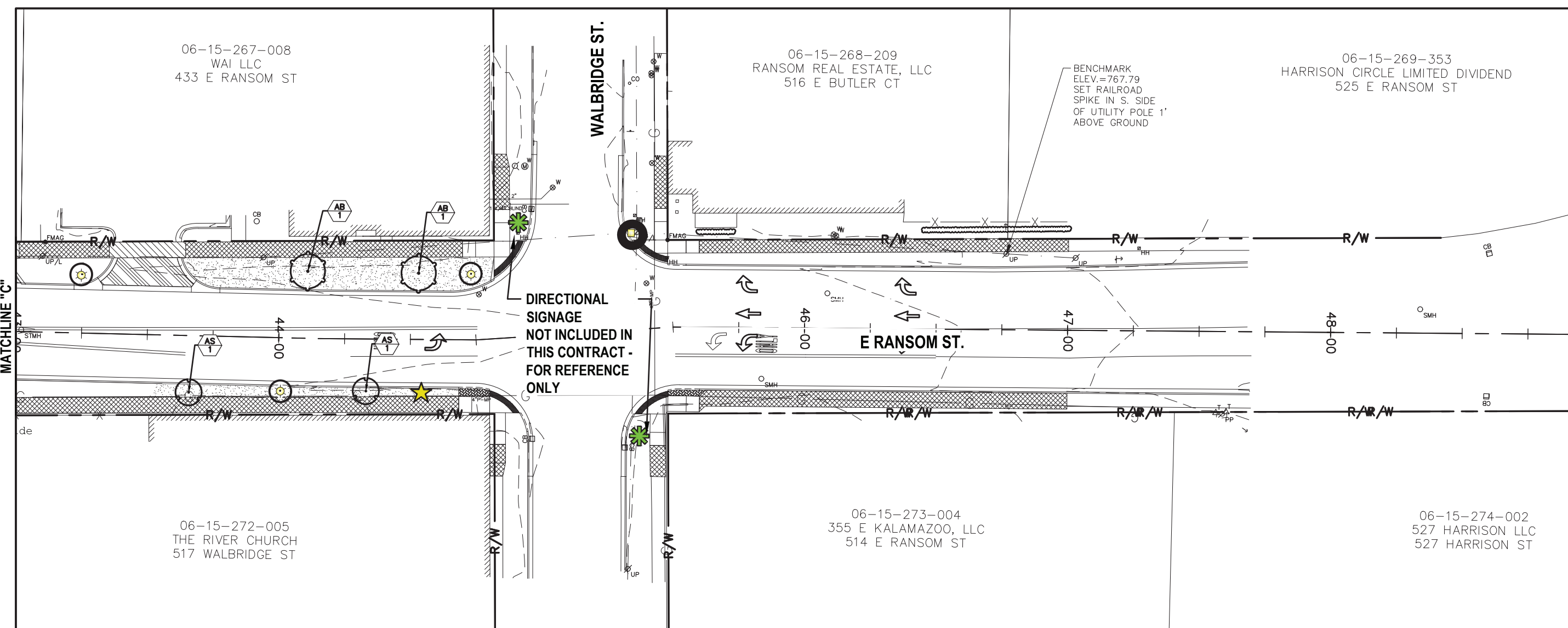
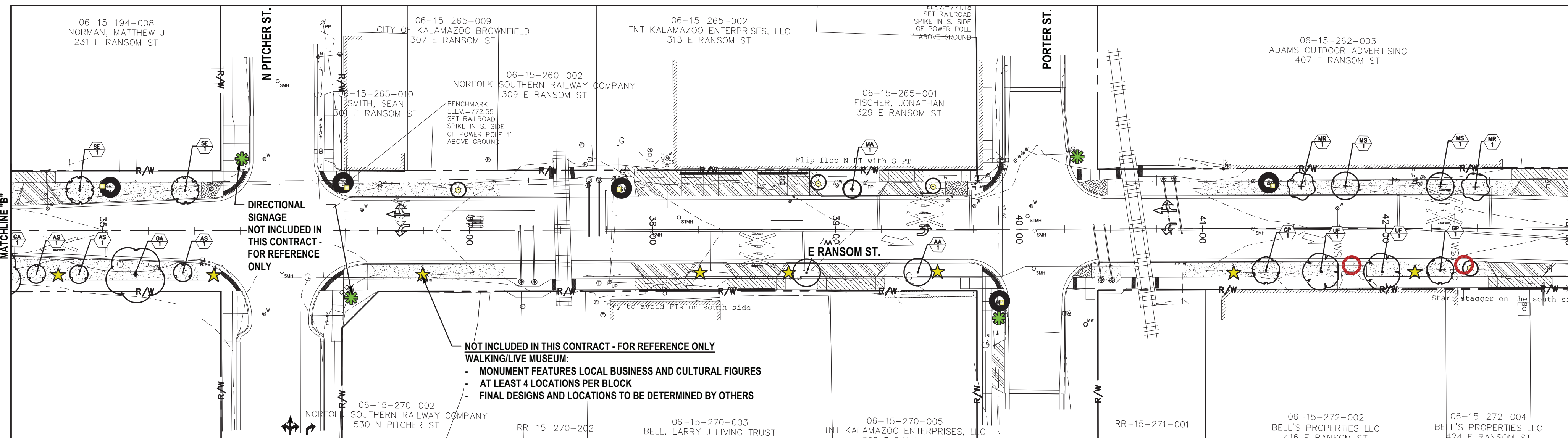
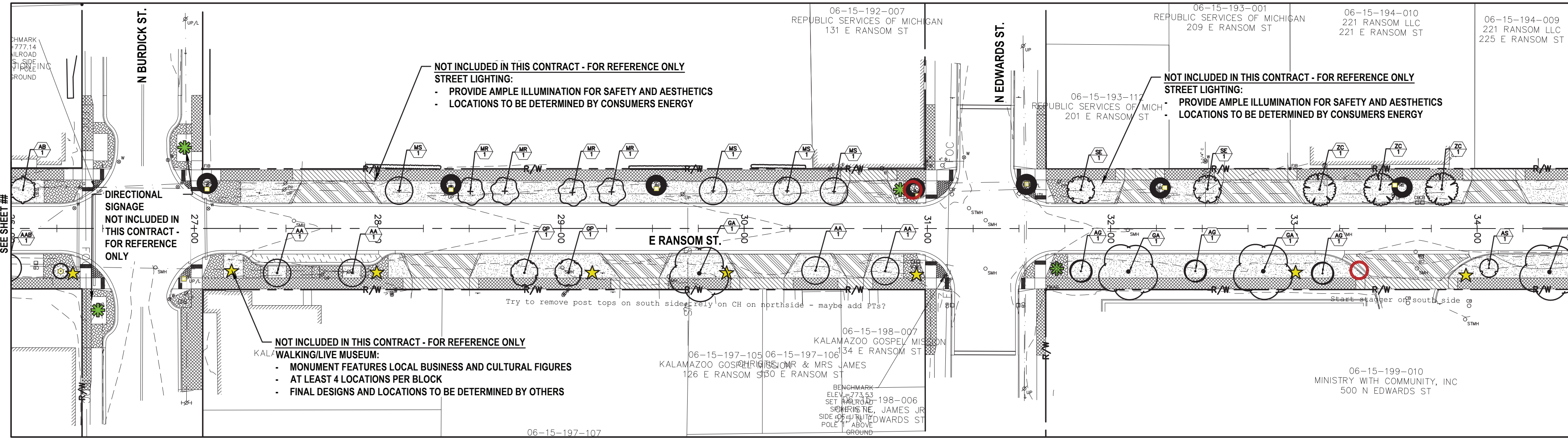
ACI JOB #

22-0031

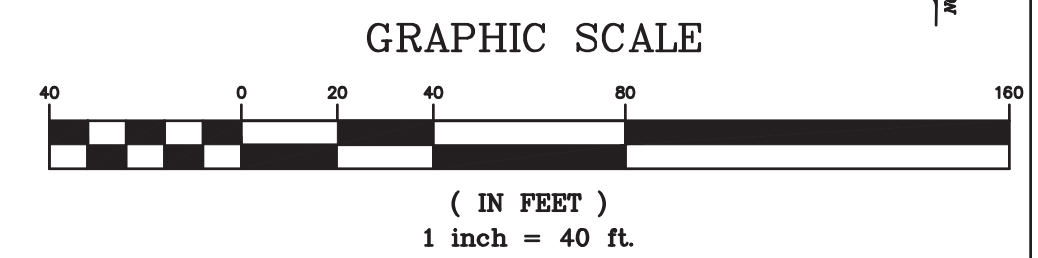
SHEET NO.

49 of 52

NO.	REVISION DESCRIPTION:	BY:	DATE:
3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22



- LEGEND**
- COBRAHEAD LIGHT
 - ☆ ORNAMENTAL STREET LIGHT
 - ★ WALKING/LIVE MUSEUM CULTURAL MONUMENT
 - ⊗ NEIGHBORHOOD GATEWAY FEATURE
 - ⊕ DIRECTIONAL SIGNAGE
 - PROPOSED LAWN AREA



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGLE PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

PROJECT:

SHEET TITLE:

DRAWN BY: DJL
DESIGNED BY: MJS/ERF
PM REVIEW: DAD
QA/QC REVIEW:

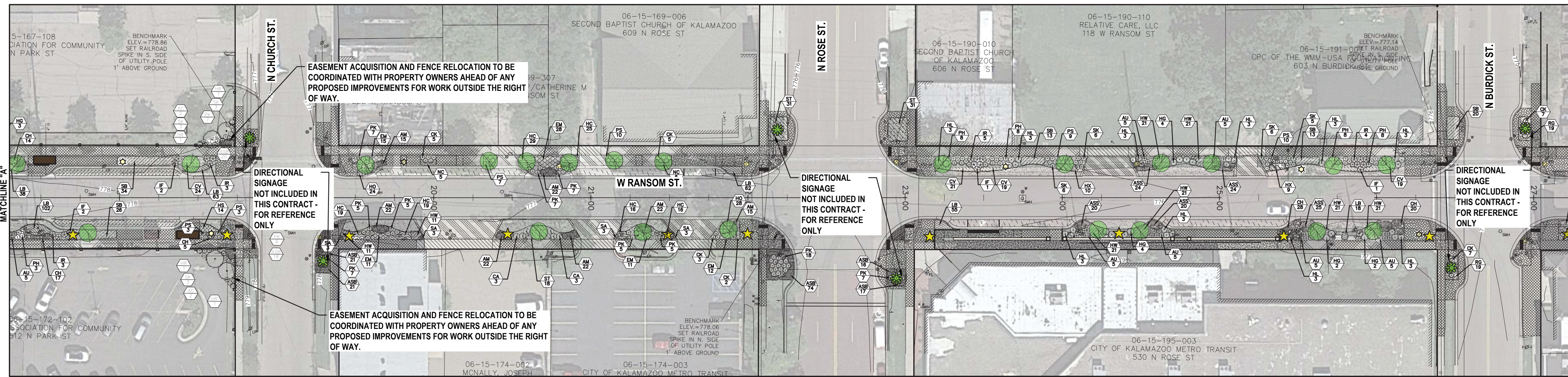
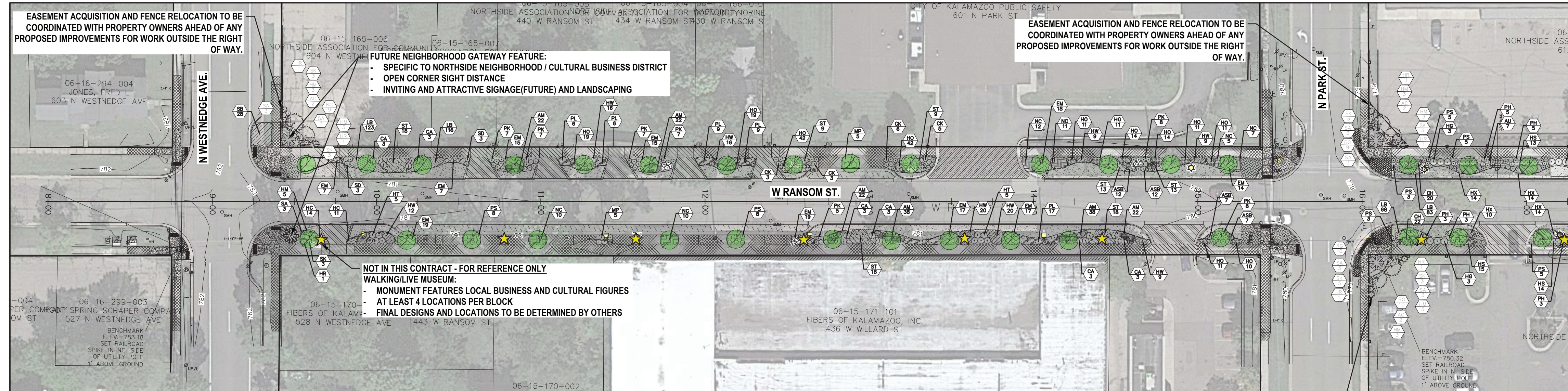
DATE: JANUARY 2023
SEAL:

SIGNATURE:

DATE:

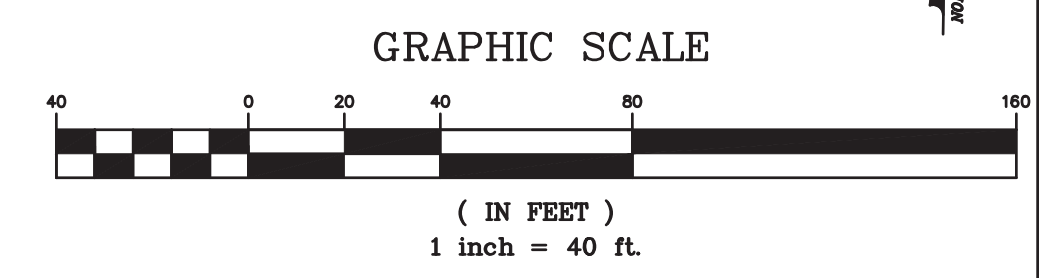
SCALE:
 HORIZ: 1" = 40'
 VERT: N/A

ACI JOB #
22-0031



LEGEND

- ★ STREET LIGHT
- ★ WALKING/LIVE MUSEUM CULTURAL MONUMENT
- ✻ NEIGHBORHOOD GATEWAY FEATURE
- ✻ DIRECTIONAL SIGNAGE
- ▨ PROPOSED LAWN AREA
- ▨ PROPOSED PLANTING BED WITH ALUMINUM EDGING



Description	Units	Quantity
Watering and Cultivating, First Season, Min, \$30,000, Alternate	LSUM	1
Watering and Cultivating, 2nd Season, Min, \$20,000, Alternate	LSUM	1
Aluminum Edging	Ft	2820
Hardwood Mulch, 3 inch	Syd	2690
Abies concolor 'Candicans', 8 ft	Ea	10
Achillea millefolium 'Strawberry Seduction', 1 Gal	Ea	259
Allium x 'Millenium', 1 Gal	Ea	472
Allium x 'Summer Beauty', 1 Gal	Ea	225
Aronia melanocarpa 'UCONNAM166' TM, 3 Gal	Ea	42
Calamagrostis x acutiflora 'Karl Foerster', 1 Gal	Ea	71
Coreopsis verticillata 'Hot Paprika', 1 Gal	Ea	231
Coreopsis verticillata 'Moonbeam', 1 Gal	Ea	224
Cornus sericea 'Arctic Fire', 3 Gal	Ea	35
Cornus sericea 'Bailey', 3 Gal	Ea	1
Cornus sericea 'SMNCSBD', 3 Gal	Ea	16
Echinacea purpurea 'Magnus', 1 Gal	Ea	373
Fothergilla gardenii, 3 Gal	Ea	1
Hakonechloa macra 'Albo-striata', 1 Gal	Ea	473
Hakonechloa macra 'Aureola', 1 Gal	Ea	23
Hemerocallis x 'Stella de Oro', 1 Gal	Ea	140
Heuchera x 'Caramel', 1 Gal	Ea	327
Heuchera x 'Cherry Truffles', 1 Gal	Ea	142
Heuchera x 'Wildberry' TM, 1 Gal	Ea	438
Hibiscus moscheutos 'Big Red', 3 Gal	Ea	1
Hibiscus moscheutos 'Kopper King', 3 Gal	Ea	1
Hibiscus x 'Holy Grail', 2 Gal	Ea	21
Hydrangea arborescens 'NCH48' TM, 3 Gal	Ea	12
Hydrangea paniculata 'SMNHPP', 3 Gal	Ea	57
Hydrangea serrata 'SMNHSD', 3 Gal	Ea	39
Ilex verticillata 'FarrowBPop', 3 Gal	Ea	33
Ilex verticillata 'FarrowMFP', 3 Gal	Ea	10
Itea virginica 'Sprich' TM, 2 Gal	Ea	1
Juniperus chinensis 'SMNJCHM' TM, 2 Gal	Ea	1
Juniperus communis 'Tortuga', 2 Gal	Ea	1
Juniperus conferta 'Blue Pacific', 2 Gal	Ea	1
Liriope Muscan 'Big Blue', 3.25 inch	Ea	812
Miscanthus purpurascens, 1 Gal	Ea	26
Nepeta x faassenii 'Cat's Pajamas', 1 Gal	Ea	97
Panicum virgatum 'Heavy Metal', 1 Gal	Ea	128
Panicum virgatum 'Shenandoah', 1 Gal	Ea	151
Pennisetum orientale 'Karley Rose', 1 Gal	Ea	167
Peroovskia atriplicifolia 'Lissitt', 1 Gal	Ea	106
Rudbeckia fulgida sultivantii 'Goldstrum', 1 Gal	Ea	154
Schizachyrium scoparium 'The Blues', 1 Gal	Ea	321
Sedum x 'Autumn Joy', 1 Gal	Ea	59
Spiraea media 'SMSMBK' TM, 3 Gal	Ea	82
Spiraea x 'Tracy' TM, 3 Gal	Ea	35
Sporobolus heterolepis 'Tara', 1 Gal	Ea	395
Thuja occidentalis 'Smaragd', 5 Gal	Ea	1
Viburnum carlesii 'Spice Baby', 3 Gal	Ea	1
Site Preparation, Max \$55,000, Alternate	LSUM	1
Automated Irrigation System	LSUM	1

3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

ABONMARCHÉ
 795 West Main Street
 Benton Harbor, MI 49023
 T 269.927.2295
 F 269.927.2295
 abonmarche.com

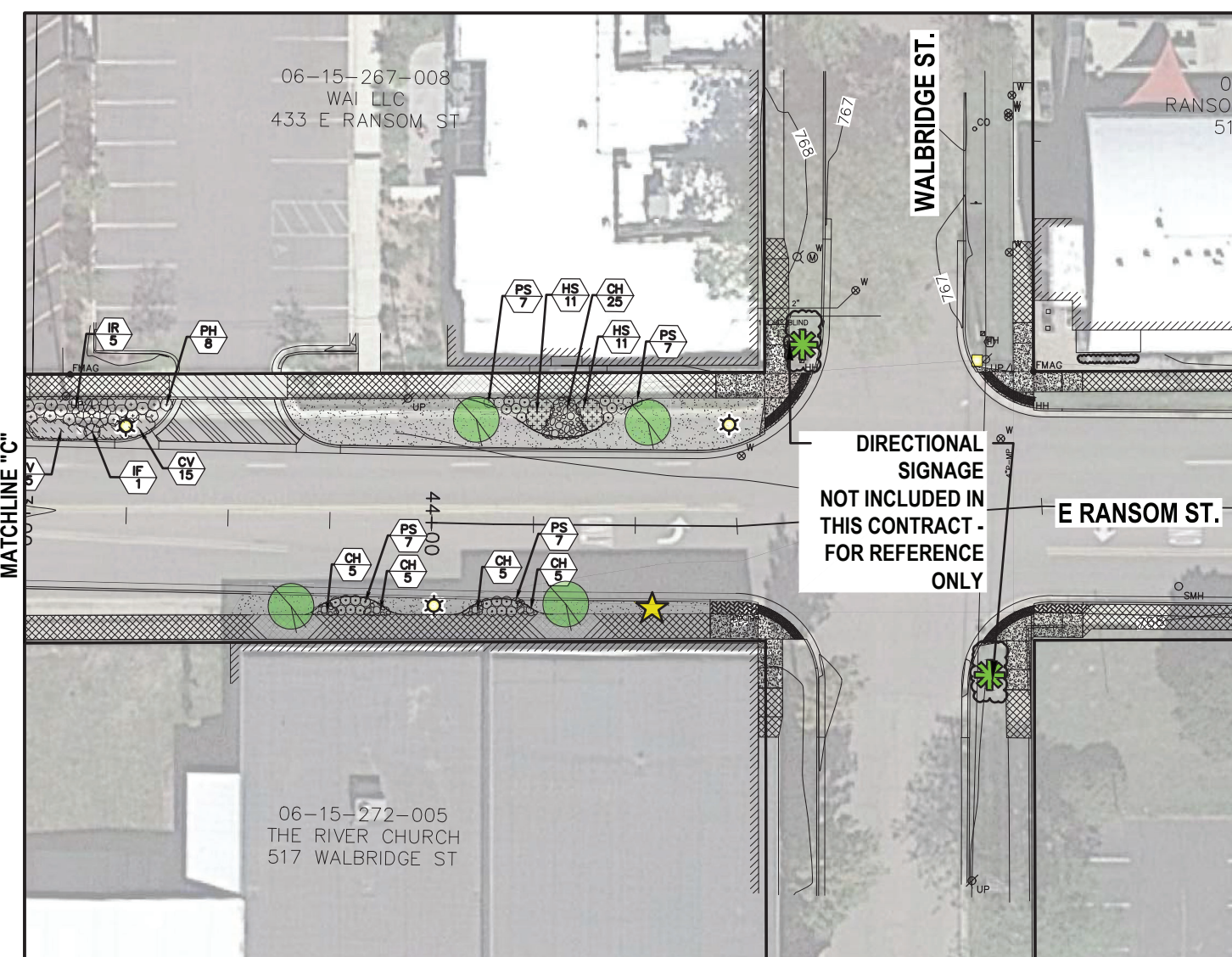
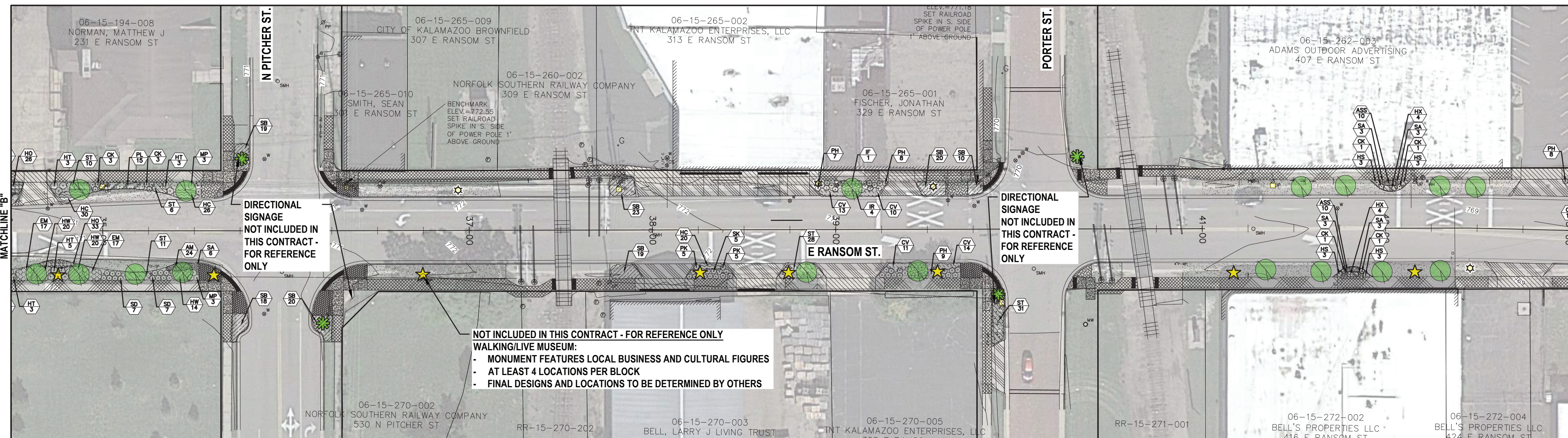
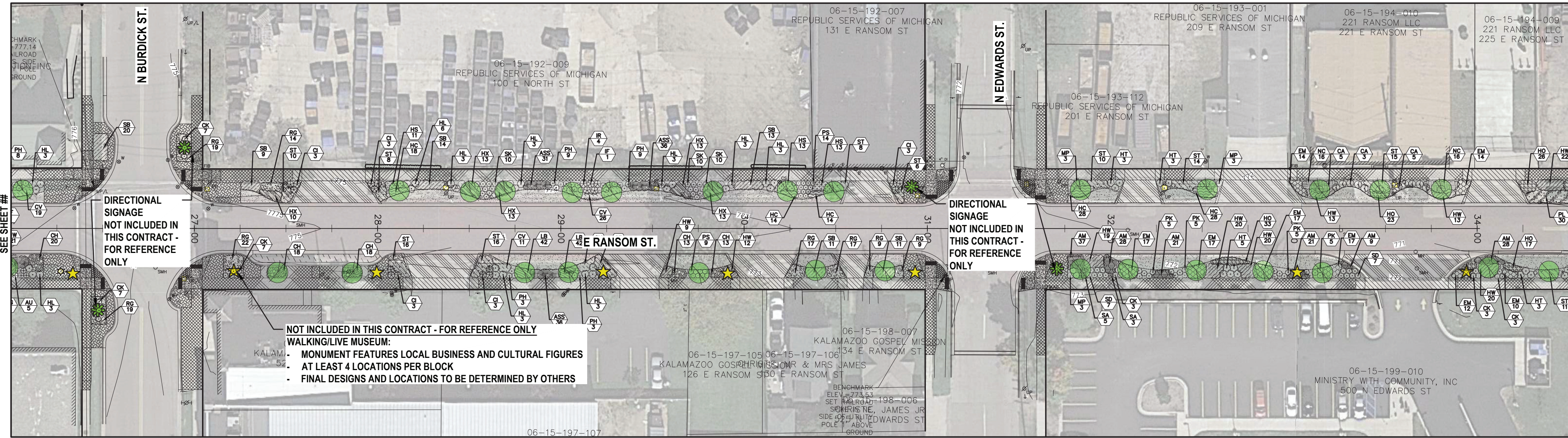
Engineering - Architecture - Land Surveying
 Brandon Harboe
 Portage
 South Bend
 Valparaiso

RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO

ALTERNATE LANDSCAPE PLAN STA 8+65 TO 27+27

PROJECT: RANSOM STREET IMPROVEMENTS CITY OF KALAMAZOO
 SHEET TITLE: ALTERNATE LANDSCAPE PLAN STA 8+65 TO 27+27
 DRAWN BY: DJL
 DESIGNED BY: MJS/ERF
 PM REVIEW: DAD
 QA/QC REVIEW:
 DATE: JANUARY 2023
 SEAL:

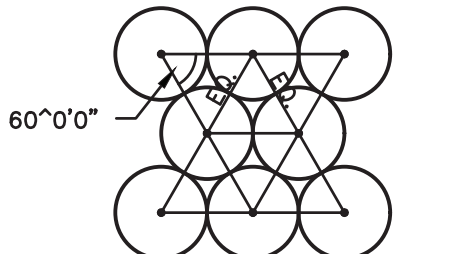
SIGNATURE:
 DATE:
 SCALE:
 HORIZ: 1" = 20'
 VERT: 1" = 5'
 ACI JOB #
22-0031
 SHEET NO.
51 of 52



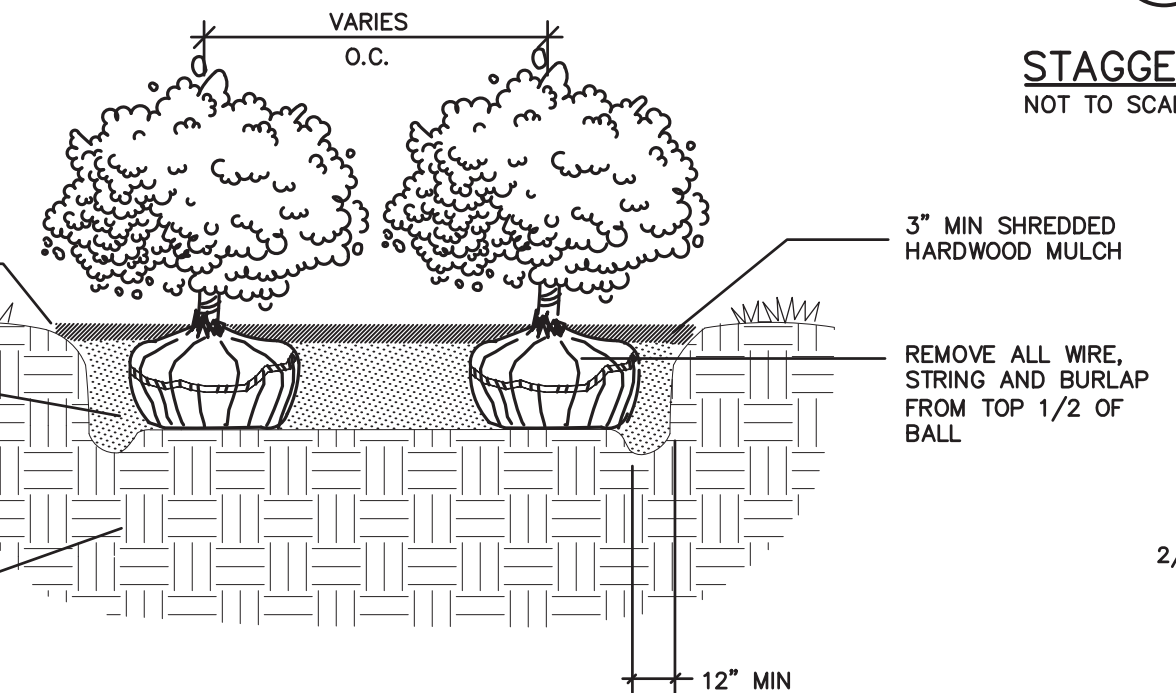
LEGEND

- STREET LIGHT
- WALKING/LIVE MUSEUM CULTURAL MONUMENT
- NEIGHBORHOOD GATEWAY FEATURE
- DIRECTIONAL SIGNAGE
- PROPOSED LAWN AREA
- PROPOSED PLANTING BED WITH ALUMINUM EDGING

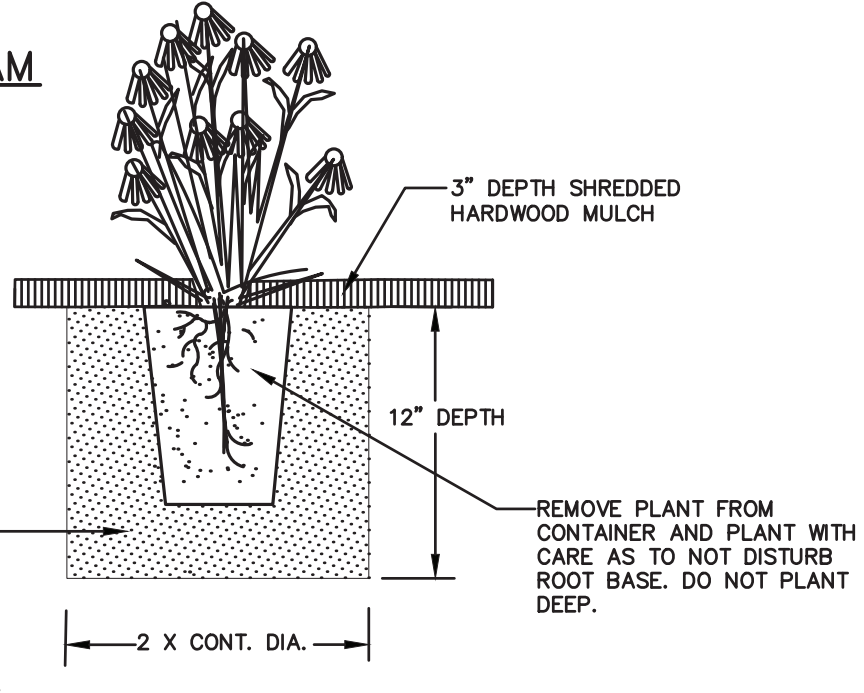
PLANT SPACING CENTER TO CENTER



STAGGER PLANT DIAGRAM
NOT TO SCALE



SHRUB BED PLANTING DETAIL
NOT TO SCALE



PERENNIAL/ORNAMENTAL PLANTING DETAIL
NOT TO SCALE

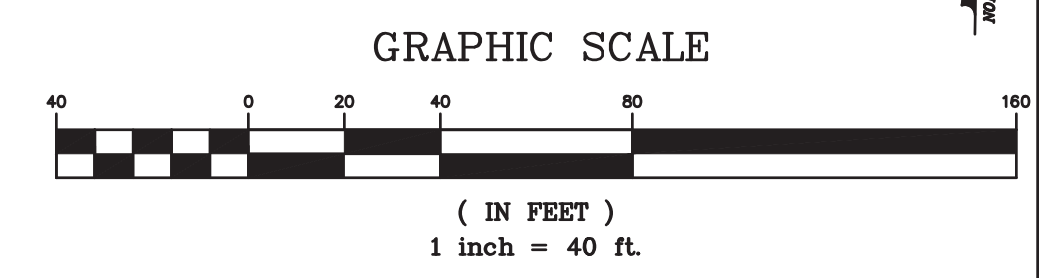
ALTERNATE 1 – LANDSCAPE BIDDING QUANTITIES:

1. COMMERCIAL GRADE ALUMINUM EDGING = 2,820 LFT
2. LAWN AREAS = 18,260 SFT
3. SHREDDED HARDWOOD MULCH FOR PLANTING BEDS = 30,070 SFT

ALL PLANTING SOILS FOR PLANTS AS SHOWN ON THE DETAILS AND BED PREPARATION TO BE PAID FOR AS SITE PREPARATION, MAX

PLANT SCHEDULE

TREES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS	
AC	10	Abies concolor 'Candicans'	Candicans White Fir	8' HT		
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
AJ	42	Aronia melanocarpa 'UNCOMMON166' TM	Low Scape Hedger Black Chokeberry	3 Gal	36" o.c.	
CA	35	Cornus sericea 'Arctic Fire'	Arctic Fire Dogwood	3 Gal	48" o.c.	
CS	1	Cornus sericea 'Saiyai'	Redtwig Dogwood	3 Gal	60" o.c.	
CI	16	Cornus sericea 'SMNCSBD'	Arctic Fire Yellow Dogwood	3 Gal	48" o.c.	
FG	1	Fothergilla gardenii	Dwarf Fothergilla	3 Gal	36" o.c.	
HM2	1	Hibiscus moscheutos 'Big Red'	Big Red Rose Mallow	3 Gal	48" o.c.	
HK	1	Hibiscus moscheutos 'Kopper King'	Kopper King Rose Mallow	3 Gal	48" o.c.	
HG	12	Hibiscus x 'Holy Grail'	Summerflor® Holy Grail Hibiscus	2 Gal	54" o.c.	
HR	21	Invincibelle Limella Hydrangea	Invincibelle Limella Hydrangea	3 Gal	48" o.c.	
HL	57	Hydrangea paniculata 'SMNHPH'	Little Lime Punch Hydrangea	3 Gal	48" o.c.	
HT	39	Hydrangea serrata 'SMNHSDD'	Tuff Stuff Ah-ha Hydrangea	3 Gal	48" o.c.	
IR	33	Ilex verticillata 'FarrowPop'	Berry Poppins® Winterberry	3 Gal	48" o.c.	
IF	10	Ilex verticillata 'FarrowWP'	Mr. Poppins® Winterberry	2 Gal	48" o.c.	
IL	1	Ilex virginica 'Spice' TM	Little Henry Sweetspire	3 Gal	36" o.c.	
JM	1	Juniperus chinensis 'SMNUCHM' TM	Montana Moss Juniper	2 Gal	48" o.c.	
JT	1	Juniperus communis 'Tortuga'	Tortuga Common Juniper	2 Gal	48" o.c.	
JB	1	Juniperus conferta 'Blue Pacific'	Blue Pacific Juniper	2 Gal	48" o.c.	
SD	82	Spiraea media 'SMMSBK' TM	Blue Kazoo Double Play Spirea	3 Gal	36" o.c.	
SK	35	Spiraea x 'Tracy' TM	Double Play Big Bang Spirea	3 Gal	36" o.c.	
TS	1	Thuja occidentalis 'Smaragd'	Emerald Green Arborvitae	5 Gal	48" o.c.	
VSB	1	Viburnum carlesii 'Spice Baby'	Korean Spice Viburnum	3 Gal	60" o.c.	
ORNAMENTAL GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
CK	71	Calamagrostis x acutiflora 'Karl Foerster'	Feather Reed Grass	1 Gal	36" o.c.	
MP	26	Miscanthus purpurascens	Flame Grass	1 Gal	42" o.c.	
PH	128	Panicum virgatum 'Heavy Metal'	Blue Switch Grass	1 Gal	36" o.c.	
PS	151	Panicum virgatum 'Shenandoah'	Switch Grass	1 Gal	30" o.c.	
PK	167	Pennisetum orientale 'Karley Rose'	Karley Rose Fountain Grass	1 Gal	36" o.c.	
PERENNIALS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
SA	59	Sedum x 'Autumn Joy'	Autumn Joy Sedum	1 Gal	18" o.c.	
ORNAMENTAL GRASSES	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
HW	473	Hakonechloa macra 'Alostrata'	White Stripe Japanese Forest Grass	1 Gal	24" o.c.	
HM	23	Hakonechloa macra 'Aureola'	Codon Variegated Forest Grass	1 Gal	30" o.c.	
SB	321	Schizachyrium scoparium 'The Blues'	The Blues Little Bluestem	1 Gal	30" o.c.	
ST	395	Sporobolus heterolepis 'Tara'	Tara Prairie Dropseed	1 Gal	30" o.c.	
PERENNIAL	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
ASS	259	Achillea millefolium 'Strawbery Seduction'	Strawbery Seduction Common Yarrow	1 Gal	18" o.c.	
ASB	225	Allium x 'Summer Beauty'	Summer Beauty Allium	1 Gal	18" o.c.	
AM	472	Allium x 'Millenium'	Millenium Ornamental Onion	1 Gal	18" o.c.	
CH	231	Coreopsis verticillata 'Hot Paprika'	Hot Paprika Sizzle & Spice® Tickseed	1 Gal	22" o.c.	
CY	224	Coreopsis verticillata 'Moonbeam'	Moonbeam Tickseed	1 Gal	24" o.c.	
EM	373	Echinacea purpurea 'Magnus'	Magnus Purple Coneflower	1 Gal	24" o.c.	
HS	140	Hemerocallis x 'Stella de Oro'	Stella de Oro Daylily	1 Gal	24" o.c.	
HX	142	Heuchera x 'Cherry Truffles'	Dolce® Cherry Truffles Coral Bells	1 Gal	28" o.c.	
HO	438	Heuchera x 'Wildberry' TM	Dolce Wildberry Coral Bells	1 Gal	18" o.c.	
HC	327	Heuchera x 'Caramel'	Caramel Coral Bells	1 Gal	18" o.c.	
NC	97	Nepeta x 'Jassemis' 'Cat's Pajamas'	Cat's Pajamas Catmint	1 Gal	30" o.c.	
PL	106	Perovskia atriplicifolia 'Lissit'	Lacy Blue Russian Sage	1 Gal	30" o.c.	
RG	154	Rudbeckia fulgida sultivanti 'Goldsturm'	Goldsturm Coneflower	1 Gal	24" o.c.	
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	REMARKS
LB	612	Liriope muscari 'Big Blue'	Big Blue Liriyurt	3.25"	12" o.c.	



3	ISSUED FOR BID	MJS	01/06/2023
2	REVISED PART 399 PERMIT SUBMITTAL	MJS	12/14/2022
1	EGL PERMIT SUBMITTAL	MJS	11/8/22
NO.	REVISION DESCRIPTION:	BY:	DATE:

**APPENDIX D
ARPA CLAUSES**



**THE CITY OF KALAMAZOO
DEPARTMENT OF PUBLIC SERVICES**

**ARPA CLAUSES
(Submit with Bid)**

2023-2024 Ransom Street Improvements

Bid Reference #: 91300-009.0

Exhibit 3: ARPA Contract Addendum

Federal and State Contract and Purchasing Requirements

The following terms and conditions apply subrecipients of the City of Kalamazoo and all subrecipients of subrecipients of the City of Kalamazoo and all contractors or vendors hired by the subrecipient, according to the City's Award Terms and Conditions; by ARPA and its implementing regulations; and as established by the Treasury Department.

1. **Equal Opportunity.** Contractor shall comply with Executive Order 11246, "Equal Employment Opportunity," as amended by EO 11375, "Amending Executive Order 11246 Relating to Equal Employment Opportunity," and as supplemented by regulations at 41 CFR part 60, "Office of Federal Contract Compliance Programs, Equal Employment Opportunity, Department of Labor."
2. **Minority and Women Business Enterprises (if applicable to this Contract)**

Contractor hereby agrees to comply with the following when applicable: The requirements of Executive Orders 11625 and 12432 (concerning Minority Business Enterprise), and 12138 (concerning Women's Business Enterprise), **when applicable**. Accordingly, the Contractor hereby agrees to take affirmative steps to assure that women and minority businesses are utilized when possible as sources of supplies, equipment, construction and services. Affirmative steps shall include the following:

- a) Including qualified women's business enterprises and small and minority businesses on solicitation lists;
- b) Assuring that women's enterprises and small and minority businesses are solicited whenever they are potential sources;
- c) When economically feasible, dividing total requirements into smaller tasks or quantities so as to permit maximum participation by small and minority business, and women's business enterprises;
- d) Where the requirement permits, establishing delivery schedules which will encourage participation by women's business enterprises and small and minority business;
- e) Using the services and assistance of the Small Business Administration, and the U.S. Office of Minority Business Development Agency of the Department of Commerce; and
- f) If any subcontracts are to be let, requiring the prime Contractor to take the affirmative steps in a through e above.

For the purposes of these requirements, a Minority Business Enterprise (MBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by members of the following groups: Black, Hispanic, Asian or Pacific Islander, American Indian, or Alaskan Natives. Women Business Enterprise (WBE) is defined as an enterprise that is at least 51 percent owned and controlled in its daily operation by women.

3. **Suspension and Debarment. (applies to all purchases.)** (A) This contract is a covered transaction for purposes of 2 CFR pt. 180 and 2 CFR pt. 3000. As such, the Contractor is required to verify that none of Contractor's principals (defined at 2 CFR § 180.995) or its affiliates (defined at 2 CFR § 180.905) are excluded (defined at 2 CFR § 180.940) or disqualified (defined at 2 CFR § 180.935). (B) The Contractor must comply with 2 CFR pt. 180, subpart C and 2 CFR pt. 3000, subpart C, and must include a requirement to comply with these regulations in any lower tier covered transaction it enters into. (C) This certification is a material representation of fact relied upon by the City of KALAMAZOO. If it is later determined that the contractor did not comply with 2 CFR pt. 180, subpart C and 2 CFR pt. 3000, subpart C, in addition to remedies available to the City, the Federal Government may pursue available remedies, including but not limited to suspension and/or debarment. (D) The Contractor agrees to comply with the requirements of 2 CFR pt. 180, subpart C and 2 CFR pt. 3000, subpart C while this offer is valid and throughout the period of any contract that may arise from this offer. The Contractor further agrees to include a provision requiring such compliance in its lower tier covered transactions.

4. **Byrd Anti-Lobbying Amendment, 31 U.S.C. § 1352, as amended. (Applies to all purchases.)** Contractor certifies that it will not and has not used Federal appropriated funds to pay any person or organization for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, officer or employee of Congress, or an employee of a Member of Congress in connection with obtaining any Federal contract, grant, or any other award covered by 31 U.S.C. § 1352. Contractor shall also disclose any lobbying with non-Federal funds that takes place in connection with obtaining any Federal award. Such disclosures are forwarded from tier to tier up to the recipient who in turn will forward the certification(s) to the awarding agency.

Purchases over \$100,000 - Contractors must sign the certification on the last page of this addendum

5. **Access to Records. (applies to all purchases.)**

- A. The Contractor agrees to provide the City of KALAMAZOO, the U.S. Department of Treasury, the Comptroller General of the United States, or any of their authorized representatives access to any books, documents, papers, and records of the Contractor which are directly pertinent to this contract for the purposes of making audits, examinations, excerpts, and transcriptions. The Contractor agrees to permit any of the foregoing parties to reproduce by any means or to copy excerpts and transcriptions as reasonably needed and agrees to cooperate with all such requests.

- B. The Contractor agrees to provide the Treasury Department or authorized representatives access to construction or other work sites pertaining to the work being completed under the contract.

- C. No language in this contract is intended to prohibit audits or internal reviews by the Treasury Department or the Comptroller General of the United States.

6. Rights to Inventions Made Under a Contract or Agreement.

Contracts or agreements for the performance of experimental, developmental, or research work shall provide for the rights of the Federal Government and the recipient in any resulting invention in accordance with 37 CFR part 401, "Rights to Inventions Made by Nonprofit Organizations and Small Business Firms Under Government Grants, Contracts and Cooperative Agreements," and any applicable implementing regulations.

7. Contract Work Hours and Safety Standards Act (40 U.S.C. 327 through 333) (applies only to purchases over \$100,000, when laborers or mechanics are used.)

Where applicable, all contracts in excess of \$100,000 that involve the employment of mechanics or laborers shall include a provision for compliance with 40 U.S.C. 3702 and 3704 of the Contract Work Hours and Safety Standards Act, as supplemented by Department of Labor regulations (29 CFR part 5). Under Section 3702 of the Act, each contractor shall be required to compute the wages of every mechanic and laborer on the basis of a standard workweek of 40 hours. Work in excess of the standard workweek is permissible provided that the worker is compensated at a rate of not less than 1 1/2 times the basic rate of pay for all hours worked in excess of 40 hours in the workweek. The requirements of 40 U.S.C. 3704 are applicable to construction work and provides that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous or dangerous. These requirements do not apply to the purchases of supplies or materials or articles ordinarily available on the open market, or contracts for transportation or transmission of intelligence.

8. Clean Air Act & Federal Water Pollution Control Act (applies to purchases of more than \$150,000.)

- A. The Contractor agrees to comply with all applicable standards, orders or regulations issued pursuant to the Clean Air Act, as amended, 42 U.S.C. § 7401 et seq.
- B. The Contractor agrees to comply with all applicable standards, orders, or regulations issued pursuant to the Federal Water Pollution Control Act, as amended, 33 U.S.C. 1251 et seq.
- C. The Contractor agrees to report each violation of the Clean Air Act and the Water Pollution Control Act to the City of KALAMAZOO
- D. and understands and agrees that the City will, in turn, report each violation as required to assure notification to the Federal Emergency Management Agency, and the appropriate Environmental Protection Agency Regional Office.

- E. Contractor agrees to include these requirements in each subcontract exceeding \$150,000 financed in whole or in part with Federal assistance.

9. Prohibition on certain telecommunications and video surveillance services or equipment (Huawei and ZTE)

Contractor is prohibited from obligating or expending loan or grant funds to:

1. Procure or obtain;
 2. Extend or renew a contract to procure or obtain; or
 3. Enter into a contract (or extend or renew a contract) to procure or obtain equipment, services, or systems that uses covered telecommunications equipment or services as a substantial or essential component of any system, or as critical technology as part of any system. As described in Public Law 115-232, section 889, covered telecommunications equipment is telecommunications equipment produced by **Huawei Technologies Company or ZTE Corporation** (or any subsidiary or affiliate of such entities).
- I. For the purpose of public safety, security of government facilities, physical security surveillance of critical infrastructure, and other national security purposes, video surveillance and telecommunications equipment produced by Hytera Communications Corporation, Hangzhou Hikvision Digital Technology Company, or Dahua Technology Company (or any subsidiary or affiliate of such entities).
 - II. Telecommunications or video surveillance services provided by such entities or using such equipment.
 - III. Telecommunications or video surveillance equipment or services produced or provided by an entity that the Secretary of Defense, in consultation with the Director of the National Intelligence or the Director of the Federal Bureau of Investigation, reasonably believes to be an entity owned or controlled by, or otherwise connected to, the government of a covered foreign country.

10. Buy USA - Domestic Preference for certain procurements using federal funds.

Contractor should, to the greatest extent practicable under a federal award, provide a preference for the purchase, acquisition, or use of goods, products, or materials produced in the United States (including but not limited to iron, aluminum, steel, cement, and other manufactured products). The requirements of this section must be included in all subawards including all contracts and purchase orders for work or products under this award. For purposes of this section:

1. "Produced in the United States" means, for iron and steel products, that all manufacturing processes, from the initial melting stage through the application of coatings, occurred in the United States.

2. "Manufactured products" means items and construction materials composed in whole or in part of non-ferrous metals such as aluminum; plastics and polymer-based products such as polyvinyl chloride pipe; aggregates such as concrete; glass, including optical fiber; and lumber.

11. Procurement of Recovered Materials: (applies only if the work involves the use of materials)

- A. In the performance of this contract, the Contractor shall make maximum use of products containing recovered materials that are EPA-designated items unless the product cannot be acquired:
 - I. Competitively within a timeframe providing for compliance with the contract performance schedule;
 - II. Meeting contract performance requirements; or
 - III. At a reasonable price.
- B. Information about this requirement, along with the list of EPA - designated items, is available at EPA's Comprehensive Procurement Guidelines web site, <https://www.epa.gov/smm/comprehensive> procurement-guideline-cpg-program.
- C. The Contractor also agrees to comply with all other applicable requirements of Section 6002 of the Solid Waste Disposal Act.

12. Publications.

Any publications produced with funds from this award must display the following language: "This project [is being] [was] supported, in whole or in part, by federal award number [enter project FAIN] awarded to [name of Recipient] by the U.S. Department of the Treasury."

13. Increasing Seat Belt Use in the United States.

Pursuant to Executive Order 13043, 62 FR 19217 (Apr. 18, 1997), Contractor is encouraged to adopt and enforce on-the-job seat belt policies and programs for your employees when operating company-owned, rented or personally owned vehicles.

14. Reducing Text Messaging While Driving.

Pursuant to Executive Order 13513, 74 FR 51225 (Oct. 6, 2009), Contractor is encouraged to adopt and enforce policies that ban text messaging while driving, and establish workplace safety policies to decrease accidents caused by distracted drivers.

15. Iran Divestment Act.

Pursuant to the North Carolina General Assembly (S.L. 2015-118; SB455), The Iran Divestment Act is to implement the authority granted to states by federal law to impose state-level sanctions against companies that engage in certain investment activities in the energy sector of Iran.

Additional Federal Regulations Applicable to ARPA (is hereby incorporated by reference):

1. **Uniform Administrative Requirements, Cost Principles, and Audit Requirements for Federal Awards, 2 C.F.R. Part 200**, other than such provisions as Treasury may determine are inapplicable to this Award and subject to such exceptions as may be otherwise provided by Treasury. Subpart F – Audit Requirements of the Uniform Guidance, implementing the Single Audit Act, shall apply to this award.
2. **Universal Identifier and System for Award Management (SAM), 2 C.F.R. Part 25**, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 25 is hereby incorporated by reference
3. **Reporting Subaward and Executive Compensation Information, 2 C.F.R. Part 170**, pursuant to which the award term set forth in Appendix A to 2 C.F.R. Part 170 is hereby incorporated by reference.
4. **OMB Guidelines to Agencies on Governmentwide Debarment and Suspension (Non-procurement), 2 C.F.R. Part 180**, including the requirement to include a term or condition in all lower tier covered transactions (contracts and subcontracts described in 2 C.F.R. Part 180, subpart B) that the award is subject to 2 C.F.R. Part 180 and Treasury's implementing regulation at 31 C.F.R. Part 19.
5. **Recipient Integrity and Performance Matters**, pursuant to which the award term set forth in 2 C.F.R. Part 200, Appendix XII to Part 200 is hereby incorporated by reference.
6. **Governmentwide Requirements for Drug-Free Workplace**, 31 C.F.R. Part 20.
7. **New Restrictions on Lobbying**, 31 C.F.R. Part 21.

8. **Uniform Relocation Assistance and Real Property Acquisitions Act of 1970** (42 U.S.C. §§ 4601-4655) and implementing regulations.

9. **Generally applicable federal environmental laws and regulations.**

Statutes and regulations prohibiting discrimination applicable to ARPA awards include, without limitation, the following:

1. **Title VI of the Civil Rights Act of 1964 (42 U.S.C. §§ 2000d et seq.)** and Treasury's implementing regulations at 31 C.F.R. Part 22, which prohibit discrimination on the basis of race, color, or national origin under programs or activities receiving federal financial assistance;

2. **The Fair Housing Act, Title VIII of the Civil Rights Act of 1968 (42 U.S.C. §§ 3601 et seq.),** 4 which prohibits discrimination in housing on the basis of race, color, religion, national origin, sex, familial status, or disability;

3. **Section 504 of the Rehabilitation Act of 1973, as amended (29 U.S.C. § 794),** which prohibits discrimination on the basis of disability under any program or activity receiving federal financial assistance;

4. **The Age Discrimination Act of 1975, as amended (42 U.S.C. §§ 6101 et seq.),** and Treasury's implementing regulations at 31 C.F.R. Part 23, which prohibit discrimination on the basis of age in programs or activities receiving federal financial assistance; and

Title II of the Americans with Disabilities Act of 1990, as amended (42 U.S.C. §§ 12101 et seq.), which prohibits discrimination on the basis of disability under programs, activities, and services provided or made available by state and local governments or instrumentalities or agencies thereto.

Exhibit 4:

Federal Lobbying Certification

This form is required to be signed by all contractors of the subrecipient only for purchases of more than \$100,000 -

31 CFR Part 21- New Restrictions on Lobbying - CERTIFICATION REGARDING LOBBYING

The undersigned certifies, to the best of their knowledge and belief, that:

1. No Federal appropriated funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of an agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal contract, the making of any Federal grant, the making of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.
2. If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL. "Disclosure Form to Report Lobbying," in accordance with its instructions .
3. The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all contractors shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

The Contractor certifies or affirms the truthfulness and accuracy of each statement of its certification and disclosure, if any. In addition, the Contractor understands and agrees that the provisions of 31 U.S.C. Ch. 38, Administrative Remedies for False Claims and Statements, apply to this certification and disclosure, if any.

Date: _____

Signature of Contractor's authorized official

(Print name and title of person signing above)

=====