

HASTINGS PLANNING COMMISSION SPECIAL MEETING AGENDA

Friday September 26, 2025

- 1. Call to Order/Roll Call** (Special meeting starts at 3:00 p.m.)
- 2. Pledge of Allegiance**
- 3. Approval / additions / deletions to agenda**
- 4. Approval of Minutes** NA
- 5. Informative Items:** NA
- 6. Public Hearings:**
 - A. Public hearing to review and consider Final Site Plan and Planned Unit Development Amendment for 420 E Mill PUD. *
- 7. New Business: None**
- 8. Old Business: None**
- 9. Open Public Discussion and Comments**
- 10. Staff Comments**
- 11. Commissioner Comments**
- 12. Adjourn**

*Indicates attachment

City of Hastings

NOTICE OF PUBLIC HEARING REGARDING PLANNED UNIT DEVELOPMENT MODIFICATION AND FINAL SITE PLAN APPROVAL

The Planning Commission for the City of Hastings will hold a Public Hearing for the purpose of hearing written and/or oral comments from the public concerning 420 E Mill Planned Unit Development modification and final site plan approval for certain properties located at 328 East Mill Street parcel #08-55-001-001-02 and 420 East Mill Street parcel # 08-55-001-001-04. The Planning Commission will review and consider 420 E Mill Planned Unit Development modification and final site plan approval for reorientation of multi-family residential buildings, reorientation and increase in size of mixed-use building, and addition of a childcare center in the mixed-use building as a permitted use. The public hearing will be held at 3:00 PM on Friday September 26, 2025, at a special meeting of the Planning Commission in the City Council Chambers on the second floor of City Hall, 201 East State Street, Hastings, Michigan 49058.



A copy of the proposed site plan and map are available for public inspection from 9:00 AM to 4:00 PM Monday through Friday at the Office of the Community Development Director, 201 East State Street, Hastings, Michigan 49058. Questions or comments can be directed to Dan King, Community Development Director, at 269.945.2468 or dking@hastingsmi.gov.

The City will provide necessary reasonable aids and services upon five days' notice to the City Clerk at 269.945.2468 or TDD call relay services 800.649.3777.

Linda Perin
City Clerk

Please publish in the September 11, 2025, edition of the Hastings Banner.

Received by _____ on _____ as
representative of the Hastings Banner.

Received by _____ on _____ as representative
of the Hastings Banner.

City of Hastings
COUNTY OF BARRY, STATE OF MICHIGAN

ORDINANCE NO. ~~619~~632

AN ORDINANCE TO AMEND CHAPTER 90 OF THE HASTINGS CODE OF 1970, AS
AMENDED, BY ~~DELETING ARTICLE VII-C ROYAL COACH PUD AND ADDING~~
AMENDING ARTICLE VII-C 420 E MILL PUD

As recommended by the Planning Commission on September 26, 2025

THE CITY OF HASTINGS ORDAINS:

SECTION I.

Chapter 90 of the Code of Ordinances, City of Hastings, Michigan, is amended to
~~DELETE~~ Article VII-C and **ADDING to amend** Article VII-C as follows:

Amended Text in BOLD

Article VII-C: 420 E MILL PUD

Sec. 90-730.13. - Zoning map.

The zoning ordinance of the City of Hastings is hereby amended by rezoning the following described lands from the D-1, Industrial District to the PUD, Planned Unit Development District, in accordance with the final development plan of the 420 E Mill Planned Unit Development, subject to all the terms and conditions of this division:

DESCRIPTION

ALL OF LOTS 330, 332, 333, AND 334 AND PART OF LOTS 329, 331, AND 335 AND PART OF VACATED PLATTED HANOVER STREET, AND PART OF VACATED PLATTED BOLTWOOD STREET, ALL IN THE ORIGINAL PLAT OF THE VILLAGE (NOW CITY) OF HASTINGS, BARRY COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS:
COMMENCING AT THE NORTH ¼ CORNER OF SECTION 17, TOWN 3 NORTH, RANGE 8 WEST: THENCE S00°15'23"W, 1121.83 FEET ALONG THE NORTH-SOUTH ¼ LINE OF SAID SECTION 17 TO THE SOUTH LINE OF PLATTED MILL STREET; THENCE ALONG SAID SOUTH LINE N89°46'48"W, 534.08 FEET TO THE TRUE POINT OF BEGINNING; THENCE S34°44'13"W, 359.13 FEET TO AN INTERMEDIATE TRAVERSE LINE OF THE NORTH BAND OF THE THORNAPPLE RIVER; THENCE ALONG SAID TRAVERSE LINE N50°51'15"W, 331.34 FEET; THENCE CONTINUING ALONG SAID TRAVERSE LINE N68°47'24"W, 82.56 FEET TO THE END OF SAID INTERMEDIATE TRAVERSE LINE;

THENCE ALONG THE WEST LINE OF VACATED BOLTWOOD STREET N00°19'59"E, 58.15 FEET TO SAID SOUTH LINE OF MILL STREET; THENCE ALONG SAID SOUTH LINE S89°46'48"E, 538.24 FEET TO THE POINT OF BEGINNING. INCLUDING LAND LYING BETWEEN SAID INTERMEDIATE TRAVERSE LINE AND THE WATERS OF THE THORNAPPLE RIVER, AS LIMITED BY THE SIDE LINES EXTENDED TO THE WATER EDGE. CONTAINING 1.95 ACRES OF LAND, MORE OR LESS, TO SAID INTERMEDIATE TRAVERSE LINE, PLUS AS UNDETERMINED AND VARIABLE AREA BETWEEN SAID TRAVERSE LINE AND THE WATERS OF THE THORNAPPLE RIVER. SPLIT/COMBINED ON 01/13/2017 FROM 55-001-001-00.

General Location: 328 E Mill St. This parcel contains approximately 2.152 acres.

and;

The zoning ordinance of the City of Hastings is hereby amended by rezoning the following described lands from Royal Coach PUD to Planned Unit Development, in accordance with the final development plan of 420 E Mill Planned Unit Development, subject to all the terms and conditions of this division:

DESCRIPTION

ALL OF LOTS 322 THRU 328, LOTS 336 THRU 348, PART OF LOTS 329 AND 335, ALL OF THE BLANK LOTS LYING WEST OF LOT 348, SOUTH OF APPLE STREET AND NORTHERLY OF THE THORNAPPLE RIVER, AND PART OF VACATED HANOVER, EAST AND APPLE STREETS, ALL IN THE ORIGINAL PLAT OF THE VILLAGE (NOW CITY) OF HASTINGS, BARRY COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTH 1/4 POST OF SECTION 17, TOWN 3 NORTH, RANGE 8 WEST, HASTINGS TOWNSHIP, BARRY COUNTY, MICHIGAN; THENCE S00°15'25"W 1121.72 FEET ALONG THE NORTH-SOUTH 1/4 LINE OF SAID SECTION 17 TO THE SOUTH LINE OF PLATTED MILL STREET (SAID POINT LYING 1.39 FEET EAST OF AN IRON PIPE); THENCE S00°15'25"W, 499.60 FEET ALONG SAID 1/4 LINE TO AN INTERMEDIATE TRAVERSE LINE OF THE NORTH BANK OF THE THORNAPPLE RIVER; THENCE S70°55'22"W, 268.20 FEET ALONG SAID INTERMEDIATE TRAVERSE LINE; THENCE N72°46'49"W, 215 .56 FEET ALONG SAID INTERMEDIATE TRAVERSE LINE; THENCE N50°12'27"W, 358 .27 FEET TO THE END OF SAID INTERMEDIATE TRAVERSE LINE; THENCE N34 °44'13"E, 360 .42 FEET TO SAID SOUTH LINE OF MILL STREET; THENCE S89°46'48"E, 531.53 FEET ALONG SAID SOUTH LINE TO THE POINT OF BEGINNING. INCLUDING ALL LAND LYING BETWEEN SAID INTERMEDIATE TRAVERSE LINE AND THE WATERS OF THE THORNAPPLE RIVER AS LIMITED BY THE SOUTHERLY EXTENSION OF THE SIDELINES. CONTAINING 7.71 ACRES OF LAND, MORE OR LESS, TO SAID INTERMEDIATE TRAVERSE LINE, PLUS AN UNDETERMINED AND VARIABLE AREA BETWEEN SAID TRAVERSE LINE AND THE WATERS OF THE THORNAPPLE RIVER.

General Location: 420 E Mill St. This parcel contains approximately 8.21 acres.

Sec. 90-730.14. - Development plan.

The rezoning of the above-described lands to the planned unit development district, in accordance with the final **amended** PUD plan of the 420 E Mill Planned Unit Development ("the development") is subject to all the following terms and conditions:

The 420 E Mill Planned Unit Development shall comply in all respects with the final PUD plan of the development. The final development plan has a date of ~~June 15, 2023,~~ **July 23, 2025**, as prepared by ~~Dixon Engineering~~ **AR Engineering** on behalf of CopperRock Construction and includes the application for planned unit development rezoning, the PUD narrative, architectural elevation drawings of the proposed buildings and other materials submitted with the application, except to the extent that any such materials may be inconsistent with this division.

In the case of conflicts or discrepancies between any part of the final **amended** development plan and the terms of this division, this division shall control.

Sec. 90-730.15. - Permitted uses.

Only the principal and accessory uses noted below shall be allowed in the 420 E Mill PUD District:

- (a) Building "A" consisting of Eighteen (18) one-bedroom units, thirty (30) two-bedroom units, and three (3) three-bedroom units for an overall unit count of fifty-one (51).
- (b) Building "B" consisting of nine (9) one-bedroom units, forty-two (42) two-bedroom units, and three (3) three-bedroom units for an overall unit count of fifty-four (54) units.
- (c) Building "C" consisting of nine (9) one-bedroom units, nineteen (19) two-bedroom units, and two (2) three-bedroom units for an overall unit count of thirty (30) units.
- (d) ~~Phase H shall~~ **Building "D" Barry County Food and Arts Center** ~~consist~~ **consisting** of the ~~land and~~ parking lot areas to the **west and** northeast of the ~~proposed commercial building "D" consisting of 10,080~~ **10,740** square feet with a use ~~Child Care Center and other uses~~ consistent with this Article.

Sec. 90-730.16. – District Regulations.

The district regulations for the 420 E Mill PUD will be the same as A-1 (Sec. 90-394) with the following departures:

- (a) Building front setback for multi-family buildings with more than four dwelling units is a minimum of 5 feet.
- (b) The unit density is 24.5 units per acre of development area and multiple family buildings to exceed 24 units per building.
- (c) Maximum building height is 40 feet.
- (d) 30 feet building separation

Sec. 90-730.17. - Development requirements.

- (1) *Street and access.*
 - (a) Ingress and egress shall be by way of three (3) driveways from Mill Street to the north.
 - (b) Pedestrian access will also be by the existing trestle bridge over the Thornapple River.
- (2) *Utilities.* The uses shall be served by public water and sanitary sewer as approved by the director of public services for the City of Hastings.
- (3) *Surface water drainage.* Stormwater management plan as approved by director of public services for the City of Hastings with review by the Department of Energy, Great Lakes, and Environment.
- (4) *Open space.* Development will provide approximately 3.50 acres or 35% of open space on the site.
- (5) *Preservation of natural area.* Placement of buildings, site improvements, and open space is largely respectful of wetlands, floodplain, Butler Creek, and the Thornapple River frontage.
- (6) *Landscaping.* Landscaping shall be provided in compliance with Article XII and approved by administrative staff.
- (7) *Lighting.* Lighting plans shall be approved by administrative staff.
- (8) *Signs.* Signs for the 420 E Mill PUD shall comply with all regulations of article XI of the Hastings Zoning Ordinance as are applicable to the use.
- (9) *Parking.* ~~254~~ **259** parking spaces required, and ~~282~~ **267** parking spaces will be provided.
- (10) *Uses and development regulations not specified.* For all uses and development regulations not specified in this division, the requirements of the multifamily buildings shall use the requirements of the A-1 zone.

Sec. 90-730.18. - Findings.

The city council hereby determines that the final **amended** site plan and PUD zone for 420 E Mill project complies with the provisions of the Hastings Zoning Ordinance and promotes its intent and purposes. The council also finds that granting the PUD rezoning will result in a recognizable and substantial benefit to the users of the project and to the community and that the proposed type and density of use shall not result in a material increase in the need for public services, facilities and utilities, and shall not place a material burden upon the subject or surrounding land or property owners and occupants or the natural environment.

The council further finds that based on the design of the PUD, the proposed use is appropriate for the proposed location and is not likely to lead to a significant change in the uses master planned in the area adjacent to the 420 E Mill PUD. Also, the proposed development will not have a significant negative impact on the surrounding area and the proposed development will be under single ownership and control for completing the project in conformity with this article.

SECTION II.

If any article, section, subsection, sentence, clause, phrase, or portion of this ordinance is, for any reason, held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of this ordinance.

SECTION III.

All ordinances or part of ordinances in conflict herewith are hereby repealed.

SECTION IV

This ordinance shall become effective upon its adoption and publication as provided by City Charter.

Moved by Member ~~Cary~~, with support by Member Resseguie, that **Ordinance No. 619 XXX** be adopted as read.

YEAS: ~~Barlow, Bowers, Cary, Furrow, Jarvis, Nesbitt, Resseguie and Tossava.~~
NAYS: ~~None.~~
ABSENT: ~~McLean.~~

CITY OF HASTINGS

Adoption Date: ~~July 24, 2023~~
Effective Date: ~~July 28, 2023~~

By: ~~Christopher R. Bever~~
Linda Perin
City Clerk

CERTIFICATE

The undersigned, being the duly qualified and acting Clerk of the City of Hastings, Michigan, does hereby certify that the foregoing is a true and complete copy of an Ordinance adopted by the Hastings City Council, of the City of Hastings, at a regular meeting of the City Council on the ~~24th day of July 2023~~, at which meeting a quorum was present and remained throughout, and that the original of said Ordinance is on file in the records of the City of Hastings. I further certify that the meeting was conducted, and public notice was given pursuant to and in compliance with Act No. 267, Public Acts of Michigan of 1976, as amended, and that minutes were kept and will be or have been made available as required thereby.

~~Christopher R. Bever~~
Linda Perin
City Clerk



MCKENNA

September 2, 2025

Planning Commission
City of Hastings
201 East State Street
Hastings, MI 49058

Subject: 420 E Mill PUD

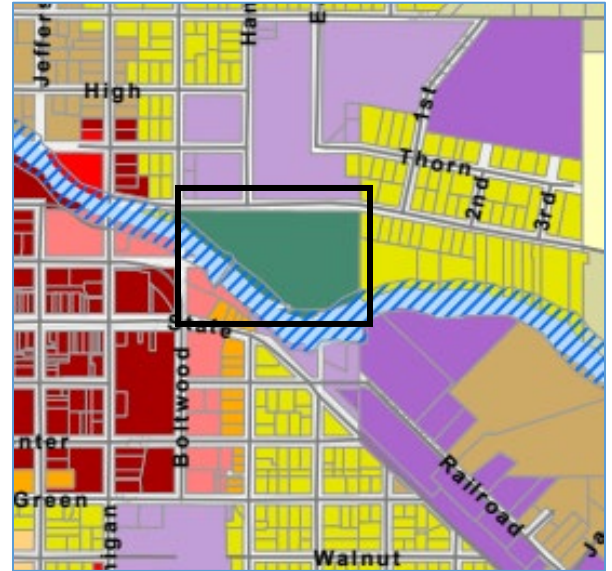
*(Previously Approved Site of Royal
Coach PUD)*

Location: 328/420 East Mill Street

Zoning: 420 E Mill PUD

Request: Modification of a PUD

Zoning Map



 PUD Planned Unit Development District

Specifically, the following modifications to the approved 420 E Mill PUD are proposed:

- Relocate (shift) 51-unit residential building (Building A) 6 ft to the west
- Increase the size of the Barry County Food & Arts Center from 10,080 sq ft to 10,740 sq ft and reorient the building on the site (in the same general location as previously approved)
- Locate a Child Care Center within the Barry County Food & Arts Center, including an outdoor childcare area/patio

Per Sec 90-674, the proposed modifications constitute ‘major changes’ to the PUD site plan and are subject to the ‘filing procedures for a PUD’. Review of the requested PUD Final Development Plan Amendment shall be guided by Section 90-667 (e) and (f) – Final Development Plan Submission and Content and Section 90-668 – Standards of Approval.

Article VII – Planned Unit Development

Sec 90-663 – Qualifying Conditions – *no change*

Sec 90-664 – Development Requirements

- Density – *no change*
- Open Space – *no change*
- Mixed Uses – **The appropriateness of increasing the size of the Barry County Food & Arts Center building and adding a child care center to the previously approved mix of residential and nonresidential uses shall be determined by the Planning Commission in consideration of the following PUD objectives:**
 - *Will encourage the use of land in accordance with its character and adaptability.*
 - *Will promote the conservation of natural features and resources.*
 - *Will encourage innovation in land use planning and development.*
 - *Will promote the enhancement of housing, employment, shopping, traffic circulation, and recreational opportunities for the people of the city.*
 - *Will promote and ensure greater compatibility of design and use between neighboring properties.*

Sec 90-665 – Applicable Regulations

Requirements for lot size, width, area, yard setbacks, structure height, signs, parking, and landscaping shall be based on the applicable requirements of the A-1 District, **unless otherwise modified by the City to better meet the intent of the PUD.**

- Lot Size/Width/Area/Coverage/ Building Height/Landscaping – *no change*
- Setbacks –
 - Building A - side and rear setback requirements met; 5 ft front setback approved – *no change*
 - Barry County Food & Arts Center Building – all setback requirements met
 - Building separation – *no change*



- 
- Signs – **any proposed signage shall comply with Article XI and be reviewed/approved through the sign permit process.**
 - Parking – parking is modified in compliance with applicable requirements.

The proposed child care center shall also be reviewed for compliance with **Sec 90-1079.**

- **The proposed child care center shall be licensed by the State per PA 116 of 1973.**
- The proposed child care center is not located closer than 800 ft to a substance abuse treatment facility, correction center, resident home, halfway house or similar facility.
- The subject site exceeds 17,000 sq ft in size and 132 ft in width.
- A child drop off/pickup area is provided off the public street.
- The child care center is located in excess of required building setbacks.
- The outdoor play area is not located within the front yard and is enclosed by a fence.
- The Barry County Food & Arts Center building represents a ‘safe environment’, free from nuisance or hazardous conditions. **The proximity of Butler Creek and Thornapple River should be considered in assessing safety risks.**
- A child care center located within a larger principal building on the site of a high-density residential development will not alter the character of the site/area.
- The child care center is located within a 9.55-acre planned development site and is provided adequate access/parking through the internal access drive and parking lot system.
- The approved landscape plan for the site provides the required buffer zones.
- The child care center (and the site at large) is served by public water and sewer.
- The child care center is located on a parcel with frontage on a primary city street.

Sec 90-666 – PUD Design Considerations

The proposed modifications to the approved Final Development Plan do not alter the initial findings of compliance with the 12 specific design considerations set forth in this Section.

Sec 90-668 – Standards of Approval

The proposed modifications to the approved Final Development Plan do not alter the initial findings of compliance with the 5 standards for approval set forth in this Section.



HASTINGS RIVERWALK APARTMENTS

**420 E. MILL STREET
SECTION 07, T.03N, R.08W
CITY OF HASTINGS
BARRY COUNTY, MI**

SITE DEVELOPMENT PLANS JULY 23, 2025

ISSUED FOR: SITE PLAN REVIEW

SHEET INDEX

No.	SHEET TITLE
T1.0	TITLE SHEET
C1.0	EX CONDITIONS - DEMO PLAN
C2.0	SITE LAYOUT
C3.0	UTILITY PLAN
C3.1	STRUCTURE DETAILS
C3.2	UNDERGROUND STORM DETAILS
C3.3	WATERMAIN PLAN & PROFILE
C4.0	GRADING - SESC PLAN
C4.1	GRADING & SESC PLAN - WEST
C4.2	GRADING & SESC PLAN - EAST
C5.0	DETAILS
C6.0	SITE CUT & FILL IN FLOODPLAIN
L1.0	LANDSCAPE PLAN
L2.0	PHOTOMETRIC PLAN

DEVELOPER:

COPPERROCK CONSTRUCTION
601 FIFTH STREET NW, SUITE 300
GRAND RAPIDS, MI 49504

CIVIL ENGINEER:

AR ENGINEERING, LLC.
5725 VENTURE PARK DRIVE, SUITE A
KALAMAZOO, MI 49008
TEL. (269) 250-5991 FAX. (866) 569-0604

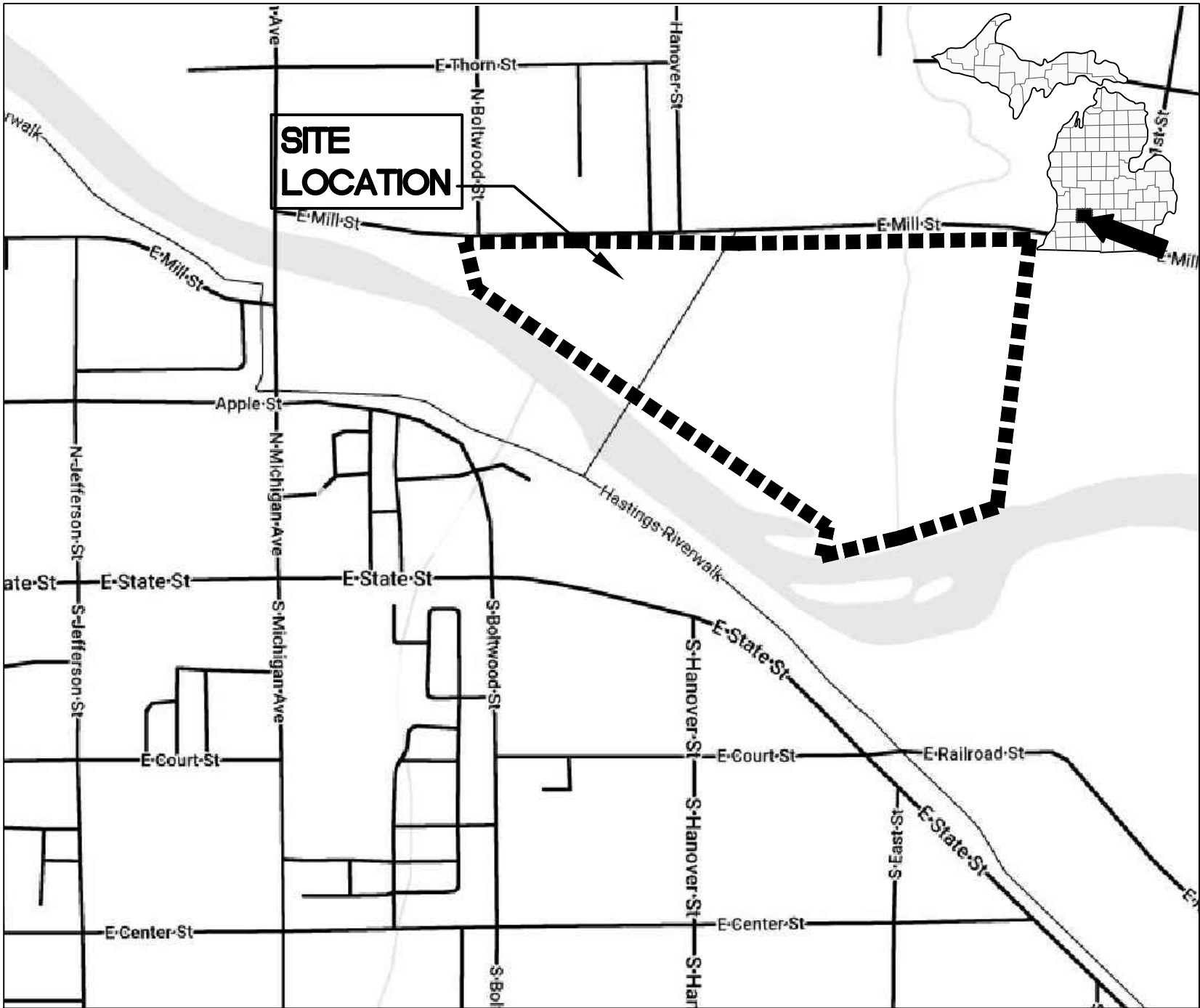


SPENCER O'DELL, P.E.

DATE

LOCATION MAP

NOT TO SCALE



42°39'00.91"N 85°16'58.91"W

LEGAL DESCRIPTION

PARCEL #: 55-001-001-02, 55-001-001-04

THE LAND REFERRED TO IN THIS COMMITMENT IS DESCRIBED AS FOLLOWS:

PARCEL 1

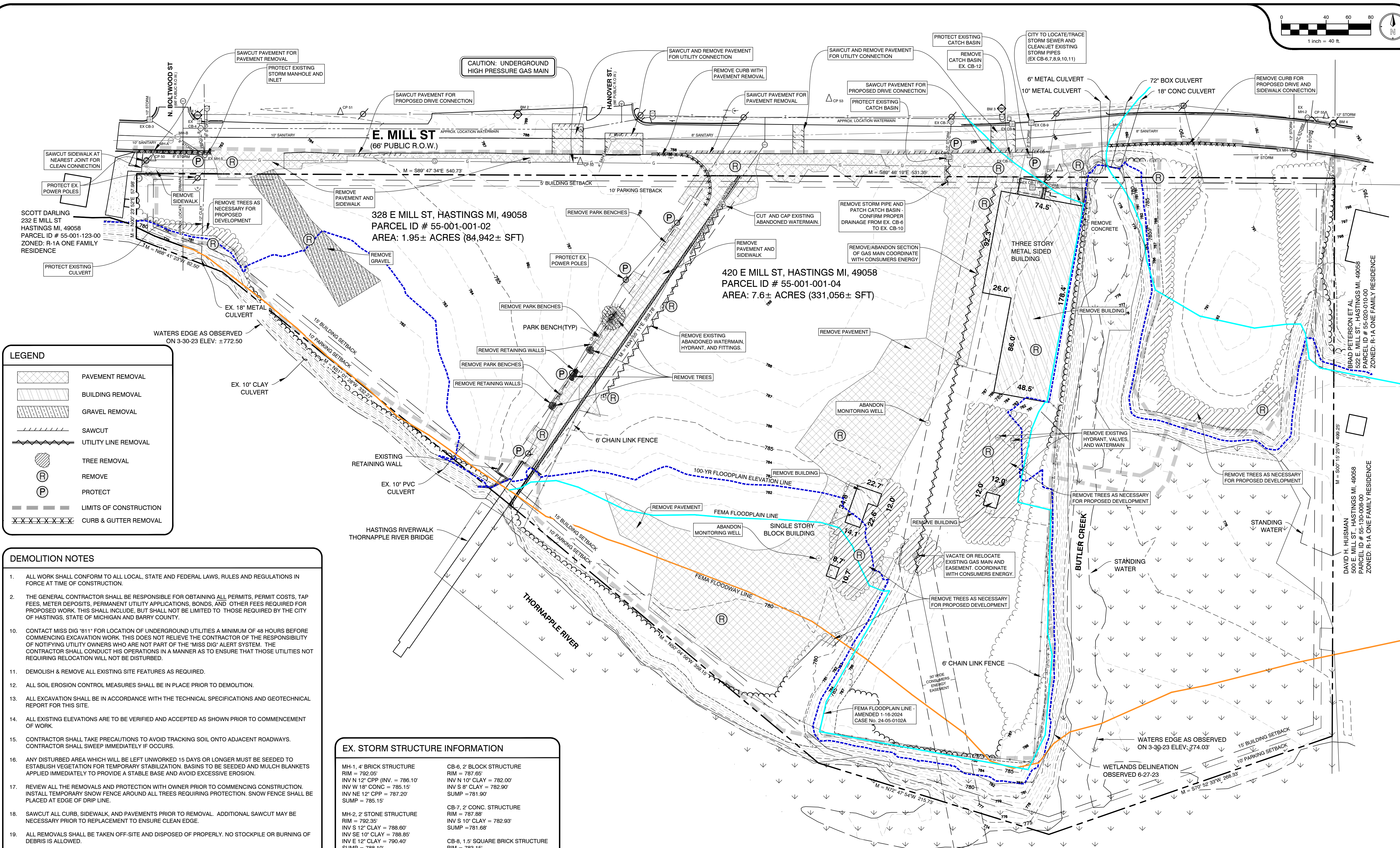
ALL OF LOTS 322 THOROUGH 328, LOTS 336 THROUGH 348, PART OF LOTS 329 AND 335, ALL OF THE BLANK LOTS LYING WEST OF LOT 348, SOUTH OF APPLE STREET AND NORTHERLY OF THE THRONAPPLE RIVER, AND PART OF VACATED HANOVER, EAST AND APPLE STREETS, ALL IN THE ORIGINAL PLAT OF THE VILLAGE (NOW CITY) OF HASTINGS, BARRY COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS FOLLOWS: COMMENCING AT THE NORTH 1/4 POST OF SECTION 17, TOWN 3 NORTH, RANGE 8 WEST, HASTINGS TOWNSHIP, BARRY COUNTY, MICHIGAN: THENCE SOUTH 00 DEGREES 15 MINUTES 25 SECONDS WEST 1121.72 FEET ALONG THE NORTH-SOUTH 1/4 LINE OF SAID SECTION 17 TO THE SOUTH LINE OF PLATTED MILL STREET (SAID POINT LYING 1.39 FEET EAST OF AN IRON PIPE); THENCE SOUTH 00 DEGREES 15 MINUTES 25 SECONDS WEST 499.80 FEET ALONG SAID 1/4 LINE TO AN INTERMEDIATE TRAVERSE LINE OF THE NORTH BANK OF THE THRONAPPLE RIVER; THENCE SOUTH 70 DEGREES 55 MINUTES 22 SECONDS WEST 268.20 FEET ALONG SAID INTERMEDIATE TRAVERSE LINE; THENCE NORTH 72 DEGREES 46 MINUTES 49 SECONDS WEST 215.56 FEET ALONG SAID INTERMEDIATE TRAVERSE LINE; THENCE NORTH 50 DEGREES 12 MINUTES 27 SECONDS WEST 358.27 FEET TO THE END OF SAID INTERMEDIATE TRAVERSE LINE; THENCE NORTH 34 DEGREES 44 MINUTES 13 SECONDS EAST 360.42 FEET TO SAID SOUTH LINE OF MILL STREET; THENCE SOUTH 89 DEGREES 46 MINUTES 48 SECONDS EAST 531.53 FEET ALONG SAID SOUTH LINE TO THE POINT OF BEGINNING, INCLUDING ALL LAND LAYING BETWEEN SAID INTERMEDIATE TRAVERSE LINE AND THE WATERS FOR THE THRONAPPLE RIVER AS LIMITED BY THE SOUTHER EXTENSION OF THE SIDELINES

PARCEL 2

ALL OF LOTS 330, 332, 333 AND 334 AND PART OF LOTS 329, 331 AND 335 AND THE PART OF VACATED PLATTED HANOVER STREET AND PART OF VACATED BOLTWOOD STREET, ALL IN THE ORIGINAL PLAT OF THE VILLAGE (NOW CITY) OF HASTINGS, BARRY COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS: COMMENCING AT THE NORTH 1/4 CORNER OF SECTION 17, TOWN 7 NORTH, RANGE 8 WEST; THENCE SOUTH 00 DEGREES 15 MINUTES 23 SECONDS WEST 1121.83 FEET ALONG THE NORTH-SOUTH 1/4 LINE OF SAID SECTION 17 TO THE SOUTH LINE OF PLATTED MILL STREET; THENCE ALONG THE NORTH-SOUTH 1/4 LINE OF SAID SECTION 17 TO THE SOUTH LINE OF PLATTED MILL STREET; THENCE ALONG SAID SOUTH LINE NORTH 89 DEGREES 46 MINUTES 48 SECONDS WEST 534.08 FEET TO THE TRUE POINT OF BEGINNING; THENCE SOUTH 34 DEGREES 44 MINUTES 48 SECONDS WEST 359.13 FEET TO AN INTERMEDIATE TRAVERSE LINE OF THE NORTH BANK OF THRONAPPE RIVER; THENCE ALONG SAID TRAVERSE LINE NORTH 50 DEGREES 51 MINUTES 15 SECONDS WEST 331.34 FEET; THENCE CONTINUING ALONG SAID TRAVERSE LINE NORTH 68 DEGREES 47 MINUTES 24 SECONDS WEST 82.56 FEET TO THE END OF SAID INTERMEDIATE TRAVERSE LINE; THENCE ALONG THE WEST LINE OF VACATED BOLTWOOD STREET NORTH 00 DEGREES 19 MINUTES 59 SECONDS EAST 58.15 FEET TO SAID SOUTH LINE OF MILL STREET; THENCE ALONG SAID SOUTH LINE SOUTH 89 DEGREES 46 MINUTES 48 SECONDS EAST 538.24 FEET TO THE POINT OF BEGINNING. INCLUDING LAND LAYING BETWEEN SAID INTERMEDIATE TRAVERSE LINE AND THE WATER OF THE THRONAPPLE RIVER, AS LIMITED BY THE SIDE LINES EXTENDED TO THE WATERS EDGE

UTILITY CONTACTS

CABLE	XFINITY (866) 477-2179	TELEPHONE	AT&T (877) 368-2737
WATER	HASTINGS DEPARTMENT OF PUBLIC SERVICES 201 E STATE ST HASTINGS, MI 49058 (269) 945-2468	SEWER	HASTINGS DEPARTMENT OF PUBLIC SERVICES 201 E STATE ST HASTINGS, MI 49058 (269) 945-2468
GAS	CONSUMERS ENERGY (800) 477-5050	ELECTRIC	CONSUMERS ENERGY (800) 477-5050
		MISS DIG	811



LEGEND

- PAVEMENT REMOVAL
- BUILDING REMOVAL
- GRAVEL REMOVAL
- SAWCUT
- UTILITY LINE REMOVAL
- TREE REMOVAL
- REMOVE
- PROTECT
- LIMITS OF CONSTRUCTION
- CURB & GUTTER REMOVAL

- DEMOLITION NOTES**
- ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
 - THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE CITY OF HASTINGS, STATE OF MICHIGAN AND BARRY COUNTY.
 - CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
 - DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
 - ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO DEMOLITION.
 - ALL EXCAVATION SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT FOR THIS SITE.
 - ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
 - CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
 - ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEEDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.
 - REVIEW ALL THE REMOVALS AND PROTECTION WITH OWNER PRIOR TO COMMENCING CONSTRUCTION. INSTALL TEMPORARY SNOW FENCE AROUND ALL TREES REQUIRING PROTECTION. SNOW FENCE SHALL BE PLACED AT EDGE OF DRIP LINE.
 - SAWCUT ALL CURB, SIDEWALK, AND PAVEMENTS PRIOR TO REMOVAL. ADDITIONAL SAWCUT MAY BE NECESSARY PRIOR TO REPLACEMENT TO ENSURE CLEAN EDGE.
 - ALL REMOVALS SHALL BE TAKEN OFF-SITE AND DISPOSED OF PROPERLY. NO STOCKPILE OR BURNING OF DEBRIS IS ALLOWED.
 - ALL REMOVALS SHALL BE TO THE LIMITS INDICATED ABOVE UNLESS OTHERWISE DIRECTED BY THE ENGINEER. UNAUTHORIZED REMOVALS AND SUBSEQUENT REPLACEMENT SHALL BE AT THE CONTRACTOR'S EXPENSE.
 - REMOVE, STORE, AND RESET ANY EXISTING SIGNS AS DIRECTED BY THE ENGINEER/OWNER.
 - REMOVE ALL TREES TO THE CLEARING LIMITS AS SHOWN. REMOVE ALL EXISTING TREES, STUMPS AND BRUSH FROM THE SITE AS NECESSARY TO CONSTRUCT THE IMPROVEMENTS.
 - THE CONTRACTOR SHALL DEMOLISH AND REMOVE ANY ITEMS REMAINING FROM THE EXISTING BUILDING, IN ITS ENTIRETY, INCLUDING WALLS, FOUNDATIONS AND FOOTINGS. ALL BUILDING DRAINS AND UTILITY LEADS SHALL BE LOCATED AND PROPERLY PLUGGED. UTILITY LEAD WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY.
 - BACKFILL EXCAVATED AREAS WITH CLEAN GRANULAR FILL COMPACTED TO 95% OF THE MATERIAL UNIT WEIGHT BY MODIFIED PROCTOR.
 - CONTROL SHALL BE MAINTAINED OVER THE SITE AND OPERATION TO ELIMINATE HAZARDS TO THE PUBLIC. NAILS OR OTHER TIRE PUNCTURING ITEMS SHALL NOT BE DROPPED ON STREETS, ALLEYS AND ADJACENT PROPERTY. PUBLIC STREETS, CURBS AND SIDEWALKS SHALL BE PROTECTED FROM DAMAGE. THE PERSON ENGAGED IN THE DEMOLITION WORK SHALL BE LIABLE FOR ANY AND ALL DAMAGE TO CURBS, STREETS, SIDEWALKS AND OTHER PUBLIC OR PRIVATE PROPERTY AND FOR ANY BODILY INJURY OCCURRING AS A RESULT OF THE DEMOLITION WORK.

EX. STORM STRUCTURE INFORMATION

MH-1, 4' BRICK STRUCTURE RIM = 792.05' INV N 12" CPP (INV. = 786.10' INV W 18" CONC = 785.15' INV NE 12" CPP = 787.20' SUMP = 785.15'	CB-6, 2' BLOCK STRUCTURE RIM = 787.65' INV N 10" CLAY = 782.00' INV S 8" CLAY = 782.90' SUMP = 781.90'
MH-2, 2' STONE STRUCTURE RIM = 792.35' INV S 12" CLAY = 788.80' INV SE 10" CLAY = 788.85' INV E 12" CLAY = 790.40' SUMP = 788.10'	CB-7, 2' CONC. STRUCTURE RIM = 787.88' INV S 10" CLAY = 782.93' SUMP = 781.68'
CB-3, 2' BLOCK STRUCTURE RIM = 783.29' INV N 10" CLAY = 781.29' INV SE 8" CLAY = 784.17' SUMP = 780.54'	CB-8, 1.5' SQUARE BRICK STRUCTURE RIM = 783.15' STRUCTURE COLLAPSED AND FULL
CB-4, 2' BLOCK STRUCTURE RIM = 783.15' INV NNW 8' CLAY = 781.45' SUMP = 781.15'	CB-9, 2' BLOCK STRUCTURE RIM = 787.57' INV S 8" CONC = 784.17' SUMP = 783.72'
MH-5, 2' BLOCK STRUCTURE RIM = 783.15' INV NNW 8' CLAY = 780.20' INV N 8" CLAY = 780.15' INV NW 8' CLAY = 780.35' INV S 12' CLAY = 779.95' INV E 8' CLAY = 781.45' SUMP = 779.90	CB-10, 1.5' SQUARE BRICK STRUCTURE RIM = 787.41' INV SE 8' CLAY = 780.66' INV W 10" CLAY = 780.56' SUMP = 780.56'
	CB-11, 1.5' SQUARE CONC. STRUCTURE RIM = 786.62' INV E 8' CLAY = 785.32' SUMP = 784.72'
	CB-12, 1.5' SQUARE BRICK STRUCTURE RIM = 787.46' (BROKEN STRUCTURE) INV E 10" CLAY = 781.11' INV W 10" CLAY = 781.06' SUMP = 781.06'

- BENCHMARKS**
- BM-1: ELEV: 785.69
SET MAG NAIL IN SOUTH SIDE OF POWER POLE LOCATED APPROX. TWENTY FEET NORTH OF CENTERLINE OF MILL ST. & APPROX TWENTY FEET EAST OF CENTERLINE OF BOLTWOOD STREET.
 - BM-2: ELEV: 790.05
SET MAG NAIL IN SOUTH SIDE OF POWER POLE LOCATED APPROX. TWENTY FEET NORTH OF CENTERLINE OF MILL ST. & APPROX NINETY FEET WEST OF CENTERLINE OF HANOVER ST.
 - BM-3: ELEV: 789.80
TOP OF NORTH EAST FLANG BOLT ON HYDRANT LOCATED APPROX. TWENTY FIVE FEET NORTH OF CENTERLINE OF MILL ST. AND APPROX. 8' FEET WEST OF CATCH BASIN IN MILL ST.
 - BM-4: ELEV: 794.54
SET MAG NAIL IN SOUTH SIDE OF POWER POLE LOCATED APPROX. FIFTEEN FEET NORTH FROM CENTERLINE OF MILL ST. & APPROX. 23' FEET EAST OF MH-2.

EX. SANITARY STRUCTURE INFORMATION

MH-A, 4' CONC. STRUCTURE RIM = 783.27' INV NE 10" PVC 779.12' INV W 10" PVC 779.02'	MH-C, 4' BRICK STRUCTURE RIM = 783.27' INV E 8' CLAY = 781.01' INV W 8' CLAY = 780.96' INV SW 4' METAL = 782.96'
MH-B, 2' BLOCK STRUCTURE RIM = 783.27' INV SW 10" PVC 779.17' INV E 10" CLAY 782.88'	MH-D, 4' CONC. STRUCTURE RIM = 789.18' INV E 8' CLAY 782.88' PLPE W = FULLY COVERED

PLANS PREPARED BY:

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www.arengineeringllc.com

DRAWN: eeg
CHECKED: SAO

STATE OF MICHIGAN
SPENCER O'DELL
ENGINEER
No. 6201309325
LICENSED PROFESSIONAL ENGINEER

SPENCER O'DELL, P.E.
No. 6201309325

No.	DATE	BY	ISSUED FOR:
0	07/23/2025	sao	SITE PLAN REVIEW
1	09/09/2025	sao	CITY REVISIONS
2			
3			
4			

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EXISTING CONDITIONS & DEMO PLAN
THORNAPPLE RIVER MILL
COPPER ROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

SHEET TITLE:
PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
23144001

DATE
09/09/2025

SHEET NUMBER
C1.0

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

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING

GENERAL NOTES

1. DIMENSIONS TAKE PRECEDENCE OVER SCALE. CONTRACTOR TO VERIFY ALL DIMENSIONS IN FIELD.
2. IF ANY ERRORS, DISCREPANCIES, OR OMISSIONS BECOME APPARENT, THESE SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT/ENGINEER PRIOR TO CONSTRUCTION OF ANYTHING AFFECTED SO THAT CLARIFICATION OR REDESIGN MAY OCCUR.
3. ALL CURB RADI AND DIMENSIONS ARE TO FACE OF CURB. CURB TO BE PROVIDED WHERE SHOWN AND INTEGRAL WITH SIDEWALK AT PAVING EDGE.
4. SLOPE GRADES UNIFORMLY BETWEEN ELEVATIONS SHOWN. NOMINAL GRADING. SLOPE SIDEWALKS AWAY FROM BUILDING AT 1/4" PER FOOT ON ENTRY WALK.

LEGEND

- ASPHALT PAVEMENT
(SEE DETAIL ON C5.0)
- CONCRETE SIDEWALK
(SEE DETAIL ON C5.0)
- HEAVY DUTY CONCRETE
(SEE DETAIL ON C5.0)
- MAINTENANCE EASEMENT AREA
- FLEXAMAT PERMANENT EROSION CONTROL
(SEE DETAIL THIS SHEET)
- PROPOSED BUILDING
- DECORATIVE STAMPED CONCRETE - STYLE TO BE DETERMINED BY DIXON ARCHITECTURE
- PROPOSED UTILITY EASEMENTS

BENCHMARKS

BM-1: ELEV: 785.69
SET MAG NAIL IN SOUTH SIDE OF POWER POLE LOCATED APPROX. TWENTY FEET NORTH OF CENTERLINE OF MILL ST. & APPROX TWENTY FEET EAST OF CENTERLINE OF BOLTWOOD STREET.

BM-2: ELEV: 790.05
SET MAG NAIL IN SOUTH SIDE OF POWER POLE LOCATED APPROX. TWENTY FEET NORTH OF CENTERLINE OF MILL ST. & APPROX NINETY FEET WEST OF CENTERLINE OF HANOVER ST.

BM-3: ELEV: 789.80
TOP OF NORTH EAST FLANG BOLT ON HYDRANT LOCATED APPROX. TWENTY FIVE FEET NORTH OF CENTERLINE OF MILL ST. AND APPROX. 8' ± FEET WEST OF CATCH BASIN IN MILL ST.

BM-4: ELEV: 794.54
SET MAG NAIL IN SOUTH SIDE OF POWER POLE LOCATED APPROX. FIFTEEN FEET NORTH FROM CENTERLINE OF MILL ST. & APPROX. 23' ± FEET EAST OF MH-2.

SITE DATA

1. PROPERTY INFORMATION:
PARCEL #S: 55-001-001-02
55-001-001-04

SITE AREA: 415,998 SF (9.55 AC)

OWNER: ROYAL COACH ACQUISITIONS, LLC
402 E MILL STREET
HASTINGS, MI 49058

DEVELOPER: COPPERROCK CONSTRUCTION
601 FIFTH STREET NW, SUITE 300
GRAND RAPIDS, MI 49504

2. ZONING:
PROPERTY CURRENTLY ZONED: PUD - PLANNED UNIT DEVELOPMENT
ABUTTING PROPERTY CURRENTLY ZONED:
NORTH: D-1 INDUSTRIAL DISTRICT
SOUTH: R-P - THORNAPPLE RIVER PROTECTION OVERLAY ZONE
EAST: R-1A - ONE FAMILY RESIDENTIAL DISTRICT
WEST: R-P - THORNAPPLE RIVER PROTECTION OVERLAY ZONE

PROPOSED LAND USE = MIXED USE
*PERMITTED USE IN PUD

3. SETBACKS
FRONT = 5'
SIDES = 15'
REAR = 15'

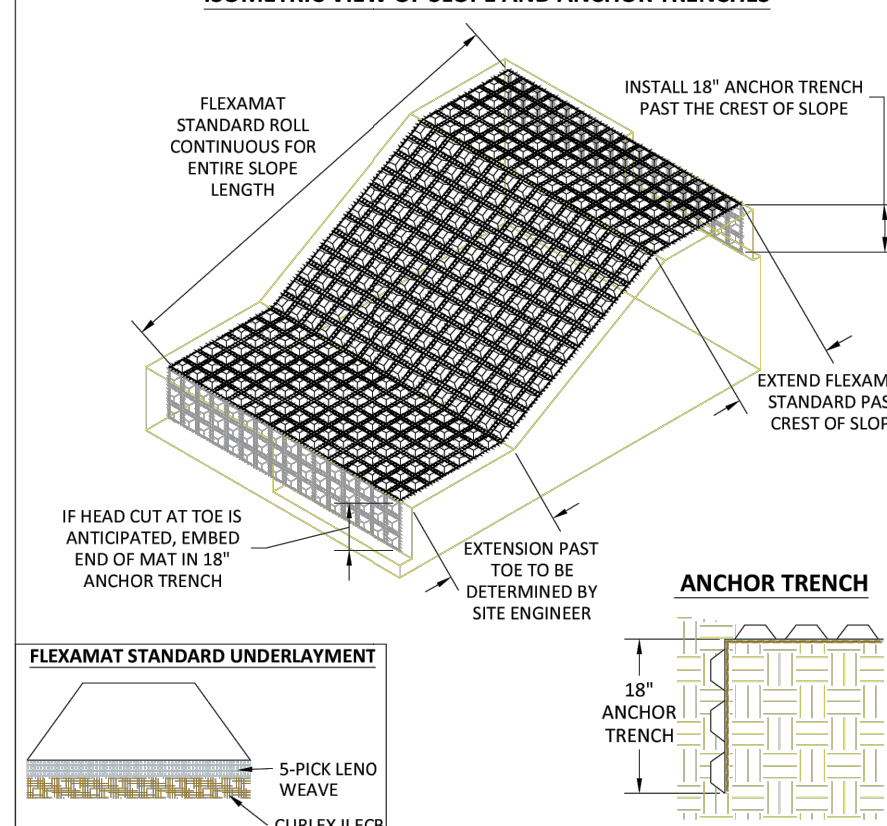
4. DENSITY
135 UNITS
NET DEVELOPABLE AREA
SITE - FLOODPLAIN = 5.75 ACRES
UNIT DENSITY = 23.4 UNITS/ACRE

SITE PLAN NOTES

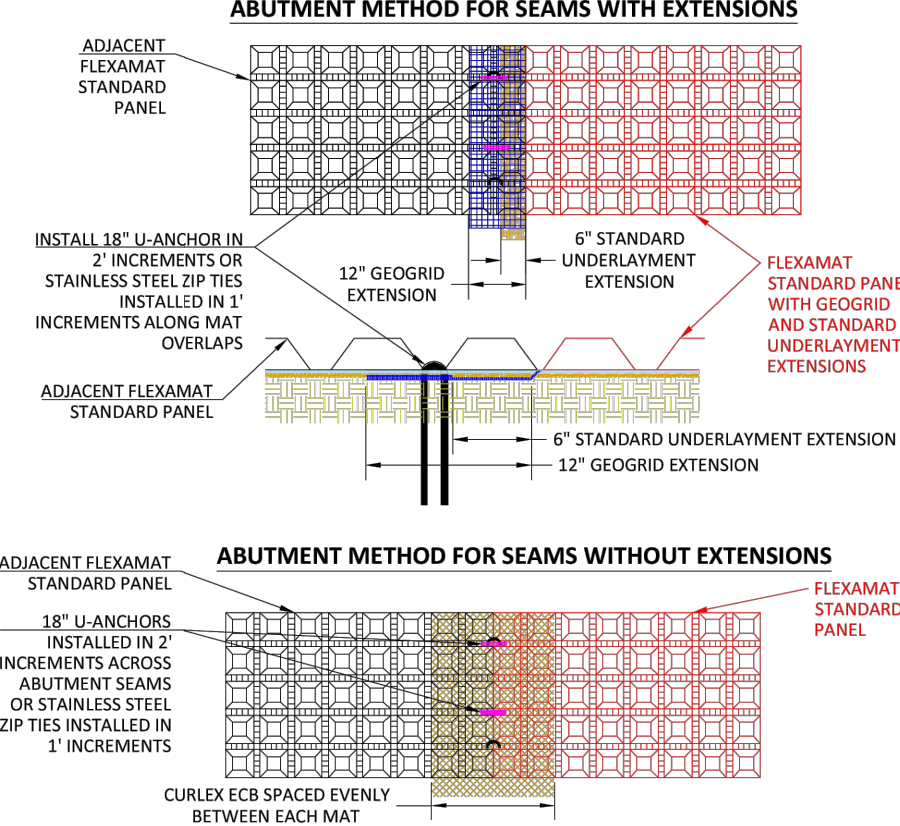
- A BITUMINOUS PAVEMENT (SEE DETAIL ON C5.0).
- B INTEGRAL CURB/WALK (SEE DETAIL ON C5.0).
- C SIDEWALK RAMP MAX 1":12" (SEE GRADING PLAN).
- D 6" BARRIER CURB (SEE DETAIL ON C5.0).
- E INTERNAL DOWNSPOUTS (TYP.).
- F 4" PAINTED PARKING LOT MARKINGS / STRIPING (TYP.).
- G PROPOSED 6' WIDE PUBLIC SIDEWALK (SEE DETAIL ON C5.0).
- H CONCRETE DUMPSTER PAD (SEE DETAIL ON C5.0) (DUMPSTER ENCLOSURE. COORDINATE WITH ARCHITECTURAL DRAWINGS).
- I ADA RAMP WITH DETECTABLE WARNING PLATE.
- J PROPOSED MDOT TYPE B GUARDRAIL (SEE DETAIL ON C5.0).
- K MDOT F2 CURB AND GUTTER (SEE DETAIL ON C5.0).
- L 12" FLAT CURB (SEE DETAIL ON C5.0).
- M CONCRETE SPILLWAY (SEE GRADING PLAN).
- N PVT MRKG, OVLY COLD PLASTIC, 6" CROSSWALK.
- O ADA SIGNS (SEE DETAIL ON C5.0).
- P CONCRETE WHEEL STOPS (TYP.).
- Q PROVIDE HAND RAILS IN ACCORDANCE WITH ADA STANDARDS - STYLE TO BE DETERMINED BY DIXON ARCHITECTURE.
- R AT GRADE WALK
- S CONCRETE STAIRS
- T RAISED DECK/WALKWAY (SEE ARCHITECTURAL PLANS)
- U FENCE - (COORDINATE WITH ARCHITECTURAL DRAWINGS)
- V MDOT F4 CURB AND GUTTER, COORDINATE WITH CITY STREET DEPARTMENT

5. OPEN SPACE
REQUIRED = 10% (0.95 ACRES)
PROVIDED = 36% (3.50 ACRES)
6. PARKING:
REQUIRED:
MULTI-FAMILY DWELLING UNITS - 1.5 PER EACH DWELLING UNIT, 1/3 OF WHICH SHALL BE WITH A GARAGE OR CARPORT
COMMERCIAL/RETAIL/OFFICE - 1 PER 200 SQ FT
- BUILDING A = 51 UNITS X 1.5 77 SPACES
BUILDING B = 54 UNITS X 1.5 81 SPACES
BUILDING C = 30 UNITS X 1.5 45 SPACES
COMMERCIAL = 11,200 SFT / 200
(NET AREA WITH MEZZANINE) + 56 SPACES
TOTAL REQUIRED SPACES = 259 SPACES
- PROVIDED = STANDARD 9' x 18' SPACES = 159
CARPORT SPACES = 94
BARRIER FREE SPACES = 14
TOTAL PROVIDED = 267
7. BUILDING:
THREE-STORY
MAXIMUM HEIGHT: N/A
SEE ARCH PLANS FOR BUILDING SIZES AND DETAILS
PROPOSED BUILDING COVERAGE: 16%
MAXIMUM BUILDING COVERAGE: N/A
8. LOT:
MINIMUM LOT SIZE: 2,500 SFT
MINIMUM LOT WIDTH: 35 FT
LOT SIZE: 415,998 SFT / 9.55 ACRES
LOT DIMENSIONS: IRREGULAR
9. LANDSCAPING:
SHALL BE IN ACCORDANCE WITH LANDSCAPING PLAN.
10. STORM WATER DETENTION REQUIRED:
STORM WATER MANAGEMENT SHALL BE IN ACCORDANCE WITH CITY AND COUNTY STORM WATER GUIDELINES.

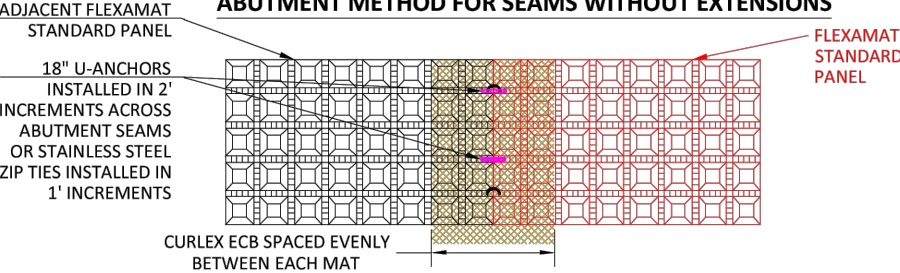
ISOMETRIC VIEW OF SLOPE AND ANCHOR TRENCHES



ABUTMENT METHOD FOR SEAMS WITH EXTENSIONS



ABUTMENT METHOD FOR SEAMS WITHOUT EXTENSIONS



FLEXAMAT STANDARD - SLOPE ARMORING

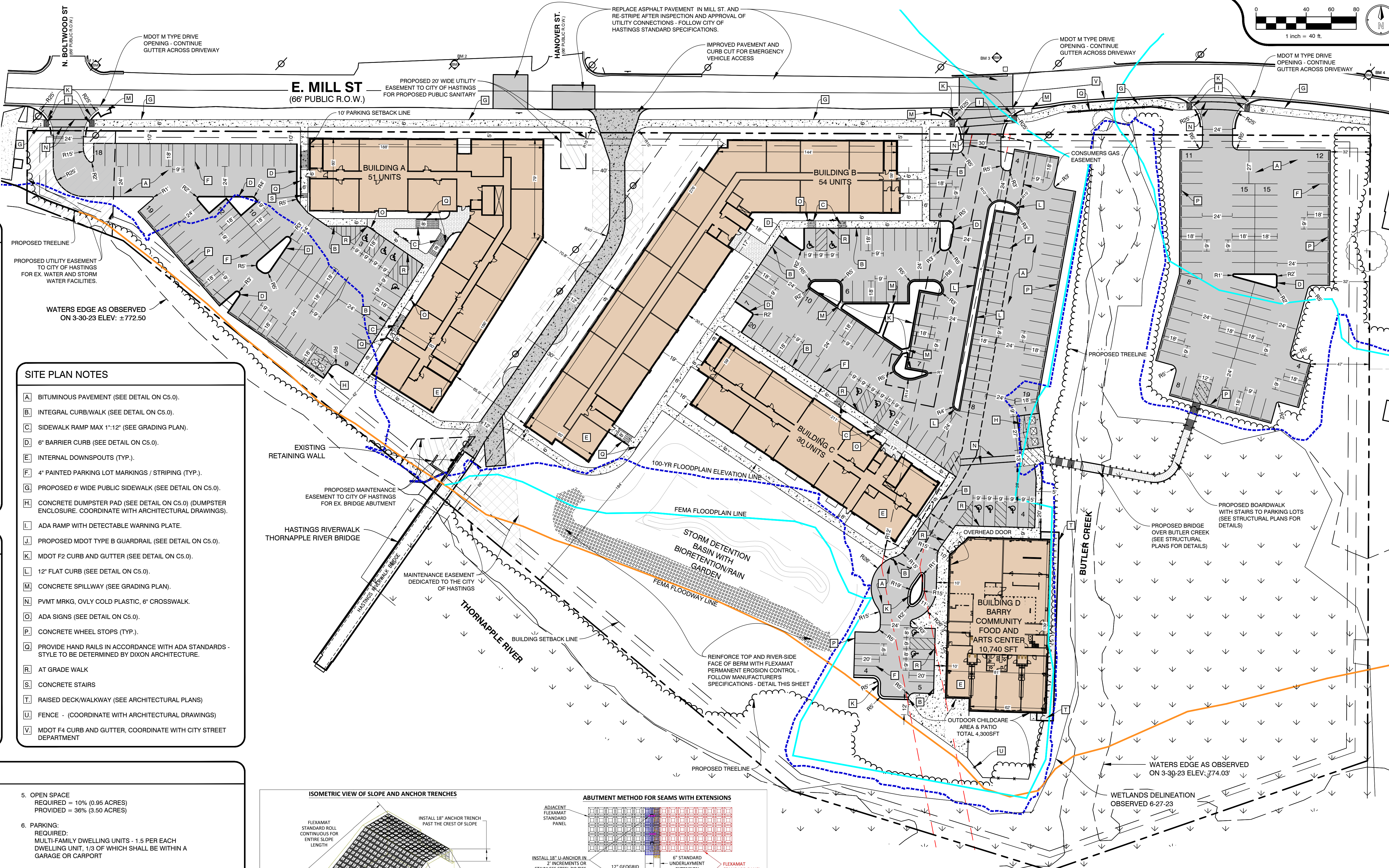
CONSTRUCTION NOTES:

1. AN ENGINEER OR MANUFACTURER'S REPRESENTATIVE SHALL BE ON SITE FOR THE START OF THE INSTALLATION.
2. ALL SUBGRADE SURFACES PREPARED FOR PLACEMENT OF MATS SHALL BE SMOOTH AND FREE OF ALL ROCKS, STICKS, ROOTS, OTHER PROTRUSIONS, OR DEBRIS OF ANY KIND.
3. PRIOR TO FLEXAMAT STANDARD INSTALLATION SEED AND FERTILIZE SUBGRADE WITH SITE SPECIFIC SEED MIX IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS.
4. INSTALL FLEXAMAT STANDARD ROLLS THAT ARE CONTINUOUS FOR ENTIRE SLOPE LENGTH. FOR SLOPES LONGER THAN 16', USE MATS WITH EXTENSIONS CUT TO THE LENGTH OF THE SLOPE. INSTALL MATS TO THAT THE MATTING EXTENDS PAST THE CREST OF SLOPE AND INTO AN 18" ANCHOR TRENCH.
- 4.1. FOR ARMORED SLOPE LENGTHS 16' OR LESS, INSTALL CURLEX ECB EQUALLY UNDER ADJACENT MATS. SECURE SEAM WITH #3 REBAR 18" U-ANCHORS IN 2' INCREMENTS THE LENGTH OF THE ABUTMENT.
- 4.2. ARMORED SLOPE LENGTHS LONGER THAN 16', INSTALL NEXT MAT OVER EXTENSIONS.
5. INSTALL SUBSEQUENT MATS OVER THE EXTENSION AND STANDARD UNDERLAYMENT EXTENSION OF THE PREVIOUSLY INSTALLED MAT. ENSURE THE GEOGRID AND STANDARD UNDERLAYMENT EXTENSIONS ARE LAYING FLAT ON THE SUBGRADE BEFORE INSTALLING ADJACENT MAT OVER THE EXTENSIONS.
6. INSTALL #3 REBAR 18" U-ANCHORS IN 2' INCREMENTS ACROSS THE GEOGRID AND STANDARD UNDERLAYMENT EXTENSION. INSTALL ANCHORS PERPENDICULAR TO THE SLOPE DIRECTLY BEHIND FIRST ROW OF BLOCKS ON THE ADJACENT MAT.
7. AT THE END OF THE ARMORED SLOPE, IF HEAD CUT IS ANTICIPATED, EMBED THE MAT 18" IN A TERMINATION TRENCH. FILL AND COMPACT TERMINATION TRENCH WITH SUITABLE FILL.

MOTZ ENTERPRISES, INC.
Flexamat
(513) 772-6689
Info@Flexamat.com
Flexamat.com

Flexamat
PERMANENT EROSION CONTROL

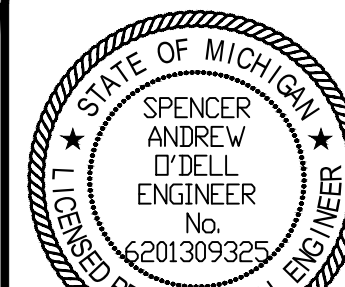
REV-1



PLANS PREPARED BY:

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CHECKED: SAO



SPENCER O'DELL, P.E.
No. 6201309325

No.	DATE	BY	ISSUED FOR:
0	07/23/2025	sao	SITE PLAN REVIEW
1	09/09/2025	sao	CITY REVISIONS
2			
3			
4			

SITE LAYOUT
THORNAPPLE RIVER MILL
COPPERROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

SHEET TITLE:
PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
23144001

DATE
09/09/2025

SHEET NUMBER

C2.0



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETTED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING

UTILITY PLAN NOTES

- 4" DIP DOMESTIC WATER SERVICE. COORDINATE CONNECTION WITH PLUMBING PLANS.
- 6" DIP FIRE SERVICE. COORDINATE CONNECTION WITH PLUMBING PLANS.
- LIVE TAP EXISTING WATER MAIN, WITH TAPPING SLEEVE AND VALVE. COORDINATE WITH CITY OF HASTINGS - 269-645-2468
- SANITARY SERVICE. COORDINATE CONNECTION WITH PLUMBING PLANS.
- CONNECT TO EXISTING SEWER MAIN WITH WYE. COORDINATE WITH CITY OF HASTINGS - 269-645-2468
- ELECTRIC SERVICE.
- TELEPHONE SERVICE.
- GAS SERVICE.
- FLARED END SECTION WITH RIP RAP AND REFUSE SCREEN. MATCH PIPE SIZE (SEE DETAIL ON C3.1)
- TWO-WAY SANITARY YARD CLEANOUT (SEE DETAIL SHEET).
- DOWNSPOUT TO CONNECT TO STORM HEADER (TYP.).
- SLOW-RELEASE / OVERFLOW STRUCTURE. (SEE DETAIL ON C3.1).
- SANITARY SEWER CLEANOUT
- SANITARY MONITORING MANHOLE
- 160 LF - 8" WIDE BIORETENTION/RAIN GARDEN WITH BOTTOM DRAIN (SEE CITY DETAIL THIS SHEET).
- WATER-TIGHT PVC SLEEVE 4" LARGER DIA. THAN UTILITY LINE - CENTER UTILITY WITH SPACER - EXTEND SLEEVE 1' OUTSIDE FOUNDATION WALL.
- 2" TYPE K COPPER DOMESTIC WATER SERVICE. COORDINATE CONNECTION WITH PLUMBING PLANS.
- 4" DIP FIRE SERVICE. COORDINATE CONNECTION WITH PLUMBING PLANS.
- STORM SEWER CLEANOUT.

GENERAL NOTES

- ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
- ELECTRICAL WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED ELECTRICIAN ACCORDING TO THE N.E.C. NATIONAL ELECTRICAL CODE AS MODIFIED BY THE STATE OF MICHIGAN. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A COMPLETE WORKING SYSTEM.
- ALL PLUMBING WORK SHALL BE PERFORMED BY A STATE OF MICHIGAN LICENSED PLUMBER ACCORDING TO THE INTERNATIONAL PLUMBING CODE AS MODIFIED BY THE STATE OF MICHIGAN AND LOCAL HEALTH DEPARTMENT. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A FULL WORKING SYSTEM.
- ALL MECHANICAL WORK SHALL BE PERFORMED ACCORDING TO THE INTERNATIONAL MECHANICAL CODE AS MODIFIED BY THE STATE OF MICHIGAN AND THE MICHIGAN ENERGY CODE. FURNISH AND INSTALL ALL MATERIALS AND LABOR TO PROVIDE A FULL WORKING SYSTEM.
- ALL WORK SHALL CONFORM TO THE MICHIGAN HANDICAPPED ACCESSIBILITY CODE AND THE AMERICANS WITH DISABILITIES ACT.
- WATER SERVICE PRESSURE TESTING AND CHLORINATION SHALL BE PER EGLE AND THE CITY OF HASTINGS REQUIREMENTS.
- SANITARY SEWER INSTALLATION AND TESTING MUST MEET THE REQUIREMENTS OF THE CITY OF HASTINGS AND EGLE.
- ALL REGULATORY SIGNAGE (IF SPECIFIED) SHALL BE PER THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
- THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK.
- CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
- ANY SANITARY SEWER, SANITARY SEWER SERVICE LEADS, WATER MAIN, WATER SERVICES, OR STORM SEWER WHICH IS DAMAGED BY THE CONTRACTOR DURING HIS OPERATIONS SHALL BE REPAIRED TO THE OWNERS SATISFACTION, AND AT THE CONTRACTORS EXPENSE. IF ANY ELEMENTS OF THE SANITARY SEWER SYSTEM ARE DAMAGED AND NEED REPAIRED, IT MUST MEET THE CITY OF HASTINGS STANDARD CONSTRUCTION SPECIFICATIONS DATED JULY 2016.
- THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR THE ELECTRICAL TRANSFORMER PAD PER THE UTILITY COMPANY SPECIFICATIONS.
- THE TELEPHONE UTILITY COMPANY SHALL PROVIDE UNDERGROUND TELEPHONE TO THE BUILDING AT THE OWNERS EXPENSE.
- REFER TO ELECTRICAL DRAWINGS FOR UNDERGROUND ELECTRICAL REQUIREMENTS FOR SITE LIGHTING & SITE DETAILS SHEETS FOR THE FIXTURE AND POLE SPECIFICATIONS.
- DESIGN, INSTALLATION AND SPECIFICATION FOR IMPROVEMENTS RELATED TO GAS, TELEPHONE, ELECTRIC AND CABLE TELEVISION SERVICES SHALL BE COORDINATED BY THE CONTRACTOR.
- CONTRACTOR SHALL COORDINATE TELEPHONE, ELECTRIC, AND CABLE TELEVISION CONDUITS WITH THE APPROPRIATE UTILITY PRIOR TO PAVEMENT INSTALLATION.
- CONTRACTOR IS TO UNCOVER AND CONFIRM ALL TAP LOCATIONS. LOCATION DISCREPANCIES ARE TO BE BROUGHT TO THE ENGINEERS ATTENTION FOR RESOLUTION.
- THE CONTRACTOR IS TO PROVIDE THE WATER SERVICE PIPING FROM THE BUILDING TO THE EXISTING MAIN. THE CONTRACTOR SHALL MAKE THE CONNECTION TO THE SHUT OFF VALVE. THE CONTRACTOR SHALL COORDINATE SERVICES WITH THE CITY OF HASTINGS.
- CONTRACTOR/OWNER SHALL OBTAIN UTILITY CONNECTION PERMITS AND SETTLE APPLICABLE UTILITY ASSESSMENTS PRIOR TO EXTENSION OF PUBLIC UTILITIES ONSITE.
- MANHOLE AND CATCH BASIN STRUCTURES SHALL BE PRECAST AND HAVE A MAXIMUM OF 2 ADJUSTING RINGS FOR FINISH GRADE ADJUSTMENT. STORM STRUCTURES MUST ALL HAVE A SUMP OF TWO FEET.
- ALL WATER MAIN TO HAVE A BURIAL DEPTH AS REQUIRED BY EGLE FOR THE SPECIFIC REGION OF WORK IN CITY OF HASTINGS.
- DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
- THE CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT PREPARED BY SME.
- DRIVEWAY LAYOUT AND CONNECTION TO E MILLS STREET SHALL COMPLY WITH ALL ASPECTS OF THE CITY OF HASTINGS DRIVE PERMIT.

SANITARY STRUCTURES

SAN-1, 4" DIA. EJIW 1020 SOLID RIM = 785.68 8" N 8" SDR 35 SE	781.53 781.53
SAN-2, 5" DIA. EJIW 1020 SOLID RIM = 786.11 8" N 8" S 8" SDR 35 W	781.26 781.35 781.35
SAN-3, 4" DIA. EJIW 1020 SOLID RIM = 788.12 8" EXISTING W 8" EXISTING E 8" S	781.05 781.05 781.05
SAN-5, 5" DIA. EJIW 1020 SOLID RIM = 787.82 6" PVC I.E. 782.82' S 1.25" FORCEMAIN I.E. 783.82' S	
SAN-6, 3.5" DIA. LIFT STATION LIBERTY PUMPS D3696-SERIES DUPLEX GRINDER PUMP VAULT OR APPROVED EQUAL RIM = 784.87 1.25" FORCEMAIN I.E. 782.50' W 6" PVC I.E. 782.18' S	

EX. STORM STRUCTURES

EX MH-1, 4" BRICK STRUCTURE RIM = 792.05 INV N 12" CPP (INV. = 786.10) INV W 18" CONC = 785.15 INV NE 12" CPP = 787.20' SUMP = 785.15'	EX CB-7, 2' CONC. STRUCTURE RIM = 787.88' INV N 12" CONC = 782.93' INV SW 10" PVC 779.17' SUMP = 781.68'
EX MH-2, 2' STONE STRUCTURE RIM = 792.35' INV S 12" CLAY = 788.60' INV SE 10" CLAY = 788.85' INV E 12" CLAY = 790.40' SUMP = 788.10'	EX CB-8, 1.5' SQUARE BRICK STRUCTURE RIM = 783.15' STRUCTURE COLLAPSED AND FULL
EX CB-3, 2' BLOCK STRUCTURE RIM = 783.29' INV N 10" CLAY = 781.29' INV SE 8" CLAY = 781.24' SUMP = 780.54'	EX CB-10, 1.5' SQUARE BRICK STRUCTURE RIM = 787.41' INV E 10" CLAY = 780.66' INV W 10" CLAY = 780.56' SUMP = 780.56'
EX CB-4, 2' BLOCK STRUCTURE RIM = 783.15' INV SES 8" CLAY = 781.45' SUMP = 781.15'	EX CB-11, 1.5' SQUARE CONC. STRUCTURE RIM = 786.62' INV E 6" CLAY = 785.32' SUMP = 784.72'
EX MH-5, 2' BLOCK STRUCTURE RIM = 783.15' INV NNW 8" CLAY = 780.20' INV N 8" CLAY = 780.15' INV NW 8" CLAY = 780.35' INV S 12" CLAY = 779.95' INV E 8" CLAY = 781.45' SUMP = 779.90	EX CB-12, 1.5' SQUARE BRICK STRUCTURE RIM = 787.46' (BROKEN STRUCTURE) INV E 10" CLAY = 781.11' INV W 10" CLAY = 781.06' SUMP = 781.06'
EX CB-6, 2' BLOCK STRUCTURE RIM = 787.65' INV N 10" CLAY = 782.00' INV S 8" CLAY = 782.90' SUMP = 781.90'	

EX. SANITARY STRUCTURES

MH-A, 4" CONC. STRUCTURE RIM = 783.32' INV NE 10" PVC 779.12' INV W 10" PVC 779.02'	MH-C, 4" BRICK STRUCTURE RIM = 787.96' INV E 8" CLAY = 781.01' INV W 8" CLAY = 780.96' INV SW 4" METAL = 782.96'
MH-B, 2' BLOCK STRUCTURE RIM = 783.27' INV SW 10" PVC 779.17' INV E 10" CLAY 779.27'	MH-D, 4" CONC. STRUCTURE RIM = 789.18' INV E 8" CLAY 782.88' PLPE W = FULLY COVERED

STORM STRUCTURES

CB-1, 2.0' DIA. EJIW 5105 RIM = 783.00 12" N12 HDPE SE	780.51	MH-6, 4.0' DIA. EJIW 1020 SOLID RIM = 786.42 15" N12 HDPE W 18" N12 HDPE SE	779.15 778.90	CB-11, 4.0' DIA. EJIW 5105 RIM = 784.62 12" N12 HDPE NW 15" N12 HDPE SW	781.14 781.14
CB-2, 4.0' DIA. EJIW 5105 RIM = 783.62 12" N12 HDPE NW	780.30	MH-7, 4.0' DIA. EJIW 1020 SOLID RIM = 786.21 12" N12 HDPE SW 8" N12 HDPE NE	780.56 780.56	CB-12, 4.0' DIA. EJIW 5105 RIM = 785.21 15" N12 HDPE NE 12" N12 HDPE W	780.44 781.17 780.44
CB-3, 4.0' DIA. EJIW 5105 RIM = 783.67 12" N12 HDPE NW	780.08	YD-8, 2.0' DIA. EJIW 1020 BEE HIVE RIM = 784.77 8" N12 HDPE SE	781.03	CB-13, 4.0' DIA. EJIW 5105 RIM = 785.56 12" N12 HDPE S	785.14
CB-4, 4.0' DIA. EJIW 5105 RIM = 783.58 12" N12 HDPE NW	779.89	CB-9, 2.0' DIA. EJIW 5105 RIM = 784.87 12" N12 HDPE SE	782.12	CB-14, 4.0' DIA. EJIW 5105 RIM = 787.02 12" N12 HDPE N	784.20 784.20
MH-5, 4.0' DIA. EJIW 1020 SOLID RIM = 785.19 15" N12 HDPE NW 15" N12 HDPE E	779.29 779.29	CB-10, 4.0' DIA. EJIW 5105 RIM = 784.83 12" N12 HDPE SE	781.96	MH-15, 4.0' DIA. TREATMENT SEE C3.1 RIM = 787.19 12" N12 HDPE W	784.17 784.17
OS-16, 4.0' DIA. EJIW 1020 SOLID RIM = 787.46 12" N12 HDPE W 12" N12 HDPE N	780.46 780.46	MH-17, 6.0' DIA. TREATMENT SEE C3.1 RIM = 784.16 18" N12 HDPE NW 18" N12 HDPE SE	778.80 778.80	OS-19, 4.0' DIA. EJIW 1020 BEE HIVE RIM = 788.56 12" N12 HDPE SW 4" N12 HDPE N	774.55 774.55
YD-22, 2.0' DIA. EJIW 1020 BEE HIVE RIM = 784.74 8" N12 HDPE SW	781.07	CB-20, 4.0' DIA. EJIW 5105 RIM = 784.50 12" N12 HDPE NW 18" N12 HDPE SE	778.76 778.76	YD-21, 2.0' DIA. EJIW 1020 BEE HIVE RIM = 784.55 12" N12 HDPE S	781.80
CB-23, 4.0' DIA. EJIW 5105 RIM = 784.42 12" N12 HDPE N	781.42	MH-25, 6.0' DIA. TREATMENT SEE C3.1 RIM = 784.30 15" N12 HDPE E 15" N12 HDPE W	780.36 780.36	MH-26, 4.0' DIA. EJIW 1020 SOLID RIM = 783.52 8" N12 HDPE NW 8" N12 HDPE S	781.47 781.47
YD-31, 1.5' DIA. ADS NYLOPLAST RIM = 786.74 12" N12 HDPE W 12" N12 HDPE S	780.07 780.07	YD-32, 1.5' DIA. ADS NYLOPLAST RIM = 786.73 12" N12 HDPE N 12" N12 HDPE SW	779.82 779.82	YD-33, 1.5' DIA. ADS NYLOPLAST RIM = 786.61 12" N12 HDPE E 12" N12 HDPE W	780.64 780.64

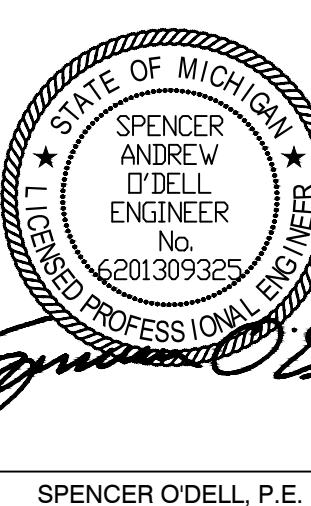


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PLANS PREPARED BY:



DRAWN: eeg
CHECKED: SAO

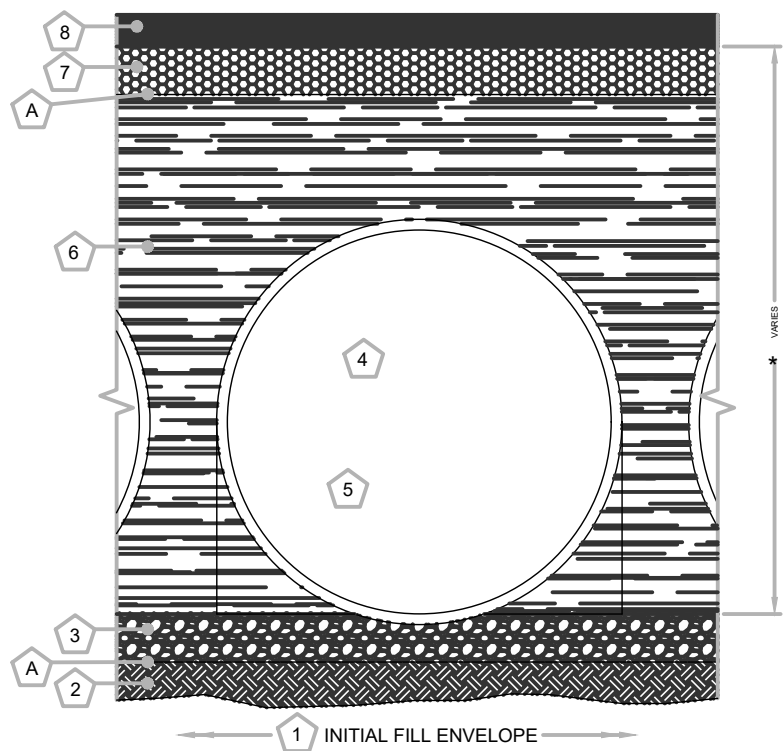


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UTILITY PLAN
THORNAPPLE RIVER MILL
COPPER ROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

JOB NUMBER
23144001
DATE
09/09/2025

SHEET NUMBER
C3.0



- 1 MINIMUM WIDTH DEPENDS ON SITE CONDITIONS AND ENGINEERING JUDGEMENT
- 2 FOUNDATION/BEDDING PREPARATION
- 3 PRIOR TO PLACING THE BEDDING, THE FOUNDATION MUST BE CONSTRUCTED TO A UNIFORM AND STABLE GRADE. IN THE EVENT THAT UNSUITABLE FOUNDATION MATERIALS ARE ENCOUNTERED DURING EXCAVATION, THEY SHALL BE REMOVED AND BROUGHT BACK TO THE GRADE WITH A FILL MATERIAL AS APPROVED BY THE ENGINEER.
- 4 HAUNCH ZONE MATERIAL SHALL BE PLACED AND UNIFORMLY COMPACTED WITHOUT SOFT SPOTS.

BACKFILL

WHEN PLACING THE FIRST LIFTS OF BACKFILL IT IS IMPORTANT TO MAKE SURE THAT THE BACKFILL IS PROPERLY COMPACTED UNDER AND AROUND THE PIPE HAUNCHES. BACKFILL SHALL BE PLACED SUCH THAT THERE IS NO MORE THAN A TWO (2) INCH DIFFERENTIAL BETWEEN ANY OF THE PIPES AT ANY TIME DURING THE BACKFILL PROCESS. THE BACKFILL SHALL BE ADVANCED ALONG THE LENGTH OF THE DETENTION SYSTEM AT THE SAME RATE TO AVOID DIFFERENTIAL LOADING ON THE PIPE.

OTHER ALTERNATE BACKFILL MATERIAL MAY BE ALLOWED DEPENDING ON SITE SPECIFIC CONDITIONS, AS APPROVED BY SITE ENGINEER.

STORAGE SUMMARY

- STORAGE VOLUME REQUIRED = 6,189 CF
- PIPE STORAGE VOLUME = 6,224 CF
- BACKFILL STORAGE VOLUME = 0 CF
- TOTAL STORAGE PROVIDED = 6,268 CF

PIPE DETAILS

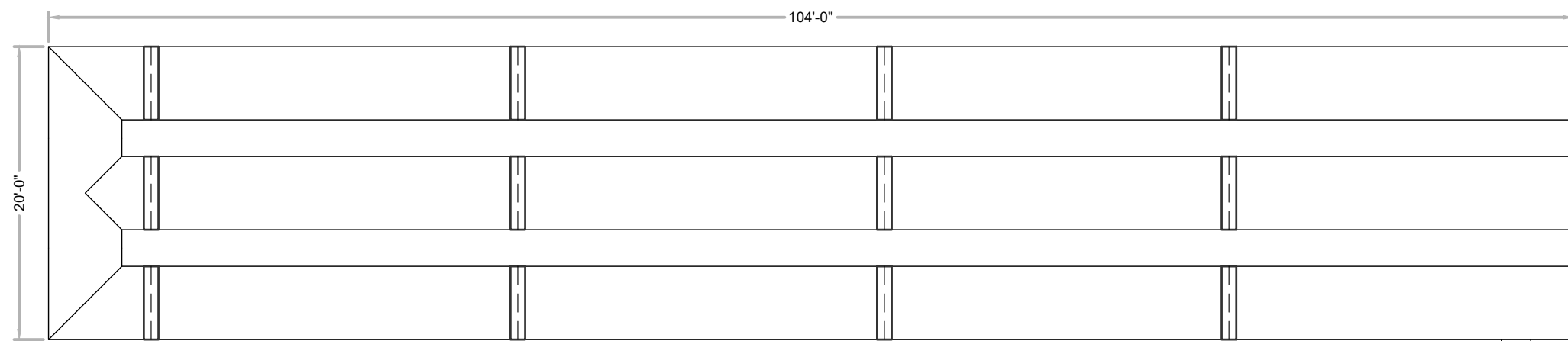
- DIAMETER = 60"
- CORRUGATION = 5x1
- GAGE = 16
- COATING = ALT2
- WALL TYPE = SOLID
- BARREL SPACING = 30"

BACKFILL DETAILS

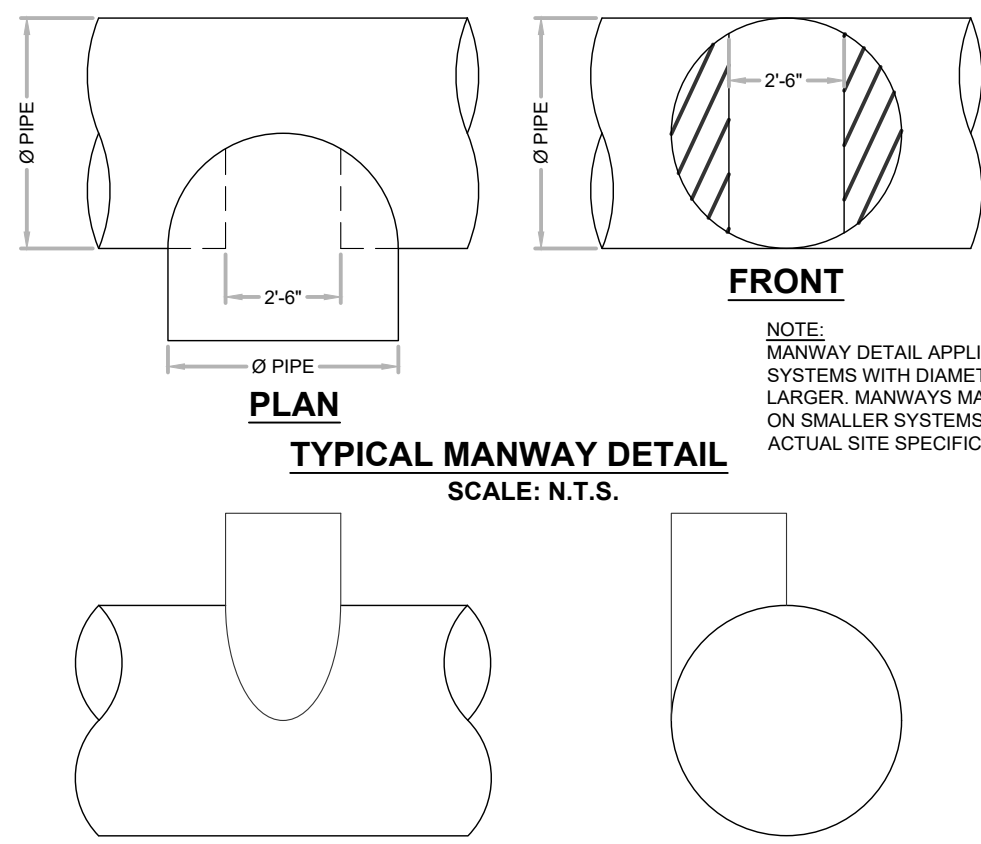
- WIDTH AT ENDS = 12"
- ABOVE PIPE = 0"
- WIDTH AT SIDES = 12"
- BELOW PIPE = 0"

NOTES

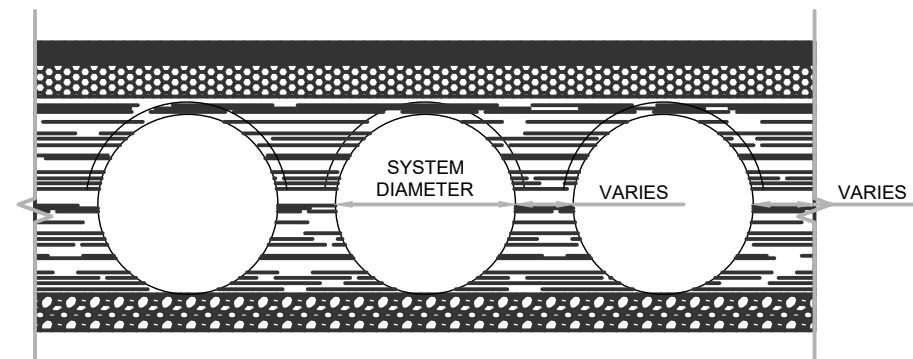
- ALL RISER AND STUB DIMENSIONS ARE TO CENTERLINE. ALL ELEVATIONS, DIMENSIONS, AND LOCATIONS OF RISERS AND INLETS, SHALL BE VERIFIED BY THE ENGINEER OF RECORD PRIOR TO RELEASING FOR FABRICATION.
- ALL FITTINGS AND REINFORCEMENT COMPLY WITH ASTM A998.
- ALL RISERS AND STUBS ARE 24" x 24" CORRUGATION AND 16 GAGE UNLESS OTHERWISE NOTED.
- RISERS TO BE FIELD TRIMMED TO GRADE.
- QUANTITY OF PIPE SHOWN DOES NOT PROVIDE EXTRA PIPE FOR CONNECTING THE SYSTEM TO EXISTING PIPE OR DRAINAGE STRUCTURES. OUR SYSTEM AS DETAILED PROVIDES NOMINAL INLET AND/OR OUTLET PIPE STUB FOR CONNECTION TO EXISTING DRAINAGE FACILITIES. IF ADDITIONAL PIPE IS NEEDED IT IS THE RESPONSIBILITY OF THE CONTRACTOR.
- BAND TYPE TO BE DETERMINED UPON FINAL DESIGN.
- THE PROJECT SUMMARY IS REFLECTIVE OF THE DYODS DESIGN. QUANTITIES ARE APPROX. AND SHOULD BE VERIFIED UPON FINAL DESIGN AND APPROVAL. FOR EXAMPLE, TOTAL EXCAVATION DOES NOT CONSIDER ALL VARIABLES SUCH AS SHORING AND ONLY ACCOUNTS FOR MATERIAL WITHIN THE ESTIMATED EXCAVATION FOOTPRINT.
- THESE DRAWINGS ARE FOR CONCEPTUAL PURPOSES AND DO NOT REFLECT ANY LOCAL PREFERENCES OR REGULATIONS. PLEASE CONTACT YOUR LOCAL CONTECH REP FOR MODIFICATIONS.



ASSEMBLY
SCALE: 1" = 10'



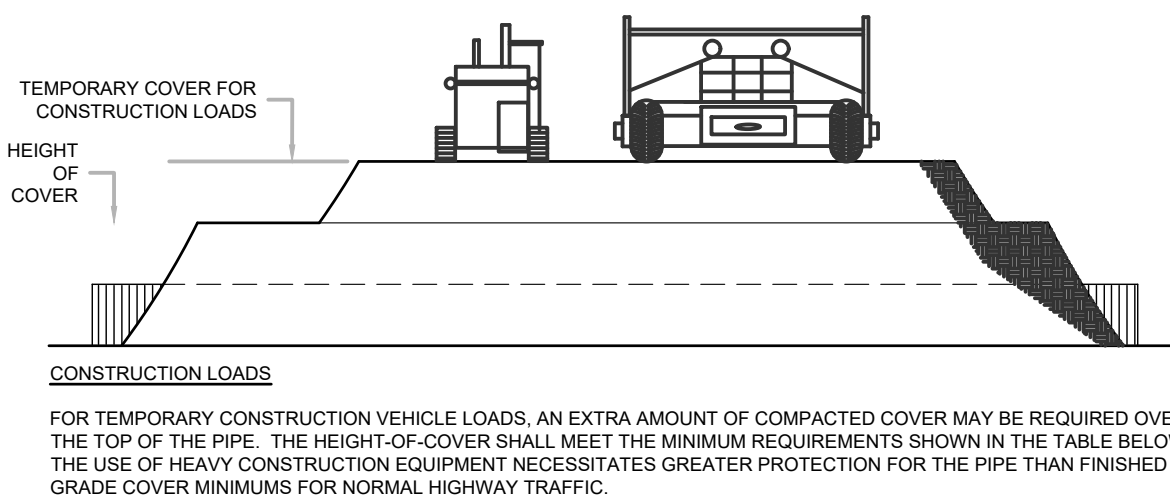
ELEVATION
TYPICAL RISER DETAIL
SCALE: N.T.S.



TYPICAL SECTION VIEW
LINER OVER ROWS
SCALE: N.T.S.

NOTE: IF SALTING AGENTS FOR SNOW AND ICE REMOVAL ARE USED ON OR NEAR THE PROJECT, AN HDPE MEMBRANE LINER IS RECOMMENDED WITH THE SYSTEM. THE IMPERMEABLE LINER IS INTENDED TO HELP PROTECT THE SYSTEM FROM THE POTENTIAL ADVERSE EFFECTS THAT MAY RESULT FROM A CHANGE IN THE SURROUNDING ENVIRONMENT OVER A PERIOD OF TIME. PLEASE REFER TO THE CORRUGATED METAL PIPE DETENTION DESIGN GUIDE FOR ADDITIONAL INFORMATION.

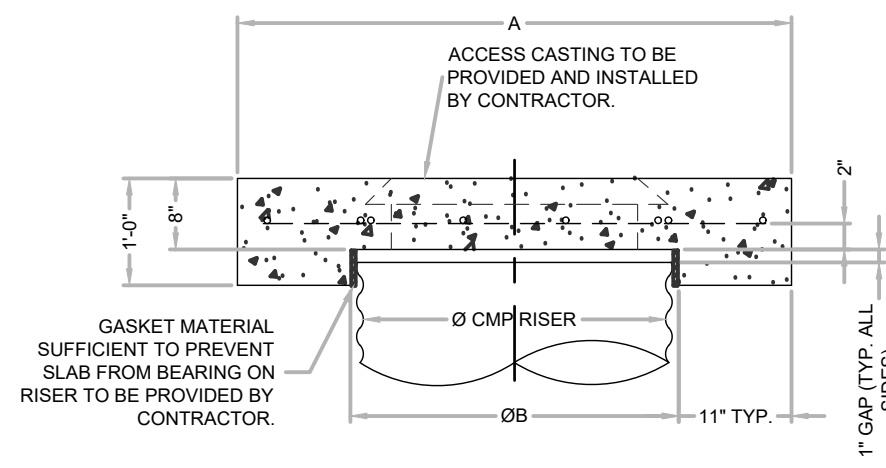
NOTE:
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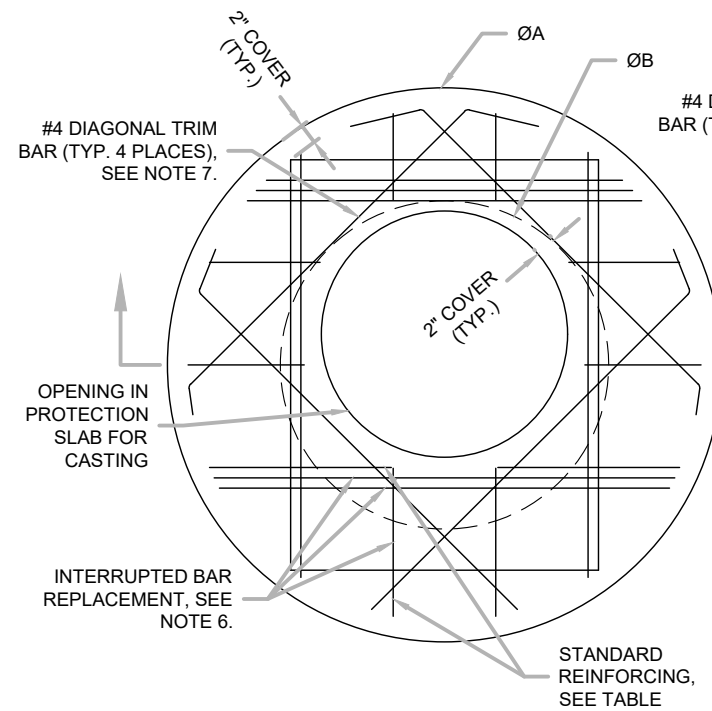
PIPE SPAN, INCHES	AXLE LOADS (kips)			
	18-50	50-75	75-110	110-150
	MINIMUM COVER (FT)			
12-42	2.0	2.5	3.0	3.0
48-72	3.0	3.0	3.5	4.0
78-120	3.0	3.5	4.0	4.0
126-144	3.5	4.0	4.5	4.5

*MINIMUM COVER MAY VARY, DEPENDING ON LOCAL CONDITIONS. THE CONTRACTOR MUST PROVIDE THE ADDITIONAL COVER REQUIRED TO AVOID DAMAGE TO THE PIPE. MINIMUM COVER IS MEASURED FROM THE TOP OF THE PIPE TO THE TOP OF THE MAINTAINED CONSTRUCTION ROADWAY SURFACE.

CONSTRUCTION LOADING DIAGRAM
SCALE: N.T.S.



SECTION VIEW



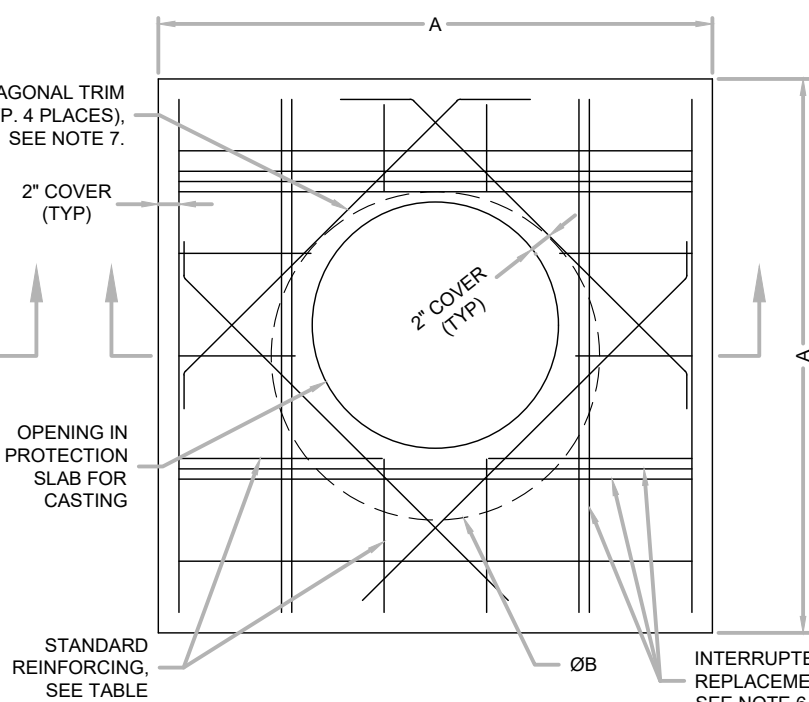
ROUND OPTION PLAN VIEW

NOTES:

1. DESIGN IN ACCORDANCE WITH AASHTO, 17TH EDITION.
2. DESIGN LOAD HS25.
3. EARTH COVER = 1' MAX.
4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.
6. PROVIDE ADDITIONAL REINFORCING AROUND OPENINGS EQUAL TO THE BARS INTERRUPTED, HALF EACH SIDE. ADDITIONAL BARS TO BE IN THE SAME PLANE.

REINFORCING TABLE				
Ø CMP RISER	A	Ø B	REINFORCING	**BEARING PRESSURE (PSF)
24"	Ø 4' 4"x4'	26"	#5 @ 12" OCEW #5 @ 12" OCEW	2,410 1,780
30"	Ø 4'-6" 4'-6" X 4'-6"	32"	#5 @ 12" OCEW #5 @ 12" OCEW	2,120 1,530
36"	Ø 5' 5' 5' X 5'	38"	#5 @ 10" OCEW #5 @ 10" OCEW	1,890 1,350
42"	Ø 5'-6" 5'-6" X 5'-6"	44"	#5 @ 10" OCEW #5 @ 9" OCEW	1,720 1,210
48"	Ø 6' 6' 6' X 6'	50"	#5 @ 9" OCEW #5 @ 8" OCEW	1,600 1,100

** ASSUMED SOIL BEARING CAPACITY



SQUARE OPTION PLAN VIEW

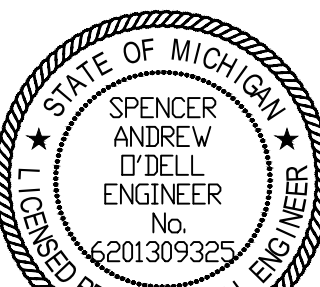
7. TRIM OPENING WITH DIAGONAL #4 BARS. EXTEND BARS A MINIMUM OF 12" BEYOND OPENING. BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.
8. PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.
9. DETAIL DESIGN BY DELTA ENGINEERING, BINGHAMTON, NY.

MANHOLE CAP DETAIL
SCALE: N.T.S.

PLANS PREPARED BY:



DRAWN: eeg
CHECKED: SAO



SPENCER O'DELL, P.E.
No. 6201309325

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UNDERGROUND STORM DETAILS

THORNAPPLE RIVER MILL

COPPER ROCK

420 E. MILL STREET

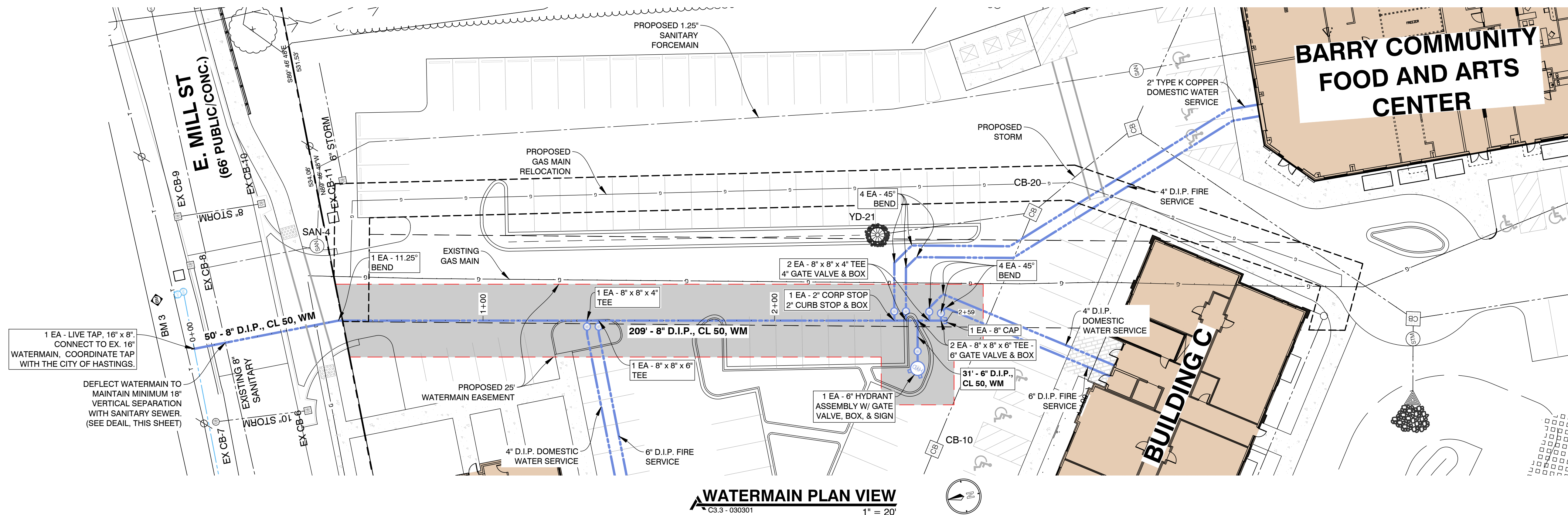
SECTION 07, T03N, R08W

SHEET TITLE:
PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
23144001

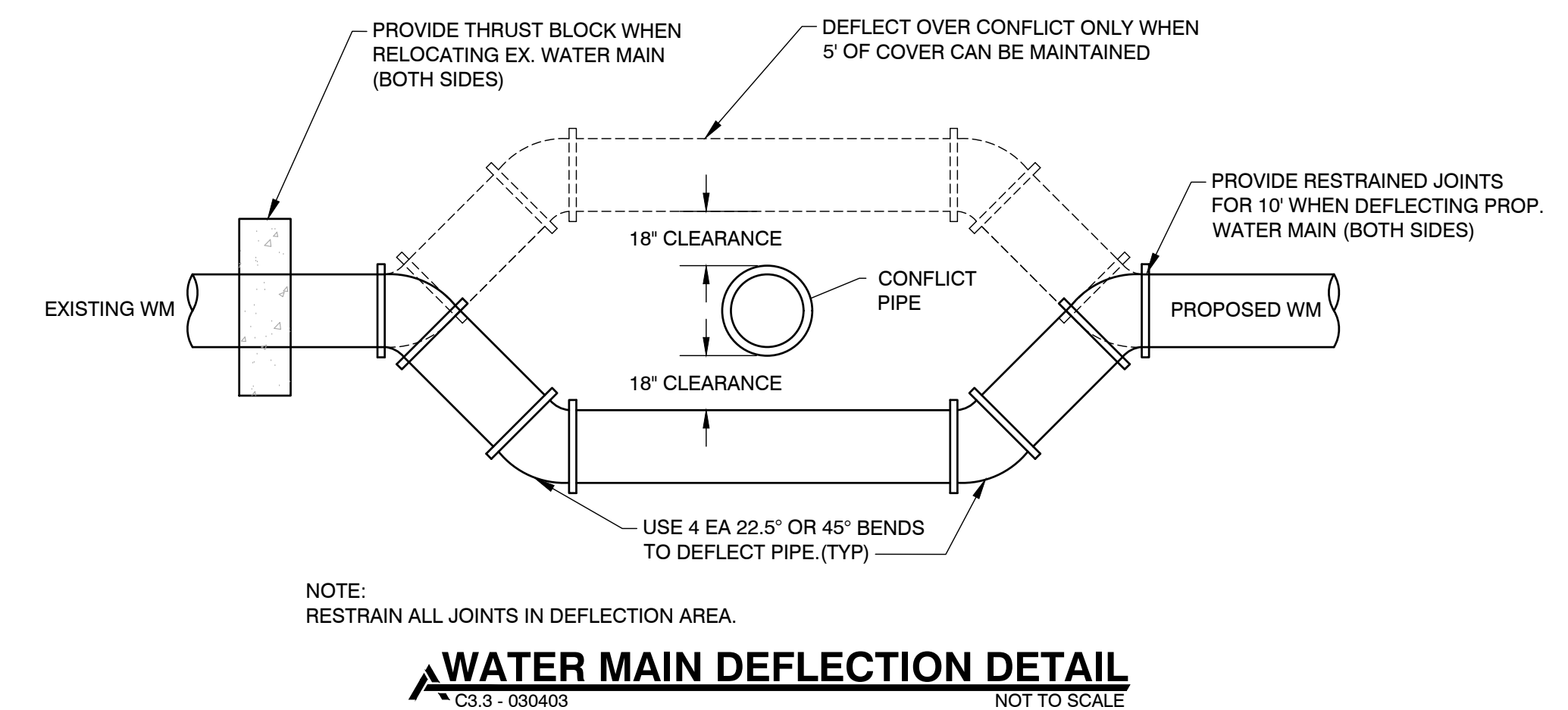
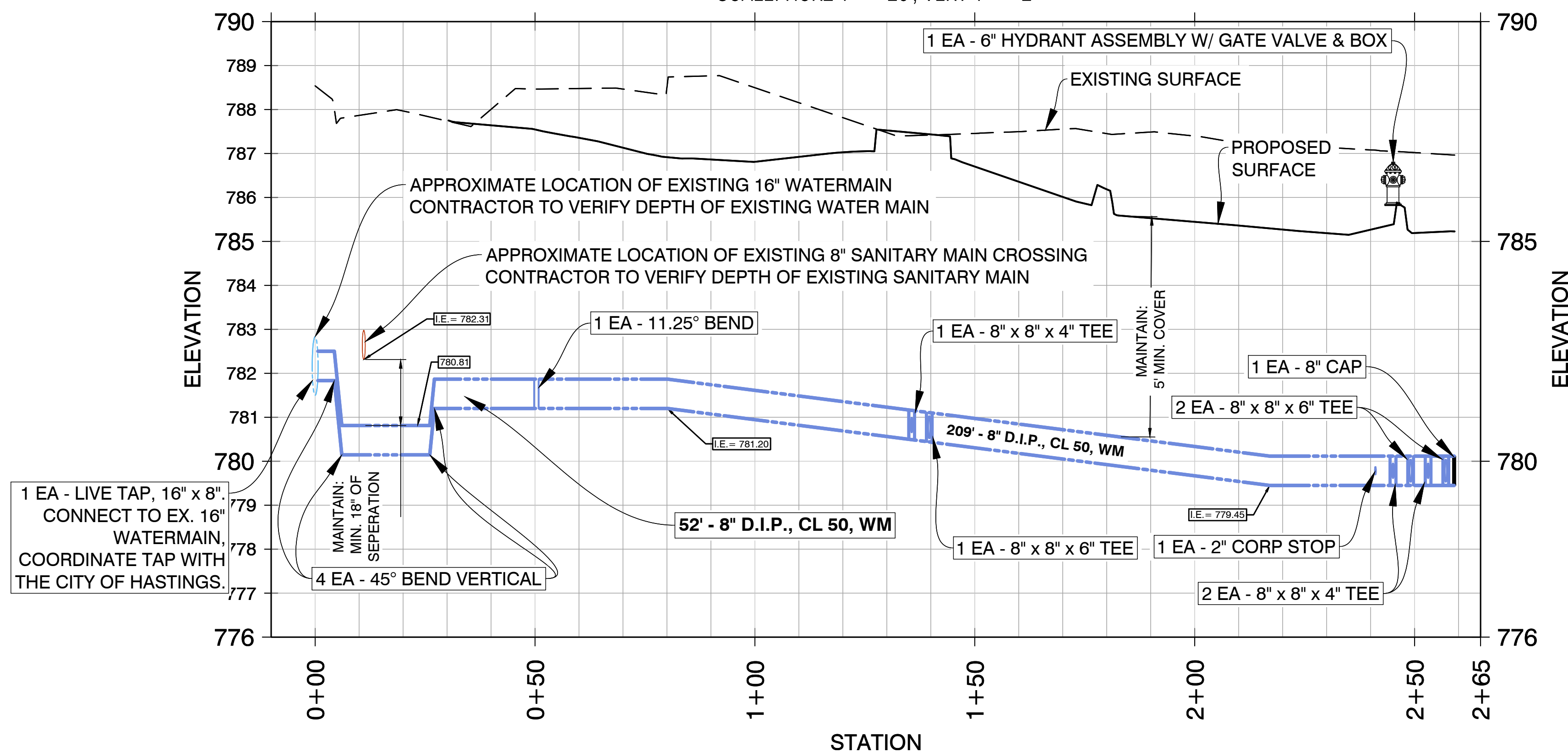
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Watermain Profile View

SCALE: HORZ 1" = 20', VERT 1" = 2'

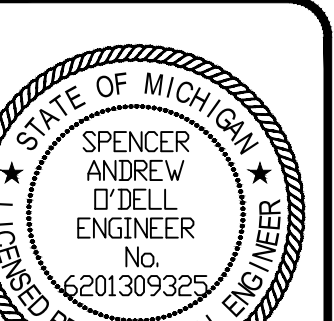


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PLANS PREPARED BY:



DRAWN: eeg
CHECKED: SAO



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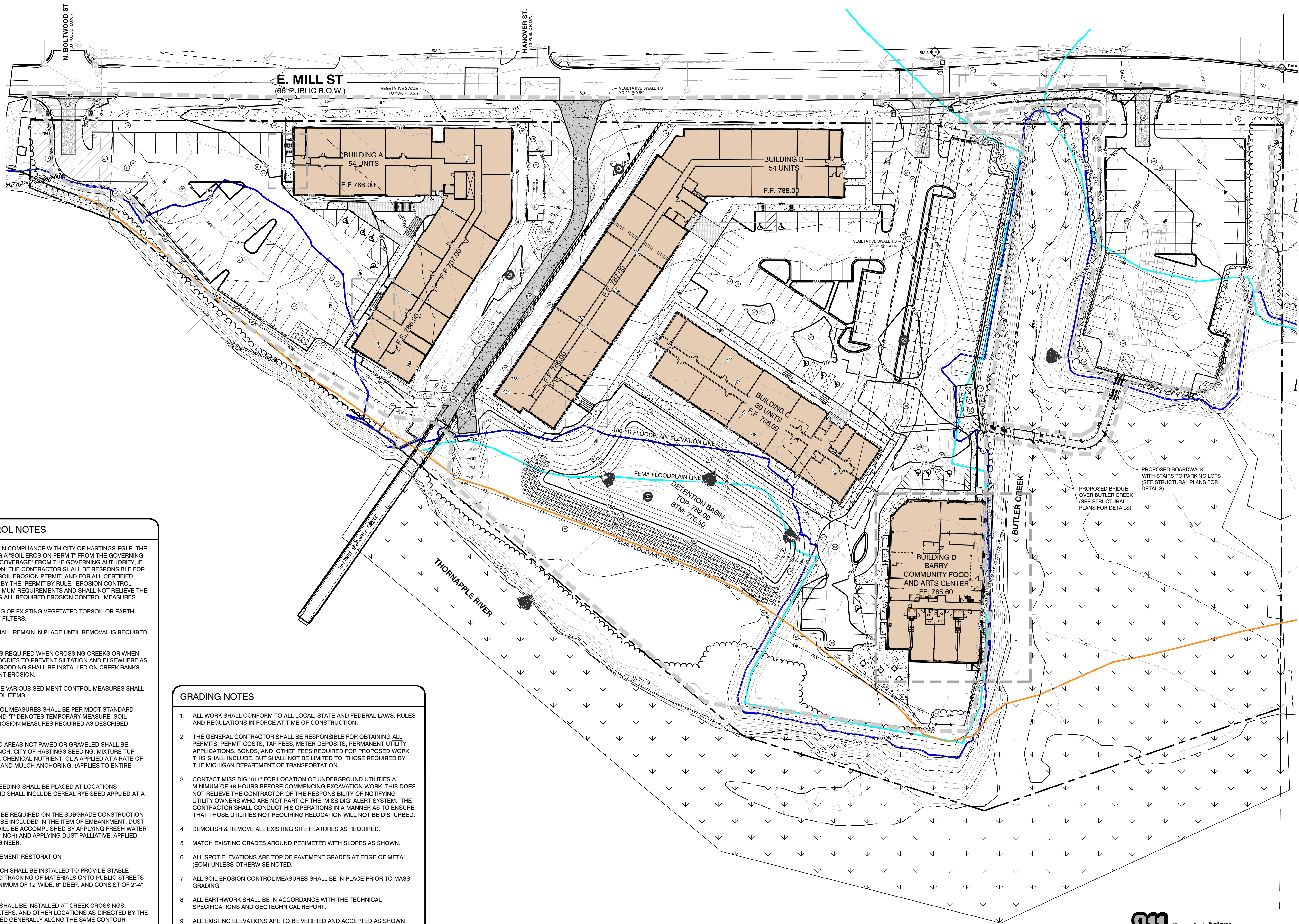
WATERMAIN PLAN & PROFILE
THORNAPPLE RIVER MILL
COPPER ROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

SHEET TITLE:
PROJECT:
CLIENT:
SITE ADDRESS:
SITE SECTION:

JOB NUMBER
23144001

DATE
09/09/2025

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C3.3



SOIL EROSION & SEDIMENT CONTROL NOTES

1. ALL CONSTRUCTION METHODS SHALL BE DONE IN COMPLIANCE WITH CITY OF HASTINGS-EGLE. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING A "SOIL EROSION PERMIT" FROM THE GOVERNING AUTHORITY AND A "PERMIT BY RULE/NOTICE OF COVERAGE" FROM THE GOVERNING AUTHORITY, IF APPLICABLE, PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE "SOIL EROSION PERMIT" AND FOR ALL CERTIFIED STORM WATER INSPECTION SERVICE REQUIRED BY THE "PERMIT BY RULE." EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS AND SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR PROVIDING ALL REQUIRED EROSION CONTROL MEASURES.

2. AVOID UNNECESSARY DISTURBING OR REMOVING OF EXISTING VEGETATED TOPSOIL OR EARTH COVER. THESE COVER AREAS ACT AS SEDIMENT FILTERS.
3. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEAN UP AND APPROVAL.
4. GEOTEXTILE SILT FENCE SHALL BE INSTALLED AS REQUIRED WHEN CROSSING CREEKS OR WHEN ADJACENT TO WETLANDS OR SURFACE WATER BODIES TO PREVENT SILTATION AND ELSEWHERE AS DIRECTED BY THE ENGINEER. SEEDING AND/OR SODDING SHALL BE INSTALLED ON CREEK BANKS IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.
5. MAINTENANCE, CLEANING, AND REMOVAL OF THE VARIOUS SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE VARIOUS EROSION CONTROL ITEMS.

ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PER MDOT STANDARD DETAILS. "P" DENOTES PERMANENT MEASURE AND "T" DENOTES TEMPORARY MEASURE. SOIL EROSION CONTROL PLANS DENOTE MINIMUM EROSION MEASURES REQUIRED AS DESCRIBED BELOW.

DENOTES PERMANENT SEEDING. ALL DISTURBED AREAS NOT PAVED OR GRAVELED SHALL BE RESTORED. PLACE TOPSOIL SURFACE, SALV. 3 INCH. CITY OF HASTINGS SEEDING, MIXTURE TUF APPLIED AT A RATE OF 220 LB/ACRE. FERTILIZER, CHEMICAL NUTRIENT, CL A APPLIED AT A RATE OF 228 LB/ACRE. MULCH AT A RATE OF 2 TON/ACRE AND MULCH ANCHORING. (APPLIES TO ENTIRE PROJECT)

DENOTES TEMPORARY SEEDING. TEMPORARY SEEDING SHALL BE PLACED AT LOCATIONS DETERMINED BY THE ENGINEER IN THE FIELD AND SHALL INCLUDE CEREAL RYE SEED APPLIED AT A RATE OF 70 LB/ACRE AND MULCH.

DENOTES DUST CONTROL. DUST CONTROL MAY BE REQUIRED ON THE SUBGRADE CONSTRUCTION AND WILL INCLUDE APPLYING FRESH WATER TO BE INCLUDED IN THE ITEM OF EMBANKMENT. DUST CONTROL ON THE AGGREGATE BASE COURSE WILL BE ACCOMPLISHED BY APPLYING FRESH WATER (INCLUDED IN THE ITEM OF AGGREGATE BASE, 6 INCH) AND APPLYING DUST PALIATIVE, APPLIED, CAC₂ (TON) AS DIRECTED BY THE PROJECT ENGINEER.

DENOTES AGGREGATE COVER/PERMANENT PAVEMENT RESTORATION

DENOTES GRAVEL ACCESS APPROACH. APPROACH SHALL BE INSTALLED TO PROVIDE STABLE ACCESS TO ROADWAYS AND MINIMIZE DUST AND TRACKING OF MATERIALS ONTO PUBLIC STREETS AND HIGHWAYS. THE APPROACH SHALL BE A MINIMUM OF 12' WIDE, 6" DEEP, AND CONSIST OF 2"-4" AGGREGATE.

DENOTES TEMPORARY SILT FENCE. SILT FENCE SHALL BE INSTALLED AT CREEK CROSSINGS, ADJACENT TO ALL WETLANDS AND SURFACE WATERS, AND OTHER LOCATIONS AS DIRECTED BY THE ENGINEER. EACH SILT FENCE SHALL BE INSTALLED GENERALLY ALONG THE SAME CONTOUR ELEVATION.

DENOTES INLET PROTECTION FABRIC DROP. SHALL BE INSTALLED AT EXISTING AND PROPOSED STORM SEWER INLETS TO PROVIDE SETTLING AND FILTERING OF SILT LADEN WATER PRIOR TO ENTRY INTO THE DRAINAGE SYSTEM.

DENOTES MULCH BLANKET OR MATTING. SHALL BE NORTH AMERICAN GREEN DS150, OR APPROVED EQUAL. MULCH BLANKETS SHALL BE PLACED ON ALL 1:3 SLOPES OR GREATER, IN AND AROUND DITCH BOTTOMS WHERE THERE IS NO BIOSWALE BY CONTRACTOR RESPONSIBLE FOR RESTORING THAT AREA.

GRADING NOTES

1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.
2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION.
3. CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
4. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.
5. MATCH EXISTING GRADES AROUND PERIMETER WITH SLOPES AS SHOWN.
6. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT GRADES AT EDGE OF METAL (EOM) UNLESS OTHERWISE NOTED.
7. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO MASS GRADING.
8. ALL EARTHWORK SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT.
9. ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.
10. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.
11. ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.

LEGEND

- LIMITS OF CONSTRUCTION
- SILT FENCE

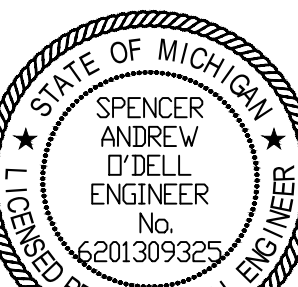


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PLANS PREPARED BY:



DRAWN: eeg
CHECKED: SAO



SPENCER O'DELL, P.E.
No. 6201309325

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GRADING & SESC PLAN - OVERALL
THORNAPPLE RIVER MILL
COPPER ROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

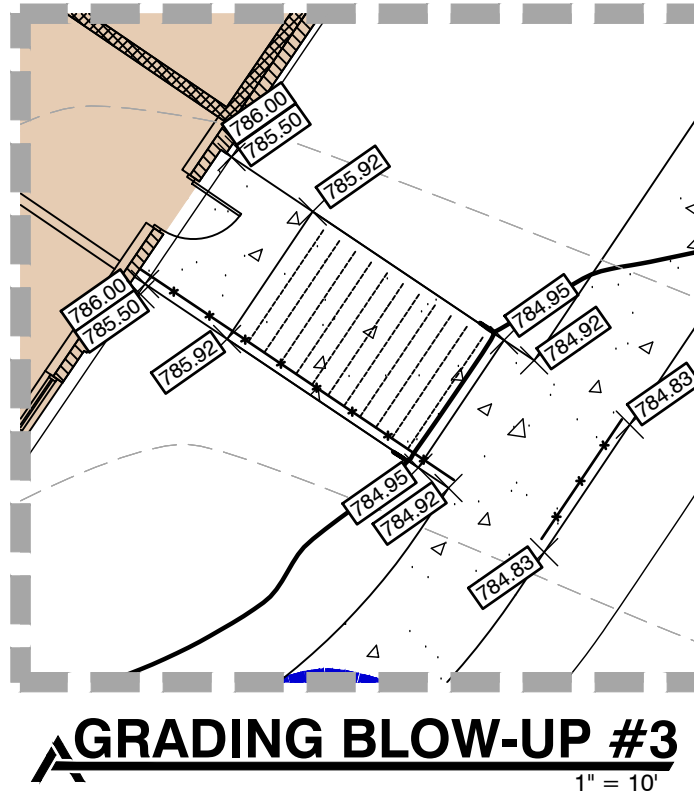
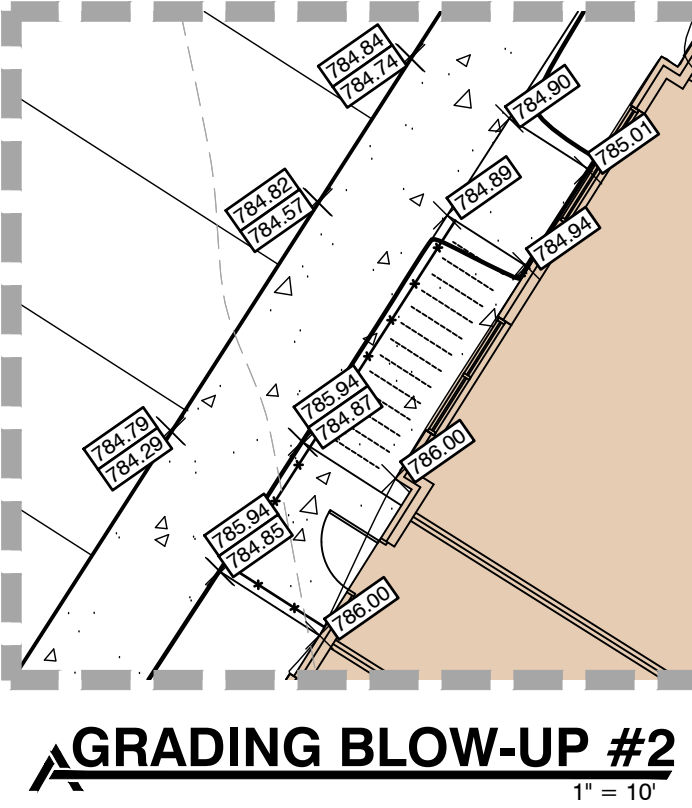
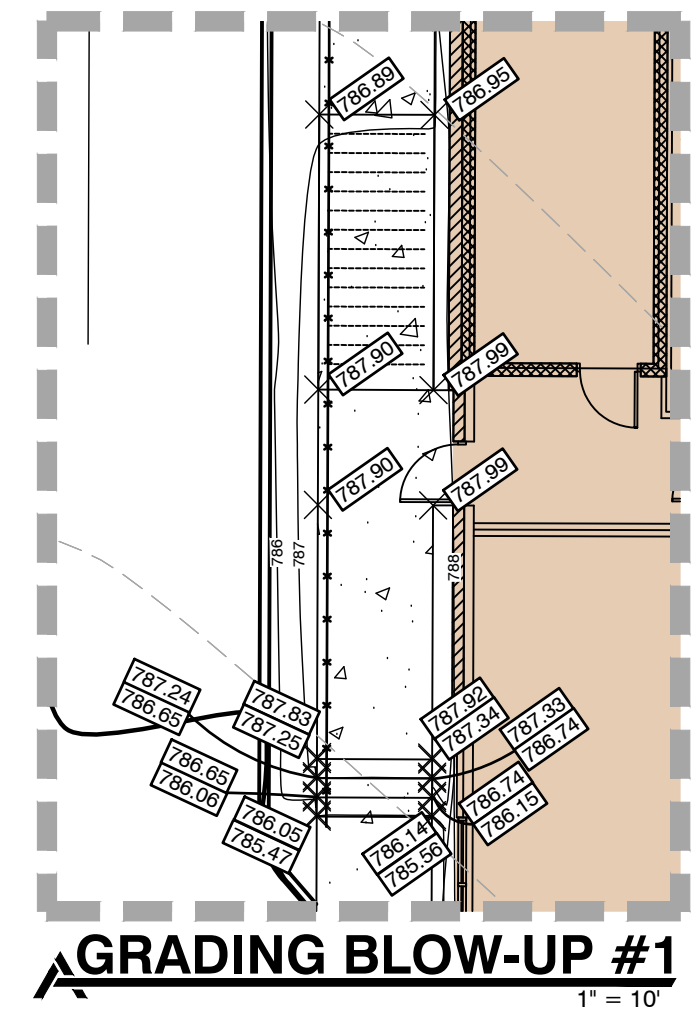
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SOIL EROSION & SEDIMENT CONTROL NOTES

1. ALL CONSTRUCTION METHODS SHALL BE DONE IN COMPLIANCE WITH CITY OF HASTINGS-EGLE. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING A "SOIL EROSION PERMIT" FROM THE GOVERNING AUTHORITY AND A "PERMIT BY RULE/NOTICE OF COVERAGE" FROM THE GOVERNING AUTHORITY, IF APPLICABLE, PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL REQUIREMENTS OF THE "SOIL EROSION PERMIT" AND FOR ALL CERTIFIED STORM WATER INSPECTION SERVICE REQUIRED BY THE "PERMIT BY RULE." EROSION CONTROL MEASURES SHOWN ON THE PLANS ARE THE MINIMUM REQUIREMENTS AND SHALL NOT RELIEVE THE CONTRACTOR'S RESPONSIBILITY FOR PROVIDING ALL REQUIRED EROSION CONTROL MEASURES.

2. AVOID UNNECESSARY DISTURBING OR REMOVING OF EXISTING VEGETATED TOPSOIL OR EARTH COVER. THESE COVER AREAS ACT AS SEDIMENT FILTERS.

3. ALL TEMPORARY SOIL EROSION PROTECTION SHALL REMAIN IN PLACE UNTIL REMOVAL IS REQUIRED FOR FINAL CLEAN UP AND APPROVAL.

4. GEOTEXTILE SILT FENCE SHALL BE INSTALLED AS REQUIRED WHEN CROSSING CREEKS OR WHEN ADJACENT TO WETLANDS OR SURFACE WATER BODIES TO PREVENT SILTATION AND ELSEWHERE AS DIRECTED BY THE ENGINEER. SEEDING AND/OR SODDING SHALL BE INSTALLED ON CREEK BANKS IMMEDIATELY AFTER CONSTRUCTION TO PREVENT EROSION.

5. MAINTENANCE, CLEANING, AND REMOVAL OF THE VARIOUS SEDIMENT CONTROL MEASURES SHALL BE INCLUDED IN THE VARIOUS EROSION CONTROL ITEMS.

ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE PER MDOT STANDARD DETAILS. "P" DENOTES PERMANENT MEASURE AND "T" DENOTES TEMPORARY MEASURE. SOIL EROSION CONTROL PLANS DENOTE MINIMUM EROSION MEASURES REQUIRED AS DESCRIBED BELOW.

DENOTES PERMANENT SEEDING. ALL DISTURBED AREAS NOT PAVED OR GRAVELED SHALL BE RESTORED. PLACE TOPSOIL SURFACE, SALV. 3 INCH. CITY OF HASTINGS SEEDING, MIXTURE TUF APPLIED AT A RATE OF 220 LB/ACRE. FERTILIZER, CHEMICAL NUTRIENT, CL A APPLIED AT A RATE OF 228 LB/ACRE. MULCH AT A RATE OF 2 TON/ACRE AND MULCH ANCHORING. (APPLIES TO ENTIRE PROJECT)

DENOTES TEMPORARY SEEDING. TEMPORARY SEEDING SHALL BE PLACED AT LOCATIONS DETERMINED BY THE ENGINEER IN THE FIELD AND SHALL INCLUDE CEREAL RYE SEED APPLIED AT A RATE OF 70 LB/ACRE AND MULCH.

DENOTES DUST CONTROL. DUST CONTROL MAY BE REQUIRED ON THE SUBGRADE CONSTRUCTION AND WILL INCLUDE APPLYING FRESH WATER TO BE INCLUDED IN THE ITEM OF EMBANKMENT. DUST CONTROL ON THE AGGREGATE BASE COURSE WILL BE ACCOMPLISHED BY APPLYING FRESH WATER (INCLUDED IN THE ITEM OF AGGREGATE BASE, 6 INCH) AND APPLYING DUST PALIATIVE, APPLIED, (CACL₂ (TON) AS DIRECTED BY THE PROJECT ENGINEER.

DENOTES AGGREGATE COVER/PERMANENT PAVEMENT RESTORATION

DENOTES GRAVEL ACCESS APPROACH. APPROACH SHALL BE INSTALLED TO PROVIDE STABLE ACCESS TO ROADWAYS AND MINIMIZE DUST AND TRACKING OF MATERIALS ONTO PUBLIC STREETS AND HIGHWAYS. THE APPROACH SHALL BE A MINIMUM OF 12' WIDE, 6" DEEP, AND CONSIST OF 2"-4" AGGREGATE.

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DENOTES INLET PROTECTION FABRIC DROP. SHALL BE INSTALLED AT EXISTING AND PROPOSED STORM SEWER INLETS TO PROVIDE SETTLING AND FILTERING OF SILT LADEN WATER PRIOR TO ENTRY INTO THE DRAINAGE SYSTEM.

DENOTES MULCH BLANKET OR MATTING. SHALL BE NORTH AMERICAN GREEN DS150, OR APPROVED EQUAL. MULCH BLANKETS SHALL BE PLACED ON ALL 1:3 SLOPES OR GREATER, IN AND AROUND DITCH BOTTOMS WHERE THERE IS NO BIOSWALE BY CONTRACTOR RESPONSIBLE FOR RESTORING THAT AREA.

GRADING NOTES

1. ALL WORK SHALL CONFORM TO ALL LOCAL, STATE AND FEDERAL LAWS, RULES AND REGULATIONS IN FORCE AT TIME OF CONSTRUCTION.

2. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, PERMIT COSTS, TAP FEES, METER DEPOSITS, PERMANENT UTILITY APPLICATIONS, BONDS, AND OTHER FEES REQUIRED FOR PROPOSED WORK. THIS SHALL INCLUDE, BUT SHALL NOT BE LIMITED TO THOSE REQUIRED BY THE MICHIGAN DEPARTMENT OF TRANSPORTATION.

3. CONTACT MISS DIG "811" FOR LOCATION OF UNDERGROUND UTILITIES A MINIMUM OF 48 HOURS BEFORE COMMENCING EXCAVATION WORK. THIS DOES NOT RELIEVE THE CONTRACTOR OF THE RESPONSIBILITY OF NOTIFYING UTILITY OWNERS WHO ARE NOT PART OF THE "MISS DIG" ALERT SYSTEM. THE CONTRACTOR SHALL CONDUCT HIS OPERATIONS IN A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

4. DEMOLISH & REMOVE ALL EXISTING SITE FEATURES AS REQUIRED.

5. MATCH EXISTING GRADES AROUND PERIMETER WITH SLOPES AS SHOWN.

6. ALL SPOT ELEVATIONS ARE TOP OF PAVEMENT GRADES AT EDGE OF METAL (EOM) UNLESS OTHERWISE NOTED.

7. ALL SOIL EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO MASS GRADING.

8. ALL EARTHWORK SHALL BE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS AND GEOTECHNICAL REPORT.

9. ALL EXISTING ELEVATIONS ARE TO BE VERIFIED AND ACCEPTED AS SHOWN PRIOR TO COMMENCEMENT OF WORK.

10. CONTRACTOR SHALL TAKE PRECAUTIONS TO AVOID TRACKING SOIL ONTO ADJACENT ROADWAYS. CONTRACTOR SHALL SWEEP IMMEDIATELY IF OCCURS.

11. ANY DISTURBED AREA WHICH WILL BE LEFT UNWORKED 15 DAYS OR LONGER MUST BE SEEDED TO ESTABLISH VEGETATION FOR TEMPORARY STABILIZATION. BASINS TO BE SEEDED AND MULCH BLANKETS APPLIED IMMEDIATELY TO PROVIDE A STABLE BASE AND AVOID EXCESSIVE EROSION.

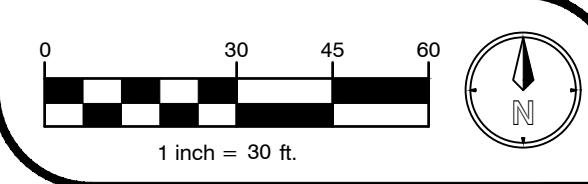
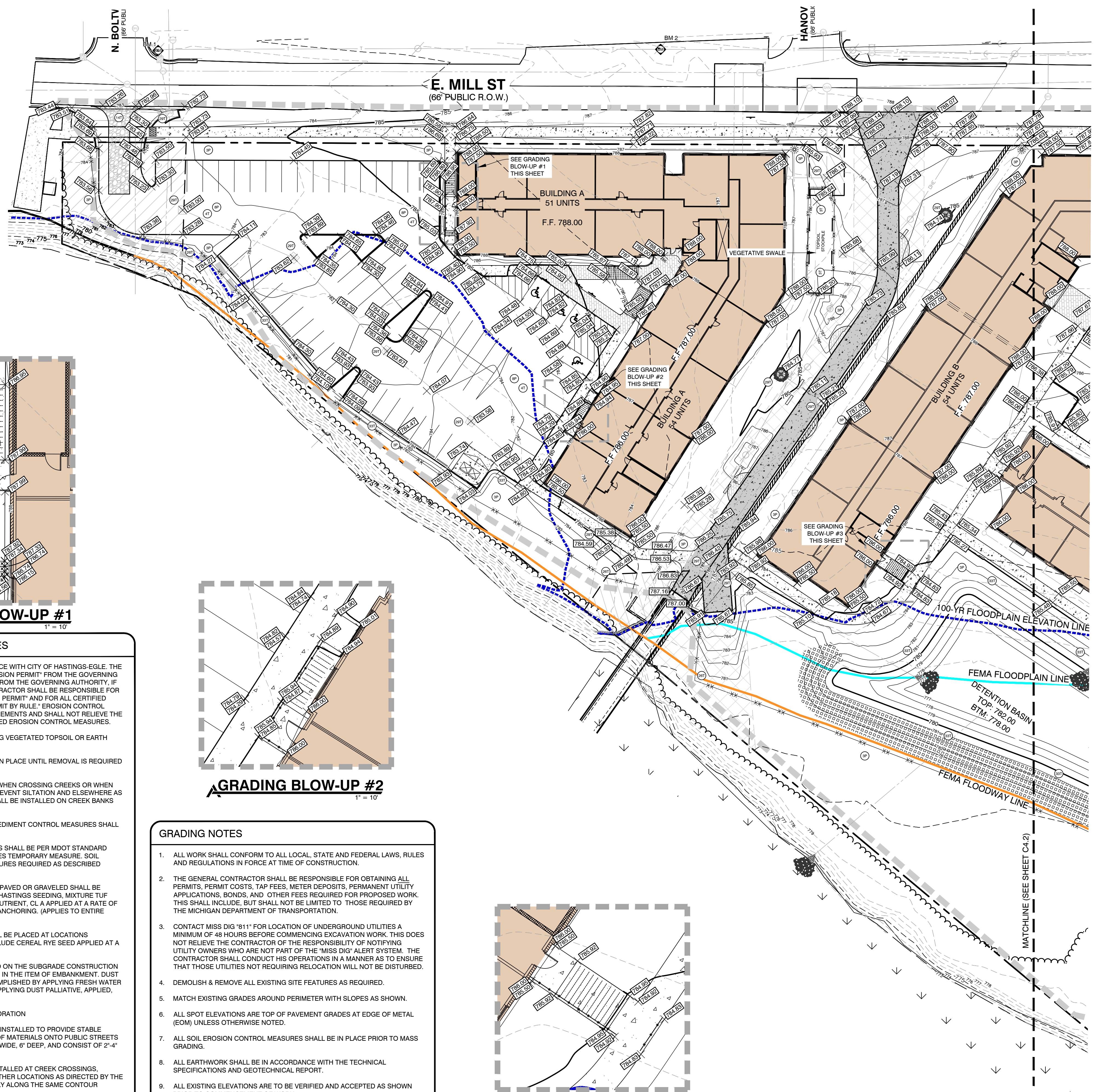
LEGEND

--- LIMITS OF CONSTRUCTION

--- SILT FENCE



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING



PLANS PREPARED BY:

AR ENGINEERING
CIVIL ENGINEERING & SURVEYING

MICHIGAN | INDIANA | ILLINOIS | OHIO
289.250.5991 PHONE | 866.560.0604 FAX
www.arengineeringllc.com

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STATE OF MICHIGAN
SPENCER O'DELL
ENGINEER
No. 6201309325
LICENSED PROFESSIONAL ENGINEER

SPENCER O'DELL, P.E.
No. 6201309325

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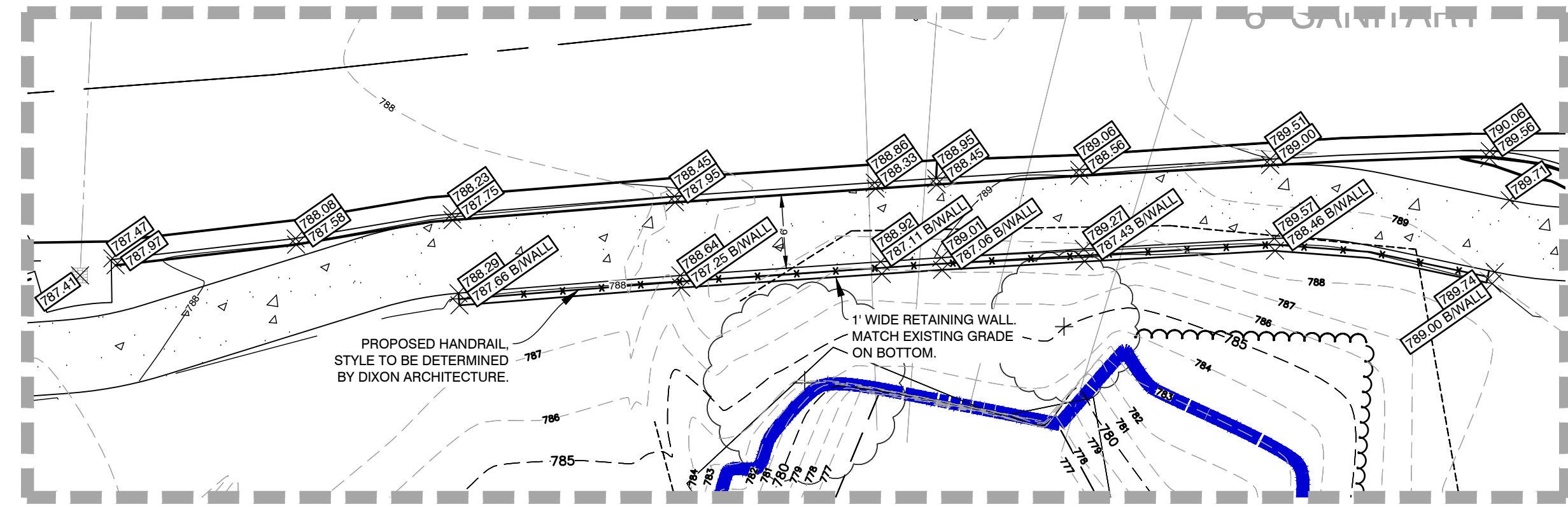
GRADING & SESC PLAN - WEST
THORNAPPLE RIVER MILL
COPPER ROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

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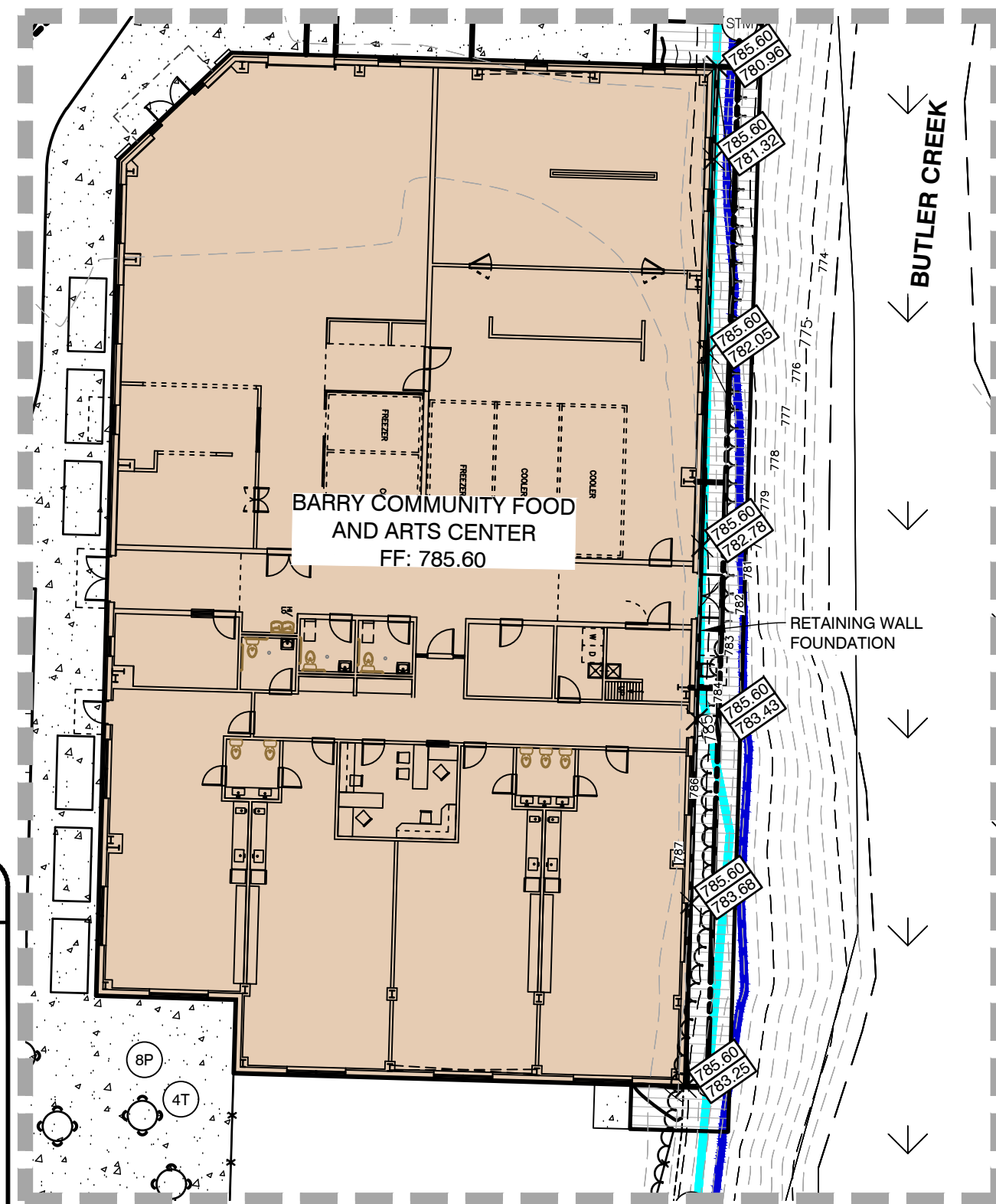
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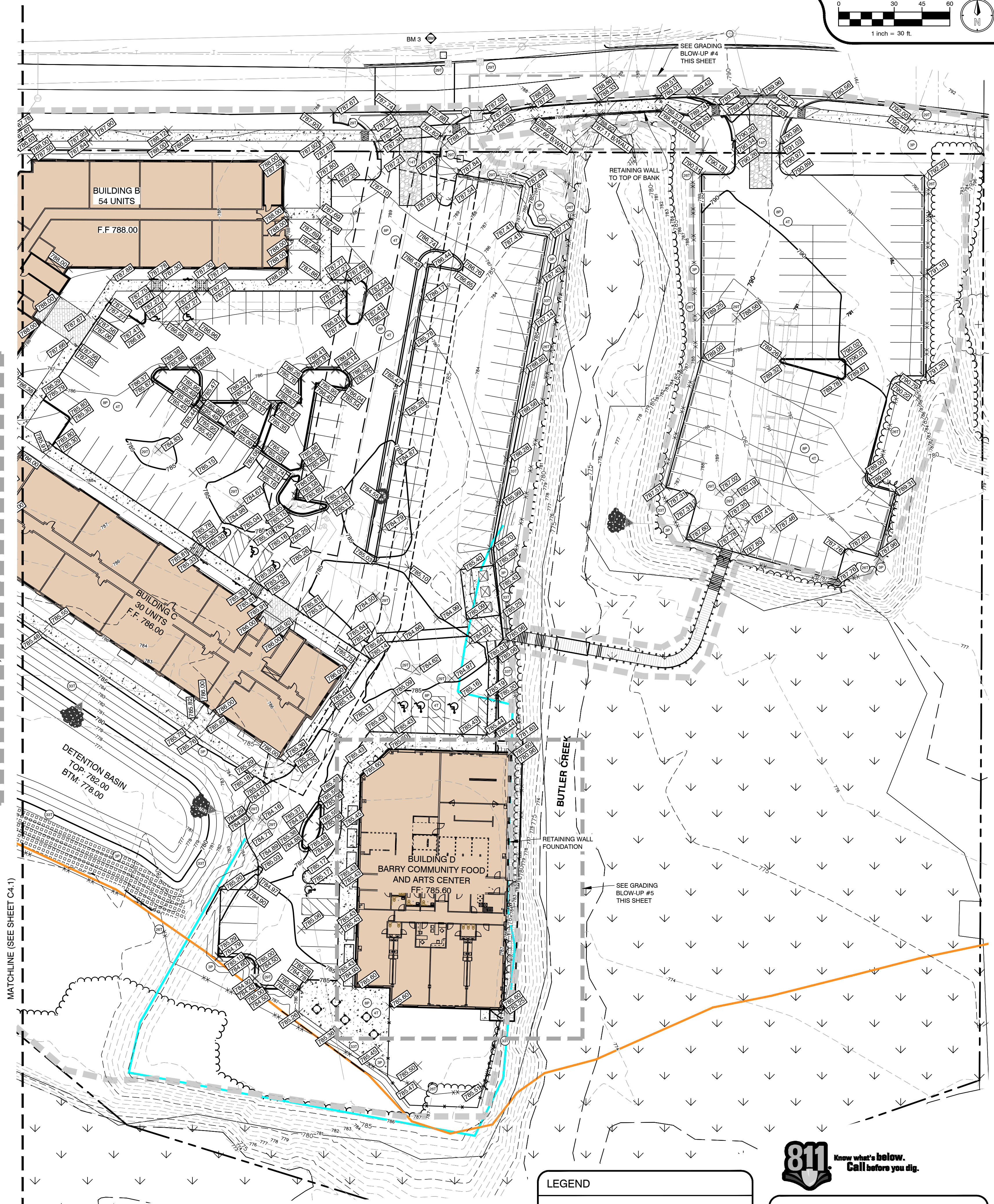
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GRADING BLOW-UP #4
1" = 10'



GRADING BLOW-UP #5
1" = 20'



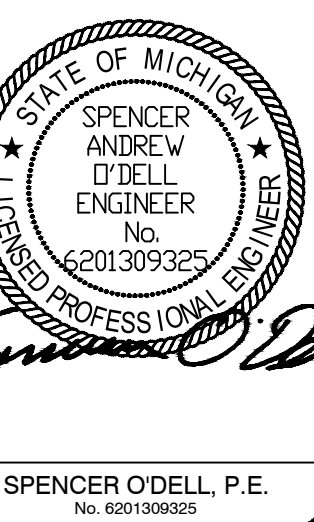
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GRADING & SESC PLAN - EAST
THORNAPPLE RIVER MILL
COPPER ROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

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LEGEND

AREA OF FILL

AREA OF CUT

CUT AND FILL SUMMARY

CUT VOLUME 1,568.42 CYD.
FILL VOLUME 579.66 CYD.
NET VOLUME 988.77 CYD. (CUT)

VOLUMES ARE CALCULATED COMPARING
PROPOSED AND EXISTING GRADE BELOW
FLOODPLAIN ELEVATION (782.40)
- SEE SHEET C6.1 FOR CROSS SECTIONS

PLANS PREPARED BY:

AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
269.250.5991 PHONE | 866.560.0604 FAX
www.arengineeringllc.com

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No. 6201309325

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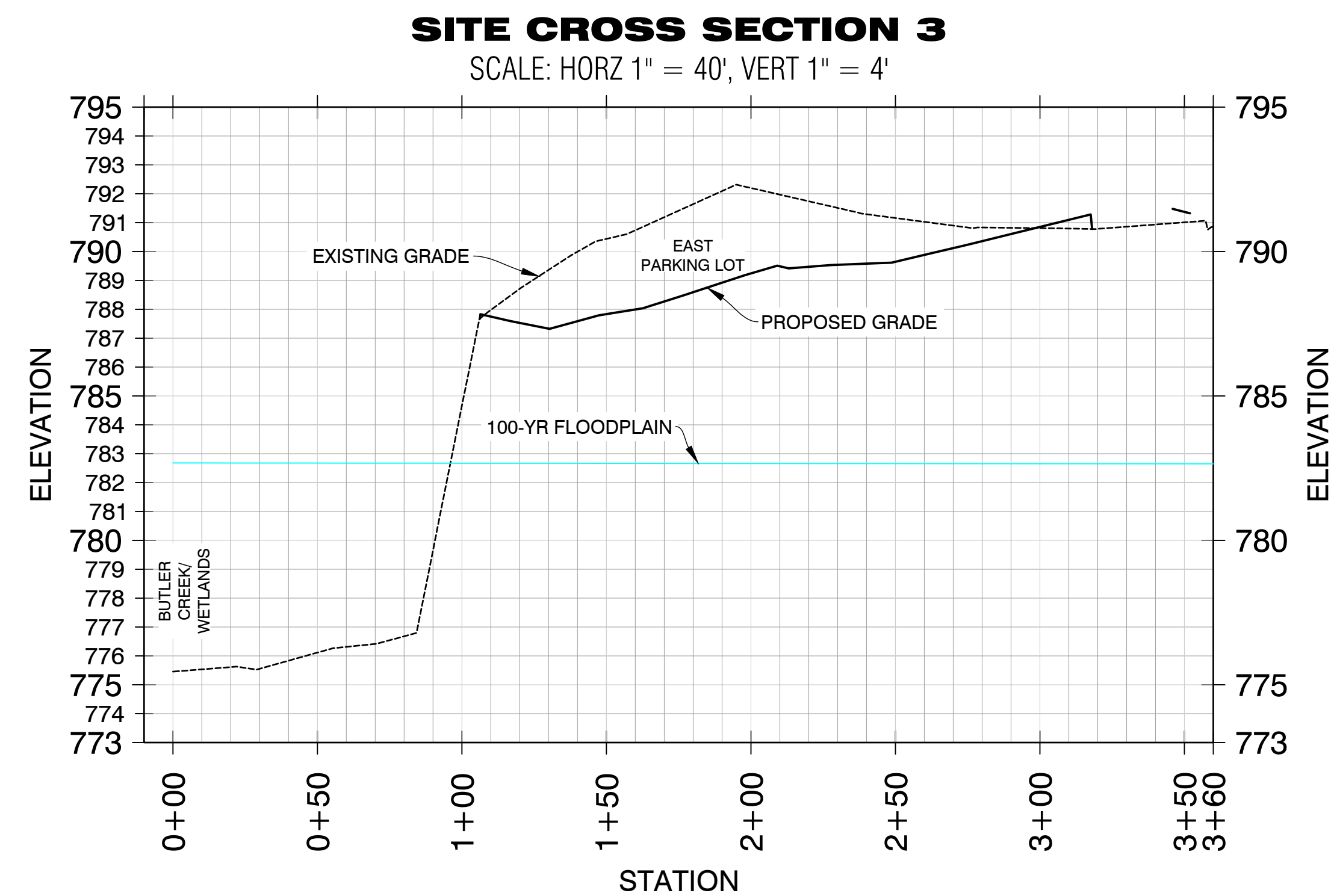
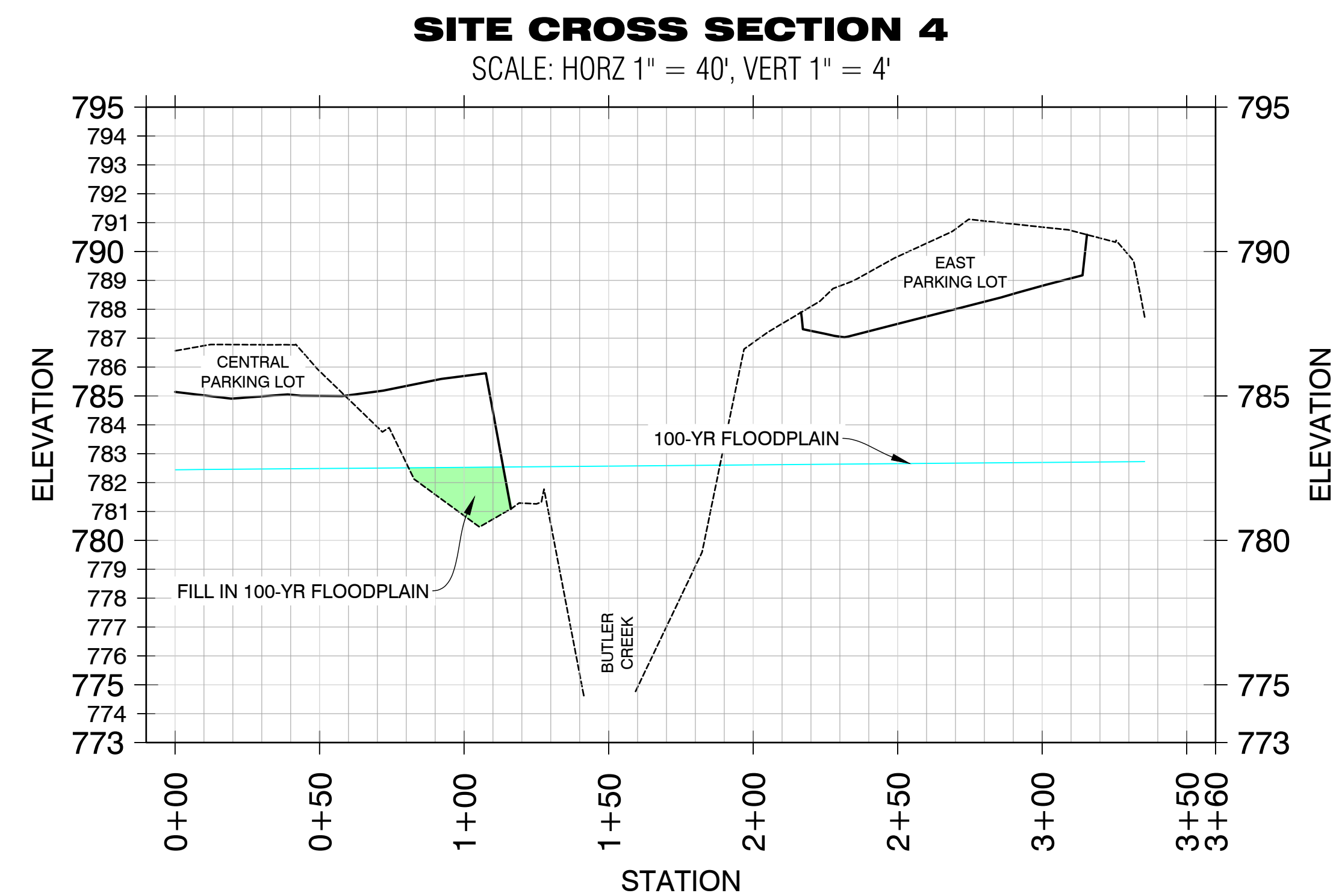
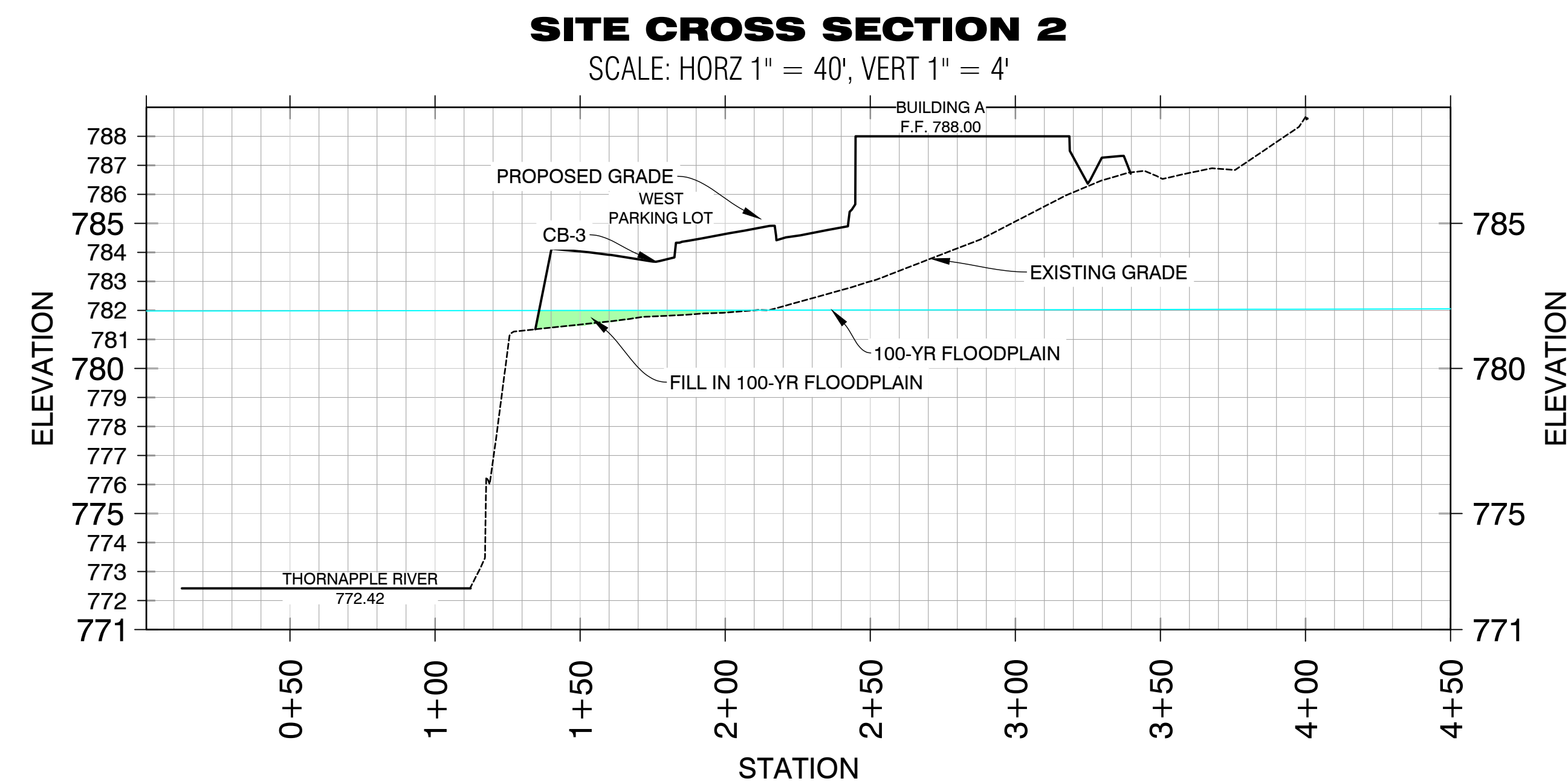
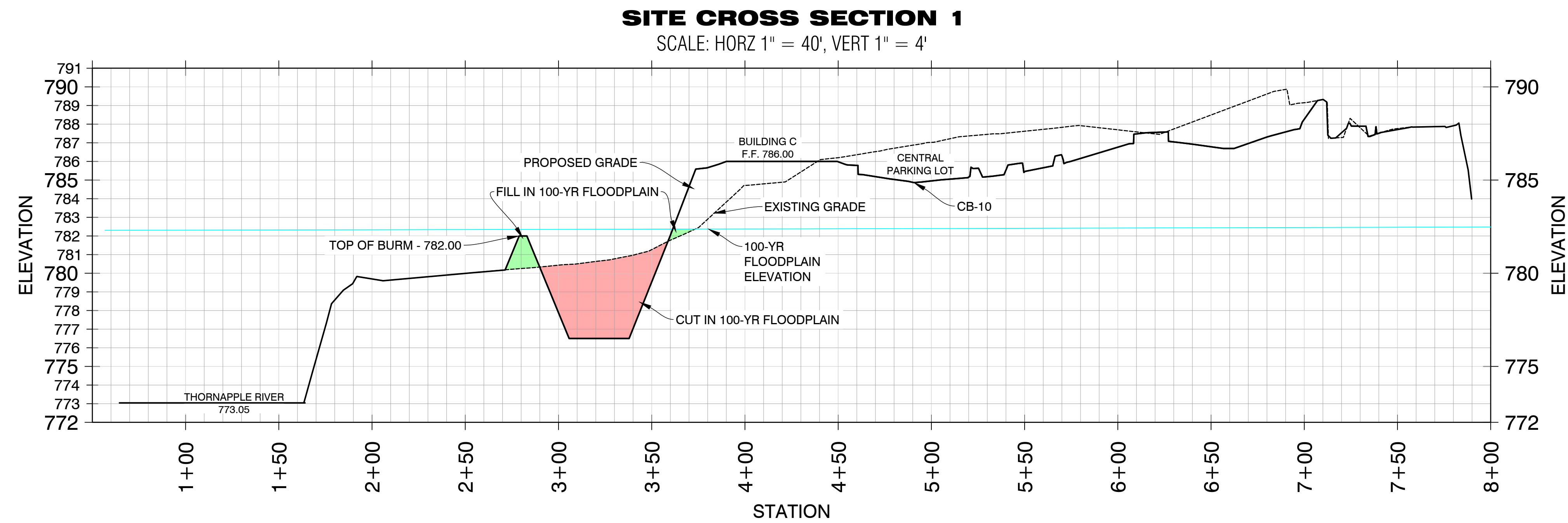
SITE CUT & FILL IN FLOODPLAIN
THORNAPPLE RIVER MILL
COPPER ROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

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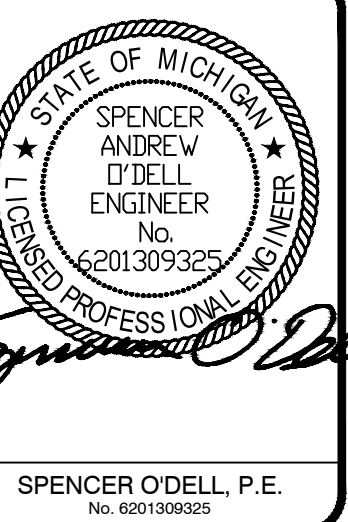
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SITE CROSS SECTIONS
THORNAPPLE RIVER MILL
COPPER ROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

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LANDSCAPING NOTES

LANDSCAPE REQUIRED:

- 1. BUFFER ZONE:**
10 FOOT WIDE BUFFER
PLANTINGS REQUIRED PER 100 LINEAR FEET OF BUFFER ZONE
• 2 CANOPY TREES
• 2 ORNAMENTAL TREES
• 2 EVERGREEN TREES
• 4 SHRUBS

WEST BUFFER ZONE = 50' / 100 = 0.5 TREES
• 2 * 0.5 = 1 CANOPY TREE
• 2 * 0.5 = 1 ORNAMENTAL TREES
• 2 * 0.5 = 1 EVERGREEN TREES
• 4 * 0.5 = 2 SHRUBS

EAST BUFFER ZONE = 400' / 100 = 4 TREES
• 2 * 4 = 8 CANOPY TREE
• 2 * 4 = 8 ORNAMENTAL TREES
• 2 * 4 = 8 EVERGREEN TREES
• 4 * 4 = 16 SHRUBS
- 2. FRONT YARD LANDSCAPING:**
1 CANOPY TREE AND 2 EVERGREEN TREES PLUS 1 CANOPY AND 1 EVERGREEN FOR EACH 75 FEET IN ROAD FRONTAGE
• 1 ORNAMENTAL TREE PLUS 1 FOR EACH 75 FEET IN ROAD FRONTAGE
• SHRUBS AT A RATE OF 1 PER EACH TREE REQUIRED

1,072 FEET OF ROAD FRONTAGE / 75 = 14.3 ≈ 15 ADDITIONAL TREES
• 16 CANOPY TREES, 18 EVERGREEN TREES
• 16 ORNAMENTAL TREES
• 50 SHRUBS
- 3. PARKING LANDSCAPING**
1 CANOPY TREE FOR EVERY 20 SPACES
• 282 SPACES / 20 = 14.1 = 14 TREES
• 1 TREE PER LANDSCAPE ISLAND = 10 TREES
• 24 TOTAL PARKING LOT TREES
- 4. 10% OPEN SPACE REQUIRED**
415,998 * 0.10 = 41,599 SFT

NOTE:
STAKING OF BALL AND BURLAP TREES REQUIRED AT THE DISCRETION OF THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR REMOVAL OF ALL STAKING AT END OF ONE YEAR WARRANTY PERIOD.

AT PLANTING PRUNE ONLY CROSSING LIMBS, CO-DOMINANT LEADERS, SUCKERS AT ROOT BALL, BROKEN OR DEAD BRANCHES AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS. DO NOT CUT TERMINAL LEADER.

USE FLEXIBLE GUYS TO TOP OF BALL IS 2' TO 3' ABOVE THE LEVEL OF THE SURROUNDING SOIL. TIE AT ONE THIRD FULL HEIGHT OF TREE. REMOVE AFTER ONE YEAR.

CREATE A 3" EARTH SAUCER WITH MULCH RING AT EDGE OF PLANTING HOLE

BACKFILL WITH 1/2 CLEAN EXIST. SOIL, 1/4 CERTIFIED TOPSOIL & 1/4 ORGANIC MATERIAL APPROVED BY THE COUNTY. USE WATER TO SETTLE OUT VOIDS IN BACKFILLED SOIL.

ADD MYCORRHIZAL LANDSCAPE INOCULANT TO PLANTING HOLE WITH BACKFILL.

SCARIFY EDGES OF PLANTING HOLE PRIOR TO BACKFILLING.

PLACE ROOT BALL ON UNDISTURBED SOIL.

STAKING OPTIONAL. STAKES OR GUYS RE TO BE INSTALLED USING ACCEPTED ARBORICULTURE PRACTICE.

3" WOOD OR STEEL STAKES SIZED APPROPRIATELY TO STABILIZE TREE.

WATER THOROUGHLY TWICE WITHIN THE FIRST 48 HOURS.

SCARIFY EDGES OF PLANTING HOLE PRIOR TO BACKFILLING.

PLACE ROOT BALL ON UNDISTURBED SOIL.

3" EARTH SAUCER CREATE WATERING DISH WITH MULCH RING AT EDGE OF PLANTING HOLE.

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SCARIFY EDGES OF PLANTING HOLE PRIOR TO BACKFILLING.

REMOVE ANY TAGS, RIBBONS, OR PACKAGING FROM TREE BRANCHES AND TRUNK.

CUT AND REMOVE ALL WRAPPING INCLUDING BURLAP, TWINE, AND BASKET FROM TOP 1/3 OF BALL AND REMOVE FROM SITE.

2" TO 4" SHREDDED HARDWOOD MULCH LEAVE 3" RING UNMULCHED AT TREE BASE.

CENTER TRUNK OF TREE IN PIT

WATER THOROUGHLY TWICE WITHIN THE FIRST 48 HOURS.

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AT PLANTING PRUNE ONLY CROSSING LIMBS, CO-DOMINANT LEADERS, BROKEN OR DEAD BRANCHES AND ANY BRANCHES THAT POSE A HAZARD TO PEDESTRIANS. DO NOT CUT TERMINAL LEADER.

USE FLEXIBLE GUYS TO TOP OF BALL IS 2' TO 3' ABOVE THE LEVEL OF THE SURROUNDING SOIL. TIE AT ONE THIRD FULL HEIGHT OF TREE. REMOVE AFTER ONE YEAR.

CREATE A 3" EARTH SAUCER WITH MULCH RING AT EDGE OF PLANTING HOLE

BACKFILL WITH 1/2 CLEAN EXIST. SOIL, 1/4 CERTIFIED TOPSOIL & 1/4 ORGANIC MATERIAL APPROVED BY THE COUNTY. USE WATER TO SETTLE OUT VOIDS IN BACKFILLED SOIL.

ADD MYCORRHIZAL LANDSCAPE INOCULANT TO PLANTING HOLE WITH BACKFILL.

SCARIFY EDGES OF PLANTING HOLE PRIOR TO BACKFILLING.

PLACE ROOT BALL ON UNDISTURBED SOIL.

3" EARTH SAUCER CREATE WATERING DISH WITH MULCH RING AT EDGE OF PLANTING HOLE.

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LEGEND

1
Xx

NUMBER AND TYPE OF PLANTS TO BE PROVIDED AND INSTALLED

PROPOSED ORNAMENTAL TREE

PROPOSED SHADE TREE

PROPOSED EVERGREEN TREE

PROPOSED SHRUB DECIDUOUS/ EVERGREEN

OPEN SPACE

SOD LAWN WITH IRRIGATION ON 4" TOPSOIL

PERENNIAL RYE GRASS WITHOUT IRRIGATION ON 4" TOPSOIL

ALL PLANTINGS AND LANDSCAPED BEDS REQUIRE IRRIGATION - EITHER DRIP LINE OR MISTERS AS REQUIRED TO ESTABLISH GROWTH AND MAINTAIN HEALTH OF ALL PLANTINGS/LANDSCAPED BEDS.

LANDSCAPING CONTRACTOR RESPONSIBLE FOR TOUCHING-UP AND FINISH-LEVELING OF TOPSOIL AS NECESSARY TO ENSURE HYDROSEED AND SOD ARE INSTALLED ON A SMOOTH AND LEVEL SURFACE FREE OF CLUMPS, STICKS, HOLES, ETC.

LANDSCAPING NOTES

- INSTALL CONSTRUCTION FENCE AROUND DRIP LINES OF EXISTING TREES TO REMAIN. NO COMPACTION OR INCREASED DEPTH OF SOIL OVER THE ROOT SYSTEM AREA PRIOR TO AND DURING CONSTRUCTION.
- ALL LAWN AREAS SHALL BE SEEDED WITH THE FOLLOWING MIXTURE: 20% IMPROVED PERENNIAL RYEGRASS, 40% FINE FESCUE, AND 40% KENTUCKY BLUEGRASS AT A RATE OF 3-4 LBS/ 1000 SFT.
- ALL EDGING SHALL BE STANDARD COMMERCIAL-STEEL EDGING 3/4" X 4", ROLLED EDGE, FABRICATED IN SECTIONS OF STANDARD LENGTHS, WITH LOOPS STAMPED FROM OR WELDED TO FACE OF SECTIONS TO RECEIVE STAKES IN STANDARD FINISH OF GREEN PAINT.
- PROVIDE QUALITY, SIZE, GENUS, SPECIES, AND VARIETY OF EXTERIOR PLANTS INDICATED, COMPLYING WITH APPLICABLE REQUIREMENTS IN ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK" MEASURED ACCORDING TO ANSI Z60.1 STANDARDS. MAINTAIN AND ESTABLISH LAWN BY WATERING, FERTILIZING, WEEDING, MOWING, TRIMMING, REPLANTING, AND OTHER OPERATIONS. ROLL, REGRADE, AND REPLANT BARE OR ERODED AREAS AND REMULCH TO PRODUCE A UNIFORMLY SMOOTH LAWN.
- BEGIN LAWN MAINTENANCE IMMEDIATELY AFTER EACH AREA IS PLANTED AND CONTINUE UNTIL ACCEPTABLE LAWN IS ESTABLISHED: A MINIMUM OF 60 DAYS AFTER SUBSTANTIAL COMPLETION.
- PROTECT ADJACENT AND ADJOINING STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND PLANTINGS FROM HYDROSEEDING OVER-SPRAY AND DAMAGE CAUSED BY PLANTING OPERATIONS.
- REMOVE STONES LARGER THAN 1" IN ANY DIMENSION AND STICK, ROOTS, RUBBISH, AND OTHER EXTRANEOUS MATTER FROM SITE.
- MAINTAIN LAWN UNTIL A HEALTHY, UNIFORM, CLOSE STAND OF GRASS HAS BEEN ESTABLISHED, FREE OF WEEDS AND SURFACE IRREGULARITIES, WITH COVERAGE EXCEEDING 90% OVER ANY 10 SFT AND BARE SPOTS DO NOT EXCEED 5 BY 5 INCHES.
- MAINTAIN TREES AND SHRUBS FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION BY PRUNING, CULTIVATING, WATERING, WEEDING, FERTILIZING, RESTORING PLANTING SAUCERS, TIGHTENING AND REPAIRING STAKES AND GUY SUPPORTS, AND RESETTLING TO PROPER GRADES OR VERTICAL POSITION, AS REQUIRED TO ESTABLISH HEALTHY VIABLE PLANTINGS. SPRAY AS REQUIRED TO KEEP TREES AND SHRUBS FREE OF INSECTS AND DISEASE.
- REMOVE AND REPLACE DEAD PLANTS IMMEDIATELY. REPLACE PLANTS THAT ARE MORE THAN 25% DEAD OR IN AN UNHEALTHY CONDITION AT END OF WARRANTY PERIOD. A LIMIT OF ONE REPLACEMENT OF EACH PLANT WILL BE REQUIRED, EXCEPT FOR LOSSES OR REPLACEMENTS DUE TO FAILURE TO COMPLY WITH REQUIREMENTS.
- TREES, AND SHRUBS SHALL BE WARRANTED FOR ONE YEAR FROM DATE OF SUBSTANTIAL COMPLETION AGAINST DEFECTS INCLUDING DEATH AND UNSATISFACTORY GROWTH, EXCEPT FOR DEFECTS RESULTING FROM INCIDENTS THAT ARE BEYOND CONTRACTORS CONTROL.

TYPICAL SHRUB PLANTING DETAIL

L1.0 - 170103 NOT TO SCALE

Shrub Planting Schedule					
Symbol	Latin Name	Common Name	Size	Container Type	Comments
Sp	Spiraea x bumalda 'Goldflame'	Goldflame Spiraea	24" Ht.	3-5 gallon cont.	3' O.C.
Gb	Buxus 'Green Gem'	Green Gem Boxwood	24" Ht.	B&B or Cont.	3' O.C.

Tree Planting Schedule					
Symbol	Latin Name	Common Name	Size	Container Type	Comments
As	Acer rubrum 'October Glory'	October Glory Red Maple	2.5" Cal.	B&B	
Av	Thuja orientalis	Aborvitae	4' Ht.	B&B	
Gd	Gleditsia triacanthos 'Skycole'	Skyline Honey Locust	2.5 - 3" Cal.	B&B	
Ls	Liquidambar styraciflua	Sweetgum	2.5 - 3" Cal.	B&B	



ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA. FIELD WORK PERFORMED BY: AR ENGINEERING

PLANS PREPARED BY:



DRAWN: eeg
CHECKED: SAO

No.	DATE	BY	ISSUED FOR:
0	07/23/2025	SAO	SITE PLAN REVIEW
1	09/09/2025	SAO	CITY REVISIONS
2			
3			
4			

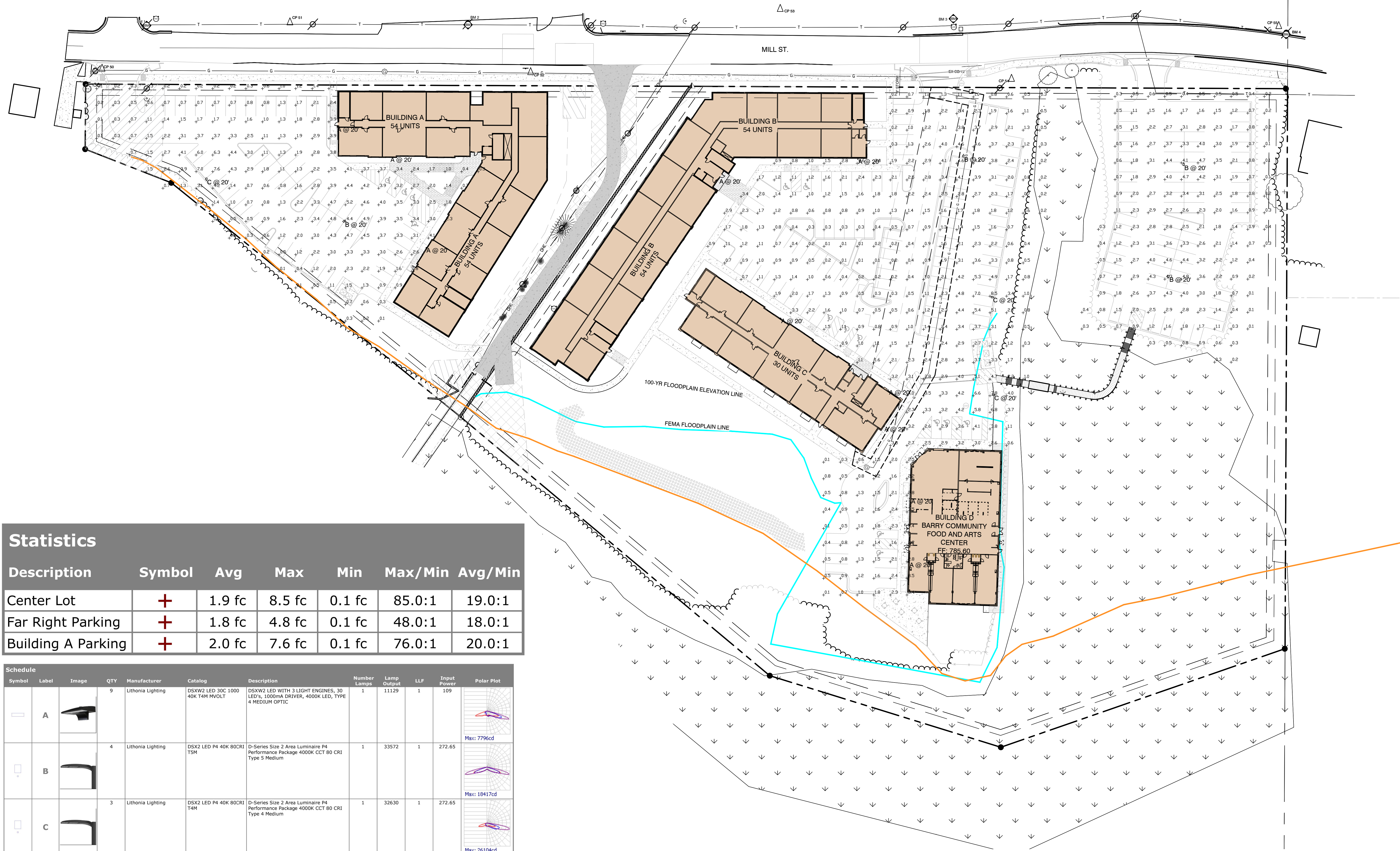
LANDSCAPING PLAN
THORNAPPLE RIVER MILL
COPPER ROCK
420 E. MILL STREET
SECTION 07, T03N, R08W

JOB NUMBER
23144001

DATE
09/09/2025

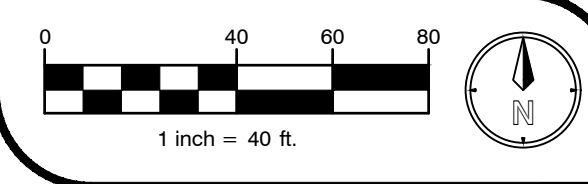
SHEET NUMBER

L1.0



Statistics						
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Center Lot	+	1.9 fc	8.5 fc	0.1 fc	85.0:1	19.0:1
Far Right Parking	+	1.8 fc	4.8 fc	0.1 fc	48.0:1	18.0:1
Building A Parking	+	2.0 fc	7.6 fc	0.1 fc	76.0:1	20.0:1

Schedule										
Symbol	Label	Image	QTY	Manufacturer	Catalog	Description	Number Lamps	Lamp Output	LLF	Input Power
	A		9	Lithonia Lighting	DSXW2 LED 30C 1000 40K T4M MVOLT	DSXW2 LED WITH 3 LIGHT ENGINES, 30 LED'S, 1000mA DRIVER, 4000K LED, TYPE 4 MEDIUM OPTIC	1	11129	1	109
	B		4	Lithonia Lighting	DSX2 LED P4 40K 80CRI TSM	D-Series Size 2 Area Luminaire P4 Performance Package 4000K CCT 80 CRI Type 5 Medium	1	33572	1	272.65
	C		3	Lithonia Lighting	DSX2 LED P4 40K 80CRI T4M	D-Series Size 2 Area Luminaire P4 Performance Package 4000K CCT 80 CRI Type 4 Medium	1	32630	1	272.65



PLANS PREPARED BY:



AR ENGINEERING
CIVIL ENGINEERING & SURVEYING
MICHIGAN | INDIANA | ILLINOIS | OHIO
289.250.5991 PHONE | 800.560.0604 FAX
www.ar-engineeringllc.com

DRAWN: eeg

CHECKED: SAO

No.	ISSUED FOR:	DATE	BY
0	SITE PLAN REVIEW	07/23/2025	SAO
1	CITY REVISIONS	09/09/2025	SAO
2			
3			
4			

PHOTOMETRIC PLAN

THORNAPPLE RIVER MILL

COPPERROCK

420 E. MILL STREET

SECTION 07, T03N, R08W

SHEET TITLE:

PROJECT:

CLIENT:

SITE ADDRESS:

SITE SECTION:

JOB NUMBER

23144001

DATE

09/09/2025

SHEET NUMBER

L2.0