



Brighton City Council Meeting

200 N First St • City Hall Council Chambers • Brighton, Michigan 48116
(810) 227-1911 • www.brightoncitymi.gov

September 23, 2025 – 6:30 p.m.

AGENDA

1. Call to order
2. Pledge of Allegiance
3. Roll call
4. Consider approval of the agenda
5. Consider approval of consent agenda items

Consent Agenda Items

- a. [Approval of minutes: regular meeting of September 9, 2025](#)
- b. [Approval to purchase a new Flygt recycle pump from Kennedy Industries for a cost not to exceed \\$17,993](#)
- c. [Award the contract for the Pine Creek water house inspection to Dixon Engineering in an amount not to exceed \\$14,950](#)

Correspondence

6. Councilmember updates
7. Staff updates
8. Call to the public

Public Hearing

9. [Conduct a public hearing and consider adoption of ORD 611, amendments to the zoning ordinance permitting temporary outdoor storage](#)

New Business

10. [Consider an appointment to the Downtown Development Authority](#)
11. [Consider approval of Site Plan 25-04, addition and renovation of the Brighton Area Fire Authority Fire Station located at 615 W. Grand River](#)
12. [Consider approving the purchase of three new 2026 trucks from Lunghamer Ford for the Public Works and Wastewater divisions for a total amount not to exceed \\$161,044 and the related buildouts by Truck and Trailer for an amount not to exceed \\$81,944](#)
13. Consider entering into closed session to consider the purchase or lease of real property pursuant to the Michigan Open Meetings Act, 1976, § 15.268(1)(d), Michigan Compiled Laws

Other Business

14. Call to the public
15. Adjournment



Brighton City Council Meeting

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MINUTES OF THE REGULAR MEETING OF THE BRIGHTON CITY COUNCIL HELD ON SEPTEMBER 9, 2025

1. Call to order

Mayor Tobbe called the meeting to order at 6:30 p.m.

2. Pledge of Allegiance

Mayor Tobbe led those in attendance in the Pledge of Allegiance

3. Roll call

Present were Mayor Tobbe, Mayor Pro Tem Bohn, Councilmembers: Gardner, Gipson, Pettengill, and Schmenk.

Others Present: City Manager Gretchen Gomolka, City Clerk Tara Brown, Attorney Sarah Gabis, and Chief Brent Pirochta.

Councilmember Albert was absent.

Motion by Councilmember Gardner, seconded by Councilmember Gipson to excuse Councilmember Albert for personal reasons. **The motion carried, 6-0.**

Motion by Councilmember Schmenk, seconded by Mayor Pro Tem Bohn to remove item 10. **The motion carried, 6-0.**

4. Consider approval of the agenda

Motion by Councilmember Gardner, seconded by Councilmember Schmenk to approve the amended agenda. **The motion carried, 6-0.**

5. Consider approval of consent agenda items

Motion by Councilmember Schmenk, seconded by Councilmember Pettengill to approve the consent agenda as presented. **The motion carried, 6-0.**

Consent Agenda Items

- a. **Approval of minutes: regular meeting of August 26, 2025**

Correspondence

6. Councilmember updates

Councilmember Gardner noted that the Brighton Area Fire Authority recently approved construction on station 31, after City Council approval, will begin in November 2025 and conclude in February 2027. Stations 32 and 33 will cover City of Brighton calls for service during that time.

Councilmember Schmenk was appreciative of the fast-paced quality work by the city's sidewalk rehabilitation contractor.

Councilmember Pettengill stated that the Brighton Arts and Culture Commission will present options at an upcoming City Council meeting for enhancements to the St. Paul Pocket Park to include chairs and shade.

7. Staff updates

Chief Pirochta noted that on Wednesday, September 17, 2025, he will be at WHMI's Meet the People talk at Ciao Amici's to discuss public safety and teen safety.

City Manager Gomolka stated the 2025 Road Maintenance projects will begin September 22, 2025. The city will hold

its first Streets Millage Open House September 10, 2025, beginning at 4:00 p.m. at the Community Center located at 555 Brighton Street.

8. Mayoral Proclamation: Eagle Scout Drew Smith

9. Call to the public

Mayor Tobbe opened the call to public at 6:47 p.m.

Susan Walters-Bakhaus spoke regarding the millage open house hours.

Hearing and seeing no further comment, the call to the public was closed at 6:48 p.m.

New Business

~~10. Appointments~~

11. Discussion: Easement request

City Manager Gomolka noted that a potential new business is reviewing options to purchase a building, which may require an easement to construct an accessible ramp. A mockup and potential investment into the building were shared with City Council, and members expressed general consensus for the concept. Further consideration will take place through the Planning Commission process.

12. Consider Entering into Closed Session to Receive a Written Attorney-Client Privileged Communication pursuant to the Michigan Open Meetings Act, 1976, § 15.268(1)(h), Michigan Compiled Laws.

Motion by Mayor Pro Tem Bohn, seconded by Councilmember Gipson to enter into closed session at 6:53 p.m. to receive a written attorney-client privileged communication pursuant to the Michigan Open Meetings Act, 1976, § 15.268(1)(h), Michigan Compiled Laws. **The motion carried by roll call vote, 6-0.**

Motion by Councilmember Gipson, seconded by Councilmember Pettengill to come out of closed session at 8:43 p.m. **The motion carried, 6-0.**

Other Business

13. Call to the public

Mayor Tobbe opened the call to the public at 8:45 p.m. Hearing and seeing no comment, the call to the public was closed.

14. Adjournment

Motion by Councilmember Schmenk, seconded by Councilmember Gipson to adjourn the meeting at 8:45 p.m. **The motion carried, 7-0.**

Tara Brown, City Clerk



City of Brighton

REPORT FROM THE CITY MANAGER TO CITY COUNCIL

September 23, 2025

SUBJECT: **CONSIDER APPROVING THE PURCHASE OF A NEW FLYGT RECYCLE PUMP FROM KENNEDY INDUSTRIES FOR A COST NOT TO EXCEED \$17,993**

BACKGROUND

Located just outside of the Lower Gallery of the Wastewater Treatment Plant (WWTP) is a duplex Recycle Pump Station. This pump station pumps water from the sludge thickening tanks and centrifuges back to the headworks of the plant. Recycle Pump #1 is now due for replacement.

ADMINISTRATIVE SUMMARY

The Recycle Pump Station is an important part of the wastewater treatment plant process. The water that is discharged from the sludge thickening tanks and centrifuges cannot flow by gravity back to the headworks of the plant. The Recycle Pump Station pumps the water from these two processes back into the wastewater flow where it can then flow through the entire treatment process again.

Recycle Pump #2 was replaced in 2023. Once Pump #1 is replaced the Recycle Pump Station will provide reliable service for the next 7-10 years.

Kennedy Industries in Wixom, Michigan is a sole source supplier of Flygt brand pumps. This pump is a direct replacement for the existing pump. Once the new pump is purchased and received Wastewater Staff will provide the labor required to install it.

BUDGET INFORMATION

City Council approved \$25,000 in the 2025/2026 Utilities fund for the purpose of replacing Recycle Pump #1 at the Wastewater Treatment Plant.

RECOMMENDATION

Approve the purchase of a new Flygt Recycle Pump from Kennedy Industries for a cost not to exceed \$17,993.

Prepared by: Corey Brooks, Deputy DPS Director

Reviewed by: Marcel Goch, DPS Director

Reviewed by: Elizabeth Gaines, Finance Director

- Within Budget
- Budget Amendment Necessary and In Proper Form
- Other _____

Reviewed &

Approved by: Gretchen Gomolka, City Manager



City of Brighton

REPORT FROM THE CITY MANAGER TO CITY COUNCIL

SEPTEMBER 23, 2025

SUBJECT: CONSIDER AWARDING THE CONTRACT FOR THE PINE CREEK WATER HOUSE INSPECTION TO DIXON ENGINEERING IN AN AMOUNT NOT TO EXCEED \$14,950.

BACKGROUND

The Pine Creek Water House was built in 2005 and provides 250,000 gallons of additional storage capacity for the water distribution system. Since its construction, the tank has operated without any major maintenance issues. Following the recommendation of Michigan Department of Environment, Great Lakes, and Energy’s (EGLE) best practices we would like to schedule an inspection for the water house.

It is industry best practices to routinely inspect water storage tanks to assess structural integrity and identify any potential deficiencies before they become critical. Both Summit and Northstar Water Tanks were inspected prior to their major refurbishment projects in 2023. Regular inspections are an essential part of responsible infrastructure management.

ADMINISTRATIVE SUMMARY

The tank inspection will include a comprehensive evaluation of both the interior and exterior of the storage tank, as well as associated components such as piping, vents, and other tank-related parts. The inspection will verify compliance with all applicable EGLE and OSHA standards. Any observed deficiencies will be identified and ranked in order of urgency. This inspection is limited to the tank itself and does not include the pumps or the building.

An Invitation to Bid (ITB) was published on the Michigan Intergovernmental Trade Network (MITN) website on August 20, 2025, using the bidding documents previously approved by the City Attorney.

Two alternate bids were published:

- Alternate A - Empty, Clean, and Enter the Tank (Manual Inspection):
 - This method involves draining the tank, allowing personnel to enter, clean the interior surfaces, and perform a detailed inspection from inside the tank.
- Alternate B - Remote Operated Vehicle (ROV) Inspection (While Tank is Full):
 - This method uses a remotely operated vehicle equipped with cameras and sensors to inspect the tank while it remains filled and in service.

Sealed bids were opened on Thursday, September 11, 2025 and four bids were received. See bid results below.

Pine Creek Storage Tank Inspection		
#ITB-WAT-25-01		
Bid Analysis		
Bidder	Alternate A	Alternate B
Dixon Engineering, Lake Odessa, MI	\$13,000.00	\$5,500.00
B&N Inspection, St. Louis, MA	\$22,900.99	\$8,652.44
Hydra Dive Tech, Mattapoissett, MA	\$16,570.00	\$5,200.00
Utility Service Company, Perry, GA	\$15,061.00	\$7,709.00

Dixon Engineering was the low bidder.

In the original bid document Dixon Engineering mistakenly transposed the amounts for Alternates A and B. The city has verified with Dixon that this was an error on their part, and the figures for Alternates A and B were intended to be reversed. The correct amounts are listed in the bid analysis. City staff is recommending using the method outlined in Alternative A as it includes cleaning and not just inspection.

Dixon Engineering has previously provided storage tank inspection services for the City of Brighton, including the Summit and Northstar rehabilitation projects, with positive results. Dixon Engineering is a professional firm specializing in water towers and storage tanks.

BUDGET INFORMATION

City Council approved \$15,000 in the FY 25-26 Utilities Fund for the inspection of Pine Creek Water Storage Tank. Staff would like to add our standard 15 percent contingency, so the total being requested is \$14,950.

RECOMMENDATION

Award the contract for the Pine Creek Water House Inspection to Dixon Engineering in an amount not to exceed \$14,950

Prepared by: Josh Bradley, Water Treatment Plant & Regulatory Compliance Superintendent

Reviewed by: Marcel Goch, DPS Director

Elizabeth Gaines, Finance Director

- Within Budget
- Budget Amendment Necessary and In Proper Form
- Other _____

Reviewed &

Approved by: Gretchen Gomolka, City Manager



City of Brighton

REPORT FROM THE CITY MANAGER TO CITY COUNCIL SEPTEMBER 23, 2025

SUBJECT: CONDUCT A PUBLIC HEARING AND CONSIDER ADOPTION OF ORDINANCE 611.

PROPOSED AMENDMENTS TO THE ZONING ORDINANCE PERMITTING TEMPORARY OUTDOOR STORAGE.

ADMINISTRATIVE SUMMARY

- The outdoor storage of goods and merchandise is only permitted in the industrial zoning districts.
- The Community Development Department receives requests each year from numerous commercial retail businesses asking for outdoor storage of goods/merchandise on a temporary basis. These businesses are most commonly the “big box” retail establishments and large department stores that reside in the C1 and OR districts.
- The Planning Commission reviewed this topic as part of their recent Master Plan review, and drafted the proposed language
- The Planning Commission conducted a public hearing on the amendments listed in proposed Ordinance 611 at their regular meeting of April 21, 2025. A motion was granted by the Commission recommending the approval of Ordinance 611.
- City Council conducted a first reading of the proposed ordinance at their regular meeting held on August 26, 2025.

Recommendation

Conduct a public hearing and **motion to adopt ordinance 611 as presented.**

Prepared by: Michael Caruso, Community Development Manager

Approved by: Gretchen Gomolka, City Manager

Reviewed by: City Attorney (Required for all agreements, ordinances, etc.)

Acceptable Form and Ready to Execute

Other _____

Attachments: 1. Zoning Ordinance Amendments Proposed (Redlined Version)
2. Ordinance 611 (Draft)

5. Mechanical equipment located on roof tops or elevated above grade shall be screened or shielded to prevent viewing from public right of ways and City owned parking lots. Screening, shielding and/or mechanical equipment shall not exceed 60 inches in height and shall be located within the rear 2/3 of the building. Mechanical equipment located on/at grade shall also be screened.
6. Pitched roofs may not shed snow or water onto a right-of-way nor onto an adjacent property without the approval of the City Council.
7. Mansard roofs are prohibited.
8. Balconies, railings, and porch structures are permitted and shall be constructed of metal, wood, cast concrete, or stone.
9. Facades may be Supplemented by awnings, which add color and visual interest to an entry or display window, and give shade and shelter. Awnings shall be made of quality materials, such as heavy canvas that will not fade or tear easily. Prohibited awning types are: rigid plastic formed awnings (typically cubed or curved, with or without internal lighting); stock unpainted metal awnings; and mansard style canopy awnings.

98-3.38 C-1 GENERAL REGULATIONS

All uses permitted in any C-1 district are subject to the following limitations:

- A. That the development of commercial facilities shall be in the form of an integrated, physically adhering group of three or more units maintaining a reasonable degree of architectural integrity including an over-all minimum floor space of 10,000 square feet in such three or more units. Each unit shall have a floor area of not less than 1,000 square feet.
- B. Off-street parking facilities shall be provided as hereinbefore specified in **Section 98-5.6**.
- C. Upon the construction of the initial group of three or more units in compliance with the provisions of this Chapter, additional units may be constructed without requirement of physical adhesion to such additional units as long as reasonable architectural integrity is maintained, and provided that additional off-street parking is afforded if necessary to comply with **Section 98-5.6**.

- D. That the appropriate use of property adjacent to the area included in the district will be safeguarded so as to avoid injury to health or property of adjacent residents or property owners.
- E. All C-1 districts shall have an area sufficient in size to supply any adequate and safe water supply and a safe and adequate sewage disposal system as established by standards required by the state or county health departments rules and regulations.
- F. **The permanent outdoor storage or display of any goods, materials, or supplies shall be prohibited irrespective of whether or not they are for sale. Seasonal storage of goods may be permitted per Section 98-4.43.**

98-3.39 C-2 GENERAL REGULATIONS

Every lot in the C-2 districts, used for a business, shall have an area sufficient in size to supply an adequate and safe water supply and a safe and adequate sewage disposal system as established by standards required by the state or county health department rules and regulations.

98-3.40 C-3 DISTRICT COUNCIL APPROVAL REQUIRED

All development in the C-3 district shall be subject to the following standards:

- A. Before construction, alteration, moving or demolition affecting the exterior appearance of any structure is made within these districts, the person proposing to make such construction or changes shall file an application for site plan review. The application shall be referred together with plans pertaining thereto to the Planning Commission which shall review such plans and applications and no permit shall be granted until the commission and City Council have acted thereon as hereinafter provided.
- B. In reviewing plans, the Planning Commission shall give consideration to the following:
 1. The proposed land use, including its adherence to the intent of this zoning district.
 2. The architectural value and significance of the structure and its relationship to the character of the surrounding area.
 3. The relationship of the exterior architectural features of the structure to the rest of the structure and to the surrounding area.



98-3.43 O-R DISTRICT REGULATIONS

- B. O-R District General Regulations. In addition to the regulation in [Section 98-3.15](#), the following shall apply to the O-R district.
1. No principal building or structure erected in the O-R district shall have less than 10,000 square feet on its main floor nor shall such a principal building contain a volume or bulk of less than 120,000 cubic feet.
 2. Distances Between Buildings. When two or more structures are located on the same site they must have a clear distance of no less than 50 feet between the points or surfaces of closest proximity. This shall apply to all buildings even though connected by enclosed walkways or passages.
 3. Expressway Side or Rear Yard. All sites abutting a state or federal expressway, service ramp, entry ramp, or exit ramp shall maintain a minimum distance of 200 feet from the right-of-way line to the closest face or projecting surface of any structure.
 4. In an O-R district, no display shall be permitted in an exterior show window or be visible from any property line. The total area devoted to display, including both the objects displayed and the floor space set aside for persons observing the displayed objects, shall not exceed 15 percent of the gross floor area of the establishment.
 5. The **permanent** outdoor storage or display of any goods, materials or supplies shall be prohibited irrespective of whether or not they are for sale. **Seasonal storage of goods may be permitted per Section 98-4.43**
 6. Warehousing or indoor storage of goods or materials in quantity greater than normally incidental to permitted uses shall be prohibited.
 7. Not more than 50 percent of any side yard abutting a secondary street shall be used for vehicular parking or driveways.
 8. Where the parking is provided in parking structures to satisfy the parking requirements of this Chapter, they shall be designed so all architectural and vehicular lighting is shielded or screened from view from adjacent properties. No lighting shall be so located or visible as to be a hazard to traffic safety.

98-3.44 O-R, I-A, I-B, AND LIP HEIGHT EXCEPTIONS

- A. Exceptions to height limitation. The City Council may, after a finding and recommendation from the Planning Commission, permit a development in the O-R I-A, I-B, or LIP districts not to exceed six stories or a maximum height of 75 feet (22.8750 meters) subject to the following conditions and standards:
1. The proposed use and height must be of such character that it will be in harmony with the appropriate and orderly development of the O-R, I-A, I-B, or LIP districts and other development in the immediate area.
 2. Providing that the change in height from the existing natural topographical elevation on the development project site is more than 30 feet from its low point to high point.
 3. The location, size, and intensity of any such proposed development must be designed to eliminate any possible nuisance likely to emanate therefrom which might be adverse to occupants of any other nearby permitted uses.
 4. The proposed development must be in accord with the spirit and purpose of this Chapter and not be inconsistent with, or contrary to, the objectives sought to be accomplished by this Article X and principles of sound planning.
 5. The proposed development is of such character that the vehicular traffic generated will not have an adverse effect upon, or be detrimental to, the surrounding land uses or the adjacent thoroughfares.
 6. The proposed development is of such character and intensity and arranged on the site so as to eliminate any adverse effects resulting from noise, dust, dirt, glare, odor, or fumes.
 7. In approving an increase in height, the City Council may attach reasonable conditions regarding the location, character, density, and other features of the proposed development as they may deem reasonable in the furtherance of the intent of this Section.

98-4.43 SEASONAL OUTDOOR SALES AND ACTIVITIES

- E. Seasonal outdoor sales may include up to 1 primary temporary tent plus 1 additional temporary tent or temporary storage container or trailer. Sales and storage shall be limited to the approved tent(s) and, when provided, storage container. No tent shall exceed 2,400 square feet in area nor shall it be greater than 20 feet in height.
- F. If a seasonal outdoor sales use has a temporary storage container or trailer for the purpose of temporary storage of related merchandise, sales or a combination of storage and sales, the exterior design, appearance and color scheme of the container / trailer shall be in keeping with the general color scheme of the surrounding development or a neutral color. For example, a bright yellow or orange container / trailer located in a shopping center with a brick façade shall not be permitted. When both a container / trailer and tent are proposed, the container / trailer shall not be placed closer to public street than the tent.
- G. Each temporary use may have one sign attached to a tent or other structure on the site. The sign area shall not exceed 75 square feet. For corner lots, one additional sign of up to 75 square feet may be permitted. In addition, signs required by law designating fire routes, tent entrances and exits shall be permitted. Also, directional signs up to 4 square feet in area and not greater than 3 feet in height may be permitted at driveways serving the site and up to 4 additional directional signs may be placed at locations within the site if necessary for wayfinding and / or traffic safety. No balloons, festoons, inflatables or other similar devices designed to attract attention to the site or use shall be permitted.
- H. Seasonal outdoor sales shall comply with all applicable laws and ordinance regulations of the City including obtaining a license under Chapter 22, Article XIV of the City Code.
- I. **Seasonal outdoor storage is permitted in the C1 and OR districts, subject to the following requirements:**
- 1. Seasonal outdoor storage is permitted on a lot or parcel a maximum of one time per calendar year, up to ninety (90) days in duration. There shall be at least one hundred and twenty days (120) between any two seasonal outdoor storage permits on a lot or parcel.**
 - 2. Stored materials shall be enclosed in secured containers designed for shipping and storage. Such containers shall be clean and in good repair and shall be reviewed and approved by the City. Containers shall not exceed 14 feet in height.**
 - 3. Hazardous material storage is prohibited.**
 - 4. Seasonal outdoor storage shall only be permitted in the side yard and rear yard areas of a parcel and must be placed on a concrete or asphalt surface.**
 - 5. Seasonal outdoor storage shall not be located in any emergency access drives and areas and is not permitted against an exterior wall of a building.**
 - 6. A plot plan describing the location and type of the container(s), shall be submitted to the city for review and approval at least 30 days prior to the storage containers being delivered to the parcel.**
 - 7. Seasonal outdoor storage shall not be located within 100 feet of a residential use or public right-of-way.**

98-4.44 ACCESSORY TEMPORARY EVENTS AND ACTIVITIES

Temporary events and activities. From time to time, existing businesses may hold temporary events and activities, including grand openings, sidewalk sales, temporary expanded outdoor dining and other special outdoor events. These are temporary uses which are permitted within the zoning district, and are accessory to, and consistent with, the principal use. These uses shall be regulated as follows:

- A. Temporary events and activities may take place not more than 4 times per calendar year on a lot or parcel (i.e., four sales events per year per lot). The total duration of a sales event shall not exceed 5 days. There shall be at least fifteen (15) days between any two temporary events and activities on a lot or parcel. These time limits may be expanded by city council in the event of a state of emergency, where additional outdoor activity is consistent with furtherance of the health, safety and welfare.
- B. When temporary events and activities are proposed to be conducted in the parking lot of an active use, the applicant shall demonstrate that there is ample space for the temporary event or activity, any principal uses, and parking for all uses on the subject site. Parking may be provided within 500 ft of the subject site, with approval of property owner(s) of associated site(s).
- C. Temporary events and activities shall be established within five days of the event or activity, including erection of tents, placement of merchandise, and placement of temporary signs.
- D. Temporary events and activities may include up to 1 primary temporary tent plus 1 additional temporary tent. No tent shall exceed 2,400 square feet in area nor shall it be greater than 20 feet in height.
- E. Signage shall be permitted consistent with the city's sign ordinance.

Temporary events and activities shall comply with all applicable laws and ordinance regulations of the City including obtaining a license under Chapter 22, Article XIV of the City Code.

(Amended by Ord. No. 595, 7-21-2022)

1 Purpose and Introduction

2 Definitions

3 Zoning Districts

4 Use Standards

5 Site Standards

6 Development Procedures

7 Admin and Enforcement



CITY OF BRIGHTON
ORDINANCE NO. 611

AN ORDINANCE OF THE CITY OF BRIGHTON, MICHIGAN; AMENDING CHAPTER 98,
“ZONING” OF THE CODE OF ORDINANCE AS FOLLOWS:

THE CITY OF BRIGHTON, LIVINGSTON COUNTY, HERBY ORDAINS:

Amend Section 98-3.38 “C-1 General Regulations” by adding the following new subsection F:

- F. The permanent outdoor storage or display of any goods, materials or supplies shall be prohibited irrespective of whether or not they are for sale. Seasonal storage of goods may be permitted by Section 98-4.43.

Amend Section 98-3.43 “O-R District Regulations” by repealing subsection (5) and replacing with the following new language:

5. The permanent outdoor storage or display of any goods, materials or supplies shall be prohibited irrespective of whether or not they are for sale. Seasonal storage of goods may be permitted by Section 98-4.43.

Amend Section 98-4.43 “Seasonal Outdoor Sales and Activities” by adding the following new subsection I to read in its entirety as Follows:

- I. Seasonal outdoor storage is permitted in the C1 and OR districts, subject to the following requirements:
 1. Seasonal outdoor storage is permitted on a lot or parcel a maximum of one time per calendar year, up to ninety (90) days in duration. There shall be at least one hundred and twenty days (120) between any two seasonal outdoor storage permits on a lot or parcel.
 2. Stored materials shall be enclosed in secured containers designed for shipping and storage. Such containers shall be clean and in good repair and shall be reviewed and approved by the City. Containers shall not exceed 14 feet in height.
 3. Hazardous material storage is prohibited.
 4. Seasonal outdoor storage shall only be permitted in the side yard and rear yard areas of a parcel and must be placed on a concrete or asphalt surface.
 5. Seasonal outdoor storage shall not be located in any emergency access drives or areas and is not permitted against an exterior wall of a building.

6. A plot plan describing the location and type of the container(s), shall be submitted to the city for review and approval at least 30 days prior to the storage containers being delivered to the parcel.
7. Seasonal outdoor storage shall not be located within 100 feet of residential use or public right-of-way.

Effective Date:

This ordinance shall take effect fifteen (15) days after the enactment, and after publication as provided by law and the Charter.

YEAS: Council Member(s) _____

NAYS: Council Member(s) _____

ABSTAIN: Council Member(s) _____

ABSENT: Council Member(s) _____

As the Clerk for the City of Brighton , Livingston County, Michigan, I certify this is a true and complete copy of an ordinance adopted by the City of Brighton Council at a regular meeting held on _____, 2025.

Tara Brown, City Clerk

First Reading:

Brief Publication:

Second Reading:

Public Hearing:

Adoption:

Full Publication:



City of Brighton

REPORT FROM THE CITY MANAGER TO CITY COUNCIL
SEPTEMBER 23, 2025

SUBJECT: CONSIDER AN APPOINTMENT TO THE DOWNTOWN DEVELOPMENT AUTHORITY

ADMINISTRATIVE SUMMARY

The Downtown Development Authority currently has one vacancy due to the resignation of Pam McConeghy. The appointed individual will serve the remainder of the term, which expires in August 2026. The city has received six applications for consideration.

- Andrea Banfield – Seeking first-time appointment
- Jon Emaus – Seeking appointment
- Stephanie Myers – Seeking first-time appointment
- Matthew Vetter – Seeking first-time appointment
- Susan Walters – Seeking first-time appointment
- Jamie Wasil – Seeking first-time appointment

Prepared by: Joe Gaikema, Management Assistant

Reviewed by: Tara Brown, City Clerk

Approved by: Gretchen Gomolka, City Manager



City of Brighton

REPORT FROM THE CITY MANAGER TO CITY COUNCIL SEPTEMBER 23, 2025

SUBJECT: CONSIDER APPROVAL OF SITE PLAN 25-04, ADDITION AND RENOVATION OF THE BRIGHTON AREA FIRE AUTHORITY FIRE STATION LOCATED AT 615 W. GRAND RIVER

ADMINISTRATIVE SUMMARY

The Brighton Area Fire Authority is proposing an exterior addition and interior renovations to their fire station at 615 W. Grand River. Section 98-6.1 of the zoning ordinance requires Planning Commission and City Council approval for a construction project that increases usable floor area by 50% or more. Brivar Construction Company has been hired by BAFA as the general contractor and applicant for site plan review.

- The applicant is proposing a 2-story exterior expansion with a footprint of 7,929 square feet, that creates more than 13,000 square feet of new interior space.
- The current interior space of the building will undergo extensive renovations.
- The proposed project will include parking lot improvements and resurfacing.
- The site plan complies with planning and zoning regulations of the City.
- Tetratex has approved the site plan with one item recommended to be completed prior to commencement of construction.
- The Brighton Fire Authority has recommended approval of the site plan.
- The Planning Commission granted a recommendation of approval at their regular meeting held on September 15, 2025.

Recommendation

Motion to approve site plan 25-04 as presented.

Prepared by: Michael Caruso, Community Development Manager

Approved by: Gretchen Gomolka, City Manager

Attachments:

1. Application
2. Consultant Review Letters
3. Exterior Elevations and Interior Design
4. Site Plan



CITY OF BRIGHTON SITE PLAN REVIEW APPLICATION

200 N. First Street - Brighton, MI 48116 - commdev@brightoncity.org - 810.844.5149

- | | |
|---|---|
| <input type="checkbox"/> Conceptual Site Plan – \$300 | <input type="checkbox"/> Administrative Review - \$400 |
| <input type="checkbox"/> New Site Plan – \$3,800 | <input type="checkbox"/> Exterior Building Review - \$675 |
| <input checked="" type="checkbox"/> Amended Site Plan – \$675 | <input type="checkbox"/> Change of Use Review - \$675 |

*Application fee is due at time of submittal. Payment does not include possible consulting fees.

PROJECT LOCATION

Project Address: 615 Grand River Ave

Parcel Tax ID # 4718 - 30-304-076

Current Zoning Classification: C-2

Adjacent Property Zoning Classification: North C-2, South C-2, West South Ore Creek, East is Grand River Ave.

PETITIONER

Name: Craig Stockard Phone: 248-446-8000

Company: Brivar Construction Company

Address: 9325 Maltby Road, Brighton, MI 48116

Email: craig@brivar.com

PROPOSED DEVELOPMENT DESCRIPTION: 5,940 sf building addition and parking lot improvements

If Residential, Number of Units: NA Number of Buildings: 1





Warranty of Petitioner (MUST BE COMPLETED BY PETITIONER):

I understand that the proposed site plan will not be considered by the Planning Commission until such time that the plan contains at least the minimum amount of information required by the city, per **Section 98-6.1(D)** of the City of Brighton Zoning Ordinance.

I understand that if the Planning Commission and/or City Council approve the approved site plan, it will be effective for one (1) year following the date of final approval, and that I am bound to construct the project in strict compliance with the approved plan.

Signature of Petitioner

Craig Stockard

Printed Name of Petitioner

Date: 8/11/2025

Address: 9325 Maltby Rd, Brighton, MI 48116

Phone: 248-446-8000

Email: craig@brivar.com

I, the property owner, authorize the petitioner to submit this application for review by the Planning Commission.

Signature of Property Owner

Michael O'Brian, Fire Chief

Printed Name of Property Owner

Date: 08/02/2025

Address: 615 Grand River Ave, Brighton, MI 48116

Phone: 810-299-0024

Email: mobrian@brightonareafire.com



BRIGHTON AREA FIRE AUTHORITY

615 W. Grand River Ave.
Brighton, MI 48116
o: 810-229-6640 f: 810-229-1619

August 25, 2025

Mike Caruso
Building/Zoning Dept.
City of Brighton
200 North First Street
Brighton, MI 48116

RE: Brighton Area Fire Authority
615 W. Grand River Ave.
Brighton, MI 48116
Site Plan Review

Dear Mike:

The Brighton Area Fire Department has reviewed the above-mentioned site plan. The plans were received for review on August 11, 2025 and the drawings are dated June 13, 2025 with latest revisions dated June 24, 2025. The project is based on a renovation of an existing 10,485 square foot fire station and addition of 13,734 square feet, including a new second story. It also includes significant site improvements. The plan review is based on the requirements of the International Fire Code (IFC) 2024 edition.

The fire authority has reviewed the site plan and has no concerns with the proposed project.

Additional comments will be given during the building plan review process (specific to the building plans and occupancy). The applicant is reminded that the fire authority must review the fire protection systems submittals (sprinkler & alarm) prior to permit issuance by the Building Department and that the authority will also review the building plans for life safety requirements in conjunction with the Building Department.

If you have any questions about the comments on this plan review please contact me at 810-229-6640.

Cordially,

A handwritten signature in black ink, appearing to read "R. Boisvert".

Rick Boisvert, FM, CFPS
Fire Marshal

cc: Sbarb@livgov.com
kari.jozwik@tetrattech.com



September 12, 2025

Mr. Michael Caruso
City of Brighton
200 North First Street
Brighton, MI 48116

**Re: Brighton Area Fire Authority Station 31
Site Plan Review No. 2**

Dear Mr. Caruso:

Tetra Tech has completed a second review of the revised site plan for the proposed Brighton Area Fire Authority (BAFA) Station 31 expansion located at 615 Grand River Avenue. The site plan, last dated September 12, 2025, was prepared by Monument Engineering Group Associates on behalf of Brivar Construction Company. The proposed work includes a 7,929 square foot expansion to the existing 10,485 square foot fire station. Other improvements include repaving and adjusting the existing parking lot and drives and storm sewer improvements. We offer the following comments:

GENERAL

1. The plans show the proposed building expansion, guardrail, and perforated underdrain close to the south property line. There does not appear to be enough room between the building and the existing property line to complete the proposed work. A construction easement should be obtained from the south property owner for access to their property during construction if necessary. This should be addressed prior to beginning construction and any easement should be provided to the City for their records.

UTILITIES

1. The proposed 6-inch water main lead should be shown as a utility crossing in the proposed storm sewer profile.

RECOMMENDATION

The applicant has satisfactorily addressed our previous concerns. Therefore, we have no engineering objection to the approval of the site plan dated September 12, 2025, subject to the above comments being addressed to the City's satisfaction. Please call me at 517-316-3952 if you have any questions or comments.

Sincerely,

A handwritten signature in blue ink that reads 'Shelby Byrne'.

Shelby Byrne, P.E.
Project Engineer



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Brivar.

www.ByFika.com
 3411 CEDDES ROAD
 ANN ARBOR, MI 48105
 DAVID@BYFIKA.COM
 (248) 946-1922

fika
 ARCHITECTS

SEAL:

07/22/25

ADDENDUM 01

07/22/25

ADDENDUM 01

07/22/25

DATE

07/22/25

DESCRIPTION

MARK

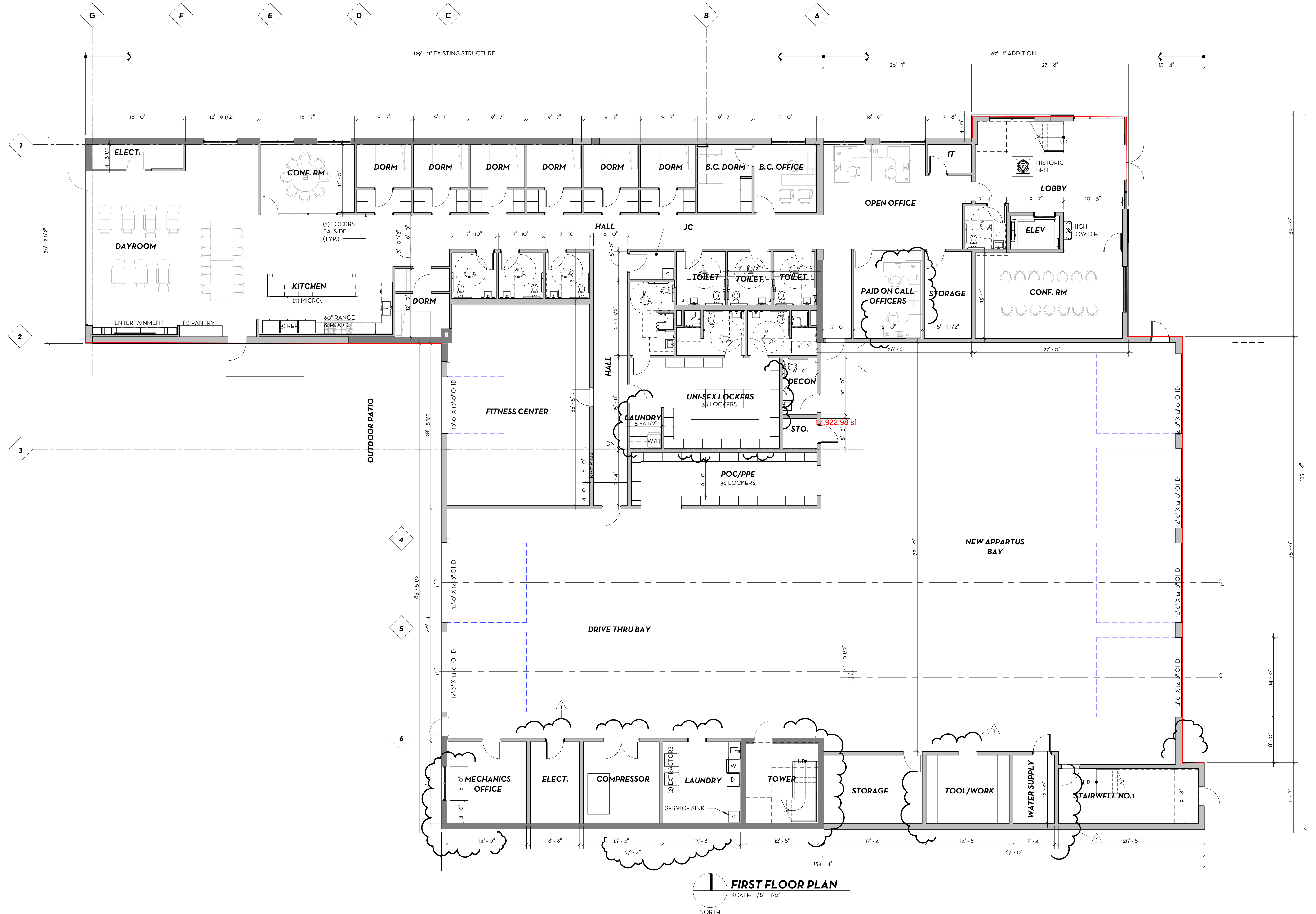
BABA 31 EXPANSION

615 W GRAND RIVER AVE.
 BRIGHTON, MI 48116

BUILDING
 RENDERINGS

DATE:
 07/17/2025

NO. 01
Ao-01



FIRST FLOOR PLAN
 SCALE: 1/8" = 1'-0"
 NORTH

SEAL:

MARK	ADDENDUM 01	DESCRIPTION	DATE	ADDENDUM 01	ADDENDUM 01
			07/22/25		07/22/25

FIRST FLOOR PLAN

BAFA 31 EXPANSION

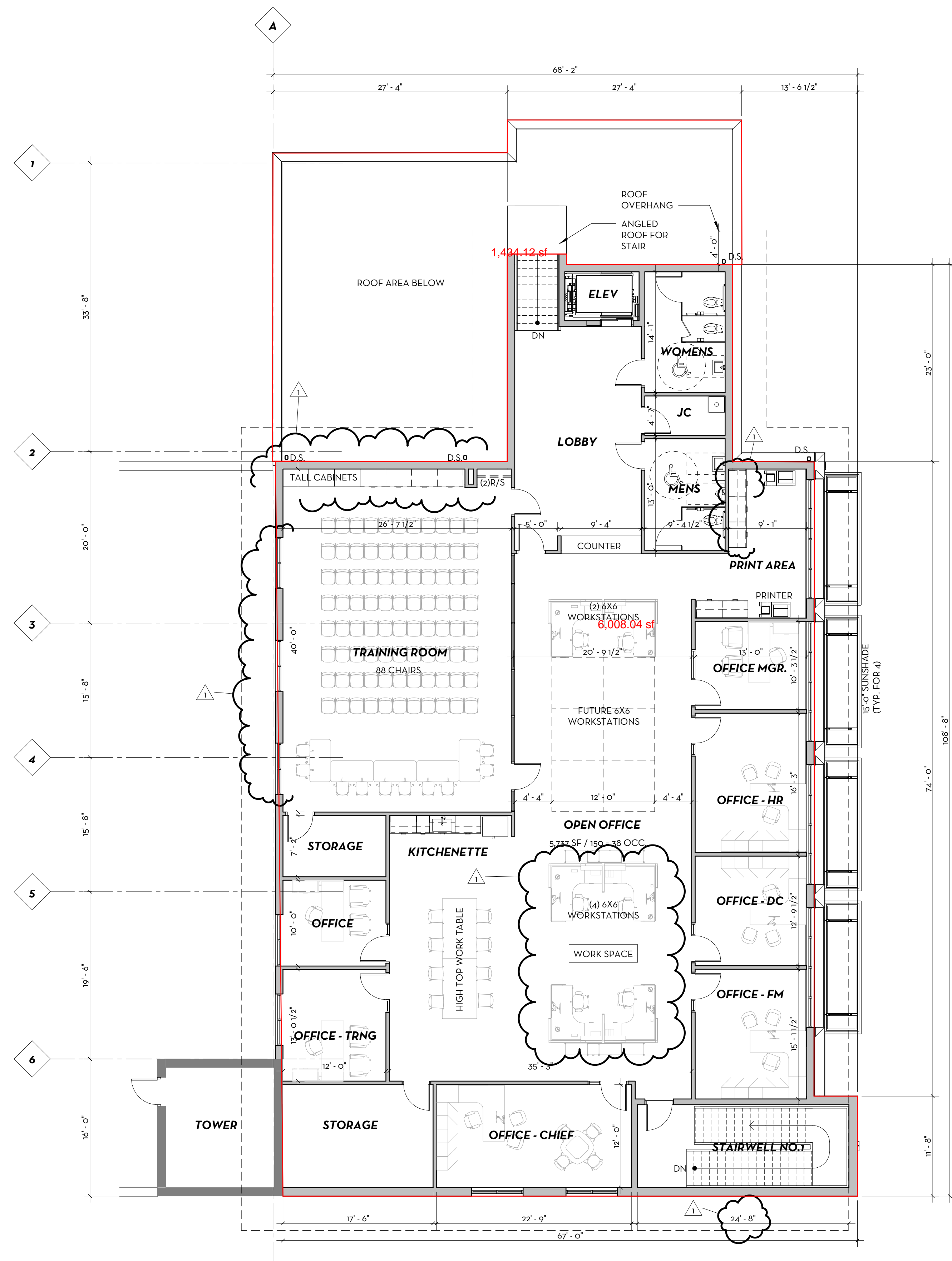
615 W GRAND RIVER AVE.
 BRIGHTON, MI 48116

DATE:
 07/17/2025

SHEET NO.
A1-01

SEAL:

MARK	DESCRIPTION	DATE	ADDENDUM #
1	ADDENDUM 01	07/22/25	ADDENDUM 01
2	ADDENDUM 01	07/22/25	ADDENDUM 01
3	ADDENDUM 01	07/22/25	ADDENDUM 01



SECOND FLOOR
SCALE: 1/8" = 1'-0"
NORTH

**SECOND FLOOR
PLAN**

DATE:
07/17/2025
SHEET NO.
A1-02

615 W GRAND RIVER AVE.
BRIGHTON, MI 48116

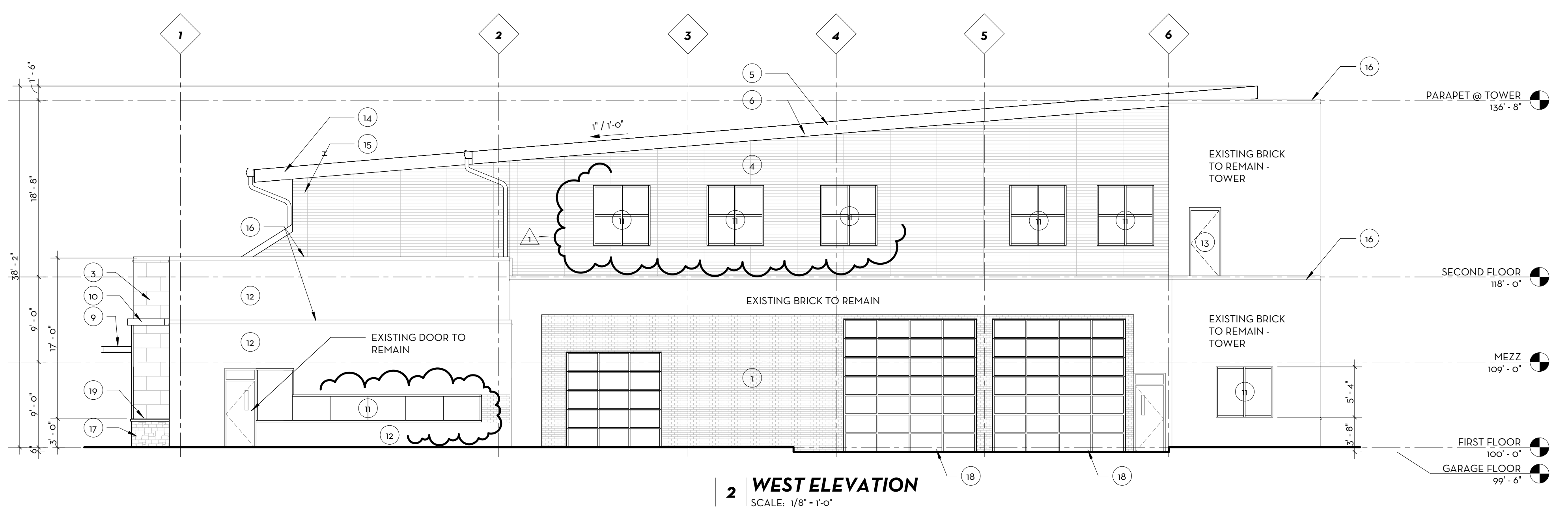
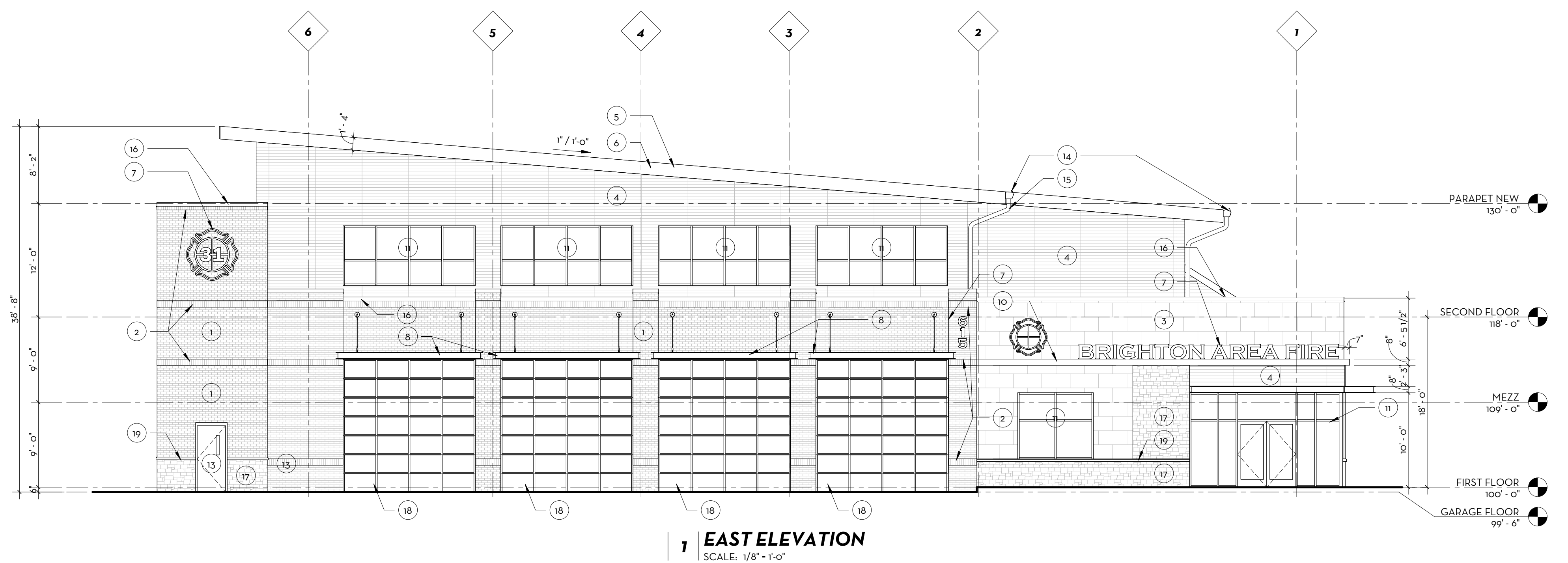
BAFA 31 EXPANSION

www.ByFika.com

KEYED NOTES - ELEVATION

- 1 4" FACE BRICK - RUNNING BOND
- 2 4" FACE BRICK - SOLDIER COURSE
- 3 FIBER CEMENT RAIN SCREEN PANEL - STYLE 1 STONE LOOK
- 4 FIBER CEMENT RAIN SCREEN PANEL - STYLE 2 WOOD LOOK
- 5 STANDING SEAM METAL ROOF - BLACK
- 6 ALUMINUM WRAPPED FASCIA - BLACK
- 7 SIGNAGE BY OWNER
- 8 PRE-FINISHED ALUMINUM SUN LOUVER - RED
- 9 STEEL STRUCTURAL CANOPY - BLACK
- 10 ALUMINUM ACCENT BAND - BLACK
- 11 1" INSULATED GLAZING WITH LOW-E COATING IN 2" X 4 1/2" ALUMINUM FRAMINGS - BLACK
- 12 EXISTING BRICK FASADE WITH ARCUS STONE SCRATCH COAT - LIME PLASTER MEDIUM - COLOR TBD
- 13 NEW H.M. DOOR PANTED - TBD. REFER TO DOOR SCHEDULE
- 14 ALUMINUM GUTTER - BLACK
- 15 PREFINISHED ALUMINUM DOWNSPOUT - BLACK, CONNECT TO DRAIN
- 16 NEW PREFINISHED METAL COPING
- 17 APPLIED STONE
- 18 NEW ALL GLASS OVERHEAD DOOR, REFER TO SCHEDULE
- 19 LIMESTONE SILL

MARK	DESCRIPTION	DATE	ADDENDUM 01	ADDENDUM 01	ADDENDUM 01



LEGAL DESCRIPTION (AS PROVIDED)

(PER TITLE AGENCY: STEWART TITLE GUARANTY COMPANY, TITLE COMMITMENT NO.: LIB109320, EFFECTIVE DATE: 10/3/2018)

TAX ID: 4718-30-304-076

SCHEDULE C DESCRIPTION:

THE LAND REFERRED TO IN THIS COMMITMENT IS LOCATED IN THE CITY OF BRIGHTON, COUNTY OF LIVINGSTON, STATE OF MICHIGAN, AND DESCRIBED AS FOLLOWS:

PARCEL 1:
 BEGINNING AT A POINT ON THE WEST RIGHT OF WAY LINE OF GRAND RIVER AVENUE, WEST 255.45 FEET; NORTH 20 DEGREES 02 MINUTES 05 SECONDS WEST ALONG TRAVELED CENTERLINE OF GRAND RIVER AVENUE 1,742.65 FEET; SOUTH 69 DEGREES 37 MINUTES 37 SECONDS WEST 50.00 FEET FROM THE SOUTH 1/4 POST OF SECTION 30. TOWN 2 NORTH, RANGE 6 EAST, BRIGHTON TOWNSHIP, CITY OF BRIGHTON, LIVINGSTON COUNTY, MICHIGAN; THENCE SOUTH 69 DEGREES 37 MINUTES 37 SECONDS WEST 357.32 FEET TO THE EAST BANK OF BRIGHTON MILL POND; NORTH 46 DEGREES 11 MINUTES 05 SECONDS WEST ALONG SAID BANK 108.01 FEET; NORTH 10 DEGREES 43 MINUTES 50 SECONDS WEST ALONG SAID BANK 80.48 FEET; NORTH 69 DEGREES 37 MINUTES 37 SECONDS EAST 391.90 FEET TO THE WEST RIGHT OF WAY LINE OF GRAND RIVER AVENUE; SOUTH 20 DEGREES 02 MINUTES 05 SECONDS EAST ALONG SAID RIGHT OF WAY LINE 176.60 FEET TO THE POINT OF BEGINNING OF THIS DESCRIPTION. SUBJECT TO EASEMENT ACROSS THE WESTERLY 20 FEET THEREOF.

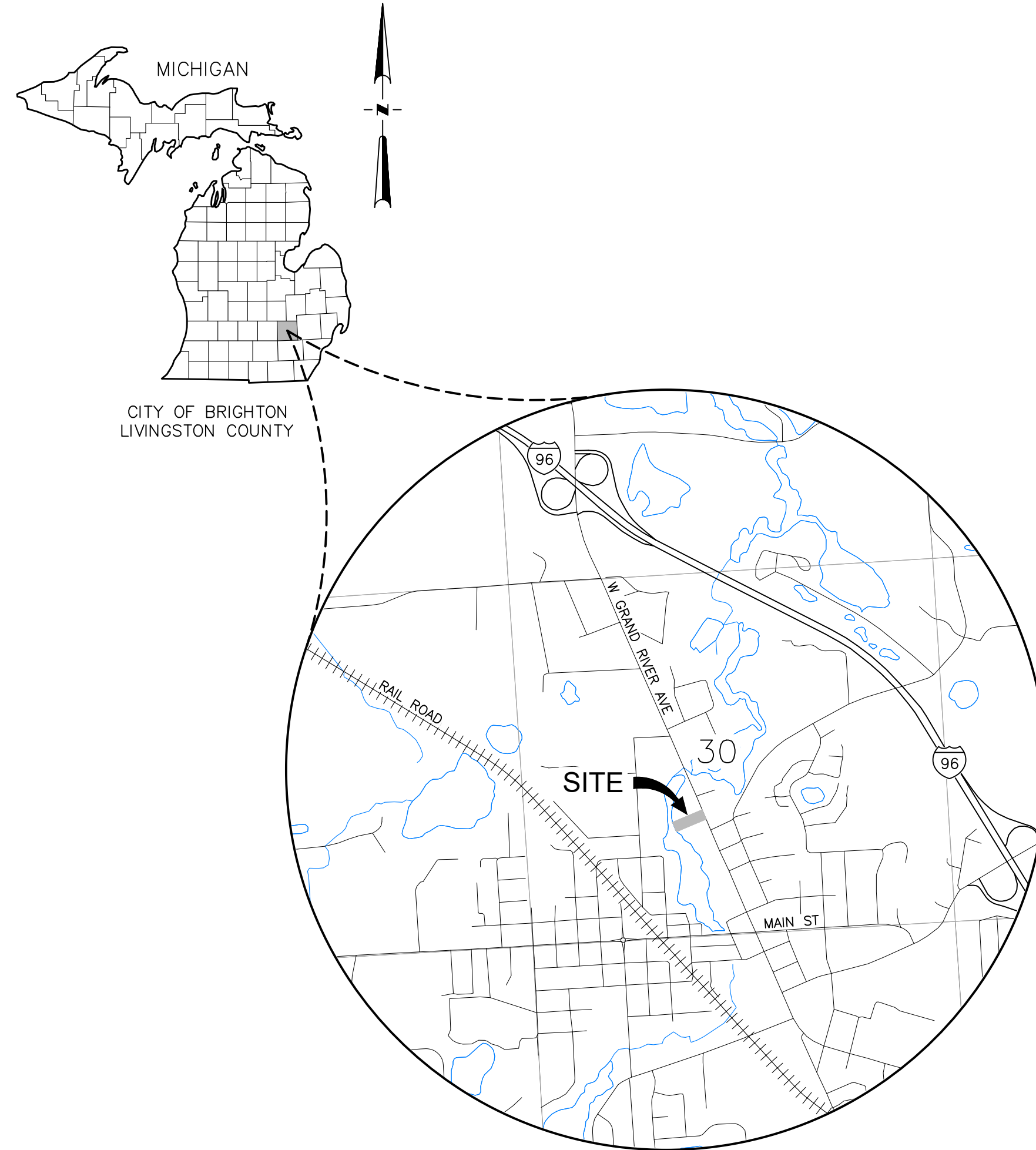
BEARING REFERENCE

BEARINGS ARE BASED ON PROJECT COORDINATE SYSTEM:
 MICHIGAN STATE PLANE COORDINATE SYSTEM, NAD83 (CONUS) (MOL) (GRS80), SOUTH ZONE 2113, INTERNATIONAL FEET, GROUND.
 (LAT: 42°32'02.37" N, LON: 83°47'00.32" W, ELEV: 922, SCALE FACTOR: 1.00011854).

DRAINAGE OWNERSHIP NOTE

DRAINAGE SYSTEM IS TO BE OWNED AND PROPERLY MAINTAINED BY THE OWNER.

AMENDED SITE PLAN FOR BAFA STATION 31



LOCATION MAP

		PLAN SUBMITTALS		
		AMENDED SITE PLAN	REVISED PER CLIENT COMMENTS	REVISED PER CITY REVIEW
		6/13/2025	6/24/2025	9/12/2025
INCLUDED SHEETS				
GENERAL				
SHEET	G-1.0	COVER	•	•
SURVEY				
SHEET	V-1.0	TOPO SURVEY AND DEMOLITION PLAN	•	•
SITE PLAN				
SHEET	C-1.0	DIMENSION AND PAVING PLAN	•	•
VEHICLE CIRCULATION				
SHEET	C-2.0	EMERGENCY VEHICLE CIRCULATION	•	•
UTILITY				
SHEET	C-3.0	UTILITY PLAN	•	•
GRADING AND SOIL EROSION & SEDIMENT CONTROL				
SHEET	C-7.0	GRADING & SESC PLAN	•	•
SHEET	C-7.1	LCDC SESC NOTES AND DETAILS	•	•
SHEET	C-7.2	LCDC SESC DETAILS	•	•
STORM WATER MANAGEMENT				
SHEET	C-9.0	DRAINAGE AREA PLAN	•	•
SPECIFICATIONS				
SHEET	C-12.0	SPECIFICATIONS	•	•
SHEET	C-12.1	SPECIFICATIONS	•	•
LANDSCAPE				
SHEET	LS-1	LANDSCAPE PLANTING DETAIL	•	•
CITY OF BRIGHTON, LIVINGSTON COUNTY STANDARD DETAILS				

NOTES:

- THE OWNER SHALL FURNISH AS-BUILT DRAWINGS TO THE CITY OF BRIGHTON INDICATING ALL CHANGES AND DEVIATIONS FROM APPROVED DRAWINGS.
- WORK IN THE RIGHT-OF-WAY WILL REQUIRE A PERMIT.

DESIGN ENGINEER/SURVEYOR



MONUMENT ENGINEERING GROUP ASSOCIATES, INC

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

298 VETERANS DRIVE,
 FOWLERVILLE, MI 48836
 PHONE: 517-223-3512

CLIENT

BRIVAR CONSTRUCTION COMPANY
 9325 MALTBY ROAD
 BRIGHTON, MI 48116
 POC: JON SCHWARTZ
 PHONE: 248-446-8000

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS
 Monument Engineering Group Associates, Inc.
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 ENGINEER
 NO. 6201043168

Allan W. Pruss

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THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE INDIVIDUALLY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT :

Brivar.
 DESIGN • BUILD • DELIVER

BRIVAR CONST. CO.
 9325 MALTBY ROAD
 BRIGHTON, MI 48116
 (248) 446-8000

COVER
 BAFA STATION 31
 615 W GRAND RIVER AVE
 PART OF THE SW 1/4 OF SEC. 30, T.2N. -R.6E.
 CITY OF BRIGHTON, LIVINGSTON COUNTY, MI

DATE	PLAN SUBMITTALS/REVISIONS
6/13/2025	AMENDED SITE PLAN
6/24/2025	REVISED PER CLIENT COMMENTS
9/12/2025	REVISED PER CITY REVIEW

CURRENT ISSUE DATE:
9/12/2025

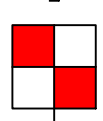
PROJECT NO: 25-006

SCALE: N/A

FIELD: ZW, RZ
 DRAWN BY: DC
 DESIGN BY: MN
 CHECK BY: AP, PL

G-10

NOT FOR CONSTRUCTION



BENCHMARKS

DATUM: NAVD88

BM A: FLANGE BOLT "M" ON HYDRANT, 30'± SOUTHWEST OFF BACK OF CURB FOR W GRAND RIVER AVENUE & 2'± SOUTHEAST OFF BACK OF CURB FOR FIRE DEPARTMENT EXIT DRIVE. ELEV = 926.45

BM B: CHISELED & PAINTED "X" ON SOUTHEAST CONCRETE LIGHT POLE BASE, 271'± SOUTHWEST OFF BACK OF CURB FOR W GRAND RIVER AVENUE & 7'± NORTHWEST OFF BACK OF CURB FOR FIRE DEPARTMENT ENTRANCE DRIVE. ELEV = 923.39

SOILS INFO

SOIL TYPES ARE ACCORDING TO THE USDA SOIL SURVEY WEB SITE (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)

- Caraba: CARLSLE MUCK, 0-2% SLOPES
- FoA: FOX SANDY LOAM, 0-2% SLOPES

UTILITY NOTES

- UTILITIES SHOWN ARE BASED ON:
 - SURVEYED MEASUREMENTS
 - MISS DIG MARKINGS LOCATED AT TIME OF SURVEY
 - PRIVATE UTILITY LOCATE SERVICES
 - UTILITY MAPS PROVIDED BY UTILITY OWNERS LISTED HEREON
- THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

UTILITY REFERENCES

WM:	CITY OF BRIGHTON
RECEIVED:	1/22/25
SAN:	CITY OF BRIGHTON
RECEIVED:	1/22/25
STORM:	CITY OF BRIGHTON
RECEIVED:	1/22/25
GAS:	CONSUMERS ENERGY
RECEIVED:	2/12/25
ELEC:	DTE ENERGY
RECEIVED:	1/23/25
PHONE/CABLE:	AT&T
RECEIVED:	1/29/25
PHONE/CABLE:	123.NET
RECEIVED:	1/28/25
PHONE/CABLE:	COMCAST
RECEIVED:	1/27/25
FIBER:	LIVINGSTON COUNTY FIBER
RECEIVED:	1/17/25

EXISTING PARKING

- 28 REGULAR SPACES
- 2 BARRIER FREE SPACES
- 30 TOTAL PARKING SPACES

STRUCTURE SCHEDULE

EX. STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
(25003) CBS	925.05	12" NE IE= 921.69
(25404) CBS	921.76	12" SE IE= 918.61
(25409) CBS	920.85	6" SE IE= 918.34 12" SW IE= 918.29
(25417) CBS	920.94	12" W IE= 917.90 12" NE IE= 917.95

EX. SANITARY SEWER		
STRUCTURE	RIM ELEV.	PIPES
(25061) SMH	924.89	T/WATER= 919.39

EXISTING LEGEND

- DECIDUOUS TREE, CONIFEROUS TREE, SHRUB
- TREE LINE/ CANOPY
- DITCH/ DRAINING COURSE
- UG TELE, MH, TELE PED, CABLE PED
- UG FIBER, PED, LINE MARKER, VAULT
- UG ELEC, MH, TRANSFORMER, AC UNIT, METER, BOX
- OH ELEC, UTIL POLE, GUY WIRE
- GROUND LIGHT, POLE, POLE W/ ARM LT
- LIGHT MH, LT CTRL BOX, PARK. METER, CAR CHARGER
- ELEC HAND HOLE, OUTLET, SIGNAL MH, SIGNAL BOX
- UG GAS, MH, VALVE, LINE MARKER
- GAS WELL, METER, VENT
- WATER MAIN, MH, VALVE IN BOX, HYDRANT, FDC
- WATER WELL, METER, STOP BOX, POST INDICATOR VALVE
- IRRIGATION CONTROL VALVE, SPRINKLER HEAD
- STORM SEWER, MH, CB, INLET, YARD DRAIN, DOWN SPOUT
- CULVERT/ END SECTION
- SANITARY SEWER, MH, CLEAN OUT
- COMBINED SEWER, MH
- STEAM LINE, MH
- MISC. MANHOLE, HAND HOLE, HAND BOX
- PARKING BLOCK, SIGN, FLAG POLE, POST, ROCK, MAIL BOX
- SECTION LINE, SECTION CORNER
- FOUND IRON ROD (FIR), FD MON, FD PK
- SET IRON ROD (SIR), SET PK, MAG NAIL
- FINISH FLOOR ELEVATION, SPOT ELEVATION
- CONTOUR
- FENCE
- GUARD RAIL
- RAILROAD SIGNAL, SIGNAL BOX
- SOIL BORING
- EX. ASPHALT
- EX. CONCRETE
- EX. GRAVEL
- EX. BRICK PAVERS

WETLAND NOTE

ACCORDING TO THE DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY (EGLE) WEBSITE (HTTPS://WWW.MCGI.STATE.MI.US/WETLANDS/MCGIMAP.HTML), THERE ARE NO NOTED WETLANDS ON THE SUBJECT PARCEL. WETLAND FLAGGING WAS NOT OBSERVED DURING THE FIELD SURVEY. AN OFFICIAL STUDY FOR THE PRESENCE OF WETLANDS WAS NOT CONDUCTED BY MONUMENT ENGINEERING GROUP ASSOCIATES.

FLOOD ZONE

FEMA MAP SCALES DO NOT SUPPLY SUFFICIENT LEVEL OF DETAIL TO PLOT ACCURATELY. ZONES IF PLOTTED HEREIN ARE APPROXIMATE.

BY SCALED MAP LOCATION AND GRAPHIC PLOTTING ONLY, THE SUBJECT PROPERTY APPEARS TO LIE ENTIRELY IN ZONE (X) AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN ACCORDING TO THE FLOOD INSURANCE RATE MAP FOR THE COUNTY OF LIVINGSTON, COMMUNITY PANEL NO. (26093C0345D), EFFECTIVE DATE: 9/17/2008.

WINTER NOTE

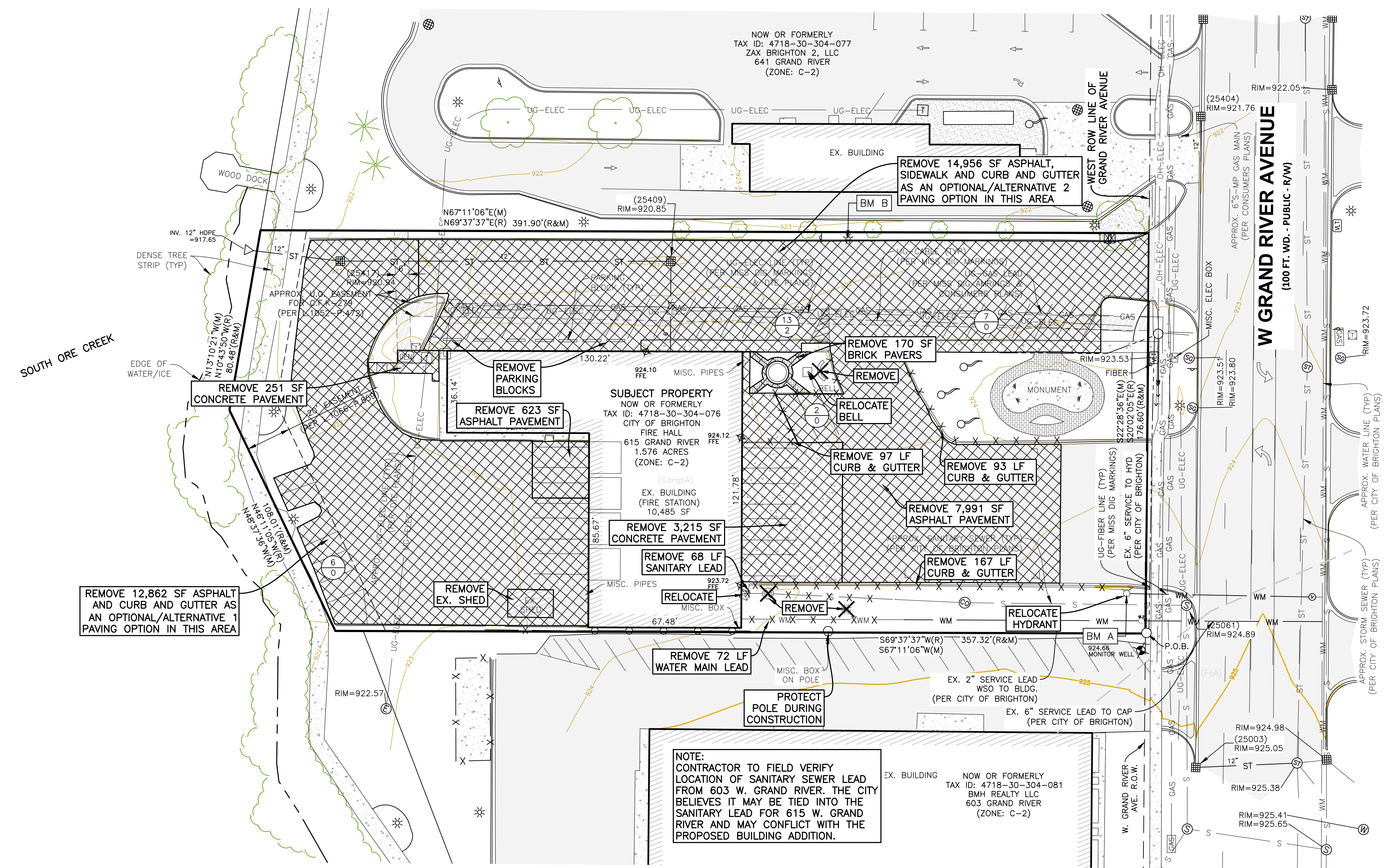
THIS SURVEY WAS PERFORMED UNDER WINTER CONDITIONS. ALL REASONABLE MEASURES WERE TAKEN DURING THE SURVEY TO OBTAIN ALL INFORMATION NECESSARY. HOWEVER, SOME INFORMATION MAY NOT BE SHOWN DUE TO SNOW COVER.

DEMOLITION LEGEND

- ABANDON IN PLACE
- ABANDON LINEAR FEATURE
- SAWCUT
- REMOVE LINEAR FEATURE
- LIMITS OF DISTURBANCE
- REMOVE OBJECT
- REMOVE PAVEMENT

DEMOLITION NOTES

- UTILITY OBJECTS SUCH AS GAS METER, TRANSFORMER, TELEPHONE PEDESTAL, UTILITY POLE & WIRES ARE TO BE REMOVED BY OTHERS IF APPLICABLE.
- ANY TREES NOT MARKED PER PLAN ARE TO BE PROTECTED & PRESERVED DURING CONSTRUCTION.
- REMOVAL LIMITS SHOWN FOR UNDERGROUND CONSTRUCTION ARE APPROXIMATE ONLY. CONTRACTOR TO DETERMINE APPROPRIATE REMOVALS NEEDED FOR SAFE EXCAVATION PRACTICES AND TO COMPLY WITH APPLICABLE SAFETY STANDARDS.



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MEGA ENGINEERING GROUP ASSOCIATES

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ENGINEER
NO. 6201043168

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9325 MALTBY ROAD
BRIGHTON, MI 48116
(248) 446-8000

TOPO SURVEY AND DEMOLITION PLAN

BABA STATION 31
615 W GRAND RIVER AVE
PART OF THE SW 1/4 OF SEC. 30, T.2N.-R.6E.
CITY OF BRIGHTON, LIVINGSTON COUNTY, MI

DATE	REVISIONS
6/13/2025	AMENDED SITE PLAN
6/24/2025	REVISED PER CLIENT COMMENTS
9/12/2025	REVISED PER CITY REVIEW

CURRENT ISSUE DATE: 9/12/2025

PROJECT NO: 25-006

SCALE: 1" = 30'

FIELD: ZW, RZ
DRAWN BY: DC
DESIGN BY: MN
CHECK BY: AP, PL

V-10

NOT FOR CONSTRUCTION

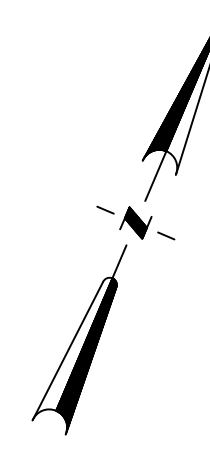
ZONING INFORMATION

THIS ZONING INFORMATION IS TAKEN FROM THE CITY OF BRIGHTON ZONING ORDINANCE
DATED: OCTOBER 20, 2017

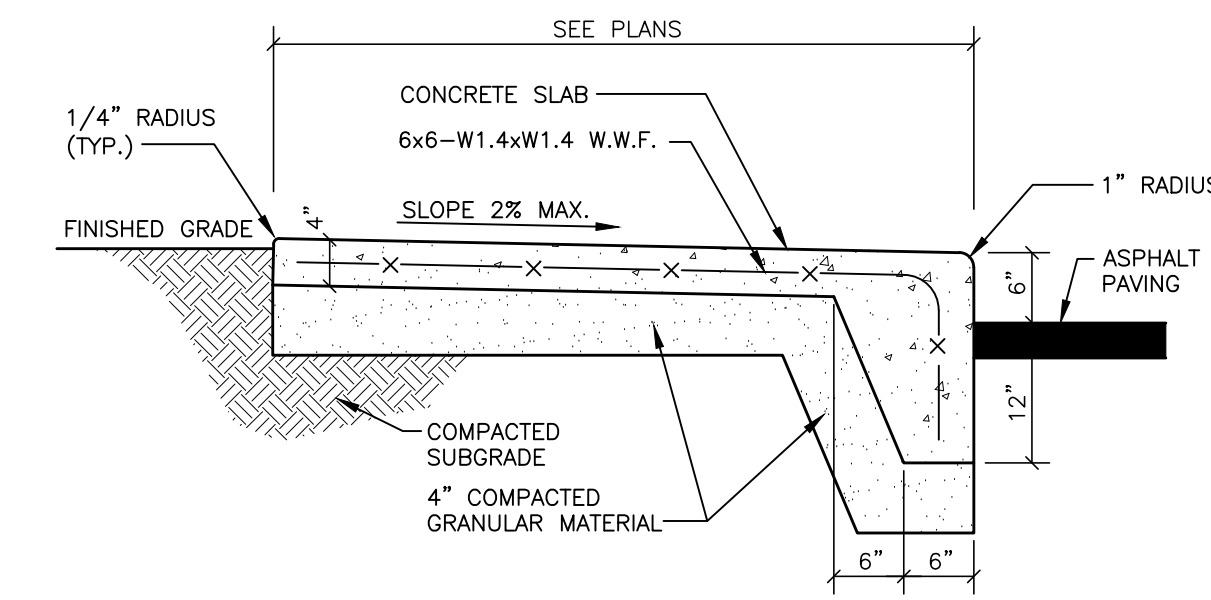
SUBJECT PARCEL ZONING: (C-2) GENERAL BUSINESS	SUBJECT PARCEL		PROPOSED BUILDING		MAXIMUM HEIGHT OF BUILDING		BUILDING SETBACKS (FT)			PARKING SETBACKS (FT)			SIGN SETBACK (FT)	MAXIMUM % LOT AREA COVERED BY ALL BUILDINGS	MAXIMUM % OF IMPERVIOUS SURFACE
	AREA (SF)	WIDTH AT BUILDING SITE (FT)	BLDG A AREA (SF)	BLDG B AREA (SF)	IN STORIES	IN FEET	FRONT (N,S,E,W)	SIDE (N,S,E,W)	REAR (N,S,E,W)	FRONT (N,S,E,W)	SIDE (N,S,E,W)	REAR (N,S,E,W)			
REQUIRED	2,000	66	-	-	3	50	0	0	20	0	0	0	-	NONE	-
PROVIDED	-	176.6	2,570	4,445	2	-	106.2	0	82.5	21.5	-	-	-	-	-

ADJACENT ZONING

NORTH: (C-2) GENERAL BUSINESS
SOUTH: (C-2) GENERAL BUSINESS
EAST: (C-2) GENERAL BUSINESS
WEST: MILLPOND AND (R-4/R-5) RESIDENTIAL



SIDEWALK DETAIL - THICKENED EDGE



PAVEMENT LEGEND

- EX. ASPHALT
- EX. CONCRETE
- EX. GRAVEL
- PR. STANDARD DUTY ASPHALT
- PR. HEAVY DUTY ASPHALT
- PR. CONCRETE
- PR. GRAVEL
- STANDARD CURB AND GUTTER
- REVERSE CURB AND GUTTER

PARKING CALCULATIONS

EXISTING PARKING SPACES:

PARKING SPACES:	6
BARRIER FREE PARKING SPACES:	0
TOTAL PARKING PROVIDED:	6

PROPOSED PARKING:

1 SPACE PER EMPLOYEE ON MAX. WORK SHIFT AND
1 SPACE PER 2 PERSONS UP TO THE MAX. CAPACITY
ESTABLISHED BY FIRE CHIEF.

1 SPACE PER 200 SF OFFICE SPACE GFA =
7,478 SF OFFICE / 200 = 38

TOTAL PARKING REQUIRED: MIN 38, MIN BF 2

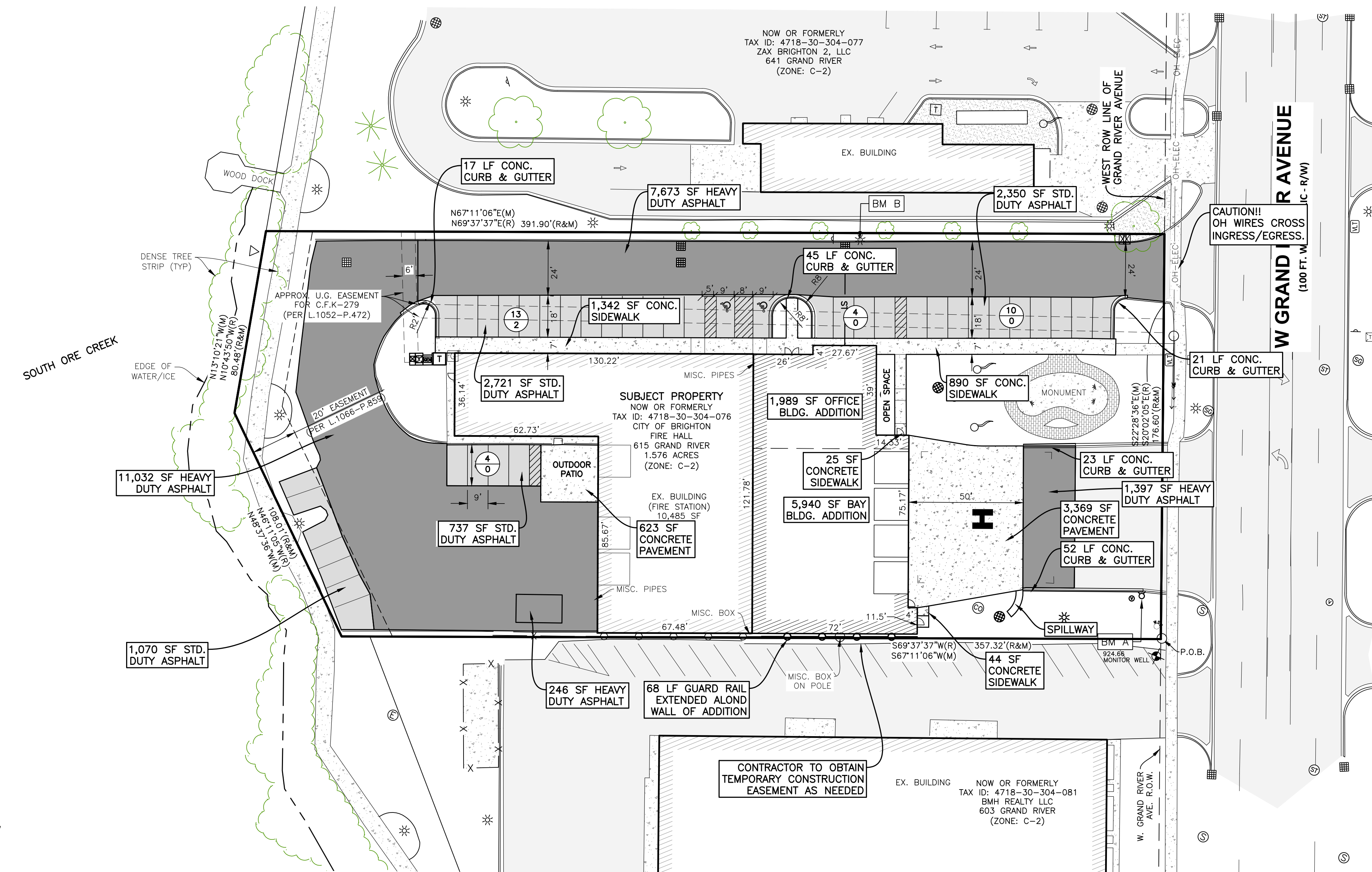
PARKING SPACES:	31	XX	REGULAR SPACES
BARRIER FREE PARKING SPACES:	2	XX	BARRIER FREE SPACES
PROPOSED PARKING PROVIDED:	33		

TOTAL PARKING PROVIDED: 39

DIMENSIONING NOTE

- RADII DIMENSIONS ARE TO THE BACK OF CURB UNLESS OTHERWISE SPECIFIED.
- ALL OTHER DIMENSIONS ARE TO THE FACE OF CURB OR EDGE OF PAVEMENT UNLESS OTHERWISE SPECIFIED.

BC = BACK OF CURB
FC = FACE OF CURB



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MEGA

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CLIENT :

Brivar
DESIGN • BUILD • DELIVER

BRIVAR CONST. CO.
9325 MALTBY ROAD
BRIGHTON, MI 48116
(248) 446-8000

DIMENSION AND PAVING PLAN

BABA STATION 31
615 W GRAND RIVER AVE., T.2N.-R.6E.
PART OF THE SW 1/4 OF SEC. 30,
CITY OF BRIGHTON, LIVINGSTON COUNTY, MI

DATE	PLAN SUBMITTALS/REVISIONS
6/13/2025	AMENDED SITE PLAN
6/24/2025	REVISED PER CLIENT COMMENTS
9/12/2025	REVISED PER CITY REVIEW

CURRENT ISSUE DATE:
9/12/2025

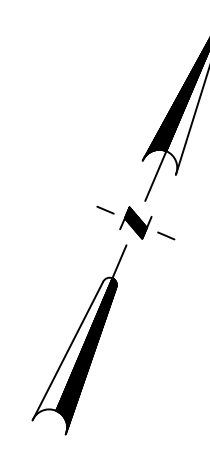
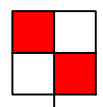
PROJECT NO: 25-006

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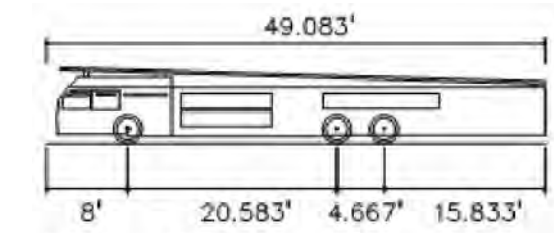
FIELD: ZW, RZ
DRAWN BY: DC
DESIGN BY: MN
CHECK BY: AP, PL

C-10

NOT FOR CONSTRUCTION



EMERGENCY VEHICLE



Brighton 49' Fire Truck
 Overall Length 49.083ft
 Overall Width 8.167ft
 Overall Body Height 5.00ft
 Min Body Ground Clearance 0.750ft
 Track Width 8.167ft
 Lock-to-lock Time 5.00s
 Max Steering Angle (Virtual) 45.00°

FIRE TRUCK DETAIL
NOT TO SCALE

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ALLAN W. PRUSS
 ENGINEER
 NO. 6201043168

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THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE INDIVIDUALLY RESPONSIBLE FOR DETERMINING THE EXACT UTILITIES, LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT :

BRIVAR CONST. CO.
 9325 MALTBY ROAD
 BRIGHTON, MI 48116
 (248) 446-8000

EMERGENCY VEHICLE CIRCULATION

BABA STATION 31
 615 W GRAND RIVER AVE., T.2N.-R.6E.
 PART OF THE SW 1/4 OF SEC. 30, T.2N.-R.6E.
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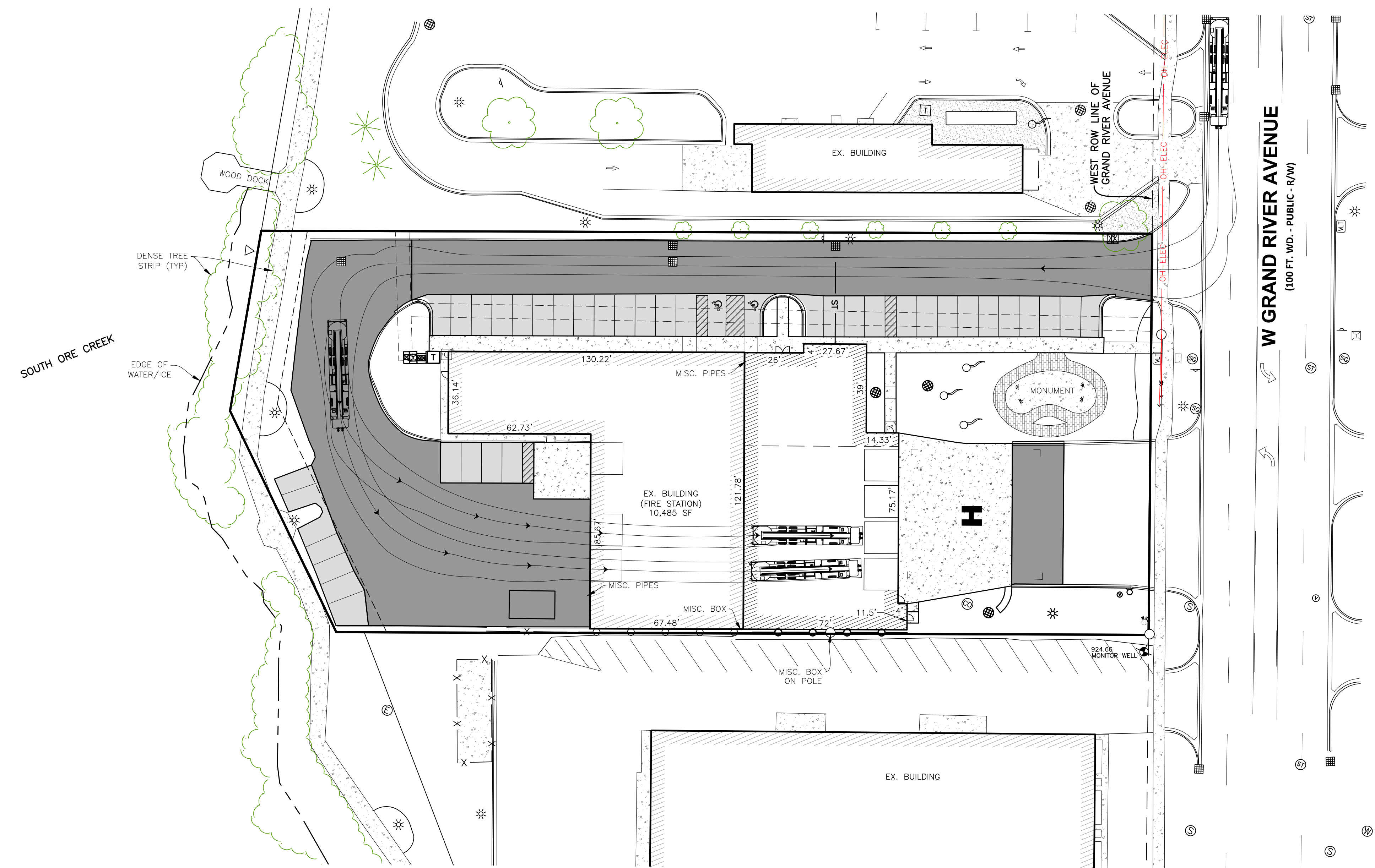
PROJECT NO: 25-006

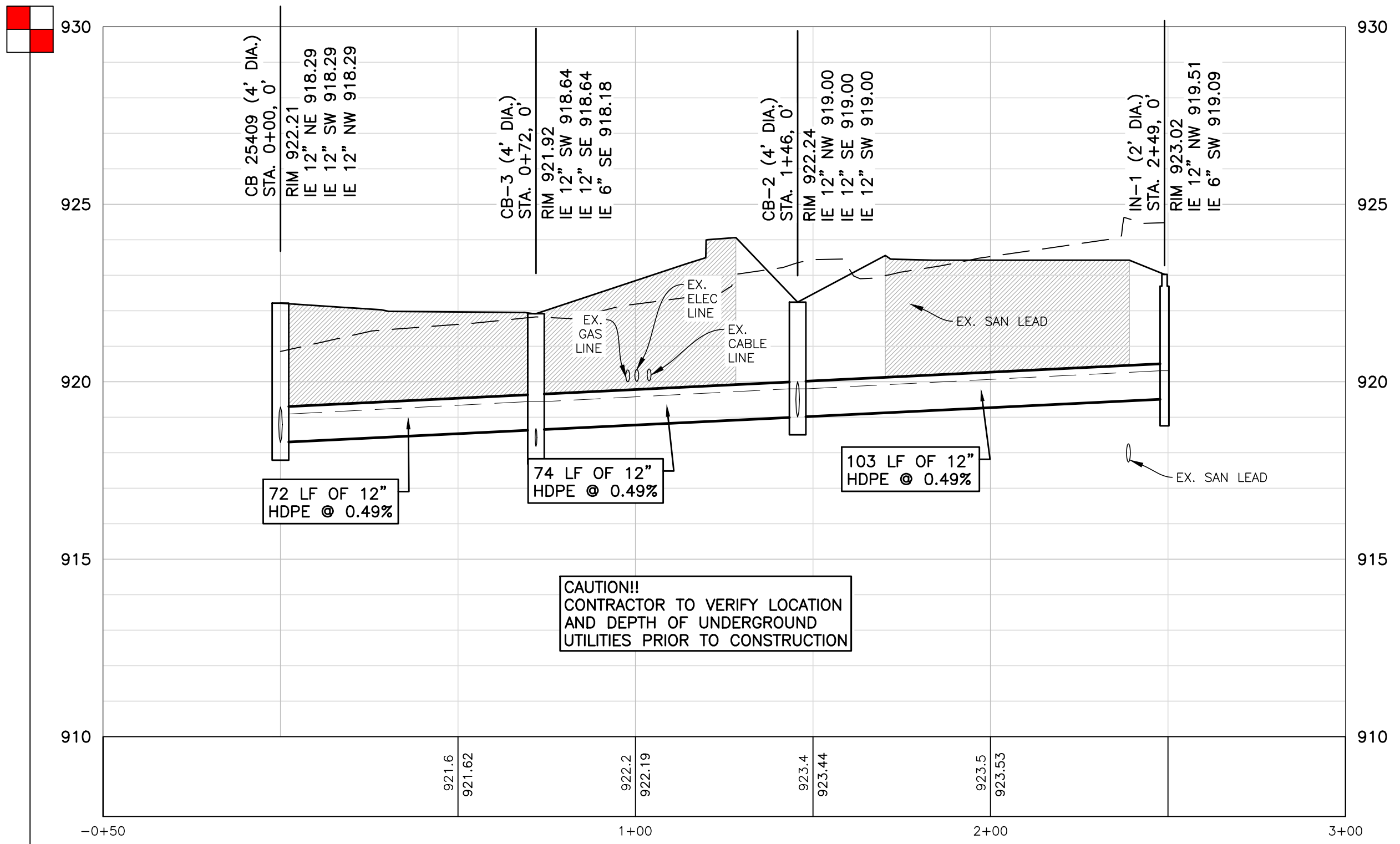
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 DESIGN BY: MN
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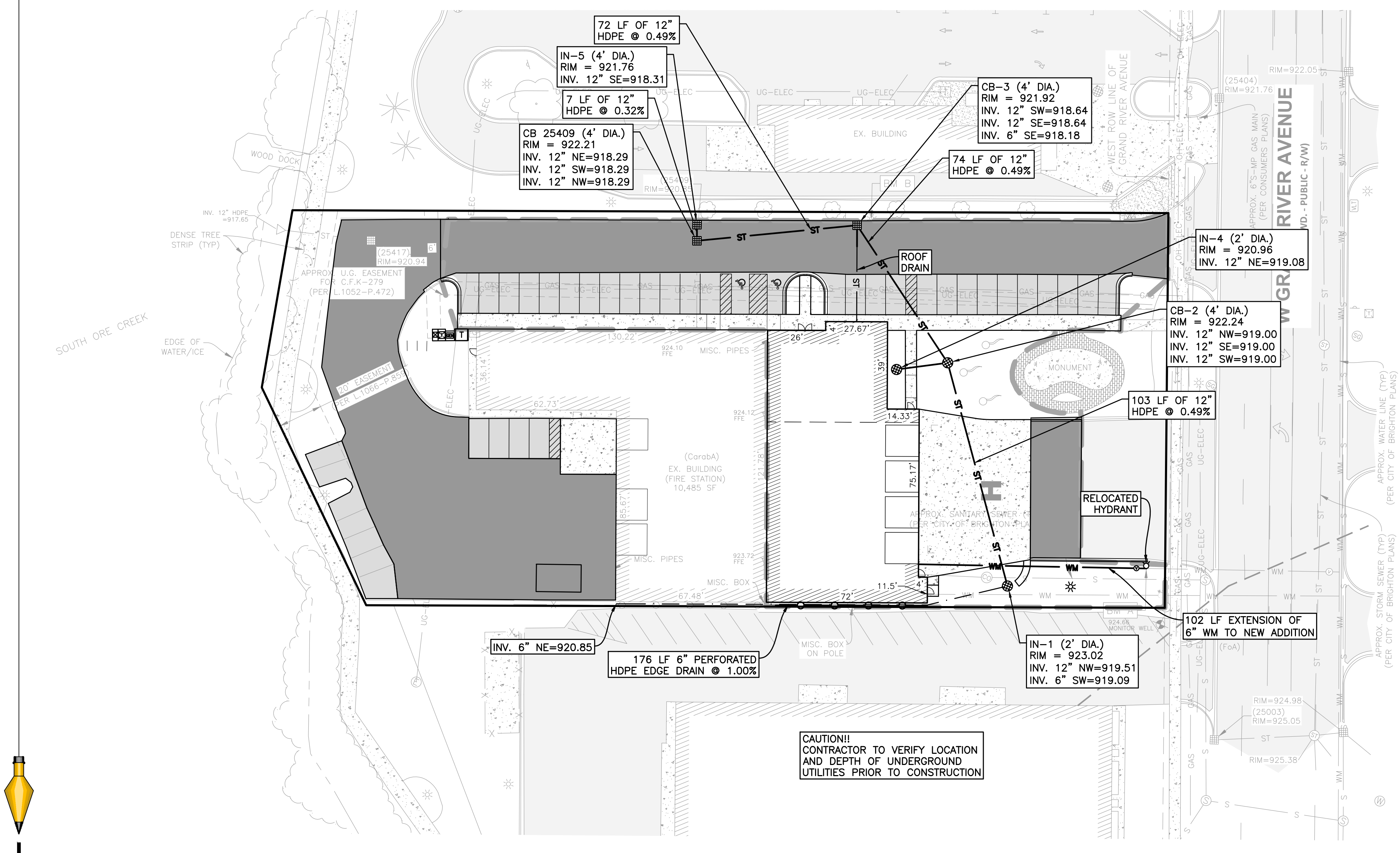
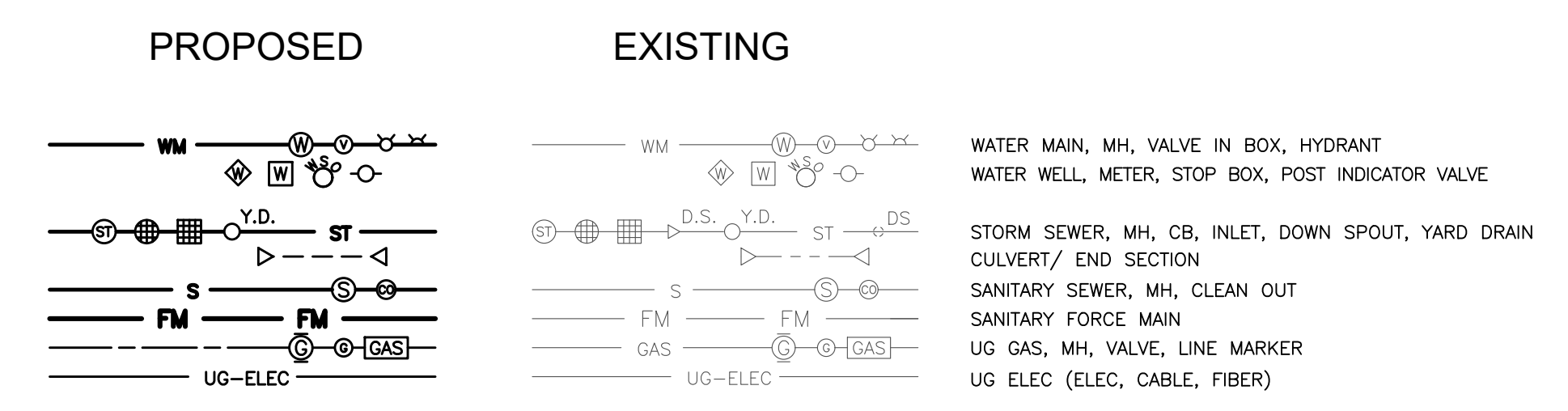
NOT FOR CONSTRUCTION





PR STORM SEWER
 PROFILE SCALE
 HORIZ: 1"=30'
 VERT: 1"=3'

UTILITY LEGEND



CAUTION!!
 CONTRACTOR TO VERIFY LOCATION
 AND DEPTH OF UNDERGROUND
 UTILITIES PRIOR TO CONSTRUCTION

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UTILITY PLAN
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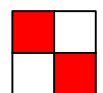
PROJECT NO: 25-006

SCALE: 1" = 30'
 0 1/2" 1"

FIELD:
 DRAWN BY: ZW, RZ
 DESIGN BY: DC
 CHECK BY: AP, PL

C-3.0

NOT FOR CONSTRUCTION



CONSTRUCTION SEQUENCE	OPERATION TIME SCHEDULE - BEGINNING AUGUST 2025				
	AUG	SEP	OCT	NOV	DEC
1 CONTRACTOR SHALL INSTALL SILT FENCE AS SHOWN ON APPROVED PLANS.					
2 REMOVE ALL TOPSOIL AND ORGANIC MATTER. TOPSOIL MAY BE STORED ON SITE IN DESIGNATED AREA TO BE USED FOR FUTURE PLANTING AND FILL AREAS. TRUCK REMAINING TOP SOIL OFFSITE AND PROPERLY DISPOSE.					
3 ROUGH GRADE AND INSTALL NEW UNDERGROUND UTILITIES. PLACE INLET FILTERS AT PROPOSED CATCH BASINS THROUGHOUT SITE.					
4 CONSTRUCT BUILDING.					
5 FINISH GRADE AROUND BUILDING AND STABILIZE AS SOON AS POSSIBLE. STABILIZE ALL DISTURBED AREAS WITH CLASS A SEED AND MULCH. IN AREAS OF SLOPES OF 1:4 OR STEEPER, CONTRACTOR TO SEED AND INSTALL PEGGED IN PLACE EROSION CONTROL BLANKETS.					
6 REPAIR/CLEAN INLET FILTERS AS REQUIRED.					
7 INSTALL FINAL LANDSCAPING PER SEPARATE LANDSCAPE PLAN.					
8 REMOVE TEMPORARY SOIL EROSION MEASURES ONCE SEEDING VEGETATION HAS BEEN ESTABLISHED. CLEAN ALL AFFECTED STORM STRUCTURES AS NECESSARY.					

NOTES

- SAND BACKFILL AND BEDDING TO BE MDOT CL II.
- MAINTAIN MINIMUM 18" VERTICAL CLEARANCE BETWEEN ALL UTILITIES.

SOILS INFO

SOIL TYPES ARE ACCORDING TO THE USDA SOIL SURVEY WEB SITE (<https://websoilsurvey.sc.gov.usda.gov/App/HomePage.htm>)

- CarabA: CARLISLE MUCK, 0-2% SLOPES
- FoA: FOX SANDY LOAM, 0-2% SLOPES

BENCHMARKS

DATUM: NAVD88

BM A:
FLANGE BOLT "M" ON HYDRANT, 30± SOUTHWEST OFF BACK OF CURB FOR W GRAND RIVER AVENUE & 2± SOUTHEAST OFF BACK OF CURB FOR FIRE DEPARTMENT EXIT DRIVE.
ELEV = 926.45

BM B:
CHISELED & PAINTED "X" ON SOUTHEAST CONCRETE LIGHT POLE BASE, 271± SOUTHWEST OFF BACK OF CURB FOR W GRAND RIVER AVENUE & 7± NORTHWEST OFF BACK OF CURB FOR FIRE DEPARTMENT ENTRANCE DRIVE.
ELEV = 923.39

SESC LEGEND

- SILT FENCE
- LIMITS OF DISTURBANCE
- STABILIZED CONSTRUCTION ACCESS
- RIP RAP

EROSION CONTROL QUANTITIES

Disturbed Area: 0.71 Acres

QTY	UNIT	ITEM
1,067	LF	SILT FENCE
7	EA	INLET FILTER
1	EA	STABILIZED CONSTRUCTION ACCESS

NOTE: QUANTITIES ARE FOR ENTIRE SITE

GRADING LEGEND

- PROPOSED SIDEWALK GRADE
- PROPOSED TOP OF PAVEMENT GRADE
- PROPOSED SIDEWALK GRADE
- PROPOSED TOP OF PAVEMENT GRADE
- PROPOSED FINISH GRADE
- PROPOSED TOP OF CURB GRADE
- PROPOSED GUTTER PAN GRADE
- PROPOSED TOP CURB GRADE
- PROPOSED GUTTER PAN GRADE
- PROPOSED TOP OF WALL GRADE
- PROPOSED BOTTOM OF WALL GRADE
- MATCH EXISTING GRADE
- PROPOSED FINISH FLOOR GRADE
- PROPOSED RIM GRADE
- ADJUSTED RIM GRADE
- PROPOSED INVERT GRADE
- ADA COMPLIANT SIDEWALK RAMP
- ADA COMPLIANT SIDEWALK LANDING
- EXISTING CONTOUR
- PROPOSED CONTOUR
- LIMITS OF DISTURBANCE
- OVERFLOW ROUTE

DTMB SOIL EROSION & SEDIMENTATION CONTROL MEASURES

MICHIGAN DEPARTMENT OF TECHNOLOGY, MANAGEMENT, AND BUDGET (DTMB)

EROSION CONTROLS			
KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
E6	MULCH		FOR USE IN AREAS SUBJECT TO ERODING SURFACE FLOWS OR SEVERE WIND OR ON NEWLY SEEDING AREAS.
E8	PERMANENT SEEDING		STABILIZATION METHOD UTILIZED ON SITES WHERE EARTH CHANGE HAS BEEN COMPLETED (FINAL GRADING ATTAINED).

SEDIMENT CONTROLS			
KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
S51	SILT FENCE		USE ADJACENT TO CRITICAL AREAS, TO PREVENT SEDIMENT LAIDEN SHEET FLOW FROM ENTERING THESE AREAS.
S53	STABILIZED CONSTRUCTION ACCESS		USED AT EVERY POINT WHERE CONSTRUCTION TRAFFIC ENTERS OR LEAVES A CONSTRUCTION SITE.
S55	SEDIMENT BASIN		AT THE OUTLET OF DISTURBED AREAS AND AT THE LOCATION OF A PERMANENT DETENTION BASIN.
S58	INLET PROTECTION FABRIC DROP		USE AT STORMWATER INLETS, ESPECIALLY AT CONSTRUCTION SITES.

EROSION & SEDIMENT CONTROLS			
KEY	BEST MANAGEMENT PRACTICES	SYMBOL	WHERE USED
ES31	CHECK DAM		USED TO REDUCE SURFACE FLOW VELOCITIES WITHIN CONSTRUCTED AND EXISTING FLOW CORRIDORS.

EROSION CONTROL STANDARDS

- ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE.
- DAILY INSPECTION SHALL BE MADE BY THE CONTRACTOR FOR EFFECTIVENESS OF EROSION AND SEDIMENTATION CONTROL MEASURES, AND ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY.
- EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
- CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. CONTRACTOR SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES AND OTHER CHANGES HAS BEEN ACCOMPLISHED.
- STAGING OF THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLACES AND AS REQUIRED TO INSURE PROGRESSIVE STABILIZATION OF DISTURBED AREAS.
- SOIL EROSION CONTROL PRACTICES WILL BE ESTABLISHED IN EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
- A CERTIFIED STORM WATER OPERATOR WILL BE NAMED ON THE EGLE NOTICE OF COVERAGE FOR NPDES AS REQUIRED.
- ALL DISTURBED AREAS ARE TO BE TOP SOILED AND SEEDED WITH THE FOLLOWING MIN RATIO:
TOPSOIL TO BE SCREENED, 3" MIN. IN DEPTH. GRASS SEED 218 LBS PER ACRE, FERTILIZER 150 LBS PER ACRE, STRAW MULCH 3" DEPTH 1.5 TO 2 TONS PER ACRE.
- HYDRO-SEEDING IS NOT ACCEPTABLE FOR SLOPES EXCEEDING 1%. ON SLOPES OVER 1%, STABILIZATION SHALL BE DONE WITH SEED AND STRAW MULCH WITH A TACKIFIER, OR STRAW BLANKETS PEGGED IN PLACE.

SOIL EROSION CONTROL MAINTENANCE SCHEDULE AND NOTES.

- CONTRACTOR MUST OBTAIN A SOIL EROSION AND SEDIMENTATION CONTROL PERMIT FROM THE LIVINGSTON COUNTY DRAIN COMMISSIONER'S OFFICE PRIOR TO COMMENCING WORK.
- EARTHWORK SHALL BE LIMITED TO THE PROPOSED SITE AS SHOWN ON THE PLAN.
- CONTRACTOR SHALL INSPECT THE SOIL EROSION/SEDIMENTATION CONTROL DEVICES ONCE A WEEK AND/OR WITHIN 24 HOURS OF A RAINFALL EVENT WHICH RESULTS IN A STORM WATER DISCHARGE FROM THE SITE. ANY DAMAGE TO EROSION CONTROL MEASURES MUST BE REPAIRED IMMEDIATELY.
- ALL MUD OR DEBRIS TRACKED ONTO EXISTING PUBLIC ROADS FROM THE SITE DUE TO CONSTRUCTION SHALL BE PROMPTLY REMOVED BY THE CONTRACTOR.
- SILT FENCE MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY BUILT-UP SEDIMENT WHEN THE SEDIMENT HEIGHT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE FENCE. THE CONTRACTOR IS RESPONSIBLE TO REMOVE, REPLACE, RETRENCH OR RE-BACKFILL THE SILTATION FENCE SHOULD IT FAIL OR BE DAMAGED DURING CONSTRUCTION.
- PERMANENT STABILIZATION MUST BE COMPLETED WITHIN 30 DAYS OF FINAL GRADING.
- ACCESS ROADS MUST BE MAINTAINED AS NECESSARY, TO KEEP THEM EFFECTIVE, NEW LAYERS OF STONE MAY BE ADDED AS OLD LAYERS BECOME COMPACTED. STEPS SHOULD ALSO BE TAKEN TO REPAIR THE ACCESS ROADS IF RUTS OR PONDING WATER APPEARS.
- INLET FILTERS SHOULD BE INSPECTED FOR BUILDUP OF SILT AND OTHER DEBRIS. THIS IS EVIDENT IF GEOTEXTILE/SOD STRUCTURE IS CAUSING FLOODING. MAINTENANCE WOULD CONSIST OF REMOVING OF SEDIMENTS WITH A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL. IF INLET FILTER IS BEYOND THIS LEVEL OF REPAIR, IT MAY BE NECESSARY TO REPLACE BOTH THE SOD AND GEOTEXTILE FILTER.
- IF SOIL EROSION/SEDIMENT CONTROL MEASURES ARE INADEQUATE FOR THE SITE. THE PROPER EROSION CONTROL AUTHORITY MUST BE NOTIFIED.
- ANY DEWATERING REQUIRED SHALL HAVE A DEWATERING PLAN SUBMITTED PRIOR TO STARTING THE ACTIVITY AND MAY REQUIRE EGLE APPROVAL.

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GRADING & SESC PLAN

BFA STATION 31
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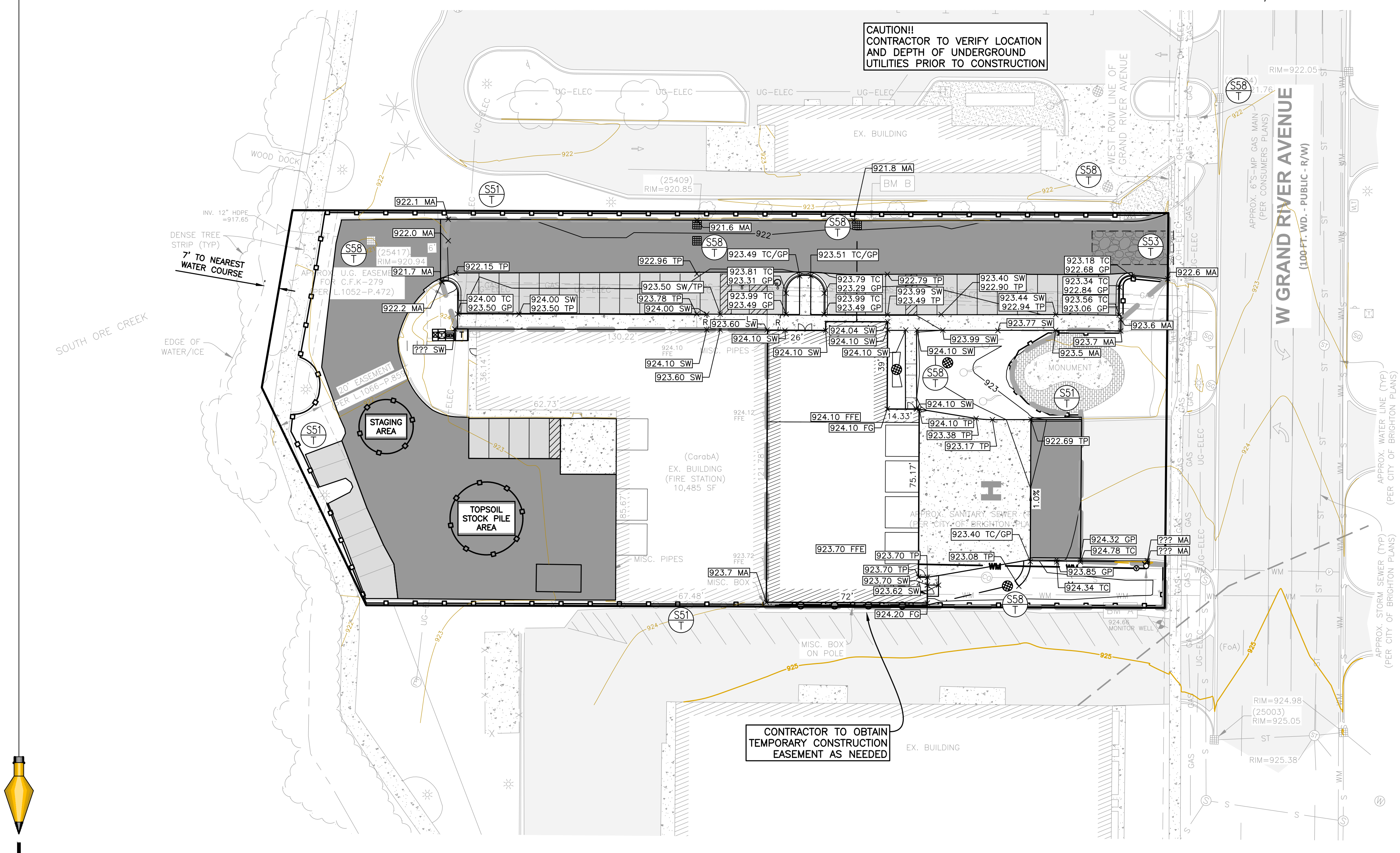
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PROJECT NO: 25-006

SCALE: 1" = 30'

FIELD: ZW, RZ
DRAWN BY: DC
DESIGN BY: MN
CHECK BY: AP, PL

C-7.0



NOT FOR CONSTRUCTION

LCDC NOTES

Top Soil & Soil Storage Areas:

- Top soil or soil storage areas shall be seeded and mulched, or matted with straw, immediately after the stripping process is completed, to prevent wind and water erosion.

Slopes and Ditches:

- On-site ditches shall be of the flat bottom type, minimum width of 2' with a minimum of 3' horizontal to 1' vertical side slopes, 3:1.
- Side slopes in excess of 3' horizontal to 1' vertical shall not be used except with a mechanical device such as a retaining wall, or terracing.
- Ditches with steep grades will need "stone flow checks" to prevent scouring of the ditch bottoms. They may be used as a temporary measure and removed once sufficient stabilization has been established. These shall be depicted on plans by the engineer. Indicate flow checks on all slopes 3.00% and greater.

Detention/Retention, Sedimentation Ponds:

- New land developments within Livingston County shall be equipped with detention/retention facilities for storm water in accordance with the Drainage Policies of the Livingston County Drain Commissioner.
- Inlets into detention ponds must not discharge at the same location as the outlet structure.
- Detention Pond Stand Pipe Outlet Detail must be the Livingston County Drain Commissioner's standard Detention Pond outlet, e.g. orifice outlets without sedimentation control devices are prohibited.
- Stand pipe structure must have a 2 ft. sump.
- Detention Pond stand pipe structure shall show staggering of outlet holes at different elevations. This will minimize plugging and provide for more effective filtering.
- The stone around the stand pipe structure shall be refreshed with clean stone prior to completion of the project.
- Detention/Retention, Sedimentation Ponds shall be excavated, top soiled, seeded, mulched and tacked prior to the start of massive earth disruption.
- Inlets into Detention/Retention Ponds must be located within two feet of the bottom floor of the pond.

Detention Pond Spillway:

- Rip-rap proposed in the construction of the emergency spillway must be placed over keyed-in geo-fabric blanket.

Silt Fence:

- All commercial projects constructed in Livingston County shall install 36" high silt fence.

Inlet Protection:

- Sedimentation protection for catch-basin inlets. Silt sacks are the preferred choice in the winter months, because they are less likely to be disturbed by the process of snow plowing.
- Open-Pipe, inlet protection must be provided with straw bales, stone or geo-fabric.

Outlet Protection:

- All storm drains 15" in diameter or larger shall have animal guards installed to prevent entrance to the system.
- All rip-rap must be placed over keyed in geo-fabric.
- Storm drain outlets that do not empty into the retention/detention pond shall have a temporary 5'x10'x3' sump installed at the termination of the storm sewer. Upon completion of the stabilization work the sump area shall be filled and rip-rapped with cobble stone over keyed in filter fabric. Silt traps shall be inspected after each storm.
- Splash blocks may be required depending on the outley flow rate or velocity.

Tracking onto public roadway:

- It is required that each development have an ingress/egress of crushed stone to restrict tracking of material onto the Public Roadway. All commercial construction sites require a minimum 75-foot tracking mat shown at ingress/egress.

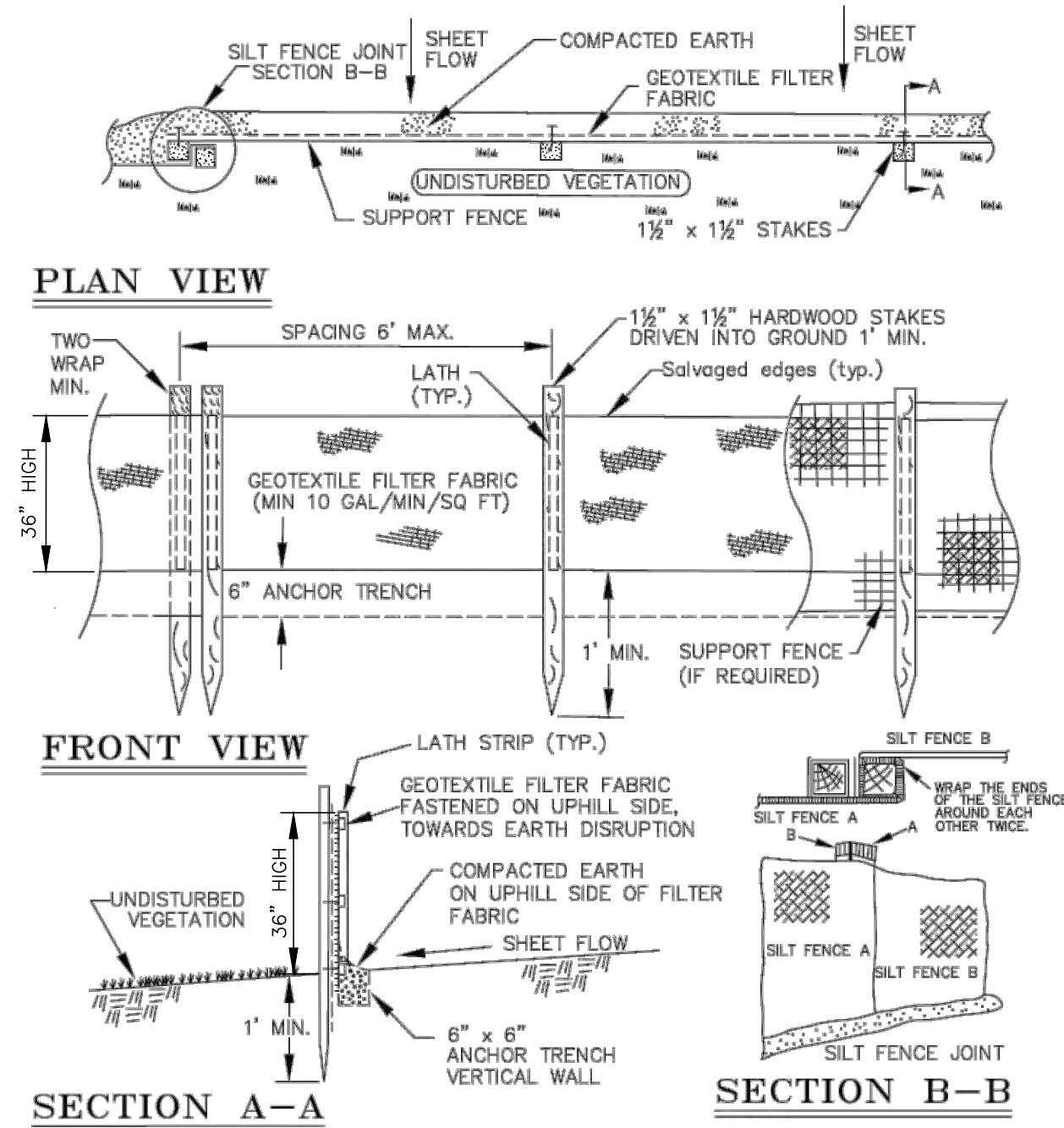
Stabilization Standards:

- For subdivision and site condominium developments: As of May 01, 2000, it is required that temporary stabilization of the entire site be completed and approval from the Livingston County Drain Commissioner's Office obtained prior to the issuance of single family dwelling permits.
- For commercial or industrial sites, common areas shall be called out on plans, in accordance with Part 17, prescribed by R 323.1709 and R 323.1710, pursuant to PART 91, Soil Erosion and Sedimentation Control, of the Natural Resources and Environmental Protection Act (Previously known as P.A. 347 of 1972) of Act 347, Public Acts OF 1972, as amended) indicating areas to be stabilized after 15 days of grade work. Areas to be outlined are as follows: detention/retention, drainage easements, utility easements, boulevards, etc.

Seeding, Fertilizer and Mulch Bare Ground Ratio:

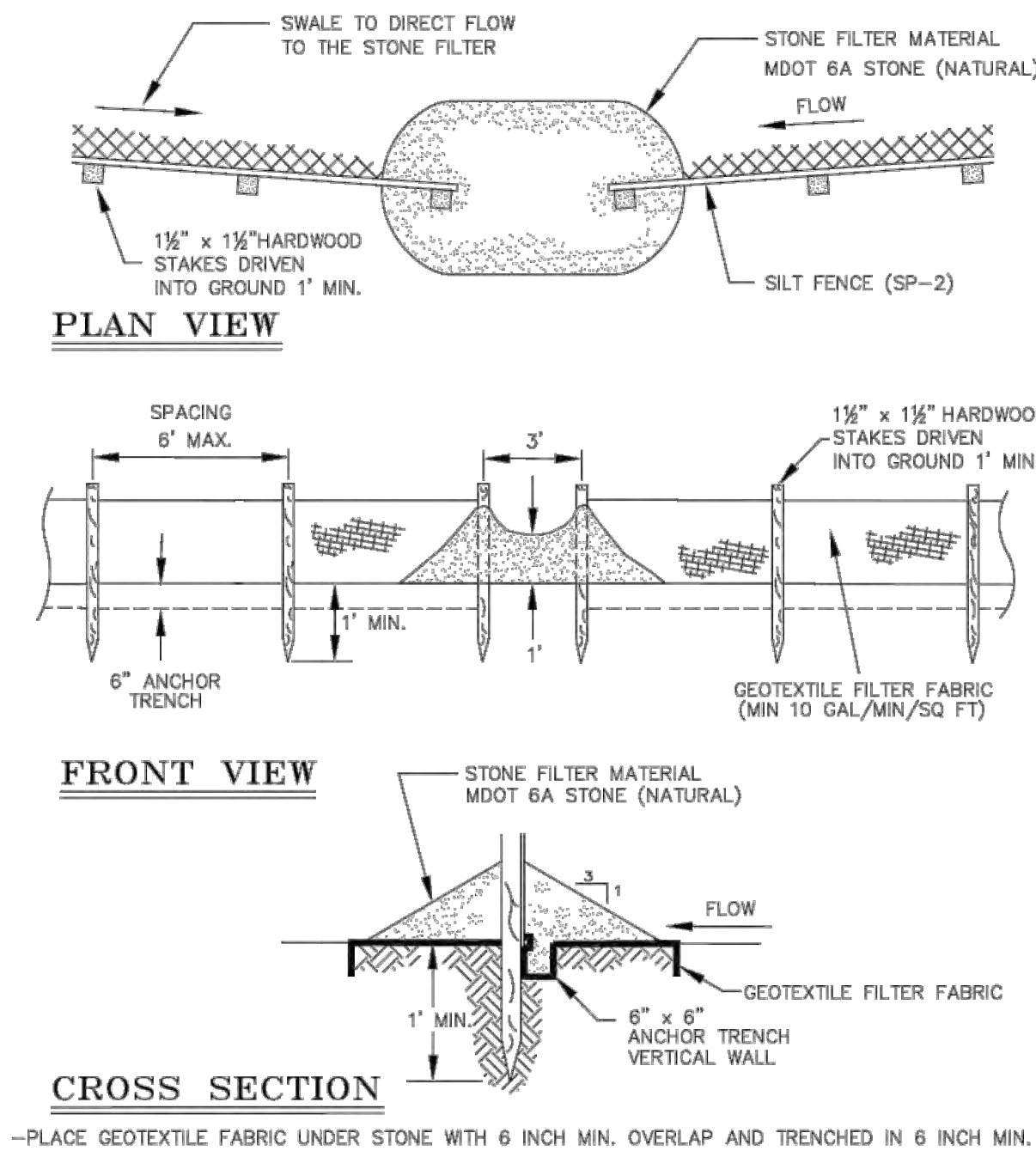
- This information shall be detailed on the construction plans.
- Top Soil Screened, 3" min. in depth
- Grass Seed 217.84 lbs per acre
- Fertilizer 150 lbs per acre
- Straw Mulch 3" in depth (All mulching must have a tie down)
- Hydroseeding is not acceptable for slopes exceeding 1%, in such cases stabilization shall be done with seed and and straw mulch with a tackifier.

36" SILT FENCE STANDARD CONTROL

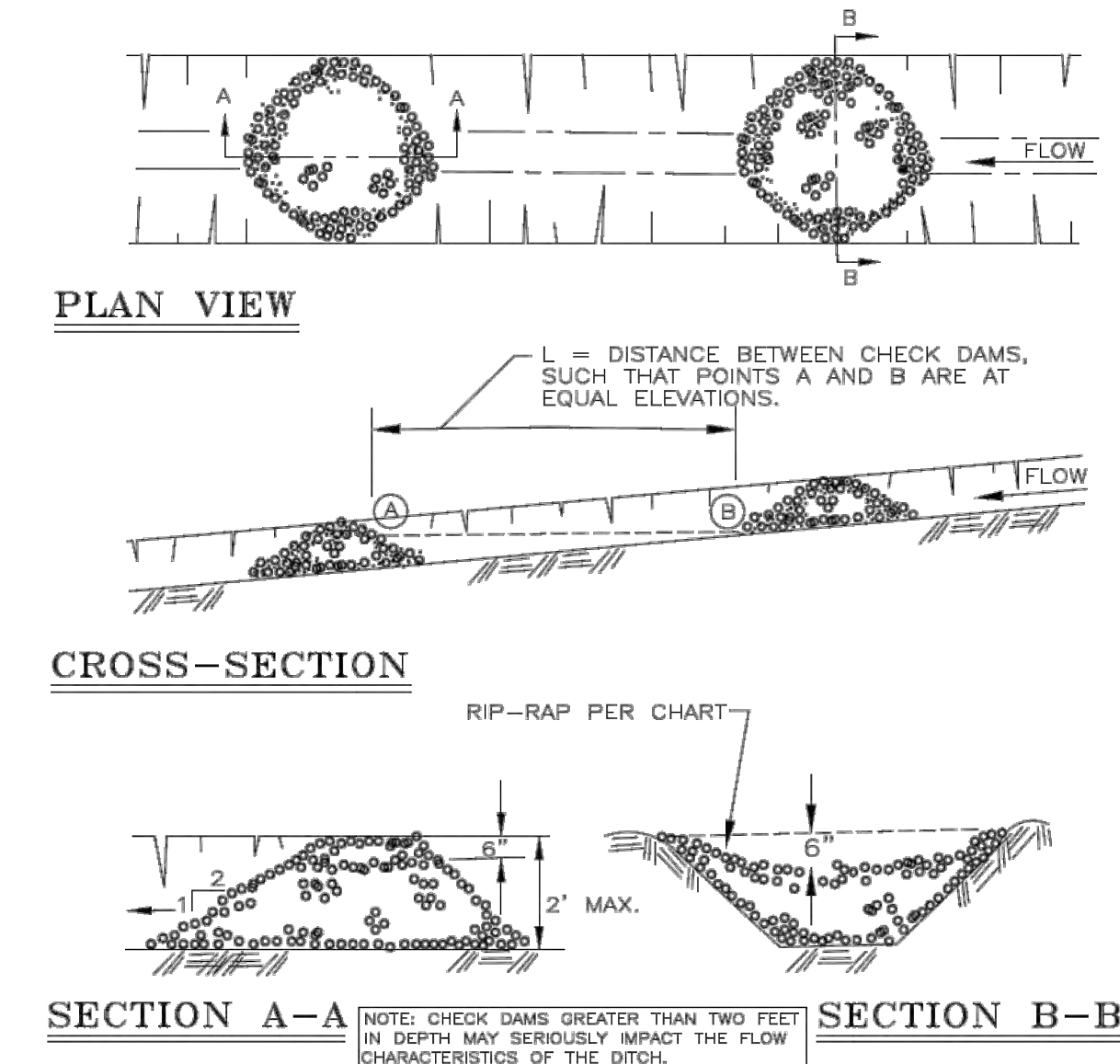


36" SILT FENCE GRAVEL FILTER STANDARD CONTROL

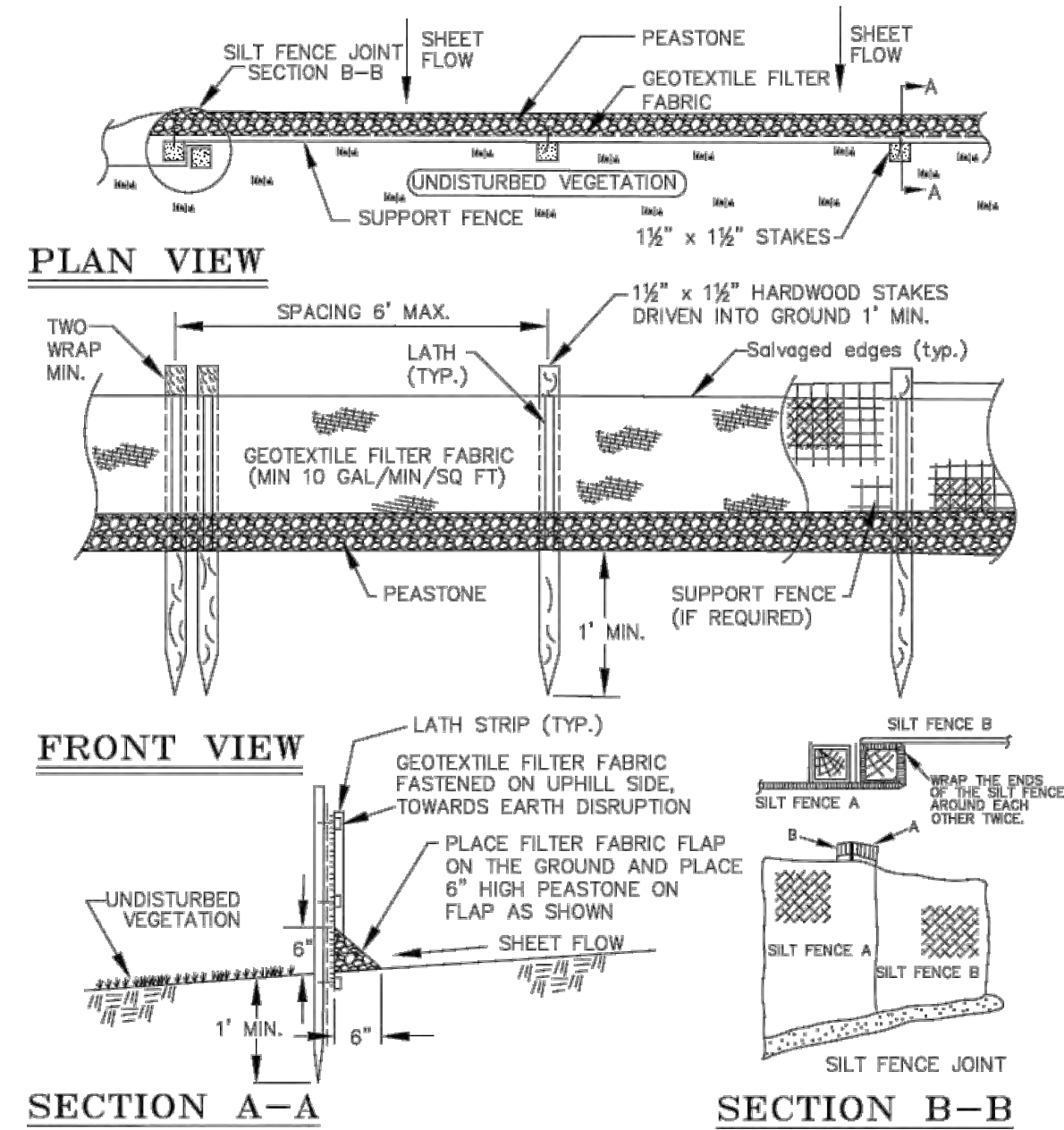
(ALL ALTERNATIVES MUST BE PRE-APPROVED BY THE INSPECTOR ON A CASE BY CASE BASIS)



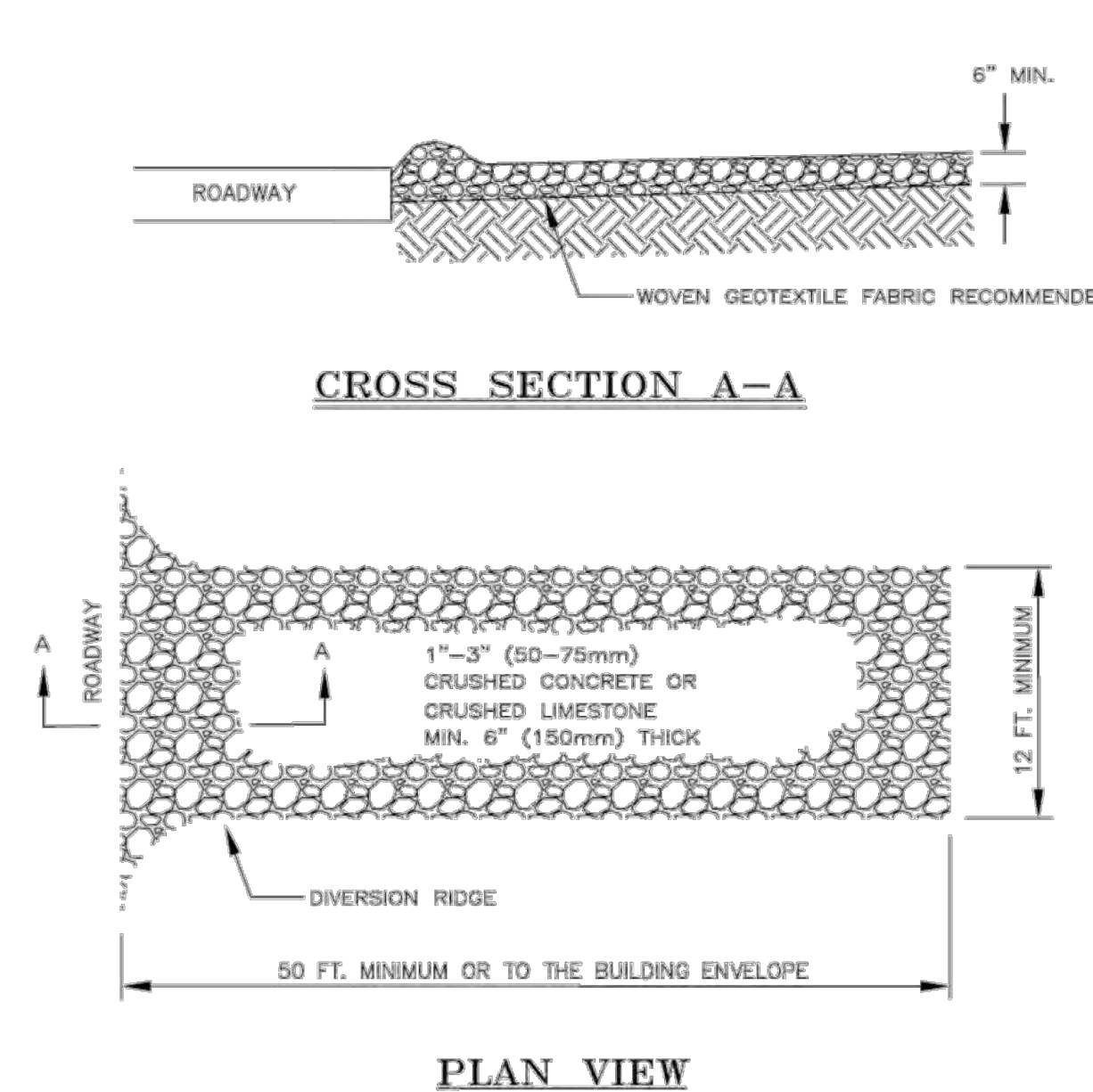
ANGULAR RIP RAP CHECK DAM STANDARD CONTROL



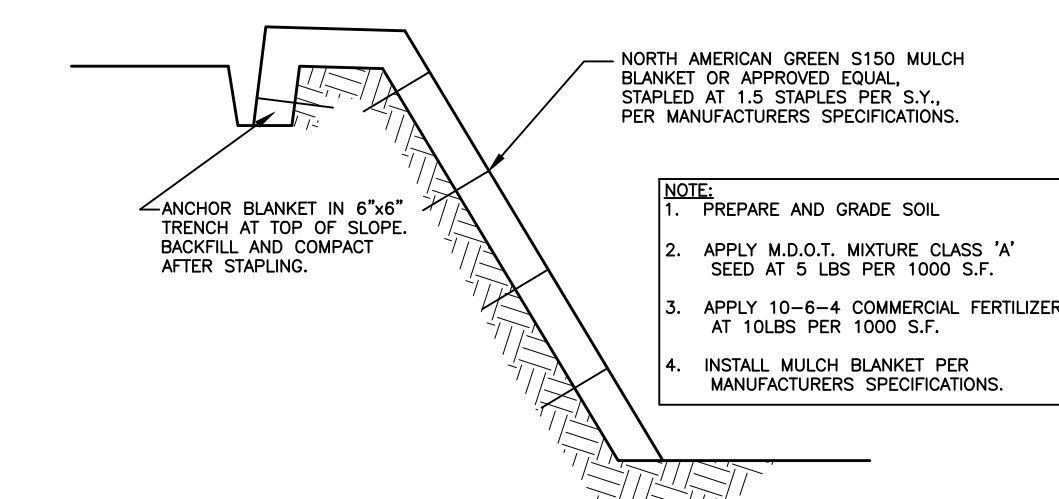
36" SILT FENCE WINTER FROZEN GROUND INSTALLATION STANDARD CONTROL



TRACKING MAT STANDARD CONTROL



EROSION CONTROL BLANKET DETAIL

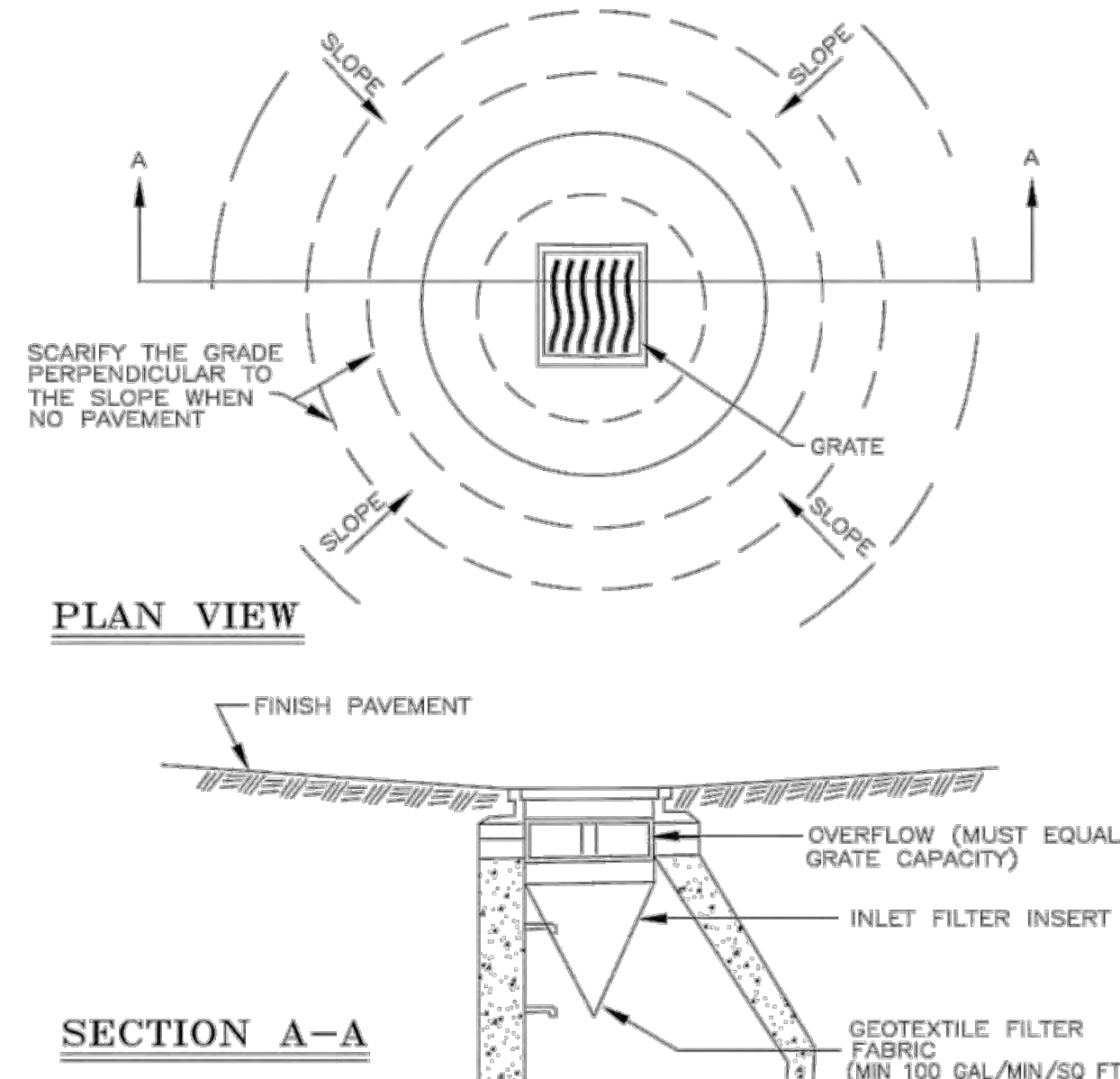




SILT SACK OR APPROVED EQUAL LOW POINT/YARD INLET FILTER

STANDARD CONTROL YEAR ROUND OR WINTER USE

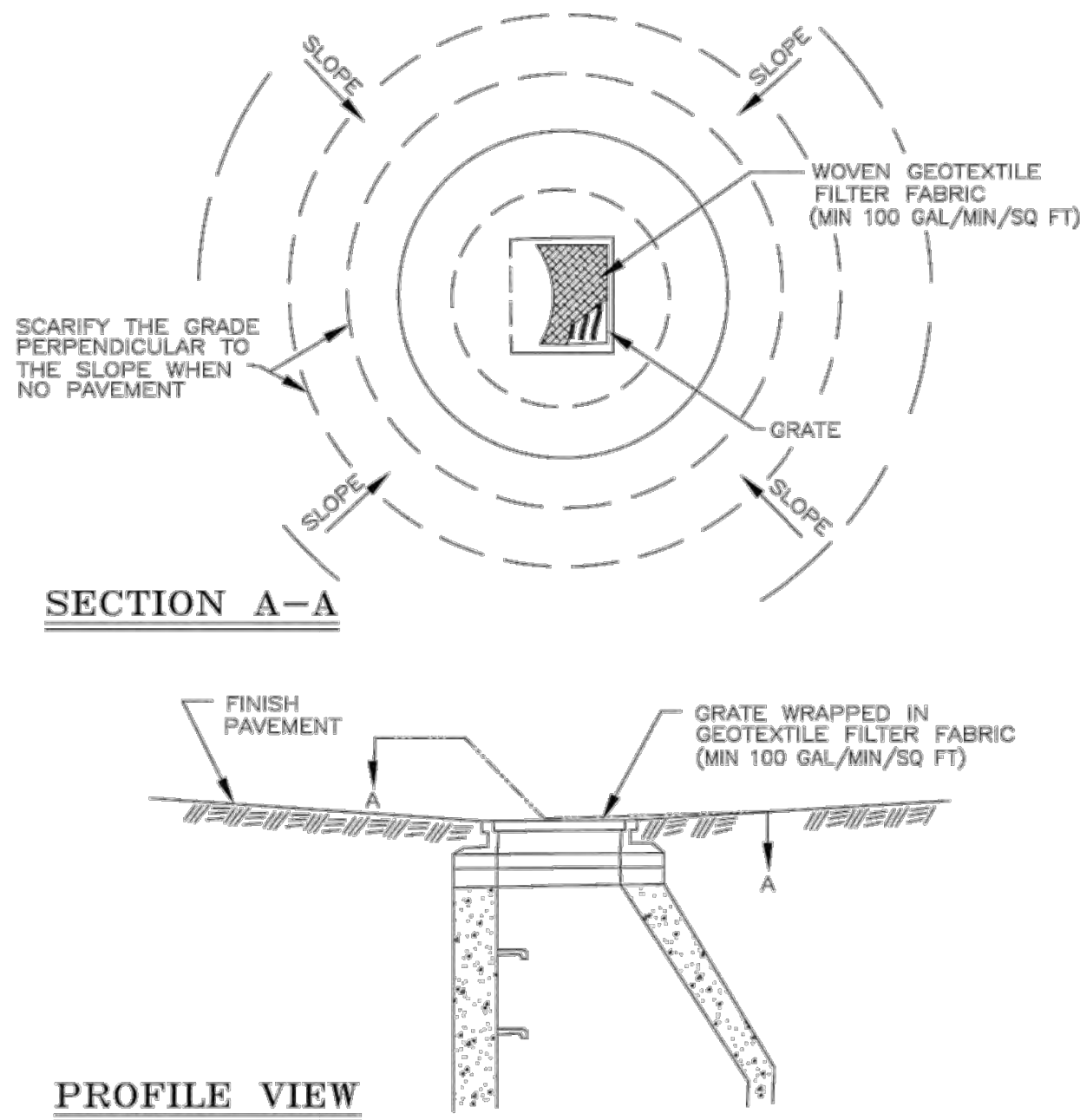
APPROVED FOR USE DURING WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



GEOTEXTILE FABRIC LOW POINT/YARD INLET FILTER

STANDARD CONTROL NON-WINTER USE

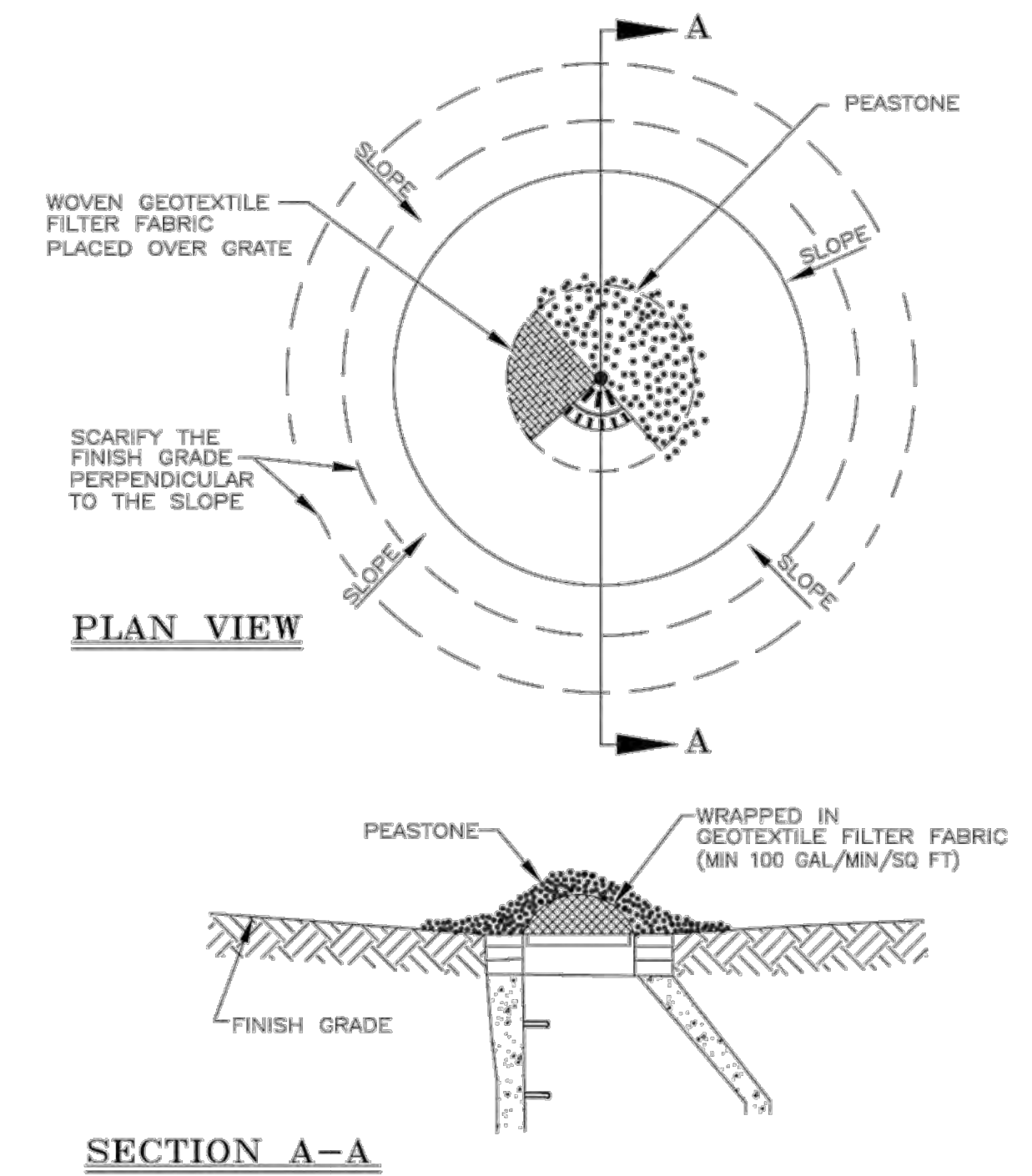
NOT FOR USE IN WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



GEOTEXTILE & PEASTONE LOW POINT/YARD INLET FILTER

STANDARD CONTROL NON-WINTER USE

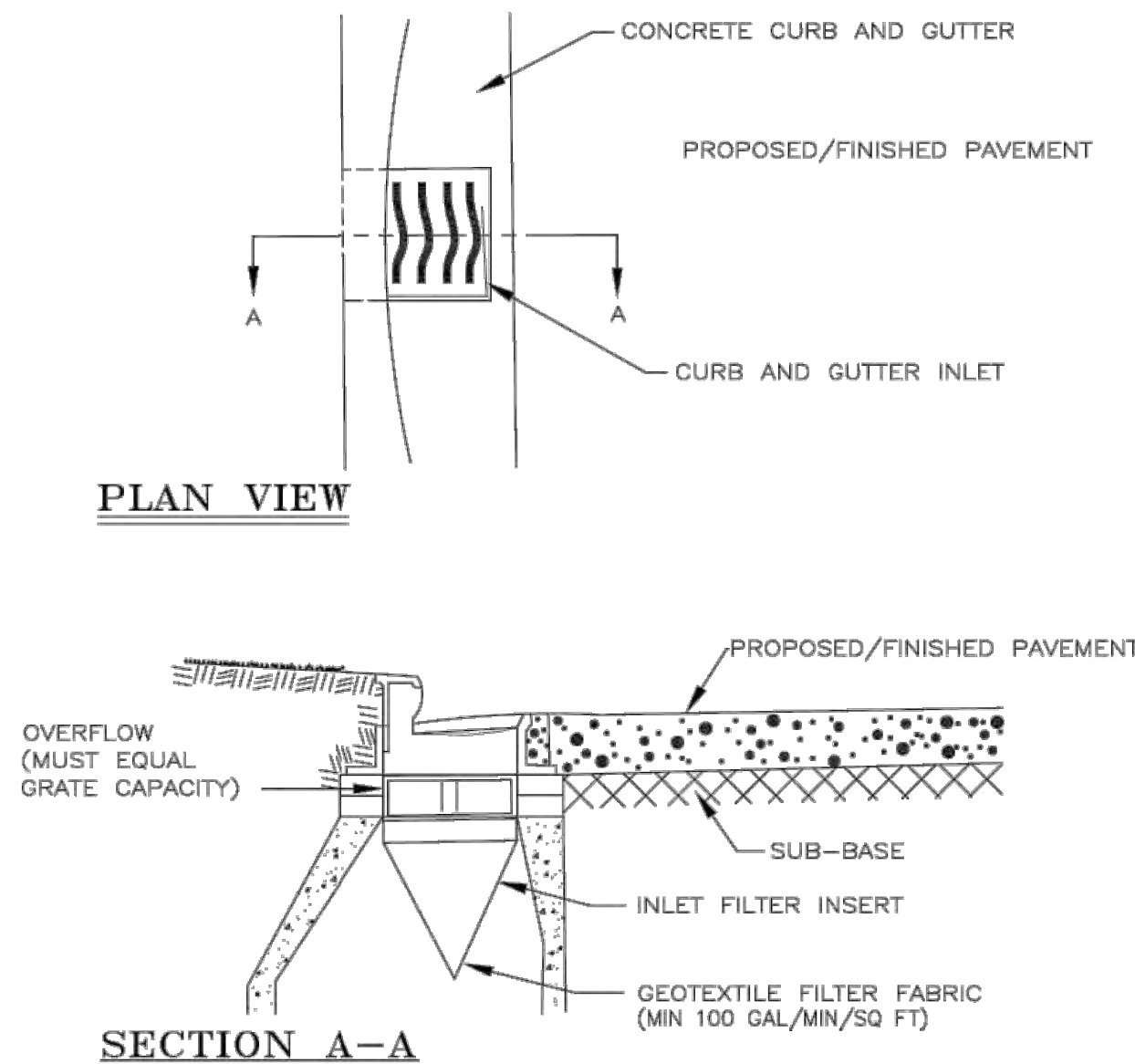
NOT FOR USE IN WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



SILT SACK OR APPROVED EQUAL CURB AND GUTTER INLET FILTER

STANDARD CONTROL YEAR ROUND OR WINTER USE

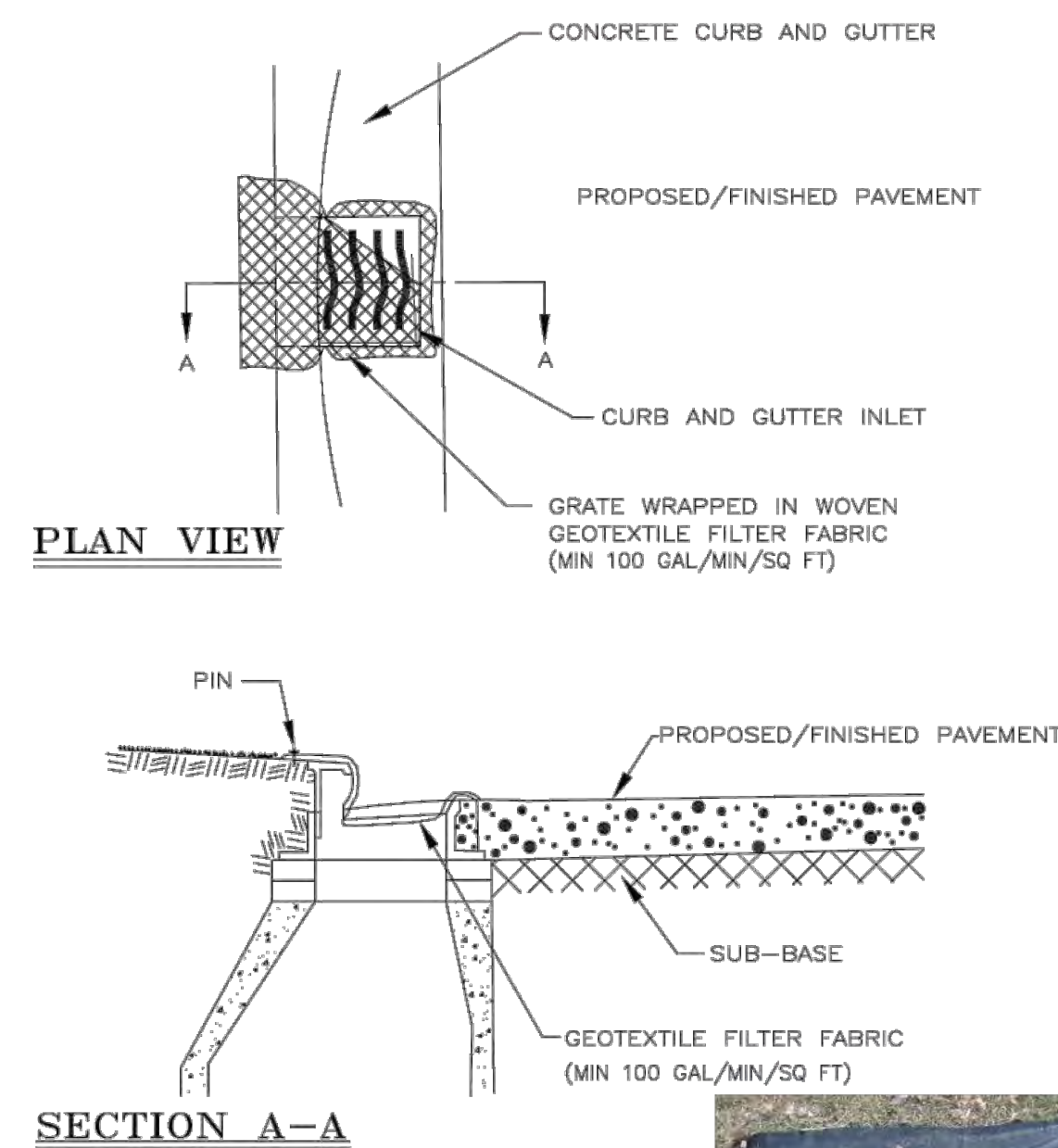
APPROVED FOR USE DURING WINTER MONTHS OR IN AREAS THAT MAY BECOME A SAFETY HAZARD DUE TO FLOODING OR FREEZING



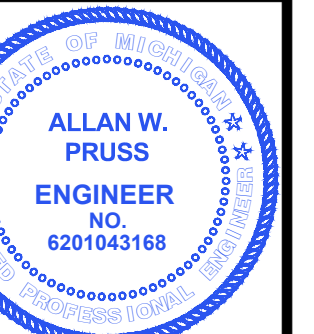
GEOTEXTILE FABRIC CURB AND GUTTER INLET FILTER

STANDARD NON-WINTER USE

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THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE INDIVIDUALLY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT :



BRIVAR CONST. CO.
 9325 MALTBY ROAD
 BRIGHTON, MI 48116
 (248) 446-8000

LCDC SESC DETAILS

BABA STATION 31
 615 W GRAND RIVER AVE
 PART OF THE SW 1/4 OF SEC. 30, T.2N. -R.6E.
 CITY OF BRIGHTON, LIVINGSTON COUNTY, MI

DATE	PLAN SUBMITTALS/REVISIONS
6/13/2025	AMENDED SITE PLAN
6/24/2025	REVISED PER CLIENT COMMENTS
9/12/2025	REVISED PER CITY REVIEW

CURRENT ISSUE DATE:
 9/12/2025

PROJECT NO: 25-006

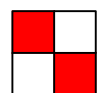
SCALE: N/A
 0 1/2" 1"

FIELD: ZW, RZ
 DRAWN BY: DC
 DESIGN BY: MN
 CHECK BY: AP, PL

C-7.2

NOT FOR CONSTRUCTION





STORM SEWER DESIGN CALCULATIONS

FROM STR TO STR	AREA A	COEFF. C	AREA A x C	AREA TOTAL At	TOTAL C x A	TIME t	INT. I	FLOW Q	PIPE CAP.	PIPE AREA	PIPE LENGTH	PIPE DIA.	PIPE SLOPE	MIN PIPE SLOPE	H.G. SLOPE	VEL. FULL	TIME FLOW	H.G. ELEV. UP STREAM	H.G. ELEV. DOWN STREAM	INVERT ELEV. UP STREAM	INVERT ELEV. DOWN STREAM	RIM ELEV. UP STREAM	RIM ELEV. DOWN STREAM	
ac.				ac.		min.	in/hr	c.f.s.	c.f.s.	sq. ft.	ft.	in.	%	%	ft/sec	min.								
MAIN RUN	IN1-CB2	0.046	0.30	0.014	0.046	0.014	15.00	4.38	0.06	2.49	0.79	103	12	0.49	0.30	0.49	3.17	0.54	920.31	919.80	919.51	919.00	923.02	922.24
	CB2-CB3	0.223	0.80	0.178	0.275	0.194	15.54	4.32	0.84	2.49	0.79	74	12	0.49	0.30	0.49	3.17	0.39	919.80	919.44	919.00	918.64	922.24	921.92
	CB3-25409	0.328	0.95	0.312	0.682	0.578	15.93	4.28	2.47	2.49	0.79	72	12	0.49	0.30	0.49	3.17	0.38	919.44	919.09	918.64	918.29	921.92	922.21
LATERAL	IN4-CB2	0.006	0.30	0.002	0.006	0.002	15.00	4.38	0.01	2.01	0.79	23	12	0.32	0.30	2.56	0.15	919.88	919.80	919.08	919.00	920.96	922.24	
LATERAL	IN5-25409	0.079	0.92	0.073	0.079	0.073	15.00	4.38	0.32	2.01	0.79	7	12	0.32	0.30	2.56	0.05	919.44	919.44	918.31	918.29	921.76	922.21	

MONUMENT ENGINEERING GROUP ASSOCIATES, LLC
 298 VETERANS DRIVE
 FOWLERVILLE, MI 48836
 517-223-3512

COMPOUND RUNOFF COEFFICIENT FOR IN-1

	AREA (SF)	AREA (AC)	C
OVERALL	2003.87	0.046	
CONTRIBUTING	2003.87	0.046	
FLOWING OFF	0.00	0.000	

COMPOUND C

	TOTAL A x C	CONTRIBUTING AREA	COMPOUND C
	601.16	2003.87	0.30

COMPOUND RUNOFF COEFFICIENT FOR AREA CB-2

	AREA (SF)	AREA (AC)	C
OVERALL	9698.69	0.223	
CONTRIBUTING	9698.69	0.223	
FLOWING OFF	0.00	0.000	

COMPOUND C

	TOTAL A x C	CONTRIBUTING AREA	COMPOUND C
	7755.62	9698.69	0.80

COMPOUND RUNOFF COEFFICIENT CB-3

	AREA (SF)	AREA (AC)	C
OVERALL	14583.04	0.335	
CONTRIBUTING	14583.04	0.335	
FLOWING OFF	0.00	0.000	

COMPOUND C

	TOTAL A x C	CONTRIBUTING AREA	COMPOUND C
	13853.89	14583.04	0.95

COMPOUND RUNOFF COEFFICIENT IN-4

	AREA (SF)	AREA (AC)	C
OVERALL	282.48	0.006	
CONTRIBUTING	282.48	0.006	
FLOWING OFF	0.00	0.000	

COMPOUND C

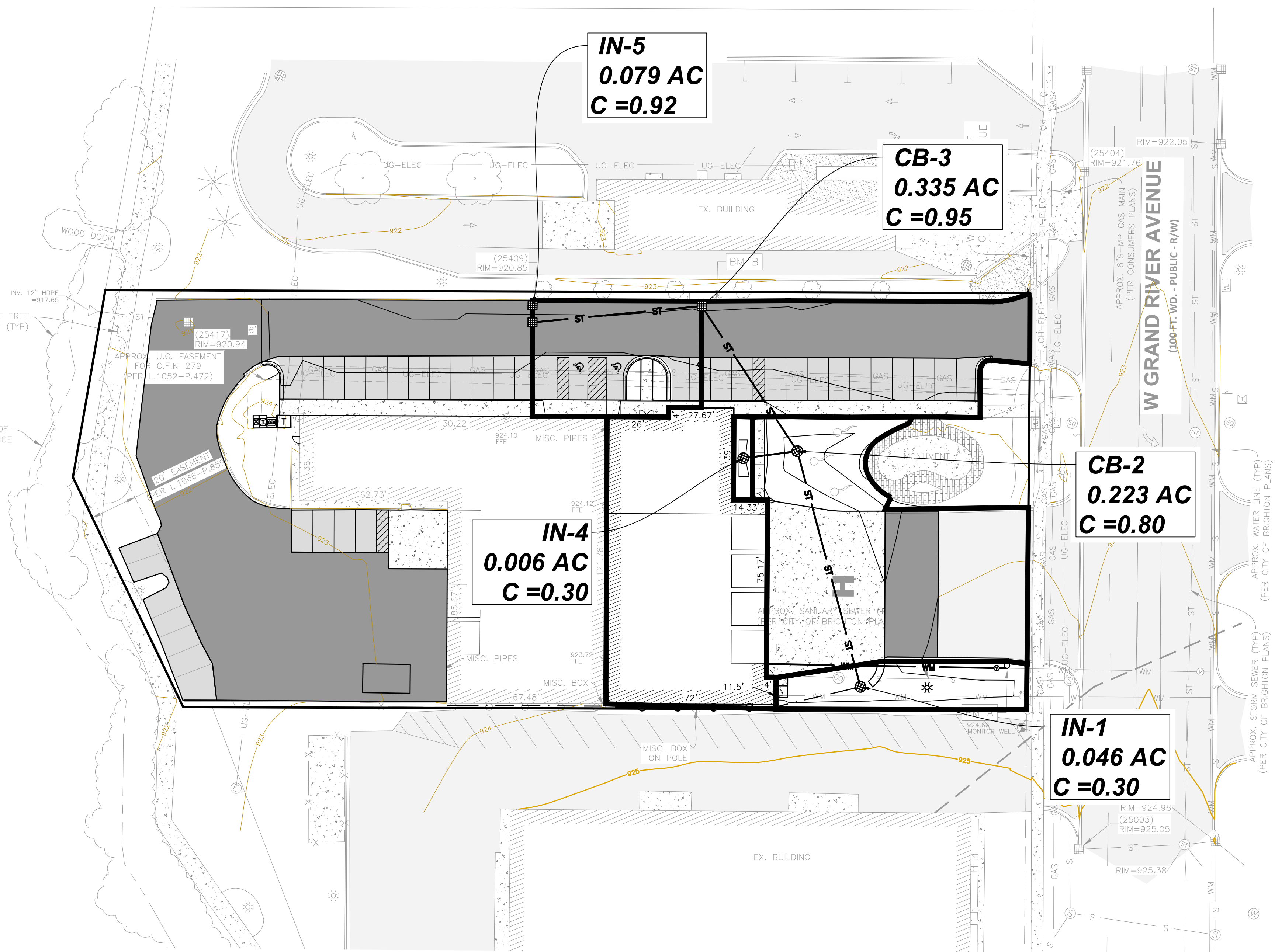
	TOTAL A x C	CONTRIBUTING AREA	COMPOUND C
	84.74	282.48	0.30

COMPOUND RUNOFF COEFFICIENT FOR IN-5

	AREA (SF)	AREA (AC)	C
OVERALL	3453.01	0.079	
CONTRIBUTING	3453.01	0.079	
FLOWING OFF	0.00	0.000	

COMPOUND C

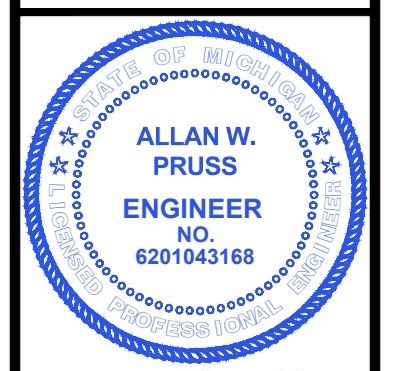
	TOTAL A x C	CONTRIBUTING AREA	COMPOUND C
	3161.50	3453.01	0.92



IMPERVIOUS AREAS

EXISTING: 55,666 SF
 PROPOSED: 55,488 SF

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DRAINAGE AREA PLAN
 BAFI STATION 31
 615 W GRAND RIVER AVE.
 PART OF THE SW 1/4 OF SEC. 30, T.2N.-R.6E.
 CITY OF BRIGHTON, LIVINGSTON COUNTY, MI

DATE	REVISIONS
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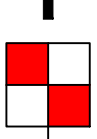
PROJECT NO: 25-006

SCALE: 1" = 30'

FIELD: ZW, RZ
 DRAWN BY: DC
 DESIGN BY: MN
 CHECK BY: AP, PL

C-9.0

NOT FOR CONSTRUCTION



GENERAL NOTES

- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND SPECIFICATIONS OF THE LOCAL MUNICIPALITY, THE LOCAL WATER AND/OR SEWER AUTHORITY, THE COUNTY DRAINAGE COMMISSIONER, MICHIGAN COMMISSIONER, MICHIGAN DEPARTMENT OF TRANSPORTATION, MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES AND ENERGY, THE STATE OF MICHIGAN, AND THE COUNTY ROAD COMMISSIONER WHERE APPLICABLE.
- RULES, REGULATIONS OR LAWS OF ANY CONTROLLING GOVERNMENTAL AGENCY SHALL GOVERN, WHEN THEY ARE MORE STRINGENT THAN THE REQUIREMENTS OF THESE SPECIFICATIONS.
- SHOULD THE CONTRACTOR ENCOUNTER A CONFLICT BETWEEN THESE PLANS AND SPECIFICATIONS EITHER AMONG THEMSELVES OR WITH THE REQUIREMENTS OF ANY AND ALL REVIEWING AND PERMIT-ISSUING AGENCIES, CONTRACTOR SHALL SEEK CLARIFICATION IN WRITING FROM THE ENGINEER BEFORE COMMENCEMENT OF CONSTRUCTION. FAILURE TO DO SO SHALL BE AT SOLE EXPENSE TO THE CONTRACTOR.
- THE CONTRACTOR SHALL PROVIDE ALL MATERIALS, LABOR AND EQUIPMENT TO COMPLETE THE TYPE OF WORK WHICH IS BID, IN ACCORDANCE WITH THE PLANS, SPECIFICATIONS, DETAILS AND TO THE SATISFACTION OF THE OWNER AND OWNER'S REPRESENTATIVE.
- CONTRACTOR AGREES THAT IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, CONTRACTOR WILL BE REQUIRED TO ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL BE MADE TO APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL HOURS, AND CONTRACTOR FURTHER AGREES TO DEFEND, INDEMNIFY AND HOLD DESIGN PROFESSIONAL HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL.
- ANY WORK WITHIN STREET OR HIGHWAY RIGHT-OF-WAYS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE GOVERNING AGENCIES HAVING JURISDICTION AND SHALL NOT BEGIN UNTIL PERMITS HAVE BEEN ISSUED BY THESE GOVERNING AUTHORITIES.
- ALL NECESSARY PERMITS, BONDS, INSURANCES, ETC., SHALL BE PAID FOR BY THE CONTRACTOR.
- ALL ELEVATIONS SHOWN ARE BASED ON BENCHMARKS PROVIDED BY THE LOCAL MUNICIPALITY UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ALL ITEMS OF WORK NOT SPECIFICALLY INDICATED AS PAY ITEMS ON THE DRAWINGS OR IN THE BID PACKAGE SHALL BE CONSIDERED INCIDENTAL ITEMS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL DURING THE PERIODS OF CONSTRUCTION.
- AT LEAST THREE (3) WORKING DAYS PRIOR TO ANY EXCAVATION, THE CONTRACTOR SHALL CONTACT MISS DIG ((1-800-482-7171)) TO VERIFY THE LOCATION OF ANY EXISTING UNDERGROUND UTILITIES AND SHALL NOTIFY REPRESENTATIVES OF OTHER UTILITIES IN THE VICINITY OF THE WORK.
- ALL PROPERTIES OR FACILITIES IN THE SURROUNDING AREAS, PUBLIC OR PRIVATE, DESTROYED OR OTHERWISE DISTURBED DURING CONSTRUCTION SHALL BE REPLACED AND/OR RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR, AT NO ADDITIONAL COST TO THE OWNER.
- MANHOLE, CATCH BASIN, GATE WELLS RIMS AND HYDRANT FINISH GRADE ELEVATIONS MUST BE AS-BUILT AND APPROVED BY THE ENGINEER BEFORE THE CONTRACTOR'S WORK IS CONSIDERED COMPLETE. AGENCY REQUIREMENTS FOR RECORD DRAWINGS ALSO APPLY.
- CONTRACTOR SHALL REMOVE AND DISPOSE OF OFF-SITE ANY TREES, BRUSH, STUMPS, TRASH OR OTHER UNWANTED DEBRIS, AT THE OWNER'S DIRECTION, INCLUDING OLD BUILDING FOUNDATIONS AND FLOORS, THE BURNING OR BURYING OF TRASH, STUMPS OR OTHER DEBRIS WILL NOT BE ALLOWED.
- ALL REFERENCES TO M.D.O.T. SPECIFICATIONS REFER TO THE MOST CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- ALL CONTRACTORS BIDDING THIS PROJECT SHALL HAVE VISITED THE SITE TO BECOME THOROUGHLY FAMILIAR WITH THE SITE AND THE CONDITIONS IN WHICH THEY WILL BE CONDUCTING THEIR OPERATIONS. ANY VARIANCE FOUND BETWEEN THE PLANS AND EXISTING CONDITIONS SHALL BE REPORTED IMMEDIATELY TO THE DESIGN ENGINEER.
- THE LOCATIONS AND DIMENSIONS SHOWN ON THE PLANS FOR EXISTING UNDERGROUND FACILITIES ARE IN ACCORDANCE WITH AVAILABLE INFORMATION PROVIDED BY THE UTILITY COMPANIES AND GOVERNMENTAL AGENCIES WITHOUT UNCOVERING AND MEASURING. THE DESIGN ENGINEER DOES NOT GUARANTEE THE ACCURACY OF THIS INFORMATION OR THAT ALL EXISTING UNDERGROUND FACILITIES ARE SHOWN.
- THE OWNER MAY EMPLOY AND PAY FOR THE SERVICES OF AN ENGINEER TO PERFORM ON-SITE INSPECTION AND VERIFY IN THE FIELD THAT ALL BACKFILL, PAVEMENTS AND CONCRETE CURB AND GUTTER HAVE BEEN PLACED AND COMPACTED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. IF, IN THE OPINION OF THE ENGINEER, THE WORK DOES NOT MEET THE TECHNICAL OR DESIGN REQUIREMENTS STIPULATED FOR THE WORK, THE CONTRACTOR SHALL MAKE ALL NECESSARY ADJUSTMENTS AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL MAKE NO DEVIATIONS FROM THE CONTRACT DOCUMENTS WITHOUT SPECIFIC WRITTEN APPROVAL OF THE OWNER.
- ALL EXCAVATED MATERIAL REMOVED FROM THE SANITARY SEWER, STORM SEWER AND WATER MAIN TRENCHES UNDER, THROUGH AND WITHIN 3 FEET OF THE 45° ZONE OF INFLUENCE LINE OF EXISTING OR PROPOSED PAVING, SIDEWALK AREAS, AND PER PLANS, NOT SUITABLE FOR BACKFILL, SHALL BE REMOVED FROM THESE AREAS AND DISPOSED OF.
- THE CONTRACTOR SHALL RESTORE TO THEIR PRESENT CONDITIONS ANY PAVEMENT OR PUBLIC RIGHTS-OF-WAY THAT IS DISTURBED BY THE OPERATIONS OF THE CONTRACTOR. ALL RESTORATION WORK IN PUBLIC RIGHTS-OF-WAY SHALL BE PERFORMED TO THE SATISFACTION OF THE GOVERNMENT AGENCIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SIGNAGE AND LIGHTS TO PROTECT THE WORK AND SAFELY MAINTAIN TRAFFIC, IN ACCORDANCE WITH LOCAL REQUIREMENTS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
- O.S.H.A. SAFETY REQUIREMENTS – ALL WORK, WORK PRACTICE, AND MATERIALS SHALL COMPLY WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL SAFETY, OCCUPATIONAL, HEALTH AND ENVIRONMENTAL REGULATIONS AND ALSO NFPA AND ANSI CODES AS APPLICABLE. ALL WORK INSIDE A CONFINED SPACE SUCH AS MANHOLES OR UNDERGROUND STRUCTURES SHALL BE COORDINATED WITH UTILITY OWNER AND ALL WORKER SAFETY REQUIREMENTS STRICTLY ENFORCED. LAND SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO ARRANGE FOR OR SUPPLY TEMPORARY WATER SERVICE, SANITARY FACILITIES AND ELECTRICITY.
- CONTRACTOR SHALL PROVIDE FOR THE CONTINUOUS OPERATION OF EXISTING FACILITIES WITHOUT INTERRUPTION DURING CONSTRUCTION UNLESS SPECIFICALLY AUTHORIZED OTHERWISE BY THE RESPECTIVE AUTHORITY.
- THE CONTRACTOR SHALL NOTE EXISTING UNDERGROUND UTILITIES IN THE PROJECT PLANS. TRENCH BACKFILL FOR EXISTING UTILITIES SHALL BE EXAMINED CAREFULLY. ANY TRENCH WHICH, IN THE OPINION OF THE SOLS ENGINEER ARE FOUND TO BE SOFT, UNSTABLE MATERIAL SHALL BE COMPLETELY EXCAVATED AND BACKFILLED WITH SUITABLE MATERIAL. SAND BACKFILL SHALL BE USED UNDER PAVEMENT OR WITHIN 3 FEET OF THE 45° INFLUENCE LINE OF PAVED OR STRUCTURES.

EROSION CONTROL STANDARDS

- ALL EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF THE JURISDICTIONAL AGENCY UNDER PART 91 OF ACT 451 OF 1994, AS AMENDED.
- UNDER "MICHIGAN'S PERMIT-BY-RULE FOR CONSTRUCTION ACTIVITIES", PROMULGATED UNDER ACT 245, PUBLIC ACTS OF 1929 AS AMENDED, AN NPDES STORM WATER DISCHARGE COVERAGE PERMIT IS REQUIRED FOR ANY CONSTRUCTION ACTIVITY THAT DISTURBS 1 ACRE OR MORE OF LAND. A CERTIFIED STORM WATER OPERATOR IS REQUIRED FOR THE SUPERVISION AND INSPECTION OF THE SOIL EROSION CONTROL MEASURES AT THE CONSTRUCTION SITE IN ACCORDANCE WITH THE PROVISIONS OF THESE RULES.
- DAILY INSPECTIONS SHALL BE MADE BY CONTRACTOR WHILE WORKING TO DETERMINE THE EFFECTIVENESS OF EROSION AND SEDIMENT CONTROL MEASURES. ANY NECESSARY REPAIRS SHALL BE PERFORMED WITHOUT DELAY. ALL SOIL EROSION CONTROL PROVISIONS SHALL BE PROPERLY MAINTAINED DURING CONSTRUCTION.
- EROSION AND ANY SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON ANY OFF-SITE AREAS OR IN WATERWAYS. WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES, AND PONDS.
- CONTRACTOR SHALL APPLY TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES WHEN REQUIRED AND AS DIRECTED ON THESE PLANS. CONTRACTOR SHALL REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGE AREAS HAVE BEEN COMPLETED.

EROSION CONTROL STANDARDS CONTINUED

- STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
- SOIL EROSION CONTROL PRACTICES WILL BE ESTABLISHED IN EARLY STAGES OF CONSTRUCTION BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES WILL BE APPLIED AS A PERIMETER DEFENSE AGAINST ANY TRANSPORTING OF SILT OFF THE SITE.
- DUST SHALL BE CONTROLLED BY WATERING OR BY OTHER APPROVED MEANS THROUGHOUT ALL CONSTRUCTION OPERATIONS.
- ALL WATER FROM DEWATERING OR SURFACE DRAINAGE FROM THE CONSTRUCTION SITE SHALL BE CONTROLLED TO ELIMINATE SEDIMENT CONTAMINATION OF OFF-SITE WATERWAYS OR STORM SEWERS. SUCH MEASURES SHALL BE APPROVED BY THE ENGINEER PRIOR TO ANY DEWATERING OR LAID DISTURBANCE.
- PERMANENT SOIL EROSION CONTROL MEASURES FOR SLOPES, CHANNELS, DITCHES OR ANY DISTURBED LAND AREA SHALL BE COMPLETED WITHIN 5 CALENDAR DAYS AFTER FINAL GRADING OR THE FINAL EARTH CHANGE HAS BEEN COMPLETED. WHEN IT IS NOT POSSIBLE TO PERMANENTLY STABILIZE A DISTURBED AREA AFTER AN EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE HAS BEEN COMPLETED OR WHERE SIGNIFICANT EARTH CHANGE ACTIVITY CEASES, TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE IMPLEMENTED WITHIN 5 CALENDAR DAYS. ALL TEMPORARY SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED UNTIL PERMANENT SOIL EROSION CONTROL MEASURES ARE IMPLEMENTED AND ESTABLISHED BEFORE A CERTIFICATE OF COMPLIANCE IS ISSUED.

STORM SEWER SPECIFICATIONS

- THESE SPECIFICATIONS SHALL BE USED IN CONJUNCTION WITH THE GENERAL SPECIFICATIONS AND STANDARD DETAILS AND DETAIL SHEETS OF THE GOVERNING AGENCIES. IF ANY CONFLICT IS FOUND BETWEEN THE SPECIFICATIONS, THE STRICTER SPECIFICATIONS SHALL BE FOLLOWED.
- CONTRACTOR SHALL FURNISH CERTIFIED EVIDENCE THAT ALL MATERIAL TESTS AND INSPECTIONS HAVE BEEN PERFORMED AND THAT THE PRODUCT HAS BEEN MANUFACTURED IN COMPLIANCE WITH THE APPLICABLE SPECIFICATIONS.
- PROPER IMPLEMENTS, TOOLS AND FACILITIES SHALL BE PROVIDED AND USED FOR UNLOADING AND DISTRIBUTING MATERIALS ALONG THE LINE OF WORK. ANY PIPE OR FITTING DAMAGED IN TRANSPORTATION OR HANDLING SHALL BE REJECTED AND IMMEDIATELY REMOVED FROM THE JOB SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFE STORAGE OF ALL MATERIAL INTENDED FOR THE WORK. HE SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO MATERIALS, EQUIPMENT AND WORK.
- PIPE BEDDING, UNLESS OTHERWISE INDICATED, SHALL BE CL. II SAND, CRUSHED STONE OR ROUNDED GRAVEL. BEDDING MATERIAL SHALL HAVE 95% PASSING A 3/4" SIEVE AND AT LEAST 50% RETAINED ON A NO. 4 SIEVE.
- POROUS FILTER MATERIAL FOR PERFORATED SUBSURFACE DRAINS SHALL BE CRUSHED ROCK OR GRAVEL GRADED BETWEEN 1-1/2" AND 3/4" OR PER PLANS AND DETAILS.
- BACKFILL, UNLESS OTHERWISE NOTED, SHALL BE COARSE SAND, FINE GRAVEL OR GRAVEL HAVING A LOW PLASTICITY INDEX, FREE OF ROCKS, DEBRIS AND OTHER FOREIGN MATERIALS AND DEFINED AS ALL PASSING THROUGH A 3/8" SIEVE AND NOT MORE THAN 10% BY VOLUME PASSING THROUGH A 200-MESH SIEVE.
- STORM SEWER PIPING AND FITTINGS SHALL BE OF THE SIZE AND TYPE INDICATED ON THE DRAWINGS AND SHALL CONFORM TO THE FOLLOWING:
 - POLYVINYL CHLORIDE (PVC) AND ACRYLONITRILE BUTADIENE STYRENE (ABS) FOR PIPE UP TO AND INCLUDING 10" IN DIAMETER, SHALL CONFORM TO ASTM D3034, SDR 23.5 FOR PVC PIPE AND ASTM D2751 FOR ABS PIPE WITH ELASTOMERIC GASKET JOINTS CONFORMING TO ASTM D3212 OR CHEMICALLY WELDED PIPE JOINTS CONFORMING TO ASTM F545.
 - REINFORCED CONCRETE PIPE FOR PIPE 12" IN DIAMETER AND UP, SHALL CONFORM TO ASTM C-76 CLASS B UNLESS OTHERWISE NOTED ON THE DRAWINGS. JOINTS SHALL BE MODIFIED GROOVED TONGUE WITH RUBBER GASKET CONFORMING TO ASTM C-443.
 - HIGH DENSITY POLYETHYLENE (HDPE) STORM SEWER, FOR PIPES 12" IN DIAMETER AND UP, SHALL CONFORM TO ASTM F2648. JOINTS SHALL BE PUSH ON "SOIL TIGHT" GASKETED JOINTS CONFORMING TO THIS SPECIFICATION.
 - PERFORATED SUBSURFACE DRAIN PIPE SHALL BE PVC CONFORMING TO ASTM D-2722 OR CORRUGATED HIGH DENSITY POLYETHYLENE PIPE CONFORMING TO AASHTO M-294. JOINTS FOR PVC AND POLYETHYLENE PIPE SHALL BE PREFABRICATED COUPLING WITH SOLVENT WELD.
- MANHOLES, CATCH BASINS, AND INLETS SHALL BE OF THE SIZE AND TYPE INDICATED ON THE DRAWINGS AND SHALL BE CONSTRUCTED OF THE FOLLOWING:
 - REINFORCED PRE-CAST CONCRETE MANHOLE SECTIONS INCLUDING CONCENTRIC OR ECCENTRIC CONES AND GRADE RINGS SHALL BE 4000 PSI CONCRETE AND CONFORM TO ASTM C-478-641.
 - BRICK SHALL BE SOUND, HARD-BURNED THROUGHOUT AND OF UNIFORM SIZE AND QUALITY AND SHALL BE IN ACCORDANCE WITH AASHTO M 91, GRADE MS.
 - CONCRETE MASONRY SHALL BE SOLID PRE-CAST SEGMENTAL UNITS CONFORMING TO ASTM C-139.
- IRON CASTINGS SHALL CONFORM TO ASTM A-48, CLASS 30. BEARING SURFACES BETWEEN CAST IRON FRAMES, COVERS AND GRATES SHALL BE MACHINED, FITTED TOGETHER AND MATCHED-MARKED TO PREVENT ROCKING. SYSTEM IDENTIFYING LETTERS 2" HIGH SHALL BE STAMPED OR CAST INTO ALL COVERS SO THAT THEY ARE PLAINLY VISIBLE. SEE MUNICIPALITY STANDARDS FOR ACTUAL WORKING.
- CASTINGS SHALL BE MANUFACTURED BY EAST JORDAN IRON WORKS, INC., NEENAH FOUNDRY COMPANY OR EQUAL.
- CONCRETE AND MASONRY MATERIALS FOR CONSTRUCTION OF STORM DRAINAGE STRUCTURES SHALL CONSIST OF THE FOLLOWING:
 - PORTLAND CEMENT SHALL BE STANDARD BRAND OF PORTLAND CEMENT CONFORMING TO ASTM C-150, TYPE 1 OR IA.
 - FINE AND COARSE AGGREGATES FOR CONCRETE SHALL BE PER ASTM C-33.
 - AGGREGATE FOR CEMENT MORTAR SHALL BE CLEAN, SHARP SAND CONFORMING TO ASTM C-144.
 - HYDRATED LIME SHALL COMPLY WITH ASTM C-207, TYPE S.
 - WATER SHALL MEET THE REQUIREMENTS OF MDO SPEC SECTION 911.
 - REINFORCING STEEL FOR CONCRETE SHALL BE INTERMEDIATE-GRADE NEW BILLET STEEL CONFORMING TO ASTM A-615, GRADE 40.
- CONCRETE, UNLESS OTHERWISE NOTED, SHALL HAVE COMPRESSIVE STRENGTH AFTER 28 DAYS OF 3000 PSI MINIMUM WITH 3" MAXIMUM SLUMP.
 - CONCRETE FILL BELOW GRADE MAY BE 2500 PSI AT 28 DAYS.
 - CONCRETE, WHEN EXPOSED TO THE WEATHER, SHALL BE AIR-ENTRAINED. AIR ENTRAINMENT SHALL BE ACCOMPLISHED BY THE USE OF ADDITIVES CONFORMING TO ASTM C-260. AIR CONTENT SHALL BE 6% + 1% ADDITIVE SHALL BE USED STRICTLY IN ACCORDANCE WITH MANUFACTURER'S PRINTED DIRECTIONS.
 - READY-MIX CONCRETE SHALL CONFORM TO THE REQUIREMENTS OF ASTM C-94.
- MORTAR SHALL BE SPECIFIED HEREINAFTER. USE METHOD OF MIXING MORTAR AT JOB SO THAT SPECIFIED PROPORTIONS OF MORTAR MATERIALS CAN BE CONTROLLED AND ACCURATELY MAINTAINED DURING WORK PROGRESS. MORTAR SHALL NOT BE MIXED IN GREATER QUANTITIES THAN REQUIRED FOR IMMEDIATE USE WITH A MINIMUM OF WATER CONSISTENT WITH SATISFACTORY WORKABILITY. RE-TAMPING OF MORTAR IS NOT PERMITTED.
 - MORTAR FOR LAYING BRICK OR CONCRETE MASONRY UNITS SHALL CONFORM TO ASTM C-270, TYPE M, AVERAGE COMPRESSIVE STRENGTH 2500 PSI MINIMUM AT 28 DAYS. MORTAR MIX SHALL BE PROPORTIONED BY VOLUME.
 - MORTAR FOR PLASTERING SHALL CONSIST OF 1 PART PORTLAND CEMENT AND 2-1/2 PARTS SAND.
 - MORTAR FOR GROUTING OF RIP-RAP SHALL CONSIST OF 1 PART PORTLAND CEMENT AND 3-1/2 PARTS SAND.
- PERFORM ALL EXCAVATING AND TRENCHING TO DIMENSIONS AND ELEVATIONS INDICATED ON DRAWINGS.

STORM SEWER SPECIFICATIONS, CONTINUED

- OPEN NO MORE TRENCH IN ADVANCE OF PIPE LAYING THAN IS NECESSARY TO EXPEDITE THE WORK.
- CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED ON DRAWINGS. WHERE EXCESSIVE OR UNAUTHORIZED EXCAVATION TAKES PLACE, THE OVERDEPTH SHALL BE BACKFILLED TO THE PROPER GRADE WITH COMPACTED BEDDING MATERIAL, AT NO EXPENSE TO THE OWNER.
- WHERE UNSTABLE SOIL IS ENCOUNTERED, CONTRACTOR SHALL NOT PLACE PIPE UNTIL A SOLID BED HAS BEEN PROVIDED.
- EXCAVATION FOR DRAINAGE STRUCTURES SHALL EXTEND A SUFFICIENT DISTANCE FROM THE WALLS AND FOOTINGS TO ALLOW FOR FORMS, CONSTRUCTION OF WALLS, CONNECTIONS AND FOR INSPECTION.
- PROVIDE REQUIRED TIMBER SHEETING, BRACING AND SHORING TO PROTECT SIDES OF EXCAVATION. DO NOT BRACE SHEETING AGAINST PIPE. PROVIDE SUITABLE LADDERS FOR SAFE ENTRY TO AND EXIT FROM EXCAVATION.
- DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE PILED IN AN AVOID MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF TRENCHES TO AVOID OVERLOADING, AND TO PREVENT SLIDES OR CAVE-INS.
- WHEN WET EXCAVATION IS ENCOUNTERED, THE TRENCH SHALL BE DE-WATERED UNTIL THE PIPE HAS BEEN LAID AND BACKFILLED TO A POINT AT LEAST 1 FOOT ABOVE TOP OF PIPE.
- MANHOLES AND CATCH BASINS SHALL BE CONSTRUCTED OF BRICK, CONCRETE MASONRY UNITS OR PRE-CAST CONCRETE WITH CAST IRON FRAMES, COVERS AND MANHOLE STEPS.
- THE WALL THICKNESS OF MANHOLES AND CATCH BASINS CONSTRUCTED OF BRICK, CONCRETE MASONRY UNITS OR PRE-CAST CONCRETE SHALL MEET THESE MINIMUMS. ADHERE TO REQUIREMENTS OF THE GOVERNING AGENCY IF THEY EXCEED THESE THICKNESSES:

DEPTH	BRICK	CONCRETE BLOCK	PRE-CAST CONCRETE
0' - 10'	8"	6"	6"
10' - 16'	12"	8"	8"
16' - 25'	16"	12"	12"
- WHENEVER EXISTING MANHOLES OR SEWER PIPE ARE TO BE TAPPED, DRILL HOLES 4" CENTER, TO CENTER, AROUND THE PERIPHERY OF OPENINGS TO CREATE A PLANE OF WEAKNESS JOINT BEFORE BREAKING SECTION OUT.
- MANHOLE STEPS SHALL BE BUILT INTO AND THOROUGHLY ANCHORED TO WALLS. STEPS SHALL BE FACTORY INSTALLED IN PRE-CAST STRUCTURES.
- ALL PIPING ENTERING OR LEAVING DRAINAGE STRUCTURES SHALL BE ADEQUATELY SUPPORTED BY POURED-IN-PLACE CONCRETE FILL FROM PIPE CENTER TO UNDISTURBED GROUND.
- SET FRAMES IN FULL BED OF STIFF MORTAR OR BITUMINOUS MASTIC JOINTING COMPOUND AT FINAL ELEVATION.
- ALL TIMBER SHEETING BELOW A PLANE 12" ABOVE TOP OF PIPE SHALL REMAIN IN PLACE IN ORDER NOT TO DISTURB PIPE GRADING. BEFORE BACKFILLING, REMOVE ALL OTHER SHEETING, BRACING AND SHORING.
- BEDDING USED FOR TRENCH BOTTOM SHALL BE EXTENDED UP THE SIDES AND CAREFULLY PLACED AROUND AND OVER PIPE IN 6" MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS PER ASTM D-1557 (MODIFIED PROCTOR) UNTIL 12" OF COVER EXISTS OVER PIPE.
- REMAINDER OF TRENCH SHALL BE BACKFILLED WITH SPECIFIED BACKFILL MATERIAL TO SPECIFIED SUBGRADE ELEVATION. BACKFILLING SHALL BE COMPACTED TO 90% OF MAXIMUM DRY DENSITY PER ASTM D-1557.
- WITHIN 3' OF THE 45° INFLUENCE LINE OF THE SUBGRADE OF STREETS, DRIVES, PARKING LOTS AND OTHER AREAS TO HAVE OR HAVING IMPROVED HARD SURFACES, BACKFILL SHALL BE MATERIAL SPECIFIED AND SHALL BE DEPOSITED IN 6" LOOSE LAYERS AT OPTIMUM MOISTURE CONTENT (±2%) AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY PER ASTM D1557. (MODIFIED PROCTOR) SUITABLE MATERIALS FOUND ON SITE MAY BE USED.
- BEFORE BACKFILLING AROUND DRAINAGE STRUCTURES, ALL FORMS, TRASH AND DEBRIS SHALL BE REMOVED AND CLEARED AWAY. SELECTED EXCAVATED MATERIAL SHALL BE PLACED SYMMETRICALLY ON ALL SIDES IN 8" MAXIMUM LAYERS. EACH LAYER SHALL BE MOISTENED AND COMPACTED WITH MECHANICAL OR HAND TAMPERS.
- AFTER INSTALLATION OF PIPES AND DRAINAGE STRUCTURES, CLEAN THEM, AND ADJUST TOPS TO FINISH GRADE. PIPE SHALL BE STRAIGHT BETWEEN STRUCTURES WITH THE FULL INSIDE DIAMETER VISIBLE WHEN SIGHTING BETWEEN STRUCTURES.
- ENDS OF HEADWALL AND END SECTIONS FOR PIPES LARGER THAN 6 INCHES, SHALL BE FITTED WITH A #4 ROUND MINIMUM WELDED STEEL ROD GRATING. RODS SHALL BE SPACED 6" O.C. MAXIMUM. WELD ROD AT ALL INTERSECTIONS. GRATE SHALL BE REMOVABLE FOR ACCESS AND CLEANING.
- RIP-RAP SHALL BE LAID FROM THE BOTTOM UPWARD; STONES SHALL BE LAID BY HAND WITH 8" MINIMUM DIMENSION PERPENDICULAR TO GRADE WITH WELL-BROKEN JOINTS, COMPACTED AS IT GOES, TRUE TO LINE. ALL JOINTS SHALL BE FILLED WITH CEMENT MORTAR. SURFACE STONE TO BE EXPOSED. CLEAN JOINTS WITH WIRE BRUSH.
- THE CONTRACTOR SHALL DO ALL REQUIRED EXCAVATION AND TRENCHING WORK AND THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPLETION OF THE WORK HEREIN REGARDLESS OF THE NATURE OF MATERIALS ENCOUNTERED DURING THE COURSE OF THE WORK. THE OWNER WILL NOT BE LIABLE FOR ANY COSTS WHATSOEVER ASSOCIATED WITH, BUT NOT LIMITED TO, THE PRESENCE OF ROCK, PEAT, SUBTERRANEAN STREAMS, EXCESSIVE WATER OR OTHER DIFFICULT OR UNANTICIPATED SUB-SURFACE PHENOMENA.
- ALL CONNECTIONS TO EXISTING SEWERS SHALL BE PER MUNICIPAL REQUIREMENTS, AND ALL COSTS INCLUDING TESTING AND/OR VIDEO OF SEWERS SHALL BE INCIDENTAL TO THE JOB.

WATER MAIN SPECIFICATIONS

- WATER MAIN SPECIFICATIONS SHALL BE USED IN CONJUNCTION WITH THE GENERAL SPECIFICATIONS, THE WATER MAIN SPECIFICATIONS, AND THE DETAIL SHEETS OF THE GOVERNING AGENCIES. IF ANY CONFLICT IS FOUND BETWEEN THE SPECIFICATIONS, THE STRICTER SPECIFICATIONS SHALL BE FOLLOWED.
- DUCTILE IRON PIPE, 16" DIAMETER AND SMALLER, SHALL CONFORM TO ANSI/AWWA SPECIFICATION C151/A21.51, CLASS 54. DUCTILE IRON FITTINGS SHALL CONFORM TO ANSI/AWWA SPECIFICATION C110/A21.10 FOR STANDARD FITTINGS OR TO ANSI/AWWA SPECIFICATION C153/A21.53 FOR COMPACT FITTINGS. DUCTILE IRON PIPE AND FITTINGS SHALL HAVE A DOUBLE THICKNESS CEMENT MORTAR LINING CONFORMING TO ANSI SPECIFICATION A21-4.
- JOINTS FOR DUCTILE IRON WATER MAIN SHALL BE U.S. PIPE AND FOUNDRY COMPANY "TYTON JOINT" OR APPROVED EQUAL.
- POLYVINYL CHLORIDE (PVC) WATER MAIN SHALL CONFORM TO AWWA C900 FOR PIPE SIZES 4 TO 12 INCHES, AND SHALL CONFORM TO AWWA C905 FOR PIPE SIZES 14 TO 24 INCHES. ALL PIPES SHALL HAVE A MINIMUM DIMENSION RATIO OF (DR) OF 18 CORRESPONDING TO A WORKING PRESSURE OF 235 PSI FOR PVC TYPE 1120 PIPE.
 - RESTRAINTS FOR PVC PIPE SHALL BE EBA IRON SERIES 200PV, UNIFLANGE SERIES 1350C, 1390C, 1500 OR APPROVED EQUAL.
 - SERVICES SHALL BE INSTALLED WITH ALL STAINLESS STEEL SADDLES SUCH AS SMITH-BLAIR 372, FORD F5303, HESLAGE C522, OR APPROVED EQUAL.
 - ALL PVC PIPE USED FOR POTABLE WATER SHALL BE BLUE IN COLOR, MANUFACTURED WITHIN THE LAST 12 MONTHS AS DETERMINED FROM THE DATE STAMP ON THE PIPE, AND FREE FROM DEFECTS.
 - ALL PIPES SHALL BE MARKED WITH THE MANUFACTURER'S NAME, DATE, NOMINAL SIZE, TYPE OF PLASTIC AND PRESSURE RATING. PIPE O.D. SHALL BE EQUIVALENT TO DUCTILE IRON PIPE OF THE SAME NOMINAL SIZE.
 - FITTING SHALL CONFORM TO AWWA C907 AND C908, UNLESS OTHERWISE APPROVED BY THE ENGINEER.
- ALL WATER MAIN SHALL BE INSTALLED WITH A MINIMUM COVER OF FIVE FEET, OR AS SPECIFIED BY THE LOCAL GOVERNING MUNICIPALITY, BELOW FINISH GRADE UNLESS OTHERWISE NOTED IN THE PLANS. WHEN WATER MAINS MUST DIP TO PASS UNDER A STORM SEWER OR SANITARY SEWER, THE SECTIONS WHICH ARE DEEPER THAN NORMAL SHALL BE KEPT TO A MINIMUM LENGTH BY THE USE OF VERTICAL 11-1/4 BENDS PROPERLY ANCHORED.
- SEE THE WATER MAIN STANDARD DETAIL SHEETS OF THE GOVERNING AGENCY FOR THE SPECIFIC TYPE OF HYDRANTS AND VALVES TO BE USED FOR THIS PROJECT. THESE DETAIL SHEETS ARE INCLUDED AS PART OF THE PLANS.
- PRIOR TO HYDROSTATIC TESTING AND BEFORE PLACING THE WATER MAIN IN SERVICE, ALL NEW WATER PIPELINES SHALL BE CHLORINATED IN ACCORDANCE WITH AWWA C651. VERIFICATION OF DISINFECTION SHALL BE PERFORMED BY A CERTIFIED TESTING LABORATORY.

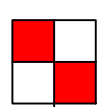
WATER MAIN SPECIFICATIONS, CONTINUED

- BEFORE ANY WATER MAIN WILL BE ACCEPTED BY THE GOVERNING AGENCY, IT MUST PASS A HYDROSTATIC PRESSURE TEST IN ACCORDANCE WITH AWWA C605 AND COMPLYING WITH THE CURRENT SPECIFICATIONS AND PROCEDURES OF THE AGENCY.
- PRIOR TO BEING PLACED INTO SERVICE, WATER MAIN SHALL BE FLUSHED OF CHLORINATED WATER AND FILLED WITH WATER FROM THE DISTRIBUTION SYSTEM. CHLORINATED WATER SHALL BE PUMPED INTO THE SANITARY SEWER. NO CHLORINATED WATER SHALL BE ALLOWED IN THE STORM SEWER OR DISCHARGED TO SURFACE WATERS.
- BEFORE ANY WATER MAIN SYSTEM WILL BE ACCEPTED BY THE GOVERNING AGENCY, THE FIRE HYDRANTS MUST BE PAINTED AS INDICATED ON THE WATER MAIN STANDARD DETAIL SHEETS.
- TWO INCH (2") DIAMETER CORPORATION STOPS SHALL BE PROVIDED IN BOTH THE EXISTING WATER MAIN AND THE NEW WATER MAIN AT ALL NEW CONNECTIONS.
- ALL TEES, BENDS CONNECTIONS, ETC. ARE INCIDENTAL TO THE JOB.
- PHYSICAL CONNECTIONS SHALL NOT BE MADE BETWEEN EXISTING AND NEW WATERMANS UNLESS TESTING IS SATISFACTORILY COMPLETED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFE STORAGE OF ALL MATERIAL INTENDED FOR THE WORK. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO MATERIALS EQUIPMENT AND WORK.
- PIPE BEDDING, UNLESS OTHERWISE INDICATED, SHALL BE CRUSHED STONE OR ROUNDED GRAVEL. BEDDING MATERIAL SHALL BE 95% PASSING A 3/4" SIEVE AND 50% RETAINED ON A NO. 4 SIEVE; LOAD FACTOR SHALL BE 1.9.
- BACKFILL, UNLESS OTHERWISE NOTED, SHALL BE COARSE SAND, FINE GRAVEL OR GRAVEL HAVING A LOW PLASTICITY INDEX, FREE OF ROCKS, DEBRIS AND OTHER FOREIGN MATERIALS AND DEFINED AS ALL PASSING THROUGH A 3/8" SIEVE AND NOT MORE THAN TEN PERCENT (10%) BY VOLUME PASSING THROUGH A 200 MESH SIEVE.
- GATE WELLS SHALL BE REINFORCED PRE-CAST CONCRETE SECTIONS INCLUDING CONCENTRIC OR ECCENTRIC CONES AND GRADE RINGS SHALL BE 4000 PSI CONCRETE AND CONFORM TO ASTM C-478.
- THRUST BLOCKS, IF REQUIRED BY THE MUNICIPALITY, SHALL BE MADE OF 3000 PSI CONCRETE WET MIX
 - THE MAXIMUM WIDTH OF TRENCH TO TOP OF PIPE SHALL BE AS FOLLOWS:

PIPE DIAMETER	TRENCH WIDTH
THROUGH 12"	36"
15" THROUGH 36"	O.D. PLUS 24"
42" THROUGH 60"	O.D. PLUS 30"
66" AND LARGER	O.D. PLUS 36"
- OPEN NO MORE TRENCH IN ADVANCE OF PIPE LAYING THAN IS NECESSARY TO EXPEDITE THE WORK.
- CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED ON DRAWINGS. WHERE EXCESSIVE OR UNAUTHORIZED EXCAVATION TAKES PLACE, THE OVERDEPTH SHALL BE BACKFILLED AT THE PROPER GRADE WITH COMPACTED BEDDING MATERIAL, AT NO EXPENSE TO THE OWNER.
- PROVIDE REQUIRED TIMBER SHEETING, BRACING AND SHORING TO PROTECT SIDES OF EXCAVATION. DO NOT BRACE SHEETING AGAINST PIPE. PROVIDE SUITABLE LADDERS FOR SAFE ENTRY TO AND EXIT FROM EXCAVATION.
- WHERE UNSTABLE SOIL IS ENCOUNTERED, CONTRACTOR SHALL NOT PLACE PIPE UNTIL A SOLID BED HAS BEEN PROVIDED.
- EXCAVATION FOR STRUCTURES SHALL EXTEND A SUFFICIENT DISTANCE FROM THE WALLS AND FOOTINGS TO ALLOW FOR FORMS, CONSTRUCTION OF WALLS, CONNECTIONS AND FOR INSPECTION.
- GATE WELLS SHALL BE CONSTRUCTED OF BRICK, CONCRETE MASONRY UNITS OR PRE-CAST CONCRETE WITH CAST IRON FRAMES, COVERS AND MANHOLE STEPS, AS INDICATED ON DRAWINGS AND SPECIFIED HEREIN.
 - COMPLETELY FILL JOINTS ON PRE-CAST CONCRETE SECTIONS WITH BITUMINOUS MASTIC JOINTING COMPOUND OR JOINTS SHALL BE MADE WITH DEBRIS SHALL BE REMOVED AND CLEARED AWAY. SELECTED EXCAVATED MATERIAL SHALL BE PLACED SYMMETRICALLY ON ALL SIDES IN 8" MAXIMUM LAYERS. EACH LAYER SHALL BE MOISTENED AND COMPACTED WITH MECHANICAL OR HAND TAMPERS.
 - BRICK SHALL BE WET WHEN LAID. LAY BRICK OR CONCRETE MASONRY UNITS IN A WORKMANLIKE MANNER. WITH JOINTS NOT MORE THAN 3/8" WIDE EXCEPT WHEN BRICKS OR CONCRETE MASONRY UNITS ARE LAID RADIALLY, IN WHICH CASE THE NARROWEST PART OF JOINT SHALL NOT EXCEED 1/4". LAY IN TRUE LINE AND, WHEN PRACTICAL, JOINTS SHALL BE CAREFULLY STRUCK AND POINTED ON INSIDE.
 - PROTECT FRESH BRICK WORK FROM FREEZING, FROM DRYING EFFECTS OF SUN AND WIND, AND FOR SUCH TIME AS DIRECTED BY THE GEOTECHNICAL ENGINEER, IN FREEZING WEATHER, HEAT SUFFICIENTLY TO REMOVE ICE AND FROST FROM BRICK WORK.
- GATE WELL STEPS SHALL BE BUILT INTO AND THOROUGHLY ANCHORED TO WALLS.
- ALL PIPING ENTERING OR LEAVING GATE WELLS SHALL BE ADEQUATELY SUPPORTED BY POURED-IN-PLACE CONCRETE FILL FROM PIPE CENTER TO UNDISTURBED GROUND.
- THE OUTSIDE SURFACES OF BRICK OR CONCRETE MASONRY PORTION OF GATE WELLS SHALL BE PLASTERED AND TROWELED SMOOTH WITH 1/2" LAYERS OF CEMENT MORTAR.
- SET FRAMES IN FULL BED OF STIFF MORTAR OR BITUMINOUS MASTIC JOINTING COMPOUND AT FINAL ELEVATION.
- IF REQUIRED BY THE MUNICIPALITY, PLACE HORIZONTAL AND/OR VERTICAL THRUST BLOCKS AT ALL PLUSES ALONG THE LINE. THE PRICE BID PER FOOT FOR THRUST BLOCKS SHALL BE INCLUDED IN THE PRICE BID PER FOOT FOR WATER MAIN. THRUST BLOCKS SHALL NOT BE BACKFILLED PRIOR TO OBSERVATION BY THE CONTROLLING GOVERNMENTAL AGENCY. IF THRUST BLOCKS ARE NOT UTILIZED, ALL FITTINGS SHALL HAVE RESTRAINED JOINTS PER THE MANUFACTURER.
- IN UNSTABLE SOIL CONDITIONS, THRUST BLOCKS SHALL BE SUPPORTED BY PILING DRIVEN TO SOLID FOUNDATIONS OR BY REMOVAL OF THE UNSTABLE SOILS AND REPLACEMENT WITH BALLAST OF SUFFICIENT STABILITY TO RESIST THE THRUSTS. THE COST OF PILING OR BALLAST AT THRUST BLOCKS SHALL BE INCLUDED IN THE PRICE BID FOR WATER MAIN.
- PLACE ALL CONCRETE ANCHORAGES AND ENCASMENTS, AS CALLED FOR ON THE DRAWINGS. THE COST OF RESTRAINED JOINTS OR ANCHORAGE AND ENCASMENTS SHALL BE INCLUDED IN THE PRICE BID FOR WATER MAIN.
- BEDDING USED FOR TRENCH BOTTOM SHALL BE EXTENDED UP THE SIDES AND CAREFULLY PLACED AROUND AND OVER PIPE IN 6" MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS PER ASTM D-1557 (MODIFIED PROCTOR) UNTIL 12" OF COVER EXISTS OVER PIPE.
- WITHIN 3' OF THE 45° INFLUENCE LINE OF THE SUBGRADE OF STREETS, DRIVES, PARKING LOTS AND OTHER AREAS TO HAVE OR HAVING IMPROVED HARD SURFACES, BACKFILL SHALL BE MATERIAL SPECIFIED AND SHALL BE DEPOSITED IN 6" LOOSE LAYERS AT OPTIMUM MOISTURE CONTENT (±2%) AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 (MODIFIED PROCTOR). SUITABLE MATERIALS FOUND ON SITE MAY BE USED IF APPROVED BY THE GEOTECHNICAL ENGINEER AND OWNER'S REPRESENTATIVE. WHERE SERVICE OR UTILITY LINES CROSS PAVEMENT OR SIDEWALK, BEDDING SHALL BE CARRIED TO 3 FEET BEHIND THE CURB LINE OR 3 FEET BEHIND THE SIDE OF SIDEWALK FARTHEST AWAY FROM THE PROPOSED PAVEMENT.
- BEFORE BACKFILLING AROUND MANHOLES, ALL FORMS, TRASH AND DEBRIS SHALL BE REMOVED AND CLEARED AWAY. SELECTED EXCAVATED MATERIAL SHALL BE PLACED SYMMETRICALLY ON ALL SIDES IN 8" MAXIMUM LAYERS. EACH LAYER SHALL BE MOISTENED AND COMPACTED WITH MECHANICAL AND HAND TAMPERS.
- REMAINDER OF TRENCH SHALL BE BACKFILLED WITH SPECIFIED BACKFILL MATERIAL TO SPECIFIED SUBGRADE ELEVATION. BACKFILLING SHALL BE COMPACTED TO 90% OF MAXIMUM DRY DENSITY PER ASTM D-1557.
- WITHIN 3' OF THE 45° INFLUENCE LINE OF THE SUBGRADE OF STREETS, DRIVES, PARKING LOTS AND OTHER AREAS TO HAVE OR HAVING IMPROVED HARD SURFACES, BACKFILL SHALL BE MATERIAL SPECIFIED AND SHALL BE DEPOSITED IN 6" LOOSE LAYERS AT OPTIMUM MOISTURE CONTENT (±2%) AND COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 (MODIFIED PROCTOR).
- BEFORE BACKFILLING AROUND STRUCTURES, ALL FORMS, TRASH AND DEBRIS SHALL BE REMOVED AND CLEARED AWAY. SELECTED EXCAVATED MATERIAL SHALL BE PLACED SYMMETRICALLY ON ALL SIDES IN 8" MAXIMUM LAYERS. EACH LAYER SHALL BE MOISTENED AND COMPACTED WITH MECHANICAL OR HAND TAMPERS.
- THE CONTRACTOR SHALL DO ALL REQUIRED EXCAVATION AND TRENCHING WORK AND THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPLETION OF THE WORK HEREIN REGARDLESS OF THE NATURE OF MATERIALS ENCOUNTERED DURING THE COURSE OF THE WORK. THE OWNER WILL NOT BE LIABLE FOR ANY COSTS WHATSOEVER ASSOCIATED WITH, BUT NOT LIMITED TO, THE PRESENCE OF ROCK, PEAT, SUBTERRANEAN STREAMS, EXCESSIVE WATER OR OTHER DIFFICULT OR UNANTICIPATED SUB-SURFACE PHENOMENA.
- ALL SEWERS SHALL BE SUBJECT TO INFILTRATION, AIR OR EXFILTRATION TESTS OR A COMBINATION THEREOF IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS:
 - ALL SEWERS OVER 24" DIAMETER SHALL BE SUBJECT TO INFILTRATION TESTS. ALL SEWERS OVER 24" DIAMETER OR SMALLER, WHERE GROUND WATER LEVEL ABOVE THE TOP OF SEWER IS OVER SEVEN (7) FEET, SHALL BE SUBJECT TO AN INFILTRATION TEST.
 - ALL SEWERS OF 24" DIAMETER OF LESS, WHERE THE GROUND WATER LEVEL ABOVE THE TOP OF THE SEWER IS SEVEN (7) FEET OR LESS, SHALL BE SUBJECT TO AIR TESTS OR EXFILTRATION TESTS.
- NO SANITARY SEWER INSTALLATION OR PORTION THEREOF SHALL HAVE INFILTRATION EXCEEDING 10 GALLONS PER INCH DIAMETER PER MILE OF PIPE PER 24 HOUR PERIOD.

SANITARY SEWER SPECIFICATIONS

- THESE SPECIFICATIONS SHALL BE USED IN CONJUNCTION WITH THE GENERAL SPECIFICATIONS AND THE SANITARY SEWER SPECIFICATIONS AND DETAIL SHEETS OF THE GOVERNING AGENCIES. IF ANY CONFLICT IS FOUND BETWEEN THE SPECIFICATIONS, THE STRICTER SPECIFICATIONS WILL BE FOLLOWED.
- THE GOVERNING AGENCY WILL INSPECT THE INSTALLATION OF ALL SANITARY SEWER PIPING.
- PROPER IMPLEMENTS, TOOLS AND FACILITIES SHALL BE PROVIDED AND USED FOR UNLOADING AND DISTRIBUTING MATERIALS ALONG THE LINE OF WORK. ANY PIPE OR FITTING DAMAGED IN TRANSPORTATION OR HANDLING SHALL BE REJECTED AND IMMEDIATELY REMOVED FROM THE JOB SITE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SAFE STORAGE OF ALL MATERIAL INTENDED FOR THE WORK. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT DAMAGE TO MATERIALS, EQUIPMENT AND WORK.
- THE CONTRACTOR SHALL DO ALL REQUIRED EXCAVATION AND TRENCHING WORK AND THE CONTRACTOR SHALL ASSUME SOLE RESPONSIBILITY FOR THE COMPLETION OF THE WORKS HEREIN REGARDLESS OF THE NATURE OF MATERIALS ENCOUNTERED DURING THE COURSE OF THE WORK. THE OWNER WILL NOT BE LIABLE FOR ANY COSTS WHATSOEVER ASSOCIATED WITH, BUT NOT LIMITED TO, THE PRESENCE OF ROCK, PEAT, SUBTERRANEAN STREAMS, EXCESSIVE WATER OR OTHER DIFFICULT OR UNANTICIPATED SUB-SURFACE PHENOMENA.
- IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE AND SCHEDULE THE SANITARY SEWER INSTALLATION WITH THE GRADING, EXCAVATION AND OTHER SITE UTILITY SUBCONTRACTORS AND THE OWNERS REPRESENTATIVE SO AS TO PROVIDE FOR A SMOOTH AND ORDERLY PROGRESSION OF THE WORK.
- SANITARY SEWER PIPING AND FITTINGS SHALL BE OF THE SIZE AND TYPE INDICATED ON THE DRAWINGS AND SHALL CONFORM TO THE REQUIREMENTS OF THE GOVERNING AGENCY.
- REINFORCED PRE-CAST CONCRETE MANHOLE SECTIONS INCLUDING CONCENTRIC OR ECCENTRIC CONES AND GRADE RINGS SHALL BE 4000 PSI CONCRETE AND CONFORM TO ASTM C-478 OR AASHTO M-199.
- OPEN NO MORE TRENCH IN ADVANCE OF PIPE LAYING THAN IS NECESSARY TO EXPEDITE THE WORK.
- CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED ON DRAWINGS. WHERE EXCESSIVE OR UNAUTHORIZED EXCAVATION TAKES PLACE, THE OVERDEPTH SHALL BE BACKFILLED AT THE PROPER GRADE WITH COMPACTED BEDDING MATERIAL, AT NO EXPENSE TO THE OWNER.
- PROVIDE REQUIRED TIMBER SHEETING, BRACING AND SHORING TO PROTECT SIDES OF EXCAVATION. DO NOT BRACE SHEETING AGAINST PIPE. PROVIDE SUITABLE LADDERS WHERE REQUIRED.
- DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE PILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF TRENCHES TO AVOID OVERLOADING, AND TO PREVENT CAVE-INS.
- WHEN WET EXCAVATION IS ENCOUNTERED, THE TRENCH SHALL BE DE-WATERED UNTIL THE PIPE HAS BEEN LAID AND BACKFILLED TO A POINT AT LEAST 1 FOOT ABOVE TOP OF PIPE.
- SANITARY SEWER CROSSINGS SHALL BE MADE WITH 18" OF VERTICAL CLEARANCE FROM ANOTHER UTILITY AND SHALL BE MADE WITHOUT PLACING POINT LOADS ON EITHER PIPE. CONSTRUCT SADDLES, OR PLACE PROTECTIVE CONCRETE CAP TO PREVENT DAMAGE.
- ALL CONNECTION BRANCHES IN THE SEWER PIPE SHALL BE SECURELY AND COMPLETELY WELDED TO THE MAIN SEWER AND SHALL BE MADE DURING THE COURSE OF MANUFACTURE. ALL PIPE CONTAINING SUCH CONNECTION BRANCHES SHALL BE INSTALLED WITH THE MAIN SEWER. THE PROPOSED LOCATION OF THE BRANCH SHALL BE PER PLAN OR AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
- SERVICE LEADS SHALL TERMINATE (WITH AN APPROVED STOPPER) PER PLANS OR AS DIRECTED BY OWNER OR OWNER'S REPRESENTATIVE.
- EACH RISER AND/OR SERVICE LEAD SHALL BE MARKED WITH A 2 INCH X 2 INCH X 8 FOOT LONG HARDWOOD MARKER, PLACED VERTICALLY AT THE END OF THE PIPE.
- DOWNSPOUTS, WEEP TIE, FOOTING DRAINS, OR ANY CONDUIT, THAT CARRIES STORM OR GROUND WATER SHALL NOT BE ALLOWED TO DISCHARGE INTO A SANITARY SEWER.
- ANY CONNECTION TO AN EXISTING SANITARY SEWER MANHOLE SHALL BE MADE IN STRICT CONFORMANCE WITH THE PLANS AND SPECIFICATIONS, WITH ALL WORK BEING DONE IN A WORKMANLIKE MANNER. THIS WORK SHALL INCLUDE THE CONSTRUCTION OF A PROPER CHANNEL FOR THE EXISTING MANHOLE WHICH THE CONNECTION IS TO BE MADE, TO DIRECT THE FLOW OF INCOMING FLUID TO THE EXISTING OUTLET IN A MANNER WHICH WILL TEND TO CREATE THE LEAST AMOUNT OF TURBULENCE AND PORTION OF THE EXISTING STRUCTURE WHICH WOULD INTERFERE WITH SUCH CONSTRUCTION SHALL BE REMOVED. THE COST OF ALL CONNECTIONS, INCLUDING ALL TESTING AND/OR TELEVISION REQUIRED BY THE LOCAL MUNICIPALITY, SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE MAIN SEWER UNLESS OTHERWISE PROVIDED IN THE PROPOSAL.
- WHEN CONNECTIONS ARE MADE WITH SEWERS OR DRAINS CARRYING FLUIDS, SPECIAL CARE MUST BE TAKEN THAT NO PART OF THE WORK IS BUILT UNDER WATER. A FLUME OR DAM MUST BE INSTALLED AND PUMPING MAINTAINED, IF NECESSARY, AND THE NEW WORK KEPT DRY UNTIL COMPLETE AND ANY CONCRETE OR MORTAR HAS SET.
- ALL TIMBER SHEETING BELOW A PLANE 12" ABOVE TOP OF PIPE SHALL REMAIN IN PLACE IN ORDER NOT TO DISTURB PIPE GRADING. BEFORE BACKFILLING, REMOVE ALL OTHER SHEETING, BRACING AND SHORING.
- BEDDING USED FOR TRENCH BOTTOM SHALL BE EXTENDED UP THE SIDES AND CAREFULLY PLACED AROUND AND OVER PIPE IN 6" MAXIMUM LAYERS. EACH LAYER SHALL BE THOROUGHLY AND CAREFULLY COMPACTED TO 95% OF MAXIMUM DRY DENSITY AS PER ASTM D-1557 (MODIFIED PROCTOR) UNTIL 12" OF COVER EXISTS OVER PIPE.
- REMAINDER OF TRENCH SHALL BE BACKFILLED WITH SPECIFIED BACKFILL MATERIAL AS APPROVED BY THE GEOTECH



GRADING AND EARTHWORK SPECIFICATIONS

- ALTHOUGH A SUB-SURFACE INVESTIGATION MAY HAVE BEEN MADE BY THE OWNER, THE BIDDER AND ANY SUB-CONTRACTORS SHALL MAKE A PERSONAL INVESTIGATION OF SITE AND EXISTING SURFACE AND SUB-SURFACE CONDITIONS. THE CONTRACTOR IS RESPONSIBLE TO ADJUST HIMSELF WITH CONDITIONS OF THE WORK AREA. THE CONTRACTOR IS ADVISED TO DETERMINE THE SUB-SURFACE SOIL CONDITIONS AND GROUND WATER CONDITIONS TO HIS OWN SATISFACTION PRIOR TO BIDDING. NO MODIFICATIONS TO THE UNIT PRICES BID FOR ANY ITEM WILL BE MADE DUE TO VARIABLE SUB-SURFACE CONDITIONS. DETERMINING IF DETERMINED NECESSARY BY THE CONTRACTOR, BY WELL POINTING OR DEEP WELLS WILL BE INCIDENTAL TO THE INSTALLATION COST OF THE ITEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING DETERMINED TO HIS SATISFACTION PRIOR TO THE SUBMISSION OF HIS BID THE CONFIRMATION OF THE GROUND, THE CHARACTER AND QUALITY OF THE SUBSTRATA, THE TYPES AND QUANTITIES OF MATERIALS TO BE ENCOUNTERED, THE NATURE OF THE GROUNDWATER CONDITIONS, THE PROSECUTION OF THE WORK, THE GENERAL AND LOCAL CONDITIONS INCLUDING CLIMATIC CHANGES, THE TIME OF YEAR IN WHICH CONSTRUCTION WILL TAKE PLACE AND ALL OTHER MATTERS WHICH CAN IN ANY WAY AFFECT THE WORK UNDER THIS CONTRACT.
- PRIOR TO COMMENCING THE EXCAVATION THE CONTRACTOR SHALL SUBMIT A PLAN OF HIS PROPOSED OPERATIONS AND TIME SCHEDULE TO THE OWNER & OWNERS REPRESENTATIVE FOR THEIR APPROVAL.
- THE CONTRACTOR SHALL CONSIDER, AND HIS PLAN FOR EXCAVATION SHALL REFLECT, THE EQUIPMENT AND METHODS TO BE EMPLOYED IN THE EXCAVATION AND WHAT METHODS WILL BE USED WHEN WET CONDITIONS ARE ENCOUNTERED REQUIRING GROUNDWATER CONTROL OR OTHER MOISTURE CONDITIONING. THE CONTRACTOR SHALL SUBMIT AN OUTLINE OF HIS EARTHWORK METHODS WHICH SHALL TAKE INTO ACCOUNT THE OVERALL CONSTRUCTION SCHEDULE AND THE PRICES ESTABLISHED IN THE PROPOSAL FOR THE WORK TO BE DONE SHALL REFLECT ALL COSTS PERTAINING TO THE WORK. NO CLAIMS FOR EXTRAS BASED ON SUBSTRATA OR GROUNDWATER TABLE CONDITIONS OR MOISTURE CONDITIONING WILL BE ALLOWED.
- THE CONTRACTOR SHALL KEEP INFORMED AND THE OWNER'S REPRESENTATIVE INFORMED AT ALL TIMES AS TO A "FILL SURPLUS OR SHORTAGE" SITUATION. SHORTAGE OR SURPLUS OF SUITABLE MATERIAL AT THE CONCLUSION OF THE GRADING AND EARTHWORK OPERATION SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND HE WILL BE REQUIRED TO APPLY THE DEFICIENCY OR DISPOSE OF THE SURPLUS WITHOUT ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL REMOVE VEGETATION, DEBRIS, UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND OTHER DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO CUT OR FILL OPERATIONS. SUCH MATERIAL SHALL BECOME PROPERTY OF THE CONTRACTOR TO BE DISPOSED OF IN A LEGAL MANNER OFF SITE.
- MATERIALS FOR FILL OR BACKFILL REQUIRED TO GRADE THE SITE AND ACHIEVE DESIGN ELEVATIONS SHALL BE EITHER ON OR OFF-SITE SOLS WHICH ARE FREE OF ORGANIC MATTER AND DEBRIS. NO TOPSOIL SHALL BE USED AS ENGINEERED FILL.
- NO FILL MAY BE PLACED UNTIL THE EXPOSED SURFACES HAVE BEEN APPROVED BY THE GEOTECHNICAL ENGINEER. ALL FILL MATERIALS SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT.
- IF ANY UNKNOWN SUBSURFACE STRUCTURES ARE ENCOUNTERED DURING CONSTRUCTION, THEY SHALL BE REPORTED TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE AND DESIGN ENGINEER PRIOR TO PROCEEDING.
- ALL FILL MATERIAL SHALL BE PLACED AND COMPACTED AT THE OPTIMUM MOISTURE CONTENT OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- NO FROZEN MATERIAL SHALL BE USED AS FILL NOR WILL ANY FILL BE PLACED ON A FROZEN BASE.
- NO ROCK OR SIMILAR MATERIAL GREATER THAN 6" DIAMETER SHALL BE PLACED IN THE FILL UNLESS RECOMMENDATIONS FOR SUCH PLACEMENT HAVE BEEN SUBMITTED BY THE GEOTECHNICAL ENGINEER IN ADVANCE AND APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE.
- COMPACT FILL MATERIAL TO AT LEAST THE FOLLOWING PERCENTAGE OF MAXIMUM DRY DENSITY, AS DETERMINED BY ASTM D-1557 (MODIFIED PROCTOR). NO DEVIATION FROM THESE COMPACTATION DENSITIES WILL BE ALLOWED UNLESS SPECIFICALLY RECOMMENDED BY THE GEOTECHNICAL ENGINEER AND APPROVED BY THE OWNER AND OWNER'S REPRESENTATIVE.

FILL AREAS	% OF MAXIMUM DRY DENSITY
FILL UNDER BUILDING (EXTENDING 5' BEYOND FOOTINGS AT A SLOPE OF 1 ON 1)	98%
FILL UNDER PAVEMENT OR SIDEWALKS	95%
FILL PLACED UNDER OR BEHIND RETAINING WALLS	95%
ALL OTHER FILL	90%
- ALL FILL MATERIAL SHALL BE PLACED AND COMPACTED IN LIFTS, THAT WILL NOT EXCEED THE DEPTH OF THE REMEDIATION EQUIPMENT OR ACHIEVE THE MAXIMUM DENSITY REQUIRED FOR THE ENTIRE DEPTH OF THE MATERIAL PLACED IN THE LIFT.
- ALL AREAS WHERE FILL HAS BEEN PLACED ON THE EXISTING SOILS HAVE BEEN DISTURBED SHALL BE SUBJECT TO COMPACTATION TESTING BY THE GEOTECHNICAL ENGINEER AND SHALL BE TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER, OWNER AND OWNER'S REPRESENTATIVE.
- FILL MATERIAL UNDER PAVEMENTS OR STRUCTURES SHALL BE FREE OF ORGANIC OR DELETERIOUS MATERIALS IT SHALL BE SUITABLE FOR SUPPORTING PAVEMENTS AND STRUCTURES WITHOUT ADVERSE SHRINKING OR SWELLING.
- FILL MATERIAL IN BERMS AND LANDSCAPE AREAS SHALL BE SUITABLE TO SUPPORT GROWTH OF THE LANDSCAPING MATERIALS (TYPICAL FOR THE LOCAL CLIMATE) AND AS PROPOSED BY THE LANDSCAPE ARCHITECT.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND DISPOSAL OF, IN A LEGAL MANNER, ANY TREES, BRUSH OR DEBRIS THAT ARE WITHIN THE DESIGNATED CUTTING AND FILLING AREAS TO BRING THE SITE TO PROPOSED GRADES.
- THE CONTRACTOR SHALL STOCKPILE EXCAVATED MATERIAL ONLY IN DESIGNATED AREAS AS DIRECTED BY THE OWNER OR OWNER'S REPRESENTATIVE.
- DURING THE PERFORMANCE OF SITE GRADING OPERATIONS, THE SUBGRADE SHALL BE EXAMINED CRITICALLY, AND ANY AREAS DISCOVERED WHICH, IN THE OPINION OF THE OWNER'S REPRESENTATIVE OR GEOTECHNICAL ENGINEER, ARE SOFT AND UNSTABLE, SHALL BE EXCAVATED TO SUCH DEPTHS AS MAY BE NECESSARY TO INSURE SATISFACTORY SUPPORTING PROPERTIES AS DETERMINED BY THE GEOTECHNICAL ENGINEER. THESE AREAS OF EXCAVATION SHALL BE BACKFILLED IMMEDIATELY AND SHALL BE BROUGHT BACK TO THE ELEVATION OF THE SURROUNDING AREAS WITH APPROVED FILL MATERIAL AND IN ACCORDANCE WITH THE EARTH FILL CONSTRUCTION PROCEDURE.
- NEWLY GRADED AREAS SHALL BE PROTECTED FROM THE ACTION OF THE ELEMENTS. ANY SETTLEMENT OR DISPLACEMENT OCCURRING PRIOR TO THAT MAY OCCUR PRIOR TO COMMENCING THE NEXT PHASE OF CONSTRUCTION SHALL BE REPAIRED, AND GRADES REESTABLISHED TO THE REQUIRED ELEVATIONS AND SLOPES.
- THE FINISHED SUBGRADE SURFACE SHALL BE SHAPED TO INDICATED PROFILES AND SHALL BE REASONABLY SMOOTH AND FREE FROM IRREGULAR SURFACE CHANGES AND SHALL BE NO MORE THAN 1 INCH ABOVE OR BELOW THE INDICATED SUBGRADE ELEVATIONS.
- THE GRADING CONTRACTOR SHALL BACKFILL ALL PAVING LOT PLANTERS AND LAWN AREAS TO WITHIN 2 INCHES OF THE TOP ADJACENT CURB GRADES. THE TOP 2 INCHES MINIMUM SHALL BE TOPSOIL, FREE FROM DEBRIS AND STONES LARGER THAN 1 INCH IN DIAMETER.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY PUMPS, DITCHING, WELL POINT SYSTEMS AND OTHER MEANS FOR REMOVING WATER FROM EXCAVATIONS, TRENCHES, SUBGRADES AND OTHER PARTS OF THE WORK. THE CONTRACTOR SHALL CONTINUE DE-WATERING OPERATIONS UNTIL THE WATER HAS BEEN REMOVED ENTIRELY. UPON COMPLETION OF WATER REMOVAL THE CONTRACTOR SHALL TAKE APPROPRIATE ACTION TO DRY THE SOILS, REGRADE TO PROPOSED ELEVATIONS AND COMPACT SOILS TO THE SATISFACTION OF THE GEOTECHNICAL ENGINEER AND OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL DISPOSE OF WATER IN A SAFE AND SANITARY WAY TO PREVENT FLOODING OR INJURY TO PUBLIC OR PRIVATE PROPERTY AND SHALL OBTAIN APPROVAL FROM GOVERNING AUTHORITY BEFORE DISCHARGING RUN-OFF WATER TO THEIR SYSTEM. SEE EROSION CONTROL NOTES FOR ADDITIONAL REQUIREMENTS.
- THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING GRADES AND NEW GRADES.

BITUMINOUS PAVING SPECIFICATIONS

- REFERENCE SPECIFICATIONS WHERE APPLICABLE TO WORK UNDER THIS SECTION ARE REFERRED TO BY ABBREVIATION AS FOLLOWS:
 - AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).
 - THE ASPHALT INSTITUTE (TAI)
 - MICHIGAN DEPARTMENT OF TRANSPORTATION/ CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION (MDOT)
 - AMERICAN SOCIETY FOR TESTING MATERIALS (ASTM)
- AGGREGATE BASE COURSE SHALL MEET THE REQUIREMENTS OF SECTION 902 OF THE MDOT STANDARD SPECIFICATION FOR CONSTRUCTION AND SHALL CONSIST OF 21A CRUSHED AGGREGATE. THE USE OF SLAG IS PROHIBITED.
- TACK COAT SHALL BE EMULSIFIED ASPHALT MEETING REQUIREMENTS OF MDOT SECTION 904, GRADE CSS-1H.
- AGGREGATE SHALL CONSIST OF CRUSHED STONE, CRUSHED GRAVEL, A MIXTURE OF UNCRUSHED GRAVEL WITH EITHER CRUSHED STONE OR CRUSHED GRAVEL, OR OTHER INERT MATERIAL HAVING SIMILAR CHARACTERISTICS. IT SHALL BE COMPOSED OF CLEAN, TOUGH, DURABLE FRAGMENTS FROM AN EXCESS OF FLAT OR ELONGATED PIECES, AND SHALL BE FREE OF ORGANIC MATTER AND DELETERIOUS SUBSTANCES AND MEET THE REQUIREMENTS OF MDOT STANDARD SPECIFICATIONS, SECTION 902, 21A. CONTRACTOR MAY USE CRUSHED HMA AGGREGATE SCREENED TO MEET THE REQUIREMENTS OF MDOT 21AA MATERIAL.
- FINE AGGREGATE SHALL BE WELL GRADED FROM COARSE TO FINE AND CONSIST OF NATURAL SAND, STONE SCREENINGS, OR A BLEND OF NATURAL SAND AND ANGULAR GRAINS OF QUARTZ OR OTHER HARD DURABLE ROCK AND MEET THE REQUIREMENTS OF MDOT STANDARD SPECIFICATIONS, SECTION 902 FOR CLASS II OR CLASS III GRANULAR MATERIAL. CONTRACTOR MAY USE CRUSHED HMA AGGREGATE SCREENED TO MEET THE REQUIREMENTS OF MDOT CLASS II OR CLASS III MATERIAL.
- ASPHALT CEMENT SHALL COMPLY WITH THE REQUIREMENTS OF MDOT SECTION 904.
- HOT MIXED ASPHALT (HMA) SHALL COMPLY WITH MDOT SECTION 501 OF STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- BITUMINOUS LEVELING COURSE SHALL BE MDOT HMA, 13A, UNLESS OTHERWISE REQUIRED BY THE MUNICIPALITY OR ROAD AGENCY WITH JURISDICTION.
- BITUMINOUS WEARING COURSE SHALL BE MDOT HMA, 36A UNLESS OTHERWISE REQUIRED BY THE MUNICIPALITY OR ROAD AGENCY WITH JURISDICTION. CONTRACTOR MAY SUBSTITUTE 13A WITH THE APPROVAL OF THE OWNER AND ENGINEER.
- THE CONTRACTOR SHALL SUBMIT, TO THE OWNER, TWO COPIES OF MATERIALS CERTIFICATES SIGNED BY MATERIAL PRODUCER AND CONTRACTOR. CERTIFICATES SHALL STATE THAT EACH MATERIAL ITEM MEETS SPECIFIED REQUIREMENTS.
- THE CONTRACTOR SHALL SUBMIT TO THE GEOTECHNICAL ENGINEER, JOB-MIX FORMULAS FOR EACH REQUIRED ASPHALT AGGREGATE MIXTURE. MIX DESIGNS SHALL BE WITHIN ALLOWABLE TOLERANCES AS SPECIFIED BY MDOT FOR THE PARTICULAR APPLICATION.
- SUBGRADE PREPARATIONS SHALL CONSIST OF THE FINAL MACHINING OF THE SUBGRADE IMMEDIATELY PRIOR TO PLACING THE BITUMINOUS BASE COURSE. THE SUBGRADE SHALL BE COMPACTED PER PLANS AND DETAILS. THE SUBGRADE SHALL BE TRUE TO LINE AND GRADE.
- CRUSHED AGGREGATE BASE COURSE SHALL BE COMPACTED TO A DENSITY EQUAL TO AT LEAST 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D-1557 (MODIFIED PROCTOR).
- BITUMINOUS CONCRETE PAVEMENT CONSTRUCTION METHODS SHALL CONFORM TO APPLICABLE PORTIONS OF SECTION 501 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- THE CONTRACTOR SHALL NOT PLACE THE AGGREGATE BASE COURSE OR THE BITUMINOUS BASE COURSE PRIOR TO THE APPROVAL OF THE SUBGRADE BY THE GEOTECHNICAL ENGINEER.
- EACH LIFT AND COURSE OF BITUMINOUS CONCRETE SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER, PRIOR TO THE PLACEMENT OF A SUCCESSING COURSE OR LIFT.
- APPLY BITUMINOUS TACK COATS ONLY WHEN TEMPERATURE HAS NOT BEEN BELOW 35 DEGREES F. FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION. CONSTRUCTION OF BITUMINOUS CONCRETE SHALL BE STOPPED WHEN ATMOSPHERIC TEMPERATURE IS ABOVE 40-DEGREES F AND RISING, AND PROCEEDING COURSE OR LIFT IS CLEAN AND DRY. BASE COURSE MAY BE LAID WHEN TEMPERATURE IS ABOVE 35 DEGREES F, AND RISING AND APPROVED BY THE GEOTECHNICAL ENGINEER.
- THE BITUMINOUS CONCRETE SHALL BE TRANSPORTED FROM THE MIXING PLANT TO THE POINT OF USE IN VEHICLES CONFORMING TO THE REQUIREMENTS OF SECTION 501 OF THE MDOT STANDARD SPECIFICATIONS FOR CONSTRUCTION. DELIVERIES SHALL BE SCHEDULED SO THAT SPREADING AND ROLLING OF ALL BITUMINOUS CONCRETE PREPARED FOR ONE DAY'S RUN CAN BE COMPLETED DURING DAYLIGHT, UNLESS ADEQUATE ARTIFICIAL LIGHTING IS PROVIDED. HAULING OVER FRESHLY PLACED BITUMINOUS MAT SHALL NOT BE PERMITTED UNTIL THE BITUMINOUS CONCRETE HAS BEEN COMPACTED, AS SPECIFIED, AND ALLOWED TO COOL TO ATMOSPHERIC TEMPERATURE.
- UPON ARRIVAL, THE BITUMINOUS CONCRETE SHALL BE SPREAD TO A THICKNESS NOT TO EXCEED 3-INCHES AND TO THE FULL WIDTH BY AN APPROVED BITUMINOUS PAVER. IT SHALL BE STRUCK OFF IN A UNIFORM LAYER OF SUCH DEPTH THAT, WHEN THE WORK IS COMPLETED, IT SHALL HAVE THE REQUIRED THICKNESS AND CONFORM TO THE GRADE AND CONTOUR INDICATED. THE SPEED OF THE PAVER SHALL BE REGULATED TO ELIMINATE PULLING AND TEARING OF THE BITUMINOUS MAT, UNLESS OTHERWISE SPECIFIED. THE MIXTURE OF THE BITUMINOUS CONCRETE SHALL BEGIN ALONG THE CENTERLINE OF A CROWNED SECTION OR ON THE HIGH SIDE OF AREAS WITH A ONE-WAY SLOPE. THE BITUMINOUS CONCRETE SHALL BE PLACED IN CONSECUTIVE ADJACENT STRIPS HAVING A MINIMUM WIDTH OF 10 FEET, EXCEPT WHERE EDGE LANES REQUIRE LESS WIDTH TO COMPLETE THE AREA. TRANSVERSE JOINTS IN ADJACENT LANES SHALL BE OFFSET A MINIMUM OF 10 FEET. WHERE POSSIBLE, JOINTS SHALL BE LOCATED AT LEAST 2 FEET FROM THE MINIMUM SPECIFIED.
- ON AREAS WHERE IRREGULARITIES OR UNAVOIDABLE OBSTACLES MAKE THE USE OF MECHANICAL SPREADING AND FINISHING EQUIPMENT IMPRACTICAL, THE BITUMINOUS CONCRETE MAY BE SPREAD AND RAKED BY HAND TOOLS.
- THE BITUMINOUS CONCRETE SHALL BE PLACED AT A TEMPERATURE OF NOT LESS THAN 250 NOR HIGHER THAN THE RECOMMENDED TEMPERATURE OF THE BINDER PRODUCER OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- THE BITUMINOUS CONCRETE MIXTURE SHALL BE THOROUGHLY AND UNIFORMLY COMPACTED BY ROLLING. THE SURFACE SHALL BE ROLLED WHEN THE BITUMINOUS MIX HAS ATTAINED SUFFICIENT STABILITY SO THAT THE ROLLING DOES NOT CAUSE UNIFORM DISPLACEMENT, CRACKING AND SHOWING. THE SEQUENCE OF ROLLING OPERATIONS SHALL BE AT THE DISCRETION OF THE CONTRACTOR.
- THE SPEED OF THE ROLLER SHALL, AT ALL TIMES, BE SUFFICIENTLY SLOW TO AVOID DISPLACEMENT OF THE HOT BITUMINOUS CONCRETE. ANY DISPLACEMENT OCCURRING AS A RESULT OF REVERSING DIRECTION ON THE ROLLER, OR FROM ANY OTHER CAUSE, SHALL BE CORRECTED AT ONCE.
- SUFFICIENT ROLLERS SHALL BE FURNISHED TO HANDLE THE OUTPUT OF THE PLANT. ROLLING SHALL CONTINUE UNTIL ALL ROLLER MARKS ARE ELIMINATED, THE SURFACE IS OF UNIFORM TEXTURE AND TRUE TO GRADE AND CROSS-SECTION, AND THE REQUIRED FIELD DENSITY IS OBTAINED.
- TACK COAT SHALL BE APPLIED TO THE SURFACE OF PREVIOUS LIFTS AND COURSES OF BITUMINOUS CONCRETE AND TO SURFACES ABUTTING OR PROJECTING INTO THE BITUMINOUS CONCRETE.
- IMMEDIATELY BEFORE PLACING A SUCCEEDING LIFT OR COURSE OF BITUMINOUS CONCRETE THE PRECEDING LIFT OR COURSE SHALL BE CLEARED OF ANY DEBRIS OR STANDING WATER BY APPROPRIATE METHODS.
- TO PREVENT ADHESION OF THE BITUMINOUS CONCRETE TO THE ROLLER, THE WHEELS SHALL BE KEPT PROPERLY MOISTENED, BUT EXCESSIVE WATER WILL NOT BE PERMITTED.
- IN AREAS NOT ACCESSIBLE TO THE ROLLER, THE BITUMINOUS CONCRETE SHALL BE THOROUGHLY COMPACTED WITH HOT HAND TAMPERS.
- ANY BITUMINOUS CONCRETE THAT BECOMES LOOSE AND BROKEN, MIXED WITH DIRT, OR IN ANY WAY DEFECTIVE SHALL BE REMOVED AND REPLACED WITH FRESH HOT BITUMINOUS CONCRETE AND IMMEDIATELY COMPACTED TO CONFORM TO THE SURROUNDING AREA. THIS WORK SHALL BE DONE AT THE CONTRACTOR'S EXPENSE. SKIN PATCHING SHALL NOT BE ALLOWED.
- THE CONTRACTOR SHALL PROVIDE AT LEAST TWO ROLLERS FOR EACH PAVEMENT OPERATING ON THE WORK. THE CONTRACTOR SHALL USE ADDITIONAL ROLLERS AS REQUIRED TO OBTAIN THE SPECIFIED PAVEMENT DENSITY.

BITUMINOUS PAVING SPECIFICATIONS, CONTINUED

- THE CONTRACTOR SHALL CAREFULLY MAKE JOINTS BETWEEN OLD AND NEW PAVEMENTS, OR BETWEEN SUCCESSIVE DAYS' WORK, TO ENSURE A CONTINUOUS BOND BETWEEN ADJOINING WORK. CONTRACT JOINTS SHALL HAVE THE SAME TEXTURE, DENSITY AND SMOOTHNESS AS OTHER SECTIONS OF THE BITUMINOUS CONCRETE COURSE. THE CONTRACTOR SHALL CONTACT SURFACES OF SAND, DIRT, OR OTHER OBJECTIONABLE MATERIAL AND APPLY TACK COAT BEFORE MAKING THE JOINT.
- THE CONTRACTOR SHALL TEST THE FINISHED SURFACE OF EACH BITUMINOUS CONCRETE COURSE FOR SMOOTHNESS, USING A 10 FOOT STRAIGHTEDGE APPLIED PARALLEL WITH AND AT RIGHT ANGLES TO CENTERLINE OF PAVED AREA. SURFACE SHALL NOT BE ACCEPTABLE IF EXCEEDING THE FOLLOWING TOLERANCES FOR SMOOTHNESS:
 - LEVELING COURSE SURFACE: 1/4 INCH, PLUS OR MINUS 1/4 INCH.
 - SURFACE COURSE: 1/4 INCH
- THE CONTRACTOR SHALL TEST CROWNED SURFACES WITH A CROWN TEMPLATE, CENTERED AND AT RIGHT ANGLES TO THE CROWN. SURFACES WILL NOT BE ACCEPTABLE IF THE FINISHED CROWN SURFACES VARY MORE THAN 1/4 INCH FROM THE CROWN TEMPLATE.
- AFTER FINAL ROLLING, THE CONTRACTOR SHALL NOT PERMIT VEHICULAR TRAFFIC ON THE BITUMINOUS CONCRETE PAVEMENT UNTIL IT HAS COOLED AND HARDENED, AND IN NO CASE SOONER THAN SIX HOURS OR AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- THE AGGREGATE BASE MUST EXTEND A MINIMUM OF 1' BEHIND THE BACK-OF-CURB OR BEYOND EDGE OF PAVEMENT WHEN NO CURB IS PROPOSED.

CONCRETE CURB, SIDEWALK AND PAVEMENT SPECIFICATIONS

- THESE SPECIFICATIONS SHALL GOVERN THE CONSTRUCTION OF ALL PAVEMENTS, CURB AND GUTTER, SIDEWALKS, SERVICE WALKS, DRIVEWAY APPROACHES, AND LOADING DOCK AREAS, AS INDICATED ON THE DRAWINGS.
- REFERENCE SPECIFICATIONS WHERE APPLICABLE TO WORK UNDER THIS SECTION ARE REFERRED BY ABBREVIATION AS FOLLOWS:
 - AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO).
 - AMERICAN CONCRETE INSTITUTE (ACI)
 - MICHIGAN DEPARTMENT OF TRANSPORTATION/ CURRENT STANDARD SPECIFICATIONS FOR CONSTRUCTION (MDOT)
 - AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
- THE FINE AGGREGATE SHALL MEET ALL REQUIREMENTS OF SECTION 902 OF MDOT SPECIFICATION FOR NO. 2MS NATURAL SAND.
- THE COARSE AGGREGATE SHALL MEET ALL REQUIREMENTS OF SECTION 902 OF M.D.O.T. SPECIFICATIONS FOR 6AA COARSE AGGREGATE.
- THE CONTRACTOR SHALL SUBMIT, TO THE OWNER, TWO COPIES OF MATERIALS CERTIFICATES SIGNED BY MATERIAL PRODUCER AND CONTRACTOR. CERTIFICATES SHALL STATE THAT EACH MATERIAL ITEM MEETS SPECIFIED REQUIREMENTS.
- THE CONTRACTOR SHALL SUBMIT TO THE GEOTECHNICAL ENGINEER, JOB MIX-FORMULAS FOR EACH REQUIRED CEMENT-AGGREGATE MIXTURE. MIX DESIGNS SHALL BE WITHIN ALLOWABLE TOLERANCES AS SPECIFIED FOR THE PARTICULAR APPLICATION.
- CONCRETE MIX SHALL BE AIR-ENTRAINED AND PROPORTIONED TO PROVIDE THE FOLLOWING:
 - COMPRESSIVE STRENGTH AT 28 DAYS: 3500 PSI MIN. OR AS INDICATED ON PLANS.
 - TOTAL AIR CONTENT BY VOLUME: 5% TO 8%.
 - SLUMP 3 INCH MAXIMUM, OR AS INDICATED ON PLANS.
- THE CONTRACTOR SHALL AT HIS EXPENSE FURNISH SAMPLES OF FRESH CONCRETE AND PROVIDE SAFE AND SATISFACTORY FACILITIES FOR OBTAINING THE SAMPLES.
- CONSTRUCT CONCRETE CURBING ONLY WHEN GROUND TEMPERATURE IS ABOVE 35 DEGREES F, AND BASE IS DRY.
- ALL CEMENT USED IN CURB CONSTRUCTION SHALL BE PORTLAND CEMENT, TYPE I OR IA ASTM C-150.
- WATER USED IN CONCRETE SHALL MEET THE REQUIREMENTS OF MDOT SECTION 911.
- AIR ENTRAINING ADMIXTURE SHALL BE SELECTED FROM THE MDOT QUALIFIED PRODUCTS LIST.
- ALL READY-MIXED CONCRETE SUPPLIERS MUST BE APPROVED BY THE OWNER AND MEET THE CURRENT REQUIREMENTS OF THE NATIONAL READY MIX CONCRETE ASSOCIATION (NRMA). IF REQUESTED BY THE OWNER, SUBMIT A WRITTEN DESCRIPTION OF PROPOSED READY-MIXED CONCRETE MANUFACTURER, GIVING QUALIFICATIONS OF PERSONAL, LOCATION OF BATCHING PLANT, LIST OF PROJECTS SIMILAR IN SCOPE OF SPECIFIED WORK, AND OTHER INFORMATION AS MAY BE REQUESTED BY THE OWNER.
- THE CONTRACTOR SHALL SUBMIT A STATEMENT OF PURCHASE FOR READY-MIXED CONCRETE: PRIOR TO ACTUAL DELIVERY OF CONCRETE, SUBMIT TO THE GEOTECHNICAL ENGINEER FOUR COPIES OF STATEMENT OF PURCHASE, GIVING THE DRY WEIGHTS OF CEMENT AND SATURATED SURFACE DRY WEIGHTS OF FINE AND COARSE AGGREGATES AND QUANTITIES, TYPE AND NAME OF ADMIXTURES (IF ANY) AND OF WATER PER CU.YD., THAT WILL BE USED IN THE MANUFACTURE OF THE CONCRETE. THE CONTRACTOR SHALL ALSO FURNISH EVIDENCE SATISFACTORY TO THE GEOTECHNICAL ENGINEER THAT THE MATERIALS TO BE USED AND PROPORTIONS SELECTED WILL PRODUCE CONCRETE OF THE QUALITY SPECIFIED. WHATEVER STRENGTHS ARE OBTAINED, THE QUANTITY OF CEMENT USED SHALL NOT BE LESS THAN THE MINIMUM SPECIFIED.
- READY-MIXED CONCRETE DELIVERY TICKETS: SUBMIT ONE COPY OF EACH DELIVERY TICKET TO THE GEOTECHNICAL ENGINEER AND CONTRACTOR IN ACCORDANCE WITH SECTION 16 OF ASTM C94.
- READY-MIXED CONCRETE SHALL BE BATCHED, MIXED AND TRANSPORTED IN ACCORDANCE WITH ASTM C94, AND COMPLY WITH ACI 304 "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE," EXCEPT AS OTHERWISE SPECIFIED HEREIN.
- READY-MIXED CONCRETE SHALL BE MIXED AND DELIVERED TO THE POINT OF DISCHARGE AT THE JOB BY MEANS OF A READY MIX CONCRETE TRUCK.
- NO WATER FROM THE TRUCK WATER SYSTEM OR ELSEWHERE SHALL BE ADDED AFTER THE INITIAL INTRODUCTION OF THE MIXING WATER FOR THE BATCH. UNDER NO CIRCUMSTANCES SHALL THE APPROVED MAXIMUM WATER CONTENT BE EXCEEDED NOR SHALL THE SLUMP EXCEED THE MAXIMUM SPECIFIED.
- DISCHARGE OF THE CONCRETE SHALL BE COMPLETED WITHIN 1-1/2 HOURS OR BEFORE THE DRUM HAS REVOLVED 300 REVOLUTIONS, WHICHEVER COMES FIRST. AFTER THE INTRODUCTION OF THE MIXING WATER TO THE CEMENT AND AGGREGATES OR THE INTRODUCTION OF THE CEMENT TO THE AGGREGATES.
- IN HOT WEATHER (AIR TEMPERATURE 80-DEGREES F. AND ABOVE) OR UNDER CONDITIONS CONTRIBUTING TO QUICK STIFFENING OF THE CONCRETE, THE TIME SHALL BE REDUCED TO ONE HOUR.
- CONCRETE DELIVERED IN COLD WEATHER (AIR TEMPERATURE 45-DEGREES F. AND LOWER) SHALL HAVE A TEMPERATURE NOT LESS THAN 60-DEGREES F. AT THE POINT OF DISCHARGE AT THE JOB, AND IN COMPLIANCE WITH ACI 306R "COLD WEATHER CONCRETING", CONCRETE PLACING WILL NOT BE PERMITTED WHEN THE AIR TEMPERATURE IS 35--DEGREES F. OR LOWER.
- CONCRETE DELIVERED UNDER HOT WEATHER CONDITIONS CONTRIBUTING TO QUICK STIFFENING OF CONCRETE, OR IN AIR TEMPERATURE OF 80-DEGREES F. AND OVER, SHALL HAVE A TEMPERATURE BETWEEN 60- AND 80-DEGREES F. AT THE POINT OF DISCHARGE AT THE JOB, AND IN ACCORDANCE WITH ACI 305R "HOT WEATHER CONCRETING".
- IN NO CASE SHALL THE MIXER OR TRUCK BE FLUSHED OUT ONTO THE STREET PAVEMENT IN A CATCH BASIN OR SEWER MANHOLE, OR IN ANY PUBLIC RIGHT-OF-WAY. SEE SOIL EROSION CONTROL PLAN FOR CONCRETE WASHOUT LOCATION.
- REINFORCEMENT BARS SHALL BE PER MDOT SECTION 905.
- THE WIRE SHALL BE BLACK, ANNEALED STEEL WIRE, NOT LESS THAN 16 GAUGE.

CONCRETE CURB, SIDEWALK AND PAVEMENT SPECIFICATIONS, CONTINUED

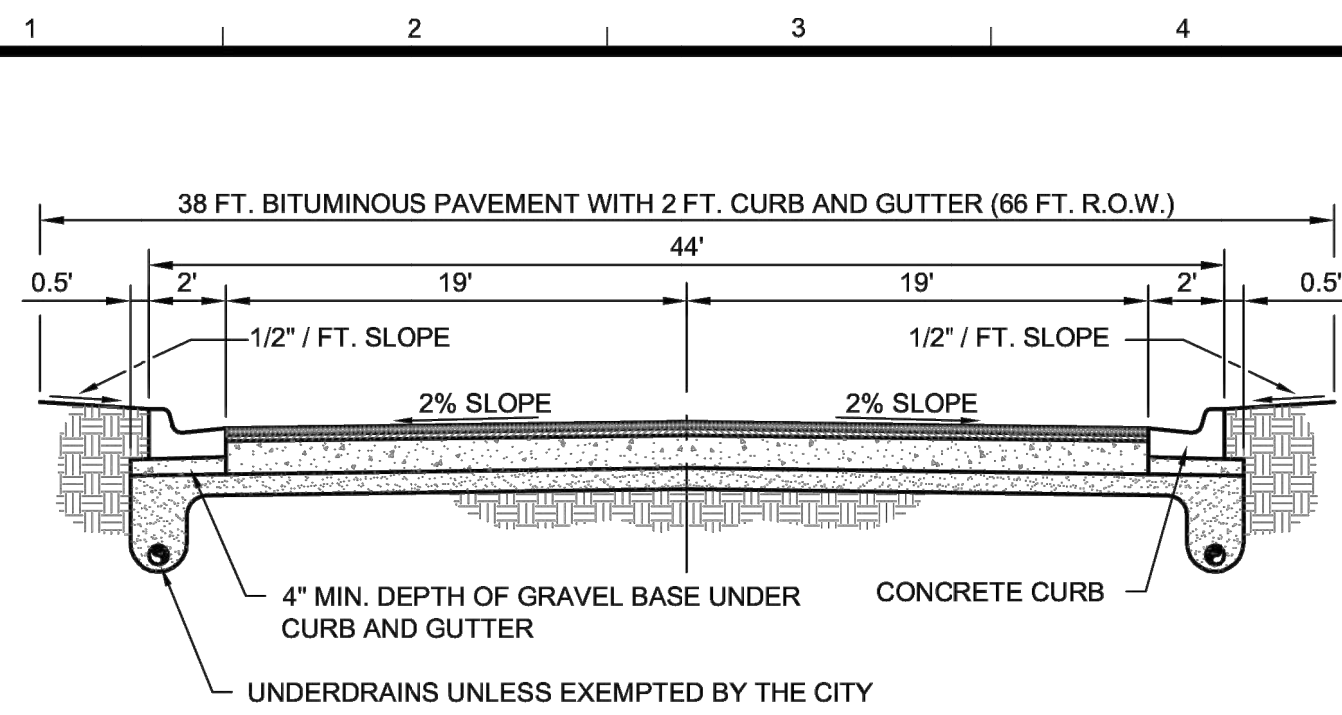
- BAR SUPPORTS SHALL CONFORM TO THE BAR SUPPORT SPECIFICATIONS CONTAINED IN CONCRETE REINFORCING STEEL INSTITUTE'S (CRSI) "MANUAL OF STANDARD PRACTICE." PROVIDE CHAIRS, SPACERS AND OTHER DEVICES SUITABLE FOR PROPER SPACING SUPPORTING AND FASTENING REINFORCING BARS.
- WHEN FORMS ARE USED AND THE CURB RADIUS IS LESS THAN 200 FEET, THE CURVED ALIGNMENT SHALL BE PROVIDED FOR BY EITHER STANDARD STEEL FORMS EQUIPPED WITH FLEXIBLE LINES OR BY FLEXIBLE FORMS. THE FORMS SHALL BE OF THE FULL DEPTH OF THE SECTION. CURB AND GUTTER FORMS SHALL BE SO CONSTRUCTED AS TO PERMIT THE INSIDE OF THE FORMS TO BE SECURELY FASTENED TO THE OUTSIDE FORMS.
- ALL NEW CURB SHALL BE PLACED ONLY ON A PREPARED SUBGRADE, SMOOTH AND LEVELED TO THE GRADES ESTABLISHED BY THE ENGINEER.
- COMPACT AND CUT-TO-GRADE SUBGRADE UNDER FORMS SO THAT FORMS WHEN SET WILL BE UNIFORMLY SUPPORTED FOR THE ENTIRE LENGTH. SECURELY STAKE AND BRACE OR THE FORMS TO PREVENT LEAKAGE OF MORTAR. BRACING WITH EARTH WILL NOT BE PERMITTED.
- COAT SURFACES OF FORMS TO BE IN CONCRETE WITH A LIGHT CLEAN PARAFFIN OIL OR PARTING COMPOUND WHICH WILL NOT STAIN THE CONCRETE.
- THE INTERIOR SURFACES OF CONCRETE CONVEYING EQUIPMENT SHALL BE MAINTAINED FREE OF HARDENED CONCRETE, DEBRIS, WATER, SNOW, ICE AND OTHER DELETERIOUS MATERIALS.
- CURBING MAY BE CONSTRUCTED EITHER BY USE OF FORMS OR BY A MECHANICAL CURB AND GUTTER PAYER, PROVIDED THE REQUIRED FINISH, AND CROSS-SECTION, ARE OBTAINED AND THE ANGULAR GRAINS OF QUARTZ AND OTHER HARD DURABLE ROCK ARE PLACED. PROVIDE ONE COURSE MONOLITHIC STRUCTURE WITHOUT THE USE OF MORTAR TOPPING OR SAND-CEMENT DRYER. CONCRETE SHALL BE SPADED OR VIBRATED SUFFICIENTLY TO ENSURE SATISFACTORY CONSOLIDATION.
- PROVIDE REINFORCEMENT FOR CONCRETE CURB AS SHOWN ON THE DRAWINGS. REINFORCEMENT SHALL BE KEPT CLEAN AND FREE FROM OBJECTIONABLE, RUST, BENDS OR KINKS IN REINFORCING BARS SHALL BE CORRECTED BEFORE PLACING. ALL REINFORCEMENT SHALL BE ACCURATELY LOCATED IN FORMS AND SECURELY HELD IN PLACE BEFORE AND DURING CONCRETE PLACING, BY SUPPORTS ADEQUATE TO PREVENT DISPLACEMENT DURING THE COURSE OF CONSTRUCTION.
- THE CONCRETE CURB SURFACE SHALL BE STRUCK OFF THE REQUIRED CROSS-SECTION ALL TRAFFIC LANE AND PARKING LOT MARKINGS AS INDICATED IN THE CONSTRUCTION DOCUMENTS.
- ALL SLAB EDGES ROUNDED WITH A 1/2 INCH RADIUS EDGING TOOL THAT WILL FINISH TO A WIDTH OF 2 INCHES AFTER THE CONCRETE HAS SLIGHTLY SET, A BROOM SHALL BE APPLIED LIGHTLY ACROSS THE SURFACE PARALLEL FORMS SO AS TO IMPART A ROUGH FINISH.
- CONTRACTION JOINTS SHALL BE CUT IN CONCRETE CURBING AT MINIMUM 10' INTERVALS. THE JOINT SHALL CUT 1/4 INCH WIDE BY 1/3 THE DEPTH OF THE CONCRETE CURB SECTION. JOINTS SHALL ALSO BE LOCATED ADJACENT TO CURB DROPS.
- ISOLATION JOINTS SHALL BE PLACED IN CURBING AT TANGENT POINTS IN CURB RETURNS AT INTERSECTIONS, AT BOTH SIDES OF STRUCTURES LOCATED IN THE AREA AND KINGS IN REINFORCING BARS SHALL BE CORRECTED BEFORE PLACING. ISOLATION JOINTS SHALL BE 1" THICK PRE-FORMED JOINT FILLER STRIPS. THE STRIPS SHALL EXTEND THE FULL DEPTH OF THE CONCRETE CURB SECTION. ISOLATION JOINTING SHALL BE PLACED IN CURB AT THE END OF EACH DAYS POUR AND WHEN ABUTTING PREVIOUSLY POURED CURB.
- THE CURING COMPOUND SHALL BE A WHITE PARAFFIN BASE COMPOUND SELECTED FROM MDOT'S QUALIFIED PRODUCTS LIST APPLIED AT 200 SQ.FT./GAL.
- ALL CONTRACTION JOINTS IN CONCRETE CURB SECTIONS SHALL BE SEALED WITH EITHER HOT POURED JOINT SEALER OR COLD APPLIED JOINT SEALER.
- SLIGHTLY UNDERFILL JOINT GROOVE WITH JOINT SEALER TO PREVENT EXTRUSION OF THE SEALER UNDER EXCESS JOINT SEALER MATERIALS AS SEEN AFTER SEALING AS POSSIBLE.
- FRESHLY PLACED CONCRETE SHALL BE PROTECTED AS REQUIRED TO MAINTAIN THE TEMPERATURE OF THE CONCRETE AT NOT LESS THAN 50 DEGREES F. NOR MORE THAN 80 DEGREES F. AND IN A MOST CONDITION CONTINUOUSLY FOR THE PERIOD OF CURING. OR A COMBINATION OF THESE AS REQUIRED TO MAINTAIN TEMPERATURE OF THE CONCRETE DURING CURING SHALL BE AS UNIFORM AS POSSIBLE AND SHALL NOT EXCEED 5 DEGREES F. IN ANY ONE HOUR, NOR 50 DEGREES F. IN ANY 24 HOUR PERIOD.
- COLD WEATHER PROTECTION: WHEN THE TEMPERATURE OF THE ATMOSPHERE IS 40-DEGREES F. AND BELOW, THE CONCRETE SHALL BE PROTECTED BY HEATING, INSULATION, WIND BREAKING, OR COMBINATION THEREOF AS REQUIRED TO MAINTAIN TEMPERATURE OF THE CONCRETE AT OR ABOVE 50-DEGREES F. AND IN A MOST CONDITION CONTINUOUSLY FOR THE CONCRETE CURING PERIOD. COLD WEATHER PROTECTION SHALL MEET THE REQUIREMENTS OF ACI 306R "COLD WEATHER CONCRETING".
- HOT WEATHER PROTECTION: WHEN THE TEMPERATURE OF THE ATMOSPHERE IS 90-DEGREES F. AND ABOVE, OR DURING OTHER CLIMATIC CONDITIONS WHICH WILL CAUSE TOO RAPID DRYING OF THE CONCRETE, THE CONCRETE SHALL BE PROTECTED BY WINDBREAKS, SHADING, FOG SPRAYING LIGHT COLORED MOISTURE RETAINING COVERING, OR A COMBINATION THEREOF AS REQUIRED TO MAINTAIN THE TEMPERATURE OF THE CONCRETE BELOW 90-DEGREE F. AND IN A MOST CONDITION CONTINUOUSLY FOR THE CONCRETE CURING PERIOD. "HOT WEATHER PROTECTION SHALL MEET THE REQUIREMENTS OF ACI 305R "HOT WEATHER CONCRETING".
- ALL FORMS, RAILS AND STAKES SHALL BE REMOVED WITHIN 24 HOURS AFTER PLACING THE CURB. EXPOSED EDGES OF CONCRETE SHALL BE IMMEDIATELY BACKFILLED OR SPRAYED WITH CURING COMPOUND.
- AFTER COMPLETION OF CONCRETE CURBING IN AN AREA, REMOVE ALL WEATHER PROTECTION MATERIALS, RUBBISH AND DEBRIS RESULTING FROM SPECIFIED WORK, SWEEP CONCRETE CURBS CLEAN, AND SEAL JOINTS.
- ALL CEMENT USED IN SIDEWALK CONSTRUCTION SHALL BE PORTLAND CEMENT, TYPE I OR IA ASTM C-150.
- ALL NEW WALKS AND CONCRETE PAVEMENTS SHALL BE PLACED ONLY ON A PREPARED SUBGRADE, SMOOTHED AND LEVELED TO THE GRADES ESTABLISHED BY THE ENGINEER. IN AREAS WHERE THE SUBGRADE IS NOT TO BE EXCAVATED 2-INCHES BELOW THE SIDEWALK BASE AND FILLED WITH APPROVED SAND MEETING MDOT CLASS II, SAND DESIGNATION.
- CONSTRUCT CONCRETE SURFACE COURSE ONLY WHEN GROUND TEMPERATURE IS ABOVE 35 DEGREES F. AND BASE IS DRY.
- SIDEWALKS SHALL PITCH TOWARD THE STREET OR AWAY FROM BUILDINGS WITH A MINIMUM CROSS SLOPE OF 1/4-INCH PER FOOT OF WIDTH AND A MINIMUM CROSS SLOPE OF 1/8-INCH PER FOOT OF WIDTH. CROSS SLOPE DIRECTION TRANSITIONS SHALL BE ACCOMPLISHED IN LENGTHS OF 10 FEET OR LESS.
- PRIOR TO PLACING THE CONCRETE, ALL DEBRIS, STONES, DIRT, ETC., SHALL BE REMOVED FROM THE SUBGRADE. THE SUBGRADE SHALL BE MOISTENED WITH WATER IN SUCH A MANNER AS TO THOROUGHLY WET THE MATERIAL WITHOUT FORMING PUDDLES OR POCKETS OF WATER. NO CONCRETE SHALL BE PLACED ON FROZEN SUBGRADE.
- FORMS SHALL BE METAL OR WOOD AND OF AN APPROVED SECTION. THEY SHALL BE STRAIGHT, FREE FROM DISTORTION AND SHALL SHOW NO VERTICAL VARIATION GREATER THAN 1/8-INCH IN 10-FOOT LENGTH. THE TRUE PLANE SURFACE ON THE TOP OF THE FORMS WHEN TESTED WITH A 10-FOOT STRAIGHTEDGE, AND SHALL SHOW NO LATERAL VARIATION GREATER THAN 1/4-INCH IN 10-FEET FROM THE TRUE PLANE SURFACE OF THE LATERAL FACE OF THE FORM WHEN TESTED WITH A 10-FOOT STRAIGHTEDGE. THEY SHALL BE OF THE DEPTH SPECIFIED FOR THE SIDEWALK, OR CONCRETE PAVEMENT PER PLANE AND DETAILS, AND BE SECURELY HELD IN PLACE AND TRUE TO LINE AND GRADE.
- THE CONCRETE SHALL BE DEPOSITED CONTINUOUSLY IN THE FORMS IN SUCH A MANNER AS TO AVOID SEGREGATION AND IT SHALL BE THOROUGHLY TAMPED OR VIBRATED SO THAT THE FORMS ARE ENTIRELY FILLED AND THE CONCRETE THOROUGHLY CONSOLIDATED. THE SLABS SHALL BE PLACED IN SECTIONS OR BLOCKS IN ONE OPERATION AS A MONOLITH.
- THE CONCRETE SURFACE SHALL BE STRUCK OFF TO A PLANE SURFACE WITH A STRAIGHTEDGE. AFTER THE CONCRETE HAS BEEN FLOATED TO AN EVEN SURFACE, THE CONTRACTION JOINT SHALL BE CUT AND ALL SLAB EDGES ROUNDED WITH A 1/2-INCH RADIUS EDGING TOOL THAT WILL FINISH TO A WIDTH OF 2-INCHES. AFTER THE CONCRETE HAS SLIGHTLY SET, A BROOM SHALL BE BRUSHED LIGHTLY ACROSS THE SURFACE AT RIGHT ANGLES TO FORMS SO AS TO IMPART A ROUGH FINISH.
- CONTRACTION JOINTS SHALL BE PLACED AT RIGHT ANGLES TO THE EDGE OF THE SIDEWALK OR CONCRETE PAVEMENT AND PERPENDICULAR TO THE SURFACE AND AT A DEPTH OF AT LEAST 1/4 THE SLAB THICKNESS WITH A MINIMUM DEPTH OF 1-1/4-INCHES FOR SIDEWALKS AND 3-INCHES FOR CONCRETE PAVEMENT SLABS.
- REINFORCEMENT BARS IN SIDEWALKS SHALL BE SPACED AT A MINIMUM OF EVERY 5- FEET IN 4" SIDEWALK, OR 8- FEET IN 6" SIDEWALK, OR AS SHOWN ON THE PLANS.

CONCRETE CURB, SIDEWALK AND PAVEMENT SPECIFICATIONS, CONTINUED

- ISOLATION PAPERS SHALL BE OF THE PRE-MOLDED, NON-EXTRUDING, ASPHALT IMPREGNATED TYPE, NOT LESS THAN 1/2-INCH THICK. THE LENGTH SHALL BE EQUAL TO THE WIDTH OF THE SLAB, AND THE DEPTH EQUAL TO THE THICKNESS OF THE SLAB PLUS 1-INCH.
- ISOLATION JOINTS SHALL BE PLACED AT THE FOLLOWING LOCATION FOR SIDEWALKS AND CONCRETE PAVEMENTS:
 - AT THE BACK OF THE CURB AND FRONT EDGE OF THE SIDEWALKS AND PAVEMENT SLABS ADJACENT TO EACH DRIVEWAY APPROACH AND SERVICE WALK.
 - AT INTERVALS NOT TO EXCEED 50- FEET IN ALL PUBLIC SIDEWALKS.
 - AT THE BACK OF THE CURB WHERE THE RAMP EXTEND FROM THE KEY FLAG TO THE PAVEMENT.
 - BETWEEN THE KEY FLAG AND THE RAMP IN ALL CASES, EXCEPT WHERE THERE ARE EXISTING EXPANSION JOINTS AT THE INTERSECTIONS OF THE SIDEWALKS AND THE KEY FLAG.
 - AT ANY PLACE WHERE A SIDEWALK OR CONCRETE PAVEMENT ABUTS A BUILDING OR FIXED STRUCTURE.
 - AT ANY OTHER LOCATIONS INDICATED ON THE PLAN.
- CONTRACTION JOINTS IN THE CONCRETE PAVEMENT WILL BE AS FOLLOWS:
 - TRANSVERSE JOINTS SHALL BE AT MAXIMUM 10-FOOT INTERVALS OR AS SHOWN ON PLANS AND DETAILS.
 - LONGITUDINAL JOINTS SHALL BE AT MAXIMUM 12-FOOT INTERVALS OR AS SHOWN ON PLANS AND DETAILS.
- PRIOR TO APPLYING JOINT SEALER, CLEAN JOINT GROOVE OF FOREIGN MATTER AND LOOSE PARTICLES, AND DRY SURFACE.

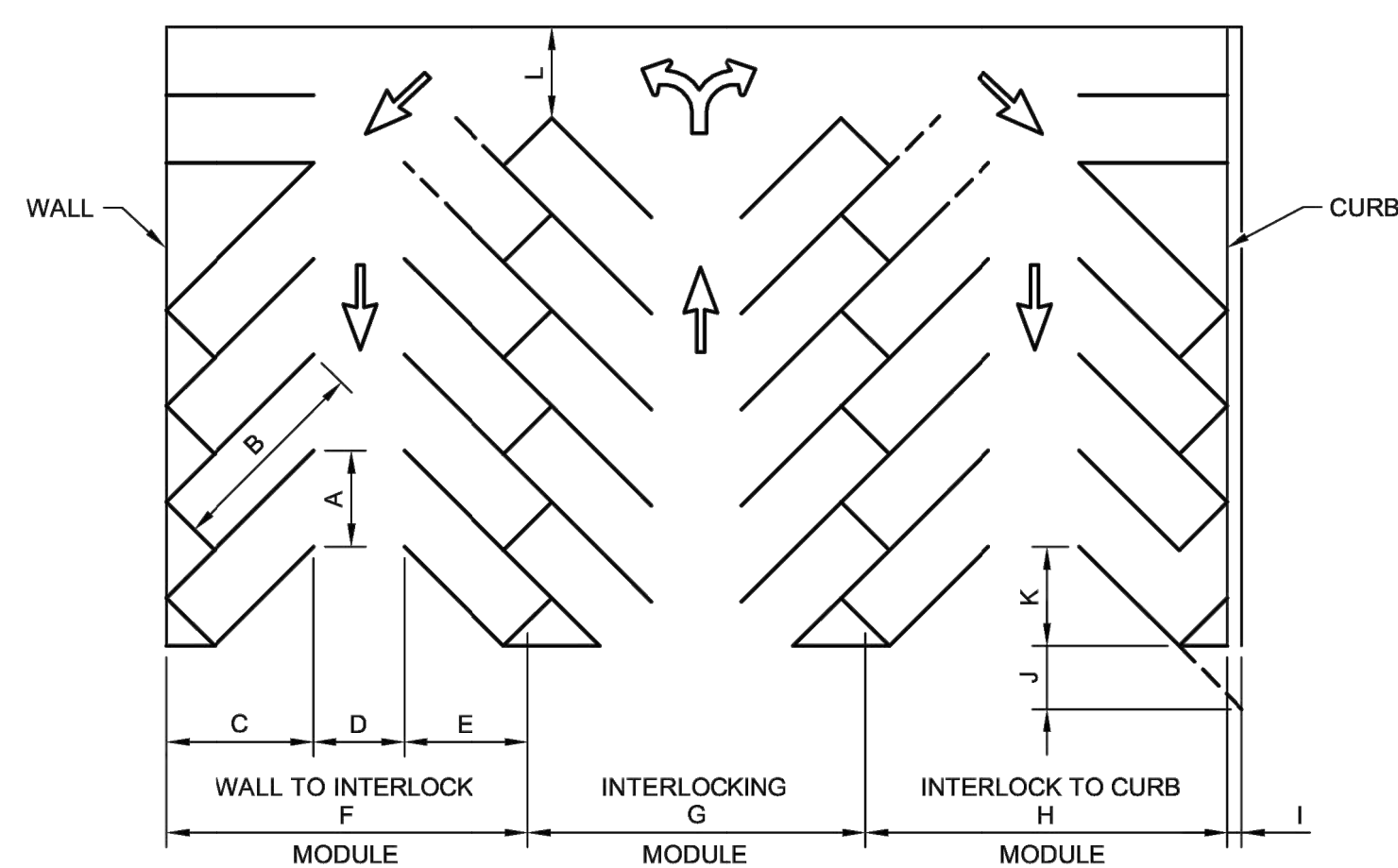
TRAFFIC LANE AND PARKING LOT MARKING

- PROVIDE ALL MATERIALS, LABOR, EQUIPMENT, AND SERVICES NECESSARY TO COMPLETE ALL TRAFFIC LANE AND PARKING LOT MARKINGS AS INDICATED IN THE CONSTRUCTION DOCUMENTS.
- WORK INCLUDES, BUT NOT LIMITED TO PAINTING OF LETTERS, MARKINGS, STRIPES AND ISLANDS ON THE PAVEMENT SURFACE APPLIED IN ACCORDANCE WITH THIS SPECIFICATION AND AT THE LOCATIONS SHOWN ON THE PLANS OR AS DIRECTED BY THE ENGINEER.
- TRAFFIC MARKING PAINT SHALL MEET THE REQUIREMENTS OF FEDERAL SPECIFICATION TT-P-859F, WITH OR WITHOUT REFLECTORIZED BEADS AS REQUIRED ON THE PLANS. OR SHALL BE A PRODUCT FROM THE CURRENT MDOT QUALIFIED PRODUCTS LIST.
- COLOR SHALL BE AS SPECIFIED ON THE PLANS OR AS FOLLOWS:
 - TRAFFIC LANE STRIPING SHALL BE WHITE OR YELLOW REFLECTORIZED, AS SHOWN ON THE PLANS.
 - TRAFFIC MARKING AND CURB FACES SHALL BE WHITE UNLESS NOTED OTHERWISE.
 - PARKING LOT STRIPING SHALL BE WHITE, UNLESS NOTED OTHERWISE.
 - HANDICAP STALL STRIPING MEETING CURRENT ADA REQUIREMENTS SHALL BE BLUE UNLESS NOTED OTHERWISE.
- THE PAINTING SHALL BE PERFORMED ONLY WHEN THE EXISTING SURFACE IS DRY AND CLEAN, WHEN THE ATMOSPHERIC TEMPERATURE IS ABOVE 40-DEGREES F. AND WHEN THE WEATHER IS NOT EXCESSIVELY WINDY, DUSTY OR FOGGY AND WHEN RAIN IS NOT FORECASTED FOR AT LEAST 2 HOURS AFTER PAINT IS APPLIED.
- ALL EQUIPMENT FOR THE WORK SHALL BE APPROVED BY THE CONTRACTOR AND SHALL INCLUDE THE APPARATUS NECESSARY TO PROPERLY CLEAN THE EXISTING SURFACE, A MECHANICAL MARKING MACHINE, AND SUCH AUXILIARY HAND EQUIPMENT AS MAY BE NECESSARY TO SATISFACTORILY COMPLETE THE JOB.
- THE MECHANICAL MARKER SHALL BE AN APPROVED ATOMIZING SPRAY-TYPE MARKING MACHINE FOR APPLICATION OF TRAFFIC PAINT. IT SHALL BE ADJUSTED TO PRODUCE AN EVEN AND UNIFORM FILM THICKNESS AT THE REQUIRED COVERAGE AND SHALL BE DESIGNED SO AS TO APPLY MARKINGS OF UNIFORM CROSS-SECTIONS AND CLEAR-CUT EDGES WITHOUT RUNNING OR SPATTERING WITHIN THE L LIMITS FOR STRAIGHTNESS SET FORTH HEREIN. WHEN NEEDED, A DISPENSER SHALL BE FURNISHED, WHICH IS PROPERLY DESIGNED FOR ATTACHMENT TO THE MECHANICAL MARKER AND SUITABLE FOR DISPENSING THE REQUIRED QUANTITY OF REFLECTIVE BEADS.
- SUITABLE ADJUSTMENTS SHALL BE PROVIDED ON THE SPRAYER/SPRAYSER OF A MACHINE FOR STRIPING THE WIDTH REQUIRED. MULTIPLE PARALLEL PASSES TO THE PAINT THE REQUIRED WIDTH WILL NOT BE ALLOWED.
- IMMEDIATELY BEFORE APPLICATION OF THE PAINT, THE EXISTING SURFACE SHALL BE DRY AND ENTIRELY FREE FROM DIRT, GREASE, OIL, ASHES, DEBRIS, OR OTHER FOREIGN MATTER WHICH WOULD REDUCE THE BOND BETWEEN THE COAT OF PAINT AND THE PAVEMENT. THE SURFACE SHALL BE THOROUGHLY CLEANED BY SWEEPING AND BLOWING AS REQUIRED TO REMOVE ALL DIRT, DEBRIS AND LOOSE MATERIALS. AREAS WHICH CANNOT BE SATISFACTORILY CLEANED BY BROOMING AND BLOWING SHALL BE SCRUBBED AS DIRECTED WITH A WATER SOLUTION OF TRISODIUM PHOSPHATE OR BY OTHER APPROVED EQUAL SOLUTION. AFTER SCRUBBING, THE SOLUTION SHALL BE RINSED OFF AND THE SURFACE DRIED PRIOR TO PAINTING.
- EXISTING MARKINGS OR STRIPES WHICH ARE TO BE ABANDONED OR REMOVED SHALL BE OBLITERATED OR OBBURED BY THE BEST METHODS SUITED FOR THE PURPOSE AND TO THE SATISFACTION OF THE OWNER OR OWNER'S REPRESENTATIVE.
- THE CONTRACTOR IS RESPONSIBLE FOR LAYING OUT A SAMPLE SECTION OF STRIPING WHICH IS TO BE APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE AS TO QUALITY BEFORE THE CONTRACTOR MAY PROCEED WITH THE STRIPING. THE CONTRACTOR IS TO INSURE THAT ALL SUBSEQUENT STRIPING MEETS THE QUALITY OF THE APPROVED SAMPLE APPLICATION.
- ON THOSE SECTIONS OF PAVEMENTS WHERE NO PREVIOUSLY APPLIED FURNISH, MARKINGS OR STRIPING IS TO BE APPLIED AS A GUIDE, SUITABLE LAYOUTS AND LINES OF PROPOSED STRIPES SHALL BE SPOTTED IN ADVANCE OF THE PAINT APPLICATION. CONTROL POINTS SHALL BE SPACED AT SUCH INTERVALS AS WILL ENSURE ACCURATE LOCATION OF ALL MARKINGS.
- THE CONTRACTOR SHALL PROVIDE AN EXPERIENCED TECHNICIAN TO SUPERVISE THE LOCATION ALIGNMENT, LAYOUT, DIMENSIONS AND APPLICATION OF THE PAINT.
- MARKINGS SHALL BE APPLIED AT THE LOCATIONS AND TO THE DIMENSIONS AND SPACING INDICATED ON THE PLANS OR AS SPECIFIED. PAINT SHALL NOT BE APPLIED UNTIL THE INDICATED ALIGNMENT IS LAID OUT AND THE CONDITIONS OF THE EXISTING SURFACE HAVE BEEN APPROVED BY THE OWNER OR OWNER'S REPRESENTATIVE.
- THE PAINT SHALL BE MIXED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS BEFORE APPLICATION. THE PAINT SHALL BE THOROUGHLY MIXED AND APPLIED TO THE SURFACE OF THE PAVEMENT WITH THE MARKING MACHINE AT ITS ORIGINAL CONSISTENCY WITHIN THE TOLERANCES SPECIFIED IF THE PAINT IS APPLIED BY BRUSH. THE SURFACE SHALL RECEIVE TWO (2) COATS; THE FIRST COAT SHALL BE THOROUGHLY DRY BEFORE THE SECOND COAT IS APPLIED.
- A MINIMUM OF ONE (1) WEEK SHALL ELAPSE BETWEEN APPLICATION OF THE BITUMINOUS SEAL COAT, SLURRY SEAL OR THE PLACEMENT OF THE BITUMINOUS SURFACE COURSE AND THE MARKING OF THE PAVEMENT. THE PAINT SHALL NOT BLEED EXCESSIVELY, CURL, OR DISCOLOR WHEN APPLIED TO BITUMINOUS OR CONCRETE SURFACES. CURING COMPOUND MUST BE REMOVED FOR THE ENTIRE WIDTH OF THE PAINTED STRIPE OR SYMBOL PRIOR TO PAINTING NEW CONCRETE.
- IN THE APPLICATION OF STRAIGHT STRIPES, ANY DEVIATION IN THE EDGES EXCEEDING 1/2-INCH IN 50- FEET SHALL BE OBLITERATED AND THE MARKING CORRECTED. THE WIDTH OF THE MARKINGS SHALL BE AS DESIGNATED WITHIN A TOLERANCE OF 5 PERCENT (5%). ALL PAINTING SHALL BE PERFORMED TO THE SATISFACTION OF THE OWNER OR OWNER'S REPRESENTATIVE BY COMPETENT AND EXPERIENCED EQUIPMENT OPERATORS, LABORERS, AND ARTISANS IN A NEAT AND WORKMANLIKE MANNER.
- PAINT SHALL BE APPLIED UNIFORMLY BY SUITABLE EQUIPMENT AT A RATE OF 0.0094 GAL./S.F. FOR STENCILS AND 0.00313 GAL./FT. FOR STRIPING. PAINT APPLICATION SHALL PRODUCE AN AVERAGE WET FILM THICKNESS OF 0.115-INCHES.
- AFTER APPLICATIONS OF THE PAINT, ALL MARKINGS SHALL BE PROTECTED WHILE THE PAINT IS DRYING. THE FRESH PAINT SHALL BE PROTECTED FROM INJURY OR DAMAGE OF ANY KIND BY ANY PERSON OR OBJECT. THE CONTRACTOR SHALL BE DIRECTLY RESPONSIBLE



1-1/2" BITUMINOUS AGGREGATE WEARING COURSE M.D.O.T. MIX 36A.
 USE 0.10 GAL/SY SS-1H BOND COAT BETWEEN COURSES.
 5" BITUMINOUS AGGREGATE LEVELING COURSE M.D.O.T. MIX 11A (2 COURSES).
 10" GRAVEL BASE, M.D.O.T. SPECIFICATION NO. 22A.
 12" CLASS II SUBBASE (DEPENDING ON SOILS) PREPARED, COMPACTED SUBGRADE.

TYPICAL COLLECTOR OR INDUSTRIAL PAVEMENT CROSS-SECTION

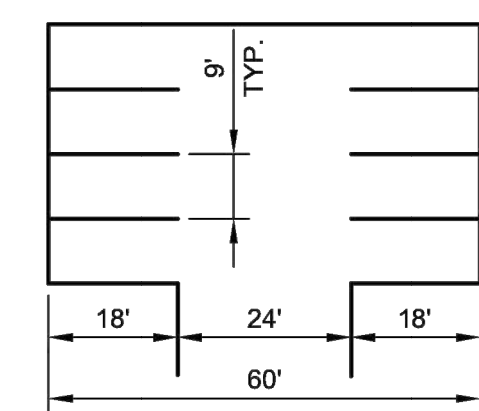


X = STALL NOT ACCESSIBLE IN CERTAIN LAYOUTS

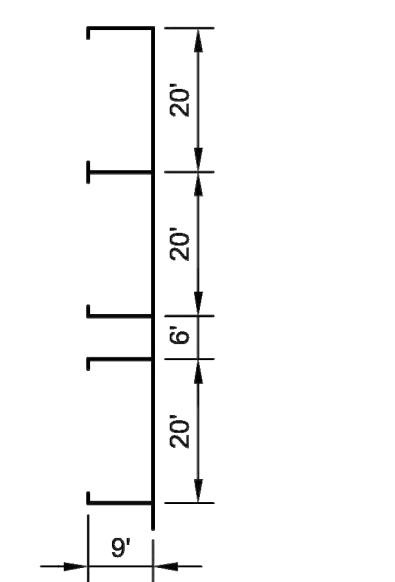
PARKING LOT DIMENSIONS					
DIMENSION	ON DIAGRAM	45°	60°	75°	90°
STALL WIDTH PARALLEL TO AISLE	A	12.7	10.4	9.3	9.0
STALL LENGTH OF LINE	B	25.0	22.0	20.0	18.5
STALL DEPTH TO WALL	C	17.5	19.0	19.5	18.5
AISLE WIDTH BETWEEN STALL LINES	D	12.0	16.0	23.0	26.0
STALL DEPTH, INTERLOCK	E	15.3	17.5	18.8	18.5
MODULE, WALL TO INTERLOCK	F	44.8	52.5	61.3	63.0
MODULE, INTERLOCKING	G	42.6	51.0	61.0	63.0
MODULE, INTERLOCK TO CURB FACE	H	42.8	50.2	58.8	60.5
BUMPER OVERHANG (TYPICAL)	I	2.0	2.3	2.5	2.5
OFFSET	J	6.3	2.7	0.5	0.0
SETBACK	K	11.0	8.3	5.0	0.0
CROSS AISLE, ONE-WAY	L	14.0	14.0	14.0	14.0
CROSS AISLE, TWO-WAY	M	24.0	24.0	24.0	24.0

TYPICAL ANGLED PARKING LAYOUT

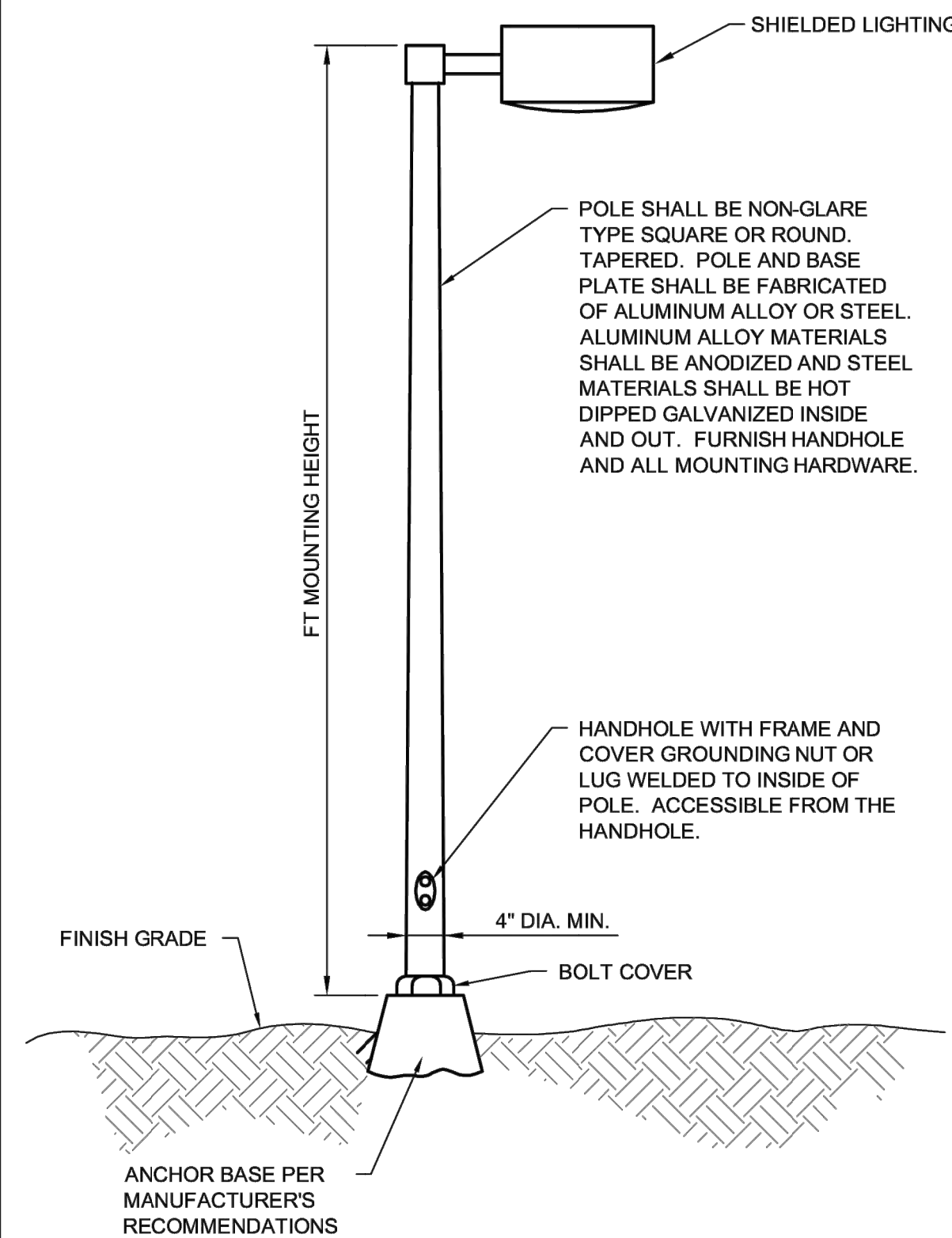
NOTE: PARKING DIMENSIONS ARE FOR 9 FOOT WIDE STALLS



TYPICAL 90° PARKING LAYOUT

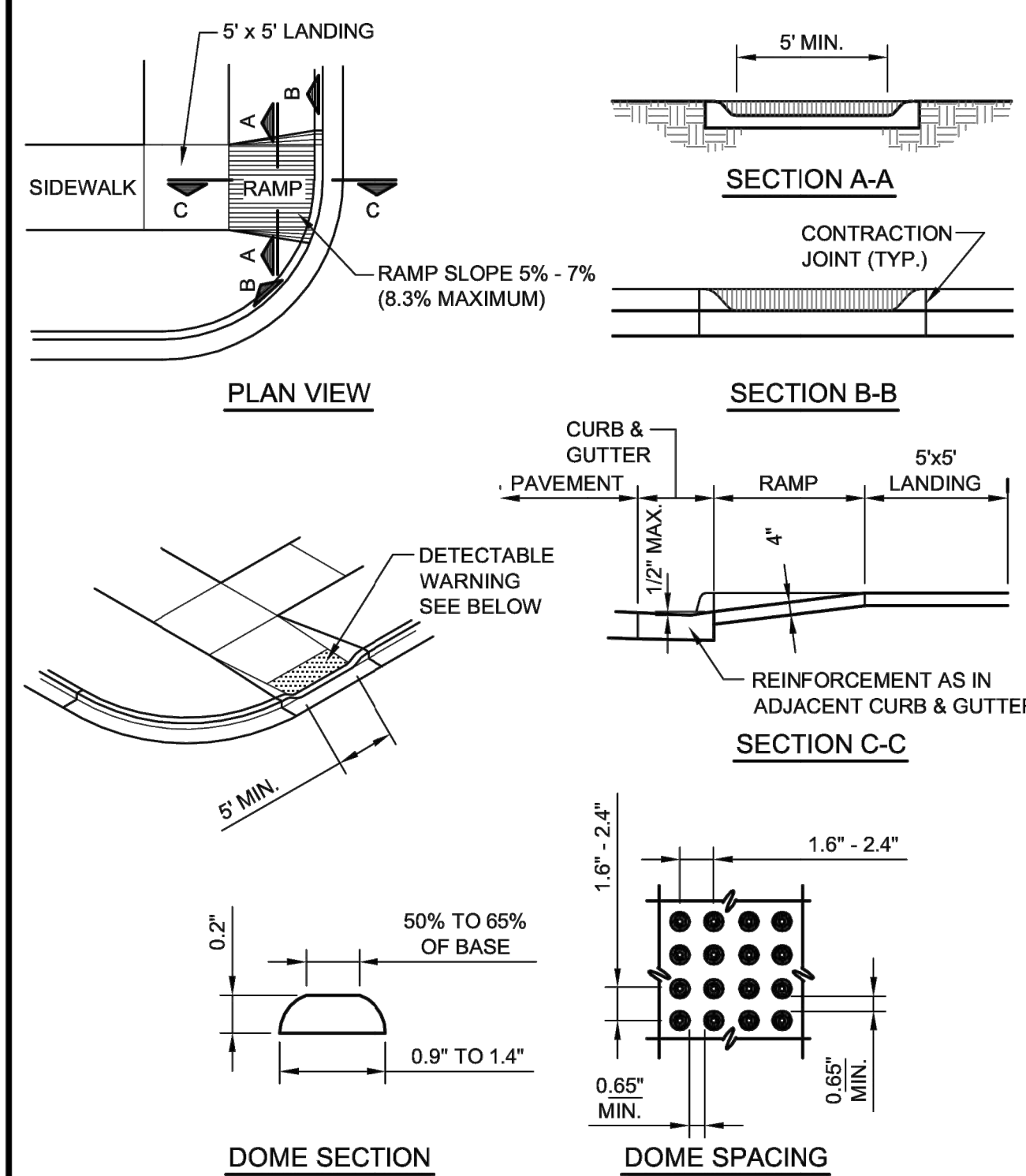


TYPICAL PARALLEL PARKING

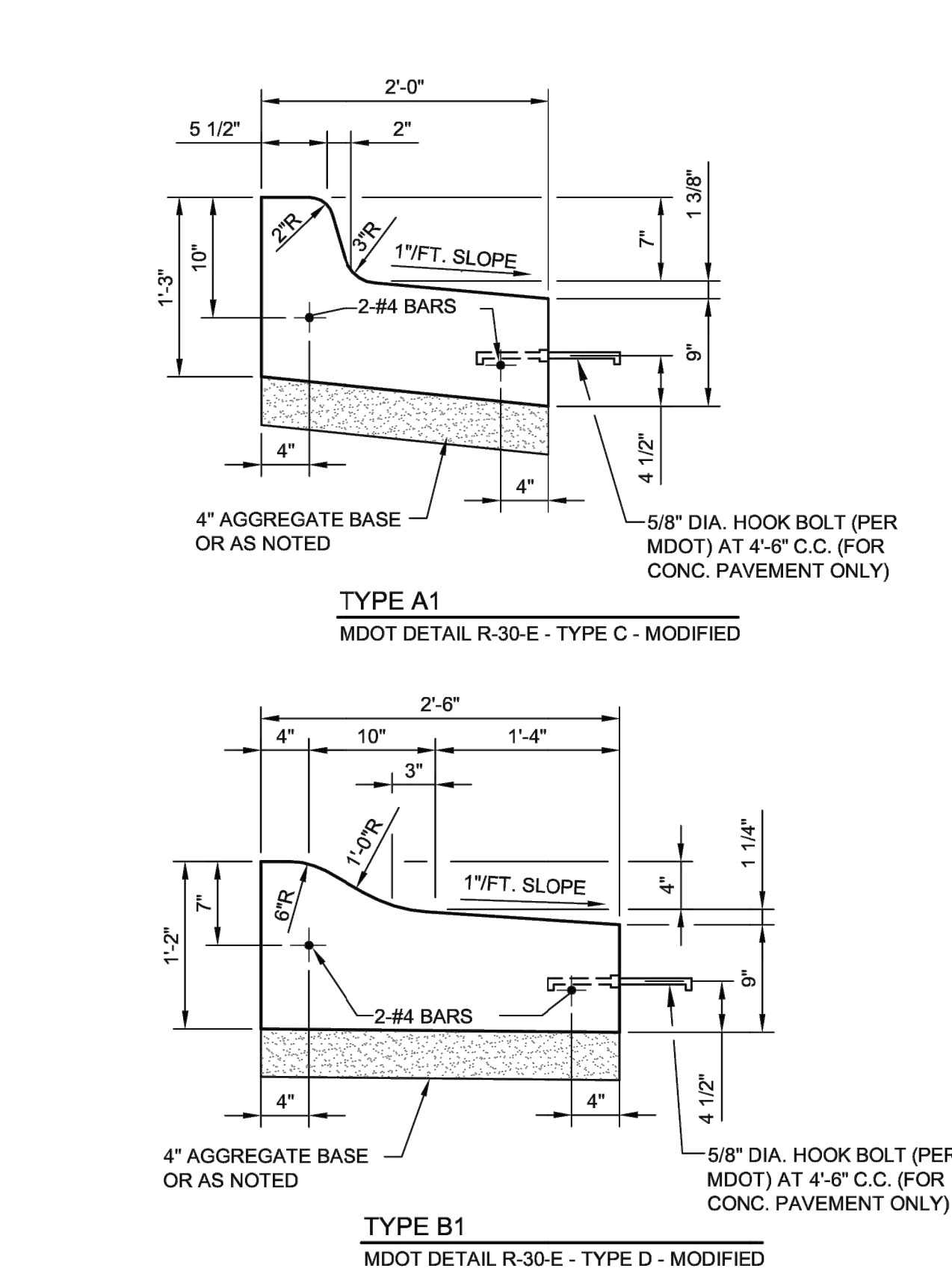


NOTES:
 1. NO LIGHT STANDARD SHALL BE MORE THAN 20 FEET IN HEIGHT.
 2. PARKING LOT LIGHTING SHALL MEET THE LUMINAIRE REQUIREMENTS OF SECTION 98-83 OF THE ZONING ORDINANCE.

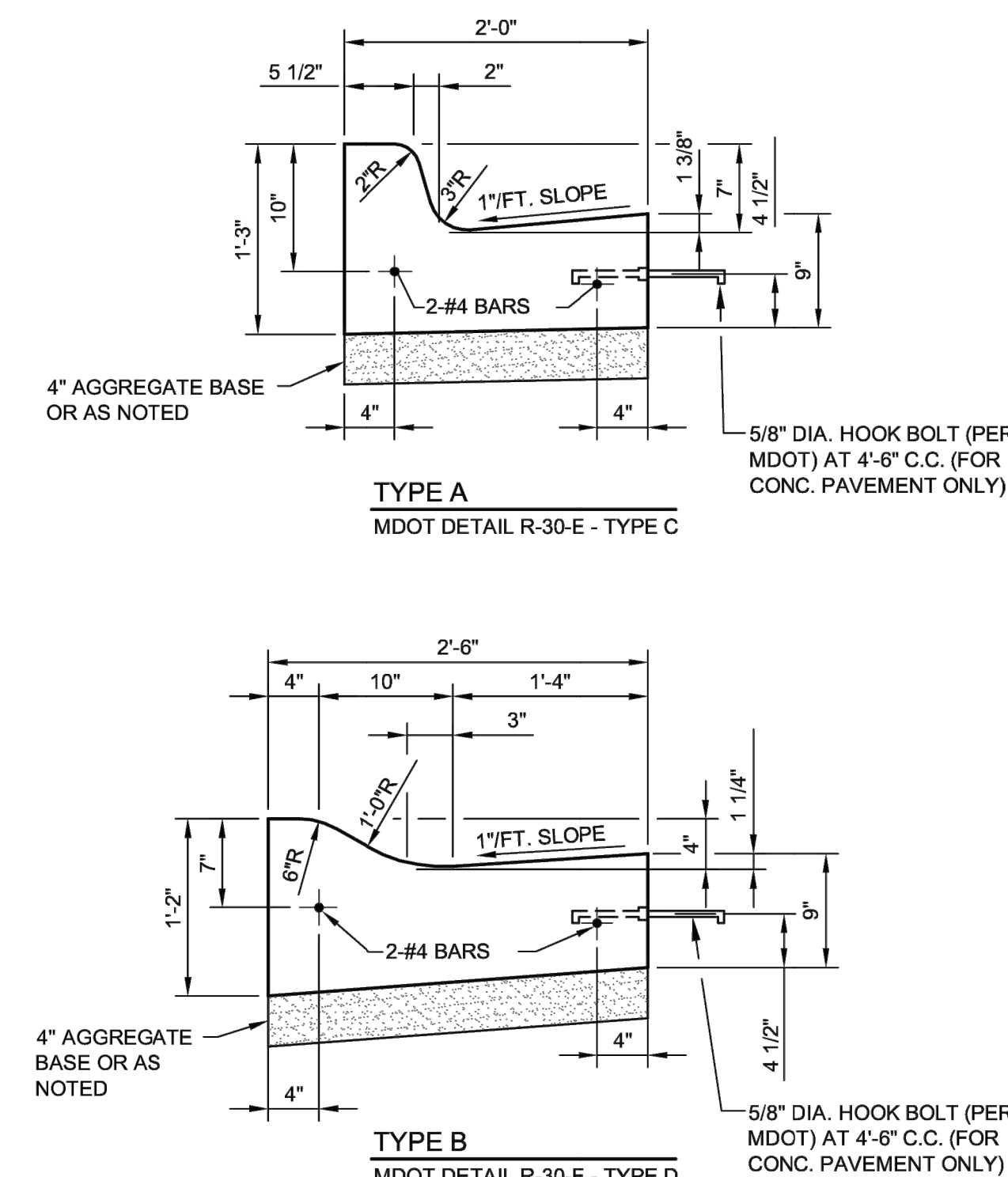
TYPICAL PARKING AREA LIGHTING



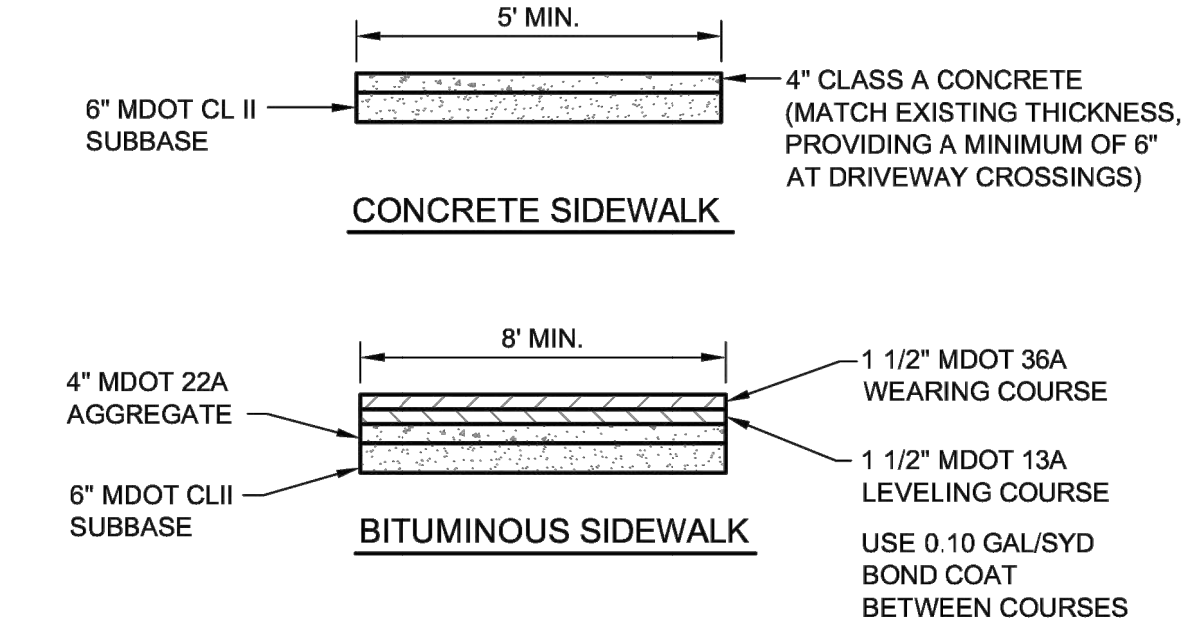
TYPICAL SIDEWALK RAMP



CONCRETE CURB SPILLOUT

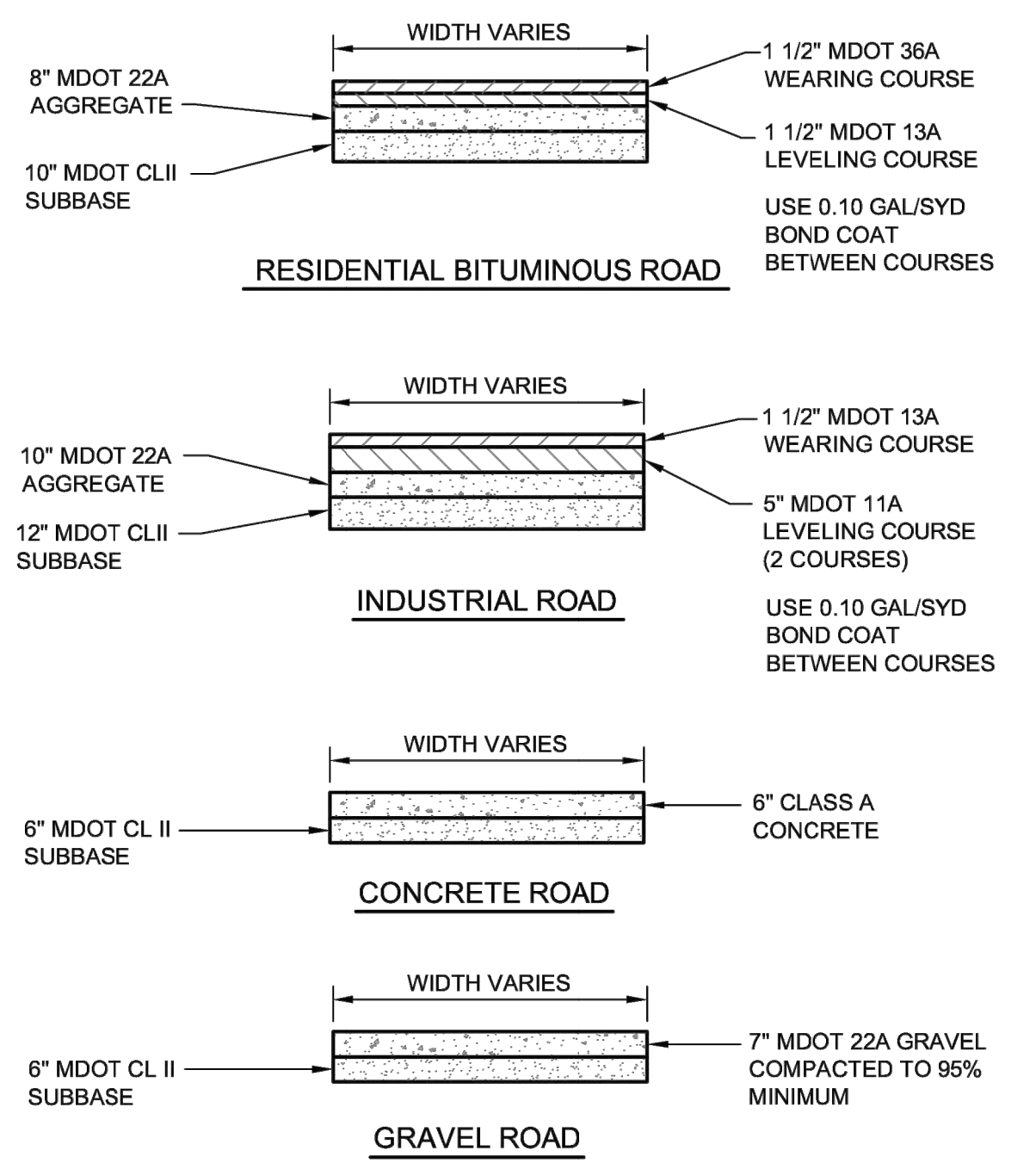


CONCRETE CURB AND GUTTER

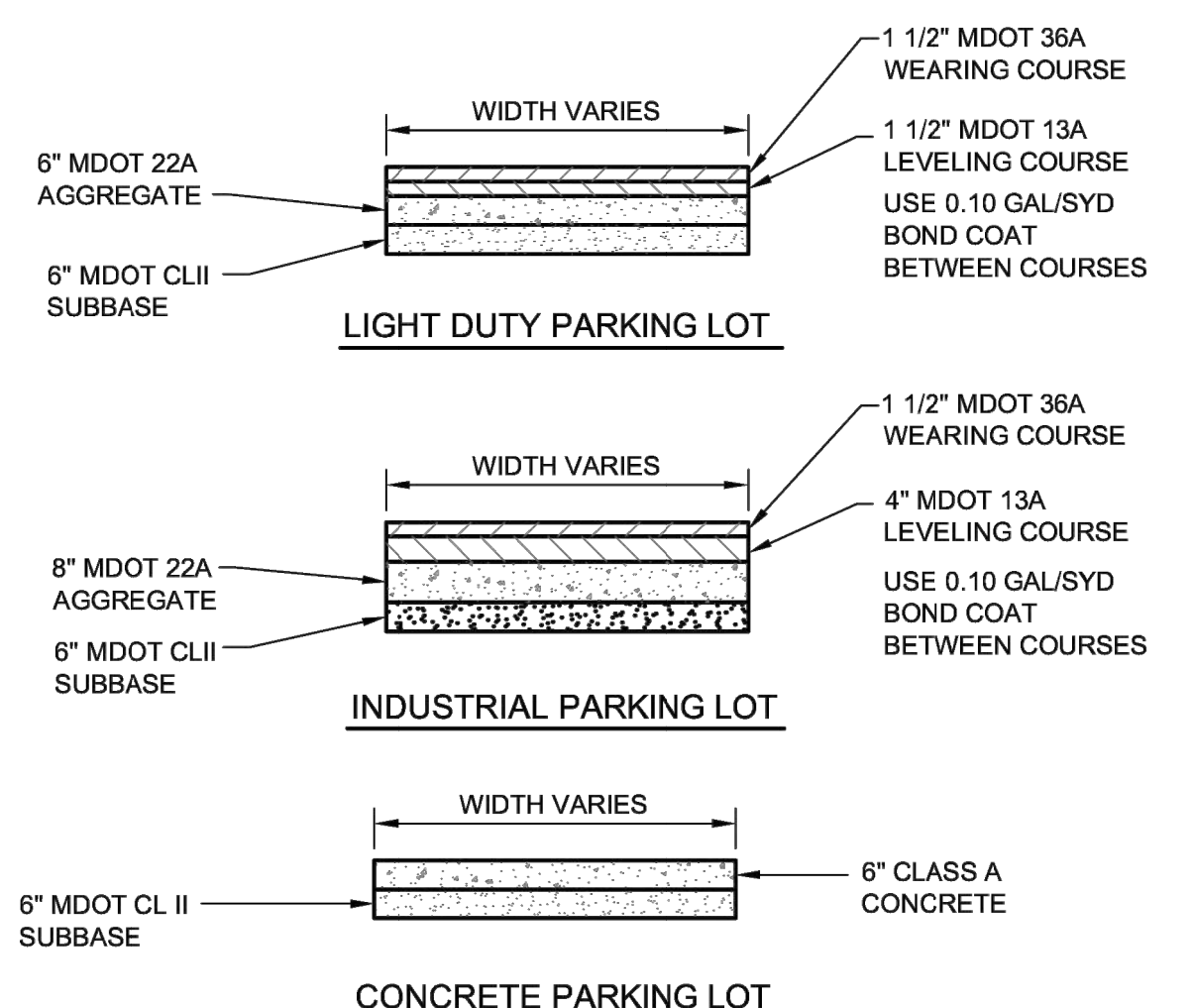


NOTES:
 1. SIDEWALKS WITHIN THE DOWNTOWN BUSINESS DISTRICT ARE SUBJECT TO SPECIAL REQUIREMENTS.
 2. CONCRETE SIDEWALKS TO BE PROVIDED ACROSS COMMERCIAL AND INDUSTRIAL DRIVEWAY ENTRANCES/ EXITS.

TYPICAL SIDEWALK SECTIONS



ROADWAY CROSS SECTIONS



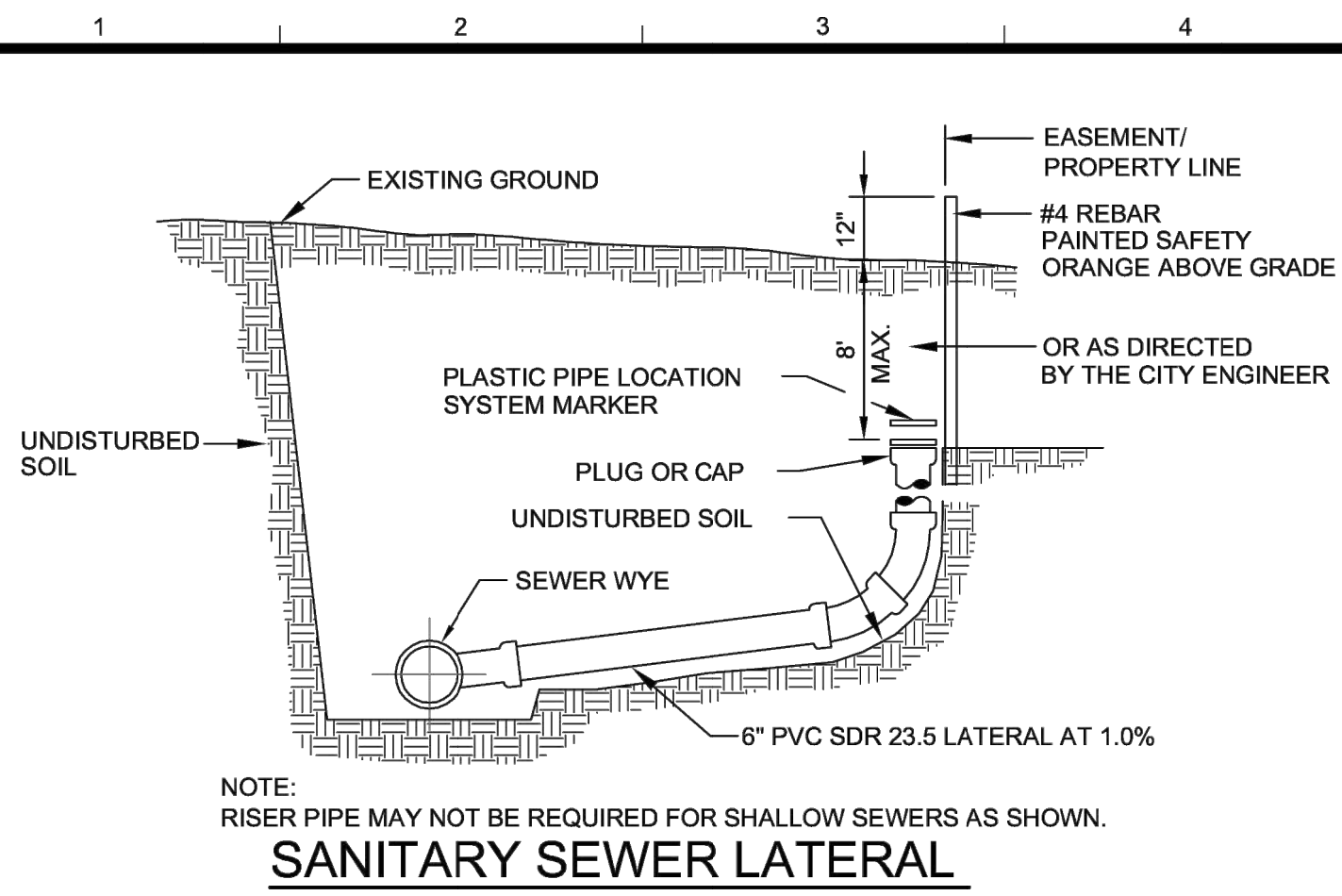
PARKING LOT CROSS SECTIONS



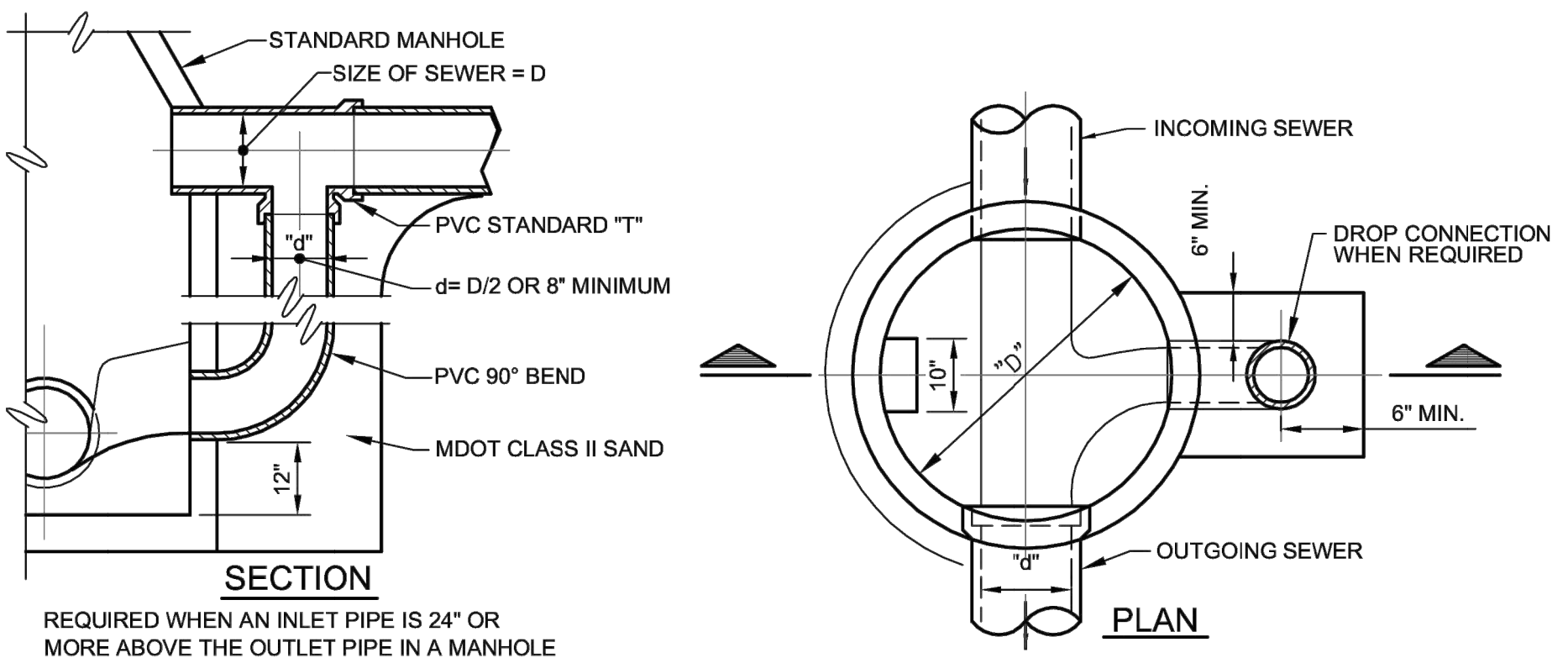
CITY OF BRIGHTON
ROADWAY, PARKING & SIDEWALK STANDARD DETAILS

Scale: NONE
 Issued Date: MAY - 2014

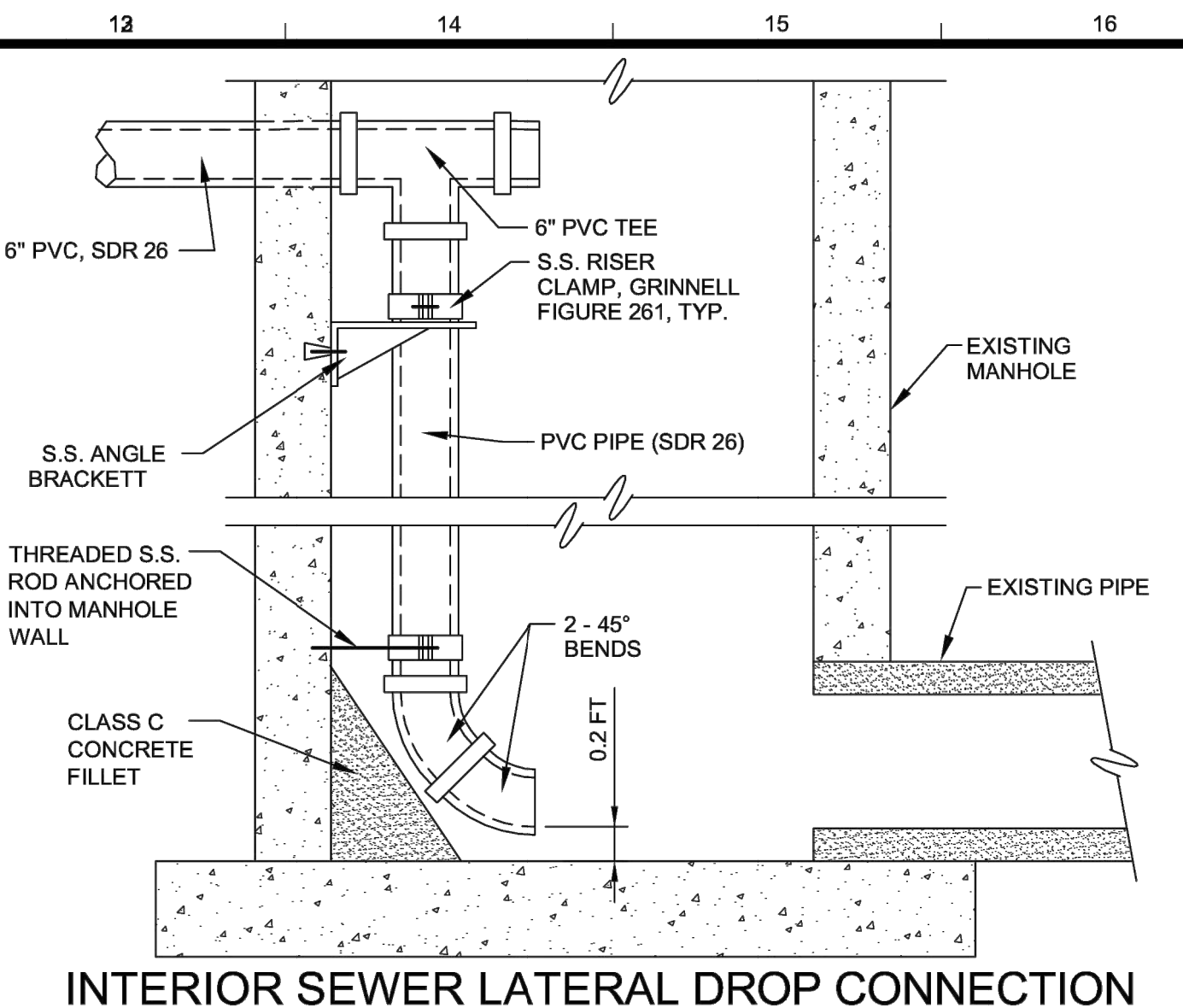
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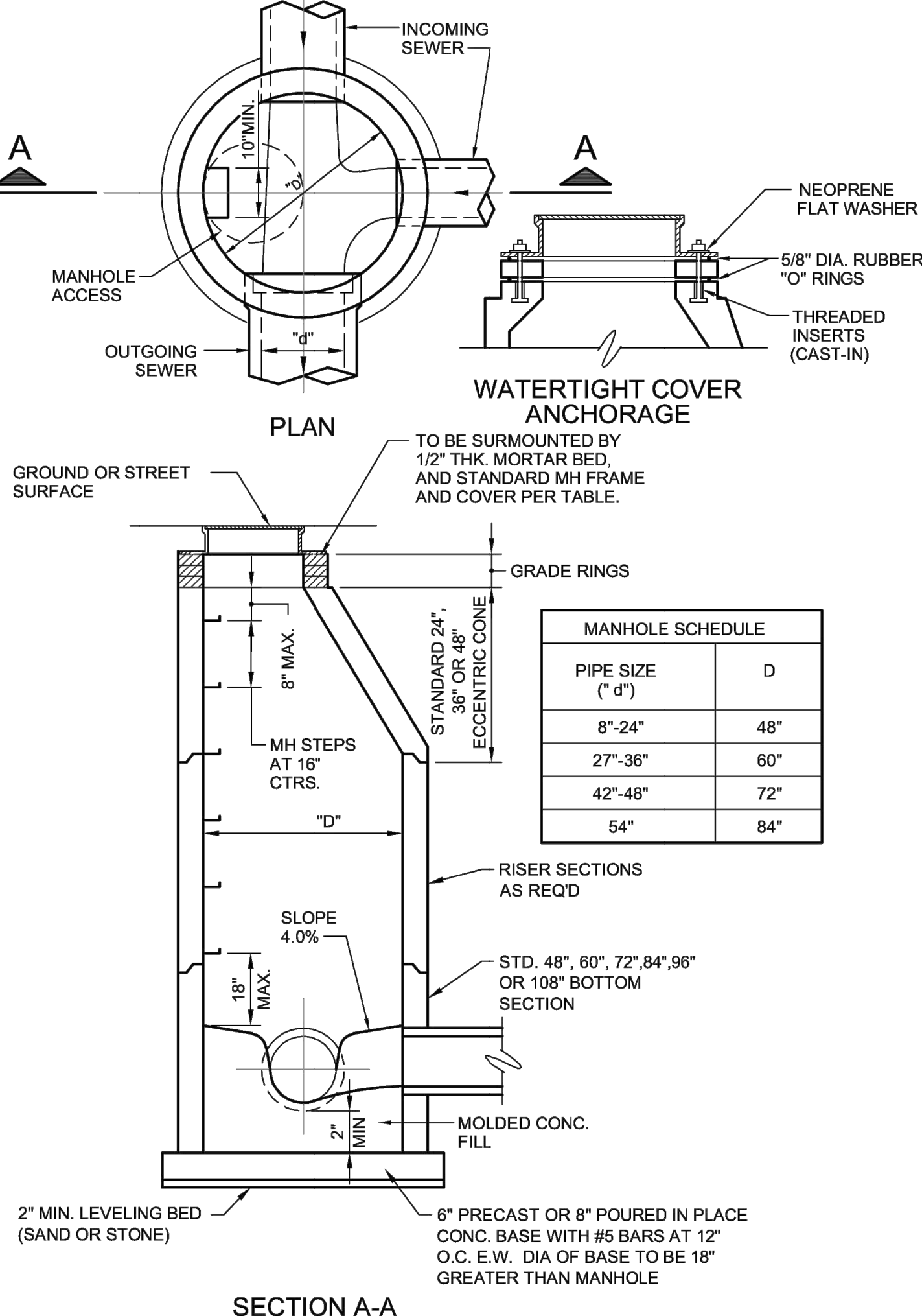
SANITARY SEWER LATERAL



EXTERIOR DROP CONNECTION



INTERIOR SEWER LATERAL DROP CONNECTION

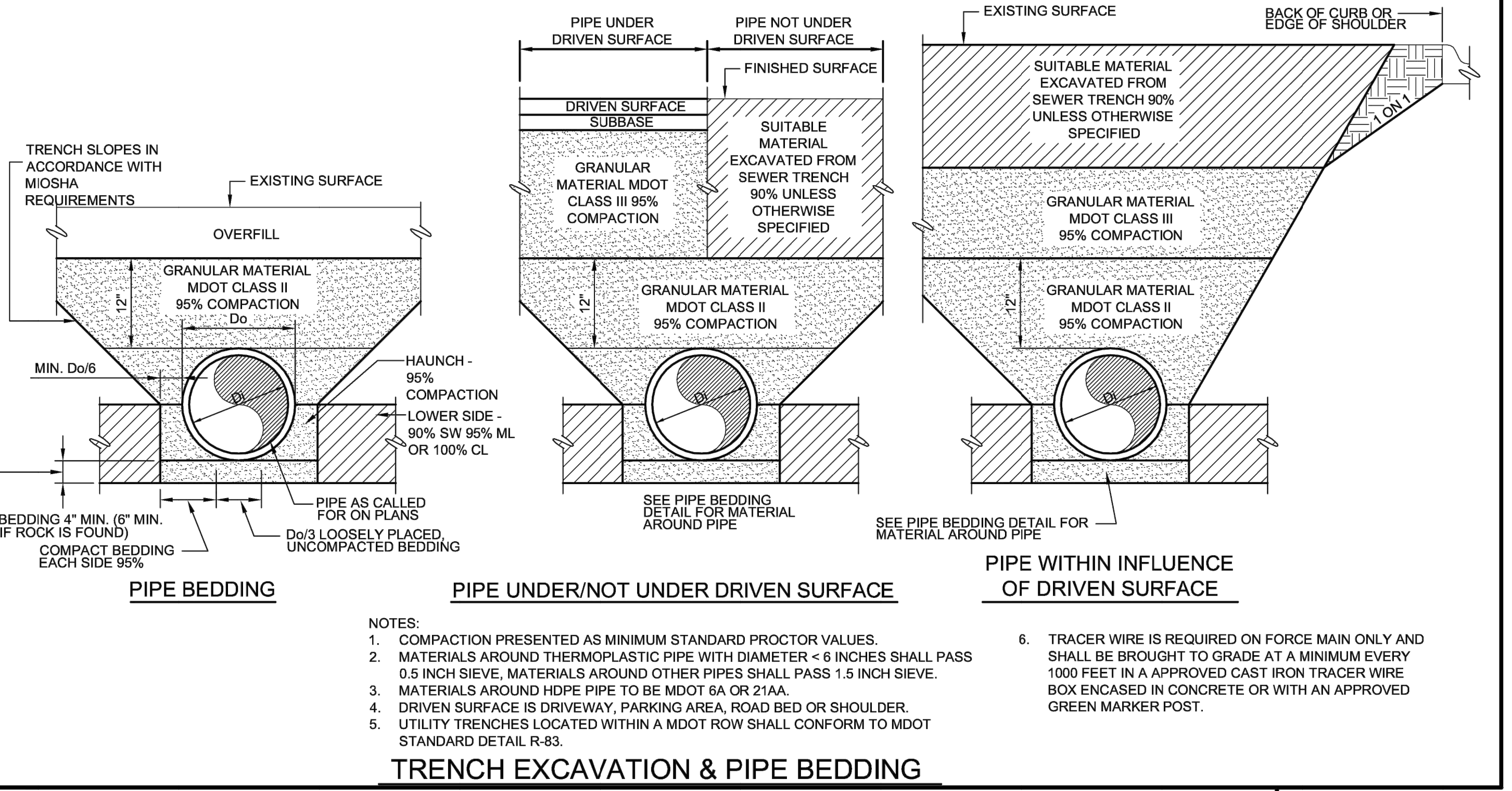


STANDARD MANHOLE

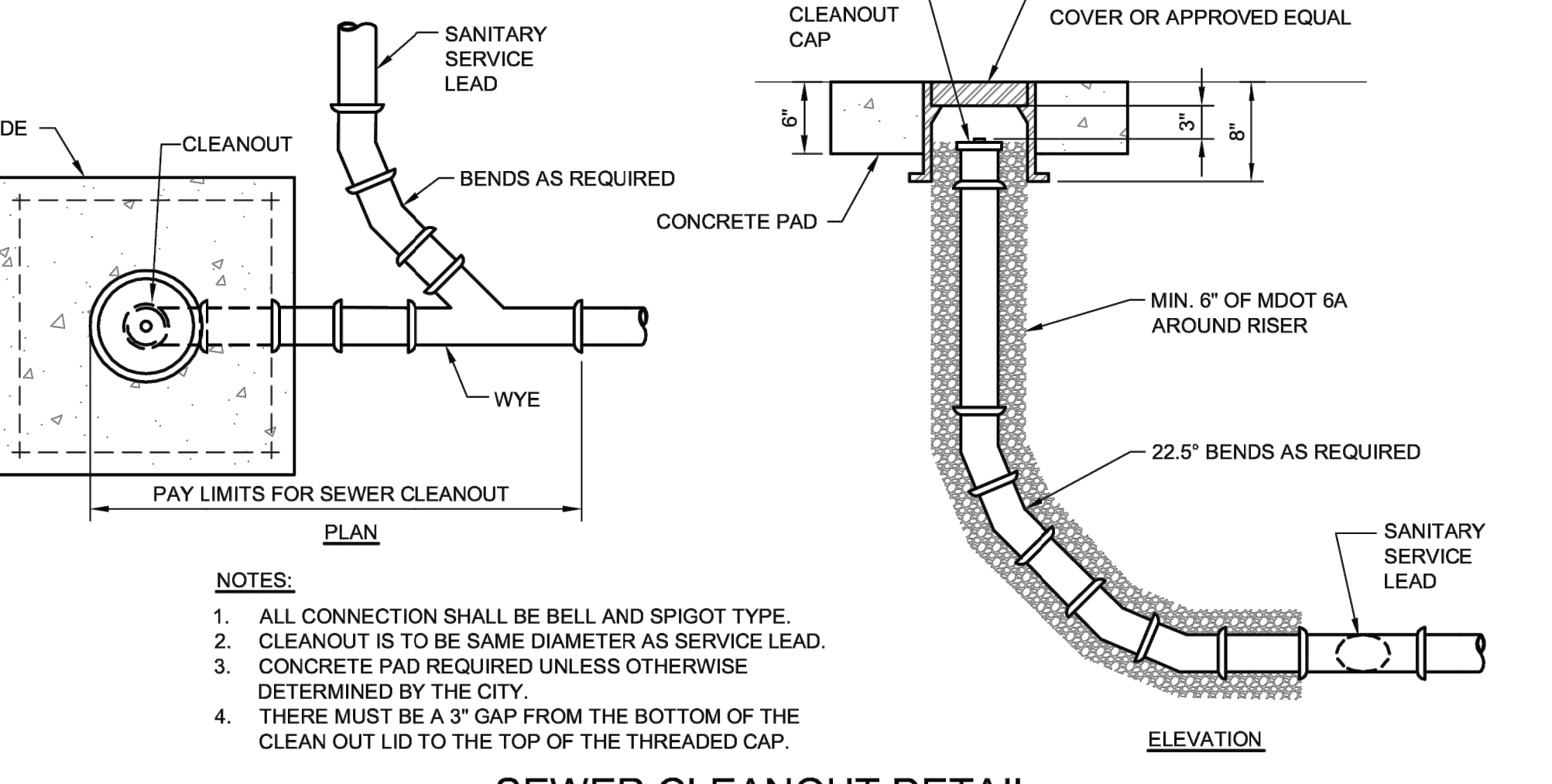
- NOTES:
- ALL SANITARY MANHOLES TO BE PRECAST REINFORCED CONCRETE WITH PREMIUM JOINTS. SEE SPECIFICATIONS FOR BASE SLAB AND PIPE OPENINGS AND CONNECTIONS.
 - MANHOLE CONES SHALL BE THE ECCENTRIC TYPE.
 - PROVIDE 6" OF COMPACTED GRANULAR MATERIAL UNDER ALL PRECAST CONCRETE BASE SLABS.
 - FORCE MAINS CONNECT DIRECTLY TO A MANHOLE SHALL BE INSTALLED SO THAT THE ELEVATION OF THE PIPE CROWNS MATCH. THE FORCE MAIN SHALL BE DIRECTED DOWNWARD INTO THE FLOW CHANNEL.
 - FOR SANITARY SEWERS ALL PIPES SHALL ENTER MANHOLE THROUGH RUBBER BOOTED CONNECTION.

TYPE	FRAME & COVER FOR SANITARY SEWER MANHOLES		
	TYPE OF COVER	MANUFACTURER OR EQUAL	
MH	SANITARY - SOLID SELF-SEALING	EAST JORDAN	NEENAH
		1040.0000	R-1642
MH	SANITARY - SOLID WATERTIGHT	1040-APT	R-1916-F
CO	SOLID	1574A	R-1973-A

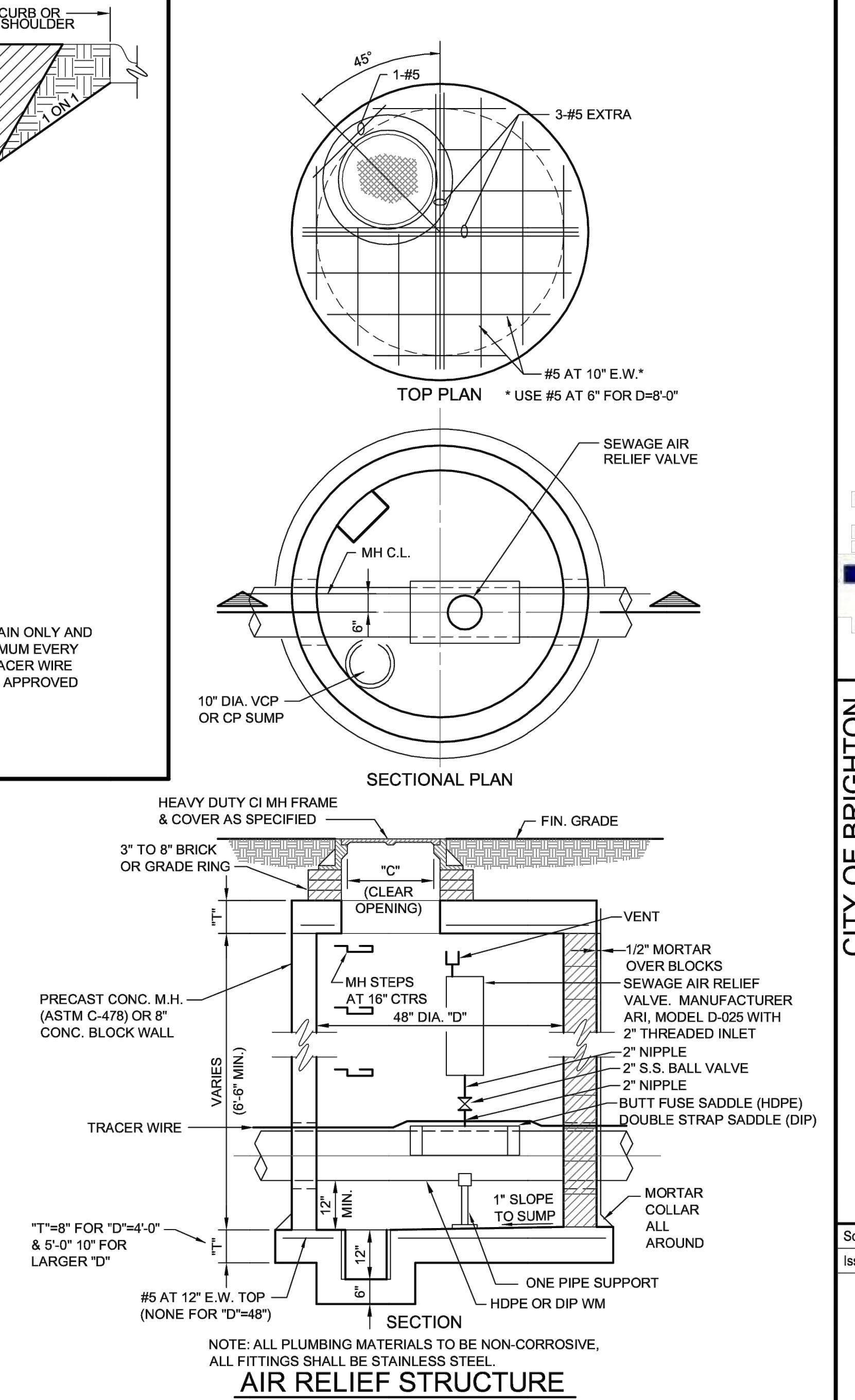
STANDARD MANHOLE



TRENCH EXCAVATION & PIPE BEDDING



SEWER CLEANOUT DETAIL



AIR RELIEF STRUCTURE



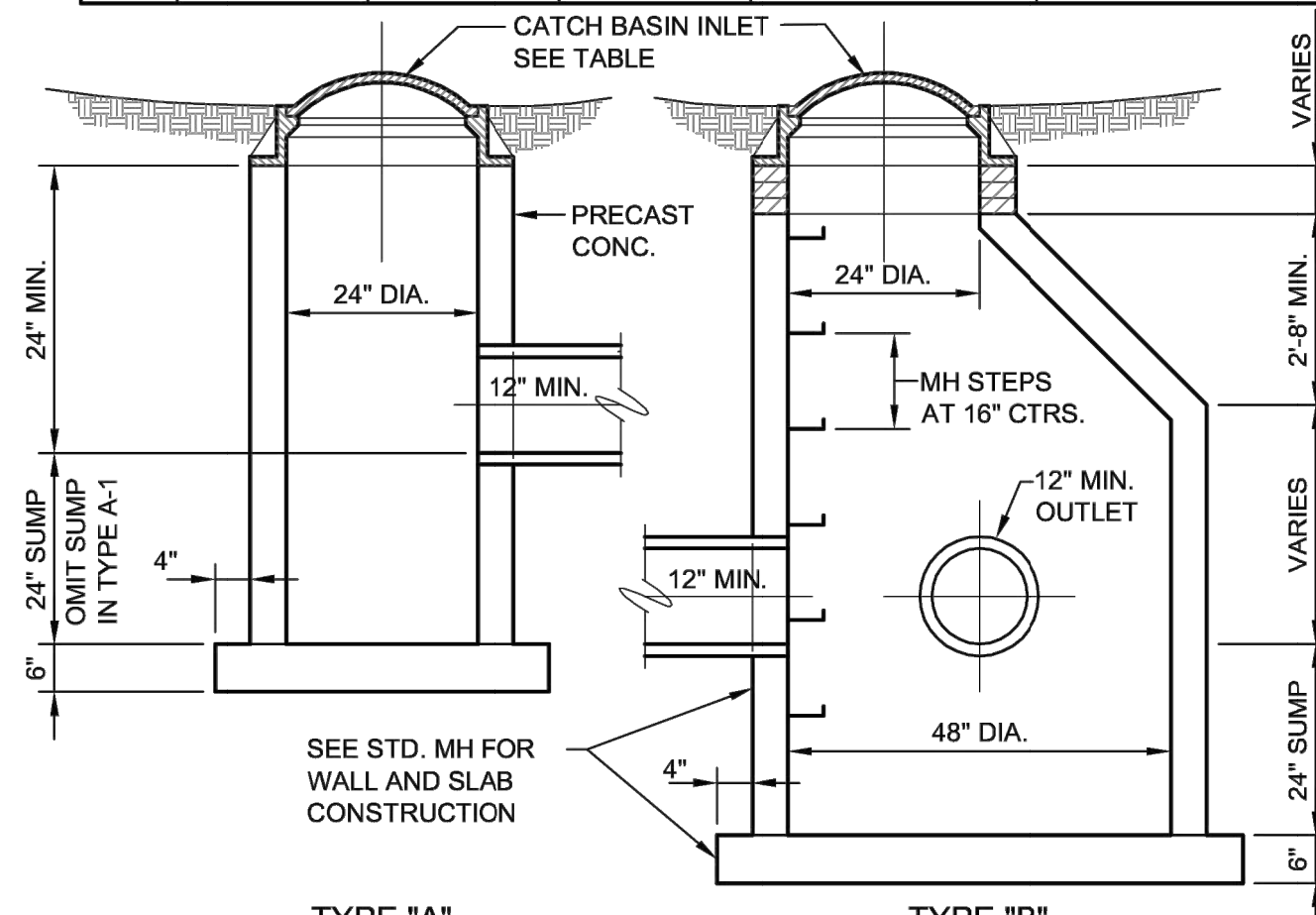
CITY OF BRIGHTON

SANITARY SEWER STANDARD DETAILS

Scale: NONE
Issued Date: MAY - 2014

N/A

MANHOLE FRAME & COVER & CATCH BASIN INLETS					
TYPE	LOCATION	MANUFACTURER OR EQUAL		TYPE OF COVER OR INLET	MAXIMUM DRAINAGE AREA (ACRES)
		EAST JORDAN	NEENAH		
MH	ALL	1040	R-1916 F1	SANITARY-SOLID SELF-SEALING STORM-VENTED	N/A
CB	TYPE A CURB	7000-T1-M1	R-3070	FLAT GRATE WITH VERT. OPEN BACK	0.71
CB	TYPE B CURB	7065-T1-M1	R-3034-B	FLAT GRATE WITH ROLL BACK	0.87
CB	PAVEMENT/ SHOULDER	1020-M1	R-2060-D	FLAT GRATE	0.86
CB	OPEN AREA	1020-O1	R-2560-D	BEEHIVE GRATE 4" HIGH	0.63
CB	GUTTER	5100	R-3238	CONCAVE INLET	0.96



NOTE:
 TYPE A-1 EQUAL TO TYPE "A" EXCLUDING 24" SUMP BUT ADD ON BOTTOM CONC. FILLET.
 TYPE B-1 EQUAL TO TYPE "B" EXCLUDING 24" SUMP BUT ADD ON BOTTOM CONC. FILLET.

CATCH BASIN

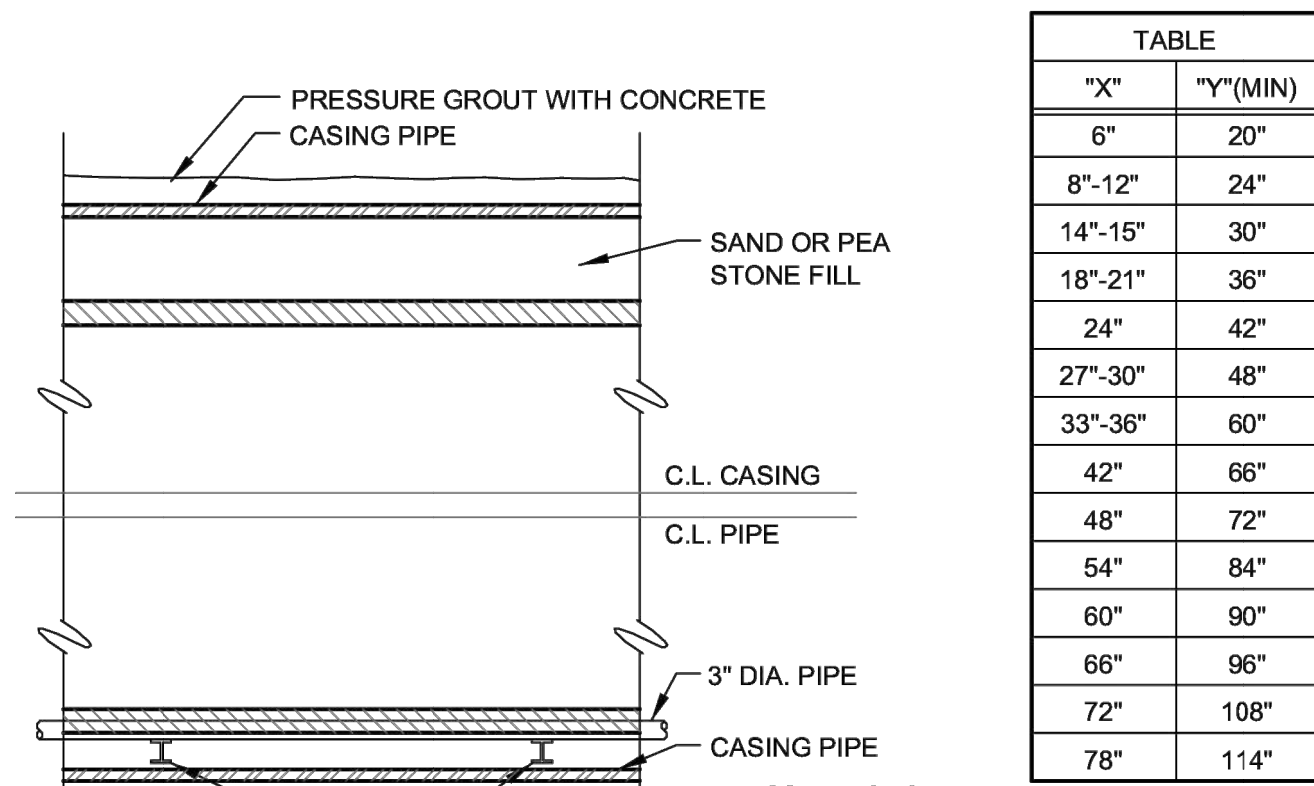
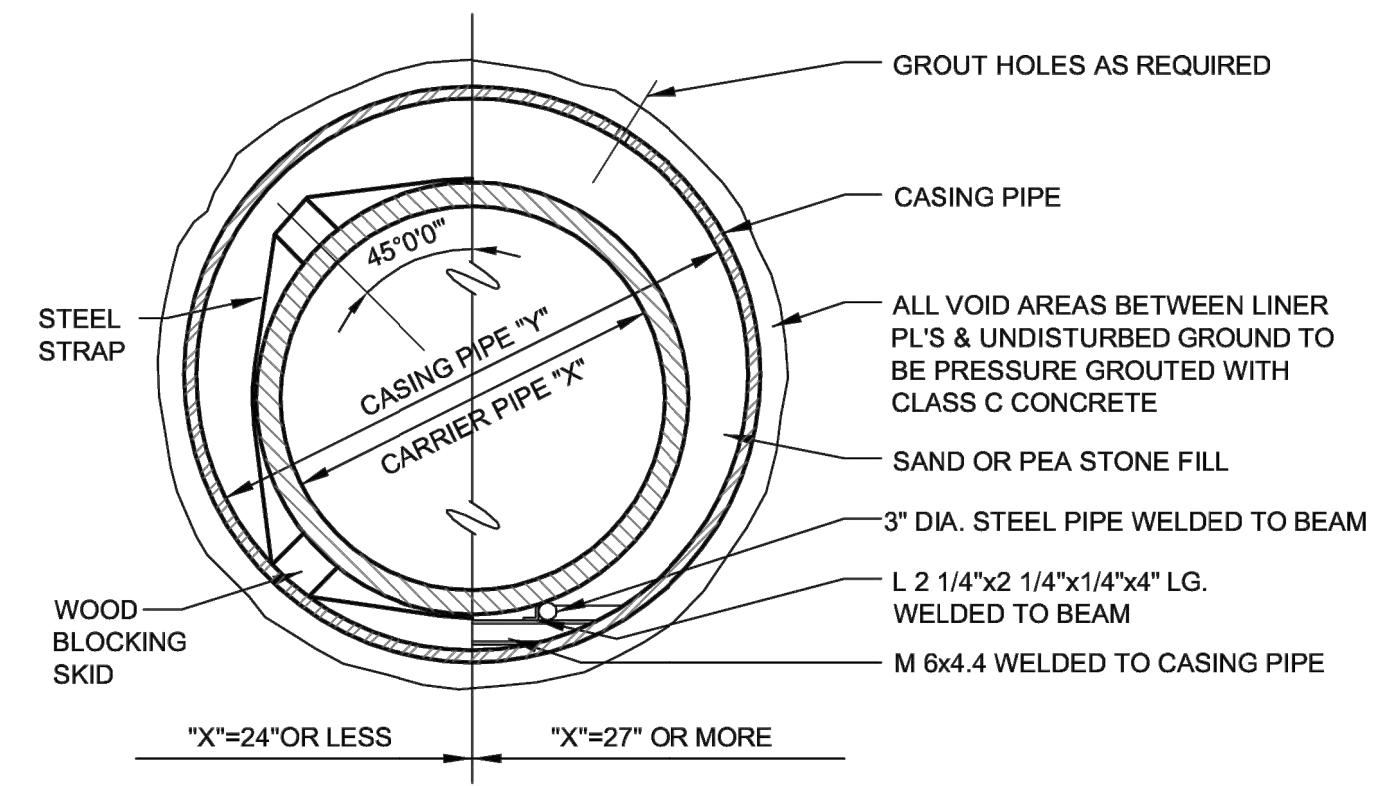


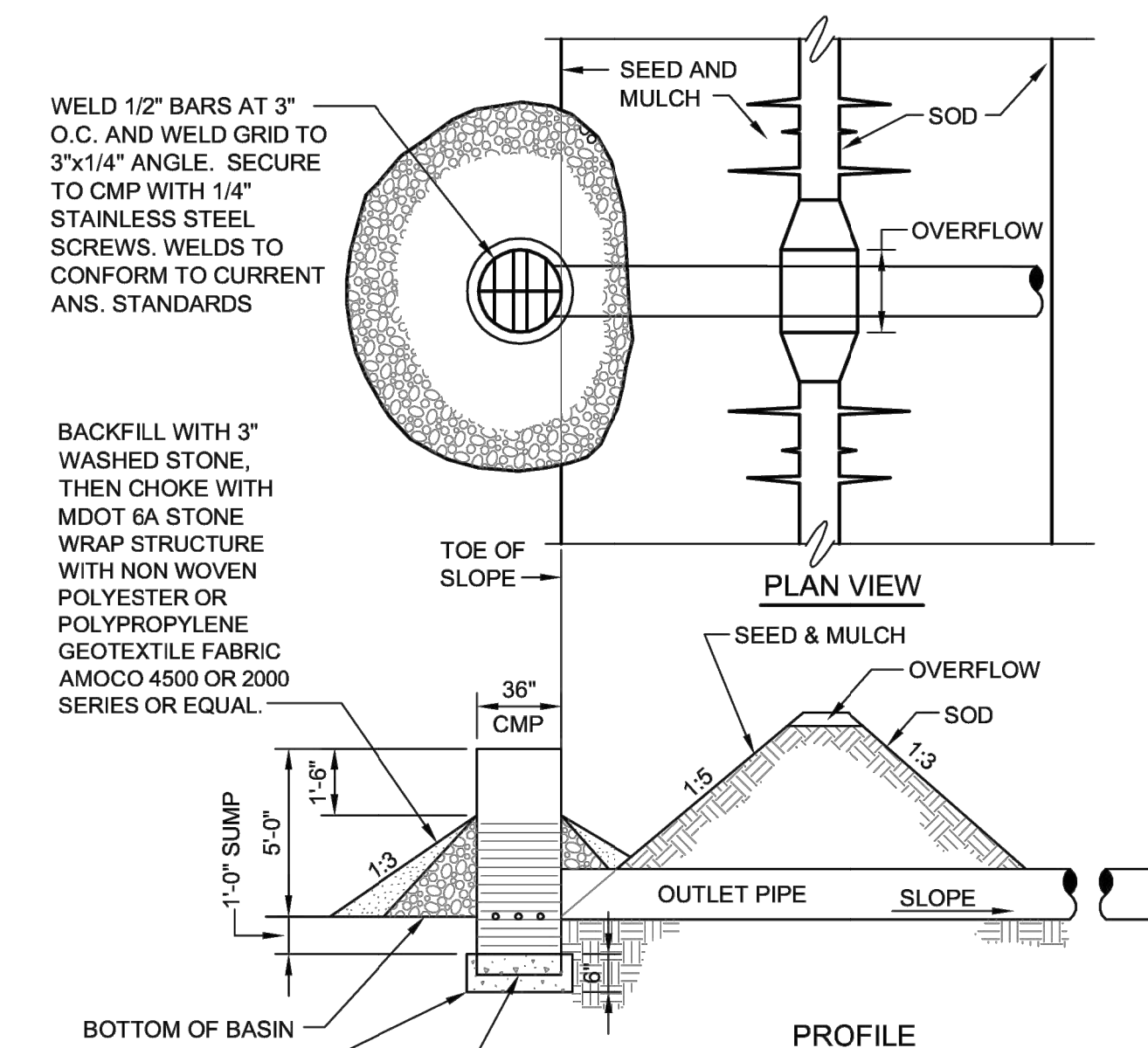
TABLE	
"X"	"Y"(MIN)
6"	20"
8"-12"	24"
14"-18"	30"
18"-21"	36"
24"	42"
27"-30"	48"
33"-36"	60"
42"	66"
48"	72"
54"	84"
60"	90"
66"	96"
72"	108"
78"	114"

CASING PIPE AT HIGHWAY AND RAILROAD CROSSING

NO SCALE

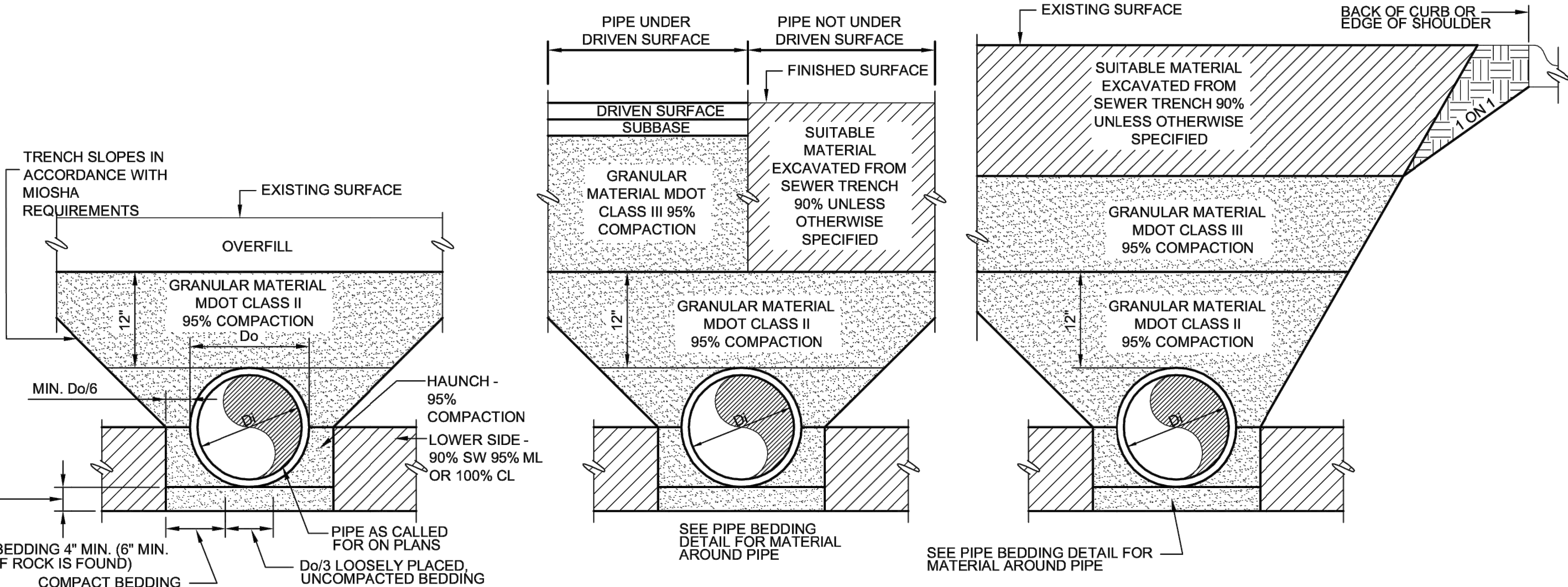


- NOTES:**
- SEE SPECIFICATIONS FOR ALTERNATE CONSTRUCTION METHODS.
 - BORING SHALL BE AT 90 DEGREES TO ALL CROSSINGS UNLESS OTHERWISE APPROVED. THE BORING OF THE HOLE AND INSTALLATION OF THE CASING PIPE SHALL BE SIMULTANEOUS. BORE HOLE DIAMETER SHALL ESSENTIALLY BE THE SAME AS THE OUTSIDE DIAMETER OF THE CASING PIPE TO BE INSTALLED.
 - BORING TO EXTEND A MINIMUM OF 10' OUTSIDE THE EDGE OF PAVEMENT.
 - CASING SPACERS SHALL BE RESTRAINED-TYPE BOLTED SPACERS AND SHALL HAVE A MAXIMUM SPACING AS NOTED BELOW OR AS RECOMMENDED BY MANUFACTURER, WHICHEVER IS CLOSER. PIPE CASING SPACERS SHALL BE EQUIVALENT TO RANGER PLASTIC CASING SPACERS AS MANUFACTURED BY PIPELINE SEAL AND INSULATOR, INC. OR APPROVED EQUAL.
 - SPACER SHALL BE PLACED MAXIMUM 1' ON EACH SIDE OF CARRIER PIPE JOINT.
 - TYPICAL 6" MAXIMUM SPACING BETWEEN SPACERS.
 - MINIMUM ONE CASING SPACER WITHIN 1' OF EACH END OF CASING.
 - INSTALL STEEL ASSEMBLY FOR CARRIER PIPE SUPPORT AS SHOWN IN DRAWING AND DETAILED IN SPECIFICATIONS. SKIDS ARE REQUIRED TO EXTEND TO FULL LENGTH OF THE CASING.
 - CASING END SEALS SHALL BE SYNTHETIC NEOPRENE RUBBER PULL-ON TYPE END SEALS WITH STAINLESS STEEL BANDS, AS MANUFACTURED BY PIPELINE SEAL AND INSULATOR, INC. OR APPROVED EQUAL.



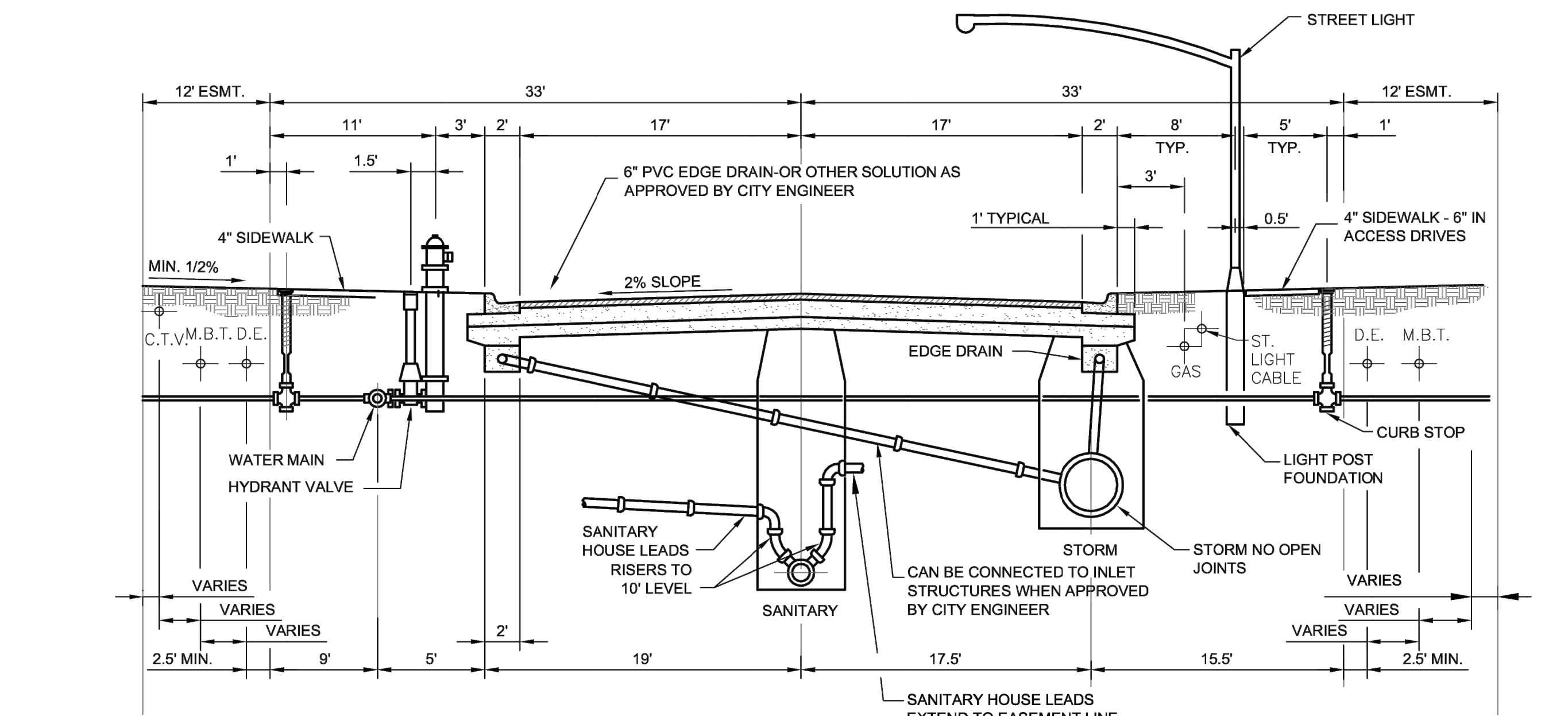
NOTE:
 BACKFILL WITH 3" WASHED STONE, THEN CHOKE WITH MDOT 6A STONE WRAP STRUCTURE WITH NON WOVEN POLYESTER OR POLYPROPYLENE GEOTEXTILE FABRIC AMOCO 4500 OR 2000 SERIES OR EQUAL.

OUTLET CONTROL STRUCTURE

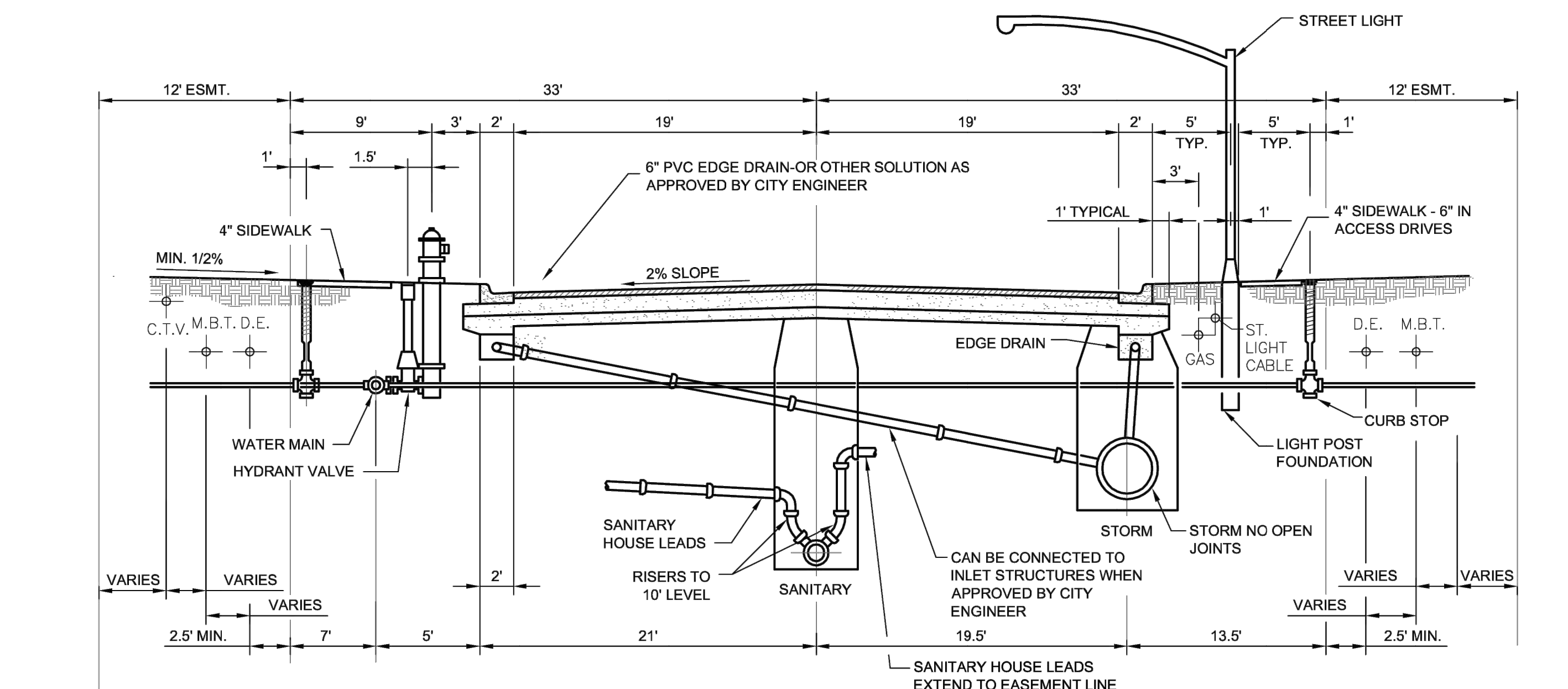


TRENCH EXCAVATION & PIPE BEDDING

- NOTES:**
- COMPACTION PRESENTED AS MINIMUM STANDARD PROCTOR VALUES.
 - MATERIALS AROUND THERMOPLASTIC PIPE WITH DIAMETER < 6 INCHES SHALL PASS 0.5 INCH SIEVE, MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SIEVE.
 - MATERIALS AROUND HDPE PIPE TO BE MDOT 6A OR 21A.
 - DRIVEN SURFACE IS DRIVEWAY, PARKING AREA, ROAD BED OR SHOULDER.
 - UTILITY TRENCHES LOCATED WITHIN A MDOT ROW SHALL CONFORM TO MDOT STANDARD DETAIL R-83.



TYPICAL RESIDENTIAL STREET



TYPICAL COLLECTOR OR INDUSTRIAL STREET

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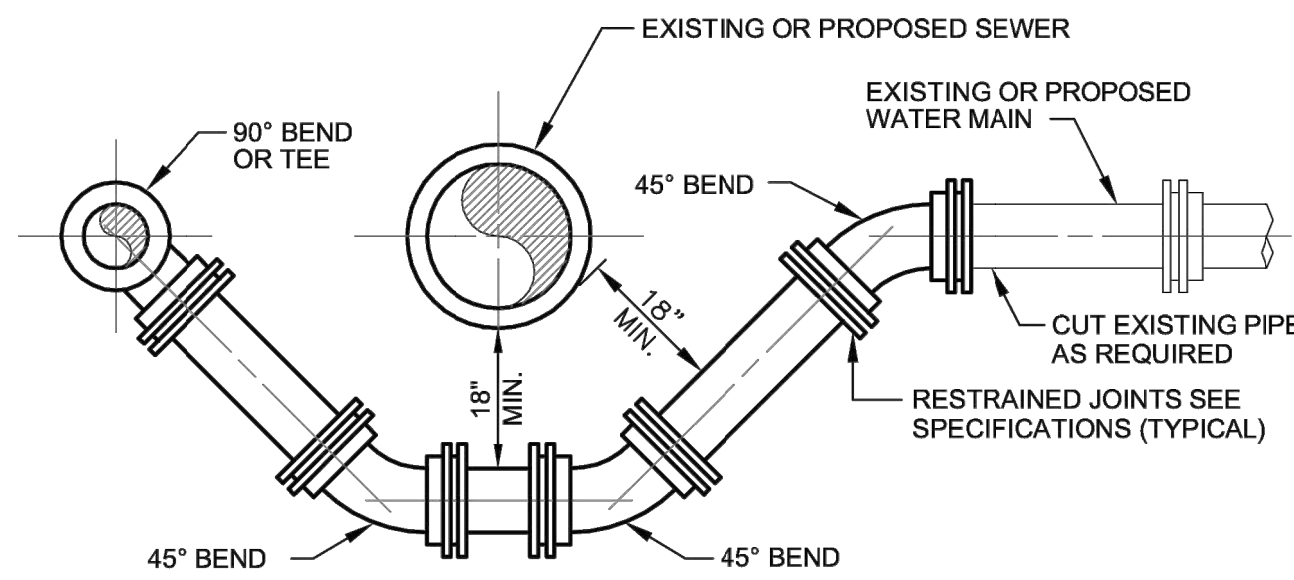
CITY OF BRIGHTON
 STORM SEWER & STREET DETAILS
 STANDARD DETAILS

Scale: PARKING
 Issued Date: MAY - 2014

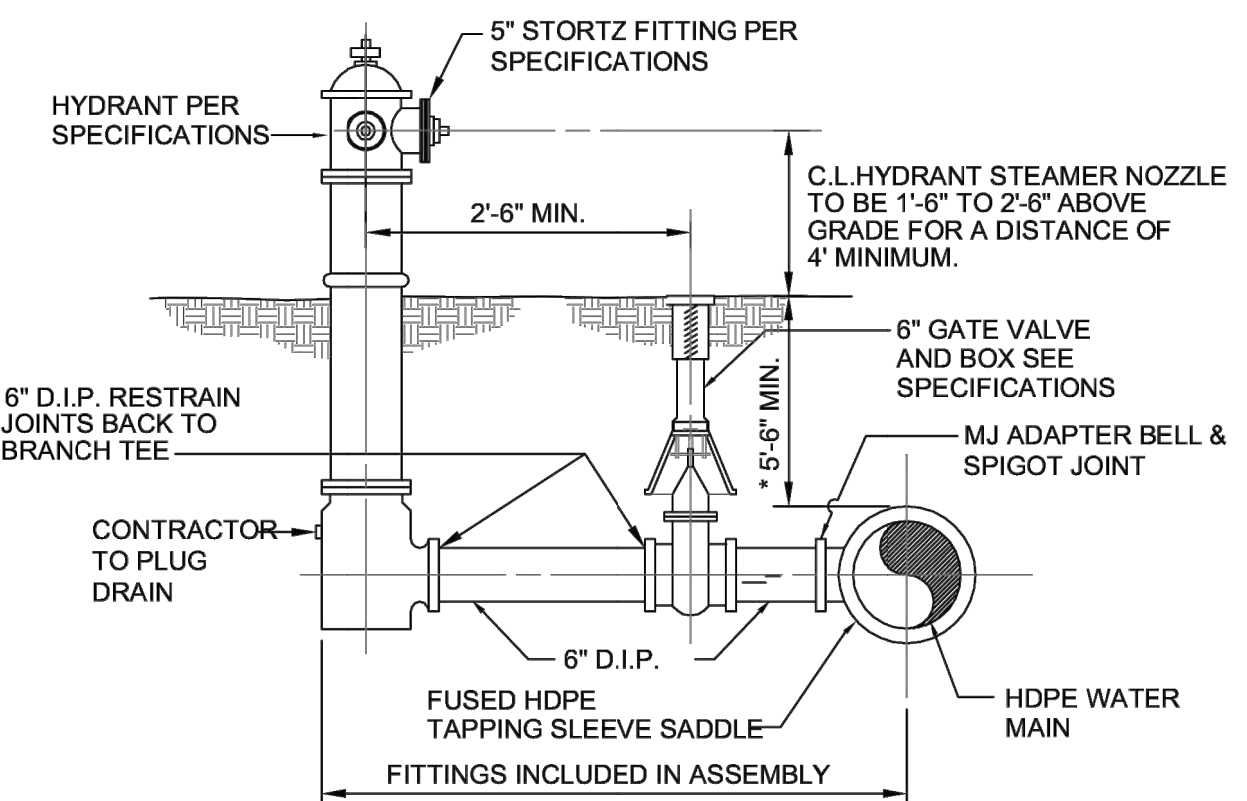
N/A

PIPE RESTRAINT SCHEDULE							
GROUND BURIED PRESSURE PIPE - POLYETHYLENE ENCASED DUCTILE IRON PIPE							
PIPE DIAMETER	TEES, 90° BENDS	45° BENDS	22-1/2° BENDS	11-1/4° BENDS	DEAD ENDS	REDUCERS (ONE SIZE REDUCTION)*	REDUCERS (TWO SIZE REDUCTION)*
4	13	5	3	1	40	--	--
6	19	8	4	2	58	31	--
8	24	10	5	2	75	30	70
12	34	14	7	3	107	57	116
16	43	18	9	4	139	59	137
20	52	22	10	5	169	59	134
24	61	25	12	6	199	60	132
30	73	30	15	7	242	85	168
36	84	35	17	8	281	84	168

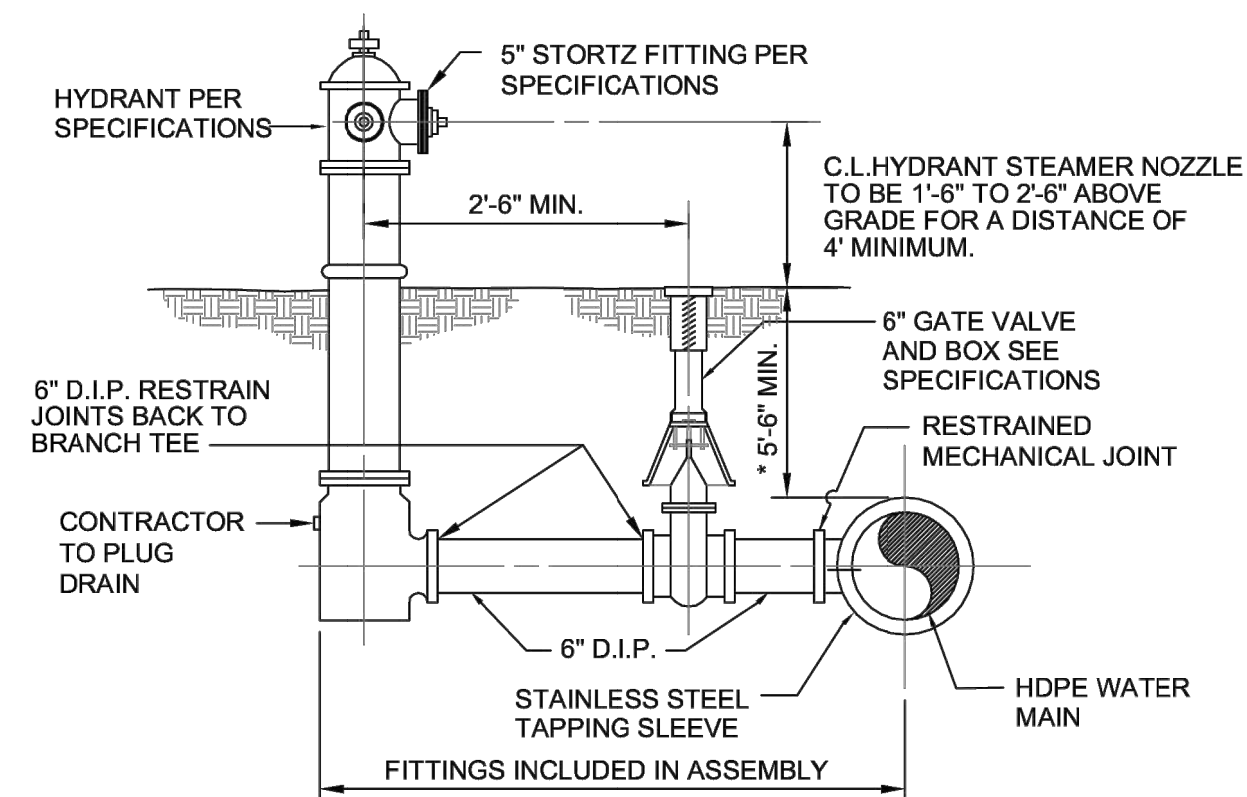
- LENGTHS OF PIPE RESTRAINT ARE GIVEN IN FEET.
 - IF REQUIRED PIPE DIAMETER IS NOT LISTED IN THIS TABLE, THE NEXT LARGEST PIPE DIAMETER SHALL BE USED.
 - THIS TABLE IS BASED ON A TEST PRESSURE OF 180 PSI (OPERATING PRESSURE PLUS WATER HAMMER. FOR OTHER TEST PRESSURES, ALL VALUES TO BE INCREASED OR DECREASED PROPORTIONALLY.
 - THE VALUES PROVIDED OF RESTRAINT LENGTH ARE IN EACH DIRECTION FROM THE POINT OF DEFLECTION OR TERMINATION EXCEPT FOR TEES, AT WHICH ONLY THE BRANCH IN THE DIRECTION OF THE STEM.
 - IF TIE RODS ARE USED, USE FOUR RODS MINIMUM AND ADD 1/8-INCH TO BAR DIAMETER AS CORROSION ALLOWANCE.
- * SIZE REDUCTION IS BASED UPON THE PIPE DIAMETER SHOWN IN THIS TABLE.
- BASED UPON: INTERNAL PRESSURE: 180
PIPE DEPTH: 5
BEDDING CLASS: TYPE 4
SOIL TYPE: GOOD SAND
SAFETY FACTOR: 2



WATER MAIN UTILITY OFFSET



WITH FUSED HDPE SADDLE

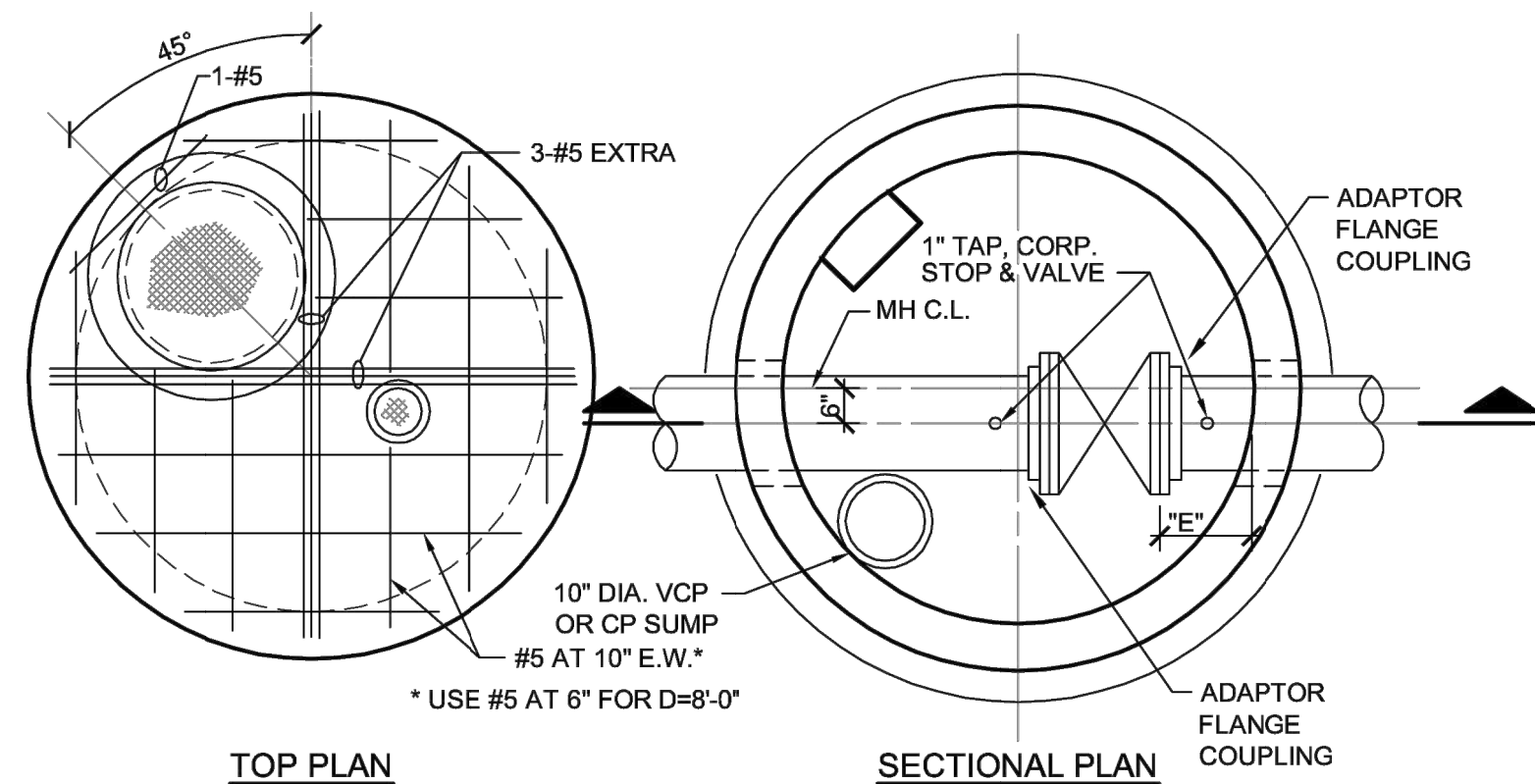


WITH STAINLESS STEEL SADDLE

NOTE: USE OF HDPE FOR WATER MAIN APPLICATION REQUIRES SPECIAL APPROVAL FROM THE CITY OF BRIGHTON.

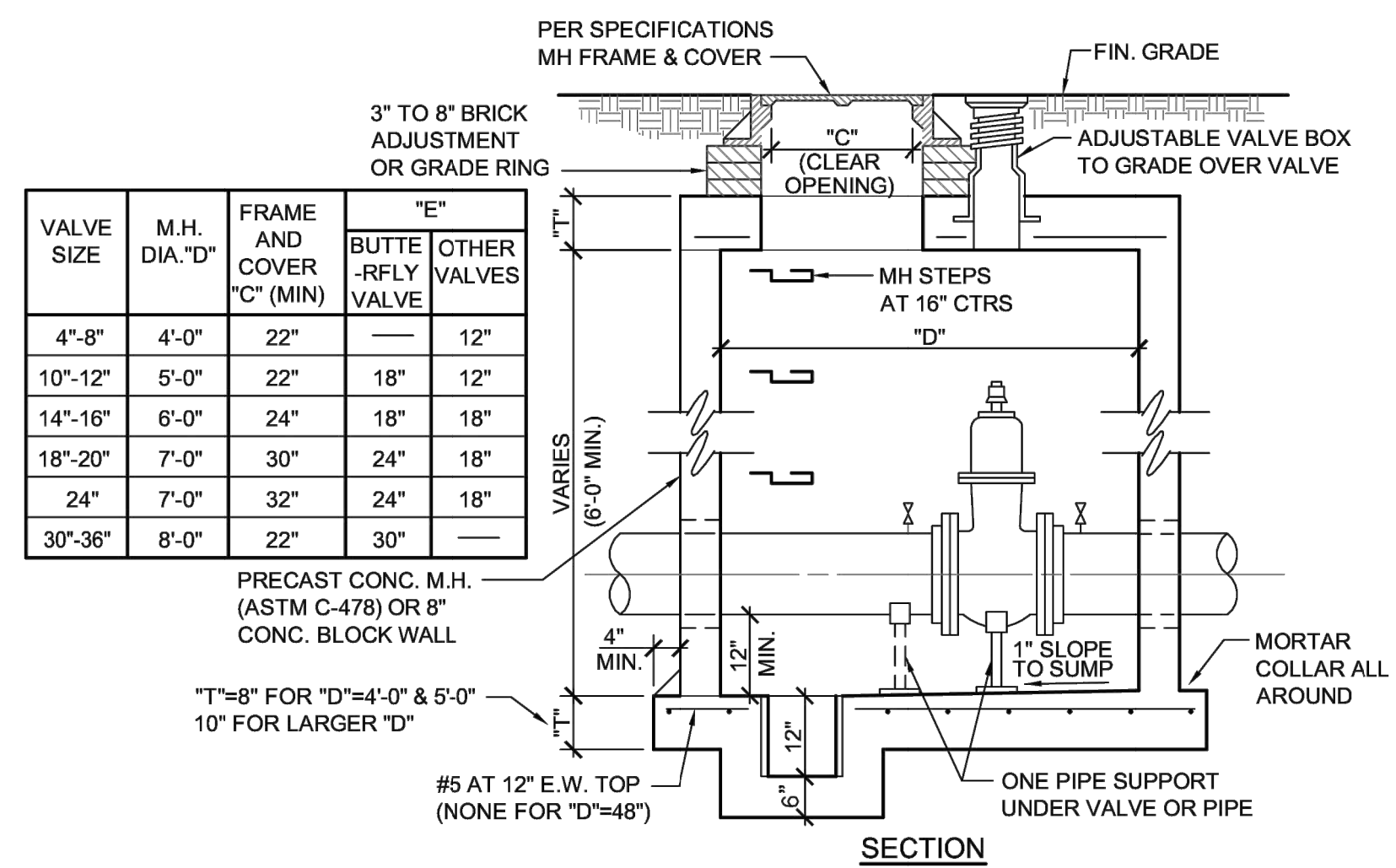
FIRE HYDRANT ASSEMBLY CONNECTION TO HDPE WATER MAIN

NO SCALE



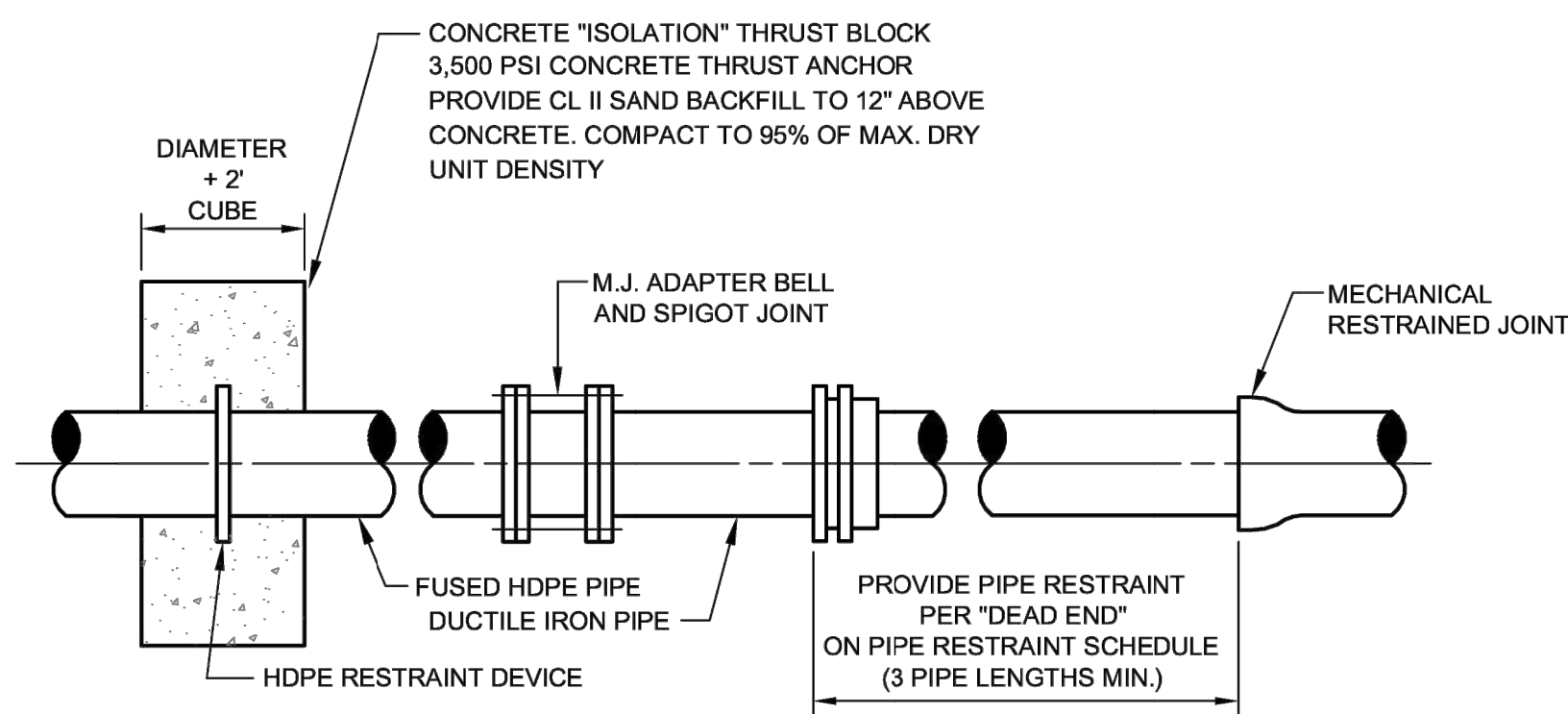
TOP PLAN

SECTIONAL PLAN



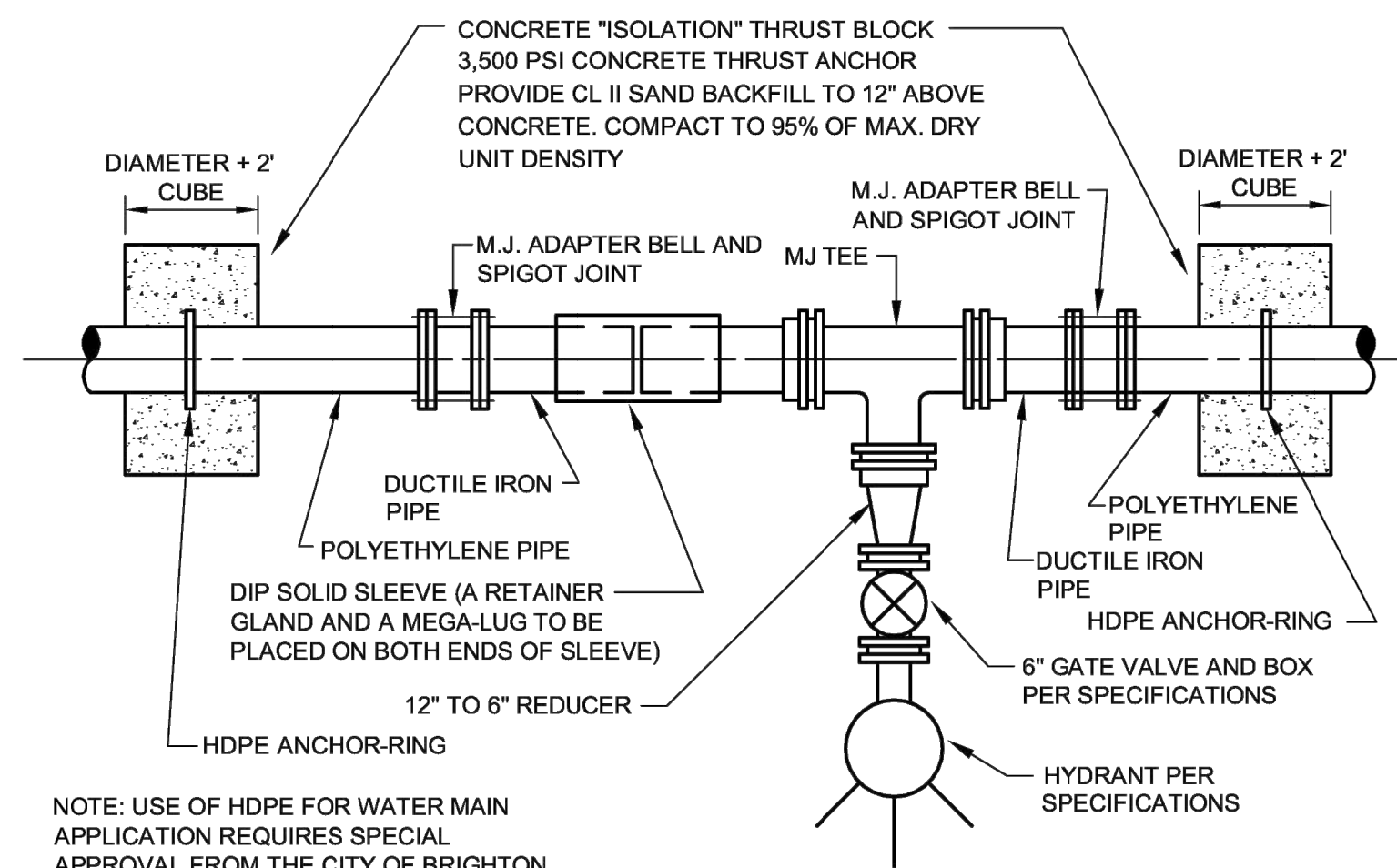
VALVE MANHOLE

NO SCALE



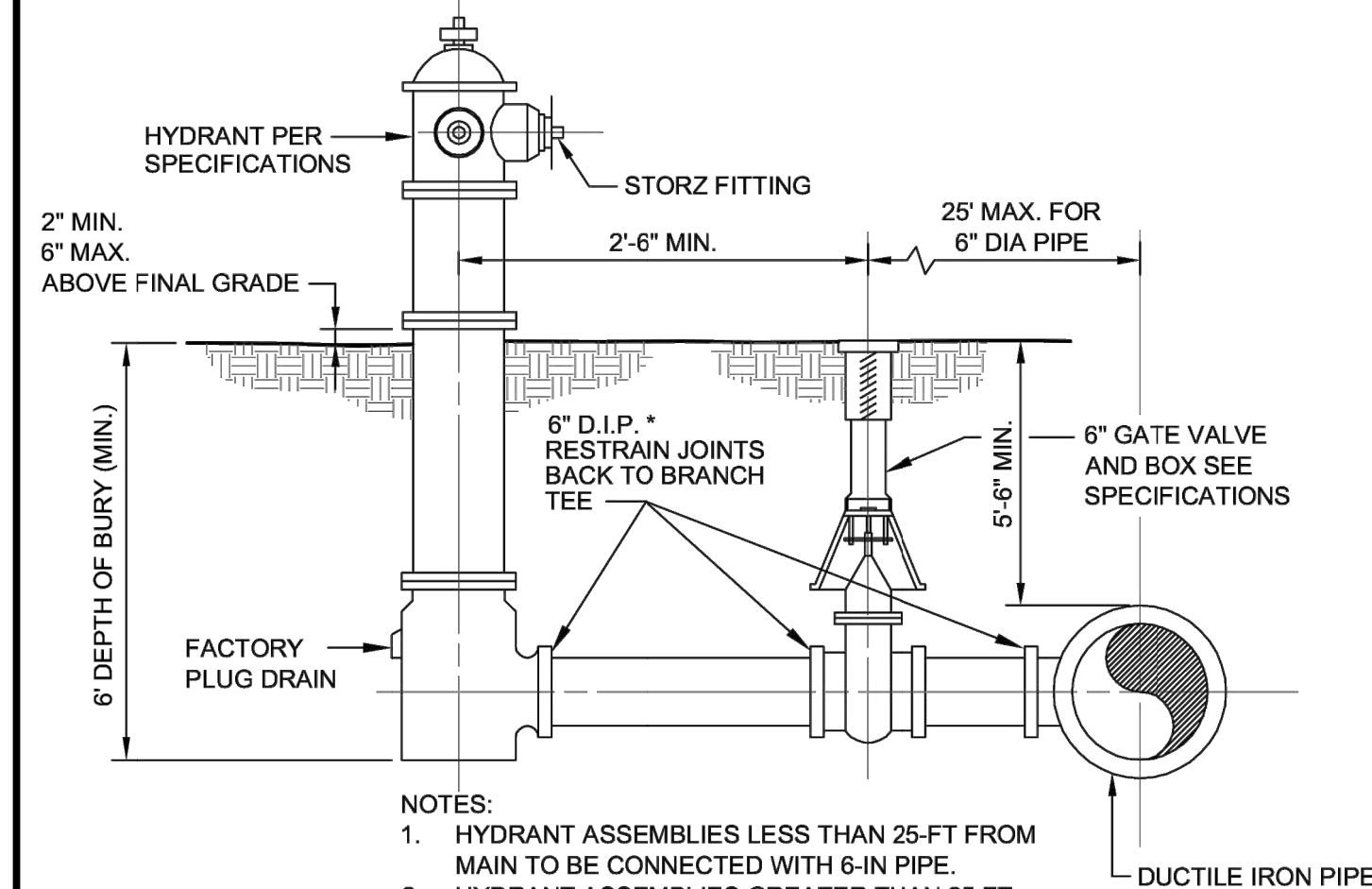
HDPE TO DIP PIPE CONNECTION DETAIL

NO SCALE



FIRE HYDRANT ASSEMBLY DIP TEE CONNECTION TO HDPE WATER MAIN

NO SCALE



FIRE HYDRANT ASSEMBLY

NO SCALE

- NOTES:
- HYDRANT ASSEMBLIES LESS THAN 25-FT FROM MAIN TO BE CONNECTED WITH 6-IN PIPE.
 - HYDRANT ASSEMBLIES GREATER THAN 25-FT FROM MAIN SHALL BE CONNECTED WITH AN 8-IN PIPE. THIS 8-IN PIPE MAY BE REDUCED TO 6-IN PIPE WITHIN 25-FT FROM THE HYDRANT.

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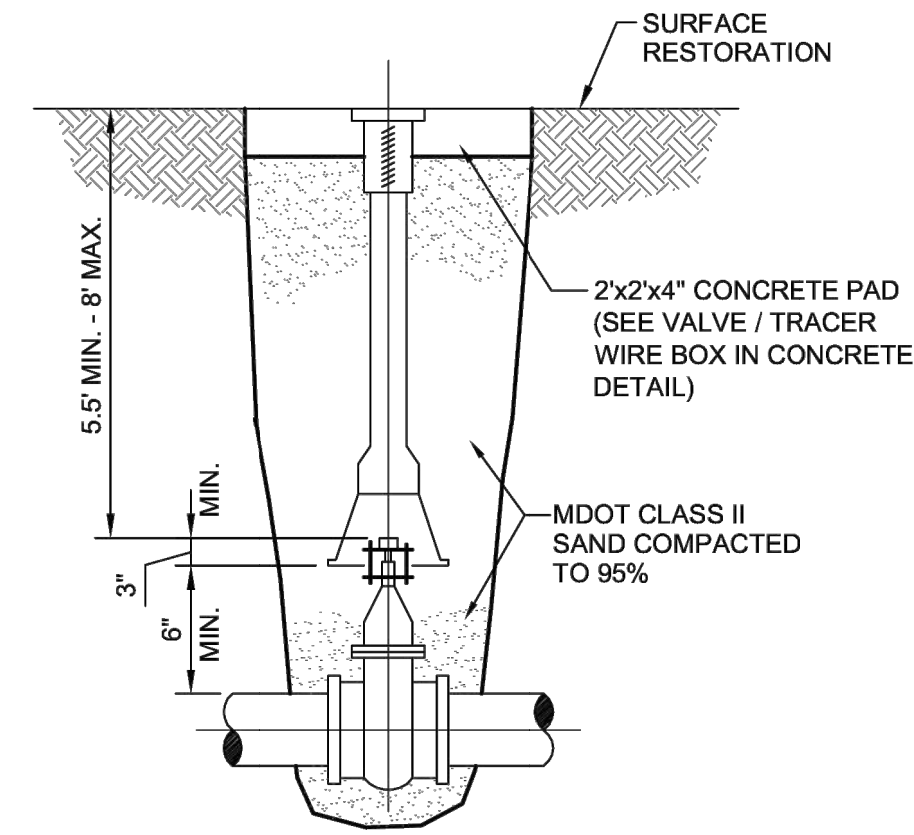


CITY OF BRIGHTON

WATER MAIN - SHEET 1 OF 2
STANDARD DETAILS

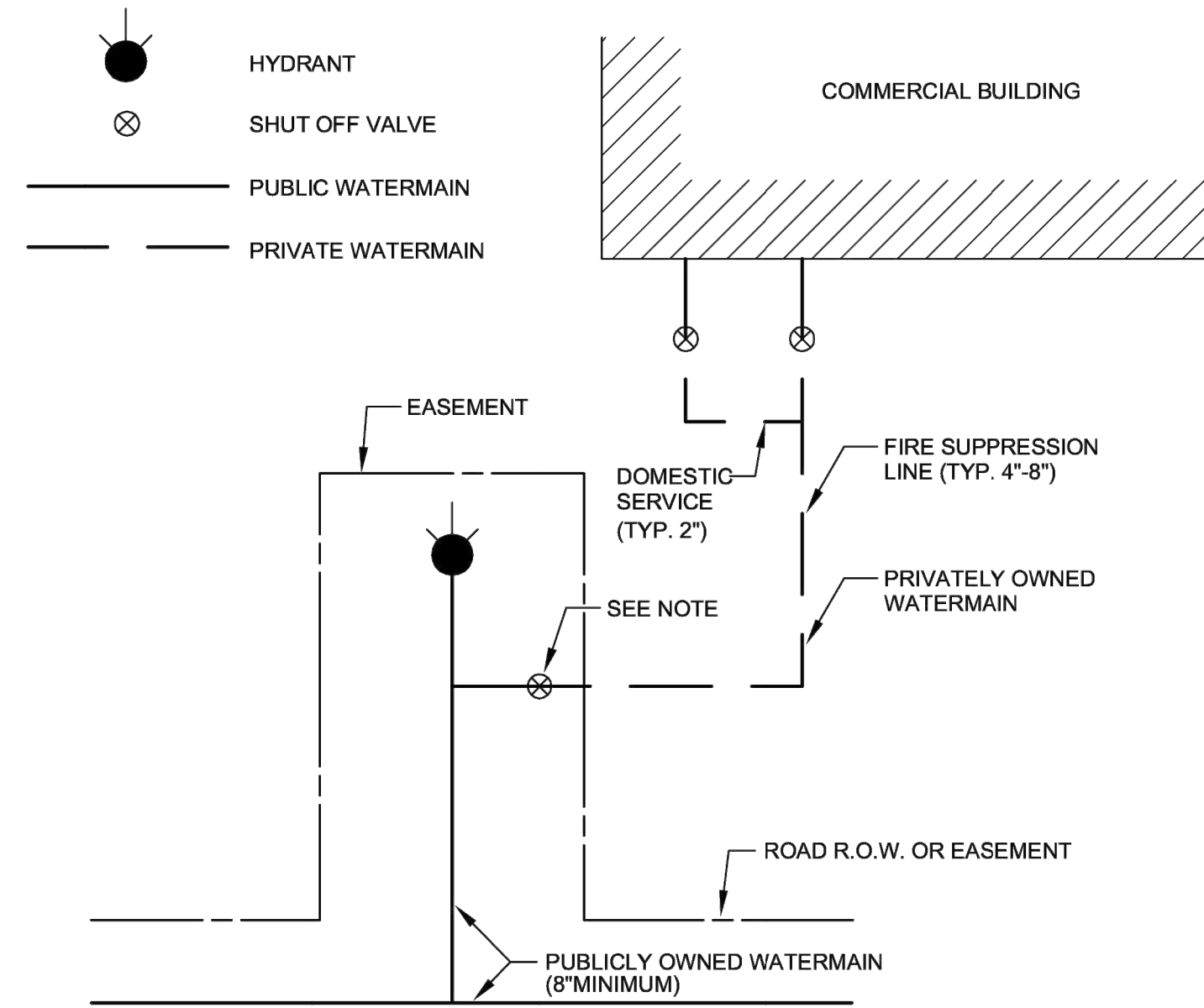
Scale: NONE
Issued Date: MAY - 2014

N/A



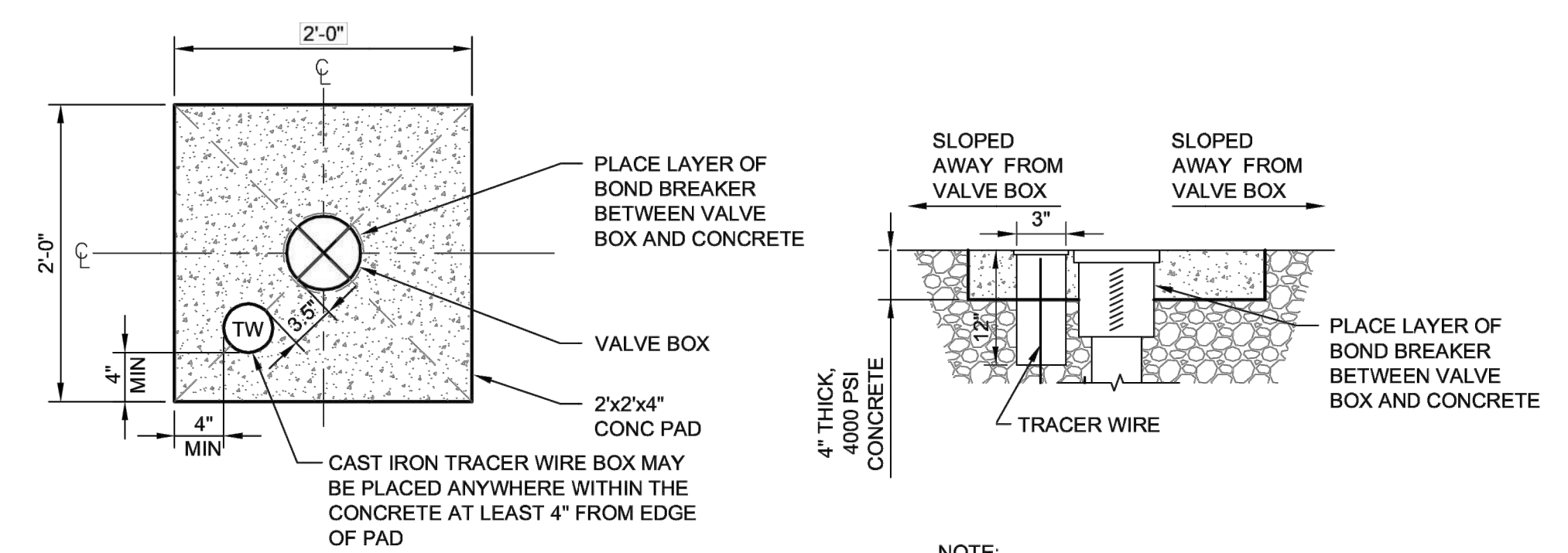
- NOTES:
1. VALVE BOX SHALL NOT REST ON VALVE OR MAIN LINE PIPE.
 2. A VALVE STEM EXTENSION WITH CENTERING RING IS REQUIRED FOR VALVES BURIED DEEPER THAN 6'.

GATE VALVE AND BOX



NOTE: PUBLICLY OWNED SHUT OFF VALVE TO BE LOCATED IN EASEMENT.

COMMERCIAL BUILDING WATER SERVICE LAYOUT



NOTE: ALL BOXES & ADJOINING TW BOXES SHALL BE ENCASED IN A CONC. PAD UNLESS OTHERWISE DETERMINED BY THE CITY.

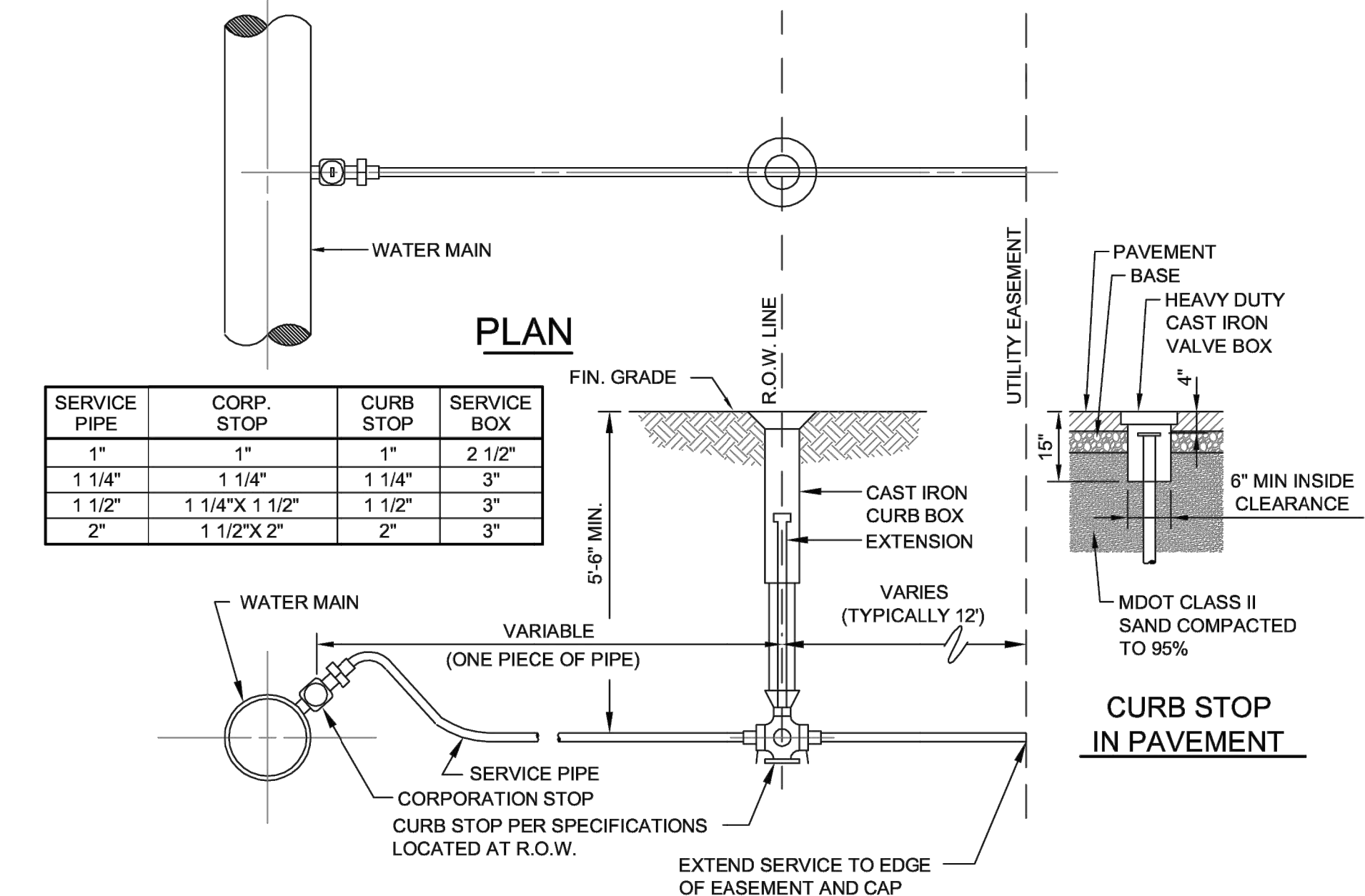
PLAN

GATE VALVE/TRACER WIRE BOX IN CONCRETE DETAIL

NO SCALE

SECTION

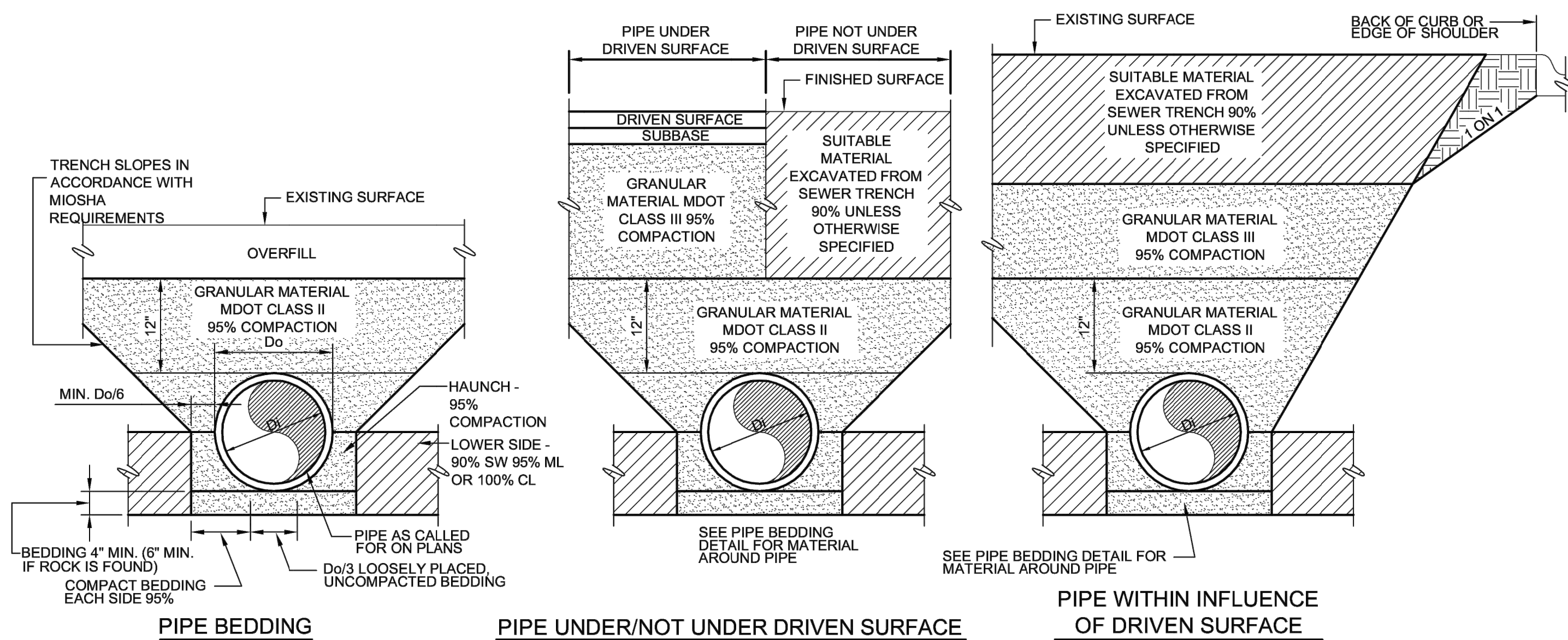
- NOTE:
1. TRACER WIRE BOXES LOCATED WITHOUT A VALVE BOX ONLY REQUIRE AN 18" X 18" CONCRETE PAD.
 2. TRACER WIRE BOX SHALL HAVE A LOCKING LID W/STANDARD AWWA PENTAGON KEY.



SERVICE PIPE	CORB STOP	CURB STOP	SERVICE BOX
1"	1"	1"	2 1/2"
1 1/4"	1 1/4"	1 1/4"	3"
1 1/2"	1 1/4" X 1 1/2"	1 1/2"	3"
2"	1 1/2" X 2"	2"	3"

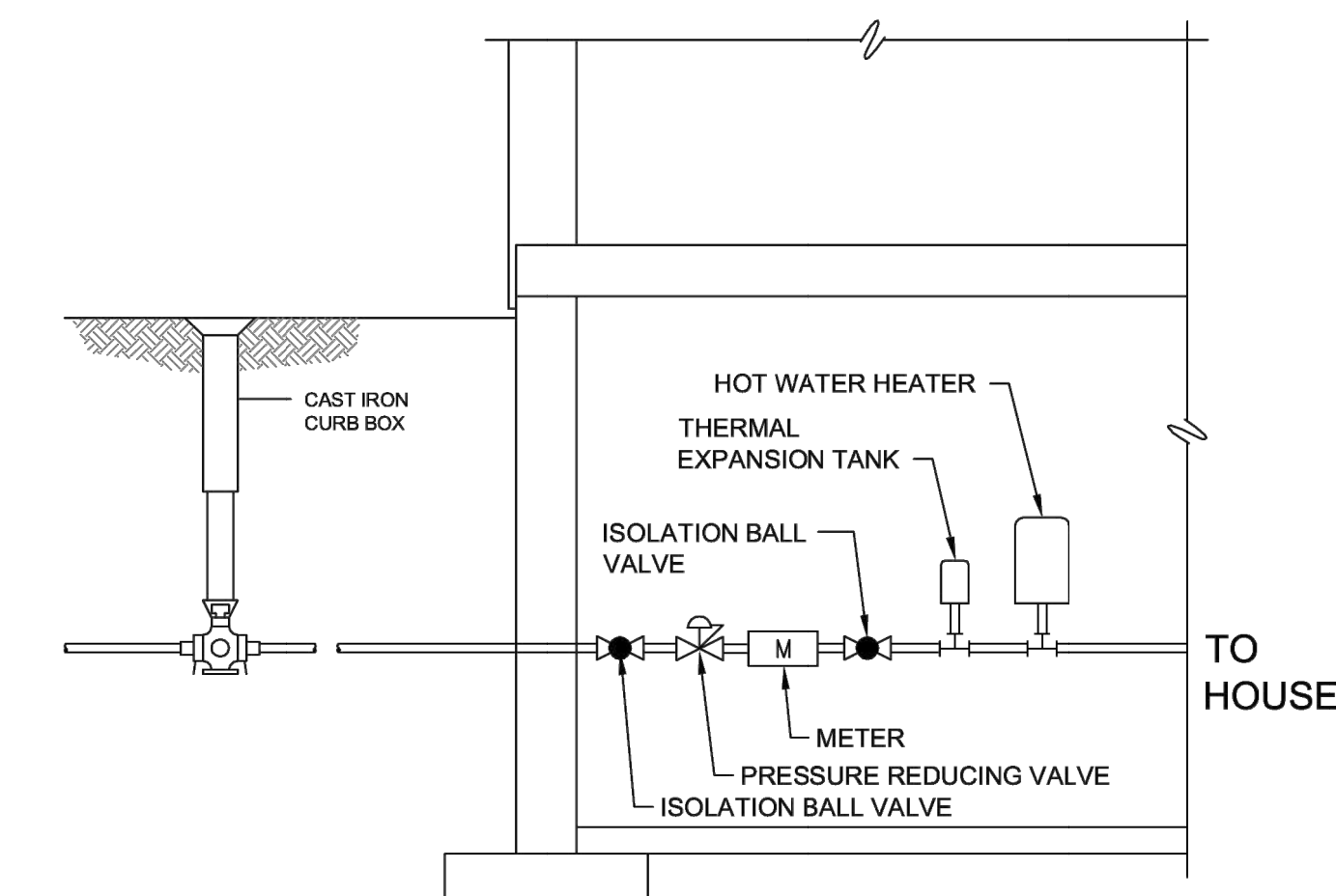
SECTION

WATER SERVICE LATERAL



- NOTES:
1. COMPACTION PRESENTED AS MINIMUM STANDARD PROCTOR VALUES.
 2. MATERIALS AROUND THERMOPLASTIC PIPE WITH DIAMETER < 6 INCHES SHALL PASS 0.5 INCH SIEVE. MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SIEVE.
 3. MATERIALS AROUND HDPE PIPE TO BE MDOT 6A OR 21A.
 4. DRIVEN SURFACE IS DRIVEWAY, PARKING AREA, ROAD BED OR SHOULDER.
 5. UTILITY TRENCHES LOCATED WITHIN A MDOT ROW SHALL CONFORM TO MDOT STANDARD DETAIL R-83.

TRENCH EXCAVATION & PIPE BEDDING



PRIVATE RESIDENCE PRESSURE REDUCING VALVE (PRV)

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CITY OF BRIGHTON

WATER MAIN - SHEET 2 OF 2
STANDARD DETAILS

Scale: NONE
Issued Date: MAY - 2014

N/A



City of Brighton

REPORT FROM THE CITY MANAGER TO CITY COUNCIL

September 23, 2025

SUBJECT: CONSIDER APPROVING THE PURCHASE OF THREE NEW 2026 TRUCKS FROM LUNGHAMER FORD FOR THE PUBLIC WORKS AND WASTEWATER DIVISIONS FOR A TOTAL AMOUNT NOT TO EXCEED \$161,044 AND THE RELATED BUILDOUTS BY TRUCK AND TRAILER FOR AN AMOUNT NOT TO EXCEED \$81,944

BACKGROUND

The Department of Public Services has established a pick-up truck replacement program for all three of its divisions. This fiscal year, the schedule calls for the replacement of three vehicles: a 2018 crew cab pickup and a 2018 F-550 pickup truck in the Public Works Division, and a 2017 ¾ ton 4-wheel drive pickup in the Wastewater Division.

ADMINISTRATIVE SUMMARY

DPS Staff contacted Lunghamer Ford of Owosso, who participates in the state bid pricing. We purchased from them last year and were pleased with their customer service. Lunghamer provided pricing for the chassis for all three of the trucks. The pricing in the table below is from the competitively bid 2026 Vehicle State of Michigan Contract #MA240000001208 and Macomb County Contract Bid #21-18. We were able to obtain competitive pricing on the buildouts by Truck and Trailer using the City of Rochester Hills RFP-RH-20-023 Contract. The pricing under these two contracts are significantly lower than purchasing directly through a dealer.

Vehicle	Chassis Lunghamer	Build Out Truck and Trailer	Total	Under Budget
2026 Ford F-550 (DPW One Ton Pickup)	\$60,455	\$51,081	\$111,536	\$43,464
2026 Ford F-250 (DPW Pickup)	\$50,547	\$14,740	\$65,287	\$4,713
2026 Ford F250 (WW Pickup)	\$50,042	\$16,123	\$66,165	\$8,835
Total	\$161,044	\$81,944	\$242,988	\$57,012

If approved, the vehicles that we are replacing will be sold, and proceeds will go into the respective General Fund or Utilities Fund from which they were originally purchased. We anticipate the sale price to be approximately \$10,000 each.

BUDGET INFORMATION

In the 2025/2026 budget City Council approved \$155,000 for a DPW one-ton pickup truck, \$70,000 for the DPW Pickup Truck, and \$75,000 for a wastewater pickup truck. There are sufficient funds budgeted for all three pickup trucks.

RECOMMENDATION

Approve the purchase of a 2026 Ford F-550 and two 2026 Ford F-250 pickup trucks from Lunghamer Ford for the Public Works and Wastewater Divisions for a total amount not to exceed \$161,044. Additionally, approve the buildout for all three pickup trucks to be completed by Truck and Trailer for an amount not to exceed \$81,944.

Prepared by: Patty Thomas, Asst. to the DPS Director

Reviewed by: Marcel Goch, DPS Director
Corey Brooks, Deputy DPS Director
Brad Shrader, DPW Superintendent

Elizabeth Gaines, Finance Director

- Within Budget
- Budget Amendment Necessary and In Proper Form
- Other _____

Reviewed &
Approved by: Gretchen Gomolka, City Manager