



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: Stephen Tait, 412 Fairfax St, Birmingham, AL
If applicant is not the owner, a letter of Authorization from Property Owner is needed. 48009

OWNER'S NAME & ADDRESS: same

SITE ADDRESS: 76936 W. Grand River PARCEL #(s): 4711-13-100-096

APPLICANT PHONE: (248) 259-4263 OWNER PHONE: ()

OWNER EMAIL: stevetait@me.com

LOCATION AND BRIEF DESCRIPTION OF SITE: VACANT PARCEL LOCATED
ON GRAND RIVER AVE APPROXIMATELY 150-FT NORTH
OF EULER ROAD. IT IS PARTIALLY WOODED WITH
SEVERAL SCRUB TREES AND MATERIAL PILES.

BRIEF STATEMENT OF PROPOSED USE: NEW CONSTRUCTION OF AN
APPROXIMATELY 7,800 SQ FT EYE CENTER/PROFESSIONAL
OFFICE INCLUDING PARKING AND STORMWATER
CONTROLS.

THE FOLLOWING BUILDINGS ARE PROPOSED: SINGLE APPROXIMATELY
7,800 SQ FT BUILDING WITH COVERED DROP-OFF
AREA.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: Stephen Tait 

ADDRESS: _____

Contact Information - Review Letters and Correspondence shall be forwarded to the following:

1.) Stephen Tait of Clark / Tait Eye at Stevetait
Name Business Affiliation center E-mail Address @me.com

FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE: [Signature] DATE: 2/16/23
PRINT NAME: Stephen Tait PHONE: 248-259-4262
ADDRESS: 412 Fairfax St, Birmingham, MI
48009



April 4, 2023

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Amy Ruthig, Planning Director
Subject:	Tait Eye Center – Site Plan Review #2
Location:	6936 Grand River Avenue – north side of Grand River, east of Euler Road
Zoning:	OSD Office Service District

Dear Commissioners:

At the Township’s request, we have reviewed the revised submittal from Tait Eye Center for development of a new medical office building (site plan dated 3/22/23).

A. Summary

1. The Commission has discretion to reduce the spacing between commercial driveways based on pre-existing conditions (which has been approved by the Road Commission).
2. The Commission should consider any comments provided by the Township Engineer and/or the Brighton Area Fire Authority with respect to vehicular circulation.
3. The Commission may modify the landscaping requirements for the front yard greenbelt due to the presence of utility easements.
4. The colored CMU on the exterior of the waste receptacle enclosure must match the color of the principal building.
5. The plans identify more wall signs than allowed by Ordinance.
6. For the applicant’s reference, electronic message signs are subject to the provisions of Section 16.07.04.
7. The applicant must confirm that a monument sign is allowed within the utility easement (if one is desired).
8. A sign permit must be obtained prior to installation of any signage (i.e., site plan approval does not constitute approval of the signage depicted in the submittal).

B. Proposal/Process

The applicant proposes to develop the vacant 1.37-acre site with a 7,865 square foot medical office building.

Table 7.02 allows medical offices with up to 15,000 square feet of gross floor area as a by right use in the OSD.

Procedurally, the Planning Commission is to review the site plan and Environmental Impact Assessment.

The Commission has final approval authority over the site plan, though the Assessment is subject to final approval by the Township Board.



Aerial view of site and surroundings (looking north)

C. Site Plan Review

1. Dimensional Requirements. As noted in the table below, the revised site plan complies with the dimensional requirements of the OSD:

	Min. Lot Req.		Minimum Yard Setbacks (feet)				Max. Lot Coverage (%)	Max. Height (feet)
	Area (acres)	Width (feet)	Front Yard	Side Yard	Rear Yard	Parking Lot		
OSD	1	100	35	20	40	20 front 10 side/rear	35% building 60% impervious	35
Proposal	1.37	155	42	20 (E) 41.5 (W)	258	N/A front 10 side (E) 10 side (W) 80 rear	12.7% building 55.7% impervious	25

2. Building Design and Materials. The revised submittal includes building renderings with material calculations.

Primary materials include brick, stone and metal panels with a wood grain. The building also contains a limited amount of EIFS as an accent material.

The material calculations demonstrate compliance with the provisions of Section 12.01.

3. Pedestrian Circulation. There is an existing 5-foot wide public sidewalk along the site’s Grand River frontage.

The project includes sidewalks along 3 sides of the building with connections to the parking lot and public sidewalk.

4. Vehicular Circulation. The proposal includes a full turning movement driveway with access to/from Grand River.

The new driveway meets the spacing requirements from Euler Road to the west and is generally aligned with the driveway across Grand River; however, it does not appear that the driveway spacing requirements are met from the existing commercial driveway immediately to the east.

The Commission has discretion to modify the driveway spacing requirements where pre-existing conditions preclude compliance. Furthermore, the revised submittal includes a note that the driveway location has been approved by the Road Commission.

The Commission should also consider any comments provided by the Township Engineer and/or the Brighton Area Fire Authority with respect to vehicular circulation.

5. Parking. As noted in the table below, the parking lot complies with the standards of Article 14:

	Requirements	Proposal	Comments
Parking Spaces Medical offices (1 space per 200 SF GFA)	40	40	In compliance
Barrier Free Spaces	2	8	In compliance
Dimensions Spaces (75 to 90-degree) Drive aisle width (two-way)	9' x 18' 24'	9' x 18' 26' (minimum)	In compliance In compliance
Construction	Looped striping Curbing on all sides	Looped striping Curbing	In compliance In compliance

6. Exterior Lighting. The revised lighting plan includes 3 light poles, 4 wall mounted fixtures, and 6 canopy fixtures.

The photometric plan complies with maximum intensities on-site and along property lines. Fixture mounting heights and fixture cut sheets also comply with the Ordinance standards of Section 12.03.

7. Landscaping. The revised landscape plan has been reviewed for compliance with the standards of Section 12.02, as follows:

Standard	Requirements	Proposal	Comments
Front yard greenbelt	20' width 4 canopy trees	40' width 1 ornamental tree 34 shrubs	Deficient by 5 canopy trees; however, the front yard contains a utility easement that restricts planting in this area
Parking lot	4 canopy trees 400 SF landscaped area	4 canopy trees 787 SF landscaped area	In compliance
Detention pond	7 canopy OR evergreen trees 66 shrubs	7 canopy trees 4 evergreen trees 67 shrubs	In compliance

The landscape plan includes several additional plantings along the perimeter of the building and property.

8. Waste Receptacle/Enclosure. As noted in the table below, the revised site plan complies with the waste receptacle/enclosure standards of Section 12.04:

	Requirements	Proposal	Comments
Location	Rear yard or non-required side yard	Rear yard	Requirement met
Access	Clear access w/ out damaging buildings/vehicles	Sufficient maneuvering area for refuse removal vehicles	Requirement met
Base design	9' x 15' concrete pad	12' x 18' concrete pad	Requirement met
Enclosure	3-sided enclosure w/ wood gate Masonry walls 6' height	3 sides w/ wooden gate Colored CMU 6'-8" height	Requirements met (so long as colored CMU matches the principal building)

9. Signage. The building renderings identify 4 separate wall signs, including 1 electronic message sign. Per Table 16.1, the building is only allowed 1 wall sign.

If the applicant wishes to incorporate electronic messaging into their permitted signage, it will be subject to the provisions of Section 16.07.04.

The site plan appears to depict an area for a monument sign southwest of the building; however, no details are provided.

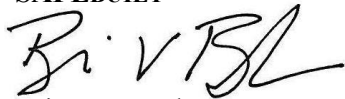
This location is also within the utility easement previously referenced. The applicant must confirm that a sign is permitted within said easement.

10. Impact Assessment. The submittal includes the required Impact Assessment (dated February 22, 2023).

In summary, the Assessment notes that the proposed project is not expected to have an adverse impact upon natural features, stormwater, surrounding land uses, public services/utilities, or traffic and pedestrians.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFEBUILT

A handwritten signature in black ink, appearing to read "B. V. Borden". The signature is stylized and cursive.

Brian V. Borden, AICP
Michigan Planning Manager



April 3, 2023

Ms. Amy Ruthig
Genoa Township
2911 Dorr Road
Brighton, MI 48116

**Re: Tait Eye Center
Site Plan Review No. 2**

Dear Ms. Ruthig:

Tetra Tech conducted a second review of the proposed Tait Eye Center site plan last dated March 22, 2023. The plan was prepared by Boss Engineering on behalf of Tait Holding, LLC. The development is located on 1.42 acres on the north side of Grand River Avenue, east of the Euler Road intersection. The Petitioner is proposing a new 7,865 square foot building. The proposed improvements include a new parking lot, hydrant addition, storm sewer, and retention basin. We offer the following comments for your consideration:

GENERAL

1. The site plan shows a proposed fire suppression line, domestic water service, and hydrant. MHOG Sewer and Water Authority will require that the fire suppression line be in a 25-foot public utility easement up to the shut-off valves near the building. After site plan approval, construction plans should be submitted to MHOG for their review and approval prior to construction. The MHOG utility department will need to witness any live taps into the existing water main.

DRAINAGE AND GRADING

1. The proposed retention pond has its overflow directed towards the neighboring property to the east. Currently the area it would overflow to is a mostly undeveloped landscaping area, but the retention pond should be monitored in the future to ensure it is functioning properly and not overflowing to the neighboring property.

The comments above should be discussed with the planning commission prior to site plan approval. Please call or email if you have any questions.

Sincerely,

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

Shelby Byrne, P.E.
Project Engineer



BRIGHTON AREA FIRE AUTHORITY

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

March 29, 2023

Amy Ruthig
Genoa Township
2911 Dorr Road
Brighton, MI 48116

RE: Tait Eye Center
6936 W. Grand River?? (Grand RiverAve. & Euler)
Genoa Twp., MI

Dear Amy,

The Brighton Area Fire Authority has reviewed the above-mentioned site plan. The plans were received for review on March 23, 2023 and the drawings are dated March 22, 2023. The project is based on a 1.42-acre parcel that will be developed for use as a new single-story, 7,865 square foot, B-use occupancy. The construction type is not known and is not listed on the drawings. The plan review is based on the requirements of the International Fire Code (IFC) 2021 edition.

All previous comments and code requirements have been substantially addressed or noted.

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, CFPS
Fire Marshal

cc: Amy Ruthig amy@genoa.org

GENOA TOWNSHIP ENVIRONMENTAL IMPACT ASSESSMENT

Prepared for:

**Owner-Applicant
Stephen Tait
412 Fairfax Street
Birmingham, MI 48009
For
Clark/Tait Eye Center Building
Parcel # 4711-13-100-046
Grand River Ave
Brighton, Michigan 48114**

Prepared by:
Patrick L. Cleary, ASLA, PLA



3121 E. Grand River Howell, MI 48843
517.546.4836 fax 517.548.1670
www.bosseng.com

February 22, 2023

INTRODUCTION

The purpose of this Impact Assessment (IA) Report is to show the effect that the proposed professional office (Eye Center) development has on various factors in the general vicinity of the proposed use. The format used for presentation of this report conforms to the Submittal Requirements for Impact Assessment/Impact Statement Guidelines, Section 13.05 of the Genoa Township Zoning Ordinance, Livingston County, Michigan.

DISCUSSION ITEMS

- A. Name(s) and address(es) of person(s) responsible for preparation of the Impact Assessment and a brief statement of their qualifications.

Prepared by:

Patrick L. Cleary, PLA
Senior Associate, Professional Landscape Architect, 30 years
Boss Engineering
3121 E Grand River
Howell, MI 48843

Prepared for:

Owner-Applicant:
Stephen Tait
412 Fairfax Street
Birmingham, MI 48009

- B. Description of the site, including existing structures, man-made facilities, and natural features, all-inclusive to within 10' of the property boundary.***

The project site is on parcel # 4711-13-100-046 in the E 1/2 of the NW ¼ of Section 15, Genoa Township, Livingston County, MI. The site is vacant and approximately 200-feet east of the intersection of Euler Road and Grand River Ave.

The subject site is bordered:

- To the east by Leppek Landscape Nursery, zoned GC (General Commercial)
- To the north by a multi-tenant professional office building, zoned IND (Industrial)
- To the west by another multi-tenant professional office building, zoned OS (Office Service)
- To the south by vacant land directly across with Community Bible Church to the southeast and Simply Fresh Market to the southwest, all zoned GC (General Commercial)

Current zoning of the subject site is OS (Office Service). Municipal Sewer and Water are available to the site from Grand River Ave.

Within 10-ft of the site perimeter features vary. To the east is landscape supply storage, partially enclosed by large concrete modular block but mostly un-screened. To the west is a landscaped side yard to the adjacent professional office building and an associated stormwater basin at the northwest corner. Directly to the north is forested vacant land associated with another professional office building to the northwest of the site. Within 10-ft to the north is a scrub forested excavated depression, purpose unclear. To the south is Grand River Ave with a public sidewalk on the site's side.

C. Impact on natural features: A written description of the environmental characteristics of the site prior to development, i.e., topography, soils, vegetative cover, drainage, streams, creeks or ponds.

Natural features were identified during an on-site visit to the property on October 25, 2022. The existing site is vacant and can primarily be described as scrub forested, dominated by invasive or typically 'unwanted' vegetation. It is anticipated that most of the site will be disturbed/ cleared. Four areas / 'Zones' were identified on the site illustrating different characteristics. The Zones are shown on the Natural Features Plan (Sheet 4).

The entire site is relatively flat with a higher elevation at Grand River Ave, sloping primarily to the north with slopes of 1-3%. Soils are also uniform as indicated by USDA NRCS soils data, consisting of Boyer-Oshtemo Loamy Sands for more than 91% of the site. This is substantiated by subsequent soil boring data that indicates the dominant soil type is a 'coarse brown sand with gravel and a trace of silt. Infiltration is substantial. No wetlands were identified on the site.

Zone 'A'

This zone includes the first approximately 80-ft of the site north from Grand River Ave. It is characterized by mowed grass lawn interspersed with several (+-12) self-seeded multi-stem Bradford / Callery Pear Trees (*Pyrus Calleryana* cvs.), each approximately 9-inches in diameter at the base (branching before DBH).

Zone 'B'

This zone is considered scrub forested. Vegetation includes multi-stem Autumn Olive (*Elaeagnus angustifolia*) (1-2 inches), a few Black Cherry (*Prunus serotina*) (largest 14-inch caliper), Japanese Honeysuckle (*Lonicera japonica*), and Buckthorn (*Rhamnus cathartica*) shrubs. Also noted were Pokeweed (*Phytolacca americana*). Bittersweet vine (*Celastrus scandens*) and Grape Vine (*Vitis riparia* spp.) (near concrete block retaining wall area on adjacent property.)

Zone 'C'

This zone is primarily open grass meadow (un-mowed) with 6, approximately 25-30-ft height Scotch Pine (*Pinus sylvestris*) near the north 1/3 end of the site, and 2, approximately 14-ft height Eastern Red Cedars (*Juniperus virginiana* spp.). There are also scattered small Honeysuckle & Buckthorn.

Zone 'D'

This zone is also forested and is primarily characterized by Black Locust (*Robinia pseudoacacia*) (3-8-inch caliper) growing adjacent to and on top of several old debris piles (appearing to be earth, gravel & broken concrete). This area also includes larger (15-18 ft height Staghorn Sumac (*Rhus typhina*) and Honeysuckle shrubs.

D. Impact on storm water management: description of soil erosion control measures during construction.

The project proposes a surface stormwater retention management system. It is understood that no stormwater overflow routes are available in the vicinity, but soil testing indicates substantial infiltration and retention has been preliminary approved by the Livingston County Drain Commission (LCDC). Detailed construction plans subject to review by the Township Engineer and LCDC. Typical SESC measures will include silt fencing around all disturbed areas, silt sacks in existing catch basins vulnerable to construction siltation, seeding & stabilizing temporary earth stockpiles, & erosion control matting for disturbed slopes over 1:6.

E. Impact on surrounding land use: Description of proposed usage and other man-made facilities; how it conforms to existing and potential development patterns. Effects of added lighting, noise or air pollution which could negatively impact adjacent properties.

The proposed building will be a professional office – eye center – similar to building uses directly to the west and north and consistent with the permitted uses of the Office Service (OS) zoning district it resides within. The proposed facility will be consistent with current development patterns. The property will include and be surrounded by similar lighting, noise, and air pollution generators – all minimal - and below Township ordinance thresholds.

F. Impact on public facilities and services: Description of number of residents, employees, patrons, and impact on general services, i.e., schools, police, fire.

The proposed building, at approximately 7,800 square feet, will be similar in size to adjacent professional offices although this is proposed to be a single-tenant facility. It is anticipated there will be 12 exam rooms, a surgery room, and 14-16 total employees. Per ordinance 40 parking spaces are required and will be provided for employees and patrons. The Police and fire protection services will be minimally impacted, and schools should not be impacted, except for increased tax base.

G. Impact on public utilities: description of public utilities serving the project, i.e., water, sanitary sewer, and storm drainage system. Expected flows projected in residential units.

Municipal sanitary sewer and water main are available along the south end of the site with the understood capacity to support this development. Impervious surfaces will increase with the development, but management of the associated storm water will be designed to meet Livingston County Drain Commission standards for retention. It is understood that no stormwater overflow routes are available in the vicinity of the site but soil testing indicates substantial infiltration required for retention. Generally, the site is a lower point in the area with portions of adjacent properties to the east and west draining onto the site. Minimal stormwater is therefore anticipated to leave the site.

H. Storage or handling of any hazardous materials: Description of any hazardous materials used, stored, or disposed of on-site.

No storing or handling of any substantial quantity of materials considered hazardous is expected for this development.

I. Impact on traffic and pedestrians: Description of traffic volumes to be generated and their effect on the area.

The site is along the 5-lane portion of Grand River with an existing dedicated left lane. No further improvements are anticipated to be needed. A Trip Generation Table has been prepared below:

LAND USE DESCRIPTION*	ITE CAT.	SIZE	UNIT	AVG DAILY TRAFFIC (vpd)	WEEKDAY AM PEAK HOUR			WEEKDAY PM PEAK HOUR		
					(vph)			(vph)		
					TOTAL	IN	OUT	TOTAL	IN	OUT
MEDICAL - DENTAL OFFICE	720	7.8	TH-GFA**	308	28	17	11	32	12	20
ENTERING (%) / EXITING (%)					100%	62%	38%	100%	39%	61%
GENOA TOWNSHIP THRESHOLD FOR TIS						100	100		100	100
TIS REQUIRED						NO	NO		NO	NO

Trip Data per Institute of Traffic Engineers (ITE) Trip Generation Manual 10th Edition – Volume 2-Part 2

As noted, the calculated office size (per 1,000 gross square feet) the peak AM & PM peak hour trips are well below the Township threshold for the need for a Traffic Impact Study (TIS).

The site will also be served by an existing public sidewalk on the site's side of Grand River Avenue.

J. Special provisions: Deed restrictions, protective covenants, etc.

There is a 40-foot-wide 'public utility easement' across the entire south end of the property (liber 2804, page 0924, Livingston County Records). This effects the building setback and precludes new tree placement in the front yard.

There is also a 5-foot-wide easement for 'Ingress and Egress' over the southerly 5-feet of the parcel (Liber 1726, pages 123-125, Livingston County Records). No other restrictions are known at the time of this report.

K. Description of all sources:

- Genoa Township Zoning Ordinance
- "Soil Survey of Livingston County Michigan" Soil Conservation Services, USDA
- ITE Trip Generation Manual (10th Edition)
- Livingston County Records
- Hastings Testing Engineers and Environmental Inc. 'Soil Infiltration Report' dated 1-27-23.
- Hastings Testing Engineers and Environmental Inc. 'Sub-Surface Exploration' dated 2-17-23.

GENERAL NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL REQUIRED TOWNSHIP, COUNTY, AND STATE OF MICHIGAN PERMITS.
- A GRADING PERMIT FOR SOIL EROSION-SEDIMENTATION CONTROL SHALL BE OBTAINED FROM THE GOVERNING AGENCY PRIOR TO THE START OF CONSTRUCTION.
- IF DUST PROBLEM OCCURS DURING CONSTRUCTION, CONTROL WILL BE PROVIDED BY AN APPLICATION OF WATER, EITHER BY SPRINKLER OR TANK TRUCK.
- ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH LOCAL MUNICIPAL STANDARDS AND SPECIFICATIONS.
- PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES SHALL BE MAINTAINED IN A SAFE, ATTRACTIVE CONDITION AS ORIGINALLY DESIGNED AND CONSTRUCTED.
- ALL BARRIER-FREE FEATURES SHALL BE CONSTRUCTED TO MEET ALL LOCAL, STATE AND A.D.A. REQUIREMENTS. WHERE EXISTING CONDITIONS AND/OR THE REQUIREMENTS OF THE PLANS WILL RESULT IN FINISHED CONDITIONS THAT DO NOT MEET ADA REQUIREMENTS, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER PRIOR TO WORK COMMENCING.
- ANY DISCREPANCY IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE DESIGN ENGINEER PRIOR TO THE START OF CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS, EASEMENTS AND DIMENSIONS SHOWN HEREON PRIOR TO BEGINNING CONSTRUCTION.
- THE CONTRACTOR SHALL CONTACT ALL OWNERS OF EASEMENTS, UTILITIES AND RIGHT-OF-WAY, PUBLIC OR PRIVATE, PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL COORDINATE WITH ALL OWNERS TO DETERMINE THE LOCATION OF EXISTING LANDSCAPING, IRRIGATION LINES & PRIVATE UTILITY LINES. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO EXISTING LANDSCAPING, IRRIGATION LINES, AND PRIVATE UTILITY LINES.
- THE CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT.
- THE CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKMEN AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE.
- THE CONTRACTOR SHALL KEEP THE AREA OUTSIDE THE "CONSTRUCTION LIMITS" BROOM CLEAN AT ALL TIMES.
- THE CONTRACTOR SHALL CALL MISS DIG A MINIMUM OF 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- ALL PAVEMENT REPLACEMENT AND OTHER WORKS COVERED BY THESE PLANS SHALL BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE TOWNSHIP, INCLUDING THE LATEST MICHIGAN DEPARTMENT OF TRANSPORTATION (MDOT) SPECIFICATIONS FOR HIGHWAY CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DAMAGE TO EXISTING UTILITIES.
- NO ADDITIONAL COMPENSATION WILL BE PAID TO THE CONTRACTOR FOR ANY DELAY OR INCONVENIENCE DUE TO THE MATERIAL SHORTAGES OR RESPONSIBLE DELAYS DUE TO THE OPERATIONS OF SUCH OTHER PARTIES DOING WORK INDICATED OR SHOWN ON THE PLANS OR IN THE SPECIFICATION OR FOR ANY REASONABLE DELAYS IN CONSTRUCTION DUE TO THE ENCOUNTERING OR EXISTING UTILITIES THAT MAY OR MAY NOT BE SHOWN ON THE PLANS.
- DURING THE CONSTRUCTION OPERATIONS, THE CONTRACTOR SHALL NOT PERFORM WORK BY PRIVATE AGREEMENT WITH PROPERTY OWNERS ADJACENT TO THE PROJECT.
- IF WORK EXTENDS BEYOND NOVEMBER 15, NO COMPENSATION WILL BE DUE TO THE CONTRACTOR FOR ANY WINTER PROTECTION MEASURES THAT MAY BE REQUIRED BY THE ENGINEER.
- NO TREES ARE TO BE REMOVED UNTIL MARKED IN THE FIELD BY THE ENGINEER.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO THE PROPERTY BEYOND THE CONSTRUCTION LIMITS INCLUDING BUT NOT LIMITED TO EXISTING FENCE, LAWN, TREES AND SHRUBBERY.
- TRAFFIC SHALL BE MAINTAINED DURING CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL SIGNS AND TRAFFIC CONTROL DEVICES. FLAG PERSONS SHALL BE PROVIDED BY THE CONTRACTOR IF DETERMINED NECESSARY BY THE ENGINEER. ALL SIGNS SHALL CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES AT NO COST TO THE TOWNSHIP. NO WORK SHALL BE DONE UNLESS THE APPROPRIATE TRAFFIC CONTROL DEVICES ARE IN PLACE.
- ALL DEMOLISHED MATERIALS AND SOIL SPOILS SHALL BE REMOVED FROM THE SITE AT NO ADDITIONAL COST, AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
- ANY EXISTING APPURTENANCES SUCH AS MANHOLES, GATE VALVES, ETC. SHALL BE ADJUSTED TO THE PROPOSED GRADE AND SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- ALL PERMANENT SIGNS AND PAVEMENT MARKINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST REVISION OF THE MICHIGAN MUTOD MANUAL AND SHALL BE INCIDENTAL TO THE CONTRACT.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT ALL ITEMS REQUIRED FOR CONSTRUCTION OF THE PROJECT ARE INCLUDED IN THE CONTRACT. ANY ITEMS NOT SPECIFICALLY DESIGNATED IN THE PLANS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT.
- THE CONTRACTOR IS RESPONSIBLE FOR HAVING A SET OF APPROVED CONSTRUCTION PLANS, WITH THE LATEST REVISION DATE, ON SITE PRIOR TO THE START OF CONSTRUCTION. IN THE EVENT OF ANY QUESTIONS PERTAINING TO THE INTENT OF THE CONSTRUCTION PLANS OR SPECIFICATIONS, THE CONTRACTOR SHALL CONTACT THE DESIGN ENGINEER FOR A FINAL DETERMINATION FROM THE DESIGN ENGINEER.
- THE CONTRACTOR, NOT THE OWNER OR THE ENGINEER, ARE RESPONSIBLE FOR THE MEANS, METHODS, AND SEQUENCE OF CONSTRUCTION. THE CONTRACTOR IS RESPONSIBLE FOR SAFE EXECUTION OF THE PROJECT SCOPE IN ACCORDANCE WITH THE APPROVED CONSTRUCTION PLANS.
- THE CONTRACTOR IS RESPONSIBLE FOR PRESERVING CONSTRUCTION STAKING AS NECESSARY. CONTRACTOR TO NOTIFY CONSTRUCTION SURVEYOR OF REPLACEMENT STAKES NEEDED WHICH SHALL BE AT THE CONTRACTORS EXPENSE.
- THE OWNER AND/OR CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING FRANCHISE UTILITY SERVICES (CABLE, ELECTRIC, GAS, ETC.) OWNER AND/OR CONTRACTOR SHALL WORK WITH UTILITY COMPANIES ON FURNISHING SITE UTILITY LAYOUTS AND PROVIDING CONDUIT CROSSINGS AS REQUIRED.
- DAMAGE TO ANY EXISTING UTILITIES OR INFRASTRUCTURE (INCLUDING PAVEMENT, CURB, SIDEWALK, ETC.) SHALL PROMPTLY BE REPLACED IN KIND AND SHALL BE AT THE CONTRACTORS EXPENSE.
- COORDINATION OF TESTING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND PER ALL CITY/TOWNSHIP/COUNTY REQUIREMENTS. COPIES OF ALL TEST REPORTS SHALL BE FURNISHED TO THE DESIGN ENGINEER.
- PRIOR TO THE START OF CONSTRUCTION, PROTECTION FENCING SHALL BE ERRECTED AROUND THE TREE DRIPLINE OF ANY TREES INDICATED TO BE SAVED WITHIN THE LIMITS OF DISTURBANCE.
- THE CONTRACTOR SHALL MAINTAIN DRAINAGE OF THE PROJECT AREA AND ADJACENT AREAS. WHERE EXISTING DRAINAGE FACILITIES ARE IMPACTED/DISTURBED DUE TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE ANY NECESSARY TEMPORARY DRAINAGE PROVISIONS.
- SOIL BORING LOGS ARE REPRESENTATIVE OF SPECIFIC POINTS ON THE PROJECT SITE, AND IF PROVIDED TO THE CONTRACTOR ARE FOR INFORMATIONAL PURPOSES ONLY.
- WHERE CITY/TOWNSHIP STANDARD CONSTRUCTION DETAILS/SPECIFICATIONS ARE PROVIDED AND ARE IN CONFLICT WITH NOTES AND SPECIFICATIONS HEREIN, THE CITY/TOWNSHIP STANDARD SHALL GOVERN.

INDEMNIFICATION STATEMENT

THE CONTRACTOR SHALL HOLD HARMLESS THE DESIGN PROFESSIONAL, MUNICIPALITY, COUNTY, STATE, AND ALL OF ITS SUB CONSULTANTS, PUBLIC AND PRIVATE UTILITY COMPANIES, AND LANDOWNERS FOR DAMAGES TO INDIVIDUALS AND PROPERTY, REAL OR OTHERWISE, DUE TO THE OPERATIONS OF THE CONTRACTOR AND/OR THEIR SUBCONTRACTORS.

GENERAL GRADING & SESC NOTES

- THE CONTRACTOR SHALL HAVE IN PLACE ALL REQUIRED EROSION CONTROL METHODS AS INDICATED ON THE CONSTRUCTION PLANS AND AS REQUIRED BY GENERAL PRACTICE. SPECIFIC MEANS, METHODS AND SEQUENCES OF CONSTRUCTION MAY DICTATE ADDITIONAL SOIL EROSION CONTROL MEASURES BE NEEDED. THE CONTRACTOR SHALL COORDINATE WITH THE DESIGN ENGINEER ON THESE ANTICIPATED METHODS. ADDITIONAL SOIL EROSION CONTROL METHODS SHALL BE INCIDENTAL TO THE SCOPE OF WORK.
- ACTUAL FIELD CONDITIONS MAY DICTATE ADDITIONAL OR ALTERNATE SOIL EROSION CONTROL MEASURES BE UTILIZED. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DEFICIENCIES OR FIELD CONDITIONS THAT WARRANT ADDITIONAL AND/OR ALTERNATIVE SESC MEASURES BE UTILIZED.
- AT THE CLOSE OF EACH DAY, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING ALL CONSTRUCTION OPERATIONS, MATERIALS, DEBRIS, ETC ARE CONTAINED ON-SITE.
- AT THE CLOSE OF EACH WORKING DAY, ALL DRAINAGE STRUCTURES SHALL BE FREE OF DIRT AND DEBRIS AT THE FLOW LINE.
- ALL SOIL EROSION CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE PER MDEGLE REGULATIONS AND BEST PRACTICES, ALL SOIL EROSION CONTROL MEASURES SHALL BE MAINTAINED BY THE CONTRACTOR.
- THE SOIL EROSION CONTROL MEASURES SHALL BE KEPT IN PLACE UNTIL SUCH A TIME THAT THE SITE IS DETERMINED TO BE ESTABLISHED WITH ACCEPTABLE AMOUNT OF VEGETATIVE GROUND COVER.
- ALL AREAS DISTURBED BY THE CONTRACTOR BEYOND THE NORMAL CONSTRUCTION LIMITS OF THE PROJECT SHALL BE SODDED OR SEEDED AS SPECIFIED OR DIRECTED BY THE ENGINEER.
- AFTER REMOVAL OF TOPSOIL, THE SUBGRADE SHALL BE COMPACTED TO 95% OF ITS UNIT WEIGHT.
- ALL GRADING IN THE PLANS SHALL BE DONE AS PART OF THIS CONTRACT. ALL DELETERIOUS MATERIAL SHALL BE REMOVED FROM THE SUBGRADE PRIOR TO COMPACTING.
- ALL ROOTS, STUMPS AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED AND THE HOLE BACKFILLED WITH SUITABLE MATERIAL. WHERE GRADE CORRECTION IS REQUIRED, THE SUBGRADE SHALL BE CUT TO CONFORM TO THE CROSS-SECTION AS SHOWN IN THE PLANS.
- ALL EXCAVATION UNDER OR WITHIN 3 FEET OF PUBLIC PAVEMENT, EXISTING OR PROPOSED SHALL BE BACKFILLED AND COMPACTED WITH SAND (MDOT CLASS II).

GENERAL LANDSCAPE NOTES

- ALL PLANT MATERIAL SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OF THE GOVERNING MUNICIPALITY. ALL STOCK SHALL BE NURSERY GROWN, CONFORMING TO ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK", AND IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE. STOCK SHALL EXHIBIT NORMAL GROWTH HABIT AND BE FREE OF DISEASE, INSECTS, EGGS, LARVAE, & DEFECTS SUCH AS KNOTS, SUN-SCALD, INJURIES, ABRASIONS, OR DISFIGUREMENT. ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
 - ALL PLANT MATERIALS SHALL BE BALLED AND BURLAPPED OR CONTAINER STOCK. NO BARE ROOT STOCK IS PERMITTED. ALL PLANT BALLS SHALL BE FIRM, INTACT, AND SECURELY WRAPPED AND BOUND.
 - ALL PLANT BED MATERIALS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS, OTHER EXTRANEOUS OBJECTS, AND POOR SOILS TO A MINIMUM DEPTH OF 12-INCHES AND BACKFILLED TO GRADE WITH SPECIFIED PLANTING MIX (SEE BELOW).
 - PLANTING MIXTURE SHALL CONSIST OF 5 PARTS TOPSOIL FROM ON-SITE (AS APPROVED), 4 PARTS COARSE SAND, 1 PART SPHAGNUM PEAT MOSS (OR APPROVED COMPOST), AND 5 LBS OF SUPERPHOSPHATE FERTILIZER PER CU. YD. OF MIX. INGREDIENTS SHALL BE THOROUGHLY BLENDED FOR UNIFORM CONSISTENCY.
 - ALL PLANT BEDS AND INDIVIDUAL PLANTS, NOT OTHERWISE NOTED SHALL BE MULCHED WITH A 4-INCH LAYER OF SHREDDED BARK MULCH. EDGE OF MULCH BEDS AS SHOWN. DECIDUOUS TREES IN LAWN AREAS SHALL RECEIVE A 5-FT DIAMETER CIRCLE OF MULCH AND CONIFER TREES 8-FT (PLANTED CROWN OF TREE) UNLESS OTHERWISE NOTED.
 - LANDSCAPE STONE SHALL BE INSTALLED WHERE NOTED OR INDICATED (HATCHED). STONE SHALL BE 3/4"-1-1/4" WASHED RIVER GRAVEL OR AS SELECTED AND SHALL BE INSTALLED TO A MINIMUM DEPTH OF 3-INCHES.
 - ALL LANDSCAPE BEDS, UNLESS OTHERWISE NOTED SHALL BE INSTALLED OVER WEED BARRIER FABRIC - WATER PERMEABLE FILTRATION FABRIC OF NON-WOVEN POLYPROPYLENE OR POLYESTER FABRIC. FABRIC SHALL BE OF SUITABLE THICKNESS FOR APPLICATION.
 - ALL PLANTS AND PLANT BEDS SHALL BE THOROUGHLY WATERED UPON COMPLETION OF PLANTING AND STAKING OPERATIONS.
 - THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF 1 YEAR FROM THE DATE THE WORK IS ACCEPTED, IN WRITING, BY THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE, WITHOUT COST TO THE OWNER, WITHIN A SPECIFIED PERIOD OF TIME, ALL DEAD PLANTS, AND ALL PLANTS NOT IN A VIGOROUS, THRIVING CONDITION, AS DETERMINED BY THE LANDSCAPE ARCHITECT, DURING AND AT THE END OF THE GUARANTEE PERIOD. REPLACEMENT STOCK SHALL CONFORM TO THE ORIGINAL SPECIFICATIONS.
 - EDGING SHALL BE PROVIDED FOR ALL LANDSCAPE BEDS NOT ADJACENT TO CONCRETE PAVEMENT. EDGING SHALL BE BLACK ALUMINUM EDGING, 3/16-INCH X 4-INCH. INSTALL PER MANUFACTURER'S INSTRUCTIONS, ALL EDGING SHALL BE INSTALLED IN STRAIGHT LINES OR SMOOTH CURVES WITHOUT IRREGULARITIES.
 - SOD SHALL BE DENSE, WELL ROOTED TURF, FREE OF WEEDS. IT SHALL BE COMPRISED OF A BLEND OF AT LEAST TWO KENTUCKY BLUE GRASSES AND ONE FESCUE. IT SHALL HAVE A UNIFORM THICKNESS OF 3/4-INCH AT TIME OF PLANTING, AND CUT IN UNIFORM STRIPS NOT LESS THAN 10-INCHES BY 18-INCHES. SOD SHALL BE KEPT MOIST AND LAID WITHIN 36-HOURS AFTER CUTTING.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ALL SODDED AREAS THAT BROWN-OUT OR HAVE NOT FIRMLY KNITTED TO THE SOIL BASE WITHIN A PERIOD OF 1 MONTH SHALL BE REPLACED BY THE CONTRACTOR, AT NO COST TO THE OWNER.
 - ALL AREAS OF THE SITE THAT BECOME DISTURBED DURING CONSTRUCTION AND ARE NOT TO BE PAVED, STONED, LANDSCAPED, OR SODDED SHALL BE SEEDED AND MULCHED.

SEED MIXTURE SHALL BE AS FOLLOWS:

KENTUCKY BLUEGRASS (CHOOSE 3 VARIETIES - ADELPHI, RUGBY, CLADE, OR PARADE)	30%
RUBY RED OR DAWSON RED FINE FESCUE	30%
ATLANTA RED FESCUE	20%
PENNFINE PERENNIAL RYE	20%

THE ABOVE SEED MIXTURE SHALL BE SOWN AT A RATE OF 250 LBS PER ACRE. PRIOR TO SEEDING, THE TOPSOIL SHALL BE FERTILIZED WITH A COMMERCIAL FERTILIZER WITH A 10-0-10 ANALYSIS:

10% NITROGEN - MIN 25% FROM A UREA FORMALDEHYDE SOURCE
 0 % PHOSPHATE
 10% POTASH - SOURCE POTASSIUM SULFATE OR POTASSIUM NITRATE

THE FIRST FERTILIZER APPLICATION SHALL BE AT A RATE OF 10 LBS PER 1000 SQ FT OF BULK FERTILIZER.

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ANY PART OF THE AREA THAT FAILS TO SHOW A UNIFORM GERMINATION SHALL BE RE-SEEDED AND SUCH RE-SEEDED SHALL CONTINUE UNTIL A DENSE LAWN IS ESTABLISHED. DAMAGE TO SEEDED AREAS RESULTING FROM EROSION SHALL BE REPAIRED BY THE CONTRACTOR.
 - ALL AREAS OF THE SITE SCHEDULED FOR SEEDING OR SODDING SHALL FIRST RECEIVE A 6-INCH LAYER OF CLEAN, FRIABLE TOPSOIL. THE SOIL SHALL BE DISCED AND SHALL BE GRADED IN CONFORMANCE WITH THE GRADING PLAN.
 - IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES AND TO INFORM THE LANDSCAPE ARCHITECT OF ANY CONFLICTS PRIOR TO COMMENCING LANDSCAPING.

GENERAL UTILITY NOTES

- BEDDING SHALL EXTEND A MINIMUM OF 4" BELOW THE PIPE, UNLESS OTHERWISE NOTED ON THE PLANS. BEDDING SHALL BE OF UNIFORM GRADATION MDOT 6AA STONE OR MDOT CLASS II GRANULAR MATERIAL FOR SANITARY AND STORM PIPE AND MDOT CLASS II GRANULAR MATERIAL ONLY FOR WATERMAIN.
- WHERE UNSTABLE GROUND CONDITIONS ARE ENCOUNTERED, STONE BEDDING SHALL BE USED AS DIRECTED BY THE ENGINEER.
- BACKFILL SHALL BE OF A SUITABLE MATERIAL AND SHALL BE FREE OF ANY ORGANIC MATERIALS AND ROCKS.
- BACKFILL ABOVE THE PIPE SHALL BE OF GRANULAR MATERIAL MDOT CLASS II TO A POINT 12" ABOVE THE TOP OF THE PIPE. WHERE THE TRENCH IS NOT WITHIN THE INFLUENCE OF THE ROAD, SUITABLE SITE MATERIAL MAY BE COMPACTED AND UTILIZED FROM A POINT 12" ABOVE THE PIPE TO GRADE. WHERE THE TRENCH IS WITHIN A 1:1 INFLUENCE OF THE ROAD, GRANULAR MATERIAL, MDOT CLASS II OR III, IS TO BE PLACED AND COMPACTED IN LAYERS NOT EXCEEDING 12" IN THICKNESS. COMPACTION SHALL BE 95% AS DETERMINED BY AASHTO T99.
- 18" MINIMUM VERTICAL SEPARATION AND 10' HORIZONTAL SEPARATION IS TO BE MAINTAINED BETWEEN WATERMAIN AND SANITARY/STORM SEWER TO THE MAXIMUM EXTENT POSSIBLE.

GENERAL STORM NOTES

- ALL STORM PIPE LENGTHS ARE SHOWN FROM C/L TO C/L OF STRUCTURE OR FROM C/L OF STRUCTURE TO DISCHARGE END OF FLARED END SECTION.
- STORM PIPE MATERIALS SHALL BE AS FOLLOWS:
 - RCP(REINFORCED CONCRETE PIPE): SHALL MEET THE REQUIREMENTS OF ASTM C76 WITH MODIFIED GROOVED TONGUE AND RUBBER GASKETS MEETING THE REQUIREMENTS OF ASTM C443. RCP TO BE EITHER CLASS IV OR V AS CALLED OUT ON THE PLANS.
 - HDPE(HIGH DENSITY POLYETHYLENE): SHALL MEET THE REQUIREMENTS OF ASTM F2448.
 - PP(POLYPROPYLENE): SHALL MEET THE REQUIREMENTS OF ASTM F2881.
 - PVC(POLYVINYL CHLORIDE): SHALL MEET THE REQUIREMENTS OF ASTM D3034.
- STORM PIPE JOINTS SHALL MEET THE REQUIREMENTS OF ASTM D3212. HDPE AND PP PIPE GASKETS SHALL MEET THE REQUIREMENTS OF ASTM F477.
- ALL STORM PIPE TO HAVE WATERTIGHT PREMIUM JOINTS, UNLESS OTHERWISE NOTED ON THE PLANS.
- STORM DRAINAGE STRUCTURES SHALL BE FURNISHED WITH STEPS WHICH SHALL BE STEEL ENCASED WITH POLYPROPYLENE PLASTIC OR EQUIVALENT. STEPS SHALL BE SET AT 16" CENTER TO CENTER.
- ALL FLARED END SECTIONS 18" AND LARGER SHALL BE FURNISHED WITH AN ANIMAL GRATE.
- FLARED END SECTIONS DISCHARGING STORM WATER SHALL RECEIVE A MINIMUM OF 10 SQ YDS OF PLAIN COBBLESTONE RIP RAP WITH A MINIMUM STONE SIZE OF 6" AND SHALL BE PLACED ON A GEOTEXTILE FABRIC WRAP.
- ALL CATCH BASINS WITHIN THE ROADWAY SHALL INCLUDE INSTALLATION OF 6" DIAMETER PERFORATED PIPE SUBDRAIN.
- STORM DRAINAGE STRUCTURE COVERS SHALL BE OF THE FOLLOWING (OR APPROVED EQUAL):

COVER USE	FRAME	GRATE/BACK
'A'	MANHOLE	1040
'B'	TYPE B2 CURB	7085
'C'	VALLEY CURB	7065
'D'	PARKING LOTS	1040/5100
'E'	LAWN	1040
'K'	TYPE C & F CURB	7045
		TYPE 'M1'
		7045 TYPE 'M1' GRATE/7060 TYPE 'T1' BACK
		TYPE 'M1' GRATE OR 5105 TYPE 'M1' GRATE
		TYPE 'O2' GRATE
		TYPE 'M1' GRATE/7050 TYPE 'T1' BACK

GENERAL SANITARY NOTES

- ALL SANITARY PIPE LENGTHS ARE SHOWN FROM C/L OF STRUCTURE TO C/L OF STRUCTURE.
- SANITARY PIPE MATERIALS SHALL BE AS FOLLOWS:
 - PVC SDR-23.5 (SANITARY LEADS)
- ALL PVC SDR SANITARY SEWER PIPE SHALL MEET THE REQUIREMENTS OF ASTM D3034 AND D2241. PVC SCHED 40 PIPE SHALL MEET THE REQUIREMENTS OF ASTM D1785. GASKET JOINTS FOR SANITARY PIPE SHALL MEET THE REQUIREMENTS OF ASTM D3139 AND D3212.
- SANITARY SEWER LATERALS SHALL HAVE A MINIMUM SLOPE OF 1.0%.
- CLEANOUTS SHALL BE INSTALLED EVERY 100', AT ALL BENDS AND STUBS.

GENERAL WATERMAIN NOTES

- WATERMAIN PIPE MATERIALS SHALL BE AS FOLLOWS:
 - TYPE 'K' COPPER (WATER LATERAL - MAIN TO CURB STOP)
 - HDPE DR-9 (WATER LATERAL - CURB STOP TO STUB)

LINES & HATCHES LEGEND

PROPOSED (PR)	EXISTING (EX)	
		CONTOUR
		SPOT ELEVATION
		SANITARY SEWER
		SANITARY LEAD
		FORCE MAIN
		PRESSURE SEWER
		STORM SEWER
		WATER MAIN
		WATER LEAD
		FIBER OPTIC
		OVERHEAD WIRE
		CABLE
		ELECTRIC
		GAS
		TELEPHONE
		FENCE
		SILT FENCE
		WETLAND BOUNDARY
		LIMITS OF GRADING/CLEARING
		MODIFIED CURB
		CONCRETE
		HIGH STRENGTH CONCRETE
		ASPHALT
		HIGH STRENGTH ASPHALT
		WETLAND
		SANITARY SEWER LABEL
		STORM SEWER LABEL
		WATER MAIN LABEL
		SOIL EROSION CONTROL MEASURE (P=PERMANENT, T=TEMPORARY)

LIGHTING LEGEND

PROPOSED (PR)	EXISTING (EX)	
		DOUBLE FIXTURE LIGHT POLE
		SINGLE FIXTURE LIGHT FIXTURE
		WALL MOUNTED LIGHT FIXTURE
		GROUND LIGHT FIXTURE
		FOOT CANDLES ON SITE
		FOOT CANDLES OFF SITE
		FOOT CANDLES CONTOURS
		CANOPY MOUNTED LIGHT FIXTURE

LANDSCAPE LEGEND

SYMBOL LEGEND

	STORM DRAINAGE FLOW
	GUY WIRE
	POWER POLE
	TRANSFORMER PAD
	ELECTRICAL RISER
	U.G. ELECTRIC MARKER
	ELECTRICAL METER
	AIR CONDITIONING UNIT
	TELEPHONE RISER
	U.G. TELEPHONE MARKER
	GAS RISER
	U.G. GAS MARKER
	GAS METER
	U.G. CABLE TV MARKER
	CABLE TV RISER
	U.G. CABLE TV MARKER
	MAILBOX
	WELL
	WATER MANHOLE
	GATE VALVE (EXISTING)
	GATE VALVE (PROPOSED)
	HYDRANT (EXISTING)
	HYDRANT (PROPOSED)
	CATCH BASIN (EXISTING)
	CATCH BASIN (PROPOSED)
	STORM MANHOLE (EXISTING)
	STORM MANHOLE (PROPOSED)
	END SECTION (EXISTING)
	END SECTION (PROPOSED)
	SANITARY MANHOLE (EXISTING)
	SANITARY MANHOLE (PROPOSED)
	TRAFFIC SIGN
	SIGN (EXISTING)
	SIGN (PROPOSED)
	SOIL BORING
	STEEL ROD SET
	STEEL ROD OR PIPE FOUND
	WOOD LATH SET
	HUB SET
	MONUMENT FOUND
	SECTION CORNER
	GAS PUMP
	ANTENNA
	SATELLITE DISH
	NEWSPAPER BOX
	PARKING METER
	PHONE BOOTH
	HANDICAP SYMBOL
	BENCHMARK
	LIGHT POLE

ABBREVIATIONS

FFE	FINISHED FLOOR ELEVATION
BFE	BASEMENT FLOOR ELEVATION
GFE	GARAGE FLOOR ELEVATION
FG	FINISHED GRADE
T/A	TOP OF ASPHALT
T/C	TOP OF CONCRETE/CURB
T/W	TOP OF WALK
T/P	TOP OF PIPE
B/P	BOTTOM OF PIPE
F/L	FLOW LINE
RIM	RIM ELEVATION (AT FLOW LINE)
INV	INVERT ELEVATION
MH	MANHOLE
CB	CATCH BASIN
RY	REAR YARD
YD	YARD DRAIN
RD	ROOF DRAIN
FES	FLARED END SECTION
CMP	CORRUGATED METAL PIPE
CPP	CORRUGATED PLASTIC PIPE
RCP	REINFORCED CONCRETE PIPE
HDPE	HIGH DENSITY POLYETHYLENE
PVC	POLYVINYL CHLORIDE
DIP	DUCTILE IRON PIPE
GV	GATE VALVE
GW	GATE VALVE IN WELL
HYD	HYDRANT
FDC	FIRE DEPARTMENT CONNECTION
UP	UTILITY POLE
NFV	NOT FIELD VERIFIED
TBR	TO BE REMOVED
L	LIBER
P	PAGE
L.C.R.	LIVINGSTON COUNTY RECORDS
(M&R)	MEASURED AND RECORD
L.O.B.	POINT OF BEGINNING

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE AS TO THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS BEFORE THE START OF CONSTRUCTION. THE LOCATION OR DEPTH DIFFERS SIGNIFICANTLY FROM THE PLANS.

BEFORE STARTING WORK, CALL MISS DIG
 1-800-487-7171
 or visit www.missdig.com

BEBOSS
Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

CLARKITAIT EYE CENTER
 TAIT HOLDING, LLC
 412 FAUREN STREET
 BIRMINGHAM, MI 48009
 248.259.6262

PROJECT: CLARKITAIT EYE CENTER
 PREPARED FOR: TAIT HOLDING, LLC
 TITLE: GENERAL NOTES

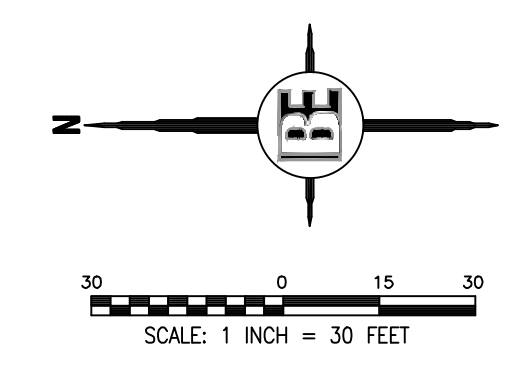
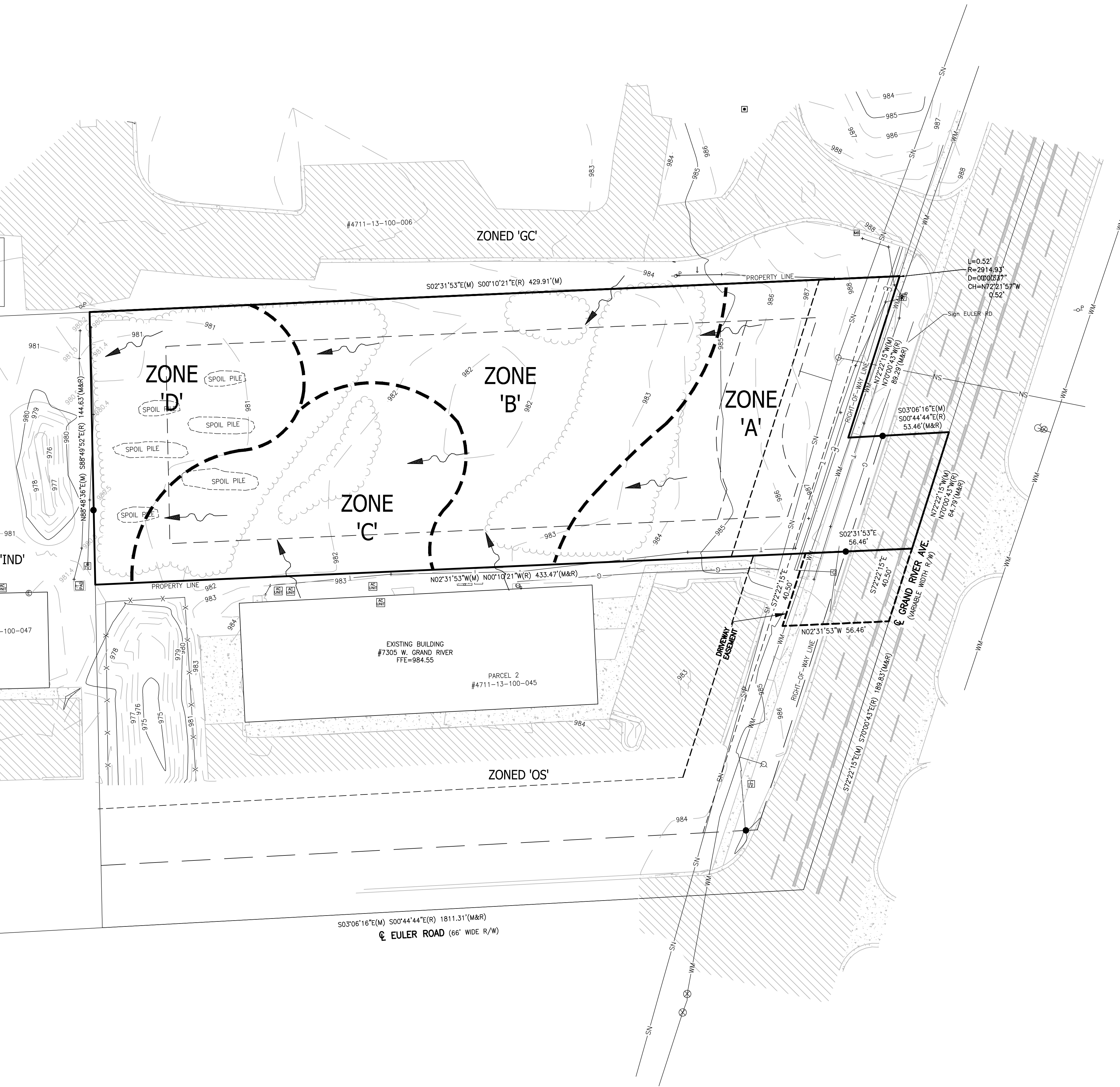
NO.	DATE	REVISION PER	PER TWP REVIEW
1	3-22-2023		

EXISTING BARN
FFE=981.34

EXISTING SHED
FFE=980.95

EXISTING BUILDING
#2333 EULER
FFE=982.41

COR.
1'-13"
1-R/W
(-05)



- LEGEND**
- NATURAL FEATURE TYPE BOUNDARY
 - EXISTING DRAINAGE FLOW
 - EXISTING 1-FT CONTOURS

NATURAL FEATURES NARRATIVE:

NATURAL FEATURES WERE IDENTIFIED DURING AN ON-SITE VISIT TO THE PROPERTY ON OCTOBER 25, 2022. SITE IS VACANT AND PRIMARILY CAN BE DESCRIBED AS SCRUB FORESTED. EACH IDENTIFIED AREA IS LABELED AS ZONES 'A-D'.

ENTIRE SITE IS RELATIVELY FLAT, WITH A HIGHER ELEVATION AT GRAND RIVER, SLOPING TO THE NORTH WITH SLOPES OF 1-3%. SOILS ARE ALSO UNIFORM PER USDA NRCS SOILS DATA CONSISTING OF BOYER-OSHTEMO LOAMY SANDS FOR OVER MORE THAN 91% OF THE SITE. THE REMAINDER IS STATED AS MIAMI LOAM SOIL SERIES AT THE SOUTHEAST CORNER OF THE SITE.

ZONE 'A'

ZONE 'A' INCLUDES THE FIRST APPROX. 80-FT OF THE SITE FROM GRAND RIVER AVE. NORTH. IT IS CHARACTERIZED BY MOWED GRASS LAWN INTERSPERSED WITH SEVERAL (±12) SELF-SEEDED MULTI-STEM ORNAMENTAL BRADFORD / CALLERY PEAR TREES (PYRUS CALLERYANA CVS.), EACH APPROX 9" DIA. AT BASE (BRANCHING BEFORE DBH).

ZONE 'B'

ZONE 'B' IS CONSIDERED SCRUB FORESTED. VEGETATION INCLUDES MULTI-STEM AUTUMN OLIVE (ELAEAGNUS ANGUSTIFOLIA) (1-2-INCH), MULTI-STEM BOX ELDER (ACER NEGUNDO) (4-10-INCH), A FEW BLACK CHERRY (PRUNUS SEROTINA) (14-INCH CALIPER), AND JAPANESE HONEYSUCKLE (LONICERA JAPONICA) & BUCKTHORN (RHAMNUS CATHARTICA) SHRUBS, POKEWEED (PHYTOLACCA AMERICANA), BITTERSWEET (CELASTRUS SCANDENS) & GRAPE VINE (VITIS RIPARIA SPP.) (NEAR CONCRETE RETAINING WALL BLOCK AREA).

ZONE 'C'

ZONE 'C' IS PRIMARILY AN OPEN GRASS MEADOW (UN-MOWED) WITH 6, 25-30-FT HGT SCOTCH PINE (PINUS SYLVESTRIS) NEAR THE NORTH 1/3 END & 2, 14-FT HGT EASTERN RED CEDARS (JUNIPERUS VIRGINIANA SPP.). THERE ARE ALSO SCATTERED SMALL HONEYSUCKLE & BUCKTHORN.

ZONE 'D'

ZONE 'D' IS ALSO FORESTED AND IS PRIMARILY CHARACTERIZED BY BLACK LOCUST (ROBINIA PSEUDACACIA) (3-8" CALIPER) GROWING AROUND & ON TOP OF SEVERAL OLD DEBRIS MOUNDS (EARTH & BROKEN CONCRETE). THIS AREA ALSO INCLUDES LARGE (15-18-FT HGT) STAGHORN SUMAC (RHUS TYPHINA) AND HONEYSUCKLE SHRUBS

EXISTING SOILS:
PER THE USDA NRCS SOIL SURVEY
EXISTING SOILS:

BIA --BOYER-OSHTEMO LOAMY SANDS,
0-2% SLOPES
HYDRIC RATING: 2%

MdD --MIAMI LOAM,
12-18% SLOPES
HYDRIC RATING: 10%

NOTES:

- REFER TO EXISTING CONDITIONS PLAN & DEMOLITION PLAN (SHEET 3) FOR ADDITIONAL EXISTING PROPERTY, UTILITY INFORMATION, AND EXISTING EASEMENT AREAS.

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE AS TO THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS BEFORE THE LOCATION OR DEPTH DIFFERS SIGNIFICANTLY FROM THE PLANS.

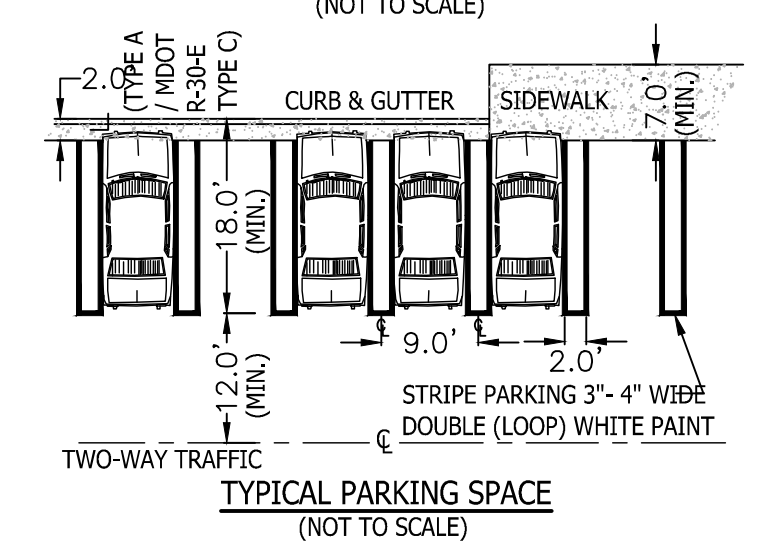
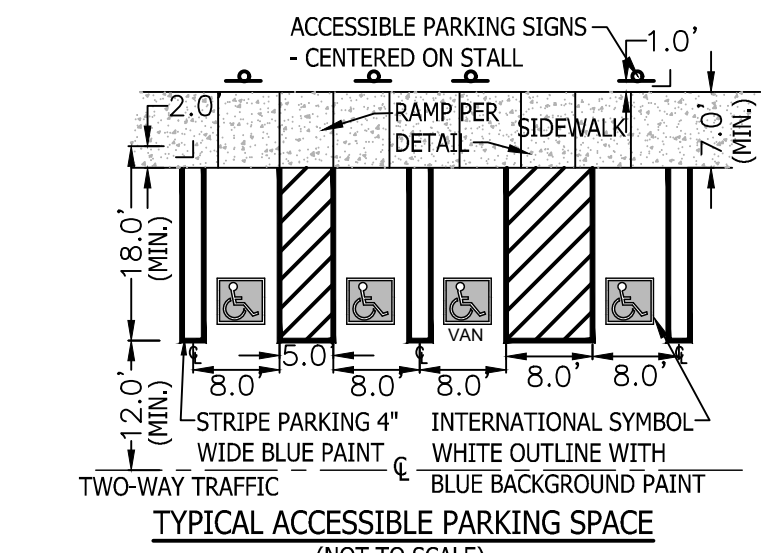
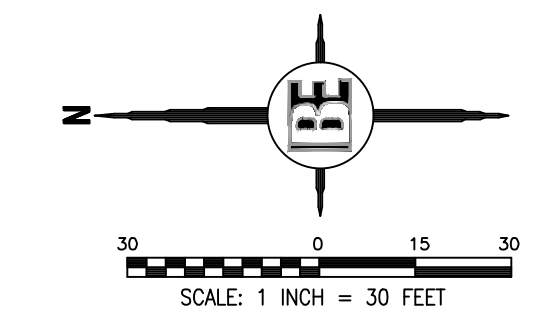
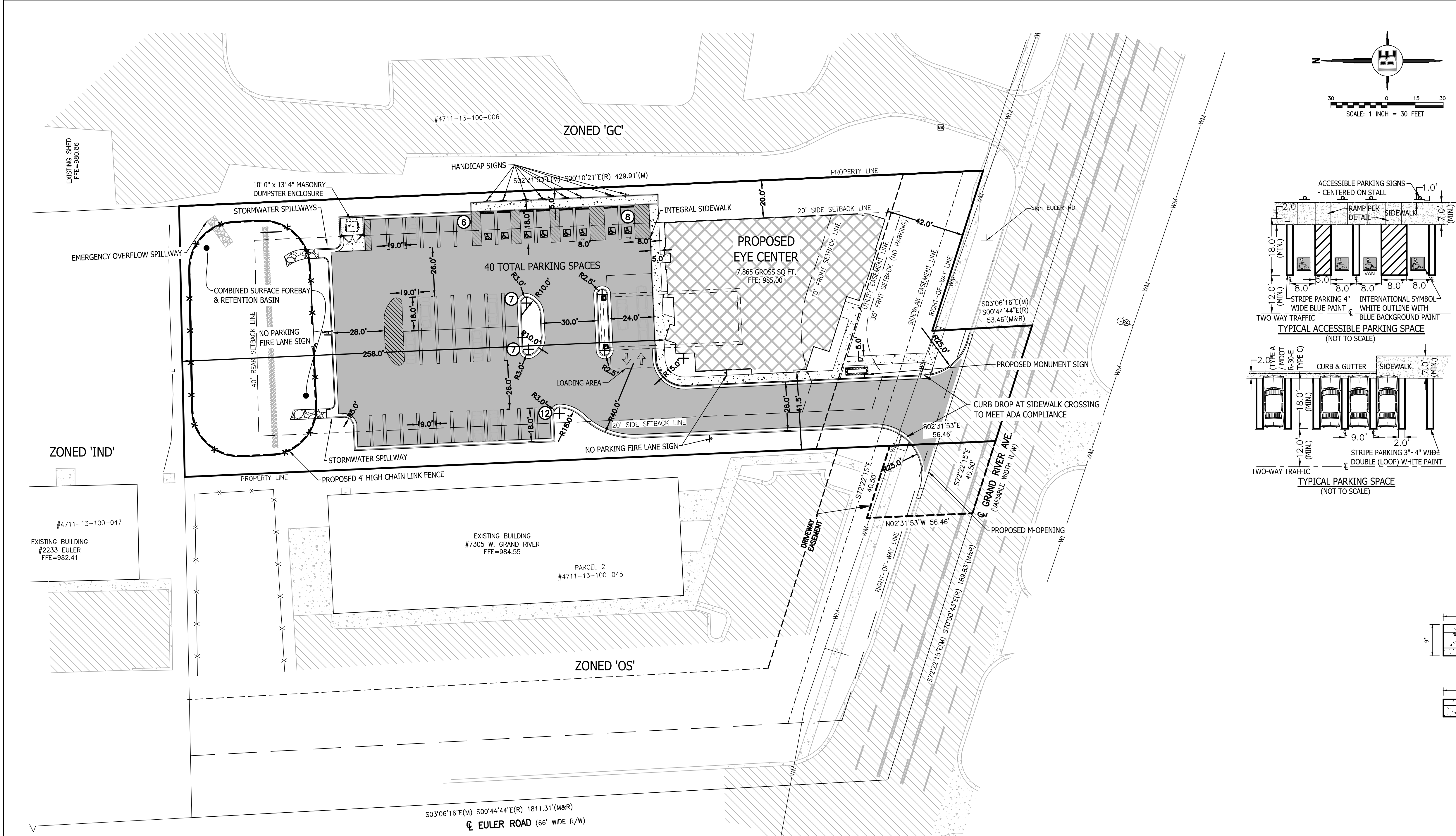
BEFORE ANY WORK BEGINS, THE CONTRACTOR SHALL CALL MISS DIG AT 1-800-487-7171.

BEBOSS
Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
517.546.4836 FAX 517.548.1670

PROJECT	CLARK/TAIT EYE CENTER
PREPARED FOR	TAIT HOLDING, LLC 412 FAIRBANK STREET BIRMINGHAM, MI 48009 248.259.4262
TITLE	NATURAL FEATURES PLAN

DESIGNED BY:	DH
DRAWN BY:	PC
CHECKED BY:	
SCALE:	1" = 30'
JOB NO:	22-357
DATE:	02/22/23
SHEET NO.	4





SITE STATISTICAL DATA:
 ZONED: 'OS' - OFFICE SERVICE
 DEVELOPMENT TYPE/USE PROPOSED: MEDICAL OFFICE - EYE CLINIC

ADJACENT ZONING / EXISTING USES: EAST - 'GC' / LANDSCAPE NURSERY; WEST - 'OS' / PROFESSIONAL OFFICE; NORTH - 'IND' / PROFESSIONAL OFFICE

GROSS SITE AREA: ±1.42 AC (61,740 SQFT.) (NET 1.37 AC EXCL. OF R.O.W.)
 DEPTH / WIDTH RATIO: 3:1 (144.63-FT LOT WIDTH NOMINAL OF R.O.W.)
 BUILDING COVERAGE (FOOTPRINT): 7,865 SQFT (12.7%)
 IMPERVIOUS SURFACE (EXCL. OF BLDG): 26,560 SQFT (0.61 AC) (43.0%)
 PVIOUS SURFACE: 27,380 SQFT. (0.62 AC) (44.4%)

MIN. SETBACKS REQUIRED AT PROPOSED BUILDING (NO ADJACENT RESIDENTIAL):

REQUIRED:	PROVIDED:
FRONT - SOUTH: 70-FT (35-FT IF NO FRONT YARD PARKING)	42-FT
REAR - NORTH: 40-FT (25-FT IF SCREEN WALL OR BERM)	25-FT
SIDE - EAST: 20-FT	20-FT
SIDE - WEST: 20-FT	42-FT
MAX BLDG. HGT: 35-FT (2-STORIES)	25-FT

MIN LOT: 1.0 AC SIZE; MIN LOT WIDTH 100 LFT; MAX DEPTH/WIDTH RATIO 4:1
 MAX LOT COVERAGES: BUILDING 35%, IMPERVIOUS SURFACES 75%

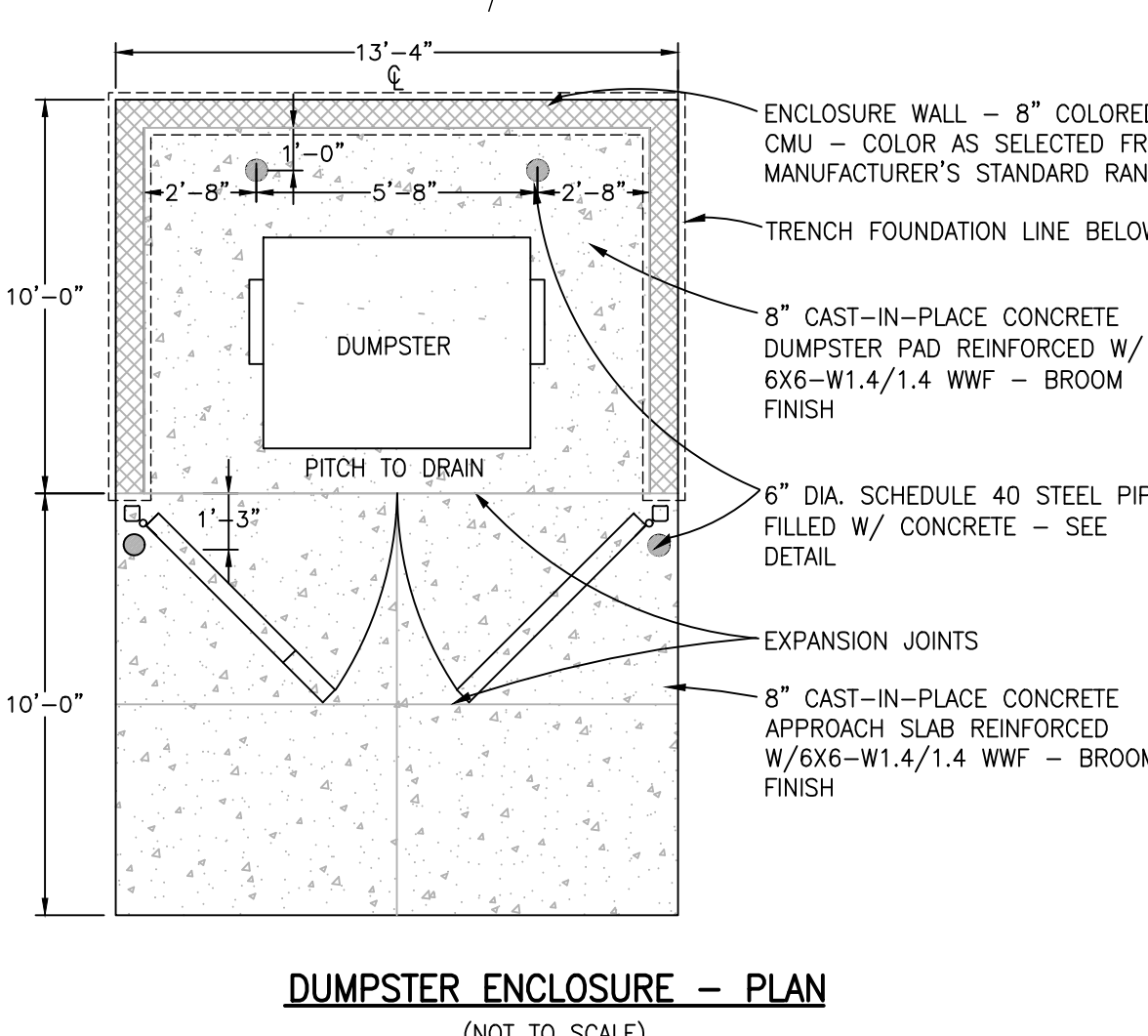
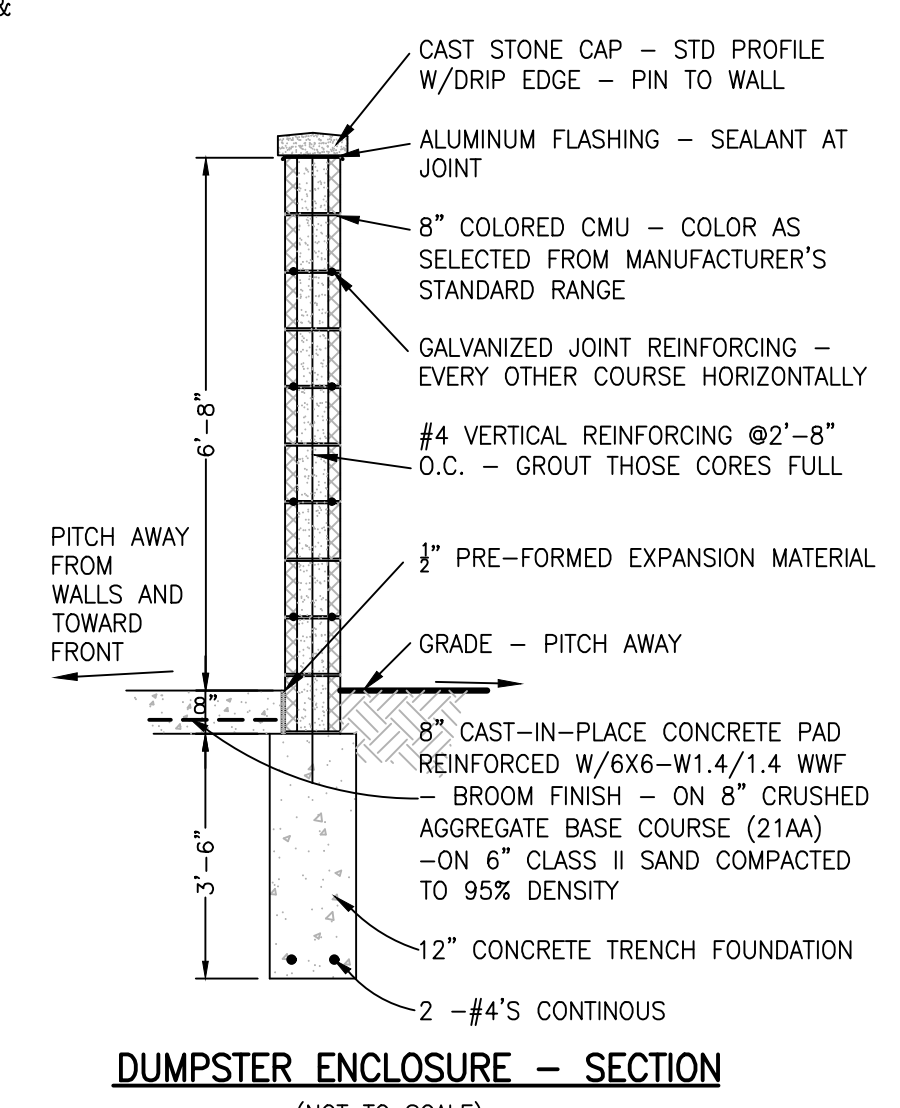
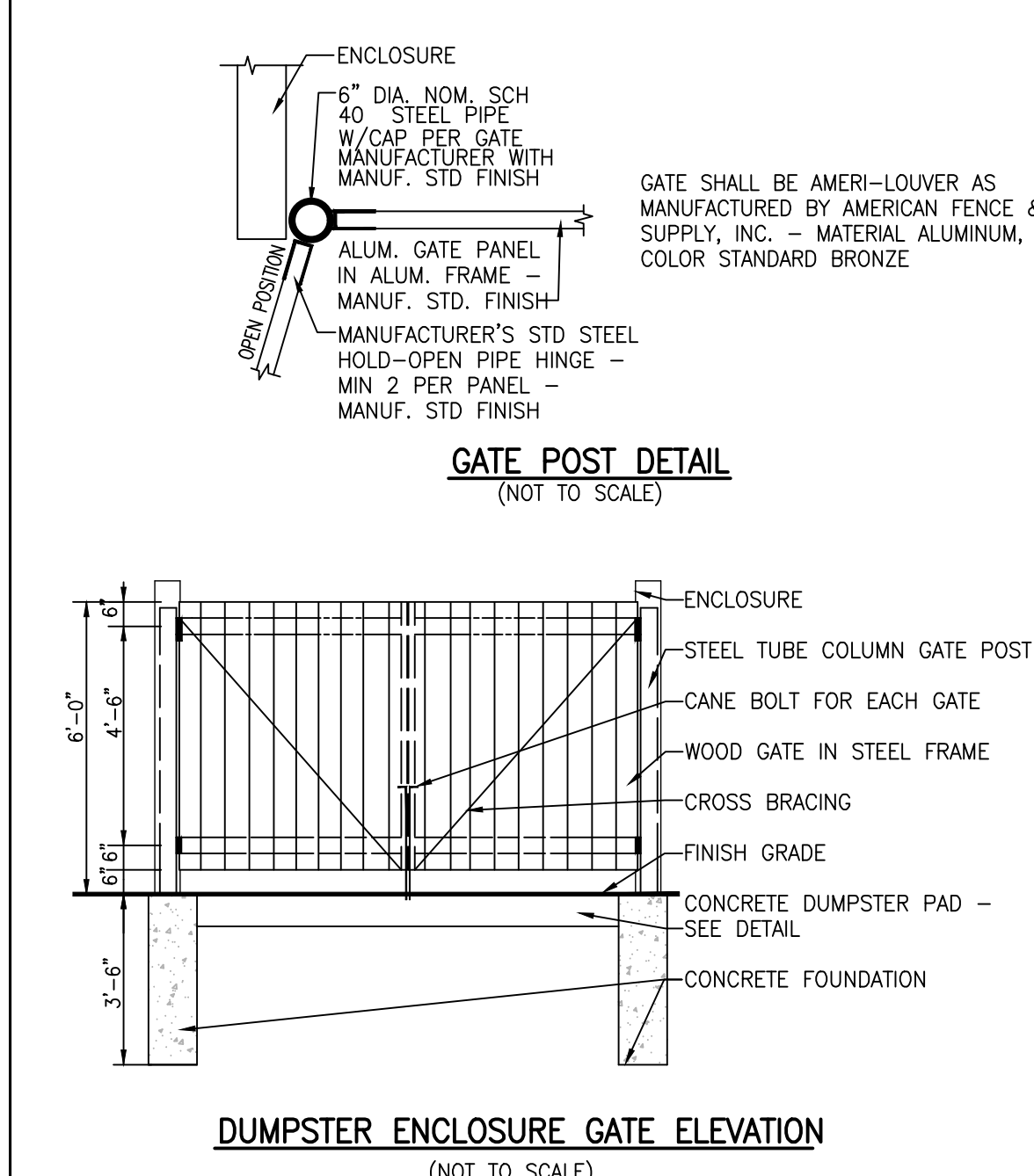
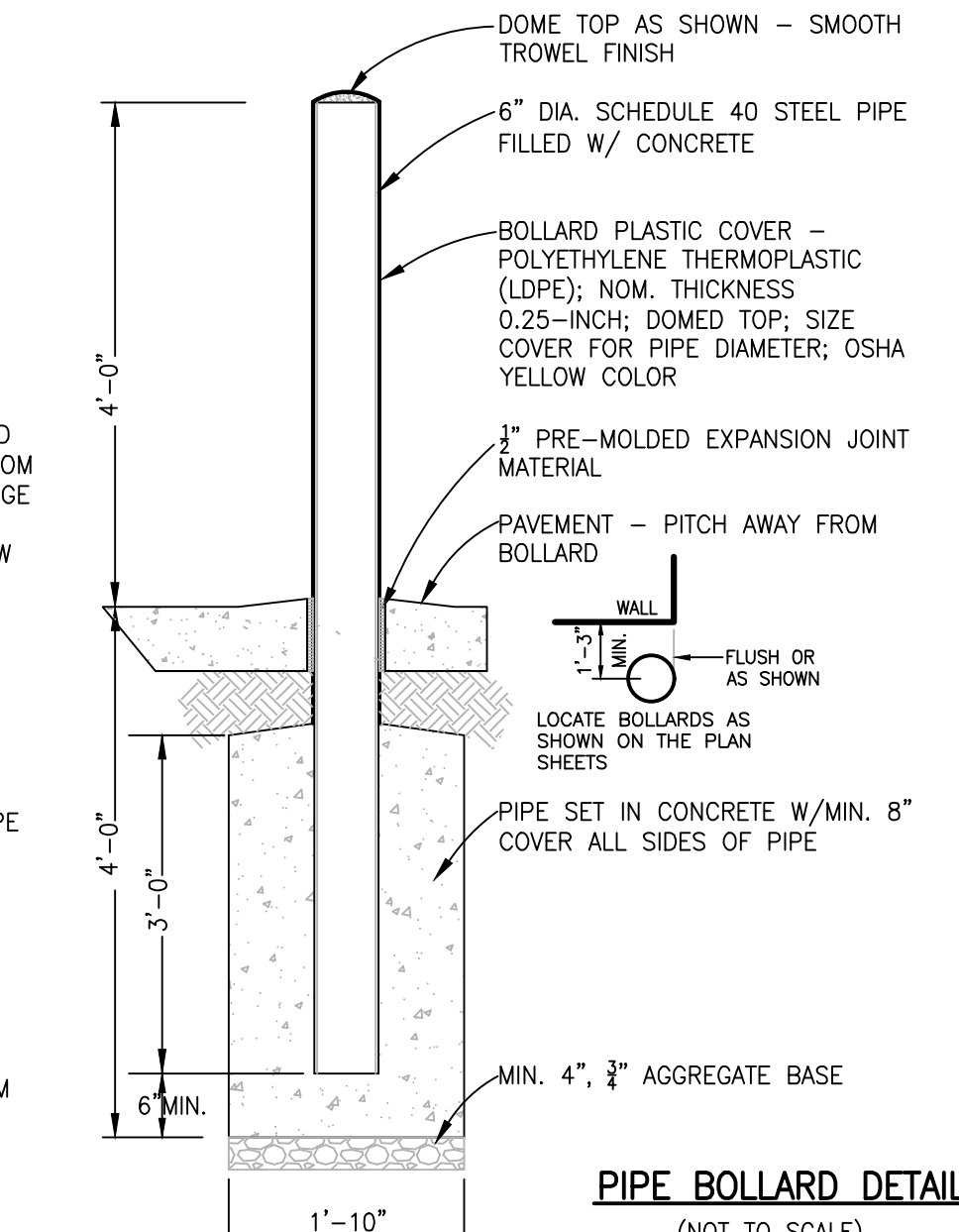
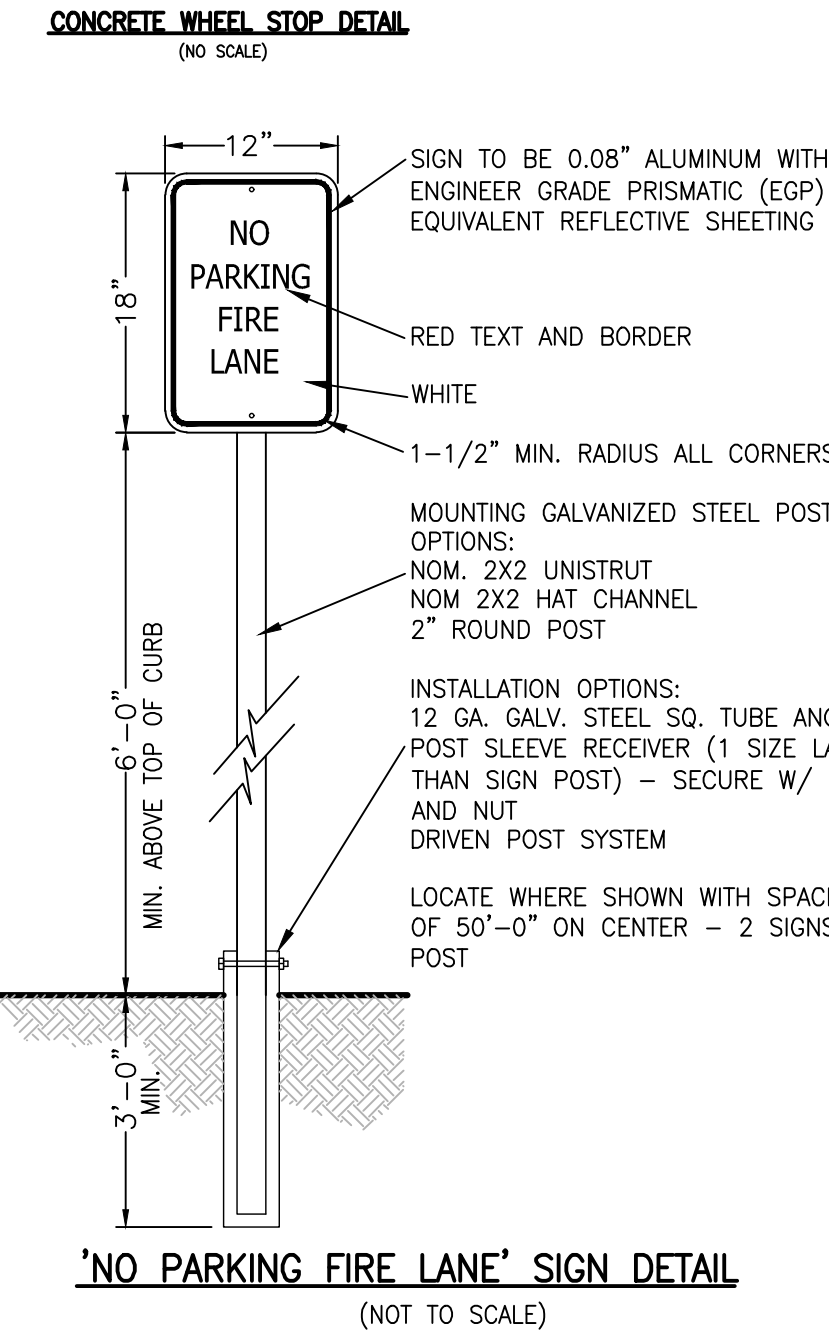
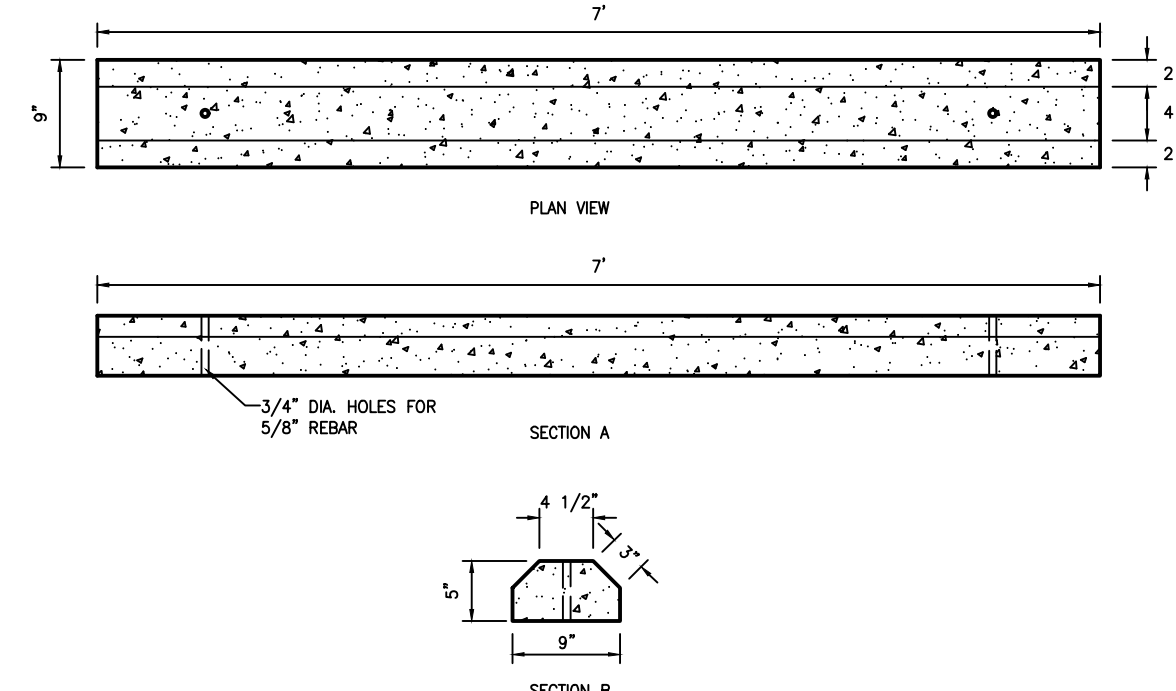
PARKING CALCULATION:
 MEDICAL OFFICE = 1 SPACE / 200 GSF = 7,865 / 200 = 40 SPACES TOTAL SPACES
 REQUIRED INCLUDING 2 BARRIER-FREE SPACES

LOADING SPACE: MIN 1, 10-FT x 50-FT x 14-FT CLEAR, REQUIRED

PROVIDED PARKING: 40 SPACES
 INCLUDING 8 BARRIER-FREE SPACES (PER OWNER PROGRAM NEEDS)

PROVIDED LOADING = VISITOR DROP-OFF AREA 24.0-FT x 50-FT x 14-FT

- GENERAL NOTES**
- ALL OUTDOOR LIGHTS SHALL BE SHIELDED TO REDUCE GLARE AND SHALL BE ARRANGED TO NOT INTERFERE WITH THE VISION OF PERSONS ON ADJACENT ROADWAYS OR ADJACENT PROPERTY.
 - ALL SIGNS SHALL MEET LOCAL MUNICIPALITY ORDINANCE REQUIREMENTS.
 - ACCESS ROADS TO SITE SHALL BE PROVIDED AND MAINTAINED DURING CONSTRUCTION. ACCESS ROADS SHALL BE CONSTRUCTED TO BE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF FIRE APPARATUS OF 84,000 POUNDS.
 - THE BUILDING ADDRESS SHALL BE A MINIMUM OF 6" HIGH LETTERS OF CONTRASTING COLORS AND BE CLEARLY VISIBLE FROM THE STREET. THE LOCATION AND SIZE ARE TO BE VERIFIED PRIOR TO INSTALLATION.
 - A KNOX BOX FOR FIRE DEPARTMENT USE SHALL BE LOCATED ADJACENT TO THE MAIN ENTRY.
 - PROPOSED MONUMENT SIGN TO MEET TOWNSHIP ORDINANCE REQUIREMENTS AND PROVIDED DURING THE SIGN PERMIT PROCESS. DURING CONSTRUCTION, THE BUILDING WILL BE EVALUATED FOR EMERGENCY RESPONDER RADIO SIGNAL STRENGTH. IF COVERAGE IS FOUND TO BE QUESTIONABLE OR INADEQUATE, THE CONTRACTOR OR THE BUILDING OWNER SHALL HIRE AN APPROVED CONTRACTOR TO CONDUCT A GRID TEST OF THE FACILITY. IF THE SIGNAL STRENGTH COVERAGE IS FOUND TO BE NON-COMPLIANT, AN APPROVED EMERGENCY RESPONDER RADIO COVERAGE SYSTEM SHALL BE PROVIDED IN THE BUILDING.



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS BEFORE THE LOCATION OR DEPTH UTILITIES SIGNIFICANTLY FROM THE PLANS.

BEBOSS ENGINEERING
 CALL MSS DIG
 1-800-482-7171
 www.beboss.com

BEBOSS
 Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

CLARKITAIT EYE CENTER
 TAIT HOLDING, LLC
 412 FAIRBANK STREET
 BIRMINGHAM, MI 48009
 248.259.4292

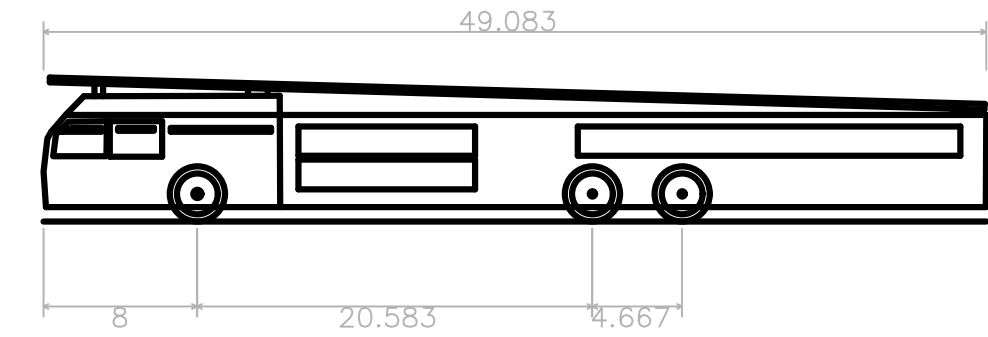
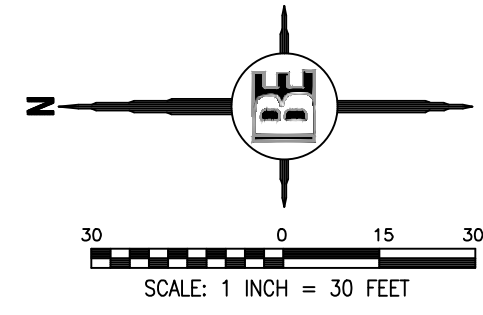
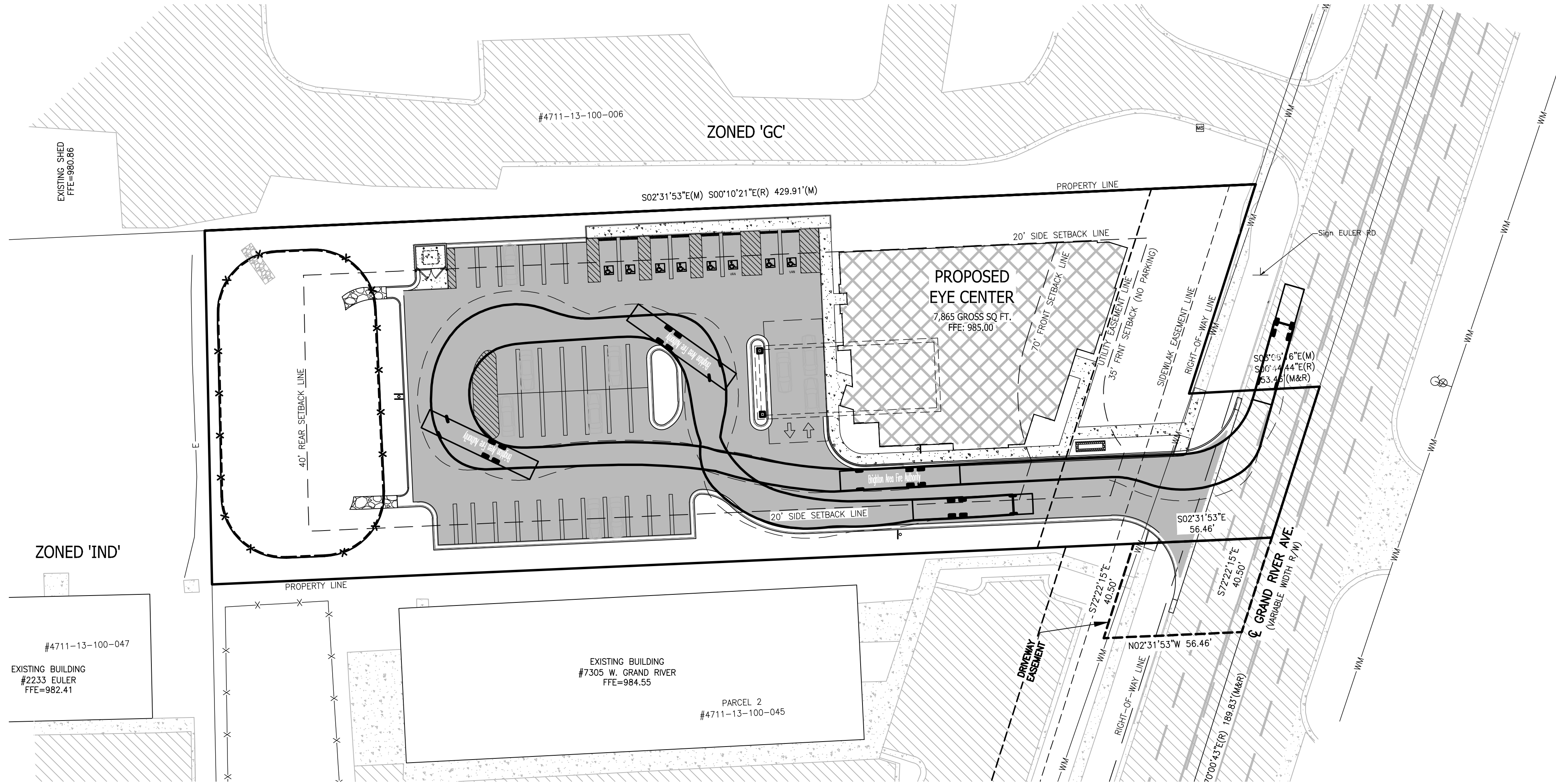
SITE PLAN

PROJECT	PREPARED FOR	TITLE	DATE
CLARKITAIT EYE CENTER	TAIT HOLDING, LLC	SITE PLAN	3-22-2023

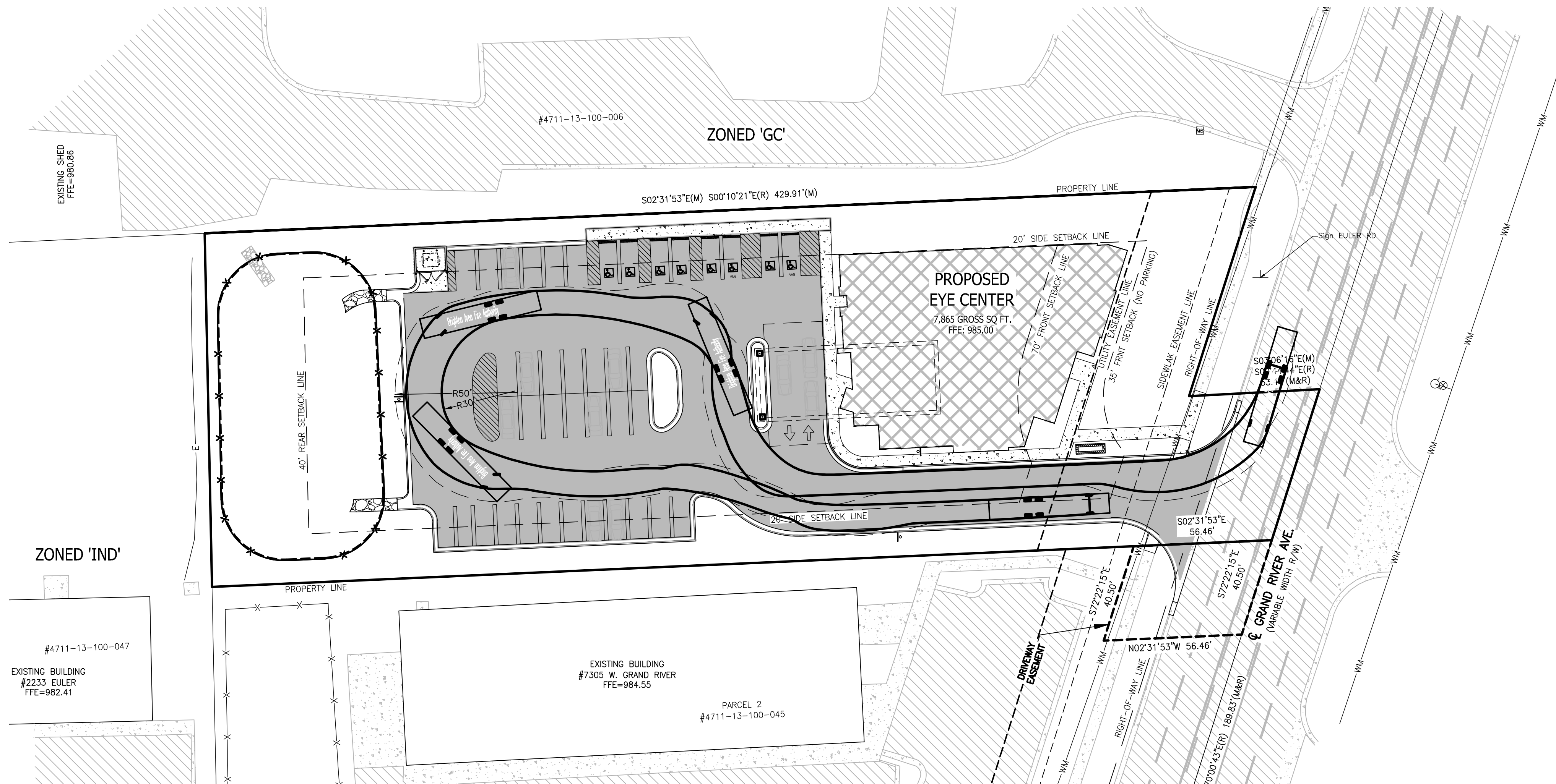
NO	BY	PER TWP REVIEW	REVISION PER
1	ST		

DESIGNED BY: DH
 DRAWN BY: JP
 CHECKED BY:
 SCALE: 1" = 30'
 JOB NO: 22-357
 DATE: 02/22/23
 SHEET NO. **5**

FOR SITE PLAN APPROVAL ONLY!
 NOT FOR CONSTRUCTION



Brighton Area Fire Authority
 Overall Length 49.083ft
 Overall Width 8.00ft
 Overall Body Height 20.583ft
 Min Body Ground Clearance 0.750ft
 Track Width 4.667ft
 Lock-to-lock time 5.00s
 Max Steering Angle (Virtual) 45.00°

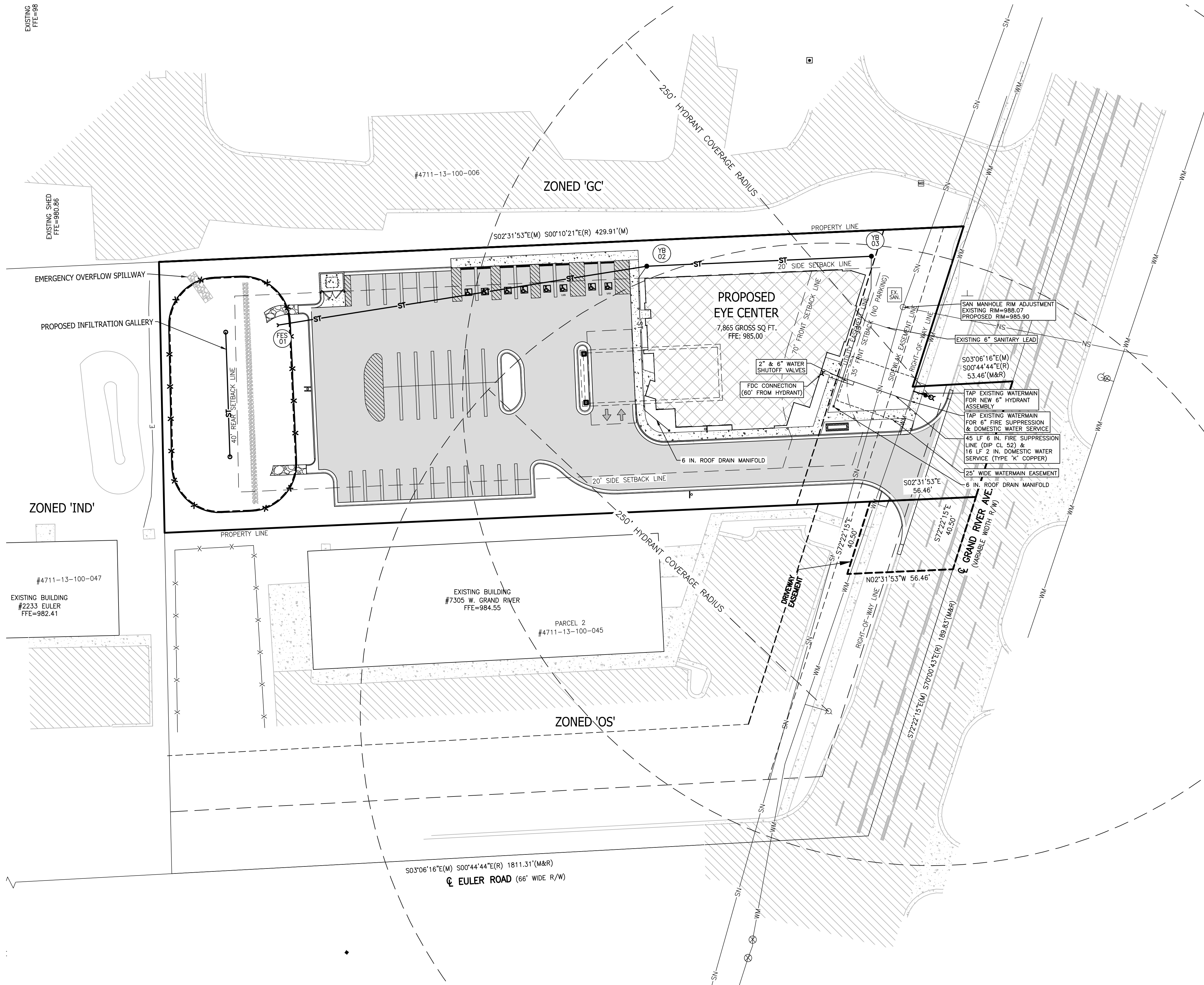
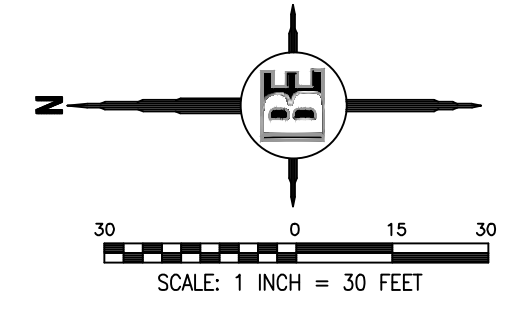


BEBOSS Engineering
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

BEBOSS
 Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

PROJECT	CLARK/TAIT EYE CENTER
PREPARED FOR	TAIT HOLDING, LLC 412 FAUBUS STREET BIRMINGHAM, MI 48009 248.259.4262
TITLE	CIRCULATION PLAN
DESIGNED BY:	DH
DRAWN BY:	JP
CHECKED BY:	
SCALE:	1" = 30'
JOB NO:	22-357
DATE:	02/22/23
SHEET NO.	5A
DATE	3-22-2023
PER TWP REVIEW	
REVISION PER	
NO BY	
1 ST	





FROM	TO	DRAIN AREA	ACRES A	RUNOFF COEFF C	EQUIV. AREA A * C	INTEN-SITY I	TIME OF CONC. Tc	ADDL. RUNOFF Q	RUNOFF (CFS) Q	PIPE LENGTH (LF)	PIPE DIA (IN)	VELOCITY FLOWING FULL (FPS)	HYDRAULIC GRADIENT SLOPE %	ACTUAL SLOPE USED	MANNING COEFFICIENT	MANNING FLOW CAPACITY	MANNING'S VELOCITY (FT/SEC)	TIME (MIN)	HG ELEV UPPER END	HG ELEV LOWER END	RIM ELEV UPPER END	RIM ELEV LOWER END	INVERT UPPER END	INVERT LOWER END	DROP DISTANCE (FT)	RIM-INV	RIM-HG >1	PIPE COVER >2.667	FLOW THRU COVER
3	2	3	0.15	0.47	0.07	4.38	15.00	0.30	120	8	2.43	0.49%	1.00%	0.013	1.21	3.47	0.58	980.99	979.79	983.75	983.75	980.46	979.26	3.29	2.76	2.62	0.30		
2	1	2	0.26	0.40	0.10	4.31	15.58	0.75	199	12	2.76	0.37%	0.75%	0.013	3.09	3.94	0.84	979.79	978.30	983.75	-	978.99	977.50	4.76	3.96	3.76	0.45		

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OF THE INFORMATION PROVIDED HEREIN. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY CONFLICTS BEFORE THE LOCATION OR DEPTH OF ANY UTILITIES IS SIGNIFICANTLY FROM THE PLANS.

BEFORE ANY WORK BEGINS, CALL MISS DIG AT 1-800-487-7171.

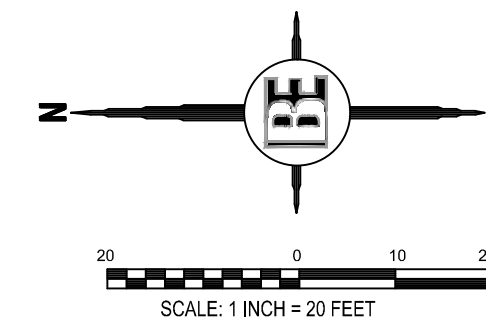
BEBOSS
Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

PROJECT: CLARK/TAIT EYE CENTER
 PREPARED FOR: TAIT HOLDING, LLC
 412 FAIRBANK STREET
 BIRMINGHAM, MI 48009
 248.259.4262

TITLE: UTILITY PLAN

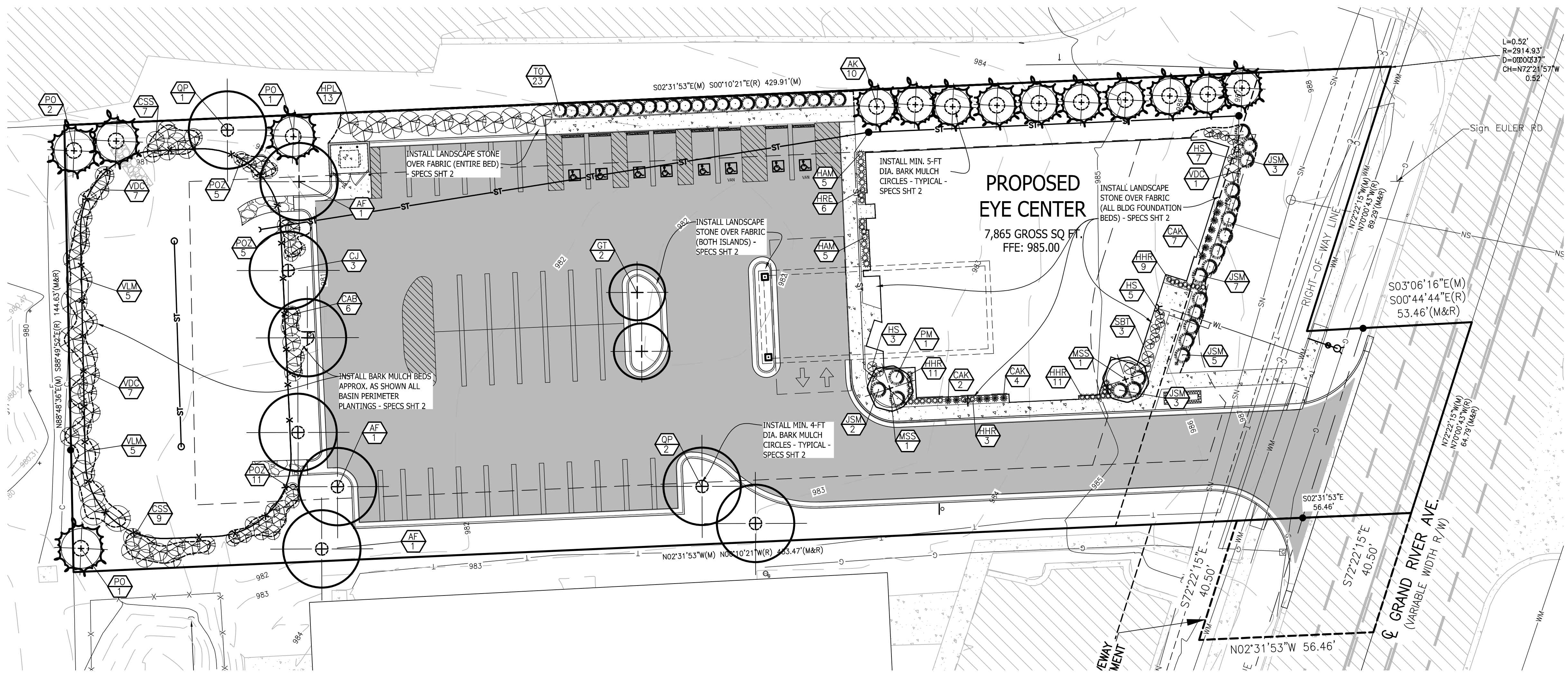
NO	BY	PER TWP REVIEW	REVISION PER	DATE
1	ST			3-22-2023

DESIGNED BY: DH
 DRAWN BY: JP
 CHECKED BY: ST
 SCALE: 1" = 30'
 JOB NO: 22-357
 DATE: 02/22/23
 SHEET NO. **7**



LANDSCAPE LEGEND

- EXISTING DECIDUOUS TREE
- PROPOSED DECIDUOUS TREE
- PROPOSED CONIFER TREE
- PROPOSED ORNAMENTAL TREE
- PROPOSED CONIFER SHRUB
- PROPOSED DECIDUOUS SHRUB
- PROPOSED PERENNIAL FORB
- PROPOSED ORNAMENTAL GRASS
- PROPOSED LANDSCAPE BOULDER
- PROPOSED TREE PROTECTION
SEE DETAIL SHEET C14



PLANT LIST					
KEY	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE	REMARK
DECIDUOUS SHADE TREES					
AF	3	Acer x fremanii 'Autumn Blaze'	Autumn Blaze hybrid Maple	2-1/2" cal.	B-B
CJ	3	Cercidiphyllum japonicum	Katsura Tree	2-1/2" cal.	B-B
GT	2	Ginkgo biloba 'Goldspire'	Ginkgo 'Goldspire'	2-1/2" cal.	B-B
QP	3	Quercus palustris	Pin Oak	2-1/2" cal.	B-B
ORNAMENTAL TREES					
MSS	2	Malus 'Spring Snow'	Spring Snow Crabapple	2" cal.	B-B
CONIFER TREES					
AK	10	Abies koreana	Korean Fir	6-ft hgt.	B-B
PO	4	Picea omorika	Serbian Spruce	6-ft hgt.	B-B
CONIFER SHRUBS					
JSM	20	Juniperus sabina 'monna'	Calgary Carpet Juniper	36" ht./#5	Cont.
PM	1	Pinus mugo var Pumilo	Dwarf Mugo Pine	36" ht./#5	Cont.
TO	23	Thuja occidentalis 'smaragd'	Emerald Arborvitae	36" ht./#5	Cont.
DECIDUOUS SHRUBS					
CAB	6	Cornus alba 'Bailhalo'	Ivory Halo Dogwood	24" ht./#3	Cont.
CSS	16	Cornus stolonifera 'smnscbd'	Artic Fire Yellow Dogwood	24" ht./#3	Cont.
HPL	13	Hydrangea paniculata 'Limelight'	Limelight Peegee Hydrangea	24" ht./#3	Cont.
HS	15	Hydrangea serrata 'smnhsdd'	Mountain Tuff Ah-ha Hydrangea	24" ht./#3	Cont.
POZ	21	Physocarpus opulifolius 'Zleyel2'	Raspberry Lemonade Ninebark	24" ht./#3	Cont.
SBT	3	Spiraea beutifolia 'tor Gold'	Glow Girl Birchleaf Spirea	24" ht./#3	Cont.
VDC	15	Viburnum dentatum 'Christom'	Blue Muffin Arrowwood Viburnum	24" ht./#3	Cont.
VLM	10	Viburnum lantana 'Mohican'	Mohican Viburnum	36" ht./#5	Cont.
PERENNIALS AND GRASSES					
CAK	13	Calamagrostis X Acutiflora Karl Foerster	Karl Foerster Feather Reed Grass	2 gal./#2	Cont.
HAM	10	Hosta 'August Moon'	August Moon Hosta	2 gal./#2	Cont.
HRE	6	Hosta 'Rainbows End'	Rainbows End Hosta	2 gal./#2	Cont.
HHR	34	Hemerocallis 'Happy Returns'	Happy Returns Daylily	2 gal./#2	Cont.

LANDSCAPE CALCULATIONS	
ZONING:	'OS' (OFFICE SERVICE)
SITE AREA:	1.42 AC +/- (61,740-SQFT) (NET 1.37 AC EXCLUSIVE OF R.O.W.)
PARKING SPACES PROVIDED:	44
REQUIRED:	
GREENBELT (SOUTH):	- STREET FRONTAGE: 1 CANOPY TREE / 40-LFT FRONTAGE, MIN 20-FT WIDE
BUFFERS:	WEST - OFFICE-TO-OFFICE ZONING = NONE EAST - OFFICE-TO-GEN. COMMERCIAL = TYPE 'C' NORTH - OFFICE-TO-INDUSTRIAL ZONING (BUT OFFICE USE) = TYPE 'B'
	TYPE 'B' BUFFER: 20-FT WIDE, 6-FT HGT WALL OR 3-FT HGT BERM AND 1 CANOPY & 1 CONIFER TREE & 4 SHRUBS / 20-LFT TYPE 'C' BUFFER: 10-FT WIDE, 1 CANOPY TREE OR 1 CONIFER TREE OR 4 SHRUBS / 20-LFT
PARKING LOT:	10-100 SPACES = 1 CANOPY TREE AND 100-SQFT LANDSCAPE AREA / 10 SPACES 1/3 OF TREES WITHIN LOT, 2/3 PERIMETER WITHIN 18-FT
STORMWATER BASIN:	1 TREE (CANOPY OR CONIFER) + 10 SHRUBS / 50-LFT PERIMETER AT TOP
PROVIDED:	
GREENBELT (SOUTH):	UTILITY EASEMENT PRECLUDES TREE PLANTING - BLDG FOUNDATION PLANTINGS SUBSTITUTED - 34 SHRUBS, 1 ORNAMENTAL TREE & 27 PERENNIALS & GRASSES
BUFFER (EAST):	429.91 / 20-LFT = 13 TREES + 36 SHRUBS REQUEST VARIABLE WIDTH BUFFER - 5 TO 20-FT WIDTH (AVG. 10-FT +) WITH 5-FT WIDE FOR UP TO 25% OF LENGTH TO ACCOMMODATE SIDEWALK WAIVER REQUEST PER ORD SECTION TABLE NOTE 12.02.03.B EXISTING FORESTED VEGETATION AT PERIMETER, NO BLDG, OFFICE USE
BUFFER (NORTH):	
PARKING LOT:	44 SPACES = 5 CANOPY TREES + 440-SQFT LANDSCAPE AREA = 2 TREES IN 1, 270-SQFT EA ISLAND + 3 TREES AROUND PERIMETER (WITHIN 350-SQFT & 167-SQFT PENINSULAS)
STORMWATER BASIN:	330 LFT PERIMETER AT TOP OF BANK / 50 = 7 TREES + 66 SHRUBS

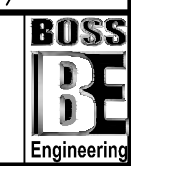
THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF ANY UTILITIES CROSSINGS IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ANY UTILITIES CROSSINGS IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ANY UTILITIES CROSSINGS IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ANY UTILITIES CROSSINGS IN THE FIELD PRIOR TO CONSTRUCTION.

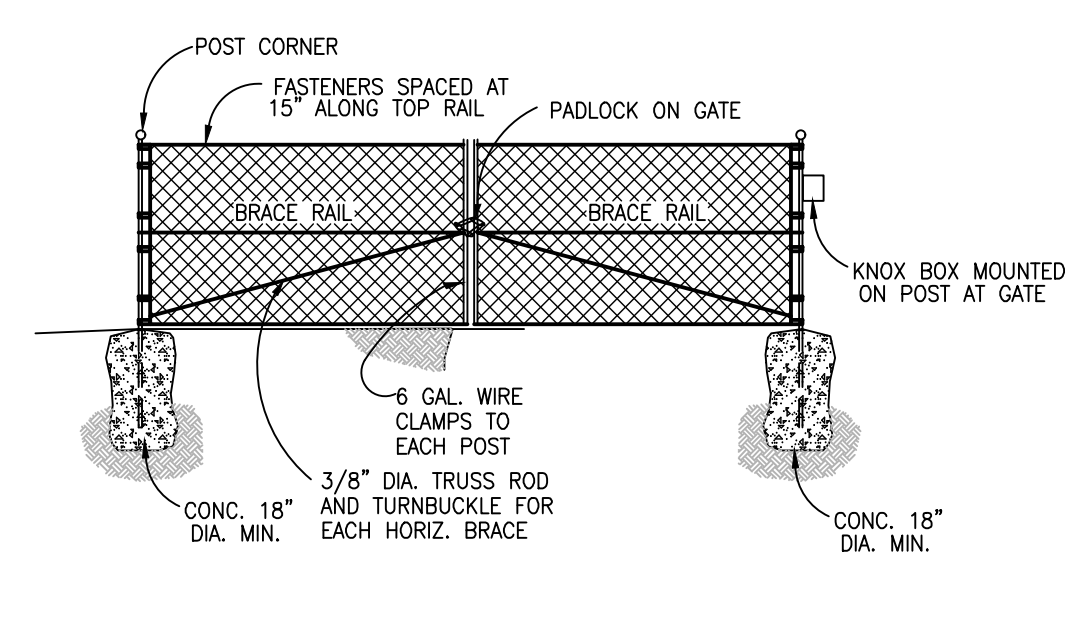
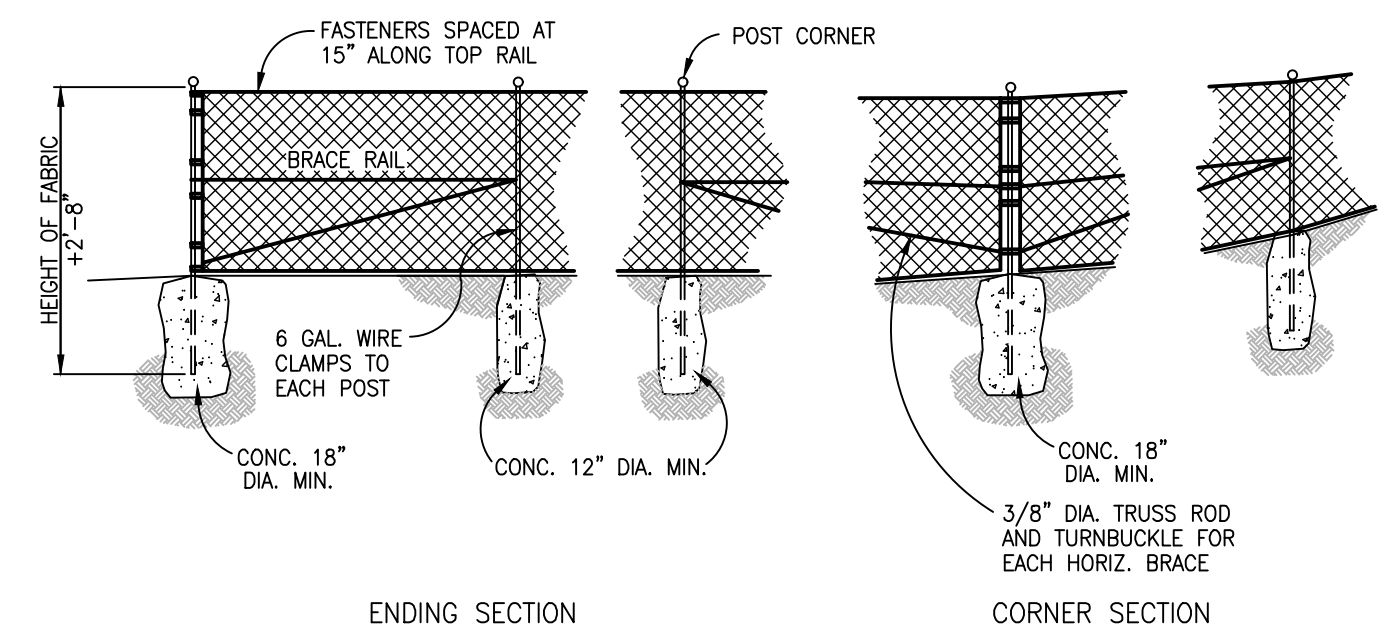
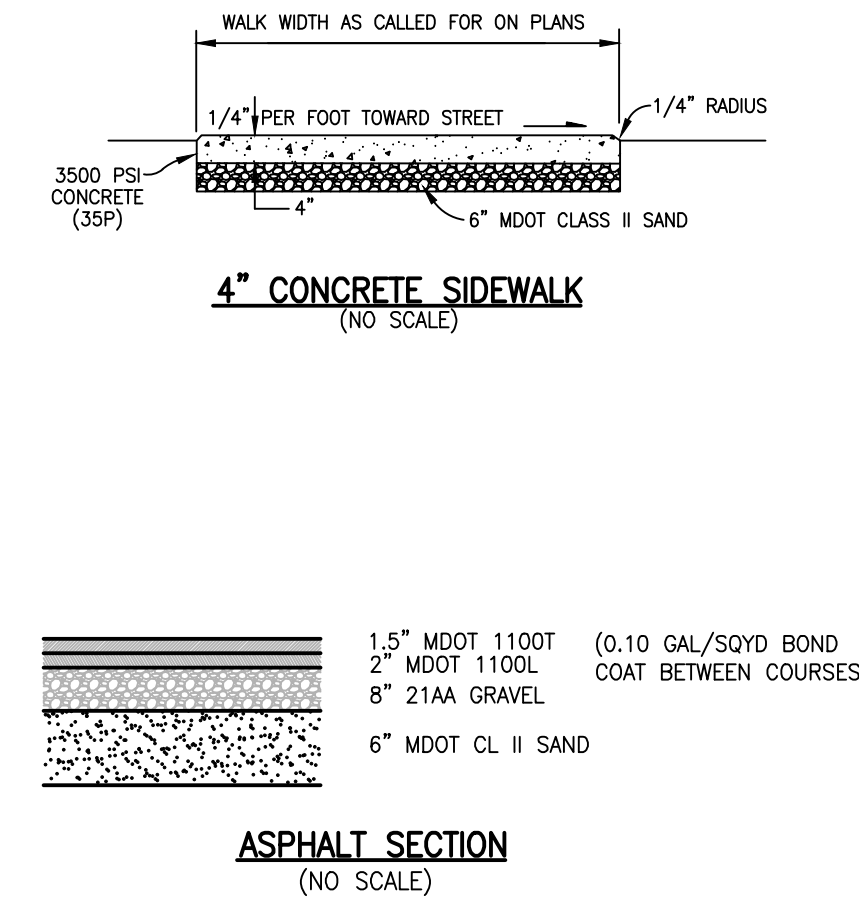
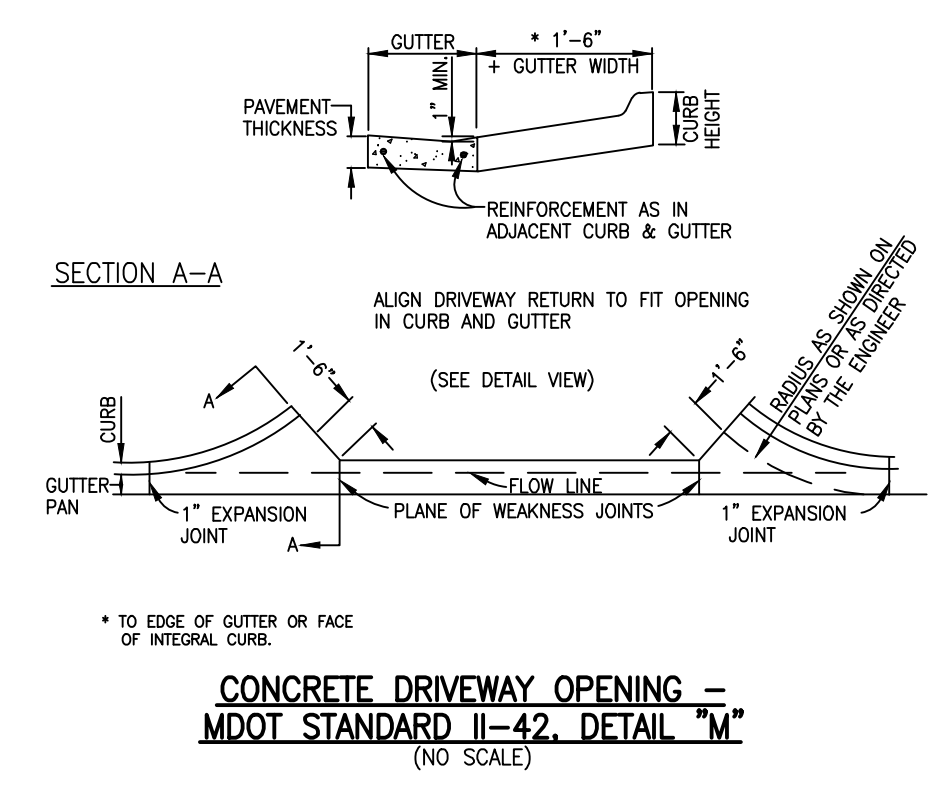
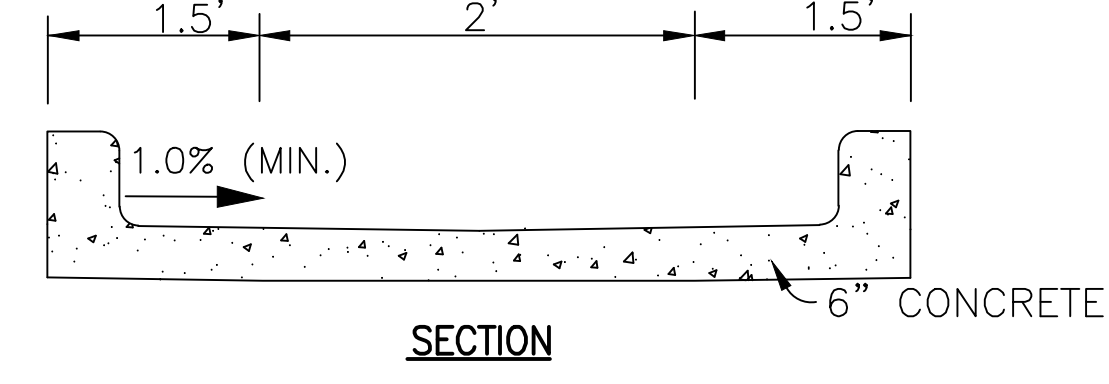
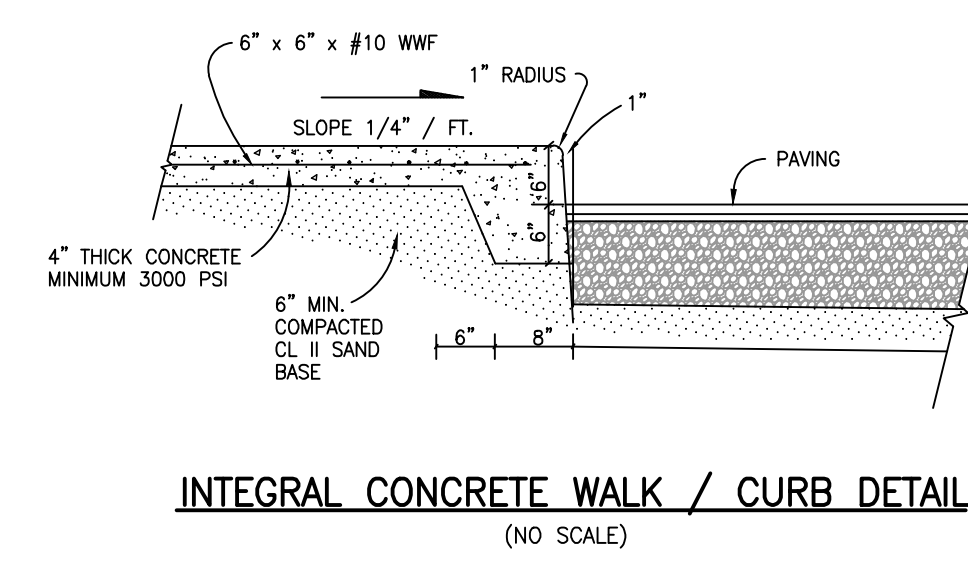
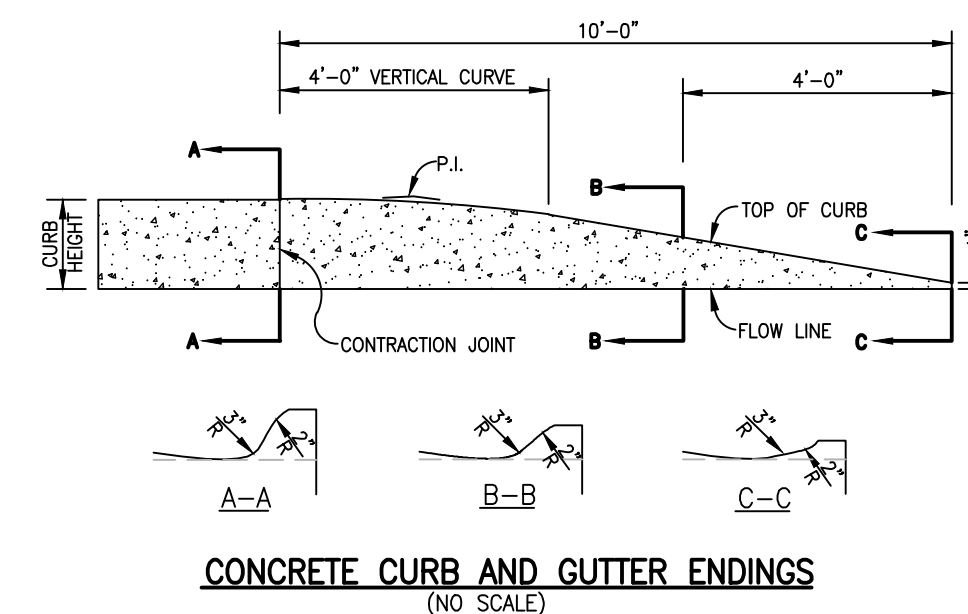
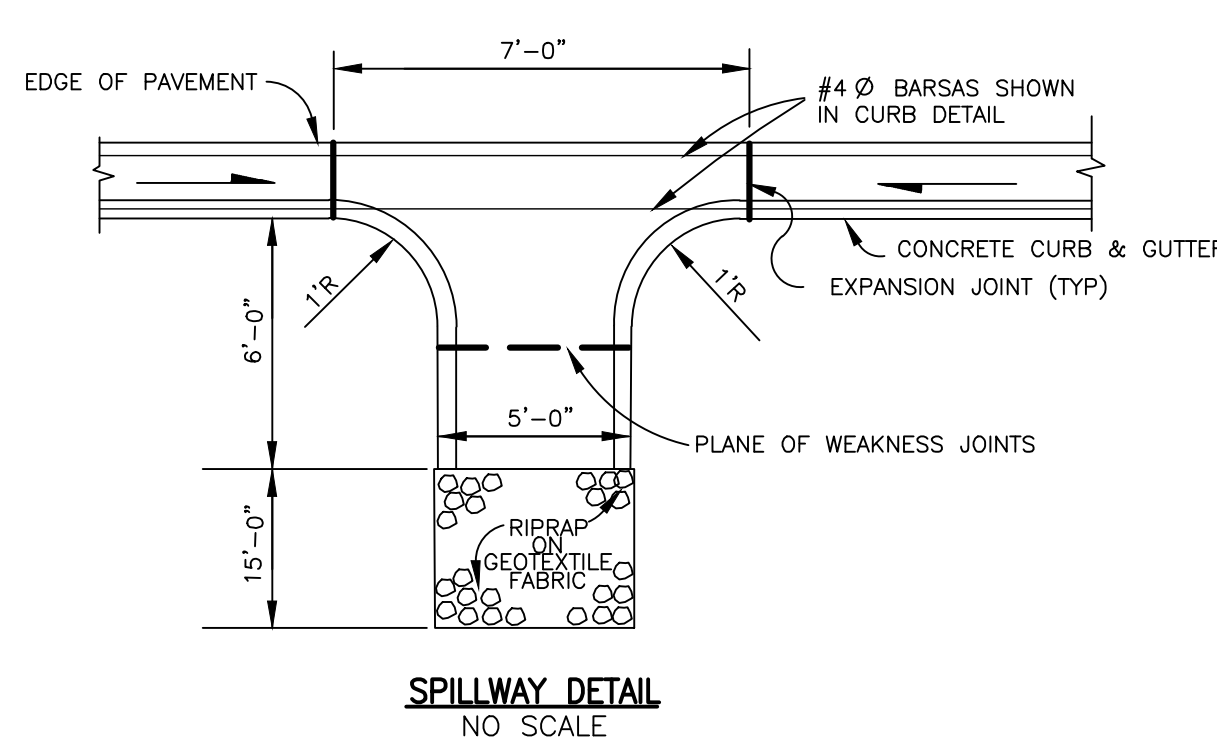
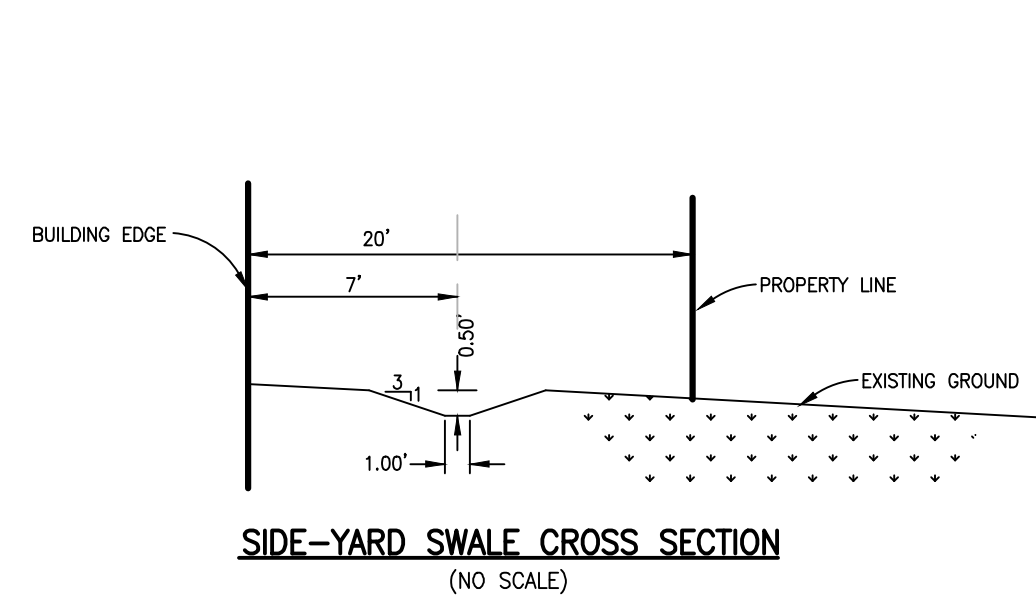
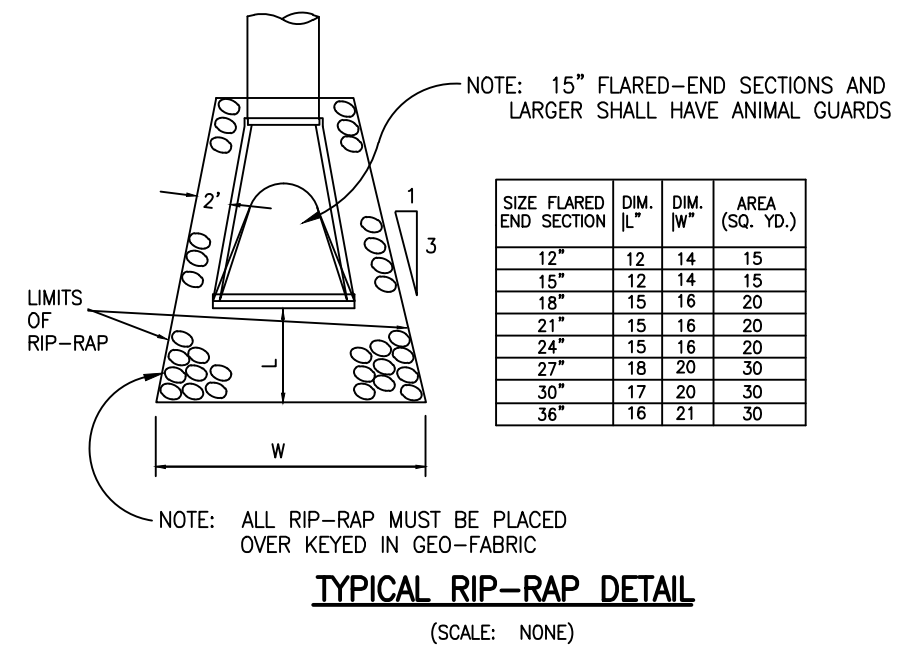
BEBOSS
Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
517.546.4836 FAX 517.548.1670

CLARK/TAIT EYE CENTER
TAIT HOLDING, LLC
412 FAIRBANK STREET
BIRMINGHAM, MI 48009
248.259.6762

PROJECT: CLARK/TAIT EYE CENTER
PREPARED FOR: TAIT HOLDING, LLC
TITLE: LANDSCAPE PLAN
DESIGNED BY: PC
DRAWN BY: PC
CHECKED BY:
SCALE: 1" = 20'
JOB NO: 22-357
DATE: 02/22/23
SHEET NO. 8

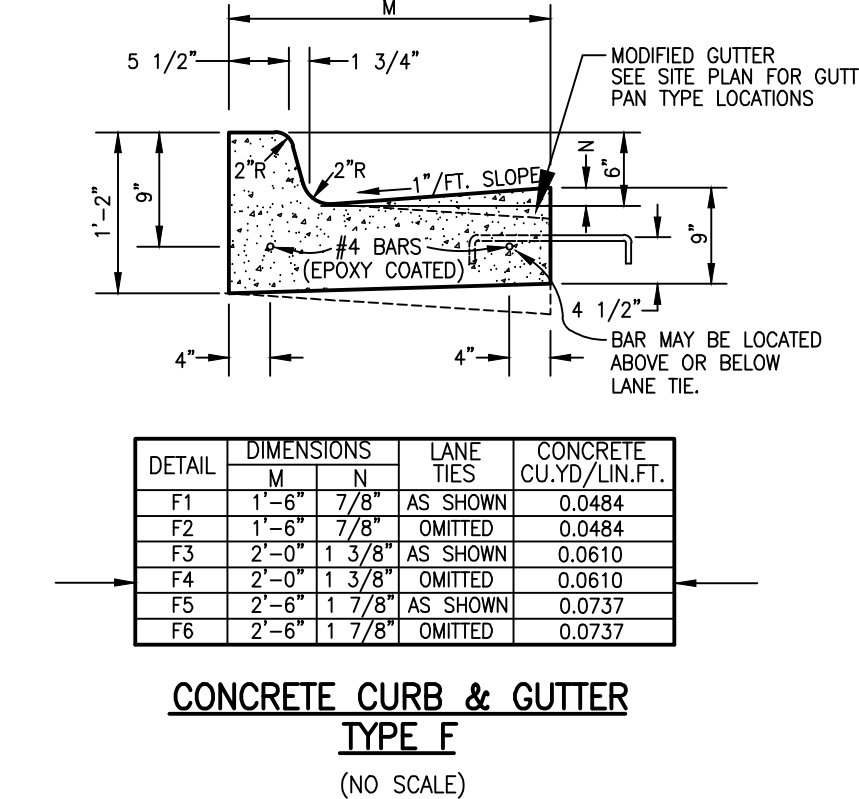
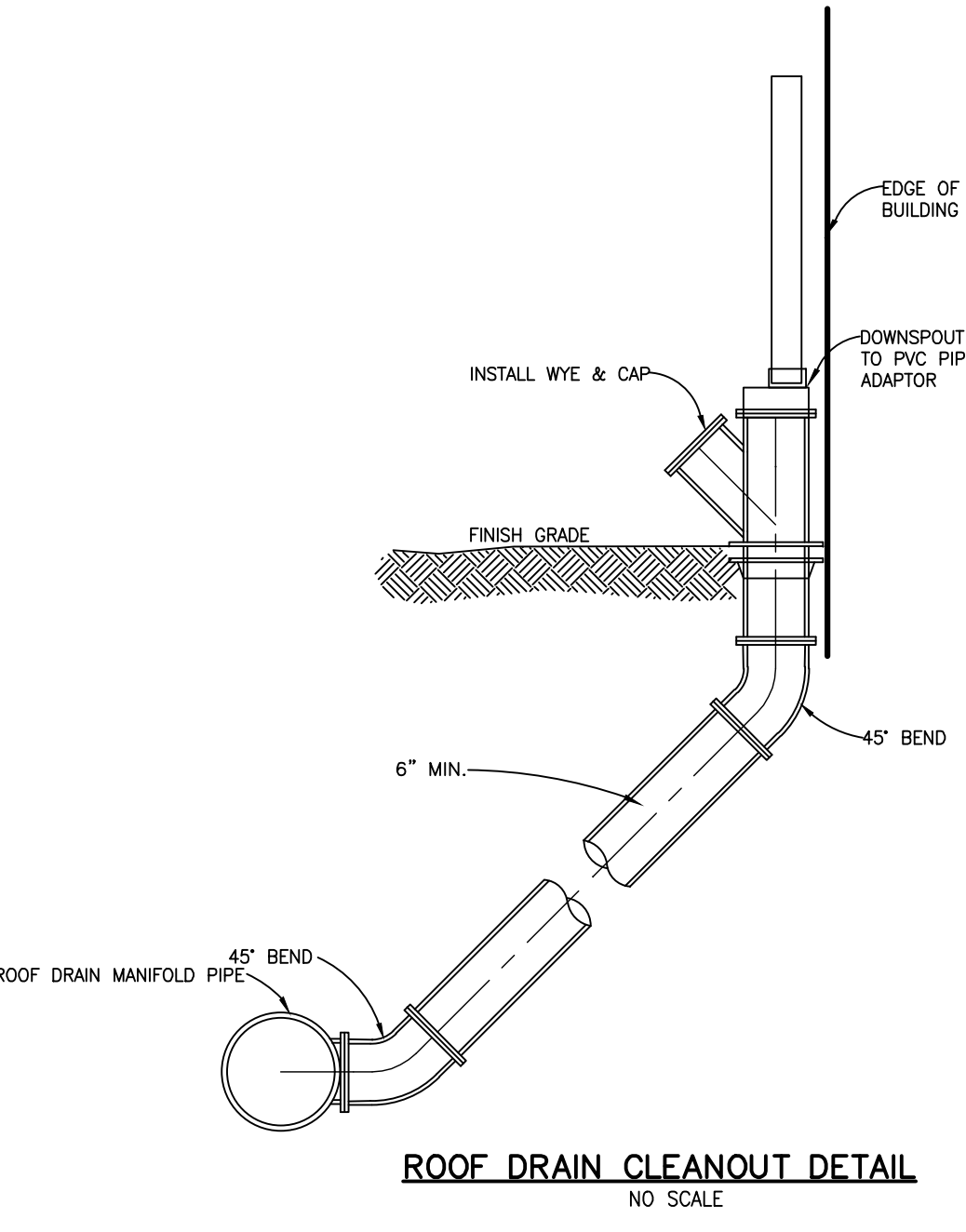
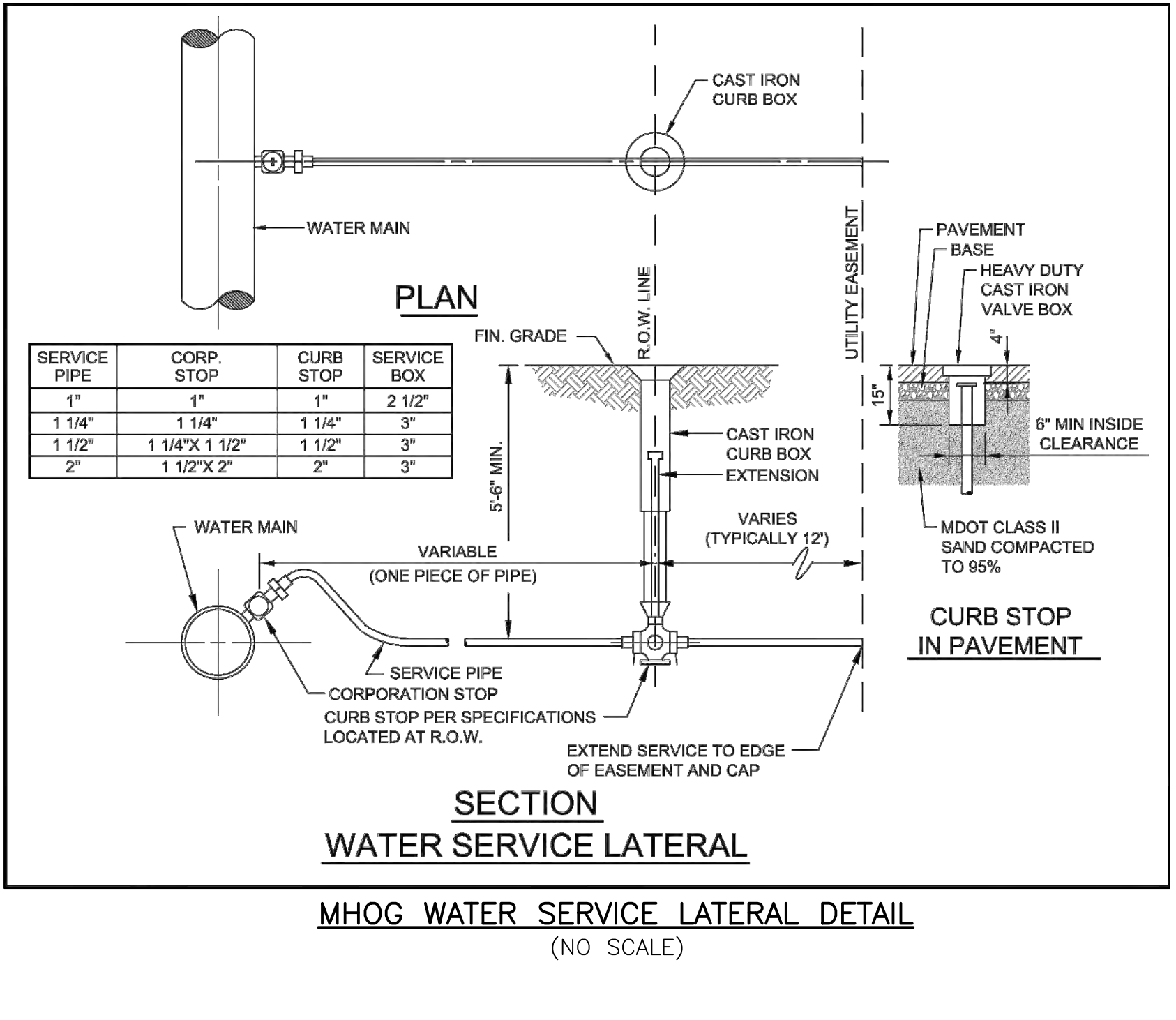
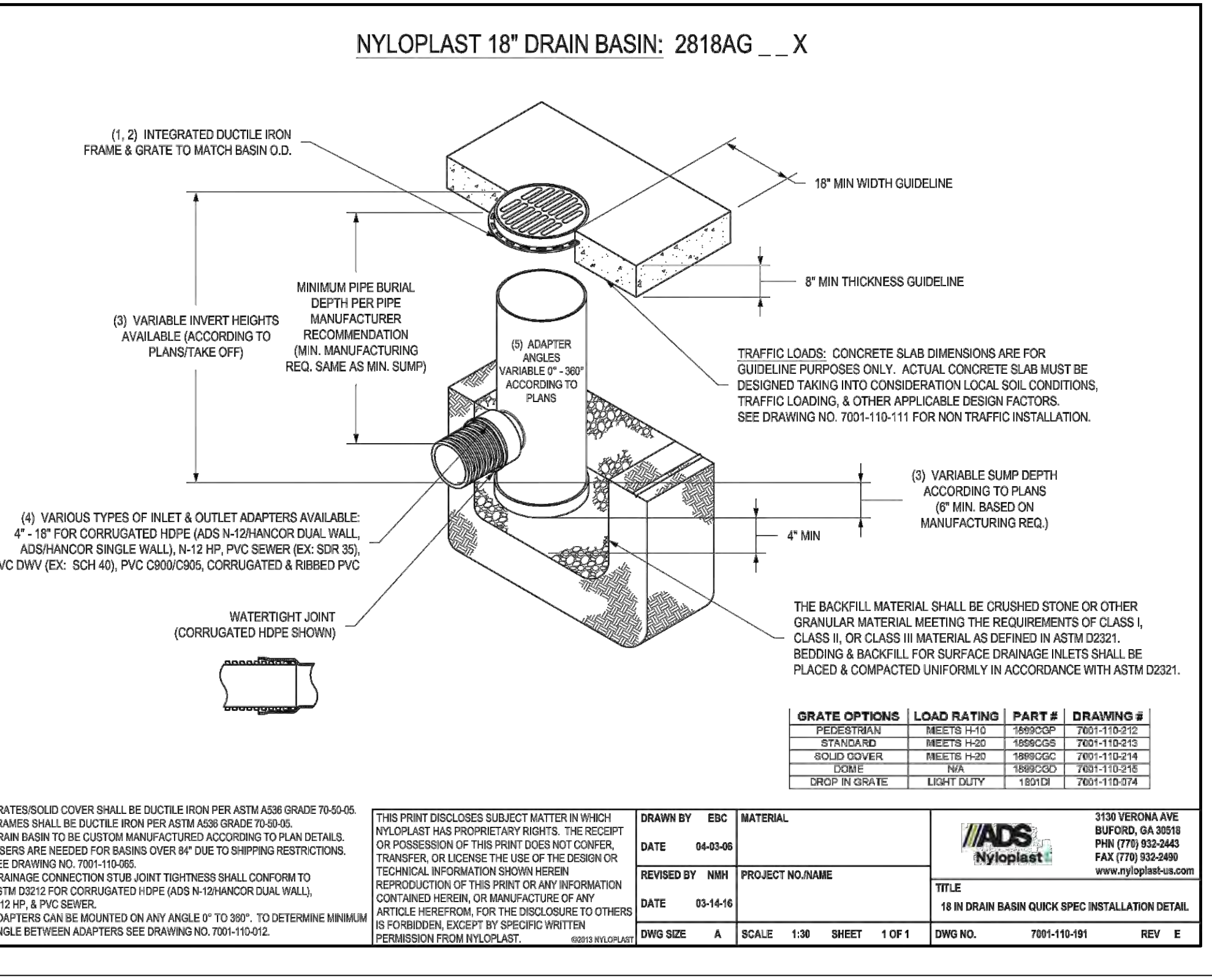
FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION





CHAIN-LINK FENCE
(NO SCALE)

6' CHAIN-LINK FENCE GATE
(NO SCALE)



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS MADE FOR THE ACCURACY OF THESE UTILITIES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND ELEVATION OF EXISTING UTILITIES. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ANY CONTACTS ARE FOUND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ANY CONTACTS ARE FOUND. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN ANY CONTACTS ARE FOUND.

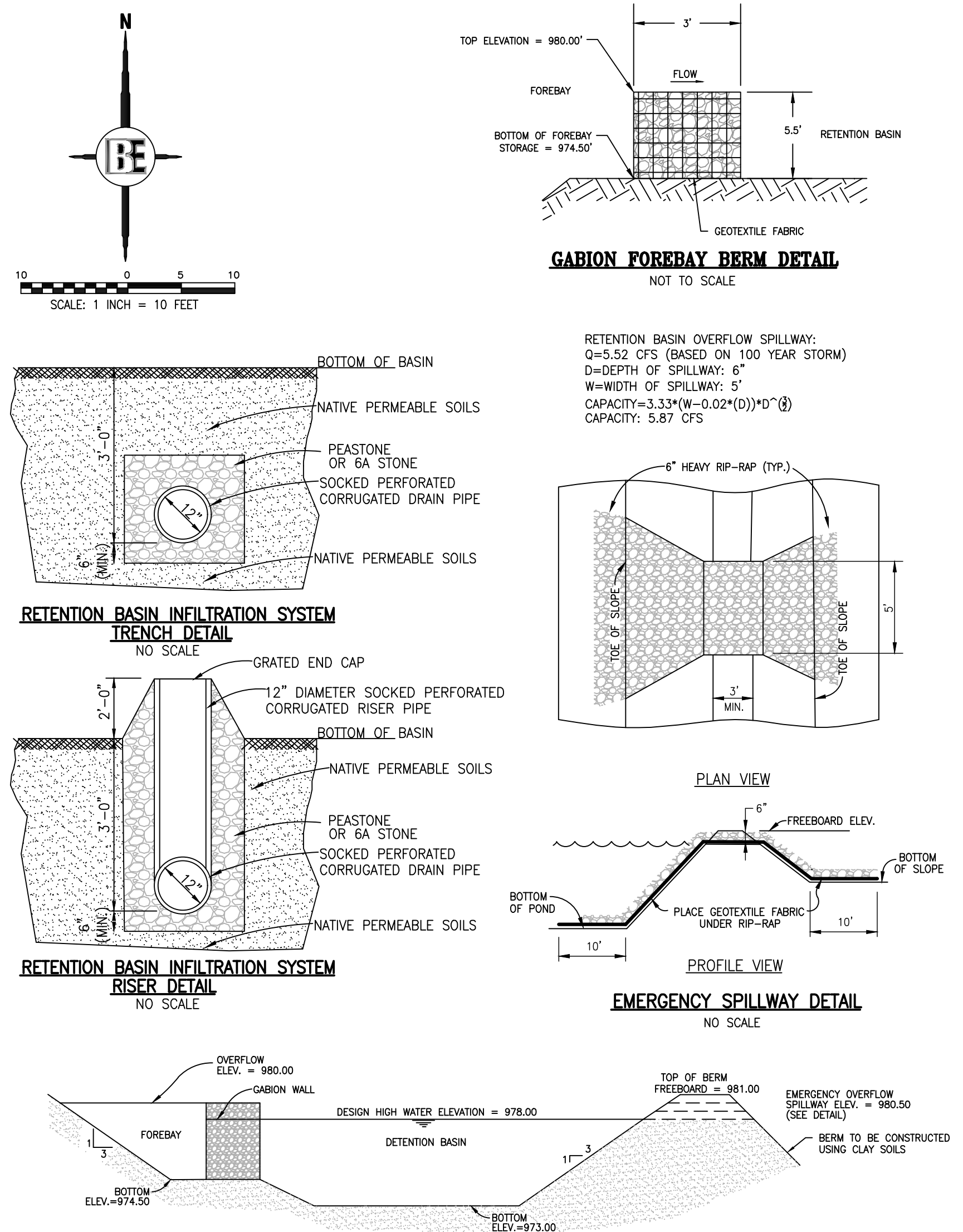
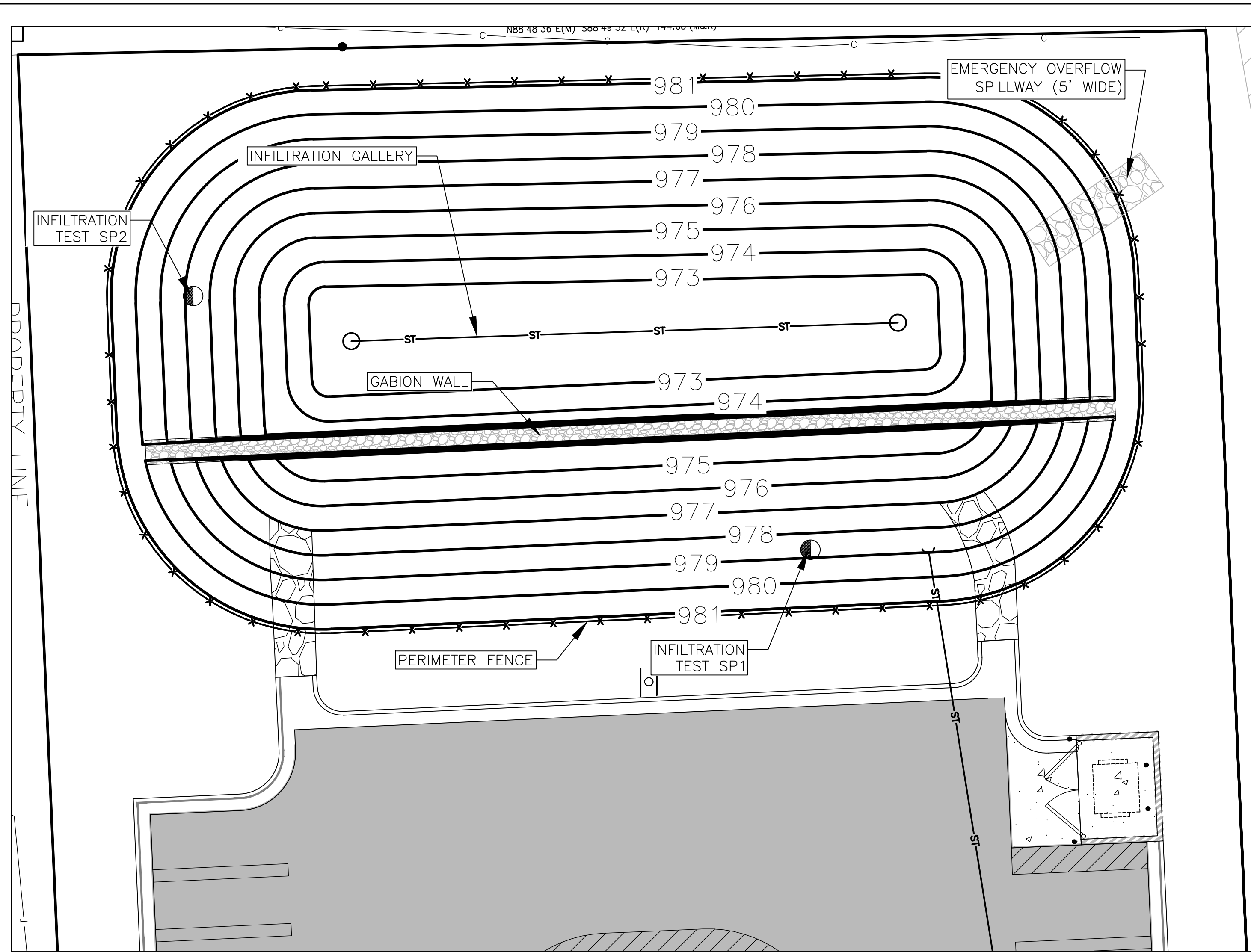
BEBOSS Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
517.546.4836 FAX 517.548.1670

CLARK/TAIT EYE CENTER
PREPARED FOR: TAIT HOLDING, LLC
412 FAIRBANK STREET
BIRMINGHAM, MI 48009
248.259.4262

CONSTRUCTION DETAILS

PROJECT: CLARK/TAIT EYE CENTER
PREPARED FOR: TAIT HOLDING, LLC
DATE: 3-22-2023

DESIGNED BY: DH
DRAWN BY: JP
CHECKED BY:
SCALE: NO SCALE
JOB NO: 22-357
DATE: 02/22/23
SHEET NO. 9



LIVINGSTON COUNTY RETENTION BASIN CALCULATIONS

AREA (ACRES)	IMPERVIOUS FACTOR	ACRE IMPERVIOUS
0.86	0.9	0.77
0.00	0.7	0.00
0.89	0.2	0.12

COMPOUND C: 0.62
TOTAL DRAINAGE AREA: 1.44 ACRES

WATER QUALITY VOLUME V_{wq}
 $V_{wq} = 3.630(C)A = 3241 \text{ FT}^3$
 Are upstream infiltration BMP's provided? NO
 $V_{wq} = 0.15(V_{wq}) = 486 \text{ FT}^3$

WATER QUALITY RATE FOR MECHANICAL STRUCTURE
 $T_c = \text{MAX TIME OF CONCENTRATION} = 15.61 \text{ MIN}$
 $Q_{wq} = (CA)30.2(T_c + 9.17)^{0.81} = 2.00 \text{ CFS}$

CHANNEL PROTECTION VOLUME CONTROL - REQUIRED
 $V_{cpr} = 4.719(C)A = 4213 \text{ FT}^3$

CHANNEL PROTECTION VOLUME CONTROL - PROVIDED
 In-Situ Infiltration Rate = 2 IN/HR
 Are upstream infiltration BMP's provided? NO
 Basin Footprint Infiltration Area Required = 843 FT^2
 $V_{cpr} = 0 \text{ FT}^3$

100-YEAR RETENTION VOLUME
 $V_{100} = 1986(C)A(2)V_{cpr} = 33900 \text{ FT}^3$
 $V_{2-INCH} = (2/12)A = 10454.40 \text{ FT}^3$
 $Q_{100} = (CA)83.3(T_c + 9.17)^{0.81} = 6.52 \text{ CFS}$

FOREBAY STORAGE VOLUME PROVIDED:

ELEVATION	AREA	VOLUME	TOTAL VOLUME
980	1784	1,681	3,837
979	1578	1,390	1,956
978	1201	566	566
977.5	1064	0	0
977	853	0	0
976	636	0	0
975	247	0	0
974.5	0	0	0

BASIN STORAGE PROVIDED 3 FT freeboards using 2-inch runoff 1:3 slope

ELEVATION	AREA (FT ²)	DEPTH (FT)	VOLUME (FT ³)	TOTAL VOLUME (FT ³)
981	7529	1	7,040	28,464
980	6550	1	6,089	21,424
979	5628	1	4,467	15,335
978	3306	1	3,073	10,868
977	2839	1	2,621	7,796
976	2402	1	2,198	5,175
975	1994	1	1,749	2,977
974	1504	1	1,228	1,228
973	952	0	0	0

PROVIDED FOOTPRINT OF BASIN BOTTOM AREA 952 FT^2

BASIN DESIGN SUMMARY

FOREBAY SIZE REQUIRED =	3241 FT^2
FOREBAY SIZE PROVIDED =	3637 FT^2
BASIN SIZE REQUIRED =	8898 FT^2
BASIN SIZE PROVIDED =	10,868 FT^2

Basin Dewatering Check
 Using V_{100} from Retention Calculations) = 33900 FT^3
 Basin infiltrative Footprint = 952 FT^2
 Effective Water depth to infiltrate (FT) = 35.6 FT
 Effective Water depth to infiltrate (IN) = 427.3 IN
 Most restrictive Infiltrative Rate = 82.7 IN/HR
 Time to Drain Retention basin = 5.17 HR

BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

CLARK/TAIT EYE CENTER
 TAIT HOLDING, LLC
 412 FAIRVIEW STREET
 BIRMINGHAM, MI 48009
 248.259.4262

PROJECT: CLARK/TAIT EYE CENTER
 PREPARED FOR: TAIT HOLDING, LLC
 TITLE: BASIN DETAILS
 DATE: 3-22-2023

NO.	BY	PER	TWP	REVIEW	DATE
1	ST				

DESIGNED BY: PC
 DRAWN BY: PC
 CHECKED BY:
 SCALE: NO SCALE
 JOB NO: 22-357
 DATE: 02/22/23
 SHEET NO. 10

HASTINGS TESTING ENGINEERS AND ENVIRONMENTAL INC.
 REPORT OF SOIL BORING
 CLIENT: CLARK/TAIT HOLDING, LLC
 DATE: 02/28/23

Soil Description	Depth (ft)	Sample No.	Moisture (%)	Specific Gravity	Natural Water (%)	Unconfined Strength (lb/ft ²)
Organic Silt and Material	0-5					
Silty coarse brown sand with silt	5-10					
Silty Brown Clay	10-15					
	15-20					
	20-25					
	25-30					
	30-35					
	35-40					
	40-45					
	45-50					
	50-55					
	55-60					
	60-65					
	65-70					
	70-75					
	75-80					
	80-85					
	85-90					
	90-95					
	95-100					

HASTINGS TESTING ENGINEERS AND ENVIRONMENTAL INC.
 REPORT OF SOIL BORING
 CLIENT: CLARK/TAIT HOLDING, LLC
 DATE: 02/28/23

Soil Description	Depth (ft)	Sample No.	Moisture (%)	Specific Gravity	Natural Water (%)	Unconfined Strength (lb/ft ²)
Coarse Brown Sand with Gravel and trace of silt	0-5					
	5-10					
	10-15					
	15-20					
	20-25					
	25-30					
	30-35					
	35-40					
	40-45					
	45-50					
	50-55					
	55-60					
	60-65					
	65-70					
	70-75					
	75-80					
	80-85					
	85-90					
	90-95					
	95-100					

HASTINGS TESTING ENGINEERS AND ENVIRONMENTAL INC.
 REPORT OF SOIL BORING
 CLIENT: CLARK/TAIT HOLDING, LLC
 DATE: 02/28/23

Soil Description	Depth (ft)	Sample No.	Moisture (%)	Specific Gravity	Natural Water (%)	Unconfined Strength (lb/ft ²)
Silty fine brown sand	0-5					
	5-10					
	10-15					
	15-20					
	20-25					
	25-30					
	30-35					
	35-40					
	40-45					
	45-50					
	50-55					
	55-60					
	60-65					
	65-70					
	70-75					
	75-80					
	80-85					
	85-90					
	90-95					
	95-100					

January 27, 2023
 Tait Holding, LLC
 412 Fairview Street
 Birmingham, MI 48009
 Attention: Steve Tait
 Regarding: Clark/Tait Eye Center, Brighton, MI - Soil Infiltration Testing

Dear Mr. Tait,

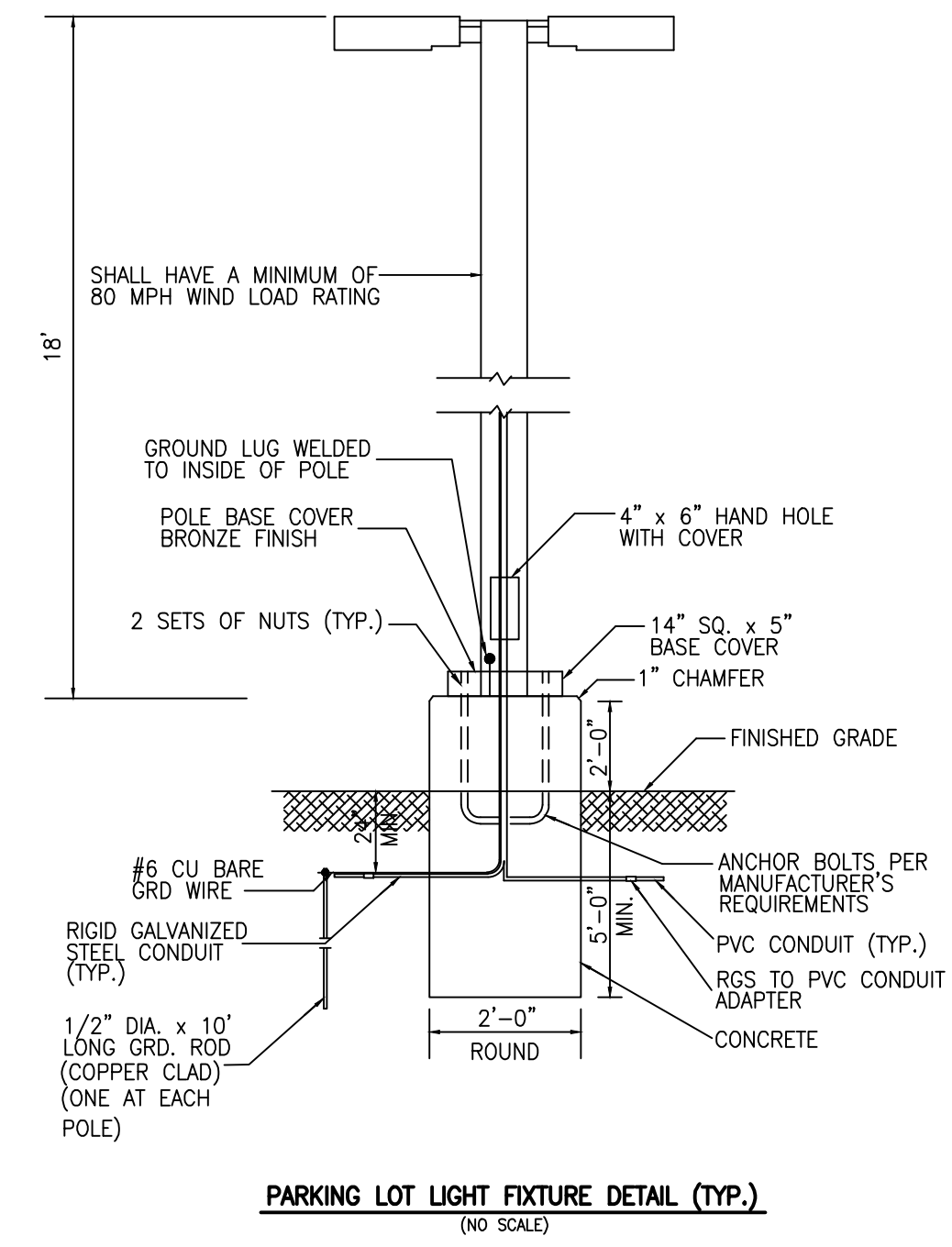
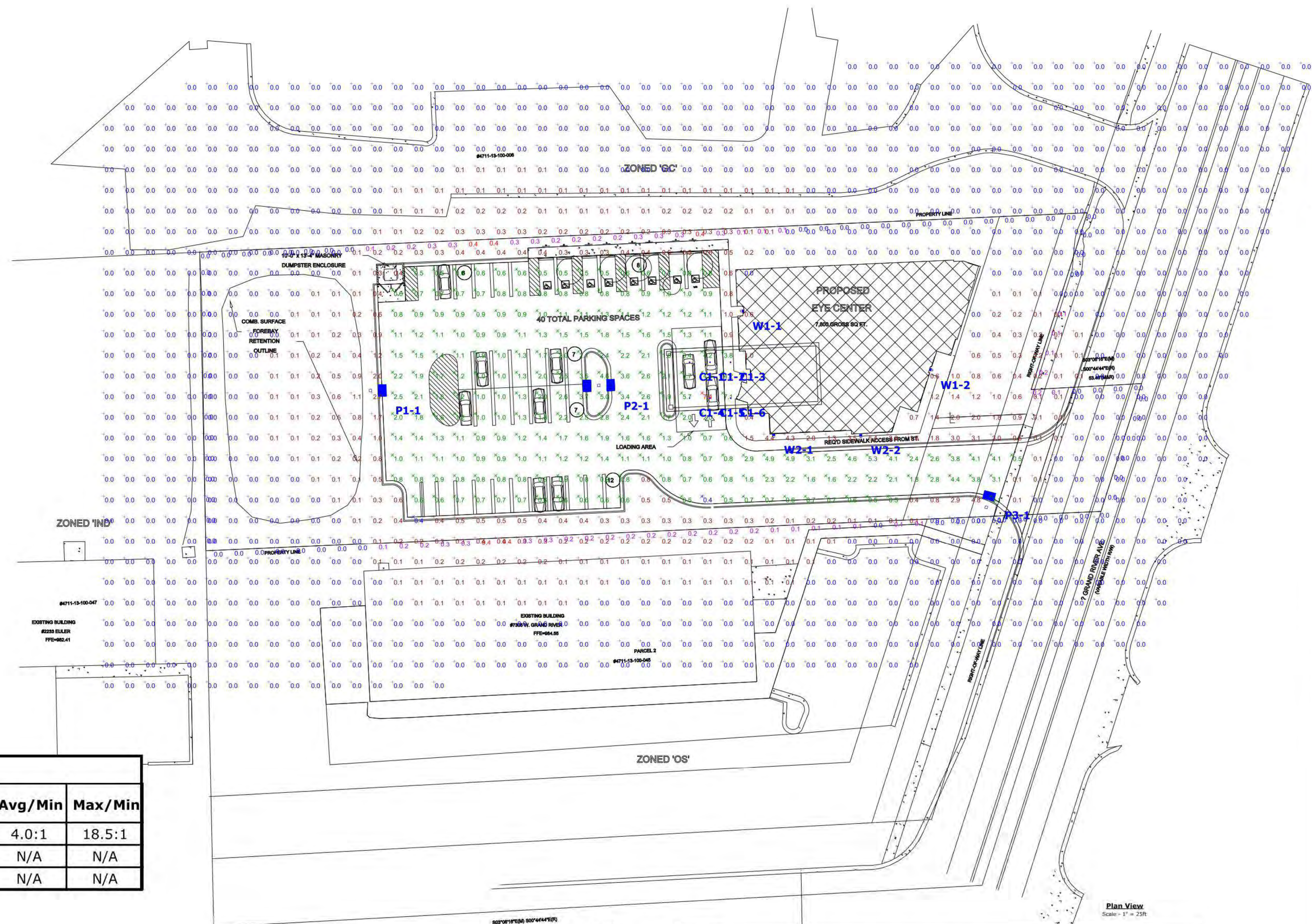
Hastings Testing Engineers and Environmental Inc. was requested to perform soil infiltration testing within a proposed retention pond at the proposed Clark/Tait Eye Center located on the north side of Grand River Avenue just east of Euler Road in Genoa Township, Michigan. The testing was performed to determine the in-situ infiltration rate of the existing sub-grade soils. The locations of the tests can be found on the enclosed diagram.

The double ring infiltration test was performed in the bottom of the proposed retention ponds according to ASTM D 3385. Test pits were excavated to the bottom of the proposed pond elevation which was approximately five feet below the existing site grade. The test locations and elevations were located by Boss Engineering. The average infiltration rate results are as follows:

Test Pit #1
 Sub-Grade Material: Coarse Brown Sand With Gravel
 $K_{inf} = 82.7 \text{ in/hr}$

Test Pit #2
 Sub-Grade Material: Coarse Brown Sand With Gravel
 $K_{inf} = 141.7 \text{ in/hr}$

If you should have further question, please contact our office:
 Sincerely,
 Marc A. W. Smith PE



Statistics						
Description	Symbol	Avg	Max	Min	Avg/Min	Max/Min
Parking and Drive	✕	1.6 fc	7.4 fc	0.4 fc	4.0:1	18.5:1
Property Line	+	0.1 fc	0.4 fc	0.0 fc	N/A	N/A
Overall	+	0.3 fc	7.4 fc	0.0 fc	N/A	N/A

General Note

- SEE DRAWING FOR LUMINAIRE MOUNTING HEIGHT.
- CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0"
- LIGHTING ALTERNATES REQUIRE NEW PHOTOMETRIC CALCULATION AND RESUBMISSION TO CITY FOR APPROVAL.

THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIREMENTS DEFINED IN ASHRAE 90.1 2013. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT ASG@GASSERBUSH.COM OR 734-266-6705.

FOR ORDERING INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.

THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lumens Per Lamp	Light Loss Factor	Wattage
○	C1	6	Lithonia Lighting	LDN6 40/10 L06AR LSS	6IN LDN, 4000K, 1000LM, CLEAR, SEMI-SPECULAR REFLECTOR, CRI80	952	0.9	10.44
□	P1	1	Lithonia Lighting	DSX0 LED P4 40K 70CRI T4M	D-Series Size 0 Area Luminaire P4 Performance Package 4000K CCT 70 CRI Type 4 Medium	11296	0.9	93.04
□	P2	1	Lithonia Lighting	DSX0 LED P4 40K 70CRI T4M	D-Series Size 0 Area Luminaire P4 Performance Package 4000K CCT 70 CRI Type 4 Medium	11296	0.9	186.08
□	P3	1	Lithonia Lighting	DSX0 LED P4 40K 70CRI RCCO	D-Series Size 0 Area Luminaire P4 Performance Package 4000K CCT 70 CRI Right Corner Cutoff Extreme Backlight Control	8169	0.9	93.04
⌒	W1	2	Lithonia Lighting	WDGE2 LED P2 40K 70CRI TFTM	WDGE2 LED WITH P2 - PERFORMANCE PACKAGE, 4000K, 70CRI, TYPE FORWARD THROW MEDIUM OPTIC	2291	0.9	18.9815
⌒	W2	2	Lithonia Lighting	WDGE2 LED P4 40K 70CRI TFTM	WDGE2 LED WITH P4 - PERFORMANCE PACKAGE, 4000K, 70CRI, TYPE FORWARD THROW MEDIUM OPTIC	4742	0.9	46.6589

Plan View
Scale: 1" = 25ft



TALL EYE CENTER
PHOTOMETRIC PLAN
PREPARED FOR: BOSS ENGINEERING
GASSER BUSH ASSOCIATES
WWW.GASSERBUSH.COM

LITHONIA LIGHTING

FEATURES & SPECIFICATIONS

INTENDED USE — Typical applications include corridors, lobbies, conference rooms and private offices.
CONSTRUCTION — Galvanized steel mounting plate/frame; galvanized steel junction box with bottom-hinged access cover and opening flange. Reflector is released by spring opening.
VERTICALLY ADJUSTABLE — Mounting brackets with commercial bar hinges provide 3-1/4" total adjustment. Two combinations: 1" (34°) and four 1/2" increments for straight-through conduit runs. Capacity: 2 lbs. (4 in.), 1 lb. (2 in.) or 1/2 lb. (1 in.).
ELECTRICAL — Built with 120-277V, 18/0/90/240V dimming drivers available by junction box, 180 or 191, minimum dimming level available.
6-WAY — 6-WAY dimming features requires two (2) additional low-voltage wires to be pulled.
20% LUMENS MAINTENANCE AT 60,000 HOURS

Product Name	
Series	
Type	

LDN6



6" Open and Wall/Wash LED Non-IC New Construction Downlight



WARRANTY — 5-year limited warranty. This is the only warranty provided and no other statements in this specification create any warranty of any kind. All other express and implied warranties are disclaimed. Consider warranty terms located at: www.lithonia-lighting.com/warranty
NOTE: Actual performance may differ as a result of end-user environment and application.
All other as depicted in typical colors. Standard color/finish/obscurity conditions at 25°C.
Specifications subject to change without notice.

ORDERING INFORMATION

Lead times will vary depending on options selected. Consult with your sales representative.

Series	Color temperature	Lumens*	Aperture/Trim Color	Finish	Voltage	
LDN6 6" round	27/ 2700K	85 500 lumens 18/ 3000K 35/ 3500K 40/ 4000K 50/ 5000K	85 500 lumens 18/ 3000K 18/ 3000K 18/ 3000K 18/ 3000K	106 Downlight 186 Washwash BR1 Black LS Specular	AR Clear WR1 White BR1 Black LS Specular	AVOLT Multi-volt 120-277V 277 277V 347 347V

Driver	Options	Notes
CA10 0-10V driver dims to 30%	SP1 Single fuse TRB1 White painted flange TRB1 Black painted flange	NB01 "night" Lumen Compensation J271 Wireless room control with "Fast Close Touch" pairing NP500Z1 "night" dimming pack controls 0-10V eDimLED drivers (E210, E211, E8 control) features an emergency circuit.
CA15 0-10V driver dims to 30%	EL1 Emergency battery pack with integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85	EL1 Emergency battery pack with integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85
CA20 0-10V driver dims to 30%	EL3 Emergency battery pack with remote test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85	EL3 Emergency battery pack with remote test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85
CA25 0-10V driver dims to 30%	EL5 Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85	EL5 Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85
CA30 0-10V driver dims to 30%	EL5D Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85	EL5D Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85
CA35 0-10V driver dims to 30%	EL5DP Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85	EL5DP Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85
CA40 0-10V driver dims to 30%	EL5DPH Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85	EL5DPH Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85
CA45 0-10V driver dims to 30%	EL5DPH1 Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85	EL5DPH1 Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85
CA50 0-10V driver dims to 30%	EL5DPH1H Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85	EL5DPH1H Emergency battery pack with self-diagnostics, integral test switch. 10W Constant Power, Not Certified in CA Title 20 MAED85

Accessories	Order as separate line item.	Notes
FP1055CP FMC Power Supply battery pack, 120 compliant		1. Overall height varies based on luminaire package; refer to dimensional chart on page 1.
FP1055CP1 FMC Power Supply battery pack, 120 compliant		2. Not available with wireless options.
FP1055CP2 FMC Power Supply battery pack, 120 compliant		3. Not available with emergency options.
FP1055CP3 FMC Power Supply battery pack, 120 compliant		4. Most specify voltage 120V or 277V.
FP1055CP4 FMC Power Supply battery pack, 120 compliant		5. Available with clear lens reflector only.
FP1055CP5 FMC Power Supply battery pack, 120 compliant		6. 1/2" of gross depth or height required for battery pack maintenance.
FP1055CP6 FMC Power Supply battery pack, 120 compliant		7. Specify voltage, 120V or 277V, for use with generator supply EM power. Will require an emergency hot lead and neutral lead.
FP1055CP7 FMC Power Supply battery pack, 120 compliant		8. Fitter height at 80% light level. Must be specified with NP500Z1 or NP500Z1H. Only available with E210 and E211 drivers.

© 2015-2022 Acuity Brands Lighting, Inc. All rights reserved. DSW14123 Rev. 11/2022 Page 1 of 9

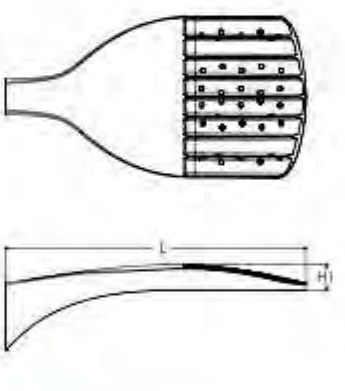


D-Series Size 0 LED Area Luminaire



Specifications

EPA: 0.44 ft² (0.04 m²)
Length: 26.18" (665 mm)
Width: 14.06" (357 mm)
Height H1: 2.26" (57 mm)
Height H2: 7.46" (190 mm)
Weight: 23 lbs (10 kg)



Product Name	
Series	
Type	

Introduction

The modern styling of the D-Series features a highly refined aesthetic that blends seamlessly with its environment. The D-Series offers the benefits of the latest in LED technology into a high performance, high efficacy, long-life luminaire.
The photometric performance results in sites with excellent uniformity, greater pole spacing and lower power density. D-Series outstanding photometry aids in reducing the number of poles required in area lighting applications, with typical energy savings of 70% and expected service life of over 100,000 hours.

Ordering Information

EXAMPLE: DSX0 LED P6 40K 70CRI T3M MVOLT SPA NLTAIR2 PIRHN DDBXD

Series	LEDs	Color Temperature	Color Rendering Index	Beam Spread	Output	Mounting
DSX0 LED	Forward optics	(0-10 section 70CRI only)				
P1 P2 P3 P4 P5 P6 P7 P8 P9	27K 2700K 35K 3500K 40K 4000K 50K 5000K	70CRI	TSM Type II medium TSL Type II low TSM Type III medium TSM Type III low TSM Type IV medium TSM Type IV low TSM Type V medium TSM Type V low	14.06" (357 mm)	1100 (100-277V) 1100 (120-277V) 1100 (277-480V) 1100 (277-480V) 1100 (277-480V) 1100 (277-480V) 1100 (277-480V) 1100 (277-480V)	Shipped included SRK Square pole mounting (8.5" dia., 15" min. height) SRK Square pole mounting (10.5" dia., 18" min. height) SRK Square pole mounting (12.5" dia., 21" min. height) SRK Square pole mounting (14.5" dia., 24" min. height) SRK Square pole mounting (16.5" dia., 27" min. height) SRK Square pole mounting (18.5" dia., 30" min. height) SRK Square pole mounting (20.5" dia., 33" min. height) SRK Square pole mounting (22.5" dia., 36" min. height) SRK Square pole mounting (24.5" dia., 39" min. height)

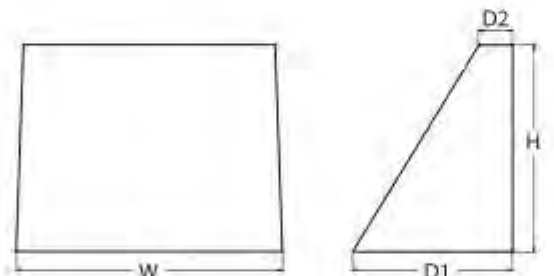
Special options	Other options	Finish options
Shipped installed NLTAR2 PIRHN 18" gpm (2" max) with level mount / ambient sensor 2.4' mounting height, ambient sensor enabled at 25' or more	PER Seven-pin emergency battery pack (not recommended for use with emergency options) FAD Field adjustable fixture BL30 30-degree beam spread BL50 50-degree beam spread DMS 0-10V dimming sensor for external control (not recommended for use with emergency options)	DDBXD Dark bronze DRXD Black DNXD Natural aluminum DWHX White DDBXD Black bronze DLBXD Natural aluminum DNBXD Natural aluminum DWHXD White

WDGE2 LED Architectural Wall Sconce Precision Refractive Optic



Specifications

Depth (D1): 7"
Depth (D2): 1.5"
Height: 9"
Width: 11.5"
Weight: 13.5 lbs (without options)



Product Name	
Series	
Type	

Introduction

The WDGE LED family is designed to meet specifier's every wall-mounted lighting need in a widely accepted shape that blends with any architecture. The clean, rectangular design comes in four sizes with lumen packages ranging from 1,200 to 25,000 lumens, providing a true site-wide solution. Embedded with right-angle AIR wireless controls, the WDGE family provides additional energy savings and code compliance.
WDGE2 with industry-leading precision refractive optics provides great uniform distribution and optical control. When combined with multiple integrated emergency battery backup options, including an 18W cold temperature option, the WDGE2 becomes the ideal wall-mounted lighting solution for pedestrian scale applications in any environment.

WDGE LED Family Overview

Luminaire	Optic	Standard Beam, Fx	Total Lum. (24")	Series	P0	P1	P2	P3	P4	P5	P6
WDGE1 LED	Visual Comfort	4W	—	—	250	1,200	2,000	—	—	—	—
WDGE2 LED	Visual Comfort	10W	18W	Standalone / All light	—	1,200	2,000	3,000	4,500	6,000	—
WDGE2 LED	Precision Refractive	10W	18W	Standalone / All light	700	1,200	2,000	3,200	4,200	—	—
WDGE2 LED	Precision Refractive	15W	18W	Standalone / All light	—	2,500	8,500	10,000	12,000	—	—
WDGE4 LED	Precision Refractive	—	—	Standalone / All light	—	12,000	16,000	18,000	20,000	22,000	25,000

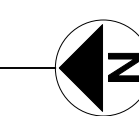
Ordering Information

Model	Type/Beam	Color Temperature	CRI	Mounting	Weight	Shipping
WDGE2 LED	P01	27K 2700K	70CRI	T15 Type I Short	11VOLT	Shipped included SRK Square pole mounting (8.5" dia., 15" min. height)
	P11	35K 3500K	80CRI	T15 Type II Medium	347V	SRM Surface emergency product
	P21	40K 4000K	80CRI	T15 Type II Medium	480V	SRM Surface emergency product
	P31	50K 5000K	80CRI	T15 Type II Medium	480V	SRM Surface emergency product
	P41	AMB Ambient	80CRI	T15 Type II Medium	480V	SRM Surface emergency product

Options	Stand-alone Sensors/Controls	Networked Sensors/Controls
E10WH Emergency battery backup, Certified in CA Title 20 MAED85	PR 0- level (100% SRI) motion sensor for 8-17" mounting heights, intended for use in switch-level circuits with external dusk-to-dawn switching.	NLTAR2 PIR right-angle PIR sensor enabled by level motion/ambient sensor for 8-17" mounting heights.
E20WK Emergency battery backup, Certified in CA Title 20 MAED85	PRH 0- level (100% SRI) motion sensor for 15-30" mounting heights, intended for use in switch-level circuits with external dusk-to-dawn switching.	NLTAR2 PIRH right-angle PIR sensor enabled by level motion/ambient sensor for 15-30" mounting heights.
PE1 Photocell, Battery Type	PRHFCV 0-10V dimming sensor for use with photocell pre-programmed for dusk-to-dawn operation.	
DMS1 0-10V dimming sensor for use with external control (not recommended for use with emergency options).	PRHFCV 0-10V dimming sensor for use with photocell pre-programmed for dusk-to-dawn operation.	
BCE Battery control ready for back bay (PBXB), rated for 4-way systems.		
BAA Bay Area Search Act Compliance		



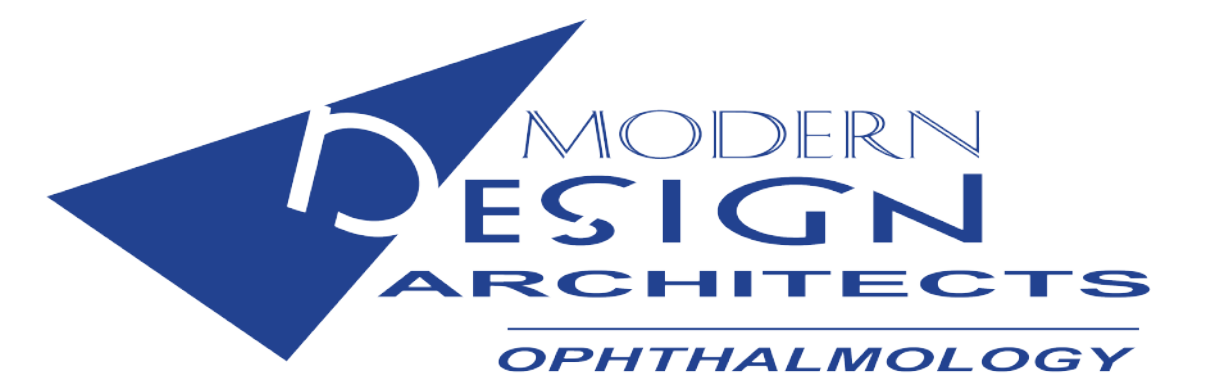
1 DESIGN MAIN PLAN
SCALE: 3/16" = 1'-0"



CLARK I TAIT EYE CENTER
BRIGHTON, MI

~7,865SF

DC2.0





CLARK | TAIT EYE CENTER
BRIGHTON, MI

RENDERINGS

DC3.4

3.20.23



CLARK | TAIT EYE CENTER
BRIGHTON, MI

RENDERINGS

DC3.5

3.20.23



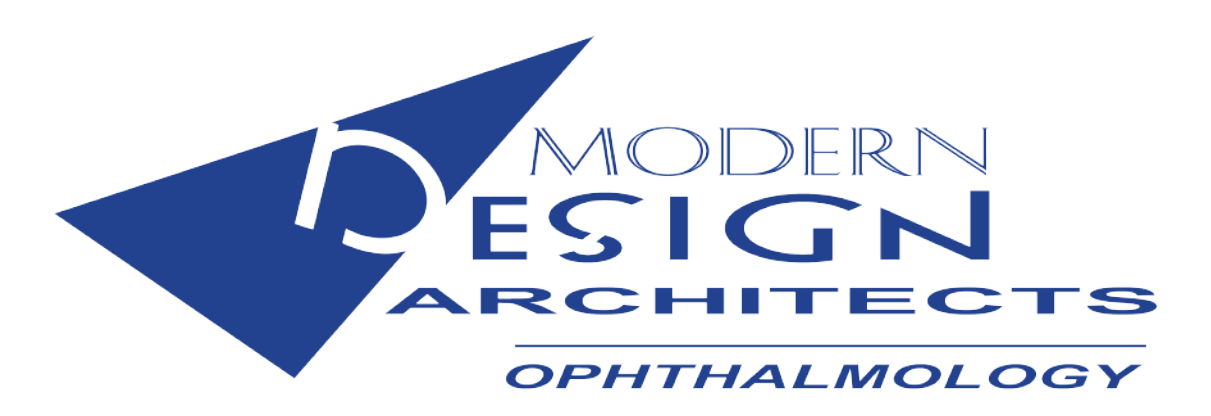
- ARCHITECTURAL METAL ROOF
- PREFIN. SHT. MTL. TRIMS & GUTTERS
- EIFS SOFFIT
- WOOD GRAIN METAL PANEL
- CAST STONE BANDING
- BRICK
- ALUM. WINDOWS
- CAST STONE
- BRICK
- EIFS
- BRICK WALL W/ SIGNAGE
- STONE COLUMN W/ BRICK INFILL
- CAST STONE BANDING
- ARCHITECTURAL METAL ROOF
- PREFIN. SHT. MTL. TRIMS & GUTTERS
- EIFS SOFFIT
- ARCHITECTURAL METAL ROOF
- PREFIN. SHT. MTL. TRIMS & GUTTERS
- EIFS SOFFIT

North - 954 sf total
 -brick- 551 = 57.76%
 -stone- 96 sf = 10.06%
 -metal- 236 sf = 24.74%
 -eifs- 71 sf = 7.44%

CLARK | TAIT EYE CENTER
 BRIGHTON, MI

RENDERINGS

DC3.6





West - 1621 sf total
 -brick- 867 sf = 53.49%
 -stone- 347 sf = 21.41%
 -metal- 309 sf = 16.89%
 -eifs- 98 sf = 6.05%

CLARK | TAIT EYE CENTER
 BRIGHTON, MI

RENDERINGS

DC3.7

3.20.23



GENOA CHARTER TOWNSHIP APPLICATION
Sketch Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION:

APPLICANT NAME & ADDRESS: Cade Martin - Tap-In's
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: Doro Vitella 7567 Radcliffe Brighton MI 48114

SITE ADDRESS: 4444 E Grand River Ave PARCEL #(s): _____
Hewell, MI 48843

APPLICANT PHONE: (248) 339-6805 OWNER PHONE: (810) 229-9481

LOCATION AND BRIEF DESCRIPTION OF SITE: Covered, open faced
Structure for Golfers to hit underneath of
Drivvy Range, Golf simulators

BRIEF STATEMENT OF PROPOSED USE: For golfers to be able to
play Golf year round

THE FOLLOWING IMPROVEMENTS ARE PROPOSED: Build a 3 sided structure
with 3 walls and roof, open faced

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: Cade Martin Cal Martin

ADDRESS: 8339 Glen Haven Dr. Hewell MI 48843

Contact Information - Review Letters and Correspondence shall be forwarded to the following:

1.) Cade Martin of Tap-In's at Golf@tap-ins.com
Name Business Affiliation Email Address

FEE EXCEEDANCE AGREEMENT

All sketch plans are allocated one (1) consultant review and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal for a Land Use Permit. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE: Cal Martin DATE: 3/15/23
PRINT NAME: Cade Martin PHONE: 248-339-6805

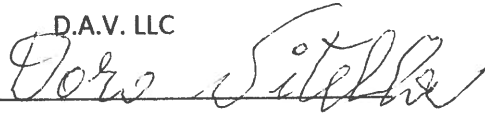
TO: Genoa Township

RE: Proposed Exterior Changes to Tap-In's LLC located at 4444 E. Grand River Ave, Howell, MI 48843

This letter authorizes Tap-In's LLC. to make changes the exterior of the property located at 4444 E. Grand River Ave. 48843 owed by D.A.V. LLC. This includes the addition of exterior structures.

Company: D.A.V. LLC

Signature:

A handwritten signature in cursive script, appearing to read "Doro Vitella", written over a horizontal line.

Name: Doro Vitella

Date: March 21, 2023



April 4, 2023

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Amy Ruthig, Planning Director
Subject:	Tap-In's – Sketch Plan Review #1
Location:	4444 E. Grand River Avenue – south side of Grand River, east of Latson Road
Zoning:	PRF Public and Recreational Facilities District

Dear Commissioners:

At the Township's request, we have reviewed the sketch plan submittal for a new structure at the existing Tap-In's driving range (plans dated 3/22/23).

A. Summary

1. The accessory structure is affiliated with a principal use, per Ordinance requirements.
2. The proposed structure height is within that allowed for conventional accessory structures.
3. The proposed structure is located well outside of minimum PRF setback requirements.
4. Site improvements are proposed as part of the project (greenbelt landscaping and pedestrian pathway construction).
5. The Commission should consider any comments provided by the Township's engineering consultant.

B. Proposal/Process

The applicant proposes to construct a new 3-sided and covered structure providing shelter for year-round use of the existing driving range.

The proposed structure is located immediately south and east of the existing building.

Golf driving ranges are special land uses in the PRF District (Table 6.02); however, the proposal entails a minor amendment to an existing special land use (Section 19.06). Therefore, a new special land use review/approval is not needed, and sketch plan review is the only zoning process needed at this time.

Article 18 allows non-residential accessory structures via the sketch plan review process. As such, Planning Commission has review and approval authority over the project.



Aerial view of site and surroundings (looking north)

C. Sketch Plan Review

1. Relationship. Accessory structures are required to be associated with a principal use/building.

In this instance, the principal use of the property is an existing golf driving range and miniature golf course, which is an allowable use in the PRF District.

As previously noted, the project does not necessitate a new special land use review.

As such, the proposed driving range shelter is allowed as an accessory structure.

2. Height. Previous requests for accessory recreational structures have been reviewed for compliance with the height limits for conventional accessory structures.

Section 11.04.02 established a maximum height of 18 feet for such structures, while the proposed structure has a height of approximately 12'.

3. Setbacks. The project area provides ample setbacks that exceed the dimensional standards of Section 6.03 – 350' from Grand River; 140' from the east side lot line; 400'+ from the west side lot line; and more than 500' from the southerly lot line.

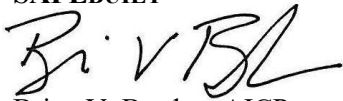
4. Site Improvements. The proposal entails 9 new canopy trees, to go along with 3 existing trees, that brings the site's greenbelt into compliance with the standards of Section 12.02.01.

The plan also includes the 8' wide pathway required by Section 12.05 for this portion of Grand River Avenue.

5. Site Engineering. The Commission should consider any comments provided by the Township's engineering consultant.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFE BUILT


Brian V. Borden, AICP
Michigan Planning Manager



April 3, 2023

Ms. Amy Ruthig
Genoa Township
2911 Dorr Road
Brighton, MI 48116

**Re: Tap-In's Canopy and Sidewalk
Sketch Plan Review No. 1**

Dear Ms. Ruthig:

Tetra Tech conducted a review of the proposed Tap In's Canopy and Sidewalk Installation sketch plan last dated March 22, 2023. The plan was prepared by Boss Engineering on behalf of Tap-In's. The site is a 22-acre parcel on the south side of Grand River Avenue, just west of Parkway Drive. The site has an existing indoor golf and outdoor range, and the Petitioner is proposing a new canopy for the range and a new sidewalk adjacent to Grand River Avenue that will tie in with the existing sidewalk system. We offer the following comment:

1. Since an existing water valve is within the limits of the proposed sidewalk the top section of the valve box should be removed and replaced with a valve box designed for use within the sidewalk, such as the EJ SELFLEVEL valve box top.

We recommend the petitioner address the above comment prior to approval.

Sincerely,

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

Shelby Byrne, P.E.
Project Engineer

From: [Rick Boisvert](#)
To: [Amy Ruthig](#)
Subject: Tap-Ins
Date: Monday, March 27, 2023 4:47:58 PM

Amy, I don't have anything on Tap-in's covered driving range addition site plan. It's an open non-combustible structure. Doesn't really increase the hazard of the facility

Cordially,

Rick Boisvert, FM, CFPS
Fire Marshal
Brighton Area Fire Authority
615 W. Grand River
Brighton, MI 48116
O: (810)229-6640 D: (810)299-0033
F: (810)229-1619 C: (248)762-7929
rboisvert@brightonareafire.com



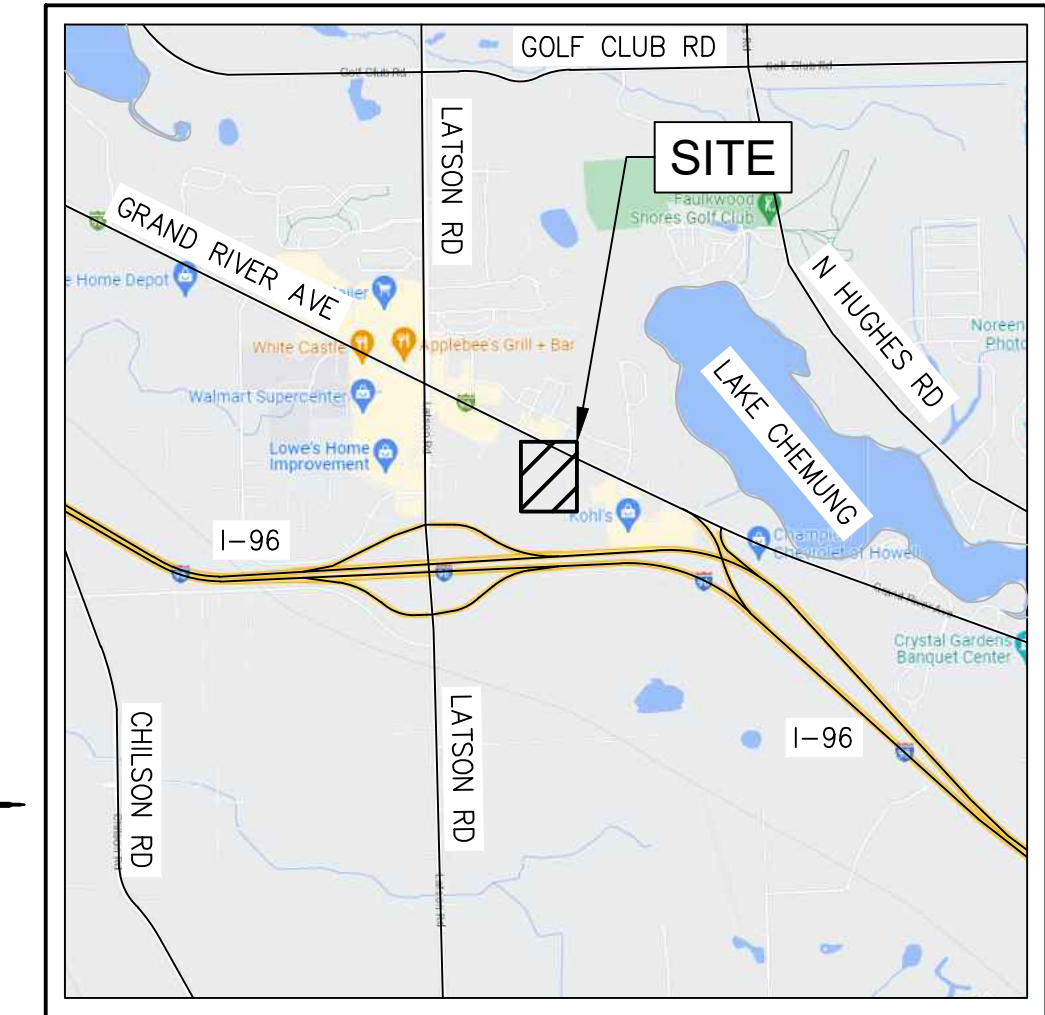
PROPERTY DESCRIPTION:

PROPERTY DESCRIPTION PER LIVINGSTON COUNTY TAX ROLL:

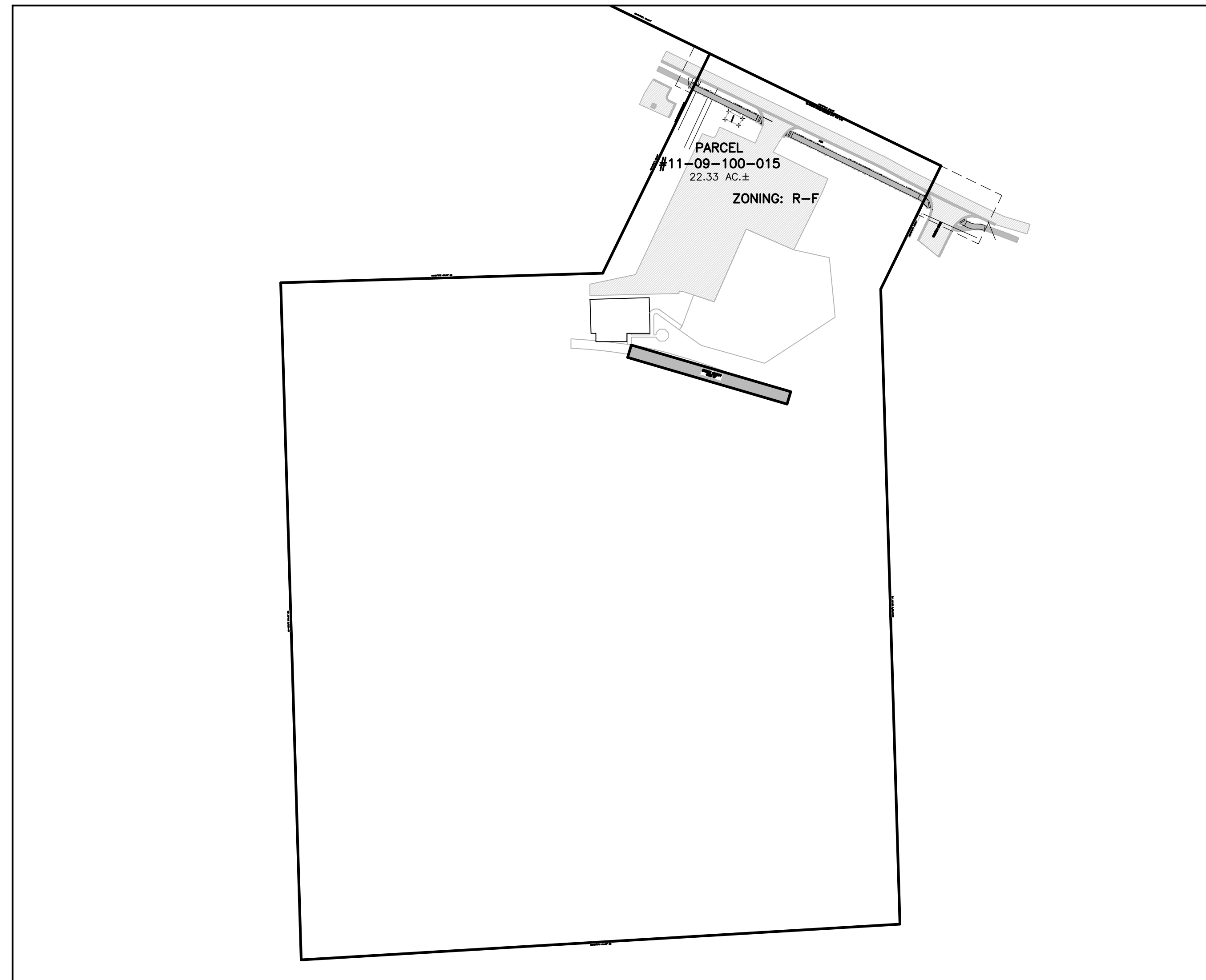
Land situated in the Township of Genoa, County of Livingston, State of Michigan, described as follows:
 SEC. 9 T2N R5E C0M NW COR. TH N1*E 549.3 FT, TH S60*E 2205.74 FT TO POB, TH S60*E 378.78 FT, TH S29*W 202.51 FT, TH S1*W 937.31 FT, TH S89*W 884.69 FT, TH N1*E 999.96 FT, TH S88*E 475.63 FT, TH N29*E 360.25 FT TO POB 22.33 AC M/L SPLIT 4/91 FROM 001

SITE PLAN FOR TAP-IN'S CANOPY & SIDEWALK INSTALLATION

PART OF NW QUARTER, SECTION 9 02N-05E
GENOA TOWNSHIP, LIVINGSTON COUNTY, MICHIGAN 48843



LOCATION MAP
NO SCALE



OVERALL SITE MAP
NO SCALE

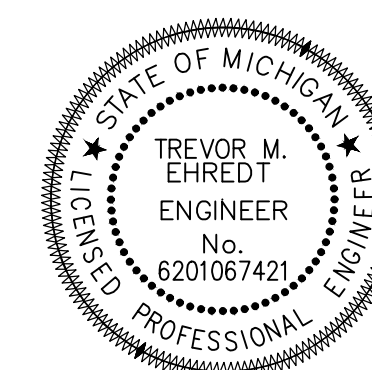
SHEET INDEX	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	GENERAL NOTES & LEGEND
3	EXISTING CONDITIONS PLAN
4	NATURAL FEATURES PLAN
5	SITE & DEMOLITION PLAN
6	GRADING, DRAINAGE, & SESC PLAN
7	LANDSCAPE PLAN
8	CONSTRUCTION DETAILS
PLANS BY OTHERS METAL BUILDING ENGINEERING, LLC	
1-4	CANOPY ARCHITECTURAL PLAN

PREPARED FOR:

TAP-IN'S
 4444 E. GRAND RIVER AVE
 HOWELL, MI 48843
 CADE MARTIN
 517.258.3004
 GOLF@TAP-INS.COM

PREPARED BY:

BEBOSS
Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670
 CONTACT: BRENT LAVANWAY
 PHONE: 517.546.4836



UTILITY CONTACTS

CABLE/FIBER OPTIC/TELEPHONE AT&T 1251 LAWSON DRIVE HOWELL, MI 48843 (800) 464-7928	ELECTRIC DTE 1095 LAWSON DRIVE HOWELL, MI 48843 (800) 477-4747
SEWER AND WATER MHOG DEPT OF PUBLIC WORKS 2911 DORR ROAD BRIGHTON, MI 48116 (800) 881-4109	GAS CONSUMERS ENERGY 1000 GRAND OAKS DRIVE HOWELL, MI 48843 (800) 477-5050

FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION

	1	
NO BY CK REVISION	DATE	ISSUE DATE: 03/22/23 JOB NO: 23-049



PARCEL INFORMATION:
 PARCEL ID: #11-09-100-015
 ZONING: R-F
 ADDRESS: 4444 E. GRAND RIVER AVENUE, HOWELL, MI 48843

PROPERTY DESCRIPTION PER LIVINGSTON COUNTY TAX ROLL:
 Land situated in the Township of Genoa, County of Livingston, State of Michigan, described as follows:
 SEC 9 T2N R5E COM NW COR, TH N1°E 549.3 FT, TH S60°E 2205.74 FT TO POB, TH S60°E 378.78 FT, TH S29°W 202.51 FT, TH S11°W 937.31 FT, TH S89°W 884.69 FT, TH N1°E 999.96 FT, TH S88°E 475.63 FT, TH N29°E 360.25 FT TO POB 22.33 AC M/L SPLIT 4/91 FROM 001

- GENERAL SURVEY NOTES:**
- BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.
 - SUBSURFACE UTILITIES NOT LOCATED FOR THIS SURVEY MAY EXIST. IT IS THE RESPONSIBILITY OF THE OWNER OF THE RESPECTIVE UTILITY TO ACCURATELY LOCATE SUCH UTILITIES.
 - EASEMENTS OR RESTRICTIONS OF RECORD NOT DEPICTED ON THIS DRAWING MAY EXIST.
 - ELEVATIONS WERE ESTABLISHED WITH GPS USING OPUS GPS POST-PROCESSING. (NAVD88 DATUM)
 - CONTOURS ARE SHOWN AT 1 FOOT INTERVALS.
 - THE LOCATIONS OF STORM SEWER, SANITARY SEWER & WATERMAIN, AS SHOWN ON THIS DRAWING ARE APPROXIMATE. THE LOCATIONS ARE BASED ON PHYSICAL FIELD LOCATIONS OF STRUCTURES.
 - ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY, THE COUNTY, AND THE STATE OF MICHIGAN.
 - ALLOW THREE WORKING DAYS BEFORE YOU DIG, CALL MISS DIG TOLL FREE 1-800-482-7171.
 - THERE WAS SNOW ON THE GROUND AT THE TIME OF FIELDWORK FOR THIS SURVEY.

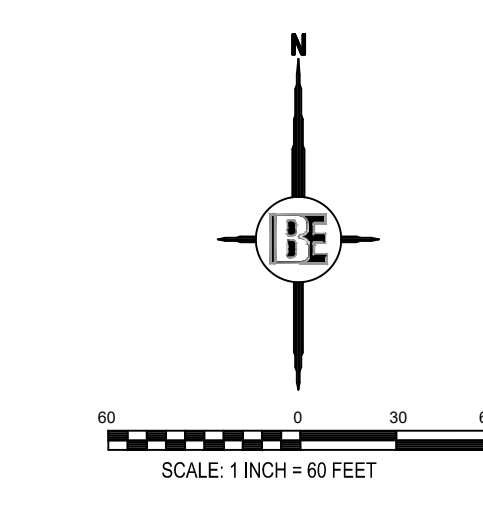
SITE BENCHMARKS (NAVD88 DATUM OR NGVD29 DATUM):
 -BM #200 = ARROW ON TOP OF HYD 30"± NORTH AND 30"± EAST OF NORTH EAST CORNER OF PARKING LOT TAP IN'S.
 ELEV.=999.96
 -BM #201 = "X" ON TOP OF LIGHT POLE BASE.
 ELEV.=1003.00

NRCS EXISTING SOILS DATA:

HmB	Hillsdale-Miami Loams	2-6% Slopes
MmB	Mtata Loamy Sand	2-6% Slopes
MmB	Wasauke Loam	2-6% Slopes

SEE SHEET 2 FOR GENERAL NOTES AND LEGEND

**FOR SITE PLAN APPROVAL ONLY!
 NOT FOR CONSTRUCTION**



THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO WARRANTIES ARE MADE BY BEBOSS ENGINEERING FOR THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION.

BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

PROJECT	TAP-IN'S CANOPY & SIDEWALK INSTALLATION
PREPARED FOR	TAP-IN'S 4444 E GRAND RIVER AVE. HOWELL, MI 48843 (517) 292-3004
TITLE	EXISTING CONDITIONS PLAN
DESIGNED BY:	BL
DRAWN BY:	JP
CHECKED BY:	
SCALE:	1" = 60'
JOB NO:	23-049
DATE:	03/22/23
SHEET NO.	3



- LEGEND**
- NATURAL FEATURE TYPE BOUNDARY
 - EXISTING DRAINAGE FLOW
 - EXISTING 1-FT CONTOURS

NATURAL FEATURES NARRATIVE:

NATURAL FEATURES WERE IDENTIFIED DURING AN ON-SITE VISIT TO THE PROPERTY ON MARCH 15, 2023. SITE IS DEVELOPED AND IS PRIMARILY USED AS A GOLF DRIVING RANGE. EACH IDENTIFIED AREA IS LABELED AS ZONES "A-D".

ENTIRE SITE IS RELATIVELY FLAT, WITH A HIGHER ELEVATION AT THE CENTER, SLOPING DOWNWARD TOWARD THE NORTHWEST WITH SLOPES OF 2-6%. SOILS IDENTIFIED BY USDA NRCS SOILS DATA CONSIST OF HILLSDALE-MIAMI LOAM AT THE CENTER OF THE SITE, METAEA LOAMY SAND AT THE WEST OF THE SITE, AND WAWASEE LOAM ALONG THE NORTH AND EAST OF THE SITE.

ZONE 'A'

ZONE 'A' REPRESENTS THE NORTHEAST CORNER OF THE SITE WITH THE NORTHERN PROPERTY LINE ADJACENT TO E GRAND RIVER AVENUE. THE SOILS IN THIS ZONE ARE WAWASEE LOAM WITH 2-6% SLOPES AND VEGETATION CHARACTERIZED BY MOWED GRASS LAWN INTERSPERSED WITH THREE CRABAPPLE TREES AND ONE SHRUB-LIKE CLUMP OF BLACK LOCUST. THE PORTION OF THE EASTERN PROPERTY LINE WITHIN THIS ZONE CONTAINS A MIX OF FIVE (5) 24'-26" TALL NORWAY AND WHITE SPRUCE.

ZONE 'B'

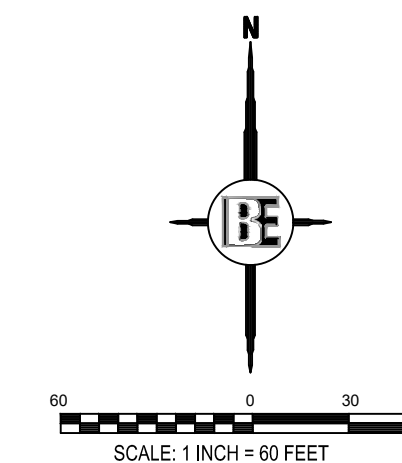
ZONE 'B' IS AT THE CENTER OF THE SITE WITH SOILS MADE UP OF HILLSDALE-MIAMI LOAMS AT 2-6% SLOPES. THE ZONE CONTAINS THE MAJORITY OF THE DRIVING RANGE LAWN, A MIX OF STAGGERED 35' TO 40' TALL BLUE AND NORWAY SPRUCE LINE THE SOUTH PROPERTY LINE. THE EVERGREEN TREES CONTINUE NORTH ON THE EAST PROPERTY LINE 27' TALL RED PINE, AND 30-35' NORWAY AND BLUE SPRUCE.

ZONE 'C'

ZONE 'C' IS LOCATED AT THE WESTERN SIDE OF THE SITE, RUNNING ALONG THE TRANSMISSION LINE. THE SOILS ARE METAEA LOAMY SAND AT 2-6% SLOPES. THE WEST END OF THE DRIVING RANGE LAWN MEETS THE PARCEL BOUNDARY BORDERED BY A SCATTERING OF SHRUBS AND TREES INCLUDING HONEYSUCKLE, STAGHORN SUMAC, COMMON BUCKTHORN, SHAGBARK HICKORY (17') AND SLIPPERY ELM.

ZONE 'D'

ZONE 'D' IS CONFINED TO THE NORTHWESTERN EDGE OF THE PARCEL. THE SOILS CONSIST OF ADDITIONAL WAWASEE LOAM AT 2-6% SLOPES. THE TREE LINE CONTINUES FROM ZONE C INCLUDING QUACKING ASPEN, BLACK RASPBERRY, WHITE AND GREEN ASH AND FIELD JUNIPER. 8'-12" CRABAPPLES LINE THE NORTH PROPERTY LINE FROM THE WEST CORNER TO BEHIND LEO'S CONEY ISLAND.



GENERAL SURVEY NOTES:

1. BEARINGS ARE BASED ON MICHIGAN STATE PLANE COORDINATE SYSTEM, SOUTH ZONE.
2. SUBSURFACE UTILITIES NOT LOCATED FOR THIS SURVEY MAY EXIST. IT IS THE RESPONSIBILITY OF THE OWNER OF THE RESPECTIVE UTILITY TO ACCURATELY LOCATE SUCH UTILITIES.
3. EASEMENTS OR RESTRICTIONS OF RECORD NOT DEPICTED ON THIS DRAWING MAY EXIST.
4. ELEVATIONS WERE ESTABLISHED WITH GPS USING OPUS GPS POST-PROCESSING. (NAVD88 DATUM)
5. CONTOURS ARE SHOWN AT 1 FOOT INTERVALS.
6. THE LOCATIONS OF STORM SEWER, SANITARY SEWER & WATERMAIN, AS SHOWN ON THIS DRAWING ARE APPROXIMATE. THE LOCATIONS ARE BASED ON PHYSICAL FIELD LOCATIONS OF STRUCTURES.
7. ALL WORK SHALL BE IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE MUNICIPALITY, THE COUNTY, AND THE STATE OF MICHIGAN.
8. ALLOW THREE WORKING DAYS BEFORE YOU DIG, CALL MISS DIG TOLL FREE 1-800-482-7171.
9. THERE WAS SNOW ON THE GROUND AT THE TIME OF FIELDWORK FOR THIS SURVEY.

SITE BENCHMARKS (NAVD88 DATUM OR NGVD29 DATUM):

- BM #200 = ARROW ON TOP OF HYD 30"± NORTH AND 30"± EAST OF NORTH EAST CORNER OF PARKING LOT TAP IN'S. ELEV.=999.96
- BM #201 = "X" ON TOP OF LIGHT POLE BASE. ELEV.=1003.00

NRCS EXISTING SOILS DATA:

HmB	Hillsdale-Miami Loams	2-6% Slopes
MtB	Metaea Loamy Sand	2-6% Slopes
WaB	Wawasee Loam	2-6% Slopes

SEE SHEET 2 FOR GENERAL NOTES AND LEGEND

FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO WARRANTIES OR GUARANTEES ARE MADE BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF ALL UTILITIES CROSSINGS IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS FROM THE PLANS DIVISION OF THE LOCAL GOVERNMENT. BE CALL MISS DIG 1-800-482-7171

BEBOSS
Engineering
Engineers Surveyors Planners Landscape Architects
3121 E. GRAND RIVER AVE.
HOWELL, MI. 48843
517.546.4836 FAX 517.548.1670

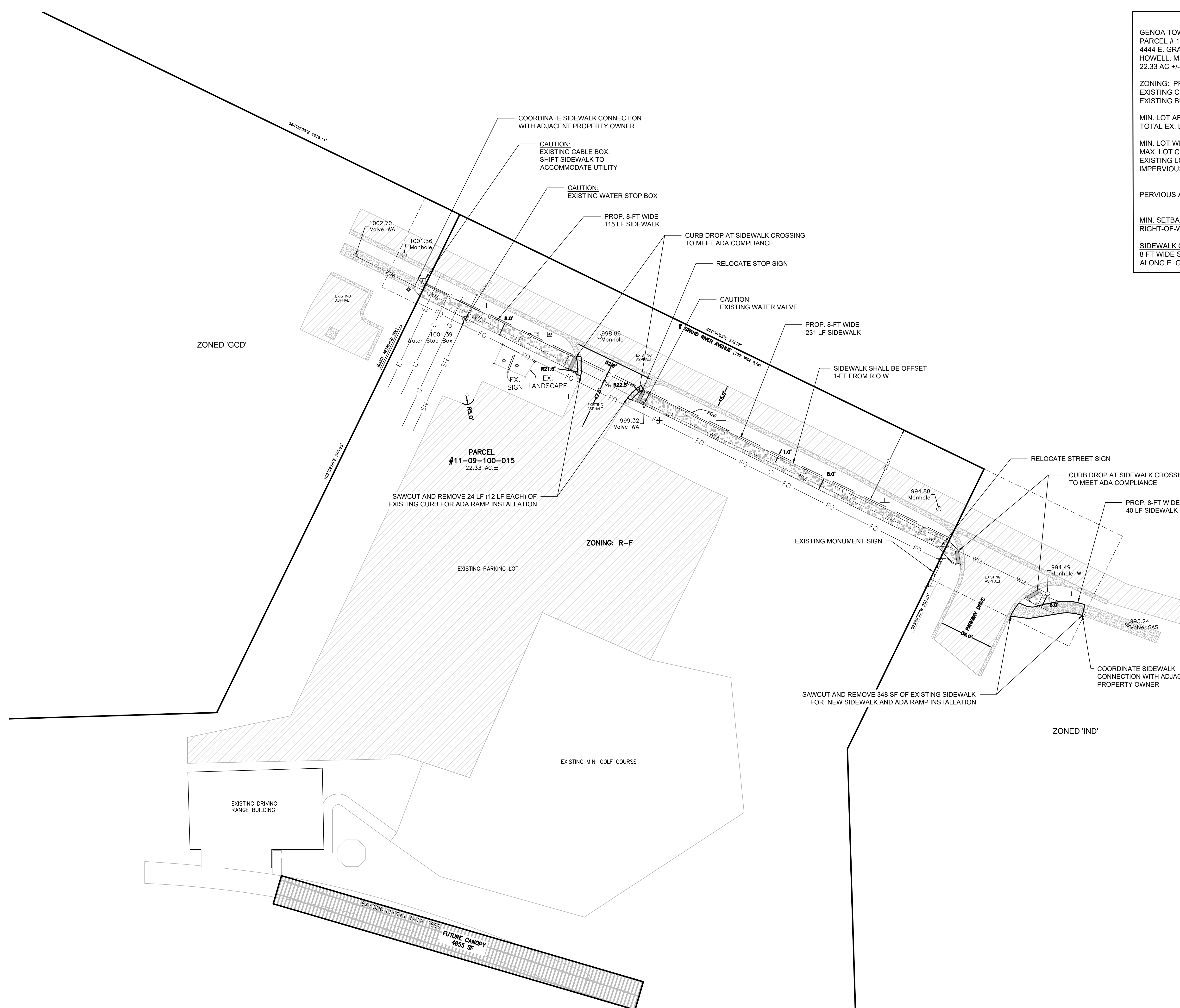
PROJECT: TAP-IN'S CANOPY & SIDEWALK INSTALLATION

PREPARED FOR: TAP-IN'S
444 E. GRAND RIVER AVE.
HOWELL, MI. 48843
(517) 298-3004

TITLE: NATURAL FEATURES PLAN

NO.	DATE	REVISION PER	BY

DESIGNED BY: BL
DRAWN BY: JP
CHECKED BY:
SCALE: 1" = 60'
JOB NO: 23-049
DATE: 03/22/23
SHEET NO.



SITE DATA:

GENOA TOWNSHIP
 PARCEL # 11-09-100-015
 4444 E. GRAND RIVER AVE.
 HOWELL MI 48843
 22.33 AC +/-

ZONING: PRF
 EXISTING CLUBHOUSE BUILDING SF: ~ 5,100 GSF
 EXISTING BUILDING USE: DRIVING RANGE BUILDING

MIN. LOT AREA REQUIRED FOR ZONING: 1 ACRE
 TOTAL EX. LOT AREA: 22.33 AC +/- (~972,695 SQ FT)

MIN. LOT WIDTH: 150 FT TOTAL EXISTING LOT WIDTH: 378.78 FT
 MAX. LOT COVERAGE: 40% BLDG, 85% IMPERVIOUS
 EXISTING LOT COVERAGE: 0.52% BLDG, 4.88% IMPERVIOUS

IMPERVIOUS AREAS =
 EXISTING ASPHALT PARKING 42,211 SF (0.97 AC)
 EXISTING BUILDING 5,100 SF (0.12 AC)

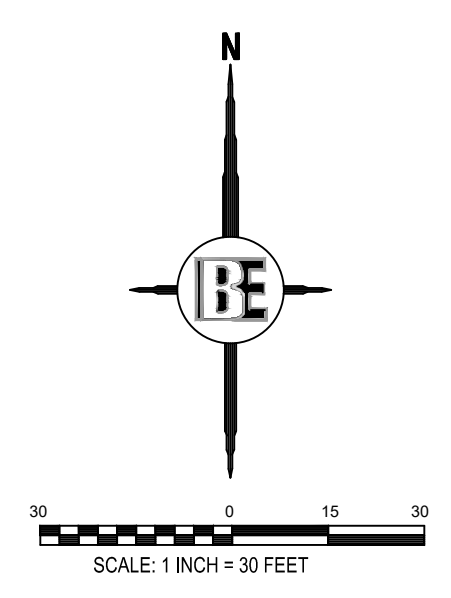
PERVIOUS AREAS =
 EXISTING LAWN/VEGETATION 925,214 SF (21.24 AC)

MIN. SETBACKS REQUIRED: EXISTING SETBACKS:
 RIGHT-OF-WAY: 50-FT 50-FT

SIDEWALK CALCULATION:
 8 FT WIDE SIDEWALKS TO MEET ARTICLE 12 SECTION 12.05 REQUIREMENTS ALONG E. GRAND RIVER AVE.

IMPACT STATEMENT NOTES

THE IMPLEMENTATION OF CONCRETE SIDEWALK IS COMPATIBLE WITH SURROUNDING LOT FRONTAGE USES AND NO NEW IMPACTS TO THE AREA ARE PROPOSED. NO SIGNIFICANT IMPACT TO THE EXISTING DRIVING RANGE BUILDING IS EXPECTED. THE IMPACT ON EXISTING PUBLIC FACILITIES AND SERVICES WILL NOT CHANGE. NORMAL POLICE AND FIRE PROTECTION SERVICES SHOULD REMAIN UNCHANGED. NO CHANGE TO EXISTING UTILITY SERVICES ARE PLANNED. NO CHANGE TO EXISTING STORMWATER MANAGEMENT SYSTEM IS PLANNED. NO HAZARDOUS MATERIALS ARE STORED ON SITE. THE DRIVEWAY ENTRANCE OFF EAST GRAND RIVER AVENUE PROVIDES ACCESS TO STAFF AND VISITOR PARKING. NO SIGNIFICANT INCREASE IN TRAFFIC VOLUME IS EXPECTED.



SEE SHEET 2 FOR GENERAL NOTES AND LEGEND

FOR SITE PLAN APPROVAL ONLY!
 NOT FOR CONSTRUCTION

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO WARRANTY IS MADE BY THE ENGINEER FOR THE ACCURACY OF THE LOCATION, DEPTH, OR COMPLETENESS OF ANY UTILITIES SHOWN THEREON. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF ALL UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE LOCATION OR DEPTH DIFFERS SIGNIFICANTLY FROM THE PLANS.

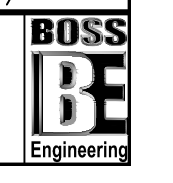
BEBOSS Engineering
 CALL: 517.546.4836
 1-800-999-4836
 www.beboss.com

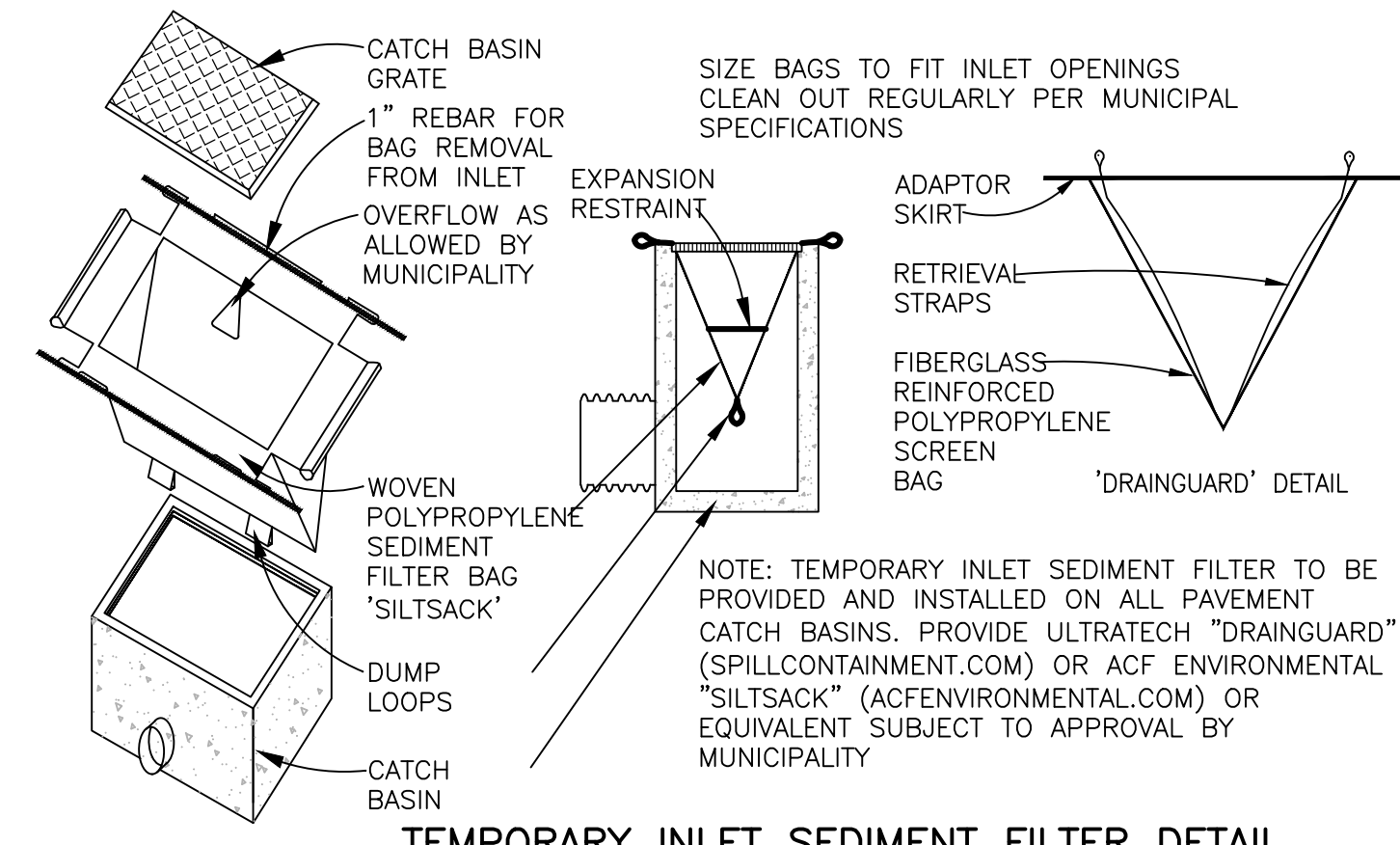
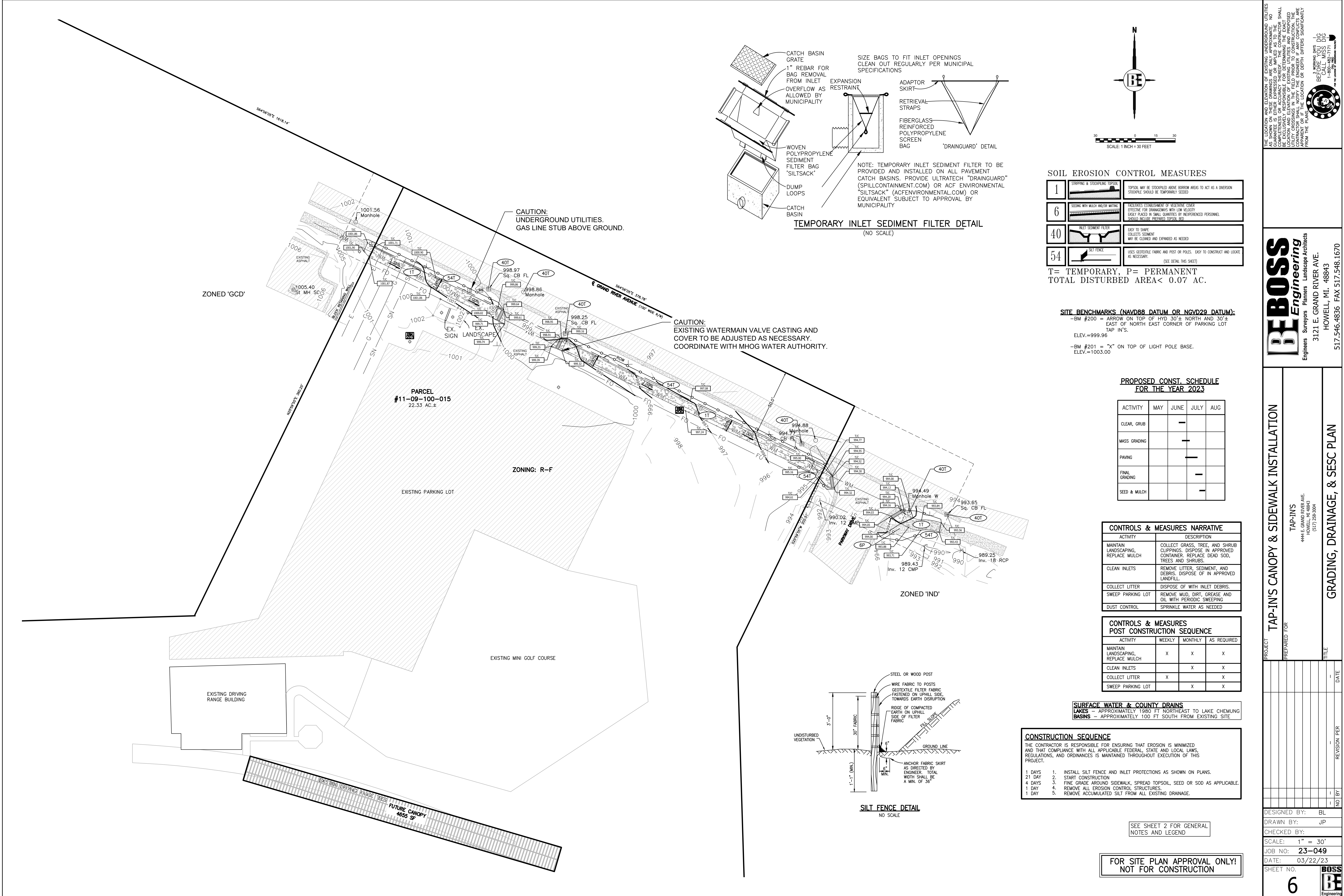
BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

PROJECT: TAP-IN'S CANOPY & SIDEWALK INSTALLATION
 PREPARED FOR: TAP-IN'S
 4444 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 (517) 298-3004
 TITLE: SITE & DEMOLITION PLAN

NO	BY	REVISION PER	DATE

DESIGNED BY: BL
 DRAWN BY: JP
 CHECKED BY:
 SCALE: 1" = 30'
 JOB NO: 23-049
 DATE: 03/22/23
 SHEET NO. 5





TEMPORARY INLET SEDIMENT FILTER DETAIL
(NO SCALE)

SOIL EROSION CONTROL MEASURES

1		TOPSOIL MAY BE STOCKPILED ABOVE BORROW AREAS TO ACT AS A DIRECTION STROOPLE SHOULD BE TEMPORARILY SEED
6		FACILITATES ESTABLISHMENT OF VEGETATIVE COVER. SPECIFIC FOR DRAINAGEWAYS WITH LOW VELOCITY. EASILY PLACED IN SMALL QUANTITIES BY INEXPERIENCED PERSONNEL. SHOULD INCLUDE PREPARED TOPSOIL. SEE
40		EASY TO SHAPE. COLLECTS SEDIMENT. MAY BE CLEANED AND EXPANDED AS NEEDED.
54		USES GEOTEXTILE FABRIC AND POST OR POLES. EASY TO CONSTRUCT AND LOCATE AS NECESSARY. (SEE DETAIL THIS SHEET)

T= TEMPORARY, P= PERMANENT
TOTAL DISTURBED AREA < 0.07 AC.

SITE BENCHMARKS (NAVD88 DATUM OR NGVD29 DATUM):
 -BM #200 = ARROW ON TOP OF HYD 30"± NORTH AND 30"± EAST OF NORTH EAST CORNER OF PARKING LOT TAP IN'S.
 ELEV.=999.96
 -BM #201 = "X" ON TOP OF LIGHT POLE BASE.
 ELEV.=1003.00

PROPOSED CONST. SCHEDULE FOR THE YEAR 2023

ACTIVITY	MAY	JUNE	JULY	AUG
CLEAR, GRUB				
MASS GRADING				
PAVING				
FINAL GRADING				
SEED & MULCH				

CONTROLS & MEASURES NARRATIVE

ACTIVITY	DESCRIPTION
MAINTAIN LANDSCAPING, REPLACE MULCH	COLLECT GRASS, TREE, AND SHRUB CLIPPINGS. DISPOSE IN APPROVED CONTAINER. REPLACE DEAD SOIL, TREES AND SHRUBS.
CLEAN INLETS	REMOVE LITTER, SEDIMENT, AND DEBRIS. DISPOSE OF IN APPROVED LANDFILL.
COLLECT LITTER	DISPOSE OF WITH INLET DEBRIS.
SWEEP PARKING LOT	REMOVE MUD, DIRT, GREASE AND OIL WITH PERIODIC SWEEPING
DUST CONTROL	SPRINKLE WATER AS NEEDED

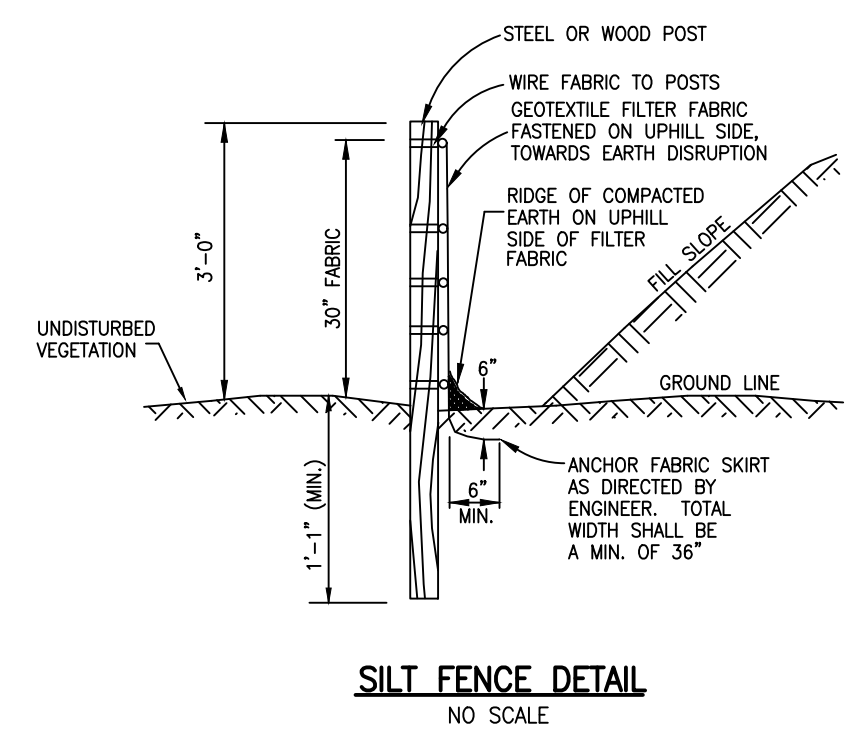
CONTROLS & MEASURES POST CONSTRUCTION SEQUENCE

ACTIVITY	WEEKLY	MONTHLY	AS REQUIRED
MAINTAIN LANDSCAPING, REPLACE MULCH	X	X	X
CLEAN INLETS		X	X
COLLECT LITTER	X		X
SWEEP PARKING LOT		X	X

SURFACE WATER & COUNTY DRAINS
LAKES - APPROXIMATELY 1980 FT NORTHEAST TO LAKE CHEMUNG
BASINS - APPROXIMATELY 100 FT SOUTH FROM EXISTING SITE

CONSTRUCTION SEQUENCE
 THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT EROSION IS MINIMIZED AND THAT COMPLIANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL LAWS, REGULATIONS, AND ORDINANCES IS MAINTAINED THROUGHOUT EXECUTION OF THIS PROJECT.

1 DAYS	1. INSTALL SILT FENCE AND INLET PROTECTIONS AS SHOWN ON PLANS.
21 DAY	2. START CONSTRUCTION
4 DAYS	3. FINE GRADE AROUND SIDEWALK, SPREAD TOPSOIL, SEED OR SOD AS APPLICABLE.
1 DAY	4. REMOVE ALL EROSION CONTROL STRUCTURES.
1 DAY	5. REMOVE ACCUMULATED SILT FROM ALL EXISTING DRAINAGE.



SILT FENCE DETAIL
(NO SCALE)

SEE SHEET 2 FOR GENERAL NOTES AND LEGEND

**FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION**

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION, DEPTH, OR ELEVATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF UTILITIES PRIOR TO CONSTRUCTION.

BE Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

TAP-IN'S CANOPY & SIDEWALK INSTALLATION

PROJECT: TAP-IN'S
 PREPARED FOR: 444 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 (517) 292-3004

TITLE: GRADING, DRAINAGE, & SECS PLAN

NO.	DATE	REVISION PER
1		
2		
3		
4		
5		
6		

DESIGNED BY: BL
 DRAWN BY: JP
 CHECKED BY:
 SCALE: 1" = 30'
 JOB NO: 23-049
 DATE: 03/22/23
 SHEET NO. **6**

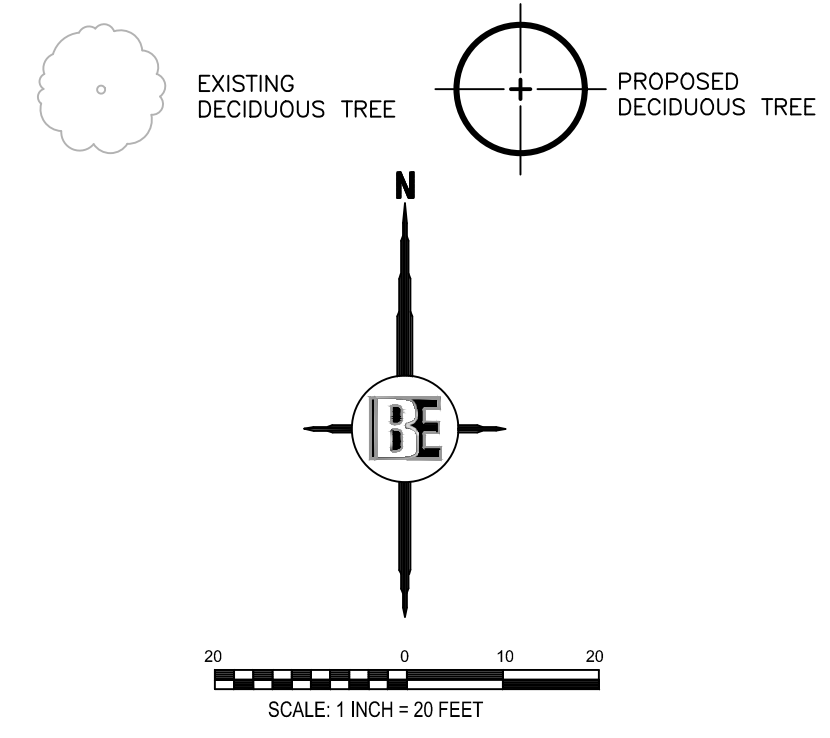
GENOA TOWNSHIP LANDSCAPE REQUIREMENTS FOR PUBLIC AND RECREATIONAL FACILITIES DISTRICT 6.02.02(e) GOLF DRIVING RANGES, MINIATURE GOLF COURSES:

- GREENBELT : MINIMUM 25 FT WIDE GREENBELT (AS DESCRIBED IN ARTICLE 3) ALONG ANY PUBLIC STREET OR HIGHWAY. ROW INCLUDING (1) CANOPY TREE FOR EVERY FORTY LINEAR FEET OF FRONTAGE. OR SUBSTITUTE EVERGREEN TREES FOR 50% OF REQUIRED TREES. FOR SITES THAT ABUT I-96, BUFFER ZONE B LANDSCAPING SHALL BE PROVIDED ALONG I-96. GRAND RIVER STREET FRONTAGE GREENBELT REQUIRED: 9 CANOPY TREES (379/40 LF = 9 TREES) PROVIDED: 9 PROPOSED CANOPY TREES
- SOUTH PROPERTY LINE ABUTTING I-96: BUFFER ZONE B REQUIRED
 PROVIDED: EXISTING STAGGERED SCREENING WITH APPROXIMATELY (28) 35' TO 40' TALL NORWAY AND BLUE SPRUCE

STREET FRONTAGE GREENBELT PLANT LIST

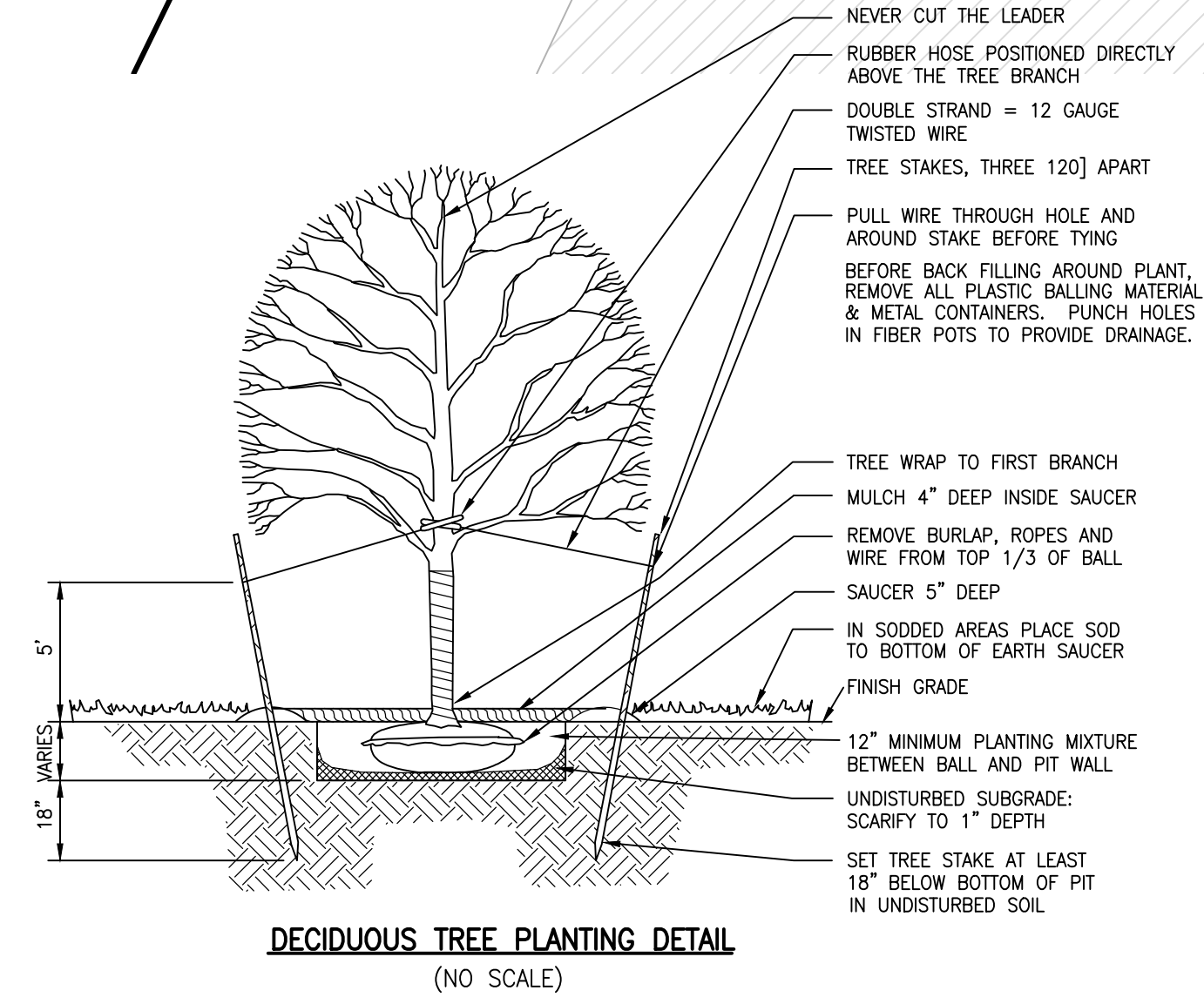
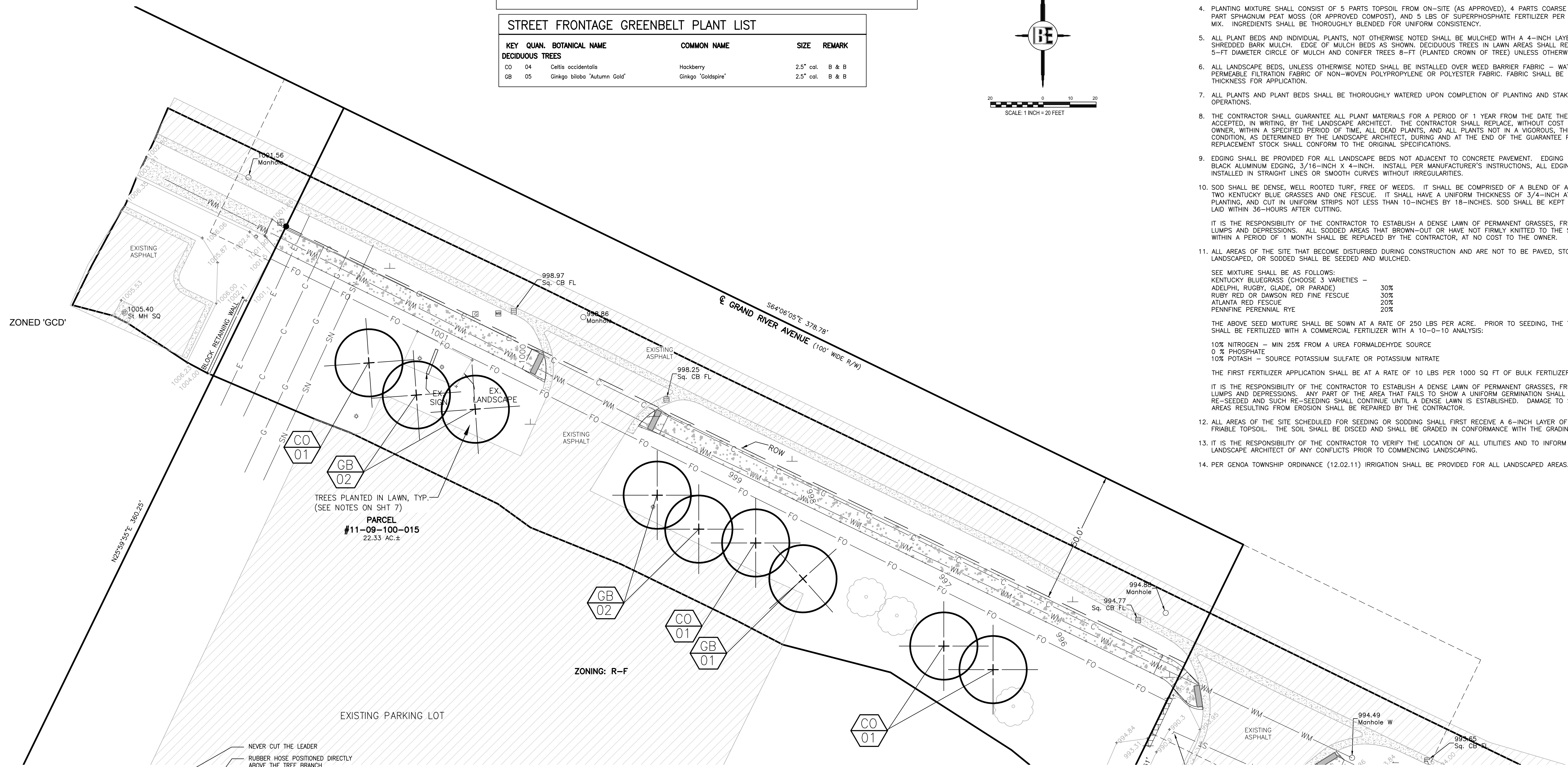
KEY	QUAN.	BOTANICAL NAME	COMMON NAME	SIZE	REMARK
CO	04	Celtis occidentalis	Hockberry	2.5" cal.	B & B
GB	05	Ginkgo biloba 'Autumn Gold'	Ginkgo 'Goldspire'	2.5" cal.	B & B

LANDSCAPE LEGEND



GENERAL LANDSCAPE SPECIFICATIONS:

- ALL PLANT MATERIAL SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS OF THE GOVERNING MUNICIPALITY. ALL STOCK SHALL BE NURSERY GROWN, CONFORMING TO ANSI Z60.1 "AMERICAN STANDARD FOR NURSERY STOCK", AND IN ACCORDANCE WITH GOOD HORTICULTURAL PRACTICE. STOCK SHALL EXHIBIT NORMAL GROWTH HABIT AND BE FREE OF DISEASE, INSECTS, EGGS, LARVAE, AND DEFECTS SUCH AS KNOTS, SUN-SCALD, INJURIES, ABRASIONS, OR DISFIGUREMENT. ALL PLANT MATERIAL SHALL BE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
 - ALL PLANT MATERIALS SHALL BE BALLED AND BURLAPPED OR CONTAINER STOCK. NO BARE ROOT STOCK IS PERMITTED. ALL PLANT BALLS SHALL BE FIRM, INTACT, AND SECURELY WRAPPED AND BOUND.
 - ALL PLANT BED MATERIALS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS, OTHER EXTRANEOUS OBJECTS, AND POOR SOILS TO A MINIMUM DEPTH OF 12-INCHES AND BACKFILLED TO GRADE WITH SPECIFIED PLANTING MIX (SEE BELOW).
 - PLANTING MIXTURE SHALL CONSIST OF 5 PARTS TOPSOIL FROM ON-SITE (AS APPROVED), 4 PARTS COARSE SAND, 1 PART SPHAGNUM PEAT MOSS (OR APPROVED COMPOST), AND 5 LBS OF SUPERPHOSPHATE FERTILIZER PER CU. YD. OF MIX. INGREDIENTS SHALL BE THOROUGHLY BLENDED FOR UNIFORM CONSISTENCY.
 - ALL PLANT BEDS AND INDIVIDUAL PLANTS, NOT OTHERWISE NOTED SHALL BE MULCHED WITH A 4-INCH LAYER OF SHREDDED BARK MULCH. EDGE OF MULCH BEDS AS SHOWN. DECIDUOUS TREES IN LAWN AREAS SHALL RECEIVE A 5-FT DIAMETER CIRCLE OF MULCH AND CONIFER TREES 8-FT (PLANTED CROWN OF TREE) UNLESS OTHERWISE NOTED.
 - ALL LANDSCAPE BEDS, UNLESS OTHERWISE NOTED SHALL BE INSTALLED OVER WEED BARRIER FABRIC - WATER PERMEABLE FILTRATION FABRIC OF NON-WOVEN POLYPROPYLENE OR POLYESTER FABRIC. FABRIC SHALL BE OF SUITABLE THICKNESS FOR APPLICATION.
 - ALL PLANTS AND PLANT BEDS SHALL BE THOROUGHLY WATERED UPON COMPLETION OF PLANTING AND STAKING OPERATIONS.
 - THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF 1 YEAR FROM THE DATE THE WORK IS ACCEPTED, IN WRITING, BY THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE, WITHOUT COST TO THE OWNER, WITHIN A SPECIFIED PERIOD OF TIME, ALL DEAD PLANTS, AND ALL PLANTS NOT IN A VIGOROUS, THRIVING CONDITION, AS DETERMINED BY THE LANDSCAPE ARCHITECT, DURING AND AT THE END OF THE GUARANTEE PERIOD. REPLACEMENT STOCK SHALL CONFORM TO THE ORIGINAL SPECIFICATIONS.
 - EDGING SHALL BE PROVIDED FOR ALL LANDSCAPE BEDS NOT ADJACENT TO CONCRETE PAVEMENT. EDGING SHALL BE BLACK ALUMINUM EDGING, 3/16-INCH X 4-INCH. INSTALL PER MANUFACTURER'S INSTRUCTIONS. ALL EDGING SHALL BE INSTALLED IN STRAIGHT LINES OR SMOOTH CURVES WITHOUT IRREGULARITIES.
 - SOD SHALL BE DENSE, WELL ROOTED TURF, FREE OF WEEDS. IT SHALL BE COMPRISED OF A BLEND OF AT LEAST TWO KENTUCKY BLUE GRASSES AND ONE FESCUE. IT SHALL HAVE A UNIFORM THICKNESS OF 3/4-INCH AT TIME OF PLANTING, AND CUT IN UNIFORM STRIPS NOT LESS THAN 10-INCHES BY 18-INCHES. SOD SHALL BE KEPT MOIST AND LAID WITHIN 36-HOURS AFTER CUTTING.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ALL SODDED AREAS THAT BROWN-OUT OR HAVE NOT FIRMLY KNITTED TO THE SOIL BASE WITHIN A PERIOD OF 1 MONTH SHALL BE REPLACED BY THE CONTRACTOR, AT NO COST TO THE OWNER.
- ALL AREAS OF THE SITE THAT BECOME DISTURBED DURING CONSTRUCTION AND ARE NOT TO BE PAVED, STONED, LANDSCAPED, OR SODDED SHALL BE SEEDED AND MULCHED.
- SEE MIXTURE SHALL BE AS FOLLOWS:
 KENTUCKY BLUEGRASS (CHOOSE 3 VARIETIES - ADELPHI, RUGBY, GLADE, OR PARADE) 30%
 RUBY RED OR DAWSON RED FINE FESCUE 30%
 ATLANTA RED FESCUE 20%
 PENNFINE PERENNIAL RYE 20%
- THE ABOVE SEED MIXTURE SHALL BE SOWN AT A RATE OF 250 LBS PER ACRE. PRIOR TO SEEDING, THE TOPSOIL SHALL BE FERTILIZED WITH A COMMERCIAL FERTILIZER WITH A 10-0-10 ANALYSIS:
 10% NITROGEN - MIN 25% FROM A UREA FORMALDEHYDE SOURCE
 0% PHOSPHATE
 10% POTASH - SOURCE POTASSIUM SULFATE OR POTASSIUM NITRATE
- THE FIRST FERTILIZER APPLICATION SHALL BE AT A RATE OF 10 LBS PER 1000 SQ FT OF BULK FERTILIZER.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ANY PART OF THE AREA THAT FAILS TO SHOW A UNIFORM GERMINATION SHALL BE RE-SEEDED AND SUCH RE-SEEDING SHALL CONTINUE UNTIL A DENSE LAWN IS ESTABLISHED. DAMAGE TO SEEDED AREAS RESULTING FROM EROSION SHALL BE REPAIRED BY THE CONTRACTOR.
- ALL AREAS OF THE SITE SCHEDULED FOR SEEDING OR SODDING SHALL FIRST RECEIVE A 6-INCH LAYER OF CLEAN, FRIABLE TOPSOIL. THE SOIL SHALL BE DISCED AND SHALL BE GRADED IN CONFORMANCE WITH THE GRADING PLAN.
 - IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE LOCATION OF ALL UTILITIES AND TO INFORM THE LANDSCAPE ARCHITECT OF ANY CONFLICTS PRIOR TO COMMENCING LANDSCAPING.
 - PER GENOA TOWNSHIP ORDINANCE (12.02.11) IRRIGATION SHALL BE PROVIDED FOR ALL LANDSCAPED AREAS.



SEE SHEET 2 FOR GENERAL NOTES AND LEGEND

**FOR SITE PLAN APPROVAL ONLY!
NOT FOR CONSTRUCTION**

THE LOCATION AND ELEVATION OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATION AND DEPTH OF UTILITIES CROSSING IN THE FIELD PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF UTILITIES APPARENT OR IF THE LOCATION OR DEPTH DIFFERS SIGNIFICANTLY FROM THE PLANS.

BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

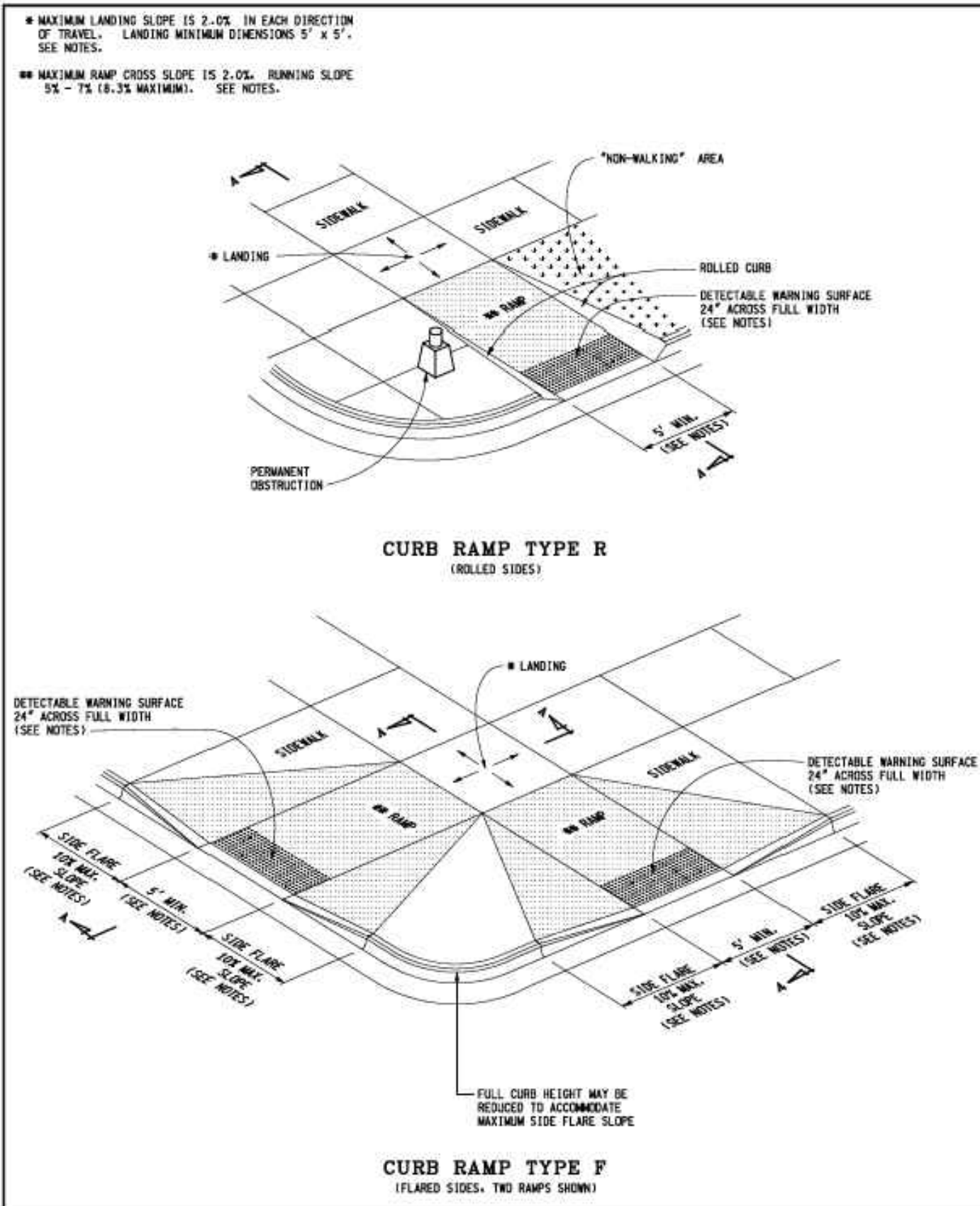
PROJECT: TAP-IN'S CANOPY & SIDEWALK INSTALLATION
 PREPARED FOR: TAP-IN'S
 444 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 (517) 258-3004

TITLE: LANDSCAPE PLAN

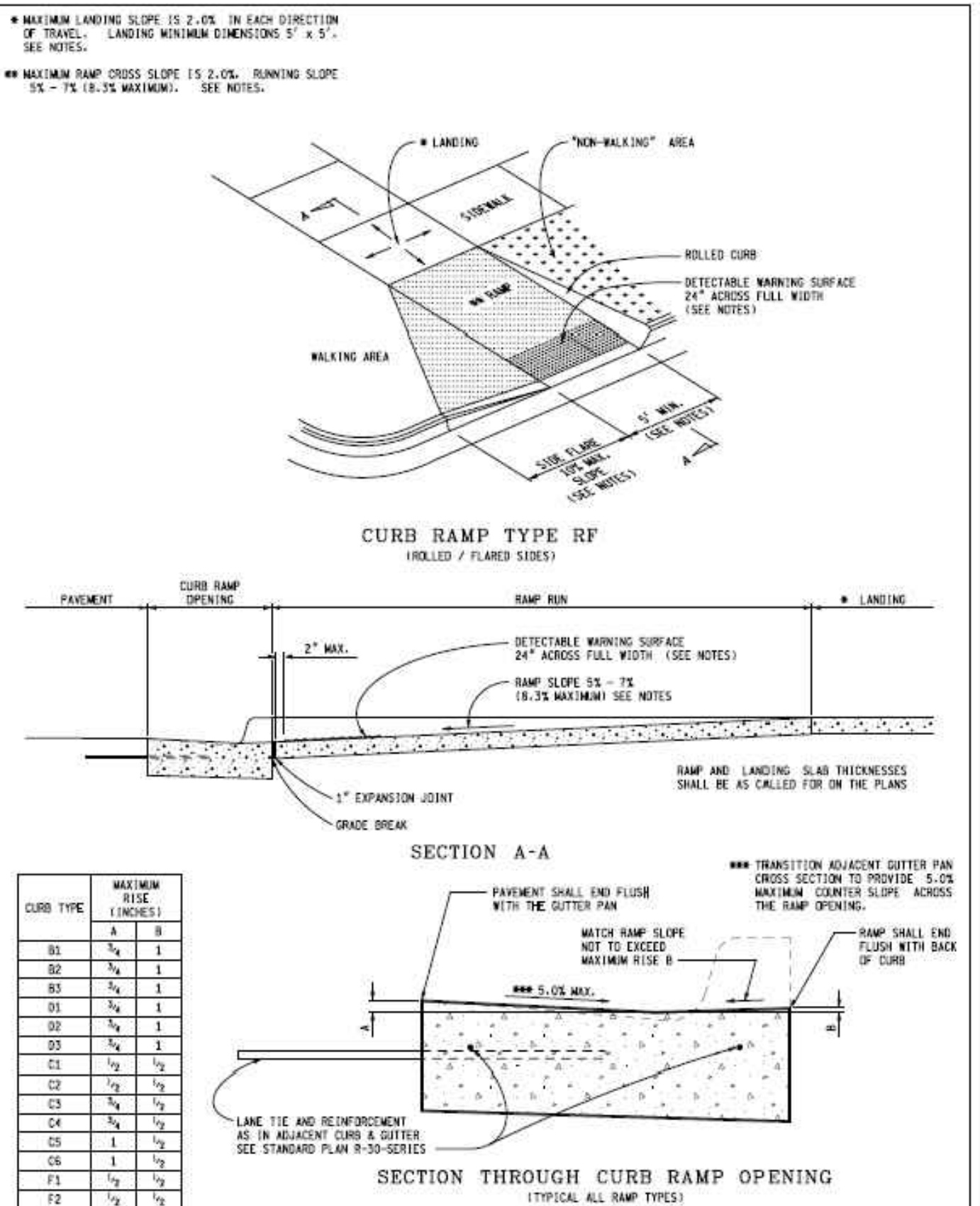
NO.	BY	DATE	REVISION

DESIGNED BY: BL
 DRAWN BY: JA
 CHECKED BY:
 SCALE: 1" = 20'
 JOB NO: 23-049
 DATE: 03/22/23
 SHEET NO. 7

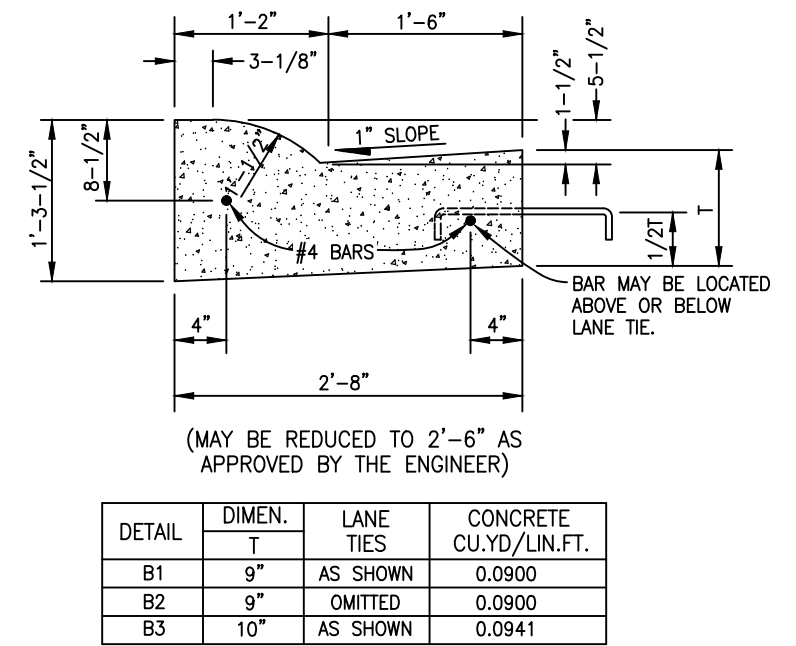
BEBOSS Engineering



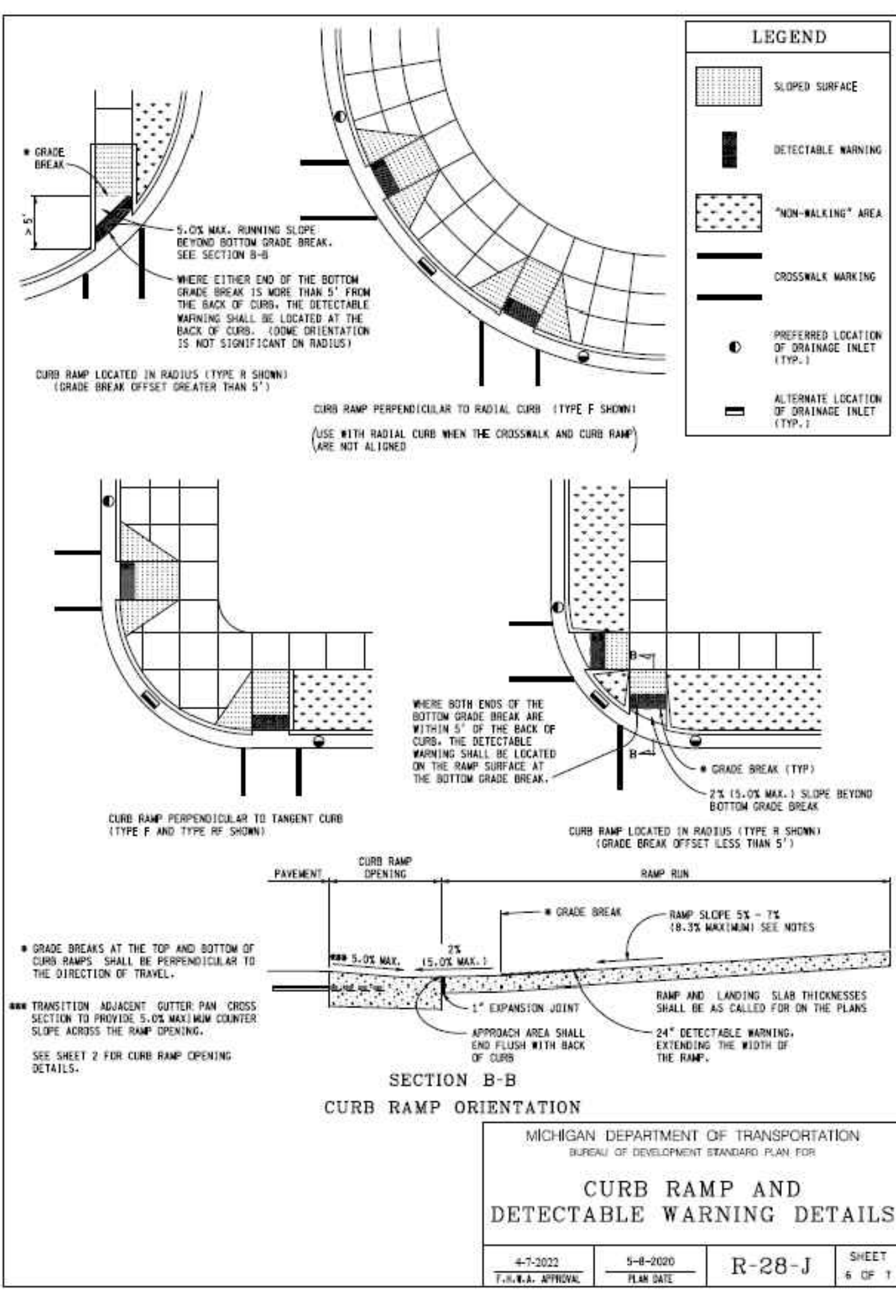
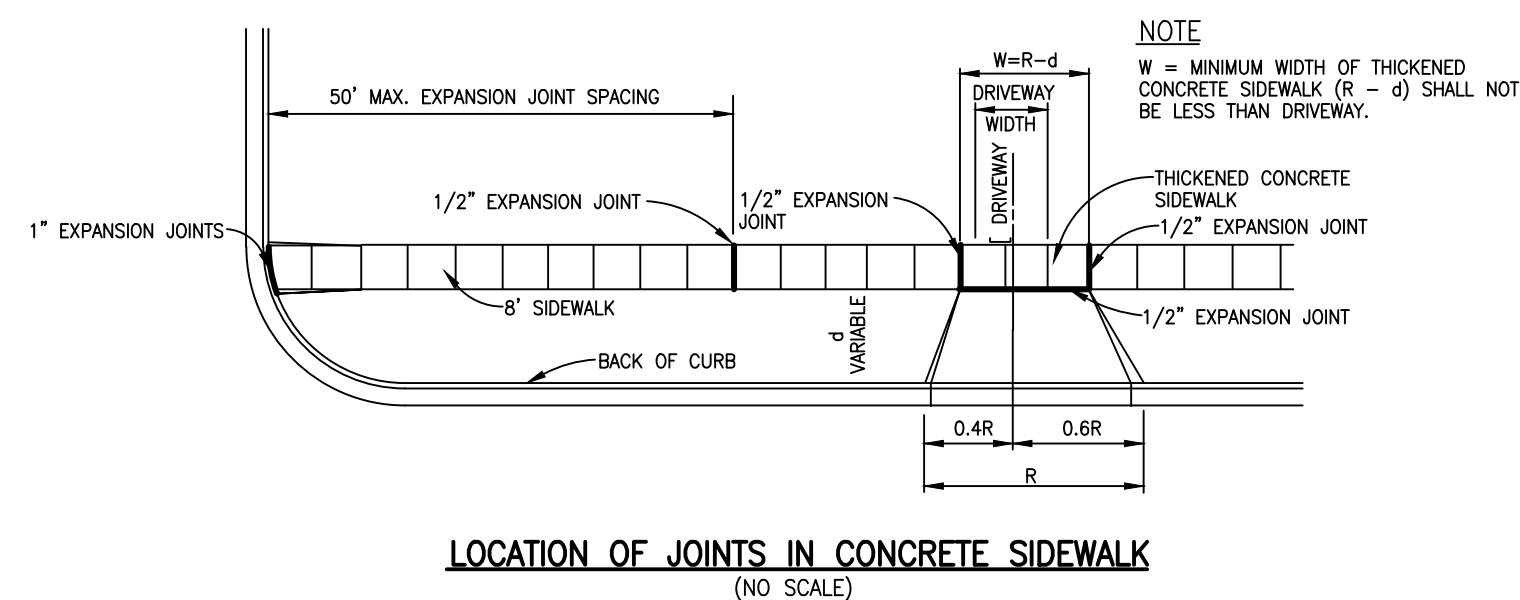
DEPARTMENT DIRECTOR Paul G. Rogers APPROVED BY: <i>[Signature]</i> DATE: 04/19/2023 12:32 PM DIRECTOR, BUREAU OF FIELD SERVICES		MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR CURB RAMP AND DETECTABLE WARNING DETAILS	
PREPARED BY: DESIGN DIVISION DRAWN BY: J.S.L. CHECKED BY: J.S.L.	APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT DATE: 04/19/2023 12:32 PM	4-7-2022 P.L.N.A. APPROVAL	5-8-2020 PLAN DATE R-28-J SHEET 1 OF 7



DEPARTMENT DIRECTOR Paul G. Rogers APPROVED BY: <i>[Signature]</i> DATE: 04/19/2023 12:32 PM DIRECTOR, BUREAU OF FIELD SERVICES		MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR CURB RAMP AND DETECTABLE WARNING DETAILS	
PREPARED BY: DESIGN DIVISION DRAWN BY: J.S.L. CHECKED BY: J.S.L.	APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT DATE: 04/19/2023 12:32 PM	4-7-2022 P.L.N.A. APPROVAL	5-8-2020 PLAN DATE R-28-J SHEET 2 OF 7



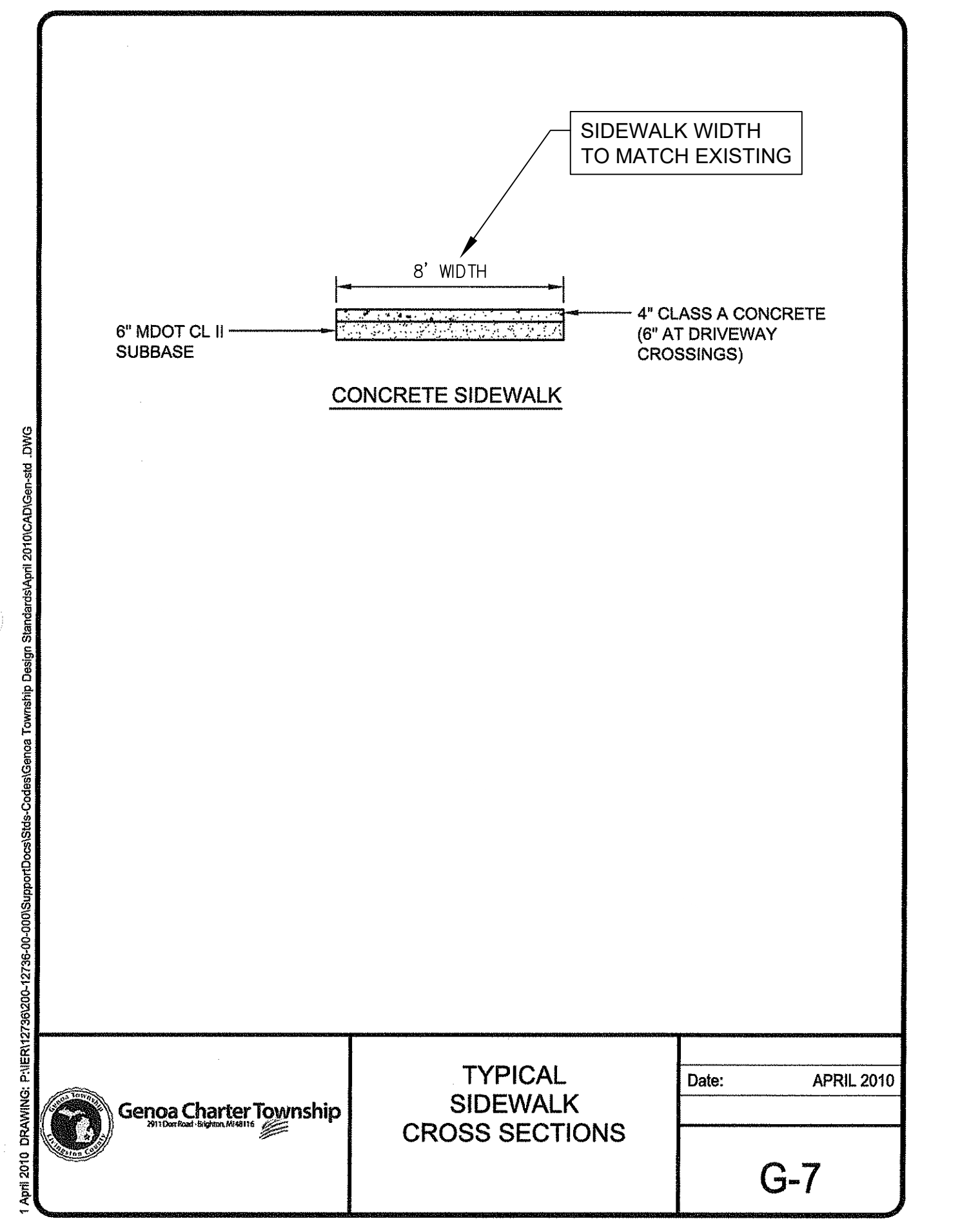
DETAIL	DIMEN. T	LANE TIES	CONCRETE CU./YD./LIN.FT.
B1	9"	AS SHOWN	0.0900
B2	9"	OMITTED	0.0900
B3	10"	AS SHOWN	0.0941



DEPARTMENT DIRECTOR Paul G. Rogers APPROVED BY: <i>[Signature]</i> DATE: 04/19/2023 12:32 PM DIRECTOR, BUREAU OF FIELD SERVICES		MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR CURB RAMP AND DETECTABLE WARNING DETAILS	
PREPARED BY: DESIGN DIVISION DRAWN BY: J.S.L. CHECKED BY: J.S.L.	APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT DATE: 04/19/2023 12:32 PM	4-7-2022 P.L.N.A. APPROVAL	5-8-2020 PLAN DATE R-28-J SHEET 6 OF 7



DEPARTMENT DIRECTOR Paul G. Rogers APPROVED BY: <i>[Signature]</i> DATE: 04/19/2023 12:32 PM DIRECTOR, BUREAU OF FIELD SERVICES		MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR CURB RAMP AND DETECTABLE WARNING DETAILS	
PREPARED BY: DESIGN DIVISION DRAWN BY: J.S.L. CHECKED BY: J.S.L.	APPROVED BY: DIRECTOR, BUREAU OF DEVELOPMENT DATE: 04/19/2023 12:32 PM	4-7-2022 P.L.N.A. APPROVAL	5-8-2020 PLAN DATE R-28-J SHEET 7 OF 7



Genoa Charter Township 10000 Grand River Ave. Howell, MI 48843 (517) 292-3004		TYPICAL SIDEWALK CROSS SECTIONS	Date: APRIL 2010
G-7			REVISION PER DATE

**FOR SITE PLAN APPROVAL ONLY!
 NOT FOR CONSTRUCTION**

BEBOSS Engineering
 Engineers Surveyors Planners Landscape Architects
 3121 E. GRAND RIVER AVE.
 HOWELL, MI. 48843
 517.546.4836 FAX 517.548.1670

TAP-IN'S CANOPY & SIDEWALK INSTALLATION

PREPARED FOR: **TAP-IN'S**
 444 E. GRAND RIVER AVE.
 HOWELL, MI 48843
 (517) 292-3004

CONSTRUCTION DETAILS

DESIGNED BY:	BL
DRAWN BY:	JP
CHECKED BY:	
SCALE:	NO SCALE
JOB NO.:	23-049
DATE:	03/22/23
SHEET NO.:	8

BEBOSS Engineering

STRUCTURAL GENERAL NOTES

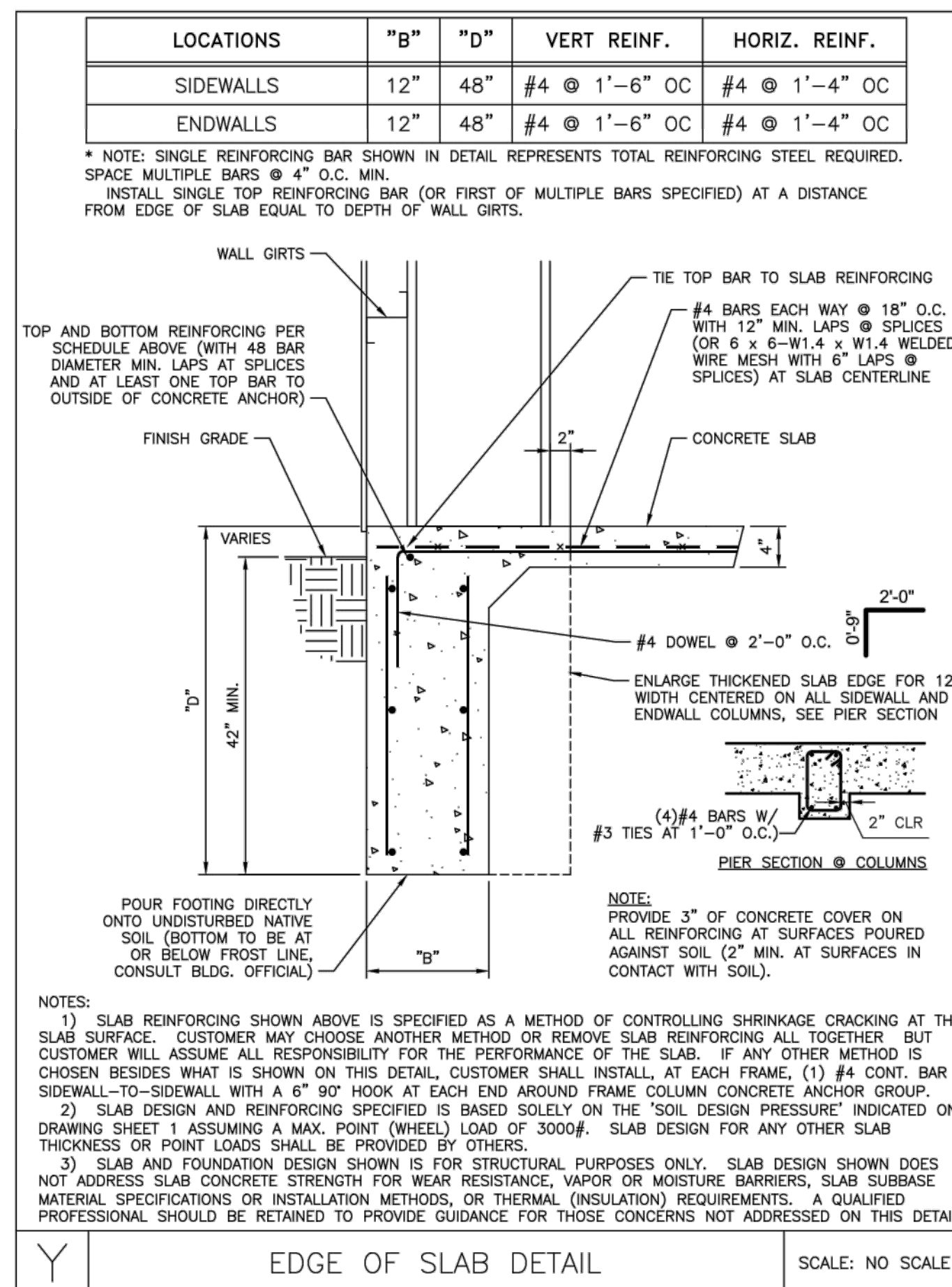
- GOVERNING CODE:** 2015 INTERNATIONAL BUILDING CODE
- DRAWING OWNERSHIP:** THESE DRAWINGS ARE JOINTLY OWNED BY METAL SALES MANUFACTURING CORP. (MSM) AND METAL BUILDING ENGINEERING, LLC. DRAWINGS ARE PROVIDED FOR THE SOLE PURPOSE OF OBTAINING BUILDING PERMITS. ENGINEERING SEAL IS VALID FOR THE CONSTRUCTION OF A SINGLE BUILDING AT THE JOB ADDRESS SHOWN IN DRAWING TITLEBLOCK. ANY OTHER USE OF THESE DRAWINGS WITHOUT WRITTEN AUTHORIZATION FROM MSM AND METAL BUILDING ENGINEERING, LLC IS PROHIBITED.
- DRAWING SEAL REQUIREMENTS:** THESE DRAWINGS ARE NOT VALID UNLESS 1) THE SEAL (STAMP) ON A PAPER COPY IS WET SIGNED IN INK BY THE ENGINEER, OR 2) THE PAPER COPIES ARE OF A DRAWING DIGITALLY SIGNED BY THE ENGINEER, OR 3) THE ELECTRONIC FILE OF THE DRAWING IS DIGITALLY SIGNED BY THE ENGINEER. IF A COPY OF THESE DRAWINGS IS DISTRIBUTED WITHOUT EITHER A PROPER WET SIGNATURE OR A DIGITAL SIGNATURE, THE DRAWING IS CONSIDERED INVALID. IF A COPY OF THESE DRAWINGS IS DISTRIBUTED WITHOUT EITHER A PROPER WET SIGNATURE OR A DIGITAL SIGNATURE, THE DRAWING IS CONSIDERED INVALID. THE ENGINEER ACCEPTS NO LIABILITY OR RESPONSIBILITY FOR DRAWINGS CONSIDERED INVALID AS NOTED ABOVE.
- CONTRACTOR RESPONSIBILITIES:** CONTRACTOR SHALL VERIFY AND CONFIRM ALL EXISTING CONDITIONS AND DIMENSIONS. METAL BUILDING ENGINEERING, LLC (ENGINEER) SHALL BE NOTIFIED OF ANY DISCREPANCIES BETWEEN DRAWINGS AND EXISTING CONDITIONS PRIOR TO START OF WORK. CONTRACTOR MUST SUBMIT IN WRITING ANY REQUEST FOR MODIFICATION TO THE PLANS AND/OR SPECIFICATIONS AND NO STRUCTURAL CHANGES FROM THE APPROVED PLANS SHALL BE MADE IN THE FIELD UNLESS, PRIOR TO MAKING CHANGES, WRITTEN APPROVAL IS OBTAINED FROM THE ENGINEER. SHOP DRAWINGS SUBMITTED TO THE ENGINEER FOR REVIEW DO NOT CONSTITUTE "IN WRITING" UNLESS IT IS NOTED THAT SPECIFIC CHANGES ARE BEING REQUESTED. IF CHANGES ARE MADE WITHOUT WRITTEN APPROVAL, SUCH CHANGES SHALL BE THE LEGAL AND FINANCIAL RESPONSIBILITY OF THE CONTRACTOR OR SUB-CONTRACTORS INVOLVED AND IT SHALL BE THEIR FULL RESPONSIBILITY TO REPLACE OR REPAIR THE CONDITION AS DIRECTED BY THE ENGINEER. CONTRACTOR SHALL PROVIDE ALL TEMPORARY BRACING, SHORING, GUYING, OR OTHER MEANS TO AVOID EXCESSIVE STRESSES AND TO HOLD STRUCTURAL ELEMENTS IN PLACE DURING ERECTION. THESE TEMPORARY PROVISIONS SHALL REMAIN IN PLACE UNTIL SUFFICIENT PERMANENT MEMBERS ARE ERECTED TO INSURE THE SAFETY OF PARTIALLY ERECTED STRUCTURES. CONTRACTOR IS RESPONSIBLE FOR MEETING ALL LAWS REGULATING THE ERECTION OF STEEL BUILDINGS. THESE STRUCTURAL DRAWINGS AND SPECIFICATIONS REPRESENT THE FINISHED STRUCTURE. BUILDING IS NOT CONSIDERED COMPLETE UNTIL THE INSTALLATION OF ALL COMPONENTS AND DETAILS SHOWN HEREIN ARE INSTALLED ACCORDING TO THE DRAWINGS.
- ENGINEERING:** THE SUPPLYING OF STAMPED ENGINEERING CALCULATIONS AND DRAWINGS FOR THIS METAL BUILDING DOES NOT IMPLY OR CONSTITUTE AN AGREEMENT THAT METAL BUILDING ENGINEERING, LLC IS ACTING AS THE ENGINEER OR ARCHITECT OF RECORD OR THE DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE FOR THE WHOLE OF THE PROJECT. THIS BUILDING HAS BEEN REVIEWED BY METAL BUILDING ENGINEERING, LLC FOR CONFORMITY ONLY TO THE STRUCTURAL DESIGN PORTIONS OF THE GOVERNING CODE. THE BUILDING OWNER IS RESPONSIBLE TO SEEK PROFESSIONAL ADVICE IN ADDRESSING ANY OTHER CODE REQUIREMENTS (INCLUDING, BUT NOT LIMITED TO, FIRE AND LIFE SAFETY, ENVIRONMENTAL, ACCESSIBILITY, OR ELECTRICAL) THAT MAY APPLY TO THIS PROJECT. DRAWINGS SCALES INDICATED ON DRAWINGS ARE APPROXIMATE AND INTENDED TO BE USED FOR REFERENCE ONLY. DO NOT SCALE DRAWINGS FOR CONSTRUCTION PURPOSES. THESE DOCUMENTS ARE STAMPED ONLY AS TO THE COMPONENTS FURNISHED BY MSM. IT IS THE RESPONSIBILITY OF THE PURCHASER TO COORDINATE DRAWINGS PROVIDED BY METAL BUILDING ENGINEERING, LLC WITH OTHER PLANS AND/OR OTHER COMPONENTS THAT ARE PART OF THE OVERALL PROJECT. IN CASES OF DISCREPANCIES, DRAWINGS PROVIDED BY METAL BUILDING ENGINEERING, LLC SHALL GOVERN. THE UNDERSIGNED ENGINEER WILL NOT SUPERVISE THE FABRICATION OR ERECTION OF THIS STRUCTURE. ANY OBSERVATION VISITS TO THE PROJECT SITE BY THE UNDERSIGNED ENGINEER ARE NOT TO BE CONSTRUED AS BEING INSPECTIONS FOR THE CONSTRUCTION OF ANY COMPONENT OF THIS BUILDING.
- INSPECTIONS:** NO SPECIAL INSPECTIONS ARE REQUIRED BY THE GOVERNING CODE ON THIS JOB. ALL SPECIAL INSPECTIONS AND ANY OTHER ADDITIONAL INSPECTIONS REQUESTED BY BUILDING DEPARTMENT SHALL BE AT OWNER'S EXPENSE.
- SOIL REQUIREMENTS:** ALLOWABLE SOIL BEARING VALUE INDICATED ON DRAWING SHEET 1 OCCURS AT 12" BELOW FINISH GRADE, OR EXISTING NATURAL GRADE, OR AT FROST DEPTH SPECIFIED BY BUILDING DEPARTMENT, WHICHEVER IS THE LOWEST ELEVATION. FOUNDATION DESIGN SHOWN ASSUMES BOTTOM OF FOOTING BEARS ON NATIVE SOILS. FOUNDATION DESIGN SHOWN DOES NOT ACCOUNT FOR EXPANSIVE SOIL CONDITIONS OR FOR CONCRETE THAT WILL BE EXPOSED TO SULFATE CONTAINING SOLUTIONS OR CHLORIDES. OWNER SHALL CONTACT ENGINEER PRIOR TO CONSTRUCTION IF ANY OF THESE CONDITIONS EXIST.
- CONCRETE REQUIREMENTS:** ALL CONCRETE SHALL HAVE A MIN. 28-DAY STRENGTH OF 2500 PSI. HIGHER STRENGTH CONCRETE MAY BE USED, AT OWNER'S DISCRETION, FOR FINISH AND DURABILITY PURPOSES. CEMENT SHALL COMPLY WITH ASTM C150, TYPE 2, AND SHALL CONTAIN NO FLYASH. ALL CONCRETE PLACEMENT SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF ACI 301, "SPECIFICATIONS FOR STRUCTURAL CONCRETE", WHICH IS HEREBY MADE A PART OF THESE DOCUMENTS. CONCRETE REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60 FOR #4 BARS AND LARGER, GRADE 40 FOR #3 BARS. WELDED WIRE MESH SHALL CONFORM TO ASTM A185 (Fy MIN. OF 70 ksi). ALL FOOTING REINFORCING BARS TO BE CONTINUOUS AROUND CORNERS. LAP SPICE FOOTING REINFORCING MIDWAY BETWEEN COLUMNS. ALL LAP SPICES TO BE 48 BAR DIAMETERS MIN. U.N.O. CONCRETE GRADE BEAMS, THICKENED SLAB EDGES, PIERS, AND SPREAD FOOTINGS SHALL BE POURED ONTO UNDISTURBED, NATIVE SOIL WHICH IS FREE FROM ANY MATERIAL THAT WILL ADVERSELY AFFECT THE MIN. ALLOWABLE SOIL BEARING PRESSURE SPECIFIED IN SHEET 1. CONCRETE ANCHOR INSTALLATION SHALL BE DONE IN ACCORDANCE WITH ICC REPORT ESR-3889, SECTION 4.3.
- STRUCTURAL STEEL REQUIREMENTS:** ALL STRUCTURAL STEEL SHALL CONFORM TO ASTM A36 (Fy MIN. OF 36000 PSI), U.N.O. ALL BOLTS SHALL CONFORM TO ASTM A307, U.N.O. BOLT HOLE DIAMETERS SHALL BE 1/16" LARGER THAN NOMINAL BOLT DIAMETER. ALL INSTALLATION SHALL BE IN ACCORDANCE WITH AISC "CODE OF STANDARD PRACTICE". NO WELDING IS REQUIRED ON THIS JOB.
- LIGHT GAUGE STRUCTURAL STEEL REQUIREMENTS:** ALL LIGHT GAUGE STEEL FRAMING MATERIAL AND ERECTION SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN IRON AND STEEL INSTITUTE (AISI) "NORTH AMERICAN SPECIFICATION FOR THE DESIGN OF COLD-FORMED STEEL STRUCTURAL MEMBERS". ALL LIGHT GAUGE STEEL MATERIAL SHALL CONFORM TO ASTM A955 HAVING A MINIMUM YIELD STRENGTH OF 55000 PSI. THE GRADE AND ASTM SPECIFICATION NUMBER SHALL BE INDICATED BY PAINTING, DECAL, TAGGING, OR OTHER SUITABLE MEANS, ON EACH LIFT OR BUNDLE OF FABRICATED ELEMENTS. UNLESS NOTED OTHERWISE, CEE, ZEE, AND CHANNEL MEMBERS' WEB AND FLANGE DIMENSIONS (IN INCHES) SHALL BE AS NOTED IN DETAILS IN THE FOLLOWING FORMAT: [WEB DEPTH] x [FLANGE WIDTH] (DIMENSIONS). FOR ZEES WITH UNEQUAL FLANGES, THE WIDTHS FOR BOTH FLANGES WILL BE LISTED, SEPARATED BY A "/". MIN. FLANGE STIFFENER LIPS SHALL BE 0.885" FOR 12G ZEES, 0.800" FOR 14G ZEES, 0.773" FOR 16G ZEES, 0.900" FOR 12G ZEES, 0.900" FOR 14G ZEES, AND 0.900" FOR 16G ZEES. ALL BEND RADIUS SHALL BE .1875". FOR ANGLES, THE FIRST TWO NUMBERS ARE THE LEG DIMENSIONS. DECIMAL THICKNESS OF THE DELIVERED LIGHT GAUGE STEEL MATERIAL, ACCORDING TO NOMINAL GAUGES, SHALL MEET OR EXCEED THE FOLLOWING DESIGN VALUES:

GAUGE NO.	10	14	16	18	20
DECIMAL THICKNESS, IN.	0.135	0.070	0.048	0.036	0.036

EXCEPT AS SHOWN ON DRAWINGS, CEE COLUMN AND RAFTER MEMBERS SHALL NOT BE DRILLED OR NOTCHED WITHOUT PRIOR APPROVAL OF THE ENGINEER. DOOR JAMB, ROOF PURLIN, AND WALL GIRT ENDS MAY HAVE FLANGES COPED 1" MAX. IF CONNECTION IS MADE TO PERPENDICULAR MEMBER PER DETAIL E/4. ROUND HOLES MAY BE DRILLED THROUGH ANY GIRT OR PURLIN MEMBER WITHIN THE MIDDLE THIRD OF THE DEPTH OF THAT MEMBER AND NOT WITHIN 24" OF MEMBER END (FIELD-DRILLED BOLT HOLES INDICATED AT ENDS OF KNEE OR APEX BRACE WEBS AND SHOP-PUNCHED HOLES IN BRACE FLANGES EXCEPTED). ALL BOLTS USED TO CONNECT LIGHT GAUGE MATERIAL SHALL CONFORM TO ASTM A307. BOLTS TO BE SNUG TIGHT PER THE RCSC AND AISC SPECIFICATIONS, UNLESS SPECIFICALLY NOTED OTHERWISE. BOLTS SHALL BE SPACED NO LESS THAN 3 BOLT DIAMETERS BETWEEN CENTERS. DISTANCE FROM BOLT CENTER TO THE END OR EDGE OF ANY LIGHT GAUGE MEMBER SHALL BE A MIN. OF 1.5 BOLT DIAMETERS. ALL SCREWS USED TO CONNECT LIGHT GAUGE MATERIAL SHALL BE SELF-DRILLING SCREWS AND SHALL HAVE A MIN. TENSILE BREAKING STRENGTH OF 100,000 PSI. SCREWS SHALL BE SPACED NO LESS THAN 1" O.C. AND EDGE OR END DISTANCE SHALL NOT BE LESS THAN 1". UNLESS NOTED OTHERWISE, ALL REFERENCES TO "SCREWS" CONNECTING MATERIAL THICKER THAN 20 GA. SHALL BE MIN. #14 SCREWS AND SHALL HAVE MIN. 14 THREADS PER INCH. SCREW ROOT DIAMETERS SHALL NOT BE LESS THAN: #14 SCREW: .200" #12 SCREW: .177" #10 SCREW: .153"
- STEEL ROOF AND WALL PANELS (CLADDING):** LIGHT GAUGE STEEL ROOF AND WALL PANELS SHALL CONFORM TO ASTM A653 AND THE STEEL DECK INSTITUTE SPECIFICATIONS AND HAVE A MIN. YIELD STRENGTH OF 80000 PSI. DECIMAL THICKNESSES, ACCORDING TO NOMINAL GAUGES, SHALL MEET OR EXCEED THE FOLLOWING:

GAUGE NO.	22	0.0259	26	0.0179	29	0.0134
DECIMAL THICKNESS, IN.	24	0.0239	28	0.0149	30	0.0120

SEE DETAILS H/4 AND I/4 FOR ROOF AND WALL PANEL FASTENER TYPES AND SPACINGS.



WALL OPENING SCHEDULE

DOOR	WIDTH	HEIGHT	OPENING TYPE	HEADER GIRT	OPENING JAMBS
1-2	10'-0"	8'-0"	ROLL UP DOOR	SEE NOTE #4	CHN6X 3X14
3	3'-0"	7'-0"	ROLL UP DOOR	DOUBLE	CHN6X 3X16
4-14	6'-0"	4'-0"	WINDOW	SEE NOTE #4	CHN6X 3X16

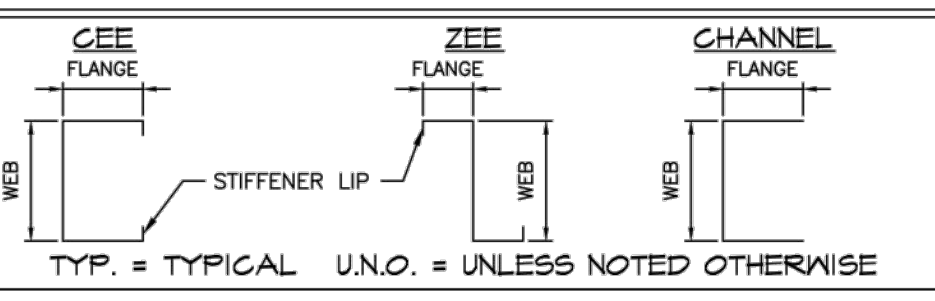
- NOTES:
 1) JAMB MEMBERS SHOWN AS "CHN" ARE CHANNEL MEMBERS (WITHOUT STIFFENER LIPS). FIRST NUMBER IS WEB DEPTH IN INCHES, SECOND NUMBER IS FLANGE WIDTH IN INCHES, AND THIRD NUMBER IS MATERIAL THICKNESS (GAUGE).
 2) SEE DETAILS J/4 AND K/4 FOR OPENING FRAMING INFORMATION.
 3) SIZE OF HEADER GIRT MEMBER TO BE SAME AS SIDEWALL OR ENDWALL GIRT, AS APPROPRIATE, PER ELEVATIONS. AT WINDOWS, INSTALL HEADER GIRT SPECIFIED ABOVE AND BELOW WINDOWS, U.N.O.
 4) AT OPENINGS NOTED, INSTEAD OF ATTACHING DOOR JAMBS TO HEADER GIRT PER DETAIL L/4 ATTACH DOOR JAMBS TO UNDERSIDE OF EAVE PURLIN PER DETAIL L2/4.
 5) ALL OPENINGS AND ACCESSORIES SHALL BE CAPABLE OF SUPPORTING ALL WIND PRESSURES PERPENDICULAR TO THE SURFACE (GENERATED BY WINDS AT THE SPEED AND EXPOSURE INDICATED ABOVE) BY SPANNING BETWEEN THE JAMBS.

IMPORTANT: IN ADDITION TO THESE ENGINEERING PLANS (WHICH ALWAYS TAKE PRECEDENCE), YOU SHOULD HAVE THE FOLLOWING FROM ACT BUILDING SYSTEMS:
 - CONSTRUCTION PACKAGE
 - INSTALLATION MANUALS
 - CONSTRUCTION VIDEOS
 PLEASE CONTACT YOUR SALES REP IF YOU HAVE NOT RECEIVED THESE PRIOR TO STARTING CONSTRUCTION.

PROJECT DESIGN CRITERIA

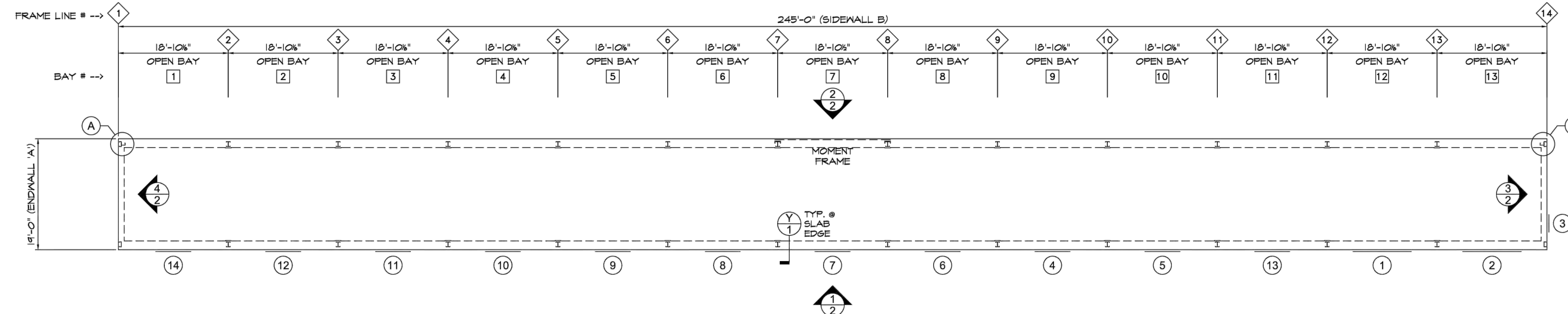
ROOF DEAD LOAD: 3 psf
 ROOF COLLATERAL LOAD: 0 psf
 GROUND SNOW LOAD: 25 psf
 ROOF SNOW LOAD: 17.5 psf
 ROOF LIVE LOAD: 20 psf
 WIND SPEED: 115 mph
 WIND EXPOSURE: C
 Ss: 0.084 Sds: 0.090
 S1: 0.045 Sd1: 0.012
 SEISMIC DESIGN CATEGORY: A (for both periods)
 R transverse: 3.0 R longitudinal: 3.0
 RISK CATEGORY: II
 SOIL BEARING PRESSURE: 1500 psf
 WIND DESIGN OF LATERAL FORCE-RESISTING SYSTEMS IS BASED ON THE DIRECTIONAL DESIGN PROCEDURE OF ASCE 7-10, CHAPTER 27.
 SEISMIC DESIGN OF LATERAL FORCE-RESISTING SYSTEMS ARE AS FOLLOWS:
 -- TRANSVERSE: ORDINARY STEEL MOMENT FRAME (SEISMIC DESIGN IS BASED ON ASCE 07-10, SECTIONS 12.1 - 12.13)
 -- LONGITUDINAL: ORDINARY STEEL BRACED FRAME (SEISMIC DESIGN IS PERFORMED USING THE SIMPLIFIED DESIGN PROCEDURE (ASCE 07-10, SECTION 12.14).
 DESIGN BASE SHEAR IS SHOWN ON CALCULATION SHEET M2.

COMPONENT DIAGRAM



FOUNDATION DETAIL KEYS

- (A) ADD SINGLE CEE STIFFENER TO MAIN BUILDING CORNER COLUMN PER DETAIL U/4



1 FOUNDATION PLAN SCALE: 3/32" = 1'-0"



Structural Engineering by: **Metal Building Engineering, LLC**
 Fountain Inn, SC 29644
 engsupport@actbuildingystems.com

ACTBUILDING
 SYSTEMS

DISTRIBUTOR: **Metal Sales Manufacturing Corp**
 JOB NAME: **Tap In Golf**
 JOB ADDRESS: **4444 East Grand River Ave. Howell, MI 48843**

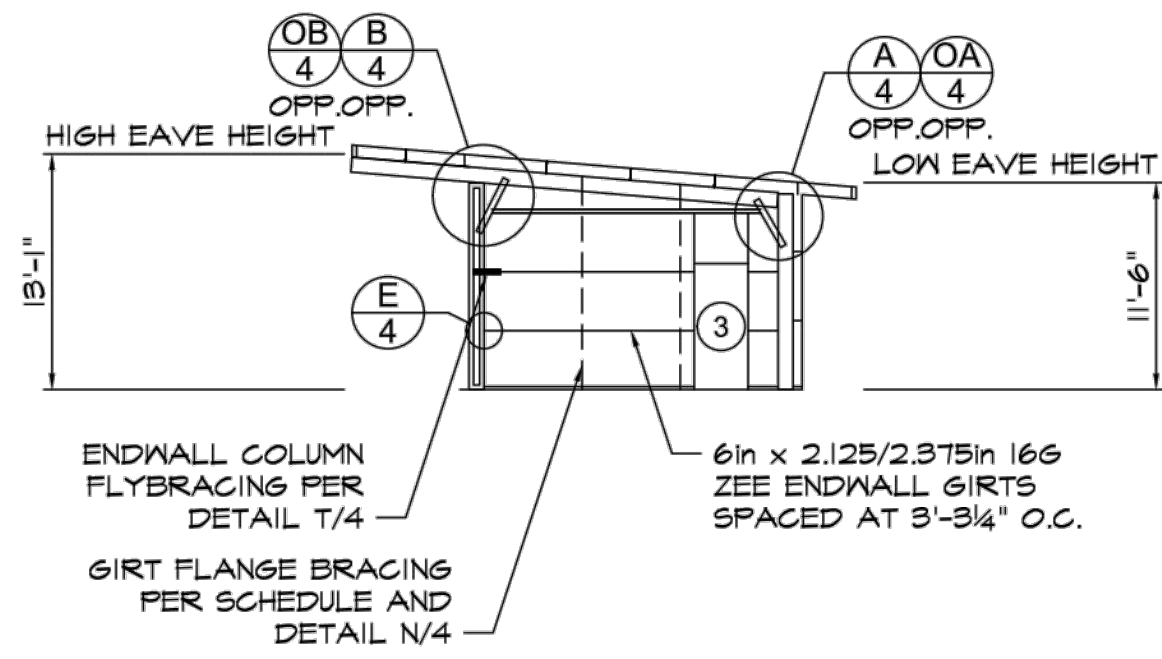
DRAWN: KM
 CHECKED: KM
 DATE: 3/17/2023
 JOB NO.: MLOU92424322
 SHEET: 1 OF 4

3-17-2023

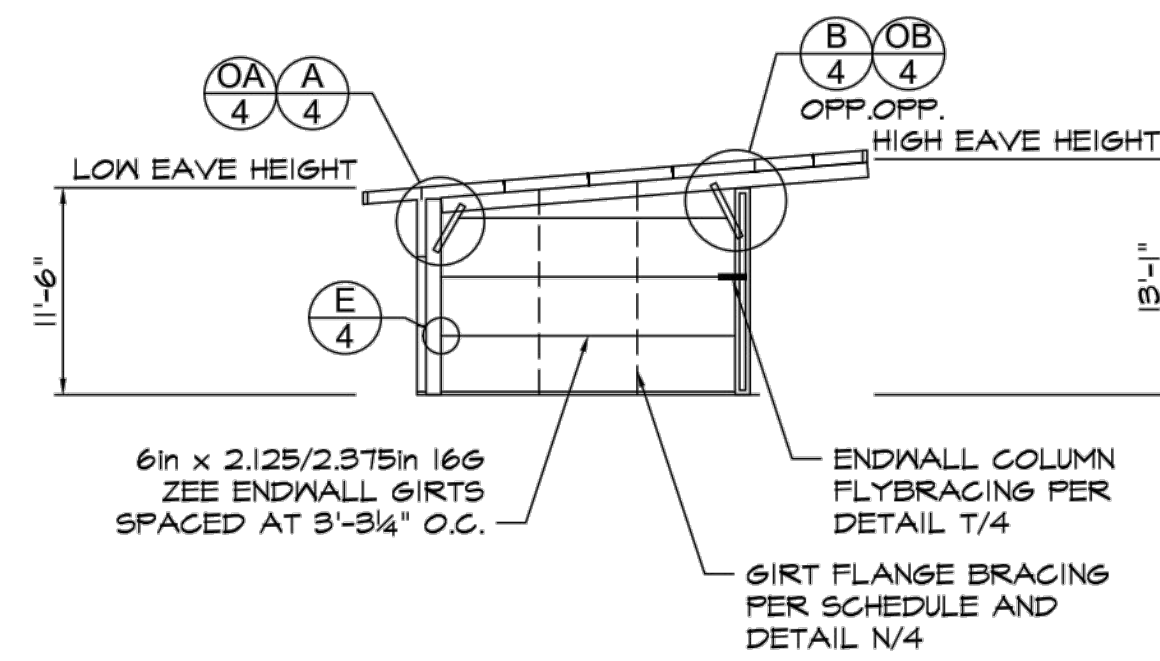
DIAPHRAGM SCHEDULE

SHEETING IN DIAPHRAGM SECTIONS (SHOWN AS HATCHED AREA ON ELEVATIONS) NOT TO BE CUT UNDER ANY CIRCUMSTANCES

WALL	DISTANCE FROM WALL EDGE													
Sidewall 'A'	0.0'-6.4'	12.4'-25.3'	31.3'-44.1'	50.1'-63.0'	69.0'-81.8'	87.8'-100.7'	106.7'-119.5'	125.5'-138.3'	144.3'-157.2'	163.2'-176.0'	182.0'-194.9'	200.9'-211.7'	221.7'-230.6'	240.6'-245.0'



3 ENDWALL 'B' INTERIOR ELEVATION
2 SCALE: 3/32" = 1'-0" FRAME #14

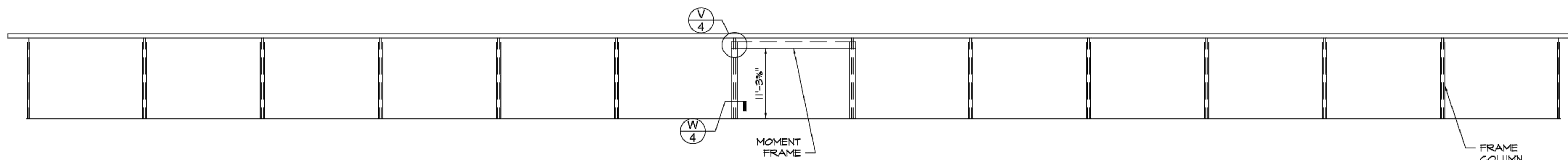


4 ENDWALL 'A' INTERIOR ELEVATION
2 SCALE: 3/32" = 1'-0" FRAME #1

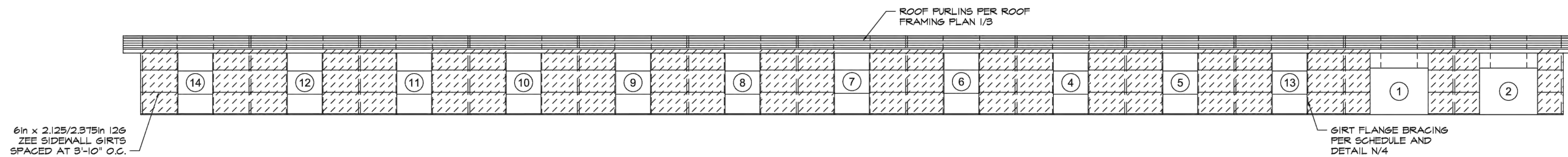
GIRT FLANGE BRACING SCHEDULE

	BAY #1	BAY #2	BAY #3	BAY #4	BAY #5	BAY #6	BAY #7	BAY #8	BAY #9	BAY #10	BAY #11	BAY #12	BAY #13
Sidewall 'A'	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.
Endwall 'A'	1/3 PTS.	---	---	---	---	---	---	---	---	---	---	---	---
Endwall 'B'	1/3 PTS.	---	---	---	---	---	---	---	---	---	---	---	---

--- = NONE REQUIRED



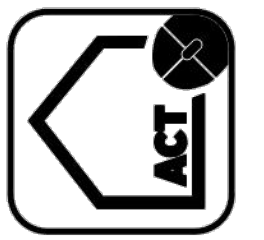
2 SIDEWALL 'B' EXTERIOR ELEVATION
2 SCALE: 3/32" = 1'-0"



1 SIDEWALL 'A' EXTERIOR ELEVATION
2 SCALE: 3/32" = 1'-0"



Structural Engineering by:
Metal Building Engineering, LLC
Fountain Inn, SC 29644
engsupport@actbuildingsystems.com



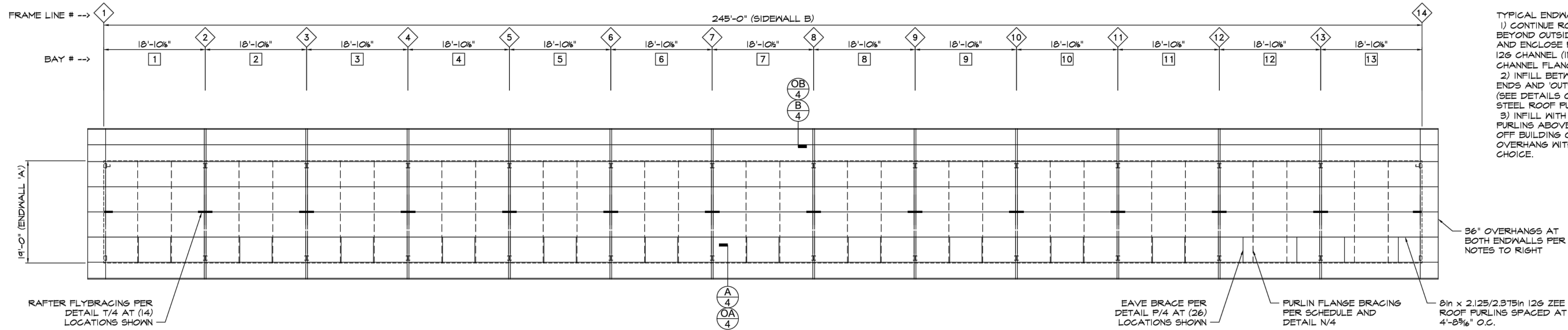
ACTBUILDING
SYSTEMS

DISTRIBUTOR:
Metal Sales Manufacturing Corp
JOB NAME:
Tap In Golf
JOB ADDRESS:
4444 East Grand River Ave.
Howell, MI 48843

DRAWN	KM
CHECKED	KM
DATE	3/17/2023
JOB NO.	MLOU92424322
SHEET	2 OF 4

ROOF DIAPHRAGM NOTE
 ROOF SHEETING IS USED AS DIAPHRAGM TO BRACE THE BUILDING AND IS NOT TO BE CUT UNDER ANY CIRCUMSTANCES

PURLIN FLANGE BRACING SCHEDULE													
	BAY #1	BAY #2	BAY #3	BAY #4	BAY #5	BAY #6	BAY #7	BAY #8	BAY #9	BAY #10	BAY #11	BAY #12	BAY #13
Main Roof	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.	1/3 PTS.



TYPICAL ENDWALL OVERHANGS INFORMATION:
 1) CONTINUE ROOF PURLINS 36" MAX. BEYOND OUTSIDE FACE OF ENDWALL GIRTS AND ENCLOSE PURLIN ENDS WITH 8in x 3in x 126 CHANNEL (INSTALL #14 SCREW AT EACH CHANNEL FLANGE TO PURLIN).
 2) INFILL BETWEEN CHANNEL AT PURLIN ENDS AND 'OUTRIGGER' AT ENDWALL FRAME (SEE DETAILS OA/4 AND OB/4) WITH TYF. STEEL ROOF PURLINS.
 3) INFILL WITH PURLIN MATERIAL BETWEEN PURLINS ABOVE ENDWALL RAFTER TO SEAL OFF BUILDING OR ENCLOSE BOTTOM OF OVERHANG WITH MATERIAL OF CUSTOMER'S CHOICE.

1
3 ROOF FRAMING PLAN
 SCALE: 3/32" = 1'-0"

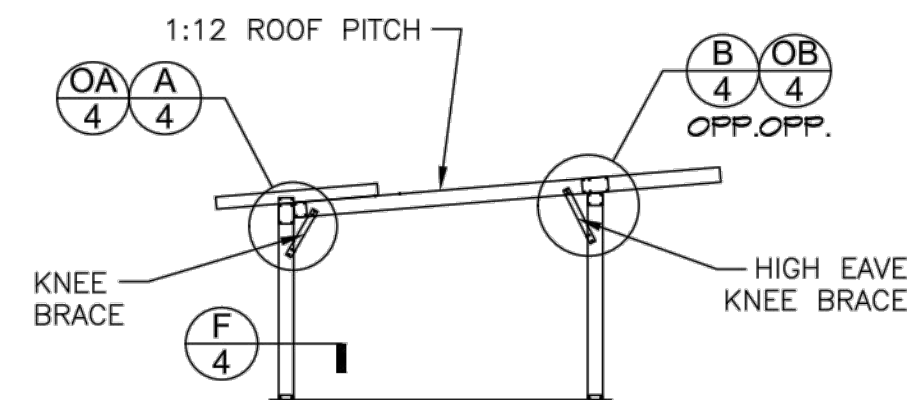


Structural Engineering by:
Metal Building Engineering, LLC
 Fountain Inn, SC 29644
 engsupport@actbuildingsystems.com



DISTRIBUTOR:
Metal Sales Manufacturing Corp
 JOB NAME:
Tap In Golf
 JOB ADDRESS:
 4444 East Grand River Ave.
 Howell, MI 48843

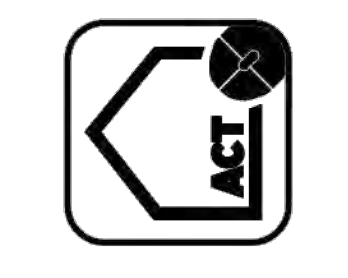
DRAWN	KM
CHECKED	KM
DATE	3/17/2023
JOB NO.	MLOU92424322
SHEET	3 OF 4



1 TYP. FRAME CROSS-SECTION
4 SCALE: 3/32" = 1'-0" FRAMES 2-14

<p>V TOP OF MOMENT FRAME COLUMN</p>	<p>W BASE OF MOMENT FRAME COLUMN</p>	<p>X CONCRETE ANCHOR TENSION REINFORCING</p>	<p>Z BOLT OPTIONS</p>
<p>V INSTALL WALL SIDING SCREW ADJACENT TO STRAP LOCATIONS AT BOTTOM OF EAVE PURLIN</p>	<p>W 8in x 4in 16G CEE EAVE PURLIN SET INTO O/R FLANGES</p>	<p>X 8in x 4in 16G CEE EAVE PURLIN</p>	<p>Z L2x4x14G BRACE ANGLE</p>
<p>N PURLIN AND GIRT FLANGE BRACING</p>	<p>OA OVERHANG CONNECTION</p>	<p>OB HIGH EAVE OVERHANG CONNECTION</p>	<p>P EAVE PURLIN BRACE</p>
<p>H ROOF SHEETING</p>	<p>I WALL SHEETING</p>	<p>J OPENING JAMB BASE CONNECTION</p>	<p>K OPENING JAMB GIRT CONNECTION</p>
<p>A HAUNCH CONNECTION</p>	<p>B HIGH EAVE HAUNCH CONNECTION</p>	<p>D ZEE PURLIN/GIRT CONNECTION</p>	<p>E ENDWALL GIRT AT CORNER COLUMN</p>
<p>Z ALL NUTS AND BOLTS TO HAVE WASHER OR FLANGED HEADS</p>	<p>T FLYBRACING CONNECTION</p>	<p>U CORNER COLUMN STIFFENER</p>	<p>L1 JAMB TO HEADER GIRT CONNECTION</p>
<p>E2 END GIRT TO BRACE</p>	<p>F FRAME COLUMN BASE DETAIL</p>	<p>L2 JAMB TO CEE CONNECTION</p>	<p>L1 MIN. 20G 2-LEGGED FLYBRACING MEMBER WITH 1.5" MIN. LEGS. COPE ENDS FOR ATTACHMENT</p>
<p>L2 SINGLE CEE CORNER COLUMN</p>	<p>F DOUBLE CEE FRAME COLUMN</p>	<p>3-17-2023</p>	<p>ACTBUILDING SYSTEMS</p>

Structural Engineering by:
Metal Building Engineering, LLC
Fountain Inn, SC 29644
engsupport@actbuildingsystems.com



ACTBUILDING
SYSTEMS

DISTRIBUTOR:
Metal Sales Manufacturing Corp
JOB NAME:
Tap In Golf
JOB ADDRESS:
**4444 East Grand River Ave.
Howell, MI 48843**

DRAWN: **KM**
CHECKED: **KM**
DATE: **3/17/2023**
JOB NO.: **MLOU92424322**
SHEET: **4** OF **4**



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

February 24, 2023: Further amendment requested to incorporate Farm Area grading and additional fill.

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: Tom Tocco
If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: Trinity Health - Michigan d/b/a St. Joseph Mercy Livingston

SITE ADDRESS: 7575 Grand River Rd., Brighton Mi 48114 PARCEL #(s): 4711-13-200-009

APPLICANT PHONE: (734) 712-2192 OWNER PHONE: (734) 712-2192

OWNER EMAIL: tom.tocco@trinity-health.org

LOCATION AND BRIEF DESCRIPTION OF SITE: The site is in the Section 13 of Livingston
County north on Grand River Road, west of South Hacker Road and east of the Genoa Business Park.

It is a 77.59-acre site that currently has a medical facility and a senior living facility residing on it.

BRIEF STATEMENT OF PROPOSED USE: Futher amendment request to incorporate Farm Area
grading and additional fill.

THE FOLLOWING BUILDINGS ARE PROPOSED: No new buildings are proposed.

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: Tom Tocco

ADDRESS: 1600 South Canton Center Road, Canton, MI 48155

Contact Information - Review Letters and Correspondence shall be forwarded to the following:

1.) Tiffany Spano of Trinity Health at Tiffany.spano@trinityhealth.org
Name Business Affiliation E-mail Address

FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

Digitally signed by Tiffany Spano
DN: cn=CAD, email=spano@trinityhealth.org
o=Trinity Health, ou=Construction and
Engineering, cn=Tiffany Spano
Date: 2023.02.27 08:27:11 -0500

SIGNATURE: Tiffany Spano DATE: 2/27/23
PRINT NAME: Tiffany Spano PHONE: (734) 274-3702
ADDRESS: 7575 Grand River, Brighton, MI 48114



April 6, 2023

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Amy Ruthig, Planning Director
Subject:	St. Joseph Mercy Health System – Amendment to approved grading plan
Location:	7575 Grand River Avenue – north side of Grand River, west of Bendix Road
Zoning:	NRPUD Non-Residential Planned Unit Development

Dear Commissioners:

As requested, we have reviewed the submittal from St. Joseph Mercy Health System requesting an amendment to the approved grading plan (plans dated 2/24/23).

A. Summary

1. The applicant must address any technical comments provided by the Township Engineer.
2. The proposal entails a significant expansion of the “community farm” area depicted on the approved PUD plans.
3. The proposal will greatly reduce the buffer area between the site and existing development to the east.
4. The proposal will result in the removal of several trees, though the submittal does not identify the exact (or estimated) quantity.
5. The submittal notes a potential location for structures that are not described/depicted in the PUD Agreement or the approved PUD plans.
6. The proposed construction road likely requires approval from the Road Commission.
7. Given the nature of the project, the plans need to be signed/sealed by a professional engineer.

B. Proposal/Process

The applicant proposes to amend the grading plan for the most recently approved PUD plan, which includes a 4-story hospital building (PUD amendment approved October 2022).

The proposal entails additional fill (upwards of 14’) in the southeast portion of the property. The submittal notes that this area is intended as a “Farm Area.”

In accordance with Section 10.11, the amendment requires review and approval by the Planning Commission, unless they feel it significantly alters the intent of the approved PUD concept plan, in which case an amendment PUD concept plan must be submitted for review/approval by both the Planning Commission and Township Board.



Aerial view of site and surroundings (looking west)

C. Amended PUD Plan

The request entails additional fill in the southeast portion of the property. Given the nature of the request, this is primarily an engineering review. As such, we defer technical review and comment to the Township Engineer.

However, we do present the following comments for the Commission's consideration:

- The proposed fill area extends well beyond the “community farm” area depicted on the approved plan.
- The expanded area will greatly reduce the buffer area between the subject site and adjacent residential uses to the east.
- The expanded area will result in the need to remove numerous trees, though the submittal does not identify the quantity.
- Sheet CG-106 identifies an area for the “potential location for farm support structures;” however, there is no indication/description of such structures in the PUD Agreement or previously approved PUD plans.
- The plans include a construction road that appears to access Grand River Avenue, which likely requires review/approval by the Road Commission.
- Given the extensive grade alterations proposed, the plans need to be signed/sealed by a professional engineer.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFE BUILT

A handwritten signature in black ink that reads 'Brian V. Borden'.

Brian V. Borden, AICP
Michigan Planning Manager



March 20, 2023

Ms. Amy Ruthig
Genoa Township
2911 Dorr Road
Brighton, MI 48116

**Re: St Joseph Mercy Hospital
Additional Grading
Site Plan Review No. 1**

Dear Ms. Ruthig:

Tetra Tech conducted a review of the proposed farm area grading plan for St Joseph Mercy Hospital last dated February 24, 2023. The plan was prepared by SmithGroup on behalf of Trinity Health. The Petitioner previously obtained site plan approved for the St Joseph Mercy Brighton Expansion and Renovation and is submitting this modification to the grading plan for the southeast corner of the site. The affected area will act as an area for construction spoils and is labeled on the plan as a future farm area for the site.

The proposed grading does not greatly change the current drainage pattern of the site, nor does it impact any existing utilities on the site. The grading plan shows a maximum proposed grade of 1:4 so no special soil stabilization is required. Therefore, we have no engineering related concerns with the proposed farm area grading plan.

Please call or email if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Gary Markstrom'.

Gary J. Markstrom, P.E.
Vice President

A handwritten signature in blue ink, appearing to read 'Shelby Byrne'.

Shelby Byrne, P.E.
Project Engineer

From: [Rick Boisvert](#)
To: [Amy Ruthig](#)
Subject: Re: St. Joes Grading Project
Date: Tuesday, March 14, 2023 5:52:04 PM
Attachments: [image001.png](#)

I have no fire-related comments on the grading proposed. It was previously discussed and will not affect fire and access for the project.

Let me know if you want a letter.

Cordially,

Rick Boisvert, FM, CFPS
Fire Marshal
Brighton Area Fire Authority
615 W. Grand River
Brighton, MI 48116
O: (810)229-6640 D: (810)299-0033
F: (810)229-1619 C: (248)762-7929
rboisvert@brightonareafire.com



On Thu, Mar 9, 2023 at 1:18 PM Amy Ruthig <amy@genoa.org> wrote:

Good Afternoon,

Attached is the site plan submittal for St. Joseph Hospital Grading project.

The review is due April 5, 2023.

Please contact me if you have any questions.

IMPACT ASSESSMENT
St. Joseph Mercy Brighton Health Center
February 24, 2023

INTRODUCTION

The proposed development is a 77.59-acre medical use site residing north of Grand River Ave. Potential areas of concern are noted along with the proposed methods of addressing each item. The format conforms to the impact assessment requirements as outlined in section 18.07 of the published zoning ordinance for Genoa Township.

- a. **Name(s) and address(es) of person(s) responsible for preparation** of the impact assessment and a brief statement of their qualifications.

St. Joseph Mercy Brighton Health Center
7575 Grand River Ave Rd,
Brighton, MI 48114
(810) 844-7575

SmithGroup
Architecture architectural, engineering and planning firm
201 Depot St, Ann Arbor, MI 48104
(734) 662-4457

Michael Johnson |
michael.johnson@smithgroup.com | 734-712-2047

Dino Lekas | PLA
dino.lekas@smithgroup.com | 734-669-2678

Jerry Vogt | Civil, PE
jerry.vogt@smithgroup.com | 734-669-2674

Katherine DeKrey | Landscape Design
katherine.dekrey@smithgroup.com | 734-669-2712

Charles Langolf | Professional Surveyor
charlie.langolf@smithgroup.com | 734-669-2690

Bergmann
Transportation engineering firm
29777 Telegraph, Suite 1640 Southfield, MI 48034

Steven J. Russo, PE | Transportation Engineer
srusso@bergmannpc.com | 248-663-1379

Barr Engineering Co.
Wetland Consultant
3005 Boardwalk Dr Suite 100, Ann Arbor, Mi 48108

Woody L. Held | Senior Environmental Consultant
WHeld@barr.com | 734.922.4422

b. Map(s) and written description/analysis of the project site

The St. Joseph Mercy Brighton Health Center site (Parcel ID: 4711-13-200-009) is in Section 13 of Livingston County, north on Grand River Road, west of South Hacker Road and east of the Genoa Business Park. It is a 77.59-acre site that currently has a medical facility and a senior living facility residing on it. These establishments are supported by surface parking as well as an access road that has shared connections shared with the Business Park. Please see attached documentation Smith Group Site Submittal Package page CV-100 for easement information and surrounding zoning.

c. Impact on natural features:

1. Slopes and Grade: The site presents steeper slopes around the parking perimeter and road resulting from the excavation process from prior development. It is intended that this plan will minimize the amount of grading that will need to be done on-site. However, due to the nature of the medical building programming, a grade change over 3% will need to be performed in order to make it accessible. This grading will be performed on 11 acres of the site. The zoning administration will be notified of the grade change required for the building footprint, revised detention basin, parking, and utility yards. Smith Group Site Submittal Package page CG-100 to CG-104.
2. Wetland and Soils: The site contains two creeks and two wetland/detention ponds north of the existing medical building. Based on a Preliminary Wetland Analysis completed by SmithGroup, and a Wetland Inventory Study, currently being conducted by Barr engineering, wetland soils are present within the project area, and development and grading may fall within 25' of the wetland boundary north of the loop fire road. Mitigations will follow any state of Michigan EGLE regulated wetlands requirements and shall only be installed or constructed upon receiving all necessary approvals of EGLE and in accordance with all applicable EGLE rules and regulations. See attachment Smith Group Site Submittal Package page CV-200 and supporting wetland documentation.
3. Vegetation: There is significant existing vegetation on the site, as shown on the Site Plan. Most of this vegetation tends to be undergrowth and brush. Some of this vegetation will need to be removed in order to accommodate the required parking for the expanded medical building use. It is the intent of this design to minimize vegetation removal and the improvements will not be removing more than 25% of existing vegetation on site. See attachment Smith Group Site Submittal Package page CV-300.

d. Impact on stormwater management:

The existing stormwater drainage is contained within the site and drain to a regional pond/detention system. An existing wet pond with forebay is currently functioning as the stormwater mitigation system for the entirety of the site's drainage area. Existing on-site underground storm sewer will be utilized to continue to convey stormwater to the existing wet pond. Proposed underground storm sewer will be added to support the additional parking areas and impervious cover.

Based on revised Livingston County Drain Commission requirements, improvements will be made to the existing forebay by dredging the bottom of the pond and increasing its storage volume. Proposed improvements to the existing system also include reconstructing the outlet pipe of the larger wet pond prior to discharging into the adjacent lake. Infiltration rates have been determined by the Geotechnical Engineer and additions of bioretention infiltration ponds throughout the site will be installed.

The improvements to the existing detention system as well as the bioretention infiltration ponds are to enhance the overall quality of the stormwater system.

Surface runoff during construction will be controlled by silt fences, inlet filters, and seed and mulch.

e. Impact on surrounding land used:

The new medical facilities are planned to benefit the community by providing state-of-the-art healthcare facilities in the area. This development enhances the existing medical development on-site, which can be accessed from the south via I-96 expressway and Grand River Avenue. Site improvements include a complete loop road, drop-off areas, parking lots, relocation of the helistop, loading area, generators, oxygen tanks,

mobile PET scanner for trucks and ambulance access. Although exterior lighting will be required for the roadways and walks to provide safe access for staff and visitors, full cut-off fixtures are planned to decrease unnecessary light pollution. Lighting will also be required for the safe use of the helipad, currently planned to only pick up patients and take them to another facility if needed. Additional building and site accent lighting will be automatically shut off via timeclock curfew control. Although the generators, helicopters, vehicles and ambulances planned for the site may increase the noise and air pollution, this is not expected to be a significant issue, due to the current noise level and air pollution from the existing site usage, its proximity to I-96 and Grand River, and significant setbacks from other adjacent development.

f. Impact on public facilities and services:

St. Joseph Mercy Health of Michigan intends to build an 175,000 square foot, 4-story, 72 bed hospital with basement, (with shell space for an additional 16 beds) within Livingston County, thus replacing the existing facility on Byron Road in Howell. The project will be located on and attached to the St. Joseph Mercy Brighton Health Center. The two buildings will be connected to the first and second levels, but no inpatients will move into the existing facility for services. There will be additions to the existing Brighton Health Center to expand Emergency Department and Outpatient Surgery Services as well as renovations of the Emergency Department, Outpatient Surgery, Imaging, and Lab.

The facility is anticipated to employ the same number of people as the two existing facilities. This development is not expected to impact the public schools. Police and fire protection will be needed for both the hospital and MOB.

g. Impact on public utilities:

Sanitary sewer and water utilities are reviewed by Marion, Howell, Oceola, and Genoa (MHOG) Sewer and Water Utilities.

The existing hospital is serviced by a sanitary sewer located south of the building that connects to Grand River Avenue. The sanitary sewer for the proposed building is to exit the north of the building and connect to the existing 8-inch sewer main running along the eastern property line. In discussion with MHOG, there is sufficient capacity in the sewer located just north of the site.

The site is currently serviced by one 12" water main connection along Grand River Avenue. With the planned hospital expansion there will be an 8" watermain that will provide a looped system by connecting the watermain system from the existing stub north of the current staff entrance to the stub located at The Village development. An existing water main runs along the north of the existing St. Joseph Mercy building to the edge of the staff parking lot. Based on the proposed building outline, a portion of the existing watermain will be removed and capped at the west edge of the driveway to the emergency department. Separate domestic and fire protection water main services will connect into the building off an extension from the capped watermain. Existing hydrants will be maintained to ensure adequate building coverage as required by all applicable fire codes.

Sanitary sewer and water main design will meet the MHOG Sanitary Sewer and Water Design Standards. All utility connections will follow guidelines set forth by the MHOG Utility Connection Manual.

h. Storage and handling of any hazardous materials:

Fuel tanks and other utilities will be installed north of the building adjacent to the loading dock, will not comply with 13.07.01 Above Ground (Fuel) Storage Tanks based on the nature of medical facility. Instead, the facility will comply with the State and Federal codes for fuel oil storage which are more rigorous than the intent of the local ordinance. It is the policy of Saint Joseph Mercy Health System (SJMHS) to ensure the safe handling and disposal of medical waste throughout the organization, including the proposed development. SJMHS enforces a strict medical waste policy and plan, including obtaining certificates from regulatory agencies, oversight from SJMHS Safety Program personnel to ensure safe practices for the transportation, packaging, and storage of medical waste.

i. Impact on Traffic and Pedestrians:

A traffic study was completed by Bergmann on March 24, 2022. The report covers all of the items listed below with the exception of the crash analysis as it was not requested by LCRC or MDOT. Please see attached Appendix I for the Traffic study's executive summary and full report.

Description of existing daily and peak hour traffic on adjacent street(s) and a description of any sight distance limitations along the right-of-way frontage of the site.

Forecasted trip generation of the proposed use for the a.m. and p.m. peak hour and average daily traffic generated.

For any project with a completion date beyond one year at the time of site plan approval, the analysis shall also include a scenario analyzing forecasted traffic at date of completion along the adjacent street network using a forecast based either on historic annual percentage increases and/or on expected development in the area.

Projected traffic generated shall be distributed (inbound v. outbound, left turn v. right turn) onto the existing street network to project turning movements at site driveways and nearby intersections. Rationale for the distribution shall be provided.

Capacity analysis at the proposed driveway(s) using the procedures outlined in the most recent edition of the *Highway Capacity Manual* published by the Transportation Research Board. Capacity analyses shall be provided for all street intersections where the expected traffic will comprise at least five-percent (5%) of the existing intersection capacity.

Accident data for the previous three (3) years for roadway sections and intersections experiencing congestion or a relatively high accident rate, as determined by the township or staff from the Livingston County Road Commission or Michigan Department of Transportation.

Analysis of any mitigation measures warranted by the anticipated traffic impacts. Where appropriate, documentation shall be provided from the appropriate road agency regarding time schedule for improvements and method of funding.

A map illustrating the location and design of proposed access, including any sight distance limitations, dimensions from adjacent driveways and intersections within 250 feet of the edge of the property frontage, and other data to demonstrate that the driveway(s) will provide safe and efficient traffic operation and be in accordance with Article 15.

j. Special Provisions: General description of any deed restrictions, protective covenants, master deed or association bylaws.

All easements are shown on Smith Group Site Submittal Package page CV-100.

k. A list of all sources shall be provided.

SmithGroup Survey and Plans
Traffic Study Appendix I
Preliminary Wetland Analysis Appendix II
Title Search Appendix III

TRAFFIC STUDY APPENDIX I

PRELIMINARY WETLAND ANALYSIS APPENDIX II

TITLE SEARCH APPENDIX III

St. Joseph Mercy Brighton Expansion and Renovation



7575 Grand River Ave., Brighton, Michigan 48114
7555 Grand River Ave., Brighton, Michigan 48114

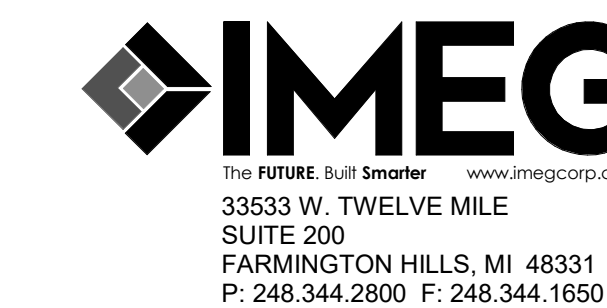
Trinity Health-Michigan/ Saint Joseph Mercy Health System

1600 South Canton Center Road
Canton, MI 48155
<https://www.stjoeshealth.org/>

Clinet Contact:
Stephen VanBrussel
Saint Joseph Mercy Health System
Regional Director of Construction
36475 Five Mile Road
Livonia, MI 48154
stephen.vanbrussel@stjoeshealth.org

SMITHGROUP

500 GRISWOLD
SUITE 1700
DETROIT, MI 48226
313.983.3600
smithgroup.com

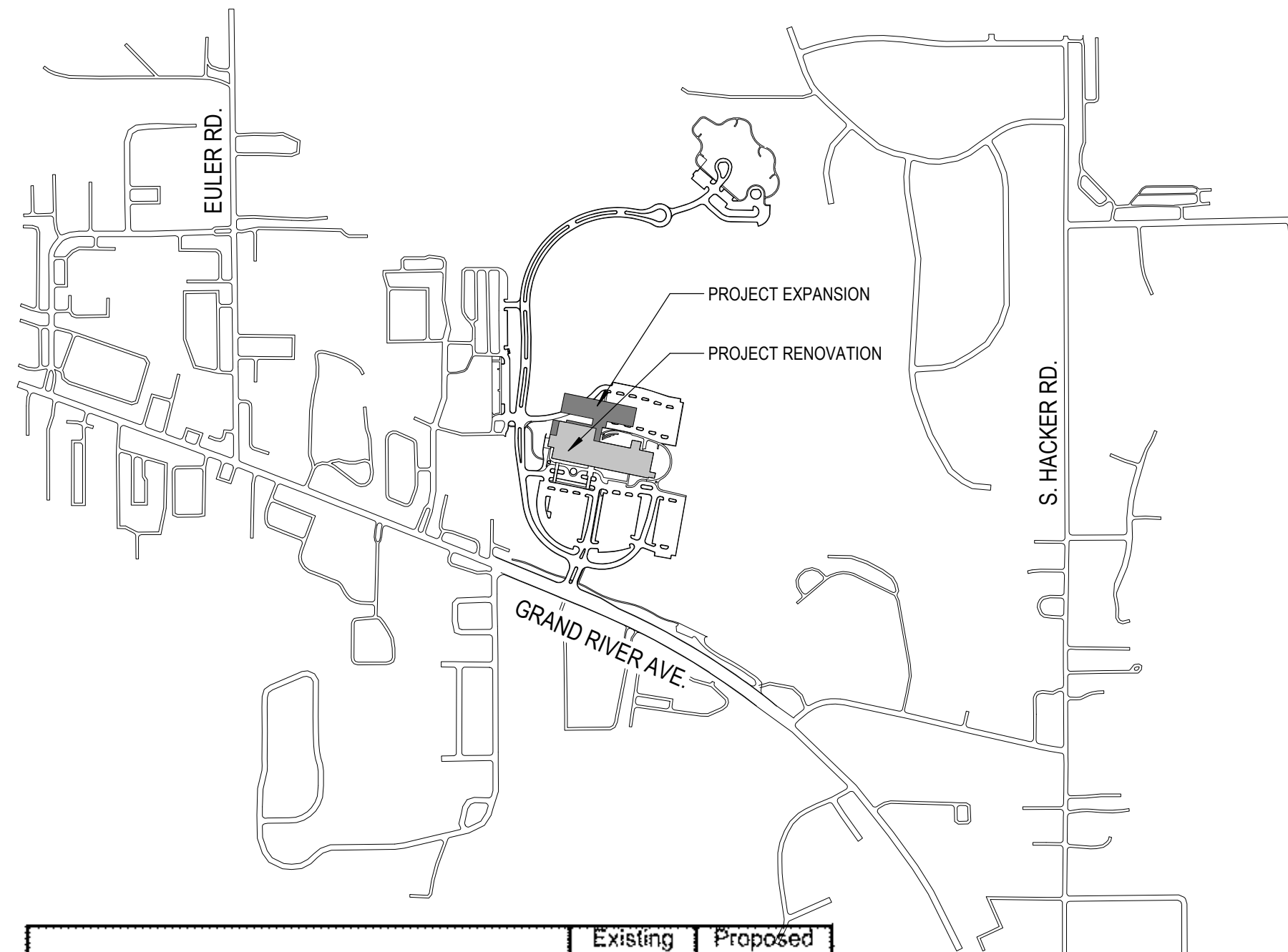


VOLUME I OF I

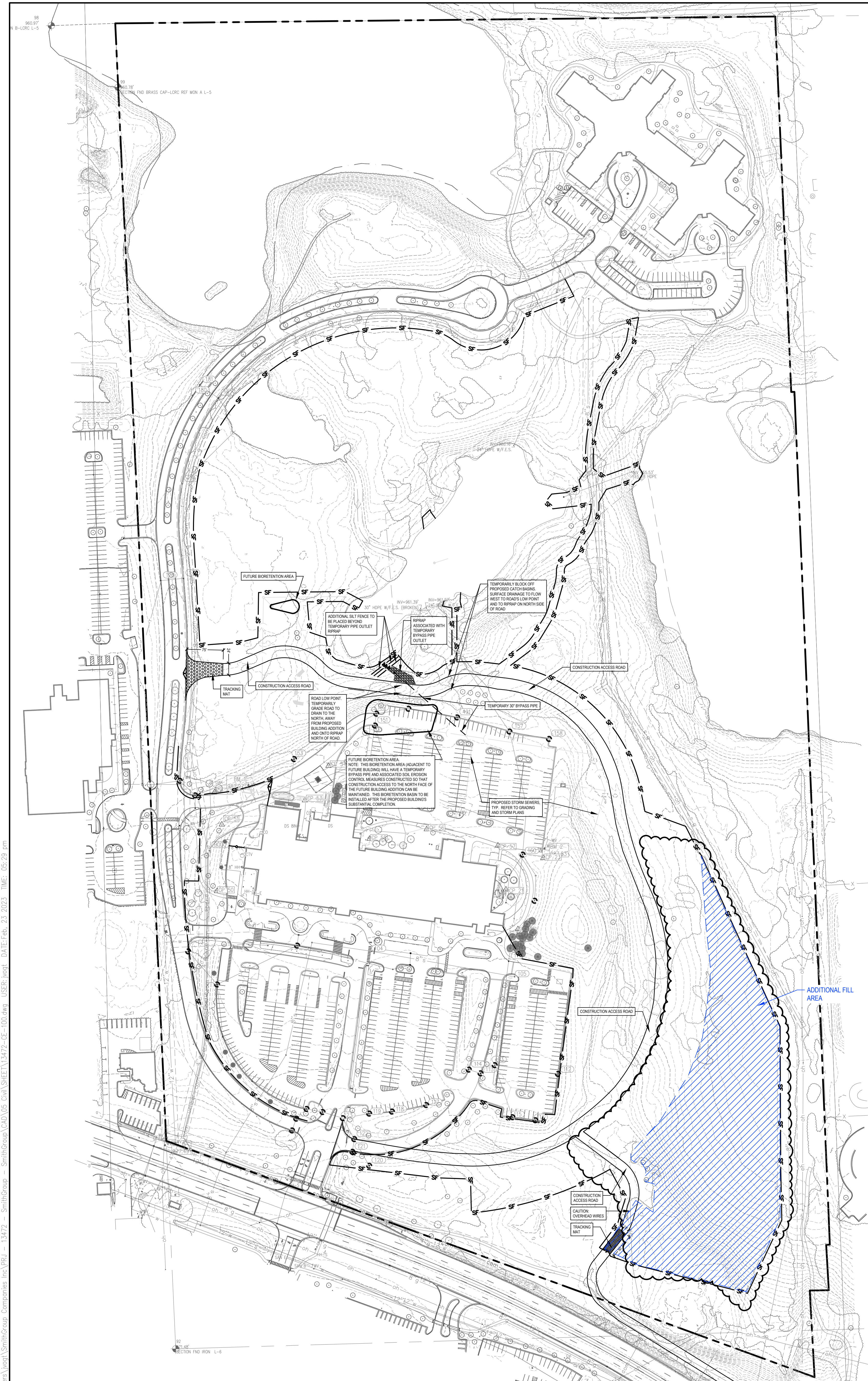
ISSUED FOR:
FARM AREA GRADING S.P.A.

ISSUE DATE:
FEBRUARY 24, 2023

SG PROJECT #: 13472.000
IMEG PROJECT #: 21006742.00



Characteristic	Existing Condition	Proposed Condition
Total Development Area (ac)	39.98	39.98
Impervious Area (ac)	15.66	20.16
Pervious Area (ac)	24.12	19.82
Pervious Area Breakdown by Cover Type		
Meadow/fallow/natural areas (non-cultivated)	7.92	7.12
Predominant NRCS Soil Type (A, B, C, or D)	C	C
Improved Areas (turf grass, landscape, row crops)	8.81	9.75
Predominant NRCS Soil Type (A, B, C, or D)	C	C
Wooded Areas	7.39	2.94
Predominant NRCS Soil Type (A, B, C, or D)	C	C
CPVC Volume Calculated (cubic feet)		21,495
CPVC Volume Provided (cubic feet)		23,638
CPVC Volume Provided (cubic feet)		160,197
The Professional Engineer who signs and seals this site plan certifies that the values in this table reflect the WRC stormwater calculations required for this development and that geotechnical investigations were performed that provide conclusive documentation that demonstrates whether infiltration (i.e., CPVC Volume Control) is practicable.		



SHEET NOTES

- EROSION AND SEDIMENT CONTROL WORK SHALL CONFORM TO STANDARDS AND SPECIFICATIONS OF LIVINGSTON COUNTY
- EROSION AND SEDIMENTATION FROM WORK ON THIS SITE SHALL BE CONTAINED ON THE SITE AND NOT ALLOWED TO COLLECT ON 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. MEASURES SHOULD BE INSTALLED PRIOR TO OR UPON COMMENCEMENT OF THE EARTH CHANGE. REMOVE TEMPORARY MEASURES AS SOON AS PERMANENT STABILIZATION OF SLOPES, DITCHES, AND OTHER EARTH CHANGES HAVE BEEN ACCOMPLISHED.
- STAGING THE WORK SHALL BE DONE BY THE CONTRACTOR AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
- SOIL EROSION CONTROL PRACTICES SHALL BE ESTABLISHED BEFORE CONSTRUCTION BEGINS BY THE CONTRACTOR. SEDIMENT CONTROL PRACTICES SHALL BE APPLIED AS A PERIMETER DEFENSE AGAINST TRANSPORTING OF SILT OFF THE SITE.
- SOIL TYPES ON SITE CONSIST OF BTA, BTA, BTC, BTD, BTF (BOYER-OSHTEMO LOAMY SANDS), BVA (BRONSON LOAMY SANDS), CC (CARUSLE MUCK), FOA (FOX SANDY LOAM), FRB, FRC, FRD, FRE (FOX-BOYER COMPLEX) AND WH (WASHTENAW SILT LOAM). REFER TO DRAWING CV-200.
- DISTURBED AREA: 17.1 ACRES
- DISTANCE TO LAKES, STREAMS, PONDS, OR WETLANDS: 0' (TO SITE WETLAND NORTH OF PROJECT). NOTE: PROJECT INVOLVES SOME WETLAND IMPACTS. EGLE PERMIT HAS BEEN APPLIED FOR (SEPARATE FROM SESC PERMIT APPLICATION).
- MINIMUM REQUIRED DEPTH OF TOPSOIL FOR SEEDING AND TURF ESTABLISHMENT: 4". REFER TO SPECIFICATIONS ON DRAWING C-501 FOR ADDITIONAL INFORMATION.
- MINIMUM REQUIRED GRASS SEED: 218 POUNDS OF PURE LIVE SEED PER ACRE. REFER TO SPECIFICATIONS ON DRAWING C-501 FOR ADDITIONAL INFORMATION.
- FERTILIZER: THE INDEPENDENT TESTING LABORATORY SHALL STATE RECOMMENDATIONS FOR SOIL TREATMENTS AND SOIL AMENDMENTS TO BE INCORPORATED PRIOR TO SEEDING. MINIMUM REQUIRED FERTILIZER 150 POUNDS PER ACRE.
- STRAW MULCH TO BE MINIMUM 3" IN DEPTH AND MINIMUM 2 TONS PER ACRE. ALL MULCH MUST HAVE A TIE-DOWN, SUCH AS TACKIFIER, NET BINDING, ETC. REFER TO SPECIFICATIONS ON DRAWING C-501 FOR ADDITIONAL INFORMATION.
- 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.
- THE CONTRACTOR SHALL INSPECT THE SOIL EROSION AND SEDIMENTATION CONTROL DEVICES EACH WEEK AND/OR WITHIN 24 HOURS OF A RAINFALL EVENT WHICH RESULTS IN A STORM WATER DISCHARGE FROM THE SITE. THE FOLLOWING STEPS SHALL BE IMPLEMENTED IF ANY DAMAGE HAS OCCURRED.
 - DEBRIS OR DIRT ON PAVED AREA RESULTING FROM CONSTRUCTION TRAFFIC SHALL BE CLEANED IN A PROMPT MANNER BY THE CONTRACTOR. THE CONSTRUCTION DRIVE SHALL BE CLEANED AT THE END OF EACH DAY.
 - DIRT AND MUD TRACKED ONTO PAVED AREAS SHALL BE REMOVED DAILY BY SCRAPING. STREET SWEEPING IS REQUIRED WEEKLY.
 - SILT FENCE MAINTENANCE SHALL INCLUDE THE REMOVAL OF 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 REBACKFILL THE SILT FENCE SHOULD IT FALL OR BE DAMAGED DURING CONSTRUCTION.
 - INLET FILTER MAINTENANCE SHALL INCLUDE THE REMOVAL OF ACCUMULATED SILT OR OTHER DEBRIS. THE REMOVAL OF SILT SHOULD BE WITH THE USE OF A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL. IF INLET FILTERS CAN NOT BE CLEANED OR ARE DAMAGED, THEN THE FABRIC MUST BE REPLACED.
 - INLET FILTERS TO BE PROVIDED ON EXISTING CATCH BASINS AS SHOWN. ALL NEW/PROPOSED CATCH BASINS TO RECEIVE INLET FILTERS AS THEY ARE CONSTRUCTED.
- DETENTION / RETENTION AND SEDIMENTATION BASINS SHALL BE EXCAVATED, TOP SOILED, SEEDED, MULCHED, TACKED AND RINGED WITH SILT FENCE PRIOR TO THE START OF MASSIVE EARTH DISRUPTION. NOTE: BIORETENTION AREA ADJACENT TO FUTURE BUILDINGS WILL HAVE A TEMPORARY BYPASS PIPE AND ASSOCIATED SOIL EROSION CONTROL MEASURES CONSTRUCTED SO THAT CONSTRUCTION ACCESS TO THE NORTH FACE OF THE FUTURE BUILDING CAN BE MAINTAINED. PLEASE REFER TO PLAN AT LEFT.
- TEMPORARY DITCHES ARE NOT ANTICIPATED FOR THE PROJECT. (NOTE: IF ANY TEMPORARY DITCHES WERE ANTICIPATED, THEY WOULD BE REQUIRED TO BE FLAT-BOTTOM TYPE; MINIMUM WIDTH OF 2' WITH A MINIMUM 3-FOOT HORIZONTAL TO 1-FOOT VERTICAL SIDE SLOPES.)



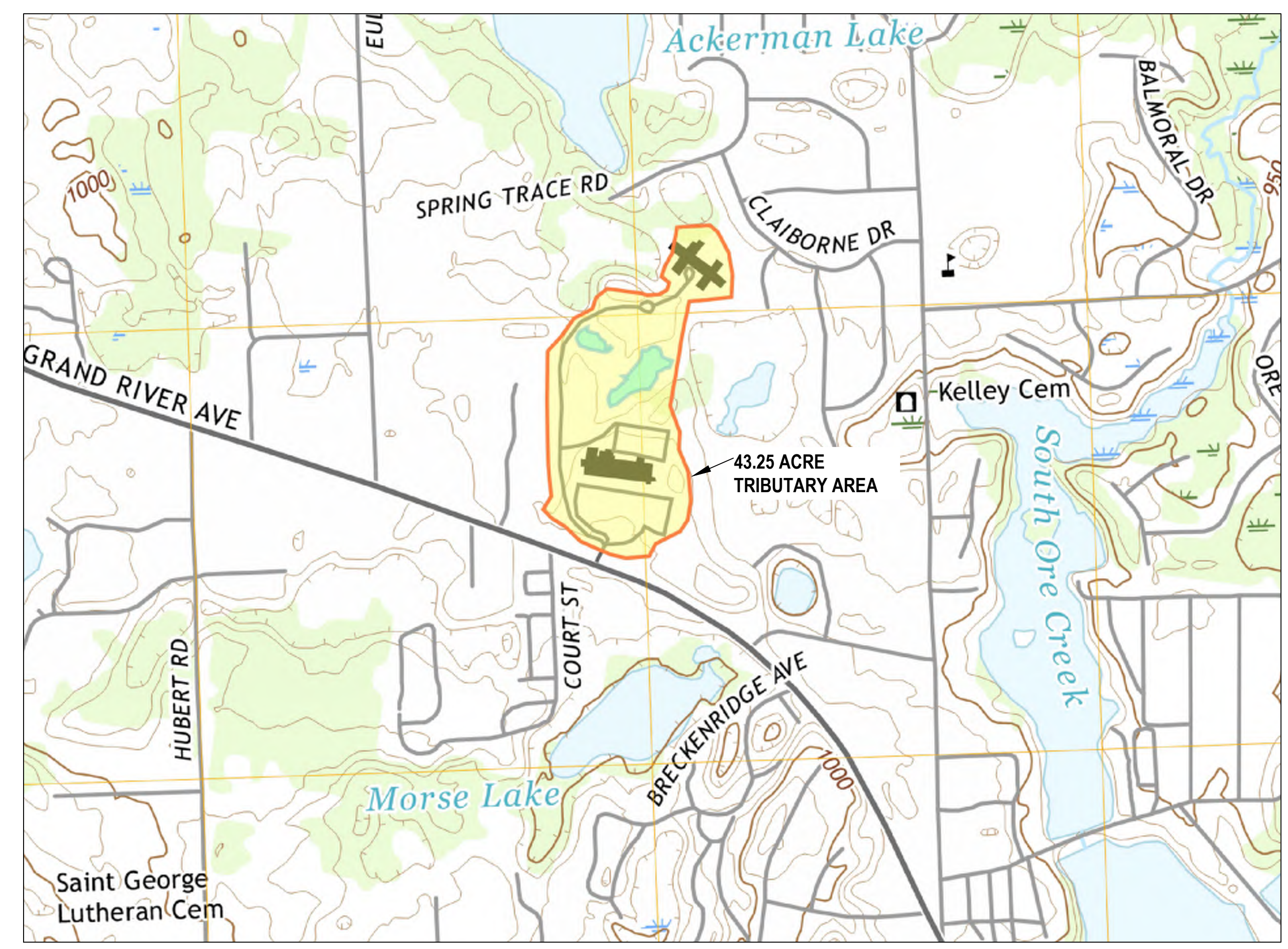
**ST. JOSEPH MERCY
BRIGHTON
EXPANSION AND RENOVATION**
7575 GRAND RIVER AVE., BRIGHTON, MI 48114
7575 GRAND RIVER AVE., BRIGHTON, MI 48114

SMITHGROUP

201 DEPOT STREET
SECOND FLOOR
ANN ARBOR, MI 48104
734.662.4457
www.smithgroup.com



35533 W. TWELVE MILE
SUITE 200
FARMINGTON HILLS, MI 48331
P: 248.344.2800 F: 248.344.1650



2 TRIBUTARY AREA AND USGS MAP

Soil Erosion Control Schedule

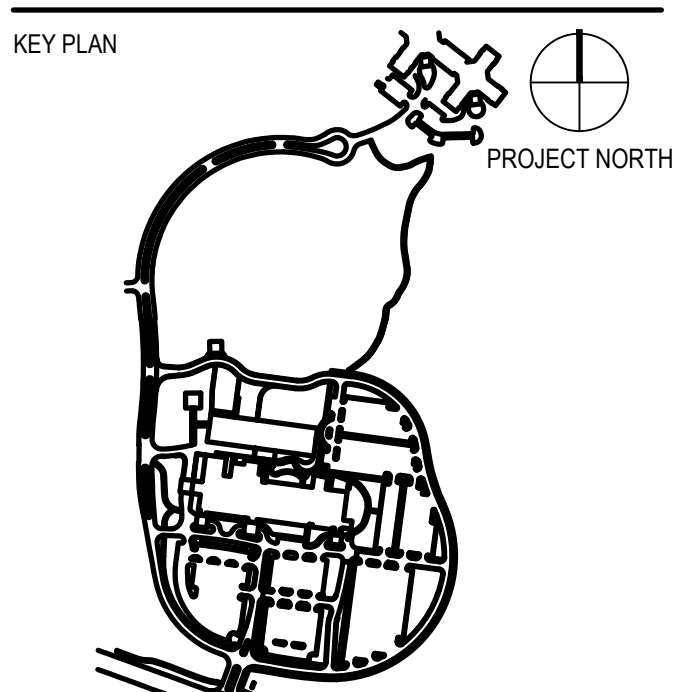
Activity	2022			2023			2024																				
	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct		
Place Silt Fence																											
Strip and Stockpile Topsoil																											
Construct Connection to Storm Sewer																											
Rough Grade Site																											
Base Course of Paving in Select areas of site																											
Construct Building Foundation and Building																											
Construct Improvements Around Building																											
Construct Utility Lines to Building																											
Finish Grade Site																											
Pave Site																											
Re-spread Topsoil and Compaction																											
Seed Disturbed Areas																											
Site Restoration/Clean Up																											

DETECTION POND WORK COMPLETED

3 CONSTRUCTION SEQUENCE AND TIMING

LEGEND

- SILT FENCE
- STABILIZED CONSTRUCTION EXIT
- INLET PROTECTION
- SEDIMENT CONTROL TUBE
- PHASING PLAN ORDER
- GATE



DRAWING TITLE
**SOIL EROSION AND
SEDIMENT CONTROL PLAN**

SCALE: 1" = 100'

SCALE: 13472.00

PROJECT NUMBER
CE-100

DRAWING NUMBER

SHEET NOTES

1. NOTIFY THE ENGINEER IN WRITING OF ANY IDENTIFIED DISCREPANCIES WITHIN THE CONSTRUCTION DOCUMENTS PRIOR TO THE START OF WORK. DURING PERFORMANCE OF THE WORK, VERIFY ALL DIMENSIONS AND CONDITIONS AT THE JOB SITE AND CROSS-CHECK DETAILS AND DIMENSIONS SHOWN ON THE DRAWINGS WITH RELATED REQUIREMENTS ON THE ENGINEERURAL, MECHANICAL, ELECTRICAL AND PLUMBING DRAWINGS. CONTRACTOR SHALL VERIFY ALL SITE CONDITIONS PRIOR TO STARTING WORK. IN ALL CASES WHERE A CONFLICT MAY OCCUR, THE ENGINEER SHALL BE NOTIFIED AND WILL INTERPRET THE INTENT OF THE CONTRACT DOCUMENTS.
2. PRIOR TO THE COMMENCEMENT OF WORK, VERIFY LOCATIONS AND DEPTHS OF ALL UNDERGROUND UTILITIES THAT MAY BE AFFECTED BY CONSTRUCTION AND TAKE RESPONSIBILITY FOR DAMAGES TO SUCH UTILITIES CAUSED AS A RESULT OF CONSTRUCTION.
3. TAKE ALL NECESSARY PRECAUTIONARY MEASURES TO PROTECT THE PUBLIC AND ADJACENT PROPERTIES FROM DAMAGE THROUGHOUT CONSTRUCTION, INCLUDING DAMAGES TO UTILITIES, WALKS, WALLS, DRIVES, CURBS, ETC.
4. ALL MATERIAL TO BE REMOVED WHETHER SPECIFICALLY NOTED IN THE PLANS OR NOT, SHALL BE REMOVED BY THE CONTRACTOR AND TRANSPORTED OFF SITE. MATERIAL TO BE DISPOSED OF OFFSITE AND IN A LEGAL MANNER. NO BURY OR BURN PITS SHALL BE ALLOWED. PROVIDE RECEIPTS AND LETTERS FROM DISPOSAL SITES TO OWNER AS REQUIRED BY THE OWNER.
5. SECURE ALL NECESSARY PERMITS AND NOTIFY ALL UTILITY COMPANIES WITH UTILITIES ON THE SITE PRIOR TO THE CONSTRUCTION OF THE PROJECT. ADHERE TO ALL APPLICABLE LOCAL, STATE AND FEDERAL LAWS OR REGULATIONS PERTAINING TO THE PROJECT.
6. SPECIFIC DEMOLITION ITEMS HAVE BEEN INDICATED ON THE PLANS AS A GUIDE TO THE GENERAL SCOPE OF THE WORK. IT IS THE INTENT THAT THESE ITEMS SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR ABOVE AND BELOW GROUND, UNLESS SPECIFICALLY NOTED OTHERWISE. AND THAT DEMOLITION WILL INCLUDE BUT WILL NOT NECESSARILY BE LIMITED TO THESE ITEMS. CONTRACTOR SHALL VISIT SITE TO VERIFY EXISTING CONDITIONS AND EXTENTS OF THE DEMOLITION THAT WILL BE REQUIRED PRIOR TO SUBMITTING A BID.
7. THE CONTRACTOR SHALL, AT A MINIMUM, PROVIDE TREE PROTECTION FENCING AROUND EXISTING TREES TO BE SAVED THAT ARE WITHIN 15' OF CONSTRUCTION ACTIVITIES AND AS INDICATED IN THE PLANS OR PER LOCAL AGENCY REQUIREMENTS.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPING AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
9. THE CONTRACTOR SHALL PROVIDE NECESSARY BARRICADES, SIGNAGE, MARKINGS, LIGHTS AND OTHER TRAFFIC CONTROL DEVICES TO PROTECT THE WORK ZONE AND SAFELY MAINTAIN TRAFFIC PER MUTCD REQUIREMENTS.
10. COORDINATE REMOVALS WITH SITE LAYOUT AND MATERIALS PLANS. NOTIFY ENGINEER OF ANY DISCREPANCIES.
11. PREPARE ALL SUBGRADES IN ACCORDANCE WITH RECOMMENDATIONS OF GEOTECHNICAL ENGINEER. PROVIDE PROOF OF ALL REQUIRED SOIL COMPACTION TO THE OWNER.
12. CALL MISS DIG 811 A MINIMUM OF 48 HOURS TO BEGINNING ANY EXCAVATION ACTIVITIES.
13. IF CONTRACTOR DISTURBS AREA OUTSIDE LIMITS OF DISTURBANCE, CONTRACTOR TO REPLACE MATERIAL AT NO COST OF OWNER.
14. ALL TREES WITHIN HELICOPTER FINAL APPROACH AND TAKEOFF (FATO) ZONES ARE TO BE MAINTAINED SO THEY DO NOT EXCEED HEIGHTS ABOVE THE HELISTOP PAD CALCULATED BY A RATIO OF 8:1 (HORIZONTAL:VERTICAL). FOR EXAMPLE, A TREE WITHIN THE FATO ZONE AND 100 AWAY FROM THE HELIPAD CANNOT BE TALLER THAN 12.5 FEET ABOVE THE ELEVATION OF THE HELISTOP PAD.



ST. JOSEPH MERCY BRIGHTON EXPANSION AND RENOVATION

7575 GRAND RIVER AVE., BRIGHTON, MI 48114
7555 GRAND RIVER AVE., BRIGHTON, MI 48114

SMITHGROUP

201 DEPOT STREET
SECOND FLOOR
ANN ARBOR, MI 48104
734.662.4457
www.smithgroup.com



THE FUTURE. Built Smarter. www.imegcorp.com
35533 W. TWELVE MILE
SUITE 200
FARMINGTON HILLS, MI 48331
P: 248.344.2800 F: 248.344.1650

KEYED NOTES

- (A) PROTECT EXISTING PAVEMENT TO REMAIN
- (B) REMOVE CONCRETE CURB AND GUTTER TO THE EXTENTS SHOWN
- (C) SAWCUT FULL DEPTH AND REMOVE PAVEMENT. REMOVE TO THE NEAREST JOINT IF PAVEMENT IS CONCRETE.
- (D) REMOVE EXISTING STORM STRUCTURE. REFER TO UTILITY PLANS FOR PROPOSED STORM STRUCTURE LOCATIONS.
- (E) PROTECT EXISTING LIGHT POLE
- (F) REMOVE LAWN AND STRIP TOP SOIL
- (G) PROTECT EXISTING LAWN, TREES, SHRUBS AND PERENNIALS
- (H) REMOVE EXISTING ROAD AND CROSSWALK STRIPPING
- (I) REFER TO IMEG PLANS FOR GENERATOR RELOCATION
- (J) SMALL GARDEN SHED REMOVAL
- (K) PARKING PAINT REMOVAL

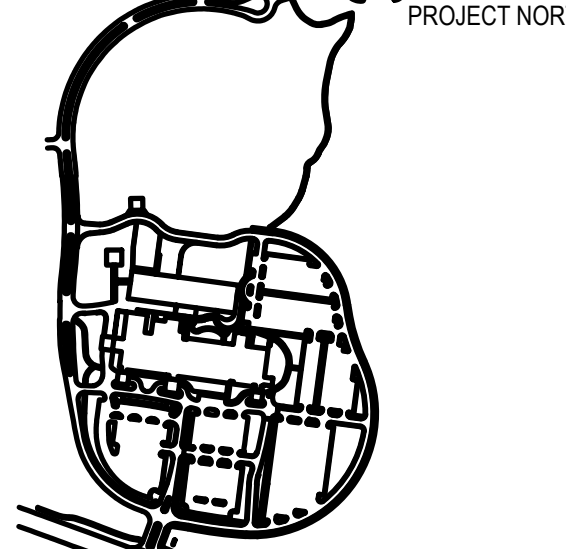
ISSUED FOR	REV	DATE
FARM AREA GRADING S.P.A.		24FEB2023

SEALS AND SIGNATURES

LEGEND

- PROPERTY LINE
- EASEMENT
- - - LIMITS OF CONSTRUCTION
- ||||| CURB REMOVAL
- ▨ PAVEMENT REMOVAL
- ▨ CONCRETE REMOVAL
- ▨ VEGETATION REMOVAL AND PREP EARTHWORK
- ⊗ TREE REMOVAL
- ⊗ TREE PROTECTION FENCE 1 CD-100
- PROTECT
- △ RELOCATE
- ⊗ REMOVE
- ⊗ SHRUB MASSING REMOVAL AND PREP EARTHWORK

KEY PLAN



DRAWING TITLE

SITE DEMOLITION PLAN

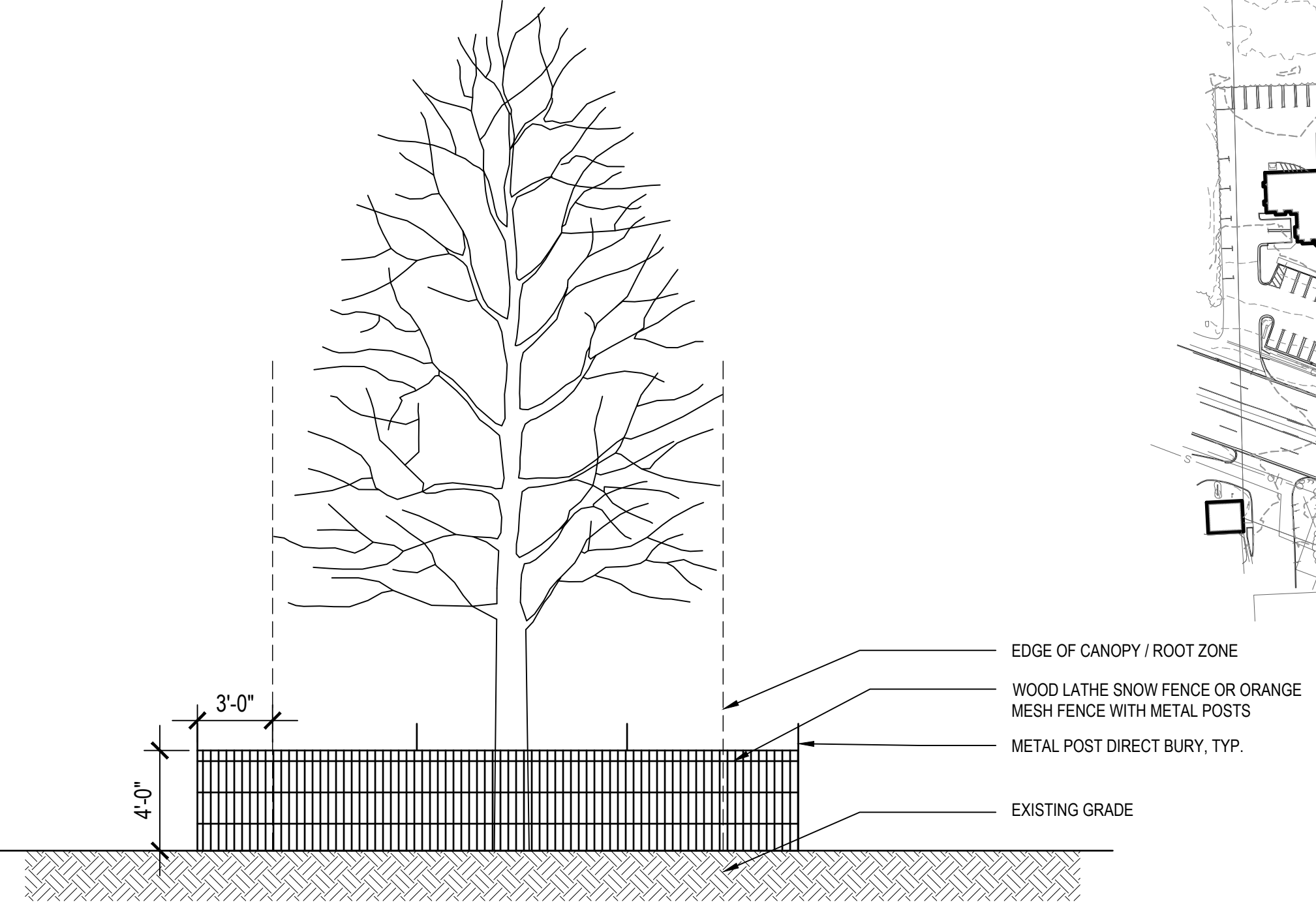
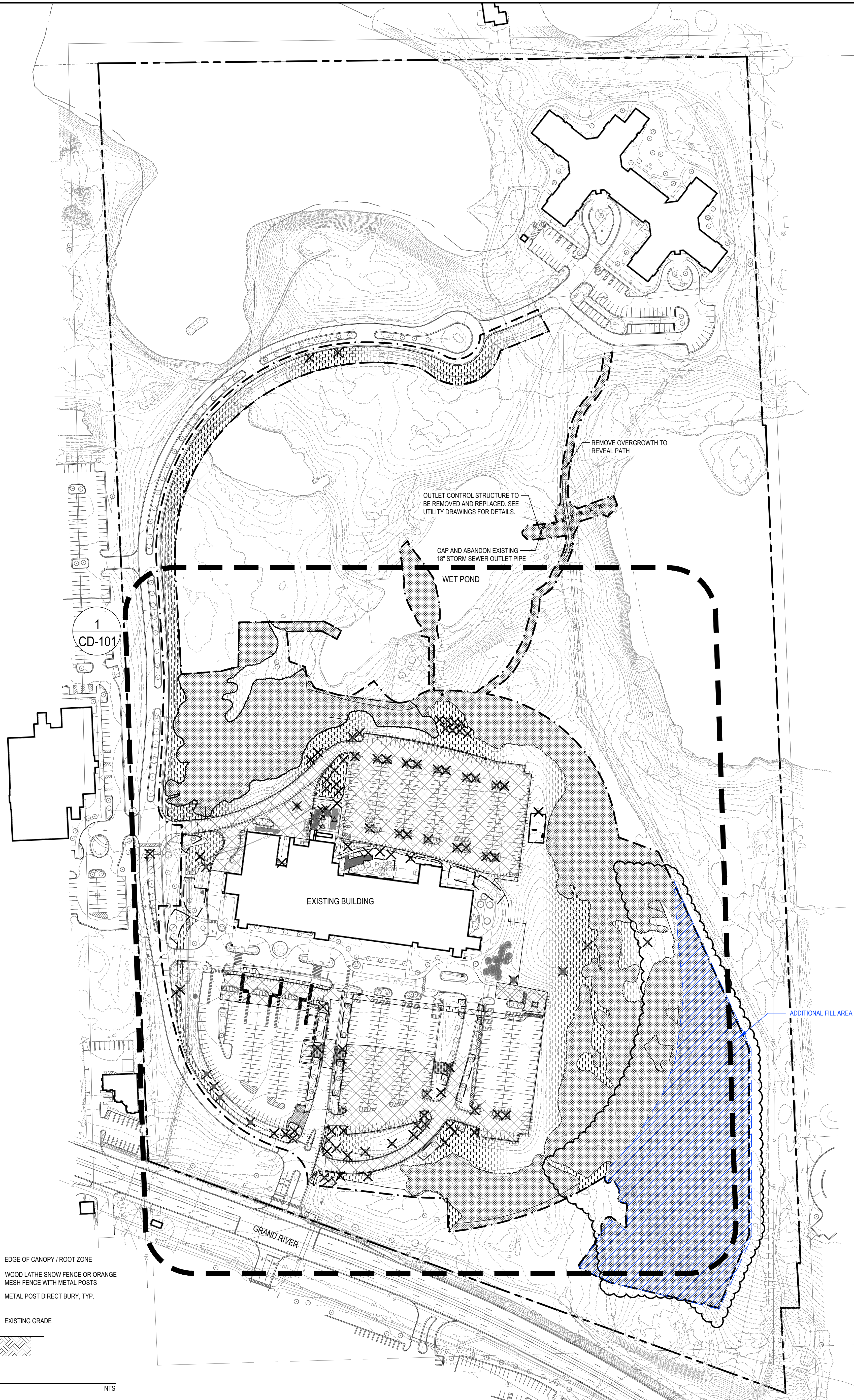
SCALE: 1" = 100'

SCALE 13472.00

PROJECT NUMBER

CD-100

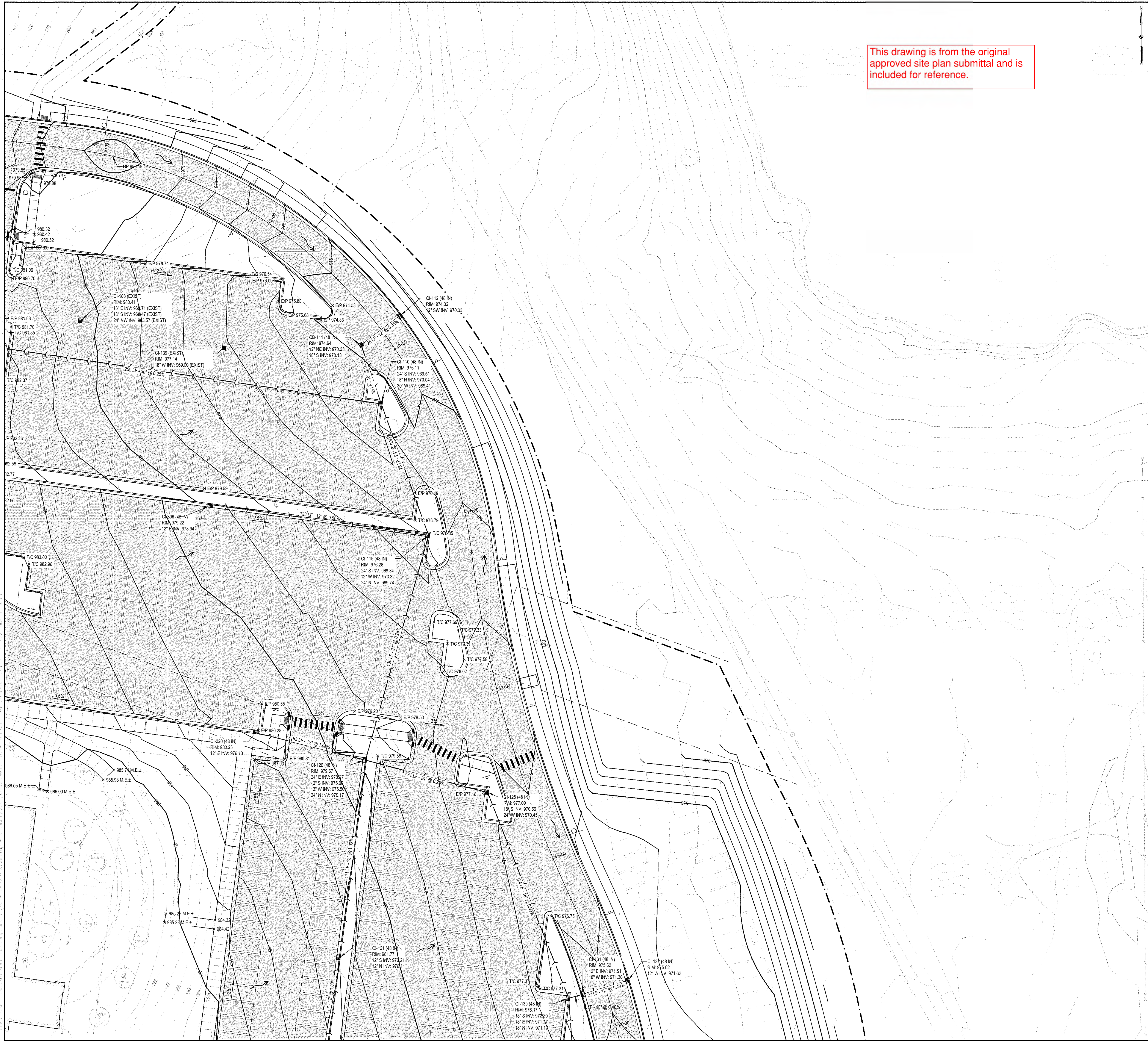
DRAWING NUMBER



1 TREE FENCE PROTECTION

NTS

FILE: C:\Users\michael.smith@smithgroup.com\Documents\michael.smith\Projects\CD-100\Drawings\CD-100-1.dwg DATE: Feb 23, 2023 TIME: 05:50 pm USER: msmith



This drawing is from the original approved site plan submittal and is included for reference.

SHEET NOTES

- REFER TO SHEET CG100 FOR GRADING AND STORMWATER SEWER NOTES.
- THE EXISTING AND PROPOSED ONSITE DRAINAGE SYSTEMS ARE TO BE OWNED AND PROPERLY MAINTAINED BY THE PROPERTY OWNER.

KEYED NOTES

LEGEND

- E.G. 861.50 EXISTING SPOT ELEVATION
- F.G. XXXX.XX PROPOSED SPOT ELEVATION
- TIC XXXX.XX TOP OF CURB ELEVATION
- T.W. XXX.XX TOP OF WALL ELEVATION
- B.W. XXX.XX BOTTOM OF WALL ELEVATION
- F.F. XXXX.XX FINISHED FLOOR ELEVATION
- T.P. XXXX.XX TOP OF POND ELEVATION
- 965 --- EXISTING MAJOR CONTOURS
- 864 --- EXISTING MINOR CONTOURS
- 865 --- PROPOSED MAJOR CONTOURS
- 864 --- PROPOSED MINOR CONTOURS
- S --- STORM SEWER
- ⊙ STORM STRUCTURE (STMH)
- ⊕ CATCH BASIN (CB)
- ⊖ OUTLET CONTROL STRUCTURE (OC)
- ⊞ CURB INLET (CI)
- ▽ FLARED END SECTION (FES)
- ▭ RIP RAP
- ↔ FLOW ARROWS



**ST. JOSEPH MERCY
BRIGHTON
EXPANSION AND RENOVATION**
7575 GRAND RIVER AVE., BRIGHTON, MI 48114
7555 GRAND RIVER AVE., BRIGHTON, MI 48114

SMITHGROUP

201 DEPOT STREET
SECOND FLOOR
ANN ARBOR, MI 48104
734.662.4457
www.smithgroup.com

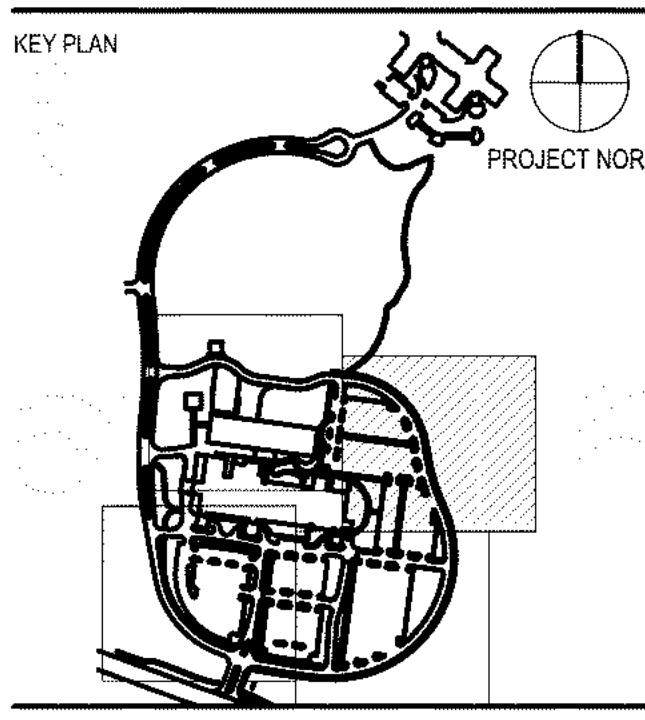


THE FUTURE BUILT SMARTER
35533 W. TWELVE MILE
SUITE 200
FARMINGTON HILLS, MI 48331
P: 248.344.2800 F: 248.344.1650

ISSUED FOR	REV	DATE
SEDC PERMITS	L	14OCT2022
SITE PLAN RESUBMITTAL R4	K	16SEP2022
LCDC RESUBMITTAL R4	J	13SEP2022
LCDC RESUBMITTAL R3	I	06SEP2022
LCDC RESUBMITTAL R2	H	29AUG2022
BID PACK 1	G	29JUL2022
SITE PLAN RESUBMITTAL REV 3	F	20JUL2022
SITE PLAN RESUBMITTAL	E	22JUN22
DESIGN DEVELOPMENT	D	21JUN22
SITE PLAN REVIEW	C	30MAR22
SCHEMATIC DESIGN	B	04MAR22
SD PROGRESS	A	04MAR22

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION

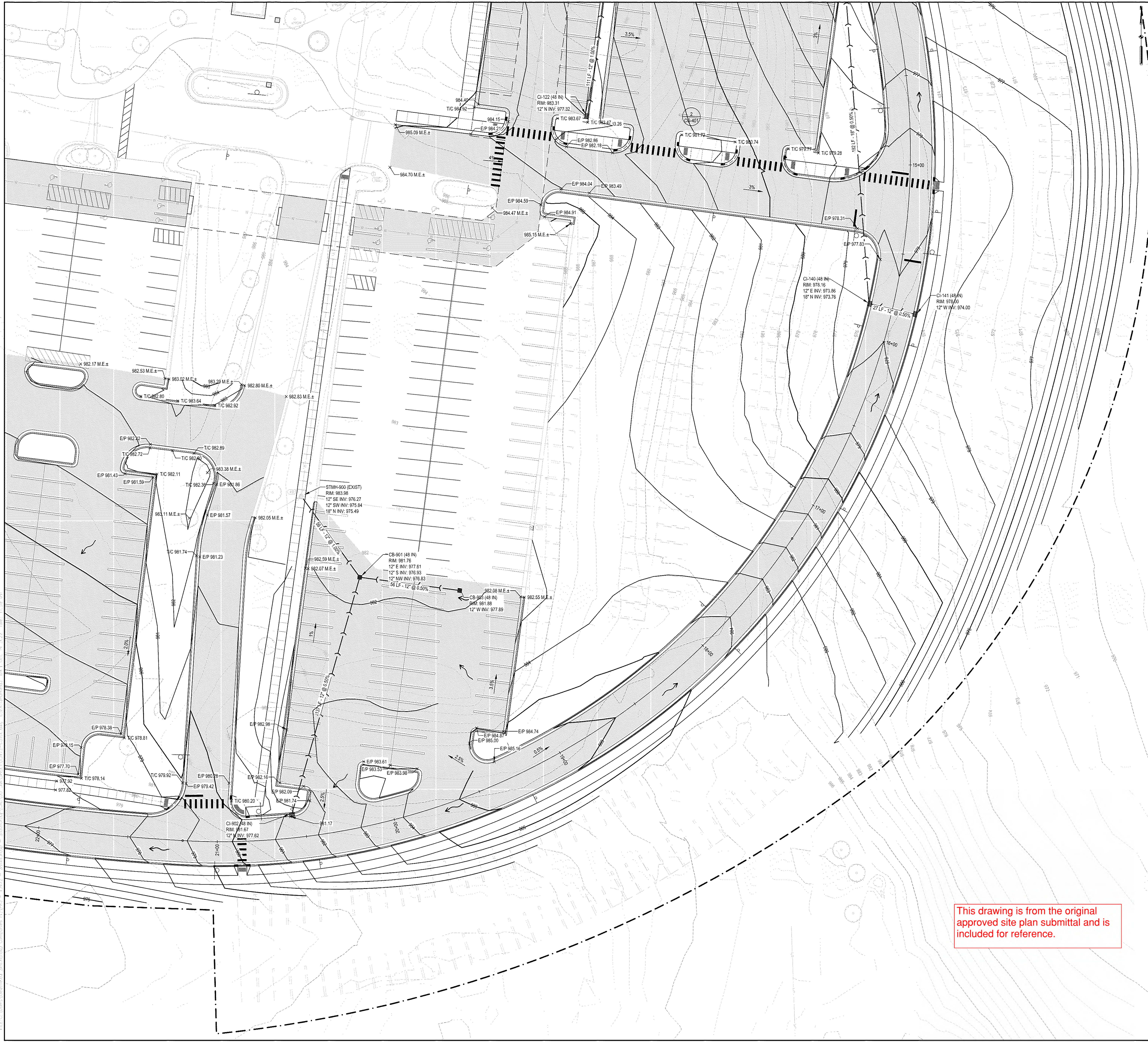


DRAWING TITLE
GRADING AND STORM PLAN

SCALE
SCALE: 1" = 20'

PROJECT NUMBER
13472.00

DRAWING NUMBER
CG-103



SHEET NOTES

1. REFER TO SHEET CG100 FOR GRADING AND STORMWATER SEWER NOTES.
2. THE EXISTING AND PROPOSED ONSITE DRAINAGE SYSTEMS ARE TO BE OWNED AND PROPERLY MAINTAINED BY THE PROPERTY OWNER.

LEGEND

- E.G. 861.50 EXISTING SPOT ELEVATION
- F.G. XXXX.XX PROPOSED SPOT ELEVATION
- TIC XXXX.XX TOP OF CURB ELEVATION
- T.W. XXX.XX TOP OF WALL ELEVATION
- B.W. XXXX.XX BOTTOM OF WALL ELEVATION
- F.F. XXXX.XX FINISHED FLOOR ELEVATION
- T.P. XXXX.XX TOP OF POND ELEVATION
- 955 --- EXISTING MAJOR CONTOURS
- 954 --- EXISTING MINOR CONTOURS
- 955 --- PROPOSED MAJOR CONTOURS
- 954 --- PROPOSED MINOR CONTOURS
- 884 --- PROPOSED MAJOR CONTOURS
- --- STORM SEWER
- ⊙ --- STORM STRUCTURE (STMH)
- --- CATCH BASIN (CB)
- ⊕ --- OUTLET CONTROL STRUCTURE (OC)
- ⊖ --- CURB INLET (CI)
- ▽ --- FLARED END SECTION (FES)
- RIP RAP
- --- FLOW ARROWS



**ST. JOSEPH MERCY
BRIGHTON
EXPANSION AND RENOVATION**
7575 GRAND RIVER AVE., BRIGHTON, MI 48114
7555 GRAND RIVER AVE., BRIGHTON, MI 48114

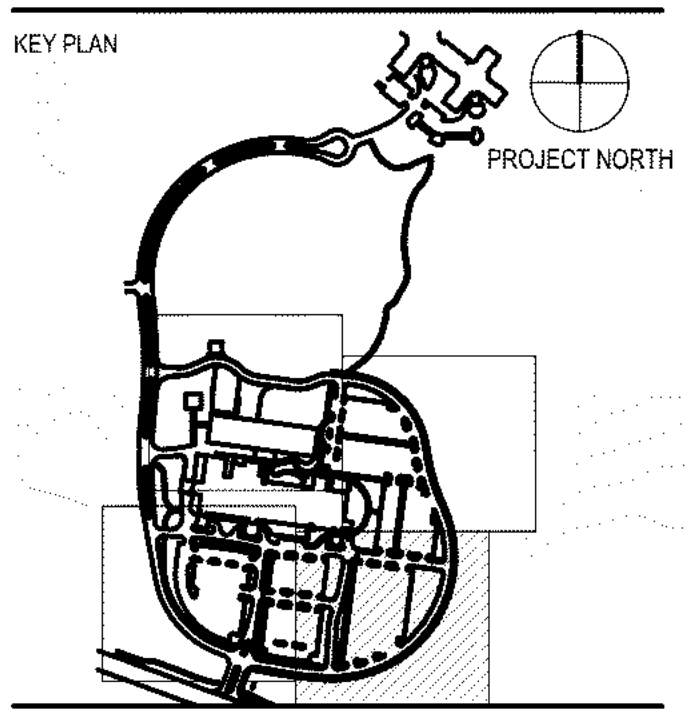
SMITHGROUP
201 DEPOT STREET
SECOND FLOOR
ANN ARBOR, MI 48104
734.662.4457
www.smithgroup.com

IMEG
The Future Built Smarter
35533 W. TWELVE MILE
SUITE 200
FARMINGTON HILLS, MI 48331
P: 248.344.2800 F: 248.344.1650

ISSUED FOR	REV	DATE
SESC PERMITS	L	14OCT2022
SITE PLAN RESUBMITTAL R4	K	16SEP2022
LCDC RESUBMITTAL R4	J	13SEP2022
LCDC RESUBMITTAL R3	I	08SEP2022
LCDC RESUBMITTAL R2	H	29AUG2022
BID PACK 1	G	29JUL2022
SITE PLAN RESUBMITTAL REV 3	F	20JUL2022
SITE PLAN RESUBMITTAL	E	22JUN22
DESIGN DEVELOPMENT	D	21JUN22
SITE PLAN REVIEW	C	30MAR22
SCHEMATIC DESIGN	B	04MAR22
SD PROGRESS	A	04MAR22

SEALS AND SIGNATURES

NOT FOR CONSTRUCTION



DRAWING TITLE
GRADING AND STORM PLAN

SCALE
SCALE: 1" = 20'

PROJECT NUMBER
13472.00

DRAWING NUMBER
CG-105

This drawing is from the original approved site plan submittal and is included for reference.



GENOA CHARTER TOWNSHIP
Application for Site Plan Review

TO THE GENOA TOWNSHIP PLANNING COMMISSION AND TOWNSHIP BOARD:

APPLICANT NAME & ADDRESS: CHESTNUT DEVELOPMENT LLC. 6253 GRAND RIVER AVE STE 700 BRIGHTON, MI 48116

If applicant is not the owner, a letter of Authorization from Property Owner is needed.

OWNER'S NAME & ADDRESS: CHESTNUT DEVELOPMENT LLC. 6253 GRAND RIVER AVE STE 700 BRIGHTON, MI 48116

SITE ADDRESS: Grand River Ave PARCEL #(s): 11-06-200-101

APPLICANT PHONE: (734)679-4356 OWNER PHONE: (888)825-1420

OWNER EMAIL: permits@chestnutdev.com

LOCATION AND BRIEF DESCRIPTION OF SITE: North side of Grand River Ave.
Just west of Char-Ann Drive.

BRIEF STATEMENT OF PROPOSED USE: Grading preparation for future development

THE FOLLOWING BUILDINGS ARE PROPOSED: None

I HEREBY CERTIFY THAT ALL INFORMATION AND DATA ATTACHED TO AND MADE PART OF THIS APPLICATION IS TRUE AND ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

BY: Steve Gronow, Owner

ADDRESS: 6253 GRAND RIVER AVE STE 700 BRIGHTON, MI 48116

Contact Information - Review Letters and Correspondence shall be forwarded to the following:

1.) Kelly Ralko _____ of Chestnut Development, LLC. _____ at permits@chestnutdev.com
Name Business Affiliation E-mail Address

FEE EXCEEDANCE AGREEMENT

As stated on the site plan review fee schedule, all site plans are allocated two (2) consultant reviews and one (1) Planning Commission meeting. If additional reviews or meetings are necessary, the applicant will be required to pay the actual incurred costs for the additional reviews. If applicable, additional review fee payment will be required concurrent with submittal to the Township Board. By signing below, applicant indicates agreement and full understanding of this policy.

SIGNATURE: Steve Gronow, Owner of Chestnut DATE: 2/27/23

PRINT NAME: Steve Gronow, Owner PHONE: 888-825-1420

ADDRESS: 6253 GRAND RIVER AVE STE 700 BRIGHTON, MI 48116



April 4, 2023

Planning Commission
Genoa Township
2911 Dorr Road
Brighton, Michigan 48116

Attention:	Kelly Van Marter, AICP Planning Director and Assistant Township Manager
Subject:	Chestnut Development site grading – Site Plan Review #1
Location:	Vacant parcel – north side of Grand River, west of Char-Ann Drive
Zoning:	OSD Office Service District

Dear Commissioners:

At the Township’s request, we have reviewed the site plan requesting approval for site grading in anticipation of future development for a vacant 4.32-acre property on the north side of Grand River, just west of Char-Ann Drive (plan dated 3/1/23).

A. Summary

1. In accordance with Section 13.01, Planning Commission has review and approval authority over the site plan for grading and tree removal.
2. Since the project only entails site engineering at this time, the applicant must address any comments provided by the Township Engineer.
3. Given their proximity to residential zoning (to the north) and use (to the west), we request the applicant provide the Commission with details of the stock pile and staging areas.
4. The silt fence line may need to be slightly adjusted to ensure protection of three trees that are to be preserved along the west and north sides of the limits of disturbance.

B. Proposal/Process

The applicant proposes site grading in anticipation of future development. The site and adjacent properties to the east are zoned OSD; those to the west along Grand River are zoned GCD; and the adjacent properties to the north are zoned LDR. It is important to note that the adjacent property to the west contains a single-family residence, though it is zoned GCD.

Per Section 13.01, grading that changes the topography of the site by more than 3 feet on average or removal of more than 25% of existing trees with a diameter of 8 inches or more is subject to review by the Zoning Administrator, though it may be forwarded to the Planning Commission for their consideration (as is the case in this instance).

The project intends to bring in fill to level the parcel, which currently has approximately 20’ of elevation change from the northwest (high ground) to the southeast, and to remove 44 trees with a diameter of 8 inches or more (59% of such trees on site).

Procedurally, Planning Commission has review and approval authority over the site plan; however, the Environmental Impact Assessment is subject to Planning Commission recommendation with final approval by the Township Board.



Aerial view of site and surroundings (looking north)

C. Site Plan Review

At this time, the project entails only site grading, which is more of an engineering review than planning/zoning.


As such, the Commission should consider any comments provided by the Township Engineer.

With that being said, we do provide the following comments for the Commission's consideration:

- The grading plan maintains 20' side yard buffer zones, and a 50' rear buffer zone from the LDR property to the north.
- No grading or tree removal is proposed within these buffer zones.
- Given their proximity to residential zoning (to the north) and use (to the west), we request the applicant provide the Commission with details of the stock pile and staging areas.
- Information such as the height of the stock pile and how it will be contained, as well as the type of equipment/materials to be kept in the staging area, would be helpful.
- The silt fence line may need to be slightly adjusted to ensure protection of three trees that are to be preserved along the west and north sides of the limits of disturbance.

Should you have any questions concerning this matter, please do not hesitate to contact our office.

Respectfully,
SAFEBUILT


Brian V. Borden, AICP
Michigan Planning Manager



March 30, 2023

Ms. Amy Ruthig
Genoa Township
2911 Dorr Road
Brighton, MI 48116

**Re: Chestnut Development Grading
Sketch Plan Review No. 1**

Dear Ms. Ruthig:

Tetra Tech conducted a review of the proposed Chestnut Development Grading plan last dated February 10, 2023. The plan was prepared by Monument Engineering Group Associates on behalf of Chestnut Development. The site is a 3.4-acre parcel on the north side of Grand River Avenue, to the west of Char Ann Drive. The Petitioner is proposing to regrade the site, including filling in what appears to be an existing detention basin. We offer the following comments:

1. The grading plan appears to be filling in an existing detention pond area and adjusting the outlet rim elevation. As the site is currently undeveloped, this change won't have a major impact on the downstream storm system. When the site is developed in the future it will need to have a new storm management system designed and would need MDOT approval to outlet to the Grand River storm sewer.
2. Some of the existing storm pipes are shown on the survey plan but missing on the proposed grading plan.
3. The existing water main is shown on the survey plan but should also be clearly shown on the grading plan.

We recommend the petitioner address the above comments prior to approval.

Sincerely,

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

Shelby Byrne, P.E.
Project Engineer

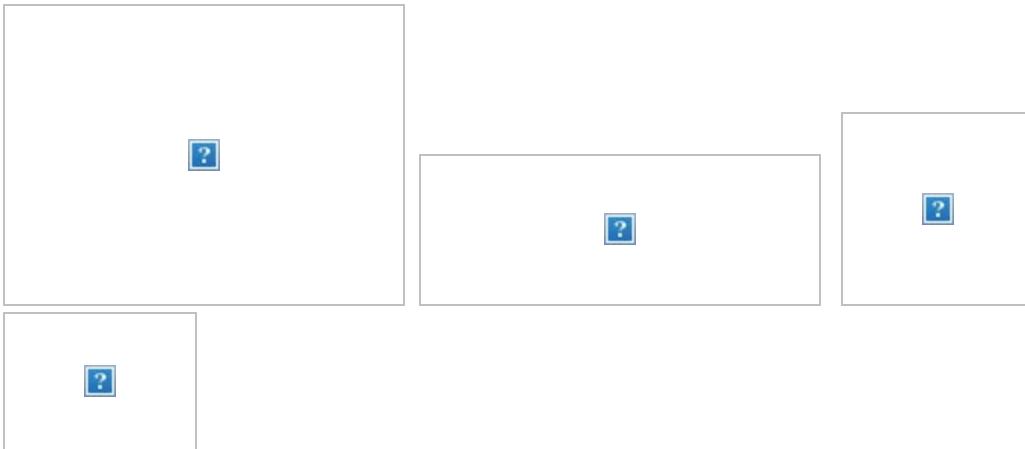
From: [Rick Boisvert](#)
To: [Amy Ruthig](#)
Subject: Re: Chestnut Dev. Grading Project
Date: Tuesday, March 14, 2023 5:51:01 PM
Attachments: [image001.png](#)

Amy, I don't have any comments related to fire stuff on this project. I did notice that it looks like they are filling in the detention pond and the catch basin outflow into it from Grand River is eliminated on the SESC plan, the ST overflow rim looks to be raised and they don't show connection to the storm on the SESC plan. I'm sure Tetrattech will catch it but just a note.

Let me know if you need a letter.

Cordially,

Rick Boisvert, FM, CFPS
Fire Marshal
Brighton Area Fire Authority
615 W. Grand River
Brighton, MI 48116
O: (810)229-6640 D: (810)299-0033
F: (810)229-1619 C: (248)762-7929
rboisvert@brightonareafire.com



On Thu, Mar 9, 2023 at 1:17 PM Amy Ruthig <amy@genoa.org> wrote:

Good Afternoon,

Attached is the site plan submittal for Chestnut Dev. Grading project.

The review is due April 5, 2023.



Monument Engineering Group Associates, Inc.

Developing Lifelong Relationships

monumentengineering.com

298 Veterans Drive, Fowlerville, MI 48836 (HQ)
(517) 223-3512



IMPACT ASSESSMENT

VACANT LAND GRAND RIVER AVE.
SECTION 6, GENOA TOWNSHIP

PREPARED BY:

Monument Engineering Group Associates, Inc.
298 Veterans Drive
Fowlerville, MI 48836

PREPARED FOR:

Chestnut Development
6253 Grand River Avenue
Suite 750
Brighton, MI 48114

March 2, 2023

IMPACT ASSESSMENT

18.07.01 Preparer:

Prepared by: Monument Engineering Group Associates, Inc.

298 Veterans Drive, Michigan 48836

Allan W Pruss, PE, PS

Mr. Pruss has over 30 years of land development experience as an engineer and project manager.

Project Description:

This project entails filling the site in preparation for future development. Currently the site has approximately 20' of fall from the northwest corner to the southeast corner of the site. Some clearing of the site (tree removal) will take place as part of the earthmoving operations.

Landscape setbacks will be adhered to around the perimeter of the site so as to not affect the adjoining parcels.

18.07.02 Location:

The site is in Section 6 T02N, R05E on the north side of Grand River Avenue. Just west of Char Ann Drive and east of Tahoe Blvd. Parcel ID 4711-06-200-101. See location map.

The site is a 4.34 acres parcel of vacant land with some trees mainly on the north side of the property. There is approximately 20' of vertical relief from the northwest corner of the property to the southeast corner. There are no structures on the site.

The property to the north is a residential neighborhood with Turning Leaf Drive adjacent to the property. To the east is an office building with access off Char Ann Drive. To the south is Grand River Avenue with vacant land (wetlands) to the south of Grand River Ave. To the west is a single-family structure located +/-350' from Grand River Ave.

See Location Map and aerial photo for specific location and description of the property.



IMPACT ASSESSMENT

18.07.03 Impact on natural features:

The site is a 4.34 acres parcel of vacant land with some trees mainly on the north side of the property. There is approximately 20' of vertical relief from the northwest corner of the property to the southeast corner. There are no structures on the site. There are approximately 70 trees on site with a diameter breast height (DBH) of 8" or greater. Per the soil survey mapper, soil characteristics are mainly loam with some Carlisle muck. No soils investigation has been conducted as part of this project. There are no known wetlands (regulated or non-regulated) on the site. See site plan for existing conditions survey of the site.

18.07.04 Impact on stormwater management:

The site drains from northwest to southeast with approximately 20' of fall. The plan for this project is to prepare the site for future development by bringing fill to the site and creating a more level site. There will be no increase in impervious area. Soil erosion control measures will be implemented, and a soil erosion sediment control (SESC) permit will be applied for with the Livingston County Drain Commission (LCDC). There will be no impact on stormwater management nor the surrounding stormwater facilities.

18.07.05 Impact on surrounding land uses:

The proposed use will remain unchanged from current use (Vacant Land) as this is a site preparation project only. There will be no increase in noise, light or pollutants when this project is finished. Construction activities will take place during normal business hours, Monday through Saturday, 8 am until 6 pm. Dust control during construction will be handled by utilizing water buffalos during dry periods to keep moisture in the soils and minimize dust to adjoining parcels.

Included as part of the soil erosion permit will be a tracking mat designed to knock mud off equipment and vehicles leaving the site. Any mud tracked onto any adjoining roads will be cleaned up daily or as needed during the day.

18.07.06 Impact on public facilities and services:

The proposed use will remain unchanged from current use (Vacant Land) as this is a site preparation project only. There will be no increase in activity on this site after the project is completed. There will be no impact on public facilities or services after the project is completed.

18.07.07 Impact on public utilities:

The proposed use will remain unchanged from current use (Vacant Land) as this is a site preparation project only. Although all public and private utilities are available to service this site, no new utility connections are proposed, therefore there will be no impact on public utilities. There is an existing connection to the public storm sewer system connecting into the Grand River right of way (ROW). This connection will remain in place and the current drainage patterns on the site will be maintained.

A SESC permit will be applied for from LCDC which will have erosion control measures implemented on the site throughout construction. These measures require them to be inspected on a weekly basis, or within 24 hours of a rain event, to ensure their integrity and that they are working properly.

IMPACT ASSESSMENT

18.07.08 Storage and handling of any hazardous materials:

There will be no storage or handling of any hazardous materials on this site during or after construction.

18.07.09 Traffic Impact Study:

As the property will remain vacant after construction activities, there will be no increase in directional trips to or from the site. Therefore, no traffic impact study will be required.

18.07.10 Historic and Cultural Resources:

The site is currently vacant land with no structures.

18.07.11 Special Provisions:

No special provisions are being requested.

18.07.12 A list of all sources shall be provided:

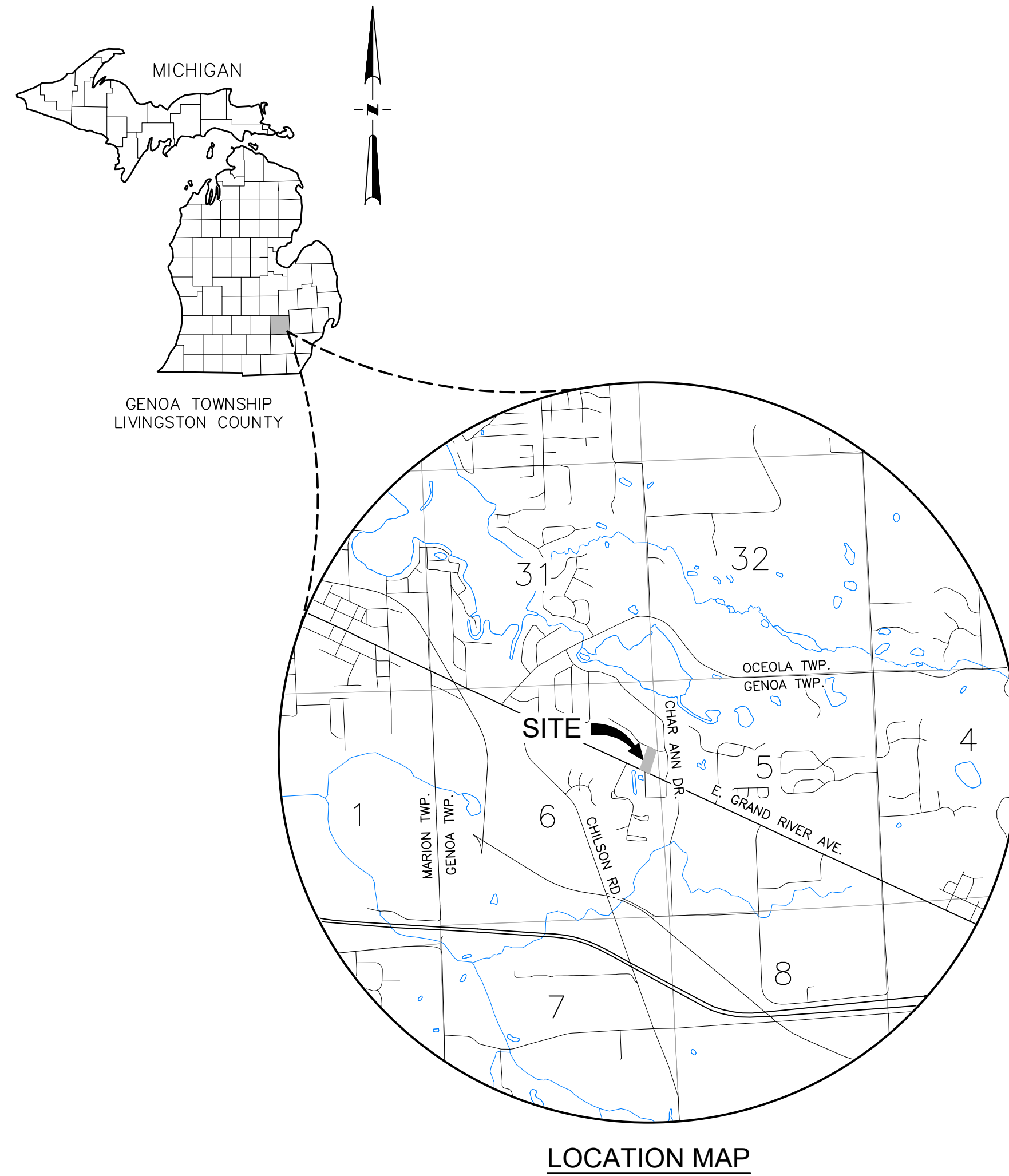
No sources cited herein.

18.07.13 Any impact assessment previously submitted:

There are no previous impact assessments previously submitted that we are aware of.



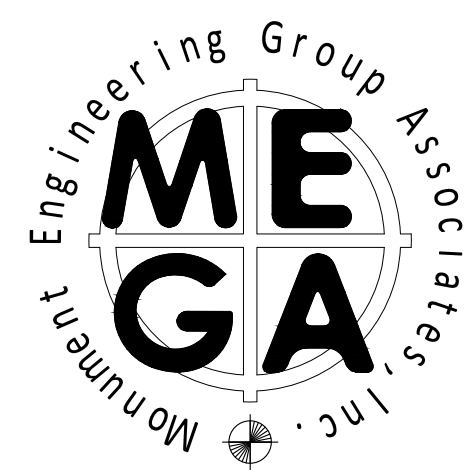
PRELIMINARY SITE PLAN DRAWING FOR CHESTNUT E. GRAND AVE



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°35'46.85" N, LON: 83°53'42.74" W, ELEV: 800.00', SCALE FACTOR: 1.00003817).

DESIGN ENGINEER/SURVEYOR



MONUMENT ENGINEERING GROUP ASSOCIATES, INC

INNOVATIVE GEOSPATIAL &
ENGINEERING SOLUTIONS

298 VETERANS DRIVE,
FOWLERVILLE, MI 48836
ALLAN W PRUSS, PE, PS
PHONE: 517-223-3512

CLIENT

CHESTNUT DEVELOPMENT
6253 GRAND RIVER AVENUE
SUITE 750
BRIGHTON, MICHIGAN 48114
POC: STEVE GRONOW
PHONE: 517-552-2489

		PLAN SUBMITTALS	
	2/10/2023	SESC SUBMITTAL	
SHEET INDEX			
INCLUDED SHEETS			
GENERAL			
SHEET	G-1.0	COVER	●
SURVEY			
SHEET	V-1.0	TOPOGRAPHIC SURVEY & DEMO PLAN	●
GRADING AND SOIL EROSION & SEDIMENTATION CONTROL (SESC)			
SHEET	C-7.0	GRADING AND SESC PLAN	●
SHEET	C-7.1	LCDC SESC NOTES AND DETAILS	●
SHEET	C-7.2	LCDC SESC DETAILS	●
SPECIFICATIONS			
SHEET	C-12.0	SPECIFICATIONS	●
SHEET	C-12.1	SPECIFICATIONS	●
GENOA TOWNSHIP, LIVINGSTON COUNTY STANDARD DETAILS			

INNOVATIVE GEOSPATIAL
& ENGINEERING SOLUTIONS

298 VETERANS DRIVE
FOWLERVILLE,
MICHIGAN 48836
(OFFICE) 517-223-3512
MONUMENTENGINEERING.COM

SERVICE DISABLED VETERAN OWNED
SMALL BUSINESS (SDVOSSB)

ALLAN W.
PRUSS
ENGINEER
NO.
6201043168

Call MISS DIG
3 full working days before you dig:

Michigan's Utility
One-Call Notification
Organization
1-800-482-7171
www.missdig.org

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 :

CHESTNUT DEVELOPMENT
6253 GRAND RIVER AVE.
SUITE 750
BRIGHTON, MI 48114
POC: STEVE GRONOW
517-552-2489

COVER

PARCEL 4711-06-200-101
PART OF NE 1/4, SEC. 6, T2N-R5E,
GENOA CHARTER TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

DATE	2/10/2023
PLAN SUBMITTALS/REVISIONS	
SESC SUBMITTAL	

ORIGINAL ISSUE DATE:
2/10/2023

PROJECT NO: 22-168

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

FIELD: RZ
DRAWN BY: MV,MN
DESIGN BY: BS
CHECK BY: MAJAP

G-10

NOT FOR CONSTRUCTION

BENCHMARKS

DATUM: NAVD88
 BM A:
 DESC. BENCH TIE ON SOUTH SIDE OF UTILITY POLE
 ELEV = 952.871'
 BM B:
 DESC. TOP ARROW OF HYDRANT
 ELEV = 960.727'

STRUCTURE SCHEDULE

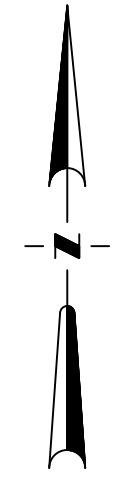
EX. STORM SEWER		
STRUCTURE	RIM ELEV.	PIPES
(50412) CBR	953.05	24" NW IE= 943.90 24" SE IE= 944.03
(60196) CBS	961.31	UNABLE TO ACCESS
(60290) CBR	949.74	12" SE IE= 944.52
(60291) STMH	952.44	UNABLE TO ACCESS
(60295) CBR	951.48	24" NW IE= 944.03 24" SE IE= 945.23
(60342) CBS	952.91	12" N IE= 950.69
(60375) CBS	955.08	10" NE IE= 952.87

SOILS INFO

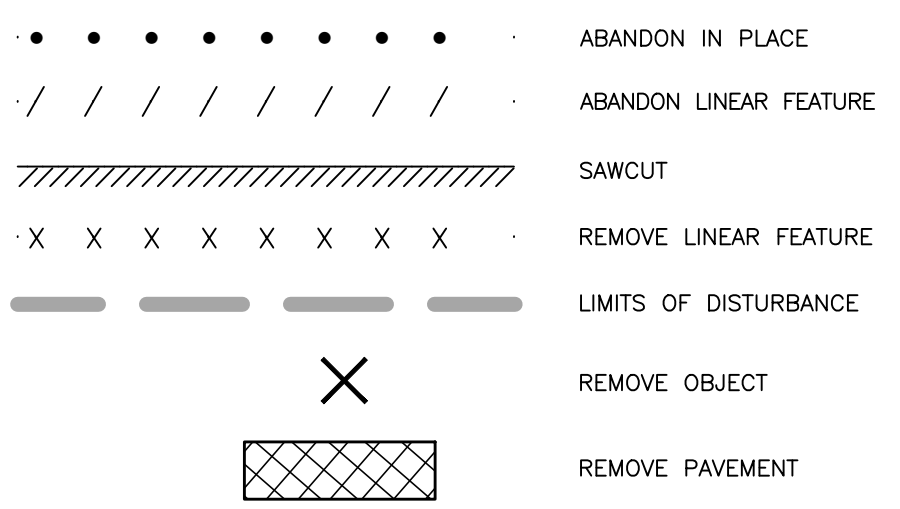
SOIL TYPES ARE ACCORDING TO THE USDA SOIL SURVEY WEB SITE
 (https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm)

SOIL TYPE LIMIT AND LABEL

- CarabA: CARLISLE MUCK, 0-2% SLOPES
- MoA: WAWASEE LOAM, 0-2% SLOPES
- MoB: WAWASEE LOAM, 2-6% SLOPES
- MoD: MIAMI LOAM, 12-18% SLOPES



DEMOLITION LEGEND



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.

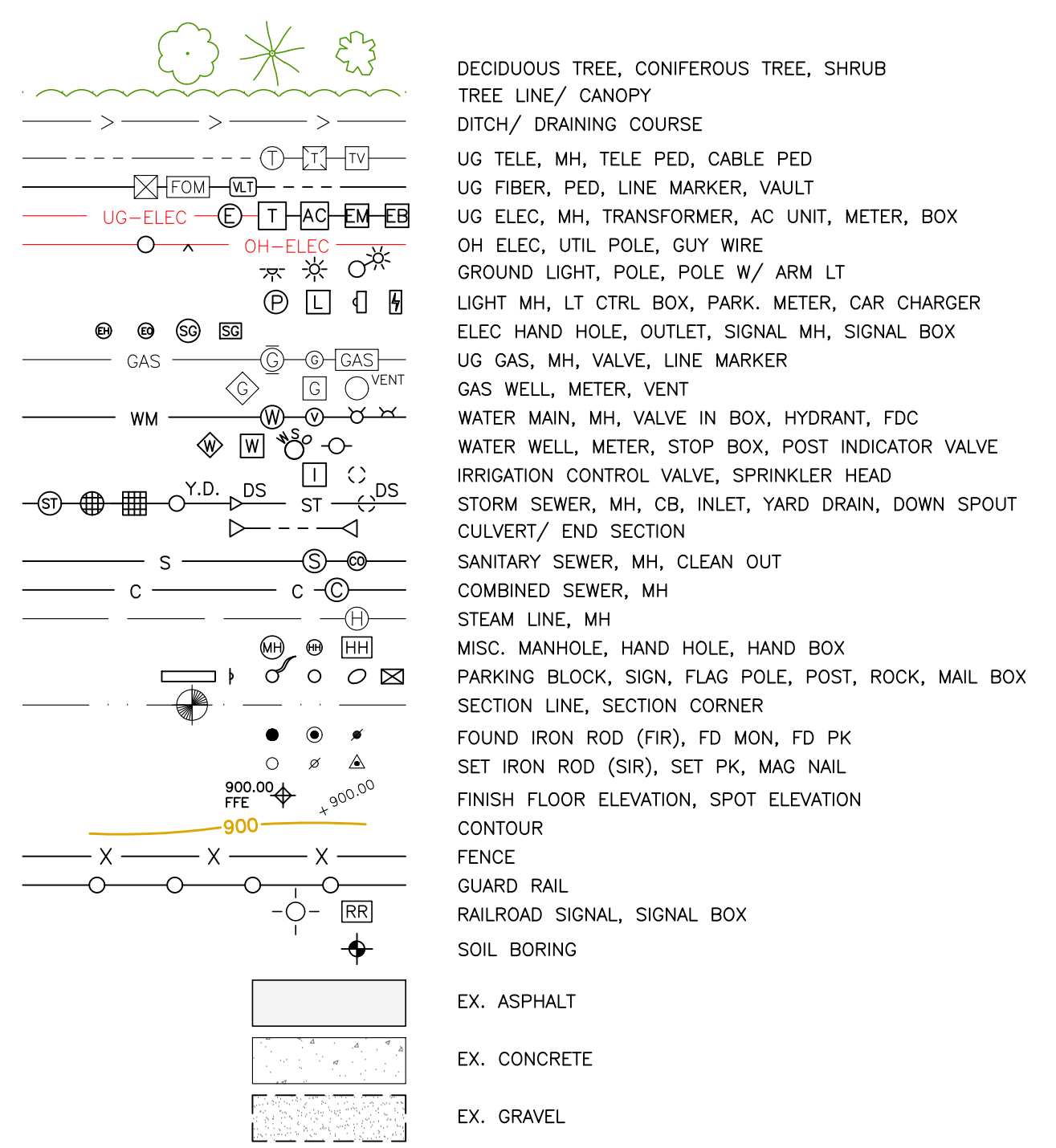
EXISTING PARKING

THERE ARE NO STRIPED PARKING SPACES ON THE SUBJECT PROPERTY.

UTILITY NOTES

- ALL FRANCHISE UTILITIES (GAS, FIBER, CABLE, UG ELEC., TELE.) SHOWN ARE BASED ON MISS DIG MARKINGS LOCATED AT TIME OF SURVEY UNLESS NOTED OTHERWISE.
- 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.

EXISTING LEGEND



WETLAND NOTE

ACCORDING TO THE NATIONAL WETLAND INVENTORY WEBSITE (HTTP://WWW.FWS.GOV/WETLANDSDATAMAPPER.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.



INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

MEGA
 Monument Engineering Group Associates, Inc.

298 VETERANS DRIVE
 FOWLERVILLE, MICHIGAN 48836
 (OFFICE) 517-223-3512
 MONUMENTENGINEERING.COM

SERVICE DISABLED VETERAN OWNED
 SMALL BUSINESS (SDVOSB)

ALLAN W. PRUSS
 ENGINEER
 NO. 6201043168

Call MISS DIG
 3 full working days before you dig.

Michigan's Utility Notification Organization
 1-800-482-7171
 www.missdig.org

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.

CLIENT :

CHESTNUT DEVELOPMENT
 6253 GRAND RIVER AVE.
 SUITE 750
 BRIGHTON, MI 48114
 POC: STEVE GRONOW
 517-552-2489

TOPOGRAPHIC SURVEY & DEMO PLAN

PARCEL 4711-06-200-101
 PART OF NE 1/4, SEC. 6, T2N-R5E,
 GENOA CHARTER TOWNSHIP
 LIVINGSTON COUNTY, MICHIGAN

DATE	DESCRIPTION
2/10/2023	SSSC SUBMITTAL

ORIGINAL ISSUE DATE:
2/10/2023

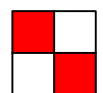
PROJECT NO: 22-168

SCALE: 1" = 40'
 0 1/2" 1"

FIELD: RZ
 DRAWN BY: MV, MN
 DESIGN BY: BS
 CHECK BY: MAAP

V-10

NOT FOR CONSTRUCTION



BENCHMARKS

DATUM: NAVD88

BM A:
DESC. BENCH TIE ON SOUTH SIDE OF UTILITY POLE
ELEV = 952.871'

BM B:
DESC. TOP ARROW OF HYDRANT
ELEV = 960.727'

SOILS INFO

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

- | SOIL TYPE LIMIT AND LABEL | |
|---------------------------|----------------------------|
| • CarabA: | CARLISLE MUCK, 0-2% SLOPES |
| • MoA: | WAWASEE LOAM, 0-2% SLOPES |
| • MoB: | WAWASEE LOAM, 2-6% SLOPES |
| • MoD: | MIAMI LOAM, 12-18% SLOPES |

SESC LEGEND

- SILT FENCE
- STABILIZED CONSTRUCTION ACCESS
- RIP RAP

EROSION CONTROL QUANTITIES

Disturbed Area: 3.42 Acres

QTY	UNIT	ITEM
1170	LF	SILT FENCE
2	EA	INLET PROTECTION
1	EA	STABILIZED CONSTRUCTION ACCESS

NOTE: QUANTITIES ARE FOR ENTIRE SITE

GRADING LEGEND

- PROPOSED TOP OF PAVEMENT GRADE
- PROPOSED SIDEWALK GRADE
- PROPOSED FINISH GRADE
- PROPOSED TOP OF 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 ELEVATION
- EXISTING CONTOUR
- PROPOSED CONTOUR
- SOIL TYPE LIMIT AND LABEL (FROM USGS SOIL SURVEY)
- 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 SEEDDED 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 LADEN 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.

TEMPORARY PERMANENT

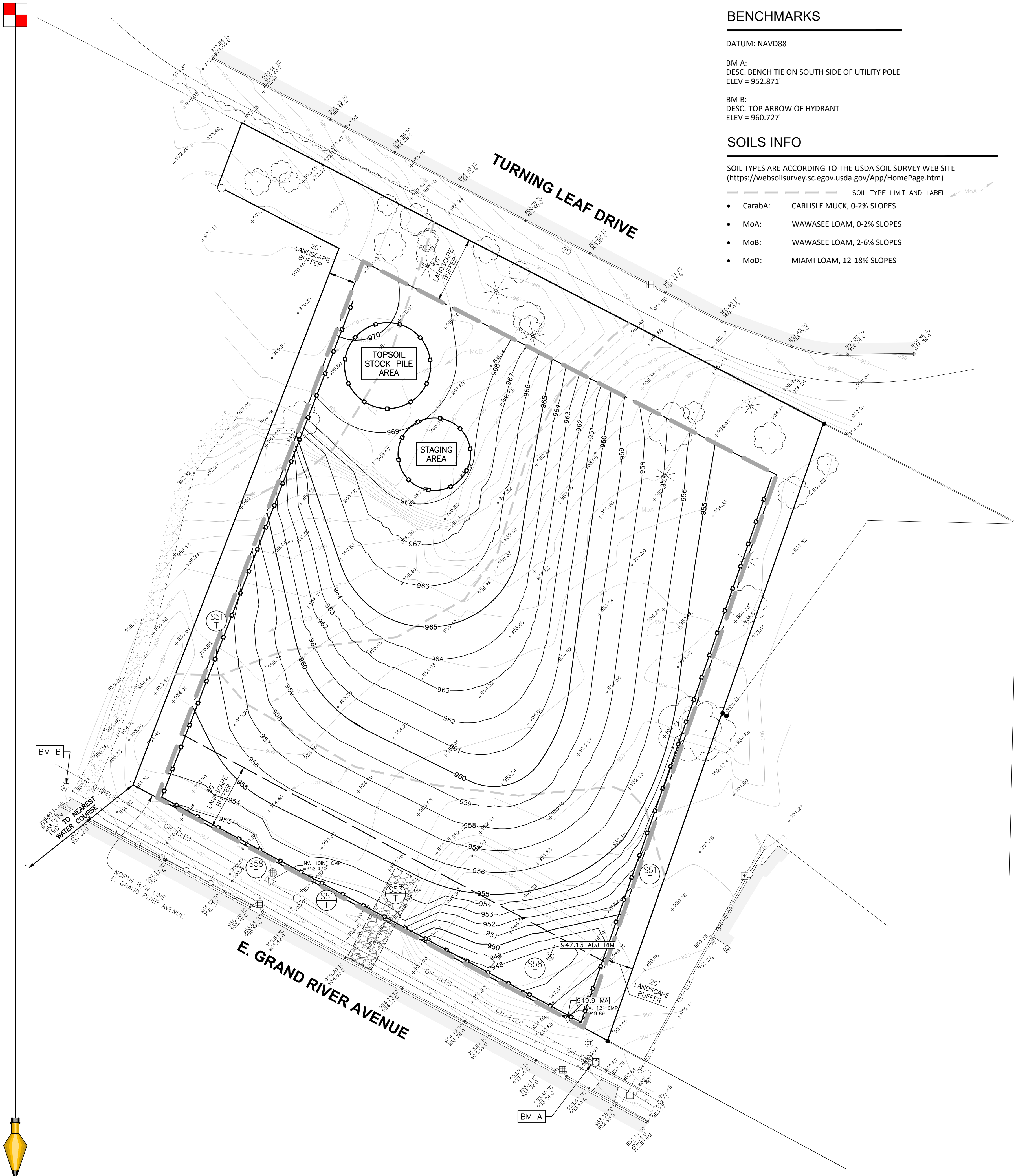
EROSION CONTROL STANDARDS

- 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 MDEQ NOTICE OF COVERAGE FOR NPDES AS REQUIRED.
- ALL DISTURBED AREAS ARE TO BE TOP SOILED AND SEEDED WITH THE FOLLOWING MIN RATIO:
TOP-SOIL 3" 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.

CONSTRUCTION SEQUENCE	OPERATION TIME SCHEDULE - BEGINNING		
	APR	MAY	JUN
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 PLACE INLET FILTERS AT CATCH BASINS THROUGHOUT SITE.			
4 FINISH GRADE 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.			
5 REPAIR/CLEAN INLET FILTERS AS REQUIRED.			
6 REMOVE TEMPORARY SOIL EROSION MEASURES ONCE SEEDED VEGETATION HAS BEEN ESTABLISHED. CLEAN ALL AFFECTED STORM STRUCTURES AS NECESSARY.			



INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

MEGA

298 VETERANS DRIVE
FOWLERVILLE,
MICHIGAN 48836
(OFFICE) 517-223-3512
MONUMENTENGINEERING.COM

SERVICE DISABLED VETERAN OWNED
SMALL BUSINESS (SDVOSS)

ALLAN W. PRUSS
ENGINEER
NO. 6201043168

Call MISS DIG
3 full working days before you dig.

Utility Notification Organization

1-800-482-7171
www.missdig.org

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 OF ACCURACY THEREOF. THE CONTRACTOR SHALL BE INDIVIDUALLY RESPONSIBLE FOR DETERMINING THE EXACT DEPTHS, LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT :

CHESTNUT DEVELOPMENT
6253 GRAND RIVER AVE.
SUITE 750
BRIGHTON, MI 48114
POC: STEVE GRONOW
517-552-2489

GRADING AND SESC PLAN

PARCEL 4711-06-200-101
PART OF NE 1/4, SEC. 6, T2N-R5E,
GENOA CHARTER TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

DATE	REVISIONS
2/10/2023	

PLAN SUBMITTALS/REVISIONS

DATE: 2/10/2023

ORIGINAL ISSUE DATE: 2/10/2023

PROJECT NO: 22-168

SCALE: 1" = 40'

0 1/2" 1"

FIELD: RZ
DRAWN BY: MY/MN
DESIGN BY: BS
CHECK BY: MA/AP

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.

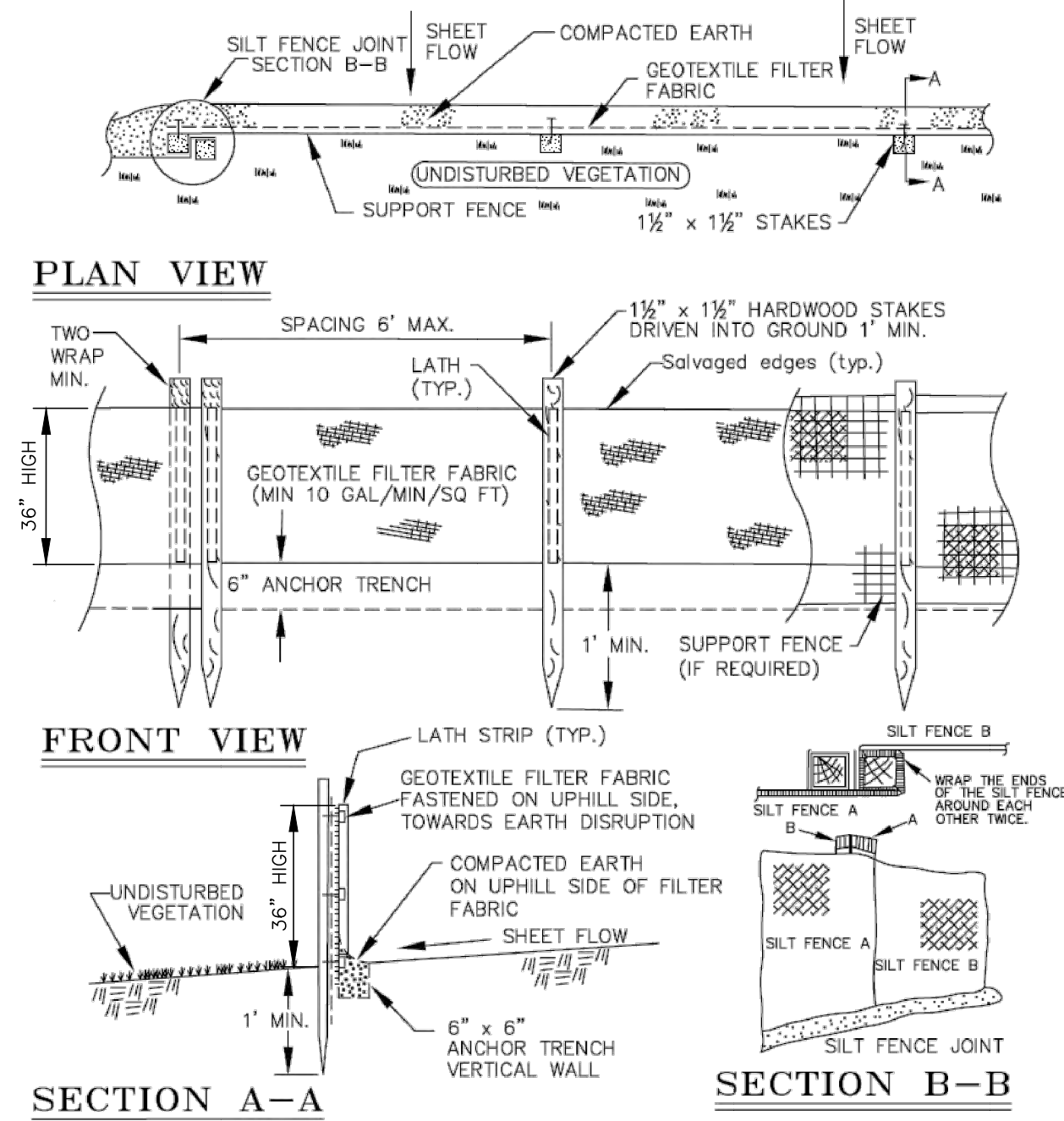
Stabilization Standards:

- 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:

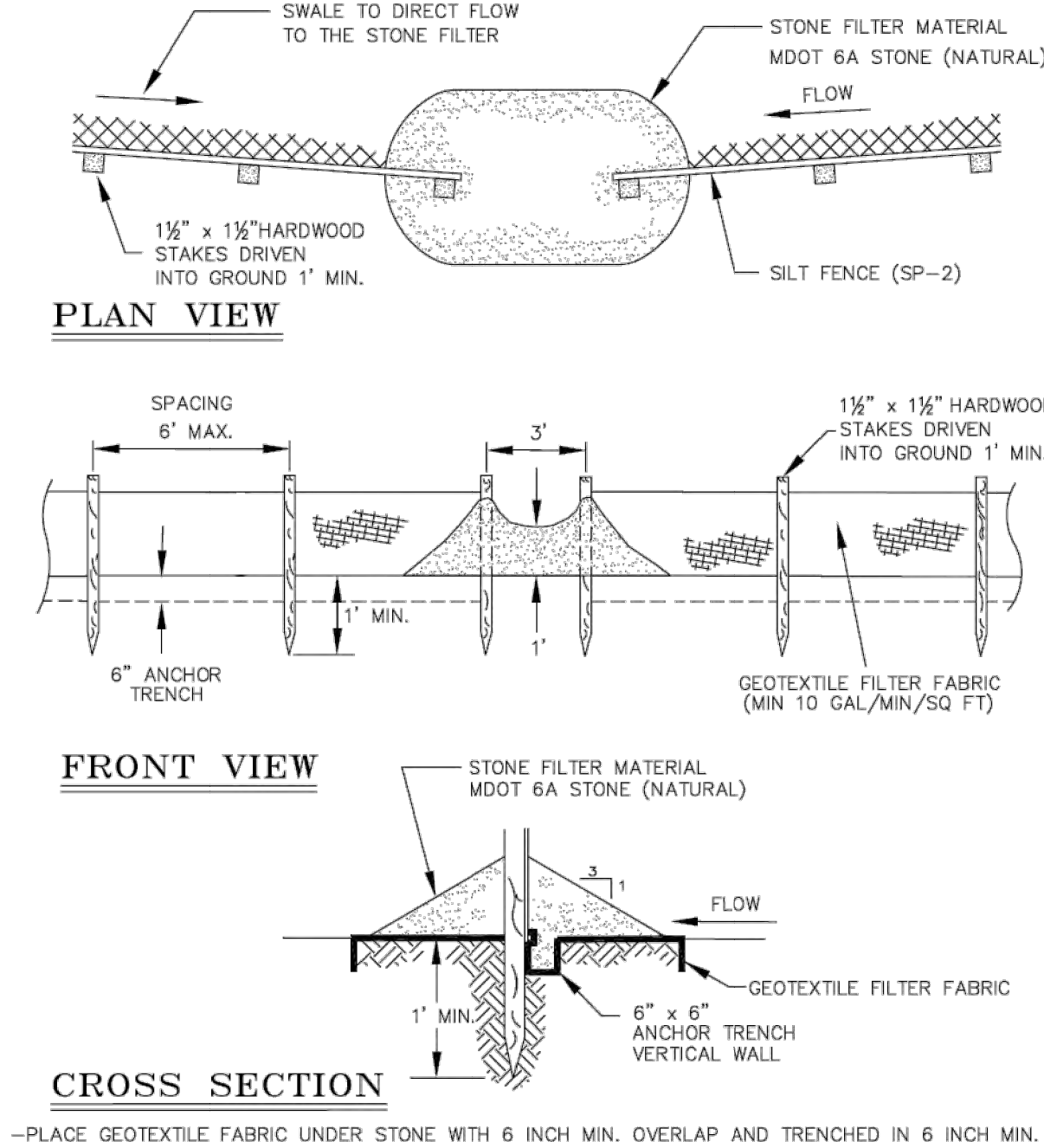
- This information shall be detailed on the construction plans.
- Top Soil 3" in depth
- Grass Seed 217.84 lbs per acre
- Fertilizer 150 lbs per acre
- Straw Mulch 3" in depth (All mulching must have a tie down)
- Hydroseeding is not acceptable for slopes exceeding 1%, in such cases stabilization shall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

36" SILT FENCE STANDARD CONTROL

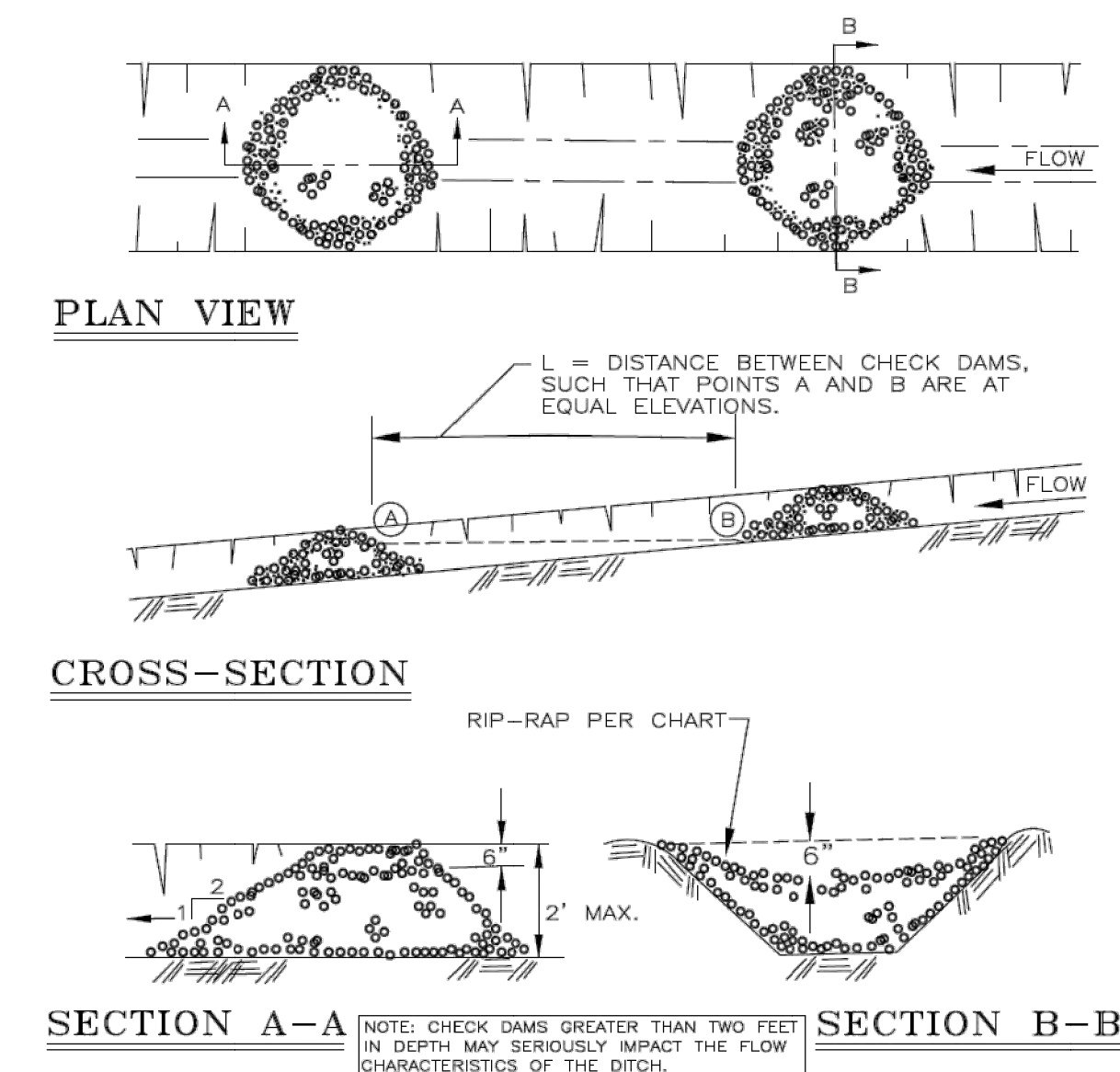


36" SILT FENCE GRAVEL FILTER STANDARD CONTROL

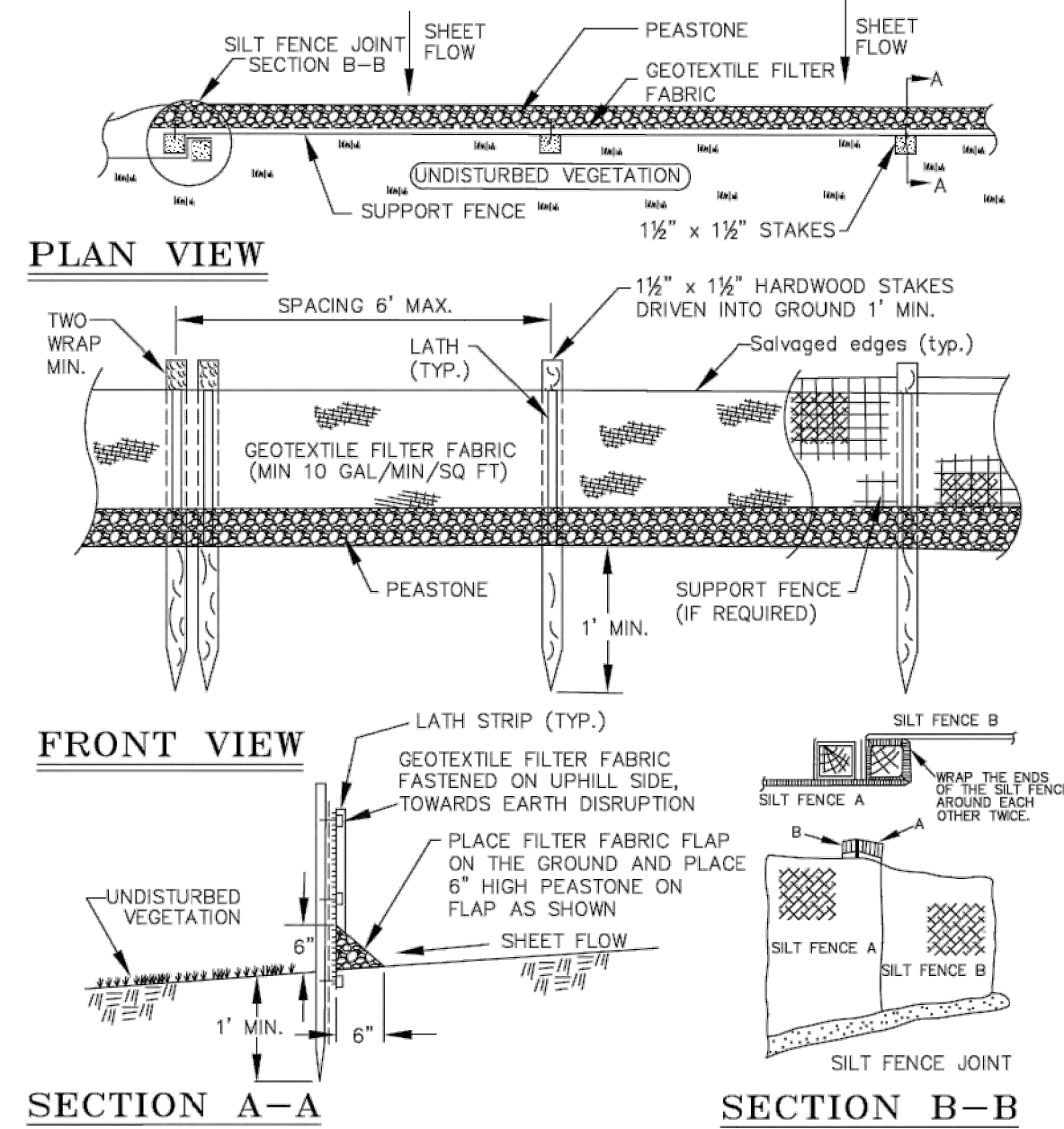
(ALL ALTERNATIVES MUST BE PRE-APPROVED BY THE INSPECTOR ON A CASE BY CASE BASIS)



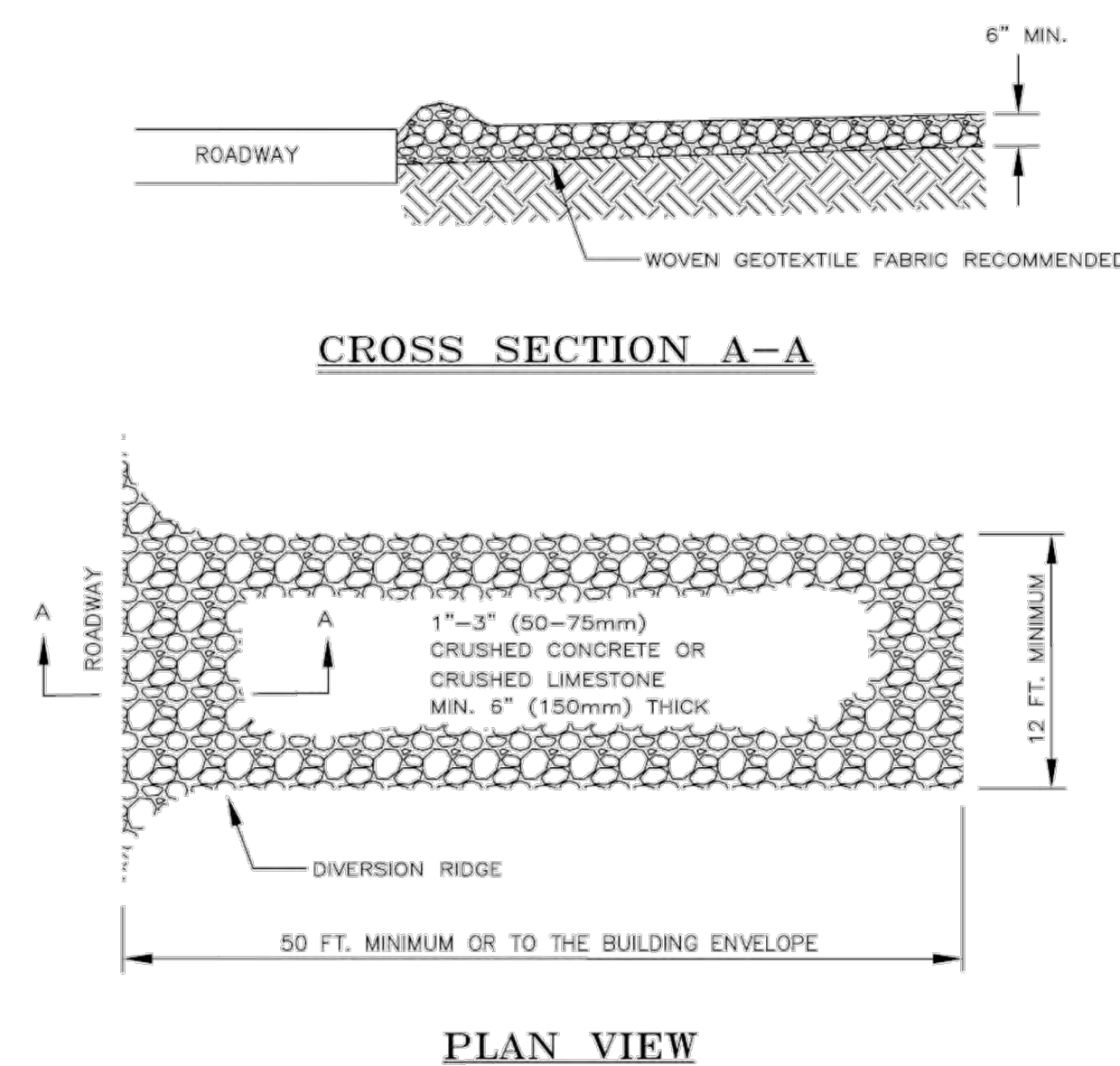
ANGULAR RIP RAP CHECK DAM STANDARD CONTROL



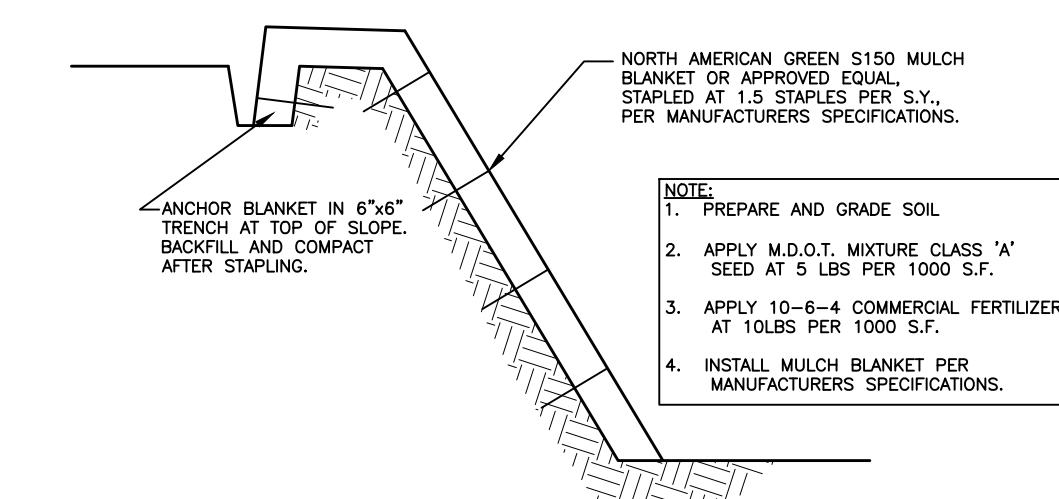
36" SILT FENCE WINTER FROZEN GROUND INSTALLATION STANDARD CONTROL



TRACKING MAT STANDARD CONTROL

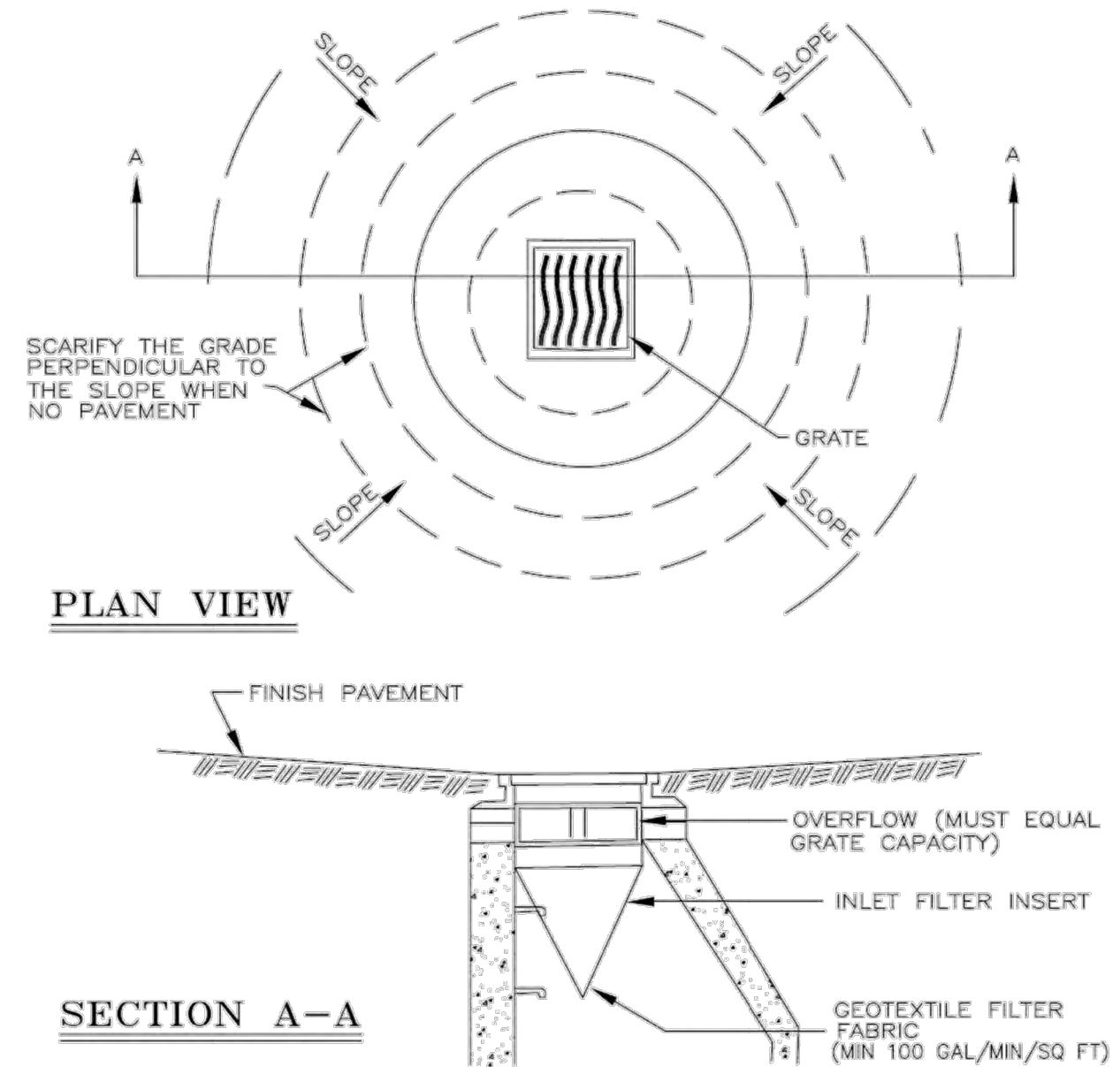


EROSION CONTROL BLANKET DETAIL



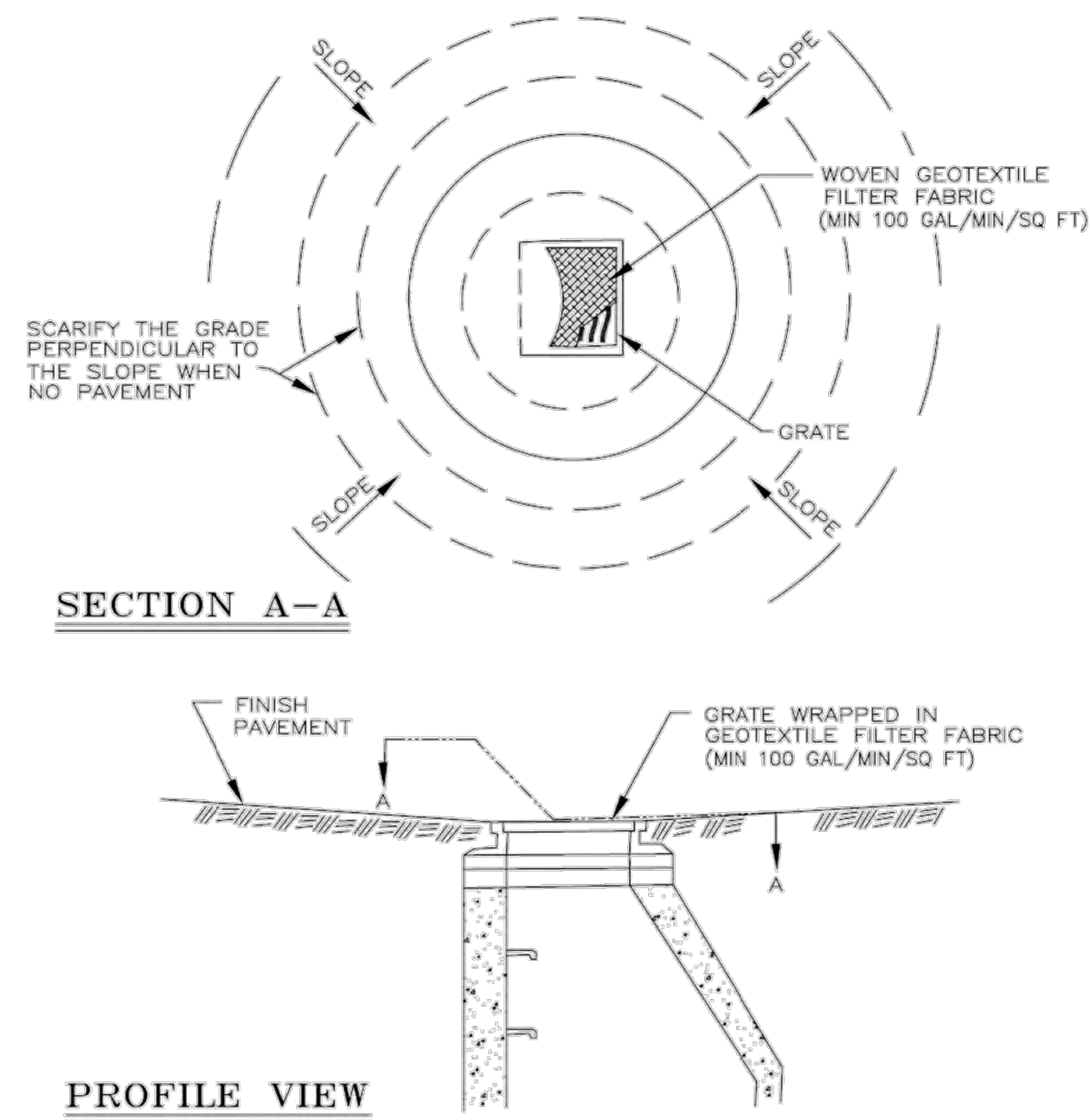
SILT SACK OR APPROVED EQUAL LOW POINT/YARD INLET FILTER
STANDARD CONTROL YEAR ROUND OR WINTER USE

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



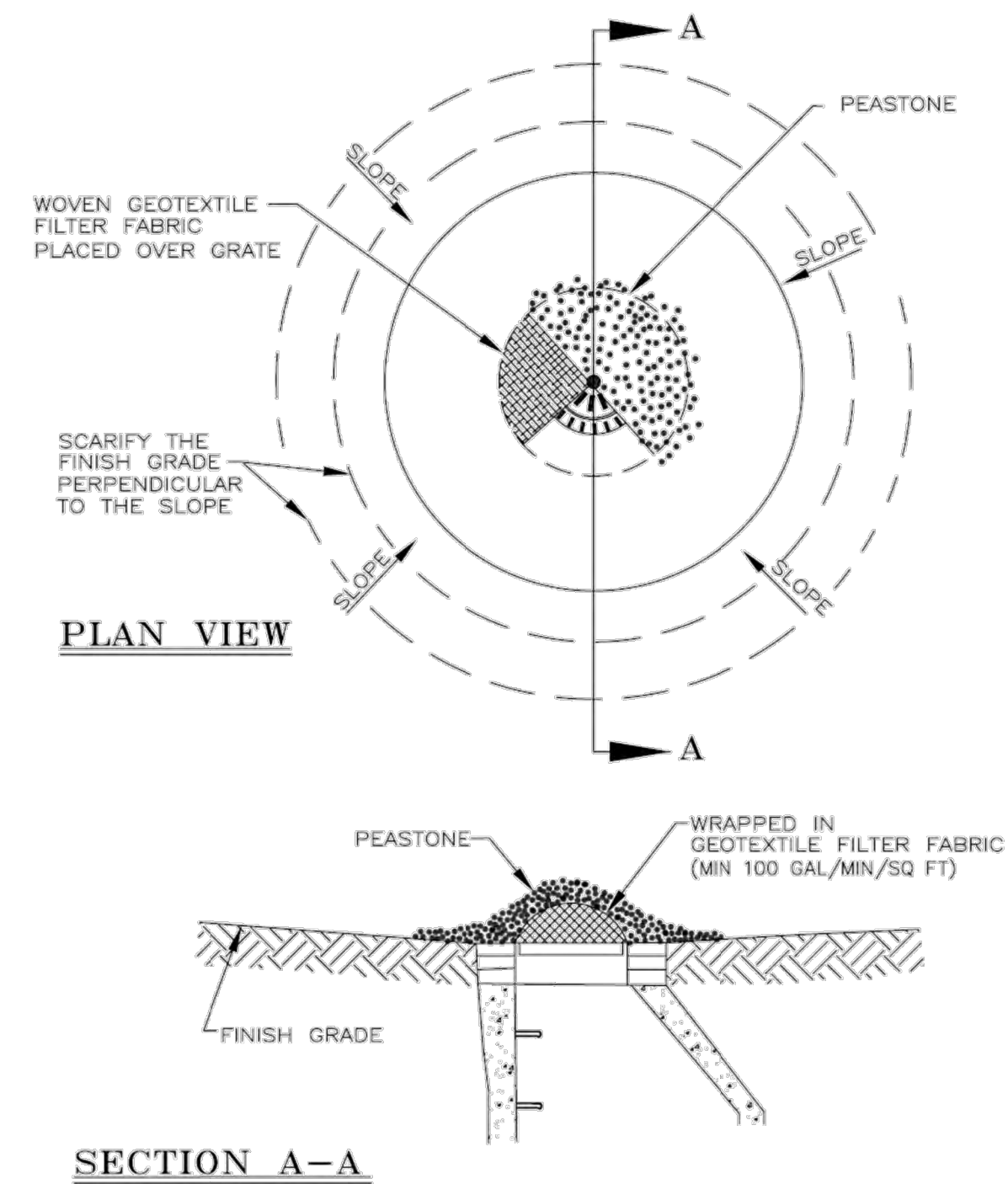
GEOTEXTILE FABRIC LOW POINT/YARD INLET FILTER
STANDARD CONTROL NON-WINTER USE

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



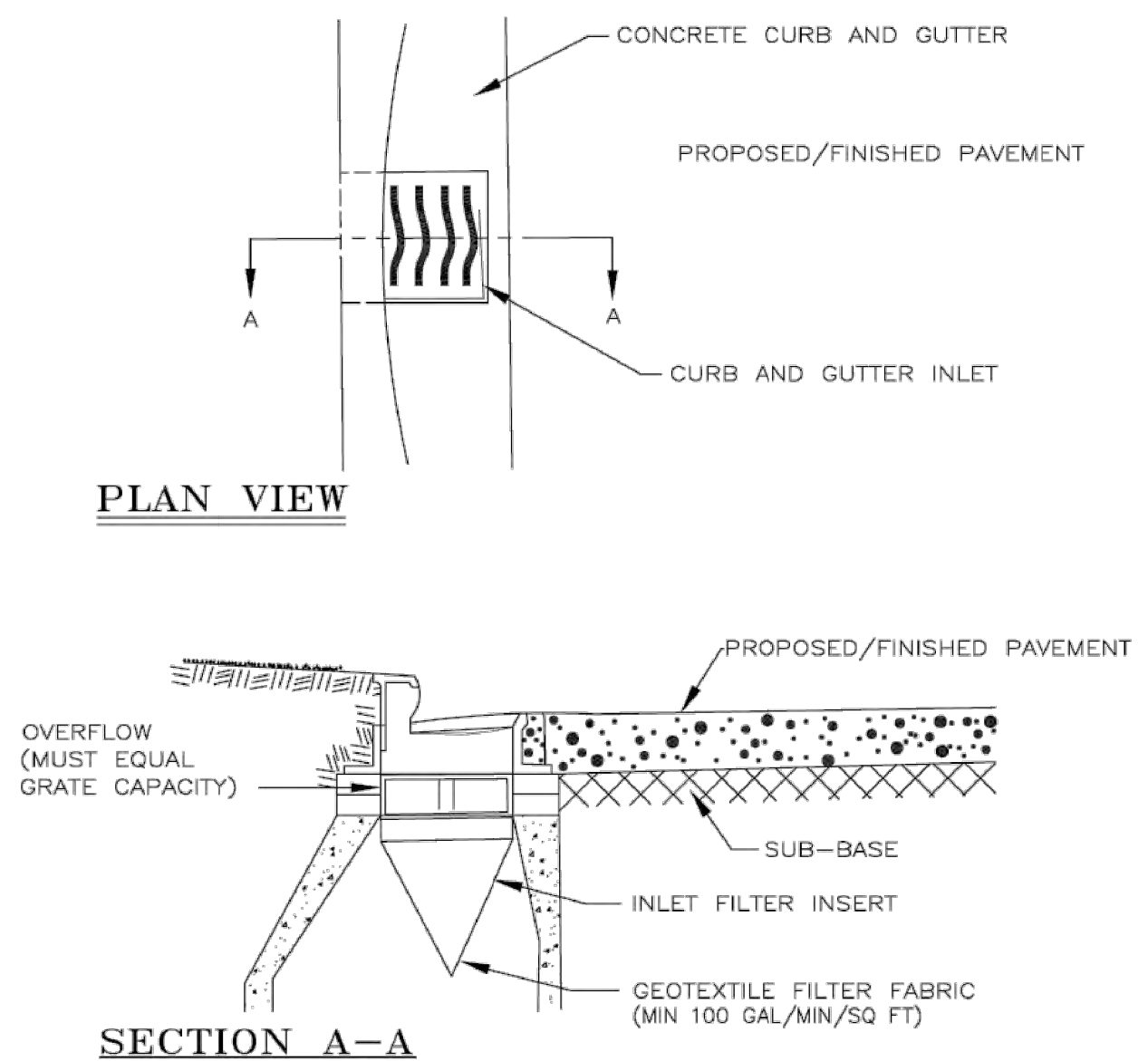
GEOTEXTILE & PEASTONE LOW POINT/YARD INLET FILTER
STANDARD CONTROL NON-WINTER USE

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



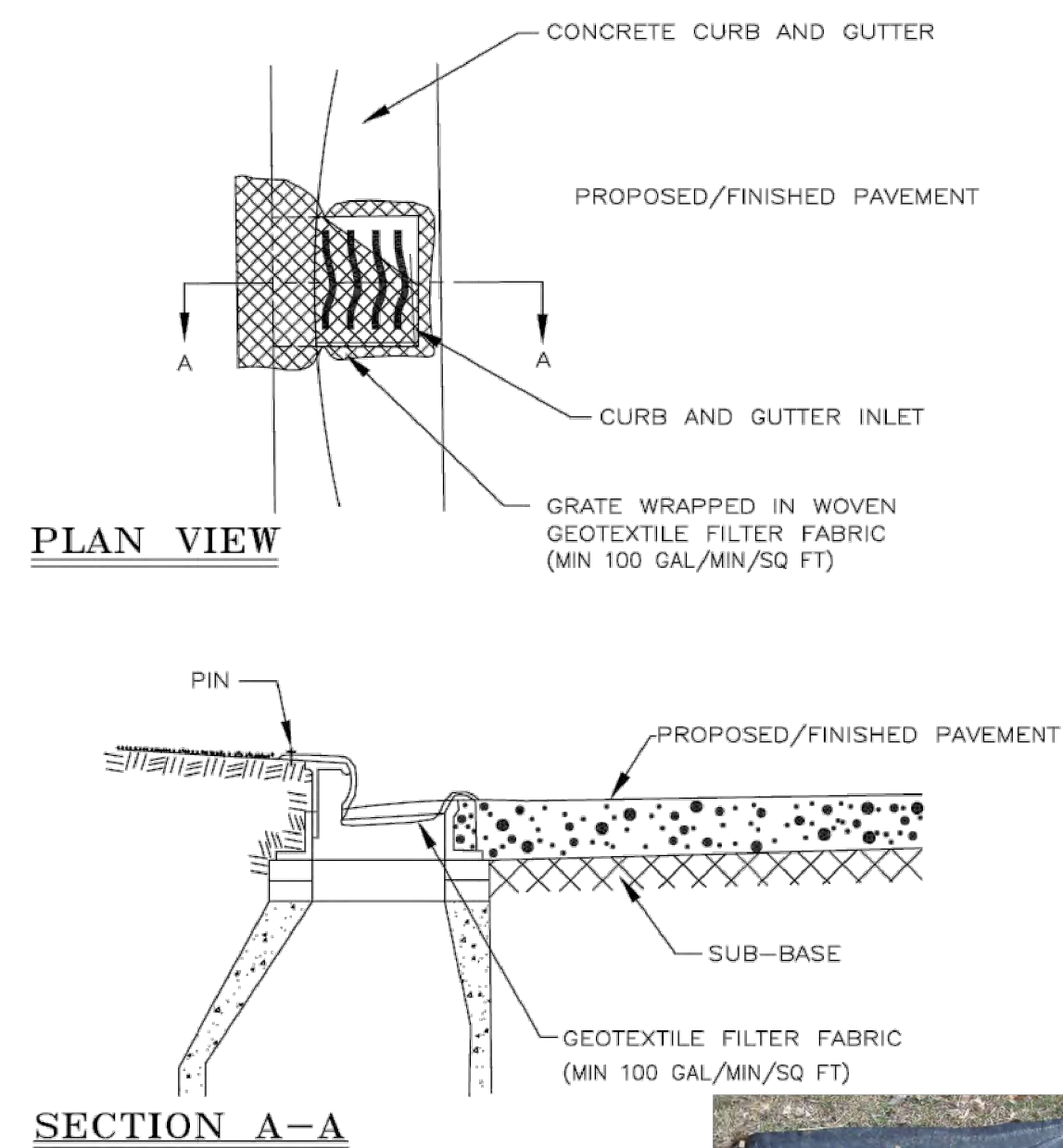
SILT SACK OR APPROVED EQUAL CURB AND GUTTER INLET FILTER
STANDARD CONTROL YEAR ROUND OR WINTER USE

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

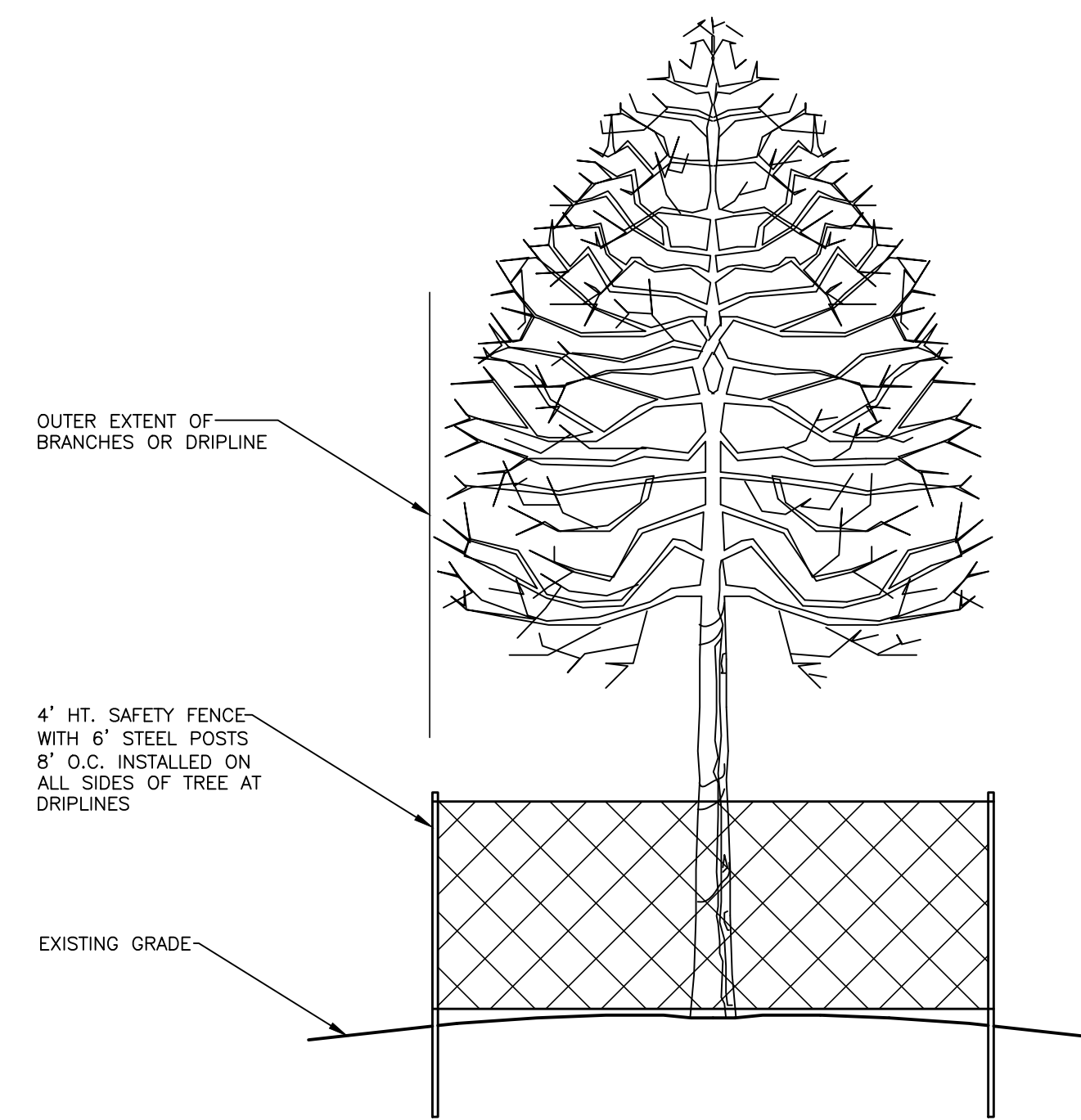


GEOTEXTILE FABRIC CURB AND GUTTER INLET FILTER
STANDARD NON-WINTER USE

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



FENCE DETAIL - TREE PROTECTION



INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

MEGA ENGINEERING GROUP ASSOCIATES, INC.

298 VETERANS DRIVE
FOWLERVILLE, MICHIGAN 48836
(OFFICE) 517-223-3512
MONUMENTENGINEERING.COM

SERVICE DISABLED VETERAN OWNED
SMALL BUSINESS (SDVOSB)

ALLAN W. PRUSS
ENGINEER
NO. 6201043168

Call MISS DIG
3 full working days before you dig.

Michigan's Utility One-Call Notification Organization
1-800-482-7171
www.missdig.org

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 :

CHESTNUT DEVELOPMENT
6253 GRAND RIVER AVE.
SUITE 750
BRIGHTON, MI 48114
POC: STEVE GRONOW
517-552-2489

LCDC SESC DETAILS

PARCEL 4711-06-200-101
PART OF NE 1/4, SEC. 6, T2N-R5E,
GENOA CHARTER TOWNSHIP
LIVINGSTON COUNTY, MICHIGAN

DATE	DESCRIPTION
2/10/2023	PLAN SUBMITTALS/REVISIONS
	SESC SUBMITTAL

ORIGINAL ISSUE DATE:
2/10/2023

PROJECT NO: 22-168

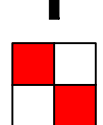
SCALE: N/A

0 1/2" 1"

FIELD: RZ
DRAWN BY: MV/MN
DESIGN BY: BS
CHECK BY: MAJAP

C-7.2

NOT FOR CONSTRUCTION



GENERAL NOTES

- 1. 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 DRAIN, THE COUNTY ROAD COMMISSIONER, MICHIGAN DEPARTMENT OF TRANSPORTATION, MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES AND ENERGY, THE STATE OF MICHIGAN, AND THE COUNTY ROAD COMMISSION WHERE APPLICABLE.
2. RULES, REGULATIONS OR LAWS OF ANY CONTROLLING GOVERNMENTAL AGENCY SHALL GOVERN, WHEN THEY ARE MORE STRINGENT THAN THE REQUIREMENTS OF THESE SPECIFICATIONS.
3. SHOULD THE CONTRACTOR ENCOUNTER A CONFLICT BETWEEN THESE PLANS AND SPECIFICATIONS EITHER BEFORE 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.
... (notes 4-29) ...

EROSION CONTROL STANDARDS CONTINUED

- 6. STAGING THE WORK WILL BE DONE BY THE CONTRACTOR AS DIRECTED IN THESE PLANS AND AS REQUIRED TO ENSURE PROGRESSIVE STABILIZATION OF DISTURBED EARTH.
7. 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.
8. DUST SHALL BE CONTROLLED BY WATERING OR BY OTHER APPROVED MEANS THROUGHOUT ALL CONSTRUCTION OPERATIONS.
... (notes 9-10) ...

STORM SEWER SPECIFICATIONS

- 1. THESE SPECIFICATIONS SHALL BE USED IN CONJUNCTION WITH THE GENERAL SPECIFICATIONS AND DETAIL SHEETS OF THE GOVERNING AGENCIES. IF ANY CONFLICT IS FOUND BETWEEN THE SPECIFICATIONS, THE STRICTER SPECIFICATIONS SHALL BE FOLLOWED.
2. 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.
... (notes 3-10) ...

STORM SEWER SPECIFICATIONS, CONTINUED

- 16. OPEN NO MORE TRENCH IN ADVANCE OF PIPE LAYING THAN IS NECESSARY TO EXPEDITE THE TRENCH.
17. 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.
... (notes 18-38) ...

WATER MAIN SPECIFICATIONS, CONTINUED

- 8. 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.
9. 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 PURGED INTO THE SANITARY SEWER. NO CHLORINATED WATER SHALL BE ALLOWED IN THE STORM SEWER OR DISCHARGED TO SURFACE WATERS.
... (notes 10-38) ...

WATER MAIN SPECIFICATIONS

- 1. 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.
2. DUCTILE IRON PIPE, 16" DIAMETER AND SMALLER, SHALL CONFORM TO ANSI/AWWA SPECIFICATION C151/A21.51, CLASS 54.
... (notes 3-10) ...

SANITARY SEWER SPECIFICATION, CONTINUED

- 4. 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.
5. THE CONTRACTOR SHALL DO ALL REQUIRED EXCAVATION AND TRENCHING WORK APPROVED BY 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.
... (notes 6-38) ...

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS
MEGA ENGINEERING GROUP ASSOCIATES
298 VERNERS DRIVE FOWLERVILLE, MICHIGAN 48836
OFFICE) 517-223-3512
MONUMENTENGINEERING.COM
SERVICE DISABLED VETERAN OWNED
SMALL BUSINESS (SVO/SB)
ALLAN W. PRUSS, LICENSED PROFESSIONAL ENGINEER
6201043168
Call MISS DIG 3 full working days before you dig.
Utility Notification Organization
1-800-482-7171
www.missdig.org
... (specifications) ...
DATE: 2/10/2023
PROJECT NO: 22-168
SCALE: N/A
FIELD: RZ
DRAWN BY: M/W/M
DESIGN BY: BS
CHECK BY: M/AA/P
C-12.0
NOT FOR CONSTRUCTION

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 ACCQUANT 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 COMPACTION 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 COMPACTION EQUIPMENT CAPABLE OF ACHIEVING MAXIMUM DENSITY REQUIRED FOR THE ENTIRE DEPTH OF THE MATERIAL PLACED IN THE LIFT.
- ALL AREAS WHERE FILL HAS BEEN PLACED OR THE EXISTING SOILS HAVE BEEN DISTURBED SHALL BE SUBJECT TO COMPACTION 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 DISPLACEMENT OR SINKING OCCURRING THAT MAY 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 SHAL BE NO MORE THAN 1 INCH ABOVE OR BELOW THE INDICATED SUBGRADE ELEVATIONS.
- THE GRADING CONTRACTOR SHALL BACKFILL ALL PARKING LOT PLANTERS AND LAWN AREAS TO WITHIN 2 INCHES OF THE TOP ADJACENT CURB GRADES. THE TOP 4 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 THE 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 (MDOOT)
 - 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 21AA CRUSHED AGGREGATE. THE USE OF SLAG IS PROHIBITED.
- TACK COAT SHALL BE EMULSIFIED ASPHALT MEETING REQUIREMENTS OF MDOOT 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 MDOOT STANDARD SPECIFICATIONS, SECTION 902, 21AA. CONTRACTOR MAY USE CRUSHED HMA AGGREGATE SCREENED TO MEET THE REQUIREMENTS OF MDOOT 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 MDOOT STANDARD SPECIFICATIONS, SECTION 902 FOR CLASS II OR CLASS III GRANULAR MATERIAL. CONTRACTOR MAY USE CRUSHED HMA AGGREGATE SCREENED TO MEET THE REQUIREMENTS OF MDOOT CLASS II OR CLASS III MATERIAL.
- ASPHALT CEMENT SHALL COMPLY WITH THE REQUIREMENTS OF MDOOT SECTION 904.
- HOT MIXED ASPHALT (HMA) SHALL COMPLY WITH MDOOT SECTION 501 OF STANDARD SPECIFICATIONS FOR CONSTRUCTION.
- BITUMINOUS LEVELING COURSE SHALL BE MDOOT HMA, 13A, UNLESS OTHERWISE REQUIRED BY THE MUNICIPALITY OR ROAD AGENCY WITH JURISDICTION.
- BITUMINOUS WEARING COURSE SHALL BE MDOOT 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 MDOOT 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 MDOOT 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 IF AMBIENT 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 MDOOT 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 CONCRETE, 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 SPEED 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 CONSISTENTLY 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 THE LANE EDGES.
- ON AREAS WHERE IRREGULARITIES OR UNAVOIDABLE OBSTACLES MAKE THE USE OF MECHANICAL SPREADING AND FINISHING EQUIPMENT IMPROPER, 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 MAT HAS ATTAINED SUFFICIENT STABILITY SO THAT THE ROLLING DOES NOT CAUSE UNIFORM DISPLACEMENT, CRACKING AND SHOVING. 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 TO HAVE THE SAME TEXTURE, DENSITY AND SMOOTHNESS AS OTHER SECTIONS OF THE BITUMINOUS CONCRETE COURSE. THE CONTRACTOR SHALL CONTRACT 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.
- 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 (MDOOT)
 - AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)
- THE FINE AGGREGATE SHALL MEET ALL REQUIREMENTS OF SECTION 902 OF MDOOT 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%.
 - SUMP 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 MDOOT SECTION 911.
- AIR ENTRAINING ADMIXTURE SHALL BE SELECTED FROM THE MDOOT 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 IN THE 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 MDOOT 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 (CRS) "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 CLEAR 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 PAVEMENT, PROVIDED THE REQUIRED FINISH, AND CROSS-SECTION, ARE OBTAINED. IF FORMS ARE USED FOR CONCRETE CURBING, PROVIDE ONE COURSE MONOLITHIC STRUCTURE WITHOUT THE USE OF MORTAR TOPPING OR SAND-CEMENT DRIER. 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. 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 THROUGHOUT. IF THE CURB 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 BRACING 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 CURB 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 DAILY POUR AND WHEN ABUTTING PREVIOUSLY POURED CURB.
- THE CURING COMPOUND SHALL BE A WHITE PARAFFIN BASE COMPOUND SELECTED FROM MDOOT'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 THE 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 MOIST CONDITION CONTINUOUSLY FOR THE PERIOD OF CURING. PROTECTION FOR CURING 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 BREAKERS, OR COMBINATION THEREOF AS REQUIRED TO MAINTAIN THE TEMPERATURE OF THE CONCRETE AT OR ABOVE 50-DEGREES F. AND IN A MOIST 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 WINDBREAKERS, SHADING, FOG SPRAYING LIGHT COLORED MOISTURE RETAINING COVERING, OR A COMBINATION OF THESE AS REQUIRED TO MAINTAIN THE TEMPERATURE OF THE CONCRETE BELOW 80-DEGREE F. AND IN A MOIST 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 NOT ACCESSIBLE TO THE ROLLER, THE CONCRETE SHALL BE PLACED IN SECTIONS 18" OR DEEPER. THEY SHALL BE OF THE DEPTH SPECIFIED FOR THE SIDEWALK AND FILLED WITH APPROVED SAND MEETING MDOOT CLASS II, SAND DESIGNATION.
- CONSTRUCT CONCRETE SURFACE COURSE ONLY WHEN GROUND TEMPERATURE IS ABOVE 35 DEGREES F. AND BASE IS DRY.
- SIDEWALKS SHALL SLOPE 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 PER FOOT OF LENGTH FROM 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 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. 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 SHALL BE PER MDOOT SECTION 905.
- TIWIRE SHALL BE BLACK, ANNEALED STEEL WIRE, NOT LESS THAN 16 GAUGE.

CONCRETE CURB, SIDEWALK AND PAVEMENT SPECIFICATIONS, CONTINUED

- ISOLATION PAPERS SHALL BE OF THE PRE-MOILED, 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-855F, WITH OR WITHOUT REFLECTORIZED BEADS AS REQUIRED ON THE PLANS. PAINT SHALL BE A PRODUCT FROM THE CURRENT MDOOT 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 THE 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/SPRAYSERS OF A MACHINE FOR STRIPING THE WIDTH REQUIRED. MULTIPLE PARALLEL PASSES TO 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, CEMENT, 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 SODIUM PHOSPHATE OR WITH A LIGHTLY AGGRAVED 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 HIS 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 BY THE CONTRACTOR, THE MARKING 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 HAS LAYED 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 WITHOUT THE ADDED OF DILUENTS. 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 DEVATION 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 AS 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.
- PAIN 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. THE CONTRACTOR SHALL BE DIRECTLY RESPONSIBLE AND SHALL ERECT OR PLACE SUITABLE WARNING SIGNS, FLAGS, OR BARRICADES. PROTECTIVE SCREENS OR COVERINGS AS REQUIRED. ALL SURFACES SHALL BE PROTECTED FROM DISFIGUREMENT BY SPATTER, SPLASHES, SPILLAGE, DRIPPINGS OF PAINT OR OTHER MATERIAL.

INNOVATIVE GEOSPATIAL & ENGINEERING SOLUTIONS

MEGA Engineering Group LLC

298 VETERANS DRIVE FOWLERVILLE, MICHIGAN 48836 (OFFICE) 517-

**GENOA CHARTER TOWNSHIP
PLANNING COMMISSION
PUBLIC HEARING
FEBRUARY 13, 2023
6:30 P.M.**

MINUTES

CALL TO ORDER: Chairman Grajek called the meeting of the Genoa Charter Township Planning Commission to order at 6:30 p.m. Present were Chris Grajek, Eric Rauch, Tim Chouinard, Diana Lowe, and Marianne McCreary. Absent was: Glynis McBain. Also present was Township Manager Kelly VanMarter, Planning Director Amy Ruthig, Brian Borden of SafeBuilt, and Shelby Byrne of Tetra Tech.

PLEDGE OF ALLEGIANCE: The pledge of allegiance was recited.

APPROVAL OF AGENDA:

Moved by Commissioner Lowe, seconded by Commissioner McCreary, to approve the agenda as presented. **The motion carried unanimously.**

DECLARATION OF CONFLICT OF INTEREST: None

CALL TO THE PUBLIC:

The call to the public was opened at 6:31 pm with no response.

OPEN PUBLIC HEARING # 1...Consideration of special land use application, environmental impact assessment and site plan for the construction of an 11,990 sq. ft. boat showroom and sales office building replacing the existing building for Wonderland Marine West located at 5796 Grand River Avenue. The request is petitioned by Mitts, LLC.

- A. Recommendation of Special Use Application.
- B. Recommendation of Environmental Impact Assessment (dated 11-1-22)
- C. Recommendation of Site Plan (dated 2-9-23)

Mr. Wayne Perry of Desine, Inc. and Mr. Paul Mitter, the applicant, were present. Mr. Perry provided a review of the request. They would like to remove the existing showroom and, in its place, construct a new showroom and parking lot. The site currently sits forward on Grand River Avenue and the drive aisles are very tight to the road. The proposed plan would relocate the building and parking further back from Grand River Avenue.

Mr. Borden reviewed his letter dated February 8, 2023. He stated the plans that he reviewed are the same plans from the December Planning Commission meeting. The Township is in process of having the Town Center Overlay District removed from the zoning map. The plans were reviewed under the General Commercial District zoning for this meeting.

1. Special Land Use (Section 19.03):
 - a. The standards of Section 19.03 are generally met.

- b. In order to make favorable findings related to compatibility and impacts, the conditions of Section 7.02.02(c) which is the requirements for boat sales need to be met to the Planning Commission's satisfaction.
 - c. The applicant must address any comments provided by the Township Engineer or Brighton Area Fire Authority regarding public facilities and services.
2. Use Conditions (Section 7.02.02 (c):
- a. The vast majority of the use conditions are met.
 - b. The boat sales with outdoor storage requires a buffer zone B. Those are not fully met for either side or the rear of the site. The Planning Commission does have discretion in regards to landscaping requirements.
3. Site Plan Review:
- a. The front parking lot setback is deficient by 2 feet. The additional 2 feet needed for compliance can be gained by reducing either the drive aisle width (from 26 to 24 feet) or the parking space depth (from 18 to 16 feet).
 - b. Building materials and design are subject to review and approval by the Planning Commission. The front façade presented indicates there are two overhead doors. Overhead doors are typically located on the side or rear. In addition, the west and south elevations are metal sided, if deemed to be visible from the road or parking lot, then the amount of metal siding exceeds Zoning Ordinance requirements in section 12.01.
 - c. We request the applicant evaluate alternatives to the use of parallel parking spaces.
 - d. The site plan is deficient by 1 barrier-free parking space.
 - e. One of the proposed light fixtures will cast light outwards instead of downwards similar to a flood light style.
 - f. The lighting plan did not include photometric readings. There are two types of fixtures shown on the plan including 1 flood light located at the back of the building. Due to the nature of the variance, we would like to see a detailed lighting plan with lighting levels.
 - g. The landscaping plan is deficient in terms of greenbelt and parking lot tree plantings.
 - h. The Planning Commission has the authority to waive or modify landscaping requirements.
 - i. We request the applicant describe the intended method of refuse removal.
 - j. We suggest the applicant remove the nonconforming pole sign as part of this project.

Mr. Perry stated that the applicant could reduce the parking spaces to 16 feet. Commissioner Rauch stated that the vehicles in the boat market are typically larger. He believes that the parking lot should maneuver well and would prefer to have more room in the parking lot since there is vehicles coming off of Grand River Avenue. Commissioner McCreary agreed since she has been to the site. Commissioners agreed the 18-foot greenbelt is sufficient.

After discussion, Commissioners agreed with the location of the overhead doors on the front façade since they are all glass and the use of metal siding on the west and south elevations since the new building is located further back on the property.

Mr. Perry stated that the parallel parking is required to meet the parking standards and also gives the ability to park a vehicle trailering a boat while not obstructing the main driveway. Mr. Perry stated that the applicant will add one more barrier free parking space to meet ordinance.

Commissioner Rauch requested to see a more detailed landscape plan specially in the front of the parking area. It does not have to be high shrubs. Also, on the west side of the parking area could easily be doubled in that area. He would like to see fifty percent more landscaping material. Commissioner McCreary would also like to see additional landscaping due to the building and concrete, it would soften the look. Mr. Perry agreed that the applicant could plant more low-lying shrubs however, they cannot plant trees in the front area due to the utility lines.

Mr. Perry stated that the only location of the flood style light is located at the rear of the building which is used for safety purposes.

In regards to the ability to plant greenbelt trees there are overhead wires and poles in the greenbelt area. Mr. Mitter stated that the overhead lines are low hanging.

Chairman Grajek sees that the only place for landscaping is located in the front yard area. Commissioner Rauch asked about the location of the waste receptacle. Mr. Mitter stated that the waste receptacle was located in the rear of the property in an enclosure.

Commissioner Lowe questioned if they have discussed obtaining a new sign. Mr. Mitter stated that they have not even looked at the pole sign and is not sure what the ordinance requirements are. Commissioner Rauch agrees with Mr. Borden in regards to the removing the pole sign. He stated that he does not want to require a new monument sign and then the applicant can not meet the setback requirements. Mr. Perry stated that they could place a sign closer to the road right of way.

Ms. VanMarter agreed with Mr. Borden on replacing the nonconforming sign and the Commission could ask for the applicant to attempt to obtain a variance due to the setback requirements.

A call to the public was made at 7:10 p.m.: Jordan Mitter is an employee of the company. In asking for more greenery which there are a lot of semi-trucks coming in and out and a consumer with a boat trailer could damage the semi or their product could be damage with the addition of more greenery or shrubs.

The call to the public was closed at 7:11 p.m.

Ms. Byrne stated that all of her items have been addressed per the letter dated December 7, 2022.

The Brighton Area Fire Authority Fire Marshal had no outstanding issues noted in his letter dated December 5, 2022.

Commissioner McCreary asked if the applicant has thought of installing signs to help indicate direction for customers pulling in the parking lot or if they have considered an “exit” and “enter” only driveway. Mr. Perry stated that there are two entrances and the east entrance is both an enter and exit for anyone towing a boat or semi-trucks delivering boats which leads to the south end of the site. The other entrance is plenty wide enough for anyone towing a boat to the maneuver the lot. Commissioner McCreary asked if any signage could be added to show direction for anyone entering the property. She asked if a sign could be located on the fence. Commissioner Rauch would like to see a single sign on the east side would state “Delivery and service” would be helpful.

Commissioner Rauch stated that the turning radius on the east side turning out seems tighter than the west side entry. Mr. Mitter stated that it is currently wide enough right now. Mr. Perry stated that expanding the radius, due to the flare of the radius, could cross over the property line and the Livingston County Road Commission would not approve that. Mr. Perry stated he would approach the Livingston County Road Commission to seek approval.

Ms. VanMarter asked if there is a detail on what the new fence would look like. The Commission would like to see a more decorative fence than the original fence that is located on the property. Mr. Perry stated that they could do an architectural fence across the front. Ms. VanMarter would like to clarify that a single trailer will be on display in the front. Applicant agreed.

Moved by Commissioner Rauch, seconded by Commissioner McCreary, to recommend to the Township Board approval of the Special Use Application for Wonderland Marine West located at 5796 Grand River Avenue as this Commission finds that the conditions in Sections 19.03 are generally met and that there are favorable findings relating to the compatible impacts of 7.02.02 (C) and 19.07 and specially find it consistent to waive the buffer zone requirement of that section.

The motion carried unanimously.

Moved by Commissioner Rauch, seconded by Commissioner Lowe, to recommend to the Township Board approve of the Environmental Impact Assessment dated November 1, 2022, for 5796 Grand River Avenue. **The motion carried unanimously.**

Moved by Commissioner Rauch, seconded by Commissioner Lowe, to recommend to the Township Board approval of the Site Plan dated February 9, 2023 for 5796 Grand River Avenue, conditioned upon the following:

- The front greenbelt of 18 feet is satisfactory.
- An additional barrier free space will be added to make a total of 2 on the site.
- All site lighting and building mounting lighting will meet the requirements of the township ordinance and a photometric drawing will be submitted to the Township staff for review.
- Petitioner will review with the LCRC the east entry to seek to improve the drive radius.
- A single sign on the east entry indicating “Deliveries” be added.
- The security fencing will be an architectural fence to be approved by township staff.

- A landscape plan will be improved by adding an additional 50 percent of low-lying plant material.
- The petitioner will seek variance approval for a ground monument sign. The pole sign will only be allowed to remain if a variance is not approved.

The motion carried unanimously

OPEN PUBLIC HEARING # 2... Consideration of a sketch plan application and sketch plan to install an all-abilities playground "Senior Survivor Park" within the existing Genoa Charter Township park property. The park is located at 2911 Dorr Road, on the east side of Dorr Road, just north of Crooked Lake Road. The request is petitioned by Genoa Charter Township.

A. Disposition of Sketch Plan (10-31-22)

Ms. VanMarter stated that the request is to expand the existing park that is located at the Genoa Charter Township Hall property. The Township has partnered with Howell Public Schools for a project to construct an all-abilities playground. Participant seniors at Howell High School has raised funds over the last two years and the Township Board has offered to contribute funds, location and long-term maintenance for the park facility.

Ms. VanMarter stated that there were concerns about parking stated in engineer's letter. She provided a parking analysis that shows that there is suitable parking and as Township Manager she is keeping an eye on the parking and she does think that there could a real possibility that the Township could require additional parking. She has ideas on how and where to add additional parking.

Ms. VanMarter gave an overview on the all abilities components of the park. It is meant to have design features that are usable in some way shape or form by everyone.

Mr. Borden reviewed his letter dated February 9, 2023.

1. The accessory recreational structures are affiliated with a principal use, per Ordinance requirements.
2. The height of all structures proposed are within that allowed for conventional accessory structures.
3. Each structure is located well outside of required setbacks.
4. The Commission should consider any comments provided by the Township's Engineer.

Ms. Bryne reviewed her letter dated February 6, 2023.

1. The petitioner addressed the parking comment.
1. The proposed playground plan shows multiple small boulder retaining walls. Prior to construction the petitioner should provide more detail on the proposed grading and retaining walls around the picnic area for review.

The Brighton Area Fire Authority Fire Marshal requested that if a fence is required by the Livingston County Building Department that it should be installed on the proposed retaining walls.

A call to the public was made at 7:32 p.m. with no response.

Moved by Commission Rauch, seconded by Commissioner McCreary to approve the sketch plan dated October 31, 2022 for the all-abilities park located at 2911 Dorr Road. **The motion carried unanimously.**

OPEN PUBLIC HEARING #3...Close public hearing for the proposed Genoa Charter Township Master Plan, Master Plan Implementation Discussion, and consideration of adoption of Master Plan by resolution.

A call to the public was made with no response and was closed at 7:34 p.m.

Ms. Jill Bahm and Rose Kim were present for Giffels Webster. Ms. Balm gave an overview on the Master Plan process. The public hearing continued to remain open during the last three Planning Commission meetings while staff and consultants could refine the map area and locations. Ms. Kim reviewed the revisions to the draft per the memo that was provided in the packet. The revisions included realignment issues on the maps, shifts in boundaries for categories, individual parcels that were incorrectly classified, the Chaldean Diocese Camp property was revised as discussed at the January 9, 2023 Planning Commission meeting, and draft language revisions to section 3.4.

Commissioner Dhaenens joined the meeting at 7:57 p.m.

Commissioner McCreary stated that a grammatical correction should be made to map 1.7 in regards to the tree canopy as it should not be labeled Sylvan Lake. She asked if the maps included in the Master Plan could be made easier to read. The maps appear distorted. Ms. Balm stated that the final Master Plan will have higher resolution maps. They did not want to make the Master Plan too large of a document.

There was discussion in regards to solar farms as they are implemented in the Mater plan. It was decided to have the following language "where appropriate" included in regards to solar farms.

After discussion with the Planning Commission members it was determined to leave the Master Plan action strategies open to implement throughout the year in conjunction with the Board of Trustees.

Moved by Commissioner Rauch, supported by Commissioner Lowe to adopt by Resolution PC 23-01, the Genoa Charter Township Master plan dated January 30, 2023 with minor updates as follows:

1. A grammatical correction to map 1.7 in regards to Sylvan Lake.
2. Include road names on the map included on page 3.29.
3. Update the names on the Acknowledgement page of the Master Plan.
4. Include language "where appropriate" in regards to the solar farms
5. Update business name for the golf range to Tap In's.

The motion carried as follows: Commissioner Chouinard, Commissioner Rauch, Commissioner McCreary, Commissioner Lowe, Commissioner Dhaenens, Commissioner Grajek.

ADMINISTRATIVE BUSINESS:

Staff Report

There was discussion in regards to Lowe's request to amend the location of their previously approved outdoor storage. Lowe's is concerned with the safety of the employees and customers having to cross the drive aisle due to an increase in traffic that could be created by the new Panda Restaurant under construction. After some discussion that Commissioner's agreed that an amended site plan indicating the proposed revisions be submitted for staff's review and approval.

Ms. Ruthig stated that she has not received a submittal for the March 13, 2023 Planning Commission meeting.

Approval of January 9, 2023 Planning Commission meeting minutes

Moved by Commissioner McCreary, supported by Commissioner Dhaenens, to approve the January 9, 2023 Planning Commission meeting as corrected. **The motion carried unanimously.**

Member Discussion

Commissioner McCreary asked if staff had any update in regards to the secured ballot boxes and how it will affect the Township. Ms. VanMarter stated the Township Clerk has been in discussions with the Livingston County Clerk's office in regards to the changes in the law.

Adjournment

Moved by Commissioner McCreary, seconded by Commissioner Lowe, to adjourn the meeting at 8:44 p.m. **The motion carried unanimously.**

Respectfully Submitted,

Amy Ruthig