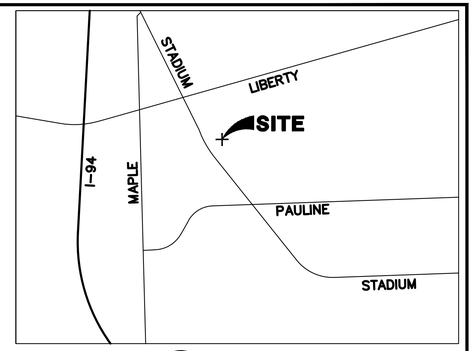
2060 W. STADIUM REDEVELOPMENT PROJECT

SECTION 31, T2S, R6E

CITY OF ANN ARBOR, WASHTENAW COUNTY, MICHIGAN

SITE PLAN FOR CITY COUNCIL APPROVAL



VICINITY MAP
SCALE : NTS

OWNER

NORTHSTAR ANN ARBOR PROPERTIES, LLC
175 THOMPSON ROAD, SUITE B
BAD AXE, MI 48413
PH: 989-269-3767
ATTN: DAVID SASS

DEVELOPER/PETITIONER

NORTHSTADIUM, LLC
30100 TELEGRAPH ROAD, SUITE 220
BINGHAM FARMS, MI 48025
PH: (248) 647-2600
ATTN: MIKE KENNEDY, SEAN HAVERA

ENGINEER/SURVEYOR/LANDSCAPE ARCH.

MIDWESTERN CONSULTING, LLC
3815 PLAZA DR.
ANN ARBOR, MI 48108
PH: 734-995-0200
CONTACT: THOMAS COVERT

ARCHITECTS

HOBBS & BLACK ARCHITECTS
100 N. STATE STREET
ANN ARBOR, MI 48104
PH: (734) 663-4189
ATTN: DAVID NIMS

MOHAGEN HANSEN
1000 TWELVE OAKS CENTER DRIVE, SUITE 200
WAYZATA, MN 55391
ATTN: RON POWELL

PROJECT NARRATIVE

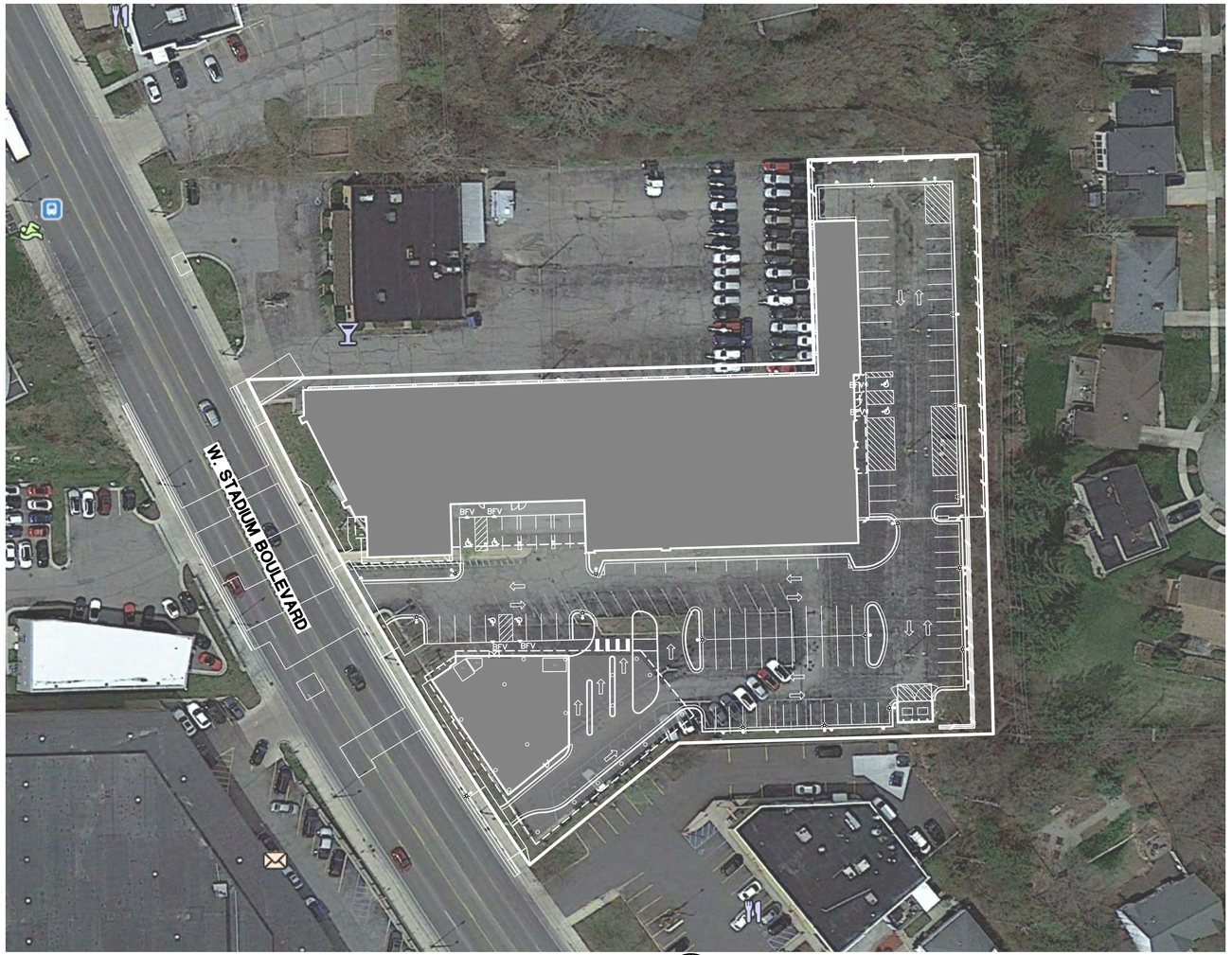
TWO EXISTING PARCELS ARE LOCATED ON THE EASTERN SIDE OF WEST STADIUM BOULEVARD, DIRECTLY SOUTH OF ZAL GAZ GROTTO CLUB AND NORTH OF DIMO'S DELI AND DONUTS. THE EXISTING SITE CONSISTS OF A LARGE VACANT BUILDING AND SURROUNDING PARKING AREA. EXISTING STORMWATER RUNOFF DRAINS INTO ON-SITE INLETS AND DISCHARGES DIRECTLY TO THE CITY STORM SEWER.

THE TWO EXISTING PARCELS ARE PROPOSED TO BE COMBINED INTO A SINGLE PARCEL. THE COMBINED PARCEL WILL BE DEVELOPED TO INCLUDE A 4-STORY SELF-STORAGE BUILDING, A 3-STORY MIXED-USE BUILDING WITH A GROUND FLOOR BANK AND 2nd AND 3rd FLOOR NON-MEDICAL OFFICES, AND ASSOCIATED OFF-STREET PARKING FOR EACH. BOTH PARCELS ARE ZONED C2B, BUSINESS SERVICE DISTRICT, WHICH SUPPORTS THE PROPOSED USES. A PORTION OF THE NORTHERN PARCEL IS CURRENTLY ZONED P, PARKING AND WILL BE RE-ZONED TO C2B. A SPECIAL EXCEPTION USE IS BEING REQUESTED FOR THE BANK DRIVE-THRU.

STORMWATER RUNOFF FROM THE PROPOSED DEVELOPMENT WILL BE ROUTED INTO AN UNDERGROUND STORAGE CHAMBER, WHICH WILL THEN OUTLET TO THE CITY STORM SEWER AT A RATE NOT EXCEEDING 0.15 CFS/ACRE.

NOTES:

1. THE OMISSION OF ANY CURRENT STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTOR FROM THIS REQUIREMENT. THE WORK SHALL BE PERFORMED IN COMPLETE CONFORMANCE WITH THE CURRENT CITY OF ANN ARBOR PUBLIC SERVICES DEPARTMENT STANDARD SPECIFICATIONS AND DETAILS.
2. SIDEWALKS CONSTRUCTED IN THE PUBLIC RIGHT-OF-WAY SHALL MEET ALL REQUIREMENTS AND GUIDELINES AS SET FORTH IN THE ADA STANDARDS FOR ACCESSIBLE DESIGN. SIDEWALK AND CURB RAMP GRADES WILL BE REVIEWED DURING CONSTRUCTION PLAN SUBMITTALS.
3. ALL SIDEWALKS SHALL BE KEPT AND MAINTAINED IN GOOD REPAIR BY THE OWNER OF THE LAND ADJACENT TO AND ABUTTING THE SAME. PRIOR TO THE ISSUANCE OF THE FINAL CERTIFICATE OF OCCUPANCY FOR THIS SITE, ALL EXISTING SIDEWALKS IN NEED OF REPAIR MUST BE REPAIRED IN ACCORDANCE WITH CITY STANDARDS.
4. PAVEMENT MARKINGS DISTURBED DUE TO PAVEMENT CUTS OR CONSTRUCTION RELATED ACTIVITIES SHALL BE REPLACED. REPLACEMENT DURING CONSTRUCTION MAY BE CONSIDERED TEMPORARY, WITH FINAL PAVEMENT MARKING RESTORATION TO OCCUR AT THE END OF THE PROJECT.
5. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PROTECT THE EXISTING PUBLIC ROAD PAVEMENT. DAMAGE TO THE PUBLIC ROAD PAVEMENT DURING CONSTRUCTION MAY NECESSITATE MILLING AND RESURFACING OF THE DAMAGED AREAS.
6. SIGN RE-USE OR RELOCATION INCLUDES THE INSTALLATION OF EXISTING SIGN ON A NEW POST.



SITE MAP
SCALE : 1"=40'

Sheet Index

The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

2060 W. STADIUM REDEVELOPMENT PROJECT

JOB No. 20034

DATE: 07/23/20
SHEET 01 OF 19

REVISIONS:	REV. DATE
PER REVIEW COMMENTS	09/11/20
PER CITY REVIEW	10/07/20
PER CITY REVIEW	10/15/20

CADD:
ENG: TPH
PM: TJC
TECH:
/20034CV1

01

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RELEASED FOR:	DATE

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P.E. #

REQUIRED STATEMENTS

Required Statements

i. General Project Information:
Northstar Ann Arbor Properties, LLC owns the properties at 2040 and 2060 W Stadium Boulevard, Ann Arbor, Michigan. In conjunction with North Stadium, LLC as the petitioner, the owner is seeking a zoning amendment, site plan approval from City Council, and special exception use approval after review by the Planning Department and recommendation by the Planning Commission. Additionally, the applicant is requesting a parking variance from the Zoning Board of Appeals. The project includes development of two buildings on the parcels including a four-story climate controlled self-storage facility and a three-story building with a bank (with drive through) on the first floor and non-medical office on the second and third floors. Site improvements include parking, stormwater management, utilities, and landscaping. The site has been previously developed with a building that is currently vacant and associated parking. The parcels are currently zoned C2B and Parking District. With this development the applicant requests a zoning map amendment to make the Parking District zoning to C2B zoning district. The drive through associated with the proposed bank is a special exception use and a variance is requested to reduce the number of parking spaces required for the development. No regulated natural features exist on the site.

Northstar Ann Arbor Properties, LLC and North Stadium, LLC do not own or have an interest in any land contiguous to the site.

ii. Development Program:
- The proposed development includes two buildings for a total of 144,002 of floor area with a floor area ratio of 142.8%. One building is a four story climate controlled self-storage facility with 908 storage units of varying sizes and a building floor area of 120,687 square feet. The other building includes a bank on the first floor with associated drive-through aisles and non-medical office building on the second and third floors for a total of 23,315 square feet of floor area. Both proposed buildings are below the 55 foot maximum building height for the C2B zoning district.
- The combined uses for the development require a total of 137 vehicular parking spaces. A total of 102 spaces are provided on the site (with 30% compact spaces). A Zoning Board of Appeals variance will be requested for the reduced number of parking spaces proposed. The proposed bank includes two drive-through aisles, which require a special exception use approval. Additionally, the combined uses for the site require 2 Class A, 4 Class B, and 6 Class C bicycle parking spaces. The required number of bicycle spaces are being provided.
- The site will be accessed from two different locations along W. Stadium Boulevard. A one way entry is proposed near the southern property boundary to facilitate access to the bank drive-through aisles and the parking lot. The main entry in the central portion of the site will provide ingress and egress access to the site for the self-storage facility and the parking lot. Additionally, it is anticipated this access would be utilized for emergency vehicle access and solid waste pick-up. One solid waste enclosure will be located in the southeastern portion of the property and will include trash and recycling dumpsters.
- Site improvements will include new parking lots and driveways with associated lighting, underground utilities, landscaping, underground stormwater management systems, and solid waste management facilities.
- Construction will occur in two phases; one for each building with site work starting in spring/summer 2021 and concluding in winter 2021/spring 2022. Existing utilities will be demolished during construction. Probable construction cost for the proposed site work, utilities, landscaping, and building construction (excluding property) is estimated to be $15,000,000.

iii. Community analysis:
a. Impact on public schools:
The development does not include any residential development and no impact to public schools is anticipated. The development will provide additional tax revenue for schools.
b. Relationship to neighboring uses:
The site is located in the Liberty/Stadium Commercial district in the Stadium Boulevard Commercial Corridor as identified in the City of Ann Arbor Land Use Element of the City Master Plan. The Liberty/Stadium General Commercial District is identified as serving local neighborhood residents as well as a wider, regional population. The proposed development will be a mixture of financial institution, non-medical office, and self-storage consistent with the uses in the Liberty/Stadium General Commercial District as well as permitted uses in the current zoning district for the property (C2B). The financial institution is intended to serve the surrounding residential neighborhood while the non-medical office use is an opportunity for both local residences and a more regional population based on the location along W. Stadium with convenient access to the I-94/M-14 interchange. Climate controlled self-storage typically has 80% local residential customers and is anticipated to serve the adjacent residential area.
A zoning map amendment to change the Parking zoning district on the eastern portion of the property to the C2B zoning district is consistent with the Land Use element of the City Master Plan by proposing an infill project on a previously developed parcel within the existing Stadium Boulevard Commercial corridor. There appears to be small portions of parcels scattered along West Stadium Boulevard that are commercially zoned along the road and with parking district zoning along the eastern portion of the lots. The conflicting land use buffer that is required along the east, far north, and southeast corner of the property provide a buffer and screening of the proposed development from the residential parcels to the east.
c. Impact of adjacent uses on proposed development:
The adjacent uses along W. Stadium Boulevard are office and commercial uses that will have no negative impact on the proposed development. It is anticipated that residents within the surrounding residential areas will utilize the self-storage facility and financial institution proposed with the development.
d. Impact on air and water quality and existing natural features:
- There will be no anticipated negative impact to air quality.
- The property currently does not have stormwater detention facilities. The proposed stormwater management system improvements are designed to pre-treat, detain, and release the runoff into the public storm sewer at a controlled rate. Water quality controls will be implemented to ensure that runoff during construction is controlled and managed.

e. There are no known endangered species habitats, floodplains, woodland, landmark trees, watercourses, or steep slopes on the site.
f. Impact on historic sites/structures:
No historic structures exist on site. The site itself is not historic.
g. Natural features general descriptions and impacts
- Woodland – no woodland exists on the site
- Wetland – no wetland exists on the site
- Watercourses – no watercourses exist on site
- Landmark trees – no landmark trees exist on the site. The critical root zone of one off-site landmark tree will be avoided by grading with the proposed development.
- Steep slopes – no natural steep slopes exist on the site; man-made existing steep slopes are present along the eastern property line
- Endangered species habitat – no known endangered species habitat exists on the site

iv. Traffic Statement:
The site is located in a commercial area along W. Stadium Boulevard, with a residential neighborhood to the east of the site. The speed limit on W. Stadium Boulevard is 35 MPH, and it is five-lanes wide with bike lanes and sidewalks on either side of the roadway. The site will have one full access driveway at its existing location south of the abandoned car dealership building and one inbound only driveway near the southern edge of the site that will lead to the drive through lanes of the bank and the site's parking lot. Neither of the site driveways meet the MDOT criteria for a dedicated right-turn deceleration lane and both driveways will have access to the center-left-turn lane on W. Stadium Boulevard. Per the traffic impact study, the development will not significantly impact any of the study intersections which are W. Stadium Boulevard at Liberty, Federal/Arbordale and Pauline Boulevard.

v. Public sidewalk maintenance statement.
Provided. See Notes on the Cover sheet.

vi. Comparison Chart of requirements and existing and proposed conditions:
Provided. See the Site Data Comparison chart for additional information.

vii. Special Exception Use Considerations:
1. The proposed use(s) shall be of such location, size and character as to be compatible with the appropriate and orderly development of the zoning district and adjacent zoning districts in which the Site is situated.
The bank with a proposed drive-through is considered a special exception use in the C2B zoning district. The bank with drive through will:
- *Be consistent with the general objectives of the Master Plan*
The site is located in the Liberty/Stadium Commercial District of the Stadium Boulevard Commercial Corridor which identifies the area as commercial developments that serve both the local neighborhoods and a more regional population. The proposed financial institution will provide services to both populations. Economically viable financial institutions currently include drive-through facilities for their customers.
- *Be designed, constructed, operated, and maintained in a manner that is consistent with the existing and planned character of the general vicinity.*
Businesses along the W. Stadium Boulevard have individual parking lots and businesses that serve the local neighborhood and a more regional population due to proximity to the freeway interchange. The proposed three story building including the financial institution has similar character of adjacent businesses. Additionally, the proposed drive-through with access behind the building and below the second and third stories is consistent with several other businesses along the W. Stadium Blvd. Additionally, the unique circumstances of the Covid-19 pandemic has led to the trend for customers of financial institutions to prefer drive-through service as opposed to face to face interaction inside the building.
- *Be consistent with the general character of the neighborhood considering population density, design, scale and bulk; and the intensity and character of activity*
The proposed financial institution and drive-through are consistent with existing financial institutions and fast food restaurants along W. Stadium Blvd commercial corridor with drive-through facilities.
- *Not be detrimental to the use, peaceful enjoyment, economic value or Development of neighboring property, or the neighborhood area in general.*
The proposed financial institution and drive-through are consistent with adjacent commercial businesses along W. Stadium Blvd commercial corridor. The drive-through facility is located on the western portion of the property along the commercial corridor and adjacent to commercial businesses. This location allows for parking to be located between the proposed building and the adjacent residential to the east.
- *Not have a detrimental effect on the natural environment.*
There are no regulated natural features near the proposed location for the financial institution and drive-through. The existing street trees that will be removed will be replaced with the proposed development and the street tree canopy loss fee will be provided.

2. The location and size of the proposed use(s), the nature and intensity of the Principal Use and all Accessory Uses, the Site layout and its relation to the streets giving access to it, shall be such that traffic to and from the uses(s), the assembly of Persons in connection with the use(s), and the effect of the proposed use(s) on public services and facilities, will not be Hazardous or inconvenient to the neighborhood nor unduly conflict with the normal traffic of the neighborhood.
- *The location of and access to off-street parking and the save provision for pedestrian traffic.*
The proposed development includes a one-way access point to the drive-through lanes. The proposed development includes a widened pedestrian sidewalk along W. Stadium Blvd to promote pedestrian accessibility along the commercial corridor. Additionally, the sidewalk along the northern side of the proposed financial institution will extend to the drive-through lanes and a cross walk will be painted along the lanes to promote pedestrian safety from the parking lot to the proposed building.
- *The relationship of the proposed use to main traffic thoroughfares and to streets and road intersections.*
Per the traffic impact study for the proposed development, the development will not significantly impact any of the study intersections which are W. Stadium Boulevard at Liberty, Federal/Arbordale and Pauline Boulevard.
- *Vehicular turning movements in relationship to traffic flow routes*
Per the traffic impact study for the proposed development, neither of the site driveways meet the MDOT criteria for a dedicated right-turn deceleration lane and both driveways will have access to the center-left-turn lane on W. Stadium Boulevard.
- *The intensity and character of traffic and parking conditions on the Site, and in the general area.*
The proposed uses will redevelop an existing but abandoned car dealership which has existing impervious surface on the majority of the site. The proposed development is anticipated to primarily serve local neighborhood residents and is located along an existing commercial corridor with individual parking lots for businesses. Per the traffic impact study, the proposed development will not significantly impact any of the study intersections in close proximity to the site.
- *The requirements for additional public services and facilities that will be created by the proposed use will not be detrimental to the social and economic welfare of the community.*
The proposed development will be a redevelopment of an existing and abandoned site with a large amount of impervious surface. The facilities will connect to existing water and sanitary services along W. Stadium Blvd. The proposed stormwater management facilities will improve treatment and control of stormwater runoff from the site prior to entering the City storm system.

3. The standards of density and required open space for the proposed use shall be at least equal to those required by this chapter in the zoning district in which the proposed use is to be located, unless a variance is granted pursuant to Section 5.29.12.
The standards of density and required open space for the proposed development are consistent with the area, height, and placement requirements for the C2B zoning district.

SITE DATA COMPARISON CHART

	Existing - C2B Business District / P Parking		Allowed / Required - C2B Business District		Allowed / Required - P Parking District	Proposed - C2B Business District (with rezoning of portion of property)	
Zoning							
Permitted Land Use	Vacant		Commercial, Office, Warehousing & Storage		Parking Lots and Structures	Bank/General Office, Indoor Storage/General Office	
Site Area			4,000	sf min.	NA	Parcels 1 & 2 to be combined	
Total	100,857	sf				100,857	sf
	2.32	Acres				2.32	Acres
Lot Width	324.56	ft	40	ft min.	NA	324.56	ft
Building							
Number of Buildings	1	Vacant Building	NA		NA	1	Storage Building
						1	Bank/Office Building
Ground Floor Area	16,542	sf	NA		NA	30,681	Storage Building
						4,455	Bank/Office Building
						35,136	sf total
Floor Area Ratio	16.4	%	200	% max.	NA	**Storage Building**	
						30,681	sf Ground Floor
						29,098	sf 2nd Floor
						30,454	sf 3rd Floor
						30,454	sf 4th Floor
						120,687	sf Total
						Bank/Office Building	
						4,455	sf Ground Floor (Bank)
						9,430	sf 2nd Floor (Offices)
						9,430	sf 3rd Floor (Offices)
						23,315	sf Total
						144,002	**sf Total Floor Area (both buildings)**
						142.8	**% FAR**
Building Height	1 story		55 ft; 4 stories		Equal to lowest maximum height (ft.) of abutting residential district. Abutting residential district is R1C, maximum height is 30 ft.	**Storage Building**	
						52 ft max. to parapet; 4 stories	
						Bank/Office Building	
						55'-0" ft max.; 3 stories	
Setbacks							
Front	21.3	ft	10	ft minimum	10 ft minimum	14.3	ft min. (Storage)
			25	ft maximum	No maximum	10.0	ft min. (Bank/Office)
Rear	112.8	ft	30 ft plus one foot for each foot of building height over 30 feet where abutting residentially zoned land		2.5 ft minimum	30' + (1' x (53.5-30)) = 53.5' required (Storage) 72.6 ft min. @ storage bldg. 30' + (1' x (55-30)) = 55' required (Bank)	
Side	22.7	ft	30 ft plus one foot for each foot of building height over 30 feet where abutting residentially zoned land, otherwise none		2.5 ft minimum except where abutting residentially zoned land. 15 ft minimum where abutting residentially zoned land.	See site plan for various required / provided side setbacks. All required side setbacks met or exceeded.	
Vehicular Parking							
Storage Building - Indoor Storage	NA		1 space per 2,000 sf of Floor Area 120,687 sf / 2000 sf = 60 spaces min.		NA	37 spaces provided - Variance Requested for 23 spaces	
Bank	NA		1 space per 220 sf of Floor Area min. 4,455 sf / 220 sf = 20 spaces min.		NA	65 spaces provided - Variance Requested for 12 spaces	
Bank - Offices	NA		1 space per 333 sf of Floor Area min. 18,860 sf / 333 sf = 57 spaces min.		NA		
Total	NA		60 + 20 + 57 = 137 spaces required		NA	102 total spaces provided Parking Variance Requested (35 spaces)	
Barrier Free & Compact Spaces	NA		Total Lot Spaces 101-150: 4 standard, 1 van accessible required; Maximum 30% Compact Spaces		NA	6 Van Accessible Barrier Free spaces provided; 102 total spaces x 30% = 31 spaces max. 31 compact spaces provided	
Bicycle Parking							
Storage Building - Indoor Storage	NA		1 space per 30,000 sf of Floor Area 120,687 sf / 30,000 sf = 4 spaces min. 100% Class B req.; 4 Class B spaces req.		NA	4 Class B spaces provided	
Bank	NA		1 space per 2,000 sf of Floor Area min. 4,455 sf / 2,000 sf = 2 spaces min. 100% Class C req.; 2 Class C spaces req.		NA	2 Class C spaces provided	
Bank - Offices	NA		1 space per 3,000 sf of Floor Area min. 18,860 sf / 3,000 sf = 6 spaces min. 30% Class A, 70% Class C req. 2 Class A, 4 Class C spaces req.		NA	2 Class A spaces provided 4 Class C spaces provided	
Total	NA		2 Class A spaces required 4 Class B spaces required 6 Class C spaces required		NA	2 Class A spaces required 4 Class B spaces required 6 Class C spaces required	
Impervious Surface							
	88,145 SF / 87.4%					82,032 SF / 81.3%	

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CLIENT
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SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT
SITE PLAN
COMPLIANCE INFORMATION

02

DATE: 07/23/20
SHEET 02 OF 19
CADD:
ENG: TPH
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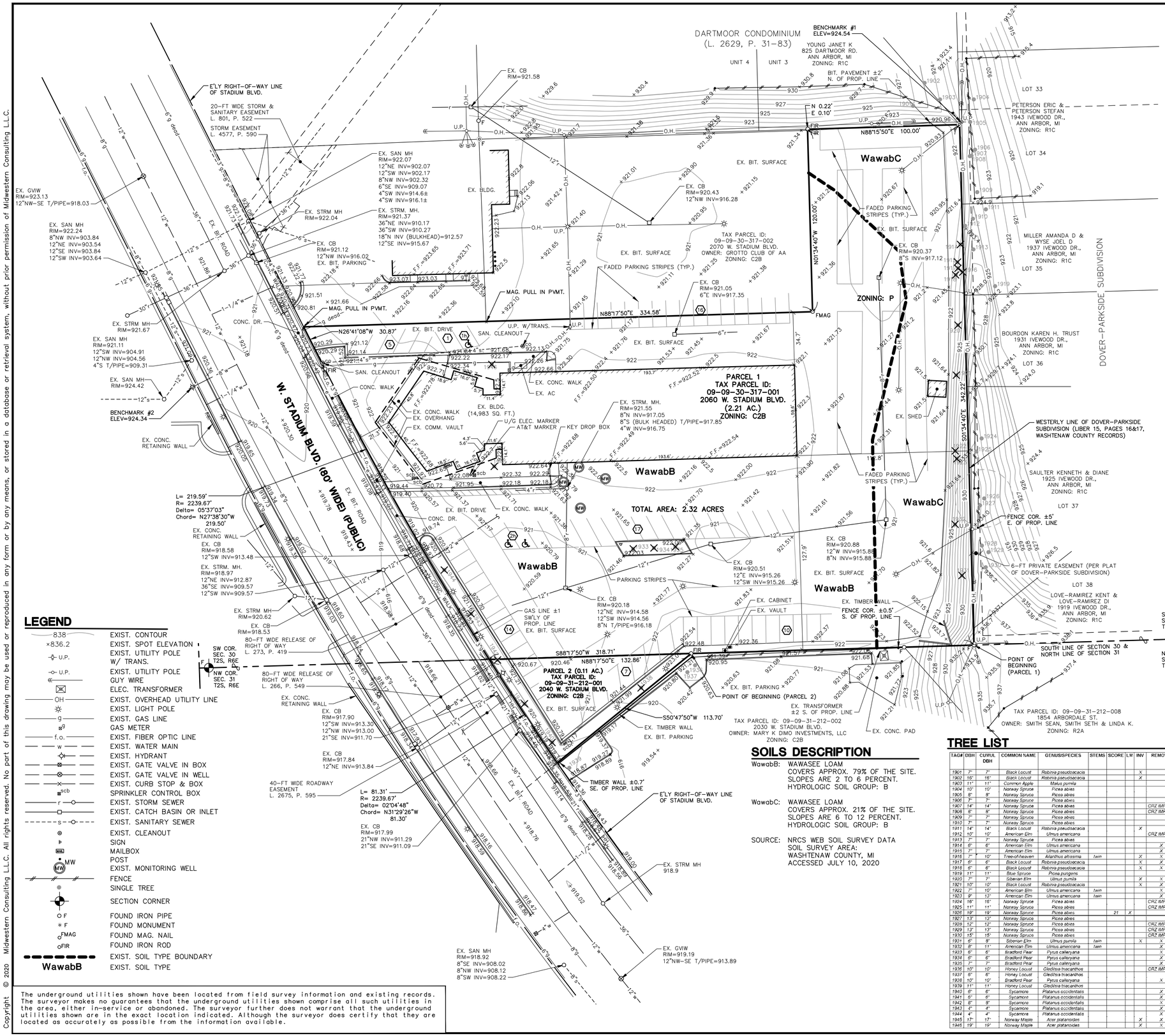
/20034CV1

JOB No. **20034**

REVISIONS:
1ST REVIEW COMMENTS
NO CHANGES THIS SHEET

REV.	DATE
01	10/07/20



LEGEND

838	EXIST. CONTOUR
×836.2	EXIST. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE W/ TRANS.
U.P.	EXIST. UTILITY POLE
	GUY WIRE
	ELEC. TRANSFORMER
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
g	EXIST. GAS LINE
g	GAS METER
f.o.	EXIST. FIBER OPTIC LINE
w	EXIST. WATER MAIN
	EXIST. HYDRANT
	EXIST. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
scb	SPRINKLER CONTROL BOX
r	EXIST. STORM SEWER
	EXIST. CATCH BASIN OR INLET
s	EXIST. SANITARY SEWER
	EXIST. CLEANOUT
	SIGN
MBL	MAILBOX
MW	POST
MW	EXIST. MONITORING WELL
	FENCE
	SINGLE TREE
	SECTION CORNER
O F	FOUND IRON PIPE
⊙ F	FOUND MONUMENT
FMAG	FOUND MAG. NAIL
FIR	FOUND IRON ROD
	EXIST. SOIL TYPE BOUNDARY
WawabB	EXIST. SOIL TYPE

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SOILS DESCRIPTION

WawabB: WAWASEE LOAM
COVERS APPROX. 79% OF THE SITE.
SLOPES ARE 2 TO 6 PERCENT.
HYDROLOGIC SOIL GROUP: B

WawabC: WAWASEE LOAM
COVERS APPROX. 21% OF THE SITE.
SLOPES ARE 6 TO 12 PERCENT.
HYDROLOGIC SOIL GROUP: B

SOURCE: NRCS WEB SOIL SURVEY DATA
SOIL SURVEY AREA:
WASHTENAW COUNTY, MI
ACCESSED JULY 10, 2020

TREE LIST

TAG#	DBH	CUMUL DBH	COMMON NAME	GENUS/SPECIES	STEMS	SCORE	LM	INV	REMOVE
1901	7"	7"	Black Locust	Robinia pseudoacacia				X	
1902	15"	15"	Black Locust	Robinia pseudoacacia				X	
1903	11"	11"	Common Apple	Malus pumila					
1904	10"	10"	Norway Spruce	Picea abies					
1905	8"	8"	Norway Spruce	Picea abies					
1906	7"	7"	Norway Spruce	Picea abies					
1907	14"	14"	Norway Spruce	Picea abies					CRZ IMPACT
1908	8"	8"	Norway Spruce	Picea abies					CRZ IMPACT
1909	7"	7"	Norway Spruce	Picea abies					
1910	7"	7"	Norway Spruce	Picea abies					
1911	14"	14"	Black Locust	Robinia pseudoacacia				X	
1912	10"	10"	American Elm	Ulmus americana					CRZ IMPACT
1913	7"	7"	Norway Spruce	Picea abies					
1914	6"	6"	American Elm	Ulmus americana					X
1915	7"	7"	American Elm	Ulmus americana					X
1916	7", 4"	10"	Tree-of-Heaven	Ailanthus altissima	twin			X	X
1917	6"	6"	Black Locust	Robinia pseudoacacia				X	X
1918	6"	6"	Black Locust	Robinia pseudoacacia				X	X
1919	11"	11"	Blue Spruce	Picea pungens					
1920	7"	7"	Siberian Elm	Ulmus pumila				X	X
1921	10"	10"	Black Locust	Robinia pseudoacacia				X	X
1922	7"	10"	American Elm	Ulmus americana	twin				X
1923	9"	13"	American Elm	Ulmus americana	twin				X
1924	16"	16"	Norway Spruce	Picea abies					CRZ IMPACT
1925	11"	11"	Norway Spruce	Picea abies					CRZ IMPACT
1926	19"	19"	Norway Spruce	Picea abies		21	X		
1927	13"	13"	Norway Spruce	Picea abies					
1928	12"	12"	Norway Spruce	Picea abies					CRZ IMPACT
1929	13"	13"	Norway Spruce	Picea abies					CRZ IMPACT
1930	15"	15"	Norway Spruce	Picea abies					CRZ IMPACT
1931	6"	8"	Siberian Elm	Ulmus pumila	twin			X	X
1932	8"	11"	American Elm	Ulmus americana	twin				X
1933	6"	6"	Bradford Pear	Pyrus calleryana					X
1934	6"	6"	Bradford Pear	Pyrus calleryana					X
1935	7"	7"	Bradford Pear	Pyrus calleryana					X
1936	10"	10"	Honey Locust	Gleditsia triacanthos					CRZ IMPACT
1937	6"	6"	Honey Locust	Gleditsia triacanthos					
1938	10"	10"	Bradford Pear	Pyrus calleryana					X
1939	11"	11"	Honey Locust	Gleditsia triacanthos					
1940	6"	6"	Sycamore	Platanus occidentalis					X
1941	6"	6"	Sycamore	Platanus occidentalis					X
1942	8"	8"	Sycamore	Platanus occidentalis					X
1943	4"	4"	Sycamore	Platanus occidentalis					X
1944	4"	4"	Sycamore	Platanus occidentalis					X
1945	17"	17"	Norway Maple	Acer platanoides				X	X
1945	19"	19"	Norway Maple	Acer platanoides				X	X

Know what's below. Call before you dig.

SCALE: 1" = 30'
0 30 60 90

NOTES

1. THE BASE SURVEY WAS PREPARED BY MIDWESTERN CONSULTING IN JUNE 2020. ALL UNDERGROUND UTILITIES AND STRUCTURES HAVE BEEN SHOWN TO A REASONABLE DEGREE OF ACCURACY AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.
2. THIS SURVEY WAS PREPARED USING ABSOLUTE TITLE, INC., FILE NO.: 87316, REV. 1, DATED FEBRUARY 26, 2020.
3. THE LEGAL DESCRIPTION DESCRIBES THE SAME PROPERTY AS INSURED IN THE TITLE COMMITMENT AND ANY EXCEPTIONS HAVE BEEN NOTED HEREIN.
4. BEARINGS ARE BASED ON ABSOLUTE TITLE, INC., FILE NO.: 87316, REV. 1, DATED FEBRUARY 26, 2020.
5. SAID DESCRIBED PROPERTY IS NOT LOCATED WITHIN A 100-YEAR FLOOD PLAIN ZONE PER FLOOD INSURANCE RATE MAP NO. 26161C0244E WITH AN EFFECTIVE DATE OF APRIL 3, 2012, FOR COMMUNITY NUMBER 260213, IN WASHTENAW COUNTY, STATE OF MICHIGAN, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PROPERTY IS SITUATED.
6. THERE IS NO EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.
7. THERE IS NO OBSERVED EVIDENCE OF THIS BEING USED AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL.
8. THERE IS NO OBSERVED EVIDENCE INDICATING ANY CEMETERIES ARE LOCATED ON THE PARCEL HEREIN DESCRIBED.
9. PARKING STRIPES ARE INCONSISTENTLY IDENTIFIABLE ON SAID PROPERTY. DUE TO THE MULTIPLE ITERATIONS OF PARKING STRIPES IN SOME AREAS, AND THE WEATHERING/FADING OF OTHERS, PARKING STRIPES AND COUNTS ARE APPROXIMATED IN SOME CASES.
10. THERE IS NO EVIDENCE OF PLOTTABLE OFFSITE EASEMENTS OR SERVITUDES, AS SHOWN ON THIS SURVEY.
11. EXISTING BUILDING ON SITE DO NOT HAVE BASEMENT. BUILDINGS WITHOUT BASEMENTS ARE ASSUMED TO NOT HAVE FOOTING DRAINS.

BENCHMARKS

BENCHMARK #1: SPIKE IN SW SIDE OF UTILITY POLE STANDING AT THE NE CORNER OF PROPERTY, NE OF BIT. PARKING LOT.
ELEVATION=924.54 (NAVD88)

BENCHMARK #2: TOP NUT OF HYDRANT ON THE WEST SIDE OF STADIUM BLVD. DIRECTLY WEST OF EXISTING BUILDING OF 2060 W. STADIUM BLVD.
ELEVATION=924.34 (NAVD88)

LEGAL DESCRIPTION

(from Absolute Title, Inc., File No.: 87316, Rev. 1, dated February 26, 2020)

Parcel 1
Part of the Southwest 1/4 of Section 30, Town 2 South, Range 6 East, City of Ann Arbor, Washtenaw County, Michigan, described as: Commencing at the South 1/4 corner of said Section 30; thence along the South line of said Section 30 North 89°51'00" West 901.23 feet to the Point of Beginning; thence North 89°51'00" West 318.71 feet to a point on the Easterly Right-of-Way line of Stadium Boulevard (80 feet wide); thence along said Easterly Right-of-Way line the following 2 courses: 1) 219.59 (recorded as 219.53) feet along an arc of a curve to the right, radius 2239.67 feet, central angle 05°37'03", chord bears North 27°38'30" West 219.50 feet and 2) North 24°49'58" West 30.87 feet (recorded as South 24°50'00" East 29.56 feet); thence South 89°51'00" East 334.58 (recorded as 333.89) feet; thence North 00°16'30" East 120.00 feet; thence South 89°53'00" East (recorded as North 89°51'00" West) 100.00 feet to a point on the Westerly line of Dover-Parkside Subdivision, as recorded in Liber 15, Pages 16 and 17, Washtenaw County Records; thence South 00°16'30" West 342.22 feet to the Point of Beginning.

Parcel 2
Part of the Northwest 1/4 of Section 31, Town 2 South, Range 6 East, City of Ann Arbor, Washtenaw County, Michigan, described as: Commencing at the North 1/4 corner of said Section 31; thence along the North line of said Section 31 North 89°51'00" West 1087.08 (recorded as 1087.39) feet to the Point of Beginning; thence South 52°39'00" West 113.70 feet to a point on the Easterly Right-of-Way line of Stadium Boulevard (80 feet wide); thence along said Easterly Right-of-Way line 81.31 feet along an arc of a curve to the right, radius 2239.67 feet, central angle 02°04'48", chord bears North 31°29'26" West 81.30 feet; thence South 89°51'00" East 132.86 feet to the Point of Beginning.

EXCEPTIONS

9. Release of right of way in favor of the Board of County Road Commissioners for Washtenaw County, as recorded in Liber 266, Page 549, Washtenaw County Records. (PLOTTED)

10. Release of Right of Way for highway purposes, as recorded in Liber 273, Page 419, Washtenaw County Records. (PLOTTED)

11. Building and use restrictions contained in instruments recorded in Liber 1820, Page 171, Washtenaw County Records, but omitting any such covenant or restriction based on race, color, religion, sex, handicap, familial status or national origin. (NOT PLOTTED)

12. Easement in favor of the City of Ann Arbor for roadway purposes, as recorded in Liber 2675, Page 595, Washtenaw County Records. (PLOTTED)

13. Asphalt paving, driveway, fences, and parking stalls encroachments, and storm sewer, gas lines, overhead utility lines, and electric manhole, as shown on Midwestern Consulting ALTA/NSPS Survey dated February 17, 2020, Job No. 20034. (PLOTTED)

SURVEYORS CERTIFICATE

To: Northstar Bank, a Michigan corporation, Absolute Title, Inc., and Stewart Title Guaranty Company:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2016 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 2, 3, 4, 5, 6b, 7a, 7b1, 8, 9, 11, 13, and 19 of Table A thereof. The fieldwork was completed on February 13, 2020.

MIDWESTERN CONSULTING, LLC

By: *Mark Vander Veen*
Mark Vander Veen, P.S. No.56788

Date: June 5, 2020

STATE OF MICHIGAN
MARK VANDER VEEN
PROFESSIONAL SURVEYOR
No. 56788
LICENSED PROFESSIONAL SURVEYOR

MIDWESTERN CONSULTING
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NORTHSTADIUM, LLC
30100 TELEGRAPH ROAD, SUITE 220
BINGHAM FARMS, MI 48025
SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

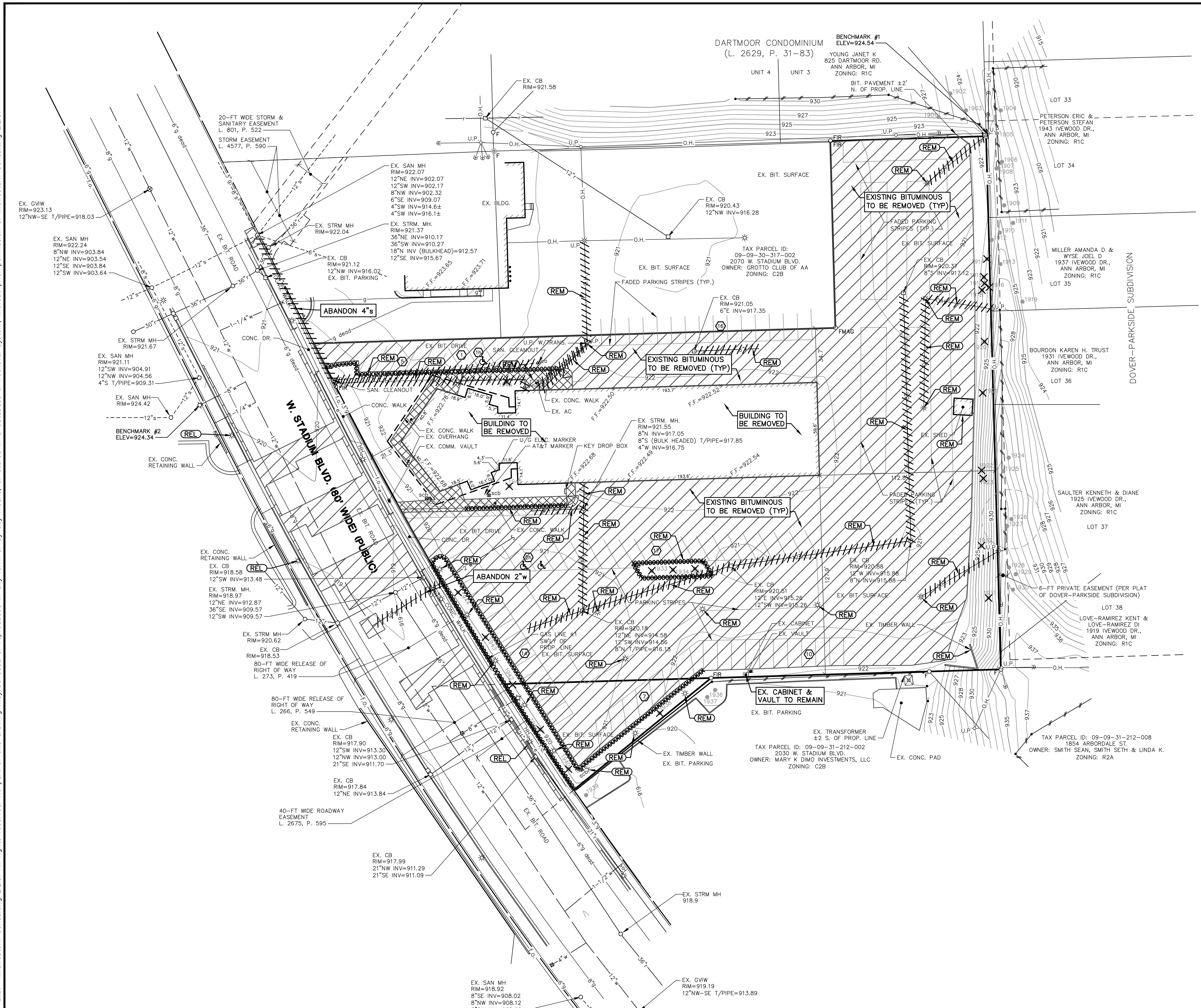
SITE PLAN
ALTA SURVEY AND EXISTING CONDITIONS

03

DATE: 07/23/20
SHEET 03 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034EX1

JOB No. 20034

REVISIONS:	REV. DATE
PER REVIEW COMMENTS	10/07/20
NO CHANGES THIS SHEET	



SCALE: 1" = 30'

0 30 60 90

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

NOTES

1. ALL ON-SITE FEATURES AND UTILITIES ARE TO BE REMOVED UNLESS OTHERWISE NOTED.
2. ALL EXISTING FRANCHISE UTILITIES ARE TO BE REMOVED BY OR PER THE PARTY HAVING JURISDICTION.
3. UTILITY SERVICE LEADS SERVING THE EXISTING STRUCTURE TO BE DEMOLISHED MUST BE PERMANENTLY KILLED AT THEIR RESPECTIVE UTILITY MAIN.

LEGEND

- CONCRETE TO BE REMOVED
- BITUMINOUS TO BE REMOVED
- UTILITY TO BE REMOVED OR ABANDONED
- CURB TO BE REMOVED
- TREE TO BE REMOVED
- REL — ITEM TO BE RELOCATED
- REM — ITEM TO BE REMOVED

The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

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SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
DEMOLITION AND REMOVALS PLAN

04

JOB No. 20034

REVISIONS:	REV. DATE
PER REVIEW COMMENTS	09/11/20
NO CHANGES THIS SHEET	10/07/20

DATE: 07/23/20
SHEET 04 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034EX1

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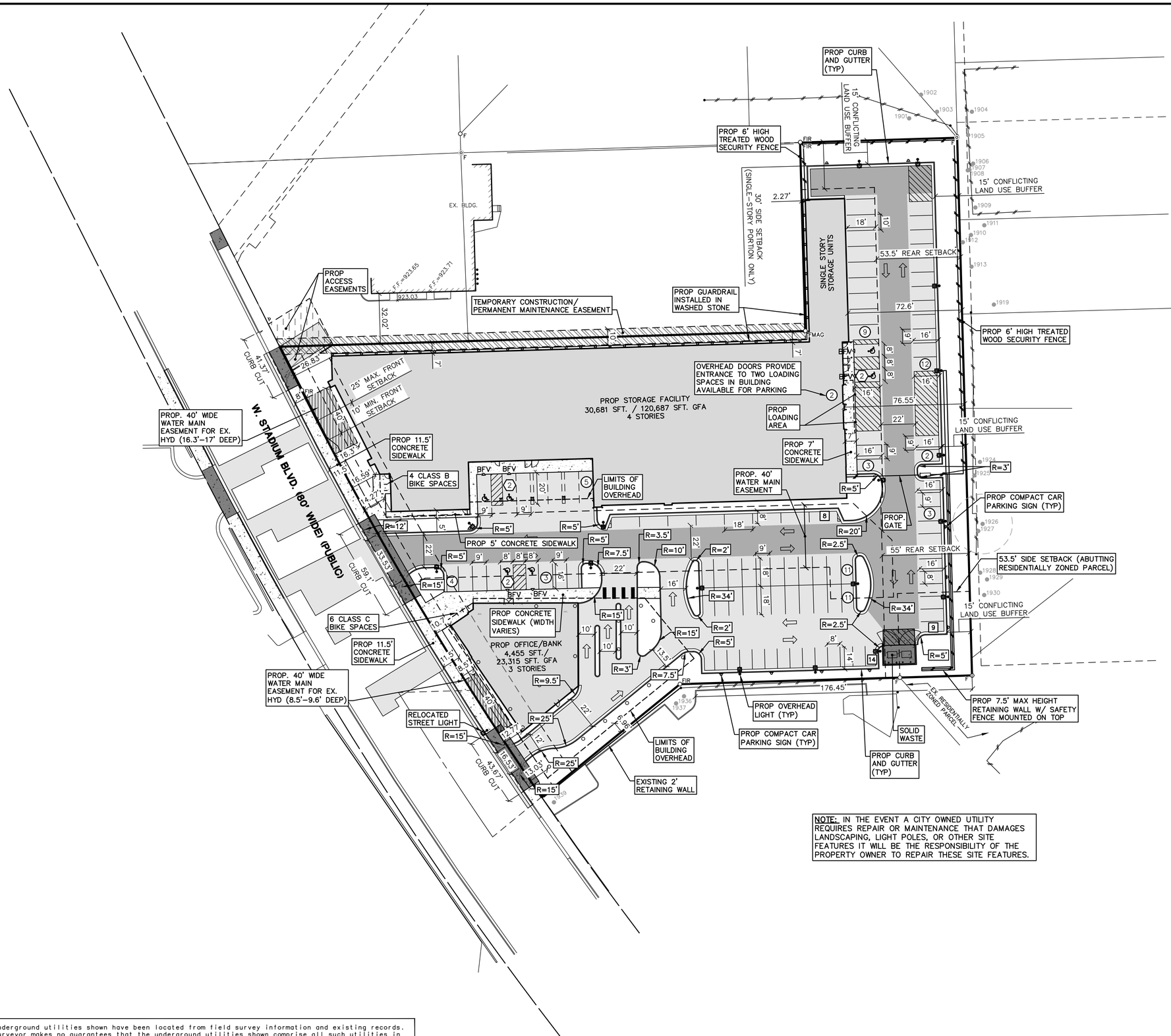

SCALE: 1" = 30'

0 30 60 90

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

NOTES

1. ALL RADII SHOWN ARE TO BACK OF CURB UNLESS OTHERWISE NOTED.

LEGEND

- (0) NUMBER OF STANDARD PARKING SPACES IN ROW
- [0] NUMBER OF COMPACT CAR PARKING SPACES IN ROW
- ⟨0⟩ NUMBER OF BARRIER FREE PARKING SPACES IN ROW
- BF BARRIER FREE PARKING SIGN
- BFV VAN ACCESSIBLE BARRIER FREE PARKING SIGN
- R BARRIER FREE SIDEWALK RAMP
- PROP. CURB & GUTTER
- PROP. BITUMINOUS PAVEMENT
- PROP. HEAVY DUTY BITUMINOUS PAVEMENT
- PROP. CONCRETE PAVEMENT
- PROP. HEAVY DUTY CONCRETE
- SIGN
- PROP. SINGLE LIGHT
- PROP. DOUBLE LIGHT

NOTE: IN THE EVENT A CITY OWNED UTILITY REQUIRES REPAIR OR MAINTENANCE THAT DAMAGES LANDSCAPING, LIGHT POLES, OR OTHER SITE FEATURES IT WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER TO REPAIR THESE SITE FEATURES.

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2060 W. STADIUM REDEVELOPMENT PROJECT

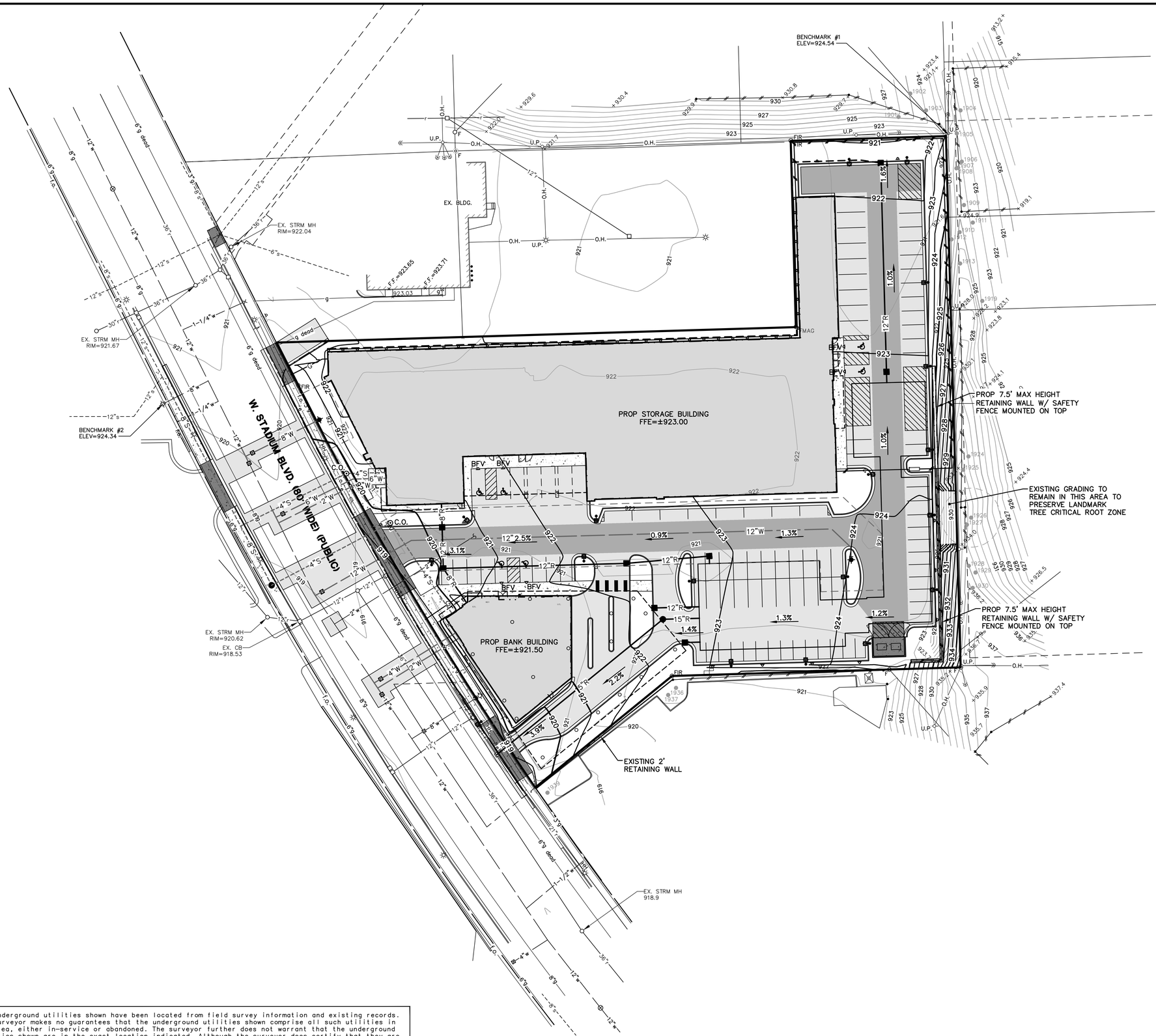
SITE PLAN
DIMENSIONAL SITE PLAN

05

JOB No. 20034

REVISIONS:	REV. DATE
PER STAFF COMMENTS	10/07/20
NO CHANGES THIS SHEET	10/07/20

DATE: 07/23/20
SHEET 05 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034SP1



SCALE: 1" = 30'

0 30 60 90

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

NOTES

1. PROPOSED CURB & GUTTER, PAVEMENT AND SIDEWALK TO MATCH EXISTING PAVEMENT/SIDEWALK GRADE AT REMOVAL LIMITS.
2. SIDEWALKS CONSTRUCTED IN THE PUBLIC RIGHT-OF-WAY SHALL MEET ALL REQUIREMENTS AND GUIDELINES AS SET FORTH IN THE ADA STANDARDS FOR ACCESSIBLE DESIGN.

LEGEND

838	EXIST. CONTOUR
838	PROP. CONTOUR
×836.2	EXIST. SPOT ELEVATION
36.60×	PROP. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
	GUY WIRE
	ELEC. TRANSFORMER
	EXIST. AC UNIT
	EXIST. GENERATOR
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	PROP. LIGHT POLE
t	EXIST. TELEPHONE LINE
e	EXIST. ELECTRIC LINE
g	EXIST. GAS LINE
g	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
w	EXIST. WATER MAIN
W	PROP. WATER MAIN
	EXIST. HYDRANT
	PROP. HYDRANT
	EXIST. GATE VALVE IN BOX
	PROP. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	PROP. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
	PROP. CURB STOP & BOX
	REDUCER
	EXIST. BLOW-OFF
	PROP. BLOW-OFF
P.I.V.	POST INDICATOR VALVE
P.I.V.	POST INDICATOR VALVE
	THRUST BLOCK
KB	PROP. KNOXBOX
fdc	EXIST. FIRE DEPARTMENT CONNECTION
FDC	PROP. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
R	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	PROP. BEEHIVE INLET
RD	PROP. ROOF DRAIN
	END SECTION
	HEAD WALL
	CULVERT
ds	EXIST. DOWNSPOUT
DS	PROP. DOWNSPOUT
s	EXIST. SANITARY SEWER
S	PROP. SANITARY SEWER
	EXIST. CLEANOUT
	PROP. CLEANOUT
	C/L OF DITCH
	DRAINAGE DIRECTION
	SIGN
	SINGLE TREE
	TREE OR BRUSH LIMIT
	FENCE
	SILTFENCE
	LIMITS OF DISTURBANCE
	CONSTRUCTION FENCE
FF	FINISH FLOOR ELEVATION
GF	GARAGE FLOOR ELEVATION
BFF	BASEMENT FINISH FLOOR ELEVATION

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2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
GRADING PLAN

06

JOB No. 20034

REVISIONS:	REV. DATE
PER STAFF COMMENTS	10/07/20
NO CHANGES THIS SHEET	

DATE: 07/23/20
SHEET 06 OF 19
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TECH:
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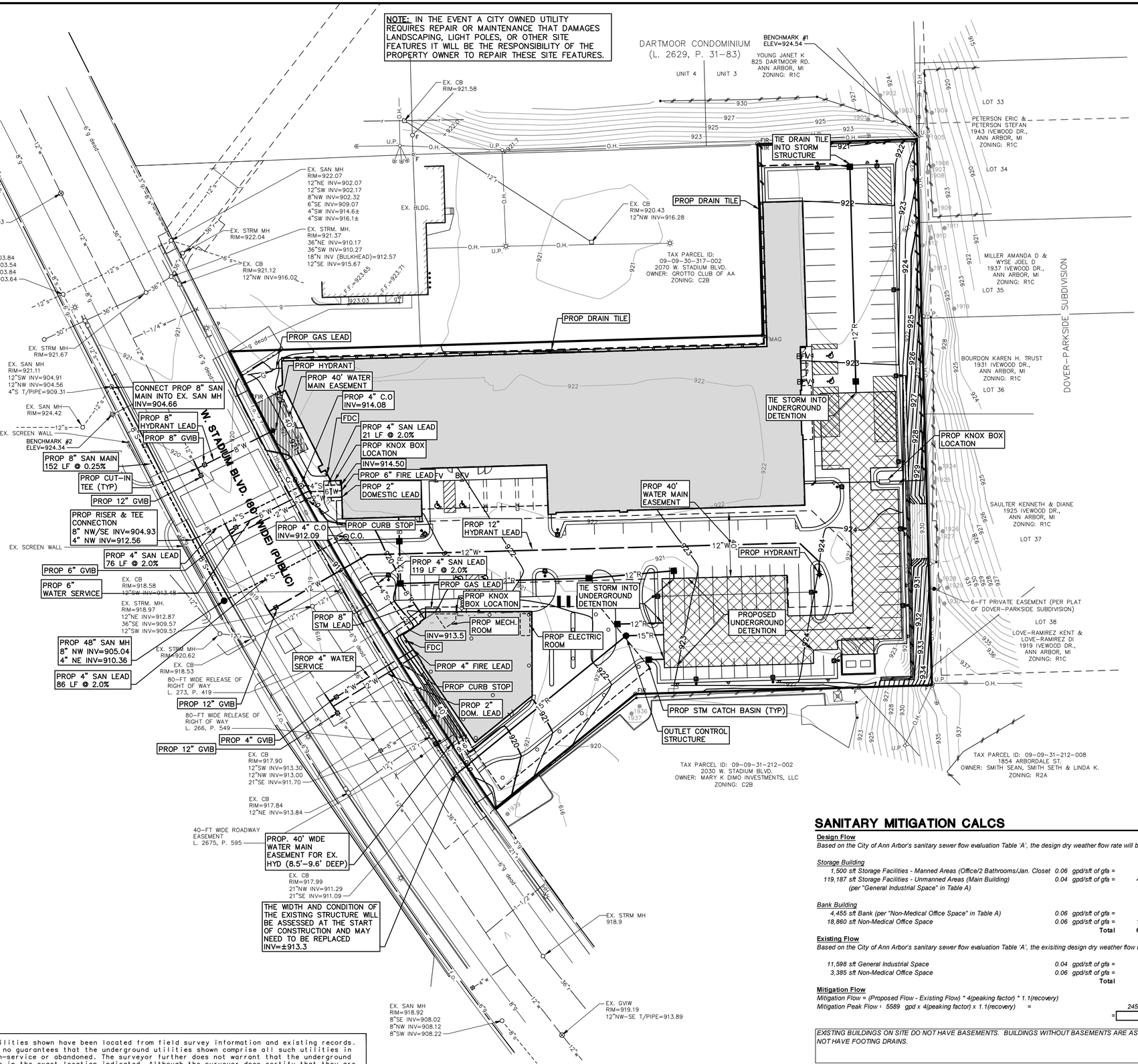

811 Know what's below. Call before you dig.

SCALE: 1" = 30'

0 30 60 90

NOTES

1. ALL UTILITIES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE CITY OF ANN ARBOR STANDARD DETAILS AND SPECIFICATIONS UNLESS NOTED OTHERWISE.
2. ALL BUILDING ROOF DRAINS TO TIE INTO PROPOSED STORM SEWER SYSTEM.
3. NO FIREWALLS ARE PROPOSED WITHIN EITHER BUILDING.
4. EXISTING BUILDING ON SITE DO NOT HAVE BASEMENT. BUILDINGS WITHOUT BASEMENTS ARE ASSUMED TO NOT HAVE FOOTING DRAINS.
5. IN THE EVENT A CITY OWNED UTILITY REQUIRES REPAIR OR MAINTENANCE THAT DAMAGES LANDSCAPING, LIGHT POLES, OR OTHER SITE FEATURES IT WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER TO REPAIR THESE SITE FEATURES.
6. BOOSTER PUMPS ARE ANTICIPATED TO BE USED FOR THE BUILDINGS' WATER SERVICE LEADS. THIS IS SUBJECT TO CHANGE BASED UPON FINAL BUILDING ENGINEERING.
7. IN THE EVENT OF A FUTURE LAND DIVISION THE PUBLIC SANITARY SEWER MAY NEED TO BE EXTENDED FURTHER THAN WHAT IS SHOWN, DEPENDING ON THE PROPOSED PARCEL CONFIGURATION.

LEGEND

-o- U.P.	EXIST. UTILITY POLE
-☼- U.P.	EXIST. UTILITY POLE W/ TRANS.
-o- GP	EXIST. GUY POLE
	GUY WIRE
	ELEC. TRANSFORMER
	EXIST. AC UNIT
	EXIST. GENERATOR
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	PROP. LIGHT POLE
	PROP. BUILDING LIGHT
t	EXIST. TELEPHONE LINE
T	PROP. TELEPHONE LINE
e	EXIST. ELECTRIC LINE
E	PROP. ELECTRIC LINE
g	EXIST. GAS LINE
G	PROP. GAS LINE
g	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
F.O.	PROP. FIBER OPTIC LINE
w	EXIST. WATER MAIN
W	PROP. WATER MAIN
	EXIST. HYDRANT
	PROP. HYDRANT
	EXIST. GATE VALVE IN BOX
	PROP. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	PROP. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
	PROP. CURB STOP & BOX
	REDUCER
	EXIST. BLOW-OFF
	PROP. BLOW-OFF
p.i.v.	POST INDICATOR VALVE
P.I.V.	POST INDICATOR VALVE
	THRUST BLOCK
fdc	EXIST. FIRE DEPARTMENT CONNECTION
FDC	PROP. FIRE DEPARTMENT CONNECTION
KB	PROP. KNOXBOX
r	EXIST. STORM SEWER
R	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	PROP. BEEHIVE INLET
RD	PROP. ROOF DRAIN
	END SECTION
	HEAD WALL
	CULVERT
ds	EXIST. DOWNSPOUT
DS	PROP. DOWNSPOUT
s	EXIST. SANITARY SEWER
S	PROP. SANITARY SEWER
	EXIST. CLEANOUT
	PROP. CLEANOUT
t	TELEPHONE RISER
catv	CABLE TELEVISION RISER
e	ELECTRIC METER
w	WATER METER
scb	SPRINKLER CONTROL BOX
g	GAS METER
glm	GAS LINE MARKER
fiber	FIBER OPTIC MARKER
ped	PEDESTRIAN CROSSING SIGNAL
tscb	TRAFFIC SIGNAL CONTROL BOX
W	WELL
	EXIST. SPRINKLER HEAD
gfc	EXIST. GAS FILLER CAP
vcs	EXIST. VEHICLE CHARGING STATION
VCS	PROP. VEHICLE CHARGING STATION

SANITARY MITIGATION CALCS

Design Flow

Based on the City of Ann Arbor's sanitary sewer flow evaluation Table 'A', the design dry weather flow rate will be:

Storage Building			
1,500 sft Storage Facilities - Manned Areas (Office/2 Bathrooms/Jan. Closet	*0.06*	*gpd/sft of gfa =*	*90 gpd*
119,187 sft Storage Facilities - Unmanned Areas (Main Building)	*0.04*	*gpd/sft of gfa =*	*4767 gpd*
(per "General Industrial Space" in Table A)			
Bank Building			
4,455 sft Bank (per "Non-Medical Office Space" in Table A)	*0.06*	*gpd/sft of gfa =*	*267 gpd*
18,860 sft Non-Medical Office Space	*0.06*	*gpd/sft of gfa =*	*1132 gpd*
		Total	**6256 gpd**

Existing Flow

Based on the City of Ann Arbor's sanitary sewer flow evaluation Table 'A', the exisiting design dry weather flow rate is:

11,598 sft General Industrial Space	*0.04*	*gpd/sft of gfa =*	*464 gpd*
3,385 sft Non-Medical Office Space	*0.06*	*gpd/sft of gfa =*	*203 gpd*
		Total	**667 gpd**

Mitigation Flow

*Mitigation Flow = (Proposed Flow - Existing Flow) * 4(peaking factor) * 1.1(recovery)*

Mitigation Peak Flow = 5589 gpd x 4(peaking factor) x 1.1(recovery) = *24591.6 gpd*

= **17.1 gpm**

EXISTING BUILDINGS ON SITE DO NOT HAVE BASEMENTS. BUILDINGS WITHOUT BASEMENTS ARE ASSUMED TO NOT HAVE FOOTING DRAINS.

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SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
UTILITY PLAN

07

DATE: 07/23/20
SHEET 07 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
Z20034UP1

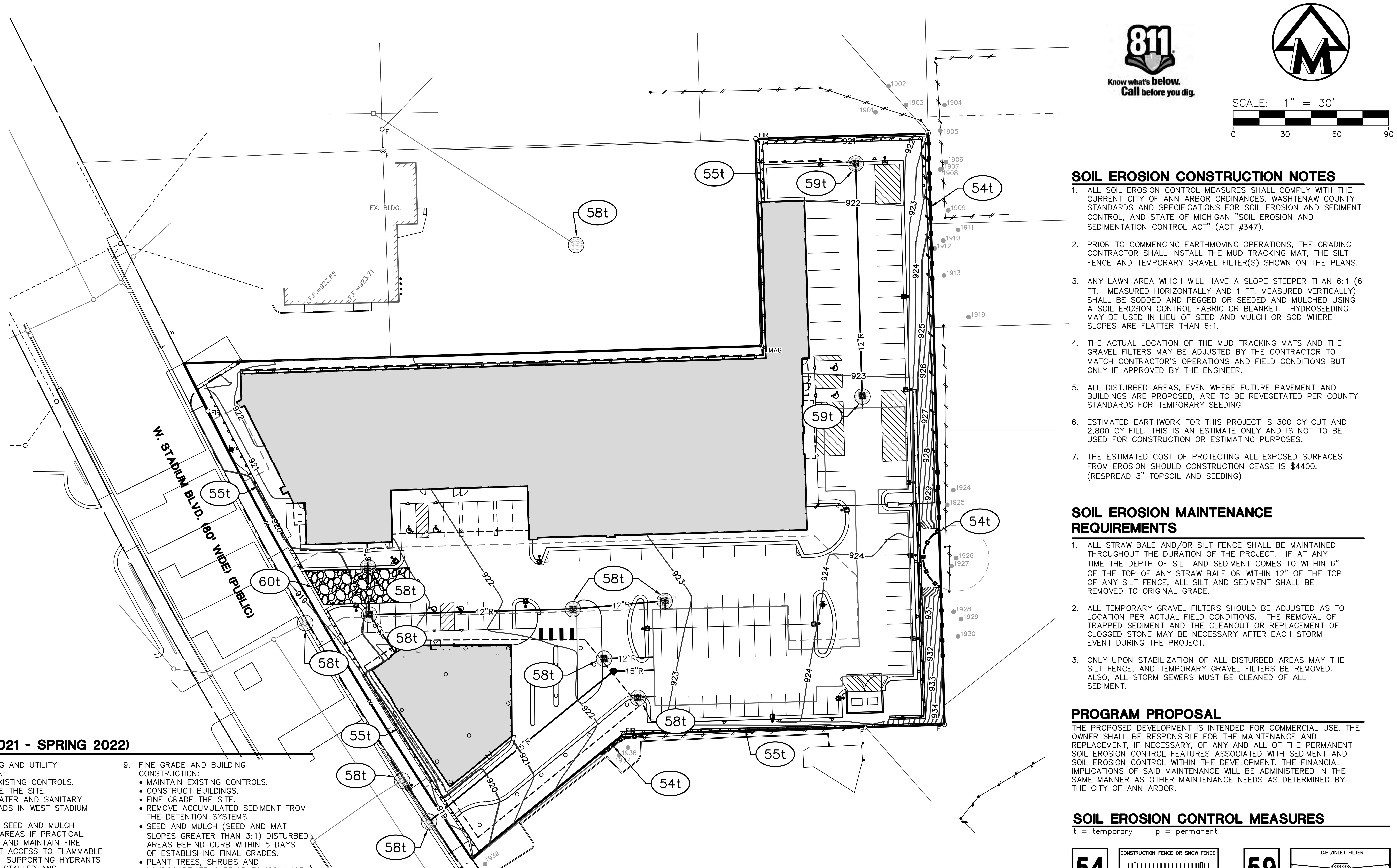
JOB No. 20034

REVISIONS:

REV.	DATE
PER REVIEW COMMENTS	10/07/20
PER CITY REVIEW	

LEGEND

Symbol	Description
838	EXIST. CONTOUR
838	PROP. CONTOUR
×836.2	EXIST. SPOT ELEVATION
36.60×	PROP. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
	GUY WIRE
	ELEC. TRANSFORMER
	EXIST. AC UNIT
	EXIST. GENERATOR
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
	PROP. LIGHT POLE
t	EXIST. TELEPHONE LINE
e	EXIST. ELECTRIC LINE
g	EXIST. GAS LINE
g	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
w	EXIST. WATER MAIN
W	PROP. WATER MAIN
	EXIST. HYDRANT
	PROP. HYDRANT
	EXIST. GATE VALVE IN BOX
	PROP. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	PROP. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
	PROP. CURB STOP & BOX
	REDUCER
	EXIST. BLOW-OFF
	PROP. BLOW-OFF
p.i.v.	POST INDICATOR VALVE
P.I.V.	POST INDICATOR VALVE
	THRUST BLOCK
KB	PROP. KNOXBOX
fdc	EXIST. FIRE DEPARTMENT CONNECTION
FDC	PROP. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
R	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	PROP. BEEHIVE INLET
RD	PROP. ROOF DRAIN
	END SECTION
	HEAD WALL
	CULVERT
ds	EXIST. DOWNSPOUT
DS	PROP. DOWNSPOUT
s	EXIST. SANITARY SEWER
S	PROP. SANITARY SEWER
	EXIST. CLEANOUT
	PROP. CLEANOUT
	C/L OF DITCH
	DRAINAGE DIRECTION
	SIGN
	SINGLE TREE
	TREE OR BRUSH LIMIT
	FENCE
	SILTFENCE
	LIMITS OF DISTURBANCE
	CONSTRUCTION FENCE
FF	FINISH FLOOR ELEVATION
GF	GARAGE FLOOR ELEVATION
BFF	BASEMENT FINISH FLOOR ELEVATION



CONSTRUCTION SEQUENCE (SPRING 2021 - SPRING 2022)

1. SESC PRE-GRADING MEETING

2. INVENTORY SITE:
   - IDENTIFY CONSTRUCTION LIMITS.
   - BRUSH THE SITE.
   - INSTALL CONSTRUCTION FENCING.
   - DEFINE THE SITE ACCESS AND INSTALL MUD TRACKING MATS AS NEEDED.
   - DEFINE THE CONSTRUCTION STORAGE AREAS WITHIN THE GRADING LIMITS AS DEFINED ON THE PLANS.

3. CLEAR AND GRUB SITE, DEMOLITION AND REMOVALS:
   - MAINTAIN EXISTING CONTROLS.
   - INSTALL SILT FENCE.
   - INSTALL STONE FILTERS.
   - TREE AND STUMP REMOVAL.
   - STRUCTURE AND UTILITY REMOVALS.

4. CONSTRUCT DETENTION SYSTEMS:
   - MAINTAIN EXISTING CONTROLS.
   - CONSTRUCT THE STORM SEWER.
   - CONSTRUCT THE DETENTION CHAMBERS AND OUTLET (SEE MANUFACTURER'S INSTALLATION NOTES FOR SPECIFIC INSTRUCTIONS). THE DETENTION SYSTEMS SHALL BE AS-BUILT VERIFIED PRIOR TO THE ISSUANCE OF A BUILDING PERMIT. REMOVAL OF ACCUMULATED SEDIMENT WILL BE REQUIRED PRIOR TO THE ISSUANCE OF CERTIFICATES OF OCCUPANCY.
   - INSTALL INLET FILTERS ON INLETS INTO THE DETENTION BASINS AFTER THEY HAVE BEEN BACKFILLED. INSTALL SEDIMENT FILTERS ON COMPLETED CATCH BASINS AND INLETS.

5. MASS GRADING AND UTILITY CONSTRUCTION:
   - MAINTAIN EXISTING CONTROLS.
   - MASS GRADE THE SITE.
   - CONNECT WATER AND SANITARY SERVICE LEADS IN WEST STADIUM BOULEVARD.
   - TEMPORARY SEED AND MULCH DISTURBED AREAS IF PRACTICAL.
   - CONSTRUCT AND MAINTAIN FIRE DEPARTMENT ACCESS TO FLAMMABLE MATERIALS. SUPPORTING HYDRANTS SHALL BE INSTALLED AND OPERATIONAL PRIOR TO ISSUANCE OF INDIVIDUAL BUILDING PERMITS.

6. BASE COURSE CONSTRUCTION:
   - THE SAND SUBBASE AND AGGREGATE BASE COURSE FOR THE PARKING LOT SHALL BE INSTALLED PRIOR TO THE ISSUANCE OF FOUNDATION PERMITS FOR THE BUILDINGS.
   - CONSTRUCT MUD TRACKING MATS PER PLANS.
   - MAINTAIN EXISTING CONTROLS.

7. BUILDING FOUNDATION CONSTRUCTION:
   - MAINTAIN EXISTING CONTROLS.
   - INSTALL EARTH RETENTION SYSTEMS.
   - EXCAVATE FOR BUILDING FOUNDATIONS.
   - CONSTRUCT BUILDING FOUNDATIONS.

8. PAVE DRIVEWAYS AND PARKING LOT:
   - MAINTAIN EXISTING CONTROLS.
   - PAVE THE PARKING LOTS AND MAIN DRIVE AREAS.
   - SEED AND MULCH (SEED AND MAT SLOPES GREATER THAN 3:1) DISTURBED AREAS BEHIND CURB WITHIN 5 DAYS OF ESTABLISHING FINAL GRADES.
   - PARKING LOT PAVING (FIRST COURSE) MUST OCCUR PRIOR TO ISSUANCE OF BUILDING PERMITS BEYOND FOUNDATIONS.

9. FINE GRADE AND BUILDING CONSTRUCTION:
   - MAINTAIN EXISTING CONTROLS.
   - CONSTRUCT BUILDINGS.
   - FINE GRADE THE SITE.
   - REMOVE ACCUMULATED SEDIMENT FROM THE DETENTION SYSTEMS.
   - SEED AND MULCH (SEED AND MAT SLOPES GREATER THAN 3:1) DISTURBED AREAS BEHIND CURB WITHIN 5 DAYS OF ESTABLISHING FINAL GRADES.
   - PLANT TREES, SHRUBS AND LANDSCAPE ITEMS PRIOR TO ISSUANCE OF THE CERTIFICATES OF OCCUPANCY.
   - INSTALL PERMANENT FENCING.

10. CLEAN-UP SITE:
    - SEED AND MULCH OR SOD AREAS THAT HAVE NOT TAKEN.
    - MAINTAIN EXISTING CONTROLS.

11. FOLLOW-UP AFTER THE SITE IS STABILIZED:
    - REMOVE SILT FENCE AND STONE FILTERS.
    - REMOVE CATCH BASIN FILTERS OR SILT SACKS.
    - REMOVE SILT FROM THE STORM SEWER SYSTEM.
    - FINAL REMOVAL OF SEDIMENT FROM THE DETENTION SYSTEMS, IF NEEDED.

12. FINALIZE BUILDING CONSTRUCTION:
    - MAINTAIN PERMANENT SOIL EROSION CONTROL MEASURES
    - REMOVE CONSTRUCTION FENCING

NOTE: THE CONSTRUCTION SEQUENCE AND SCHEDULE IS PRELIMINARY AND SUBJECT TO ADJUSTMENT IN RESPONSE TO FORCES BEYOND OUR CONTROL. THESE MAY INCLUDE WEATHER, MATERIAL AVAILABILITY, LABOR UNREST, POLITICAL AND REGULATORY DELAYS, OR OTHER UNFORESEEN CIRCUMSTANCES.

MAINTENANCE TASK AND SCHEDULE DURING CONSTRUCTION (by Contractor)

TASKS:	Storm Sewer System	Catch Basin Sumps	Catch Basin Inlet Silt Sacks	Outlet Control Structures	Detention System Forebay Units	SCHEDULE:	ESTIMATED COST:
Inspect for sediment accumulation	X	X	X	X	X	Weekly and after every 1" storm event	$ 1,000
Removal of sediment accumulation	X	X	X	X	X	As needed and prior to turnover	$ 4,000
Inspect for floatable and debris	X	X	X	X	X	Quarterly and after every 1" storm event	$ 500
Cleaning of floatable and debris	X	X	X	X	X	Quarterly, as needed, and at turnover	$ 1,500
Make adjustments or replacements as determined by pre-turnover inspection	X	X	X	X	X	As needed	$ 5,000
Total Construction Phase Cost Estimate							**$ 12,000**

* And as required for NPDES
* "As Needed" means when sediment has accumulated to one foot depth.

MAINTENANCE TASK AND SCHEDULE AFTER CONSTRUCTION (by Owner)

TASKS:	Catch Basin Sumps	Outlet Control Structures	Detention System Forebay Units	SCHEDULE:	ESTIMATED COST:
Inspect for sediment accumulation	X	X	X	Yearly and after every 1" storm event	$ 200
Removal of sediment accumulation	X	X	X	As needed	$ 1,200
Inspect for floatable and debris	X	X	X	Yearly and after every 1" storm event	$ 100
Cleaning of floatable and debris	X	X	X	As needed	$ 200
Total Annual Cost Estimate					**$ 1,700**

* "As Needed" means when sediment has accumulated to one foot depth.

SOIL EROSION CONSTRUCTION NOTES

1. ALL SOIL EROSION CONTROL MEASURES SHALL COMPLY WITH THE CURRENT CITY OF ANN ARBOR ORDINANCES, WASHTENAW COUNTY STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL, AND STATE OF MICHIGAN "SOIL EROSION AND SEDIMENTATION CONTROL ACT" (ACT #347).
2. PRIOR TO COMMENCING EARTHMOVING OPERATIONS, THE GRADING CONTRACTOR SHALL INSTALL THE MUD TRACKING MAT, THE SILT FENCE AND TEMPORARY GRAVEL FILTER(S) SHOWN ON THE PLANS.
3. ANY LAWN AREA WHICH WILL HAVE A SLOPE STEEPER THAN 6:1 (6 FT. MEASURED HORIZONTALLY AND 1 FT. MEASURED VERTICALLY) SHALL BE SODDED AND PEGGED OR SEEDED AND MULCHED USING A SOIL EROSION CONTROL FABRIC OR BLANKET. HYDROSEEDING MAY BE USED IN LIEU OF SEED AND MULCH OR SOD WHERE SLOPES ARE FLATTER THAN 6:1.
4. THE ACTUAL LOCATION OF THE MUD TRACKING MATS AND THE GRAVEL FILTERS MAY BE ADJUSTED BY THE CONTRACTOR TO MATCH CONTRACTOR'S OPERATIONS AND FIELD CONDITIONS BUT ONLY IF APPROVED BY THE ENGINEER.
5. ALL DISTURBED AREAS, EVEN WHERE FUTURE PAVEMENT AND BUILDINGS ARE PROPOSED, ARE TO BE REVEGETATED PER COUNTY STANDARDS FOR TEMPORARY SEEDING.
6. ESTIMATED EARTHWORK FOR THIS PROJECT IS 300 CY CUT AND 2,800 CY FILL. THIS IS AN ESTIMATE ONLY AND IS NOT TO BE USED FOR CONSTRUCTION OR ESTIMATING PURPOSES.
7. THE ESTIMATED COST OF PROTECTING ALL EXPOSED SURFACES FROM EROSION SHOULD CONSTRUCTION CEASE IS $4400. (RESPREAD 3" TOPSOIL AND SEEDING)

SOIL EROSION MAINTENANCE REQUIREMENTS

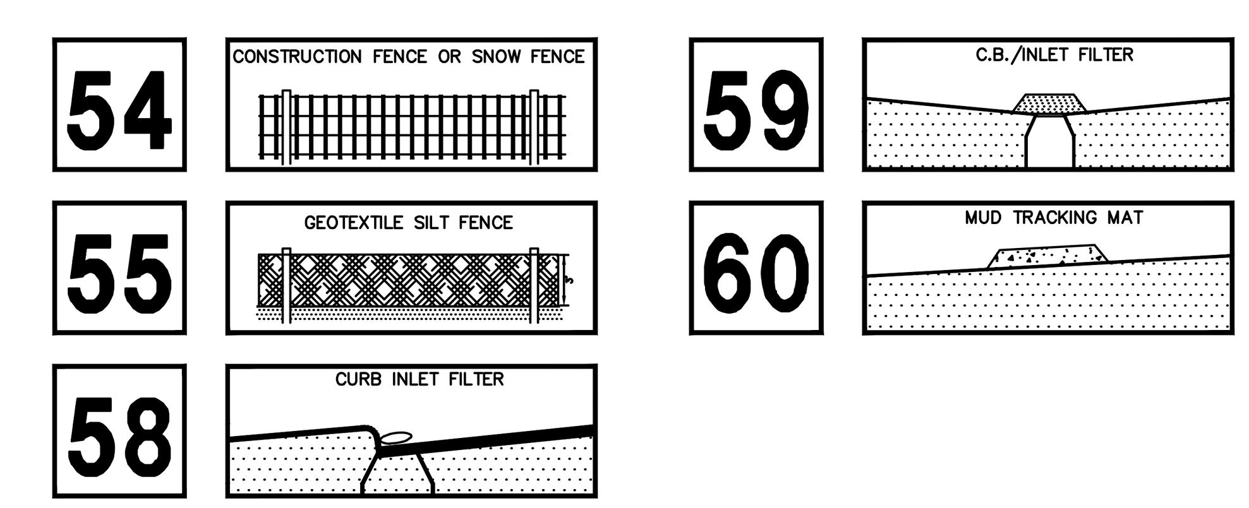
1. ALL STRAW BALE AND/OR SILT FENCE SHALL BE MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. IF AT ANY TIME THE DEPTH OF SILT AND SEDIMENT COMES TO WITHIN 6" OF THE TOP OF ANY SILT FENCE, ALL SILT AND SEDIMENT SHALL BE REMOVED TO ORIGINAL GRADE.
2. ALL TEMPORARY GRAVEL FILTERS SHOULD BE ADJUSTED AS TO LOCATION PER ACTUAL FIELD CONDITIONS. THE REMOVAL OF TRAPPED SEDIMENT AND THE CLEANOUT OR REPLACEMENT OF CLOGGED STONE MAY BE NECESSARY AFTER EACH STORM EVENT DURING THE PROJECT.
3. ONLY UPON STABILIZATION OF ALL DISTURBED AREAS MAY THE SILT FENCE, AND TEMPORARY GRAVEL FILTERS BE REMOVED. ALSO, ALL STORM SEWERS MUST BE CLEANED OF ALL SEDIMENT.

PROGRAM PROPOSAL

THE PROPOSED DEVELOPMENT IS INTENDED FOR COMMERCIAL USE. THE OWNER SHALL BE RESPONSIBLE FOR THE MAINTENANCE AND REPLACEMENT, IF NECESSARY, OF ANY AND ALL OF THE PERMANENT SOIL EROSION CONTROL FEATURES ASSOCIATED WITH SEDIMENT AND SOIL EROSION CONTROL WITHIN THE DEVELOPMENT. THE FINANCIAL IMPLICATIONS OF SAID MAINTENANCE WILL BE ADMINISTERED IN THE SAME MANNER AS OTHER MAINTENANCE NEEDS AS DETERMINED BY THE CITY OF ANN ARBOR.

SOIL EROSION CONTROL MEASURES

t = temporary   p = permanent



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SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
SOIL EROSION CONTROL PLAN

JOB No. 20034

DATE: 07/23/20
SHEET 08 OF 19

REVISIONS:	REV. DATE	
PER REVIEW COMMENTS	09/11/20	CADD:
NO CHANGES THIS SHEET	10/07/20	ENG: TPH
		PM: TJC
		TECH:
		/20034SE1

2060 W. Stadium
Stormwater Detention Calculations
Midwestern Consulting - Project No. 20034
24-Aug-20

Underground Detention Chambers
W1 - Determining Post-Development Cover Types, Areas, Curve Numbers, and Runoff Coefficients

Total Site Area (Property Limits)	**2.32 ac**	
Tributary Area (Area draining to the underground chambers)	**2.18 ac**	*(the area draining to this basin)*
Area Excluding "Self-Crediting" BMPs*	**2.18 ac**	

*** Used for remainder of calculations below**

Rational Method Variables
(for first flush)

Cover Type	Soil Type	Area (sft)	Area (ac)	Runoff Coeff. (C)	(C) (Area)
Roof/Bldg.		40,166	0.92	0.95	0.88
Walk/Pvmt		40,032	0.92	0.95	0.87
Landscape, >8%	B	9,103	0.21	0.35	0.07
Landscape, <4%	B	5,844	0.13	0.25	0.03
Total		95,145	2.18	0.85	1.86

0.35 for pervious surfaces, Soil Type B, slope >8%
0.25 for pervious surfaces, Soil Type B, slope <4%
0.95 for house roofs, driveways, and roadways

Total - Sum(C)(Area) 1.86 ac
Area Total 2.18 ac
Weighted C - (Sum(C)(Area))/(Area Total) 0.85

NRCS Variables
(for bankfull and 100-year calculations)

Pervious

Cover Type	Soil Type	Area (sft)	Area (ac)	Curve Number	(CN) (Area)
Landscape	B	14,947	0.34	61	0.21
Total		14,947	0.34	61	0.21

61 for Landscaping, Good Condition, Soil Type B

Total - Sum(C)(Area) 0.21 ac
Area Total 0.34 ac
Weighted C - (Sum(C)(Area))/(Area Total) 61.0

NRCS Variables
(for bankfull and 100-year calculations)

Impervious

Cover Type	Soil Type	Area (sft)	Area (ac)	Curve Number	(CN) (Area)
Roof/Bldg.		40,166	0.92	98	0.90
Walk/Pvmt		40,032	0.92	98	0.90
Total		80,198	1.84	98	1.80

98 for Building Roofs
98 for Pavement

Total - Sum(C)(Area) 1.80 ac
Area Total 1.84 ac
Weighted C - (Sum(C)(Area))/(Area Total) 98.0

W2 - First Flush Runoff Calculations (Vff)

A. Vff = 1" x 1/12" x 43560 sft/ac x A x C	*6,736*	*cft*
	0.15	*ac-ft*

W3 - Pre-Development Bankfull Runoff Calculations (Vbf-pre)

A. 2 year / 24 hour storm event: P=	*2.35*	*in*
B. Pre-Development CN (Meadow, Type B Soils)	*58*	
C. S = (1000 / CN) - 10	*7.241*	*in*
D. Q = [(P-0.2S)^2] / [P+0.8S]	*0.100*	*in*
E. Total Site Area excluding "Self-Crediting" BMPs	*95,145*	*sft*
F. Vbf-pre = Q x (1/12) x Area	*792*	*cft*
	0.02	*ac-ft*

W4 - Pervious Cover Post-Development Bankfull Runoff Calculations (Vbf-per-post)

A. 2 year / 24 hour storm event: P=	*2.35*	*in*
B. Pervious Cover CN From Worksheet 1	*61*	
C. S = (1000 / CN) - 10	*6.393*	*in*
D. Q = [(P-0.2S)^2] / [P+0.8S]	*0.154*	*in*
E. Pervious Cover Area from Worksheet 1	*14,947*	*sft*
F. Vbf-per-post = Q x (1/12) x Area	*192*	*cft*
	0.004	*ac-ft*

W5 - Impervious Cover Post-Development Bankfull Runoff Calculations (Vbf-imp-post)

A. 2 year / 24 hour storm event: P=	*2.35*	*in*
B. Impervious Cover CN From Worksheet 1	*98*	
C. S = (1000 / CN) - 10	*0.204*	*in*
D. Q = [(P-0.2S)^2] / [P+0.8S]	*2.122*	*in*
E. Impervious Cover Area from Worksheet 1	*80,198*	*sft*
F. Vbf-imp-post = Q x (1/12) x Area	*14,179*	*cft*
	0.3255	*ac-ft*

W6 - Pervious Cover Post-Development 100-Year Runoff Calculations (V100-per-post)

A. 100 year / 24 hour storm event: P=	*5.11*	*in*
B. Pervious Cover CN From Worksheet 1	*61*	
C. S = (1000 / CN) - 10	*6.393*	*in*
D. Q = [(P-0.2S)^2] / [P+0.8S]	*1.436*	*in*
E. Pervious Cover Area from Worksheet 1	*14,947*	*sft*
F. V100-per-post = Q x (1/12) x Area	*1,788*	*cft*
	0.04	*ac-ft*

W7 - Impervious Cover Post-Development 100-Year Runoff Calculations (V100-imp-post)

A. 100 year / 24 hour storm event: P=	*5.11*	*in*
B. Impervious Cover CN From Worksheet 1	*98*	
C. S = (1000 / CN) - 10	*0.204*	*in*
D. Q = [(P-0.2S)^2] / [P+0.8S]	*4.873*	*in*
E. Impervious Cover Area from Worksheet 1	*80,198*	*sft*
F. Vbf-imp-post = Q x (1/12) x Area	*32,567*	*cft*
	0.75	*ac-ft*

W8 - Time of Concentration (Tc-hrs)

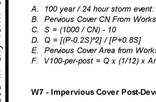
A. Assume 15-minute minimum time of concentration	*0.25 hr*

W9 - Runoff Summary & On-Site Infiltration Requirement

A. Summary from Previous Worksheets			
First Flush Volume (Vff)	**6,736**	**cft**	**0.15 ac-ft**
Pre-Development Bankfull Runoff Volume (Vbf-pre)	**792**	**cft**	**0.02 ac-ft**
Pervious Cover Post-Development Bankfull Volume (Vbf-per-post)	*192*	*cft*	*0.00 ac-ft*
Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post)	*14,179*	*cft*	*0.33 ac-ft*
Total BF Volume (Vbf-post)	**14,371**	**cft**	**0.33 ac-ft**
Pervious Cover Post-Development 100-Year Volume (V100-per-post)	*1,788*	*cft*	*0.04 ac-ft*
Impervious Cover Post-Development 100-Year Volume (V100-imp-post)	*32,567*	*cft*	*0.75 ac-ft*
Total 100-Year Volume (V100)	**34,355**	**cft**	**0.79 ac-ft**
B. Determine Onsite Infiltration Requirement			
Subtract the Pre-Development Bankfull from the Post-Development Bankfull Volume			
Total Post-Development Bankfull Volume (Vbf-post)	*14,371*	*cft*	*0.33 ac-ft*
Pre-Development Bankfull Runoff Volume (Vbf-pre)	*792*	*cft*	*0.02 ac-ft*
Bankfull Volume Difference	**13,579**	**cft**	**0.31 ac-ft**
Compare to First Flush Volume (Vff)	*6,736*	*cft*	*0.15 ac-ft*
Greater of Bankfull Volume or First Flush Volume	**13,579**	**cft**	**0.31 ac-ft**
To be Infiltrated			

W10 - Detention/Retention Requirement

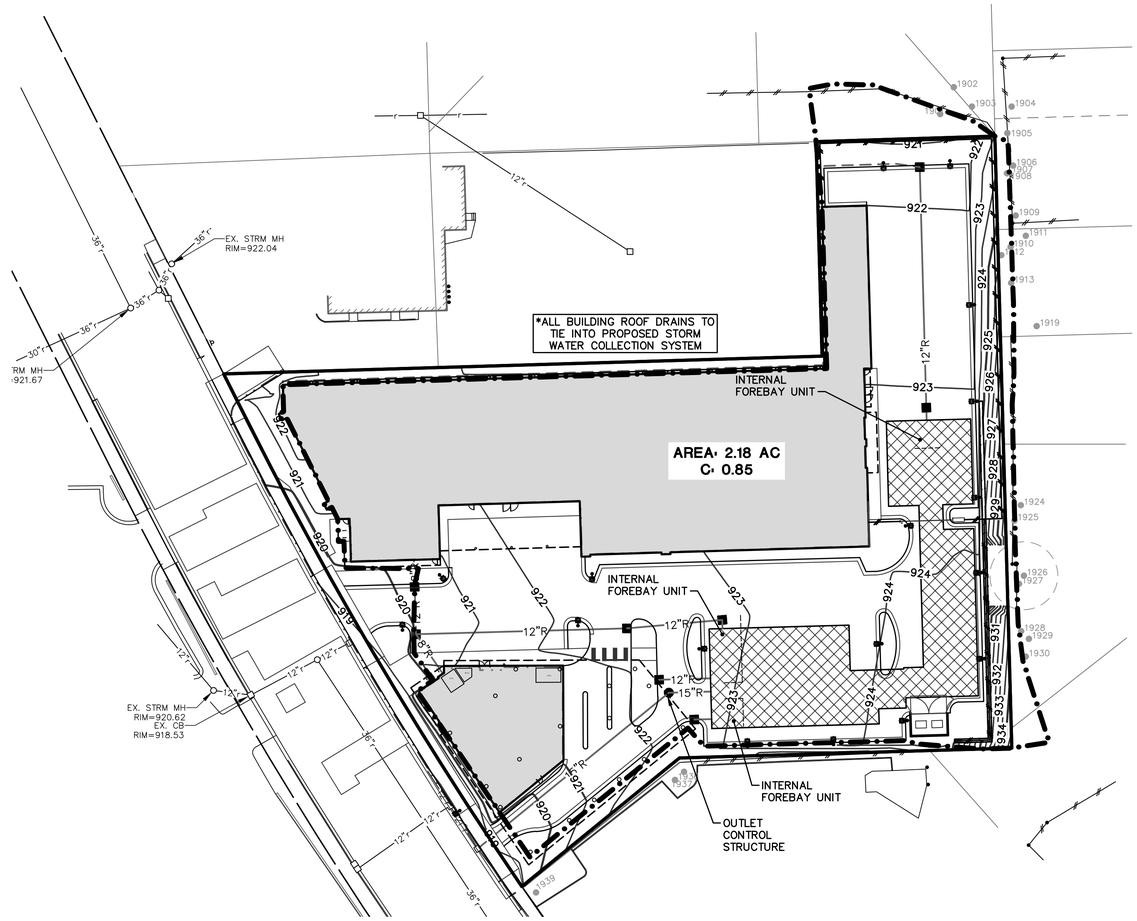
Detention		
A. Qp = 238.6 Tc^-0.82	*743.63*	*cfs/(in x sq. mi)*
B. Total Site Area excluding "Self-Crediting" BMPs	*2.18*	*ac*
C. Q100 = Q100-per + Q100-imp (from W6 and W7, respectively)	*6.309*	*in*
D. Peak Flow (PF) = Qp x Q100 x Area / 640	*16.01*	*cfs*
E. Delta = PF - 0.15 x Area (ac) [0.15 x Area (ac)]	*15.68*	*cfs*
	0.33	*cfs*
F. Vdet = Delta / PF x V100	*33,652*	*cft*
Required Detention not including infiltration credit.		
Sediment Forebay Volume Required (5% of V100)	*1,718*	*cft*



SCALE: 1" = 40'

0 40 80 120

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



W11 - Determine Applicable BMPs and Associated Volume Credits
As contamination has been discovered in the existing sub-surface soils, infiltration will not be accommodated into the underground detention design

		Storage Volume (cft)		Design Infilt.	Infilt. Volume in	Max. Allowable	Total Volume
Proposed BMP	*Area (sft)*	*Surface*	*Stone Voids*	*Rate (in/hr)*	*6-hour storm (cft)*	*48-hour Drawdown*	*Reduction (cft)*
None Provided	-	-	-	0.00	-	-	-

Total Volume Reduction Credit by Proposed Structural BMPs (cft) - cft
Runoff Volume Infiltration Requirement (Vinf) from Worksheet 9 (cft) 13,579 cft
Runoff Volume Credit (cft) (13,579) cft

W12 - Natural Features Inventory
**SEE COVER SHEET*

W13 - Site Summary of Infiltration & Detention

A. Stormwater Management Summary		
Minimum Onsite Infiltration Requirement (Vinf)	*13,579*	*cft*
Designed/Provided Infiltration Volume	*-*	*cft*
% Minimum Required Infiltration Provided	*0%*	
Total Calculated Detention Volume, Vdet	*33,652*	*cft*
Net Required Detention Volume	*33,652*	*cft*
(Vdet - Designed/Provided Infiltration Volume)		
B. Detention Volume Increase for sites where the required infiltration volume cannot be achieved.		
% Required Infiltration NOT Provided	*100.0%*	
(100% - % Minimum Required Infiltration Provided)		
Net % Penalty	*20.0%*	
(20% x % Required Infiltration NOT Provided)		
Total Required Detention Volume, including penalty	**49,382**	**cft**
{(100% + Net % Penalty) x Net Required Detention Volume}		

W14 - Storage-Elevation Data

Underground Detention Chambers

Footprint Area (sft)	Vol. % per footprint area	Design Area (sft)	Depth (ft)	Volume Provided (cft)
10,578	85%	8,991	5.00	44,957

Underground Detention Chambers

Elevation (ft)	Design Area (sft)	Volume (cft)	Cum. Volume (cft)
914.00	8,991	-	-
915.00	8,991	8,991	8,991
916.00	8,991	8,991	17,982
917.00	8,991	8,991	26,973
918.00	8,991	8,991	35,964
919.00	8,991	8,991	44,955

First Flush 914.75
Barkfull Elevation 915.60
100 Year Elevation 918.49

Total Provided Detention + Infiltration Volume = **44,955 cft**

Surplus storage volume provided 4,573 cft *(Total Provided Detention + Infiltration volume - Total Detention Required)*

STORMWATER MANAGEMENT NARRATIVE

THE PROPOSED STORMWATER MANAGEMENT SYSTEM CONSISTS OF UNDERGROUND DETENTION CHAMBERS LOCATED LARGELY IN THE SOUTHEAST CORNER OF THE SITE.

RUNOFF WILL BE COLLECTED INTO THE PROPOSED STORM SEWER SYSTEM VIA CATCH BASINS AND WILL BE ROUTED TO THE UNDERGROUND CHAMBERS. AN OUTLET PIPE WILL DISCHARGE WATER FROM THE CHAMBERS INTO AN OUTLET CONTROL STRUCTURE, WHICH WILL THEN SLOWLY RELEASE INTO THE EXISTING CITY STORM SEWER IN W. STADIUM BLVD.

EMERGENCY DISCHARGE WILL FLOW OVER A WEIR WALL IN THE OUTLET CONTROL STRUCTURE AND BYPASS THE CONTROLLED RELEASE ORIFICES.

QUALITY CONTROL WILL BE PROVIDED BY UTILIZING SEQUESTERED FOREBAY UNITS WITHIN THE DETENTION CHAMBERS.

LEGEND

r	EXIST. STORM SEWER
R	PROP. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	PROP. CATCH BASIN OR INLET
RD	PROP. ROOF DRAIN
	EXIST. CLEANOUT
	PROP. CLEANOUT
	PROP. DRAINAGE AREA BOUNDARY
1.17 AC	PROP. DRAINAGE AREA LABEL

The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

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2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
STORMWATER MANAGEMENT PLAN

09

DATE: 07/23/20
SHEET 09 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034A1

JOB No. 20034

REVISIONS:	REV. DATE
PER REVIEW COMMENTS	10/07/20
NO CHANGES THIS SHEET	

Detention Outlet Calculations

A. Required Detention Volumes (Reduced by 6-hour infiltration)

Storm Event	Req'd Volume	less	Infil. Credit	=	Final Volume
First Flush	6,739 cft	-	0 cft	=	**6,739** cft
Bankfull	14,371 cft	-	0 cft	=	**14,371** cft
100 -year	33,652 cft	-	0 cft	=	**33,652** cft
100-year + Req'd Penalty	40,383 cft	-	0 cft	=	**40,383** cft
Forebay Volume Required (5% of 100-yr)				=	**1,683** cft

B. Detention Volumes Provided

Underground Detention Chambers

Footprint Area	10,578 sft
Volume % of footprint	85%
Design Area	8,991 sft
Depth	5.00 ft
Volume Provided	44,957 cft

Elevation	Area (sft)	Depth (ft)	Volume (cft)	Cum. Volume (cft)
914.0	8,991	0	0	0
915.0	8,991	1	8,991	8,991
916.0	8,991	1	8,991	17,983
917.0	8,991	1	8,991	26,974
918.0	8,991	1	8,991	35,965
919.0	8,991	1	8,991	44,957
			Total Volume =	44,957

Storage Elevation Calculation

First Flush Elevation (Xff)= (915.0 - 914.0) / (8,991 - 0) = (Xff - 914.0) / (6,739 - 0) Xff = **914.75 ft**

Bankfull Elevation (Xbf)= (916.0 - 915.0) / (17,983 - 8,991) = (Xbf - 915.0) / (14,371 - 8,991) Xbf = **915.60 ft**

100-Year Elevation (X100)= (919.0 - 918.0) / (44,957 - 35,965) = (X100 - 918.0) / (40,383 - 35,965) X100 = **918.49 ft**

C. Two-Stage Outlet Design

First Flush Discharge (24-36 hours for the detention of first flush storm event)

Average Head (H_{ave}) = 2/3 (Xff - Xbot) = 2/3 (914.75 - 914) =	0.50 ft
First Flush Max. Flowrate ($Q_{ff\text{-}max}$) = Vff / 24 hrs = 6739cfs / (24 hrs*3600) =	0.08 cfs
Req Area (Aff) = $Q_{ff\text{-}max}$ / 0.62 / sqrt(2*g*Have) = 0.08/0.62/(2*32.2*0.5)^0.5=	0.023 sft
Orifice Diameter, Proposed	1.875 in
Orifice Area =	0.0192 sft
Number Required for 24 hr drainage = Aff / Orifice Area= 0.023 sft / 0.0192 sft =	1.19 holes
Number of Holes to Use	1 holes
Area of (1) - 1.875 inch Orifi Aff	0.0192 sft
Actual Flow (Qff) = 0.62 * Aff * sqrt(2*g*Have) = 0.62 * 0.0192 *sqrt(2*32.2*0.5) =	0.068 cfs
Actual Time (Tff) = Vff / Qff = 6739 cf / 0.068 cfs / 3600 =	27.71 hr

Bankfull Discharge (36-48 hours)

Average Head (H_{ave}) = 2/3 (Xbf - Xbot) = 2/3 (915.6 - 914) =	1.07 ft
Actual Flow (Qbf) = 0.62 * Abf * sqrt(2*g*Have) = 0.62 * 0.0192 * sqrt(2 * 32.2 * 1.07)=	0.099 cfs
Actual Time (Tbf) = Vbf / Qbf = 14371 cf / 0.099 cfs / 3600 =	40.40 hr

Drawdown Time for Bankfull Volume is between 36 and 48 hours

Therefore use (1) 1.875 inch Diameter Holes at Elev 914

100-year Discharge (0.15 cfs/acre max. allowed)

Max Head to Lowest Holes ($H_{max\ 100\text{-}ff}$) = X_{100} - Xbot= 918.49 - 914 =	4.49 ft
Max Flow at Lowest Holes ($Q_{max\text{-}ff}$)= 0.62 * Aff * sqrt(2 * g * H_{max}) = = 0.62 * 0.0192 * sqrt(2 * 32.2 * 4.49) =	0.202 cfs
Max Head to 100yr Holes ($H_{max\text{-}100}$) = X_{100} - Xbf = 918.49 - 915.6 =	2.89 ft
QA (Allowable 100-year release rate)= 0.15 cfs/acre = 0.15 cfs * 2.18 ac =	0.328 cfs
Max flow through 100-year holes = $Q_{max\text{-}100}$ = QA - $Q_{max\text{-}ff}$ = 0.33 cfs - 0.2 cfs =	0.13 cfs
Max. Area for Orifices (A_{100}) = Q_{max} / 0.62 / sqrt (2*g*h-100_{max})	0.01 sft
Orifice Diameter	1.500 in
Orifice Area	0.012 sft
Number Required for 0.15 cfs/acre drainage	1.21
Number of holes used	1 ea
Area of (1) - 1.5 inch Orifice (A_{100})	0.012 sft
100-year orifices - Actual Flow ($Q_{max\text{-}100}$) = 0.62 * A_{100} * sqrt (2 * g * H_{max100}) = 0.62 * 0.012 * sqrt (2 * 32.2 * 2.89) =	0.100 cfs
Actual Max Release Rate (Qmax) = Qmax-100 + Qmax-ff = 0.1 cfs + 0.202 cfs =	0.30 cfs

100-year Drawdown Time (72-hour max. to the lowest orifice)

Average head to first flush holes with all orifice in use ($H_{ff\text{-}ave}$) = 2/3 (X_{100} - Xbf) + (Xbf - Xbot)

$H_{ff\text{-}ave}$ = 2/3 (918.49 - 915.6) + (915.6 -914) = 3.53 ft

Average flow through lowest holes to bankfull elevation = 0.62 * Aff * sqrt (2 * g * $H_{ff\text{-}ave}$)

$Q_{ff\text{-}ave}$ = 0.62 * 0.0192 * SQRT(2 * 32.2 * 3.53) 0.179 cfs

Average head to 100-year holes with all orifices in use = 2/3 (X_{100}-Xbf)

$H_{100\text{-}ave}$ = 2/3 * (918.49 - 915.6) = 1.93 ft

Average flow through 100-yr holes with all holes in use = 0.62 * A_{100} * sqrt (2 * g * $H_{100\text{-}ave}$)

$Q_{100\text{-}ave}$ = 0.62 * 0.012 * sqrt(2 * 32.2 * 1.93) = 0.083 cfs

Combined drawdown flow ($Q_{100\text{-}bf}$) = $Q_{ff\text{-}ave}$ + $Q_{100\text{-}ave}$ = 0.179 cfs + 0.083 cfs = 0.262 cfs

Volume of Storage above Bankfull Elev (V_{rem}) = V_{100} - Vbf = 40383 - 14371 = 26,012 cft

Time to drain Volume between 100yr and bankfull elevations = V_{rem}/$Q_{100\text{-}bf}$/3600 = 26012 cf / 0.262 cfs / 3600 = 27.53 hr

Total 100-year drawdown time = T100 = T100-bf + Tbf = 40.4 hrs + 27.53 hrs = 67.93 hr

Therefore use (1) 1.5 inch Diameter Holes at Elev 915.6

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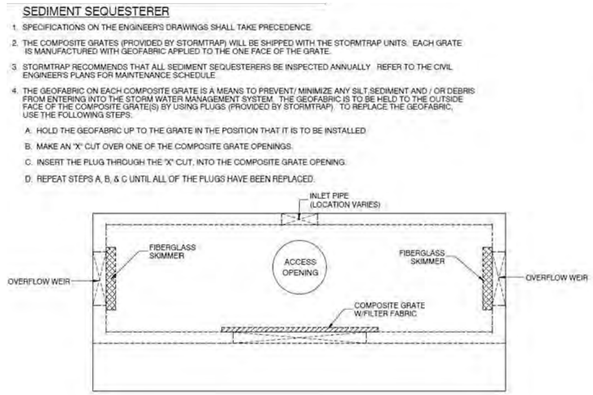
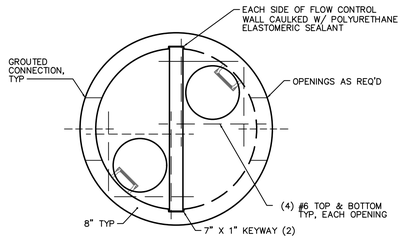


DETENTION FOREBAY UNIT DETAIL

NO SCALE

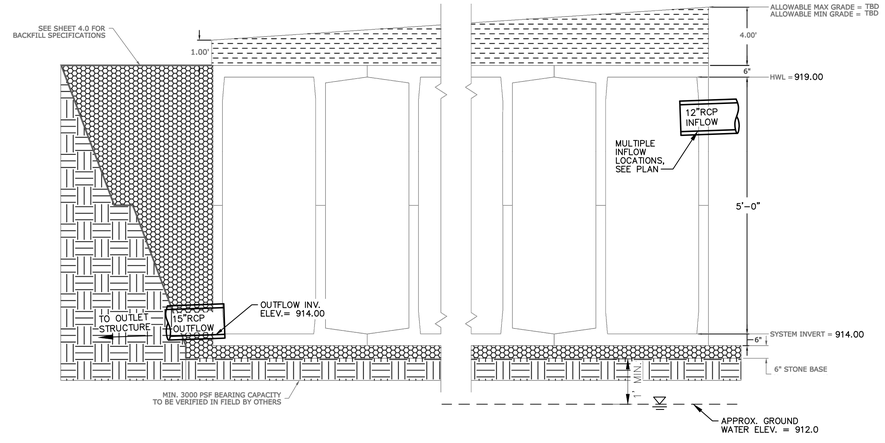


NOTES:

1. MANHOLE SECTIONS TO BE MANUFACTURED TO ASTM C-478 SPECIFICATIONS AND IN ACCORDANCE WITH NORTHERN CONCRETE PIPE, INC. (800 222 9918).
2. REINFORCING SHOWN FOR SCHEMATIC ONLY.
3. CONTRACTOR TO SEAL BETWEEN PRECAST WALL & BASE W/BUTYL ROPE.
4. INLET & OUTLET PIPES SIZE VARIES.
5. NUMBER, SIZE AND ELEVATION OF HOLES IN THE FLOW RESTRICTOR WALL SHALL BE IN ACCORDANCE WITH THE GOVERNING AGENCY.

OUTLET CONTROL STRUCTURE DETAIL

NO SCALE



UNDERGROUND DETENTION CHAMBER DETAIL

NO SCALE

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SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
STORMWATER MANAGEMENT DETAILS

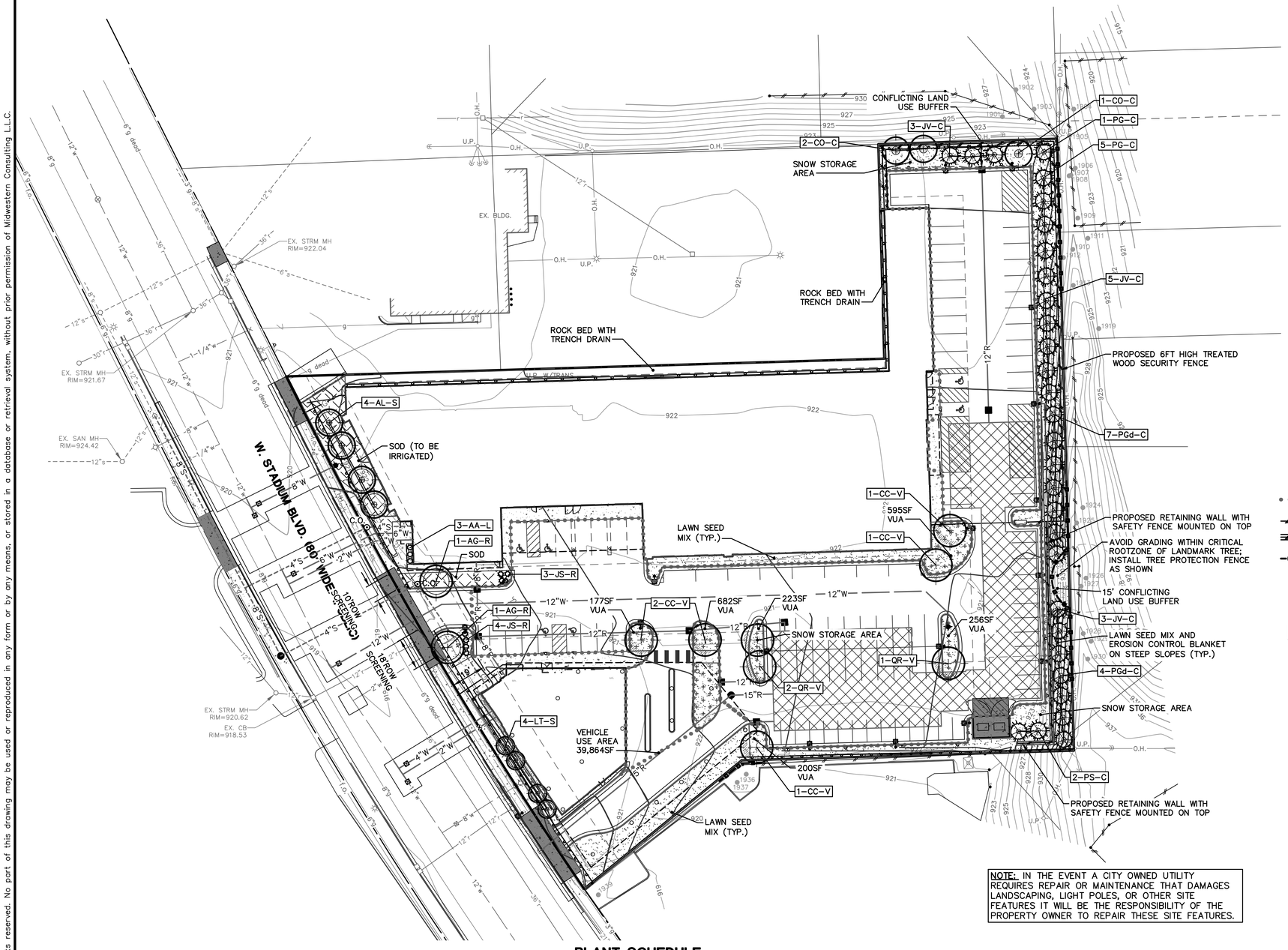
10

JOB No. 20034

REVISIONS:
PER REVIEW COMMENTS
NO CHANGES THIS SHEET

REV. DATE
10/07/20

DATE: 07/23/20
SHEET 10 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034DA1



NOTE: IN THE EVENT A CITY OWNED UTILITY REQUIRES REPAIR OR MAINTENANCE THAT DAMAGES LANDSCAPING, LIGHT POLES, OR OTHER SITE FEATURES IT WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER TO REPAIR THESE SITE FEATURES.

LANDSCAPE LEGEND

- V — PROPOSED CANOPY TREE (INTERIOR VUA)
- V — PROPOSED EVERGREEN TREE (INTERIOR VUA)
- R — PROPOSED CANOPY TREE (RIGHT-OF-WAY SCREEN)
- R — PROPOSED EVERGREEN TREE (RIGHT-OF-WAY SCREEN)
- R — PROPOSED EVERGREEN SHRUBS (RIGHT-OF-WAY SCREENING)
- S — PROPOSED CANOPY TREE (STREET TREE)
- C — PROPOSED CANOPY TREE (CONFLICTING LAND USE BUFFER)
- C — PROPOSED EVERGREEN TREE (CONFLICTING LAND USE BUFFER)
- M — PROPOSED CANOPY TREE (MITIGATION)
- M — PROPOSED EVERGREEN TREE (MITIGATION)
- L — PROPOSED EVERGREEN SHRUB (SITE LANDSCAPING)
- LM — EXISTING TREE TO REMAIN
- ###SF VUA — PROPOSED VEHICLE USE AREA ISLANDS AND SQUARE FOOT AREA
- VEHICULAR USE AREA LIMITS
- PROPOSED FENCE
- PROPOSED RETAINING WALL WITH SAFETY FENCE
- TREE PROTECTION FENCE (SEE MISCELLANEOUS NOTES AND SITE DETAILS FOR DETAIL)

SEE LANDSCAPE NOTES AND DETAILS SHEET FOR FURTHER INFORMATION

NOTE: A LANDSCAPE MODIFICATION IS REQUESTED SINCE NO BIORETENTION ISLANDS ARE PROPOSED DUE TO SITE CONTAMINATION

SCALE: 1" = 30'

0 30 60 90

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

LANDSCAPE REQUIREMENTS

	Required	Proposed
Right-of-way screening		
	10ft when VUA viewed from ROW 1 tree per 30lf; continuous hedge/screen 30inches in ht 10ft = 1 tree and shrubs 18ft = 1 tree and shrubs	2 trees and 7 shrubs proposed
Vehicle Use Area		
Interior islands	1:15sf ratio for island, 39,864sf / 20 =1,993sf island	2,133sf proposed
Bio-retention island	if >750sf island; 50% bioretention 1,993sf x 0.5 = 997sf bioretention island	None proposed; site is contaminated; **a landscape modification is requested**
Interior island trees	1 tree per island; 1 tree per 250sf island; 1,993sf / 250 = 8 trees	8 trees proposed
Snow pile storage	identify locations on plan	identified on landscape plan
Street Trees		
Street trees	1 tree per 45lf frontage 332lf / 45 = 8 trees	8 trees proposed within the property; **a landscape modification is requested.**
Street tree escrow	$1.30 per linear foot frontage	None proposed - Not applicable
Street tree canopy loss fee	total dbh removed - caliper replacement trees x $207 per tree	No removals proposed - Not applicable
Conflicting Land Use Buffer		
when adjacent to public park and R4 adjacent to residential purposes	15ft wide; 1 tree per 15lf, 50% evergreen; continuous screening 4ft high East-112lf outside fence + 227lf inside fence = 339 / 15lf = 23 trees and screening North-100lf inside fence / 15lf = 7 trees and screening South - 45lf / 15 = 3 trees and screening	East-outside fence - 8 trees, retaining wall and existing berm for 4 ft screening East-within fence - 15 proposed trees, proposed wooden fence and existing berm for 4 ft screening North-inside fence - 7 proposed trees and proposed wooden fence for 4ft screening South - 3 proposed trees, trash enclosure, retaining wall and existing berm for 4ft screening
Tree Mitigation		
	50% DBH of Woodland and LM removed	Not applicable
Outdoor refuse		
		screening wall around dumpsters
Private streets and shared driveways		
	Not applicable	Not applicable

PLANT SCHEDULE

Total	V.U.A. (V)	R.O.W. (R)	C.L.U.B (C)	Street Tree Equivalent* (S)	Site Landscaping (L)	Symbol	Scientific Name	Common Name	Root	Size	Spacing	Notes
Deciduous Trees												
4				4		AL	*Amelanchier laevis 'JFS Arb'*	Spring Flurry Seviceberry	B&B	2.5" cal.	15' o.c.	single stem
2		2				AG	*Amelanchier x grandiflora 'Autumn Brilliance'*	Autumn Brilliance Serviceberry	B&B	2.5" cal.	As Shown	single stem
5	5					CC	*Caripinus caroliniana*	American Hornbeam	B&B	2.5" cal.	As Shown	
3			3			CO	*Celtis occidentalis*	Northern Hackberry	B&B	2.5" cal.	As Shown	
4				4		LT	*Liriodendron tulipifera 'Arnold'*	Arnold Tulip tree	B&B	2.5" cal.	10' o.c.	
3	3					QR	*Quercus rubra*	Northern Red Oak	B&B	2.5" cal.	As Shown	
21	8	2	3	8	0	Total						
Evergreen Trees												
11			11			JV	*Juniperus virginiana*	Eastern Red Cedar	B&B	6-7' ht	12' o.c.	Full
6			6			PG	*Picea glauca*	White Spruce	B&B	6-7' ht	12' o.c.	Full
11			11			PGd	*Picea glauca 'densata'*	Black Hills Spruce	B&B	6-7' ht	12' o.c.	Full
2			2			PS	*Pinus strobus*	Eastern White Pine	B&B	6-7' ht	15' o.c.	Full
30	0	0	30	0	0	Total						
Shrubs												
3					3	AA	*Aronia arbutifolia 'Brilliantissima'*	Red Chokeberry	#5 Cont.	24-30" ht	3.5' o.c.	
7		7				JS	*Juniperus x 'Sea Green'*	Sea Green Juniper	#5 Cont.	24-30" ht	3.5' o.c.	
10	0	7		0	3	Total						

Note: All species substitutions must be approved in writing by the City of Ann Arbor Natural Resources Staff prior to installation.
***Note: Street Tree equivalent trees are planted within the property and are not considered street trees. They are proposed to meet the intent of the UDC ordinance.**

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2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
LANDSCAPE PLAN

11

JOB No. 20034
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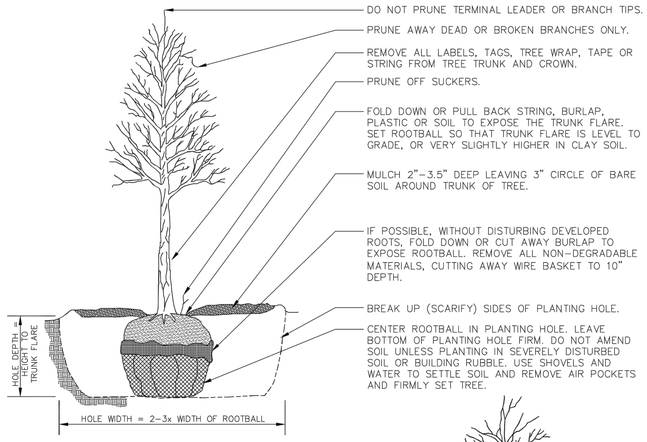
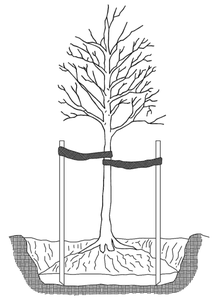


DO NOT STAKE UNLESS IN HEAVY CLAY SOIL, WINDY CONDITIONS, 3" OR GREATER DIAMETER TREE TRUNK OR LARGE CROWN. IF STAKING IS NEEDED DUE TO THESE CONDITIONS:

- STAKE WITH 2 x 2 HARDWOOD STAKES, OR APPROVED EQUAL, DRIVEN 6"–8" OUTSIDE OF ROOTBALL.
- LOOSELY STAKE TREE TRUNK TO ALLOW FOR TRUNK FLEXING.
- STAKE TREES JUST BELOW FIRST BRANCH WITH 2"–3" WIDE BELT–LIKE, NYLON OR PLASTIC STRAPS (2 PER TREE ON OPPOSITE SIDES OF TREE, CONNECT FROM TREE TO STAKE HORIZONTALLY. DO NOT USE ROPE OR WIRE THROUGH A HOSE.)
- REMOVE ALL STAKING MATERIALS AFTER 1 YEAR.



REVISIONS	REV. NO.	DR.BY	CH. BY	DATE

PUBLIC SERVICES DEPARTMENT
CITY OF ANN ARBOR

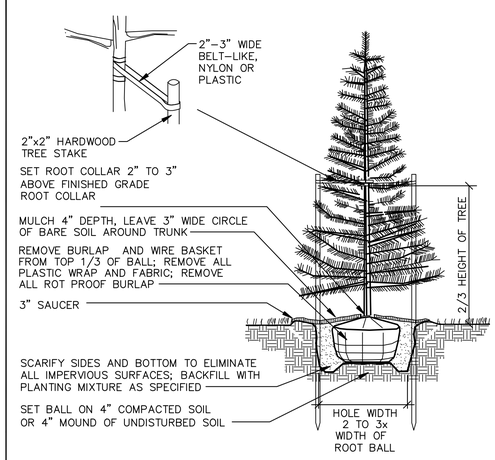
TREE PLANTING DETAIL

DR. BY	ARG	CH. BY	CSS
SCALE	NONE	DATE	7–23–10
INCH			

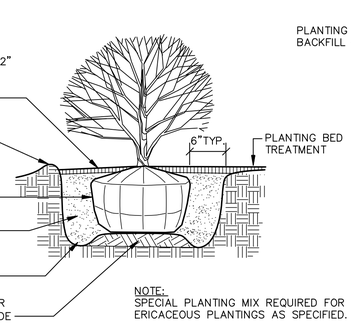
DRAWING NO. SD–L–3

SHEET NO. _____ OF _____

NOTE: A: STAKING IS ONLY REQUIRED IF THE SITE IS WINDY OR THE TREES ARE GREATER THAT 3" CALIPER. IF TREES MUST BE STAKED, THE STAKED SHALL BE REMOVED IN ONE YEAR.

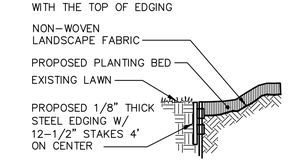


EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

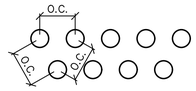


SHRUB PLANTING DETAIL
NOT TO SCALE

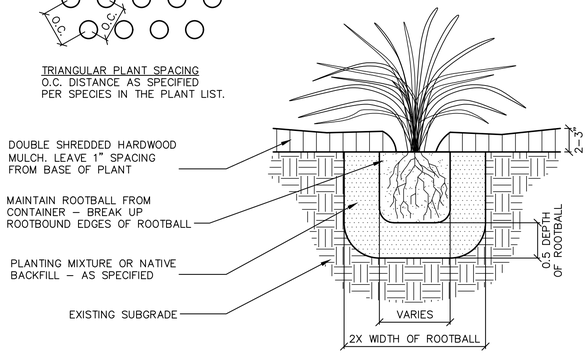
NOTE:
MATERIALS TO BE FLUSH WITH THE TOP OF EDGING



STEEL EDGING DETAIL
NOT TO SCALE

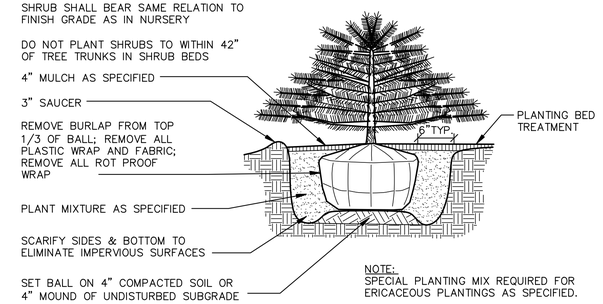


TRIANGULAR PLANT SPACING
O.C. DISTANCE AS SPECIFIED PER SPECIES IN THE PLANT LIST.



PERENNIAL/ORNAMENTAL GRASS PLANTING DETAIL
NOT TO SCALE

NOTE:
PRUNE 20% OF BRANCHES AND FOLIAGE RETAINING NORMAL PLANT



EVERGREEN SHRUB PLANTING DETAIL
NOT TO SCALE

NOTES

1. For any plant quantity discrepancies between the plan view and the plant schedules, the plant schedule shall take precedence.
2. Plant materials shall be selected and installed in accordance with standards established by the City of Ann Arbor.
3. In-ground automatic irrigation shall be provided for landscaped areas noted on the Landscape Plan. Water outlets shall be provided within 150 feet of all other required planting areas.
4. All diseased, damaged or dead material shown on the site plan as proposed plantings shall be replaced by the end of the following growing season.
5. Restore disturbed areas with a minimum of four (4) inches of topsoil and then seed/ fertilize/mulch.
6. All disturbed areas not to be seeded with seed mixes identified on the Landscape Plan shall be lawn areas. Fertilizer for the initial installation of lawns shall provide not less than one (1) pound of actual nitrogen per 1,000 sq ft of lawn area and shall contain not less than two percent (2%) potassium and four percent (4%) phosphoric acid.
   Lawn (turfgrass) seed mix shall consist of:
   15% Rugby Kentucky Bluegrass
   10% Park Kentucky Bluegrass
   40% Ruby Creeping Red Fescue
   15% Pennifine Perennial Ryegrass
   20% Scaldis Hard Fescue
   Seed shall be applied at a rate of five pounds (5 lbs) per 1000 sq ft. Mulch within 24 hours with two (2) tons of straw per acre, or 71 bales of excelsior mulch per acre. Anchor straw mulch with spray coating of adhesive material applied at the rate of 150 gals. / acre.
7. After the first growing season, only fertilizers that contain NO phosphorus shall be used on the site.
8. Areas identified on the Landscape Plan with seed mixes shall be seeded with specified seed mixes from Cardno, or equivalent as approved by landscape architect. Temporary cover crop shall be included with all seed mixes. Seeding rates and installation techniques shall be confirmed with supplier.
9. All seeded areas with slopes less than 1:3 (one vertical foot for every 3 horizontal feet) shall be mulched with straw mulch at the rate of two (2) bales per 1,000 square feet. All seeded areas with slopes greater than 1:3 shall be seeded and biodegradable erosion control blanket North American Green SC150, or equivalent, shall be applied with biodegradable stakes.
10. Deciduous plants shall be planted between March 1 and May 15 and from October 1 until the prepared soil becomes frozen. Evergreen plants shall be planted between March 1 and June 1 and from August 15 to September 15.
11. Native seeding areas shall be seeded after May 1, (when soil is free of frost and in workable condition), but before June 15 or after October 1, but before November 30 (or prior to ground freezing) or as approved by Landscape Architect or guaranteed by the supplier. If seeding is performed outside planting window, contractor shall perform regularly scheduled watering for installed seed and as needed based on weather conditions to ensure germination and establishment of seed.
12. All planting beds are to receive four (4) inches of shredded hardwood bark mulch.
13. All trees to be located a minimum of 10 feet from public utilities.
14. All single trunk, deciduous trees shall have a straight and a symmetrical crown with a central leader. One sided trees or those with thin or open crowns shall not be accepted.
15. All evergreen trees shall be branched fully to the ground, symmetrical in shape and have not been sheared in the last three (3) growing seasons.
16. All compacted subgrade soils in proposed landscape areas shall be tilled to a minimum 12-inch depth prior to placement of topsoil, geotextile fabric, or other planting media as specified.
17. Proposed trees will be planted a minimum of 15 feet apart.
18. Planting Soil: Existing, in-place or stockpiled topsoil. Supplement with imported topsoil as needed. Verify suitability of existing surface soil to produce viable planting soil. Remove stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth. Mix surface soil with the following soil amendments to produce planting soil:
    a. Ratio of Loose Compost to Topsoil by Volume: 1:4.
    b. Weight of Lime per 1000 Sq. Ft.: Amend with lime only on recommendation of soil test to adjust soil pH.
    c. Weight of Sulfur or Aluminum Sulfate per 1,000 Sq. Ft.: Amend with sulfur or aluminum sulfate only on recommendation of soil test to adjust soil pH.
    d. Volume of Sand: Amend with sand only on recommendation of Landscape Architect to adjust soil texture.
    e. Weight of Slow-Release Fertilizer per 1,000 Sq. Ft.: Amend with fertilizer only on recommendation of soil test to adjust soil fertility.
19. Native seeding installation shall be performed by a qualified contractor with documented experience of successful established native seeding. Seed shall be installed per manufacturer's specification via hand broadcast
20. Snow cannot be pushed onto interior islands unless they are designated on the plan for snow storage. Bio-retention islands can be used for snow storage. Snow storage areas are located along the edges and corners of parking areas as shown on the plan.
21. During the establishment period for the installed deciduous mitigation trees (1-2 years as to be determined by certified arborist):
    a. The trunk of young trees shall be wrapped in late autumn and wrap shall be removed in early spring
    b. Burlap screening or wrapping shall be installed on the southwest and windward sides from late autumn to early spring.
    c. Trees shall be watered in spring and autumn and during dry conditions at a frequency determined by certified arborist.
    d. Mulching around trees shall be maintained at a depth of 2 to 3 inches

Maintenance:

22. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
23. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
24. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
25. Contractor shall warranty all plant material and trees to remain alive and be in healthy, vigorous and like new condition for the specified period from installation to Substantial Completion. The entire Landscaping Project, including but not limited to: plants (perennials), trees, shrubs, mulches, shrubs, etc are to be under Warranty for One Year after Substantial Completion date of the Project. At the end of the specified One Year Warranty period the Owner's Representative will inspect plant material for compliance. Contractor shall replace, in accordance with the drawings and specifications, all plants, trees, shrubs, etc or as determined by the Owner's Representative, are in an unhealthy or unsightly condition. Warranty shall not include damage or loss of plants, trees, and shrubs caused by fires, floods, freezing rains, lightning storms, or winds over 75 miles per hour, acts of vandalism or negligence on the part of the owner, or any other incident beyond landscape contractor's control.
26. Long-term maintenance of the bio-retention islands shall be performed by the Owner. Maintenance shall include seasonal trimming and removal of dead foliage, removal of weeds, and removal or mulching of leaves and stems. Spot treatment/removal of invasive weeds may be necessary if localized areas become dominated by invasive weeds. Bio-retention island and rain garden shall be inspected by owner following any storm event exceeding 1". Trash and debris shall be removed as needed. Shredded hardwood mulch must be re-spread when erosion is evident and be replenished annually. Once every 2 to 3 years, the entire bio-retention/rain garden area may require mulch replacement.

NOTE: SEE MISCELLANEOUS NOTES AND DETAILS SHEET FOR TREE PROTECTION FENCE DETAIL

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2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
LANDSCAPE NOTES AND DETAILS

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CADD:
ENG: TPH
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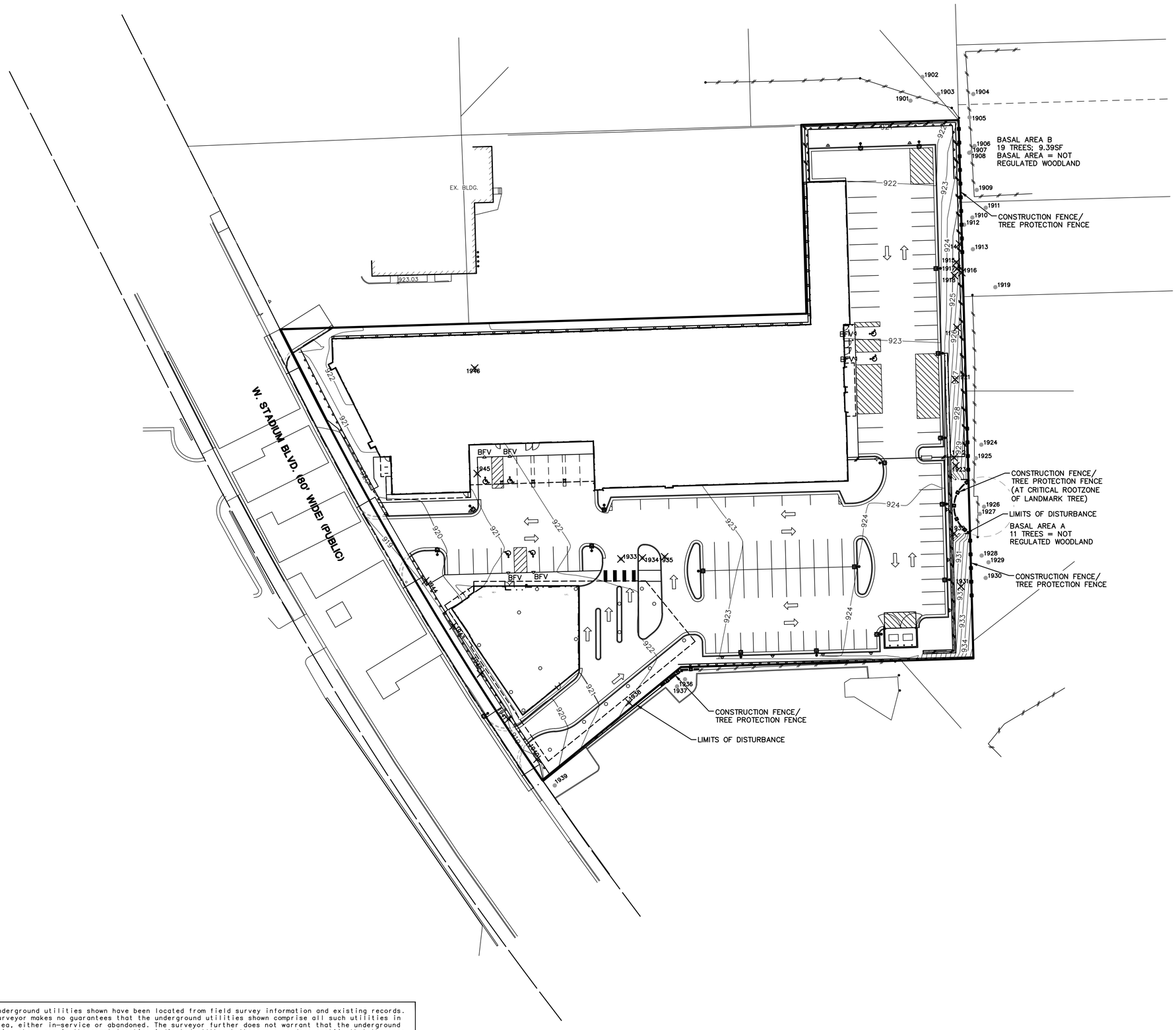
TECH:
/20034D11

JOB No. 20034

REVISIONS:	REV. DATE
PER REVIEW COMMENTS	10/07/20
NO CHANGES THIS SHEET	



SCALE: 1" = 30'

0 30 60 90

Know what's below. Call before you dig.

NATURAL FEATURES SUMMARY

- THERE ARE NO KNOWN NATURAL FEATURES LOCATED ON THE SITE. BASAL AREA CALCULATIONS HAVE BEEN PROVIDED INDICATED THAT TREES ALONG THE EASTERN PROPERTY LINE ARE NOT REGULATED WOODLAND.
- THERE ARE MAN-MADE STEEP SLOPES ALONG THE EASTERN PROPERTY BOUNDARY THAT ARE NOT REGULATED.
- THERE IS ONE LANDMARK TREE ON AN ADJACENT PARCEL TO THE EAST. THE PROPOSED GRADING AND RETAINING WALL ARE OUTSIDE THE CRITICAL ROOT ZONE OF THE LANDMARK TREE.
- THERE ARE CRITICAL ROOT ZONE IMPACTS TO NON-REGULATED TREES ALONG THE EASTERN PROPERTY LINE.
- CONSTRUCTION FENCE WILL BE INSTALLED ALONG THE EASTERN PROPERTY LINE NEAR OFF-SITE TREES AND AT THE CRITICAL ROOT ZONE OF THE OFF-SITE LANDMARK TREE.

LEGEND

- 838 EXIST. CONTOUR
- 838 PROP. CONTOUR
- U.P. EXIST. UTILITY POLE
- GUY WIRE
- OH EXIST. OVERHEAD UTILITY LINE
- PROP. LIGHT POLE
- FENCE
- SILTFENCE
- LIMITS OF DISTURBANCE
- CONSTRUCTION FENCE
- EXISTING TREE
- EXISTING LANDMARK TREE AND CRITICAL ROOT ZONE
- TREE TO BE REMOVED

The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

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SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

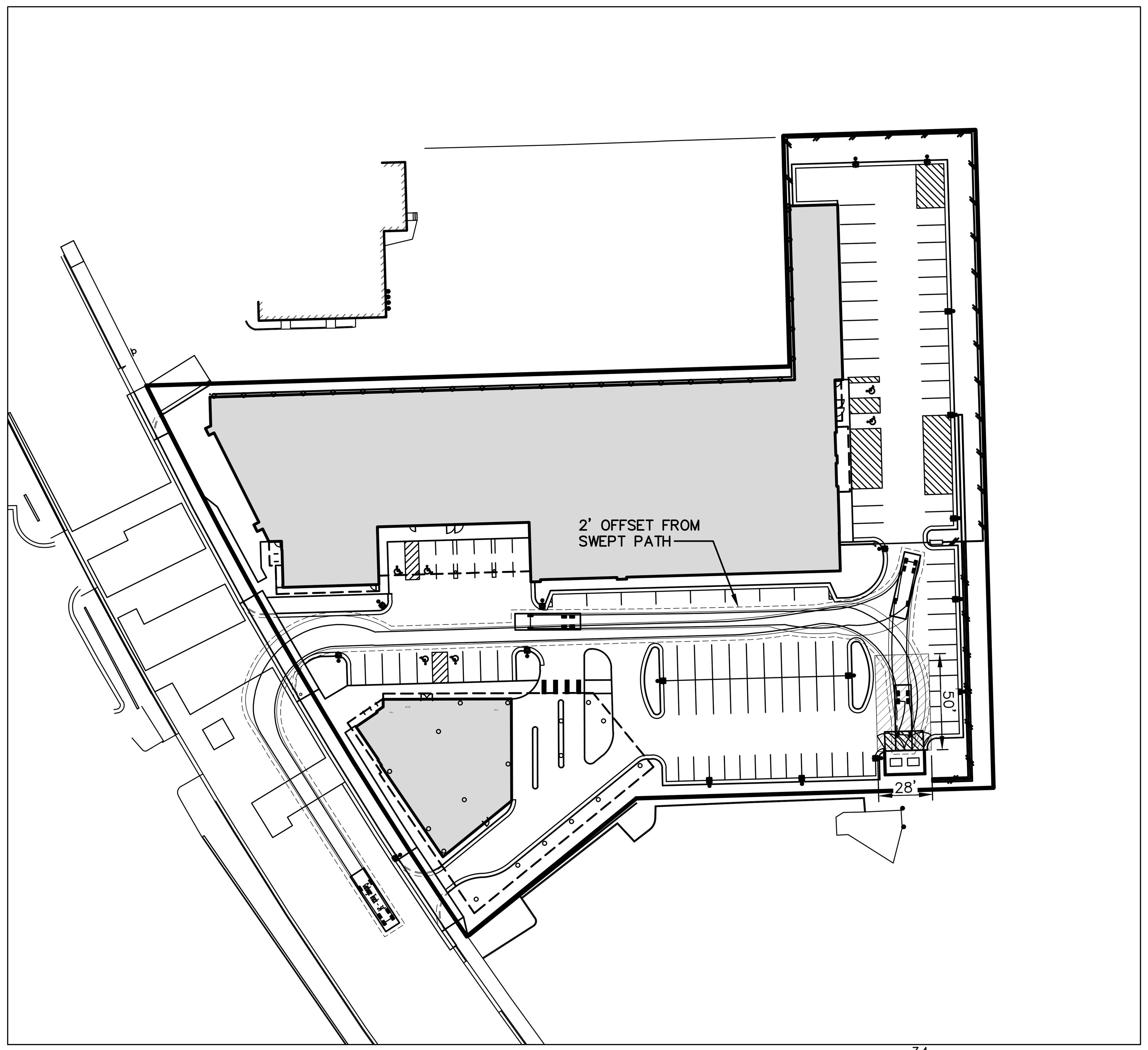
SITE PLAN
NATURAL FEATURES OVERLAY PLAN

13

JOB No. 20034

REVISIONS:	REV. DATE
NSD REVIEW COMMENTS	09/17/20
NSD COMMENTS THIS SHEET	10/07/20

DATE: 07/23/20
SHEET 13 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034NF1

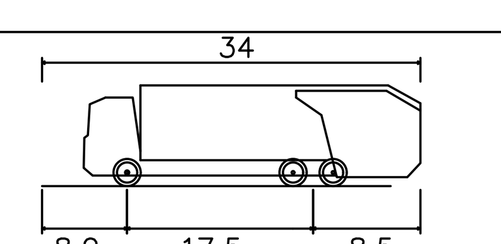


TRASH TRUCK TURNING TEMPLATE

SCALE: 1"=50'

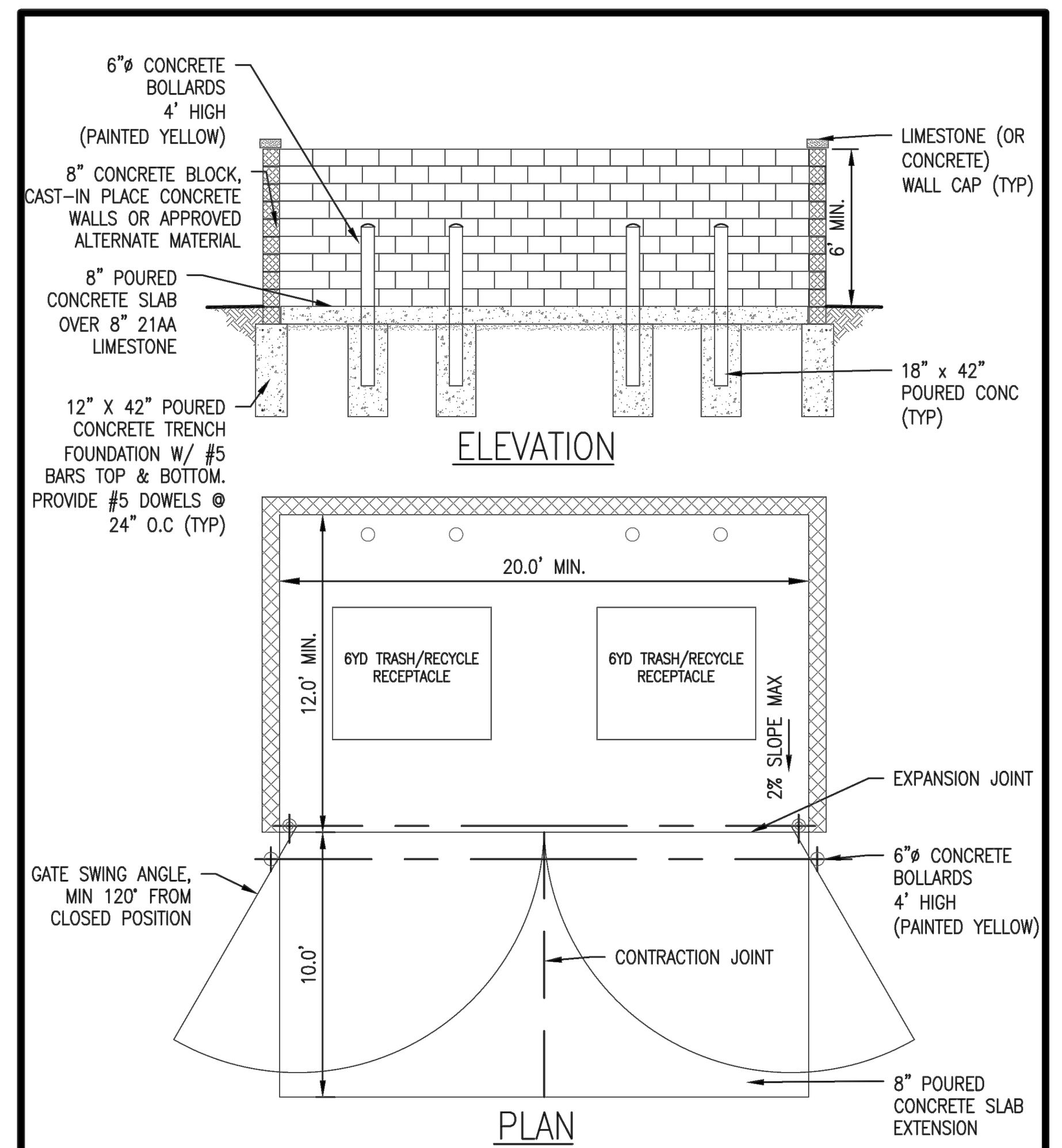
SCALE: 1" = 50'

0 50 100 150



Garbage Truck - 34'

Overall Length	34.00ft
Overall Width	8.50ft
Overall Body Height	10.25ft
Min Body Ground Clearance	0.701ft
Track Width	7.0ft
Lock-to-lock time	6.00s
Max Steering Angle (Virtual)	40.00°



DOUBLE BIN ENCLOSURE DETAIL

CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET P.O. BOX 8647 ANN ARBOR, MI 48107-8647 734-794-6410 www.a2gov.org	REV. NO.	DATE	DRAWN BY	CHECKED BY
	SOLID WASTE STANDARD DETAILS			
	DR. OHM	CH. CJE	DRAWING NO.	
	SCALE N.T.S.	DATE 12/29/15	PAGE 2	

GENERAL NOTES:

1. A CLEAR SPACE MUST BE MAINTAINED DIRECTLY IN FRONT OF THE SOLID WASTE ENCLOSURE. THE CLEAR SPACE SHALL BE A MINIMUM OF FIFTY (50) FEET LONG BY THE WIDTH OF THE INSIDE DIMENSION OF THE ENCLOSURE PLUS FOUR (4) FEET ON BOTH SIDES. A MINIMUM VERTICAL CLEARANCE OF AT LEAST TWENTY-FIVE (25) FEET MUST BE PROVIDED ABOVE THIS AREA.
2. INGRESS AND EGRESS ROUTES MUST BE DEVELOPED BASED ON SOLID WASTE SWEPT PATH REQUIREMENTS. A MINIMUM HORIZONTAL CLEARANCE OF TWO (2) FEET FROM THE EDGE OF THE SWEPT PATH AND A MINIMUM VERTICAL CLEARANCE OF AT LEAST FIFTEEN (15) FEET MUST BE PROVIDED ALONG THE ENTIRE ROUTE.
3. GATES ON ENCLOSURES MUST BE DESIGNED TO OPEN A MINIMUM OF 120 DEGREES FROM THE CLOSED POSITION. THE GATES MUST NOT REDUCE THE REQUIRED ENCLOSURE OPENING WIDTH, BLOCK ADJACENT PARKING SPOTS, OR BE IMPEDED BY ADJACENT CURBS OR LANDSCAPING.
4. GATES SHALL BE DESIGNED TO BE FREE STANDING WITHOUT A CENTER POLE. IF A CENTER POLE DESIGN IS NECESSARY, 12-INCHES SHALL BE ADDED TO THE OVERALL WIDTH OF THE ENCLOSURE.
5. GATE DESIGN SHALL INCLUDE A RELIABLE MEANS TO SECURE THE DOOR IN BOTH THE OPEN AND CLOSED POSITIONS.
6. THE CONCRETE SLAB IN FRONT OF THE BIN ENCLOSURE SHALL HAVE PAVEMENT MARKINGS TO INDICATE "NO PARKING", AS APPROVED BY CITY.
7. THE PROPERTY OWNER SHALL BE RESPONSIBLE FOR THE INSTALLATION AND MAINTENANCE OF NO PARKING SIGNS ALONG THE SOLID WASTE INGRESS/EGRESS ROUTE TO ENSURE THE ROUTE REMAINS FREE OF OBSTRUCTIONS.
8. REFER TO ASSOCIATED STANDARD DETAILS FOR REQUIREMENTS ON SINGLE AND DOUBLE WIDE SOLID WASTE BIN ENCLOSURE LAYOUT AND DESIGN CRITERIA. THE CITY SHALL HAVE THE ABILITY TO MODIFY OR INTERPRET THESE DETAILS AS NECESSARY, TO ACCOMMODATE THE CITY OR CITY CONTRACTOR NEEDS IN REGARDS TO SOLID WASTE PICK-UP.
9. SOLID WASTE ACCESS ROADS AND SERVICE AREA SURFACES SHALL BE DESIGNED AND MAINTAINED TO SUPPORT THE IMPOSED LOADS OF COLLECTION TRUCKS WEIGHING UP TO 66,000 LBS GROSS VEHICLE WEIGHT (GVW) AND SHALL BE PROVIDED WITH AN APPROVED SURFACE SO AS TO PROVIDE ALL WEATHER DRIVING CAPABILITIES. PROPERTY OWNER SHALL BE RESPONSIBLE FOR ALL SNOW AND ICE REMOVAL REQUIRED FOR SAFE ACCESS OF SOLID WASTE VEHICLES.
10. THE SOLID WASTE COLLECTION LOCATION SHALL BE LOCATED A MINIMUM OF TEN (10) FEET AWAY FROM MAJOR ELECTRICAL EQUIPMENT, ABOVE GROUND UTILITY SERVICES, TREE BRANCHES, BALCONIES OR OTHER OVERHEAD OBSTRUCTIONS.

CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET P.O. BOX 8647 ANN ARBOR, MI 48107-8647 734-794-6410 www.a2gov.org	00	06/05/18	OHM	CJE
	REV. NO.	DATE	DRAWN BY	CHECKED BY
	SOLID WASTE STANDARD DETAILS			
	DR. OHM	CH. CJE	DRAWING NO.	
	SCALE N.T.S.	DATE 02/01/16	PAGE 5	

GENERAL NOTES CONTINUED:

11. IF FORWARD ACCESS TO THE PUBLIC STREET IS NOT AVAILABLE FOR THE SOLID WASTE TRUCK, THE SITE DEVELOPMENT LAYOUT MUST ACCOMMODATE A TURN-AROUND LOCATION.
12. FOR SITES THAT CANNOT ACCOMMODATE A TURN-AROUND, THE FOLLOWING REQUIREMENTS MUST BE MET:
    - 12.1. SOLID WASTE TRUCKS MUST BE ABLE TO SERVICE DUMPSTERS WITHOUT IMPEDING THE PUBLIC STREET OR SIDEWALK.
    - 12.2. THE DUMPSTER COLLECTION LOCATION SHALL BE CLEARLY DELINEATED AND NOT HAVE A SLOPE GREATER THAN 2% IN ANY DIRECTION.
    - 12.3. BOLLARDS OR ADEQUATE CLEAR SPACE MUST BE PROVIDED BEHIND THE LIFT POINT SO THE DUMPSTERS ARE NOT POTENTIALLY PUSHED INTO ANY BUILDING OR ACCESS ROUTE.
    - 12.4. ALL SWEPT-PATH CLEARANCE REQUIREMENTS PREVIOUSLY IDENTIFIED SHALL BE PROVIDED.
    - 12.5. A VERTICAL CLEARANCE OF 25 FEET SHALL BE PROVIDED ABOVE THE COLLECTION LOCATION.
13. FOR SITES THAT CANNOT ACCOMMODATE A STANDARD DUMPSTER ENCLOSURE, THE DUMPSTERS MAY BE ROLLED OUT OF A BUILDING OR ALTERNATE ENCLOSURE BY THE PROPERTY OWNER TO A PROPOSED COLLECTION LOCATION. A COLLECTION SCHEDULE FOR RECYCLING AND TRASH COLLECTION SHALL BE PROVIDED ON THE SITE PLAN.
14. FOR SITES ADJACENT TO A PUBLIC ALLEY, SOLID WASTE TRUCKS ARE PERMITTED TO ACCESS THE PROPERTY THROUGH THE ALLEY IF SWEPT-PATH CLEARANCE REQUIREMENTS CAN BE PROVIDED.
15. SOLID WASTE COLLECTION LOCATIONS MUST BE LOCATED WITHIN THE BOUNDARIES OF THE PROPERTY.

CITY OF ANN ARBOR PUBLIC SERVICES 301 EAST HURON STREET P.O. BOX 8647 ANN ARBOR, MI 48107-8647 734-794-6410 www.a2gov.org	00	06/05/18	OHM	CJE
	REV. NO.	DATE	DRAWN BY	CHECKED BY
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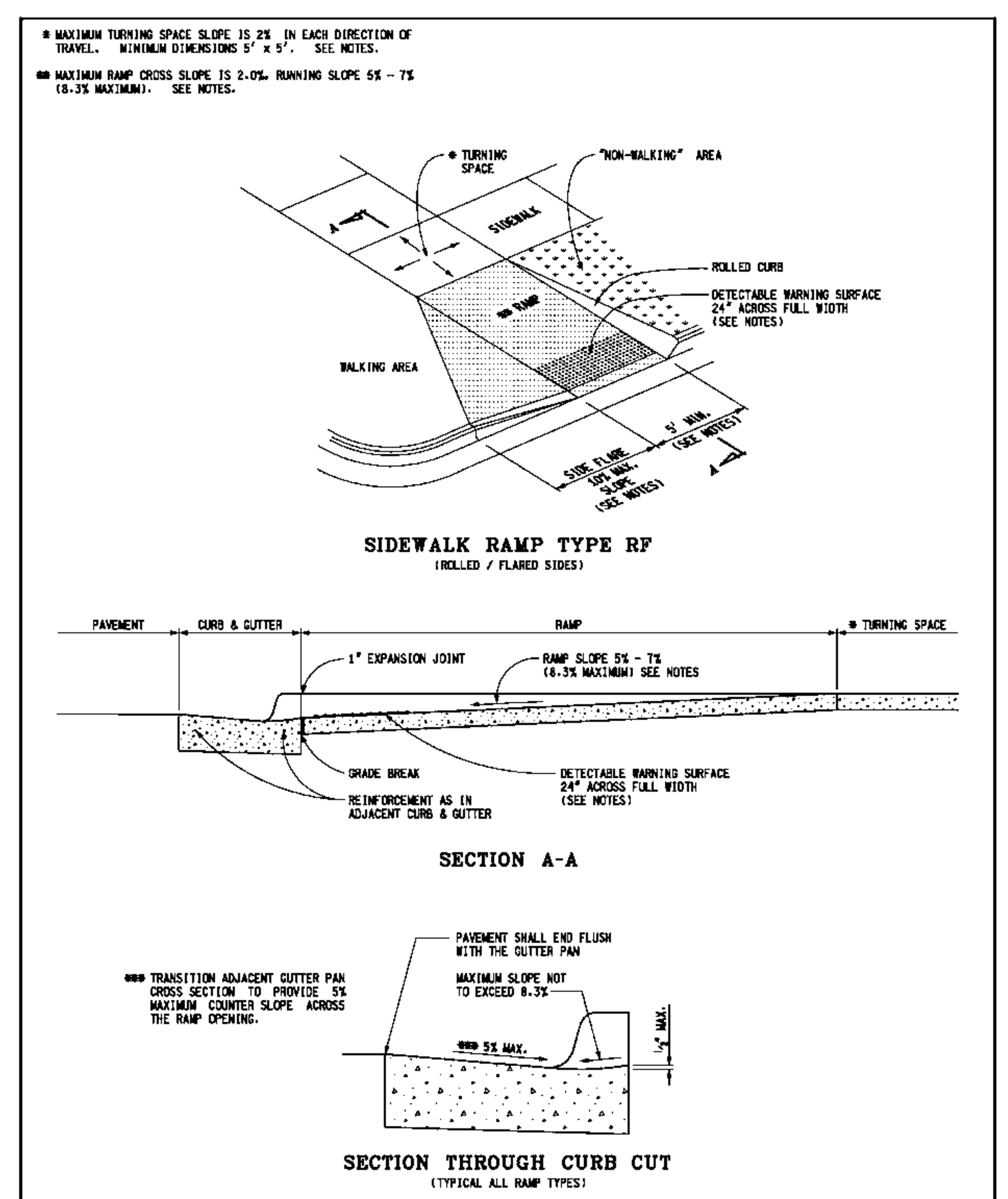
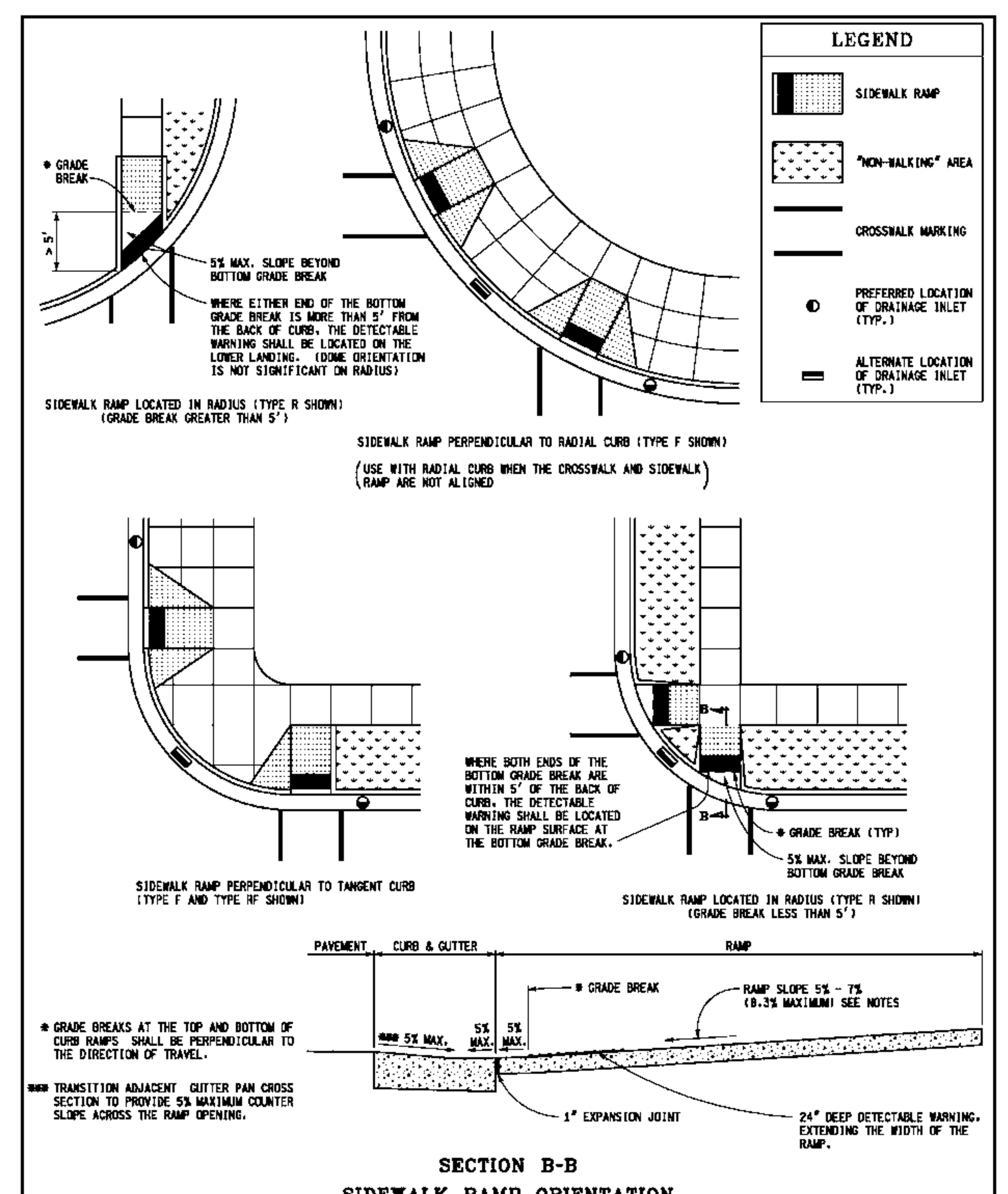
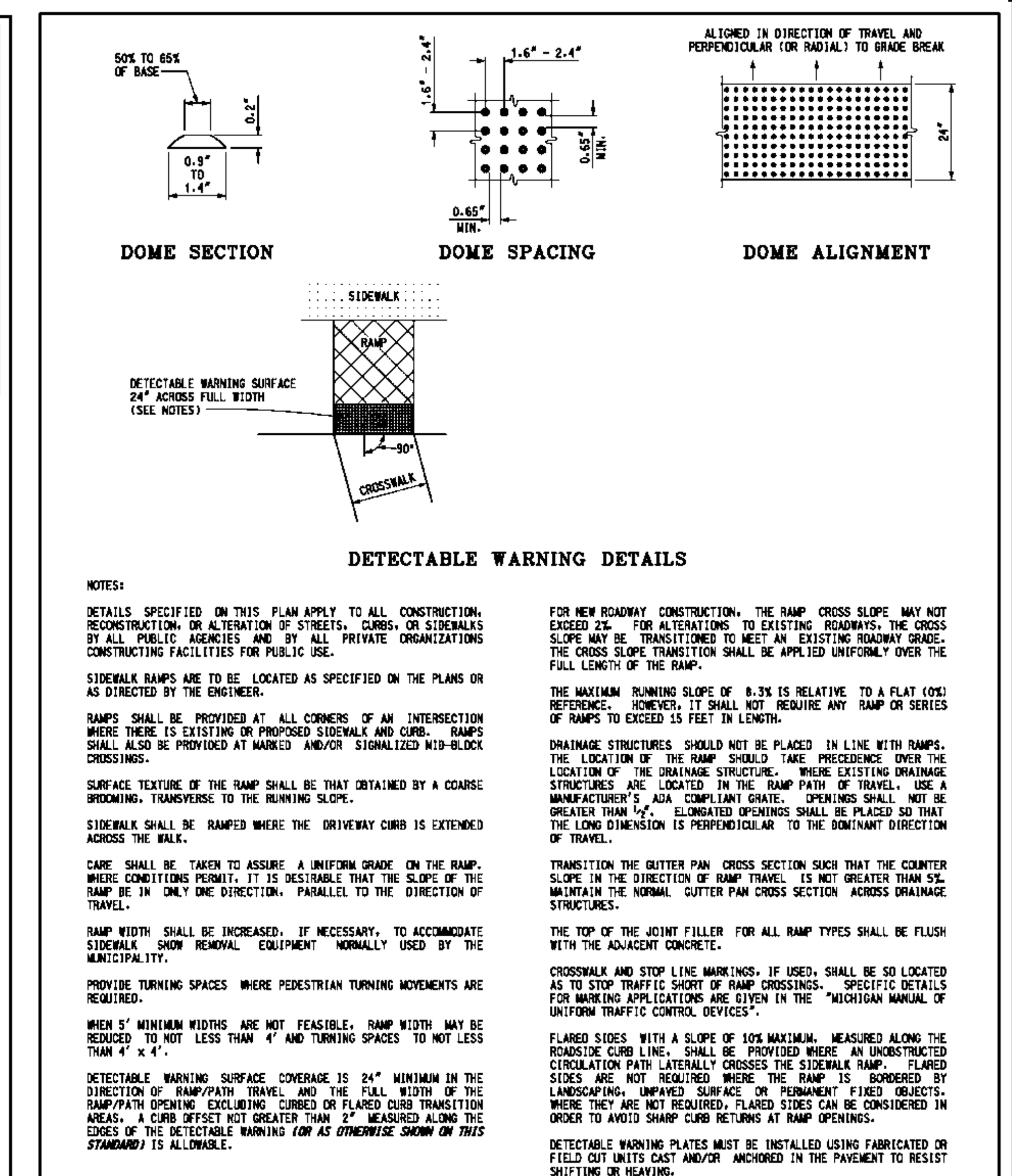
	SCALE N.T.S.	DATE 02/01/16	PAGE 6	







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2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
MISCELLANEOUS NOTES AND DETAILS

14

JOB No. 20034	DATE: 07/23/20
	SHEET 14 OF 19

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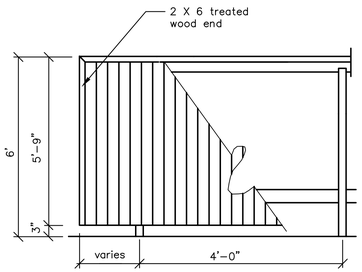
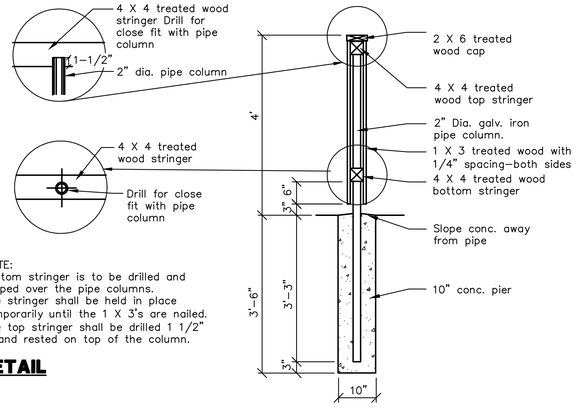
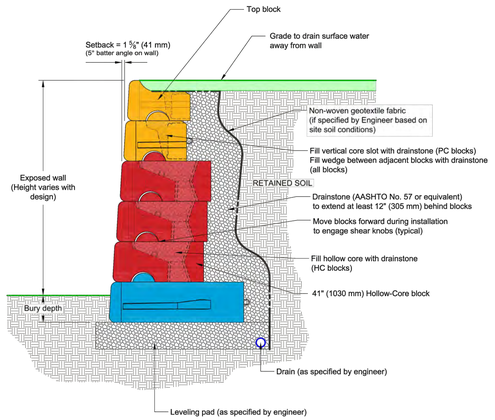




NOTE:
Bottom stringer is to be drilled and slipped over the pipe columns. The stringer shall be held in place temporarily until the 1 X 3's are nailed. The top stringer shall be drilled 1 1/2" in and rested on top of the column.

TREATED WOOD SCREEN FENCE DETAIL

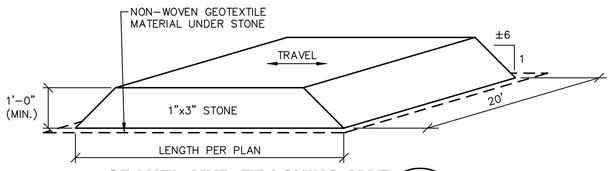
NOT TO SCALE



Note: Wall designs typically include a combination of solid, PC, and hollow-core blocks. Redi-Rock blocks are designed to be used together. Block type, size, and configuration will vary based on site-specific conditions and wall height.

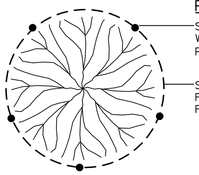
RETAINING WALL DETAIL

NOT TO SCALE



GRAVEL MUD TRACKING MAT (60t)

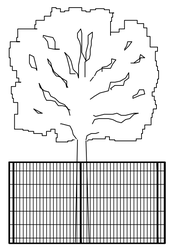
NOT TO SCALE



PLAN

STANDARD STEEL OR WOODEN FENCE POST, POST AT 10' O.C. (MAX)

STANDARD 48" HIGH SNOW FENCE OR ORANGE PLASTIC FENCE

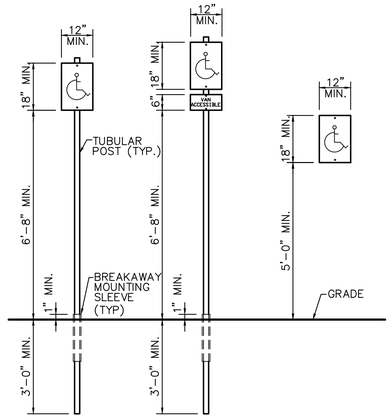


ELEVATION

SNOW FENCE SHALL BE LOCATED AT THE OUTER PERIMETER OF THE CRITICAL ROOT ZONE OR CLOSER ONLY IF INDICATED ON THE APPROVED LANDSCAPE PLAN.

TREE PROTECTION DETAIL (54t)

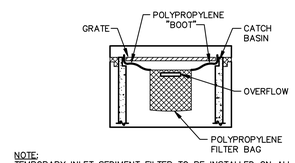
NOT TO SCALE



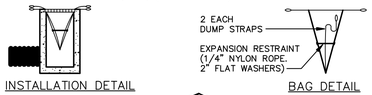
POST MOUNTED SIGNS WALL MOUNTED SIGNS

TYPICAL HANDICAP PARKING SIGNS

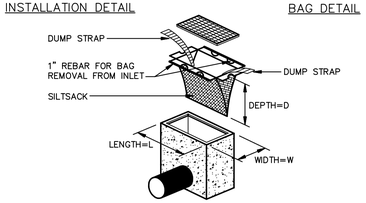
SCALE: 1/2" = 1'-0"



NOTE:
TEMPORARY INLET SEDIMENT FILTER TO BE INSTALLED ON ALL PAVED CATCH BASINS OR STORM INLETS. INLET FILTER TO BE SIMILAR TO "STREAMGUARD" AS MANUFACTURED BY STORMWATER SERVICES CORPORATION (206-767-0441) OR "SILTSACK" AS MANUFACTURED BY ATLANTIC CONSTRUCTION FABRICS, INC.; (800-448-3636). CLEAN FILTER AS NEEDED.

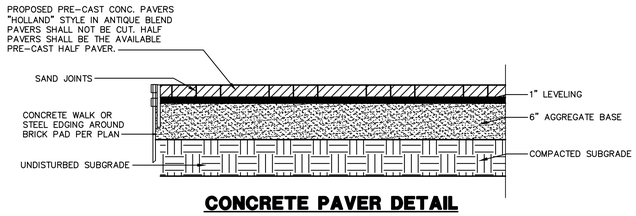


INSTALLATION DETAIL BAG DETAIL



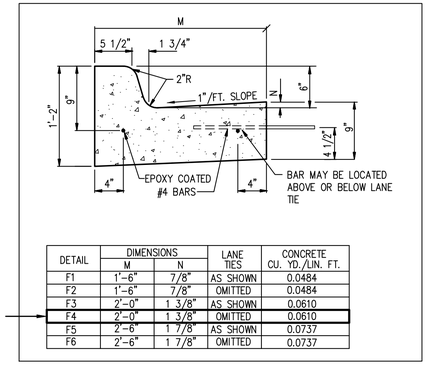
SILT SACK DETAIL (59t)

NO SCALE



CONCRETE PAVER DETAIL

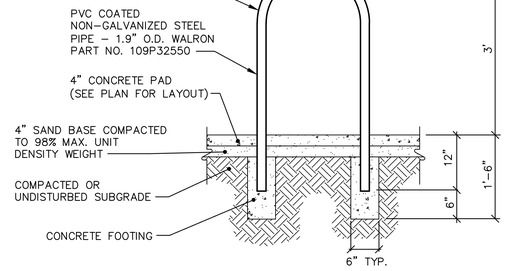
NOT TO SCALE



DETAIL	DIMENSIONS M	DIMENSIONS N	LANE TIES	CONCRETE CU. YD./LIN. FT.
F1	1'-6"	7/8"	AS SHOWN	0.0484
F2	1'-6"	7/8"	OMITTED	0.0484
F3	2'-0"	1 3/8"	AS SHOWN	0.0610
F4	2'-0"	1 3/8"	OMITTED	0.0610
F5	2'-6"	1 7/8"	AS SHOWN	0.0737
F6	2'-6"	1 7/8"	OMITTED	0.0737

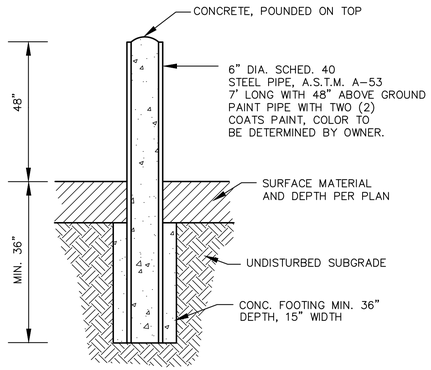
MDOT TYPE F CONCRETE CURB / GUTTER

NOT TO SCALE



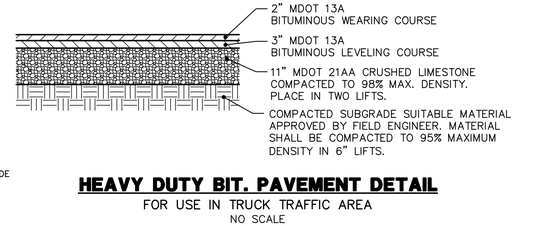
BIKE HOOP DETAIL

NOT TO SCALE



PIPE BOLLARD DETAILS

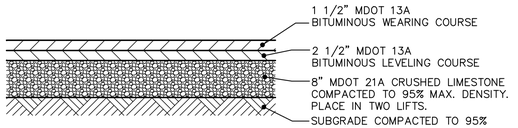
NOT TO SCALE



HEAVY DUTY BIT. PAVEMENT DETAIL

FOR USE IN TRUCK TRAFFIC AREA

NO SCALE



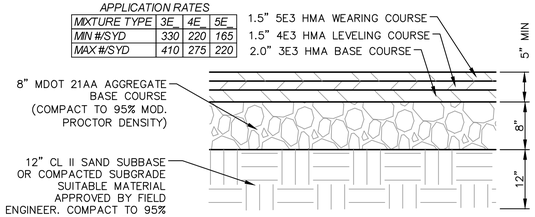
TYPICAL PARKING LOT CROSS SECTION DETAIL

NOT TO SCALE

MINIMUM REQUIREMENT

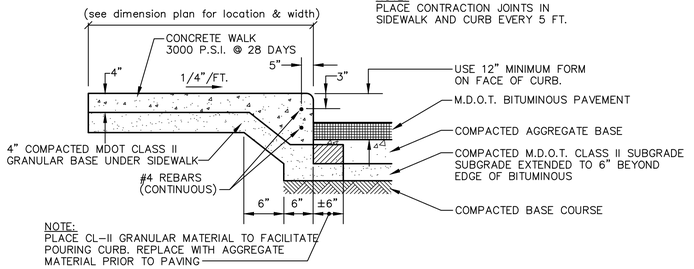
APPLICATION RATES			
MIXTURE TYPE	3E	4E	5E
MIN #/SYD	330	220	165
MAX #/SYD	410	275	220

1.5" 5E3 HMA WEARING COURSE
1.5" 4E3 HMA LEVELING COURSE
2.0" 3E3 HMA BASE COURSE



BITUMINOUS PAVEMENT - PUBLIC R.O.W.

NOT TO SCALE

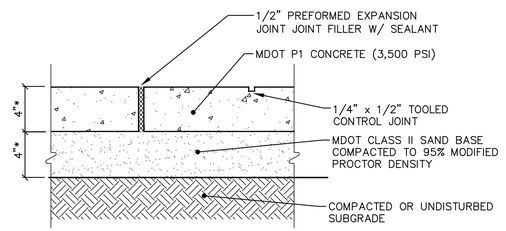


NOTE:
PLACE CONTRACTION JOINTS IN SIDEWALK AND CURB EVERY 5 FT.

NOTE:
PLACE CL-II GRANULAR MATERIAL TO FACILITATE POURING CURB. REPLACE WITH AGGREGATE MATERIAL PRIOR TO PAVING

TYPICAL INTEGRAL WALK / CURB

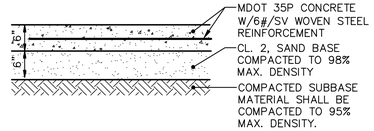
NOT TO SCALE



NOTE:
* INCREASE CONCRETE WALK TO 6" WHEN CROSSING A SINGLE-FAMILY OR DOUBLE-FAMILY DRIVEWAY, AND TO 8" FOR COMMERCIAL DRIVE CROSSINGS. USE 6" CLASS II SAND BASE AT RESIDENTIAL DRIVE CROSSINGS, AND 8" 21AA AGGREGATE BASE (98% MODIFIED PROCTOR) AT COMMERCIAL DRIVE CROSSINGS.

CONCRETE WALK DETAIL

NOT TO SCALE



HEAVY DUTY CONCRETE

NOT TO SCALE

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SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
MISCELLANEOUS NOTES AND DETAILS

15

DATE: 07/23/20
SHEET 15 OF 19
CADD:
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/20034DT1

JOB No. 20034

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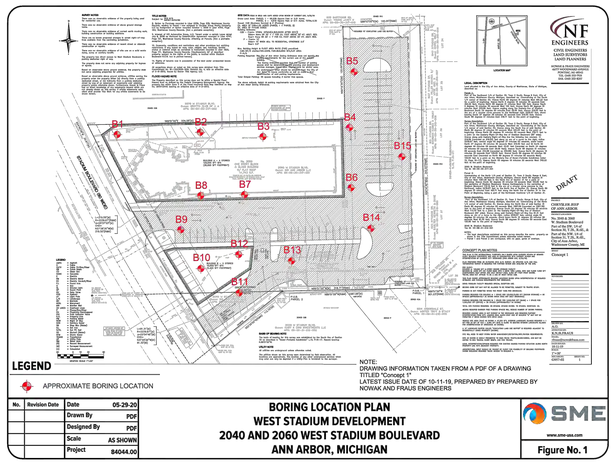
PER CITY REVIEW	



NOTE:
DRAWING INFORMATION TAKEN FROM A PDF OF A DRAWING TITLED "Concept 1"
LATEST ISSUE DATE OF 10-11-19, PREPARED BY PREPARED BY NOWAK AND FRAUS ENGINEERS

No.	Revision Date	Date	05-29-20
		Drawn By	PDF
		Designed By	PDF
		Scale	AS SHOWN
		Project	B4044.00

BORING LOCATION PLAN
WEST STADIUM DEVELOPMENT
2040 AND 2060 WEST STADIUM BOULEVARD
ANN ARBOR, MICHIGAN

SME www.sme-usa.com

Figure No. 1

BORING B 1

PAGE 1 OF 1
BORING DEPTH: 30 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/13/20 COMPLETED: 5/13/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 922 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
FILL- Fine to Medium SILTY SAND- Brown- Medium Dense (SM)
FILL- Sandy CLAY- Trace Gravel- Dark Gray- Very Stiff to Stiff (CL)
LEAN CLAY- Trace Gravel- Gray- Hard (CL)
Fine to Coarse SILTY SAND- Grayish Brown- Wet- Loose to Medium Dense (SM)
END OF BORING AT 30.0 FEET.

GROUNDWATER & BACKFILL INFORMATION
DEPTH (FT) ELEV (FT)
DURING BORING: 13.0 909.0
AT END OF BORING: 13.0 909.0
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B 2

PAGE 1 OF 1
BORING DEPTH: 15 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/13/20 COMPLETED: 5/13/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 922 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
FILL- Fine to Medium SILTY SAND- Brown- Moist- Very Loose (SM)
Fine SILTY SAND- Brown- Moist- Loose to Medium Dense (SM)
LEAN CLAY- Brown- Hard (CL)
LEAN CLAY- Gray- Hard (CL)
END OF BORING AT 15.5 FEET.

GROUNDWATER & BACKFILL INFORMATION
DEPTH (FT) ELEV (FT)
DURING BORING: 8.0 915.0
AT END OF BORING: 8.0 915.0
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B 3

PAGE 1 OF 1
BORING DEPTH: 30 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/13/20 COMPLETED: 5/13/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 923 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
FILL- Fine to Coarse SAND with Gravel- Brown- Moist
FILL- Sandy LEAN CLAY- Trace Gravel- Dark Gray- Very Stiff (CL)
LEAN CLAY- Brown- Very Stiff (CL)
LEAN CLAY with Sand- Gray- Very Stiff (CL)
Fine to Coarse SILTY SAND- Wet- Gravel- Gray- Wet- Loose (SM)
LEAN CLAY- Gray- Hard to Very Stiff (CL)
END OF BORING AT 30.0 FEET.

GROUNDWATER & BACKFILL INFORMATION
DEPTH (FT) ELEV (FT)
DURING BORING: 8.0 915.0
AT END OF BORING: 13.0 910.0
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B 4

PAGE 1 OF 1
BORING DEPTH: 20 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/13/20 COMPLETED: 5/13/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 922 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
FILL- Fine to Medium SILTY SAND- Brown- Medium Dense (SM)
LEAN CLAY- Brown- Hard to Very Stiff (CL)
LEAN CLAY- Gray- Very Stiff (CL)
END OF BORING AT 20.0 FEET.

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered. 3. Strong gasoline odor noted from borehole and soil samples.

BORING B 5

PAGE 1 OF 1
BORING DEPTH: 15 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/12/20 COMPLETED: 5/12/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 922 FT
PROFILE DESCRIPTION
1 inches of ASPHALT CONCRETE
FILL- Fine to Coarse SAND- Brown- Moist (SP)
FILL- Sandy LEAN CLAY- Trace Gravel- Very Stiff (CL)
LEAN CLAY- Gray- Hard to Very Stiff (CL)
END OF BORING AT 15.0 FEET.

GROUNDWATER & BACKFILL INFORMATION
DEPTH (FT) ELEV (FT)
DURING BORING: 13.0 909.0
AT END OF BORING: 13.0 909.0
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B 6

PAGE 1 OF 1
BORING DEPTH: 30 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/12/20 COMPLETED: 5/12/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 923 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
FILL- Fine to Coarse SAND- Brown- Moist (SP)
FILL- Sandy LEAN CLAY- Trace Gravel- Dark Gray- Very Stiff (CL)
FILL- LEAN CLAY- Gray- Very Stiff (CL)
Fine to Medium SILTY SAND- Brown- Moist to Wet- Very Loose (SM)
LEAN CLAY- Gray- Stiff (CL)
LEAN CLAY with Sand- Gray- Stiff (CL)
LEAN CLAY- Gray- Very Stiff (CL)
END OF BORING AT 30.0 FEET.

GROUNDWATER & BACKFILL INFORMATION
DEPTH (FT) ELEV (FT)
DURING BORING: 10.0 913.0
AT END OF BORING: 10.0 913.0
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B 7

PAGE 1 OF 1
BORING DEPTH: 20 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/12/20 COMPLETED: 5/12/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 923 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
FILL- LEAN CLAY- Brownish Gray- Very Stiff to Hard (CL)
LEAN CLAY- Brown- Wet- Very Stiff (CL)
Sandy LEAN CLAY- Gray- Stiff (CL)
Fine to Coarse GRAVEL with Silt and Sand- Brown- Loose (GP-GM)
END OF BORING AT 20.0 FEET.

GROUNDWATER & BACKFILL INFORMATION
DEPTH (FT) ELEV (FT)
DURING BORING: 8.0 915.0
AT END OF BORING: 8.0 915.0
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B 8

PAGE 1 OF 1
BORING DEPTH: 6 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/12/20 COMPLETED: 5/12/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 923 FT
PROFILE DESCRIPTION
Sandy TOPSOIL
FILL- Sandy LEAN CLAY- Trace Brick Fragments- Brown- Hard (CL)
FILL- LEAN CLAY with Sand- Trace Gravel- Brown- Hard (CL)
RUBBER RECYCLE
END OF BORING AT 6.0 FEET.

Unmarked borehole within a 30 foot radius of boring B8 was encountered. Possibly concrete.

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B 9

PAGE 1 OF 1
BORING DEPTH: 7.5 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/12/20 COMPLETED: 5/12/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 923 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
FILL- Fine to Medium SAND- Brown- Moist (SP)
FILL- LEAN CLAY with Sand- Trace Wood Fragments- Gray- Very Stiff (CL)
END OF BORING AT 7.5 FEET.

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B10

PAGE 1 OF 2
BORING DEPTH: 40 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/11/20 COMPLETED: 5/11/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 922 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
FILL- Fine to Medium SILTY SAND- Brown- Medium Dense (SM)
FAT CLAY with Sand- Occasional Silt Partings- Brown & Gray- Stiff (CH)
LEAN CLAY- Gray- Medium to Very Stiff (CL)
Fine SILTY SAND- Brown- Wet (SM)
LEAN CLAY- Brown- Very Stiff (CL)

* Moisture content test was performed on a clay layer

(Continued Next Page)

GROUNDWATER & BACKFILL INFORMATION
DEPTH (FT) ELEV (FT)
DURING BORING: 18.0 904.0
AT END OF BORING: 18.0 904.0
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B10

PAGE 2 OF 2
BORING DEPTH: 40 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan

ELEVATION: 922 FT
PROFILE DESCRIPTION
LEAN CLAY- Brown- Very Stiff (CL) (continued)
SILT- Gray- Moist- Medium Dense (ML)
END OF BORING AT 40.0 FEET.

BORING B11

PAGE 1 OF 1
BORING DEPTH: 20 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/11/20 COMPLETED: 5/11/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 923 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
FILL- LEAN CLAY- with Sand- Dark Brown- Stiff (CL)
LEAN CLAY with Sand- Brown- Very Stiff to Hard (CL)
Fine to Medium SILTY SAND- Brown- Wet- Loose (SM)
LEAN CLAY with Sand- Gray- Very Stiff (CL)
END OF BORING AT 20.0 FEET.

GROUNDWATER & BACKFILL INFORMATION
DEPTH (FT) ELEV (FT)
DURING BORING: 8.0 915.0
AT END OF BORING: 8.0 915.0
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B12

PAGE 1 OF 1
BORING DEPTH: 20 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/11/20 COMPLETED: 5/11/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 922 FT
PROFILE DESCRIPTION
4 inches of ASPHALT CONCRETE
FILL- Sandy LEAN CLAY- Trace Gravel- Brown- Hard to Very Stiff (CL)
FAT CLAY with Sand- Occasional Silt Partings- Brown & Gray- Stiff (CH)
Fine to Coarse SILTY SAND- Gray- Wet- Medium Dense (SM)
END OF BORING AT 20.0 FEET.

GROUNDWATER & BACKFILL INFORMATION
DEPTH (FT) ELEV (FT)
DURING BORING: 8.0 915.0
AT END OF BORING: 12.0 910.0
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered. 3. Strong gasoline odor noted during drilling.

BORING B13

PAGE 1 OF 1
BORING DEPTH: 7.5 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/11/20 COMPLETED: 5/11/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 923 FT
PROFILE DESCRIPTION
FILL- LEAN CLAY with Sand- Brown- Very Stiff (CL)
FILL- Fine to Medium SILTY SAND- Brown- Moist- Loose (SM)
FILL- LEAN CLAY with Sand- Trace Gravel- Brown and Gray- Hard (CL)
END OF BORING AT 7.5 FEET.

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B14

PAGE 1 OF 1
BORING DEPTH: 7.5 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/11/20 COMPLETED: 5/11/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 923 FT
PROFILE DESCRIPTION
8 inches of ASPHALT CONCRETE
Fine to Medium SAND- Brown (SP)
FILL- LEAN CLAY with Sand- Trace Gravel- Brown- Moist- Very Stiff to Hard (CL)
END OF BORING AT 7.5 FEET.

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

BORING B15

PAGE 1 OF 1
BORING DEPTH: 7.5 FEET

PROJECT NAME: West Stadium Development: 2040 - 2060
PROJECT NUMBER: 084044.00
CLIENT: Hughes Properties
PROJECT LOCATION: Ann Arbor, Michigan
DATE STARTED: 5/13/20 COMPLETED: 5/13/20
BORING METHOD: Solid-stem Augers
DRILLER: DB RIG NO.: 552-CME55-Truck
LOGGED BY: DB CHECKED BY: PDF

ELEVATION: 923 FT
PROFILE DESCRIPTION
4 inches of ASPHALT CONCRETE
FILL- Fine to Medium SAND with Clay- Gray- Medium Dense (SP)
FILL- Fine to Medium SAND with Clay- Gray- Moist- Medium Dense (SP)
END OF BORING AT 7.5 FEET.

GROUNDWATER & BACKFILL INFORMATION
GROUNDWATER WAS NOT ENCOUNTERED
BACKFILL METHOD: Auger Cuttings & Cold Patch

NOTES: 1. The indicated stratification lines are approximate. In situ, the transition between materials may be gradual. 2. Soil colors indicated on symbolic profile of boring logs are for visualization purposes only when reviewing the boring logs and do not necessarily represent the in-situ color of the soils encountered.

MIDWESTERN CONSULTING
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CLIENT
NORTHSTADIUM, LLC
30100 TELEGRAPH ROAD, SUITE 220
BINGHAM FARMS, MI 48025
SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

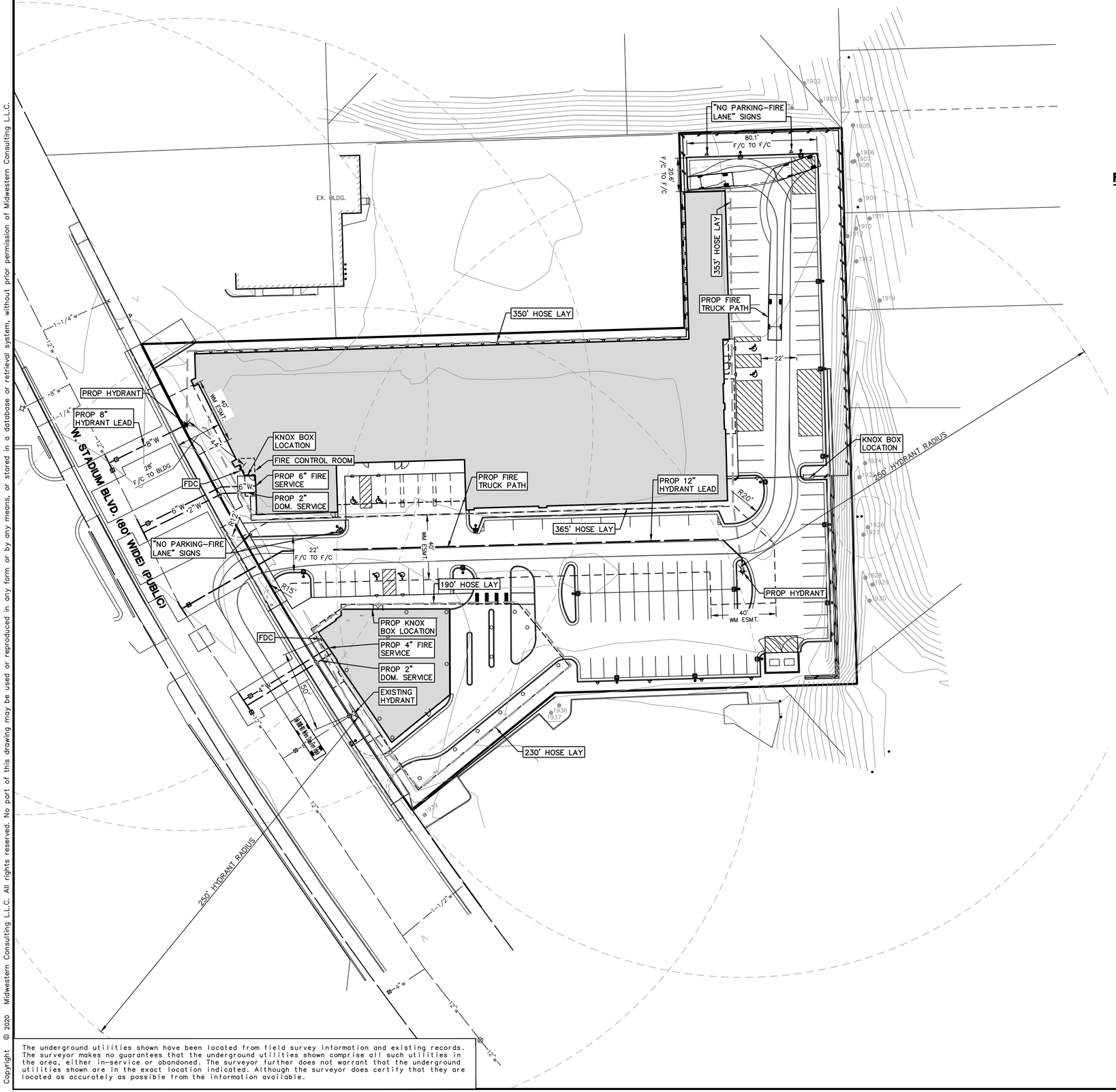
SITE PLAN
SOIL BORINGS

16

DATE: 07/23/20
SHEET 16 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034DT1

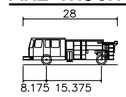
JOB No. 20034

REVISIONS:	REV. DATE
PER REVIEW COMMENTS	10/07/20
NO CHANGES THIS SHEET	



The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

FIRE TRUCK PROFILE



AA 0100-011 Metro Star Fire Truck

Overall Length	28.00ft
Overall Width	8.25ft
Overall Body Height	10.432ft
Min Body Ground Clearance	0.862ft
Track Width	8.00ft
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	29.47ft

NOTES

1. WATER SERVICES ARE TO BE SEPARATE DOMESTIC AND FIRE LINES.
2. ADDRESSING: NUMERICS SHALL BE A MINIMUM OF 12 INCHES IN HEIGHT AND CLEARLY VISIBLE WHEN APPROACHING THE BUILDING. SEE ARCHITECTURAL PLANS FOR EXACT DIMENSIONS AND LOCATIONS.
3. FLOW REQUIREMENTS: FLOW SHALL COMPLY WITH NFPA 13 STANDARDS AND SHALL MEET 2015 INTERNATIONAL FIRE CODE (IFC) STANDARDS FOUND IN APPENDIX B. TABLE B 105.1 OF THE CODE.
4. FIRE DEPARTMENT CONNECTIONS (FDC'S) SHALL BE WITHIN 100 FEET OF A HYDRANT.
5. FIRE DEPARTMENT CONNECTION (FDC): HOOK-UP LOCATION IS SUBJECT TO FIRE MARSHAL'S APPROVAL.
6. FDC'S SHALL BE 4 INCH STORZ CONNECTIONS OR (2) 2 ½ INCH NST CONNECTIONS.
7. FDC ACCESS SHALL COMPLY WITH IFC 912.3.
8. FDC SIGNAGE SHALL BE PROVIDED AND SHALL COMPLY WITH IFC 912.4.
9. FIRE PROTECTION ALARM AND DETECTION SYSTEM SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES ADOPTED BY THE CITY OF ANN ARBOR, INCLUDING NFPA 72, 2007 EDITION AND ALL OTHER REFERENCED STANDARDS.
   a. A HORN STROBE DEVICE SHALL BE INSTALLED ABOVE THE FDC AND SHALL ACTIVATE UPON SPRINKLER WATER FLOW.
   b. EMERGENCY RESPONDER RADIO COVERAGE SHALL COMPLY WITH 2015 IFC SECTION 510.
   c. EMERGENCY VOICE/ALARM COMMUNICATIONS SYSTEM SHALL COMPLY WITH 2015 IFC SECTION 907.6.2.2.
   d. OCCUPANT NOTIFICATION APPLIANCES SHALL ACTIVATE THROUGHOUT THE NOTIFICATION ZONES UPON SPRINKLER WATER FLOW.
   e. PLACE SIGNAGE ON FIRE SUPPRESSION SYSTEM CONTROL ROOM DOOR (IFC 2015 SECTION 509.1) IF APPLICABLE.
10. KNOX BOX EMERGENCY ACCESS SYSTEM WITH KEYS TO ACCESS THE BUILDING, THE FIRE SUPPRESSION SYSTEM CONTROL ROOM (IF APPLICABLE), AN ELEVATOR KEY, AND ANY OTHER KEYS TO AREAS THAT MAY BE RELEVANT DURING EMERGENCIES WILL BE REQUIRED. KNOX BOX WITH PROPER KEYS SHALL BE IN PLACE PRIOR TO ISSUANCE OF CERTIFICATES OF OCCUPANCY FOR THE BUILDINGS.
11. THE KNOX BOX SHALL BE MOUNTED NO HIGHER THAN 6 FEET FROM GRADE IN AN APPROVED LOCATION ON THE EXTERIOR FOR EMERGENCY ACCESS TO THE BUILDING AS WELL AS ACCESS TO THE FIRE SUPPRESSION SYSTEM CONTROL ROOMS IF APPLICABLE.
12. CONSTRUCTION SEQUENCING
    a. HYDRANTS MUST BE IN SERVICE AND APPROVED DURING CONSTRUCTION.
    b. HYDRANTS PROVIDING PROTECTION COVERAGE FOR THE BUILDING MUST BE IN SERVICE AND APPROVED BY BOTH ENGINEERING AND FIRE DEPARTMENTS BEFORE THE FIRE DEPARTMENT WILL SUPPORT PERMIT ISSUANCE FOR NEW CONSTRUCTION PHASE AND BEFORE COMBUSTIBLE MATERIALS ARE PLACED ON THE JOB SITE.
    c. STORAGE AREAS FOR CONSTRUCTION MATERIALS MUST BE APPROVED SO AS NOT TO INTERFERE WITH FIRE/EMERGENCY SITE ACCESS.
    d. IF SITE ACCESS IS TO BE RESTRICTED DURING CONSTRUCTION, KNOX BOX LOCKS FOR GATES ARE TO BE PROVIDED.
13. NO FIREWALLS WILL BE CONSTRUCTED WITHIN THE BUILDING.
14. BOOSTER PUMPS WILL BE PROVIDED ON THE DOMESTIC WATER SERVICE AND THE FIRE SUPPRESSION WATER SERVICE LEADS. THE PUMPS SHALL MEET 2015 IFC STANDARDS, SECTION 914.3.1.2.
15. NO SEPARATE FIRE SUPPRESSION SYSTEM CONTROL ROOM IS REQUIRED.
16. STORAGE AREA FOR CONSTRUCTION MATERIALS SHALL NOT INTERFERE WITH FIRE/EMERGENCY SERVICES.
17. HYDRANTS PROVIDING PROTECTION COVERAGE FOR THE BUILDING SHALL BE IN SERVICE AND APPROVED BY BOTH PLANNING AND FIRE DEPARTMENT BEFORE FIRE DEPARTMENT WILL SUPPORT PERMIT ISSUANCE FOR NEW CONSTRUCTION PHASE AND BEFORE COMBUSTIBLE MATERIAL ARE PLACED ON THE JOB SITE.
18. RADIO COVERAGE MUST BE PROVIDED TO MEET ALL REQUIREMENTS OF THE IFC 2015 EDITION, SECTION 510. (FOR THE SELF-STORAGE BUILDING.)
19. AT THE PROPOSED EMERGENCY ACCESS / SECURITY GATE, INSTALL GATE KNOX BOX PER CITY OF ANN ARBOR FIRE CODE. MANUALLY CONTROLLED SLIDING GATES SHALL BE PROVIDED WITH AN APPROVED EMERGENCY VEHICLE DETECTOR / RECEIVER SYSTEM TO MEET CITY OF ANN ARBOR FIRE CODE.
20. WATER SUPPLY FOR THE BUILDING SHALL MEET THE DEMAND FOR AN AUTOMATIC SPRINKLER SYSTEM, INCLUDING HOSE STREAM ALLOWANCE, PER APPENDIX B105.3 AND SHALL MEET THE MINIMUM REQUIREMENTS IN 2015 IFC, APPENDIX B, TABLE B105.1.

LEGEND

W	EXIST. WATER MAIN
W	PROP. WATER MAIN
	EXIST. HYDRANT
	PROP. HYDRANT
	EXIST. GATE VALVE IN BOX
	PROP. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	PROP. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
	PROP. CURB STOP & BOX
	REDUCER
	EXIST. BLOW-OFF
	PROP. BLOW-OFF
P.I.V.	POST INDICATOR VALVE
P.I.V.	POST INDICATOR VALVE
	THRUST BLOCK
fdc	EXIST. FIRE DEPARTMENT CONNECTION
FDC	PROP. FIRE DEPARTMENT CONNECTION
KB	PROP. KNOXBOX

Know what's below. Call before you dig.

SCALE: 1" = 30'

0 30 60 90

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CLIENT
NORTHSTADIUM, LLC
30100 TELEGRAPH ROAD, SUITE 220
BINGHAM FARMS, MI 48025
SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
FIRE PROTECTION PLAN

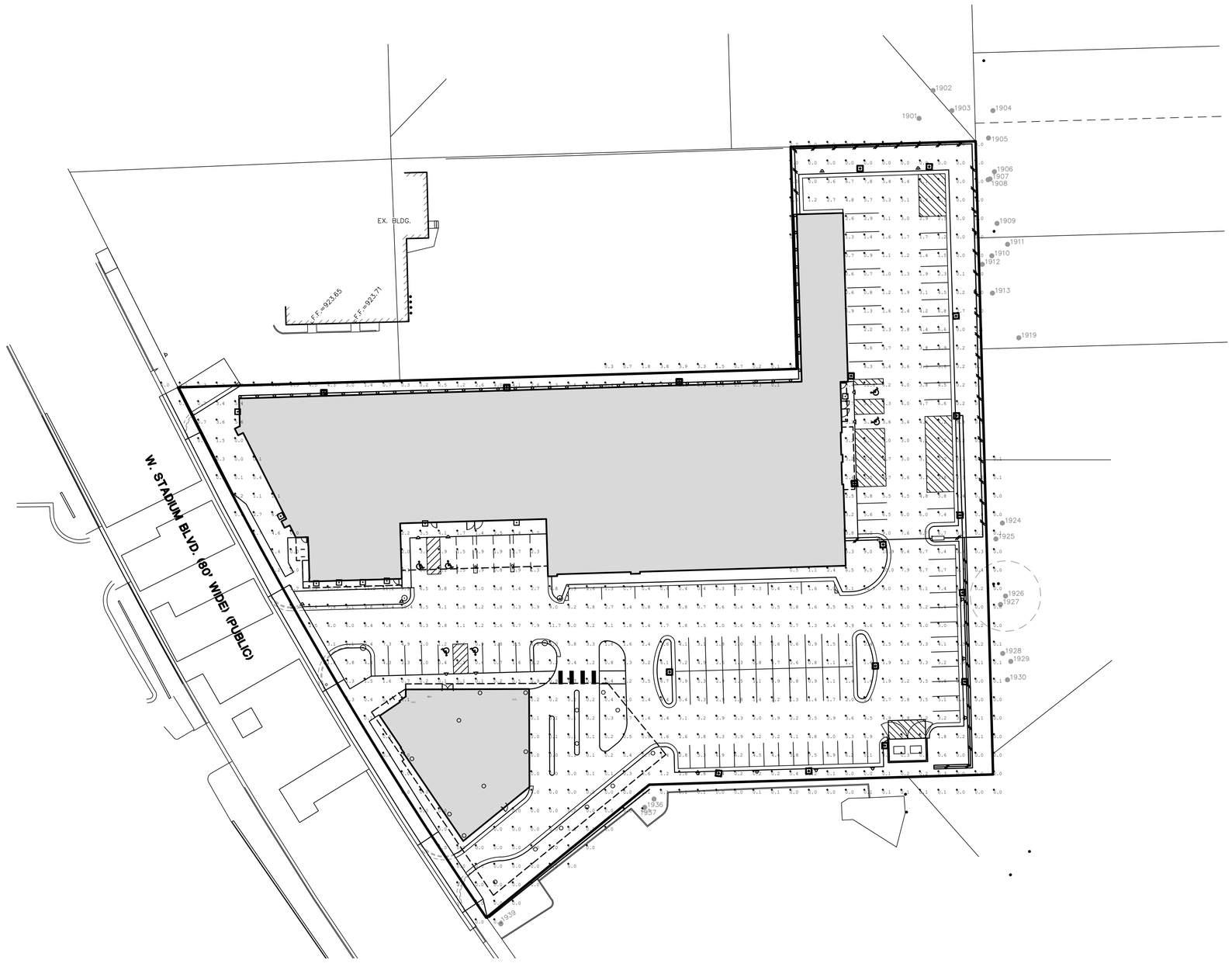
17

JOB No. 20034

REVISIONS:
NO. REVIEW COMMENTS

REV. DATE
10/07/20

DATE: 07/23/20
SHEET 17 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034FP1



SCALE: 1" = 30'

0 30 60 90

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

Luminaire Schedule					
Symbol	Qty	Label	Arrangement	Total Lamp Lumens	LLF
	7	DWP008-LED18 (10')	SINGLE	3147.5	1.000
	2	DWP008-LED18 (9')	SINGLE	3147.5	1.000
	4	EPTS101C-LED80 (14')	SINGLE	8206.3	1.000
	4	DWP008-LED50 (15')	SINGLE	5486.6	1.000
	14	MSL-LED100-III (20')	SINGLE	12945.06	1.000

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CLIENT
NORTHSTADIUM, LLC
30100 TELEGRAPH ROAD, SUITE 220
BINGHAM FARMS, MI 48025
SEAN HAVERA, RON HUGHES

2060 W. STADIUM REDEVELOPMENT PROJECT

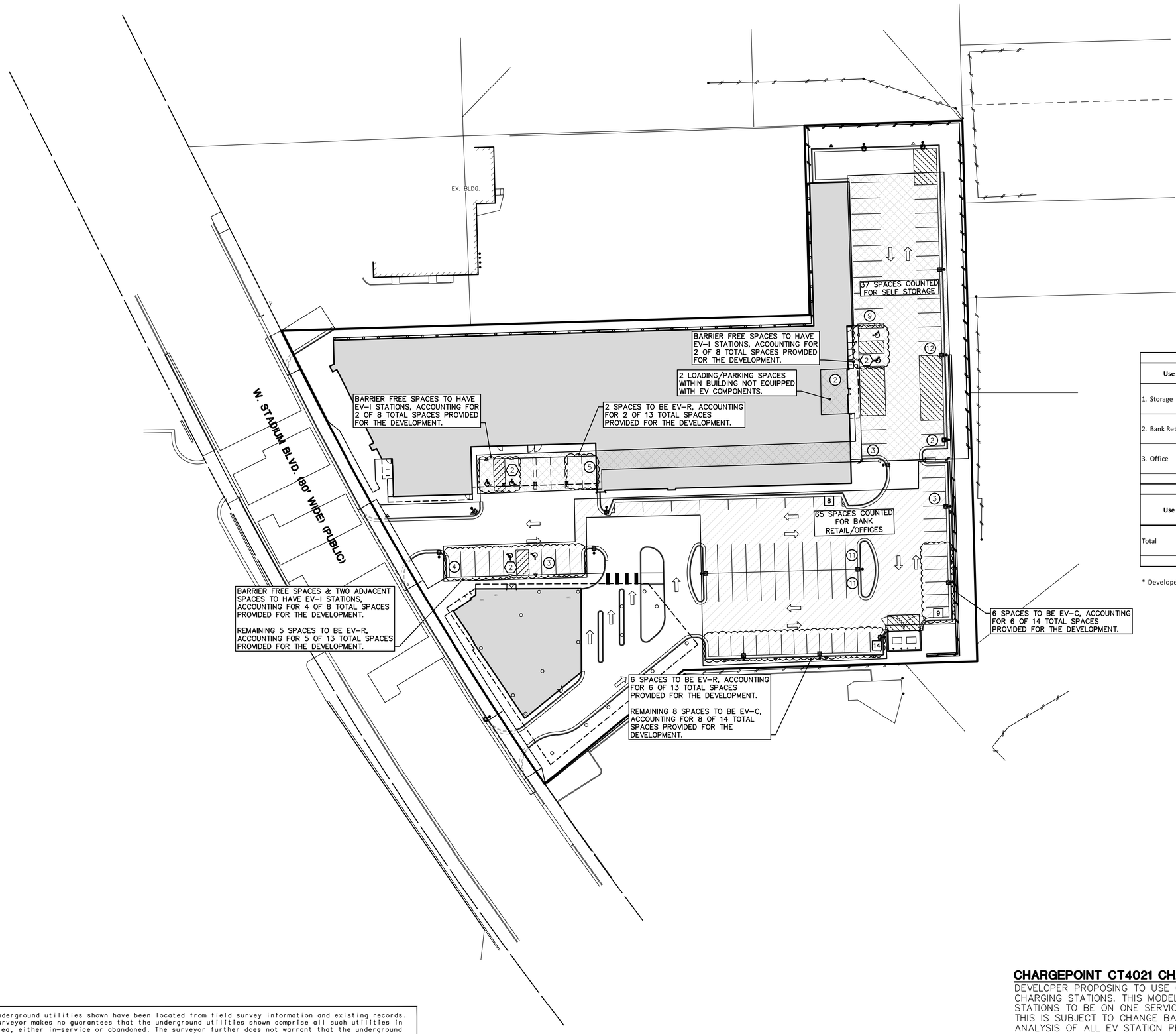
SITE PLAN
PHOTOMETRIC PLAN

18

DATE: 07/23/20
SHEET 18 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034OT1

JOB No. 20034

REVISIONS:	REV. DATE
PER REVIEW COMMENTS	09/07/20
NO CHANGES THIS SHEET	10/07/20



SCALE: 1" = 30'

0 30 60 90

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

2060 W. Stadium Development
EV Ordinance Requirement Summary

EV Requirements					
Use	Parking Required	Parking Provided	EV Ordinance Requirement		
			EV-I Type	Ordinance	Required
1. Storage	60	37	EV-I	0%	-
			EV-R	10%	4
			EV-C	0%	-
2. Bank Retail	20	9	EV-I	10%	1
			EV-R	10%	1
			EV-C	0%	-
3. Office	57	56	EV-I	10%	6
			EV-R	15%	9
			EV-C	25%	14

EV Provided					
Use	Parking Required	Parking Provided	EV Ordinance Requirement		
			EV-I Type	Ordinance Required	Provided *
Total	137	102	EV-I	7	8
			EV-R	14	13
			EV-C	14	14
			Total	**35**	**35**

* Developer providing additional EV-I station in lieu of EV-R space.

CHARGEPOINT CT4021 CHARGING STATION

DEVELOPER PROPOSING TO USE CHARGEPOINT CT CHARGING STATIONS. THIS MODEL ALLOWS FOR 2 EV-I STATIONS TO BE ON ONE SERVICE STANCHION POLE. THIS IS SUBJECT TO CHANGE BASED UPON FINAL ANALYSIS OF ALL EV STATION PROVIDERS.

CT4021

The underground utilities shown have been located from field survey information and existing records. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in-service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated. Although the surveyor does certify that they are located as accurately as possible from the information available.

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2060 W. STADIUM REDEVELOPMENT PROJECT

SITE PLAN
EV PARKING LOCATION PLAN

19

JOB No. 20034

DATE: 09/11/2020
SHEET 19 OF 19
CADD:
ENG: TPH
PM: TJC
TECH:
/20034SP2

REVISIONS:	REV. DATE
PER REVIEW COMMENTS	10/07/20
NO CHANGES THIS SHEET	