

OVERALL AREA MAP

PROJECT CONTACTS

OWNER

DNL HOLDINGS, LLC 2000 WEST STADIUM BLVD. ANN ARBOR, MI 48107

ARCHITECT

METRO GROUP ARCHITECTS P.O. BOX 7363 ANN ARBOR, MI 48107 PHONE: 734.747.8999

CONTRACTOR / DEVELOPER

A. R. BROUWER COMPANY. CONTACT: DAVID NISWONGER DEXTER, MI 48130 PHONE: 734.426.9980

ENGINEER / SURVEYOR

METRO CONSULTING ASSOCIATES CONTACT: CHRISTOPHER SUTTON 45345 FIVE MILE ROAD PLYMOUTH, MI 48170 PHONE: 800.525.6016 EMAIL: CSUTTON@METROCA.NET

MUNICIPALITY

CITY OF ANN ARBOR 301 EAST HURON STREET ANN ARBOR, MI 48104 PHONE: 734.994.2700 OR 734.794.6320

PROJECT NARRATIVE

LEWIS JEWELERS IS RESPECTFULLY REQUESTING SITE PLAN APPROVAL TO ALLOW FOR REDEVELOPMENT OF THE EXISTING SITE AT 300 S MAPLE ROAD TO BE USED FOR NEW RETAIL BUILDINGS.

THE OVERALL EXISTING PARCEL IS 1.98 ACRES IN SIZE AND IS ZONED C3: FRINGE COMMERCIAL DISTRICT. THE SITE IS CURRENTLY VACANT AND WAS MOST RECENTLY USED AS THE QUARTER BISTRO RESTAURANT. THE EXISTING BUILDING AND SITE IMPROVEMENTS WILL BE DEMOLISHED TO ACCOMMODATE THREE NEW COMMERCIAL BUILDINGS TOTALING 24,529 SF OF FLOOR AREA. SITE WORK WILL INCLUDE NEW PARKING SPACES AND DRIVE AISLES, A SIDEWALK CONNECTION FROM MAPLE ROAD TO THE WESTGATE SHOPPING CENTER, BIORETENTION AREAS, AN UNDERGROUND DETENTION SYSTEM, AND LANDSCAPING.

WATER SERVICE WILL BE PROVIDED TO THE BUILDINGS VIA A NEW 4" FIRE SERVICE AND 2" DOMESTIC SERVICE CONNECTED TO THE EXISTING 12" WATER MAIN ON THE SOUTH SIDE OF THE SITE. SANITARY SEWER SERVICE WILL BE PROVIDED FROM THE EXISTING 6" SANITARY SEWER ON THE NORTH SIDE OF THE SITE. STORMWATER MANAGEMENT WILL BE HANDLED VIA TWO UNDERGROUND DETENTION SYSTEMS ON THE NORTH AND SOUTH SIDES OF THE SITE. ADDITIONALLY, THERE WILL BE SIX BIORETENTION AREAS THROUGHOUT THE SITE. THE WIDTH OF THE EXISTING CURB CUT ONTO S MAPLE ROAD WILL BE REDUCED TO ACCOMMODATE THE PROPOSED BUILDINGS WHILE STILL PROVIDING TWO LANES OF TRAFFIC. THREE ACCESS POINTS TO THE EXISTING DRIVEWAYS FOR THE WESTGATE SHOPPING CENTER WILL ALSO BE MAINTAINED.

CITY OF ANN ARBOR GENERAL NOTES

- 1) THE CONSTRUCTION COVERED BY THESE PLANS SHALL CONFORM TO THE CITY OF ANN ARBOR PUBLIC SERVICES STANDARD SPECIFICATIONS WHICH ARE INCLUDED BY REFERENCE.
- 2) THE OMISSION OF ANY STANDARD DETAIL DOES NOT RELIEVE THE CONTRACTORS OF THEIR OBLIGATION TO CONSTRUCT ITEMS IN COMPLETE ACCORDANCE WITH THE PUBLIC SERVICES STANDARD SPECIFICATIONS.
- 3) USE OF LINE STOPS IS REQUIRED WHERE EXISTING WATER MAINS CANNOT BE SUFFICIENTLY ISOLATED TO COMPLETE THE WORK. THE COST OF ANY LINE STOP ISOLATION IS THE RESPONSIBILITY OF THE DEVELOPER AND/OR CONTRACTOR.
- 4) PAVEMENT MARKINGS DISTURBED DUE TO PAVEMENT CUTS OR CONSTRUCTION RELATED ACTIVITIES SHALL BE REPLACED AS DIRECTED BY ENGINEER. REPLACEMENT DURING CONSTRUCTION OF THE PROJECT MAY BE CONSIDERED TEMPORARY, WITH FINAL PAVEMENT MARKING RESTORATION TO OCCUR AT THE END OF THE PROJECT.

OPEN SPACE SUMMARY

EXISTING OPEN SPACE AREA: 18.960 SF (0.435 AC) PROPOSED OPEN SPACE AREA: 12,664 SF (0.291 AC)

SHEET INDEX

COVER SHEET

ALTA SURVEY

DEMOLITION PLAN LAYOUT PLAN

GRADING & SOIL EROSION CONTROL PLAN

SOIL EROSION CONTOL NOTES AND DETAILS

UTILITY PLAN

STORM WATER MANAGEMENT PLAN

STORM WATER MANAGEMENT CALCULATIONS - NORTH STORM WATER MANAGEMENT CALCULATIONS - SOUTH

STORM WATER MANAGEMENT DETAILS

TYPICAL DETAILS

TYPICAL DETAILS

LANDSCAPE PLAN

LANDSCAPE NOTES, CALCULATIONS & NATURAL FEATURES

LANDSCAPE DETAILS

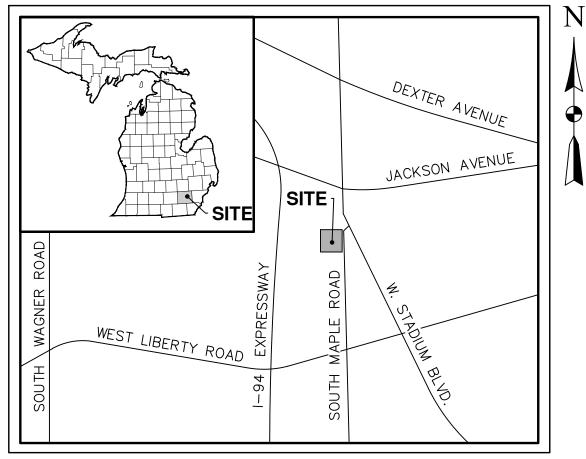
OVERALL FLOOR PLAN

OVERALL EXTERIOR ELEVATIONS

A7.0 OVERALL BUILDING SECTIONS

SITE AND BUILDING RENDERINGS

PH-1 PHOTOMETRIC PLAN



VICINITY MAP

SITE ADDRESS: 300 SOUTH MAPLE ROAD / TAX ID#: 09-08-25-103-006

LAND **DEVELOPMENT SUMMARY**

DEVELOPMENT PROGRAM

- THE PROPOSED DEVELOPMENT INCLUDES DEMOLITION OF THE EXISTING BUILDING AND CONSTRUCTION OF THREE NEW COMMERCIAL BUILDINGS. • PROPOSED BUILDING #1: +/-9,408 SF JEWELRY STORE (LEWIS
- •• PROPOSED BUILDING #2: +/-10,575 SF RETAIL BUILDING (4 UNITS) •• PROPOSED BUILDING #3: +/-4,546 SF RETAIL/RESTAURANT
- ALL EXISTING PAVEMENT WILL BE REMOVED AND REPLACED, AND THE PROPOSED VEHICULAR USE AREA WILL BE APPROXIMATELY 31.035 SF
- INCLUDING THE PARKING SPACES AND DRIVE AISLES. • PROPOSED SIDEWALKS AND RAMPS WILL MEET CURRENT ADA
- THE SITE LANDSCAPING WILL BE BROUGHT UP TO CURRENT CITY REQUIREMENTS AND STANDARDS.

COMMUNITY ANALYSIS

• THE PROPOSED PROJECT WILL HAVE NO IMPACT ON PUBLIC SCHOOLS. • THE PROPOSED PROJECT IS PART OF AN EXISTING RETAIL CENTER AND

• ALL IMPROVEMENTS ARE PROPOSED TO BE COMPLETED IN ONE PHASE.

- IS COMPATIBLE WITH THE SURROUNDING USES. • ADJACENT LAND USES WILL NOT HAVE A SIGNIFICANT IMPACT ON THE
- PROPOSED PROJECT. • THE PROPOSED PROJECT WILL HAVE NO SIGNIFICANT IMPACT ON AIR OR WATER QUALITY. THERE ARE NO NATURAL FEATURES ON OR ADJACENT
- WE ARE NOT AWARE OF ANY HISTORIC SITES OR STRUCTURES LOCATED ON THE SITE.

TO THE SITE THAT WILL BE IMPACTED BY THE PROPOSED RENOVATION

SITE ANALYSIS

- THE SITE IS PART OF A LARGER COMMERCIAL RETAIL CENTER. IT IS LOCATED AT THE WEST SIDE OF SOUTH MAPLE ROAD. THE SITE IS CURRENTLY VACANT BUT WAS PREVIOUSLY USED AS A RESTAURANT.
- THE SOIL SURVEY OF WASHTENAW COUNTY INDICATES THAT THE PREDOMINANT SOIL TYPES ON SITE ARE URBAN LAND AND WAWASEE
- WE DO NOT BELIEVE THERE ARE ANY ENDANGERED SPECIES OR
- HABITATS LOCATED ON THIS PREVIOUSLY DEVELOPED SITE. • THIS SITE IS LOCATED IN AN AREA OF MINIMAL FLOOD HAZARD (ZONE X) AND OUTSIDE THE 100-YEAR FLOOD PLAIN PER FEMA COMMUNITY
- PANEL NUMBER 26161C0244E DATED 04/03/2012. • TWO LANDMARK TREES ARE LOCATED ON THE SITE. THEY WILL BE
- REMOVED AND REPLACEMENT TREES PROVIDED. • THERE ARE NO STEEP SLOPES LOCATED ON SITE AS DEFINED BY THE
- CITY OF ANN ARBOR ZONING ORDINANCE. • THERE ARE NO OPEN WATERCOURSES LOCATED ON THIS SITE. THE RECEIVING WATERS FOR THIS SITE IS THE WEST PARK FAIRGROUNDS
- THERE ARE NO WETLANDS LOCATED ON SITE
- THERE ARE NO WOODLANDS LOCATED ON SITE. • EXISTING BUILDINGS, WITH ASSOCIATED DRIVES AND PARKING AREAS,
- WILL REMAIN ADJACENT TO THIS SITE. • THE EXISTING CURB CUT ONTO SOUTH MAPLE ROAD WILL BE MODIFIED TO ACCOMMODATE THE PROPOSED BUILDING, AND THE EXISTING ACCESS POINT TO THE NORTH WILL BE RELOCATED. THE REMAINING CURB CUTS
- AND ACCESS POINTS SERVING THE SITE WILL NOT BE ALTERED. • THE SITE IS CURRENTLY SERVED BY EXISTING PUBLIC AND FRANCHISE UTILITIES. EXISTING WATER, SANITARY SEWER AND GAS ARE LOCATED WITHIN THE SOUTH MAPLE ROAD RIGHT-OF-WAY. OVERHEAD ELECTRIC
- LINES ARE LOCATED ALONG THE EAST SIDE OF THE SITE. • THE SITE SURFACE GENERALLY DRAINS FROM WEST TO EAST AND MOST LIKELY ULTIMATELY DISCHARGES INTO THE NORTH BRANCH OF FELLOWS CREEK. THIS SITE DOES NOT APPEAR TO RECEIVE DRAINAGE FROM

ADJACENT SITES.

• PLEASE REFERENCE THE TRAFFIC IMPACT STUDY PREPARED BY ROWE FOR ADDITIONAL TRAFFIC DATA RELATED TO THE PREVIOUS AND PROPOSED LAND USES.

PUBLIC SIDEWALK MAINTENANCE STATEMENT

 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.

TRASH AND RECYCLING COLLECTION

 TRASH AND RECYCLING WILL BE REMOVED FROM THE BUILDING AND DEPOSITED IN THE APPROPRIATE DUMPSTERS DAILY. TRASH AND RECYCLING WILL BE COLLECTED FROM THE DUMPSTERS ONCE WEEKLY.



N AN APPROXIMATE WAY ONLY ANI HAVE NOT BEEN INDEPENDENTLY PRESERVE ANY AND ALL UNDERGROUND UTILITIES

CONSTRUCTION SITE SAFETY IS RESPONSIBILITY OF THE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF STRUCTURES, OR OF ANY OTHER

09.29.2020 \(\text{REVISED PER SITE PLAN REVIEW #1} \)

12.21.20
REVISED PER PLANNING COMMISSION

RELATIONSHIPS - REPUTATION - RESULTS 800.525.6016

1051-19-9457 08/26/2020 |Checked by |Drawn by | Crew/Book

AR BROUWER COMPANY

CB CB KMW

LEWIS JEWELERS

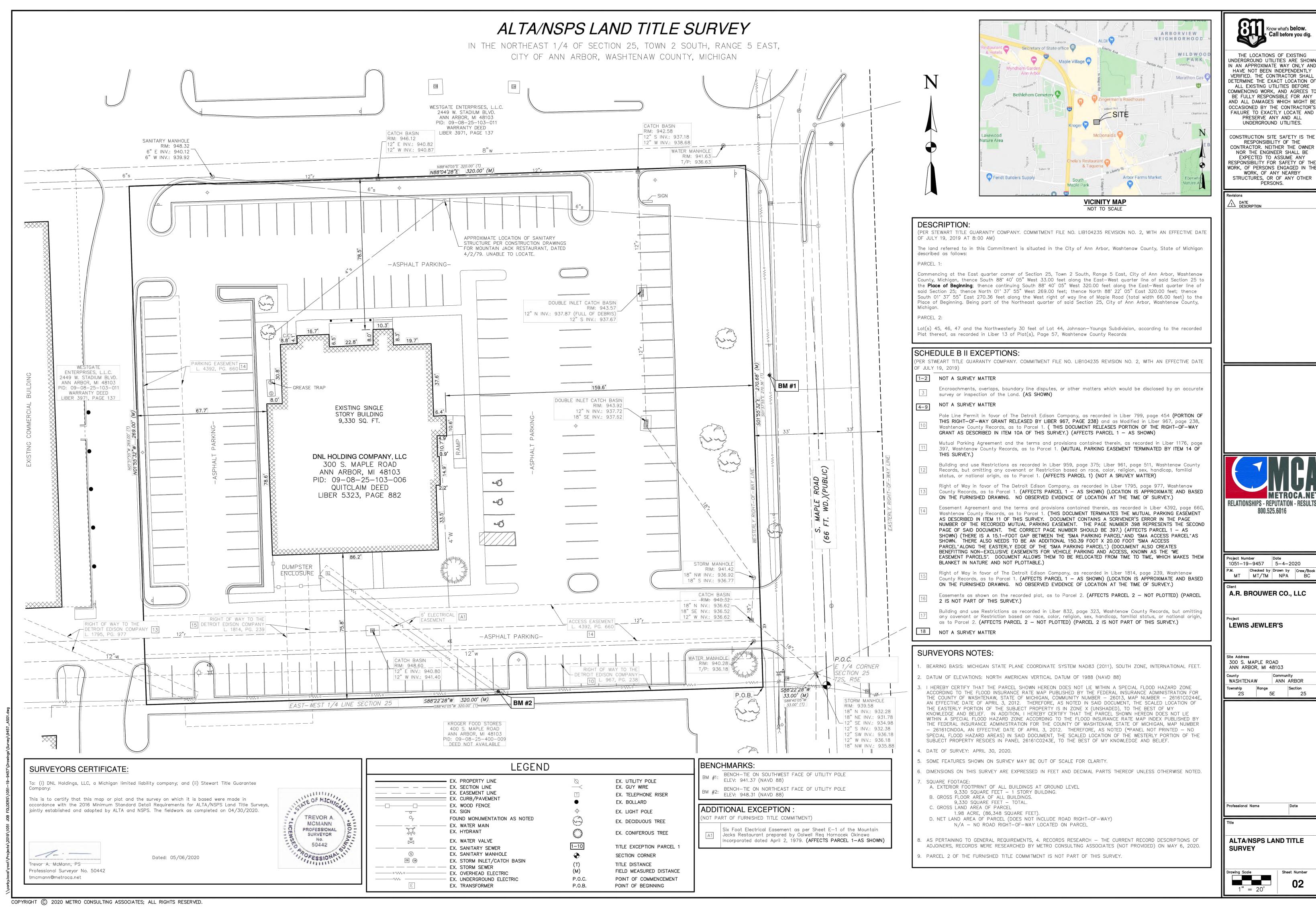
300 S. MAPLE ROAD ANN ARBOR, MICHIGAN 48103

WASHTENAW ANN ARBOR 5E 25

CHRISTOPHER SUTTON, PE --

SITE PLAN

COVER SHEET



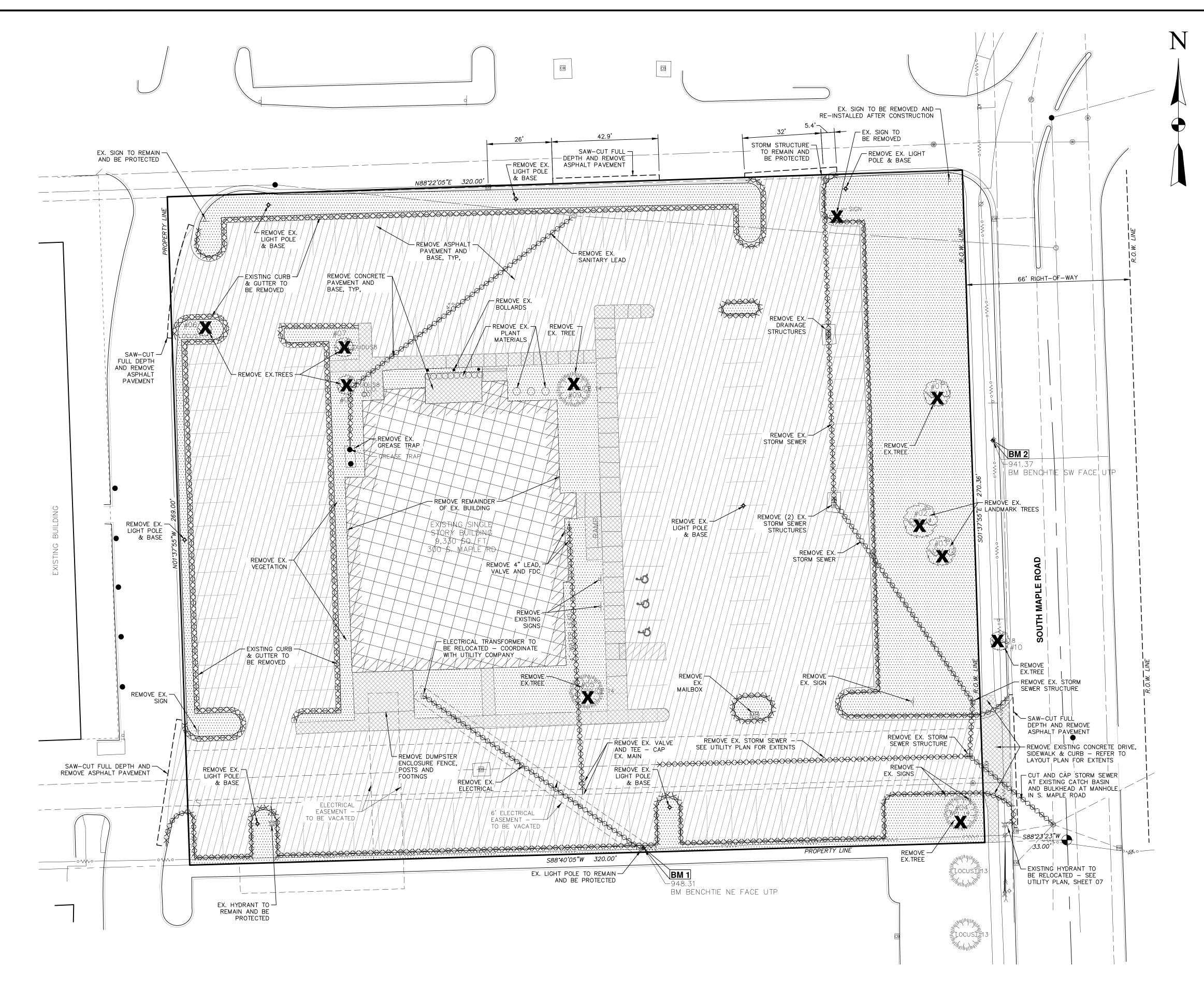
Call before you dig.

N AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION O ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES T BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND

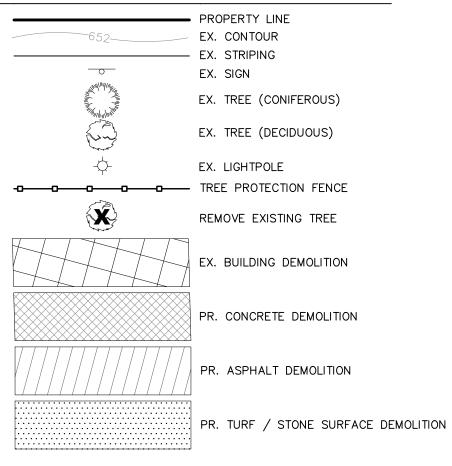
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RELATIONSHIPS - REPUTATION - RESULTS

|Checked by |Drawn by | Crew/Book MT MT/TM NPA BC



LEGEND



DEMOLITION NOTES:

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE TO DEMOLISH OR RELOCATE ANY SITE FEATURES AS ACCORDING TO PLAN OR AS APPROPRIATE TO FACILITATE THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS.
- 2. ALL WORK SHALL COMPLY WITH THE CITY OF ANN ARBOR STANDARDS AND SPECIFICATIONS.
- 3. CONTRACTOR IS RESPONSIBLE FOR PRESERVING LANDSCAPED AREAS THROUGHOUT CONSTRUCTION. ANY PLANTINGS, VEGETATION, OR GROUNDCOVER DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW TO MATCH EXISTING AT THE CONTRACTOR'S EXPENSE.
- 4. THE CONTRACTOR SHALL CALL 811 "MISS DIG" AT LEAST THREE WORKING DAYS PRIOR TO CONSTRUCTION.
- 5. A SOIL EROSION CONTROL PERMIT FROM THE AUTHORITY HAVING JURISDICTION IS REQUIRED AND SOIL EROSION CONTROL BMP'S SHALL BE IN PLACE PRIOR TO THE COMMENCEMENT OF DEMOLITION ACTIVITIES.
- 6. THE CONTRACTOR SHALL INDEPENDENTLY VERIFY THE LOCATION AND DEPTH OF EXISTING UTILITIES PRIOR TO DEMOLITION ACTIVITIES.
- 7. PRIOR TO REMOVING, RELOCATING, OR PERFORMING ANY WORK ON A UTILITY, THE CONTRACTOR SHALL COORDINATE WITH THE RESPECTIVE UTILITY OWNER.
- 8. ALL DEMOLISHED MATERIAL SHALL BE REMOVED FROM THE SITE AND DISPOSED OF IN A LEGALLY DESIGNATED DISPOSAL AREA. PERMITS AND FEES FOR DISPOSAL OF DEMOLITION MATERIAL SHALL BE OBTAINED AND PAID FOR BY THE CONTRACTOR.
- 9. PAVEMENTS TO BE REMOVED SHALL BE SAW CUT TO THE FULL DEPTH OF THE PAVEMENT. THE CONTRACTOR SHALL TAKE CARE TO MAINTAIN A CLEAN EDGE OF
- 10. ALL UNUSED SERVICE LEADS SHALL BE PERMANENTLY KILLED AT ITS RESPECTIVE MAIN

EXISTING CONDITIONS NOTES:

- 1. THIS PLAN IS BASED ON THE TOPOGRAPHIC SURVEY PREPARED BY METRO CONSULTING ASSOCIATES DATED FEBRUARY 13, 2020.
- 2. ELEVATIONS SHOWN HEREIN ARE BASED ON DATUM NATIONAL GEODETIC VERTICAL DATUM OF 1988 (NAVD88)
- 3. THE BEARING BASIS FOR THE SITE IS STATE PLANE, MICHIGAN SOUTH ZONE, INTERNATIONAL FEET.
- 4. THE PARCEL SHOWN IS WITHIN AN AREA OF MINIMAL FLOOD HAZARD (ZONE X) ACCORDING TO FEMA FLOOD INSURANCE RATE MAP, 26161CO244E
- 5. EXISTING UTILITIES ARE BASED ON FIELD OBSERVATIONS OF VISIBLE STRUCTURES IN CONJUNCTION WITH UTILITY MAPS OBTAINED AND/OR MARKED IN THE FIELD BY OTHERS. METRO CONSULTING ASSOCIATES (MCA) MAKES NO GUARANTEE AS TO THE ACCURACY OR COMPLETENESS OF THE EXISTING UTILITY INFORMATION SHOWN. ALL UTILITY LOCATIONS AND DEPTHS SHOULD BE INDEPENDENTLY VERIFIED PRIOR TO CONSTRUCTION. ANY DISCREPANCIES WITH THE PLANS SHOULD BE BROUGHT TO THE DESIGN PROFESSIONAL'S ATTENTION IMMEDIATELY.
- 6. THE EXISTING BUILDING HAS NO BASEMENT.

BENCHMARKS:

BM #1: BENCH TIE IN NORTHEAST FACE OF UTILITY POLE ELEVATION: 948.31' (NAVD88)

BM #2: BENCH TIE IN SOUTHWEST FACE OF UTILITY POLE ELEVATION: 941.37' (NAVD88)

EXISTING TREE LIST:

NO.	SIZE	SPECIES	STATUS					
01	11" CAL.	CRAB APPLE TREE	TO BE REMOVED					
02	14" CAL. (LM)	CRAB APPLE TREE	TO BE REMOVED					
03	12" CAL. (LM)	CRAB APPLE TREE	TO BE REMOVED					
04	14" CAL.	PINE TREE	TO BE REMOVED					
05	14" CAL.	SPRUCE	TO BE REMOVED					
06	3" CAL.	LOCUST TREE	TO BE REMOVED					
07	8" CAL.	CRAB APPLE TREE	TO BE REMOVED					
08	8" CAL.	CRAB APPLE TREE	TO BE REMOVED					
09	14" CAL.	SPRUCE	TO BE REMOVED					
10	8" CAL.	CRAB APPLE TREE	TO BE REMOVED					
(LM) DESIGNATES ANN ARBOR LANDMARK TREE								

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

THE LOCATIONS OF EXISTING

JNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

> CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THI WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

08.27.2020 SITE PLAN SUBMISSION

09.29.2020 REVISED PER SITE PLAN REVIEW #1

10.22.2020
REVISED PER SITE PLAN REVIEW #2

12.07.20
REVISED PER SITE PLAN REVIEW #3

22.21.20 REVISED PER PLANNING COMMISSION



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AR BROUWER COMPANY

LEWIS JEWELERS

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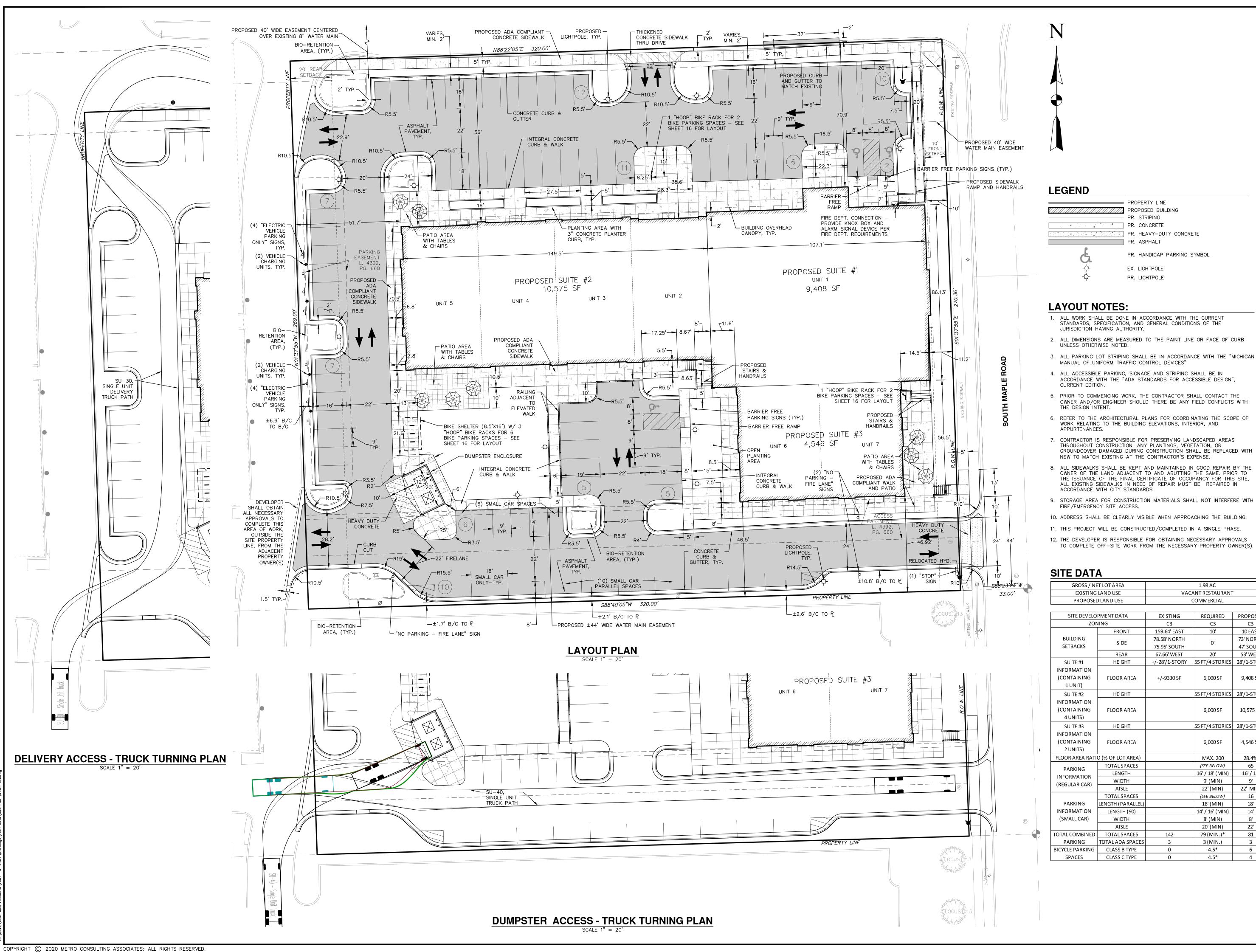
te Address 300 S. MAPLE ROAD ANN ARBOR, MICHIGAN 48103

WASHTENAW ANN ARBOR 2S 5E 25

CHRISTOPHER SUTTON, PE --

SITE PLAN

DEMOLITION PLAN





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REVISED PER SITE PLAN REVIEW #3

12.21.20
REVISED PER PLANNING COMMISSION

LAYOUT NOTES:

- 1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT STANDARDS, SPECIFICATION, AND GENERAL CONDITIONS OF THE JURISDICTION HAVING AUTHORITY.
- 2. ALL DIMENSIONS ARE MEASURED TO THE PAINT LINE OR FACE OF CURB UNLESS OTHERWISE NOTED.

PROPERTY LINE PROPOSED BUILDING

PR. STRIPING

PR. CONCRETE

PR. ASPHALT

EX. LIGHTPOLE

PR. LIGHTPOLE

PR. HEAVY-DUTY CONCRETE

PR. HANDICAP PARKING SYMBOL

- 3. ALL PARKING LOT STRIPING SHALL BE IN ACCORDANCE WITH THE "MICHIGAN
- 4. ALL ACCESSIBLE PARKING, SIGNAGE AND STRIPING SHALL BE IN ACCORDANCE WITH THE "ADA STANDARDS FOR ACCESSIBLE DESIGN",
- CURRENT EDITION. 5. PRIOR TO COMMENCING WORK, THE CONTRACTOR SHALL CONTACT THE OWNER AND/OR ENGINEER SHOULD THERE BE ANY FIELD CONFLICTS WITH
- THE DESIGN INTENT. 6. REFER TO THE ARCHITECTURAL PLANS FOR COORDINATING THE SCOPE OF
- WORK RELATING TO THE BUILDING ELEVATIONS, INTERIOR, AND APPURTENANCES. 7. CONTRACTOR IS RESPONSIBLE FOR PRESERVING LANDSCAPED AREAS
- THROUGHOUT CONSTRUCTION, ANY PLANTINGS, VEGETATION, OR GROUNDCOVER DAMAGED DURING CONSTRUCTION SHALL BE REPLACED WITH NEW TO MATCH EXISTING AT THE CONTRACTOR'S EXPENSE. 8. 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.
- FIRE/EMERGENCY SITE ACCESS.
- 10. ADDRESS SHALL BE CLEARLY VISIBLE WHEN APPROACHING THE BUILDING. 11. THIS PROJECT WILL BE CONSTRUCTED/COMPLETED IN A SINGLE PHASE.
- 12. THE DEVELOPER IS RESPONSIBLE FOR OBTAINING NECESSARY APPROVALS TO COMPLETE OFF-SITE WORK FROM THE NECESSARY PROPERTY OWNER(S).

SITE DATA

GROSS / NE	ET LOT AREA	1.98 AC								
EXISTING	LAND USE	VACANT RESTAURANT								
PROPOSEI	D LAND USE		COMMERCIAL							
SITE DEVELO	PMENT DATA	EXISTING	REQUIRED	PROPOSED						
ZON	NING	C3	C3	C3						
	FRONT	159.64' EAST	10'	10 EAST						
BUILDING	SIDE	78.58' NORTH	0'	73' NORTH						
SETBACKS	SIDL	75.95' SOUTH	U	47' SOUTH						
	REAR	67.66' WEST	20'	53' WEST						
SUITE #1	HEIGHT	+/-28'/1-STORY	55 FT/4 STORIES	28'/1-STORY						
INFORMATION (CONTAINING 1 UNIT)	FLOOR AREA	+/-9330 SF	6,000 SF	9,408 SF						
SUITE #2	HEIGHT		55 FT/4 STORIES	28'/1-STORY						
INFORMATION (CONTAINING 4 UNITS)	FLOOR AREA		6,000 SF	10,575 SF						
SUITE #3	HEIGHT		55 FT/4 STORIES	28'/1-STORY						
INFORMATION (CONTAINING 2 UNITS)	FLOOR AREA		6,000 SF	4,546 SF						
FLOOR AREA RATI	O (% OF LOT AREA)		MAX. 200	28.4%						
PARKING	TOTAL SPACES		(SEE BELOW)	65						
INFORMATION	LENGTH		16' / 18' (MIN)	16' / 18'						
(REGULAR CAR)	WIDTH		9' (MIN)	9'						
(REGULAR CAR)	AISLE		22' (MIN)	22' MIN.						
	TOTAL SPACES		(SEE BELOW)	16						
PARKING	LENGTH (PARALLEL)		18' (MIN)	18'						
INFORMATION	LENGTH (90)		14' / 16' (MIN)	14'						
(SMALL CAR)	WIDTH		8' (MIN)	8'						
	AISLE		20' (MIN)	22'						
TOTAL COMBINED	TOTAL SPACES	142	79 (MIN.)*	81						
PARKING	TOTAL ADA SPACES	3	3 (MIN.)	3						
BICYCLE PARKING	CLASS B TYPE	0	4.5*	6						
SPACES	CLASS C TYPE	0	4.5*	4						

RELATIONSHIPS - REPUTATION - RESULTS 800.525.6016

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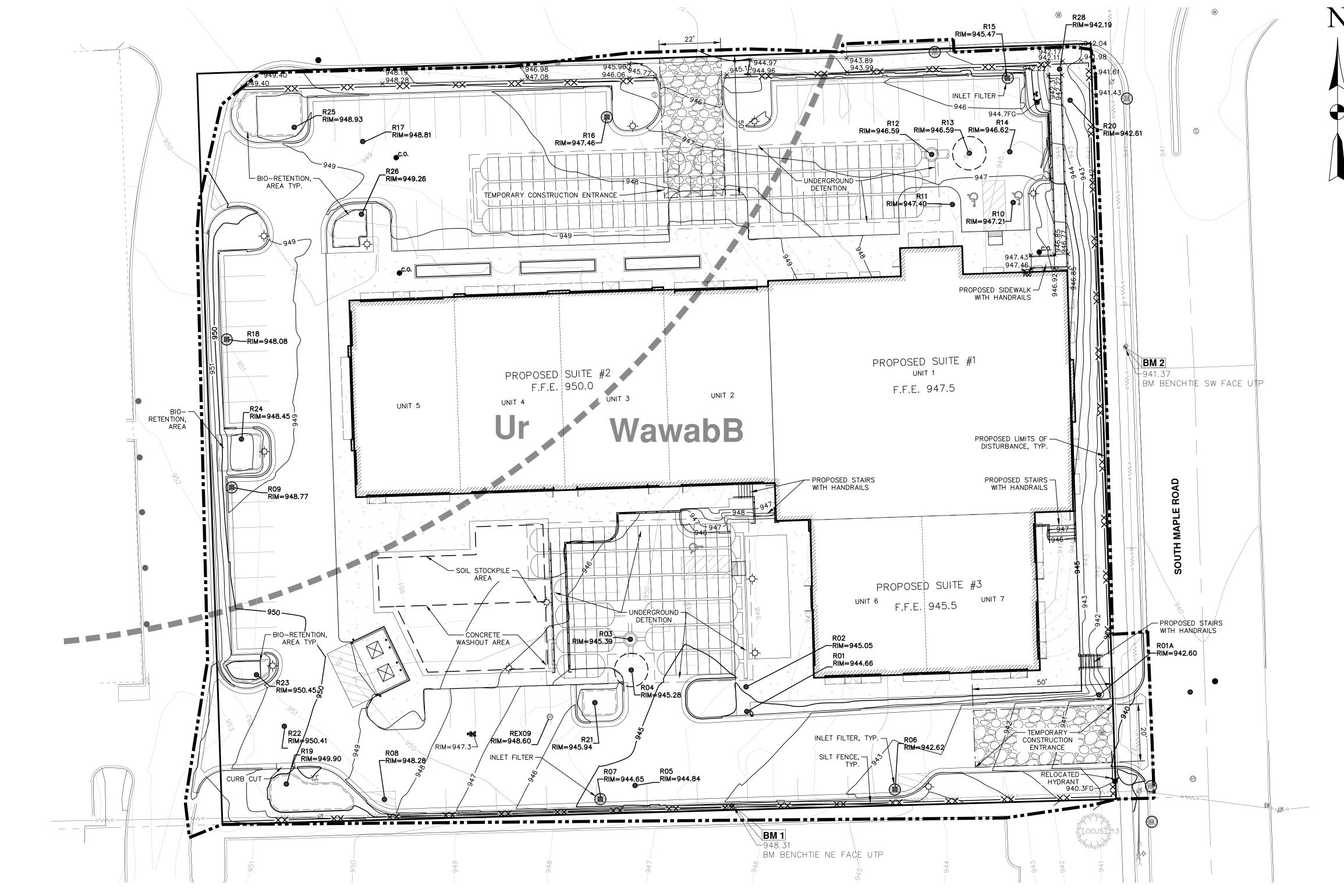
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HRISTOPHER SUTTON, PE --

SITE PLAN LAYOUT PLAN



	EX. SPOT ELEVATION EX. CONTOUR EX. WETLAND LIMITS EX. ADJACENT PROPERTY LINI EX. SECTION LINE EX. EASEMENT LINE EX. CURB/PAVEMENT EX. FENCE EX. GRAVEL EX. Q DITCH EX. GUARDRAIL EX. TREELINE EX. TREE (CONIFEROUS) EX. TREE (DECIDUOUS) EX. SIGN EX. MAILBOX FOUND IRON PIPE FOUND IRON PIPE FOUND IRON ROD FOUND PK NAIL FOUND CONC. MONUMENT SET IRON ROD SET MAG NAIL EX. SECTION CORNER SOIL BORING EX. WATER MAIN EX. WATER MANHOLE EX. WATER MANHOLE EX. WATER METER EX. STORM IN ET/CATCH BAS
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	EX. OVERHEAD ELECTRIC
	EX. UNDERGROUND ELECTRIC EX. UNDERGROUND CABLE
<u> </u>	EX. TELEPHONE MANHOLE
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× 656.5	PR. SPOT ELEVATION
653	PR. CONTOUR
	PR. DRAINAGE ARROW PR. EASEMENT LINE
	PR. SETBACK LINE
	PR. CURB/PAVEMENT
X	— PR. FENCE
R	PR. SIDEWALK RAMP
	PR. ASPHALT PAVEMENT
Δ 4 4	PR. CONCRETE
<u> </u>	PR. GUARDRAIL
	PR. SIGN —— PR. WATER MAIN
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*	PR. HYDRANT
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	PR. STORM SEWER
	PR. STORM INLET/CATCH BAS PR. STORM MANHOLE
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TW	PR. UTILITY CROSSING LOCATI PR. UNDERGROUND GAS PR. GAS VALVE PR. LIGHT POLE TREE PROTECTION FENCE PR. INLET FILTER
ME	PR. UTILITY CROSSING LOCATI PR. UNDERGROUND GAS PR. GAS VALVE PR. LIGHT POLE TREE PROTECTION FENCE

BENCHMARKS:

BM #1: BENCH TIE IN NORTHEAST FACE OF UTILITY POLE ELEVATION: 948.31' (NAVD88)

WawabB SOIL TYPE DESIGNATION

BM #2: BENCH TIE IN SOUTHWEST FACE OF UTILITY POLE ELEVATION: 941.37' (NAVD88)

EARTHWORK ESTIMATE:

- THE ESTIMATED COST OF EARTHWORK IS \$125,000
- ESTIMATED CUT = 2,177 CY ESTIMATED FILL = 973 CY
- THE ESTIMATED COST OF SITE STABILIZATION IS \$5,300

GRADING NOTES:

- 1. THE PROPOSED CONTOURS AND SLOPES ARE APPROXIMATE AS SHOWN.
- 2. ALL PROPOSED SPOT GRADES SHOWN AT THE EDGE OF METAL OR TOP EDGE OF WALK, UNLESS OTHERWISE NOTED. NOTATION CODES ARE AS FOLLOWS: FF=FINISHED FLOOR, FG=FINISHED GRADE, TP=TOP OF PAVEMENT, RIM=TOP OF GRATE OR MANHOLE, TW=TOP OF WALL, BW=BOTTOM OF WALL, TC=TOP OF CURB.
- 3. ANY SOIL RETAINING SYSTEM OR WALL IF REQUIRED SHALL BE DESIGNED BY A QUALIFIED STRUCTURAL OR GEOTECHNICAL ENGINEER. A DETAIL OF THE RETAINING WALL WITH CALCULATIONS TO BE SUBMITTED TO THE REVIEW AGENCY AS REQUIRED.
- 4. WHEN PAVED AREAS ARE EXCAVATED, ASPHALT AREAS SHALL BE SAW-CUT AND REMOVED TO A DISTANCE EQUAL TO THE DEPTH OF EXCAVATION. CONCRETE SHALL BE REMOVED TO THE FIRST JOINT PAST THE DISTANCE EQUAL TO THE DEPTH OF EXCAVATION. COMPACTED SAND BACKFILL IS REQUIRED IN ALL EXCAVATIONS WITHIN A 1:1 SLOPE OF EXISTING OR PROPOSED PAVEMENT.
- 5. CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE POSITIVE DRAINAGE REMAINS DURING AND IN POST CONSTRUCTION CONDITIONS AND NO ADVERSE IMPACTS WILL OCCUR TO NEIGHBORING PROPERTIES DURING AND AFTER COMPLETION OF CONSTRUCTION.
- 6. ALL SIDEWALK PLANNED TO BE ACCESSIBLE SHALL BE CONSTRUCTED WITH CROSS SLOPES LESS THAN 2%.
- 7. ALL SIDEWALK CURB RAMPS SHALL BE CONSTRUCTED PER THE LATEST MICHIGAN DEPARTMENT OF TRANSPORTATION DETAILS AND IN COMPLIANCE WITH THE AMERICAN WITH DISABILITIES ACT.

- 8. CONTRACTOR SHALL ADJUST ALL EXISTING MANHOLE/CATCH BASIN RIM ELEVATIONS AFFECTED BY THE PROPOSED WORK. WHERE NECESSARY, DUE TO EXCESSIVE ELEVATION CHANGE, CONTRACTOR SHALL RECONSTRUCT THE EXISTING STRUCTURE.
- 9. CONTRACTOR SHALL REFER TO THE GEOTECHNICAL REPORT FOR RECOMMENDATIONS ON BACKFILL, TRENCHING, GROUND WATER CONDITIONS, ETC. UNSUITABLE MATERIAL, IF ENCOUNTERED, BENEATH THE BUILDING ADDITION OR PROPOSED PAVEMENT, SHALL BE REMOVED ENTIRELY AND REPLACED WITH ENGINEERED FILL. AREAS REQUIRING SUBSTANTIAL REMEDIATION SHALL BE BROUGHT TO THE OWNER AND THE OWNER'S ENGINEER FOR FURTHER RECOMMENDATION.
- 10. ALL GRADES ARE TOP OF WALK OR TOP OF PAVEMENT UNLESS OTHERWISE SPECIFIED.
- 11. PARKING SPACES AND REQUIRED BARRIER FREE SIGNAGE SHALL COMPLY WITH THE MICHIGAN BUILDING CODE.
- 12. ALL CONSTRUCTION SHALL COMPLY WITH THE CITY OF ANN ARBOR STANDARDS AND SPECIFICATIONS.
- 13. ALL PROPOSED PAVEMENT MARKINGS TO BE PAINTED TO CURRENT INDUSTRY STANDARDS.
- 14. ADA PARKING STALLS AND AISLES SHALL NOT EXCEED 2% SLOPE IN ALL DIRECTIONS
- 15. INTERNAL AND EXTERNAL STREETS SHALL BE CLEANED OF ANY TRACKED MUD IMMEDIATELY FOLLOWING EACH MUD-TRACKING OCCURRENCE.



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES T BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THI WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

08.27.2020 SITE PLAN SUBMISSION

09.29.2020
REVISED PER SITE PLAN REVIEW #1

10.22.2020 REVISED PER SITE PLAN REVIEW #2 12.07.20
REVISED PER SITE PLAN REVIEW #3

12.21.20 REVISED PER PLANNING COMMISSION

RELATIONSHIPS - REPUTATION - RESULTS

800.525.6016

1051-19-9457 08/26/2020 | Checked by Drawn by | Crew/Book

AR BROUWER COMPANY

CB | CB | KMW

LEWIS JEWELERS

300 S. MAPLE ROAD

ANN ARBOR, MICHIGAN 48103

WASHTENAW ANN ARBOR

2S 5E 25

HRISTOPHER SUTTON, PE --

SITE PLAN

GRADING & SOIL EROSION CONTROL PLAN

RECEIVING WATER: WEST PARK FAIRGROUNDS DRAIN

SITE SOILS INFORMATION:

Ur: URBAN LAND

WawabB: WAWASEE LOAM, 2 TO 6 PERCENT SLOPE

PER THE NATIONAL RESOURCES CONSERVATION SERVICE (NRCS) SOIL SURVEY

APPROXIMATE AREA OF DISTURBANCE: 2 ± ACRES PERSON RESPONSIBLE FOR ON-SITE SOIL EROSION CONTROL

CONTRACTOR: TBD PHONE: TBD FAX: TBD

APPROXIMATE CONSTRUCTION SCHEDULE IS AS FOLLOWS:

03/2021 PROJECT START DATE

03/2021 TEMPORARY EROSION CONTROL MEASURES INSTALLED

03/2021 GRAVEL CONSTRUCTION ENTRANCE INSTALLED

GENERAL SOIL EROSION CONTROL NOTES:

SITUATIONS THAT PROMOTE EROSION.

CONTROL PERFORMANCE BOND, AS REQUESTED.

JURISDICTION OR THE SOIL EROSION INSPECTOR.

MAY RESUME ONLY AFTER STABILIZATION IS COMPLETE.

DISCHARGE INTO STORM WATER RUN OFF.

MAINTENANCE REQUIREMENTS:

PROPERLY IMPLEMENTED.

OF INSPECTION.

STOCKPILES TO BE GRADED TO A MAXIMUM OF 3:1 SIDE SLOPE.

1. ALL BMPS MUST BE MAINTAINED IN A FUNCTIONAL CONDITION

2. QUALIFIED PERSONNEL (PROVIDED BY THE DEVELOPER) MUST

24 HOURS OF A 0.5" OR GREATER RAINFALL WITHIN ANY 24-HOUR PERIOD AND DETERMINE IF THE SWP3 HAS BEEN

3. WRITTEN REPORTS SUMMARIZING INSPECTION RESULTS MUST BE

UNTIL ALL UPSLOPE AREAS THEY CONTROL ARE PERMANENTLY

INSPECT ALL BMPS AT LEAST ONCE EVERY 7 DAYS AND WITHIN

MADE AVAILABLE UPON REQUEST. REPORTS MUST INCLUDE: DATE

WEATHER CONDITIONS, LOCATIONS WHERE IN-STREAM OR OFF-SITE

CORRECTLY OR PROVIDE ADEQUATE PROTECTION, OR LOCATION OF

WITH THE NPDES PERMIT. WHERE A REPORT DOES NOT IDENTIFY

INCIDENTS OF NON-COMPLIANCE, THE REPORT MUST CONTAIN A

CERTIFICATION THAT THE SITE IS IN COMPLIANCE AT THE TIME OF

5. MAINTENANCE OR REPAIR OF BMPS MUST BE COMPLETED WITHIN 3

DAYS OF THE DATE OF THE INSPECTION THAT REVEALED THEY

6. WHEN INSPECTIONS REVEAL THAT A BMP IS NOT EFFECTIVE AND

7. WHEN THE INSPECTION REVEALS THAT A BMP DEPICTED ON THE

IS REQUIRED WITHIN 10 DAYS OF THE INSPECTION.

WERE DEFICIENT. FOR SEDIMENT PONDS, REPAIR OR MAINTENANCE

THAT ANOTHER, MORE APPROPRIATE BMP IS REQUIRED, THE SWP3

MUST BE AMENDED AND THE MORE APPROPRIATE BMP MUST BE

INSTALLED WITHIN 10 DAYS OF THE INSPECTION THAT REVEALED

SWP3 HAS NOT BEEN INSTALLED, BUT IS REQUIRED TO PROVIDE

ADEQUATE CONTROL AT THE SITE, IT MUST BE INSTALLED PRIOR TO THE NEXT STORM EVENT, WHICH PRODUCES RUNOFF, BUT IN NO CASE LATER THAN 10 DAYS FROM THE DATE OF INSPECTION,

AREAS IN NEED OF ADDITIONAL BMPS NOT IN PLACE AT THE TIME

OF INSPECTION, NAME AND QUALIFICATIONS OF THE INSPECTOR,

SEDIMENTATION WAS OBSERVED, LOCATION OF BMPS NEEDING

MAINTENANCE, LOCATIONS OF BMPS FAILING TO OPERATE

4. THE REPORTS MUST IDENTIFY INCIDENTS OF NON-COMPLIANCE

03/2021 DEMOLITION ACTIVITIES

04/2021 DETENTION FACILITIES INSTALLED

04/2021 UTILITIES / STORM SEWER / INLETS FILTERS INSTALLED 05/2021 FIRST COARSE OF PAVEMENT, CURB AND GUTTER INSTALLED

05/2021 BUILDING CONSTRUCTION

08/2021 FINAL COARSE PAVING INSTALLED 08/2021 FINAL GRADING / SEEDING

09/2021 CATCH BASINS CLEANED

10/2021 PERMANENT EROSION CONTROL MEASURES IN PLACE 11/2021 TEMPORARY EROSION CONTROL MEASURES REMOVED

1. THE CONTRACTOR SHALL CONFORM TO PART 91 OF ACT 451 OF THE PUBLIC ACTS OF 1994; EROSION AND SEDIMENT CONTROL OF RUNOFF DURING CONSTRUCTION (AS AMENDED) AND

2. PRIOR TO ANY EARTH CHANGE, THE DEVELOPER SHALL SUBMIT A DETAILED EROSION CONTROL PLAN, COMPLETED APPLICATION AND CHECKLIST FORMS, PAY ALL FEES AND POST AN EROSION

3. CONSTRUCTION OPERATION SHALL BE SCHEDULED AND PERFORMED SO THAT PREVENTATIVE SOIL EROSION CONTROL MEASURES ARE IN PLACE PRIOR TO EXCAVATION IN CRITICAL AREAS AND TEMPORARY STABILIZATION MEASURES ARE IN PLACE IMMEDIATELY FOLLOWING BACKFILLING

4. SPECIAL PRECAUTIONS WILL BE TAKEN IN THE USE OF CONSTRUCTION EQUIPMENT TO PREVENT

5. CLEANUP WILL BE DONE IN A MANNER TO ENSURE THAT EROSION CONTROL MEASURES ARE

6. NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT FOR STORM WATER

7. THE CONTRACTOR IS REQUIRED TO KEEP A COPY OF THE APPROVED SOIL EROSION AND

9. DURING CONSTRUCTION, ANY ADDITIONAL CONTROL MEASURES AS DEEMED NECESSARY TO PREVENT EROSION OR CONTROL SEDIMENT BEYOND THOSE MEASURES SHOWN ON THE APPROVED PLANS SHALL BE INSTALLED OR EMPLOYED AT THE DIRECTION OF THE LOCAL

10. TEMPORARY AND PERMANENT STABILIZATION SHALL BE CONDUCTED PER THE TABLE BELOW.

11. TRENCH AND GROUND WATER MUST PASS THROUGH A SEDIMENT POND, FILTER BAG OR OTHER COMPARABLE METHOD PRIOR TO DISCHARGING FROM THE SITE. IF USING A FILTER BAG, IT

SHALL BE MONITORED FOR ANY EROSIVE CONDITIONS. IF EROSION OCCURS, DEWATERING OPERATIONS MUST CEASE AND THE ERODED AREA MUST BE STABILIZED IMMEDIATELY, AND

13. A CONCRETE WASHOUT AREA SHALL BE DESIGNATED AND UTILIZED AS NECESSARY, CONCRETE TRUCKS ARE NOT PERMITTED TO WASH OUT DIRECTLY INTO STORM SEWERS, STREAMS, OR

12. ANY TEMPORARY SOILS STOCKPILE SHALL OCCUR WITHIN THE LIMITS OF THE SILT FENCE.

14. GRADING SHALL BE DONE AS TO NOT DISRUPT THE STORM WATER FROM ADJACENT

15. NO SOLID OR LIQUID WASTE, INCLUDING BUILDING MATERIALS OR THEIR PACKAGING, SHALL

16. CONTAMINATED SOILS WHERE CONSTRUCTION SITE CHEMICALS HAVE BEEN SPILLED MUST BE REMOVED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH FEDERAL, STATE, AND

SHOULD BE PLACED ON FLAT GROUND TO ENSURE EFFICIENCY. THE FILTER BAG SHOULD BE LOCATED A SUFFICIENT DISTANCE FROM THE EXISTING WATERCOURSE OR WETLAND TO ALLOW PROPER SETTLING OR FILTERING THROUGH NATURAL VEGETATION. DEWATERING DISCHARGE

8. ALL SOIL EROSION CONTROL PRACTICES TO BE INSTALLED PRIOR TO ANY MAJOR SOIL

PERMANENTLY STABILIZED AS DETERMINED BY THE SOIL EROSION INSPECTOR.

SEDIMENT CONTROL PLAN AND PERMIT AT THE CONSTRUCTION SITE.

DISCHARGE FROM THE CONSTRUCTION ACTIVITIES IS REQUIRED PRIOR TO ANY EARTH CHANGE.

DISTURBANCE, OR IN THEIR PROPER SEQUENCE, AND MAINTAINED UNTIL SUCH MEASURES ARE

CURRENT LOCAL ORDINANCES FOR EROSION AND SEDIMENTATION CONTROL

12/2021 PROJECT END DATE

TIME FRAME TO APPLY EROSION CONTROLS WITHIN TWO DAYS OF THE MOST RECENT DISTURBANCE I MARCH 1 TO AUGUST 15 THE AREA WILL REMAIN IDLE FOR MORE THAN 21 DAYS

TEMPORARY STABILIZATION

DISTURBED AREAS THAT WILL BE IDLE OVER THE WINTER PRIOR TO THE ONSET OF WINTER WEATHER

PERMANENT STABLIZATION

WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE

MUST BE STABILIZED AT LEAST SEVEN DAYS PRIOR TO THE

TIME FRAME TO APPLY EROSION CONTROLS

WITHIN SEVEN DAYS OF THE MOST RECENT DISTURBANCE

WITHIN SEVEN DAYS OF REACHING FINAL GRADE WITHIN

WITHIN TWO DAYS OF REACHING FINAL GRADE

TRANSFER OF PERMIT COVERAGE FOR THE INDIVIDUAL

FOR RESIDENTIAL SUBDIVISIONS, DISTURBED AREAS

AREA REQUIRING TEMPORARY STABILIZATION

ANY DISTURBED AREASE WITHIN 50 FEET OF A STREAM

FOR ALL CONSTRUCTION ACTIVITIES, ANY DISTURBED

BUT LESS THAN ONE YEAR, AND NOT WITHIN 50 FEET OF A

AREA REQUIRING PERMANENT STABILIZATION

ANY AREAS THAT WILL LIE DORMANT FOR ON YEAR OR

ANY AREAS WITHIN 50 FEET OF A STREAM AND AT FINAL

ANY OTHER AREAS AT FINAL GRADE

AREAS THAT WILL BE DORMANT FOR MORE THAN 21 DAYS WITHIN THE AREA

AND NOT AT FINAL GRADE

STREAM

GRADE

MAINTENANCE NOTES:

RESOURCES COMMISSIONER.

3. TEMPORARY STONE ACCESS DRIVE:

WATER APPEAR.

PROMPTLY REPLACED.

PROMPTLY.

DAILY DURING PROLONGED RAIN.

1. ALL DIRT AND MUD TRACKED ONTO ROADS DUE TO CONSTRUCTION

SHALL BE REMOVED ON A DAILY BASIS BY THE CONTRACTOR.

CONTRACTOR SHALL PROVIDE WATERING OR OTHER METHOD OF

3.1. CRUSHED LIMESTONE BASE SHALL BE PLACED ON A

DUST CONTROL ACCEPTABLE TO THE WASHTENAW COUNTY WATER

GEOTEXTILE FILTER CLOTH OR APPROVED ALTERNATIVE

ADDITIONAL LAYERS OF STONE OR CRUSHED LIMESTONE

BASE SHALL BE ADDED IN LAYERS AND COMPACTED.

3.3. STEPS SHALL BE TAKEN TO REPAIR IF RUTS OR POOLING

4.1. BUILT UP SEDIMENT SHALL BE REMOVED WHEN SEDIMENT

4.2. IF SILT FABRIC DECOMPOSES OR BECOMES INEFFECTIVE

INLET FILTERS SHALL BE INSPECTED WEEKLY UNDER

5.2. BUILT-UP SEDIMENT AND DEBRIS SHALL BE REMOVED

ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE SILT

PRIOR TO THE END OF THE EXPECTED USEABLE LIFE, AND

THE BARRIER IS STILL REQUIRED, THE FABRIC SHALL BE

NORMAL CONDITIONS, WITHIN 24 HOURS OF RAINFALL AND

5.3. IF FABRIC DECOMPOSES OR BECOMES INEFFECTIVE PRIOR TO

THE END OF THE EXPECTED USEABLE LIFE AND THE

BARRIER IS STILL REQUIRED, INLET FILTER SHALL BE

2. SHOULD DUST BECOME A PROBLEM AT THE SITE, THE

FERTILIZER: (12:12:12) MULCH: (STRAW OR HAY)

SEED: ANNUAL RYE FERTILIZER: (12:12:12) MULCH: (STRAW OR HAY) NOVEMBER 1 TO MARCH 1 MULCH (ONLY): (STRAW OR HAY)

2 TONS/ACRE

"PERMANENT SEEDING" SHALL BE DONE BETWEEN MARCH 15 AND OCTOBER 15. IF SEEDING IS DONE BETWEEN OCTOBER 15 AND MARCH 15, IT SHALL BE CLASSIFIED AS "TEMPORARY SEEDING" PERMANET SEED SHALL BE 40% KENTUCKY BLUEGRASS, 40% CREEPING RED FESCUE, 20% ANNUAL RYEGRASS. PERMANENT SEEDING SHALL CONSIST OF FERTILIZING, WATERING AND SEEDING RATES INDICATED UNDER ITEM 659. SEEDING SHALL BE APPLIED WITHIN TWO

> 4 LBS./1,000 SQ.FT. 20 LBS./1,000 SQ.FT.

STABILIZATION SPECIFICATIONS

"TEMPORARY SEEDING" NO AREA FOR WHICH GRADING HAS BEEN COMPLETED SHALL BE LEFT UNSEEDED OR UNMULCHED FOR LONGER THAN 21 DAYS. IF PERMANENT SEED IS NOT APPLIED AT THIS TIME, TEMPORARY SEEDING SHALL BE DONE AT THE FOLLOWING RATES.

SEED: OATS 2 LBS./1,000 SQ.FT. 12 1/2 LBS./1,000 SQ.FT. 2 TONS/ACRE AUGUST 15 TO NOVEMBER 1 2 LBS./1,000 SQ.FT. 12 1/2 LBS./1,000 SQ.FT. 2 TONS/ACRE

DAYS AFTER FINAL GRADING OR FOLLOWING SEED BED PREPARATION. RATES OF APPLICATION OF ITEM 659:

FERTILIZER: (12:12:12) MULCH: (STRAW OR HAY) 2 TONS/ACRE ESTIMATED COST OF SITE STABILIZATION: \$5,300

-CONCRETE WASHOUT

REESTABLISH PERMANENT VEGETATION ON ERODED SLOPES

WATER DISTURBED AREAS TO PROVIDE DUST CONTROL

INSPECT STRUCTURAL ELEMENTS DURING WET WEATHER

ROFESSIONAL ENGINEER REPORTING TO THE OWNER)

MAKE ADJUSTMENTS OR REPLACEMENTS AS DETERMINED

* "AS NEEDED" MEANS WHEN SEDIMENT HAS ACCUMULATED TO A MAXIMUM OF ONE FOOT DEPTH

DURING CONSTRUCTION

TO BE PERFORMED BY CONTRACTOR

INSPECT FOR SEDIMENT ACCUMULATION

REMOVAL OF SEDIMENT ACCUMULATION

INSPECT FOR FLOATABLES AND DEBRIS

CLEAN DRIVES AND PARKING LOTS

INSPECTION FOR EROSION

CLEANING FOR FLOATABLES AND DEBRIS

AND COMPARE TO AS-BUILT PLANS (BY A

LONG TERM STORM WATER MAINTENANCE PLAN & BUDGET

L DISTURBED AREAS OF SI

XXX | XXX | XXX | AS NEEDED

SOIL EROSION CONTROL MAINTENANCE TASKS AND SCHEDULE

AS NEEDED* AND PRIOR TO TURNOVER

AS NEEDED* AND PRIOR TO TURNOVER

WEEKLY OR AS DETERMINED BY PERMITTING AGENCY

QUARTERLY AND AT TURNOVER

ANNUALLY AND AT TURNOVER

QUARTERLY

AS NEEDED

WEFKLY

TO BE PERFORMED BY OWNER OR OWNER'S REP.

TASKS	PAVED AREAS	PERVIOUS AREAS	STORM DRAINAGE SYSTE	CATCH BASIN SUMPS	CATCH BASIN INLET CO	ION BASIN	OUTLET CONTROL STR	BIO-FILTRATION AREA	DETENTION AREA	SCHEDULE	ANNUAL COST
INSPECT FOR SEDIMENT ACCUMULATION	Χ		Х	Х	Х	Χ	Χ	Χ	Х	SEMI-ANUALLY/AS NEEDED*	\$100.00
REMOVAL OF SEDIMENT ACCUMULATION	Χ		Х	Х	Х	Х	Χ	Х	Х	5-10 YRS/AS NEEDED*	\$200.00
INSPECT FOR FLOATABLES AND DEBRIS			Х	X		X	Χ	Χ	X	ANNUALLY	\$100.00
CLEANING FOR FLOATABLES AND DEBRIS			Х	Х		X	Χ	Х	X	ANNUALLY	\$300.00
INSPECTION FOR EROSION		Х				X		X	Х	ANNUALLY/AFTER MAJOR STORMS	\$100.00
REESTABLISH PERMANENT VEGETATION ON ERODED SLOPES		X				X		X	X	AS NEEDED	\$300.00
CLEAN DRIVES AND PARKING LOTS	Χ									ANNUALLY	\$500.00
MOWING		X								0-2 TIMES PER YEAR	\$400.00
INSPECT STRUCTURAL ELEMENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS (BY A PROFESSIONAL ENGINEER REPORTING TO THE OWNER)			Х			×	Х	×	×	ANNUALLY	\$100.00
MAKE ADJUSTMENTS OR REPLACEMENTS AS DETERMINED BY ANNUAL WET WEATHER INSPECTION			Х			X	Х	Х	Х	AS NEEDED	\$100.00
KEEP RECORDS OF ALL INSPECTIONS AND MAINTENANCE ACTO PROPERTY OWNER	CTIV	/ITIE	S A	ND	RE	POF	RT			ANNUALLY	\$50.00
KEEP RECORDS OF ALL COSTS FOR INSPECTIONS, MAINTENAREPORT TO PROPERTY OWNER	ANC	EΑ	MD	REI	PAIF	RS.				ANNUALLY	\$50.00
PROPERTY OWNER REVIEWS COST EFFECTIVENESS OF THE F MAINTENANCE PROGRAM AND MAKES NECESSARY ADJUSTME			ТАТ	IVE						ANNUALLY	\$50.00
OWNER TO HAVE A PROFESSIONAL ENGINEER CARRY OUT EINSPECTIONS UPON IDENTIFICATION OF SEVERE PROBLEMS	MEF	RGEI	VCY	,						AS NEEDED	\$150.00

* "AS NEEDED" MEANS WHEN SEDIMENT HAS ACCUMULATED TO A MAXIMUM OF ONE FOOT DEPTH

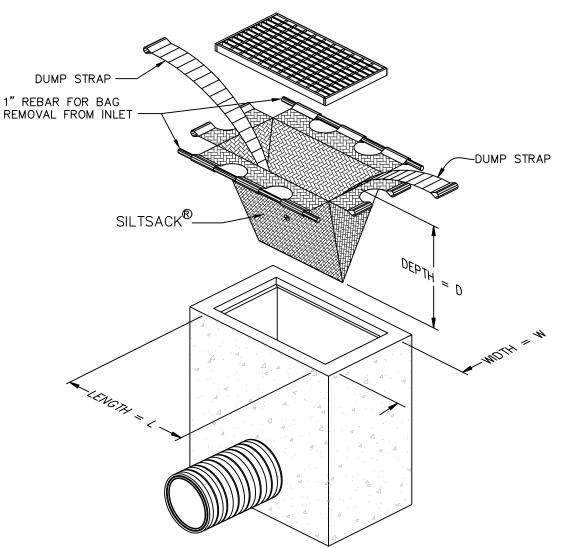
SILT FENCE GEOTEXTILE FABRIC SECURELY WOODEN POST DRIVEN INTO -FASTENED TO POSTS ON GROUND A MINIMUM OF 12". UPHILL SIDE TOWARDS MAX. OF 6.5' SPACING O.C. EARTH DISTURBANCE. WRAP END POSTS TOGETHER _6"x6" ANCHOR TRENCH. AT LEAST ONE REVOLUTION WHEN SPLICING SECTIONS OF FILTER FABRIC TO SILTFENCE. EXTEND ACROSS BOTTOM OF TRENCH AND THEN BACKFILLED WITH SHEET FLOW-COMPACTED EARTH. DIRECTION FXISTING: GROUND

GEOTEXTILE SILT FENCE

EXPANSION: RESTRAINT (NYLON ROPE, 2 FLAT WASHERS)

INSTALLATION DETAIL

BAG DETAIL



INLET FILTER

NOT TO SCALE

- UNDISTURBED OR COMPACTED SOIL

CWA INSTALLATION NOTES

1. SEE PLAN VIEW FOR:

INSTALLATION LOCATION. 2. DO NOT LOCATE ANY UNLINED CWA WITHIN 400' OF ANY NATURAL DRAINAGE PATHWAY OR WATERBODY. DO NOT LOCATE WITHIN 1,000' OF ANY WELLS OR DRINKING WATER SOURCES. IF SITE CONSTRAINTS MAKE THIS INFEASIBLE, OR IF HIGHLY PERMEABLE SOILS EXIST ON SITE, THE CWA MUST BE INSTALLED WITH AN IMPERMEABLE LINER (16 MIL MIN. THICKNESS) OR SURFACE STORAGE ALTERNATIVES USING PREFABRICATED CONCRETE WASHOUT DEVICES OR A LINED ABOVE GROUND STORAGE AREA SHOULD BE

8 x 8 MIN.

CONCRETE WASHOUT AREA PLAN

8 x 8 MIN.

COMPACTED BERM AROUND

THE PERIMETER

- 3. THE CWA SHALL BE INSTALLED PRIOR TO CONCRETE PLACEMENT ON SITE.
- 4. CWA SHALL INCLUDE A FLAT SUBSURFACE PIT THAT IS AT LEAST 8' BY 8'. SLOPES LEADING OUT OF THE SUBSURFACE PIT SHALL BE 3:1 OR FLATTER. THE PIT SHALL BE AT LEAST 3' DEEP.
- 5. BERM SURROUNDING SIDES AND BACK OF THE CWA SHALL HAVE A MINIMUM HEIGHT OF 1'.
- 6. SIGNS SHALL BE PLACED AT THE CONSTRUCTION ENTRANCE, AT THE CWA, AND ELSEWHERE AS NECESSARY TO CLEARLY INDICATE THE LOCATION OF THE CWA TO OPERATORS OF CONCRETE TRUCKS
- 7. USE EXCAVATED MATERIAL FOR PERIMETER BERM CONSTRUCTION.

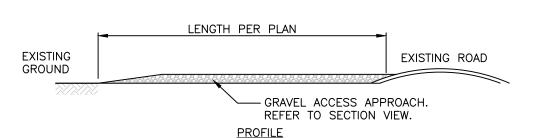
CONCRETE WASHOUT AREA

NOT TO SCALE

- CRUSHED CONCRETE OR COARSE AGGREGATE 2"-3". - NON-WOVEN GEOTEXTILE FABRIC SEPARATOR - EXISTING GROUND

INSTALL AT CONSTRUCTION VEHICLE ENTRANCE/EXIT AS SPECIFIED

PER PLAN. MINIMUM 15' WIDE X 50' LONG.



- 1. THE ENTRANCES SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT OF WAYS. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
- SUPPLY WATER TO WASH TIRES IF NECESSARY, WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT OF WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED AGGREGATE THAT DRAINS INTO AN APPROVED SEDIMENT
- TRAP OR SEDIMENT BASIN.

TEMPORARY CONSTRUCTION ENTRANCE NOT TO SCALE

Know what's **below**.

Call before you dig. THE LOCATIONS OF EXISTING JNDERGROUND UTILITIES ARE SHOWN N AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL

DETERMINE THE EXACT LOCATION O ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES T BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. CONSTRUCTION SITE SAFETY IS THE

RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF TH WORK, OF PERSONS ENGAGED IN THI WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

08.27.2020 SITE PLAN SUBMISSION

09.29.2020 REVISED PER SITE PLAN REVIEW #1

10.22.2020 \ REVISED PER SITE PLAN REVIEW #2 12.07.20
A REVISED PER SITE PLAN REVIEW #3

12.21.20
REVISED PER PLANNING COMMISSION

RELATIONSHIPS - REPUTATION - RESULTS 800,525,6016

1051-19-9457 08/26/2020 Checked by Drawn by Crew/Boo CB | CB | KMW

AR BROUWER COMPANY

LEWIS JEWELERS

300 S. MAPLE ROAD

ANN ARBOR, MICHIGAN 48103 ANN ARBOR WASHTENAW

HRISTOPHER SUTTON, PE --

SITE PLAN SOIL EROSION CONTOL

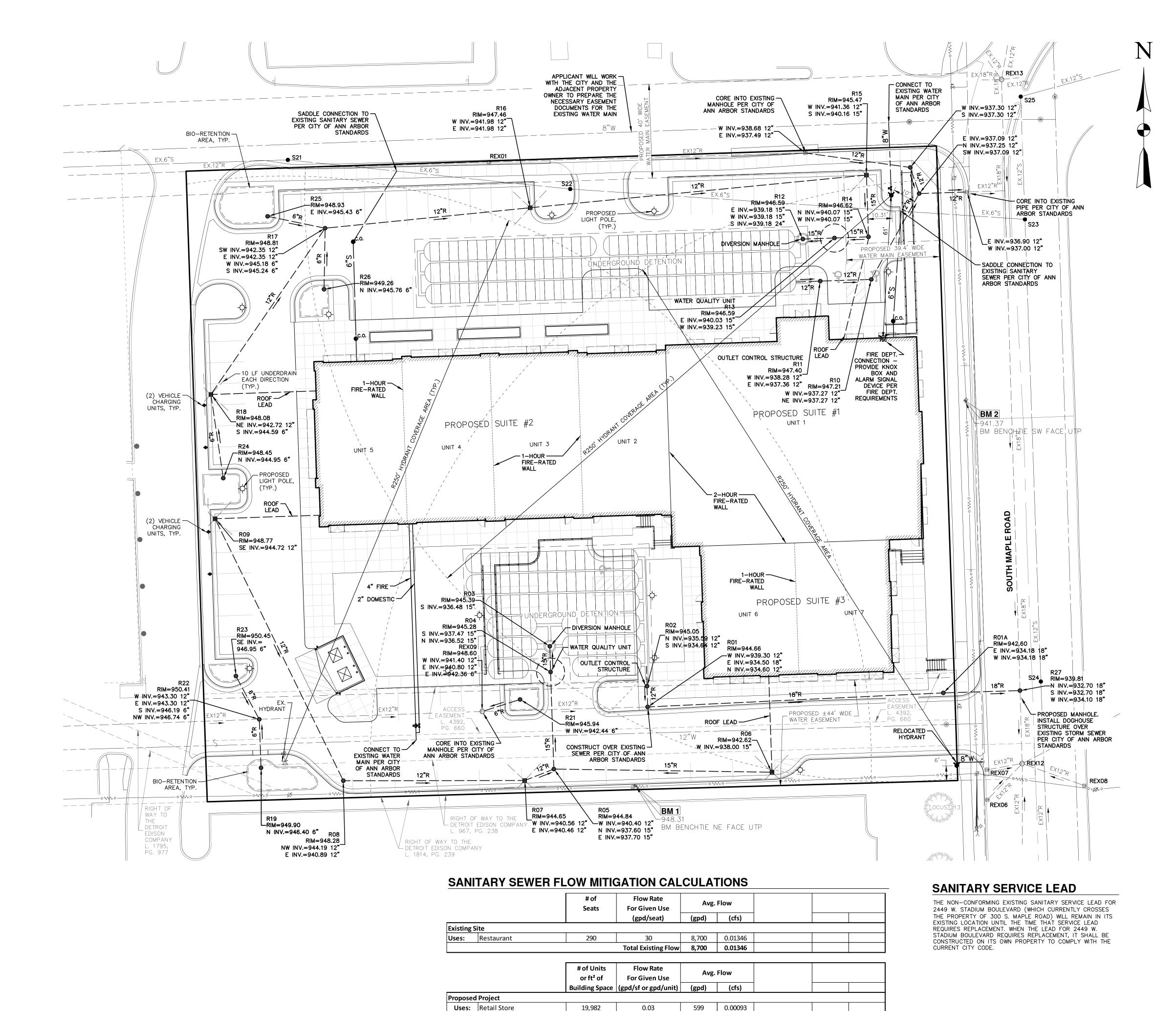
NOTES AND DETAILS

Sheet Number

8. THE REPORTS MUST BE MAINTAINED FOR THREE (3) YEARS FOLLOWING THE SUBMITTAL OF A NOTICE OF TERMINATION.

WHICH REVEALED THE DEFICIENCY.

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19,982

NOTE: Net reduction of sanitary flow. No sanitary sewer flow reuction is required on this project.

599 750

Total Proposed Flow 1,349 0.00209 Net Change In Flow 7350.54 0.0114

Design Basis: Use the City of Ann Arbor "Table A" and "Michigan Criteria for Subsurface Sewage Disposal" Michigan Department of Public Health April 1994 & the

0.00116

Uses: Retail Store

Uses: Restaurant

LEGEND

LEGEND	
× 656.5	EX. SPOT ELEVATION
652	EX. CONTOUR EX. WETLAND LIMITS
	EX. ADJACENT PROPERTY LINE
	EX. SECTION LINE
	EX. CURB/PAVEMENT
	EX. FENCE
	EX. GRAVEL
	EX. & DITCH EX. GUARDRAIL
	EX. TREELINE
Q	EX. TREE (CONIFEROUS) EX. TREE (DECIDUOUS)
<u> </u>	EX. SIGN
MB C	EX. MAILBOX
O _F O _{F-RR}	FOUND IRON PIPE FOUND IRON ROD
OF-NAIL	FOUND PK NAIL
© O _S	FOUND CONC. MONUMENT
O _S -NAIL	SET IRON ROD SET MAG NAIL
°s−nail	EX. SECTION CORNER
-	SOIL BORING
	EX. WATER MAIN EX. WATER VALVE
	EX. HYDRANT
\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	EX. WATER MANHOLE
<u> </u>	EX. WELL EX. WATER METER
	EX. STORM SEWER
CB (ST)	EX. STORM INLET/CATCH BASIN EX. STORM MANHOLE
	EX. STORM MANHOLE EX. STORM END SECTION
	EX. SANITARY SEWER
<u> </u>	EX. SANITARY MANHOLE EX. UNDERGROUND GAS
S	EX. GAS VALVE
	EX. OVERHEAD ELECTRIC EX. UNDERGROUND ELECTRIC
	EX. UNDERGROUND CABLE
①	EX. TELEPHONE MANHOLE EX. ELECTRIC MANHOLE
Ē E	EX. ELECTRIC METER
E G -∳ ■	EX. GAS METER EX. LIGHT POLE
-\	EX. TRAFFIC SIGNAL BOX
<u> </u>	EX. UNIDENTIFIED MANHOLE
Ø Ø	EX. TRAFFIC SIGNAL POLE EX. UTILITY POLE
$\stackrel{\cdot}{\longrightarrow}$	EX. GUY WIRE
× 656.5	PR. SPOT ELEVATION PR. CONTOUR
	PR. DRAINAGE ARROW
	PR. EASEMENT LINE PR. SETBACK LINE
	PR. CURB/PAVEMENT
——————————————————————————————————————	PR. FENCE PR. SIDEWALK RAMP
IX	PR. ASPHALT PAVEMENT
4 4	PR. CONCRETE
0 0 0	PR. GUARDRAIL PR. SIGN
	PR. WATER MAIN
&	PR. WATER VALVE PR. HYDRANT
8	PR. WATER VALVE IN MANHOLE
@	PR. WELL PR. REDUCER
	PR. STORM SEWER
	PR. STORM INLET/CATCH BASIN
	PR. STORM MANHOLE PR. STORM END SECTION
	PR. SANITARY SEWER
● • C.O.	PR. SANITARY MANHOLE PR. CLEANOUT
○ 1 ○ 1	PR. UTILITY CROSSING LOCATION
G.	PR. UNDERGROUND GAS PR. GAS VALVE
⊗	PR. LIGHT POLE
·	

BENCHMARKS:

BM #1: BENCH TIE IN NORTHEAST FACE OF UTILITY POLE ELEVATION: 948.31' (NAVD88) BM #2: BENCH TIE IN SOUTHWEST FACE OF UTILITY POLE

UTILITY NOTES:

ELEVATION: 941.37' (NAVD88)

- 1. PROPOSED ROOF LEADS SHALL BE SDR 23.5 PVC UNLESS OTHERWISE INDICATED AND/OR UNLESS OTHERWISE APPROVED BY THE AUTHORITY HAVING JURISDICTION.
- 2. ALL EXISTING UNDERDRAINS FROM THE BUILDING SHALL BE DISCONNECTED.
- 3. THE STORM SYSTEM WILL BE INSPECTED, AND WHEN NEEDED, CLEANED/SERVICED TO ENSURE THE SYSTEM IS 100% FUNCTIONAL
- 4. HYDRANTS SHALL BE IN SERVICE AND UNOBSTRUCTED DURING CONSTRUCTION.
- 5. "1-HOUR" RATED FIREWALLS SHALL BE CONSTRUCTED BETWEEN EACH TENANT'S UNIT AND "2-HOUR" RATED FIREWALLS SHALL BE CONSTRUCTED BETWEEN EACH SUITE. SEE PLAN FOR CALLOUTS.
- 6. THE PUBLIC WATER MAIN EASEMENT SHALL BE CLEAR OF OBSTRUCTIONS SUCH AS BUILDINGS, RETAINING WALL, DUMPSTER ENCLOSURES, OR ANY OTHER OBJECT WITH A FOUNDATION OR
- 7. THE EXISTING LIGHT POLES LOCATED WITHIN THE PROPOSED WATER MAIN EASEMENT WILL BE THE RESPONSIBILITY OF THE PROPERTY OWNER IN THE EVENT OF UTILITY MAIN MAINTENANCE, REPAIR OR REPLACEMENT.
- 8. THE SANITARY SEWER LEADS FOR 300 S. MAPLE ROAD AND 2449 W. STADIUM BOULEVARD ARE A SHARED SERVICE LEAD, WHICH IS NOT PERMITTED UNDER CURRENT CITY CODE. ADDITIONALLY, WE NOTE THAT THE EXISTING SANITARY SERVICE LEAD FOR THE ADJACENT PARCEL, 2449 W. STADIUM BOULEVARD, CROSSES THE SUBJECT SITE PLAN PARCEL (300 S. MAPLE ROAD). UTILITY SERVICE LEADS SERVING A PARCEL MUST CONNECT TO THE PUBLIC UTILITY FRONTING THAT PARCEL AND MAY NOT CROSS OVER OR IN FRONT OF ANOTHER PARCEL. THIS EXISTING, NON-CONFORMING SITUATION WILL BE ALLOWED TO REMAIN UNTIL THE SERVICE LEAD TO 2449 W. STADIUM BOULEVARD SERVICE LEAD REQUIRES REPLACEMENT, AT WHICH TIME IT MUST BE CONSTRUCTED ON ITS OWN PROPERTY
- 9. NO BOOSTER PUMPS ARE PROPOSED FOR THIS PROJECT.



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1051-19-9457 08/26/2020 | Checked by | Drawn by | Crew/Book CB CB KMW

AR BROUWER COMPANY

LEWIS JEWELERS

te Address 300 S. MAPLE ROAD ANN ARBOR, MICHIGAN 48103

WASHTENAW ANN ARBOR 2S 5E 25

CHRISTOPHER SUTTON, PE --

SITE PLAN

UTILITY PLAN

DRAINAGE NARRATIVE

THE DEVELOPER IS CONSTRUCTING A BUILDING WITH MULTIPLE SUITES FOR VARIED USE, INCLUDING A JEWELRY STORE ON 0.435 ACRES LOCATED ON THE WEST SIDE OF SOUTH MAPLE ROAD IN ANN ARBOR, WASHTENAW COUNTY, MICHIGAN. THE PROPOSED DEVELOPMENT INCLUDES THE CONSTRUCTION OF A THREE BUILDINGS ALONG WITH ASSOCIATED PARKING, UTILITIES AND STORM WATER MANAGEMENT

THE EXISTING SITE GENERALLY SLOPES TO THE SOUTH AND TO THE EAST. THE PROPOSED DRAINAGE FROM THE PROJECT AREA WILL BE COLLECTED BY AN ON-SITE STORM SEWER SYSTEM WHICH HAS BEEN DESIGNED TO CONVEY A 10-YEAR STORM. RUNOFF WILL BE TREATED BY A WATER QUALITY UNIT AND TWO UNDERGROUND DETENTION SYSTEMS ON BOTH THE NORTH AND SOUTH SIDES OF THE BUILDINGS. PRIOR TO DISCHARGING TO THE EXISTING MAIN IN SOUTH MAPLE ROAD. THE DISCHARGE FROM THE PROPOSED DETENTION SYSTEMS HAVE BEEN DESIGNED TO CONTROL THE RELEASE OF THE STORM IN ACCORDANCE WITH WASHTENAW COUNTY'S STANDARDS.



Storm	Called Control Called		C-Factor	Total Area	Total Area	Weighted	
Structure	Area (sf)	C-i actoi	Area (sf)	C-i actor	(sf)	(ac)	C-Factor
R01A	0	0.95	0	0.30	0	0.00	0.00
R01	0	0.95	0	0.30	0	0.00	0.00
R02	0	0.95	0	0.30	0	0.00	0.00
R03	0	0.95	0	0.30	0	0.00	0.00
R04	0	0.95	0	0.30	0	0.00	0.00
R05	0	0.95	0	0.30	0	0.00	0.00
R06	18,305	0.95	1,906	0.30	20,211	0.46	0.89
R07	7,747	0.95	3,516	0.30	11,263	0.26	0.75
R08	0	0.95	0	0.30	0	0.00	0.00
R09	3,218	0.95	371	0.30	3,589	0.08	0.88
R10	0	0.95	0	0.30	0	0.00	0.00
R11	0	0.95	0	0.30	0	0.00	0.00
R12	0	0.95	0	0.30	0	0.00	0.00
R13	0	0.95	0	0.30	0	0.00	0.00
R14	5,696	0.95	0	0.30	5,696	0.13	0.95
R15	10,525	0.95	219	0.30	10,744	0.25	0.94
R16	6,920	0.95	193	0.30	7,113	0.16	0.93
R17	0	0.95	0	0.30	0	0.00	0.00
R18	14,457	0.95	563	0.30	15,020	0.34	0.93
R19	580	0.95	1,239	0.30	1,819	0.04	0.51
R20	0	0.95	0	0.30	0	0.00	0.00
R21	86	0.95	218	0.30	304	0.01	0.48
R22	0	0.95	0	0.30	0	0.00	0.00
R23	0	0.95	201	0.30	201	0.00	0.30
R24	0	0.95	341	0.30	341	0.01	0.30
R25	0	0.95	450	0.30	450	0.01	0.30
R26	223	0.95	267	0.30	490	0.01	0.60
R27	0	0.95	0	0.30	0	0.00	0.00
R28	0	0.95	0	0.30	0	0.00	0.00
Total	67,757	0.95	9,484	0.30	77,241	1.74	0.87

C-FACTOR CALCULATIONS

METRO CONSULTING ASSOCIATES

Structure	Area (sf)	0-1 40101	Area (sf)	0-1 40101	(sf)	(ac)	C-Factor
R01A	0	0.95	0	0.30	0	0.00	0.00
R01	0	0.95	0	0.30	0	0.00	0.00
R02	0	0.95	0	0.30	0	0.00	0.00
R03	0	0.95	0	0.30	0	0.00	0.00
R04	0	0.95	0	0.30	0	0.00	0.00
R05	0	0.95	0	0.30	0	0.00	0.00
R06	18,305	0.95	1,906	0.30	20,211	0.46	0.89
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R13	0	0.95	0	0.30	0	0.00	0.00
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R27	0	0.95	0	0.30	0	0.00	0.00
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Total	67,757	0.95	9,484	0.30	77,241	1.74	0.87



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AR BROUWER COMPANY

LEWIS JEWELERS

300 S. MAPLE ROAD ANN ARBOR, MICHIGAN 48103

WASHTENAW ANN ARBOR Township Range Section 25

Professional Name | Date | CHRISTOPHER SUTTON, PE--

SITE PLAN STORM WATER **MANAGEMENT PLAN**

10-YEAR STORM SEWER DESIGN

ON-SITE STORM SEWER CONVEYANCE SYSTEM DESIGN

Community: City of Ann Arbor Lewis Jewelers County: Washtenaw 9/24/2020

Q manning = (1.486 A R2/3 S1/2)/nI = I = 151.8/(T+19.9)n concrete = 0.013 n plastic = 0.012 C = varies T = 15 (min.)

FROM	TO	INCRE-		EQUIV.	TOTAL	Т	ı	Q=CIA	CAPAC-	DIAM.	LENGTH	SLOPE	MIN HG	HG FOR	ACTUAL	VEL.	TIME	H.G.L.	ELEV.	GROUN	D ELEV.	INVER	ΓELEV.	RIM - I	H.G.L.
MH	MH	MENT	С	AREA	AREA	TIME	(IN	C.F.S.	ITY OF	OF	OF	OF	BASED	2.5 FPS	HG	FLOW	OF	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER	UPPER	LOWER
INPUT		ACRES		100%	100%	(MIN.)	PER	FLOW	SEWER	PIPE	LINE	PIPE	ON "Q"	GIVEN "D"	(%)	FULL	FLOW	END	END	END	END	END	END	END	END
		(A)		ACRES	ACRES		HOUR)		(C.F.S.)	(IN.)	(FT.)	(%)	(%)	(%)		(FT./	(MIN.)								
				CA	SUM CA											SEC.)									
R18	R17	0.34	0.93	0.32	0.32	15.00	4.35	1.39	2.34	12	86	0.43	0.15	0.30	0.30	3.0	0.5	943.42	943.15	948.08	948.81	942.72	942.35	4.66	5.66
R17	R16	0.00	0.00	0.00	0.32	15.50	4.29	1.39	2.34	12	88	0.43	0.15	0.30	0.30	3.0	0.5	943.04	942.78	948.81	947.46	942.35	941.98	5.77	4.68
R16	R15	0.16	0.93	0.15	0.47	16.00	4.23	1.99	2.34	12	144	0.43	0.31	0.30	0.31	3.0	0.8	942.61	942.16	947.46	945.47	941.98	941.36	4.85	3.31
R15	R14	0.25	0.94	0.23	0.70	16.80	4.14	2.91	3.65	15	26	0.32	0.20	0.23	0.23	3.0	0.1	942.13	942.07	945.47	946.62	941.16	941.07	3.34	4.55
R14	R13	0.13	0.95	0.12	0.83	16.90	4.13	3.41	3.65	15	14	0.32	0.28	0.23	0.28	3.0	0.1	942.07	942.03	946.62	946.59	941.07	941.03	4.55	4.56
R13	R12	0.00	0.00	0.00	0.83	17.00	4.11	3.41	3.65	15	13	0.32	0.28	0.23	0.28	3.0	0.1	940.22	940.18	946.59	946.59	939.23	939.18	6.37	6.41
R9	R8	0.08	0.88	0.07	0.07	15.00	4.35	0.32	2.34	12	124	0.43	0.01	0.30	0.30	3.0	0.7	945.37	944.99	948.77	948.27	944.72	944.19	3.40	3.28
R8	R7	0.00	0.00	0.00	0.07	15.70	4.26	0.32	2.34	12	77	0.43	0.01	0.30	0.30	3.0	0.4	941.59	941.36	948.27	944.66	940.89	940.56	6.68	3.30
R7	R5	0.26	0.75	0.19	0.27	16.10	4.22	1.12	2.34	12	13	0.43	0.10	0.30	0.30	3.0	0.1	941.24	941.20	944.66	944.83	940.46	940.40	3.42	3.63
R6	R5	0.46	0.89	0.41	0.41	15.00	4.35	1.79	3.65	15	93	0.32	0.08	0.23	0.23	3.0	0.5	938.91	938.70	942.29	944.83	938.00	937.70	3.38	6.13
R5	R4	0.00	0.00	0.00	0.68	15.50	4.29	2.91	3.65	15	41	0.32	0.20	0.23	0.23	3.0	0.2	938.56	938.47	944.83	945.28	937.60	937.47	6.27	6.81
R4	R3	0.00	0.00	0.00	0.68	15.70	4.26	2.91	3.65	15	11	0.32	0.20	0.23	0.23	3.0	0.1	937.51	937.48	945.28	945.40	936.52	936.48	7.77	7.92

Total Site Area Excl	uding "Self-Creditin	g" BMPs =	3940 3940	<u>0.90</u> a <u>0.90</u> a	
		RATIONAL MET	HOD VARIABLES ₂		
				Runoff Coefficient,	
Cover Type	Soil Type	Area (sf)	Area (Ac)	С	C*A
Grass/Lawn	B, 2% to 6%	1583	0.04	0.3	0.01
Gravel	B, 2% to 6%	0	0.00	0.85	0.00
Pavement/Roof	B, 2% to 6%	37820	0.87	0.95	0.82
Water Surface	B, 2% to 6%		0.00	1	0.00
	•		_	Total-∑C*A=	0.84

Area Total-∑ac = Weighted C - $\sum C*A/\sum ac =$

Area Total-∑ac =

Weighted CN - ∑CN*A/∑ac =

		NRCS VA	ARIABLES ₃		
Pervious Cover Type	Soil Type	Area (sf)	Area (Ac)	Curve Number (CN)	CN*A
Grass/Lawn	B, 2% to 6%	1583	0.04	69	2.51
Gravel	B, 2% to 6%	0	0.00	85	0.00
Pavement/Roof	B, 2% to 6%		0.00	98	0.00
Water Surface	B, 2% to 6%		0.00	98	0.00
				Total-∑CN*A=	2.51
				Area Total-Σac =	0.04

Weighted CN - Σ CN*A/ Σ ac = CN*A Soil Type (CN) Area (sf) Area (Ac) Grass/Lawn B, 2% to 6% 0.00 0.00 B, 2% to 6% 0.00 37820 Pavement/Roof B, 2% to 6% B, 2% to 6% Water Surface Total-∑CN*A=

1Use this area for the remainder of the runoff calculations 2Required for first flush calculations 3Required for bankfull and 100-year runoff calculations

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

First Flush Runoff Calculations

A= Total Site Areas (ac) Excluding "Self-Crediting" BMPs from Worksheet 1 = C= Weighted Runoff Coefficient from Worksheet 1 =

Vff= (1")(1'/12")(43560sf/1ac)*A*C

Vff (cf) = 3033.66

Vbf-pre (cf)= 327.87

0.90

0.92

0.87

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Pre-development Bankfull Runoff Calculations (Vbf-pre)

	princine bullitati numbri culculations (151 pre)	
Α.	2 year/24 hour storm event (in)	P= 2.35
В.	The pre-develoment land cover will be Good Cover Woods or Meadow. Determine the associated soil hydrologic group for the entire site and choose the curve number	CN= 58
C.	S=1000/CN-10	S(in)= 7.24
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 0.10
E.	Total Site Area (sf) excluding "Self-Crediting" BMPs	A(sf)= 39403

Vbf-pre = Q(1/12)Area

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Development Bankfull Runoff Calculations (Vhf-per-nost)

Pervious C	over Post-Development Bankfull Runoff Calculations (Vbf-	per-post)
A.	2 year/24 hour storm event (in)	P= 2.35
В.	Pervious Cover CN From Worksheet 1	CN= 69
C.	S=1000/CN-10	S(in)= 4.49
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 0.35
E.	Pervious Cover Area from Worksheet 1	A(sf)= 1583
F.	Vbf-per-post = Q(1/12)Area	Vbf-per-post (cf)= 46.75

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

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

Α.	2 year/24 hour storm event (in)	P= 2.35
В.	Impervious Cover CN From Worksheet 1	CN= 98
C.	S=1000/CN-10	S(in)= 0.20
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 2.12
E.	Impervious Cover Area from Worksheet 1	A(sf)= 37820
F.	Vbf-imp-post = Q(1/12)Area	Vbf-imp-post (cf)= 6686.81

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Pervious Cover Post-Development100-Year Storm Runoff Calculations (V100-per-post)

Α.	100-year storm event (in)	P= 5.11
В.	Pervious Cover CN From Worksheet 1	CN= 69
C.	S=1000/CN-10	S(in)= 4.49
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 2.04
E.	Pervious Cover Area from Worksheet 1	A(sf)= 1583
F.	V100-per-post = Q(1/12)Area	V100-per-post (cf)= 268.80

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Impervious Cover Post-Development100-Year Storm Runoff Calculations (V100-imp-post)

Α.	100-year storm event (in)	P= 5.11
В.	Impervious Cover CN From Worksheet 1	CN= 98
C.	S=1000/CN-10	S(in)= 0.20
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 4.87
E.	Impervious Cover Area from Worksheet 1	A(sf)= 37820
F.	V100-imp-post = Q(1/12)Area	V100-imp-post (cf)= 15358.07

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

considered waterway.

Determine Time of Concentration for Applicable Flow Types (Tc-hrs)

Flow Type	К	Change in Elevation (ft)	Length (ft)	Slope %	√S	V=K*√S	Tc=L/(V*3600)
Sheet Flow*	0.48	Elevation (It)	Length (it)	0.00	0.00	0.00	0.00
SHEELTIOW	0.40			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
		-					
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
*Sheet flow canno	ot exceed 300 fe	et. Anything beyon	d this is	Tot	al Time of Concer	ntration (Tc-hrs)=	0.25

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Runoff Summary & Onsite Infiltration Requirement

A.	Runoff Summary from Previous Worksheets		
	First Flush Volume (Vff)	3,033.66 cf	
	Pre-Development Bankfull Runoff Volume (Vbf-pre)	327.87 cf	
	Pervious Cover Post-Development Bankfull Volume (Vbf-per-post)	46.75 cf	
	Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post)	6,686.81 cf	
	Total BF Volume (Vbf-post)	6,733.56 cf	
	Pervious Cover Post-Development 100-Year Volume (V100-per-post)	268.80 cf	
	Impervious Cover Post-Development 100-Year Volume (V100-imp-post)	15,358.07 cf	
	Total 100-Year Volume (V100-post)	15,626.88 cf	
B.	Determine Onsite Infiltration Requirement		
	Subtract the Per-Development Bankfull from the Post-Development Bankfull Volument	ne.	
	Total Post-Development Bankfull Volume (Vbf-post)	6,733.56 cf	
	Pre-Development Bankfull Runoff Volume (Vbf-pre)	327.87 cf	
	Bankfull Volume Difference	6,405.69 cf	
	Compare the Bankfull Volume Difference with the First Flush Volume. The greater Requirement.	of the two is the On-site Inf	iltration
	Onsite Infiltration Requirement (Vinf)	6,405.69 cf	

W10 SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Peak of the Unit Hydrograph Tc From Worksheet 8	T- () - 0.25
Tc From Worksheet 8	T- (:-) 0.35
	Tc (min) = 0.25
Qp=238.6*Tc^(-0.82)	Qp(cfs/in-mi^2) = 743.63
Total Site Area (ac) excluding "Self-Crediting" BMPs	Area (ac) = 0.90
O100 from Workshood C	0100 (:-) - 2.04
	Q100-per (in) = 2.04 Q100-imp (in) = 4.87
	Q100-imp (iii) = 4.87 Q100 (in) = 6.91
Q100 - Q100-per + Q100-mp	Q100 (iii) = 0.31
D E (DE) (O #0400#4)/640	77/61 706
Peak Flow (PF) = (Qp*Q100*A)/640	PF (cfs) = 7.26
	3,867, 369
$\Delta = PF - 0.15*A$	Δ (cfs) = 7.13
	Total Site Area (ac) excluding "Self-Crediting" BMPs Q100-per from Worksheet 6 Q100-imp from Worksheet 7 Q100 = Q100-per + Q100-imp Peak Flow (PF) = $(Qp*Q100*A)/640$ $\Delta = PF - 0.15*A$

W11 SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Determine Applicable BMPs and Associated Volume Credits

Vret = 2*V100

Proposed BMP ₁	Area (sf)	Storage Volume ₂ (cf)	Ave. Design Infiltration Rate (in/hr)	Infiltration Volume During Storm ₃ (cf)	Total Volume Reduction ₄ (cf)
Porous Pavement w/ Infiltration Bed					
Infiltration Basin	·				
Subsurface Infiltration Bed	·		·		
Infiltration Trench	·		,		
Rain Garden/Bioretention					
Dry Well	·				
Vegitated Filter Strip	,		,		
Green Roof	·		,		
	Tot	tal Volume Reduction	Credit by Proposed S	Structural BMPs (cf) =	0.00

Total Volume Reduction Credit by Proposed Structural BMPs (cf) = -6,405.69

Runoff Volume Infiltration Requirement (Vinf) from Worksheet 9 = 6,405.69

1Complete checklist from Chapter VI for each Structural BMP type ₂Storage volume as defined in individual BMP write-ups ₃Approximated as the average design infiltration rate over 6 hours multiplied by the BMP area:

Infiltration Rate x 6 hours x BMP Area x Unit Conversions = Infiltration Volume (cf)

₄Total Volume Reduction Credit is the sum of the Storage Volume and the Infiltration Volume During Storm



Height of Incremental Single Incremental Incremental

Chamber Model -Number of Chambers -Number of End Caps -Voids in the stone (porosity) -Base of STORAGE Elevation -Amount of Stone Above Chambers -Amount of Stone Below Chambers -Area of system -

amount of stone under the chambers.

System

102

Chamber

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2.34

2.36

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2.41

2.42

2.43

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2.46

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2.49

2.50

2.51

2.51

2.53

Vret (cf) = 31,253.75

4878 sf Min. Area - 4353 sf min.

End Cap

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0.08

0.21

0.38

0.70

1.13

1.53

1.93

2.16

2.38

2.78

3.15

3.34

3.52

3.70

4.04

4.20

4.36

4.52

4.67

4.81

4.96

5.10

5.25

5.39

5.79

5.92

6.05

6.30

6.41

6.57

6.73

6.77

6.87

6.98

7.18

7.56

7.74

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7.98

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100.48

98.35

96.96

95.69

93.98

88.77

82.77

78.97

75.86

73.16

70.75

68.56

66.53

64.64

62.87

61.21

59.63

58.13

56.70

55.35

54.05

52.80

51.61

50.47

49.37

48.32

47.31

46.33

45.39

44.49 43.61

42.77

41.96

41.18

40.43

39.70

39.00

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37.68

37.05

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35.85

35.31

34.78

34.27

33.78

33.31

32.86

32.43

32.02

31.63

31.26

30.90

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30.26

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StormTech requires a minimum of 9 inches of stone below the chambers. This table is for modeling purposes only. Please see the engineer's drawings for the actual

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0.89

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0.92

0.93

0.95

0.96

0.97

0.98

0.99

1.00

1.01

1.02

1.02

1.03

0.87

Single End Cap | Chambers

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18.45

23.38

30.05

50.71

74.51

89.49

101.71

112.33

121.78

130.31

138.21

145.56

152.44

158.90

165.01

170.82

176.34

181.60

186.62

191.42

196.01

200.40

204.65

208.71

212.61

216.37

219.98

223.45

226.80

230.02

233.13

236.10

238.99

241.77

244.44

247.02

249.50

251.87

254.17

256.37

258.48

260.51

262.45

264.31

266.09

267.79

269.41

270.96

272.43

273.82

275.14

276.39

277.57

278.68

279.74

280.73

281.65

283.02

0.00

0.00

0.00

✓ Include Perimeter Stone in Calculations

Stormlech

er storie in Calculations	12.07.20 REVISED PER SITE PLAN REVIEW #3
in. area	12.21.20 REVISED PER PLANNING COMMISSION

19628.18 946.90

19018.43 946.40 18916.81 946.32

18815.18 946.24 18713.56 946.15

18611.93 946.07

18307.06 945.82

18205.43 945.74

18103.81 945.65

17900.56 945.49

17494.06 945.15

17392.43 945.07

17290.81 944.99

17087.56 944.82

16579.43 944.40

16274.56 944.15

15461.56 943.49

15359.93 943.40

15258.31 943.32

15153.24 943.24

15041.80 943.15

14926.18 943.07

14806.74 942.99

14682.17 942.90

14541.98 942.82

14383.80 942.74

14214.21 942.65

14035.29 942.57

13848.27 942.49

13654.02 942.40

13453.22 942.32

13246.31 942.24

13033.73 942.15

12815.84 942.07

12592.95 941.99

12365.34 941.90

12133.24 941.82

11896.85 941.74

11656.39 941.65

11412.03 941.57

11163.93 941.49

10912.27 941.40

10657.19 941.32

10398.81 941.24

10137.27 941.15

9605.18

9334.85

9061.81

8507.97

7944.41

7659.20

7371.80

7082.31

6497.32

5305.30

4087.70

2221.97

1591.45

639.09

320.08

9872.69 941.07

8786.15 940.74

8227.35 940.57

6790.79 940.15

6201.98 939.99

5904.80 939.90

5605.86 939.82

5003.14 939.65

4699.45 939.57

4394.28 939.49

3779.77 939.32

3470.55 939.24

3160.10 939.15

2848.49 939.07

2535.75 938.99

1907.18 938.82

1274.83 938.65

957.36 938.57

940.99

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19526.56

19424.93

19323.31

19221.68

19120.06

18510.31

18408.68

18002.18

17798.93

17697.31

17595.68

17189.18

16985.93

16884.31

16782.68

16477.81

16376.18

16172.93

16071.31

15969.68

Stone | EC and Stone | System | Elevation

101.63

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105.07

111.44

115.62

119.44

124.57

140.19

158.18

169.59

178.91

187.02

194.25

200.81

206.90

212.58

217.89

222.88

227.61

232.10

236.39

240.46

244.36

248.09

251.66

255.08

258.38

261.54

264.58

267.51

270.33

273.04

275.66

278.18

280.61

282.95

285.21

287.39

289.49

291.52

293.47

295.34

297.17

298.94

300.56

302.16

303.69

305.17

306.58

307.93

309.22

310.45

311.62

312.73

313.79

314.79

315.73

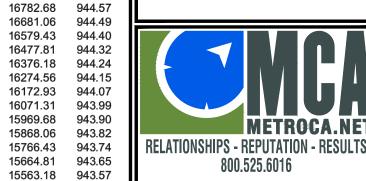
316.62

317.47

318.27

319.01

320.08



Know what's **below.**

Call before you dig.

THE LOCATIONS OF EXISTING JNDERGROUND UTILITIES ARE SHOWN

IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

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PERSONS.

09.29.2020 REVISED PER SITE PLAN REVIEW #1

10.22.2020
REVISED PER SITE PLAN REVIEW #2

08.27.2020 SITE PLAN SUBMISSION

1051-19-9457 08/26/2020 |Checked by |Drawn by | Crew/Book CB CB KMW

AR BROUWER COMPANY

LEWIS JEWELERS

300 S. MAPLE ROAD

ANN ARBOR, MICHIGAN 48103

WASHTENAW ANN ARBOR 2S 5E 25

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SITE PLAN **STORM WATER MANAGEMENT CALCULATIONS - NORTH**

rawing Scale Sheet Number

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Total Site Area = Total Site Area Excluding "Self-Crediting" BMPs =		35063 sf, = 34649 sf, =		<u>0.80</u> acre <u>0.80</u> acre	
		RATIONAL METI	HOD VARIABLES ₂		
				Runoff Coefficient,	
Cover Type	Soil Type	Area (sf)	Area (Ac)	С	C*A
Grass/Lawn	B, 2% to 6%	5793	0.13	0.3	0.04
Gravel	B, 2% to 6%	0	0.00	0.85	0.00
Pavement/Roof	B, 2% to 6%	29270	0.67	0.95	0.64
Water Surface	B, 2% to 6%		0.00	1	0.00
	•			Total-∑C*A=	0.68

Area Total-∑ac = Weighted C - $\sum C*A/\sum ac =$

0.80

NRCS VARIABLES3					
Pervious Cover Type	Soil Type	Area (sf)	Area (Ac)	Curve Number (CN)	CN*A
Grass/Lawn	B, 2% to 6%	5793	0.13	69	9.18
Gravel	B, 2% to 6%	0	0.00	85	0.00
Pavement/Roof	B, 2% to 6%		0.00	98	0.00
Water Surface	B, 2% to 6%		0.00	98	0.00
				Total-∑CN*A=	9.18
				Area Total-∑ac =	0.13

Weighted CN - ∑CN*A/∑ac = CN*A Soil Type (CN) Area (sf) Area (Ac) Grass/Lawn B, 2% to 6% 0.00 0.00 B, 2% to 6% 0.00 Pavement/Roof B, 2% to 6%

Water Surface B, 2% to 6% Total-∑CN*A= ₁Use this area for the remainder of the runoff calculations 0.67 Area Total-∑ac = Weighted CN - ∑CN*A/∑ac = 2Required for first flush calculations ₃Required for bankfull and 100-year runoff calculations

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

First Flush Runoff Calculations

A= Total Site Areas (ac) Excluding "Self-Crediting" BMPs from Worksheet 1 = C= Weighted Runoff Coefficient from Worksheet 1 =

Vff(cf) = 2432.96Vff= (1")(1'/12")(43560sf/1ac)*A*C

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Pre-development Bankfull Runoff Calculations (Vbf-pre)

A.	2 year/24 hour storm event (in)	P= 2.35	
В.	The pre-develoment land cover will be Good Cover Woods or Meadow. Determine the associated soil hydrologic group for the entire site and choose the curve number	CN= 58	
C.	S=1000/CN-10	S(in)= 7.24	
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 0.10	
E.	Total Site Area (sf) excluding "Self-Crediting" BMPs	A(sf)= 34649	

Vbf-pre (cf)= 288.31

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Vbf-pre = Q(1/12)Area

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

Pervious Co	over Post-Development Bankfull Runoff Calculations (Vbf-	per-post)
A.	2 year/24 hour storm event (in)	P= 2.35
В.	Pervious Cover CN From Worksheet 1	CN= 69
C.	S=1000/CN-10	S(in)= 4.49
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 0.35
E.	Pervious Cover Area from Worksheet 1	A(sf)= 5793
F.	Vbf-per-post = Q(1/12)Area	Vbf-per-post (cf)= 171.09

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

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

A.	2 year/24 hour storm event (in)	P= 2.35
В.	Impervious Cover CN From Worksheet 1	CN= 98
C.	S=1000/CN-10	S(in)= 0.20
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 2.12
E.	Impervious Cover Area from Worksheet 1	A(sf)= 29270
F.	Vbf-imp-post = Q(1/12)Area	Vbf-imp-post (cf)= 5175.12

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Pervious Cover Post-Development100-Year Storm Runoff Calculations (V100-per-post)

A.	100-year storm event (in)	P= 5.11
В.	Pervious Cover CN From Worksheet 1	CN= 69
C.	S=1000/CN-10	S(in)= 4.49
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 2.04
E.	Pervious Cover Area from Worksheet 1	A(sf)= 5793
F.	V100-per-post = Q(1/12)Area	V100-per-post (cf)= 983.69

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Impervious Cover Post-Development100-Year Storm Runoff Calculations (V100-imp-post)

	100-year storm event (in)	P= 5.11
В.	Impervious Cover CN From Worksheet 1	CN= 98
C.	S=1000/CN-10	S(in)= 0.20
D.	Q=(P-0.2S)^2/(P+0.8S)	Q(in)= 4.87
Ε.	Impervious Cover Area from Worksheet 1	A(sf)= 29270
F.	V100-imp-post = Q(1/12)Area	V100-imp-post (cf)= 11886.06

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

considered waterway.

Determine Time of Concentration for Applicable Flow Types (Tc-hrs)

		Change in					
Flow Type	К	Elevation (ft)	Length (ft)	Slope %	٧S	V=K*√S	Tc=L/(V*3600)
Sheet Flow*	0.48			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2	11		0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Waterway	1.2			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
Small Tributary	2.1			0.00	0.00	0.00	0.00
*Sheet flow canno	ot exceed 300 fee	t. Anything beyon	d this is	Tot	al Time of Concer	ntration (Tc-hrs)=	0.25

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Runoff Summary & Onsite Infiltration Requirement

A.	Runoff Summary from Previous Worksheets		
	First Flush Volume (Vff)	2,432.96 cf	
	Pre-Development Bankfull Runoff Volume (Vbf-pre)	288.31 cf	
	Pervious Cover Post-Development Bankfull Volume (Vbf-per-post)	171.09 cf	
	Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post)	5,175.12 cf	
	Total BF Volume (Vbf-post)	5,346.21 cf	
	Pervious Cover Post-Development 100-Year Volume (V100-per-post)	983.69 cf	
	Impervious Cover Post-Development 100-Year Volume (V100-imp-post)	11,886.06 cf	
	Total 100-Year Volume (V100-post)	12,869.75 cf	
В.	Determine Onsite Infiltration Requirement		
	Subtract the Per-Development Bankfull from the Post-Development Bankfull Volu	me.	
	Total Post-Development Bankfull Volume (Vbf-post)	5,346.21 cf	
	Pre-Development Bankfull Runoff Volume (Vbf-pre)	288.31 cf	
	Bankfull Volume Difference	5,057.89 cf	
	Compare the Bankfull Volume Difference with the First Flush Volume. The greate Requirement.	<u>r</u> of the two is the On-site Infiltr	atior

5,057.89 cf

Vret (cf) = 25,739.49

SUBSURFACE DETENTION BASIN STANDARD METHOD RUNGER VOLUME CALCULATIONS

Onsite Infiltration Requirement (Vinf)

Peak of the Unit Hydrograph	
Tc From Worksheet 8 Qp=238.6*Tc^(-0.82)	Tc (min) = 0.25 Qp(cfs/in-mi^2) = 743.63
Total Site Area (ac) excluding "Self-Crediting" BMPs	Area (ac) = 0.80
Q100-per from Worksheet 6 Q100-imp from Worksheet 7 Q100 = Q100-per + Q100-imp	Q100-per (in) = 2.04 Q100-imp (in) = 4.87 Q100 (in) = 6.91
Peak Flow (PF) = (Qp*Q100*A)/640	PF (cfs) = 6.39
$\Delta = PF - 0.15*A$	Δ (cfs) = 6.27
	Qp=238.6*Tc^(-0.82) Total Site Area (ac) excluding "Self-Crediting" BMPs Q100-per from Worksheet 6 Q100-imp from Worksheet 7 Q100 = Q100-per + Q100-imp Peak Flow (PF) = (Qp*Q100*A)/640

W11 SUBSURFACE DETENTION BASIN STANDARD METHOD RUNOFF VOLUME CALCULATIONS

Determine Applicable BMPs and Associated Volume Credits

Vret = 2*V100

		Storage Volume ₂	Ave. Design Infiltration Rate	Infiltration Volume	Total Volume		
Proposed BMP ₁	Area (sf)	(cf)	(in/hr)	During Storm ₃ (cf)	Reduction ₄ (cf)		
Porous Pavement w/ Infiltration Bed							
Infiltration Basin							
Subsurface Infiltration Bed							
Infiltration Trench							
Rain Garden/Bioretention	414	327.9	0.5	103.50	431.40		
Dry Well							
Vegitated Filter Strip							
Green Roof							
Total Volume Reduction Credit by Proposed Structural BMPs (cf) = 431.40							

Total Volume Reduction Credit by Proposed Structural BMPs (cf) = $\underline{431}$ Runoff Volume Infiltration Requirement (Vinf) from Worksheet 9 = 5,057.89 Total Volume Reduction Credit by Proposed Structural BMPs (cf) = -4,626.49

1Complete checklist from Chapter VI for each Structural BMP type ₂Storage volume as defined in individual BMP write-ups

₃Approximated as the average design infiltration rate over 6 hours multiplied by the BMP area: Infiltration Rate x 6 hours x BMP Area x Unit Conversions = Infiltration Volume (cf) ₄Total Volume Reduction Credit is the sum of the Storage Volume and the Infiltration Volume During Storm

Lewis Jewelers - South UG

roject.	LCWIS SCWCICIS - C	outil oo
Chamber Mode	el –	MC-4500
Units -		Imperial C
Number of Cha	mbers -	80
Number of End	Caps -	20
Voids in the sto	ne (porosity) -	25 %
Base of STOR	AGE Elevation -	935.62 ft
Amount of Stor	ne Above Chambers -	42 in
Amount of Stor	ne Below Chambers -	0 in
Area of system	-	4367 sf

2.53

1.03

202.15

20.65

35.28

258.08

258.08 935.70

StormTech requires a minimum of 9 inches of stone below the chambers. This table is for modeling purposes only. Please see the engineer's drawings for the actual

	Click Here for Metric % ft in	de Perimeter Stone in	Calculations	1
	in		-	
		3571 sf min. are	ea	
le				
	10010 0001140101 4121		**************************************	
olu	ımes			
ıl	Incremental	Incremental	Incremental Ch,	Cumi
	End Cap	Stone	EC and Stone	Sys
	(cubic feet)	(cubic feet)	(cubic feet)	(cubi

amount of stone under the chambers. milech MC-4500 Cumulative Storage Vo Height of Incremental Single Incremental Incrementa Chamber Single End Cap Chambers stem Elevation System 16205.90 944.12 0.00 0.00 0.00 0.00 90.98 90.98 16114.92 944.04 0.00 0.00 0.00 0.00 90.98 90.98 16023.94 943.95 0.00 0.00 0.00 0.00 90.98 90.98 15932.96 943.87 0.00 0.00 90.98 90.98 15841.98 0.00 0.00 943.79 0.00 0.00 0.00 0.00 90.98 90.98 15751.00 943.70 15660.02 943.62 0.00 0.00 0.00 0.00 90.98 90.98 0.00 0.00 0.00 0.00 90.98 90.98 15569.04 943.54 0.00 0.00 0.00 0.00 90.98 90.98 15478.06 943.45 15387.08 943.37 0.00 90.98 90.98 0.00 0.00 0.00 0.00 0.00 0.00 0.00 90.98 90.98 15296.11 943.29 0.00 0.00 0.00 0.00 90.98 90.98 15205.13 943.20 0.00 0.00 0.00 0.00 90.98 90.98 15114.15 943.12 0.00 0.00 0.00 90.98 90.98 15023.17 943.04 0.00 0.00 0.00 0.00 90.98 90.98 14932.19 942.95 0.00 0.00 0.00 0.00 90.98 90.98 14841.21 942.87 0.00 0.00 0.00 0.00 90.98 90.98 14750.23 942.79 0.00 0.00 0.00 0.00 90.98 90.98 14659.25 942.70 0.00 0.00 0.00 0.00 90.98 90.98 14568.27 942.62 0.00 0.00 0.00 0.00 90.98 90.98 14477.29 942.54 0.00 0.00 0.00 90.98 90.98 14386.31 942.45 0.00 0.00 0.00 0.00 90.98 90.98 14295.33 942.37 0.00 0.00 0.00 0.00 90.98 90.98 14204.36 942.29 14113.38 942.20 0.00 0.00 0.00 0.00 90.98 90.98 0.00 0.00 0.00 0.00 90.98 90.98 14022.40 942.12 13931.42 942.04 0.00 0.00 0.00 0.00 90.98 90.98 0.00 0.00 0.00 90.98 90.98 13840.44 941.95 0.00 0.00 0.00 0.00 90.98 90.98 13749.46 941.87 0.00 0.00 0.00 0.00 90.98 90.98 13658.48 941.79 13567.50 941.70 0.00 0.00 0.00 0.00 90.98 90.98 0.00 0.00 0.00 0.00 90.98 90.98 13476.52 941.62 0.00 0.00 0.00 0.00 90.98 90.98 13385.54 941.54 0.00 0.00 0.00 0.00 90.98 90.98 13294.56 941.45 90.98 13203.58 941.37 0.00 0.00 0.00 0.00 90.98 90.98 13112.61 941.29 0.00 0.00 90.98 90.98 0.00 0.00 13021.63 941.20 0.00 0.00 0.00 0.00 90.98 90.98 12930.65 941.12 0.00 0.00 0.00 0.00 90.98 90.98 12839.67 941.04 12748.69 940.95 0.00 0.00 0.00 0.00 90.98 90.98 0.00 0.00 0.00 0.00 90.98 90.98 12657.71 940.87 0.00 0.00 0.00 0.00 90.98 90.98 12566.73 940.79 0.00 90.98 0.00 0.00 0.00 90.98 12475.75 940.70 12384.77 940.62 0.04 0.00 3.28 0.00 90.16 93.44 0.12 0.01 9.29 0.20 88.61 98.10 12291.33 940.54 0.16 0.03 13.18 0.53 87.55 101.26 12193.24 940.45 0.21 0.05 86.57 12091.98 940.37 16.70 0.95 104.22 0.27 0.07 21.47 1.35 85.27 108.09 11987.76 940.29 0.45 0.09 36.22 1.75 81.48 119.46 11879.67 940.20 0.67 0.11 77.11 132.59 11760.21 940.12 53.22 2.26 0.80 0.14 74.29 141.04 11627.62 940.04 63.92 0.91 0.17 72.65 71.98 147.98 11486.58 939.95 3.35 1.00 0.19 80.23 3.83 69.96 154.03 11338.60 939.87 1.09 0.22 68.16 159.45 11184.57 939.79 86.99 4.30 1.16 0.24 93.08 66.50 164.41 11025.12 939.70 169.07 10860.71 939.62 1.23 0.27 64.95 98.72 5.40 1.30 0.30 103.97 5.95 63.50 173.42 10691.64 939.54 1.36 62.14 177.49 10518.22 939.45 0.32 108.88 6.47 1.42 0.35 113.50 181.32 10340.72 939.37 1.47 0.37 117.87 59.66 7.42 184.95 10159.41 939.29 1.53 0.39 122.01 58.51 188.40 9974.46 939.20 1.57 57.40 191.71 9786.06 939.12 0.42 125.96 8.35 1.62 0.44 129.71 8.81 194.87 9594.35 939.04 1.67 0.46 133.30 9.25 55.34 197.89 9399.48 938.95 1.71 0.48 136.73 9.68 54.38 200.79 9201.59 938.87 9000.81 938.79 1.75 53.45 203.56 0.50 140.01 10.10 1.79 0.53 143.14 10.50 52.57 206.22 8797.25 1.83 0.55 146.18 10.90 51.71 208.79 938.62 8591.03 1.86 0.56 149.08 11.29 50.89 211.25 8382.25 938.54 1.90 0.58 151.87 11.67 50.10 213.63 8171.00 938.45 1.93 0.60 154.55 12.03 49.33 215.92 7957.37 938.37 1.96 0.62 157.13 12.40 48.60 218.12 7741.45 938.29 2.00 0.64 159.61 12.76 47.89 220.26 7523.33 938.20 222.32 7303.07 2.03 0.66 162.00 13.12 47.20 938.12 2.05 0.67 164.30 13.46 46.54 224.30 7080.76 938.04 2.08 0.69 166.52 13.81 226.22 6856.45 937.95 45.90 2.11 0.71 168.65 14.14 45.28 228.07 6630.23 937.87 2.13 0.72 170.71 14.48 44.68 229.87 6402.15 937.79 2.16 0.74 172.69 14.80 44.11 231.60 6172.29 937.70 2.18 0.76 174.60 43.55 233.27 5940.69 937.62 15.12 5707.42 937.54 2.21 0.77 234.88 176.44 15.43 43.01 178.21 236.44 5472.53 937.45 2.23 0.79 15.74 42.49 237.94 5236.09 937.37 2.25 0.80 179.91 16.04 41.99 2.27 0.82 181.55 16.41 41.49 239.45 4998.15 937.29 2.29 240.93 4758.70 937.20 0.84 183.12 16.82 41.00 2.31 0.85 242.14 4517.77 937.12 184.63 16.92 40.59 2.33 0.86 186.08 17.17 40.17 243.42 4275.63 937.04 2.34 0.87 187.46 17.44 39.75 244.66 4032.21 936.95 2.36 0.89 188.79 17.70 39.36 245.85 3787.56 936.87 2.38 0.90 190.06 38.97 247.00 3541.71 936.79 2.39 0.91 191.28 18.21 38.61 248.09 3294.71 936.70 2.41 0.92 192.44 38.26 249.14 3046.62 936.62 2.42 0.93 193.54 18.68 37.92 250.15 2797.47 936.54 2.43 0.95 194.59 18.91 37.60 251.11 2547.33 936.45 2296.22 936.37 252.02 2.44 0.96 195.59 37.30 19.13 2.46 0.97 196.53 19.35 37.01 252.89 2044.20 936.29 2.47 36.73 253.71 1791.31 936.20 0.98 197.42 19.56 198.26 36.47 254.49 1537.60 936.12 36.23 255.24 1283.10 936.04 2.49 1.00 199.06 19.95 2.50 1.01 199.82 20.14 35.99 255.94 1027.86 935.95 2.51 1.02 35.77 256.61 771.92 935.87 200.52 20.32 2.51 1.02 201.18 20.49 35.56 257.23 515.31 935.79



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UNDERGROUND UTILITIES.

IVEAIR	nis .
\triangle	08.27.2020 SITE PLAN SUBMISSION
2	09.29.2020 REVISED PER SITE PLAN REVIEW #1
3	10.22.2020 REVISED PER SITE PLAN REVIEW #2
$\overline{}$	12.07.20

REVISED PER SITE PLAN REVIEW #3 12.21.20 REVISED PER PLANNING COMMISSION



1051-19-9457 08/26/2020 | Checked by | Drawn by | Crew/Book CB CB KMW

AR BROUWER COMPANY

LEWIS JEWELERS

300 S. MAPLE ROAD ANN ARBOR, MICHIGAN 48103

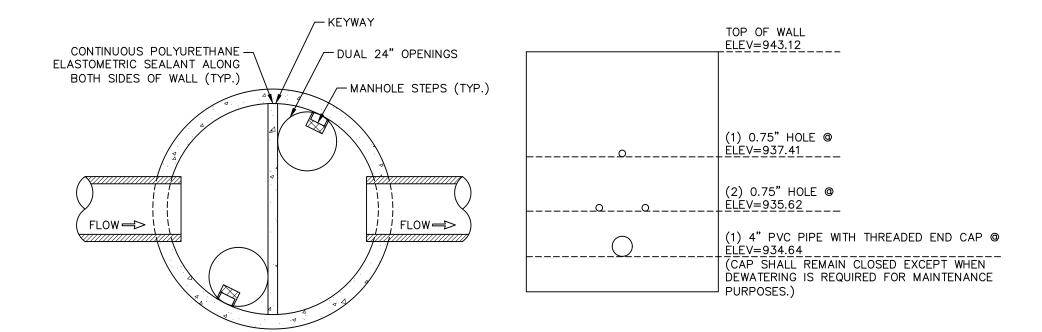
WASHTENAW ANN ARBOR 5E 25 2S

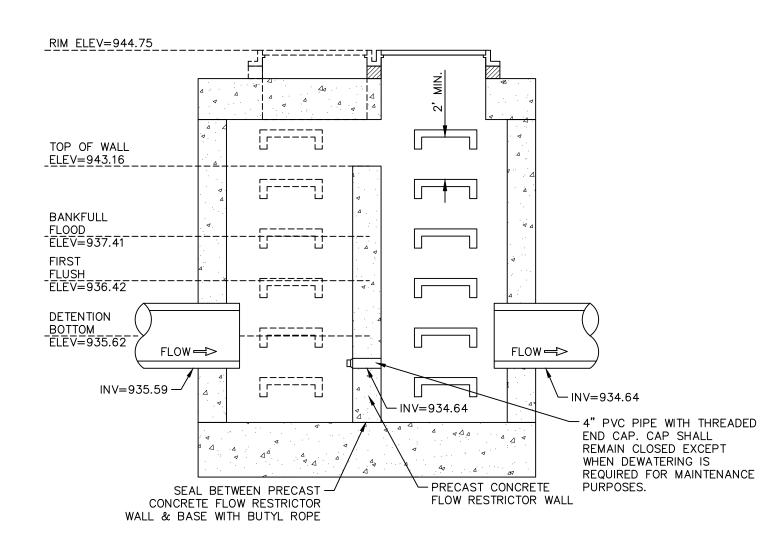
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SITE PLAN **STORM WATER MANAGEMENT CALCULATIONS - SOUTH**

rawing Scale Sheet Number

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SECTION "A-A"

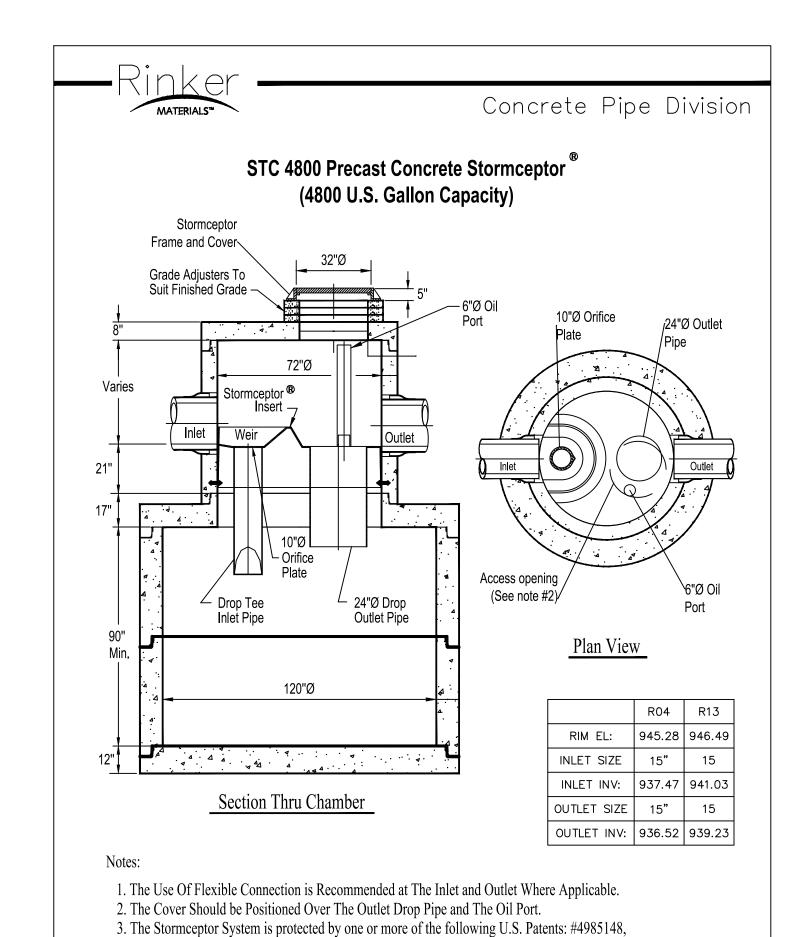
- 1. THIS TYPE OF FLOW RESTRICTOR STRUCTURE TO BE USED
- ONLY WITH UNDERGROUND DETENTION SYSTEMS..

 2. THE PRECAST REINFORCED FLOW RESTRICTOR STRUCTURE
- SHALL BE MANUFACTURED PER ASTM C-478
 SPECIFICATIONS AND MEETING HS20 LOADING REQUIREMENTS

 CONTRACTOR TO PROVIDE SHOP DRAWING, INCLUDING REINFORCEMENT, PRIOR TO CONSTRUCTION.

OUTLET CONTROL STRUCTURE (R02)

Storage Elevations	Xo = Xbf=	935.62 937.41	Xff= X100 =	936.42 943.16	
Outlet Control Structure					
1. outlet holes sizing - "first flush" runoff					
First Flush must be released in a mimimum of 24 hours					
Qff = Vff / 24 hrs / 3600 sec		Qff=	0.0282 cfs		
$h = 2/3 \times (Xff - Xo)$		h =	0.53 ft		
$A = Qff / .62 \times sqrt(2*32.2*h)$		A =	0.0078 sf		
The area of a 0.75" orifice			0.0031 sf		
Number of orifice holes		=	2 holes	at elev.	935.62
Qact = $0.62 \text{ x \#orif x Aorif x sqrt}(2x32.2xh) =$		Qact =	0.022 cfs		
Tff=Vff/Qact		Tff =	30.4 hrs		
2. outlet holes sizing - "Bankfull flood" discharge					
Bankfull must be detained between 36 to 48 hours					
$h = 2/3 \times (Xbf - Xo)$		h =	1.19 ft		
Qbf = 0.62 x #orif x Aorif x sqrt(2x32.2xh) =		Qbf=	0.033 cfs		
Tbf = Vbf / Qbf (with first flush holes only)		Tbf=	44.5 hrs		
3. outlet holes sizing - "100-yr flood" discharge					
Area, a =		A =	0.80 ac		
Qa = 0.15 x A		Qa=	0.121 cfs		
Qff+Qbf = 0.62 x #fforif x Afforif x sgrt(64.4 (X100 - Xo)) + 0.62 x #bforif x Abforif x sgr	t(64.4 (X100 - Xff))	Qff+Qbf=	0.084 cfs		
Q100 = Qa - (Qff + Qbf)		Q100 =	0.037 cfs		
A100 = Q100 / (0.62 x sgrt(2*32.2 x (X100 - Xbf))		A100 =	0.0031 sf		
The area of a 0.75" orifice			0.0031 sf		
Number of orifice holes		=	1 holes	at elev	937.41
$Qff + Qbf + 0.62 \times \#orif \times A100 \times sgrt(2*32.2*h100) < Qa$			0.120 < Qa		
$Hall = 2/3 \times (X100 - Xbf) + (Xbf - Xo)$		Hall =	5.62 ft		
Qall = $0.62 \times \text{#fforif} \times \text{Afforif} \times \text{sqrt}(2*32.2*\text{Hall})$		Qall =	0.072 cfs		
$Hbf = 2/3 \times (X100 - Xbf) + (Xbf - Xff)$		Hbf =	4.83 ft		
Qbf+100 = $0.62 \text{ x \#bforif x Abforif x sqrt}(2*32.2*Hbf)$		Qbf+100 =	0.000 cfs		
$H100 = 2/3 \times (X100 - Xbf)$		H100 =	3.83 ft		
Q100avg = 0.62 x #100orif x A100orif x sqrt(2+32.2*H100)		Q100avg =	0.030 cfs		
Vrem = V100 - Vbf		Vrem=	9,809 cf		
T100 = Tbf + Vrem / (Qall + Qbf + 100 + Qall)					



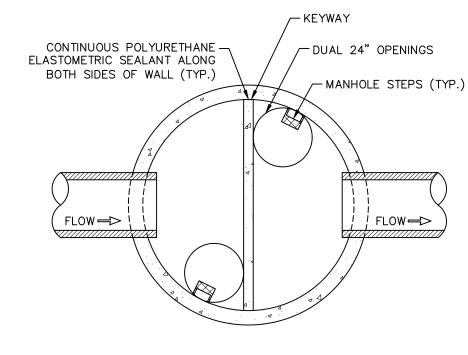
WAYNE COUNTY NOTE:

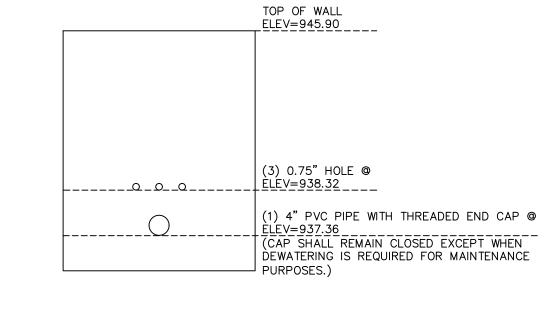
THE STORMCEPTOR STRUCTURE MUST BE FABRICATED AS PER SHOP DRAWINGS THAT HAVE BEEN APPROVED BY WAYNE COUNTY. THE MANUFACTURER MUST CONTACT WAYNE COUNTY TESTING OFFICE AT (734) 595-6504 x2015 AT LEAST 3 WORKING DAYS PRIOR TO FABRICATION TO SCHEDULE INSPECTION DURING FABRICATION.

4. Contact a Concrete Pipe Division representative for further details not listed on this drawing.

#5498331, #5725760, #5753115, #5849181, #6068765, #6371690.

WATER QUALITY CONTROL STRUCTURE (R04, R13)

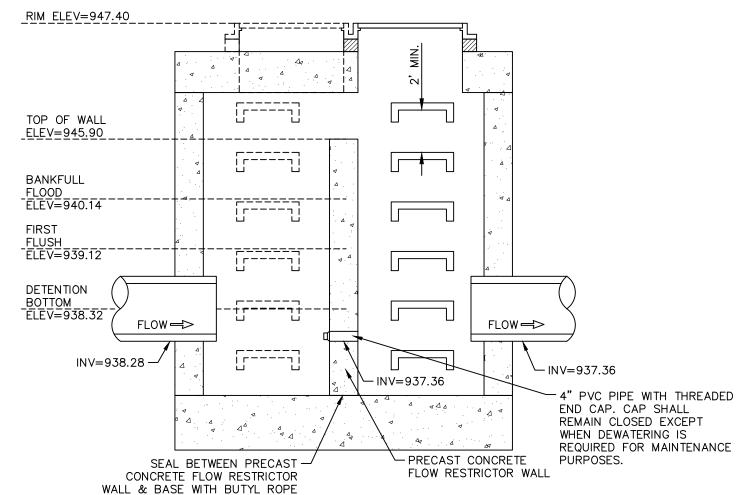




939.12

945.90

X100 =



SECTION "A-A"

- 1. THIS TYPE OF FLOW RESTRICTOR STRUCTURE TO BE USED
- ONLY WITH UNDERGROUND DETENTION SYSTEMS..

 2. THE PRECAST REINFORCED FLOW RESTRICTOR STRUCTURE
- SHALL BE MANUFACTURED PER ASTM C-478
 SPECIFICATIONS AND MEETING HS20 LOADING REQUIREMENTS
- 3. CONTRACTOR TO PROVIDE SHOP DRAWING, INCLUDING REINFORCEMENT, PRIOR TO CONSTRUCTION.

Storage Elevations

OUTLET CONTROL STRUCTURE (R11)

Xbf =

Outlet Control Structure			
1. outlet holes sizing - "first flush" runoff			
First Flush must be released in a mimimum of 24 hours			
Qff = Vff / 24 hrs / 3600 sec	Qff=	0.035 cfs	
$h = 2/3 \times (Xff - Xo)$	h=	0.53 ft	
$A = Qff / .62 \times sqrt(2*32.2*h)$	A =	0.010 sf	
The area of a 0.75" orifice		0.0031 sf	
Number of orifice holes	=	3 holes at elev.	938.32
$Qact = 0.62 \times \# orif \times Aorif \times sqrt(2x32.2xh) =$	Qact=	0.033 cfs	
Tff=Vff/Qact	Tff=	25.2 hrs	
2. outlet holes sizing - "Bankfull flood" discharge			
Bankfull must be detained between 36 to 48 hours			
$h = 2/3 \times (Xbf - Xo)$	h=	1.21 ft	
$Qbf = 0.62 \times #orif \times Aorif \times sqrt(2x32.2xh) =$	Qbf=	0.050 cfs	
Tbf = Vbf/Qbf (with first flush holes only)	Tbf =	37.1 hrs	
3. outlet holes sizing - "100-yr flood" discharge			
Area, a =	A =	0.90 ac	
$Qa = 0.15 \times A$	Qa=	0.136 cfs	
Qff+Qbf = 0.62 x #fforif x Afforif x sqrt(64.4 (X100 - Xo)) + 0.62 x #bforif x Abforif x sqrt(64.4 (X100 - Xff))	Qff+Qbf=	0.126 cfs	
Q100 = Qa - (Qff + Qbf)	Q100 =	0.010 cfs	
A100 = Q100 / (0.62 x sqrt(2*32.2 x (X100 - Xbf))	A100 =	0.0008 sf	
The area of a 0.75" orifice		0.0031 sf	
Number of orifice holes	=	0 holes at elev	940.14
Qff + Qbf + 0.62 x # orif x A100 x sqrt(2*32.2*h100) < Qa		0.126 < Qa	
$Hall = 2/3 \times (X100 - Xbf) + (Xbf - Xo)$	Hall =	5.66 ft	
Qall = $0.62 \times \#$ fforif x Afforif x sqrt($2*32.2*$ Hall)	Qall =	0.109 cfs	
$Hbf = 2/3 \times (X100 - Xbf) + (Xbf - Xff)$	Hbf=	4.86 ft	
Qbf+100 = 0.62 x #bforif x Abforif x sqrt(2*32.2*Hbf)	Qbf+100 =	0.000 cfs	
$H100 = 2/3 \times (X100 - Xbf)$	H100 =	3.84 ft	
Q100avg = 0.62 x #100orif x A100orif x sqrt(2+32.2*H100)	Q100avg =	0.000 cfs	
Vrem = V100 - Vbf	Vrem=	11,668 cf	
T100 = Tbf + Vrem / (Qall + Qbf + 100 + Qall)	T100 =	66.9 hrs	



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AND ALL DAMAGES WHICH MIGHT BE
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PRESERVE ANY AND ALL

CONSTRUCTION SITE SAFETY IS THE
RESPONSIBILITY OF THE
CONTRACTOR. NEITHER THE OWNER
NOR THE ENGINEER SHALL BE
EXPECTED TO ASSUME ANY
RESPONSIBILITY FOR SAFETY OF THE
WORK, OF PERSONS ENGAGED IN THE
WORK, OF ANY NEARBY
STRUCTURES, OR OF ANY OTHER
PERSONS.

UNDERGROUND UTILITIES.

08.27.2020
SITE PLAN SUBMISSION

09.29.2020
REVISED PER SITE PLAN REVIEW #1

10.22.2020
REVISED PER SITE PLAN REVIEW #2

12.07.20
REVISED PER SITE PLAN REVIEW #3

12.21.20
REVISED PER SITE PLAN REVIEW #3

PER SITE PLAN REVIEW #3

RELATIONSHIPS - REPUTATION - RESULTS
800.525.6016

AR BROUWER COMPANY

Project

LEWIS JEWELERS

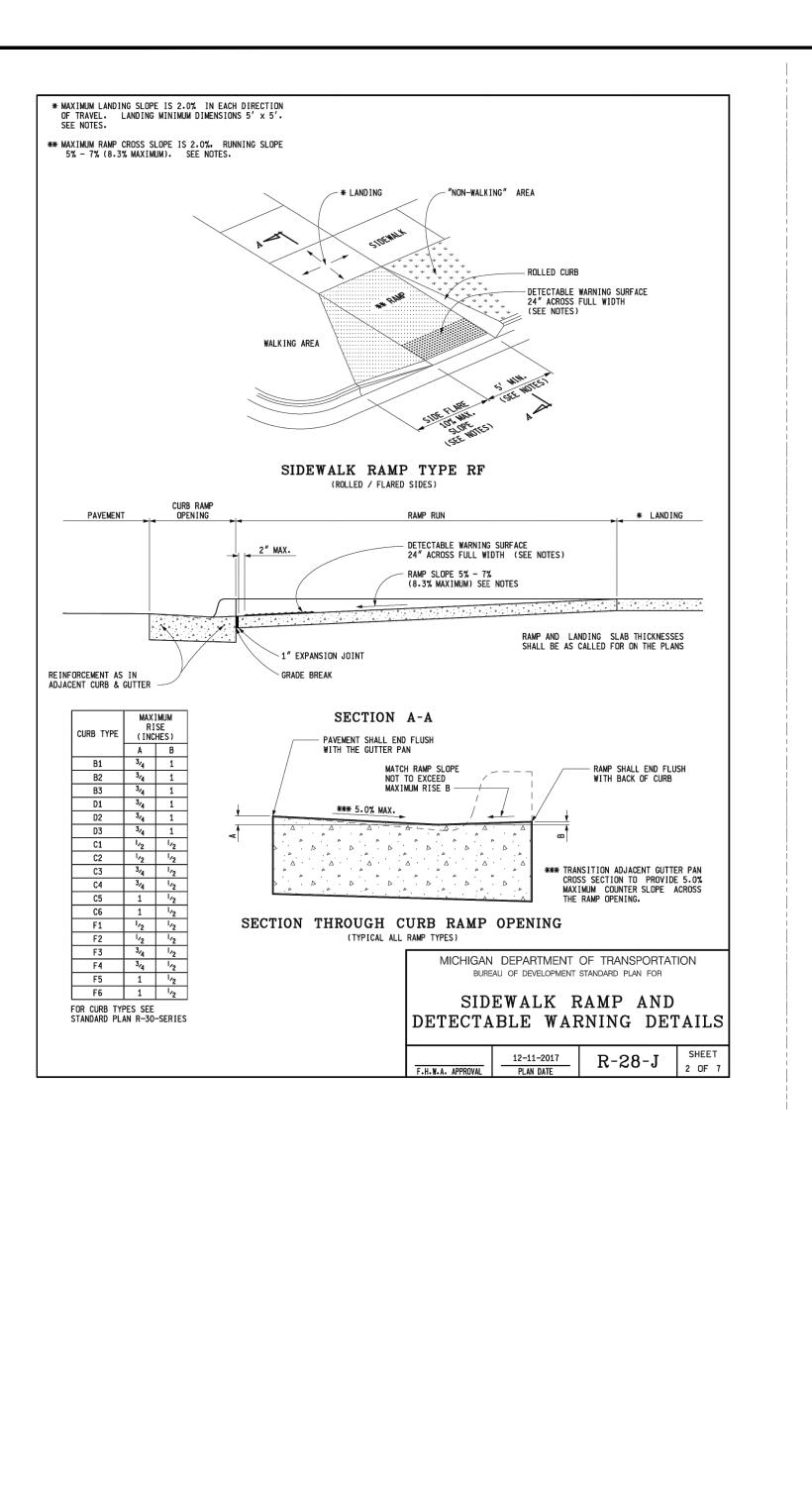
Site Address
300 S. MAPLE ROAD
ANN ARBOR, MICHIGAN 48103
County
County
WASHTENAW
ANN ARBOR

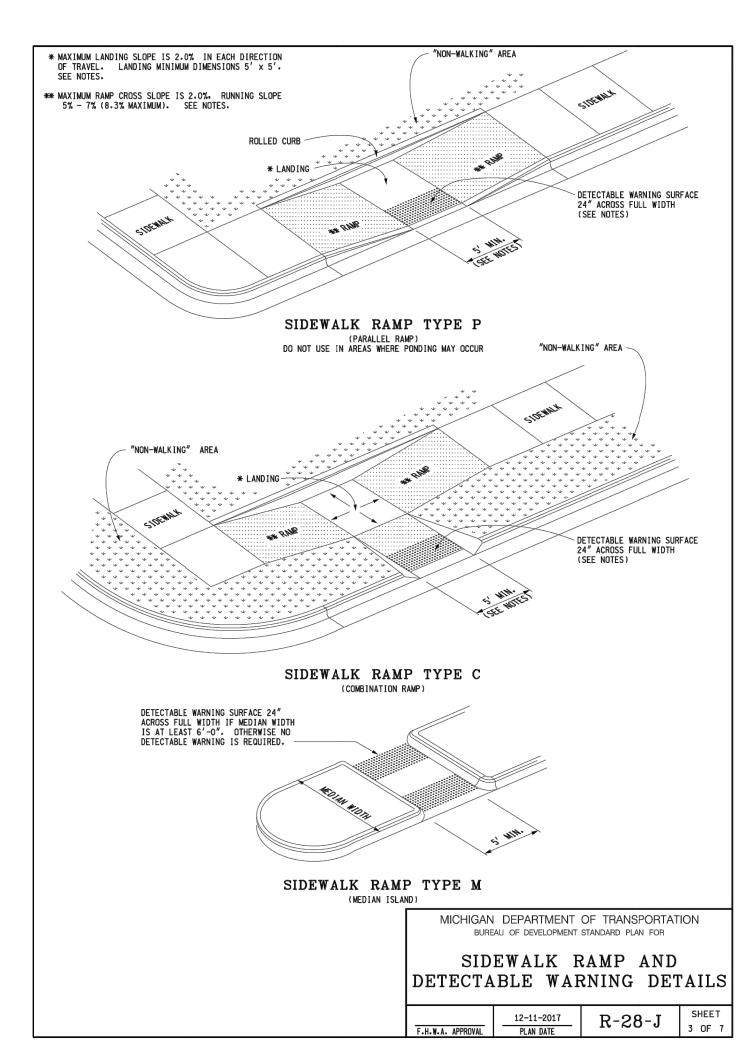
Township Range Section 2S 5E 25

Professional Name | Date | CHRISTOPHER SUTTON, PE --

SITE PLAN
STORM WATER
MANAGEMENT DETAILS

Drawing Scale





-4" PCC (CONCRETE) SIDEWALK

CROSS SLOPE AT 2% MAX

MATCH THE EXISTING CONTROL JOINTS ON SITE.

CONCRETE CURB, 3,500 PSI, -

CUT AT EXPANSION JOINTS

WITH (2) NO. 4 RODS, CONT.,

AT 45°

1/2" CHAMFER

- CONCRETE

TYPICAL

DETAIL

WALK - SEE

4 4 4 4

1. SET 1/2" EXPANSION JOINTS AT POINTS ABUTTING CURB OR PAVEMENT.

THICKNESS DEEP. CONTROL JOINTS SHALL BÉ SAWED OR TOOLED TO

NEW SIDEWALK TO EXISTING SIDEWALK CONNECTION DETAIL

2. CONTROL JOINTS SHALL BE 1/8" WIDE AND 1/4 OF THE SIDEWALK

__1/2" EXPANSION JOINT

┥" COMPACTED

SUBGRADE

- PLANTING BED -SEE LANDSCAPE

-EXPANSION JOINT -

SEE TYPICAL DETAIL

- 21AA CRUSHED

MOD. PROCTOR

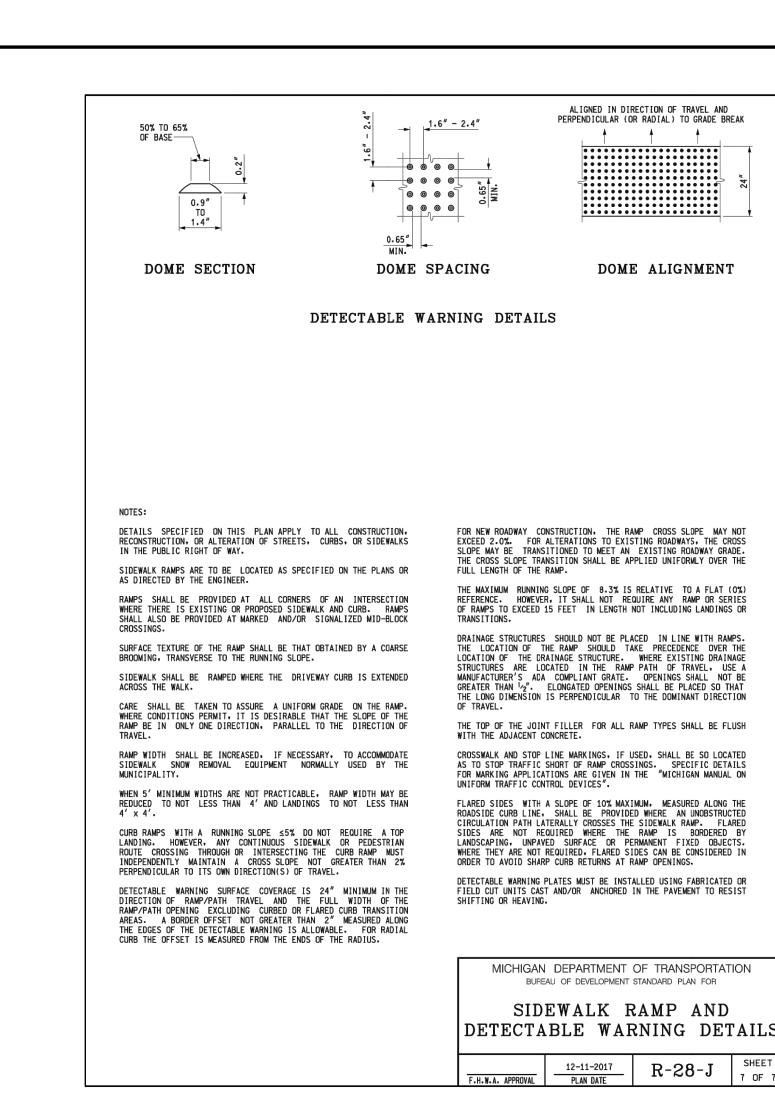
STONE BASE. COMPACT TO 95%

PLAN

COMPACTED

BASE COURSE

- EXIST. SIDEWALK



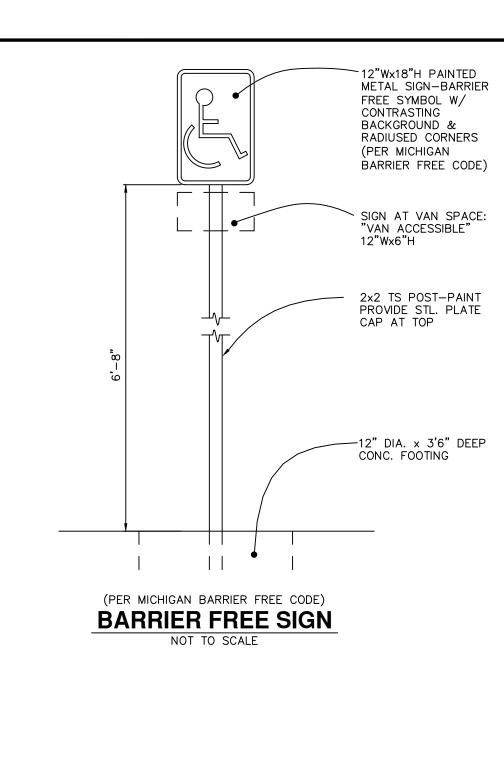
SAWCUT AND REMOVE

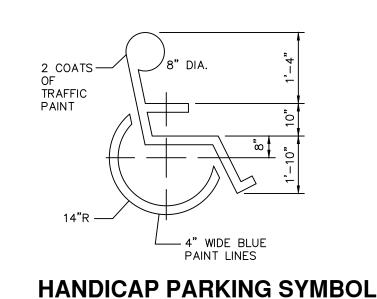
EXISTING ASPHALT OR -

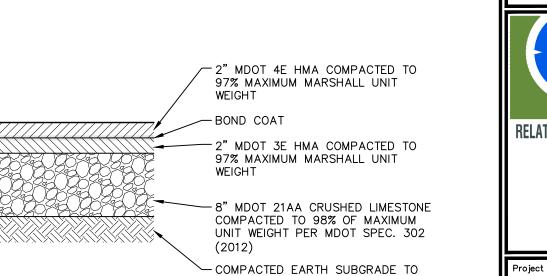
ASPHALT OVER CONCRETE

EXISTING ASPHALT TO THE-

CONCRETE OR 3" MINIMUM



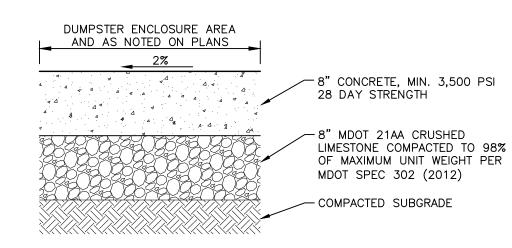




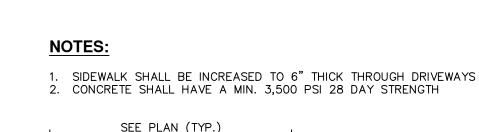
ASPHALT PAVEMENT SECTIOIN

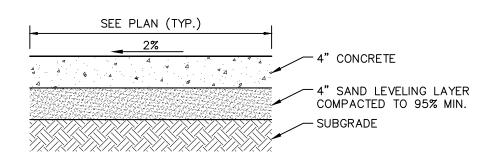
NOT TO SCALE

95% MIN.



HEAVY DUTY CONCRETE PAVEMENT NOT TO SCALE





CONCRETE SIDEWALK DETAIL

TYPE OF JOINT	USE DESCRIPTION	DETAIL
A. CONTROL JOINT. SAWED JOINT SEALED WITH HOT-POURED RUBBER-ASPHALT JOINT SEALING COMPOUND	PLACE JOINT SO AS TO UNIFORMLY DIVIDE SLAB AS SHOWN ON DETAIL	JOINT SEALANT 3/4" DEEP (MIN.) HELD 1/4" BELOW SURFACE
B. EXPANSION JOINT	PLACE AGAINST EXISTING CONCRETE PAVEMENTS, STRUCTURES (BUILDINGS, CANOPY COLUMNS, TRENCH DRAINS, ETC.)	JOINT SEALANT 3/4" DEEP (MIN.) HELD 1/4" BELOW SURFACE EXISTING CONCRETE PAVEMENTS OR STRUCTURES 1/2" EXPANSION MATERIAL
C. CONSTRUCTION JOINT	CONSTRUCTION JOINTS MUST BE PLACED WHEN CONTINUOUS POUR OPERATIONS ARE	3/4" MIN. NEW WORK

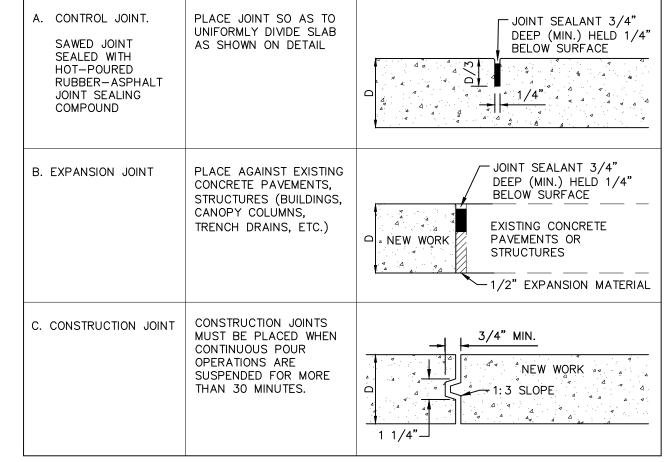
BUTT JOINT NOT TO SCALE

- PROPOSED

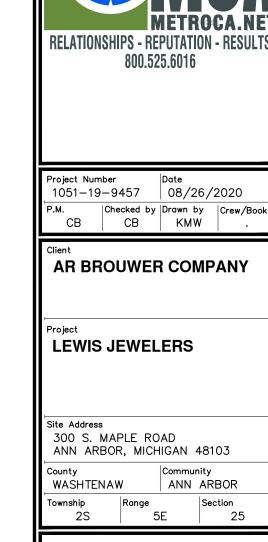
PAVEMENT

APPLY BITUMINOUS

BOND COAT



CONCRETE JOINT DETAILS NOT TO SCALE



CHRISTOPHER SUTTON, PE --

Sheet Number

12

TYPICAL DETAILS

SITE PLAN

Know what's **below.**

THE LOCATIONS OF EXISTING

JNDERGROUND UTILITIES ARE SHOWN

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WORK, OF ANY NEARBY

STRUCTURES, OR OF ANY OTHER

PERSONS.

09.29.2020 \(\text{REVISED PER SITE PLAN REVIEW #1} \)

REVISED PER SITE PLAN REVIEW #2

12.07.20
REVISED PER SITE PLAN REVIEW #3

12.21.20
REVISED PER PLANNING COMMISSION

08.27.2020 SITE PLAN SUBMISSION

Call before you dig.

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FLOW LINE └ 1" EXPANSION JOINT WEAKNESS JOINTS

GUTTER PAN *1'-6" + CURB & GUTTER | GUTTER WIDTH | * TO EDGE OF GUTTER OR FACE OF INTEGRAL CURB PAVEMENT T THICKNESS 1 -REINFORCEMENT AS IN ADJACENT CURB & GUTTER

ALIGN DRIVEWAY RETURN TO FIT OPENING

IN CURB AND GUTTER

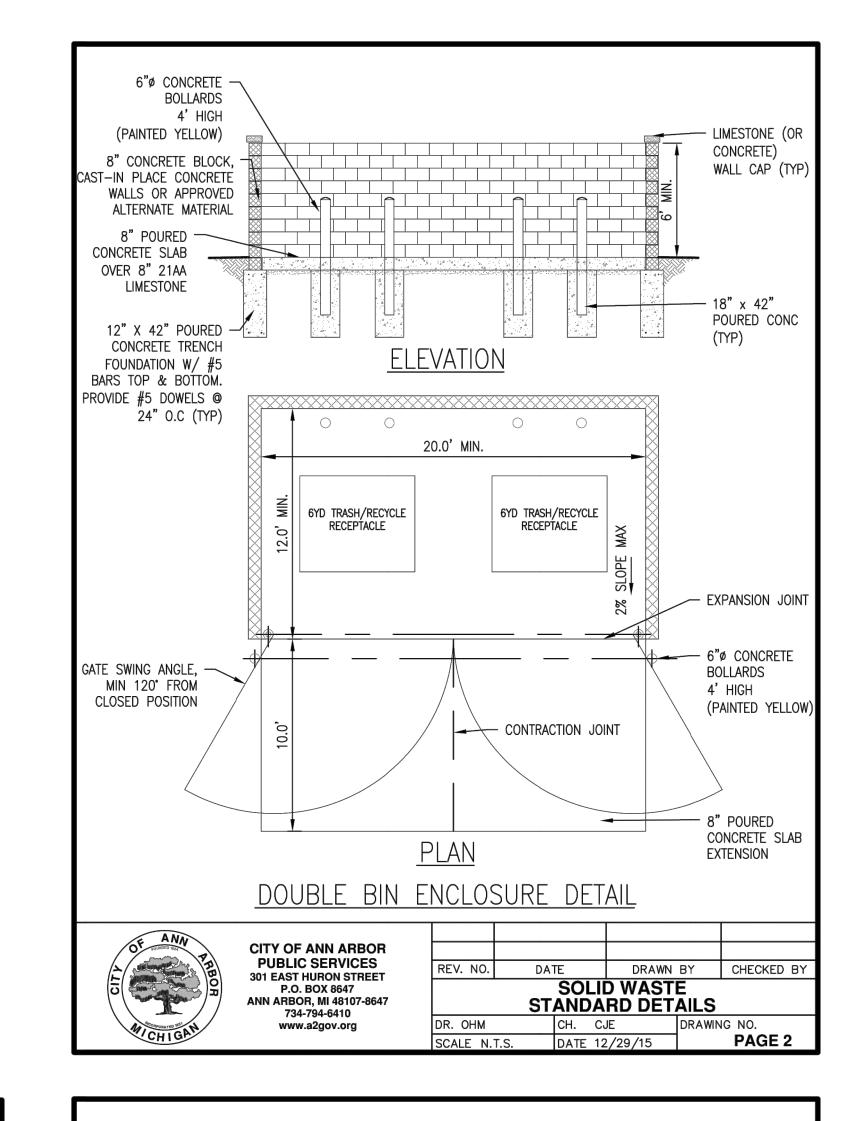
TYPE 'M' **DRIVEWAY OPENING AND APPROACH**

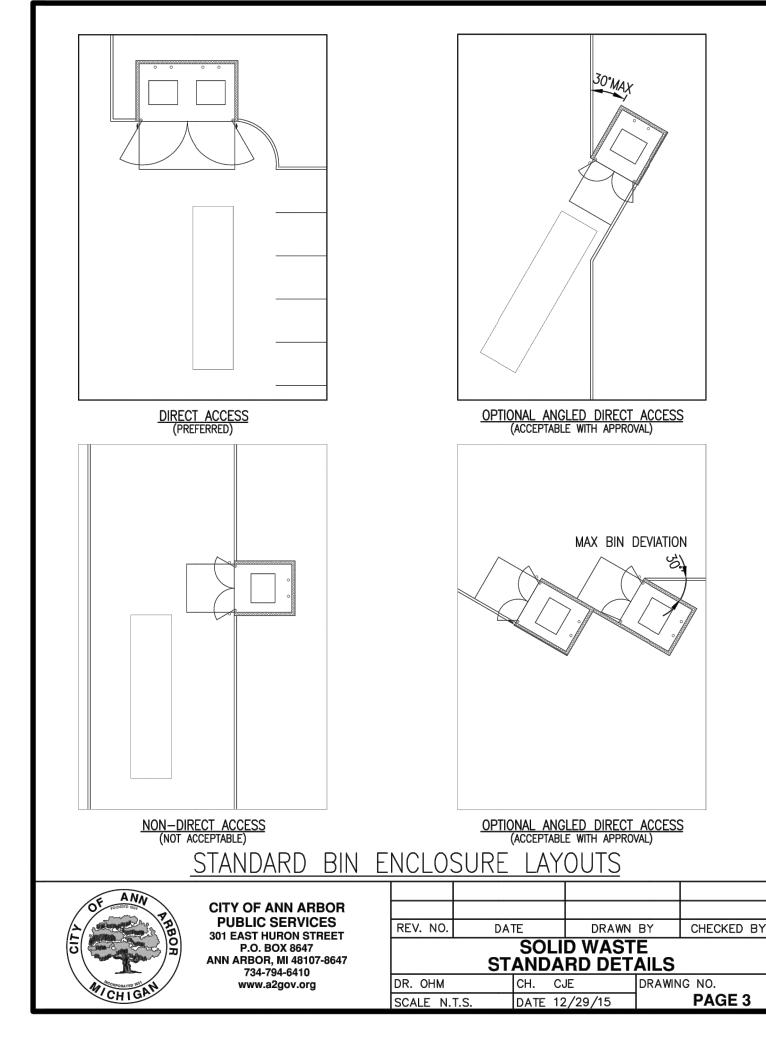
SECTION A-A

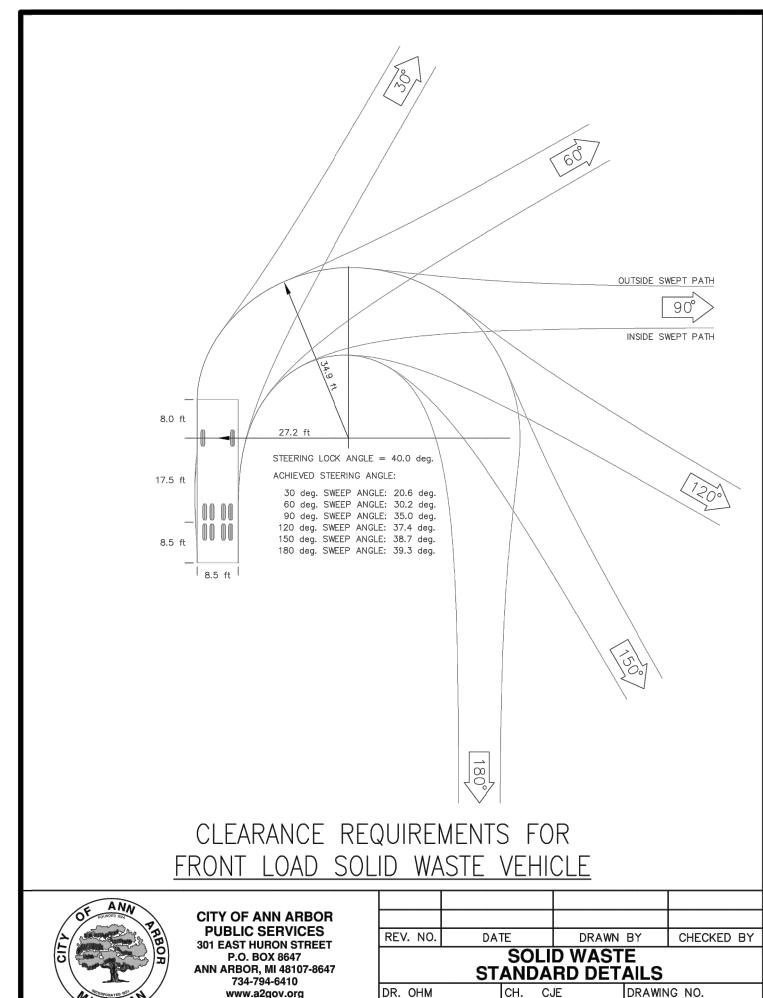
1" EXPANSION

PLANTER CURB NOT TO SCALE

COMPACTED SUBGRADE TO 95% MOD. PROCTOR







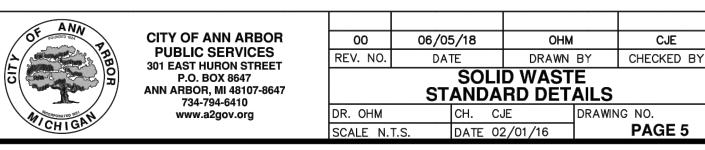
GENERAL NOTES:

"NO PARKING", AS APPROVED BY CITY.

PAGE 4

DATE 12/08/15

- 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
- 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.



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
- 12.1. SOLID WASTE TRUCKS MUST BE ABLE TO SERVICE DUMPSTERS WITHOUT IMPEDING THE PUBLIC
- 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

06/05/18 OHM DRAWN BY CHECKED BY REV. NO. DATE SOLID WASTE STANDARD DETAILS CH. CJE DRAWING NO. DR. OHM DATE 02/01/16 PAGE 6 SCALE N.T.S.



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09.29.2020 \(\text{REVISED PER SITE PLAN REVIEW #1} \)

10.22.2020
REVISED PER SITE PLAN REVIEW #2 12.07.20
REVISED PER SITE PLAN REVIEW #3

12.21.20
REVISED PER PLANNING COMMISSION

RELATIONSHIPS - REPUTATION - RESULTS

800.525.6016

1051-19-9457 08/26/2020 | Checked by | Drawn by | Crew/Book

AR BROUWER COMPANY

CB CB KMW

LEWIS JEWELERS

300 S. MAPLE ROAD

ANN ARBOR, MICHIGAN 48103 WASHTENAW ANN ARBOR

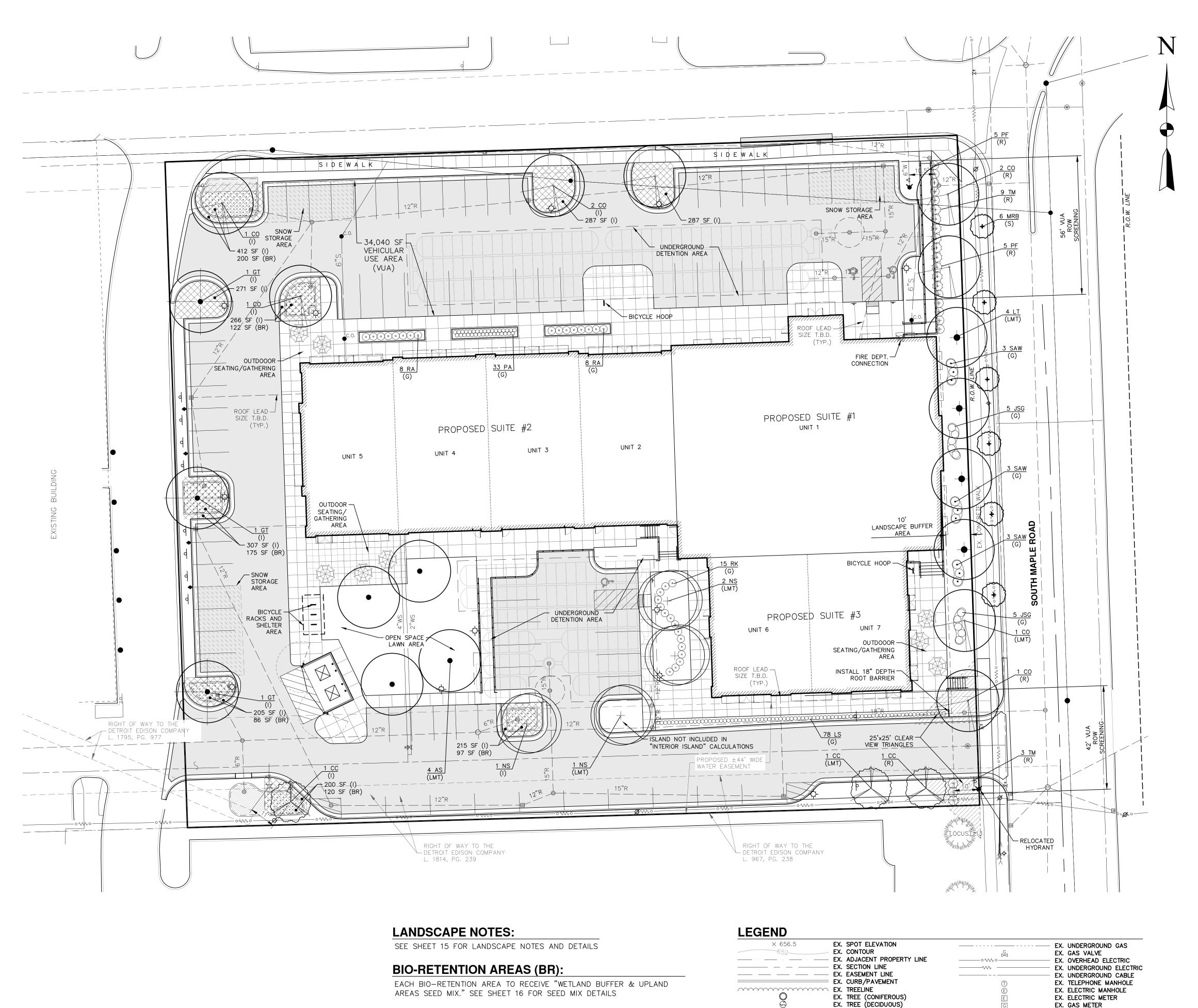
2S 5E 25

CHRISTOPHER SUTTON, PE --

SITE PLAN

TYPICAL DETAILS

13



STREET TREE ESCROW CALCULATIONS

THE CURRENT STREET TREE ESCROW RATE IS \$1.30 PER LINEAL FOOT OF STREET FRONTAGE. BASED ON THE 270.36 LINEAL FEET OF SOUTH MAPLE ROAD FRONTAGE ON THIS PROJECT, THE REQUIRED STREET TREE ESCROW FOR THIS SITE IS \$351.47

THIS AMOUNT MUST BE PAID PRIOR TO ISSUING THE BUILDING PERMIT. THE DEVELOPER HAS PROVIDED THE REQUIRED STREET TREES FOR THIS SITE. THEREFORE THE ESCROW AMOUNT SHALL BE REFUNDED AFTER THE CITY FORESTRY DIVISION HAS APPROVED THE STREET TREE PLANTINGS.

032-	EX. CONTOUR	\bowtie	EX. GAS VALVE
· · ·	EX. ADJACENT PROPERTY LIN		EX. OVERHEAD ELECTRIC
	EX. SECTION LINE		EX. UNDERGROUND ELECTRIC
	EX. EASEMENT LINE		EX. UNDERGROUND CABLE
	EX. CURB/PAVEMENT	$(\overline{1})$	EX. TELEPHONE MANHOLE
· · · · · · · · · · · · · · · · · · ·	EX. TREELINE	Ē	EX. ELECTRIC MANHOLE
0	EX. TREE (CONIFEROUS)	E	EX. ELECTRIC METER
9	EX. TREE (DECIDUOUS)	E G	EX. GAS METER
	EX. SIGN	\	EX. LIGHT POLE
	EX. WATER MAIN	! ⊠	EX. TRAFFIC SIGNAL BOX
₩	EX. WATER VALVE	(1)	EX. UNIDENTIFIED MANHOLE
\mathfrak{A}	EX. HYDRANT	Ø	EX. TRAFFIC SIGNAL POLE
W	EX. WATER MANHOLE	8	EX. UTILITY POLE
(EX. WELL		EX. GUY WIRE
W	EX. WATER METER		PROPOSED BUILDING
	EX. STORM SEWER		INTERIOR LANDSCAPE ISLAND A
СВ	EX. STORM INLET/CATCH BAS	SIN	PORTION OF BIO-RETENTION AR
ST	EX. STORM MANHOLE	[+'+'+'+'+'+'+'+'+'+'+'+'+'+'+'+'+'+'+'	APPLYING TO REQUIREMENTS
\smile	EX. STORM END SECTION	VIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	PORTION OF BIO-RETENTION AR
	EX. SANITARY SEWER		NOT APPLYING TO REQUIREMEN
<u> </u>	EX. SANITARY MANHOLE		-
		///////////////////////////////////////	SNOW STORAGE AREA

PLANT LIST

<u>PLA</u>	NI L	.151		
		Y SCREENING (R)		
KEY CO	QTY. 3	SPECIES CELTIS OCCIDENTALIS	MIN. SIZE 2" Cal.	SPEC. B&B
CO	3	HACKBERRY	Z Cal.	БQБ
CC	1	CARPINUS CAROLINIANA	2" Cal.	B&B
-	4	_AMERICAN HOP HORNBEAM 		
TM	12	TAXUS X MEDIA 'DENSIFORMIS'	30" Ht.	В&В
		DENSE YEW		
PF	10	POTENTILLA FRUTICOSA SHUBBY CINQUEFOIL	30" Ht.	CONT.
INTERIO	OR LAN	IDSCAPE ISLANDS (I)		
KEY	QTY.	SPECIES	MIN. SIZE	SPEC.
GT	3	GLEDITSIA TRIACANTHOS VAR INERMI THORNLESS HONEY LOCUST	2" Cal.	В&В
СО	4	CELTIS OCCIDENTALIS HACKBERRY	2" Cal.	В&В
CC	1	CARPINUS CAROLINIANA AMERICAN HOP HORNBEAM	2" Cal.	B&B
NS	1	NYSSA SYLVATICA	2" Cal.	B&B
-	9	_BLACKGUM _ PROVIDED		
CTD	-			
STREET KEY	TREES QTY.	IN PUBLIC RIGHT-OF-WAY (S) SPECIES	MIN. SIZE	SPEC.
MRB	6	MALUS 'RED BARRON'	2" Cal.	B&B
_		RED BARRON CRABAPPLE		
I A NI IDA	6 11 DK N	PROVIDED		
LANDIV KEY	IARK IV QTY.	IITIGATION TREES (LMT) SPECIES	MIN. SIZE	SPEC.
AS	4	ACER SACCHARUM	2" Cal.	B&B
CC	1	SUGAR MAPLE	211 Cal	חסם
CC	1	CARPINUS CAROLINIANA AMERICAN HOP HORNBEAM	2" Cal.	B&B
СО	1	CELTIS OCCIDENTALIS	2" Cal.	В&В
NIC	2	HACKBERRY NYSSA SYLVATICA	211.0-1	חסח
NS	3	NYSSA SYLVATICA BLACKGUM	2" Cal.	В&В
LT	4	LIRIODENDRON TULIPIFERA TULIP TREE	2" Cal.	В&В
=	13	PROVIDED		
GENER.	AL PLA	NTINGS (G)		
KEY	QTY.	SPECIES	MIN. SIZE	SPEC.
LS	78	CREEPING LILYTURF LIRIOPE SPICATA	1 GAL.	CONT.
JSG	10	JUNIPERUS 'SEA GREEN' SEA GREEN JUNIPER	24" HT. & SPR.	CONT.
PA	33	PENNISETUM A. 'HAMELN' DWARF FOUNTAIN GRASS	1 GAL.	CONT.
RA	31	RHUS AROMATICA 'GRO-LOW' GRO-LOW FRAGRANT SUMAC	24" HT. & SPR.	CONT.
SAW	9	SPIRAEA X BUMALDA ANTHONY WATERER SPIREA	24" HT. & SPR.	CONT.
MULCH	l			
AREAS	OF IND	IVIDUAL TREES AND LANDSCAPE BEDS A	ARE TO BE MULCH	HED WITH
		F 4 INCHES OF SHREDDED HARDWOOD	BARK.	
NO GR	\ DNUC	WOOD PALETTE MULCH PERMITTED		
_ANI	DSC	APE REQUIREMENT CA	LCULATIO	ONS
		ULAR USE - RIGHT-OF-WAY SCREENING (R		PROVIDED
		REENING LENGTH = 56 + 42 = 98 LF LF REQUIRED	 	-
	•	0 LF = 3.3 = 4 TREES REQUIRED	4	4
		JLAR USE / INTERIOR LANDSCAPE ISLANDS	(I) REQUIRED	PROVIDED
		E AREA = 31,035 SF OSCAPE AREA REQUIRED	 	
3,30	0 - 49,9	99 SF = 1:20 SF	į Į	į
	-	F \ 20 SF = 1,552 SF R LANDSCAPE AREA REQUIRED	 1,552 SF	 2,450 SF
1 TR	EE REQI	JIRED / 250 SF OF AREA	Ī	ĺ
		\ 250 SF = 6.2 = 7 TREES REQUIRED	7 EA	9 EA
		RETENTION AREA REQUIRED > 750 SF	1 1	
	-	X 50% =	776 SF	800 SF
		TING LAND USE BUFFERS	NOT APPLIC	
		STREETS AND SHARED DRIVEWAY BUFFERS	_	CABLE
		TREES IN THE PUBLIC RIGHT-OF-WAY (S) NGTH = 270.36 LF	<u>required</u> I	PROVIDED
		NGTH = 270.36 LF LF REQUIRED	 	l I

1 TREE / 45 LF REQUIRED

STREET TREE ESCROW

\$1.30 / LF OF STREET FRONTAGE

\$1.30 X 270.36 LF = \$351.47

 $270.36 \, \text{LF} \setminus 45 \, \text{LF} = 6 \, \text{TREES REQUIRED}$

5.29.6.F.4 NATURAL FEATURE MITIGATION (LMR)

270.36 LF SOUTH MAPLE ROAD STREET FRONTAGE

50% CAL. INCH OF LANDMARK TREE REMOVED

12" & 14" LANDMARK CRABAPPLE TO BE REMOVED 26" LANDMARK TREE REMOVED X 50% =

LANDMARK TREE REPLACEMENT REQUIREMENT:



THE LOCATIONS OF EXISTING

UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

08.27.2020
SITE PLAN SUBMISSION

09.29.2020
REVISED PER SITE PLAN REVIEW #1

10.22.2020
REVISED PER SITE PLAN REVIEW #2

12.07.20
REVISED PER SITE PLAN REVIEW #3

12.21.20
REVISED PER PLANNING COMMISSION

RELATIONSHIPS - REPUTATION - RESULTS
800.525.6016

AR BROUWER COMPANY

Project

LEWIS JEWELERS

Site Address 300 S. MAPLE ROAD ANN ARBOR, MICHIGAN 48103

ANN ARBOR, MICHIGAN 48103

County | Community | ANN ARBOR |

Township | Range | Section | 2S | 5E | 25

Professional Name
CHRISTOPHER SUTTON, PE --

SITE PLAN

LANDSCAPE PLAN

REQUIRED PROVIDED

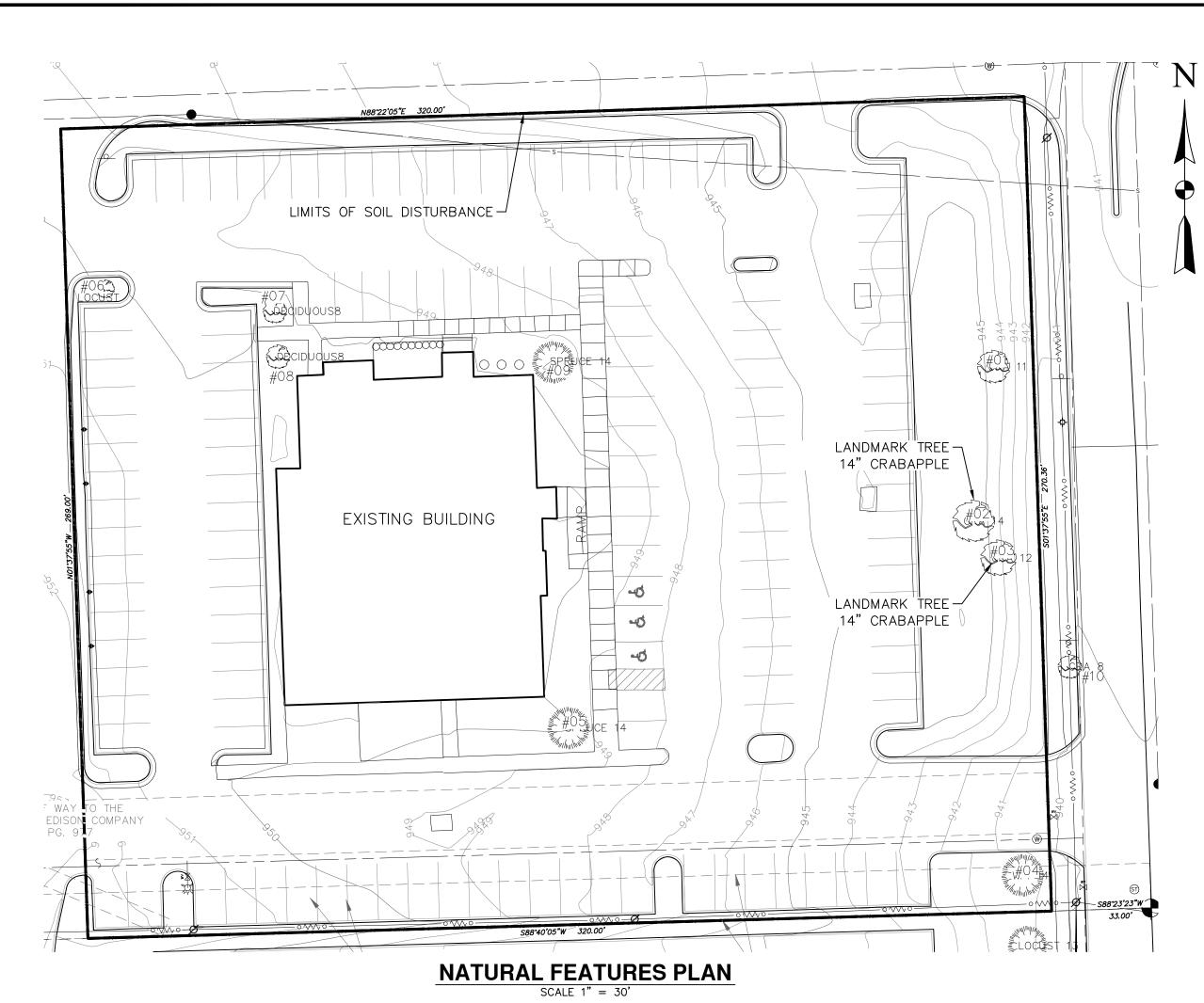
13 TREES 13 TREES

REQUIRED PROVIDED

\$351.47 **\$351.47**

sheet Number

1" = 20'



NATURAL FEATURES PLAN NOTES

. LIMITS OF DISTURBANCE ARE SHOWN ON THE PLAN

- 2. NO ENDANGERED SPECIES HABITAT EXIST ON THIS SITE.
- PER THE ALTA SURVEY: THE PARCEL DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FLOOD INSURANCE RATE MAP PUBLISHED BY THE FEDERAL INSURANCE ADMINISTRATION FOR THE COUNTY OF WASHTENAW, STATE OF MICHIGAN, COMMUNITY NUMBER - 26013, MAP NUMBER - 26161C0244E, AN EFFECTIVE DATE OF APRIL 3, 2012. THEREFORE, AS NOTED IN SAID DOCUMENT, THE SCALED LOCATION OF THE EASTERLY PORTION OF THE SUBJECT PROPERTY IS IN ZONE X (UNSHADED),
- THE PARCEL DOES NOT LIE WITHIN A SPECIAL FLOOD HAZARD ZONE ACCORDING TO THE FLOOD INSURANCE RATE MAP INDEX PUBLISHED BY THE FEDERAL INSURANCE ADMINISTRATION FOR THE COUNTY OF WASHTENAW, STATE OF MICHIGAN, MAP NUMBER - 26161CINDOA, AN EFFECTIVE DATE OF APRIL 3, 2012. THEREFORE, AS NOTED (*PANEL NOT PRINTED - NO SPECIAL FLOOD HAZARD AREAS) IN SAID DOCUMENT, THE SCALED LOCATION OF THE WESTERLY PORTION OF THE SUBJECT PROPERTY RESIDES IN
- 4. TWO LANDMARK TREES EXIST ON THIS SITE AND WILL BE REMOVED. THEIR LOCATION AND CONDITION IS NOTED ON THE PLAN.
- 5. NO STEEP SLOPES EXIST ON THIS SITE.

PANEL 26161C0243E.

- 6. NO EXISTING OR PROPOSED WATER COURSE ARE ON THIS SITE.
- 7. NO WETLANDS EXIST ON THIS SITE.

NATURAL FEATURES - STATEMENT OF IMPACT

THE PROPOSED PROJECT INCLUDES THREE COMMERCIAL BUILDINGS WITH A MAXIMUM POTENTIAL CAPACITY OF 6 BUSINESSES.

THE EXISTING NATURAL FEATURES ON THE SITE ARE LIMITED TO TWO LANDMARK TREES AS FOLLOWS:

TREE #02 14" CAL. CRABAPPLE TREE, GOOD CONDITION TREE HEALTH / CONDITION FACTOR SCORE = 21 TREE #03 12" CAL. CRABAPPLE TREE, GOOD CONDITION TREE HEALTH / CONDITION FACTOR SCORE = 21

SUMMARY: TREE #02 14" CAL. CRABAPPLE TREE - REMOVE DUE TO EXISTING LOCATION ONSITE FALLING WITH PROPOSED BUILDING - BUILDING LOCATION AS

REQUIRED BY ORDINANCE FOR FRONT SETBACK TREE #03 12" CAL. CRABAPPLE TREE — <u>REMOVE</u> DUE TO EXISTING LOCATION ONSITE FALLING WITH PROPOSED BUILDING — BUILDING LOCATION AS REQUIRED BY ORDINANCE FOR FRONT SETBACK

EXISTING TREE LIST:

NO.	SIZE	SPECIES	STATUS
01	11" CAL.	CRAB APPLE TREE	TO BE REMOVED
02	14" CAL. (LM)	CRAB APPLE TREE	TO BE REMOVED
03	12" CAL. (LM)	CRAB APPLE TREE	TO BE REMOVED
04	14" CAL.	PINE TREE	TO BE REMOVED
05	14" CAL.	SPRUCE	TO BE REMOVED
06	3" CAL.	LOCUST TREE	TO BE REMOVED
07	8" CAL.	CRAB APPLE TREE	TO BE REMOVED
08	8" CAL.	CRAB APPLE TREE	TO BE REMOVED
09	14" CAL.	SPRUCE	TO BE REMOVED
10	8" CAL.	CRAB APPLE TREE	TO BE REMOVED

(LM) DESIGNATES ANN ARBOR LANDMARK TREE

LANDSCAPE NOTES:

- 1. THIS PLAN IS FOR PLANTING LOCATIONS ONLY.
- 2. SIZES SPECIFIED ARE MINIMUM SIZES TO BE INSTALLED.
- 3. IN THE EVENT THE PLANT LIST DOES NOT MATCH THE PLAN, THE PLAN SHALL TAKE PRECEDENCE.
- 4. ALL EXISTING TREES TO REMAIN THAT ARE DAMAGED DURING CONSTRUCTION SHALL BE REPLACED BY THE END OF THE FOLLOWING PLANTING SEASON.
- 5. THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL UNDERGROUND AND OVERHEAD UTILITIES. PLANT MATERIAL IS TO BE LOCATED SUCH THAT IT WILL NOT INTERFERE WITH ANY UNDERGROUND OR OVERHEAD UTILITIES. PLANTINGS WITHIN 15 FEET OF A FIRE HYDRANT SHALL NOT EXCEED 6 INCHES IN HEIGHT.
- 6. PLANT TREES AND SHRUBS AT THE SAME GRADE LEVEL AT WHICH THEY WERE GROWN IN THE NURSERY. IF HEAVY CLAY SOILS ARE EVIDENT, PLANT TREES AND SHRUBS IN LEVEL AREAS HIGHER, APPROXIMATELY 1/4 OF THE ROOT BALL ABOVE THE GRADE.
- 7. REMOVE ALL TWINE, WIRE, NURSERY TREE GUARDS, TAGS AND INORGANIC MATERIAL FROM ROOT BALLS. PEEL BACK THE TOP 1/3 OF BURLAP FROM EARTH BALLS AND REMOVE ANY BURLAP AROUND TREE TRUNKS.
- 8. ALL LANDSCAPE AREAS SHALL BE EXCAVATED OF ALL BUILDING / CONSTRUCTION MATERIAL AND POOR SOILS TO A DEPTH OF 18"-24" AND BACKFILLED WITH GOOD, MEDIUM TEXTURED PLANTING SOIL.
- 9. ALL DISTURBED UNPAVED AREAS ARE TO BE SPREAD WITH A MINIMUM 4 INCHES OF TOPSOIL AND SODDED.
- 10. AREAS OF INDIVIDUAL TREES AND LANDSCAPE BEDS ARE TO BE MULCHED WITH A MINIMUM OF 4 INCHES OF SHREDDED HARDWOOD BARK. (NO GROUND WOOD PALETTE MULCH PERMITTED) MULCH SHALL BE SPREAD IN A 5-FOOT DIAMETER CIRCLE AROUND THE BASE OF EACH TREE, LEAVING A 6-INCH RADIUS CIRCLE OF BARE SOIL AROUND THE TRUNK OF THE TREE. ALL AREAS OUTSIDE OF THE MULCH RINGS SHALL BE SODDED. MULCH TO BE DOUBLE SHREDDED HARDWOOD BARK MULCH
- 11. IF AN APPROVED SPECIES IS NO LONGER ACCEPTABLE DUE TO SUCH THINGS AS INFESTATION OR DISEASE, A SUITABLE SIMILAR SPECIES SHALL BE USED AS REPLACEMENT. ANY PLANT SUBSTITUTIONS SHALL HAVE CITY OF ANN ARBOR APPROVAL PRIOR TO INSTALLATION.
- 12. RECOMMENDED PLANTING DATES ARE MARCH 1 TO MAY 15 FOR ALL MATERIALS AND OCTOBER 15 TO DECEMBER 15 FOR DECIDUOUS MATERIALS. PLANTINGS OUTSIDE THESE DATES SHALL HAVE PRIOR CITY OF ANN ARBOR APPROVAL, AND MAY REQUIRE SPECIAL TREATMENT, SUCH AS EXTRA WATERING OR MULCHING, TO INCREASE SURVIVAL POTENTIAL.
- 13. TREE "BALLED AND BURLAPPED" ROOT BALL SIZE SHALL BE A MINIMUM OF AT LEAST TEN TIMES THE TREE CALIPER SIZE.
- 14. ANY SPECIES DEVIATIONS FROM THE APPROVED SITE PLAN MUST BE APPROVED IN WRITING BY THE CITY OF ANN ARBOR PRIOR TO INSTALLATION.

LANDSCAPE MAINTENANCE PLAN

LANDSCAPING REQUIRED BY THE CITY OF ANN ARBOR SHALL BE MAINTAINED IN A HEALTHY, NEAT AND ORDERLY APPEARANCE, FREE FROM REFUSE AND DEBRIS. SPECIFIC LANDSCAPE MAINTENANCE INCLUDES, BUT IS NOT LIMITED TO, CUTTING, PRUNING, AND MOWING OF REQUIRED LANDSCAPE AREAS AND REMOVAL OF

APPLICATIONS OF FERTILIZERS, BEYOND THE INITIAL TOPSOIL AND SEEDING, SHALL BE A FERTILIZER WITH CONTAINING NO PHOSPHORUS.

ALL DISEASED, DAMAGED, OR DEAD PLANT MATERIAL SHALL BE REPLACED, IN ACCORDANCE WITH THE CITY OF ANN ARBOR'S UNIFIED DEVELOPMENT CODE, BY THE END OF THE FOLLOWING PLANTING SEASON AS A CONTINUING OBLIGATION FOR THE DURATION OF THE SITE PLAN.

THE OWNER SHALL INSURE PERPETUAL AND MANDATORY MAINTENANCE AND/OR REPLACEMENT OF VEGETATIVE PLANTINGS PURSUANT TO THE APPROVED LANDSCAPE PLAN.

IRRIGATION NOTE:

PROVIDE UNDERGROUND AUTOMATIC IRRIGATION SYSTEM. SYSTEM SHALL INCLUDE SEPARATE ZONES FOR LAWNS, SHRUBS PERENNIALS AND ANNUAL FLOWERS.

LANDSCAPE EDGING:

ALL LANDSCAPE EDGES ARE SHOVEL CUT.

COMPACTED SOILS

- 1. NO MACHINERY IS TO BE USED OR PARKED WITHIN THE DRIPLINE OF EXISTING TREES.
- 2. PROPOSED PLANT BEDS FOUND TO HAVE COMPACTED SOILS SHALL BE FULLY EXCAVATED TO DEPTH SHOWN ON DETAILS. THESE AREAS (NOT INDIVIDUAL PLANT HOLES) ARE TO RECEIVE CONTINUOUS PLANT MIX AS SPECIFIED BELOW

A MIXTURE OF 70% LOAM TOPSOIL, 10% COMPOST, 20% SAND BACKFILLED IN THE PLANT BED.

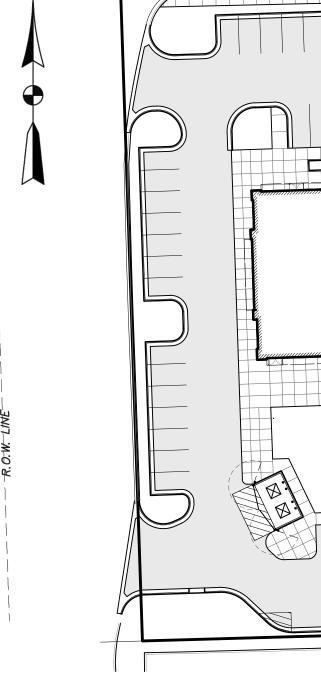
ADDITIONALLY - HAND TILL TO A MINIMUM DEPTH OF 12", INTO EVERY 150 SQ. FT. BED AREA:

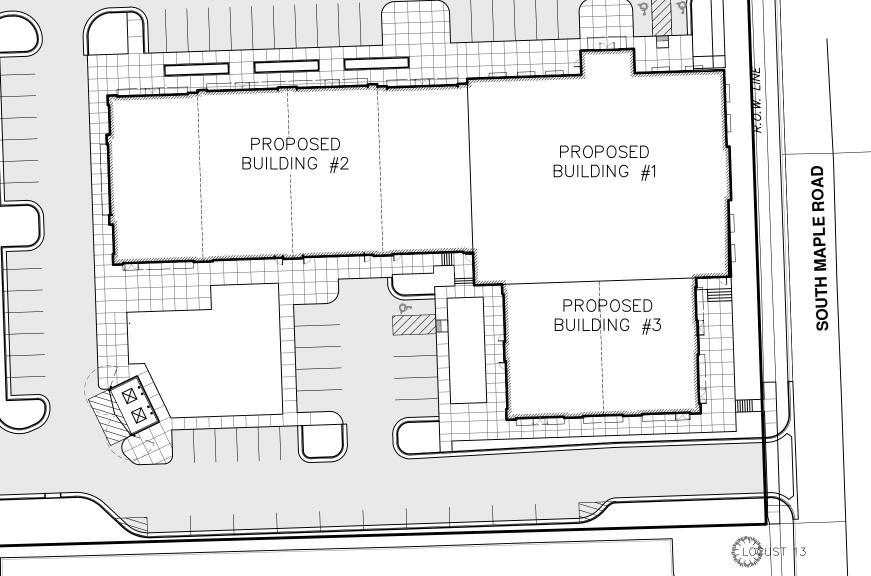
- (1) 6 CU. FT. BALE ORGANIC COMPOST
- (1) 40 LB BAG COMPOSTED POULTRY MANURE "CHICK MAGIC" 5-3-2 WWW.CHICKMAGIC.NET (262)495-6220
- (1) 5 LB BAG 13-13-13 MULTI-PURPOSE FERTILIZER

SNOW STORAGE NOTE:

SNOW SHALL NOT BE PUSHED ON TO INTERIOR LANDSCAPE ISLANDS UNLESS THOSE AREAS HAVE BEEN DESIGNATED FOR SNOW STORAGE.







PROPOSED SITE PLAN

PROPOSED C3 155.93 EAST 159.64' EAST IN COMPARISON OF THE ALTERNATIVE AND THE PROPOSED PROJECTS, THE ALTERNATIVE PROPOSAL LIMITED THE USE AND AESTHETICS OF THE PROPERTY. 78.58' NORTH 84.89' NORTH 75.95' SOUTH 75.95' SOUTH 67.66' WEST 67.66' WEST | 55 FT./4 Stories | +/-28'/1-STORY 28'/1-STORY 9,330 SF

139

ALTERNATIVE ANALYSIS SITE PLAN

0.435 AC

EXISTING

+/-9330 SF

142

ALTERNATIVE ANALYSIS NARRATIVE

THE ALTERNATE PLAN IS THE ORIGINALLY PROPOSED RENOVATION OF THIS PROJECT. DUE TO THE CONDITION OF THE EXISTING BUILDING, TOTAL DEMOLITION OF THAT BUILDING WAS NECESSARY.

THE CITY'S CURRENT UNIFIED DEVELOPMENT CODE REQUIRES A 10-FOOT FRONT SETBACK FOR ALL PROPOSED BUILDINGS. CONSTRUCTING A BUILDING IN THE LOCATION OF THE PREVIOUS RESTAURANT WOULD REQUIRE A SETBACK VARIANCE FROM THE ZONING BOARD OF APPEALS.

ALTERNATIVE SITE PLAN PROS & CONS

AND CUSTOMERS

FOR PROPOSED USE

- PRO ALLOWED FOR THE MAINTENANCE OF THE LANDMARK TREES • CON - PLAN MAINTAINED PAVEMENT, WALKS, AND LANDSCAPE
- WHICH EXIST IN POOR CONDITION. CON — THE EXTERIOR OF THE BUILDING REQUIRED NUMEROUS

IMPROVEMENTS FOR THE HEALTH AND SAFETY OF THE EMPLOYEES

- CON DID NOT FULLY UTILIZE THE COMMERCIAL/TAXABLE ASPECTS OF THE PROPERTY
- CON PROVIDED SUBSTANTIALLY MORE PARKING THAN NECESSARY
- PROPOSED SITE PLAN PROS & CONS
- PRO PROVIDES SAFE AND HEALTHY ENVIRONMENT FOR EMPLOYEES AND CUSTOMERS PRO - OVERALL ENHANCED AESTHETICS AND FUNCTIONALITY FOR THE COMMUNITY PRO - FULLY UTILIZES THE POTENTIAL COMMERCIAL/TAXABLE REVENUE OF THE PROPERTY PRO - PROVIDES ADEQUATE RATHER THAN EXCESSIVE PARKING FOR PROPOSED USE
- ACCESSING EXISTING COMMERCIAL USES WEST OF THIS SITE PRO - PROVIDES FOR BOTH SHELTERED AND UN-SHELTERED BICYCLE PARKING PRO — PROVIDES NEW AREAS FOR OUTDOOR SEATING AND GATHERING

PRO - INCLUDES NEW SIDEWALK FOR PEDESTRIAN CONNECTIVITY AND SAFETY IN

- PRO PROVIDES AREA FOR NATURAL BIO-RETENTION AREA • PRO - MEETS CITY DEVELOPMENT CODE FOR 10-FOOT BUILDING FRONT SETBACK.
- CON LOSE OF TWO LANDMARK TREES

GROSS / NET	ΓLOT AREA	0.435 AC		
SITE DEVELOP	MENT DATA	REQUIRED	PROPOSED	
	FRONT	10'	10 EAST	
BUILDING	CIDE	0'	73' NORTH	
SETBACKS	SIDE	U	47' SOUTH	
	REAR	20'	53' WEST	
BUILDING #1	HEIGHT	55 FT/4 STORIES	28'/1-STORY	
INFORMATION	FLOOR AREA	6,000 SF	9,408 SF	
BUILDING #2	HEIGHT	55 FT/4 STORIES		
INFORMATION	FLOOR AREA	6,000 SF	10,575 SF	
BUILDING #3	HEIGHT	55 FT/4 STORIES		
INFORMATION	FLOOR AREA	6,000 SF	4,546 SF	
PARKING	TOTAL SPACES	30 MIN.	81	
INFORMATION	ADA SPACES	3 (MIN)	3	
BICYCLE PARKING	WITH SHELTER	4.5	6	
DICTULL PARKING	W/O SHELTER	4.5	4	
	·	·		



THE LOCATIONS OF EXISTING JNDERGROUND UTILITIES ARE SHOWN N AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES T BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THI WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

08.27.2020 SITE PLAN SUBMISSION

09.29.2020 REVISED PER SITE PLAN REVIEW #1

\(\sigma\) 10.22.2020
\(\sigma\) REVISED PER SITE PLAN REVIEW #2 12.07.20
REVISED PER SITE PLAN REVIEW #3

12.21.20
REVISED PER PLANNING COMMISSION



1051-19-9457 08/26/2020 |Checked by |Drawn by | Crew/Bool CB | CB | KMW

AR BROUWER COMPANY

LEWIS JEWELERS

300 S. MAPLE ROAD

WASHTENAW ANN ARBOR 5E 25 2S

ANN ARBOR, MICHIGAN 48103

HRISTOPHER SUTTON, PE --

SITE PLAN

LANDSCAPE NOTES. **CALCULATIONS & NATURAL FEATURES**

> Sheet Number 15

REQUIRED

C3

10'

6,000 SF

30 MIN.

3 (MIN)

TO REMAIN

GROSS / NET LOT AREA

SITE DEVELOPMENT DATA

ZONING

BICYCLE PARKING

BUILDING

SETBACKS

BUILDING

INFORMATION

PARKING

INFORMATION

FRONT

SIDE

REAR

HEIGHT

FLOOR AREA

TOTAL SPACES

ADA SPACES

WETLAND BUFFER & UPLAND AREAS SEED MIX

Quote 19323

THE SEED MIX BELOW IS A CUSTOMIZED VERSION OF THE GENESIS NURSERY'S STANDARD "LO PRO PRAIRIE FOR CLAY SOLS" MIX

Metro Consulting no job name Salt Tolerant Sedge Ghetto Mix

Rudbeckia laciniata

Schoenoplectus acutus {Scirpus a}

Schoenoplectus pungens (Scirpus p)

Schoenoplectus tabernaemontani (Scirpus vali Great Bulrush

Sagittaria latifolia

Genesis Nursery, Inc. Tampico, Il Illinois Permit # 3669 (877) 817–5325 www.GenesisNurseryInc.com

PLS where applicable					
16-Jan-2	020		seeds	permanent matrix seed	
Species	Common Name	lb/ac	per pound	per acre	
Agrostis stolonifera (A alba palustris)	Bent Grass	0.063	7,442,623	468,885	
Alisma subcordatum	Common Water Plantain	0.125	1,212,834	151,604	
Ammannia robusta	Scarlet Loosestrife	0.016	27,515,151	440,242	
Amorpha fruticosa	Indigo Bush	0.063	62,968	3,967	
Asclepias incarnata	Swamp Milkweed	0.125	63,148	7,894	
Bidens cernua	Nodding Burmarigold	0.063	305,660	19,257	
Bidens frondosa	Common Beggarstick	0.031	194,511	6,030	
Boltonia asteroides	False Aster	0.063	4,450,980	280,412	
Dulla a ala a ancia fluoria tilia (Caissona f)	Division Division in In-	0.135	122 571	15 440	

Duck Potato

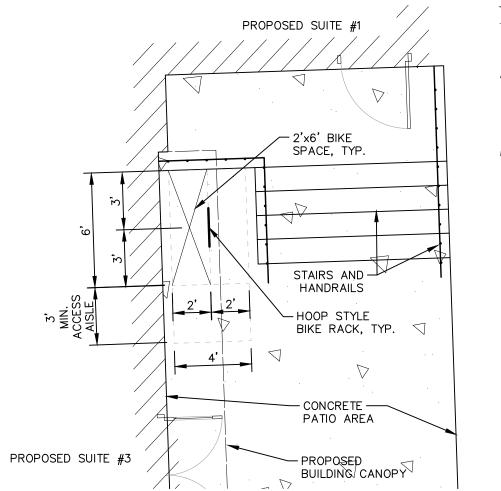
Hardstem Bulrush

Chairmakers Rush

16-Jan-2020			seeds	matrix seeds	seeds	%
Species	Common Name	lb/ac	per pound	per acre	per sq. ft.	by sd ct
Agrostis stolonifera {A alba palustris}	Bent Grass	0.063	7,442,623	468,885	10.76	6.41%
Alisma subcordatum	Common Water Plantain	0.125	1,212,834	151,604	3.48	2.07%
Ammannia robusta	Scarlet Loosestrife	0.016	27,515,151	440,242	10.11	6.02%
Amorpha fruticosa	Indigo Bush	0.063	62,968	3,967	0.09	0.05%
Asclepias incarnata	Swamp Milkweed	0.125	63,148	7,894	0.18	0.11%
Bidens cernua	Nodding Burmarigold	0.063	305,660	19,257	0.44	0.26%
Bidens frondosa	Common Beggarstick	0.031	194,511	6,030	0.14	0.08%
Boltonia asteroides	False Aster	0.063	4,450,980	280,412	6.44	3.83%
Bulboschoenus fluviatilis (Scirpus f)	River Bulrush	0.125	123,571	15,446	0.35	0.21%
Bulboschoenus maritimus (Scirpus paludosus)	Alkali Bulrush	0.063	222,000	13,986	0.32	0.19%
Carex Bebbii	Bebbs Sedge	0.063	2,203,883	138,845	3.19	1.90%
Carex lupuliformis	Knobbed Hop Sedge	0.125	97,758	12,220	0.28	0.17%
Carex nebraskensis	Nebraska Sedge	0.063	425,891	26,831	0.62	0.37%
Carex praegracilis	Expressway Sedge	0.125	637,640	79,705	1.83	1.09%
Carex scoparia	Pointed Broom Sedge	0.063	1,254,144	79,011	1.81	1.08%
Carex stipata	Awlfruited Sedge	0.063	650,430	40,977	0.94	0.56%
Carex vulpinoidea	Fox Sedge	0.500	1,964,030	982,015	22.54	13.43%
Cephalanthus occidentalis	Button Bush	0.125	112,043	14,005	0.32	0.19%
Distichlis spicata	Salt Grass	0.500	560,000	280,000	6.43	3.83%
Echinochloa crusgalli	Barnyard Grass	2.000	135,482	270,964	6.22	3.70%
Eleocharis obtusa	Blunt Spikerush	0.031	2,508,287	77,757	1.79	1.06%
Eleocharis palustris	Marsh Spikerush	0.063	1,181,250	74,419	1.71	1.02%
Elymus virginicus	Virginia Rye	5.000	117,252	586,260	13.46	8.02%
Eutrochium maculatum {Eupatorium m}	Spotted Joepyeweed	0.031	1,586,013	49,166	1.13	0.67%
Glyceria striata	Fowl Manna Grass	0.031	2,043,243	63,341	1.45	0.87%
Helenium autumnale	Sneezeweed	0.063	3,310,948	208,590	4.79	2.85%
Juncus arcticus balticus {J b littoralis}	Lake Shore Rush	0.016	9,659,574	154,553	3.55	2.11%
Juncus effusus	Soft Rush	0.016	22,700,000	363,200	8.34	4.97%
Juncus nodosus	Joint Rush	0.016	26,705,882	427,294	9.81	5.84%
Juncus torreyi	Torrey's Rush	0.016	23,402,062	374,433	8.60	5.12%
Leersia oryzoides	Rice Cut Grass	0.125	354,688	44,336	1.02	0.61%
Mimulus ringens	Monkey Flower	0.031	2,579,545	79,966	1.84	1.09%
Penthorum sedoides	Ditch Stonecrop	0.008	43,283,095	346,265	7.95	4.73%
Persicaria pensylvanica {Polygonum p}	Giant Smartweed	2.000	69,810	139,620	3.21	1.91%

0.031

0.063 0.125



2,025,000 62,775

879,545 55,411

189,246

530,374

23,656

66,297

1.44

1.27

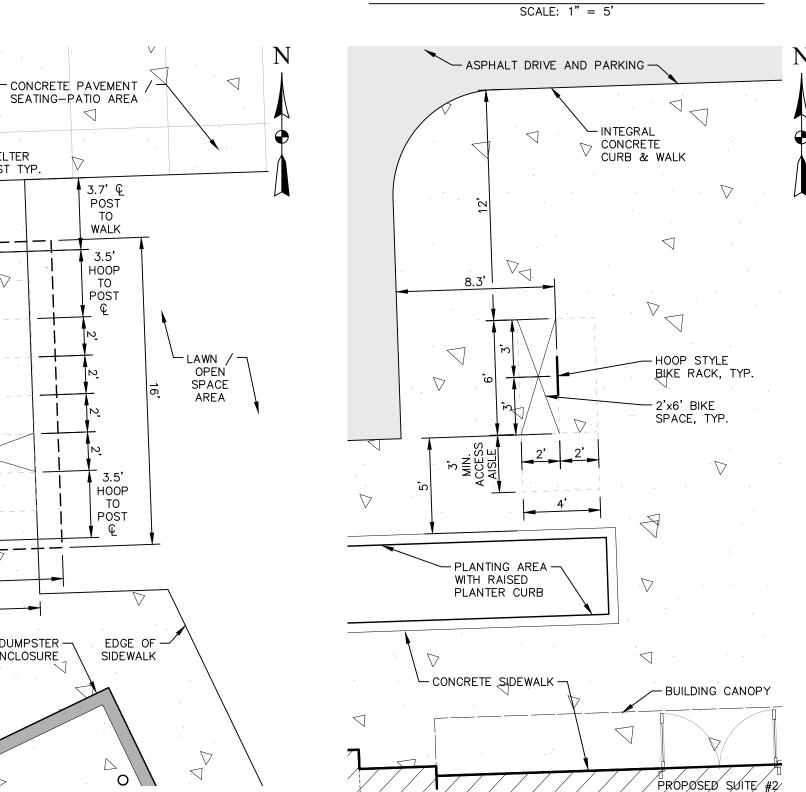
0.54

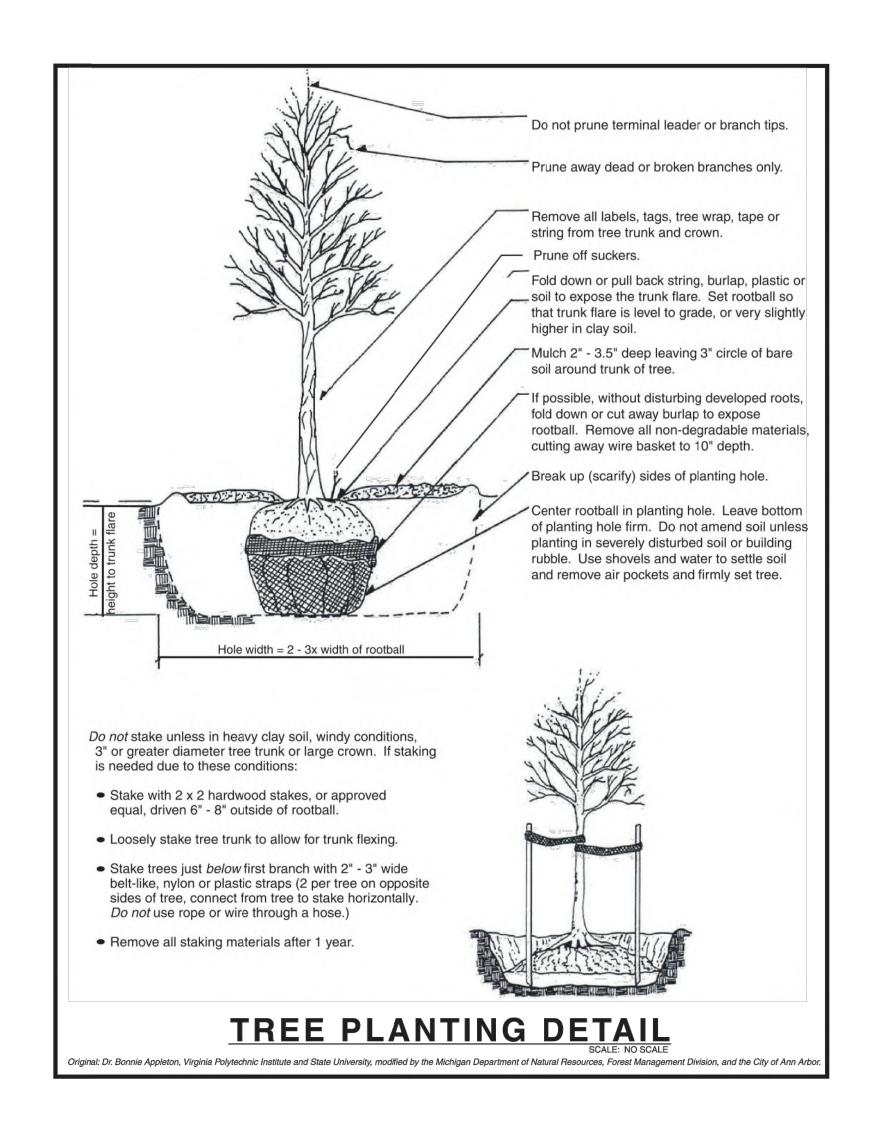
0.76% 0.32%

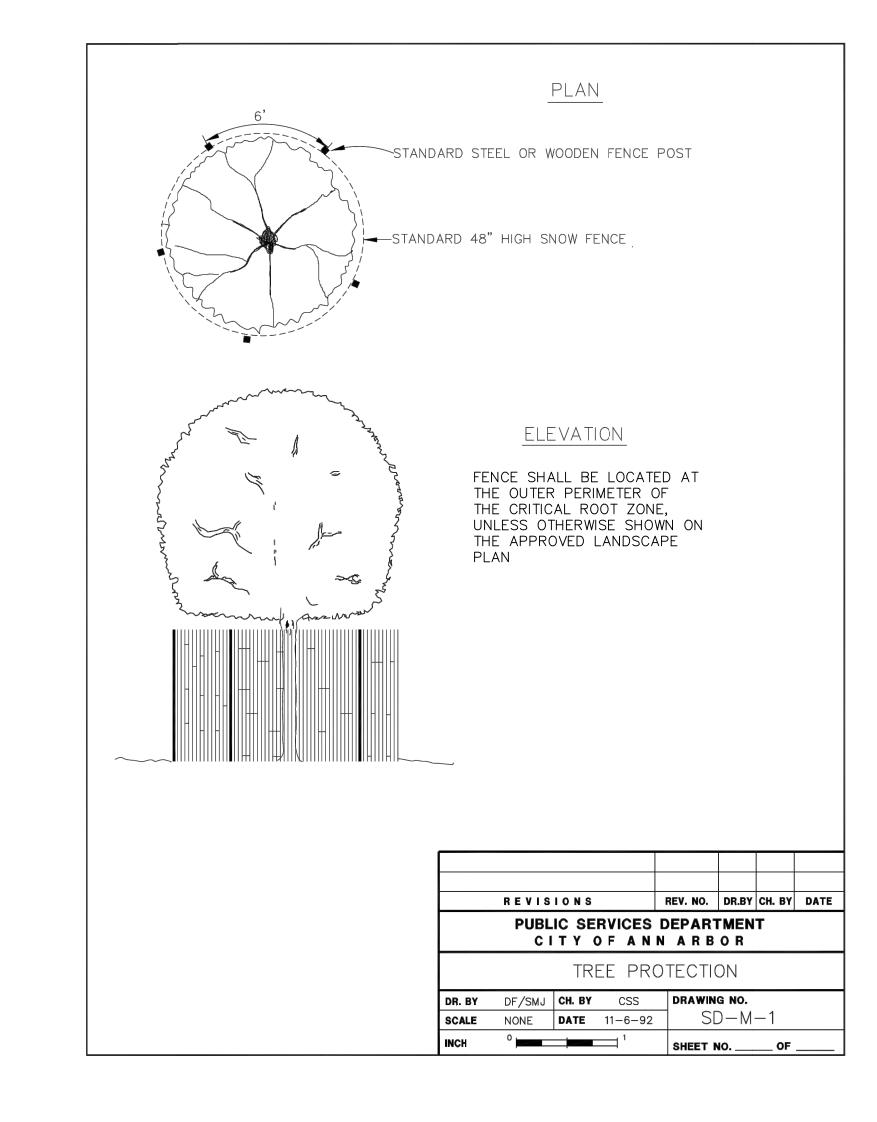


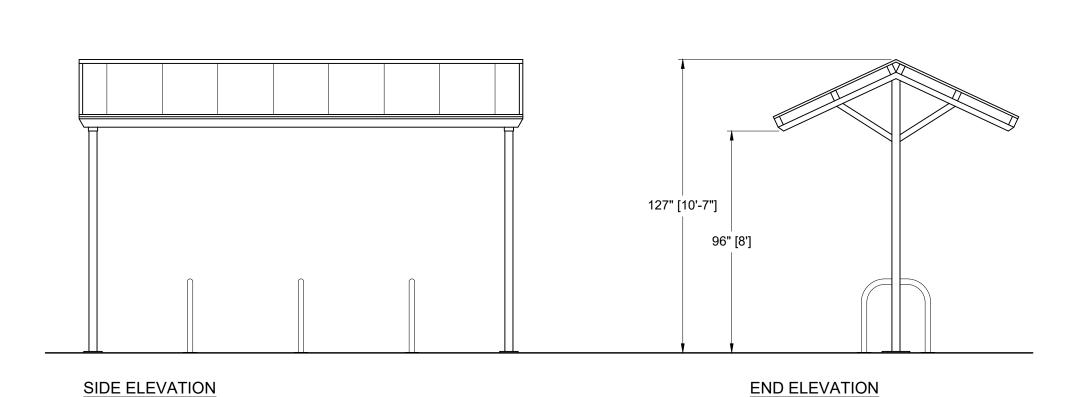
2 BICYCLE SPACE LAYOUT - NORTH

SCALE: 1" = 5'









102" [8'-6"] – 192" [16'] ·

PLAN VIEW

48" RACK SPACING)

 FRAMEWORK TO BE WELDED AND MECHANICALLY FASTENED STEEL

 ALL FASTENERS TO BE STAINLESS STEEL ROOF GLAZING TO BE: 8MM POLYCARBONATE STRUCTURED SHEET, TONGUE AND GROOVE SYSTEM, IN ALUMINUM TRIM. TINT:

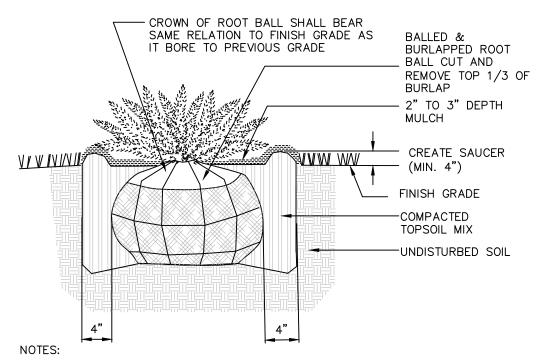
 STEEL FINISHING: MEDIA BLAST PREP

TNEMEC TNEME ZINC 90-97 PRIMER TNEMEC SERIES N69 HI-BUILD EPOXOLINE 2-PART

EPOXY MIDCOAT; TNEMEC SERIES 73 ENDURA-SHIELD TOPCOAT. ALUMINUM TRIM TO HAVE SAME TOP TWO COATS (OR IN MATCHING ANODIZED). COLOR: _____ ALL DIMENSIONS TO BE FIELD VERIFIED

 DESIGN IS PRELIMINARY, AND CONCEPTUAL, AND SUBJECT TO CHANGE BASED ON FINAL ENGINEERING PHASE AND CUSTOMER APPROVAL.

BIKE RACK SHELTER TO BE AS SHOWN, OR AN 8.5"x16' APEX' BICYCLE SHELTER BE AS SHOWN, OR APPROVED EQUAL



1. DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING 2. WATER SHRUB THOROUGHLY SUBSEQUENT TO INSTALLATION

SHRUB PLANTING DETAIL NOT TO SCALE



BIKE RACK DETAIL



JNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

CONSTRUCTION SITE SAFETY IS THE RESPONSIBILITY OF THE CONTRACTOR. NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THI WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

08.27.2020 SITE PLAN SUBMISSION

09.29.2020 \(\text{REVISED PER SITE PLAN REVIEW #1} \) 10.22.2020
REVISED PER SITE PLAN REVIEW #2

12.07.20
REVISED PER SITE PLAN REVIEW #3

12.21.20
REVISED PER PLANNING COMMISSION

RELATIONSHIPS - REPUTATION - RESULTS 800.525.6016

1051-19-9457 08/26/2020 C.M. | Checked by | Drawn by | Crew/Book | CB | KMW | .

AR BROUWER COMPANY

LEWIS JEWELERS

300 S. MAPLE ROAD ANN ARBOR, MICHIGAN 48103

WASHTENAW ANN ARBOR 2S 5E 25

CHRISTOPHER SUTTON, PE --

SITE PLAN LANDSCAPE DETAILS

Sheet Number

16

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DUMPSTER —

ENCLOSURE

6 BICYCLE SPACE WITH SHELTER LAYOUT

POST TYP.

ACCESS

AISLE

BICYCLE -

STYLE BIKE RACK, TYP.

2'x6' BIKE -

9.8' TO HOOP &

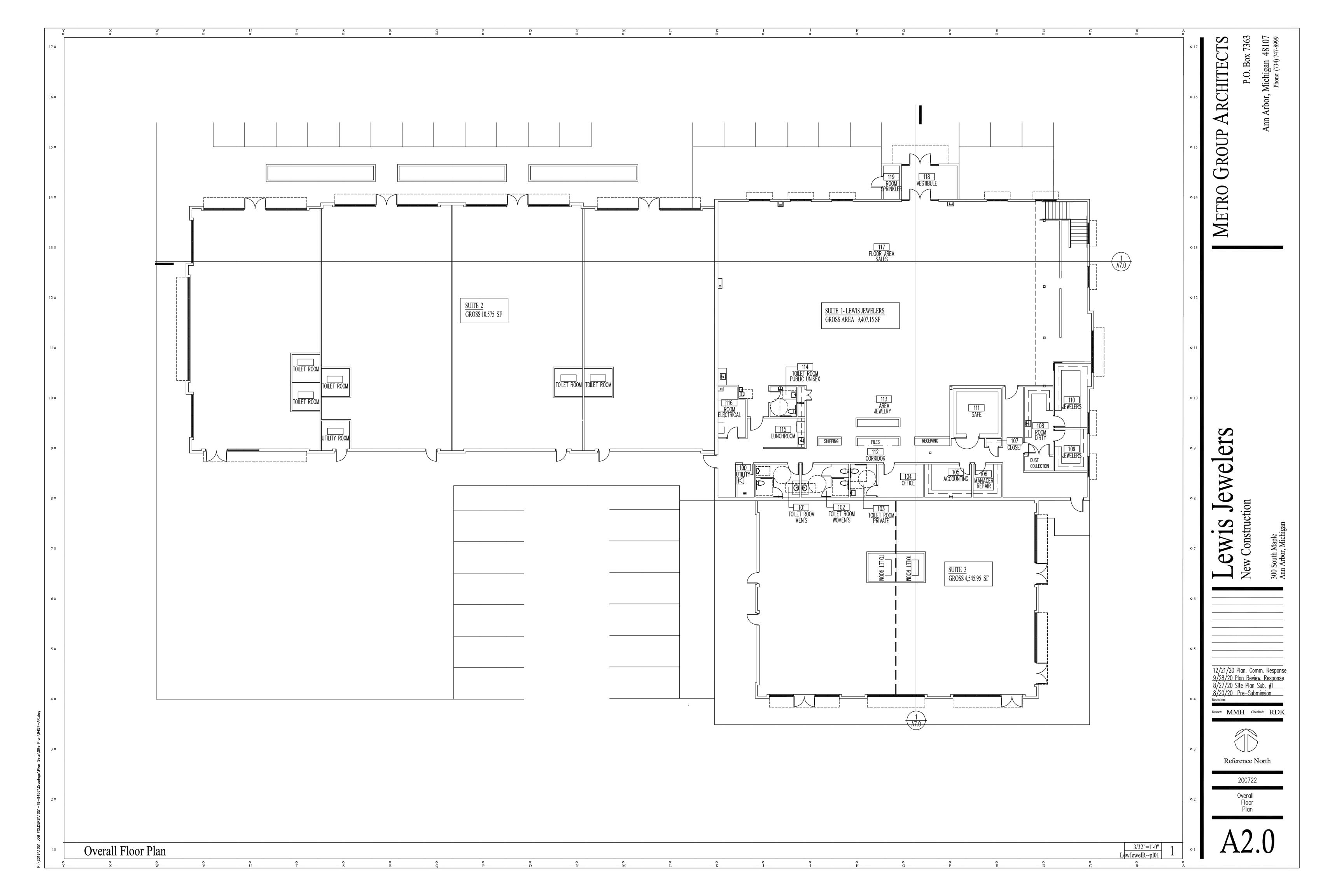
- INTEGRAL

CONCRETE

CURB & WALK

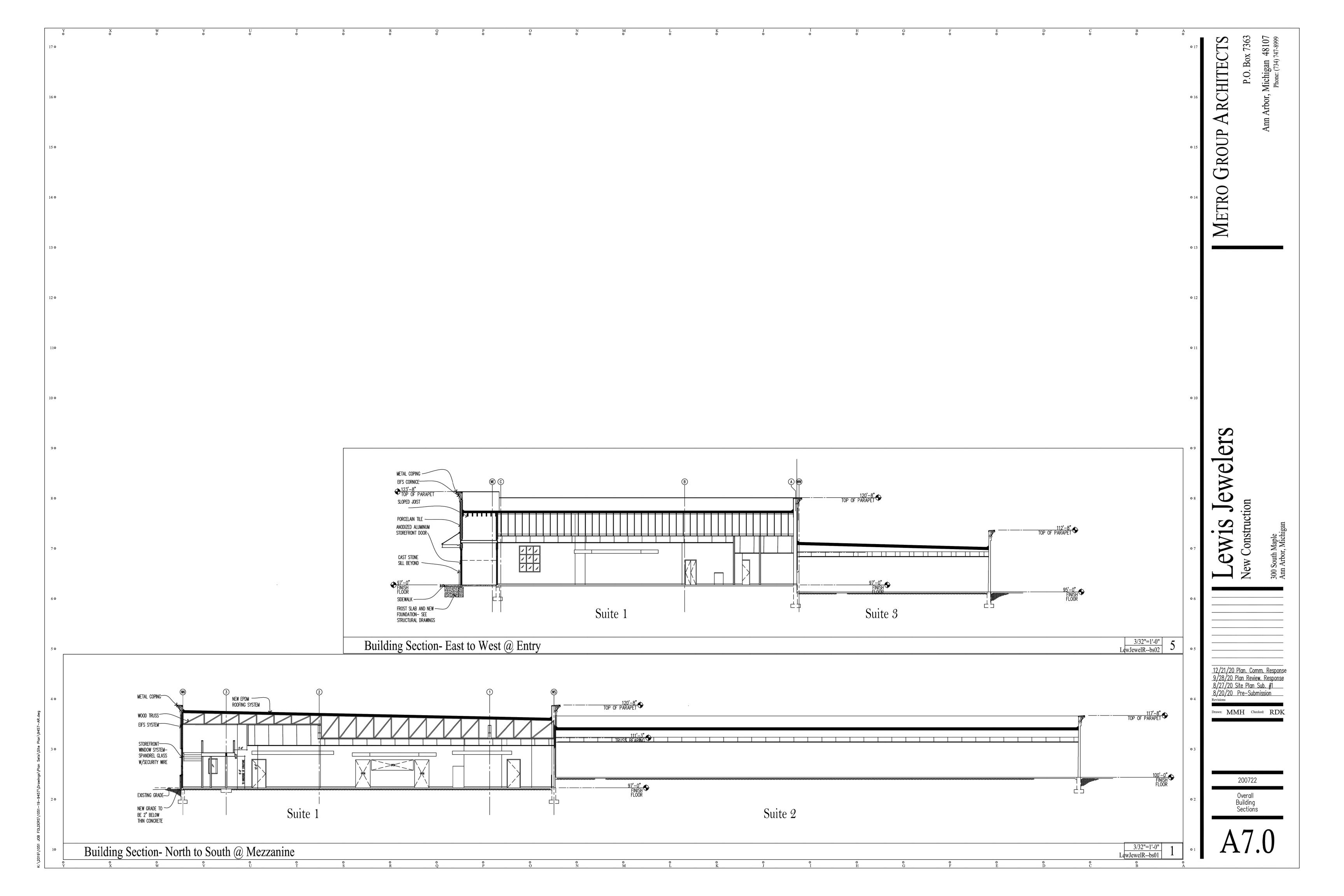
SPACE, TYP.

SHELTER





\2019\1051 JOB FOLDERS\1051—19—9457\Drawings\Plan Sets\Site Plan\9457





NORTH ELEVATION



WEST ELEVATION



SOUTH ELEVATION



EAST ELEVATION



SITE PLAN



OVERALL VIEW TO SOUTH WEST





AREA PLAN

GROUP.

12/21/20 Plan.Comm. Response

200722