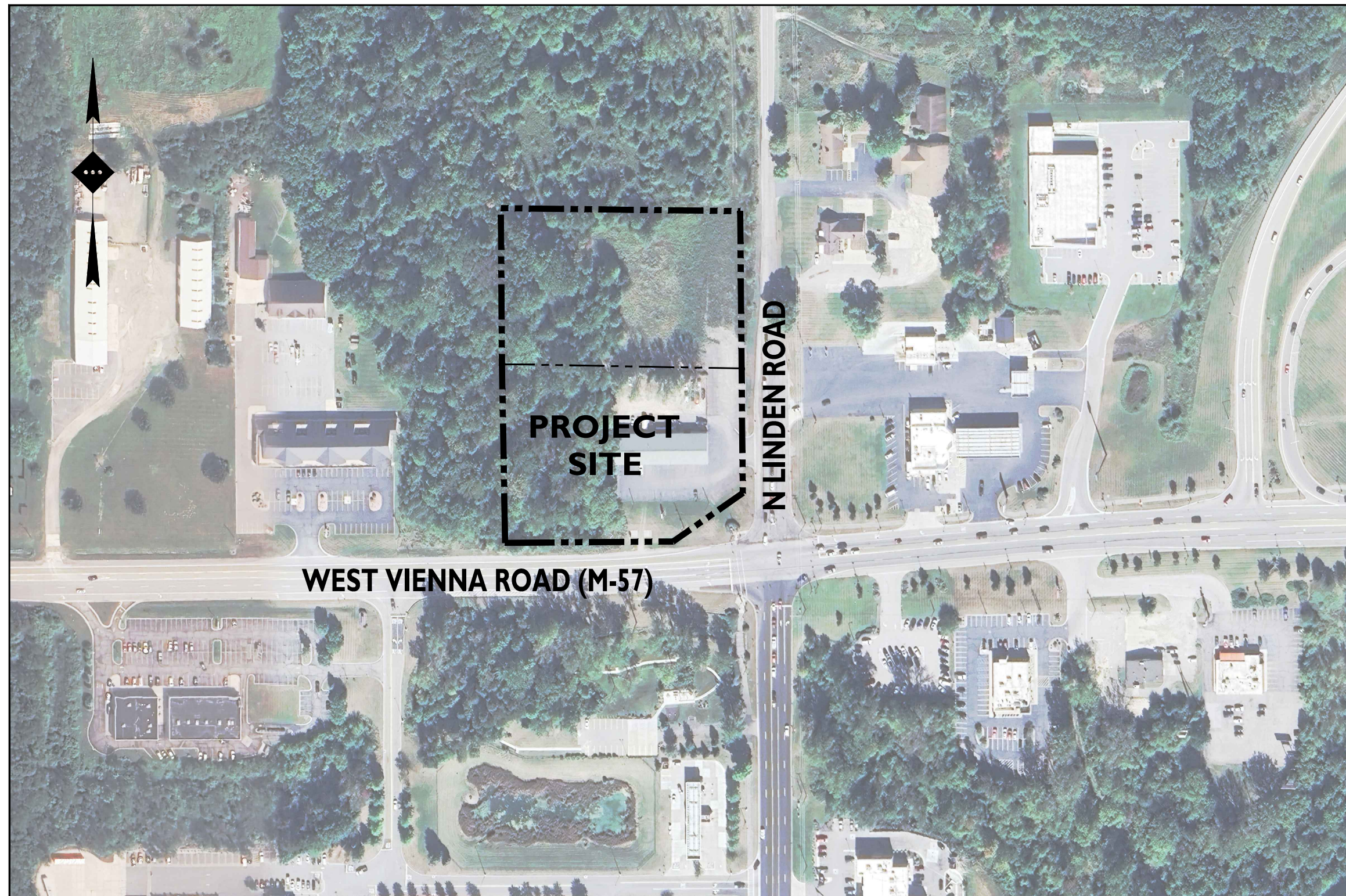


SOURCE: USGS MAPPING SYSTEM

LOCATION MAP

SCALE: 1" = 2000'±



SOURCE: GOOGLE EARTH PRO

AERIAL MAP

SCALE: 1" = 200'±

PROPERTY DESCRIPTION

THE LAND SITUATED IN THE TOWNSHIP OF VIENNA, COUNTY OF GENESEE, STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:

PARCEL 1 (PID: 18-17-400-038):
A PARCEL OF LAND BEGINNING N00°53'06"W, 180 FEET FROM SOUTHEAST CORNER OF SECTION; THENCE S55°31'36"W, 324.11 FEET; THENCE WEST 221.7 FEET; THENCE N00°51'10"E, 381.03 FEET; THENCE EAST 483.44 FEET; THENCE S00°23'30"E TO POINT OF BEGINNING, EXCLUDING ALL THAT PART LYING EASTERLY & SOUTHERLY OF A LINE DESCRIBED AS BEGINNING N00°48'34"W 492.126 FEET FROM SOUTHEAST CORNER OF SECTION; THENCE S89°11'26"W, 49.21 FEET & S00°48'34"E, 322.647 FEET & S53°31'32"W, 1221.03 FEET & ON CURVE TO RIGHT CHORD IS S87°47'18"W, 613.59 FEET & S89°19'54"W, 100 FEET TO POINT OF ENDING, SECTION 17, T9N-R6E (99) FR 18-17-400-021.

PARCEL 2 (PID: 18-17-400-035):
A PARCEL OF LAND BEGINNING N00°23'20"W, 381 FT FROM SOUTHEAST CORNER OF SECTION; THENCE WEST, 483.44 FEET; THENCE N00°51'10"E, 278.97 FEET; THENCE EAST, 477.55 FEET; THENCE S00°23'20"E, 280.44 FEET TO POINT OF BEGINNING, EXCLUDING ALL THAT PART LYING EASTERLY OF MDOT RIGHT-OF-WAY LINE DESCRIBED AS BEGINNING N00°48'34"W, 553.64 FEET FROM SOUTHEAST CORNER OF SECTION; THENCE S89°11'26"W, 41.01 FEET; THENCE S00°48'34"E, 196.85 FEET TO POINT OF ENDING, SECTION 17, T9N-R6E (98 / 23) FR 18-17-400-022



Know what's below
Call before you dig.

SITE IMPROVEMENT PLANS FOR SHOWCASE AUTO SALES PROPOSED PARKING LOT ADDITION

PID: 18-17-400-035 & 18-17-400-038

5010 WEST VIENNA ROAD (M-57)

CHARTER TOWNSHIP OF VIENNA, GENESEE COUNTY, MICHIGAN 48420

PLAN DISTRIBUTION SUMMARY				
OFFICE	CONTACT	DATE SUBMITTED	DATE RE-SUBMITTED	DATE APPROVED
CHARTER TOWNSHIP OF VIENNA - SITE PLAN APPROVAL	JENNIFER WOHLFELL	9/10/2025	11/19/2025	
CHARTER TOWNSHIP OF VIENNA - LOT COMBINATION	KEVIN MACDERMAID			
GENESEE COUNTY DRAIN - STORMWATER	VASILEIOS MYLONAS	9/11/2025	11/19/2025	
GENESEE COUNTY DRAIN - SESC	DION BURROUGHS	9/11/2025		
MDOT ROW PERMIT	STEVE GASSER	9/11/2025	9/15/2025	9/16/2025
EGLE	BRITTNEY BEAVERS	9/11/2025	11/19/2025	

TOTAL AREA OF DISTURBANCE: 2.34 AC

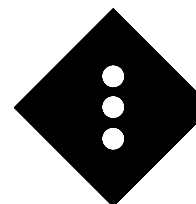
<5.0 AC, NPDES STORMWATER PERMIT NOT REQUIRED

OWNER / APPLICANT

JOHN LEONARD
SHOWCASE AUTO SALES
5010 WEST VIENNA ROAD
VIENNA TOWNSHIP, MI 48420
810-252-5428
JLEONARD528@HOTMAIL.COM

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SITE IMPROVEMENT PLANS

SHOWCASE AUTO SALES
PARKING LOT ADDITION

PID: 18-17-400-035 & 18-17-400-038
5010 WEST VIENNA ROAD
CHARTER TOWNSHIP OF VIENNA
GENESEE COUNTY, MICHIGAN



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SCALE: AS SHOWN PROJECT ID: DET-250192

TITLE:

COVER SHEET

DRAWING:

C-1

ZONING KEY

- RU-1: ONE FAMILY RESIDENTIAL DISTRICT
- C-2: GENERAL COMMERCIAL DISTRICT
- C-4: HIGHWAY COMMERCIAL DISTRICT

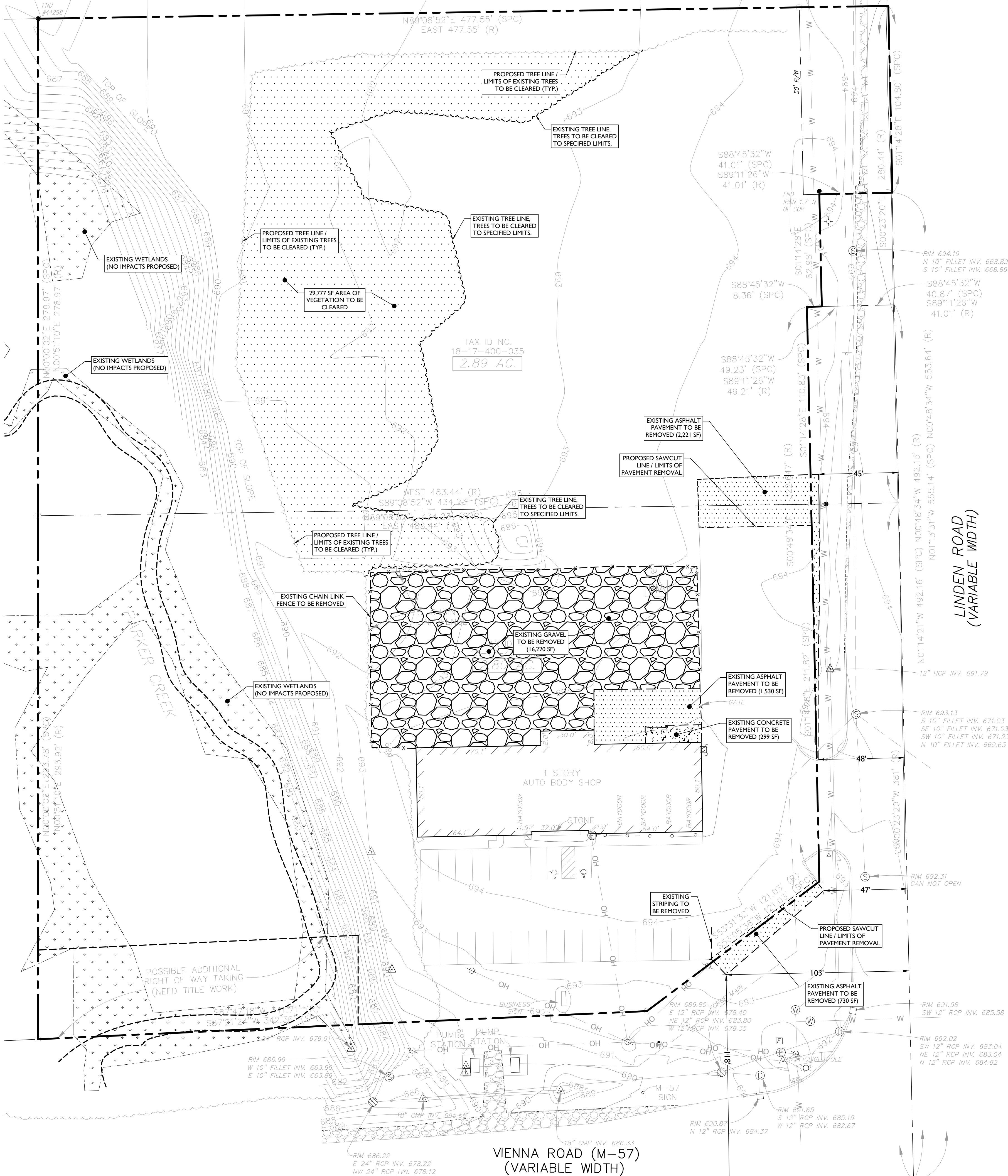
ZONING MAP

SCALE: 1" = 200'±

PLAN REFERENCE MATERIALS:

- THIS PLAN SET REFERENCES THE FOLLOWING DOCUMENTS INCLUDING, BUT NOT LIMITED TO:
 - TOPOGRAPHIC SURVEY PREPARED BY MERIDIAN LAND SURVEYING DATED 5/13/2025
 - AERIAL MAP OBTAINED FROM GOOGLE EARTH PRO
 - LOCATION MAP OBTAINED FROM USGS MAPPING SYSTEM
- ALL REFERENCE MATERIAL LISTED ABOVE SHALL BE CONSIDERED A PART OF THIS PLAN SET AND ALL INFORMATION CONTAINED WITHIN THESE MATERIALS SHALL BE UTILIZED IN CONJUNCTION WITH THIS PLAN SET. THE CONTRACTOR IS RESPONSIBLE TO OBTAIN A COPY OF EACH REFERENCE AND REVIEW IT THOROUGHLY PRIOR TO THE START OF CONSTRUCTION.

NOT TO SCALE. SEE PLAN FOR DIMENSIONS. 1/2" = 30' GRAPHIC SCALE. 1/2" = 30' GRAPHIC SCALE. 1/2" = 30' GRAPHIC SCALE.



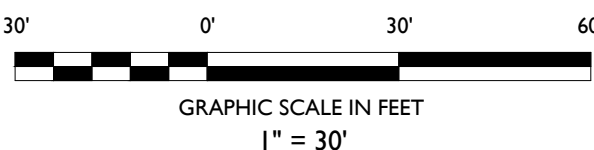
SYMBOL	DESCRIPTION
---	FEATURE TO BE REMOVED / DEMOLISHED
---	PROPERTY LINE
---	PROPOSED SAWCUT LINE
---	ASPHALT REMOVAL
---	GRAVEL REMOVAL
---	CONCRETE REMOVAL

ALL SITE FEATURES WITHIN THE LIMITS OF THIS PLAN ARE TO REMAIN AND BE PROTECTED THROUGHOUT CONSTRUCTION UNLESS OTHERWISE NOTED. THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IF SIGNIFICANT DISCREPANCIES ARE DISCERNED BETWEEN THIS PLAN AND FIELD CONDITIONS



Know what's below
Call before you dig.

- DEMOLITION NOTES**
1. THE WORK REFLECTED ON THE DEMOLITION PLAN IS TO PROVIDE GENERAL INFORMATION TOWARDS THE EXISTING ITEMS TO BE DEMOLISHED AND/OR REMOVED. THE CONTRACTOR IS RESPONSIBLE TO REVIEW THE ENTIRE PLAN SET AND ASSOCIATED REPORTS/REFERENCE DOCUMENTS INCLUDING ALL DEMOLITION ACTIVITIES AND INCIDENTAL TASKS NECESSARY TO COMPLETE THE SITE IMPROVEMENTS.
 2. THE CONTRACTOR IS RESPONSIBLE TO DETERMINE THE MEANS AND METHODS OF DEMOLITION ACTIVITIES.
 3. EXPLOSIVES SHALL NOT BE USED UNLESS WRITTEN CONSENT FROM BOTH THE OWNER AND ANY APPLICABLE GOVERNING AGENCY IS OBTAINED. BEFORE THE START OF ANY EXPLOSIVE PROGRAM, THE CONTRACTOR IS RESPONSIBLE TO OBTAIN ALL LOCAL, STATE, AND FEDERAL PERMITS. ADDITIONALLY, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL SEISMIC TESTING AS REQUIRED AND ANY DAMAGES AS THE RESULT OF SAID DEMOLITION PRACTICES.
 4. ALL DEMOLITION ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL CODES. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL UTILITIES ARE DISCONNECTED IN ACCORDANCE WITH THE UTILITY AUTHORITIES' REQUIREMENTS PRIOR TO STARTING THE DEMOLITION OF ANY STRUCTURE. ALL EXCAVATIONS ASSOCIATED WITH DEMOLISHED STRUCTURES OR REMOVED TANKS SHALL BE BACKFILLED WITH SUITABLE MATERIAL AND COMPACTED TO SUPPORT SITE AND BUILDING IMPROVEMENTS. A GEOTECHNICAL ENGINEER SHOULD BE PRESENT DURING BACKFILLING ACTIVITIES TO OBSERVE AND CERTIFY THAT BACKFILL MATERIAL WAS COMPACTED TO A SUITABLE CONDITION.
 5. DEMOLISHED DEBRIS SHALL NOT BE BURIED ON SITE. ALL WASTE/DEBRIS GENERATED FROM DEMOLITION ACTIVITIES SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL, STATE AND FEDERAL REQUIREMENTS. THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN ALL RECORDS OF THE DISPOSAL TO DEMONSTRATE COMPLIANCE WITH THE ABOVE REGULATIONS.



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18-17-400-035 & 18-17-400-038
5010 WEST VIENNA ROAD OF VIENNA
CHARTER TOWNSHIP OF VIENNA
GENESEE COUNTY, MICHIGAN

555 S. Old Woodward Avenue, Suite 12L, Birmingham, MI 48009
Phone 248.247.1115

SITE IMPROVEMENT PLANS

SHOWCASE AUTO SALES
PARKING LOT ADDITION

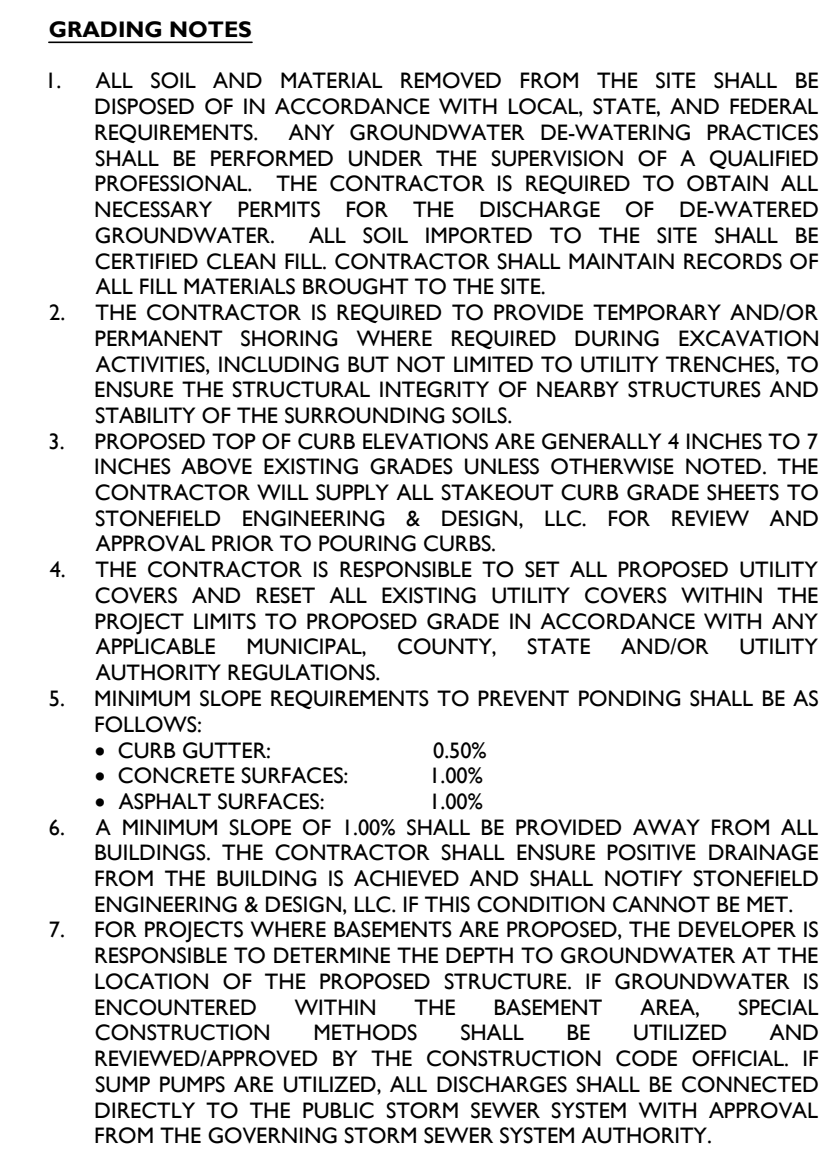
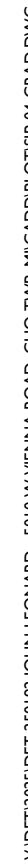
REVISED PER TOWNSHIP AND COUNTY DRAIN REVIEWS
DIMENSIONS ADDED TO DEMO PLAN PER MDOT
SUBMISSION FOR SITE PLAN APPROVAL & PERMITTING


EM	11/18/2025	3	BY	DATE	ISSUE
JS/EM	09/15/2025	2	DATE	ISSUE	
JS/EM	09/02/2025	1	DATE	ISSUE	

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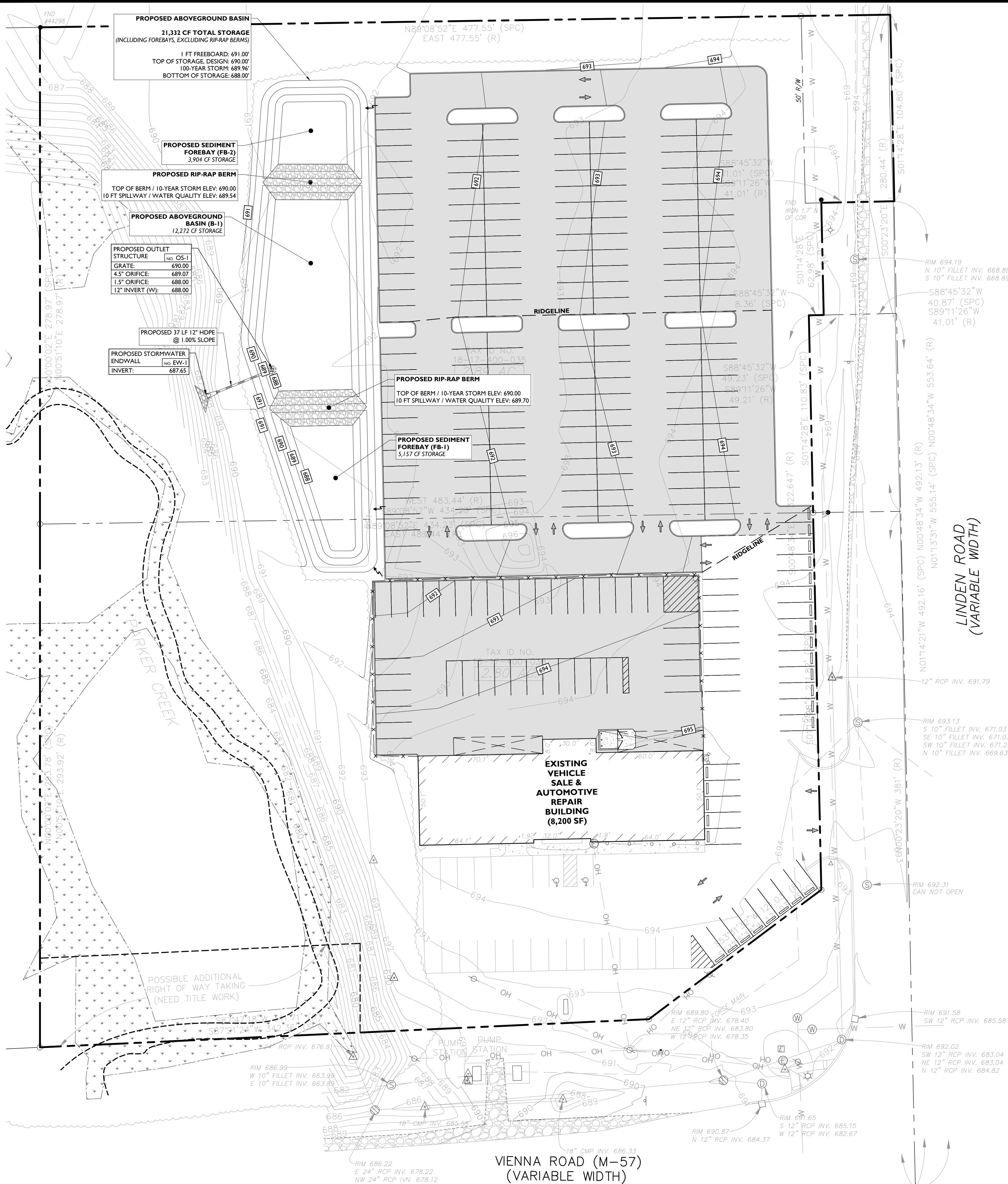
DEMOLITION PLAN

C-2



- 30' 0' 30' 6'
- 
- GRAPHIC SCALE IN FEET
1" = 30'

NOT TO SCALE. SEE SHEET C-13 FOR STORMWATER DETAILS AND CALCULATIONS.



SYMBOL	DESCRIPTION
	PROPERTY LINE
	PROPOSED GRADING CONTOUR
	PROPOSED GRADING RIDGELINE
	PROPOSED DIRECTION OF DRAINAGE FLOW
	PROPOSED STORMWATER STRUCTURES
	PROPOSED STORMWATER PIPING

SEE SHEET C-13 FOR
STORMWATER DETAILS
AND CALCULATIONS

DRAINAGE AND UTILITY NOTES

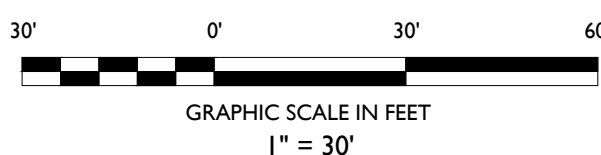
- THE CONTRACTOR TO PERFORM A TEST PIT PRIOR TO CONSTRUCTION (RECOMMEND 30 DAYS PRIOR) AT LOCATIONS OF EXISTING UTILITY CROSSINGS FOR STORMWATER IMPROVEMENTS. SHOULD A CONFLICT EXIST, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IN WRITING.
- CONTRACTOR SHALL START CONSTRUCTION OF STORM LINES AT THE LOWEST INVERT AND WORK UP-GRADE.
- THE CONTRACTOR IS REQUIRED TO CALL THE APPROPRIATE AUTHORITY FOR NOTICE OF CONSTRUCTION/EXCAVATION AND UTILITY MARK OUT PRIOR TO THE START OF CONSTRUCTION IN ACCORDANCE WITH STATE LAW. CONTRACTOR IS REQUIRED TO CONFIRM THE HORIZONTAL AND VERTICAL LOCATION OF UTILITIES IN THE FIELD. SHOULD A DISCREPANCY EXIST BETWEEN THE FIELD LOCATION OF A UTILITY AND THE LOCATION SHOWN ON THE PLAN SET OR SURVEY, THE CONTRACTOR SHALL NOTIFY STONEFIELD ENGINEERING & DESIGN, LLC. IMMEDIATELY IN WRITING.
- THE CONTRACTOR IS RESPONSIBLE TO MAINTAIN A RECORD OF THE AS-BUILT LOCATIONS OF ALL PROPOSED UNDERGROUND INFRASTRUCTURE. THE CONTRACTOR SHALL NOTE ANY DISCREPANCIES BETWEEN THE AS-BUILT LOCATIONS AND THE LOCATIONS DEPICTED WITHIN THE PLAN SET. THIS RECORD SHALL BE PROVIDED TO THE OWNER FOLLOWING COMPLETION OF WORK.

EXCAVATION, SOIL PREPARATION, AND DEWATERING NOTES

- THE CONTRACTOR IS REQUIRED TO REVIEW THE REFERENCED GEOTECHNICAL DOCUMENTS PRIOR TO CONSTRUCTION. THESE DOCUMENTS SHALL BE CONSIDERED A PART OF THE PLAN SET.
- THE CONTRACTOR IS REQUIRED TO PREPARE SUBGRADE SOILS BENEATH ALL PROPOSED IMPROVEMENTS AND BACKFILL ALL EXCAVATIONS IN ACCORDANCE WITH RECOMMENDATIONS BY THE GEOTECHNICAL ENGINEER OF RECORD.
- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING SHORING FOR ALL EXCAVATIONS AS REQUIRED. CONTRACTOR SHALL HAVE THE SHORING DESIGN PREPARED BY A QUALIFIED PROFESSIONAL SHORING DESIGNS SHALL BE SUBMITTED TO STONEFIELD ENGINEERING & DESIGN, LLC. AND THE OWNER PRIOR TO THE START OF CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT ALL OPEN EXCAVATIONS ARE PERFORMED AND PROTECTED IN ACCORDANCE WITH THE LATEST OSHA REGULATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR ANY DEWATERING DESIGN AND OPERATIONS, AS REQUIRED, TO CONSTRUCT THE PROPOSED IMPROVEMENTS. THE CONTRACTOR SHALL OBTAIN ANY REQUIRED PERMITS FOR DEWATERING OPERATIONS AND GROUNDWATER DISPOSAL.

STORMWATER UNDERGROUND BMP CONSTRUCTION NOTES

- THE CONTRACTOR SHALL INSTALL AND BACKFILL THE UNDERGROUND BMP IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS.
- UNDERGROUND BASINS SHALL UTILIZE A STONE BACKFILL WITH A MINIMUM VOID RATIO OF 40%.
- NO CONSTRUCTION LOADING OVER UNDERGROUND BASINS IS PERMITTED UNTIL BACKFILL IS COMPLETE PER THE MANUFACTURER'S SPECIFICATIONS. NO VEHICLES SHALL BE STAGED OR OPERATE FROM A FIXED POSITION OVER THE BASIN.



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REVISION	DATE	BY	DESCRIPTION
1	09/07/2025	JS/EM	SUBMISSION FOR SITE PLAN APPROVAL & PERMITTING
2	09/15/2025	EM	DIMENSIONS ADDED TO DEMO PLAN PER MDOT
3	11/18/2025	EM	REVISED PER TOWNSHIP AND COUNTY DRAIN REVIEWS

SITE IMPROVEMENT PLANS

SHOWCASE AUTO SALES

PARKING LOT ADDITION

PID: 18-17-400-035 & 18-17-400-038
5010 WEST VIENNA ROAD OF VIENNA
CHARTER TOWNSHIP OF VIENNA
GENESEE COUNTY, MICHIGAN

STATE OF MICHIGAN
NOTARIAL SEAL
JAMES J. HARRIS
NOTARY PUBLIC
EXPIRES 12/31/2026

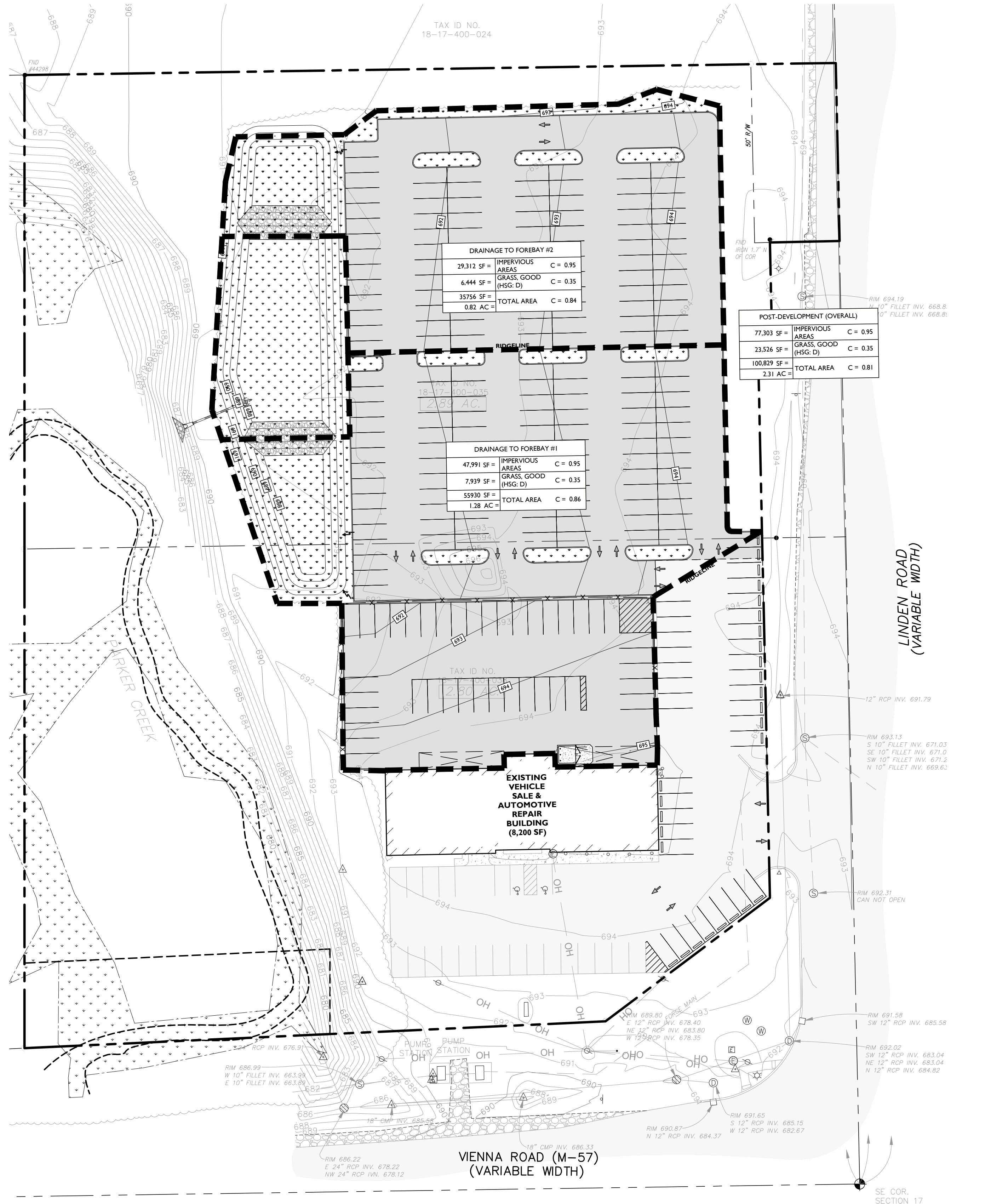
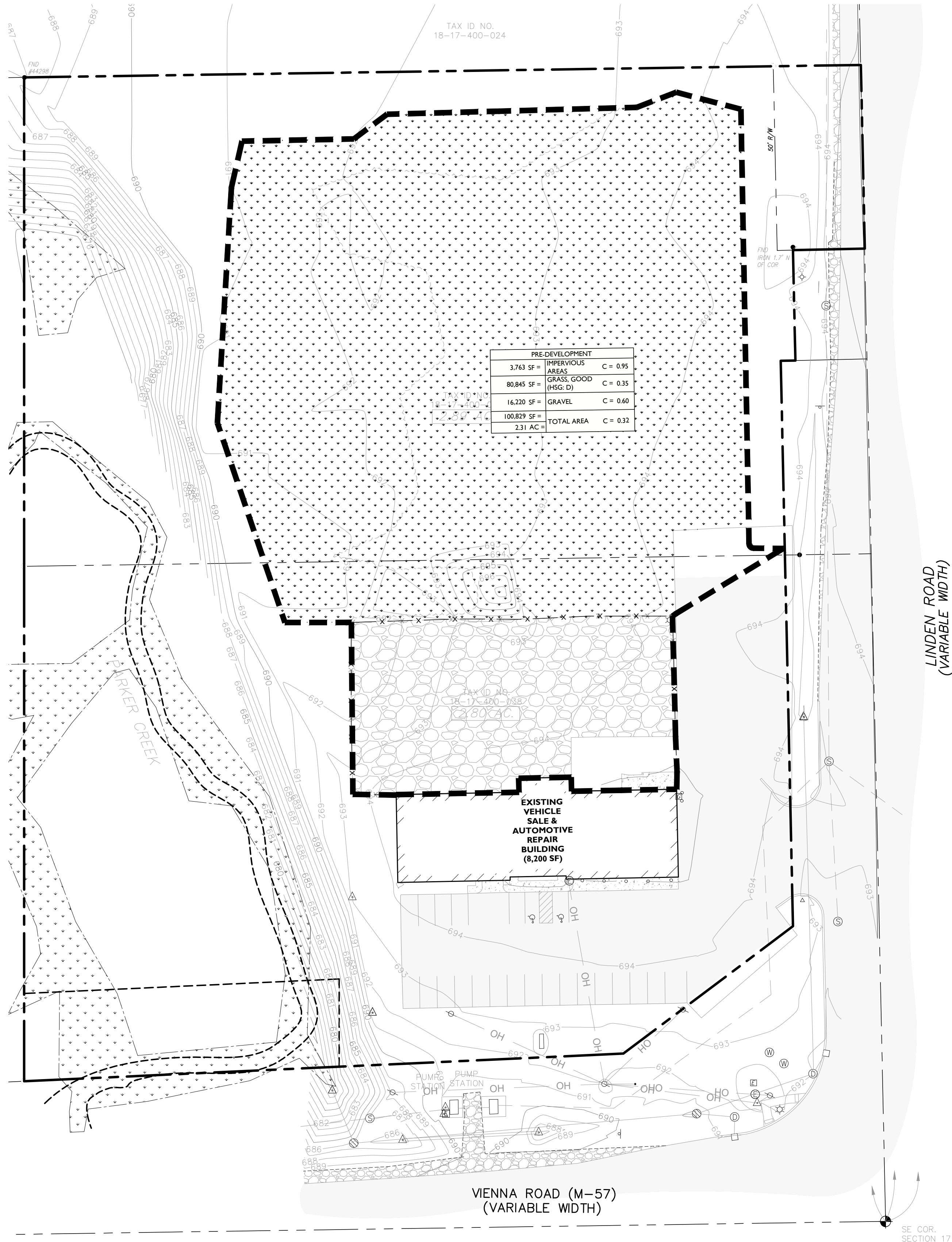
STONEFIELD
engineering & design

SCALE: 1" = 30' PROJECT ID: DET-250192

TITLE: STORMWATER MANAGEMENT PLAN

DRAWING: C-5

NOT TO SCALE. SEE PLAN FOR DIMENSIONS. SEE PLAN FOR DIMENSIONS. SEE PLAN FOR DIMENSIONS.



SYMBOL	DESCRIPTION
---	PROPERTY LINE
- - - - -	DRAINAGE AREA
▽▽▽▽▽	PERVIOUS AREA



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SHOWCASE AUTO SALES
PARKING LOT ADDITION

PID: 18-17-400-035 & 18-17-400-038
5010 WEST VIENNA ROAD OF VIENNA
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SCALE: 1" = 40' PROJECT ID: DET-250192

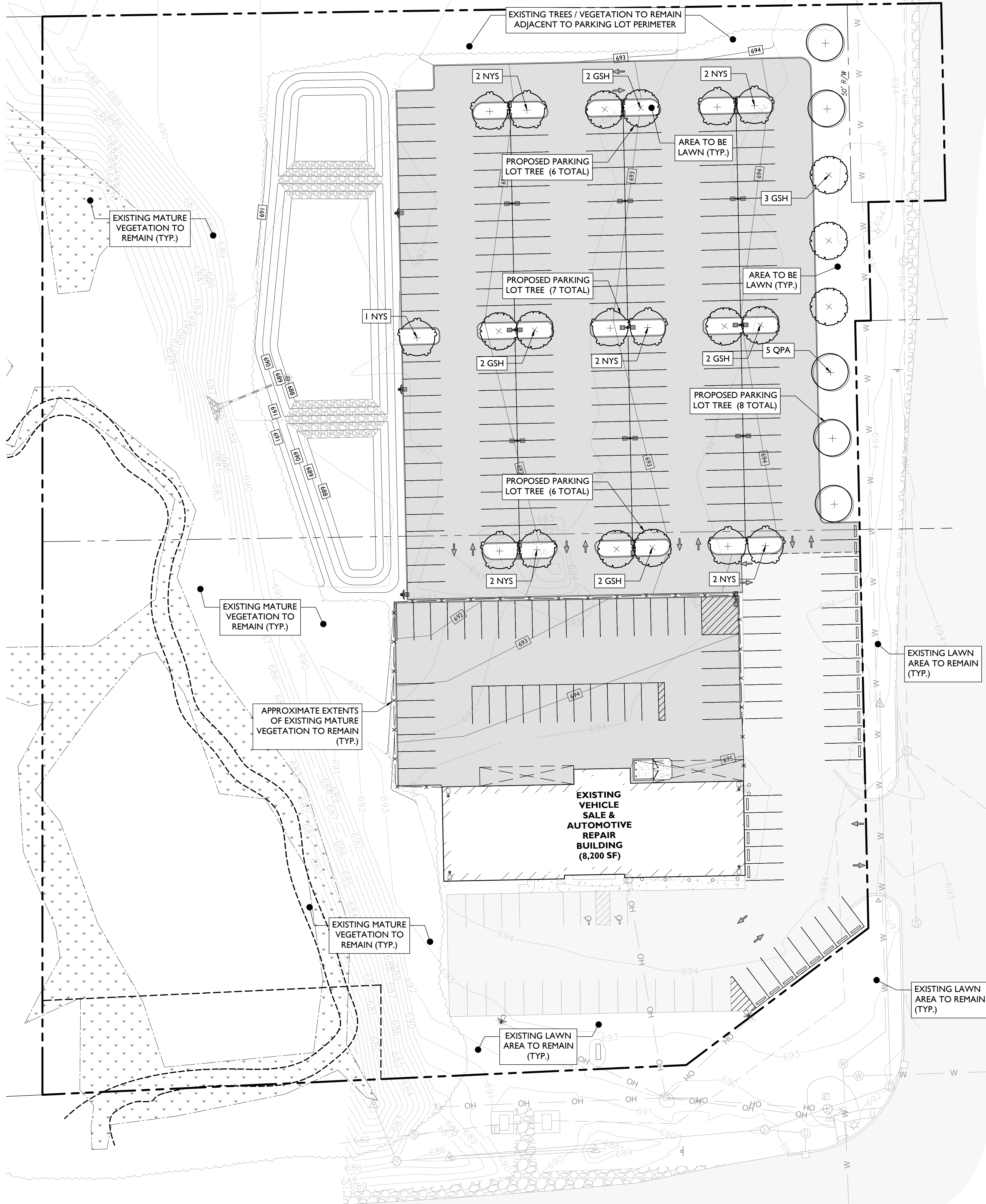
TITLE:

DRAINAGE AREA MAPS

DRAWING:

C-6

V:\01250512\01250512.DWG JOHN LEONARD 250 W VIENNA ROAD, CLO TWP, MI 48009 C:\01250512\01250512.DWG



VIENNA ROAD (M-57)
(VARIABLE WIDTH)

PLANT SCHEDULE					
SYMBOL	CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE
DECIDUOUS TREES					
	GSH	11	GLEDTISIA TRIACANTHOS INERMIS SHADEMASTER	SHADEMASTER HONEY LOCUST	2" - 2.5" CAL
	NYS	11	NYSSA SYLVATICA	SOUR GUM	2" - 2.5" CAL
	QPA	5	QUERCUS PALUSTRIS	PIN OAK	2" - 2.5" CAL

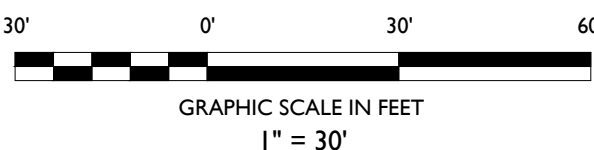
NOTE: IF ANY DISCREPANCIES OCCUR BETWEEN AMOUNTS SHOWN ON THE LANDSCAPE PLAN AND WITHIN THE PLANT LIST, THE PLAN SHALL DICTATE.

LANDSCAPING REQUIREMENTS		
CODE SECTION	REQUIRED	PROPOSED
§ 2050.3	PARKING LOT LANDSCAPING 1 TREE PER 3,000 SF OF PAVED AREA (103,647 SF) / (3,000 SF) = 35 TREES 150 SF PER TREE = 5,250 SF	EXISTING MATURE VEGETATION TO REMAIN + 27 TREES PROPOSED
§ 2050.4	LANDSCAPED AREA (6,000-50,000 SF) MINIMUM 5% LANDSCAPING REQUIRED (103,647 SF) * (0.05 SF) = 5,182 SF	7,061 SF (6.8%)
§ 2050.5	LANDSCAPED AREA STANDARDS MINIMUM WIDTH: 7.5 FT	COMPLIES
§ 2055.5	LANDSCAPED GREENBELT REQUIRED WHERE SITE ABUTS A RESIDENTIAL ZONE	EXISTING MATURE VEGETATION TO REMAIN



Know what's below
Call before you dig.

- LANDSCAPING NOTES
- THE CONTRACTOR SHALL RESTORE ALL DISTURBED GRASS AND LANDSCAPED AREAS TO MATCH EXISTING CONDITIONS UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
 - THE CONTRACTOR SHALL RESTORE ALL DISTURBED LAWN AREAS WITH A MINIMUM 4 INCH LAYER OF TOPSOIL AND SEED.
 - THE CONTRACTOR SHALL RESTORE MULCH AREAS WITH A MINIMUM 3 INCH LAYER OF MULCH.
 - THE MAXIMUM SLOPE ALLOWABLE IN LANDSCAPE RESTORATION AREAS SHALL BE 3 FEET HORIZONTAL TO 1 FOOT VERTICAL (3:1 SLOPE) UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET.
 - THE CONTRACTOR IS REQUIRED TO LOCATE ALL SPRINKLER HEADS IN AREA OF LANDSCAPING DISTURBANCE PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL RELOCATE SPRINKLER HEADS AND LINES IN ACCORDANCE WITH OWNER'S DIRECTION WITHIN AREAS OF DISTURBANCE.
 - THE CONTRACTOR SHALL ENSURE THAT ALL DISTURBED LANDSCAPED AREAS ARE GRADED TO MEET FLUSH AT THE ELEVATION OF WALKWAYS AND TOP OF CURB ELEVATIONS EXCEPT UNLESS INDICATED OTHERWISE WITHIN THE PLAN SET. NO ABRUPT CHANGES IN GRADE ARE PERMITTED IN DISTURBED LANDSCAPING AREAS.



REVISIONS		REVISIONS		REVISIONS	
3	11/18/2025	EM	REVIS PER TOWNSHIP AND COUNTY DRAIN REVIEWS	BY	DESCRIPTION
2	09/15/2025	EM	DIMENSIONS ADDED TO DEMO PLAN PER MDOT	DATE	
1	09/02/2025	JS/EM	SUBMISSION FOR SITE PLAN APPROVAL & PERMITTING	ISSUE	

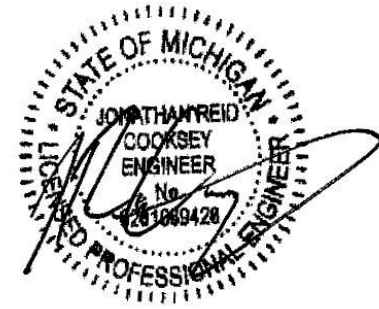
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SITE IMPROVEMENT PLANS
SHOWCASE AUTO SALES
PARKING LOT ADDITION

PID: 18-17-400-035 & 18-17-400-038
5010 WEST VIENNA ROAD OF VIENNA
CHARTER TOWNSHIP OF VIENNA
GENESEE COUNTY, MICHIGAN



STONEFIELD
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SCALE: 1" = 30' PROJECT ID: DET-250192

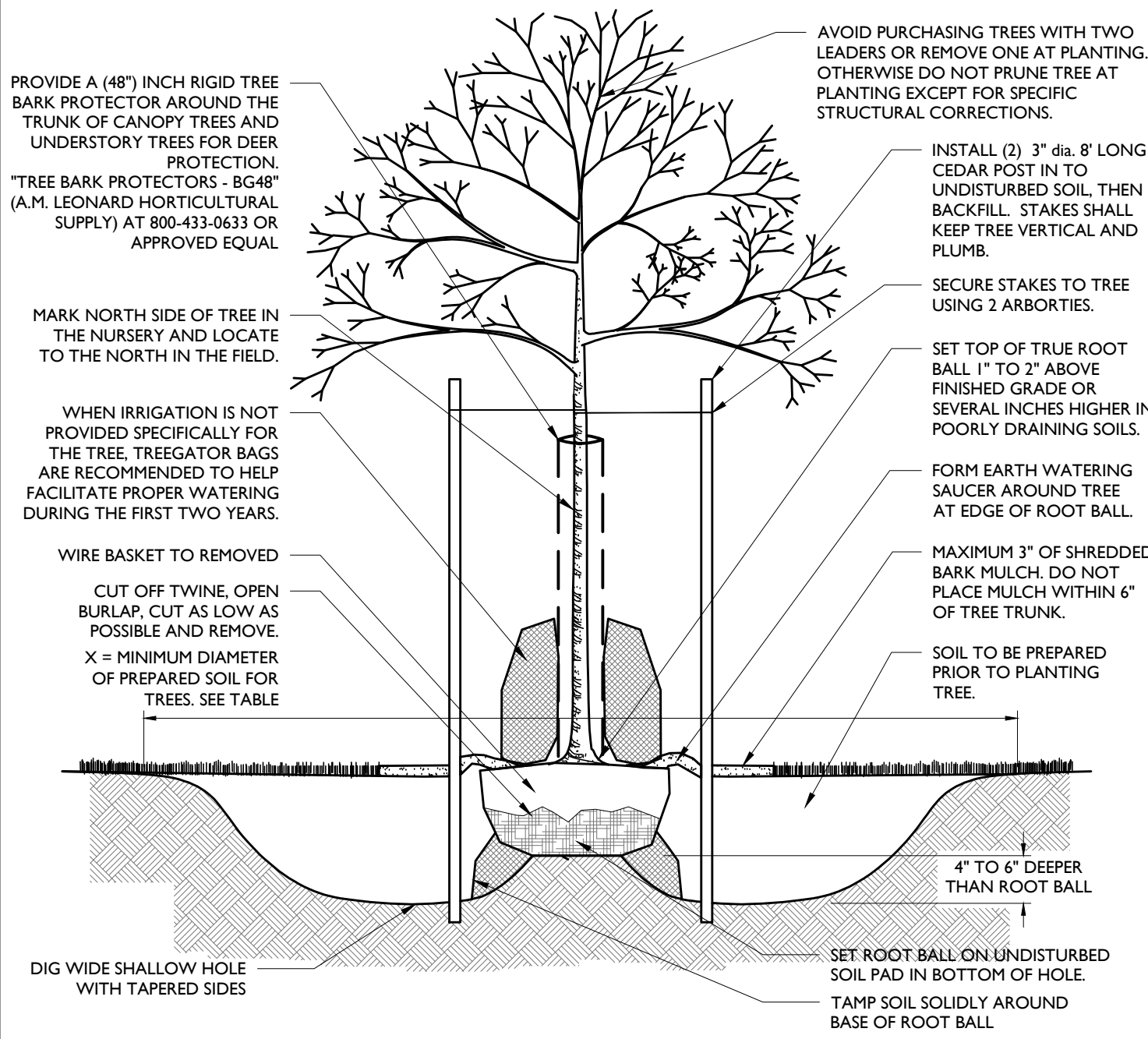
TITLE:

LANDSCAPING PLAN

DRAWING:

C-8

- NOTES:
- FOR CONTAINER-GROWN TREES, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER
 - THOROUGHLY SOAK THE TREE ROOT BALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING AND REGULARLY THROUGHOUT THE FOLLOWING TWO SUMMERS.
 - SOIL AMENDMENTS:
 - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM
 - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85% SAND) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX



DECIDUOUS TREE PLANTING DETAIL

NOT TO SCALE

1

GENERAL LANDSCAPING NOTES:

- THE LANDSCAPE CONTRACTOR SHALL FURNISH ALL MATERIALS AND PERFORM ALL WORK IN ACCORDANCE WITH THESE SPECIFICATIONS, APPROVED OR FINAL DRAWINGS, AND INSTRUCTIONS PROVIDED BY THE PROJECT LANDSCAPE DESIGNER, MUNICIPAL OFFICIALS, OR OWNER/OWNER'S REPRESENTATIVE. ALL WORK COMPLETED AND MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH THE INTENTION OF THE SPECIFICATIONS, DRAWINGS, AND INSTRUCTIONS AND EXECUTED WITH THE STANDARD LEVEL OF CARE FOR THE LANDSCAPE INDUSTRY.
- WORK MUST BE CARRIED OUT ONLY DURING WEATHER CONDITIONS FAVORABLE TO LANDSCAPE CONSTRUCTION AND TO THE HEALTH AND WELFARE OF PLANTS. THE SUITABILITY OF SUCH WEATHER CONDITIONS SHALL BE DETERMINED BY THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL.
- IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR, BEFORE ORDERING OR PURCHASING MATERIALS, TO PROVIDE SAMPLES OF THOSE MATERIALS TO THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL FOR APPROVAL, IF SO REQUESTED.
- IF SAMPLES ARE REQUESTED, THE LANDSCAPE CONTRACTOR IS TO SUBMIT CERTIFICATION TAGS FROM TREES, SHRUBS AND SEED VERIFYING TYPE AND PURITY.
- UNLESS OTHERWISE AUTHORIZED BY THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL, THE LANDSCAPE CONTRACTOR SHALL PROVIDE NOTICE AT LEAST FORTY-EIGHT HOURS (48 HRS.) IN ADVANCE OF THE ANTICIPATED DELIVERY DATE OF ANY PLANT MATERIALS TO THE PROJECT SITE. A LEGIBLE COPY OF THE INVOICE, SHOWING VARIETIES AND SIZES OF MATERIALS INCLUDED FOR EACH SHIPMENT SHALL BE FURNISHED TO THE PROJECT LANDSCAPE DESIGNER, OR GOVERNING MUNICIPAL OFFICIAL.
- THE PROJECT LANDSCAPE DESIGNER OR GOVERNING MUNICIPAL OFFICIAL RESERVES THE RIGHT TO INSPECT AND REJECT PLANTS AT ANY TIME AND AT ANY PLACE.

PROTECTION OF EXISTING VEGETATION NOTES:

- BEFORE COMMENCING WORK, ALL EXISTING VEGETATION WHICH COULD BE IMPACTED AS A RESULT OF THE PROPOSED CONSTRUCTION ACTIVITIES MUST BE PROTECTED FROM DAMAGE BY THE INSTALLATION OF TREE PROTECTION FENCING. FENCING SHALL BE LOCATED AT THE DRIPLINE OR LIMIT OF DISTURBANCE AS DEPICTED WITHIN THE APPROVED OR FINAL PLAN SET, ESTABLISHING THE TREE PROTECTION ZONE. FENCE INSTALLATION SHALL BE IN ACCORDANCE WITH THE PROVIDED "TREE PROTECTION FENCE DETAIL." NO WORK MAY BEGIN UNTIL THIS REQUIREMENT IS FULFILLED. THE FENCING SHALL BE INSPECTED REGULARLY BY THE LANDSCAPE CONTRACTOR AND MAINTAINED UNTIL ALL CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED.
- IN ORDER TO AVOID DAMAGE TO ROOTS, BARK OR LOWER BRANCHES, NO VEHICLE, EQUIPMENT, DEBRIS, OR OTHER MATERIALS SHALL BE DRIVEN, PARKED OR PLACED WITHIN THE TREE PROTECTION ZONE. ALL ON-SITE CONTRACTORS SHALL USE ANY AND ALL PRECAUTIONARY MEASURES WHEN PERFORMING WORK AROUND TREES, WALKS, PAVEMENTS, UTILITIES, AND ANY OTHER FEATURES EITHER EXISTING OR PREVIOUSLY INSTALLED UNDER THIS CONTRACT.
- IN RARE INSTANCES WHERE EXCAVATING, OR GRADING IS REQUIRED WITHIN THE DRIPLINE OF TREES TO REMAIN, THE WORK SHALL BE PERFORMED AS FOLLOWS:
 - TRENCHING: WHEN TRENCHING OCCURS AROUND TREES TO REMAIN, THE TREE ROOTS SHALL NOT BE CUT, BUT THE TRENCH SHALL BE TUNNELED UNDER OR AROUND THE ROOTS BY CAREFUL HAND DIGGING AND WITHOUT INJURY TO THE ROOTS. NO ROOTS, LIMBS OR WOODS ARE TO HAVE ANY PAINT OR MATERIAL APPLIED TO ANY SURFACE.
 - RAISING GRADES: WHEN THE GRADE AT AN EXISTING TREE IS BELOW THE NEW FINISHED GRADE, AND FILL NOT EXCEEDING 6 INCHES (6") IS REQUIRED, CLEAN, WASHED GRAVEL FROM ONE TO TWO INCHES (1" - 2") IN SIZE SHALL BE PLACED DIRECTLY AROUND THE TREE TRUNK. THE GRAVEL SHALL EXTEND OUT FROM THE TRUNK ON ALL SIDES A MINIMUM OF 18 INCHES (18") ABOVE THE FINISHED GRADE. THE GRAVEL SHALL BE PLACED IN CONTACT WITH THE TRUNK OF ANY TREE REQUIRING FILL. WHERE FILL EXCEEDING 6 INCHES (6") IS REQUIRED, A DRY LAID TREE WELL SHALL BE CONSTRUCTED. IF APPLICABLE, TREE WELL INSTALLATION SHALL BE IN ACCORDANCE WITH THE PROVIDED "TREE WELL DETAIL."
 - LOWERING GRADES: EXISTING TREES LOCATED IN AREAS WHERE THE NEW FINISHED GRADE IS TO BE LOWERED, SHALL HAVE RE-GRADING WORK DONE BY HAND TO THE INDICATED ELEVATION, NO GREATER THAN SIX INCHES (6"). ROOTS SHALL BE CUT CLEANLY THREE INCHES (3") BELOW FINISHED GRADE UNDER THE DIRECTION OF A LICENSED ARBORIST. WHERE CUT EXCEEDING 6 INCHES (6") IS REQUIRED, A DRY LAID RETAINING WALL SHALL BE CONSTRUCTED. IF APPLICABLE, THE RETAINING WALL INSTALLATION SHALL BE IN ACCORDANCE WITH THE PROVIDED "TREE RETAINING WALL DETAIL."

SOIL PREPARATION AND MULCH NOTES:

- LANDSCAPE CONTRACTOR SHALL OBTAIN A SOIL TEST OF THE IN-SITU TOPSOIL BY A CERTIFIED SOIL LABORATORY PRIOR TO PLANTING. LANDSCAPE CONTRACTOR SHALL ALLOW FOR A TWO WEEK TURNAROUND TIME FROM SUBMITTAL OF SAMPLE TO NOTIFICATION OF RESULTS.
- BASED ON SOIL TEST RESULTS, ADJUST THE RATES OF LIME AND FERTILIZER THAT SHALL BE MIXED INTO THE TOP SIX INCHES (6") OF TOPSOIL. THE LIME AND FERTILIZER RATES PROVIDED WITHIN THE "SEED SPECIFICATION" OR "SOD SPECIFICATION" IS APPROXIMATE AND FOR BIDDING PURPOSES ONLY. IF ADDITIONAL AMENDMENTS ARE NECESSARY, ADJUST THE TOPSOIL AS FOLLOWS:
 - MODIFY HEAVY CLAY OR SILT SOILS (MORE THAN 40% CLAY OR SILT) BY ADDING COMPOSTED PINE BARK (UP TO 30% BY VOLUME) OR GYPSUM.
 - MODIFY EXTREMELY SANDY SOILS (MORE THAN 85%) BY ADDING ORGANIC MATTER AND/OR DRY, SHREDDED CLAY LOAM UP TO 30% OF THE TOTAL MIX.
- TOPSOIL SHALL BE FERTILE, FRIABLE, NATURAL TOPSOIL OF LOAMING CHARACTER, WITHOUT ADMIXTURE OF SUBSOIL MATERIAL OBTAINED FROM A WELL-DRAINED ARABLE SITE, FREE FROM ALL CLAY, LUMPS, COARSE SANDS, STONES, PLANTS, ROOTS, STICKS, AND OTHER FOREIGN MATERIAL GREATER THAN ONE INCH (1").
- TOPSOIL SHALL HAVE A PH RANGE OF 5.0-7.0 AND SHALL NOT CONTAIN LESS THAN 6% ORGANIC MATTER BY WEIGHT.
- OBTAIN TOPSOIL ONLY FROM LOCAL SOURCES OR FROM AREAS HAVING SIMILAR SOIL CHARACTERISTICS TO THAT FOUND AT THE PROJECT SITE.
- CONTRACTOR SHALL PROVIDE A SIX INCH (6") DEEP LAYER OF TOPSOIL IN ALL PLANTING AREAS. TOPSOIL SHALL BE SPREAD OVER A PREPARED SURFACE IN A UNIFORM LAYER TO ACHIEVE THE DESIRED COMPACTED THICKNESS. THE SPREADING OF TOPSOIL SHALL NOT BE CONDUCTED UNDER MUDDY OR FROZEN SOIL CONDITIONS.
- UNLESS OTHERWISE NOTED IN THE CONTRACT, THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR THE INSTALLATION OF TOPSOIL AND THE ESTABLISHMENT OF FINE GRADING WITHIN THE DISTURBED AREA OF THE SITE.
- LANDSCAPE CONTRACTOR SHALL VERIFY THAT THE SUB-GRADE ELEVATION MEETS THE FINISHED GRADE ELEVATION (LESS THE REQUIRED TOPSOIL), IN ACCORDANCE WITH THE APPROVED OR FINAL GRADING PLAN.
- ALL LAWN AND PLANTING AREAS SHALL BE GRADED TO A SMOOTH, EVEN AND UNIFORM PLANE WITH NO ABRUPT CHANGE OF SURFACE AS DEPICTED WITHIN THE APPROVED OR FINAL CONSTRUCTION SET UNLESS OTHERWISE DIRECTED BY THE PROJECT LANDSCAPE DESIGNER OR MUNICIPAL OFFICIAL.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER SURFACE AND SUBSURFACE PLANT BED DRAINAGE PRIOR TO THE INSTALLATION OF PLANTINGS. IF POOR DRAINAGE CONDITIONS EXIST, CORRECTIVE ACTION SHALL BE TAKEN PRIOR TO INSTALLATION, ALL PLANTING AND LAWN AREAS SHALL BE GRADED AND MAINTAINED TO ALLOW A FREE FLOW OF SURFACE WATER.
- DOUBLE SHREDDED HARDWOOD MULCH OR APPROVED EQUAL SHALL BE USED AS A THREE INCH (3") TOP DRESSING IN ALL SHRUB PLANTING BEDS AND AROUND TREES PLANTED BY LANDSCAPE CONTRACTOR, GROUND COVER, PERENNIAL AND ANNUAL PLANTING BEDS SHALL BE MULCHED WITH A TWO INCH (2") TOP DRESSING. SINGLE TREES OR SHRUBS SHALL BE MULCHED TO AVOID CONTACT WITH TRUNK OR PLANT STEM. MULCH SHALL BE OF SUFFICIENT CHARACTER AS NOT TO BE EASILY DISPLACED BY WIND OR WATER RUNOFF.
- WHENEVER POSSIBLE, THE SOIL PREPARATION AREA SHALL BE CONNECTED FROM PLANTING TO PLANTING.
- SOIL SHALL BE LOOSENEED WITH A BACKHOE OR OTHER LARGE COARSE-TILING EQUIPMENT UNLESS THE SOIL IS FROZEN OR EXCESSIVELY WET. TILING THAT PRODUCES LARGE, COARSE CHUNKS OF SOIL IS PREFERABLE TO TILING THAT RESULTS IN FINE GRAINS UNIFORM IN TEXTURE. AFTER THE AREA IS LOOSENEED IT SHALL NOT BE DRIVEN OVER BY ANY VEHICLE.
- APPLY PRE-EMERGENT WEED CONTROL TO ALL PLANT BEDS PRIOR TO MULCHING. ENSURE COMPATIBILITY BETWEEN PRODUCT AND PLANT MATERIAL.
- ALL PLANTING SOIL SHALL BE AMENDED WITH THE FOLLOWING:

MYCOR® TREE SAVER - A DRY GRANULAR MYCORRHIZAL FUNGI INOCULANT THAT IS MIXED IN THE BACKFILL WHEN PLANTING TREES AND SHRUBS. IT CONTAINS SPORES OF BOTH ECTOMYCORRHIZAL AND VA MYCORRHIZAL FUNGI (VAM), BENEFICIAL RHIZOSPHERE BACTERIA, TERRA-SORB SUPERABSORBENT HYDROGEL TO REDUCE WATER LEACHING, AND SELECTED ORGANIC MICROBIAL NUTRIENTS.

- DIRECTIONS FOR USE: USE 3-OZ PER EACH FOOT DIAMETER OF THE ROOT BALL, OR 3-OZ PER INCH CALIPER, MIX INTO THE BACKFILL WHEN TRANSPLANTING TREES AND SHRUBS. MIX PRODUCT IN A RING-SHAPED VOLUME OF SOIL AROUND THE UPPER PORTION OF THE ROOT BALL, EXTENDING FROM THE SOIL SURFACE TO A DEPTH OF ABOUT 8 INCHES, AND EXTENDING OUT FROM THE ROOT BALL ABOUT 8 INCHES INTO THE BACKFILL. APPLY WATER TO SOIL SATURATION.
- MYCOR® TREE SAVER® IS EFFECTIVE FOR ALL TREE AND SHRUB SPECIES EXCEPT RHODODENDRONS, AZALEAS, AND MOUNTAIN LAUREL, WHICH REQUIRE ERICOID MYCORRHIZAE.
- SOIL PH: THE FUNGI IN THIS PRODUCT WERE CHOSEN BASED ON THEIR ABILITY TO SURVIVE AND COLONIZE PLANT ROOTS IN A PH RANGE OF 3 TO 9.
- FUNGICIDES: THE USE OF CERTAIN FUNGICIDES CAN HAVE A DETRIMENTAL EFFECT ON THE INOCULATION PROGRAM. SOIL APPLICATION OF ANY FUNGICIDE IS NOT RECOMMENDED FOR TWO WEEKS AFTER APPLICATION.
- OTHER PESTICIDES: HERBICIDES AND INSECTICIDES DO NOT NORMALLY INTERFERE WITH MYCORRHIZAL FUNGAL DEVELOPMENT, BUT MAY INHIBIT THE GROWTH OF SOME TREE AND SHRUB SPECIES IF NOT USED PROPERLY.

HEALTHY START MACRO TABS 12-8-8

- FERTILIZER TABLETS ARE PLACED IN THE UPPER 4 INCHES OF BACKFILL SOIL WHEN PLANTING TREES AND SHRUBS.
- TABLETS ARE FORMULATED FOR LONG-TERM RELEASE BY SLOW BIODEGRADATION, AND LAST UP TO 2 YEARS AFTER PLANTING. TABLETS CONTAIN 12-8-8 NPK FERTILIZER, AS WELL AS A MINIMUM OF SEVEN PERCENT (7%) HUMIC ACID BY WEIGHT, MICROBIAL NUTRIENTS DERIVED FROM SEA KELP, PROTEIN BYPRODUCTS, AND YUCCA SCHIDIGERA, AND A COMPLEMENT OF BENEFICIAL RHIZOSPHERE BACTERIA. THE STANDARD 21 GRAM TABLET IS SPECIFIED HERE. DIRECTIONS FOR USE: FOR PLANTING BALLED & BURLAPPED (B&B) TREES AND SHRUBS, MEASURE THE THICKNESS OF THE TRUNK, AND USE ABOUT 1 TABLET (21-G) PER HALF-INCH. PLACE THE TABLETS DIRECTLY NEXT TO THE ROOT BALL, EVENLY DISTRIBUTED AROUND ITS PERIMETER, AT A DEPTH OF ABOUT 4 INCHES.

IRRIGATION DURING ESTABLISHMENT

SIZE AT PLANTING	IRRIGATION FOR VITALITY	IRRIGATION FOR SURVIVAL
< 2" CALIPER	DAILY FOR TWO WEEKS, EVERY OTHER DAY FOR TWO MONTHS, WEEKLY UNTIL ESTABLISHED	TWO TO THREE TIMES WEEKLY FOR TWO TO THREE MONTHS
2"-4 CALIPER	DAILY FOR ONE MONTH, EVERY OTHER DAY FOR THREE MONTHS, WEEKLY UNTIL ESTABLISHED	TWO TO THREE TIMES WEEKLY FOR THREE TO FOUR MONTHS
4" > CALIPER	DAILY FOR SIX WEEKS, EVERY OTHER DAY FOR FIVE MONTHS, WEEKLY UNTIL ESTABLISHED	TWICE WEEKLY FOR FOUR TO FIVE MONTHS

TABLE NOTES:

- AT EACH IRRIGATION, APPLY TWO TO THREE GALLONS PER INCH TRUNK CALIPER TO THE ROOT BALL SURFACE. APPLY IT IN A MANNER SO ALL WATER SOAKS THE ENTIRE ROOT BALL, DO NOT WATER IF ROOT BALL IS WET/SATURATED ON THE IRRIGATION DAY.
- WHEN IRRIGATING FOR VITALITY, DELETE DAILY IRRIGATION WHEN PLANTING IN WINTER OR WHEN PLANTING IN COOL CLIMATES. ESTABLISHMENT TAKES THREE TO FOUR MONTHS PER INCH TRUNK CALIPER, NEVER APPLY IRRIGATION IF THE SOIL IS SATURATED.
- WHEN IRRIGATING FOR SURVIVAL, TREES TAKE MUCH LONGER TO ESTABLISH THAN REGULARLY IRRIGATED TREES. IRRIGATION MAY BE REQUIRED IN THE NORMAL HOT, DRY PORTIONS OF THE FOLLOWING YEAR.

PLANT QUALITY AND HANDLING NOTES:

- ALL PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK (ANSI Z601-2004) OR LATEST REVISION AS PUBLISHED BY THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION.
- IN ALL CASES, BOTANICAL NAMES LISTED WITHIN THE APPROVED OR FINAL PLANT LIST SHALL TAKE PRECEDENCE OVER COMMON NAMES.
- ALL PLANTS SHALL BE OF SELECTED SPECIMEN QUALITY, EXCEPTIONALLY HEAVY, TIGHTLY KNIT, SO TRAINED OR FAVORED IN THEIR DEVELOPMENT AND APPEARANCE AS TO BE SUPERIOR IN FORM, NUMBER OF BRANCHES, COMPACTNESS AND SYMMETRY. ALL PLANTS SHALL HAVE A NORMAL HABIT OR SOUND, HEALTHY, VIGOROUS PLANTS WITH WELL DEVELOPED ROOT SYSTEM. PLANTS SHALL BE FREE OF DISEASE, INSECT PESTS, EGGS OR LARVAE.
- PLANTS SHALL NOT BE PRUNED BEFORE DELIVERY. TREES WITH ABRASION OF THE BARK, SUNSCALDS, DISFIGURING KNOTS OR FRESH CUTS OF LIMBS OVER ONE AND ONE-FOURTH INCHES (1-1/4") WHICH HAVE NOT COMPLETELY CALLOUSED SHALL BE REJECTED.
- ALL PLANTS SHALL BE TYPICAL OF THEIR SPECIES OR VARIETY AND SHALL HAVE A NORMAL HABIT OF GROWTH AND BE LEGIBLY TAGGED WITH THE PROPER NAME AND SIZE.
- THE ROOT SYSTEM OF EACH PLANT SHALL BE WELL PROVIDED WITH FIBROUS ROOTS. ALL PARTS SHALL BE SOUND, HEALTHY, VIGOROUS, WELL-BRANCHED AND DENSELY FOLIATED WHEN IN LEAF.
- ALL PLANTS DESIGNATED BALL AND BURLAP (B&B) MUST BE MOVED WITH THE ROOT SYSTEM AS SOLID UNITS WITH BALLS OF EARTH FIRMLY WRAPPED WITH BURLAP. THE DIAMETER AND DEPTH OF THE BALLS OF EARTH MUST BE SUFFICIENT TO ENCOMPASS THE FIBROUS ROOT FEEDING SYSTEMS NECESSARY FOR THE HEALTHY DEVELOPMENT OF THE PLANT. NO PLANT SHALL BE ACCEPTED WHEN THE BALL OF EARTH SURROUNDING ITS ROOTS HAS BEEN BADLY CRACKED OR BROKEN PREPARATORY TO OR DURING THE PROCESS OF PLANTING. THE BALLS SHALL REMAIN INTACT DURING ALL OPERATIONS. ALL PLANTS THAT CANNOT BE PLANTED AT ONCE MUST BE HEeled-IN BY SETTING IN THE GROUND AND COVERING THE BALLS WITH SOIL OR MULCH AND THEN WATERING. HEMP BURLAP AND TWINE IS PREFERABLE TO TREATED. IF TREATED BURLAP IS USED, ALL TWINE IS TO BE CUT FROM AROUND THE TRUNK AND ALL BURLAP IS TO BE REMOVED.
- PLANTS TRANSPORTED TO THE PROJECT IN OPEN VEHICLES SHALL BE COVERED WITH TARP OR OTHER SUITABLE COVERS SECURELY FASTENED TO THE BODY OF THE VEHICLE TO PREVENT INJURY TO THE PLANTS. CLOSED VEHICLES SHALL BE ADEQUATELY VENTILATED TO PREVENT OVERHEATING OF THE PLANTS. EVIDENCE OF INADEQUATE PROTECTION FOLLOWING DIGGING, CARELESSNESS WHILE IN TRANSIT, OR IMPROPER HANDLING OR STORAGE SHALL BE CAUSE FOR REJECTION OF PLANT MATERIAL. ALL PLANTS SHALL BE KEPT MOIST, FRESH, AND PROTECTED. SUCH PROTECTION SHALL ENCOMPASS THE ENTIRE PERIOD DURING WHICH THE PLANTS ARE IN TRANSIT, BEING HANDLED, OR ARE IN TEMPORARY STORAGE.
- ALL PLANT MATERIAL SHALL BE INSTALLED IN ACCORDANCE WITH THE CORRESPONDING LANDSCAPE PLAN AND PLANTING

- LANDSCAPE CONTRACTOR SHALL MAKE BEST EFFORT TO INSTALL PLANTINGS ON THE SAME DAY AS DELIVERY. IF PLANTS ARE NOT PLANTED IMMEDIATELY ON SITE, PROPER CARE SHALL BE TAKEN TO PLACE THE PLANTINGS IN PARTIAL SHADE WHEN POSSIBLE. THE ROOT BALL SHALL BE KEPT MOIST AT ALL TIME AND COVERED WITH MOISTENED MULCH OR AGED WOODCHIPS. PROPER IRRIGATION SHALL BE SUPPLIED SO AS TO NOT ALLOW THE ROOT BALL TO DRY OUT. PLANTINGS SHALL BE UNTIED AND PROPER SPACING SHALL BE ALLOTTED FOR AIR CIRCULATION AND TO PREVENT DISEASE, WILTING, AND LEAF LOSS. PLANTS THAT REMAIN UNPLANTED FOR A PERIOD OF TIME GREATER THAN THREE (3) DAYS SHALL BE HEaled IN WITH TOPSOIL OR MULCH AND WATERED AS REQUIRED TO PRESERVE ROOT MOISTURE.
- PLANTS WITH INJURED ROOTS OR BRANCHES SHALL BE PRUNED PRIOR TO PLANTING UTILIZING CLEAN, SHARP TOOLS. ONLY DISEASED OR INJURED PLANTS SHALL BE REMOVED.
- IF ROCK OR OTHER UNDERGROUND OBSTRUCTION IS ENCOUNTERED, THE LANDSCAPE DESIGNER RESERVES THE RIGHT TO REMOVE THE ROCK OR ENCASE PLANTING IN ITS OR DILET PLANT MATERIAL FROM THE CONTRACT.
- IF PLANTS ARE PROPOSED WITHIN SIGHT TRIANGLES, TREES SHALL BE LIMBED AND MAINTAINED TO A HEIGHT OF EIGHT FEET (8') ABOVE GRADE, AND SHRUBS, GROUND COVER, PERENNIALS, AND ANNUALS SHALL BE MAINTAINED TO A HEIGHT NOT TO EXCEED TWO FEET (2') ABOVE GRADE UNLESS OTHERWISE NOTED OR SPECIFIED BY THE GOVERNING MUNICIPALITY OR AGENCY.
- INSTALLATION SHALL OCCUR DURING THE FOLLOWING SEASONS:
PLANTS (MARCH 15 - DECEMBER 15)
LAWNS (MARCH 15 - JUNE 15 OR SEPTEMBER 1 - DECEMBER 1)
- THE FOLLOWING TREES ARE SUSCEPTIBLE TO TRANSPILANT SHOCK AND SHALL NOT BE PLANTED DURING THE FALL SEASON (STARTING SEPTEMBER 15):
 - ABIES CORNUS VARIETIES
 - ACER BUEGERIANUM CRATAEGUS VARIETIES
 - ACER FREYANII PINUS NIGRA
 - ACER RUBRUM FAGUS VARIETIES
 - ACER SACCHARINUM HALEZIA VARIETIES
 - BETULA VARIETIES ILEX X FOSTERII
 - CARPINUS VARIETIES ILEX NELLE STEVENS
 - CEDRUS DEODARA ILEX OPACA
 - CELTIS VARIETIES JUNIPERUS VIRGINIANA
 - CERIDPHYLLOM VARIETIES KOELUTERIA PANICULATA
 - CERCIS CANADENSIS LIQUIDAMBAR VARIETIES
 - CORNUS VARIETIES LIRODENDRON VARIETIES
 - CRATAEGUS VARIETIES MALUS IN LEAF
 - NYSSA SYLVATICA

- IF A PROPOSED PLANT IS UNATTAINABLE OR ON THE FALL DIGGING HAZARD LIST, AN EQUIVALENT SPECIES OF THE SAME SIZE MAY BE REQUESTED FOR SUBSTITUTION OF THE ORIGINAL PLANT. ALL SUBSTITUTIONS SHALL BE APPROVED BY THE PROJECT LANDSCAPE DESIGNER OR MUNICIPAL OFFICIAL PRIOR TO ORDERING AND INSTALLATION.
- DURING THE COURSE OF CONSTRUCTION/PLANT INSTALLATION, EXCESS AND WASTE MATERIALS SHALL BE CONTINUOUSLY AND PROMPTLY REMOVED AT THE END OF EACH WORK DAY. ALL DEBRIS, MATERIALS, AND TOOLS SHALL BE PROPERLY STORED, STOCKPILED OR DISPOSED OF AND ALL PAVED AREAS SHALL BE CLEANED.
- THE LANDSCAPE CONTRACTOR SHALL DISPOSE OF ALL RUBBISH AND EXCESS SOIL AT HIS EXPENSE TO AN OFF-SITE LOCATION AS APPROVED BY THE LOCAL MUNICIPALITY.
- 90-DAY MAINTENANCE PERIOD SHALL BEGIN IMMEDIATELY AFTER ALL PLANTS HAVE BEEN SATISFACTORILY INSTALLED.
- MAINTENANCE SHALL INCLUDE, BUT NOT BE LIMITED TO, REPLACING MULCH THAT HAS BEEN DISPLACED BY EROSION OR OTHER MEANS, REPAIRING AND RESHAPING WATER RINGS OR SAUCERS, MAINTAINING STAKES AND GUYS IF ORIGINALLY REQUIRED, WATERING WHEN NEEDED OR DIRECTED, WEEDING, PRUNING, SPRAYING, FERTILIZING, MOWING THE LAWN, AND PERFORMING ANY OTHER WORK REQUIRED TO KEEP THE PLANTS IN A HEALTHY CONDITION.
- MOW ALL GRASS AREAS AT REGULAR INTERVALS TO KEEP THE GRASS HEIGHT FROM EXCEEDING THREE INCHES (3"). MOWING SHALL BE PERFORMED ONLY WHEN GRASS IS DRY. MOWER BLADE SHALL BE SET TO REMOVE NO MORE THAN ONE THIRD (1/3) OF THE GRASS LENGTH. WHEN THE AMOUNT OF GRASS IS HEAVY, IT SHALL BE REMOVED TO PREVENT DESTRUCTION OF THE UNDERLYING TURF. MOW GRASS AREAS IN SUCH A MANNER AS TO PREVENT CLIPPINGS FROM BLOWING ON PAVED AREAS, AND SIDEWALKS. CLEANUP AFTER MOWING SHALL INCLUDE SWEEPING OR BLOWING OF PAVED AREAS AND SIDEWALKS TO CLEAR THEM FROM MOWING DEBRIS.
- GRASSSED AREAS DAMAGED DURING THE PROCESS OF THE WORK SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, WHO SHALL RESTORE THE DISTURBED AREAS TO A CONDITION SATISFACTORY TO THE PROJECT LANDSCAPE DESIGNER, MUNICIPAL OFFICIAL, OR OWNER/OWNER'S REPRESENTATIVE. THIS MAY INCLUDE FILLING TO GRADE, FERTILIZING, SEEDING, AND MULCHING.
- SHOULD THE OWNER REQUIRE MAINTENANCE BEYOND THE STANDARD 90-DAY MAINTENANCE PERIOD, A SEPARATE CONTRACT SHALL BE ESTABLISHED.
- LANDSCAPE CONTRACTOR SHALL WATER NEW PLANTINGS FROM TIME OF INSTALL AND THROUGHOUT REQUIRED 90-DAY MAINTENANCE PERIOD UNTIL PLANTS ARE ESTABLISHED. IF ON-SITE WATER IS NOT AVAILABLE AT THE PROJECT LOCATION, THE LANDSCAPE CONTRACTOR SHALL FURNISH IT BY MEANS OR A WATERING TRUCK OR OTHER ACCEPTABLE MANNER.
- THE QUANTITY OF WATER APPLIED AT ONE TIME SHALL BE SUFFICIENT TO PENETRATE THE SOIL TO A MINIMUM OF EIGHT INCHES (8") IN SHRUB BEDS AND SIX INCHES (6") IN TURF AREAS AT A RATE WHICH WILL PREVENT SATURATION OF THE SOIL.
- IF AN AUTOMATIC IRRIGATION SYSTEM HAS BEEN INSTALLED, IT CAN BE USED FOR WATERING PLANT MATERIAL. HOWEVER, FAILURE OF THE SYSTEM DOES NOT ELIMINATE THE LANDSCAPE CONTRACTOR'S RESPONSIBILITY OF PLANT HEALTH AND ESTABLISHMENT.

PLANT MATERIAL GUARANTEE NOTES:

- THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF ONE YEAR (1 YR.) FROM APPROVAL OF LANDSCAPE INSTALLATION BY THE PROJECT LANDSCAPE DESIGNER, MUNICIPAL OFFICIAL, OR OWNER/OWNER'S REPRESENTATIVE.
- THE LANDSCAPE CONTRACTOR SHALL REMOVE AND REPLACE DYING, DEAD, OR DEFECTIVE PLANT MATERIAL AT HIS EXPENSE. THE LANDSCAPE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ANY DAMAGES CAUSED BY HIS COMPANY'S OPERATIONS.
- ALL REPLACEMENT PLANTS SHALL BE OF THE SAME SPECIES AND SIZE AS SPECIFIED ON THE APPROVED OR FINAL PLANT LIST. REPLACEMENTS RESULTING FROM REMOVAL, LOSS, OR DAMAGE DUE TO OCCUPANCY OF THE PROJECT IN ANY PART: VANDALISM, PHYSICAL DAMAGE BY ANIMALS, VEHICLES, ETC., AND LOSSES DUE TO CURTALMENT OF WATER BY LOCAL AUTHORITIES SHALL BE APPROVED AND PAID FOR BY THE OWNER.
- THE CONTRACTOR SHALL INSTRUCT THE OWNER AS TO THE PROPER CARE AND MAINTENANCE OF ALL PLANTINGS.

LAWN (SEED OR SOD) NOTES:

- SEED MIXTURE SHALL BE FRESH, CLEAN, NEW, CROP SEED. SOD SHALL BE STRONGLY ROOTED, UNIFORM IN THICKNESS, AND FREE OF WEEDS, DISEASE, AND PESTS.
- SEED OR SOD SHALL BE PURCHASED FROM A RECOGNIZED DISTRIBUTOR AND SHALL BE COMPOSED OF THE MIX OR BLEND WITHIN THE PROVIDED "SEED SPECIFICATION" OR "SOD SPECIFICATION".
- REFERENCE LANDSCAPE PLAN FOR AREAS TO BE SEED OR LAID WITH SOD.
- SEEDING SHALL NOT BE PERFORMED IN WINDY WEATHER. IF THE SEASON OF THE PROJECT COMPLETION PROHIBITS PERMANENT STABILIZATION, TEMPORARY STABILIZATION SHALL BE PROVIDED IN ACCORDANCE WITH THE "TEMPORARY SEEDING SPECIFICATION".
- PROTECT NEW LAWN AREAS AGAINST TRESPASSING WHILE THE SEED IS GERMINATING. FURNISH AND INSTALL FENCES, SIGNS, BARRIERS OR ANY OTHER NECESSARY TEMPORARY PROTECTIVE DEVICES. DAMAGE RESULTING FROM TRESPASS, EROSION, WASHOUT, SETTLEMENT OR OTHER CAUSES SHALL BE REPAIRED BY THE LANDSCAPE CONTRACTOR AT HIS EXPENSE. REMOVE ALL FENCES, SIGNS, BARRIERS OR OTHER TEMPORARY PROTECTIVE DEVICES ONCE LAWN HAS BEEN ESTABLISHED.

REVISED PER TOWNSHIP AND COUNTY DRAIN REVIEWS	EM	EM	IS/EM	ISSUE	DATE	BY	DESCRIPTION
DIMENSIONS ADDED TO DEMO PLAN PER PDOT	11/18/2025	09/15/2025	09/02/2025	1			
SUBMISSION FOR SITE PLAN APPROVAL & PERMITTING				2			
				3			

NOT APPROVED FOR CONSTRUCTION



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SITE IMPROVEMENT PLANS
SHOWCASE AUTO SALES
PARKING LOT ADDITION

PID: 18-17-400-035 & 18-17-400-038
5010 WEST VIENNA ROAD
CHARTER TOWNSHIP OF VIENNA
GENESEE COUNTY, MICHIGAN



SCALE: AS SHOWN PROJECT ID: DET-250192

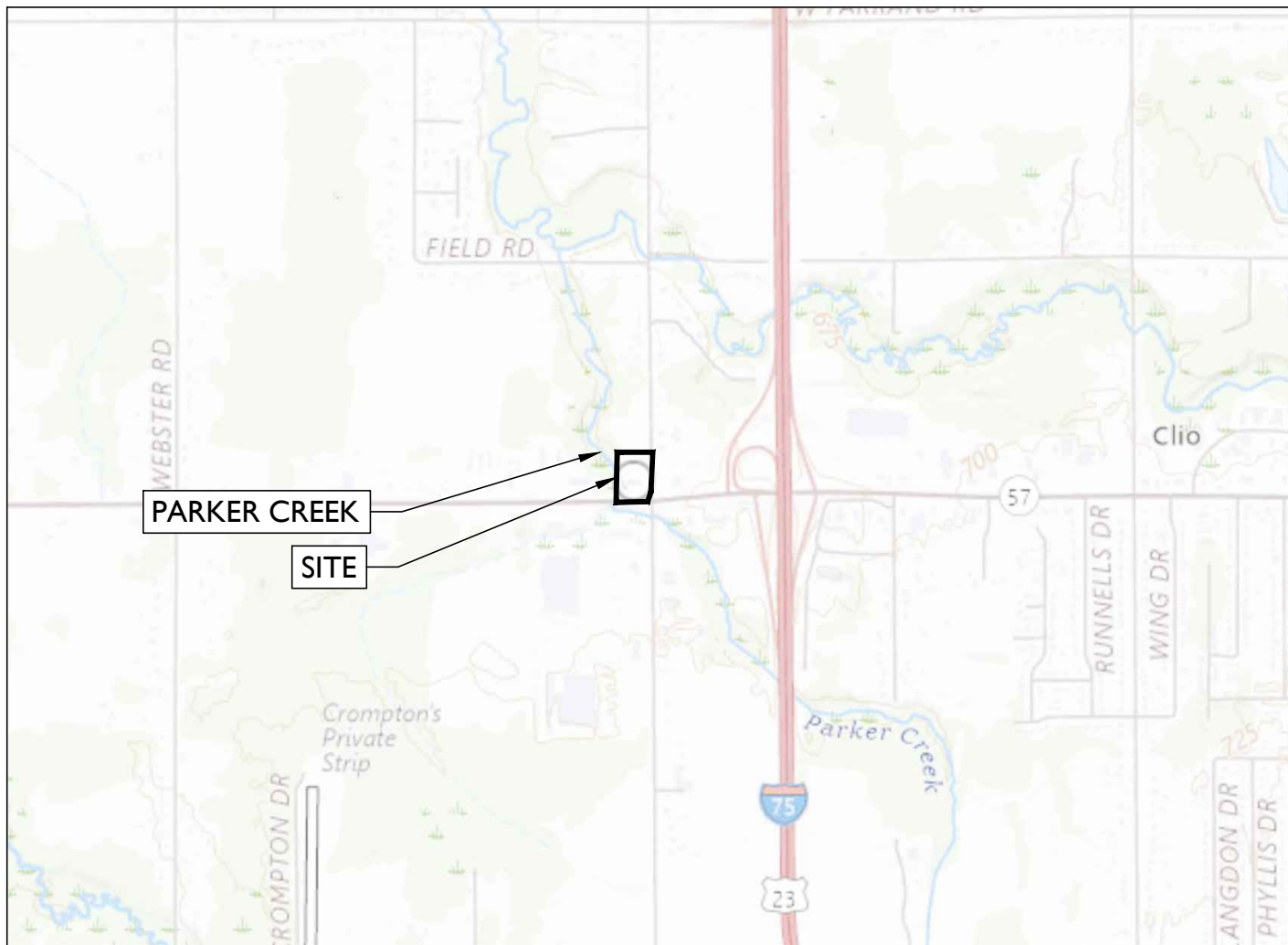
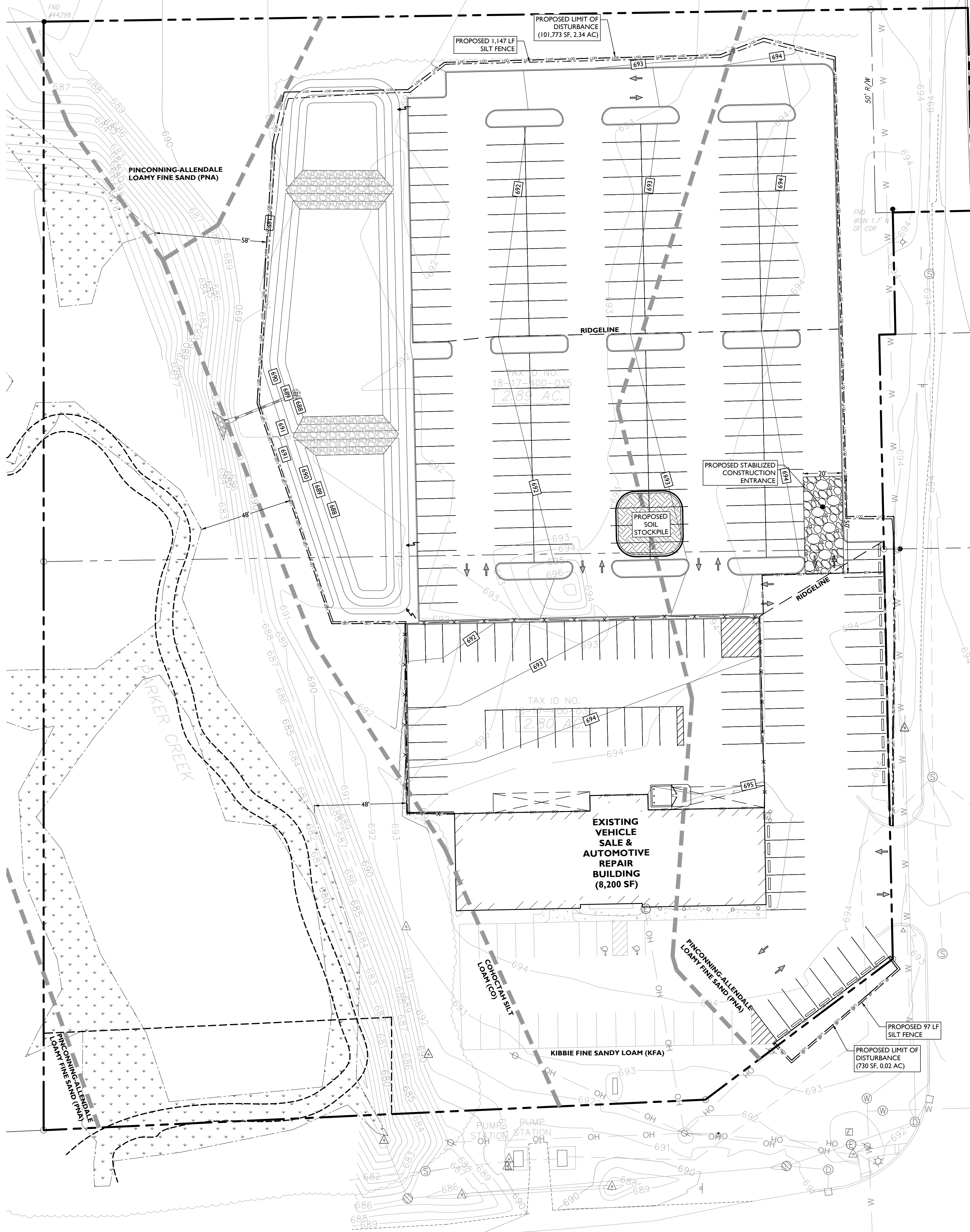
TITLE:

LANDSCAPING DETAILS

DRAWING:

C-9

NOT TO SCALE. DIMENSIONS ARE APPROXIMATE. SEE PLAN FOR DIMENSIONS. 18-17-400-035 & 18-17-400-038. 5010 WEST VIENNA ROAD, CLIO, MI 48009. 5010 WEST VIENNA ROAD, CLIO, MI 48009. 5010 WEST VIENNA ROAD, CLIO, MI 48009.



SOURCE: USGS MAPPING SYSTEM

LOCATION MAP

SCALE: 1" = 2000'±

SOIL CHARACTERISTICS CHART

TYPE OF SOIL	ARKPORT LOAMY FINE SAND (ARB)	COHOCTAH SILT LOAM (CO)	KIBBIE FINE SANDY LOAM (KFA)	PINCONNING-ALLENDALE LOAMY FINE SANDS (PNA)
PERCENT OF SITE COVERAGE	0.0%	33.0%	37.1%	29.9%
HYDROLOGIC SOIL GROUP	A	B/D	B/D	C/D
DEPTH TO RESTRICTIVE LAYER	> 80 INCHES	> 80 INCHES	> 80 INCHES	> 80 INCHES
SOIL PERMEABILITY	0.60 TO 20.00 IN / HR	0.60 TO 6.00 IN / HR	0.60 TO 2.00 IN / HR	0.06 TO 0.20 IN / HR
DEPTH TO WATER TABLE	> 80 INCHES	0 INCHES	6 INCHES	0 INCHES

PROPERTY DESCRIPTION

THE LAND SITUATED IN THE TOWNSHIP OF VIENNA, COUNTY OF GENESEE, STATE OF MICHIGAN, IS DESCRIBED AS FOLLOWS:

PARCEL 1 (PID: 18-17-400-038):
A PARCEL OF LAND BEGINNING N00°53'06"W, 180 FEET FROM SOUTHEAST CORNER OF SECTION; THENCE S55°31'36"W, 324.11 FEET; THENCE WEST 221.7 FEET; THENCE N00°51'10"E, 381.03 FEET; THENCE EAST 483.44 FEET; THENCE S00°23'30"E TO POINT OF BEGINNING, EXCLUDING ALL THAT PART LYING EASTERLY & SOUTHERLY OF A LINE DESCRIBED AS BEGINNING N00°48'34"W, 492.126 FEET FROM SOUTHEAST CORNER OF SECTION; THENCE S89°11'26"W, 49.21 FEET & S00°48'34"E, 322.647 FEET & S53°31'32"W, 1221.03 FEET & ON CURVE TO RIGHT CHORD IS S87°47'18W, 613.59 FEET & S89°19'54"W, 100 FEET TO POINT OF ENDING, SECTION 17, T9N-R6E (99) FR 18-17-400-021.

PARCEL 2 (PID: 18-17-400-035):
A PARCEL OF LAND BEGINNING N00°23'20"W, 381 FT FROM SOUTHEAST CORNER OF SECTION; THENCE WEST, 483.44 FEET; THENCE N00°51'10"E, 278.97 FEET; THENCE EAST, 477.55 FEET; THENCE S00°23'20"E, 280.44 FEET TO POINT OF BEGINNING, EXCLUDING ALL THAT PART LYING EASTERLY OF MDOT RIGHT-OF-WAY LINE DESCRIBED AS BEGINNING N00°48'34"W, 553.64 FEET FROM SOUTHEAST CORNER OF SECTION; THENCE S89°11'26"W, 41.01 FEET; THENCE S00°48'34"E, 196.85 FEET TO POINT OF ENDING, SECTION 17, T9N-R6E (98 / 23) FR 18-17-400-022

SEQUENCE OF CONSTRUCTION

1. INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE (2 DAYS).
2. DEMOLITION OF EXISTING PARKING AREAS (7 DAYS).
3. ROUGH GRADING AND TEMPORARY SEEDING (7 DAYS).
4. SITE IMPROVEMENTS (14 DAYS).
5. LANDSCAPING IMPROVEMENTS AND FINAL SEEDING (7 DAYS).
6. REMOVE SOIL EROSION MEASURES (1 DAY).

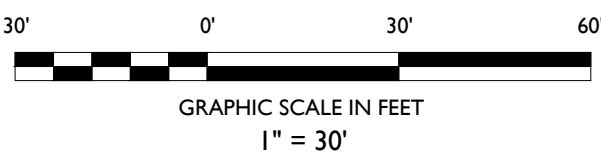
NOTE: TIME DURATIONS ARE APPROXIMATE AND ARE INTENDED TO ACT AS A GENERAL GUIDE TO THE CONSTRUCTION TIMELINE. ALL DURATIONS ARE SUBJECT TO CHANGE BY CONTRACTOR. CONTRACTOR SHALL SUBMIT CONSTRUCTION SCHEDULE TO TOWNSHIP AND ENGINEER. CONTRACTOR SHALL PHASE CONSTRUCTION ACCORDINGLY.

SOIL EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR SOIL EROSION AND SEDIMENT CONTROL IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
2. THE CONTRACTOR IS RESPONSIBLE FOR DUST CONTROL IN COMPLIANCE WITH LOCAL, STATE, AND FEDERAL AIR QUALITY STANDARDS.
3. THE CONTRACTOR IS RESPONSIBLE TO INSPECT ALL SOIL EROSION AND SEDIMENT CONTROL MEASURES WEEKLY AND AFTER A PRECIPITATION EVENT GREATER THAN 1 INCH. THE CONTRACTOR SHALL MAINTAIN AN INSPECTION LOG ON SITE AND DOCUMENT CORRECTIVE ACTION TAKEN THROUGHOUT THE COURSE OF CONSTRUCTION AS REQUIRED.



Know what's below
Call before you dig.

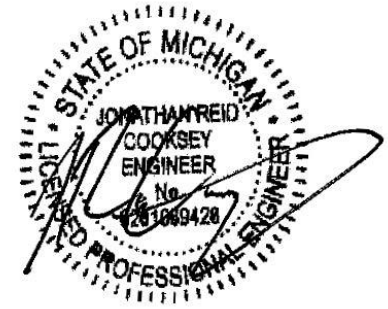


SITE IMPROVEMENT PLANS

SHOWCASE AUTO SALES

PARKING LOT ADDITION

PID: 18-17-400-035 & 18-17-400-038
5010 WEST VIENNA ROAD OF VIENNA
CHARTEER TOWNSHIP OF VIENNA
GENESEE COUNTY, MICHIGAN



SCALE: 1" = 30' PROJECT ID: DET-250192

TITLE:

SOIL EROSION &
SEDIMENT CONTROL
PLAN

DRAWING:

C-10

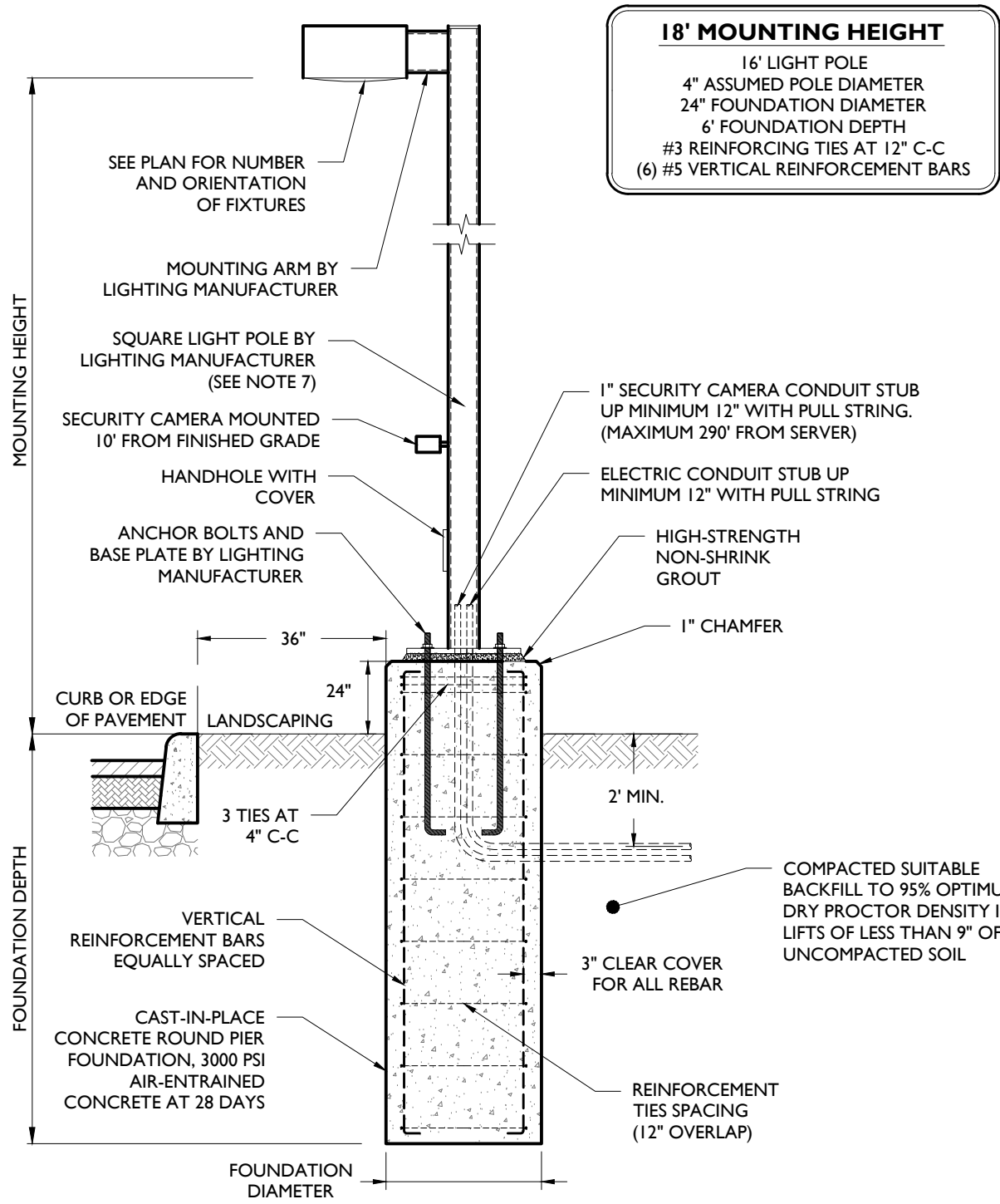
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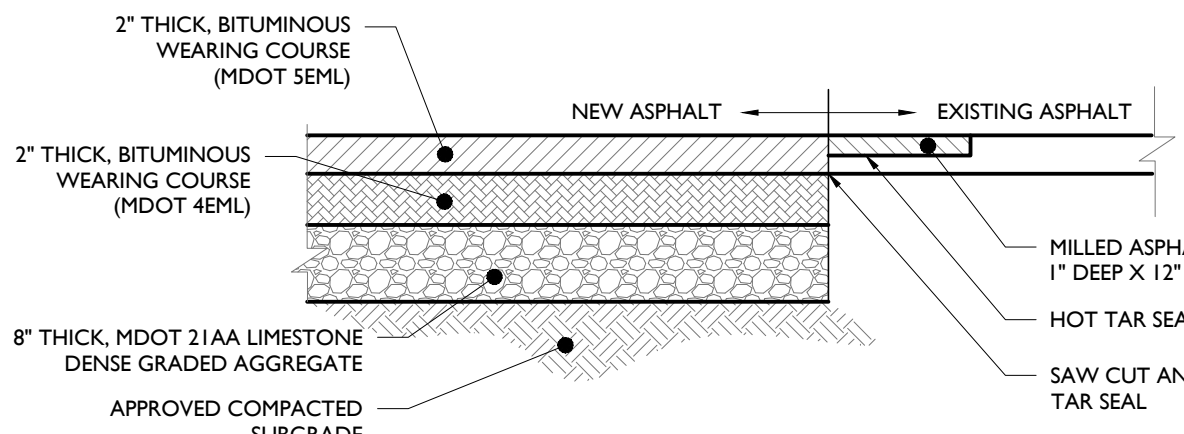
NOT APPROVED FOR CONSTRUCTION

REVISION	DATE	BY	DESCRIPTION
1	09/15/2025	JS/EM	SUBMISSION FOR SITE PLAN APPROVAL & PERMITTING
2	09/15/2025	EM	DIMENSIONS ADDED TO DEMO PLAN PER MDOT
3	11/18/2025	EM	REVISED PER TOWNSHIP AND COUNTY DRAIN REVIEWS



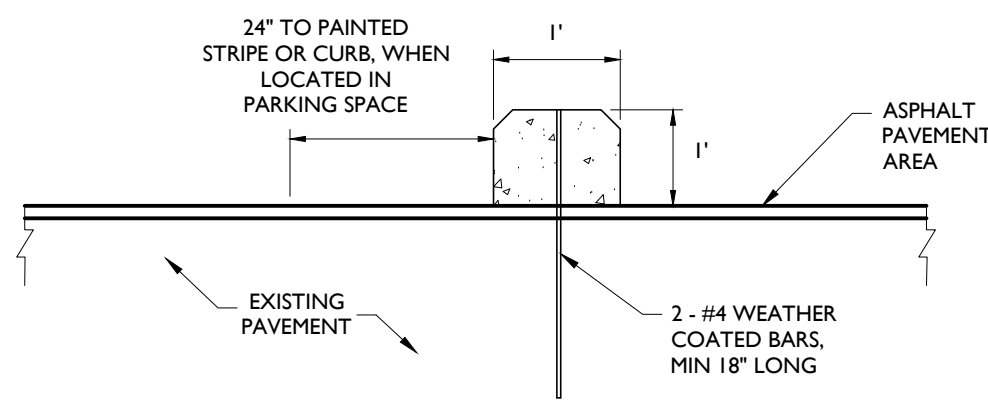
LIGHT POLE INSTALLATION

- NOTES:
1. MINIMUM SOIL BEARING PRESSURE OF 1500 PSF, SOIL FRICTION ANGLE OF 30 DEGREES, AND SOIL DRY UNIT WEIGHT OF 120 PCF SHALL BE CONFIRMED IN THE FIELD BY A QUALIFIED PROFESSIONAL.
 2. CAST-IN-PLACE CONCRETE SHALL BE CONSOLIDATED USING VIBRATOR.
 3. ALL REBAR TO BE NEW GRADE 60 STEEL.
 4. PRE-CAST PIERS ACCEPTABLE UPON WRITTEN APPROVAL OF SHOP DRAWING BY ENGINEER.
 5. CONCRETE TO BE INSTALLED A MINIMUM OF 7 DAYS PRIOR TO INSTALLING LIGHT POLE. POURED CONCRETE MIX REQUIRED TO OBTAIN 80% OF DESIGN STRENGTH PRIOR TO INSTALLING LIGHT POLE.
 6. CONCRETE SHALL HAVE A MAXIMUM SLUMP OF 4\"/>



FULL DEPTH ASPHALT PAVEMENT DETAIL

- NOTES:
1. BITUMINOUS WEARING COURSE AND DENSE GRADED AGGREGATE SHALL CONFORM TO STATE DEPARTMENT OF TRANSPORTATION SPECIFICATIONS.
 2. PAVEMENT SECTION IS PER GEOTECHNICAL REPORT RECOMMENDATION. REPORT PREPARED BY G2 DATED OCTOBER 7, 2023.



CONCRETE WHEEL STOP DETAIL

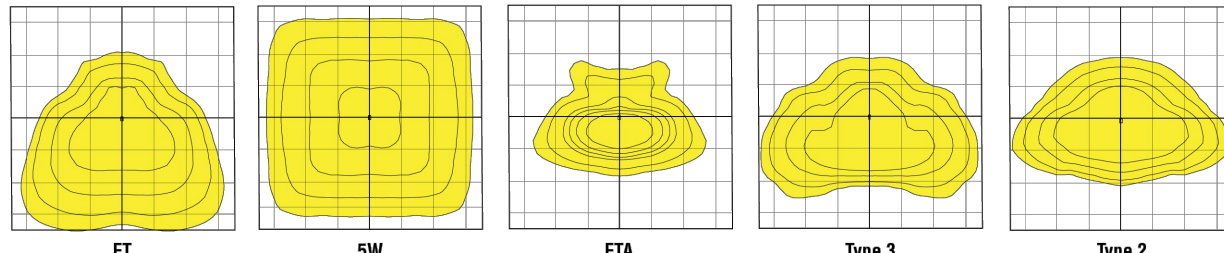
- NOTES:
1. ON CONCRETE PAVEMENT, SECURE WHEEL STOP WITH EPOXY BONDING AGENT.
 2. WHEEL STOP SHALL BE 6\"/>
 3. WHEEL STOP SHALL BE PREFABRICATED CONCRETE.



Mirada Medium - MRM Outdoor LED Area Light

Performance (Cont.)

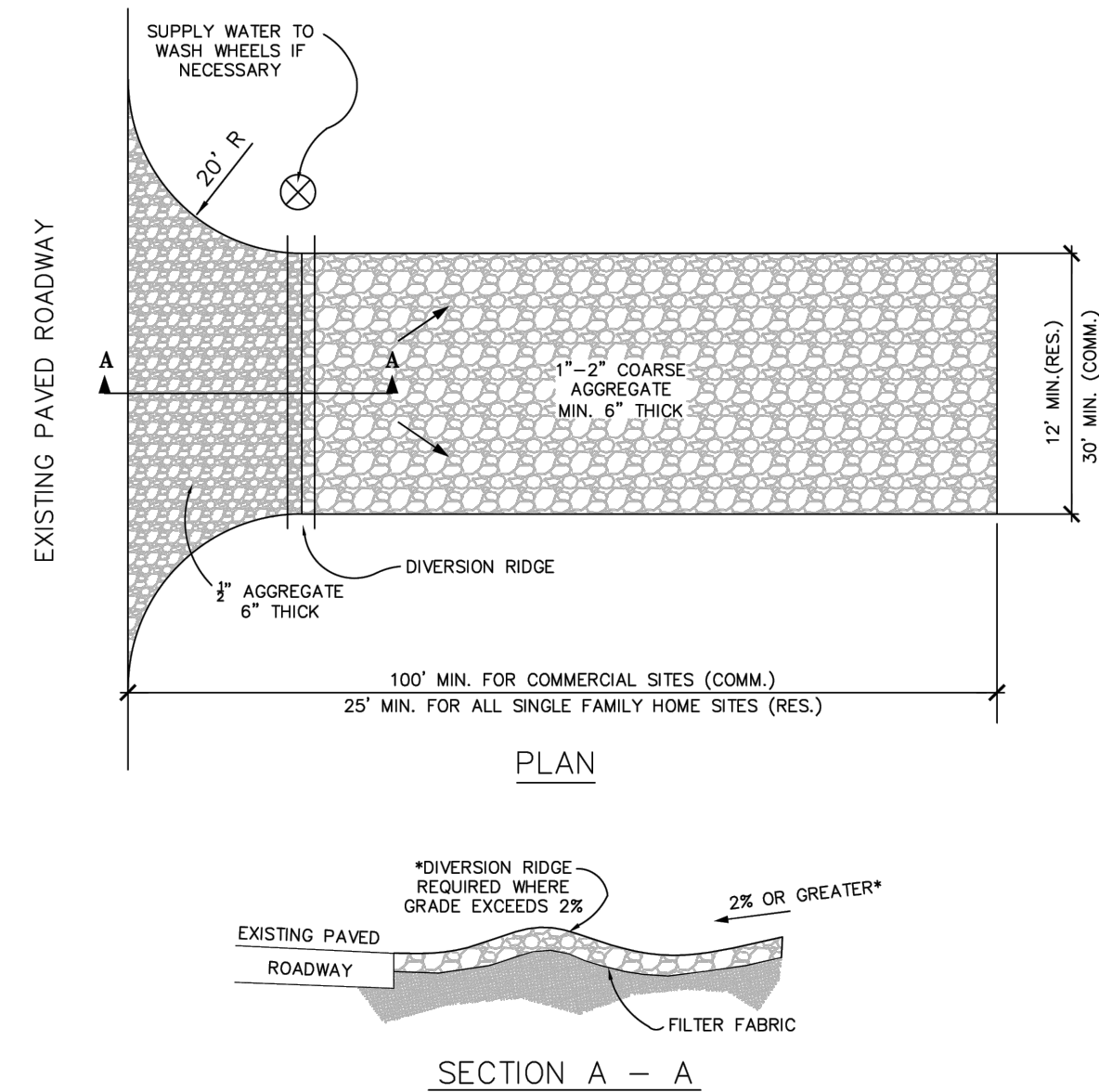
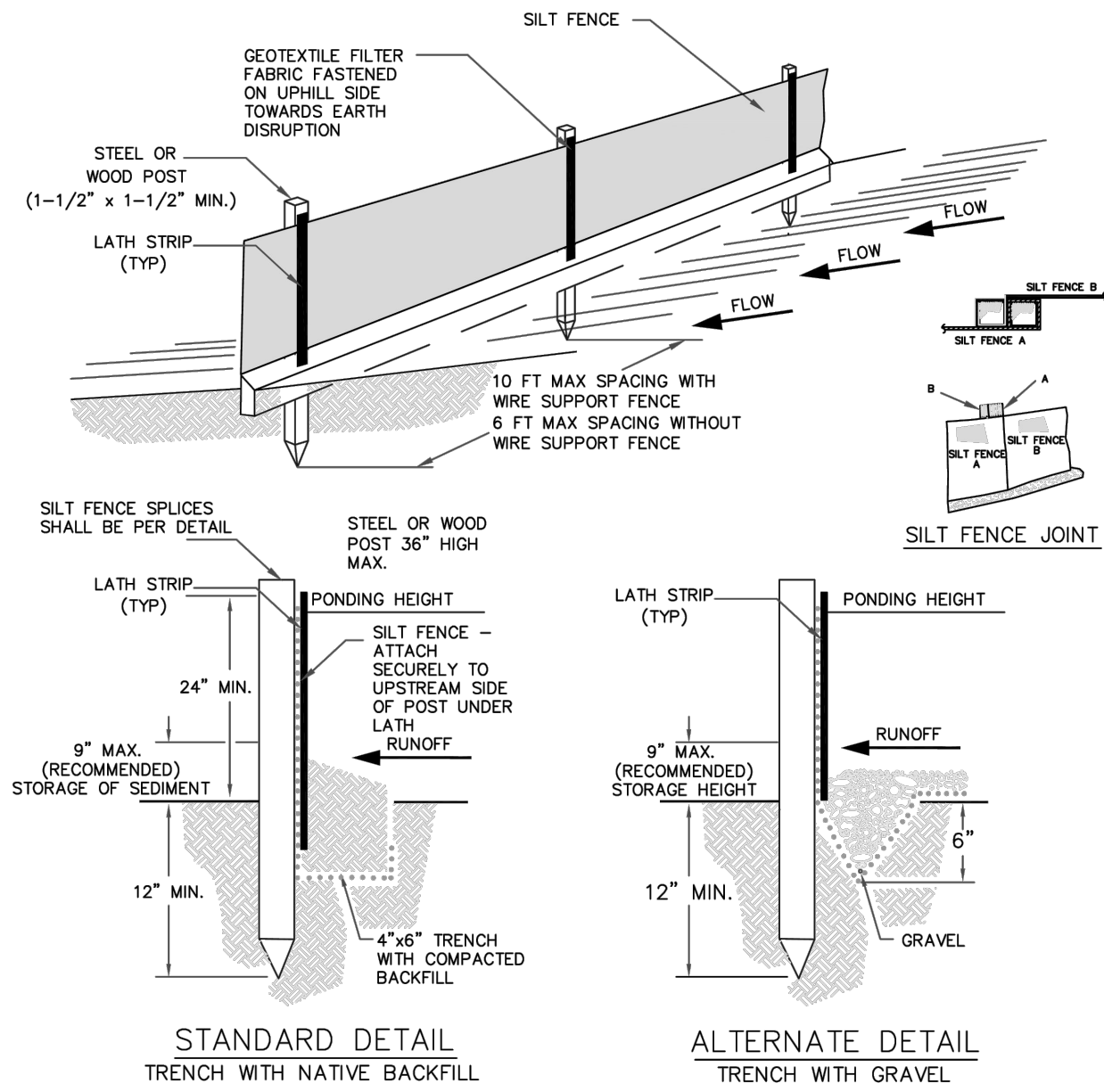
All published luminaire photometric testing performed to IESNA LM-79 standards. ISO footcandle plots below demonstrate the Mirada (MRM) light patterns only. Not for total fixture output. For complete specifications and IES files, see website.



Ordering Guide

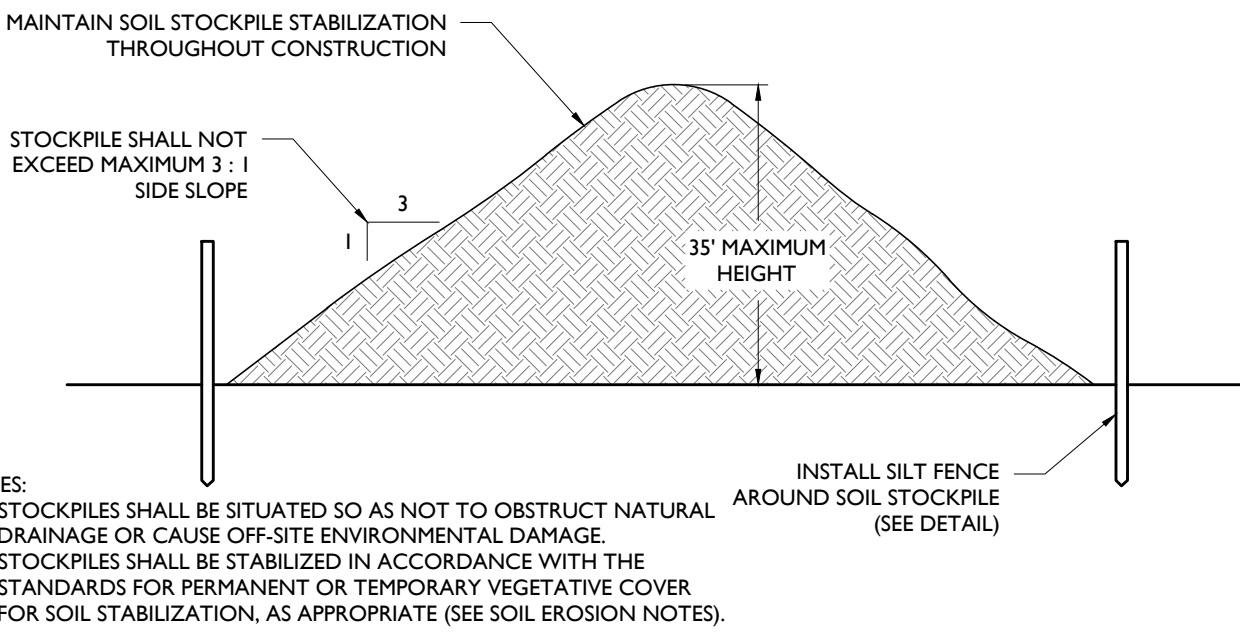
TYPICAL ORDER EXAMPLE: MRM LED 36L SIL FTA UNV DIM 50 70CRI ALSCS04 BRZ IL							
Luminaire Profile	Light Source	Lumen Package*	Light Output	Distribution	Orientation†	Voltage	Driver
MRM Mirada	LED	36L - 7,000 lms 36L - 9,000 lms 36L - 12,000 lms 36L - 15,000 lms 36L - 20,000 lms 36L - 30,000 lms 36L - 40,000 lms	SIL - Silcone	2 - Type 2 3 - Type 3 SW - Type 5 Wide FTA - Forward Throw FTA - Forward Throw Automotive	(Blank) - standard L - Optics rotated left 90 R - Optics rotated right 90	UNV - Universal Voltage (120-277V) HW - High Voltage (347-480V)	DIM - 0-10V Dimming (0-10%)
*Consult factory for programmable wattages and lumen packages							
Controls (Choose One)							
Color Temp				Color Rendering		Options	
50-5,000 CCT				70CRI - 70 CRI		(Blank) - None	
40-4,000 CCT						IL - Integral Inverse HSS†	
30-3,000 CCT							
27-2,700 CCT							
AMB - Phosor Converter Ambient†							
Wireless Controls System				BRZ - Bronze		(Blank) - None	
ALSC01 - AirLink Synapse Control System				BLK - Black		GPT - Graphite	
ALSC02 - AirLink Synapse Control System Host / Satellite				NSV - Neodymium Silver		WHT - White	
ALSC03 - AirLink Synapse Control System Host / Satellite with 8-12 Motion Sensor				PLP - Platinum Plus		SVG - Sand Verde Green	
ALSC04 - AirLink Synapse Control System Host / Satellite with 8-12 Motion Sensor							
ALSC05 - AirLink Synapse Control System with 12-20 Motion Sensor							
ALSC06 - AirLink Synapse Control System Host / Satellite with 12-20 Motion Sensor							
ALSC07 - AirLink Synapse Control System with 20-40 Motion Sensor							
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ALSC213 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
ALSC214 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
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ALSC218 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
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ALSC228 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
ALSC229 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
ALSC230 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
ALSC231 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
ALSC232 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
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ALSC234 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
ALSC235 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
ALSC236 - AirLink Synapse Control System Host / Satellite with 20-40 Motion Sensor							
ALSC237 -							

V:\01250192\250192.DWG JOHN LEONARD 555 W VIENNA ROAD, CLO TWP, MI 48060 DET-250192 11/13/2017 DWG

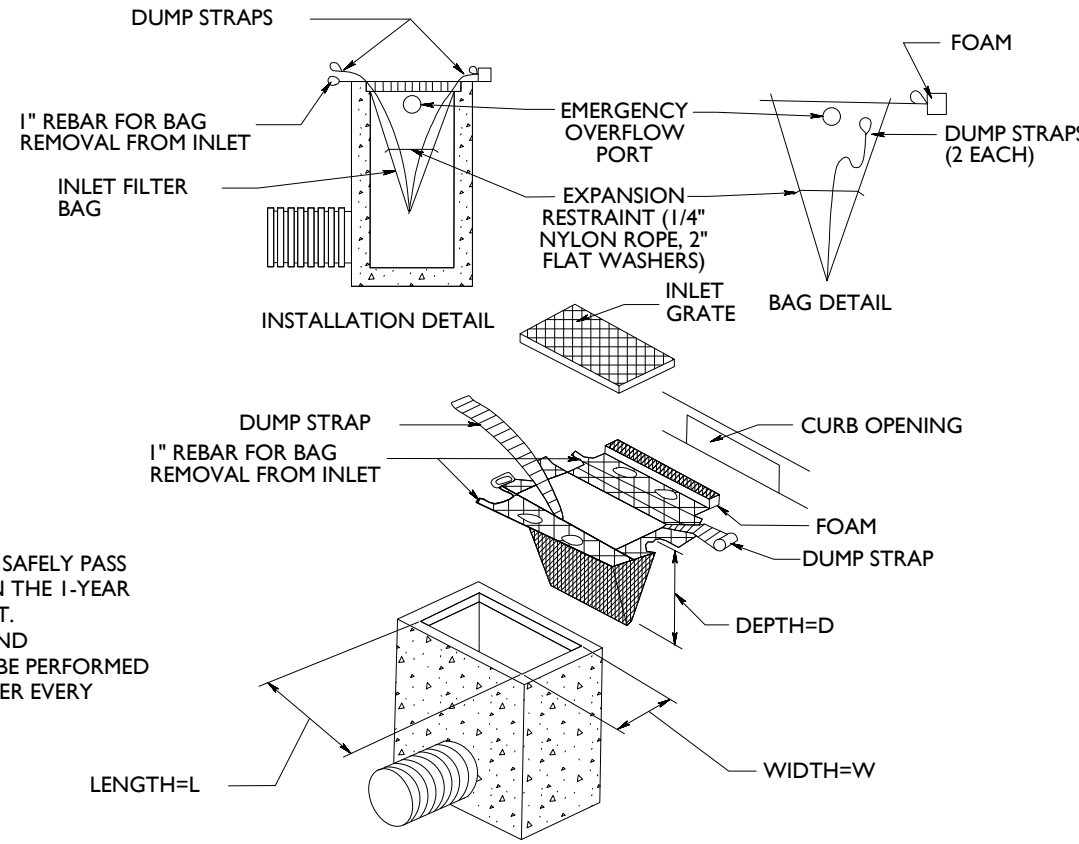


- APPLICATIONS**
1. INSTALLED TO REDUCE SEDIMENT LADEN SURFACE RUNOFF FROM LEAVING THE PROPERTY OF A CONSTRUCTION SITE INVOLVING DISTURBED EARTH.
 2. DIVERSIONARY STRUCTURE.
- DESIGN**
1. INSTALL AROUND THE BASE OF SOIL STOCKPILES.
 2. UTILIZE FOR SHEET FLOW ONLY.
- DESIGN (CONT.)**
3. INSTALL ON DOWN STREAM SIDE OF CONSTRUCTION.
 4. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
 5. IF POSSIBLE LOCATE FENCE 10-FT. FROM TOP OF SLOPE, WETLAND OR WATER BODY.
 6. JOIN SECTIONS OF SILT FENCE BY WRAPPING THE ENDS TOGETHER.

- APPLICATIONS**
1. ASSISTS IN REMOVING SOIL FROM THE TIRES OF CONSTRUCTION EQUIPMENT/VEHICLES WHEN EXITING THE CONSTRUCTION SITE. THIS REDUCES TRACKING EXCESSIVE SEDIMENT/SOIL ONTO THE ADJACENT ROAD.
- DESIGN**
1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
 2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ON PUBLIC RIGHTS-OF-WAY.
 3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.



- NOTES:**
1. STOCKPILES SHALL BE SITUATED SO AS NOT TO OBSTRUCT NATURAL DRAINAGE OR CAUSE OFF-SITE ENVIRONMENTAL DAMAGE.
 2. STOCKPILES SHALL BE STABILIZED IN ACCORDANCE WITH THE STANDARDS FOR PERMANENT OR TEMPORARY VEGETATIVE COVER FOR SOIL STABILIZATION, AS APPROPRIATE (SEE SOIL EROSION NOTES).



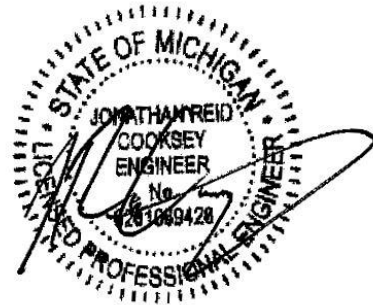
- NOTES:**
1. THE FILTER BAG SHALL SAFELY PASS FLOWS GREATER THAN THE 1-YEAR 24-HOUR STORM EVENT.
 2. SEDIMENT REMOVAL AND MAINTENANCE SHALL BE PERFORMED FREQUENTLY AND AFTER EVERY STORM EVENT.

SITE IMPROVEMENT PLANS

SHOWCASE AUTO SALES

PARKING LOT ADDITION

PID: 18-17-400-035 & 18-17-400-038
5010 WEST VIENNA ROAD OF VIENNA
CHARTER TOWNSHIP OF VIENNA
GENESEE COUNTY, MICHIGAN



SCALE: AS SHOWN PROJECT ID: DET-250192

TITLE:
**CONSTRUCTION
DETAILS**

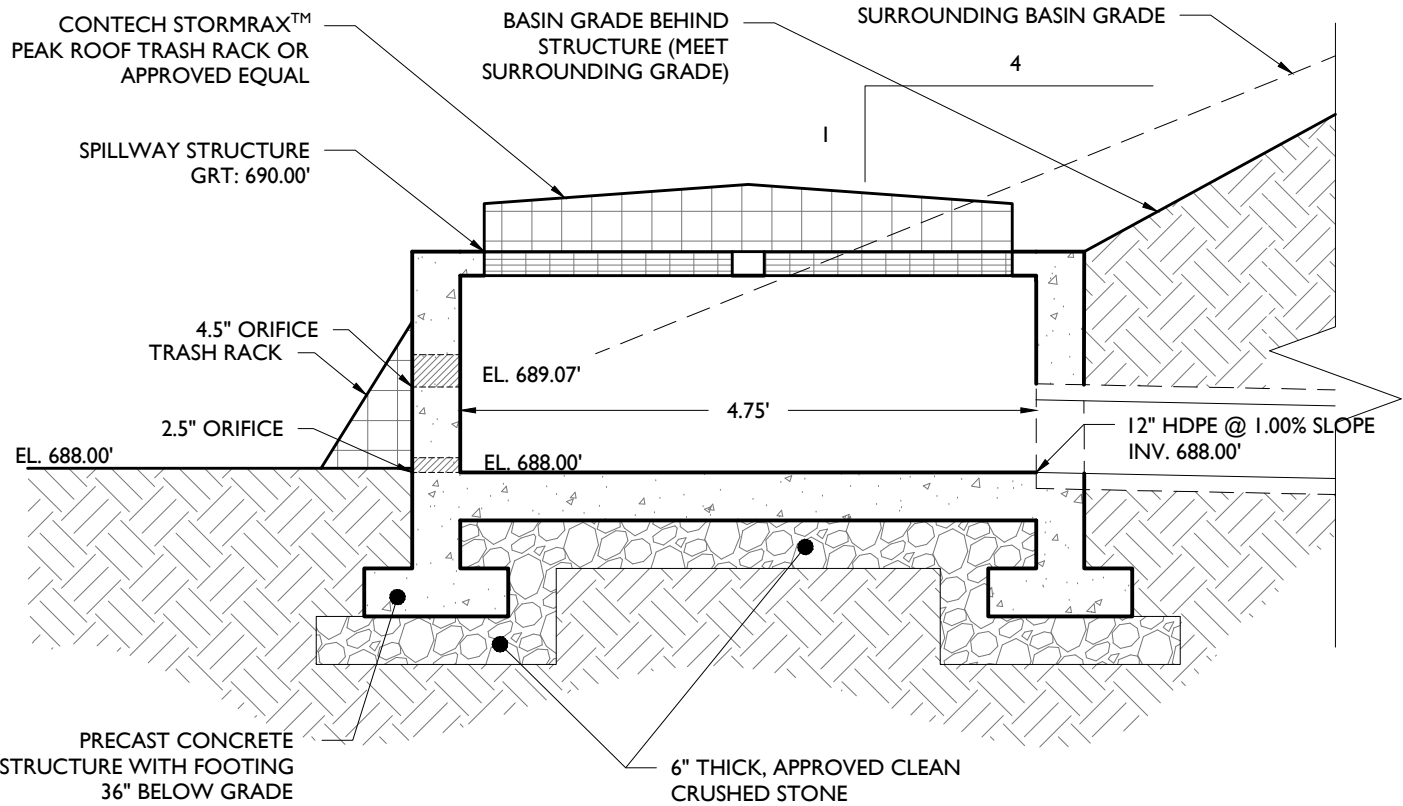
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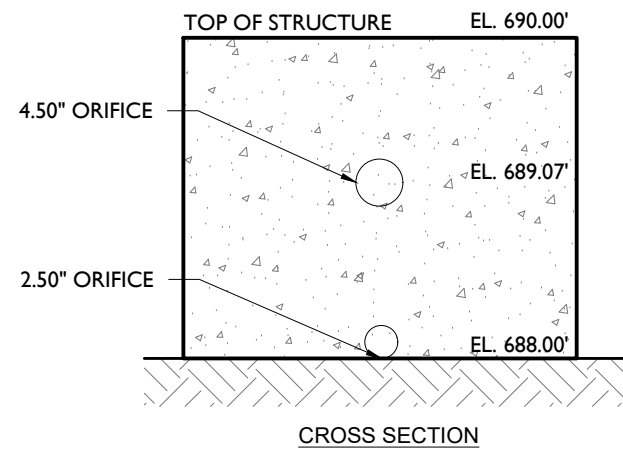
NOT APPROVED FOR CONSTRUCTION

REVISIONS				DESCRIPTION			
NO.	DATE	BY	ISSUE	REVISIONS	DESCRIPTION	DATE	BY
3	11/18/2025	EM		REVISED PER TOWNSHIP AND COUNTY DRAIN REVIEWS			
2	09/15/2025	EM		DIMENSIONS ADDED TO DEMO PLAN PER MDOT			
1	09/02/2025	JS/EM		SUBMISSION FOR SITE PLAN APPROVAL & PERMITTING			

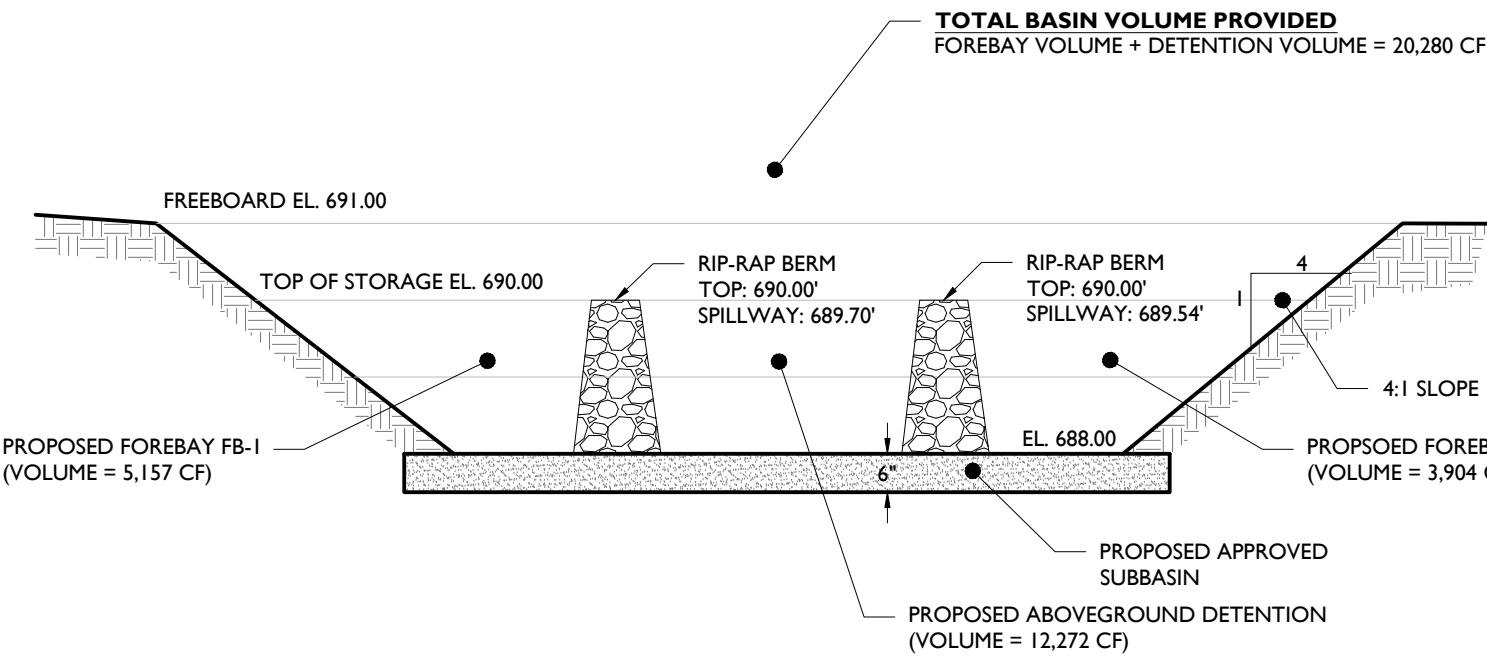


ABOVE-GROUND OUTLET STRUCTURE (OS-1) DETAIL

NOT TO SCALE

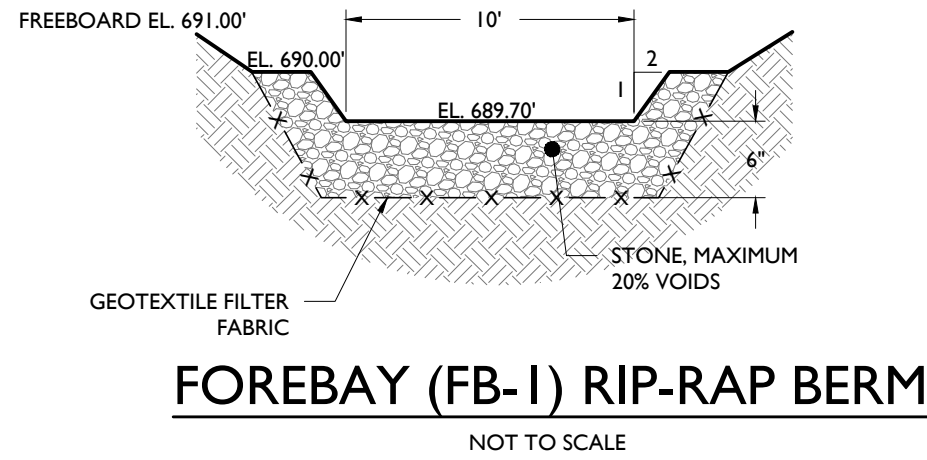


- NOTE:
1. STRUCTURE SHALL SUPPORT H2S LOADING.
 2. STRUCTURE TO BE CONSTRUCTED OF REINFORCED PRECAST CONCRETE.
 3. ALL JOINTS TO BE WATER-TIGHT.
 4. TRASH RACKS CONSTRUCTED OF NON-CORROSIVE MATERIALS TO BE PROVIDED



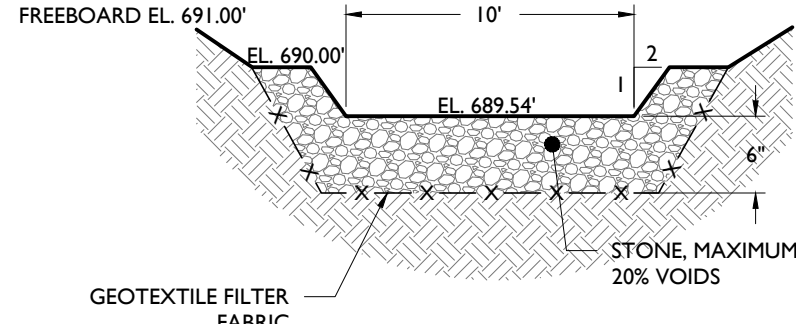
ABOVE GROUND DETENTION BASIN WITH FOREBAY DETAIL
(TOTAL VOLUME = 21,332 CF)

NOT TO SCALE



FOREBAY (FB-1) RIP-RAP BERM

NOT TO SCALE



FOREBAY (FB-2) RIP-RAP BERM

NOT TO SCALE

Calculations for Stormwater Runoff Volume Control

SITE NAME: 5010 W Vienna Road

Total Site Disturbed Area: 2.3 acres

2-Year, 24-Hour Rainfall: 2.26 in (See Rainfall Tab for regional rainfall value or site specific rainfall event may be substituted with DNRE approval)

Pre-Development Conditions

Cover Type	Soil Type	Area (sf)	Area (ac)	CN (from TR-55)	S	Q Runoff (in)	Runoff Volume ² (ft ³)
Woods / Meadow	A	0		30	23.3	0.27677817	0
Open Space	A	82346	1.89	39	15.6	0.0510248	350.1406504
Woods	B	0		55	8.2	0.04416834	0
Meadow	B	0		58	7.2	0.0816189	0
Open Space	B	0		61	6.4	0.13057586	0
Woods	C	0		70	4.3	0.34595824	0
Meadow	C	0		71	4.1	0.37675147	0
Open Space	C	0		74	3.5	0.47826175	0
Woods	D	0		77	3.0	0.5945079	0
Meadow	D	0		78	2.8	0.636804	0
Open Space	D	0		80	2.5	0.72713615	0
Impervious	N/A	19790	0.45	98	0.20	2.03228931	3351.583787
Other:		0				NA	NA
TOTAL:	N/A	102136	2.3	N/A	N/A	N/A	3,702

Post-Development Conditions

Cover Type	Soil Type	Area (sf)	Area (ac)	CN ²	S	Q Runoff ¹ (in)	Runoff Volume ² (ft ³)
Impervious	N/A	81036	1.86	98	0.2	2.03228931	13724.04971
Open Space	A	21101	0.48	39	15.6	0.0510248	89.7228507
		0				0.0	0
		0				0.0	0
TOTAL:	N/A		2.3	N/A	N/A	N/A	13,814

Runoff Volume Increase (ft³): 10,112

Runoff Volume Increase = (Post-Dev. Runoff Volume) MINUS (Pre-Dev. Runoff Volume)

1. Runoff (in) = $Q = (P - I_a)^2 / (P - I_a) + S$ Where: P = 2-Year, 24-Hour Rainfall (in)
Ia = 0.25 therefore: S = 1000 / CN - 10
CN = Curve Number
Q = Runoff (in)
2. Runoff Volume (ft³) = $Q \times I_a \times A$ Area = Area of specific land cover (ft²)

* Runoff Volume must be calculated separately for pervious and impervious areas (without using a weighted CN)

STORMWATER MANAGEMENT CALCULATIONS

(Based on Genesee County Design Standards Requirements - 2018)

Project: 5010 W Vienna Road

Location: Vienna Township, Genesee County, MI

Designer: EM

Date: 11/18/2025

REQUIREMENT A: WATER QUALITY IMPACTS

Site Area, A: 2.34 AC

Runoff Coefficient, C: 0.820

Allowable discharge rate = 0.2 cfs / ac

Allowable Discharge Rate, Q_a: 0.47 cfs

90-percent non-exceedance storm, P: 0.90 in

Site Percent Impervious, I: 80.41 %

Time of Concentration, T_C¹: 20 min

R_v = 0.05 + 0.009(I)

WQV = P * R_v

WQV = P * R_v * (I/112) * A * 43,560

I₁ = 30.2033 * P^{0.2203} / (T_C + 9.1747)^{0.8869}

Q_{WQ} = C * I₁ * A * WQ

***Minimum time of concentration for urbanized areas

REQUIREMENT B: CHANNEL PROTECTION VOLUME SUMMARY

*Refer to Stormwater Runoff Control Spreadsheet

Runoff Volume Increase (ft³): 10,112

REQUIREMENT C: FLOOD CONTROL REQUIREMENTS (100-YEAR)

Rainfall Intensity, I_h^{***}: 1.40 in/hour

Time of Concentration, T_C^{***}: 160 min

V_{req} = ((C * I_h * A) - Q_a) * T_C * 60

Detention Volume Required, V_{req}: 21,296 CF

***Refer to Rainfall Intensity - Duration - Frequency Curves on pg. 12 of 'Genesee County Storm Water and Flood Control Design Standard Requirements'

***Refer to pg. 17 of 'Genesee County Storm Water and Flood Control Design Standard Requirements' T_C = 160 minutes for maximum volume (as found with the rational method may not be 160 minutes)

WATER QUALITY FOREBAY (FB-1, 60% OF WQV)

Incremental Volumes (CF)		
Elevation	Area	Total Volume (CF)
688.00	1,723	0
689.00	2,548	2,136
690.00	3,494	5,157
691.00	-	FREEBOARD

Top of Berm: 690.00 FT

Proposed Forebay Volume: 5,157 CF

*Excluding berm

10-Yr Vol: 10,044 CF

10-Yr Elev: 690.00 FT

60% Req. WQV: 3,549 CF

20% Sediment Storage: 710 CF

Total Req WQV: 4,259 CF

20% Sediment Elev: 688.33 FT

WQV Elevation: 689.70 FT

WATER QUALITY FOREBAY (FB-2, 40% OF WQV)

Incremental Volumes (CF)		
Elevation	Area	Total Volume (CF)
688.00	1,296	0
689.00	1,923	1,610
690.00	2,665	3,904
691.00	-	FREEBOARD

Top of Berm: 690.00 FT

Proposed Forebay Volume: 3,904 CF

*Excluding berm

10-Yr Vol: 6,696 CF

10-Yr Elev: 690.00 FT

40% Req. WQV: 2,366 CF

20% Sediment Storage: 473 CF

Total Req WQV: 2,839 CF

20% Sediment Elev: 688.29 FT

WQV Elevation: 689.54 FT

ABOVEGROUND BASIN (B-1)

Incremental Volumes (CF)		
Elevation	Area	Total Volume (CF)
688.00	4,857	0
689.00	6,102	5,480
690.00	7,483	12,272
691.00	-	FREEBOARD

*Volumes above do NOT include Forebays. Forebays modeled separately.

TOTAL VOLUME PROVIDED

Volume, FB-1: 5,157 FT

Volume, FB-2: 3,904 FT

Volume, B-1: 12,272 FT

B-1 + FB-1 + FB-2 = 21,332 CF

TOTAL VOLUME PROVIDED > V_{req}

Incremental Volumes (CF)		
Elevation	Area	Total Volume (CF)
688.00	7,876	0
689.00	10,573	9,225
690.00	13,642	21,332
691.00	-	FREEBOARD

Water Quality Volume Elevation, Z_{WQ}: 688.77 FT

10-Yr Volume Elevation, Z₁₀: 689.62 FT

CP Volume Elevation, Z_{CP}: 689.07 FT

FC Volume Elevation, Z_{100-REQ}: 690.00 FT

Design Top Elevation, Z₁₀₀: 690.00 FT

Basin height, H₁₀₀: 2.00 FT

WATER QUALITY DEWATERING

Outlet Diameter, d:	1.50 IN
*Orifice size required to hold CP volume for 48 hours	
Number of Holes, n:	1 Holes
Orifice Area, A:	0.0123 SF
Gravity, g:	32.2 FT/s ²
WQ Discharge Rate, Q _{CP} :	0.0358 CFS
Dewater Time, T _{CP} :	45.88 HRS

Q_{CPRC} = 0.62 x A x (2 x g x 0.67 x H_{CPRC})^{0.5}

H_{CPRC} = 2/3 * H_{ED}

H_{ED} = High Water Level - Orifice Elevation

H_{ED} = 688.77 - 688 = 0.77 feet

CHANNEL PROTECTION DEWATERING

Outlet Diameter, d:	1.50 IN
*Orifice size required to hold volume for 48 hours	
Number of Holes, n:	1 Holes
Orifice Area, A:	0.012272 SF
Gravity, g:	32.2 FT/s ²
CPRC Discharge Rate, Q _{CP} :	0.0423 CFS
Dewater Time, T _{CP} :	66.44 HRS

Q_{CPRC} = 0.62 x A x (2 x g x 0.67 x H_{CPRC})^{0.5}

H_{CPRC} = 2/3 * H_{ED}

H_{ED} = High Water Level - Orifice Elevation

H_{ED} = 689.07 - 688 = 1.07 feet

*Channel Protection Volume must be held on site for a minimum of 48 hours and discharge at a rate lower than the existing 2-year discharge from the site

Q_{CPRC} (2-Year) = Q_{CA} = (0.28)(2.95 in/hr)(2.34 AC) = 1.93 cfs

FLOOD CONTROL DEWATERING

Outlet Diameter, d:	4.50 IN
Number of Holes, n:	1 Holes
Orifice Area, A:	0.1104 SF
Gravity, g:	32.2 FT/s ²
FC Discharge Rate, Q _{CP} :	0.3542 CFS
Dewater Time, T _{CP} :	16.70 HRS

Q_{CPRC} = 0.62 x A x (2 x g x 0.67 x H_{CPRC})^{0.5}

H_{CPRC} = 2/3 * H_{ED}

H_{ED} = High Water Level - FC Orifice Elevation

H_{ED} = 690.00 - 689.07 = 0.93 feet

*Flood Control Volume must be released within 24 hours, neglecting the Channel Protection Orifice

10-YEAR STORM DEWATERING

Outlet Diameter, d:	1.50 IN
*Orifice size required to hold CP volume for 48 hours	
Number of Holes, n:	1 Holes
Orifice Area, A:	0.012272 SF
Gravity, g:	32.2 FT/s ²
CPRC Discharge Rate, Q _{CP} :	0.051939 CFS
Dewater Time, T _{CP} :	53.72 HRS

Q_{CPRC} = 0.62 x A x (2 x g x 0.67 x H_{CPRC})^{0.5}

H_{CPRC} = 2/3 * H_{ED}

H_{ED} = High Water Level - Orifice Elevation

H_{ED} = 689.62 - 688.00 = 1.62 feet

GENESEE COUNTY STORMWATER CALCULATIONS

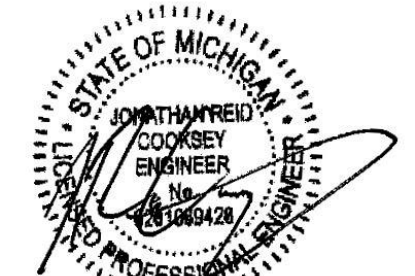
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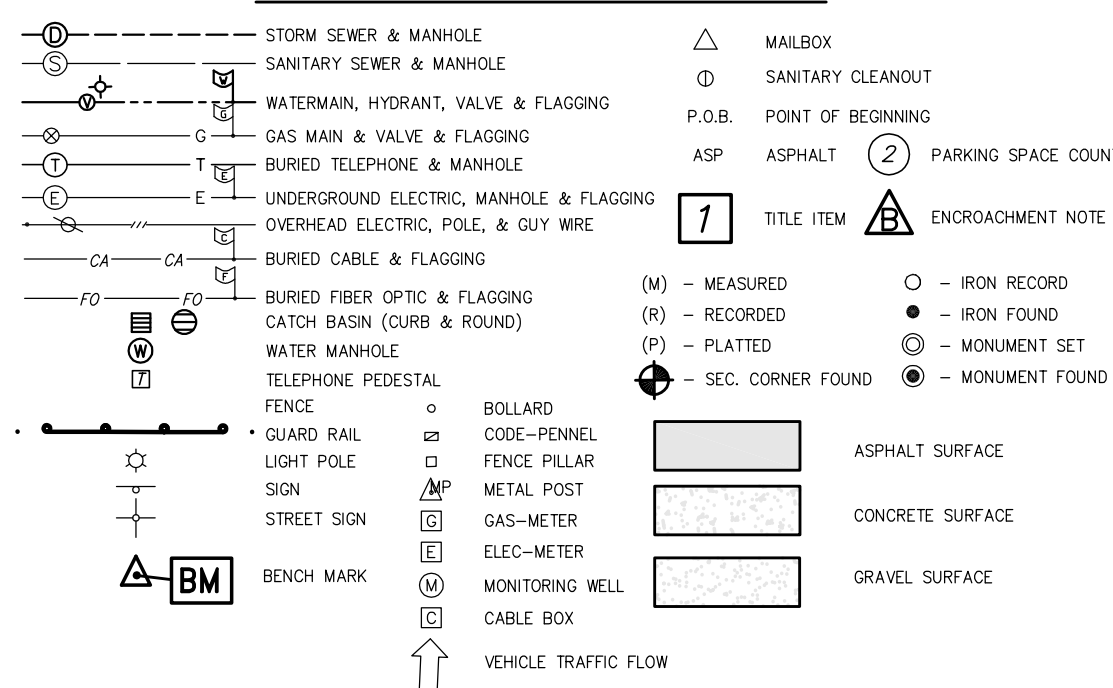
SCALE: AS SHOWN PROJECT ID: DET-250192

TITLE: CONSTRUCTION DETAILS

DRAWING:

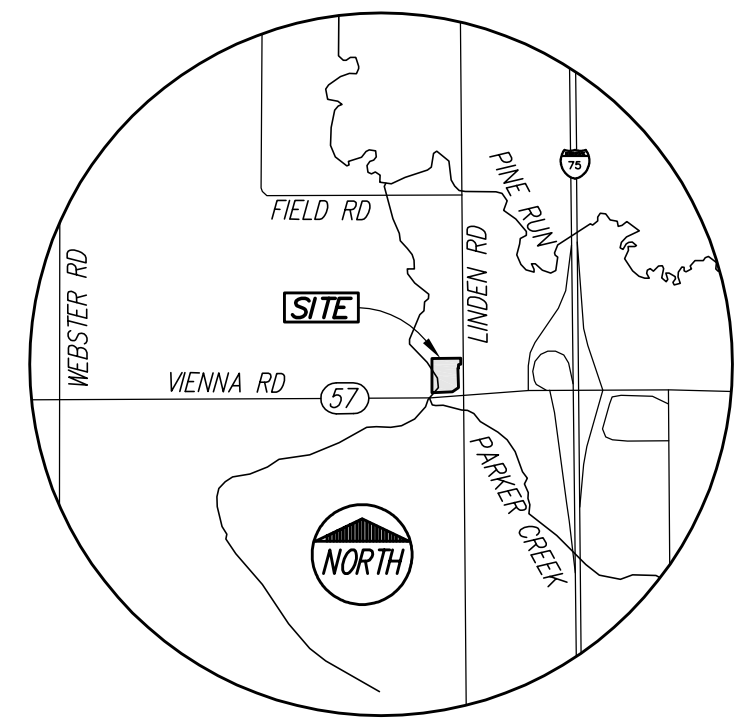
C-13

LEGEND



TOPOGRAPHIC SURVEY

M-57 AND LINDEN RD - CLIO
PART OF THE SE 1/4 OF SECTION 17, T9N-R6E
VIENNA TOWNSHIP, GENESEE COUNTY, MICHIGAN
Site Address: 5010 W VIENNA ROAD



LOCATION MAP:
N.T.S.

LEGAL DESCRIPTION PER TAX ID:

TAX ID NO. 18-17-400-038:

A parcel of land BEGINNING N00°53'06"W, 180 feet from Southeast corner of Section; thence S55°31'36"W, 324.11 feet; thence WEST 221.7 feet; thence N00°51'10"E, 381.03 feet; thence EAST 483.44 feet; thence S00°23'30"E to POINT OF BEGINNING, EXCLUDING all that part lying Easterly & Southerly of a line described as BEGINNING N00°48'34"W, 492.126 feet from Southeast corner of Section; thence S89°11'26"W, 49.21 feet & S00°48'34"E, 322.647 feet & S53°31'32"W, 121.03 feet & on curve to right chord is S87°47'18"W, 613.59 feet & S89°19'54"W, 100 feet to POINT OF ENDING, Section 17, T9N-R6E (99) fr 18-17-400-021.

TAX ID NO. 18-17-400-035:

A parcel of land BEGINNING N00°23'20"W, 381 feet from Southeast corner of Section; thence WEST, 483.44 feet; thence N00°51'10"E, 278.97 feet; thence EAST, 477.55 feet; thence S00°23'20"E, 280.44 feet to POINT OF BEGINNING, EXCLUDING all that part lying Easterly of mdot right-of-way line described as BEGINNING N00°48'34"W, 553.64 feet from Southeast corner of Section; thence S89°11'26"W, 41.01 feet; thence S00°48'34"E, 196.85 feet to POINT OF ENDING, Section 17, T9N-R6E (98/23) fr 18-17-400-022

FLOOD NOTE:

The subject property lies within Flood zone "X" as plotted on the Flood Insurance Rate Map, Community Panel No. 26049C0042D, which bears an effective date of September 25, 2009. Flood Zone "X" is designated as an area of minimal flood hazard.

ZONING:

PARCEL IS ZONED RSA "ONE FAMILY RESIDENTIAL DISTRICT"

Minimum Lot area - 12,000 sq. ft.
Minimum Lot Width - 90 ft.
Maximum density (units/acre)- 1.7
Maximum Height of Building - 45 ft.
Minimum Front Yard - 35 ft.
Minimum Side Yard - 12 ft. (25 ft. total)
Minimum Rear Yard - 35 ft.
Minimum Ground Floor Area Per Unit - 1,040 sq. ft.
Maximum % Lot Area Covered by Buildings - 35%

Zoning information obtained from Article 18, Section 1800, of Code of Ordinances Charter Township of Vienna, Michigan, adopted May 5, 2008, Effective June 3, 2008. See document for interpretation.

BENCHMARK:

Set "X" in East side top of Concrete base of light pole.

ELEV. = 696.99' (NAVD88)

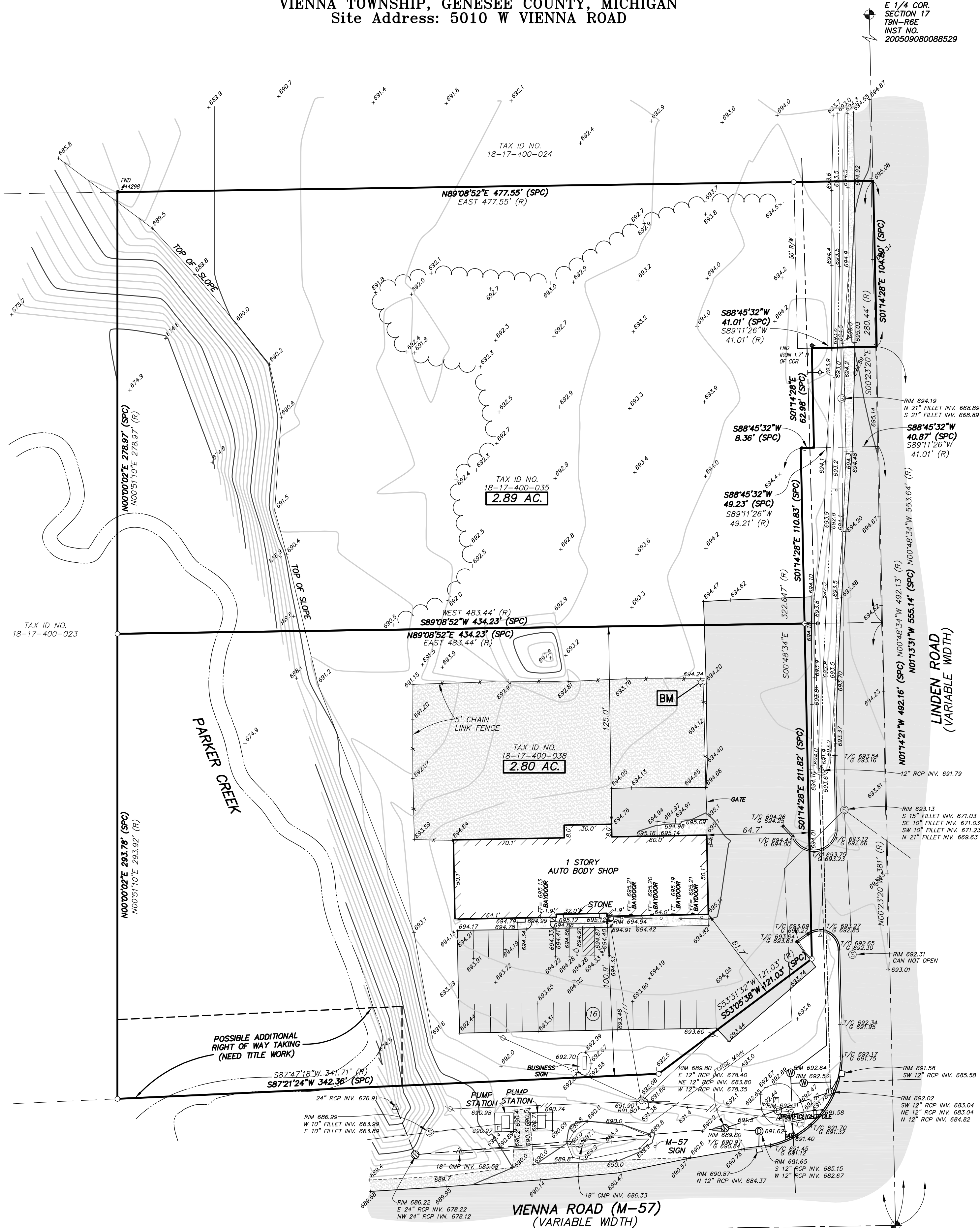
GENERAL NOTES:

1. Basis of Bearing is State Plane Coordinates, Michigan South Zone 2113, Horizontal Datum NAD83. Vertical Datum NAVD88
2. Surveyor does not guarantee that all utilities are shown or their locations. It is the responsibility of the contractor and developer to contact Miss Dig and any other involved agencies to locate all utilities prior to construction. Removal, relocation and/or replacement is the responsibility of the contractor.
3. No title work has been supplied by the client for purposes of this survey. therefore no guarantee is made that any or all easements both recorded and unrecorded are shown on this survey.



Know what's below.
Call before you dig.

Surveyor does not guarantee that all utilities are shown or their locations. It is the responsibility of the contractor and developer to contact Miss Dig and any other involved agencies to locate all utilities prior to construction. Removal, relocation and/or replacement is the responsibility of the contractor.



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TOPOGRAPHIC SURVEY
M-57 AND LINDEN RD - CLIO
PART OF THE SE 1/4 OF SECTION 17, T9N-R6E
VIENNA TOWNSHIP, GENESEE COUNTY, MICHIGAN
SITE ADDRESS: 5010 W VIENNA ROAD

DATE: 5-13-2025 DRAWN BY: MA JOB NO: 2025054
SCALE: 1" = 40' CHECKED BY: GMM SHEET: 1 OF 1



SCALE: 1" = 40'



GREG M. MARICLE
PROFESSIONAL SURVEYOR NO. 46678