DEEN'S YARD OF ANN ARBOR
PRELIMINARY SITE PLAN
A MULTI-FAMILY HOME DEVELOPMENT

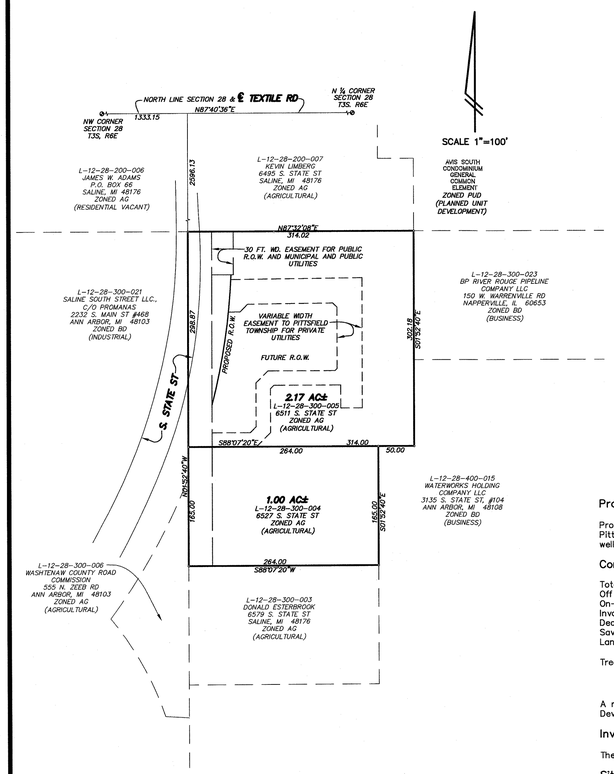
6511 & 6527 STATE ST.

TAX ID. L-12-28-300-005 AND
TAX ID. L-12-28-300-004

A PART OF THE SOUTHWEST 1/4 OF
SECTION 28, T3S, R6E, PITTSFIELD TOWNSHIP,
WASHTENAW COUNTY, MICHIGAN

FOR:

RONNY FURRHA
3760 BARRY KNOLL DR
ANN ARBOR, MI 48108
PH: (734) 260-7260



Project Description:

Project consists of (18) multi-family units, situated on 3.17 acres of land (7,671.4 sf/du) within Pittsfield Township. The project will be preserving and enhancing the existing wetlands on site, as well as creating a natural rain garden.

Condition of Existing Vegetation:

Total Surveyed Trees	217
Off Site Trees on Survey	14
On-site trees	203 = 100%
Invasive Trees	14 = 7%
Dead Trees	17 = 8%
Saved Trees	94 = 46%
Land Mark Trees	42 = 21%

Trees to be mitigated regulated = 11 trees (109") Landmark = 4 trees (104")
11 trees @ 109"x 100% = 109", 5 LM trees @ 122" or 150% = 183"
109" + 183" = 292" @ 2.5" = 117 mitigation trees

A request for waiver to the required tree mitigation for the proposed Deen's Yard of Ann Arbor Site Development.

Invasive Understory:

There are (15) invasive species trees on-site and numerous invasive species shrubs in the understory.

Site Development Issues:

Imperious Surfaces – although minimal paved parking and efficient vehicle circulation patterns these areas occupy approximately 47,916 SF

Storm-water Management – the site does not support storm-water infiltration, therefore, 25,230 cft of underground detention is planned for the site. Additional storm-water treatment is accomplished through a Rain-Garden approximately 4,271 SF.

Regulated Wetlands, neither the Army Corp of Engineers or EGLE consider roadside ditch sections regulated wetlands. Pittsfield Twp. Wetland Consultant (ECT) included these areas in their approved wetland map of natural features on the Deen's Yard of Ann Arbor Site.

Total Site = 3.17 acres
Impervious Surfaces = 1.1 acres
Detention (underground) = 0.2 acres
Natural Vegetation Areas = 1.9 acres
Tree Mitigation, setbacks & other required landscape
Note: 1 Tree approximately requires a minimum of 400 SF

Deen's Yard of Ann Arbor Project requests a waiver to the required tree mitigation for the following reasons:

a.) Site Development requirements conflict with the ability to place all required mitigation trees on site.
b.) The Petitioner is not allowed to utilize the 21,812 SF Wetland Area for tree plantings.
c.) Petitioner seeks a modification from the Planning Commission to allow the remaining 60 trees to be paid in equilibrate funds to the Township Tree Fund.

CONSTRUCTION NOTES:

1.) IT IS ESSENTIAL THAT THE CONTRACTOR FAMILIARIZE HIMSELF WITH THE SITE PRIOR TO SUBMITTING PROPOSAL.

2.) THE AREA WITHIN THE CONSTRUCTION LIMITS SHALL BE STRIPPED OF ORGANIC SOILS PRIOR TO COMMENCING GENERAL EXCAVATION. THIS MATERIAL SHALL BE STOCKPILED ON THE PROPERTY OR AS DIRECTED BY THE ENGINEER OR THE OWNER.

3.) ALL DISTURBED AREAS, DITCH BOTTOMS AND SLOPES UNLESS NOTED OTHERWISE, SHALL BE SEEDED AND MULCHED PER M.D.O.T. SPECIFICATION 6.53 INCLUDING PLACEMENT OF 4 INCH TOPSOIL BED. DITCH BOTTOMS SHALL BE SEEDED WITH A MULCH BLANKET WHERE DITCH GRADE EXCEEDS 3.00%.

4.) THE CONTRACTOR MUST CONTACT MISS DIG PRIOR TO BEGINNING CONSTRUCTION.

5.) CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TEMPORARY EROSION CONTROL MEASURES PER THIS APPROVED PLAN.

6.) CONTRACTOR MUST OBTAIN AN EROSION CONTROL PERMIT FROM PITTSFIELD TWP. PRIOR TO BEGINNING EARTH MOVING. CONTRACTOR WILL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS PRIOR TO BEGINNING CONSTRUCTION.

7) ANY CONDITIONS EXISTING ON THE SITE THAT ARE NOT CONSISTENT WITH THE PLANS OR SOIL EROSION SEDIMENTATION PERMIT WILL RESULT IN A STOP WORK ORDER AND REVOCATION OF THE SOIL EROSION SEDIMENTATION CONTROL PERMIT.

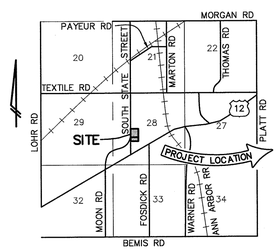
8) CONTRACTOR WILL BE RESPONSIBLE FOR REPLACEMENT OF ANY AND ALL SOIL EROSION MEASURES DAMAGED AS A RESULT OF THEIR WORK. REPLACEMENT SHALL BE INCIDENTAL TO THE COST OF WORK PROVIDED.

PROPERTY OWNER:
ASAD DALIA & RONNY FURRHA
3760 BARRY KNOLL DRIVE
ANN ARBOR, MI 48108
PH: (734) 260-7620

APPLICANT:
RONNY FURRHA
3760 BARRY KNOLL DRIVE
ANN ARBOR, MI 48108
PH: (734) 260-7620

DESCRIPTION

Commencing at the Northwest corner of Section 28, T3S, R6E, Pittsfield Township, Washtenaw County, Michigan; thence N87°40'36"E 1332.94 (1333.15 recorded) feet along the North line of said Section and the centerline of Textile Road; thence S01°52'40"E 2696.13 (2596.13 recorded) feet along the centerline of South State Street to the POINT OF BEGINNING; thence N87°33'20"E 314.02 feet; thence S01°52'40"E 301.98 feet; thence S88°07'20"W 50.00 feet; thence S01°52'40"E 165.00 feet; thence S88°07'20"W 264.00 feet; thence N01°52'40"W 463.87 feet along the centerline of South State Street to the Point of Beginning. Being a part of the West 1/2 of Section 28, T3S, R6E, Pittsfield Township, Washtenaw County, Michigan and containing 3.17 acres of land, more or less. Being subject to the rights of the pubic over South State Street as occupied. Also being subject to easements and restrictions of record, if any.



VICINITY MAP
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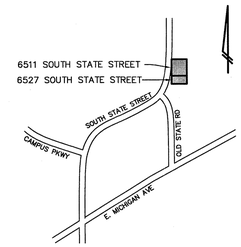

CSPA 19-12
Dean Yard - Ann Arbor
aka Deen Yard - Ann Arbor
Preliminary Site Plan
Rec'd: 2019-09-19

WASHTENAW ENGINEERING
CIVIL ENGINEERS * PLANNERS
SURVEYORS * LANDSCAPE ARCHITECTS
P.O. BOX 1128
3526 WEST LIBERTY RD, SUITE 400, ANN ARBOR, MICHIGAN 48106
TEL. 734-761-8800 FAX. 734-761-9530
E-MAIL: weco@wengco.com
washtenawengineering.com

SITE DATA

CATEGORY	EXISTING	PROPOSED	REQUIRED
ZONING[1]	CONDITIONAL R2[1]	R2	R2
PARCEL SIZE[2]	3.17 AC±	3.17 AC±	1.00 AC±[2]
PARCEL SIZE[2]	138,035 SQ. FT.	138,035 SQ. FT.	43,560 SQ. FT[2]
PARCEL AREA – WCRC R.O.W.	15,308 SQ. FT.	15,308 SQ. FT.	NONE
PARCEL AREA – EASEMENT	1,800 SQ. FT.	1,800 SQ. FT.	NONE
PARCEL AREA – WETLAND	22,298 SQ. FT.	22,298 SQ. FT.	NONE
PARCEL SIZE – NET	98,679 SQ. FT.	98,679 SQ. FT.	NONE
PARCEL SIZE – NET	2.27 AC±	2.27 AC±	NONE
LOT WIDTH	463.87'	463.87'	125' MIN.
LOT COVERAGE	1.5%	17.3%	50% MAX.
DWELLING UNITS	1	18/7,671.4 SQ. FT/DU	MAX 7,300 SQ. FT/DU
DWELLING UNITS	1	18@3BRM	18MAX
DWELLING UNITS 3 BDRM	0	2300SF EACH	NONE
IMPERVIOUS SURFACE RATIO	4,340SF(0.30%)	44,755SF(32.4%)	60% MAX.
GROUND FLOOR AREA	2,100 SF	23,931 SF	NONE
TOTAL FLOOR AREA	3,900 SF	41,400 SF	NONE
FLOOR AREA RATIO	2.82%	30.0%	NONE
BUILDING HEIGHT	22'	27'	35' MAX.
BUILDING HEIGHT (STORIES)	2	2	3 MAX.
BUILDING SETBACKS			
FRONT (SOUTH STATE STREET)	172'	44.9'	10'
REAR (EAST)	69'	15'	15'
SIDE (NORTH)	58'	10'	10'
SIDE (SOUTH)	191'	10.9'	10'
MINIMUM DISTANCE BETWEEN BUILDINGS (BUILDINGS 35 FEET IN HEIGHT OR UNDER)			
INTERNAL DRIVE	N/A	N/A	10'
BUILDING SIDE TO BUILDING SIDE	N/A	20'	20'
BUILDING SIDE TO BUILDING FRONT OR BUILDING REAR	N/A	40'	30'
BUILDING FRONT TO BUILDING FRONT OR BUILDING REAR	N/A	40'	40'
BUILDING REAR TO BUILDING REAR	N/A	N/A	40'

NOTES:
1. CONDITIONAL ZONING WAS GRANTED BY PLANNING COMMISSION ON 3-27-2019.
2. MINIMUM TOTAL LOT AREA OF 1 ACRE FOR RESIDENTIAL USE WITH A MINIMUM LOT AREA OF 7,300 SQ. FT. PER DWELLING UNIT, AND A MINIMUM LOT AREA OF 3 ACRES FOR NON-RESIDENTIAL USES.
3. ALL BUILDINGS TO HAVE 3 BEDROOM UNITS.
4. ALL WORK TO BE DONE IN ONE PHASE.

PARKING	EXISTING	ADDITIONAL	REQUIRED	TOTAL PARKING PROVIDED
MULTIPLE-FAMILY RESIDENTIAL – 18 UNITS	0	36+6[2]	36[1]	42
BARRIER FREE PARKING	0	2	2	2
TOTAL PARKING	0	42	36	42
BICYCLE PARKING	0	2	2	2

NOTES:
1. 2 SPACES PER EACH DWELLING UNIT WITH ONE OR MORE BEDROOMS.
2. 3 BEDROOM UNITS INCLUDED AS 2 PER UNIT WITH 6 EXTRA VISITOR SPACES.

ZONING REQUIREMENTS:
1. PARKING SPACES SHALL BE A MINIMUM OF 9.5' IN WIDTH AND 20' IN LENGTH.
2. THE MANUVERING AISLE SHALL BE A MINIMUM OF 22' IN WIDTH.
3. WHERE A PARKING SPACE ABUTS A SIDEWALK, THE MINIMUM WIDTH SHALL BE SEVEN (7) FEET. THE PARKING SPACE MAY BE DECREASED BY TWO (2) FEET IN LENGTH IF CURBING IS PROVIDED.
4. ALL RESIDENTIAL BUILDINGS OF MORE THAN TWO(2) DWELLING UNITS SHALL PROVIDE TRASH ENCLOSURES.
5. A RETAINING WALL SHALL BE REGULATED AS A FENCE IF THE WALL PROJECTS MORE THAN EIGHTEEN (18) INCHES ABOVE THE GRADE OF THE GROUND BEING RETAINED.
6. PROJECT WILL REQUEST 6 ADDITIONAL PARKING SPACES.
7. NO LOADING SPACES ARE PROPOSED FOR RESIDENTIAL PROJECT.
8. ALL WALKWAYS MUST BE ADA COMPLIANT.

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FIRST FLOOR PLANS TYPICAL FOR UNITS 16 THRU 18	23	A-07
SECOND FLOOR PLANS FOR UNITS 16 THRU 18	24	A-08
BUILDING ELEVATIONS FOR UNITS 16 THRU 18	25	A-09

PREPARED BY _____
JOSEPH K. MAYNARD P.E., MICH No. 52559

STATE OF MICHIGAN
JOSEPH K. MAYNARD
ENGINEER
No. 52559
LICENSED PROFESSIONAL ENGINEER

REVISED: 09-19-19
REVISED: 09-13-19
REVISED: 08-29-19
ORIGINAL: 06-11-19

DEEN'S YARD OF ANN ARBOR C.S.P.A.#19-12

DEEN'S YARD OF ANN ARBOR

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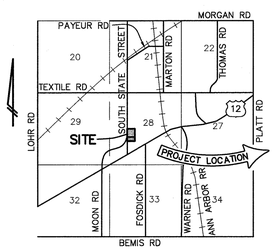

VICINITY MAP
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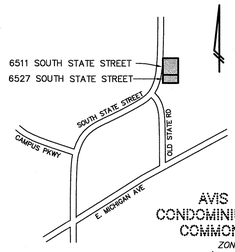

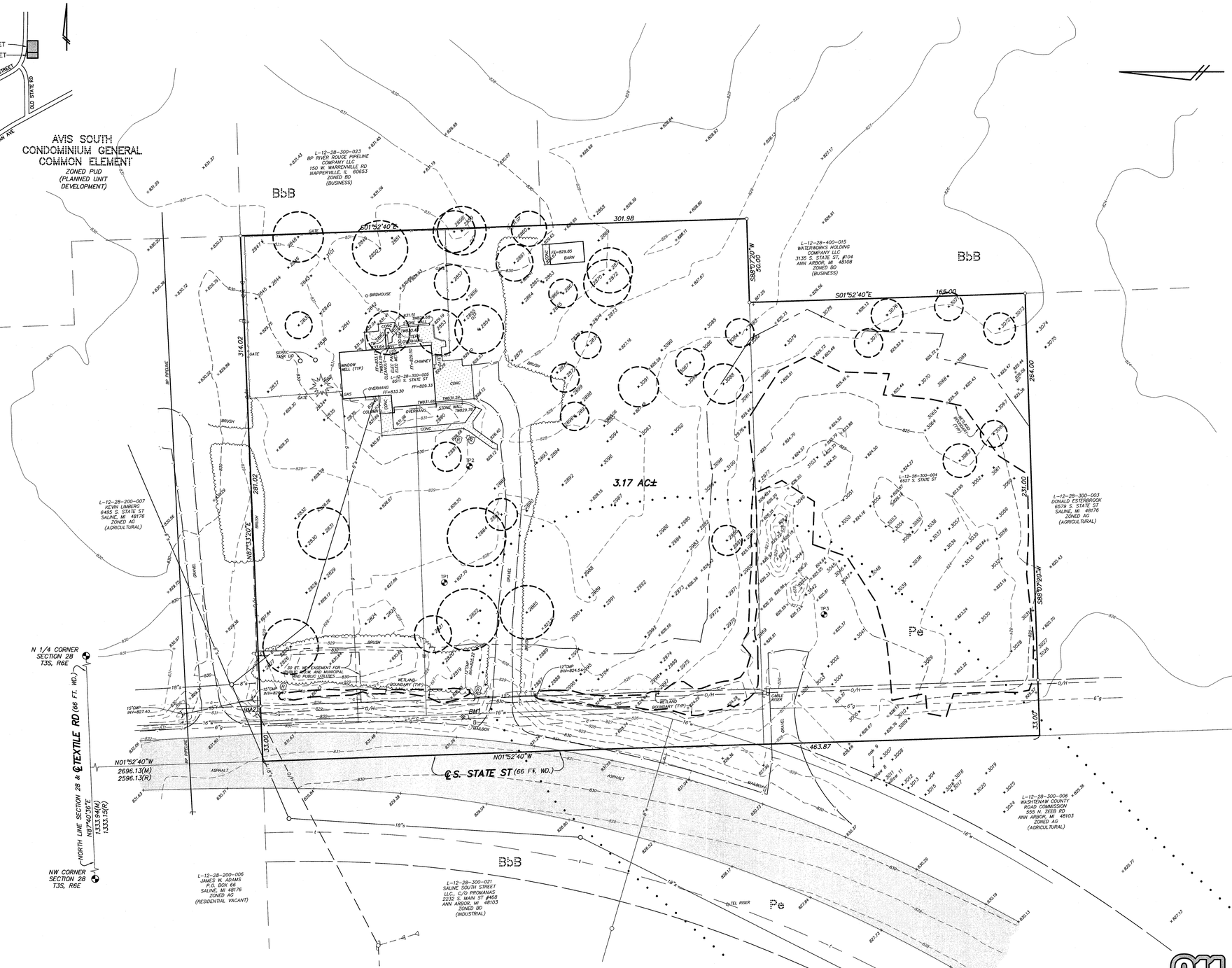

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORDS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH IT IS BELIEVED THAT THEY ARE IN APPROXIMATE LOCATION UNLESS OTHERWISE INDICATED. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

Test Pit 1
Performed on 4-22-19

0'	0–2.0'	SANDY CLAY TOPSOIL, FREQUENT ROOTS, DARK BROWN, MOIST.
5'	2.0'–8.0'	SANDY CLAY, TRACE GRAVEL, OCCASIONAL HAIR ROOTS, MOTTLED BROWN, YELLOWSH BROWN AND GRAY, MOIST TO WET
10'		WATER WAS OBSERVED TO INFILTRATE INTO THE OPEN EXCAVATION. BEFORE BACKFILLING, THE PERCHED WATER OR GROUND WATER WAS AT A DEPTH OF APPROXIMATELY 4 FEET BELOW THE EXISTING GROUND SURFACE.

Test Pit 2
Performed on 4-22-19

0'	0–2.0'	SANDY CLAY TOPSOIL, FREQUENT ROOTS, DARK BROWN, MOIST.
5'	2.0'–8.0'	SANDY CLAY, TRACE GRAVEL, OCCASIONAL HAIR ROOTS, MOTTLED BROWN, YELLOWSH BROWN AND GRAY, MOIST TO WET
10'		WATER WAS OBSERVED TO INFILTRATE INTO THE OPEN EXCAVATION. BEFORE BACKFILLING, THE PERCHED WATER OR GROUND WATER WAS AT A DEPTH OF APPROXIMATELY 4 FEET BELOW THE EXISTING GROUND SURFACE.

Test Pit 3
Performed on 4-22-19

0'	0–1.0'	SANDY CLAY TOPSOIL, FREQUENT ROOTS AND HAIR ROOTS, DARK BROWN, MOIST.
	1.0'–3.0'	FILL–SANDY CLAY, TRACE GRAVEL, BROWN, MOIST
5'	3.0'–5.0'	SANDY CLAY, TRACE GRAVEL, DARK BROWN TO BLACK, MOIST TO WET
	5.0'–8.0'	SANDY CLAY, TRACE GRAVEL, MOTTLED BROWN, YELLOWSH BROWN AND GRAY, WET
10'		WATER WAS OBSERVED TO INFILTRATE INTO THE OPEN EXCAVATION. BEFORE BACKFILLING, THE PERCHED WATER OR GROUND WATER WAS AT A DEPTH OF APPROXIMATELY 5 FEET BELOW THE EXISTING GROUND SURFACE.

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EXISTING LEGEND

- = WETLAND BOUNDARY WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC. DATED: JUNE 2018
- = WETLAND BUFFER

EWASHTENAW.ORG CONTOURS
- = EXISTING 5 FT. CONTOUR
- = EXISTING 1 FT. CONTOUR

FIELDWORK GENERATED CONTOURS
- = EXISTING 5 FT. CONTOUR
- = EXISTING 1 FT. CONTOUR
- = LIGHT POLE
- = UTILITY POLE
- = GUY ANCHOR
- = HYDRANT
- = GATE VALVE
- = SPOT ELEV.
- = POST
- = SIGN
- = TREE
- = CRITICAL ROOT ZONE
- = MANHOLE
- = CATCHBASIN
- = END SECTION
- = GRAVEL
- = FENCE
- = CONCRETE
- = ASPHALT
- = EXISTING STORM
- = EXISTING SANDITARY
- = EXISTING WATER
- = EXISTING GAS
- = EXISTING ELECTRIC
- = EXISTING TELEPHONE

THE OWNER SHALL NOT USE OR AUTHORIZE ANY OTHER PERSON TO USE THE DRAWINGS, SPECIFICATIONS, ELECTRONIC DATA AND OTHER INSTRUMENTS OF SERVICE PREPARED BY WASHTENAW ENGINEERING COMPANY (WECO) EXCEPT AS AGREED IN WRITING BY WECO AND OTHERS SO LONG AS WASHTENAW ENGINEERING COMPANY (WECO) IS NOT ADJUDGED TO BE IN DEFAULT UNDER THIS AGREEMENT. PROVIDED THAT WECO PROVIDES NOTICE OF ANY DEFAULT TO THE OWNER AND ALLOWS THE OWNER A REASONABLE TIME TO REMEDY THE DEFAULT, THE OWNER SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS WECO, ITS OFFICERS AND EMPLOYEES FROM AND AGAINST CLAIMS, DAMAGES, LOSSES AND EXPENSES, INCLUDING BUT NOT LIMITED TO ATTORNEY'S FEES, ARISING OUT OF UNAUTHORIZED REUSE OF DRAWINGS, SPECIFICATIONS, ELECTRONIC DATA OR OTHER INSTRUMENTS OF SERVICE.

WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION

BbB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES

Pe – PEWAMO CLAY LOAM

• • • • • • • – SOILS BOUNDARY

SOILS ARE BASED ON USDA SOIL SURVEY OF WASHTENAW COUNTY.

DESCRIPTION

Commencing at the Northwest corner of Section 28, T3S, R6E, Pittsfield Township, Washtenaw County, Michigan; thence N87°40'36"E 1332.94 (1333.15 recorded) feet along the North line of said Section and the centerline of Textile Road; thence S01°52'40"E 2696.13 (2596.13 recorded) feet along the centerline of South State Street to the POINT OF BEGINNING; thence N87°33'20"E 314.02 feet; thence S01°52'40"E 301.98 feet; thence S88°07'20"W 50.00 feet; thence S01°52'40"E 165.00 feet; thence S88°07'20"W 264.00 feet; thence N01°52'40"W 463.87 feet along the centerline of South State Street to the Point of Beginning. Being a part of the West 1/2 of Section 28, T3S, R6E, Pittsfield Township, Washtenaw County, Michigan and containing 3.17 acres of land, more or less. Being subject to the rights of the pubic over South State Street as occupied. Also being subject to easements and restrictions of record, if any.

SEE REMOVAL PLAN FOR TREE IDENTIFICATION TABLE.

TEST PIT LOCATIONS AND LOGS COMPLETED BY:
PROFESSIONAL SERVICE INDUSTRIES, INC.
37483 INTERCHANGE DRIVE
FARMINGTON HILLS, MI 48335

TEL: 248–957–9911
PROJECT NO. 03811123
DATED: 5–13–19

TP2 =TEST PIT LOCATION

BENCHMARK BM1=TOP OF DIRECTION ARROW ON HYDRANT, EAST OF S. STATE ST AND NORTH OF EXISTING DRIVE TO 6511 S. STATE ST, ELEV=833.06 (NAVD 88).

BM2=NAIL IN W'LY FACE OF UTILITY POLE, EAST OF S. STATE ST AND SOUTH OF EXISTING DRIVE TO 6495 S. STATE ST, ELEV=831.98 (NAVD 88).

REVISIONS 8–29–19 PER REVIEW. 9–13–19 PER REVIEW.

SCALE 0 15 30 60
SCALE: 1"=30'

PREPARED BY THOMAS L. SUTHERLAND P.S., MICH No. 24620

STATE OF MICHIGAN THOMAS L. SUTHERLAND PROFESSIONAL SURVEYOR NO. 24620 LICENSED PROFESSIONAL SURVEYOR

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

CIVIL ENGINEERS
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LANDSCAPE ARCHITECTS
3526 W. LIBERTY RD
SUITE 400
ANN ARBOR, MI 48103
TEL. 734–761–8530
FAX. 734–761–9530
WASHTENAWENGINEERING.COM

WASHTENAW ENGINEERING

CLIENT
RONNY FURRHA
3760 BARRY KNOLL DR
ANN ARBOR, MI 48108
TEL 734–260–7260

SHEET
BOUNDARY & TOPOGRAPHICAL SURVEY

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN

DATE 6–11–19
JOB NO. 32485
DWG NO. 485–topo
FIELD BOOK NONE
FILE NO. 10537

SHEET 2

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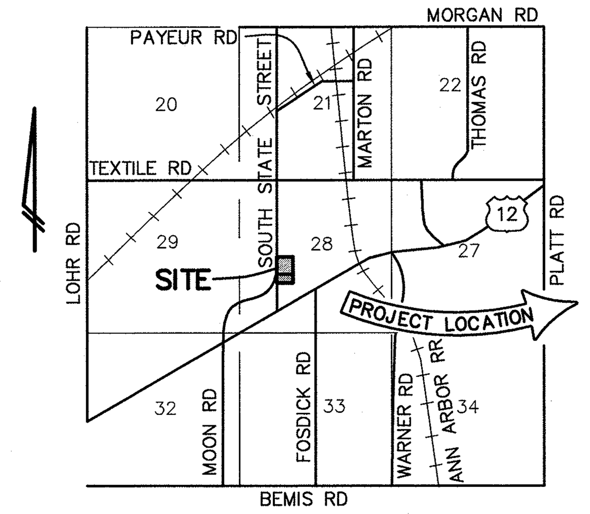

VICINITY MAP
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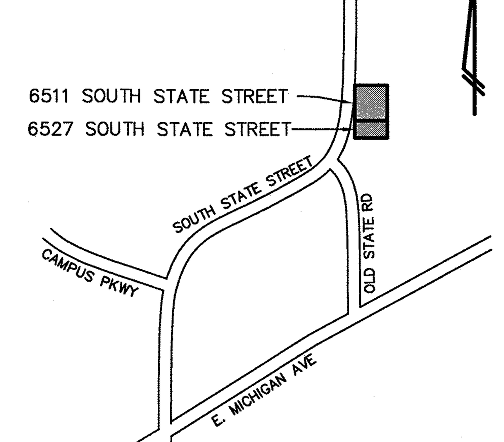

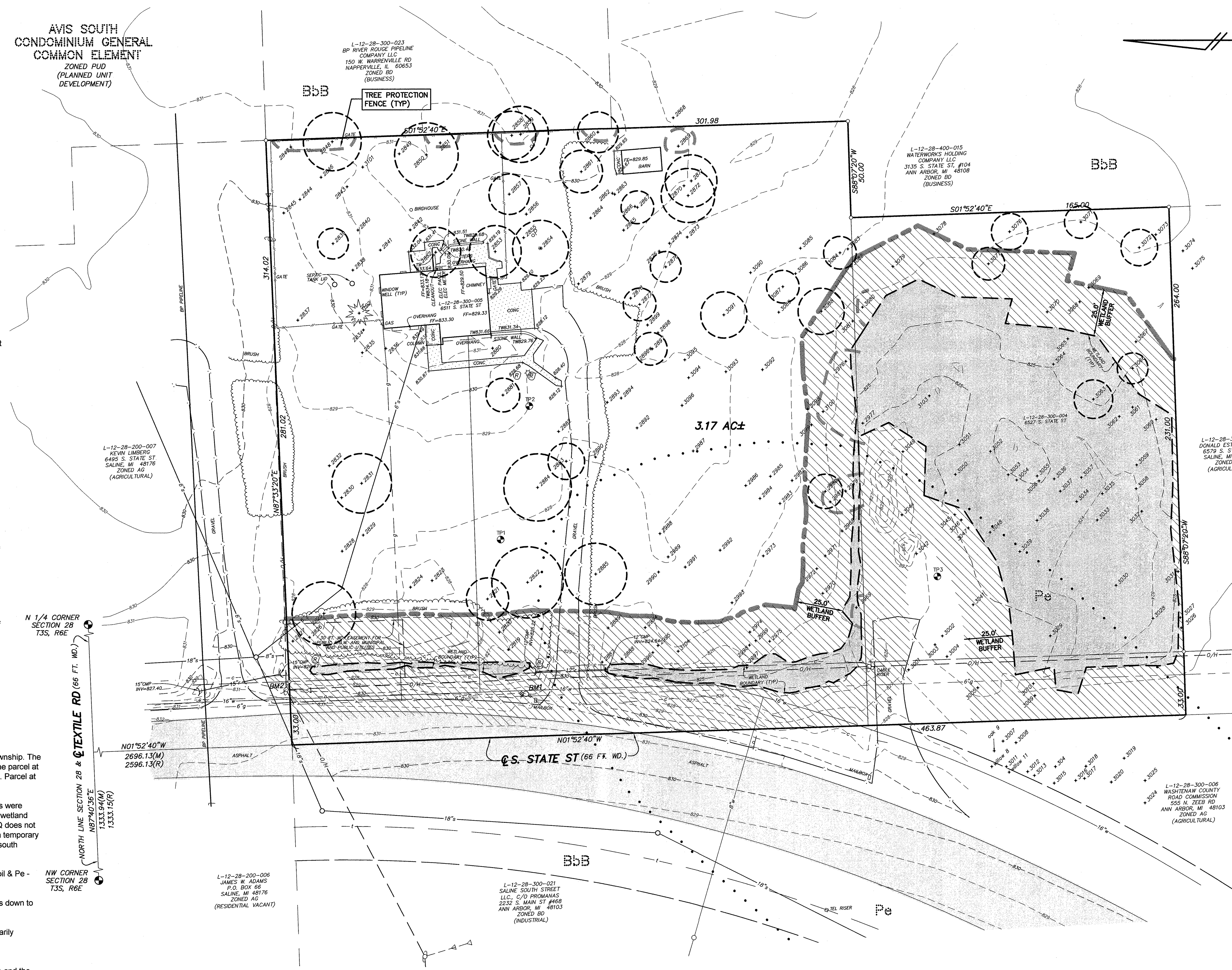

Natural Features Protection Plan

The property contains a 0.51 acre wetland environment that is self-contained and not hydraulically connected to other streams, drains, wetlands or other off-site water bodies. There will be no major interruption of this natural environment by the proposed development. A small diversion of a narrow channel and the addition of a rain-garden will be constructed. The Rain-Garden is designed to intercept and pretreat storm-water from the proposed hard surfaces of the development prior to their release into the existing on-site wetland.

Protection: Existing herbaceous plants and existing trees contained within the wetland and its influences will not be disturbed, a 25 foot wide wetland buffer will be maintained.

Rain-Garden and regraded slopes will be re-vegetated with Native species grasses, sedges and forbs.

The upland of the site contains mature species hardwood trees. Thirty-eight of the standing trees qualify as Landmark Trees. Three alternatives were considered for the protection of the existing landmark trees.

Alternative 1 - "Do Nothing"

Alternatives 2 - Reduce the number of housing units. Due to the locations of the existing trees this alternative did not significantly save trees. The reduction of units makes the project financially unfeasible.

Alternative 3 - Protect all Landmark trees outside the building envelope and wetland perimeter.

The existing mature trees are primarily located on a developed residential parcel. This property has been maintained as a domestic lawn and there are no remnants of natural understory trees, shrubs or herbaceous woodland species.

Protection: A Mature Tree Harvest will be utilized for all Land Mark trees to be removed, by reuse the wood from trees to be removed from the site the owner is implementing best land stuartship practices.

All remaining trees will be protected from construction activities utilizing protective fencing.

Natural Features Statement

Site totals 3.17-acres located on South State Street within Section 28 of Pittsfield Township. The site is comprised of two lot, 6511 South State Street and 6527 South State Street. The parcel at 6511 has mature trees and is developed as a residential home on a domesticated lot. Parcel at 6527 is an undeveloped lot occupied with mature trees and contains a wetland.

Wetlands were delineated by Pittsfield Township's consultant. Wetland environments were determined to be present on both portions of the subject property. At 6511, a narrow wetland environment was flagged within the road ditch along South State Street (Note: MDEQ does not consider roadside ditches as regulated wetlands). This body continues east around a temporary fill area then continues south and connects with a larger wetland that extends to the south boundary line Where it terminates on site..

Soils are of two types, BbB - Blount Loam, 2-6% slope a somewhat poorly drained soil & Pe - Pewamo Clay Loam a very poorly drained soil.

Gradient the site consists of high ground in the north end of the site that gently slopes down to the lower 1/3 of the site to the south.

Vegetation, large mature native species trees exist on site. Existing species are primarily Oak/Hickory with some Elm and Ash species present.

In Conclusion,
The subject property contains an abandoned home on the northern portion of the site and the property is developed as a residential landscape The structure will be raised for the proposed development. The parcel is flanked by residential homes on the north and south boundaries, active agriculture land is located along the east boundary the parcel abuts South State Street. R.O.W. Industrial zoned land is located on the west side of South State Street.

Woodland, under the Townships definition are located within the upland areas. The predominant species are Oak/Hickory. There are Heritage trees existing on site.
Features on site and within fifty (50) feet beyond.

- There are NO endangered species habitat on site.
- The site does NOT include a 100-year flood plain.
- There are NO steep Slopes on site
- There are NO existing watercourses on site.
- There are NO known endangered plant species
- There are NO known archaeological impacts on the site.

EXISTING LEGEND

= WETLAND BOUNDARY WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC. DATED: JUNE 2018
= WETLAND BUFFER
EWASHTENAW.ORG CONTOURS
830 = EXISTING 5 FT. CONTOUR
829 = EXISTING 1 FT. CONTOUR
FIELDWORK GENERATED CONTOURS
835 = EXISTING 5 FT. CONTOUR
834 = EXISTING 1 FT. CONTOUR
= LIGHT POLE
= UTILITY POLE
= GUY ANCHOR
= HYDRANT
= GATE VALVE
= POST
= SIGN
= TREE
= CRITICAL ROOT ZONE
= MANHOLE
= CATCHBASIN
= END SECTION
= GRAVEL
= FENCE
= CONCRETE
= ASPHALT
r = EXISTING STORM
s = EXISTING SANITARY
w = EXISTING WATER
g = EXISTING GAS
e = EXISTING ELECTRIC
t = EXISTING TELEPHONE
= EXISTING WETLAND BUFFER AREA
= EXISTING WETLAND AREA
= TREE PROTECTION FENCE

WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION

BbB - BLOUNT LOAM, 2 TO 6 PERCENT SLOPES
Pe - PEWAMO CLAY LOAM
• • • • • • • - SOILS BOUNDARY

SOILS ARE BASED ON USDA SOIL SURVEY OF WASHTENAW COUNTY.

DESCRIPTION

Commencing at the Northwest corner of Section 28, T3S, R6E, Pittsfield Township, Washtenaw County, Michigan; thence N87°40'36"E 1332.94 (1333.15 recorded) feet along the North line of said Section and the centerline of Textile Road; thence S01°52'40"E 2696.13 (2596.13 recorded) feet along the centerline of South State Street to the POINT OF BEGINNING; thence N87°33'20"E 314.02 feet; thence S01°52'40"E 301.98 feet; thence S88°07'20"W 50.00 feet; thence S01°52'40"E 165.00 feet; thence S88°07'20"W 264.00 feet; thence N01°52'40"W 463.87 feet along the centerline of South State Street to the Point of Beginning. Being a part of the West 1/2 of Section 28, T3S, R6E, Pittsfield Township, Washtenaw County, Michigan and containing 3.17 acres of land, more or less. Being subject to the rights of the pubic over South State Street as occupied. Also being subject to easements and restrictions of record, if any.

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORDS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

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BENCHMARK BM1=TOP OF DIRECTION ARROW ON HYDRANT, EAST OF S. STATE ST AND NORTH OF EXISTING DRIVE TO 6511 S. STATE ST, ELEV=833.06 (NAVD 88).

BM2=NAIL IN W'LY FACE OF UTILITY POLE, EAST OF S. STATE ST AND SOUTH OF EXISTING DRIVE TO 6495 S. STATE ST, ELEV=831.98 (NAVD 88).

REVISIONS 8-29-19 PER REVIEW. 9-13-19 PER REVIEW.

SCALE 0 15 30 60
SCALE: 1"=30'

PREPARED BY [signature]
GERALD J. SOSNOWSKI RLA, MICH No. 982

STATE OF MICHIGAN — GERALD J. SOSNOWSKI LANDSCAPE ARCHITECT NO. 982 — REGISTERED LANDSCAPE ARCHITECT

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FAX. 734-761-9530
WASHTENAWENGINEERING.COM

CLIENT
RONNY FURRHA
3760 BARRY KNOLL DR
ANN ARBOR, MI 48108
TEL 734-260-7260

SHEET
NATURAL FEATURES

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY * MICHIGAN
DATE 06-11-19
JOB NO. 32485
DWG NO. 485-NAT
FIELD BOOK NONE
FILE NO. 10537
SHEET 3

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORDS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

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EXSITING TREE SURVEY

TAG	COMMON NAME	DBH	CONDITION	INVASIVE	REMOVE	MITAGATABLE	LANDMARK
2819	Colorado Blue Spruce	11	Dead		Remove	No - Dead	
2820	Colorado Blue Spruce	10	Dead		Remove	No - Dead	
2821	Hickory	22	Excellent		Remove	No - Utility	Landmark
2822	Red Oak	37	Excellent		Remove	No - Utility	Landmark
2823	Hickory	13	Excellent		Remove	No - Road	
2824	Hickory	26	Excellent		Remove	No - Road	Landmark
2825	White Oak	33	Excellent		Remove		Landmark
2826	Norway Maple	5,6,8,9	Fair	Invasive	Remove	No - Invasive	
2827	Spruce	7	Dead		Remove	No - Dead	
2828	White Oak	31	Excellent		Remove	No - House	Landmark
2829	Bur Oak	29	Dead		Remove	No - Dead	
2830	Bur Oak	31	Excellent		Remove	No - House	Landmark
2831	Hickory	15	Excellent		Remove	No - House	
2832	Bur Oak	13	Excellent		Remove	No - House	
2833	Mulberry	7	Fair				
2834	Colorado Blue Spruce	8.5	Poor		Remove	No - House	
2835	Colorado Blue Spruce	10	Poor		Remove	No - House	
2836	Colorado Blue Spruce	9	Poor		Remove	No - House	
2837	Norway Maple	7	Fair	Invasive	Remove	No - Invasive	
2838	Hickory	15	Good		Remove	No - House	
2839	Hickory	16	Excellent		Remove	No - House	Landmark
2840	Chokecherry	17	Poor		Remove	No - House	
2841	Bur Oak	8	Good		Remove	No - House	
2842	Japanese Maple	7			Remove	No - House	
2843	Hickory	15	Excellent		Remove	No - House	
2844	Hawthorn	10,4	Poor		Remove	No - House	
2845	Hawthorn	7	Poor		Remove	No - House	
2846	Apple	7	Fair		Remove	No - House	
2847	Elm	8	Good				
2848	White Oak	30	Excellent				Landmark
2849	White Oak	17	Dead		Remove	No - Dead	
2850	White Oak	33	Excellent		Remove	No - House	Landmark
2851	Hickory	13	Excellent				
2852	White Oak	26	Excellent		Remove	No - House	Landmark
2853	White Oak	27	Excellent		Remove	No - House	Landmark
2854	White Oak	29	Excellent		Remove	No - House	Landmark
2855	Elm	9	Good		Remove	No - House	
2856	Elm	6.5	Fair		Remove	No - House	
2857	Shag Hickory	21	Excellent		Remove	No - House	Landmark
2858	White Oak	25	Excellent				Landmark
2859	White Oak	29	Excellent				Landmark
2860	White Oak	21	Excellent				Landmark
2861	White Oak	22	Excellent		Remove	No - House	Landmark
2862	Hickory	12	Excellent		Remove	No - House	
2863	Chokecherry	6	Poor		Remove	No - House	
2864	Hickory	12	Excellent		Remove	No - House	
2865	Hickory	11	Excellent		Remove	No - House	
2866	Elm	9	Good		Remove	No - House	
2867	White Oak	17	Fair		Remove	No - House	Landmark
2868	Hickory	10	Good				
2869	Hickory	9	Good				
2870	Hickory	10	Excellent		Remove		
2871	White Oak	27	Excellent		Remove		Landmark
2872	White Oak	28	Excellent		Remove		Landmark
2873	Hickory	13	Excellent		Remove		
2874	Hickory	13	Excellent		Remove		
2875	Hickory	14	Excellent		Remove		
2876	Hickory	16	Excellent		Remove		Landmark
2877	Hickory	17	Excellent		Remove	No - Road/Utility	Landmark
2878	Green Ash	6	Poor		Remove	No - Road/Utility	
2879	White Oak	10	Good		Remove	No - Road/Utility	
2880	Hickory	22	Excellent		Remove	Yes-Mitigation	Landmark
2881	Hickory	17.5	Excellent		Remove	Yes-Mitigation	Landmark
2882	Hickory	12	Excellent		Remove		
2883	Bur Oak	19	Excellent		Remove		Landmark
2884	Bur Oak	35	Excellent		Remove	No - House	Landmark
2885	Bur Oak	32	Excellent		Remove	No - House	Landmark
2886	Hickory	23	Excellent				Landmark
2887	White Oak	8	Good		Remove		
2888	Colorado Blue Spruce	12	Dead		Remove	No - Dead	
2889	Colorado Blue Spruce	8	Dead		Remove	No - Dead	
2890	Elm	10	Fair				
2891	Bur Oak	35	Excellent				Landmark
2892	Cottonwood	12	Fair	Invasive	Remove	No - Invasive	
2893	Norway Maple	5,6,7	Fair	Invasive	Remove	No - Invasive	
2894	Cottonwood	6	Fair	Invasive	Remove	No - Invasive	
2895	Cottonwood	7	Fair	Invasive	Remove	No - Invasive	
2896	Hickory	17	Excellent		Remove	No - Road/Utility	Landmark
2897	Elm	9	Fair		Remove	No - Road/Utility	
2898	Buckthorn	6	Poor	Invasive	Remove	No - Invasive	
2899	Domestic Apple	6	Poor		Remove	No - Road/Utility	
2968	Ash	8	Dead		Remove	No - Dead	
2969	Ash	6	Poor				
2970	American Elm	13	Poor		Remove		
2971	Ash	12	Poor		Remove		
2972	American Elm	8	Poor		Remove	No - House	
2973	Ash	15	Poor		Remove	No - House	
2974	Elm	8	Good		Remove		
2975	White Oak	8	Fair		Remove		
2976	Elm	8	Fair				
2977	Elm	9	Fair				
2978	Elm	6	Fair				
2979	Buckthorn	8	Poor	Invasive			
2980	Maple	18	Fair				Landmark
2981	American Elm	12	Dead				
2982	Ash	14	Poor		Remove	No - House	
2983	Boxelder	7	Poor		Remove	No - House	
2984	Ash	12	Poor		Remove	No - House	
2985	Ash	15	Poor		Remove	No - House	
2986	American Elm	14	Good		Remove	No - House	
2987	American Elm	9	Fair		Remove	No - Road/Utility	
2988	White Oak	9	Good		Remove	No - Road/Utility	
2989	Cottonwood	13	Fair	Invasive	Remove	No - Invasive	
2990	Cottonwood	10	Fair	Invasive	Remove	No - Invasive	
2991	Cottonwood	18	Fair	Invasive	Remove	No - Invasive	
2992	Ash	9	Poor		Remove	No - House	
2993	Cottonwood	20	Good	Invasive	Remove	No - Invasive	
2994	White Oak	9	Good		Remove		
2995	White Oak	8	Good		Remove		
2996	White Oak	8	Fair		Remove		
2997	White Oak	9	Good				
2998	American Elm	10	Good		Remove		
2999	American Elm	7	Fair		Remove		
3001	Swamp White Oak	14	Good				
3002	Walnut	9	Fair				
3003	American Elm	8	Dead				
3004	Swamp White Oak	8	Good		Remove		
3005	Swamp White Oak	6	Good				
3006	Swamp White Oak	8.5	Fair				
3007	Swamp White Oak	6	Good				
3008	Swamp White Oak	6	Good				
3009	Ash	7	Poor				
3010	Swamp White Oak	9	Good				
3011	Willow	10	Poor	Invasive			
3012	Willow	9	Poor	Invasive			
3013	Swamp White Oak	30	Poor				Landmark
3014	Swamp White Oak	8.5	Good				
3015	Swamp White Oak	9	Fair				
3016	Swamp White Oak	8,7.5	Fair				
3017	Swamp White Oak	9	Fair				
3018	Swamp White Oak	25	Good				Landmark
3019	White Oak	27	Good				Landmark
3020	American Elm	12	Fair				
3021	Swamp White Oak	6	Good				
3022	Swamp White Oak	6,4	Good				
3023	Domestic Apple	6,4,4	Fair				
3024	Swamp White Oak	6	Fair				
3025	American Elm	29	Good				

TAG	COMMON NAME	DBH	CONDITION	INVASIVE	REMOVE	MITAGATABLE	LANDMARK
3025	American Elm	29	Good				
3026	American Elm	8	Fair				
3027	American Elm	9,9	Fair				
3028	American Elm	9.5	Fair				
3029	American Elm	8,10,10	Dead				
3030	American Elm	9,11	Fair				
3031	Silver Maple	9,8,6	Fair				
3032	Willow	12	Fair	Invasive			
3033	American Elm	8	Dead				
3034	American Elm	10	Dead				
3035	Swamp White Oak	10	Fair				
3036	Shagbark Hickory	7	Good				
3037	Shagbark Hickory	6	Good				
3038	Shagbark Hickory	6	Good				
3039	American Elm	7	Good				
3040	Maple	8	Dead				
3041	Swamp White Oak	12	Good				
3042	Swamp White Oak	9	Good				
3043	American Elm	9	Dead				
3044	Maple	12	Dead				
3045	Shagbark Hickory	6	Fair				
3046	Shagbark Hickory	7	Fair				
3047	Maple	12	Dead				
3048	Swamp White Oak	13	Good				
3049	Elm	6	Fair				
3050	Shagbark Hickory	8	Good				
3051	Swamp White Oak	12	Good				
3052	Shagbark Hickory	10	Good				
3053	Shagbark Hickory	7	Good				
3054	Shagbark Hickory	6	Good				

TAG	COMMON NAME	DBH	CONDITION	INVASIVE	REMOVE	MITAGATABLE	LANDMARK
3055	Shagbark Hickory	6	Good				
3056	Shagbark Hickory	6	Good				
3057	Elm	6	Fair				
3058	American Elm	9	Good				
3059	American Elm	11	Fair				
3060	Shagbark Hickory	13	Good				
3061	Shagbark Hickory	17	Good				
3062	American Elm	8.5	Good				
3063	Pignut Hickory	20	Good				Landmark
3064	Shagbark Hickory	14	Good				
3065	Shagbark Hickory	14	Good				
3066	Shagbark Hickory	16	Good				Landmark
3067	Shagbark Hickory	10	Good				
3068	Shagbark Hickory	12	Good				
3069	Shagbark Hickory	15.5	Good				
3070	Shagbark Hickory	14	Good				
3071	Shagbark Hickory	17	Good				Landmark
3072	Shagbark Hickory	19	Good				Landmark
3073	White Oak	29	Dead				
3074	Shagbark Hickory	17	Good				Landmark
3075	Shagbark Hickory	14	Good				
3076	Shagbark Hickory	19	Good				Landmark
3077	Shagbark Hickory	17	Good				Landmark
3078	Shagbark Hickory	11	Good				
3079	Shagbark Hickory	12	Good				
3080	American Elm	6.5	Fair				
3081	American Elm	8	Fair		Remove		
3082	Shagbark Hickory	12	Good		Remove		
3083	Shagbark Hickory	14	Good		Remove		
3084	Shagbark Hickory	17	Good		Remove	No - Road/Utility	Landmark

TAG	COMMON NAME	DBH	CONDITION	INVASIVE	REMOVE	MITAGATABLE	LANDMARK
3086	Shagbark Hickory	7.5	Good		Remove	No - Road/Utility	
3087	Shagbark Hickory	17	Good		Remove	No - Road/Utility	Landmark
3088	Shagbark Hickory	24	Good		Remove	No - Road/Utility	Landmark
3089	American Elm	10.5	Fair		Remove	No - Road/Utility	
3090	Shagbark Hickory	15	Good		Remove	No - Road/Utility	
3091	Shagbark Hickory	24	Good		Remove	No - Road/Utility	Landmark
3092	Elm	12	Fair		Remove	No - House	
3093	Elm	8	Fair		Remove	No - House	
3094	White Oak	14	Good		Remove	No - Road/Utility	
3095	Shagbark Hickory	15	Good		Remove	No - Road/Utility	
3096	Elm	8	Good		Remove	No	
3097	Elm	9	Fair				
3098	Boxelder	6	Bad		Remove	No - House	
3099	Elm	7	Good		Remove	No - House	
3100	Elm	10	Good				
3101	Hickory	12	Excellent		Remove	No - House	
3102	Spruce	7	Poor		Remove	No - Road/Utility	
3103	White Oak	14	Good				
3104	Swamp White Oak	10	Good				
		Trees are located offsite					

EXISTING LEGEND

- = WETLAND BOUNDARY WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC. DATED: JUNE 2018
- = WETLAND BUFFER

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- 829 = EXISTING 1 FT. CONTOUR

FIELDWORK GENERATED CONTOURS

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- = POST
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- = TREE
- = CRITICAL ROOT ZONE
- = MANHOLE
- = CATCHBASIN
- = END SECTION
- = GRAVEL
- = FENCE
- = CONCRETE
- = ASPHALT
- r = EXISTING STORM
- s = EXISTING SANITARY
- w = EXISTING WATER
- g = EXISTING GAS
- e = EXISTING ELECTRIC
- t = EXISTING TELEPHONE

REMOVAL LEGEND

- = REMOVE ITEM
- = REMOVE CONCRETE
- (R) = REMOVE ITEM

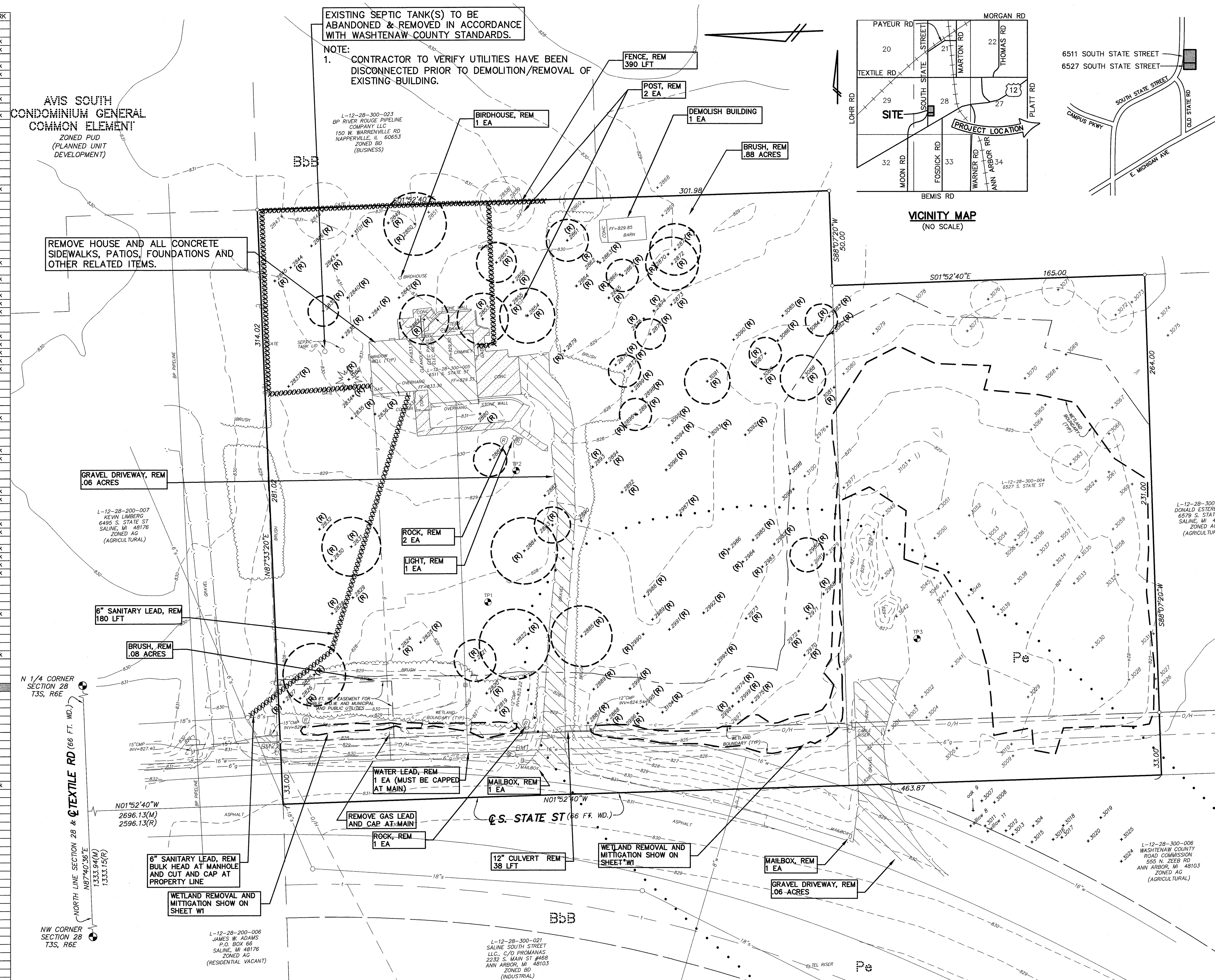
WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION

BbB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES

Pe – PEWAMO CLAY LOAM

• • • • • • • – SOILS BOUNDARY

SOILS ARE BASED ON USDA SOIL SURVEY OF WASHTENAW COUNTY.



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REVISIONS 8-29-19 PER REVIEW. 9-13-19 PER REVIEW.

SCALE 0 20 40 80 SCALE: 1"=40'

PREPARED BY JOSEPH K. MAYNARD P.E., MICH No. 52559

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WASHTENAW ENGINEERING

CLIENT

RONNY FURRHA
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ANN ARBOR, MI 48108
TEL 734-260-7260

SHEET

REMOVAL PLAN

PROJECT

DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY * MICHIGAN
DATE 06-11-19
JOB NO. 32485
DWG NO. 485-rem
FIELD BOOK NONE
FILE NO. 10537
SHEET 4

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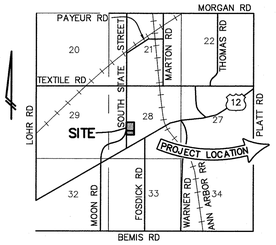
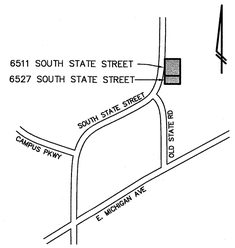


VICINITY MAP
(NO SCALE)



EXISTING LEGEND

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  WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC. DATED: JUNE 2018
- = WETLAND BUFFER

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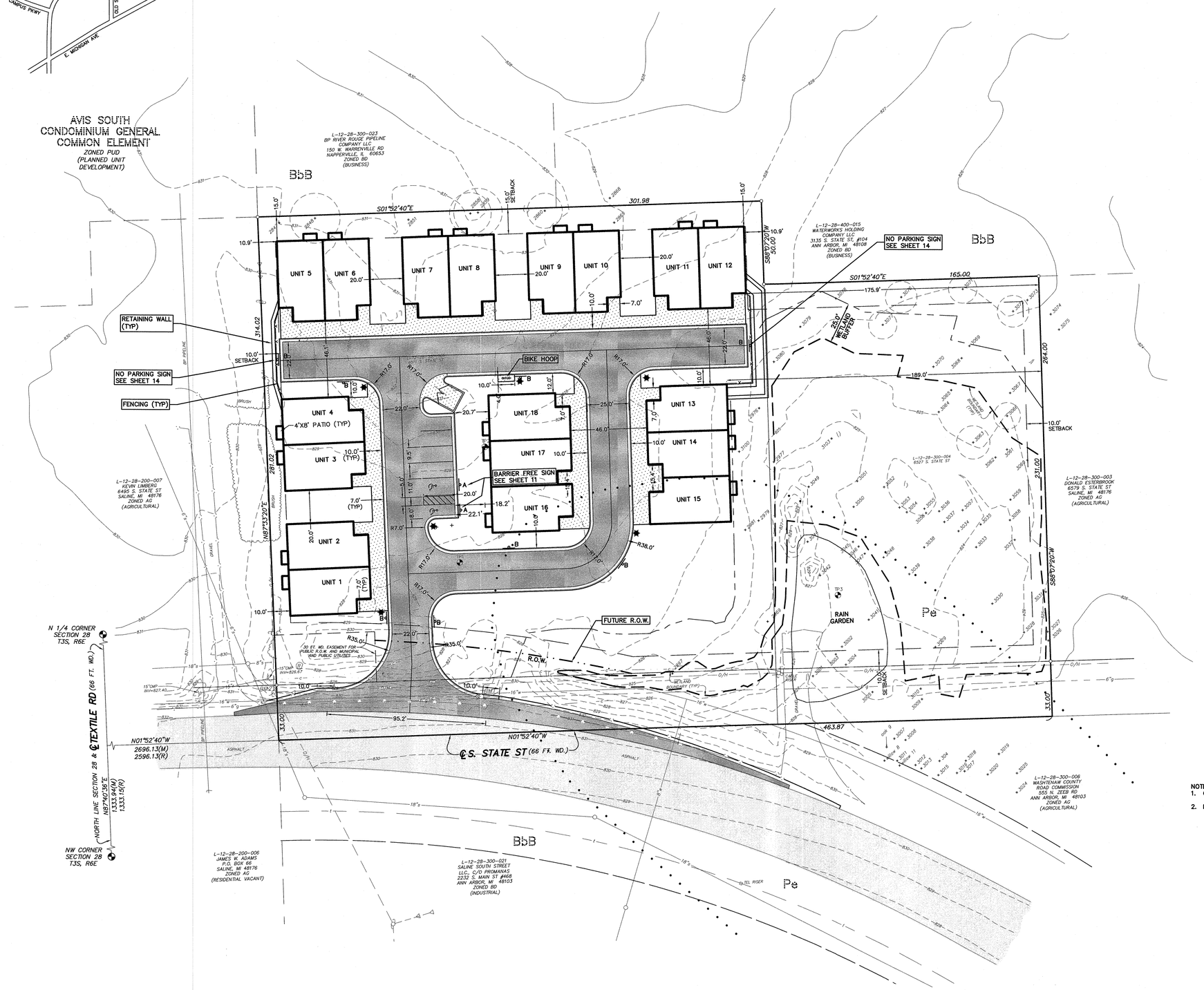
FIELDWORK GENERATED CONTOURS
- 835 = EXISTING 5 FT. CONTOUR
- 834 = EXISTING 1 FT. CONTOUR
- = LIGHT POLE
- = UTILITY POLE
- = GUY ANCHOR
- = HYDRANT
- = GATE VALVE
- = POST
- = SIGN
- = TREE
- = CRITICAL ROOT ZONE
- = MANHOLE
- = CATCHBASIN
- = END SECTION
- = GRAVEL
- = FENCE
- = CONCRETE
- = ASPHALT
- f = EXISTING STORM
- s = EXISTING SANITARY
- w = EXISTING WATER
- g = EXISTING GAS
- e = EXISTING ELECTRIC
- t = EXISTING TELEPHONE

PROPOSED LEGEND

- = BIKE HOOP
- = RETAINING WALL
- = FENCE
- = BUILDING
- = ASPHALT
- = CONCRETE
- = CURB
- = BARRIER FREE PARKING
- = SETBACK LINE
- = WETLAND MITIGATION AREA
- = WETLAND BUFFER
- = SIGN-HANDICAP
- = SIGN-NO PARKING-FIRE LANE
- = LIGHT-POLE
- = DUMPSTER ENCLOSURE



NOTE:
1. ONE BIKE HOOP PROVIDED
2. NO PROPOSED OUTDOOR STORAGE

WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION
- BbB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES
- PeB – PEWAMO CLAY LOAM
- SOILS BOUNDARY

SOILS ARE BASED ON USDA SOIL SURVEY OF WASHTENAW COUNTY.

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

STATE OF MICHIGAN
JOSEPH K. MAYNARD
ENGINEER
No. 52559
LICENSED PROFESSIONAL ENGINEER

BENCHMARK BM1=TOP OF DIRECTION ARROW ON HYDRANT, EAST OF S. STATE ST AND NORTH OF EXISTING DRIVE TO 6511 S. STATE ST, ELEV=833.06 (NAVD 88).

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REVISIONS 8-29-19 PER REVIEW. 9-13-19 PER REVIEW. 9-19-19 BLD. MOD.

SCALE 0 15 30 60
SCALE: 1"=30'

PREPARED BY JOSEPH K. MAYNARD P.E., MICH No. 52559

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FAX. 734-761-9530
WASHTENAWENGINEERING.COM

WASHTENAW ENGINEERING

CLIENT
RONNY FURRHA
3760 BARRY KNOLL DR
ANN ARBOR, MI 48108
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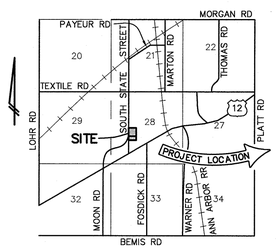
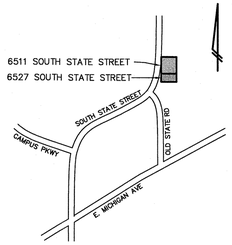
SHEET
PRELIMINARY SITE PLAN

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN

DATE 06-11-19
JOB NO. 324B5
DWG NO. 485-site
FIELD BOOK NONE
FILE NO. 10537
SHEET 5





VICINITY MAP
(NO SCALE)

EXISTING LEGEND

- = WETLAND BOUNDARY
  WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC.
  DATED: JUNE 2018
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- = UTILITY POLE
- = GUY ANCHOR
- = HYDRANT
- = GATE VALVE
- 831.23 = SPOT ELEV.
- = POST
- = SIGN
- = TREE
- = CRITICAL ROOT ZONE
- = MANHOLE
- = CATCHBASIN
- = END SECTION
- = GRAVEL
- = FENCE
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- = ASPHALT
- r = EXISTING STORM
- s = EXISTING SANITARY
- w = EXISTING WATER
- g = EXISTING GAS
- e = EXISTING ELECTRIC
- t = EXISTING TELEPHONE

PROPOSED LEGEND

- = BIKE HOOP
- = RETAINING WALL
- x = FENCE
- = BUILDING
- = ASPHALT
- = CONCRETE
- = CURB
- = BARRIER FREE PARKING
- = SETBACK LINE
- = WETLAND MITIGATION AREA
- = WETLAND BUFFER
- = SIGN-HANDICAP
- = SIGN-NO PARKING-FIRE LANE
- = LIGHT-POLE
- = DUMPSTER ENCLOSURE
- 834 = 1 FOOT CONTOUR
- 830 = 5 FOOT CONTOUR
- 835.05 x = SPOT GRADE
- = CATCH BASIN
- = MANHOLE
- = END SECTION
- 12"R = STORM SEWER
- C01 = CLEANOUT
- = UNDERGROUND DETENTION
- 10"S = SANITARY SEWER
- 6"S = SANITARY SERVICE
- 8"W = WATER MAIN
- 1"W = WATER SERVICE
- = GATE VALVE IN BOX
- = GATE VALVE IN WELL
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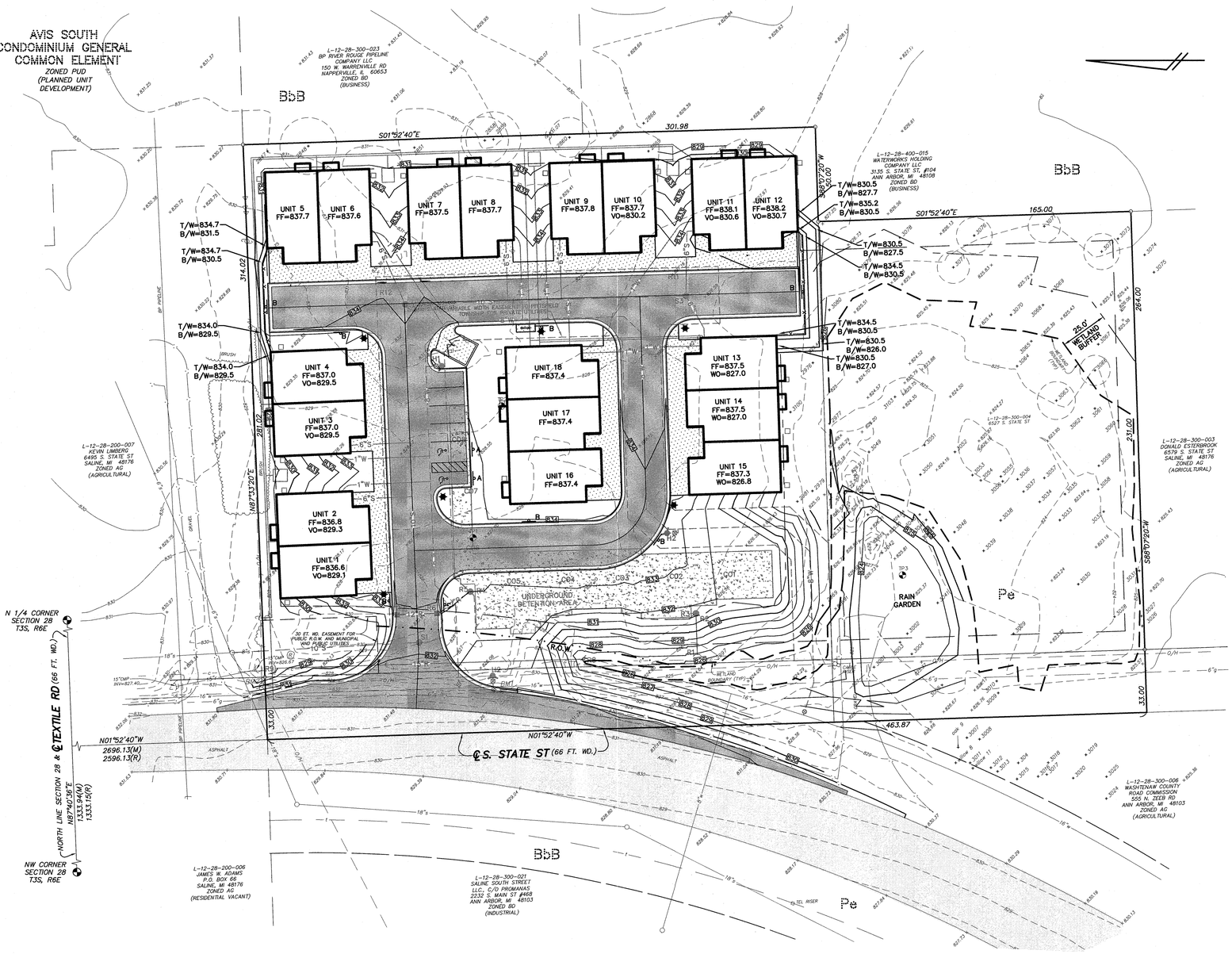

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SHEET
PRELIMINARY GRADING PLAN

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN

DATE 06-11-19
JOB NO. 324485
DWG NO. 485-grd
FIELD BOOK NONE
FILE NO. 105.37

SHEET 6

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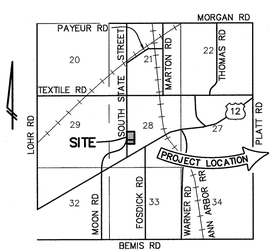

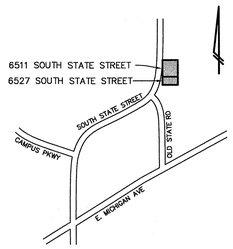

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- = SETBACK LINE
- = WETLAND MITIGATION AREA
- = WETLAND BUFFER
- = SIGN-HANDICAP
- = SIGN-NO PARKING-FIRE LANE
- = LIGHT-POLE
- = DUMPSTER ENCLOSURE
- 834 = 1 FOOT CONTOUR
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- = CATCH BASIN
- = MANHOLE
- = END SECTION
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- = UNDERGROUND DETENTION
- 10"S = SANITARY SEWER
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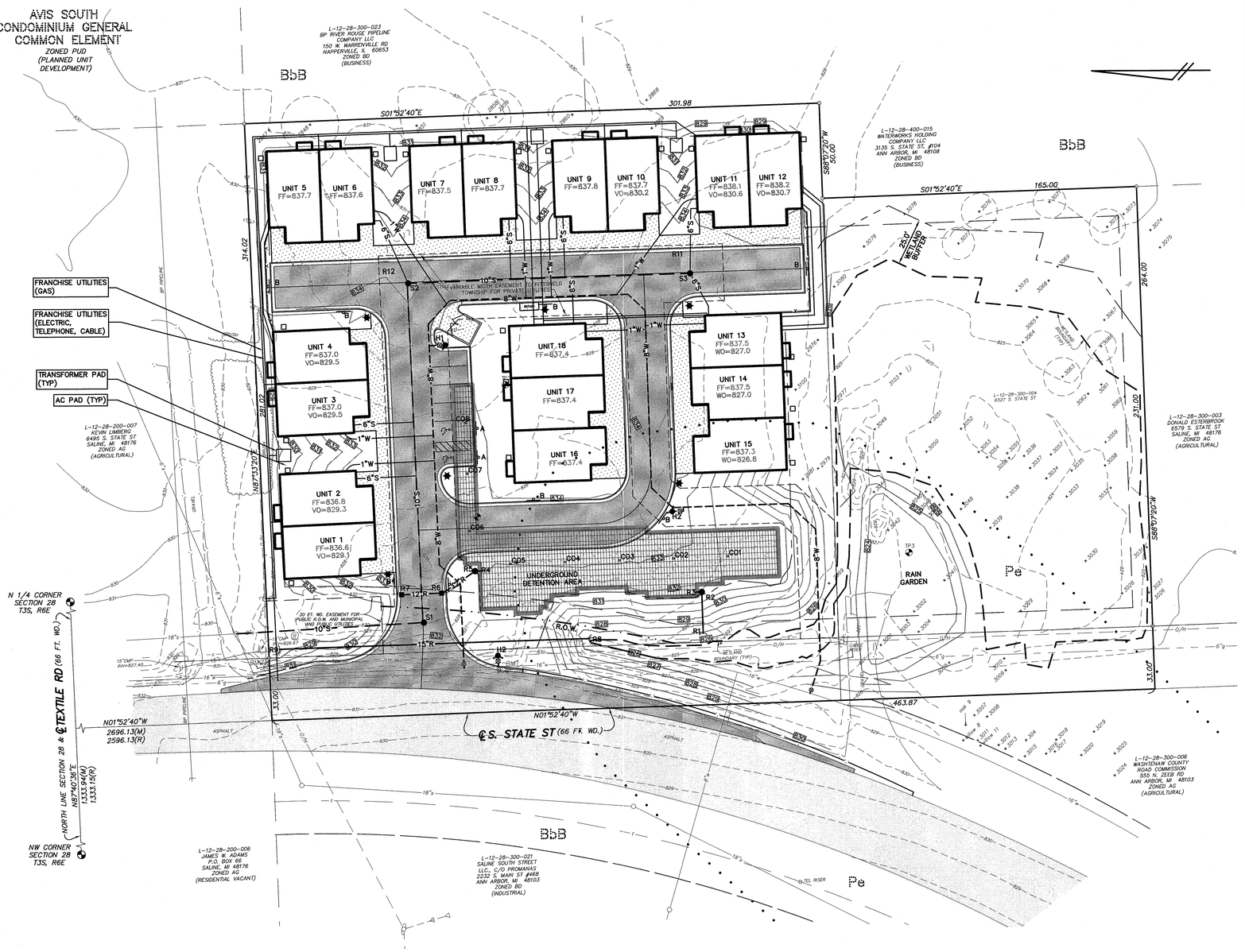

SANITARY SEWER / WATER MAIN BASIS OF DESIGN

1. TOTAL NUMBER OF UNITS IS 18 UNITS.
2. DESIGN POPULATION FACTOR OF 3.5 PERSONS PER UNIT.
3. PROPOSED DESIGN USAGE IS 100 GALLONS/DAY-PERSON.
4. TOTAL USAGE FOR PROJECT IS 6,300 GALLONS PER DAY (GPD) OR 0.01 CUBIC FEET/SECOND(CFS).
5. USING A PEAK HOUR FACTOR OF 4 THE FLOW IS 25,200 GPD OR 0.04 CFS.
6. CAPACITY OF 10" DIAMETER SEWER WITH 0.40% MINIMUM SLOPE IS 0.14 CFS.
7. CAPACITY OF A 1" TYPE "K" COPPER LEAD WITH A MINIMUM PRESSURE OF 40 PSI IS 50 GPM. LARGEST BUILDING IS (3) UNITS AT A PEAK FLOW OF 4,200 GPD OR 15 GPM. THE 1" LINE HAS ADEQUATE CAPACITY.

WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION

BbB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES

PeB – PEWAMO CLAY LOAM

• • • • • • • – SOILS BOUNDARY

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SCALE 0 15 30 60
SCALE: 1"=30'

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SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN

DATE	06-11-19
JOB NO.	32485
DWG NO.	485-util
FIELD BOOK	NONE
FILE NO.	105.37
SHEET	7

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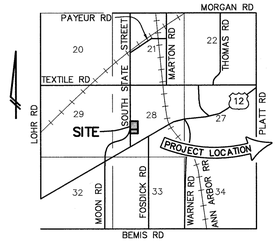

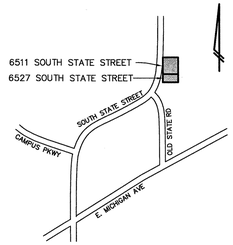

VICINITY MAP
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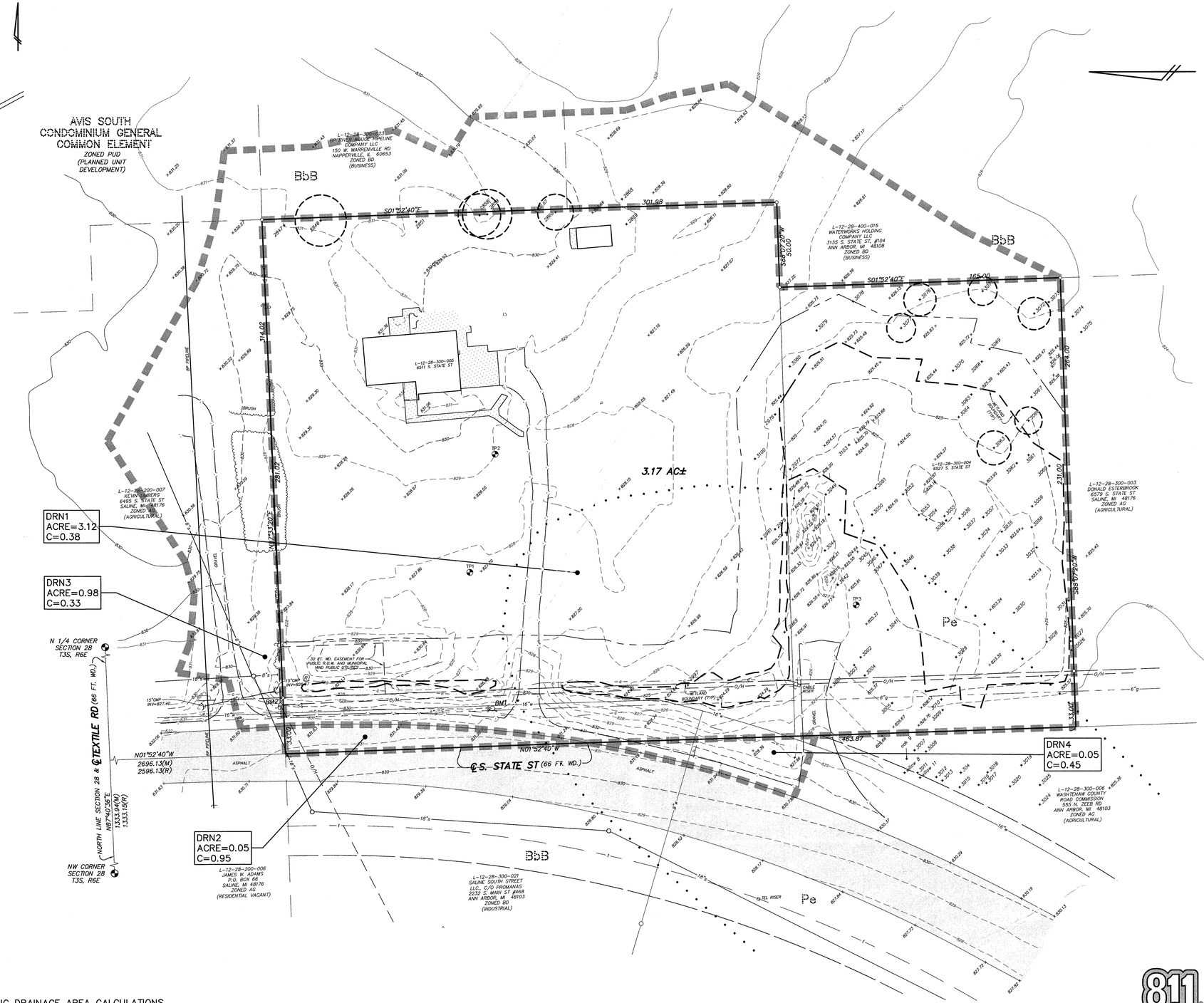

EXISTING DRAINAGE AREA CALCULATIONS												
AREA NAME	IMPERVIOUS			PERVIOUS (BbB)			PERVIOUS (Pe)			TOTAL		
	SFT	ACRE	C	SFT	ACRE	C	SFT	ACRE	C	SFT	ACRE	C
DRN1	8,917	0.21	0.95	92,919	2.13	0.30	34,049	0.78	0.45	135,885	3.12	0.38
DRN2	2,008	0.05	0.95	0	0.00	0.30	0	0.00	0.45	5,894	0.05	0.95
DRN3(OFFSITE)	2,086	0.05	0.95	40,398	0.93	0.30	0	0.00	0.45	42,484	0.98	0.33
DRN4(OFFSITE)	0	0.00	0.95	0	0.00	0.30	2,178	0.05	0.45	42,484	0.05	0.45

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3760 BARRY KNOLL DR
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TEL. 734-260-7260

SHEET
STORM WATER MANGEMENT DRAINAGE AREA PLAN EXISTING

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN

DATE 06-11-19
JOB NO. 324485
DWG NO. 485-swm-drn-ex
FIELD BOOK NONE
FILE NO. 10537
SHEET 8

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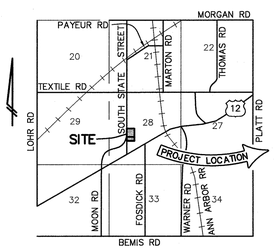

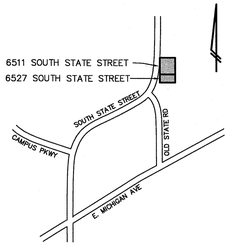

VICINITY MAP
(NO SCALE)

EXISTING LEGEND

- = WETLAND BOUNDARY WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC. DATED: JUNE 2018
- = WETLAND BUFFER

EWASHTENAW.ORG CONTOURS
- 830 = EXISTING 5 FT. CONTOUR
- 829 = EXISTING 1 FT. CONTOUR

FIELDWORK GENERATED CONTOURS
- 835 = EXISTING 5 FT. CONTOUR
- 834 = EXISTING 1 FT. CONTOUR
- = LIGHT POLE
- = UTILITY POLE
- = GUY ANCHOR
- = HYDRANT
- = GATE VALVE
- 891.23 = SPOT ELEV.
- = POST
- = SIGN
- = TREE
- = CRITICAL ROOT ZONE
- = MANHOLE
- = CATCHBASIN
- = END SECTION
- = GRAVEL
- = FENCE
- = CONCRETE
- = ASPHALT
- f = EXISTING STORM
- s = EXISTING SANITARY
- w = EXISTING WATER
- g = EXISTING GAS
- e = EXISTING ELECTRIC
- t = EXISTING TELEPHONE

PROPOSED LEGEND

- = BIKE HOOP
- = RETAINING WALL
- x = FENCE
- = BUILDING
- = ASPHALT
- = CONCRETE
- = CURB
- = BARRIER FREE PARKING
- = SETBACK LINE
- = WETLAND MITIGATION AREA
- = WETLAND BUFFER
- A = SIGN-HANDICAP
- B = SIGN-NO PARKING-FIRE LANE
- = LIGHT-POLE
- = DUMPSTER ENCLOSURE
- 834 = 1 FOOT CONTOUR
- 835 = 5 FOOT CONTOUR
- = CATCH BASIN
- = MANHOLE
- = END SECTION
- 12"R = STORM SEWER
- C01 = CLEANOUT
- = UNDERGROUND DETENTION
- 10"S = SANITARY SEWER
- 6"S = SANITARY SERVICE
- 8"W = WATER MAIN
- 1"W = WATER SERVICE
- = GATE VALVE IN BOX
- = GATE VALVE IN WELL
- = HYDRANT
- = UTILITY EASEMENT
- = DRAINAGE AREA BOUNDARY

WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION

BbB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES

Pe – PEWAMO CLAY LOAM

• • • • • • – SOILS BOUNDARY

SOILS ARE BASED ON USDA SOIL SURVEY OF WASHTENAW COUNTY.

EXISTING DISCHARGE TO WETLAND SOUTH OF THE PROJECT SITE
AREA = 4.15 ACRES
Cavg. = 0.37
EX. 2 YEAR STORM EVENT (2.35"/ACRE) VOLUME = 13,099 CFT
EX. 100 YEAR STORM EVENT (5.11"/ACRE) VOLUME = 28,482 CFT

PROPOSED DISCHAGE TO WETLAND SOUTH OF THE PROJECT SITE (DRN1)
AREA = 1.47 ACRES
Cavg. = 0.45
PRO. 2 YEAR STORM EVENT VOLUME = 5,643 CFT
PRO. 100 YEAR STORM EVENT VOLUME = 12,270 CFT

PROPOSED DISCHAGE TO WETLAND SOUTH OF THE PROJECT SITE (DRN3)
AREA = 0.45 ACRES
Cavg. = 0.37
PRO. 2 YEAR STORM EVENT VOLUME = 1,420 CFT
PRO. 100 YEAR STORM EVENT VOLUME = 3,088 CFT

PROPOSED DISCHAGE TO WETLAND SOUTH OF THE PROJECT SITE (DRN4)
AREA = 0.32 ACRES
Cavg. = 0.30
PRO. 2 YEAR STORM EVENT VOLUME = 819 CFT
PRO. 100 YEAR STORM EVENT VOLUME = 1,781 CFT

PROPOSED DISCHAGE TO WETLAND SOUTH OF THE PROJECT SITE (DRN5)
AREA = 0.14 ACRES
Cavg. = 0.30
PRO. 2 YEAR STORM EVENT VOLUME = 358 CFT
PRO. 100 YEAR STORM EVENT VOLUME = 779 CFT

PROPOSED DISCHAGE TO WETLAND SOUTH OF THE PROJECT SITE (DRN6)
AREA = 0.21 ACRES
Cavg. = 0.30
PRO. 2 YEAR STORM EVENT VOLUME = 514 CFT
PRO. 100 YEAR STORM EVENT VOLUME = 1,169 CFT

PROPOSED DISCHAGE TO WETLAND SOUTH OF THE PROJECT SITE (DRN7)
AREA = 0.15 ACRES
Cavg. = 0.30
PRO. 2 YEAR STORM EVENT VOLUME = 384 CFT
PRO. 100 YEAR STORM EVENT VOLUME = 835 CFT

PROPOSED DISCHAGE TO WETLAND SOUTH OF THE PROJECT SITE (DRN8)
AREA = 1.28 ACRES
Cavg. = 0.86
PRO. 2 YEAR STORM EVENT VOLUME = 9,390 CFT
PRO. 100 YEAR STORM EVENT VOLUME = 20,419 CFT

WETLAND RECHARGE TABLE

	EXISTING 10 YEAR	PROPOSED 10 YEAR	EXISTING 100 YEAR	PROPOSED 100 YEAR
SOUTH	13,099 CFT	18,528 CFT	28,482 CFT	40,341 CFT

PROPOSED DRAINAGE AREA CALCULATIONS

AREA NAME	IMPERVIOUS SFT	IMPERVIOUS ACRE	IMPERVIOUS C	PERVIOUS (BbB) SFT	PERVIOUS (BbB) ACRE	PERVIOUS (BbB) C	PERVIOUS (Pe) SFT	PERVIOUS (Pe) ACRE	PERVIOUS (Pe) C	TOTAL SFT	TOTAL ACRE	TOTAL C
DRN1	0	0.00	0.95	1,910	0.04	0.30	62,164	1.43	0.45	64,074	1.47	0.45
DRN2(UNDETAINED)	2,008	0.05	0.95	0	0.00	0.30	0	0.00	0.45	5,894	0.05	0.95
DRN3(OFFSITE)	143	0.00	0.95	19,627	0.40	0.30	0	0.00	0.45	19,770	0.45	0.37
DRN4(OFFSITE)	0	0.00	0.95	13,877	0.32	0.30	0	0.00	0.45	13,877	0.32	0.30
DRN5	0	0.00	0.95	6,283	0.14	0.30	0	0.00	0.45	6,283	0.14	0.30
DRN6(OFFSITE)	0	0.00	0.95	9,080	0.21	0.30	0	0.00	0.45	9,080	0.21	0.30
DRN7	394	0.01	0.95	5,645	0.13	0.30	0	0.00	0.45	6,039	0.14	0.35
DRN8	47,917	1.10	0.95	7,074	0.16	0.30	881	0.02	0.45	55,872	1.28	0.86

STORM WATER EXCHANGE TABLE

OFF SITE AREAS DRAINING TO SITE

DRANAGE AREA NAME	AREA (A)	RATIONAL VALUE (C)	AXC
DRN3	0.45	0.37	0.17
DRN4	0.32	0.30	0.10
DRN6	0.21	0.30	0.06
		TOTAL	0.33

ON SITE AREAS DRAINING FROM SITE

DRANAGE AREA NAME	AREA (A)	RATIONAL VALUE (C)	AXC
DRN2	0.05	0.95	0.05
		TOTAL	0.05

PROJECT SITE ACCEPTING MORE WATER THAN DISCHARGING.

Know what's below. Call before you dig.

STATE OF MICHIGAN JOSEPH K. MAYNARD ENGINEER No. 52559 LICENSED PROFESSIONAL ENGINEER

BENCHMARK BM1=TOP OF DIRECTION ARROW ON HYDRANT, EAST OF S. STATE ST AND NORTH OF EXISTING DRIVE TO 6511 S. STATE ST, ELEV=833.06 (NAVD 88).

BM2=NAIL IN WLY FACE OF UTILITY POLE, EAST OF S. STATE ST AND SOUTH OF EXISTING DRIVE TO 6495 S. STATE ST, ELEV=831.98 (NAVD 88).

REVISIONS 8-29-19 PER REVIEW. 9-13-19 PER REVIEW. 9-19-19 BLD. MOD.

SCALE 0 15 30 60
SCALE: 1"=30'

PREPARED BY JOSEPH K. MAYNARD P.E., MICH No. 52559

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SUITE 400
ANN ARBOR, MI 48103
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SHEET
STORM WATER MANGEMENT DRAINAGE AREA PLAN PROPOSED

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN
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STORM WATER MANAGEMENT CALCULATIONS

Standard Method Runoff Volume Work Sheets

	Project:	6511 and 6527 S. State Street				
	Basin:	A				
	By:	Seth Garner, P.E.				
	Date:	8/20/2019				
W1	Determining Post-Development Cover types, Areas, Curve Numbers and Runoff					
	Total Site area =	3.17	Ac			
	Disturbed Site Area =	2.07	Ac			
	% Disturbed =	65 %				
	Total Site area Excluding "Self-Crediting" BMPS =			1.28	Ac	
	Rational Method Variables					
	Cover Type / Soil Type	Slope Letter	Area (ft2)	Area(acre)	Runoff Coefficient C	(C)(Area)
	Pervious C	A	7074	0.16	0.3	0.05
	Pervious D	A	881	0.02	0.45	0.01
	Impervious		47917	1.1	0.95	1.05
					Σ(C)(Area) =	1.11
					Σ(Area) =	1.28
					Weighted C = Σ(C)(Area)/Σ(Area) =	0.87
	NRCS Variables - Pervious Cover					
	Cover Type / Soil Type		Area (ft2)	Area(acre)	Curve Number	(CN)(Area)
	Open Space-Good C		7074	0.16	74	11.84
	Open Space-Good D		881	0.02	80	1.60
					Σ(CN)(Area) =	13.44
					Σ(Area) =	0.18
					Weighted CN = Σ(C)(Area)/Σ(Area) =	75
	NRCS Variables - Impervious Cover					
	Cover Type / Soil Type		Area (ft2)	Area(acre)	Curve Number	(CN)(Area)
	Paved D		47917	1.1	98	107.80
					Σ(CN)(Area) =	107.80
					Σ(Area) =	1.1
					Weighted CN = Σ(C)(Area)/Σ(Area) =	98
W2	First Flush					
			Vff =	(1")(1/12")(43560ft3/1ac)AC		
		Total Area	A =	1.28	Ac	
		Weighted C	C =	0.87		
			Vff =	4042	cft	
W3	Pre-development Bankfull Runoff Calculation (Vbf-pre)					
			Existing Cover Type =	Meadow		
			2year/24 hour storm event P =	2.35	inches	
			Weighted CN =	72		
			S = (1000/CN) - 10 =	3.89	inches	
			Q = $(P-0.2S)^2/(P+0.8S)$ =	0.45	inches	
	Total Site Area (SF) excluding "Self-Crediting" BMPs Area =			55872	square feet	
			Vbf-pre = Q(1/12)Area =	2095	ft^3	
W4	Pervious Cover Post-development Bankfull Runoff Calculation (Vbf-per-post)					
			2year/24 hour storm event P =	2.35	inches	
			Pervious Curve Number from W1 =	75		
			S = (1000/CN) - 10 =	3.33	inches	
			Q = $(P-0.2S)^2/(P+0.8S)$ =	0.57	inches	
			Pervious Cover Area from W1 =	7955	square feet	
			Vbf-per-post = Q(1/12)Area =	378	ft^3	
W5	Impervious Cover Post-development Bankfull Runoff Calculation (Vbf-imp-post)					
			2year/24 hour storm event P =	2.35	inches	
			Impervious Curve Number from W1 =	98		
			S = (1000/CN) - 10 =	0.2	inches	
			Q = $(P-0.2S)^2/(P+0.8S)$ =	2.13	inches	
			Impervious Cover Area from W1 =	47917	square feet	
			Vbf-imp-post = Q(1/12)Area =	8505	ft^3	
W6	Pervious Cover Post-development 100-Year Storm Runoff Calculation ($V_{100\text{-per-post}}$)					
			100year/24 hour storm event P =	5.11	inches	
			Pervious Curve Number from W1 =	75		
			S = (1000/CN) - 10 =	3.33	inches	
			Q = $(P-0.2S)^2/(P+0.8S)$ =	2.54	inches	
			Pervious Cover Area from W1 =	7955	square feet	
			$VV_{100\text{-per-post}}$ = Q(1/12)Area =	1684	ft^3	
W7	Impervious Cover Post-development 100-Year Storm Runoff Calculation ($V_{100\text{-imp-post}}$)					
			100year/24 hour storm event P =	5.11	inches	
			Impervious Curve Number from W1 =	98		
			S = (1000/CN) - 10 =	0.2	inches	
			Q = $(P-0.2S)^2/(P+0.8S)$ =	4.88	inches	
			Impervious Cover Area from W1 =	47917	square feet	
			$V_{100\text{-imp-post}}$ = Q(1/12)Area =	19486	ft^3	
W8	Determine Time of Concentration for Applicable Flow Types (Tc-hrs)					

Flow Type	K	Change in Elevation	Length (L)	Slope % (S*100)	$S^{0.5}$	$V=K*S^{0.5}$	Tc = L/(V*3600)
Sheet Flow*	0.48	4.5	180	2.5	1.58	0.76	0.07
Waterway	1.2	1	50	2	1.41	1.69	0.01
Small Trib.	2.1						
						Total Tc =	0.08

*Sheet flow cannot exceed 300 feet. Anything beyond this is considered waterway.

W9	Runoff Summary & Onsite Infiltration Requirement		
	First Flush Volume Vff =	4042	ft^3
	Pervious-Post Development Bankfull Runoff Volume Vbf-per-post =	378	ft^3
	Impervious Cover Post-Development Bankfull Runoff Volume Vbf-imp-post =	8505	ft^3
	Total BF Volume Vbf-post =	8883	ft^3
	Pervious - Post Development 100-year Runoff Volume $V_{100\text{-per-post}}$ =	1684	ft^3
	Impervious Cover Post-Development 100-year Runoff Volume $V_{100\text{-imp-post}}$ =	19486	ft^3
	Total 100-year Volume V_{100} =	**21170**	ft^3
	Determine Onsite Infiltration Requirement		
	Subtract the Pre-Development Bankfull from the Post Development Bankfull Volume		
	Total Post-Development Bankfull Volume Vbf-post =	8883	ft^3
	Pre-Development Bankfull Runoff Volume Vbf-pre =	2095	ft^3
	Bankfull Volume Difference =	6788	ft^3
	Compare the Bankfull Volume Difference with the First Flush Volume.		
	The greater of the two is the Onsite Infiltration Requirement.		
	Onsite Infiltration Requirement V_{inf} =	**6788**	ft^3
W10	Detention/Retention Requirement		
	Detention		
	Peak of Unit Hydrograph $Qp=238.6Tc^{-0.82}$ =	1893	cfs/in-mi^2
	Total Site Area (ac) excluding "Self Crediting" BMPs Area =	1.28	ac
	$Q_{100} = Q_{100\text{-per}} + Q_{100\text{-imp}}$ =	7.42	in
	Peak Flow PF =Qp*Q100*Area/640 =	28.09212	cfs
	Δ = PF - 0.15 Area =	27.90012	cfs
	Vdet = (Δ/PF)*$V_{100\text{-post}}$ =	**21025**	ft^3

STORM WATER MANAGEMENT CALCULATIONS (CONTINUED)

W12	Natural Features Inventory				
	Exististing Natural Resources	Mapped (yes,no, n/a)	Total Area (ac)	Protected/ Undisturbed Area (ac)	
	Waterbodies				
	Floodplains				
	Riparian Areas				
	Wetlands		0.57	0.57	
	Woodlands				
	Natural Drainage Area				
	Steep Slopes, 15%-25%				
	Steep Slopes, over 25%				
	Special Habitat Areas				
	Other (Onsite Wetland Recharge Area)		1.23	1.23	
	Other (Undetained to S. State St.)		0.09	0.09	
	Total Existing (ac)			1.89	
W13	Summary				
	A. Storm Water Management Summary				
	Minimum Onsite Infiltration Requirement, Vinf =			6788	cft
	Designed/Provided Infiltration Volume =			0	cft
	% Minimum Required Infiltration Provided =			0	%
	Total Calculated Detention Volume, Vdet =			21025	cft
	Net Required Detention Volume				
	(Vdet - Designed/Provided Infiltration Volume) =			21025	cft
	B. Detention Volume Increase for sites where the required infiltration cannot be				
	% Required Infiltration NOT provided				
	(100%-%Minimum Required Infiltration Provided)			100	%
	Net % Penalty				
	(20% x %Required Infiltration NOT Provided)			20	%
	Total Required Detention Volume, including penalty				
	[(100% + Net % Penalty) x Net Required Detention Volume)]			25230	cft

PRELIMINARY UNDERGROUND STORAGE CALCULATIONS

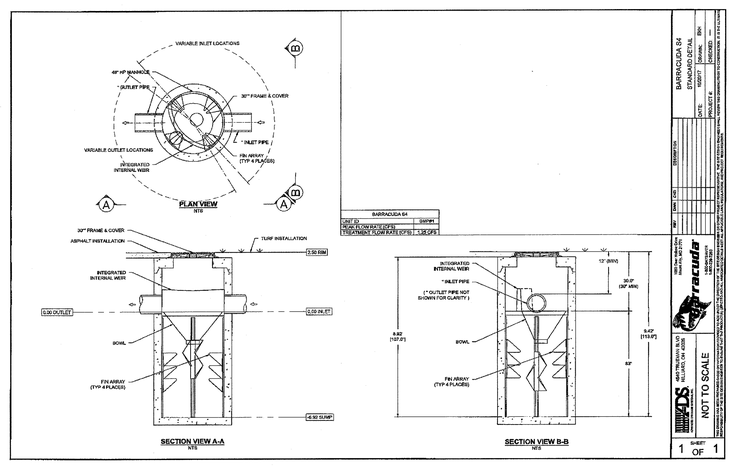
REQUIRED 100 YEAR STORM WATER VOLUME = 25,230 CFT

AREA OF UNDERGROUND STORAGE = 5,809.5 SFT

AREA OF ONE STORMTANK CHAMBER = 4.5 SFT

USE STACKED 24" AND 30" UNTS = 8.656 CFT + 10.876 CFT = 19.532 CFT/CHAMBER

AVAILABLE STORAGE = 5,809.5 SFT / 4.5 SFT X 19.532 CFT = 25,216 CFT



Brentwood StormTank Stormwater Storage Modules — Page 1 of 3

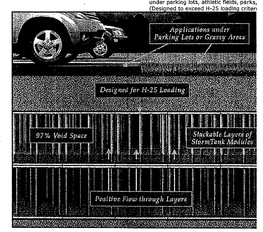
PAGE DIRECTORY
High Void, High Strength
Easy to Install
Easy to Clean
Saves Space and Money
Top of Page
CLICK FOR PRINTABLE PDF

StormTank™ Stormwater Storage Modules

Brentwood's StormTank™ Stormwat Storage Modules are a high-void, stron affordable alternative to crushed stone, concrete structures, or pipe chambers fo sub-surface stormwater detention or infiltration basins.

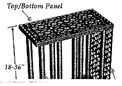
HIGH VOID, HIGH STRENGTH

Brentwood StormTank Modules offer the largest void space of any underground stormwater storage units currently on th market (97%), and are the strongest units available for heavy duty applications (Designed to exceed H-25 loading criteri

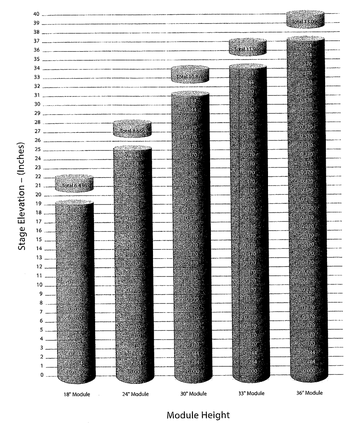


EASY TO INSTALL

The entire StormTank Storage System is built on-site from Top/Bottom Panels and Side Panels made of rugged, lightweight polypropylene and 2-3/8" diameter PVC columns. Combinations of these three components create all the module configurations needed for a fully-functioning underground system (see example below).



11.1 Storage Volume



DRAINAGE NARRATIVE
DEEN'S YARD OF ANN ARBOR

Existing Conditions

This site consists of 3.17 acres located in Section 28, Pittsfield Township, Washtenaw County, on the east side of South State Street, north of the intersection with Old State Road. This property currently has an existing house and two drive entrances in the South State Street right-of-way.

There is one existing wetland area at the south end of the property. There are 3.12 acres tributary to the wetland from the site, plus 1.03 acres from the properties to the north and east for a total of 4.15 acres contributing to recharge the wetland.

The wetland is unregulated and discharges to the South State Street road ditch. From there it goes to a culvert under Old State Road and continues to the southwest and eventually runs to the Pittsfield #5 drain, then from there to the Saline River. It currently does not have any recognized flooding issues.

Methodology

As the area in question is less than 5 acres, a direct calculation of the 24 hour rainfall over the area tributary to the wetland was used. The 24 hour rainfall for the 10 year and 100 year events is done using the Washtenaw County Water Resources Commissioners Appendix G: Rainfall Precipitation Data Table. The Washtenaw County Water Resources Commissioner (WCWRC) Procedures and Design Criteria for Storm Water Management Systems were used for storm water volume for the basin design.

Existing Conditions Calculations

For a 10 year storm event, the existing water volume is approximately 13,099 cft. For a 100 year storm event, the existing water volume is approximately 28,482 cft.

Proposed Development

It is proposed to develop the site into a multi-family home development. A rain garden feature is to be installed upstream of the wetland to improve water quality and provide for a landscaped area.

Storm Water Impact

The increase in impervious area on the site will require a storm water detention system. The proposed detention basin will be an underground system and located at the west side of the development. It will outlet to the south west of the site, go through the rain garden area and to the wetland area over a period of 48 hours.

There will be a small area along the west edge of the site that is not able to be detained in the storm water basin.

Proposed Storm Water Calculations

The proposed storm water detention basin will collect storm water from 1.28 acres using the WCWRC standard dry detention basin design. A rational method C value of 0.87 is used based on the proposed site design and soil conditions. To detain the 100 year storm event will require 25,230 cubic feet of storage. This includes the 20% storage penalty for not providing infiltration. The basin uses a structure with orifice control to regulate the storage for the 100 year, 10 year and first flush events.

Proposed Detention System Product Information

It is proposed to use the STORMTANK chamber system from Brentwood Industries stacking the ST-24 and the ST-30 chamber modules.. The storm water pretreatment to remove sediment and debris will be the ADS Baracuda pretreatment chamber.

Effects on the Existing Southern Wetland

Because of the development, the volume of water for the 10 year and 100 year storm events will increase over the existing conditions and provide adequate volume of water to recharge the wetland. There will be no additional impact to the downstream culvert or downstream properties.

PRINCIPALS
J.K. MAYNARD, P.E.
D.J. HOUCK
D.L. MOORE
ASSOCIATE
T.L. SUTHERLAND, P.S.

WASHTENAW ENGINEERING COMPANY

CIVIL ENGINEERS • PLANNERS • SURVEYORS
TRANSPORTATION ENGINEERS
LANDSCAPE ARCHITECTS

ENGINEER'S CERTIFICATE OF OUTLET

Date June 10, 2019

Development Name Dean Yard of Ann Arbor

Twp. of Pittsfield Sec. 28

Washtenaw County, Michigan

I hereby certify that the existing drain is the only reasonable available storm water outlet for the proposed storm water management system and that the existing drain has sufficient capacity to serve as an adequate outlet for the proposed system, without detriment to or diminution of the drainage service that the existing outlet presently provides.

Signed _____
Registered Professional Engineer

STATE OF MICHIGAN SETH A. GARNER ENGINEER NO. 53111 REGISTERED PROFESSIONAL ENGINEER

H:\PROJECTS\PVWRA - 2 STATE RD\Design\Storm Water Management\CERTIFICATE OF OUTLET.doc

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CLIENT
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3760 BARRY KNOLL DR
ANN ARBOR, MI 48108
TEL 734-260-7260

SHEET
STORM WATER MANAGEMENT CALCULATIONS

PROJECT
DEEN'S YARD OF ANN ARBOR

Know what's below. Call before you dig.

STATE OF MICHIGAN JOSEPH K. MAYNARD ENGINEER No. 52559 LICENSED PROFESSIONAL ENGINEER

SECTION 28	TOWN 3 SOUTH	RANGE 6 EAST	PROJECT
PITTSFIELD TOWNSHIP			
WASHTENAW COUNTY • MICHIGAN			
DATE 06-17-19	JOB NO. 32485	DWG NO. 485-stm-calc	
		FIELD BOOK NONE	
SHEET 10		FILE NO. 10537	

BENCHMARK BM1=TOP OF DIRECTION ARROW ON HYDRANT, EAST OF S. STATE ST AND NORTH OF EXISTING DRIVE TO 6511 S. STATE ST, ELEV=833.06 (NAVD 88).

BM2=NAIL IN W'LY FACE OF UTILITY POLE, EAST OF S. STATE ST AND SOUTH OF EXISTING DRIVE TO 6495 S. STATE ST, ELEV=831.98 (NAVD 88).

REVISIONS 8-29-19 PER REVIEW. 9-13-19 PER REVIEW.

SCALE NO SCALE

PREPARED BY JOSEPH K. MAYNARD P.E., MICH No. 52559

H:\32485\engs\32485\engs485-stm-calc.dwg, 9/18/2019 1:57:23 PM, 1:1

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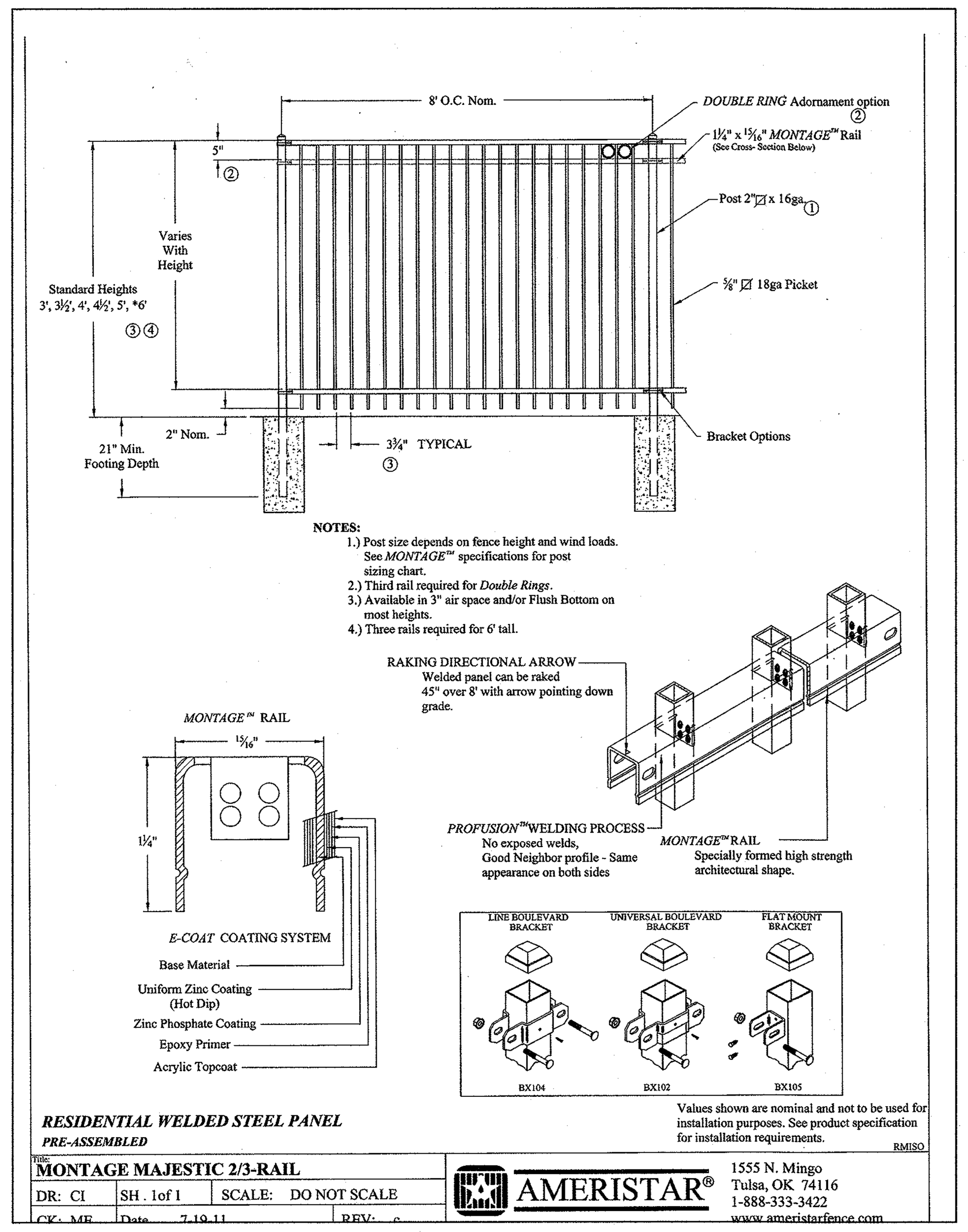
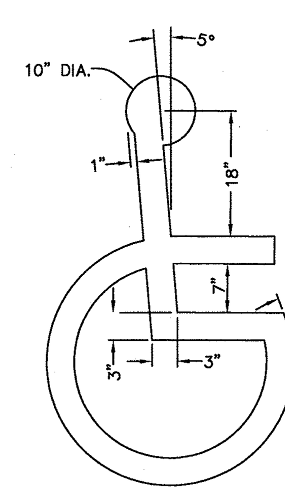


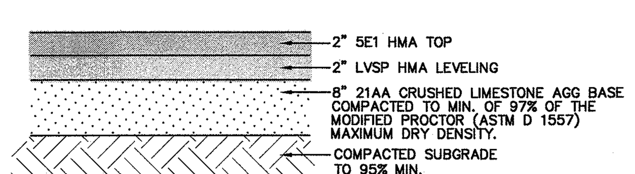
STEEL FENCE DETAIL



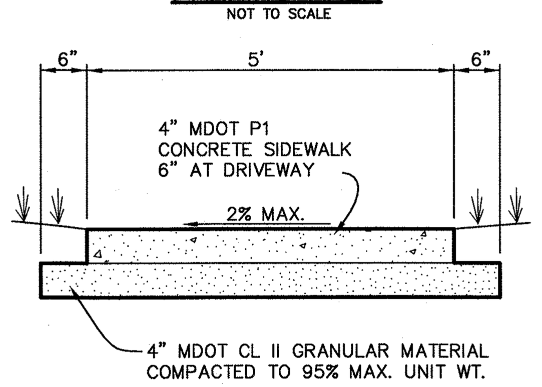
NOTE:
ALL STRIPES TO BE 4" PAINTED BLUE.

NOTE:
BARRIER FREE SYMBOL WILL BE PLACED BY OTHERS. CONTRACTOR WILL NOT BE RESPONSIBLE FOR EXTERIOR PAVEMENT MARKINGS.

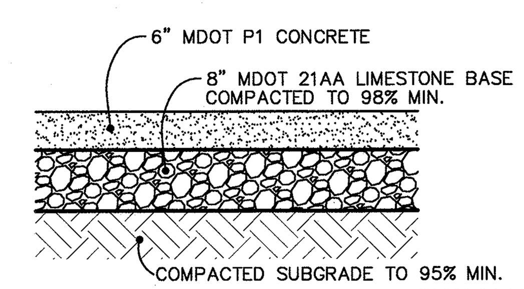
BARRIER FREE SYMBOL
NOT TO SCALE



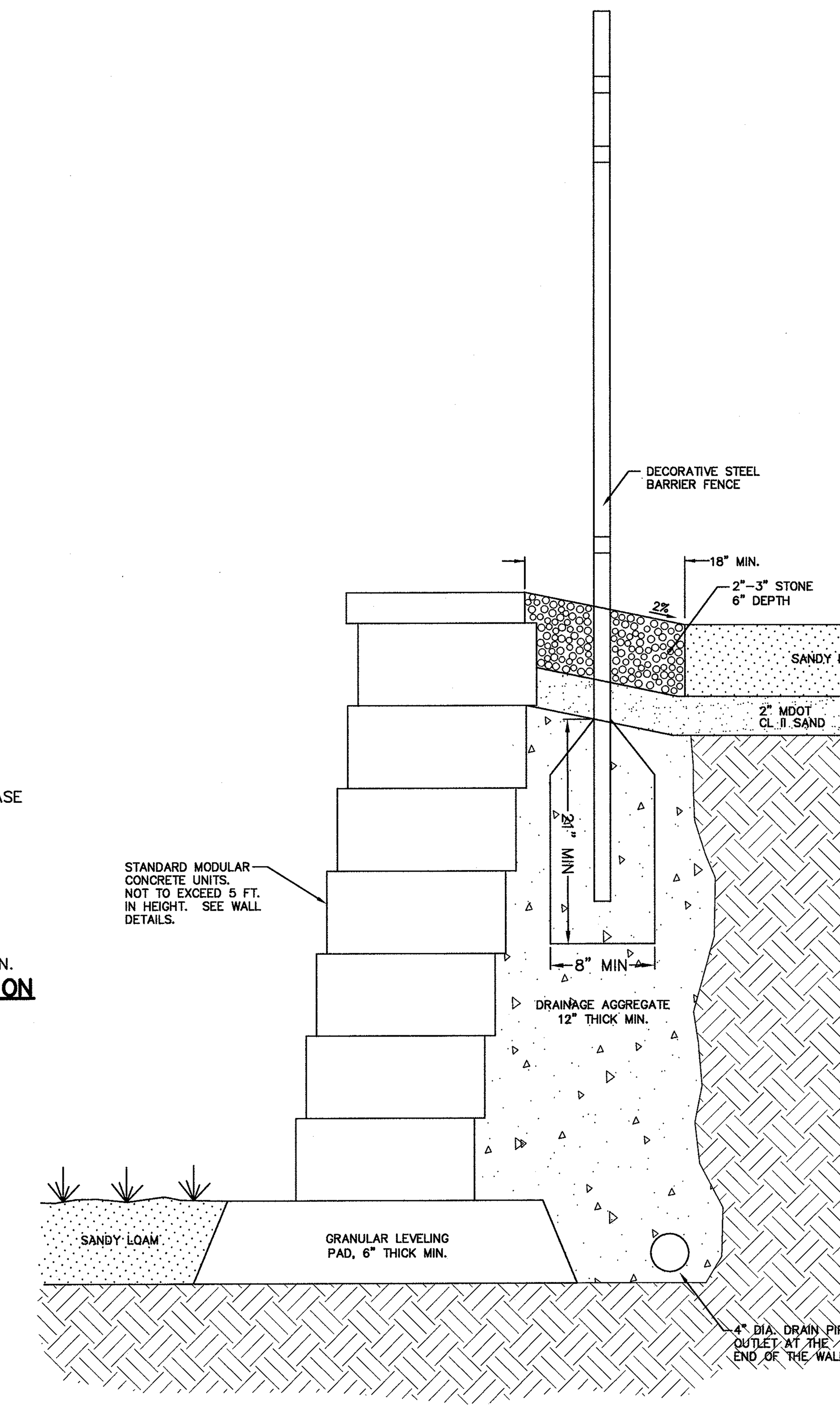
HMA TYPICAL CROSS SECTION PARKING AREA
NOT TO SCALE



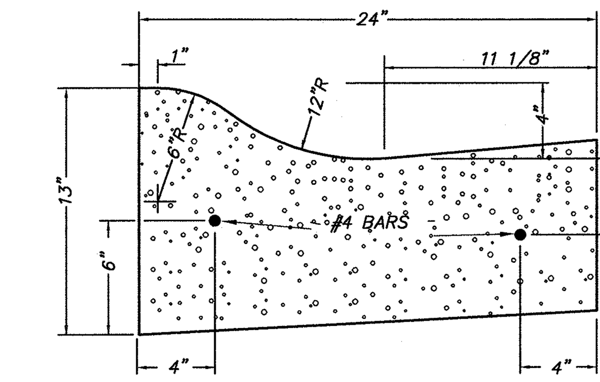
TYPICAL SIDEWALK SECTION
NOT TO SCALE



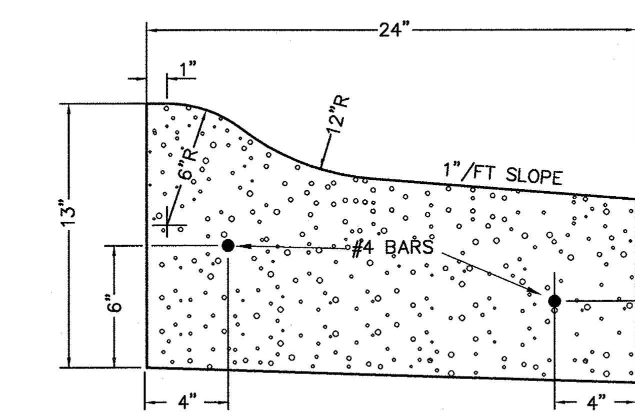
CONCRETE DUMPSTER PAVEMENT SECTION
NO SCALE



KEYSTONE WALL DETAIL
NOT TO SCALE

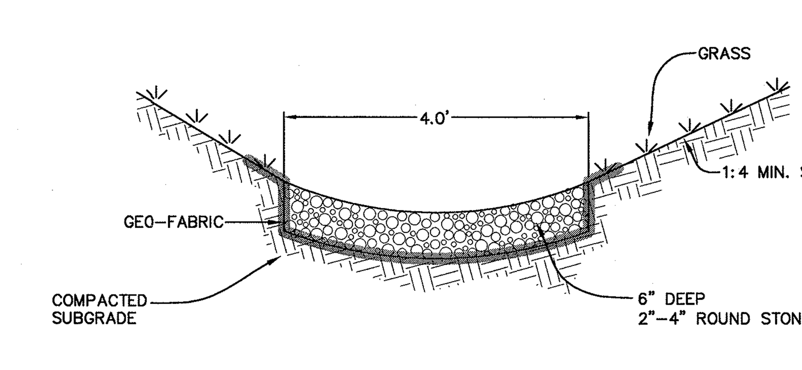


MOUNTABLE (MDOT DETAIL D2 MODIFIED)
NO SCALE

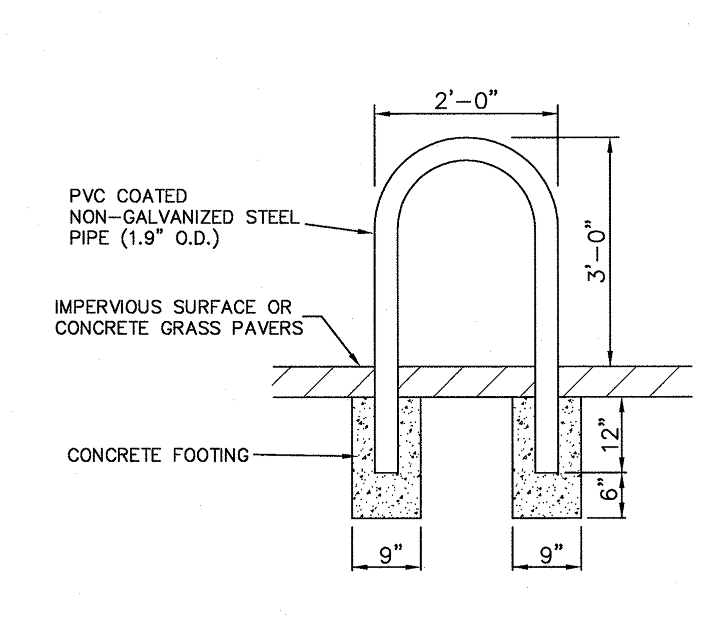


MOUNTABLE SPILLOUT(MDOT DETAIL D2 MODIFIED)
NOT TO SCALE

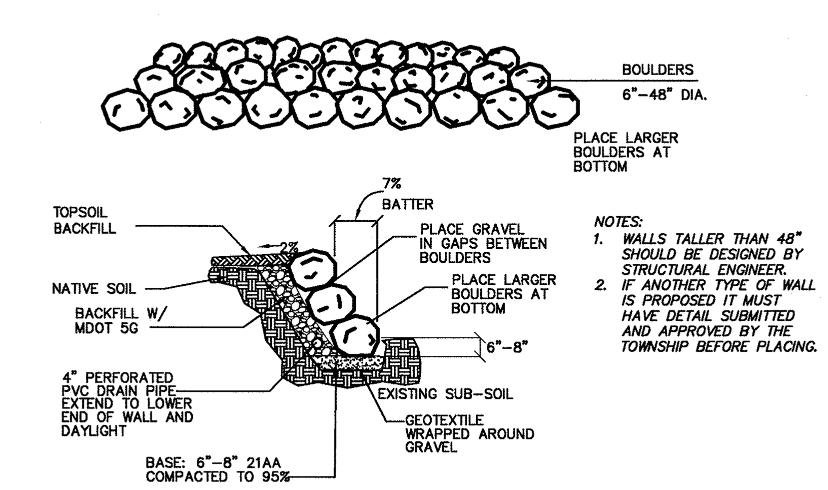
d2 curb mod spillout



RIP-RAP SWALE DETAIL
NOT TO SCALE

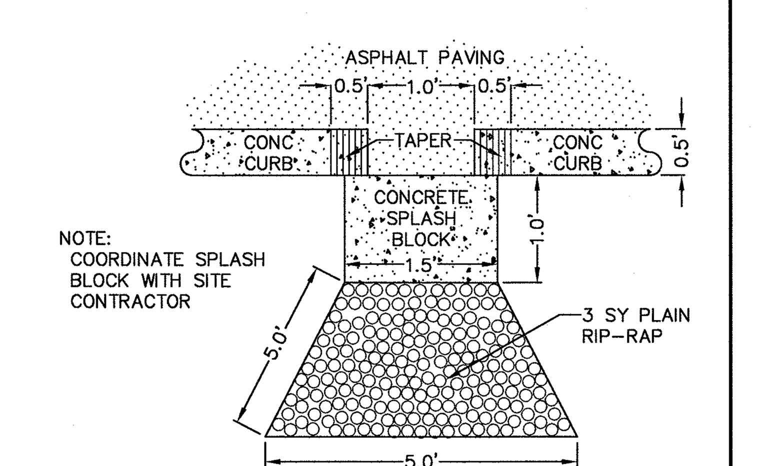


HOOPSTYLE RACK
NOT TO SCALE



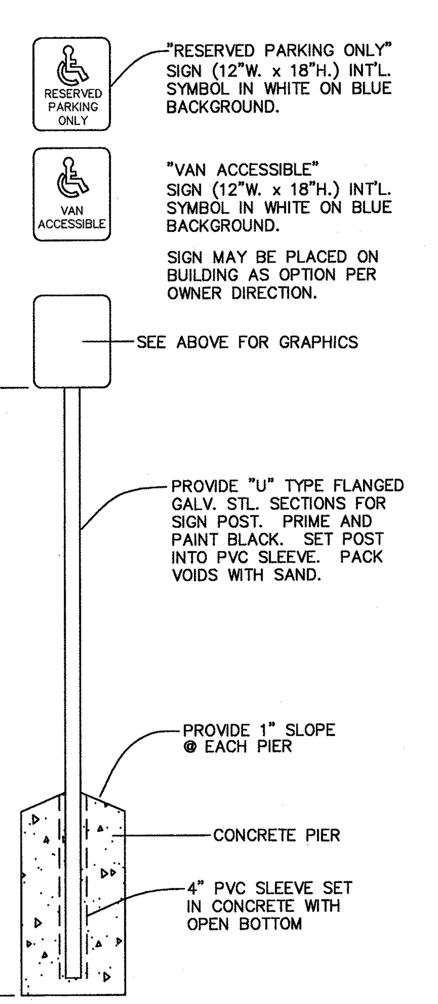
NOTES:
1. *WALLS TALLER THAN 48" SHOULD BE DESIGNED BY STRUCTURAL ENGINEER.*
2. *IF ANOTHER TYPE OF WALL IS PROPOSED IT MUST HAVE DETAIL SUBMITTED AND APPROVED BY THE TOWNSHIP BEFORE PLACING.*

BOULDER WALL DETAIL
NOT TO SCALE



NOTE:
COORDINATE SPLASH BLOCK WITH SITE CONTRACTOR

DRAINAGE CURB CUT
NOT TO SCALE



"RESERVED PARKING ONLY" SIGN (12"W. x 18"H.) INT'L. SYMBOL IN WHITE ON BLUE BACKGROUND.

"VAN ACCESSIBLE" SIGN (12"W. x 18"H.) INT'L. SYMBOL IN WHITE ON BLUE BACKGROUND.

SIGN MAY BE PLACED ON BUILDING AS OPTION PER OWNER DIRECTION.

SEE ABOVE FOR GRAPHICS

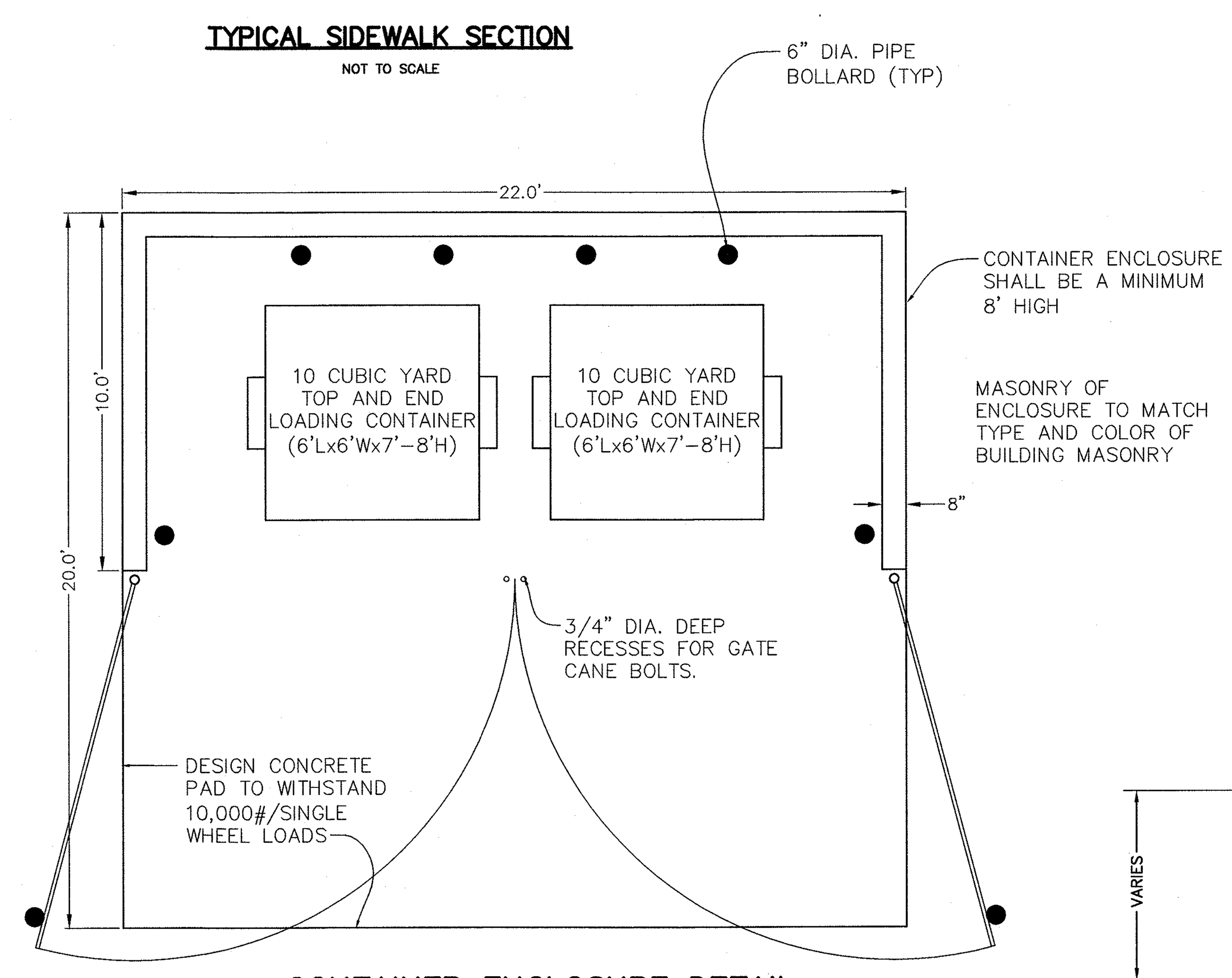
PROVIDE "U" TYPE FLANGED GALV. STL. SECTIONS FOR SIGN POST. PRIME AND PAINT BLACK. SET POST INTO PVC SLEEVE. PACK VOIDS WITH SAND.

PROVIDE 1" SLOPE @ EACH PIER

CONCRETE PIER

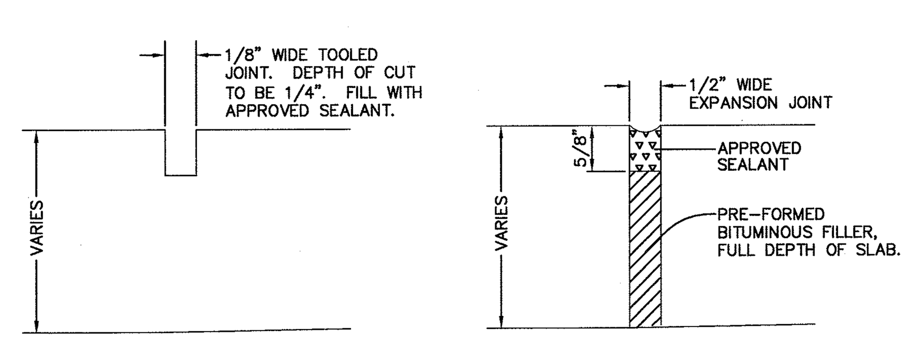
4" PVC SLEEVE SET IN CONCRETE WITH OPEN BOTTOM

BARRIER FREE PARKING SIGN
NOT TO SCALE

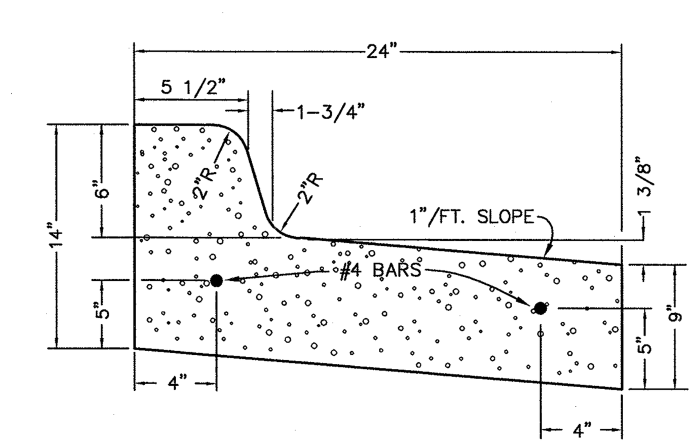


CONTAINER ENCLOSURE DETAIL
(NOT TO SCALE)

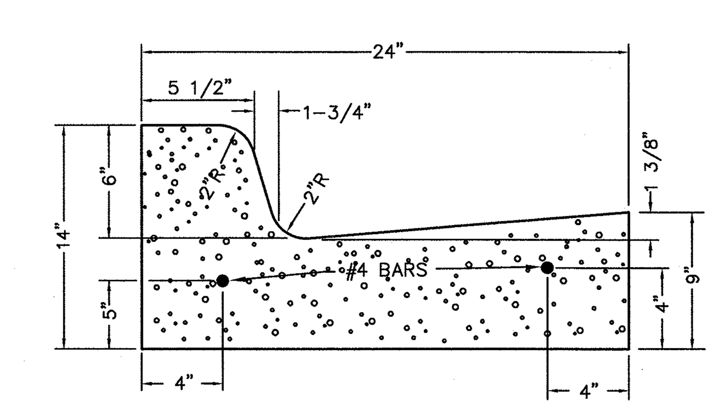
NOTE:
1. ALL FACILITIES FOR THE DISABLED SHALL CONFORM WITH THE AMERICAN WITH DISABILITIES ACT AND ALL REVISIONS.
2. THE CHARACTERS AND THE BACKGROUND OF SIGNS SHALL BE EGGSHELL, MATTE OR OTHER NON-GLARE FINISH. CHARACTERS AND SYMBOLS SHALL CONTRAST WITH THEIR BACKGROUND. LIGHT CHARACTERS ON DARK BACKGROUND ARE PREFERRED.
3. CONTRAST LEVELS OF SYMBOLS TO BACKGROUND TO BE A MINIMUM OF 70%.
4. CONTRACTOR SHALL VERIFY THAT THE SYMBOL SHOWN MEETS THE CURRENT STANDARD OF THE INTERNATIONAL SYMBOL OF ACCESSIBILITY AND SHALL BE IN COMPLIANCE WITH ICC/ANSI FIGURE 703.7.2.1.



CONCRETE JOINTS
NOT TO SCALE



SPILL-OUT (MODIFIED MDOT DETAIL F-4)
NOT TO SCALE



BARRIER (MDOT DETAIL F4)
NOT TO SCALE

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SHEET
DETAILS

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION *28* TOWN *3* SOUTH RANGE *6* EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY * MICHIGAN

DATE *06-11-19*	JOB NO. *32485*
	DWG NO. *485-det*
	FIELD BOOK *NONE*
	FILE NO. *10537*

11
SHEET

STATE OF MICHIGAN
JOSEPH K. MAYNARD
ENGINEER
No. 52559
LICENSED PROFESSIONAL ENGINEER

BENCHMARK *BM1=TOP OF DIRECTION ARROW ON HYDRANT, EAST OF S. STATE ST AND NORTH OF EXISTING DRIVE TO 6511 S. STATE ST, ELEV=833.06 (NAVD 88).*

BM2=NAIL IN W'LY FACE OF UTILITY POLE, EAST OF S. STATE ST AND SOUTH OF EXISTING DRIVE TO 6495 S. STATE ST, ELEV=831.98 (NAVD 88).

REVISIONS *8-29-19 PER REVIEW. 9-13-19 PER REVIEW.*

SCALE
NO SCALE

PREPARED BY
JOSEPH K. MAYNARD P.E., MICH No. 52559

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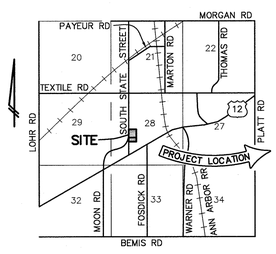
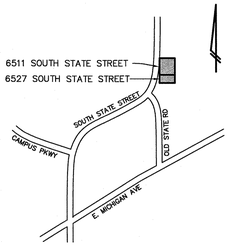




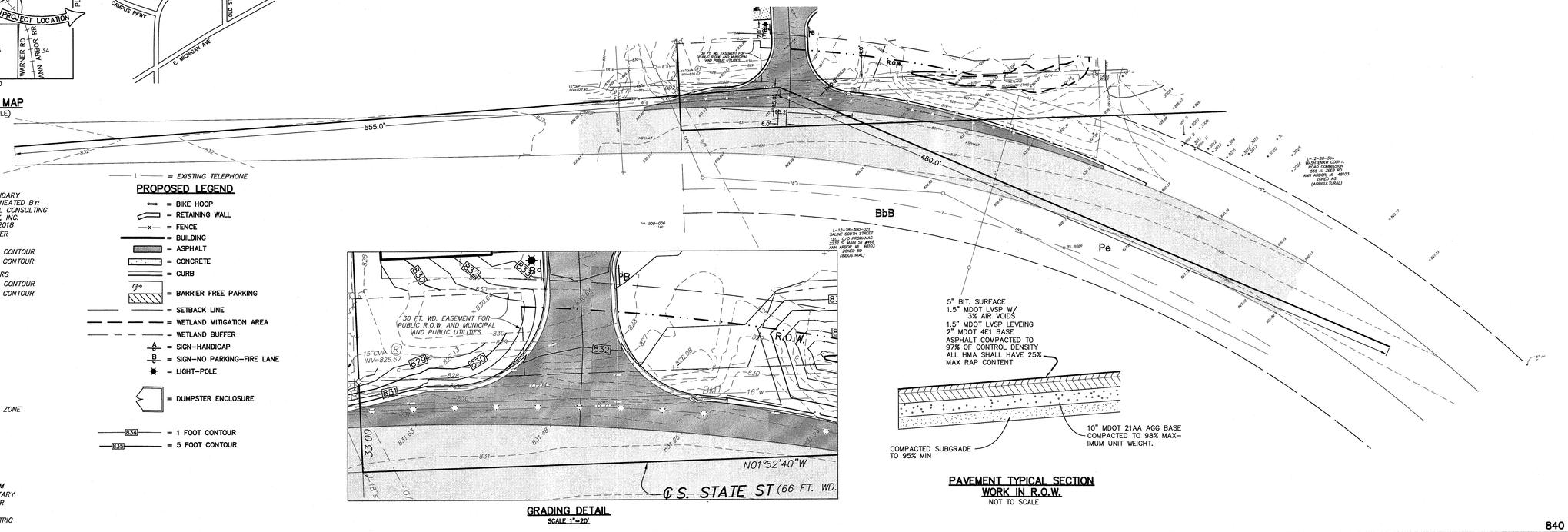
VICINITY MAP
(NO SCALE)

WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION

BbB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES
Pe – PEWAMO CLAY LOAM
• • • • • • • – SOILS BOUNDARY

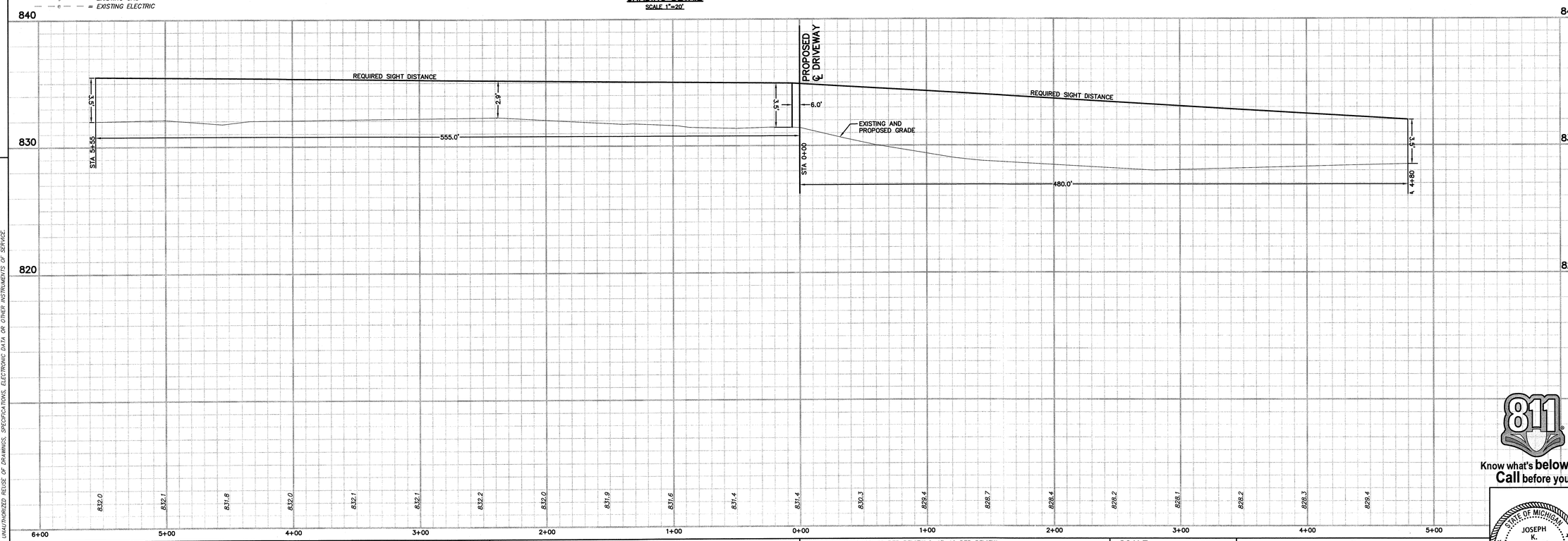
SOILS ARE BASED ON USDA SOIL SURVEY OF WASHTENAW COUNTY.

NOTES:
1. POSTED SPEED LIMIT 50 MPH
2. SIGHT DISTANCE FOR PASSENGER CARS FROM STOP FOR 50 MPH DESIGN SPEED; LEFT TURN 555 FT, RIGHT TURN 480 FT.
3. NO EXISTING CURB IN SOUTH STATE STREET
4. A COMMERCIAL DRIVEWAY SHALL BE AN MDOT TYPE "M" OPENING.



PAVEMENT TYPICAL SECTION WORK IN R.O.W.
NOT TO SCALE

GRADING DETAIL
SCALE 1"=20'



EXISTING LEGEND

- WETLAND BOUNDARY — WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC. DATED: JUNE 2018
- WETLAND BUFFER
- EWASHTENAW.ORG CONTOURS
- 830 = EXISTING 5 FT. CONTOUR
- 829 = EXISTING 1 FT. CONTOUR
- FIELDWORK GENERATED CONTOURS
- 835 = EXISTING 5 FT. CONTOUR
- 834 = EXISTING 1 FT. CONTOUR
- LIGHT POLE
- UTILITY POLE
- GUY ANCHOR
- HYDRANT
- GATE VALVE
- 827.23 = SPOT ELEV.
- POST
- SIGN
- TREE
- CRITICAL ROOT ZONE
- MANHOLE
- CATCHBASIN
- END SECTION
- GRAVEL
- FENCE
- CONCRETE
- ASPHALT
- f = EXISTING STORM
- s = EXISTING SANITARY
- w = EXISTING WATER
- g = EXISTING GAS
- e = EXISTING ELECTRIC
- t = EXISTING TELEPHONE

PROPOSED LEGEND

- BIKE HOOP
- RETAINING WALL
- FENCE
- BUILDING
- ASPHALT
- CONCRETE
- CURB
- BARRIER FREE PARKING
- SETBACK LINE
- WETLAND MITIGATION AREA
- WETLAND BUFFER
- SIGN–HANDICAP
- SIGN–NO PARKING–FIRE LANE
- LIGHT–POLE
- DUMPSTER ENCLOSURE
- 834 = 1 FOOT CONTOUR
- 835 = 5 FOOT CONTOUR

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORDS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN WERE IN THE EXISTENCE AT THE TIME OF THIS SURVEY. THE SURVEYOR DOES ASSERT THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

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TEL 734-260-7260

SHEET
ENTRANCE SITE DISTANCE PLAN & PROFILE

PROJECT
DEEN'S YARD OF ANN ARBOR

Know what's below. Call before you dig.

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN

DATE 06-11-19
JOB NO. 32485
DWG NO. 485-entry
FIELD BOOK NONE
FILE NO. 10537

SHEET 12

BENCHMARK BM1=TOP OF DIRECTION ARROW ON HYDRANT, EAST OF S. STATE ST AND NORTH OF EXISTING DRIVE TO 6511 S. STATE ST, ELEV=833.06 (NAVD 88).

BM2=NAIL IN WLY FACE OF UTILITY POLE, EAST OF S. STATE ST AND SOUTH OF EXISTING DRIVE TO 6495 S. STATE ST, ELEV=831.98 (NAVD 88).

REVISIONS 8-29-19 PER REVIEW. 9-13-19 PER REVIEW.

SCALE 80
0 20 40
HORIZONTAL: 1 INCH = 40 FEET
VERTICAL: 1 INCH = 4 FEET

PREPARED BY JOSEPH K. MAYNARD P.E., MICH No. 52559

STATE OF MICHIGAN JOSEPH K. MAYNARD ENGINEER No. 52559 LICENSED PROFESSIONAL ENGINEER

H:\GISDwg\GIS485\dwg\485-entry.dwg, SHEET1 12:36:39 PM, 1:1

EXISTING LEGEND

- = WETLAND BOUNDARY WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC. DATED: JUNE 2018
- = WETLAND BUFFER

EWASHTENAW.ORG CONTOURS

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- 835 = EXISTING 5 FT. CONTOUR
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- = UTILITY POLE
- = GUY ANCHOR
- = HYDRANT
- = GATE VALVE
- = POST
- = SIGN
- = TREE
- = CRITICAL ROOT ZONE
- = MANHOLE
- = CATCHBASIN
- = END SECTION
- = FENCE
- = CONCRETE
- = ASPHALT
- r = EXISTING STORM
- s = EXISTING SANITARY
- w = EXISTING WATER
- g = EXISTING GAS
- e = EXISTING ELECTRIC
- t = EXISTING TELEPHONE

PROPOSED LEGEND

- = BIKE HOOP
- = RETAINING WALL
- x = FENCE
- = BUILDING
- = ASPHALT
- = CONCRETE
- = CURB
- = BARRIER FREE PARKING
- = SETBACK LINE
- = WETLAND MITIGATION AREA
- = WETLAND BUFFER
- A = SIGN–HANDICAP
- B = SIGN–NO PARKING–FIRE LANE
- = LIGHT–POLE
- = DUMPSTER ENCLOSURE
- 834 = 1 FOOT CONTOUR
- 835 = 5 FOOT CONTOUR
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- 12"R = STORM SEWER
- CO1 = CLEANOUT
- = UNDERGROUND DETENTION
- 10"S = SANITARY SEWER
- 6"S = SANITARY SERVICE
- 8"W = WATER MAIN
- 1"W = WATER SERVICE
- = GATE VALVE IN BOX
- = GATE VALVE IN WELL
- = HYDRANT
- = UTILIITY EASEMENT
- ×3065 = EXISTING TREES ON AND OFF SITE
- 2 WP = PROPOSED PLANT KEY
- = PROPOSED DECIDUOUS SHRUB
- = PROPOSED EVERGREEN SHRUB
- = PROPOSED EVERGREEN TREE (M = MITIGATION)
- = PROPOSED DECIDUOUS TREE (M = MITIGATION)
- = EXISTING TREE TO REMAIN
- = PROPOSED DECORATIVE HERBACEOUS GROUNDCOVER
- = PROPOSED RAIN GARDEN MIX
- = PROPOSED WETLAND BUFFER MIX
- = EXISTING WETLAND
- = PROPOSED UNDERGROUND DETENTION
- = WETLAND BOUNDARY
- = 25' WETLAND BUFFER
- x = PROPOSED DECORATIVE /SAFETY BARRIER FENCE
- = PROPOSED RETAINING WALL
- = TREE PROTECTION FENCE

THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING RECORDS. THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN–SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.

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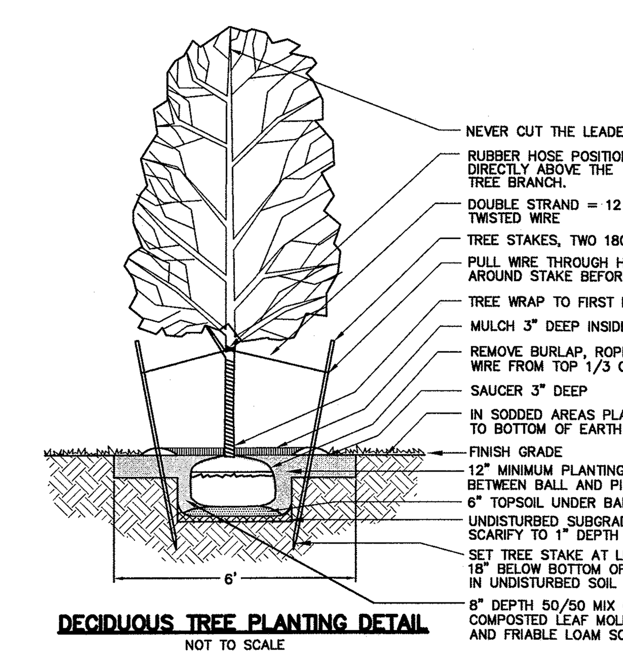
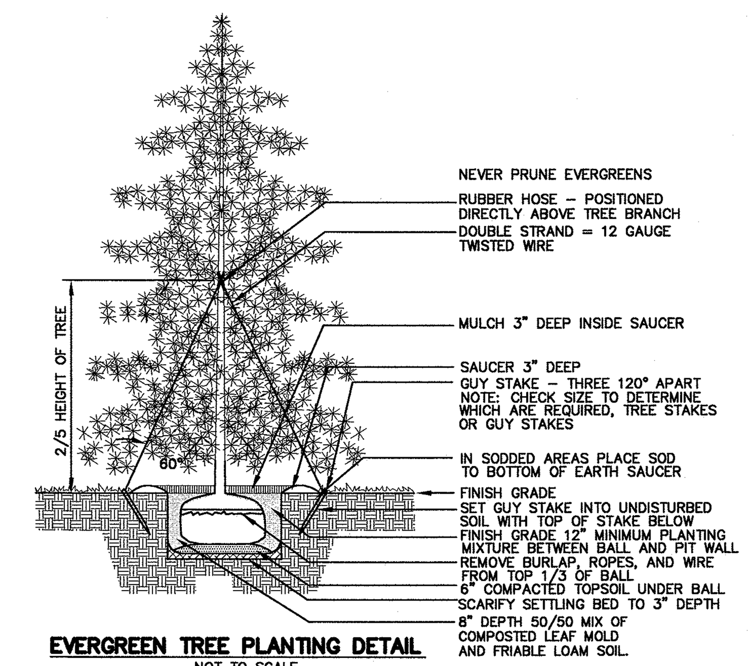
GENERAL LANDSCAPE NOTES

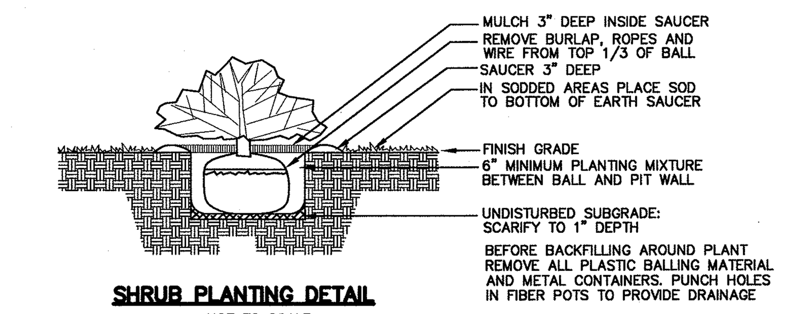
1. ALL WORKMANSHIP AND MATERIALS SHALL CONFORM TO PITTSFIELD TOWNSHIP STANDARDS AND SPECIFICATIONS. ALL PLANT MATERIAL SHALL BE SIZES AND MEASUREMENTS CONFORMING TO THE USA STANDARD FOR NURSERY STOCK. ALL PLANT MATERIAL SHALL BE OF SELECTED SPECIMEN QUALITY AND HAVE A NORMAL HABIT OF GROWTH. ALL PLANT MATERIAL IS SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT.
2. ALL PLANT MATERIAL SHALL BE BALLED AND BURLAPPED STOCK MOVED BY TREE SPADE OR CONTAINER STOCK. NO BARE ROOT STOCK IS PERMITTED. ALL PLANT BALLS SHALL BE FIRM, INTACT AND SECURELY WRAPPED AND BOUND.
3. ALL PLANT BEDS SHALL BE EXCAVATED OF ALL BUILDING MATERIALS AND OTHER EXTRANEOUS OBJECTS AND POOR SOILS TO A MINIMUM DEPTH OF TWELVE INCHES (12") AND ALL BACKFILLED TO GRADE WITH PLANTING MIX (SEE BELOW).
4. PLANTING MIXTURE SHALL BE 50% COMPOSTED LEAF MOLD & 50% FRIABLE LOAM SOIL.
5. ALL PLANT BEDS AND INDIVIDUAL PLANTS SHALL BE MULCHED WITH A THREE INCH (3") LAYER OF SHREDDED BARK MULCH.
6. ALL PLANTS AND PLANT BEDS SHALL BE THOROUGHLY WATERED.
7. THE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIALS FOR A PERIOD OF ONE (1) YEAR FROM THE DATE THE WORK IS ACCEPTED, IN WRITING, BY THE LANDSCAPE ARCHITECT. THE CONTRACTOR SHALL REPLACE, WITHOUT COST TO THE OWNER, WITHIN A SPECIFIED PERIOD OF TIME, ALL DEAD PLANTS, AND ALL PLANTS NOT IN A VIGOROUS, THRIVING CONDITION, AS DETERMINED BY THE LANDSCAPE ARCHITECT DURING AND AT THE END OF THE GUARANTEE PERIOD. REPLACEMENT STOCK SHALL CONFORM TO THE ORIGINAL REQUIREMENTS.
8. ALL AREAS OF THE SITE THAT BECOME DISTURBED DURING CONSTRUCTION AND ARE NOT TO BE PAVED, STONED OR LANDSCAPED SHALL BE SEEDED AND MULCHED. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ESTABLISH A DENSE LAWN OF PERMANENT GRASSES, FREE OF LUMPS AND DEPRESSIONS. ANY PART OF THE AREA THAT FAILS TO SHOW A UNIFORM GERMINATION SHALL BE RESEEDED AND SUCH RESEEDING SHALL CONTINUE UNTIL A DENSE LAWN IS ESTABLISHED. DAMAGE TO SEEDED AREAS RESULTING FROM EROSION SHALL BE REPAIRED BY THE CONTRACTOR.
9. ALL AREAS OF THE SITE SCHEDULED FOR SEEDING SHALL BE DISCED AND GRADED IN CONFORMANCE WITH THE GRADING PLAN.
10. IT IS THE CONTRACTOR'S RESPONSIBILITY TO LOCATE THE UTILITIES, BOTH ABOVE AND UNDERGROUND PRIOR TO LANDSCAPING. ANY CONFLICTS BETWEEN UTILITIES AND PLANT MATERIAL SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT.
11. PROPOSED TREE LOCATIONS ARE ADJUSTED FOR UTILITIES LOCATIONS.
12. WETLAND ARE DELINEATED BY OTHERS THERE IS NO PLANTING ALLOWED WITHIN WETLAND BUFFER AREAS.
13. LAWN MIX IN CLEAR VISION ZONES ALONG ENTRY DRIVE AND S. STATE STREET R.O.W. OVER UNDERGROUND DETENTION AND AROUND BUILDING UNITS.
14. DUMPSTER ENCLOSURE IS MASONRY.
15. NO TREE PLANTING ABOVE UNDERGROUND DETENTION AREA.
16. NO LATE SUMMER OR FALL PLANTING OF PROPOSED EVERGREENS WILL BE ACCEPTED. TREAT EVERGREEN FOLIAGE WITH ANTI DISSIDENT AT TIME OF INSULATION.
17. MISCELLANEOUS REMOVALS INCLUDE, SCRUBS, BRUSH (BUCKTHRON, HONEYSUCKLE, WILDROSE) ALL DEAD TREES, AND INVASIVE SPECIES.



DECIDUOUS TREE PLANTING DETAIL
NOT TO SCALE



EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE



SHRUB PLANTING DETAIL
NOT TO SCALE

1ST YEAR LANDSCAPE MAINTENANCE

- LAWN AREAS – NEWLY PLANTED DOMESTIC LAWN AREAS WILL BE MOWED AND MAINTAINED AT 3" HEIGHT THROUGHOUT THE GROW SEASON. ANY DAMAGED OR BARE AREAS WILL BE REPAIRED WITH SPECIFIED SEED MIX AS INDICATED IN THE CONSTRUCTION PLAN.
- DETENTION BASIN – BASIN SEED MIX RESTORATION MIX ARE NATIVE SPECIES PLANTS THAT ADAPT TO CHANGING WEATHER CONDITIONS, SUPPLEMENTAL MAINTENANCE INCLUDES LATE FALL MOWING OR "PRESCRIBED BRUNING". ANY DAMAGED OR BARE AREAS WILL BE REPAIRED WITH SPECIFIED SEED MIX AS INDICATED IN THE CONSTRUCTION PLANS.
- TREE PLANTINGS & LANDSCAPING – NEW TREE PLANTINGS WILL RECEIVE ADEQUATE WATERING AT TIME OF PLANTING. ALL TREES WILL RECEIVE 3" HARDWOOD SHREDDED BARK MULCH WHICH WILL BE ADEQUATE TO MAINTAIN GROUND MOISTURE FOR ALL NEW TREES THROUGHOUT THE GROWING SEASON. IN CASE OF DROUGHT CONDITIONS, THE SITE CONDITIONS WILL BE EVALUATED AT THE TIME AND THE APPROPRIATE MITIGATION WILL BE IMPOSED.

WETLAND BUFFER MIX = FOR DISTURBED AREAS ONLY		
Botanical (Common) Name	Lbs./AC.	
FORBES		
Anemone canadensis (Canada Anemone)	0.031	#/A
Angelica purpurea (Angelica)	0.016	#/A
Asclepias incarnata (Swamp Milkweed)	0.188	#/A
Eupatorium maculatum (Joe-Pye Weed)	0.031	#/A
Eupatorium perfoliatum (Boneset)	0.126	#/A
Helenium autumnale (Sneezeweed)	0.063	#/A
Iris virginica (Wild Blue Flag)	0.188	#/A
Lobelia siphilitica (Great Blue Lobelia)	0.016	#/A
Rudbeckia fulgida (Three-lobed Coneflower)	0.026	#/A
Solidago graminifolia (Grassleaved Goldenrod)	0.125	#/A
Solidago patula (Swamp Goldenrod)	0.125	#/A
Symphyotrichum puniceum (Swamp Aster)	0.031	#/A
Verbena hastata (Blue Vervain)	0.125	#/A
Vernonia missurica (Ironweed)	0.063	#/A
Carex spp. (Carex species)	0.250	#/A
Elymus virginicus (Virginia Wild Rye)	0.125	#/A
Scirpus spp. (Scirpus species)	0.031	#/A
Sparganium eurycarpum (Common Bur)	0.125	#/A
Avena sativa (Seed Oaks)	32.000	#/A
Festuca elatior 'scaldis' (Scaldis hard fescue)	8.000	#/A
Andropogon gerardii (Big Blue Steam)	2.000	#/A
Total seed mix	**43.685**	#/A

RAIN GARDEN MIX		
Virginia Wildrye	Elymus virginicus	35%
Riverbank Wildrye	Elymus riparius	20%
Prairie Cordgrass	spartina pectinata	6%
Rice Cut Grass	Leersia oruzoides	1%
Bluejoint Reedgrass	Calamagrostis canadensis	0.5%
Woolgrass	Scirpus cyperinus	0.5%
Giant Bur Reed	Sparganium eurycarpum	1%
Frank's Sedge	Carex frankii	1%
Hop Sedge	Carex lupulina	1%
Bristly Sedge	Carex comosa	0.5%
Tussock Sedge	Carex stricta	0.25%
Fox Sedge	Carex vulpinoidea	8%
Soft Rush	Juncus effusus	1%
Hardstem Bulrush	Scirpus acutus	1%
Softstem Bulrush	Schoenoplectus tabernaemontani	1%
Dark Green Bulrush	Scirpus atrovirens	2%
Swamp Mildweed	Asclepias incamata	5%
Blue Vervain	Verbena hastata	5%
Water Plantain	Alisma plantago-aquatica	5%
Sweet Flag	Acorus calamus	1%
Monkey Flower	Mimulus ringens	1%
Blue Flag Iris	Iris virginica shrevel	1%
Common Arrowhead	Sagittaria latifolia	0.5%
Joe Pye Weed	Eupatorium maculatum	0.5%
Gardinal Flower	Lobelia cardinalis	0.25%
Great Blue Lobelia	Lobelia siphilitica	0.25%
New England Aster	Aster novae angliae	0.5%
Canada Anemone	Anemone canadensis	0.25%
	TOTAL MIX	100%
Seeding Rate: Drill 15 lbs/acre		

Planting Installation Dates:

Deciduous trees and shrubs - March 15 - July 1 & September 15 - November 15

Evergreen Trees and Shrubs - March 15 - July 1 (trees) NO FALL PLANTINGS WILL BE ACCEPTED
March 15 - July 1 & September 15 - November 15 (shrubs)

Domestic Lawn - March 15 - July 1 & September 15 - December 15

Native Grasses, Wildflowers, Sedges - March 15 - July 1 & September 15 - December 15

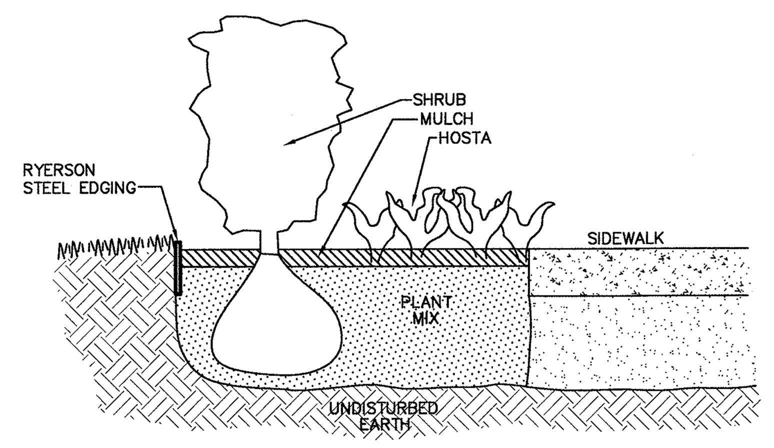
Landscape Maintenance Schedule:

Deciduous trees and shrubs - Mulch with 3" shredded hardwood mulch in (Spring)
Fertilize with 12-12- 12, per American nurserymen association standards
Trim crossing branches, suckers, branching growing back into crown (Trim time to match species requirement)

Evergreen Trees and Shrubs - Mulch with 3" shredded hardwood mulch in (Spring)
Fertilize with 12-12- 12, per American nurserymen association standards
Trim according to species growth habit, DO NOT USE HEDGE SHEARS.

Domestic Lawn - Maintain 2.5"mow height throughout summer season.
Apply 29-0-5 fertilizer once per June, July, and early September.

Native Grasses, Wildflowers, Sedges
Mechanically remove any woody growth within Rain-Garden
Weed-whack tall stalks at the end of each of the first two years.
Preform a prescribed burn in Spring of Fourth year of establishment and every third year thereafter.

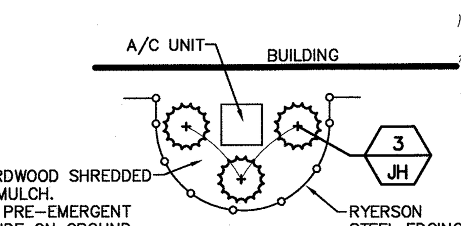


PLANT BED WITH EDGING DETAIL
(NOT TO SCALE)

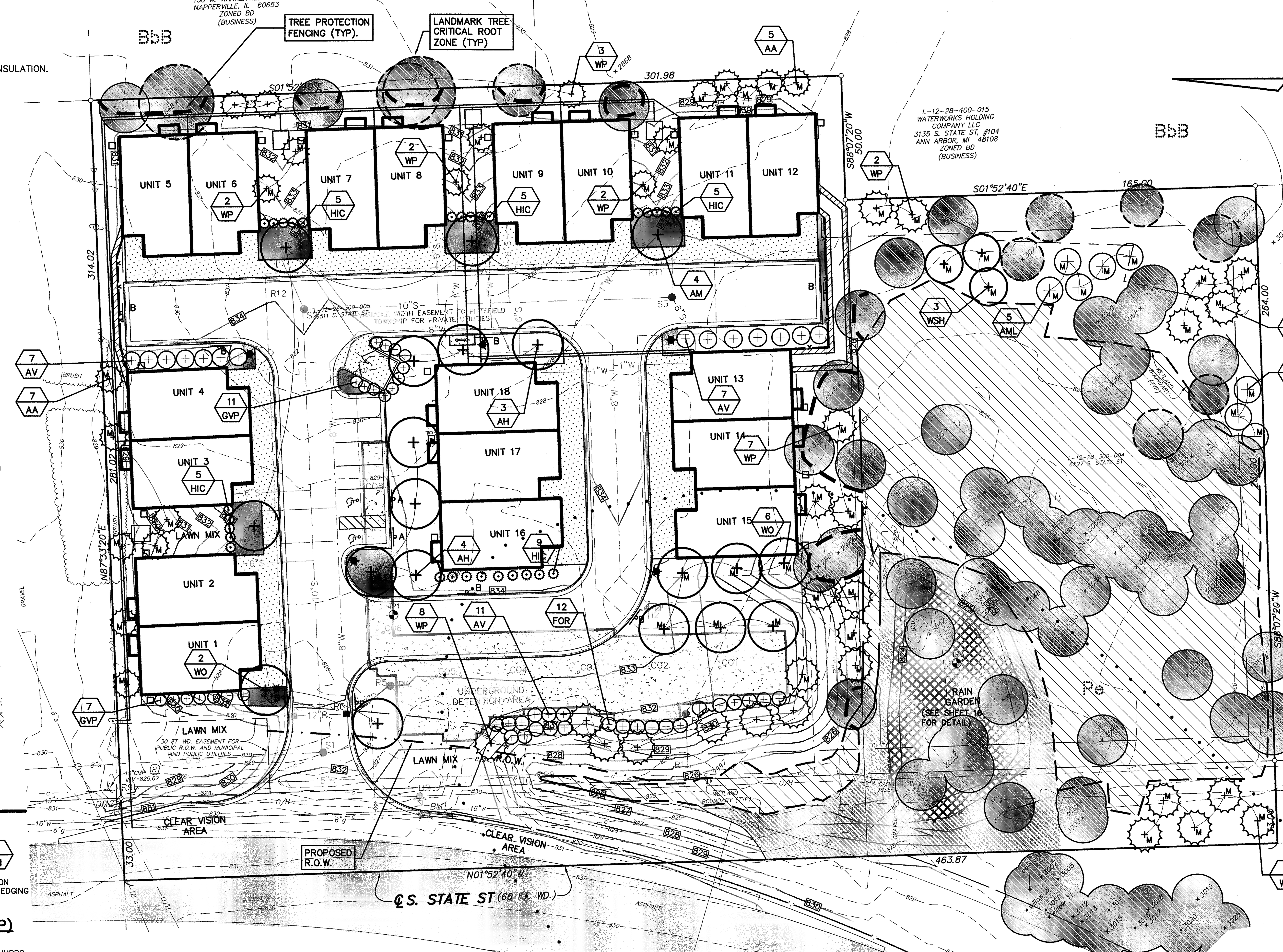
KENTUCKY BLUEGRASS MIX

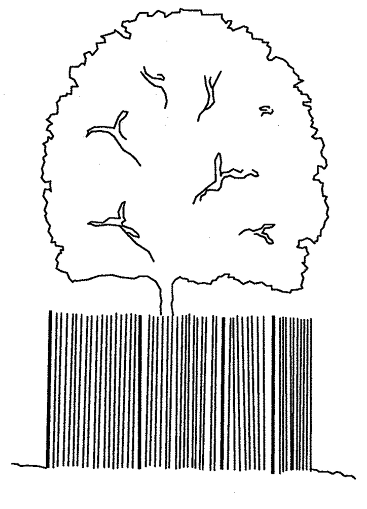
20% KENTUCKY BLUE 98/80
25% PERENNIAL RYE
25% CREEPING RED FESCUE
10% BARON KENTUCKY BLUEGRASS
10% KEN BLUE KENTUCKY BLUEGRASS

SEED RATE: 4 LBS/1000 SFT
FERTILIZER RATE: 15.30.15 3.25 LBS/1000 SFT



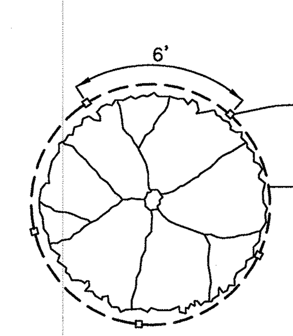
PLANTING DETAIL AROUND A/C UNIT (TYP)
(NOT TO SCALE)
NOTE: 18 AC UNITS X 3 SHRUBS = 54 SHURBS





ELEVATION

SNOW FENCE SHALL BE LOCATED AT THE OUTER PERIMETER OF THE SPREAD OF THE BRANCHES, OR CLOSER ONLY AT THE DIRECTION OF THE ENGINEER.



PLAN

TREE PROTECTION FENCING
NOT TO SCALE

PLANT LIST					
KEY	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
TREES					
AA	12	Thuja occidentalis	American Arborvitae	6' HT	B&B
AH	4	Carpinus caroliniana	American Hornbeam	2.5" CAL	B&B
AM	2	Acer rubrum 'Armstrong'	Armstrong Maple	2.5" CAL	B&B
WO	11	Quercus alba	White Oak	2.5" CAL	B&B
WP	23	Pinus strobus	White Pine	2.5" CAL	B&B
CP	5	Pyrus calleryana	Callery Pear	2.5" CAL	B&B
SHRUBS					
AV	25	Viburnum detatum	Arrowwood viburnum	36" HT	Container
HIC	29	Taxus hicksi	Spreading Hicks	24" SPD	Container
GVP	18	Ligustrum x vicaryi	Golden Vicary Privet	24" HT	Container
FOR	12	Forsythia suspensa	Weeping Forsythia	36" HT	Container
JH	54	Ilex crenata	Japanese Holly	18" HT	Container
	90	Hosta	Hosta Gold Tiara	#2 Pot	Container

ALTERNATIVE TREE MITIGATION

Due to the distribution of the Natural Features on the site (wetlands, buildable soils & topography) the Site Development Plan utilizes the north portion of the site for residential buildings, roads and utilities. This Plan conserves the bulk of the Natural Features that are located within the south end of the site. There is no other viable layout option that conserves more trees than our plan as submitted.

PLANTING REQUIREMENT SUMMARY

	REQUIRED	PROVIDED
SITE LANDSCAPE AREA (TOTAL AREA=98,679 SF± IMPERVIOUS AREA=44,755 SF±)	20%	45.3%
STREET FRONTAGE/GREENBELT TREES (463.87 LF @ 1 TREE PER 40'=12)	12 TREES	12 TREES
SIDE YARD FRONTAGE (PROVIDED AS MITIGATION)	0 TREES	0 TREES
INTERIOR LANDSCAPING (PROVIDED AS MITIGATION)	0 TREES	21 TREES
DUMPSTER SCREENING (6' MASONRY ENCLOSURE)	0 TREES 0 SHRUBS	0 TREES 11 SHRUBS
INTERIOR PARKING LOT LANDSCAPING (6 SPACES @ 1 TREE PER 8 SPACES=1)	1 TREES	1 TREES
PERIMETER PARKING LOT LANDSCAPING (58 LF @ 1 TREE PER 40'=2)	2 TREES	2 TREES (UTILITY EXCEPTION)
TREE MITIGATION (292" DBH TOTAL INCHES REQUIRED MITIGATION, 292" @ 2.5" CAL.=117 TREES) NOTE: A CASH CONTRIBUTION WILL BE MADE TO THE PITTSFIELD TOWNSHIP TREE FUND FOR THE REMAINING 60 MITIGATION TREES FOR A DOLLAR AMOUNT TO BE DETERMINED.	117 TREES	57 TREES
EQUIPMENT SCREENING	N/A SHRUBS	54 SHRUBS

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

BENCHMARK BM1=TOP OF DIRECTION ARROW ON HYDRANT, EAST OF S. STATE ST AND NORTH OF EXISTING DRIVE TO 6511 S. STATE ST, ELEV=833.06 (NAVD 88).

BM2=NAIL IN W'LY FACE OF UTILITY POLE, EAST OF S. STATE ST AND SOUTH OF EXISTING DRIVE TO 6495 S. STATE ST, ELEV=831.98 (NAVD 88).

REVISIONS 8-29-19 PER REVIEW. 9-13-19 PER REVIEW. 9-19-19 BLD. MOD.

SCALE 0 15 30 60
SCALE: 1"=30'

PREPARED BY [signature]
GERALD J. SOSNOWSKI RLA, MICH No. 982

STATE OF MICHIGAN GERALD J. SOSNOWSKI LANDSCAPE ARCHITECT NO. 982 REGISTERED LANDSCAPE ARCHITECT

CIVIL ENGINEERS
PLANNERS * SURVEYORS
LANDSCAPE ARCHITECTS
3526 W. LIBERTY RD
SUITE 400
ANN ARBOR, MI 48103
TEL. 734-761-8800
FAX. 734-761-9530
WASHTENAWENGINEERING.COM

WASHTENAW ENGINEERING

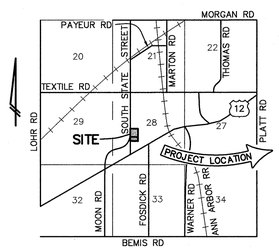
CLIENT
RONNY FURRHA
3760 BARRY KNOLL DR
ANN ARBOR, MI 48108
TEL 734-260-7260

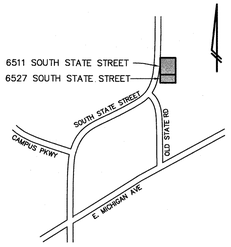
SHEET
PRELIMINARY LANDSCAPE PLAN

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN

DATE 10-30-18
JOB NO. 32485
DWG NO. 485-land
FIELD BOOK NONE
FILE NO. 10537





VICINITY MAP
(NO SCALE)

EXISTING LEGEND

- = WETLAND BOUNDARY
  WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC. DATED: JUNE 2018
- = WETLAND BUFFER

EWASHTENAW.ORG CONTOURS
- 830 = EXISTING 5 FT. CONTOUR
- 829 = EXISTING 1 FT. CONTOUR

FIELDWORK GENERATED CONTOURS
- 835 = EXISTING 5 FT. CONTOUR
- 834 = EXISTING 1 FT. CONTOUR
- = LIGHT POLE
- = UTILITY POLE
- = GUY ANCHOR
- = HYDRANT
- = GATE VALVE
- 981.23 = SPOT ELEV.
- = POST
- = SIGN
- = TREE
- = CRITICAL ROOT ZONE
- = MANHOLE
- = CATCHBASIN
- = END SECTION
- = GRAVEL
- = FENCE
- = CONCRETE
- = ASPHALT
- t = EXISTING STORM
- s = EXISTING SANITARY
- w = EXISTING WATER
- g = EXISTING GAS
- e = EXISTING ELECTRIC
- t = EXISTING TELEPHONE

PROPOSED LEGEND

- = BIKE HOOP
- = RETAINING WALL
- = FENCE
- = BUILDING
- = ASPHALT
- = CONCRETE
- = CURB
- = BARRIER FREE PARKING
- = SETBACK LINE
- = WETLAND MITIGATION AREA
- = WETLAND BUFFER
- = SIGN-HANDICAP
- = SIGN-NO PARKING-FIRE LANE
- = LIGHT-POLE
- = DUMPSTER ENCLOSURE
- = CATCH BASIN
- = MANHOLE
- = END SECTION
- 12"R = STORM SEWER
- CO1 = CLEANOUT
- = UNDERGROUND DETENTION
- 10"S = SANITARY SEWER
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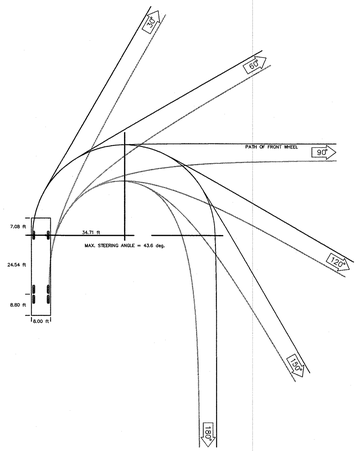
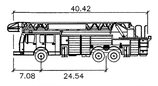
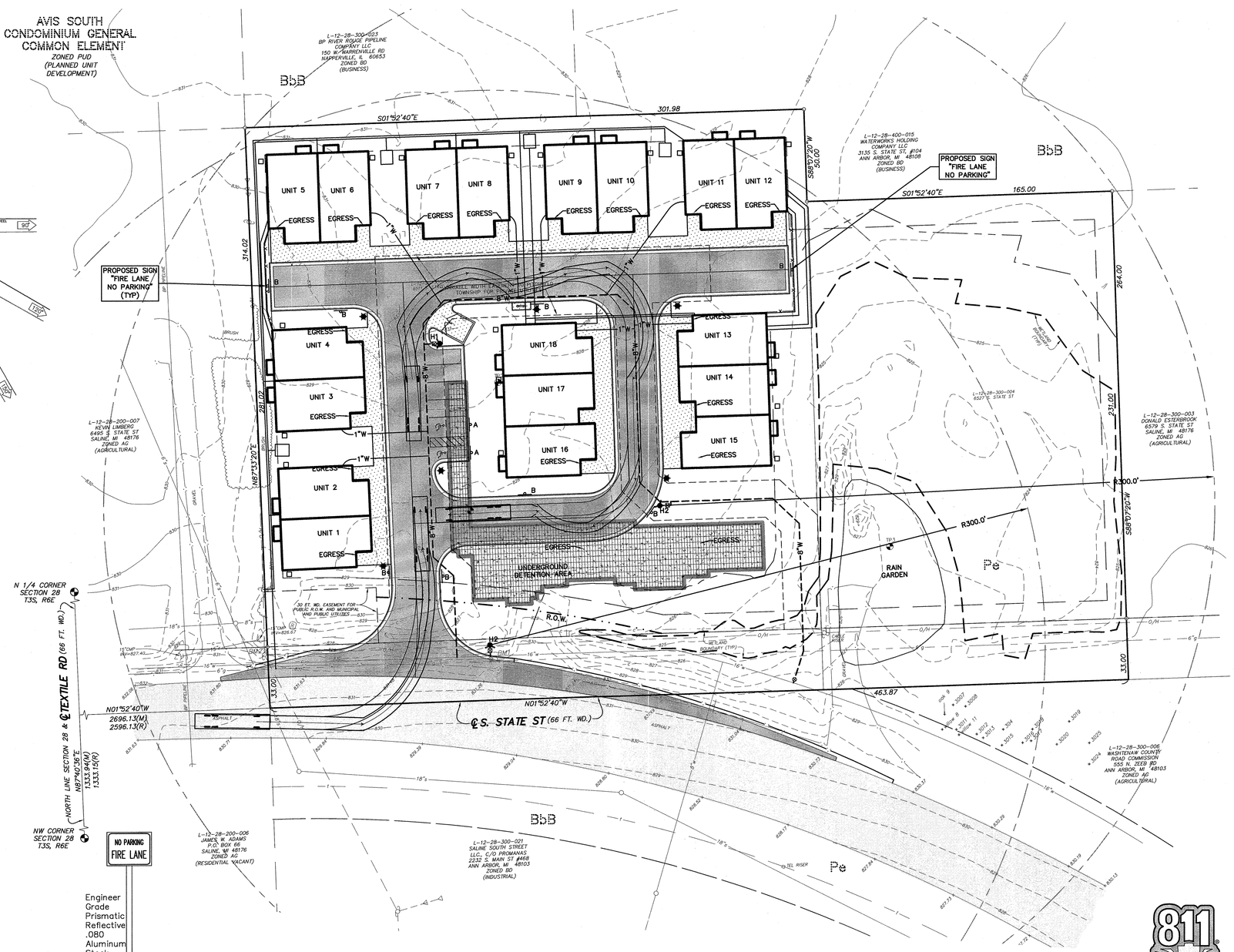




PITTSFIELD FIRE TRUCK

Width	: 8.00
Track	: 6.91
Lock to Lock Time	: 6.00
Steering Angle	: 45.00



NO PARKING FIRE LANE SIGN
NOT TO SCALE
(SIGN B)

NOTES:
1. ALL BUILDING ARE TWO STORY TOWNHOMES FOR RESIDENTIAL OCCUPANCY.
2. THERE IS NO PROPOSED FIRE DEPARTMENT CONNECTIONS NO THE PROPOSED BUILDINGS.

WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION
- B&B – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES
- PeB – PEWAMO CLAY LOAM
- SOILS BOUNDARY

SOILS ARE BASED ON USDA SOIL SURVEY OF WASHTENAW COUNTY.

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REVISIONS 8-29-19 PER REVIEW. 9-13-19 PER REVIEW. 9-19-19 BLD. MOD.

SCALE 0 15 30 60
SCALE: 1"=30'

PREPARED BY
JOSEPH K. MAYNARD P.E., MICH No. 52559

STATE OF MICHIGAN
JOSEPH K. MAYNARD
ENGINEER
No. 52559
LICENSED PROFESSIONAL ENGINEER

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RONNY FURRHA
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TEL. 734-260-7260

SHEET
FIRE PROTECTION PLAN

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN

DATE	06-11-19
JOB NO.	32485
DWG NO.	485-fire
FIELD BOOK	NONE
FILE NO.	10537

SHEET 14

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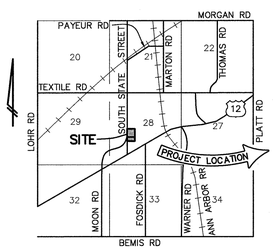
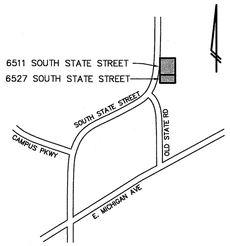




VICINITY MAP
(NO SCALE)

EXISTING LEGEND

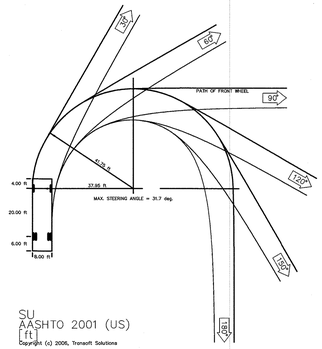
- = WETLAND BOUNDARY WETLANDS DELINEATED BY: ENVIRONMENTAL CONSULTING & TECHNOLOGY, INC. DATED: JUNE 2018
- = WETLAND BUFFER

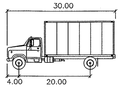
EWASHTENAW.ORG CONTOURS
- 830 = EXISTING 5 FT. CONTOUR
- 829 = EXISTING 1 FT. CONTOUR

FIELDWORK GENERATED CONTOURS
- 835 = EXISTING 5 FT. CONTOUR
- 834 = EXISTING 1 FT. CONTOUR
- = LIGHT POLE
- = UTILITY POLE
- = GUY ANCHOR
- = HYDRANT
- = GATE VALVE
- 823.23 = SPOT ELEV.
- = POST
- = SIGN
- = TREE
- = CRITICAL ROOT ZONE
- = MANHOLE
- = CATCHBASIN
- = END SECTION
- = GRAVEL
- = FENCE
- = CONCRETE
- = ASPHALT
- t = EXISTING STORM
- s = EXISTING SANITARY
- w = EXISTING WATER
- g = EXISTING GAS
- e = EXISTING ELECTRIC
- t = EXISTING TELEPHONE

PROPOSED LEGEND

- = BIKE HOOP
- = RETAINING WALL
- = FENCE
- = BUILDING
- = ASPHALT
- = CONCRETE
- = CURB
- = BARRIER FREE PARKING
- = SETBACK LINE
- = WETLAND MITIGATION AREA
- = WETLAND BUFFER
- = SIGN–HANDICAP
- = SIGN–NO PARKING–FIRE LANE
- = LIGHT–POLE
- = DUMPSTER ENCLOSURE





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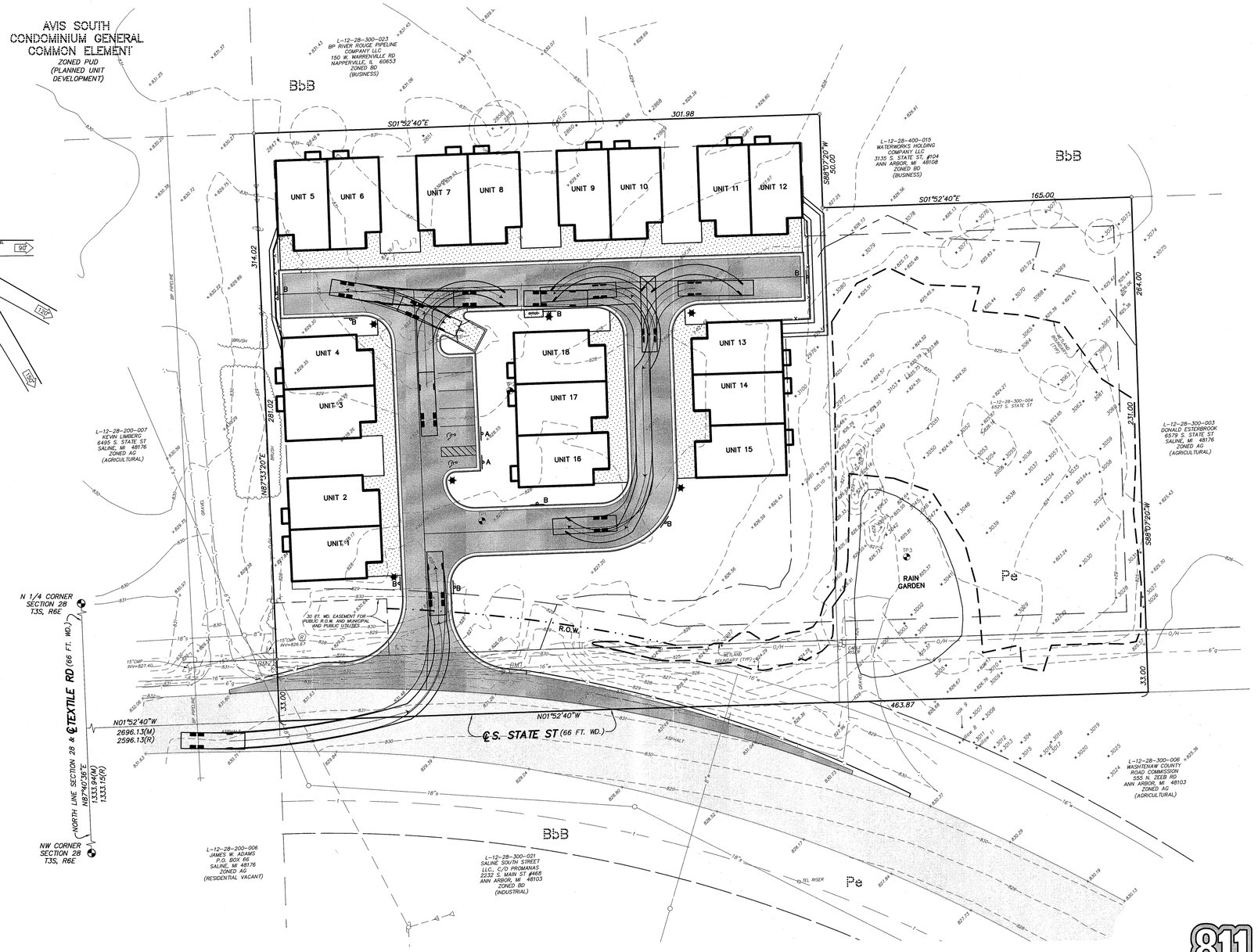
Track	: 8.00
Lock to Lock Time	: 6.00
Steering Angle	: 31.80



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WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION

BrB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES

PeB – PEWAMO CLAY LOAM

• • • • • • • – SOILS BOUNDARY

SOILS ARE BASED ON USDA SOIL SURVEY OF WASHTENAW COUNTY.

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SHEET
GARBAGE TRUCK TURNING TEMPLATE

PROJECT
DEEN'S YARD OF ANN ARBOR

SECTION 28 TOWN 3 SOUTH RANGE 6 EAST
PITTSFIELD TOWNSHIP
WASHTENAW COUNTY • MICHIGAN

DATE 06-11-09
JOB NO. 32485
DWG NO. 485-turn
FIELD BOOK NONE
FILE NO. 10537

SHEET 15

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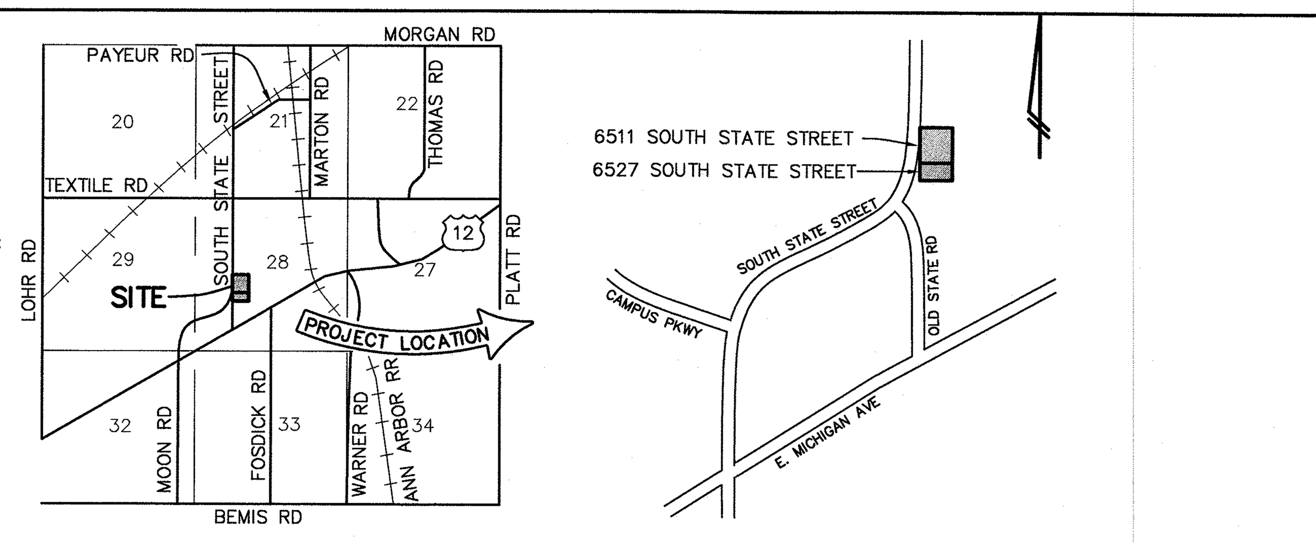

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- = CATCHBASIN
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Wetland Determination of properties located at 6511 & 6527 S. State Street

PROPERTY

Subject properties are located at 6511 and 6527 South State Street, Pittsfield Township. The property sizes are 2.17-acres and 1.0-acres respectively.

Significant and influencing site features of subject parcels and adjacent lands are as follows:

6511 South State Street is an upland environment primarily populated with mature White Oak trees. Significant adjacent urban features include a pipeline and easement along the north boundary and South State Street R.O.W., a primary arterial road, along the west boundary.

6527 South State Street is a combination of upland and lowland environments. The uplands contain mature White/Bur Oaks and Shagbark Hickory trees. The lowland area contains a Scrub – Brush wetland environment populated by American Elm & Buckthorn, an invasive species. There is fill of random soil types located in the northwest quadrant of the parcel; this fill extends west into the site beginning at the parcels access driveway. The property is bordered by Washtenaw County property at its southwest quadrant. There is no stormwater flow to the S. State Street R.O.W. A single family home exists at 6579 South State Street, this property adjoins the south boundary, filling of its front yard has cutoff natural outflow of stormwater from the subject parcel's emergent wetland.

METHOD

In August 2018 GJS Land Planning, LLC conducted a tree survey of 6511 South State Street. On November 3, 2018 another visit was made to 6527 South State Street to review the existing site features and the wetland boundary flagged by ECT (Environmental Consulting and Technology Inc.).

The natural features were evaluated using the following methods.

Soil Probes reveal soil profiles of existing on-site conditions. Soil probes reveal the presence of hydric (wetland) soils and locations of possible fill areas. Soil probe also help prove evidence of existing soil hydrology.

Vegetation – trees/ shrub species and wetland grasses, forbs and sedges are noted as indicators of existing soil types and hydrology. A tree survey in the upland of 6527 South State Street was conducted in September 2018.

Historic Data

- Soil Maps indicate the locations of upland and bottom lands of the subject parcels.
- Topography Maps indicate surface flow of stormwater runoff.
- 2018 weather conditions indicate available stormwater recharge conditions.
- Historic aerial photos indicate urban modifications that may have impacted natural features.

FINDINGS

Historic aerial photos indicate a small wetland located in the southwest quadrant of 6527 South State Street. This wetland was fed by stormwater runoff from the uplands to the north. The wetland once had an overland outlet flowing south and through 6579 South State Street.

Weather - June, July, and August 2018 marked the hottest/driest summer on record in the past 7 years. This drought was followed by record rainfall during September.

Soils in the western third of 6527 South State Street contains (Pe) Pewamo, clay loam, this soil type is associated with wetlands. This soil is characteristically poorly drained. The remaining two-third of the site is (BbB) Blount Loam, this is an upland soil type and existing mature Oak and Shagbark Hickory trees growing in it has verified this fact. There is an area of imported fill (approximately 10,000 SF+/-) consisting of random soil types, that include clays, silt, and gravels.

A Scrub – Brush Wetland exists in the southwest quadrant of the one acre parcel. This is a low quality wetland populated with under developed American Elm and Buckthorn, (invasive species). There are no endangered plant species evidenced here, Canary Reed Grass is the prominent grass. The natural overland stormwater outlet of this feature has been cut off by filling of the property's front yard at 6579 South State Street.

Note, Canary Reed Grass is an extremely aggressive species that forms a monotypic stand on sites disturbed by drainage, filling, siltation and other factors. It is found in a variety of disturbed wetlands including shrub swamps. Although typically associated with disturbed wetlands, this species also colonizes disturbed upland sites.

An Emergent Wetland has formed in portions of the southeast and northeast quadrants of the parcel. This environment is caused by the backup of stormwater caused by the elimination of the outflow to the south. Unfortunately, numerous existing 18"-20" Shagbark Hickory trees (approximately 75-100 years old) will be lost due to this backup of water that is caused by the adjoining neighbor to the south.

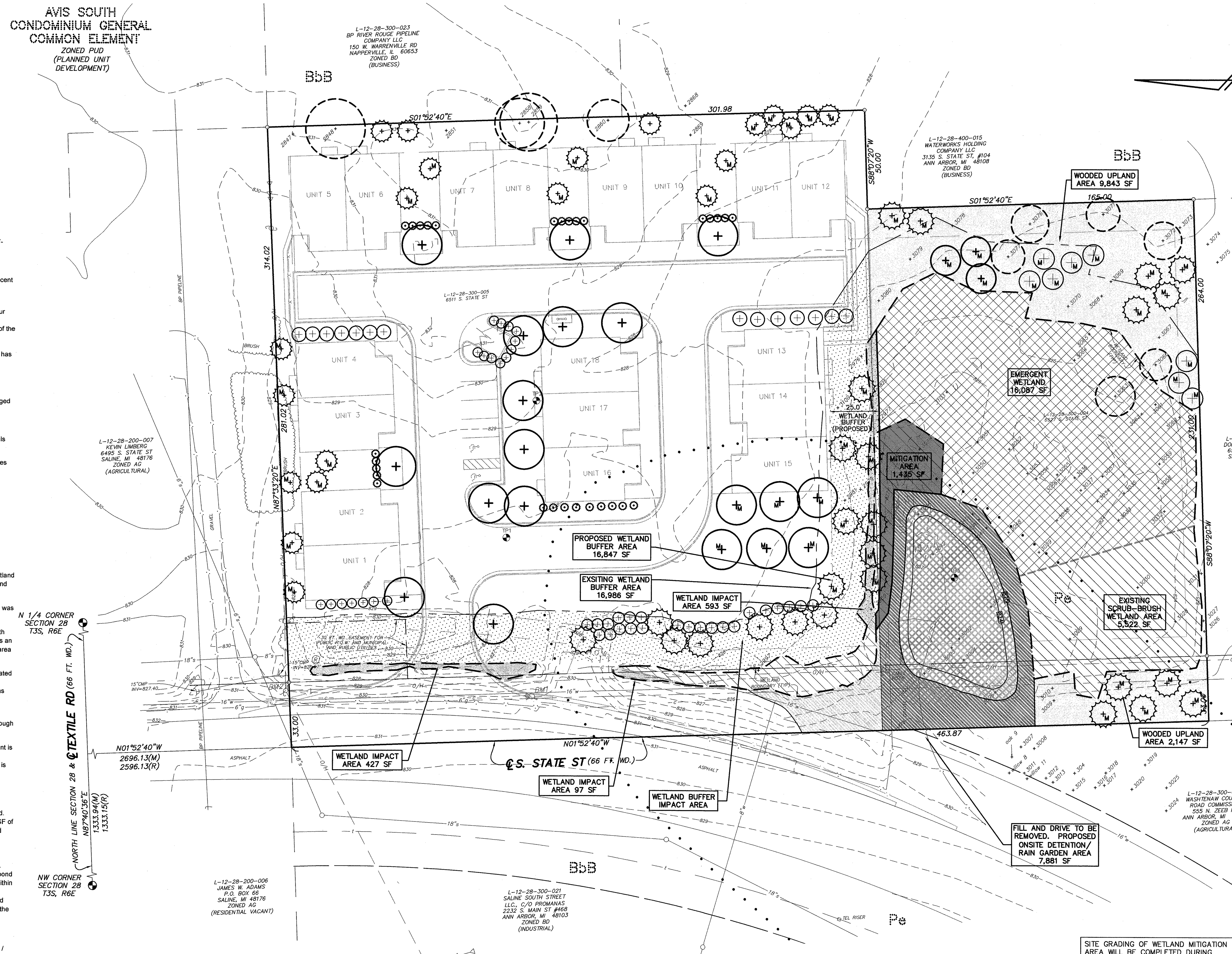
PROPOSED SITE DEVELOPMENT

A. 6511 South State Street
An 18 unit multi-family housing development with associated site circulation and extended utilities is proposed. Existing entry drive would be located approximately 60 LF north of its present location. Disruption of 495.68 SF of emergent wetland would be restored in the location of the removed driveway. 552.48 SF of emergent wetland existing along the south boundary would be relocated and restored on 6527 South State Street.

B. 6527 South State Street
Stormwater Detention/Rain Garden (approx. 7,977 SF) would be built in the northwest quadrant of the parcel. This location is now occupied with fill soils. The site fill will be removed. The proposed stormwater detention pond / Rain Gardens will impact the required 25' buffer wetland zone, the Petitioner will apply for permits to work within this area.
Selective clearing and replanting of the Scrub-Brush Wetland will be conducted to improve the natural wetland environment. Stormwater outlet will need to be re-established in South State Street R.O.W. that connects to the County Drain.

MITIGATION

A new wetland mitigation area of 1,435 SF will be built between the existing emergent wetland and the new detention / Rain Garden.



SITE GRADING OF WETLAND MITIGATION AREA WILL BE COMPLETED DURING PRELIMINARY SITE PLANS. GRADING TO INCLUDE ALL NEEDED CONTOURS AND SPOT GRADES. WETLAND BUFFER IN SOUTH STATE STREET R.O.W. NOT INCLUDED IN CALCULATIONS.

- = RAINGARDEN RESTORATION MIX
- = NATIVE GRASS BUFFER MIX
- = EXISTING WETLAND IMPACT AREA
- = EXISTING WOODED UPLAND
- = EMERGENT WETLAND
- = SCRUB-BRUSH WETLAND
- = WETLAND BUFFER IMPACT AREA
- = PROPOSED WETLAND (MITIGATION MIX)
- = PROPOSED WETLAND BUFFER
- = 25' WETLAND BUFFER
- = LANDMARK TREE
- 3880 = EXISTING TREE TO REMAIN

WASHTENAW COUNTY SOIL SURVEY CLASSIFICATION

BbB – BLOUNT LOAM, 2 TO 6 PERCENT SLOPES
Pe – PEWAMO CLAY LOAM
• • • • • • • – SOILS BOUNDARY

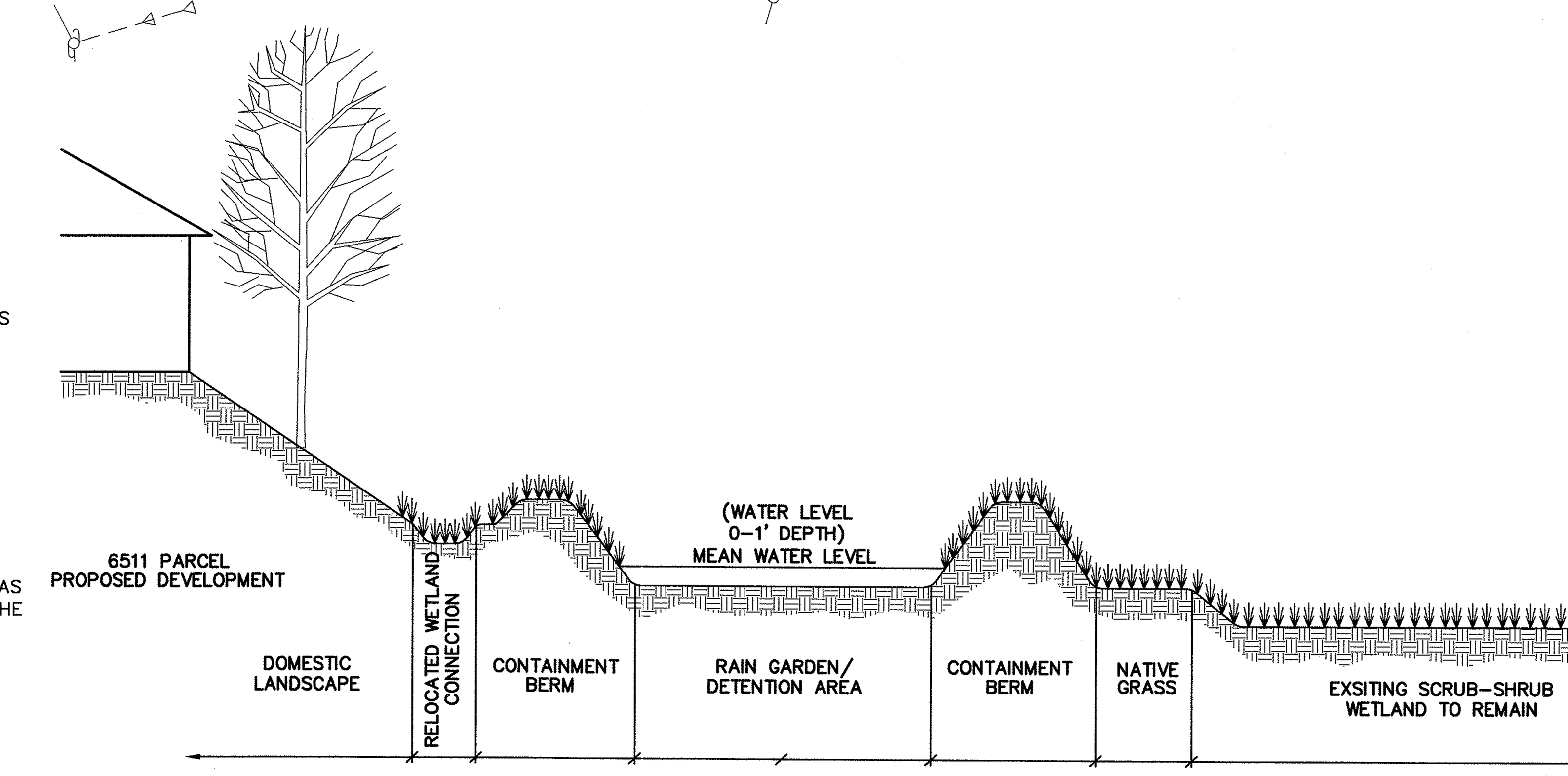
SOILS ARE BASED ON USDA SOIL SURVEY OF WASHTENAW COUNTY.

RAIN GARDEN MIX		
Virginia Wildrye	Elymus virginicus	35%
Riverbank Wildrye	Elymus riparius	20%
Prairie Cordgrass	spartina pectinata	6%
Rice Cut Grass	Leersia oruzoides	1%
Bluejoint Reedgrass	Calamagrostis canadensis	0.5%
Woolgrass	Scirpus cyperinus	0.5%
Giant Bur Reed	Sparganium eurycarpum	1%
Frank's Sedge	Carex frankii	1%
Hop Sedge	Carex lupulina	1%
Bristly Sedge	Carex comosa	0.5%
Tussock Sedge	Carex stricta	0.25%
Fox Sedge	Carex vulpinoidea	8%
Soft Rush	Juncus effusus	1%
Hardstem Bulrush	Scirpus acutus	1%
Softstem Bulrush	Schoenoplectus tabernaemontani	1%
Dark Green Bulrush	Scirpus atrovirens	2%
Swamp Mildweed	Asclepias incarnata	5%
Blue Vervain	Verbena hastata	5%
Water Plantain	Alisma plantago-aquatica	5%
Sweet Flag	Acorus calamus	1%
Monkey Flower	Mimulus ringens	1%
Blue Flag Iris	Iris virginica shrevel	1%
Common Arrowhead	Sagittaria latifolia	0.5%
Joe Pye Weed	Eupatorium maculatum	0.5%
Gardinal Flower	Lobelia cardinalis	0.25%
Great Blue Lobelia	Lobelia siphilitica	0.25%
New England Aster	Aster novae angliae	0.5%
Canada Anemone	Anemone canadensis	0.25%
	TOTAL MIX	100%
Seeding Rate: Drill 15 lbs/acre		

Low-Profile Broad-Spectrum Prairie with Flowers Seed	
Botanical (Common) Name	**Lbs./AC.**
PERMANENT MATRIX	
Andropogon gerardii (Big Blue Stem)	0.250#/A
Andropogon scoparius (Little Blue Stem)	4.000#/A
Boutelous curtipendula (Side Oats Grama)	1.750#/A
Panicum virgatum (Priarie Switch Grass)	0.500#/A
Sorghastrum nutans (Indian Grass)	0.094#/A
TEMPORARY MATRIX	
Avena sativa (Seed Oats)	32.000#/A
Elymus canadensis (Prairie Wild Rye)	1.000#/A
Hordeum jubatum (Squirrel Tail Barley)	0.006#/A
Lolium multiflorum (Annual Rye)	5.000#/A
Phleum pratense (Timothy)	2.000#/A
FORBS	
Amorpha canescens (Lead Plant)	0.125#/A
Aster laevis (Smooth Blue Aster)	0.016#/A
Aster novae angliae (New England Aster)	0.031#/A
Baptisia leucantha (White Wild Indigo)	0.078#/A

CONSTRUCTION NOTES:

1. THE APPLICANT SHALL CONTACT THE TOWNSHIP'S WETLAND CONSULTANT AT LEAST 48 HOURS IN ADVANCE TO SCHEDULE A WETLAND AREA GRADING INSPECTION PRIOR TO THE PLANTING AND SEEDING OF THESE AREAS.
2. A COPY OF THE RECEIPT OR INVOICE FOR THE PROPOSED RAIN GARDEN SEED MIX SHALL BE PROVIDED TO THE TOWNSHIP PLANNING CONSULTANT AS WELL AS THE TOWNSHIP WETLAND'S CONSULTANT PRIOR TO THE INSTALLATION OF THE WETLAND MITIGATION AREA GARDEN SEED MIX.
3. NEWLY-SEEDED WETLAND MITIGATION AREAS ARE PROPOSED TO BE STABILIZED WITH STRAW MULCH.
4. THE APPLICANT WILL PROVIDE A MINIMUM OF ONE (1) YEAR OF WETLAND MITIGATION MONITORING (AND ASSOCIATED REPORT) AFTER THE COMPLETION OF CONSTRUCTION OF THE WETLAND MITIGATION AREAS TO ENSURE THAT THE PROPOSED WETLAND VEGETATION SUCCESSFULLY GERMINATES AND BECOMES ADEQUATELY ESTABLISHED.
5. A WETLAND FINANCIAL GUARANTEE FROM THE APPLICANT SHALL BE REQUIRED AS APART OF THE PROJECT'S FINAL CONSTRUCTION APPROVAL TO ENSURE THAT THE WETLAND MITIGATION MEASURES (I.E., GRADING AND PLANTING) ARE SUCCESSFULLY COMPLETED AS PROPOSED. WETLAND FINANCIAL GUARANTEE OF $6,000 TO COVER THE EARTHWORK AND PLANTING ASSOCIATED WITH THE CONSTRUCTION OF WETLAND MITIGATION AREAS.



RAINGARDEN DETAIL
(NOT TO SCALE)

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

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REVISIONS 11-29-18 SHEET ADDED TO REZONING APPLICATION, 12-6-18 REVISED, 6-11-19 FROM REZONING APPLICATION. 8-29-19 PER REVIEW. 9-13-19 PER REVIEW. 9-19-19 BLD. MOD.

SCALE 0 15 30 60
SCALE: 1"=30'

PREPARED BY [signature]
GERALD J. SOSNOWSKI RLA, MICH No. 982

STATE OF MICHIGAN — GERALD J. SOSNOWSKI LANDSCAPE ARCHITECT NO. 982 — REGISTERED LANDSCAPE ARCHITECT

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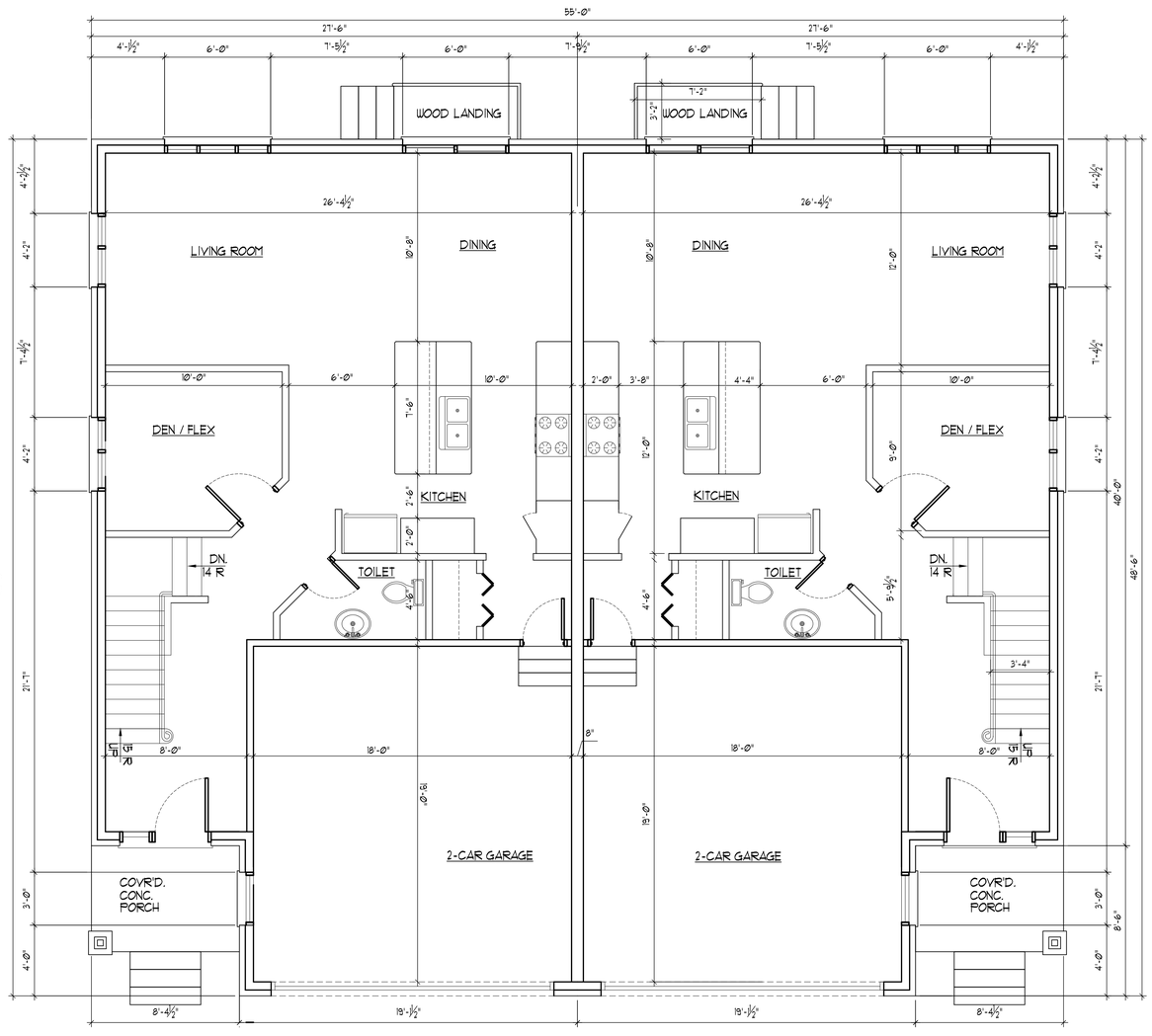

Arbid
Design & Construction

16030 Michigan Ave.
Suite 220
Dearborn, MI 48126
313-575-5454
Email: sarbeed@gmail.com

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Project Name: 2 UNIT CONDOS DESIGN SCHEMATICS OPTION - 2

Project Location:

Owner:

APPROVED BY:

Seal:

09/13/2019	Issued For TWP. REV.

Drawn By: S. Arbid
Checked By: S. Arbid
Approved By:

Sheet Title:
FIRST FLOOR PLANS TYPICAL FOR UNITS 1 THRU 12

Scale:
¼" = 1'-0"

Project Number:
19-0311

Sheet Number:
A-01

SHEET 17

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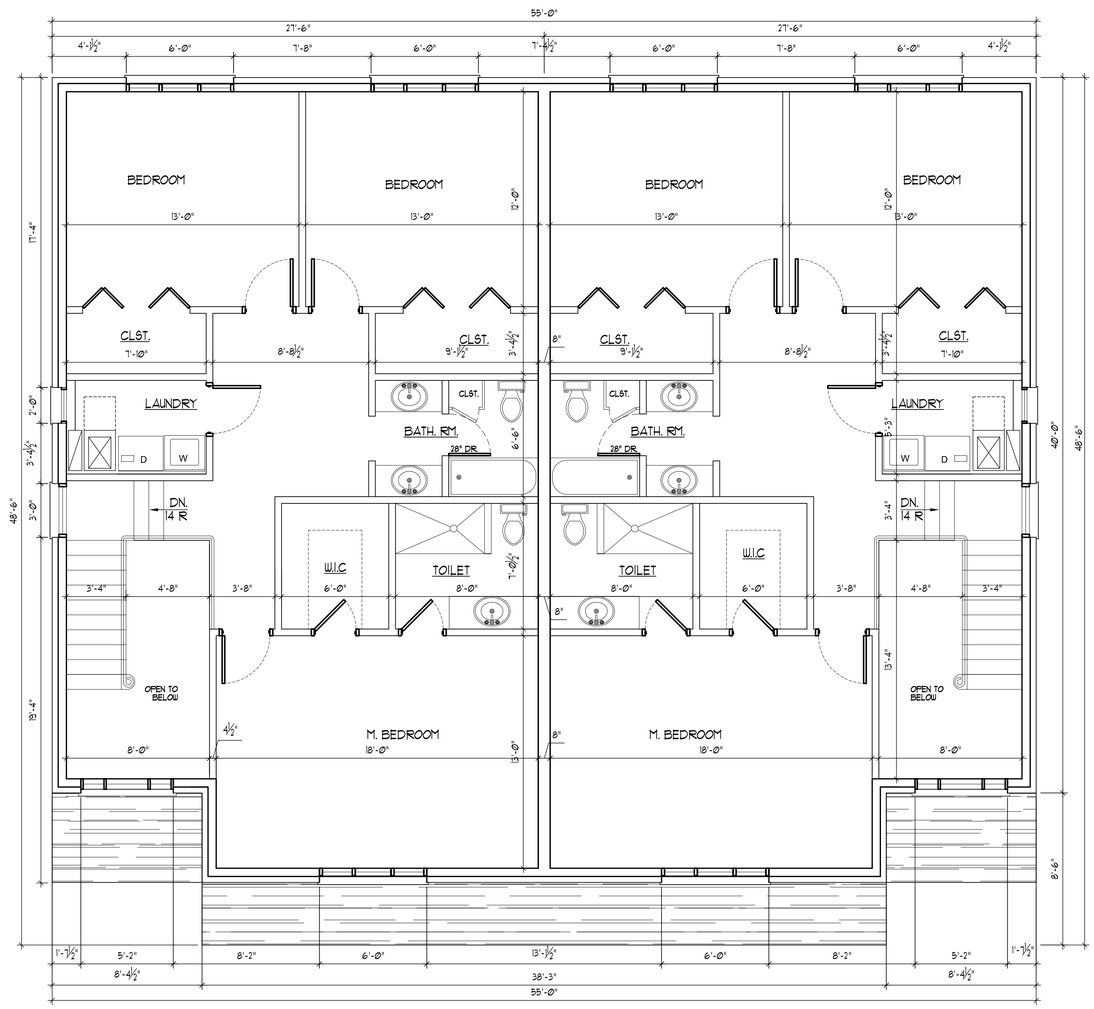

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16030 Michigan Ave.
Suite 220
Dearborn, MI 48126
313-575-5454
Email: sarbeed@gmail.com

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Project Name: 2 UNIT CONDOS DESIGN SCHEMATICS OPTION - 2

Project Location:

Owner:

APPROVED BY:

Seal:

09/13/2019	Issued For TWP. REV.

Drawn By: S. Arbid
Checked By: S. Arbid
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Sheet Title:
SECOND FLOOR PLANS FOR UNITS 1 THRU 12

Scale:
¼" = 1'-0"

Project Number:
19-0311

Sheet Number:
A-02
SHEET 18

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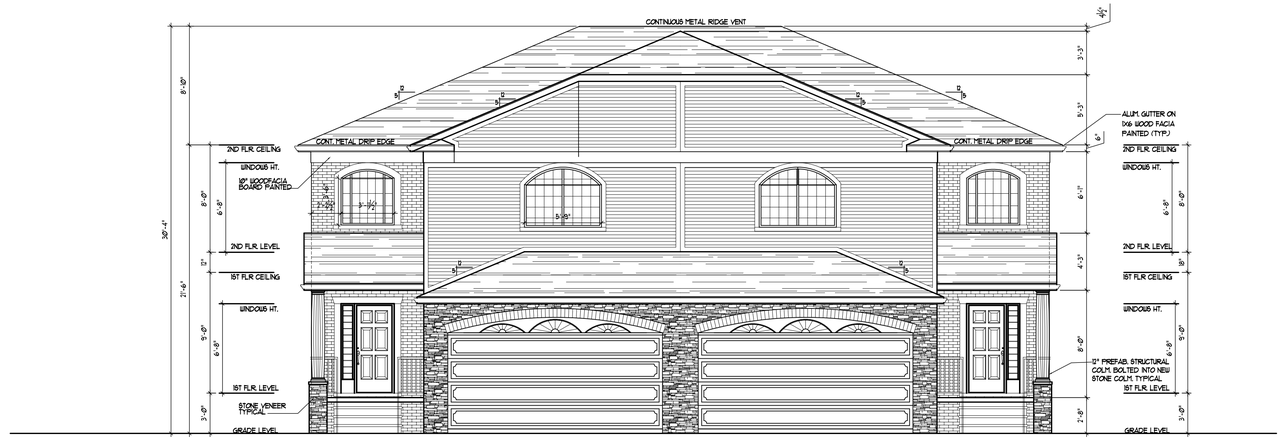
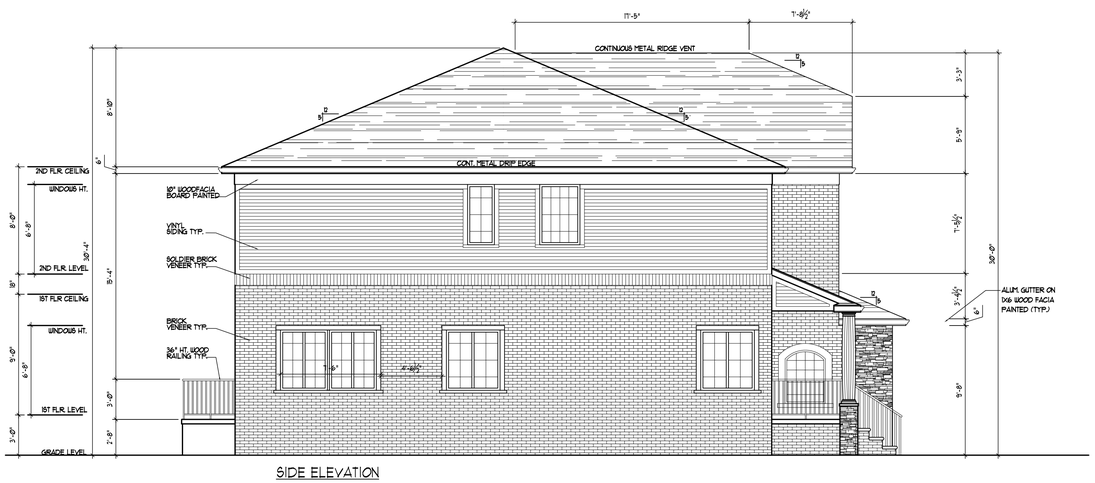
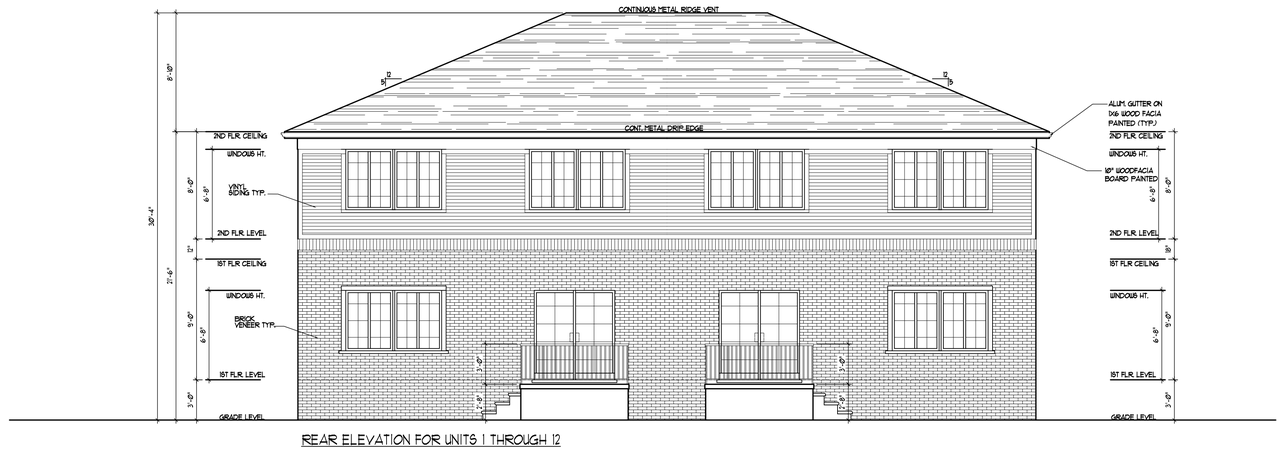


FRONT ELEVATION TYPICAL FOR UNITS 1 THROUGH 12



SIDE ELEVATION

SIDE ELEVATION TYPICAL THROUGH ALL UNITS



REAR ELEVATION FOR UNITS 1 THROUGH 12

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16030 Michigan Ave.
Suite 220
Dearborn, MI 48126
313-575-5454
Email: sarbeed@gmail.com

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Project Name: 2 UNIT CONDOS DESIGN SCHEMATICS OPTION - 2

Project Location:

Owner:

APPROVED BY:

Seal:

	Issued For
09/13/2019	TWP. REV.

Drawn By: S. Arbid
Checked By: S. Arbid
Approved By:

Sheet Title:
BUILDING ELEVATIONS FOR UNITS 1 THRU 12

Scale:
3/16" = 1'-0"

Project Number:
19-0311

Sheet Number:
A-03
SHEET 19

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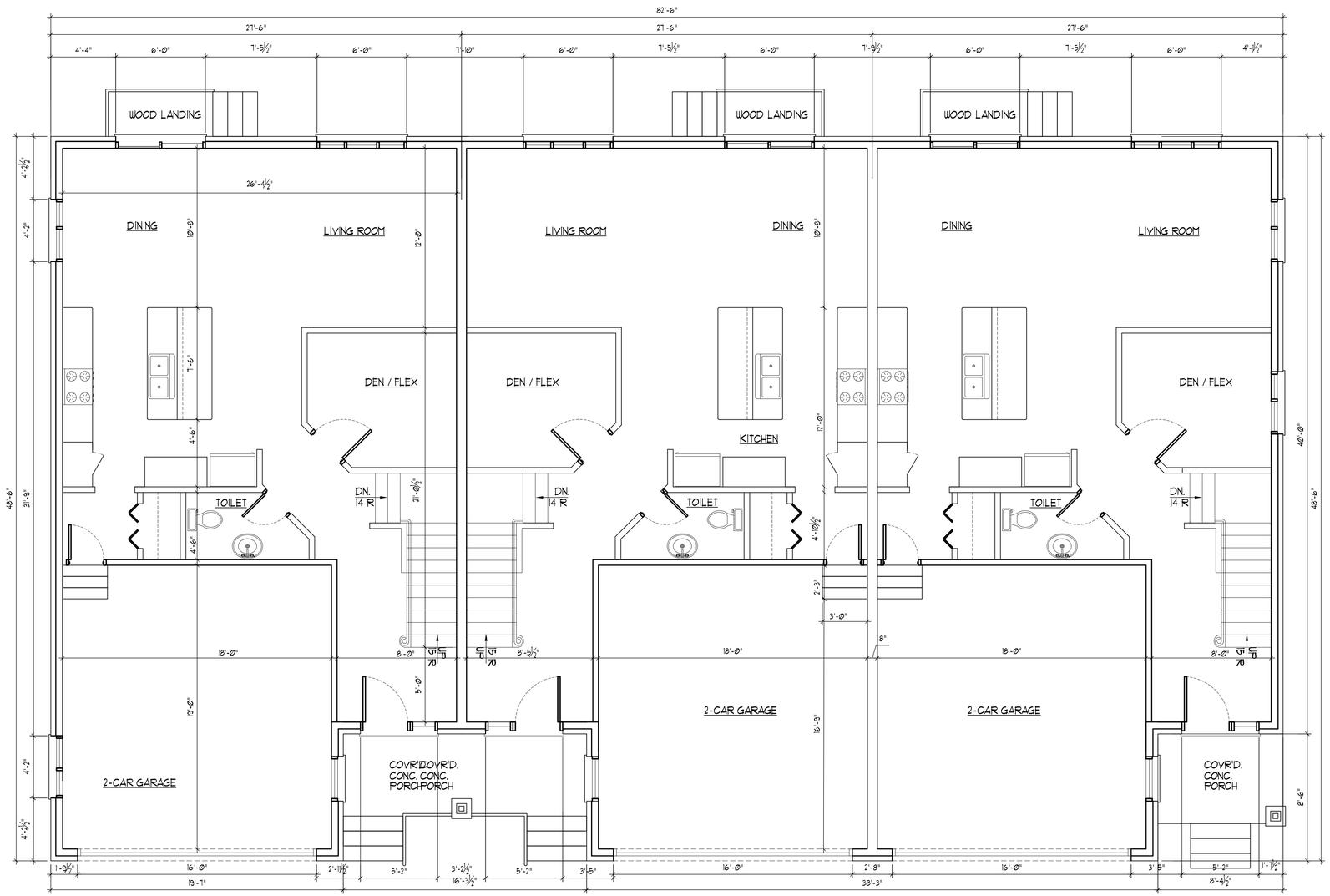

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Suite 220
Dearborn, MI 48126
313-575-5454
Email: sarbeed@gmail.com

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Project Name: 2 UNIT CONDOS DESIGN SCHEMATICS OPTION - 2

Project Location:

Owner:

APPROVED BY:

Seal:

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09/13/2019	TWP. REV.

Drawn By: S. Arbid

Checked By: S. Arbid

Approved By:

Sheet Title:

FIRST FLOOR PLANS
TYPICAL FOR UNITS
13 THRU 15

Scale:

¼" = 1'-0"

Project Number:

19-0311

Sheet Number:

A-04

SHEET 20

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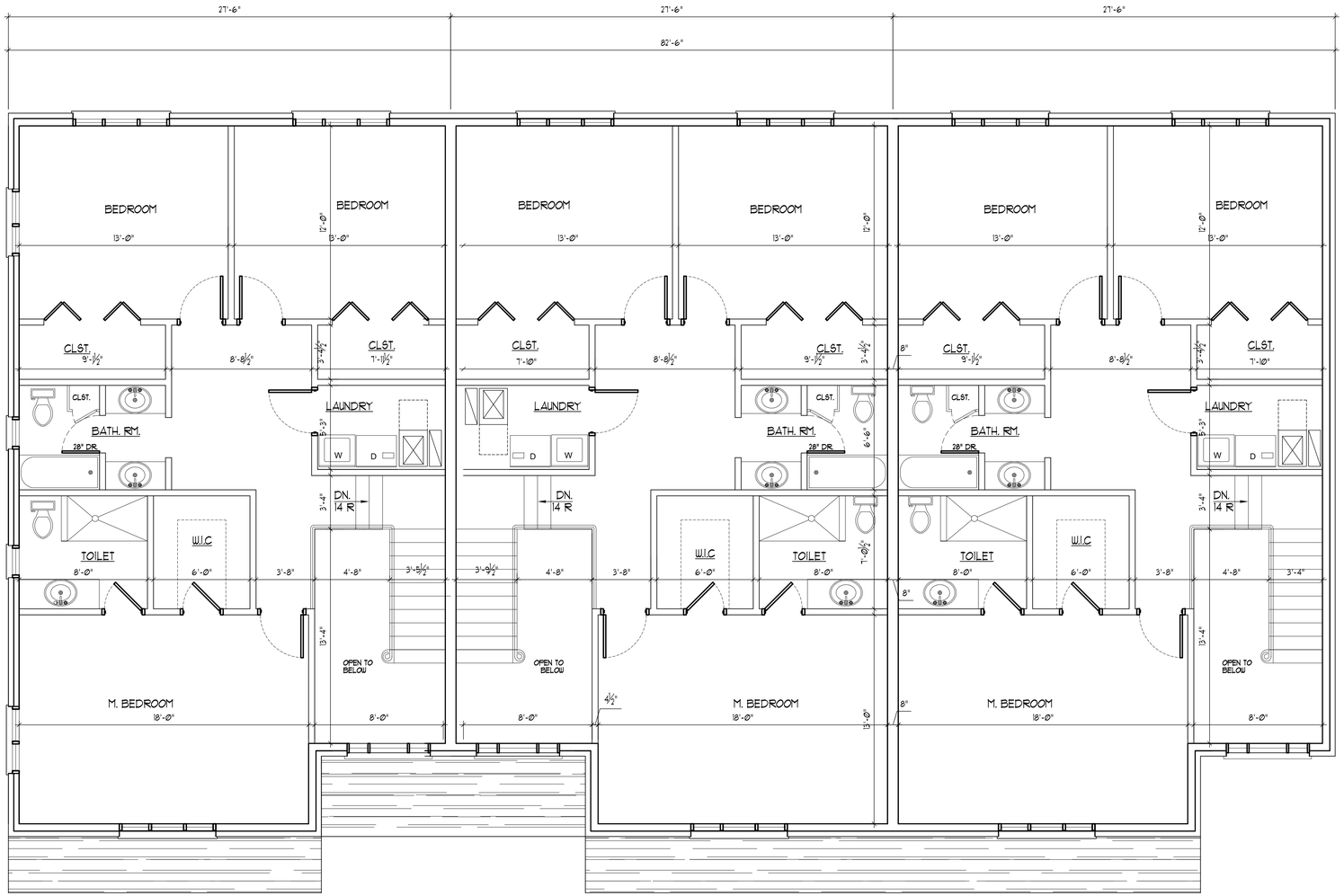

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Project Name: 2 UNIT CONDOS DESIGN SCHEMATICS OPTION - 2

Project Location:

Owner:

APPROVED BY:

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09/13/2019	Issued For TWP. REV.

Drawn By: S. Arbid
Checked By: S. Arbid
Approved By:

Sheet Title:
SECOND FLOOR PLANS FOR UNITS 13 THRU 15

Scale:
¼" = 1'-0"

Project Number:
19-0311

Sheet Number:
A-05
SHEET 21

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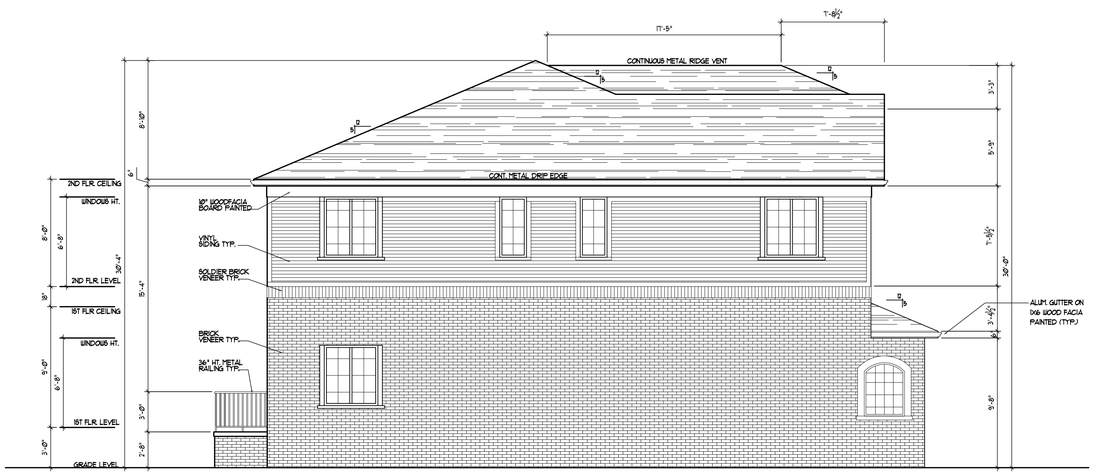
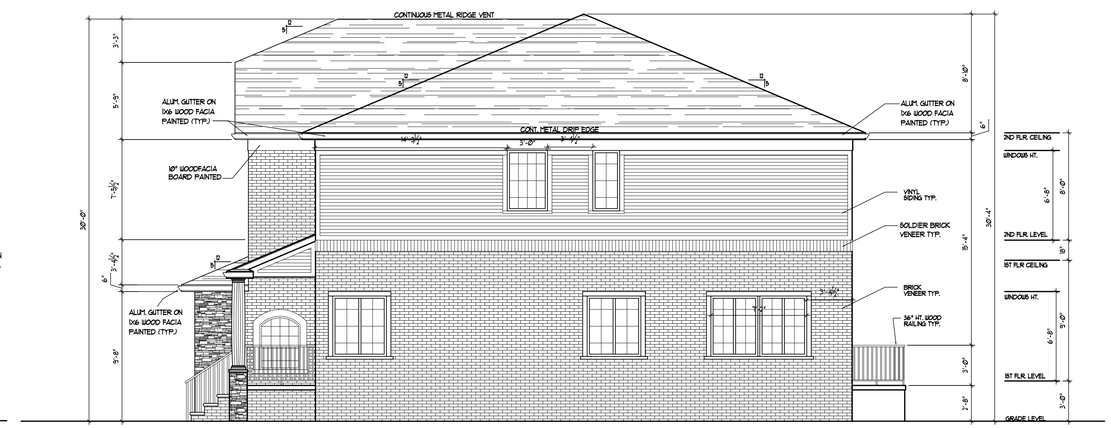
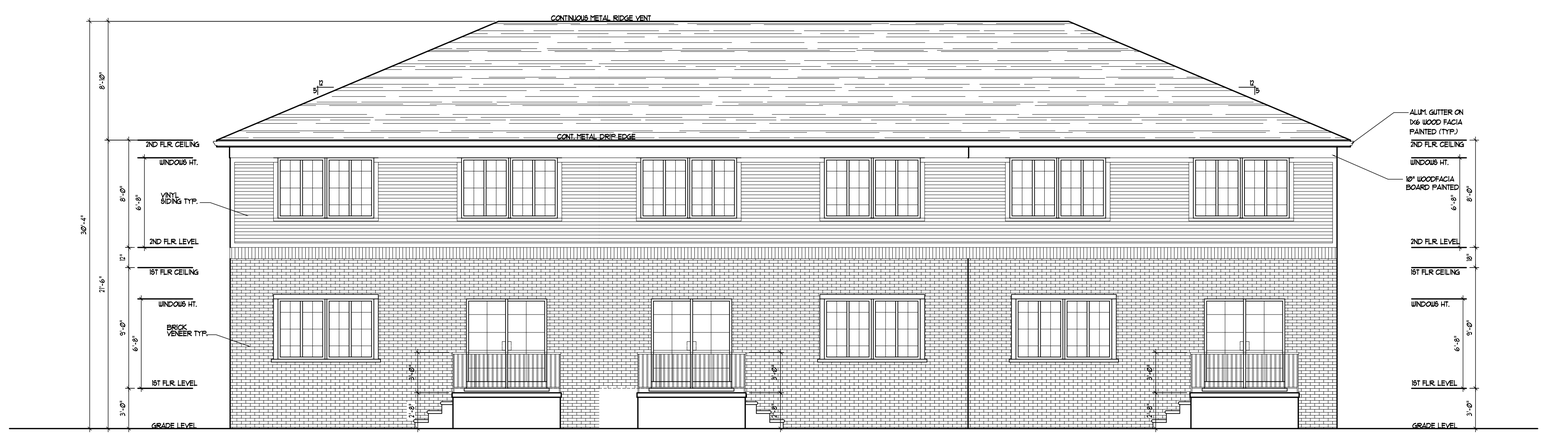
FRONT ELEVATION TYPICAL FOR UNITS 13 THROUGH 15



SIDE ELEVATION TYPICAL FOR UNITS 13 THROUGH 15



SIDE ELEVATION TYPICAL THROUGH ALL UNITS



REAR ELEVATION TYPICAL FOR UNITS 13 THROUGH 15

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313-575-5454
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Project Name: 2 UNIT CONDOS DESIGN SCHEMATICS OPTION - 2

Project Location:

Owner:

APPROVED BY:

Seal:

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Drawn By: S. Arbid
Checked By: S. Arbid
Approved By:

Sheet Title:
BUILDING ELEVATIONS FOR UNITS 13 THRU 15

Scale:
3/16" = 1'-0"

Project Number:
19-0311

Sheet Number:
A-06
SHEET 22

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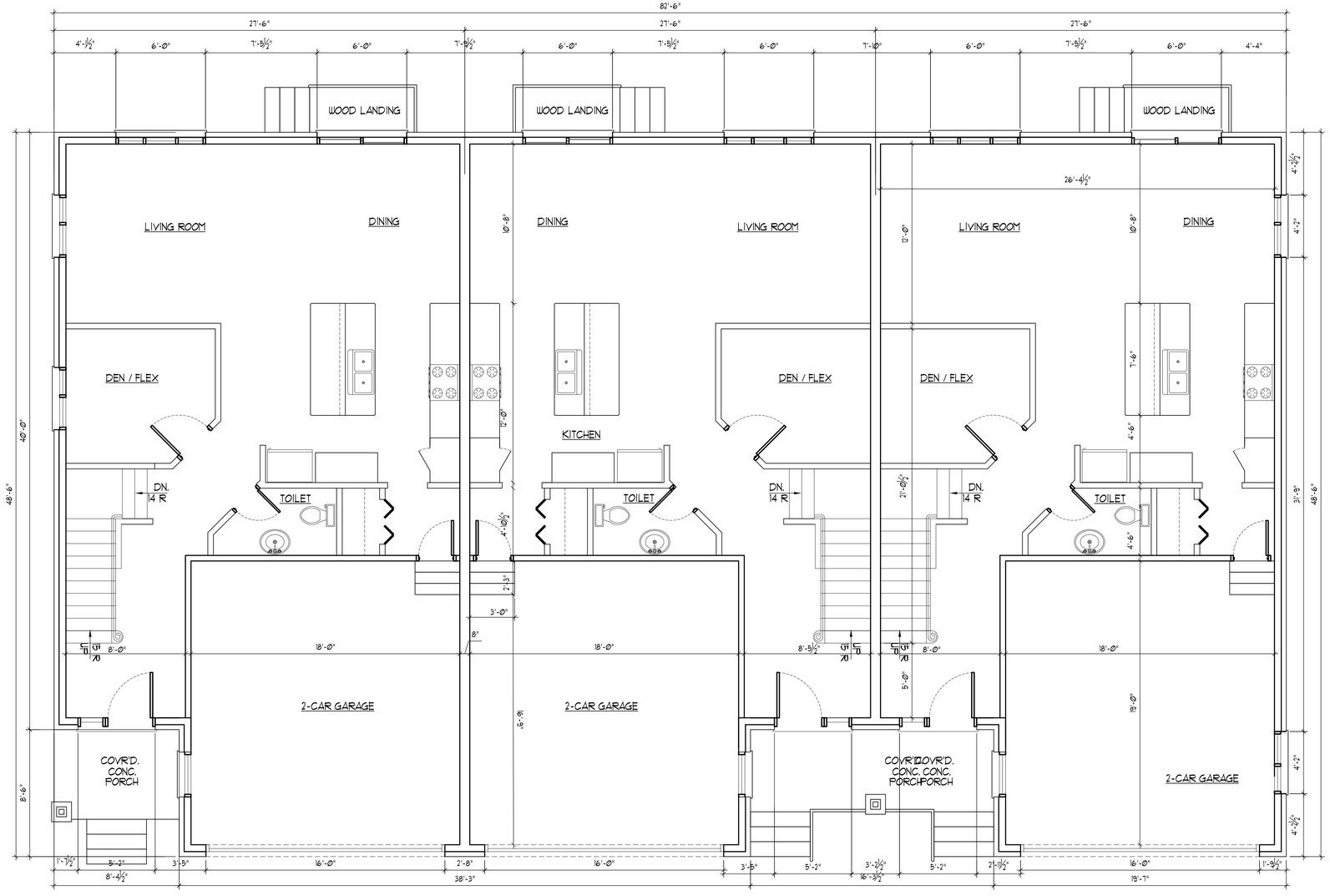

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Dearborn, MI 48126
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Project Name: 2 UNIT CONDOS DESIGN SCHEMATICS OPTION - 2

Project Location:

Owner:

APPROVED BY:

Seal:

09/13/2019	Issued For TWP. REV.

Drawn By: S. Arbid
Checked By: S. Arbid
Approved By:

Sheet Title:
FIRST FLOOR PLANS
TYPICAL FOR UNITS
16 THRU 18

Scale:
¼" = 1'-0"

Project Number:
19-0311

Sheet Number:
A-07
SHEET 23

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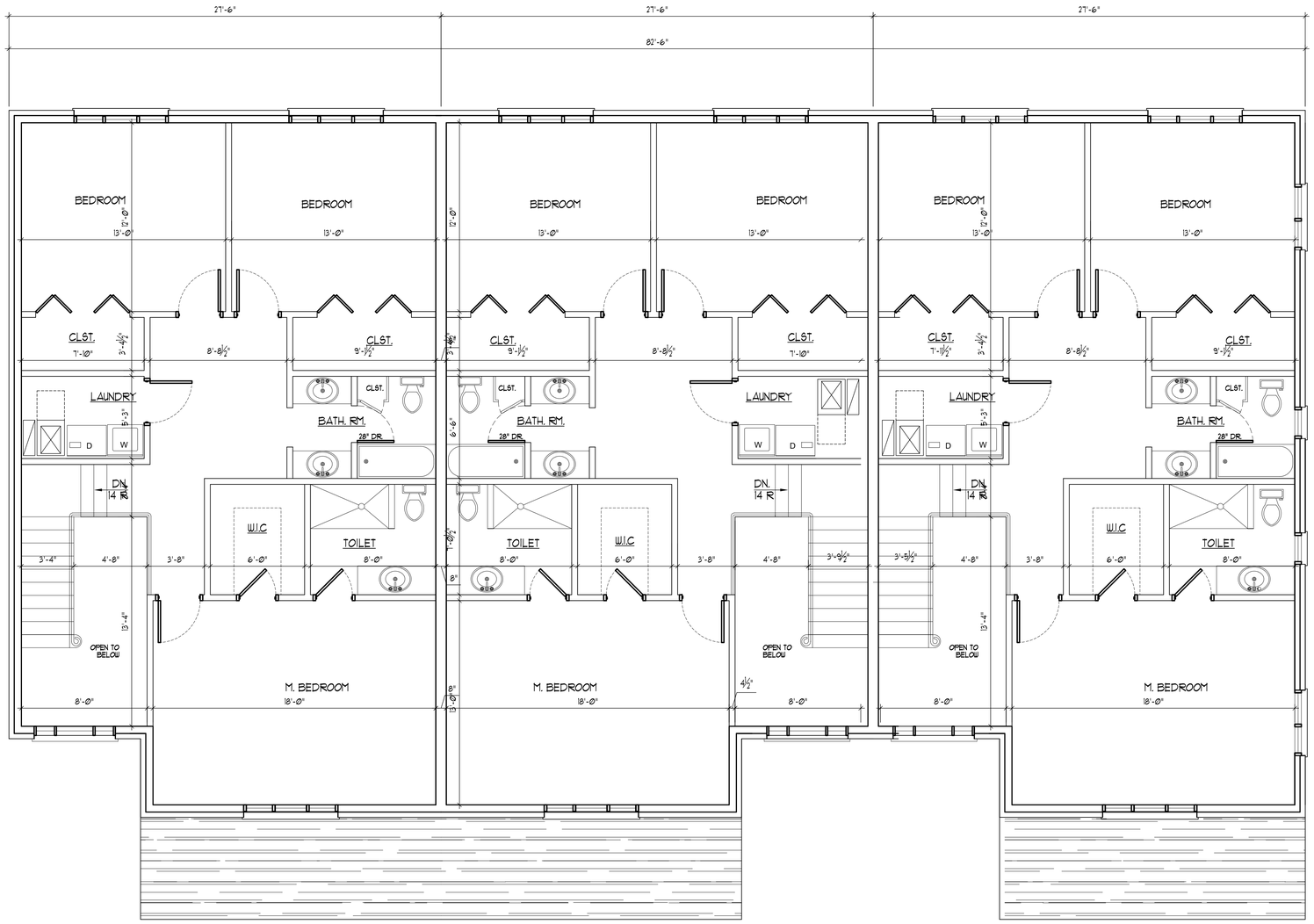

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Project Name: 2 UNIT CONDOS DESIGN SCHEMATICS OPTION - 2

Project Location:

Owner:

APPROVED BY:

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Drawn By: S. Arbid

Checked By: S. Arbid

Approved By:

Sheet Title:
SECOND FLOOR PLANS FOR UNITS 16 THRU 18

Scale:
¼" = 1'-0"

Project Number:
19-0311

Sheet Number:
A-08

SHEET 24

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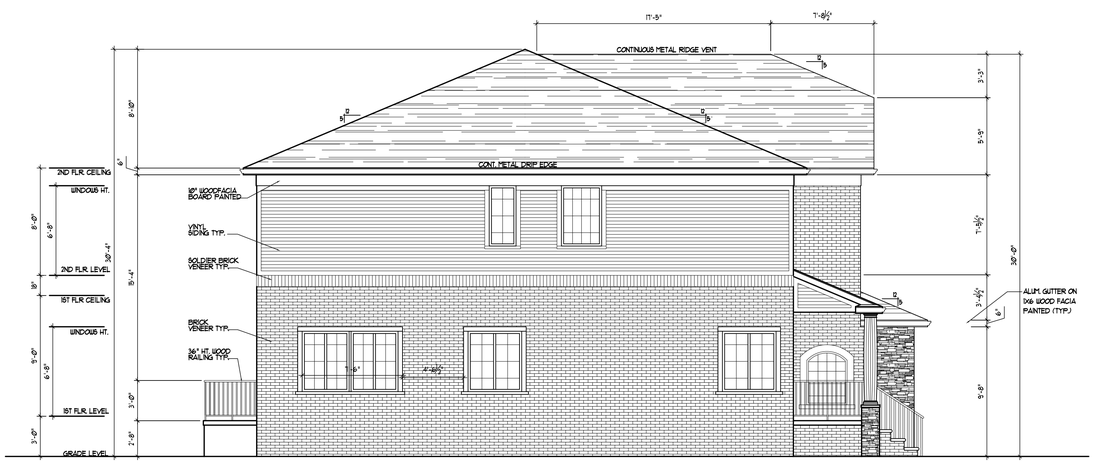
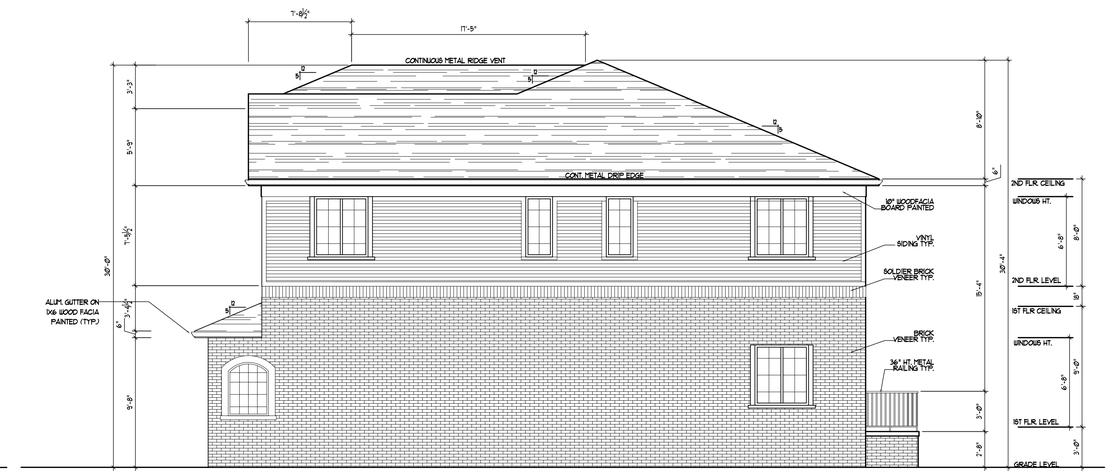
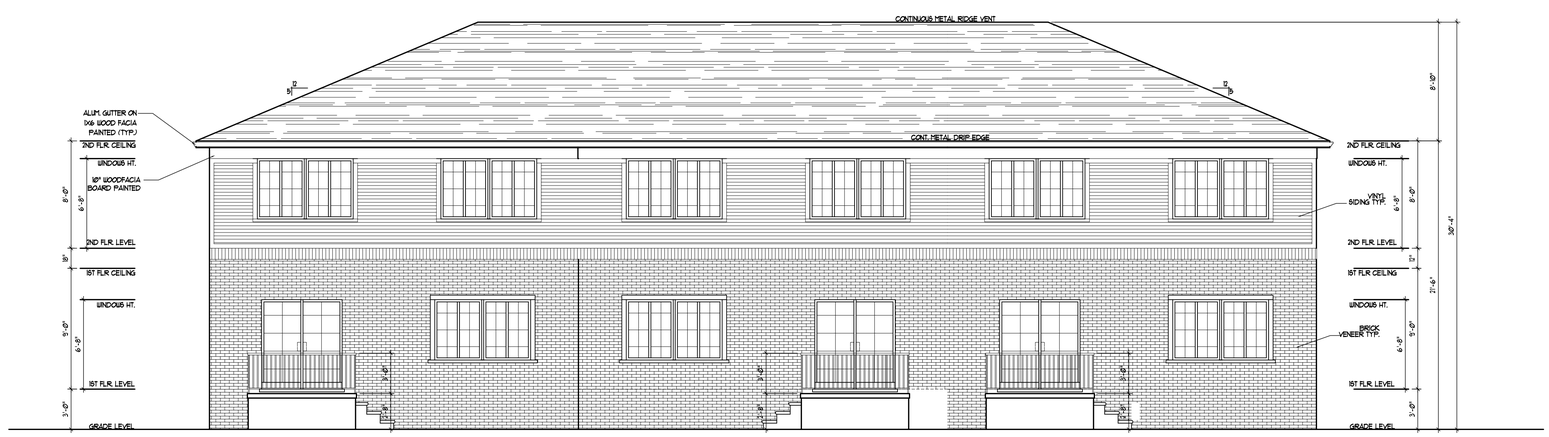
FRONT ELEVATION TYPICAL FOR UNITS 16 THROUGH 18



SIDE ELEVATION



SIDE ELEVATION TYPICAL FOR UNITS 16 THROUGH 18



REAR ELEVATION TYPICAL FOR UNITS 16 THROUGH 18

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16030 Michigan Ave.
Suite 220
Dearborn, MI 48126
313-575-5454
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Project Name: 2 UNIT CONDOS DESIGN SCHEMATICS OPTION - 2

Project Location:

Owner:

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Sheet Title:
BUILDING ELEVATIONS FOR UNITS 16 THRU 18

Scale:
3/16" = 1'-0"

Project Number:
19-0311

Sheet Number:
A-09
SHEET 25

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