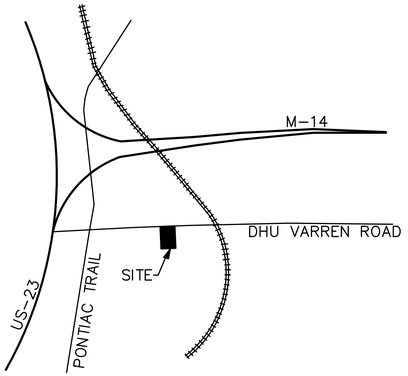
ANN ARBOR CHINESE CHRISTIAN CHURCH

BUILDING EXPANSION

1750 DHU VARREN ROAD

CITY OF ANN ARBOR, WASHTENAW COUNTY, MICHIGAN

SPECIAL EXCEPTION USE SITE PLAN



VICINITY MAP
SCALE : NTS

OWNER/APPLICANT

ANN ARBOR CHINESE CHRISTIAN CHURCH
1750 DHU VARREN ROAD
ANN ARBOR, MI 48105
CONTACT: DENNIS WONG/HOWARD HUANG
734-668-9128

ENGINEER/SURVEYOR/LANDSCAPE ARCH.

MIDWESTERN CONSULTING, LLC
3815 PLAZA DR.
ANN ARBOR, MI 48108
CONTACT: SUE DICKINSON
734-995-0200, EXT. 221

ARCHITECT

ZION CHURCH BUILDERS
PO BOX 218
MATTAWAN, MI. 49071
CONTACT: DANIEL G. WHITE, ARCHITECT, LLC
417-425-9618

LEGAL DESCRIPTION

LEGAL DESCRIPTION OF 8.51-ACRE PARCEL OF LAND
LOCATED IN THE NE 1/4 OF SECTION 16, T2S, R6E,
ANN ARBOR TOWNSHIP, WASHTENAW COUNTY, MICHIGAN

Commencing at the N 1/4 corner of Section 16, T2S, R6E, Ann Arbor Township, Washtenaw County, Michigan; thence N 85°25'58" E 878.14 feet along the North line of said Section 16 and the centerline of Dhu Varren Road (120 feet wide) to the POINT OF BEGINNING,

thence continuing N 85°25'58" E along said North line 448.71 feet measured (449.14 feet recorded);
thence S 01°36'44" E 825.00 feet measured and recorded along the East line of the W 1/2 of the NE 1/4 of said Section 16;
thence S 85°25'59" W 451.28 feet measured (450.10 feet recorded);
thence N 01°26'01" W 825.13 feet measured (825.05 feet recorded) to the POINT OF BEGINNING. Being a part of the NE 1/4 of Section 16, T2S, R6E. Being subject to the following:

-Easement in favor of Detroit Edison, L.3020, Pg.736
-40 foot wide utility easement, L.3889, PG.584
-Warranty Deed, L.3381, PG.148
-Easement (6' wide) in favor of Detroit Edison, L.1278, PG.284
-The rights of the public over the north 33 feet as taken for Dhu Varren Rd
Also being subject to other easements and restrictions of record, if any.

SITE DATA

COMPARISON CHART

ITEM	REQUIRED/ PERMITTED	PROPOSED
SITE AREA	21,780 SF	370,696 SF / 8.51 AC TOTAL
PARCEL WIDTH	200'	448.71'
ZONING	R4A	R4A
PROPOSED USE	CHURCH	CHURCH
BUILDING FOOTPRINT	8,219 sf existing	14,592 sf proposed
BUILDING FLOOR AREA	8,219 sf existing	17,380 sf proposed
BUILDING HEIGHT	30'	30'
FRONT SETBACK	40'	206.17'
SIDE SETBACK	20'	115.16' (WEST); 86.54' (EAST)
REAR SETBACK	40'	443.99'
SITE AREA (MINUS DHU VARREN ROW)	-	343,824 SF / 7.89 AC
BUILDING/DRIVEWAY/PARKING AREA	-	38,164 SF / 0.88 AC
MINIMUM USEABLE OPEN SPACE	65%	88.9%
VEHICULAR PARKING	80	63*
1 SPACE REQ'D PER 3 SEATS, 240 SEATS TOTAL		
ELECTRIC VEHICLE CHARGING		
EV - INSTALLED 10%	8	2**
EV - READY 10%	8	0**
EV - CAPABLE 15%	12	2**
BF SPACES	3	4
PARKING AISLE WIDTH	22'	22'
BICYCLE PARKING	6 Class C	20 Class C exist
1 CLASS C SPACE PER 50 SEATS		
TRASH AREA	ENCLOSURE	ENCLOSURE
PHASING		NONE
PRELIMINARY PROJECT COST	-	$1,500,000

* AN EXISTING PARKING AGREEMENT IS IN PLACE TO ALLOW PARKING IN THE FOOD GATHERERS FACILITY ACROSS DHU VARREN ROAD.
A VARIANCE WILL BE APPLIED FOR, TO REQUEST THAT THIS MUTUAL LEASE AGREEMENT MAY BE ACCEPTABLE RATHER THAN A PERMANENT EASEMENT.

** A VARIANCE WILL BE APPLIED FOR FOLLOWING SITE PLAN APPROVAL TO REDUCE THE NUMBER OF ELECTRIC VEHICLE CHARGING STATIONS.

PROJECT NARRATIVE

I. DEVELOPMENT PROGRAM

(a) *Description:*
The development consists of a building expansion to the existing church and enlargement of the storm water detention basin to accommodate the increased area of impervious surface.
(i) The existing church is 8,219 square feet, with 64 parking spaces and a detention basin.
(ii) The proposed development will consist of a building of 9,161 square feet of floor area in two floors. There is a decrease of 1 parking space in the proposed plan. The detention basin will be expanded to handle the additional storm water.

(b) *Preliminary Phasing Proposal and Probable Construction Cost:*
(i) One phase construction is proposed.
(ii) Probable construction cost for site work, utilities and building construction (excluding property) is estimated to be $1,500,000.

II. COMMUNITY ANALYSIS

(a) *Impact of Proposed Development on Area Schools:*
The development will not generate any additional population and therefore will not have an impact on the area schools.

(b) *Relationship of Intended Use to Neighboring Uses:*
The proposed development will continue the church use of the site and is consistent with the existing use. New trees, both deciduous and coniferous, are proposed along the east side of the site to buffer the neighboring residences.

(c) *Impact of Adjacent Uses on the Proposed Development:*
The adjacent uses will not impact the proposed development. The residential areas will be effectively buffered from the church.

(d) *Impact of Proposed Development on Air and Water Quality, and on the Existing Natural Features of the Site and Neighboring Sites:*
(i) There will be no negative impact to air quality.
(ii) There will not be a negative effect on water quality. The existing detention basin will be expanded to accommodate any increase in storm water runoff from the building addition. The detention basin will help remove sediment by allowing it to settle prior to discharge. Soil erosion and sedimentation controls will be implemented to ensure that runoff both during construction and after construction is controlled and managed.
(iii) A limited number of existing trees are being removed for the building and detention basin expansion. Tree replacement is proposed and is demonstrated on the landscape plan.
(iv) No steep slopes areas are present in the project area of the site.
(v) There are no known endangered species, wetlands, watercourses, flood plain, or floodway that will be impacted by the proposed development. There is a native forest fragment on the site consisting primarily of hickory, oak, sassafras, walnut, and cherry. Per City regulations, this forest fragment is of "highest level concern". The forest fragment will not be impacted by the building expansion.
(vi) An existing 8" water main serves the existing hydrant and existing building onsite. Water service for the new building will be routed from the existing structure.
(vii) A 6-inch sanitary sewer lead serves the existing building. The new building will tie into the existing sewer lead.

(e) *Impact of the Proposed Use on Historic Sites/Structures:*
No historic structures exist on-site. The site itself is not historic.

(f) *Traffic Impact Statement*
Using the ITE Trip Generation Code 560, Church, and the capacity increase of 160 persons to 240 persons, the net increase in the peak hour of the generator (Sunday) is 44 trips.

(g) *Photometric – Site Lighting*
No new parking lot lighting is proposed. The existing parking lot has lighting that was addressed and approved in the previous site plan and no changes are proposed. There are building mounted lights proposed on the building addition which are included on the photometric plan.

III. SPECIAL EXCEPTION USE

(a) *Reason for Special Exception Use:*
The property is currently used for church facilities. The proposed development will continue and expand this use of the site. The Special Exception Use application is requesting that the capacity be increased from 160 to 240 people.

SITE RENDERING
SCALE : NTS

Sheet List Table

SHEET NUMBER	SHEET TITLE
1	COVER SHEET
2	ALTA SURVEY PLAN
3	EXISTING CONDITIONS AND REMOVALS– NORTH
4	EXISTING CONDITIONS – SOUTH
5	SITE PLAN
6	UTILITY PLAN
7	GRADING AND SOIL EROSION AND SEDIMENTATION CONTROL PLAN
8	LANDSCAPE AND MITIGATION PLAN
9	TREE LIST
10	LANDSCAPE AND SESC DETAILS
11	STORM WATER MANAGEMENT CALCULATIONS
12	NATURAL FEATURES OVERALY AND ALT ANALYSIS
13	FIRE PROTECTION AND SOLID WASTE COLLECTION PLAN
PR1	PRELIMINARY FLOOR PLANS
PR2	PRELIMINARY BUILDING ELEVATIONS
PH1	PHOTOMETRIC PLAN

NOTES:

1. "All work within the City of Ann Arbor covered by these plans shall be performed in complete conformance with the current City of Ann Arbor Public Services Department Standard Specifications and Details."
2. "The omission of any current standard detail does not relieve the contractor from this requirement. The work shall be performed in complete conformance with the current public services standard specifications and details."
3. Sidewalks constructed in the public right-of-way shall meet all requirements and guidelines as set forth in the ADA standards for accessible design. Sidewalk and curb ramp grades will be reviewed during construction plan submittals. All sidewalks are to be kept and maintained in good repair by the owner of the land adjacent to and abutting upon the same. Prior to the issuance of the final Certificate of Occupancy for this site, all existing sidewalks in need of repair must be repaired in accordance with City standards.
4. The owner agrees to use only landscape care products that have no phosphates. The northeast corner of the site outlets to the east to the Traver Creek watershed. The center and west portions of the site outlet to the south to the Huron River.
5. Recycle and trash pickup is to be private. Trash and recycling will be stored in screened enclosures.

BENCH MARKS:

BM#1: TOP OF STEAMER VALVE OF HYDRANT STANDING AT S. END OF ISLAND IN FRONT OF CHURCH BUILDING
ELEV. = 924.56 NAVD88

BM#2: TOP OF SURVEY POINT N.E. SIDE OF 10" TREE (197) +/-40' SE OF SE CORNER OF CHURCH BUILDING
ELEV. = 923.94 NAVD88

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

ANN ARBOR CHINESE CHRISTIAN CHURCH

JOB No. **20255**

REVISIONS:	REV. DATE
PER CITY STAFF REVIEWS	8/27/21
PER CITY STAFF REVIEWS	10/8/21
PER CITY STAFF REVIEWS	11/3/21

DATE: 5/20/21
SHEET 1 OF 16
CADD: ACT
ENG: SCD
PM: SCD
TECH: ACT
20255CV1

1

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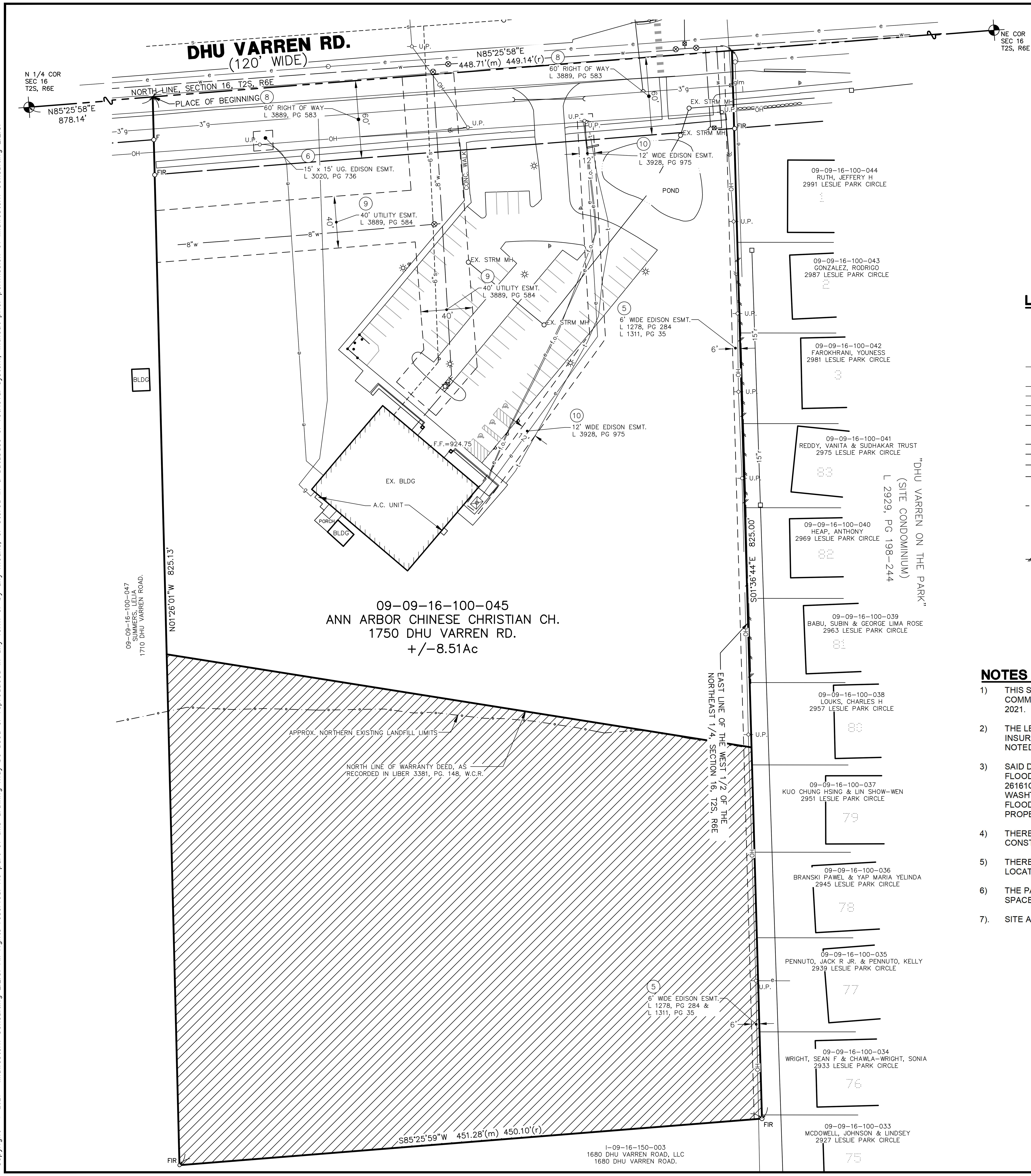
3815 Plaza Drive Ann Arbor, Michigan 48108
(734) 995-0200 • www.midwesternconsulting.com
Land Development • Land Survey • Institutional • Municipal
Wireless Communications • Transportation • Landfill Services

RELEASED FOR:	DATE
SITE PLAN	5/20/21

STATE OF MICHIGAN
SUSAN C. DICKINSON
ENGINEER
No. 39622

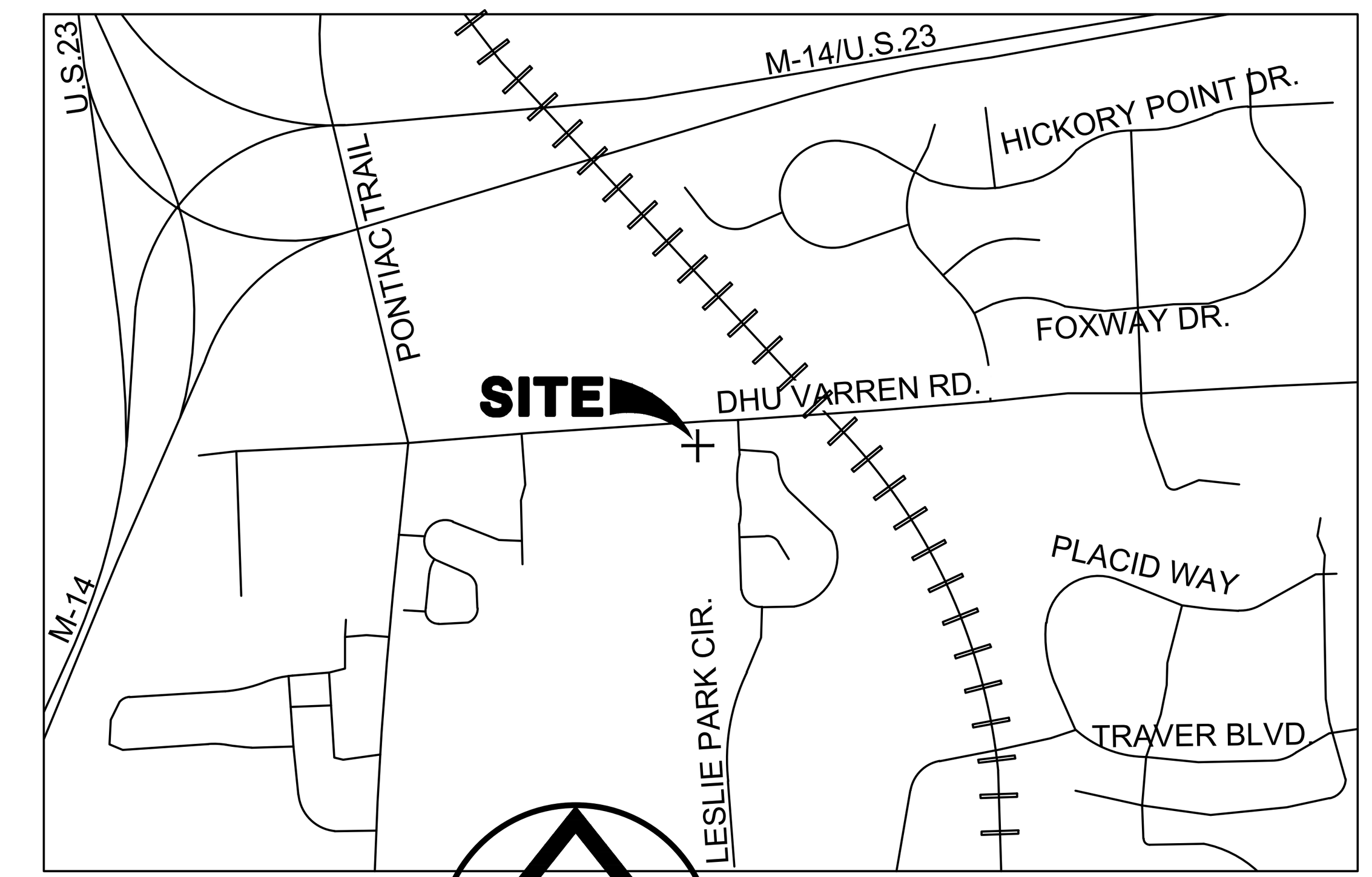
SUSAN C. DICKINSON, P.E.
PE # 39622



SCALE: 1" = 40'

0 40 80 120

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



VICINITY MAP
NOT TO SCALE

LEGEND

838	EXIST. CONTOUR
×836.2	EXIST. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
	GUY WIRE
⊠	ELEC. TRANSFORMER
OH	EXIST. OVERHEAD UTILITY LINE
☼	EXIST. LIGHT POLE
t	EXIST. TELEPHONE LINE
e	EXIST. ELECTRIC LINE
g	EXIST. GAS LINE
f.o.	EXIST. FIBER OPTIC LINE
w	EXIST. WATER MAIN
	EXIST. HYDRANT
⊠	EXIST. GATE VALVE IN BOX
⊗	EXIST. GATE VALVE IN WELL
r	EXIST. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	END SECTION
	CULVERT
s	EXIST. SANITARY SEWER
	SIGN
MAIL	MAILBOX
glm	GAS LINE MARKER
●	POST
	FENCE
	SECTION CORNER
F	FOUND IRON PIPE
FIR	FOUND IRON ROD
	CONTROL PT.
▨	AREA AFFECTED BY BUILDING AND USE RESTRICTIONS, PER LIBER 3381, PG. 148

NOTES

1) THIS SURVEY WAS PREPARED USING ABSOLUTE TITLE, INC. TITLE COMMITMENT No. 90282 WITH AN EFFECTIVE DATE OF FEBRUARY 4, 2021.

2) THE LEGAL DESCRIPTION DESCRIBES THE SAME PROPERTY AS INSURED IN THE TITLE COMMITMENT AND ANY EXCEPTIONS HAVE BEEN NOTED HEREIN.

3) SAID DESCRIBED PROPERTY IS NOT LOCATED WITHIN A 100-YEAR FLOOD PLAIN ZONE PER FLOOD INSURANCE RATE MAP NO. 26161C0253E WITH AN EFFECTIVE DATE OF APRIL 3, 2012, IN WASHTENAW COUNTY, STATE OF MICHIGAN, WHICH IS THE CURRENT FLOOD INSURANCE RATE MAP FOR THE COMMUNITY IN WHICH SAID PROPERTY IS SITUATED.

4) THERE IS NO EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS.

5) THERE IS NO OBSERVED EVIDENCE INDICATING ANY CEMETERIES ARE LOCATED ON THE PARCEL HEREIN DESCRIBED.

6) THE PARCEL HEREIN DESCRIBED HAS 61 REGULAR STRIPPED PARKING SPACES AND 3 HANDICAP SPACES.

7). SITE ADDRESS: 1750 DHU VARREN RD., ANN ARBOR, MI

LEGAL DESCRIPTION

LEGAL DESCRIPTION OF A PARCEL OF LAND LOCATED IN THE NORTHEAST 1/4 OF SECTOIN 16, TOWN 2 SOUTH, RANGE 6 EAST, CITY OF ANN ARBOR, WASHTENAW COUNTY, MICHIGAN

Commencing at the North 1/4 corner of Section 16, Town 2 South, Range 6 East, Ann Arbor Township, Washtenaw County, Michigan; thence Easterly 878.14 feet along the North line of said Section for a **PLACE OF BEGINNING**;

thence continuing Easterly along said North line 449.14 feet;
thence Southerly along the East line of the West 1/2 of the Northeast 1/4 deflecting 93°04' to the right 825.0 feet;
thence Westerly deflecting 86°56' to the right 450.10 feet;
thence Northerly deflecting 93°08' to the right 825.05 feet to the **PLACE OF BEGINNING**.

The above described parcel being more particularly described as:

Commencing at the North 1/4 corner of Section 16, Town 2 South, Range 6 East, Ann Arbor Township, Washtenaw County, Michigan; thence N 85°25'58" E 878.14 feet along the North line of said Section for a **PLACE OF BEGINNING**;

thence continuing along said North Line, N 85°25'58" E 448.71 feet (recorded as 449.14 feet);
thence along the East line of the West 1/2 of the Northeast 1/4 of said Section 16, S 01°36'44" E 825.00 feet;
thence S 85°25'59" W 451.28 feet (recorded as 450.10 feet)
thence N 01°26'01" W 825.13 feet to the **PLACE OF BEGINNING**. Being a part of the Northeast 1/4 of Section 16, Town 2 South, Range 6 East, City of Ann Arbor, Washtenaw County, Michigan, and containing 8.51 acres of land, more or less. Subject to the rights of the public over the Northerly 60 feet thereof, as occupied by Dhu Varren Road. Subject to easements and restrictions of record, if any.

EXCEPTIONS

5. Right of Way in favor of The Detroit Edison Company, as recorded in Liber 1278, Page 284, and Liber 1311, Page 35, Washtenaw County Records. **PLOTTED**

6. Easement (right of way) in favor of The Detroit Edison Company, as recorded in Liber 3020, Page 736, Washtenaw County Records. **PLOTTED**

7. Resolution Authorizing Water Main Improvement Charge as recorded in Liber 3860, Page 882, Washtenaw County Records. **NOTHING TO PLOT**

8. Right of Way in favor of City of Ann Arbor, as recorded in Liber 3889, Page 583, Washtenaw County Records. **PLOTTED**

9. Easement for public utilities in favor of City of Ann Arbor, as recorded in Liber 3889, Page 584, Washtenaw County Records. **PLOTTED**

10. Right of Way in favor of The Detroit Edison Company, Ameritech Telephone Company, and Media One Associates, Limited Partnership/OBA/Continental Cable of Michigan, as recorded in Liber 3928, Page 975, Washtenaw County Records. **PLOTTED**

Building and use restrictions as contained in Warranty Deed as recorded Liber 3381, Page 148. Washtenaw County Records. **PLOTTED**

SURVEYORS CERTIFICATE

To: The Ann Arbor Chinese Christian Church, S.B.C., a Michigan ecclesiastical corporation, Absolute Title, Inc., and The City of Ann Arbor:

This is to certify that this map or plat and the survey on which it is based were made in accordance with the 2021 Minimum Standard Detail Requirements for ALTA/NSPS Land Title Surveys, jointly established and adopted by ALTA and NSPS, and includes Items 1, 2, 3, 4, 8, 9, 11a, 13, 16, & 17 of Table A thereof. The fieldwork was completed on April 30, 2021

STATE OF MICHIGAN PATRICK L. HASTINGS PROFESSIONAL SURVEYOR No. 37277 LICENSED PROFESSIONAL SURVEYOR

MIDWESTERN CONSULTING, LLC

By: [illegible]
Patrick L. Hastings, P.S. No. 37277

Date: May 11, 2021

MIDWESTERN CONSULTING
3815 Plaza Drive Ann Arbor, Michigan 48108
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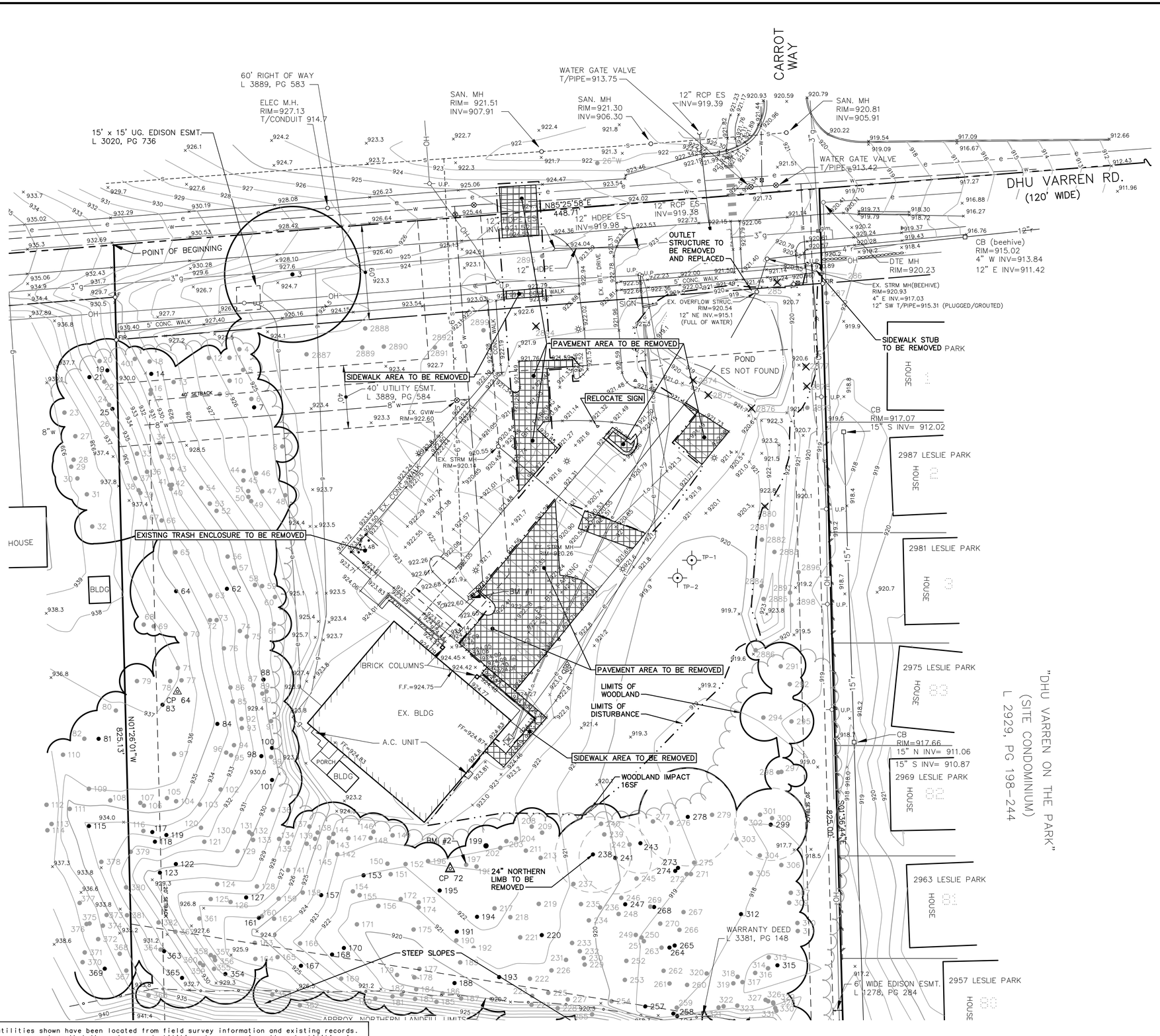
ANN ARBOR CHRISTIAN CHURCH

ANN ARBOR CHRISTIAN CHURCH
ALTA SURVEY PLAN

2

DATE: 5/20/21
SHEET 2 OF 16
CADD:
ENG: SCD
PM: SCD
TECH:
/20255ALTA
FB#----
REV. DATE
JOB No. 20255
REVISIONS:



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

SCALE: 1" = 30'

0 30 60 90

NOTES

1. THE BASE SURVEY WAS PREPARED BY MIDWESTERN CONSULTING IN 2005 WITH UPDATES MADE IN APRIL, 2021. ALL UNDERGROUND UTILITIES AND STRUCTURES HAVE BEEN SHOWN TO A REASONABLE DEGREE OF ACCURACY AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THEIR EXACT LOCATION AND TO AVOID DAMAGE THERETO. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE ENGINEER PRIOR TO COMMENCING WORK.

2. SEE NATURAL FEATURES OVERLAY AND ALTERNATIVE ANALYSIS FOR NATURAL FEATURES SUMMARY. SEE TREE LIST SHEET FOR TREE LIST.

BENCHMARKS

BM#1: TOP OF STEAMER VALVE OF HYDRANT STANDING AT S. END OF ISLAND IN FRONT OF CHURCH BUILDING
ELEV. = 924.56 NAVD88

BM#2: TOP OF SURVEY POINT N.E. SIDE OF 10" TREE (197) +/-40' SE OF SE CORNER OF CHURCH BUILDING
ELEV. = 923.94 NAVD88

LEGEND

838	EXIST. CONTOUR
×836.2	EXIST. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
GP	EXIST. GUY POLE
	GUY WIRE
	ELEC. TRANSFORMER
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
t	EXIST. TELEPHONE LINE
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f.o.	EXIST. FIBER OPTIC LINE
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	EXIST. HYDRANT
	EXIST. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
fdc	EXIST. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	END SECTION
	HEAD WALL
	CULVERT
ds	EXIST. DOWNSPOUT
s	EXIST. SANITARY SEWER
	EXIST. CLEANOUT
T/C	TOP OF CURB
T/P	TOP OF PAVEMENT
G	GUTTER
T/W	TOP OF WALK
	C/L OF DITCH
	DRAINAGE DIRECTION
T	ENCLOSED TRASH AREA
	SIGN
RR	RAILROAD CROSSING SIGN
	MAILBOX
T	TELEPHONE RISER
catv	CABLE TELEVISION RISER
e	ELECTRIC METER
w	WATER METER
g	GAS METER
glm	GAS LINE MARKER
fiber	FIBER OPTIC MARKER
	POST
W	WELL
	FENCE
	GUARDRAIL
	SINGLE TREE
	TREE OR BRUSH LIMIT
	SECTION CORNER
TP-1	TEST PIT LOCATION
S	SET IRON PIPE
F	FOUND IRON PIPE
S	SET MONUMENT
F	FOUND MONUMENT
S	SET IRON ROD
FIR	FOUND IRON ROD
	CONTROL PT.
	CENTERLINE
	PROPERTY LINE

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

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ANN ARBOR CHRISTIAN CHURCH

ANN ARBOR CHRISTIAN CHURCH
EXISTING CONDITIONS AND REMOVALS- NORTH

3

JOB No. 20255

REVISIONS:	REV. DATE
PER CITY STAFF REVIEWS	10/8/21
PER CITY STAFF REVIEWS	11/3/21
PER CITY STAFF REVIEWS	

DATE: 5/26/21
SHEET 3 OF 16
CADD:
ENG: SCD
PM: SCD
TECH:
20255EX1

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

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ANN ARBOR CHRISTIAN CHURCH

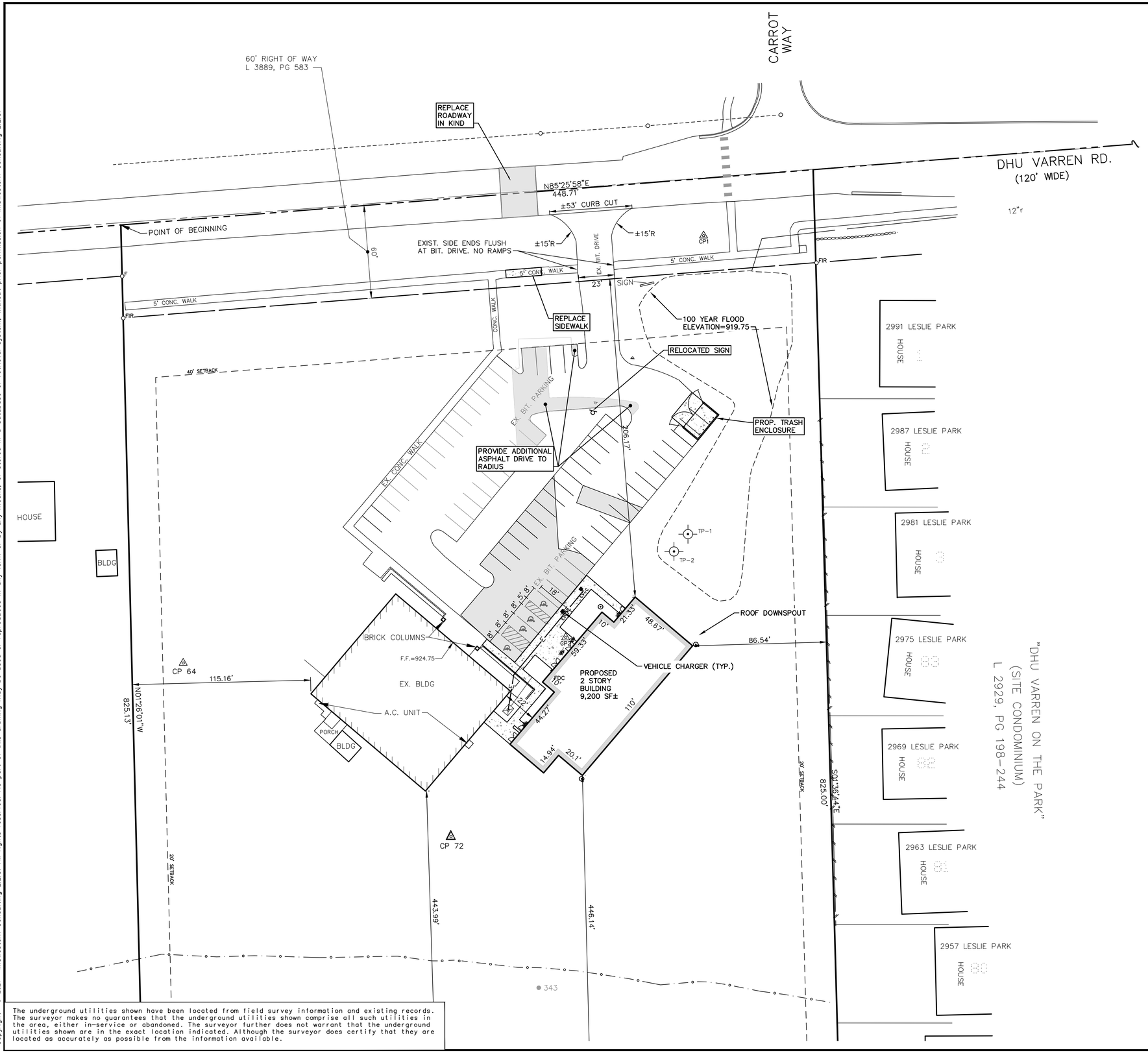
ANN ARBOR CHRISTIAN CHURCH
EXISTING CONDITIONS - SOUTH

4

DATE: 08/20/21
SHEET 4 OF 16
CADD:
ENG: SCD
PM: SCD
TECH:
20255EX1

REVISIONS:	REV. DATE
PER CITY STAFF REVIEW	08-27-21

JOB No. 20255



SCALE: 1" = 30'

0 30 60 90

NOTES:

1. Recycle and trash pickup is to be private. Trash and recycling will be stored in a screened enclosure. The existing enclosure will be removed and a new enclosure constructed.
2. An existing site light pole is within ten feet of the water main. When this light pole is replaced, it will be relocated to be at least ten feet from the water main. The City is not responsible for the light pole or its relocation.
3. The existing drive approach is non-conforming due to its width and the drive approach surface is bituminous and the sidewalk does not continue through the drive approach. It will be allowed to remain until repair or replacement is required. At that time, the drive approach shall be brought into conformance.

ELECTRIC VEHICLE CHARGING SUMMARY

2 – EV-INSTALLED SPACES SHOWN NOTED AS EV-I
0 – EV-READY SPACES SHOWN NOTED AS EV-R
2 – EV-CAPABLE SPACES SHOWN NOTED AS EV-C

LEGEND

838	EXIST. CONTOUR
×836.2	EXIST. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
GP	EXIST. GUY POLE
	GUY WIRE
	ELEC. TRANSFORMER
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
t	EXIST. TELEPHONE LINE
e	EXIST. ELECTRIC LINE
g	EXIST. GAS LINE
g	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
w	EXIST. WATER MAIN
	EXIST. HYDRANT
	EXIST. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
fdc	EXIST. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	END SECTION
	HEAD WALL
	CULVERT
ds	EXIST. DOWNSPOUT
s	EXIST. SANITARY SEWER
	EXIST. CLEANOUT
T/C	TOP OF CURB
T/P	TOP OF PAVEMENT
G	GUTTER
T/W	TOP OF WALK
	C/L OF DITCH
	DRAINAGE DIRECTION
T	ENCLOSED TRASH AREA
	SIGN
	RAILROAD CROSSING SIGN
	MAILBOX
t	TELEPHONE RISER
catv	CABLE TELEVISION RISER
e	ELECTRIC METER
w	WATER METER
g	GAS METER
glm	GAS LINE MARKER
fiber	FIBER OPTIC MARKER
	POST
W	WELL
	FENCE
	GUARDRAIL
	SINGLE TREE
	TREE OR BRUSH LIMIT
	SECTION CORNER
SB-1	SOIL BORING LOCATION
	TEST PIT LOCATION
S	SET IRON PIPE
F	FOUND IRON PIPE
S	SET MONUMENT
F	FOUND MONUMENT
S	SET IRON ROD
FIR	FOUND IRON ROD
	CONTROL PT.
℄	CENTERLINE
℞	PROPERTY LINE

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

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734-668-9128

ANN ARBOR CHRISTIAN CHURCH

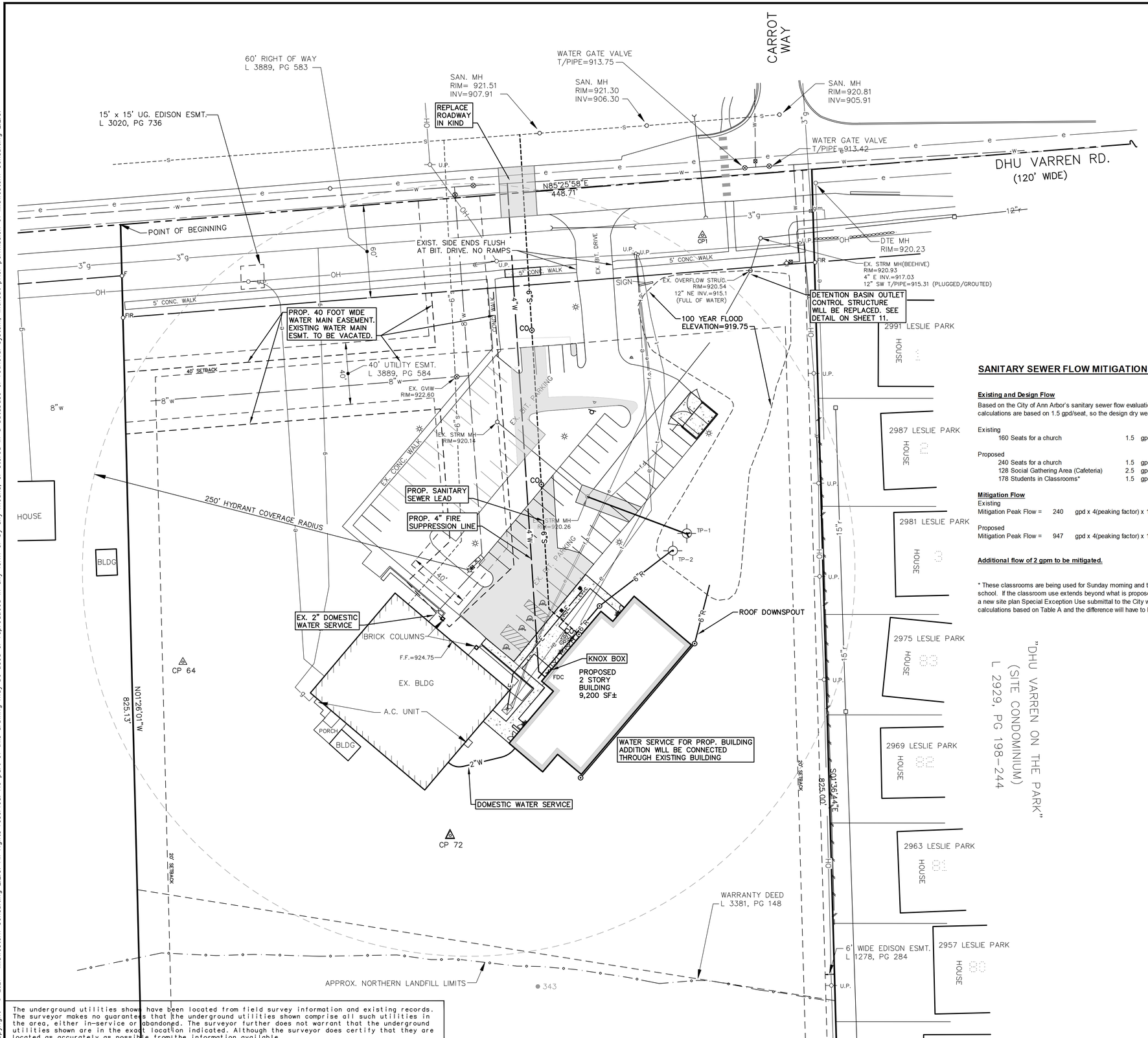
ANN ARBOR CHRISTIAN CHURCH
SITE PLAN

5

JOB No. 20255

REVISIONS:	REV. DATE
PER CITY STAFF REVIEWS	9/7/21
PER CITY STAFF REVIEWS	10/6/21
PER CITY STAFF REVIEWS	11/3/21

DATE: 5/20/21
SHEET 5 OF 16
CADD:
ENG: SCD
PM: SCD
TECH:
/20255SP1



SCALE: 1" = 30'

0 30 60 90

NOTES:

1. The proposed building will be fire suppressed. A Knox Box has been located between the door and the Fire Department Connection.
2. A new 4" fire service is proposed. It connects to the public water main within Dhu Varren Road right-of-way. There is an existing valve between the new connection and the existing hydrant lead that serves the building.
3. Proposed domestic water service for the building expansion will be connected from the existing structure.
4. A new sanitary sewer service for the building connects to the public sanitary sewer on the north side of Dhu Varren Road.
5. The existing storm water detention basin will be expanded to accommodate the increased impervious area for the new building footprint.
6. The existing water service lead is connected to a dead-end water main serving a fire hydrant. This existing, non-conforming condition will be allowed to remain until the service lead requires replacement or major repair. At that time, the service lead will need to be tapped to a looping main.
7. An existing site light pole is within ten feet of the water main. When this light pole is replaced, it will be relocated to be at least ten feet from the water main. The City is not responsible for the light pole or its relocation.
8. There are no booster pumps needed for the new building.

SANITARY SEWER FLOW MITIGATION CALCULATIONS

Existing and Design Flow

Based on the City of Ann Arbor's sanitary sewer flow evaluation Table 'A', for a church, the calculations are based on 1.5 gpd/seat, so the design dry weather flow rate will be:

Existing			
160 Seats for a church	1.5	gpd =	240 gpd
Proposed			
240 Seats for a church	1.5	gpd =	360 gpd
128 Social Gathering Area (Cafeteria)	2.5	gpd =	320 gpd
178 Students in Classrooms*	1.5	gpd =	267 gpd

Mitigation Flow

Existing

Mitigation Peak Flow = 240 gpd x 4(peaking factor) x 1.1(recovery) = 1056 gpd = 0.73 gpm

Proposed

Mitigation Peak Flow = 947 gpd x 4(peaking factor) x 1.1(recovery) = 4166.8 gpd = 2.89 gpm

Additional flow of 2 gpm to be mitigated.

* These classrooms are being used for Sunday morning and two weeknights, not a daily school. If the classroom use extends beyond what is proposed here, such as a daily school, a new site plan Special Exception Use submittal to the City will be required showing revised calculations based on Table A and the difference will have to be mitigated at that time.

LEGEND

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×836.2	EXIST. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
GP	EXIST. GUY POLE
	GUY WIRE
	ELEC. TRANSFORMER
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
t	EXIST. TELEPHONE LINE
e	EXIST. ELECTRIC LINE
g	EXIST. GAS LINE
g	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
w	EXIST. WATER MAIN
	EXIST. HYDRANT
	EXIST. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
fdc	EXIST. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	END SECTION
	HEAD WALL
	CULVERT
ds	EXIST. DOWNSPOUT
s	EXIST. SANITARY SEWER
	EXIST. CLEANOUT
T/C	TOP OF CURB
T/P	TOP OF PAVEMENT
G	GUTTER
T/W	TOP OF WALK
	C/L OF DITCH
	DRAINAGE DIRECTION
T	ENCLOSED TRASH AREA
P	SIGN
RR	RAILROAD CROSSING SIGN
M	MAILBOX
t	TELEPHONE RISER
catv	CABLE TELEVISION RISER
e	ELECTRIC METER
w	WATER METER
g	GAS METER
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	POST
W	WELL
	FENCE
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SB-1	SOIL BORING LOCATION
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ANN ARBOR CHRISTIAN CHURCH
UTILITY PLAN

6

JOB No. 20255

REVISIONS:
FIRE OTT STAFF REVIEWS

REV.	DATE
	11/3/21

DATE: 5/20/21
SHEET 6 OF 16
CADD:
ENG: SCD
PM: SCD
TECH:
20255SP1.dwg
FILE:

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SCALE: 1" = 30'

0 30 60 90

Know what's below. Call before you dig.

LEGEND

- EXIST. CONTOUR
- PROP. CONTOUR
- EXIST. SPOT ELEVATION
- PROP. SPOT ELEVATION
- EXIST. UTILITY POLE
- GUY WIRE
- ELEC. TRANSFORMER
- EXIST. OVERHEAD UTILITY LINE
- EXIST. LIGHT POLE
- PROP. LIGHT POLE
- EXIST. TELEPHONE LINE
- EXIST. ELECTRIC LINE
- EXIST. GAS LINE
- EXIST. GAS VALVE
- EXIST. FIBER OPTIC LINE
- EXIST. WATER MAIN
- EXIST. HYDRANT
- EXIST. GATE VALVE IN BOX
- EXIST. GATE VALVE IN WELL
- EXIST. CURB STOP & BOX
- EXIST. BLOW-OFF
- EXIST. STORM SEWER
- PROP. STORM SEWER
- EXIST. CATCH BASIN OR INLET
- PROP. CATCH BASIN OR INLET
- PROP. ROOF DRAIN
- END SECTION
- CULVERT
- EXIST. DOWNSPOUT
- PROP. DOWNSPOUT
- EXIST. SANITARY SEWER
- PROP. SANITARY SEWER
- EXIST. CLEANOUT
- PROP. CLEANOUT
- C/L OF DITCH
- DRAINAGE DIRECTION
- SIGN
- SINGLE TREE
- TREE OR BRUSH LIMIT
- FENCE
- SILTFENCE
- LIMITS OF DISTURBANCE
- CONSTRUCTION FENCE
- FF FINISH FLOOR ELEVATION
- GF GARAGE FLOOR ELEVATION
- BFF BASEMENT FINISH FLOOR ELEVATION

SOIL EROSION CONTROL MEASURES

t = temporary p = permanent

5	SEEDING
6	SEEDING WITH MULCH AND/OR MATTING
54	CONSTRUCTION FENCE OR SNOW FENCE
55	GEOTEXTILE SILT FENCE

GRADING AND SOIL EROSION CONTROL NOTES

1. All soil erosion control measures shall comply with the City of Ann Arbor "Soil Erosion and Sedimentation Control" Ordinance, Title V, Chapter 63 of the City's code, Division VII.
2. Permanent seeding shall comply with specifications for "Permanent Seeding" as set forth in the Washtenaw County Standards. Basic requirements consist of 200 lbs/acre of seed, 500 lbs/acre of 10-10-10 analysis fertilizer (or equal), and straw mulch at a rate of 1.5 tons per acre.
3. Temporary seeding and seeding of the topsoil stockpile is to be per City of Ann Arbor Standard Specifications, Division VII Soil Erosion and Sedimentation Control, Section 4 Construction Methods, Item 4A Vegetative Protection and Mulching.
4. The grading contractor will be responsible for implementing the initial soil erosion control measures (curb inlet filter and silt fence) prior to commencing earthmoving operations. Other measure are to be implemented as soon as feasible in the construction sequence.
5. The utility contractor will be responsible for restoring any existing soil erosion control measure that is disturbed during utility construction.
6. Any lawn area which will have a slope steeper than 3:1 (3 horizontal to 1 vertical) shall be sodded and pegged or seeded and mulched using a soil erosion control fabric or blanket within 15 days after establishing the final grade.
7. All construction and material shall confom to City of Ann Arbor public services department standard specifications.
8. Standard details from the City of Ann Arbor Public Service Department have been included on these drawings. All work and materials shall conform to these standards. Omission of any standard from this document does not relieve the contractor of the responsibility of performing the work to the applicable standard.
9. Permanent soil erosion control measures are required to be installed within 5 days after final grading or final earth change.
10. The estimated quantity of earth excavation for this development is 800 cy of cut and 800 cy of fill.
11. The estimated cost of soil erosion control shown on these plans is $1250 (excluding seeding and sodding).
12. The estimated cost of protecting all exposed surfaces from erosion should construction cease is $2300. (Re-spread 3" topsoil and surface with seed and mulch.)

MAINTENANCE REQUIREMENTS

1. All silt fence shall be maintained throughout the duration of the project. If at any time the depth of silt and sediment comes to within 12" of the top of any silt fence, all silt and sediment shall be removed to original grade.
2. All temporary gravel filters should be adjusted as to location per actual field conditions. The removal of trapped sediment and the cleanout or replacement of clogged stone may be necessary after each storm event during the project.
3. Only upon stabilization of all disturbed areas may the silt fence and temporary gravel filters be removed. Also, all storm sewers must be cleaned of all sediment.
4. All internal and external streets will be cleaned of any mud tracked from the project site immediately following each mud-tracking occurrence

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GRADING AND SOIL EROSION AND SEDIMENTATION CONTROL PLAN

JOB No. 20255

REVISIONS:	REV. DATE
PER CITY STAFF REVIEWS	8/27/21
PER CITY STAFF REVIEWS	10/08/21

DATE: 5/20/21
SHEET 6 OF 16
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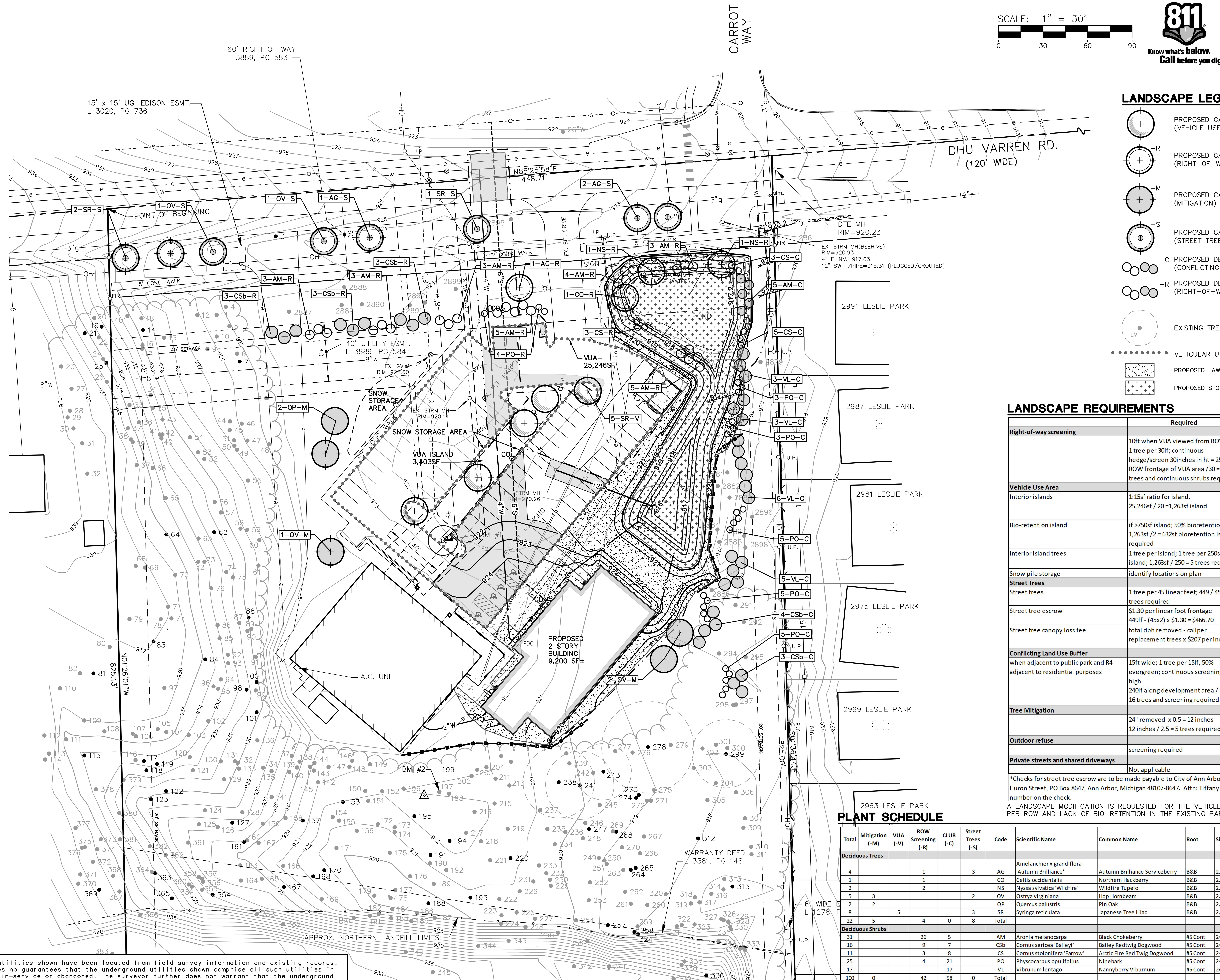

LANDSCAPE LEGEND

- PROPOSED CANOPY TREE (VEHICLE USE AREA)
- -R PROPOSED CANOPY TREE (RIGHT-OF-WAY SCREEN)
- -M PROPOSED CANOPY TREE (MITIGATION)
- -S PROPOSED CANOPY TREE (STREET TREE)
- -C PROPOSED DECIDUOUS SHRUBS (CONFLICTING LAND USE BUFFER)
- -R PROPOSED DECIDUOUS SHRUBS (RIGHT-OF-WAY SCREENING)
- EXISTING TREE TO REMAIN
- VEHICULAR USE AREA LIMITS
- PROPOSED LAWN AREA
- PROPOSED STORMWATER SEED MIX

LANDSCAPE REQUIREMENTS

	Required	Proposed
Right-of-way screening		
	10ft when VUA viewed from ROW 1 tree per 30lf; continuous hedge/screen 30inches in ht = 255ft ROW frontage of VUA area /30 = 9 trees and continuous shrubs required	7 existing trees + 4 proposed trees = 11 trees provided and 42 shrubs provided
Vehicle Use Area		
Interior islands	1:15sf ratio for island, 25,246sf / 20 =1,263sf island	3,403sf existing island; one row with 19 spaces in a row; **Request landscape modification to leave as existing**
Bio-retention island	if >750sf island; 50% bioretention 1,263sf /2 = 632sf bioretention island required	**Request landscape modification to leave as existing with no bio-retention**
Interior island trees	1 tree per island; 1 tree per 250sf island; 1,263sf / 250 = 5 trees required	5 trees provided
Snow pile storage	identify locations on plan	as shown on plans
Street Trees		
Street trees	1 tree per 45 linear feet; 449 / 45 = 10 trees required	2 existing trees to remain; 8 trees proposed
Street tree escrow	$1.30 per linear foot frontage 449lf - (45x2) x $1.30 = $466.70	$466.70 to City Tree Fund prior to issuing building permits.*
Street tree canopy loss fee	total dbh removed - caliper replacement trees x $207 per inch	Not applicable
Conflicting Land Use Buffer		
when adjacent to public park and R4 adjacent to residential purposes	15ft wide; 1 tree per 15lf, 50% evergreen; continuous screening 4ft high 240lf along development area / 15lf = 16 trees and screening required	16 existing tree to remain; 58 shrubs proposed
Tree Mitigation		
	24" removed x 0.5 = 12 inches 12 inches / 2.5 = 5 trees required	5 trees provided
Outdoor refuse		
	screening required	Trash enclosure proposed
Private streets and shared driveways		
	Not applicable	Not applicable

*Checks for street tree escrow are to be made payable to City of Ann Arbor and mailed to Systems Planning Unit, 301 E. Huron Street, PO Box 8647, Ann Arbor, Michigan 48107-8647. Attn: Tiffany Giacobazzi. Include the project name and number on the check.

A LANDSCAPE MODIFICATION IS REQUESTED FOR THE VEHICLE USE AREA NUMBER OF PARKING SPACES PER ROW AND LACK OF BIO-RETENTION IN THE EXISTING PARKING LOT.

PLANT SCHEDULE

Total	Mitigation (-M)	VUA (-V)	ROW Screening (-R)	CLUB (-C)	Street Trees (-S)	Code	Scientific Name	Common Name	Root	Size	Spacing	Notes
Deciduous Trees												
4			1		3	AG	Amelanchier x grandiflora 'Autumn Brilliance'	Autumn Brilliance Serviceberry	B&B	2.5" cal.	20' o.c.	Single Stem
1			1			CO	Celtis occidentalis	Northern Hackberry	B&B	2.5" cal.	25' o.c.	
2			2			NS	Nyssa sylvatica 'Wildfire'	Wildfire Tupelo	B&B	2.5" cal.	20' o.c.	Single Stem
5	3				2	OV	Ostrya virginiana	Hop Hornbeam	B&B	2.5"cal.	15' o.c.	
2	2					QP	Quercus palustris	Pin Oak	B&B	2.5" cal.	25' o.c.	
8		5			3	SR	Syringa reticulata	Japanese Tree Lilac	B&B	2.5" cal.	20' o.c.	Single Stem
22	5		4	0	8	Total						
Deciduous Shrubs												
31			26	5		AM	Aronia melanocarpa	Black Chokeberry	#5 Cont	24-30" ht	6' o.c.	
16			9	7		CSb	Cornus sericea 'Baileyi'	Bailey Redtwig Dogwood	#5 Cont	24-30" ht	8' o.c.	
11			3	8		CS	Cornus stolonifera 'Farrow'	Arctic Fire Red Twig Dogwood	#5 Cont	24-30" ht	4' o.c.	
25			4	21		PO	Physcocarpus opulifolius	Ninebark	#5 Cont	24-30" ht	4' o.c.	
17				17		VL	Vibrunum lentago	Nannyberry Viburnum	#5 Cont	24-30" ht	8' o.c.	
100	0		42	58	0	Total						

NOTE: ALL SPECIES SUBSTITUTIONS MUST BE APPROVED IN WRITING FROM THE CITY OF ANN ARBOR PRIOR TO INSTALLATION.

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ANN ARBOR CHRISTIAN CHURCH
LANDSCAPE AND MITIGATION PLAN

8

JOB No. 20255

REVISIONS:	REV. DATE
PER CITY STAFF REVIEWS	8/19/21
PER CITY STAFF REVIEWS	10/08/21

DATE: 5/20/21

CADD:
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	TAG #	DBH	COMMON NAME	GENUS/SPECIES	STEM	SCORE	LM	WOOD-LAND	INV	REM	OFF-SITE
P	1	32"	Silver Maple	*Acer saccharinum*		dead		X			
P	2	29"	Pignut Hickory	*Carya glabra*		dead		X			
P	3	43"	White Oak	*Quercus alba*			X	x			
P	4	8"	Bitternut Hickory	*Carya cordiformis*				X			
P	5	11"	Bitternut Hickory	*Carya cordiformis*				X			
P	6	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	7	7"	Bitternut Hickory	*Carya cordiformis*	quad			X			
P	7	18"	Black Cherry	*Prunus serotina*			X	X			
P	8	10"	Red Oak	*Quercus rubra*				X			
P	9	12"	White Oak	*Quercus alba*				X			
P	10	11"	American Elm	*Ulmus americana*				X			
P	11	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	12	8"	Bitternut Hickory	*Carya cordiformis*				X			
P	13	10"	Bitternut Hickory	*Carya cordiformis*	twin			X			
P	14	16"	Red Oak	*Quercus rubra*			X	X			
P	15	10"	Red Oak	*Quercus rubra*				X			
P	16	14"	Red Oak	*Quercus rubra*	twin			X			
P	17	15"	Red Oak	*Quercus rubra*				X			
P	18	6"	White Mulberry	*Morus alba*				X	X		
P	19	20"	Red Oak	*Quercus rubra*			X	X			OS
P	20	10"	Shagbark Hickory	*Carya ovata*	twin			X			
P	21	21"	Red Oak	*Quercus rubra*			X	X			OS
P	22	14"	White Oak	*Quercus alba*				X			OS
P	23	9"	Shagbark Hickory	*Carya ovata*				X			OS
P	24	8"	White Oak	*Quercus alba*				X			OS
P	25	17"	Red Oak	*Quercus rubra*			X	X			OS
P	26	8"	Bitternut Hickory	*Carya cordiformis*	quad			X			OS
P	27	9"	Shagbark Hickory	*Carya ovata*				X			OS
P	28	13"	Bitternut Hickory	*Carya cordiformis*	twin			X			OS
P	29	12"	Bitternut Hickory	*Carya cordiformis*				X			OS
P	30	14"	White Oak	*Quercus alba*				X			OS
P	31	10"	Bitternut Hickory	*Carya cordiformis*	multi			X			OS
P	32	11"	Bitternut Hickory	*Carya cordiformis*	triple			X			OS
P	33	10"	Bitternut Hickory	*Carya cordiformis*	twin			X			
P	34	15"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	35	8"	Shagbark Hickory	*Carya ovata*				X			
P	36	15"	Red Oak	*Quercus rubra*	triple	60%		X			
P	37	11"	White Oak	*Quercus alba*	twin	60%		X			
P	38	8"	Shagbark Hickory	*Carya ovata*	quad			X			
P	39	6"	White Oak	*Quercus alba*				X			
P	40	6"	White Oak	*Quercus alba*				X			
P	41	8"	Shagbark Hickory	*Carya ovata*				X			
P	42	11"	Shagbark Hickory	*Carya ovata*				X			
P	43	11"	Shagbark Hickory	*Carya ovata*				X			
P	44	9"	Bitternut Hickory	*Carya cordiformis*				X			
P	45	10"	Shagbark Hickory	*Carya ovata*				X			
P	46	15"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	47	7"	Black Cherry	*Prunus serotina*				X			
P	48	7"	Red Oak	*Quercus rubra*				X			
P	49	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	50	8"	Shagbark Hickory	*Carya ovata*				X			
P	51	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	52	9"	Black Cherry	*Prunus serotina*				X			
P	53	10"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	54	7"	American Elm	*Ulmus americana*	Twin	60%		X			
P	55	7"	Bitternut Hickory	*Carya cordiformis*	twin			X			
P	56	10"	Shagbark Hickory	*Carya ovata*				X			
P	57	11"	Shagbark Hickory	*Carya ovata*	quad			X			
P	58	14"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	59	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	60	7"	Black Walnut	*Juglans nigra*				X			
P	61	11"	Black Cherry	*Prunus serotina*				X			
P	62	19"	Red Oak	*Quercus rubra*			X	X			
P	63	14"	Red Oak	*Quercus rubra*				X			
P	64	29"	Red Oak	*Quercus rubra*			X	X			
P	65	14"	White Oak	*Quercus alba*	quad			X			
P	66	12"	Red Oak	*Quercus rubra*				X			
P	67	9"	White Oak	*Quercus alba*	twin			X			
P	68	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	69	6"	Black Walnut	*Juglans nigra*				X			
P	70	7"	American Elm	*Ulmus americana*	Twin	60%		X			
P	71	16"	Black Cherry	*Prunus serotina*		40%		X			
P	72	10"	Bitternut Hickory	*Carya cordiformis*	quad			X			
P	73	11"	Bitternut Hickory	*Carya cordiformis*				X			
P	74	7"	Shagbark Hickory	*Carya ovata*	twin			X			
P	75	8"	Black Walnut	*Juglans nigra*				X			
P	76	13"	Black Walnut	*Juglans nigra*				X			
P	77	7"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	78	9"	Bitternut Hickory	*Carya cordiformis*	quad			X			
P	79	11"	Bitternut Hickory	*Carya cordiformis*	multi			X			
P	80	12"	Black Cherry	*Prunus serotina*				X			
P	81	18"	Red Oak	*Quercus rubra*			X	X			OS
P	82	9"	Red oak	*Quercus rubra*				X			OS
P	83	19"	White Oak	*Quercus alba*			X	X			
P	84	20"	Bur Oak	*Quercus macrocarpa*	quad	40%	X	X			
P	86	9"	Bitternut Hickory	*Carya cordiformis*	Twin			X			
P	87	12"	Bitternut Hickory	*Carya cordiformis*				X			
P	88	19"	Bitternut Hickory	*Carya cordiformis*			X	X			
P	89	8"	Black Cherry	*Prunus serotina*				X			
P	90	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	91	15"	Bitternut Hickory	*Carya cordiformis*				X			
P	92	8"	Bitternut Hickory	*Carya cordiformis*	Twin			X			
P	93	8"	Bitternut Hickory	*Carya cordiformis*				X			
P	94	6"	Bitternut Hickory	*Carya cordiformis*	Twin			X			
P	95	15"	American Elm	*Ulmus americana*				X			
P	96	8"	Bitternut Hickory	*Carya cordiformis*	Twin			X			
P	97	15"	White Oak	*Quercus alba*				X			
P	98	16"	Bitternut Hickory	*Carya cordiformis*	quad		X	X			
P	99	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	100	17"	Bitternut Hickory	*Carya cordiformis*			X	X			
P	101	19"	Bitternut Hickory	*Carya cordiformis*			X	X			
P	102	9"	Bitternut Hickory	*Carya cordiformis*	Twin			X			
P	103	9"	Bitternut Hickory	*Carya cordiformis*	Twin			X			
P	104	14"	Red Oak	*Quercus rubra*				X			
P	105	15"	Red Oak	*Quercus rubra*				X			
P	106	9"	Bitternut Hickory	*Carya cordiformis*				X			
P	107	9"	Red maple	*Acer rubrum*				X			
P	108	10"	Red Oak	*Quercus rubra*	twin			X			OS
P	109	11"	Bitternut Hickory	*Carya cordiformis*	triple			X			OS
P	110	10"	Bitternut Hickory	*Carya cordiformis*	Twin			X			OS
P	111	9"	White Oak	*Quercus alba*	twin			X			OS
P	112	12"	Black Cherry	*Prunus serotina*				X			
P	113	14"	Red Oak	*Quercus rubra*				X			OS
P	114	9"	Red Oak	*Quercus rubra*				X			OS
P	115	17"	Red Oak	*Quercus rubra*			X	X			OS
P	116	6"	white Oak	*Quercus alba*				X			
P	117	18"	Red Oak	*Quercus rubra*	twin		X	X			
P	118	16"	White Oak	*Quercus alba*			X	X			
P	119	18"	Red Oak	*Quercus rubra*			X	X			
P	120	9"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	121	15"	Red Oak	*Quercus rubra*				X			
P	122	16"	White Oak	*Quercus alba*	twin		X	X			
P	123	16"	White Oak	*Quercus alba*			X	X			
P	124	6"	Black Cherry	*Prunus serotina*				X			
P	125	12"	Bitternut Hickory	*Carya cordiformis*				X			
P	126	8"	Black Cherry	*Prunus serotina*				X			
P	127	22"	Red Oak	*Quercus rubra*	twin		X	X			
P	128	9"	Bitternut Hickory	*Carya cordiformis*				X			
P	129	14"	White Ash	*Fraxinus americana*	triple			X			
P	130	9"	Black Cherry	*Prunus serotina*				X			
P	131	7"	Black Cherry	*Prunus serotina*				X			
P	132	11"	Black Cherry	*Prunus serotina*				X			
P	133	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	134	9"	White Ash	*Fraxinus americana*	twin			X			
P	135	10"	White Ash	*Fraxinus americana*				X			
P	136	11"	Black Cherry	*Prunus serotina*		40%		X			
P	137	10"	Black Cherry	*Prunus serotina*				X			
P	138	22"	White Ash	*Fraxinus americana*				X			
P	139	6"	White Ash	*Fraxinus americana*				X			
P	140	12"	White Ash	*Fraxinus americana*				X			
P	141	12"	White Ash	*Fraxinus americana*	triple			X			
P	142	12"	Black Cherry	*Prunus serotina*				X			
P	143	15"	White Ash	*Fraxinus americana*				X			
P	144	20"	White Ash	*Fraxinus americana*				X			
P	145	7"	White Ash	*Fraxinus americana*				X			
P	146	12"	Black Cherry	*Prunus serotina*				X			
P	147	17"	White Ash	*Fraxinus americana*	triple			X			
P	148	6"	Black Cherry	*Prunus serotina*				X			
P	149	10"	Black Cherry	*Prunus serotina*				X			

	TAG #	DBH	COMMON NAME	GENUS/SPECIES	STEM	SCORE	LM	WOOD-LAND	INV	REM	OFF-SITE
P	150	6"	White Ash	*Fraxinus americana*				X			
P	151	16"	White Ash	*Fraxinus americana*	twin			X			
P	152	12"	Shagbark Hickory	*Carya ovata*				X			
P	153	30"	White Oak	*Quercus alba*			X	X			
P	154	6"	Black Cherry	*Prunus serotina*				X			
P	155	7"	Black Cherry	*Prunus serotina*				X			
P	156	8"	Black Cherry	*Prunus serotina*				X			
P	157	17"	White Oak	*Quercus alba*			X	X			
P	158	10"	White Oak	*Quercus alba*				X			
P	159	6"	White Oak	*Quercus alba*				X			
P	160	9"	Red Oak	*Quercus rubra*				X			
P	161	16"	Red Oak	*Quercus rubra*			X	X			
P	162	7"	Black Cherry	*Prunus serotina*				X			
P	163	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	164	7"	Black Cherry	*Prunus serotina*				X			
P	165	7"	Black Cherry	*Prunus serotina*				X			
P	166	8"	Black Cherry	*Prunus serotina*				X			
P	167	22"	Red Oak	*Quercus rubra*			X	X			
P	168	18"	White Oak	*Quercus alba*			X	X			
P	169	14"	Red Oak	*Quercus rubra*				X			
P	170	24"	White Oak	*Quercus alba*			X	X			
P	171	14"	White Oak	*Quercus alba*				X			
P	172	14"	Bitternut Hickory	*Carya cordiformis*				X			
P	173	11"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	174	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	175	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	176	13"	Shagbark Hickory	*Carya ovata*				X			
P	177	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	178	11"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	179	9"	Bitternut Hickory	*Carya cordiformis*				X			
P	180	7"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	181	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	182	13"	Black Cherry	*Prunus serotina*				X			
P	183	9"	Black Cherry	*Prunus serotina*				X			
P	184	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	185	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	186	10"	Bitternut Hickory	*Carya cordiformis*				X			
P	187	9"	Red Oak	*Quercus rubra*				X			
P	188	24"	Red Oak	*Quercus rubra*			X	X			
P	189	9"	White Oak	*Quercus alba*				X			
P	190	6"	White Oak	*Quercus alba*				X			
P	191	16"	Shagbark Hickory	*Carya ovata*			X	X			
P	192	10"	White Oak	*Quercus alba*				X			
P	193	22"	Red Oak	*Quercus rubra*			X	X			
P	194	16"	Bitternut Hickory	*Carya cordiformis*	Twin		X	X			
P	195	16"	Bitternut Hickory	*Carya cordiformis*	triple		X	X			
P	196	12"	Bitternut Hickory	*Carya cordiformis*				X			
P	197	12"	Bitternut Hickory	*Carya cordiformis*				X			
P	198	9"	Bitternut Hickory	*Carya cordiformis*	Twin			X			
U	199	13"	Sassafras	*Sassafras albidum*				X			
U	200	12"	Sassafras	*Sassafras albidum*		Dead		X			
P	201	10"	Sassafras	*Sassafras albidum*				X			
U	202	11"	Sassafras	*Sassafras albidum*				X			
U	203	10	Sassafras	*Sassafras albidum*				X			
U	204	10"	Sassafras	*Sassafras albidum*				X			
U	205	9"	Sassafras	*Sassafras albidum*		Dead		X			
U	206	8"	Sassafras	*Sassafras albidum*		Dead		X			
U	207	7"	Sassafras	*Sassafras albidum*		Dead		X			
U	208	12"	Sassafras	*Sassafras albidum*				X			
U	209	11"	Sassafras	*Sassafras albidum*				X			
U	210	9	Sassafras	*Sassafras albidum*		Dead		X			
U	211	13"	Bitternut Hickory	*Carya cordiformis*				X			
P	212	15"	Bitternut Hickory	*Carya cordiformis*				X			
U	213	9"	Sassafras	*Sassafras albidum*				X			
U	214	10"	Bitternut Hickory	*Carya cordiformis*		Dead		X			
U	215	14"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	216	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	217	15"	Bitternut Hickory	*Carya cordiformis*				X			
P	218	13"	Bitternut Hickory	*Carya cordiformis*	Twin			X			
P	219	7"	Black Cherry	*Prunus serotina*				X			
P	220	16"	Red Oak	*Quercus rubra*	triple	40%	X	X			
P	221	9"	Shagbark Hickory	*Carya ovata*				X			
P	222	13"	Bitternut Hickory	*Carya cordiformis*	Twin			X			
P	223	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	224	6"	Black Cherry	*Prunus serotina*				X			
P	225	12"	Bitternut Hickory	*Carya cordiformis*				X			
P	226	14"	White Oak	*Quercus alba*	quad			X			
P	227	11"	Black Cherry	*Prunus serotina*				X			
P	228	7"	American Elm	*Ulmus americana*		40%		X			
P	229	16"	Shagbark Hickory	*Carya ovata*				X			
P	230	9"	Shagbark Hickory	*Carya ovata*				X			
P	231	9"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	232	16"	Bitternut Hickory	*Carya cordiformis*	quad			X			
P	233	14"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	234	10"	Bitternut Hickory	*Carya cordiformis*				X			
P	235	10"	Bitternut Hickory	*Carya cordiformis*				X			
P	236	11"	Bitternut Hickory	*Carya cordiformis*				X			
U	237	10"	Bitternut Hickory	*Carya cordiformis*				X			
U	238	24"	Bur Oak	*Quercus macrocarpa*	twin		X	X		24" R	
U	239	15"	Bitternut Hickory	*Carya cordiformis*				X			
U	240	13"	Black Cherry	*Prunus serotina*				X		IMP	
U	241	23"	Red Oak	*Quercus rubra*	twin			X			
U	242	12"	Bitternut Hickory	*Carya cordiformis*				X			
U	243	19"	Red Oak	*Quercus rubra*	twin			X			
U	244	18"	Red Oak	*Quercus rubra*		Dead	X	X			
P	245	16"	White Ash	*Fraxinus americana*	twin			X			
P	246	9"	Bitternut Hickory	*Carya cordiformis*				X			
P	247	20"	Red Oak	*Quercus rubra*	quad	75%	X	X			
P	248	14"	Red Oak	*Quercus rubra*				X			
P	249	14"	Red Oak	*Quercus rubra*				X			
P	250	14"	Red Oak	*Quercus rubra*				X			
P	251	12"	Bitternut Hickory	*Carya cordiformis*				X			
P	252	15"	Red Oak	*Quercus rubra*	twin	40%		X			
P	253	9"	Bitternut Hickory	*Carya cordiformis*	Twin	40%		X			
P	254	6"	Black Cherry	*Prunus serotina*				X			
P	255	11"	Bitternut Hickory	*Carya cordiformis*	triple			X			
P	256	12"	Black Walnut	*Juglans nigra*				X			
P	257	17"	Red Oak	*Quercus rubra*			X	X			
P	258	16"	Red Oak	*Quercus rubra*	twin		X	X			
P	259	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	260	8"	Bitternut Hickory	*Carya cordiformis*				X			
P	261	8"	Bitternut Hickory	*Carya cordiformis*				X			
P	262	8"	Bitternut Hickory	*Carya cordiformis*				X			
P	263	9"	Red Oak	*Quercus rubra*				X			
P	264	19"	Red Oak	*Quercus rubra*			X	X			
P	265	18"	Red Oak	*Quercus rubra*			X	X			
P	266	8"	Shellbark Hickory	*Carya laciniosa*				X			
P	267	14"	Red Oak	*Quercus rubra*				X			
P	268	16"	Red Oak	*Quercus rubra*			X	X			
P	269	9"	Red Oak	*Quercus rubra*				X			
P	270	7"	Shellbark Hickory	*Carya laciniosa*				X			
P	271	12"	Linden	*Tilia sp.*				X			
P	272	14"	Linden	*Tilia sp.*				X			
P	273	19"	Red Oak	*Quercus rubra*			X	X			
P	274	18"	Red Oak	*Quercus rubra*			X	X			
P	275	9"	Black Cherry	*Prunus serotina*				X			
U	276	8	Black Cherry	*Prunus serotina*				X			
U	277	7"	American Elm	*Ulmus americana*				X			
U	278	31"	White Oak	*Quercus alba*			X	X			
U	279	8"	Black Walnut	*Juglans nigra*				X			
P	280	7"	Boxelder	*Acer negundo*		40%		X			
P	281	9"	Boxelder	*Acer negundo*				X			
P	282	10"	Boxelder	*Acer negundo*				X			
P	283	10"	Boxelder	*Acer negundo*				X			
P	284	7"	Boxelder	*Acer negundo*				X			
U	285	15"	Black Walnut	*Juglans nigra*		Dead				X	
U	286	12"	Blue Spruce	*Picea pungens*							
U	287	11"	Blue Spruce	*Picea pungens*							
P	288	8"	White oak	*Quercus alba*				X			
P	289	8"	White oak	*Quercus alba*				X			
P	290	7"	Sweet Cherry	*Prunus avium*		40%		X			
U	291	15"	Box Elder	*Acer negundo*				X			
U	292	8"	Hawthorn	*Crataegus*				X			
P	293	7"	Tree-of-heaven	*Ailanthus altissima*				X	X		
U	294	15"	Tree of Heaven	*Ailanthus*				X	X		
P	295	14"	Black Walnut	*Juglans nigra*				X			
P	296	7"	Black Locust	*Robinia pseudoacacia*		Gone		X	X		
P	297	9"	Black Walnut	*Juglans nigra*				X			
P	298	8"	Black Walnut	*Juglans nigra*				X			
P	299	23"	Black Walnut	*Juglans nigra*			X	X			

	TAG #	DBH	COMMON NAME	GENUS/SPECIES	STEM	SCORE	LM	WOOD-LAND	INV	REM	OFF-SITE
P	300	10"	Black Locust	*Robinia pseudoacacia*				X	X		
P	301	12"	Black Walnut	*Juglans nigra*		40%		X			
P	302	15"	Black Walnut	*Juglans nigra*		40%		X			
P	303	7"	Linden	*Tilia sp.*				X			
P	304	6"	American Elm	*Ulmus americana*		Dead		X			
P	305	6"	Black Cherry	*Prunus serotina*		dead		X			
P	306	14"	Black Walnut	*Juglans nigra*		40%		X			
P	307	8"	Shagbark Hickory	*Carya ovata*		40%		X			
P	308	6"	Black Walnut	*Juglans nigra*		40%		X			
P	309	9"	Bitternut Hickory	*Carya cordiformis*				X			
P	310	7"	Shellbark Hickory	*Carya laciniosa*				X			
P	311	10"	Crab Apple	*Malus pumila*				X			
P	312	20"	Red Oak	*Quercus rubra*			X	X			
P	313	6"	Bitternut Hickory	*Carya cordiformis*				X			
P	314	10"	Pignut Hickory	*Carya glabra*	twin			X			
P	315	19"	Pignut Hickory	*Carya glabra*			X	X			
P	316	6"	Pignut Hickory	*Carya glabra*				X			
P	317	8"	Pignut Hickory	*Carya glabra*				X			
P	318	12"	Shagbark Hickory	*Carya ovata*				X			
P	319	12"	Shagbark Hickory	*Carya ovata*				X			
P	320	6"	Shellbark Hickory	*Carya laciniosa*				X			
P	321	9"	Pignut Hickory	*Carya glabra*				X			
P	322	10"	Pignut Hickory	*Carya glabra*	twin			X			
P	323	11"	Pignut Hickory	*Carya glabra*				X			
P	324	16"	Red Oak	*Quercus rubra*			X	X			
P	325	11"	Pignut Hickory	*Carya glabra*				X			
P	326	9"	Pignut Hickory	*Carya glabra*				X			
P	327	6"	Pignut Hickory	*Carya glabra*				X			
P	328	7"	Pignut Hickory	*Carya glabra*				X			
P	329	9"	Pignut Hickory	*Carya glabra*				X			
P	330	12"	Pignut Hickory	*Carya glabra*				X			
P	331	10"	Pignut Hickory	*Carya glabra*				X			
P	332	8"	Pignut Hickory	*Carya glabra*				X			
P	333	15"	American Elm	*Ulmus americana*				X			
P	334	8"	Black Walnut	*Juglans nigra*				X			
P	335	9"	Red Maple	*Acer rubrum*				X			
P	337	11"	Boxelder	*Acer negundo*				X			
P	338	14"	Boxelder	*Acer negundo*		40%		X			
P	339	8"	Black Locust	*Robinia pseudoacacia*		40%		X	X		
P	340	10"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	341	22"	Black Locust	*Robinia pseudoacacia*				X	X		
P	342	8"	Boxelder	*Acer negundo*				X			
P	343	11"	Black Locust	*Robinia pseudoacacia*				X	X		
P	344	9"	Linden	*Tilia sp.*				X			
P	345	12"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	346	13"	Black Locust	*Robinia pseudoacacia*				X	X		
P	347	12"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	348	9"	Black Locust	*Robinia pseudoacacia*		40%		X	X		
P	349	12"	Boxelder	*Acer negundo*				X			
P	350	12"	Boxelder	*Acer negundo*				X			
P	351	13"	Boxelder	*Acer negundo*		40%		X			
P	352	13"	Boxelder	*Acer negundo*		40%		X			
P	353	12"	American Elm	*Ulmus americana*				X			
P	354	19"	Red Oak	*Quercus rubra*			X	X			
P	355	15"	Red Oak	*Quercus rubra*				X			
P	356	9"	Bitternut Hickory	*Carya cordiformis*				X			
P	357	8"	Bitternut Hickory	*Carya cordiformis*				X			
P	358	7"	Bitternut Hickory	*Carya cordiformis*				X			
P	359	9"	Shellbark Hickory	*Carya laciniosa*				X			
P	360	10"	Shellbark Hickory	*Carya laciniosa*				X			
P	361	8"	Shellbark Hickory	*Carya laciniosa*				X			
P	362	10"	Shellbark Hickory	*Carya laciniosa*				X			
P	363	17"	Red Oak	*Quercus rubra*			X	X			
P	364	9"	Shagbark Hickory	*Carya ovata*				X			
P	365	19"	White Oak	*Quercus alba*			X	X			
P	366	8"	Pignut Hickory	*Carya glabra*				X			
P	367	6"	Pignut Hickory	*Carya glabra*				X			OS
P	368	13"	White Oak	*Quercus alba*				X			OS
P	369	19"	Red Oak	*Quercus rubra*			X	X			OS
P	370	8"	Shellbark Hickory	*Carya laciniosa*				X			OS
P	371	6"	Shellbark Hickory	*Carya laciniosa*				X			OS
P	372	8"	Shellbark Hickory	*Carya laciniosa*				X			OS
P	373	9"	Shellbark Hickory	*Carya laciniosa*				X			OS
P	374	15"	Red Oak	*Quercus rubra*				X			OS
P	375	10"	Pignut Hickory	*Carya glabra*				X			OS
P	376	10"	Pignut Hickory	*Carya glabra*				X			OS
P	377	11"	Pignut Hickory	*Carya glabra*				X			OS
P	378	10"	Pignut Hickory	*Carya glabra*				X			OS
P	379	8"	Pignut Hickory	*Carya glabra*	triple			X			
P	380	9"	Pignut Hickory	*Carya glabra*				X			OS
P	381	17"	Red Oak	*Quercus rubra*			X	X			OS
P	382	9"	Pignut Hickory	*Carya glabra*				X			
P	383	8"	Boxelder	*Acer negundo*				X			
P	384	10"	Boxelder	*Acer negundo*				X			
P	385	13"	Boxelder	*Acer negundo*				X			
P	386	9"	American Elm	*Ulmus americana*				X			OS
P	387	10"	Bigtooth Aspen	*Populus grandidentata*				X			OS
P	388	9"	Bigtooth Aspen	*Populus grandidentata*	Twin			X			OS
P	389	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	390	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	391	8"	Black Locust	*Robinia pseudoacacia*	twin			X	X		
P	392	8"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	393	9"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	394	16"	Honeylocust	*Gleditsia triacanthos*			X	X			
P	395	11"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	396	8"	Boxelder	*Acer negundo*		40%		X			
P	397	20"	Boxelder	*Acer negundo*		40%		X			
P	398	17"	Boxelder	*Acer negundo*		40%		X			
P	399	17"	Boxelder	*Acer negundo*		40%		X			
P	400	15"	Boxelder	*Acer negundo*		40%		X			
P	401	8"	Boxelder	*Acer negundo*		40%		X			
P	402	8"	Boxelder	*Acer negundo*		40%		X			
P	403	12"	Boxelder	*Acer negundo*		40%		X			
P	404	12"	Boxelder	*Acer negundo*				X			
P	405	12"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	406	13"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	407	8"	Boxelder	*Acer negundo*				X			
P	408	8"	Black Locust	*Robinia pseudoacacia*		40%		X	X		
P	409	13"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	410	10"	Black Locust	*Robinia pseudoacacia*				X	X		
P	411	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	412	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	413	8"	Black Locust	*Robinia pseudoacacia*	twin	40%		X	X		
P	414	11"	Black Locust	*Robinia pseudoacacia*				X	X		
P	415	10"	Boxelder	*Acer negundo*		40%		X			
P	416	15"	Cottonwood	*Populus deltoides*				X			
P	417	16"	Cottonwood	*Populus deltoides*				X			
P	418	14"	Cottonwood	*Populus deltoides*				X			
P	419	10"	Black Locust	*Robinia pseudoacacia*	twin	40%		X	X		
P	420	9"	Black Locust	*Robinia pseudoacacia*	twin	40%		X	X		
P	421	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	422	8"	Honeylocust	*Gleditsia triacanthos*				X			
P	423	9"	Honeylocust	*Gleditsia triacanthos*				X			
P	424	10"	Black Locust	*Robinia pseudoacacia*	twin			X	X		OS
P	425	12"	Black Locust	*Robinia pseudoacacia*				X	X		
P	426	11"	Black Locust	*Robinia pseudoacacia*				X	X		
P	427	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	428	10"	Black Locust	*Robinia pseudoacacia*	twin			X	X		
P	429	10"	Boxelder	*Acer negundo*		40%		X			
P	430	13"	Cottonwood	*Populus deltoides*				X			
P	431	15"	Cottonwood	*Populus deltoides*				X			
P	432	14"	Cottonwood	*Populus deltoides*				X			
P	433	10"	Cottonwood	*Populus deltoides*				X			
P	434	16"	Cottonwood	*Populus deltoides*				X			
P	435	10"	Black Locust	*Robinia pseudoacacia*		40%		X	X		
P	436	10"	Black Locust	*Robinia pseudoacacia*	twin			X	X		
P	437	10"	Boxelder	*Acer negundo*		40%		X			
P	438	9"	Boxelder	*Acer negundo*		40%		X			
P	439	10"	Boxelder	*Acer negundo*		40%		X			
P	440	12"	Boxelder	*Acer negundo*		40%		X			
P	441	9"	Boxelder	*Acer negundo*		40%		X			
P	442	8"	Boxelder	*Acer negundo*				X			
P	443	11"	Black Locust	*Robinia pseudoacacia*				X	X		
P	444	10"	Black Locust	*Robinia pseudoacacia*				X	X		
P	445	8"	Boxelder	*Acer negundo*				X			
P	446	24"	Cottonwood	*Populus deltoides*				X			
P	447	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	448	9"	Black Locust	*Robinia pseudoacacia*		40%		X	X		
P	449	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	450	16"	Cottonwood	*Populus deltoides*				X			

	TAG #	DBH	COMMON NAME	GENUS/SPECIES	STEM	SCORE	LM	WOOD-LAND	INV	REM	OFF-SITE
P	451	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	452	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	453	8"	Boxelder	*Acer negundo*		40%		X			
P	454	9"	Black Locust	*Robinia pseudoacacia*	twin			X	X		
P	455	11"	Black Locust	*Robinia pseudoacacia*				X	X		
P	456	14"	Boxelder	*Acer negundo*				X			
P	457	18"	Boxelder	*Acer negundo*			X	X			
P	458	8"	Boxelder	*Acer negundo*				X			
P	459	15"	Boxelder	*Acer negundo*				X			
P	460	9"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	461	10"	Black Locust	*Robinia pseudoacacia*				X	X		
P	462	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	463	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	464	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	465	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	466	12"	White Mulberry	*Morus alba*				X	X		
P	467	16"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	468	9"	Tree-of-heaven	*Ailanthus altissima*	twin	40%		X	X		
P	469	24"	Honeylocust	*Gleditsia triacanthos*			X	X			
P	470	13"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	471	13"	Boxelder	*Acer negundo*		40%		X			
P	472	10"	White Mulberry	*Morus alba*	quad	40%		X	X		
P	473	12"	Boxelder	*Acer negundo*				X			
P	474	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	475	9"	Boxelder	*Acer negundo*	twin			X			
P	476	9"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	477	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	478	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	479	17"	Cottonwood	*Populus deltoides*				X			
P	480	26"	Cottonwood	*Populus deltoides*	twin			X			
P	481	11"	Boxelder	*Acer negundo*				X			
P	482	8"	Boxelder	*Acer negundo*				X			
P	483	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	484	14"	Black Locust	*Robinia pseudoacacia*				X	X		
P	485	8"	Boxelder	*Acer negundo*	twin			X			
P	486	8"	Boxelder	*Acer negundo*		40%		X			
P	487	10"	Boxelder	*Acer negundo*				X			
P	488	13"	Boxelder	*Acer negundo*				X			
P	489	9"	Black Cherry	*Prunus serotina*				X			
P	490	10"	Boxelder	*Acer negundo*		40%		X			
P	491	14"	Boxelder	*Acer negundo*				X			
P	492	9"	Black Walnut	*Juglans nigra*				X			
P	493	10"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	494	12"	Black Locust	*Robinia pseudoacacia*				X	X		
P	495	15"	Boxelder	*Acer negundo*				X			
P	496	8"	Boxelder	*Acer negundo*		40%		X			
P	497	9"	Black Walnut	*Juglans nigra*				X			
P	498	10"	Black Locust	*Robinia pseudoacacia*				X	X		
P	499	8"	Boxelder	*Acer negundo*		40%		X			
P	500	8"	Dogwood	*Cornus sp.*			X	X			
P	501	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	502	19"	Boxelder	*Acer negundo*			X	X			
P	503	15"	Boxelder	*Acer negundo*		40%		X			
P	504	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	505	28"	Black Locust	*Robinia pseudoacacia*				X	X		
P	506	14"	Black Locust	*Robinia pseudoacacia*				X	X		
P	507	9"	Boxelder	*Acer negundo*		40%		X			
P	508	18"	Black Locust	*Robinia pseudoacacia*				X	X		
P	509	8"	Boxelder	*Acer negundo*		40%		X			
P	510	11"	Black Locust	*Robinia pseudoacacia*				X	X		
P	511	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	512	10"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	513	13"	Boxelder	*Acer negundo*				X			
P	514	8"	Boxelder	*Acer negundo*		40%		X			
P	515	15"	Honeylocust	*Gleditsia triacanthos*				X			
P	516	11"	Black Locust	*Robinia pseudoacacia*				X	X		
P	517	16"	Black Locust	*Robinia pseudoacacia*				X	X		
P	518	11"	Black Locust	*Robinia pseudoacacia*				X	X		
P	519	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	520	8"	Black Locust	*Robinia pseudoacacia*				X	X		
P	521	20"	Black Locust	*Robinia pseudoacacia*				X	X		
P	522	10"	Honeylocust	*Gleditsia triacanthos*				X			
P	523	10"	Boxelder	*Acer negundo*		40%		X			
P	524	9"	Boxelder	*Acer negundo*		40%		X			
P	525	9"	Boxelder	*Acer negundo*		40%		X			
P	526	12"	Boxelder	*Acer negundo*		40%		X			
P	527	21"	Black Locust	*Robinia pseudoacacia*				X	X		
P	528	8"	American Elm	*Ulmus americana*				X			
P	529	12"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	530	13"	Boxelder	*Acer negundo*		40%		X			
P	531	9"	Boxelder	*Acer negundo*	twin	40%		X			
P	532	8"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	533	14"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	534	10"	Black Locust	*Robinia pseudoacacia*				X	X		
P	535	23"	Black Locust	*Robinia pseudoacacia*				X	X		
P	536	9"	Red Maple	*Acer rubrum*				X			
P	537	8"	Red Maple	*Acer rubrum*				X			
P	538	8"	Boxelder	*Acer negundo*		40%		X			
P	539	10"	Boxelder	*Acer negundo*		40%		X			
P	540	8"	American Elm	*Ulmus americana*				X			
P	541	17"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	542	17"	White Mulberry	*Morus alba*				X	X		
P	543	14"	American Elm	*Ulmus americana*				X			
P	544	12"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	545	13"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	546	14"	American Elm	*Ulmus americana*				X			
P	547	12"	Black Locust	*Robinia pseudoacacia*				X	X		
P	548	15"	Black Locust	*Robinia pseudoacacia*	triple			X	X		
P	549	9"	Honeylocust	*Gleditsia triacanthos*				X			
P	550	13"	Boxelder	*Acer negundo*				X			
P	551	16"	Honeylocust	*Gleditsia triacanthos*			X	X			
P	552	9"	Boxelder	*Acer negundo*	twin			X			
P	553	12"	Boxelder	*Acer negundo*				X			OS
P	554	11"	Boxelder	*Acer negundo*				X			OS
P	555	14"	Boxelder	*Acer negundo*				X			OS
P	556	9"	Black Locust	*Robinia pseudoacacia*				X	X		
P	557	13"	Boxelder	*Acer negundo*				X			OS
P	558	9"	Boxelder	*Acer negundo*				X			OS
P	559	8"	Boxelder	*Acer negundo*	twin	40%		X			OS
P	560	26"	Black Locust	*Robinia pseudoacacia*				X	X		OS
P	561	13"	Boxelder	*Acer negundo*		40%		X			OS
P	562	12"	Boxelder	*Acer negundo*		40%		X			OS
P	563	8"	Black Walnut	*Juglans nigra*				X			OS
P	564	10"	Black Walnut	*Juglans nigra*				X			OS
P	565	13"	Tree-of-heaven	*Ailanthus altissima*				X	X		OS
P	566	10"	Boxelder	*Acer negundo*				X			OS
P	567	15"	Boxelder	*Acer negundo*				X			OS
P	568	19"	Boxelder	*Acer negundo*			X	X			OS
P	569	14"	Boxelder	*Acer negundo*		40%		X			OS
P	570	12"	Boxelder	*Acer negundo*		40%		X			OS
P	571	8"	Tree-of-heaven	*Ailanthus altissima*				X	X		OS
P	572	9"	Tree-of-heaven	*Ailanthus altissima*				X	X		OS
P	573	17"	Tree-of-heaven	*Ailanthus altissima*				X	X		OS
P	574	13"	Tree-of-heaven	*Ailanthus altissima*	twin			X	X		OS
P	575	9"	Black Locust	*Robinia pseudoacacia*				X	X		OS
P	576	14"	Boxelder	*Acer negundo*		40%		X			
P	577	8"	Honeylocust	*Gleditsia triacanthos*				X			
P	578	9"	Boxelder	*Acer negundo*				X			
P	579	14"	Boxelder	*Acer negundo*				X			
P	580	8"	Honeylocust	*Gleditsia triacanthos*				X			
P	581	15"	Boxelder	*Acer negundo*		40%		X			
P	582	8"	Honeylocust	*Gleditsia triacanthos*				X			
P	583	13"	Honeylocust	*Gleditsia triacanthos*				X			
P	584	11"	Honeylocust	*Gleditsia triacanthos*				X			
P	585	8"	Honeylocust	*Gleditsia triacanthos*				X			
P	586	12"	Boxelder	*Acer negundo*		40%		X			
P	587	11"	Honeylocust	*Gleditsia triacanthos*				X			
P	588	9"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	589	10"	Honeylocust	*Gleditsia triacanthos*				X			
P	590	9"	Black Walnut	*Juglans nigra*				X			OS
P	591	11"	Boxelder	*Acer negundo*		40%		X			OS
P	592	12"	Cottonwood	*Populus deltoides*				X			
P	593	21"	Cottonwood	*Populus deltoides*	twin			X			OS
P	594	11"	Boxelder	*Acer negundo*		40%		X			
P	595	11"	Black Walnut	*Juglans nigra*				X			
P	596	8"	Tree-of-heaven	*Ailanthus altissima*				X	X		
P	597	10"	Boxelder	*Acer negundo*		40%		X			
P	598	10"	Boxelder	*Acer negundo*		40%		X			
P	599	11"	Black Walnut	*Juglans nigra*				X			
P	600	8"	Honeylocust	*Gleditsia triacanthos*				X			

	TAG #	DBH	COMMON NAME	GENUS/SPECIES	STEM	SCORE	LM	WOOD-LAND	INV	REM	OFF-SITE
P	601	13"	Boxelder	*Acer negundo*		40%		X			
P	602	8"	Boxelder	*Acer negundo*				X			OS
P	603	8"	Boxelder	*Acer negundo*				X			
P	604	12"	Boxelder	*Acer negundo*				X			OS
P	605	8"	Honeylocust	*Gleditsia triacanthos*		40%		X			OS
P	606	8"	Honeylocust	*Gleditsia triacanthos*				X			OS
P	607	10"	Tree-of-heaven	*Ailanthus altissima*				X	X		OS
P	608	10"	Honeylocust	*Gleditsia triacanthos*				X			OS
P	609	8"	Honeylocust	*Gleditsia triacanthos*				X			OS
P	610	10"	Black Walnut	*Juglans nigra*				X			OS
P	611	8"	Black Walnut	*Juglans nigra*		40%		X			OS
P	612	14"	Cottonwood	*Populus deltoides*				X			OS
P	613	9"	Honeylocust	*Gleditsia triacanthos*				X			
P	614	8"	Black Locust	*Robinia pseudoacacia*				X	X		OS
P	615	8"	Honeylocust	*Gleditsia triacanthos*				X			
P	2236	18"	Red Maple	*Acer rubrum*			X	X			
U	2874	10"	Pin Oak	*Quercus palustris*						X	
U	2875	7"	Red Maple	*Acer rubra*						X	
U	2876	11"	Silver Maple	*Acer saccharinum*						X	
U	2877	9"	White Pine	*Pinus strobus*						X	
U	2878	9"	White Pine	*Pinus strobus*						X	
U	2879	8"	Norway Spruce	*Picea abies*							
U	2880	9"	Pin Oak	*Quercus palustris*							
U	2881	11"	White Pine	*Pinus strobus*						Imp	
U	2882	7"	White Pine	*Pinus strobus*						Imp	
U	2883	11"	Douglas Fir	*menziesii*							
U	2884	9"	White Pine	*Pinus strobus*						Imp	
U	2885	9"	White Pine	*Pinus strobus*						Imp	
U	2886	6"	White Pine	*Pinus strobus*				X			
U	2887	5"	Norway Spruce	*Picea abies*							
U	2888	4"	Red Maple	*Acer rubra*							
U	2889	8"	Pin Oak	*Quercus palustris*							
U	2890	7"	Pin Oak	*Quercus palustris*							
U	2891	5"	Pin Oak	*Quercus palustris*							
U	2892	7"	Pin Oak	*Quercus palustris*							
U	2893	3"	Red Maple	*Acer rubra*							
U	2894	6"	White Pine	*Pinus strobus*					X		
U	2895	9"	Black Walnut	*Juglans nigra*							
U	2896	6"	Tree of Heaven	*Ailanthus altissima*					X		
U	2897	8"	Tree of Heaven	*Ailanthus altissima*					X		
U	2898	8"	Tree of Heaven	*Ailanthus altissima*					X		
U	2899	3"	Red Maple	*Acer rubra*							

P=PREVIOUS SURVEY, U=UPDATED SURVEY
OS = OFF-SITE
IMP = IMPACT TO CRZ BUT TO REMAIN

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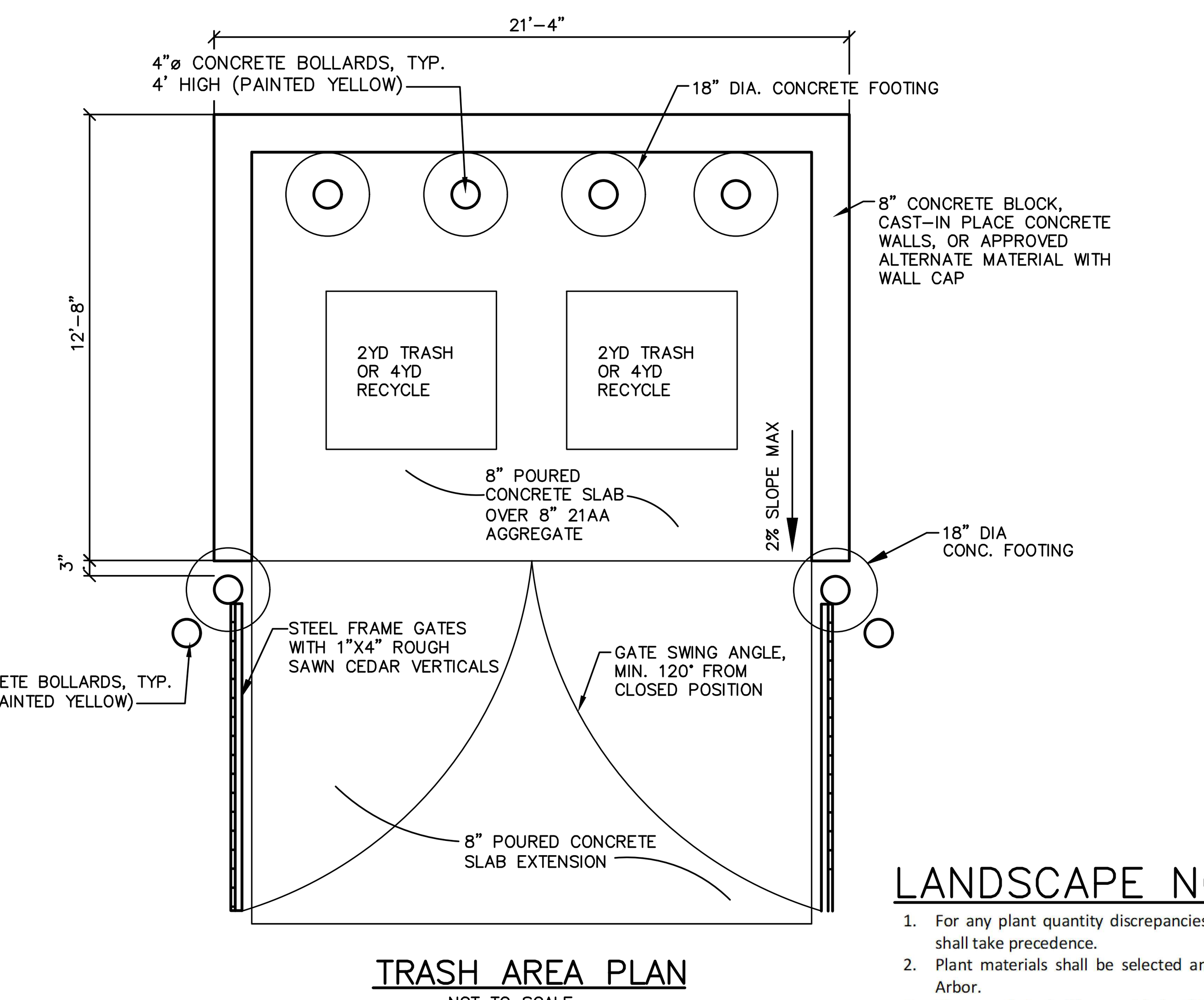
9

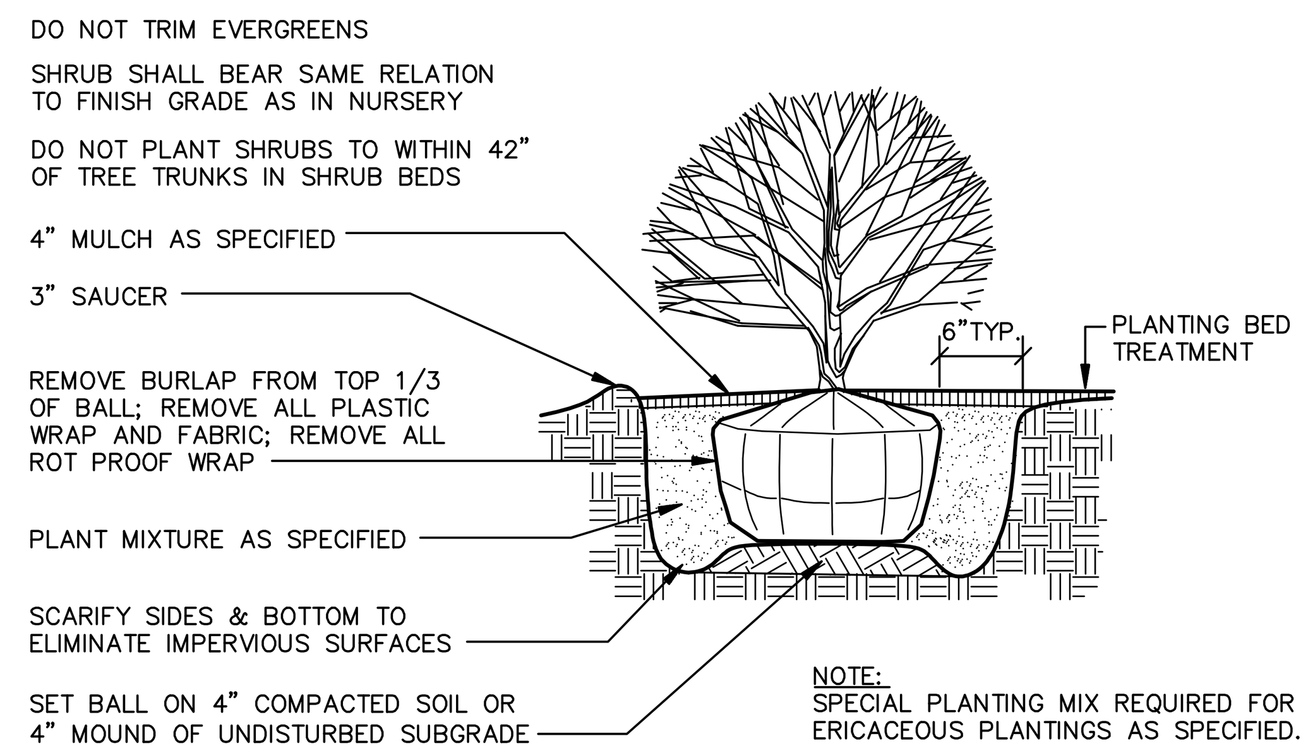
DATE: 5/20/21
SHEET 8 OF 16
CADD:
ENG: SCD
PM: SCD
TECH:
/20255TL1
FB#----

JOB No. 20255
REVISIONS: | REV. DATE
PER CITY STAFF REVIEWS | 10/08/21

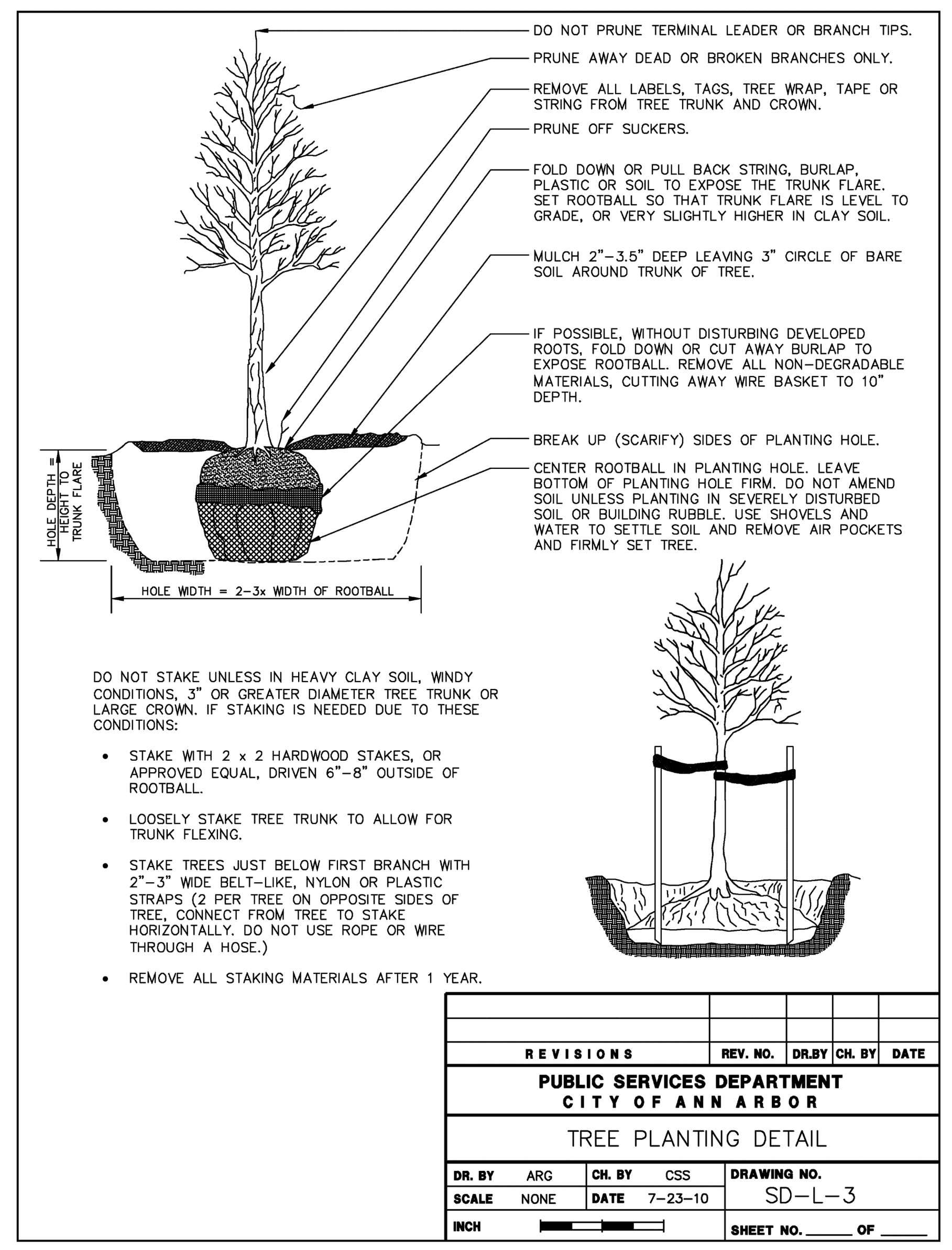
Detention Basin Seed Mix	
Source: Michigan Wildflower Farm	
Scientific Name	Common Name
Forbs (40%)	
Anemone canadensis	Canada Anemone
Angelica atropurpurea	Angelica
Asckepias incarnata	Swamp Milkweed
Eupatorium maculatum	Joe-Pye Weed
Eupatorium perfoliatum	Boneset
Helenium autumnale	Sneezeweed
Iris viriginica	Wild Blue Flag
Lobelia siphilitica	Great Blue Lobelia
Rudbeckia fulgida	Sweet Black Eyed Susan
Solidago graminifolia	Grass-leaved Goldenrod
Solidago patula	Swamp Goldenrod
Symphyotrichum puniceum	Swamp Aster
Verbena hastata	Blue Vervain
Vernonia missurica	Ironweed
Grasses/Sedges/Rushes (60%)	
Carex spp.	Carex species
Elymus virginicus	Virginia Wild Rye
Scirpus spp.	Scirpus species
Sparganium eurycarpum	Common Bur Reed
Detention Basin Mix Seeding Rate:	6lbs/acre
Temporary Cover Crop	15 lbs/acre
Avena sativa	Seed Oats
Lolium multiflorum	Annual Rye

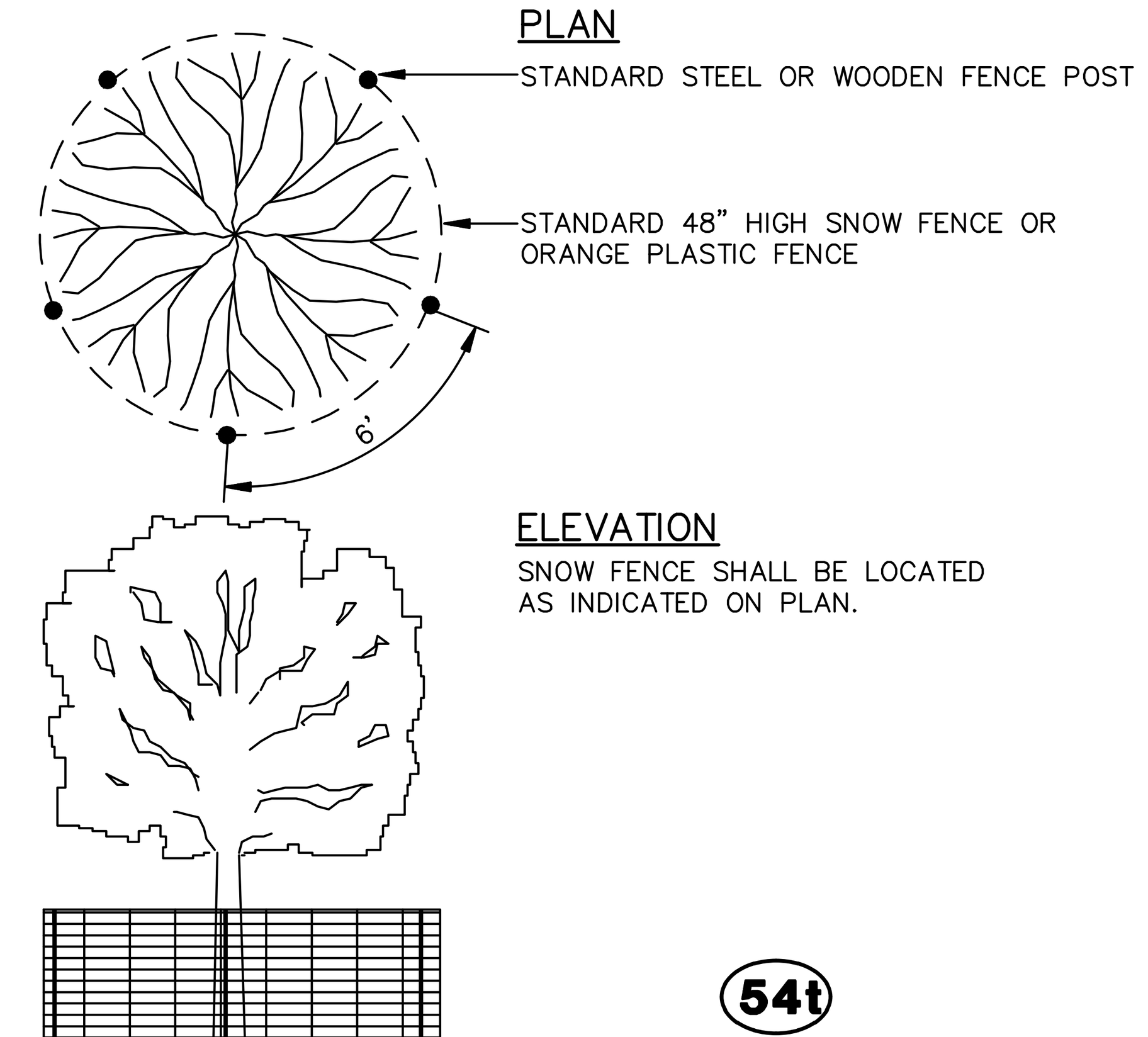

21'-4"
4"ø CONCRETE BOLLARDS, TYP.
4' HIGH (PAINTED YELLOW)
18" DIA. CONCRETE FOOTING
8" CONCRETE BLOCK, CAST-IN PLACE CONCRETE WALLS, OR APPROVED ALTERNATE MATERIAL WITH WALL CAP
12'-8"
2YD TRASH OR 4YD RECYCLE
2YD TRASH OR 4YD RECYCLE
8" POURED CONCRETE SLAB OVER 8" 21AA AGGREGATE
2% SLOPE MAX
3'
18" DIA CONC. FOOTING
STEEL FRAME GATES WITH 1"X4" ROUGH SAWN CEDAR VERTICALS
GATE SWING ANGLE, MIN. 120° FROM CLOSED POSITION
6"ø CONCRETE BOLLARDS, TYP.
4' HIGH (PAINTED YELLOW)
8" POURED CONCRETE SLAB EXTENSION

TRASH AREA PLAN
NOT TO SCALE

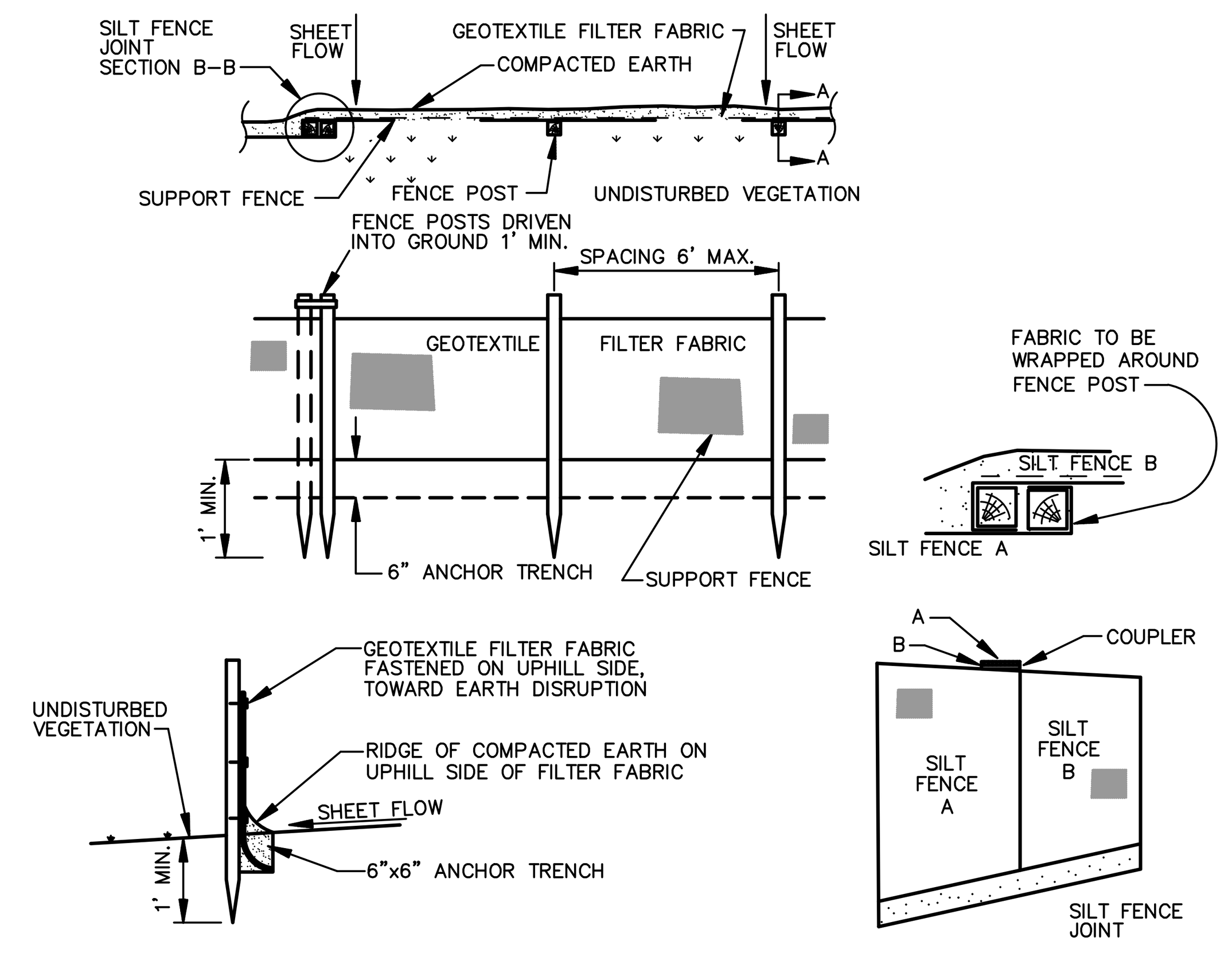

DO NOT TRIM EVERGREENS
SHRUB SHALL BEAR SAME RELATION TO FINISH GRADE AS IN NURSERY
DO NOT PLANT SHRUBS TO WITHIN 42" OF TREE TRUNKS IN SHRUB BEDS
4" MULCH AS SPECIFIED
3" SAUCER
6" TYP.
PLANTING BED TREATMENT
REMOVE BURLAP FROM TOP 1/3 OF BALL; REMOVE ALL PLASTIC WRAP AND FABRIC; REMOVE ALL ROT PROOF WRAP
PLANT MIXTURE AS SPECIFIED
SCARIFY SIDES & BOTTOM TO ELIMINATE IMPERVIOUS SURFACES
SET BALL ON 4" COMPACTED SOIL OR 4" MOUND OF UNDISTURBED SUBGRADE
NOTE:
SPECIAL PLANTING MIX REQUIRED FOR ERICACEOUS PLANTINGS AS SPECIFIED.

SHRUB PLANTING DETAIL
NOT TO SCALE


DO NOT PRUNE TERMINAL LEADER OR BRANCH TIPS.
PRUNE AWAY DEAD OR BROKEN BRANCHES ONLY.
REMOVE ALL LABELS, TAGS, TREE WRAP, TAPE OR STRING FROM TREE TRUNK AND CROWN.
PRUNE OFF SUCKERS.
FOLD DOWN OR PULL BACK STRING, BURLAP, PLASTIC OR SOIL TO EXPOSE THE TRUNK FLARE. SET ROOTBALL SO THAT TRUNK FLARE IS LEVEL TO GRADE, OR VERY SLIGHTLY HIGHER IN CLAY SOIL.
MULCH 2"-3.5" DEEP LEAVING 3" CIRCLE OF BARE SOIL AROUND TRUNK OF TREE.
IF POSSIBLE, WITHOUT DISTURBING DEVELOPED ROOTS, FOLD DOWN OR CUT AWAY BURLAP TO EXPOSE ROOTBALL. REMOVE ALL NON-DEGRADABLE MATERIALS, CUTTING AWAY WIRE BASKET TO 10" DEPTH.
BREAK UP (SCARIFY) SIDES OF PLANTING HOLE.
CENTER ROOTBALL IN PLANTING HOLE. LEAVE BOTTOM OF PLANTING HOLE FIRM. DO NOT AMEND SOIL UNLESS PLANTING IN SEVERELY DISTURBED SOIL OR BUILDING RUBBLE. USE SHOVELS AND WATER TO SETTLE SOIL AND REMOVE AIR POCKETS AND FIRMLY SET TREE.
HOLE DEPTH = HEIGHT TO TRUNK FLARE
HOLE WIDTH = 2-3x WIDTH OF ROOTBALL
DO NOT STAKE UNLESS IN HEAVY CLAY SOIL, WINDY CONDITIONS, 3" OR GREATER DIAMETER TREE TRUNK OR LARGE CROWN. IF STAKING IS NEEDED DUE TO THESE CONDITIONS:
• STAKE WITH 2 x 2 HARDWOOD STAKES, OR APPROVED EQUAL, DRIVEN 6"-8" OUTSIDE OF ROOTBALL.
• LOOSELY STAKE TREE TRUNK TO ALLOW FOR TRUNK FLEXING.
• STAKE TREES JUST BELOW FIRST BRANCH WITH 2"-3" WIDE BELT-LIKE, NYLON OR PLASTIC STRAPS (2 PER TREE ON OPPOSITE SIDES OF TREE, CONNECT FROM TREE TO STAKE HORIZONTALLY. DO NOT USE ROPE OR WIRE THROUGH A HOSE.)
• REMOVE ALL STAKING MATERIALS AFTER 1 YEAR.
REVISIONS
REV. NO.
DR.BY
CH. BY
DATE
PUBLIC SERVICES DEPARTMENT
CITY OF ANN ARBOR
TREE PLANTING DETAIL
DR. BY ARG
CH. BY CSS
DRAWING NO.
SD-L-3
SCALE NONE
DATE 7-23-10
INCH
SHEET NO. ____ OF ____



TREE PROTECTION DETAIL
NO SCALE


SILT FENCE JOINT SECTION B-B
SHEET FLOW
GEOTEXTILE FILTER FABRIC
COMPACTED EARTH
SHEET FLOW
A
A
SUPPORT FENCE
FENCE POST
UNDISTURBED VEGETATION
FENCE POSTS DRIVEN INTO GROUND 1' MIN.
SPACING 6' MAX.
GEOTEXTILE
FILTER FABRIC
1' MIN.
6" ANCHOR TRENCH
SUPPORT FENCE
FABRIC TO BE WRAPPED AROUND FENCE POST
SILT FENCE B
SILT FENCE A
GEOTEXTILE FILTER FABRIC FASTENED ON UPHILL SIDE, TOWARD EARTH DISRUPTION
UNDISTURBED VEGETATION
RIDGE OF COMPACTED EARTH ON UPHILL SIDE OF FILTER FABRIC
SHEET FLOW
1' MIN.
6"x6" ANCHOR TRENCH
SECTION A – A
A
B
COUPLER
SILT FENCE A
SILT FENCE B
SILT FENCE JOINT
SECTION B – B

SILT FENCE 55t
NO SCALE

MAINTENANCE PLAN BUDGET

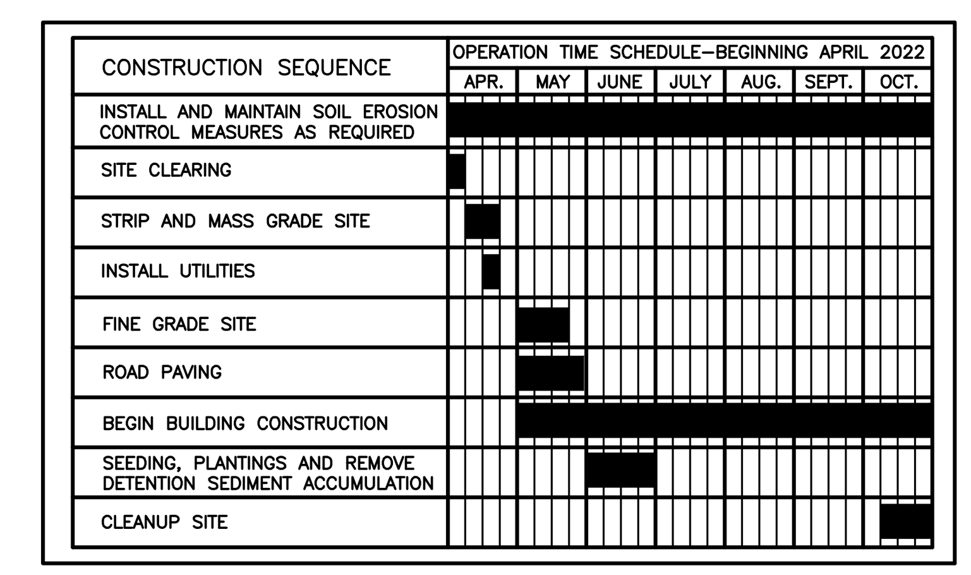
Annual inspection for sediment accumulation	$50.00
Removal of sediment accumulation every two (2) years, as needed	$200.00
Inspect for floatables and debris annually and after major storms	$50.00
Removal of floatables and debris annually and after major storms	$100.00
Inspect system for erosion annually and after major storms	$100.00
Re-establish permanent vegetation on eroded slopes, as needed	$150.00
Replacement of stone	$100.00
Mowing 0-2 times per year	$150.00
Inspect structural elements during wet weather and compare to as-built plans every two (2) years	$100.00
Make structural adjustments or replacements as determined by inspection, as needed	$150.00
Total Annual Budget	**$1150.00**

Stormwater Management System Maintenance Plan

1. Responsibility for Maintenance:
   (a) During construction, it is the contractor's responsibility to perform the maintenance.
   (b) Following construction, it will be the responsibility of Owner to perform the maintenance.
   (c) The routine maintenance of the stormwater facilities must be completed within thirty (30) days of receipt of written notification that action is required, unless other acceptable arrangements are made with the City of Ann Arbor. Emergency maintenance (i.e., when there is endangerment to public health, safety, or welfare) shall be performed immediately upon receipt of written notice. Should the Owner fail to act within these time frames, the City may perform the needed maintenance and assess the costs against the Owner.
   (d) The use of chemicals are not allowed in the stormwater features or buffer zones with the following exception: invasive species may be treated with chemicals by a certified operator.
2. Source of Financing
   (a) The Owner shall be required to pay for all maintenance activities on a continuing basis.
3. Maintenance Tasks and Schedule
   (a) See the chart on this page. The chart describes maintenance tasks to be performed by the Owner.
   (b) Immediately following construction, the Owner will have the stormwater management system inspected by an engineer to verify grades of the detention and filtration areas and to make recommendations for any necessary sediment removal.

Permanent Maintenance Tasks and Schedule

Tasks	Parking and Drives	Storm Sewer System	Catch Basin Sumps	Catch Basin Inlet Castings	Weir/ Outflow Control Structure	Sediment Forebays	Basin Areas	Emergency Overflow	Schedule
Inspect for sediment accumulation		X	X		X	X	X		annually
Removal of sediment accumulation		X	X		X	X	X		every 2 years, as needed
Inspect for floatables and debris		X	X			X	X		annually
Inspect Infiltration Facilities events > 1 inch						X	X		as needed
Cleaning of floatables and debris		X	X			X	X		annually
Inspection for erosion					X	X	X	X	annually
Re-establish permanent vegetation on eroded slopes					X	X	X		as needed
Clean Parking and Drives	X								semi-annually
Mowing									0-2 times per year
Make adjustments or replacements as determined by annual wet weather inspection	X	X	X	X	X	X	X	X	as needed
Keep records of all inspections and maintenance activities	X	X	X	X	X	X	X	X	annually
Keep records of all costs for inspection, maintenance and repairs	X	X	X	X	X	X	X	X	annually


CONSTRUCTION SEQUENCE
OPERATION TIME SCHEDULE—BEGINNING APRIL 2022
APR.
MAY
JUNE
JULY
AUG.
SEPT.
OCT.
INSTALL AND MAINTAIN SOIL EROSION CONTROL MEASURES AS REQUIRED
SITE CLEARING
STRIP AND MASS GRADE SITE
INSTALL UTILITIES
FINE GRADE SITE
ROAD PAVING
BEGIN BUILDING CONSTRUCTION
SEEDING, PLANTINGS AND REMOVE DETENTION SEDIMENT ACCUMULATION
CLEANUP SITE

LANDSCAPE NOTES

1. For any plant quantity discrepancies between the plan view and the plant schedules, the plant schedule shall take precedence.
2. Plant materials shall be selected and installed in accordance with standards established by City of Ann Arbor.
3. Water outlets shall be provided within 150 feet of all required plantings.
4. All diseased, damaged or dead material shown on the site plan as proposed plantings shall be replaced by the end of the following growing season.
5. Restore disturbed areas with a minimum of four (4) inches of topsoil and then seed/ fertilize/mulch.
6. All disturbed areas not to be seeded with seed mixes identified on the Landscape Plan shall be lawn areas. Fertilizer for the initial installation of lawns shall provide not less than one (1) pound of actual nitrogen per 1,000 sq ft of lawn area and shall contain not less than two percent (2%) potassium and four percent (4%) phosphoric acid.
   Lawn (turfgrass) seed mix shall consist of:
   - 15% Rugby Kentucky Bluegrass
   - 10% Park Kentucky Bluegrass
   - 40% Ruby Creeping Red Fescue
   - 15% Pennifine Perennial Ryegrass
   - 20% Scaldis Hard Fescue

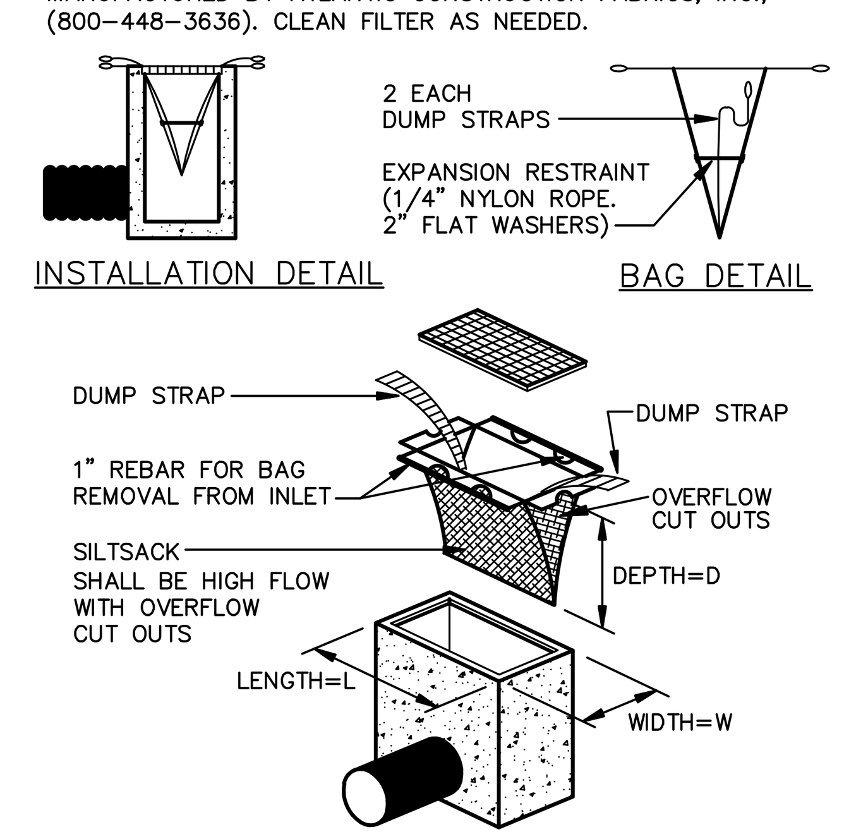
   Seed shall be applied at a rate of five pounds (5 lbs) per 1000 sq ft. Mulch within 24 hours with two (2) tons of straw per acre, or 71 bales of excelsior mulch per acre. Anchor straw mulch with spray coating of adhesive material applied at the rate of 150 gals. / acre.
7. After the first growing season, only fertilizers that contain NO phosphorus shall be used on the site.
8. Areas identified on the Landscape Plan with seed mixes shall be seeded with specified seed mixes from Michigan Wildflower Farm, or equivalent as approved by landscape architect. Temporary cover crop shall be included with all seed mixes. Seeding rates and installation techniques shall be confirmed with supplier.
9. All seeded areas with slopes less than 1:3 (one vertical foot for every 3 horizontal feet) shall be mulched with straw mulch at the rate of two (2) bales per 1,000 square feet. All seeded areas with slopes greater than 1:3 shall be seeded and biodegradable erosion control blanket North American Green SC150, or equivalent, shall be applied with biodegradable stakes.
10. Deciduous plants shall be planted between March 1 and May 15 and from October 1 until the prepared soil becomes frozen. Evergreen plants shall be planted between March 1 and June 1 and from August 15 to September 15.
11. Native seeding areas shall be seeded after May 1, (when soil is free of frost and in workable condition), but before June 15 or after October 1, but before November 30 (or prior to ground freezing) or as approved by Landscape Architect or guaranteed by the supplier. If seeding is performed outside planting window, contractor shall perform regularly scheduled watering for installed seed and as needed based on weather conditions to ensure germination and establishment of seed.
12. All planting beds are to receive four (4) inches of shredded hardwood bark mulch.
13. All trees to be located a minimum of 10 feet from public utilities.
14. All single trunk, deciduous trees shall have a straight and a symmetrical crown with a central leader. One sided trees or those with thin or open crowns shall not be accepted.
15. All evergreen trees shall be branched fully to the ground, symmetrical in shape and have not been sheared in the last three (3) growing seasons.
16. All compacted subgrade soils in proposed landscape areas shall be tilled to a minimum 12-inch depth prior to placement of topsoil, geotextile fabric, or other planting media as specified.
17. Proposed trees will be planted a minimum of 15 feet apart.

1. Planting Soil: Existing, in-place or stockpiled topsoil. Supplement with imported topsoil as needed. Verify suitability of existing surface soil to produce viable planting soil. Remove stones, roots, plants, sod, clods, clay lumps, pockets of coarse sand, concrete slurry, concrete layers or chunks, cement, plaster, building debris, and other extraneous materials harmful to plant growth. Mix surface soil with the following soil amendments to produce planting soil:
   a. Ratio of Loose Compost to Topsoil by Volume: 1:4.
   b. Weight of Lime per 1000 Sq. Ft.: Amend with lime only on recommendation of soil test to adjust soil pH.
   c. Weight of Sulfur or Aluminum Sulfate per 1,000 Sq. Ft.: Amend with sulfur or aluminum sulfate only on recommendation of soil test to adjust soil pH.
   d. Volume of Sand: Amend with sand only on recommendation of Landscape Architect to adjust soil texture.
   e. Weight of Slow-Release Fertilizer per 1,000 Sq. Ft.: Amend with fertilizer only on recommendation of soil test to adjust soil fertility.
2. Native seeding installation shall be performed by a qualified contractor with documented experience of successful established native seeding. Seed shall be installed per manufacturer's specification via hand broadcast
3. Snow cannot be pushed onto interior islands unless they are designated on the plan for snow storage.
4. Snow storage areas are located along the edges and corners of parking areas as shown on the plan.
5. During the establishment period for the installed deciduous mitigation trees (1-2 years as to be determined by certified arborist):
   a. The trunk of young trees shall be wrapped in late autumn and wrap shall be removed in early spring
   b. Burlap screening or wrapping shall be installed on the southwest and windward sides from late autumn to early spring.
   c. Trees shall be watered in spring and autumn and during dry conditions at a frequency determined by certified arborist.
   d. Mulching around trees shall be maintained at a depth of 2 to 3 inches

Maintenance:

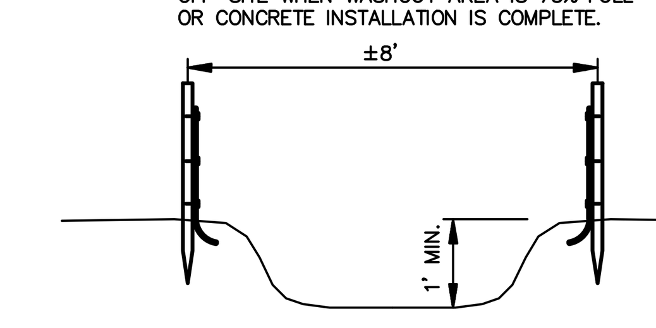
1. Maintain plantings by pruning, cultivating, watering, weeding, fertilizing, mulching, restoring planting saucers, adjusting and repairing tree-stabilization devices, resetting to proper grades or vertical position, and performing other operations as required to establish healthy, viable plantings. Spray or treat as required to keep trees and shrubs free of insects and disease.
2. Fill in as necessary soil subsidence that may occur because of settling or other processes. Replace mulch materials damaged or lost in areas of subsidence.
3. Apply treatments as required to keep plant materials, planted areas, and soils free of pests and pathogens or disease. Use integrated pest management practices whenever possible to minimize the use of pesticides and reduce hazards. Treatments include physical controls such as hosing off foliage, mechanical controls such as traps, and biological control agents.
4. Contractor shall warranty all plant material and trees to remain alive and be in healthy, vigorous and like new condition for the specified period from installation to Substantial Completion. The entire Landscaping Project, including but not limited to: plants (perennials), trees, shrubs, mulches, shrubs, etc are to be under Warranty for One Year after Substantial Completion date of the Project. At the end of the specified One Year Warranty period the Owner's Representative will inspect plant material for compliance. Contractor shall replace, in accordance with the drawings and specifications, all plants, trees, shrubs, etc or as determined by the Owner's Representative, are in an unhealthy or unsightly condition. Warranty shall not include damage or loss of plants, trees, and shrubs caused by fires, floods, freezing rains, lightning storms, or winds over 75 miles per hour, acts of vandalism or negligence on the part of the owner, or any other incident beyond landscape contractor's control.
5. Turf installations shall meet the following criteria as determined by Owner:
   a. Satisfactory Seeded Turf: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 90 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.
   b. Satisfactory Sodded Turf: At end of maintenance period, a healthy, well-rooted, even-colored, viable turf has been established, free of weeds, open joints, bare areas, and surface irregularities.
   c. Use specified materials to reestablish turf that does not comply with requirements and continue maintenance until turf is satisfactory.

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

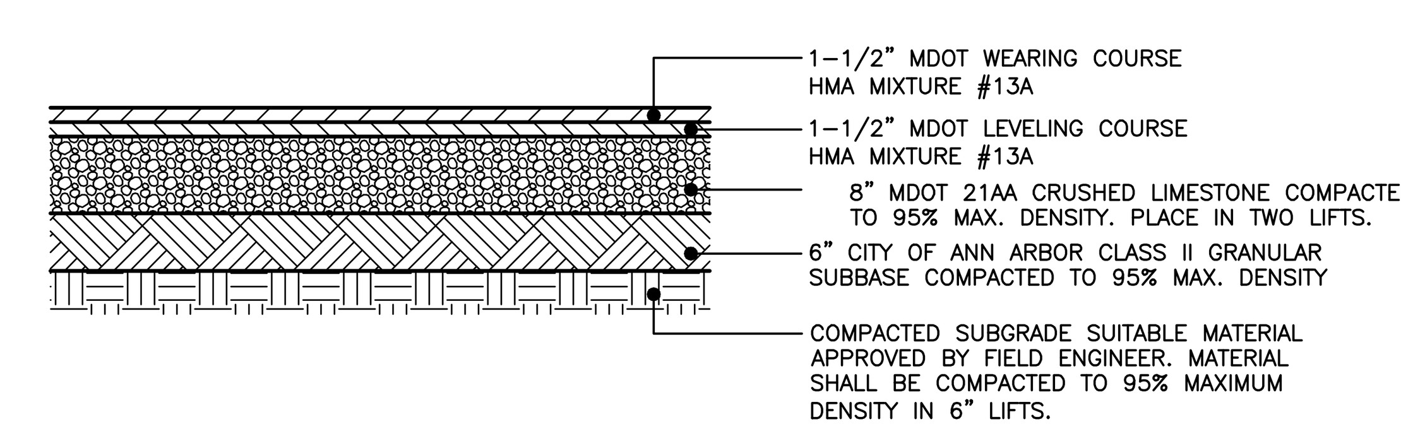

INSTALLATION DETAIL
2 EACH DUMP STRAPS
EXPANSION RESTRAINT (1/4" NYLON ROPE. 2" FLAT WASHERS)
BAG DETAIL
DUMP STRAP
DUMP STRAP
1" REBAR FOR BAG REMOVAL FROM INLET
OVERFLOW CUT OUTS
SILTSACK
SHALL BE HIGH FLOW WITH OVERFLOW CUT OUTS
DEPTH=D
LENGTH=L
WIDTH=W

TEMPORARY INLET SEDIMENT FILTER DETAIL
NO SCALE

NOTES:
1. DO NOT DISCHARGE CONCRETE WASHOUT INTO STORM DRAINS, CATCH BASINS OR TO THE SANITARY SEWER SYSTEM.
2. COMPLETE SURROUND WASHOUT AREA WITH SILT FENCE.
3. CONCRETE IS TO BE BROKEN AND DISPOSED OFF-SITE WHEN WASHOUT AREA IS 75% FULL OR CONCRETE INSTALLATION IS COMPLETE.



CONCRETE WASHOUT DETAIL
NO SCALE


1-1/2" MDOT WEARING COURSE HMA MIXTURE #13A
1-1/2" MDOT LEVELING COURSE HMA MIXTURE #13A
8" MDOT 21AA CRUSHED LIMESTONE COMPACTED TO 95% MAX. DENSITY. PLACE IN TWO LIFTS.
6" CITY OF ANN ARBOR CLASS II GRANULAR SUBBASE COMPACTED TO 95% MAX. DENSITY
COMPACTED SUBGRADE SUITABLE MATERIAL APPROVED BY FIELD ENGINEER. MATERIAL SHALL BE COMPACTED TO 95% MAXIMUM DENSITY IN 6" LIFTS.

BITUMINOUS PAVEMENT SECTION
NOT TO SCALE

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

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(734) 995-0200 • www.midwesternconsulting.com
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ANN ARBOR CHRISTIAN CHURCH
1750 DHU VARREN ROAD
ANN ARBOR, MI 48105

734-668-9128

ANN ARBOR CHRISTIAN CHURCH

ANN ARBOR CHRISTIAN CHURCH
LANDSCAPE AND SESC DETAILS

DATE: 5/20/21
SHEET 9 OF 16
CADD:
ENG: SCD
PM: SCD
TECH:
/20255LDT1
FB#----

JOB No. 20255

REVISIONS:	REV. DATE
PER CITY STAFF REVIEWS	8/27/21

Basin Stormwater Calculations

5/5/2021

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

Rational Method Variables

Cover Type	Soil Type	Area (sft)	Area (ac)	Runoff Coeff. (C)	(C) x (Area)
Building/Pavement		6,252	0.14	0.95	0.14
Pavement		2,391	0.05	0.95	0.05
Grass	A		0.00	0.15	0.00
Grass	B	0	0.00	0.25	0.00
Grass	C		0.00	0.30	0.00
Grass	D		0.00	0.45	0.00
Water Surface		1,200	0.03	1.00	0.03
Total		9,843	0.23		0.22

Weighted C = (Sum(C)x(Area))/(Area Total)= 0.96

NRCS Variables (Pervious)

Cover Type	Soil Type	Area (sft)	Area (ac)	Curve Number	(CN) x (Area)
Grass	A	0	0.00	49	0.00
Grass	B	0	0.00	69	0.00
Grass	C	0	0.00	79	0.00
Grass	D	0	0.00	84	0.00
Total		0	0.00		0.00

Weighted CN = (Sum(CN)x(Area))/(Area Total)= 69

NCRS Variables (Impervious)

Cover Type	Soil Type	Area (sft)	Area (ac)	Curve Number	(CN) x (Area)
Building/Pavement		6,252	0.14	98	0.14
Pavement		2,391	0.05	98	0.05
Water Surface		1,200	0.03	98	0.03
Total		9,843	0.23		0.22

Weighted CN = (Sum(CN)x(Area))/(Area Total)= 98

W2 - W2 - First Flush Runoff Calculations (V_{ff})

A. V_{ff} = 1" x 1'/12" x 43560 sft/ac x A x C where A= 0.23 and where C= 0.96

V_{ff} = 1" x 1'/12" x 43560 sft/ac x 0.23 x 0.96 = 787 cf

W3 - W3 - Pre-Development Bankfull Runoff Calculations (V_{bf-pre})

A. 2 year / 24 hour storm event: P= 2.35 in
B. Pre-Development CN
(Good Cover Woods, Type B Soils) CN= 55
C. S = (1000 / CN) - 10 S= 8.182 in
D. Q = [(P-0.2S)^2] / [P+0.8S] Q= 0.057 in
E. Total Site Area excluding "Self-Crediting" BMPs 9,843 sft
F. V_{bf-pre} = Q x (1/12) x Area V_{bf-pre} = 47 cft

W4 - Pervious Cover Post-Development Bankfull Runoff Calculations ($V_{bf-per-post}$)

A. 2 year / 24 hour storm event: P= 2.35 in
B. Pervious Cover CN From Worksheet 1 CN= 69
C. S = (1000 / CN) - 10 S= 4.493 in
D. Q = [(P-0.2S)^2] / [P+0.8S] Q= 0.354 in
E. Pervious Cover Area from Worksheet 1 0 sft
F. $V_{bf-per-post}$ = Q x (1/12) x Area $V_{bf-per-post}$ = 0 cft

W5 - W5 - Impervious Cover Post-Development Bankfull Runoff Calculations ($V_{bf-imp-post}$)

A. 2 year / 24 hour storm event: P= 2.35 in
B. Impervious Cover CN From Worksheet 1 CN= 98
C. S = (1000 / CN) - 10 S= 0.204 in
D. Q = [(P-0.2S)^2] / [P+0.8S] Q= 2.122 in
E. Impervious Cover Area from Worksheet 1 9,843 sft
F. $V_{bf-imp-post}$ = Q x (1/12) x Area $V_{bf-imp-post}$ = 1,740 cft

W6 - W6 - Pervious Cover Post-Development 100-Year Runoff Calculations ($V_{100-per-post}$)

A. 100 year / 24 hour storm event: P= 5.11 in
B. Pervious Cover CN From Worksheet 1 CN= 69
C. S = (1000 / CN) - 10 S= 4.493 in
D. Q = [(P-0.2S)^2] / [P+0.8S] Q= 2.038 in
E. Pervious Cover Area from Worksheet 1 0 sft
F. $V_{100-per-post}$ = Q x (1/12) x Area $V_{100-per-post}$ = 0 cft

W7 - W7 - Impervious Cover Post-Development 100-Year Runoff Calculations ($V_{100-imp-post}$)

A. 2 year / 24 hour storm event: P= 5.11 in
B. Impervious Cover CN From Worksheet 1 CN= 98
C. S = (1000 / CN) - 10 S= 0.204 in
D. Q = [(P-0.2S)^2] / [P+0.8S] Q= 4.873 in
E. Impervious Cover Area from Worksheet 1 9,843 sft
F. $V_{bf-imp-post}$ = Q x (1/12) x Area $V_{bf-imp-post}$ = 3,997 cft

W8 - Time of Concentration (Tc-hrs)

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

W9 - Runoff Summary & On-Site Infiltration Requirement

A. Summary from Previous Worksheets

First Flush Volume (Vff)	**787 cft**
Pre-Development Bankfull Runoff Volume (Vbf-pre)	**47 cft**
Pervious Cover Post-Development Bankfull Volume (Vbf-per-post)	*0 cft*
Impervious Cover Post-Development Bankfull Volume (Vbf-imp-post)	*1,740 cft*
Total BF Volume (Vbf-post)	**1,740 cft**
Pervious Cover Post-Development 100-Year Volume (V100-per-post)	*0 cft*
Impervious Cover Post-Development 100-Year Volume (V100-imp-post)	*3,997 cft*
Total 100-Year Volume (V100)	**3,997 cft**

B. Determine Onsite Infiltration Requirement
Subtract the Pre-Development Bankfull from the Post-Development Bankfull Volume

Total Post-Development Bankfull Volume (Vbf-post)	1,740 cft
Pre-Development Bankfull Runoff Volume (Vbf-pre)	47 cft
Bankfull Volume Difference	**1,693 cft**
Infiltration Requirement (Vinf)	**1,693 cft**

W10 - Detention/Retention Requirement

A. Q_p = 238.6 Tc^-0.82 743.63 cfs/(in x sq. mi)
B. Total Site Area excluding "Self-Crediting" BMPs 0.23 ac
C. Q_{100} = $Q_{100-per}$ + $Q_{100-imp}$ 6.911 in
(from W6 and W7, respectively)
D. Peak Flow (PF) = Q_p x Q_{100} x Area / 640 1.81 cfs
E. Delta = PF - 0.15 x Area (ac) 1.78 cfs
[0.15 x Area (ac)] *0.03 cfs*
F. V_{det} = Delta / PF x V_{100} 3,922 cft
Required Detention not including infiltration credit or penalty.
Sediment Forebay Volume Required (5% of V100) 200 cft

W11 - Determine Applicable BMPs and Associated Volume Credits

		Storage Volume (cft)		Design Infilt. Rate	Infilt. Volume in 6-hr	Total Volume
Proposed BMP	Area (sft)	Surface	In Soil	(in/hr)	Drawdown (cft)	Reduction (cft)
Bioretention Systems	300	1,197		10.00	1,500	2,697

Total Volume Reduction Credit by Proposed Structural BMPs (cft) 2,697
Runoff Volume Infiltration Requirement (Vinf) from W9 (cft) 1,693
Runoff Volume Credit (cft) 1,004

W13 - Site Summary of Infiltration & Detention

A. Stormwater Management Summary

Min Infiltration Requirement (V_{inf})	1,693 cft
Designed/Provided Infiltration Volume	2,697 cft
% Minimum Required Infiltration Provided	159 %
Total Calculated Detention Volume, V_{det}	3,922 cft
Net Required Detention Volume	1,225 cft
(V_{det} - Designed/Provided Infiltration Volume)	

B. Detention Volume Increase for sites where the required infiltration volume cannot be achieved.

% Required Infiltration NOT Provided	0.0 %
(100% - % Minimum Required Infiltration Provided)	
Net % Penalty (20% x % Required Infiltration NOT Provided)	0.0 %
Total Required Detention Volume, including penalty	**3,922 cft**

[(100% + Net % Penalty) x Net Required Detention Volume)]

C. Existing Site Required Detention Volume from 2001 asbuilt calculations

First Flush	2026 cft
Bankfull - Estimated, not included in previous calculations	4200 cft
100 -year	14011 cft

D. Total Required Detention Volume including existing plus building addition

First Flush	2,813 cft
Bankfull	5,940 cft
100 -year	15,236 cft
Overall Site Developed Area	2.03 ac

Detention Outlet Calculcations

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

Storm Event	Req'd Volume	less	Infil. Credit	=	Final Volume
First Flush	2,813 cft	-	1,500 cft	=	**1,313** cft
Bankfull	5,940 cft	-	1,500 cft	=	**4,440** cft
100 -year	15,236 cft	-	1,500 cft	=	**13,736** cft
Forebay Volume Required (5% of 100-yr)				=	**687** cft

B. Detention Volumes Provided

Elevation	Area (sft)	Depth (ft)	Volume (cft)	Cum. Volume (cft)
916.0	300	0.0	0	
917.0	931	1.0	586	586
917.2	4,084	0.2	464	1,051
917.5	4,726	0.3	1,320	2,371
918.0	6,041	0.5	2,685	5,056
919.0	8,728	1.0	7,343	12,400
920.0	11,580	1.0	10,120	22,520
			Total Volume =	22,520

Storage Elevation Calculation

Bankfull Elevation (Xbf)= $\frac{918.0 - 917.5}{5{,}056 - 2{,}371} = \frac{X_{bf} - 917.5}{4{,}440 - 2{,}371}$ Xbf = 917.89 ft

100-Year Elevation (X100)= $\frac{920.0 - 919.0}{22{,}520 - 12{,}400} = \frac{X_{100} - 919.0}{13{,}736 - 12{,}400}$ X100 = 919.13 ft

Nearly the entire First Flush and Bankfull storm events will infiltrate. The outlet control structure will be designed to discharge the difference between the 100-year storm event and the bankfull storm event in a time period not to exceed 72 hours, or a target time of 60 hours.

C. Single-Stage Outlet Design

100-Year Volume over and above the Bankfull storm event

Average Head (H_{ave}) = 2/3 (X100 - X_{ocs}) = 2/3 (919.13 - 917.2) =	1.29 ft
100-year Max. Flowrate ($Q_{100-max}$) = V100 / 60 hrs = 9296cfs / (60 hrs*3600) =	0.0430 cfs
Req Area (A_{100}) = $Q_{100-max}$ / 0.62 / sqrt(2*g*Have) =0.04/0.62/(2*32.2*1.29)^0.5=	0.008 sft
Orifice Diameter, Proposed	0.81 in
Orifice Area =	0.0036 sft
Number Required for 66 hr drainage = A_{100} / Orifice Area= 0.008 sft / 0.0036 sft =	2.13 holes
Number of Holes to Use	2 holes
Area of (2) - 0.81 inch Orific A_{100}	0.0072 sft
Act. Flow (Q_{100}) = 0.62 * A_{100} * sqrt(2*g*Have) = 0.62 * 0.0072 *sqrt(2*32.2*1.29) =	0.041 cfs
Actual Time (T_{100}) = V_{100} / Q_{100} = 9296 cf / 0.041 cfs / 3600 =	63.46 hr

Discharge Must be Less than 72 Hours

Storm Water Detention Basin Narrative

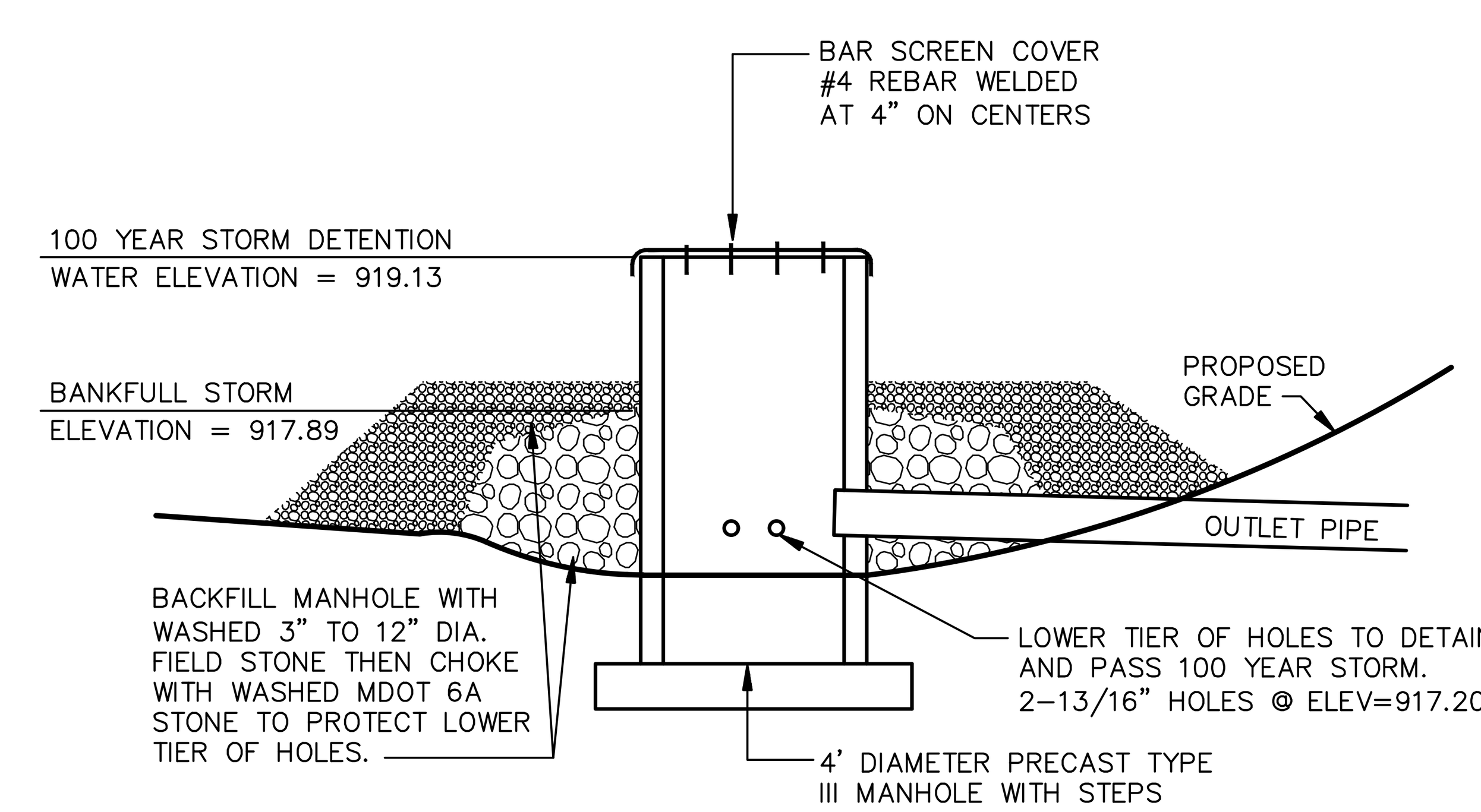
The existing detention basin located in the northeast corner of the site was constructed when the building was constructed under previous basin sizing guidelines. Although the area of the proposed building addition was accounted for in the previous detention basin design, the existing basin will be expanded to accommodate the increase in impervious area. Asbuilt calculations for the basin have been obtained. The existing basin was designed to provide 14,000 cf of storage for the 100-year storm event.

The basin discharges to the Dhu Varren ROW public storm sewer. Due to conflicts with existing DTE duct banks the outlet pipe installed was limited to 4" in size. The existing basin retains a permanent pool below the outlet invert elevation.

The existing basin will be enlarged to accommodate the increased impervious surface area. The basin is expanded southward toward the new building construction. A new outlet control structure will be placed at the location of the existing outlet pipe and discharge to the same storm sewer. The new basin area will provide an area for infiltration as soil testing encountered a pocket of favorable soils. The existing basin bottom will be filled and is no longer proposed to hold a permanent pool. An emergency overflow location is provided into the Dhu Varren ROW adjacent to the existing hydrant in the northeast corner of the site.

SCALE: 1" = 30'
0 30 60 90

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



TYPICAL DETENTION POND OUTLET

NO SCALE

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

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ANN ARBOR, MI 48105

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ANN ARBOR CHRISTIAN CHURCH

ANN ARBOR CHRISTIAN CHURCH
STORM WATER MANAGEMENT CALCULATIONS

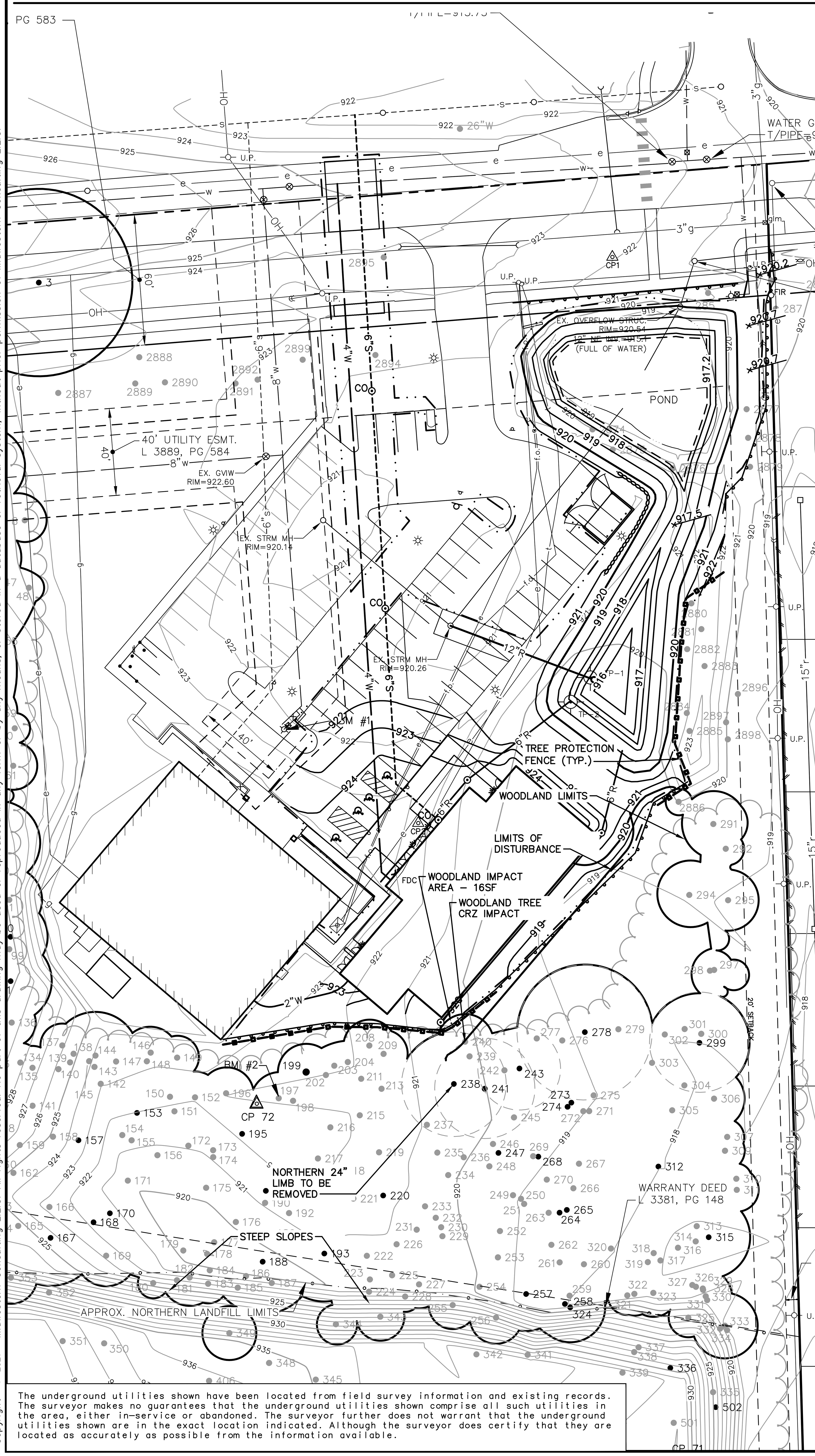
11

DATE: 5/20/21
SHEET 10 OF 16
CADD:
ENG: SCD
PM: SCD
TECH:
/20255SW1
FB#----

JOB No. 20255

REVISIONS:	REV. DATE
PER CITY STAFF REVIEWS	8/19/21

PROPOSED SITE PLAN WITH NATURAL FEATURES OVERLAY



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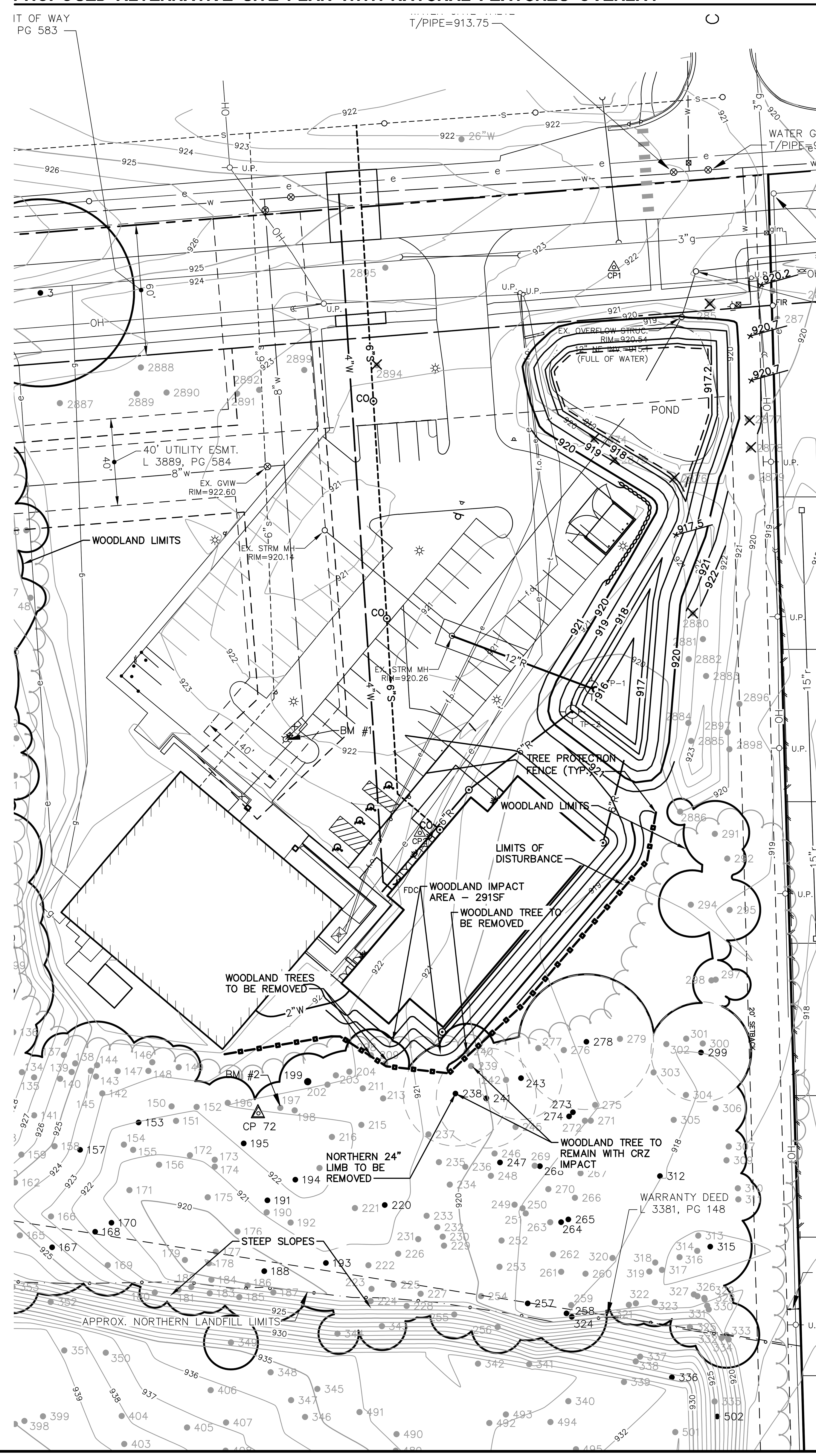
PROPOSED ALTERNATIVE SITE PLAN WITH NATURAL FEATURES OVERLAY



SCALE: 1" = 30'

0 30 60 90

NATURAL FEATURES SUMMARY

THE SITE CONSISTS OF DEVELOPED AREAS WITH MANICURED LAWN, NATRUALIZED STROMWATER BASIN, EXISTING BUFFER SHRUBS AND TREES TO THE RESIDENTIAL AREA TO THE EAST AND WOODLAND ALONG THE SOUTHERN AND WESTERN BOUNDARIES.

LANDMARK TREES – THERE ARE LANDMARK TREES LOCATED ON THE SITE AND IDENTIFIED IN THE TREE LIST. IMPACTS TO CRITICAL ROOT ZONE OF ONE LANDMARK TREE ARE PROPOSED. THIS TREE IS A TWIN TREE WITH ONE LIMB LEANING TOWARD THE PROPOSED BUILDING LOCATION. IN ORDER TO PROTECT THE PROPOSED BUILDING FROM FUTURE DAMAGE BY THE TREE, TRIMMING OF THE NORTHERN LIMB IS PROPOSED AND THE OTHER LIMB WILL REMAIN.

WOODLAND –WOODLAND IS IDENTIFIED ALONG THE WESTERN/SOUTHERN LIMITS OF THE DEVELOPMENT AREA AND IS DOMINATED BY WALNUTS, HICKORY, AND CHERRY. A SMALL IMPACT IS PROPOSED TO THE EXISTING WOODLAND. MITIGATION IS PROPOSED FOR WOODLAND TREES TO BE REMOVED.

STEEP SLOPES – NO STEEP SLOPES EXISTING WITHIN THE DEVELOPMENT AREA. STEEP SLOPES EXIST IN THE WOODLAND TO THE SOUTH ASSOCIATED WITH THE EXISTING LANDFILL.

WATERCOURSES – NO WATERCOURSES EXIST ON THE SITE

WETLAND – NO WETLAND EXISTS ON THE SITE

THREATENED AND ENDANGERED SPECIES HABITAT – NO IMPACTS TO THREATENED AND ENDANGERED SPECIES HABITAT IS ANTICIPATED WITH THIS PROJECT.

ALTERNATIVE ANALYSIS

ALTERNATIVE LOCATIONS FOR THE BUILDING EXPANSION WERE LIMITED TO AREAS NORTHWEST OF THE EXISTING BUILDING AND SOUTHEAST OF THE BUILDING AS PROPOSED.

THE LOCATION NORTHWEST OF THE EXISTING BUILDING IS NOT LARGE ENOUGH TO ACCOMMODATE THE PROPOSED BUILDING EXPANSION AND IS LIMITED DUE TO AN EXISTING UTILITIES, A UTILITY EASEMENT THAT RUNS EAST/WEST THROUGH THE SITE AND WOODLAND.

THE LOCATION IN THE SOUTHEAST CORNER CANNOT BE SHIFTED TO THE EAST TO AVOID THE MINOR WOODLAND GRADING DUE TO REQUIRED STORMWATER MANAGEMENT EXPANSION IN THE EXISTING STORMWATER BASIN. THE ALTERNATIVE ANALYSIS GRAPHIC ON THIS PAGE ILLUSTRATES THE ALTERNATIVE OF GRADING WITH ONE ON THREE SLOPES FROM THE BUILDING TO LIMIT THE IMPACTS TO WOODLAND TREES. THE PROPOSED GRADING INCORPORATES AN EXPOSED BUILDING FOUNDATION TO FURTHER LIMIT THE IMPACTS TO TREES AND WOODLAND. BELOW IS A COMPARISON OF THE ALTERNATIVE TO THE PROPOSED GRADING LIMITS.

	ALTERNATIVE LAYOUT	PROPOSED LAYOUT
WOODLAND IMPACT:	291SF	16SF
WOODLAND TREE REMOVAL:	3 TREES / 36" DBH	NONE
WOODLAND TREE CRZ IMPACT:	1 TREE / 15" DBH	1 TREE / 13" DBH
LANDMARK TREE REMOVAL:	1 TREE / 24" LIMB	1 TREE / 24" LIMB
LANDMARK TREE CRZ IMPACT:	1 TREE / 24" DBH	NONE

NATURAL FEATURES MITIGATION

A TOTAL OF ONE LIMB OF ONE LANDMARK TREE IS PROPOSED TO BE REMOVED FOR 24" DBH OF TREE REMOVALS. ONE ADDITIONAL TREE HAS IMPACTS TO THE CRITICAL ROOT ZONE BUT WILL REMAIN ON THE SITE. THIS REQUIRES 12" DBH OF TREE MITIGATION. PROPOSED MITIGATION PLANTINGS ARE IDENTIFIED ON THE LANDSCAPE AND MITIGATION PLAN.

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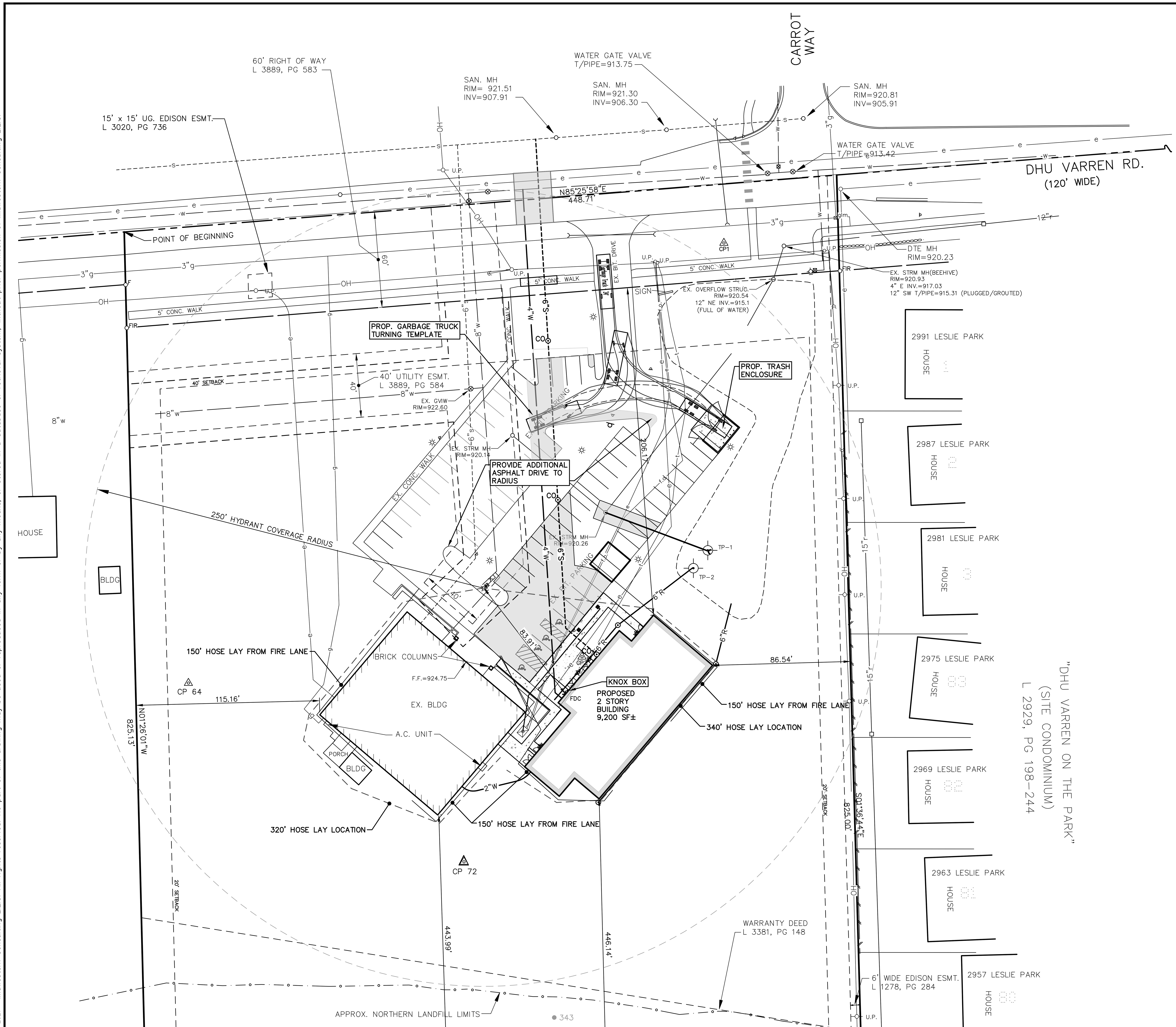
NATURAL FEATURES OVERALY AND ALT ANALYSIS

12

DATE:	5/20/21
SHEET	11 OF 16
CADD:	
ENG:	SCD
PM:	SCD
TECH:	
	/20255AA1
FB#:	–––

JOB No. 20255

REVISIONS:	REV. DATE
PER CITY STAFF REVIEWS	8/27/21
PER CITY STAFF REVIEWS	10/08/21


CARROT WAY
DHU VARREN RD. (120' WIDE)
60' RIGHT OF WAY L 3889, PG 583
15' x 15' UG. EDISON ESMT. L 3020, PG 736
SAN. MH RIM= 921.51 INV=907.91
WATER GATE VALVE T/PIPE=913.75
SAN. MH RIM=921.30 INV=906.30
SAN. MH RIM=920.81 INV=905.91
WATER GATE VALVE T/PIPE=913.42
N85°25'58"E 448.71'
POINT OF BEGINNING
DTE MH RIM=920.23
EX. STRM MH(BEEHIVE) RIM=920.93 4" E INV.=917.03 12" SW T/PIPE=915.31 (PLUGGED/GROUTED)
EX. OVERFLOW STRUC. RIM=920.54 12" NE INV.=915.1 (FULL OF WATER)
5' CONC. WALK
EX. BIT. DRIVE
CP1
SIGN
PROP. GARBAGE TRUCK TURNING TEMPLATE
PROP. TRASH ENCLOSURE
40' UTILITY ESMT. L 3889, PG 584
40' SETBACK
EX. GVIW RIM=922.60
EX. STRM MH RIM=920.14
PROVIDE ADDITIONAL ASPHALT DRIVE TO RADIUS
EX. CONC. WALK
EX. BIT. PARKING
206.17'
EX. STRM MH RIM=920.26
TP-1
TP-2
250' HYDRANT COVERAGE RADIUS
HOUSE
BLDG
2991 LESLIE PARK
2987 LESLIE PARK
2981 LESLIE PARK
2975 LESLIE PARK
2969 LESLIE PARK
2963 LESLIE PARK
2957 LESLIE PARK
150' HOSE LAY FROM FIRE LANE
BRICK COLUMNS
F.F.=924.75
EX. BLDG
A.C. UNIT
PORCH
CP 64
115.16'
N01°26'01"W 825.13'
83.91'
KNOX BOX
FDC
PROPOSED 2 STORY BUILDING 9,200 SF±
86.54'
340' HOSE LAY LOCATION
320' HOSE LAY LOCATION
2"W
CP 72
20' SETBACK
443.99'
446.14'
825.00'
S01°36'44"E
"DHU VARREN ON THE PARK" (SITE CONDOMINIUM) L 2929, PG 198-244
WARRANTY DEED L 3381, PG 148
6' WIDE EDISON ESMT. L 1278, PG 284
APPROX. NORTHERN LANDFILL LIMITS
343

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SCALE: 1" = 30'
0 30 60 90

FIRE PROTECTION NOTES:

1. The proposed building will be fire suppressed. A Knox Box has been located between the door and the Fire Department Connection.
2. A new 4" fire service is proposed. It connects to the public water main within Dhu Varren Road right-of-way. There is an existing valve between the new connection and the existing hydrant lead that serves the building.
3. Proposed domestic water service for the new building will be connected from the existing structure.
4. There are no proposed firewalls.
5. The storage of construction materials shall not interfere with fire/emergency access.

SOLID WASTE AND RECYCLING NOTES:

1. Recycle and trash pickup is to be private. Trash and recycling will be stored in screened enclosures.
2. The existing enclosure will be removed and a new enclosure constructed.

LEGEND

838	EXIST. CONTOUR
×836.2	EXIST. SPOT ELEVATION
U.P.	EXIST. UTILITY POLE
U.P.	EXIST. UTILITY POLE W/ TRANS.
GP	EXIST. GUY POLE
	GUY WIRE
	ELEC. TRANSFORMER
OH	EXIST. OVERHEAD UTILITY LINE
	EXIST. LIGHT POLE
t	EXIST. TELEPHONE LINE
e	EXIST. ELECTRIC LINE
g	EXIST. GAS LINE
g	EXIST. GAS VALVE
f.o.	EXIST. FIBER OPTIC LINE
w	EXIST. WATER MAIN
	EXIST. HYDRANT
	EXIST. GATE VALVE IN BOX
	EXIST. GATE VALVE IN WELL
	EXIST. CURB STOP & BOX
fdc	EXIST. FIRE DEPARTMENT CONNECTION
r	EXIST. STORM SEWER
	EXIST. CATCH BASIN OR INLET
	EXIST. BEEHIVE INLET
	END SECTION
	HEAD WALL
	CULVERT
ds	EXIST. DOWNSPOUT
s	EXIST. SANITARY SEWER
	EXIST. CLEANOUT
T/C	TOP OF CURB
T/P	TOP OF PAVEMENT
G	GUTTER
T/W	TOP OF WALK
	C/L OF DITCH
	DRAINAGE DIRECTION
T	ENCLOSED TRASH AREA
	SIGN
RR	RAILROAD CROSSING SIGN
MAIL	MAILBOX
t	TELEPHONE RISER
catv	CABLE TELEVISION RISER
e	ELECTRIC METER
w	WATER METER
g	GAS METER
glm	GAS LINE MARKER
fiber	FIBER OPTIC MARKER
•	POST
W	WELL
	FENCE
	GUARDRAIL
●	SINGLE TREE
	TREE OR BRUSH LIMIT
	SECTION CORNER
SB-1	SOIL BORING LOCATION
TP-1	TEST PIT LOCATION
S	SET IRON PIPE
F	FOUND IRON PIPE
S	SET MONUMENT
F	FOUND MONUMENT
S	SET IRON ROD
FIR	FOUND IRON ROD
	CONTROL PT.
℄	CENTERLINE
℗	PROPERTY LINE

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ANN ARBOR CHRISTIAN CHURCH
FIRE PROTECTION AND SOLID WASTE COLLECTION PLAN

13

REVISIONS:	REV. DATE
PER CITY STAFF REVIEWS	8/27/21
PER CITY STAFF REVIEWS	10/08/21
PER CITY STAFF REVIEWS	11/3/21

JOB No. **20255**
DATE: 8/19/21
SHEET 12 OF 16
CADD:
ENG: SCD
PM: SCD
TECH:
20255FP1
FB#----

PRELIMINARY DESIGN NOTES:

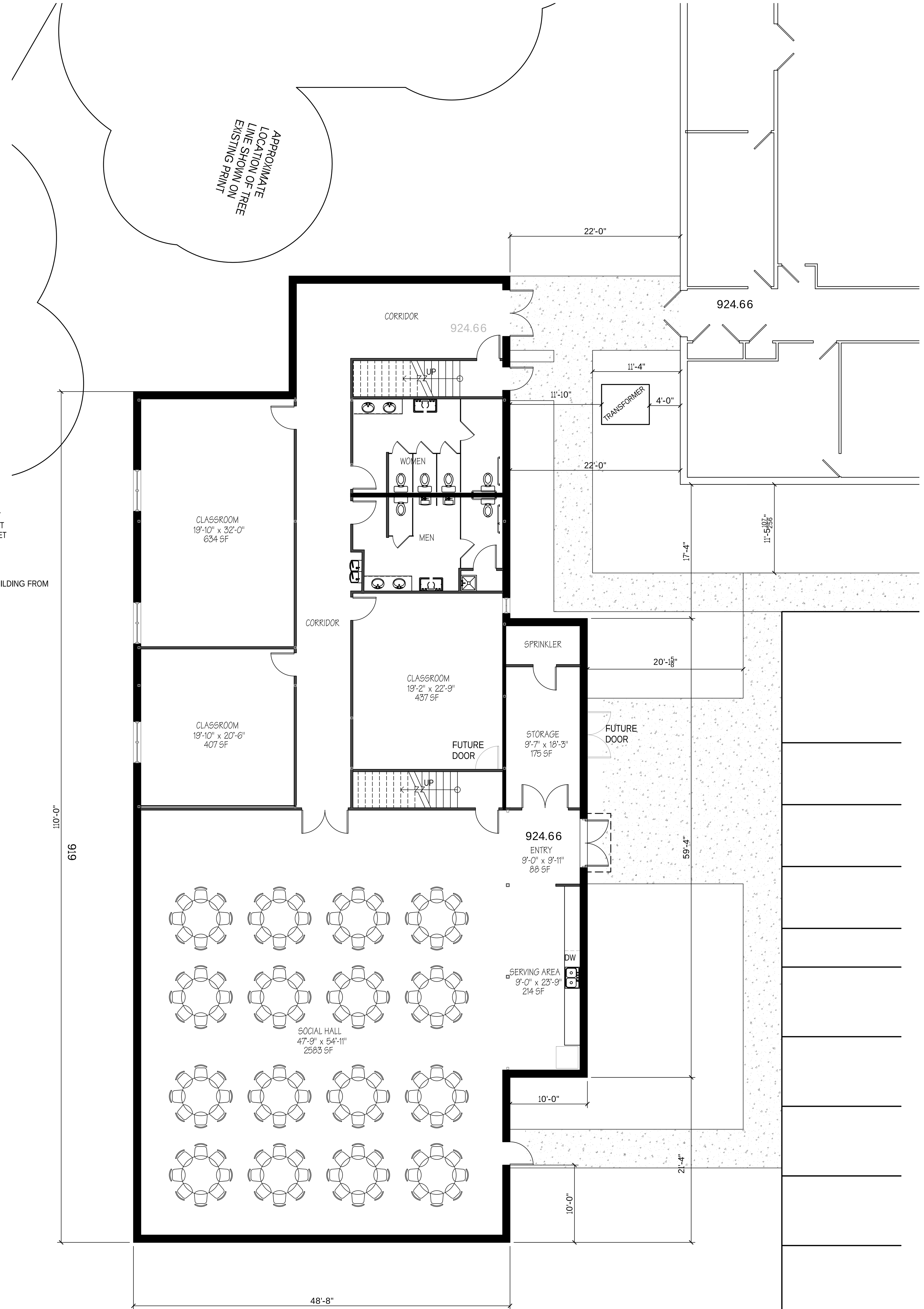
1. ROOM MEASUREMENTS ARE TO THE LONGEST WIDTH AND LENGTH OF THE ROOM.
2. ROOM MEASUREMENTS ARE ROUNDED OFF TO TO THE NEAREST INCH. THEREFORE ROOM AREAS MAY VARY ON SIMILAR SIZE OF ROOMS.
3. PROPERTY LINES, PARKING LOT AND SIDEWALKS (IF SHOWN) ARE SHOWN FOR CONCEPTUAL PURPOSES ONLY, SITE LAYOUT, PARKING LAYOUT AND SIDEWALK DESIGN IS TO BE PROVIDED BY A CIVIL ENGINEER, ARRANGED FOR AND PAID UNDER A SEPERATE CONTRACT.
4. KITCHEN IS SCHEMATIC AND DOES NOT SHOW ANY APPLIANCES. PLEASE PROVIDE A LIST OF APPLIANCES YOU EXPECT TO WANT IN THE KITCHEN AND WE WILL WORK OUT A DESIGN FOR THE KITCHEN.

BUILDING DATA

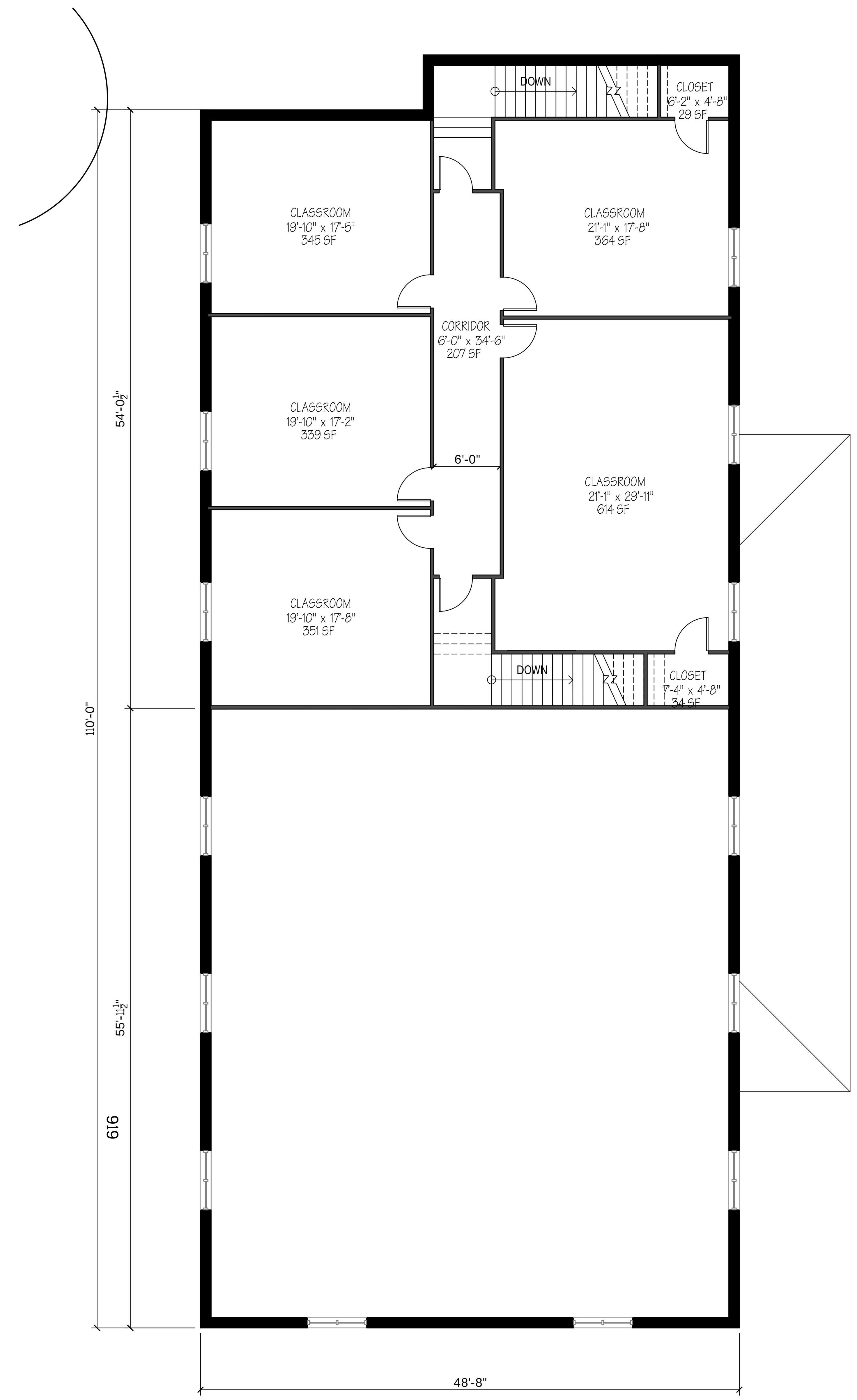
EXISTING FOOTPRINT AREA - 8,219 SQUARE FEET
ADDITION MAIN LEVEL AREA - 6,373 SQUARE FEET
ADDITION UPPER LEVEL AREA - 2,788 SQUARE FEET

TOTAL ADDITION - 9,161 SQUARE FEET
TOTAL BUILDING AREA - 17,380 SQUARE FEET

PROJECT WILL 20 FOOT CLEAR SEPARATING THE EXISTING BUILDING FROM THE NEW BUILDING



1 MAIN LEVEL FLOOR PLAN PR1 1/8" = 1'-0"



2 UPPER LEVEL FLOOR PLAN PR1 1/8" = 1'-0"

PRELIMINARY - NOT FOR CONSTRUCTION

Daniel G. White, Architect
PO Box 695 8576 West Farm Road 76 Willard, Missouri 65781
(417)425-9618
DGWCREATIONS@GMAIL.COM
ARCHITECT FOR:
ZION CHURCH BUILDERS, INC
P.O. Box 218, Mattawan, MI 49071
(269)544-7211 · (269) 544-7216 Fax
EMAIL: ZIONCHURCHBUILDERS@GMAIL.COM

A NEW ADDITION FOR
ANN ARBOR CHINESE CHRISTIAN CHURCH
Ann Arbor, Michigan

PRELIMINARY FLOOR PLANS

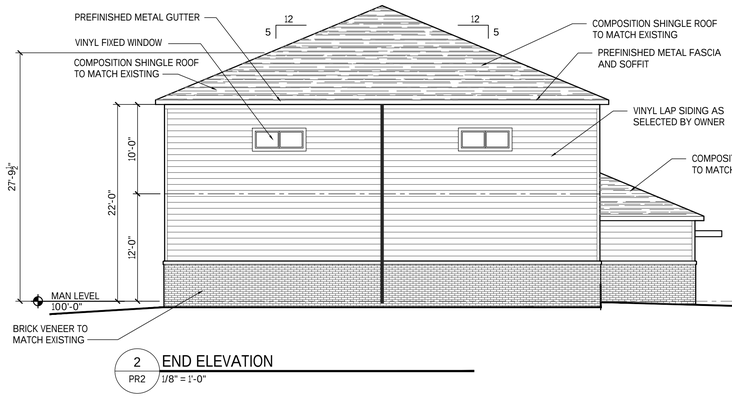
No.	Date
31	07OCT21B
30	11AUG21
29	17JUL21

PROJECT NUMBER 20-01
ORIGINAL ISSUE DATE 29JAN20

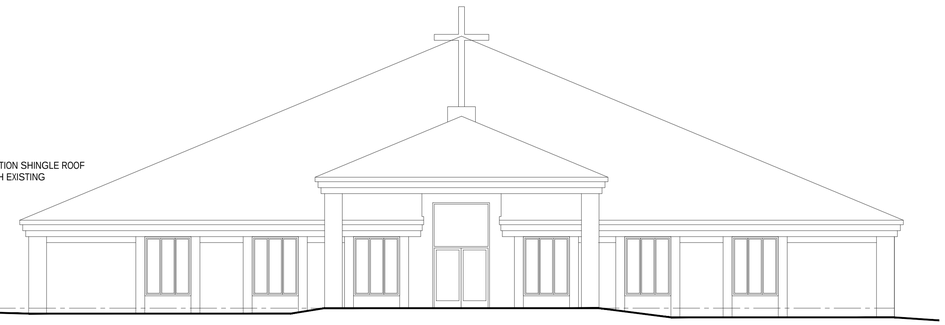
PR1

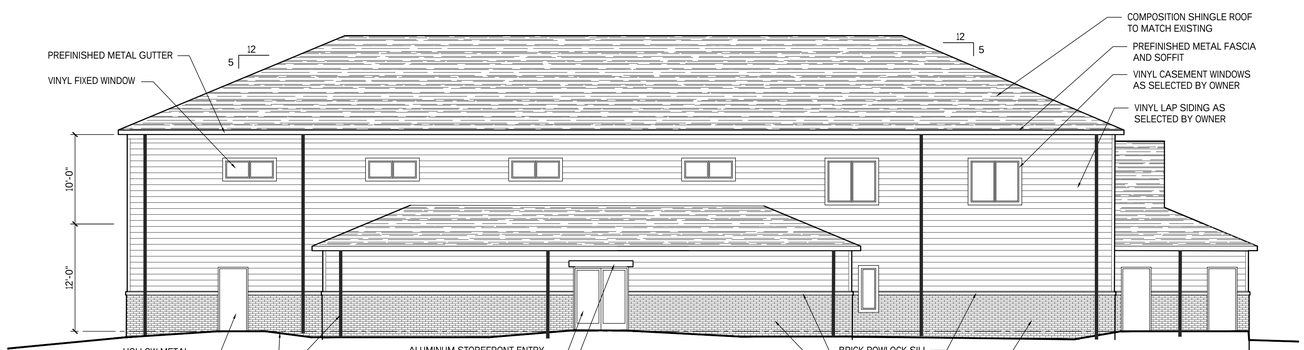
OF 2

3 PR2 BACK ELEVATION
1/8" = 1'-0"



2 PR2 END ELEVATION
1/8" = 1'-0"





1 PR2 FRONT ELEVATION
1/8" = 1'-0"

DANIEL G. WHITE
ARCHITECT
NO. 1301083315
STATE OF MICHIGAN
REGISTERED ARCHITECT

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EMAIL: ZIONCHURCHBUILDERS@GMAIL.COM

PRELIMINARY - NOT FOR CONSTRUCTION

A NEW ADDITION FOR
ANN ARBOR CHINESE CHRISTIAN CHURCH
Ann Arbor, Michigan

PRELIMINARY ELEVATIONS

No.	Date
30	11AUG21
29	17JUL21
28	15JUL21

PROJECT NUMBER
20-01

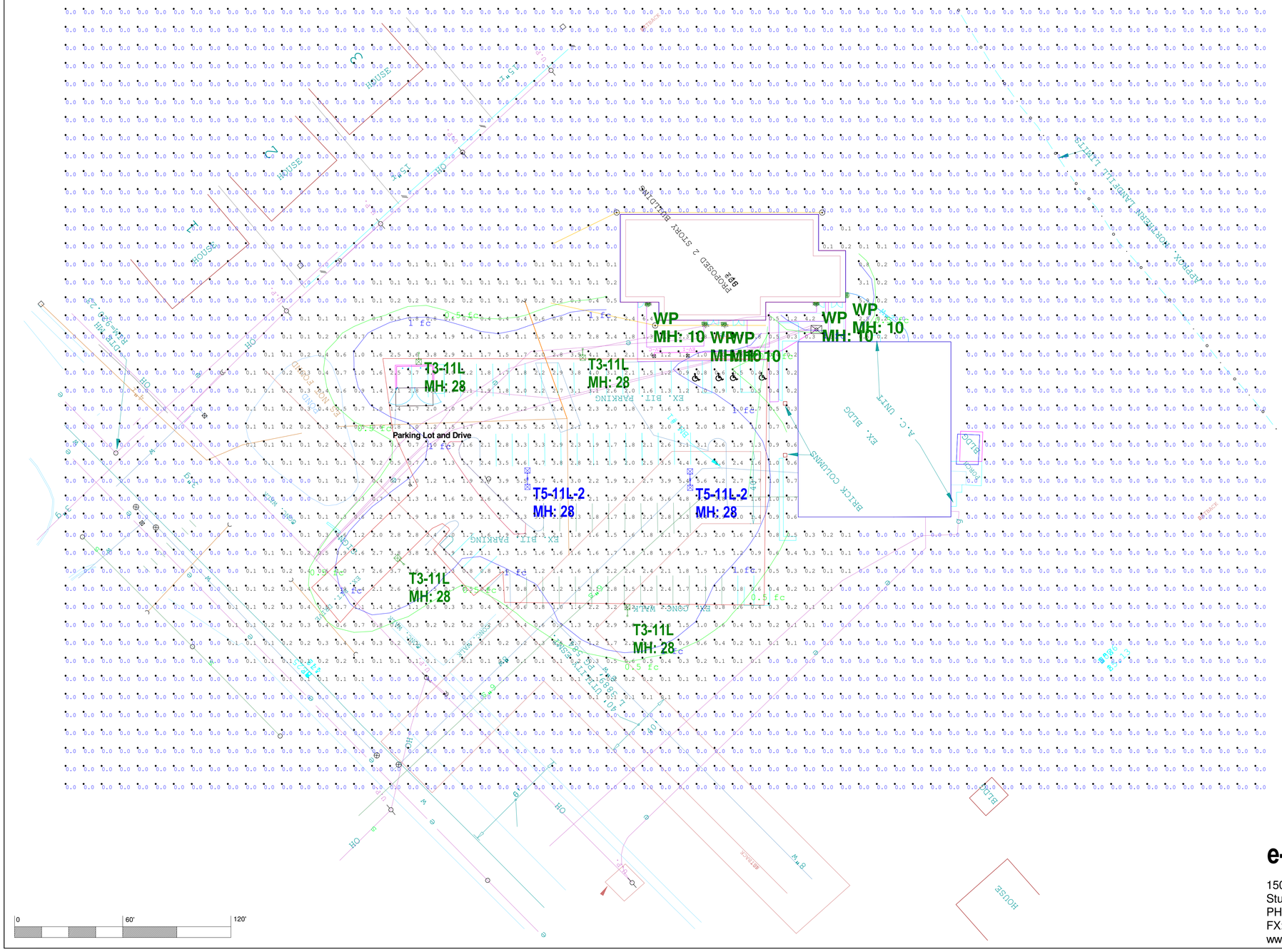
ORIGINAL ISSUE DATE
29JAN20

PR2

Noctura fixtures are using a LLF of 0.91 for 50K hours at 10 C Ambient temperature.

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	Lumens/Lamp	LLF	Total Watts	Description
	5	WP	SINGLE	3400	1.000	110	C-WP-A-FCA-03-40K-DB
	4	T3-11L	SINGLE	11475	0.910	300	NTA-A-NM-T3-11L-40K-UL-BZ
	2	T5-11L-2	D180°	N.A.	0.910	300	NTA-A-NM-T5-11L-40K-UL-BZ

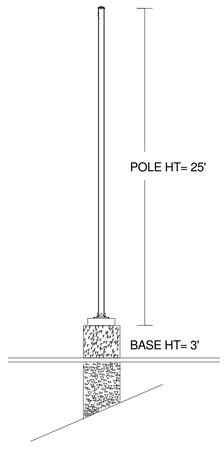
Calculation Summary					
Label	Avg	Max	Min	Avg/Min	Max/Min
CalcPts_1	0.32	11.5	0.0	N.A.	N.A.
Parking Lot and Drive	2.14	5.7	0.4	5.35	14.25



Customer to verify Color, Mounting, Fixture Location and Voltage prior to ordering.

Pole Schedule
(4) E-PS4E25S1DB (25' X 4" STEEL SQUARE POLE)
Proposed poles meet 100 MPH sustained winds.
(2) E-PS4E25S2DB (25' X 4" STEEL SQUARE POLE)
Proposed poles meet 100 MPH sustained winds.

Additional Equipment
(8) NTA-DA-BZ (Direct Arm Mount)
(8) NTX-7R-BZ-U (Extension for NEMA 7-pin photocell)



e-conolight
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Customer responsible to verify ordering information/ catalogue number prior to placing order.

Date:10/5/2021 | Scale: 1"=30' | Layout by: Ben Foster
Project Name: 129369 - Chinese Christian Church, Ann Arbor, MI | Salesforce: 35475
Filename: 210427AR1BAFR2.AGI
Footcandles calculated at 3' AFG using initial lumen values