Wauwatosa, WI

Design Review Board

Meeting Agenda - Final

7725 W. North Avenue
Wauwatosa, WI 53213

Thursday, January 18, 2024 | **7:00 PM** | **Committee Room 1**

Regular Meeting

CALL TO ORDER

ROLL CALL

NEW BUSINESS

1.	116th Street Park Buildings and Structures	**23-1365**
2.	11530 Burleigh - Horicon Bank - RTU Screening	**23-843**
3.	900 N 92nd Street - Froedtert Hospital Expansion	**24-0050**

ADJOURNMENT

NOTICE TO PERSONS WITH A DISABILITY
Persons with a disability who need assistance to participate in this meeting should call the City Clerk's office at (414) 479-8917 or send an email to tclerk@wauwatosa.net, with as much advance notice as possible.

7725 W. North Avenue
Wauwatosa, WI 53213

File #: 23-1365 **Agenda Date:** 1/18/2024 **Agenda #:** 1.

116th Street Park Buildings and Structures

Submitted by:
Alex Krutsch - Parks and Forestry Superintendent
Department:
Public Works

A. Issue

Staff is seeking Board approval of the exterior design and aesthetic qualities of the restroom, picnic pavilion, and playground shade structures being planned for the 116th Street Park.

B. Background/Options

The Common Council of Wauwatosa has allocated 2 million dollars of American Rescue Plan Act (ARPA) funds through the City's Capital Improvement Plan (CIP) for the development of a new city park located at the intersection of 116th Street and Gilbert Avenue on the City's West side.

In addition to the ARPA funds staff and our consultants have secured close to $2 million in grant funding for the park. This funding has allowed staff to plan additional amenities such as a restroom, shade structures, and a picnic pavilion. These upgraded facilities will certainly create a more comfortable and enjoyable experience for residents visiting the park.

The restroom, shade structures, and picnic pavilion being planned for the park are all pre-fabricated structures. Sourcing pre-fabricated structures has allowed staff to select vandal resistant materials, keep costs within the limits of grant funding, and procure structures in accordance with the park's construction timeline while providing attractive amenities that fit with the overall aesthetic of the park. Pre-fabricated structures have the added benefit of a manufacturer's warranty.

Included in the agenda packet are restroom elevations with floorplan, picnic pavilion drawings with precedent imagery, shade structure renderings, and a park site plan for the Boards consideration. Members of the Board will notice two possible color schemes represented on the restroom elevations. These schemes were presented by the manufacturer as examples of a subdued color scheme (scheme "A") and a more vibrant color scheme (scheme "B") and are meant to show how color can be applied to the structure. The colors themselves do not represent staffs color selection. With that said, staff believes the use of color in "Scheme B" continues the fun and vibrant aesthetic of the playground and helps unify the space. Staff will present the board with physical color samples for the structure at the board meeting.

C. Strategic Plan (Area of Focus)

Priority Area Three: Infrastructure
Priority Area Five: Quality of Life

D. Fiscal Impact

The initial expense of the structures is being covered by grant funding. Staff has selected vandal resistant, low maintenance finishes such as steel roofs, cement board siding, and split block facades. This should keep maintenance expenses low for years to come. While there will certainly be some expense with maintaining and operating these buildings it is anticipated that the parks current operating budget will be able to absorb those costs.

E. Recommendation

Staff recommends approval of the exterior design and finishes of the restroom, picnic pavilion, and shade structures being planned for the 116th Street Park.

THE SIGMA GROUP
Single Source. Sound Solutions.
www.thesigmagroup.com
1300 West Canal Street
Milwaukee, WI 53233
Phone: 414-643-4200
Fax: 414-643-4210

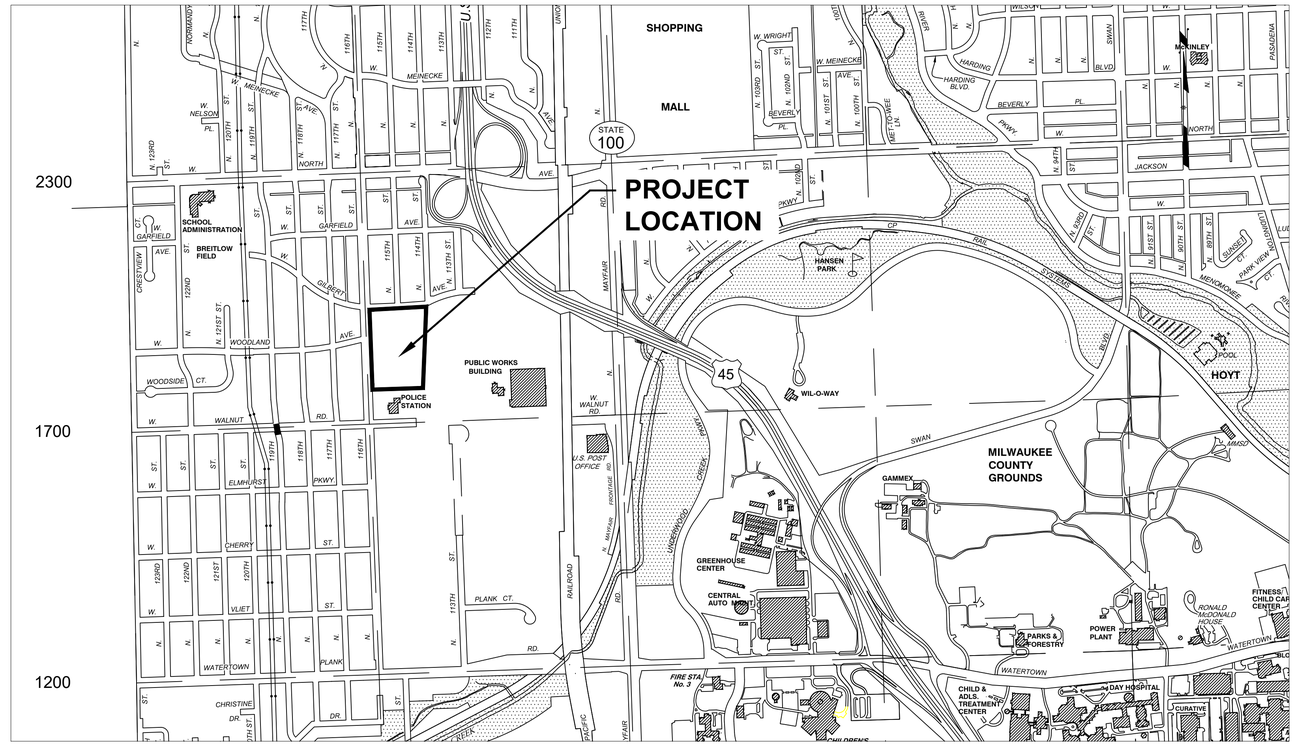
CITY OF WAUWATOSA
CONTRACT 24-02
116TH STREET PARK

CITY PROJECT #8045
SIGMA PROJECT #21231

SHEET NO:	DESCRIPTION
C 001	SITE SURVEY
C 002	EROSION CONTROL AND SITE PREPARATION PLAN
C 100	OVERALL SITE PLAN
C 200	GRADING PLAN
C 201	DETAILED GRADING PLAN
C 202	DETAILED GRADING PLAN
C 300	UTILITY PLAN
C 400	EROSION CONTROL DETAILS
C 401	PAVING DETAILS
C 402	UTILITY DETAILS
C 403	SITE DETAILS
C 404	GI CROSS SECTION DETAIL
C 500-502	SPECIFICATIONS

site

SHEET NO:	DESCRIPTION
L002	OVERALL SITE PLAN (FOR REFERENCE ONLY)
L003	GENERAL NOTES
L008	TREE PRESERVATION AND DEMOLITION PLAN
L101	LANDSCAPE SITE PLAN
L101A.1	LANDSCAPE SITE PLAN ENLARGEMENT
L101A.2	LANDSCAPE PLAN ENLARGEMENT
L102A.2	PLAYGROUND GRADING PLAN ENLARGEMENT
L103A.1	HARDSCAPE PLAN ENLARGEMENT
L103A.2	HARDSCAPE PLAN ENLARGEMENT
L104A.1	SITE FURNISHINGS PLAN ENLARGEMENT
L104A.2	PLAYGROUND EQUIPMENT ENLARGEMENT PLAN (FOR REFERENCE ONLY)
L105	SOILS PLAN
L106	PLANTING PLAN
L106A	PLANTING PLAN ENLARGMENT
L106B	PLANTING PLAN ENLARGMENT
L106C	PLANTING PLAN ENLARGMENT
L106A.1	PLANTING PLAN ENLARGMENT
L106A.2	PLANTING PLAN ENLARGMENT
L501	PRESERVATION AND DEMOLITION DETAILS
L503	HARDSCAPE DETAILS
L503A	HARDSCAPE DETAILS
L503B	HARDSCAPE DETAILS
L503C	HARDSCAPE DETAILS
L503D	HARDSCAPE DETAILS
L503E	HARDSCAPE DETAILS
L504	SITE FURNISHING DETAILS
L504A	SITE STRUCTURES
L504B	PLAYGROUND DETAILS
L504C	PLAYGROUND FURNISHING RENDERINGS (FOR REFERENCE ONLY)
L506	PLANTING DETAILS
L506A	PLANTING DETAILS
L603	HARDSCAPE SCHEDULE
L604	SITE FURNISHING SCHEDULE
L606	PLANTING SCHEDULE
L1000	IRRIGATION PLAN



ibc engineering services, inc.
WISCONSIN | ILLINOIS | FLORIDA

SHEET NO:	DESCRIPTION
E 000	LEGEND AND NOTES
E 100	ELECTRICAL SITE PLANS
E 500	ELECTRICAL SCHEDULES

PROJECT COORDINATION:
ALEX KRUTSCH
PARKS & FORESTRY SUPERINTENDENT
(414) 471-8422
AKRUTSCH@WAUWATOSA.NET

THE SIGMA GROUP:
CHRISTOPHER CARR, PE
VICE PRESIDENT
(414) 643-4163
CCARR@THESIGMAGROUP.COM

SITE DESIGN LANDSCAPE ARCHITECTURE:
BRENDA KIESGEN
PROJECT MANAGER
(708) 691-0601
BKIESGEN@SITE-DESIGN.COM

IBC ENGINEERING SERVICES:
COLLEEN HOFFMANN, PE
ELECTRICAL ENGINEER
(262) 522-4423
COLLEENH@IBCENGINEERING.COM

APPROVED BY THE BOARD OF PUBLIC WORKS OF THE CITY OF WAUWATOSA, WISCONSIN BY RESOLUTION ADOPTED:

DATE _____ CITY CLERK _____

SUBMITTED FOR APPROVAL:

JANUARY 5, 2024
DATE

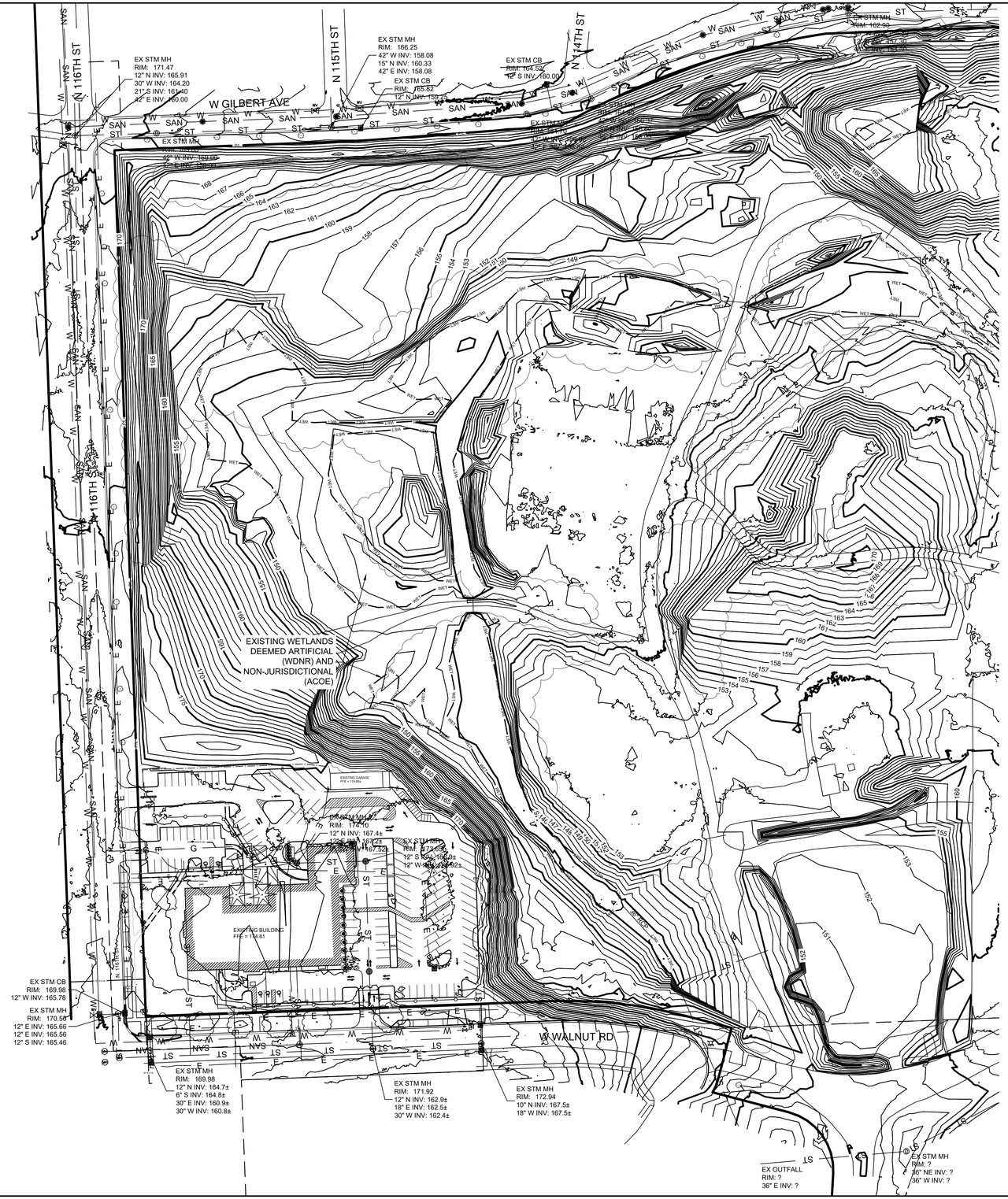
CITY ENGINEER
REG. PROF. ENGR. _____

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

116TH STREET PARK

1900 N. 116TH STREET

SCALE: AS NOTED | SHEETS:



GRAPHIC SCALE
0 80 160

LEGEND:

	SECTION 1/4 SECTION LINE
	PROPERTY LINE
	EASEMENT
X	CHAIN LINK FENCE
	TREE LINE
OH	OVERHEAD UTILITY LINE
E	ELECTRIC
TEL	TELEPHONE
FO	FIBER OPTIC
CTV	CABLE TV
SAN	SANITARY SEWER
FM	FORCE MAIN
ST	STORM SEWER
W	WATER MAIN
G	GAS
670	EXISTING CONTOUR
WET	WETLAND
FP	FLOODPLAIN

MANHOLE	IRON PIPE FOUND/SET
CATCH BASIN	REBAR FOUND/SET
CATCH BASIN (ROUND)	CHISELED CROSS FOUND/SET
ROOF DRAIN	PK NAIL FOUND/SET
HYDRANT	SPIKE/NAIL
WATER VALVE	MONUMENT
GAS VALVE	BENCHMARK
UTILITY POLE	SIGN
GUY WIRE	DECIDUOUS TREE
GAS METER	
ELECTRIC METER	CONIFEROUS TREE
UTILITY PEDESTAL	
TRAFFIC SIGNAL	BUSH
LIGHT POLE	POST
SOIL BORING	
MONITORING WELL	

DRAWING IS BASED ON FIELD LOCATIONS AND/OR RECORDS FURNISHED BY MUNICIPALITIES AND UTILITY COMPANIES. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

2. VERIFY ACTUAL LOCATIONS AND INVERTS IN THE FIELD. ANY POTENTIAL ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.

3. DRAWING IS BASED ON FIELD SURVEY COMPLETED BY THE CITY OF WAUWATOSA ON OCTOBER 2022.

4. DATUM FOR THE PROJECT SURVEY IS WAUWATOSA DATUM.

5. CONTRACTOR TO VERIFY EXISTING CONDITIONS, CONTACT ENGINEER WITH DISCREPANCIES.

6. PRIVATE CONSTRUCTION THAT DISTURBS UNDERGROUND UTILITIES IS REQUIRED TO INSTALL AND MAINTAIN ENCLOSED RAT TRAPS OR BAIT STATIONS.

THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS MAP IS BASED ON FIELD MARKINGS AND INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED.

TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1–800–242–8511
TOLL FREE
WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE
MILW. AREA 259–1181

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

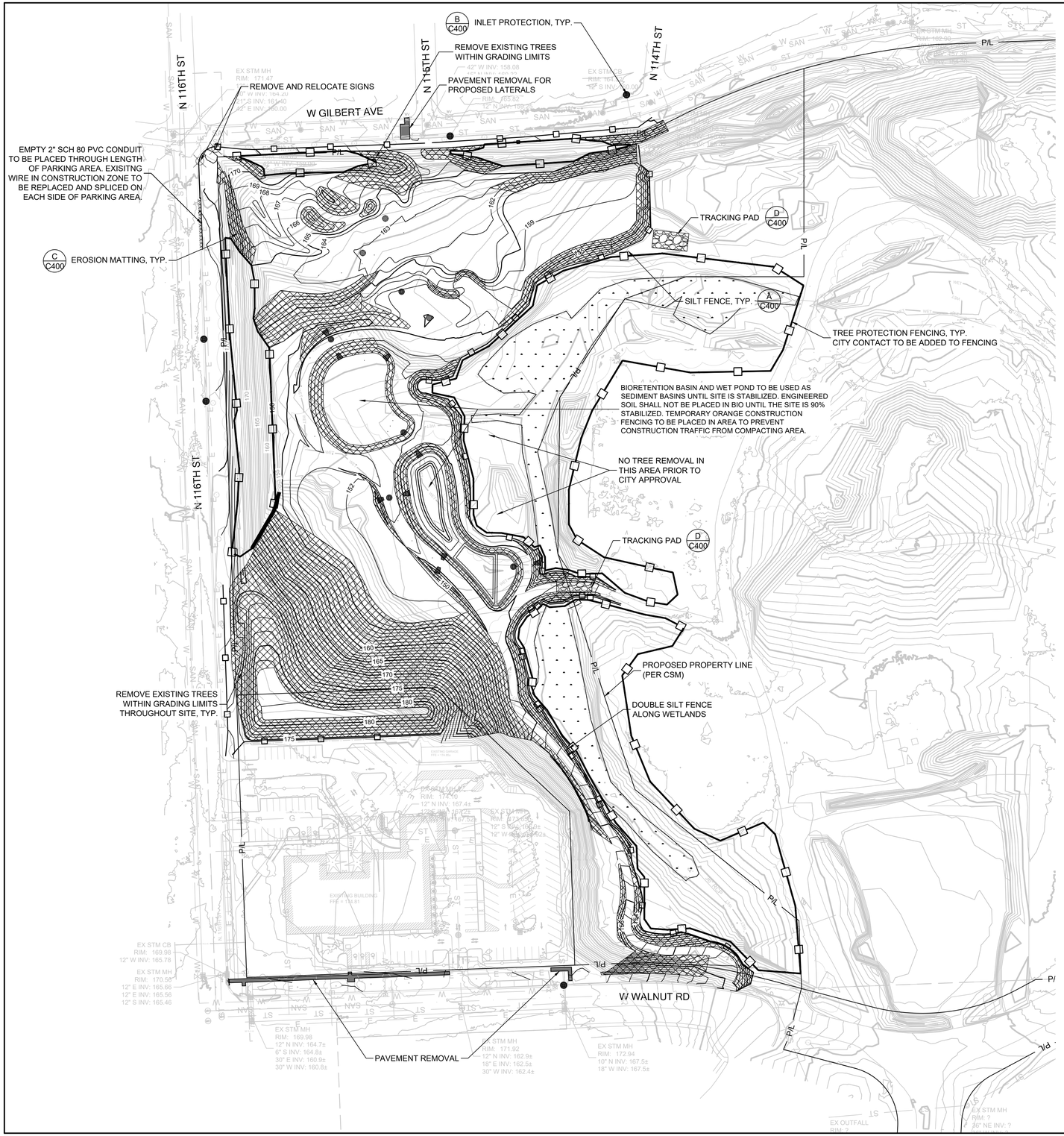
SITE

SITE SURVEY

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO:	21231
DRAWN BY:	JRG
CHECKED BY:	CTC
SCALE:	AS SHOWN

C001



LEGEND:

- A C400 — PROPOSED SILT FENCE
- B C400 — PROPOSED INLET PROTECTION
- D C400 — PROPOSED TRACKING PAD
- C C400 — PROPOSED EROSION MATTING WISDOT APPROVED CLASS 1 TYPE B
- PROPOSED TREE PROTECTION FENCE (SEE SHEET L501)
- PAVEMENT REMOVAL
- 5 — EXISTING CONTOUR
- 5 — PROPOSED CONTOUR
- XXXXXXX — CURB REMOVAL
- STRUCTURE REMOVAL

GRAPHIC SCALE
0 80 160

GENERAL NOTES:

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3. WORK TO BE COMPLETED IS INDICATED IN BOLD TYPE LINES AND EXISTING CONDITIONS ARE INDICATED BY LIGHT TYPE LINES.
4. ELECTRONIC CIVIL FILES ARE AVAILABLE UPON WRITTEN REQUEST. DO NOT USE ELECTRONIC CIVIL FILES TO LAYOUT FOUNDATIONS, COLUMN LINES, LIGHT POLES, OR OTHER NON CIVIL SITE WORK. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND ARCHITECTURAL FEATURES.
5. SEE SHEET C400 FOR A COMPLETE LIST OF EROSION CONTROL NOTES AND DETAILS. EROSION CONTROL MEASURES SHALL BE INSTALLED PRIOR TO START OF LAND DISTURBING ACTIVITIES.
6. DO NOT BEGIN LAND DISTURBING ACTIVITIES UNTIL AN EROSION CONTROL PERMIT IS OBTAINED FROM LOCAL JURISDICTION.
7. PRIVATE CONSTRUCTION THAT DISTURBS UNDERGROUND UTILITIES IS REQUIRED TO INSTALL AND MAINTAIN ENCLOSED RAT TRAPS OR BAIT STATIONS.

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MILW. AREA 259–1181

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

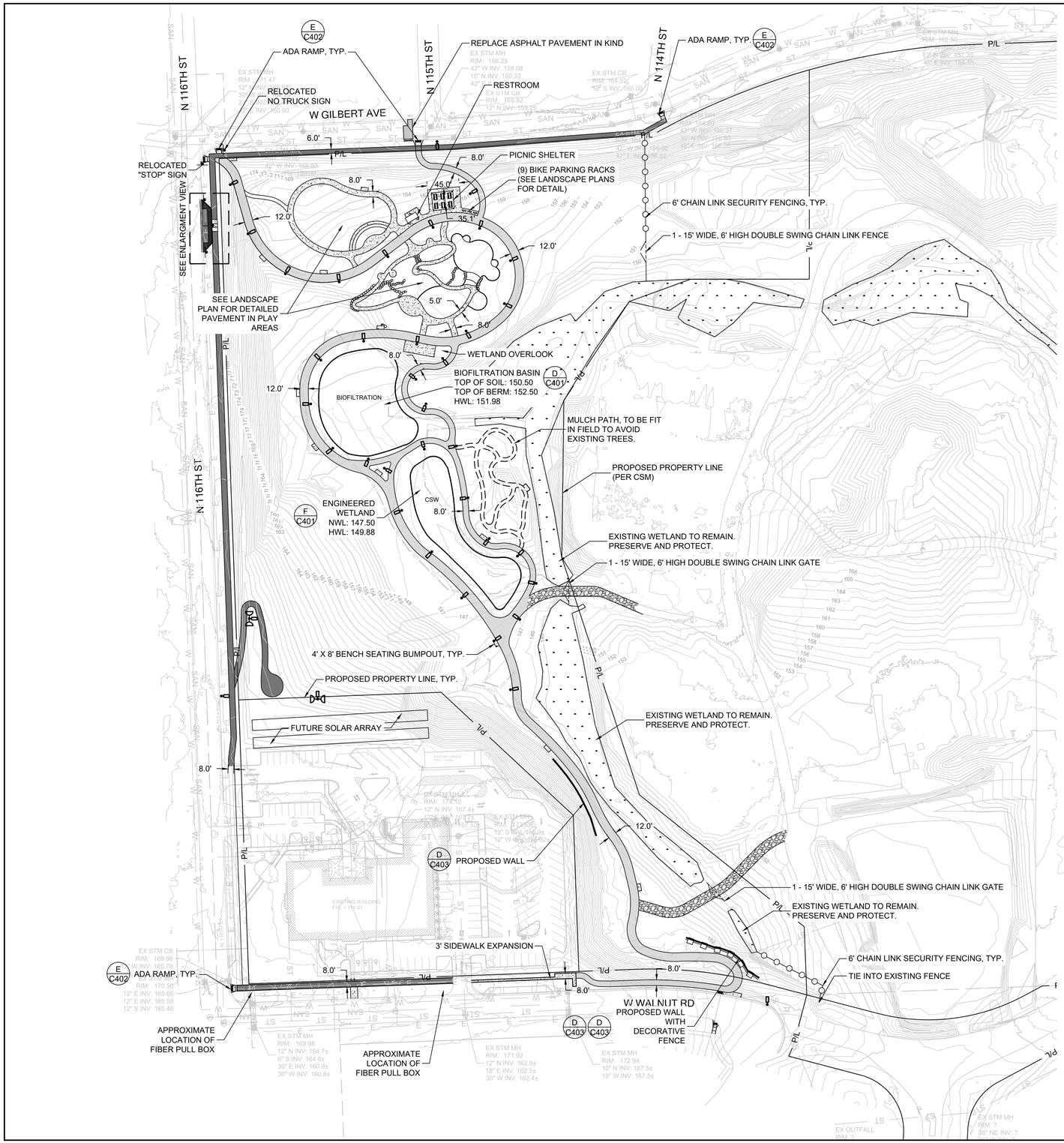
THE SIGMA GROUP
Single Source. Sound Solutions.

EROSION CONTROL PLAN

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	--
FILE NO:	21231
DRAWN BY:	JRG
CHECKED BY:	CTC
SCALE:	AS SHOWN

C002



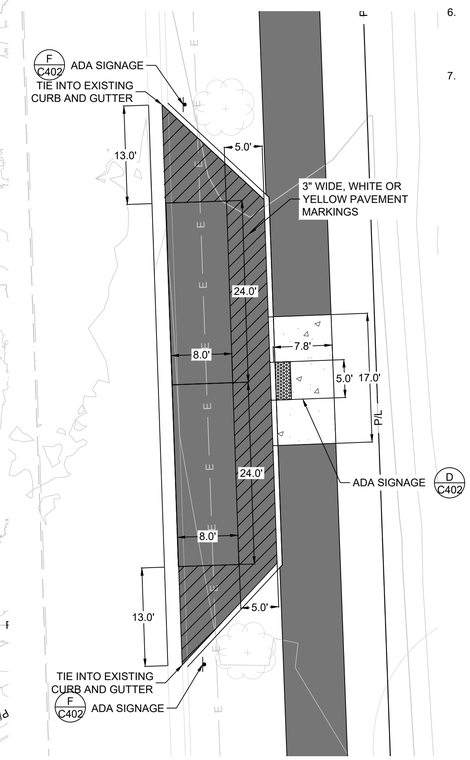
LEGEND:

- A C401 — 5" THICK CONCRETE WALK
- G C401 — POROUS ASPHALT PATH (INTERIOR)
- H C401 — POROUS ASPHALT PATH (EXTERIOR)
- 8" THICK, 3/4" DENSE GRADED BASE COURSE MAINTENANCE DRIVE
- EXISTING WETLAND TO REMAIN PRESERVE AND PROTECT
- CHAIN LINK FENCE
- LIGHT POLE (SEE LIGHTING PLANS)
- C C401 — 8" STAND UP CURB

GRAPHIC SCALE 0 80 160

SITE INFORMATION			
SITE AREA	521611	11.975 AC	
SITE DISTURBED AREA	372576	8.553 AC	
EXISTING IMPERVIOUS AREA	1590	0.037 AC	0.3 %
EXISTING PERVIOUS AREA	370986	8.517 AC	99.6 %
PROPOSED IMPERVIOUS AREA	90710	2.082 AC	24.3 %
PROPOSED PERVIOUS AREA	280276	6.434 AC	75.2 %
ADA PARKING SPACES	4		
BIKE PARKING SPACES	9		

NOTE:
ALL PAVEMENT MARKINGS ARE TO BE 3 INCH WIDE STRIPES OF WHITE OR YELLOW PAINT.



ADA PARKING ENLARGEMENT
1" = 10'

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DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

OVERALL SITE PLAN

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: ----
FILE NO: 21231
DRAWN BY: JRG
CHECKED BY: CTC
SCALE: AS SHOWN

C100

LEGEND:

- A C401 — 5" THICK CONCRETE WALK
- G C401 — POROUS ASPHALT PATH (INTERIOR)
- H C401 — POROUS ASPHALT PATH (EXTERIOR)
- 8" THICK, 3/4" DENSE GRADED BASE COURSE MAINTENANCE DRIVE
- EXISTING WETLAND TO REMAIN PRESERVE AND PROTECT
- CHAIN LINK FENCE
- LIGHT POLE (SEE LIGHTING PLANS)
- C C401 — 8" STAND UP CURB
- 5 — EXISTING CONTOUR
- 5 — PROPOSED CONTOUR
- PROPOSED SWALE
- 100.50 T/C 100.00 FL — PROPOSED CURB & GUTTER SPOT GRADE; T/C: TOP OF CURB GRADE; FL: FLOW LINE CURB GRADE
- 100.00 — PROPOSED SURFACE SPOT GRADE
- TW: 100.00 BW: 100.00 — PROPOSED TOP OF WALL AT FINISHED GRADE; PROPOSED BOTTOM OF WALL AT FINISHED GRADE
- 100.00 — EXISTING SURFACE SPOT GRADE (MATCH)

GRAPHIC SCALE
0 80 160

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MILW. AREA 259-1181

DATE	DESCRIPTION

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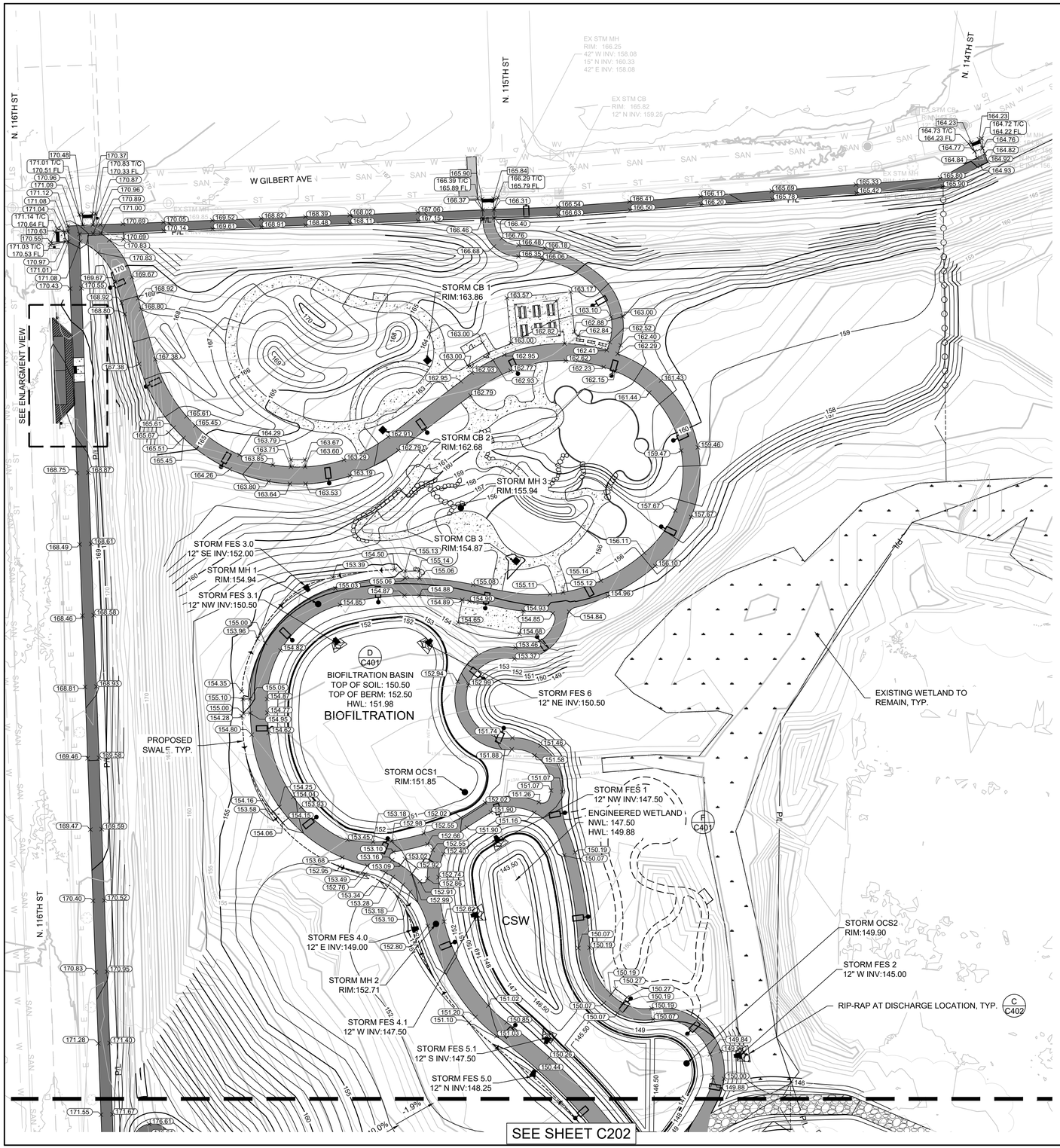
GRADING PLAN

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO:	21231
DRAWN BY:	JRG
CHECKED BY:	CTC
SCALE:	AS SHOWN

C200



LEGEND:

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G C401	POROUS ASPHALT PATH (INTERIOR)
H C401	POROUS ASPHALT PATH (EXTERIOR)
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GRAPHIC SCALE
0 40 80

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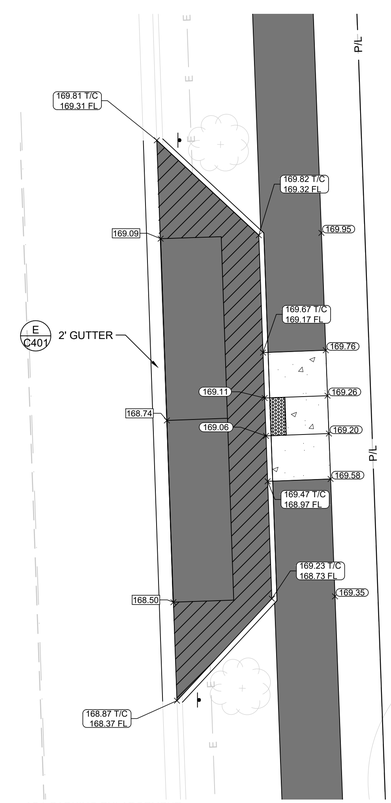

ADA PARKING ENLARGEMENT
1" = 10'

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CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

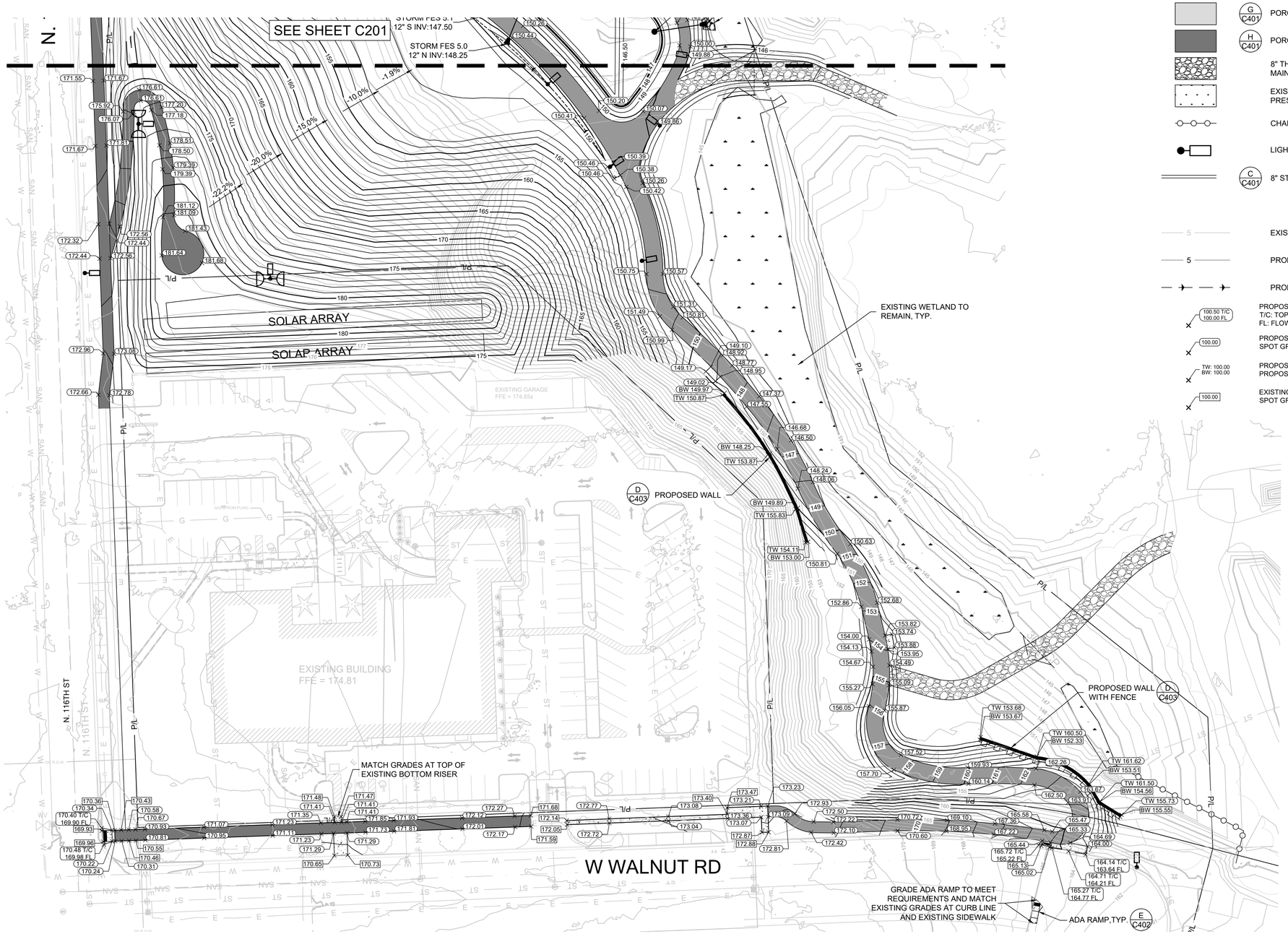
THE SIGMA GROUP
Smart Source. Sound Solutions.

DETAILED GRADING PLAN

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO:	21231
DRAWN BY:	JRG
CHECKED BY:	CTC
SCALE:	AS SHOWN

C201



LEGEND:

- 5" THICK CONCRETE WALK (A / C401)
- POROUS ASPHALT PATH (INTERIOR) (G / C401)
- POROUS ASPHALT PATH (EXTERIOR) (H / C401)
- 8" THICK, 3/4" DENSE GRADED BASE COURSE MAINTENANCE DRIVE
- EXISTING WETLAND TO REMAIN PRESERVE AND PROTECT
- CHAIN LINK FENCE
- LIGHT POLE (SEE LIGHTING PLANS)
- 8" STAND UP CURB (C / C401)
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED SWALE
- PROPOSED CURB & GUTTER SPOT GRADE — T/C: TOP OF CURB GRADE — FL: FLOW LINE CURB GRADE
- PROPOSED SURFACE SPOT GRADE
- PROPOSED TOP OF WALL AT FINISHED GRADE — PROPOSED BOTTOM OF WALL AT FINISHED GRADE
- EXISTING SURFACE SPOT GRADE (MATCH)

GRAPHIC SCALE 0 40 80

GENERAL NOTES:

1. THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS DRAWING IS BASED ON FIELD LOCATIONS AND/OR RECORDS FURNISHED BY MUNICIPALITIES AND UTILITY COMPANIES. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. VERIFY ACTUAL LOCATIONS AND INVERTS IN THE FIELD. ANY POTENTIAL ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. WORK TO BE COMPLETED IS INDICATED IN BOLD TYPE LINES AND EXISTING CONDITIONS ARE INDICATED BY LIGHT TYPE LINES.
4. ELECTRONIC CIVIL FILES ARE AVAILABLE UPON WRITTEN REQUEST. DO NOT USE ELECTRONIC CIVIL FILES TO LAYOUT FOUNDATIONS, COLUMN LINES, LIGHT POLES, OR OTHER NON CIVIL SITE WORK. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND ARCHITECTURAL FEATURES.
5. DIMENSIONS ARE FROM FACE OF CURB OR EDGE OF PAVEMENT.
6. WORK WITHIN THE PUBLIC RIGHT OF WAY, INCLUDING BUT NOT LIMITED TO DRIVEWAY OPENINGS, SIDEWALK AND RAMPS, PAVING, AND CURB AND GUTTER SHALL BE COMPLETED PER MUNICIPAL AND/OR COUNTY REQUIREMENTS AND STANDARDS.
7. EARTHWORK SHALL BE IN ACCORDANCE WITH GEOTECHNICAL ENGINEER'S RECOMMENDATIONS.

THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS MAP IS BASED ON FIELD MARKINGS AND INFORMATION FURNISHED BY UTILITY COMPANIES AND THE LOCAL MUNICIPALITY. WHILE THIS INFORMATION IS BELIEVED TO BE RELIABLE, ITS ACCURACY AND COMPLETENESS CANNOT BE GUARANTEED.

TO OBTAIN LOCATIONS OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN WISCONSIN

CALL DIGGERS HOTLINE
1-800-242-8511
TOLL FREE

WIS STATUTE 182.0175(1974) REQUIRES MIN. 3 WORK DAYS NOTICE BEFORE YOU EXCAVATE

MILW. AREA 259-1181

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

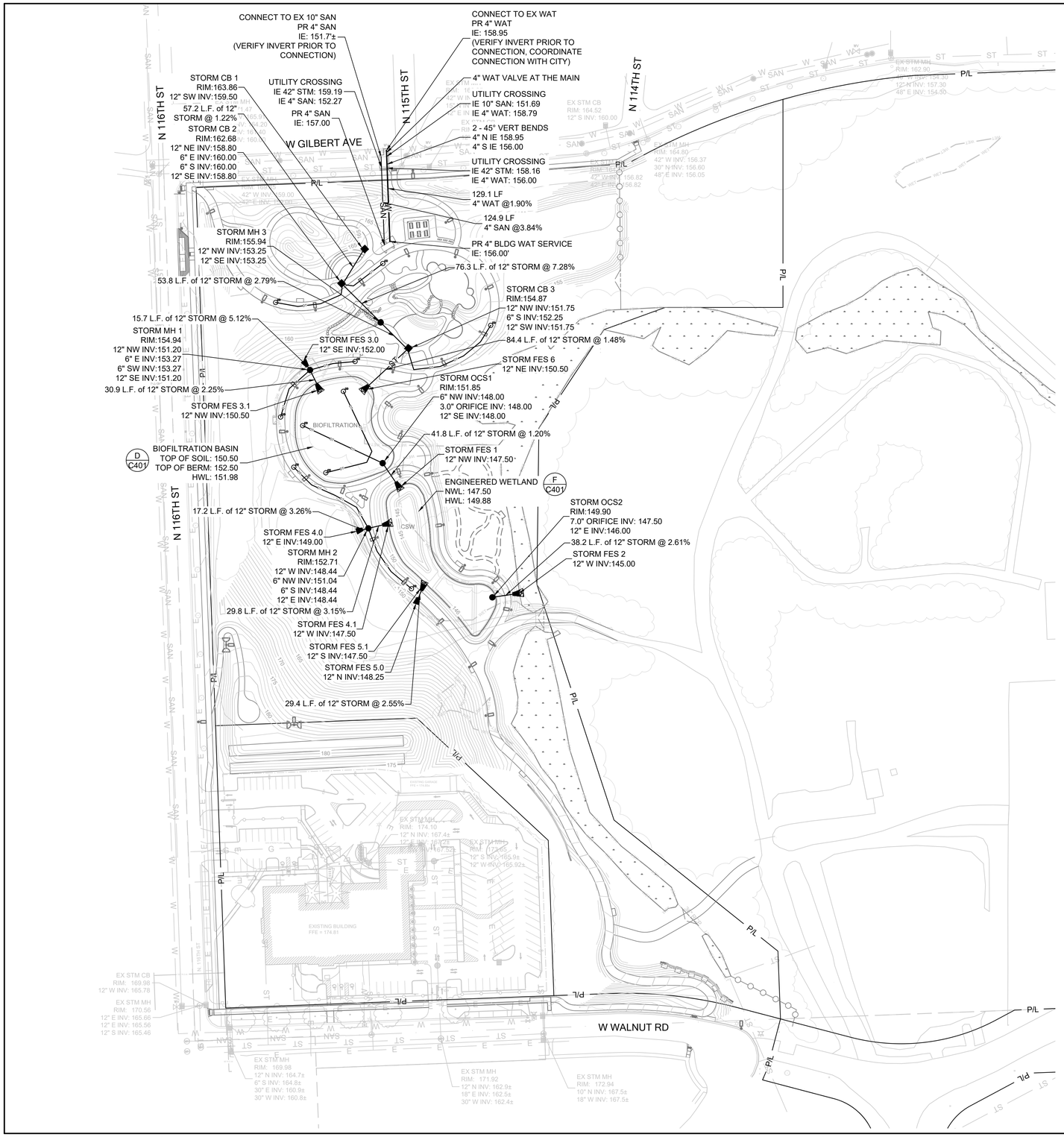
THE SIGMA GROUP
Single Source. Sound Solutions.

DETAILED GRADING PLAN

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO:	21231
DRAWN BY:	JRG
CHECKED BY:	CTC
SCALE:	AS SHOWN

C202



LEGEND:

—W—	PROPOSED WATER SERVICE
—SAN—	PROPOSED SANITARY SERVICE
—ST—	PROPOSED STORM SEWER
—DT—	PROPOSED DRAIN TILE (UNDERDRAIN)
—E—	PROPOSED ELECTRICAL SERVICE
—T—	PROPOSED TELEPHONE SERVICE
—G—	PROPOSED GAS SERVICE
■	A C402 PROPOSED STORM INLET
●	B C402 PROPOSED STORM MANHOLE
◢	C C402 PROPOSED FLARED END SECTION

GRAPHIC SCALE
0 80 160

GENERAL NOTES:

1. THE UNDERGROUND UTILITY INFORMATION SHOWN ON THIS DRAWING IS BASED ON FIELD LOCATIONS AND/OR RECORDS FURNISHED BY MUNICIPALITIES AND UTILITY COMPANIES. THE LOCATION AND ACCURACY OF WHICH CANNOT BE GUARANTEED. THERE MAY BE ADDITIONAL UNDERGROUND UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.
2. VERIFY ACTUAL LOCATIONS AND INVERTS IN THE FIELD. ANY POTENTIAL ERRORS, OMISSIONS, OR DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO PROCEEDING WITH CONSTRUCTION.
3. WORK TO BE COMPLETED IS INDICATED IN BOLD TYPE LINES AND EXISTING CONDITIONS ARE INDICATED BY LIGHT TYPE LINES.
4. ELECTRONIC CIVIL FILES ARE AVAILABLE UPON WRITTEN REQUEST. DO NOT USE ELECTRONIC CIVIL FILES TO LAYOUT FOUNDATIONS, COLUMN LINES, LIGHT POLES, OR OTHER NON CIVIL SITE WORK. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS OF BUILDING AND ARCHITECTURAL FEATURES.
5. ALL UTILITIES WITHIN 5 FEET OF PAVED AREAS SHALL REQUIRE GRANULAR BACKFILL. SLURRY BACKFILL IS REQUIRED FOR ALL WORK IN PUBLIC RIGHT OF WAY.
6. PRIVATE STORM INLETS IN PAVEMENT SHALL REQUIRE DRAIN TILE STUBS OF 10 FEET IN TWO DIRECTIONS FOR SUBDRAINAGE. RIM GRADE FOR STORM INLETS IN CURB AND GUTTER ARE FLOW LINE GRADES.
7. WORK IN PUBLIC RIGHT OF WAY SHALL FOLLOW MATERIAL AND INSTALLATION REQUIREMENTS PER MUNICIPAL AND/OR COUNTY.
8. PRIVATE STORM SEWER 12-INCH DIAMETER OR LARGER SHALL BE HDPE. BELOW 12-INCH DIAMETER SHALL BE PVC SDR-35 ASTM D3034. PRIVATE WATER MAIN SHALL BE CLASS 235 DR 18 PVC CONFORMING TO AWWA C-900. PRIVATE SANITARY SEWER SHALL BE PVC SDR-35 ASTM D3034.
9. COORDINATE FINAL LOCATION AND DESIGN OF PRIVATE UTILITY SERVICES (ELECTRIC, GAS, PHONE, CABLE) WITH UTILITY COMPANIES.
10. IF PROJECT IS DESIGN BUILD MEP, THE GENERAL CONTRACTOR IS REQUIRED TO PROVIDE FINAL SEWER AND WATER DESIGN SHOWING LOCATION, INVERTS AND SIZES TO THE ENGINEER FOR FINAL REVIEW AND VERIFICATION PRIOR TO STARTING UNDERGROUND UTILITY CONSTRUCTION.
11. WATER MAIN CONNECTION: TAP WATER MAIN WITH SIZE AND LOCATION INDICATED ON PLAN IN ACCORDANCE WITH LOCAL WATER UTILITY REQUIREMENTS. COORDINATE CONNECTION WITH LOCAL WATER UTILITY. ALL JOINTS HALL BE RESTRAINED FROM CONNECTION OF WATER MAIN TO BUILDING WALL. SUBMIT JOINT RESTRAINT DETAILS FOR ALL JOINT TYPES INCLUDING PUSH-ON AND MECHANICAL CONNECTIONS. INSTALL MEGA-LUG OR APPROVED EQUAL TIGHT TO WALL FOR RESTRAINT FOR ALL BUILDING WALL PENETRATIONS AS APPROVED BY LOCAL PLUMBING INSPECTOR AND WATER UTILITY. INSTALL THRUST BLOCKING AND MEGA-LUG AT BEND BELOW FLOOR FOR ALL FLOOR PENETRATIONS.
12. INSTALL JOINT RESTRAINT AND CONCRETE THRUST BLOCKS AT ALL OFFSET FITTINGS (TEES, BENDS, DEAD ENDS, VALVES, REDUCERS) USING MEGA-LUG OR APPROVED EQUAL. CONCRETE THRUST BLOCKS SHALL BE INSTALLED PER FILE NO'S:44,45,46 FROM THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. SEE DETAIL FOR MINIMUM LENGTH OF RESTRAINED JOINT REQUIRED. SUBMIT JOINT RESTRAINT DETAILS FOR ALL JOINT TYPES INCLUDING PUSH-ON AND MECHANICAL CONNECTIONS.

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DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

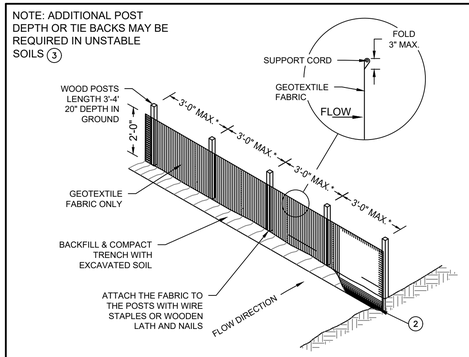
UTILITY PLAN

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: ----
FILE NO: 21231
DRAWN BY: JRG
CHECKED BY: CTC
SCALE: AS SHOWN

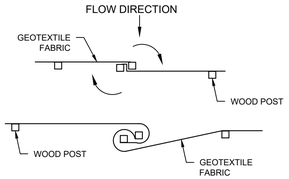
C300

FILE NAME: C300 UTILITY PLAN.DWG
PLOT DATE: 2024-01-05
PLOTTED BY: HELEN JOHN
SHEET: C300

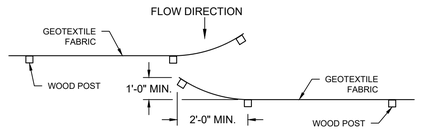


* NOTE: 8'-0" POST SPACING ALLOWED IF A WOVEN GEOTEXTILE FABRIC IS USED.

SILT FENCE

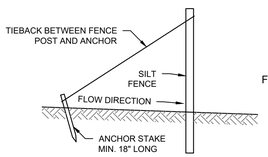


TWIST METHOD

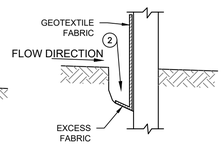


HOOK METHOD

JOINING TWO LENGTHS OF SILT FENCE 5



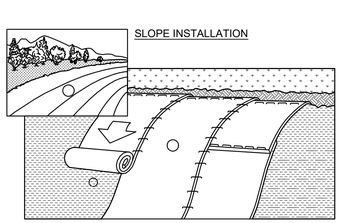
SILT FENCE TIE BACK
(WHEN ADDITIONAL SUPPORT REQUIRED)



TRENCH DETAIL

GENERAL NOTES
1. HORIZONTAL BRACE REQUIRED WITH 2"X4" WOODEN FRAME OR EQUIVALENT AT TOP OF POSTS.
2. TRENCH SHALL BE A MINIMUM OF 4" WIDE & 6" DEEP TO BURY AND ANCHOR THE GEOTEXTILE FABRIC. FOLD MATERIAL TO FIT TRENCH AND BACKFILL & COMPACT TRENCH WITH EXCAVATED SOIL.
3. WOOD POSTS SHALL BE A MINIMUM SIZE OF 1-1/32" X 1-1/32" OF OAK OR HICKORY.
4. SILT FENCE TO EXTEND ACROSS THE TOP OF THE PIPE.
5. CONSTRUCT SILT FENCE FROM A CONTINUOUS ROLL IF POSSIBLE BY CUTTING LENGTHS TO AVOID JOINTS. IF A JOINT IS NECESSARY USE ON THE FOLLOWING TWO METHODS: A) OVERLAP THE END POSTS AND TWIST OR ROTATE, AT LEAST 180 DEGREES. B) HOOK THE END OF EACH SILT FENCE LENGTHS.
6. SILT FENCE SHALL CONFORM TO WDNR CONSERVATION PRACTICE STANDARD #1056
7. THIS DRAWING IS BASED ON WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD DETAIL DRAWING 8 E 9-6

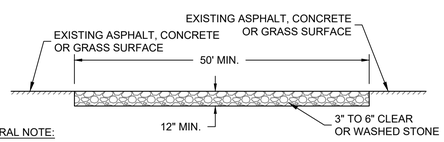
A SILT FENCE - WDNR TS-1056
SCALE:NTS



1. ECRMs (EROSION CONTROL REVEGATIVE MATS) SHALL BE INSTALLED AFTER ALL TOPSOILING, FERTILIZING, LIMING, AND SEEDING IS COMPLETE.
2. THE MAT SHALL BE IN FIRM AND INTIMATE CONTACT WITH THE SOIL. IT SHALL BE INSTALLED AND ANCHORED PER THE MANUFACTURER'S RECOMMENDATION.
3. TRMs (TURF-REINFORCEMENT MAT) SHALL BE INSTALLED INCONJUCTION WITH THE TOPSOILING OPERATION AND SHALL BE FOLLOWED BY ECRM INSTALLATION.
4. AT TIME OF INSTALLATION, DOCUMENT THE MANUFACTURER AND MAT TYPE BY RETENTION OF MATERIAL LABELS AND MANUFACTURER'S INSTALLATION INSTRUCTIONS. RETAIN THIS DOCUMENTATION UNTIL THE SITE HAS BEEN STABILIZED.

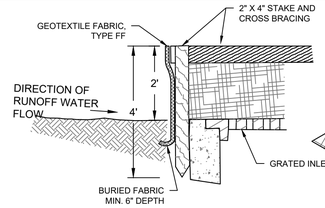
NOTES:
1. EROSION MATTING SHALL CONFORM TO WDNR CONSERVATION PRACTICE STANDARD #1052.
2. INSTALL PER MANUFACTURERS SPECIFICATIONS.

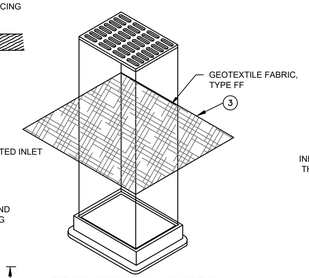
C EROSION MATTING - WDNR TS-1052
SCALE:NTS



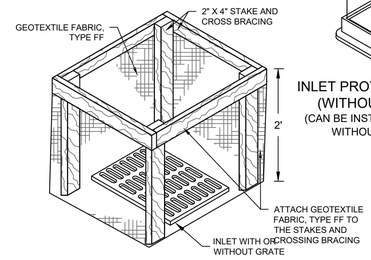
GENERAL NOTE:
1. STONE TRACKING PAD SHALL CONFORM TO WDNR CONSERVATION PRACTICE STANDARD #1057
2. AN APPROVED MANUFACTURED TRACKOUT CONTROL DEVICE SYSTEM CONFORMING TO WDNR TECHNICAL STANDARD #1057 MAY BE USED AS AN ALTERNATIVE TO A STONE TRACKING PAD

D CONSTRUCTION ENTRANCE - WDNR TS-1057
SCALE:NTS





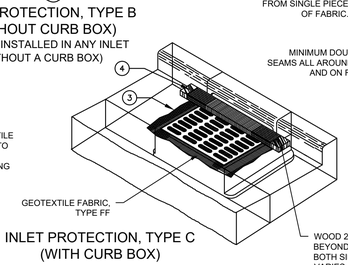
INLET PROTECTION, TYPE B
(WITHOUT CURB BOX)
(CAN BE INSTALLED IN ANY INLET WITHOUT A CURB BOX)



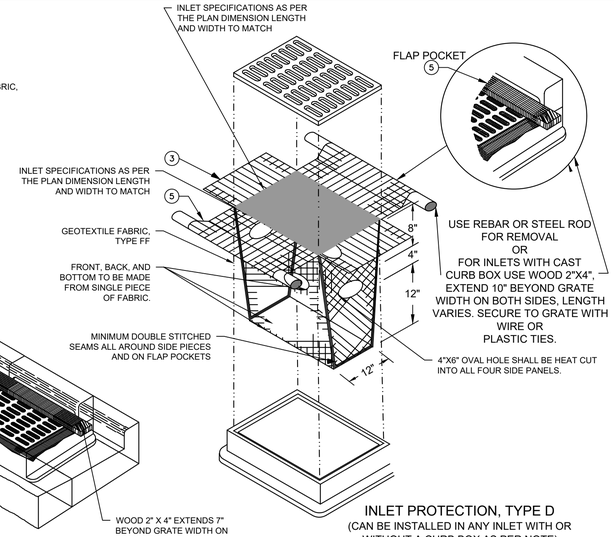
INLET PROTECTION, TYPE A

GENERAL NOTES:
1. MANUFACTURED ALTERNATIVES APPROVED AND LISTED ON THE DEPARTMENT'S EROSION CONTROL PRODUCT ACCEPTABILITY LIST MAY BE SUBSTITUTED.
2. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.
3. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL
4. FOR INLET PROTECTION, TYPE C (WITH CURB BOX), AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
5. FLAP POCKETS SHALL BE LARGE ENOUGH TO ACCEPT WOOD 2X4.

B INLET PROTECTION - WDNR TS-1060
SCALE:NTS



INLET PROTECTION, TYPE C
(WITH CURB BOX)



INLET PROTECTION, TYPE D
(CAN BE INSTALLED IN ANY INLET WITH OR WITHOUT A CURB BOX AS PER NOTE) 4

INSTALLATION NOTES
TYPE B & C
TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

TYPE D
DO NOT INSTALL INLET PROTECTION TYPE D IN INLETS SHALLOWER THAN 30", MEASURED FROM THE BOTTOM OF THE INLET TO THE TOP OF THE GRATE. TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE. THE INSTALLED BAG SHALL HAVE A MINIMUM SIDE CLEARANCE, BETWEEN THE INLET WALLS AND THE BAG, MEASURED AT THE BOTTOM OF THE OVERFLOW HOLES, OF 3". WHERE NECESSARY THE CONTRACTOR SHALL CINCH THE BAG, USING PLASTIC ZIP TIES, TO ACHIEVE THE 3" CLEARANCE. THE TIES SHALL BE PLACES AT A MAXIMUM OF 4" FROM THE BOTTOM OF THE BAG.

GENERAL NOTE
INLET PROTECTION SHALL CONFORM TO WDNR CONSERVATION PRACTICE STANDARD #1060

THIS DRAWING IS BASED ON WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD DETAIL DRAWING 8 E 10-2

CONSTRUCTION SEQUENCE FOR EROSION CONTROL INCLUDES:
START DATE: MAY 2024
STABILIZATION DATE: DECEMBER 2024

1. INSTALL STABILIZED CONSTRUCTION ENTRANCE.
2. INSTALL SILT FENCING AND INLET PROTECTION.
3. INITIATE STOCKPILING OF IMPORTED MATERIAL AS NECESSARY. PLACE SILT FENCE AROUND ANY STOCKPILE(S).
4. STRIP TOPSOIL FROM BIOFILTRATION BASIN LOCATION AND STOCKPILE. PLACE SILT FENCE AROUND ANY STOCKPILE(S).
5. CONSTRUCT STORM WATER BASIN AND INSTALL TEMPORARY OUTLET AND EMERGENCY OVERFLOW. BASIN IS TO BE USED AS A SEDIMENTATION BASIN DURING THE COURSE OF CONSTRUCTION.
6. STRIP TOPSOIL FROM REMAINDER OF SITE IN A PROGRESSIVE MANNER, AND STOCKPILE.
7. PERFORM ROUGH SITE GRADING. STABILIZE FINISHED AREAS AS THE WORK PROGRESSES. USE EROSION MATTING WHERE CALLED FOR ON THE PLANS. PER WDNR TECHNICAL STANDARD 1059: AREAS THAT RECEIVE TEMPORARY SEEDING SHALL HAVE A MINIMUM TOPSOIL DEPTH OF 2 INCHES. AREAS THAT RECEIVE PERMANENT SEEDING SHALL HAVE A MINIMAL TOPSOIL DEPTH OF 4 INCHES.
8. PREPARE BUILDING PAD AND BEGIN FOUNDATIONS WORK FOR BUILDING.
9. INSTALL UTILITIES. INSTALL ANY ADDITIONAL INLET PROTECTION ON NEW STORM SEWER.
10. PERFORM FINE GRADING
11. INSTALL CONCRETE WORK AND PAVEMENTS.
12. PLACE TOPSOIL AND LANDSCAPING.
13. STABILIZE AREAS REMAINING AREAS WITHIN 7 DAYS OF COMPLETION OF FINAL GRADING AND TOPSOILING.
14. REMOVE EXCESS SEDIMENT FROM STORMWATER BASINS AND RETURN BASINS TO THEIR DESIGN DIMENSIONS AND VOLUMES. FINALIZE BIOFILTRATION BASIN AFTER SITE IS FULLY STABILIZED.
15. REMOVE EROSION CONTROL MEASURES ONLY WHEN SITE IS FULLY STABILIZED.

EROSION CONTROL NOTES:

1. CONSTRUCTION SITE EROSION CONTROL AND SEDIMENTATION CONTROL SHALL COMPLY WITH THE REQUIREMENTS OF THE LOCAL MUNICIPALITY AND SHALL EMPLOY EROSION CONTROL METHODS AS SHOWN AND SPECIFIED IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS.
2. ALL EROSION CONTROL MEASURES SHALL BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND SHALL BE INSTALLED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON THE SITE.
3. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE CHECKED FOR STABILITY AND OPERATION AFTER A RAINFALL OF 0.5 INCHES OR MORE, BUT NO LESS THAN ONCE EVERY WEEK. MAINTENANCE OF ALL EROSION CONTROL STRUCTURES SHALL BE PROVIDED TO INSURE INTENDED PURPOSE IS ACCOMPLISHED. CONTRACTOR SHALL BE RESPONSIBLE FOR CLEANUP AND REMOVAL OF ALL SEDIMENT WHEN LEAVING PROPERTY. EROSION CONTROL MEASURES MUST BE IN WORKING CONDITION AT END OF EACH WORK DAY. DOCUMENT AND MAINTAIN RECORDS OF INSPECTIONS IN ACCORDANCE WITH WDNR NR216 REQUIREMENTS.
4. SILT FENCE SHALL BE INSTALLED IN THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS. SEDIMENT DEPOSITS SHALL BE REMOVED FROM BEHIND THE SILT FENCE WHEN DEPOSITS REACH A DEPTH OF 6 INCHES. THE SILT FENCE SHALL BE REPAIRED OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER.
5. FILTER FABRIC SHALL BE INSTALLED BENEATH INLET COVERS TO TRAP SEDIMENT PER INLET PROTECTION DETAIL IN THE LOCATIONS SHOWN ON THE CONSTRUCTION PLANS.
6. EROSION CONTROL MEASURES SHALL BE MAINTAINED ON A CONTINUING BASIS UNTIL SITE IS FULLY STABILIZED.
7. PERIODIC STREET SWEEPING SHALL BE COMPLETED TO MAINTAIN ADJACENT STREETS FREE OF DUST AND DIRT.
8. SILT FENCE SHALL BE INSTALLED IN HORSESHOE FASHION AROUND ANY TOPSOIL AND FILL STOCKPILES.
9. SITE DEWATERING. WATER PUMPED FROM THE SITE SHALL BE TREATED BY SEDIMENT BASINS OR OTHER APPROPRIATE MEASURES SPECIFIED IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS. WATER MAY NOT BE DISCHARGED IN A MANNER THAT CAUSES EROSION OF THE SITE, ADJACENT SITES, OR RECEIVING CHANNELS.
10. WASTE AND MATERIAL DISPOSAL. ALL WASTE AND UNUSED BUILDING MATERIALS (INCLUDING GARBAGE, DEBRIS, CLEANING WASTES, WASTEWATER, TOXIC MATERIALS, OR HAZARDOUS MATERIALS) SHALL BE PROPERLY DISPOSED AND NOT ALLOWED TO BE CARRIED OFF-SITE BY RUNOFF OR WIND.
11. TRACKING. EACH SITE SHALL HAVE GRAVELED ROADS, ACCESS DRIVES AND PARKING AREAS OF SUFFICIENT WIDTH AND LENGTH TO PREVENT SEDIMENT FROM BEING TRACKED ONTO PUBLIC OR PRIVATE ROADWAYS. ANY SEDIMENT REACHING A PUBLIC OR PRIVATE ROAD SHALL BE REMOVED BY STREET CLEANING, TO THE SATISFACTION OF THE THE CITY OF WAUWATOSA, BEFORE THE END OF EACH WORKDAY. FLUSHING MAY NOT BE USED UNLESS SEDIMENT WILL BE CONTROLLED BY A SEDIMENT BASIN OR PRACTICE SPECIFIED IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS. NOTIFY MUNICIPALITY OF ANY CHANGES IN STABILIZED CONSTRUCTION ENTRANCE LOCATION.
12. SEDIMENT CLEANUP. ALL OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF A STORM EVENT SHALL BE CLEANED UP BY THE END OF THE NEXT WORKDAY. ALL OTHER OFF-SITE SEDIMENT DEPOSITS OCCURRING AS A RESULT OF CONSTRUCTION ACTIVITIES SHALL BE CLEANED UP BY THE END OF THE WORKDAY.
13. ALL DISTURBED GROUND LEFT INACTIVE FOR SEVEN OR MORE DAYS SHALL BE STABILIZED BY TEMPORARY OR PERMANENT SEEDING, MULCHING, SODDING, COVERING WITH TARPS, OR EQUIVALENT PRACTICE FOUND IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARD. IF TEMPORARY SEEDING IS USED, A PERMANENT COVER SHALL ALSO BE REQUIRED AS PART OF THE FINAL SITE STABILIZATION. SEEDING OR SODDING SHALL BE REQUIRED AS PART OF THE FINAL SITE STABILIZATION.
14. SOIL OR DIRT STORAGE PILES SHALL BE LOCATED A MINIMUM OF TWENTY-FIVE FEET FROM ANY DOWNSLOPE ROAD, LAKE, STREAM, WETLAND, OR DRAINAGE CHANNEL. STRAW BALE OR FILTER FABRIC FENCES SHALL BE PLACED ON THE DOWN SLOPE SIDE OF THE PILES. IF REMAINING FOR MORE THAN THIRTY DAYS, PILES SHALL BE STABILIZED BY MULCHING, VEGETATIVE COVER, TARPS OR OTHER MEANS.
15. WHEN THE DISTURBED AREA HAS BEEN STABILIZED BY PERMANENT VEGETATION OR OTHER MEANS, TEMPORARY PRACTICES, SUCH AS FILTER FABRIC FENCES, STRAW BALES, SEDIMENT AND SEDIMENT TRAPS, FOUND IN THE WISCONSIN DEPARTMENT OF NATURAL RESOURCES TECHNICAL STANDARDS SHALL BE REMOVED.
16. NOTIFY THE LOCAL MUNICIPALITY HAVING JURISDICTION WITHIN TWO WORKING DAYS OF COMMENCING ANY LAND DEVELOPMENT OR LAND DISTURBING ACTIVITY.
17. OBTAIN PERMISSION FROM THE LOCAL MUNICIPALITY HAVING JURISDICTION PRIOR TO MODIFYING THE EROSION CONTROL PLAN.
18. REPAIR ANY SILTATION OR EROSION DAMAGE TO ADJOINING SURFACES AND DRAINAGE WAYS RESULTING FROM LAND DEVELOPMENT OR LAND DISTURBING ACTIVITIES.
19. KEEP A COPY OF THE EROSION CONTROL PLAN ON SITE.
20. CONTRACTOR SHALL, TO THE EXTENT POSSIBLE, MINIMIZE DISTURBANCE OF EXISTING VEGETATION DURING CONSTRUCTION.
21. CONTRACTOR SHALL, TO THE EXTENT POSSIBLE, MINIMIZE COMPACTION OF TOPSOIL AND PRESERVE TOPSOIL IN GREENSPACE AREAS.
22. WASH WATER FROM VEHICLES AND WHEEL WASHING SHALL BE CONTAINED AND TREATED PRIOR TO DISCHARGE.
23. CONTRACTOR SHALL MAINTAIN SPILL KITS ON-SITE.
24. PERMAMENT TURF SEEDING OF DISTURBED AREA MUST OCCUR PRIOR TO SEPTEMBER 15TH. IF ADEQUATE TIME IS NOT AVAILABLE TO APPLY PERMANENT SEEDING PRIOR TO SEPTEMBER 15TH, THEN DISTURBED AREAS SHALL BE TEMPORARILY SEEDED WITH AN ANNUAL RYE GRASS PER WDNR TECHNICAL STANDARD 1059, WHERE THE TEMPORARY SEEDING MUST OCCUR PRIOR TO OCTOBER 15TH.
25. IF TEMPORARY SEEDING IS NOT COMPLETED BY OCTOBER 15TH, APPLY SOIL STABILIZERS AND DORMANT SEED TO DISTURBED AREA PER WDNR TECHNICAL STANDARD 1050. INSPECT ANIONIC PAM APPLICATION AT A MINIMUM FREQUENCY OF EVERY TWO MONTHS AND REAPPLY AS NECESSARY

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

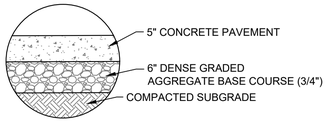
THE SIGMA GROUP
Single Source. Sound Solutions.

EROSION CONTROL DETAILS

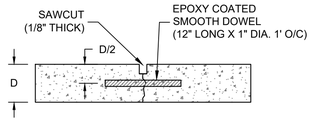
1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO:	21231
DRAWN BY:	JRG
CHECKED BY:	CTC
SCALE:	AS SHOWN

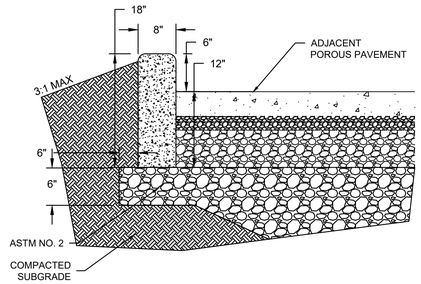
C400



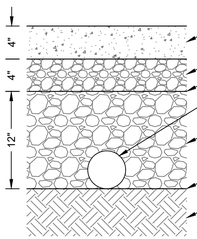
A CONCRETE SIDEWALK SECTION
SCALE:NTS



B CONCRETE JOINT - DOWEL
SCALE:NTS



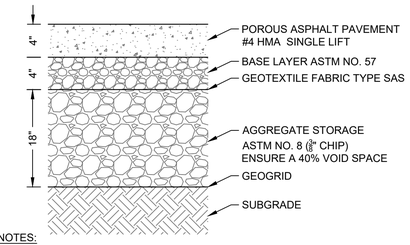
C CURB HEAD
SCALE:1" = 1'



NOTES:

1. PAVEMENT SURFACE PERCENT VOIDS SHOULD BE LESS THAN 25%.
2. JOINT STONE AND BEDDING COURSE SHALL CONSIST OF ASTM C-33, 8, 9, 89, OR 57 AGGREGATE.
3. AGGREGATE STORAGE RESERVOIR DEPTH SHALL BE A MINIMUM OF 12 INCHES. AGGREGATE STORAGE RESERVOIR SHALL USE AN OPEN GRADED BASE CONSISTING OF CRUSHED STONE OR CRUSHED GRAVEL WITH NO GREATER THAN 5% PASSING THE NO. 200 SIEVE.
4. UNDERDRAINS CAN BE LOCATED WITHIN OR BELOW THE AGGREGATE STORAGE RESERVOIR. UNDERDRAINS (OR EQUIVALENT) ARE REQUIRED IF THE AGGREGATE STORAGE RESERVOIR DRAIN DOWN TIME WILL EXCEED 72 HOURS. THE SLOPE OF THE SUBGRADE SHALL BE AS FLAT AS POSSIBLE BE NO GREATER THAN 2%.
5. POROUS PAVEMENT SHALL CONFORM TO THE WDNR TECHNICAL STANDARD # 1008

G INTERIOR POROUS PAVEMENT
SCALE:NTS



NOTES:

1. PAVEMENT SURFACE PERCENT VOIDS SHOULD BE LESS THAN 25%.
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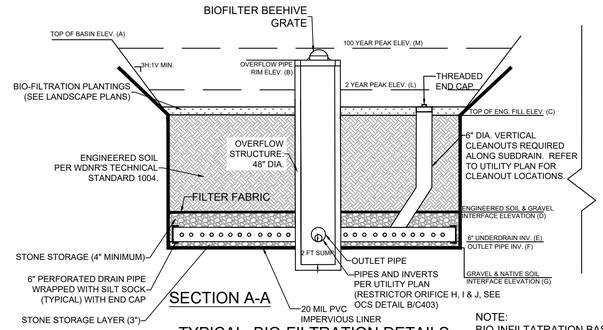
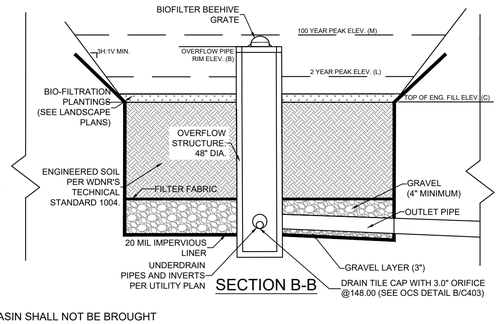
4. POROUS PAVEMENT SHALL CONFORM TO THE WDNR TECHNICAL STANDARD # 1008

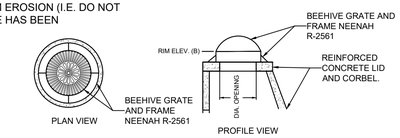
H EXTERIOR POROUS PAVEMENT
SCALE:NTS





TYPICAL BIO-FILTRATION DETAILS
(BIO-FILTRATION BASIN 1)

NOTE:
BIO-INFILTATRATION BASIN SHALL NOT BE BROUGHT ONLINE UNTIL AREA DRAINING TO THE BASIN HAS ACHIEVED 90% STABILIZATION FROM EROSION (I.E. DO NOT PLACE ENGINEERED SOIL UNTIL SITE HAS BEEN STABILIZED) .



BIOFILTRATION AREA - GRATE DETAIL
NOT TO SCALE

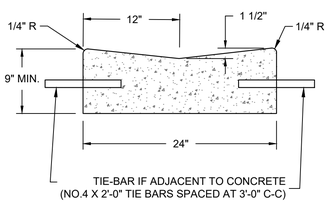
NOTE:

1. BIO-FILTRATION BASINS THAT HAVE MULTIPLE VERTICAL ORIFICES SHALL BE INSTALLED AT THE SAME ELEVATION AS IDENTIFIED IN THE TABLE.
2. MULTIPLE VERTICAL ORIFICES SHALL HAVE A MINIMUM OF 12 INCHES HORIZONTAL SEPARATION.

BIO-FILTRATION SUMMARY TABLE

	(A)	(B)	(C)	(D)	(E)		(F)	(G)	(H)	(I)	(J)	(K)	(L)	(M)
BIO-FILTRATION AREA	TOP OF POND	OVERFLOW RIM ELEVATION	TOP OF ENGINEERED FILL ELEVATION	ENGINEERED SOIL AND GRAVEL INTERFACE ELEVATION	6" DIAMETER UNDERDRAIN ELEVATION	OUTLET PIPE SIZE	OUTLET PIPE ELEVATION	GRAVEL AND NATIVE SOIL INTERFACE ELEVATION	VERTICAL ORIFICE DIAMETER (INCH)	VERTICAL ORIFICE ELEVATION	# OF VERTICAL ORIFICES	SPILLWAY CREST ELEVATION	2 YR WATER ELEVATION	100 YR WATER ELEVATION
BIO 1	152.50	151.85	150.50	149.00	148.00	12	148.00	148.00	3	148.00	1	-	150.10	151.98

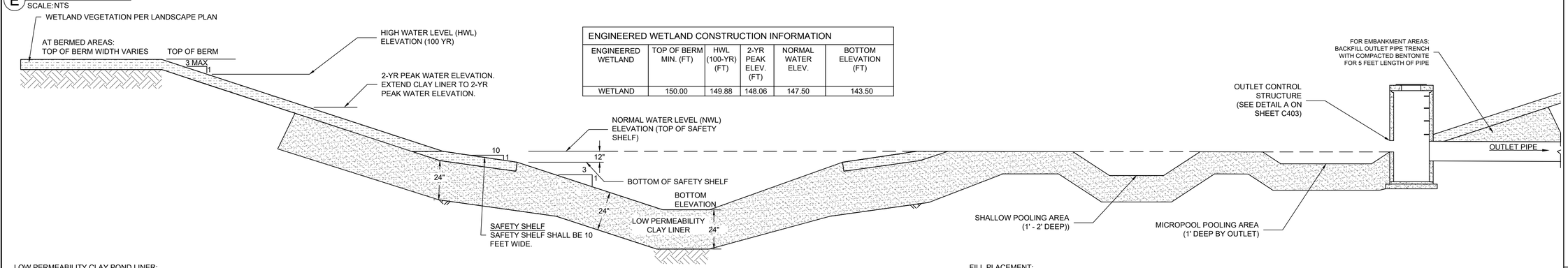
D BIOFILTRATION BASIN
SCALE:NTS



E 24 INCH CONCRETE GUTTER
SCALE:NTS

ENGINEERED WETLAND CONSTRUCTION INFORMATION

ENGINEERED WETLAND	TOP OF BERM MIN. (FT)	HWL (100-YR) (FT)	2-YR PEAK ELEV. (FT)	NORMAL WATER ELEV.	BOTTOM ELEVATION (FT)
WETLAND	150.00	149.88	148.06	147.50	143.50



LOW PERMEABILITY CLAY POND LINER:
MATERIAL FOR LOW PERMEABILITY CLAY POND LINER SHALL BE A NATURAL CLAY SOIL (CL MATERIAL) AS DEFINED BY THE UNIFIED SOIL CLASSIFICATION SYSTEM, FREE FROM ORGANIC OR OTHER DELETERIOUS MATERIAL. CLAY LINER SHALL BE A TYPE "B" LINER PER WDNR TECHNICAL STANDARD 1001 WHICH INCLUDES THE FOLLOWING CRITERIA: 50 PERCENT FINES (200 SIEVE) OR MORE, AN IN-PLACE HYDRAULIC CONDUCTIVITY OF 1X10E-6 CM/SEC OR LESS. AN AVERAGE LIQUID LIMIT VALUE OF 16 OR GREATER, WITH NO VALUE LESS THAN 14, AN AVERAGE PI OF 7 OR MORE WITH NO VALUES LESS THAN 5. IN-SITU CLAY (IF PRESENT) AT THE BASIN MAY BE USED TO SATISFY THE LINER REQUIREMENT PROVIDED IT MEETS THE WDNR TYPE B LINER REQUIREMENTS AND IS PRESENT IN-SITU AT A THICKNESS OF 3 OR MORE FEET. SUBMIT TEST DATA DEMONSTRATING ANY MATERIALS INTENDED FOR USE AS THE BASIN LINER MEET THE REQUIRED CRITERIA FOR A TYPE B LINER.

CLAY SOURCE SHALL BE APPROVED PRIOR TO INITIATING PLACEMENT OF THE CLAY MATERIAL. SUBMIT REPRESENTATIVE MOISTURE-DENSITY DATA FOR PROPOSED CLAY MATERIAL PRIOR TO START OF WORK. IF REQUESTED, FURNISH ENGINEER WITH REPRESENTATIVE CLAY MATERIAL SAMPLES FOR TESTING.

FIELD THICKNESS AND FIELD COMPACTION OF CLAY TO BE TESTED BY OWNER'S INDEPENDENT TESTING AGENCY.

LOW PERMEABILITY CLAY/POND LINER SHALL BE PLACED USING STANDARD COMPACTION TECHNIQUES, AS PER THE STATE OF WISCONSIN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, SECTION 207.3.6. PERCENT COMPACTION SHALL BE GREATER THAN 95% OF STANDARD PROCTOR. MATERIAL SHALL BE COMPACTED WITH MOISTURE CONTENT WET OF OPTIMUM DENSITY MOISTURE. MATERIAL SHOULD BE PLACED IN LAYERS GENERALLY NOT EXCEEDING 8 INCHES IN THICKNESS BEFORE COMPACTION.

CLEARING AND SUBGRADE PREPARATION:
ALL EXISTING TOPSOIL, ROOTMAT, AND ANY OTHER SOFT OR UNSUITABLE MATERIALS SHALL BE REMOVED FROM THE CLEARING AND STRIPPING LIMITS. PRIOR TO INITIATION OF FILL PLACEMENT, THE STRIPPED AREA SHALL BE OBSERVED BY AN EXPERIENCED GEOTECHNICAL ENGINEER OR HIS AUTHORIZED REPRESENTATIVE TO AID IN LOCATING UNSUITABLE AND/OR HIGHLY PLASTIC MATERIALS WHICH REQUIRE COMPLETE AND/OR PARTIAL REMOVAL. THE PREPARATION OF FILL SUBGRADES OF EMBANKMENTS SHALL BE OBSERVED ON A FULL-TIME BASIS BY AN EXPERIENCED GEOTECHNICAL ENGINEER OR HIS AUTHORIZED REPRESENTATIVE TO ENSURE THAT ALL UNSUITABLE MATERIALS HAVE BEEN COMPLETELY REMOVED.

FILL PLACEMENT:
FILL MATERIALS SHALL BE PLACED AND COMPACTED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL RECOMMENDATIONS.

THE FOOTPRINT OF THE EMBANKMENT AREAS SHALL BE WELL DEFINED, INCLUDING THE LIMITS OF THE FILL ZONES, AT THE TIME OF FILL PLACEMENT, WITH GRADE CONTROL MAINTAINED THROUGHOUT THE FILL PLACEMENT OPERATIONS.

FILL OPERATIONS SHALL BE OBSERVED ON A FULL-TIME BASIS BY A QUALIFIED SOIL TECHNICIAN, WHO SHALL PERFORM IN PLACE DENSITY TESTS TO DETERMINE IF MINIMUM COMPACTION REQUIREMENTS ARE BEING MET.

FILL MATERIALS SHALL NOT BE PLACED ON FROZEN SOILS. SIMILARLY, BORROW FILL MATERIALS SHALL NOT CONTAIN FROZEN MATERIALS AT THE TIME PLACEMENT. FROZEN SOILS, FROM BOTH SUBGRADE AND FILL, SHALL BE REMOVED PRIOR TO CONTINUATION OF FILL OPERATIONS.

AREAS RECEIVING FILL SHALL BE GRADED TO FACILITATE POSITIVE DRAINAGE OF ANY FREE WATER ASSOCIATED WITH PRECIPITATION AND SURFACE RUNOFF.

F ENGINEERED CONSTRUCTED WETLAND
SCALE:NTS

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

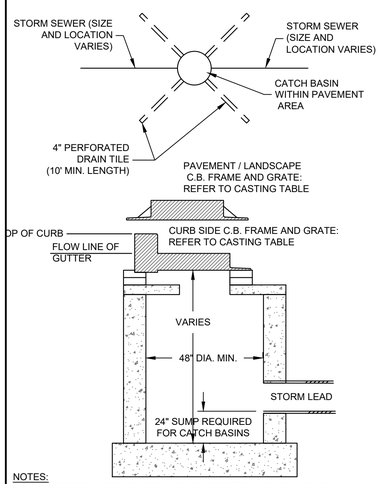
PAVING DETAILS

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: ----
FILE NO: 21231
DRAWN BY: JRG
CHECKED BY: CTC
SCALE: AS SHOWN

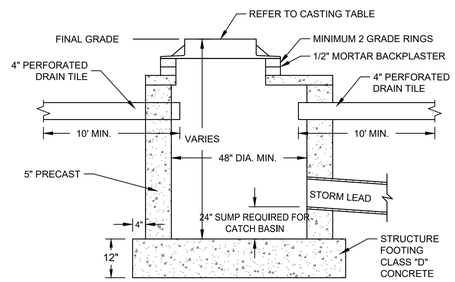
C401

CATCH BASIN WITHIN LOW POINT OF PAVEMENT AREA



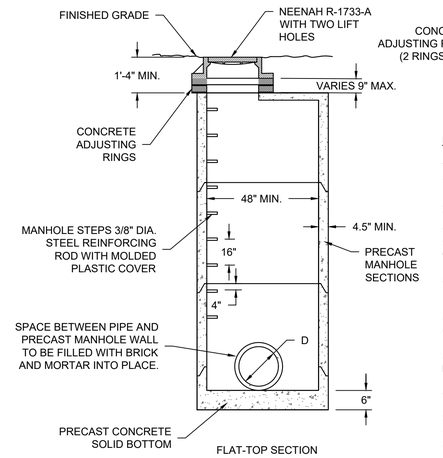
NOTES:
1. ADJUST FRAME TO GRADE WITH CONCRETE RINGS OF VARIABLE THICKNESS. MAXIMUM RING HEIGHT = 6". MINIMUM RING HEIGHT = 2". CONCRETE RINGS SHALL BE REINFORCED WITH ONE LINE OF STEEL CENTERED WITHIN THE RING.
2. CONCRETE AND REINFORCEMENT STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION C-478.
3. 3" MIN. BEDDING OF STONE UNDER BASE REQUIRED . ADDITIONAL BEDDING STOME MAY BE REQUIRED ON WET SUB-GRADE.
4. UNLESS NOTED ON THE PLANS CONTRACTOR IS RESPONSIBLE FOR ALL CATCH BASIN SIZING AND SHALL PROVIDE A SHOP DRAWING TO THE SIGMA GROUP, INC. BEFORE THEY ARE RELEASED FOR PRODUCTION.

A INLET AND CATCH BASIN
SCALE:NTS

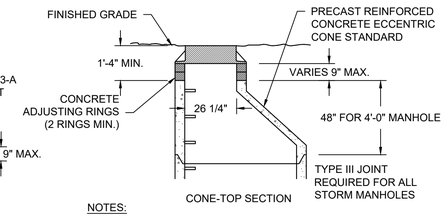


CATCH BASIN / INLET CASTING TABLE

	IF 18" CURB & GUTTER		IF 24" CURB & GUTTER		IF 30" CURB AND GUTTER	
	CASTING	GRATE	CASTING	GRATE	CASTING	GRATE
CURB INLET	NEENAH R-3067	A	NEENAH R-3067	A	NEENAH R-3228H	C
AREA INLET	NEENAH R-1661-B	R-2467-D				



B PRECAST STORM MANHOLE
SCALE:NTS



NOTES:

1. CONSTRUCT MANHOLE IN ACCORDANCE WITH FILE NO. 12 OF THE STATE STANDARD SPECIFICATIONS FOR SEWER AND WATER.

2. ADJUST FRAME TO GRADE WITH CONCRETE RINGS OF VARIABLE THICKNESS. MAXIMUM RING HEIGHT = 6". MINIMUM RING HEIGHT = 2". CONCRETE RINGS SHALL BE REINFORCED WITH ONE LINE OF STEEL CENTERED WITHIN THE RING. WHERE NECESSARY RINGS SHALL BE GROOVED TO RECEIVE STEP.

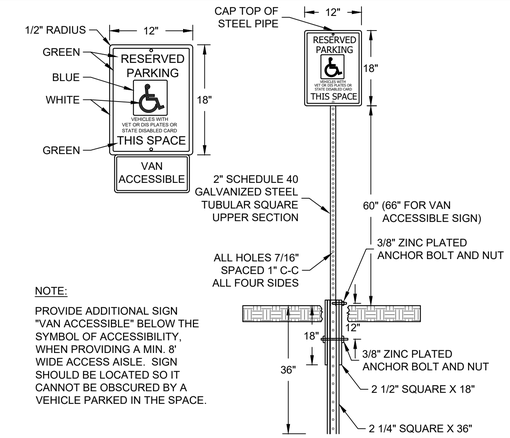
3. CONCRETE AND REINFORCEMENT STEEL SHALL CONFORM TO THE REQUIREMENTS OF ASTM DESIGNATION C-478.

4. JOINTS SHALL BE WATERTIGHT AND SHALL BE MADE USING MORTAR, OR FLEXIBLE RUBBER TYPE GASKETS FOR STORM MANHOLES.

5. AREA OF CIRCUMFERENTIAL STEEL = 0.12 SQ. INCH PER LINEAL FOOT MIN.

6. 3" OF BEDDING STONE UNDER BASE.

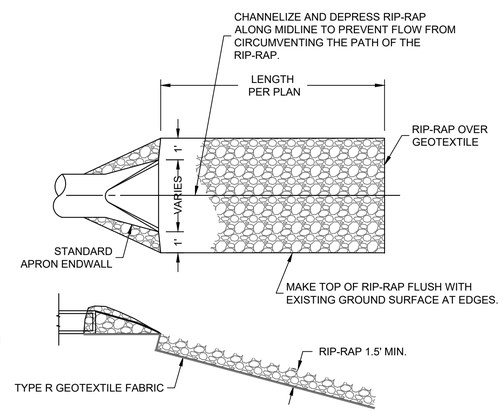
7. UNLESS NOTED ON THE PLANS CONTRACTOR IS RESPONSIBLE FOR ALL MANHOLE SIZING AND SHALL PROVIDE A SHOP DRAWING TO THE SIGMA GROUP, INC. BEFORE THEY ARE RELEASED FOR PRODUCTION.



NOTE:

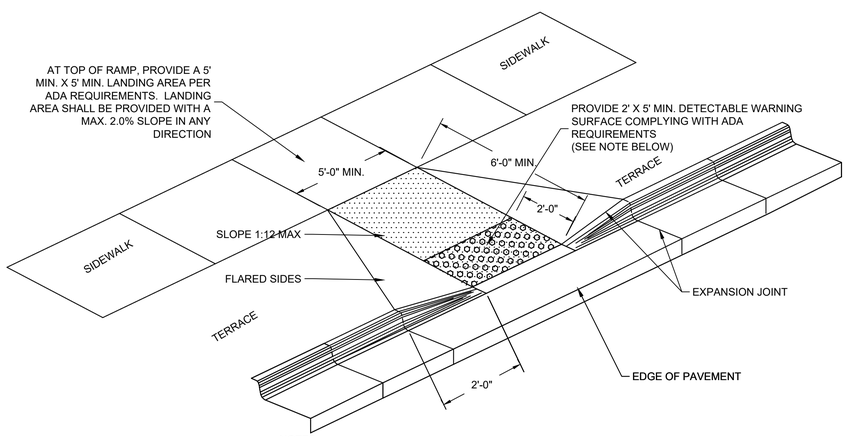
PROVIDE ADDITIONAL SIGN "VAN ACCESSIBLE" BELOW THE SYMBOL OF ACCESSIBILITY, WHEN PROVIDING A MIN. 8' WIDE ACCESS AISLE. SIGN SHOULD BE LOCATED SO IT CANNOT BE OBSCURED BY A VEHICLE PARKED IN THE SPACE.

F ADA SIGN AND POST
SCALE:NTS



NOTES:
1. INSTALL RIP-RAP WHERE SHOWN ON PLANS.
2. FOR PERMANENT POOL (WET) DETENTION BASINS: EXTEND RIP-RAP FROM OUTFALL TO AT LEAST 10 FEET BEYOND THE NORMAL WATER LEVEL.
3. RIP-RAP SHALL BE MEDIUM RIP-RAP PER WISDOT STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION
4. GEOTEXTILE FABRIC SHALL BE TYPE R PER WISDOT STANDARD SPECIFICATIONS PER HIGHWAY AND STRUCTURE CONSTRUCTION.

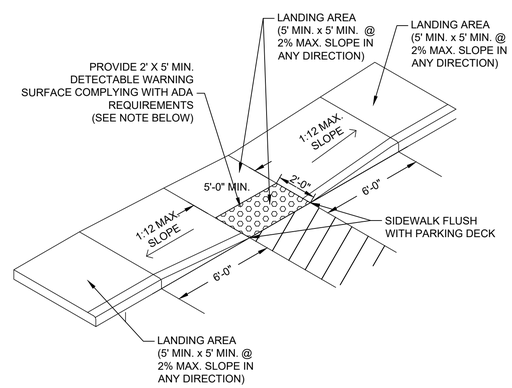
C RIP-RAP DISCHARGE APRON
SCALE:NTS



NOTES:

1. CONTRACTOR TO VERIFY ADA RAMP DETAIL WITH CITY AND ADJUST AS NEEDED.
2. PROVIDE DETECTABLE WARNING CONSISTING OF RAISED TRUNCATED DOMES OF SIZE, SPACING AND CONTRAST REQUIRED BY ADA GUIDELINES.
3. DETECTABLE WARNINGS SHALL BE PER CITY STANDARDS.

E ADA RAMP - TYPE 2
SCALE:NTS



NOTES:

1. CONTRACTOR TO VERIFY ADA RAMP DETAIL WITH CITY AND ADJUST AS NEEDED.
2. PROVIDE DETECTABLE WARNING CONSISTING OF RAISED TRUNCATED DOMES OF SIZE, SPACING AND CONTRAST REQUIRED BY ADA GUIDELINES.
3. DETECTABLE WARNINGS SHALL BE PER CITY STANDARDS.

D ADA RAMP - TYPE 1
SCALE:NTS

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

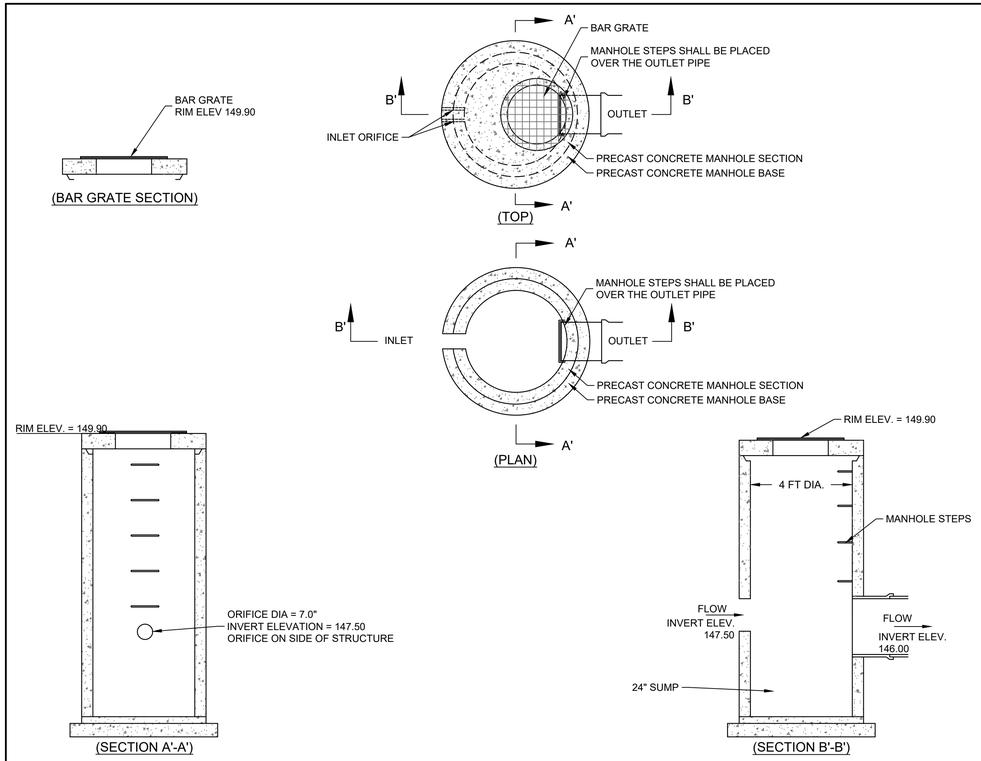
THE SIGMA GROUP
Single Source. Sound Solutions.

UTILITY DETAILS

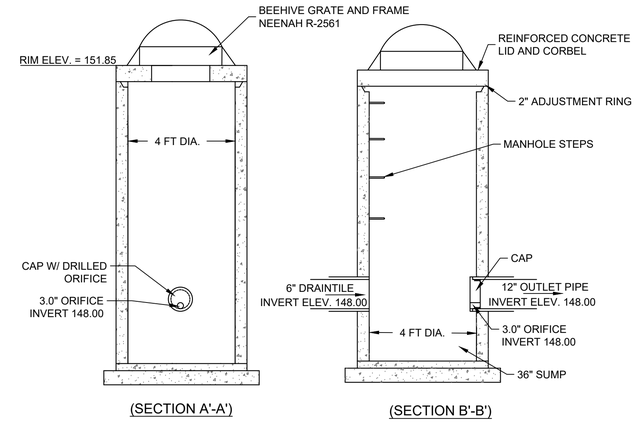
1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: ----
FILE NO: 21231
DRAWN BY: JRG
CHECKED BY: CTC
SCALE: AS SHOWN

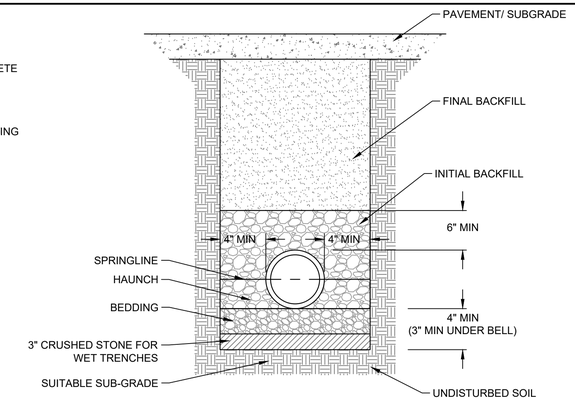
C402



A OUTLET CONTROL - WETLAND
SCALE:NTS



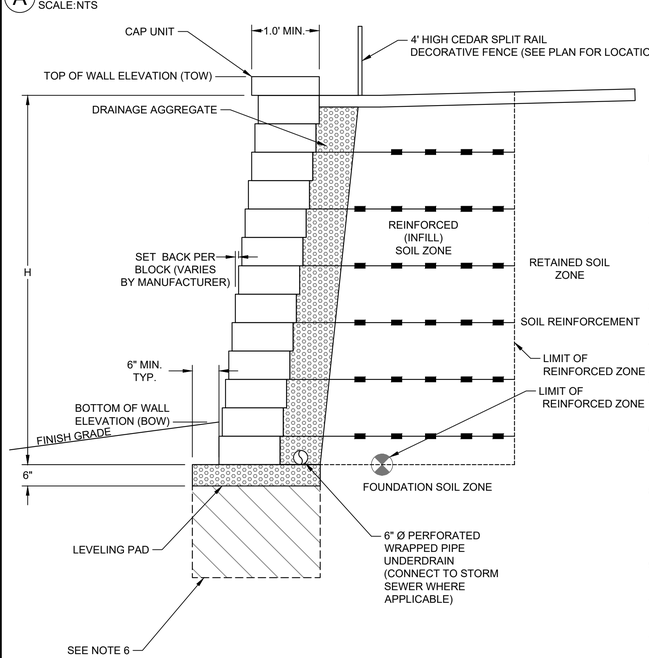
B OUTLET CONTROL - BIOFILTRATION
SCALE:NTS



NOTES:

1. INSTALL ALL PIPE IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND STANDARD SPECIFICATIONS FOR SEWER AND WATER IN WISCONSIN, LATEST EDITION.
2. **FOUNDATION:** TRENCH BOTTOMS WITH UNSTABLE OR UNYIELDING MATERIAL SHALL BE EXCAVATED TO A DEPTH DIRECTED BY THE GEOTECHNICAL ENGINEER AND REPLACED WITH SUITABLE MATERIAL. FOR UNSTABLE MATERIALS, GEOTEXTILE MAY BE USED TO STABILIZE THE TRENCH BOTTOM, IF DIRECTED BY THE GEOTECHNICAL ENGINEER.
3. **BEDDING:** APPROPRIATE BEDDING IS REQUIRED TO PROVIDE UNIFORM SUPPORT FOR THE PIPE AND TO SUSTAIN GRADE.
4. **HAUNCHING:** ADEQUATE HAUNCH SUPPORT IS CRITICAL TO THE INSTALLED PERFORMANCE OF BURIED PIPE. THE HAUNCH AREA ENCOMPASSES THE BEDDING ZONE UP TO THE SPRINGLINE OF THE PIPE. IF COMPACTION IS NECESSARY, AVOID DISTURBING PIPE ALIGNMENT DURING COMPACTION OPERATIONS. ALWAYS WORK ENOUGH MATERIAL UNDER THE HAUNCH TO PROVIDE ADEQUATE COMPACTION.
5. **BACKFILLING:** IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

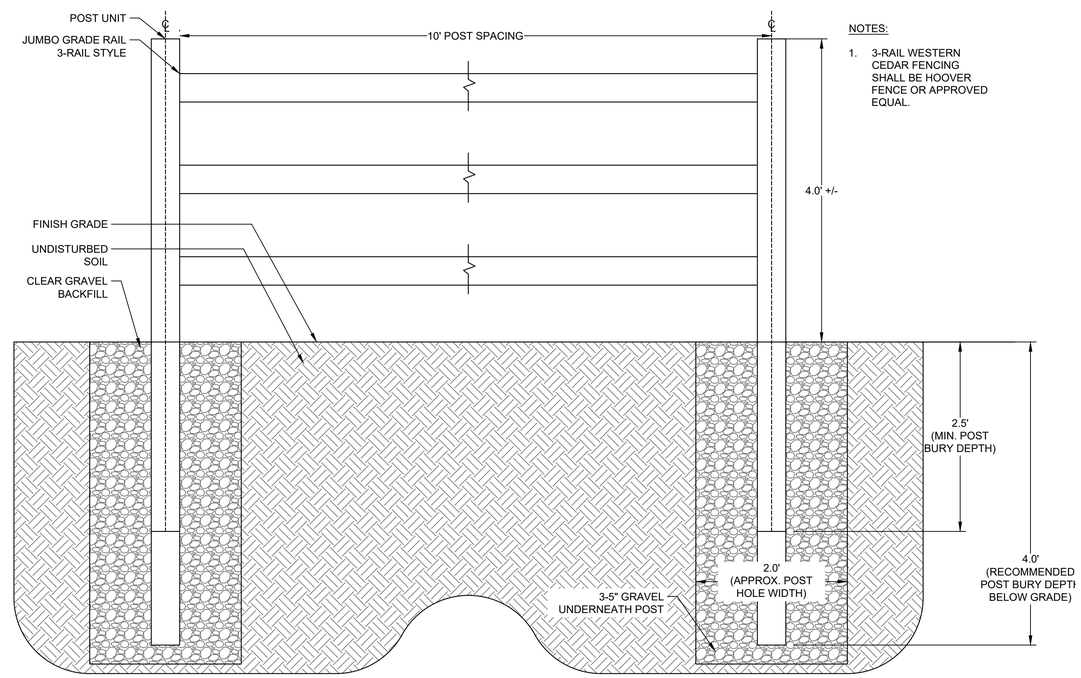
C UTILITY TRENCH BEDDING & BACKFILL
SCALE:NTS



NOTES:

1. RETAINING WALL SYSTEM SHALL BE KEYSTONE, ROCKWOOD, OR APPROVED EQUAL.
2. TYPICAL SECTION IS FOR CONCEPTUAL DESIGN ONLY.THE CONTRACTOR SHALL PROVIDE COMPLETE DESIGN, PLANS, DETAILS, SPECIFICATIONS, AND STAMPED AND SEALED SHOP DRAWINGS AND STABILITY CALCULATIONS FOR THE RETAINING WALLS TO THE ENGINEER. THE RETAINING WALL MANUFACTURER SHALL PROVIDE TECHNICAL ASSISTANCE TO THE CONTRACTOR DURING CONSTRUCTION. THE COST OF THESE ITEMS SHALL BE INCLUDED.
3. STAMPED AND SEALED RETAINING WALL DESIGN, PLANS, DETAILS AND CALCULATIONS SHALL BE PROVIDED TO THE CITY.
4. GEOGRID REINFORCEMENT SPACING AND LENGTH PER MANUFACTURER'S ENGINEER RECOMMENDATIONS.
5. GEOTECHNICAL ENGINEER MAY REQUIRE THAT ADDITIONAL DRAIN PIPING IS NEEDED DEPENDENT UPON SOILS ENCOUNTERED DURING WALL CONSTRUCTION.
6. WALL STRUCTURE TO BE VERIFIED WITH GEOTECHNICAL ENGINEER.
7. ANY SPECIAL TREATMENT SOILS BELOW LEVELING PAD WHICH ARE SUBJECT TO FROST HEAVE SHALL BE DESIGNED BY STRUCTURAL ENGINEER OF RECORD.
8. PLANS, ELEVATIONS, AND DETAILS SHOWN ON THESE DRAWINGS ARE INTENDED TO INDICATE WALL LOCATIONS, LENGTHS, HEIGHTS, AND DETAILS COMMON TO THE WALL SYSTEM SELECTED. THE CONTRACTOR SHALL VERIFY THAT THE WALL SYSTEM SELECTED WILL CONFORM TO THE REQUIRED ALIGNMENTS AND DETAILS.
9. THE RETAINING WALL IS TO BE DESIGNED USING THE ELEVATIONS GIVEN ON THIS SHEET AND GRADING PLAN SHEETS.
10. STYLE AND COLOR OF THE MODULAR BLOCK SHALL BE SELECTED BY THE OWNER AND ARCHITECT
11. PROTECTIVE RAILINGS/GUARD RAILS REQUIRED FOR ALL RETAINING WALLS ADJACENT TO PEDESTRIAN PATHS TO BE VERIFIED BY WALL DESIGNER, ARCHITECT, AND LOCAL JURISDICTION.

D MODULAR BLOCK MSE WALL (WITH FENCE)
SCALE:NTS



NOTES:

1. 3-RAIL WESTERN CEDAR FENCING SHALL BE HOOVER FENCE OR APPROVED EQUAL.

E 3-RAIL WESTERN CEDAR FENCE
SCALE:NTS

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

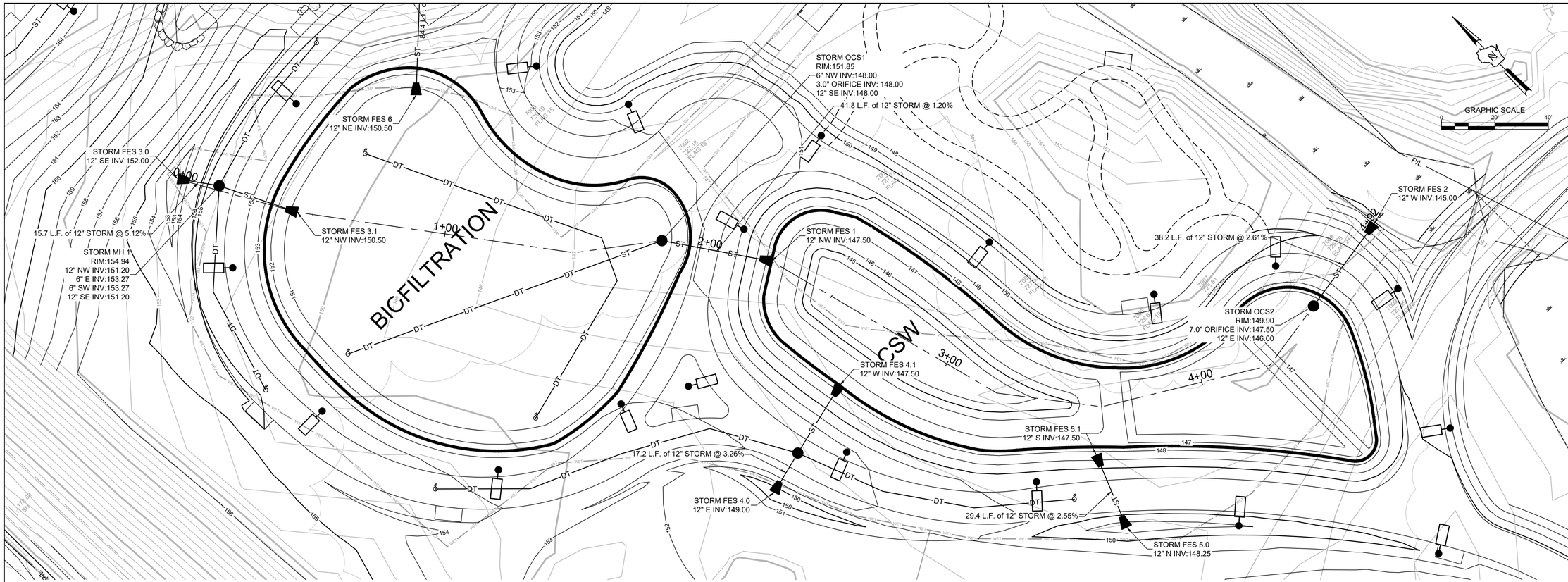
THE SIGMA GROUP
Single Source. Sound Solutions.

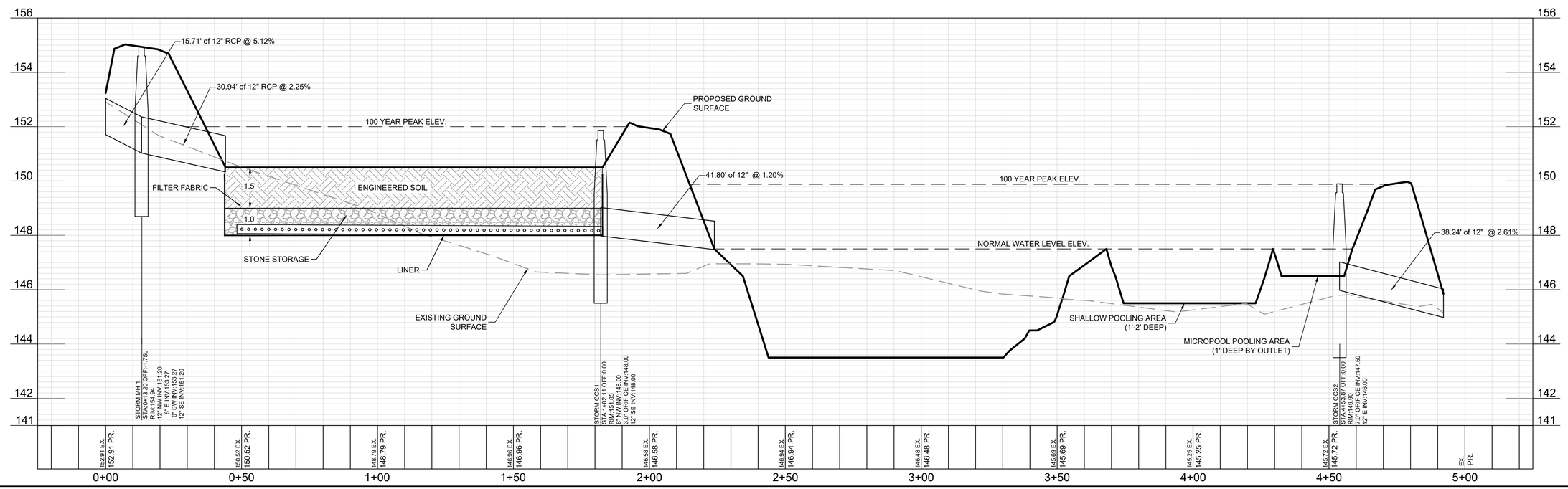
SITE DETAILS

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO:	21231
DRAWN BY:	JRG
CHECKED BY:	CTC
SCALE:	AS SHOWN

C403





DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
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GI CROSS SECTION

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO:	21231
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SCALE:	AS SHOWN

C404

GENERAL:

1. EXISTING UTILITIES ARE SHOWN FOR INFORMATIONAL PURPOSES ONLY, AND NO RESPONSIBILITY IS ASSUMED BY THE OWNER OR ENGINEER FOR THEIR ACCURACY OR COMPLETENESS.
2. CONTRACTOR IS RESPONSIBLE FOR MAKING THEIR OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UNDERGROUND UTILITIES AS MAY BE NECESSARY TO AVOID DAMAGE THERETO. CONTRACTOR SHALL HAVE SITE MARKED BY DIGGER'S HOTLINE AND SHALL HAVE PRIVATE UTILITIES MARKED BY A PRIVATE UTILITY LOCATOR PRIOR TO CONSTRUCTION. CONTRACTOR SHALL VERIFY ALL ELEVATIONS, LOCATIONS, AND SIZES OF EXISTING UTILITIES AND SHALL CHECK ALL UTILITY CROSSINGS AND PROPOSED CONNECTIONS FOR CONFLICTS/DISCREPANCIES PRIOR TO INITIATING CONSTRUCTION. REPORT ANY CONFLICTS OR DISCREPANCIES TO THE ENGINEER SO REDESIGN MAY OCCUR IF NEEDED.
3. LENGTHS OF ALL UTILITIES ARE TO CENTER OF STRUCTURES OR FITTINGS AND MAY VARY SLIGHTLY FROM PLANS. LENGTHS SHALL BE VERIFIED IN THE FIELD BY THE CONTRACTOR.

SITE CLEARING:

1. EXCEPT FOR STRIPPED TOPSOIL OR OTHER MATERIALS INDICATED TO REMAIN ON OWNER'S PROPERTY, CLEARED MATERIALS SHALL BECOME CONTRACTOR'S PROPERTY AND SHALL BE REMOVED FROM PROJECT SITE.
2. MINIMIZE INTERFERENCE WITH ADJOINING ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES DURING SITE-CLEARING OPERATIONS.
3. SALVABLE IMPROVEMENTS: CAREFULLY REMOVE ITEMS INDICATED TO BE SALVAGED AND STORE ON OWNER'S PREMISES WHERE INDICATED.
4. UTILITY LOCATOR SERVICE: NOTIFY UTILITY LOCATOR SERVICE FOR AREA WHERE PROJECT IS LOCATED BEFORE SITE CLEARING.
5. DO NOT COMMENCE SITE CLEARING OPERATIONS UNTIL TEMPORARY EROSION AND SEDIMENTATION CONTROL MEASURES ARE IN PLACE.
6. PROTECT AND MAINTAIN BENCHMARKS AND SURVEY CONTROL POINTS FROM DISTURBANCE DURING CONSTRUCTION.
7. LOCATE AND CLEARLY FLAG TREES AND VEGETATION TO REMAIN OR TO BE RELOCATED.
8. PROTECT EXISTING SITE IMPROVEMENTS TO REMAIN FROM DAMAGE DURING CONSTRUCTION; RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO OWNER.
9. LOCATE, IDENTIFY, DISCONNECT, AND SEAL OR CAP OFF UTILITIES INDICATED TO BE REMOVED; ARRANGE WITH UTILITY COMPANIES TO SHUT OFF INDICATED UTILITIES.
10. EXISTING UTILITIES: DO NOT INTERRUPT UTILITIES SERVING FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED BY THE OWNER AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY UTILITY SERVICES.
11. FILL DEPRESSIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SATISFACTORY SOIL MATERIAL UNLESS FURTHER EXCAVATION OR EARTHWORK IS INDICATED; PLACE FILL MATERIAL IN HORIZONTAL LAYERS NOT EXCEEDING A LOOSE DEPTH OF 8 INCHES, AND COMPACT EACH LAYER TO A DENSITY EQUAL TO ADJACENT ORIGINAL GROUND.
12. REMOVE SOD AND GRASS BEFORE STRIPPING TOPSOIL.
13. STRIP TOPSOIL TO WHATEVER DEPTHS ARE ENCOUNTERED IN A MANNER TO PREVENT INTERMINGLING WITH UNDERLYING SUBSOIL OR OTHER WASTE MATERIALS.
14. STOCKPILE TOPSOIL MATERIALS AWAY FROM EDGE OF EXCAVATIONS WITHOUT INTERMIXING WITH SUBSOIL. GRADE AND SHAPE STOCKPILES TO DRAIN SURFACE WATER. COVER TO PREVENT WINDBLOWN DUST.
15. REMOVE EXISTING ABOVE- AND BELOW-GRADE IMPROVEMENTS AS INDICATED AND AS NECESSARY TO FACILITATE NEW CONSTRUCTION.
16. SAWCUT ALL PAVEMENTS FULL DEPTH PRIOR TO REMOVAL; SAWCUTS SHALL BE IN STRAIGHT LINES PERPENDICULAR AND/OR PARALLEL TO EXISTING PAVEMENT JOINTS AND PAVEMENT EDGES.
17. REMOVE SURPLUS SOIL MATERIAL, UNSUITABLE TOPSOIL, OBSTRUCTIONS, DEMOLISHED MATERIALS, AND WASTE MATERIALS INCLUDING TRASH AND DEBRIS, AND LEGALLY DISPOSE OF THEM OFF OWNER'S PROPERTY.
18. SEPARATE RECYCLABLE MATERIALS PRODUCED DURING SITE CLEARING FROM OTHER NONRECYCLABLE MATERIALS. STORE OR STOCKPILE WITHOUT INTERMIXING WITH OTHER MATERIALS AND TRANSPORT THEM TO RECYCLING FACILITIES.

SITE WATER SERVICE:

1. COMPLY WITH STANDARDS OF STATE PLUMBING CODE (SPS CH. 382, 384), LOCAL WATER UTILITY REQUIREMENTS AND STANDARDS OF AUTHORITIES HAVING JURISDICTION FOR FIRE-SUPPRESSION AND WATER SERVICE PIPING INCLUDING MATERIALS, FITTINGS, APPURTENANCES, INSTALLATION, TESTING, SERVICE TAPS, ETC. IN CASE OF CONFLICT BETWEEN THESE SPECIFICATIONS AND STATE PLUMBING CODE OR LOCAL JURISDICTIONAL AUTHORITY, STATE PLUMBING CODE AND LOCAL JURISDICTIONAL AUTHORITY REQUIREMENTS GOVERN.
2. DO NOT INTERRUPT SERVICE TO FACILITIES OCCUPIED BY OWNER OR OTHERS UNLESS PERMITTED BY OWNERS OF SUCH FACILITIES AND THEN ONLY AFTER ARRANGING TO PROVIDE TEMPORARY WATER-DISTRIBUTION SERVICE.
3. WATER SERVICE PIPING MAY BE EITHER DUCTILE IRON WATER PIPE OR PVC WATER PIPE AS ALLOWED BY THE LOCAL WATER UTILITY.
4. DUCTILE IRON WATER PIPE CONFORMING TO THE REQUIREMENTS OF THE AMERICAN NATIONAL STANDARD FOR DUCTILE IRON PIPE, CENTRIFUGALLY CAST, AWWA C151/A21.51 - LATEST REVISION AND REQUIREMENTS OF CHAPTER 8.18.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
   a. CLASS 52
   b. CEMENT MORTAR LINING AND INTERNAL AND EXTERNAL BITUMINOUS COATS IN ACCORDANCE WITH SECTION 51.8 OF AWWA C151.
   c. PUSH-ON GASKET PIPE
   d. PLAIN RUBBER GASKETS
   e. BONDING STRAPS TO PROVIDE ELECTRICAL CONDUCTIVITY WITHOUT FIELD TESTING
5. JOINTS FOR DUCTILE IRON PIPE: JOINTS SHALL BE RUBBER GASKET JOINTS; CONFORM TO THE REQUIREMENTS OF AMERICAN NATIONAL STANDARD FOR RUBBER GASKET JOINTS FOR DUCTILE IRON PRESSURE PIPE AND FITTINGS (ANSI/AWWA C111/A21.11, LATEST EDITION)
6. FITTINGS FOR DUCTILE IRON PIPE: CONFORM TO THE REQUIREMENTS OF AMERICAN NATIONAL STANDARD FOR DUCTILE IRON AND GRAY IRON FITTINGS, 3" THROUGH 48" FOR WATER ANSI/AWWA C110/A21.10, LATEST EDITION); CLASS 250 MECHANICAL JOINT PIPE FITTINGS; CEMENT LINED; ALL BELLS; ENTIRE FITTING TARRED; CONDUCTIVE MECHANICAL JOINT (NO LEAD) RUBBER GASKETS, FLANGES, AND BOLTS.
7. PVC AWWA PIPE: AWWA C900, CLASS 235 WITH BELL END WITH GASKET AND WITH SPIGOT END AND MEETING REQUIREMENTS OF CHAPTER 8.20.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. FITTINGS SHALL BE IN ACCORDANCE WITH CHAPTER 8.22.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. MECHANICAL -JOINT, DUCTILE IRON FITTINGS: AWWA C153, DUCTILE-IRON COMPACT PATTERN. GLANDS, GASKETS AND BOLTS: AWWA C111, DUCTILE IRON GLANDS, RUBBER GASKETS AND STEEL BOLTS.
8. GATE VALVES: CONFORM TO AWWA C-500 AND STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN SUITABLE FOR DIRECT BURY.
9. VALVE BOXES: CAST IRON CONFORMING TO ASTM DESIGNATION A-48, CLASS 20 AND STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
10. FIRE HYDRANTS: TO MEET LOCAL STANDARDS.
11. WATER MAIN CONNECTION: TAP WATER MAIN WITH SIZE AND LOCATION INDICATED ON PLAN IN ACCORDANCE WITH LOCAL WATER UTILITY REQUIREMENTS. COORDINATE CONNECTION WITH LOCAL WATER UTILITY. ALL JOINTS HALL BE RESTRAINED FROM CONNECTION OF WATER MAIN TO BUILDING WALL. SUBMIT JOINT RESTRAINT DETAILS FOR ALL JOINT TYPES INCLUDING PUSH-ON AND MECHANICAL CONNECTIONS. INSTALL MEGA-LUG OR APPROVED EQUAL TIGHT TO WALL FOR RESTRAINT FOR ALL BUILDING WALL PENETRATIONS AS APPROVED BY LOCAL PLUMBING INSPECTOR AND WATER UTILITY. INSTALL THRUST BLOCKING AND MEGA-LUG AT BEND BELOW FLOOR FOR ALL FLOOR PENETRATIONS
12. GENERAL WATER PIPE INSTALLATION: IN ACCORDANCE WITH CHAPTER 4.3.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
13. INSTALL DUCTILE-IRON, WATER-SERVICE PIPING ACCORDING TO AWWA C600 AND CHAPTER 4.4.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.

SITE WATER SERVICE CONT.:

14. ALL DUCTILE IRON PIPE SHALL BE ENCASED IN POLYETHYLENE PER AWWA C105, LATEST EDITION AND IN ACCORDANCE WITH CHAPTER 4.4.4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. ALL JOINTS AND FITTINGS SHALL HAVE POLYETHYLENE ENCASEMENT INSTALLED PER MANUFACTURER'S REQUIREMENTS AND PROCEDURES.
15. INSTALL PVC AWWA PIPE ACCORDING TO ASTM F645 AND AWWA M23 AND CHAPTER 4.6.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
16. INSTALL JOINT RESTRAINT AND CONCRETE THRUST BLOCKS AT ALL OFFSET FITTINGS (TEES, BENDS, DEAD ENDS, VALVES, REDUCERS) USING MEGA-LUG OR APPROVED EQUAL. CONCRETE THRUST BLOCKS SHALL BE INSTALLED PER FILE NO'S:44,45,46 FROM THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN. SEE DETAIL FOR MINIMUM LENGTH OF RESTRAINED JOINT REQUIRED. SUBMIT JOINT RESTRAINT DETAILS FOR ALL JOINT TYPES INCLUDING PUSH-ON AND MECHANICAL CONNECTIONS.INSTALL WATER SERVICE PIPING SUCH THAT THERE IS A MINIMUM OF 6' OF COVER OVER THE TOP OF THE WATER SERVICE PIPING.
17. BEDDING AND COVER FOR WATER SERVICE PIPING SHALL BE IN ACCORDANCE WITH SECTION 4.3.3 AND FILE NO. 36 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. TRENCH BACKFILL SHALL BE GRANULAR BACKFILL IN ACCORDANCE WITH SECTION 8.43.4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION ON-SITE.
18. INSTALL TRACER WIRE FOR NON-METALLIC WATER SERVICES IN ACCORDANCE WITH SPS SECTION 382.40(8)(K). TRACER WIRE INSULATION COLOR SHALL BE BLUE FOR POTABLE WATER SERVICE PIPING.
19. DUCTILE-IRON PIPING, RUBBER GASKETED JOINTS IN ACCORDANCE WITH SECTION 4.4.2 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
20. PVC PIPING GASKETED JOINTS: USING JOINING MATERIALS ACCORDING TO AWWA C900. CONSTRUCT JOINTS WITH ELASTOMERIC SEALS AND LUBRICANTS ACCORDING TO ASTM D2774 OR ASTM D3139 AND PIPE MANUFACTURER'S WRITTEN INSTRUCTIONS.
21. CONDUCT HYDROSTATIC TESTS IN ACCORDANCE WITH CHAPTER 4.15.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
22. CLEAN AND DISINFECT WATER SERVICE PIPING IN ACCORDANCE WITH SPS CHAPTER 82.40(8)(I) AND AWWA C651.

SANITARY SEWERAGE:

1. ALL PRIVATE SANITARY SEWER WORK SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES (DSPS) PLUMBING CODE - CHAPTERS SPS 382 AND SPS 384 AND LOCAL MUNICIPAL REQUIREMENTS.
2. ALL PUBLIC SANITARY SEWER WORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION (STANDARD SPECIFICATIONS) AND LOCAL MUNICIPAL REQUIREMENTS.
3. PVC SEWER PIPE AND FITTINGS: ASTM D 3034, SDR 35, WITH BELL-AND-SPIGOT ENDS WITH RUBBER GASKETED JOINTS IN ACCORDANCE WITH CHAPTER 8.10.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. JOINTS SHALL CONFORM TO ASTM D-3212.
4. MANHOLES: STANDARD PRECAST REINFORCED CONCRETE MANHOLES CONFORMING TO ASTM C478, SECTION 8.39.0 OF THE STANDARD SPECIFICATIONS AND CONFORMING TO FILE NOS. 12, 13 AND 15 OF THE STANDARD SPECIFICATIONS. DIAMETER AND DEPTH AS INDICATED ON PLANS. MANHOLE SIZES TO BE VERIFIED BY CONTRACTOR AND SHOP DRAWINGS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING STRUCTURES.
5. MANHOLES DEEPER THAN FOUR FEET SHALL BE PROVIDED WITH MANHOLE STEPS CONFORMING TO SECTION 8.40.0 OF THE STANDARD SPECIFICATIONS.
6. SEWERS SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 3.2.0 OF THE STANDARD SPECIFICATIONS. INSTALL PROPER SIZE INCREASERS, REDUCERS AND COUPLINGS WHERE DIFFERENT SIZES OR MATERIALS OF PIPES AND FITTINGS ARE CONNECTED. INSTALL TRACER PIPE OVER NON-METALLIC PIPING IN ACCORANCE WITH SPS SECTION 382.30(11)(H) AND 382.36(7)(D).
7. PIPE JOINT CONSTRUCTION: FOLLOW PIPING MANUFACTURER'S RECOMMENDATIONS; JOIN PVC SEWER PIPE ACCORDING TO ASTM D2321 AND ASTM D 3212 FOR ELASTOMERIC GASKET JOINTS. JOIN DISSIMILAR PIPE MATERIALS WITH NONPRESSURE-TYPE, FLEXIBLE COUPLINGS
7. PROVIDE AND INSTALL CLEANOUTS IN ACCORDANCE WITH SPS CHAPTER 382.35. INSTALL CLEANOUTS AND RISER EXTENSIONS FORM SEWER PIPES TO PROPOSED GRADE. INSTALL PIPING SO CLEANOUTS OPEN IN DIRECTION OF FLOW IN SEWER PIPE. USE LIGHT DUTY, TOP LOADING CLASSIFICATION CLEANOUTS IN EARTH OR UNPAVED FOOT TRAFFIC AREAS; USE MEDIUM DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN PAVED FOOT TRAFFIC AREAS; USE HEAVY DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN VEHICULAR TRAFFIC AREAS. SET CLEANOUT FRAMES AND COVERS IN PAVEMENT AREAS FLUSH WITH PAVEMENT SURFACE.
8. CLASS B COMPACTED TRENCH SECTION (FILE NO. NO. 4 OF STANDARD SPECIFICATIONS) SHALL BE UTILIZED. BEDDING AND COVER MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 8.43.0 OF THE STANDARD SPECIFICATIONS.
9. TRENCH BACKFILL MATERIAL SHALL BE GRANULAR BACKFILL IN ACCORDANCE WITH SECTION 8.43.4 OF THE STANDARD SPECIFICATIONS BENEATH AND WITHIN FIVE FEET OF PAVEMENT AREAS; COMPACTED SPOIL BACKFILL IN ACCORDANCE WITH SECTION 8.43.5 OF THE STANDARD SPECIFICATIONS MAY BE USED BENEATH LANDSCAPE AREAS.
10. MANHOLE INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 3.5.0 OF THE STANDARD SPECIFICATIONS. SET MANHOLE RIMS TO ELEVATIONS INDICATED ON PLANS.
11. AFTER INSTALLATION OF SEWER PIPE CLEAN ALL DEBRIS FROM SEWER AND INSPECT INTERIOR OF PIPING TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED. CONDUCT DEFLECTION TESTING OF INSTALLED PIPE IN ACCORDANCE WITH SECTION 3.2.6(I)4 OF THE STANDARD SPECIFICATIONS; REPLACE ANY PIPE SECTION NOT PASSING THE DEFLECTION TESTING USING NEW PIPE MATERIALS. TEST NEW BUILDING SEWER IN ACCORDANCE WITH SECTION 5.4.0 OF THE STANDARD SPECIFICATIONS. REPLACE LEAKING PIPE USING NEW PIPE MATERIALS AAND REPEAT TESTING UNTIL LEAKAGE IS WITHIN ALLOWANCES SPECIFIED.

STORM DRAINAGE:

1. ALL PRIVATE STORM SEWER WORK SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES (DSPS) PLUMBING CODE - CHAPTERS SPS 382 AND SPS 384 AND LOCAL MUNICIPAL REQUIREMENTS.
2. ALL PUBLIC STORM SEWER WORK SHALL BE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION (STANDARD SPECIFICATIONS) AND LOCAL MUNICIPAL REQUIREMENTS.
3. PVC SEWER PIPE AND FITTINGS: ASTM D 3034, SDR 35, WITH BELL-AND-SPIGOT ENDS WITH RUBBER GASKETED JOINTS IN ACCORDANCE WITH CHAPTER 8.10.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. JOINTS SHALL CONFORM TO ASTM D-3212.
4. REINFORCED CONCRETE PIPE: ASTM C76 WITH BELL AND SPIGOT ENDS AND GASKETED JOINTS WITH ASTM C443 RUBBER GASKETS IN ACCORDANCE WITH CHAPTER 8.6.0 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
5. HDPE PIPE: ADS N12 PIPE AS APPROVED ON THE DEPARTMENT OF SAFETY AND PROFESSIONAL SERVICES PLUMBING PRODUCT REGISTER.
6. CATCH BASINS: STANDARD PRECAST CONCRETE CATCH BASINS CONFORMING TO CHAPTER 3.6.0 OF THE STANDARD SPECIFICATIONS AND IN GENERAL CONFORMANCE WITH FILE NO. 26 OF THE STANDARD SPECIFICATIONS. DEPTH AND DIAMETER AS INDICATED ON PLANS. CATCH BASIN SIZES TO BE VERIFIED BY CONTRACTOR AND SHOP DRAWINGS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING STRUCTURES.
7. FRAMES AND GRATES: AS INDICATED ON PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING SPECIFIED FRAME/GRATE IS COMPATIBLE WITH STRUCTURE; IF NOT, NOTIFY ENGINEER.
8. MANHOLES: STANDARD PRECAST REINFORCED CONCRETE MANHOLES CONFORMING TO ASTM C478, SECTION 8.39.0 OF THE STANDARD SPECIFICATIONS AND CONFORMING TO FILE NOS. 12, 13 AND 15 OF THE STANDARD SPECIFICATIONS. DIAMETER AND DEPTH AS INDICATED ON PLANS. MANHOLE SIZES TO BE VERIFIED BY CONTRACTOR AND SHOP DRAWINGS SHALL BE PROVIDED TO THE ENGINEER FOR REVIEW PRIOR TO ORDERING STRUCTURES.
9. MANHOLES AND CATCH BASINS DEEPER THAN FOUR FEET SHALL BE PROVIDED WITH MANHOLE STEPS CONFORMING TO SECTION 8.40.0 OF THE STANDARD SPECIFICATIONS.
10. SEWERS SHALL BE INSTALLED IN CONFORMANCE WITH SECTION 3.2.0 OF THE STANDARD SPECIFICATIONS. INSTALL PROPER SIZE INCREASERS, REDUCERS AND COUPLINGS WHERE DIFFERENT SIZES OR MATERIALS OF PIPES AND FITTINGS ARE CONNECTED. INSTALL TRACER PIPE OVER NON-METALLIC PIPING IN ACCORDANCE WITH SPS SECTION 382.30(11)(H) AND 382.36(7)(D).
11. PROVIDE AND INSTALL CLEANOUTS IN ACCORDANCE WITH SPS CHAPTER 382.35. INSTALL CLEANOUTS AND RISER EXTENSIONS FORM SEWER PIPES TO PROPOSED GRADE. INSTALL PIPING SO CLEANOUTS OPEN IN DIRECTION OF FLOW IN SEWER PIPE. USE LIGHT DUTY, TOP LOADING CLASSIFICATION CLEANOUTS IN EARTH OR UNPAVED FOOT TRAFFIC AREAS; USE MEDIUM DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN PAVED FOOT TRAFFIC AREAS; USE HEAVY DUTY, TOP-LOADING CLASSIFICATION CLEANOUTS IN VEHICULAR TRAFFIC AREAS. SET CLEANOUT FRAMES AND COVERS IN PAVEMENT AREAS FLUSH WITH PAVEMENT SURFACE.

STORM DRAINAGE:

12. CLASS B COMPACTED TRENCH SECTION (FILE NO. NO. 4 OF STANDARD SPECIFICATIONS) SHALL BE UTILIZED. BEDDING AND COVER MATERIAL SHALL BE IN ACCORDANCE WITH SECTION 8.43.0 OF THE STANDARD SPECIFICATIONS.
13. TRENCH BACKFILL MATERIAL SHALL BE GRANULAR BACKFILL IN ACCORDANCE WITH SECTION 8.43.4 OF THE STANDARD SPECIFICATIONS BENEATH AND WITHIN FIVE FEET OF PAVEMENT AREAS; COMPACTED SPOIL BACKFILL IN ACCORDANCE WITH SECTION 8.43.5 OF THE STANDARD SPECIFICATIONS MAY BE USED BENEATH LANDSCAPE AREAS.
14. MANHOLE INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 3.5.0 OF THE STANDARD SPECIFICATIONS. SET MANHOLE RIMS TO ELEVATIONS INDICATED ON PLANS.
15. CATCH BASIN INSTALLATION SHALL BE IN ACCORDANCE WITH SECTION 3.6 OF THE STANDARD SPECIFICATIONS. CATCH BASIN EXCAVATION AND PREPARATION SHALL BE IN ACCORDANCE WITH SECTION 3.5.4(A) AND (B) OF THE STANDARD SPECIFICATIONS. FRAMES AND GRATES SHALL BE SET TO THE ELEVATIONS SHOWN ON THE PLANS.
16. AFTER INSTALLATION OF SEWER PIPE CLEAN ALL DEBRIS FROM SEWER AND INSPECT INTERIOR OF PIPING TO DETERMINE WHETHER LINE DISPLACEMENT OR OTHER DAMAGE HAS OCCURRED. CONDUCT DEFLECTION TESTING OF INSTALLED PIPE IN ACCORDANCE WITH SECTION 3.2.6(I)4 OF THE STANDARD SPECIFICATIONS; REPLACE ANY PIPE SECTION NOT PASSING THE DEFLECTION TESTING USING NEW PIPE MATERIALS.

EARTH MOVING:

1. ALL EARTH WORK SHALL BE DONE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER PRESENTED IN THE SITE GEOTECHNICAL REPORT, GEOTECHNICAL ENGINEER RECOMMENDATIONS MADE IN THE FIELD AND THESE SPECIFICATIONS. IN CASE OF CONFLICT BETWEEN THESE SPECIFICATIONS AND THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER, THE RECOMMENDATIONS OF THE GEOTECHNICAL ENGINEER SHALL GOVERN.
2. CONTRACTOR SHALL PROVIDE MATERIAL TEST REPORTS FROM A QUALIFIED TESTING AGENCY INDICATING TEST RESULTS FOR CLASSIFICATION ACCORDING TO ASTM D2487 AND LABORATORY COMPACTION CURVES ACCORDING TO ASTM D 1557 FOR EACH ON-SITE AND OFF-SITE SOIL MATERIAL PROPOSED FOR FILL AND BACKFILL.
3. CONTRACTOR SHALL PROVIDE PREEXCAVATION PHOTOS OR VIDEOS SHOWING EXISTING CONDITIONS OF ADJOINING STRUCTURES AND SITE IMPROVEMENTS THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY EARTHWORK OPERATIONS.
4. OLD BUILDING FOUNDATIONS, BUILDING REMNANTS OR UNSUITABLE BACKFILL MATERIAL SHALL BE COMPLETELY REMOVED FROM WITHIN AND A MINIMUM OF 10 FEET BEYOND THE NEW BUILDING PAD AREAS. THE RESULTING EXCAVATION SHALL BE BACKFILLED WITH COMPACTED ENGINEERED FILL.
5. FOUNDATIONS, FOUNDATION WALLS OR CONCRETE FLOOR SLABS SHALL BE REMOVED TO A MINIMUM OF TWO FEET BELOW PROPOSED SUBGRADE WITHIN PROPOSED PARKING AND GREENSPACE AREAS. BASEMENT SLABS LOCATED BELOW 2 FEET FROM PLANNED SUBGRADE ELEVATION MAY BE LEFT IN PLACE BUT SHALL BE BROKEN INTO MAXIMUM 6 INCH PIECES TO FACILITATE DRAINAGE.
6. SATISFACTORY SOILS FOR FILL: ASTM D 2487 SOIL CLASSIFICATION GROUPS GW, GP, GM, SW, SP, AND SM OR A COMBINATION OF THESE GROUPS; FREE OF ROCK OR GRAVEL LARGER THAN 3 INCHES IN ANY DIMENSION, DEBRIS, WASTE, FROZEN MATERIALS, VEGETATION, AND OTHER DELETERIOUS MATTER OR ANY SOIL GROUP OR COMBINATION OF GROUPS APPROVED OF BY THE PROJECT GEOTECHNICAL ENGINEER.
7. UNSATISFACTORY SOILS FOR FILL: SOIL CLASSIFICATION GROUPS GC, SC, CL, ML, OL, CH, MH, OH, AND PT ACCORDING TO ASTM D 2487 OR A COMBINATION OF THESE GROUPS UNLESS DEEMED SATISFACTORY BY THE PROJECT GEOTECHNICAL ENGINEER. UNSATISFACTORY SOILS ALSO INCLUDE SOILS NOT MAINTAINED WITHIN 3 PERCENT OF OPTIMUM SOIL MOISTURE CONTENT AT THE TIME OF COMPACTION.
8. AGGREGATE BASE COURSE BENEATH PAVEMENTS: SHALL BE 1-1/4" DENSE GRADED BASE COURSE CONFORMING TO SECTION 305 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION.
9. ENGINEERED FILL: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND; ASTM D 2940; WITH AT LEAST 90 PERCENT PASSING A 1-1/2-INCH (37.5-MM) SIEVE AND NOT MORE THAN 12 PERCENT PASSING A NO. 200 SIEVE OR ANY SOIL DEEMED ACCEPTABLE FOR ENGINEERED FILL BY THE PROJECT GEOTECHNICAL ENGINEER. ENGINEERED FILL SHALL BE FREE OF ORGANIC, FROZEN, OR OTHER DELETERIOUS MATERIAL AND HAVE A MAXIMUM PARTICLE SIZE LESS THAN 3 INCHES. CLAY FILLS SHALL HAVE A LIQUID LIMIT OF LESS THAN 49 AND PLASTICITY INDEX BETWEEN 11 AND 25.
10. BEDDING COURSE FOR SEWERS AND WATER SERVICE: NATURALLY OR ARTIFICIALLY GRADED MIXTURE OF NATURAL OR CRUSHED GRAVEL, CRUSHED STONE, AND NATURAL OR CRUSHED SAND CONFORMING TO THE REQUIREMENTS OF SECTION 8.43.2 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
11. DRAINAGE COURSE BENEATH BUILDING SLABS: NARROWLY GRADED MIXTURE OF WASHED, CRUSHED STONE, OR CRUSHED OR UNCRUSHED GRAVEL; ASTM D 448; COARSE-AGGREGATE GRADING SIZE 57; WITH 100 PERCENT PASSING A 1-1/2-INCH (37.5-MM) SIEVE AND 0 TO 5 PERCENT PASSING A NO. 8 SIEVE.
12. TRENCH BACKFILL MATERIAL SHALL BE GRANULAR BACKFILL IN ACCORDANCE WITH SECTION 8.43.4 OF THE STANDARD SPECIFICATIONS BENEATH AND WITHIN FIVE FEET OF PAVEMENT AREAS; COMPACTED SPOIL BACKFILL IN ACCORDANCE WITH SECTION 8.43.5 OF THE STANDARD SPECIFICATIONS MAY BE USED BENEATH LANDSCAPE AREAS.
13. PIPE COVER MATERIAL: CONFORM TO SECTION 8.43.3 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.
14. PREVENT SURFACE WATER AND GROUND WATER FROM ENTERING EXCAVATIONS, FROM PONDING ON PREPARED SUBGRADES, AND FROM FLOODING PROJECT SITE AND SURROUNDING AREA.
15. SHORING, SHEETING AND BRACING: SHORE, BRACE OR SLOPE BANKS OF EXCAVATION TO PROTECT WORKMEN, BANKS, ADJACENT PAVING, STRUCTURES, AND UTILITIES TO MEET OSHA REQUIREMENTS. DESIGN OF TEMPORARY SUPPORT OF EXCAVATION IS THE RESPONSIBILITY OF THE CONTRACTOR.
16. EXCAVATE TO SUBGRADE ELEVATIONS REGARDLESS OF THE CHARACTER OF SURFACE AND SUBSURFACE CONDITIONS ENCOUNTERED. UNCLASSIFIED EXCAVATED MATERIALS MAY INCLUDE ROCK, SOIL MATERIALS, AND OBSTRUCTIONS. NO CHANGES IN THE CONTRACT SUM OR THE CONTRACT TIME WILL BE AUTHORIZED FOR ROCK EXCAVATION OR REMOVAL OF OBSTRUCTIONS.
17. PROOF-ROLL SUBGRADE BELOW THE BUILDING SLABS AND PAVEMENTS WITH FULLY LOADED TANDEM AXLE DUMP TRUCK OR RUBBER TIRED VEHICLE OF SIMILAR SIZE AND WEIGHT, TYPICALLY 9 TONS/AXLE, WHERE COHESIVE SOILS ARE ENCOUNTERED OR WITH A SMOOTH DRUMMED VIBRATORY ROLLER WHERE GRANULAR SOILS ARE PRESENT. DO NOT PROOF-ROLL WET OR SATURATED SUBGRADES AND PROOFROLL IN DRY WEATHER. PROOF ROLL IN PRESENCE OF PROJECT GEOTECHNICAL ENGINEER OR TECHNICIAN. SOILS THAT ARE OBSERVED TO RUT OR DEFLECT EXCESSIVELY UNDER THE MOVING LOAD (TYPICALLY >1") SHALL BE UNDERCUT AND REPLACED WITH PROPERLY COMPACTED ENGINEERED FILL. IN PAVEMENT AREAS WHERE UNDERCUTS ARE PERFORMED, THE EDGES OF THE OVEREXCAVATIONS SHALL BE FEATHERED INOT THE SURROUNDING SUITABLE SOIL SO THAT EDGE FAILURE OF THE OVEREXCAVATED AREA DOES NOT OCCUR.
18. DUE TO CLAYEY SOILS, IF UNDERCUTS OCCUR WITHIN PAVEMENT AREAS AND THEY ARE BACKFILLED WITH GRANULAR SOILS, THE BOTTOM OF THE OVEREXCAVATION SHALL BE SLOPED TO A DRAINTILE THAT IS IN KIND SLOPED TOWARD THE NEAREST STORM SEWER. MINIMUM SLOPES OF SUCH DRAINTILES SHALL BE 0.5%.
19. CONVENTIONAL DISKING AND AERATION TECHNIQUES SHALL BE USED TO DRY SOILS BEFORE PROOF ROLLING. ALLOT FOR PROPER DRYING TIME IN PROJECT SCHEDULE.
20. ENGINEERED FILL SHALL BE PLACED IN MAXIMUM LIFTS OF EIGHT INCHES OF LOOSE MATERIAL AND COMPACTED WITHIN 3% OF OPTIMUM SOIL MOISTURE CONTENT VALUE AND A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST ASTM D1557. EACH LIFT OF COMPACTED ENGINEERED FILL SHALL BE OBSERVED AND TESTED BY A QUALIFIED GEOTECHNICAL ENGINEER OR TECHNICIAN.
21. EXISTING OLD FILL MATERIAL SHALL BE REMOVED BELOW FOOTINGS OR FOUNDATION SUPPORTING FILL. ENGINEERED FILL BELOW FOOTINGS SHOULD HAVE AN IN-PLACE DENSITY OF 95% OF THE MAXIMUM DRY DENSITY AND A MOISTURE CONTENT WITHIN 3% OF OPTIMUM AS DETERMINED BY ASTM D1557. ENGINEERED FILL BELOW FOOTINGS SHALL BE EVALUATED BY IN-FIELD DENSITY TESTS DURING CONSTRUCTION.
22. WHERE UNSUITABLE BEARING SOILS ARE ENCOUNTERED IN A FOOTING EXCAVATION, THE EXCAVATION SHALL BE DEEPENED TO COMPETENT BEARING SOIL AND THE FOOTING LOWERED OR AN OVEREXCAVATION AND BACKFILL PROCEDURE PERFORMED. OVEREXCAVATION AND BACKFILL TREATMENT REQUIRES WIDENING THE DEEPENED EXCAVATION IN ALL DIRECTIONS AT LEAST 6 INCHES BEYOND THE EDGE OF THE FOOTING FOR EACH 12 INCHES OF OVEREXCAVATION DEPTH. THE OVEREXCAVATION SHALL BE BACKFILLED UP TO FOOTING BASE ELEVATION IN MAXIMUM 8 INCH LOOSE LIFTS WITH SUITABLE GRANULAR FILL MATERIAL AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AND A MOISTURE CONTENT WITHIN 3% OF OPTIMUM AS DETERMINED BY ASTM D1557. SOILS AT FOUNDATION BEARING ELEVATION IN THE FOOTING EXCAVATIONS SHALL BE OBSERVED AND TESTED BY A QUALIFIED GEOTECHNICAL ENGINEER OR TECHNICIAN.
23. A MINIMUM OF FOUR INCHES OF DRAINAGE COURSE MAT SHALL BE PLACED BELOW BUILDING FLOOR SLABS. DRAINAGE COURSE SHALL BE COMPACTED TO A MINIMUM OF 95% COMPACTION WITH RESPECT TO THE MODIFIED PROCTOR (ASTM D1557)
24. UTILITY TRENCHES FOR SEWER AND WATER SHALL CONFORM TO CLASS B COMPACTED TRENCH SECTION IN ACCORDANCE WITH FILE NO. 4 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION.

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

SPECIFICATIONS
1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO:	21231
DRAWN BY:	JRG
CHECKED BY:	CTC
SCALE:	AS SHOWN

C500

EARTH MOVING:

25. BACKFILL UTILITY TRENCHES IN 4 TO 6 INCH LOOSE LIFTS COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY AS DETERMINED BY ASTM D1557. BACKFILL SHALL BE MOISTURE CONDITIONED TO BE WITH 3% OF OPTIMUM MOISTURE CONTENT AS DETERMINED BY ASTM D1557.
26. UTILITY BEDDING PLACEMENT: CONFORM TO SECTION 3.2.6 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN, LATEST EDITION. BEDDING MATERIAL SHALL BE COMPACTED TO A MINIMUM OF 90% COMPACTION WITH RESPECT TO THE MODIFIED PROCTOR (ASTM D1557).
27. COMPACTION TESTING OF UTILITY TRENCHES SHALL BE PERFORMED ONE FOR EVERY 200 CUBIC YARDS OF BACKFILL PLACED OR ONE FOR TEST PER 200 LINEAR FEET OF TRENCH FOR EACH LIFT, WHICHEVER IS LESS.
28. AGGREGATE BASE COURSE BENEATH PAVEMENTS SHALL BE PLACED AND COMPACTED TO 95% OF THE MAXIMUM DRY DENSITY WITH A MOISTURE CONTENT WITHIN 3% OF OPTIMUM AS DETERMINED BY ASTM D1557. AGGREGATE BASE SHALL BE OBSERVED AND TESTED BY A QUALIFIED GEOTECHNICAL ENGINEER OR TECHNICIAN.
29. GRADING GENERAL: UNIFORMLY GRADE AREAS TO A SMOOTH SURFACE, FREE OF IRREGULAR SURFACE CHANGES. COMPLY WITH COMPACTION REQUIREMENTS AND GRADE TO CROSS SECTIONS, LINES, AND ELEVATIONS INDICATED. SLOPE GRADES TO DIRECT WATER AWAY FROM BUILDINGS AND TO PREVENT PONDING.
30. TESTING AGENCY: CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT GEOTECHNICAL ENGINEERING TESTING AGENCY TO PERFORM FIELD QUALITY-CONTROL TESTING.
31. FOOTING SUBGRADE TESTING: EACH ISOLATED FOOTING SHALL INCLUDE AT LEAST ONE TEST PROBE. TEST PROBES SHALL BE PERFORMED EVERY 20 LINEAR FEET IN CONTINUOUS FOOTINGS.
32. BUILDING SLAB AREA TESTING: AT SUBGRADE AND AT EACH COMPACTED FILL AND BACKFILL LAYER, AT LEAST 1 TEST PER LIFT FOR EVERY 2500 SQ. FT. OR LESS OF BUILDING SLAB, BUT IN NO CASE FEWER THAN 3 TESTS.
33. PAVEMENT AREA TESTING: AT SUBGRADE AND AT EACH COMPACTED FILL AND BACKFILL LAYER, AT LEAST ONE TEST FOR EVERY LIFT FOR EVERY 2,500 SQUARE FEET OF PAVEMENT AREA, BUT IN NO CASES FEWER THAN 3 TESTS.
34. FOUNDATION WALL BACKFILL: AT EACH COMPACTED BACKFILL LAYER, AT LEAST 1 TEST PER LIFT FOR EACH 50 FEET OR LESS OF WALL LENGTH, BUT NO FEWER THAN 2 TESTS.
35. WHEN TESTING AGENCY REPORTS THAT SUBGRADES, FILLS, OR BACKFILLS HAVE NOT ACHIEVED DEGREE OF COMPACTION SPECIFIED, SCARIFY AND MOISTEN OR AERATE, OR REMOVE AND REPLACE SOIL TO DEPTH REQUIRED; RECOMPACT AND RETEST UNTIL SPECIFIED COMPACTION IS OBTAINED.
36. DISPOSAL: REMOVE SURPLUS SOIL AND WASTE MATERIAL, INCLUDING UNSATISFACTORY SOIL, TRASH, AND DEBRIS, AND LEGALLY DISPOSE OF IT OFF OWNER'S PROPERTY.

CONCRETE PAVING:

1. THE COMPOSITION, PLACING AND CONSTRUCTION OF CONCRETE PAVEMENTS SHALL BE IN ACCORDANCE WITH THE APPLICABLE REQUIREMENTS OF SECTIONS 415, 416, 501, 601, AND 602 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION (WISDOT STANDARD SPECIFICATIONS) AND LOCAL MUNICIPAL REQUIREMENTS AND SPECIFICATIONS.
2. CONTRACTOR SHALL PROVIDE PRODUCT DATA FOR EACH TYPE OF PRODUCT INDICATED - INCLUDE TECHNICAL DATA AND TESTED PHYSICAL AND PERFORMANCE PROPERTIES; JOB-MIX DESIGNS: CERTIFICATION THAT MIX MEETS OR EXCEEDS WISDOT STANDARD SPECIFICATIONS; AND MATERIAL CERTIFICATES CERTIFYING COMPLIANCE WITH WISDOT STANDARD SPECIFICATIONS.
3. MANUFACTURER QUALIFICATIONS: MANUFACTURER OF READY-MIXED CONCRETE PRODUCTS WHO COMPLIES WITH ASTM C 94/C 94M REQUIREMENTS FOR PRODUCTION FACILITIES AND EQUIPMENT AND APPROVED BY THE WISCONSIN DEPARTMENT OF TRANSPORTATION.
4. CONCRETE GRADE: GRADE A, GRADE A-2, OR A-FA CONFORMING TO SECTION 501.3.1.3 OF THE WISDOT STANDARD SPECIFICATIONS
5. AGGREGATES: CONFORM TO SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS. PROVIDE AGGREGATES FROM A SINGLE SOURCE.
6. WATER: ASTM C 94/C 94M AND SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
7. AIR-ENTRAINING ADMIXTURE: ASTM C 260 AND SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
8. CHEMICAL ADMIXTURES: PER SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
9. CURING MATERIALS IN ACCORDANCE WITH SECTION 415.3.12 OF THE WISDOT STANDARD SPECIFICATIONS.
10. EXPANSION JOINT MATERIAL: CONFORM TO SECTION 415.2.3 OF THE WISDOT STANDARD SPECIFICATIONS.
11. MEASURE, BATCH, AND MIX CONCRETE MATERIALS AND CONCRETE IN ACCORDANCE WITH SECTION 501 OF THE WISDOT STANDARD SPECIFICATIONS.
12. GENERAL EXECUTION: CONFORM TO SECTION 415 OF THE WISDOT STANDARD SPECIFICATIONS.
13. PROOFROLL SUBGRADE AND AGGREGATE BASE AS OUTLINED IN EARTH MOVING SPECIFICATION PRIOR TO PLACEMENT OF PAVEMENTS.
14. SET, BRACE, AND SECURE EDGE FORMS, BULKHEADS, AND INTERMEDIATE SCREED GUIDES FOR PAVEMENT TO REQUIRED LINES, GRADES, AND ELEVATIONS. INSTALL FORMS TO ALLOW CONTINUOUS PROGRESS OF WORK AND SO FORMS CAN REMAIN IN PLACE AT LEAST 24 HOURS AFTER CONCRETE PLACEMENT.
15. CLEAN FORMS AFTER EACH USE AND COAT WITH FORM-RELEASE AGENT TO ENSURE SEPARATION FROM CONCRETE WITHOUT DAMAGE.
16. JOINTS GENERAL: FORM CONSTRUCTION, ISOLATION, AND CONTRACTION JOINTS AND TOOL EDGINGS TRUE TO LINE WITH FACES PERPENDICULAR TO SURFACE PLANE OF CONCRETE. CONSTRUCT TRANSVERSE JOINTS AT RIGHT ANGLES TO CENTERLINE, UNLESS OTHERWISE INDICATED. CONFORM TO SECTION 415 OF THE WISDOT STANDARD SPECIFICATIONS
17. CONSTRUCTION JOINTS: SET CONSTRUCTION JOINTS AT SIDE AND END TERMINATIONS OF PAVEMENT AND AT LOCATIONS WHERE PAVEMENT OPERATIONS ARE STOPPED FOR MORE THAN ONE-HALF HOUR UNLESS PAVEMENT TERMINATES AT ISOLATION JOINTS.
18. ISOLATION JOINTS: FORM ISOLATION JOINTS OF PREFORMED JOINT-FILLER STRIPS ABUTTING CONCRETE CURBS, CATCH BASINS, MANHOLES, INLETS, STRUCTURES, WALKS, OTHER FIXED OBJECTS, AND WHERE INDICATED.
19. CONTRACTION JOINTS: FORM WEAKENED-PLANE CONTRACTION JOINTS, SECTIONING CONCRETE INTO AREAS AS INDICATED. CONSTRUCT CONTRACTION JOINTS FOR A DEPTH EQUAL TO AT LEAST ONE-FOURTH OF THE CONCRETE THICKNESS TO MATCH JOINTING OF EXISTING ADJACENT CONCRETE PAVEMENT.
20. EDGING: TOOL EDGES OF PAVEMENT, GUTTERS, CURBS, AND JOINTS IN CONCRETE AFTER INITIAL FLOATING WITH AN EDGING TOOL TO A 1/4-INCH RADIUS. REPEAT TOOLING OF EDGES AFTER APPLYING SURFACE FINISHES. ELIMINATE TOOL MARKS ON CONCRETE SURFACES.
21. CURBING: COMPLY WITH SECTION 601 OF THE WISDOT STANDARD SPECIFICATIONS.
22. SIDEWALKS: COMPLY WITH SECTION 602 OF THE WISDOT STANDARD SPECIFICATIONS.
23. MOISTEN AGGREGATE TO PROVIDE A UNIFORM DAMPENED CONDITION AT TIME CONCRETE IS PLACED.
24. FINISH CURBING IN ACCORDANCE WITH SECTION 601.3.5 OF THE WISDOT STANDARD SPECIFICATIONS.
25. FINISH SIDEWALK AND PATIO IN ACCORDANCE WITH SECTION 602.3.2.3 OF THE WISDOT STANDARD SPECIFICATIONS (LIGHT BROOM FINISH).
26. FINISH CONCRETE VEHICULAR PAVEMENTS AND PADS IN ACCORDANCE WITH SECTION 415.3.8 OF THE WISDOT STANDARD SPECIFICATIONS (ARTIFICIAL TURF DRAG FINISH).
27. PROTECT AND CURE SIDEWALK IN ACCORDANCE WITH SECTION 602.3.2.6 OF THE WISDOT STANDARD SPECIFICATIONS.
28. PROTECT AND CURE CURBING IN ACCORDANCE WITH SECTION 601.3.7 OF THE WISDOT STANDARD SPECIFICATIONS.
29. PROTECT AND CURE VEHICULAR CONCRETE PAVING IN ACCORDANCE WITH SECTION 415.3.12 OF THE WISDOT STANDARD SPECIFICATIONS.
30. REMOVE AND REPLACE CONCRETE PAVEMENT THAT IS BROKEN, DAMAGED, OR DEFECTIVE OR THAT DOES NOT COMPLY WITH REQUIREMENTS IN THIS SECTION.
31. PROTECT CONCRETE FROM DAMAGE. EXCLUDE TRAFFIC FROM PAVEMENT FOR AT LEAST 7 DAYS AFTER PLACEMENT.
32. MAINTAIN CONCRETE PAVEMENT FREE OF STAINS, DISCOLORATION, DIRT, AND OTHER FOREIGN MATERIAL. SWEEP CONCRETE PAVEMENT NOT MORE THAN TWO DAYS BEFORE DATE SCHEDULED FOR SUBSTANTIAL COMPLETION INSPECTIONS.

ASPHALTIC PAVING:

1. THE COMPOSITION, PLACING AND CONSTRUCTION OF ASPHALTIC PAVEMENTS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460, 465, AND 475 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION (WISDOT STANDARD SPECIFICATIONS).
2. CONTRACTOR SHALL PROVIDE PRODUCT DATA FOR EACH TYPE OF PRODUCT INDICATED - INCLUDE TECHNICAL DATA AND TESTED PHYSICAL AND PERFORMANCE PROPERTIES; JOB-MIX DESIGNS: CERTIFICATION THAT MIX MEETS OR EXCEEDS WISDOT STANDARD SPECIFICATIONS; AND MATERIAL CERTIFICATES CERTIFYING COMPLIANCE WITH WISDOT STANDARD SPECIFICATIONS.
3. MANUFACTURER QUALIFICATIONS: MANUFACTURER SHALL BE REGISTERED WITH AND APPROVED BY THE DOT OF THE STATE IN WHICH PROJECT IS LOCATED.
4. ENVIRONMENTAL LIMITATIONS: DO NOT APPLY ASPHALT MATERIALS IF BASE COURSE IS WET OR EXCESSIVELY DAMP OR IF THE FOLLOWING CONDITIONS ARE NOT MET: APPLY TACK COAT WHEN AMBIENT TEMPERATURE IS ABOVE 50 DEGREES FAHRENHEIT AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35 DEGREES FAHRENHEIT FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION; PLACE ASPHALTIC CONCRETE SURFACE COURSE WHEN TEMPERATURE IS ABOVE 40 DEGREES FAHRENHEIT; BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30 DEGREES FAHRENHEIT AND RISING. PROCEED WITH PAVEMENT MARKING ONLY ON CLEAN, DRY SURFACES. DO NOT APPLY BELOW THE MINIMUM PAVEMENT TEMPERATURE AS RECOMMENDED BY THE MANUFACTURER.
5. AGGREGATES SHALL BE IN ACCORDANCE WITH SECTION 460.2.2 OF THE WISDOT STANDARD SPECIFICATIONS.
6. ASPHALT MATERIALS SHALL BE IN ACCORDANCE WITH CHAPTER 455 OF THE WISDOT STANDARD SPECIFICATIONS.
7. PAVEMENT MARKING PAINT: PROVIDE PAINT FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCTS LIST. COLOR SHALL BE WHITE UNLESS INDICATED OTHERWISE ON PLANS.
8. HOT-MIX ASPHALT: ASPHALTIC BINDER COURSE AND SURFACE COURSE SHALL BE MIXTURE LT FOR REGULAR DUTY PAVEMENT AND LT FOR HEAVY DUTY PAVEMENT COMPLYING WITH THE WISDOT STANDARD SPECIFICATIONS. ASPHALTIC BINDER SHALL BE 58-28 S UNLESS NOTED.
9. AGGREGATE BASE COURSE BENEATH PAVEMENTS: SHALL BE 1-1/4" DENSE GRADED BASE COURSE CONFORMING TO SECTION 305 OF THE WISDOT STANDARD SPECIFICATIONS.
10. PAVEMENT PLACEMENT GENERAL: ASPHALT CONCRETE PAVING EQUIPMENT, WEATHER LIMITATIONS, JOB-MIX FORMULA, MIXING, CONSTRUCTION METHODS, COMPACTION, FINISHING, TOLERANCE AND PROTECTION SHALL CONFORM TO THE REQUIREMENTS OF THE APPROPRIATE SECTIONS OF THE WISDOT STANDARD SPECIFICATIONS.
11. PREPARE AND PROOFROLL SUBGRADES AND AGGREGATE BASE COURSE AS OUTLINED IN EARTH MOVING SPECIFICATIONS PRIOR TO PLACEMENT OF ASPHALT PAVEMENTS.
12. SWEEP LOOSE GRANULAR PARTICLES FROM SURFACE OF AGGREGATE BASE COURSE PRIOR TO PAVEMENT PLACEMENT. DO NOT DISLODGE OR DISTURB AGGREGATE EMBEDDED IN COMPACTED SURFACE OF BASE COURSE.
13. SPREAD AND FINISH ASPHALTIC MIXTURE IN ACCORDANCE WITH SECTION 450.3.2.5 OF THE WISDOT STANDARD SPECIFICATIONS. PAVEMENT THICKNESSES SHALL BE AS INDICATED ON THE PLANS.
14. PROMPTLY CORRECT SURFACE IRREGULARITIES IN PAVING COURSE BEHIND PAVER. USE SUITABLE HAND TOOLS TO REMOVE EXCESS MATERIAL FORMING HIGH SPOTS. FILL DEPRESSIONS WITH HOT-MIX ASPHALT TO PREVENT SEGREGATION OF MIX; USE SUITABLE HAND TOOLS TO SMOOTH SURFACE.
15. COMPACT ASPHALTIC PAVEMENT IN ACCORDANCE WITH SECTION 450.3.2.6 OF THE WISDOT STANDARD SPECIFICATIONS.
16. PROTECTION: AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO BECOME MARKED.
17. THICKNESS TOLERANCE: COMPACT EACH COURSE TO PRODUCE THE THICKNESS INDICATED WITHIN PLUS/MINUS ¼ INCH FOR BINDER COURSE AND PLUS ¼ INCH FOR SURFACE COURSE, NO MINUS.
18. SURFACE SMOOTHNESS TOLERANCE: COMPACT EACH COURSE TO PRODUCE A SURFACE SMOOTHNESS WITHIN THE FOLLOWING TOLERANCES AS DETERMINED BY USING A 10-FOOT STRAIGHTEDGE APPLIED TRANSVERSELY OR LONGITUDINALLY TO PAVED AREAS: BINDER COURSE: ¼ INCH; SURFACE COURSE: 1/8 INCH. REMOVE AND REPLACE ALL HUMPS OR DEPRESSIONS EXCEEDING THE SPECIFIED TOLERANCES.
19. DO NOT APPLY PAVEMENT-MARKING PAINT UNTIL LAYOUT, COLORS, AND PLACEMENT HAVE BEEN VERIFIED WITH ENGINEER.
20. APPLY MARKINGS TO A DRY SURFACE FREE FROM FROST. REMOVE DUST, DIRT, OIL, GREASE, GRAVEL, DEBRIS OR OTHER MATERIAL THAT MAY PREVENT BONDING TO THE PAVEMENT.
21. APPLY PAINT AS THE MANUFACTURER SPECIFIES WITH MECHANICAL EQUIPMENT TO PRODUCE PAVEMENT MARKINGS, OF DIMENSIONS INDICATED, WITH UNIFORM, STRAIGHT EDGES. APPLY AT MANUFACTURER'S RECOMMENDED RATES AT A MINIMUM RATE OF 17.6 GALLONS/MILE FOR A CONTINUOUS 4" LINE.
22. TESTING AGENCY: CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND TO PREPARE TEST REPORTS.

SEGMENTAL RETAINING WALL:

1. WORK SHALL CONSIST OF FURNISHING DETAILED DESIGN, MATERIALS, LABOR, EQUIPMENT AND SUPERVISION TO INSTALL A SEGMENTAL RETAINING WALL SYSTEM IN ACCORDANCE WITH PLANS AND SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN AND DIMENSIONS SHOWN ON PLANS.
2. MATERIALS SUBMITTALS: THE CONTRACTOR SHALL SUBMIT MANUFACTURERS' CERTIFICATIONS TWO WEEKS PRIOR TO START OF WORK STATING THAT THE SRW UNITS AND GEOSYNTHETIC REINFORCEMENT MEET THE REQUIREMENTS OF THE DESIGN.
3. DESIGN SUBMITTAL: THE CONTRACTOR SHALL SUBMIT TWO SETS OF DETAILED DESIGN CALCULATIONS AND FINAL RETAINING WALL PLANS FOR APPROVAL AT LEAST TWO WEEKS PRIOR TO THE BEGINNING OF WALL CONSTRUCTION. ALL CALCULATIONS AND DRAWINGS SHALL BE PREPARED AND SEALED BY A PROFESSIONAL CIVIL ENGINEER (P.E.) - (WALL DESIGN ENGINEER) EXPERIENCED IN SRW DESIGN AND LICENSED IN THE STATE WHERE THE WALL IS TO BE BUILT.
4. SEGMENTAL RETAINING WALL (SRW) UNITS SHALL BE MACHINE FORMED, PORTLAND CEMENT CONCRETE BLOCKS SPECIFICALLY DESIGNED FOR RETAINING WALL APPLICATIONS. SRW UNITS SHALL BE VERSA-LOK STANDARD RETAINING WALL UNITS, KEYSTONE RETAINING WALL UNITS, ROCKWOOD RETAINING WALL UNITS OR APPROVED EQUAL.
5. COLOR AND STYLE OF SRW UNITS SHALL BE AS SELECTED BY ARCHITECT AND OWNER FROM MANUFACTURER'S FULL RANGE.
6. SRW UNITS SHALL BE CAPABLE OF BEING ERECTED WITH THE HORIZONTAL GAP BETWEEN ADJACENT UNITS NOT EXCEEDING 1/8 INCH.
7. SRW UNITS SHALL BE SOUND AND FREE OF CRACKS OR OTHER DEFECTS THAT WOULD INTERFERE WITH THE PROPER PLACING OF THE UNIT OR SIGNIFICANTLY IMPAIR THE STRENGTH OR PERMANENCE OF THE STRUCTURE. ANY CRACKS OR CHIPS OBSERVED DURING CONSTRUCTION SHALL FALL WITHIN THE GUIDELINES OUTLINED IN ASTM C 1372.
8. CONCRETE SRW UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM 1372 AND HAVE A MINIMUM NET AVERAGE 28 DAYS COMPRESSIVE STRENGTH OF 3000 PSI. COMPRESSIVE STRENGTH TEST SPECIMENS SHALL CONFORM TO THE SAW-CUT COUPON PROVISIONS OF ASTM C140.
9. SRW UNITS' MOLDED DIMENSIONS SHALL NOT DIFFER MORE THAN ± 1/8 INCH FROM THAT SPECIFIED, AS MEASURED IN ACCORDANCE WITH ASTM C 140. THIS TOLERANCE DOES NOT APPLY TO ARCHITECTURAL SURFACES, SUCH AS SPLIT FACES.
10. SRW UNITS SHALL BE INTERLOCKED WITH CONNECTION PINS. THE PINS SHALL CONSIST OF GLASS-REINFORCED NYLON MADE FOR THE EXPRESSED USE WITH THE SRW UNITS SUPPLIED.
11. GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF HIGH-TENACITY PET GEOGRIDS, HDPE GEOGRIDS, OR GEOTEXTILES MANUFACTURED FOR SOIL REINFORCEMENT APPLICATIONS. THE TYPE, STRENGTH AND PLACEMENT OF THE GEOSYNTHETIC REINFORCEMENT SHALL BE DETERMINED BY PROCEDURES OUTLINED IN THIS SPECIFICATION AND THE NCMA DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS (3RD EDITION 2009) AND MATERIALS SHALL BE SPECIFIED BY WALL DESIGN ENGINEER IN THEIR FINAL WALL PLANS AND SPECIFICATIONS. THE MANUFACTURERS/SUPPLIERS OF THE GEOSYNTHETIC REINFORCEMENT SHALL HAVE DEMONSTRATED CONSTRUCTION OF SIMILAR SIZE AND TYPES OF SEGMENTAL RETAINING WALLS ON PREVIOUS PROJECTS.
12. THE TYPE, STRENGTH AND PLACEMENT OF THE REINFORCING GEOSYNTHETIC SHALL BE AS DETERMINED BY THE WALL DESIGN ENGINEER, AS SHOWN ON THE FINAL, P.E.-STAMPED RETAINING WALL PLANS.
13. MATERIAL FOR LEVELING PAD SHALL CONSIST OF COMPACTED SAND, GRAVEL, OR COMBINATION THEREOF (USCS SOIL TYPES GP,GW, SP, & SW) AND SHALL BE A MINIMUM OF 6 INCHES IN DEPTH. LEAN CONCRETE WITH A STRENGTH OF 200-300 PSI AND 3 INCHES THICK MAXIMUM MAY ALSO BE USED AS A LEVELING PAD MATERIAL. THE LEVELING PAD SHOULD EXTEND LATERALLY AT LEAST A DISTANCE OF 6 INCHES FROM THE TOE AND HEEL OF THE LOWERMOST SRW UNIT.
14. DRAINAGE AGGREGATE SHALL BE ANGULAR, CLEAN STONE OR GRANULAR FILL MEETING THE FOLLOWING GRADATION AS DETERMINED IN ACCORDANCE WITH ASTM D422:

SIEVE SIZE	PERCENT PASSING
1 INCH	100
3/4 INCH	75-100
NO. 4	0-60
NO. 40	0-50
NO. 200	0-5

SEGMENTAL RETAINING WALL CONT.:

15. THE DRAINAGE COLLECTION PIPE SHALL BE A PERFORATED OR SLOTTED PVC, OR CORRUGATED HDPE PIPE. THE DRAINAGE PIPE MAY BE WRAPPED WITH A GEOTEXTILE TO FUNCTION AS A FILTER. DRAINAGE PIPE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM F 405 OR ASTM F 758.
16. THE REINFORCED SOIL MATERIAL SHALL BE FREE OF DEBRIS. UNLESS OTHERWISE NOTED ON THE FINAL, P.E.-SEALED, RETAINING WALL PLANS PREPARED BY THE WALL DESIGN ENGINEER, THE REINFORCED MATERIAL SHALL CONSIST OF THE INORGANIC USCS SOIL TYPES GP, GW, SW, SP, SM, MEETING THE FOLLOWING GRADATION, AS DETERMINED IN ACCORDANCE WITH ASTM D422:

SIEVE SIZE	PERCENT PASSING
1 INCH	100
NO. 4	20-100
NO. 40	0-60
NO. 200	0-35

17. THE MAXIMUM PARTICLE SIZE OF POORLY-GRADED GRAVELS (GP) (NO FINES) SHOULD NOT EXCEED 3/4 INCH UNLESS EXPRESSLY APPROVED BY THE WALL DESIGN ENGINEER AND THE LONG-TERM DESIGN STRENGTH (LTDS) OF THE GEOSYNTHETIC IS REDUCED TO ACCOUNT FOR ADDITIONAL INSTALLATION DAMAGE FROM PARTICLES LARGER THAN THIS MAXIMUM.
18. THE PLASTICITY OF THE FINE FRACTION SHALL BE LESS THAN 20.
19. THE PH OF THE BACKFILL MATERIAL SHALL BE BETWEEN 3 AND 9 WHEN TESTED IN ACCORDANCE WITH ASTM G 51.
20. DRAINAGE GEOTEXTILE SHALL CONSIST OF GEOSYNTHETIC SPECIFICALLY MANUFACTURED FOR USE AS A PERMEABLE SOIL FILTER THAT RETAINS SOIL WHILE STILL ALLOWING WATER TO PASS THROUGHOUT THE LIFE OF THE STRUCTURE. THE TYPE AND PLACEMENT OF THE GEOTEXTILE FILTER MATERIAL SHALL BE AS REQUIRED BY THE WALL DESIGN ENGINEER IN THEIR FINAL WALL PLANS AND SPECIFICATIONS.
21. THE DESIGN ANALYSIS FOR THE FINAL, P.E.-STAMPED RETAINING WALL PLANS PREPARED BY THE WALL DESIGN ENGINEER SHALL CONSIDER THE EXTERNAL STABILITY AGAINST SLIDING AND OVERTURNING, INTERNAL STABILITY AND FACIAL STABILITY OF THE REINFORCED SOIL MASS, AND SHALL BE IN ACCORDANCE WITH ACCEPTABLE ENGINEERING PRACTICE AND THESE SPECIFICATIONS. THE INTERNAL AND EXTERNAL STABILITY ANALYSIS SHALL BE PERFORMED IN ACCORDANCE WITH THE "NCMA DESIGN MANUAL FOR SEGMENTAL RETAINING WALLS, 3RD EDITION" USING THE RECOMMENDED MINIMUM FACTORS OF SAFETY IN THIS MANUAL.
22. EXTERNAL STABILITY ANALYSIS FOR BEARING CAPACITY, GLOBAL STABILITY, AND TOTAL AND DIFFERENTIAL SETTLEMENT SHALL BE THE RESPONSIBILITY OF THE OWNER AND THE OWNER'S GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL PERFORM BEARING CAPACITY, SETTLEMENT ESTIMATES, AND GLOBAL STABILITY ANALYSIS BASED ON THE FINAL WALL DESIGN PROVIDED BY THE WALL DESIGN ENGINEER AND COORDINATE ANY REQUIRED CHANGES WITH THE WALL DESIGN ENGINEER.
23. THE GEOSYNTHETIC PLACEMENT IN THE WALL DESIGN SHALL HAVE 100% CONTINUOUS COVERAGE PARALLEL TO THE WALL FACE. GAPPING BETWEEN HORIZONTALLY ADJACENT LAYERS OF GEOSYNTHETIC (PARTIAL COVERAGE) WILL NOT BE ALLOWED.
24. CONTRACTOR'S FIELD CONSTRUCTION SUPERVISOR SHALL HAVE DEMONSTRATED EXPERIENCE AND BE QUALIFIED TO DIRECT ALL WORK AT THE SITE.
25. CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE PROJECT GRADING PLANS. CONTRACTOR SHALL TAKE PRECAUTIONS TO MINIMIZE OVER-EXCAVATION. OVER-EXCAVATION SHALL BE FILLED WITH COMPACTED INFILL MATERIAL, OR AS DIRECTED BY THE WALL DESIGN ENGINEER, AT THE CONTRACTOR'S EXPENSE.
26. CONTRACTOR SHALL VERIFY LOCATION OF EXISTING STRUCTURES AND UTILITIES PRIOR TO EXCAVATION. CONTRACTOR SHALL ENSURE ALL SURROUNDING STRUCTURES ARE PROTECTED FROM THE EFFECTS OF WALL EXCAVATION. EXCAVATION SUPPORT, IF REQUIRED, IS THE RESPONSIBILITY OF THE CONTRACTOR.
27. FOLLOWING THE EXCAVATION, THE FOUNDATION SOIL SHALL BE EXAMINED BY THE OWNER'S ENGINEER TO ASSURE ACTUAL FOUNDATION SOIL STRENGTH MEETS OR EXCEEDS THE ASSUMED DESIGN BEARING STRENGTH. SOILS NOT MEETING THE REQUIRED STRENGTH SHALL BE REMOVED AND REPLACED WITH INFILL SOILS, AS DIRECTED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER.
28. FOUNDATION SOIL SHALL BE PROOF-ROLLED AND COMPACTED TO 95% STANDARD PROCTOR DENSITY AND INSPECTED BY THE CONTRACTOR'S GEOTECHNICAL ENGINEER PRIOR TO PLACEMENT OF LEVELING PAD MATERIALS.
29. LEVELING PAD SHALL BE PLACED AS SHOWN ON THE FINAL, P.E.-SEALED RETAINING WALL PLANS WITH A MINIMUM THICKNESS OF 6 INCHES. THE LEVELING PAD SHOULD EXTEND LATERALLY AT LEAST A DISTANCE OF 6 INCHES FROM THE TOE AND HEEL OF THE LOWERMOST SRW UNIT.
30. GRANULAR LEVELING PAD MATERIAL SHALL BE COMPACTED TO PROVIDE A FIRM, LEVEL BEARING SURFACE ON WHICH TO PLACE THE FIRST COURSE OF UNITS. WELL-GRADED SAND CAN BE USED TO SMOOTH THE TOP 1/4 INCH TO 1/2 INCH OF THE LEVELING PAD. COMPACTION WILL BE WITH MECHANICAL PLATE COMPACTORS TO ACHIEVE 95% OF MAXIMUM STANDARD PROCTOR DENSITY (ASTM D 698).
31. ALL SRW UNITS SHALL BE INSTALLED AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE FINAL, P.E.-SEALED WALL PLANS AND DETAILS OR AS DIRECTED BY THE WALL DESIGN ENGINEER. THE SRW UNITS SHALL BE INSTALLED IN GENERAL ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. THE SPECIFICATIONS AND DRAWINGS SHALL GOVERN IN ANY CONFLICT BETWEEN THE TWO REQUIREMENTS.
32. FIRST COURSE OF SRW UNITS SHALL BE PLACED ON THE LEVELING PAD. THE UNITS SHALL BE LEVELED SIDE-TO-SIDE, FRONT-TO-REAR AND WITH ADJACENT UNITS, AND ALIGNED TO ENSURE INTIMATE CONTACT WITH THE LEVELING PAD. THE FIRST COURSE IS THE MOST IMPORTANT TO ENSURE ACCURATE AND ACCEPTABLE RESULTS. NO GAPS SHALL BE LEFT BETWEEN THE FRONT OF ADJACENT UNITS. ALIGNMENT MAY BE DONE BY MEANS OF A STRING LINE OR OFFSET FROM BASE LINE TO THE BACK OF THE UNITS.
33. ALL EXCESS DEBRIS SHALL BE CLEANED FROM TOP OF UNITS AND THE NEXT COURSE OF UNITS INSTALLED ON TOP OF THE UNITS BELOW.
34. CONNECTION PINS SHALL BE INSERTED THROUGH THE PIN HOLES OF EACH UPPER-COURSE UNIT INTO RECEIVING SLOTS IN LOWER-COURSE UNITS. PINS SHALL BE FULLY SEATED IN THE PIN SLOT BELOW. UNITS SHALL BE PUSHED FORWARD TO REMOVE ANY LOOSENESS IN THE UNIT-TO-UNIT CONNECTION.
35. PRIOR TO PLACEMENT OF NEXT COURSE, THE LEVEL AND ALIGNMENT OF THE UNITS SHALL BE CHECKED AND CORRECTED WHERE NEEDED.
36. LAYOUT OF CURVES AND CORNERS SHALL BE INSTALLED IN ACCORDANCE WITH THE WALL PLAN DETAILS OR IN GENERAL ACCORDANCE WITH SRW MANUFACTURER'S INSTALLATION GUIDELINES. WALLS MEETING AT CORNERS SHALL BE INTERLOCKED BY OVERLAPPING SUCCESSIVE COURSES.
37. PROCEDURES ABOVE SHALL BE REPEATED UNTIL REACHING TOP OF WALL UNITS, JUST BELOW THE HEIGHT OF THE CAP UNITS. GEOSYNTHETIC REINFORCEMENT, DRAINAGE MATERIALS, AND REINFORCED BACKFILL SHALL BE PLACED IN SEQUENCE WITH UNIT INSTALLATION.
38. ALL GEOSYNTHETIC REINFORCEMENT SHALL BE INSTALLED AT THE PROPER ELEVATION AND ORIENTATION AS SHOWN ON THE FINAL P.E.-SEALED RETAINING WALL PLAN PROFILES AND DETAILS, OR AS DIRECTED BY THE WALL DESIGN ENGINEER.
39. AT THE ELEVATIONS SHOWN ON THE FINAL PLANS, (AFTER THE UNITS, DRAINAGE MATERIAL AND BACKFILL HAVE BEEN PLACED TO THIS ELEVATION) THE GEOSYNTHETIC REINFORCEMENT SHALL BE LAID HORIZONTALLY ON COMPACTED INFILL AND ON TOP OF THE CONCRETE SRW UNITS, TO WITHIN 1 INCH OF THE FRONT FACE OF THE UNIT BELOW. EMBEDMENT OF THE GEOSYNTHETIC IN THE SRW UNITS SHALL BE CONSISTENT WITH SRW MANUFACTURER'S RECOMMENDATIONS. CORRECT ORIENTATION OF THE GEOSYNTHETIC REINFORCEMENT SHALL BE VERIFIED BY THE CONTRACTOR TO BE IN ACCORDANCE WITH THE GEOSYNTHETIC MANUFACTURER'S RECOMMENDATIONS. THE HIGHEST-STRENGTH DIRECTION OF THE GEOSYNTHETIC MUST BE PERPENDICULAR TO THE WALL FACE.
40. GEOSYNTHETIC REINFORCEMENT LAYERS SHALL BE ONE CONTINUOUS PIECE FOR THEIR ENTIRE EMBEDMENT LENGTH. SPLICING OF THE GEOSYNTHETIC IN THE DESIGN-STRENGTH DIRECTION (PERPENDICULAR TO THE WALL FACE) SHALL NOT BE PERMITTED. ALONG THE LENGTH OF THE WALL, HORIZONTALLY ADJACENT SECTIONS OF GEOSYNTHETIC REINFORCEMENT SHALL BE BUTTED IN A MANNER TO ASSURE 100% COVERAGE PARALLEL TO THE WALL FACE.
41. TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY ON THE GEOSYNTHETIC REINFORCEMENT. A MINIMUM OF 6 INCHES OF BACKFILL IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOSYNTHETIC. TURNING SHOULD BE KEPT TO A MINIMUM. RUBBER-TIRED EQUIPMENT MAY PASS OVER THE GEOSYNTHETIC REINFORCEMENT AT SLOW SPEEDS (LESS THAN 5 MPH).
42. THE GEOSYNTHETIC REINFORCEMENT SHALL BE FREE OF WRINKLES PRIOR TO PLACEMENT OF SOIL FILL. THE NOMINAL TENSION SHALL BE APPLIED TO THE REINFORCEMENT AND SECURED IN PLACE WITH STAPLES, STAKES OR BY HAND TENSIONING UNTIL REINFORCEMENT IS COVERED BY 6 INCHES OF FILL.

DESCRIPTION | DATE

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.
site

SPECIFICATIONS
1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO:	21231
DRAWN BY:	JRG
CHECKED BY:	CTC
SCALE:	AS SHOWN

C501

SEGMENTAL RETAINING WALL CONT.:

43. DRAINAGE AGGREGATE SHALL BE INSTALLED TO THE LINE, GRADES AND SECTIONS SHOWN ON THE FINAL P.E.-SEALED RETAINING WALL PLANS. DRAINAGE AGGREGATE SHALL BE PLACED TO THE MINIMUM THICKNESS SHOWN ON THE CONSTRUCTION PLANS BETWEEN AND BEHIND UNITS (A MINIMUM OF 1 CUBIC FOOT FOR EACH EXPOSED SQUARE FOOT OF WALL FACE UNLESS OTHERWISE NOTED ON THE FINAL WALL PLANS).
44. DRAINAGE COLLECTION PIPES SHALL BE INSTALLED TO MAINTAIN GRAVITY FLOW OF WATER OUTSIDE THE REINFORCED-SOIL ZONE. THE DRAINAGE COLLECTION PIPE SHALL BE INSTALLED AT THE LOCATIONS SHOWN ON THE FINAL CONSTRUCTION DRAWINGS. THE DRAINAGE COLLECTION PIPE SHALL DAYLIGHT INTO A STORM SEWER OR ALONG A SLOPE, AT AN ELEVATION BELOW THE LOWEST POINT OF THE PIPE WITHIN THE AGGREGATE DRAIN. DRAINAGE LATERALS SHALL BE SPACED AT A MAXIMUM 50-FOOT SPACING ALONG THE WALL FACE.
45. THE REINFORCED BACKFILL SHALL BE PLACED AS SHOWN IN THE FINAL WALL PLANS IN THE MAXIMUM COMPACTED LIFT THICKNESS OF 8 INCHES AND SHALL BE COMPACTED TO A MINIMUM OF 95% OF STANDARD PROCTOR DENSITY (ASTM D 698) AT A MOISTURE CONTENT WITHIN -1% POINT TO +3% POINTS OF OPTIMUM. THE BACKFILL SHALL BE PLACED AND SPREAD IN SUCH A MANNER AS TO ELIMINATE WRINKLES OR MOVEMENT OF THE GEOSYNTHETIC REINFORCEMENT AND THE SRW UNITS.
46. ONLY HAND-OPERATED COMPACTION EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET OF THE BACK OF THE WALL UNITS. COMPACTION WITHIN THE 3 FEET BEHIND THE WALL UNITS SHALL BE ACHIEVED BY AT LEAST THREE PASSES OF A LIGHTWEIGHT MECHANICAL TAMPER, PLATE, OR ROLLER.
47. AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LEVEL OF BACKFILL AWAY FROM THE WALL FACING AND REINFORCED BACKFILL TO DIRECT WATER RUNOFF AWAY FROM THE WALL FACE.
48. AT COMPLETION OF WALL CONSTRUCTION, BACKFILL SHALL BE PLACED LEVEL WITH FINAL TOP OF WALL ELEVATION. IF FINAL GRADING, PAVING, LANDSCAPING AND/OR STORM DRAINAGE INSTALLATION ADJACENT TO THE WALL IS NOT PLACED IMMEDIATELY AFTER WALL COMPLETION, TEMPORARY GRADING AND DRAINAGE SHALL BE PROVIDED TO ENSURE WATER RUNOFF IS NOT DIRECTED AT THE WALL NOR ALLOWED TO COLLECT OR POND BEHIND THE WALL UNTIL FINAL CONSTRUCTION ADJACENT TO THE WALL IS COMPLETED.
49. SRW CAPS SHALL BE PROPERLY ALIGNED AND GLUED TO UNDERLYING UNITS WITH VERSA-LOK ADHESIVE, A FLEXIBLE, HIGH-STRENGTH CONCRETE ADHESIVE. RIGID ADHESIVE OR MORTAR ARE NOT ACCEPTABLE.
50. CAPS SHALL OVERHANG THE TOP COURSE OF UNITS BY 3/4 INCH TO 1 INCH. SLIGHT VARIATION IN OVERHANG IS ALLOWED TO CORRECT ALIGNMENT AT THE TOP OF THE WALL.
51. THE GENERAL CONTRACTOR IS RESPONSIBLE FOR ENSURING THAT CONSTRUCTION BY OTHERS ADJACENT TO THE WALL DOES NOT DISTURB THE WALL OR PLACE TEMPORARY CONSTRUCTION LOADS ON THE WALL THAT EXCEED DESIGN LOADS, INCLUDING LOADS SUCH AS WATER PRESSURE, TEMPORARY GRADES, OR EQUIPMENT LOADING. HEAVY PAVING OR GRADING EQUIPMENT SHALL BE KEPT A MINIMUM OF 3 FEET BEHIND THE BACK OF THE WALL FACE. EQUIPMENT WITH WHEEL LOADS IN EXCESS OF 150 PSF LIVE LOAD SHALL NOT BE OPERATED WITHIN 10 FEET OF THE FACE OF THE RETAINING WALL DURING CONSTRUCTION ADJACENT TO THE WALL. CARE SHOULD BE TAKEN BY THE GENERAL CONTRACTOR TO ENSURE WATER RUNOFF IS DIRECTED AWAY FROM THE WALL STRUCTURE UNTIL FINAL GRADING AND SURFACE DRAINAGE COLLECTION SYSTEMS ARE COMPLETED.

BIOFILTRATION BASIN:

1. BIOFILTRATION BASIN SHALL BE CONSTRUCTED IN GENERAL ACCORDANCE WITH WDNR TECHNICAL STANDARD 1004: BIORETENTION FOR INFILTRATION AND THESE SPECIFICATIONS.
2. ENGINEERED SOIL MIX SHALL CONSIST OF A MIX OF 70 TO 85% SAND AND 15 TO 30% COMPOST BASED ON VOLUME. SAND SHALL MEET THE REQUIREMENTS FOR FINE AGGREGATE SAND SPECIFIED SECTION 501.2.5.3.4 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION OR MEET ASTM C33 (FINE AGGREGATE CONCRETE SAND).
3. PRIOR TO PLACEMENT IN THE BIOFILTRATION BASIN, THE ENGINEERED SOIL SHALL BE PREMIXED AND THE MOISTURE CONTENT SHALL BE LOW ENOUGH TO PREVENT CLUMPING AND COMPACTION DURING PLACEMENT.
4. THE ENGINEERED SOIL SHALL BE PLACED IN MULTIPLE LIFTS, EACH APPROXIMATELY 12 INCHES IN DEPTH.
5. ENGINEERED SOIL MIX SHALL BE FREE OF ROCKS, STUMPS, ROOTS, BRUSH OR OTHER MATERIAL OVER ONE INCH IN DIAMETER. NO OTHER MATERIALS SHALL BE MIXED WITH THEE PLANTING SOIL THAT MAY BE HARMFUL TO PLANT GROWTH OR BE A HINDRANCE TO PLANTING OR MAINTENANCE.
6. ENGINEERED SOIL AND GRAVEL SHALL BE IN ACCORDANCE WITH THE LATEST WDNR TECHNICAL STANDARD 1004.
7. PEA GRAVEL SHALL BE GRADED SUCH THAT MINIMUM PARTICLE SIZE IS LARGE ENOUGH TO PREVENT FALLING THROUGH PERFORATIONS OF THE UNDERDRAIN PIPE.
8. BIOFILTRATION BASIN DRAIN PIPE: 6-INCH CORRUGATED HDPE PIPE MEETING PERFORATION REQUIREMENTS OF AASHTO M278 HIGHWAY UNDERDRAIN SPECIFICATIONS WITH 3/8" PERFORATIONS ON 6" CENTERS WITH 4 HOLES PER ROW.
9. BEEHIVE INLET: NEENAH R-256I, OR EQUAL
10. RISER STRUCTURE: 48" DIAMETER PRECAST CATCH BASIN STRUCTURE WITH 24" TOP OPENING TO ACCOMMODATE BEEHIVE INLET. IN GENERAL ACCORDANCE WITH FILE NO. 26 OF THE STANDARD SPECIFICATIONS FOR SEWER AND WATER CONSTRUCTION IN WISCONSIN.
11. GRAVEL STORAGE LAYER (IF INDICATED ON PLANS): COURSE AGGREGATE #2 IN ACCORDANCE WITH SECTION 501.2.5.4.4 OF THE WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION.
12. FILTER FABRIC: GEOTEXTILE FABRIC IN ACCORDANCE WITH SECTION 645.2.2.4 OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION
13. EXCAVATE TO GRADES AS INDICATED ON PLANS.
14. CONSTRUCT TEMPORARY DIVERSION SWALES OR PROVIDE OTHER MEANS AS NECESSARY TO PREVENT CONSTRUCTION SITE RUNOFF FROM DISTURBED AREAS, AND RUNOFF FROM PERVIOUS AREAS WHICH HAVE NOT YET BEEN STABILIZED, FROM ENTERING THE BIORETENTION AREA.
15. CONSTRUCTION SHALL BE SUSPENDED DURING PERIODS OF RAINFALL OR SNOWMELT. CONSTRUCTION SHALL REMAIN SUSPENDED IF PONDED WATER IS PRESENT OR IF RESIDUAL SOIL MOISTURE CONTRIBUTES SIGNIFICANTLY TO THE POTENTIAL FOR SOIL SMEARING, CLUMPING OR OTHER FORMS OF COMPACTION.
16. COMPACTION AND SMEARING OF THE ENGINEERED SOIL AND TOP SOIL BENEATH THE FLOORS, IN THE SOIL PLANTING BED, AND THE SIDE SLOPES OF THE BASIN, AND COMPACTION OF THE ENGINEERED SOILS IN THE BASIN SHALL BE MINIMIZED. DURING SITE DEVELOPMENT, THE AREA DEDICATED TO THE BIOFILTRATION BASIN SHALL BE CORDONED OFF TO PREVENT ACCESS BY HEAVY EQUIPMENT. ACCEPTABLE EQUIPMENT FOR CONSTRUCTING THE BIOFILTRATION BASIN INCLUDES EXCAVATION HOES, LIGHT EQUIPMENT WITH TURF TYPE TIRES, MARSH EQUIPMENT OR WIDE-TRACK LOADERS.
17. IF COMPACTION OCCURS AT THE BASE OF THE BIOFILTRATION BASIN, THE SOIL SHALL BE REFRACTURED TO A DEPTH OF AT LEAST 12 INCHES. IF SMEARING OCCURS, THE SMEARED AREAS OF THE INTERFACE SHALL BE CORRECTED BY RAKING OR ROTO-TILLING.
18. STEPS MAY BE TAKEN TO INDUCE MILD SETTLING OF THE ENGINEERED SOIL BED AS NEEDED TO PREPARE A STABLE PLANTING MEDIUM AND TO STABILIZE THE PONDING DEPTH. VIBRATING PLATE-STYLE COMPACTORS SHALL NOT BE UTILIZED.
19. ANY SEDIMENT ACCUMULATED IN THE BASIN DUE TO CONSTRUCTION ACTIVITIES SHOULD BE REMOVED AND THE ENGINEERED SOIL SHALL BE DEEP TILLED PRIOR TO PLANTING.
20. IMPERVIOUS LINER SHALL BE 45 MIL FIRESTONE EPDM (GSI PRODUCTS), OR 30 MIL PVC (GSI PRODUCTS), OR EQUAL.

POROUS PAVEMENT:

1. THE COMPOSITION, PLACING AND CONSTRUCTION OF ASPHALTIC PAVEMENTS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF SECTIONS 450, 455, 460, 465, AND 475 OF THE STATE OF WISCONSIN STANDARD SPECIFICATIONS FOR HIGHWAY AND STRUCTURE CONSTRUCTION, LATEST EDITION (WISDOT STANDARD SPECIFICATIONS) AND WISCONSIN ASPHALT PAVEMENT ASSOCIATION (WAPA) POROUS ASPHALT PAVEMENTS TECHNICAL BULLETIN.
2. CONTRACTOR SHALL PROVIDE PRODUCT DATA FOR EACH TYPE OF PRODUCT INDICATED - INCLUDE TECHNICAL DATA AND TESTED PHYSICAL AND PERFORMANCE PROPERTIES; JOB-MIX DESIGNS: CERTIFICATION THAT MIX MEETS OR EXCEEDS WISDOT STANDARD SPECIFICATIONS; AND MATERIAL CERTIFICATES CERTIFYING COMPLIANCE WITH WISDOT STANDARD SPECIFICATIONS.
3. MANUFACTURER QUALIFICATIONS: MANUFACTURER SHALL BE REGISTERED WITH AND APPROVED BY THE DOT OF THE STATE IN WHICH PROJECT IS LOCATED.
4. ENVIRONMENTAL LIMITATIONS: DO NOT APPLY ASPHALT MATERIALS IF BASE COURSE IS WET OR EXCESSIVELY DAMP OR IF THE FOLLOWING CONDITIONS ARE NOT MET: APPLY TACK COAT WHEN AMBIENT TEMPERATURE IS ABOVE 50 DEGREES FAHRENHEIT AND WHEN TEMPERATURE HAS NOT BEEN BELOW 35 DEGREES FAHRENHEIT FOR 12 HOURS IMMEDIATELY PRIOR TO APPLICATION; PLACE ASPHALTIC CONCRETE SURFACE COURSE WHEN TEMPERATURE IS ABOVE 40 DEGREES FAHRENHEIT; BASE COURSE MAY BE PLACED WHEN AIR TEMPERATURE IS ABOVE 30 DEGREES FAHRENHEIT AND RISING. PROCEED WITH PAVEMENT MARKING ONLY ON CLEAN, DRY SURFACES. DO NOT APPLY BELOW THE MINIMUM PAVEMENT TEMPERATURE AS RECOMMENDED BY THE MANUFACTURER.
5. AGGREGATES SHALL BE IN ACCORDANCE WITH SECTION 460.2.2 OF THE WISDOT STANDARD SPECIFICATIONS AS MODIFIED BY THE WAPA POROUS ASPHALT PAVEMENTS TECHNICAL BULLETIN.
6. ASPHALT MATERIALS SHALL BE IN ACCORDANCE WITH CHAPTER 455 OF THE WISDOT STANDARD SPECIFICATIONS AS MODIFIED BY THE WAPA POROUS ASPHALT PAVEMENTS TECHNICAL BULLETIN.
7. PAVEMENT MARKING PAINT: PROVIDE PAINT FROM THE WISCONSIN DEPARTMENT OF TRANSPORTATION'S APPROVED PRODUCTS LIST. COLOR SHALL BE WHITE UNLESS INDICATED OTHERWISE ON PLANS.
8. POROUS ASPHALT: POROUS ASPHALT MIXES SHALL BE COMPATIBLE WITH WISDOT-APPROVED WARM-MIX ASPHALT TECHNOLOGIES. ASPHALTIC BINDER SHALL BE GRADE 28 IN ACCORDANCE WITH WAPA POROUS ASPHALTIC TECHNICAL BULLETIN.
9. AGGREGATE STORAGE RESERVOIR: USE A WASHED OR OPEN-GRADED BASE CONSISTING OF CRUSHED STONE OR CRUSHED GRAVEL WITH NO GREATER THAN 50% PASSING THE NO. 200 SIEVE. PROVIDE A MINIMUM POROSITY OF 30% PER ASTM C29 STANDARD TEST METHOD FOR BULK DENSITY AND VOIDS IN AGGREGATE. COMPLY WITH SOUNDNESS, WEAR, AND FRACTURE REQUIREMENTS LISTED IN WISCONSIN DOT STANDARD SPECIFICATION SECTION 301.2.4.5 - AGGREGATE BASE PHYSICAL PROPERTIES.
10. PAVEMENT PLACEMENT GENERAL: ASPHALT CONCRETE PAVING EQUIPMENT, WEATHER LIMITATIONS, JOB-MIX FORMULA, MIXING, CONSTRUCTION METHODS, COMPACTION, FINISHING, TOLERANCE AND PROTECTION SHALL CONFORM TO THE REQUIREMENTS OF THE APPROPRIATE SECTIONS OF THE WISDOT STANDARD SPECIFICATIONS AS MODIFIED BY THE WAPA POROUS ASPHALT PAVEMENTS TECHNICAL BULLETIN.
11. PREPARE AND PROOFROLL SUBGRADES AND AGGREGATE BASE COURSE AS OUTLINED IN EARTH MOVING SPECIFICATIONS PRIOR TO PLACEMENT OF ASPHALT PAVEMENTS. THE SLOPE OF THE SUBGRADE SHALL BE AS FLAT AS POSSIBLE BUT NO GREATER THAN 2%.
12. SWEEP LOOSE GRANULAR PARTICLES FROM SURFACE OF AGGREGATE BASE COURSE PRIOR TO PAVEMENT PLACEMENT. DO NOT DISLODGE OR DISTURB AGGREGATE EMBEDDED IN COMPACTED SURFACE OF BASE COURSE.
13. SPREAD AND FINISH ASPHALTIC MIXTURE IN ACCORDANCE WITH SECTION 450.3.2.5 OF THE WISDOT STANDARD SPECIFICATIONS AS MODIFIED BY THE WAPA POROUS PAVEMENTS TECHNICAL BULLETIN. PAVEMENT THICKNESSES SHALL BE AS INDICATED ON THE PLANS.
14. PROMPTLY CORRECT SURFACE IRREGULARITIES IN PAVING COURSE BEHIND PAVER. USE SUITABLE HAND TOOLS TO REMOVE EXCESS MATERIAL FORMING HIGH SPOTS. FILL DEPRESSIONS WITH POROUS ASPHALT TO PREVENT SEGREGATION OF MIX; USE SUITABLE HAND TOOLS TO SMOOTH SURFACE.
15. COMPACT ASPHALTIC PAVEMENT IN ACCORDANCE WITH SECTION 450.3.2.6 OF THE WISDOT STANDARD SPECIFICATIONS AS MODIFIED BY THE WAPA POROUS ASPHALT PAVEMENTS TECHNICAL BULLETIN. POROUS ASPHALT SHOULD BE COMPACTED WITH TWO TO FOUR PASSES OF A 10-TON ROLLER.
16. PROTECTION: AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR TRAFFIC ON PAVEMENT FOR AT LEAST 24 HOURS. ERECT BARRICADES TO PROTECT PAVING FROM TRAFFIC UNTIL MIXTURE HAS COOLED ENOUGH NOT TO BECOME MARKED.
17. THICKNESS TOLERANCE: COMPACT EACH COURSE TO PRODUCE THE THICKNESS INDICATED WITHIN PLUS/MINUS ¼ INCH FOR BINDER COURSE AND PLUS ¼ INCH FOR SURFACE COURSE, NO MINUS.
18. SURFACE SMOOTHNESS TOLERANCE: COMPACT EACH COURSE TO PRODUCE A SURFACE SMOOTHNESS WITHIN THE FOLLOWING TOLERANCES AS DETERMINED BY USING A 10-FOOT STRAIGHTEDGE APPLIED TRANSVERSELY OR LONGITUDINALLY TO PAVED AREAS: BINDER COURSE: ¼ INCH; SURFACE COURSE: 1/8 INCH. REMOVE AND REPLACE ALL HUMPS OR DEPRESSIONS EXCEEDING THE SPECIFIED TOLERANCES.
19. DO NOT APPLY PAVEMENT-MARKING PAINT UNTIL LAYOUT, COLORS, AND PLACEMENT HAVE BEEN VERIFIED WITH ENGINEER.
20. APPLY MARKINGS TO A DRY SURFACE FREE FROM FROST. REMOVE DUST, DIRT, OIL, GREASE, GRAVEL, DEBRIS OR OTHER MATERIAL THAT MAY PREVENT BONDING TO THE PAVEMENT.
21. APPLY PAINT AS THE MANUFACTURER SPECIFIES WITH MECHANICAL EQUIPMENT TO PRODUCE PAVEMENT MARKINGS, OF DIMENSIONS INDICATED, WITH UNIFORM, STRAIGHT EDGES. APPLY AT MANUFACTURER'S RECOMMENDED RATES AT A MINIMUM RATE OF 17.6 GALLONS/MILE FOR A CONTINUOUS 4" LINE.
22. TESTING AGENCY: CONTRACTOR SHALL ENGAGE A QUALIFIED INDEPENDENT TESTING AND INSPECTING AGENCY TO PERFORM FIELD TESTS AND INSPECTIONS AND TO PREPARE TEST REPORTS.

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

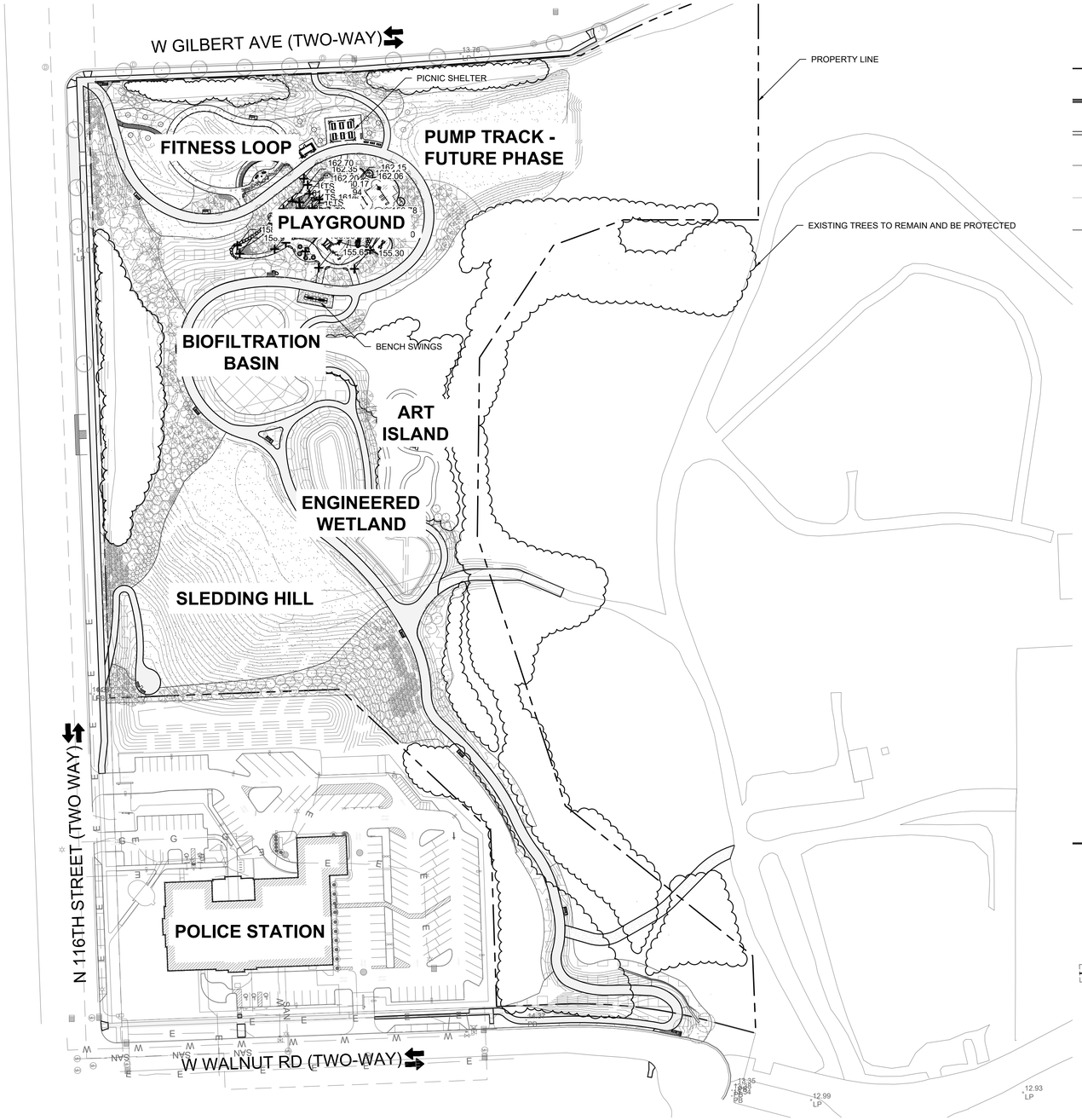
THE SIGMA GROUP
Single Source. Sound Solutions.

SPECIFICATIONS

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: ----
FILE NO: 21231
DRAWN BY: JRG
CHECKED BY: CTC
SCALE: AS SHOWN

C502



LEGEND

- PROPERTY LINE
- RAISED CONCRETE CURB
- FLUSH CONCRETE CURB
- EXPANSION JOINT
- CONTROL JOINT
- THICKENED EDGE CONCRETE PAVEMENT
- STABILIZED AGGREGATE PAVING
- CONCRETE PAVEMENT
- PLAY TURF SURFACING W/ AGGREGATE SUBBASE
- PLAY TURF SURFACING W/ CONCRETE SUBBASE
- ENGINEERED WOOD FIBER
- BOULDERS
- STONE STEPPERS
- LAWN SEED MIX
- PERENNIALS AND ORNAMENTAL GRASSES
- LOW PRAIRIE SEED MIX
- BASIN SEED MIX
- EMERGENT SLOPE SEED MIX
- NO MOW LAWN SEED MIX
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SHRUBS
- EXISTING TREES TO REMAIN AND BE PROTECTED
- HANDRAIL
- WOODEN PLATFORM
- TRASH RECEPTACLE
- RECYCLING RECEPTACLE
- BENCH SWINGS
- PICNIC TABLE, TYPE 1
- PICNIC TABLE, TYPE 2
- PICNIC TABLE, TYPE 3
- BENCH, TYPE 1
- BENCH, TYPE 2
- BENCH, TYPE 3
- GAME TABLE
- BIKE RACK
- HOT COAL RECEPTACLE
- ADA CLEARANCE

NOTE:
SEE SCHEDULES TO DETERMINE FURNISH AND INSTALLATION RESPONSIBILITIES

1 OVERALL SITE PLAN (FOR REFERENCE ONLY)
1"= 80'-0"

0 40 80 120 160'

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

OVERALL SITE PLAN (FOR REFERENCE ONLY)

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L002

FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:

CONCRETE AND FORMWORK NOTES:

1. ALL CONCRETE WORK SHALL CONFORM TO THE LATEST EDITION OF THE FOLLOWING (INCLUDING BUT NOT LIMITED TO) AMERICAN CONCRETE INSTITUTE PUBLICATIONS:
   a. ACI 301 - SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS
   b. ACI 304 - GUIDE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE
   c. ACI 311 - GUIDE FOR CONCRETE INSPECTION
   d. ACI 315 - DETAILS AND DETAILING OF CONCRETE REINFORCEMENT
   e. ACI 318 - BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE AND COMMENTARY
   f. ACI 347 - GUIDE TO FORMWORK FOR CONCRETE
2. CONCRETE SHALL BE AS FOLLOWS:
   a. CONCRETE F'C PSI @ 28 DAYS
   b. FOUNDATIONS AND FOOTINGS NORMAL WEIGHT (145 PCF) F'C = 4000 PSI
   c. GRADE BEAMS NORMAL WEIGHT (145 PCF) F'C = 4000 PSI
   d. EXTERIOR SLAB ON GRADE NORMAL WEIGHT (145 PCF) F'C = 4000 PSI
   e. PADS FOR MEP EQUIP. NORMAL WEIGHT (145 PCF) F'C = 4000 PSI
   f. ELEVATED SLABS, BEAMS NORMAL WEIGHT (145 PCF) F'C = 8000 PSI
3. ALL EXTERIOR EXPOSED CONCRETE SHALL BE AIR- ENTRAINED TO GIVE THE CONCRETE AN AIR CONTENT OF 6 +/- 1 1/2% BY VOLUME. WATER REDUCING PLASTICIZING ADMIXTURES MAY BE USED, PENDING APPROVAL OF THE AOR, SOR AND LA.
4. NO CALCIUM CHLORIDE OR CHLORIDE ION PRODUCING ADD MIXTURE SHALL BE USED IN ANY CONCRETE.
5. FORMWORK FOR ALL CONCRETE WHICH WILL BE EXPOSED IN COMPLETED STRUCTURES SHALL BE CONSTRUCTED FROM A SUITABLE PLASTIC SURFACED PLYWOOD WHICH WILL PRODUCE AN ACCEPTABLY SMOOTH SURFACE. ALSO SEE THE SPECIFICATIONS.
6. THE CONTRACTOR SHALL SUBMIT DETAILED DRAWINGS SHOWING THE LOCATIONS OF ALL FORM TIES, CONSTRUCTION JOINTS, CURBS AND SLAB DEPRESSIONS, IF ANY, AND DESCRIBE THE CONCRETE PLACEMENT SEQUENCING. ALL CURBS SHALL BE REINFORCED WITH AT LEAST (1) - #4 CONTINUOUS AND #3 AT 16" C/C DOWELS TO THE STRUCTURE BELOW, UNO.
7. ALL CONSTRUCTION JOINTS SHALL BE WIRE BRUSHED AND CLEANED IMMEDIATELY PRIOR TO PLACING NEW CONCRETE. ALLOW 24 HOURS MINIMUM TO ELAPSE BETWEEN POURS.
8. SEE ARCHITECTURAL DRAWINGS FOR TYPE AND LOCATION OF ALL INTERIOR FLOOR FINISHES, FLOOR DEPRESSIONS AND CURBS AND FOR ALL WATERPROOFING/DAMPPROOFING DETAILS. SEE MEP DRAWINGS FOR ADDITIONAL WALL AND/OR SLAB OPENINGS, AND EQUIPMENT PADS NOT SHOWN ON THE STRUCTURAL DRAWINGS.
9. SLOPE CONCRETE SLABS, WHERE REQUIRED, DRAINS SHOWN ON THE ARCHITECTURAL CIVIL AND/OR MEP.
10. CONCRETE PROTECTION FOR REINFORCING BARS SHALL BE AS FOLLOWS:
    a. FOOTINGS 3" CLEAR, SIDES AND BOTTOM
    b. WALLS 2" CLEAR, OUTSIDE FACE, 1 1/2" CLEAR, INSIDE FACE
    c. SLABS 1" CLEAR
    d. PIERS 2" CLEAR TO TIES

DIMENSIONAL LUMBER:

1. ALL WOOD CONSTRUCTION SHALL CONFORM TO THE "NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION," LATEST EDITION, BY THE NATIONAL FOREST PRODUCT ASSOCIATION.
2. STRUCTURAL LUMBER SHALL HAVE THE FOLLOWING MINIMUM IN GRADE UNIT STRESSES:
   a. GRADE: STRUCTURAL SELECT, REFER TO SPECIFICATIONS FOR SPECIES
      - FB = 1200 PSI
      - FV = 160 PSI
      - FC = 1,200 PSI
      - ⊥FC = 615 PSI
      - FT = 650 PSI
      - E = 1,400,000 PSI
3. ALL LUMBER SHALL HAVE AN AVERAGE MOISTURE CONTENT OF NOT MORE THAN 19%.
4. BOLT HEADS & NUTS BEARING ON WOOD SHALL BE PROVIDED WITH STANDARD CUT WASHERS.
5. ALL WOOD IN CONTACT WITH CONCRETE OR MASONRY SHALL BE PRESSURE TREATED UNO.
6. MINIMUM NAILED CONNECTIONS FOR WOOD FRAMING MEMBERS SHALL BE IN ACCORDANCE WITH REQUIREMENTS OF THE LATEST VERSION OF THE APPLICABLE JURISDICTIONAL BUILDING CODES.
7. ALL STRUCTURAL WOOD EXPOSED TO THE ELEMENTS SHALL BE PRESSURE TREATED.
8. ALL CONNECTIONS THROUGH PRESSURE TREATED WOOD SHALL BE MADE WITH CORROSION RESISTANT FASTENERS.

PLANTING PROTECTION AND REMOVAL NOTES:

1. PRIOR TO THE COMMENCEMENT OF PLANTING PROTECTION AND REMOVAL SCOPE OF WORK, CONVENE A PRE-CONSTRUCTION CONFERENCE WITH AOR, LA, CONTRACTOR AND ANY ASSOCIATED AND RELEVANT DESIGN TEAM MEMBERS, SUBCONTRACTORS AND AHJ TO REVIEW WORK SCOPE, SCHEDULE AND TO REVIEW Q&A BY DESIGN TEAM, AHJ AND CONTRACTORS. CONTRACTOR TO PROVIDE MINIMUM 5 BUSINESS DAY NOTICE FOR ALL MEETINGS.
2. CONFIRM ALL PLANTING REMOVAL AND PROTECTION QUANTITIES AND DIMENSIONS.
3. INSTALL PLANT PROTECTION FENCING PRIOR TO SITE WORK AND MAINTAIN THROUGHOUT CONSTRUCTION PERIOD. NO STORAGE OF MATERIALS, VEHICULAR ACCESS OR ANY OTHER CONSTRUCTION ACTIVITIES PERMITTED WITHIN THE TREE PROTECTION ZONE UNO.
4. ALL PLANT AND SITE PROTECTION FENCING TO BE INSTALLED PRIOR TO HARDSCAPE DEMOLITION AND/OR CONSTRUCTION OPERATIONS.
5. ADJUST PLANT PROTECTION FENCING AS NEEDED THROUGHOUT CONSTRUCTION OPERATIONS TO PROTECT CRITICAL ROOT ZONES OF ALL TREES.
6. MARK ALL ROOT PRUNING LOCATIONS PRIOR TO EXECUTION FOR REVIEW AND APPROVAL BY LA.
7. PROVIDE 2 INCH (AFTER SETTLING) MULCH LAYER WITHIN CRITICAL ROOT ZONE OF EXISTING TREES AS MIN PROTECTION DURING CONSTRUCTION OPERATIONS. COORDINATE WITH AOR AND LA FOR ADDITIONAL MEASURES IF CRITICAL ROOT ZONES NEED TO BE ACCESSED FOR ANY REASON DURING CONSTRUCTION OPERATIONS. MULCH LAYER TO BE A 50/50 BLEND OF ¾ INCH SHREDDED HARDWOOD BARK FINES AND ¾ INCH PINE BARK FINES.
8. PROVIDE TEMPORARY IRRIGATION FOR ALL EXISTING PLANT MATERIAL AND MAINTAIN THROUGHOUT CONSTRUCTION OPERATIONS. PROVIDE IN SUCH A MANNER AS TO NOT IMPACT EXISTING ROOT SYSTEMS OF PLANT MATERIAL.
9. REMOVE ALL EXISTING TREE AND SHRUB STUMPS AND ROOTS THAT IMPACT WORK. GRIND OUT STUMPS TO A MINIMUM DEPTH OF 18". BRING TO FINISH GRADE PRIOR TO COMPLETION OF WORK.
10. REMOVE MULCH, LAWN, AND PLANTING BEDS AND EXCAVATE EARTH TO COORDINATE WITH GRADING, EARTHWORK AND SITE IMPROVEMENTS.
11. FOR PLANTING REMOVAL AND PROTECTION DETAILS, SEE SHEET(S) L-008, L-501.
12. FOR PLANTING REMOVAL AND PROTECTION SCHEDULE, SEE SHEET(S) L-008.

MOCKUP NOTES:

1. PRIOR TO THE COMMENCEMENT OF MOCKUPS, CONVENE A PRE-CONSTRUCTION CONFERENCE WITH AOR, LA, CONTRACTOR AND ANY ASSOCIATED AND RELEVANT DESIGN TEAM MEMBERS, SUBCONTRACTORS AND AHJ TO REVIEW WORK SCOPE, SCHEDULE AND TO REVIEW Q&A BY DESIGN TEAM, AHJ AND CONTRACTORS. CONTRACTOR TO PROVIDE MINIMUM 5 BUSINESS DAY NOTICE FOR ALL MEETINGS.

LANDSCAPE DRAINAGE NOTES:

1. PRIOR TO THE COMMENCEMENT OF DRAINAGE SCOPE OF WORK, CONVENE A PRE-CONSTRUCTION CONFERENCE WITH AOR, LA, CONTRACTOR AND ANY ASSOCIATED AND RELEVANT DESIGN TEAM MEMBERS, SUBCONTRACTORS AND AHJ TO REVIEW WORK SCOPE, SCHEDULE AND TO REVIEW Q&A BY DESIGN TEAM, AHJ AND CONTRACTORS. CONTRACTOR TO PROVIDE MINIMUM 5 BUSINESS DAY NOTICE FOR ALL MEETINGS.
2. CONFIRM ALL DRAINAGE QUANTITIES AND DIMENSIONS.
3. LANDSCAPE DRAINAGE SHOWN IS IN ADDITION TO CIVIL DRAINAGE, REFER TO CIVIL.
4. ALL DRAINAGE PIPING AND ACCESSORIES TO BE INSTALLED IN SEGMENTS WITH APPLICABLE CONNECTIONS. CONNECTION BETWEEN DRAINAGE PIPING IS NOT SHOWN BUT IS TO BE ASSUMED AND TO BE INCLUDED IN COSTS.
5. COORDINATE TAP LOCATIONS WITH CIVIL, REFER TO CIVIL.

STRUCTURAL STEEL NOTES:

1. ALL DETAILING, FABRICATION AND ERECTION OF STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITIONS OF ALL AISC AND AWS SPECIFICATIONS AND CODES.
2. ALL STRUCTURAL STEEL WIDE FLANGE SHAPES SHALL MEET THE REQUIREMENTS OF ASTM A992, FY = 50 KSI, UNLESS NOTED OTHERWISE. ALL STRUCTURAL STEEL PIPES AND TUBES SHALL MEET THE REQUIREMENTS OF ASTM A500, GRADE B. ALL OTHER STRUCTURAL STEEL SHAPES SHALL MEET THE REQUIREMENTS OF ASTM A36 UNO ALL STEEL TO BE HOT DIP GALVANIZED.
3. ALL BOLTS, NUTS AND WASHERS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A325 OR ASTM A440. ALL ANCHOR BOLTS SHALL MEET THE REQUIREMENTS OF ASTM F1554, FY=36 KSI, UNO. ALL FASTENERS TO BE HOT DIP GALVANIZED UNO.
4. ALL WELDING ELECTRODES SHALL BE E70XX, UNO. ALL WELDING SHALL BE DONE BY QUALIFIED WELDERS AND SHALL CONFORM TO AWS "CODE FOR ARC AND GAS WELDING IN BUILDING CONSTRUCTION", LATEST EDITION.
5. SHOP CONNECTIONS MAY BE WELDED UNO. MINIMUM WELDS NOT SHOWN ON THE DRAWINGS SHALL BE 1/4" FILLET WELDS ALL AROUND.
6. UNO ON THE DRAWINGS, ALL CONNECTIONS SHALL BE STANDARD DOUBLE ANGLE SHEAR CONNECTIONS. ALL BOLTS SHALL BE MINIMUM 3/4" DIAMETER, ASTM A325. THE MINIMUM NUMBER OF VERTICAL ROWS OF BOLTS SHALL BE AS BELOW, UNLESS NOTED OTHERWISE ON THE DRAWINGS. IN CASES WHERE REACTIONS ARE NOT INDICATED, PROVIDE AT LEAST 75% OF THE UNIFORM LOAD CARRYING CAPACITY OF THE BEAM AS DETERMINED IN THE TABLES FOR "UNIFORM LOAD CONSTANTS FOR BEAMS" IN THE AISC MANUAL OF STEEL CONSTRUCTION, 14TH EDITION, OR THE REACTION FORCE WHEN INDICATED ON THE DRAWING AS (F=X.X KIPS).
   a. W6,W8, W10: (2) ROWS
   b. W12 & W14: (3) ROWS
7. SEE SPECIFICATIONS FOR CONNECTIONS DESIGN RESPONSIBILITIES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF ALL ERECTION PROCEDURES AND SEQUENCES WITH RELATION TO TEMPERATURE DIFFERENTIAL AND TEMPORARY STRUCTURAL STABILITY.
9. STEEL SHALL BE CLEANED OF RUST, LOOSE MILL SCALE AND OTHER FOREIGN MATERIALS WHERE REQUIRED FOR PROPER FABRICATION, FITTING UP OR WELDING.
10. THERE SHALL BE NO FIELD CUTTING OF STRUCTURAL STEEL MEMBERS FOR THE WORK OF OTHER TRADES WITHOUT THE PRIOR WRITTEN APPROVAL OF THE AOR, SOR AND LA.
11. REFER TO THE ARCHITECTURAL AND/OR MEP DRAWINGS FOR ADDITIONAL STRUCTURAL AND MISCELLANEOUS STEEL REQUIREMENTS. ALL EXTERIOR EDGE ANGLES, LINTELS AND SHELF ANGLES SHALL BE STAINLESS STEEL OR GALVANIZED AFTER FABRICATION. SEE SPECIFICATION FOR REQUIREMENTS.

HARDSCAPE NOTES:

1. PRIOR TO THE COMMENCEMENT OF HARDSCAPE SCOPE OF WORK, CONVENE A PRE-CONSTRUCTION CONFERENCE WITH AOR, LA, CONTRACTOR AND ANY ASSOCIATED AND RELEVANT DESIGN TEAM MEMBERS, SUBCONTRACTORS AND AHJ TO REVIEW WORK SCOPE, SCHEDULE AND TO REVIEW Q&A BY DESIGN TEAM, AHJ AND CONTRACTORS. CONTRACTOR TO PROVIDE MINIMUM 5 BUSINESS DAY NOTICE FOR ALL MEETINGS.
2. CONFIRM ALL HARDSCAPE QUANTITIES AND DIMENSIONS.
3. STAKE AND PAINT OUT ALL STRUCTURE EXTENTS AND FOOTING LOCATIONS, WALL FACES/BACKS, STAIR LOCATIONS, CURB FACES/BACKS AND PAVING EDGES PER PLANS FOR AOR AND LA REVIEW AND APPROVAL PRIOR TO EXCAVATION AND INSTALLATION. ADJUST ANY LAYOUT MODIFICATIONS BY AOR AND LA AT NO ADDITIONAL COST TO THE OWNER. ALL SURVEY AND LAYOUT COSTS BY CONTRACTOR.
4. ESTABLISH APPROVED LAYOUT LINES AND GRADES AND MAINTAIN THROUGH CONSTRUCTION FOR VERIFICATION BY AOR AND LA. ALL LINES TO BE STRAIGHT AND TRUE, ALL CURVES SHALL BE SMOOTH AND NON-FACETED WITH BOTH IN ACCORDANCE WITH THE PLANS AND APPROVED FIELD LAYOUT BY AOR AND LA.
5. FOR PRECISION OF LAYOUT REQUIREMENTS SEE SPECS. ALL EDGES OF HARDSCAPE ELEMENTS TO BE PAINTED AND MAINTAINED FOR AOR AND LA REVIEW AND APPROVAL PRIOR TO FORMING. ALL FORMING AND REINFORCEMENT TO BE REVIEWED AND APPROVED BY AOR AND LA PRIOR TO POURING.
6. MATCH LINE AND GRADE OF PAVEMENT, LAWN AND PLANTING AREAS TO EXISTING ADJACENT AREAS.
7. TRANSITION SMOOTHLY BETWEEN DIFFERENT SLOPES WITHOUT ABRUPT CHANGES IN SLOPE. REFER TO GRADING PLAN.
8. GRADE ALL HARDSCAPE SURFACES TO A MAXIMUM 5% SLOPE WITH A MAXIMUM CROSS SLOPE OF 2% AND A MINIMUM SLOPE OF 1%. SLOPE ALL PAVEMENT TO DRAIN.
9. ADJUST UTILITY STRUCTURES TO MEET FINISH GRADE.
10. LAYOUT CONTROL JOINTS AT A MAX 5' OC AND EXPANSION JOINTS AT A MAX 30' OC UNO. IF PAVEMENT IS ARCED, LAYOUT CONTROL JOINTS EQUALLY ALONG LENGTH OF ARCH AND PERPENDICULAR TO CENTERLINE OF ARC UNO.
11. ALL CONTROL JOINTS AND EXPANSION JOINTS ARE PERPENDICULAR AND PARALLEL TO BUILDING FACADE UNO.
12. CLEARLY MARK ALL VISIBLE SAW CUT CONTROL JOINTS PRIOR TO CUTTING FOR REVIEW AND APPROVAL BY AOR AND LA.
13. ALL EXPOSED VERTICAL CONCRETE EDGES TO BE CHAMFERED 1/2", 45° UNO.
14. REFER TO SPECIFICATIONS FOR PAVEMENT REPAIR AND RESTORATION CRITERIA.
15. SET BOULDERS OR ANY OTHER STONE ELEMENTS OR FEATURES PRIOR TO PLACING ADJACENT HARDSCAPES. PROVIDE EXPANSION JOINT BETWEEN VERTICAL ELEMENTS AND ADJACENT HORIZONTAL SURFACES. COORDINATE WITH AOR AND LA IN FIELD PRIOR TO FINAL PLACEMENT OF BOULDERS.
16. COORDINATE REQUIREMENTS OF FOUNDATIONS FOR UTILITIES, LIGHTING, IRRIGATION AND SITE FURNISHINGS SCOPE IN CONJUNCTION WITH ALL HARDSCAPE OPERATIONS.
17. FOR HARDSCAPE DETAILS, SEE SHEET(S) L-503A, L-503B, L-503C, L-503D, L-503E.
18. FOR HARDSCAPE SCHEDULE, SEE SHEET(S) L-603.

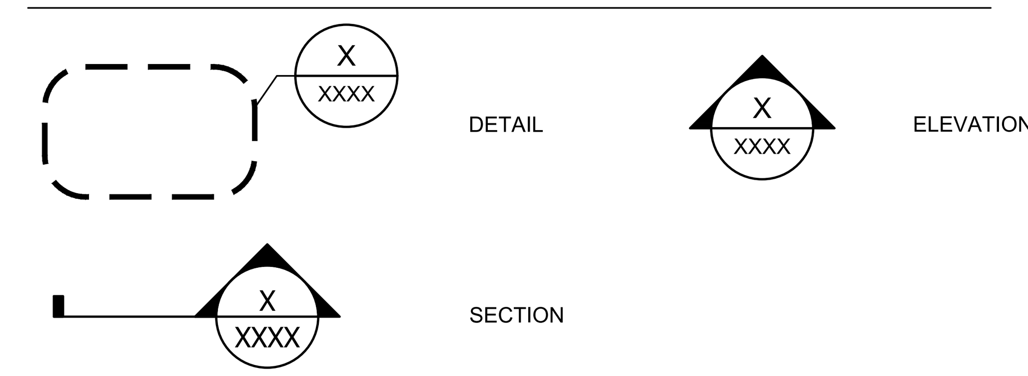
SOIL NOTES:

1. CONFIRM ALL SOIL QUANTITIES AND DIMENSIONS.
2. BASE SOIL MIX SHALL BE AS FOLLOWS:
   a. PLANTING TOPSOIL, EITHER EXISTING ON SITE OR IMPORTED, TO BE USED FOR NEW PLANTING SOILS ACROSS THE ENTIRE SITE SHALL MEET THE FOLLOWING CRITERIA (AMEND AS NECESSARY TO MEET SPEC):
      - CLAY VALUE NOT TO EXCEED (IDEAL RANGE 10-15%).
      - SAND VALUE (IDEAL RANGE 60-70%) SAND VALUES SHALL BE MOSTLY MEDIUM TO COURSE ON THE .25 AND .50 SIEVE.
      - REMAINDER TO BE SILT (IDEAL RANGE 15-30%)
      - ORGANIC MATTER NOT LESS THAN 3.5% AND NOT MORE THAN 5%
   b. LAWN TOPSOIL, EITHER EXISTING ON SITE OR IMPORTED, TO BE USED FOR NEW PLANTING SOILS ACROSS THE ENTIRE SITE SHALL MEET THE FOLLOWING CRITERIA (AMEND AS NECESSARY TO MEET SPEC):
      - CLAY VALUE NOT TO EXCEED 25% (IDEAL RANGE 5-25%).
      - SAND VALUE (IDEAL RANGE 25-50%) SAND VALUES SHALL BE MOSTLY MEDIUM TO COURSE ON THE .25 AND .50 SIEVE.
      - REMAINDER TO BE SILT (IDEAL RANGE 25-50%)
      - ORGANIC MATTER NOT LESS THAN 3.5% AND NOT MORE THAN 5%
3. AMENDMENTS FOR PLANTING MIXES:
   a. MIXED SOIL AMENDMENTS (4" DEPTH PROFILE TILLED INTO THE PROPOSED SOIL PROFILE DEPTH):
      - 4 PARTS AGED PINE FINES
      - 4 PARTS COURSE SAND
      - 2 PARTS COMPOSTED RICE HULLS
   b. PLACED SOIL AMENDMENTS:
      - GYPSUM-50#/1000 SF
      - UMAXX UREA-4#/1000 SF
      - POTASSIUM SULFATE-5#/1000SF
      - MONO-AMMONIUM PHOSPHATE-21#/1000SF
4. AMENDMENTS FOR LAWN MIXES:
   a. MIXED SOIL AMENDMENTS:
      - N/A
   b. PLACED SOIL AMENDMENTS:
      - GYPSUM-50#/1000 SF
      - UMAXX UREA-4#/1000 SF
      - POTASSIUM SULFATE-5#/1000SF
      - MONO-AMMONIUM PHOSPHATE-21#/1000SF
5. PROVIDE MULTIPLE SEPARATE SOURCES FOR INITIAL TESTING IN HOPE TO MINIMIZE THE NEED FOR ADDITIONAL SOIL AMENDMENTS.
6. PROVIDE 1 QUART SAMPLE ALONG WITH TESTING DATA FOR AOR AND LA REVIEW AND APPROVAL PRIOR TO FINAL PROCUREMENT AND PLACEMENT.
7. PLANTING MIX SHALL BE LOOSELY MIXED WITH A LOADER BUCKET AS FOLLOWS AND AS NECESSARY TO MEET SPEC: MIX "MIXED" SOIL AMENDMENTS TOGETHER SEPARATELY IN THE CORRECT PROPORTION. ADD SOIL AMENDMENTS BLEND TO UNSCREENED TOPSOIL. USE A PUSH AND DRAG MOTION WITH THE LOADER BUCKET, MIX THE COMPONENTS. DO NOT OVER MIX. USE TECHNIQUES THAT PRESERVE SOIL PEDS IN THE FINAL MIX.
8. LAWN MIX TO BE APPROVED TOPSOIL WITHOUT AMENDMENTS UNO.
9. PRIOR TO PLACEMENT SCARIFY/FRACTURE SUB-GRADE AND VERTICAL EDGES OF PLANTING SOIL EXCAVATIONS.
10. IMPORT SOIL TO MEET PROPOSED GRADES AFTER SETTLING. TOP OF SOIL PROFILE TO MEET 85% MODIFIED PROCTOR AFTER SETTLING.
11. PROVIDE TEST RESULTS FOR EVERY 1000 YARDS OF PLACED SOIL TO ENSURE ALL SOIL CONFORMS TO APPROVED PARAMETERS.
12. ONCE PLACED, SOIL PROFILES SHOULD BE PROTECTED FROM COMPACTION. SOIL PROFILES AFFECTED BY COMPACTION SHOULD BE REMOVED AND REPLACED OR AMENDED IN PLACE UNDER THE REVIEW OF AOR AND LA.

PLANTING NOTES:

1. PRIOR TO THE COMMENCEMENT OF PLANTING SCOPE OF WORK, CONVENE A PRE-CONSTRUCTION CONFERENCE WITH AOR, LA, CONTRACTOR AND ANY ASSOCIATED AND RELEVANT DESIGN TEAM MEMBERS, SUBCONTRACTORS AND AHJ TO REVIEW WORK SCOPE, SCHEDULE AND TO REVIEW Q&A BY DESIGN TEAM, AHJ AND CONTRACTORS. CONTRACTOR TO PROVIDE MINIMUM 5 BUSINESS DAY NOTICE FOR ALL MEETINGS.
2. CONFIRM ALL PLANTING QUANTITIES AND DIMENSIONS. QUANTITIES PROVIDED ARE FOR THE CONVENIENCE OF THE CONTRACTOR. CONTRACTOR TO VERIFY IMPLIED COVERAGE ON THE PLANTING PLANS. CONTRACTOR TO BRING ANY DISCREPANCIES TO THE ATTENTION OF THE LA AT THE TIME OF BID.
3. ALL PLANT MATERIAL TO BE INSTALLED IN CONFORMANCE WITH ALL APPLICABLE CODES AND ORDINANCES.
4. OBTAIN PERMIT FROM CITY OF CHICAGO BUREAU OF FORESTRY FOR ANY TREES REMOVED OR REPLACED IN THE PUBLIC ROW IF APPLICABLE.
5. OBTAIN A PERMIT TO REMOVE, SPRAY OR OTHERWISE AFFECT THE GENERAL HEALTH OR STRUCTURE OF EXISTING OR NEW TREES AND/OR OTHER PLANT MATERIAL.
6. EXISTING PARKWAY AND INTERIOR TREES/FENCING TO BE PROTECTED WHILE PROJECT IS UNDER CONSTRUCTION AND WILL BE REPLACED IF DAMAGED BY CONTRACTOR.
7. TAKE GREAT CARE NOT TO DAMAGE EXISTING OR NEW TREES OR OTHER PLANT MATERIAL DURING EXCAVATION, PLANTING AND OTHER CONSTRUCTION OPERATIONS. SEEK AOR AND LA APPROVAL TO WORK WITHIN THE DRIP LINE OF EXISTING TREES.
8. TAKE GREAT CARE WHEN WORKING WITHIN THE DRIP LINE OF ANY TREE IF APPROVED BY AOR AND LA. WHEN TRENCHING WITHIN DRIP LINES OF ANY TREE, OPERATIONS SHOULD BE CONDUCTED BY HAND WORKING IN A WHEEL AND SPOKE MANNER WORKING FROM THE TRUNK OF THE TREE OUTWARD. DAMAGED OR TORN ROOTS SHOULD BE IMMEDIATELY REPAIRED WITH A SMOOTH, CLEAN CUT. TAKE GREAT CARE DURING TILLAGE OPERATIONS WITHIN SPECIFIED TREE PROTECTION ZONES OF TREES TO REMAIN. WHEN MAJOR ROOTS ARE ENCOUNTERED EXCAVATE BY HAND TO AVOID DAMAGE TO ROOT SYSTEM.
9. ALL PLANT MATERIAL TO BE SPECIMEN QUALITY, WELL MATCHED IN FORM, NURSERY GROWN, SOUND, HEALTHY, VIGOROUS AND FREE OF INSECTS, DISEASE AND INJURIES WITH HABIT OF GROWTH THAT IS TYPICAL FOR THE SPECIES. SIZES SHALL BE EQUAL TO OR GREATER THAN THOSE NOTED ON THE PLANT LIST(S). DO NOT PROCEED WITH PLANTING INSTALLATION UNLESS LA HAS APPROVED ALL PLANT MATERIAL. ALL B&B MATERIAL TO BE OBTAINED FROM NURSERIES WITH SIMILAR SOIL CONDITIONS AS THE PROJECT SITE.
10. PROVIDE AOR AND LA WITH PLANT LIST AND INTENDED NURSERY SUPPLIERS FOR EACH ITEM TO LA WITHIN 30 DAYS OF AWARD OF CONTRACT. ANY UNAVAILABLE PLANT MATERIAL SHOULD BE NOTED AT THAT TIME. AOR AND LA RESERVES THE RIGHT TO ASSIST IN PLANT SOURCING AS NECESSARY. PROVIDE AOR AND LA WITH SUBSTITUTION LIST IN THE EVENT PROPOSED MATERIALS ARE UNAVAILABLE PRIOR TO PROCUREMENT FOR FINAL REVIEW AND APPROVAL.
11. COORDINATE NURSERY SELECTION AND TAGGING WITH AOR AND LA. AOR AND LA RESERVES THE RIGHT TO ACCEPT OR REJECT ANY AND ALL PLANT MATERIAL AS IT RELATES TO THE REQUIREMENTS IN THE SPECIFICATIONS. AOR AND LA RESERVES THE RIGHT TO REJECT PLANT MATERIAL IF DAMAGED OR UNHEALTHY UPON ARRIVAL TO THE PROJECT SITE EVEN AFTER INITIAL APPROVAL.
12. PROVIDE IDENTIFICATION TAG FROM THE SUPPLYING NURSERY SHOWING COMMON AND BOTANICAL PLANT NAMES FOR AT LEAST ONE PLANT OF EACH UNIQUE SPECIES DELIVERED TO THE SITE.
13. PRIOR TO PLANTING INSTALLATION, VERIFY PLANTING AREAS ARE GRADED AT =/-0.1 FEET TO FINISHED GRADE.
14. CONFIRM PLANTING AREAS ARE MIN 4 INCHES BELOW FINISH FLOOR ELEVATION UNO.
15. FINISHED GRADE OF PLANTING AREAS TO MEET ADJACENT HARDSCAPES 2 INCHES BELOW ELEVATION OF HARDSCAPES UNO.
16. IF PLANTING PITS ARE MACHINE EXCAVATED AND GLAZING IS PRONOUNCED, SCARIFY ALL SIDES.
17. REMOVE ALL ROCK AND DEBRIS 1 INCH AND LARGER FROM PLANTING AREAS. LEGALLY DISPOSE ALL EXCESS MATERIALS RESULTING FROM THE WORK.
18. WITHIN PLANTING EXCAVATIONS, REMOVE CRUSHED AGGREGATE TO AN ADEQUATE DEPTH TO ENSURE THAT NO PART OF THE PLANT MATERIAL OR FUTURE EXTENTS OF ROOT SYSTEM IS IN CONTACT OR AFFECTED BY THE LIME OR LIMESTONE WITHIN THE AGGREGATE.
19. STAKE ALL TREES AND FLAG ALL SHRUB LOCATIONS FOR REVIEW AND APPROVAL BY AOR AND LA PRIOR TO PLANTING. PROVIDE LA WITH A MINIMUM OF 5 BUSINESS DAYS NOTICE PRIOR TO REVIEW.
20. SET ALL TREES AND SHRUBS ON TOP OF FINISHED GRADE PER APPROVED STAKED AND FLAGGED LOCATIONS FOR FACING AND FINAL APPROVAL BY AOR AND LA PRIOR TO PLANTING.
21. FOR ALL GRASSES, PERENNIALS, GROUNDCOVER AND ANNUALS, SET OUT PLANT MATERIAL ON TOP OF PROPOSED GRADE FOR AOR AND LA REVIEW PRIOR TO PLANTING IN ACCORDANCE WITH PLANTING PLANS. AOR AND LA RESERVE THE RIGHT TO MODIFY THE PLANTINGS AS NEEDED.
22. INSTALL ALL PLANT MATERIAL IN ACCORDANCE WITH THE DETAILS AND SPECIFICATIONS.
23. REMOVE ALL PLANT TYING MATERIAL AND MARKING TAPES AT THE TIME OF PLANTING. LEAVE AOR AND LA NURSERY SEALS IN PLACE FOR THE DURATION OF THE SPECIFIED WARRANTY PERIOD.
24. FOR B&B MATERIAL, REMOVE TOP 1/3 OF METAL CAGE AND BURLAP FROM ROOT BALL AND PROPERLY DISPOSE. DO NOT FOLD DOWN, CAGE MUST BE REMOVED. IMMEDIATELY REPORT ANY DAMAGE TO ROOT BALLS OR PLANTS TO AOR AND LA.
25. FOR CONTAINER MATERIAL WHERE APPLICABLE LOOSEN ROOT MASS BY HAND OR IF REQUIRED BY CUTTING (4) 1 INCH DEEP VERTICAL SLITS EVENLY SPACED AROUND ROOT BALL OF PLANT PRIOR TO PLANTING. REPEAT SLITS IN X PATTERN ON BOTTOM OF ROOT MASS.
26. ROOT FLARE OF PLANTS TO BE SET MIN AT FINISHED GRADE OR NO MORE THAN 3 INCHES ABOVE FINISHED GRADE.
27. ROOT FLARE OF PLANTS INSTALLED IMMEDIATELY ADJACENT TO HARDSCAPE TO BE PLANTED NO MORE THAN 1 INCH ABOVE FINISHED GRADE TO ENSURE SMOOTH TRANSITION TO HARDSCAPE.
28. FOR PERENNIALS AND GROUNDCOVERS, PLANT 1 INCH ABOVE SOIL PROFILE TO ACCOMMODATE MULCH LAYER.
29. DURING BACKFILL OF ALL PLANTS (WITH THE EXCEPTION OF SOD AND SEEDED LAWNS) SUPPLEMENT BACKFILL WITH PLANTING SOIL SUPPLEMENTS AS NOTED IN THE SPECS. REFER TO MANUFACTURER REQUIREMENTS FOR INSTALLATION.
30. DO NOT ALLOW AIR POCKETS TO FORM IN SOIL WHILE BACKFILLING.
31. TREE STAKING AND GUYING TO BE REVIEWED WITH AOR AND LA WHEN DEEMED NECESSARY PRIOR TO INSTALLATION.
32. ALL NEWLY INSTALLED PLANT MATERIAL SHALL BEAR THE SAME RELATIONSHIP TO THE NEW GRADE AS THEY BORE TO NURSERY GRADES UNO.
33. WATER AND MAINTAIN PLANT MATERIAL WHILE BEING STORED ON SITE, IMMEDIATELY AFTER PLANTING AND UNTIL FINAL ACCEPTANCE.
34. ALL PLANTINGS BED EDGES TO HAVE A SPADED EDGE UNO. BOTTOM OF SPADED EDGE TO BE 2 INCHES BELOW THATCH OR ADJACENT HARDSCAPE SURFACE.
35. PROVIDE 2 INCH (AFTER SETTLEMENT) OF MULCH OVER ALL PLANTING BEDS UPON COMPLETION OF PLANTING OPERATIONS. MULCH TO BE A 50/50 BLEND OF ¾ INCH SHREDDED HARDWOOD BARK FINES AND ¾ INCH PINE BARK FINES UNO.
36. SOD IS TO BE CUT WITH 1 INCH OF SOIL UNO.
37. DO NOT ALLOW SOD TO BE ROLLED UP FOR A PERIOD LONGER THAN 12 CONSECUTIVE HOURS.
38. AOR AND LA TO APPROVE FINE GRADING OF LAWN SOIL PRIOR TO SOD INSTALLATION.
39. SCARIFY LAWN SOIL 1/2 INCH PRIOR TO INSTALLATION AND APPROVED BY LA.
40. ALTERNATE SOD SEAMS TO ELIMINATE CONTINUOUS SEAMS, OVERLAPPING ADJACENT SOD PANEL BY ½ FOR SMALL ROLL SOD.
41. INSTALL AND MAINTAIN SOD TO ELIMINATE LUMPS IN SURFACE AND SEAMS.
42. SOD TO MEET ALL ADJACENT HARDSCAPE SURFACES FLUSH WITH TOP OF THATCH LAYER.
43. ROLL SOD WITH APPROPRIATELY SIZED ROLLER TO PROVIDE PROPER SOD TO SOIL INTERFACE.
44. COMPLETELY WATER IN SOD DEEPLY IMMEDIATELY AFTER ROLLING.
45. PROTECT SEEDED AREAS AND SLOPES AGAINST EROSION AND SEED LOSS DUE TO BIRDS AND OTHER WILDLIFE BY APPLYING SHORT TERM, BIODEGRADABLE EROSION CONTROL BLANKETS, MATS, AND/OR NETTING AFTER COMPLETION OF SEEDING OPERATIONS. ADHERE TO MANUFACTURER'S REQUIREMENTS FOR REQUIRED PLACEMENT AND STAKING.
46. PRUNING OPERATIONS SHOULD FOLLOW APPLICABLE ANSI STANDARDS UNO. UPON COMPLETION OF WORK UNDER THIS CONTRACT, PRUNE AND REPAIR INJURIES TO ALL PLANTS. LIMIT AMOUNT OF PRUNING TO MINIMUM NECESSARY TO REMOVE INJURED OR DAMAGED BRANCHES, TWIGS AND STEMS AND TO COMPENSATE FOR THE LOSS OF ROOTS AS A RESULT OF TRANSPLANTING OPERATIONS. PRUNE IN SUCH A MANNER AS NOT TO CHANGE NATURAL HABIT OR SHAPE UNO. ALL HEDGE PRUNING TO BE COMPLETED UNDER THE REVIEW BY AOR AND LA.
47. DURING PUNCH LIST REVIEW, COORDINATE WITH AOR AND LA TO REVIEW AESTHETIC PRUNING NEEDS FOR ALL PLANTS. AOR AND LA TO MARK (WITH YELLOW RIBBON) OR SELF CONDUCT AESTHETIC PRUNING WITH CONTRACTOR AS PART OF THE SUBSTANTIAL COMPLETION REVIEW.
48. WARRANTY ALL PLANT MATERIAL FOR A MIN PERIOD OF 1 YEAR FROM FINAL ACCEPTANCE UNO IN THE SPECIFICATIONS. REMOVE AND REPLACE PLANTS AS DETERMINED BY LA TO BE SIGNIFICANTLY UNHEALTHY OR DEAD PER THE CRITERIA SET FORTH IN THE SPECS. CONDUCT REPLACEMENTS DURING THE APPROPRIATE PLANTING SEASON AS DETERMINED BY THE LOCAL CLIMATE AND INDUSTRY STANDARDS. REPLACEMENTS SHOULD CONFORM TO THE CRITERIA SHOWN AND SPECIFIED. SEE SPECS FOR ALL MAINTENANCE REQUIREMENTS. SIZE, CHARACTER AND FORM OF ALL REPLACEMENTS TO BE SIMILAR TO THE ORIGINAL APPROVED MATERIAL AND APPROVED BY THE AOR AND LA.
49. ALL PLANT MATERIAL IS SHOWN AS ANTICIPATED SIZE AT INSTALLATION. PLANT GROWTH VARIES BY SPECIES AND YEARLY CLIMACTIC CONDITIONS.

SYMBOLS:



ABBREVIATIONS:

&	AND	MAX	MAXIMUM
@	AT	MIN	MINIMUM
AHJ	AUTHORITY HAVING JURISDICTION	NIC	NOT INCLUDING IN CONTRACT
AOR	ARCHITECT OF RECORD	NPT	NATIONAL PIPE THREAD
BIT	BITUMINOUS	NTS	NOT TO SCALE
BOC	BACK OF CURB	OC	ON CENTER
BSG	BELOW SURFACE GRADE	OFOI	OWNER FURNISHED, OWNER INSTALLED
CB	CATCH BASIN		
CCD	CITY OF CHICAGO DATUM	PAV-1	PAVING - ONE
CJ	CONTROL JOINT	PAV-2	PAVING - TWO
C	CENTER LINE	PC	PORTLAND CEMENT
CIP	CAST IN PLACE	PCC	PORTLAND CEMENT CONCRETE
CONC	CONCRETE	R	RADIUS
DIA.	DIAMETER	ROW	RIGHT OF WAY
EL	ELEVATION	SIM	SIMILAR
EJ	EXPANSION JOINT	SRO	SOIL REMEDIATION OBJECTIVE
EMT	ELECTRICAL METALLIC TUBING	SS	STAINLESS STEEL
ESC	ESCALATOR	STR	STAIR
EXIST	EXISTING	TYP	TYPICAL
G	CUTTER	UNO	UNLESS NOTED OTHERWISE
H	HEIGHT	UST	UNDERGROUND STORAGE TANK
HP	HIGH POINT	VCP	VITRIFIED CLAY PIPE
INV	INVERT	VIF	VERIFY IN FIELD
INLET	DRAIN INLET	W	WIDTH
LA	LANDSCAPE ARCHITECT	WP	WATERPROOF
L	LENGTH	WT	WEIGHT
LBS, #	POUNDS	WWF	WELDED WIRE FRAME
MH	MANHOLE	W/	WITH

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L003	GENERAL NOTES
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L102A.2	PLAYGROUND GRADING PLAN ENLARGEMENT
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L501	PRESERVATION AND DEMOLITION DETAILS
L503	HARDSCAPE DETAILS
L503A	HARDSCAPE DETAILS
L503B	HARDSCAPE DETAILS
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L503D	HARDSCAPE DETAILS
L504	SITE FURNISHING DETAILS
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L603	HARDSCAPE SCHEDULE
L604	SITE FURNISHINGS SCHEDULE
L606	PLANTING SCHEDULE
L1000	AREAS TO BE IRRIGATED

DESCRIPTION | DATE

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

WAUWATOSA — IN GOD WE TRUST

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site

GENERAL NOTES

1700 N 116TH STREET
WAUWATOSA, WI 53226

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L003

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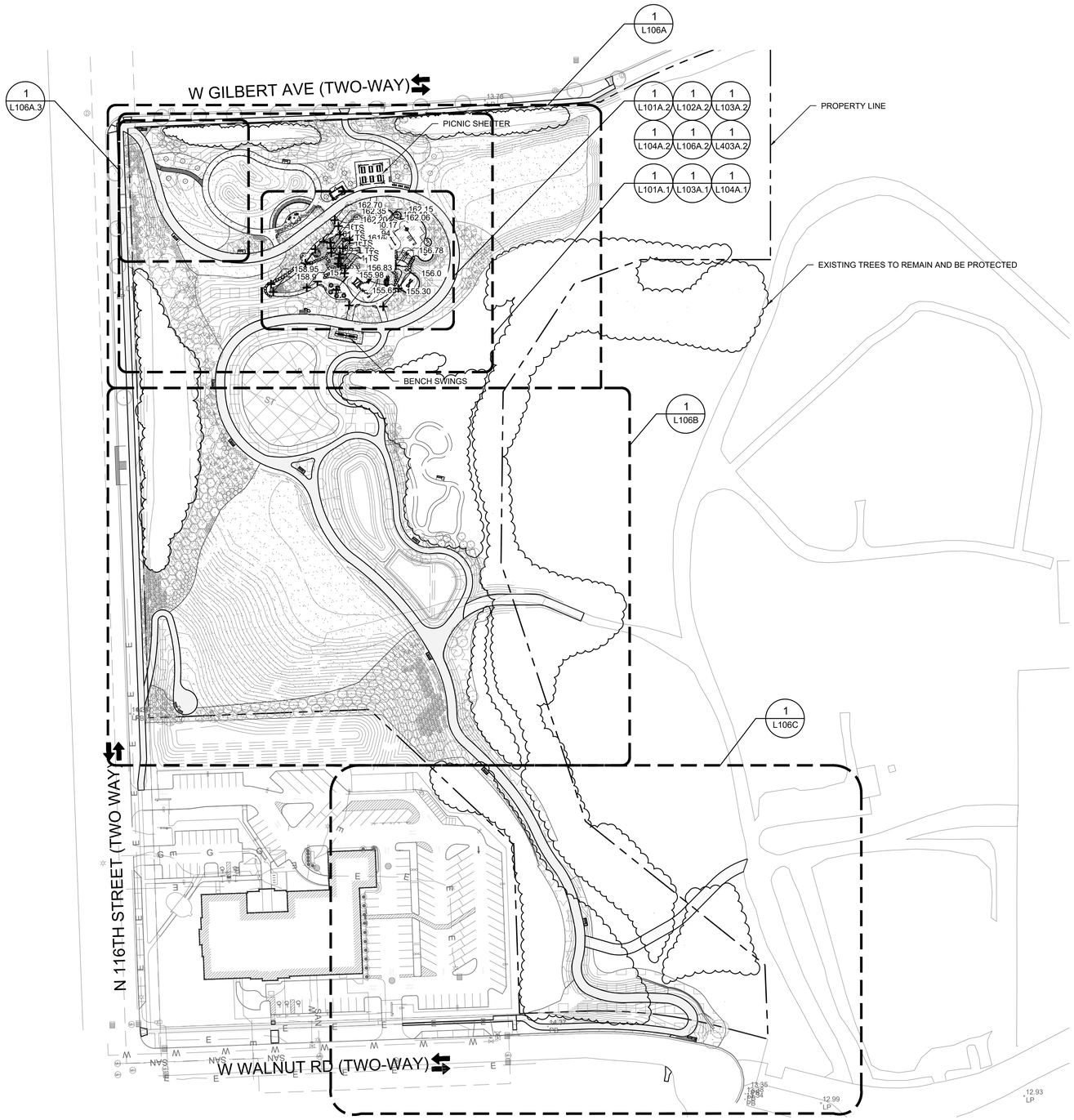

LEGEND

- PROPERTY LINE
- RAISED CONCRETE CURB
- FLUSH CONCRETE CURB
- EXPANSION JOINT
- CONTROL JOINT
- THICKENED EDGE CONCRETE PAVEMENT
- STABILIZED AGGREGATE PAVING
- CONCRETE PAVEMENT
- PLAY TURF SURFACING W/ AGGREGATE SUBBASE
- PLAY TURF SURFACING W/ CONCRETE SUBBASE
- ENGINEERED WOOD FIBER
- BOULDERS
- STONE STEPPERS
- LAWN SEED MIX
- PERENNIALS AND ORNAMENTAL GRASSES
- LOW PRAIRIE SEED MIX
- BASIN SEED MIX
- EMERGENT SLOPE SEED MIX
- NO MOW LAWN SEED MIX
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SHRUBS
- EXISTING TREES TO REMAIN AND BE PROTECTED
- HANDRAIL
- WOODEN PLATFORM
- TRASH RECEPTACLE
- RECYCLING RECEPTACLE
- BENCH SWINGS
- PICNIC TABLE, TYPE 1
- PICNIC TABLE, TYPE 2
- PICNIC TABLE, TYPE 3
- BENCH, TYPE 1
- BENCH, TYPE 2
- BENCH, TYPE 3
- GAME TABLE
- BIKE RACK
- HOT COAL RECEPTACLE
- ADA CLEARANCE

1 LANDSCAPE SITE PLAN
1"=80'-0"

0 40 80 120 160'

DATE	DESCRIPTION

CITY OF WAUWATOSA
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LANDSCAPE SITE PLAN

1700 N 116TH STREET
WAUWATOSA, WI 53226

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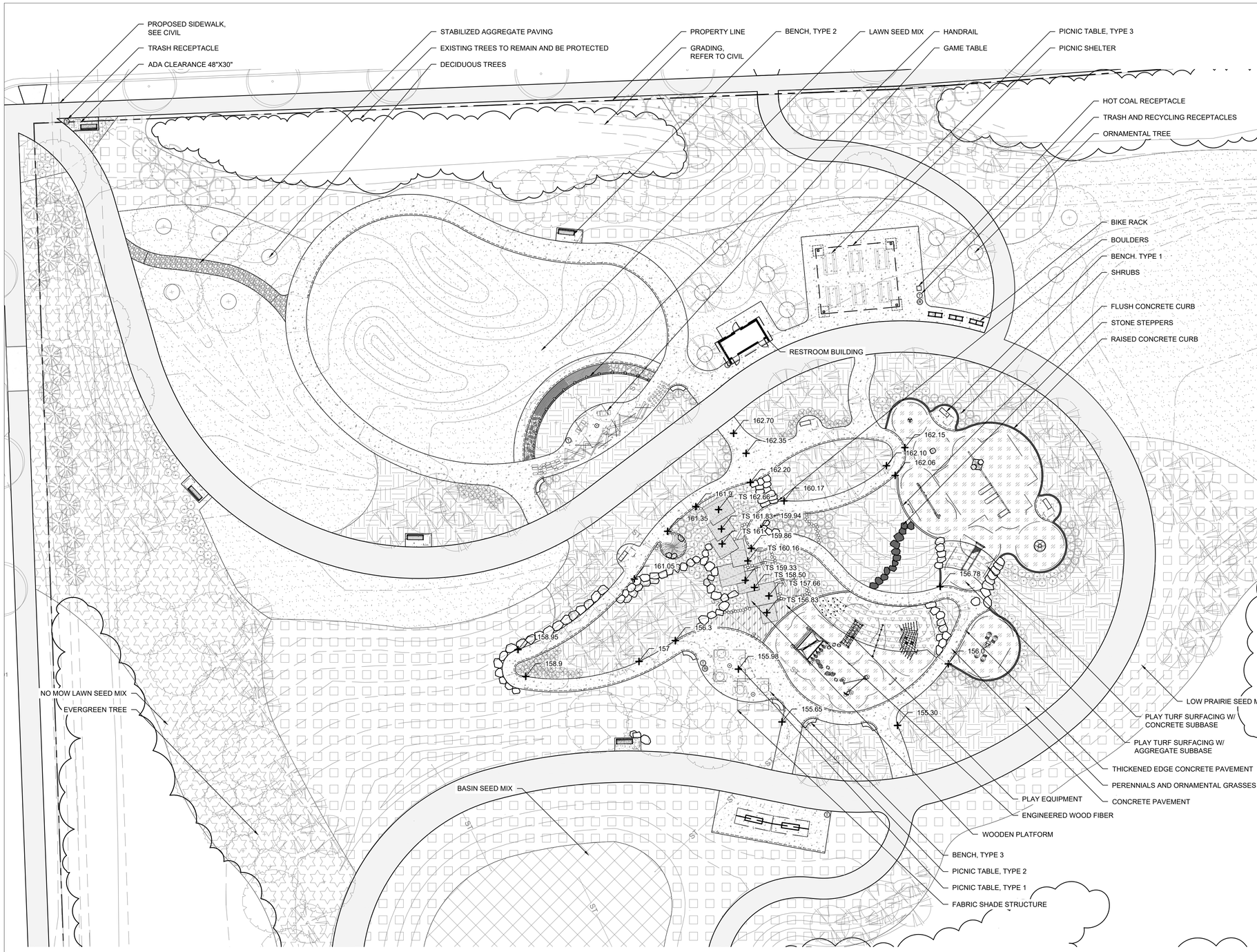

1 LANDSCAPE SITE PLAN ENLARGEMENT
1"=20'-0"

LEGEND

- PROPERTY LINE
- RAISED CONCRETE CURB
- FLUSH CONCRETE CURB
- EJ — EXPANSION JOINT
- CONTROL JOINT
- THICKENED EDGE CONCRETE PAVEMENT
- STABILIZED AGGREGATE PAVING
- CONCRETE PAVEMENT
- PLAY TURF SURFACING W/ AGGREGATE SUBBASE
- PLAY TURF SURFACING W/ CONCRETE SUBBASE
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- BOULDERS
- STONE STEPPERS
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- EXISTING TREES TO REMAIN AND BE PROTECTED
- HANDRAIL
- WOODEN PLATFORM
- T — TRASH RECEPTACLE
- R — RECYCLING RECEPTACLE
- BENCH SWINGS
- PICNIC TABLE, TYPE 1
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- PICNIC TABLE, TYPE 3
- BENCH, TYPE 1
- BENCH, TYPE 2
- BENCH, TYPE 3
- GAME TABLE
- BIKE RACK
- HOT COAL RECEPTACLE
- ADA CLEARANCE

DATE	DESCRIPTION

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LANDSCAPE SITE PLAN ENLARGEMENT

1700 N 116TH STREET
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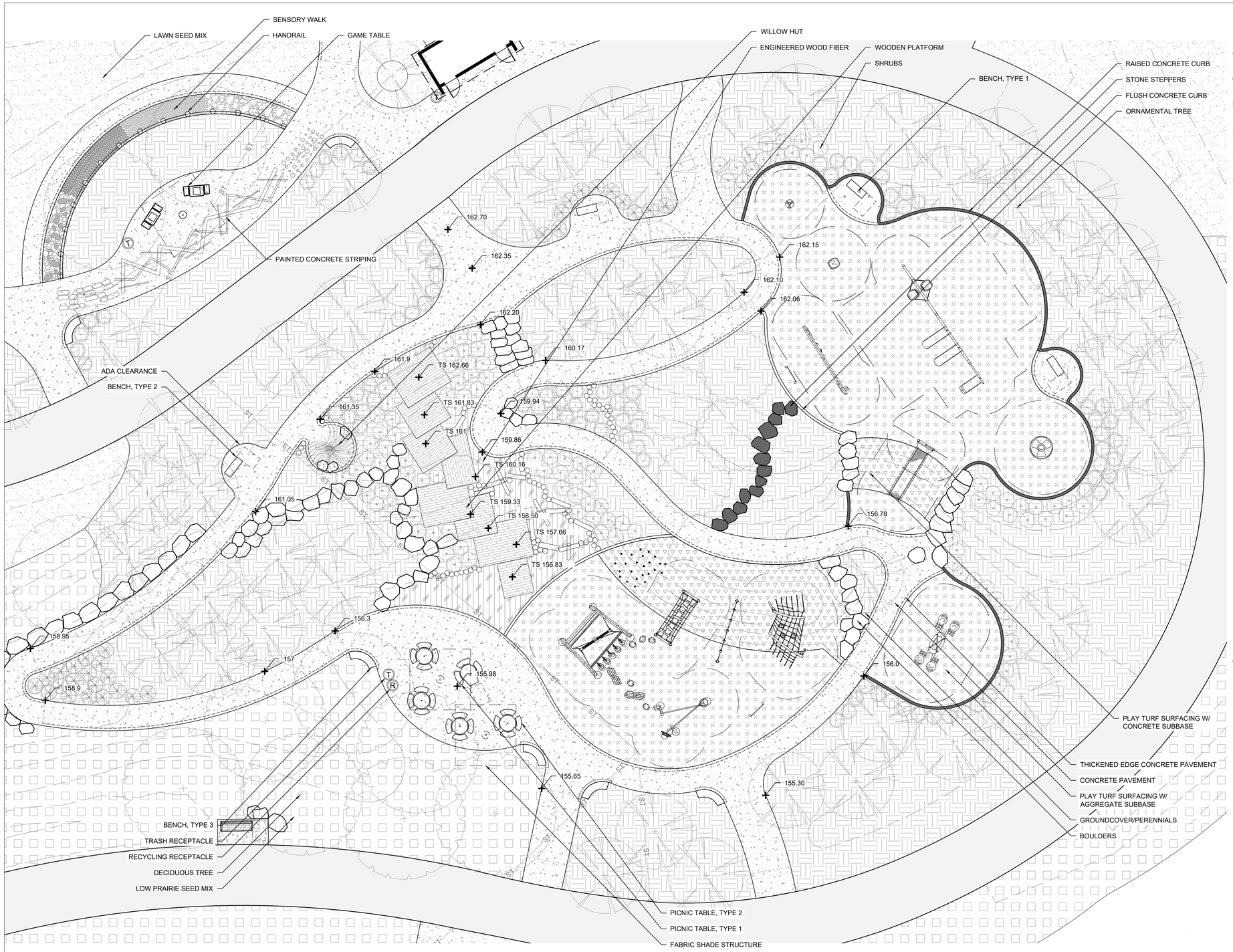

1 LANDSCAPE PLAN ENLARGEMENT
1"=10'-0"

0 5 10 15 20'

LEGEND

- PROPERTY LINE
- RAISED CONCRETE CURB
- FLUSH CONCRETE CURB
- EXPANSION JOINT
- CONTROL JOINT
- THICKENED EDGE CONCRETE PAVEMENT
- STABILIZED AGGREGATE PAVING
- CONCRETE PAVEMENT
- PLAY TURF SURFACING W/ AGGREGATE SUBBASE
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- BENCH, TYPE 1
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- BENCH, TYPE 3
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- BIKE RACK
- HOT COAL RECEPTACLE

DATE	DESCRIPTION

CITY OF WAUWATOSA
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LANDSCAPE PLAN ENLARGEMENT

1700 N 116TH STREET
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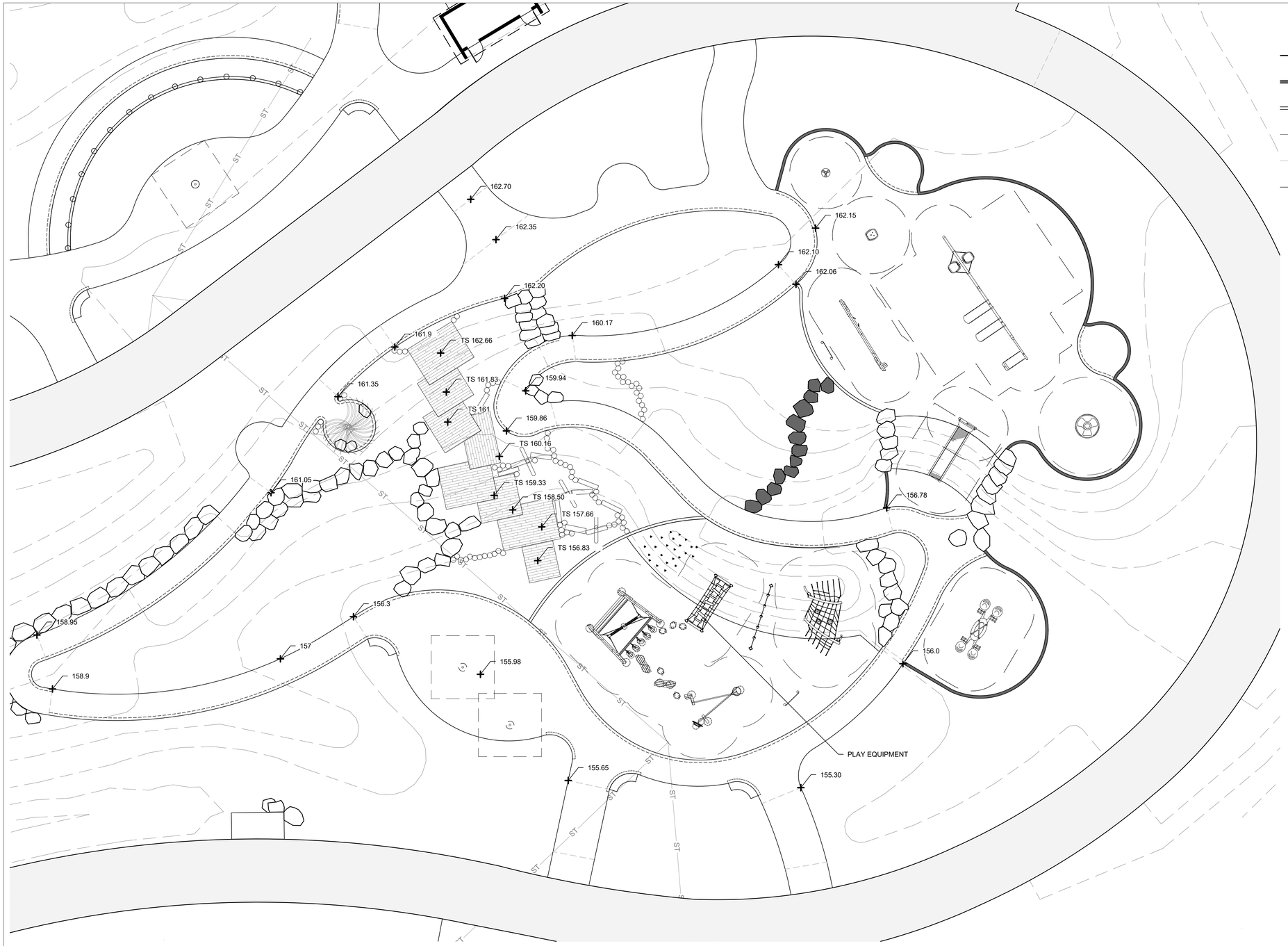

LEGEND

- PROPERTY LINE
- RAISED CONCRETE CURB
- FLUSH CONCRETE CURB
- EJ — EXPANSION JOINT
- CONTROL JOINT
- THICKENED EDGE CONCRETE PAVEMENT
- BOULDERS
- STONE STEPPERS
- WOODEN PLATFORM
- SPOT ELEVATIONS

1 PLAYGROUND GRADING PLAN ENLARGEMENT
1"=10'-0"

0 5 10 15 20'

DATE	DESCRIPTION

CITY OF WAUWATOSA
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PLAYGROUND GRADING PLAN ENLARGEMENT

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
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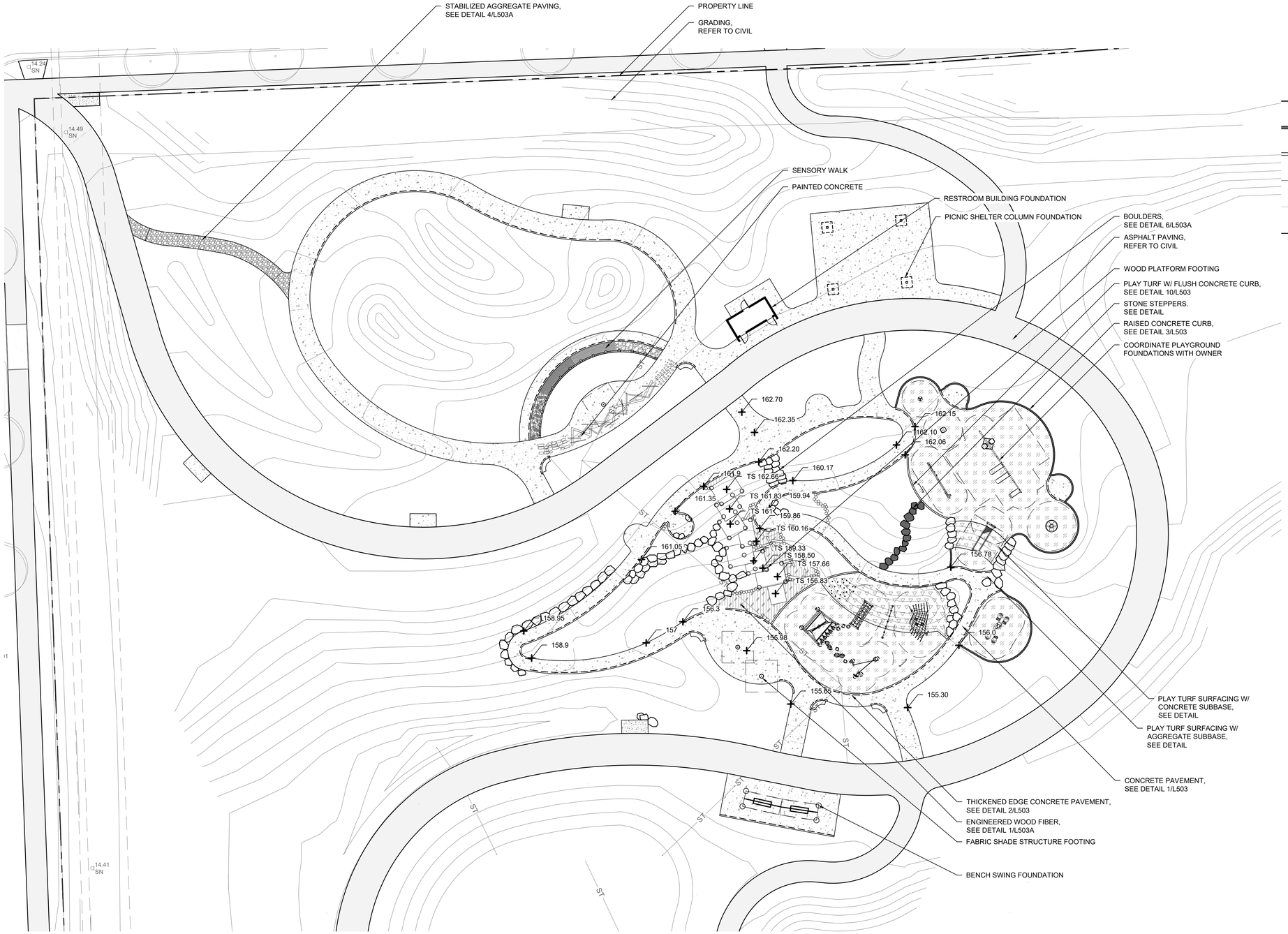

LEGEND

- PROPERTY LINE
- RAISED CONCRETE CURB
- FLUSH CONCRETE CURB
- EXPANSION JOINT (EJ)
- CONTROL JOINT
- THICKENED EDGE CONCRETE PAVEMENT
- STABILIZED AGGREGATE PAVING
- CONCRETE PAVEMENT
- PLAY TURF SURFACING W/ AGGREGATE SUBBASE
- PLAY TURF SURFACING W/ CONCRETE SUBBASE
- ENGINEERED WOOD FIBER
- BOULDERS
- STONE STEPPERS

1 HARDSCAPE PLAN ENALRGEMENT

1"= 20'-0"

0 10 20 30 40'

DATE	DESCRIPTION

CITY OF WAUWATOSA

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HARDSCAPE PLAN ENALRGEMENT

1700 N 116TH STREET
WAUWATOSA, WI 53226

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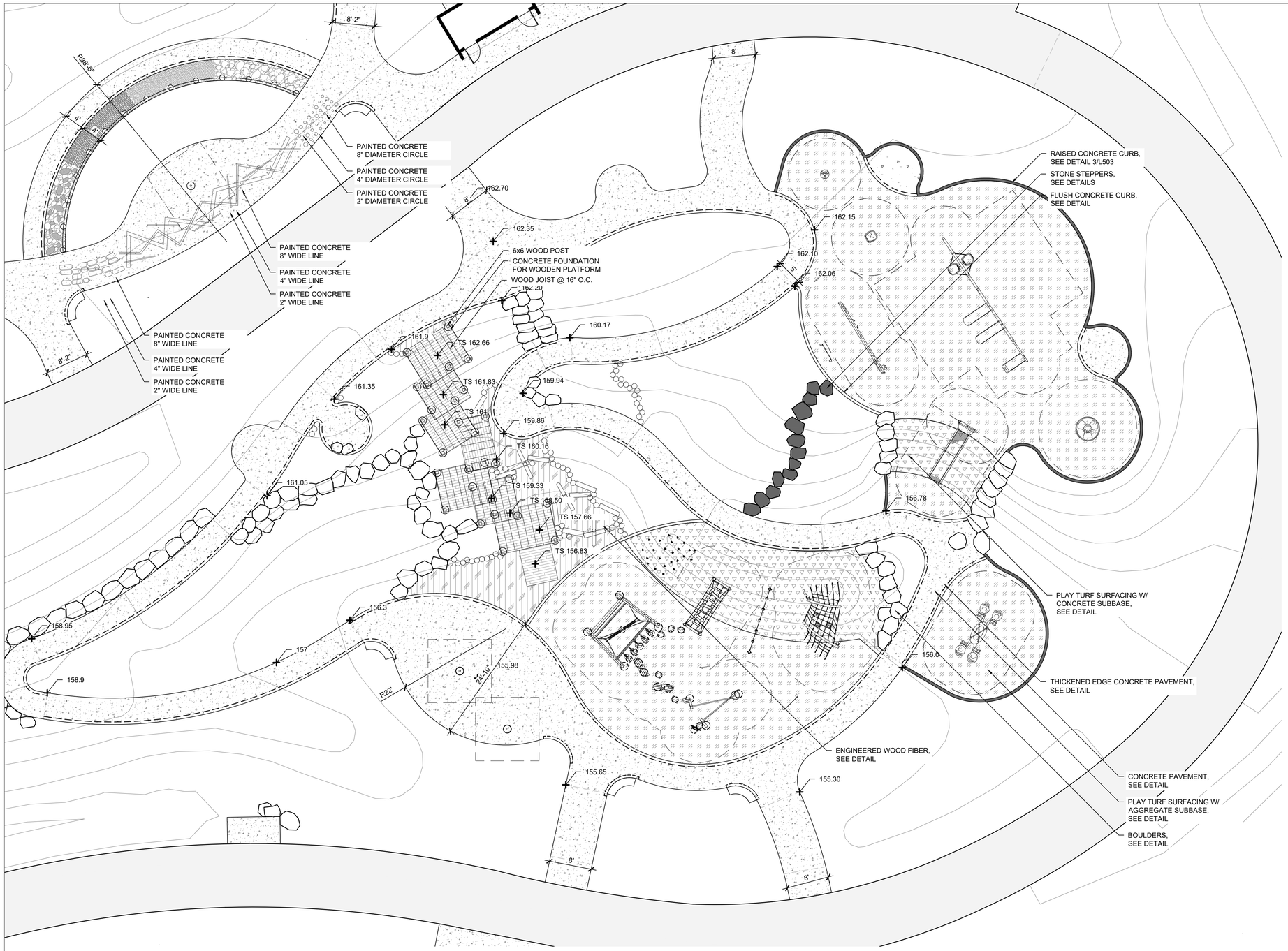

LEGEND

- PROPERTY LINE
- RAISED CONCRETE CURB
- FLUSH CONCRETE CURB
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- CONTROL JOINT
- THICKENED EDGE CONCRETE PAVEMENT
- STABILIZED AGGREGATE PAVING
- CONCRETE PAVEMENT
- PLAY TURF SURFACING W/ AGGREGATE SUBBASE
- PLAY TURF SURFACING W/ CONCRETE SUBBASE
- ENGINEERED WOOD FIBER
- BOULDERS
- STONE STEPPERS

1 HARDSCAPE PLAN ENLARGEMENT
1"= 10'-0"

0 5 10 15 20'

DATE	DESCRIPTION

CITY OF WAUWATOSA
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HARDSCAPE PLAN ENLARGEMENT

1700 N 116TH STREET
WAUWATOSA, WI 53226

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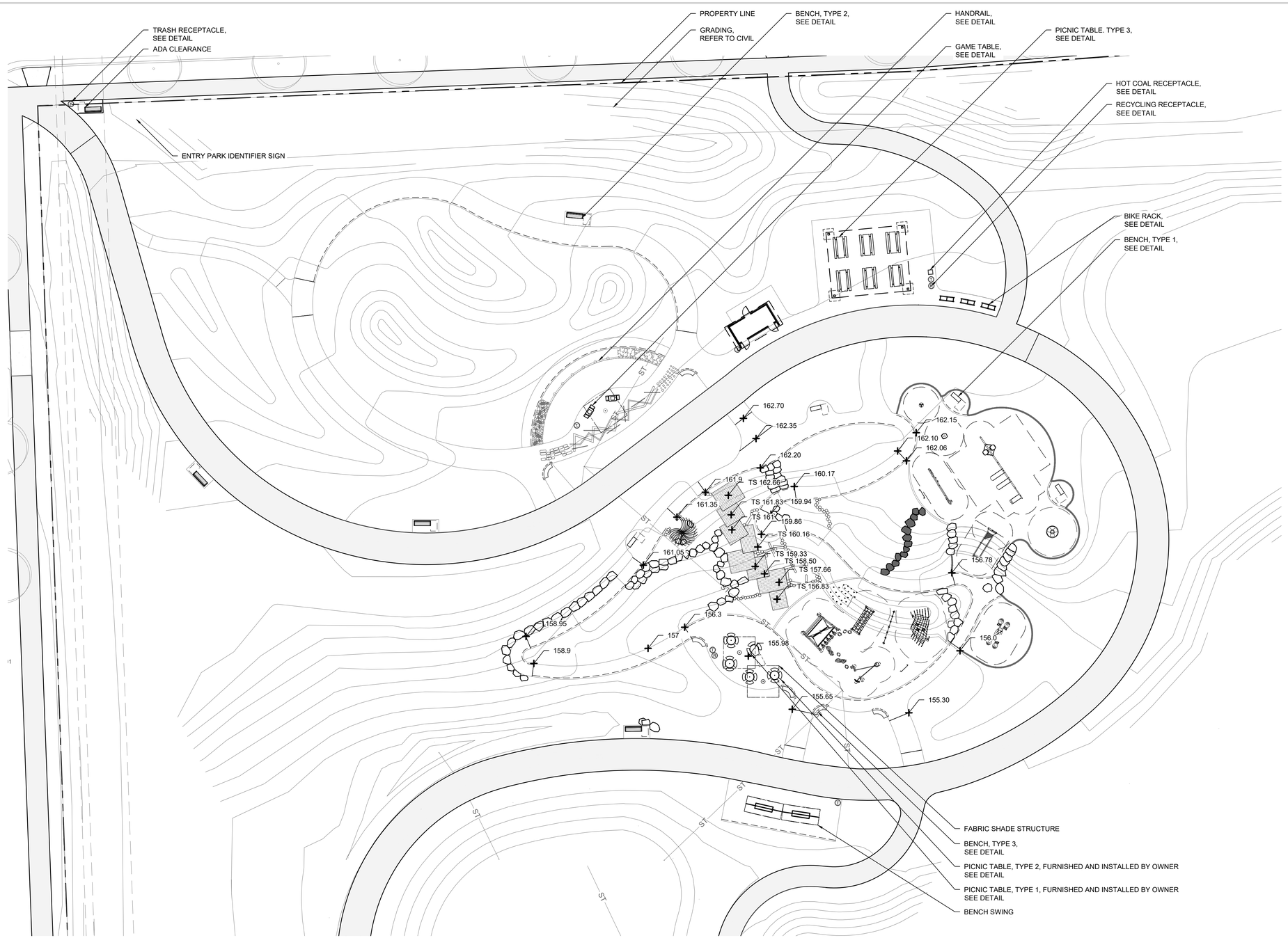

LEGEND

- PROPERTY LINE
- WOODEN PLATFORM
- BENCH SWINGS
- TRASH RECEPTACLE
- RECYCLING RECEPTACLE
- PICNIC TABLE, TYPE 1
- PICNIC TABLE, TYPE 2
- PICNIC TABLE, TYPE 3
- BENCH, TYPE 1
- BENCH, TYPE 2
- BENCH, TYPE 3
- GAME TABLE
- BIKE RACK
- HOT COAL RECEPTACLE
- ADA CLEARANCE

1 SITE FURNISHINGS PLAN ENLARGEMENT
1"= 20'-0"

0 10 20 30 40'

DATE	DESCRIPTION

CITY OF WAUWATOSA
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SITE FURNISHINGS PLAN ENLARGEMENT

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
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L104A.1

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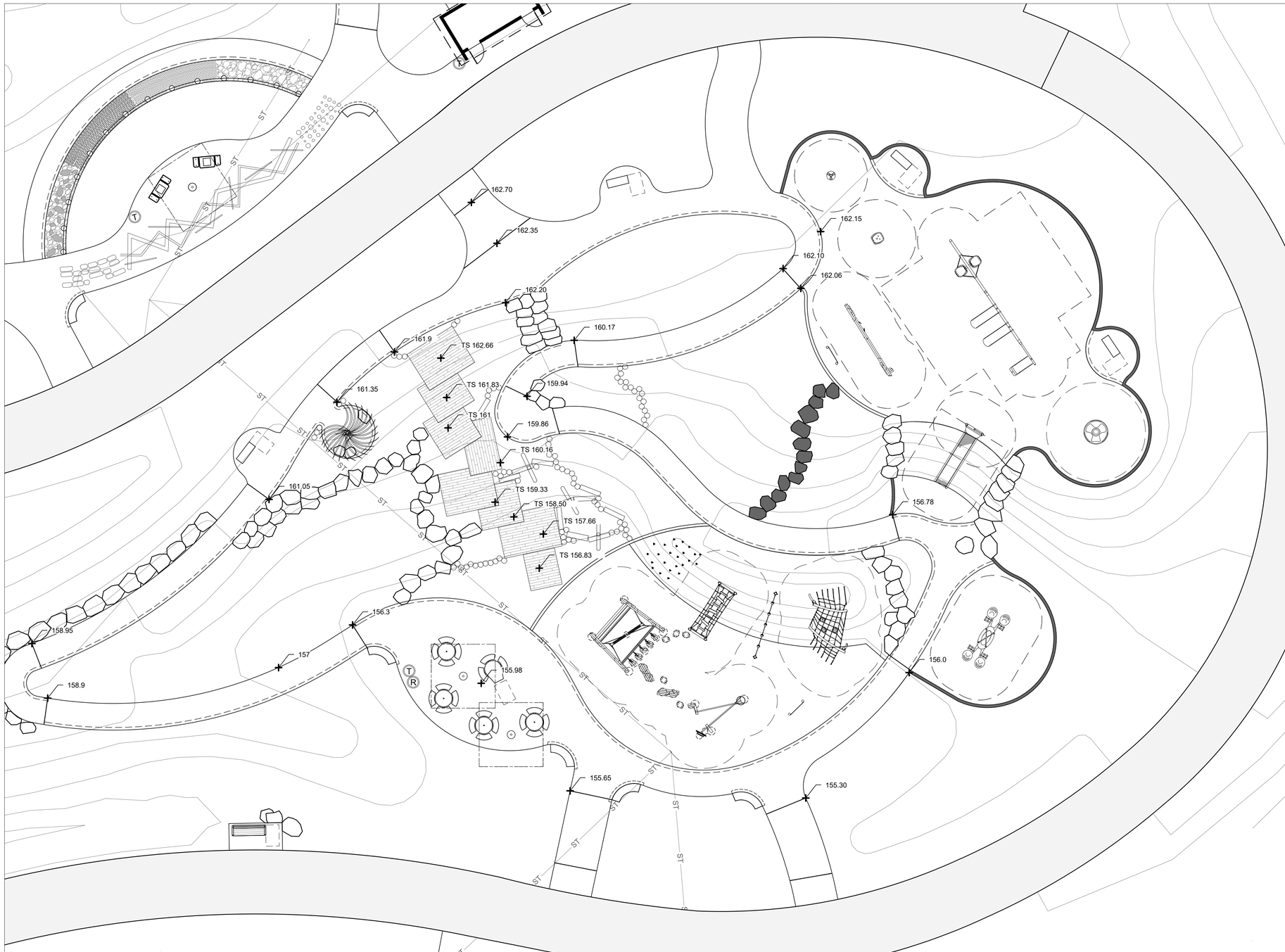

LEGEND

- PROPERTY LINE
- WOODEN PLATFORM
- BENCH SWINGS
- TRASH RECEPTACLE
- RECYCLING RECEPTACLE
- PICNIC TABLE, TYPE 1
- PICNIC TABLE, TYPE 2
- PICNIC TABLE, TYPE 3
- BENCH, TYPE 1
- BENCH, TYPE 2
- BENCH, TYPE 3
- GAME TABLE
- BIKE RACK
- HOT COAL RECEPTACLE
- ADA CLEARANCE

1 PLAYGROUND EQUIPMENT ENLARGEMENT PLAN (FOR REFERENCE ONLY)
1"=10'-0"

0 5 10 15 20'

DATE	DESCRIPTION

CITY OF WAUWATOSA
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PLAYGROUND EQUIPMENT ENLARGEMENT PLAN (FOR REFERENCE ONLY)

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
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L104A.2

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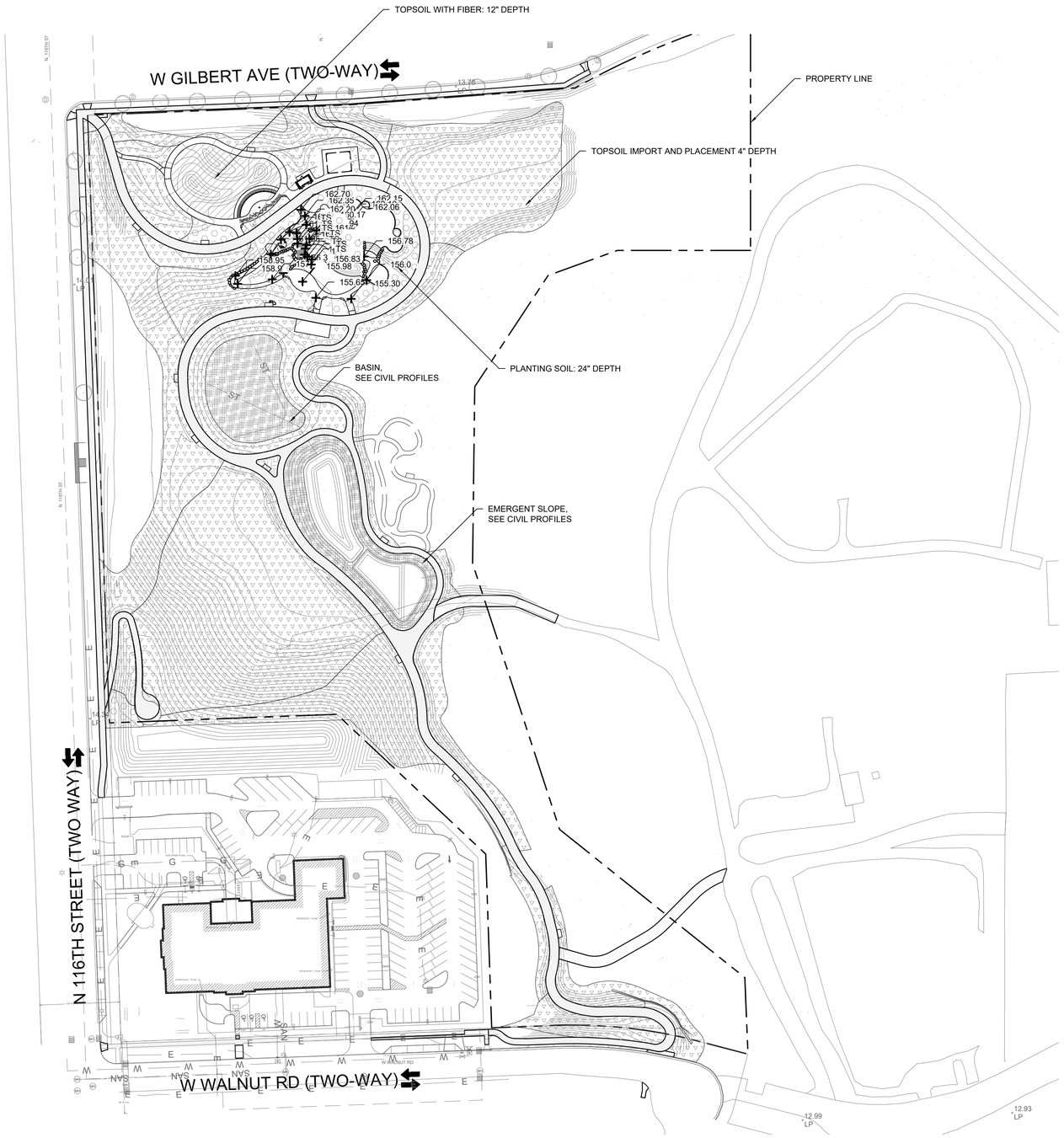

1 SOILS PLAN
1"=30'-0"

LEGEND

- PROPERTY LINE
- TOPSOIL IMPORT AND PLACEMENT 4" DEPTH
- PLANTING SOIL: 24" DEPTH
- TOPSOIL WITH FIBER: 12" DEPTH

DATE	DESCRIPTION

CITY OF WAUWATOSA
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SOILS PLAN

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
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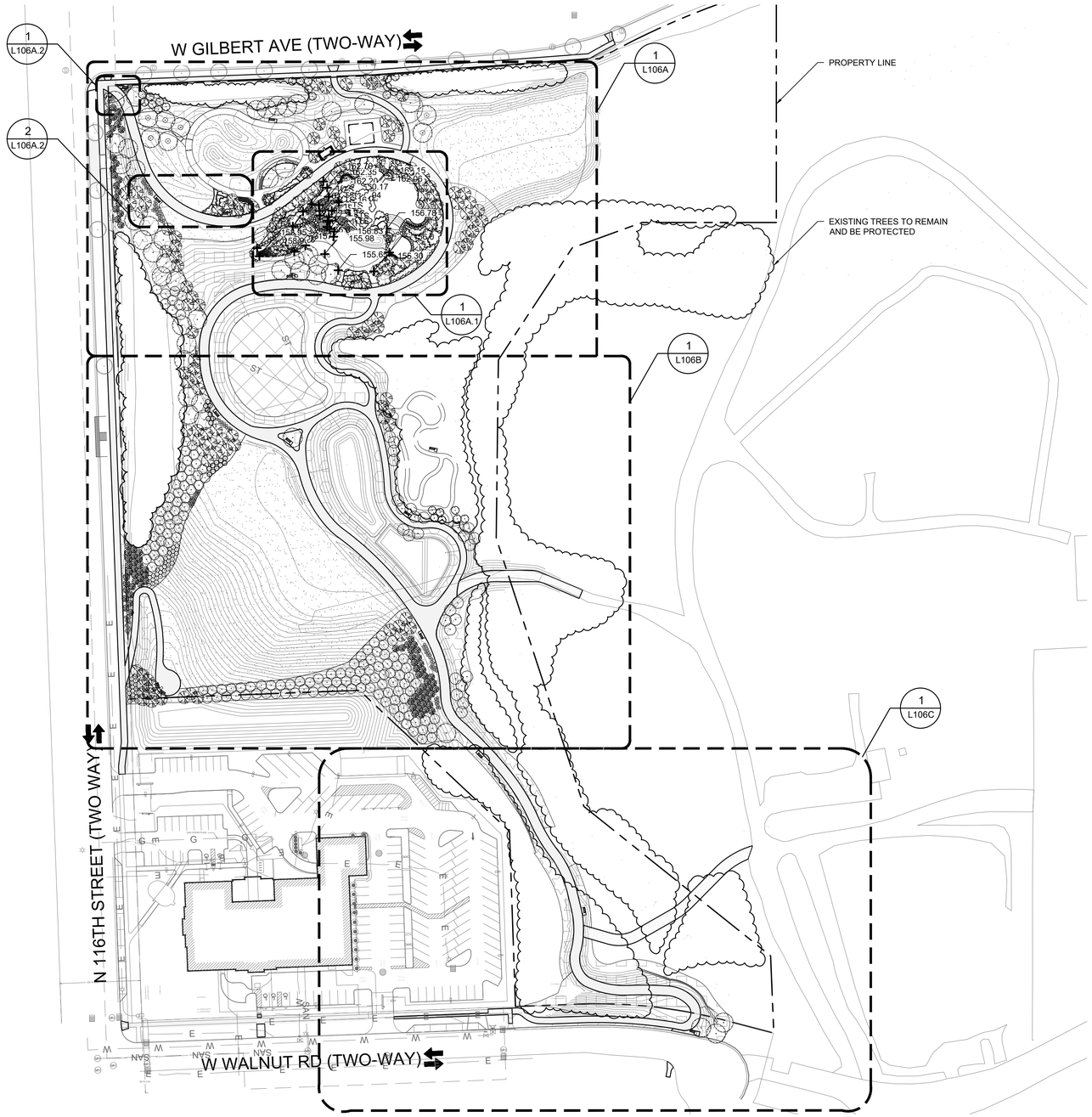
CHECKED BY: BK
SCALE:

L105

FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:



1 PLANTING PLAN
1"=80'-0"

LEGEND

- PROPERTY LINE
- LAWN SEED MIX
- PERENNIALS AND ORNAMENTAL GRASSES
- LOW PRAIRIE SEED MIX
- BASIN SEED MIX
- EMERGENT SLOPE SEED MIX
- NO MOW TURF
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SHRUBS
- EXISTING TREES TO REMAIN AND BE PROTECTED
- EXISTING TREE TO REMAIN

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

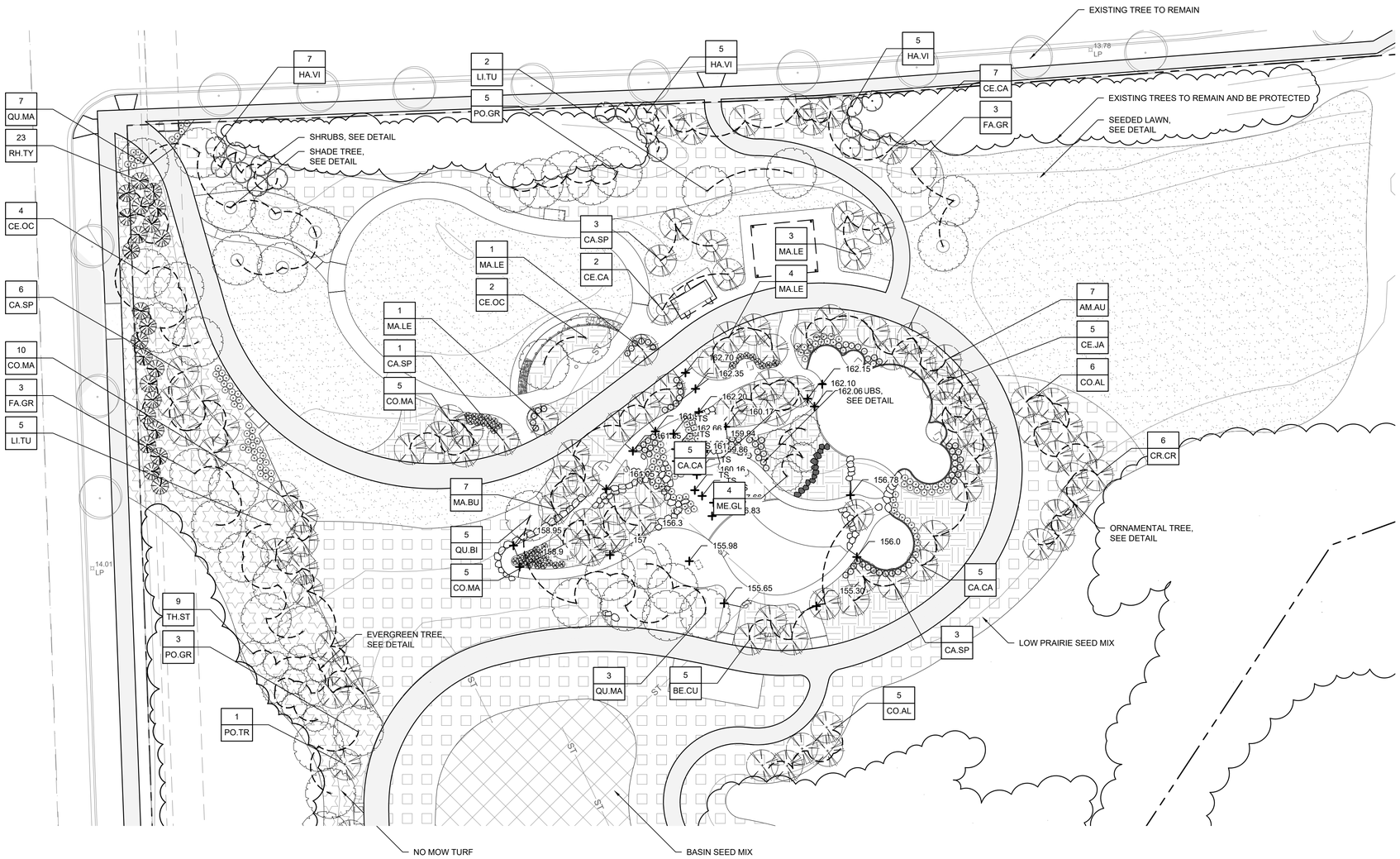
PLANTING PLAN

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: 9509
FILE NO:
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L106

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:



LEGEND

- PROPERTY LINE
- LAWN SEED MIX
- PERENNIALS AND ORNAMENTAL GRASSES
- LOW PRAIRIE SEED MIX
- BASIN SEED MIX
- EMERGENT SLOPE SEED MIX
- NO MOW TURF
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SHRUBS
- EXISTING TREES TO REMAIN AND BE PROTECTED
- EXISTING TREE TO REMAIN

1 NORTH TREES AND SHRUBS PLANTING PLAN ENLARGEMENT
1"= 30'-0"

0 10 20 30 40 50 60'

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

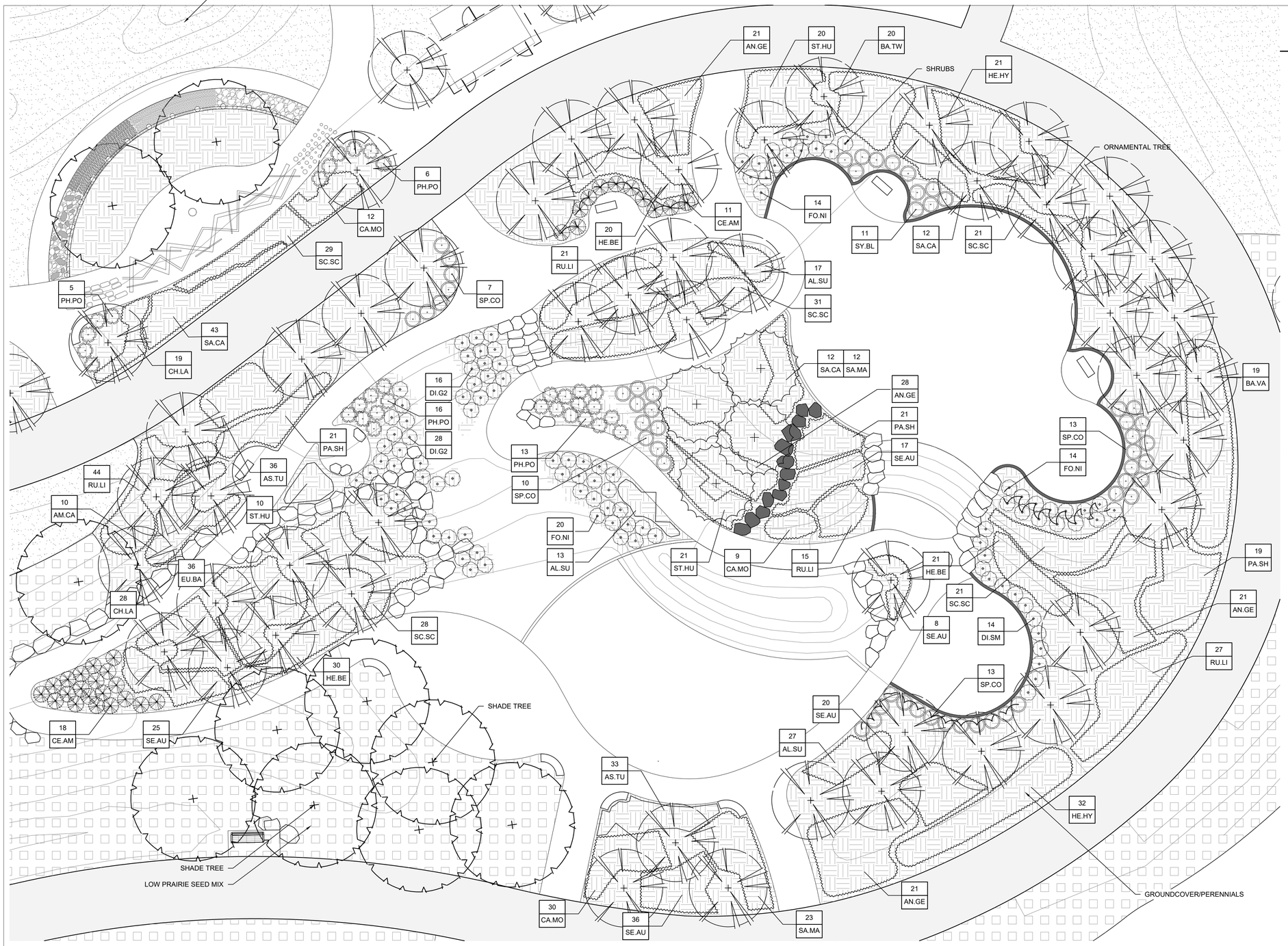
NORTH TREES AND SHRUBS
PLANTING PLAN ENLARGEMENT

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: 9509
FILE NO:
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L106A

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:



LEGEND

- PROPERTY LINE
- LAWN SEED MIX
- PERENNIALS AND ORNAMENTAL GRASSES
- LOW PRAIRIE SEED MIX
- BASIN SEED MIX
- EMERGENT SLOPE SEED MIX
- NO MOW TURF
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SHRUBS
- EXISTING TREES TO REMAIN AND BE PROTECTED
- EXISTING TREE TO REMAIN

1 PLAYGROUND SHRUBS AND PERENNIALS PLANTING PLAN ENLARGEMENT
1"= 10'-0"

0 10 20 30 40 50 60'

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

WAUWATOSA IN GOD WE TRUST

THE SIGMA GROUP
Single Source. Sound Solutions.

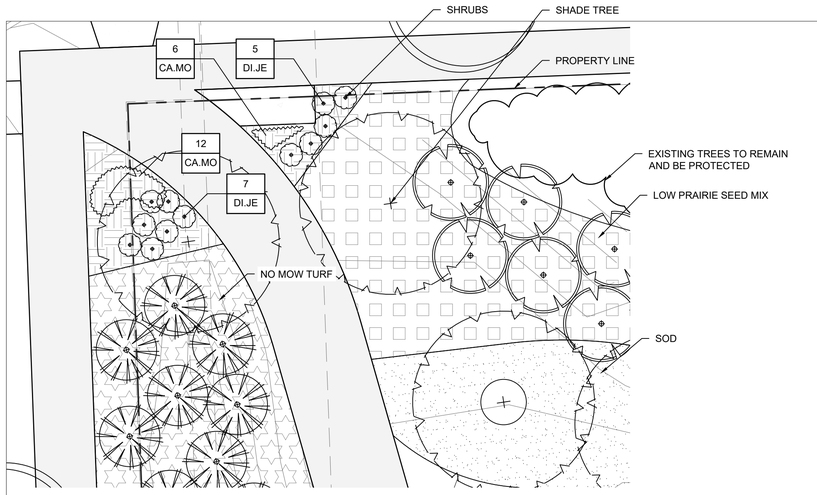
PLAYGROUND SHRUBS AND PERENNIALS PLANTING PLAN ENLARGEMENT

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: 9509
FILE NO:
DRAWN BY: DN
CHECKED BY: BK
SCALE:

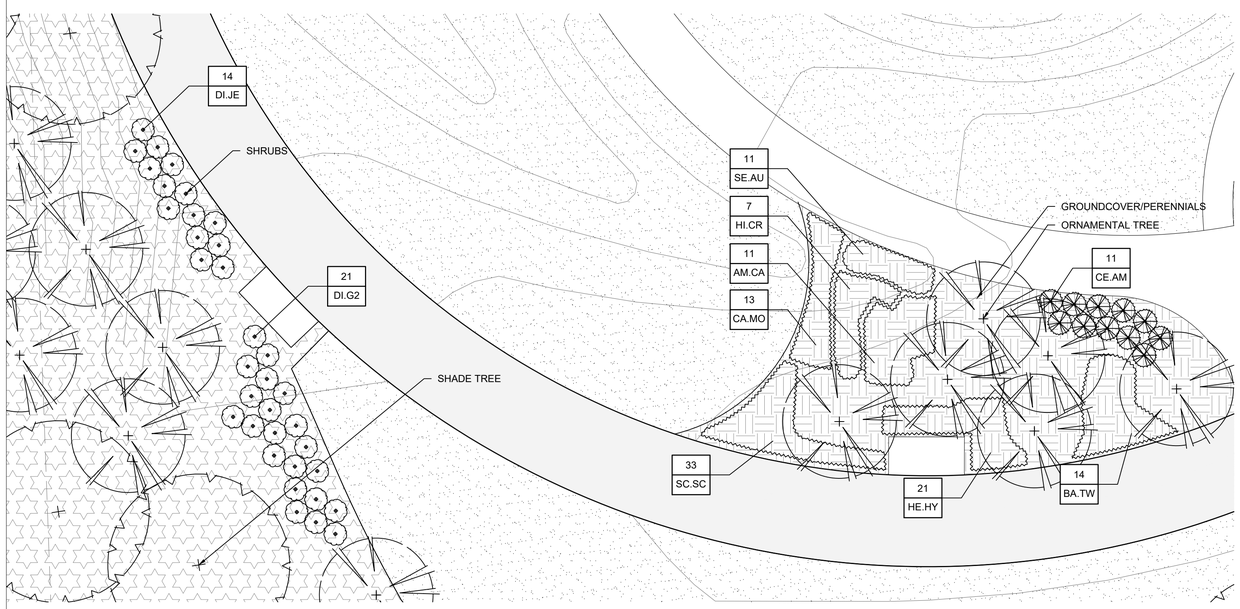
L106A.1.1

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:



1 PLANTING PLAN ENLARGEMENT
1"=10'-0"

0 10 20 30 40 50 60'



2 PLANTING PLAN ENLARGEMENT
1"=10'-0"

0 10 20 30 40 50 60'

LEGEND

- PROPERTY LINE
- LAWN SEED MIX
- PERENNIALS AND ORNAMENTAL GRASSES
- LOW PRAIRIE SEED MIX
- BASIN SEED MIX
- EMERGENT SLOPE SEED MIX
- NO MOW TURF
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SHRUBS
- EXISTING TREES TO REMAIN AND BE PROTECTED
- EXISTING TREE TO REMAIN

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

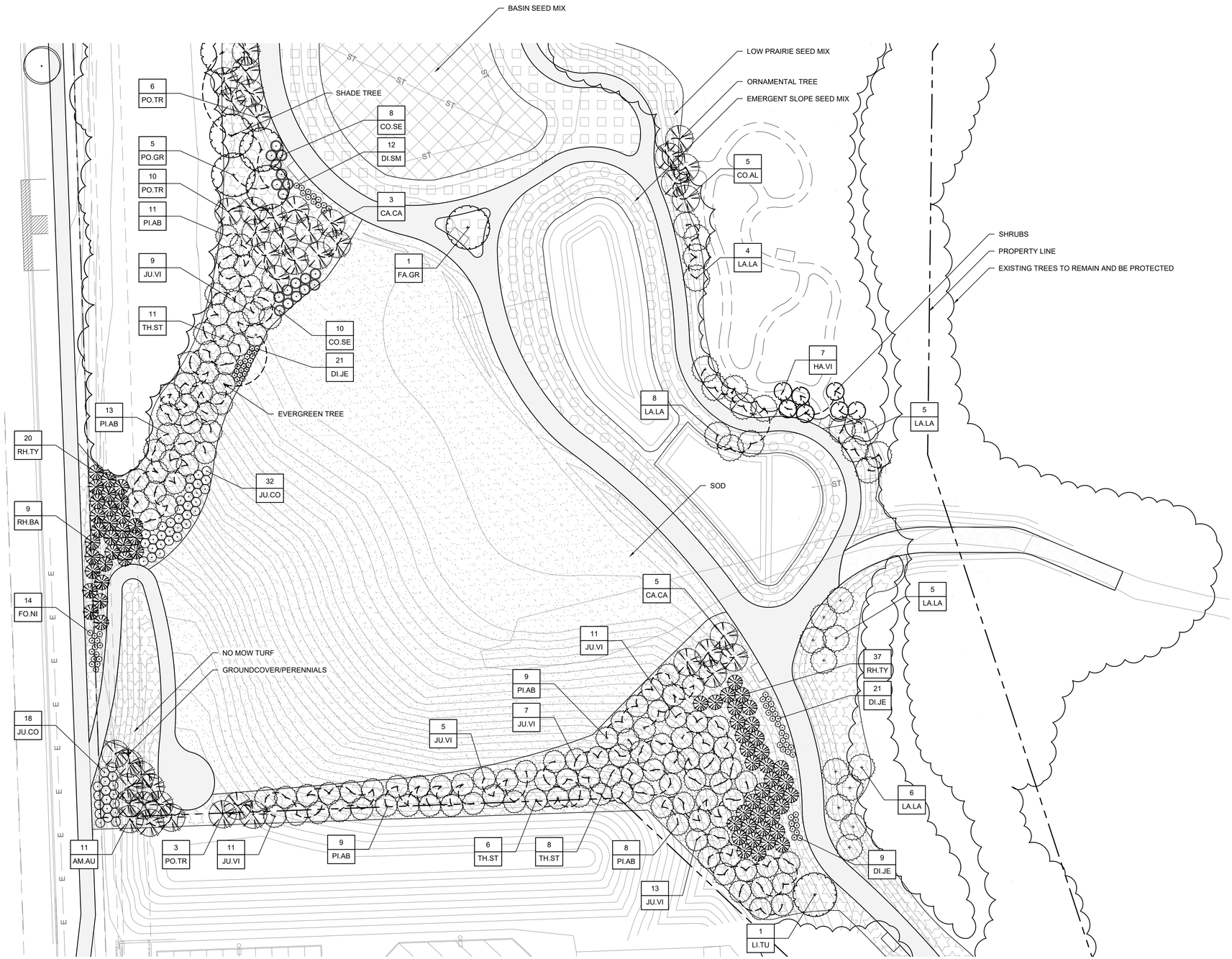
PLANTING PLAN ENLARGEMENT

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L106A.2

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:



LEGEND

- PROPERTY LINE
- LAWN SEED MIX
- PERENNIALS AND ORNAMENTAL GRASSES
- LOW PRAIRIE SEED MIX
- BASIN SEED MIX
- EMERGENT SLOPE SEED MIX
- NO MOW TURF
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SHRUBS
- EXISTING TREES TO REMAIN AND BE PROTECTED
- EXISTING TREE TO REMAIN

1 PLANTING PLAN ENLARGEMENT
1"= 30'-0"

0 10 20 30 40 50 60'

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

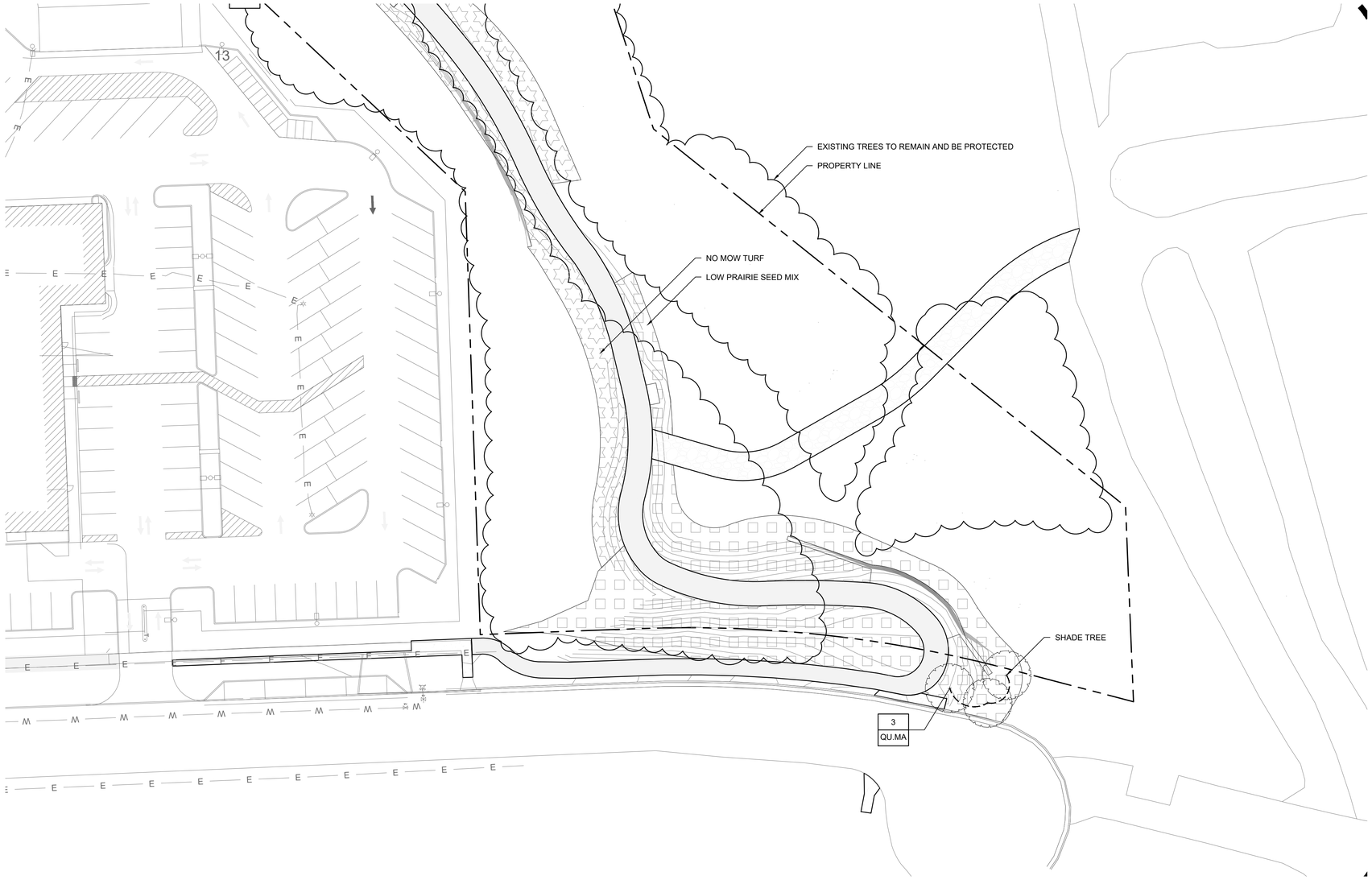
PLANTING PLAN ENLARGEMENT

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L106B

FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:



LEGEND

- PROPERTY LINE
- LAWN SEED MIX
- PERENNIALS AND ORNAMENTAL GRASSES
- LOW PRAIRIE SEED MIX
- BASIN SEED MIX
- EMERGENT SLOPE SEED MIX
- NO MOW TURF
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- SHRUBS
- EXISTING TREES TO REMAIN AND BE PROTECTED
- EXISTING TREE TO REMAIN

1 PLANTING PLAN ENLARGEMENT
1"= 30'-0"

0 10 20 30 40 50 60'

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

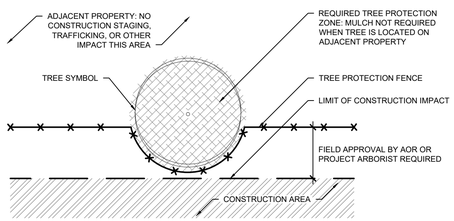
PLANTING PLAN ENLARGEMENT

1700 N 116TH STREET
WAUWATOSA, WI 53226

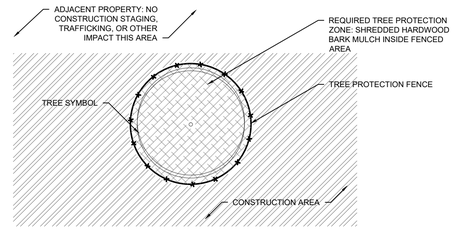
CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L106C

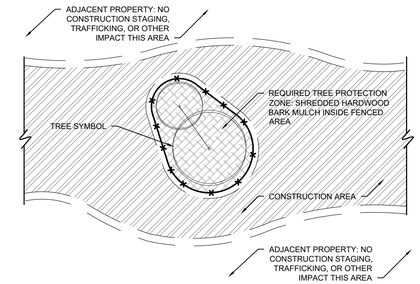
FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:



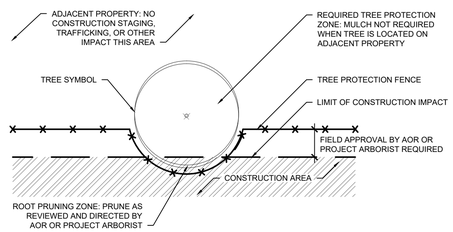
1A TREE PROTECTION FENCE INTERSECTS PROPERTY LIMIT; NO ROOT PRUNING REQUIRED PLAN
NOT TO SCALE



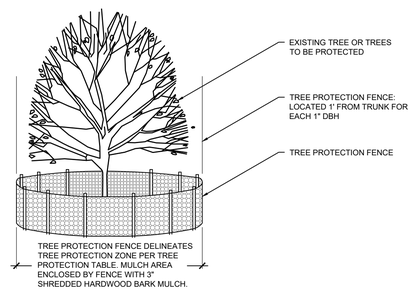
2A TREE PROTECTION ENTIRELY WITHIN CONSTRUCTION AREA PLAN
NOT TO SCALE



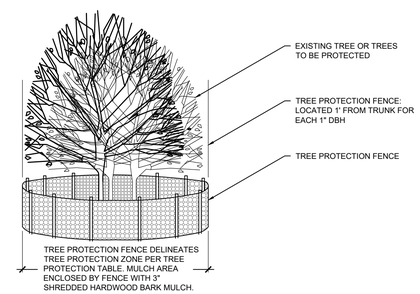
3A GROUP TREE PROTECTION ENTIRELY WITHIN CONSTRUCTION AREA PLAN
NOT TO SCALE



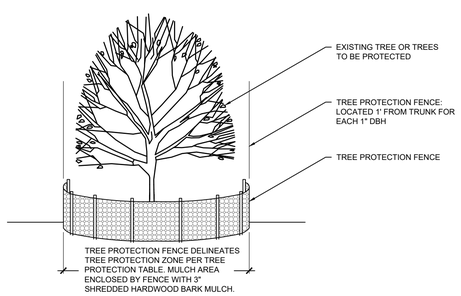
1B TREE PROTECTION FENCE INTERSECTS PROPERTY LIMIT; ROOT PRUNING REQUIRED PLAN
NOT TO SCALE



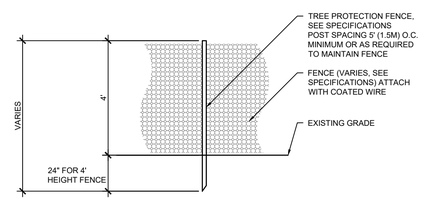
2B TREE PROTECTION ENTIRELY WITHIN CONSTRUCTION AREA ELEVATION
NOT TO SCALE



3B GROUP TREE PROTECTION ENTIRELY WITHIN CONSTRUCTION AREA ELEVATION
NOT TO SCALE



1C TREE PROTECTION FENCE INTERSECTS PROPERTY LIMIT; NO ROOT PRUNING REQUIRED ELEVATION
NOT TO SCALE

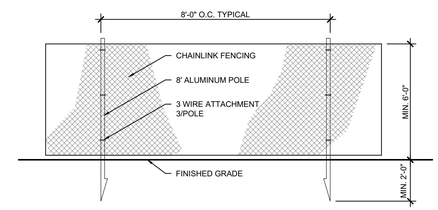


4 TREE PROTECTION FENCE
NOT TO SCALE

TREE PROTECTION	FLAG TAPE COLOR	RADIUS OF TREE PROTECTION FENCE FROM TRUNK	MULCH TREE PROTECTION ZONE
ADJACENT PROPERTY	NONE	NONE, TREE PROTECTED BY TREE PROTECTION FENCE AT PROJECT LIMITS	NO
TREE WITH TREE PROTECTION FENCE	GREEN	1' (30 cm) RADIUS FOR EACH 1" (2.54 cm) DBH*, OR AS APPROVED BY AOR OR PROJECT ARBORIST	YES, 3" DEPTH OF HARDWOOD BARK MULCH, NOT IN CONTACT WITH THE TRUNK
TREE WITH TREE PROTECTION FENCE, ROOTPRUNED	GREEN & YELLOW	1' (30 cm) RADIUS FOR EACH 1" (2.54 cm) DBH*, OR AS APPROVED BY AOR OR PROJECT ARBORIST	YES, 3" DEPTH OF HARDWOOD BARK MULCH, NOT IN CONTACT WITH THE TRUNK
TREE TO BE RELOCATED	BLUE	1' (30 cm) RADIUS FOR EACH 1" (2.54 cm) DBH*, OR AS APPROVED BY AOR OR PROJECT ARBORIST	YES, 3" DEPTH OF HARDWOOD BARK MULCH, NOT IN CONTACT WITH THE TRUNK
TREE TO BE REMOVED	RED	NONE, TREES MUST BE REMOVED PRIOR TO START OF CONSTRUCTION	NO

*DBH - DIAMETER AT BREAST HEIGHT MEASURED AT 4.5' FROM BASE OF TREE.

5 TREE PROTECTION TABLE AND NOTES
NOT TO SCALE



6 6'H CONSTRUCTION FENCE ELEVATION
NOT TO SCALE

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

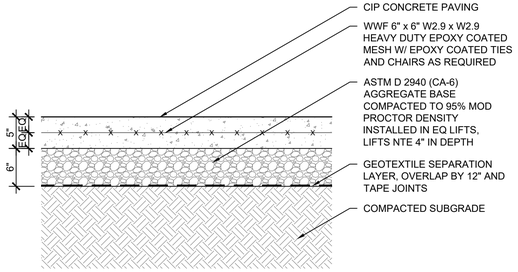
PRESERVATION AND DEMOLITION DETAILS

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

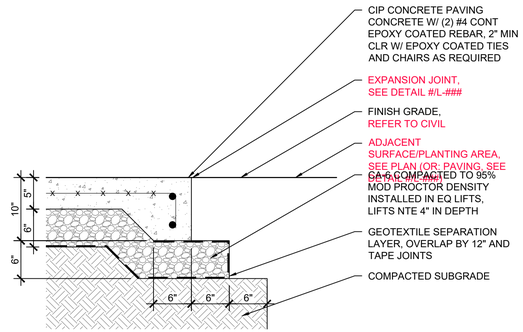
L501

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:

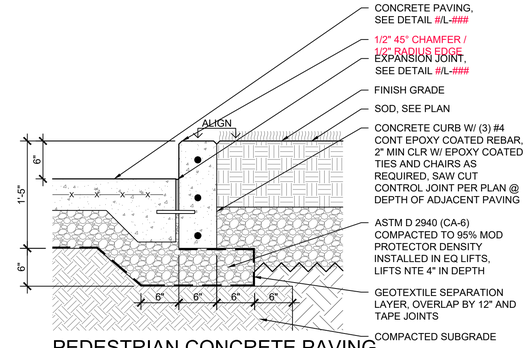


X PEDESTRIAN CONCRETE PAVING SECTION
1" = 1'-0"

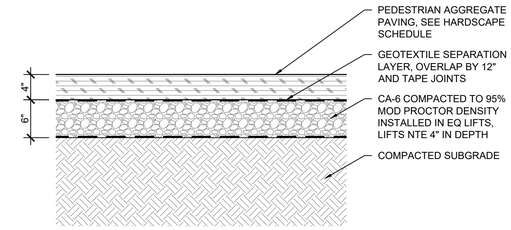
NOTES:
1. X = 1/3 OF CONCRETE PAVING DEPTH



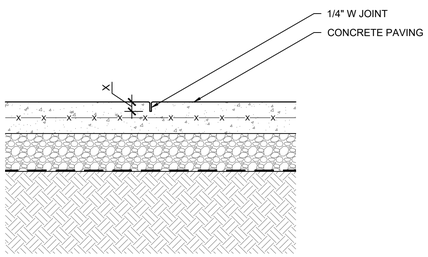
X PEDESTRIAN CONCRETE PAVING THICKENED EDGE SECTION
1" = 1'-0"



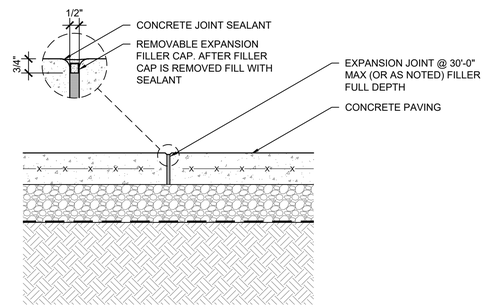
X PEDESTRIAN CONCRETE PAVING W/ RAISED CONCRETE CURB SECTION
1" = 1'-0"



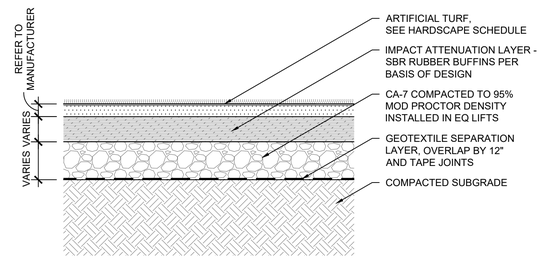
X PEDESTRIAN AGGREGATE PAVING SECTION
1" = 1'-0"



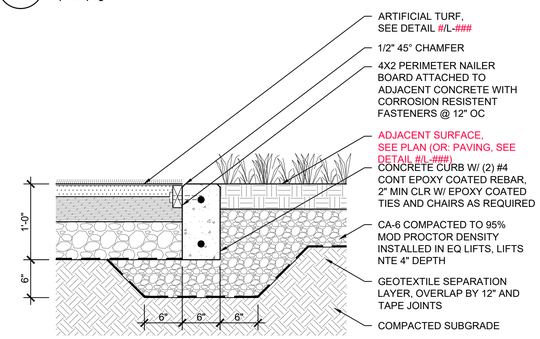
X SAWCUT CONTROL JOINT SECTION
1" = 1'-0"



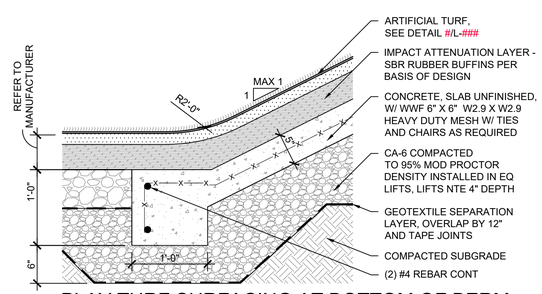
X EXPANSION JOINT SECTION
1" = 1'-0"



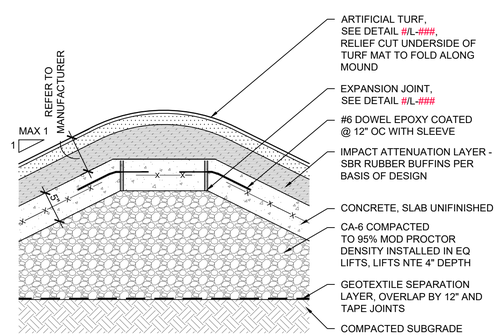
X PLAY TURF SURFACING SECTION
1" = 1'-0"



X PLAY TURF SURFACING W/ FLUSH CONCRETE CURB SECTION
1" = 1'-0"



X PLAY TURF SURFACING AT BOTTOM OF BERM W/ THICKENED CONCRETE EDGE SECTION
1" = 1'-0"



X PLAY TURF SURFACING AT TOP OF BERM SECTION
1" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

WAUWATOSA IN GOD WE TRUST

THE SIGMA GROUP
Single Source. Sound Solutions.

HARDSCAPE DETAILS

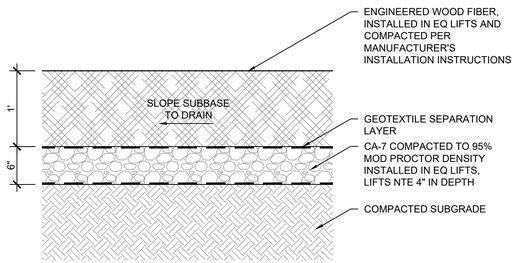
1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

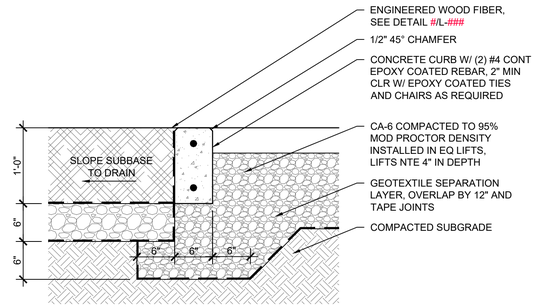
L503

FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:

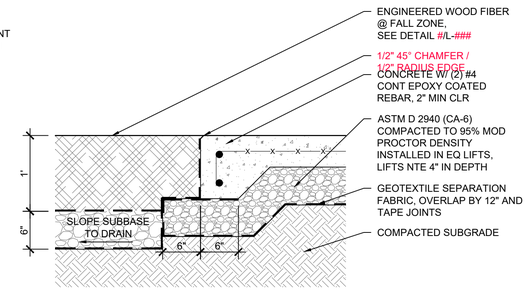
NOTE:
1. INSTALL ENGINEERED WOOD FIBER PER MANUFACTURER'S RECOMMENDED INSTALLATION INSTRUCTIONS.



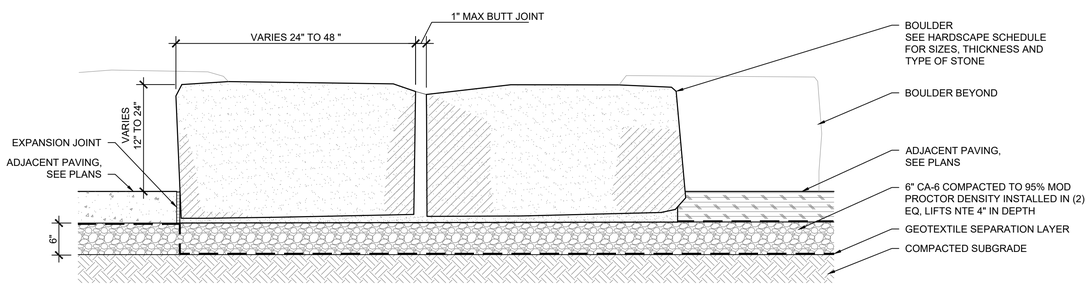
X ENGINEERED WOOD FIBER SECTION
1" = 1'-0"



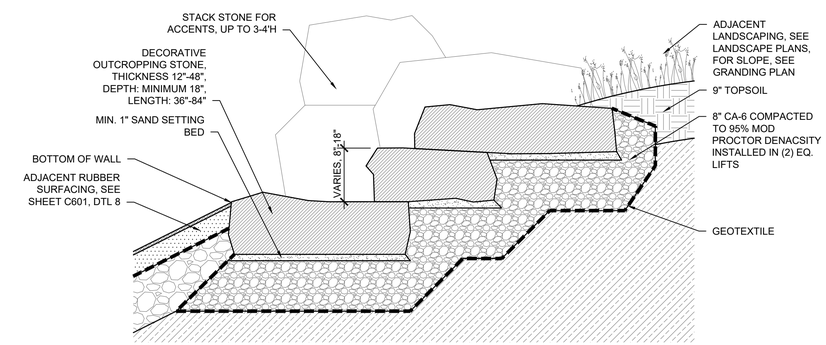
X ENGINEERED WOOD FIBER W/ FLUSH CURB SECTION
1" = 1'-0"



X ENGINEERED WOOD FIBER AT FALL ZONE TO THICKENED CONCRETE EDGE SECTION
1" = 1'-0"



X BOULDER DETAIL
1" = 1'-0"



x EMBANKMENT BOULDER DETAIL
1" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

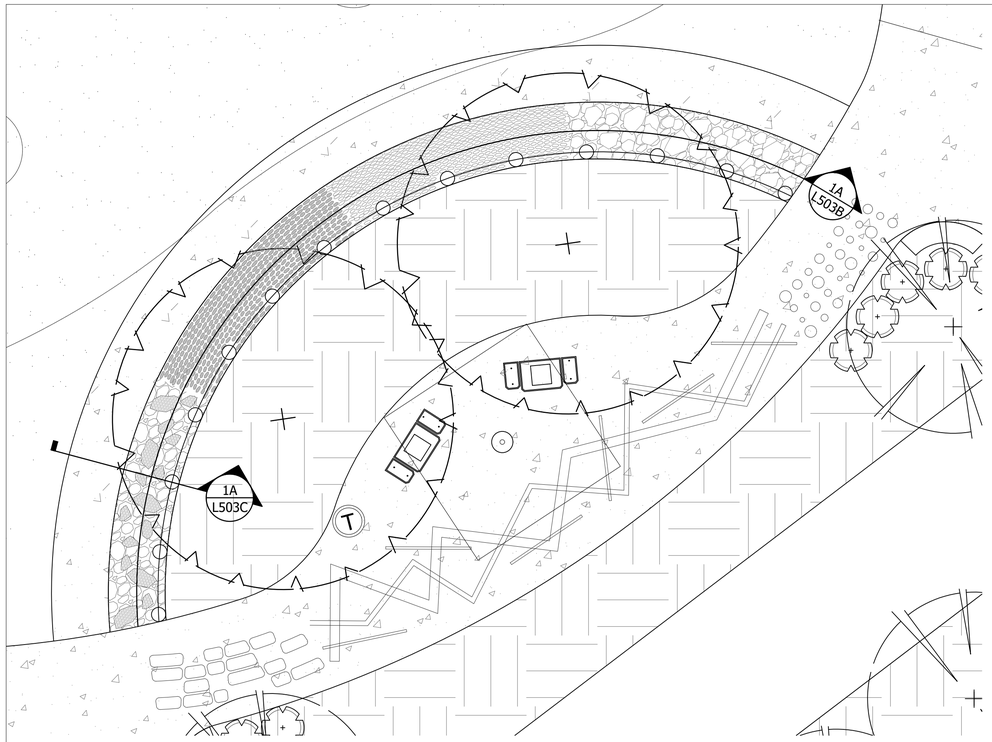
HARDSCAPE DETAILS

1700 N 116TH STREET
WAUWATOSA, WI 53226

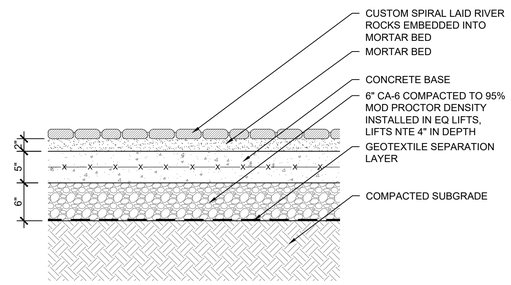
CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L503A

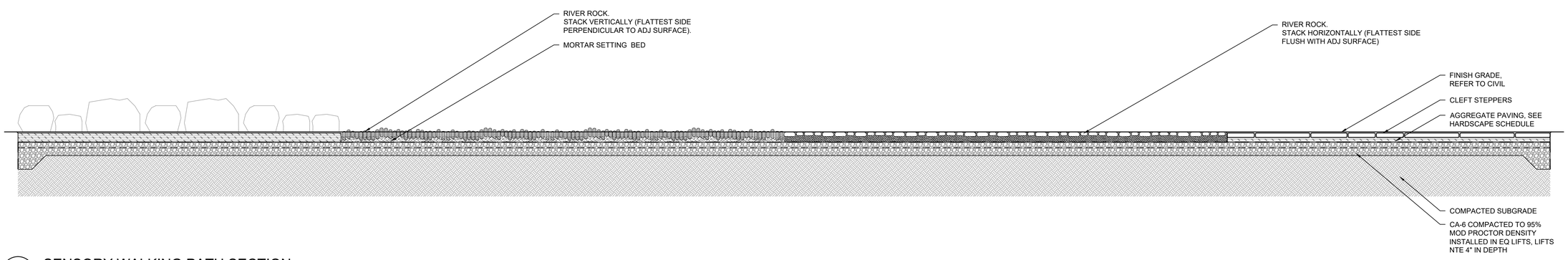
FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:



1 SENSORY WALKING PATH KEY PLAN
3/16" = 1'-0"



2 RIVER ROCK SECTION
1" = 1'-0"



1A SENSORY WALKING PATH SECTION
1/2" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

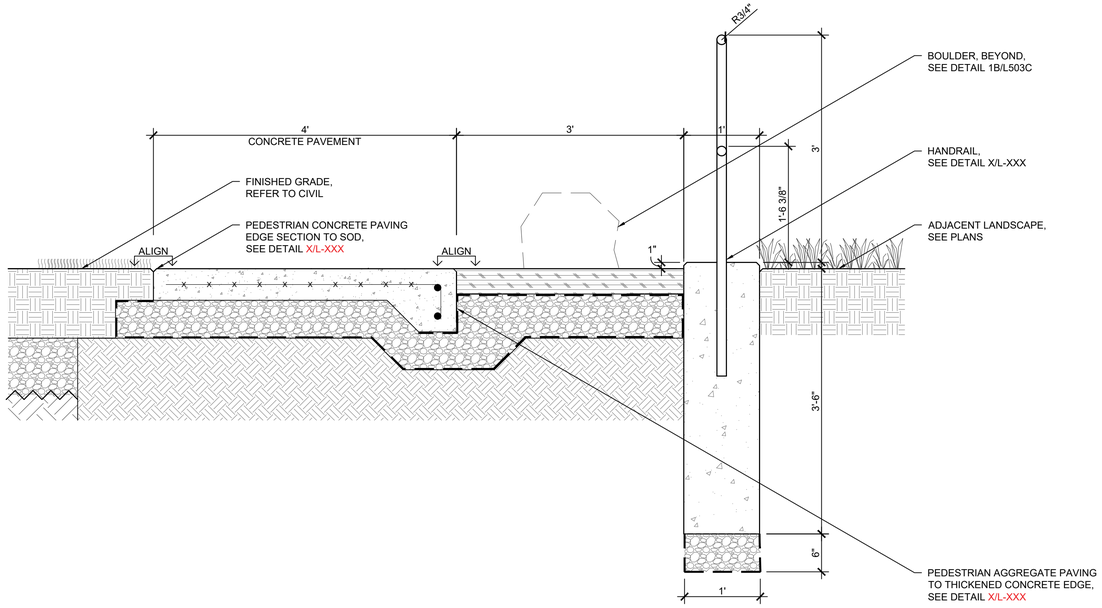
HARDSCAPE DETAILS

1700 N 116TH STREET
WAUWATOSA, WI 53226

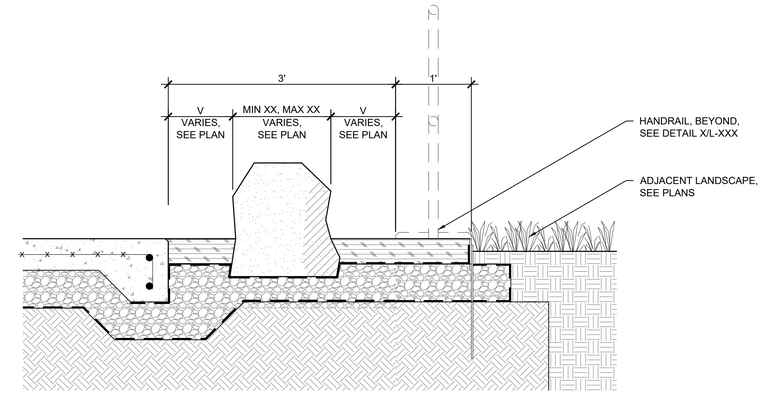
CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L503B

FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:



1A SENSORY WALKING PATH SECTION
1" = 1'-0"



1B BOULDER IN SENSORY WALKING PATH SECTION
1" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

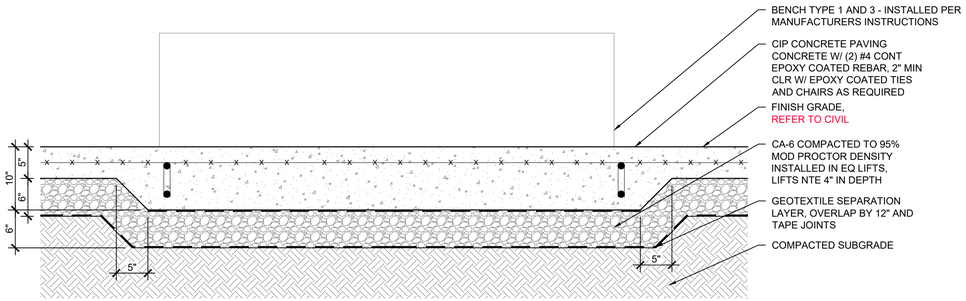
HARDSCAPE DETAILS

1700 N 116TH STREET
WAUWATOSA, WI 53226

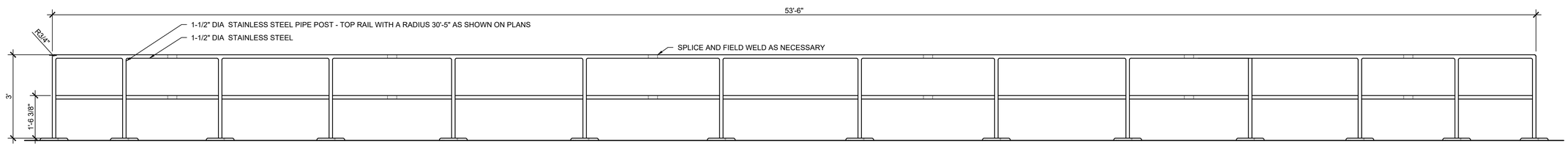
CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L503C

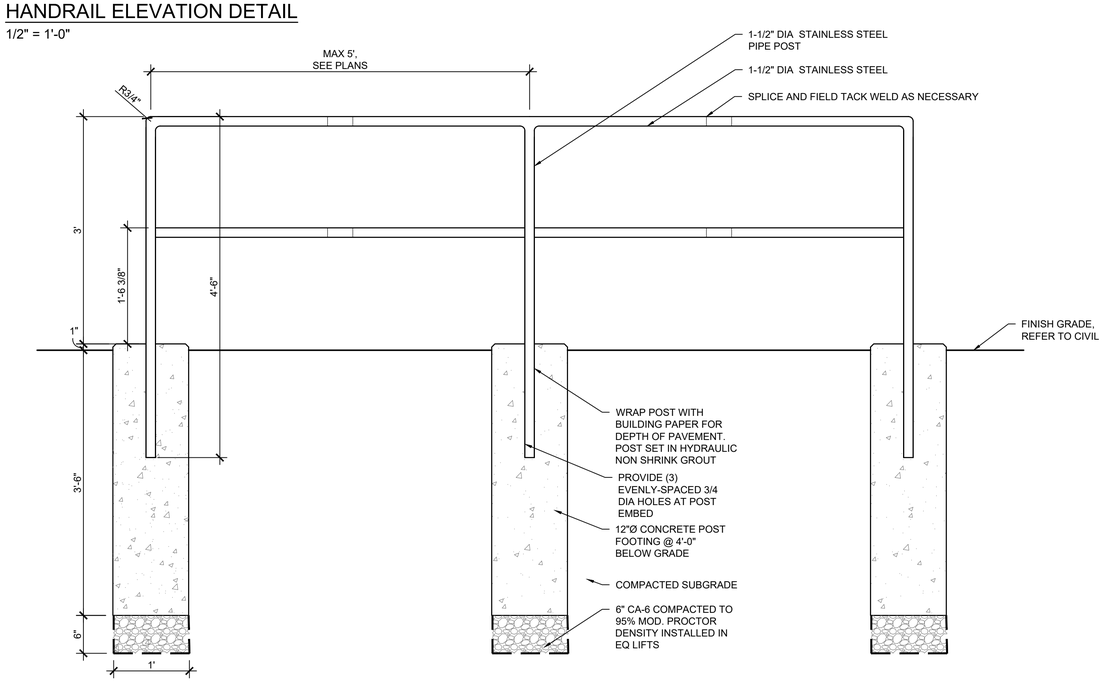
FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:



X BENCH TYPE 1 AND 3 THICKENED CONCRETE PAD SECTION
1" = 1'-0"



X HANDRAIL ELEVATION DETAIL
1/2" = 1'-0"



X HANDRAIL SECTION
1" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

HARDSCAPE DETAILS

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
DRAWN BY: DN
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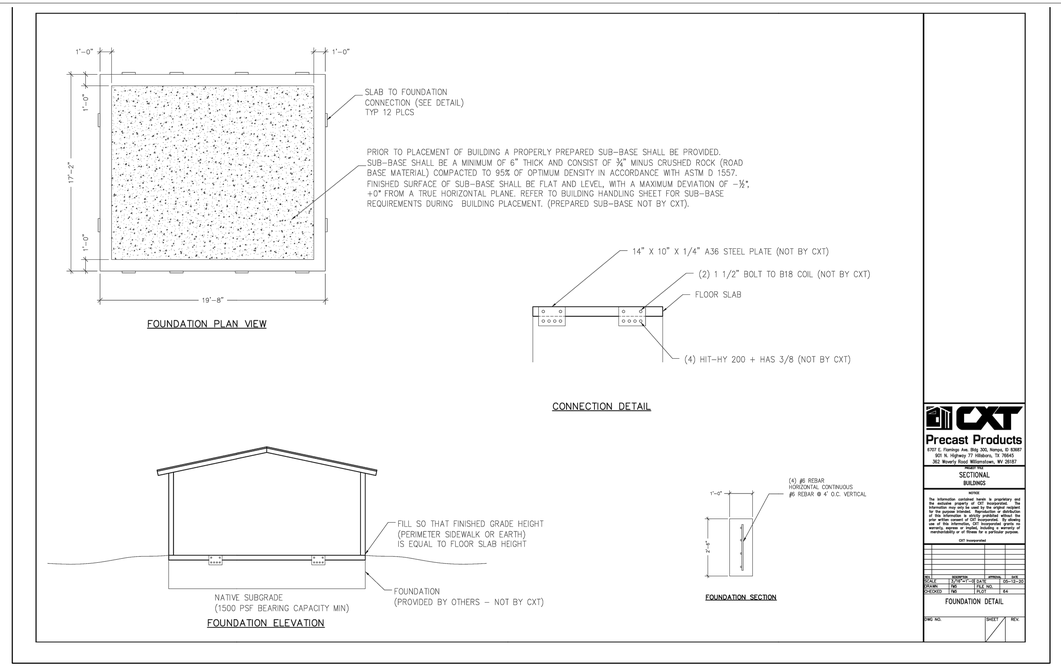
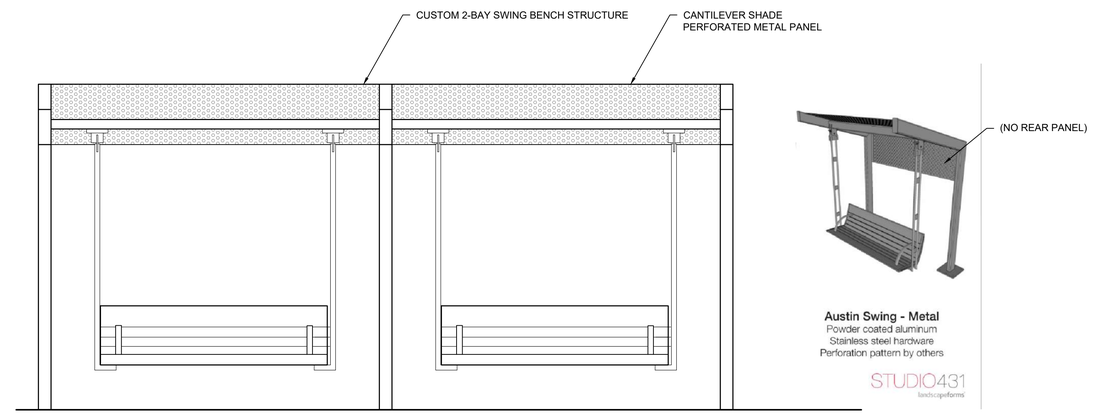
SCALE:

L503D

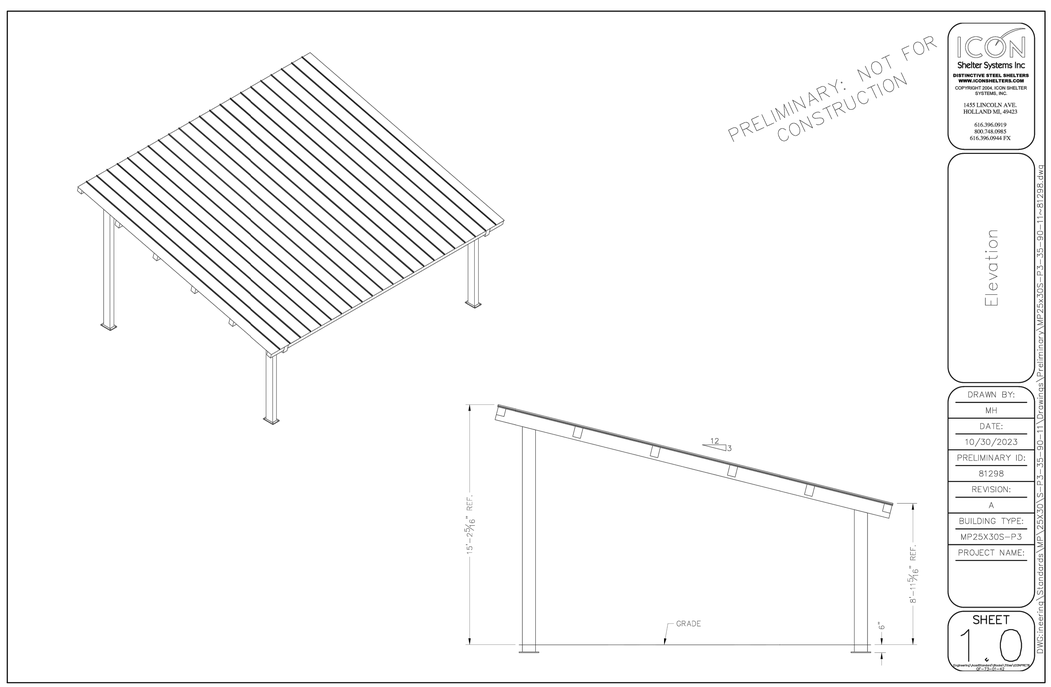
FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:



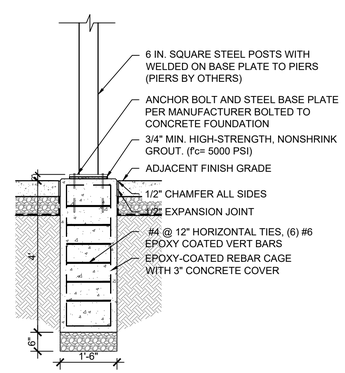
1 RESTROOM FOUNDATION AND SUBGRADE PREP DETAIL (FOR REFERENCE ONLY)
NTS



1 BENCH SWING (FOR REFERENCE ONLY)
NTS



1 PICNIC SHELTER STRUCTURE (FOR REFERENCE ONLY)
NTS



2 SHADE STRUCTURE POST FOOTING DETAIL
1/2" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

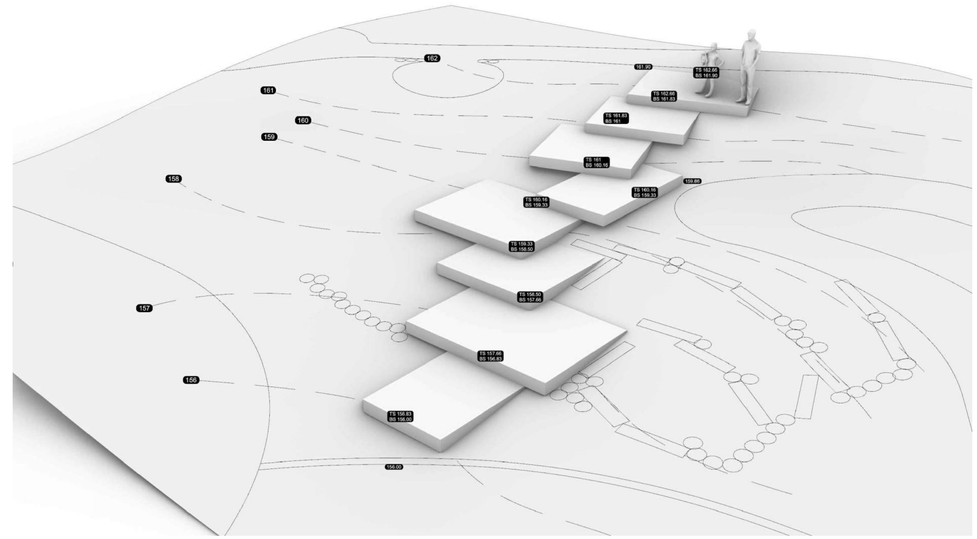
SITE FURNISHING DETAILS

CONTRACT:
FILE NO:
DRAWN BY:
CHECKED BY:
SCALE:

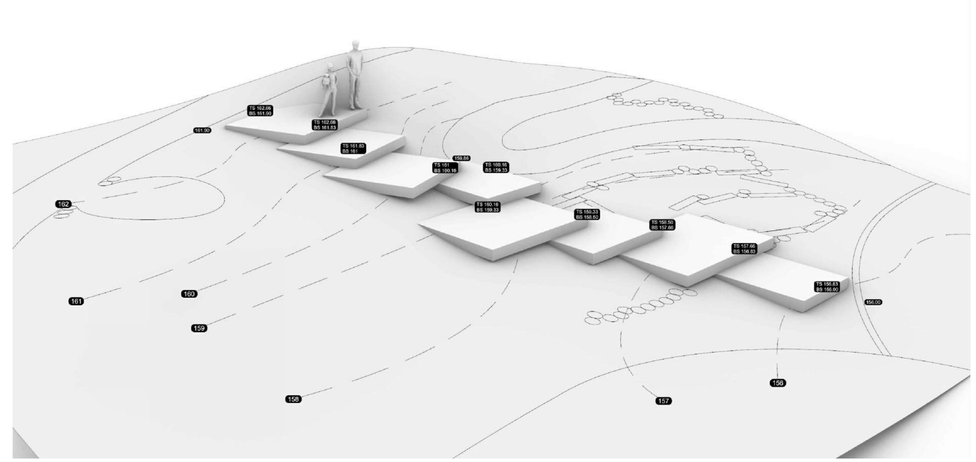
L504

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:

1 WOOD PLATFORM KEY PLAN
1/4" = 1'-0"



3 RENDERING AT WOOD PLATFORM - FROM EAST
NTS



4 RENDERING AT WOOD PLATFORM - FROM WEST
NTS

IN PROGRESS

2 SECTION AT WOOD PLATFORM
1/4" = 1'-0"

IN PROGRESS

5 SECTION AT WOOD PLATFORM
1" = 1'-0"

6 SECTION AT WOOD PLATFORM
1" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

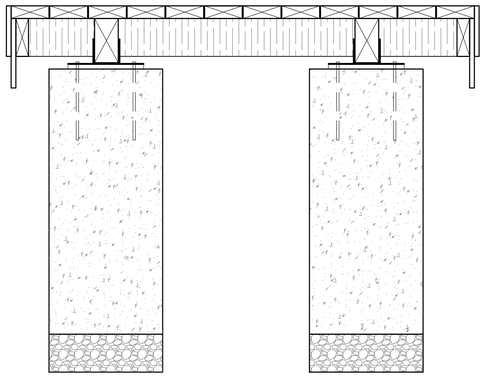
site

SITE STRUCTURES

CONTRACT:
FILE NO:
DRAWN BY:
CHECKED BY:
SCALE:

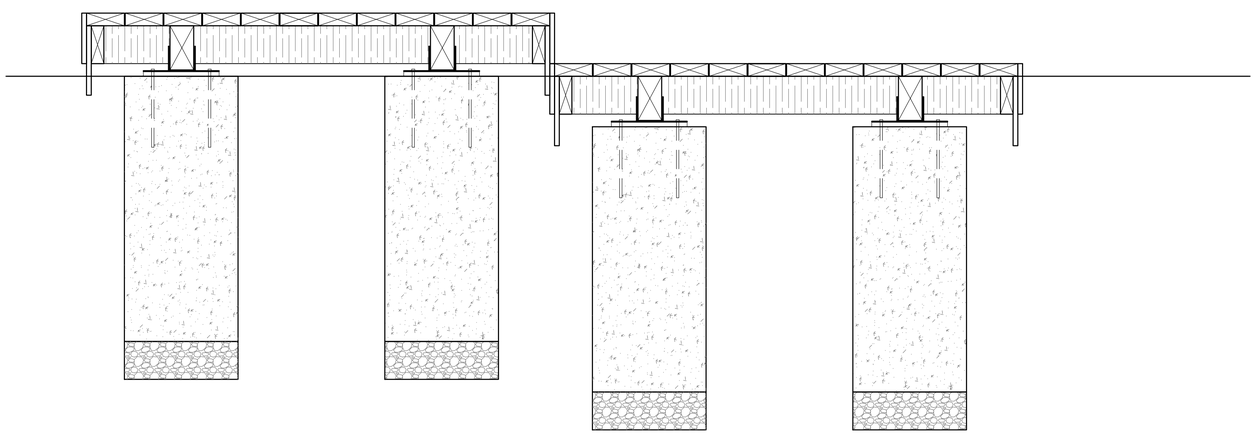
L504A

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:



1 TYPICAL WOOD PLATFORM DETAIL
1" = 1'-0"

IN PROGRESS



2 TYPICAL WOOD PLATFORM DETAIL
1" = 1'-0"

DATE	DESCRIPTION

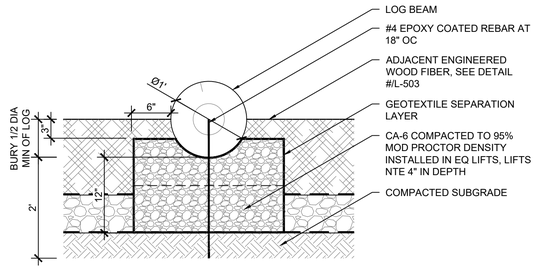
CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

SITE STRUCTURES

CONTRACT:
FILE NO:
DRAWN BY:
CHECKED BY:
SCALE:

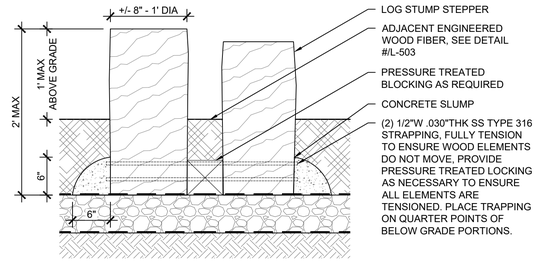
L504B

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:



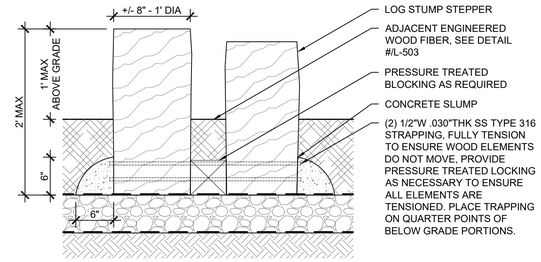
NOTES:
1. PROPOSED MFR, SEE SITE FURNISHINGS SCHEDULE.
2. GC SHALL ENSURE LOGS DO NOT ROCK OR ROLL.

1 LOG BEAM, SECTION
1" = 1'-0"



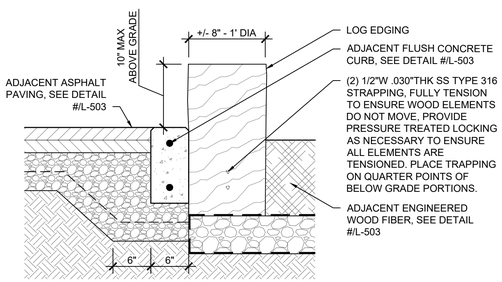
NOTES:
1. PROPOSED MFR, SEE SITE FURNISHINGS SCHEDULE.
2. GC SHALL ENSURE LOGS DO NOT ROCK OR ROLL.

2 LOG STUMP STEPPERS, SECTION
1" = 1'-0"



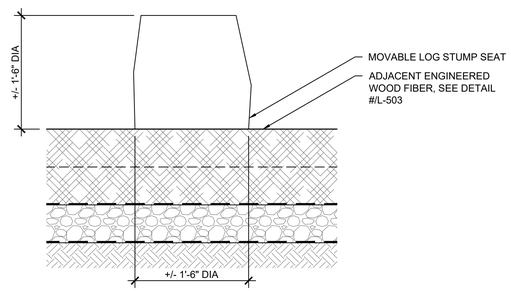
NOTES:
1. PROPOSED MFR, SEE SITE FURNISHINGS SCHEDULE.
2. GC SHALL ENSURE LOGS DO NOT ROCK OR ROLL.

3 LOG STUMP STEPPERS, SLOPED SECTION
1" = 1'-0"



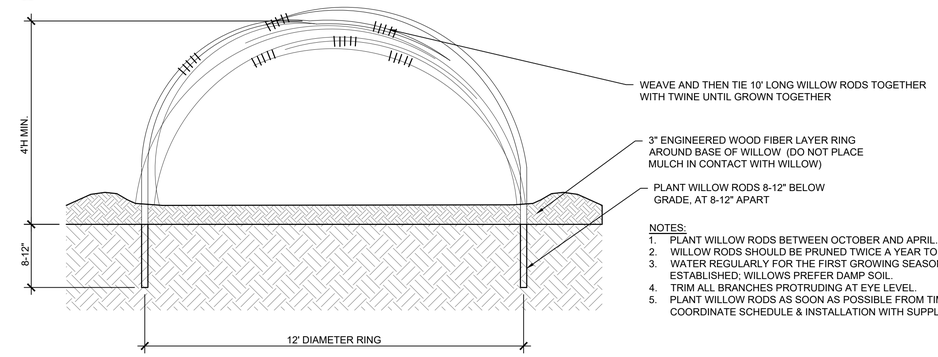
NOTES:
1. PROPOSED MFR, SEE SITE FURNISHINGS SCHEDULE.
2. GC SHALL ENSURE LOGS DO NOT ROCK OR ROLL.

4 LOG EDGING TO FLUSH CONCRETE CURB, SECTION
1" = 1'-0"



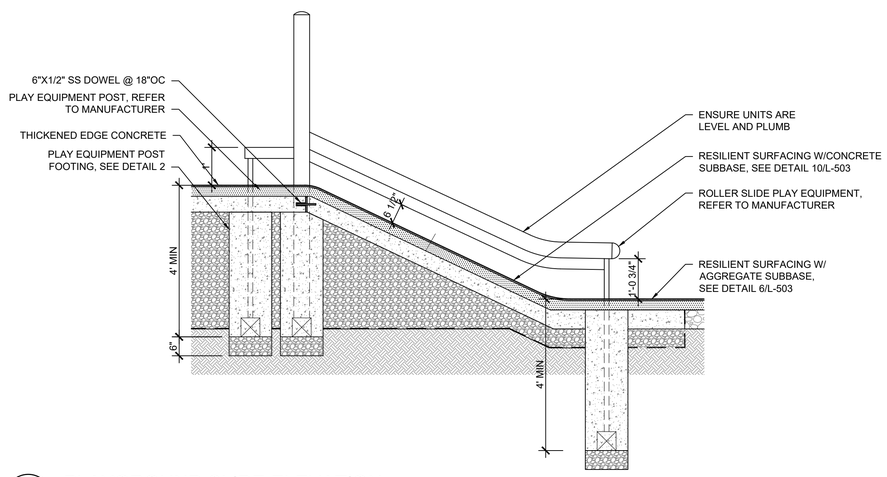
NOTES:
1. PROPOSED MFR, SEE SITE FURNISHINGS SCHEDULE.

5 LOG STUMP SEAT, SECTION
1" = 1'-0"

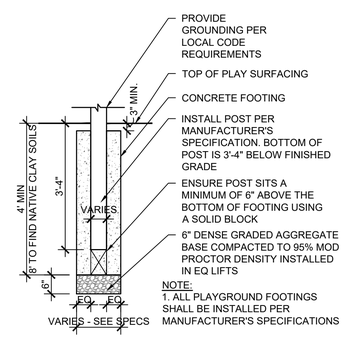


NOTES:
1. PLANT WILLOW RODS BETWEEN OCTOBER AND APRIL.
2. WILLOW RODS SHOULD BE PRUNED TWICE A YEAR TO KEEP ITS SHAPE.
3. WATER REGULARLY FOR THE FIRST GROWING SEASON UNTIL ESTABLISHED; WILLOWS PREFER DAMP SOIL.
4. TRIM ALL BRANCHES PROTRUDING AT EYE LEVEL.
5. PLANT WILLOW RODS AS SOON AS POSSIBLE FROM TIME OF CUTTING. COORDINATE SCHEDULE & INSTALLATION WITH SUPPLIER.

6 WILLOW HUT SECTION
1" = 1'-0"

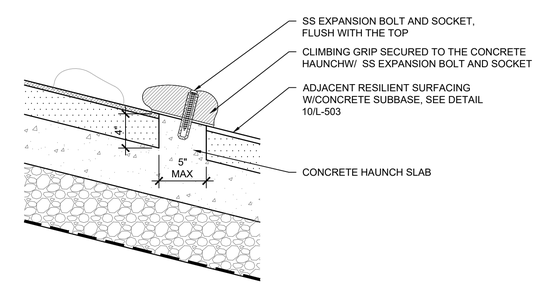


7 PLAYGROUND SLIDE ELEVATION
1/2" = 1'-0"



NOTE:
1. ALL PLAYGROUND FOOTINGS SHALL BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS

8 PLAY EQUIPMENT FOOTING DETAIL
1/2" = 1'-0"



9 CLIMBING GRIP DETAIL
1-1/2" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

PLAYGROUND DETAILS

CONTRACT:
FILE NO:
DRAWN BY:
CHECKED BY:
SCALE:

L504C

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:

1 PLAYGROUND RENDERING
NTS

2 PLAYGROUND RENDERING
NTS

3 PLAYGROUND RENDERING
NTS

4 PLAYGROUND RENDERING
NTS

5 PLAYGROUND RENDERING
NTS

6 PLAYGROUND RENDERING
NTS

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

SITE

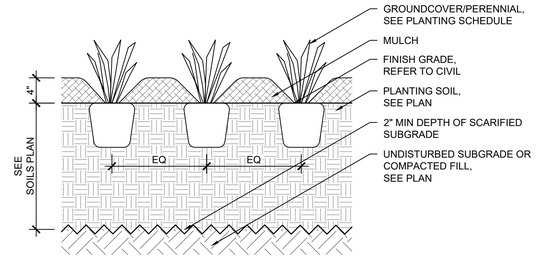
PLAYGROUND FURNISHING RENDERINGS

CONTRACT:
FILE NO:
DRAWN BY:
CHECKED BY:
SCALE:

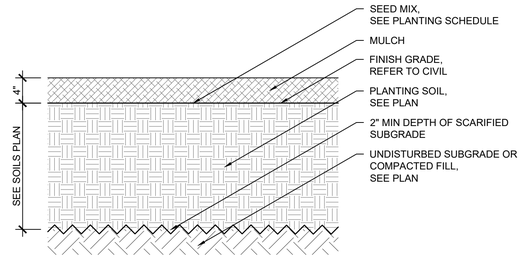
L504D

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:

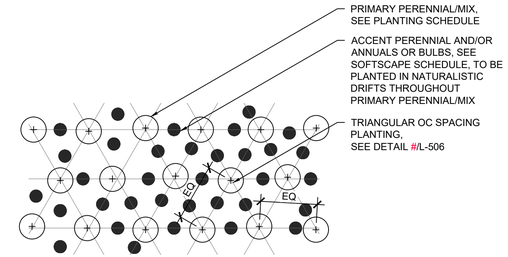
NOTES:
1. RAISE PLANTING BED FOR ADEQUATE DRAINAGE. PROPOSED DRAINAGE, REFER TO CIVIL
2. PLANT SHALL BE HANDLED BY CONTAINER, NOT BY STEMS OR BRANCHES



0 GROUNDCOVER/PERENNIAL SECTION
1" = 1'-0"

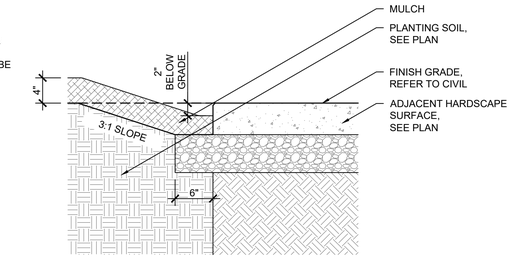


0 SEED SECTION
1" = 1'-0"

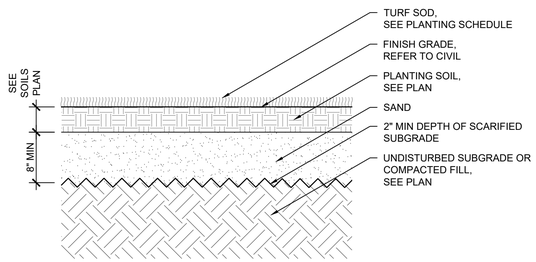


0 GROUNDCOVER INTERPLANTING PLAN
NTS

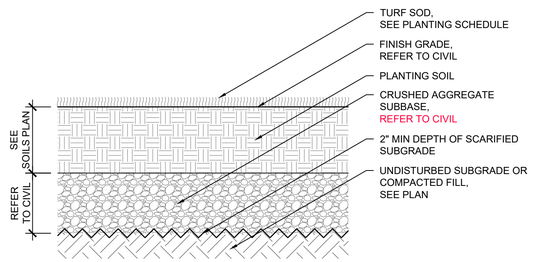
NOTES:
1. RAISE PLANTING BED FOR ADEQUATE DRAINAGE. PROPOSED DRAINAGE, REFER TO CIVIL



0 PLANTING MATERIAL EDGE TO HARDSCAPE SURFACE SECTION
1" = 1'-0"

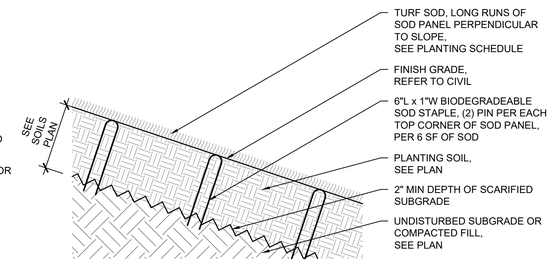


0 SOD (EVENT LAWN) SECTION
1" = 1'-0"

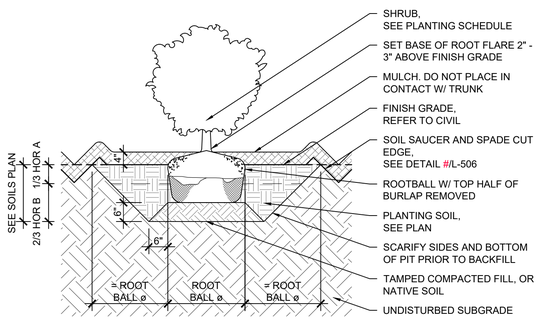


0 SOD SECTION
1" = 1'-0"

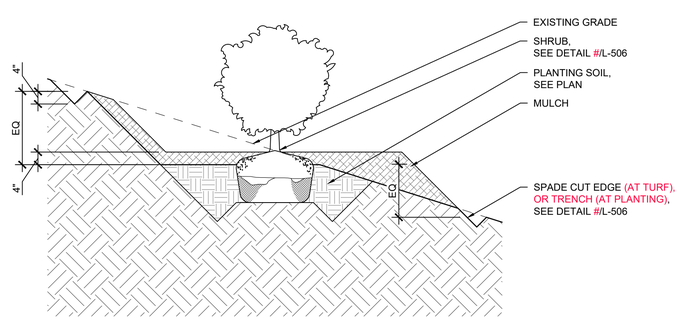
NOTES:
1. PROVIDE SOD STAPLES ON SLOPES GREATER THAN 1:4
2. BUTT ALL SEAMS, NO GAPS



0 SOD ON SLOPE SECTION
1" = 1'-0"



0 SHRUB SECTION
1/2" = 1'-0"



0 SHRUB ON SLOPE SECTION
1/2" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

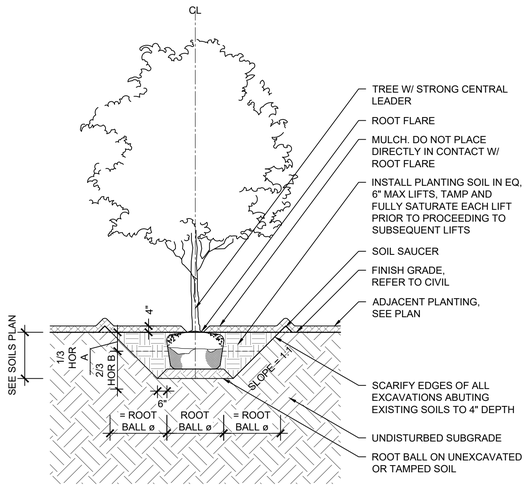
L506 PLANTING DETAILS

1700 N 116TH STREET
WAUWATOSA, WI 53226

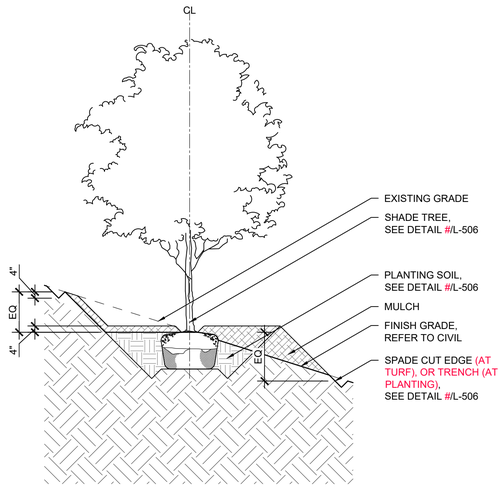
CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:

NOTES:
1. ALIGN TRUNKS WHEN PLANTED IN A LINE
2. ORIENT TREE PER LA TREE SEALS, RIBBON, AND/OR OTHER MARKINGS AS COORDINATED W/ NURSERY VISITS PER SPECIFICATIONS
3. DO NOT PRUNE OR THIN CANOPY UNLESS DIRECTED BY LA
4. REMOVE ALL TWINE, ROPE, WIRE, AND BURLAP FROM TOP HALF OF ROOT BALL (IF PLANT IS SHIPPED W/ WIRE BASKET AROUND ROOT BALL, CUT WIRE IN FOUR PLACES AND REMOVE TOP HALF
5. SET ROOTBALL AND BASE OF ROOT FLARE 2" HIGHER THAN FINISH GRADE
6. ENSURE TRUNK AND LEADER ARE PLUMB
7. REMOVE EXCESS FILL ON TOP OF ROOT BALL TO ENSURE ROOT FLARE IS VISIBLE



0 SHADE TREE SECTION
1/4" = 1'-0"



0 SHADE TREE ON SLOPE SECTION
1/4" = 1'-0"

NOTES:
1. ALIGN TRUNKS WHEN PLANTED IN A LINE
2. ORIENT TREE PER LA TREE SEALS, RIBBON, AND/OR OTHER MARKINGS AS COORDINATED W/ NURSERY VISITS PER SPECIFICATIONS
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5. SET ROOTBALL AND BASE OF ROOT FLARE 2" HIGHER THAN FINISH GRADE
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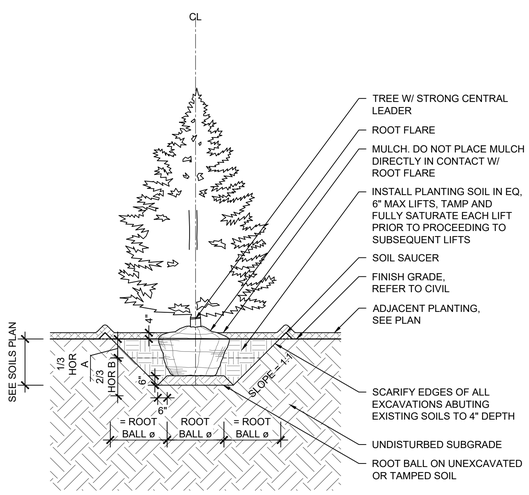
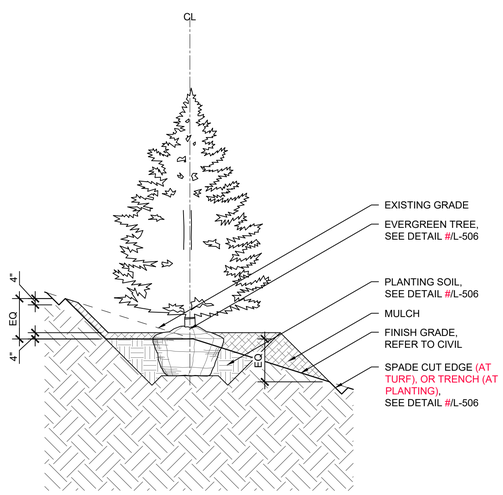
7. REMOVE EXCESS FILL ON TOP OF ROOT BALL TO ENSURE ROOT FLARE IS VISIBLE



0 EVERGREEN TREE SECTION
1/4" = 1'-0"



0 EVERGREEN TREE ON SLOPE SECTION
1/4" = 1'-0"

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

SITE

L506A PLANTING DETAILS

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:

MOCKUPS

CODE	COMPONENT	SOURCE	MATERIAL	SIZE	COLOR	FINISH	NOTES	SHEET	DETAIL	SPECIFICATION
PA-01	CONCRETE PAVING MOCKUP (10' x 10')	-	PROVIDE MOCKUP FOR EVERY TYPE PER SCHEDULE	FULL PROFILE PER DETAIL	PER SCHEDULE	PER SCHEDULE	PROVIDE EXAMPLES OF EACH UNIQUE CONDITION PER PLANS/DETAILS.	L-X	X	XX XX XX
SW-01	SENSORY WALK TYPE 1 MOCKUP (3' x 10')	-	PER SCHEDULE	FULL PROFILE PER DETAIL	SENSORY WALK TYPE 1	PER SCHEDULE	PROVIDE EXAMPLES OF EACH UNIQUE CONDITION PER PLANS/DETAILS.	L-X	X	XX XX XX
SW-02	SENSORY WALK TYPE 2 MOCKUP (3' x 10')	-	PER SCHEDULE	FULL PROFILE PER DETAIL	SENSORY WALK TYPE 2	PER SCHEDULE	PROVIDE EXAMPLES OF EACH UNIQUE CONDITION PER PLANS/DETAILS.	L-X	X	XX XX XX
PM-01	PAINTED WALK MOCKUP (3' x 10')	-	PER SCHEDULE	FULL PROFILE PER DETAIL	PAINTED WALK	PER SCHEDULE	PROVIDE EXAMPLES OF EACH UNIQUE CONDITION PER PLANS/DETAILS.	L-X	X	XX XX XX

STRUCTURES AND ASSEMBLIES

CODE	FURNISH/ INSTALL SCOPE	COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
BD-1	OF-CI	RESTROOM BUILDING	[Owner Furnished] 6707 E. Flamingo Ave. Bldg 300 Nampa, ID 83687	Precast concrete flush toilet buidling	Denali CXT Standard Building	19'-8 x 10'-3" x 13'-0" H	N/A	N/A	N/A	N/A	[Owner Furnished} REQUIRED	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE	CF-CI	*FOUNDATION*	N/A	Concrete Footing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ST-01	OF-CI	PICNIC SHELTER	[Owner Furnished] Gerber Leisure Products, Inc. Contact: Meghan Barrett p. 608-514-6323 meghan@gerberleiure.com	Steel Frame Shelter	MP25x30S-P3	25' x 30' x 15'-2.3" H	N/A	N/A	N/A	N/A	[Owner Furnished} REQUIRED	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE	CF-CI	*CONCRETE FOOTING*	N/A	Concrete Footing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ST-02	OF-CI	BENCH SWINGS	[Owner Furnished] Landscape Forms Studio 431 7800 E. Michigan Ave Kalamazoo, MI 49048 Contact: Jennifer Woods P. 800.430.6206 x 1336 jenniferw@landscapeforms.com	Steel Frame	2-Bay Austin Cantilever Structure with Perforated Metal Roof	Per Manufacturer 19' L	N/A	N/A	N/A	N/A	N/A	N/A	L-X	X
ASSEMBLY COMPONENT FOR ITEM ABOVE	CF-CI	*CONCRETE FOOTING*	N/A	Concrete Footing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

WALLS

CODE		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
REFER TO CIVIL	CF-CI	RETAINING WALL	REFER TO CIVIL	MODULAR BLOCK MSE RETAINING WALLS	REFER TO CIVIL	SEE DETAIL(S)	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REQUIRED	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL

CURBS

CODE		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
CB-01	CF-CI	RAISED CONCRETE CURB	N/A	CIP Concrete Barrier Curb w/ Rebar Reinforcement	N/A	SEE DETAIL(S)	N/A	Light Broom	Caulked Snap Cap Expansion Joints w/ Saw-cut Control Joints	N/A	N/A	N/A	L503	X
CB-02	CF-CI	FLUSH CONCRETE CURB	N/A	CIP Concrete Flush Curb w/ Rebar Reinforcement	N/A	SEE DETAIL(S)	N/A	Light Broom	Caulked Snap Cap Expansion Joints w/ Saw-cut Control Joints	N/A	N/A	N/A	L503	X

PAVING

CODE		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
PA-01	CF-CI	CONCRETE PAVEMENT	N/A	CIP Concrete w/ Steel Mesh Reinforcement	N/A	5" THK	N/A	Light Broom	Caulked Snap Cap Expansion Joints w/ Saw-cut Control Joints	N/A	N/A	N/A	L503	1
ASSEMBLY COMPONENT FOR ITEM ABOVE	CF-CI	*THICKENED EDGE CONCRETE PAVING*	N/A	N/A	N/A	X	N/A	N/A	N/A	N/A	N/A	N/A	L503	X
PA-02	CF-CI	STABILIZED AGGREGATE PAVING	Kafka Granite 550 East Hwy 153 Mosinee, WI 54455	Stabilized Stone Aggregate Paving	X	3" THK	N/A	N/A	N/A	REQUIRED	N/A	N/A	L503	X
PA-03	OF-ON	PLAY TURF SURFACING	Forever Lawn 8007 Beeson St Louisville, OH 44641 p. 866.992.7879	Protective Play Surface, Synthetic Turf	Playground Grass	X	X	N/A	X	REQUIRED	REQUIRED	X	L503	X
ASSEMBLY COMPONENT FOR ITEM ABOVE	CF-CI	*SITE PREP: GRADING, SUBBASE, AGGREGATE CONCRETE BASE*	N/A	N/A	N/A	N/A	N/A	N/A	X	N/A	N/A	N/A	N/A	N/A
PA-04	CF-CI	ENGINEERED WOOD FIBER	X	Protective Play Surface, Engineered Wood Fiber	X	12" THK	N/A	N/A	X	N/A	N/A	N/A	L503A	1
SW-01	CF-CI	SENSORY WALK TYPE 1	N/A	X	X	12" THK	X	N/A	'Advanced' Sensory Walk.	REQUIRED	REQUIRED	REQUIRED	L-X	X
SW-02	CF-CI	SENSORY WALK TYPE 2	N/A	X	X	12" THK	X	N/A	'Intermediate' Sensory Walk.	REQUIRED	REQUIRED	REQUIRED	L-X	X
PM-01	CF-CI	PAINTED WALK	X	Pavement Markings	StreetBond SB 150AL with primer	SEE DETAIL(S)	SW 6939 - Turquish SW 6921 - Electric Lime SW 6839 Kimono Violet SW 6926 - Lucky Green	N/A	'Beginner' Sensory Walk.	N/A	REQUIRED	REQUIRED	L-X	X
REFER TO CIVIL	CF-CI	ADA TACTILE WARNING TILES	REFER TO CIVIL	Tactile Warning Surfacing	REFER TO CIVIL	2' x 5'	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL
REFER TO CIVIL	CF-CI	POROUS ASPHALTIC PAVEMENT	REFER TO CIVIL	POROUS ASPHALTIC PAVEMENT	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL

DECKING

CODE		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
DK-01	CF-CI	NATURE PLAY WOOD PLATFORM	N/A	Wood Decking and Framing, Robinia	N/A	SEE DETAIL(S)	N/A	N/A	N/A	N/A	REQUIRED	N/A	L504A	X

WOOD EDGING

CODE		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
WE-01	CF-CI	WOOD LOG EDGE TYPE 1	N/A	Robina Wood Log	N/A	SEE DETAIL(S)	N/A	N/A	Vertical Log	N/A	REQUIRED	N/A	L504A	X
WE-02	CF-CI	WOOD LOG EDGE TYPE 2	N/A	Robina Wood Log	N/A	SEE DETAIL(S)	N/A	N/A	Hortizontal Log	N/A	REQUIRED	N/A	L504A	X

FENCES

CODE		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
REFER TO CIVIL	CF-CI	8' HT CHAIN LINK	N/A	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	Black	Vinyl Coating	N/A	N/A	N/A	N/A	REFER TO CIVIL	REFER TO CIVIL

GATES

CODE		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
REFER TO CIVIL	CF-CI	ACCESS GATE (SWING)	N/A	REFER TO CIVIL	REFER TO CIVIL	REFER TO CIVIL	Black	Vinyl Coating	N/A	N/A	N/A	N/A	REFER TO CIVIL	REFER TO CIVIL

HANDRAILS

CODE		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
HR-01	CF-CI	SENSORY WALK HANDRAIL	N/A	Stainless Steel Pipe Handrail	N/A	1.5" OD PIPE	N/A	X	N/A	N/A	Required	N/A	L-X	X
ASSEMBLY COMPONENT FOR ITEM ABOVE	CF-CI	*CONCRETE FOOTING*	N/A	Concrete Footing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

NATURAL STONE

CODE		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
NS-01	OF-CI	BOULDERS	OWNER PROVIDED	N/A	N/A	N/A	N/A	N/A	Coordinate and install owner provided boulders	N/A	N/A	N/A	L503A	N/A
NS-02	OF-CI	STONE STEPPERS	OWNER PROVIDED	N/A	N/A	N/A	N/A	N/A	Coordinate and install owner provided stone steppers	N/A	N/A	N/A	L503A	N/A

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

HARDSCAPE SCHEDULE

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: 9509
FILE NO:
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L603

PLAY EQUIPMENT

CODE	UNIT	FURNISH/ INSTALL SCOPE	COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
PG-01	LS	OF-CI	**PLAYGROUND EQUIPMENT**	[Owner Furnished] Gerber Leisure Products, Inc. Contact: Meghan Barrett p. 608-514-6323 meghan@gerberleiure.com	N/A	Landscape Structures, Inc. Freestanding System Project ID: 23091802	See LSI Drawing #23092802-02	N/A	N/A	Owner Furnished, Contractor Installed	N/A	N/A	N/A	L504C	(for reference only)
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE FOOTINGS*	N/A	Concrete Footing	N/A	Per Manufacturer	N/A	N/A	N/A	N/A	N/A	N/A	L504B	3

SIGNAGE

CODE	UNIT		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
REFER TO CIVIL	EA	CF-CI	**GENERAL SIGNAGE**	N/A	ALUMINUM PANEL SIGN, PAINT AND VINYL GRAPHICS,	N/A	N/A	N/A	N/A	PROVIDE AND INSTALL SIGNS WHERE SHOWN ON PLANS INCLUDING ADA. FURNISH AND INSTALL POSTS, SIGNS, FOOTINGS, INCLUDING HARDWARE	N/A	REQUIRED	N/A	REFER TO CIVIL	
MS-1	EA		**ENTRY SIGN**	X	PRECAST CONCRETE WALL WITH CUSTOM METAL FABIRCATED SIGNAGE	N/A	16' L x 1'-1" W x 4' H	N/A	N/A	X	REQUIRED	REQUIRED	N/A	L503D L503E	ALL
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE FOOTING*	N/A	Concrete Footing	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503E	1

BIKE RACKS

CODE	UNIT	CF-CI	COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
BR-01	EA	OF-OI	**BIKE RACKS**	[Owner Furnished] Madrax Graber Manufacturing, Inc. Waunakee, WI 53597	Powder Coated Steel	3 Hoop on Rail U190-6-P	21" W x 36" H x 66" L	Patriot Blue	Powder Coat	Surface Mount	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1

FURNITURE

CODE	UNIT		COMPONENT	SOURCE	MATERIAL	MODEL	SIZE	COLOR	FINISH	NOTES	SAMPLE	SHOP DRAWING	MOCKUP	SHEET	DETAIL
BN-01	EA	OF-CI	**BENCH TYPE 1**	[Owner Furnished] Wausau Tile P.O. BOX 1520 Wausau, WI 64402 www.wausautile.com	Precast Concrete	TF5117	48" L, 18" W, 18" HT,	N/A	N/A	Surface Mount	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
BN-02	EA	OF-OI	**BENCH TYPE 2**	[Owner Furnished] Thomas Steele Division of Graber Manufacturing, Inc. 1080 Uniek Drive, Waunakee, WI 53597 P 800.241.2505, F 608.849.1081	Steel Frame Recylced Plastic Slats	6 Ft Walden Circle Arm Bench	76" L x 31" H x 24" W	Walnut (Slats) Storm Metallic (Frame)	Powder Coated	Surface Mount	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
BN-03	EA	OF-CI	**BENCH TYPE 3**	[Owner Furnished] Wausau Tile P.O. BOX 1520 Wausau, WI 64402 www.wausautile.com	Precast Concrete	TF5116	Arc: Total Length 73-1/2"; 18" Seat Width 18" HT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
TB-01	EA	OF-OI	**PICNIC TABLE- TYPE 1**	[Owner Furnished] Wausau Tile P.O. BOX 1520 Wausau, WI 64402 www.wausautile.com	Precast Concrete	TF3128	66" L x 64" W x 30" H	Darkest Gray A38y	Standard Ground and Polish Top and Bench; Acid Wash Legs	N/A	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
TB-02	EA	OF-OI	**PICNIC TABLE- TYPE 2**	[Owner Furnished] Wausau Tile P.O. BOX 1520 Wausau, WI 64402 www.wausautile.com	Precast Concrete	TF3125	66" DIA x 30" H	Darkest Gray A38y	Standard Ground and Polish Top and Bench; Acid Wash Legs	N/A	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
TB-03	EA	OF-OI	**PICNIC TABLE- TYPE 3**	[Owner Furnished] Kay Park Recreation 1301 Pine St. Janesville, IA 50647 P. 866.741.8266	Galvanized Steel Pipe Frame Composite Slats	J2 Series	8' L	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
TB-04	EA	OF-OI	**GAME TABLE**	[Owner Furnished] Wausau Tile P.O. BOX 1520 Wausau, WI 64402 www.wausautile.com	Precast Concrete	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
TR-01	EA	OF-OI	**MESH TRASH RECEPTACLES**	[Owner Furnished] Kay Park Recreation 1301 Pine St. Janesville, IA 50647 P. 866.741.8266	Steel Mesh	52 Gallon	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
TR-02	EA	OF-OI	**TRASH RECEPTACLES, TYPE 1**	[Owner Furnished] Max-R W248 N5499 Executive Drive Sussex, WI 53089 P. 855.204.3560	HDPE Recycled Plastic	Infinity Round Rivited	55 Gallon	Black	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
TR-03	EA	OF-OI	**RECYCLING RECEPTACLE**	[Owner Furnished] Max-R W248 N5499 Executive Drive Sussex, WI 53089 P. 855.204.3560	HDPE Recycled Plastic	Infinity Round Rivited	N/A	Blue	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1
CR-01	EA	OF-OI	**HOT COAL RECEPTACLE**	[Owner Furnished] Kay Park Recreation 1301 Pine St. Janesville, IA 50647 P. 866.741.8266	Precast Concrete	Concrete Hot Ash Receptacle SKU: CHAR2235	22" x 22" x 35" H	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
ASSEMBLY COMPONENT FOR ITEM ABOVE		CF-CI	*CONCRETE BASE*	N/A	SEE CONCRETE PAVEMENT	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	L503	1

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

SITE FURNISHINGS SCHEDULE

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT: 9509
FILE NO:
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L604

FILE NAME: PLOT DATE: PLOTTED BY: SHEET:

Code	Nursery	Trees	Common Name	Mature Size	Purchase Size	Quantity	Unit Price	Total
	SHADE TREES							
CE.OC	Johnson's	*Celtis occidentalis*	Common Hackberry	40' ht x 60' spread	#5 container	6	$ 99.00	$ 594.00
FA.GR	Johnson's	*Fagus granifolia*	American Beech	60' ht x 55' spread	1.5"	7	$ 285.00	$ 1,995.00
LI.TU	Wayside	*Liriodendron tulipifera*	Tulip Tree	80' ht x 45' spread	1.75"	8	$ 195.00	$ 1,560.00
PO.GR	Johnson's	*Populus grandidentata*	Big-tooth Aspen	60' ht x 14' spread	#5 container	13	$ 45.00	$ 585.00
QU.BI	Johnson's	*Quercus bicolor*	Swamp White Oak	75' ht x 65' spread	#25 container	5	$ 195.00	$ 975.00
QU.MA	Johnson's	*Quercus macrocarpa*	Bur Oak	60' ht x 60' spread	#25 container	13	$ 195.00	$ 2,535.00
						52		$ 15,047.00
	ORNAMENTAL TREES							
AM.AU		*Amelanchier x grandiflora* 'Autumn Brilliance'	Autumn Brilliance Serviceberry	15' ht x 25' spread	#5 container	18		
BE.CU	Wayside	*Betula nigra* 'Cully'	Heritage River Birch	40' tall x 40' wide (multi-stem)	6'	5	$ 144.00	$ 720.00
CA.CA	Wayside	*Carpinus caroliniana*	Musclewood	25' ht x 25' spread	2"	18	$ 215.00	$ 3,870.00
CA.SP	Wayside	*Catalpa speciosa*	Northern Catalpa	40' ht x 30' spread	1.75"	13	$ 150.00	$ 1,950.00
CE.CA	Wayside	*Cercis canadensis*	Redbud	20' ht x 25' spread (multi-stem)	6'	9	$ 192.00	$ 1,728.00
CE.JA	Wayside	*Cercidiphyllum japonicum*	Katsura Tree	50' ht x 20' spread	1.75"	5	$ 199.00	$ 995.00
CO.AL	Wayside	*Cornus alternifolia*	Pagoda Dogwood	15'ht x 15' spread	4'	16	$ 92.00	$ 1,472.00
CO.MA	Wayside	*Cornus mas*	Corneliancherry Dogwood	20' ht x 15' spread (tree-form)	1.75"	20	$ 167.00	$ 3,340.00
CR.CR		*Crataegus crus-galli*	Cockspur Hawthorn	20-30' ht x 25-35' spread	#5 container	6	$ 108.00	$ 648.00
MA.BU	Wayside	*Magnolia* 'Butterflies'	Magnolia 'Butterflies'	20' ht x 20' spread	1.75"	7	$ 230.00	$ 1,610.00
MA.LE	Wayside	*Magnolia* 'Leonard Messel'	Magnolia 'Leonard Messell'	15' ht x 20' spread (multi-stem)	5'	9	$ 180.00	$ 1,620.00
PO.TR	Wayside	*Populus tremuloides*	Quaking Aspen	40' ht x 25' spread (multi-stem)	8'	20	$ 170.00	$ 3,400.00
						128		$ 21,353.00
	EVERGREEN TREES							
JU.CO	Johnson's	*Juniper communis*	Old Field Common Juniper	4'h x 10' spread	#2 container	50	$ 27.00	$ 1,350.00
JU.VI	Johnson's	*Juniperus virginiana*	Eastern Redcedar	30-40'ht x 8-20' spread	#5 container	56	$ 50.00	$ 2,800.00
LA.LA	Johnson's	*Larix laricina*	Tamarack	30-50' ht x 10-15' spread	#10 container	28	$ 93.00	$ 2,604.00
ME.GL	Wayside	*Metasequoia glyptostroboides*	Dawn Redwood	75' ht x 15-25' spread	2"	4	$ 170.00	$ 680.00
PI.AB	Wayside	*Picea abies*	Norway Spruce		6'	50	$ 250.00	$ 12,500.00
TH.ST	Wayside	*Thuja plicata* 'Standishii'	Green Giant Arborvitae	60' ht x 12-20' spread	5'	34	$ 160.00	$ 5,440.00
						222		$ 15,047.00
	SHRUBS							
CE.AM	Midwest	*Ceanothus americanus*	New Jersey Tea	2-3' ht x 4' spread	#3 container	40	$ 19.75	$ 790.00
CO.SE	Midwest	*Cornus sericea*	Red osier Dogwood	6' ht x 6' spread	#5 container	18	$ 19.25	$ 346.50
DI.G2	Midwest	*Diervilla x* 'G2X88544'	Kodiak Orange Diervilla	4' ht x 4' spread	#3 container	65	$21.75	$ 1,413.75
DI.JE	Johnson's	*Diervilla lonicera* 'Jewell'	Jewel Honeysuckle	4' ht x 4' spread	#2 container	77	$ 17.00	$ 1,309.00
DI.SM	Midwest	*Diervilla rivularis* 'SMNDRSF'	Kodiak Black Diervilla	4' ht x 4' spread	#3 container	26	$21.75	$ 565.50
FO.NI	Midwest	*Forsythia x* 'NIMBUS'	Sugar Baby Forsythia	24" ht x 4' spread	#3 container	62	$ 21.75	$ 1,348.50
HA.VI	Midwest	*Hamamelis virginiana*	Common Witchhazel	12' ht x 12' spread	#5 container	24	$ 29.50	$ 708.00
PH.PO	Midwest	*Physocarpus opulifolius* 'Podaras 3'	Lemon Candy Ninebark	2.5' ht x 3' spread	#5 container	40	$ 25.50	$ 1,020.00
RH.BA	Midwest	*Rhus typhina* 'Bailtiger'	Tiger Eye Sumac	10'ht x 10' spread	#5 container	9	$ 25.50	$ 229.50
RH.TY	Midwest	*Rhus typhina*	Staghorn Sumac	12' ht x 20' spread	#5 container	80	$ 24.25	$ 1,940.00
SP.CO	Wayside	*Spiraea betufolia* 'COURISPI01'	Pink Sparkler Spirea	4' ht x 4' spread	18"	43	$ 21.00	$ 903.00
SY.BL	Midwest	*Syringa x* 'Bloomerang Lilac'	Bloomerang Lilac dark purple	4' ht x 4' spread	#3 container	11	$ 22.50	$ 247.50
						495		$ 10,821.25
	FORBS							
AL.SU	Radtke	*Allium* 'Summer Beauty'	Summer Beauty Allium	18"ht x 12" spread	#1 container	57	$ 7.25	$ 413.25
AM.CA	Radtke	*Amorpha canescens*	Lead Plant	3'ht x 4' spread	quart	21	$ 6.25	$ 131.25
AS.TU	Radtke	*Asclepias tuberosa*	Butterfly Weed	2'ht x 12" spread	#1 container	69	$ 7.50	$ 517.50
BA.TW	Radtke	*Baptisia x varicolor* 'Twilite'	Twilite Prairieblues Baptisia	24" ht x 4' spread	#1 container	34	$ 10.50	$ 357.00
BA.VA	Radtke	*Baptisia Decadence* 'Vanilla Cream'	Baptisia Vanilla Cream	24" ht x 4' spread	#1 container	19	$ 14.00	$ 266.00
CA.MO	Radtke	*Calamintha nepeta* 'Montrose White'	Montrose White Catmint	18"ht x 24" spread	#1 container	82	$ 6.50	$ 533.00
EU.BA	Radtke	*Eupatorium dubium* 'Baby Joe'	Baby Joe-pye Weed	2'ht x 2' spread	quart	36	$ 4.00	$ 144.00
HE.BE	Radtke	*Hemerocallis* 'Bela Lugosi' (sub)	Bela Lugosi Daylily (sub)	28" ht x 1.5' spread	#1 container	71	$ 10.00	$ 710.00
HE.HY	Radtke	*Hemerocallis* 'Hyperion'	Hyperion Daylily	3' ht x 1.5' spread	#1 container	74	$ 7.50	$ 555.00
HI.CR	Midwest	*Hibiscus Summerific* 'Cranberry Crush'	Cranberry Crush Hibiscus	3' ht x 4' spread	#2 container	7	$ 13.95	$ 97.65
RU.LI	Radtke	*Rudbeckia fulgida var. sullivantii* 'Little Goldstar'	Little Goldstar Black-eyed Susan	14" x 14"	#1 container	107	$ 10.00	$ 1,070.00
SA.CA	Radtke	*Salvia nemerosa* 'Caradonna'	Caradonna Salvia	24" ht x 24" spread	#1 container	67	$ 6.50	$ 435.50
SA.MA	Radtke	*Salvia nemerosa* 'Mainacht'	May Night Salvia	18" ht x 24" spread	#1 container	35	$ 6.50	$ 227.50
ST.HU	Radtke	*Stachys monieri* 'Hummelo'	Hummelo Lamb's Ear	20" ht x 20" spread	#1 container	51	$ 6.50	$ 331.50
						730		$ 5,789.15
	GRASSES							
AN.GE	Radtke	*Andropogon gerardii*	Big Bluestem	4' ht x 24" spread	#1 container	91	$ 6.25	$ 568.75
CH.LA	Radtke	*Chasmanthium latifolium*	Northern Sea Oats	30" ht x 12" spread	#1 container	47	$ 6.25	$ 293.75
PA.SH	Radtke	*Panicum virgatum* 'Shenandoah'	Shenandoah Switch Grass	4' ht x 2' spread	#1 container	61	$ 9.50	$ 579.50
SC.SC	Radtke	*Schizachyrium scoparium*	Little Bluestem	2' ht x 12" spread	#1 container	163	$ 7.00	$ 1,141.00
SE.AU	Radtke	*Sesleria autumnalis*	Autumn Moor Grass	3' ht x2' spread	#1 container	117	$ 9.50	$ 1,111.50
						479		$ 3,694.50
	SEED MIXES							
		Lawn Turf			SF	109100		
	Agrecol	*Low Prairie Seed Mix*			SF	51,800		
		No Mow Turf			SF	55900		
	Agrecol	*Basin Seed Mix*			SF	13600		
	Agrecol	*Emergent Slope Mix*			SF	12,600		
		Mulch area/planting bed						
					SF	16170		

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

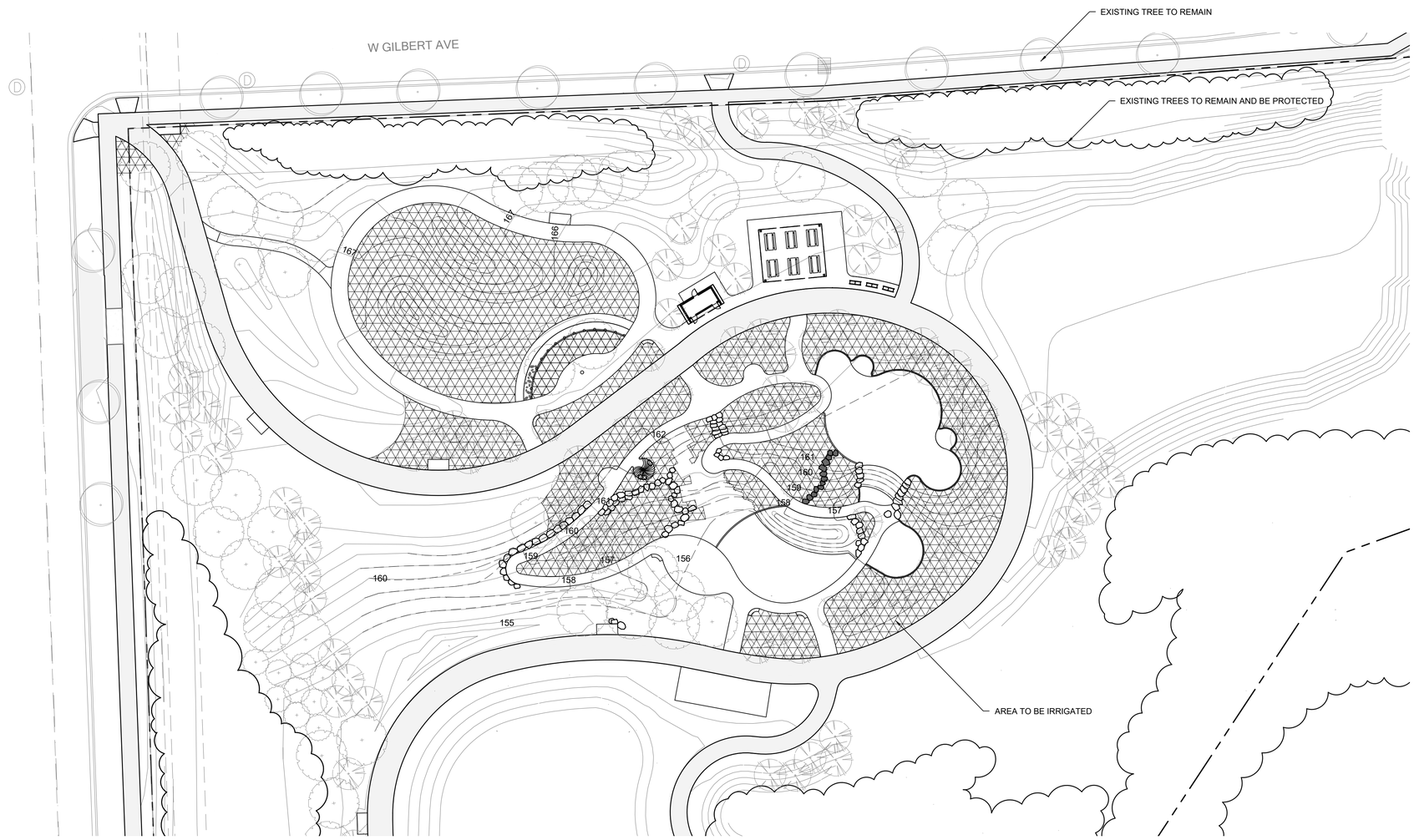
PLANTING SCHEDULE

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L606

FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:



LEGEND

- PROPERTY LINE
- AREA TO BE IRRIGATED
- SHADE TREE
- ORNAMENTAL TREE
- EVERGREEN TREE
- EXISTING TREES TO REMAIN AND BE PROTECTED
- EXISTING TREE TO REMAIN

1 AREAS TO BE IRRIGATED
1"=30'-0"

0 40 80 120 160'

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

AREAS TO BE IRRIGATED

1700 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:
FILE NO: 9509
DRAWN BY: DN
CHECKED BY: BK
SCALE:

L1000

FILE NAME:
PLOT DATE:
PLOTTED BY:
SHEET:

ABBREVIATIONS

AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHJ	AUTHORITY HAVING JURISDICTION
AIC	AMPERE INTERRUPTING CAPACITY
ALT	ALTERNATE
AMP	AMPERE
AOR	AREA OF REFUGE
AORM	AREA OF REFUGE MASTER STATION
AORR	AREA OF REFUGE REMOTE STATION
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AV	AUDIO VISUAL
BLDG	BUILDING
BOT	BOTTOM
C	CONDUIT
CAB	CABINET
CATV	COMMUNITY ANTENNA TELEVISION
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CD	CANDELA OR CONSTRUCTION DOCUMENT
CKT	CIRCUIT
CLG	CEILING
COAX	COAXIAL CABLE
CP	CONTROL PANEL
CT	CURRENT TRANSFORMER
CU	COPPER
dB	DECIBEL
DB	DIRECT BURIAL
DEMO	DEMOLITION
DISC	DISCONNECT
DIST	DISTRIBUTION
DM	DIMMING
DN	DOWN
DPDT	DOUBLE POLE, DOUBLE THROW
DPST	DOUBLE POLE, SINGLE THROW
DS	DAYLIGHT SENSOR
DWG	DRAWING
EBU	EMERGENCY BATTERY UNIT
EC	ELECTRICAL CONTRACTOR
ELEV	ELEVATOR
EM	EMERGENCY
ENCL	ENCLOSURE
ER	ELEVATOR RECALL
ERL	EXISTING TO BE RELOCATED
ES	ELECTRIC STRIKE
ETR	EXISTING TO REMAIN
FA	FIRE ALARM
FAAP	FIRE ALARM ANNUNCIATOR PANEL
FACP	FIRE ALARM CONTROL PANEL
FC	FOOT-CANDLE
FLA	FULL LOAD AMPERE
FP	FIRE PROTECTION
FSS	FUSED SAFETY SWITCH
FVNR	FULL VOLTAGE NON-REVERSING
FVR	FULL VOLTAGE REVERSING
GEN	GENERATOR
GRD	GROUND
GC	GENERAL CONTRACTOR
GFI / GFCI	GROUND FAULT CIRCUIT INTERRUPTER
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO
HP	HORSE POWER
HZ	HERTZ
IG	INSOLATED GROUND
K	KEY OPERATED
JB	JUNCTION BOX
KV	KILOVOLT
KVA	KILOVOLT AMPERE
KW	KILOWATT
KWH	KILOWATT HOUR
LCP	LIGHTING CONTROL PANEL
LED	LIGHT EMITTING DIODE
LF	LINEAR FOOT (FEET)
LM	LUMEN
LPS	LOW PRESSURE SODIUM
LRA	LOCKED ROTOR AMPERAGE
LTG	LIGHTING
LV	LOW VOLTAGE
MAG	MAGNETIC STARTER
MAN	MANUAL STARTER
MATV	MASTER ANTENNA TELEVISION SYSTEM
MC	MECHANICAL CONTRACTOR
MCA	MINIMUM CIRCUIT AMPACITY
MCB	MAIN CIRCUIT BREAKER
MFG	MANUFACTURER
MH	MANHOLE
MOCP	MAXIMUM OVERCURRENT PROTECTION
MLO	MAIN LUG ONLY
MTD	MOUNTED
MTS	MANUAL TRANSFER SWITCH
MV	MEDIUM VOLTAGE
N	NEUTRAL
NA	NOT APPLICABLE
NAC	NOTIFICATION APPLIANCE CIRCUIT
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NFPA	NATIONAL FIRE PROTECTION AGENCY
NFSS	NON-FUSED SAFETY SWITCH
NIC	NOT INCLUDED IN CONTRACT
NL	NIGHT LIGHT
NO	NORMALLY OPEN
NTS	NOT TO SCALE
OC	ON CENTER
OD	OUTSIDE DIAMETER
OL	OVERLOAD
OS	OPTIONAL STANDBY
P	POLE
PA	PUBLIC ADDRESS
PB	PUSHBUTTON
PC	PLUMBING CONTRACTOR
PE	PHOTOELECTRIC CELL, PHOTOEYE
PED	PEDESTAL
PEND	PENDANT
PF	POWER FACTOR
PH	PHASE
PL	PILOT LIGHT
PNL	PANEL
PWR	POWER
RC	REMOTE CONTROL
RCP	REFLECTED CEILING PLAN
REC	RECESSED
RECPT	RECEPTACLE
SCC	SHORT CIRCUIT CAPACITY
SF	SQUARE FOOT (FEET)
SPD	SURGE PROTECTION DEVICE
SPEC	SPECIFICATION
SPST	SINGLE POLE, SINGLE THROW
SS	SWITCH STATION
SW	SWITCH
T	TAMPERPROOF
TC	TIMECLOCK
TV	TELEVISION
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSION
TYP	TYPICAL
UL	UNDERWRITERS LABORATORY
UNV	UNIVERSAL
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLT
VA	VOLT AMPERE
VAC	VOLT AMPERE CURRENT
VFD	VARIABLE FREQUENCY DRIVE
W	WATT OR WIRE
WAP	WIRELESS ACCESS POINT
WP	WEATHERPROOF
X-	EXISTING
XFER	TRANSFER
XFMR	TRANSFORMER

LIGHTING LEGEND

$	SWITCH
$3	THREE WAY WALL SWITCH
$4	FOUR WAY WALL SWITCH
$D	DIMMING SWITCH
$D3	THREE WAY DIMMING SWITCH
$D4	FOUR WAY DIMMING SWITCH
$SD	STEP DIMMING SWITCH
$K	KEYED SWITCH
$K3	THREE WAY KEYED SWITCH
$K4	FOUR WAY KEYED SWITCH
$ $	DUAL LEVEL SWITCH
SS-	SWITCH STATION
OS	SWITCH-BOX OCCUPANCY SENSOR
OS	WALL MOUNT OCCUPANCY SENSOR
OS	CEILING MOUNT OCCUPANCY SENSOR
VS	SWITCH-BOX VACANCY SENSOR
VS	WALL MOUNT VACANCY SENSOR
VS	CEILING MOUNT VACANCY SENSOR
C	CONTACTOR
TC	TIMECLOCK
RT	REMOTE TRANSFORMER
DS	CEILING MOUNT DAYLIGHT SENSOR
DS	WALL MOUNT DAYLIGHT SENSOR
PC	EXTERIOR PHOTOELECTRIC SWITCH
	SURFACE MOUNT LIGHT FIXTURE
	SURFACE MOUNT LIGHT FIXTURE - EMERGENCY
	PENDANT DIRECT/INDIRECT (LENGTH AS INDICATED)
	PENDANT DIRECT/INDIRECT - EMERGENCY (LENGTH AS INDICATED)
	STRIP/INDUSTRIAL FIXTURE
	2X2 SURFACE MOUNT FIXTURE
	2X2 SURFACE MOUNT FIXTURE - EMERGENCY
	2X2 RECESSED FIXTURE
	2X2 RECESSED FIXTURE - EMERGENCY
	2X4 SURFACE MOUNT FIXTURE
	2X4 SURFACE MOUNT FIXTURE - EMERGENCY
	2X4 RECESSED FIXTURE
	2X4 RECESSED FIXTURE - EMERGENCY
	LINEAR WALL BRACKET
	LINEAR WALL BRACKET - EMERGENCY
	WALL MOUNTED FIXTURE
	WALL MOUNTED FIXTURE - EMERGENCY
	POLE MOUNT LUMINAIRE
	BOLLARD
	FLOOD LIGHT

POWER LEGEND

	SINGLE RECEPTACLE
	DUPLEX RECEPTACLE
	DUPLEX RECEPTACLE 6" ABOVE COUNTER OR BACKSPLASH OR AT HEIGHT INDICATED
	DOUBLE DUPLEX RECEPTACLE
	TOP SWITCHED DUPLEX RECEPTACLE
	SPECIAL PURPOSE OUTLET
	DUPLEX FLOOR OUTLET
	DOUBLE DUPLEX FLOOR OUTLET
	TOP SWITCHED DUPLEX FLOOR OUTLET
	CEILING MOUNTED DUPLEX RECEPTACLE
	CEILING MOUNTED DOUBLE DUPLEX RECEPTACLE
	POKE THRU
	PUSH BUTTON
PP	POWER POLE
J	JUNCTION BOX
	CIRCUIT BREAKER
	FUSE
	GROUND
M	TRANSOCKET
	SURFACE MOUNT PANEL
	RECESSED PANEL
M	METER
	CURRENT TRANSFORMER
	MANUAL DISCONNECT
	NON-FUSED DISCONNECT
	FUSED DISCONNECT
	MAGNETIC STARTER
	COMBINATION STARTER
	MOTOR
	POWER ASSIST OPERATOR PUSH PLATE

GENERAL LEGEND

	NEW ELECTRICAL COMPONENT
	EXISTING ELECTRICAL COMPONENT
	DEMOLISHED ELECTRICAL COMPONENT
E##	KEY NOTE
	TYPICAL CIRCUIT
	UNSWITCHED CIRCUIT

GENERAL NOTES

1. DRAWINGS ARE DIAGRAMMATIC AND DO NOT SHOW ALL REQUIRED COMPONENTS FOR A COMPLETE INSTALLATION. CONTRACTOR SHALL FURNISH AND INSTALL MATERIAL,EQUIPMENT, DEVICES, FIXTURES, SERVICE REQUIREMENTS NECESSARY TO CONFORM TO THE STRUCTURE, EQUIPMENT CONNECTIONS, FOR A COMPLETE AND FUNCTIONAL INSTALLATION AND SHALL MAINTAIN APPROPRIATE CLEARANCES.
2. ALL WORK SHALL COMPLY WITH APPLICABLE NATIONAL, STATE, LOCAL CODES, FEDERAL AND STATE REGULATIONS, AND ALL REQUIREMENTS OF THE LOCAL AUTHORITIES HAVING JURISDICTION.
3. CONTRACTOR SHALL COORDINATE WORK WITH ALL OTHER TRADES PRIOR TO INSTALLATION.
4. THE CONTRACTOR SHALL VISIT THE SITE TO DETERMINE THE FULL EXTENT OF WORK AND PROJECT CONDITIONS. FAILURE TO DO SO WILL NOT RELIEVE THE CONTRACTOR OF THE OBLIGATIONS OF THE CONTRACT.
5. THE CONTRACTOR SHALL CHECK ALL DRAWINGS AND SPECIFICATIONS OF OTHER TRADES AND INCLUDE IN THEIR BID ANY ADDITIONAL WORK REQUIRED BY THIS TRADE.
6. CONTRACTOR SHALL VERIFY ALL EQUIPMENT CONNECTION CONFIGURATIONS BEFORE PURCHASE. ALL DEVICES SHOWN ARE FOR REFERENCE ONLY, TO COMMUNICATE DESIGN INTENT, FINAL LOCATIONS SHALL BE VERIFIED PRIOR TO INSTALLATION. THIS NOTE SHALL APPLY TO, BUT NOT BE LIMITED TO, RECEPTACLES, SWITCHES, DATA PORTS, AUDIO/VIDEO DEVICES, AND TELEPHONE JACKS.
7. CONDUCTOR SIZES INDICATED ARE MINIMUM SIZES BASED ON 60°C COPPER CONDUCTOR 100 AMPS OR LESS AND 75°C COPPER CONDUCTOR GREATER THAN 100 AMPS. AMPACITIES OF CONDUCTORS DO NOT TAKE VOLTAGE DROP INTO CONSIDERATION. CONTRACTOR SHALL SIZE CONDUCTORS FOR FEEDERS AND BRANCH CIRCUITS TO PREVENT A VOLTAGE DROP EXCEEDING 3 PERCENT AT THE FARTHEST OUTLET OF POWER, HEATING, AND LIGHTING LOADS, OR COMBINATION OF SUCH LOADS, AND WHERE THE MAXIMUM TOTAL VOLTAGE DROP ON BOTH FEEDERS AND BRANCH CIRCUITS TO THE FARTHEST OUTLET DOES NOT EXCEED 5 PERCENT, TO PROVIDE REASONABLE EFFICIENCY OF OPERATION.

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

ibc engineering services, inc.
WISCONSIN | ILLINOIS | FLORIDA
IBC PROJECT NO: 2023032

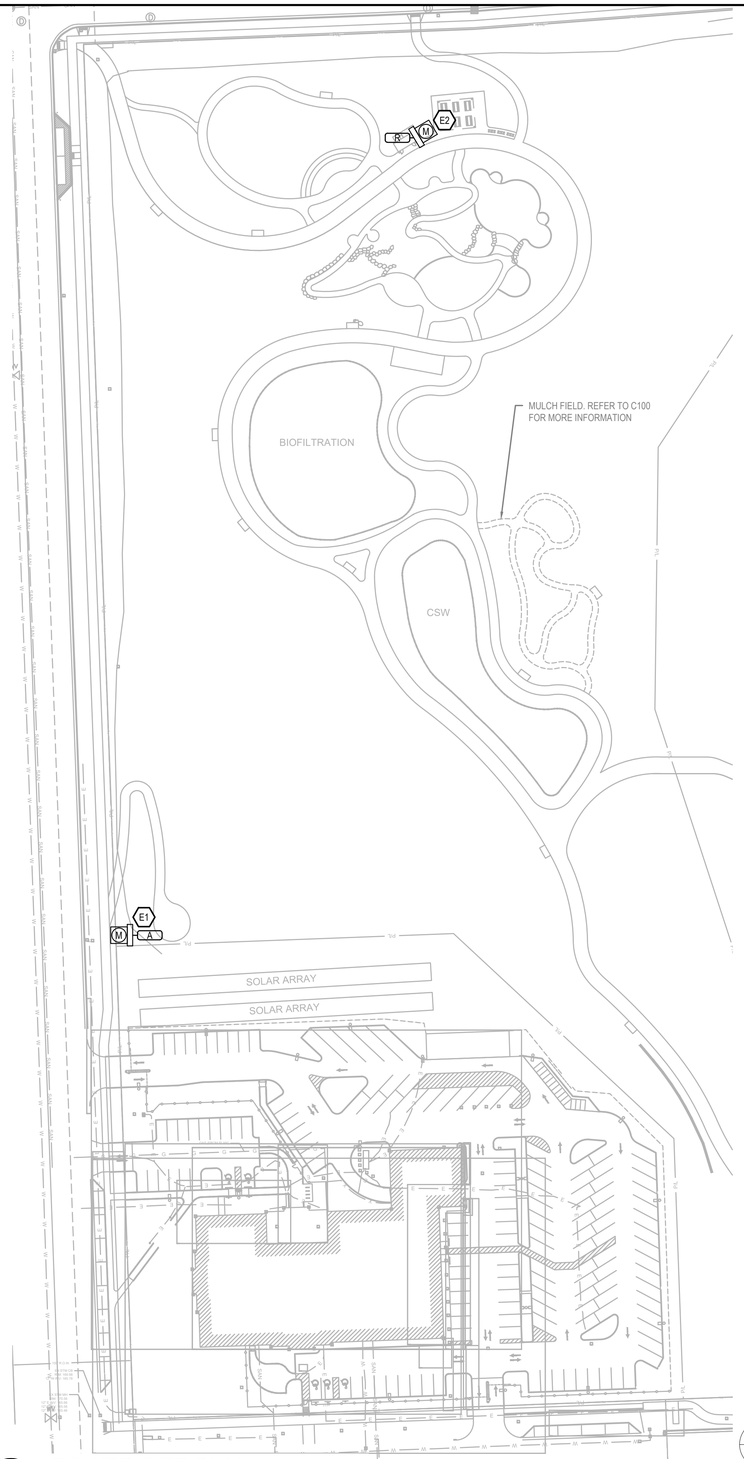
NOT FOR CONSTRUCTION

ELECTRICAL LEGEND AND NOTES

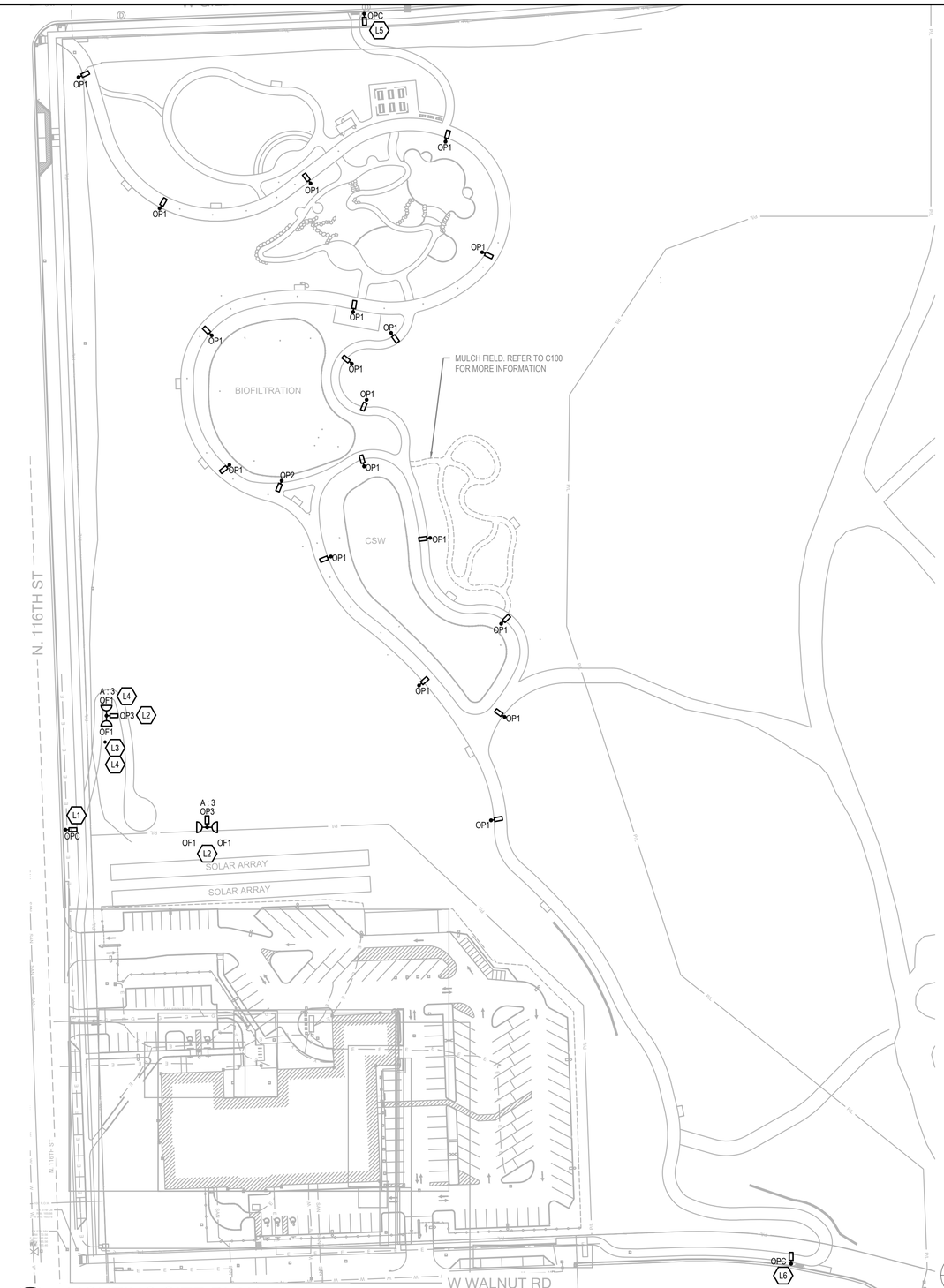
1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	------
FILE NO:	21231
DRAWN BY:	FA
CHECKED BY:	DH
SCALE:	AS SHOWN

E000



2 POWER SITE PLAN
SCALE: 1/8" = 1'-0"



1 LIGHTING SITE PLAN
SCALE: 1/8" = 1'-0"

SHEET NOTES

1.	ALL LIGHT FIXTURES/HEADS TO BE MOUNTED AT 20' ABOVE FINISHED GRADE.

KEY NOTES

L1	FIXTURE TYPE OPC SHALL BE INSTALLED TO EXISTING CITY POLE AND ASSOCIATED POWER BY THE CITY, OUTSIDE OF THIS PROJECT'S SCOPE, AND AS SHOWN ON PLANS. CITY SHALL VERIFY EXISTING POLE'S SUITABILITY FOR INCREASED FIXTURE LOAD PRIOR TO PROJECT COMPLETION TO ENSURE PROJECT REQUIREMENTS ARE MET.
L2	THIS POLE SHALL BE INSTALLED WITH FIXTURE HEAD OP3 MOUNTED AND AIMED AS SHOWN ON PLANS. FLOOD LIGHTS OF1 SHALL BE MOUNTED ON TOP OF THE POLE AND AIMED ON SITE FOR BEST COVERAGE OF SLEDDING HILL.
L3	LIGHTING FOR SLEDDING HILL SHALL BE CONTROLLED VIA TIMED PUSH BUTTON CONTROL SYSTEM. REFER TO SHEET E501 (SITE CONTROLS DETAILS) FOR ADDITIONAL INFO.
L4	PUSH BUTTON LOCATED ON INDEPENDENT POLE. REFER TO DETAIL 2 ON SHEET E500 FOR MORE INFORMATION.
L5	FIXTURE TYPE OPC SHALL BE INSTALLED TO CITY POLE AND ASSOCIATED POWER BY THE CITY, OUTSIDE OF THIS PROJECT'S SCOPE, AND AS SHOWN ON PLANS.
L6	CONDUIT TO ACCOMMODATE PROPOSED FUTURE LOCATION FOR CITY INSTALLED HARD WIRED POLE AND LIGHT FIXTURE. STYLE TO MATCH EXISTING CITY POLES AND HEADS. THIS FIXTURE AND POLE NOT PART OF THIS PROJECT.
E1	PROPOSED LOCATION OF ELECTRICAL METER AND POWER PANEL A.
E2	PROPOSED LOCATION OF ELECTRICAL METER AND POWER PANEL R. PROVIDE 100A, 120/240V, 24 POLE ELECTRICAL PANEL METER IS LOCATED ON EXTERIOR OF REST ROOM BUILDING. PANEL IS LOCATED WITH JANITORS CLOSET IN REST ROOM BUILDING. PROVIDE CONVENIENCE RECEPTACLE NEXT TO PANELBOARD. REFER TO REST ROOM PLANS FOR MORE INFORMATION.

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

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REQUESTED NOW: 3 WORK DAYS
NOTICE EXPIRES: TWO WORKDAYS
MILW. AREA 259-1181

ibc engineering services, inc.
WISCONSIN | ILLINOIS | FLORIDA
IBC PROJECT NO: 2023032

THIS BAR APPEARS 2" LONG ON FULL SIZE SHEETS.

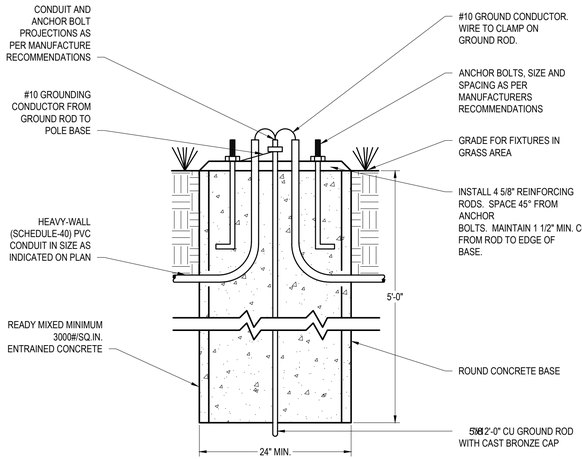
NOT FOR CONSTRUCTION

ELECTRICAL SITE PLANS

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	-----
FILE NO.:	21231
DRAWN BY:	GS
CHECKED BY:	DH
SCALE:	AS SHOWN

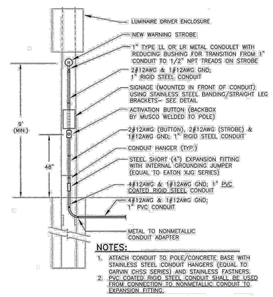
E100



3 LIGHT POLE BASE
N.T.S.

POLE HEIGHT	BASE EMBEDMENT / DIAMETER			
	EPA 2.0 FT^2 OR LESS	EPA 4.0 FT^2 TO 2.1 FT^2	EPA 6.0 FT^2 TO 4.1 FT^2	EPA 6.1 FT^2 OR GREATER
15'-0"	6'5"/2'-6"	6'5"/2'-6"	6'5"/2'-6"	6'5"/2'-6"
20'-0"	6'5"/2'-6"	6'5"/2'-6"	8'-0"/2'-6"	8'-0"/2'-6"
25'-0"	6'5"/2'-6"	8'-0"/2'-6"	9'-0"/2'-6"	10'-0"/2'-6"
30'-0"	8'-0"/2'-6"	9'-0"/2'-6"	10'-0"/2'-6"	10'-0"/2'-6"

NOTES:
1. TABLE IS BASED ON SOIL BEARING PRESSURE OF 300 PSF.

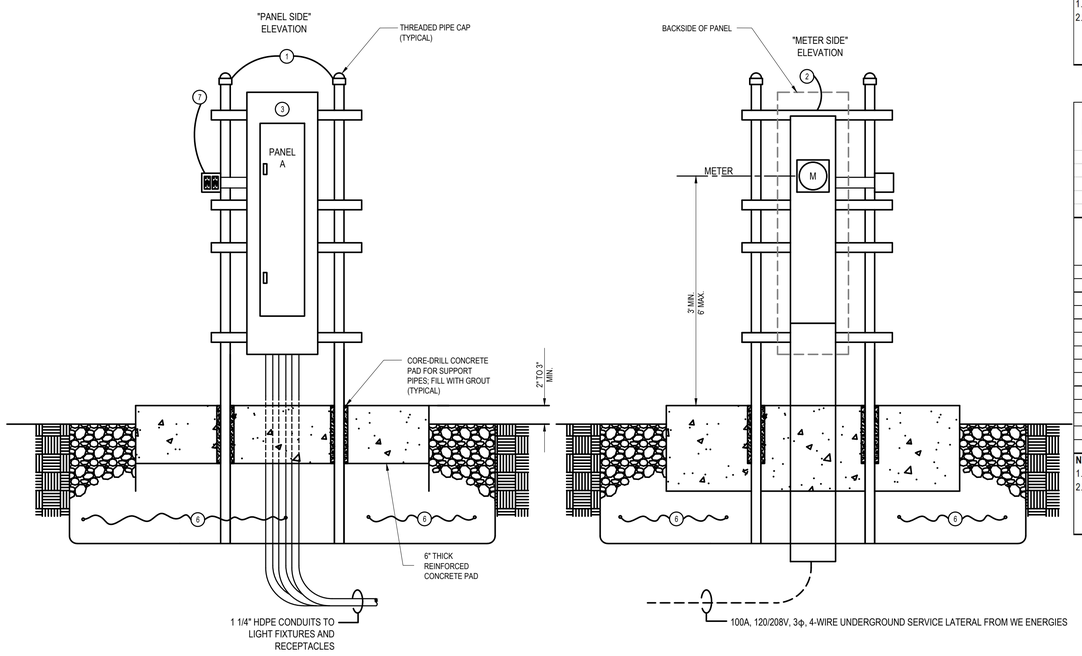


NOTES:
1. ATTACH CONDUIT TO POLE/CONCRETE BASE WITH STAINLESS STEEL CONDUIT HANGERS (EQUAL TO GARVIN CHSS SERIES) AND STAINLESS FASTNERS.
2. PVC COATED RIGID STEEL CONDUIT SHALL BE USED FROM CONNECTION TO NONMETALLIC CONDUIT TO EXPANSION FITTING.

2 SLED PUSHBUTTON/STROBE DETAIL
N.T.S.

PARK SERVICE ENCLOSURE EQUIPMENT LIST

1. FREE-STANDING 3" GALVANIZED PIPE AND STAINLESS STEEL UNISTRUT (BACK-TO-BACK DOUBLE CHANNEL P1001 SERIES) SUPPORT FRAME FOR MOUNTING ELECTRICAL EQUIPMENT. PROVIDE A MINIMUM OF (2) PIPES. TOP OF PIPES TO BE CAPPED. INSTALL SUPPORT FRAME PIPES THRU CORE-DRILLED HOLES IN CONCRETE PAD.
2. UTILITY APPROVED 100A, 120/240V, 1ϕ, 3W OUTDOOR TRANSOCKET WITH METER SOCKET MOUNTED ON COVER. MOUNT TRANSOCKET TO FREE-STANDING 3" GALVANIZED PIPE (MINIMUM OF 3 CAPPED PIPES) AND STAINLESS STEEL UNISTRUT SUPPORT FRAME. INSTALL SUPPORT FRAME PIPES THRU CORE-DRILLED HOLES IN CONCRETE PAD.
3. 24 CKT., 120/240V, 1ϕ, 3-WIRE PANELBOARD WITH 100A MAIN BREAKER-SQUARE D TYPE NQ. PANEL TO BE TYPE NEMA 3R ENCLOSURE. ENCLOSURE TO HAVE HASP FOR PADLOCK. REFER TO PANELS SCHEDULE FOR MORE INFORMATION.
6. PROVIDE GRAVEL A MINIMUM OF 12" DEEP BELOW PAD AND EXTENDING 12" OUT FROM EDGES OF PAD.
7. 20A, 120V DOUBLE-DUPLEX GFCI WEATHER RESISTANT RECEPTACLES, WITH WEATHERPROOF "WHILE-IN-USE" COVER.



1 ELECTRICAL SERVICE EQUIPMENT
N.T.S.

LIGHTING FIXTURE SCHEDULE

FIXT.	DESCRIPTION	TYPE	INPUT W	VOLT	MANUFACTURER	CATALOG NUMBER	MOUNTING	SEE NOTE
OF1	FLOODLIGHT	18,000 LUMEN, 3000K	170W	120V	LITHONIA	DSXF3 LED-6-P2-30K-70CRI-MSP-[VOLTAGE]-[MOUNTING]-[OPTIONS]-DBLXD	POLE	3
OP1	AREA HEAD	3700 LUMEN, 3000K	22W	SOLAR	SUNNA DESIGN	SL4249-1-[LIGHTING PROFILE]-290-RL204-3-120-2-27	POLE	1,2
OP2	AREA HEAD	3700 LUMEN, 3000K	22W	SOLAR	SUNNA DESIGN	SL4249-1-[LIGHTING PROFILE]-290-RL204-3-120-2-07	POLE	1,2
OP3	AREA HEAD	33,000 LUMEN, 3000K	277W	120V	LITHONIA	DSX1 LED-P9-30K-70CRI-T4M-[VOLTAGE]-[MOUNTING]-[OPTIONS]-DBLXD	POLE	3

REMARKS:
A. CATALOG NUMBERS ARE TO PROVIDE GUIDANCE ONLY AND MAY NOT BE COMPLETE.
B. FIXTURES SPECIFIED TO MEET DESIGN INTENT. EQUALS MAY BE SUBSTITUTED SUBJECT TO DESIGN TEAM'S APPROVAL WITH PROOF OF SYSTEM PERFORMANCE VIA CALCULATION AND PRODUCT DOCUMENTATION.
C. PROVIDE ALL PARTS AND PIECES NECESSARY FOR A COMPLETE AND FUNCTIONAL INSTALLATION.
D. ARCHITECT TO DETERMINE ALL FINISHES.
E. VERIFY DIMMING CONTROLS ARE COMPATIBLE WITH DIMMING DRIVER SELECTED FOR FIXTURE.
F. POLE HEIGHTS SHALL NOT EXCEED 25' FEET AFG.

NOTES:
1. SOLAR SYSTEM SHALL BE CONFIGURED AND AIMED PER MANUFACTURER'S GUIDELINES.
2. POLES FOR SOLAR FIXTURES ARE INCLUDED TOGETHER AS A UNIT WITH SOLAR PANELS, LIGHTING FIXTURES, AND BATTERIES.
3. POLES FOR HARD WIRED FIXTURES SHALL BE PROVIDED BASED ON THE COMPLETE INSTALLATION OF ALL LIGHT FIXTURES AND MOUNTING EQUIPMENT AS DIRECTED BY FIXTURE MANUFACTURER. MANUFACTURER SHALL PROVIDE SHOP DRAWING FOR THIS INSTALLATION.

PANEL NAME: A

LOCATION:	Sled hill	VOLTS:	120/240	AIC RATING:	10,000 MIN. EC TO VERIFY
SUPPLY FROM:	Utility	PHASES:	1	MAINS TYPE:	MCB
MOUNTING:	Surface	WIRES:	3	BUS RATING:	100
ENCLOSURE:	Type 3R			MCB RATING:	100

POLE NO.	POLES	AMP	DESCRIPTION	NOTES	A		B		DESRIPTION	NOTES	AMP	POLES	POLE NO.
1	1	20	RECEPT		720				SPARE		20	1	2
3	1	20	LIGHTS				1234		SPARE		20	1	4
5	1	20	SPARE						SPARE		20	1	6
7													8
9													10
11													12
13													14
15													16
17													18
19													20
21													22
23													24
			PHASE TOTAL:		720		0						
			TOTAL LOAD:		0								

NOTES:
1. GFI BREAKER
2. SHUNT TRIP BREAKER

PANEL NAME: R

LOCATION:	Restroom	VOLTS:	120/240	AIC RATING:	10,000 MIN. EC TO VERIFY
SUPPLY FROM:	Utility	PHASES:	1	MAINS TYPE:	MCB
MOUNTING:	Surface	WIRES:	3	BUS RATING:	100
ENCLOSURE:	Type 3R			MCB RATING:	100

POLE NO.	POLES	AMP	DESCRIPTION	NOTES	A		B		DESRIPTION	NOTES	AMP	POLES	POLE NO.
1	1	20	RECEPT						SPARE		20	1	2
3	1	20	LIGHTS						SPARE		20	1	4
5	1	20	SPARE						SPARE		20	1	6
7													8
9													10
11													12
13													14
15													16
17													18
19													20
21													22
23													24
			PHASE TOTAL:		0		0						
			TOTAL LOAD:		0								

NOTES:
1. GFI BREAKER
2. SHUNT TRIP BREAKER

NOT FOR CONSTRUCTION

ibc engineering services, inc.
WISCONSIN | ILLINOIS | FLORIDA
IBC PROJECT NO: 2023032

DATE	DESCRIPTION

CITY OF WAUWATOSA
ENGINEERING SERVICES DIVISION

THE SIGMA GROUP
Single Source. Sound Solutions.

ELECTRICAL SCHEDULES

1900 N 116TH STREET
WAUWATOSA, WI 53226

CONTRACT:	----
FILE NO.:	21231
DRAWN BY:	FA
CHECKED BY:	DH
SCALE:	AS SHOWN

E500

landscape structures
116th St Park
1179100-06-06-01 • 01.02.2024
GERBER
LEISURE PRODUCTS
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landscape structures®

SkyWays® Single Post Hypar (12′x12′) Shade

Model #267724 January 6, 2020

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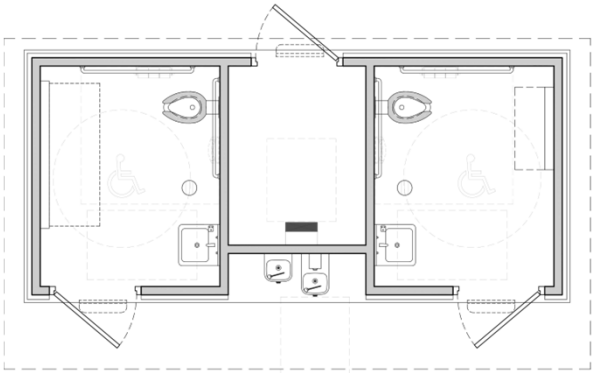

FLOOR PLAN

SCALE: NOT TO SCALE

COLOR SCHEME 'A'

PARK 116TH STREET

WAUWATOSA, WISCONSIN

RESTROOM BUILDING

ARTIST IMPRESSION: 3D RENDERING ONLY FOR REPRESENTATION. COLORS AND MATERIALS ARE SUBJECT TO CHANGE

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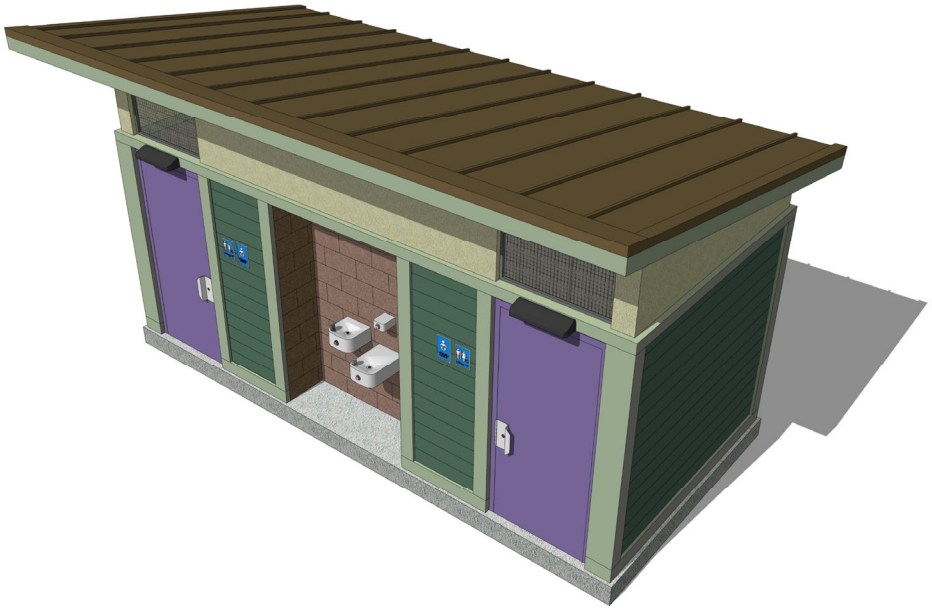
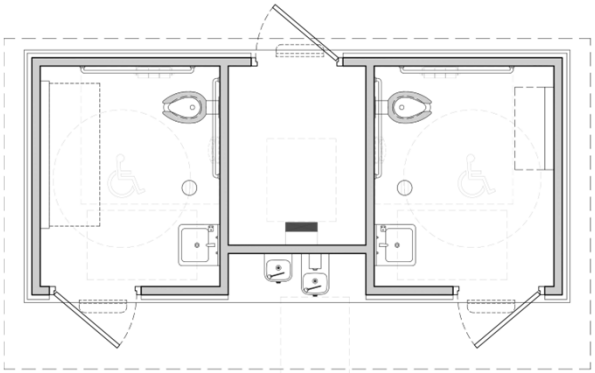
2587 BUSINESS PARKWAY
MINDEN NEVADA 89423
P: 888-888-2060 F: 888-888-1448

PROJECT REF#: 11551-1/5/2024-1





FLOOR PLAN

SCALE: NOT TO SCALE

COLOR SCHEME 'B'

PARK 116TH STREET

WAUWATOSA, WISCONSIN

RESTROOM BUILDING

ARTIST IMPRESSION: 3D RENDERING ONLY FOR REPRESENTATION. COLORS AND MATERIALS ARE SUBJECT TO CHANGE

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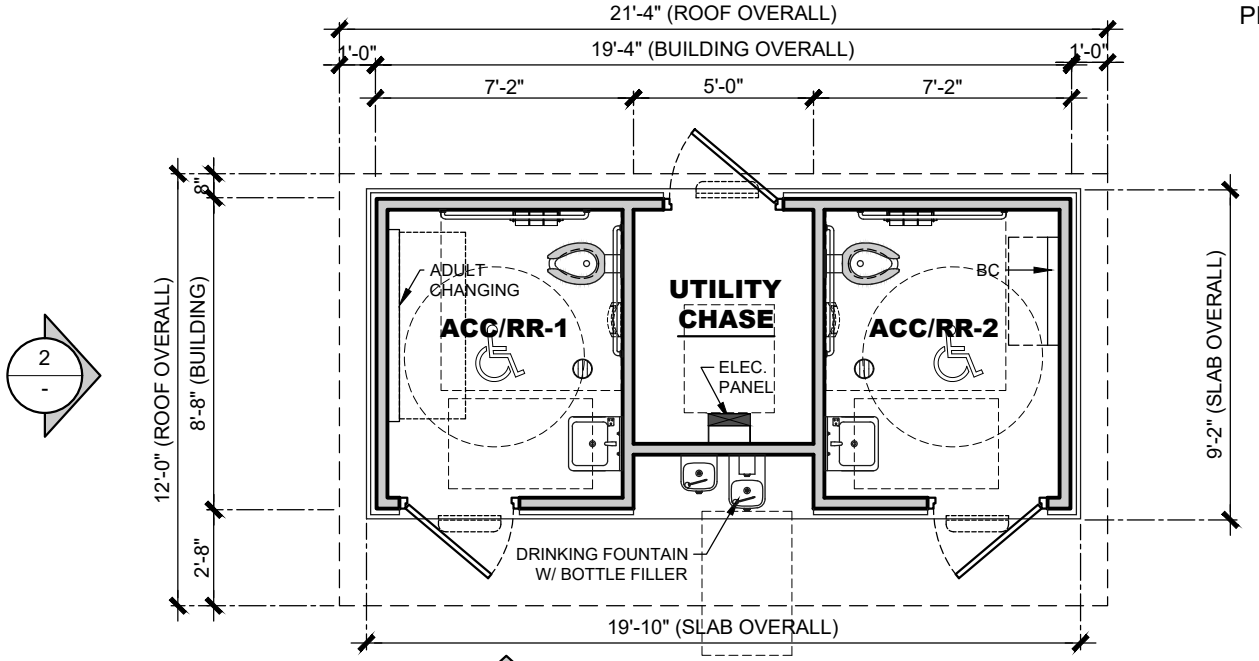
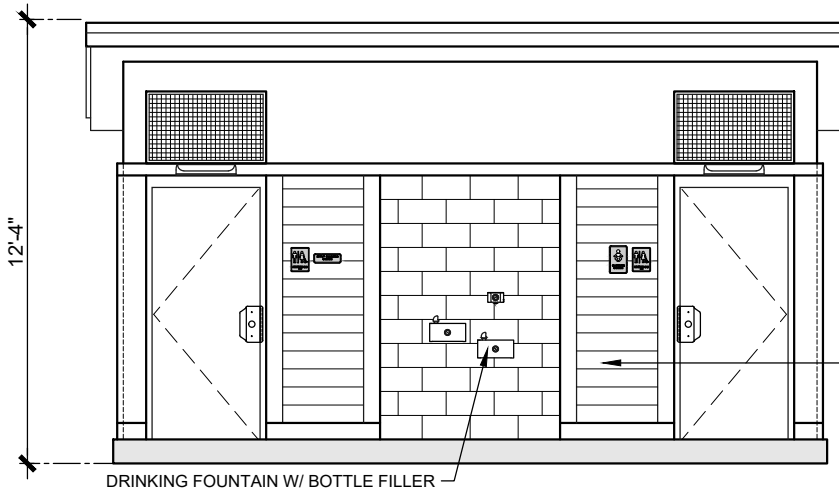


1
-

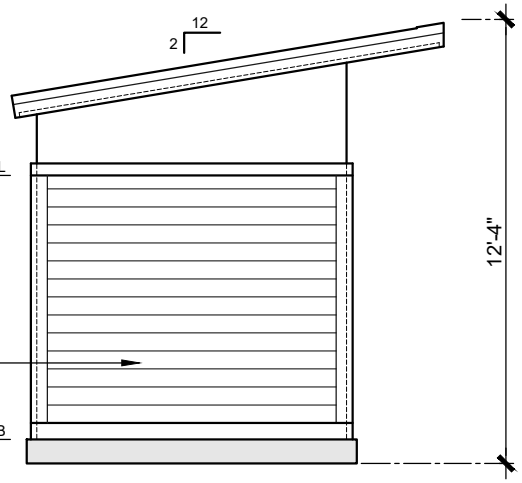
FLOOR PLAN

SCALE: 3/16"=1'0"



ELEVATION 1

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



ELEVATION 2

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

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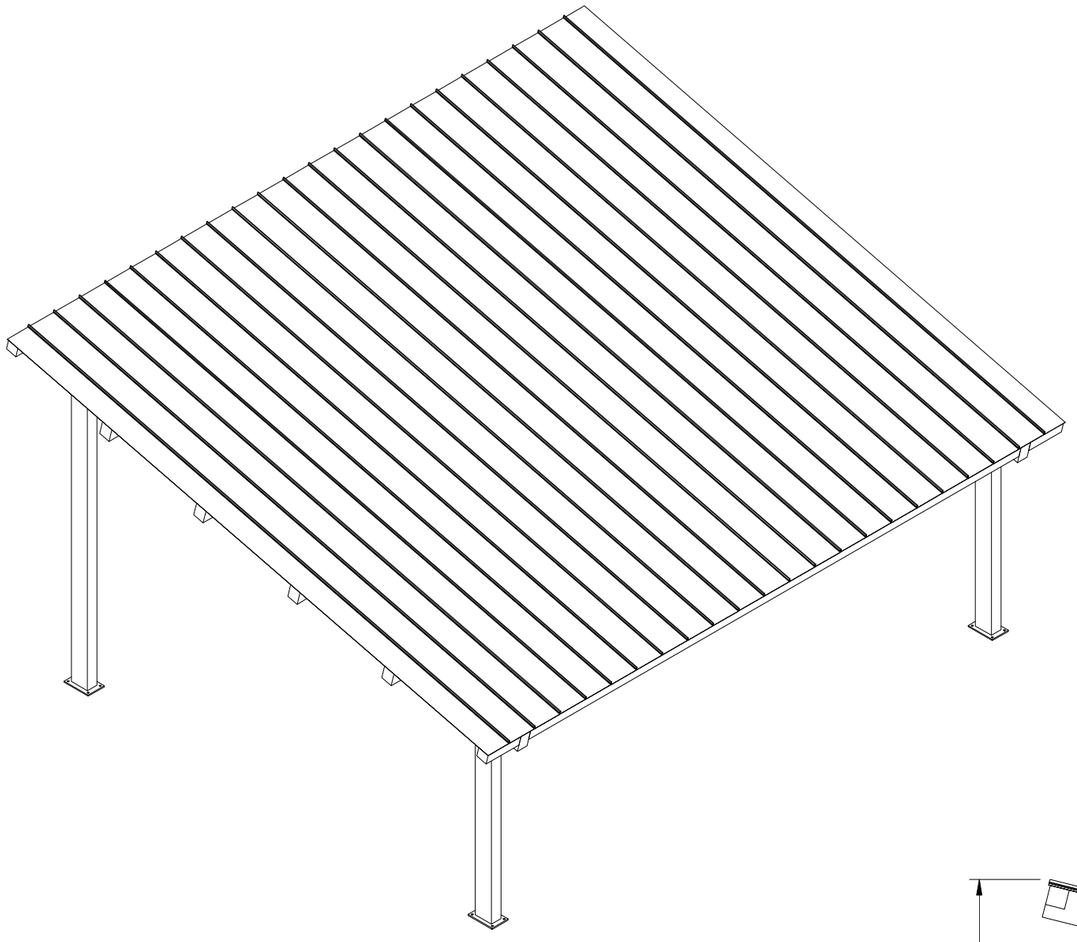
BUILDING TYPE:	**RESTROOM BUILDING**	**REVISION #** 1	**REVISION DATE:** 1/5/2024
			DRAWN BY: EOR
PROJECT:	**116TH STREET PARK WAUWATOSA, WI**	**PROJECT #:** 11551	**START DATE:** 10/24/2023
			DRAWN BY: EOR

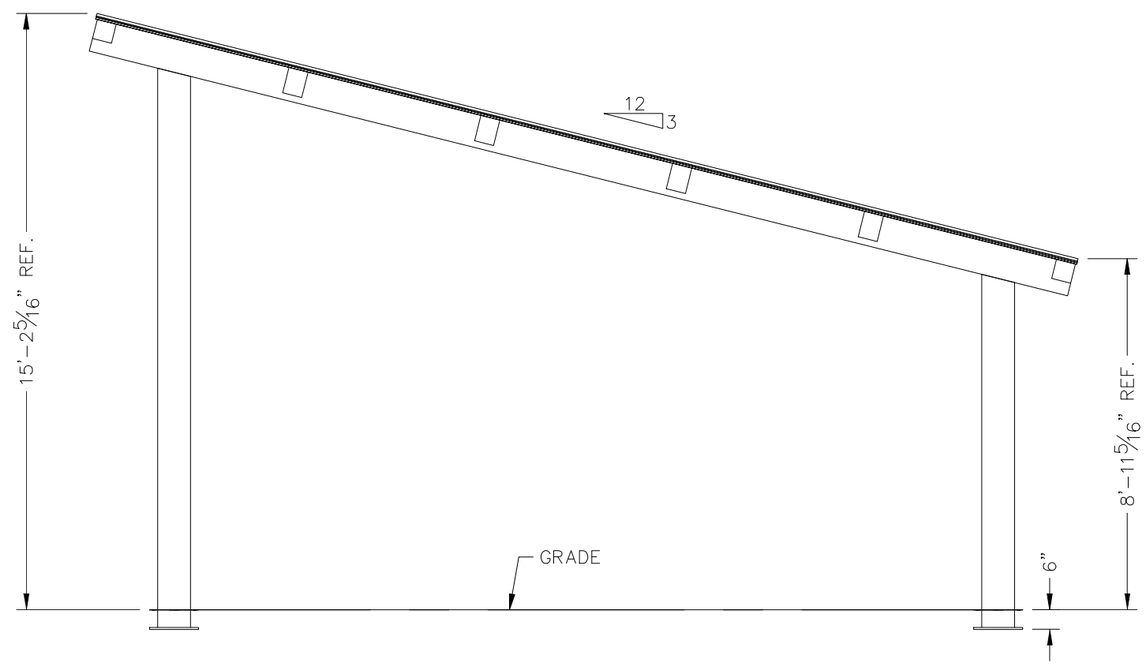
SHEET# **A-1**

MAX. PERSON / HOUR: **45 S**

Ph: 888-888-2060 | Fax: 888-888-1448

~NOT FOR CONSTRUCTION ~ PRELIMINARY DESIGN DRAWING ONLY ~ DO NOT SCALE, DIMENSIONS PRESIDE





PRELIMINARY: NOT FOR CONSTRUCTION

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Shelter Systems Inc
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HOLLAND MI, 49423

616.396.0919
800.748.0985
616.396.0944 FX

Elevation

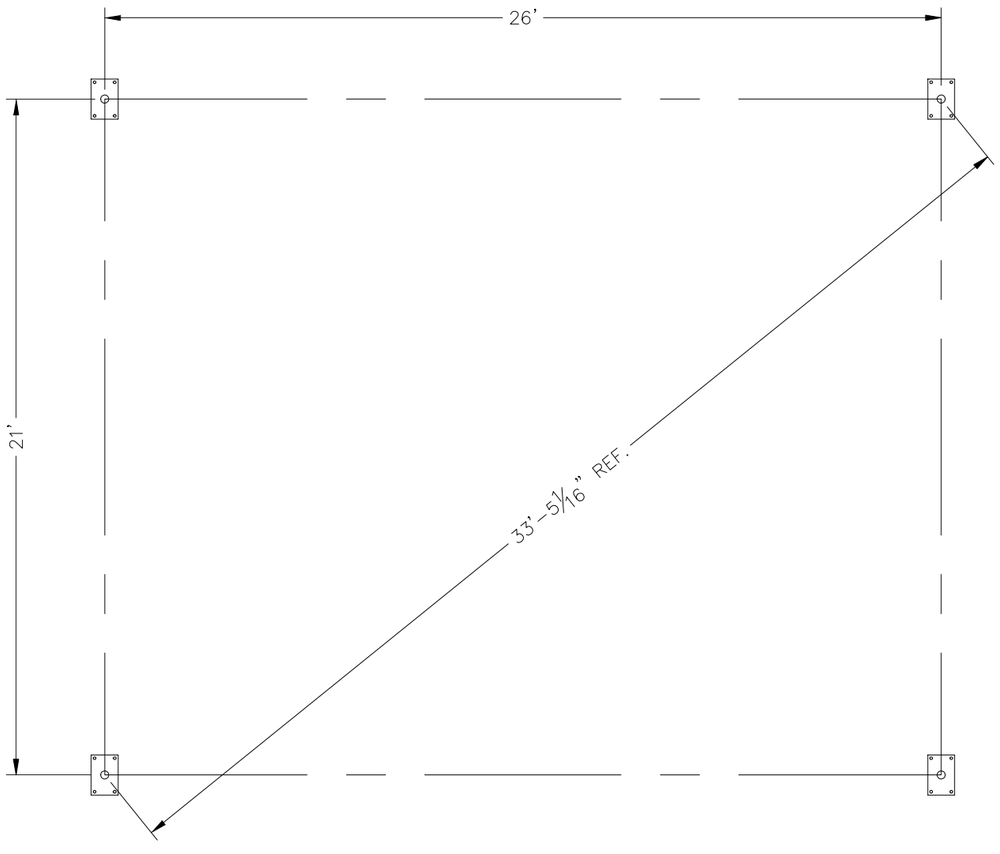
DRAWN BY:	MH
DATE:	10/30/2023
PRELIMINARY ID:	81298
REVISION:	A
BUILDING TYPE:	MP25X30S-P3
PROJECT NAME:	

SHEET 1 of 62

Engineering\AcadStandard\Blocks\Titles\GC
QF-73-01-42

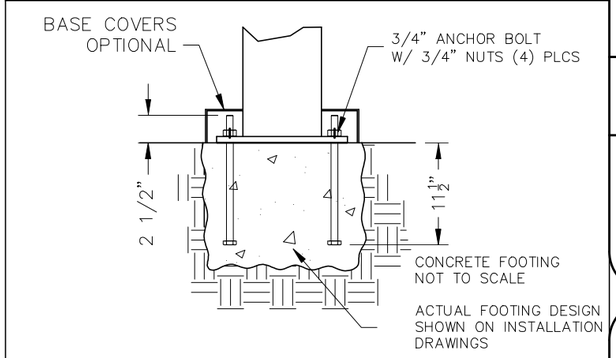
DWG:ineering\Standards\MP\25X30\S-P3-35-90-11\Drawings\Preliminary\MP25x30S-P3-35-90-11~81298.dwg

PRELIMINARY: NOT FOR CONSTRUCTION



PRELIMINARY DRAWINGS SHOWN AS 6" BURIED

STANDARD BASE CONNECTION
COLUMN TYPE: A (6" BURIED)



OPTIONAL BASE CONNECTION
COLUMN TYPE: B (SURFACE MOUNT W/ COVERS)

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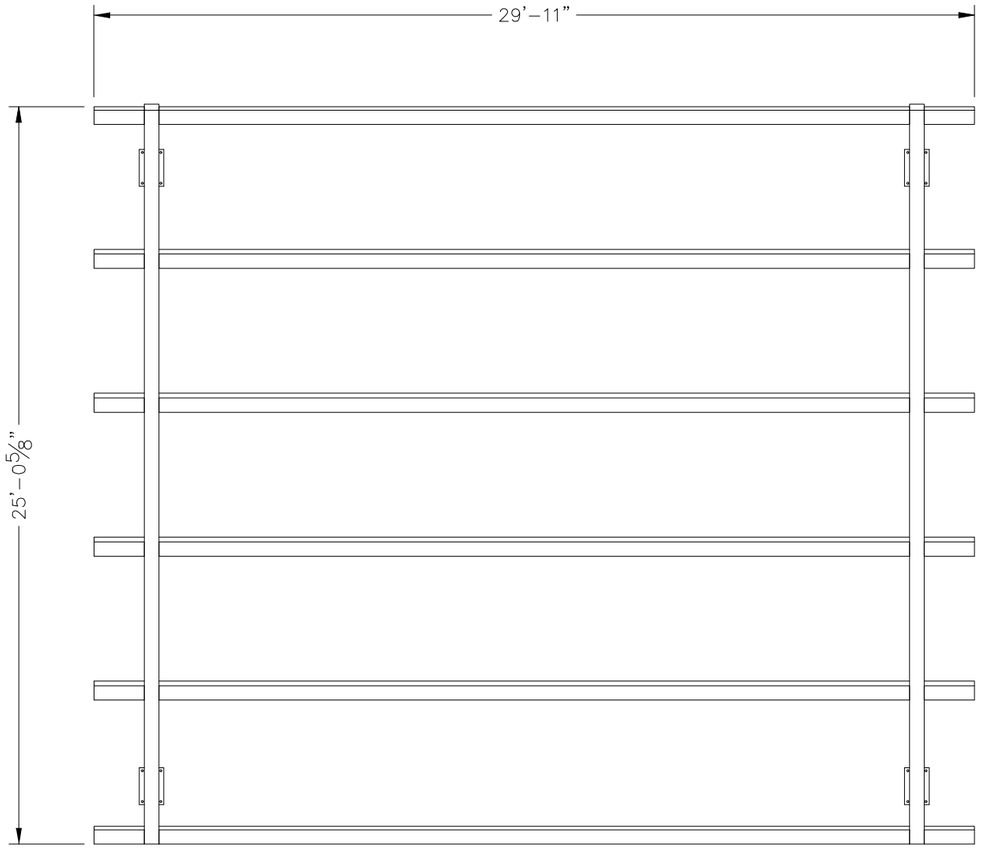
Anchor Bolt Layout

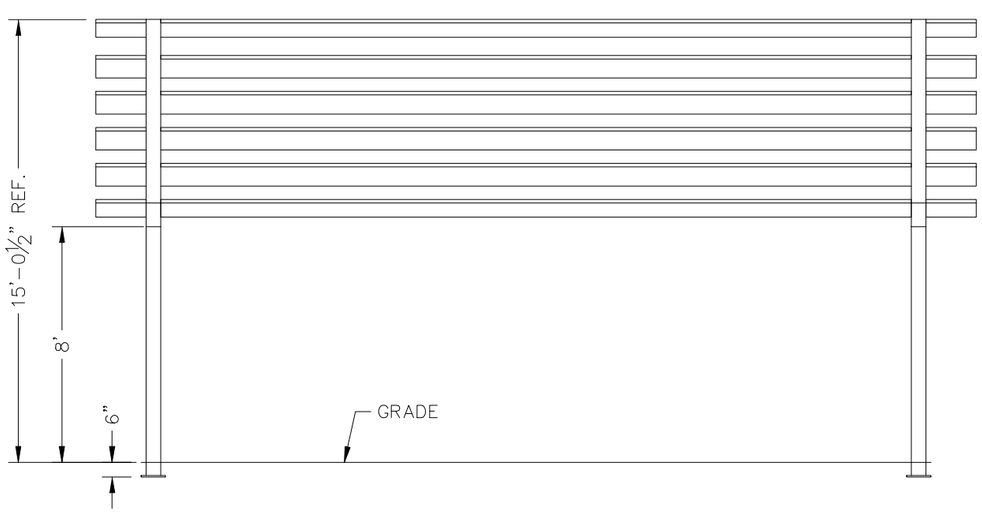
DRAWN BY:	MH
DATE:	10/30/2023
PRELIMINARY ID:	81298
REVISION:	A
BUILDING TYPE:	MP25X30S-P3
PROJECT NAME:	

SHEET 2.0

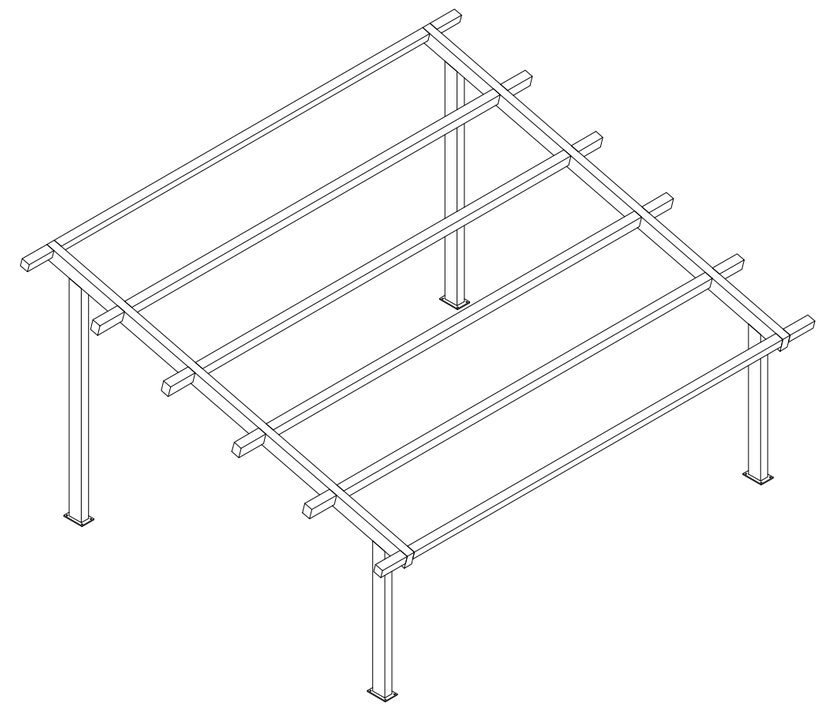
Engineering\AcadStandard\Blocks\Titles\CI QF-73-01-42

DWG:ineering\Standards\MP\25X30\S-P3-35-90-11\Drawings\Preliminary\MP25x30S-P3-35-90-11~81298.dwg





PRELIMINARY: NOT FOR CONSTRUCTION



ALL STRUCTURAL COMPONENTS WILL BE:
TUBE: ASTM A500 GRADE B
PLATE: ASTM A36
BOLTS: ASTM A325
NUTS: ASTM A563
WELDING: GMAW

NOTE:
COLUMN SIZE: HSS 10x6x3/16

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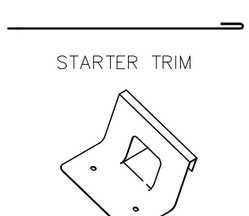
Frame

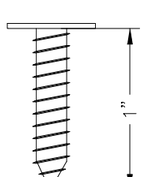
DRAWN BY:	MH
DATE:	10/30/2023
PRELIMINARY ID:	81298
REVISION:	A
BUILDING TYPE:	MP25X30S-P3
PROJECT NAME:	

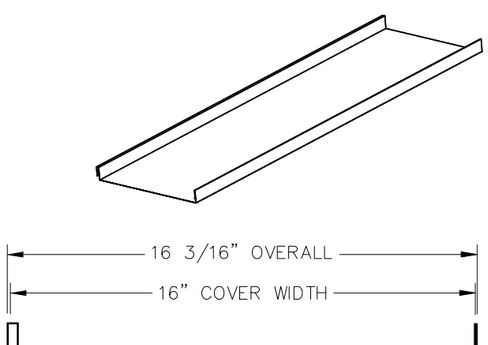
SHEET 3.0 64

Engineering\AcadStandard\Blocks\Titles\CC QF-73-01-42

DWG:ineering\Standards\MP\25X30\S-P3-35-90-11\Drawings\Preliminary\MP25x30S-P3-35-90-11~81298.dwg

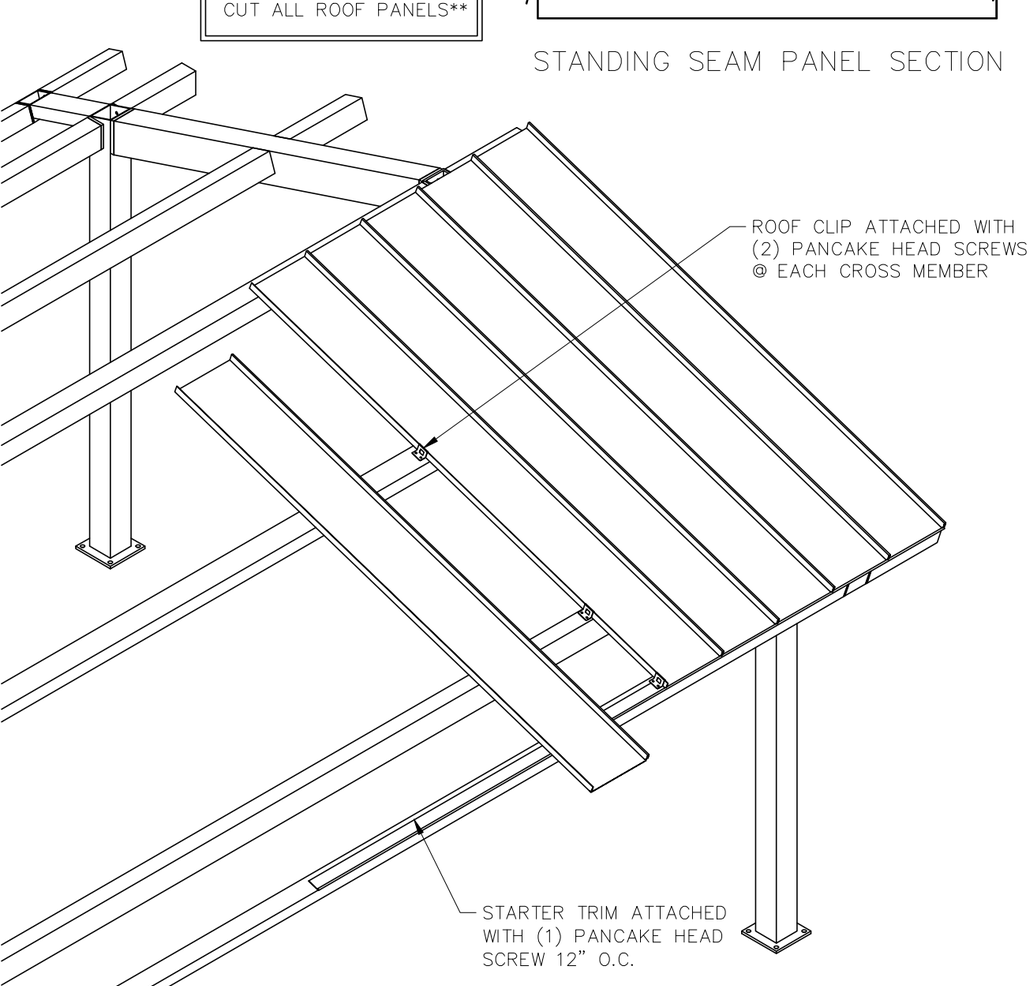






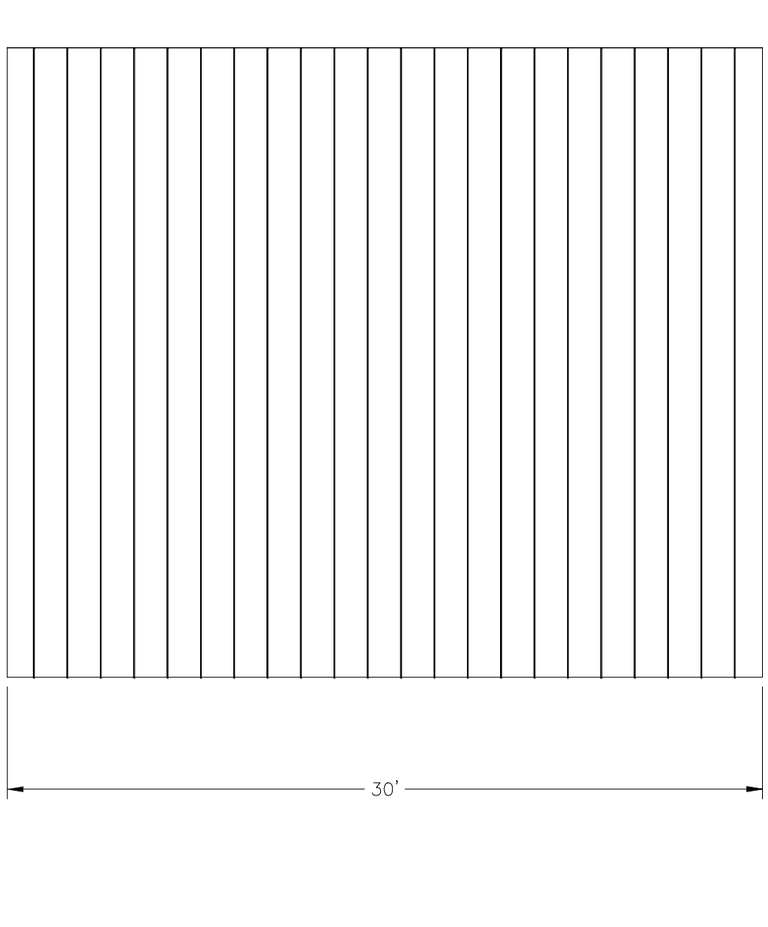
STANDING SEAM PANEL SECTION

INSTALLER TO FIELD CUT ALL ROOF PANELS



NOTE: STANDARD DETAILS SHOWN
ACTUAL BUILDING MAY VARY

PRELIMINARY: NOT FOR CONSTRUCTION



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HOLLAND MI, 49423

616.396.0919
800.748.0985
616.396.0944 FX

Roof Layout

DRAWN BY:	MH
DATE:	10/30/2023
PRELIMINARY ID:	81298
REVISION:	A
BUILDING TYPE:	MP25X30S-P3
PROJECT NAME:	

SHEET 4.0

Engineering\AcadStandard\Blocks\Titles\ICC QF-73-01-42

DWG:ineering\Standards\MP\25X30\S-P3-35-90-11\Drawings\Preliminary\MP25x30S-P3-35-90-11~81298.dwg

ELECTRICAL INFORMATION - MONOSLOPE

ICON'S STANDARD ELECTRICAL IS DESIGNED TO ACCOMMODATE Ø1/2" CONDUIT WITH A Ø3" INLET HOLE ON THE BOTTOM OF EACH COLUMN.
THE CONDUIT PATHWAY RUNS THROUGH THE COLUMN, RAFTER, AND RIDGE BEAM THROUGH ALL BOLTED CONNECTIONS AS SHOWN.
IF YOU HAVE SPECIAL ELECTRICAL REQUIREMENTS, PLEASE OUTLINE ANY CHANGES BELOW AS DESCRIBED.

PLEASE NOTE: DESIGN LIMITATIONS ON HOLE/CUTOUT SIZES MAY APPLY.
ICON WILL REACH OUT TO DISCUSS ANY SUCH LIMITATIONS AS NEEDED.

NOTE: ICON SHELTER FRAME IS NOT UL LISTED TO ACT AS A CONDUIT FOR ELECTRICAL WIRING. CONSULT LOCAL BUILDING CODES WHEN PLANNING YOUR ELECTRICAL SYSTEM.

PRELIMINARY: NOT FOR CONSTRUCTION

STEPS:
1. CONDUIT HOLE SIZE (DETAIL A)
2. ELECTRICAL EXIT HOLES (DETAIL B)
3. ELECTRICAL ACCESS & COVER PLATES (DETAIL C)
4. ELECTRICAL CONDUIT PATHWAY (DETAIL D)

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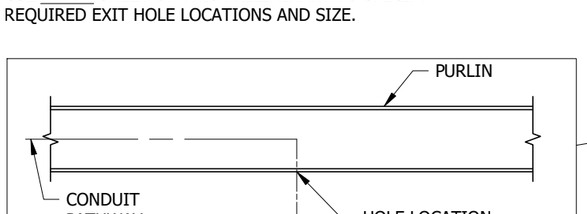
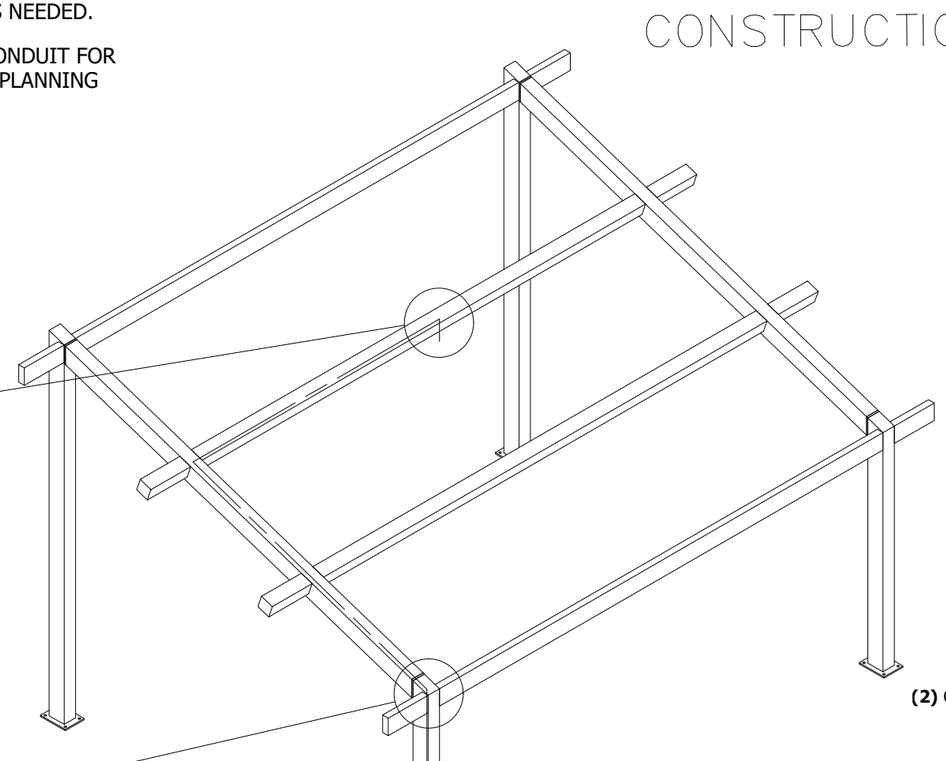
OPTIONAL EXIT HOLES

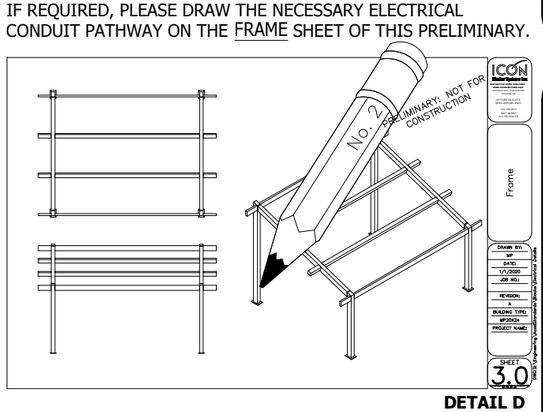
IF REQUIRED, EXIT HOLES FOR LIGHTING, ETC.
CAN BE PLACED IN THE RAFTER AND/OR PURLIN.
USE FRAME SHEET OF THIS PRELIMINARY TO SPECIFY
REQUIRED EXIT HOLE LOCATIONS AND SIZE.



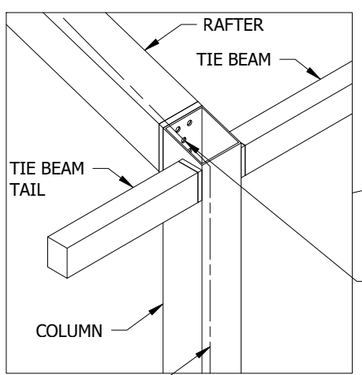
DETAIL B



IF REQUIRED, PLEASE DRAW THE NECESSARY ELECTRICAL CONDUIT PATHWAY ON THE FRAME SHEET OF THIS PRELIMINARY.



DETAIL D



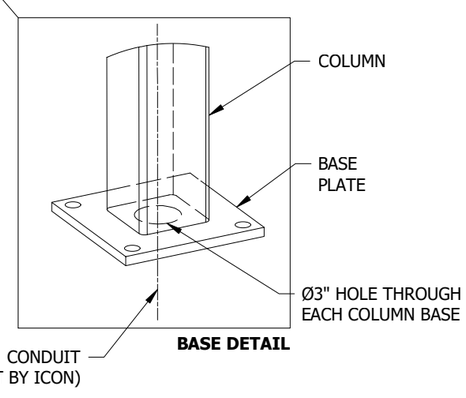
DETAIL A

ICON PROVIDES A MINIMUM OF (1) 3/4" HOLE AT
EACH CONNECTION FOR 1/2" CONDUIT.
IF APPLICABLE, PLEASE SPECIFY REQUIRED CONDUIT SIZE: (CHARGES APPLY)

- ☐ 3/4" CONDUIT (1" HOLES)
- ☐ 1" CONDUIT (1 1/4" HOLES)
- ☐ OTHER (PLEASE SPECIFY

_____

CONDUIT PATHWAY PROVIDED FOR EACH COLUMN.



BASE DETAIL

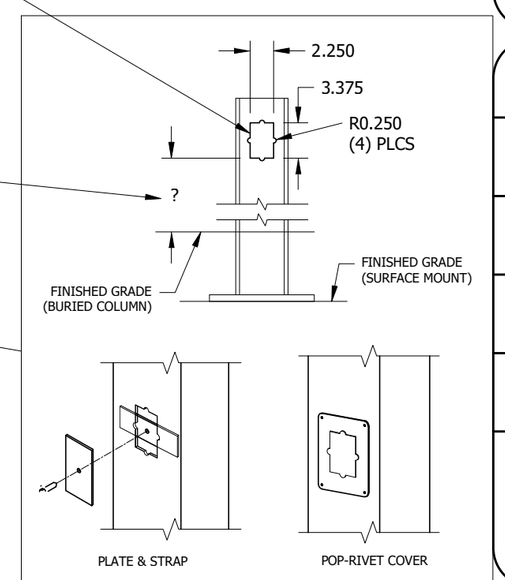
OPTIONAL CUTOUTS

USE FRAME SHEET OF THIS PRELIMINARY TO SPECIFY
REQUIRED CUTOUT LOCATIONS (CHARGES APPLY)
SEE REQUIRED INFO BELOW

(1) STANDARD CUTOUT SIZE SHOWN. SPECIFY IF OTHER SIZE REQUIRED.

(2) CUTOUTS WILL BE ON INSIDE FACE OF COLUMN UNLESS OTHERWISE INDICATED ON FRAME SHEET.

(3) SPECIFY HEIGHT ABOVE FINISHED GRADE FOR EACH CUTOUT AS SHOWN



DETAIL C

(4) COVER PLATES PROVIDED UPON REQUEST (CHARGES APPLY)
PLEASE SPECIFY TYPE AND QUANTITY REQUIRED:

- ☐ PLATE & STRAP
- ☐ POP-RIVET COVER PLATE

HOW MANY REQUIRED?_____

NOTE: BUILDING DEPICTED ON THIS SHEET FOR ILLUSTRATION PURPOSES ONLY. ACTUAL LAYOUT AND FRAME MEMBER QUANTITIES VARY BY DESIGN. PLEASE REFER TO ELEVATION AND FRAME SHEETS IN THIS PRELIMINARY FOR ORDER-SPECIFIC CONFIGURATION.

Electrical

DRAWN BY:	MH
DATE:	10/30/2023
PRELIMINARY ID:	81298
REVISION:	A
BUILDING TYPE:	MP25X30S-P3
PROJECT NAME:	

SHEET 5.0

DWG:ineering\Standards\MP\25X30S-P3-35-90-11\Drawings\Preliminary\MP25x30S-P3-35-90-11~81298.dwg

BEVERLY

7725 W. North Avenue
Wauwatosa, WI 53213

Wauwatosa, WI

Staff Report

File #: 23-843 **Agenda Date:** **Agenda #:** 2.

11530 Burleigh - Horicon Bank - RTU Screening

THE MAYFAIR COLLECTION
NORDSTROM rack
DICK'S
OFF 5TH
OLD NAVY
WHOLE FOODS MARKET
DSW
BOB'S FURNITURE
TJ maxx
carter's OSHKOSH
ULTA
CONBANK
South Elevation

East Elevation

North Elevation

Acrylicap® ABS Panels are most often ordered in one of the colors below. Want something unique?
Provide a sample, RAL or PMS number and we will color match to your specifications.

ALABASTER

ELECTRIC BLACK

SLATE BLUE

FOREST GREEN

SHADOW GRAY

SLATE GRAY

DARK BRONZE

OYSTER

PUTTY

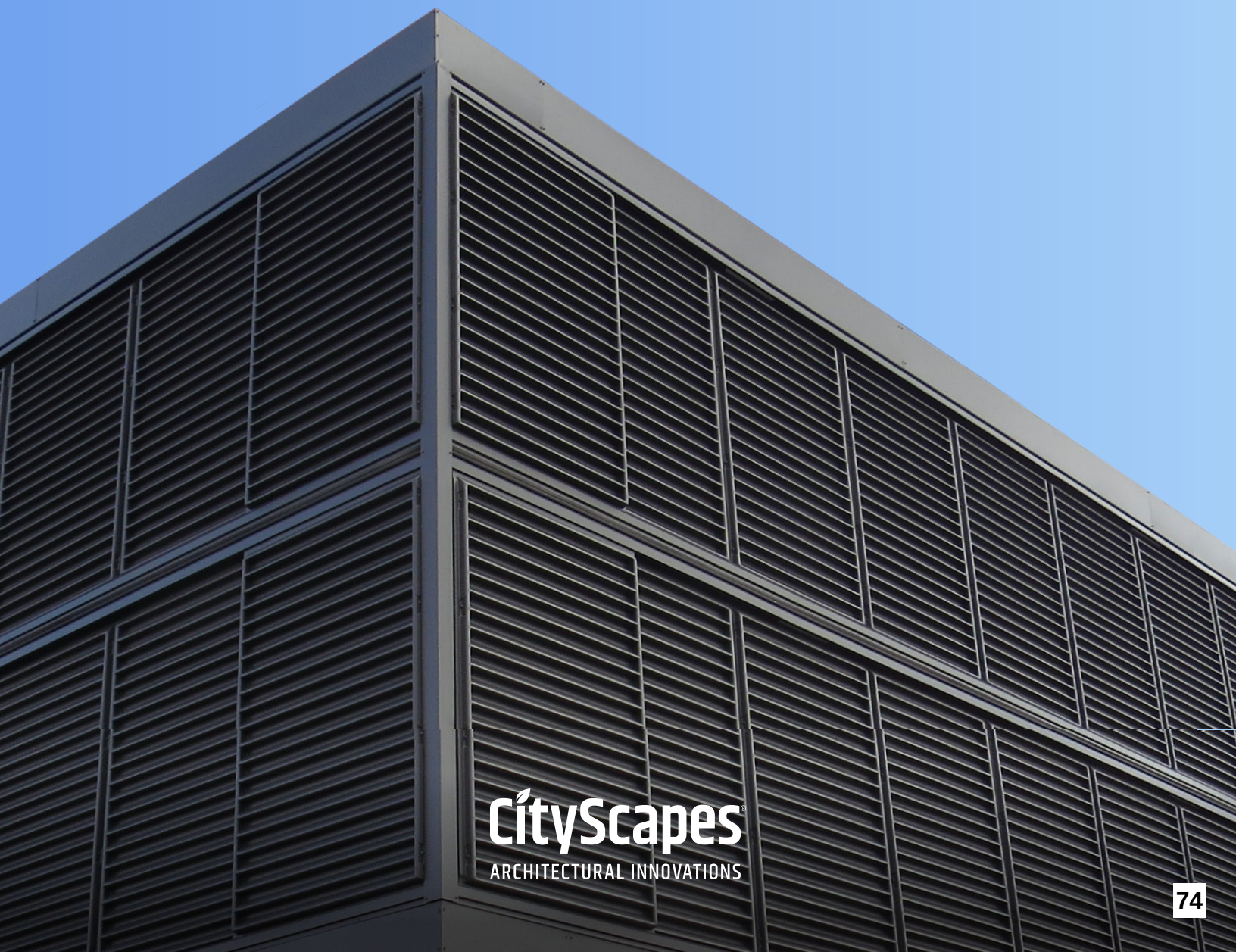
TERRACOTTA

MANSARD BROWN

Swatches viewed on a computer screen or on printed material are intended to be a guide to our product color choices. For best results, contact us to request material samples that will provide true color representation.

envisor®

SCREENING SYSTEMS



CityScapes®
ARCHITECTURAL INNOVATIONS

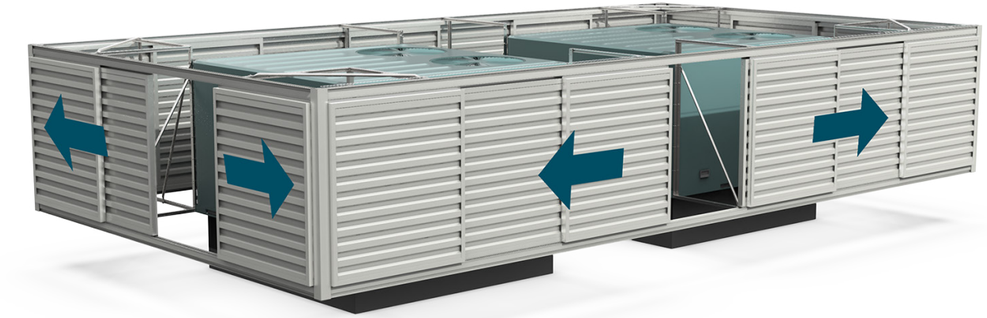
Office Building
Indianapolis, IN

ENVISOR®

ROOF SCREENS WITH SOARING GOOD LOOKS

Set the bar high with durable and attractive Envisor® roof screens. Affordable and elegant, Envisor makes meeting code simple and blends into any design. Better yet, no rooftop penetration is required for installation, which gives you a clean, modern look.

- Practical solution for municipal screening requirements of HVAC units, chillers, air handlers, and more.
- Create your own custom design for your specific application.
- Nationwide project management and installation available.
- Designed in-house and manufactured in a state-of-the-art facility.



ZERO ROOFTOP PENETRATION

UV and rust resistant finishes to protect from harsh environments

CODE COMPLIANT

Practical solution for municipal screening requirements of HVAC units, chillers, air handlers, and more

WIND LOAD AND RESISTANCE

Ultimate wind speed resistance

EASY MAINTENANCE

Panels slide for easy service access

PANEL STLYES BLEND BUILDING DESIGN & UTILITY

Envisor® offers over 15 panel designs and variety of colors to choose from, ensuring that your HVAC screening perfectly matches your building design.

MS Consultants
Columbus, OH

Hospital
Richmond, VA

ACRYLICAP® ABS INFILLS

- Acrylicap® uses .187 acrylic-capped ABS for UV protection.
- Standard panel heights are 35”, 52”, 70”.
- Panels can be stacked for additional coverage.
- PE Stamped drawings are available on all North America projects.

Louver

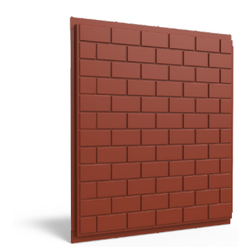
Horizontal Rib

7.2 Rib

Flat Pan

Batten

Vertical Rib



Brick

Custom

We are working with Cityscapes to provide a panel with this tree pattern in the Slate Grey color.

Actual color swatch will be provided at the Design Review Board meeting

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ELECTRIC BLACK

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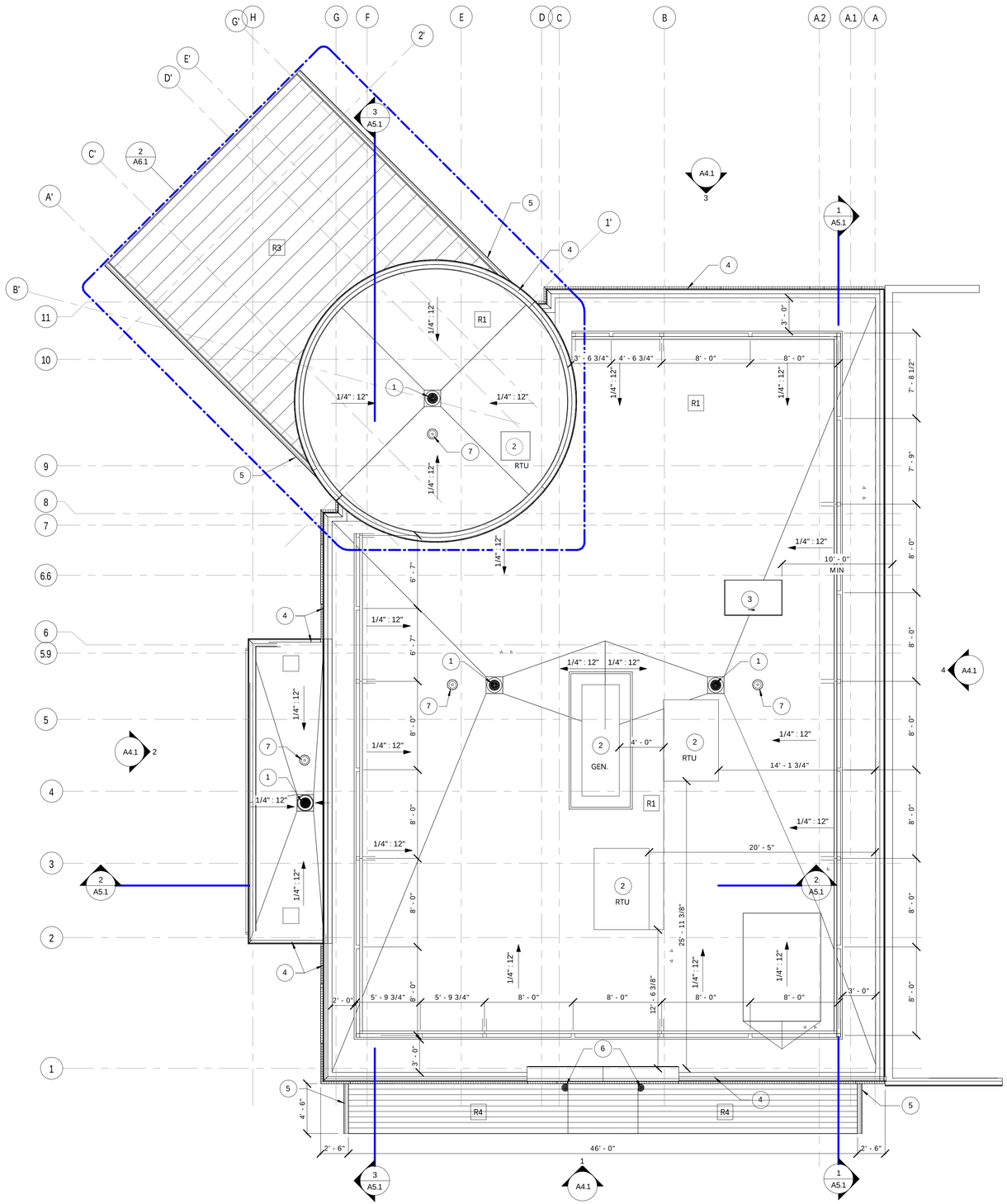
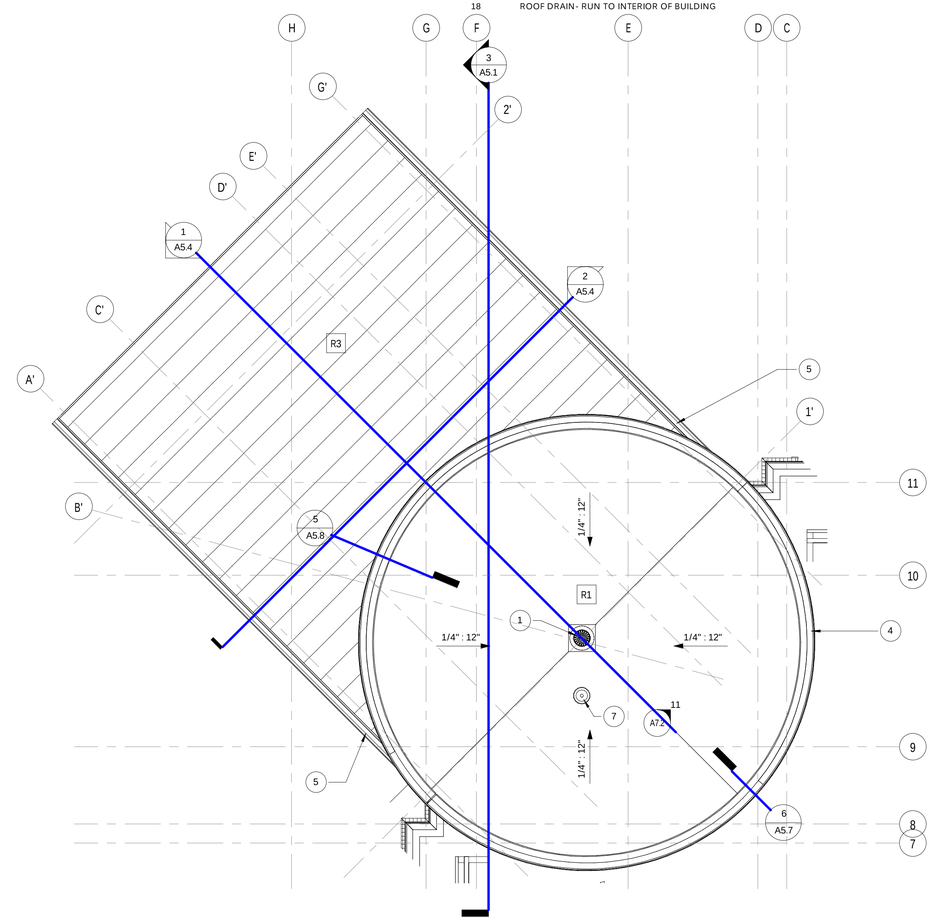
KEYED ROOF PLAN NOTES	
TAG #	DESCRIPTION
1	ROOF DRAIN
2	MECHANICAL EQUIPMENT. SEE MECHANICAL FOR ADDITIONAL INFORMATION
3	ROOF HATCH WITH FIXED WALL-MOUNTED ACCESS LADDER
4	PREFINISHED METAL COPING/GRAVEL STOP- PAC CLAD "DARK GRAY", TYPICAL FOR ALL COPINGS
5	PREFINISHED METAL FASCIA AND GUTTERS. GUTTERS TO RUN TO STORM
6	ROOF DRAIN- RUN TO INTERIOR OF BUILDING
7	ROOF DRAIN- RUN TO INTERIOR OF BUILDING
18	ROOF DRAIN- RUN TO INTERIOR OF BUILDING



1 A6.1 ROOF
3/16" = 1'-0"



2 A6.1 ENLARGED ROOF PLAN
1/4" = 1'-0"

ROOF R1:

- 60MIL BLACK EPDM, BALLASTED
- TAPERED XPS INSULATION
- MINIMUM 6" (R24) XPS INSULATION (2 LAYERS W/ STAGGERED JOINTS)
- 30 MIL VAPOR BARRIER
- METAL DECK PER STRUCTURAL
- FRAMING PER STRUCTURAL

ROOF R2:

NOT USED

ROOF R3:

STANDING SEAM METAL ROOF ON 1 1/2" METAL DECK

ROOF R4:

STANDING SEAM METAL ROOF

ROOF TYPES
1" = 1'-0"

DESIGN 2 CONSTRUCT
DEVELOPMENT CORPORATION

N173 W21010
NORTHWEST PASSAGE WAY
JACKSON, WI 53037

PHONE 262.677.9933
FAX 262.677.9934

info@design2construct.com

BUILDING DESIGN FOR:
HORICON BANK
11530 W. BURLEIGH STREET
WAUWATOSA, WI 53213

SHEET TITLE
ROOF PLAN

REVISIONS
1 05-31-2022

PROJECT DATA

DATE	1/10/2024
JOB NO.	20-00219
SET USE	
DRAWN BY	TJD
SHEET NO.	A6.1

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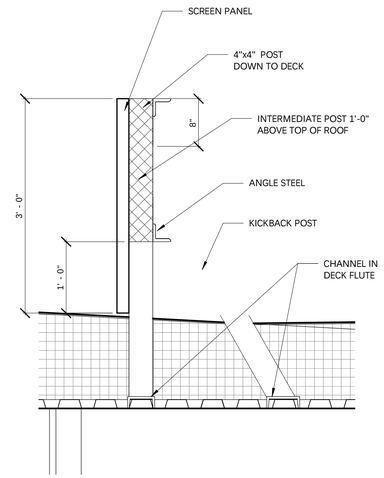
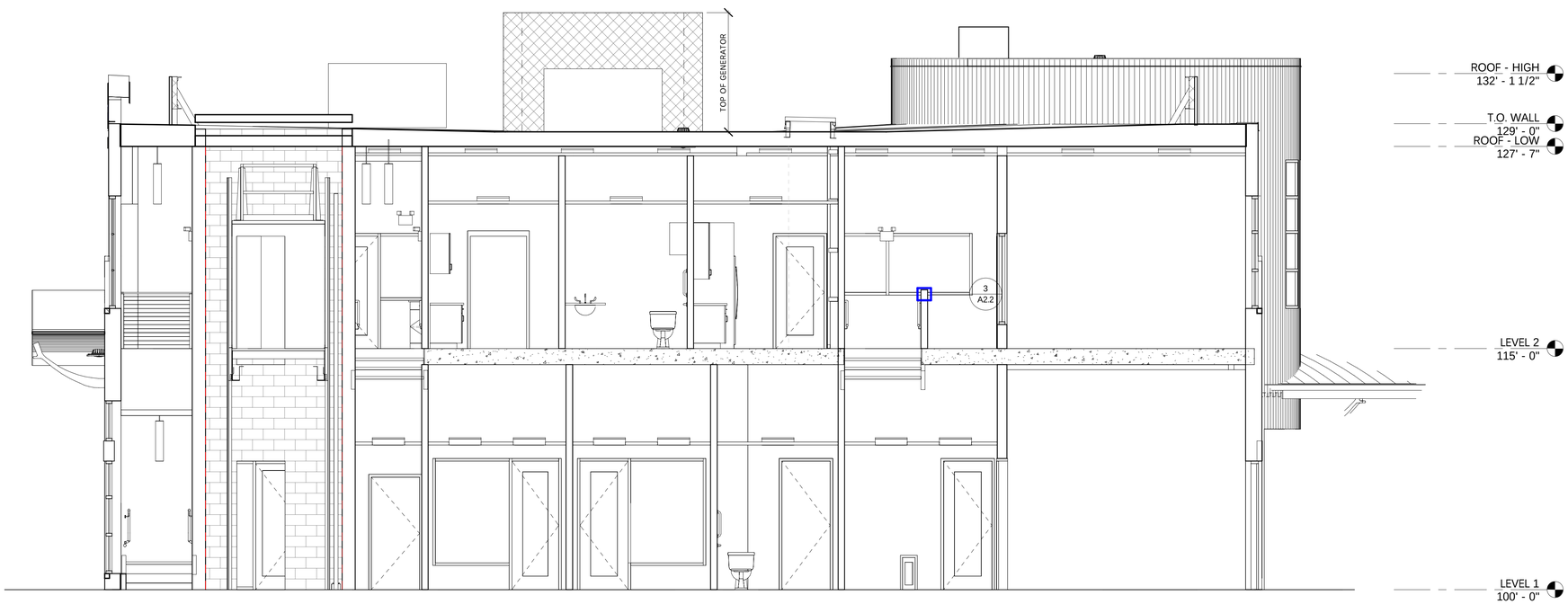
1 A5.0 SHORT SECTION

1/4" = 1'-0"



3 A5.0 Detail 2

1" = 1'-0"



2 A5.0 LONG SECTION

1/4" = 1'-0"

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BUILDING DESIGN FOR:
HORICON BANK

11530 W. BURLEIGH STREET
WAUWATOSA, WI 53213

SHEET TITLE

BUILDING SECTIONS W/ ROOFTOP SCREEN

REVISIONS

PROJECT DATA

DATE 1/10/2024

JOB NO. 20-00219

SET USE

DRAWN BY TJD

SHEET NO.

A5.0

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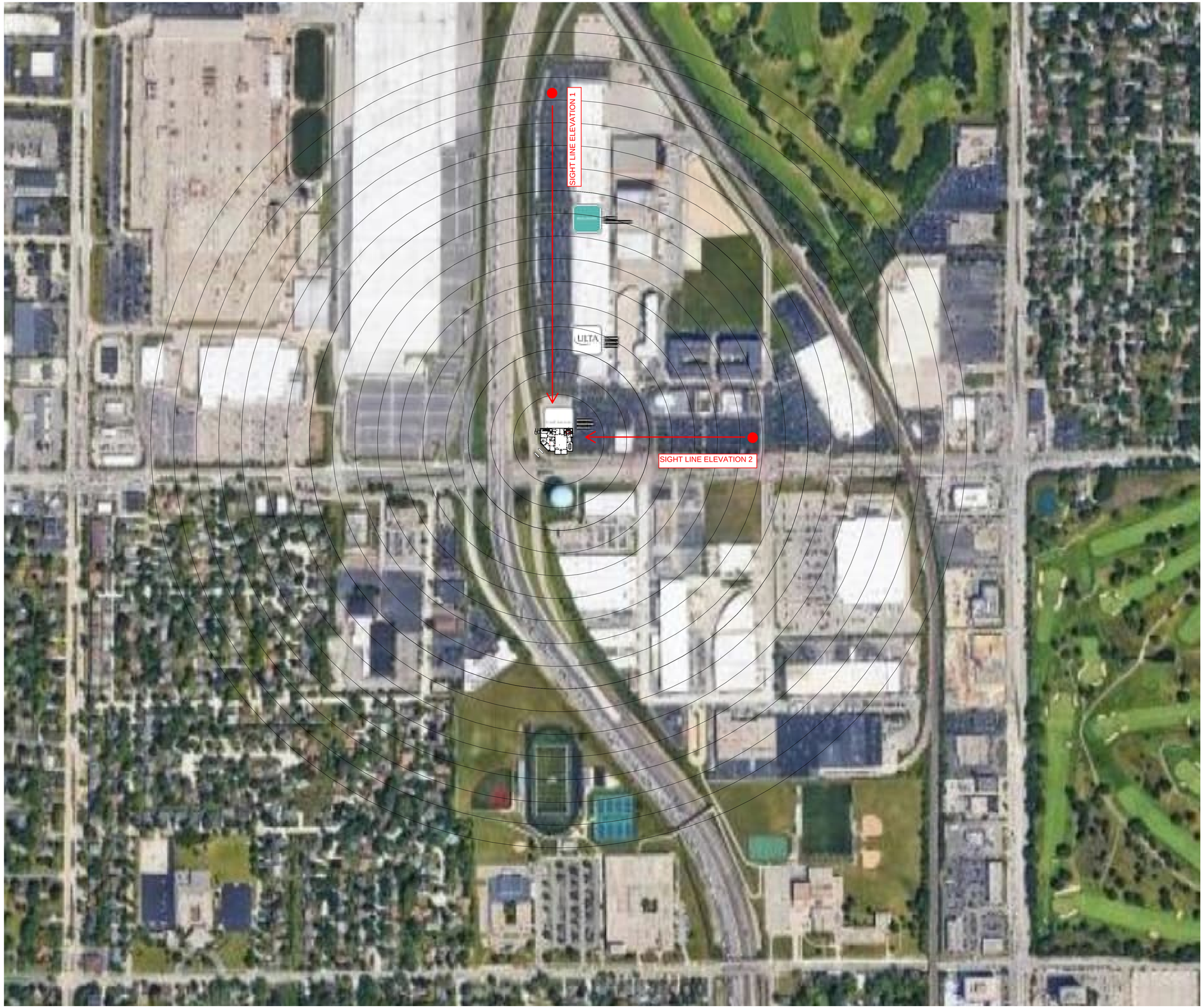

DISTANCE AWAY FROM BUILDING BEFORE YOU WILL START TO SEE THE TOP OF THE RTU.
NORTH: 722'
EAST: 374'

EVERY LINE IS 50'

1 A1.1 SITE PLAN
1" = 100'-0"

N W E S

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BUILDING DESIGN FOR:
HORICON BANK

11530 W. BURLEIGH STREET
WAUWATOSA, WI 53213

SHEET TITLE
RTU SITE PLAN LAYOUT

REVISIONS

PROJECT DATA
DATE 1/10/2024
JOB NO. 20-00219
SET USE
DRAWN BY TJD
SHEET NO.
A1.1

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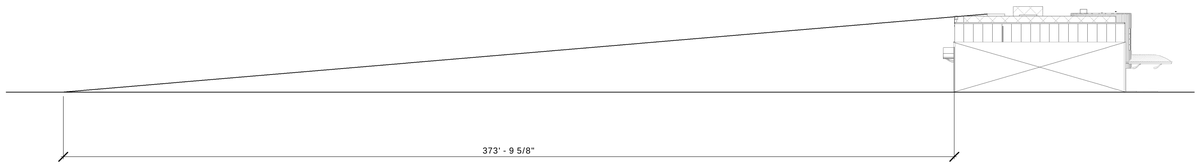
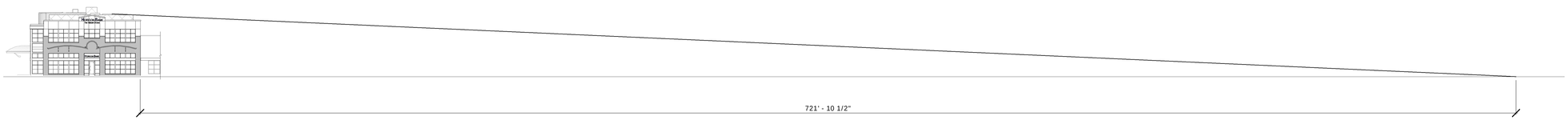


2
A1.2

BUILDING ELEVATION - NORTH

1" = 30'-0"



1
A1.2

BUILDING ELEVATION - EAST

1" = 30'-0"

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BUILDING DESIGN FOR:
HORICON BANK

11530 W. BURLEIGH STREET
WAUWATOSA, WI 53213

SHEET TITLE
SCREENED RTU ELEVATION

REVISIONS

PROJECT DATA

DATE	1/10/2024
JOB NO.	20-00219
SET USE	
DRAWN BY	TJD
SHEET NO.	A1.2

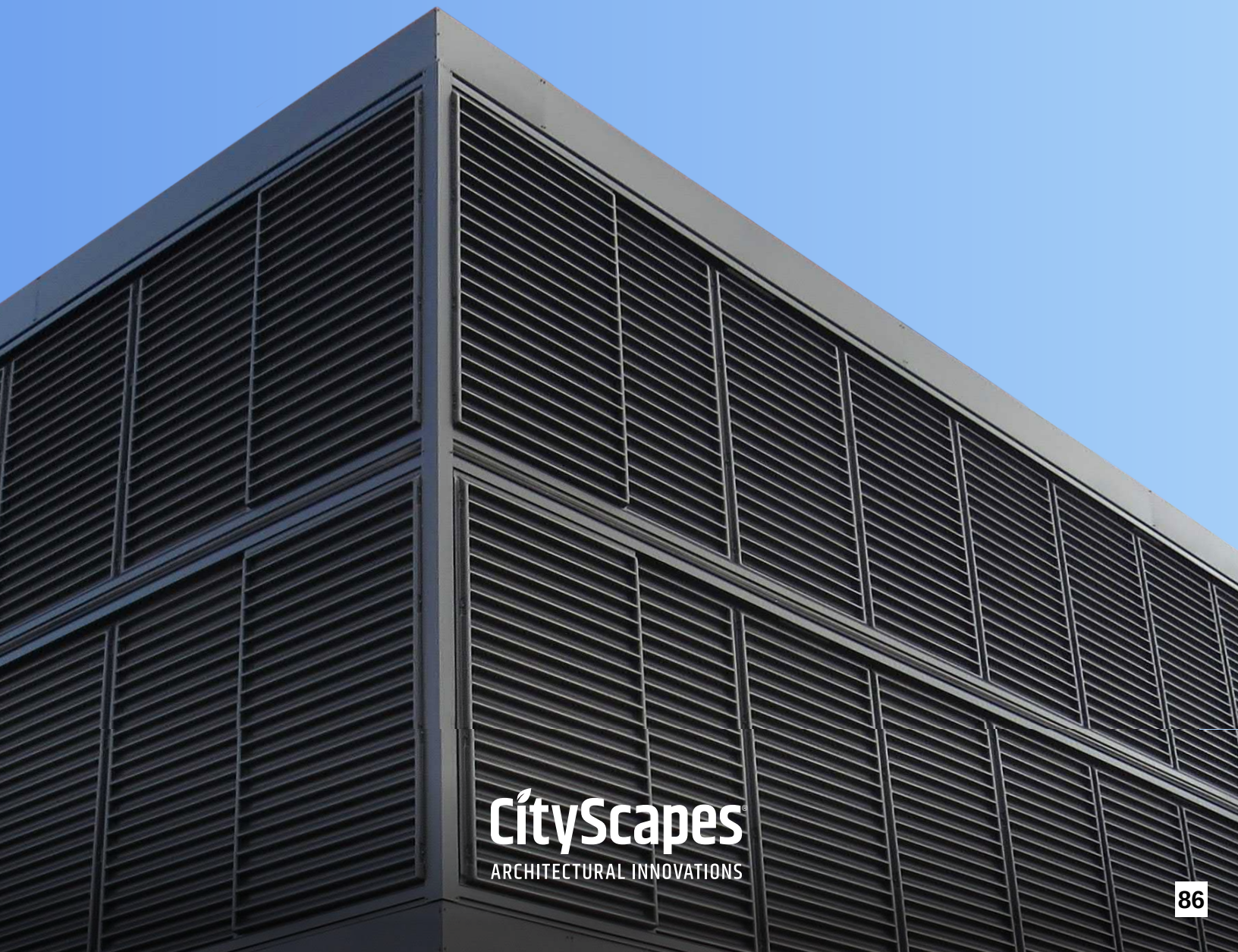
South Elevation

East Elevation

North Elevation

envisor®

SCREENING SYSTEMS



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Louver

Horizontal Rib

7.2 Rib

Flat Pan

Batten

Vertical Rib

Brick

Custom

HORICONBANK
The Natural Choice
HORICONBANK

HORICON BANK

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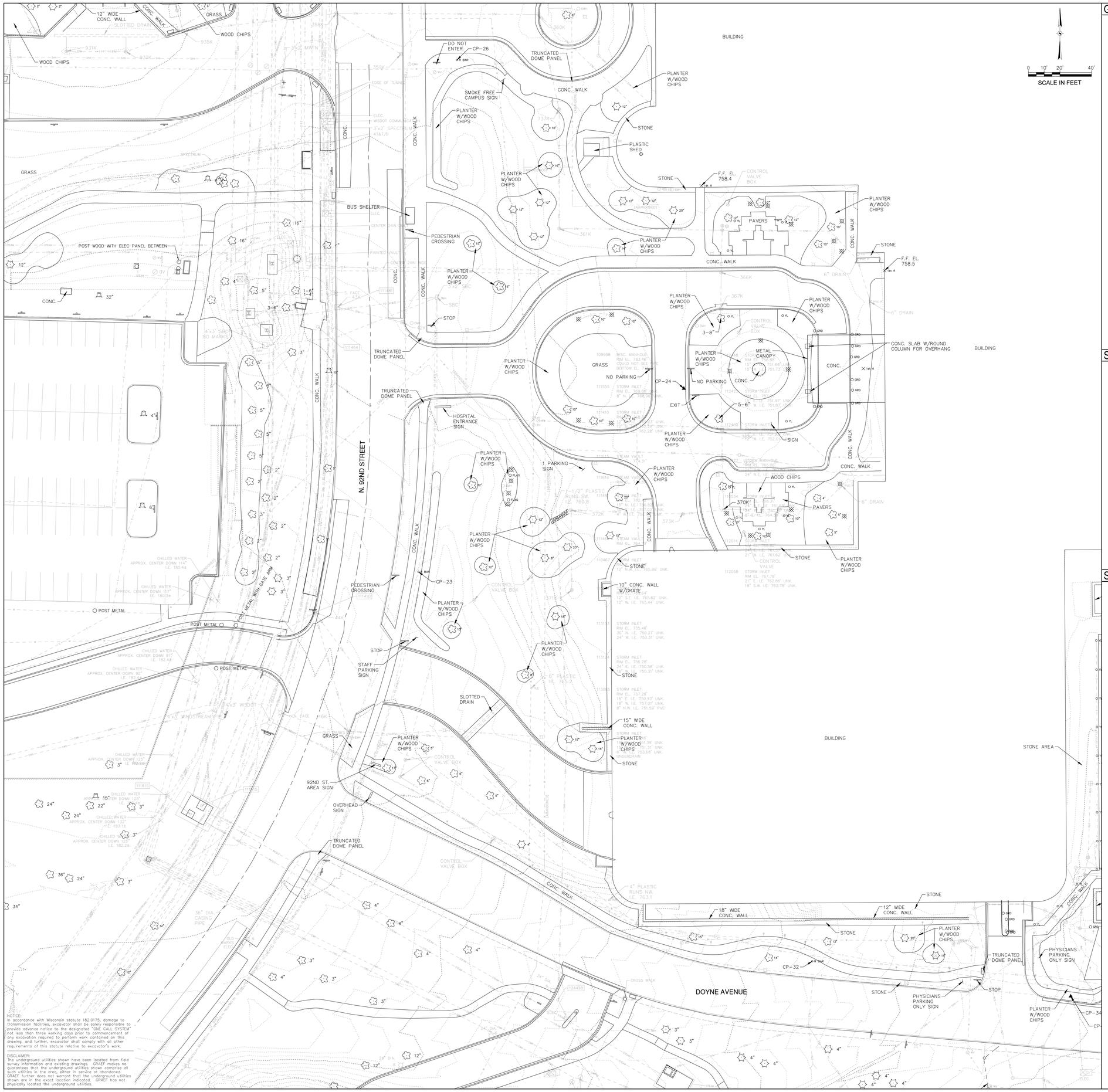

GENERAL SHEET NOTES

1. SEE SHEET C0002 FOR GENERAL NOTES.
2. SEE SHEET C0002 FOR SURVEY NOTES.

SHEET KEYNOTES

SHEET LEGEND

NOTICE:
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DISCLAIMER:
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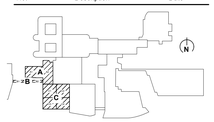

KEY PLAN

Drawing Title:

EXISTING CONDITIONS

Project No.: 006902.00 Checked by:

C-1

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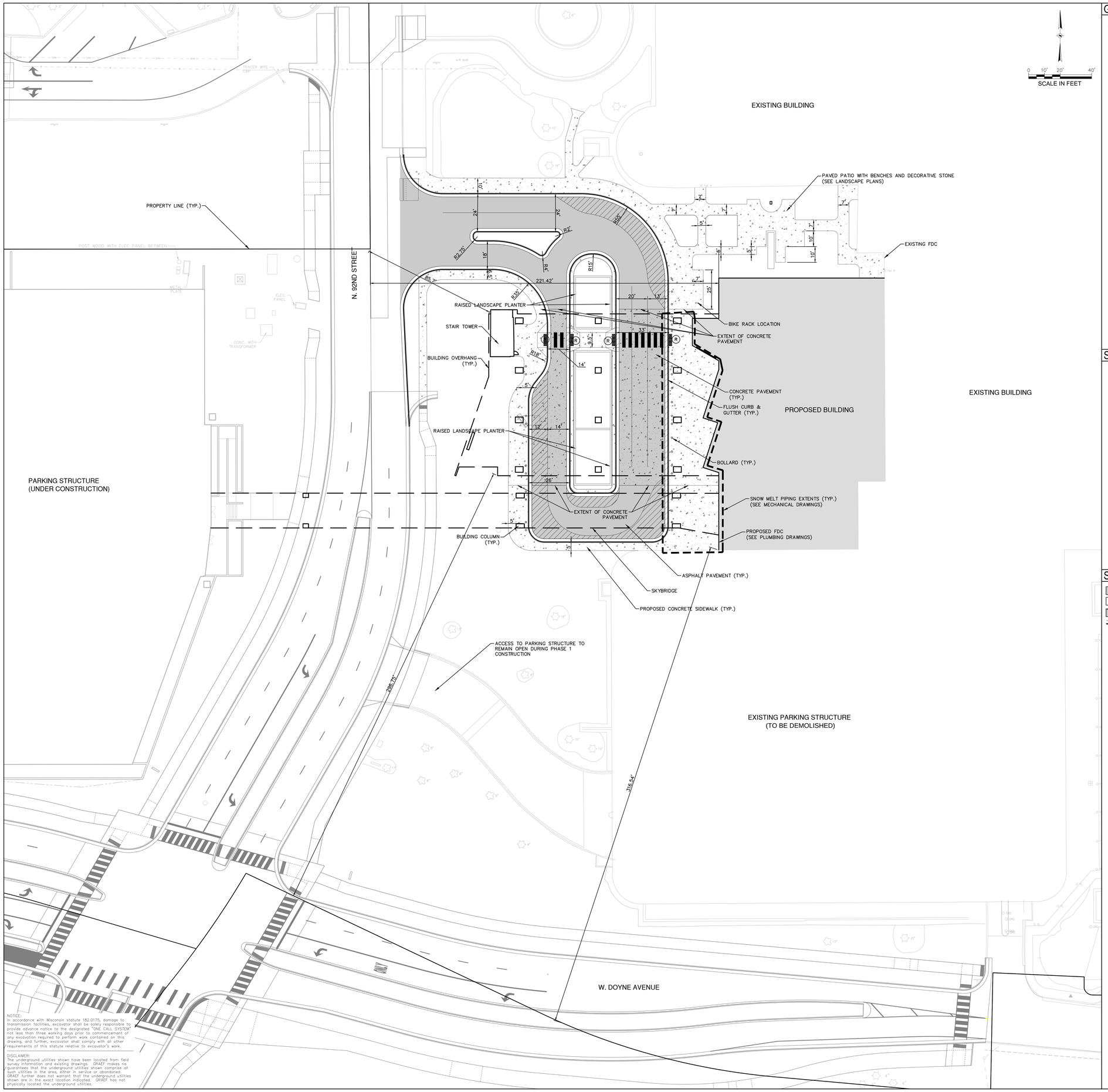

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GENERAL SHEET NOTES

1. SEE SHEET C0002 FOR GENERAL NOTES.
2. SEE SHEET C0002 FOR LAYOUT NOTES.

SHEET KEYNOTES

SHEET LEGEND

- PROPOSED ASPHALT PAVEMENT
- PROPOSED CONCRETE SIDEWALK
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE CURB AND GUTTER
- (R) PROPOSED ADA RAMP WITH TRUNCATED DOMES

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No.	Description	Date

KEY PLAN

Drawing Title:

SITE LAYOUT PLAN

Project No.: 006902.00 Checked by:

C-2

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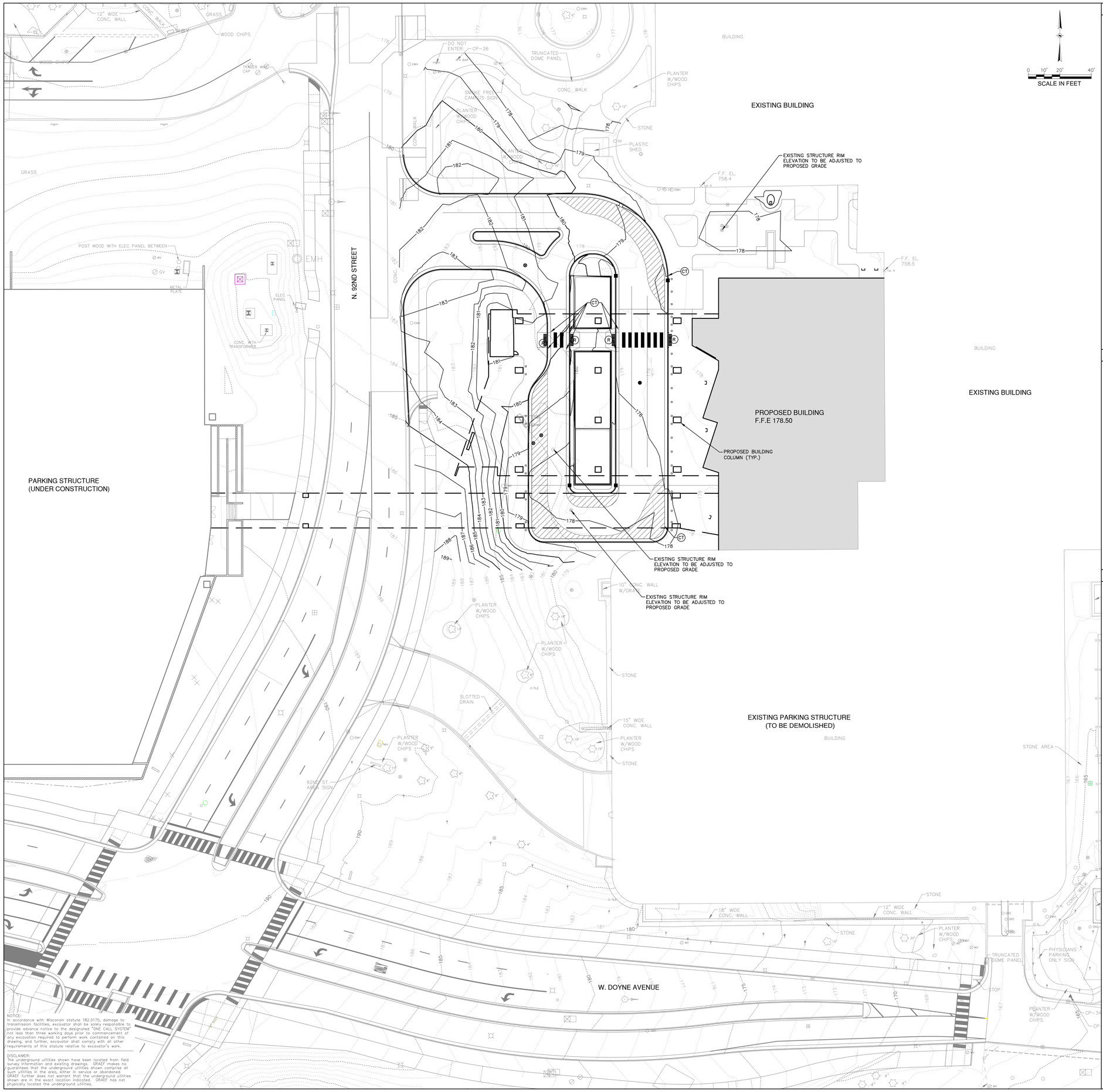

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GENERAL SHEET NOTES

1. SEE SHEET C0002 FOR GENERAL NOTES.
2. SEE SHEET C0002 FOR GRADING NOTES.

SHEET KEYNOTES

SHEET LEGEND

- 100 — EXISTING CONTOUR
- 100 — PROPOSED CONTOUR
- — PROPOSED MANHOLE
- — PROPOSED CATCH BASIN
- (R) — PROPOSED ADA RAMP WITH TRUNCATED DOMES
- (CT) — PROPOSED CURB TAPER
- — PROPOSED GATE VALVE
- — PROPOSED HYDRANT
- — PROPOSED UTILITY PLUG

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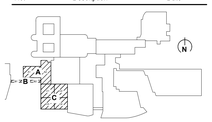
No.	Description	Date



KEY PLAN

Drawing Title:

SITE GRADING PLAN

Project No.: 006902.00 Checked by:

C-3

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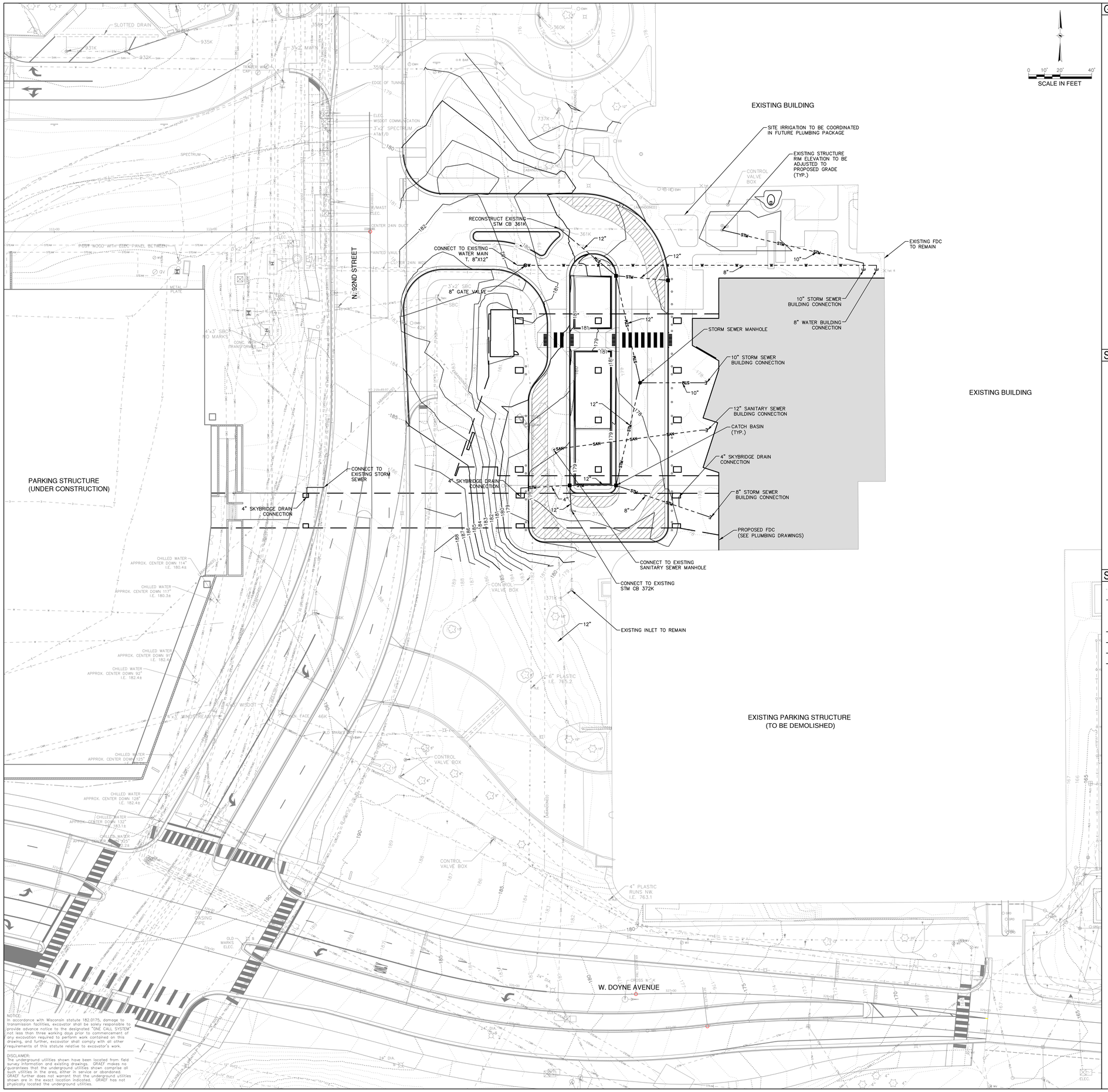

GENERAL SHEET NOTES

1. SEE SHEET C0002 FOR GENERAL NOTES.
2. SEE SHEET C0002 FOR UTILITY NOTES.

SHEET KEYNOTES

SHEET LEGEND

100	–EXISTING CONTOUR
100	–PROPOSED CONTOUR
●	–PROPOSED MANHOLE
■	–PROPOSED CATCH BASIN
STM	–PROPOSED STORM SEWER
SAN	–PROPOSED SANITARY SEWER
W	–PROPOSED WATER MAIN
E	–PROPOSED ELECTRICAL
●	–PROPOSED MANHOLE
■	–PROPOSED CATCH BASIN
⊗	–PROPOSED GATE VALVE
	–PROPOSED HYDRANT
	–PROPOSED UTILITY PLUG

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DESIGN REVIEW BOARD 1.18.2024

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KEY PLAN

Drawing Title:

SITE UTILITY PLAN

Project No.: 0069002.00 Checked by:

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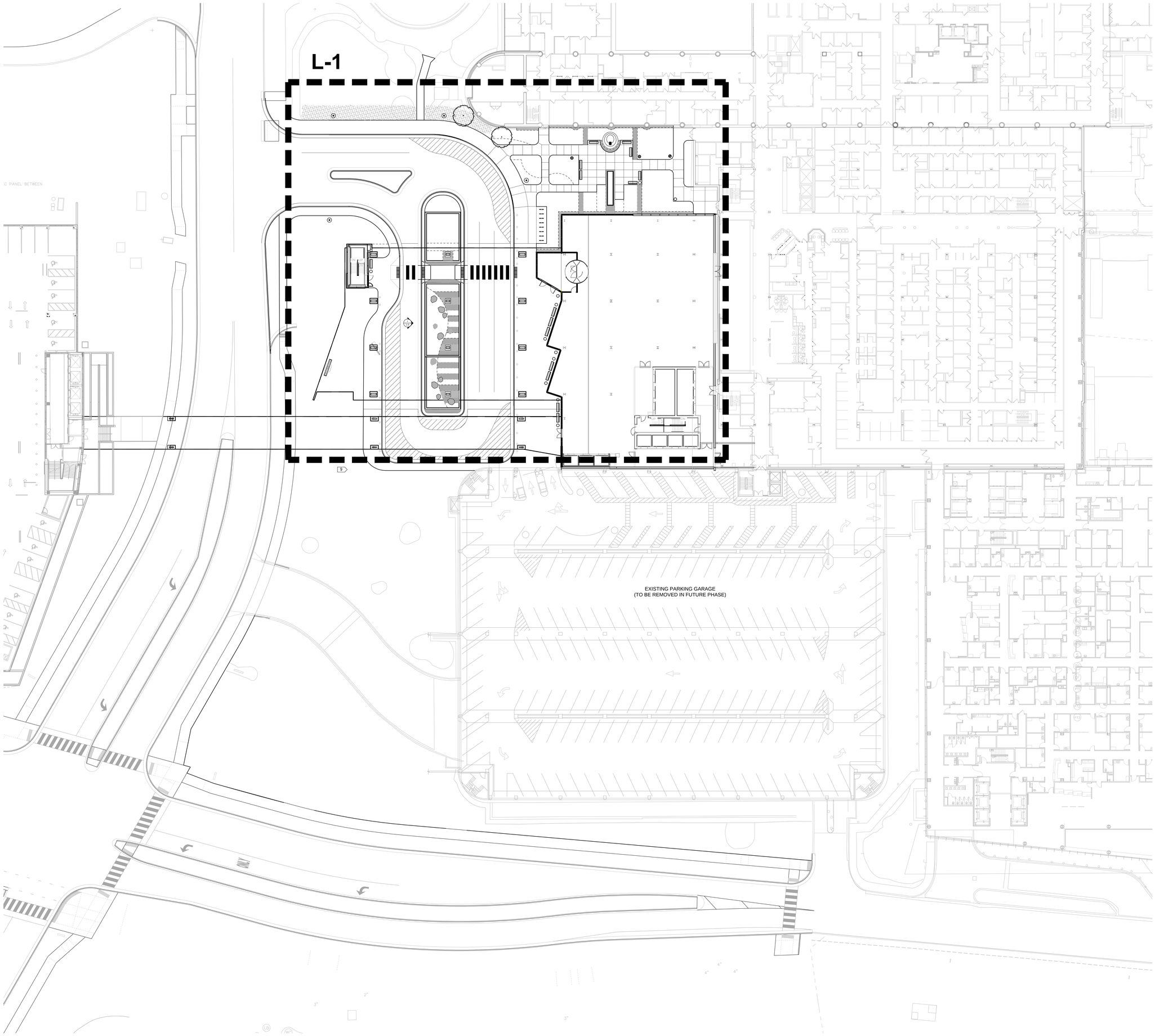

KEYNOTES:

1. BITUMINOUS PAVING
2. CONCRETE (REGULAR) WALK
3. EDGING
4. LOW PLANTER WALL (HEIGHT VARIES, PIP); REFER TO L-3s
5. BENCH 6'
6. PLANTER (Tournesol or sim)
7. DECORATIVE STONE AGGREGATE, TYPE 1, REFER TO 3/L210
8. DECORATIVE STONE AGGREGATE, TYPE 2, REFER TO 3/L210
9. PLANTING AREA
10. FUTURE SCULPTURE
11. DECORATIVE BOULDERS
12. BIKE RACK
13. RAISED BERM (2' to 3' ht.)
14. TRAFFIC BOLLARD, REFER TO CIVIL
15. LITTER & RECYCLING RECEPTACLE
16. ROADWAY POLE LIGHT
17. MULTI-HEAD PEDESTRIAN POLE LIGHT

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KEY PLAN

Drawing Title:

LAYOUT AND MATERIALS REFERENCE PLAN

Project No.: 006902.00 Checked by: Checker

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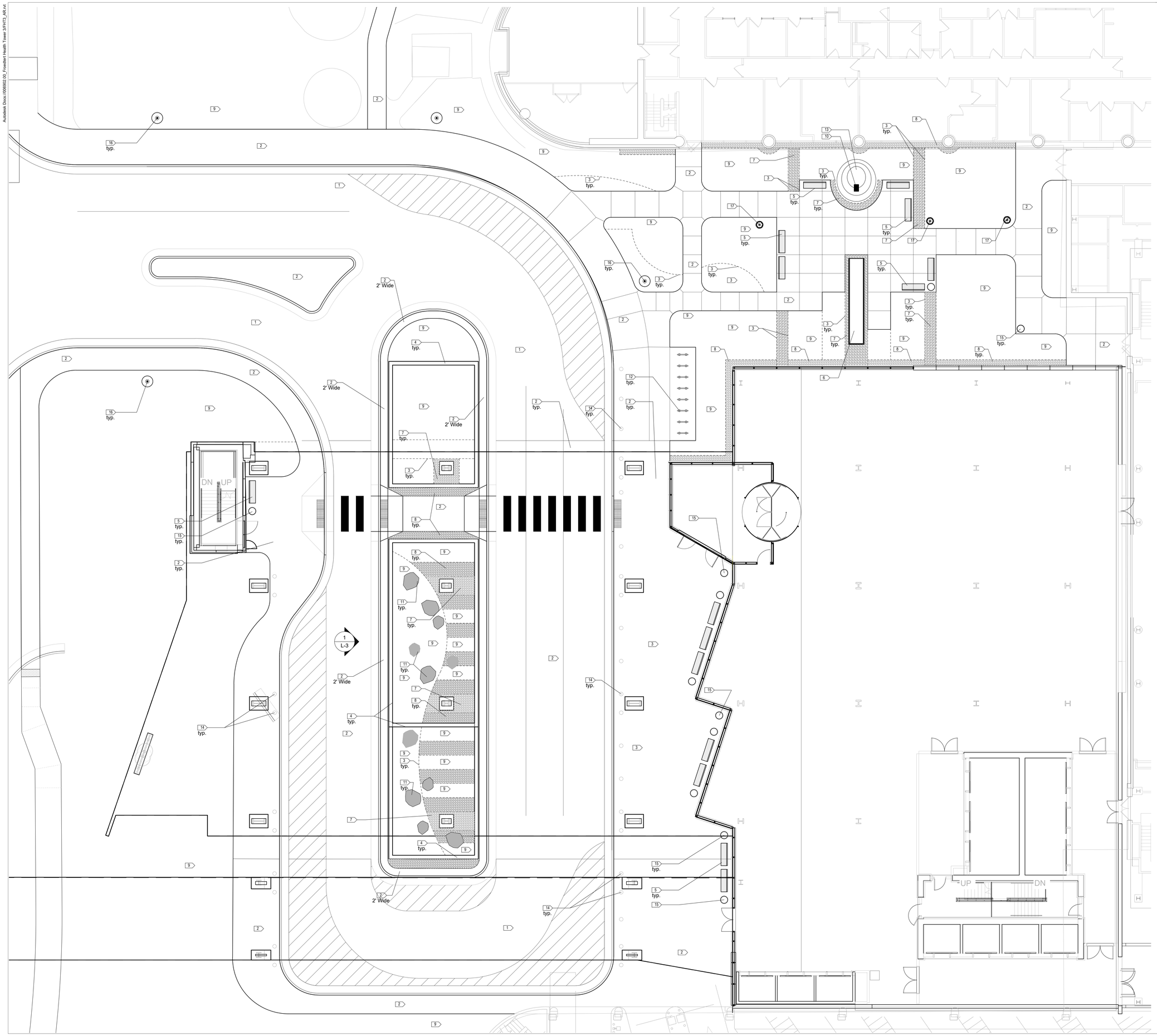

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KEY PLAN

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LAYOUT AND MATERIALS PLAN AREA NORTH

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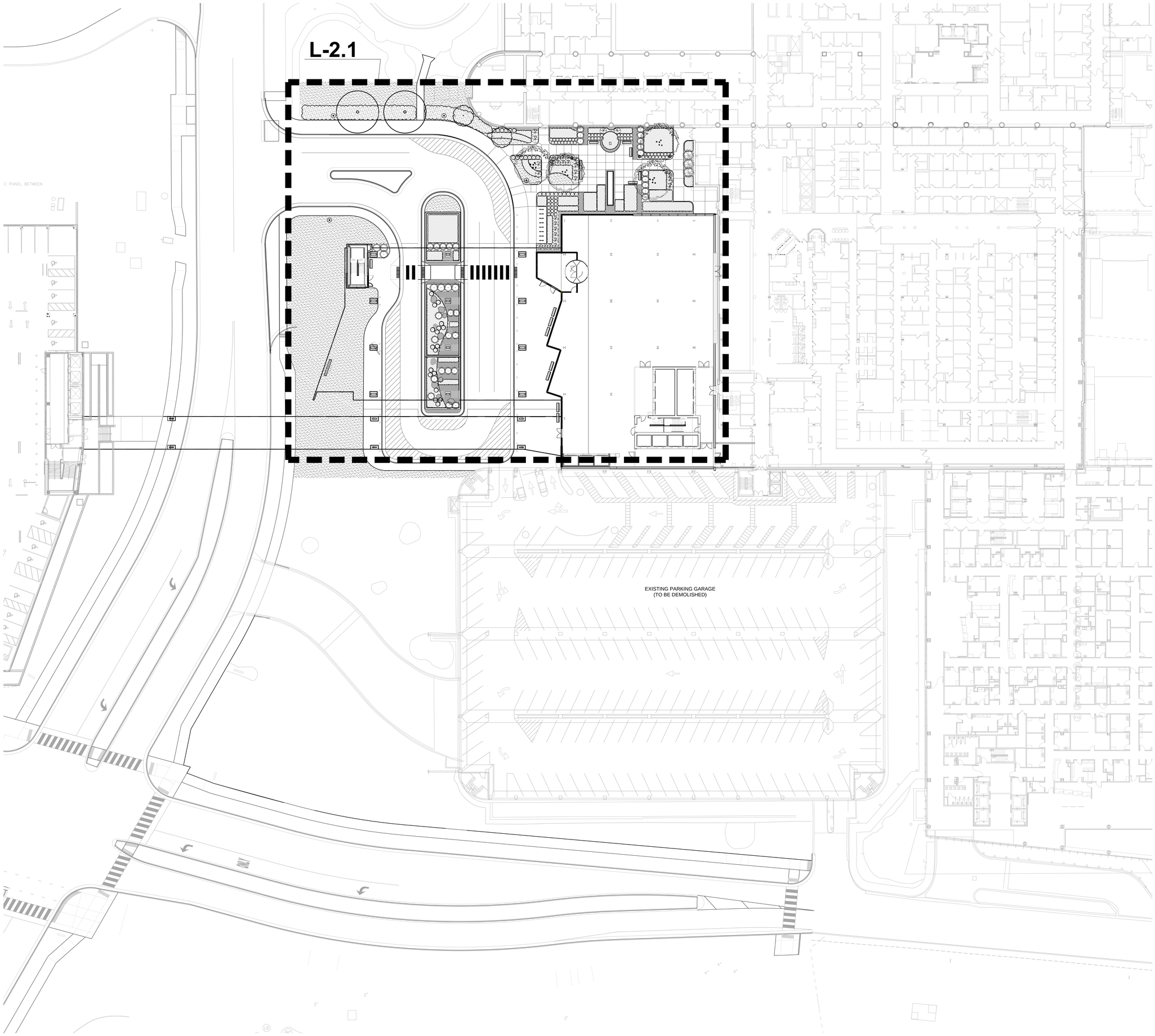

LEGEND

- EXISTING TREE TO REMAIN
- NEW SHADE TREE
- NEW ORNAMENTAL TREE
- NEW CONIFEROUS TREE
- NEW CONIFEROUS SHRUB
- NEW DECIDUOUS SHRUB
- NEW PERENNIALS
- NEW ORNAMENTAL GRASSES
- METAL EDGING
- TURF SOD/SEED

GENERAL NOTES:

1. ALL PLANTS SHALL BE MULCHED WITH SHREDDED HARDWOOD MULCH

2. ALL PLANTS SHALL BE IRRIGATED, INCLUDING ALL PLANTED AREAS UNDER THE OVERHANG

3. ALL LAWN AREAS SHALL BE SODDED

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PLANTING REFERENCE PLAN

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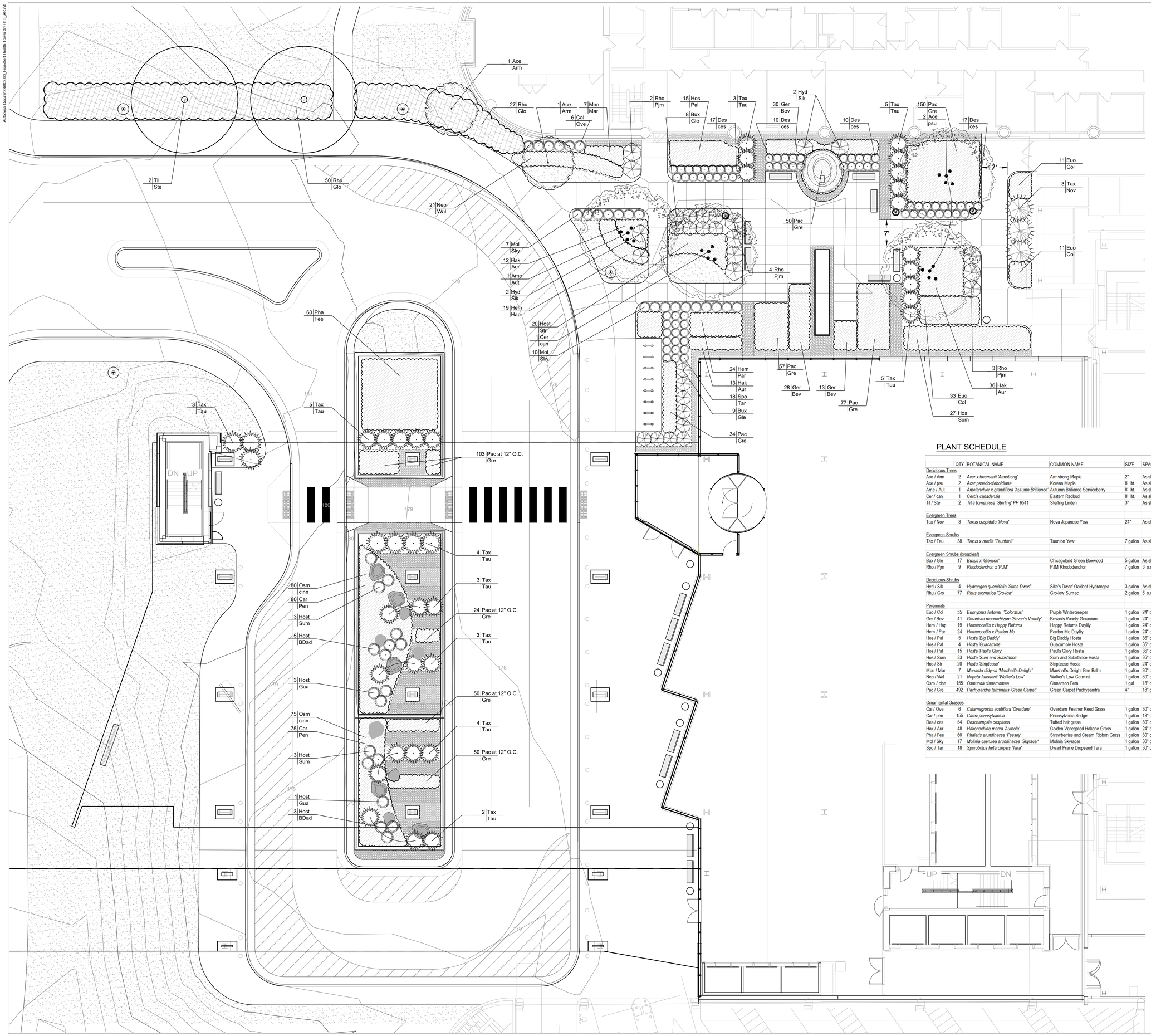

LEGEND

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PLANT SCHEDULE

	QTY	BOTANICAL NAME	COMMON NAME	SIZE	SPACING	ROOT	NOTES
Deciduous Trees							
Ace / Arm	2	*Acer x freemanii 'Armstrong'*	Armstrong Maple	2"	As shown	BB	
Ace / psu	2	*Acer psuedo-sieboldiana*	Korean Maple	8' ht.	As shown	BB	multi-stem
Ame / Aut	1	*Amelanchier x grandiflora 'Autumn Brilliance'*	Autumn Brilliance Serviceberry	8' ht.	As shown	BB	multi-stem
Cer / can	1	*Cercis canadensis*	Eastern Redbud	8' ht.	As shown	BB	multi-stem
Til / Ste	2	*Tilia tomentosa 'Sterling' PP 6511*	Sterling Linden	3"	As shown	BB	
Evergreen Trees							
Tax / Nov	3	*Taxus cuspidata 'Nova'*	Nova Japanese Yew	24"	As shown	BB	
Evergreen Shrubs							
Tax / Tau	38	*Taxus x media 'Tauntonii'*	Taunton Yew	7 gallon	As shown	Cont.	
Evergreen Shrubs (broadleaf)							
Bux / Gle	17	*Buxus x 'Glencoe'*	Chicagoland Green Boxwood	5 gallon	As shown	Cont.	
Rho / Pjm	9	*Rhododendron x 'PJM'*	PJM Rhododendron	7 gallon	5' o.c.	Cont.	
Deciduous Shrubs							
Hyd / Sik	4	*Hydrangea quercifolia 'Sikes Dwarf'*	Sike's Dwarf Oakleaf Hydrangea	3 gallon	As shown	Cont.	
Rhu / Gro	77	*Rhus aromatica 'Gro-low'*	Gro-low Sumac	2 gallon	5' o.c.	Cont.	
Perennials							
Euo / Col	55	*Euonymus fortunei 'Coloratus'*	Purple Wintercreeper	1 gallon	24" o.c.	Cont.	
Ger / Bev	41	*Geranium macrorhizum 'Bevan's Variety'*	Bevan's Variety Geranium	1 gallon	24" o.c.	Cont.	
Hem / Hap	19	*Hemerocallis x Happy Returns*	Happy Returns Daylily	1 gallon	24" o.c.	Cont.	
Hem / Par	24	*Hemerocallis x Pardon Me*	Pardon Me Daylily	1 gallon	24" o.c.	Cont.	
Hos / Pal	5	*Hosta 'Big Daddy'*	Big Daddy Hosta	1 gallon	36" o.c.	Cont.	
Hos / Pal	4	*Hosta 'Guacamole'*	Guacamole Hosta	1 gallon	36" o.c.	Cont.	
Hos / Pal	15	*Hosta 'Paul's Glory'*	Paul's Glory Hosta	1 gallon	36" o.c.	Cont.	
Hos / Sum	33	*Hosta 'Sum and Substance'*	Sum and Substance Hosta	1 gallon	36" o.c.	Cont.	
Hos / Str	20	*Hosta 'Striptease'*	Striptease Hosta	1 gallon	24" o.c.	Cont.	
Mon / Mar	7	*Monarda didyma 'Marshall's Delight'*	Marshall's Delight Bee Balm	1 gallon	30" o.c.	Cont.	
Nep / Wal	21	*Nepeta fassenii 'Walker's Low'*	Walker's Low Catmint	1 gallon	30" o.c.	Cont.	
Osm / cinn	155	*Osmunda cinnamomea*	Cinnamon Fern	1 gal	18" o.c.	Cont.	
Pac / Gre	492	*Pachysandra terminalis 'Green Carpet'*	Green Carpet Pachysandra	4"	18" o.c.	Cont.	
Ornamental Grasses							
Cal / Ove	6	*Calamagrostis acutiflora 'Overdam'*	Overdam Feather Reed Grass	1 gallon	30" o.c.	Cont.	
Car / pen	155	*Carex pennsylvanica*	Pennsylvania Sedge	1 gallon	18" o.c.	Cont.	
Des / ces	54	*Deschampsia cespitosa*	Tufted hair grass	1 gallon	30" o.c.	Cont.	
Hak / Aur	48	*Hakonechloa macra 'Aureola'*	Golden Variegated Hakone Grass	1 gallon	24" o.c.	Cont.	
Pha / Fee	60	*Phalaris arundinacea 'Feesey'*	Strawberries and Cream Ribbon Grass	1 gallon	30" o.c.	Cont.	
Mol / Sky	17	*Molinia caerulea arundinacea 'Skyracer'*	Molinia Skyracer	1 gallon	30" o.c.	Cont.	
Spo / Tar	18	*Sporobolus heterolepsis 'Tara'*	Dwarf Prairie Dropseed Tara	1 gallon	30" o.c.	Cont.	

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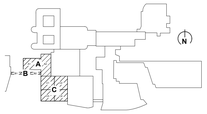

KEY PLAN

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PLANTING PLAN AREA NORTH

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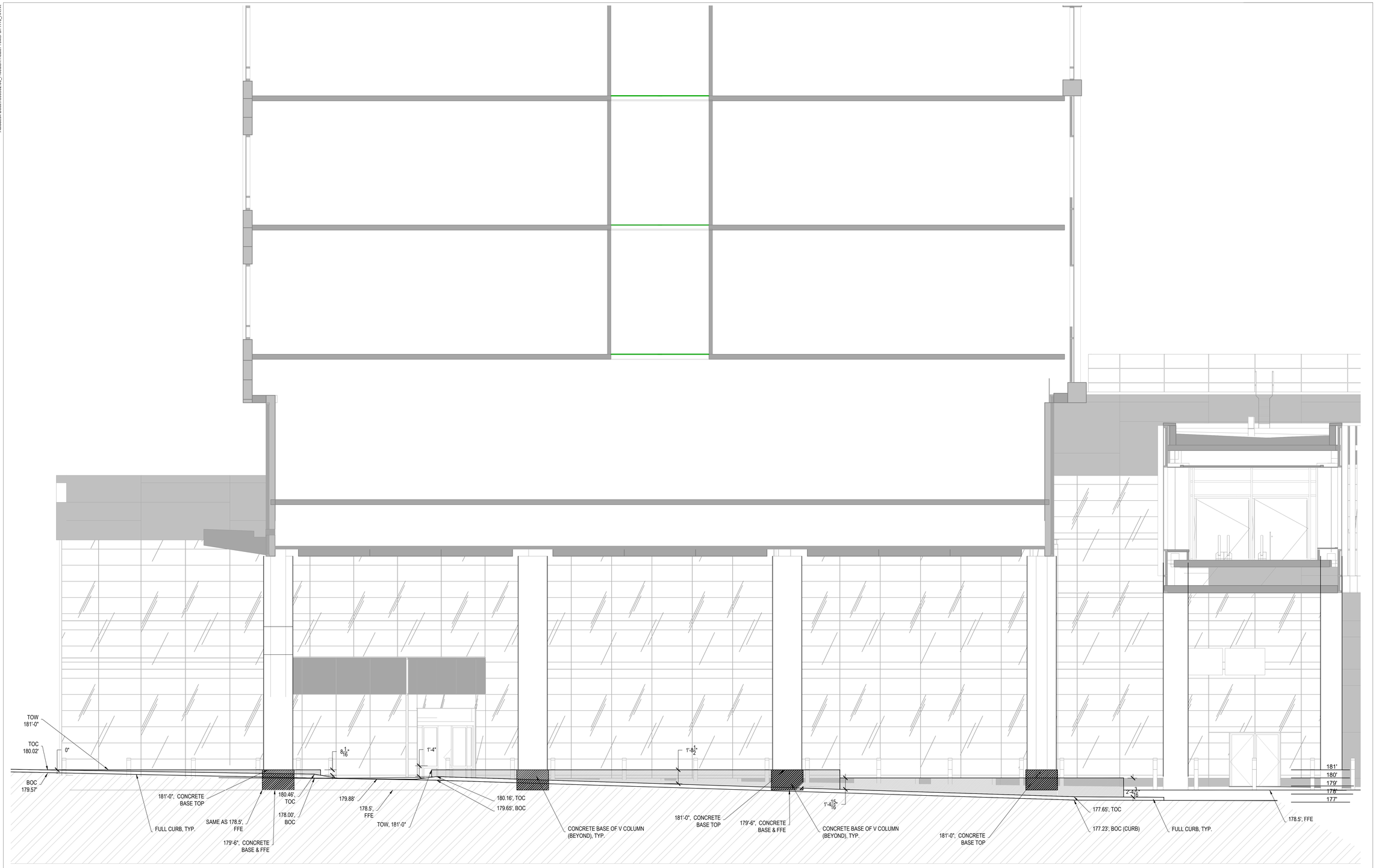

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DROP-OFF ISLAND PLANTER ELEVATION - LOOKING EAST

SCALE: 1/4"=1'-0"

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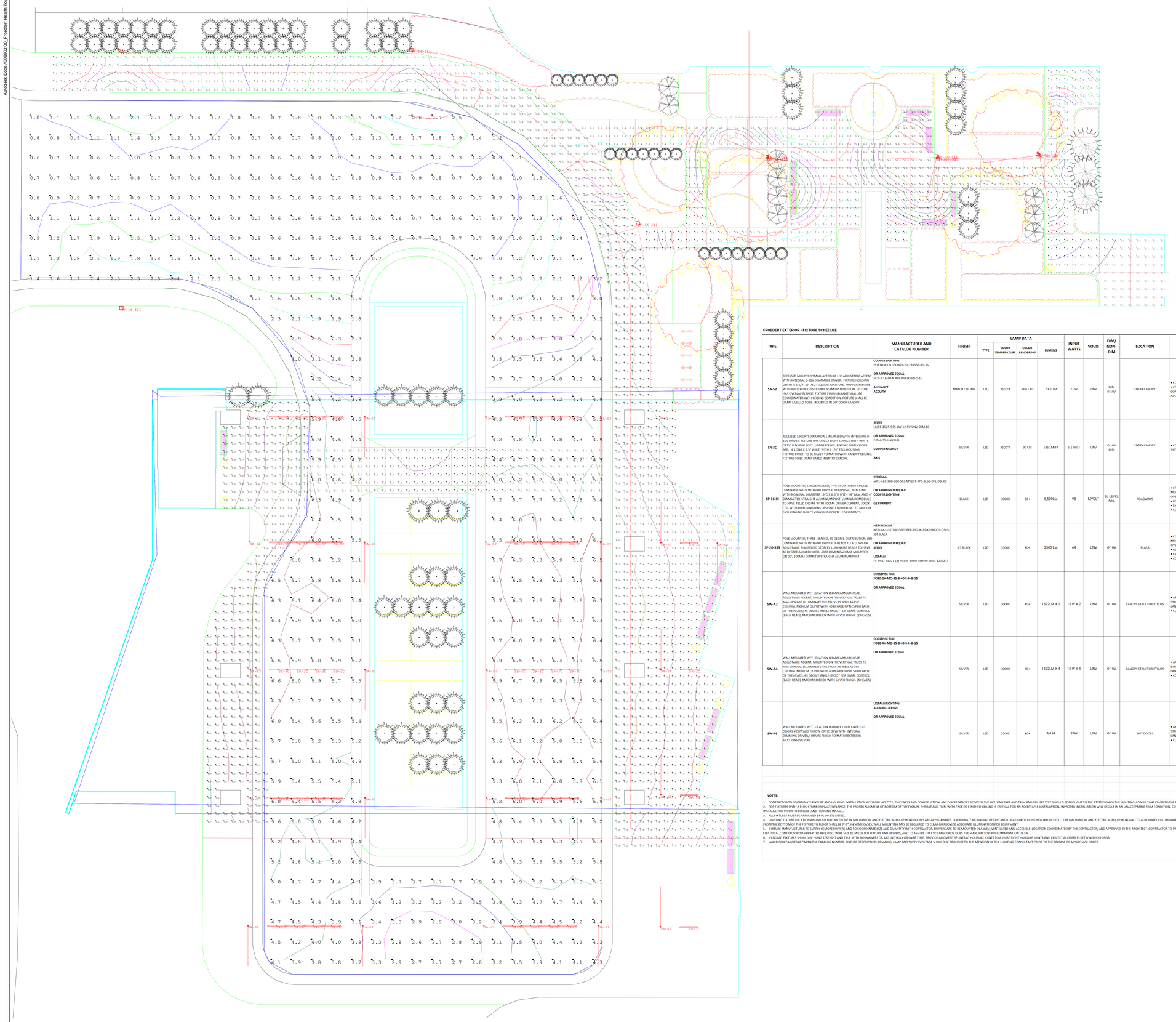

FROEDERT EXTERIOR - FIXTURE SCHEDULE

TYPE	DESCRIPTION	MANUFACTURER AND CATALOG NUMBER	FINISH	LAMP DATA				INPUT WATTS	VOLTS	DIM/ NON-DIM	LOCATION	NOTES
				TYPE	COLOR TEMPERATURE	COLOR RENDERING	LUMENS					
SA-S2	RECESSED MOUNTED SMALL APERTURE LED ADJUSTABLE ACCENT WITH INTEGRAL 0-10V DIMMABLE DRIVER. FIXTURE HOUSING DEPTH IS 5 1/2" WITH 2" SQUARE APERTURE. PROVIDE FIXTURE WITH WIDE FLOOD 55 DEGREE BEAM DISTRIBUTION. FIXTURE HAS OVERLAP FLANGE. FIXTURE FINISH/FLANGE SHALL BE COORDINATED WITH CEILING CONDITION. FIXTURE SHALL BE DAMP LABELED TO BE MOUNTED IN OUTDOOR CANOPY.	**COOPER LIGHTING** PORTFOLIO LDSQA2B-20-2R15SP-B0-35 **OR APPROVED EQUAL** VCP-1-18-40-N-ROUND-90-60-0-10 **ALPHABET** **ACCUITY**	MATCH CEILING	LED	3500°K	80+ CRI	2000 LM	21 W	UNV	DIM 0-10V	ENTRY CANOPY	• FIXTURE MOUNTED IN WOOD, GWB AND TILE CEILING. • CONTRACTOR TO COORDINATE CEILING THICKNESS AND CONSTRUCTION WITH FIXTURE HOUSING AND ORDER ACCORDINGLY
SR-3C	RECESSED MOUNTED NARROW LINEAR LED WITH INTERGRAL 0-10V DRIVER. FIXTURE HAS DIRECT LIGHT SOURCE WITH WHITE OPTIC LENS FOR SOFT LUMINESCENCE. FIXTURE DIMENSIONS ARE: 4' LONG X 2.5" WIDE WITH 4 1/4" TALL HOUSING. FIXTURE FINISH TO BE SILVER TO MATCH WITH CANOPY CEILING. FIXTURE TO BE DAMP RATED IN ENTRY CANOPY.	**SELUX** L6/R1-1C25-935-LW-12-5V-UNV-DIM-EC **OR APPROVED EQUAL** C-D-4-35-U-W-R-D **COOPER NEORAY** **AXIS**	SILVER	LED	3500°K	90 CRI	535 LM/FT	6.1 W/LF	UNV	0-10V DIM	ENTRY CANOPY	• CO TO COORDINATE MOUNTING WITH SPECIFIED CEILING SYSTEM.
SP-16-III	POLE MOUNTED, SINGLE HEADED, TYPE III DISTRIBUTION, LED LUMINAIRE WITH INTEGRAL DRIVER. HEAD SHALL BE ROUND WITH NOMINAL DIAMETER 19"D X 6.5"H WITH 24" ARM AND 4" DIAMMETER STRAIGHT ALUMINUM POST. LUMINAIRE MODULE TO HAVE KOLEDI ENGINE WITH 700MA DRIVER CURRENT, 3000K CCT, WITH DIFFUSING LENS DESIGNED TO DIFFUSE LED MODULE ENSURING NO DIRECT VIEW OF DISCRETE LED ELEMENTS.	**STHONIA** MR1-42C-700-30K-SR3-MVOLT-RPS-BLS0-DFL-DBLXD **OR APPROVED EQUAL:** **COOPER LIGHTING** **GE CURRENT**	BLACK	LED	3000K	80+	8,500LM	98	MVOLT	BL LEVEL 50%	ROADWAYS	• CIVIL ENGINEER SHALL REVIEW FIXTURE POST AND MOUNTING RELATIVE TO LOCAL CONDITIONS - INCLUDING OVERTURN & STRUCTURAL CALCULATIONS • REFER TO ENGINEER'S DRAWINGS FOR POLE FOUNDATION • ENGINEER TO VERIFY LOCAL WIND SPEEDS • CONTRACTOR SHALL COORDINATE FIXTURE MOUNTING
SP-20-3SS	POLE MOUNTED, THREE HEADED, 35 DEGREE DISTRIBUTION, LED LUMINAIRE WITH INTEGRAL DRIVER. 3 HEADS TO ALLOW FOR ADJUSTABLE AIMING (30 DEGREE). LUMINAIRE HEADS TO HAVE 45 DEGREE ANGLED HOOD. 4000 LUMEN PACKAGE MOUNTED ON 20', 350MM DIAMETER STRAIGHT ALUMINUM POST.	**NERI NEBULA** NEBULA-L-ST-3@35DEGREE-3500K-2500-SNOOT-G545-JET BLACK **OR APPROVED EQUAL:** **SELUX** **LIGMAN** FS-SOD-23021-(3) Heads-Beam Pattern-W30-12@277	JET BLACK	LED	3500K	80+	2500 LM	64	UNV	0-10V	PLAZA	• CIVIL ENGINEER SHALL REVIEW FIXTURE POST AND MOUNTING RELATIVE TO LOCAL CONDITIONS - INCLUDING OVERTURN & STRUCTURAL CALCULATIONS • REFER TO ENGINEER'S DRAWINGS FOR POLE FOUNDATION • ENGINEER TO VERIFY LOCAL WIND SPEEDS • CONTRACTOR SHALL COORDINATE FIXTURE MOUNTING
SW-A2	WALL MOUNTED WET LOCATION LED AREA MULTI-HEAD ADJUSTABLE ACCENT, MOUNTED ON THE VERTICAL TRUSS TO AIM UPWARD (ILLUMINATE THE TRUSS AS WELL AS THE CEILING). MEDIUM OUPUT WITH 40 DEGREE OPTICS FOR EACH OF THE HEADS; 45 DEGREE ANGLE SNOOT FOR GLARE CONTROL (EACH HEAD). MACHINED BODY WITH SILVER FINISH. (2 HEADS)	**ECOSENSE RISE** **FOBD-2H-MO-35-8-40-S-H-B-15** **OR APPROVED EQUAL**	SILVER	LED	3000K	80+	1522LM X 2	15 W X 2	UNV	0-10V	CANOPY STRUCTURE/TRUSS	• ARCHIETCT SHALL REVIEW FIXTURE MOUNTING WITH STRUCTURE, RELATIVE TO LOCAL CONDITIONS - INCLUDING LANDSCAPING AND SNOW LINE. • CONTRACTOR SHALL COORDINATE FIXTURE MOUNTING
SW-A4	WALL MOUNTED WET LOCATION LED AREA MULTI-HEAD ADJUSTABLE ACCENT, MOUNTED ON THE VERTICAL TRUSS TO AIM UPWARD (ILLUMINATE THE TRUSS AS WELL AS THE CEILING). MEDIUM OUPUT WITH 40 DEGREE OPTICS FOR EACH OF THE HEADS; 45 DEGREE ANGLE SNOOT FOR GLARE CONTROL (EACH HEAD). MACHINED BODY WITH SILVER FINISH. (4 HEADS)	**ECOSENSE RISE** **FOBD-4H-MO-35-8-40-S-H-B-15** **OR APPROVED EQUAL**	SILVER	LED	3000K	80+	1522LM X 4	15 W X 4	UNV	0-10V	CANOPY STRUCTURE/TRUSS	• ARCHIETCT SHALL REVIEW FIXTURE MOUNTING WITH STRUCTURE, RELATIVE TO LOCAL CONDITIONS - INCLUDING LANDSCAPING AND SNOW LINE. • CONTRACTOR SHALL COORDINATE FIXTURE MOUNTING
SW-46	WALL MOUNTED WET LOCATION LED FACE LIGHT OVER EXIT DOORS. FORWARD THROW OPTIC, 37W WITH INTEGRAL DIMMING DRIVER, FIXTURE FINISH TO MATCH EXTERIOR MULLIONS (SILVER)	**LIGMAN LIGHTING** **AU-30601-T3-02-** **OR APPROVED EQUAL**	SILVER	LED	3500K	80+	4,454	37W	UNV	0-10V	EXIT DOORS	• ARCHIETCT SHALL REVIEW FIXTURE MOUNTING WITH STRUCTURE, RELATIVE TO LOCAL CONDITIONS - INCLUDING LANDSCAPING AND SNOW LINE. • CONTRACTOR SHALL COORDINATE FIXTURE MOUNTING

NOTES:

1. CONTRACTOR TO COORDINATE FIXTURE AND HOUSING INSTALLATION WITH CEILING TYPE, THICKNESS AND CONSTRUCTION. ANY DISCREPANCIES BETWEEN THE HOUSING TYPE AND TRIM AND CEILING TYPE SHOULD BE BROUGHT TO THE ATTENTION OF THE LIGHTING CONSULTANT PRIOR TO THE RELEASE OF A PURCHASE ORDER.
2. FOR FIXTURES WITH A FLUSH TRIM OR PLASTER FLANGE, THE PROPER ALIGMENT OF BOTTOM OF THE FIXTURE THROAT AND TRIM WITH FACE OF FINISHED CEILING IS CRITICAL FOR AN ACCEPTABLE INSTALLATION. IMPROPER INSTALLATION WILL RESULT IN AN UNACCEPTABLE TRIM CONDITION. CONTRACTOR TO CAREFULLY REVIEW MANUFACTURERS INSTALLATION PRIOR TO FIXTURE AND HOUSING INSTALL.
3. ALL FIXTURES MUST BE APPROVED BY UL OR ETL LISTED.
4. LIGHTING FIXTURE LOCATION AND MOUNTING METHODE IN MECHANICAL AND ELECTRICAL EQUIPMENT ROOMS ARE APPROXIMATE. COORDINATE MOUNTING HEIGHT AND LOCATION OF LIGHTING FIXTURES TO CLEAR MECHANICAL AND ELECTRICAL EQUIPMENT AND TO ADEQUATELY ILLUMINATE METERS,GAUGES AND EQUIPMENT. MINIMUM HEIGHT FROM THE BOTTOM OF THE FIXTURE TO FLOOR SHALL BE 7'-6". IN SOME CASES, WALL MOUNTING MAY BE REQUIRED TO CLEAR OR PROVIDE ADEQUATE ILLUMINATION FOR EQUIPMENT.
5. FIXTURE MANUFACTURER TO SUPPLY REMOTE DRIVERS AND TO COORDINATE SIZE AND QUANTITY WITH CONTRACTOR. DRIVERS ARE TO BE MOUNTED IN A WELL VENTILATED AND ACCESIBLE LOCATION COORDINATED BY THE CONTRACTOR, AND APPROVED BY THE ARCHITECT. CONTRACTOR TO PROVIDE NEMA APPROVED ENCOLOSURES AS REQUIRED. ELECTRICAL CONTRACTOR TO VERIFY THE REQUIRED WIRE SIZE BETWEEN LED FIXTURE AND DRIVERS, AND TO ASSURE THAT VOLTAGE DROP DOES THE MANUFACTURER RECOMANDATION OF 5%
6. PENDANT FIXTURES SHOULD BE HUNG STREIGHT AND TRUE WITH NO WAVERS OR SAG INITIALLY OR OVER TIME. PROVIDE ALIGMENT SPLINES AT HOUSING JOINTS TO ASSURE TIGHT HAIRLINE JOINTS AND PERFECT ALIGMENTS BETWING HOUSINGS.
7. ANY DISCREPANCIES BETWEEN THE CATALOG NUMBER, FIXTURE DESCRIPTION, REMARKS, LAMP AND SUPPLY VOLTAGE SHOULD BE BROUGHT TO THE ATTENTION OF THE LIGHTING CONSULTANT PRIOR TO THE RELEASE OF A PURCHASE ORDER.

GENERAL SHEET NOTES

SHEET KEYNOTES

SHEET LEGEND

Froedtert & Medical College of Wisconsin

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101

NOT FOR CONSTRUCTION

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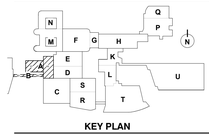
DESIGN REVIEW BOARD 1.18.2024

No.	Description	Date



KEY PLAN

Drawing Title:

LIGHTING FIXTURE SCHEDULE AND PHOTOMETRICS

Project No.: 006902.00 Checked by: Checker

E1

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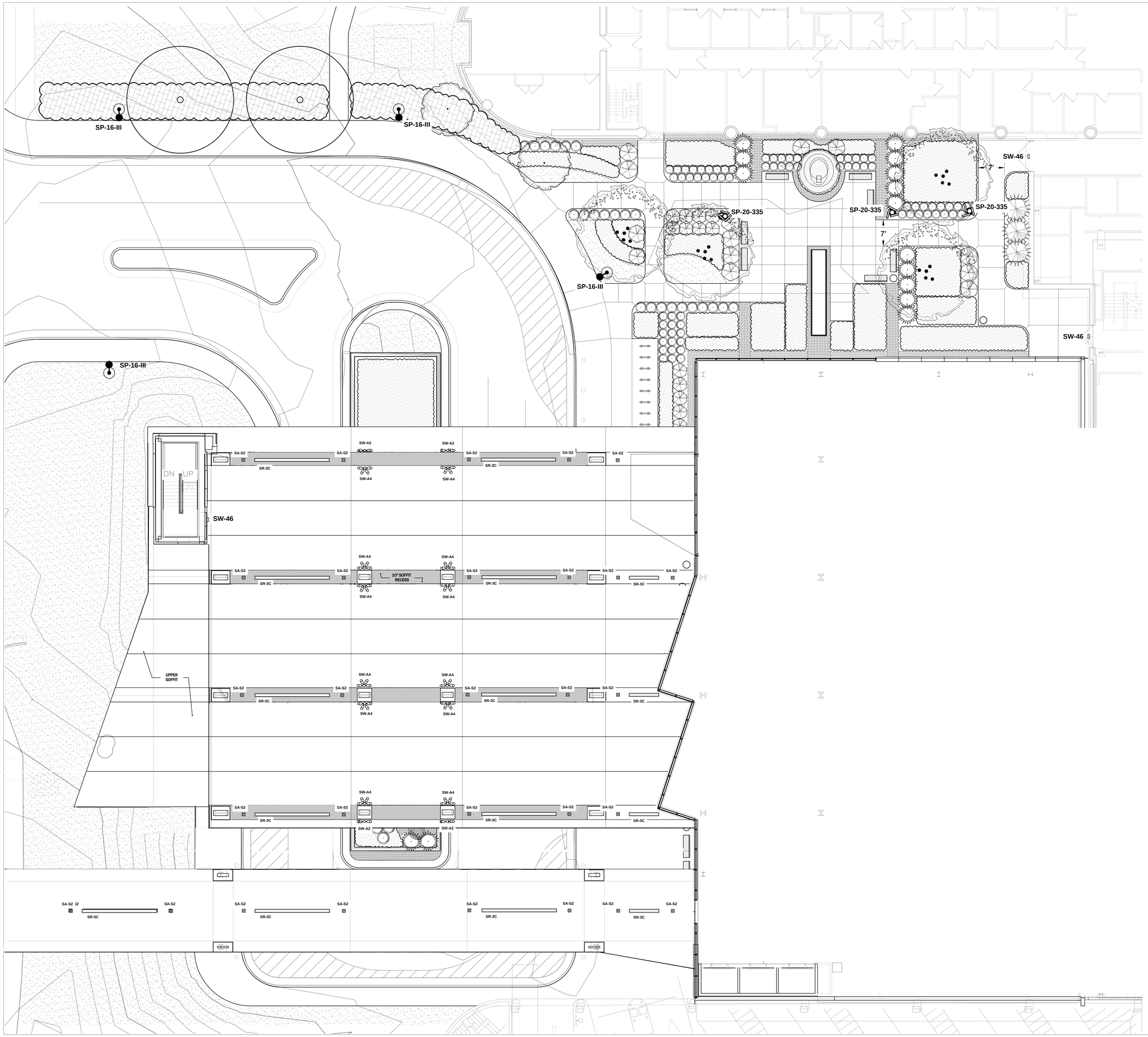

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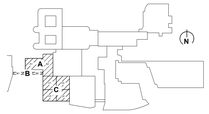

KEY PLAN

Drawing Title:

LIGHTING PLAN

Project No.: 006902.00 Checked by: Checker

E2

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Autodesk Docs://006902.00_Froedtert Health Tower 3/FHT3-CT_AR CS.rvt

SA-S2

Project | **Catalog #** | **Type**
Prepared by | **Notes** | **Date**

Portfolio
LDSQA2B | 2LB
2-inch LED Square Adjustable, New Construction
500, 1000, 1500, 2000 Lumens

Typical Applications
Healthcare • Hospitality • Retail • Institutional • Indoor Display & Signage

Interactive Menu
- Order Information page 2
- Product Specifications page 3
- Energy & Performance Data page 4
- Photometric Data page 4
- Connected Systems page 6
- Product Warranty

Product Certification | **Product Features** | **Control Compatibility**

Top Product Features
- Square adjustable accent or lensed wall wash (flat or sloped ceilings)
- Excellent light control and low aperture brightness
- 365° rotation and 45° tilt holds any aiming position
- Die-cast aluminum reflectors; Holds 2 lens media
- 6 color temperatures: 2400K, 2700K, 3000K, 3500K, 4000K and 5000K CCT
- CRI: 80, 90 or 97; D2W™ option from 3000K to 1850K;
- Lumens: 500-2,800; Field-interchangeable optics: 15°, 25°, 40° or 55°
- 0-10V 1% dimming driver; Optional 100%-1% (DALI), 0-10V or DMX drivers

Dimensional and Mounting Details

COOPER Lighting Solutions — PS520181EN page 1, November 15, 2023 3:15 PM

Portfolio — LDSQA2B | 2LB
Order Information
SAMPLE ORDER NUMBER: LDA2B159030D010

Housing	Lumens	Distribution	CRI	Color	Voltage
LDSQA2B=New Construction Adjustable 2" Nominal Aperture; LDSQA2BCP=New Construction Adjustable 2" Nominal Aperture Chicago Plenum	05=500 lumens; 10=1000 lumens; 15=1500 lumens; 20=2000 lumens	2R15SP=15° optic; 2R20=20° optic; 2R25NFL=25° optic; 2R30=30° optic; 2R35=35° optic; 2R40FL=40° optic; 2R45=45° optic; 2R50=50° optic; 2R55WFL=55° optic; 2R60=60° optic; 2R65=65° optic; 2R70=70° optic; Blank=no optic (order accessory reflector)	80=80 CRI minimum; 90=90 CRI minimum; 97=97 CRI minimum	80 CRI: 27=2700K, 30=3000K, 35=3500K, 40=4000K, 50=5000K; 90 CRI: 24=2400K, 27=2700K, 30=3000K, 35=3500K, 40=4000K, 50=5000K; 97 CRI: 27=2700K, 30=3000K	Blank=120-277V; 3=347V 0-10V only 1000-2000 lumens

Dim to Warm (1000 & 1500 lumens only): 9030D2W=Dim to warm, 90CRI
Tunable White (1000 lumens only): W2N902050 = 2000K-5000K; W2N902765 = 2700K-6500K; Choose 5LT or DE010 driver

Driver	Options
D010=0-10V Dimming 1%-100%, 120-277V; D010A=0-10V Dimming 1%-100%, 120-277V for installations with above ceiling access; D010TR=0-10V 120-277V Dimming 1%-100%, or 120V 5% line voltage dimming; D010ATR=0-10V 120-277V Dimming 1%-100%, or 120V 5% line voltage dimming for installations with above ceiling access; DE010=0-10V Linear Dimming, 0% to 100%, 120V-277V; DSLT=Fifth Light® DALI DT6 Logarithmic Dimming, 0% to 100%, 120V-277V; DMX=DMX/RDM Logarithmic Dimming, 0% to 100%, 120V-277V; DMXC5=DMX/RDM Logarithmic Dimming, 0% to 100%, 120V-277V, with RJ45 connection; DLE=Lutron Ecosystem dimming 1% to 100%, 120V-277V; DLV=Low voltage dimming driver 1-100% for use with DLVP system	EMBOD=Bodine® Emergency Module with Remote Test Switch; EMBOD7ST=Bodine® Emergency Module with Self Test Remote Test Switch; EM7=7W Emergency Module with Remote Test Switch; EM14=14W Emergency Module with Remote Test Switch (not for use with DLVP driver); EMV7=7W Low Voltage Emergency Module with Remote Test Switch (for use with DLVP driver); EMV14=14W Low Voltage Emergency Module with Remote Test Switch (for use with DLVP driver); WPST=Factory installed Wavelinx (includes control module, sensor, cable, tilemount and ceiling mount sensor); WLST=Factory installed WaveLinx LITE Sensor Kit; WPN = WaveLinx PRO Wireless Node without sensor

SAMPLE ORDER NUMBER: LDA2B159030D010

Trim	Reflector	Flange	Finish
2LB=2" trim	ASQC=Square cast aluminum; ALSQC=Square lensed cast aluminum; ASWSQC=Square lensed wall wash cast aluminum; APINSQ=Square adjustable Pinhole; ALPINSQ=Square adjustable lensed Pinhole	1=Self-flanged; 2=White Painted Self-flanged; 3=Rimless; Blank=Pinhole	MW=Matte White; MB=Matte Black; MMS=Matte Metallic Silver

Accessories
2SQAPR=Square plaster lathing ring (order with rimless option); EDC2SQ=Ceiling extension kit for ceilings 7/8" - 1-1/4"; Bar Hangers: HB26=Pair C-channel bar hanger, 26" long; HB50=Pair C-channel bar hanger, 50" long; RMB22=Pair wood joist bar hanger 22" long; Connected Lighting Systems: WPST = Field installed WaveLinx sensor Kit; WLST = Field installed WaveLinx LITE Sensor Kit
Beam Forming Optic (required when ordering no optic for distribution): 2R15SP=15°, 2R20=20°, 2R25NFL=25°, 2R30=30°, 2R35=35°, 2R40FL=40°, 2R45=45°, 2R50=50°, 2R55WFL=55°, 2R60=60°, 2R65=65°, 2R70=70°
L100 lenses - color filters: L112=Red Gel Filter; L114=Ultraviolet, Dichoric Filter; L120=Red, Dichoric Filter; L121=Amber, Dichoric Filter; L122=Yellow, Dichoric Filter; L123=Green, Dichoric Filter; L124=Daylight Blue, Dichoric Filter; L125=Blue, Dichoric Filter; L127=Cosmetic (2700K), Dichoric Filter; L131=Amber, Gel Filter
L100 lenses - optical lenses: L110N=Diffuse Sandblasted Lens: Provides an even beam spread - especially useful in wall washing. L111=Soft Focus Lens: Smooths irregular beam pattern while maintaining high controlled illumination levels and beam angles. L113=Prismatic Spread Lens: Provides a symmetrical broadening of lamp beam. Suitable when a wide, uniform light distribution is required. L115=Linear Spread Lens: Fans out the beam 5° (2-1/2" to each side) to produce a wide rectangular pattern. L100MB=Black finished metal hexagonal-cell louver - controls light spill while retaining lamp optics.

COOPER Lighting Solutions — PS520181EN page 2

SR-3C

Date: Customer: Project: Type: Qty: — selux

M60
LED Regressed

Order Code:

Series	L60J Multi-Mount Form; L6JR1 Continuous Flange (Flanged Endcaps); L6JR2 Continuous Flange (Flangeless Endcaps)
Light Engine	1C45 80CRI-916lm 90CRI-770lm 11.1W per foot; 1C40 80CRI-859lm 90CRI-722lm 9.9W per foot; 1C35 80CRI-751lm 90CRI-631lm 8.7W per foot; 1C30 80CRI-672lm 90CRI-565lm 7.3W per foot; 1C25 80CRI-535lm 90CRI-450lm 6.1W per foot; 1C20 80CRI-444lm 90CRI-373lm 4.9W per foot
CCT	927 2700K 90+ CRI; 930 3000K 90+ CRI; 935 3500K 90+ CRI; 940 4000K 90+ CRI; 827 2700K 80+ CRI; 830 3000K 80+ CRI; 835 3500K 80+ CRI; 840 4000K 80+ CRI; RGBW (consult factory)
Shielding	LW LED Optimized White Lens; MI Clear Lens with Microprism; NB LMO Symmetric with Satine Lens; A2 LMO Asymmetric 20° Wall Washer with Satine Lens; A5 LMO Asymmetric 5° Wall Grazer with Satine Lens; BW LMO Batwing with Satine Lens
Mounting L60J	SF2 Spackle Flange (⅝" Drywall)
Mounting L6JR1 or L6JR2	TB T-Bar Length with suspension clips; TBS T-Bar Length with 1" ¼"-20 Stud; RC Rotating Crossbar (Ceilings ¼" to 2" thick); TS 1" ¼"-20 Stud
Nominal Fixture Length	01 1 ft.; 02 2 ft.; 03 3 ft.; 04 4 ft.; 05 5 ft.; 06 6 ft.; 07 7 ft.; 08 8 ft.; XX Runs (over 8') and Configurations, round up to the nearest foot and replace the "xx" with the # (i.e. 09=09' nominal).
Finish	WH White; BL Semi-Matte Black; SV Silver; SP Specify Premium Color
Voltage	120 120V; 277 277V; UNV 120V through 277V 50/60hz capable; 347 347V (consult factory)
Driver	DIM 0-10V 1% (Linear); DIL eldoLED 1% ECOdrive 0-10V (Logarithmic); DED eldoLED 1% ECOdrive DALI-2 (Logarithmic); D01 eldoLED 0.1% SOLOdrive 0-10V (Linear); DL01 eldoLED 0.1% SOLOdrive 0-10V (Logarithmic); DE1 Lutron 1% EcoSystem; DC3 Lutron 1% 3-Wire (consult factory)
Fixture Options	FS In-line Fuse; SS Separate Switching; CS Custom Switching (consult factory); CCEA Chicago Plenum (consult factory)
Emergency Options	EC Emergency Circuit Wiring; EMR Remote Micro Inverter (consult factory); EM Integral EM Battery Pack (non-IC Rated)
Configuration Options	L9 Lit Horizontal 90° Corner; T9 Lit "T" section 90° Corner; X9 Lit "X" section 90° Corner; V9 Vertical Mount with Lit Inside 90° Corners; LC Lit Horizontal Custom Angle Corners (consult factory); TC Lit "T" section Custom Angle Corners (consult factory); XC Lit "X" section Custom Angle Corners (consult factory); VC Vertical Mount with Lit Inside Custom Angle Corners (consult factory)

*1' fixture only available with 1C35 light engine. Individual fixtures, Runs, and Configurations are supplied in nominal lengths to ensure full, even, illumination. See pages 2 through 6 for additional details.

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SP-20-335

NERI

Project location: / Project name: / Model code #: / Date / Fixture type: / Rev.01 09/2022

NEBULA L (6") — Nebula Large luminaire head consists of two sources. Each source can be independently configured. The overview below lists available options.

NEBULA L CONFIGURATION # — LUMINAIRE HEAD DOWN LIGHT
3 Heads

Section	Optic system	CCT	Lumen output	Driver function	Aperture lens
NEBULA L - EMPTY					
NEBULA L - ST	Type II; Type IV; Type V	2,700K; 3,000K; 3,500K; 4,000K	2,500; 4,000	1-10V	Prismatic flat glass
NEBULA L - PR	10° Very narrow spot; 20° Narrow spot; 35° Medium narrow spot; 70° Medium wide flood	2,700K; 3,000K; 3,500K; 4,000K	2,500; 3,500; 4,500	1-10V	Transparent flat glass
NEBULA L - RGBW	15° Very narrow spot; 25° Narrow spot; 35° Medium narrow spot	RGBW	500 lm (R); 390 lm (G); 133 lm (B); 750 lm (W)	DMX	Transparent flat glass
NEBULA L - A	Type II; Type V	Amber	700 lm (A)	1-10V	Prismatic flat glass

NEBULA L - SNOOT: snoot 30°; snoot 45°
NEBULA L - REFRACTOR SCREEN: Linear Diffusion
NEBULA L - FINISH — Powder coating: Neri grey; Pure white; White aluminum; Grey aluminum; Jet black; Moss green — Anodizing: Silver anodizing; Gold anodizing; Bronze anodizing; Brown anodizing; Black anodizing

DOWN — NEBULA L LUMINAIRE HEAD DOWN LIGHT: ST, PR, RGBW, A; Aperture lens: Transparent flat glass, Prismatic flat glass

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SP-16-III

MR1 LED
LED Area Luminaire

Catalog Number / Notes / Type

Specifications
EPA: 0.54 ft² (0.05 m²)
Length: 24-1/2" (62.2 cm)
Width: 18-5/8" (47.3 cm)
Height: 6-3/8" (16.2 cm)
Weight (max): 31 lbs (14.7 kg)

A+ Capable Luminaire
This item is an A+ capable luminaire, which has been designed and tested to provide consistent color appearance and system-level interoperability.
- All configurations of this luminaire meet the Acuity Brands' specification for chromatic consistency
- This luminaire is A+ Certified when ordered with DTL® controls marked by a shaded background. DTL DLL equipped luminaires meet the A+ specification for luminaire to photocontrol interoperability1
- This luminaire is part of an A+ Certified solution for ROAM®2 control networks, providing out-of-the-box control compatibility with simple commissioning, when ordered with drivers and control options marked by a shaded background

To learn more about A+, visit www.acuitybrands.com/aplus.
1. See ordering tree for details.
2. A+ Certified Solutions for ROAM require the order of one ROAM node per luminaire. Sold Separately: Link to Roam; Link to DTL DLL

Ordering Information — EXAMPLE: MR1 LED 42C 700 40K SR5 MVOLT SPA DDBXD

Series	LEDs	Drive Current	Color temperature	Distribution	Voltage	Mounting
MR1 LED	42C 42 LEDs (one engine)	350 350mA; 530 530mA; 700 700mA	30K 3000K; 40K 4000K; 50K 5000K	SR2 Type II; SR3 Type III; SR4 Type IV; SR5 Type V	MVOLT; 120; 208; 240; 277; 347; 480	SPA Square pole mounting; RPA Round pole mounting; WBA Wall bracket

Control Options	Other Options	Finish (required)
Shipped installed: PER NEMA twist-lock receptacle only (no controls); PER5 Five-wire receptacle only (no controls); PER7 Seven-wire receptacle only (no controls); DMG 0-10v dimming wires pulled outside fixture (for use with an external control, ordered separately); BL30 Bi-level switched dimming, 30%; BL50 Bi-level switched dimming, 50%	SF Single fuse (120, 277, 347V); DF Double fuse (208, 240, 480V); DFL Diffusing lens	DDBXD Dark bronze; DBLXD Black; DNAXD Natural aluminum; DWHXD White; DDBTXD Textured dark bronze; DBLBXD Textured black; DNATXD Textured natural aluminum; DWHGXD Textured white

Ordering Information — Drilling; Accessories; Tenon Mounting Slipfitter

Performance Data
Lumen Output

LEDs	Drive Current (mA)	System Watts	Dist. Type	Lumens	B	U	G	LPW
42C (42 LEDs)	350	49W	SR2	5,128	1	0	1	105
			SR3	5,109	1	0	1	104
			SR4	5,075	1	0	1	104
			SR5	5,403	3	0	1	110
	530	75W	SR2	7,148	2	0	2	95
			SR3	7,121	1	0	2	95
			SR4	7,074	1	0	2	94
			SR5	7,531	3	0	2	100
	700	98W	SR2	8,564	2	0	2	87
			SR3	8,533	2	0	2	87
			SR4	8,476	2	0	2	86
			SR5	9,023	3	0	2	92

Lumen Ambient Temperature (LAT) Multipliers

Ambient		Lumen Multiplier
0°C	32°F	1.06
10°C	50°F	1.03
20°C	68°F	1.01
25°C	77°F	1.00
30°C	86°F	0.99
40°C	104°F	0.96

Projected LED Lumen Maintenance

Operating Hours	0	25,000	50,000	100,000
Lumen Maintenance Factor	1.0	0.96	0.93	0.85

Photometric Diagrams — SR2, SR3, SR4, SR5

FEATURES & SPECIFICATIONS
INTENDED USE — Ideal for parking areas, street lighting, walkways and car lots.
CONSTRUCTION — Single-piece die-cast aluminum housing with nominal wall thickness of .012". Die-cast doorframe has impact-resistant, tempered glass lens (3/16" thick). Doorframe is fully gasketed with one-piece tubular silicone.
FINISH — Exterior parts are protected by a zinc-infused Super Durable TGIC thermoset powder coat finish that provides superior resistance to corrosion and weathering.
OPTICS — Precision acrylic refractive optics for optimum light distribution through the flat glass lens.
ELECTRICAL — Light engine consists of 42 high-efficacy LEDs mounted to a metal-core circuit board and aluminum heat sink.
INSTALLATION — Included mounting block and integral arm facilitate quick and easy installation.
LISTINGS — CSA certified to U.S. and Canadian standards. IP65 rated. U.S. Patent No. D556,357.
BUY AMERICAN ACT; WARRANTY — 5-year limited warranty.

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SW-4 6

LIGMAN — AUSTIN 1 (AU-30601) — Outdoor | Surface facade luminaires | AUSTIN

Luminaire Structure
- Die-cast aluminium housing and frame
- Pre-treated before powder coating ensuring high corrosion resistance
- Two cable entries for through wiring
- Stainless steel fasteners in grade 304 with zinc flake coating (ZFC)
- Durable silicone rubber gasket
- High-efficiency PMMA lens
- Clear toughened glass
- Integral control gear

Optic: M, W, EW, T1, T2, T3, T4, ME
Product colour: 01 - Black (RAL 9011); 02 - Dark Grey (RAL 7043); 03 - White (RAL 9003); 05 - Matt Silver (RAL 9006); 06 - Bronze (RAL 6014)
Special finishes upon request: SU01 - Concrete - Urban; SU02 - Softscape - Urban; SU03 - Stone - Urban; SU04 - Corten - Urban; SW01 - Oak - Woodland; SW02 - Walnut - Woodland; SW03 - Pine - Woodland

We reserve the right to make technical and design changes. 02:46, 19-12-2023 — https://www.ligman.com/austin-1-au-30601/
THAILAND — LIGMAN Lighting Co.,Ltd. 17/2 Moo 4, Monthong, Bang Nam Priao, 24150 Chachoengsao - Thailand — info@ligman.com

SW-A2

ECOSENSE — RISE
OVERVIEW • SPECIFICATIONS • ORDERING — INTERIOR + EXTERIOR | F080 DUO
DATE | PROJECT | FIRM | TYPE

RISE IS A SYSTEM OF BEAUTIFULLY DESIGNED OUTDOOR RATED LUMINAIRES THAT PROVIDE EFFICIENT AND POWERFUL LIGHT USING THE LATEST IN LED TECHNOLOGY. RISE F080 DUO IS A UNIQUE CONFIGURATION THAT PAIRS UP TWO RISE F080 SINGLES ALLOWING YOU TO DOUBLE YOUR LUMEN POWER, DELIVERING UP TO 2340 LUMENS. THIS UNIQUE FIXTURE CAN BE USED TO POWERFULLY LIGHT ONE OBJECT OR AIMED SEPARATELY, ALLOWING YOU TO ILLUMINATE MULTIPLE APPLICATIONS. THIS POWERFUL AND COMPACT LED LIGHT FIXTURE CAN BE USED IN SPOT, ACCENT, LANDSCAPE AND FLOODLIGHT APPLICATIONS. ITS UNIQUE MACRO™ LOCK FEATURE ALLOWS FOR FULL 180 DEGREE TILT AND 360 DEGREE PAN AIMABILITY OF EACH FIXTURE HEAD USING ONLY ONE TWIST.

FEATURES:
- POWERFUL CBCP
- EXTREMELY COMPACT
- POWERFUL OUTPUT UP TO 2340 LUMENS
- MACRO™ LOCK - 180° TILT AND 360° PAN
- 12 UNIQUE BEAM ANGLES
- MULTIVOLT (110V-277 V)
- 8 CCTS: 2200K THROUGH 6500K
- 80+ AND 90+ CRI
- DIMMABLE TO 5%
- IP66 RATED

FIXTURE MODEL	FIXTURE CONFIG.	POWER/LUMEN OUTPUT*	CCT/COLOR	CRI	BEAM ANGLE	FINISHES	ACCESSORIES	WIRING AND MOUNTING
F080	2V - 2 Heads, Vertical Orientation; 2H - 2 Heads, Horizontal Orientation	LO - Low Output; MO - Medium Output; HO - High Output	22 - 2200K; 25 - 2500K; 27 - 2700K; 30 - 3000K; 35 - 3500K; 40 - 4000K; 50 - 5000K; 65 - 6500K; RD - Red; GR - Green; BL - Blue; AM - Amber; *2200K and 2500K not available in 40°, 60°, 70° and 90°	8 - 80; 9 - 90*; X - For RD, GR, BL, AM; *90 CRI not available in 2200K, 2500K, 5000K, and 6500K	05 - Laser Spot (5°); 10 - Very Narrow Spot (10°); 15 - Narrow Spot (15°); 20 - Spot (20°); 40 - Flood (40°); 60 - Medium Flood (60°); 70 - Wide Flood (70°); 90 - Very Wide Flood (90°); E1 - Elliptical 1 (15°x60°); E2 - Elliptical 2 (30°x60°); E3 - Elliptical 3 (60°x15°); E4 - Elliptical 4 (60°x30°)	K - Black; Z - Bronze; S - Silver; W - White; C - Custom*; *Provide RAL #	X - No Accessory; H - Half Snoot; F - Full Snoot	B - 10' External Cable Side Exit; Surface Mount; UL Listed; C* - 10' External Cable Bottom Exit; Surface Mount - 1/2" NPT; UL Listed; D* - 10' External Cable Side Exit; Surface Mount; CE Listed; E* - 10' External Cable Bottom Exit; Surface Mount - 1/2" NPT; CE Listed

*SEE PHOTOMETARY CHART FOR LUMEN DATA

PERFORMANCE WATTS	POWER	LUMEN OUTPUT 5°	LUMEN OUTPUT 40°	EFFICACY 5°	EFFICACY 40°	CBCP 5°	CBCP 40°
8	Low Output	618	858	76	107	43,982	1,410
15	Medium Output	1,062	1,522	71	101	75,623	2,502
23	High Output	1,488	2,280	65	97	105,982	3,748

ALL LUMEN DATA IS FROM 4000K 80CRI FIXTURES. PLEASE SEE PHOTOMETRY SPEC SHEET FOR ADDITIONAL LUMEN DATA.
COLOR RENDERING INDEX 80+, 90+; COLOR CONSISTENCY 3-STEP MACADAM ELLIPSE

LUMEN DEPRECIATION WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
LOW	>60,500* >(109,000)**	>60,500* >(109,000)**	>60,500* >(109,000)**	>60,500* >(109,000)**
MEDIUM	>60,500* >(109,000)**	>60,500* >(109,000)**	>60,500* >(109,000)**	>60,500* >(109,000)**
HIGH	>60,500* >(181,000)*	>36,000*	>60,500* >(69,800)**	>33,200*

* ENERGY STAR REPORTED TESTING HOURS TO DATE. CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR ** ESTIMATED HOURS

NOTE: Information on this Spec Sheet is subject to change, please visit ecosenselighting.com/downloads/rise for the most updated information.
ECOSENSE LIGHTING INC. 837 NORTH SPRING STREET SUITE 103 LOS ANGELES, CA 90012 — P • 310.496.6255 F • 310.496.6256 T • 855.632.6736 855.6.ECOSEN — ECOSENSELIGHTING.COM 1/4

ECOSENSE — RISE — INTERIOR + EXTERIOR | F080 DUO
ELECTRICAL — WATTAGE: LOW OUTPUT = 8 W; MEDIUM OUTPUT = 15 W; HIGH OUTPUT = 23 W; POWER FACTOR: >0.9 for 120 V (HO, MO, LO), 230 V (HO, MO), 277 V (HO); THD: <0.2 for 120 V (HO, MO, LO), 230 V (HO, MO), 277 V (HO); OPERATING VOLTAGE: MULTIVOLT: 110-277VAC, 50/60 Hz; DRIVER: INTEGRAL TO FIXTURE; DE-RATED POWER AND SYNCHRONOUS START-UP AT FULL BRIGHTNESS; STARTUP TEMPERATURE: -40 °F TO 122 °F (-40 °C TO 50 °C); OPERATING TEMPERATURE: -40 °F TO 122 °F (-40 °C TO 50 °C); STORAGE TEMPERATURE: -40 °F TO 176 °F (-40 °C TO 80 °C); SURGE PROTECTION: SURGE PROTECTION DEVICES WITH A MINIMUM DISCHARGE CURRENT RATING OF 20kA, THAT MEET UL1449, CSA C22.2 No. 269.1, AND IEC TR 62066, SHOULD BE INSTALLED ON EACH BRANCH CIRCUIT.
CONTROL — DIMMING: 110-277 VAC, ELV TYPE, REVERSE PHASE, TRAILING EDGE
PHYSICAL — DIMENSIONS: SEE DIMENSION PAGES; HOUSING/LENS: EXTRUDED ALUMINUM; UV STABILIZED POLYCARBONATE; STAINLESS STEEL FASTENERS; WEIGHT: 5.0 LBS / 2.26 KG; ENVIRONMENT: OUTDOOR • UL CERTIFIED FOR MARINE GRADE APPLICATIONS • WET LOCATIONS • IP66, IMPACT RATED TO IK10, MEETS 3G ANSI C136.31 VIBRATION STANDARD FOR BRIDGE APPLICATIONS WHEN USED WITH SURFACE MOUNT PLATE (INCLUDED) OR WALL MOUNT ARMS (SOLD SEPERATELY); MOUNTING OPTIONS: B - EXTERNAL CABLE SIDE EXIT; SURFACE MOUNT ; UL LISTED, SURFACE MOUNT PLATE INCLUDED; C - EXTERNAL CABLE BOTTOM EXIT; 1/2" NPT; UL LISTED, SURFACE MOUNT PLATE INCLUDED; D - EXTERNAL CABLE SIDE EXIT; SURFACE MOUNT ; CE LISTED, SURFACE MOUNT PLATE INCLUDED; E - EXTERNAL CABLE BOTTOM EXIT; SURFACE MOUNT : CE LISTED, SURFACE MOUNT PLATE INCLUDED; WIRING: LENGTH OF EXTERIOR CABLE 10' (3.05 m); TOOLS: 2.5 mm HEX KEY AND PHILLIPS #0 SCREWDRIVER FOR INTERCHANGEABLE LENS + SNOOTS, 4 mm HEX KEY FOR AIMING, 5 mm HEX KEY FOR MAIN TILT ARM; WIND LOAD (EPA): EFFECTIVE PROJECTED AREA 2H=0.24 ft²; 2V=0.39 ft²; CORROSION RESISTANT: A HIGH-PERFORMING, CORROSION-RESISTANT FINISH THAT USES HIGH DURABILITY TRIGLYCIDYL ISOCYANURATE (TGIC) POWDER COATINGS SPECIFICALLY DESIGNED FOR NATATORIUMS AND EXTERIOR WEATHER EXPOSURE. THIS FINISH HAS BEEN TESTED AND APPROVED TO MARINE GRADE CORROSION RESISTANCE STANDARD IN UL1598A, ASTM B117 SALT FOG TEST FOR 200 HOURS.
FIXTURE RATING & CERTIFICATIONS — UL1598A MARINE CERTIFIED, CE, RoHS COMPLIANT, IK10
LIMITED WARRANTY — 5 YEARS
0-10V CONTROL OPTIONS — 100-120 VAC / 277 VAC Linear Dimming Control Module 0-10 V - Plenum Rated .... LDCM-PL-120-277-010V-GR. All products come standard with ELV dimming capabilities. 0-10 V Control options required for operation at 0-10 V.
OPTIONAL ACCESSORIES — Snoots: Full Snoot, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom) .... F080-F-(K,Z,S,W,C); Half Multi-Fixture Snoot, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom) .... F080-HM-(K,Z,S,W,C)
Interchangeable Lens — If inner optic = 5°, Desired angle .... Order the following spread lens: 5 Degree F080-LENS-05; 10 Degree F080-LENS-10; 15 Degree F080-LENS-15; 20 Degree F080-LENS-20; 40 Degree F080-LENS-40; 60 Degree F080-LENS-60; 80 Degree F080-LENS-80; 15x60 or 60x15 Degree F080-LENS-E1E3; 30x60 or 60x30 Degree F080-LENS-E2E4; Full Set of Beam Angle Lens Degree (5, 10, 15, 20, 40, 60, 80, 15X60 or 60X15, 30X60 or 60X30) F080-LENS-FULLSET
ECOSENSELIGHTING.COM 2/4

SW-A4

ECOSENSE — RISE
OVERVIEW • SPECIFICATIONS • ORDERING — INTERIOR + EXTERIOR | F080 QUAD
DATE | PROJECT | FIRM | TYPE

RISE IS A SYSTEM OF BEAUTIFULLY DESIGNED OUTDOOR RATED LUMINAIRES THAT PROVIDE EFFICIENT AND POWERFUL LIGHT USING THE LATEST IN LED TECHNOLOGY. RISE F080 QUAD IS A UNIQUE CONFIGURATION THAT GROUPS FOUR RISE F080 SINGLES ALLOWING YOU TO QUADRUPLE YOUR LUMEN POWER, DELIVERING UP TO 4680 LUMENS. THIS UNIQUE FIXTURE CAN BE USED TO POWERFULLY LIGHT ONE OBJECT OR AIMED SEPARATELY, ALLOWING YOU TO ILLUMINATE MULTIPLE APPLICATIONS. THIS POWERFUL AND COMPACT LED LIGHT FIXTURE CAN BE USED IN SPOT, ACCENT, LANDSCAPE AND FLOODLIGHT APPLICATIONS. ITS UNIQUE MACRO™ LOCK FEATURE ALLOWS FOR FULL 180 DEGREE TILT AND 360 DEGREE PAN AIMABILITY OF EACH FIXTURE HEAD USING ONLY ONE TOOL.

FEATURES:
- POWERFUL CBCP
- EXTREMELY COMPACT
- POWERFUL OUTPUT UP TO 4680 LUMENS
- MACRO™ LOCK - 180° TILT AND 360° PAN
- 12 UNIQUE BEAM ANGLES
- MULTIVOLT (110 V-277 V)
- 8 CCTS: 2200K THROUGH 6500K
- 80+ AND 90+ CRI
- DIMMABLE TO 5%
- IP66 RATED

FIXTURE MODEL	FIXTURE CONFIG.	POWER/LUMEN OUTPUT*	CCT/COLOR	CRI	BEAM ANGLE	FINISHES	ACCESSORIES	WIRING AND MOUNTING
F080	4M - 4 Heads, Movable Quad	LO - Low Output; MO - Medium Output; HO - High Output	22 - 2200K; 25 - 2500K; 27 - 2700K; 30 - 3000K; 35 - 3500K; 40 - 4000K; 50 - 5000K; 65 - 6500K; RD - Red; GR - Green; BL - Blue; AM - Amber; *2200K and 2500K not available in 40°, 60°, 70° and 90°	8 - 80; 9 - 90*; X - For RD, GR, BL, AM; *90 CRI not available in 2200K, 2500K, 5000K, and 6500K	05 - Laser Spot (5°); 10 - Very Narrow Spot (10°); 15 - Narrow Spot (15°); 20 - Spot (20°); 40 - Flood (40°); 60 - Medium Flood (60°); 70 - Wide Flood (70°); 90 - Very Wide Flood (90°); E1 - Elliptical 1 (15°x60°); E2 - Elliptical 2 (30°x60°); E3 - Elliptical 3 (60°x15°); E4 - Elliptical 4 (60°x30°)	K - Black; Z - Bronze; S - Silver; W - White; C - Custom*; *Provide RAL #	X - No Accessory; H - Half Snoot; F - Full Snoot; Will ship as X if not specified	B - 10' External Cable Side Exit ; Surface Mount ; UL Listed; C* - 10' External Cable Bottom Exit; Surface Mount - 1/2" NPT; UL Listed; D* - 10' External Cable Side Exit; Surface Mount ; CE Listed; E* - 10' External Cable Bottom Exit; Surface Mount - 1/2" NPT; CE Listed; *Will ship as C if not specified

*SEE PHOTOMETARY CHART FOR LUMEN DATA

PERFORMANCE WATTS	POWER	LUMEN OUTPUT 5°	LUMEN OUTPUT 40°	EFFICACY 5°	EFFICACY 40°	CBCP 5°	CBCP 40°
16	Low Output	1,235	1,716	77	107	87,964	2,821
30	Medium Output	2,124	3,044	71	101	151,295	5,003
46	High Output	2,980	4,560	65	99	212,192	7,495

ALL LUMEN DATA IS FROM 4000K 80CRI FIXTURES. PLEASE SEE PHOTOMETRY SPEC SHEET FOR ADDITIONAL LUMEN DATA.
COLOR RENDERING INDEX 80+, 90+; COLOR CONSISTENCY 3-STEP MACADAM ELLIPSE

LUMEN DEPRECIATION WATTS	L70 @ 25C	L70 @ 50C	L90 @ 25C	L90 @ 50C
LOW	>36,300* >(109,000)**	>36,300* >(109,000)**	>36,300* >(109,000)**	>36,300* >(109,000)**
MEDIUM	>36,300* >(109,000)**	>36,300* >(109,000)**	>36,300* >(109,000)**	>36,300* >(109,000)**
HIGH	>60,500* >(181,000)**	>36,300* >(109,000)**	>60,500* >(69,800)**	>31,700*

* ENERGY STAR REPORTED TESTING HOURS TO DATE. CALCULATIONS FOR LED FIXTURES ARE BASED ON MEASUREMENTS THAT COMPLY WITH IES LM-80 TESTING PROCEDURES AND IES TM-21 CALCULATOR ** ESTIMATED HOURS

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ECOSENSE — RISE — INTERIOR + EXTERIOR | F080 QUAD
ELECTRICAL — WATTAGE: LOW OUTPUT = 16 W; MEDIUM OUTPUT = 30 W; HIGH OUTPUT = 46 W; POWER FACTOR: >0.9 for 120 V (HO, MO, LO), 230 V (HO, MO), 277 V (HO); THD: <0.2 for 120 V (HO, MO, LO), 230 V (HO, MO), 277 V (HO); OPERATING VOLTAGE: MULTIVOLT: 110-277 VAC, 50/60 Hz; DRIVER: INTEGRAL TO FIXTURE; DE-RATED POWER AND SYNCHRONOUS START-UP AT FULL BRIGHTNESS; STARTUP TEMPERATURE: -40 °F TO 122 °F (-40 °C TO 50 °C); OPERATING TEMPERATURE: -40 °F TO 122 °F (-40 °C TO 50 °C); STORAGE TEMPERATURE: -40 °F TO 176 °F (-40 °C TO 80 °C); SURGE PROTECTION: SURGE PROTECTION DEVICES WITH A MINIMUM DISCHARGE CURRENT RATING OF 20kA, THAT MEET UL1449, CSA C22.2 No. 269.1, AND IEC TR 62066, SHOULD BE INSTALLED ON EACH BRANCH CIRCUIT.
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PHYSICAL — DIMENSIONS: SEE DIMENSION PAGES; HOUSING/LENS: EXTRUDED ALUMINUM; UV STABILIZED POLYCARBONATE; STAINLESS STEEL FASTENERS; WEIGHT: 7.4 LBS / 3.3 KG; ENVIRONMENT: OUTDOOR • UL CERTIFIED FOR MARINE GRADE APPLICATIONS • WET LOCATIONS • IP66, IMPACT RATED TO IK10, MEETS 3G ANSI C136.31 VIBRATION STANDARD FOR BRIDGE APPLICATIONS WHEN USED WITH SURFACE MOUNT PLATE (INCLUDED) OR WALL MOUNT ARMS (SOLD SEPERATELY); MOUNTING OPTIONS: B - EXTERNAL CABLE SIDE EXIT; SURFACE MOUNT ; UL LISTED, SURFACE MOUNT PLATE INCLUDED; C - EXTERNAL CABLE BOTTOM EXIT; 1/2" NPT ; UL LISTED, SURFACE MOUNT PLATE INCLUDED; D - EXTERNAL CABLE SIDE EXIT; SURFACE MOUNT ; CE LISTED, SURFACE MOUNT PLATE INCLUDED; E - EXTERNAL CABLE BOTTOM EXIT; SURFACE MOUNT : CE LISTED, SURFACE MOUNT PLATE INCLUDED; WIRING: LENGTH OF EXTERIOR CABLE 10' (3.05 m); TOOLS: 2.5 mm HEX KEY AND PHILLIPS #0 SCREWDRIVER FOR INTERCHANGEABLE LENS + SNOOTS, 4 mm HEX KEY FOR AIMING, 5 mm HEX KEY FOR MAIN TILT ARM; WIND LOAD (EPA): EFFECTIVE PROJECTED AREA 0.39 ft²; CORROSION RESISTANT: A HIGH-PERFORMING, CORROSION-RESISTANT FINISH THAT USES HIGH DURABILITY TRIGLYCIDYL ISOCYANURATE (TGIC) POWDER COATINGS SPECIFICALLY DESIGNED FOR NATATORIUMS AND EXTERIOR WEATHER EXPOSURE. THIS FINISH HAS BEEN TESTED AND APPROVED TO MARINE GRADE CORROSION RESISTANCE STANDARD IN UL1598A, ASTM B117 SALT FOG TEST FOR 200 HOURS.
FIXTURE RATING & CERTIFICATIONS — UL1598A MARINE CERTIFIED, CE, RoHS COMPLIANT, IK10
LIMITED WARRANTY — 5 YEARS
0-10V CONTROL OPTIONS — 100-120 VAC / 277 VAC Linear Dimming Control Module 0-10 V - Plenum Rated LDCM-PL-120-277-010V-GR
OPTIONAL ACCESSORIES — Snoots: Full Snoot, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom) .... F080-F-(K,Z,S,W,C); Half Multi-Fixture Snoot, Color Finish (K=Black, Z=Bronze, S=Silver, W=White, C=Custom) .... F080-HM-(K,Z,S,W,C)
Interchangeable Lens — If inner optic = 5°, Desired angle .... Order the following spread lens: 5 Degree F080-LENS-05; 10 Degree F080-LENS-10; 15 Degree F080-LENS-15; 20 Degree F080-LENS-20; 40 Degree F080-LENS-40; 60 Degree F080-LENS-60; 80 Degree F080-LENS-80; 15x60 or 60x15 Degree F080-LENS-E1E3; 30x60 or 60x30 Degree F080-LENS-E2E4; Full Set of Beam Angle Lens Degree (5, 10, 15, 20, 40, 60, 80, 15X60 or 60X15, 30X60 or 60X30) F080-LENS-FULLSET
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GENERAL SHEET NOTES

SHEET KEYNOTES

SHEET LEGEND

Froedtert & MEDICAL COLLEGE of WISCONSIN
HOSPITAL EXPANSION

CANNONDESIGN
225 North Michigan Avenue, Suite 1100
Chicago, Illinois 60601
T: 312.332.9600

Baltimore ■ Boston ■ Buffalo ■ Chicago ■ Houston
Irvine ■ Los Angeles ■ Mumbai ■ New York
St. Louis ■ San Diego ■ Toronto ■ Washington DC

Mortenson Construction
Construction Manager
17975 W Sarah Lane
Brookfield, WI 53045
T: 262.879.2500

American Design
Associate Architect
1661 N Water Street, #307
Milwaukee, WI 53202
T: 414.446.3715

BR+A
MEP/FP Engineering
105 Madison Avenue, 10th Floor
New York, NY 10016
T: 212.840.0060

Graef USA
Civil and Structural Engineering
One Honey Creek, Corporate Center
125 S 84th Street, Suite 401
Milwaukee, WI 53214
T: 414.259.1500

Lerch Bates
Vertical Transportation
328 S Jefferson Street, Suite 760
Chicago, IL 60661
T: 312.635.4804

Ripple Associates
Food Service Design
10650 Red Circle Drive, Suite 100
Minneapolis, MN 55343
T: 952.933.0313

103

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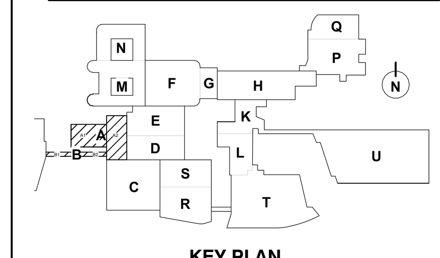
FOR REFERENCE ONLY

DESIGN REVIEW BOARD 1.18.2024

No.	Description	Date



KEY PLAN

Drawing Title:
LIGHTING FIXTURE CUT SHEETS

Project No.: 006902.00 — Checked by: Checker

E3

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FROEDTERT AND THE MEDICAL COLLEGE OF WISCONSIN

Hospital Expansion

Wauwatosa Design Review Board
Submission: January 9th 2024
Presentation: January 18th 2024

Froedtert & Medical College of Wisconsin Mortenson construction CANNONDESIGN

HOSPITAL EXPANSION

9200 West Wisconsin Ave
Milwaukee, WI 53226

The Froedtert Hospital Expansion Project is designed to provide ***fostering environments of healing, learning and wellness that honor the evolving human experience and needs of our diverse teams and communities.***

The project submitted for review includes 225,280 gross square feet of new construction and will provide five new levels of inpatient care floors, with four planned for immediate construction, as well as a new main lobby expansion and bridge connection to the new parking structure being constructed across 92nd Street.

The new expansion will provide a new gateway to the campus, finding inspiration in the Doyne avenue design precedents while shaping a new identity for the future of the campus. The design is meant to be a companion to the adjacent Center for Advanced Care, completed in 2020, extending the design brand established by that project into the new expansion.

Context of Existing Facilities and Surroundings

The project site is an open parcel of land within the Froedtert Hospital land holdings – a long term lease from Milwaukee County. The current site is used for a surface drop-off/pick-up at West Clinics Building entrance to the east and parking garage entry/exit to the south. The parking structure located to the south (commonly known as Parking Area 1) a will be demolished as part of the master plan. The West Clinics building (1990) is located immediately to the east of Phase 1. The new building will tie directly into the West Clinics building at Levels 1, 2, 3 and 4 via fire-rated openings between the structures. The buildings will act independently from a life safety perspective. The West Hospital Building (1980) is located to the north of the new tower and will remain untouched.

Booklet	Sheets
G-1 TITLE SHEET	C-1 EXISTING CONDITIONS
G-2 INDEX	C-2 SITE PLAN
G-3 CAMPUS MAP / SITE PHOTOS	C-3 SITE GRADING PLAN
G-4 SITE PHOTOS	C-4 SITE UTILITY PLAN
A-1 SITE PLAN	L-1 LAYOUT AND MATERIALS REFERENCE PLAN
A-2 LEVEL 03.5 PLAN (BRIDGE LEVEL)	L-1.1 LAYOUT AND MATERIALS PLAN AREA NORTH
A-3 LEVEL 04 PLAN	L-2 PLANTING REFERENCE PLAN
A-4 LEVEL 05-09 PLAN (TYPICAL INPATIENT)	L-2.1 PLANTING PLAN AREA NORTH
A-5 ROOF PLAN	L-3 DROP OFF ISLAND PLANTER ELEVATION
A-6 SOUTH VIEW	
A-7 SOUTHWEST VIEW	E-1 LIGHT FIXTURE SCHEDULE AND PHOTOMETRICS
A-8 BRIDGE VIEW	E-2 LIGHTING PLAN
A-9 NORTHWEST VIEW	E-3 LIGHTING FIXTURE CUT SHEETS
A-10 NORTH VIEW	
A-11 FACADE PATTERN DETAIL	
A-12 DIGITAL MATERIALS	
A-13 WEST SECTION	
A-14 BRIDGE NORTH ELEVATIONS	
A-15 BRIDGE SOUTH ELEVATIONS	
A-16 SOUTH ELEVATION	
A-17 NORTH ELEVATION	
A-18 EAST ELEVATION	
A-19 WEST ELEVATION	
A-20 WALL SECTIONS	

1. OVERHEAD VIEW FROM WEST

2. VIEW FROM WEST

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JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

CAMPUS MAP / SITE PHOTOS

G-3

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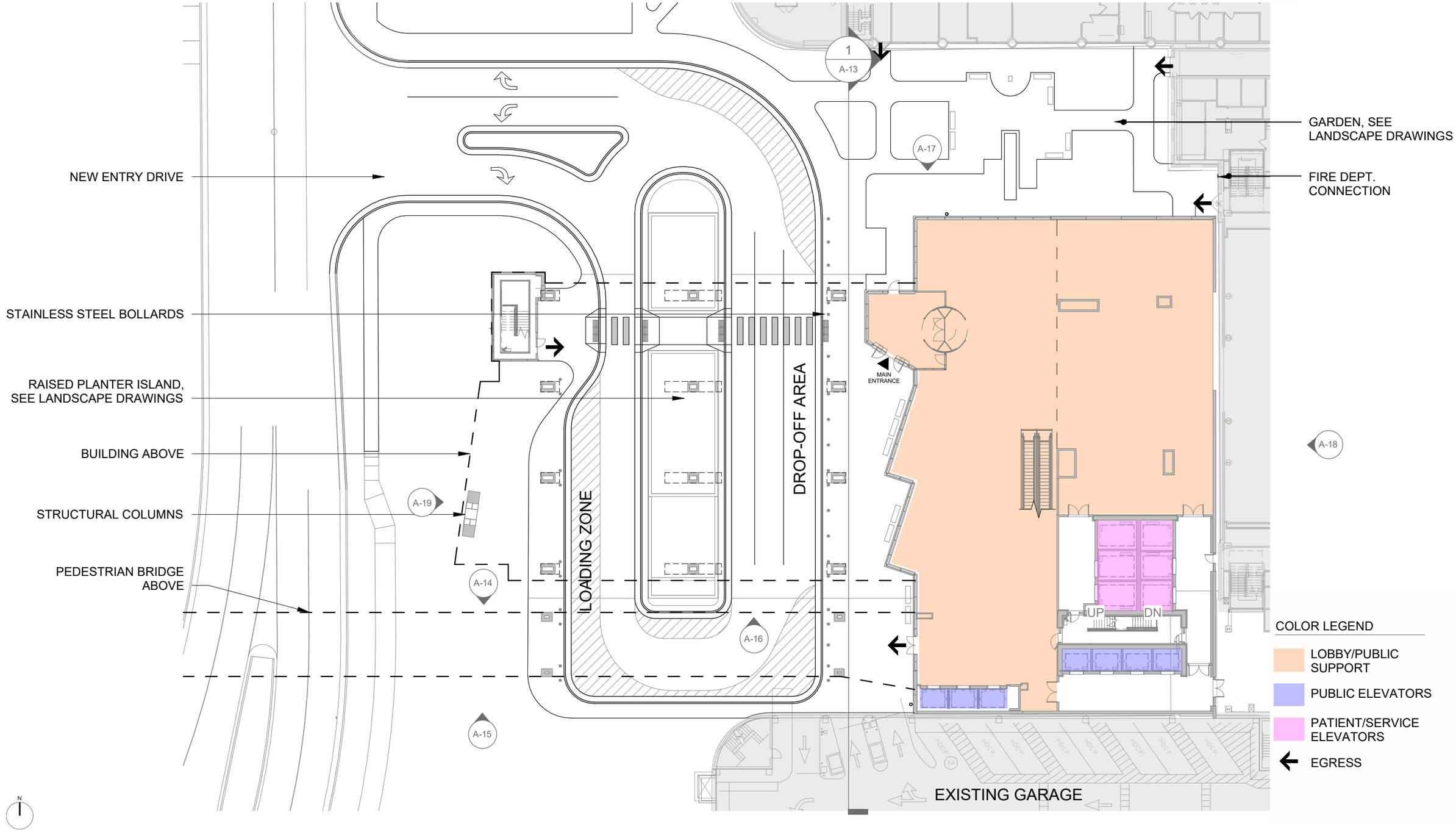
6. EXISTING CENTER FOR ADVANCED CARE

4. EXISTING CENTER FOR ADVANCED CARE

5. EXISTING WEST CLINICS ENTRANCE

3. OVERHEAD VIEW FROM SOUTH



SCALE 1/32" = 1'

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FROEDTERT HOSPITAL EXPANSION

SITE PLAN

A-1

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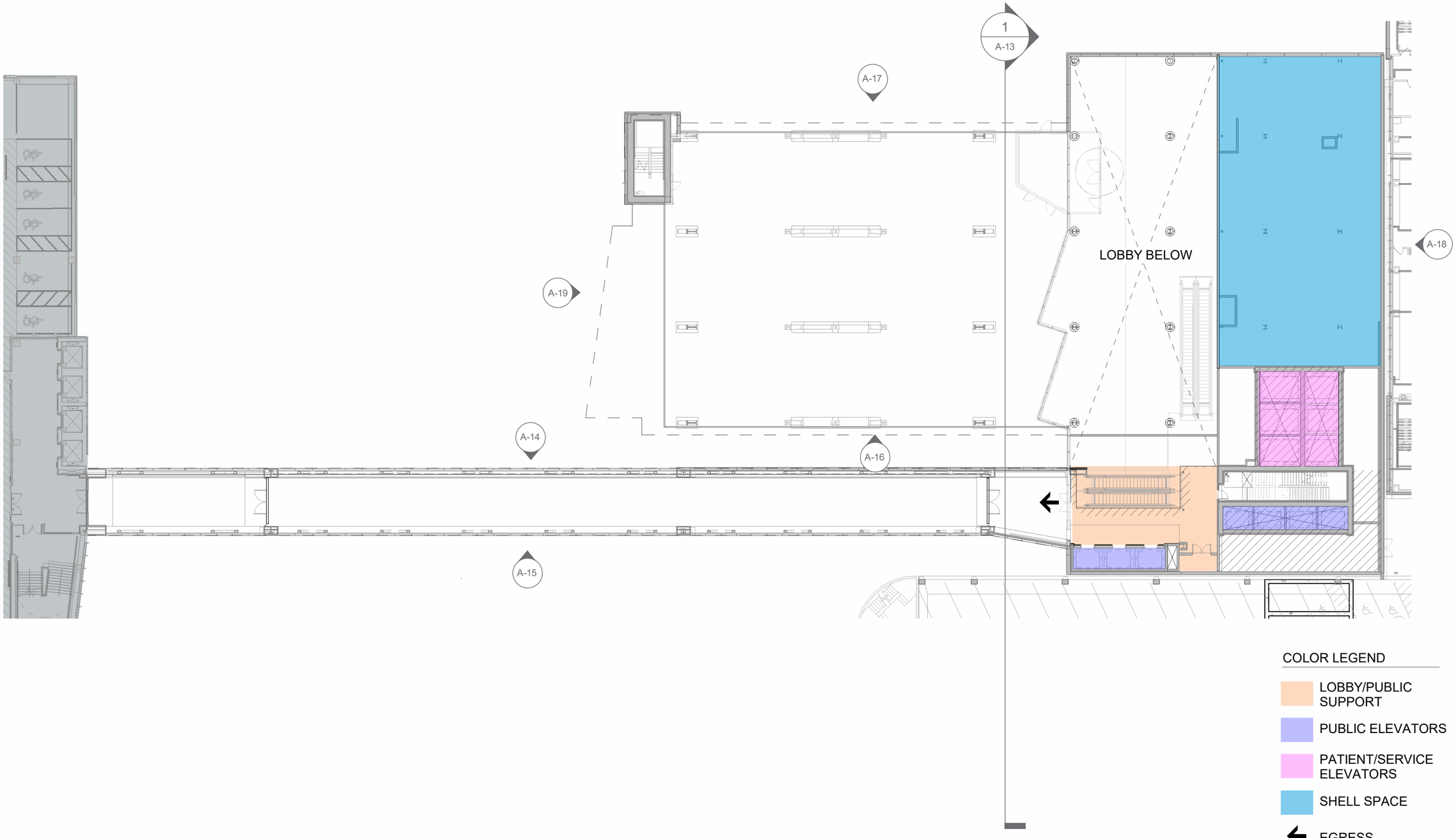

COLOR LEGEND

- LOBBY/PUBLIC SUPPORT
- PUBLIC ELEVATORS
- PATIENT/SERVICE ELEVATORS
- SHELL SPACE
- EGRESS

N

SCALE 1/32" = 1'

0 64

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JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

LEVEL 03.5 PLAN (BRIDGE LEVEL)

A-2

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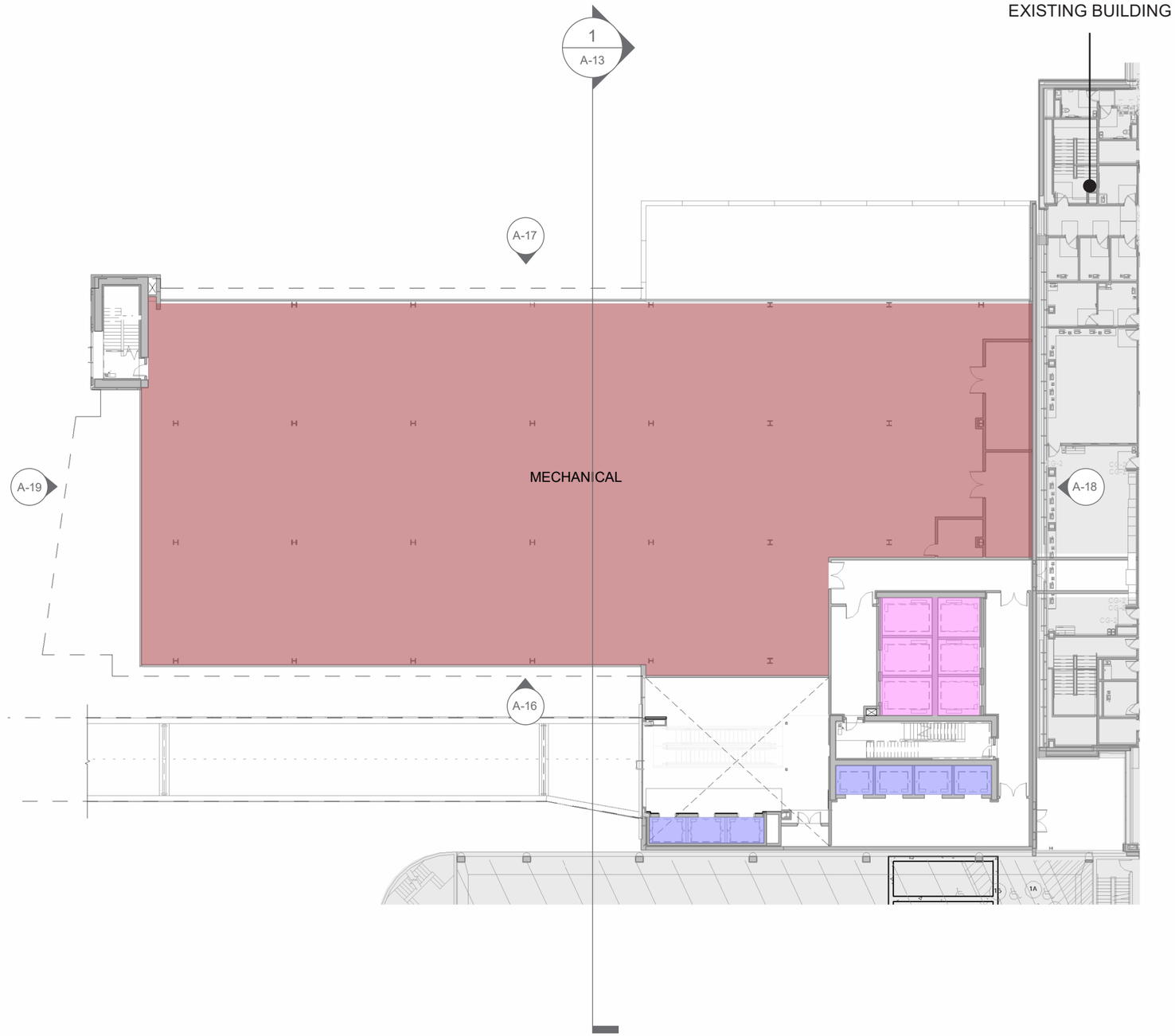

COLOR LEGEND

- SHELL SPACE
- MECHANICAL
- PUBLIC ELEVATORS
- PATIENT/SERVICE ELEVATORS

N

SCALE 1/32" = 1'

0 64

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JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

LEVEL 04 PLAN

A-3

CANNONDESIGN

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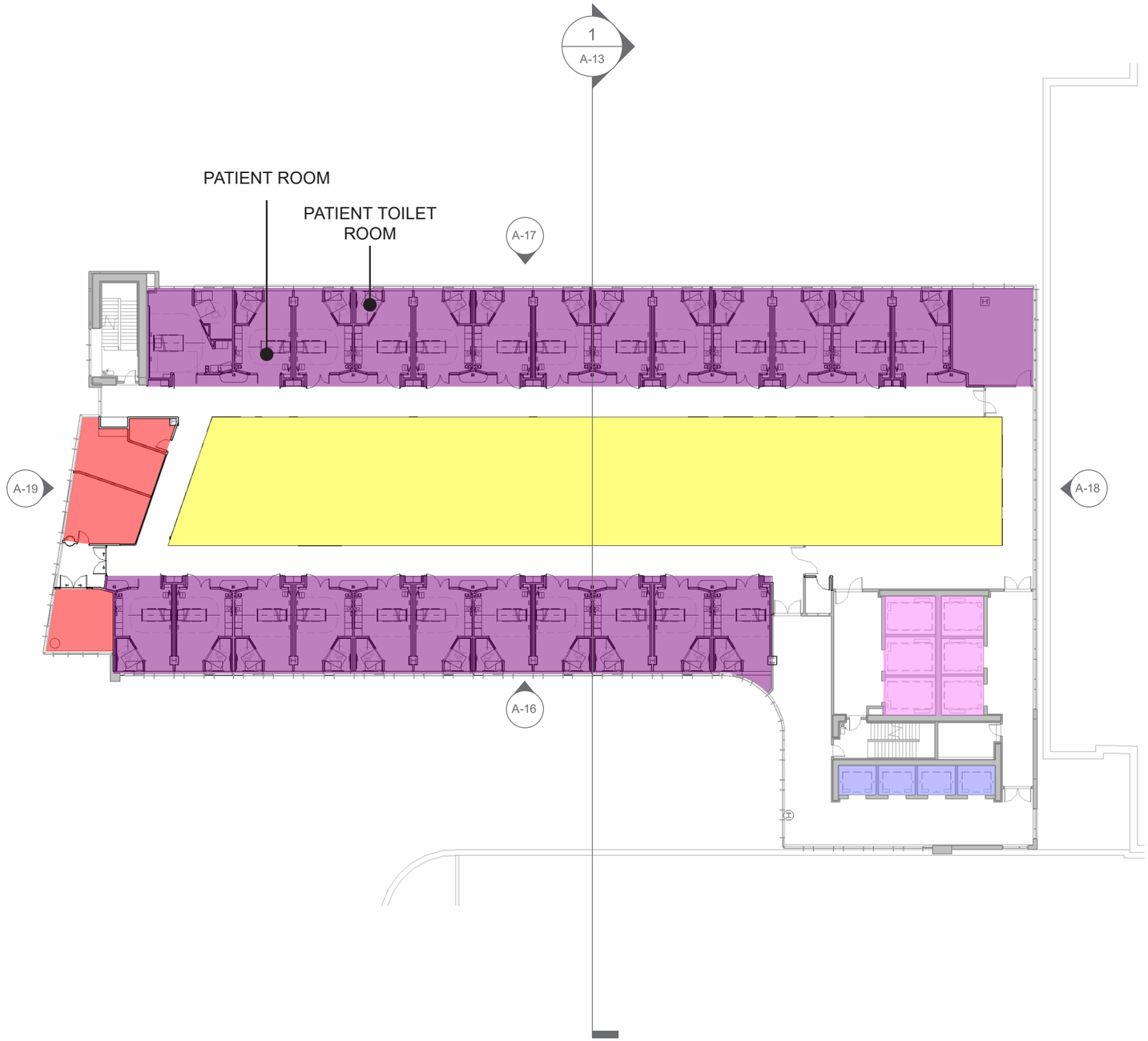

COLOR LEGEND

- INPATIENT CARE
- CLINICAL SUPPORT
- STAFF/PATIENT SUPPORT
- PUBLIC ELEVATORS
- PATIENT/SERVICE ELEVATORS

N

SCALE 1/32" = 1'

0 64

Froedtert & Medical College of Wisconsin

Mortenson construction

JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

LEVEL 05-09 PLAN (TYPICAL INPATIENT)

A-4

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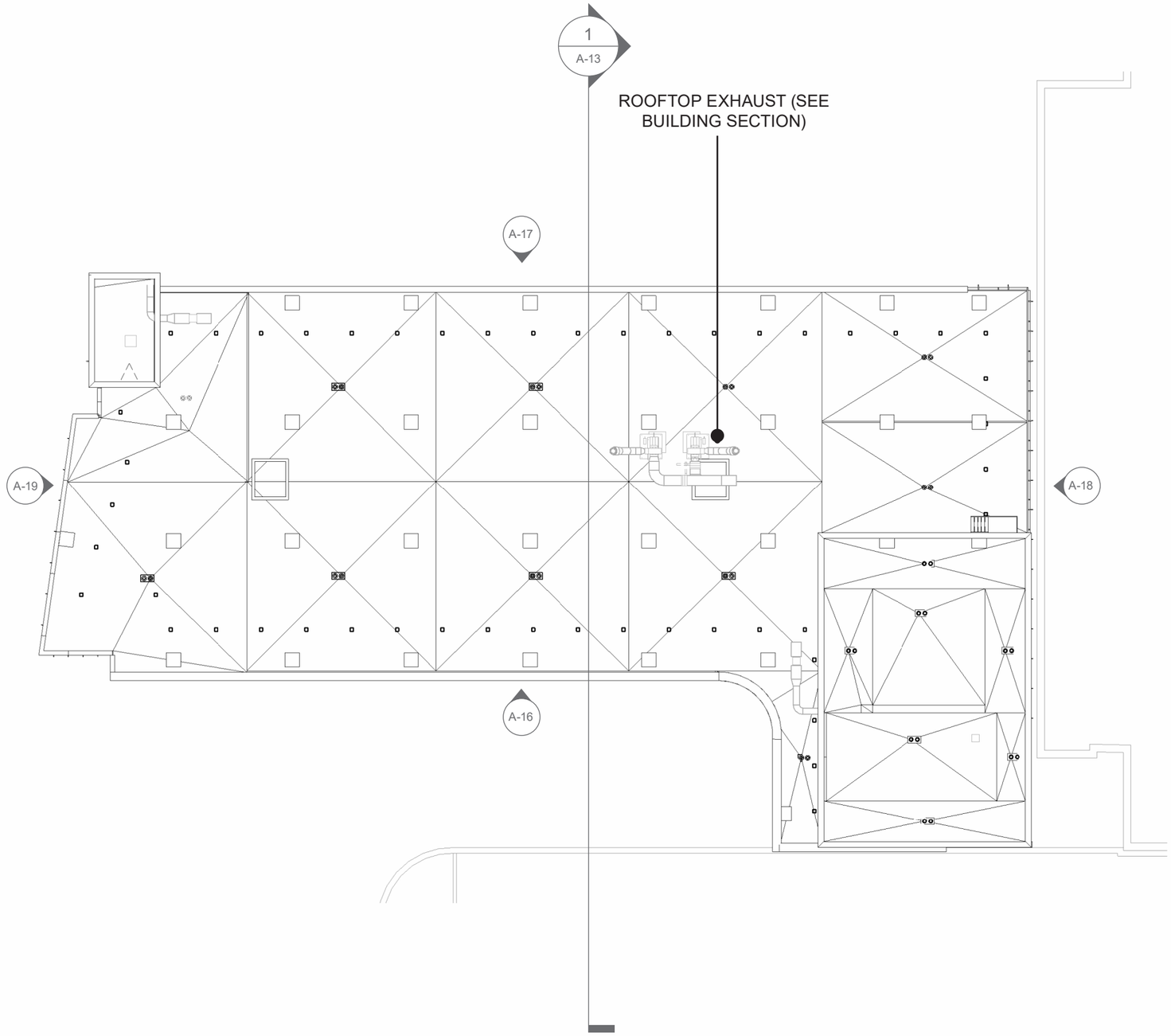

N

SCALE 1/32" = 1'

0 64

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JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

ROOF PLAN

A-5

CANNONDESIGN

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Froedtert & Medical College of Wisconsin

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JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

SOUTH VIEW

A-6

CANNONDESIGN

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JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

SOUTHWEST VIEW

A-7

CANNONDESIGN

DESIGN REVIEW BOARD

Froedtert & Medical College of Wisconsin

Mortenson construction

JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

BRIDGE VIEW

A-8

CANNONDESIGN

DESIGN REVIEW BOARD

Froedtert & Medical College of Wisconsin

Mortenson construction

JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

NORTHWEST VIEW

CANNONDESIGN

DESIGN REVIEW BOARD

Froedtert & Medical College of Wisconsin

Mortenson construction

JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

NORTH VIEW

A-10

CANNONDESIGN

DESIGN REVIEW BOARD

Southwest Tower Detail

GL-2S (Accent Spandrel)

GL-2 (Accent Vision)

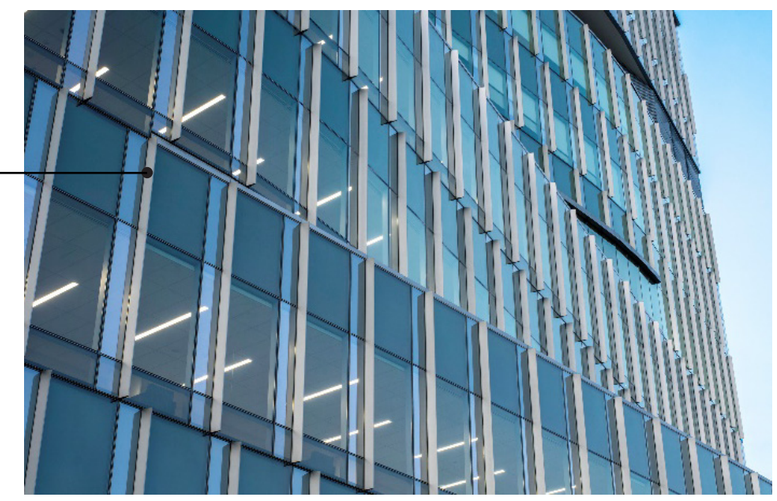
GL-1 (Vision)

GL-1S (Spandrel)

GL-3 (Frosted Glass at Patient Bathrooms)

Aluminum Mullion Extension

Existing CFAC Images



(See Material Palette Slide for Sample Images)

GL-2 (Reflective)

GL-1

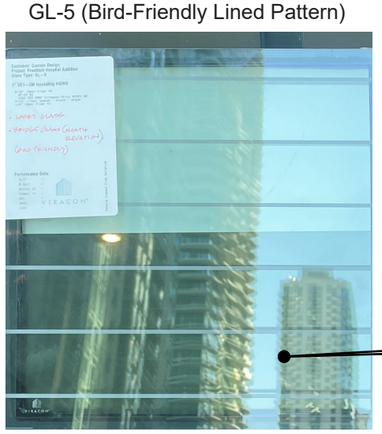
GL-3 (Frosted)

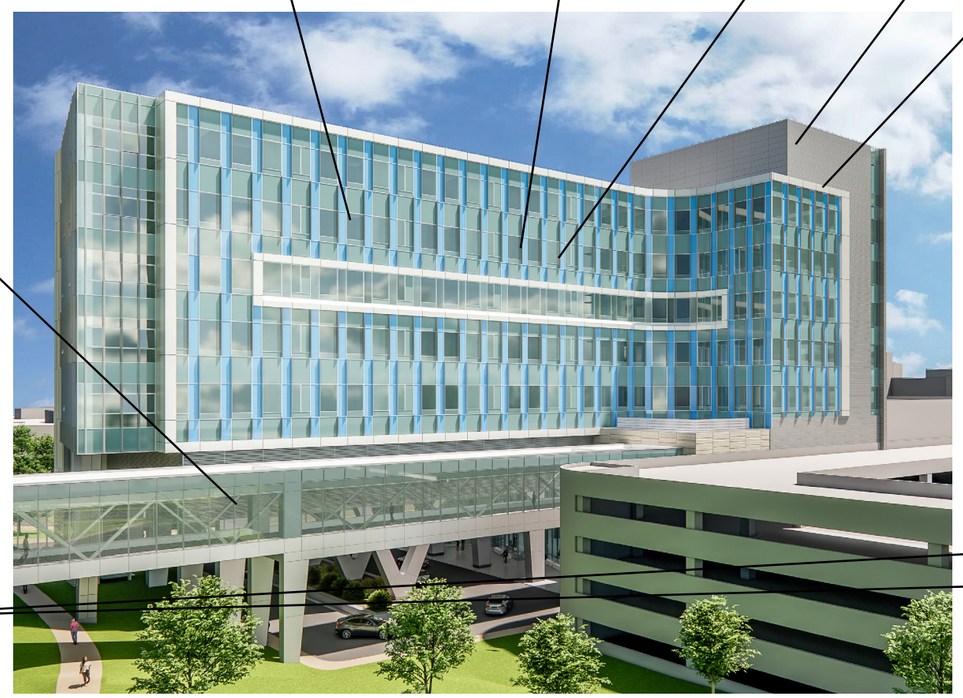
Composite Metal Panel

Precast Concrete

GL-4 (Bird-Friendly Lined Pattern)

GL-5 (Bird-Friendly Lined Pattern)





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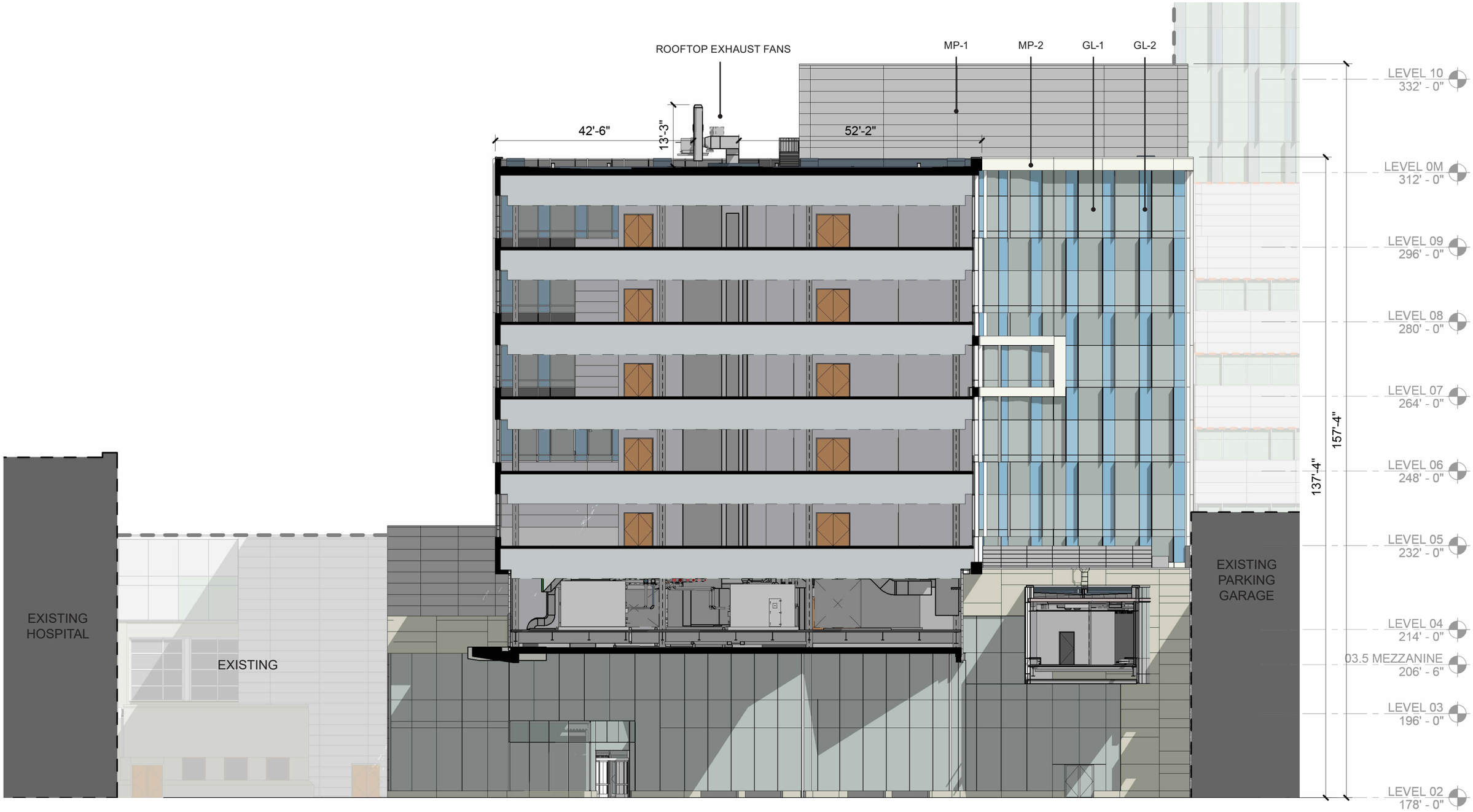
FROEDTERT HOSPITAL EXPANSION

DIGITAL MATERIALS

A-12

CANNONDESIGN

DESIGN REVIEW BOARD



SCALE 1" = 20'

0 40

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JANUARY 18, 2024

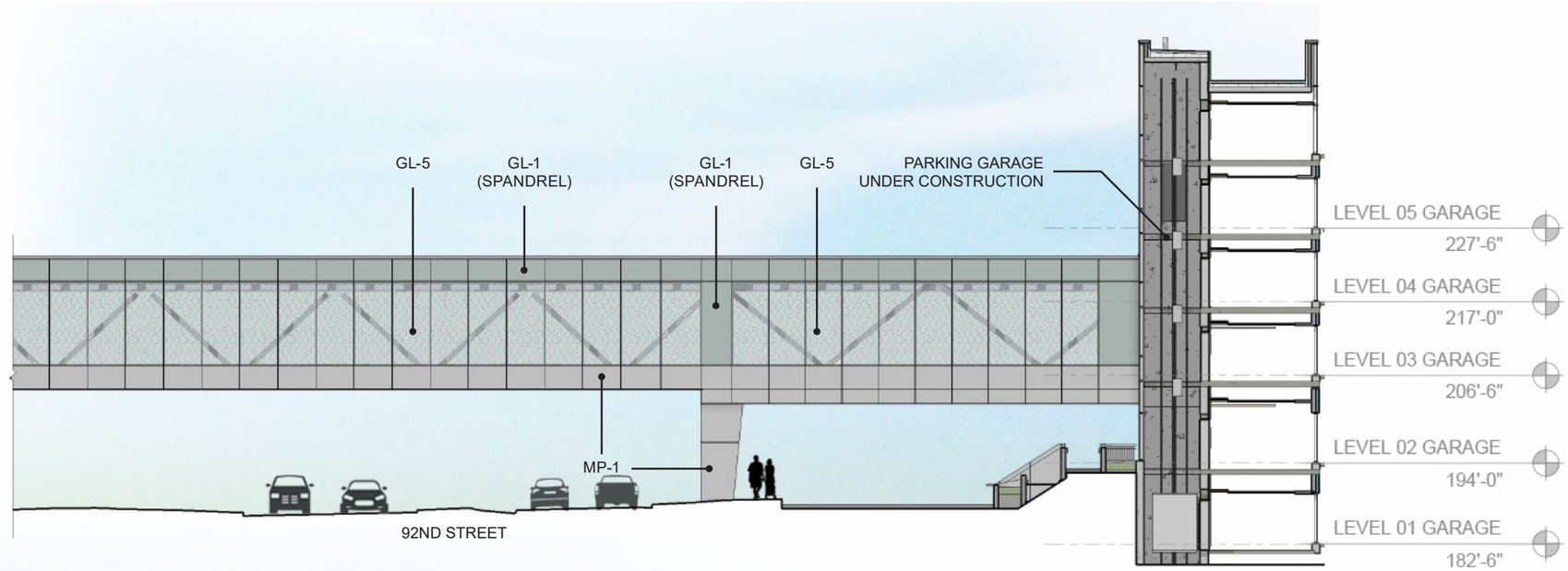
FROEDTERT HOSPITAL EXPANSION

WEST SECTION

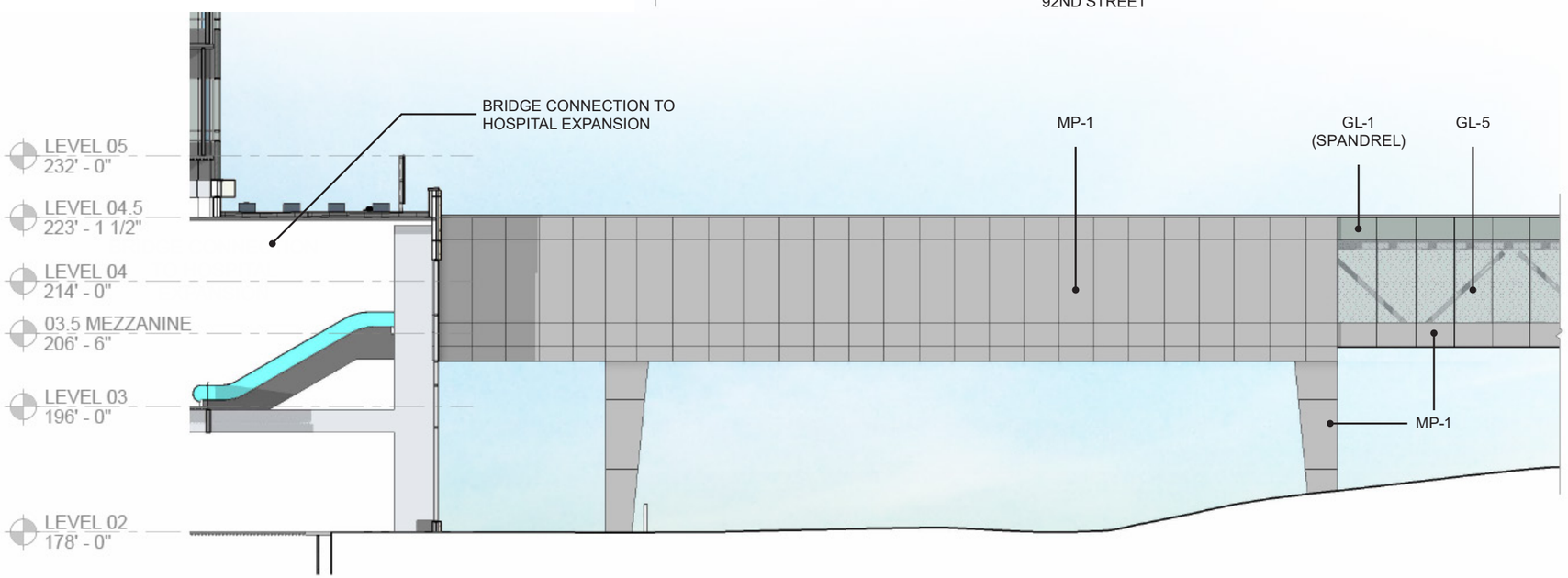
A-13

CANNONDESIGN

DESIGN REVIEW BOARD



NORTHWEST ELEVATION



NORTHEAST ELEVATION

SCALE 1" = 20'

0 40

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JANUARY 18, 2024

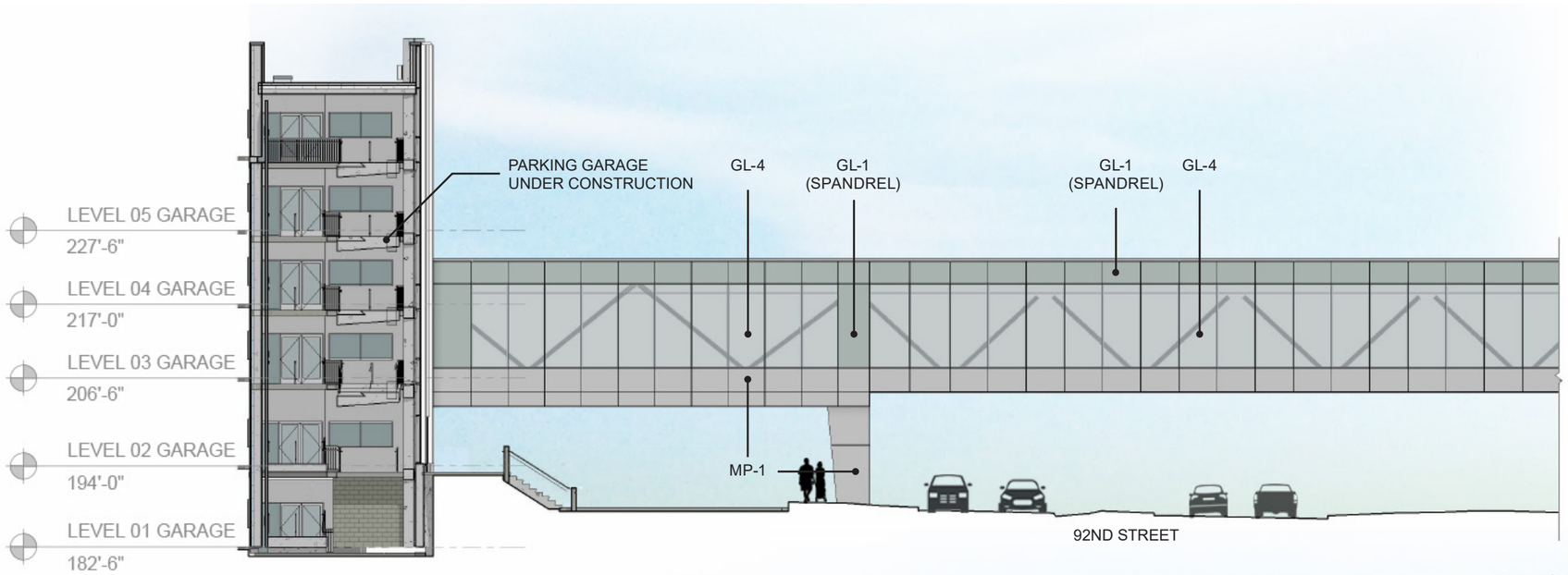
FROEDTERT HOSPITAL EXPANSION

BRIDGE NORTH ELEVATIONS

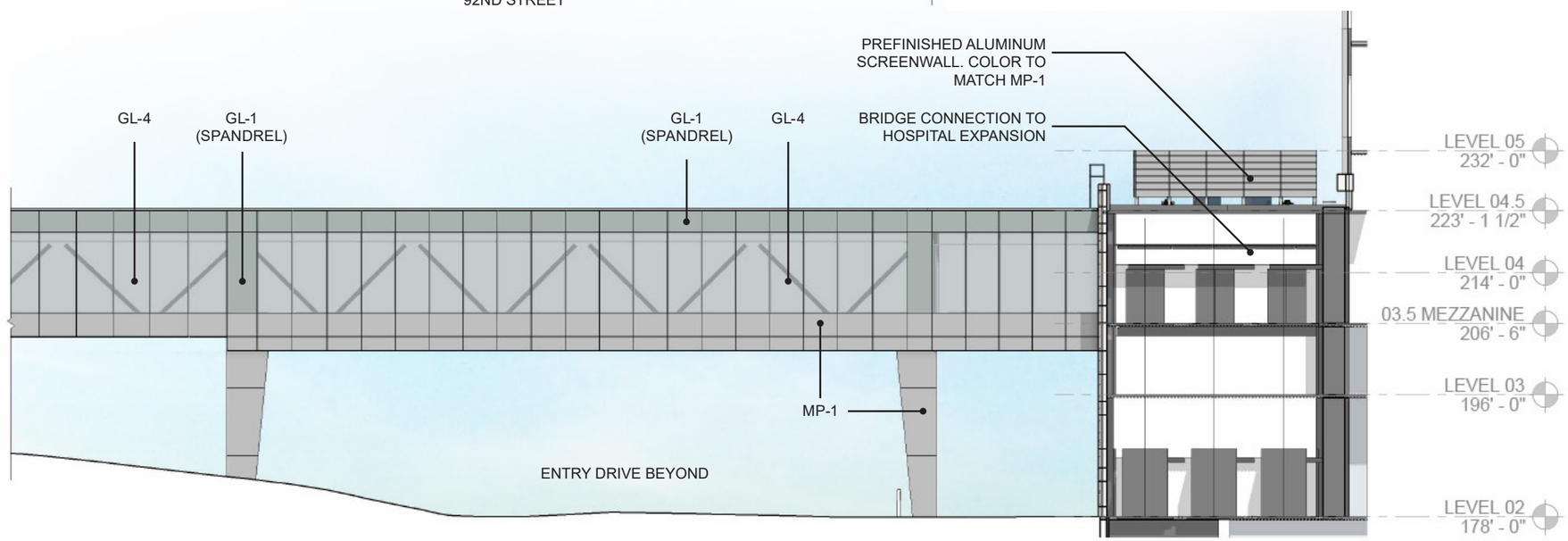
A-14

CANNONDESIGN

DESIGN REVIEW BOARD



SOUTHWEST ELEVATION



SOUTHEAST ELEVATION

SCALE 1" = 20'

0 40

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JANUARY 18, 2024

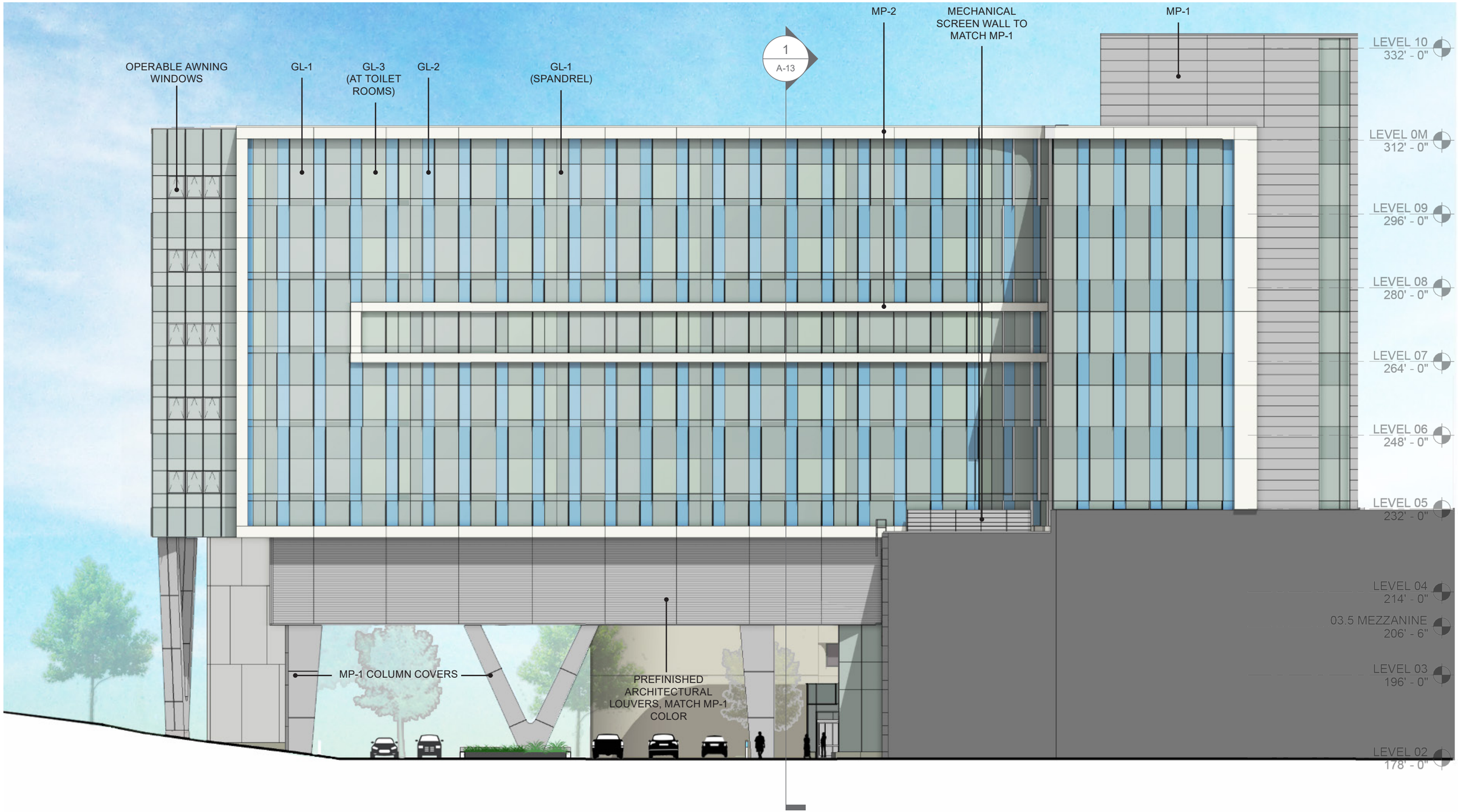
FROEDTERT HOSPITAL EXPANSION

BRIDGE SOUTH ELEVATIONS

A-15

CANNONDESIGN

DESIGN REVIEW BOARD



SCALE 1" = 20'

0 40

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JANUARY 18, 2024

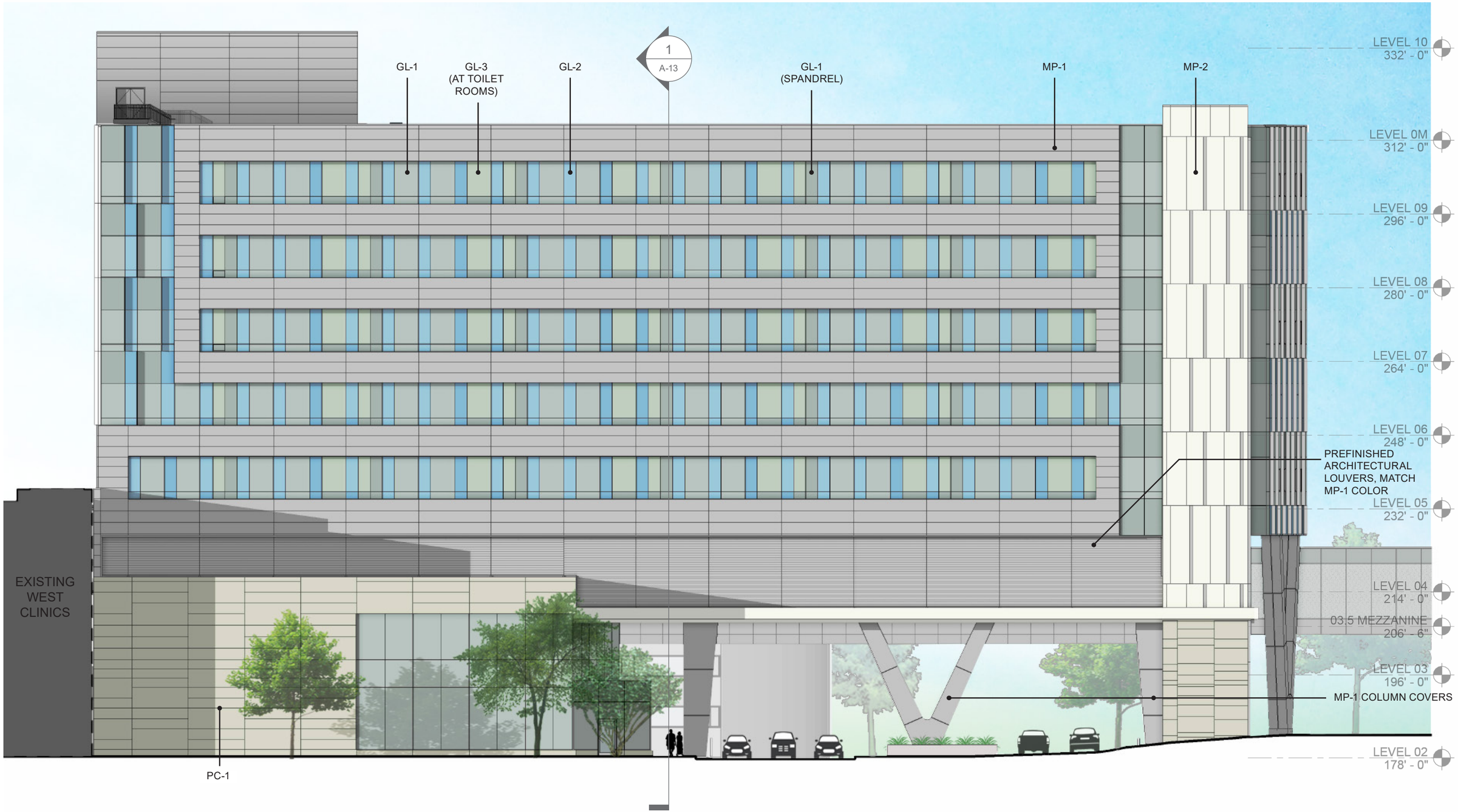
FROEDTERT HOSPITAL EXPANSION

SOUTH ELEVATION

A-16

CANNONDESIGN

DESIGN REVIEW BOARD



SCALE 1" = 20'

0 40

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JANUARY 18, 2024

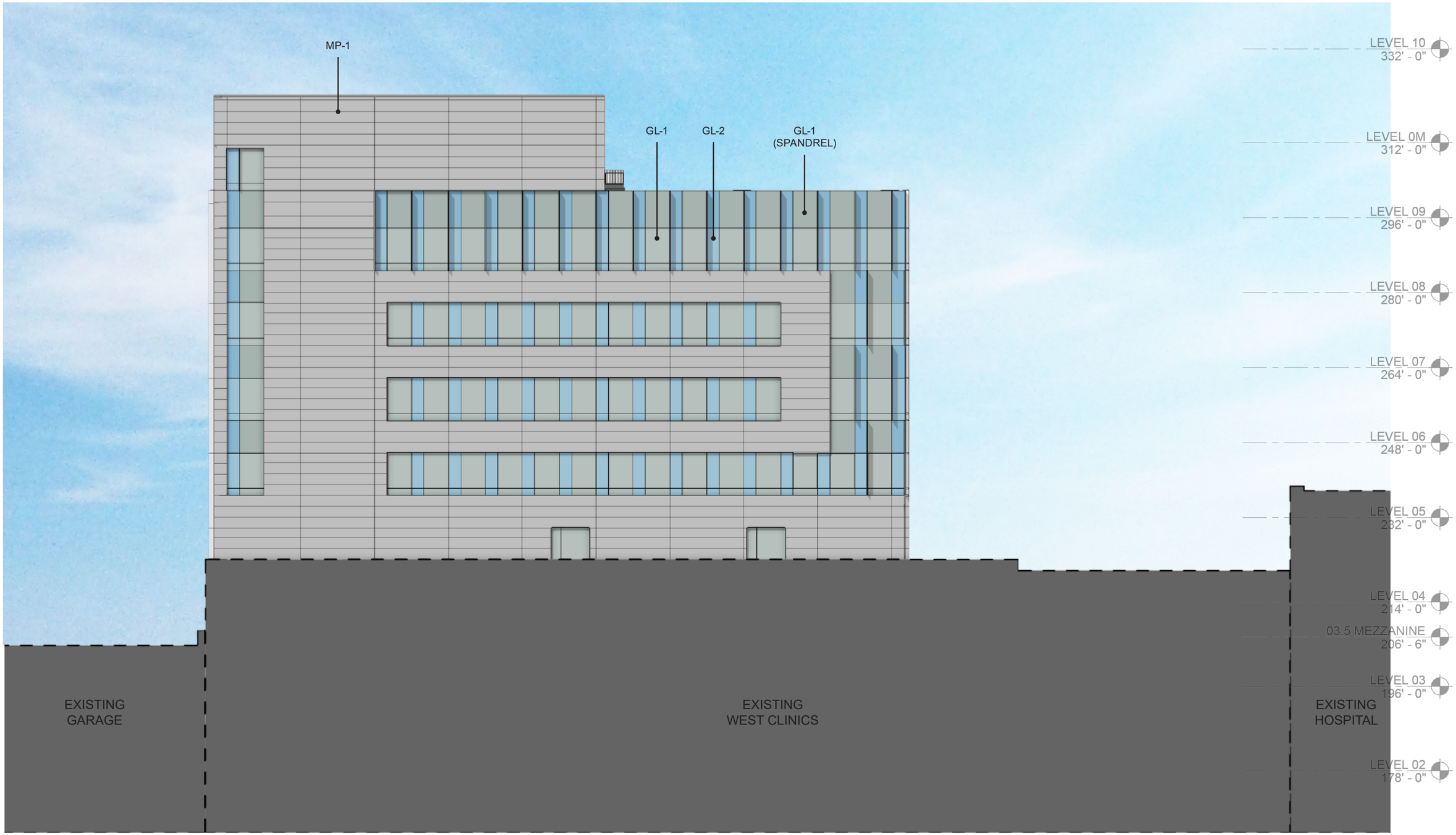
FROEDTERT HOSPITAL EXPANSION

NORTH ELEVATION

A-17

CANNONDESIGN

DESIGN REVIEW BOARD



SCALE 1" = 20'

0 40

Froedtert & Medical College of Wisconsin

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JANUARY 18, 2024

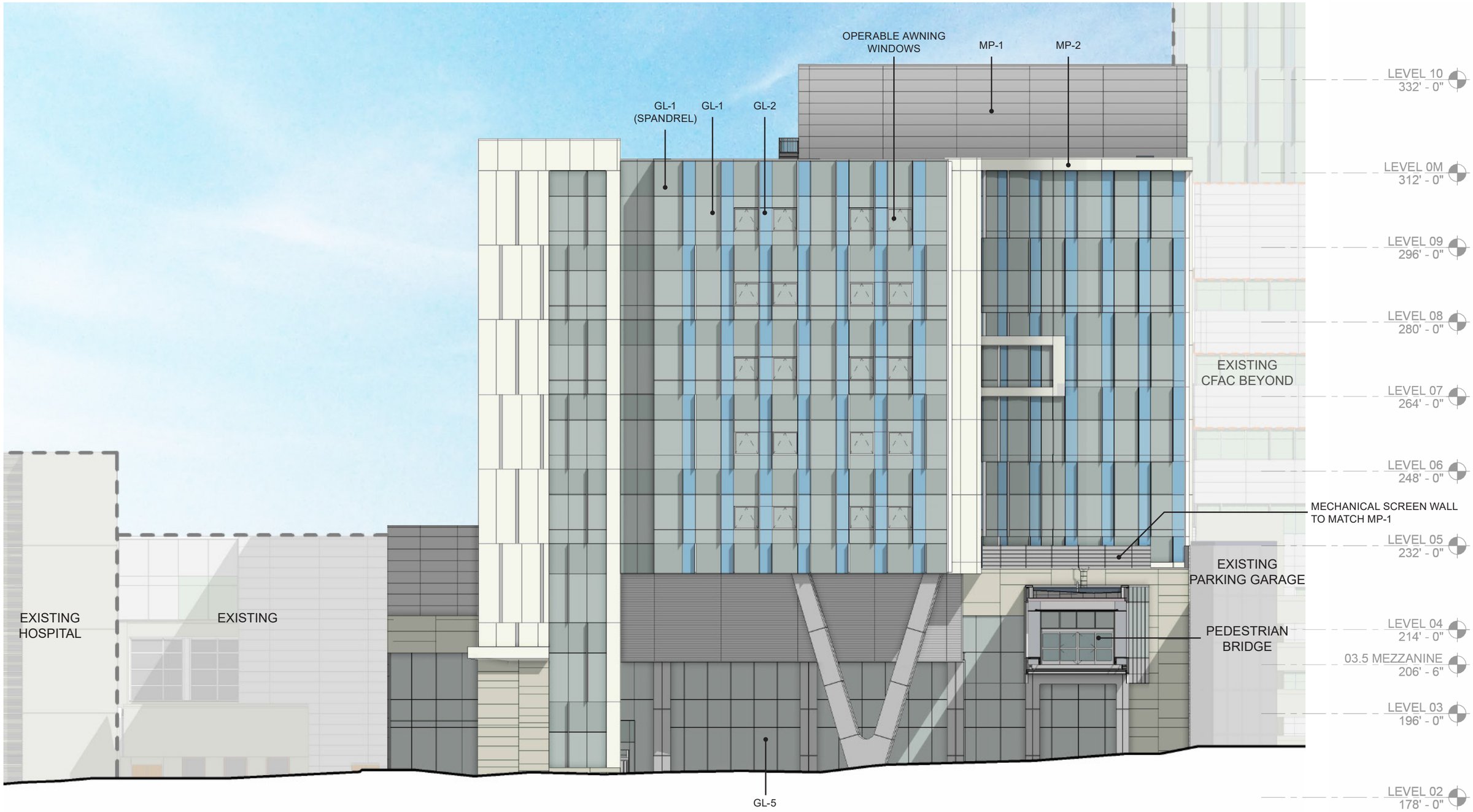
FROEDTERT HOSPITAL EXPANSION

EAST ELEVATION

A-18

CANNONDESIGN

DESIGN REVIEW BOARD



SCALE 1" = 20'

0 40

Froedtert & Medical College of Wisconsin

Mortenson construction

JANUARY 18TH 2024

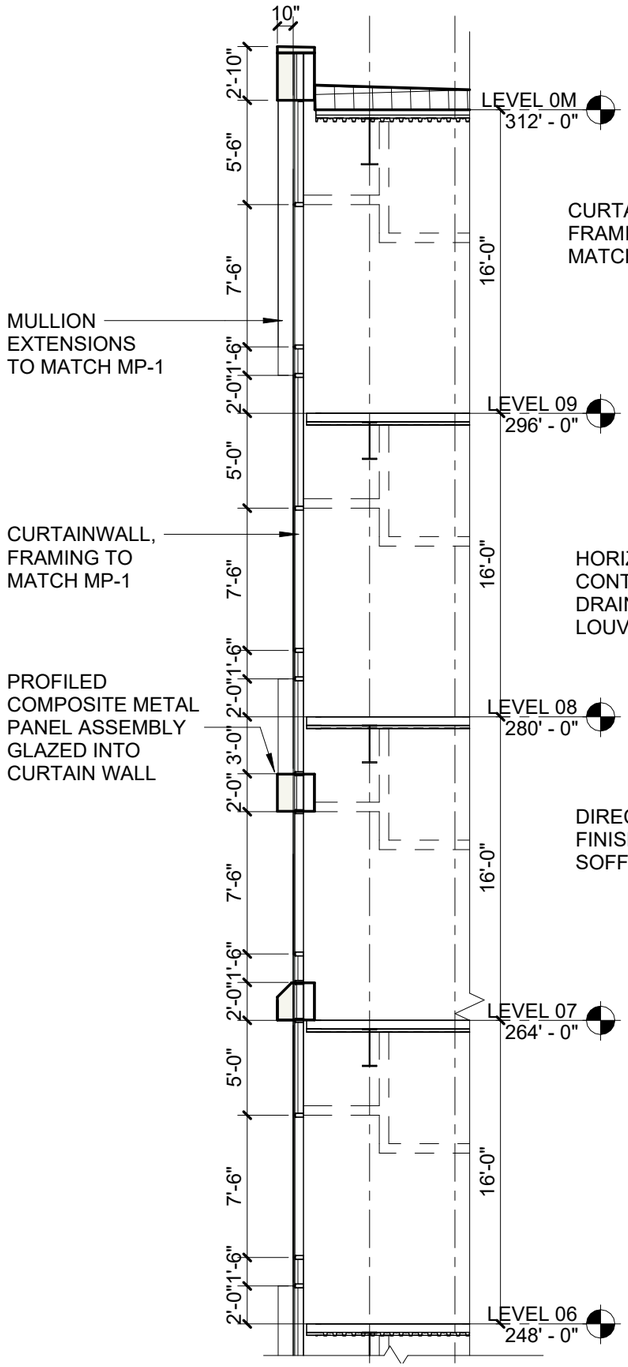
FROEDTERT HOSPITAL EXPANSION

WEST ELEVATION

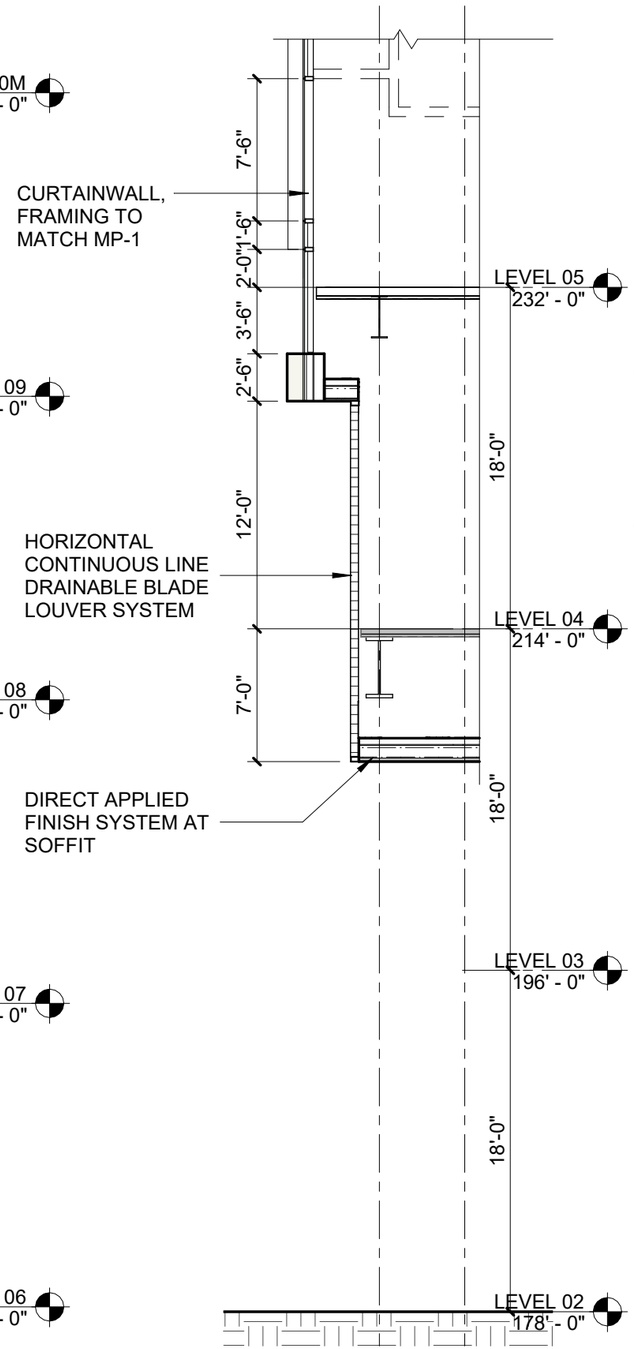
A-19

CANNONDESIGN

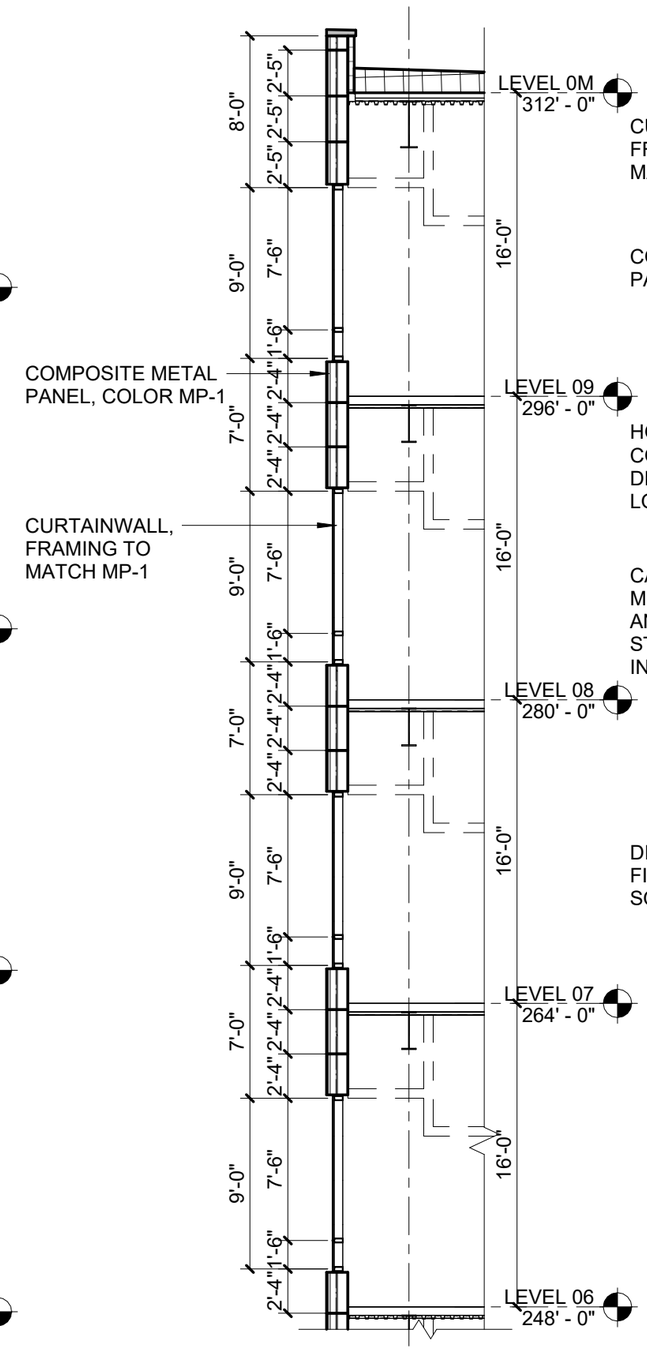
DESIGN REVIEW BOARD



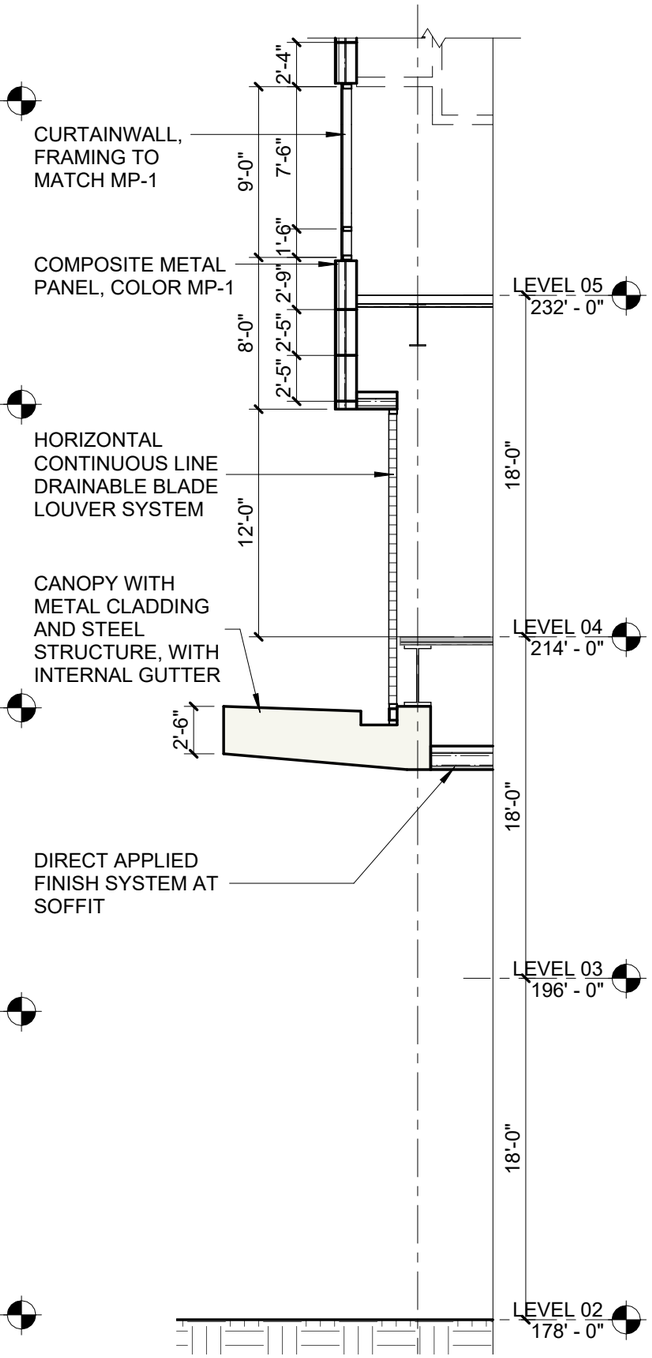
WALL SECTION AT SOUTH ELEVATION - TOP HALF



WALL SECTION AT SOUTH ELEVATION - BOTTOM HALF



WALL SECTION AT NORTH ELEVATION - TOP HALF



WALL SECTION AT NORTH ELEVATION - BOTTOM HALF

SCALE 1/8" = 1'

0 16

Froedtert & Medical College of Wisconsin

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JANUARY 18, 2024

FROEDTERT HOSPITAL EXPANSION

WALL SECTIONS

A-20

CANNONDESIGN

DESIGN REVIEW BOARD