



COMMUNITY DEVELOPMENT DEPARTMENT

45175 Ten Mile Road
Novi, MI 48375
(248) 347-0415 Phone
(248) 735-5600 Facsimile
www.cityofnovi.org

ZONING BOARD OF APPEALS STAFF REPORT

FOR: City of Novi Zoning Board of Appeals

MEETING DATE: January 14, 2025

REGARDING: 46500 Humboldt Drive # 50-22-09-176-019 (PZ24-0062)

BY: Alan Hall, Deputy Director Community Development

I. GENERAL INFORMATION:

Applicant

Lineage Logistics

Variance Type

Dimensional Variance

Property Characteristics

Zoning District: This property is zoned General Industrial (I-2)

Location: south of West Road and west of West Park Road

Parcel #: 50-22-09-176-019

Request

The applicant is requesting variances from the City of Novi Zoning Ordinance Section 5.15.12.b to allow 52.5 ft wide carports (40 ft allowed, variance of 12.5 ft) and to increase the maximum allowed height by 5 ft (12 ft maximum, variance of 5 ft).

II. STAFF COMMENTS:

The applicant, Lineage Logistics, is seeking (2) dimensional variances.

- 1) Requesting a 12.5-foot width increase for their carports
(The increase is to allow a covered pedestrian walkway and solar panel configuration)*
- 2) Requesting a 5-foot height increase for the same carports.
(The increase is to allow solar panel configuration)*

There is a minimum angle for the solar panels to be effective which would affect the roof pitch.

III. RECOMMENDATION:

The Zoning Board of Appeals may take one of the following actions:

1. I move that we grant the variance in Case No. **PZ24-0062**, sought by _____, for _____ because Petitioner has shown practical difficulty requiring _____.

(a) Without the variance Petitioner will be unreasonably prevented or limited with respect to use of the property because _____.

(b) The property is unique because _____.

(c) Petitioner did not create the condition because _____.

(d) The relief granted will not unreasonably interfere with adjacent or surrounding properties because _____.

(e) The relief is consistent with the spirit and intent of the ordinance because _____.

(f) The variance granted is subject to:

1. _____.
2. _____.
3. _____.
4. _____.

2. I move that we **deny** the variance in Case No. **PZ24-0062**, sought by _____, for _____ because Petitioner has not shown practical difficulty requiring _____.

(a) The circumstances and features of the property including _____ are not unique because they exist generally throughout the City.

(b) The circumstances and features of the property relating to the variance request are self-created because _____.

(c) The failure to grant relief will result in mere inconvenience or inability to attain higher economic or financial return based on Petitioners statements that _____.

(d) The variance would result in interference with the adjacent and surrounding properties by _____.

(e) Granting the variance would be inconsistent with the spirit and intent of the ordinance to _____.

Should you have any further questions with regards to the matter please feel free to contact me at (248) 347-0417.

Alan Hall – Deputy Director Community Development - City of Novi



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 Novi, MI 48375
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ZONING BOARD OF APPEALS APPLICATION

RECEIVED

DEC 02 2024

CITY OF NOVI
COMMUNITY DEVELOPMENT

APPLICATION MUST BE FILLED OUT COMPLETELY

I. PROPERTY INFORMATION (Address of subject ZBA Case)				Application Fee: \$330.00 Meeting Date: 1-14-25 ZBA Case #: PZ 24-0062
PROJECT NAME / SUBDIVISION Lineage Car Ports Addition				
ADDRESS 46500 Humboldt Drive		LOT/SIUTE/SPACE #		
SIDEWELL # 50-22-09 -176 -015		May be obtain from Assessing Department (248) 347-0485		
CROSS ROADS OF PROPERTY North of Humboldt East of Maellan				
IS THE PROPERTY WITHIN A HOMEOWNER'S ASSOCIATION JURISDICTION? <input type="checkbox"/> YES <input type="checkbox"/> NO		REQUEST IS FOR: <input type="checkbox"/> RESIDENTIAL <input checked="" type="checkbox"/> COMMERCIAL <input type="checkbox"/> VACANT PROPERTY <input type="checkbox"/> SIGNAGE		
DOES YOUR APPEAL RESULT FROM A NOTICE OF VIOLATION OR CITATION ISSUED? <input type="checkbox"/> YES <input type="checkbox"/> NO				
II. APPLICANT INFORMATION				
A. APPLICANT		EMAIL ADDRESS mfahey@madisonei.com	CELL PHONE NO.	
NAME Mike Fahey		TELEPHONE NO. 541 243 2308		
ORGANIZATION/COMPANY Madison Energy Holdings LLC		FAX NO.		
ADDRESS 8484 Westpark Drive Suite 720		CITY McLean	STATE VA	
			ZIP CODE 22102	
B. PROPERTY OWNER <input type="checkbox"/> CHECK HERE IF APPLICANT IS ALSO THE PROPERTY OWNER				
Identify the person or organization that owns the subject property:		EMAIL ADDRESS cthurston@onelineage.com	CELL PHONE NO.	
NAME Chris Thurston		TELEPHONE NO. 973 997 1654		
ORGANIZATION/COMPANY Lineage Logistics		FAX NO.		
ADDRESS 46500 Humboldt Drive		CITY Novi	STATE MI	
			ZIP CODE 48377	
III. ZONING INFORMATION				
A. ZONING DISTRICT				
<input type="checkbox"/> R-A <input type="checkbox"/> R-1 <input type="checkbox"/> R-2 <input type="checkbox"/> R-3 <input type="checkbox"/> R-4 <input type="checkbox"/> RM-1 <input type="checkbox"/> RM-2 <input type="checkbox"/> MH <input type="checkbox"/> I-1 <input checked="" type="checkbox"/> I-2 <input type="checkbox"/> RC <input type="checkbox"/> TC <input type="checkbox"/> TC-1 <input type="checkbox"/> OTHER _____				
B. VARIANCE REQUESTED				
INDICATE ORDINANCE SECTION (S) AND VARIANCE REQUESTED:				
1. Section <u>5.15.12.b</u> Variance requested <u>Exceed allowable width by 12.5 feet</u>				
2. Section <u>5.15.12.b</u> Variance requested <u>Exceed allowable height by 5 feet average.</u>				
3. Section _____ Variance requested _____				
4. Section _____ Variance requested _____				
IV. FEES AND DRAWINGS				
A. FEES				
<input type="checkbox"/> Single Family Residential (Existing) \$220 <input type="checkbox"/> (With Violation) \$275 <input type="checkbox"/> Single Family Residential (New) \$275 <input checked="" type="checkbox"/> Multiple/Commercial/Industrial \$330 <input type="checkbox"/> (With Violation) \$440 <input type="checkbox"/> Signs \$330 <input type="checkbox"/> (With Violation) \$440 <input type="checkbox"/> House Moves \$330 <input type="checkbox"/> Special Meetings (At discretion of Board) \$660				
B. DRAWINGS 1-COPY & 1 DIGITAL COPY SUBMITTED AS A PDF				
<ul style="list-style-type: none"> • Dimensioned Drawings and Plans • Site/Plot Plan • Existing or proposed buildings or addition on the property • Number & location of all on-site parking, if applicable 		<ul style="list-style-type: none"> • Existing & proposed distance to adjacent property lines • Location of existing & proposed signs, if applicable • Floor plans & elevations • Any other information relevant to the Variance application 		



ZONING BOARD OF APPEALS APPLICATION

V. VARIANCE

A. VARIANCE (S) REQUESTED

DIMENSIONAL USE SIGN

There is a five-(5) hold period before work/action can be taken on variance approvals.

B. SIGN CASES (ONLY)

Your signature on this application indicates that you agree to install a **Mock-Up Sign** ten-(10) days before the schedule ZBA meeting. Failure to install a mock-up sign may result in your case not being heard by the Board, postponed to the next schedule ZBA meeting, or cancelled. A mock-up sign is **NOT** to be actual sign. Upon approval, the mock-up sign must be removed within five-(5) days of the meeting. If the case is denied, the applicant is responsible for all costs involved in the removal of the mock-up or actual sign (if erected under violation) within five-(5) days of the meeting.

C. ORDINANCE

City of Novi Ordinance, Section 3107 – Miscellaneous

No order of the Board permitting the erection of a building shall be valid for a period longer than one-(1) year, unless a building permit for such erection or alteration is obtained within such period and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

No order of the Board permitting a use of a building or premises shall be valid for a period longer than one-hundred and eighty-(180) days unless such use is establish within such a period; provided, however, where such use permitted is dependent upon the erection or alteration or a building such order shall continue in force and effect if a building permit for such erection or alteration is obtained within one-(1) year and such erection or alteration is started and proceeds to completion in accordance with the terms of such permit.

D. APPEAL THE DETERMINATION OF THE BUILDING OFFICIAL

PLEASE TAKE NOTICE:

The undersigned hereby appeals the determination of the Building Official / Inspector or Ordinance made

CONSTRUCT NEW HOME/BUILDING ADDITION TO EXISTING HOME/BUILDING SIGNAGE
 ACCESSORY BUILDING USE OTHER _____

VI. APPLICANT & PROPERTY SIGNATURES

A. APPLICANT

Michael Fahay

Applicant Signature

Dec 2, 2024

Date

B. PROPERTY OWNER

If the applicant is not the owner, the property owner must read and sign below:

The undersigned affirms and acknowledges that he, she or they are the owner(s) of the property described in this application, and is/are aware of the contents of this application and related enclosures.

Chris Thurston

Chris Thurston (Dec 2, 2024 13:30 PST)

Property Owner Signature

Dec 2, 2024

Date

VII. FOR OFFICIAL USE ONLY

DECISION ON APPEAL:

GRANTED

DENIED

The Building Inspector is hereby directed to issue a permit to the Applicant upon the following and conditions:

Chairperson, Zoning Board of Appeals

Date



Community Development Department

45175 Ten Mile Road
Novi, MI 48375
(248) 347-0415 Phone
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**REVIEW STANDARDS
DIMENSIONAL VARIANCE**

The Zoning Board of Appeals (ZBA) will review the application package and determine if the proposed Dimensional Variance meets the required standards for approval. In the space below, and on additional paper if necessary, explain how the proposed project meets each of the following standards. (Increased costs associated with complying with the Zoning Ordinance will not be considered a basis for granting a Dimensional Variance.)

Standard #1. Circumstances or Physical Conditions.

Explain the circumstances or physical conditions that apply to the property that do not apply generally to other properties in the same zoning district or in the general vicinity. Circumstances or physical conditions may include:

- a. **Shape of Lot.** Exceptional narrowness, shallowness or shape of a specific property in existence on the effective date of the Zoning Ordinance or amendment.
 Not Applicable Applicable If applicable, describe below:

and/or

- b. **Environmental Conditions.** Exceptional topographic or environmental conditions or other extraordinary situations on the land, building or structure.
 Not Applicable Applicable If applicable, describe below:

The existing parking spaces over which the canopies are to be placed has a center island containing a pedestrian walkway. The intent is to provide a continuous canopy over both the parking spaces and the central walkway, and to use the roof to mount solar collectors. This will require the canopies to be a total of 52.5 feet, and an average height of 17.5 feet, which does not fit into the length and width restrictions imposed by the ordinance +

and/or

- c. **Abutting Property.** The use or development of the property immediately adjacent to the subject property would prohibit the literal enforcement of the requirements of the Zoning Ordinance or would involve significant practical difficulties.
 Not Applicable Applicable If applicable, describe below:

Standard #2. Not Self-Created.

Describe the immediate practical difficulty causing the need for the Dimensional Variance, that the need for the requested variance is not the result of actions of the property owner or previous property owners (i.e., is not self-created).

5.15.12.b allows for a maximum canopy width of 40 feet and an allowable height of 12 feet. This ordinance envisioned a standard gable roof over a double row of parking with no barrier between the spaces. It does not consider the needs of a solar canopy, which requires a continuous shed roof, making for a taller structure, or allowing for a pedestrian walkway under the canopy.

Standard #3. Strict Compliance.

Explain how the Dimensional Variance in strict compliance with regulations governing area, setback, frontage, height, bulk, density or other dimensional requirements will unreasonably prevent the property owner from using the property for a permitted purpose, or will render conformity with those regulations unnecessarily burdensome.

In order to meet the ordinance requirements for the existing parking, the canopies would have to be redesigned into two separate canopies per row of parking, with no overhang to protect the pedestrian walkway. In addition, they would have to have a pitch that is not favorable for solar collection, in order to meet height and clearance requirements. This might, in fact, make solar collection impractical for this project.

Standard #4. Minimum Variance Necessary.

Explain how the Dimensional Variance requested is the minimum variance necessary to do substantial justice to the applicant as well as to other property owners in the district.

The requested variance is the minimum required in order to provide the desired shelter and surface area for solar collectors to function effectively.

Standard #5. Adverse Impact on Surrounding Area.

Explain how the Dimensional Variance will not cause an adverse impact on surrounding property, property values, or the use and enjoyment of property in the neighborhood or zoning district.

The requested variance will not cause an adverse impact to surrounding property, as it is located towards the rear of the site, and will not be visible from the building front or from nearby roadways. The character of the parking lot will remain similar to that of the surrounding properties, which are all industrial uses.

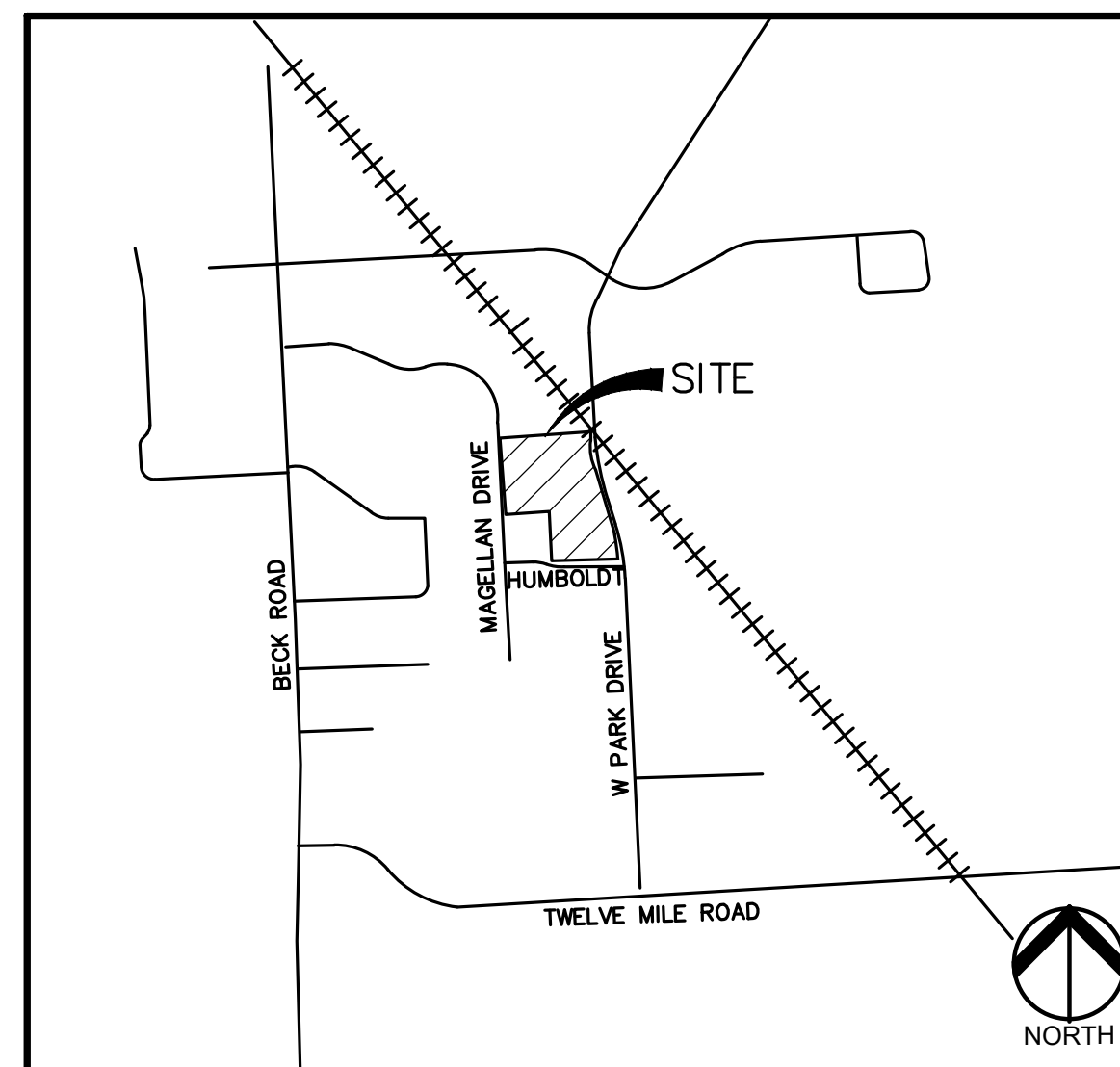
CONSTRUCTION PLANS

LINEAGE CAR PORTS ADDITION

46500 HUMBOLDT DRIVE
CITY OF NOVI, OAKLAND COUNTY, MICHIGAN

PERMIT / APPROVAL SUMMARY		
DATE SUBMITTED	DATE APPROVED	PERMIT / APPROVAL
9/10/2024	11/13/2024	PRELIMINARY SITE PLAN APPROVAL
9/10/2024		FINAL SITE PLAN APPROVAL
9/10/2024		SESC PERMIT

WAIVER AND VARIANCE LIST	
1.	A WAIVER IS REQUESTED FROM SECTION 5.3.12 OF NOVI ZONING ORDINANCE TO ALLOW SOME OF THE EXISTING INTERIOR LANDSCAPE TREES TO BE REMOVED FOR THE CONSTRUCTION OF SOLAR CANOPIES. REPLACEMENT TREES WILL BE PLACED AROUND THE PERIMETER OF THE PARKING AREA.
2.	A VARIANCE IS REQUESTED FROM 4.19.2.C.iii AND 5.15.12.D TO ALLOW THE CANOPIES TO EXCEED THE ALLOWABLE WIDTH OF 40 FEET BY 12.5 FEET, AND TO ALLOW THE CANOPIES TO EXCEED THE ALLOWABLE HEIGHT OF 12 FEET BY AN AVERAGE OF 5 FEET.



LOCATION MAP
SCALE: 1" = 1500'

INDEX OF DRAWINGS	
NUMBER	TITLE
	COVER SHEET
C-1.0	OVERALL EXISTING CONDITIONS PLAN
C-1.1	EXISTING CONDITIONS AND DEMOLITION PLAN
C-2.0	OVERALL SITE PLAN
C-2.1	DIMENSION AND PAVING PLAN - 1
C-2.2	DIMENSION AND PAVING PLAN - 2
C-3.1	GRADING AND SESC PLAN - 1
C-3.2	GRADING AND SESC PLAN - 2
C-4.0	UTILITY PLAN
C-5.0	NOTES AND DETAILS
L-1.0	LANDSCAPE PLAN
L-2.1	LANDSCAPE SPECIFICATIONS
L-2.2	LANDSCAPE SPECIFICATIONS
<u>PHOTOMETRIC SITE PLANS</u>	
1 OF 2	PHOTOMETRIC LAYOUT
2 OF 2	PHOTOMETRIC LAYOUT
<u>CARPORT CANOPY STRUCTURAL PLANS</u>	
S0.1	STRUCTURAL NOTES
S0.2	TESTING AND INSPECTION NOTES
S0.3	ABBREVIATIONS AND SYMBOLS
S1.0	CANOPY FOUNDATION PLAN
S1.1	CANOPY FRAMING PLAN
S2.1	TYPICAL CANOPY SECTION
S3.1	DETAILS

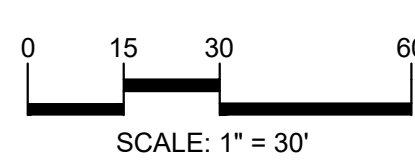
DESIGN TEAM

APPLICANT	CIVIL ENGINEER
MADISON ENERGY INVESTMENTS 8100 BOONE BLVD, SUITE 310 VIENNA, VA 22182 CONTACT: NICK PERGE PHONE: 614-425-0315 EMAIL: NPERGE@MADISONEI.COM	PEA GROUP 58105 VAN DYKE RD. WASHINGTON TWP., MI 48094 CONTACT: BECKY KLEIN, PE, LEED AP BD+C PHONE: 844.813.2949 EMAIL: BKLEIN@PEAGROUP.COM
	LANDSCAPE ARCHITECT
	PEA GROUP 7927 NEMCO WAY, STE. 115 BRIGHTON, MI 48116 CONTACT: JANET EVANS, PLA PHONE: 844.813.2949 EMAIL: JEVANS@PEAGROUP.COM

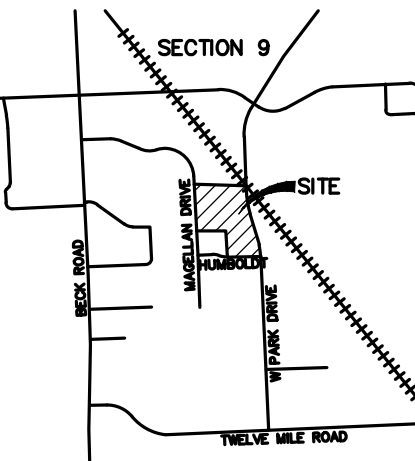


REVISIONS	
DESCRIPTION	DATE
PRELIMINARY AND FINAL SITE PLAN SUBMITTAL	9/12/2024
FSP/VARIANCE SUBMITTAL	12/2/2024





CAUTION!!
THE LOCATION AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE OR OTHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
MADISON ENERGY INVESTMENTS
8100 BOONE BLVD, STE 310
VIENNA, VIRGINIA

PROJECT TITLE
LINEAGE CAR PORTS ADDITION
46500 HUMBOLDT DRIVE
NOVI, MICHIGAN

REVISIONS

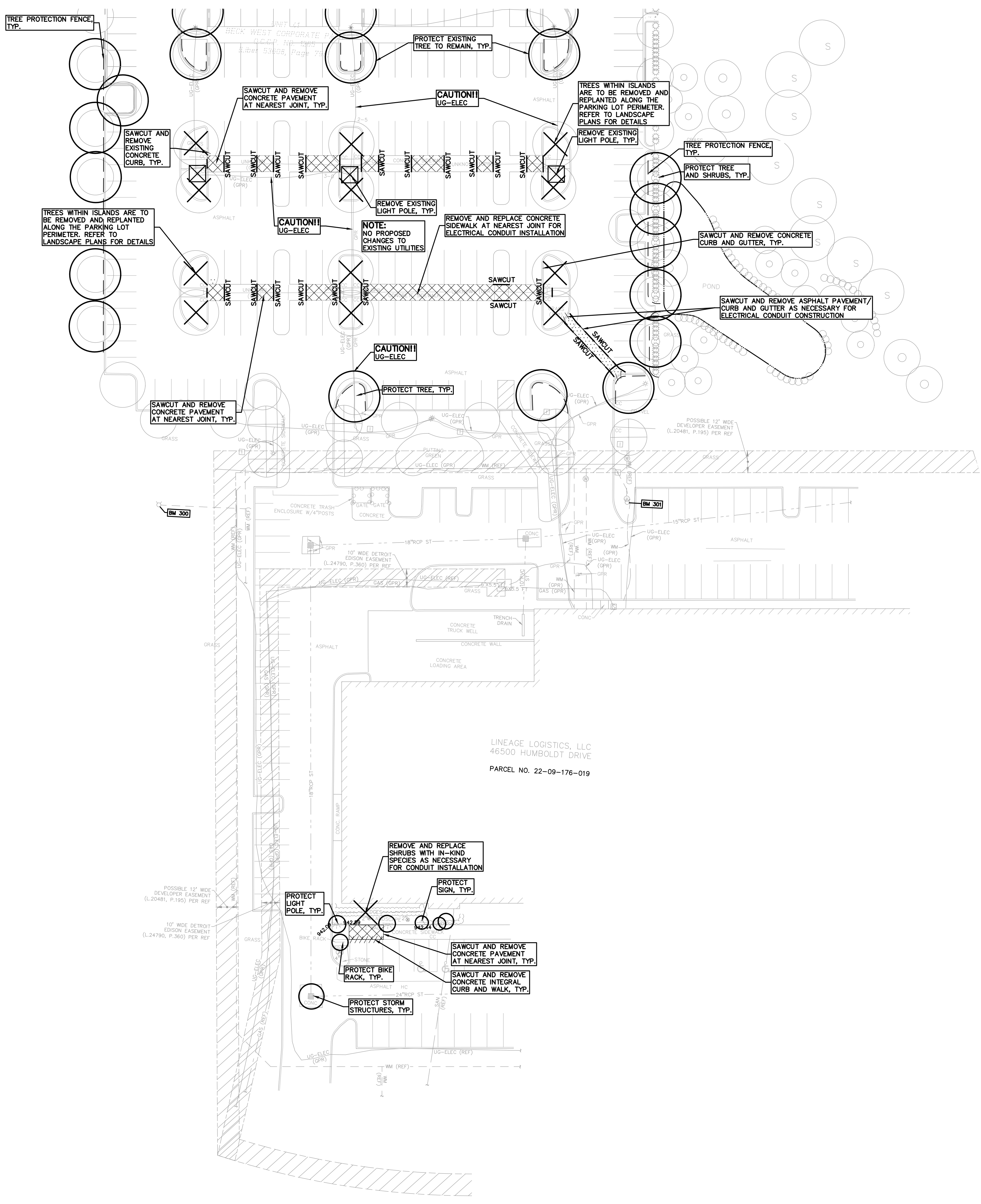
FSP AND FSP SUBMITTAL	9/12/2024
FSP/VARIANCE SUBMITTAL	12/2/2024

ORIGINAL ISSUE DATE:
AUGUST 16, 2024

DRAWING TITLE
EXISTING CONDITIONS AND DEMOLITION PLAN

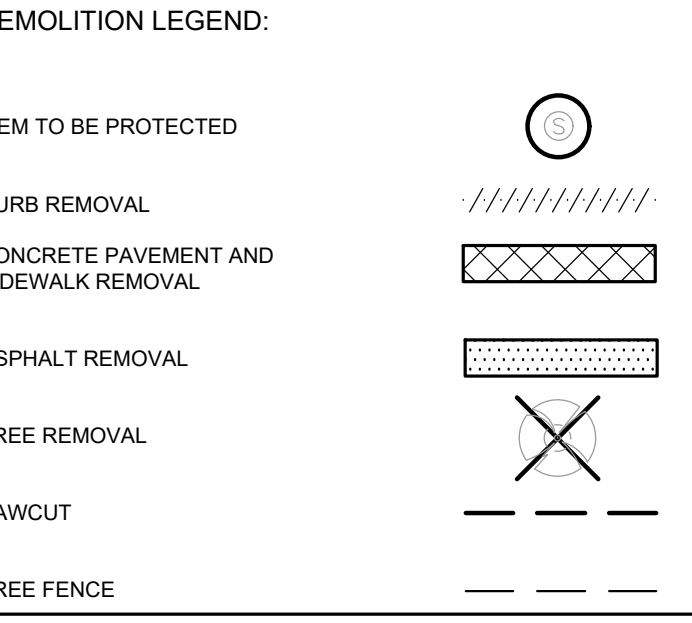
PEA JOB NO.	2023-1048
P.M.	BK
DN.	MT
DES.	MT

DRAWING NUMBER:
C-1.1



FLOODPLAIN NOTE:
BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X'. AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN PER FLOOD INSURANCE RATE MAP NUMBER 26125C0469F DATED SEPTEMBER 29, 2006.

NOVI BENCHMARKS
BM #913
X ON NORTH RIM OF GATE VALVE WEST OF INTERSECTION OF HUMBOLDT DR. AND MAGELLAN, 10' WEST OF BACK OF CURB AND 25' NORTH OF CENTERLINE OF HUMBOLDT DR.
ELEV. - 945.93
BM #921
X ON NORTH RIM OF SANITARY MH LOCATED EAST OF INTERSECTION OF HUMBOLDT AND WEST PARK, 10' EAST OF ASPHALT WALK.
ELEV. - 944.96



GENERAL DEMOLITION NOTES:
THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT:

- ALL MATERIAL TO BE REMOVED, WHETHER SPECIFICALLY NOTED IN THE PLANS OR NOT, SHALL BE REMOVED FROM THE SITE BY THE CONTRACTOR AND DISPOSED OF OFF-SITE IN A LEGAL MANNER. NO ON-SITE BURY OR BURN PITS SHALL BE ALLOWED.
- ALL DEMOLITION WORK SHALL CONFORM TO ALL LOCAL CODES AND ORDINANCES.
- STAGING/PHASING OF DEMOLITION AND CONSTRUCTION IS TO BE COORDINATED WITH THE OWNER AND THE CONTRACTOR PRIOR TO CONSTRUCTION.
- SPECIFIC DEMOLITION ITEMS HAVE BEEN INDICATED ON THE PLANS AS A GUIDE TO THE GENERAL SCOPE OF THE WORK. IT IS THE INTENT THAT THESE ITEMS SHALL BE COMPLETELY REMOVED BY THE CONTRACTOR ABOVE AND BELOW GROUND, UNLESS SPECIFICALLY NOTED OTHERWISE, AND THAT DEMOLITION WILL INCLUDE BUT WILL NOT NECESSARILY BE LIMITED TO THESE ITEMS. CONTRACTOR SHALL VISIT SITE TO VERIFY EXISTING CONDITIONS AND EXTENTS OF THE DEMOLITION THAT WILL BE REQUIRED PRIOR TO SUBMITTING A BID.
- REMOVE ALL STRUCTURES DESIGNATED FOR REMOVAL ACCORDING TO THE DEMOLITION PLAN. THIS INCLUDES CONCRETE, ASPHALT, TREES, ETC.
- REFER TO SHEET LANDSCAPE PLANS FOR TREE PROTECTION DETAILS.
- THE CONTRACTOR SHALL, AS A MINIMUM, PROVIDE TREE PROTECTION FENCING AROUND EXISTING TREES TO BE SAVED THAT ARE WITHIN 15 FEET OF CONSTRUCTION ACTIVITIES AND AS INDICATED IN THE PLANS OR PER LOCAL AGENCY REQUIREMENTS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CLEAN UP, NOISE, DUST CONTROL, STREET SWEEPINGS AND HOURS OF OPERATION IN ACCORDANCE WITH THE LOCAL CODES.
- THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADES, SIGNAGE, MARKINGS, LIGHTS AND OTHER TRAFFIC CONTROL DEVICES TO PROTECT THE WORK ZONE AND SAFELY MAINTAIN TRAFFIC PER AGENCY REQUIREMENTS AND IN ACCORDANCE WITH THE LATEST EDITION OF THE STATE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.
- THE CONTRACTOR IS RESPONSIBLE FOR THE REMOVAL AND REPLACEMENT OF SIGNS AND SUPPORTS WITHIN THE WORK AREA, AS NECESSARY TO FACILITATE CONSTRUCTION. SIGNS SHALL BE PROTECTED OR STOCKPILED FOR REUSE AS SPECIFIED IN THE PLANS OR AS REQUIRED BY THE AGENCY OF JURISDICTION. THE CONTRACTOR SHALL REPLACE ANY DAMAGED SIGNS AND SUPPORTS AT NO ADDITIONAL COST TO THE OWNER.
- THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE 811 ONE CALL UTILITY LOCATING CENTER, THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.

LEGEND:

OH-ELEC-W-O	EX. OH. ELEC. POLE & GUY WIRE
UG-CATV	EX. U.G. CABLE TV & PEDESTAL
UG-COMM	EX. U.G. COMMUNICATION LINE, PEDESTAL & MANHOLE
UG-ELEC-MH	EX. U.G. ELEC. MANHOLE, METER & HANDHOLE
---	EX. GAS LINE
⊙	EX. GAS VALVE & GAS LINE MARKER
⊞	EX. TRANSFORMER & IRRIGATION VALVE
---	EX. WATER MAIN
⊕	EX. HYDRANT, GATE VALVE & POST INDICATOR VALVE
⊖	EX. WATER VALVE BOX & SHUTOFF
⊙	EX. SANITARY SEWER
⊞	EX. SANITARY CLEANOUT & MANHOLE
⊕	EX. COMBINED SEWER MANHOLE
---	EX. STORM SEWER
⊞	EX. CLEANOUT & MANHOLE
⊞	EX. SQUARE, ROUND & BEEHIVE CATCH BASIN
⊕	EX. YARD DRAIN, U.G. ROOF DRAIN & DOWNSPOUT
⊞	EX. UNIDENTIFIED STRUCTURE
⊞	EX. MAILBOX, SIGN, LIGHTPOLE & GUARD POST
---	EX. FENCE
---	EX. GUARD RAIL
⊕	EX. DEC. TREE, CONIFEROUS TREE & SHRUB
⊕	EX. TREE TAG & TREE LINE
---	EX. SPOT ELEVATION
---	EX. CONTOUR
---	EX. WETLAND
⊕	IRON FOUND / SET
⊕	NAIL FOUND / NAIL & CAP SET
⊕	BRASS PLUG SET
⊕	MONUMENT FOUND / SET
⊕	SECTION CORNER FOUND
⊕	RECORDED / MEASURED / CALCULATED
⊕	GNSS GLOBAL NAVIGATION SATELLITE SYSTEM

REFERENCE DRAWINGS:
TOPOGRAPHIC SURVEY, PEA JOB NO. 2019-436

BENCHMARKS:
THE LOCATION AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE OR OTHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

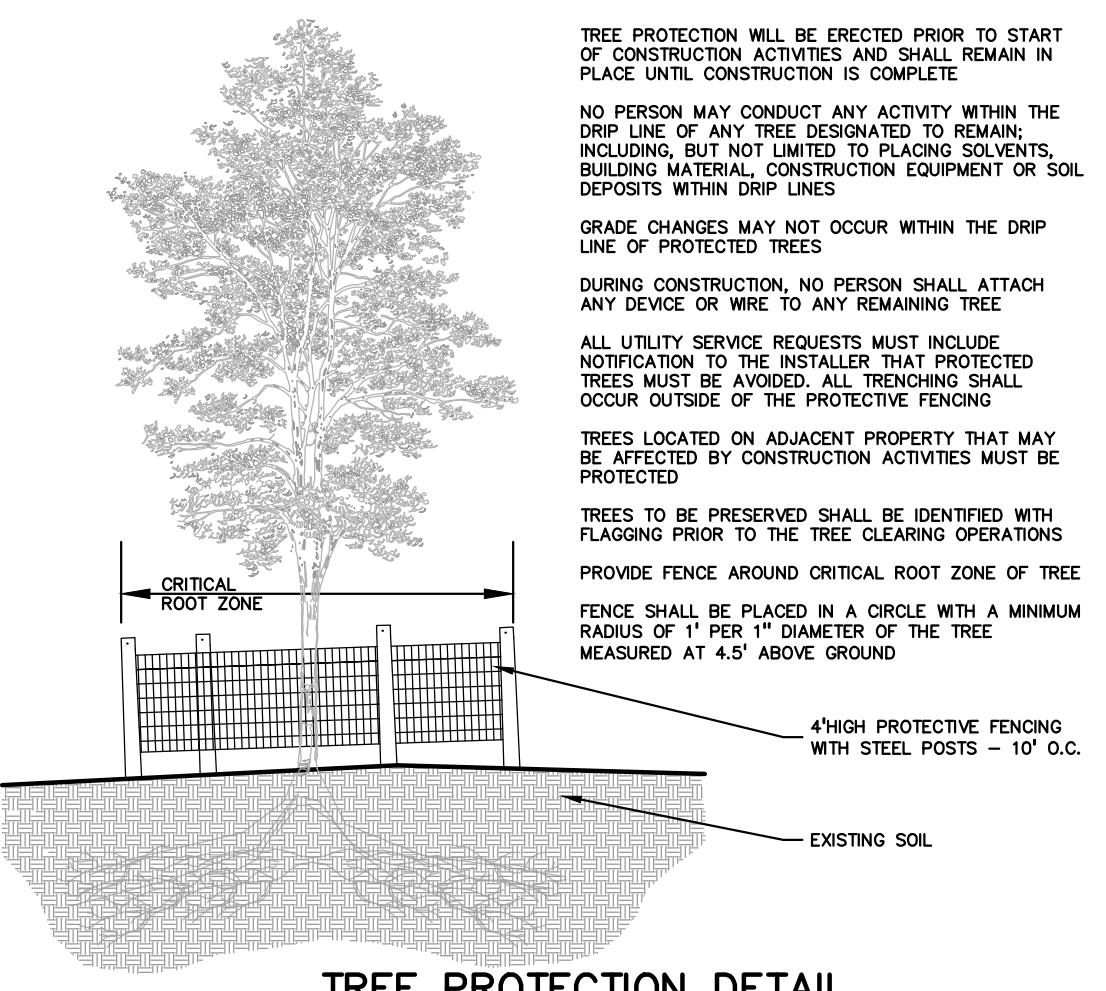
BM #300
ARROW ON A HYDRANT LOCATED APPROX. 107' WEST OF THE TRUCK ENCLOSURE AREA, NORTHWEST OF THE TRUCK LOADING AREA.
ELEV. - 947.10
BM #301 (PER PEA JOB NO. 2019-436)
ARROW ON A HYDRANT LOCATED APPROX. 58' NORTH OF THE BUILDING, NORTHEAST OF THE TRUCK LOADING AREA.
ELEV. - 944.62

TOPOGRAPHIC AND BOUNDARY SURVEY DISCLAIMER:
TOPOGRAPHIC AND BOUNDARY SURVEY ELEMENTS OF THIS EXISTING CONDITIONS PLAN, INCLUDING PROPERTY LINES, LEGAL DESCRIPTION, EXISTING UTILITIES, EXISTING ELEVATIONS, EXISTING PHYSICAL FEATURES, AND EXISTING STRUCTURES ARE REFERENCED FROM THE FOLLOWING NOWAK AND FRAUS SURVEYS:

ALTA/NSPS LAND TITLE SURVEY, BY NOWAK AND FRAUS, DATED 03-27-2017
ALTA/NSPS LAND TITLE SURVEY, BY NOWAK AND FRAUS, DATED 08-29-2019
BOUNDARY/TOPOGRAPHIC/WETLAND SURVEY, BY NOWAK AND FRAUS, DATED 08-29-2019

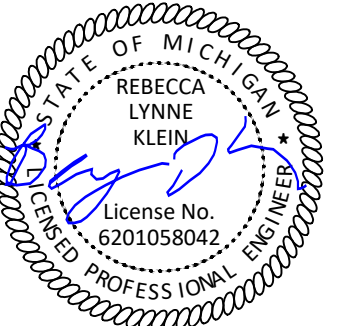
PEA GROUP WILL NOT BE HELD RESPONSIBLE FOR THE ACCURACY OF THE SURVEY OR FOR DESIGN ERRORS/OMISSIONS RESULTING FROM SURVEY INACCURACIES.

LEGAL DESCRIPTION:
CURRENT PARCEL ID: 22-09-176-019
PER "5TH AMENDMENT TO CONSOLIDATING MASTER DEED BECK WEST CORPORATE PARK-NOVI CONDOMINIUM" AS RECORDED IN LIBER 53608, PAGE 798, OAKLAND COUNTY RECORDS:
LAND IN THE NORTHWEST CORNER OF TOWNSHIP 1 NORTH, RANGE 8 EAST, OAKLAND COUNTY, MICHIGAN, DESCRIBED AS FOLLOWS:
UNIT 41 OF "BECK WEST CORPORATE PARK - NOVI CONDOMINIUMS" AS RECORDED IN OAKLAND COUNTY RECORDS, SUBDIVISION NO. 1265.



TREE PROTECTION DETAIL
NOT TO SCALE

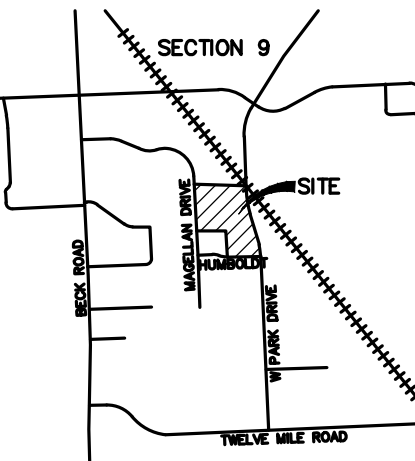
S:\PROJECTS\2023\23-1048 LINEAGE LOGISTICS CARPORT\DWG\3_CONSTRUCTION\C-1.1_EXISTING CONDITIONS-25-1048.dwg PLOT DATE: 12/2/2024 10:56:56 AM



0 15 30 60
 SCALE: 1" = 30'



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CLIENT
MADISON ENERGY INVESTMENTS
 8100 BOONE BLVD, STE 310
 VIENNA, VIRGINIA

PROJECT TITLE
LINEAGE CAR PORTS ADDITION
 46500 HUMBOLDT DRIVE
 NOVI, MICHIGAN

REVISIONS

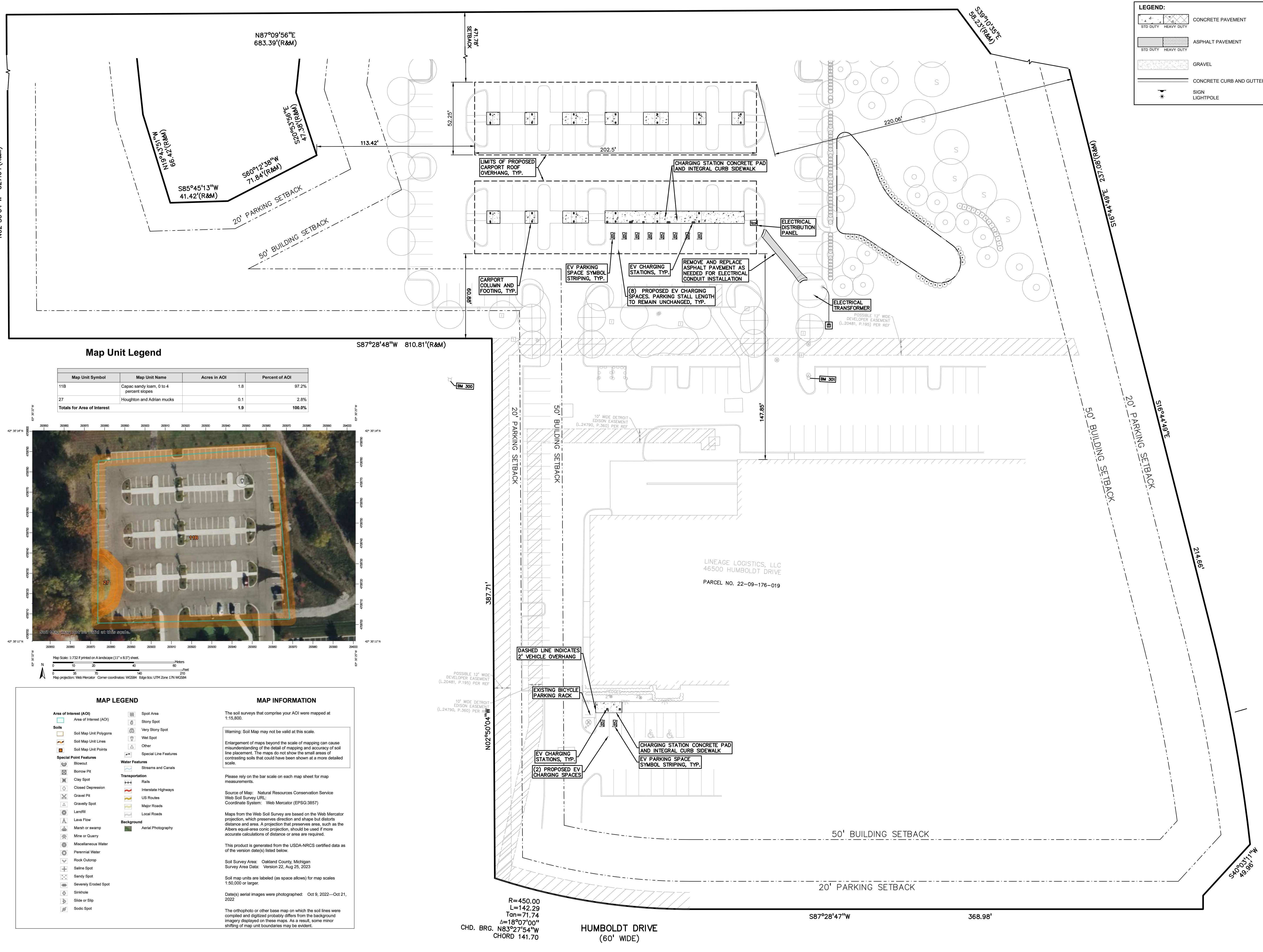
FSP AND FSP SUBMITTAL	9/12/2024
FSP/VARIANCE SUBMITTAL	12/2/2024

ORIGINAL ISSUE DATE:
 AUGUST 16, 2024

DRAWING TITLE
OVERALL SITE PLAN

PEA JOB NO.	2023-1048
P.M.	BK
D.N.	MT
DES.	MT
DRAWING NUMBER:	

C-2.0



Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
11B	Capac sandy loam, 0 to 4 percent slopes	1.8	97.2%
27	Houghton and Adrian mucks	0.1	2.8%
Totals for Area of Interest		1.9	100.0%



Map Scale: 1:2500 printed on a landscape (11" x 6.5") sheet.
 0 10 20 40 60 Feet
 0 10 20 40 60 Meters
 Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM, Zone 17N, WGS84

MAP LEGEND

- Area of Interest (AOI)
 - Area of Interest (AOI)
- Soils
 - Soil Map Unit Polygons
 - Soil Map Unit Lines
 - Soil Map Unit Points
- Special Point Features
 - Blowout
 - Borrow Pit
 - Clay Spot
 - Closed Depression
 - Gravel Pit
 - Gravelly Spot
 - Landfill
 - Lava Flow
 - Marsh or swamp
 - Mine or Quarry
 - Miscellaneous Water
 - Perennial Water
 - Rock Outcrop
 - Salina Spot
 - Sandy Spot
 - Severely Eroded Spot
 - Sinkhole
 - Slide or Slip
 - Sodic Spot
- Water Features
 - Streams and Canals
- Transportation
 - Rails
 - Interstate Highways
 - US Roads
 - Major Roads
 - Local Roads
- Background
 - Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
 Web Soil Survey URL: <http://websoilsurvey.sc.egov.usda.gov>
 Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Oakland County, Michigan
 Survey Area Data: Version 22, Aug 25, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Oct 9, 2022—Oct 21, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

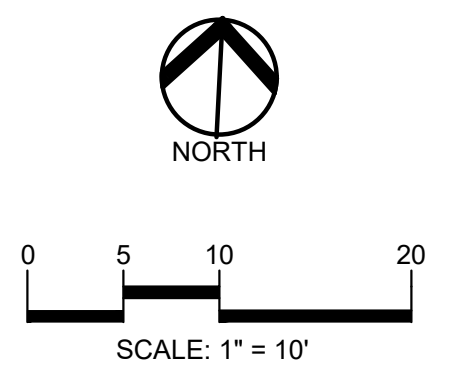
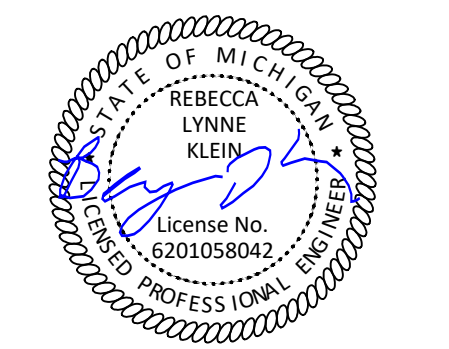
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GENERAL NOTES:
 THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.

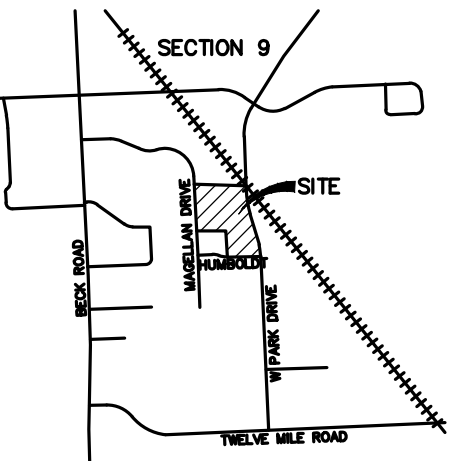
- ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
- REFER TO NOTES & DETAILS SHEET FOR ON-SITE PAVING DETAILS.
- REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS.

LEGEND:

	CONCRETE PAVEMENT
	ASPHALT PAVEMENT
	GRAVEL
	CONCRETE CURB AND GUTTER
	REVERSE GUTTER PAN
	SIGN LIGHTPOLE



CAUTION!!
 THE LOCATION AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
MADISON ENERGY INVESTMENTS
 8100 BOONE BLVD, STE 310
 VIENNA, VIRGINIA

PROJECT TITLE
LINEAGE CAR PORTS ADDITION
 46500 HUMBOLDT DRIVE
 NOVI, MICHIGAN

REVISIONS

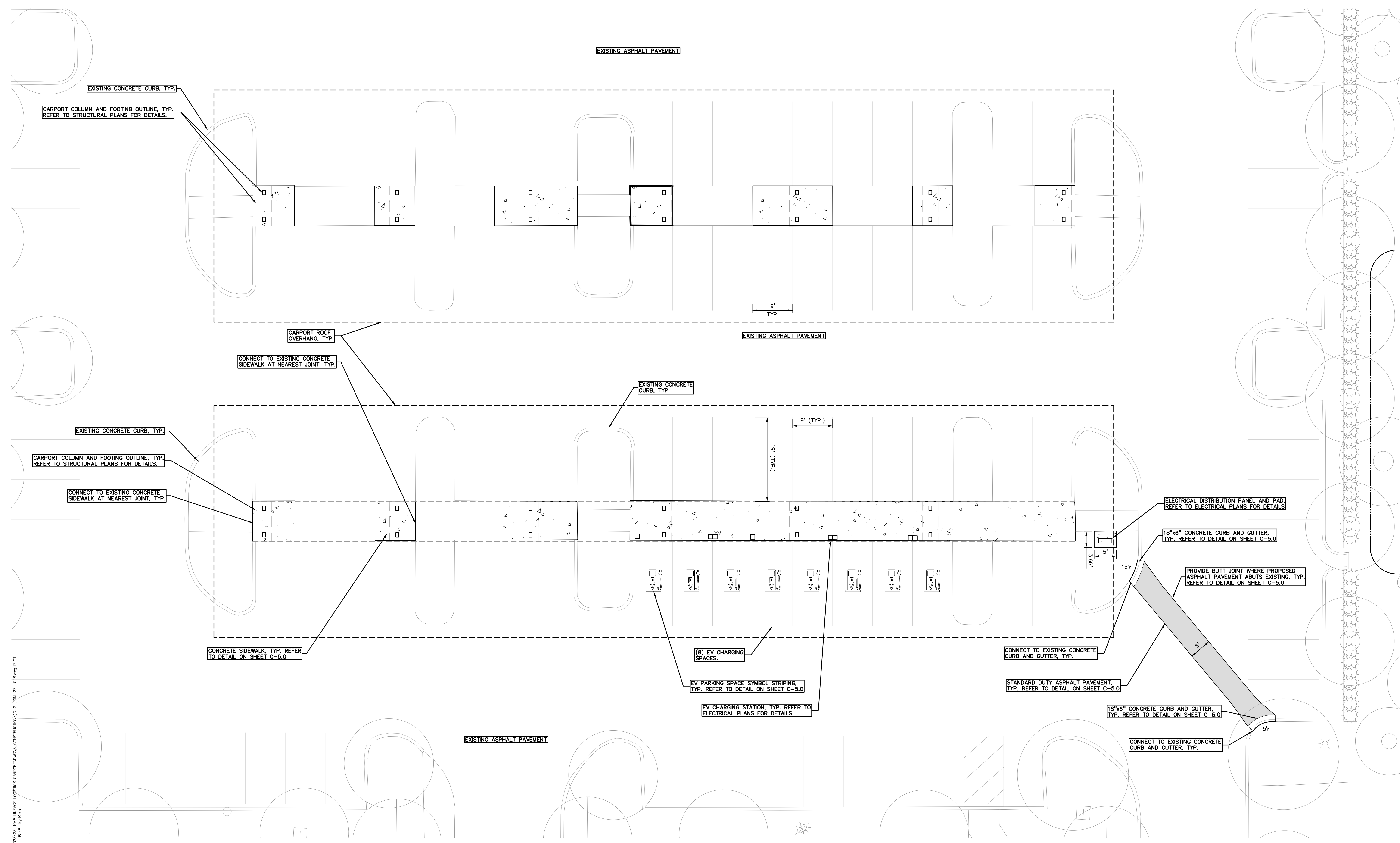
PSP AND FSP SUBMITTAL	9/12/2024
FSP/VARIANCE SUBMITTAL	12/2/2024

ORIGINAL ISSUE DATE:
 AUGUST 16, 2024

DRAWING TITLE
DIMENSION AND PAVING PLAN - 1

PEA JOB NO.	2023-1048
P.M.	BK
DN	MT
DES.	MT

DRAWING NUMBER:
C-2.1



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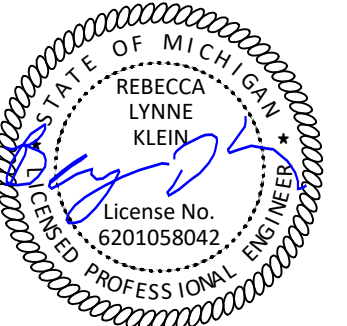
GENERAL NOTES:
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1. ALL DIMENSIONS SHOWN ARE TO BACK OF CURB, FACE OF SIDEWALK, OUTSIDE FACE OF BUILDING, PROPERTY LINE, CENTER OF MANHOLE/CATCH BASIN OR CENTERLINE OF PIPE UNLESS OTHERWISE NOTED.
2. REFER TO NOTES & DETAILS SHEET FOR ON-SITE PAVING DETAILS.
3. REFER TO NOTES & DETAILS SHEET FOR ON-SITE SIDEWALK RAMP DETAILS.

LEGEND:

	CONCRETE PAVEMENT
	ASPHALT PAVEMENT
	GRAVEL
	CONCRETE CURB AND GUTTER
	REVERSE GUTTER PAN
	SIGN LIGHTPOLE

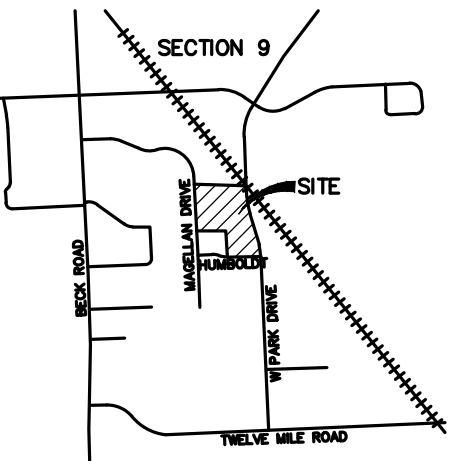
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0 5 10 20
 SCALE: 1" = 10'



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CLIENT
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 8100 BOONE BLVD, STE 310
 VIENNA, VIRGINIA

PROJECT TITLE
LINEAGE CAR PORTS ADDITION
 46500 HUMBOLDT DRIVE
 NOVI, MICHIGAN

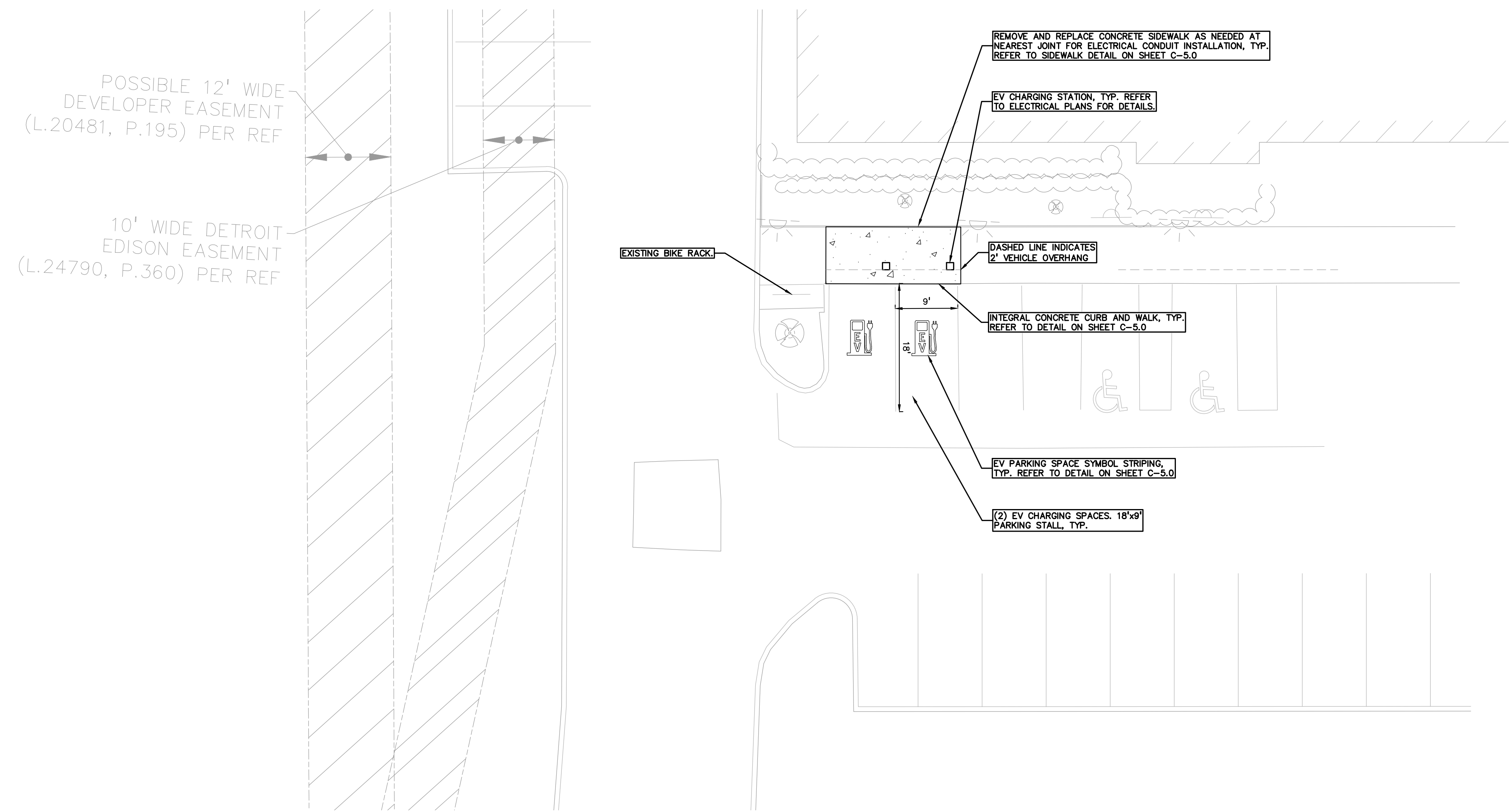
REVISIONS

PSP AND FSP SUBMITTAL	9/12/2024
FSP/VARIANCE SUBMITTAL	12/2/2024

ORIGINAL ISSUE DATE:
 AUGUST 16, 2024
 DRAWING TITLE
DIMENSION AND PAVING PLAN - 2

PEA JOB NO.	2023-1048
P.M.	BK
DN.	MT
DES.	MT

DRAWING NUMBER:
C-2.2



- CITY OF NOVI STANDARD NOTES:**
- IT IS THE DEVELOPER'S RESPONSIBILITY TO GRADE AND STABILIZE DISTURBANCES DUE TO THE INSTALLATION OF PUBLIC UTILITIES
 - ALL DRAINAGE DITCHES SHALL BE STABILIZED WITH EROSION CONTROL BLANKET AND SHALL UTILIZE CHECK DAMS AS NECESSARY. DRAINAGE DITCHES STEEPER THAN 3% SHALL BE SODDED.
 - SLOPES STEEPER THAN 1V:6H (16%) SHALL BE STABILIZED WITH EROSION CONTROL BLANKET
 - ALL CULVERT END SECTIONS MUST CONTAIN GROUTED RIP-RAP IN ACCORDANCE WITH CRDANCE SPECIFICATIONS
 - THE INSTALLATION OF SILT FENCE AND TREE PROTECTION FENCING SHALL NOT OCCUR PRIOR TO THE INITIAL CITY PRE-CONSTRUCTION MEETING. WHEN NATURAL FEATURES EXIST IN THE SITE, INSPECTION OF STAKING MAY BE REQUIRED PRIOR TO INSTALLATION OF THE FENCING.

SYMBOLS: EROSION CONTROL:

- (SP-2) SILT FENCE
- (SI-2A) LOW POINT INLET FILTER
- HAY BALE

REFER TO O.C.W.R.C. SOIL EROSION AND SEDIMENTATION CONTROL DETAILS SHEET FOR ALL DEVICE DETAILS.

BENCHMARKS:
(GPS DERIVED - NAVD83)

BM #500
ARROW ON A HYDRANT LOCATED APPROX. 10' WEST OF THE TRASH ENCLOSURE AREA, NORTHWEST OF THE TRUCK LOADING AREA.
ELEV. - 947.10

BM #301 (PER PEA JOB NO. 2019-436)
ARROW ON A HYDRANT LOCATED APPROX. 58' NORTH OF THE BUILDING, NORTHEAST OF THE TRUCK LOADING AREA.
ELEV. - 944.62

FLOODPLAIN NOTE:
BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X'. AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN PER FLOOD INSURANCE RATE MAP NUMBER 2612520466F DATED SEPTEMBER 29, 2006.

NOVI BENCHMARKS

BM #913
X ON NORTH RIM OF GATE VALVE WEST OF INTERSECTION OF HUMBOLDT DR. AND MAGELLAN, 10' WEST OF BACK OF CURB AND 25' NORTH OF CENTERLINE OF HUMBOLDT DR.
ELEV. - 945.93

BM #921
X ON NORTH RIM OF SANITARY MH LOCATED EAST OF INTERSECTION OF HUMBOLDT AND WEST PARK, 10' EAST OF ASPHALT WALK.
ELEV. - 944.96

GRADING LEGEND:

- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION: TYPICALLY TOP OF PAVEMENT IN PAVED AREAS, GUTTER GRADE IN CURB LINES.
- EXISTING CONTOUR
- PROPOSED CONTOUR
- PROPOSED REVERSE GUTTER PAN
- PROPOSED RIDGE LINE
- PROPOSED SWALE/DITCH

ABBREVIATIONS

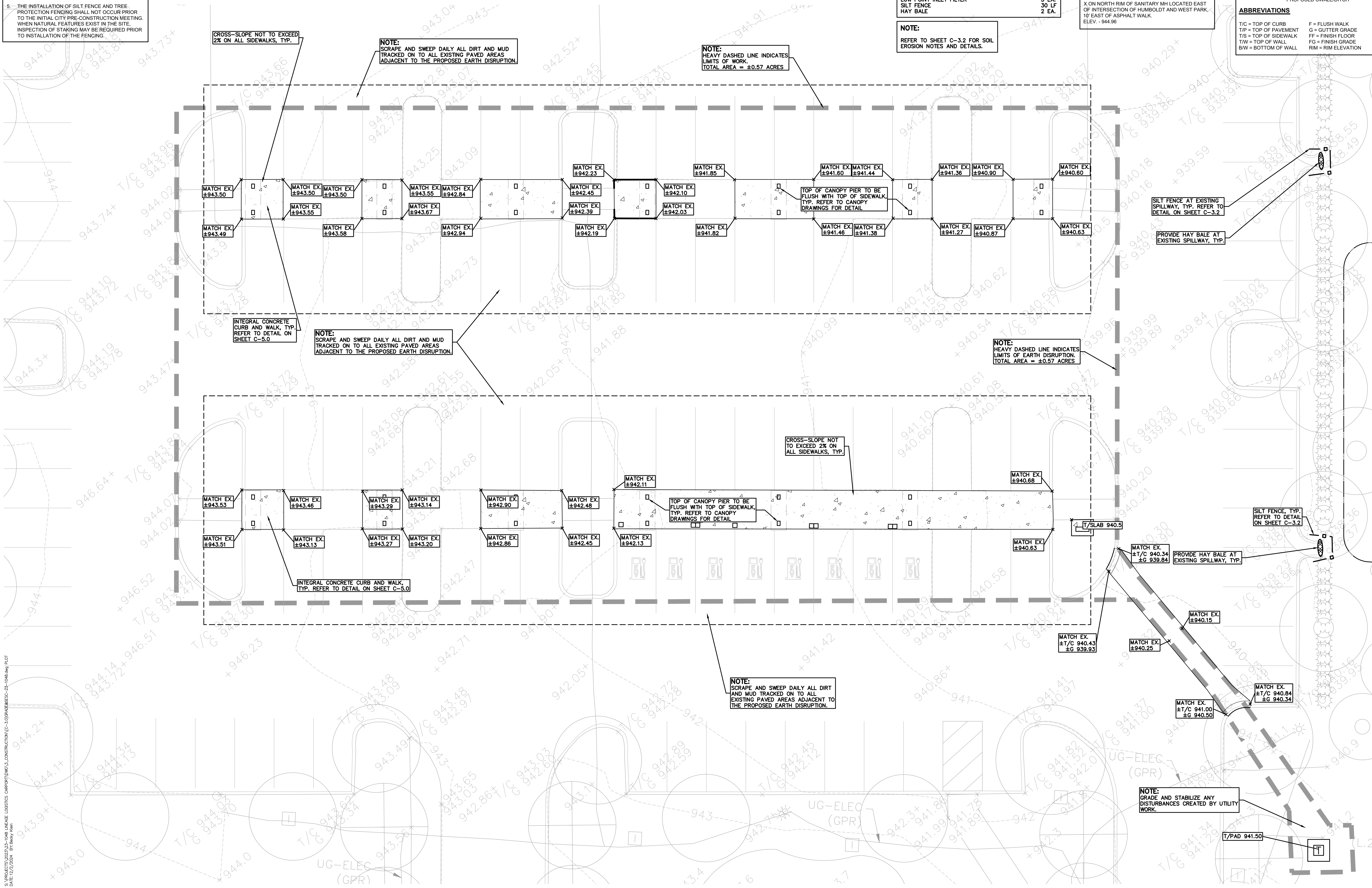
T/C = TOP OF CURB
T/P = TOP OF PAVEMENT
T/S = TOP OF SIDEWALK
T/W = TOP OF WALL
B/W = BOTTOM OF WALL

F = FLUSH WALK
G = GUTTER GRADE
FF = FINISH FLOOR
FG = FINISH GRADE
RIM = RIM ELEVATION

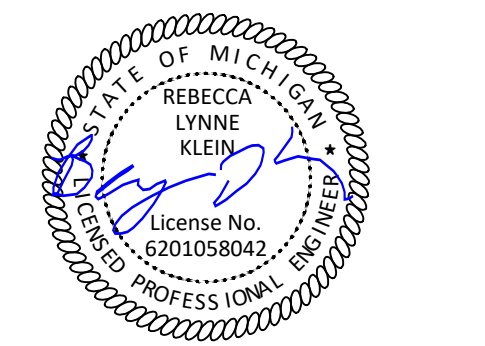
EROSION CONTROL QUANTITIES:

LOW POINT INLET FILTER 3 EA.
SILT FENCE 30 LF
HAY BALE 2 EA.

NOTE:
REFER TO SHEET C-3.2 FOR SOIL EROSION NOTES AND DETAILS.



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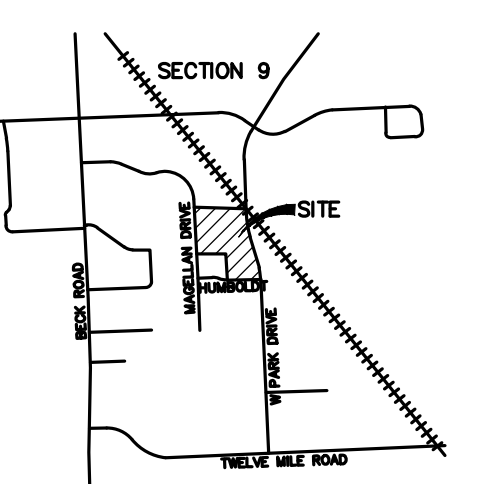


811 Know what's below. Call before you dig.

CAUTION!! THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE AS TO ACCURACY OR COMPLETENESS OF THE INFORMATION. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.

CLIENT
MADISON ENERGY INVESTMENTS
8100 BOONE BLVD, STE 310
VIENNA, VIRGINIA

PROJECT TITLE
LINEAGE CAR PORTS ADDITION
46500 HUMBOLDT DRIVE
NOVI, MICHIGAN



REVISIONS

PSP AND FSP SUBMITTAL	9/12/2024
FSP/VARIANCE SUBMITTAL	12/2/2024

ORIGINAL ISSUE DATE:
AUGUST 16, 2024

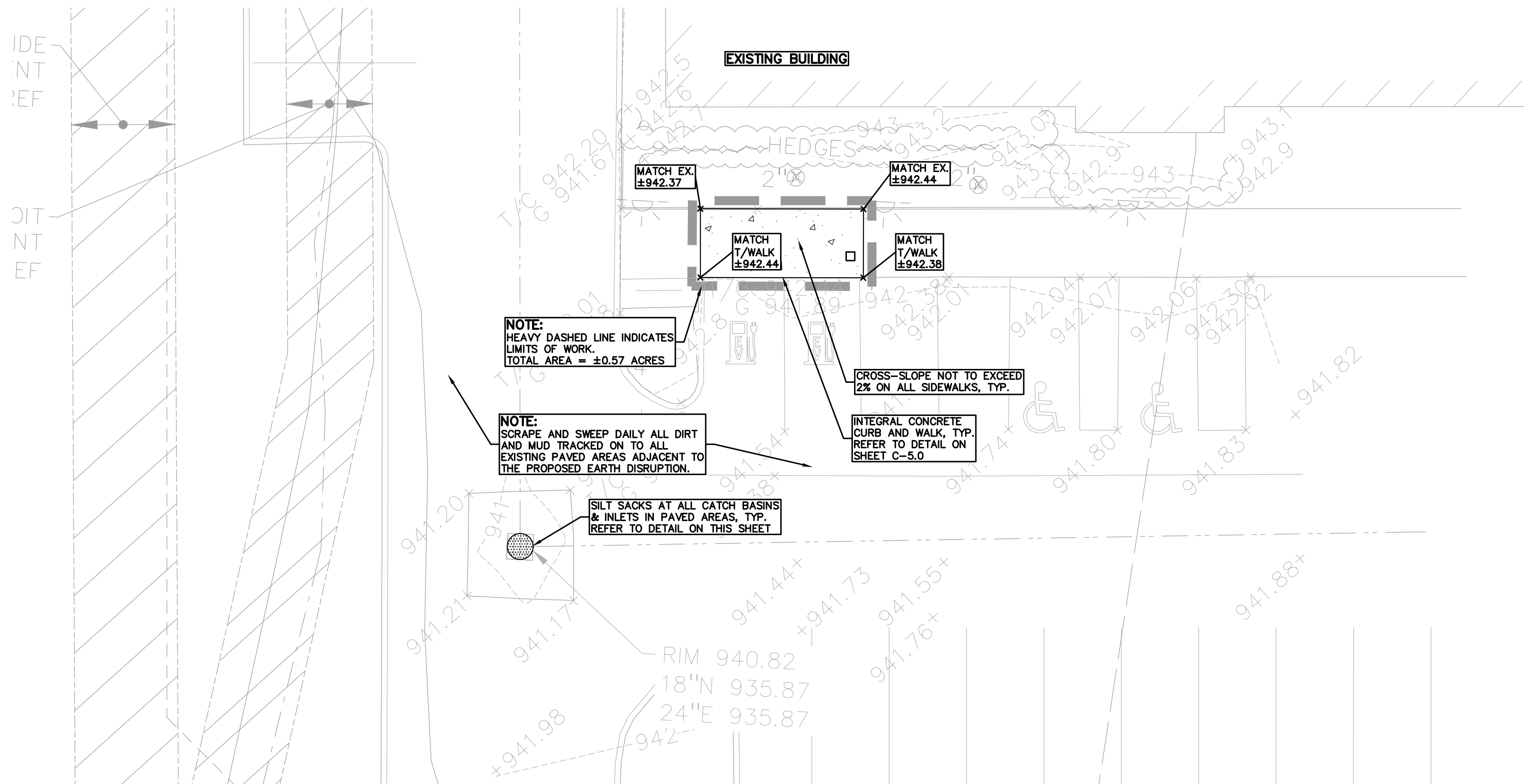
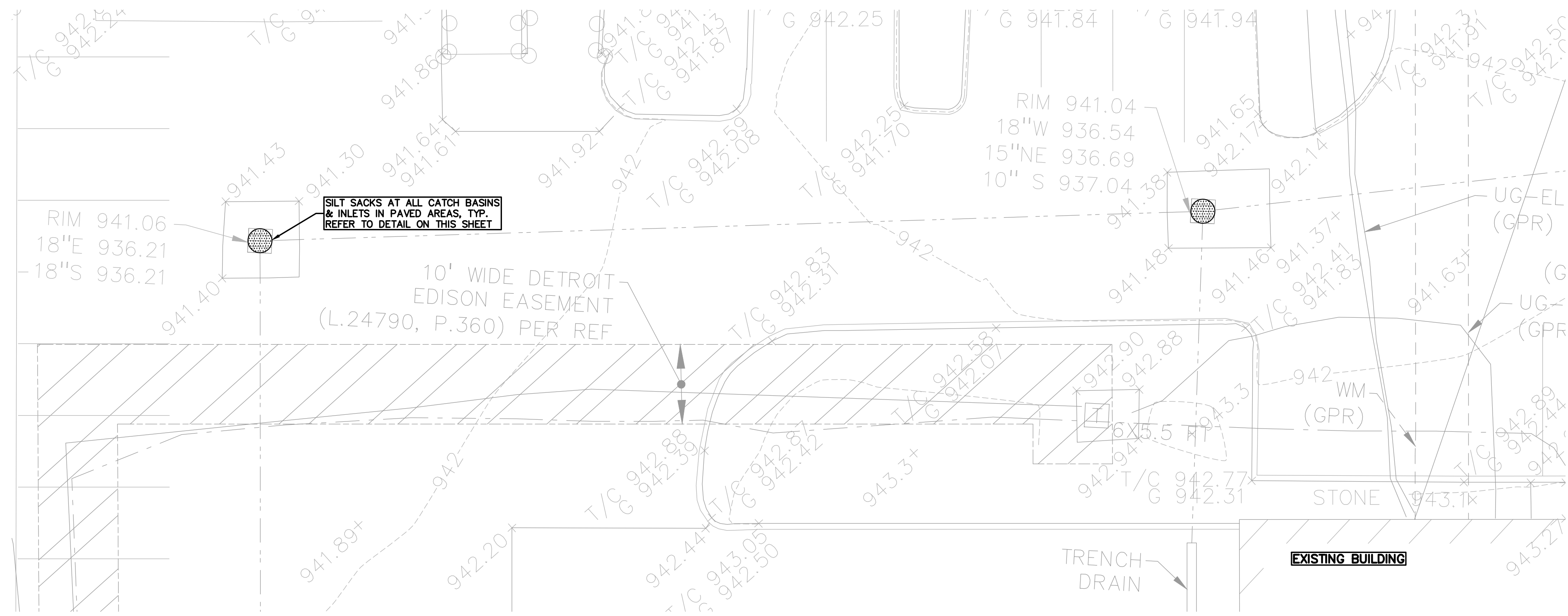
DRAWING TITLE
GRADING AND SESC PLAN -1

PEA JOB NO. 2023-1048

P.M.	BK
DN.	MT
DES.	MT

DRAWING NUMBER:
C-3.1

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SEQUENCE OF CONSTRUCTION:

START DAY	END DAY	DESCRIPTION
1	90	INSTALL TEMPORARY SOIL EROSION CONTROL MEASURES, INLET PROTECTION, ETC. AS NECESSARY.
1	90	MAINTAIN A 25' BUFFER OF VEGETATION AROUND PERIMETER OF SITE WHERE POSSIBLE.
1	15	REMOVE ALL VEGETATION, TREES AND BRUSH FROM THE PROPOSED CONSTRUCTION AREA UNLESS MARKED TO REMAIN. STRIP AND STOCKPILE TOPSOIL AS REQUIRED. ALL STOCKPILES MUST BE GRADED AND SEEDED.
5	14	REMOVE ALL PAVEMENT, CURB, ETC. AS REQUIRED TO INSTALL THE PROPOSED WORK AS SHOWN ON THE TOPOGRAPHIC SURVEY AND DEMOLITION PLAN.
5	14	DISPOSE OF ALL EXCESS/UNSUITABLE MATERIALS OFF SITE IN A LEGAL MANNER. NO ON-SITE BURN OR BURY PITS ALLOWED.
28	40	TEMPORARY SEEDING MUST BE PROVIDED IN AREAS NOT TO BE WORKED ON FOR 15 DAYS OR LONGER.
40	50	FINE GRADE SITE AND PREPARE FOR SITE PAVING OPERATIONS.
50	60	INSTALL ALL PAVEMENT, SIDEWALKS, CURBING AS PROPOSED. IF PERMANENT LANDSCAPING IS NOT TO BE INSTALLED SOON AFTER PAVING IS COMPLETE, ALL AREAS WITHIN 20 FEET OF BACK OF CURB MUST BE TEMPORARILY SEEDED. REPAIR INLET PROTECTION, SILT FENCE AND ANY OTHER DAMAGED SOIL EROSION CONTROL MEASURES AS NECESSARY.
60	70	FINAL GRADE, REDISTRIBUTE STOCKPILED TOPSOIL, ESTABLISH VEGETATION AND INSTALL ALL PERMANENT LANDSCAPING IN ALL DISTURBED AREAS NOT BUILT.
70	80	CLEAN PAVEMENT AND REMOVE ALL TEMPORARY SOIL EROSION CONTROL MEASURES. RE-ESTABLISH VEGETATION AS REQUIRED.
90	90	REMOVE SEDIMENTATION CONTROLS ONCE ENTIRE SITE HAS BEEN PERMANENTLY STABILIZED.

BENCHMARKS:
(GPS DERIVED - NAVD88)

BM #300
ARROW ON A HYDRANT LOCATED APPROX. 107' WEST OF THE TRASH ENCLOSURE AREA, NORTHWEST OF THE TRUCK LOADING AREA.
ELEV. - 947.10

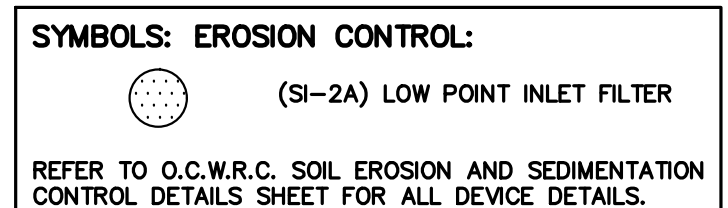
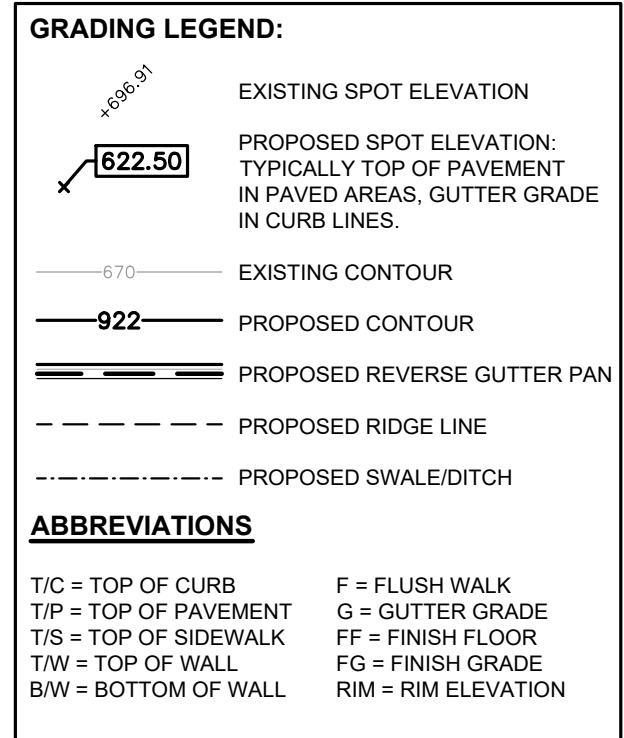
BM #301 (PER PEA JOB NO. 2019-436)
ARROW ON A HYDRANT LOCATED APPROX. 58' NORTH OF THE BUILDING, NORTHEAST OF THE TRUCK LOADING AREA.
ELEV. - 944.62

FLOODPLAIN NOTE:
BY GRAPHICAL PLOTTING, SITE IS WITHIN ZONE 'X', AREA DETERMINED TO BE OUTSIDE OF THE 0.2% ANNUAL CHANCE FLOODPLAIN PER FLOOD INSURANCE RATE MAP NUMBER 26125C0469F DATED SEPTEMBER 29, 2006.

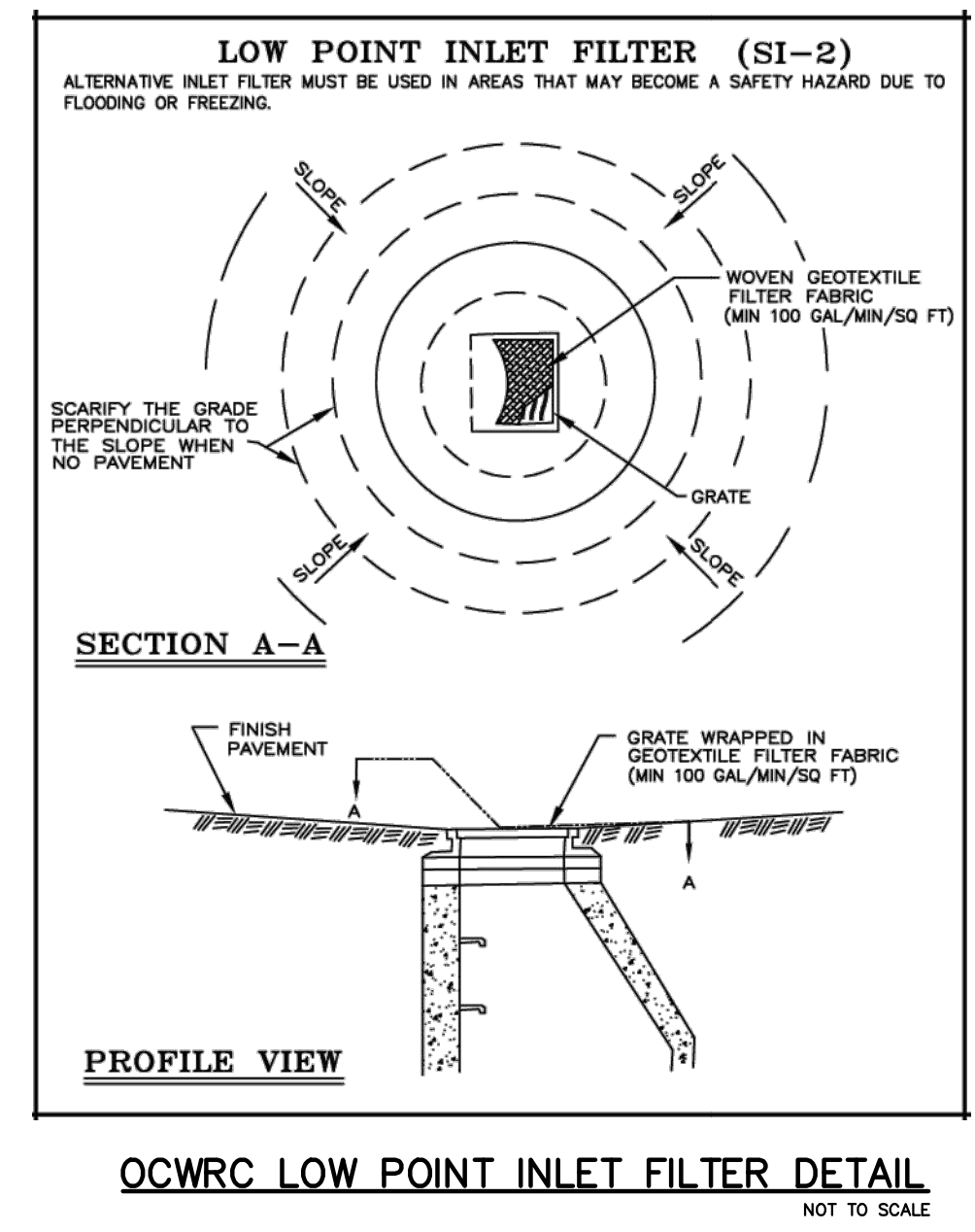
NOVI BENCHMARKS

BM #913
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ELEV. - 945.93

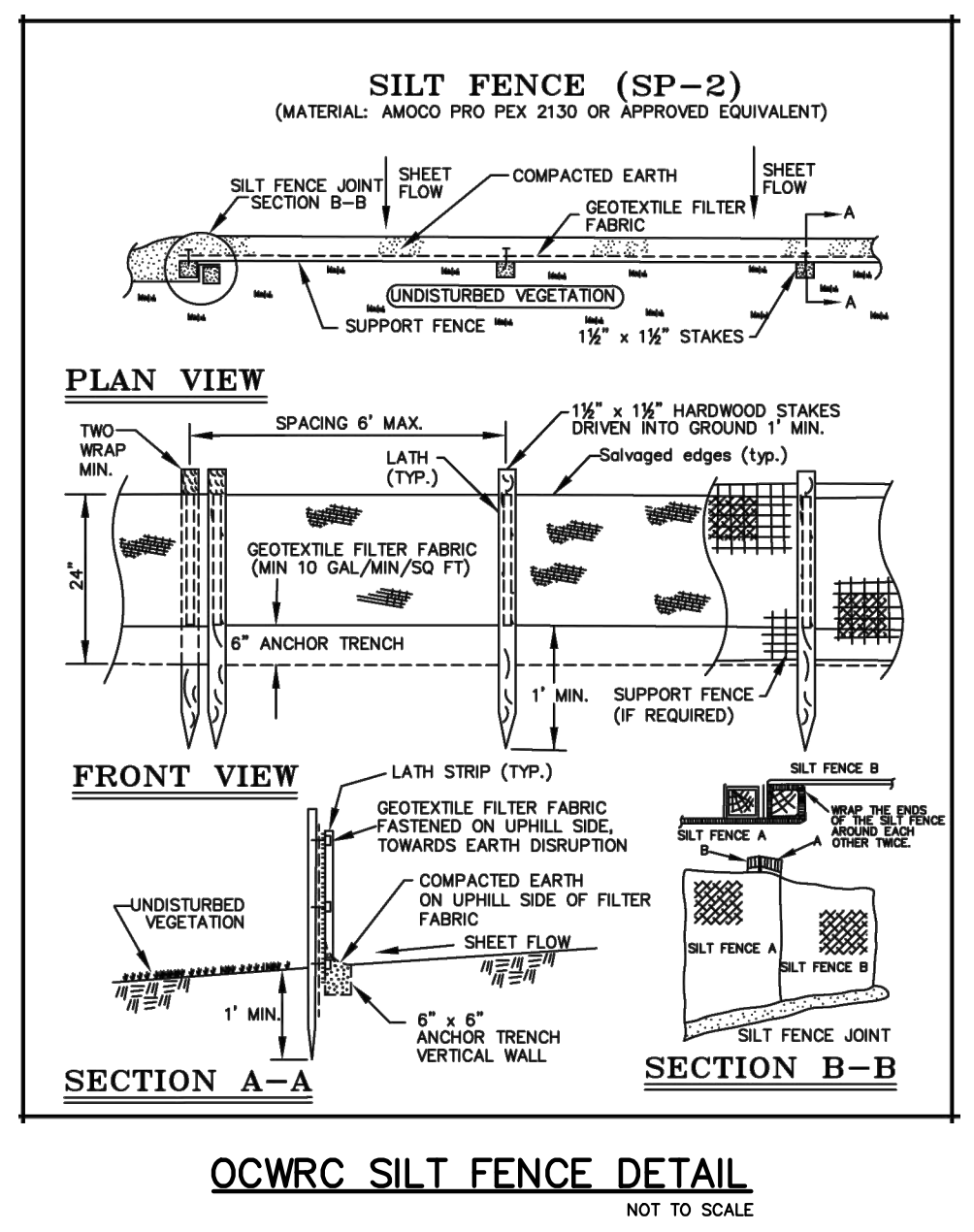
BM #921
X ON NORTH RIM OF SANITARY MH LOCATED EAST OF INTERSECTION OF HUMBOLDT AND WEST PARK, 10' EAST OF ASPHALT WALK.
ELEV. - 944.96



- SOIL EROSION AND SEDIMENTATION CONTROL SEQUENCE OF CONSTRUCTION**
- SEE OAKLAND COUNTY W.R.C. SOIL EROSION AND SEDIMENTATION CONTROL DETAILS SHEET FOR ALL SOIL EROSION CONTROL RELATED DETAILS.
 - PLACE SILT FENCE & INSTALL INLET FILTERS ON EXISTING STORM SEWER STRUCTURES, ACCORDING TO PLANS.
 - INSTALL TEMPORARY CRUSHED CONCRETE ACCESS DRIVE AT ALL CONSTRUCTION ENTRANCES. (80'x24'x8" W/MINIMUM OF 1"-3" CRUSHED CONCRETE - NO FINES).
 - REMOVE CURB, PAVEMENT, TREES, ETC. AS DIRECTED ON THE DEMOLITION PLAN.
 - STRIP AND STOCKPILE TOPSOIL FOR RESTORATION REQUIREMENTS.
 - DISPOSE OF ALL EXCESS, UNSUITABLE MATERIALS OFF SITE IN A LEGAL MANNER. NO BURN OR BURY PITS ALLOWED.
 - UNSUITABLE MATERIALS CONSIST OF, BUT ARE NOT NECESSARILY LIMITED TO THE FOLLOWING: CONCRETE, ASPHALT, TREES, BRUSH, STUMPS, ROOTS, OR OTHER MISCELLANEOUS DEBRIS OR TRASH.
 - MASS GRADE THE SITE IN ACCORDANCE WITH THE PLANS.
 - INSTALL SEED, MULCH AND EROSION CONTROL BLANKETS AS SHOWN ON THE PLAN WITHIN 5 DAYS OF COMPLETION OF MASS GRADING OR WHENEVER DISTURBED AREAS WILL REMAIN UNCHANGED FOR 30 DAYS OR GREATER. 3"-4" TOPSOIL WILL BE USED WHERE VEGETATION IS REQUIRED.
 - COMPLETE ROUGH GRADING OF SITE AND INSTALL UTILITIES. PLACE INLET FILTERS AT ALL INLETS AND CATCH BASINS, AS SHOWN.
 - FINISH GRADE AND PAVE SITE AS PROPOSED TO DRAIN TO STORM SEWER SYSTEM. REPAIR INLET FILTERS AS REQUIRED.
 - APPLY TOPSOIL, SEED AND MULCH/SOD TO ALL DISTURBED AREAS UPON COMPLETION OF GRADING. THE CONTRACTOR SHALL STAGE CONSTRUCTION ACTIVITIES IN ORDER TO MINIMIZE THE EXPOSURE OF UNSTABILIZED AREAS.
 - CLEAN PAVEMENT AND STORM SEWERS. REMOVE SILT FENCE, AND INLET FILTERS ONCE VEGETATION HAS BEEN ESTABLISHED.
 - CLEAN DETENTION BASIN AND OVERFLOW SPILLWAYS AND REPAIR RIPRAP AS NECESSARY.
 - ALL DIRT AND MUD TRACKED ONTO PUBLIC ROADS SHALL BE REMOVED DAILY.
 - STREET CATCH BASINS TO BE PERIODICALLY CLEANED AND FILTER CLOTH CHANGED AND MAINTAINED.

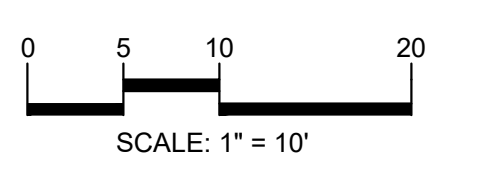
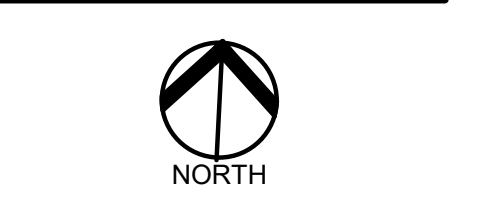
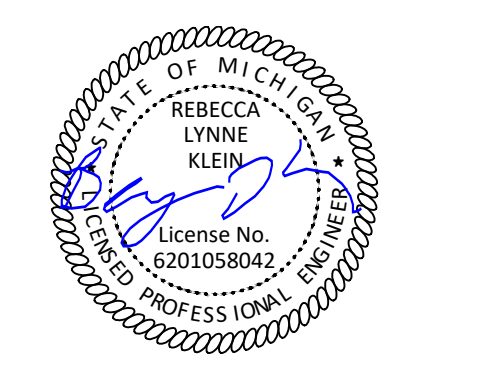


- GENERAL SITE CONDITIONS:**
- ACCORDING TO THE OAKLAND COUNTY USDA WEB SOIL SURVEY, THE SITE GENERALLY CONSISTS OF THE FOLLOWING SOIL TYPES:
11B - CAPAC SANDY LOAMS
27 - HOUGHTON AND ADRIAN MUCKS
 - TOTAL DISTURBED AREA = ±0.57 ACRES
 - N.P.D.E.S. NOTICE OF COVERAGE IS NOT REQUIRED

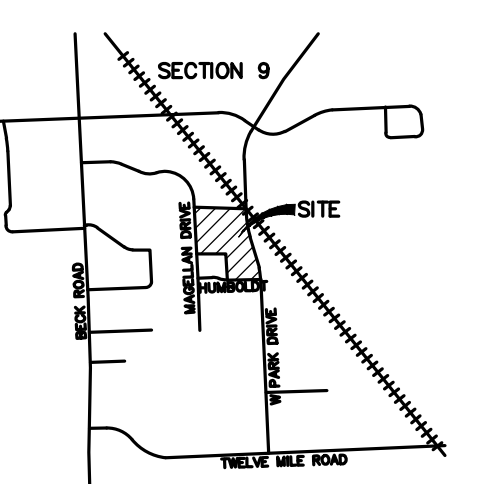


- SOIL EROSION MAINTENANCE SCHEDULE AND NOTES:**
- THE SOIL EROSION CONTROLS WILL BE MAINTAINED WEEKLY AND AFTER EVERY STORM EVENT BY:
TBD
 - IF ANY DAMAGE HAS OCCURRED AS A RESULT OF STORM WATER DISCHARGE FROM THE SITE, THE FOLLOWING STEPS SHALL BE IMPLEMENTED.
 - ANY DEBRIS OR DIRT ON ANY PAVED AREA RESULTING FROM CONSTRUCTION TRAFFIC SHALL BE CLEANED IN A PROMPT MANNER BY THE CONTRACTOR. THE CONSTRUCTION DRIVE SHALL BE CLEANED AT THE END OF EACH DAY.
 - ALL DIRT AND MUD TRACKED ONTO PAVED AREAS SHALL BE REMOVED BY THE CONTRACTOR DAILY BY SCRAPING. STREET SWEEPING IS REQUIRED WEEKLY.
 - SILT FENCE MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY BUILT UP SEDIMENT WHEN THE SEDIMENT HEIGHT ACCUMULATES TO 1/3 TO 1/2 OF THE HEIGHT OF THE FENCE. THE CONTRACTOR IS RESPONSIBLE TO REMOVE, REPLACE, RETRENCH OR REBACKFILL THE SILTATION FENCE SHOULD IT FALL OR BE DAMAGED DURING CONSTRUCTION.
 - INLET FILTER MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY ACCUMULATED SILT OR OTHER DEBRIS. THE REMOVAL OF SILT SHOULD BE WITH THE USE OF A STIFF BRISTLE BROOM OR SQUARE POINT SHOVEL. IF INLET FILTERS CAN NOT BE CLEANED OR ARE DAMAGED, THEN THE FABRIC MUST BE REPLACED.
 - CONTRACTOR SHALL PROVIDE WATER TRUCK TO WATER DOWN THE SITE ON A DAILY BASIS AS REQUIRED TO MAINTAIN DUST CONTROL.
 - IF HIGH GROUNDWATER IS ANTICIPATED OR ENCOUNTERED DURING CONSTRUCTION A DEWATERING PLAN MUST BE SUBMITTED TO THE CITY ENGINEERING DIVISION FOR REVIEW.

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CLIENT
MADISON ENERGY INVESTMENTS
8100 BOONE BLVD, STE 310
VIENNA, VIRGINIA

PROJECT TITLE
LINEAGE CAR PORTS ADDITION
46500 HUMBOLDT DRIVE
NOVI, MICHIGAN

REVISIONS

NO.	DESCRIPTION	DATE
1	PSP AND FSP SUBMITTAL	9/12/2024
2	FSP/VARIANCE SUBMITTAL	12/2/2024

ORIGINAL ISSUE DATE:
AUGUST 16, 2024

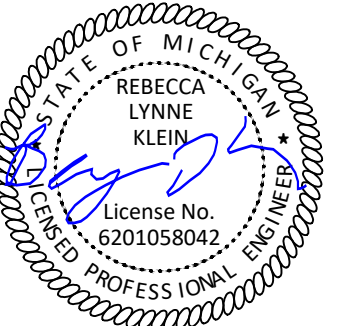
DRAWING TITLE
GRADING AND SESC PLAN - 2

PEA JOB NO. 2023-1048

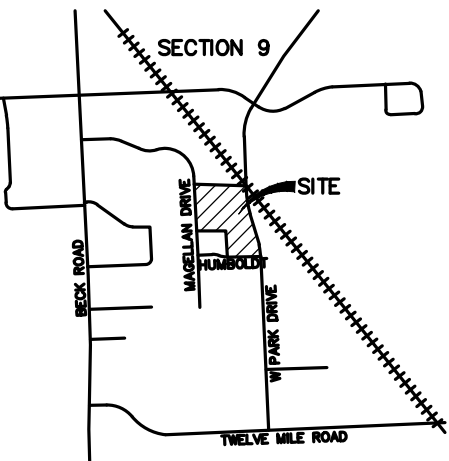
DESIGNER	DATE
P.M.	BK
MN	MT
DES.	MT

DRAWING NUMBER:
C-3.2

S:\PROJECTS\2023\23-1048 LINEAGE CARPORTS ADDITION\3_CONSTRUCTION\C-3.02GRADING-23-1048.dwg PLOT DATE: 12/2/2024 10:59:46am



CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS GIVEN FOR THE ACCURACY OR COMPLETENESS OF ANY INFORMATION PROVIDED HEREON. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
MADISON ENERGY INVESTMENTS
8100 BOONE BLVD, STE 310
VIENNA, VIRGINIA

PROJECT TITLE
LINEAGE CAR PORTS ADDITION
46500 HUMBOLDT DRIVE
NOVI, MICHIGAN

REVISIONS	
PSP AND FSP SUBMITTAL	9/12/2024
FSP/VARIANCE SUBMITTAL	12/2/2024

ORIGINAL ISSUE DATE:
AUGUST 16, 2024

DRAWING TITLE
NOTES AND DETAILS

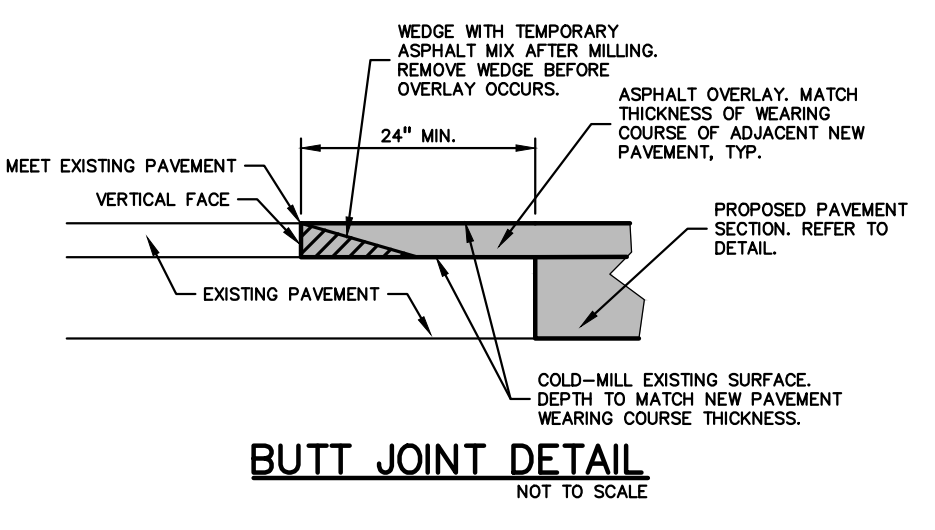
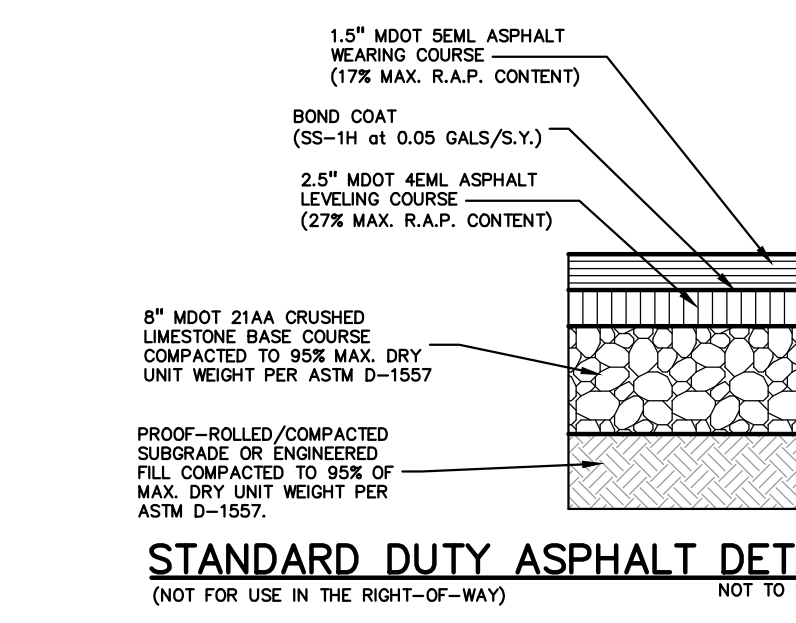
PEA JOB NO.	2023-1048
P.M.	BK
D.N.	MT
DES.	MT

DRAWING NUMBER:
C-5.0

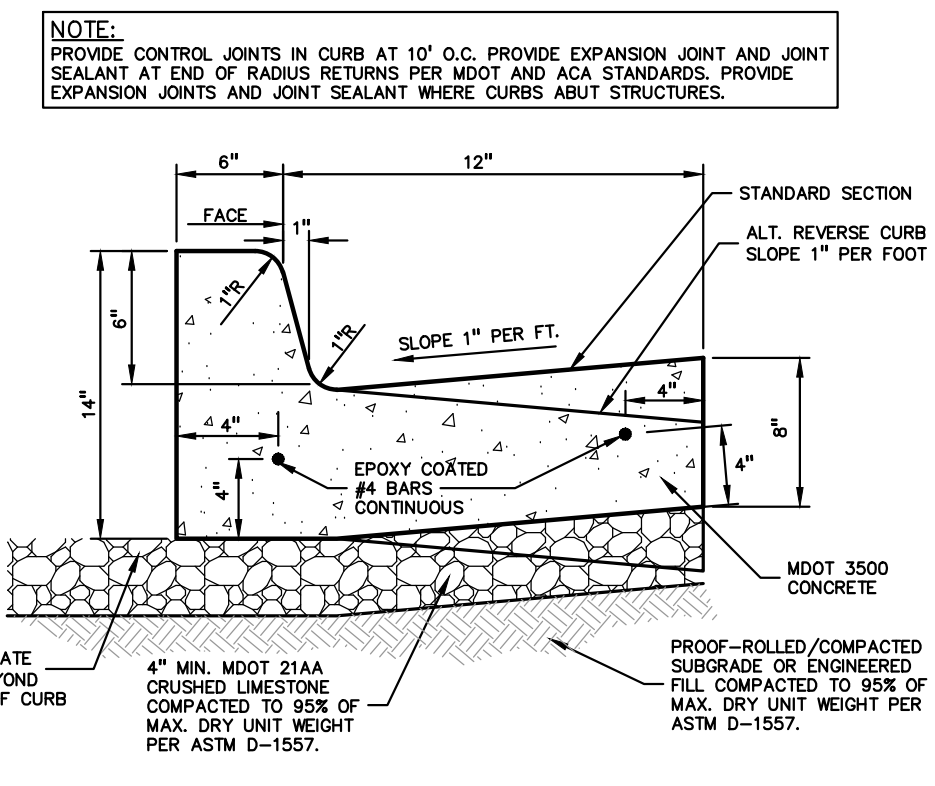
ASPHALT MIX DESIGN CHART					
COMMERCIAL ADT 0-300	COMMERCIAL ADT 301-1000	COMMERCIAL ADT 1001-3400	COMMERCIAL ADT 53401	APPLICATION RATE (LB/YD ²) MINIMUM - MAXIMUM	COURSE APPLICATION
2EL	2EML	2EMH	2EH	435-550	BASE
3EL	3EML	3EMH	3EH	330-410	BASE AND/OR LEVELING
4EL	4EML	4EMH	4EH	220-275	LEVELING AND/OR TOP
5EL	5EML	5EMH	5EH	165-220	TOP
PG 58-28	PG 64-28	PG 64-28	PG 70-28P		

AGGREGATE BASE NOTE:
THIS PAVEMENT SECTION DESIGN ASSUMES THE USE OF MDOT 21AA CRUSHED LIMESTONE BASE MATERIAL THAT MEETS THE REQUIREMENTS OF MDOT STANDARD SPECIFICATION SECTION 902 FOR AGGREGATES. IF CRUSHED CONCRETE AGGREGATE BASE IS PROPOSED IN LIEU OF THE SPECIFIED CRUSHED LIMESTONE MATERIAL, PEA GROUP WILL REQUIRE A MINIMUM 25% INCREASE IN BASE THICKNESS. HOWEVER, IF TESTING DOCUMENTATION IS PROVIDED TO PEA GROUP THAT SHOWS THAT THE CRUSHED CONCRETE MATERIAL MEETS ALL REQUIREMENTS OF MDOT SPECIFICATION SECTION 902, THEN THE 25% INCREASE IN THICKNESS MAY BE REEVALUATED.

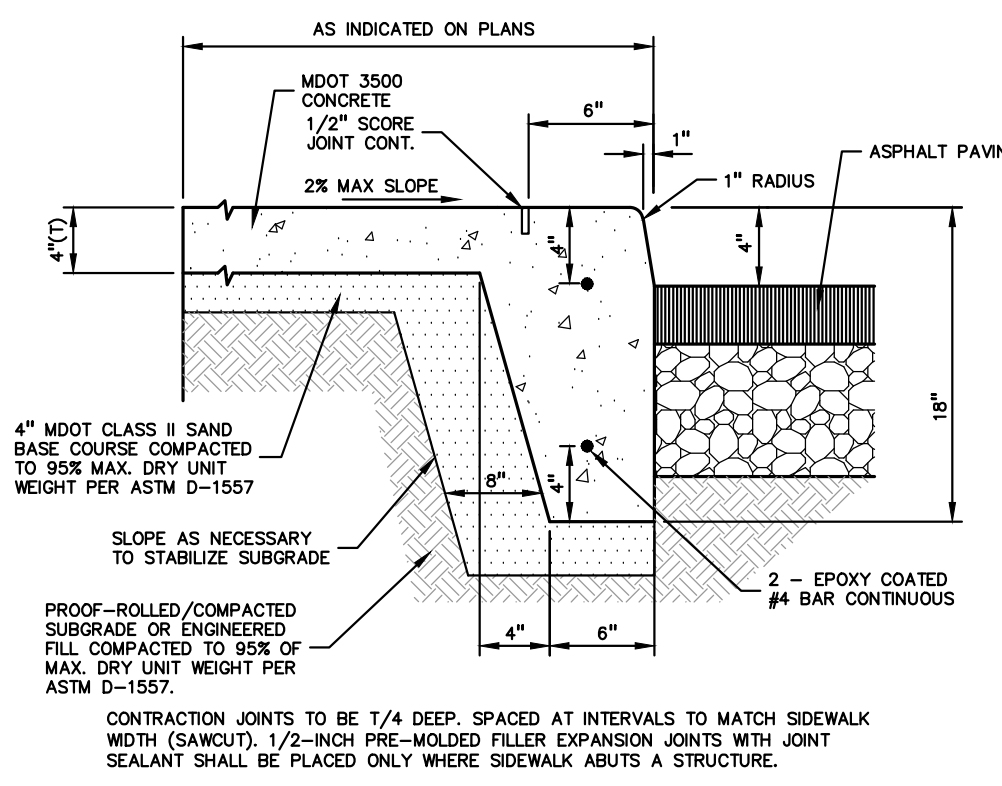
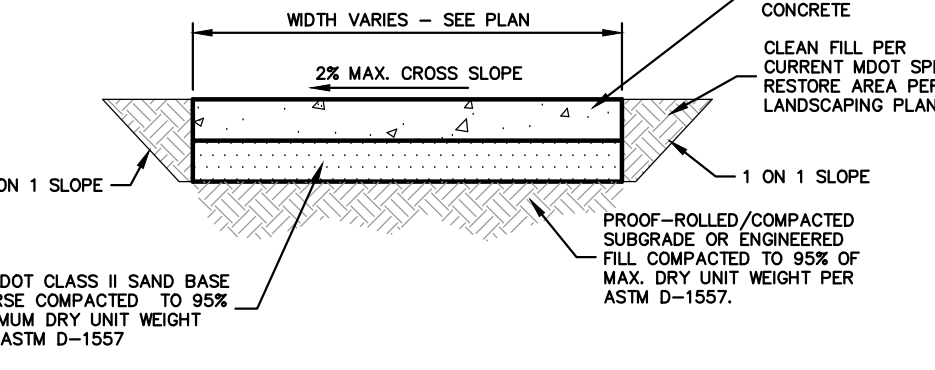
ASPHALT MATERIAL NOTES:
HOT-MIX ASPHALT MIXTURES UTILIZING RECYCLED ASPHALT PAVEMENT (RAP) MUST MEET MDOT SPECIAL PROVISION (SPS005). THE BINDER GRADE FOR THIS WORK IS PG64-28. IF ASPHALT MIXES CONTAINING RAP ARE TO BE SUPPLIED FOR THIS PROJECT, THE ASPHALT BINDER MUST BE REVISED PER MDOT TIER 1 OR TIER 2 REQUIREMENTS (RAP CONTENT UP TO 27% MAXIMUM). TIER 3 MIXES ARE NOT ACCEPTABLE ON THIS PROJECT. AN ASPHALT MIX DESIGN FOR ALL SPECIFIED MIXES SHOULD BE FORWARDED TO PEA GROUP FOR REVIEW PRIOR TO CONSTRUCTION.



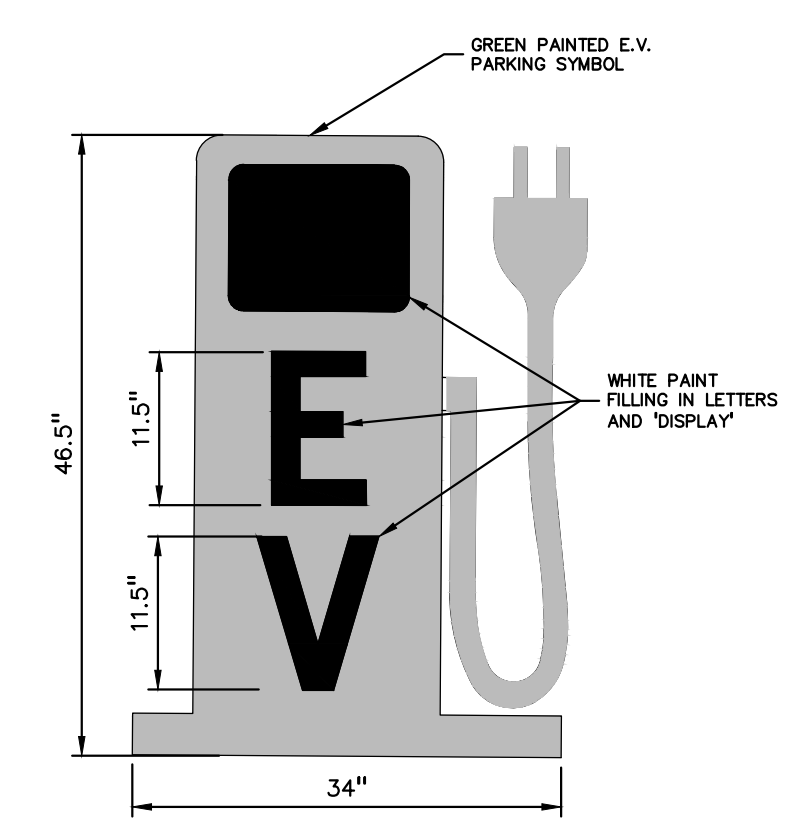
NOTE: ALTERNATE REVERSE CURB SECTION TO BE USED ONLY WHEN DRAINING AWAY FROM CURB. SEE PLAN FOR LOCATION.



NOTE: CROSS-SLOPE OF SIDEWALK MUST NOT EXCEED 2.0% EXCEPT IN TRANSITION AREA MATCHING INTO EXISTING SIDEWALK.



EV PARKING SYMBOL
NOT TO SCALE



EV PARKING SYMBOL
NOT TO SCALE

GENERAL NOTES:

- THESE NOTES APPLY TO ALL CONSTRUCTION ACTIVITIES ON THIS PROJECT.
- ALL CONSTRUCTION, WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT OSHA, MDOT AND MUNICIPALITY STANDARDS AND REGULATIONS.
 - THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION.
 - THE CONTRACTOR SHALL CONTACT THE ENGINEER SHOULD THEY ENCOUNTER ANY DESIGN ISSUES DURING CONSTRUCTION. IF THE CONTRACTOR MAKES DESIGN MODIFICATIONS WITHOUT THE WRITTEN DIRECTION OF THE DESIGN ENGINEER, THE CONTRACTOR DOES SO AT HIS OWN RISK.
 - ALL NECESSARY PERMITS, TESTING, BONDS AND INSURANCES ETC., SHALL BE PAID FOR BY THE CONTRACTOR. THE OWNER SHALL PAY FOR ALL CITY INSPECTION FEES.
 - THE CONTRACTOR SHALL NOTIFY THE APPROPRIATE 811/ONE CALL UTILITY LOCATING CENTER, THE CITY ENGINEER AND/OR THE AUTHORITY HAVING JURISDICTION 3 BUSINESS DAYS PRIOR TO THE BEGINNING OF CONSTRUCTION. IF NO NOTIFICATION IS GIVEN AND DAMAGE RESULTS, SAID DAMAGE WILL BE REPAIRED AT SOLE EXPENSE OF THE CONTRACTOR. IF EXISTING UTILITY LINES ARE ENCOUNTERED THAT CONFLICT IN LOCATION WITH NEW CONSTRUCTION, THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER SO THAT THE CONFLICT MAY BE RESOLVED.
 - CONTRACTOR SHALL VERIFY THAT THE PLANS AND SPECIFICATIONS ARE THE VERY LATEST PLANS AND SPECIFICATIONS AND FURTHERMORE, VERIFY THAT THESE PLANS AND SPECIFICATIONS HAVE BEEN APPROVED. ALL ITEMS CONSTRUCTED BY THE CONTRACTOR PRIOR TO RECEIVING FINAL APPROVAL HAVING TO BE ADJUSTED OR RE-DONE, SHALL BE AT THE CONTRACTORS EXPENSE. SHOULD THE CONTRACTOR ENCOUNTER A CONFLICT BETWEEN THESE PLANS AND/OR SPECIFICATIONS, THEY SHALL SEEK CLARIFICATION IN WRITING FROM THE ENGINEER BEFORE COMMENCEMENT OF CONSTRUCTION. FAILURE TO DO SO SHALL BE AT SOLE EXPENSE TO THE CONTRACTOR.
 - ANY WORK WITHIN THE STREET OR HIGHWAY RIGHTS-OF-WAY SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF THE AGENCIES HAVING JURISDICTION AND SHALL NOT BEGIN UNTIL ALL NECESSARY PERMITS HAVE BEEN ISSUED FOR THE WORK.
 - ALL PROPERTIES OR FACILITIES IN THE SURROUNDING AREAS, PUBLIC OR PRIVATE, DESTROYED OR OTHERWISE DISTURBED DUE TO CONSTRUCTION, SHALL BE REPLACED AND/OR RESTORED TO THE ORIGINAL CONDITION BY THE CONTRACTOR.
 - THE CONTRACTOR SHALL PROVIDE ALL NECESSARY BARRICADING, SIGNAGE, LIGHTS AND TRAFFIC CONTROL DEVICES TO PROTECT THE WORK AND SAFELY MAINTAIN TRAFFIC IN ACCORDANCE WITH LOCAL REQUIREMENTS AND THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION). THE DESIGN ENGINEER, OWNER, CITY AND STATE SHALL NOT BE HELD LIABLE FOR ANY CLAIMS RESULTING FROM ACCIDENTS OR DAMAGES CAUSED BY THE CONTRACTOR'S FAILURE TO COMPLY WITH TRAFFIC AND PUBLIC SAFETY REGULATIONS DURING THE CONSTRUCTION PERIOD.
 - THE USE OF CRUSHED CONCRETE IS PROHIBITED ON THE PROJECT WITHIN 100 FEET OF ANY WATER COURSE (STREAM, RIVER, COUNTY DRAIN, ETC.) AND LAKE, REGARDLESS OF THE APPLICATION OR LOCATION OF THE WATER COURSE OR LAKE RELATIVE TO THE PROJECT LIMITS.
 - IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ADJUST THE TOP OF ALL EXISTING AND PROPOSED STRUCTURES (MANHOLES, CATCH BASINS, INLETS, GATE WELLS ETC.) WITHIN GRADED AND /OR PAVED AREAS TO FINAL GRADE SHOWN ON THE PLANS. ALL SUCH ADJUSTMENTS SHALL BE INCIDENTAL TO THE JOB AND WILL NOT BE PAID FOR SEPARATELY.

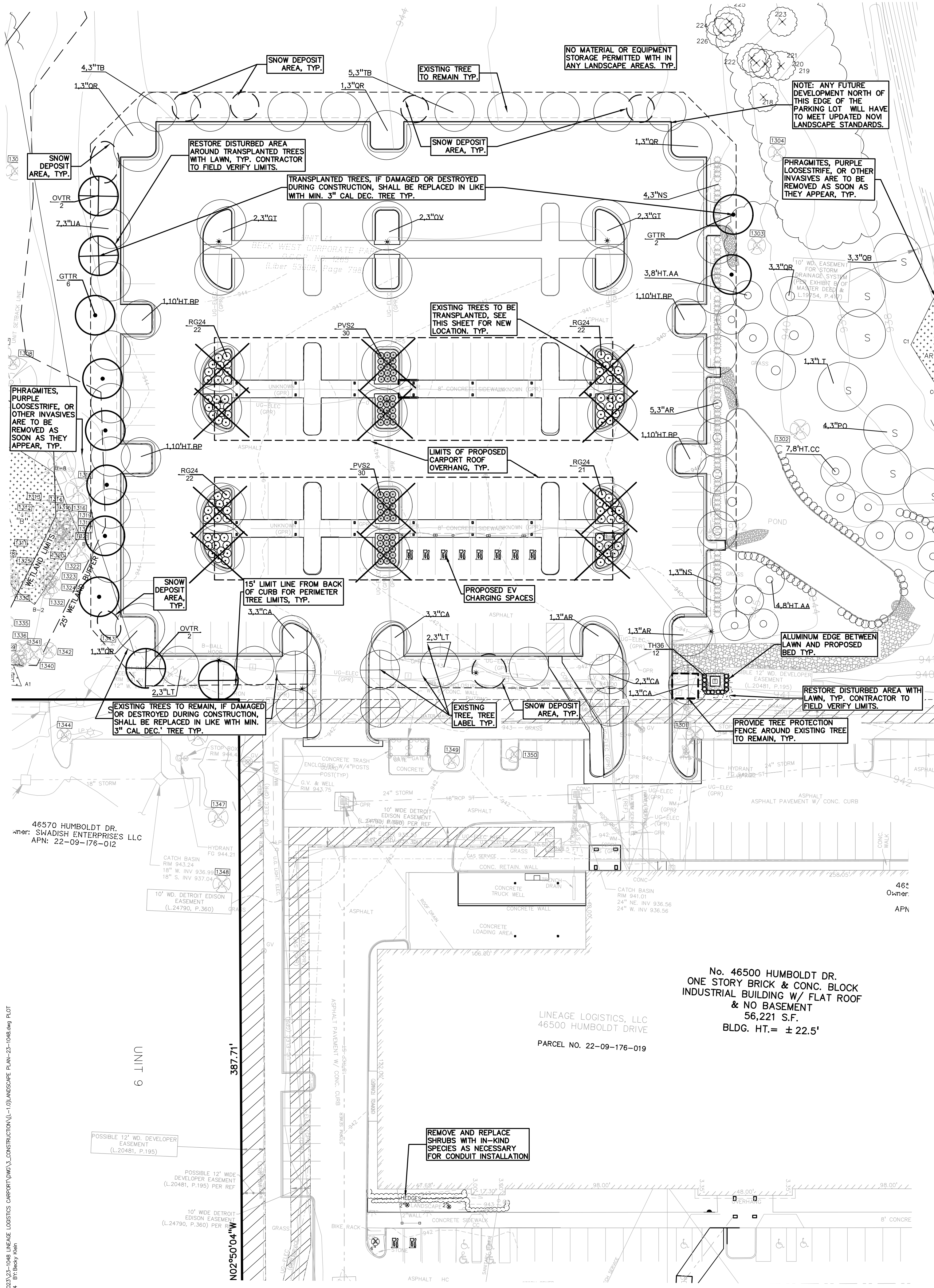
PAVING NOTES:

- IN AREAS WHERE NEW PAVEMENTS ARE BEING CONSTRUCTED, THE TOPSOIL AND SOIL CONTAINING ORGANIC MATTER SHALL BE REMOVED PRIOR TO PAVEMENT CONSTRUCTION.
- REFER TO ARCHITECTURAL PLANS FOR DETAILS OF FROST SLAB AT EXTERIOR BUILDING DOORS.
- CONSTRUCTION TRAFFIC SHOULD BE MINIMIZED ON THE NEW PAVEMENT. IF CONSTRUCTION TRAFFIC IS ANTICIPATED ON THE PAVEMENT STRUCTURE, THE INITIAL LIFT THICKNESS COULD BE INCREASED AND PLACEMENT OF THE FINAL LIFT COULD BE DELAYED UNTIL THE MAJORITY OF THE CONSTRUCTION ACTIVITIES HAVE BEEN COMPLETED. THIS ACTION WILL ALLOW REPAIR OF LOCALIZED FAILURE, IF ANY DOES OCCUR, AS WELL AS REDUCE LOAD DAMAGE ON THE PAVEMENT SYSTEM.
- ALL EXPANSION JOINTS AND CONCRETE PAVEMENT JOINTS TO BE SEALED.
- CONCRETE PAVEMENT JOINTING - UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE AUTHORITY HAVING JURISDICTION;
 - WHERE PROPOSED CONCRETE ABUTS A STRUCTURE, PROVIDE A MINIMUM 1/2" EXPANSION JOINT. THE JOINT FILLER BOARD MUST BE AT LEAST THE FULL DEPTH OF THE CONCRETE AND HELD DOWN A 1/2" TO ALLOW FOR SEALING.
 - WHERE PROPOSED CONCRETE ABUTS EXISTING CONCRETE OR IN BETWEEN POURS OF PROPOSED CONCRETE (CONSTRUCTION JOINT), PROVIDE 5/8" DOWELS EVERY 30" CENTER TO CENTER HALF WAY ALONG THE THICKNESS OF THE PROPOSED PAVEMENT. ALTERNATE DOWELS SIZES AND SPACING MUST BE APPROVED THE ENGINEER PRIOR TO COMMENCING WORK AND VIA THE SUBMITTAL PROCESS.
 - WHERE PROPOSED CONCRETE ABUTS EXISTING OR PROPOSED SIDEWALK OR CURBING, PROVIDE A MINIMUM 1/2" EXPANSION JOINT.
 - CONTROL, LONGITUDINAL AND/OR TRANSVERSE JOINTS SHALL BE PLACED TO PROVIDE PANELS WITHIN THE PAVEMENT AS SQUARE AS POSSIBLE WITH THE FOLLOWING MAXIMUM SPACING PARAMETERS:
 - 6-INCH THICK CONCRETE PAVEMENT: 12' X 12'
 - 8-INCH THICK CONCRETE PAVEMENT: 15' X 15'
 - IRREGULAR-SHAPED PANELS MAY REQUIRE THE USE OF REINFORCING MESH OR FIBER MESH AS DETERMINED BY THE ENGINEER. THE USE OF MESH MUST BE APPROVED THE ENGINEER PRIOR TO COMMENCING WORK AND VIA THE SUBMITTAL PROCESS.
 - IF A JOINT PLAN IS NOT PROVIDED IN THE PLANS, THE CONTRACTOR SHALL SUBMIT ONE TO THE ENGINEER FOR REVIEW PRIOR TO COMMENCING WORK AND VIA THE SUBMITTAL PROCESS.
- CONCRETE CURBING JOINTING - UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE AUTHORITY HAVING JURISDICTION
 - JOINTS WHEN ADJACENT TO ASPHALT PAVEMENT
 - PLACE CONTRACTION JOINTS AT 10' INTERVALS
 - PLACE 1/2" EXPANSION JOINT AT CATCH BASINS, EXISTING AND PROPOSED SIDEWALK OR EXISTING CURBING.
 - PLACE 1" EXPANSION JOINT:
 - AT SPRING POINTS OF INTERSECTIONS OR ONE OF THE END OF RADIUS LOCATIONS IN A CURVE
 - AT 400' MAXIMUM INTERVALS ON STRAIGHT RUNS
 - AT THE END OF RADIUS AT OPPOSITE ENDS IN A CURBED LANDSCAPE ISLAND
 - JOINTS WHEN TIED TO CONCRETE PAVEMENT
 - PLACE CONTRACTION JOINTS OPPOSITE ALL TRANSVERSE CONTRACTION JOINTS IN PAVEMENT
 - PLACE 1/2" EXPANSION JOINT AT CATCH BASINS, EXISTING AND PROPOSED SIDEWALK OR EXISTING CURBING.
 - PLACE 1" EXPANSION JOINT OPPOSITE ALL TRANSVERSE EXPANSION JOINTS IN PAVEMENT
 - CURB AND GUTTER AND CONCRETE SHALL BE TIED TOGETHER SIMILAR TO A LONGITUDINAL LANE TIE JOINT (MDOT B1 JOINT)
 - IN BETWEEN POURS OF PROPOSED CONCRETE CURBING (CONSTRUCTION JOINT):
 - CARRY THE REBAR CONTINUOUSLY BETWEEN POURS
 - IF THE REBAR IS NOT LONG ENOUGH TO CARRY CONTINUOUSLY, THEN TIE TWO PIECES OF REBAR PER THE LATEST MDOT SPECIFICATIONS
- CONCRETE SIDEWALK JOINTING - UNLESS SHOWN OTHERWISE IN THE PLANS OR REQUIRED BY THE AUTHORITY HAVING JURISDICTION
 - PLACE TRANSVERSE CONTRACTION JOINTS EQUAL TO THE WIDTH OF THE WALK WHEN WIDTH IS LESS THAN 8'
 - PLACE TRANSVERSE AND LONGITUDINAL CONTRACTION JOINTS EQUAL TO 1/2 THE WIDTH OF THE WALK WHEN WIDTH IS EQUAL TO OR GREATER THAN 8'
 - PLACE 1" EXPANSION JOINT WHERE ABUTTING SIDEWALK RAMP AND/OR RADIUS IN INTERSECTION
 - PLACE TRANSVERSE 1/2" EXPANSION JOINT AT MAXIMUM OF 100' SPACING
 - PLACE 1/2" EXPANSION JOINT WHEN ABUTTING A FIXED STRUCTURE, OTHER PAVEMENT (CONCRETE PAVEMENT AND DRIVE APPROACHES), UTILITY STRUCTURES, LIGHT POLE BASES AND COLUMNS

CONSTRUCTION MATERIAL SUBMITTALS

UNLESS REQUIRED OTHERWISE IN THE PROJECT SPECIFICATIONS, THE CONTRACTOR SHALL ONLY SUBMIT THE FOLLOWING CONSTRUCTION MATERIAL SUBMITTALS, AS APPLICABLE TO THE PLANS, FOR REVIEW BY THE ENGINEER. UNLESS APPROVED IN ADVANCE AND IN WRITING BY THE ENGINEER, ANY MATERIAL SUBMITTALS PROVIDED TO THE ENGINEER FOR REVIEW IN ADDITION TO THIS LIST SHALL BE RETURNED TO THE CONTRACTOR WITHOUT A REVIEW BEING PERFORMED.

- SOIL EROSION AND SEDIMENTATION CONTROL MEASURES
- PAVEMENT AGGREGATE BASE MATERIAL WITH ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER
- PAVEMENT MIX DESIGNS SUBMITTED FOR REVIEW BY THE ENGINEER MUST FOLLOW THE CURRENT MDOT REVIEW CHECKLISTS AS SUMMARIZED BELOW AND ALL MATERIAL DATA INCLUDED IN THE SUBMITTAL BEING DATED WITHIN 60 DAYS OF THE SUBMITTAL UNLESS APPROVED OTHERWISE BY THE ENGINEER:
 - 8.1. CONCRETE MIX DESIGN REVIEW CHECKLIST (FORM 2000)
 - 8.2. SUPERPAVE MIX DESIGN CHECKLIST (FORM 1842)
 - 8.3. MARSHALL MIX DESIGN CHECKLIST (FORM 1849)
- ANY SPECIALTY ITEMS SHOWN IN THE PLANS OR DETAIL SHEETS THAT SPECIFICALLY DO NOT STATE FOR THE CONTRACTOR SHALL SUBMIT A SHOP DRAWING TO THE ENGINEER FOR REVIEW BUT THE CONTRACTOR REQUESTS TO BE REVIEWED. THE CONTRACTOR'S REQUEST FOR REVIEW MUST BE IN WRITING AND APPROVED BY THE ENGINEER PRIOR TO SUBMITTING THE INFORMATION.



46570 HUMBOLDT DR.
 OWNER: SHADISH ENTERPRISES LLC
 APN: 22-09-176-012

No. 46500 HUMBOLDT DR.
 ONE STORY BRICK & CONC. BLOCK
 INDUSTRIAL BUILDING W/ FLAT ROOF
 & NO BASEMENT
 56,221 S.F.
 BLDG. HT. = ± 22.5'

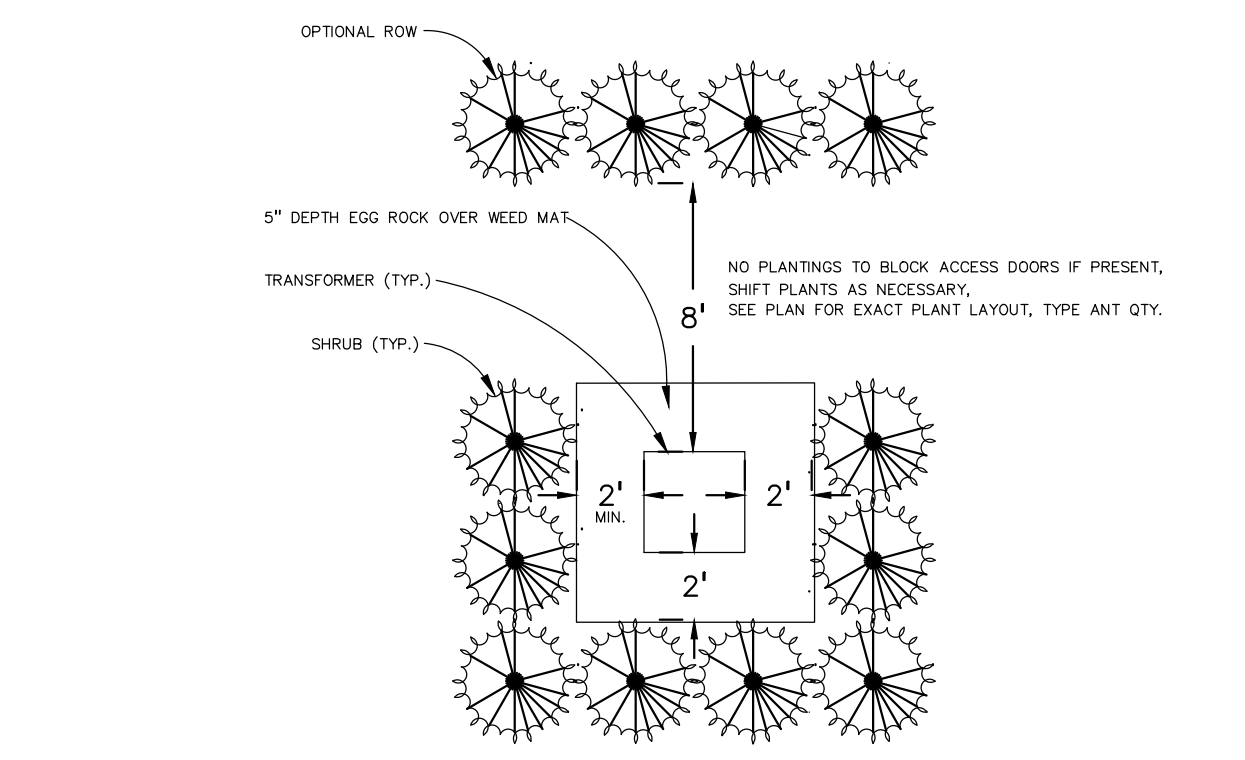
LINEAGE LOGISTICS, LLC
 46500 HUMBOLDT DRIVE
 PARCEL NO. 22-09-176-019

TRANSPLANTED DECIDUOUS TREES						
CODE	QTY	UNIT	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
GTR	8	ea	GLEDITSIA TRIACANTHOS INERMIS 'SKYCOLE'	SKYLINE HONEYLOCUST	3" CAL	TRANSPLANT
OVRT	4	ea	Ostrya virginiana	AMERICAN HOPHORNBEAM	3" CAL	TRANSPLANT
	12		SUBTOTAL			

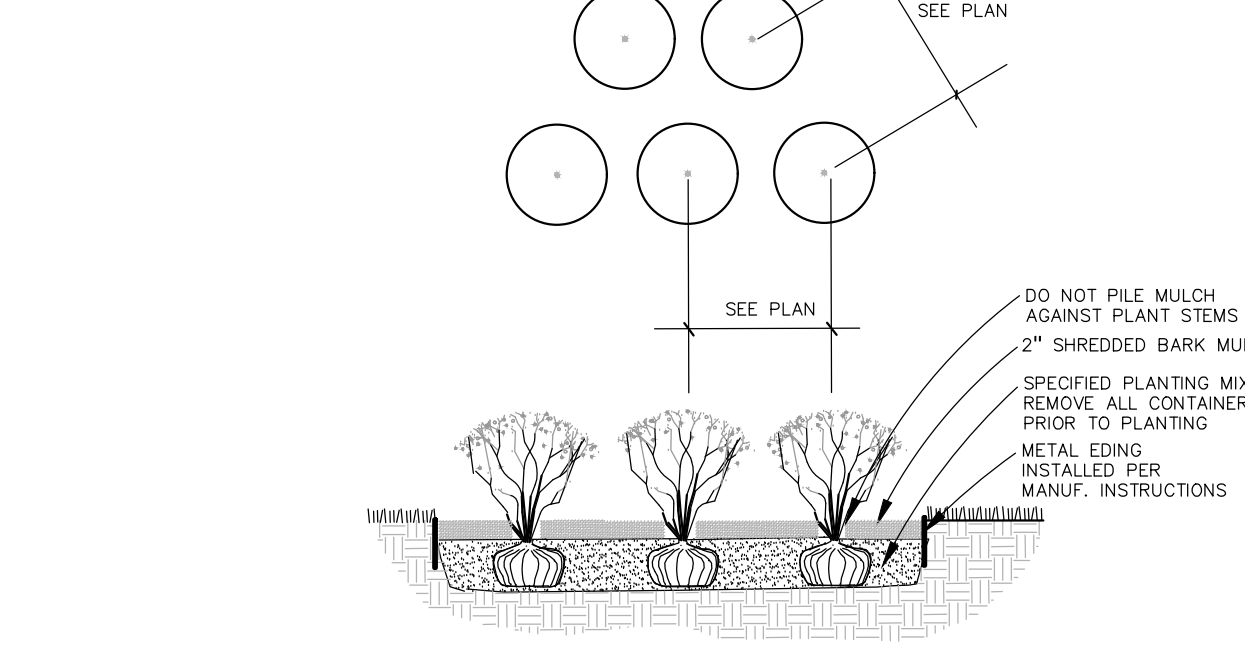
PROPOSED SHRUBS/ PERENNIALS						
CODE	QTY	UNIT	BOTANICAL NAME	COMMON NAME	SIZE	CONTAINER
PVS2	60	ea	SHENANDOAH SWITCH GRASS	PANICUM VIRGATUM 'Shenandoah'	1 GAL	CONT.
RG24	87	ea	GRO LOW SUMAC	RHUS AROMATICA 'Gro-Low'	2" HT	CONT.
TH36	12	ea	TAXUS X MEDIA 'HICKSII'	HICKS ANGLA-JAPANESE YEW	3" HT	CONT.
	159		SUBTOTAL			

SYM	COMMON NAME	SCIENTIFIC NAME
A8	Downy Serviceberry	<i>Amelanchier arborea</i>
AR3	Redpointe Maple	<i>Acer rubrum 'Redpointe'</i>
BP10	Paper Birch	<i>Betula papyrifera</i>
CA3	American Hornbeam	<i>Carpinus caroliniana</i>
CC8	Eastern Redbud	<i>Cercis canadensis</i>
GT3	Skyline Honeylocust	<i>Gleditsia triacanthos</i>
LT3	Tulip Tree	<i>Liriodendron tulipifera</i>
NS3	Black Gum	<i>Nyssa sylvatica</i>
OV3	American Hophornbeam	<i>Ostrya virginiana</i>
PO3	Sycamore	<i>Platanus occidentalis</i>
QB3	Swamp White Oak	<i>Quercus bicolor</i>
QR3	Red Oak	<i>Quercus rubra</i>
TB3	American Basswood	<i>Tilia americana</i>
UA3	American Elm	<i>Ulmus americana</i>

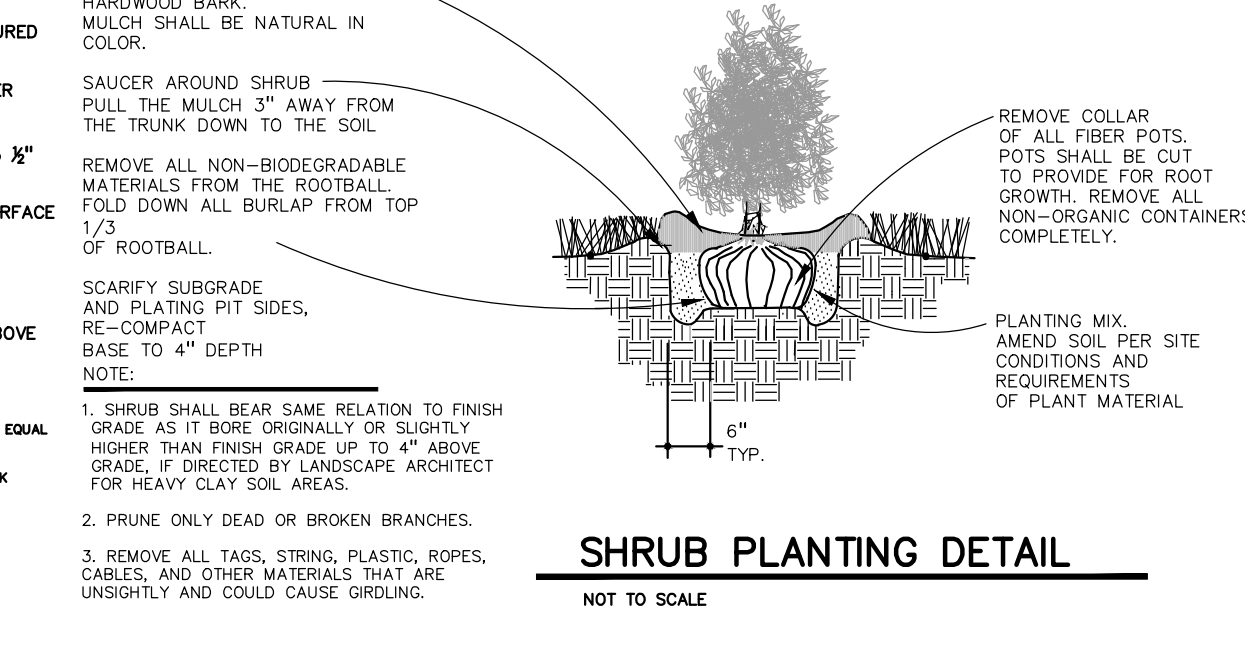
LANDSCAPING COST OPINION				
QUANTITY	UNIT	DESCRIPTION	UNIT PRICE	ITEM PRICE
99	EA	SHRUBS	\$50.00	\$4,950.00
60	EA	PERENNIALS/ORNAMENTAL GRASSES	\$15.00	\$900.00
12	EA	DECIDUOUS TREES RELOCATION	\$400.00	\$4,800.00
60	L F	ALUMINUM EDGING	\$5.00	\$300.00
28	C Y	TOPSOIL FOR SEED LAWN (3" DEPTH)	\$7.00	\$196.00
334	S Y	SEED LAWN	\$3.00	\$1,002.00
TOTAL LANDSCAPING				\$12,308.00



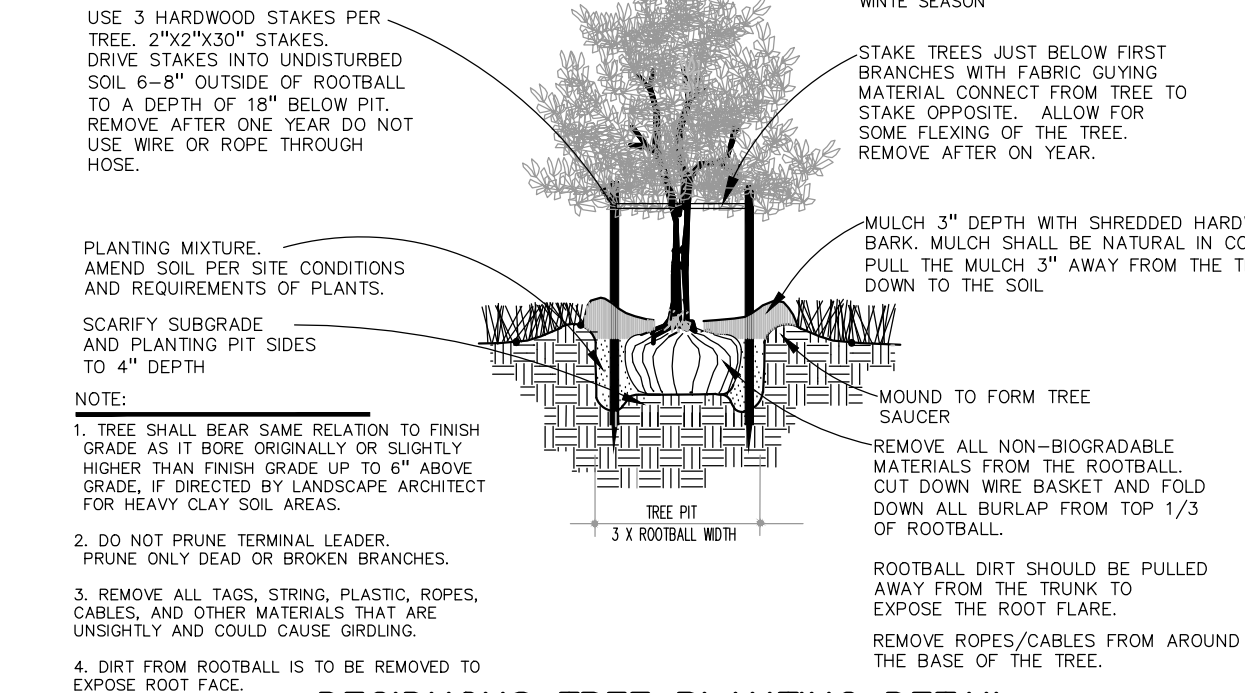
TRANSFORMER SCREENING DETAIL
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PERENNIAL PLANTING DETAIL
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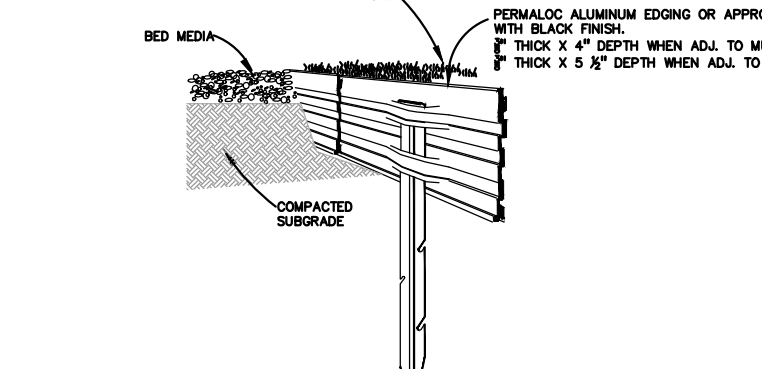


SHRUB PLANTING DETAIL
 NOT TO SCALE

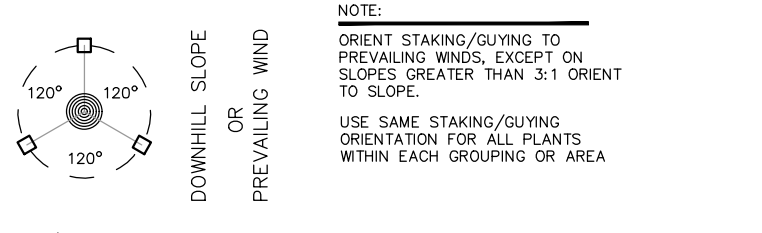


DECIDUOUS TREE PLANTING DETAIL
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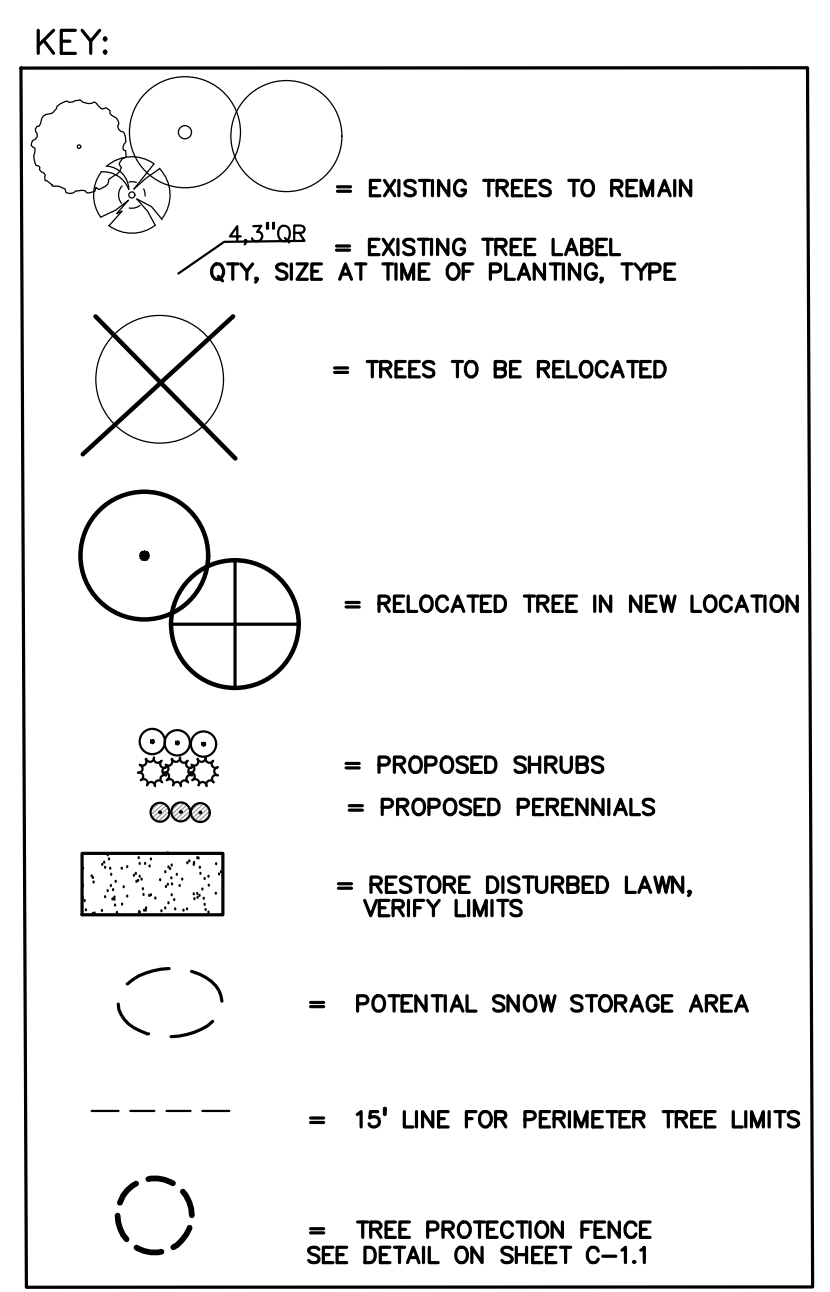
SPECIFICATION FOR LANDSCAPE BED EDGING:
 LANDSCAPE BED EDGING SHALL BE COMMERCIAL GRADE ALUMINUM AS MANUFACTURED BY PERMALOC 1,800,358,9660 OR APPROVED EQUAL.
 (8) EDGT OR (16) SIXTEEN FOOT SECTIONS SHALL BE USED WITH ONE STAKE PER (36) THIRTY SIX INCHES OF EDGING.
 EDGING SHALL BE 1/2" THICK X 4" DEPTH WHEN ADJ. TO MULCH AND 1/2" THICK X 5 1/2" DEPTH WHEN ADJ. TO ROCK. FINISH, BLACK DURALUX MEETS AAMA 2603
 STAKE SHALL SECURELY ENGAGE EDGING AND SHALL BE ENTIRELY BELOW TOP SURFACE OF EDGING.
 EDGING SHALL HAVE A MINIMUM OF (2") TWO INCHES OF INTERLOCKING OVERLAP BETWEEN SECTIONS.
 INSTALL AS PER MANUFACTURER'S SPECIFICATIONS WITH TOP OF EDGING 1"-2" ABOVE COMPACTED FINISH GRADE. FINISH GRADE TO BE COMPACTED ON EITHER SIDE OF EDGING TO MAINTAIN STABILITY.



ALUM. EDGING DETAIL
 NOT TO SCALE



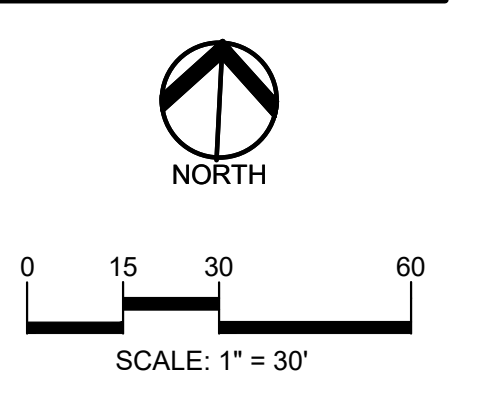
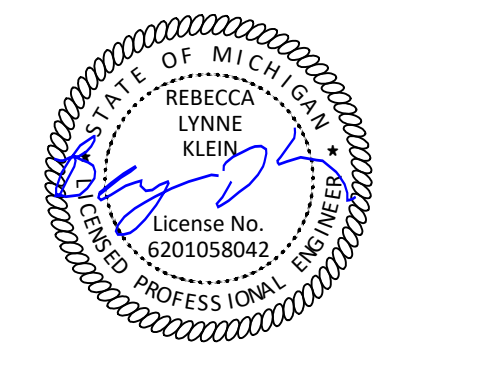
TREE STAKING DETAIL
 NOT TO SCALE



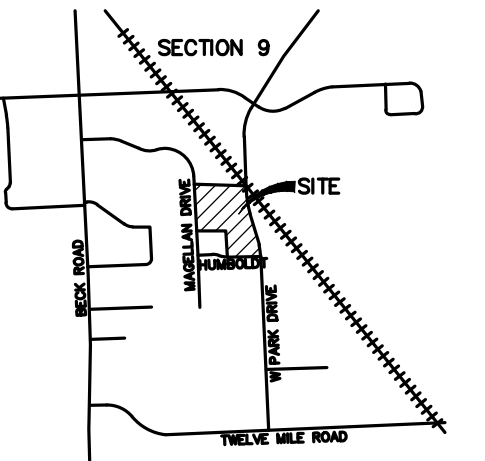
CITY OF NOVI REQUIREMENTS:
 AS PER PLAN REVIEW CENTER REPORT DATED JULY 17, 2024 NO NEW TREES ARE REQUIRED AS LONG AS THE RELOCATED TREES ARE REPLACED AROUND THE PARKING LOT TO PROVIDE SHADE.
 A WAIVER IS REQUESTED FROM SECTION 5.3.12 OF NOVI ZONING ORDINANCE TO ALLOW SOME OF THE EXISTING INTERIOR LANDSCAPE TREES TO BE REMOVED FOR THE CONSTRUCTION OF SOLAR CANOPIES. REPLACEMENT TREES WILL BE PLACED AROUND THE PERIMETER OF THE PARKING AREA.
 PROVIDED: 12 EXISTING TREES RELOCATED WITHIN 15' OF THE PARKING LOT, PROPOSED EVERGREEN SHRUBS AT NEW TRANSFORMER LOCATION AND PROPOSED SHRUBS/PERENNIALS UNDER NEW CARPORT CANOPY.
 THE OWNER SHALL COMPARE THE ORIGINAL APPROVED LANDSCAPE PLANS TO THE EXISTING LANDSCAPE PLANTINGS AROUND THE ENTIRE SITE AND WILL REPLACE ANY MISSING OR DEAD PLANTINGS PER THE ORIGINAL APPROVED LANDSCAPE PLAN.
INVASIVE PLANT NOTE:
 IF PHRAGMITES STILL EXIST OR OTHER INVASIVE SPECIES, IT SHALL BE CHEMICALLY TREATED BY A LICENSE ANS CONTRACTOR TO KILL IT.
REPLACEMENT / TRANSPLANT TREE NOTE:
 IF TREE TO BE TRANSPLANTED IS IN POOR CONDITION, DAMAGED, OR DEAD - REPLACE WITH NEW TREE OF SAME SPECIES AND MIN. 3" CAL. SIZE.
IRRIGATION NOTE:
 EXISTING IRRIGATION SYSTEM SHALL BE EXTENDED/ MODIFIED AS NECESSARY FOR NEW PLANTING LOCATIONS/ RELOCATED TREES.

TRANSPLANTED MATERIAL GUIDELINES:
 1. ALL TRANSPLANTED TREES SHALL BE FROM ON-SITE. TREES MAY BE REJECTED FOR REASONS OF INSECT INFESTATION, DISEASE OR TREE DAMAGE.
 2. THE ROOT BALL OF ANY TRANSPLANTED TREE SHALL MEASURE 1 FOOT FOR EACH INCH OF TRUNK DIAMETER MEASURED 12" ABOVE THE GROUND.
 3. IF THERE IS AN OPTION BETWEEN IMMEDIATELY TRANSPLANTING OR TEMPORARILY STOCKPILING TREES, TREES SHOULD BE IMMEDIATELY TRANSPLANTED.
 4. IF TREES ARE TO BE STORED, THEY SHALL BE BURLAPPED AND HELED IN WITH MULCH IN A PRE-DETERMINED AREA PROVIDED BY CONTRACTOR.
 5. THE TREES SHALL BE PROVIDED WITH ACCESSIBLE WATER TO ENSURE THEIR VIABILITY DURING STORAGE.
 6. TREES TRANSPLANTED IN CLOSE PROXIMITY TO CONSTRUCTION AREAS ARE TO HAVE TREE PROTECTION FENCING INSTALLED AT THEIR DRIP LINE.
 7. TRANSPLANTED TREES ARE GUARANTEED FOR 2 YEARS, IF THEY WEAKEN OR FAIL DURING THAT TIME THEY MUST BE REPLACED.

CITY OF NOVI LANDSCAPE NOTES:
 1. ALL PLANT MATERIALS ARE TO BE INSTALLED IN A SOUND, WORKMAN-LIKE MANNER AND IN ACCORDANCE WITH THE CURRENT CITY OF NOVI PLANTING REQUIREMENTS.
 2. ALL PLANT MATERIALS SHALL BE INSTALLED BETWEEN MARCH 15th AND NOVEMBER 30th.
 3. ALL PLANT MATERIALS ARE TO BE NORTHERN NURSERY GROWN NO. 1 GRADE AND INSTALLED ACCORDING TO ACCEPTED PLANTING PROCEDURES. ALL PLANT MATERIALS SHALL CONFORM TO THE CURRENT AMERICAN ASSOCIATION OF NURSERMEN (AAN) STANDARDS FOR NURSERY STOCK. THEY SHALL BE PLANTED ACCORDING TO THE CITY OF NOVI PLANTING DETAILS AND SPECIFICATIONS. THE CITY SHALL HAVE THE RIGHT TO INSPECT THE PLANT MATERIALS PRIOR TO PLANTING AND TO REJECT ANY PLANT MATERIALS DEEMED NOT TO MEET THE STANDARDS OF THE CITY OF NOVI ZONING ORDINANCE OR LANDSCAPE DESIGN MANUAL.
 4. ALL TREES SHALL HAVE A CENTRAL LEADER AND A RADIAL BRANCHING STRUCTURE. PARK GRADE TREES ARE NOT ACCEPTABLE. ALL TREES SHALL BE BALLED AND BURLAPPED (B&B).
 5. ANY DECIDUOUS CANOPY TREES WITH BRANCHES THAT MIGHT TEND TO DEVELOP INTO "V" CROTCHES SHALL BE SUBORDINATED SO AS NOT TO BECOME DOMINANT BRANCHES.
 6. MULCH SHALL BE NATURAL COLOR, FINELY SHREDDED HARDWOOD BARK FOR ALL PLANTINGS - 3" THICK FOR TREES IN A 4-FOOT DIAMETER CIRCLE WITH 3" PULLED AWAY FROM TRUNK, 3" THICK FOR SHRUBS AND SHRUB BEDS, AND 2" THICK FOR PERENNIALS AND PERENNIAL BEDS. ALSO PULL AWAY ROOT BALL DIRT FROM TRUNK AND ROOT FLARE.
 7. ALL PLANT MATERIAL SHALL BE WARRANTED FOR TWO (2) FULL YEARS AFTER DATE OF ACCEPTANCE BY THE CITY OF NOVI. ALL UNHEALTHY AND DEAD MATERIAL SHALL BE REPLACED WITHIN THREE (3) MONTHS OR THE NEXT APPROPRIATE PLANTING PERIOD.
 8. ALL PLANT MATERIAL SHALL BE MAINTAINED IN A HEALTHY GROWING CONDITION, INCLUDING WATERING, CULTIVATION, WEED CONTROL AND SOIL ENRICHMENTS AS MAY BE NECESSARY.
 9. ANY SUBSTITUTIONS OR DEVIATIONS FROM THE LANDSCAPE PLAN MUST BE APPROVED IN WRITING BY THE CITY OF NOVI PRIOR TO INSTALLATION.
 10. ALL LANDSCAPE AREAS ARE TO BE MAINTAINED IN A HEALTHY GROWING CONDITION FREE OF DEBRIS AND REFUSE AND IN CONFORMANCE WITH THE APPROVED LANDSCAPE PLAN.
 11. CONTRACTOR TO REMOVE ALL CONSTRUCTION DEBRIS AND EXCESS MATERIAL FROM THE SITE PRIOR TO FINAL ACCEPTANCE.
 12. PLANT MATERIALS, EXCEPT SOD, GROUND COVERS AND CREEPING VINE TYPE PLANTINGS, SHALL NOT BE LOCATED WITHIN FOUR (4) FEET OF THE PROPERTY LINE.
 13. ALL TRANSFORMERS ARE TO BE SCREENED ON THREE SIDES (MINIMUM) IN ACCORDANCE WITH THE CITY OF NOVI ORDINANCE AND SO AS TO NOT CONFLICT WITH TREE RESTRICTIONS (SEE DETAIL THIS SHEET).
 14. THE OWNER IS RESPONSIBLE FOR REQUEST OF FINAL INSPECTION AND ACCEPTANCE OF THE LANDSCAPE AT THE END OF THE 2-YEAR GUARANTEE PERIOD.
 15. THE PROVIDER OF THE FINANCIAL GUARANTEE FOR THE LANDSCAPE INSTALLATION SHALL BE FULLY RESPONSIBLE FOR COMPLETION OF THE LANDSCAPE INSTALLATION AND MAINTENANCE PER THE APPROVED LANDSCAPE PLAN AND APPLICABLE CITY ORDINANCES.



CAUTION!!
 THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
MADISON ENERGY INVESTMENTS
 8100 BOONE BLVD, STE 310
 VIENNA, VIRGINIA

PROJECT TITLE
LINEAGE CAR PORTS ADDITION
 46500 HUMBOLDT DRIVE
 NOVI, MICHIGAN

REVISIONS	
PSP AND FSP SUBMITTAL	9/12/2024
FSP/VARIANCE SUBMITTAL	12/2/2024

ORIGINAL ISSUE DATE:
 AUGUST 16, 2024

DRAWING TITLE
LANDSCAPE PLAN

PEA JOB NO.	2023-1048
P.M.	BK
DN.	CAL
DES.	JLE

DRAWING NUMBER:
L-1.0

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GENERAL LANDSCAPING REQUIREMENTS

- 1.0 GENERAL
1.1 SUMMARY
1.1.1 Includes But Not Limited To
1. General Procedures and requirements for Site Work.
2.0 PRODUCTS - Not Used
3.0 EXECUTION
3.1 PREPARATION
3.1.1 Protection
1. Spillage:
A. Avoid spillage by covering and securing loads when hauling on adjacent to public streets or highways.
B. Remove spillage and sweep, wash, or otherwise clean project, streets, and highways.
2. Erosion Control:
A. Take precautions necessary to prevent erosion and transportation of soil downstream, to adjacent properties, and into on-site or off-site drainage systems.
B. Develop, install, and maintain an erosion control plan if required by law.
C. Repair and correct damage caused by erosion.
3. Existing Plants And Features:
A. Do not damage tops, trunks, and roots of existing trees and shrubs on site which are intended to remain.
B. Do not use heavy equipment within branch spread. Interfering branches may be removed only with permission of Landscape Architect.
C. Do not damage other plants and features which are to remain.
3.1.2 If specified precautions are not taken or corrections and repairs made promptly, Owner may take such steps as may be deemed necessary and deduct costs of such from monies due to Contractor.

END OF SECTION

LANDSCAPING PREPARATION

- 1.0 GENERAL
1.1 SUMMARY
1.1.1 Includes But Not Limited To
1. General landscape work requirements.
1.2 QUALITY ASSURANCE
1.2.1 Comply with all applicable local, state and federal requirements, regarding materials, methods of work, and disposal of excess and waste materials.
1.2.2 Obtain and pay for all required inspections, permits, and fees.
1.2.3 Provide notices required by governmental authorities.
1.3 PROJECT CONDITIONS
1.3.1 Locate and identify existing underground and overhead services and utilities within contract limit work areas.
1.3.2 Provide adequate means to protect utilities and services designated to remain.
1.3.3 Repair utilities damaged during site work operations at Subcontractor's expense.
1.3.4 When uncharted or incorrectly charted underground piping or other utilities and services are encountered during site work operations, notify the applicable utility company immediately to obtain procedure directions.
1.3.5 Locate, protect, and maintain benchmarks, monuments, control points and project engineering reference points.
1.3.6 Perform landscape work operations and the removal of debris and materials to assure minimum interference with streets, walks, and other adjacent facilities.
1.3.7 Obtain governing authorities' written permission when required to close or obstruct streets, walks and adjacent facilities.
1.3.8 Protect and maintain street lights, utility poles and services, traffic signal control boxes, curb boxes, valves and other services, except items designated for removal.
1.3.9 The General Contractor will occupy the premises and adjacent facilities during the entire period of construction.
1.3.10 Perform landscape preparation work before commencing landscape construction.
1.3.11 Provide necessary barricades, coverings and protection to prevent damage to existing improvements indicated to remain.
1.3.12 Protect existing trees scheduled to remain against injury or damage including cutting, breaking or skinning of roots, trunks or branches, smothering by stockpiled construction materials, excavated materials or vehicular traffic within branch spread.
2.0 PRODUCTS
2.1 MATERIALS/EQUIPMENT
2.1.1 As selected by the General Contractor, except as indicated.
1. Tree protection:
A. Wood fencing - Snow fencing 4' height.
B. Posts - Steel fence post.
C. Herbicide for lawn restoration - "Round-up" by Monsanto.
3.0 EXECUTION
3.1 EXISTING UTILITIES
3.1.1 Call "MISS DIG" 811 before construction begins.
3.2 CLEARING
3.2.1 Locate and suitably identify trees and improvements indicated to remain.
3.2.2 Fencing/soil erosion fence is to be installed.
3.2.3 Any equipment that compacts the soil in the areas of existing trees is not allowed.
3.2.4 Protect trees scheduled to remain with 4' high snow fence per plans.

- 3.2.5 No vehicular traffic is permitted beneath drip line at any time.
3.2.6 Clear and grub areas within contract limits as required for site access and execution of the work.
3.2.7 Remove trees, plants, undergrowth, other vegetation and debris, except items indicated to remain.
3.2.8 Treat planting and lawn areas as required with herbicide per manufacturer recommendations to kill existing vegetation prior to planting, seeding and sodding.
3.2.9 Remove stumps and roots to a clear depth of 36" below subgrades.
3.3 DISPOSAL OF WASTE MATERIALS
3.3.1 Stockpile, haul from site and legally dispose of waste materials and debris.
3.3.2 Maintain disposal routes, clear, clean and free of debris.
3.3.3 On site burning of combustible cleared materials is not permitted.
3.3.4 Upon completion of landscape preparation work, clean areas within contract limits, remove tools and equipment.
3.3.5 Materials, items and equipment not scheduled for reinstallation or salvaged for the General Contractor are the property of the Landscape Contractor.

END OF SECTION

FINISH GRADING AND TOPSOIL PLACEMENT

- 1.0 GENERAL
1.1 SUMMARY
1.1.1 Includes But Not Limited To
1. Perform finish grading and topsoil placement required to prepare site for installation of landscaping as described in Contract Documents.
1.2 SUBMITTALS
1.2.1 Quality Assurance
1. Submit test on imported topsoil and on site stockpiled topsoil by independent licensed testing laboratory prior to use.
2. Provide and pay for testing and inspection during topsoil operations.
3. Submit report stating location of source of imported topsoil and account of recent use.
4. Test for pH factor, mechanical analysis, and percentage of organic content.
5. Submit test reports to General Contractor.
6. Sub-Contractor, or testing agency to make recommendations on type of quantity of additives required to establish satisfactory pH factor and supply of nutrients to bring nutrients to satisfactory level for planting.
1.3 QUALITY ASSURANCE
1.3.1 Participate in pre-installation meeting with Landscape Architect.
1.4 PROJECT CONDITIONS
1.4.1 Also see Landscape Preparation Section.
1.4.2 Protect existing trees, plants, lawns, and other features designated to remain as part of the landscaping work.
1.4.3 Promptly repair damage to adjacent facilities caused by topsoil operations.
1.4.4 Promptly notify the General Contractor and Landscape Architect of unexpected subsurface conditions.
2.0 PRODUCTS
2.1 MATERIALS
2.1.1 Topsoil: supplied and stockpiled topsoil proposed for use must meet the testing criteria results specified.
2.1.2 Existing topsoil: existing topsoil from on-site stockpile shall be utilized.
2.1.3 Provide additional topsoil as required to complete the job.
2.1.4 All processing, cleaning, and preparation of this supplied topsoil to render it acceptable for use is the responsibility of the Subcontractor.
2.1.5 Supplied and stockpiled topsoil, shall be fertile, friable, dark in color and representative of local productive soil, capable of sustaining vigorous plant growth and free of clay lumps, subsoil, noxious weeds, or other foreign matter such as stones of 1" in any dimension, roots, sticks, and other extraneous material: not frozen or muddy. PH of soil range between 5.0 and 7.5.
2.1.6 Soil shall not contain more than 2 percent of particles measuring over 2.0 mm in largest size.
2.1.7 Prepared topsoil shall be used in planting mixtures as specified in Trees, Plants, and Ground Cover; all beds prepared as specified.

3.0 EXECUTION

- 3.1 EXAMINATION
3.1.1 Do not commence work of this Section until grading tolerances specified are met.
3.2 PREPARATION
3.2.1 Prior to grading, dig out weeds from planting areas by their roots and remove from site.
3.2.2 Prior to placing topsoil, remove any imported base material present in planting areas down to natural subgrade or other material acceptable to Landscape Architect.
3.3 PERFORMANCE
3.3.1 Site Tolerances
1. Total Topsoil Depth -
A. Lawn And Groundcover Planting Areas - 3 inches minimum compacted.
B. Shrub Planting Areas - 12 inches minimum throughout entire shrub bed area.
2. Elevation of topsoil relative to walks or curbs -
A. Seeded Lawn Areas - 1/4 inch below
B. Sodded Lawn Areas - 1 1/2 inches below
C. Shrub And Ground Cover Areas - 3 inches below
3.3.2 Do not expose or damage existing shrub or tree roots.
3.3.3 Redistribute approved existing top soil stored on site as a result of rough grading. Remove organic material, rocks and clods greater than 1 inch in any dimension, and other objectionable materials. Provide additional approved imported topsoil required for specified topsoil depth and bring surface to specified elevation relative to walk or curb.

- 3.3.4 For trees, shrubs, ground cover beds and plant mix for beds see Exterior Plants section.
3.3.5 Provide earth berming where indicated on plans.
3.3.6 Berming to be free flowing in shape and design, as indicated, and to blend into existing grades gradually so that the toe of slope is not readily visible.
3.3.7 Regardless of finish grading elevations indicated, it is intended that grading be such that proper drainage of surface water away from buildings will occur and that no low areas are created to allow ponding.
3.3.8 Slope grade away from building for 12 feet minimum from walls at slope of 1/2 inch per ft minimum unless otherwise noted.
3.3.9 Rake all topsoil to remove clods, rocks, weeds, and debris.
3.3.10 Grade and shape area to bring surface to true uniform planes free from irregularities and to provide proper drainage and slopes per plans.
3.4 CLEANING
3.4.1 Upon completion of topsoil operations, clean areas within contract limits, remove tools, equipment, and haul all excess topsoil off-site.

END OF SECTION

LAWN SEEDING

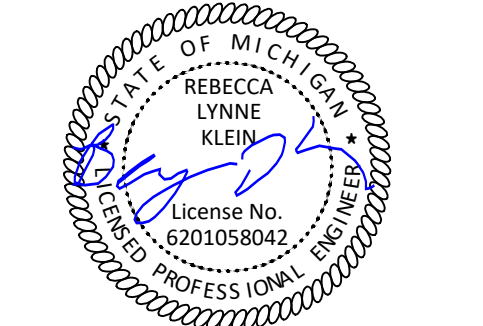
- 1.0 GENERAL
1.1 SUMMARY
1.1.1 Includes But Not Limited To
1. Furnish and install seeded lawn as described in Contract Documents.
1.2 SUBMITTALS
1.2.1 Submit seed vendor's certification for required grass seed mixture, indicating percentage by weight, and percentage of purity, germination, and weed seed for each grass species.
1.3 DELIVERY AND STORAGE
1.3.1 Deliver seed and fertilizer materials in original unopened containers, showing weight, analysis, and name of manufacturer.
1.4 PROJECT CONDITIONS
1.4.1 See landscape preparation section.
1.4.2 Work notification: Notify Landscape Architect of General Contractor's representative at least seven (7) working days prior to start of seeding operation.
1.4.3 Protect existing utilities, paving, and other facilities from damage caused by seeding operations.
1.4.4 Perform seeding work only after planting and other work affecting ground surface has been completed.
1.4.5 Provide hose and lawn watering equipment as required.
1.4.6 The irrigation system will be installed prior to seeding.
1.5 WARRANTY
1.5.1 See Landscape Maintenance and Warranty Section
2.0 PRODUCTS
2.1 MATERIALS
2.1.1 Lawn seed for Seeded Areas: See Topsoil Placement and Drawings.
2.1.2 Topsoil: supplied and stockpiled topsoil proposed for use must meet the testing criteria results specified.
2.1.3 Seed mixture composed of the following varieties, mixed to the specified proportions by weight and tested to minimum percentages of purity and germination.
2.1.4 Irrigated Lawn Seed Mixture proportioned by volume as indicated below:
2.1.5 Non-irrigated Seed Mixture proportioned by volume as indicated below:
2.1.6 Fertilizer: granular, non burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
2.1.7 Ground Limestone: Used if required by soil test report: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20% mesh sieve.
2.1.8 Straw Mulch: Used in crimping process only. Clean oat or wheat straw well seasoned before baling, free from mature seed-bearing status, or roots of prohibited or noxious weeds.
2.1.9 Water: Free of substance harmful to seed growth. Hoses or other methods to transpiration furnished by Sub Contractor.
3.0 EXECUTION
3.1 INSPECTION
3.1.1 Landscape Architect or General Contractor's representative must approve finish surfaces, grades, topsoil quality and depth.
3.2 PREPARATION
3.2.1 SURFACE PREPARATION
1. Seven days maximum prior to seeding, -
A. Treat Lawn areas if required with "Round-Up" by Monsanto, per label direction to kill existing vegetation prior to seeding.
B. Loosen topsoil areas to minimum depth of 4", dampen thoroughly, and cultivate to properly break up clods and lumps.
C. Rake area to remove clods, rocks, weeds, debris, and stones over 1" in any dimension.
D. Grade lawn areas to smooth, free draining even surface with a loose, moderately coarse texture.
E. Apply limestone to supplied topsoil if required by soil test report rate determined by the soil test, to adjust pH of topsoil to not less than 6.0 no more than 6.8.
F. Apply fertilizers to indicated turf areas at a rate equal to 1 lb. of actual nitrogen 1,000 sq. ft. (43 lbs / acre).
G. Apply fertilizers by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with soil to a depth of 1" by approved method.
3.2.2 Fertilizer: granular, non burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
3.2.3 Ground Limestone: Used if required by soil test report: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20% mesh sieve.
3.2.4 Straw Mulch: Used in crimping process only. Clean oat or wheat straw well seasoned before baling, free from mature seed-bearing status, or roots of prohibited or noxious weeds.
3.2.5 Water: Free of substance harmful to seed growth. Hoses or other methods to transpiration furnished by Sub Contractor.

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3.2.9 Water: Free of substance harmful to seed growth. Hoses or other methods to transpiration furnished by Sub Contractor.
3.0 EXECUTION
3.1 INSPECTION
3.1.1 Landscape Architect or General Contractor's representative must approve finish surfaces, grades, topsoil quality and depth. Do not start seeding work until unsatisfactory conditions are corrected.
3.2 PREPARATION
3.2.1 SURFACE PREPARATION
1. Seven days maximum prior to seeding, -
A. Treat Lawn areas if required with "Round-Up" by Monsanto, per label direction to kill existing vegetation prior to seeding.
B. Loosen topsoil areas to minimum depth of 4", dampen thoroughly, and cultivate to properly break up clods and lumps.
C. Rake area to remove clods, rocks, weeds, debris, and stones over 1" in any dimension.
D. Grade lawn areas to smooth, free draining even surface with a loose, moderately coarse texture.
E. Apply limestone to supplied topsoil if required by soil test report rate determined by the soil test, to adjust pH of topsoil to not less than 6.0 no more than 6.8.
F. Apply fertilizers to indicated turf areas at a rate equal to 1 lb. of actual nitrogen 1,000 sq. ft. (43 lbs / acre).
G. Apply fertilizers by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with soil to a depth of 1" by approved method.
3.2.2 Fertilizer: granular, non burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
3.2.3 Ground Limestone: Used if required by soil test report: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20% mesh sieve.
3.2.4 Straw Mulch: Used in crimping process only. Clean oat or wheat straw well seasoned before baling, free from mature seed-bearing status, or roots of prohibited or noxious weeds.
3.2.5 Water: Free of substance harmful to seed growth. Hoses or other methods to transpiration furnished by Sub Contractor.

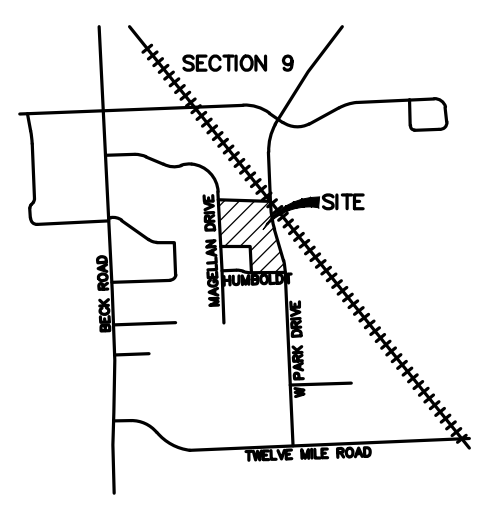
- H. After lawn areas have been prepared, take no heavy objects over them except lawn rollers.
I. After preparation of lawn areas and with topsoil in semi-dry condition, roll lawn planting areas in two directions at approximately right angles with water bailer roller weighing 100 to 300 lbs according to soil type.
J. Rake or scarify and cut or fill irregularities that develop as required until area is true and uniform, free from lumps, depressions, and irregularities.
K. Restore prepared areas to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to seeding.
3.3 INSTALLATION
3.3.1 SEEDING
1. Seed lawns only between April 1, and June 1, and fall seeding between August 15, and October 15, or at such other times acceptable to Landscape Architect.
2. Seed immediately after preparation of bed. Seed indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.
3. Perform seeding operations when the soil is dry and when the winds do not exceed five(5) miles per hour velocity.
4. Apply seed with a rotary or drop type distributor. Install seed evenly by sowing equal quantities in two (2) directions, at right angles to each other.
5. Sow seed at a rate of 300 lbs./acre.
6. After seeding, rake or drag surface of soil lightly to incorporate seed into top 1/8" of soil. Roll with light lawn roller.
7. Provide soil erosion planting mat where grade conditions required to stabilize the planting area.
3.3.2 HYDRO-SEEDING
A. Mix seed, fertilizer, and wood cellulose fiber in required amount of water to produce a homogeneous slurry.
B. For hydro-seeding, wood cellulose fiber shall be used.
C. Hydraulically spray material on ground to form a uniform cover impregnated with grass seed.
D. Immediately following application of slurry mix, make separate application of wood cellulose mulch at the rate of 1,000 pounds, dry weight, per acre.
E. Apply cover so that rainfall or applied water will percolate to underlying soil.
3.3.3 MULCHING
1. Place straw mulch on seeded areas within 24-hours after seeding.
2. Place straw mulch uniformly in a continuous blanket at a rate of 2-1/2 tons per acre, or two (2) 50 lb. bales per 1,000 sq. ft. of area.
3. Crimp straw into soil by use of a "crimper".
3.3.4 ESTABLISH LAWN
1. Establish dense lawn of permanent grasses, free from lumps and depressions.
2. Damage to seeded area resulting from erosion to be repaired by Sub Contractor.
3. In event Sub Contractor does not establish dense lawn during first germination period, return to project to reseed and establish dense lawn.
4. Should the seeded lawn become largely weeds after germination, Sub Contractor is responsible to kill the weeds and reseed the proposed lawn areas to produce a dense turf, as specified.
3.4 CLEANING
3.4.1 Perform Cleaning during installation of the work and upon completion of the work to the approval of the Landscape Architect.
3.5 MAINTENANCE
3.5.1 See Landscape Maintenance and Warranty Section.
3.6 ACCEPTANCE
3.6.1 See Landscape Maintenance and Warranty Section.
END OF SECTION

- LAWN SODDING
1.0 GENERAL
1.1 SUMMARY
1.1.1 Includes But Not Limited To
1. Furnish and install sodded lawn as described in Contract Documents.
1.2 QUALITY ASSURANCE
1.2.1 Sod: Comply with American Sod Producers Association (ASPA) classes of sod materials.
1.3 SUBMITTALS
1.3.1 Submit sod growers certification of grass species. Identify source location.
1.3.2 Submit manufacturer's certification of fertilizer.
1.4 DELIVERY, STORAGE, AND HANDLING
1.4.1 Cut, deliver, and install sod within 24 hour period.
1.4.2 Do not harvest or transport sod when moisture content may adversely affect sod survival.
1.4.3 Protect sod from sun, wind, and dehydration prior to installation.
1.4.4 Sod which dries out before installation will be rejected.
1.5 PROJECT CONDITIONS
1.5.1 See Landscape Preparation section.
1.5.2 Work notification: Notify Landscape Architect or General Contractor's representative at least seven (7) working days prior to start of sodding operation.
1.5.3 Protect existing utilities, paving, and other facilities from damage caused by sodding operations.
1.5.4 Perform sodding work only after planting and other work affecting ground surface has been completed.
1.5.5 Restrict traffic from lawn areas until grass is established. Erect signs and barriers as required.

- 1.5.6 Provide hose and lawn watering equipment as required.
1.5.7 The Irrigation system will be installed prior to sodding.
1.6 WARRANTY
1.6.1 See Landscape Maintenance and Warranty Section.
2.0 PRODUCTS
2.1 MATERIALS
2.1.1 Sod: An "approved" nursery grown blend of improved Kentucky Bluegrass varieties.
2.1.2 Sod containing Common Bermudagrass, Quackgrass, Johnsongrass, Poison Ivy, Nutseeds, Nimblewill, Canada Thistle, Timothy, Bentgrass, Wild Garlic, Ground Ivy, Perennial Sorrel, or Bramegrass weeds will not be acceptable.
2.1.3 Provide well rooted, healthy sod, free of diseases, nematodes and soil borne insects.
2.1.4 Furnish sod, machine stripped in square pads or strips not more than 3'-0" long, uniformly 1" to 1-1/2" thick with clean cut edges.
2.1.5 Fertilizer: granular, non burning product composed of not less than 50% organic slow acting, guaranteed analysis professional fertilizer.
2.1.6 Type A: starter fertilizer containing 20% nitrogen, 12% phosphoric acid, and 8% potash by weight or similar approved composition.
2.1.7 Ground Limestone: Used if required by soil test report: Containing not less than 85% of total carbonates and ground to such fineness that 50% will pass through a 100 mesh sieve and 90% will pass through a 20% mesh sieve.
2.1.8 Stakes: softwood, 3/4" x 8" long.
2.1.9 Water: Free of substance harmful to seed growth. Hoses or other methods to transpiration furnished by Sub Contractor.
2.1.10 Topsoil: see Topsoil Placement section.
3.0 EXECUTION
3.1 INSPECTION
3.1.1 Landscape Architect or General Contractor's representative must approve finish surfaces, grades, topsoil quality and depth. Do not start sodding work until unsatisfactory conditions are corrected.
3.2 PREPARATION
3.2.1 Surface Preparation:
1. Seven days maximum prior to sodding, -
a. Treat Lawn areas if required with herbicide per manufacturer recommendations to kill existing vegetation prior to sodding.
b. Loosen topsoil areas to minimum depth of 4", dampen thoroughly, and cultivate to properly break up clods and lumps.
c. Rake area to remove clods, rocks, weeds, roots, debris, and stones over 1" in any dimension.
d. Grade lawn areas to smooth, free draining even surface with a loose, moderately coarse texture.
e. Apply limestone to supplied topsoil if required by soil test report at rate determined by the soil test, to adjust pH of topsoil to not less than 6.0 no more than 6.8.
f. Apply fertilizers to indicated turf areas at a rate equal to 1 lb. of actual nitrogen 1,000 sq. ft. (43 lbs / acre).
g. Apply fertilizers by mechanical rotary or drop type distributor, thoroughly and evenly incorporated with soil to a depth of 1" by approved method.
h. After lawn areas have been prepared, take no heavy objects over them except lawn rollers.
i. After preparation of lawn areas and with topsoil in semi-dry condition, roll lawn planting areas in two directions at approximately right angles with water bailer roller weighing 100 to 300 lbs.
j. Rake or scarify and cut or fill irregularities that develop as required until area is true and uniform, free from lumps, depressions, and irregularities.
k. Restore prepared areas to specified condition if eroded, settled or otherwise disturbed after fine grading and prior to sodding.
l. Dampen dry soil prior to sodding.
3.3 INSTALLATION
3.3.1 Sodding:
1. Lay sod to form a solid mass with tightly fitted joints. Butt ends and sides of sod strips. Do not overlay edges. Stagger strips to offset joints in adjacent course.
2. Do not lay dormant sod or install sod on saturated, frozen soil.
3. Install initial row of sod in a straight line, beginning at the bottom of slopes, perpendicular to direction of the sloped area.
4. Peg sod on slopes greater than 3 to 1 or in centerline of swales to prevent slippage at a rate of 2 stakes per yard of sod.
5. Water sod thoroughly with a fine spray immediately after laying to obtain moisture penetration through sod into top 4 inches of topsoil.
6. Roll with light lawn roller in two directions perpendicular to each other to ensure contact with sub grade.
7. Install sod at indicated areas within contract limits and areas adjoining contract limits disturbed as a result of construction operations.
8. Damage to sodded area resulting from erosion to be repaired by Subcontractor.
3.4 CLEANING
3.4.1 Perform Cleaning during installation of the work and upon completion of the work to the approval of the Landscape Architect.
3.5 MAINTENANCE
3.5.1 See Landscape Maintenance and Warranty Section.
3.6 ACCEPTANCE
3.6.1 See Landscape Maintenance and Warranty Section.
END OF SECTION



CAUTION!! THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE...



CLIENT
MADISON ENERGY INVESTMENTS
6100 BOONE BLVD, STE 310
VIENNA, VIRGINIA

PROJECT TITLE
LINEAR CAR PORTS ADDITION
4600 HUMBOLDT DRIVE
NOVA, MICHIGAN

Table with 3 columns: Revision number, Description, Date. Includes revisions for PSP AND FSP SUBMITTAL and FSP VARIANCE SUBMITTAL.

ORIGINAL ISSUE DATE: AUGUST 16, 2024
DRAWING TITLE: LANDSCAPE SPECIFICATIONS
PEA JOB NO.: 2023-1048
P.M.: BK
DN.: CAL
DES.: JLE
DRAWING NUMBER: L-2.1

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PLOT DATE: 11/27/2024 8:51:56 AM

EXTERIOR PLANTS

1.0 GENERAL
1.1 SUMMARY
1.1.1 Includes But Not Limited To
1.2 QUALITY ASSURANCE
1.2.1 Plant names indicated, comply with "Standardized Plant Names" as adopted by the latest edition of the American Joint Committee of Horticultural Nomenclature...

4. Plants planted in rows shall be matched in form, (see specimen stock).
5. Plants larger than those specified in the plant list may be used when acceptable to the Landscape Architect.
6. No pruning wounds shall be present with a diameter of more than 1" and such wounds must show vigorous bark on all edges.

3.1.3 Accurately stake plant material according to the Drawings. Stakes shall be above grade, painted a bright color, and labeled with the name of the plant material to be installed at that location.
3.2 TIME OF PLANTING
3.2.1 Evergreen material: Plant Evergreen materials between September 1 and October 31 or in spring before new growth begins...

3.7.1 Remove or cut back broken, damaged, and unsymmetrical growth of new wood.
3.7.2 Multiple leader plants: preserve the leader which will best promote the symmetry of the plant. Do not prune terminal leader. Cut branches flush with the trunk of the main branch...

LANDSCAPE MAINTENANCE AND WARRANTY STANDARDS

1.0 GENERAL
1.1 SUMMARY
1.1.1 Includes But Not Limited To
1. Provide maintenance for new landscaping as described in Contract Documents.

1. At the completion of all landscape installation, or pre-approved portions thereof, the Landscape Subcontractor shall request in writing an inspection or Acceptance of Installation in which the Landscape Subcontractor, Landscape Architect, and General Contractor's Representative shall be present.

2. Landscape work may be inspected for acceptance in parts agreeable to the General Contractor's Representative and Landscape Architect provided work offered for inspection is complete, including maintenance as required.

1. The Project Warranty Period begins upon written preliminary acceptance of the project installation by the Landscape Architect and General Contractor's representative.
2. The Landscape Subcontractor shall guarantee trees, shrubs, ground cover beds and seeded or sodded areas through construction and for a period of two (2) years after date of Acceptance of Installation against defects including death and unsatisfactory growth...

1. To insure guarantee standards, the following maintenance procedures for trees, shrubs, and ground covers shall be executed during construction and for the full Project Warranty Periods.
a. Landscape Subcontractor shall be responsible for unlimited replacement of any plant materials up to and during the two (2) year Project Warranty Period. A plant that dies within the first growing season should be replaced within 3 months or during the first available growing season, whichever comes first...

3.5.1 Mulch trees and shrub planting pits and shrub beds with shredded hardwood bark mulch 3" deep to dripline immediately after planting. Leave 3" circle of bare soil around tree trunk. Thoroughly water mulched areas. After watering, rake mulch to provide a uniform finished surface.
3.5.2 Mulch shall not be placed in contact with trunks or stems. Form saucer with 4" continuous rim.

3.1.4 Maintenance of Seeded Lawn Areas
1. The Landscape Subcontractor shall maintain seeded lawn areas.
a. Water, fertilize, weed, and apply chemicals until a dense lawn of permanent grasses, free from lumps and depressions or any bare spots, none of which is larger than one (1) foot of area up to a maximum of 3% of the total seeded lawn area is established.
b. Seeded lawn that fails to show a uniform growth and/or germination shall be reseeded until a dense cover is established, regardless of what season the seed was installed.

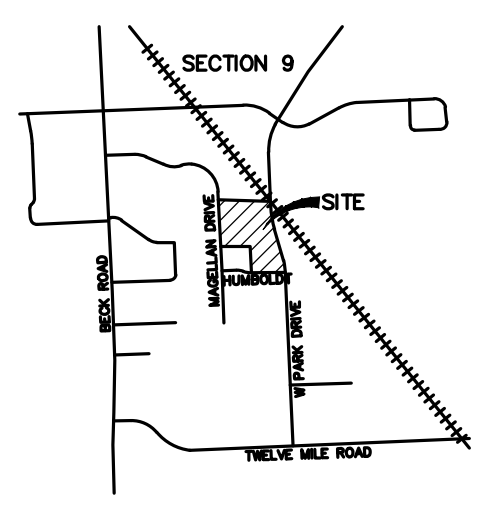
3.1.5 Maintenance of Sodded Lawn Areas
1. The Landscape Subcontractor shall maintain sodded lawn areas.
a. Water, fertilize, spot weed, apply herbicides, fungicides, insecticides and reseed until a full uniform, smooth stand of sod is knitted to topsoil, and accepted by the Landscape Architect or his or her representative.

3.1.6 Final Acceptance Upon Conclusion of the Warranty Period
1. At the conclusion of the Project Warranty Period the Landscape Subcontractor shall request a project inspection for final acceptance in which the Landscape Contractor, Landscape Architect and Owner's Representative shall be present.

NOTE: The Owners may at their option elect to utilize a Construction Manager in lieu of a General Contractor for all matters pertaining to these specifications and the site work.



CAUTION!!
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THESE DRAWINGS ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE EXCLUSIVELY RESPONSIBLE FOR DETERMINING THE EXACT UTILITY LOCATIONS AND ELEVATIONS PRIOR TO THE START OF CONSTRUCTION.



CLIENT
MADISON ENERGY INVESTMENTS
6100 BOONE BLVD, STE 310
VIENNA, VIRGINIA

PROJECT TITLE
LINEAGE CAR PORTS ADDITION
4650 HUMBOLDT DRIVE
NOVA, MICHIGAN

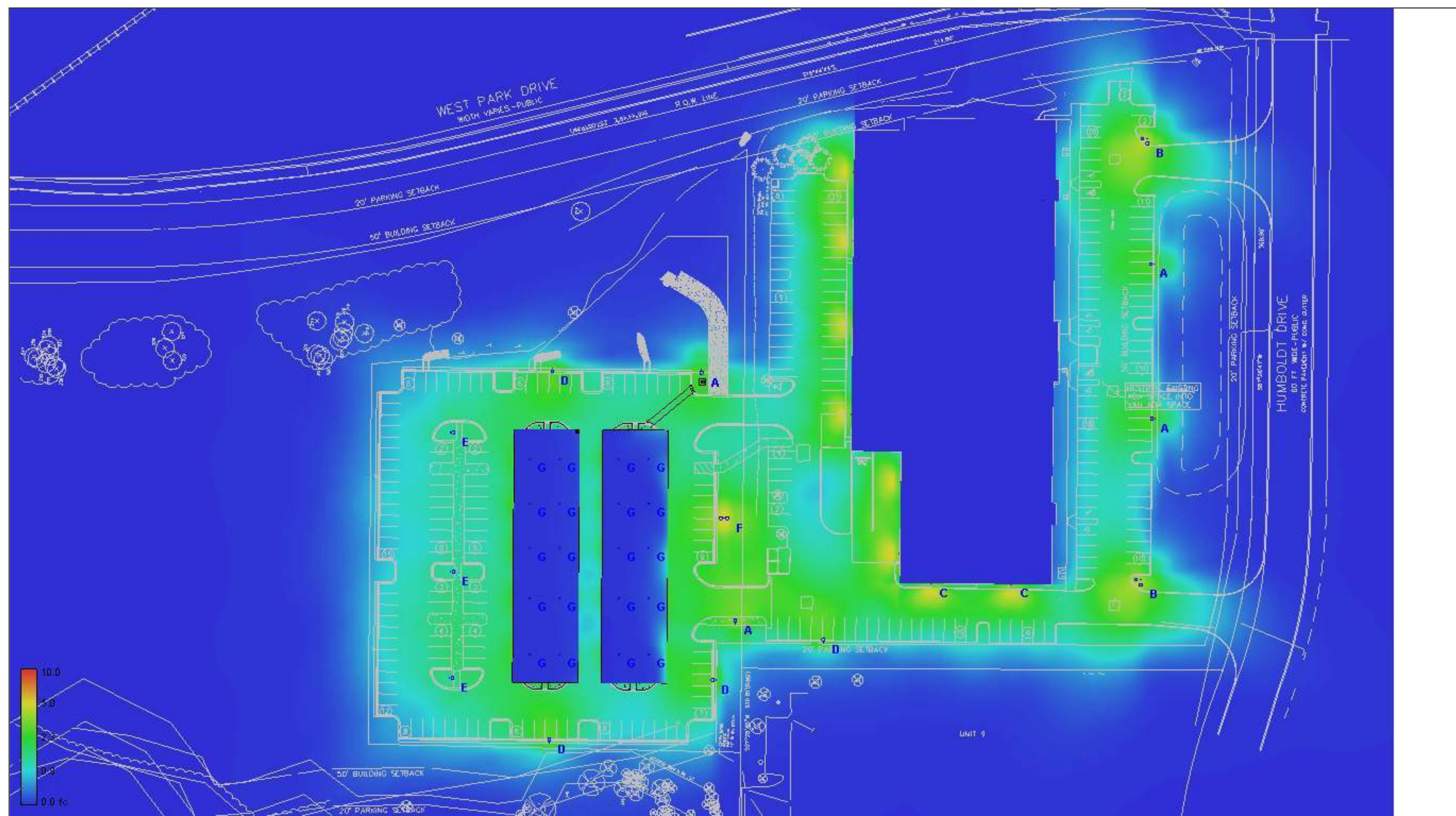
Table with 2 columns: REVISIONS, Description, Date. Includes entries for PSP AND FSP SUBMITTAL and FSP VARIANCE SUBMITTAL.

ORIGINAL ISSUE DATE: AUGUST 16, 2024

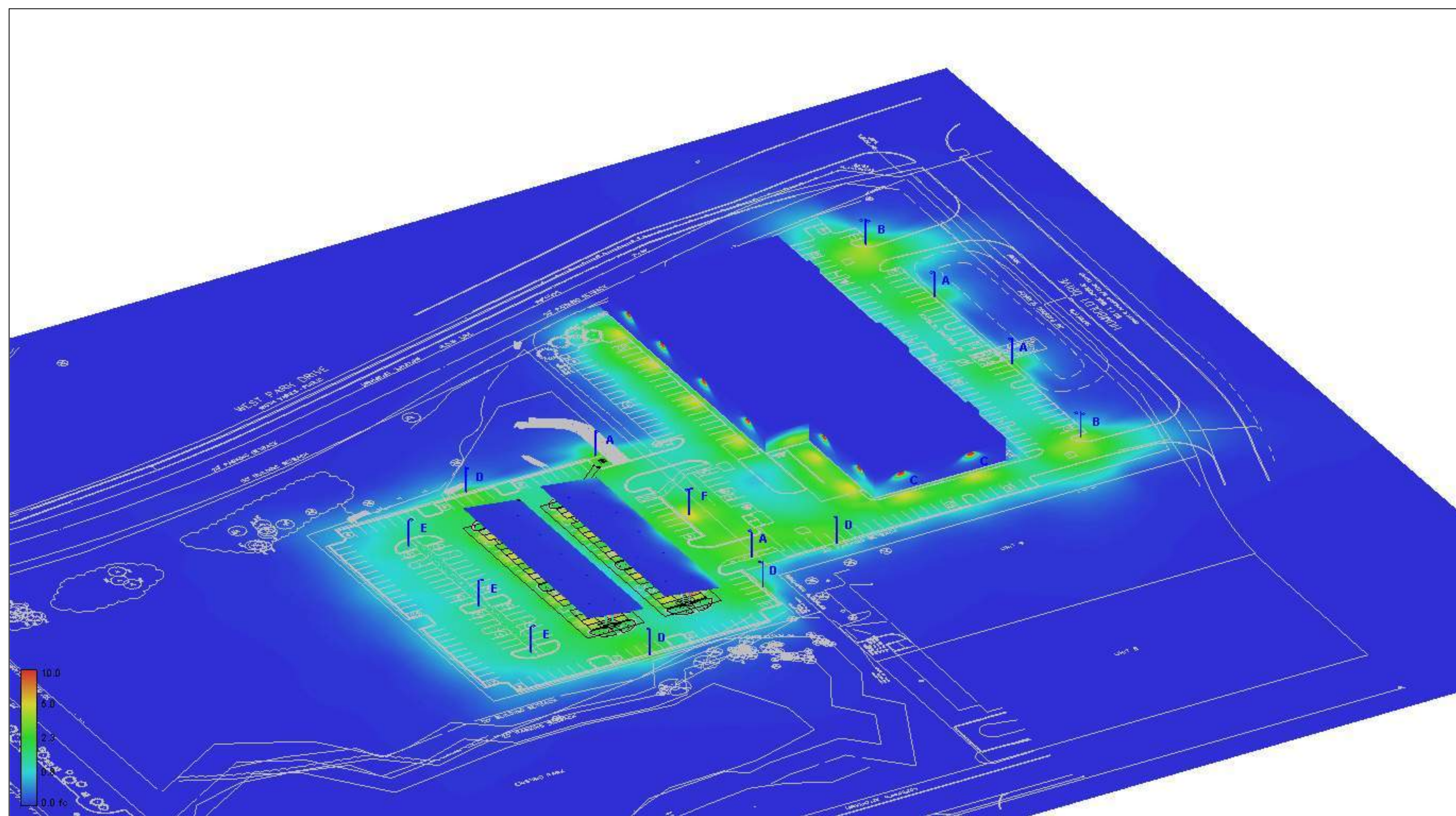
DRAWING TITLE
LANDSCAPE SPECIFICATIONS

PEA JOB NO. 2023-1048
P.M. BK
DN. JAL
DES. CLE
DRAWING NUMBER:

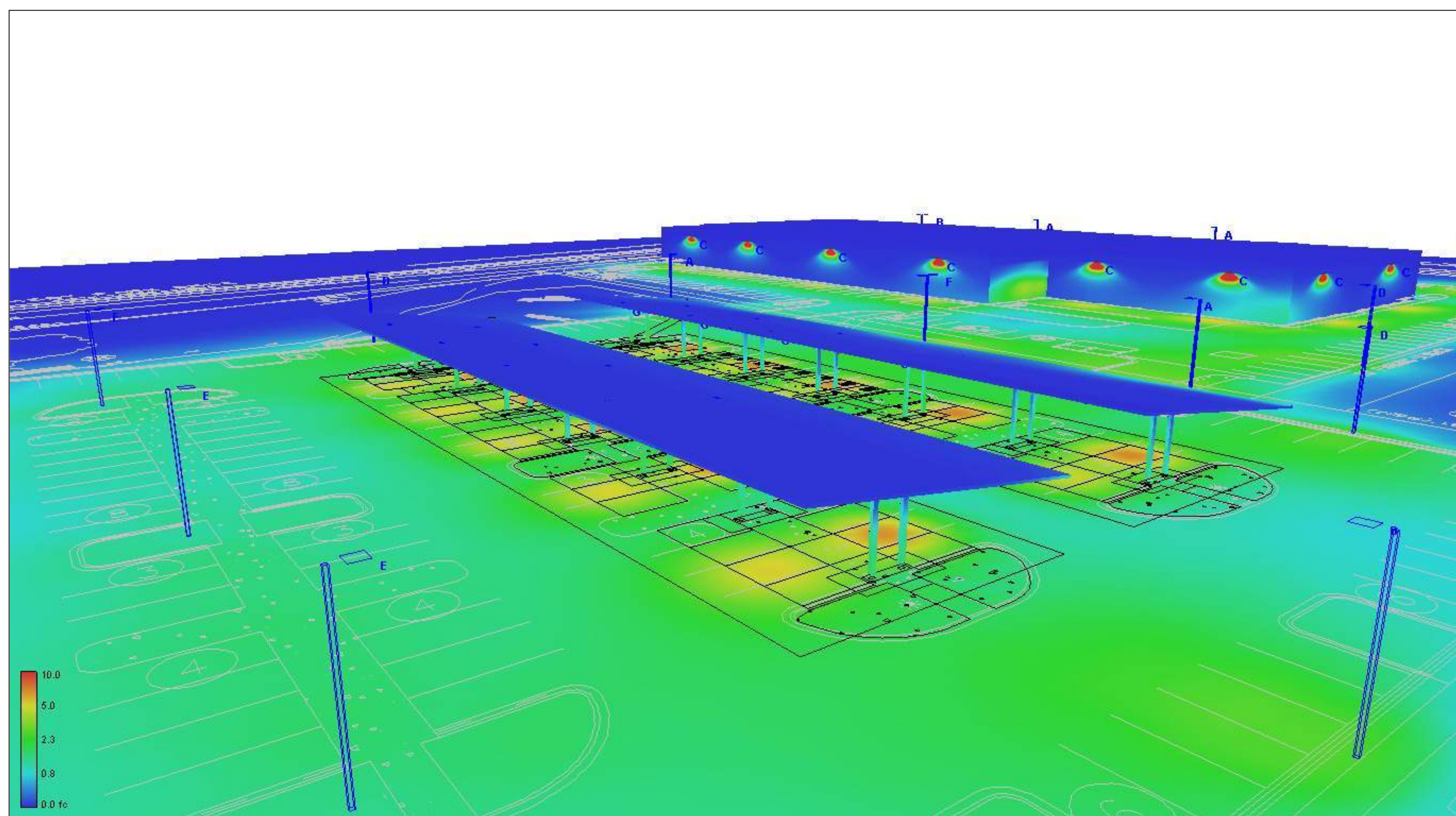
\\saw\projects\2023\1048\PEA\JOB\DESIGN\LANDSCAPE\CONSTRUCTION\0-22 LANDSCAPE SPEC- 23-1048.rvt
PLOT DATE: 11/27/2024 10:59:56 AM



View #1



View #2



View #3

D-Series Size 1
LED Area Luminaire

Specifications

Brand	Lithonia
Model	DSX1 LED P4
Height	30K 70CRI T4M
Mount	30K 70CRI T4M

Quantity Schedule

Symbol	Qty	Manufacturer	Model	Height	Mount	Output (lm)	LLF	Mount Height (ft)	Mounting Spacing (ft)
A	4	Lithonia Lighting	DSX1 LED P4 30K 70CRI T4M	30K	70CRI T4M	15613	0.9	123.94	24'

D-Series Size 2
LED Wall Luminaire

Specifications

Brand	Lithonia
Model	DSX1 LED P3
Height	30K 70CRI T3M
Mount	30K 70CRI T3M

Quantity Schedule

Symbol	Qty	Manufacturer	Model	Height	Mount	Output (lm)	LLF	Mount Height (ft)	Mounting Spacing (ft)
B	2	Lithonia Lighting	DSX1 LED P3 30K 70CRI T3M	30K	70CRI T3M	13206	0.9	204.34	24'

CS
CNY LED
Canopy Lighting

Specifications

Brand	Contractor Select
Model	CNY LED P0 30K MVOLT
Height	30K
Mount	30K

Quantity Schedule

Symbol	Qty	Manufacturer	Model	Height	Mount	Output (lm)	LLF	Mount Height (ft)	Mounting Spacing (ft)
G	20	Lithonia Lighting	CNY LED P0 30K MVOLT	30K	30K	3669	0.9	26.35	13'10" & 16'10"

Statistics

Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min
Canopy Parking	X	2.8 fc	6.9 fc	0.9 fc	7.7:1	3.1:1
Existing Parking Lot	+	1.8 fc	5.3 fc	0.3 fc	17.7:1	6.0:1
New Parking Lot	+	1.8 fc	6.9 fc	0.5 fc	13.8:1	3.6:1
Boundary Line	+	0.0 fc	0.5 fc	0.0 fc	N/A	N/A

Schedule Number	Label	Qty	Manufacturer	Coloring	Description	Lamp Output	LLF	Mount Height	Mounting Spacing
A	4	Lithonia Lighting	DSX1 LED P4 30K 70CRI T4M	D-Series Size 1 Area Luminaire P4 Performance Package 3000K CCT 70 CRI Type 4 Medium	15613	0.9	123.94	24'	
B	2	Lithonia Lighting	DSX1 LED P3 30K 70CRI T3M	D-Series Size 1 Area Luminaire P3 Performance Package 3000K CCT 70 CRI Type 3 Medium	13206	0.9	204.34	24'	
C	8	Lithonia Lighting	DSXW2 LED 30C 1000 30K TFTM MVOLT	DSXW2 LED WITH 3 LIGHT ENGINES, 30 LED's, 1000mA DRIVER, 3000K LED, TYPE FORWARD THROW MEDIUM OPTIC	10355	0.9	109	18'	
D	4	Lithonia Lighting	DSX1 LED P4 30K 70CRI T4M HS	D-Series Size 1 Area Luminaire P4 Performance Package 3000K CCT 70 CRI Type 4 Medium Houseside Shield	13431	0.9	123.93	24' 73	
E	3	Lithonia Lighting	DSX1 LED P4 30K 70CRI T5W	D-Series Size 1 Area Luminaire P4 Performance Package 3000K CCT 70 CRI Type 5 Wide	16324	0.9	123.94	24'	
F	1	Lithonia Lighting	DSX1 LED P4 30K 70CRI T4M HS	D-Series Size 1 Area Luminaire P4 Performance Package 3000K CCT 70 CRI Type 4 Medium Houseside Shield	13431	0.9	247.87	24' 46	
G	20	Lithonia Lighting	CNY LED P0 30K MVOLT	Contractor Select CNY LED Canopy P0=3,500lm	3669	0.9	26.35	13'10" & 16'10"	

General Note

- SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
- SEE LUMINAIRE SCHEDULE FOR LIGHT LOSS FACTOR.
- CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0"

THE ENGINEER AND/OR ARCHITECT MUST DETERMINE APPLICABILITY OF THE LAYOUT TO EXISTING / FUTURE FIELD CONDITIONS. THIS LIGHTING LAYOUT REPRESENTS ILLUMINATION LEVELS CALCULATED FROM LABORATORY DATA TAKEN UNDER CONTROLLED CONDITIONS IN ACCORDANCE WITH ILLUMINATING ENGINEERING SOCIETY APPROVED METHODS. ACTUAL PERFORMANCE OF ANY MANUFACTURER'S LUMINAIRE MAY VARY DUE TO VARIATION IN ELECTRICAL VOLTAGE, TOLERANCE IN LAMPS, AND OTHER VARIABLE FIELD CONDITIONS. MOUNTING HEIGHTS INDICATED ARE FROM GRADE AND/OR FLOOR UP.

THESE LIGHTING CALCULATIONS ARE NOT A SUBSTITUTE FOR INDEPENDENT ENGINEERING ANALYSIS OF LIGHTING SYSTEM SUITABILITY AND SAFETY. THE ENGINEER AND/OR ARCHITECT IS RESPONSIBLE TO REVIEW FOR MICHIGAN ENERGY CODE AND LIGHTING QUALITY COMPLIANCE.

UNLESS EXEMPT, PROJECT MUST COMPLY WITH LIGHTING CONTROLS REQUIREMENTS DEFINED IN ASHRAE 90.1 2013. FOR SPECIFIC INFORMATION CONTACT GBA CONTROLS GROUP AT ASG@GASSERBUSH.COM OR 734-266-6705.

Alternates Note

THE USE OF FIXTURE ALTERNATES MUST BE RESUBMITTED TO THE CITY FOR APPROVAL.

Ordering Note

FOR INQUIRIES CONTACT GASSER BUSH AT QUOTES@GASSERBUSH.COM OR 734-266-6705.

Drawing Note

THIS DRAWING WAS GENERATED FROM AN ELECTRONIC IMAGE FOR ESTIMATION PURPOSE ONLY. LAYOUT TO BE VERIFIED IN FIELD BY OTHERS.

Mounting Height Note

MOUNTING HEIGHT IS MEASURED FROM GRADE TO FACE OF FIXTURE. POLE HEIGHT SHOULD BE CALCULATED AS THE MOUNTING HEIGHT LESS BASE HEIGHT.

GENERAL NOTES

- 1. 'STRUCTURAL ENGINEER' IN THESE NOTES REFERS TO TYLK GUSTAFSON RECKERS WILSON ANDREWS, LLC. THE STRUCTURAL ENGINEER OF RECORD.
2. 'SPECIALTY ENGINEER' IN THESE NOTES REFERS TO AN ENGINEER LICENSED OR REGISTERED TO PRACTICE STRUCTURAL ENGINEERING IN THE STATE IN WHICH THE PROJECT IS LOCATED.
3. STRUCTURAL DRAWINGS ARE TO BE COORDINATED AND USED IN CONJUNCTION WITH THE ARCHITECTURAL, CIVIL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS...
15. ALL MEMBERS SHOWN ON FRAMING PLANS BETWEEN COLUMN LINES/GRID LINES SHALL BE EQUALLY SPACED, UNLESS NOTED OTHERWISE.

SHOP DRAWINGS

- 1. CONTRACTOR SHALL SUBMIT SHOP DRAWINGS TO THE STRUCTURAL ENGINEER FOR REVIEW AND APPROVAL.
2. ALL SHOP DRAWING SUBMITTALS SHALL BE AS DESCRIBED IN THE PROJECT SPECIFICATIONS OR IN THESE NOTES IF THERE IS NO PROJECT SPECIFICATION.
3. SHOP DRAWINGS AND RELATED MATERIALS PREPARED BY SUPPLIERS AND SUBCONTRACTORS SHALL BE REVIEWED BY THE GENERAL CONTRACTOR PRIOR TO SUBMITTING TO THE ARCHITECT/STRUCTURAL ENGINEER...
11. PROVIDE SLEEVE LAYOUTS FOR ALL PENETRATIONS THROUGH STRUCTURAL MEMBERS (ALL TRADES ARE INCLUDED). LAYOUTS ARE TO BE SUBMITTED TO THE STRUCTURAL ENGINEER FOR REVIEW PRIOR TO CONSTRUCTION.

STRUCTURAL SYSTEM

- 1. THE GRAVITY LOADS RESISTING SYSTEM CONSISTS OF STEEL PURLINS, STEEL BEAMS, AND STEEL COLUMNS ON CONCRETE FOOTINGS.
2. THE LATERAL LOAD RESISTING SYSTEM CONSISTS OF STEEL ORDINARY CANTILEVER COLUMNS ON CONCRETE FOOTINGS.

FOUNDATIONS

- 1. FOUNDATION DESIGN IS BASED ON THE GEOTECHNICAL INVESTIGATION REPORT PERFORMED BY XXX DATED XXX, 2022. CONTRACTOR SHALL FOLLOW ALL REQUIREMENTS SPECIFIED IN THIS REPORT.
2. FOUNDATION STRUCTURE IS BASED ON THE USE OF CONTINUOUS STRIP FOOTINGS AND/OR SPREAD FOOTINGS APPLYING A MAXIMUM PRESSURE OF 1,500 POUNDS PER SQUARE FOOT TO THE SOIL.
3. ALL ENGINEERED FILL IS TO BE COMPACTED TO ACHIEVE THIS BEARING PRESSURE AS VERIFIED BY FIELD TESTING BY THE OWNER'S TESTING AGENCY...
11. REFER TO THE TESTING AND INSPECTION SECTION OF THESE NOTES FOR THE FOUNDATION TESTING AND INSPECTION REQUIREMENTS.

STRUCTURAL CONCRETE

- 1. CONCRETE MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE PUBLICATIONS:
A. ACI 301 - "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS"
B. ACI 302 - "RECOMMENDED PRACTICE FOR CONCRETE FLOOR AND SLAB CONSTRUCTION"
C. ACI 304 - "RECOMMENDED PRACTICE FOR MEASURING, MIXING, TRANSPORTING AND PLACING CONCRETE"
2. PROVIDE CONCRETE TO OBTAIN A MINIMUM COMPRESSIVE STRENGTH AT 28 DAYS, f'c = 4,000 PSI
3. LABORATORY TEST REPORTS OR MATERIAL CERTIFICATES FOR CONCRETE MATERIALS AND MIX DESIGN TEST DATA, IN CONFORMANCE WITH ACI STANDARDS, SHALL BE SUBMITTED FOR REVIEW FOR EACH TYPE OF CONCRETE TO BE USED...
11. IF STRUCTURAL CONCRETE MEMBERS (STRUCTURED SLABS, BEAMS AND GIRDERS) ARE NOT CONSTRUCTED IN ONE CONTINUOUS POUR THE VERTICAL CONSTRUCTION JOINT BETWEEN POURS SHALL BE PLACED WITHIN THE MIDDLE FIFTH OF THE MEMBER SPAN AND CONTINUOUSLY KEVED.

Table with columns: BAR SIZE, f'c, SLAB/BEAM (TOP, OTHER, VERT), WALL (VERT, HORIZ), COLUMN VERTICAL. Rows include bar sizes #3, #4, #5, #6, #7, #8, #9, #10, #11 with various dimensions.

- NOTES:
A. THE ABOVE TABLE IS BASED ON THE CLEAR SPACING OF BARS BEING NOT LESS THAN 2x THE MAXIMUM BAR DIAMETER AND THE CLEAR COVER OF BARS BEING NOT LESS THAN ONE BAR DIAMETER...
20. MECHANICAL COUPLERS MAY BE USED IN LIEU OF LAP SPLICES. MECHANICAL COUPLERS MUST BE CAPABLE OF SUSTAINING 125% OF THE BAR CAPACITY.
21. REFER TO THE TESTING AND INSPECTION SECTION OF THESE NOTES FOR THE CONCRETE TESTING AND INSPECTION REQUIREMENTS.

POST-INSTALLED ANCHORS

- 1. WHERE EPOXY SYSTEM IS INDICATED ON THE PLANS OR DETAILS, USE HILTI HY-200 ADHESIVE IN CONCRETE AND SOLID GROUTED MASONRY UNLESS NOTED OTHERWISE. THE CONTRACTOR MAY SUBMIT SUBSTITUTE EPOXY SYSTEMS FOR APPROVAL PROVIDED THEY MEET OR EXCEED THE CAPACITY OF HILTI HY-200 ADHESIVE.
2. DRILL HOLES TO EPOXY MANUFACTURER'S RECOMMENDED SIZE. CLEAN HOLES WITH A CIRCULAR WIRE OR NYLON BRUSH AND BLOW OUT WITH COMPRESSED AIR.
3. WHERE MECHANICAL EXPANSION ANCHORS ARE INDICATED ON THE PLANS OR DETAILS, USE HILTI KWIK BOLT 3 ANCHORS IN CONCRETE UNLESS NOTED OTHERWISE...
5. REFER TO THE TESTING AND INSPECTION SECTION OF THESE NOTES FOR THE POST-INSTALLED ANCHORS TESTING AND INSPECTION REQUIREMENTS.

STRUCTURAL STEEL

- 1. FURNISH STRUCTURAL STEEL IN ACCORDANCE WITH AISC SPECIFICATIONS FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS AND AISC CODE OF STANDARD PRACTICE, LATEST EDITIONS.
2. STRUCTURAL STEEL MATERIAL SHALL BE AS INDICATED BELOW UNO:
STRUCTURAL STEEL SPECIFICATION
WIDE FLANGES: ASTM A992
CHANNELS: ASTM A36
ANGLES: ASTM A36
SQUARE & RECTANGULAR HSS: ASTM A500, GRADE C
PLATES: ASTM A36
THREADED RODS: ASTM A36
ANCHOR BOLT ASSEMBLIES: ASTM F1554, GRADE 36
HIGH STRENGTH BOLTS: ASTM A325 OR SAE GRADE 5, AS NOTED
3. ALL STRUCTURAL STEEL FRAMEWORK INCLUDED IN THESE DOCUMENTS ARE CLASSIFIED AS NON-SELF-SUPPORTING. ALL CONNECTIONS SPECIFIED HEREIN ARE BASED ON LOADING CONDITIONS OF THE FULLY COMPLETED STRUCTURE IN ITS ENTIRETY...
11. BOLTED CONNECTIONS SHALL USE A MINIMUM OF (2) 3/4" Ø BOLTS UNLESS NOTED OTHERWISE.

COLD FORMED STEEL FRAMING (TGRWA DESIGN)

- 1. FURNISH COLD FORMED STEEL FRAMING IN ACCORDANCE WITH AMERICAN IRON AND STEEL INSTITUTE. "SPECIFICATION FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS," LATEST EDITION.
2. COLD FORMED STEEL FRAMING EXAMPLE MEMBER DESIGNATION IS AS SUCH:
A. 60S200-54:
1. 600 = F' WEB DEPTH
2. S = STUD SECTION
3. 200 = 2" FLANGE WIDTH
4. 54 = 54 MILS = 1/2 GAUGE
3. ALL FRAMING SHALL BE FORMED FROM SHEET STEEL CORRESPONDING TO THE REQUIREMENTS OF ASTM A1003, STRUCTURAL GRADE, TYPE H WITH MINIMUM 600 ZINC COATING AND MINIMUM YIELD STRENGTH OF 50 KSI, UNLESS NOTED OTHERWISE.
4. ALL FRAMING SHALL BE MINIMUM 54 MILS, UNLESS NOTED OTHERWISE.
5. ALL STUD SECTIONS SHALL BE PUNCHED WITH STANDARD HOLES WITH STIFFENED FLANGES. ALL TRACK SECTIONS SHALL BE UNPUNCHED WITH UNSTIFFENED FLANGES...
11. REFER TO THE TESTING AND INSPECTION SECTION OF THESE NOTES FOR THE COLD FORMED STEEL FRAMING TESTING AND INSPECTION REQUIREMENTS.

STRUCTURAL LOADING CRITERIA

- 1. STRUCTURAL BUILDING CODE - 2015 MICHIGAN BUILDING CODE
2. ROOF DEAD LOADS: SEE "SCHEDULE OF BUILDING DESIGN LOADS"
A. SOLAR PANELS = 2.5 PSF
B. MISC. WIRING AND CONNECTORS: 1.0 PSF
C. STRUCTURAL = WELF WEIGHT OF STRUCTURAL MEMBERS INDICATED
3. ROOF LIVE LOADS: SOLAR PANELS NOT DESIGNED FOR OCCUPANCY
4. WIND LOADS:
A. BASIC WIND SPEED (3 SECOND GUST) - V = 115 MPH (ULTIMATE)
B. RISK CATEGORY = II
C. IMPORTANCE FACTOR I = 1.00
D. EXPOSURE CATEGORY = B
E. WIND LOADS ON OPEN BUILDING WITH MONOSLOPE ROOF:
1. VERTICAL FACES OF STRUCTURAL MEMBERS (ALL DIRECTIONS) = 32.6 PSF
2. WIND PARALLEL TO ROOF SLOPE
A. VERTICAL DOWN FORCE AT WINDWARD HALF OF ROOF, CASE A = 23.7 PSF
B. VERTICAL DOWN FORCE AT LEEWARD HALF OF ROOF, CASE A = 8.3 PSF
C. VERTICAL UPLIFT FORCE AT WINDWARD HALF OF ROOF, CASE B = 24.6 PSF
D. VERTICAL UPLIFT FORCE AT LEEWARD HALF OF ROOF, CASE A = 7.4 PSF
3. WIND PERPENDICULAR TO ROOF SLOPE
a. VERTICAL UPLIFT/DOWN FORCE AT WINDWARD EDGE = 18.0 PSF
b. VERTICAL UPLIFT/DOWN FORCE AWAY FROM WINDWARD EDGE = 12.6 PSF
c. VERTICAL UPLIFT/DOWN FORCE AT LEEWARD EDGE = 7.4 PSF
F. COMPONENTS TRANSFERRING WIND LOAD TO PRIMARY STRUCTURAL SYSTEM = SEE REFERENCED CODE ABOVE.
5. SNOW LOADS:
A. GROUND SNOW LOAD - Pg = 25 PSF
B. IMPORTANCE FACTOR = 1.0
C. THERMAL FACTOR, Ct = 1.2
D. EXPOSURE FACTOR = 0.9
E. FLAT ROOF SNOW LOAD Pf = 20 PSF
6. SEISMIC LOADS:
A. SHORT PERIOD MAPPED SPECTRAL ACCELERATION Ss = 0.088
B. 1-SECOND PERIOD MAPPED SPECTRAL ACCELERATION S1 = 0.046
C. SITE CLASS = D (ASSUMED)
D. RISK CATEGORY = II
E. IMPORTANCE FACTOR I = 1.00
F. SHORT PERIOD SITE COEFFICIENT Fa = 1.6
G. 1-SECOND PERIOD SITE COEFFICIENT Fv = 2.4
H. SHORT PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION SDS = 0.094
I. 1-SECOND PERIOD DESIGN SPECTRAL RESPONSE ACCELERATION SD1 = 0.074
J. SEISMIC DESIGN CATEGORY = A
K. BASIC SEISMIC FORCE RESISTING SYSTEM = STEEL ORDINARY CANTILEVER COLUMN SYSTEMS
L. RESPONSE MODIFICATION COEFFICIENT R = 1.25
M. SEISMIC RESPONSE COEFFICIENT, Cs = 0.01

REVISION SCHEDULE table with columns: REV, ISSUE FOR, DATE. Multiple empty rows for revisions.

TGRWA logo and contact information: Tylk Gustafson Reckers Wilson Andrews, LLC Structural Engineers, 600 West Van Buren, Suite 500, Chicago, Illinois 60607, Phone: 312.341.0055 Fax: 312.341.9566 www.tgrwa.com

STRUCTURAL SOLAR, LLC
LINEAGE HQ SOLAR PROJECT
46500 HUMBOLDT DR., NOME, MI

Table with columns: DRAWN (NC), CHECKED (SEO), DATE (07/29/16), SCALE (NTS), JOB NO. (23116), SHEET.

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STRUCTURAL NOTES

