ADDENDUM No. 1
May 19, 2026

Millpond Park Plaza
City of Fenton
OHM Job No.: 0077-24-0110

The following changes, additions, and/or clarifications to the Contract Documents shall be incorporated in said documents and shall be allowed for in the unit prices bid by the Contractor such that the unit prices indicated in the Bid Form shall represent the conditions as set forth in the Contract Documents and this addendum. The bidder shall acknowledge their receipt of this addendum on page 1 of their Bid Form submittal, book section 00 41 00. This addendum will be included in its entirety in the final, executed version of the Contract Book.

The Bidder shall also complete and return, via email or facsimile, the acknowledgment sheet located on page 4 of this addendum.
This Addendum contains 21 pages.

CONTRACT DOCUMENT CHANGES:

Construction Plans
1. Delete Sheet L-400 and replace with page 5 of this addendum (Butterfly garden note)
2. Delete Sheet L-601 and replace with page 6 of this addendum (Updated detail 6)
3. Delete Sheet E-601 and replace with page 7 of this addendum (LP1 Lighting Relay Detail Updated)

Advertisement for Bid, Section 01 11 13
1. Clarify the bid date to be for 2026 rather than 2025.

Bid Form, Section 00 41 00.
1. Delete 00 41 00 Bid Form, Pages 3-6, and replace with pages 8-10 of this addendum. (Several quantities adjusted, two alternate pay items added).

Appendix
1. Add Special Provision for Helical Piles (pages 11-21 of this addendum) as Appendix A.

PRE-BID MEETING QUESTIONS:

1. Will helical piers be allowed instead of the concrete-filled sonotubes for the deck foundations?
    a. Helical piles will be allowed as a substitute to the concrete foundations proposed. The Contractor is reminded that no soil borings are currently available in the deck area and none are planned by the design team. If the Contractor chooses to bid the foundations as helical piles, he/she will need to submit shop drawings and design calculations for the helical piles and all associated bearing plates and hardware. Helical piles shall be driven to a minimum of 15 kips each. Helical pile materials and design requirements shall be per special provision included on pages 11-21 of this addendum. A minimum of 2 diagonal piles will be required for lateral bracing of the deck system as a whole. The Contractor shall be responsible for removing or coring through any obstructions encountered while driving helical piles and shall include his/her plan for doing so should that situation arise. The Contractor may propose alternate framing layouts as long as all local building codes are met. Stringers resting on headers instead of framed into the side with traditional deck hangers will be considered if preferred for ease of construction. The Contractor shall submit proposed changes for review by the Engineer. Should design changes be required during construction, the Contractor shall provide revised design to the Engineer

for review and approval. Downtime will not be awarded in response to reviewing these changes.

2. The boulders look like they encroach on the area where there is sidewalk, green space, and trees proposed. What is the plan there?
    a. Some boulders will be relocated as part of other work items. However, tree location and final green space width will be adjusted in the field as required.
3. Do we have to “rotate” the gazebo? Or could we just leave it alone and rework the stairs and railing along the front?
    a. The intention to rotate the gazebo is so that it is positioned to better focus on the hillside amphitheater seating. An alternate item has been added to the Bid Form, titled “Gazebo, Modify Stairs and Railing.” Please assume that for this item, the stairs will be extended an additional 8th of the way around the gazebo headed southward, and the railing will be removed to the same location such that a larger opening is facing the amphitheater seating. For reference the end of the new stairs will be located near the existing breaker noted in the plans. The work shall include all necessary materials, equipment, and labor to extend the stairs and modify the railing while matching the existing lumber, style, and coloring. Existing railing shall be salvaged and reused if possible.
4. Do we need a larger contactor that includes the bridge and gazebo? Maybe 8 instead of 5?
    a. The contactor has been revised on plan sheet E-601 to be a 10-space unit. This will include the bridge and the gazebo lights. Refer to
5. Can we specify a high-quality composite, as well as one high-quality PVC composite for the decking material, rather than just composite?
    a. An alternate price has been requested for the Wood Deck pay item, called Wood Deck, PVC Composite which includes all of the same work as the Wood Deck, but includes the use of full PVC composite rather than traditional composites. For the purpose of bidding, please assume the product is Timber Tech Advanced PVC or approved equal.
6. Does the Wood Deck include a skirt or flashing around the perimeter of the deck?
    a. Please assume that the pay item Wood Deck, and the alternate item, Wood Deck, PVC Composite both include a skirt or flashing around the perimeter of the deck. The Contractor shall provide composite material consistent with the decking product that covers the full visible height of the stringers around the full perimeter of the deck area.
7. Will a foundation be required for the connection between the Wood Deck and the adjacent concrete?
    a. The ground header at the sidewalk/deck interface shall bear on a concrete strip footing that is 2 feet wide and 1 foot thick with #4 bars each way at 18-inch maximum spacing. The length of the footing shall extend a minimum of 1 foot beyond the length of the ground header at each end.
8. What size Unilock Umbriano pavers are specified? 60mm,70mm,80mm and dimensions, percentage of mix of each size?
    a. Pavers should match the existing pattern and should be provided in the same ratio of sizes.
9. What is the specified base material for the Butterfly patio extension, concrete or aggregate material?
    a. 10-12 inches of aggregate base material was used under the existing bricks. All new and relocated brick pavers should have a matching amount of base material. Detail 6 on sheet L-601 has been updated to reflect this.
10. What is the edging material for the pavers?
    a. Black, plastic edging was used around the existing pavers. Matching edging should be used for all new or relaid brick areas.

11. How much existing pavers are lifted, and reused 20 sq. Ft.? Are there a mix with old pavers into the new Butterfly?
    a. The bid form has been updated to include 150 square feet of pavers to be salvaged and relayed. It is anticipated that this work will primarily consist of soldier course pavers and those among the field where new pavers will be mixed in.
12. It seems adding new (pavers) to the old (salvaged pavers) needs to be mixed throughout?
    a. If the new pavers are not an exact match due to wear or otherwise, this would be an acceptable option.
13. Will there be a plan holders list?
    a. Plan holders list should be accessible on BidNet.
14. The benches that are specified appear to be no longer available.
    a. If the Waldorf benches cannot be acquired, the City will work with the Contractor to approve a similar product to match existing downtown furnishings.
15. Since the light standard foundation and luminaire have separate pay items, are the actual poles are incidental to the luminaire item or if the City will be providing those?
    a. The poles are considered incidental to the luminaire pay item.
16. Does the conduit connecting to the Police Station Gazebo Panel need to be drilled or can it be open-cut?
    a. Either method would be acceptable. The quantity is for bidding purposes to get within proximity of the Police Station Gazebo Panel which is located within the southeast corner of the Police Station. Once a final route is determined and coordinated with the City, additional work items may be added to the contract as necessary.
17. Will they have to drill into the building?
    a. It is our assumption that the Contractor will have to dill into the building but they may be able to reuse the existing conduit core.

ACKNOWLEDGEMENT of RECEIPT OF ADDENDUM

ATTENTION:

Please complete this form and return immediately by email to joseph.lehman@ohm-advisors.com or by facsimile to Orchard, Hiltz & McCliment, Inc. at 734-522-6427.

Our company: _____

has received from Orchard, Hiltz, & McCliment, Inc., d/b/a OHM Advisors

Addendum No. 1 for: Millpond Park Plaza

City of Fenton

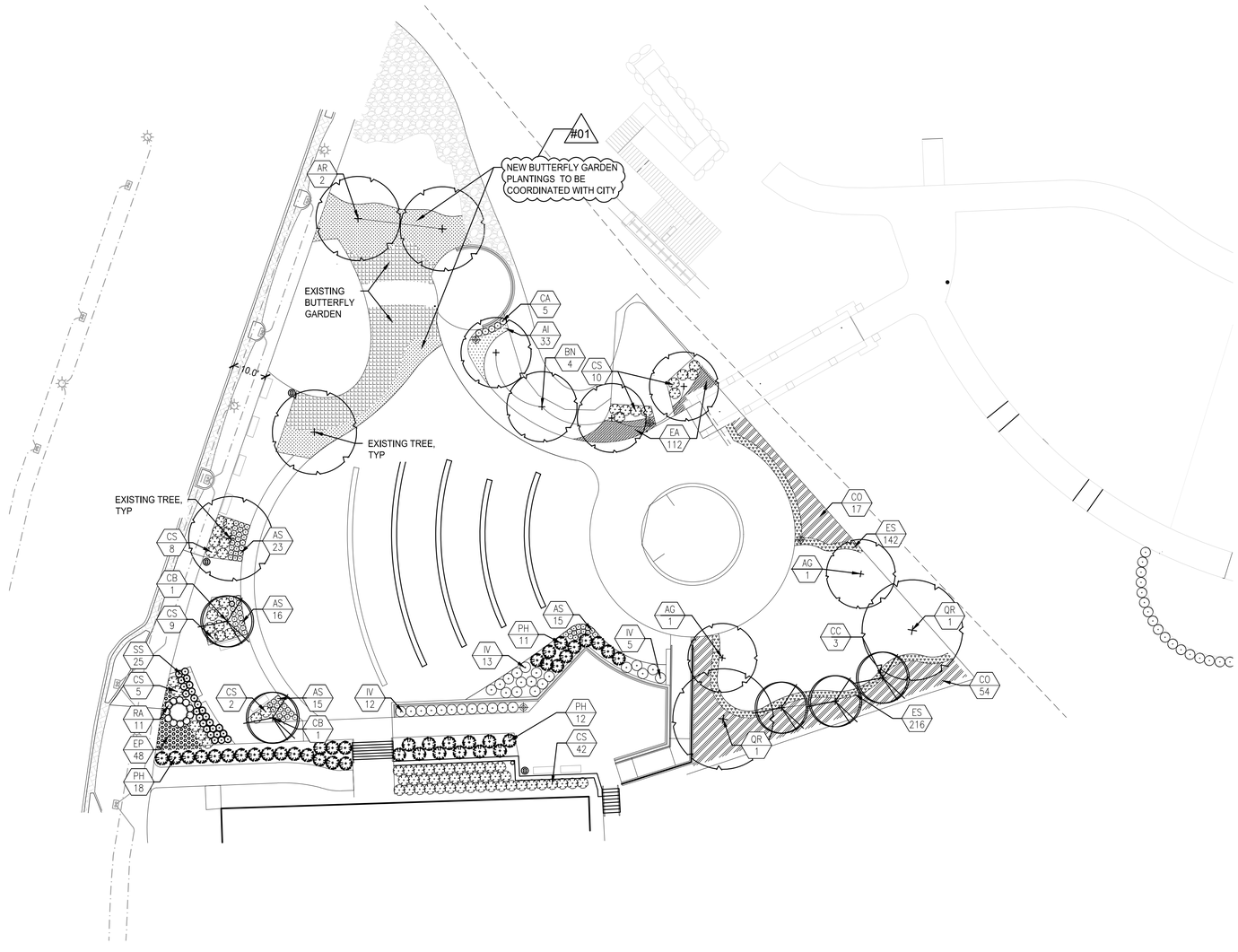
0077-24-0110

Today, _____(date) at _____(time) a.m. / p.m. (circle one)

Signature of recipient: _____

Printed name of recipient: _____

End of Addendum No. 1



N

GRAPHIC SCALE: HALF 40 feet FULL 20 feet
0 10 20 40 60

PLANT LIST						
QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING
DECIDUOUS TREES						
2	AG	Amelanchier x grandiflora 'Autumn Brilliance'	AUTUMN BRILLIANCE SERVICEBERRY	12' HT.	B&B	PER PLAN
2	AR	Acer rubrum 'Red Sunset'	RED SUNSET RED MAPLE	3" CAL.	B&B	PER PLAN
4	BN	Betula nigra	RIVER BIRCH	12' HT.	B&B	PER PLAN
2	CB	Carpinus betulus 'Fastigiata'	EUROPEAN HORNBEAM	3" CAL.	B&B	PER PLAN
2	QR	Quercus Rubra	RED OAK	3" CAL.	B&B	PER PLAN
ORNAMENTAL TREES						
3	CC	Cercis canadensis ' Forest Pansy'	FOREST PANSY REDBUD	10' HT.	B&B	PER PLAN

PLANT LIST						
QTY.	KEY	BOTANICAL NAME	COMMON NAME	SIZE	CONDITION	SPACING
SHRUBS						
71	CO	Cephalanthus occidentalis	BUTTONBUSH	#3	CONT.	48" O.C
79	CS	Cornus sericea 'Kelseyi'	KELSEY'S DWARF RED-OSIER DOGWOOD	#3	CONT.	30" O.C
30	IV	Itea virginica 'Little Henry'	LITTLE HENRY SWEETSPIRE	#2	CONT.	36" O.C
41	PH	Hydrangea paniculata 'Little Lime'	LITTLE LIME HYDRANGEA	#3	CONT.	48" O.C
11	RA	Rhus Aromatica 'Gro-Low'	GRO-LOW SUMAC	#2	CONT.	24" O.C
PERENNIALS / ORNAMENTAL GRASSES						
33	AI	Asclepias incarnata	SWAMP MILKWEED	#1	CONT.	18" O.C
66	AS	Allium 'Summer Beauty'	ORNAMENTAL ONION	#1	CONT.	18" O.C
5	CA	Calmagrostis x acutiflora 'Karl Foerster'	FEATHER REED GRASS	#3	CONT.	24" O.C
112	EA	Elymus arenarius 'Blue Dream'	BLUE DREAM LYME GRASS	#2	CONT.	12" O.C
48	EP	Echinacea purpurea	PURPLE CONEFLOWER	#1	CONT.	18" O.C
358	ES	Eragrostis spectabilis	PURPLE LOVE GRASS	#2	CONT.	12" O.C
25	SS	Schizachyrium scoparium 'The Blues'	LITTLE BLUE STEM	#1	CONT.	24" O.C

PLANTING LEGEND:

TEMPORARY SEED MIX AREAS OF POTENTIAL FUTURE PLANTING

EXISTING BUTTERFLY GARDEN PLANTING BED

NOTES:

1. THE CONTRACTOR SHALL COORDINATE A SPRING INSPECTION OF THE EXISTING BUTTERFLY GARDEN PLANTINGS WITH THE OWNER AND THE LANDSCAPE ARCHITECT TO INVENTORY THE GARDEN AND DETERMINE EXISTING PLANT HEALTH. UPON COMPLETION OF THIS INSPECTION, THE OWNER WILL DETERMINE THE EXTENT OF NEW AND/OR REPLACEMENT PLANTINGS TO BE COMPLETED IN THE BUTTERFLY GARDEN.

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

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ISSUED FOR:	ADDENDUM
DATE	2026/05/16
REVISION	ADDENDUM #1
DESCRIPTION	---

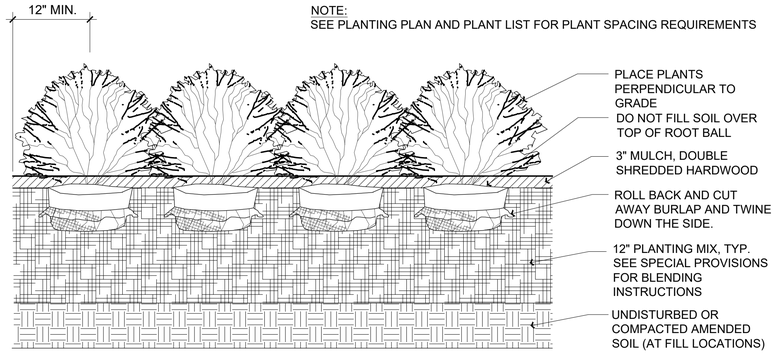
PROJECT NUMBER	0077-24-0110
PM	---
JL	---

CITY OF FENTON
MILLPOND PARK PLAZA

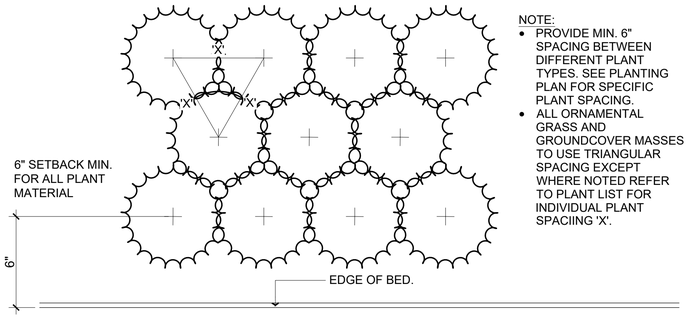
PLANTING PLAN

L-400

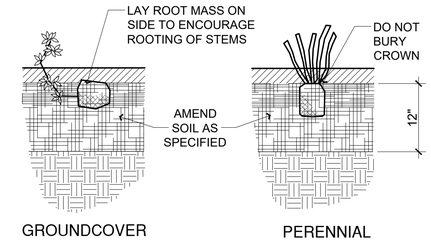
DRAWING PATH: P:\0000_0100\0077\24\0110_Mill_Pond_Park_Plaza\Drawings\PLN_LD\Sheets\240110-PLT.dwg May 18, 2026 - 10:28 AM



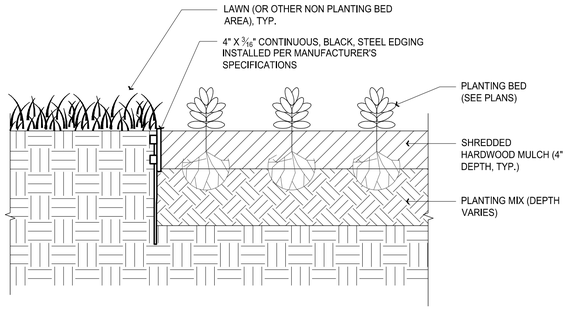
1 SHRUB / ORNAMENTAL GRASS PLANTING
SCALE: 1" = 1'-0"



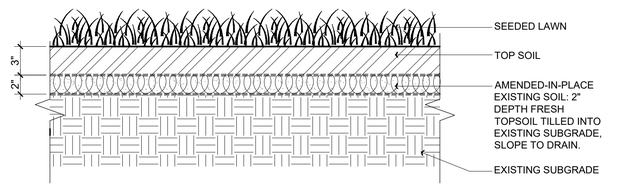
2 PLANT SPACING
SCALE: 1" = 1'-0"



3 GROUNDCOVER & PERENNIAL PLANTING
SCALE: 1" = 1'-0"

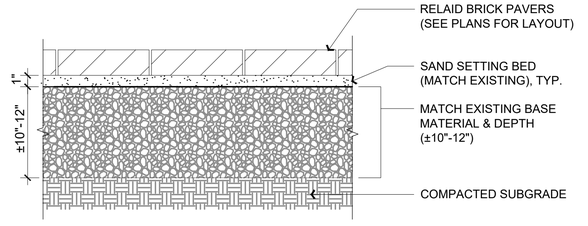


4 PLANT BED EDGE
SCALE: 1 1/2" = 1'-0"

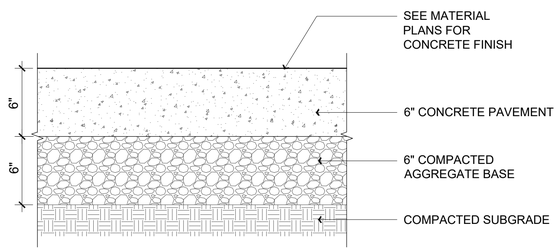


5 SEEDED LAWN DETAIL
SCALE: 1 1/2" = 1'-0"

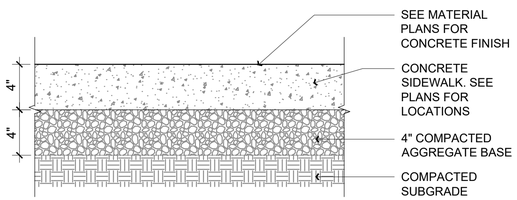
INCH UNIT, SCALE BY 1/8



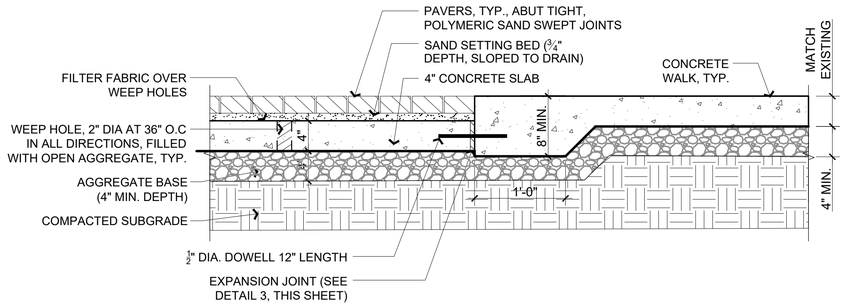
6 BUTTERFLY GARDEN BRICK PAVERS
SCALE: 1-1/2" = 1'-0"



7 CONCRETE SIDEWALK, 6" DEPTH
SCALE: 1-1/2" = 1'-0"



8 CONCRETE SIDEWALK, 4" DEPTH
SCALE: 1-1/2" = 1'-0"



9 NEW PAVERS TO CONCRETE PAVING
SCALE: 1" = 1'-0"

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REVISION	DESCRIPTION	DATE
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GLP2

DESCRIPTION: PROPOSED SURFACE MOUNT PANEL, 240/120V, 1ϕ, 3W, 100A, MCB, 20 CIRCUIT, 10k SSCR, LOCATED BY GAZEBO. SEPARATE GROUND AND NEUTRAL BUS. PROVIDE GROUND RODS AND UFER GROUND AT PANEL LOCATION PER 2023 NEC.

IDENTIFICATION	KVA LOAD A	KVA LOAD B	WIRE	POLE	AMP	CIRCUIT		CIRCUIT	AMP	POLE	WIRE	KVA LOAD B	KVA LOAD A	IDENTIFICATION
LP1 LIGHTS	0.2		10	2	20	1		2	20	1	4	0.2		GAZEBO WEATHERPROOF RECEPT
		0.2				3		4	20	1	4		0.2	GAZEBO WEATHERPROOF RECEPT
GAZEBO WEATHERPROOF RECEPT	0.2		4	1	20	5		6	20	1	4	0.2		GAZEBO WEATHERPROOF RECEPT
SP1 LIGHTS		0.2	14	1	20	7		8	20	1	10		0.2	SL1 LIGHTS
SL1 LIGHTS	0.2		10	1	20	9		10	20	1	10	0.2		SP1/UL1 WEST
BRIDGE LIGHTS		0.2	4	1	20	11		12	20	1	12		–	LP1 CONTROL
GAZEBO LIGHTS	0.2		4	1	20	13		14	20	1	–	–		SPARE
SPACE		–	–	1	–	15		16	20	1	–		–	SPARE
SPACE	–		–	1	–	17		18	–	1	–	–		SPACE
SPACE		–	–	1	–	19		20	–	1	–		–	SPACE
CONNECTED LOAD	0.60	0.60										0.60	0.40	CONNECTED LOAD

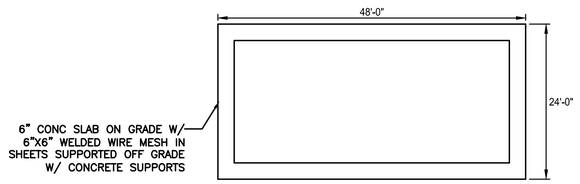
EXISTING GAZEBO LIGHTING PANEL

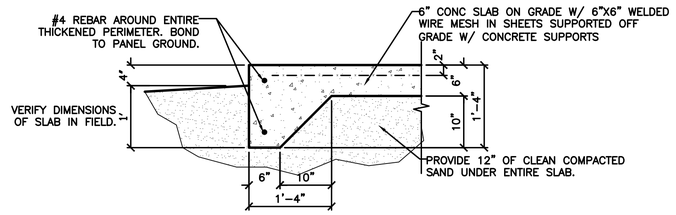
DESCRIPTION: EXISTING PANEL SURFACE MOUNT, 208Y/120V, 3ϕ, 4W, 100A, MCB, 18 CIRCUIT, 10k SSCR, LOCATED IN POLICE GARAGE

IDENTIFICATION	KVA LOAD A	KVA LOAD B	KVA LOAD C	WIRE	POLE	AMP	CIRCUIT		CIRCUIT	AMP	POLE	WIRE	KVA LOAD C	KVA LOAD B	KVA LOAD A	IDENTIFICATION
PLUGS	–			12	1	20	1		2	60	2	2/0	–			PANEL GLP2
HTS		–		12	1	20	3		4					–		
HTS			–	12	1	20	5		6	20	1	12			–	SPACE
PLUG AND CLASSROOM	–			12	1	20	7		8	20	1	12	–			SPACE
PARKING LOT LIGHTS		–		12	1	20	9		10	20	1	12		–		SPACE
SPRINKLERS P.D			–	12	1	20	11		12	20	1	12			–	SPACE
SPACE	–			12	1	20	13		14	20	1	12	–			SPACE
SPACE		–		12	1	20	15		16	20	1	12		–		SPACE
SPACE			–	12	1	20	17		18	20	1	12			–	SPACE
CONNECTED LOAD	####	####	####										####	####	####	CONNECTED LOAD

LIGHT FIXTURE SCHEDULE

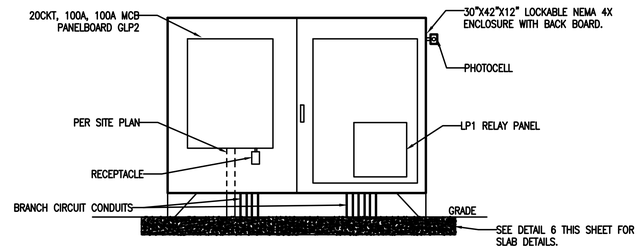
TYPE	DESCRIPTION	MANUFACTURER	CATALOG #	LAMPS	REMARKS
SL1	LED STEP LIGHT	WE-EF	190-9008-9004-190-9031	8 WATT, 171 LUMENS LED	-
LP1	LED POLE LIGHT	AMERLUX	D131/ARP23-PC-T3-AVI-G 3-SY-40-P4-BLK-FSO	86 WATT, 10943 LUMENS LED	OWNER TO VERIFY LIGHT LEVEL SETTING UPON FIXTURE INSTALLATION.
UL1	LED UP LIGHT	VISTA	GW-5262-B-5.5-W-36	5.5 WATT, 389 LUMENS LED	PROVIDE LOW VOLTAGE TRANSFORMER (LV1) ITT-300-B AS SHOWN ON PLANS
SP1	LED SPOTLIGHT	VISTA	GR-2250-B-5.5-W-60	5.5 WATT, 389 LUMENS LED	PROVIDE LOW VOLTAGE TRANSFORMER (LV1) ITT-300-B AS SHOWN ON PLANS





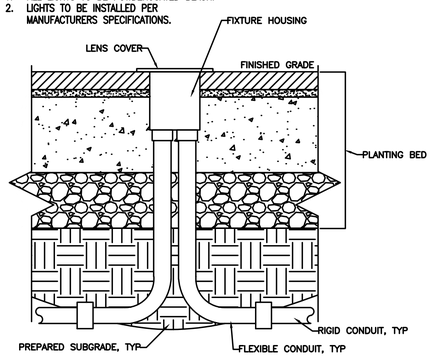
6 ELECTRICAL CABINET SLAB DETAIL
NTS

NOTES:
1. ALL CONDUIT ABOVE GRADE ATTACHED TO ENCLOSURE, SHALL BE GALVANIZED RIGID STEEL.
2. BOND ENCLOSURE AND REINFORCEMENT STEEL TO SYSTEM GROUND.



5 GROUND MOUNT ELECTRICAL CABINET DETAIL
NTS

NOTES
1. ALL LIGHTS TO BE POWDERCOATED BLACK.
2. LIGHTS TO BE INSTALLED PER MANUFACTURERS SPECIFICATIONS.

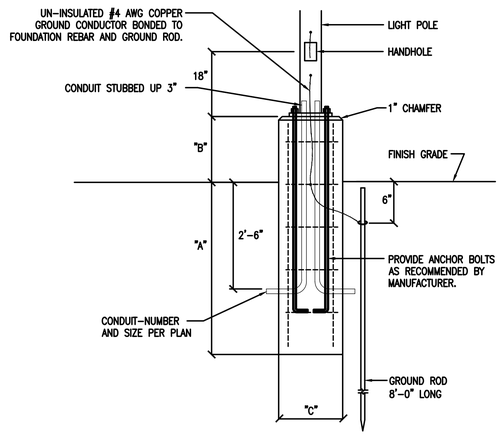


4 IN-GROUND UP LIGHTING DETAIL
NTS

POLE SCHEDULE

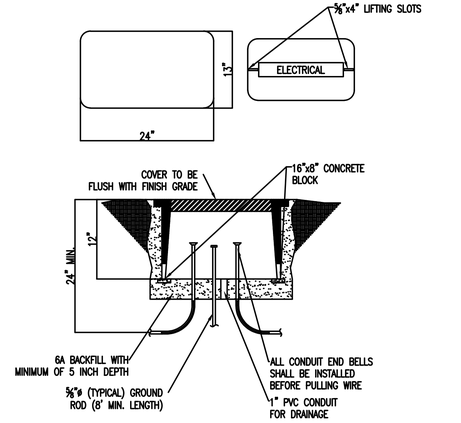
POLE PART: AMERLUX APQ94-12-BLK

POLE HEIGHT	"A"	"B"	"C"
10'-12' HIGH	4'-0"	2"	18" DIA. CONCRETE BASE. (7) #6 BARS VERTICAL, #3 TIES @ 12" OC

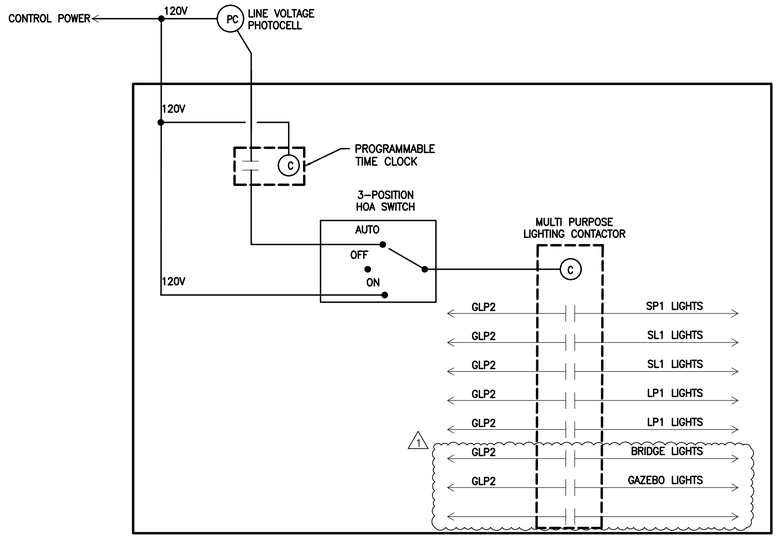


3 LIGHT POLE DETAIL
NTS

NOTES
1. BOX AND COVER SHALL BE CONCRETE OR COMPOSITE. METAL COVER IS ACCEPTABLE.
2. COVERS SHALL BE SECURED WITH ⅜" BOLTS, NUTS, AND WASHERS. WHICH SHALL BE BRASS, STAINLESS STEEL OR OTHER CORROSION RESISTANT MATERIAL. STAINLESS STEEL SHALL HAVE A CHROMIUM CONTENT OF NOT LESS THAN 18% AND A NICKEL CONTENT OF NOT LESS THAN 8%, NUTS SHALL BE RECESSED BELOW TOP SURFACE OF COVER.
3. COVER LETTERING SHALL BE ½"MINIMUM LETTERS CAST IN STANDARD MARKINGS: (ELECTRICAL).
4. CONDUIT ENTERING THE BOX SHALL HAVE 90° LONG RADIUS BEND (INSIDE THE BOX). THE CONDUITS OPENING, INSIDE THE BOX, SHALL BE AT LEAST 4" BELOW THE LID, OPENING SHALL HAVE SMOOTH EDGE. IF THE CONDUIT IS P.V.C. A SLIP COUPLING MUST BE USED. IF THE CONDUIT IS RIGID PIPE, A PROTECTIVE BUSHING SHALL BE USED.
5. CONDUCTORS SHALL HAVE A MINIMUM OF 24" SLACK FROM CONDUIT BELL END.
6. BACKFILL WITH EXCAVATED MATERIAL AND THOROUGHLY COMPACT.
7. WHERE PULLBOXES ARE INSTALLED IN CONCRETE AREAS, ½" PREMOLDED EXPANSION JOINT SHALL BE INSTALLED AROUND THE BOX.
8. BOXES IN NON-VEHICLE TRAFFIC AREAS TO BE TIER 8 AND IN VEHICLE TRAFFIC AREAS TO BE TIER 22 UNLESS OTHERWISE NOTED.



2 HAND HOLE DETAIL
NTS



1 LP1 LIGHTING RELAY PANEL DETAIL
NTS

OHM
ARCHITECTS ENGINEERS PLANNERS
OHM-ADVISORS.COM

REVISION	DESCRIPTION	DATE
1	ADDENDUM 1	5/18/2026

ISSUED FOR: BID DOCUMENTS 2026/04/24

PROJECT NUMBER 0077-24-0110 | PM JL

CITY OF FENTON
MILLPOND PARK PLAZA

ELECTRICAL DETAILS AND SCHEDULES

E-601

Item	Description	Estimated Quantity		Unit Price	Amount
Division 1: Site Work					
1	Mobilization, 5% Max.	1	LSUM	$	$
2	Curb, Rem	71	Ft	$	$
3	Masonry and Conc Structure, Rem	100	Cyd	$	$
4	Pavt, Rem	630	Syd	$	$
5	Retaining Wall, Rem	175	Ft	$	$
6	Rip Rap, Rem	30	Syd	$	$
7	Lightpole, Rem	4	Ea	$	$
8	Deck, Rem	1	LSUM	$	$
9	Landscape, Rem	1	LSUM	$	$
10	Rotate Gazebo	1	LSUM	$	$
11	Tree Removal	1	LSUM	$	$
12	Earthwork	1	LSUM	$	$
13	Soil Erosion & Sediment Control Measures	1	LSUM	$	$
14	Water Box, Adj	1	Ea	$	$
15	Contractor Staking	1	LSUM	$	$
16	Exploratory Excavation	20	Hr	$	$
17	Crew Days		Cdays	$ 800.00	$
	Subtotal Division 1 (ITEMS 1-17 incl.):				$
Division 2: Hardscape					
18	Amphitheater Seat Wall, Conc	280	Ft	$	$
19	Retaining Wall, Conc	1865	Sft	$	$
20	Sculpture Footing	1	Ea	$	$
21	Sidewalk, Conc, 4 inch	5395	Sft	$	$
22	Sidewalk, Conc, 6 inch	833	Sft	$	$
23	Seat Wall, Conc.	16	Ft	$	$
24	Sidewalk, Brick Pavers	1750	Sft	$	$
25	Sidewalk, Brick Pavers, Salv, Reinstall	150	Sft	$	$
26	Building Entry Steps	1	LSUM	$	$
27	Plaza Steps	1	LSUM	$	$
	Subtotal Division 2 (Items 18-27 incl.):				$

Item	Description	Estimated Quantity		Unit Price	Amount
Division 3: Landscape					
28	Riprap, Plain	57	Syd	$	$
29	Cornus sericea 'Kelseyi', #3 cont.	79	Ea	$	$
30	Echinacea purpurpea, #1 cont.	48	Ea	$	$
31	Rhus aromatica 'Gro-Low', #2 cont.	11	Ea	$	$
32	Schizachyrium scoparium 'The Blues', #1 cont.	25	Ea	$	$
33	Steel Edging	330	Ft	$	$
34	Acer rubrum 'Red Sunset', 3 inch	2	Ea	$	$
35	Allium 'Summer Beauty', #1 cont.	66	Ea	$	$
36	Amelanchier x grandiflora 'Autumn Brilliance', clump form, 12' h	2	Ea	$	$
37	Asclepias incarnata, #1 cont.	33	Ea	$	$
38	Betula nigra, clump form, 12' ht.	4	Ea	$	$
39	Calamagrostis x acutiflora 'Karl Foerster', #3 cont.	5	Ea	$	$
40	Carpinus betulus 'Fastigiata', 3 inch	2	Ea	$	$
41	Cephalanthus occindentalis, #3 cont.	71	Ea	$	$
42	Cercis canadensis 'Forest Pansy', 10' ht.	3	Ea	$	$
43	Elymus arenarius 'Blue Dream', #2 cont.	112	Ea	$	$
44	Eragrostis spectabilis, #2 cont.	358	Ea	$	$
45	Hydrangea paniculata 'Little Lime', #3 cont.	41	Ea	$	$
46	Itea virginica 'Little Henry', #2 cont.	30	Ea	$	$
47	Quercus rubra, 3 inch	2	Ea	$	$
48	Automatic Underground Irrigation System	1	LSUM	$	$
49	Butterfly Garden Plantings	1	Allow	$ 5,000.00	$ 5,000.00
50	Double Shreded Hardwood Mulch	42	Cyd	$	$
51	Planting Mix	166	Cyd	$	$
52	Turf Restoration, Performance	1	LSUM	$	$
	Subtotal Division 3 (Items 29-52 incl.):				$
Division 4: Site Furnishings					
53	Decorative Aluminum Fencing	170	Ft	$	$
54	Handrail, Building Entry Steps	18	Ft	$	$
55	Handrail, Plaza Steps	16	Ft	$	$
56	Handrail, Walkway	103	Ft	$	$
57	Bench	2	Ea	$	$
58	Bench, Salv, Reinstall	4	Ea	$	$
59	Statue, Salv, Reinstall	1	Ea	$	$

Item	Description	Estimated Quantity		Unit Price	Amount
60	Trash Receptacle	2	Ea	$	$
61	Wood Deck	1	LSUM	$	$
	Subtotal Division 4 (Items 53-61 incl.):				$
Division 5: Electrical					
62	Conduit, Schedule 40, 1 inch	310	Ft	$	$
63	Conduit, Schedule 40, 2 1/2 inch	305	Ft	$	$
64	DB Cable, in Conduit, 600V, 1/C#2/0	750	Ft	$	$
65	DB Cable, in Conduit, 600V, 1/C#4	820	Ft	$	$
66	DB Cable, in Conduit, 600V, 1/C#10	1920	Ft	$	$
67	Cable, Equipment Grounding Wire, 1/C#4	380	Ft	$	$
68	Cable, Equipment Grounding Wire, 1/C#10	750	Ft	$	$
69	Hh, Square	2	Ea	$	$
70	Unmetered Serv	1	Ea	$	$
71	Light Std Fdn	4	Ea	$	$
72	Luminaire	4	Ea	$	$
73	Conduit, Schedule 40, 3/4"	800	Ft	$	$
74	LED Step Light	18	Ea	$	$
75	Low Voltage LED Spot Light	6	Ea	$	$
76	Low Voltage LED Uplight	1	Ea	$	$
	Subtotal Division 5 (Items 62-76 incl.):				$
	Total Bid Amount (Divisions 1 - 5 incl.):				**$**
Alternates					
10a	Gazebo, Modify Stairs and Railing	1	LSUM	$	$
61a	Wood Deck, PVC Composite	1	LSUM	$	$

CITY OF FENTON

SPECIAL PROVISION
FOR
HELICAL PILES

a. Description. This work consists of designing, furnishing, installing helical piles and bracket assemblies in accordance with the project plans, industry standard design methodology, the standard specifications, and this special provision. Install each helical pile at the location and to the elevation, minimum length, and load capacities shown on the plans. This special provision is to be used in conjunction with the contract documents and can be used as an alternate to the concrete foundations shown on the plans.

The following definitions apply when used herein and on the plans:

Allowable Pile Capacity. Ultimate pile capacity divided by a factor of safety as designated on the plans. If the factor of safety is not designated on the plans then the factor of safety will be 2.0.

Alignment Load (AL). A small load applied to a helical pile during testing to keep the testing equipment correctly positioned.

Brackets. Cap plate or other termination device that is bolted, slipped over, or welded to the end of a helical pile after completion of installation, to facilitate attachments to structures or embedment in cast-in-place structures.

Designer. A Professional Engineer, licensed in the State of Michigan, who is retained by the Contractor and is responsible for the design and working drawings required herein.

Elastic Movement. The recoverable movement measured during a helical pile test.

Extension Section. Helical pile section(s), which follow the lead section into the ground and extend the helical lead to the appropriate depth. Extension section(s) consist of a central shaft and may have helical bearing plates affixed to the shaft.

Helical Pile. Manufactured steel foundation element with one or more helical bearing plates that is rotated into the ground to support structures. The element consists of a lead or starter section, extension section(s), brackets, and a pile cap.

Installation Torque. The resistance generated by a helical pile when installed into soil. The installation resistance is a function of the soil type and the size and shape of the various components of the helical pile.

Lead Section. The first section of a helical pile to enter the ground, lead sections consist of a central shaft with a tapered end and one or more helical bearing plates affixed to the shaft.

Manufacturer. The individual or legal entity that performs part of the work required through a contract agreement with the Contractor. This includes an individual or legal entity that owns the patent, product trademark/copyright, or product name for the approved helical pile system.

Minimum Pile Penetration Elevation. The elevation shown on the plans to or below which the bottom of piles must be installed.

Shop Drawings. A submittal consisting of drawings and calculations related to the design, installation, and load testing of the helical pile system by the Contractor.

Torque Strength Rating. The maximum torque energy you can apply to the helical pile foundation during installation in soil, i.e., allowable or safe torque.

Unsupported Length. Unsupported shaft lengths shall include the length of the shaft in air, water, or in fluid soils.

Verification Load Test. A helical pile load test performed to verify the helical pile ultimate capacity based on the construction methods proposed. Verification load tests are performed on non-production piles, prior to installation of production piles.

b. Materials. Unless noted otherwise, it is the responsibility of the Contractor to select the appropriate type and design strength of helical plates, shaft connections, shafts, brackets, and the overall helical pile system to support the load capacities and criteria specified on the project plans. Materials used for helical piles must meet the requirements of ICC-ES AC358. In addition, all helical piles must be manufactured to the following criteria.

1. Central Steel Shaft. The central shaft must consist of high strength structural steel tube, pipe, or solid steel bars meeting the requirements of *ASTM A 36*, *A 252 Grade 3*, *A 500 Grade C*, or *A 576 Grade 1045* or *Grade 1530*.

2. Helix Bearing Plate. Bearing plate material must conform to *ASTM A 572 Grade 50* or *A 1018 Grade 55.* Boardwalk pile lead sections shall consist of a triple plate system with a 14 inch diameter top place, 12 inch diameter middle plate, and 10 inch diameter bottom plate. Bridge abutment pile lead sections shall consist of a double helix section with a 10 inch diameter bottom plate and 12 inch diameter top plate.

3. Bolts, Nuts, and Washers. Must meet the material and hot-dip galvanizing requirements of subsection 906.07 of the Standard Specifications for Construction.

4. Brackets. Bracket must conform to *ASTM A 36*, *ASTM A 572 Grade 50*, or *ASTM A 958 Grade SC 1045.* Brackets will be required for vertical and battered piles.

5. Couplings. Couplings, if applicable, must conform to *ASTM A 958*.

6. Corrosion Protection. At minimum, all helical piles and hardware must have corrosion protection consisting of hot-dip galvanization in conformance with *ASTM A 153* and *ASTM A 123*, as applicable.

c. Construction. Furnish, design, install, and load test the helical piles in accordance with the project plans, this special provision, and the approved shop drawings.

1. Qualifications.

A. Manufacturer. The manufacturer must be a company specializing in the manufacturing and distribution of these products. Manufacturer's qualifications are to be submitted to the Engineer in accordance with subsection c.2.A of this special provision. The submittal must include:

(1) A product catalog and evidence showing the manufacturer has at least 10 years of experience in the design and manufacture of helical piles.

(2) Current ICC-ES product evaluation report or complete description of product testing and engineering calculations used to assess product capacity.

B. Contractor. The Contractor performing the work described in the contract must be a company specializing in the installation of helical piles. The submittal must include:

(1) Evidence the Contractor has completed training in the proper methods for installation of helical piles and brackets.

(2) Documentation that the Contractor's fulltime onsite supervisor and drillers performing the work have completed at least 10 projects and have 3 years of experience installing similar types of helical piles in similar subsurface conditions to this project. Documentation must, at minimum, include project name, description, dates, number and type of helical piles, project location, and client contact information.

(3) List of installation equipment and detailed description of proposed method of installation.

C. Designer. The design of the helical piles must be done by a licensed design professional specialized in the engineering and design of helical piles. The designer must have the following qualifications:

(1) A Professional Engineer licensed in the State of Michigan.

(2) Documentation indicating the designer has designed at least five projects utilizing helical piles. Documentation must, at minimum, include project name, description, dates, number and type of helical piles, project location, and client contact information.

2. Submittals.

A. Qualifications. Submit manufacturer, Contractor, and designer qualifications in accordance to subsections c.1.A, c.1.B, and c.1.C.

Submit to the Engineer three copies of the project reference list and a personnel list at least 30 calendar days before the planned start of helical pile construction. Provide a summary of each individual's experience in the personnel list and be complete enough for the Engineer to determine whether each individual satisfies the required qualifications. The Engineer will approve or reject the Contractor's and manufacturer's qualifications within 15 calendar days after receipt of a complete submission. Additional time required due to incomplete or unacceptable submittals will not be justification for time extension or impact or delay claims. All such costs associated with incomplete or unacceptable submittals are to be borne by the Contractor.

Work is not to be started, nor materials ordered, until the Engineer's written approval of the Contractor's, manufacturer's, and designer's experience and personnel qualifications is given. The Engineer may suspend the work if the Contractor uses non-approved personnel, manufacturer, or designer. If work is suspended, the Contractor is fully liable for all resulting costs, and no adjustment in contract time will accrue due to the suspension.

B. Shop Drawings. Prepare and submit to the Engineer shop drawings for the helical piles intended for use on the project at least 30 calendar days prior to start of installation. The shop drawings must include the following:

(1) Overall plan drawing showing helical pile location, number, and product identification number(s).

(2) Maximum allowable mechanical compression and tensile strength of the helical piles. Include the Torque Strength Rating.

(3) Helical piles respective design capacities from the drawings.

(4) Planned installation depth and cut-off elevation and the number and type of lead and extension sections.

(5) Designer's recommended allowable pile capacity to installation torque ratio and minimum final installation torque(s) for the helical test pile(s).

(6) Product identification numbers and designations for all the brackets and number and size of connection bolts or couplers. Details illustrating helical pile attachment to structure relative to grade beam, column pad, pile cap, etc.

(7) Corrosion protection coating on helical piles and bracket assemblies.

C. Design Calculations. The designer is to prepare and submit detailed design calculations to the Engineer for the helical piles intended for use on the project. Design must be in accordance with the *AASHTO Standard Specifications for Highway Bridges* and other published design methodologies as approved by the Engineer. All submittals must be sealed and stamped by the designer and submitted at least 30 calendar days prior to the start of installation. The analysis must take into account the notes and design details from the plans and must include, but is not limited to, the following items:

(1) Reduction in the dimensions of the structural elements based on anticipated corrosion loss over the design life for the subsurface and environmental conditions encountered at the project site.

(2) Ultimate and allowable pile capacities. Consider affects from downdrag, buckling, and expansive soils.

(3) Minimum installation depth to reach bearing stratum and to achieve pullout capacity, if applicable.

(4) One hand calculation for a typical helical anchor location, which illustrates conformance of the computer programs utilized to design the axial pile capacity.

(5) Lateral resistance of the shaft, if applicable.

(6) Estimated pile head movement at the allowable pile capacities.

(7) Design the helical pile attachment to distribute the loads to the substructure and/or superstructure does not exceed those in the *AASHTO Standard Specifications for Highway Bridges*.

D. Calibration Reports. Submit to the Engineer calibration information certified by an independent testing agency for the torque measurement device. Calibration information must have been tested within 30 days of the start of helical pile installation. Calibration information must include, but is not limited to, the name of the testing agency, identification number or serial number of device calibrated, calibration data, and the date of calibration.

E. Installation Record. Submit to the Engineer a Daily Installation Log during helical pile installation. This log must contain the following information for each helical pile:

(1) Name of project and Contractor.

(2) Name of Contractor's supervisor during installation.

(3) Date and time of installation.

(4) Name and model of installation equipment and type of torque indicator used.

(5) Location of helical pile by grid location or assigned identification number.

(6) Type and configuration of Lead Section with length of shaft and number and size of helical bearing plates.

(7) Type and configuration of extension sections, with length and number and size of helical bearing plates, if any.

(8) Installation duration and observations.

(9) Total length installed.

(10) Final elevation of top of shaft and cut-off length, if any.

(11) Final plumbness or inclination of shaft.

(12) Installation torque at minimum 3-foot depth intervals.

(13) Final installation torque.

(14) Comments pertaining to interruptions, obstructions, or other relevant information.

(15) Verified allowable pile axial load capacity.

3. Subsurface Data. Review the available soil boring logs from the subsurface investigation(s). Upon request, a copy of the geotechnical data report outlining the subsurface exploration conducted during the design phase will be provided. If during construction, the Contractor determines the actual subsurface conditions differ substantially from those reported on the boring logs; notify the Engineer in writing within 48 hours of such determination.

The data indicated on the available boring logs are not intended as representation or warranties of continuity of such conditions. It is expressly understood that the Department will not be responsible for interpretations or conclusions drawn therefrom by the Contractor. Additional soil test borings and other exploratory procedures may be performed by the Contractor at no additional cost to the Department.

4. Installation Equipment. The equipment must be capable of applying adequate down pressure (crowd) and torque simultaneously to ensure normal advancement of the helical piles to the ultimate pile capacities and the minimum pile penetration elevation(s) as shown on the plans. The equipment must be capable of continuous position adjustment to maintain proper alignment and position.

A. Torque Motor. Helical piles are to be installed with high torque, low RPM torque motors, which allow the helical plates to advance with minimal soil disturbance. The torque motor must be hydraulically powered with clockwise and counter-clockwise rotation capability. The torque motor must be adjustable with respect to revolutions per minute during installation. Percussion drilling equipment is prohibited. The torque motor must have a minimum torque capacity 15 percent greater than the torsional strength rating of the central steel shaft to be installed for the project. The connection between the torque motor and the installation rig must have no more than two pivot hinges oriented 90 degrees from each other.

B. Drive Tool. The connection between the torque motor and helical pile must be in-line, straight, and rigid, and must consist of a hexagonal, square, or round kelly bar adapter and helical shaft socket. To ensure proper fit, the drive tool must be manufactured by the helical pile manufacturer and used in accordance with the manufacturer’s installation instructions.

C. Connection Pins. Attach the central shaft of the helical pile to the drive tool by smooth tapered pins matching the number and diameter of the specified shaft connection bolts. Maintain the connection pins in good condition allowing safe operations at all times. Inspect the pins regularly for wear and deformation. Replace pins with identical pins when worn or damaged.

D. Torque Indicator. Ensure the torque indicator is capable of providing continuous installation torque measurement during installation. Ensure the torque indicator is capable of torque measurements of 500 ft-lbs or less. Calibrate torque indicators that are mounted in-line with the installation tooling either on-site or at an appropriately equipped test facility. Re-calibrate indicators that measure torque as a function of hydraulic pressure following any maintenance performed on the torque motor. Re-calibrate torque indicators if, in the opinion of the Engineer, reasonable doubt exists as to the accuracy of the torque measurements. If recalibration is directed by the Engineer in writing and the calibration is off by less than 500 ft-lbs, the recalibration will be paid for as extra work. Otherwise recalibrations will be paid for by the Contractor at no cost to the Department.

5. Installation Procedures. The helical pile installation technique is to be determined by the Contractor such that it is consistent with the geotechnical, logistical, environmental, and load carrying conditions of the project.

A. Position the lead section at the location depicted on the working drawings. Battered helical piles can be positioned perpendicular to the ground to assist in initial advancement into the soil before the required batter angle is established. The equipment must be capable of continuous position adjustment to maintain proper helical pile alignment. Apply constant axial force (crowd) while rotating helical piles into the ground. Apply sufficient crowd to ensure the helical pile advances into the ground a distance equal to at least 80 percent of the blade pitch per revolution during normal advancement.

B. Advance the helical pile sections into the soil in a smooth, continuous manner at a rate of rotation between 5 RPM's and 40 RPM's. Adjust the rate of rotation and magnitude of down pressure for different soil conditions and depths.

C. Provide extension sections to obtain the required minimum overall length and installation torque as shown on the shop drawings. Use coupling bolt(s) and nuts torqued in accordance to the manufacturer's guidelines to connect sections together.

D. Do not exceed the manufacturer's Torque Strength Rating of the helical pile during installation.

E. The Contractor must adjust the elevation of the top end of the shaft to the elevation shown on the shop drawings or as required. This adjustment may consist of cutting off the top of the shaft and drilling new holes to facilitate installation of brackets to the orientation shown on the shop drawings. Alternatively, installation may continue until the final elevation and orientation of the pre-drilled bolt holes are in alignment. Do not reverse the direction of torque and back-out the helical pile to obtain the final elevation.

F. Install brackets in accordance with helical pile manufacturer's details or as shown on the shop drawings.

G. Ensure all helical pile components, including the shaft and bracket, are isolated from making a direct electrical contact with any concrete reinforcing bars or other non-galvanized metal objects since these contacts may alter corrosion rates.

H. Obstructions. Terminate the installation and remove the pile if the helical pile encounters refusal or is deflected by a subsurface obstruction. Remove the obstruction if feasible, and reinstall the helical pile. Backfill and compact the resulting excavation before reinstalling the pile. Install the helical pile at an adjacent location, subject to review and approval by the Engineer, if the obstruction can't be removed. Removal of such obstructions will be paid using the pay item 'Helical Pile, Resistance'.

6. Helical Pile Testing. Perform verification testing of helical piles according to *ASTM D 1143*, except as modified herein. Perform the testing under the direction of a Professional Engineer licensed in the State of Michigan. Determine the site specific K factor based on load test results to correlate torque to allowable pile capacity. Summarize the test data in a report to be sealed by the Professional Engineer. Submit the report to the Engineer within 24 hours of each load test. Notify the Engineer in writing 3 working days prior to any load test. Do not perform load tests without a representative from the Engineer's Geotechnical Services being on

site to witness the load test.

Do not exceed 80 percent of the following helical pile structural elements during load testing: steel yield in tension, steel yield in compression, and steel buckling in compression. Costs associated with increasing the strength of the verification test pile structural elements above the strength required for production piles will be borne by the Contractor.

A. Testing Equipment and Data Recording. Testing equipment includes, but is not limited to: dial gauges, dial gauge supports, jack and pressure gauges, electronic load cell, reaction piles, and a reaction frame. The load cell is required only for the creep test portion of the verification test. Submit a written description of the load test setup and jack, pressure gauge and load cell calibration reports according to subsection c.2 herein. Design the testing reaction frame to be sufficiently rigid and of adequate dimensions to prevent excessive deformation of the testing equipment. Align the jack, bearing plates stressing anchorage such that unloading and repositioning of the equipment will not be required during the test. Apply the test load with a hydraulic jack and measure the load with a pressure gauge graduated in no more than 50 psi increments or less. Use a jack and gauge with a pressure range not more than twice the anticipated maximum test pressure. Select a jack with ram travel sufficient to allow the test to be performed without repositioning during the test. Monitor the creep test load hold during verification tests with both the pressure gauge and the electronic load cell. Use the load cell to accurately maintain a constant load hold during the creep test load hold increment of the verification test. Measure the pile top movement with a dial gauge capable of measuring to 0.001 inch and a travel sufficient to allow the test to be performed without having to reset the gauge. Align the gauge to be parallel to the axis of the helical pile. Support the gauge independent from the jack, pile or reaction frame. Use a minimum of four dial gauges evenly distributed around the test pile. Record the load test data.

B. Verification Load Testing. Perform a pre-production verification load test to verify the design of the helical pile and the construction methods used to install the helical pile meet specifications. Do not use production piles as reaction piles during load tests. Unless otherwise specified on the plans, install one sacrificial verification test pile per structure. Install verification test piles at locations approved by the Engineer. The verification helical pile must be identical to those used in production and installed using the same methods to be used for installing production piles.

Do not locate reaction piles closer than 5 feet to the verification pile. Reaction piles must meet the approval of the Engineer. Perform verification load tests by incrementally loading the helical pile in compression according to Table 1. Depending on performance, the Engineer will determine whether a 10 minute or a 60 minute creep load hold is appropriate. If the pile top movement measured between 1 and 10 minutes exceeds 0.04 inches, maintain an additional 50 minutes of load hold during the creep test. Record pile top movements during each hold period at time intervals of 1, 2, 3, 4, 5, 6, 10, 20, 30, 50, and 60 minutes. Reset dial gauges to zero after the initial alignment load (AL) is applied. The acceptance criteria for helical pile verification load tests are:

(1) Failure of the test pile does not occur before the maximum test load is applied. Failure is defined as the lesser of:

(i) The slope of the load versus deflection curve (at the end of the load increment) exceeds 0.025 inch/kip, or

(ii) Where attempts to further increase the test load simply results in continued pile movement.

(2) Test pile supports the allowable pile capacity with not more than 1.00 inch of total vertical movement at the top of the pile from its position prior to testing.

(3) At the end of the creep test load period, a creep rate not greater than 0.04 inch/log cycle time (1 to 10 minutes) and not greater than 0.08 inch/log cycle time (6 to 60 minutes or the last log cycle if held longer) and linear or decreasing creep rate.

The Engineer will provide written approval or rejection of the helical pile design and construction techniques within 7 working days of the completion of the verification load test.

If site conditions vary across the project limits additional load tests may be necessary as determined by the Engineer.

Verification piles constructed using methods different from the methods submitted for production piles will be rejected and additional verification test pile(s) will be required at no additional cost to the Department. If the verification pile fails to meet the acceptance criteria, the Engineer may modify the design of the production piles, or require the Contractor to make modifications to the construction methods, or both. Modifications may include, but not be limited to, modifying the installation methods, or changing the helical pile materials. Any modification to the construction procedure that necessitates changes to the structure requires the Engineer's review and approval.

Do not install production piles until the verification load test results have been reviewed and accepted by the Engineer. At the completion of verification testing, remove testing equipment and remove test piles and reaction piles or cut off piles to an elevation directed by the Engineer.

Table 1: Verification Load Test Schedule

Step	Load (a)(b)	Hold Time, minutes	Step	Load (a)(b)	Hold Time, minutes
1	AL	-	19	AL	1
2	0.10 R_n	3	20	0.10 R_n	1
3	0.20 R_n	3	21	0.20 R_n	1
4	0.30 R_n	3	22	0.30 R_n	1
5	AL	1	23	0.40 R_n	1
6	0.10 R_n	1	24	0.50 R_n	1
7	0.20 R_n	1	25	0.60 R_n	1
8	0.30 R_n	1	26	0.70 R_n	1
9	0.40 R_n	3	27	0.80 R_n	3
10	0.50 R_n	10 or 60 (creep test)	28	0.90 R_n	3
11	AL	1	29	1.00 R_n	10
12	0.10 R_n	1	30	0.75 R_n	5
13	0.20 R_n	1	31	0.50 R_n	5
14	0.30 R_n	1	32	0.25 R_n	5
15	0.40 R_n	1	33	AL	5
16	0.50 R_n	1			

Step	Load (a)(b)	Hold Time, minutes	
17	0.60 R_n	3	
18	0.70 R_n	3	
a. R_n denote nominal resistance (ultimate pile capacity). b. AL denotes alignment load. AL is equal to 0.025 R_n.			

7. Production Helical Piles.

A. Advance production helical piles until all of the following criteria are satisfied:

(1) Allowable pile capacity is verified by achieving the required Installation Torque. The required Installation Torque must be determined from the site specific K factor based on the verification load test results. The required Installation Torque is defined as the average of the last three readings recorded at 1 foot intervals, unless a more stringent specification is noted on the designer's shop drawings. The maximum rotational speed must not exceed 12 RPM when torque is monitored.

(2) Minimum depth as depicted on the plans is obtained.

B. If the manufacturer's Torque Strength Rating of the helical pile is obtained during installation and the minimum pile depth has not been reached, the Contractor and designer must submit revised shop drawings and design calculations for review and approval by the Engineer.

If the Contractor chooses to reinstall a pile in the same location, the topmost helix of the new lead section of the helical pile must be terminated at least 3 feet beyond the terminating depth of the original helical pile.

C. If the final Installation Torque is not achieved at the estimated length shown on the shop drawings, the Contractor has the following options:

(1) Install the helical pile deeper using additional extension sections until the required Installation Torque is obtained.

(2) Remove the helical pile and install a new one with additional and/or larger diameter helical bearing plates. This option may require an additional pile load test to determine the new K factor, as determined by the Engineer. No additional compensation for any additional pile load tests will be provided for in this option.

(3) Submit other options to the Engineer in writing for review and approval.

(4) Additional materials and work necessary to reach the required helical pile capacity, including engineering analysis and redesign, is to be furnished without cost to the Department and without an extension of the completion dates for the project.

D. The helical pile must be sized to reach the allowable pile capacity and the minimum helical pile penetration elevation . No additional compensation for changes in the helical pile will be allowed unless differing site conditions are determined by the Engineer.

8. Construction Tolerances.

A. Horizontal Alignment. Ensure the helical pile actual centerlines are within 2 inches of plan centerlines at the plan elevation for the top of the shaft. Tolerances for bracket assembly placement are ±1 inch in both directions perpendicular to the shaft and ±1/4 inch in a direction parallel with the shaft, unless otherwise specified.

B. Plumb. Tolerance for departure from the design orientation angles is ±5 degrees.

C. Top of Pile Elevation. Ensure helical pile is cut off at the design cut-off elevation.

D. Submit a plan for remedial action to the Engineer for approval, for helical piles not constructed within the required tolerances which are considered unacceptable. The Contractor is responsible for correcting all unacceptable piles to the satisfaction of the Engineer. Materials and work necessary to complete corrections for out-of-tolerance helical piles, including engineering analysis and redesign, must be furnished without cost to the Department and without an extension of the completion dates for the project. Do not begin repair operations until receiving the Engineer's approval of the remedial action plan.

d. Measurement and Payment. The completed work, as described, will be included in Wood Deck item.