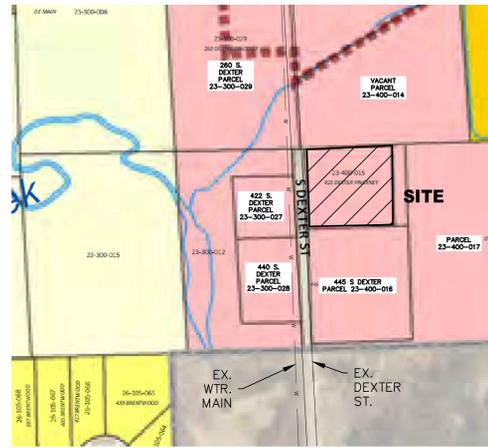


SITE PLAN FOR McFARLAND'S TREE SERVICE 425 DEXTER-PINCKNEY ROAD

**A PART OF SECTION 23, T.1N.-R.4E.
VILLAGE OF PINCKNEY, LIVINGSTON COUNTY, MICHIGAN**



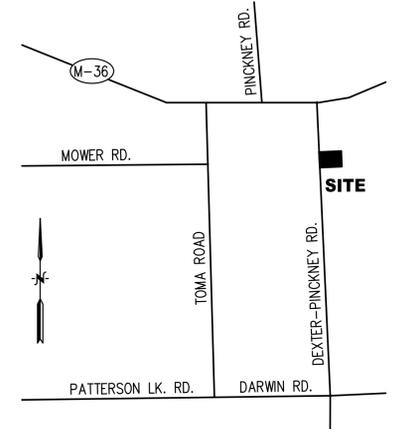
ZONING MAP

- NO SCALE
- R1, Low Density Residential District
 - R2, Medium Density Residential District
 - R3, High Density Residential District
 - R4, Multiple-Family Residential District
 - ROH, Residential-Office Business District
 - CBD, Central Business District
 - SBD, Secondary Business District

WAIVERS/VARIANCES REQUIRED:

* WAIVER FOR REQUIREMENT TO HAVE STREET FRONTAGE SIDEWALK IN ANTICIPATION OF FUTURE VILLAGE TRAIL PROJECT.

APPROXIMATE PERFORMANCE GUARANTEE AMOUNT: \$202,745.43 (BASED ON 125% OF ESTIMATED SITE WORK COST OF \$162,196.34)



LOCATION MAP

SCALE: 1"=2000'

LEGAL DESCRIPTION

Reference: Tax Roll 2021
Parcel No. 4714-23-400-015
Being a part of Section 23, Town 1 North, Range 4 East, Village of Pinckney, Livingston County, Michigan, unplatted, more particularly described as follows:
Commencing at the East side of Highway at the Northwest Corner of the South part of the Southwest 1/4 of the Southwest 1/4 of Section 23; thence South on the East line of Highway 12 rods; thence 13 rods; thence North 12 rods; thence West 13 rods to the Place of Beginning; Place of Beginning is 30 rods North and 2 rods East of the Southwest Corner of Southwest 1/4 of the Southwest 1/4 of Section 23.
Tax ID: 4714-23-400-015
Also known as: 425 Dexter Pinckney Road, Pinckney, Michigan 48169

SHEET INDEX

- EX EXISTING CONDITIONS PLAN
- D DEMOLITION PLAN
- W AREA WIDE PLAN
- SP SITE PLAN
- GR GRADING AND PAVING PLAN
- UT UTILITY PLAN
- SE WATERSHED & SOIL EROSION CONTROL PLAN
- DT1 SITE DEVELOPMENT NOTES & DETAILS
- DT2 SITE DEVELOPMENT NOTES & DETAILS
- L-1 LANDSCAPE PLAN

LIGHTING AND PHOTOMETRIC PLAN



BENCHMARK
DATUM BASED ON NGS OPUS SOLUTION REPORT,
DATE 11/23/21

BENCHMARK: #201
TOP OF HYDRANT STEAMER LOCATED ACROSS THE STREET FROM #425 S. DEXTER IN FRONT OF #422 S. DEXTER BUILDING APPROXIMATELY 15 FEET FROM WEST SIDE OF SOUTH DEXTER ROAD.
ELEVATION = 875.38 (NAVD 88)

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ELEVATION = 873.20 (NAVD 88)

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ELEVATION = 876.27 (NAVD 88)

OWNER/DEVELOPER
McFARLAND'S TREE SERVICE, LLC
10704 WHITEWOOD
PINCKNEY, MI. 48169
(734) 800-9535

CIVIL ENGINEER/LAND SURVEYOR
DESINE INC.
2183 PLESS DRIVE
BRIGHTON, MI. 48114
(810) 227-9533

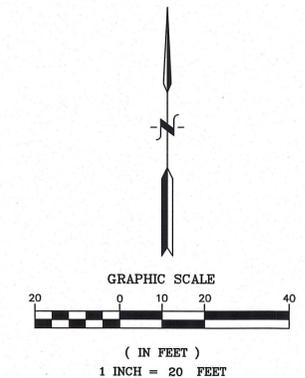
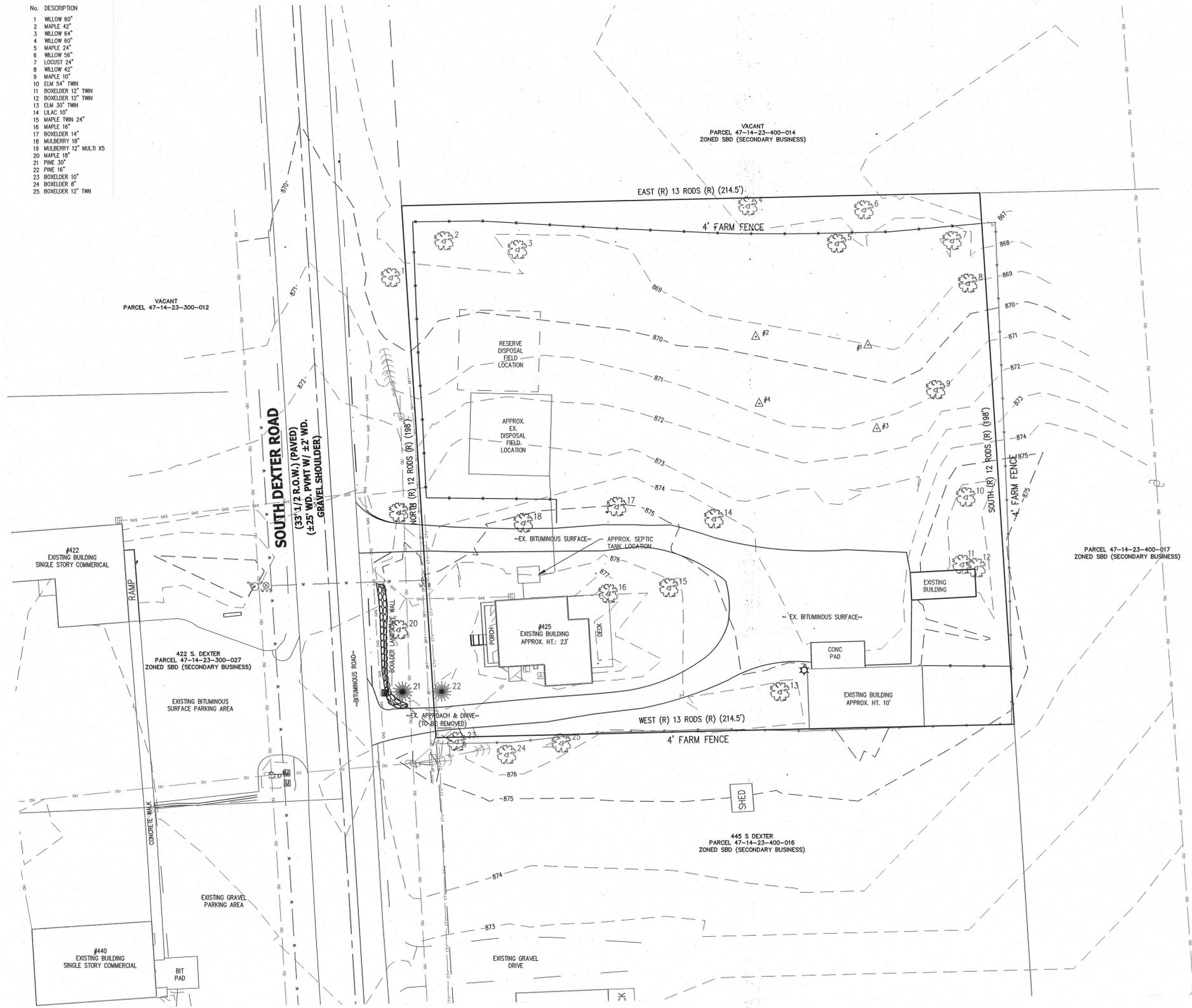
3 WORKING DAYS BEFORE YOU DIG
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OR VISIT CALL811.COM

REVISED	SCALE: N/A
4-20-23	PROJECT No.: 9214191
6-22-23	DWG NAME: 4191-COV
	PRINT: JUNE 22, 2023

DESINE INC.
(810) 227-9533
CIVIL ENGINEERS
LAND SURVEYORS
2183 PLESS DRIVE
BRIGHTON, MICHIGAN 48114

TREE SCHEDULE

No.	DESCRIPTION
1	WILLOW 60"
2	MAPLE 42"
3	WILLOW 64"
4	WILLOW 60"
5	MAPLE 24"
6	WILLOW 56"
7	LOCUST 24"
8	WILLOW 42"
9	MAPLE 10"
10	ELM 54" TWN
11	BOXELDER 12" TWN
12	BOXELDER 12" TWN
13	ELM 30" TWN
14	LILAC 10"
15	MAPLE TWN 24"
16	MAPLE 16"
17	BOXELDER 14"
18	MULBERRY 18"
19	MULBERRY 12" MULTI X5
20	MAPLE 18"
21	PINE 30"
22	PINE 18"
23	BOXELDER 10"
24	BOXELDER 8"
25	BOXELDER 12" TWN



LEGEND

- [Symbol] = MISC. STRUCTURE (AS LABELED)
- [Symbol] = BOLLARD
- [Symbol] = SIGN
- [Symbol] = LIGHT BASE
- [Symbol] = UTILITY METERS & BOXES (ELECTRIC METER, GAS METER, WATER METER, PHONE BOX, CATV BOX, MAIL BOX)
- [Symbol] = AIR CONDITIONER UNIT
- [Symbol] = UTILITY MANHOLE (AS LABELED)
- [Symbol] = UTILITY POLE W/GUY WIRE
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- [Symbol] = STORM WATER DRAINAGE PIPE
- [Symbol] = HYDRANT
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- [Symbol] = WATER VALVE BOX
- [Symbol] = WATER MAIN
- [Symbol] = GAS SHUT OFF
- [Symbol] = U/G GAS
- [Symbol] = SPOT ELEVATION
- [Symbol] = 1' CONTOUR
- [Symbol] = 5' CONTOUR
- [Symbol] = SOIL EVALUATION

SOIL EVALUATIONS (AS OBSERVED 11/19/21)

#1: 0'-24": TOPSOIL AND ORGANICS
24"-32": GRAY CLAY, WATER ENCOUNTERED

#2: 0'-28": TOPSOIL AND ORGANICS, WATER ENCOUNTERED AT 28"

#3: 0'-24": TOPSOIL AND ORGANICS
24"-30": CLAYEY LOAM
30"-70": GRAY CLAY

#4: 0'-12": TOPSOIL
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DESIGN: SVB	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	1	4-10-23	REV. PER VILLAGE COMMENTS			
CHECK: WMP	2	6-22-23	REV. PER VILLAGE COMMENTS			

McFARLAND'S TREE SERVICE

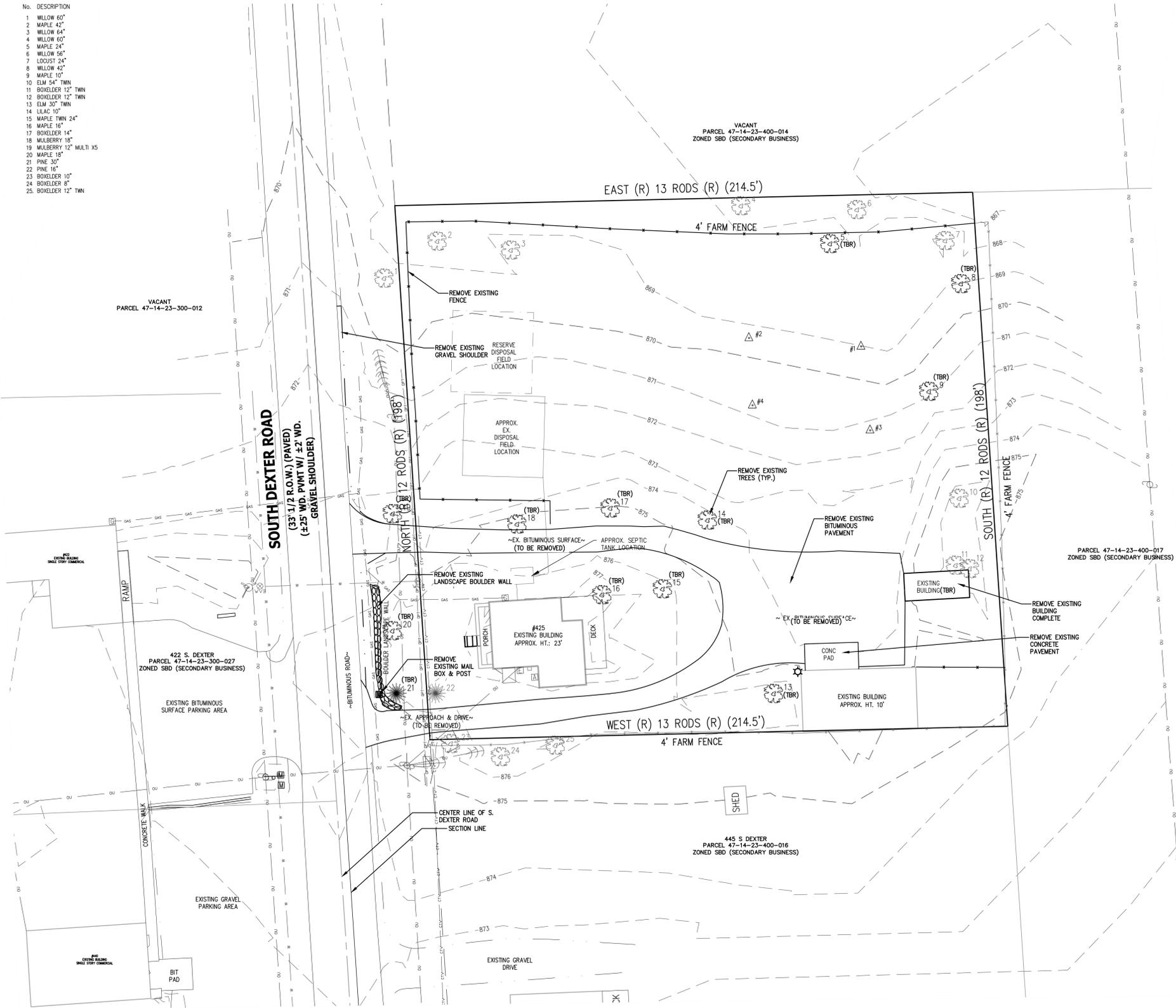
EXISTING CONDITIONS

CLIENT: SHANE BLACK McFARLAND'S TREE SERVICE, LLC 10704 WHITEWOOD PINCKNEY, MICHIGAN 48169 734 800-9535	SCALE: 1"=20' PROJECT No.: 9214191 DWG NAME: 4191-EX ISSUED: JUNE 22, 2023
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EX

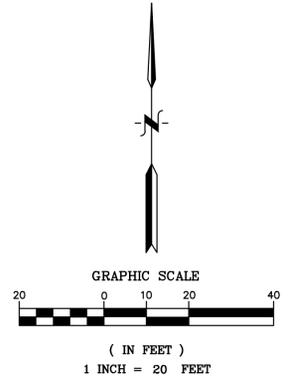
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DEMOLITION NOTES:

- The demolition specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
- Contractor shall contact the 811 Underground Public Utility Locating Agency, a minimum of three (3) working days prior to performing demolition work. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
- Contractor shall contact the appropriate Agencies to coordinate disconnect of the electric, gas, phone, cable and other public utilities as necessary prior to performing demolition work.
- Contractor shall contact the appropriate Agencies to coordinate removal and/or relocation of any underground and/or overhead public utility lines as necessary prior to performing demolition work.
- Contractor shall recycle and/or dispose of all demolition material and debris in accordance with the appropriate Local, County, State and Federal regulations.
- All bituminous and concrete pavement that is to be removed shall be saw cut at the limits of removal to provide for a clean straight edge for future abutment.
- All existing irrigation lines that are to be removed shall be terminated at the limits of demolition or as necessary to allow for construction of the proposed site improvements. Ends of pipe shall be capped and the location of marked for future connection.
- All existing water main and sanitary sewer that is to be removed shall be terminated at the limits of demolition or as indicated on the project plans. Temporary plugs shall be installed in the ends of pipe in accordance with the appropriate Agency and the locations of marked for future connection. Permanent plugs shall be installed in the ends of pipe in accordance with the appropriate Agency. The Contractor shall record the location of all permanent plugs and provide the location information to the appropriate Agency.
- All existing storm sewer that is to be removed shall be terminated at the limits of demolition or as indicated on the project plans. Temporary plugs shall be installed in the ends of pipe in accordance with the appropriate Agency and the locations of marked for future connection. Permanent bulkheads shall be installed in the ends of pipe or openings in terminating structures in accordance with the appropriate Agency. The Contractor shall record the location of all permanent bulkheads and provide the location information to the appropriate Agency.
- All existing light sources to be removed shall have their power cables removed up to the power source or properly terminated for future connection at the limits of demolition or as necessary to allow for construction of the proposed site improvements. Removal and termination of power cables shall be performed in accordance with local electric codes.
- All existing utility meters that are to be removed shall be properly removed to allow for reuse. Any existing utility meters that are not to be reused as a part of this project shall be returned to the appropriate Agency.
- All trenches and/or excavations resulting from the demolition of underground utilities, building foundations, etc. that are located within the 1 on 1 influence zone of proposed structures, paved areas and/or other areas subject to vehicular traffic shall be backfilled with MDOT Class III granular material (or better) to the proposed subgrade elevation. Backfill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, Modified Proctor).



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CHECK: WMP	2	6-22-23	REV. PER VILLAGE COMMENTS			

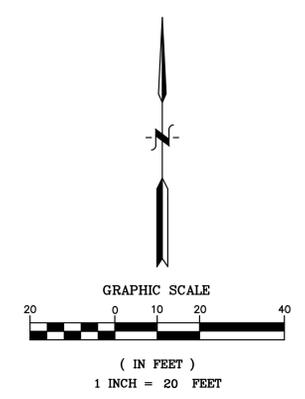
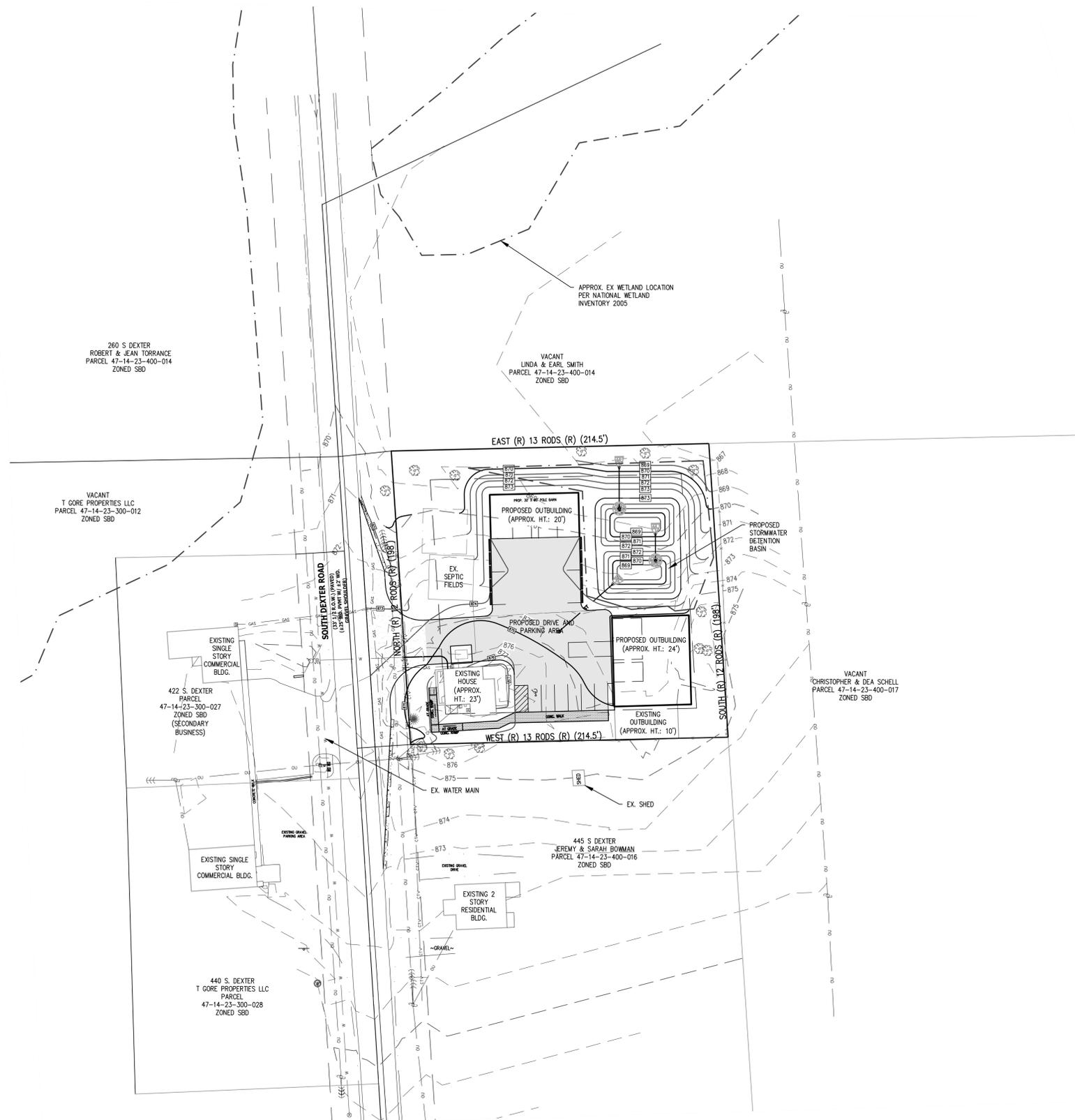
**McFARLAND'S
TREE SERVICE**

DEMOLITION PLAN

CLIENT:
SHANE BLACK
McFARLAND'S TREE SERVICE, LLC
10704 WHITEWOOD
PINCKNEY, MICHIGAN 48169
734 800-9535

SCALE: 1"=20'
PROJECT No.: 9214191
DWG NAME: 4191-EX
ISSUED: JUNE 22, 2023

D



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 - = PROPOSED STORM STRUCTURES
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 - = PROPOSED 5' CONTOUR
 - = PROPOSED CONCRETE WALK
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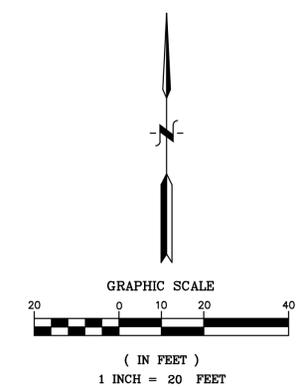
McFARLAND'S TREE SERVICE

AREA WIDE PLAN

CLIENT:
 SHANE BLACK
 McFARLAND'S TREE SERVICE, LLC
 10704 WHITEWOOD
 PINCKNEY, MICHIGAN 48169
 734 800-9535

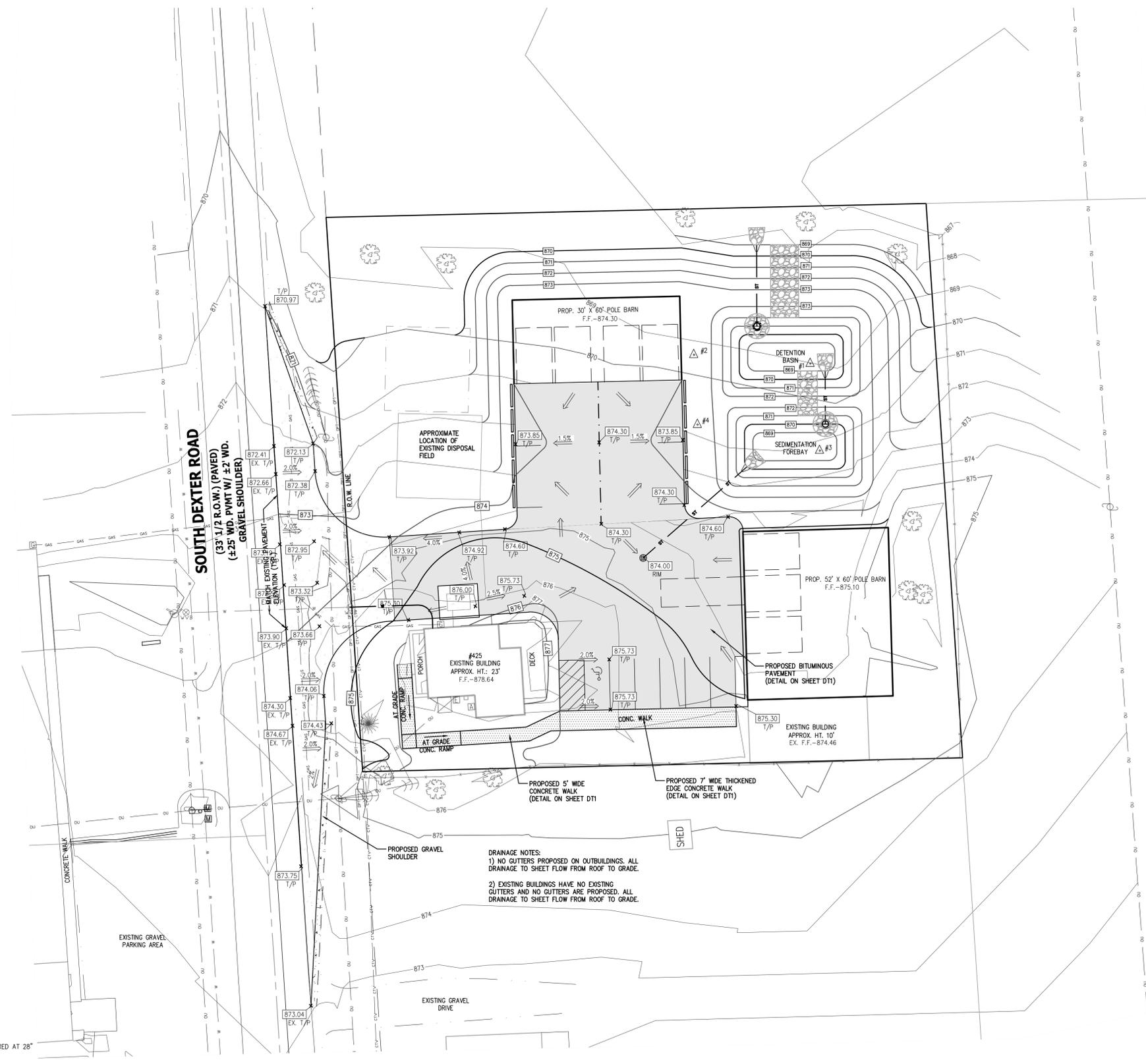
SCALE: 1"=20'
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 DWG NAME: 4191-SP
 ISSUED: **JUNE 22, 2023**

W



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- = PROPOSED BITUMINOUS PAVEMENT
- = SOIL EVALUATION
- = TOP OF PAVEL $\frac{000.00}{T/P}$
- = TOP OF WALK $\frac{000.00}{T/W}$
- = PROPOSED FLOW ARROW



SOIL EVALUATIONS (AS OBSERVED 11/19/21)

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- #2: 0'-28": TOPSOIL AND ORGANICS, WATER ENCOUNTERED AT 28"
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24"-30": CLAYEY LOAM
30"-70": GRAY CLAY
- #4: 0'-12": TOPSOIL
12"-70": GRAY CLAY

DRAINAGE NOTES:
 1) NO GUTTERS PROPOSED ON OUTBUILDINGS. ALL DRAINAGE TO SHEET FLOW FROM ROOF TO GRADE.
 2) EXISTING BUILDINGS HAVE NO EXISTING GUTTERS AND NO GUTTERS ARE PROPOSED. ALL DRAINAGE TO SHEET FLOW FROM ROOF TO GRADE.

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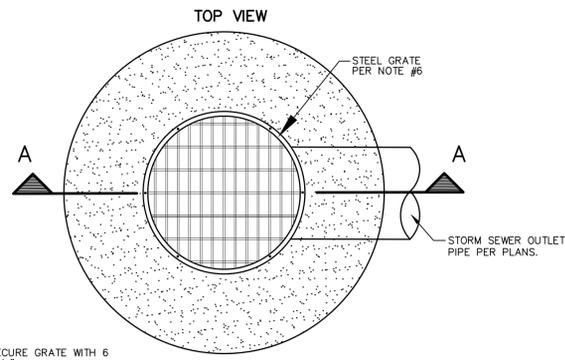
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GR



KEY		
CONTROL STRUCTURE DESIGNATION	CS-201	CS-101
A MATERIAL TYPE, SEE NOTE 2	HDPE	HDPE
B STRUCTURE INSIDE DIAMETER	4'	4'
C RIM ELEVATION WITHOUT GRATE	870.90	871.65
D INVERT ELEVATION OUTLET PIPE	869.89	869.29
E TOP OF STONE ELEVATION	871.40	872.15
F OUTLET PIPE DIAMETER	8"	8"
G OUTLET PIPE MATERIAL	HDPE-S	HDPE-S
H STRUCTURE HEIGHT WITHOUT GRATE	3.01'	4.36'
J SUMP HEIGHT	2'	2'
K RESTRICTOR OPENING DIA. IN OUTLET PIPE	N/A	N/A
L FIRST ROW OF HOLES CENTERLINE ELEVATION HOLE DIAMETER NUMBER OF HOLES IN ROW	869.04 1" 1	871.35 0.75" 2
M SECOND ROW OF HOLES CENTERLINE ELEVATION HOLE DIAMETER NUMBER OF HOLES IN ROW	N/A	N/A
N THIRD ROW OF HOLES CENTERLINE ELEVATION HOLE DIAMETER NUMBER OF HOLES IN ROW	N/A	N/A
O FOURTH ROW OF HOLES CENTERLINE ELEVATION HOLE DIAMETER NUMBER OF HOLES IN ROW	N/A	N/A

SOIL EVALUATIONS (AS OBSERVED 11/19/21)

#1: 0'-24": TOPSOIL AND ORGANICS
24'-32": GRAY CLAY, WATER ENCOUNTERED

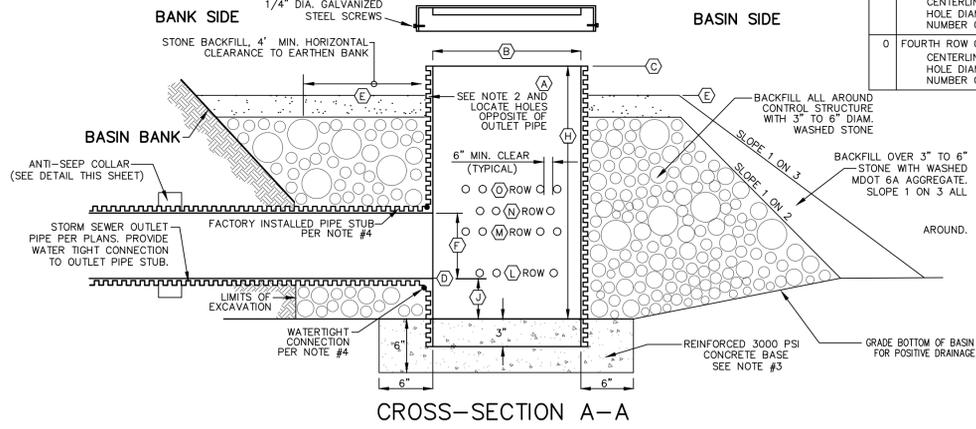
#2: 0'-28": TOPSOIL AND ORGANICS, WATER ENCOUNTERED AT 28"

#3: 0'-24": TOPSOIL AND ORGANICS
24'-30": CLAYEY LOAM
30'-70": GRAY CLAY

#4: 0'-12": TOPSOIL
12'-70": GRAY CLAY

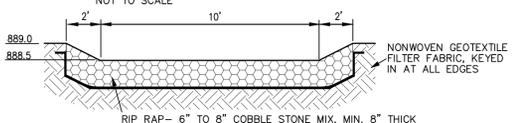
FOREBAY CONTROL STRUCTURE CALCULATIONS	
Tributary Area:	A = 0.50 Acres
Compound Runoff Coefficient:	C = 0.66
Orifice Flow Coefficient:	c = 0.60
Allowable Outflow Rate:	Ca = 0.10 CFS
Forebay Storage Volume =	Vf = 2,276 CF
Low Water Level:	LWL = 869.00
Forebay Storage Elevation:	X = 871.06
Forebay Outlet Control:	
Qf = Vf * (1 / 24 hrs) * (1 / 3600 sec) =	0.0263 CFS
Hf = X - LWL =	2.06 FT
Af = Qf / (c * SQRT(2 * 32.2 * Hf)) =	0.0038 SF
D = Orifice Diameter	1.000 inch dia.
N = Af / D	0.70 Orifices
Use Nf =	1 Orifices at Centerline Elevation = 869.04

Detention Basin CONTROL STRUCTURE CALCULATIONS	
Tributary Area:	A = 0.50 Acres
Compound Runoff Coefficient:	C = 0.66
Orifice Flow Coefficient:	c = 0.60
Allowable Outflow Rate:	Ca = 0.10 CFS
100 Year Detention Volume =	V100 = 2,453 CF
Extended Detention Volume =	Ved = 2,276 CF
Channel Protection Volume =	Vcp = 1,557 CF
Low Water Level:	LWL = 869.00
Channel Protection Elevation:	Xcp = 871.32
Extended Detention Elevation:	Xed = 871.94
100 Year Storage Elevation:	X100 = 871.10
Extended Detention:	
Qed = Ved * (1 / 48 hrs) * (1 / 3600 sec) =	0.0132 CFS
Hed = Xed - Xcp =	0.03 FT
Aed = Qed / (c * SQRT(2 * 32.2 * Hed)) =	0.0035 SF
D = Orifice Diameter	0.750 inch dia.
Ned = Aed / D	1.13 Orifices
Use Ned =	2 Orifices at Centerline Elevation = 871.35
Approx. Extended Detention Discharge Duration = 27.05 hours	

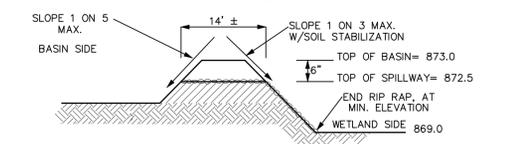


100 YEAR STORM DETENTION	
Tributary Area (A) =	0.50 Acres
Compound Runoff Coefficient (C) =	0.66
Water Quality Control Volume = (3.630)(A)(C) =	1,198 cf
Channel Protection Volume = (4.719)(A)(C) =	1,557 cf
Extended Detention Volume = (6.897)(A)(C) =	2,276 cf
Forebay Volume:	
Downstream Infiltration Provided = Vwq =	1,198 cf
Upstream Infiltration (15% of WQC Vol) =	180 cf
100 Year Storm Inlet Rate calculation:	
Tc =	20.0 (from storm sewer calculations)
Q100in =	1.81 cfs
100 Year Storm Outlet Rate calculation:	
Allowed Outlet Rate is lesser of Qcr or restricted release rate for the drain	
County Drain Restricted Rate =	0.2 cfs
Variable Release Rate = Qcr =	1.25 cfs
(Variable Release Rate capped at 1.0 cfs/acre for Area < 2 acres)	
(Variable Release Rate = 0.15 cfs/acre for Area > 100 acres)	
ALLOWABLE 100 YEAR OUTLET RATE = Qall =	0.10 cfs
100 Year Required Storm Detention Volume calculation:	
Storage Cune Factor = R =	0.64
100 Year Storage Volume In = V100in =	6,265.05 cf
Calculated 100 Year Storage Volume = V100det =	2,453 cf
REQUIRED VOLUME: V100det > Ved =	2,453 cf
Extended Detention Discharge Rate: Ved/172,800 =	0.01 cfs

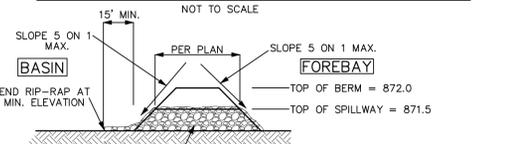
BASIN CONTROL STRUCTURE DETAIL (CS-101)



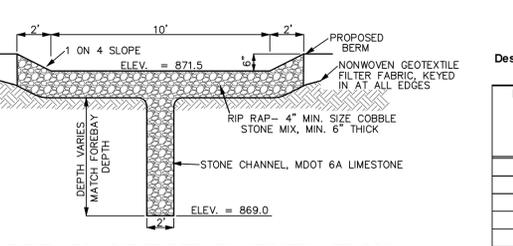
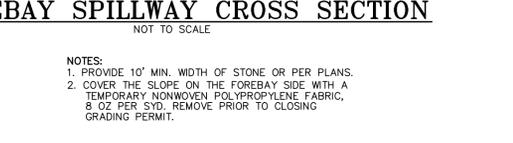
EMERGENCY SPILLWAY ELEVATION



EMERGENCY SPILLWAY CROSS SECTION



FOREBAY SPILLWAY CROSS SECTION



FOREBAY SPILLWAY ELEVATION

- CONTROL STRUCTURE NOTES:**
- Control Structure and Grate shall be factory built. Contractor shall provide Engineer with Shop Drawings for Control Structure and Grate. Contractor shall obtain Engineer's Approval of Shop Drawings prior to Control Structure installation.
 - Control Structure shall be constructed of material noted in Item A of KEY. CMP shall be corrugated metal pipe with corrosion resistant coating and shall conform to the specifications for corrugated metal pipe per AASHTO Designation M36. HDPE shall be high density polyethylene pipe with a smooth interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M294 Type S.
 - Control Structure Base shall be a reinforced 3000 PSI air entrained concrete base. Control Structure shall be embedded into the concrete base providing a full strength water tight connection as illustrated in the Basin Control Structure Detail.
 - Provide a watertight connection between the Control Structure and Outlet Pipe as follows:
For a CMP Outlet Pipe from a CMP Control Structure: Factory weld a CMP Pipe Stub to the Control Structure with full strength continuous weld all around Pipe Stub. Coat welded area with corrosion resistant paint. OR Provide a bolted CMP saddle with watertight gasket. For an HDPE Outlet Pipe from an HDPE Control Structure: Seal Outlet Pipe to outside of Control Structure with an 18" minimum thickness 2500 PSI cast in place concrete donut all around Outlet Pipe. AND Seal Outlet Pipe to inside of Control Structure with a 2" minimum thickness bead of bitumastic tar all around Outlet Pipe.
 - Construct berm over Outlet Pipe as necessary to provide 12" minimum cover.
 - Grate shall be built to fit over the outside edge of the Control Structure and to be secured to the Control Structure with six (6) 1/4" minimum diameter removable galvanized screws. All joints shall be welded full strength per current AWS code. Grate shall be factory coated with bitumastic or corrosion resistant paint. Grate shall be constructed of 1/2" minimum diameter round or square steel bar creating a square grid pattern with a maximum 3"x 3" opening size. Outside of Grate shall be wrapped with a 1/4" minimum x 3" minimum flat stock steel.

PROPOSED DRAINAGE AREAS

POND DEPTH (FT)	ELEV.	DETECTION CONTOUR AREA (SF)	DETECTION BASIN VOLUME (CF)	FOREBAY CONTOUR AREA (SF)	FOREBAY BASIN VOLUME (CF)	TOTAL STORAGE VOLUME (CF)
LVL	869.00	304	0	292	0	0
1.0	870.00	587	438	598	422	860
2.0	871.00	942	1,156	916	1,157	2,352
3.0	872.00	1,369	2,344	1,336	2,276	4,620
4.0	873.00	3,830	4,840			7,671

100 Yr. Detention Storage Elevation Calculation:			
ELEV.	VOLUME	VOLUME REQ.	ELEVATION
Lower	871.00	1,195	2,453
Higher	872.00	2,344	872.10

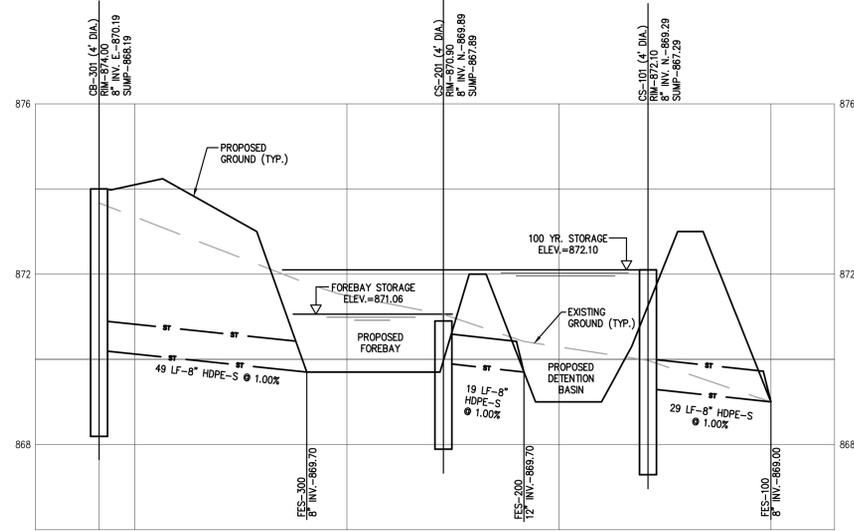
Extended Detention Storage Elevation Calculation:			
ELEV.	VOLUME	VOLUME REQ.	ELEVATION
Lower	871.00	1,195	2,276
Higher	872.00	2,344	871.94

Channel Protection Storage Elevation Calculation:			
ELEV.	VOLUME	VOLUME REQ.	ELEVATION
Lower	871.00	1,195	1,557
Higher	872.00	2,344	871.32

Forebay Storage Elevation Calculation:			
ELEV.	VOLUME	VOLUME REQ.	ELEVATION
Lower	870.00	422	1,198
Higher	871.00	1,157	871.06

Design Criteria: 10 year event (I = 175/t + 25) RCP n = 0.013 HDPE n = 0.013

From MH#	To MH#	Inc. Acres	Eqv. Area 100%	Total Area 100%	T Time Min.	I Inch Per Hour	Q (CIA) c.f.s.	Qa (Additional flow) c.f.s.	Qt (Total flow) c.f.s.	Dia. of pipe inch	Slope pipe %	Slope H.G. %	Length of line ft.	Vel. Flow full ft./sec.	Time of flow min.	Cap of pipe c.f.s.	H.G. Elev. upper end	Ground Elev. Upper end	Lower end	Invert Elev. Upper end	Lower end	
101	100	0.00	0.00	0.00	20.0	3.89	0.00	0.01	0.01	8	1.00	0.00	29	3.46	0.1	1.21	869.67	871.65	869.00	869.29	869.00	
201	200	0.00	0.00	0.00	20.0	3.89	0.00		0.00	8	1.00	0.00	19	3.46	0.1	1.21	870.37	870.90	869.70	869.89	869.70	
301	300	0.25	0.90	0.23	20.0	3.89	0.88		0.88	8	1.00	0.52	49	3.46	0.2	1.21	870.62	874.00	869.70	870.19	869.70	
																		979.72	Downstream HWL			



STORM SEWER PROFILE

SCALE: HOR. 1"=20'/VERT. 1"=2'

BENCHMARK
DATUM BASED ON NGS OPUS SOLUTION REPORT, DATE 11/23/21

BENCHMARK: #201
TOP OF HYDRANT STEAMER LOCATED ACROSS THE STREET FROM #425 S. DEXTER IN FRONT OF #422 S. DEXTER BUILDING APPROXIMATELY 15 FEET WEST SIDE OF SOUTH DEXTER ROAD. ELEVATION = 875.38 (NAVD 88)

BENCHMARK: #202
TOP OF WELL HEAD LOCATED APPROXIMATELY 75 FEET SOUTH OF BUILDING #440 S. DEXTER AND 25 FEET WEST OF SOUTH DEXTER ROAD. ELEVATION = 873.20 (NAVD 88)

BENCHMARK: #203
TOP OF NAIL ON WEST SIDE OF U-POLE LOCATED EAST SIDE OF S. DEXTER ROAD APPROXIMATELY 13 FEET SOUTHWESTERLY PROPERTY CORNER OF SOUTHWESTERLY PROPERTY CORNER OF SUBJECT PARCEL. ELEVATION = 876.27 (NAVD 88)

LEGEND

- MISC. STRUCTURE (AS LABELED)
- BOLLARD
- SIGN
- LIGHT BASE
- UTILITY METERS & BOXES (ELECTRIC METER, GAS METER, WATER METER, PHONE BOX, CATV BOX, MAIL BOX)
- AIR CONDITIONER UNIT
- UTILITY MANHOLE (AS LABELED)
- UTILITY POLE W/GUY WIRE
- OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- U/G UTILITY LINES (ELECTRIC/PHONE/CABLE)
- DECIDUOUS TREE W/IDENTIFIER
- CONIFEROUS TREE W/IDENTIFIER
- DECIDUOUS SHRUB
- EXISTING TREE DRIP LINE
- FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- EDGE OF GRAVEL
- CONCRETE CURB (UNLESS OTHERWISE STATED)
- CLEAN OUT
- STORM WATER MANHOLE W/IDENTIFIER
- CATCH BASIN W/IDENTIFIER
- FLARED END SECTION
- STORM WATER DRAINAGE PIPE
- HYDRANT
- WATER SHUT OFF
- WATER VALVE
- WATER VALVE BOX
- WATER MAIN
- GAS SHUT OFF
- U/G GAS
- SPOT ELEVATION
- 1' CONTOUR
- 5' CONTOUR
- PROPOSED STORM SEWER
- PROPOSED STORM STRUCTURES
- PROPOSED 1' CONTOUR
- PROPOSED 5' CONTOUR
- SOIL EVALUATION

DESIGN/SVB	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	1	4-20-23	REV. PER VILLAGE COMMENTS
CHECK: SVB	2	6-22-23	REV. PER VILLAGE COMMENTS

REVISION #	DATE	REVISION-DESCRIPTION

McFARLAND'S TREE SERVICE

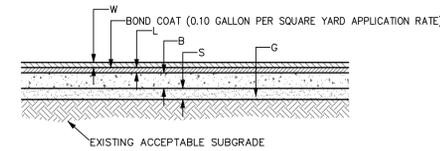
UTILITY PLAN

CLIENT:	SCALE:
SHANE BLACK McFARLAND'S TREE SERVICE, LLC 10704 WHITEWOOD PINCKNEY, MICHIGAN 48169 734 800-9535	1"=20'
PROJECT NO: 9214191 DWG NAME: 4191-UT ISSUED: JUNE 22, 2023	

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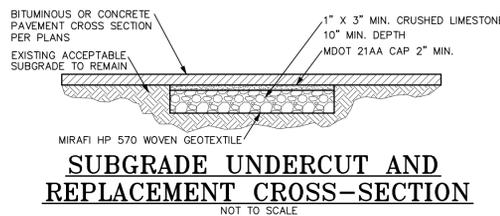


BITUMINOUS PAVEMENT CROSS SECTION
NOT TO SCALE

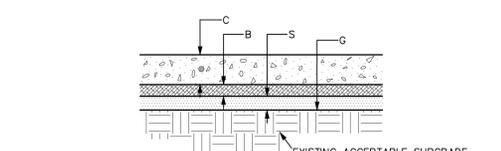
KEY	DESCRIPTION	MATERIAL SPECIFICATION	MINIMUM COMPACTED THICKNESS
W	WEARING COURSE	MDOT 4E3	2.0"
L	LEVELING COURSE	MDOT 13A	3.0"
B	AGGREGATE BASE	MDOT 21AA	10.0"
S	GRANULAR SUBBASE	MDOT CLASS II	6.0"
G	GEOGRID	N/A	N/A

BITUMINOUS PAVEMENT CROSS SECTION NOTES:

- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Bituminous Pavement Cross Section Details on the Project Plans for additional requirements.
- The existing subgrade soils shall be prepared prior to placement of any fill material and/or granular subbase material. Unsuitable soils found within the 1 on 1 influence zone of the proposed pavement areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material compacted to a minimum of 95% maximum unit weight, modified proctor.
- The prepared bituminous pavement subgrade shall be proof rolled as directed by the Project Engineer and/or Material Testing Engineer. The Project Engineer and/or Material Testing Engineer shall observe the subgrade proof roll. Areas of subgrade that do not pass a proof roll inspection shall be undercut in accordance with the Subgrade Undercut Notes and Details on the Project Plans. Alternative means of subgrade stabilization may be considered when recommended by the Project Engineer and/or Material Testing Engineer. Alternative methods shall not be performed without receipt of the Owner's Authorization.
- The bituminous pavement granular subbase material shall be MDOT Class II granular material. No granular subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The granular subbase shall be compacted to a minimum of 95% of the maximum unit weight, Modified Proctor.
- The bituminous pavement aggregate base material shall be MDOT 21AA aggregate material. No aggregate base material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The aggregate base shall be compacted to a minimum of 95% of the maximum unit weight, Modified Proctor.
- The bituminous pavement leveling course material shall be MDOT 13A bituminous material placed in 1 lift. The bituminous pavement wearing course material shall be MDOT 4E3 bituminous material placed in 1 lift. The bituminous pavement leveling and wearing courses shall NOT be combined into a single course. No bituminous material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. Compaction of the leveling course shall be achieved prior to placement of the wearing course. Any sediment, soil, debris and other foreign materials that accumulate on the leveling course shall be removed prior to placement of the wearing course. The bond coat shall be sprayed on the leveling course within 24 hours of placement of the wearing course. The bituminous pavement material shall be compacted to a minimum of 95% of the 50-blow Marshall Density.
- The Owner/Developer may delay placement of the bituminous pavement wearing course outside of the public road right of way. Repair of the bituminous pavement leveling course may be necessary due to any delay in placement of the bituminous pavement wearing course. Substantial repair to the bituminous pavement leveling course may be necessary if placement of the bituminous pavement wearing course is delayed for more than 12 months after placement of the bituminous pavement leveling course. The bituminous pavement leveling course shall be repaired as directed by the Project Engineer and/or Material Testing Engineer prior to placement of the bituminous pavement wearing course.
- Bituminous mix designs shall be developed in accordance with the MDOT HMA Production Manual. The Contractor shall submit the bituminous pavement mix designs to the Material Testing Engineer for review and approval a minimum of 3 business days prior to use. Bituminous pavement work shall not commence without receipt of the Material Testing Engineer's approval of the bituminous mix designs. The bituminous pavement mix design shall be a virgin mix. RAP mixtures shall not be utilized without prior written approval of the Material Testing Engineer and receipt of the Owner's authorization. RAP mixtures, if authorized, shall be designed and produced in accordance with MDOT Tier I or Tier II RAP Mixture Specifications. In no instance shall MDOT Tier III or non-MDOT RAP mixtures be permitted or utilized.



SUBGRADE UNDERCUT AND REPLACEMENT CROSS-SECTION
NOT TO SCALE



HEAVY DUTY CONCRETE PAVEMENT CROSS-SECTION
NOT TO SCALE

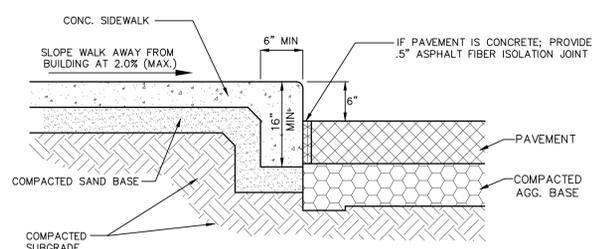
KEY	DESCRIPTION	MATERIAL SPEC.	MIN. THICKNESS
C	CONCRETE	MDOT GRADE P1, 6.0 SACK	10"
B	AGGREGATE BASE	MDOT 21AA LESTONE	8"
S	GRANULAR SUBBASE	MDOT CLASS II	6"
G	GEOGRID	N/A	N/A

CONCRETE PAVEMENT CROSS SECTION NOTES:

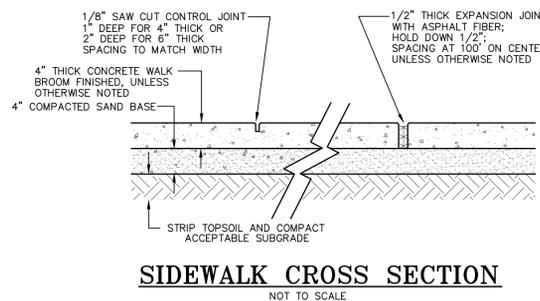
- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Heavy Duty Concrete Pavement Cross Section Detail on the Project Plans for additional requirements.
- The Geotechnical Evaluation Report for the project site, is a part of this work. The General Contractor, Earthwork Subcontractor and Concrete Pavement Subcontractor shall obtain, review and become familiar with the Geotechnical Evaluation Report.
- The concrete pavement cross section specifications are based on typical weather conditions during the June through September Construction Season. If the concrete pavement areas are to be constructed during any other time of the year and/or if weather conditions are unseasonably wet, then modifications to the concrete pavement cross section specifications may be necessary. If either of these conditions exists, then contact the Material Testing Engineer and/or the Project Engineer for additional requirements.
- The existing subgrade soils shall be prepared in accordance with the Geotechnical Evaluation Report. Unsuitable soils found within the 1 on 1 influence zone of the proposed pavement areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans and the Geotechnical Evaluation Report.
- The concrete pavement subgrade shall be prepared and proof rolled in accordance with the Geotechnical Evaluation Report. The Material Testing Engineer and/or the Project Engineer shall observe the subgrade proof roll. Areas of subgrade that do not pass a proof roll inspection shall be undercut in accordance with the Subgrade Undercut Notes and Details on the Project Plans. Alternative means of subgrade stabilization may be considered when recommended by the Material Testing Engineer. Alternative methods shall not be performed without receipt of the Owner's Authorization.
- The concrete pavement compacted subbase material shall be MDOT Class II granular material. No subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The subbase shall be compacted to a minimum of 95% of the maximum unit weight, Modified Proctor.
- Concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28-day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. The Contractor shall submit concrete mix design and aggregate mechanical analysis report to the Material Testing Engineer for review and approval prior to use.
- Heavy Duty Concrete Pavement placed within the Truck Well shall be Reinforced with epoxy coated deformed #5 bars at 12" on center each way placed at mid-depth of the concrete, unless noted otherwise on the Project Structural Plans. See Structural Plans and Details within the Building Plans for additional requirements.
- Install transverse contraction joints and longitudinal contraction joints at the locations specified on the Project Structural Plans. Joints shall be 2" deep, unless noted otherwise on the Project Structural Plans. Tool joints in fresh concrete or saw cut within 4 hours after placement with soft cut saws.
- Provide 1" asphalt fiber control joint between concrete pavement and all other concrete structures such as concrete building foundations, concrete curb and concrete sidewalks.
- The Concrete Pavement shall not be exposed to vehicular traffic until the concrete has reached at least 75% of the design flexural strength.

PAVEMENT SUBGRADE UNDERCUT NOTES:

- Areas of pavement subgrade that do not pass a proof roll inspection shall be undercut when directed by the Material Testing Engineer and/or Project Engineer. All undercut work shall be witnessed and field measured by the Material Testing Engineer and/or Project Engineer. Copies of the field notes depicting the field measurements of the undercut areas shall be provided to the General Contractor and/or Earthwork Subcontractor.
- Undercut areas shall be excavated to a depth of 12" below the proposed subgrade elevation using an Excavator or Backhoe with a Smooth Edged Ditching Bucket so as not to scarify the underlying soils. Undercut areas shall remain free of all construction traffic and equipment to avoid rutting and/or tracking of the underlying soils.
- Mirafi HP 570 Woven Geotextile Fabric (or approved equal) shall be placed over all undercut areas per the Manufacturer's specifications. Overlap all seams a minimum of 12" unless specified otherwise by the Manufacturer.
- Backfill the undercut areas with 1" x 3" minimum size crushed angular limestone and cap with 21AA crushed angular limestone up to the proposed subgrade elevation. Crushed concrete material shall NOT be substituted for crushed limestone material. The backfill material shall be spread with a Wide Track Dozer to minimize loading on the underlying soils. Static roll the backfill material with a large smooth drum roller.
- Construct the appropriate Bituminous or Concrete Pavement Cross Section over the undercut areas per the Project Plans.
- The General Contractor and/or Earthwork Subcontractor shall provide Developer with unit pricing to perform subgrade undercut work per square yard (SY) of undercut area. Undercut Unit Pricing SHALL include excavation, loading, hauling and offsite disposal of excess spoils, placement of geotextile fabric and backfill including all labor, equipment and materials necessary to complete pavement subgrade undercut work as specified on the Project Plans.



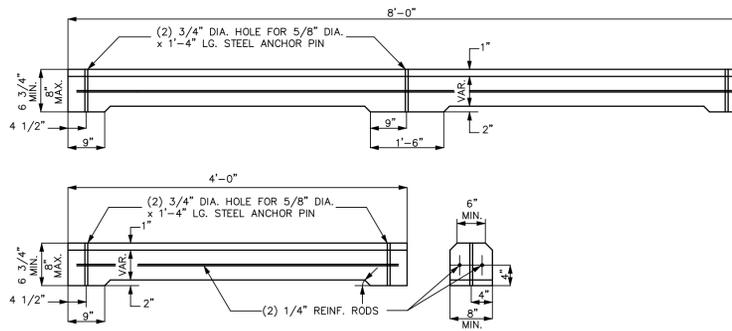
SIDEWALK WITH INTEGRAL CURB & ISOLATION JOINT DETAIL
NOT TO SCALE



SIDEWALK CROSS SECTION
NOT TO SCALE

SIDEWALK CROSS SECTION NOTES:

- The construction specifications of the Local Municipality are a part of this work. Refer to the General Notes and the Sidewalk Cross Section Details on the Project Plans for additional requirements.
- Sidewalk widths may vary. See the Project Plans for the proposed sidewalk width at each location. Increase sidewalks to 6" minimum thickness at driveways and other areas exposed to vehicular traffic.
- The existing subgrade soils shall be prepared prior to placement of the granular subbase. Unsuitable soils found within the 1 on 1 influence zone of the proposed sidewalk areas, such as muck, peat, topsoil, marl, silt or other unstable materials shall be excavated and replaced with structural fill. Structural fill shall be MDOT Class II granular material placed in accordance with the General Notes on the Project Plans.
- The sidewalk compacted subbase material shall be MDOT CL II sand. No subbase material substitutions shall be permitted without prior written approval of the Project Engineer and receipt of the Owner's Authorization. The subbase shall be compacted to a minimum of 95% of the maximum unit weight, modified proctor.
- Concrete material shall be MDOT P1 (I-A) 6.0 sack concrete pavement mixture with a minimum 28 day design compressive strength of 4,000 PSI and 6.5% (+/-1.5%) entrained air. The Contractor shall submit the concrete mix design and aggregate mechanical analysis report to the Material Testing Engineer and/or Project Engineer for review and approval prior to use.
- Install transverse contraction control joints in accordance with the Sidewalk Cross Section Detail. Space contraction control joints to match sidewalk width, but no greater than 10' on center. Tool joints in fresh concrete or saw cut within 8 hours.
- Install transverse expansion control joints in accordance with the Sidewalk Cross Section Detail. Space expansion control joints at 50 feet on center maximum. Transverse expansion control joints shall be 1/2" thick asphalt fiber joint filler matching entire sidewalk cross section.
- Provide 1" asphalt fiber control joint between concrete sidewalks and all other concrete structures, such as concrete building foundations, concrete curb and concrete driveways.
- Construct all Barrier Free Sidewalk Ramps in accordance with the American Disabilities Act and the Barrier Free Design Requirements of the appropriate Local, County or State Agency with jurisdiction over the project. Refer to MDOT Standard Plan R-28, latest revision.
- The concrete sidewalk shall not be exposed to vehicular traffic until the concrete has reached at least 75% of the design flexural strength.



CONCRETE BUMPER BLOCK DETAIL
NOT TO SCALE

DRIVEWAY AND PARKING LOT CONSTRUCTION NOTES:

- The grading, driveway and parking lot specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
- Driveway and Parking Lot work shall include site clearing of vegetation and tree stumps; stripping and stockpiling of topsoil for reuse; mass grading cuts and fills; removal of unsuitable soils from the paved surface influence area; culvert placement; subgrade preparation including fine grading and proof roll; subgrade undercuts and/or placement of geotextile fabric if needed; placement and preparation of granular subbase and aggregate base courses including fine grading and compaction; placement of concrete curb and gutter; watering of aggregate base within 24 hours of paving to obtain optimum moisture content; bituminous and/or concrete pavement including placement, compaction and bond coats; cleaning of bituminous pavements between courses if needed; preparation, finish work and restoration as needed to connect to existing pavements, ditches, driveways, etc.; adjustment of storm and utility structure castings to match finish grade; placement of shoulders and finish grading of ditches; pavement markings; topsoil placement; seed & mulch; site cleanup; restoration; and other work as shown on the project plans and specifications.

- Existing and proposed grades shown in the driveway profile view(s) are along the centerline of each driveway. Refer to the plan view and curve tables on the project plans for horizontal alignment and curve data. Proposed contours for ditches, curbs, driveway crown and pavement slope may not be shown in the plan view and/or grading plan.
- Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of driveway and/or parking lot work.
- Contractor shall coordinate construction staking, testing, documentation submital and observation with the appropriate Agency, Surveyor and/or Engineer as required for construction, certification and/or acceptance of the driveway(s) and/or parking lot(s). All materials used and work done shall meet or exceed the requirements and specifications noted on the project plans. Any materials used or work done that does not meet said requirements and/or specifications shall be replaced and/or redone at Contractor's expense. The Owner/Developer may wait for test results, certifications and/or Agency reviews prior to accepting work.
- Contractor shall take all appropriate job site safety precautions. Refer to the Traffic Control specifications of the appropriate Regulatory Agency for work within a public road right of way.
- Contractor shall take precautions to prevent contamination of driveway and/or parking lot materials during handling, installation and construction procedures. Contaminated materials shall be removed and replaced at Contractor's expense.
- Clear vision areas shall be created where required; refer to the Clear Vision Area detail on the project plans. Relocate existing signs/utilities as acceptable to the appropriate Agency. Owner/Developer shall coordinate installation of permanent street signage after completion of roadwork.
- When side slopes within utility easements exceed 1 on 10 (10%), Contractor shall rough grade a flat shelf within the easement area as acceptable to Engineer and restore following underground utility installation.

GENERAL NOTES:

- Contractor shall perform the work in accordance with the requirements of the appropriate Local, County and State Agencies and all other Government and Regulatory Agencies with jurisdiction over the project. Contractor shall notify the appropriate Agencies in advance of each stage of work in accordance with each Agency's requirements.
- Contractor shall comply with all permit, insurance, licensing and inspection requirements associated with the work. Prior to construction, Contractor and Owner/Developer shall determine who is responsible for obtaining each required permit. Contractor shall verify that the each required permit has been obtained prior to commencement of the stage of work associated with the required permit(s).
- Contractor shall furnish liability insurance and property damage insurance to save harmless the Owner, Developer, Architect, Engineer, Surveyor and Government Agencies for any accident occurring during the construction period. Refer to the appropriate Local, County and State Agencies for additional requirements. Copies of insurance certifications shall be made available to the Owner/Developer.
- Contractor shall conduct and perform work in a safe and competent manner. Contractor shall perform all necessary measures to provide for traffic and pedestrian safety from the start of work and through substantial completion. Contractor shall determine procedures and provide safety equipment such as traffic controls, warning devices, temporary pavement markings and signs as needed. Contractor shall comply with the safety standards of the State Department of Labor, the occupational health standards of the State Department of Health and safety regulations of the appropriate Local, County, State and Federal Agencies. Refer to the safety specifications of the appropriate Regulatory Agencies. The Contractor shall designate a qualified employee with complete job site authority over the work and safety precautions; said designated employee shall be on site at all times during the work.
- Contractor shall coordinate scheduling of all work in the proper sequence, including work by Subcontractors. Additional costs due to improper planning by Contractor or work done out of sequence as determined by standard acceptable construction practices, shall be Contractor's responsibility.
- Contractor shall contact the 811 Underground Public Utility Locating System or other appropriate local underground utility locating Agency, a minimum of three (3) working days prior to construction. Existing utility information on the project plans may be from information disclosed to this firm by the Utility Companies, Local, County or State Agencies, and/or various other sources. No guarantee is given as to the completeness or accuracy thereof. Prior to construction, locations and depths of all existing utilities (in possible conflict with the proposed improvements) shall be verified in the field.
- Contractor shall coordinate scheduling a Pre-Construction Meeting with Engineer prior to commencement of work.
- The Local Municipality, County and/or State in which the project is located may require an Engineer's Certification of construction of the proposed site improvements. Contractor shall verify the certification requirements with Engineer prior to commencement of work. Contractor shall coordinate construction staking, testing, documentation submital and observation with the appropriate Agency, Surveyor and/or Engineer as required for Engineer's Certification and Government Agency Acceptance. All materials used and work done shall meet or exceed the requirements of certification and acceptance, the contract documents and the material specifications noted on the project plans. Any materials used or work done that does not meet said requirements, contract documents and/or specifications shall be replaced and/or redone at Contractor's expense. The Owner/Developer may wait for test results, certifications and/or Agency reviews prior to accepting work.
- Engineer may provide subsurface soil evaluation results, if available, to Contractor upon request. Subsurface soil evaluation results, soils maps and/or any other documentation does NOT guarantee existing soil conditions or that sufficient, acceptable on-site granular material is available for use as structural fill, pipe bedding, pipe backfill, road subbase or use as any other granular material specified on the project plans. On-site granular material that meets or exceeds the material specifications noted on the project plans may be used as structural fill, pipe bedding, pipe backfill and/or road subbase material. On-site granular material shall be stockpiled and tested as acceptable to the appropriate Agency and/or Engineer prior to use.
- During the performance of their work, Contractor shall be solely responsible for determining soil conditions and appropriate construction methods based on the actual field conditions. Contractor shall furnish, install and maintain sheeting, shoring, bracing and/or other tools and equipment and/or construction techniques as needed for the safety and protection of the workers, pedestrians and vehicular traffic and for protection of adjacent structures and site improvements.
- Contractor shall install temporary and permanent soil erosion and sedimentation control devices at the appropriate stages of construction in accordance with the appropriate regulatory Agencies. Refer to Soil Erosion and Sedimentation Control Plans and Notes on the project plans.
- Structural fill shall be placed as specified on the project plans and within the 1 on 1 influence zone of all structures, paved areas and other areas subject to vehicular traffic. Structural fill shall be placed using the controlled density method (12" maximum lifts, compacted to 95% maximum unit weight, modified proctor). Fill material shall meet or exceed the specifications noted on the project plans or as directed by Engineer when not specified on the project plans.
- All existing monuments, property corners, ground control and benchmarks shall be protected and preserved; and if disturbed by Contractor, shall be restored at Contractor's expense. Contractor shall notify Surveyor of any conflicts between existing monuments, property corners, ground control and/or benchmarks and the proposed site improvements.
- Contractor shall notify Owner/Developer and Engineer immediately upon encountering any field conditions, which are inconsistent with the project plans and/or specifications.
- When noted on the project plans for demolition and/or removal, Contractor shall remove existing structures, building and debris and recycle and/or dispose of in accordance with Local, County, State and Federal regulations.
- Contractor shall remove excess construction materials and debris from site and perform restoration in accordance with the project plans and specifications. Disposing of excess materials and debris shall be performed in accordance with Local, County, State and Federal regulations.
- Construction access to the site shall be located as acceptable to the Owner/Developer and to the appropriate Local, County and/or State Agency with jurisdiction over the road(s) providing access to the site. Construction access shall be maintained and cleaned in accordance with the appropriate Local, County and/or State Agencies and as directed by Owner/Developer and/or Engineer.
- Contractor shall take necessary precautions to protect all site improvements from heavy equipment and construction procedures. Damage resulting from Contractor actions shall be repaired at Contractor's expense.

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BRIGHTON, MICHIGAN 48114

DESIGN/SVB	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	1	4-20-23	REV. PER VILLAGE COMMENTS
CHECK: SVB	2	6-22-23	REV. PER VILLAGE COMMENTS

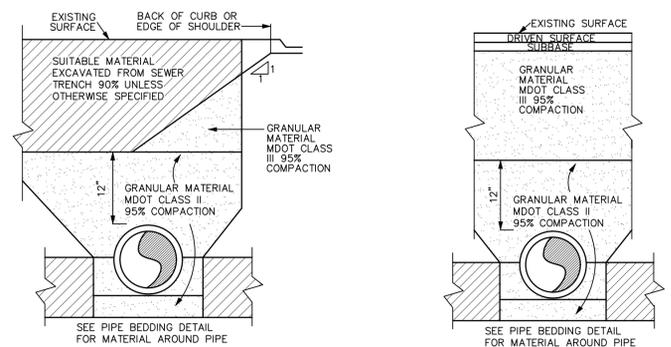
REVISION #	DATE	REVISION-DESCRIPTION

McFARLAND'S TREE SERVICE

SITE IMPROVEMENT NOTES & DETAILS

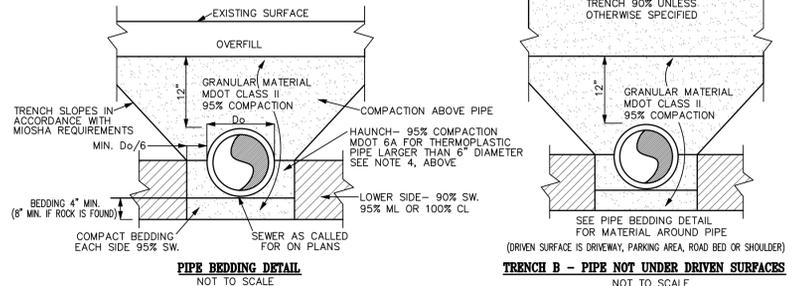
CLIENT: SHANE BLACK McFARLAND'S TREE SERVICE, LLC 10704 WHITEWOOD PINCKNEY, MICHIGAN 48169 734 800-9535	SCALE: N/A PROJECT No.: 9214191 DWG NAME: 4191-DETAILS ISSUED: JUNE 22, 2023
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DT1



TRENCH A - PIPE UNDER OR WITHIN INFLUENCE OF DRIVEN SURFACE
NOT TO SCALE

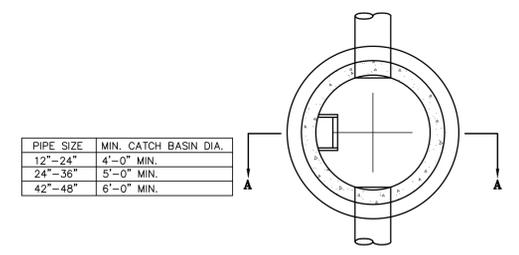
- NOTES:
1. COMPACTION PRESENTED AS STANDARD PROCTOR VALUES.
 2. SOIL TYPES AASHTO DESIG. GRAVEL SANDY (SW) A1, A3 SANDY SILTY (ML) A2, A4 SILTY CLAY (CL) A5, A6, A7
 3. SOIL IN HAUNCH AND LOWER SIDE ZONES OUTSIDE OF $D_o/6$ FROM SPRING LINE SHALL BE COMPACTED TO AT LEAST THE SAME COMPACTION AS THE SOIL IN THE OVERFILL ZONE.
 4. MATERIALS AROUND THERMO. PLASTIC PIPE WITH DIAMETER 6 INCHES SHALL PASS 0.5 INCH SIEVE. MATERIALS AROUND OTHER PIPES SHALL PASS 1.5 INCH SIEVE.



PIPE BEDDING DETAIL
NOT TO SCALE

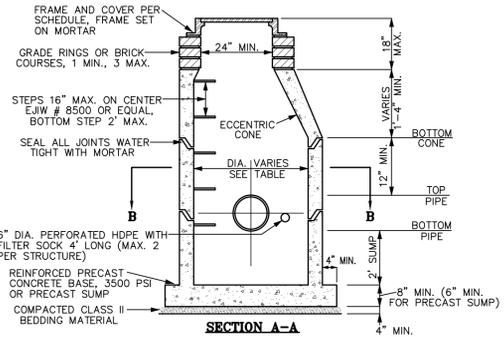
TRENCH B - PIPE NOT UNDER DRIVEN SURFACES
NOT TO SCALE

TRENCH DETAILS
NOT TO SCALE



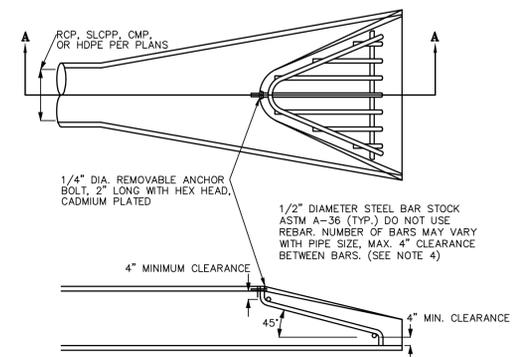
SECTION B-B

PIPE SIZE	MIN. CATCH BASIN DIA.
12"-24"	4'-0" MIN.
24"-36"	5'-0" MIN.
42"-48"	6'-0" MIN.



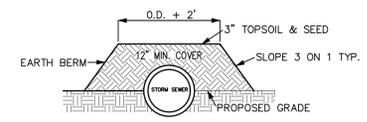
CATCH BASIN
NOT TO SCALE

- NOTES:
1. FURNISH LARGER STRUCTURE DIAMETER AS NEEDED TO MAINTAIN 6" MIN. CLEAR BETWEEN PIPE OPENINGS.
 2. FURNISH LOW PROFILE STRUCTURE ONLY WHEN NECESSARY TO MAINTAIN PROPER CLEARANCE ABOVE PIPES.



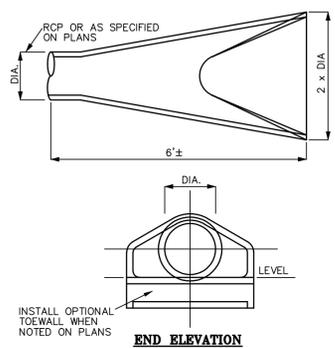
ANIMAL GUARD
NOT TO SCALE

- NOTES:
1. ANIMAL GUARD REQUIRED ON ALL FLARED END SECTIONS OF 15" DIAMETER PIPE OR GREATER.
 2. CONTRACTOR MAY SUBSTITUTE ALTERNATE GRATING LAYOUT AS APPROVED BY OWNER/ENGINEER/AGENCY PRIOR TO INSTALLATION.
 3. DETAIL SHOWN FOR RCP FLARED END SECTION. PROVIDE SIMILAR ANIMAL GUARD FOR FLARED END SECTIONS ON CMP, HDPE, AND SLOPP.
 4. WELD ALL CONNECTIONS FULL STRENGTH PER AMERICAN WELDING SOCIETY STANDARDS.



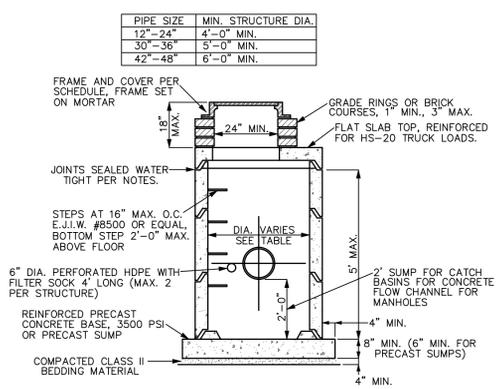
SEWER PIPE BERM
NOT TO SCALE

NOTE:
NOT FOR USE IN ROAD R.O.W.



FLARED END SECTION
NOT TO SCALE

- NOTES:
1. RCP FLARED END SECTION SHOWN. PROVIDE SIMILAR FLARED END SECTION FOR CMP, SLOPP OR HDPE PIPE.
 2. PROVIDE RIP-RAP PER RIP-RAP DETAILS FOR ALL OUTLET FLARED END SECTIONS.
 3. INSTALL FLARED END SECTION WITH INVERT ELEVATION LEVEL AS VIEWED FROM END.



LOW PROFILE STORM STRUCTURE
NOT TO SCALE

PIPE SIZE	MIN. STRUCTURE DIA.
12"-24"	4'-0" MIN.
30"-36"	5'-0" MIN.
42"-48"	6'-0" MIN.

STORM SEWER NOTES:

1. The storm sewer and stormwater management specifications of the Local Municipality are a part of this work. Refer to the General Notes on the project plans for additional requirements.
2. Storm sewer work shall include clearing of vegetation and tree stumps, stripping and stockpiling of topsoil for reuse, excavation of pipe trench, placement of pipe bedding, placement of pipe and structures including castings, connection to existing structures, tuck pointing of structures, backfill of pipe trench, compaction of backfill, finish grading to provide positive drainage to structures, adjustment of castings to match finish grade, topsoil placement, seed & mulch, site cleanup and restoration, and other work as shown on the project plans and specifications.
3. Existing and proposed grades shown in profile view, when provided on the project plans, may be in relation to the centerline of road or item other than the centerline of pipe. The pipe lengths and grades shown in profile view on the project plans may not be to scale.
4. RCP when shown on the project plans shall be reinforced concrete pipe and shall conform to the specifications for reinforced concrete pipe per ASTM C76. RCP pipe joints shall be bell-and-spigot with rubber gaskets conforming to ASTM C433. Non-gasketed joints shall only be utilized when authorized by the Owner, Engineer AND Municipality. Non-gasketed joints of pipe having a diameter of 30 inches or greater shall be tuck-pointed on the inside with cement mortar after the backfill process is complete. Install reinforced concrete end sections incidental to work. Saw cut pipes to length as needed. When pipe class is not shown on the project plans, provide the following:
Pipe cover to proposed grade: 0 to 4 feet Class V
4.1 to 10 feet Class III*
10.1 to 18 feet Class IV
18.1 feet and greater Class V
* Use Class IV under paved surfaces
5. CMP when shown on the project plans shall be corrugated metal pipe and shall conform to the specifications for corrugated metal pipe per AASHTO Designation M36. CMP shall be 16-gauge steel minimum for 24 inch diameter or smaller and 14-gauge steel minimum for 30 inch diameter or greater. Install galvanized steel end sections and connection bands, incidental to work. Connection bands for CMP pipe joints located under paved surfaces shall be gasketed couplers. Saw cut pipes to length as needed.
6. HDPE - Type S when shown on the project plans shall be high density polyethylene pipe with a smooth interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M252 Type S for pipes of 3" to 10" diameter and per AASHTO Designation M294 Type S for pipes of 12" to 60" diameter. HDPE - Type S pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477. Tamp backfill at spring line of HDPE - Type S pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
7. HDPE - Type C when shown on the project plans shall be high density polyethylene pipe with a corrugated interior and shall conform to the specifications for high density polyethylene pipe per AASHTO Designation M252 for pipes of 3" to 10" diameter and per AASHTO Designation M294 for pipes of 12" to 60" diameter. HDPE - Type C pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477. Tamp backfill at spring line of HDPE - Type C pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
8. CPVC when shown on the project plans shall be corrugated polyvinyl chloride pipe and shall conform to the specifications for corrugated polyvinyl chloride pipe per ASTM F794 and F949. CPVC pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477. Tamp backfill at spring line of CPVC pipe. Install high density polyethylene end sections incidental to work. Saw cut pipes to length as needed.
9. PVC when shown on the project plans shall be polyvinyl chloride pipe and shall conform to the specifications for polyvinyl chloride pipe per ASTM D2751, maximum SDR of 26. PVC pipe joints shall be bell-and-spigot type conforming to ASTM D3212 with rubber gaskets conforming to ASTM F477 or solvent welded type conforming to ASTM D2564. Tamp backfill at spring line of PVC pipe. Saw cut pipes to length as needed.
10. Concrete storm structures shall be pre-cast and shall conform to the specification of pre-cast concrete structures per ASTM C478. Joints of concrete storm structure sections shall be bell-and-spigot with rubber gaskets conforming to ASTM C433. Brick, concrete block or cast in place storm structures may be substituted for pre-cast storm structures ONLY when authorized by the Owner, Engineer AND Municipality; refer to MDOT standard plan R-1, latest revision. Pipe openings in pre-cast structures shall be factory installed. All temporary openings in storm structures shall be tuck-pointed watertight with cement mortar. Refer to MDOT standard plan R-2, latest revision, for alternate on-line storm structure details when pipe exceeds 42 inch diameter.
11. Tap existing structures as acceptable to the Engineer and Municipality, incidental to work. All temporary openings in storm structures shall be tuck-pointed watertight with cement mortar.
12. Backfill all storm sewer in accordance with the Pipe Trench details provided on the project plans. Provide pipe bedding that meets or exceeds both the specifications of the Pipe Trench details on the project plans and the recommendation of the pipe manufacturer, incidental to work.
13. When edge drains and/or under drains are shown on the project plans, connection to storm structures is incidental to work. During storm sewer construction, install first 10 linear feet of edge drain and/or under drain from the storm structures in each specified direction and install temporary cap at end. Complete installation of edge drain following preparation of the subgrade when under paved surface or following finish grade when not under paved surface.
14. Install removable plugs in storm sewer stubs as acceptable to Engineer and Municipality, incidental to work. Mark the end of all storm sewer stubs with a 2" x 4" wooden stake extending a minimum of 12" above finish grade, incidental to work.
15. Storm structure castings shall be coated with water based asphaltic paint by the manufacturer. Seams and temporary openings between storm structures and castings shall be tuck-pointed water tight with cement mortar. Coordinate correct curb box / hood / "T" back as needed to match curb profile. See casting schedule on project plans for additional requirements.
16. Provide 3.5' minimum cover from the top of pipe of all roof drain pipes to the proposed finish grade when site conditions allow. When pipe cover is less than 3.5', install 2" thick by 24" wide Styrofoam insulation centered over the top of pipe at 12" above top of pipe or as required by the Local Municipality.

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DESIGN:SVB	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	1	4-20-23	REV. PER VILLAGE COMMENTS			
CHECK: SVB	2	6-22-23	REV. PER VILLAGE COMMENTS			

McFARLAND'S TREE SERVICE

SITE IMPROVEMENT NOTES & DETAILS

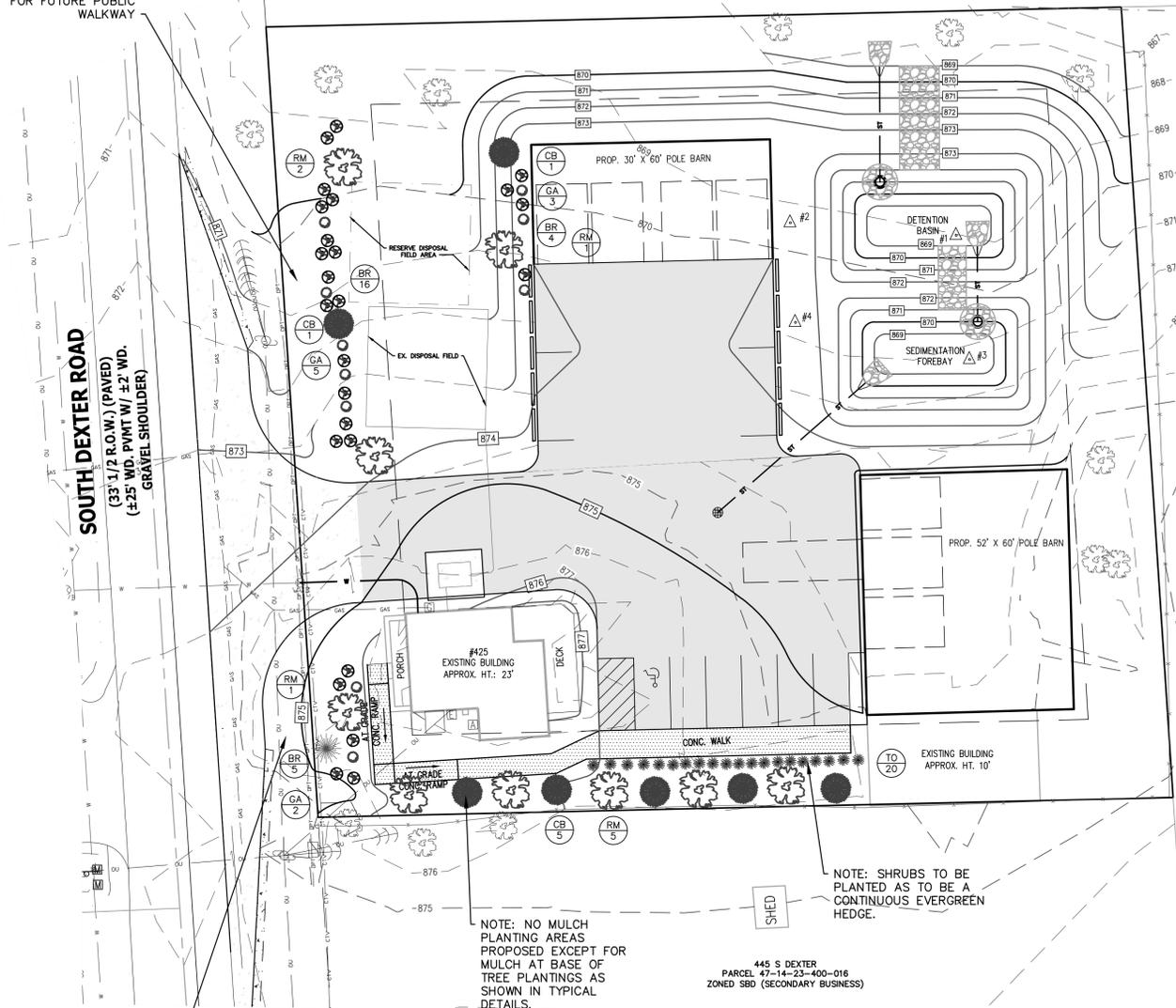
CLIENT:
SHANE BLACK
McFARLAND'S TREE SERVICE, LLC
10704 WHITEWOOD
PINCKNEY, MICHIGAN 48169
734 800-9535

SCALE: N/A
PROJECT No.: 9214191
DWG NAME: 4191-DETAILS
ISSUED: JUNE 22, 2023

DT2

NOTE: OPEN SPACE TO REMAIN BETWEEN PLANTINGS AND PROPERTY BOUNDARY FOR FUTURE PUBLIC WALKWAY

VACANT
PARCEL 47-14-23-400-014
ZONED SBD (SECONDARY BUSINESS)



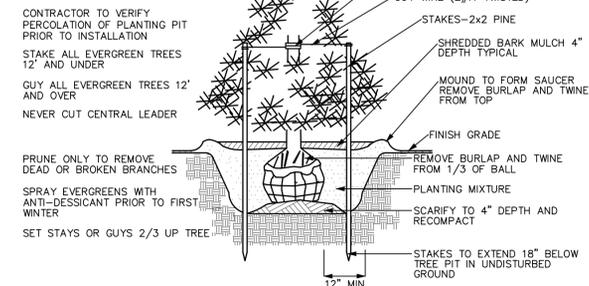
NOTE: OPEN SPACE TO REMAIN BETWEEN PLANTINGS AND PROPERTY BOUNDARY FOR FUTURE PUBLIC WALKWAY

MAINTENANCE NOTES:
LANDSCAPING REQUIRED BY VILLAGE ORDINANCE SHALL BE MAINTAINED IN A HEALTHY, NEAT, AND ORDERLY APPEARANCE, FREE FROM REFUSE AND DEBRIS. ALL UNHEALTHY AND DEAD PLANT MATERIAL SHALL BE REPLACED IMMEDIATELY, UNLESS THE SEASON IS NOT APPROPRIATE FOR PLANTING, IN WHICH CASE SUCH PLANT MATERIAL SHALL BE REPLACED AT THE BEGINNING OF THE NEXT PLANTING SEASON. THE OWNER SHALL ENSURE PERPETUAL AND MANDATORY MAINTENANCE AND/OR REPLACEMENT OF VEGETATIVE PLANTINGS PURSUANT TO THE APPROVED LANDSCAPE PLAN.

ALL LANDSCAPED AREAS WILL BE IRRIGATED MANUALLY WITH STANDARD GARDEN HOSE AND FIXTURES.

445 S DEXTER
PARCEL 47-14-23-400-016
ZONED SBD (SECONDARY BUSINESS)

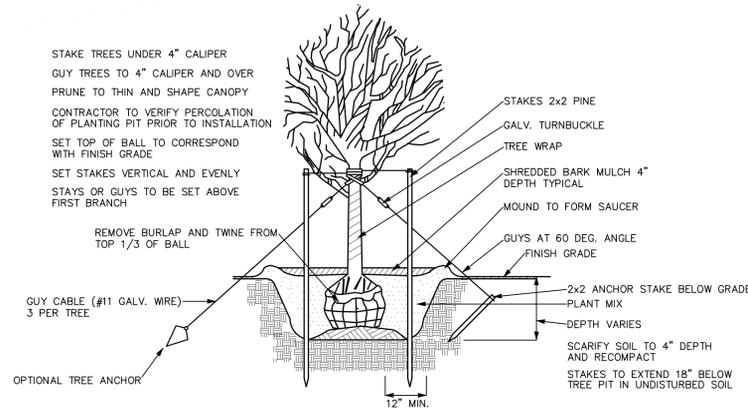
NOTE: SHRUBS TO BE PLANTED AS TO BE A CONTINUOUS EVERGREEN HEDGE.



TYPICAL EVERGREEN TREE PLANTING

NOT TO SCALE

STAKE TREES UNDER 4\"/>



TYPICAL DECIDUOUS TREE PLANTING

NOT TO SCALE

GENERAL NOTES:

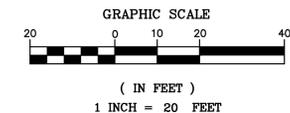
- ALL PLANTING SIZES SHOWN SHALL BE AT TIME OF PLANTING.
 - ALL PLANT MATERIAL SHALL BE FREE OF DISEASE AND INSECTS AND SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK OF THE AMERICAN ASSOCIATION OF NURSERYMEN.
 - ALL LANDSCAPING SHALL BE MAINTAINED A HEALTHY CONDITION, ANY DEAD OR DISEASED PLANTINGS SHALL BE REMOVED AND REPLACED WITHIN 1 YEAR.
 - ALL LANDSCAPE BEDS TO BE MULCHED WILL HAVE CYPRESS MULCH UNLESS OTHERWISE NOTED.
 - ALL PLANT MATERIAL TO BE USED SHALL BE AS SPECIFIED OR APPROVED EQUAL.
 - ALL UNPAVED AREAS AND AREAS NOT OTHERWISE PROPOSED AS A LANDSCAPE BED OR AN AREA TO BE CYPRESS MULCHED SHALL BE SEEDED TO ESTABLISH A VEGETATIVE LAWN COVER.
- NOTE: TREES WITH (TBR) ARE TO BE REMOVED, UNLESS OTHERWISE SPECIFIED ALL OTHER TREES ARE TO REMAIN.

PROPOSED LANDSCAPE PLANTING LEGEND

KEY	QUANTITY	BOTANICAL NAME	COMMON NAME	MINIMUM SIZE	ROOT
EVERGREEN TREES					
CB	7	<i>Picea pungens 'Glauca'</i>	Colorado Blue Spruce	6' Height	B & B
DECIDUOUS TREES					
RM	2	<i>Acer Rubrum</i>	Red Maple	2.5' Caliper	B & B
EVERGREEN SHRUBS					
GA	10	<i>Thuja Occidentalis 'Golden Globe'</i>	Golden Globe Arborvitae	24" Height	Container
TO	20	<i>Thuja Occidentalis 'Nigra'</i>	Dark Green Arborvitae	24" Height	Container
DECIDUOUS SHRUBS					
BR	25	<i>Spiraea betulifolia 'Tor'</i>	Tor Birchleaf Spirea	12" Height	Container

LEGEND

- = MISC. STRUCTURE (AS LABELED)
- = BOLLARD
- = SIGN
- ⊙ = LIGHT BASE
- ⊠ = UTILITY METERS & BOXES (ELECTRIC METER, GAS METER, WATER METER, PHONE BOX, CATV BOX, MAIL BOX)
- ⊡ = AIR CONDITIONER UNIT
- ⊞ = UTILITY MANHOLE (AS LABELED)
- ⊞ = UTILITY POLE W/GUY WIRE
- ⊞ = OVERHEAD UTILITY LINES (ELECTRIC/PHONE/CABLE)
- ⊞ = U/G UTILITY LINES (ELECTRIC/PHONE/CABLE)
- = DECIDUOUS TREE W/IDENTIFIER
- = CONIFEROUS TREE W/IDENTIFIER
- = DECIDUOUS SHRUB
- = EXISTING TREE DRIP LINE
- ⊞ = FENCE (CHAIN LINK UNLESS OTHERWISE STATED)
- ⊞ = EDGE OF GRAVEL
- ⊞ = CONCRETE CURB (UNLESS OTHERWISE STATED)
- = CLEAN OUT
- = STORM WATER MANHOLE W/IDENTIFIER
- = CATCH BASIN W/IDENTIFIER
- ⊞ = FLARED END SECTION
- ⊞ = STORM WATER DRAINAGE PIPE
- ⊞ = HYDRANT
- ⊞ = WATER SHUT OFF
- ⊞ = WATER VALVE
- ⊞ = WATER VALVE BOX
- ⊞ = WATER MAIN
- ⊞ = GAS SHUT OFF
- ⊞ = U/G GAS
- = SPOT ELEVATION
- = 1' CONTOUR
- = 5' CONTOUR
- ⊞ = PROPOSED STORM SEWER
- ⊞ = PROPOSED STORM STRUCTURES
- ⊞ = PROPOSED 1' CONTOUR
- ⊞ = PROPOSED 5' CONTOUR
- ⊞ = PROPOSED CONCRETE WALK
- ⊞ = PROPOSED GRAVEL SURFACE
- ⊞ = PROPOSED BITUMINOUS PAVEMENT



BENCHMARK
DATUM BASED ON NGS OPUS SOLUTION REPORT, DATE 11/23/21

BENCHMARK: #201
TOP OF HYDRANT STEAMER LOCATED ACROSS THE STREET FROM #425 S. DEXTER IN FRONT OF #422 S. DEXTER BUILDING APPROXIMATELY 15 FEET FROM WEST SIDE OF SOUTH DEXTER ROAD.
ELEVATION = 875.38 (NAVD 88)

BENCHMARK: #202
TOP OF WELL HEAD LOCATED APPROXIMATELY 75 FEET SOUTH OF BUILDING #440 S. DEXTER AND 25 FEET WEST OF SOUTH DEXTER ROAD.
ELEVATION = 873.20 (NAVD 88)

BENCHMARK: #203
TOP OF NAIL ON WEST SIDE OF U-POLE LOCATED EAST SIDE OF S. DEXTER ROAD APPROXIMATELY 15 FEET SOUTHWESTERLY OF SOUTHWESTERLY PROPERTY CORNER OF SUBJECT PARCEL.
ELEVATION = 876.27 (NAVD 88)

DESIGN/SVB	REVISION #	DATE	REVISION-DESCRIPTION	REVISION #	DATE	REVISION-DESCRIPTION
DRAFT: L.F.	1	4-20-23	REV. PER VILLAGE COMMENTS			
CHECK: SVB	2	6-22-23	REV. PER VILLAGE COMMENTS			

**McFARLAND'S
TREE SERVICE**

LANDSCAPE PLAN

CLIENT:
SHANE BLACK
McFARLAND'S TREE SERVICE, LLC
10704 WHITEWOOD
PINCKNEY, MICHIGAN 48169
734 800-9535

SCALE: 1"=20'
PROJECT No.: 9214191
DWG NAME: 4191-SP
ISSUED: JUNE 22, 2023

L-1

Luminaire Schedule							
Symbol	Qty	Label	Arrangement	LMF	Lum. Lumens	Lum. Watts	Part Number
	2	4M-16L	SINGLE	1.000	16100	104	OSQM-B-16L-40K7-4M-UL-NM-__ w/OSQ-ML-B-DA-__
	1	4M-16L w BLS	SINGLE	1.000	12350	104	OSQM-B-16L-40K7-4M-UL-NM-__ w/OSQ-ML-B-DA-__ + OSQ-BLSMF
	13	B-Low	SINGLE	1.000	N.A.	16.5	CDR8-ALS-9ACK-10V5-WH-UNV (Low Setting)

Calculation Summary; 1.00 LLF						
Label	Units	Avg	Max	Min	Avg/Min	Max/Min
All Calc Points	Fc	0.83	8.7	0.0	N.A.	N.A.
Property Line	Fc	0.06	0.4	0.0	N.A.	N.A.
Paved Parking	Fc	3.91	6.0	0.8	4.89	7.50

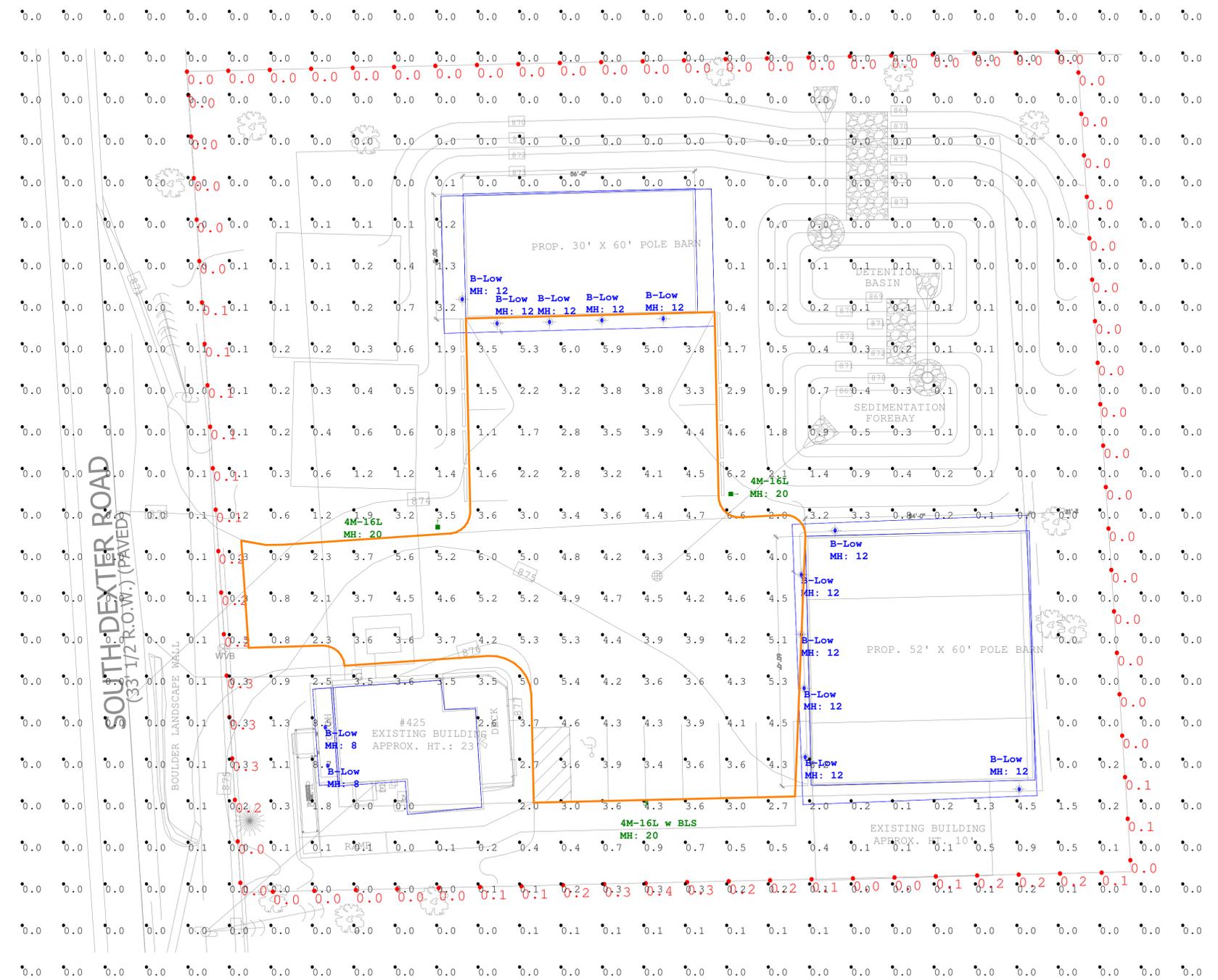
Fixture Mounting Height: 20' AFG (17' Pole + 3.0' Base)

Pole Schedule
 (3) LP14C171_-0 (17' X 4" X 11ga STEEL SQUARE POLE, Single)

Proposed poles meet 140MPH sustained winds.

Additional Equipment:
 (3) - LP14ABT-0 - (Anchor Bolts & Template for 4" Poles: 0.75" anchor bolts, 8.5" bolt circle (8-9" range))
 (3) - OSQ-ML-B-DA-__ - (Direct Arm Mount)
 (1) - OSQ-BLSMF - (Backlight Shield)

*** CUSTOMER TO VERIFY ORDERING INFORMATION AND CATALOGUE NUMBER PRIOR TO PLACING ORDER ***



Illumination results shown on this lighting design are based on project parameters provided to Cree Lighting used in conjunction with luminaire test procedures conducted under laboratory conditions. Actual project conditions differing from these design parameters may affect field results. The customer is responsible for verifying dimensional accuracy along with compliance with any applicable electrical, lighting, or energy code.

Project Name: Office Space - 425 S. Dexter Street Village of Pinckney, MI - EXT
 CASE #: 00548637 || Footcandles calculated at grade || Filename: 230327OS1CJWR1.AGI

Layout By: Collin Withrow
 Date: 6/21/2023

