CHAHAL SEMI TRUCK/TRAILER REPAIR FACILITY

6100 SCHOONER DRIVE

VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN

DESIGN ENGINEERS

HARDY CIVIL DESIGN SERVICES LLC
4996 MOORE
WAYNE MI 48184
Ph. (734) 756-2196
E-MAIL: kbhardy1964@hotmail.com
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GENERAL CONTRACTOR

JOE DAVENPORT
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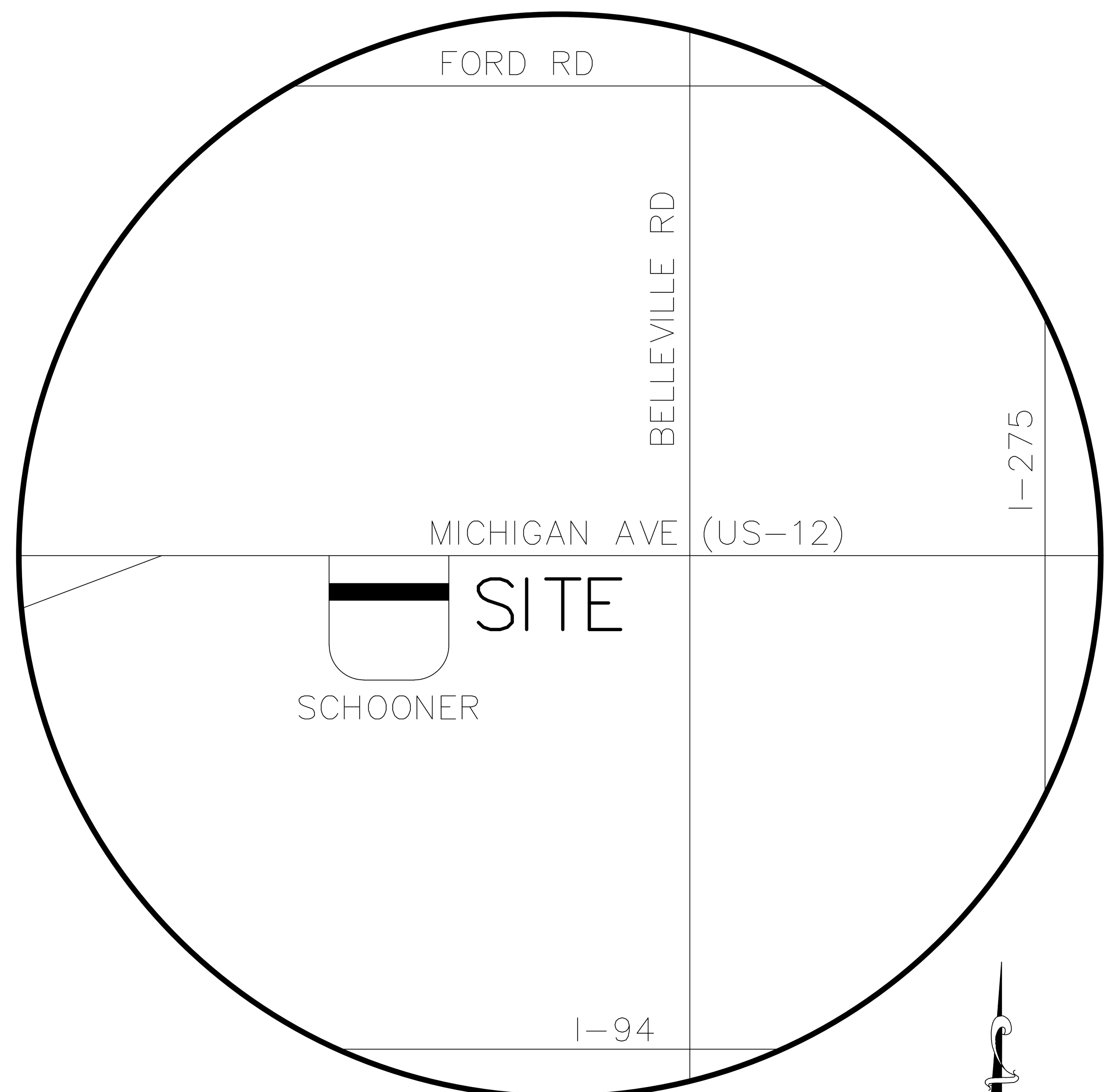
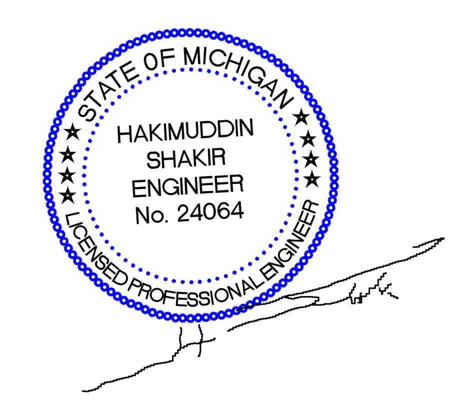
301 INDUSTRIAL PARK DRIVE
BELLEVILLE, MI 48111
Ph. (313) 350-0369
E-MAIL: joe@davenportbrothers.com



VICINITY MAP

PROPERTY OWNER

SUKHDEV SINGH
8385 OPAL
WESTLAND, MI 48185
Ph. (734) 419-3060
E-MAIL: suksingh363@gmail.com



REQUIRED PERMITS

WAYNE COUNTY (STORM WATER PERMIT)
WAYNE COUNTY SESC PERMIT
VAN BUREN TONWSHIP (SITE DEVELOPMENT PERMIT)

PROPOSED USE

THE PROPOSED USE OF THE FACILITY IS FOR MAJOR TRUCK REPAIR.

VEHICLES AND THEIR TRAILERS MAY REQUIRE AND RECEIVE REPLACEMENT OR REPAIR TO MAY COMPONENT, SUCH AS ENGINES, EXHAUST SYSTEMS, TRANSMISSIONS, AND OR SUSPENSIONS.

NEW AND USED VEHICLES AND TRAILER COMPONENTS WILL BE REMOVED WITHIN THE PROPOSED BUILDING AND ALL NEW AND USED COMPONENTS WILL BE STORED WITHIN THE PROPOSED BUILDING.

LEGAL DESCRIPTION

COMMENCING AT THE SOUTH 1/4 CORNER OF SECTION 32, TOWN 2 SOUTH, RANGE 8 EAST, VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN; THENCE S.87°37'34"W., 61.08 FEET ALONG THE SOUTH LINE OF SAID SECTION 32, ALSO BEING THE NORTH LINE OF SECTION 5, TOWN 3 SOUTH, RANGE 8 EAST, VAN BUREN TOWNSHIP,M WAYNE COUNTY, MICHIGAN; THENCE ALONG THE WESTERLY LINE OF SCHOONER DRIVE (60' RIGHT OF WAY) THE FOLLOWING TWO COURSES: (1) SOUTHERLY 27.29 FEET ALONG THE ARC OF A 370 FOOT RADIUS CURVE TO THE RIGHT, THROUGH A CENTRAL ANGLE OF 04°13'31"AND HAVING A CHORD BEARING S.07°20'55"E., 27.28 FEET AND (2) S.05°14'10"E., 476.68 FEET TO THE POINT OF BEGINNING; THENCE CONTINUING S.05°14'10"E., 274.00 FEET; THENCE S.85°10'54"W., 1010.75 FEET; THENCE N.04°49'18"W., 216.33 FEET ALONG THE EASTERLY LINE OF SAID SCHOONER DRIVE; THENCE N.88°17'04"E., 217.19 FEET; THENCE N.05°42'41"W., 69.43 FEET; THENCE N.85°10'54"E., 792.98 FEET TO THE POINT OF BEGINNING. BEING A PART OF THE NORTH 1/2 OF SECTION 5, TOWN 3 SOUTH, RANGE 8 EAST, VAN BUREN TOWNSHIP, WAYNE COUNTY, MICHIGAN.

TAX ID #83-017-99-0014-714

SHEET INDEX

ZONING & SETBACKS
SUBJECT PROPERTY ZONED M2 (GENERAL INDUSTRIAL)
PROPOSED USE: SEMI TRUCK/TRAILER REPAIR

ADJACENT PROPERTY ZONING:

NORTH	M1 & M2
EAST	M2
SOUTH	M2
WEST	M1

SCHEDULE OF REGULATIONS FOR M2 ZONING

LOT SIZE	NONE
BUILDING HEIGHT	4 – STORY
LOT COVERAGE	35%

SETBACKS

FRONT 60'(o)
REAR 50'
SIDES 50'(p), TOTAL 100'

SETBACK FOOTNOTES
(o) OFF-STREET PARKING FOR VISITORS, OVER AND ABOVE THE NUMBER OF SPACES REQUIRED UNDER SECTION 9.102 MAY BE PERMITTED WITHIN THE REQUIRED FRONT YARD PROVIDED THAT SUCH OFF-STREET PARKING IS NOT LOCATED WITHIN TWENTY (20) FEET OF THE FRONT LINE.
(p) OFF-STREET PARKING SHALL BE PERMITTED IN A REQUIRED SIDE YARD SETBACK.

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6100 SCHOONER DRIVE
TAX ID #83-017-99-0014-714

REQUIRED PARKING
PER TOWNSHIP ORDINANCE:

5 SPACES + EITHER 1 SPACE PER 550 S.F. GROSS FLOOR AREA OR 1 SPACE PER EACH EMPLOYEE AT PEAK SHIFT, WHICHEVER IS GREATER.

= 5+(MAX EMPLOYEE "5") = 10 REQUIRED SPACES OR
= 5+(8320sf/550) = 20 REQUIRED SPACES

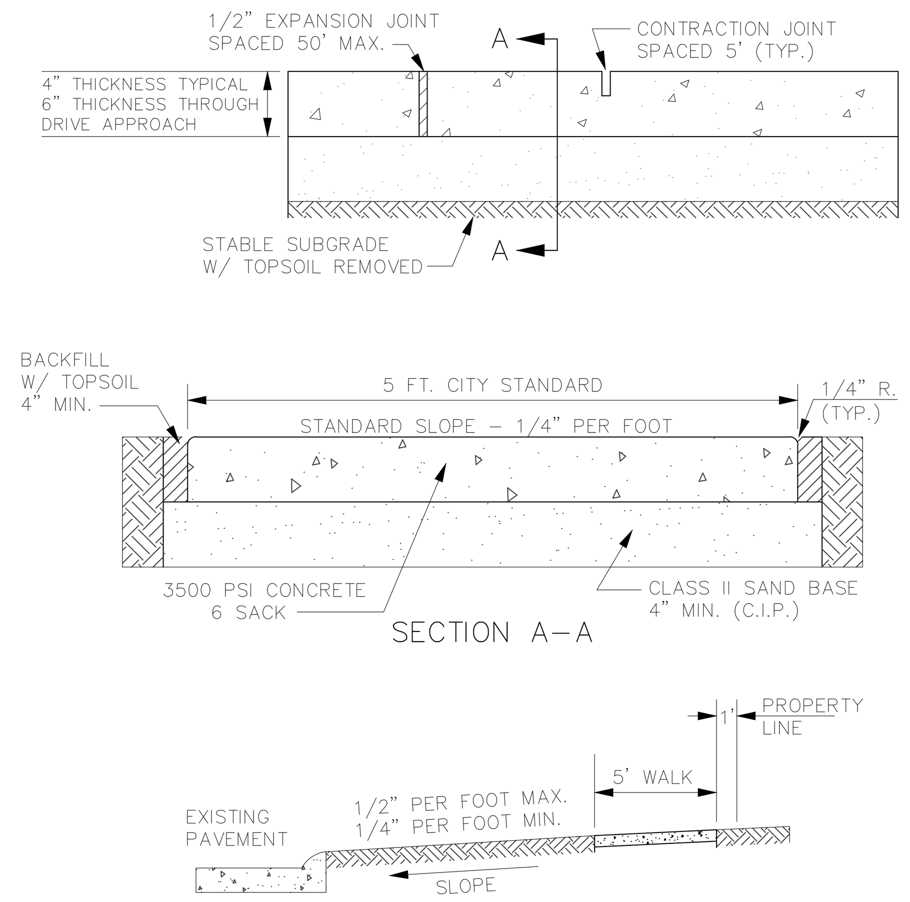
TOTAL SPACES REQUIRED = 20

PROVIDED REGULAR SPACES	21
PROVIDED BARRIER FREE SPACES	01
TOTAL SPACES	22

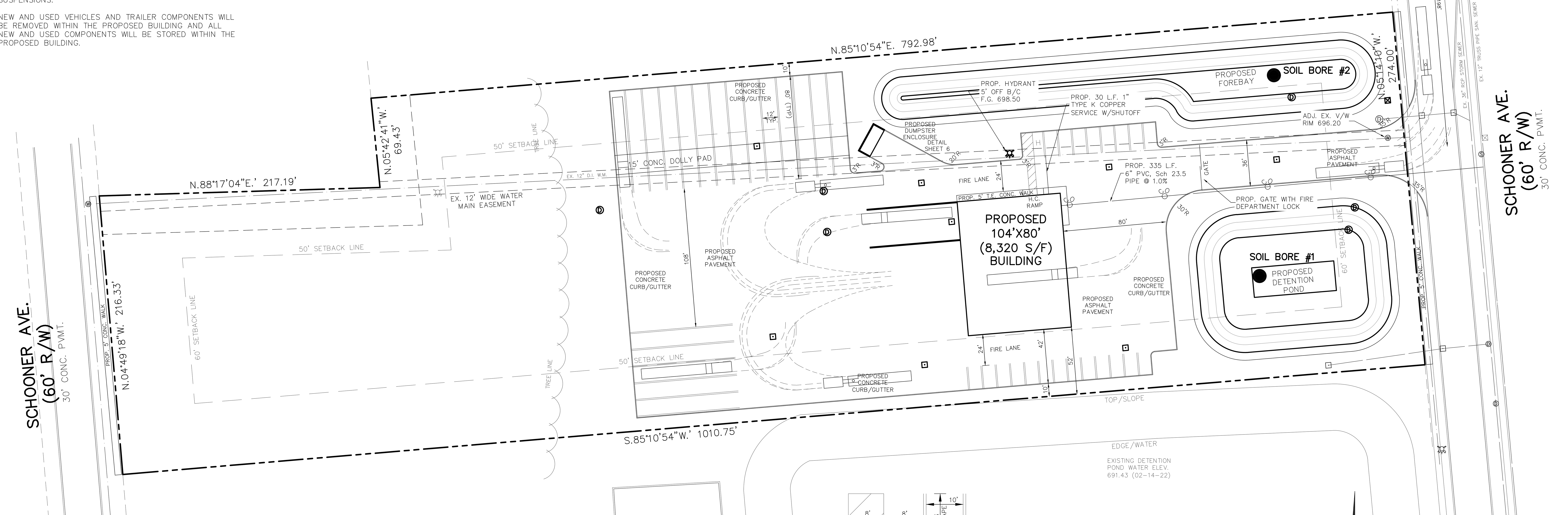
GENERAL NOTES
1. PICK UP DEBRIS WITHIN PROPERTY LIMITS WEEKLY OR AS NEEDED.
2. PHASING OF THE PROJECT IS NOT PROPOSED.
3. THERE ARE NO WETLANDS LOCATED ON SUBJECT PROPERTY.
4. PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES AND SURFACES SHALL BE MAINTAINED IN A SAVE, ATTRACTIVE CONDITION AS ORIGINALLY MAINTAINED IN A CLEARLY VISIBLE CONDITION.

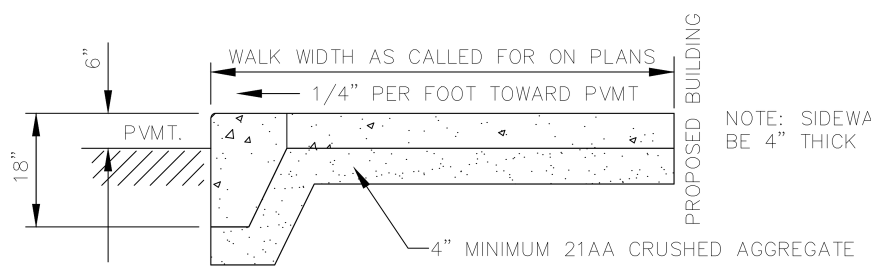
SITE SPECIFIC NOTES
1. PROPOSED SEMI TRUCK REPAIR FACILITY. THERE WILL BE NO LONG TERM PARKING WITHIN THE SUBJECT PROPERTY.
2. TRUCKS PARKED ON THIS PROPERTY ARE FUNCTIONAL AND AWAITING REPAIR I.E., NO JUNK TRUCKS FOR PARTS SALVAGE.
3. THERE WILL BE NO HAZARDOUS WASTE GENERATED FROM THE SITE.
4. OILS, SOLVENTS AND OTHER CHEMICALS WILL BE REMOVED FROM THE SITE BY APPROVED HAULING METHODS.
5. ALL CONSTRUCTION SHALL CONFORM TO THE CURRENT STANDARDS, SPECIFICATIONS, AND GENERAL CONDITIONS OF THE TOWNSHIP.
6. THE APPLICANT IS RESPONSIBLE FOR RESOLVING ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH ARE THE RESULT OF THE APPLICANTS ACTIONS.
7. PROPOSED GATE TO BE SUPPLIED A FIRE DEPARTMENT LOCK.
8. SITE FENCING IS NOT PROPOSED AS PART OF THIS PLAN.
9. THERE IS NO PROPOSED SIGNAGE FOR THE SITE.

REQUIRED PERMITS
1. WAYNE COUNTY STORM MANAGEMENT PERMIT.
2. VAN BUREN DEVELOPMENT PERMIT

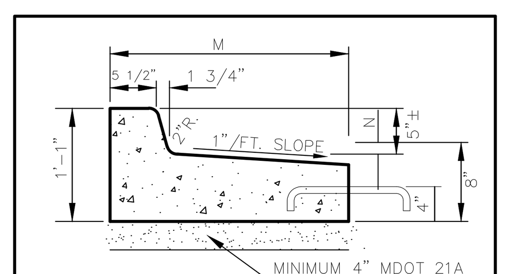


SIDEWALKS





THICKENED EDGE CONCRETE SIDEWALK
NO SCALE

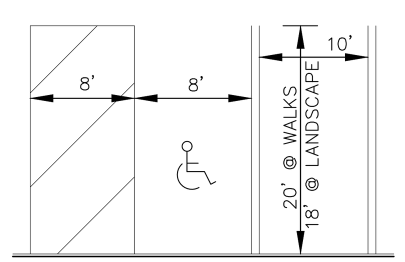


DETAIL	DIMENSIONS M	DIMENSIONS N	LANE TIES	CONCRETE CU. YD. / LIN. FT.
F1	1'-6"	7/8"	AS SHOWN	0.0424
F2	1'-6"	7/8"	OMITTED	0.0424
F3	2'-0"	1 3/8"	AS SHOWN	0.0550
F4	2'-0"	1 3/8"	OMITTED	0.0550
F5	2'-6"	1 7/8"	AS SHOWN	0.0677
F6	2'-6"	1 7/8"	OMITTED	0.0677

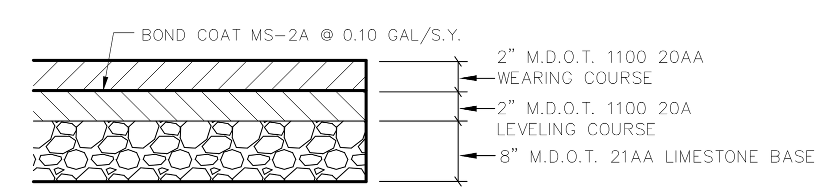
USE → F2 ← USE

F

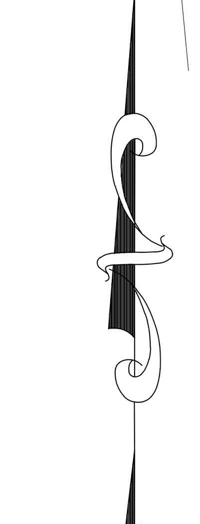
CURB & GUTTER DETAIL
USE CURB DETAIL 'F2'

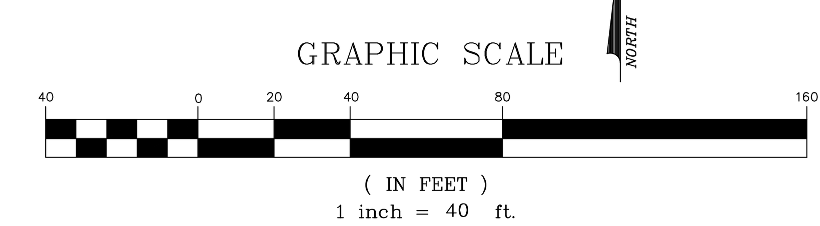


TYPICAL 90° PARKING SPACE DETAIL
NOT TO SCALE



ASPHALT PAVEMENT SECTION
NOT TO SCALE





PROPERTY OWNER
SDUKHDEV SINGH
8385 OPAL DRIVE
WESTALND, MI 48185

LEGEND
- EX. CATCH BASIN
- EX. SANITARY MANHOLE
- EX. STORM MANHOLE
- EX. HYDRANT
- EX. UTILITY POLE
- EX. VALVE WELL
- EX. FENCE
- EX. STREET SIGN
- EX. LIGHT POLE

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SITE PLAN

SEMI-TRUCK REPAIR FACILITY
6100 SCHOONER ROAD
VAN BUREN TWSP, MI

SHEET No.	JOB No.	DRAWING No.	DATE	REVISIONS
1 OF ..	2022-01	A-	01-10-22	05-06-22 06-02-22 06-21-22 08-03-22
		DRAWN BY:	CHECKED BY:	

ZONING & SETBACKS
SUBJECT PROPERTY ZONED M2 (GENERAL INDUSTRIAL)

ADJACENT PROPERTY ZONING:

NORTH	M1 & M2
EAST	M2
SOUTH	M2
WEST	M1

SCHEDULE OF REGULATIONS FOR M2 ZONING

LOT SIZE	NONE
BUILDING HEIGHT	4 – STORY
LOT COVERAGE	35%

SETBACKS

FRONT 60'(o)
REAR 50'
SIDES 50'(p), TOTAL 100'

SETBACK FOOTNOTES
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(p) OFF–STREET PARKING SHALL BE PERMITTED IN A REQUIRED SIDE YARD SETBACK.

FLOODZONE
THE SUBJECT PROPERTY IS LOCATED IN ZONE "C" (AREAS OF MINIMAL FLOODING) AS SHOWN ON FLOOD INSURANCE RATE MAP PANEL 26163C0195E, DATED FEBRUARY 02, 2012.

PARCEL SOILS TYPE
Ba BELLEVILLE LOAMY FINE SAND
TfA TEDROW LOAMY FINE SAND, LOAMY SUBSTRATUM, 0 TI 2 PERCENT SLOPES
PER USDA SOILD SURVEY OF SOUTHEAST MICHIGAN.

LAND AREA
THE SUBJECT PROPERTY CONTAINS 262,924 S/F – 6.02 AC.

GENERAL NOTES
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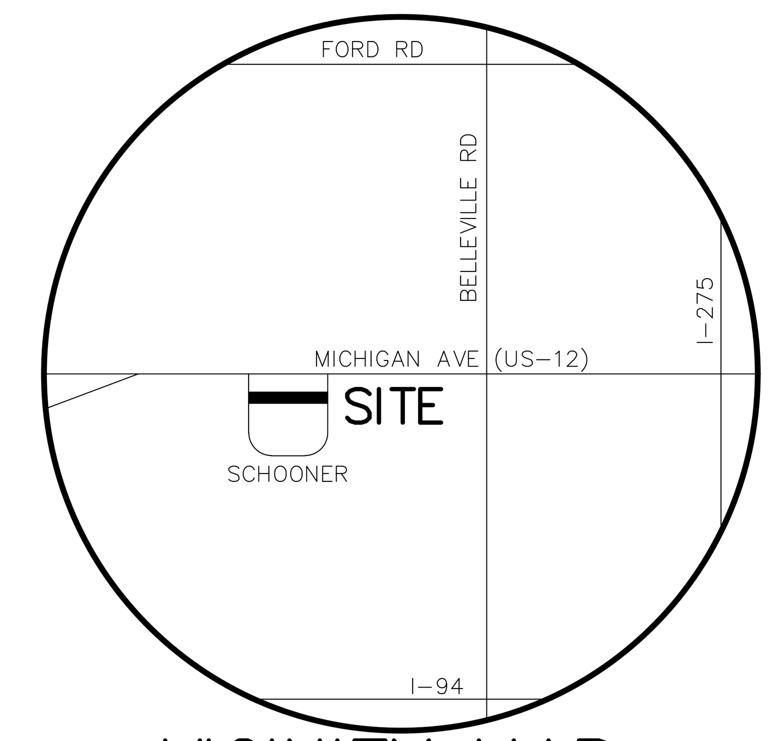
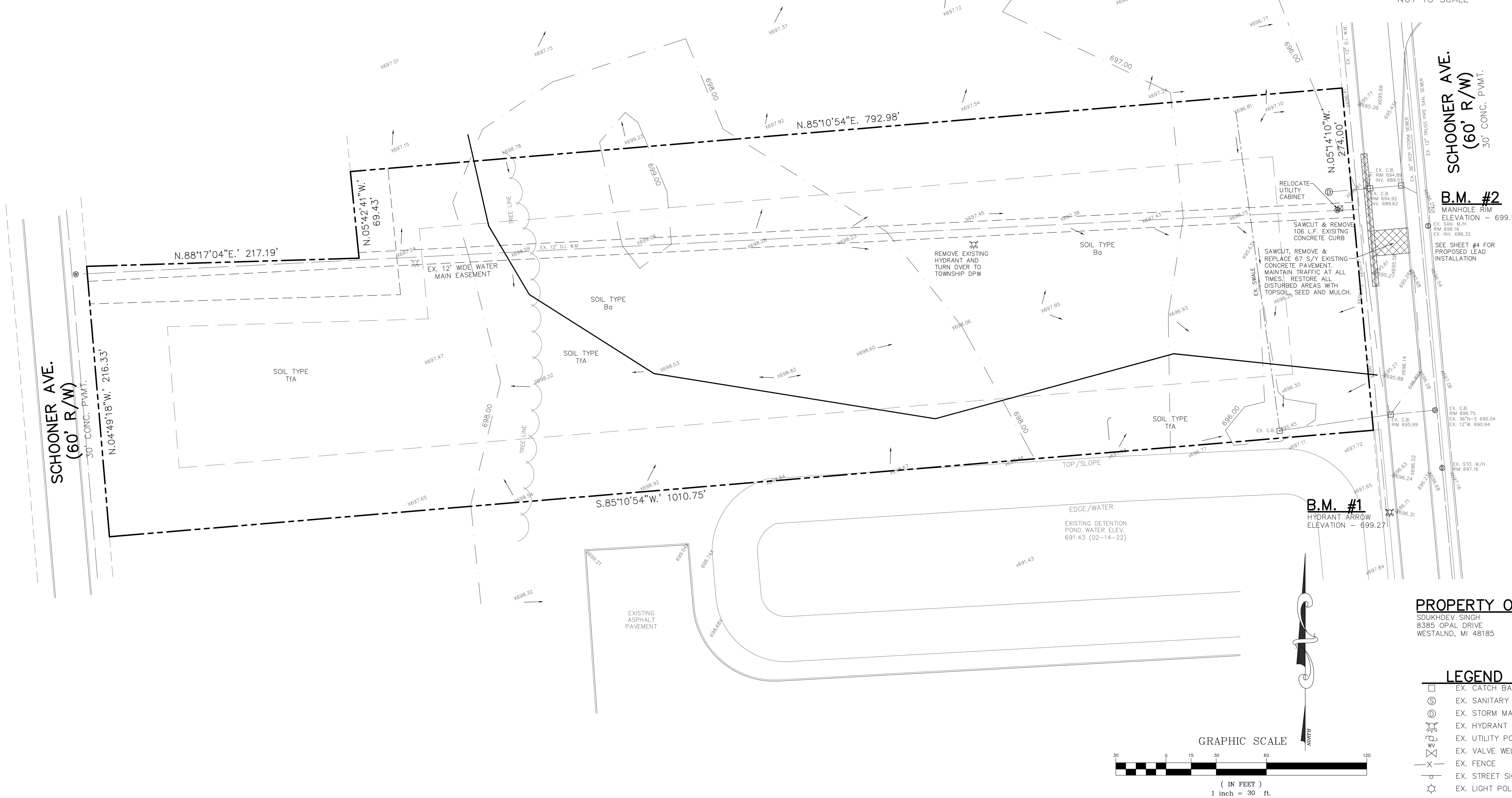
4. PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES AND SURFACES SHALL BE MAINTAINED IN A SAVE, ATTRACTIVE CONDITION AS ORIGINALLY MAINTAINED IN A CLEARLY VISIBLE CONDITION.
5. CONTRACTOR MUST PICK UP ANY FLOW FROM OFFSITE THAT CONTRIBUTES TO THE SITE.

BENCHMARKS (USGS NAVD29)
RIM ON EXISTING MANHOLE LOCATED ON THE EAST SIDE OF SCHOONER DRIVE 115' SOUTH OF NORTHERLY PROPERTY LINE OF SUBJECT PARCEL
ELEVATION – 699.16

ARROW ON HYDRANT LOCATED ON THE WEST SIDE OF SCHOONER DRIVE 65' SOUTH OF SOUTHERLY PROPERTY LINE OF SUBJECT PARCEL._
ELEVATION – 699.27



VICINITY MAP
NOT TO SCALE



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TOPOGRAPHIC SURVEY

SEMI–TRUCK REPAIR FACILITY
6100 SCHOONER ROAD
VAN BUREN TWSP, MI

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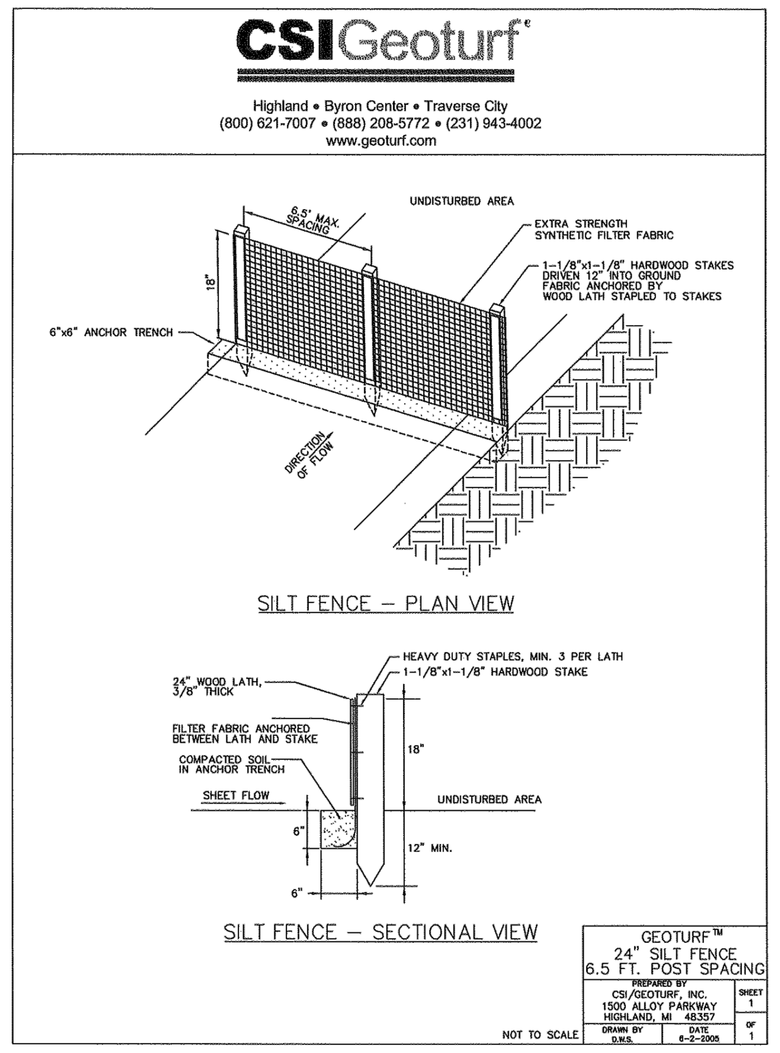
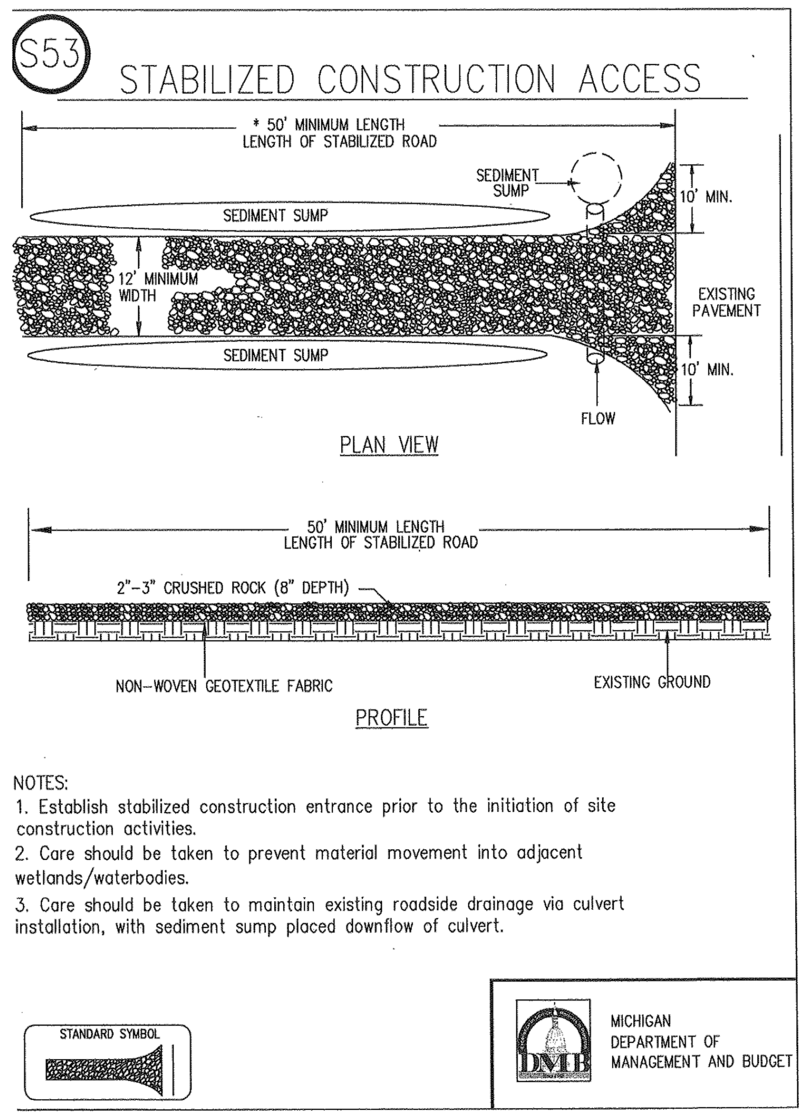
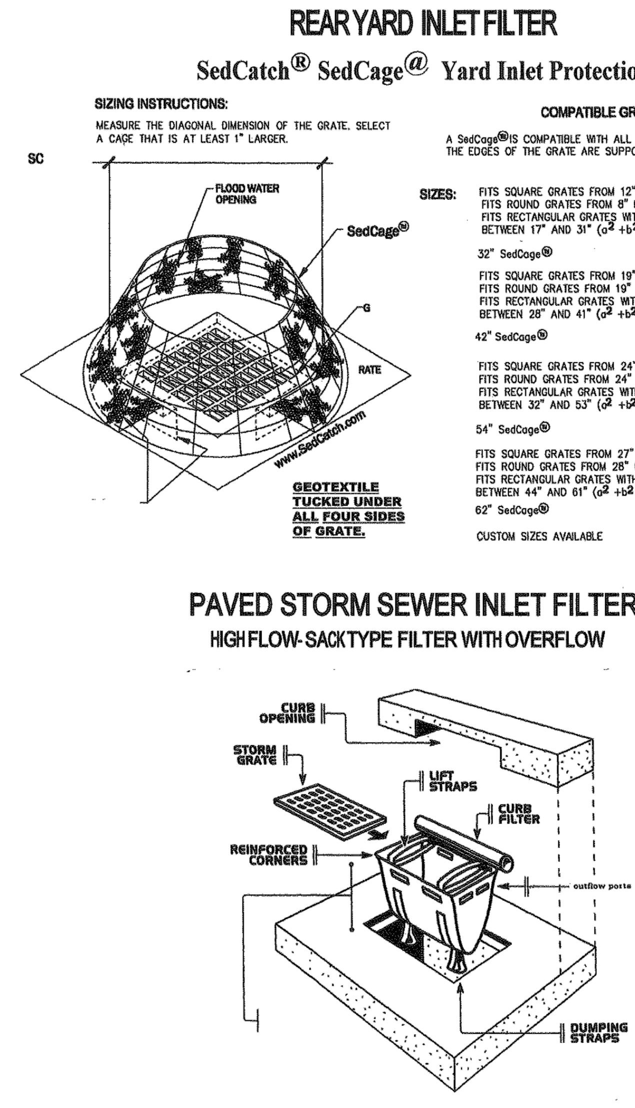
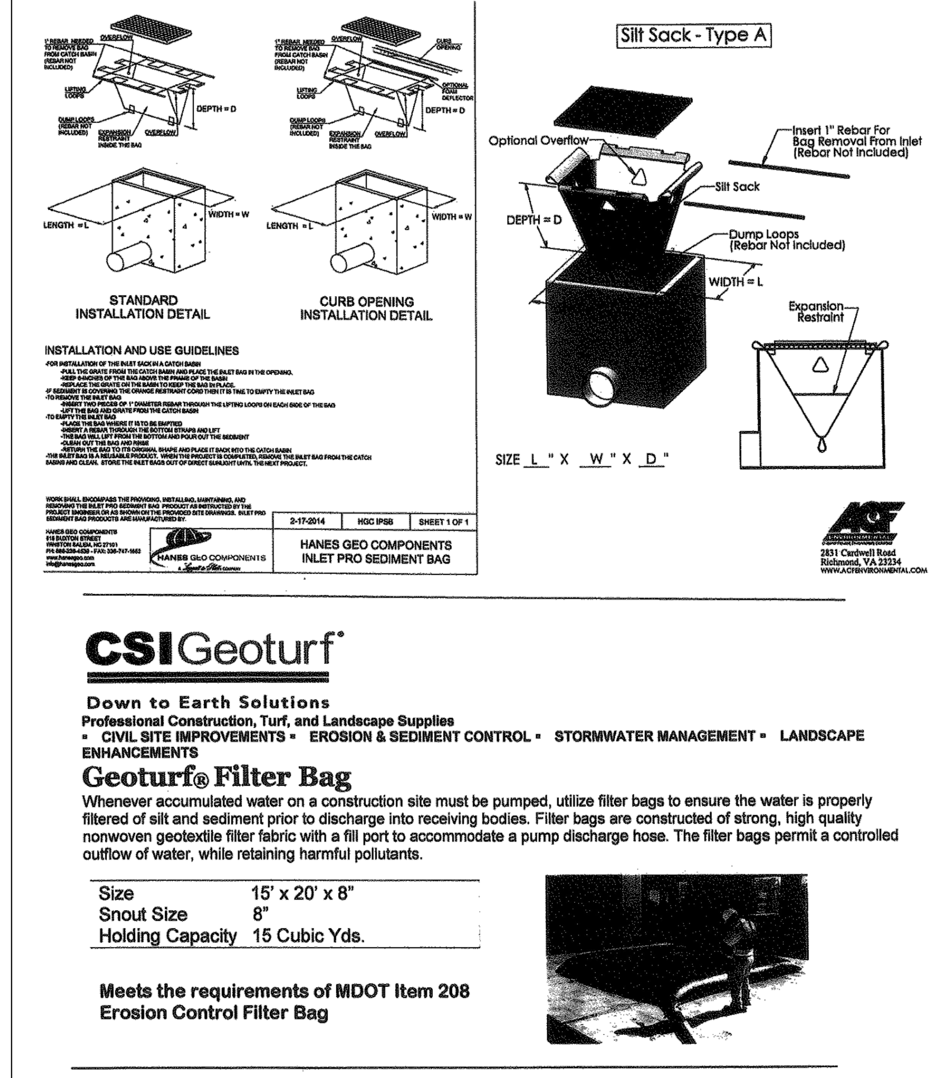








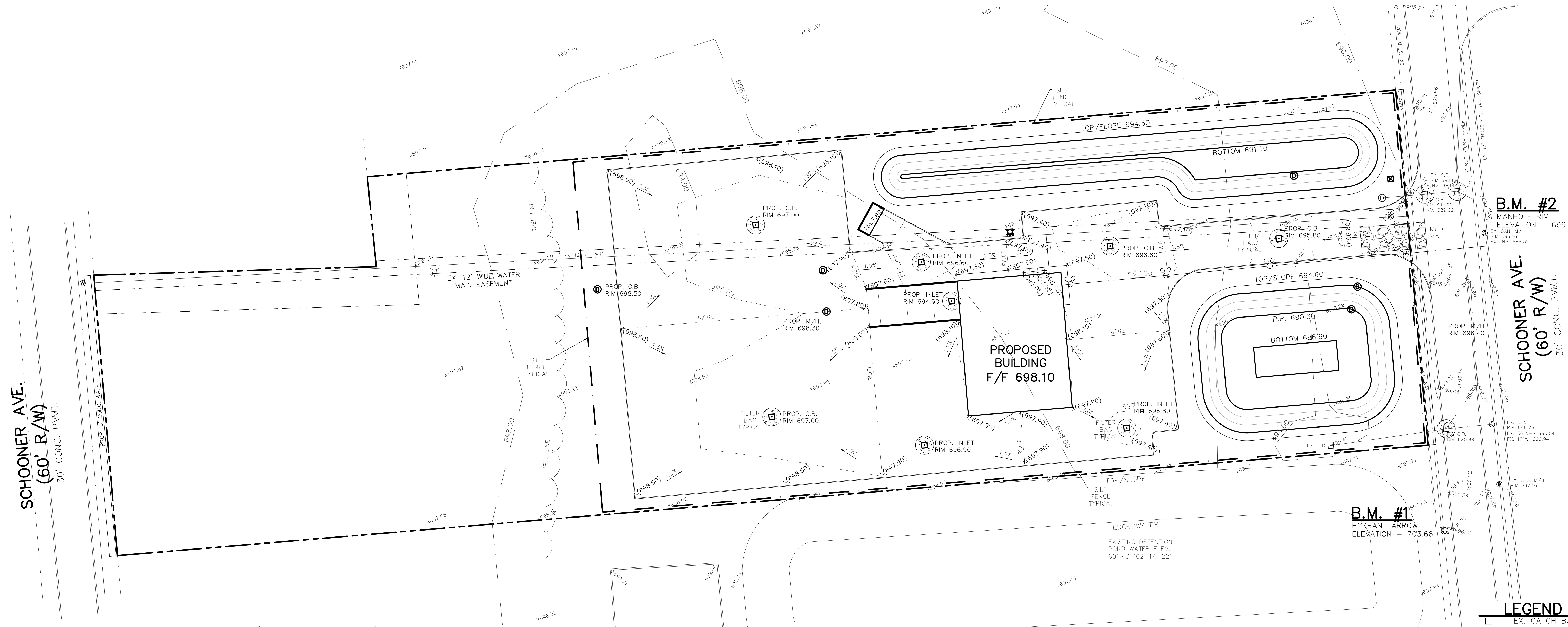
SOIL EROSION SEQUENCE OF CONSTRUCTION

START DAY	END DAY	
8–14	11–30	1. STONE TRACKING PAD ATOP GEOTEXTILE LINER (MUD–MAT).
8–14	11–30	2. INSTALL SILT FENCING AND PROTECTIVE FENCING.
8–14	8–18	3. STRIP AND STOCKPILE TOPSOIL.
8–14	9–02	4. GRADE AND BALANCE AS REQUIRED. STABILIZE DITCHES, SWALES, COMMON AREAS AND SLOPES PER PLAN WITHIN 5 DAYS OF GRADE.
8–21	9–02	5. EXCAVATE DETENTION BASIN, INSTALL APPROVED OUTLET, STABILIZE BEFORE PAVING IS STARTED.
9–05	9–16	6. INSTALL UNDERGROUND UTILITIES (I.E. SANITARY, STORM AND WATER MAIN).
8–01	11–30	7. PLACE INLET FILTERS.
9–19	10–06	8. INSTALL PAVEMENT COMPLETE.
10–09	10–13	9. INSTALL ALL PUBLIC UTILITIES COMPLETE (ELECTRIC, TELEPHONE, AND CABLE T.V.)
10–16		10. ESTABLISH VEGETATION FOR ALL DISTURBED AREAS AND ROAD / R.O.W.s.
11–01		11. CLEAN OUT STORM SEWERS SYSTEM.
11–01		12. CLEAN OUT AND RESTORE SEDIMENT FOREBAY AND DETENTION POND TO DESIGN SPECIFICATIONS.
11–30		13. REMOVE SILT FENCE FOLLOWING W.C.D.O.E. APPROVAL.

	SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
SCRAPE STREETS		X	X	X	X	X	X
SWEEP STREETS				X			

SOIL EROSION SEQUENCE OF CONSTRUCTION

(1) INSTALL SILT FENCE AS SHOWN HERE ON.
(2) COMPLETE MASS GRADING AND UNDERGROUND UTILITIES.
(3) COMPLETE BIOSWALE INSTALLATION
(4) CONSTRUCT PARKING AREA.
(5) RESTORE ALL DISTURBED AREAS WITH SOD OR TOPSOIL, SEED AND MULCH.
(6) REMOVE SILT FROM FROM BEHIND SILT FENCE AND REMOVE SILT FENCE.



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ELEVATION – 699.16

ARROW ON HYDRANT LOCATED ON THE WEST SIDE OF SCHOONER DRIVE 65' SOUTH OF SOUTHERLY PROPERTY LINE OF SUBJECT PARCEL.
ELEVATION – 699.27

SOIL EROSION QUANTITIES:

1800 L.F.	SILT FENCING
1 EA.	MUD MAT
12 EA.	SEDIMENTATION FILTER

SOIL EROSION LEGEND

SILT FENCING
SEDIMENTATION FILTER

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

PROPERTY OWNER

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WESTALND, MI 48185

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GRADING PLAN

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VAN BUREN TWSP, MI

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3 OF ..	2022–01	A–	01–10–22	05–06–22 06–02–22 06–21–22 08–03–22
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LAND USE SUMMARY

Land Characteristic	Existing	Proposed	
Total Development Area (ac)	6.03	4.99	
Impervious Area (ac)	0	3.24	4.99
Total Pervious Area (ac)	0	1.75	

Pervious Area Berakdown by Cover Type

Non-cultivated	0	0	
Impervious Area (ac)	N/A	N/A	
Improved area (grass/landscape)	0.26	0.32	
Predominant NRCS Soil Type	type B	type B	(Type A, B, C, C)
Wooded Area (ac)	0	0	
Predominant NRCS Soil Type	N/A	N/A	(Type A, B, C, C)

Calculated CPVC Volume (cf)=

CALCULATE RUNOFF COEFFICIENT

C=(Ai*Ci)/A 0.70

TIME of CONCENTRATION CALCULATIONS

V (sheet flow)=	0.48	1	%slope
Flow time=	4.3	125	flow length
V(shallow flow)=	1.37	1.3	%slope
Flow time=	9.1	750	flow length
V(sewer flow)=		3.00	fps
Flow time=	8.3	750	flow length

concentration time= 22 min. site less than 2 acres use 10 min
if site is less than 2 acres, use 22 min.

CALCULATE 100-YEAR PEAK INTENSITY

I100= 5.2 in/hr

CHANNEL PROTECTION VOLUME CONTROL (CPVC)

Vcpvc= 12,680 cf

CHANNEL PROTECTION RATE CONTROL (CPRC)

Vcprc= 24,091 cf

100-YEAR FLOOD CONTROL VOLUME CALCS

Qallow,calc= 1.11 cfs/acre 1.11
a site less than 2 acres must use a variable release rate of 1.00 cfs/acre
Qallow= 1.11 cfs/acre
Qo= 5.883 cfs
Qi= 18.6 cfs
Vr= 65,111 cf
(Vr/Vs)= 0.457 0.457
100-year (req) $\boxed{29,755}$ cf if not using bioretention

SITE DESIGN MUST ACCOMMODATE THE FOLLOWING VOLUMES:

cpvc= 12,505 cf
cprc= 23,760 cf
flood control= 17,250 cf

REQ. DETENTION VOL. DETERMINATION (CPRC IS THE SITE MINI

CPVC 12,505 cf
CPRC 23,760 cf SITE MINIMUM

req storage vol.= $\boxed{23,760}$ cf if using bioretention

FOREBAY DESIGN

Required Volume 12505 ft3

ENTER ELEV. AND AREA

ELEV.	AREA	VOLUME	CUM. VOL.	DEPTH	
691.10	3,705.00	0.00	0.00		
692.00	5,914.00	4,285.70	4,285.70	0.90	21,911,370.00
693.00	10,504.00	8,091.79	12,377.49	1.00	62,120,656.00
693.60	15,319.00	7,693.91	20,071.40	0.60	160,910,776.00
	3,475.00	-6,026,006.21	-6,005,934.81	-693.60	53,233,525.00
		0.00	-6,005,934.81	0.00	
		0.00	-6,005,934.81	0.00	

Zff = LOWER EL + (UPPER EL - LOWER EL)*
[(REQ. VOL.-CUM. VOL. LWER EL./)/(CUM. VOL. UPPER EL-CUM. VOL. LOW EL)]

693.00	693.60	12,377.49	20,071.40

Zff = 692.03 ft Weir wall is 1' higher than Zff

Forebay Outlet Design

Riser Outlet Pipe & Orifice Sizing

Qavg ff = 24-hour average allowable outflow rate (cfs) of forebay – restrictor
= Vt ff / 86400 = 0.145 cfs

Havg = 0.667*(Zff-Zout) = "Zout = upstream crown elevation of riser outlet pipe"
Dout = assume 4" pipe = 4.00 0.333
Zout = 691.43 ft
Havg = 0.400
Aout = Qavgff/(0.62*sqrt 2*g*h) = 0.046 s/f 5.075431016
Dout = [sqrt(Aout/3.141)]*2*12= 2.904 inches 0.121005043
-**USE**- 4 " PIPE WITH 2.500 " Restrictor Hole Size of restr

Dout = 4.00 end area = 0.0873 sq./ft. 0.087
Do = 2.500 end area = 0.03409 sq./ft. 0.0341

ACTUAL AVERAGE RELEASE RATE THROUGH THE ORIFICE
Qavgff = 0.62*Ao*sqrt2*g*Havg = 0.107 cfs 5.075
Qavgff of 0.107 is less than 0.145 (ok, or not ok) try to be close

ACTUAL HOLDING TIME
Tff = Vff/(Qavgff*3600) = 32.460 hours
is 32.460 hrs approximates 24.000 hrs

RISER PIPE OUTLET SLOPE 4.00 " outlet pipe size
SLOPE = [(Qavg,ff*n)/(1.486*Aout*R2/3 power)]squared 0.27 % if less than 12" use 1.0% 0.002682461
0.268246066

-**USE**- 4 " PIPE @ 1.00 percent W/ 2.500 " restrictor hole

CHECK VELOCITY AT FULL PIPE FLOW
Vmax = Qavgff/Aout = 1.23 fps, if less than 8 fps, OK

DETENTION BASIN DESIGN

Bankfull Flood Storage & Total Storage Volume Requirements

Vt bf = = 5160 * A * C = **17776.2** ft3
Qavg bf = 40-hour average allowable outflow rate (cfs) of bank full storage – restrictor
= Vt bf / 144000 = 0.12 cfs

REQ. DETENTION VOL. DETERMINATION

Is the site utilizing Bioretention Y/N 2

Required detention volume= 29,755

ENTER ELEV. AND AREA

ELEV.	AREA	VOLUME	CUM. VOL.	DEPTH	
690.60	7,711.00	0.00	0.00		
691.60	9,852.00	8,750.91	8,750.91	1.00	75,968,772.00
692.60	12,220.00	11,003.75	19,754.66	1.00	120,391,440.00
693.60	14,812.00	13,481.75	33,236.41	1.00	181,002,640.00
		-3,421,109.87	-3,387,873.46	-693.60	0.00
		0.00	-3,387,873.46	0.00	0.00
		0.00	-3,387,873.46	0.00	0.00

Zbf = LOWER EL + (UPPER EL - LOWER EL)*
[(REQ. VOL.-CUM. VOL. LWER EL./)/(CUM. VOL. UPPER EL-CUM. VOL. LOW EL)]

691.60	692.60	8,750.91	19,754.66

Zbf = 692.42 ft Weir wall is 1' hi

Zvt10 = LOWER EL + (UPPER EL - LOWER EL)*
[(REQ. VOL.-CUM. VOL. LWER EL./)/(CUM. VOL. UPPER EL-CUM. VOL. LOW EL)]

692.60	693.60	19,754.66	33,236.41

Zvt10 = 693.34 ft Weir wall is 1' hi

Detention Outlet Design

Bank Full Flood Flow Restrictor Sizing

Qavgbf = Vtbf / (40 * 3600) = 0.1234 cfs
Havgus = 0.66666667 * (Zbf-Zout) = 1.213 ft.
Ao = Qbf / (0.62 * √(2 * g * Hbf)) = 0.0225 ft.2 Total Sq.Ft. Orifice area t
Do = Diameter of holes = 1 inch
Area, Ao, of one hole for 1 inch diameter hole = 0.00545 ft.2
Number of Holes required N = A / area per hole (round up) = 5
Aact = Number of holes * Ao = 0.027257
Use 5 Holes at 1 inch at elevatic 690.60
Bankfull Actual Discharge Calculations
Qavgbf = 0.62 * Ao * √(2 * g * Hbf) = 0.1494 cfs
Tbf = Vbf / Qavgbf / 3600 = 33.0548 hours

Riser Outlet Pipe and Flood Control Flow Restrictor sizing

Establish outlet pipe diameter
Qmax = Qa = (from storage volume calculations) = 0.107 cfs
Doutinitial = 4 inch = 0.333333333 feet
Zout = Forebay Downstream Pipe Elevation + Det. Pond Outlet Pipe Dia = upstream crown of riser pi
Zout = 690.93
Hmax = (Z10-Zout) = 1.487 ft
Aoutrequired = Qmax/((0.62*(2*32.2*Hmax)^0.5)) = 0.0176 s/f
Doutrequired = ((Aout/3.1416)^0.5)*2 0.149856549 ft 1.798278591 inch
Doutrequired = required min. diameter to handle Qa
Dout = 4 inch pipe change B152 by user based on F157 and general unde
Aout = area of Dout in s.f. = 0.087
Next, orifice hole drilled in cap at bottom of tee, tee placed on pond outlet, cap
Do = 1.75 inch hole
Ao = 0.017 s/f
ACTUAL RELEASE RATE THROUGH ORIFICE RESTRICTOR AND OUTLET PIPE
Qmaxact = 0.62*Ao*((2*g*Hmax)^0.5) = 0.10133184 cfs
is Qmax of 0.101 fs approx's initi 0.107 cfs, must be within 10% of Qn

Riser Outlet Pipe Slope

between riser outlet and overflow manhole
R=dout/4= 0.083333333
SLOPE = [(Qmax*n)/(1.486*Aout*R^2/3)]^2 = 0.00026
SLOPE = 0.03 %
**USE 4.0 " PIPE WITH 1.00 " DIA. HOLE @ 1.00
V = Qmax/Aout = 0.38
is Qmax of 0.38 cfs is less than 8.000 cfs, if yes, OK

Overflow Structure Outlet Pipe Size & Slope

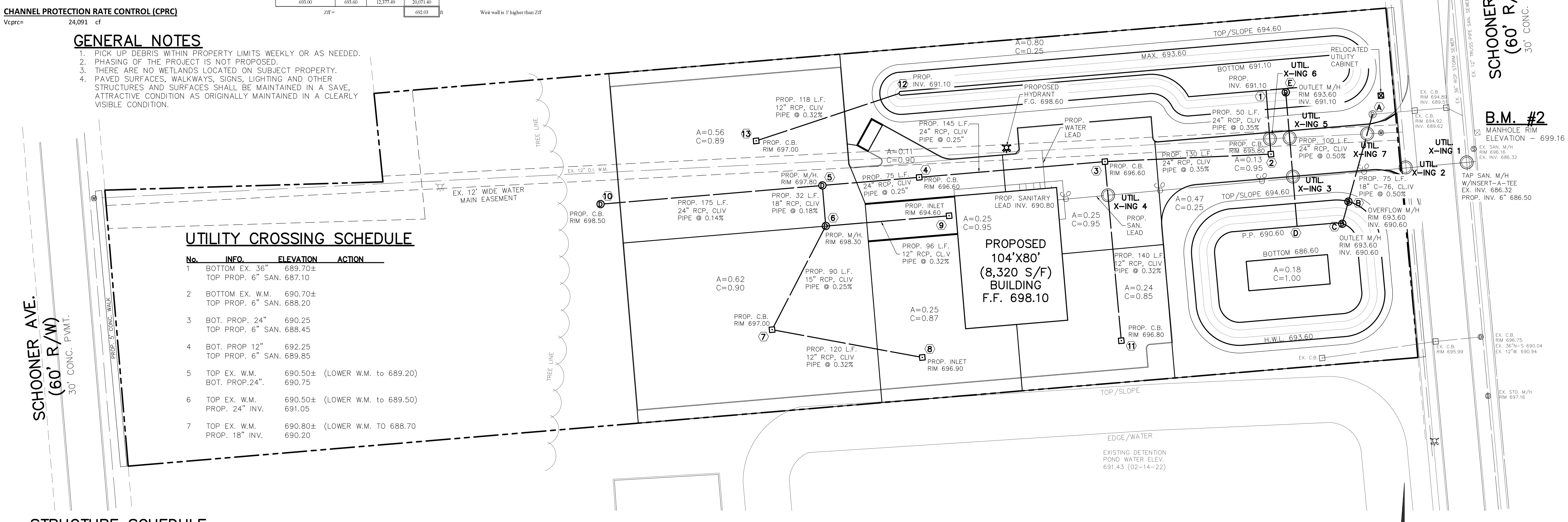
Peak flow from storm sewer design chart 8.89
Pipe size = 24 inch
A= 3.1416 S.F.
R=d/4= 0.5
SLOPE = [(Q*n)/((1.486*A*R^2/3)]^2 = 0.13158 %
**USE 24.0 " PIPE @ 0.13 percent
V=Q/A= 2.83

UTILITY PLAN NOTES

1. PROPOSED HYDRANT TO BE MINIMUM OF 5' OFF BACK OF CURB

GENERAL NOTES

1. PICK UP DEBRIS WITHIN PROPERTY LIMITS WEEKLY OR AS NEEDED.
2. PHASING OF THE PROJECT IS NOT PROPOSED.
3. THERE ARE NO WETLANDS LOCATED ON SUBJECT PROPERTY.
4. PAVED SURFACES, WALKWAYS, SIGNS, LIGHTING AND OTHER STRUCTURES AND SURFACES SHALL BE MAINTAINED IN A SAVE, ATTRACTIVE CONDITION AS ORIGINALLY MAINTAINED IN A CLEARLY VISIBLE CONDITION.



UTILITY CROSSING SCHEDULE

No.	INFO.	ELEVATION	ACTION
1	BOTTOM EX. 36"	689.70±	
	TOP PROP. 6" SAN.	687.10	
2	BOTTOM EX. W.M.	690.70±	
	TOP PROP. 6" SAN.	688.20	
3	BOT. PROP. 24"	690.25	
	TOP PROP. 6" SAN.	688.45	
4	BOT. PROP 12"	692.25	
	TOP PROP. 6" SAN.	689.85	
5	TOP EX. W.M.	690.50±	(LOWER W.M. to 689.20)
	BOT. PROP.24".	690.75	
6	TOP EX. W.M.	690.50±	(LOWER W.M. to 689.50)
	PROP. 24" INV.	691.05	
7	TOP EX. W.M.	690.80±	(LOWER W.M. TO 688.70
	PROP. 18" INV.	690.20	

STRUCTURE SCHEDULE

No.	INFO.
1	INV. 24" 691.10
2	4' DIA. C.B. RIM 695.80 INV. 24"N. 691.15 INV. 24"W. 691.29
3	4' DIA. C.B. RIM 696.60 INV. 24"E–W. 691.68 INV. 12"N. 692.15
4	4' DIA. C.B. RIM 696.60 INV. 24"E–W 692.05
5	4' DIA. MANHOLE RIM 697.80 INV. 24"E. 692.23 INV. 24"W. 692.36 INV. 18"S. 692.23
6.	4' DIA. MANHOLE RIM 698.30 INV. 18"N. 692.29 INV. 15"SW. 692.29 INV. 12"E. 692.29
7	4' DIA. C.B. RIM 697.00 INV. 15"NE. 692.52 INV. 12"SE. 692.52
8	2' DIA. INLET RIM 696.90 INV. 12"NW. 692.90
9	2' DIA INLET RIM 694.60 INV. 12"W. 692.60
10	4' DIA C.B. RIM 698.50 INV. 12"E. 692.60
11	2' DIA INLET RIM 696.80 INV. 12"W. 692.80
12	INV. 12"SW. 691.10
13	2' DIA. INLET RIM 697.00 INV. 12"NE. 691.48

STORM SEWER DESIGN CHART

Project Name: SCHOONER — Date: #######
Project No.: 2022-01 — Prepared by: KBH
Roughness Coefficient 0.012 — Rainfall Intensity
Run-off Coefficient Varies — I = 151.8/(t+19.9)

From	To	Area, Ac.	Coeff. R	A x R	Total AxR	Time, Min.	Intensity I, in/hr	Runoff Q=CIA	Pipe Dia. In.	% Slope	Length ft	Velocity fps	Time of Flow, min	Capacity cfs	---	Invert Upstream	Invert Downstream	Ground Upstream	Ground Downstream	rise	RIM-T/PIPE
13	12	0.56	0.89	0.50	0.498	15.00	4.35	2.17	12	0.32	118	2.78	0.71	2.18		691.48	691.10	697.00	N/A	0.38	4.38
11	3	0.24	0.95	0.23	0.228	15.00	4.35	0.99	12	0.32	140	2.78	0.84	2.18		692.60	692.15	696.80	696.60	0.45	3.06
10	5	2.18	0.75	1.64	1.635	15.00	4.35	7.11	24	0.14	175	2.92	1.00	9.17		692.60	692.36	698.50	697.80	0.25	3.63
9	6	0.25	0.95	0.24	0.238	15.00	4.35	1.03	12	0.32	96	2.78	0.58	2.18		692.60	692.29	694.60	698.30	0.31	0.87
8	7	0.25	0.87	0.22	0.218	15.00	4.35	0.95	12	0.32	120	2.78	0.72	2.18		692.90	692.52	696.90	697.00	0.38	2.87
7	6	0.62	0.90	0.56	0.776	15.72	4.26	3.30	15	0.25	90	2.85	0.53	3.50		692.52	692.29	697.00	698.30	0.23	3.07
6	5	0.00	0.00	0.00	1.013	16.25	4.20	4.25	18	0.18	32	2.73	0.20	4.83		692.29	692.23	698.30	697.80	0.06	4.31
5	4	0.00	0.00	0.00	2.648	16.44	4.18	11.06	24	0.25	75	3.90	0.32	12.25		692.23	692.05	697.80	696.60	0.19	3.30
4	3	0.11	0.90	0.10	2.747	16.76	4.14	11.37	24	0.25	145	3.90	0.62	12.25		692.05	691.68	696.60	696.60	0.36	2.28
3	2	0.25	0.95	0.24	3.213	17.38	4.07	13.08	24	0.30	130	4.27	0.51	13.42		691.68	691.29	696.60	695.80	0.39	2.65
2	1	0.13	0.95	0.12	3.336	17.89	4.02	13.40	24	0.30	50	4.27	0.20	13.42		691.15	691.00	695.80	N/A	0.15	2.38

SANITARY SEWER BASIS OF DESIGN

AVERAGE PER CAPITA FLOW = 100 gpd
PER 1000 sf OF BUILDING AREA = (8320/1000)*100 = 832 gpd

832 gpd/1440gpd~gpm = 0.578 gpm

0.578 gpm * 0.13368/60 = 0.0013 cfs

PEAKING FACTOR = 0.0013*4 = 0.0052 cfs

PROVIDED 6" LEAD @ 1.00% = CAPACITY 0.56 CFS

GRAPHIC SCALE
40 0 20 40 80 160
(IN FEET)
1 inch = 40 ft.

PROPERTY OWNER

SDUKHDEV SINGH
8385 OPAL DRIVE
WESTALND, MI 48185

LEGEND

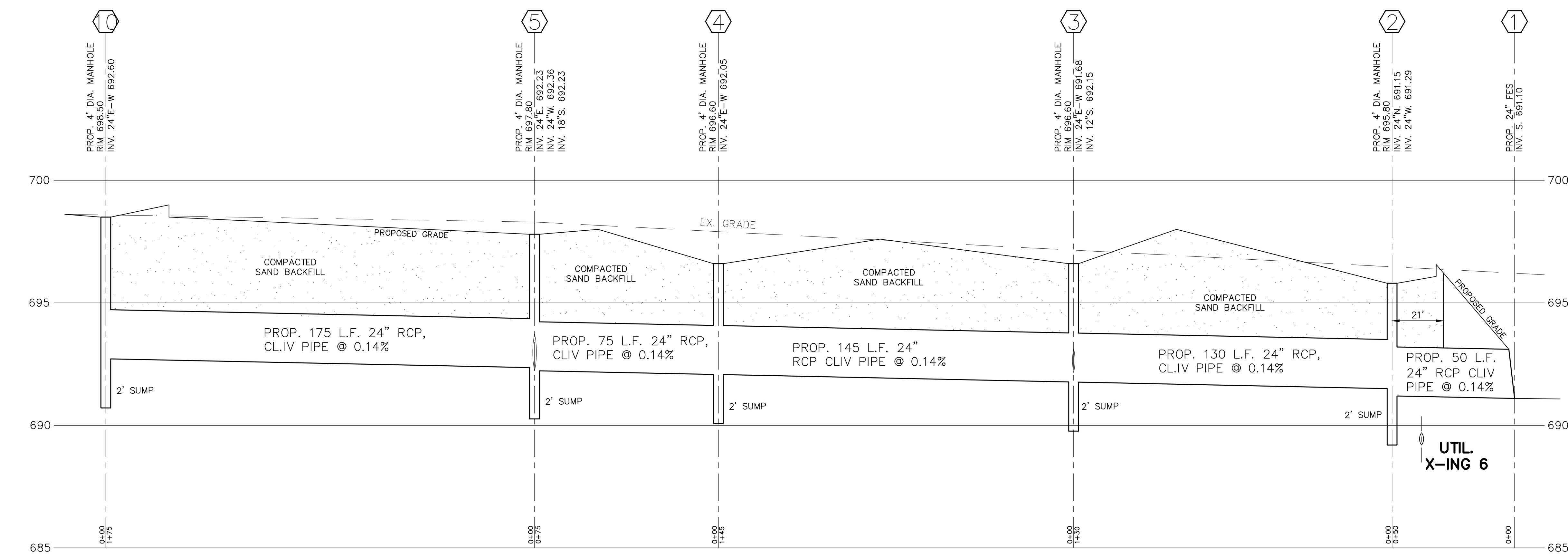
- EX. CATCH BASIN
- EX. SANITARY MANHOLE
- EX. STORM MANHOLE
- EX. HYDRANT
- EX. UTILITY POLE
- EX. VALVE WELL
- EX. FENCE
- EX. STREET SIGN
- EX. LIGHT POLE

HARDY CIVIL DESIGN SERVICES LLC
4996 MOORE ST. WAYNE, MI 48184
(734) 756-2196
E-mail: kbhardy1964@hotmail.com

STORM SEWER DESIGN

SEMI-TRUCK REPAIR FACILITY
6100 SCHOONER ROAD
VAN BUREN TWSP, MI

SHEET No.	JOB No.	DRAWING No.	DATE	REVISIONS
4 OF ..	2022-01	A-	01-10-22	05-06-22 06-02-22 06-21-22 08-03-22
		DRAWN BY:	CHECKED BY:	

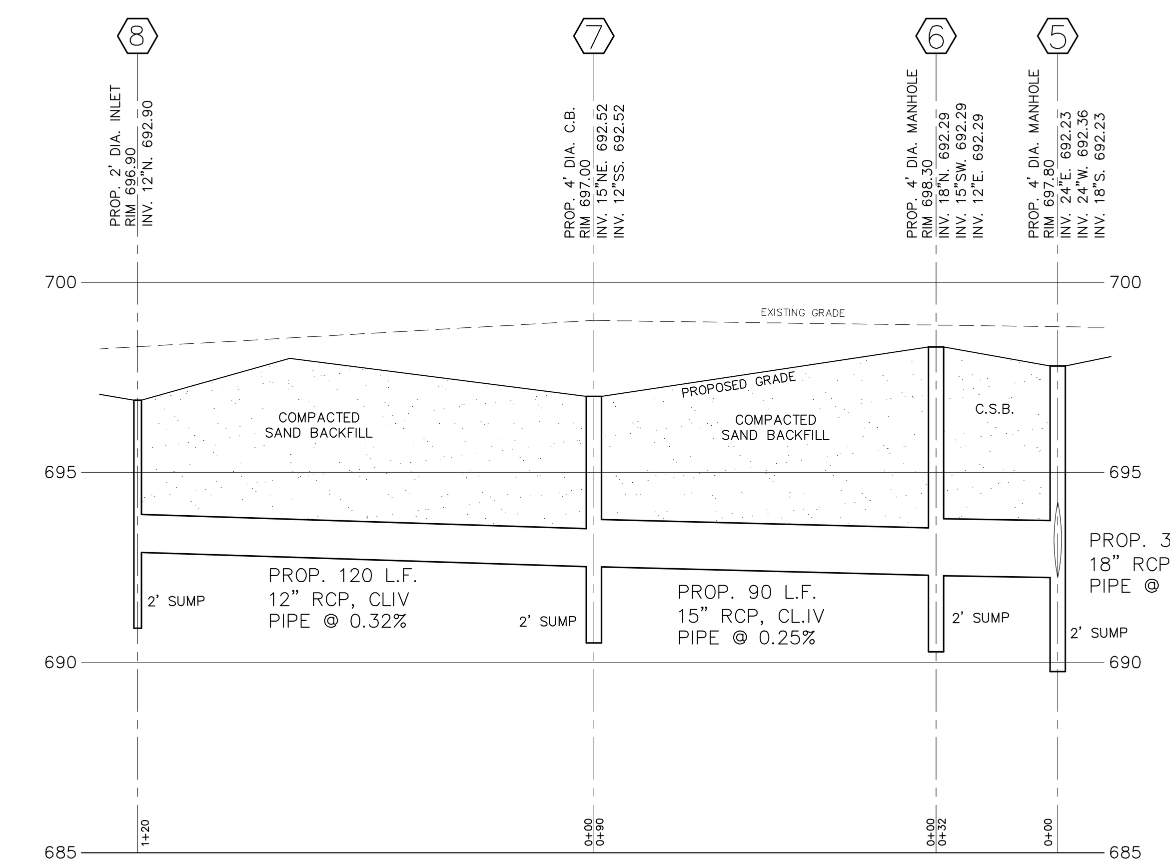


STORM SEWER PROFILES

SCALE: 1"=40' HORIZONTAL
1"= 4' VERTICAL

UTILITY CROSSING SCHEDULE

No.	INFO.	ELEVATION	ACTION
1	BOTTOM EX. 36" TOP PROP. 6" SAN.	689.70± 687.10	
2	BOTTOM EX. W.M. TOP PROP. 6" SAN.	690.70± 688.20	
3	BOT. PROP. 24" TOP PROP. 6" SAN.	690.25 688.45	
4	BOT. PROP 12" TOP PROP. 6" SAN.	692.25 689.85	
5	TOP EX. W.M. BOT. PROP. 24".	690.50± 690.75	(LOWER W.M. to 689.20)
6	TOP EX. W.M. BOT. PROP. 24"	690.50± 691.05	(LOWER W.M. to 689.50)
7	TOP EX. W.M. BOT. PROP. 18"	690.80± 690.20	(LOWER W.M. TO 688.70



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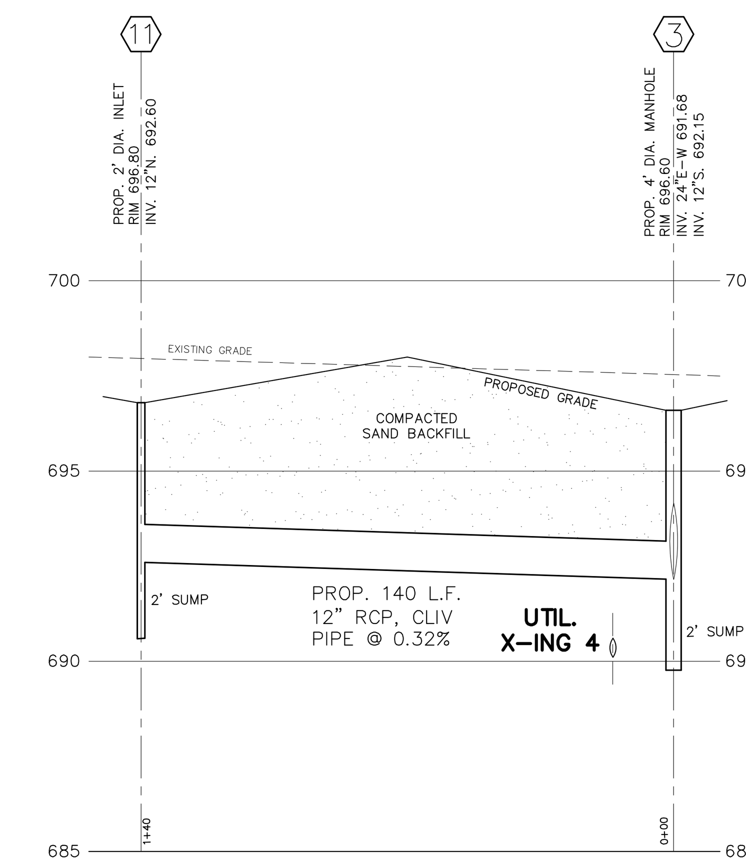

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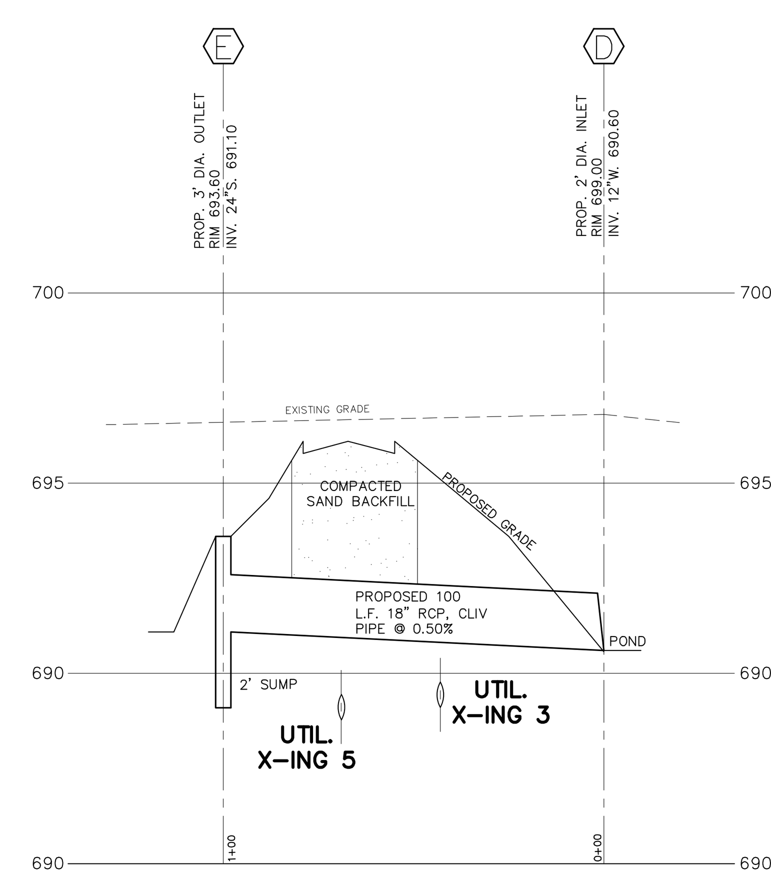

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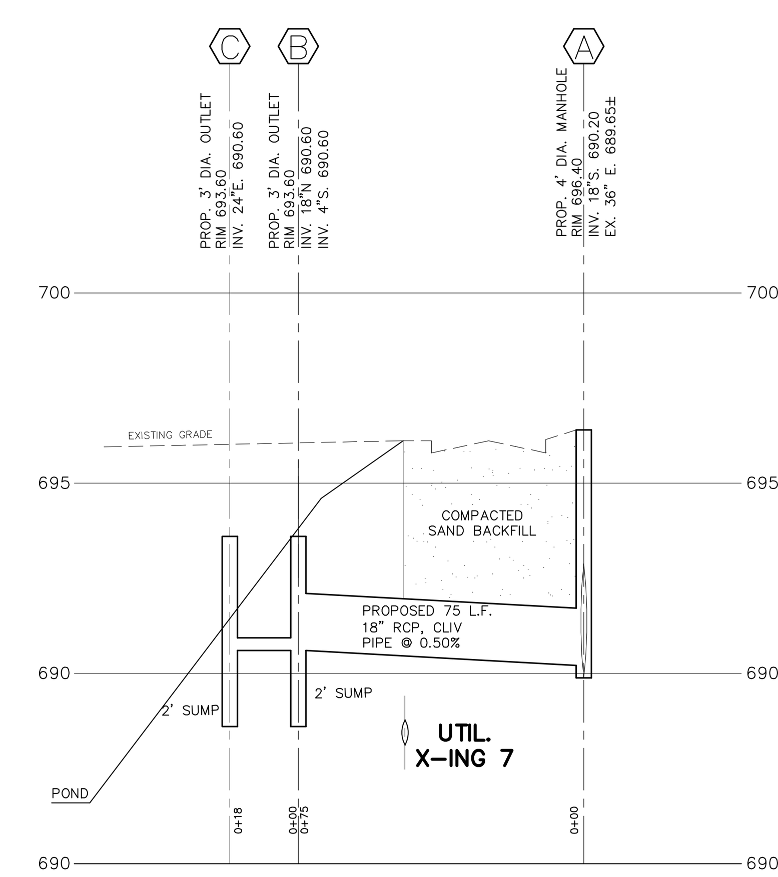
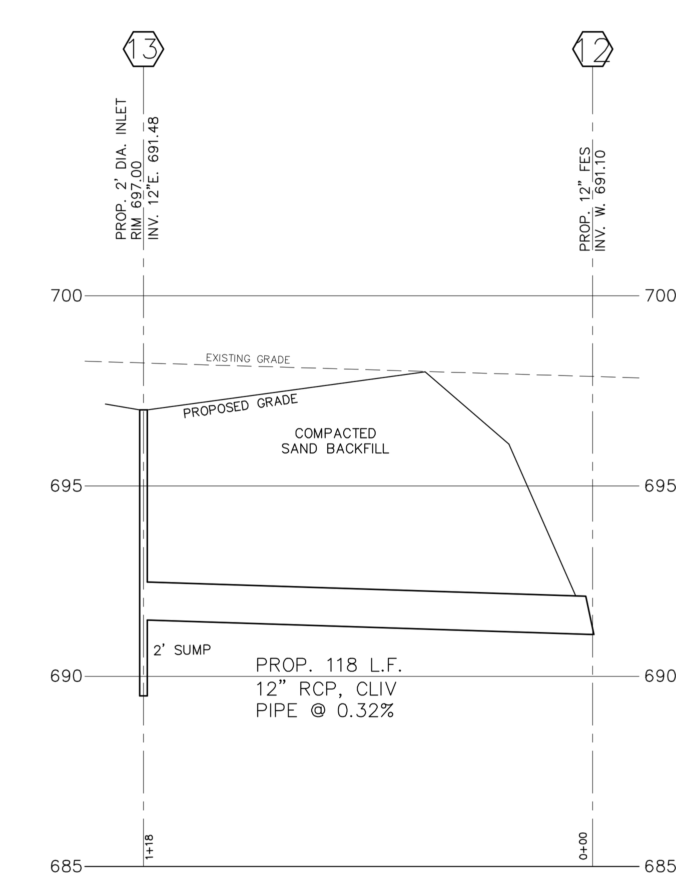


STORM SEWER PROFILES

SCALE: 1"=40' HORIZONTAL
1"= 4' VERTICAL



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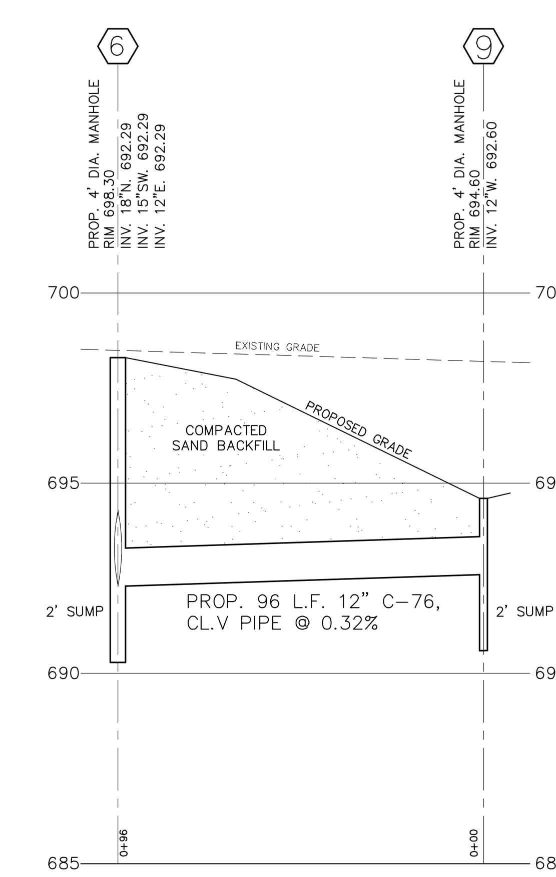
SCALE: 1"=40' HORIZONTAL
1"= 4' VERTICAL



STORM SEWER PROFILES

SCALE: 1"=40' HORIZONTAL
1"= 4' VERTICAL

HARDY CIVIL DESIGN SERVICES LLC
4996 MOORE ST. WAYNE, MI 48184
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E-mail: kbhardy1964@hotmail.com

STORM SEWER PROFILES

SEMI-TRUCK REPAIR FACILITY
6100 SCHOONER ROAD
VAN BUREN TWSP, MI

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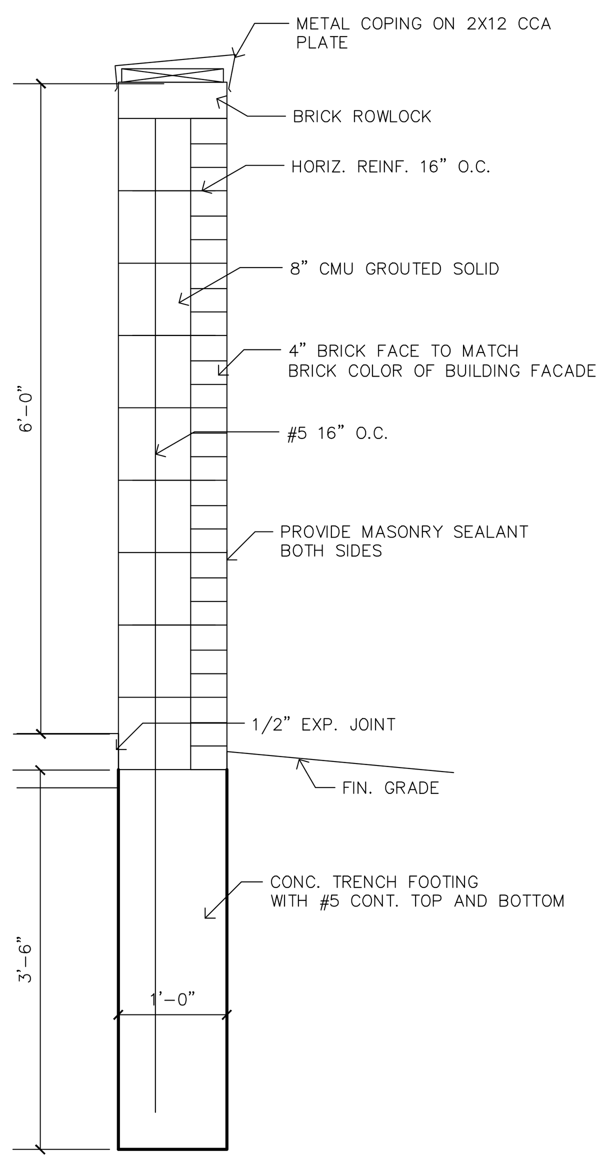
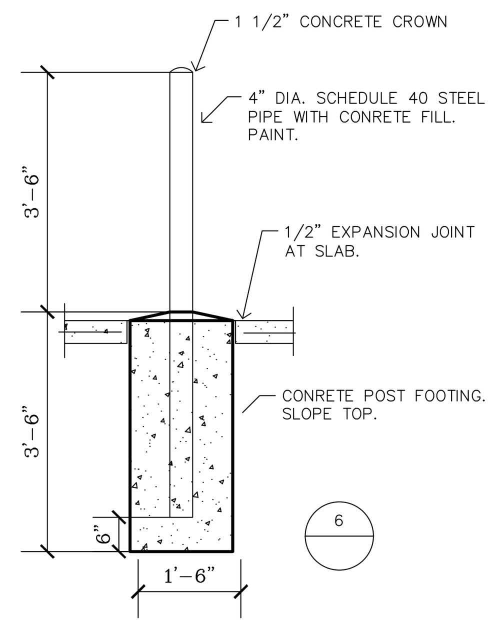
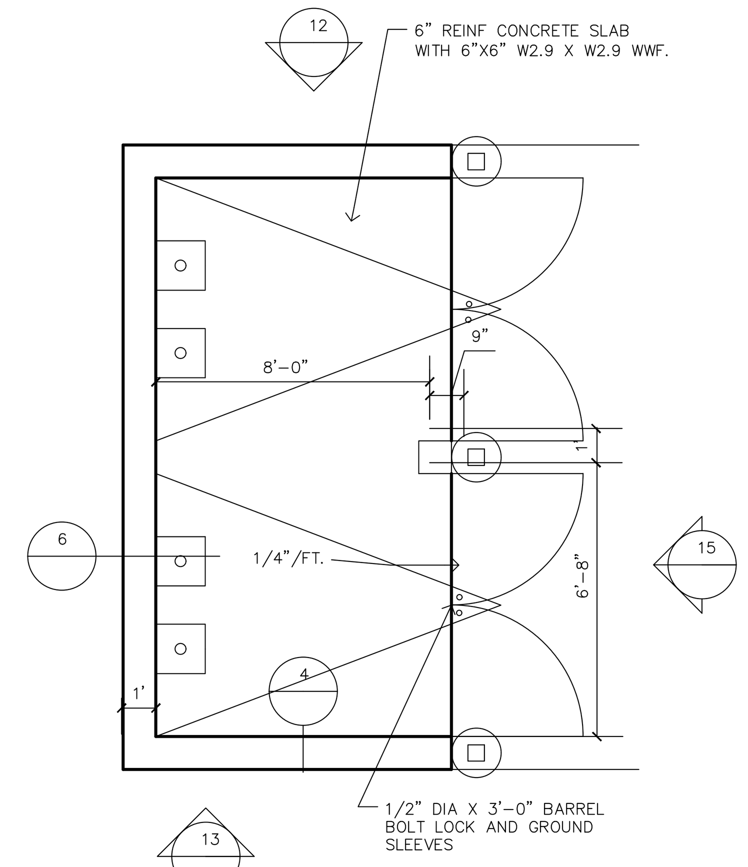


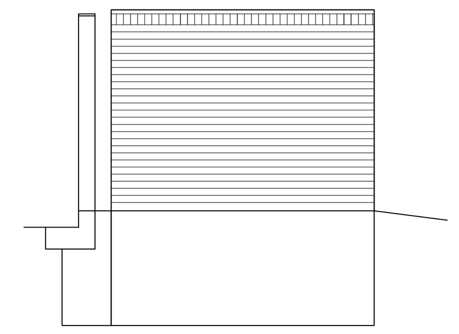
4 SCREEN SECTION



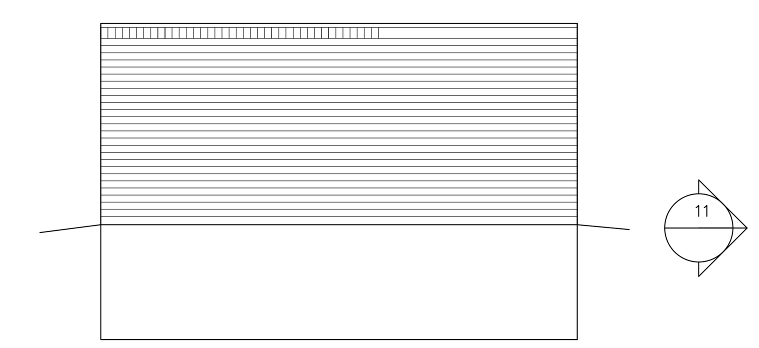
BUMPER POST 6



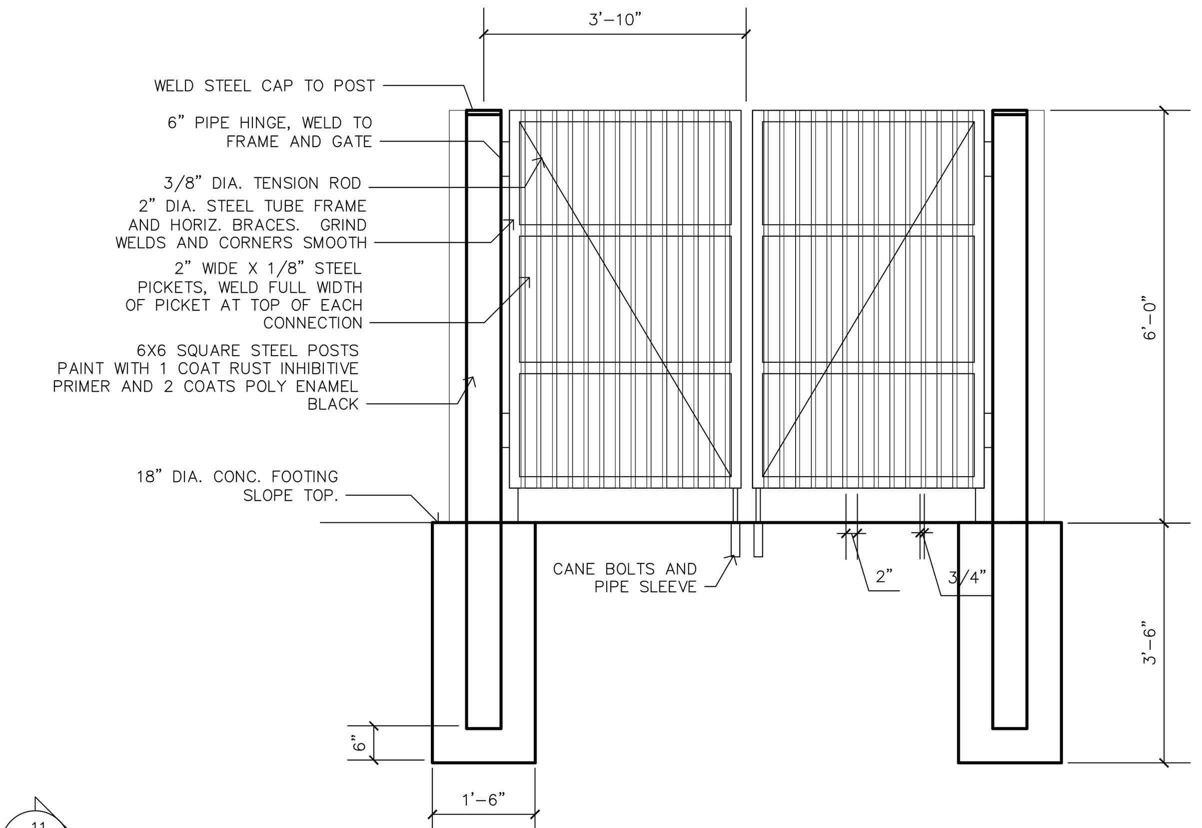
10 SCREEN PLAN



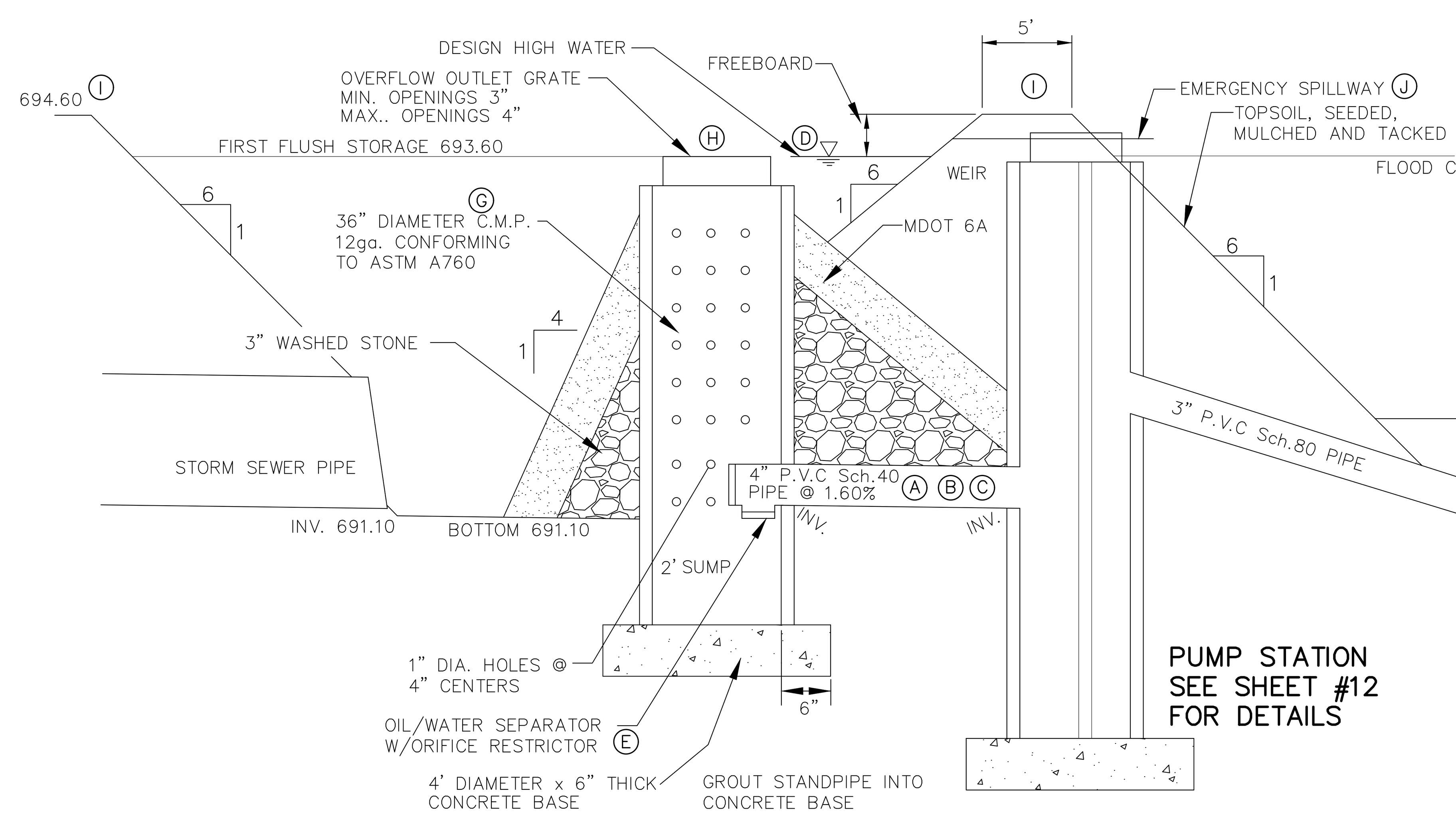
12 SCREEN ELEVATION



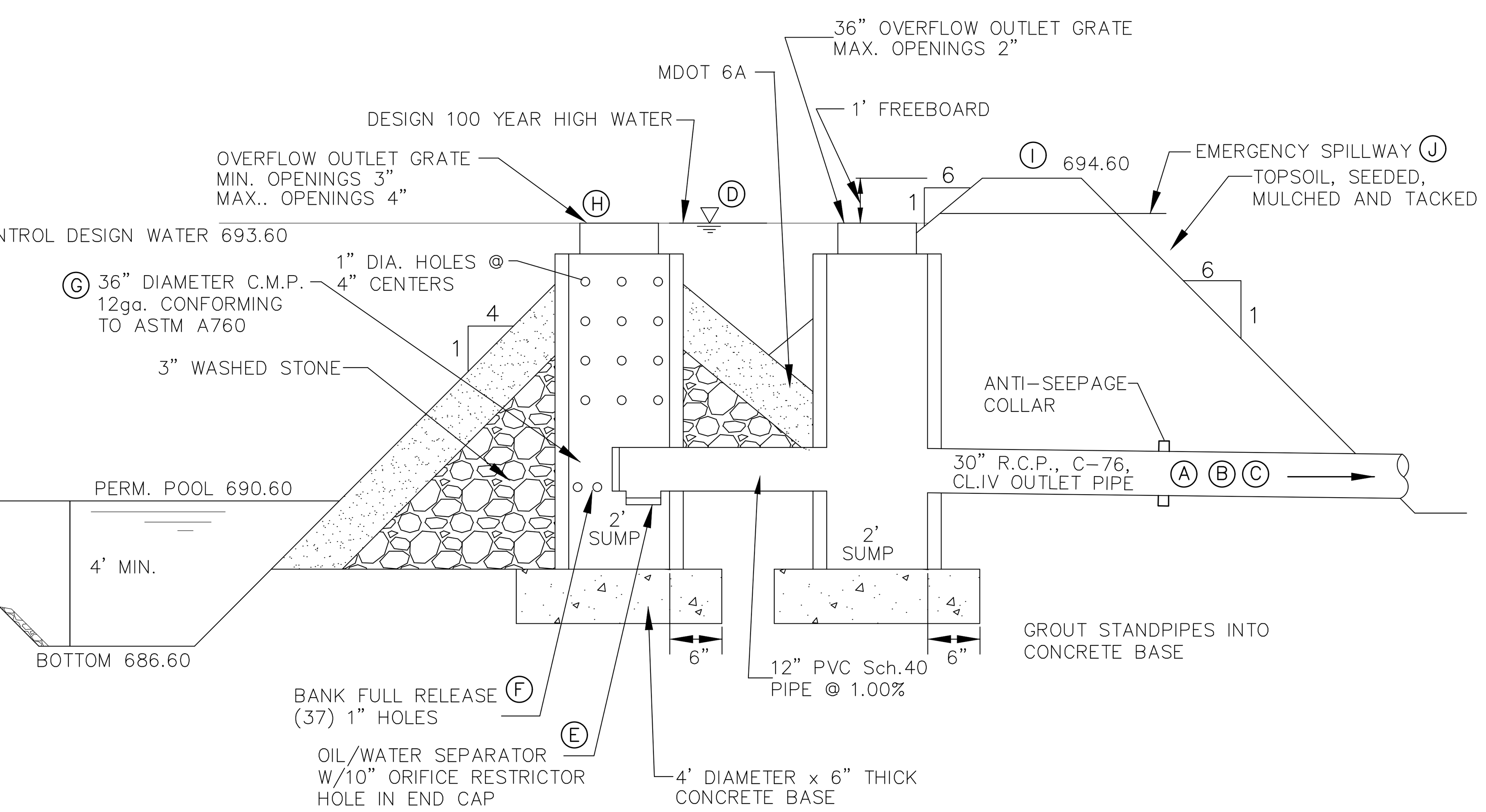
11 SCREEN ELEVATION



14 SCREEN ELEVATION



FOREBAY OUTLET STRUCTURE



DETENTION OUTLET STRUCTURE

FORBAY OUTLET SCHEDULE

OUTLET PIPE LENGTH Ⓐ	OUTLET PIPE SLOPE Ⓑ	OUTLET PIPE SIZE @ INV. Ⓒ	10-YEAR STORAGE Ⓓ	FIRST FLUSH DISCHARGE ORIFICE SIZE Ⓔ		STANDPIPE DIAMETER Ⓖ	TOP OF STANDPIPE ELEVATION Ⓗ	FOREBAY CREST ELEVATION Ⓘ	EMERGENCY SPILLWAY ELEVATION Ⓙ
100'	0.50%	24"@691.10	693.60	(1) 2-3/16" IN CAP		36"	693.60	694.60	694.60

DETENTION OUTLET SCHEDULE

OUTLET PIPE LENGTH Ⓐ	OUTLET PIPE SLOPE Ⓑ	OUTLET PIPE SIZE Ⓒ	100 YEAR STORAGE Ⓓ	100 YEAR STORM RELEASE INV./ORIFICE SIZE Ⓔ		STANDPIPE DIAMETER Ⓖ	TOP OF STANDPIPE ELEVATION Ⓗ	POND CREST ELEVATION Ⓘ	EMERGENCY SPILLWAY ELEVATION Ⓙ
100'	0.50%	36"	693.60	(1) 10" HOLE @ 690.60		36"	693.60	694.60	693..60

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DETAILS

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6100 SCHOONER ROAD
VAN BUREN TWSP, MI

SHEET No.	JOB No.	DRAWING No.	DATE	REVISIONS
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		DRAWN BY:	CHECKED BY:	

HAE Haengel & Associates Engineering, Inc.
Geotechnical, Environmental, QA/QC

LOG OF GEOTECHNICAL SOIL BORING B1

Project: Truck Repair Facility - Proposed Detention Pond & Forebay — Project No.: H-22-2236-G
Location: Schooner Avenue, Van Buren Township, MI — Prepared/Checked by: AAK / GH

SUBSURFACE PROFILE				SOIL SAMPLE DATA							
ELEV. (FT)	STRATA PROFILE	MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SAMPLE DEPTH (FT)	SAMPLE TYPE-NO.	BLOWS PER 6-IN.	N-SPT BLOWS PER FT	MOIST. CONT. (%)	DRY UNIT WT (PCF)	UNCONF. COMP. STR. (TSF)	SPT N-VALUE Blows/Feet
100.0			0								0 10 20 30 40
		TOPSOIL									
99.0			1.0	1.0							
		Fine SAND (SP)				4					
		little silt				6					
		brown, moist, medium dense		2.5	S-1	5	11	20.3			
97.0			3.0								
				3.5							
		Silty CLAY (CL)				3					
		trace sand				4					
		gray, moist, very stiff		5.0	S-2	5	9	15.4	128.0	3.5	
94.5			5.5								
				6.0							
		SILT (ML)				7					
		little clay, trace sand				9					
		gray, moist, medium dense		7.5	S-3	10	19	18.6			
92.0			8.0								
				8.5							
		Silty CLAY (CL)				2					
		trace sand				7					
		gray, moist, very stiff		10.0	S-4	6	13	23.4	113.4	3.5	
88.0			12.0								
				13.5							
		Silty CLAY (CL)				7					
		trace sand				9					
		gray, moist, very stiff		15.0	S-5	17	26	16.4	124.6	3.5	
83.0			17.0								
				18.5							
		Silty CLAY (CL)				7					
		trace sand				8					
80.0		gray, moist, stiff	20.0	20.0	S-6	10	18	16.3	127.5	2.5	

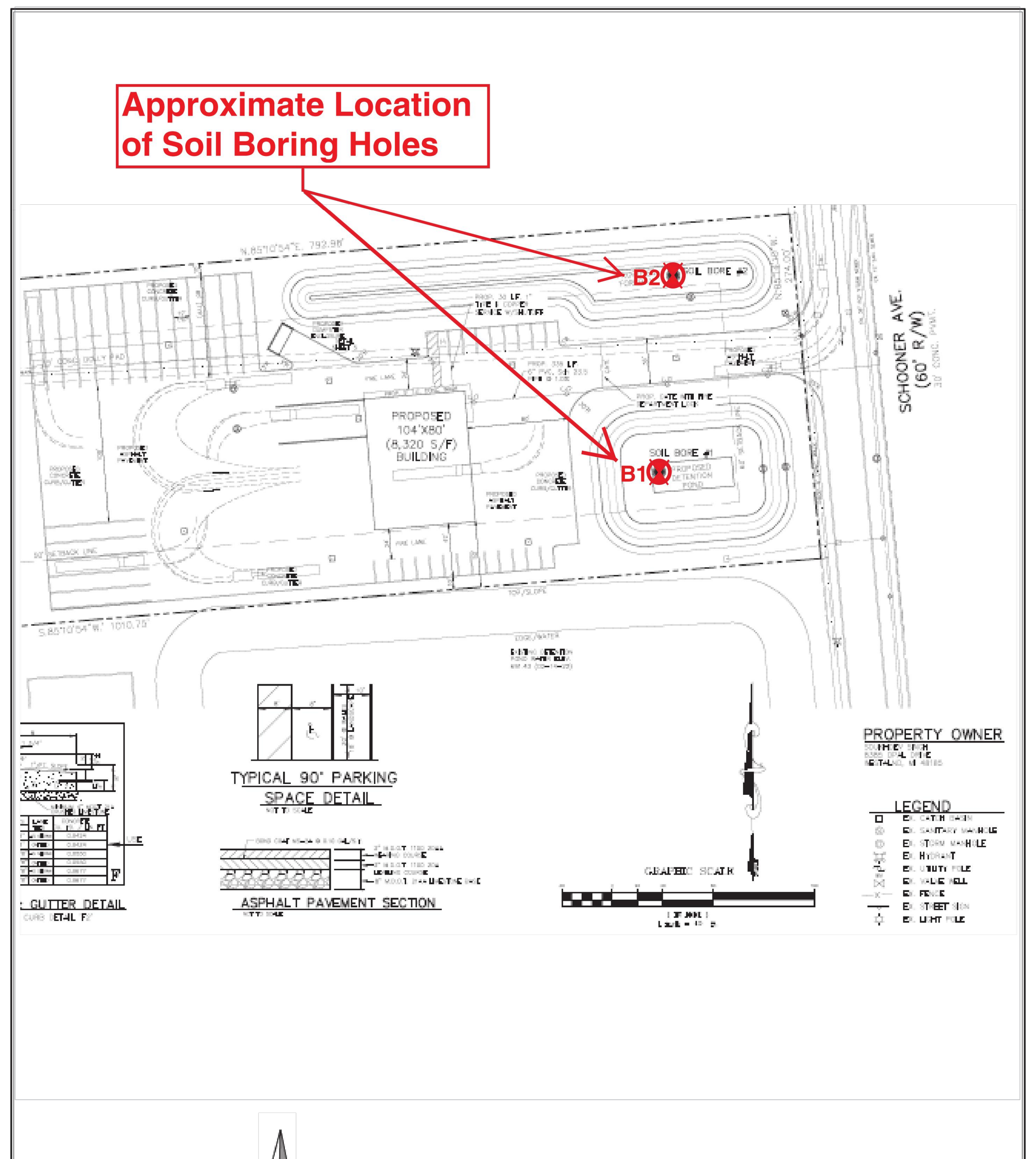
End of Boring

* Indicates results from calibrated penetrometer

DRILLING INFORMATION ***GROUNDWATER LEVEL OBSERVATIONS***

Date Drilled: 6/23/2022 Total Depth: 20 feet — During Drilling: 7 — At Completion: none
Driller: Steve - GeoServ Inspector: Tarun — ... Hours after completion: — Cave-in:
Drilling Method: Track-mounted, solid-stem auger. — Notes:
BH Backfill Procedure: Borings backfilled with soil cuttings.
Refusal:
Relocate:

FIGURE NO. 1



LEGEND:

N

Approx. Soil Boring B1 - B2

6/24/2022 by HAE / GEOSERV DRILLING

N.T.S.

42040 KOPPERNICK ROAD. SUITE 407
CANTON, MICHIGAN 48187
(734) 455-9771/ Fax (734) 455-9774

SOIL BORING LOCATION PLAN

Proposed Schooner Ave. Detention Pond

Project No.: H-22-2236-G PLATE No.: 1A

HAE Haengel & Associates Engineering, Inc.
Geotechnical, Environmental, QA/QC

LOG OF GEOTECHNICAL SOIL BORING B2

Project: Truck Repair Facility - Proposed Detention Pond & Forebay — Project No.: H-22-2236-G
Location: Schooner Avenue, Van Buren Township, MI — Prepared/Checked by: AAK / GH

SUBSURFACE PROFILE				SOIL SAMPLE DATA							
ELEV. (FT)	STRATA PROFILE	MATERIAL DESCRIPTION	LAYER DEPTH (FT)	SAMPLE DEPTH (FT)	SAMPLE TYPE-NO.	BLOWS PER 6-IN.	N-SPT BLOWS PER FT	MOIST. CONT. (%)	DRY UNIT WT (PCF)	UNCONF. COMP. STR. (TSF)	SPT N-VALUE Blows/Feet
100.0			0								0 10 20 30 40
		TOPSOIL									
99.0			1.0	1.0							
		Sandy CLAY (CL)				3					
		little silt, trace gravel				4					
		gray/brown, moist, very stiff		2.5	S-1	5	9	19.2	109.5	4.5	
97.0			3.0								
				3.5							
		Sandy CLAY (CL)				3					
		little silt, trace gravel				5					
		gray/brown, moist, very stiff		5.0	S-2	9	14	17.7	114.5	4.5	
94.5			5.5								
				6.0							
		Silty CLAY (CL)				4					
		trace sand				7					
		gray, moist, very stiff		7.5	S-3	11	18	14.3	115.4	4.5	
92.0			8.0								
				8.5							
		Silty CLAY (CL)				7					
		trace sand				9					
		gray, moist, very stiff		10.0	S-4	14	23	10.5	122.3	4.5	
88.0			12.0								
				13.5							
		Sandy SILT (ML)				7					
		trace sand				7					
		brown, moist, medium dense		15.0	S-5	10	17	2.3			
83.0			17.0								
				18.5							
		Silty CLAY (CL)				8					
		trace sand				15					
80.0		gray, moist, stiff	20.0	20.0	S-6	13	28	8.8	139.1	2.5	

End of Boring

* Indicates results from calibrated penetrometer

DRILLING INFORMATION ***GROUNDWATER LEVEL OBSERVATIONS***

Date Drilled: 6/23/2022 Total Depth: 20 feet — During Drilling: 13 — At Completion: 15
Driller: Steve - GeoServ Inspector: Tarun — ... Hours after completion: — Cave-in:
Drilling Method: Track-mounted, solid-stem auger. — Notes:
BH Backfill Procedure: Borings backfilled with soil cuttings.
Refusal:
Relocate:

FIGURE NO. 2

HARDY CIVIL DESIGN SERVICES LLC
4996 MOORE ST. WAYNE, MI 48184
(734) 756-2196
E-mail: kbhardy1964@hotmail.com

DETAILS

SEMI-TRUCK REPAIR FACILITY
6100 SCHOONER ROAD
VAN BUREN TWSP, MI

SHEET No.	JOB No.	DRAWING No.	DATE	REVISIONS
7 OF ..	2022-01	A-	01-10-22	05-06-22 06-02-22 06-21-22 08-03-22
		DRAWN BY:	CHECKED BY:	

LANDSCAPE PLANTING NOTES:

PLANTING

1. Installation of all plant material shall be in accordance with the latest edition of the *American Association of Nurserymen Standards for Nursery Stock* and with the specifications set forth by Van Buren Township, Michigan.
2. The plant materials shall conform to the type stated on the plant list. Sizes shall be the minimum stated on the plant list or larger. All measurements shall be in accordance with the latest edition of the *American Association of Nurserymen Standards for Nursery Stock.*
3. The plant material shall be nursery grown and inspected by the Owner's representative before planting. The Owner's representative reserves the right to reject any plant material at any time.
4. Plants designated "B&B" shall be balled and burlapped with firm balls of earth.
5. Dig shrub pits one foot (1') larger than the shrub rootball, tree pits three (3) times the width of the tree rootball and backfill with one (1) part topsoil and one (1) part soil from excavated pit. Plant trees and shrubs at the same grade level at which they were planted at the nursery. If wet, clay soils are evident, plant trees and shrubs slightly higher.
6. The Contractor is responsible for planting the materials at the correct grades and spacing. The plants shall be oriented to give the best appearance.
7. When the plant has been properly set, the pit shall be backfilled with the topsoil mixture, gradually filling, patting, and settling with water.
8. Trees in lawn areas to have a four foot (4') circle of mulch, four inches (4') deep, and three inches (3") away from the trunk. Shrub beds are to be mulched with shredded bark mulch to a minimum depth of three inches (3"). Perennial beds are to be mulched with shredded bark mulch to a minimum depth of two inches (2"). Only natural color, finely shredded hardwood bark mulch will be accepted.
9. Remove all twine, wire, and burlap from the top one third (1/3) of tree and shrub root balls and from tree trunks. Remove all non-biodegradable material such as plastic or nylon completely from branches and stems. All tree wrap, stakes, and guys are to be removed after one (1) winter season.
10. All plant materials shall be pruned and injuries repaired. The amount of pruning shall be limited to the removal of dead or injured limbs and to compensate for the loss of roots from transplanting. Cuts should be flush, leaving no stubs. Cuts over three quarters of an inch (3/4") shall be painted with tree paint. Shrubs along the site perimeter shall be allowed to grow together in a natural form.
11. Organic, friable topsoil shall be evenly distributed and fine graded over all areas to receive lawns at uniform depth of four inches (4") after settlement.
12. All lawn areas shall be sodded with a Grade A Kentucky Blue Grass blend over the topsoil.
13. All plantings shall be completed within three (3) months, and no later than November 30, from the date of issuance of a certificate of occupancy if such certificate is issued during the April1 thru September 30 period; if the certificate is issued during the October 1 thru March 31 period, the planting shall be completed no later than the ensuing May 31. If the Owner is to pursue a Certificate of Occupancy prior to landscaping requirements being fulfilled, a performance guarantee must be provided.
14. Backfill directly behind all curbs and along sidewalks and compact to the top of curbs or walk to support vehicle and pedestrian weight without settling.
15. Conversion of all asphalt and gravel areas to landscape planting beds shall be done in the following manner: a. Remove all asphalt, gravel, and compacted earth to a depth of six inches to eighteen inches (6"-18") depending on the depth of the sub base and dispose of off site; b. Call the Township for an inspection prior to backfilling; c. Replace excavated material with good, medium-textured planting soil (loam or light yellow clay loam) to a minimum of two inches (2") above the top of the curb and sidewalk, add four inches to six inches (4"-6") of topsoil and crown to a minimum of six inches (6") above the adjacent curb and walk after earth settling, unless otherwise noted on the landscape plan.
    If conversion from asphalt to landscape occurs in or between an existing landscape area(s), replace excavated material from four inches to six inches (4"-6") below adjacent existing grade with good, medium-textured planting soil (loam or light yellow clay loam) and add four inches to six inches (4"-6") of topsoil to meet existing grades after earth settling.

MATERIALS

1. Required landscape material shall satisfy the criteria of the American Association of Nurserymen Standards for Nursery Stock and be: a.) Northern nursery grown; b.) State Department of Agriculture inspected; c.) No. 1 grade material with a straight, unscarred trunk, and well-developed uniform crown (park grade trees will not be accepted); d.) Staked, wrapped, watered, and mulched according to the details provided; and e.) Guaranteed for one (1) year.
2. Topsoil shall be friable, fertile soil of clayloam character containing at least five percent (5%) but not more than twenty percent (20%) by weight of organic matter with a pH range between 6.0 and 7.0. The topsoil shall be free from clay lumps, coarse sand, plant roots, sticks, and other foreign materials.
3. The seed mixture for the seeded lawn areas as indicated on the plan shall consist of a Kentucky Blue Grass blend and mulched with clean straw free of noxious weed seeds. Maintenance of the right-of-way lawn area shall consist of a regular cuttings as needed. Weed content of the seed mixture shall not exceed one percent (1%). The mix shall be applied at a rate of 200 pounds per acre.
4. Sod, if specified, shall be two (2) year old "Baron/Sheri/Adelphi" Kentucky Blue Grass blend grown in a sod nursery on loam soil.
5. Proposed perennials shall be full, well-rooted plants.
6. Cobblestone mulch shall consist of two inch to four inch (2" - 4") cobbles six inches (6") deep with geotextile fabric beneath.
7. Callery Pear (*Pyrus calleryana*) and Norway Maple (*Acer platanoides*) shall not be substituted for any tree species in the plant list. Contact the Landscape Architect for acceptable plant substitutions.

GENERAL

1. Do not plant deciduous or evergreen trees directly over utility lines or under overhead wires. Maintain a six foot (6') distance from the centerline of utilities and twenty feet (20') from the centerline of overhead wires for planting holes. Call MISS DIG forty-eight (48) hours prior to landscape construction for field location of utility lines.
2. The Contractor agrees to guarantee all plant material for a period of one (1) year. At that time, the Owner's representative reserves the right for a final inspection. Plant material with twenty-five percent (25%) die back, as determined by the Owner's representative shall be replaced. This guarantee includes the furnishing of new plants, labor, and materials. These new plants shall also be guaranteed for a period of one (1) year.
3. The work shall consist of providing all necessary materials, labor, equipment, tools, and supervision required for the completion as indicated on the drawings.
4. Landscape areas shall be irrigated by an automatic underground irrigation system. Lawns and shrub/landscape areas shall be watered by separate zones to minimize overwatering.
5. All written dimensions override scale dimensions on the plans.
6. All substitutions or deviations from the landscape plan must be approved by Van Buren Township prior to installation.
7. All bidders must inspect the site and report any discrepancies to the Owner's representative.
8. All specifications are subject to change due to existing conditions.
9. The Owner's representative reserves the right to approve all plant material.

MAINTENANCE

1. The Owner of the landscaping shall perpetually maintain such landscaping in good condition so as to present a healthy, neat, and orderly appearance, free from refuse and debris.
2. The Owner shall conduct a seasonal landscape maintenance program including regular lawn cutting (at least once per week during the growing season), pruning at appropriate times, watering, and snow removal during winter.
3. The Contractor is responsible for watering and maintenance of all seed areas until a minimum of ninety percent (90%) coverage, as determined by the Owner's representative.
4. All diseased and/or dead material shall be removed within sixty (60) days following notification and shall be replaced within the next appropriate planting season or within one (1) year, whichever comes first.
5. Any debris such as lawn clippings, fallen leaves, fallen limbs, and litter shall be removed from the site on a weekly basis at the appropriate season.
6. All planting beds shall be maintained by removing weeds, fertilizing, and replenishing mulch as needed.

DETENTION POND LANDSCAPE DEVELOPMENT NOTES:

PLANTING:

1. Follow the Supplier's recommended procedures for bed preparation, installation, and soil erosion control measures of the proposed seeded areas. After the plants germinate and begin to grow follow the maintenance guidelines included on this sheet.
2. Rototill four inches (4") of compost or topsoil into the top six inches (6") of the surface of the basin. (Compost may be obtained from the municipal facility at Six Mile and Ridge Roads. Call Onyx Environmental at 248 305-8377 or 248 349-7230 for hours of operation and general information.)
3. Provide a cover crop of annual rye at a rate of ten pounds (10#) per acre and seed oats at a rate of thirty pounds (30#) per acre over the entire area to be seeded.

MAINTENANCE OF THE DETENTION AREA

1. ESTABLISHMENT: During the first growing season, the native seed areas should be mowed two (2) to four (4) times to a height of four inches to six inches (4"-6") when the plants reach a height of ten inches to twelve inches (10"-12"). Hand pulling may be needed to control unwanted weed populations. If a mower cannot be set high enough, a string trimmer can be used. During the second growing season, the native seed areas should be mowed a few times to a height of about eight inches (8"), when the plants reach a height of ten inches to eighteen inches (10"-18"). Hand pulling may be needed to control unwanted weed populations. By the second growing season it should be apparent if some areas need reseeding. Long term management includes mowing and hand pulling of weeds. The native planting may be mowed to a short height and the clippings removed in the early Spring before birds begin nesting.
2. WATERING: Watering should be performed as needed. During the establishment period after the initial planting, watering is very important and should be conducted every two to three (2-3) days. The initial planting should be checked regularly for appropriate moisture availability. Two (2) methods for determining adequate moisture levels include the following: a.) if the plants wilt during the day when the temperature is at its highest, but revive during the night, then watering is not necessary, and b.) by testing the soil moisture at a depth of four inches (4") by inserting a small rod into the soil. If the rod is wet, then the soil is moist at a depth of four inches (4") and watering is not necessary.
3. EROSION CONTROL: Provide an erosion control blanket on the side slopes of the seeded areas detention area. The erosion control blanket shall be pegged in place.
4. EDGING: The edge of the detention area should be maintained to avoid grass growing into the detention area. The edge can be maintained with a V-notch cut edge. The channel should be maintained at four inches (4") or greater and renewed every six to eight (6-8) weeks.
5. CUTTING BACK: Tall wildflowers should be cut back by one-third. Early flowering plants can be cut back in late June or early July and late flowering plants in late October.
6. THINNING: After the detention area has become established and thriving, it may be necessary to thin perennials by dividing individual plants in Spring or Fall.
7. REPLACEMENT: Any plants that die or become diseased should be replaced. Plant health should be checked regularly with replanted material occurring in the Spring or Fall.
8. REMOVAL OF LITTER AND DEBRIS: Litter, trash, and debris should be removed on a regular basis to insure that inlets remain free flowing and to keep the area in a neat and attractive appearance.
9. INORGANIC APPLICATIONS: In general, detention areas do not need fertilization as nutrients from surrounding areas is usually at an elevated level. If soil fertility appears to be an issue, the soil should be tested and appropriate actions taken based on the results. Insecticides, herbicides, fungicides, and rodenticides should not be used in the detention area. If a plant is diseased or infested with insects, it should simply be removed and replaced.

SEED MIX COMPOSITIONS

WETLAND SEED MIX

MICHIGAN WILDFLOWER FARM

A composition of wildflowers, sedges, and grasses.
Application rate: 3 oz. per 1000 sq. ft. or
7 lbs. per acre

BOTANICAL NAME	COMMON NAME
Wildflowers	
Asclepias incarnata	Swamp Milkweed
Aster novae-anglae	New England Aster
Aster puniceus	Swamp Aster
Aster umbellatus	Flat-Top Aster
Eupatorium maculatum	Joe-Pye Weed
Eupatorium perfoliatum	Boneset
Euthamia graminifolia	Grassleaved Goldenrod
Liatris spicata	Marsh Blazing Star
Pedicularis lanceolata	Swamp Betony
Rudbeckia subtomentosa	Black-Eyed Susan
Silphium serfoliatum	Cupplant
Silphium terebinthinaceum	Prairie Dock
Solidago patula	Swamp Goldenrod
Solidago riddellii	Ridell's Goldenrod
Verbena hastata	Blue Vervain
Vernonia missurica	Ironweed
Veronicastrum virginicum	Culver's Root
Sedges/Grasses	
Andropogon scoparius	Little Bluestem
Carex crinita	Fringed Sedge
Carex stricta	Tussock Sedge
Scirpus cyperinus	Wool Grass

WETLAND SEED MIX

CUSTOM SHORT GRASS SEED MIX

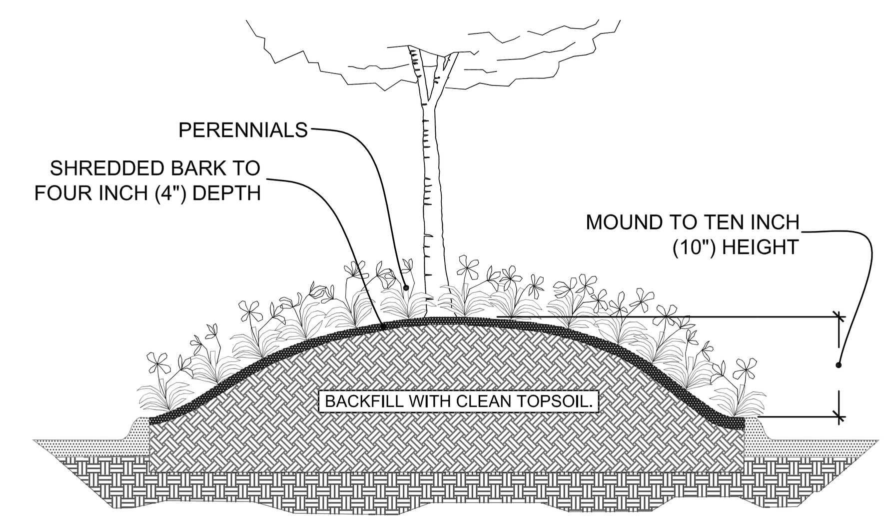
Fifty percent (50%) Forbs/Fifty percent (50%) Grass.
Application rate: 5 oz. per 1000 sq. ft.
or 10 lbs. per acre

BOTANICAL NAME	COMMON NAME
Wildflowers	
Achillea millefolium	Yarrow
Aquilegia canadensis	Wild Columbine
Asclepias tuberosa	Butterflyweed
Aster laevis	Smooth Aster
Coreopsis lanceolata	Sand Tickseed
Echinacea purpurea	Purple Coneflower
Kuhnia eupatoroides	False Boneset
Monarda fistulosa	Bergamot
Penstemon digitalis	Fokglove Beardstongue
Rudbeckia hirta	Black-Eyed Susan
Solidago speciosa	Showy Goldenrod
Sedges/Grasses	
Schzachyrium scoparius	Little Bluestem
Bouteloua curtipendula	Side Oats Grama
Koeleria pyramidata	June Grass*
Sporobolus heterolepsis	Prairie Dropseed*

* Supplier to add these species to the mix.

CUSTOM SHORT GRASS SEED MIX

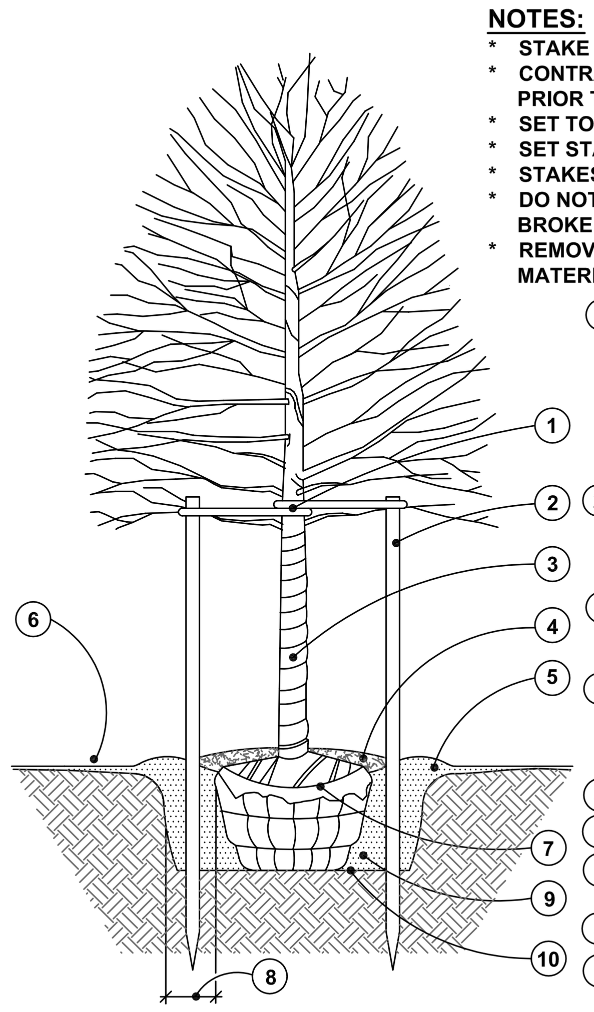
MICHIGAN WILDFLOWER FARM
11770 Cutler Road
Portland, Michigan 48875-9452
Phone: (517) 647 6010
Fax: (517) 647 6072



PARKING LOT ISLAND DETAIL not to scale

NOTES:

- STAKE TREES UNDER FOUR INCH (4") CALIPER.
- CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION.
- SET TOP OF BALL THREE INCHES (3") ABOVE FINISH GRADE.
- SET STAKES VERTICAL & EVENLY SPACED.
- STAKES OR GUYS TO BE SECURED ABOVE THE FIRST BRANCH.
- DO NOT PRUNE TERMINAL LEADER. PRUNE ONLY DEAD OR BROKEN BRANCHES.
- REMOVE ALL TAGS, STRING, PLASTICS, AND OTHER MATERIALS THAT ARE UNSIGHTLY OR COULD CAUSE DAMAGE.

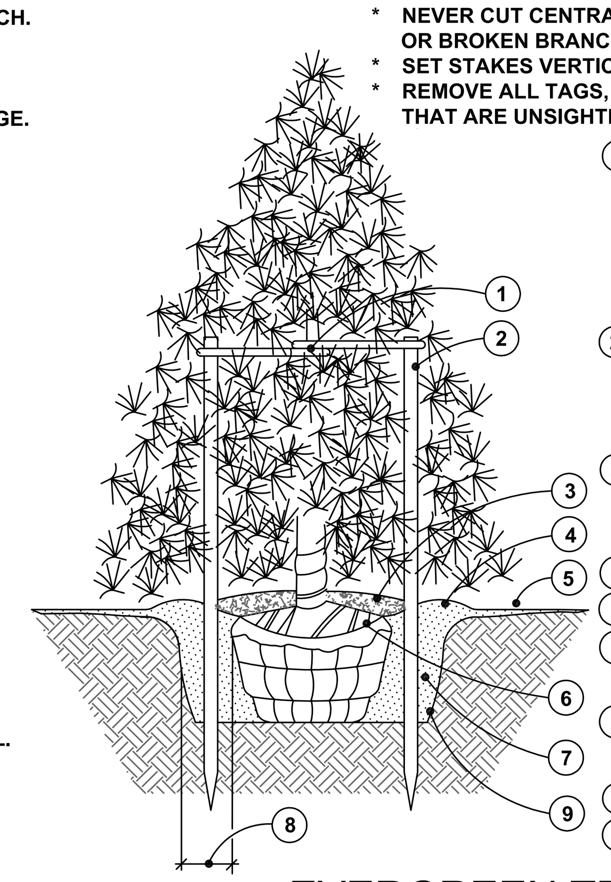


(1) STAKE TREE JUST BELOW FIRST BRANCH USING TWO INCH TO THREE INCH (2"-3") WIDE BELT-LIKE MATERIAL OF NYLON, PLASTIC, OR OTHER ACCEPTABLE MATERIAL. (NO WIRE OR HOSE TO BE USED TO GUY TREES.) THREE (3) GUYS EVENLY SPACED PER TREE. REMOVE AFTER ONE (1) WINTER SEASON.
(2) 2 x 2 HARDWOOD STAKES. POSITION SIX INCHES TO EIGHT INCHES (6"-8") OUTSIDE OF ROOTBALL AND EXTEND EIGHTEEN INCHES (18") BELOW TREE PIT INTO UNDISTURBED SOIL.
(3) APPLY TREE WRAP AND SECURE WITH A BIODEGRADABLE MATERIAL AT TOP AND BOTTOM. REMOVE AFTER ONE (1) WINTER.
(4) SHREDDED BARK MULCH OF A NATURAL COLOR AT FOUR INCH (4") MINIMUM DEPTH. LEAVE A THREE INCH (3") CIRCLE OF BARE SOIL AT THE BASE OF THE TREE.
(5) MOUND TO FORM TREE SAUCER.
(6) FINISH GRADE SLOPED AWAY FROM TREE.
(7) CUT AND REMOVE WIRE, BURLAP, AND BINDINGS FROM THE TOP ONE-THIRD (1/3) OF THE ROOTBALL.
(8) WIDTH OF ROOTBALL ON EACH SIDE.
(9) PLANTING MIX SHALL BE AMMENDED PER SITE CONDITIONS AND PLANT REQUIREMENTS.
(10) SCARIFY BOTTOM AND SIDES OF PLANTING PIT TO FOUR INCH (4") DEPTH.

DECIDUOUS TREE

NOTES:

- STAKE ALL EVERGREEN TREES UNDER TWELVE FEET (12') HIGH. GUY ALL EVERGREEN TREES TWELVE FEET (12') HIGH AND OVER.
- CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION.
- NEVER CUT CENTRAL LEADER. PRUNE ONLY TO REMOVE DEAD OR BROKEN BRANCHES.
- SET STAKES VERTICAL AND EVENLY SPACED.
- REMOVE ALL TAGS, STRING, PLASTICS, AND OTHER MATERIALS THAT ARE UNSIGHTLY OR COULD CAUSE GIRDLING.



(1) STAKE TREE AS INDICATED USING TWO INCH TO THREE INCH (2"-3") WIDE BELT-LIKE MATERIAL OF NYLON, PLASTIC, OR OTHER ACCEPTABLE MATERIAL. (NO WIRE OR HOSE TO BE USED TO GUY TREES.) THREE (3) GUYS EVENLY SPACED PER TREE. REMOVE AFTER ONE (1) WINTER SEASON.
(2) 2 x 2 HARDWOOD STAKES. POSITION SIX INCHES TO EIGHT INCHES (6"-8") OUTSIDE OF ROOTBALL AND EXTEND EIGHTEEN INCHES (18") BELOW TREE PIT INTO UNDISTURBED SOIL.
(3) SHREDDED BARK MULCH OF A NATURAL COLOR AT FOUR INCH (4") MINIMUM DEPTH. LEAVE A THREE INCH (3") CIRCLE OF BARE SOIL AT THE BASE OF THE TREE.
(4) MOUND TO FORM TREE SAUCER.
(5) FINISH GRADE SLOPED AWAY FROM TREE.
(6) CUT AND REMOVE WIRE, BURLAP, AND BINDINGS FROM THE TOP ONE-THIRD (1/3) OF THE ROOTBALL.
(7) PLANTING MIX SHALL BE AMMENDED PER SITE CONDITIONS AND PLANT REQUIREMENTS.
(8) WIDTH OF ROOTBALL ON EACH SIDE.
(9) SCARIFY BOTTOM AND SIDES OF PLANTING PIT TO FOUR INCH (4") DEPTH.

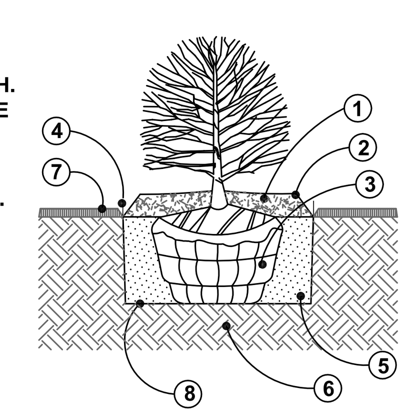
EVERGREEN TREE

GENERAL NOTES FOR ALL PLANTINGS:

- DO NOT CUT CENTRAL LEADER.
- REMOVE ALL TAGS, STRINGS,PLASTICS, AND ANY OTHER NON-BIODEGRADABLE MATERIALS (EXCEPT LABEL FOR PLANT NAME) FROM PLANT STEMS OR CROWN WHICH ARE UNSIGHTLY OR COULD CAUSE GIRDLING.
- PLANTS SHALL BEAR THE SAME RELATION TO FINISH GRADE AS IT BORE TO THE PREVIOUS GRADE IN THE NURSERY. SET THE BASE OF THE PLANT SLIGHTLY HIGHER THAN EXISTING GRADE IF PLANTING IN CLAY SOILS.
- CENTER THE ROOTBALL IN THE PLANTING HOLE. LEAVE THE BOTTOM OF THE PLANTING HOLE FIRM. USE WATER TO SETTLE THE PLANTING MIX AND REMOVE ANY AIR POCKETS AND FIRMLY SET THE TREE OR SHRUB. GENTLY TAMP IF NEEDED.

NOTE:

- CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION.

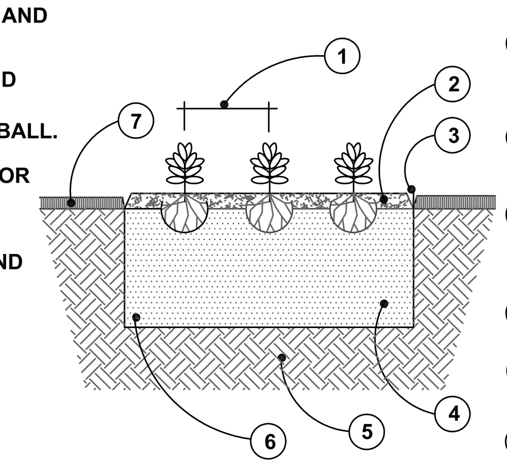


(1) SHREDDED BARK MULCH AT FOUR INCH (4") MINIMUM DEPTH. MULCH SHALL BE NATURAL IN COLOR.
(2) FORM A SAUCER WITH MULCH AND SOIL AROUND SHRUB BED.
(3) CUT AND REMOVE BURLAP AND BINDINGS FROM THE TOP ONE-THIRD (1/3) OF THE ROOTBALL.
(4) 3/16" x 4" ALUMINUM EDGING (OR APPROVED EQUIVALENT) OR SPADED EDGE.
(5) EXCAVATE PLANTING HOLE AND BACKFILL WITH PREPARED PLANTING MIX.
(6) UNDISTURBED SUBGRADE.
(7) LAWN.
(8) SCARIFY SUBGRADE.

SHRUB

NOTE:

- CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO INSTALLATION.
- PERENNIALS TO BE PLANTED UP TO THE EDGE OF THE SAUCER AROUND A TREE OR SHRUB BED.



(1) SEE PLANT LIST FOR SPACING DISTANCE.
(2) SHREDDED HARDWOOD BARK OF A NATURAL COLOR MULCH AT FOUR INCH (4") MINIMUM DEPTH.
(3) 3/16" x 4" ALUMINUM EDGING (OR APPROVED EQUIVALENT) OR SPADED EDGE.
(4) EXCAVATE PLANTING BED AND BACKFILL WITH PREPARED PLANTING MIX AT A SIX INCH (6") DEPTH.
(5) UNDISTURBED SUBGRADE.
(6) PLANTING MIX TO CONSIST OF EQUAL PARTS OF SAND, LEAF COMPOST, AND NATIVE SOIL.
(7) LAWN.

ANNUAL / PERENNIAL / GROUNDCOVER

PLANTING DETAILS

not to scale

NOTE:

- See Sheet LP-1 for landscape planting plan, plant list, and summary of landscape requirements.

date: March 2, 2022
revised:
05-16-2022 Revise for Township review ltr. dated April 14,2022.

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

LANDSCAPE PLAN FOR:
Davenport Brothers Construction
301 Industrial Park Drive
Belleville, Michigan 48111
(734) 697-2994

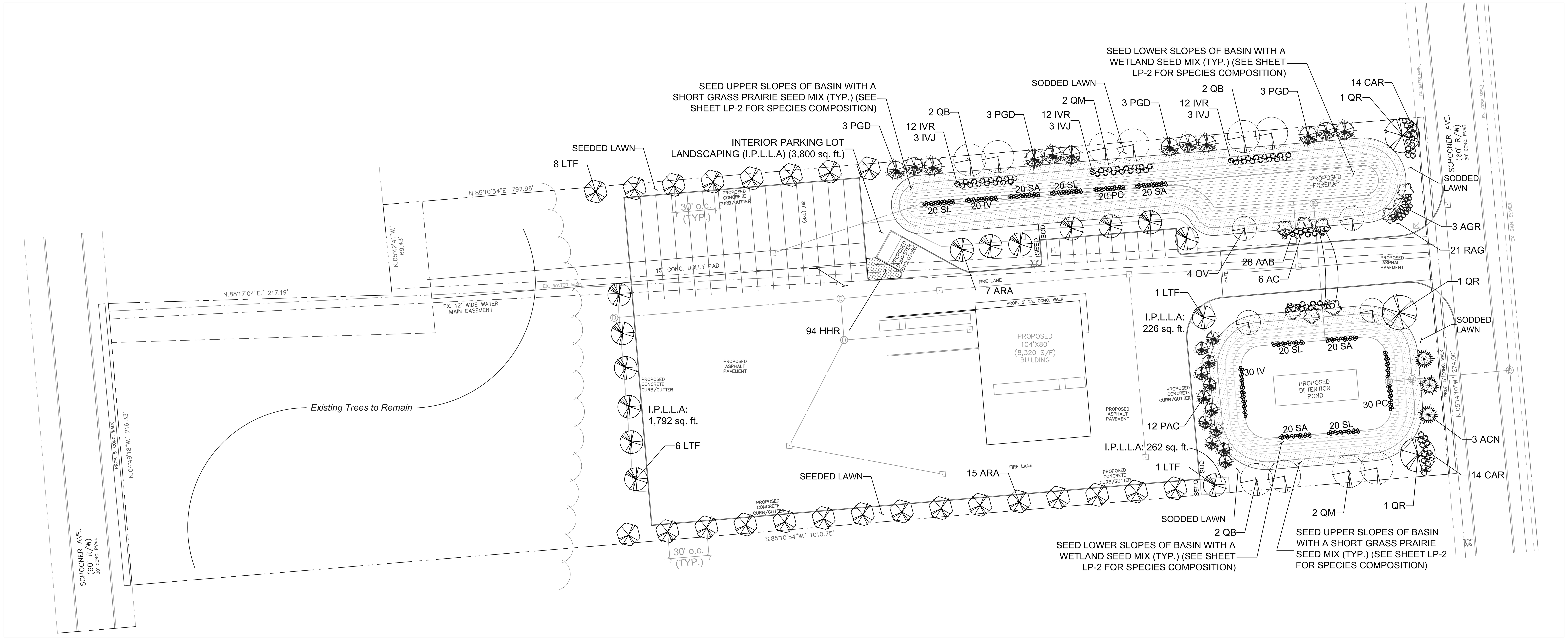
PROJECT LOCATION:
Proposed Trucking Facility
Schooner Avenue
Van Buren Township,
Michigan

LANDSCAPE PLAN BY:
Nagy Devlin Land Design, L.L.C.
31736 West Chicago Ave.
Livonia, Michigan 48150
(734) 634-9208

STATE OF MICHIGAN ★ J. BRIAN DEVLIN NO.1260 ★ REGISTERED LANDSCAPE ARCHITECT

J. Brian Devlin
AUTOCAD SIGNATURE
ORIGINAL IN BLUE

LP - 2: LANDSCAPE NOTES & DETAILS



LANDSCAPE PLANTING PLAN

scale: 1" = 40'

PLANT LIST

KEY	QTY.	BOTANICAL NAME	COMMON NAME	SIZE
FRONTAGE LANDSCAPING - Schooner Avenue				
ACN	3	*Abies concolor*	Concolor Fir	8' ht. B&B
AGR	3	*Amelanchier x grandiflora* 'Robin Hill'	Robin Hill Apple Serviceberry	2" cal. B&B
CAR	28	*Clethra alnifolia* 'Ruby Spice'	Ruby Spice Summersweet	30" ht., 5 gal. pot
QR	3	*Quercus rubra*	Red Oak	3" cal. B&B
RAG	21	*Rhus aromatica* 'Gro-Low'	Gro-Low Fragrant Sumac	24" ht., 3 gal. pot
INTERIOR PARKING LOT LANDSCAPING				
ARA	7	*Acer rubrum* 'Armstrong Gold'	Armstrong Gold Red Maple	3" cal. B&B
LTF	8	*Liriodendron tulipifera* 'Fastigiata'	Fastigiate Tuliptree	3" cal. B&B
HHR	94	*Hemerocallis sp.* 'Happy Returns'	Happy Returns Daylily	1 gal. pot, 36" o.c.
LOADING AREA LANDSCAPING				
PAC	12	*Picea abies* 'Cupressina'	Cupressina Norway Spruce	8' ht. B&B
OPEN SPACE LANDSCAPING				
PGD	12	*Picea glauca* 'Black Hills'	Black Hills White Spruce	8' ht. B&B
STORMWATER BASIN LANDSCAPING				
AAB	28	*Aronia arbutifolia* 'Brilliantissima'	Brilliantissima Red Chokeberry	36" ht., 5 gal. pot
AC	6	*Amelanchier canadensis*	Clump Serviceberry	8' - 10' ht. B&B
IVJ	9	*Ilex verticillata* 'Jim Dandy'	Jim Dandy Michigan Holly	30" ht., 5 gal. pot
IVR	36	*Ilex verticillata* 'Red Sprite'	Red Sprite Michigan Holly	30" ht., 5 gal. pot
OV	4	*Ostrya virginiana*	American Hophornbeam	2" cal. B&B
QB	4	*Quercus bicolor*	Swamp White Oak	3" cal. B&B
QM	2	*Quercus macrocarpa*	Bur Oak	3" cal. B&B
Emergent Plantings				
IV	50	*Iris virginica*	Blue Flag Iris	Bare Root
PC	50	*Pontederia cordata*	Pickeral Weed	Bare Root
SA	80	*Scirpus acutus*	Hard-Stemmed Bulrush	Bare Root
SL	70	*Sagittaria latifolia*	Broad-Leaf Arrowhead	Bare Root
GREENBELT BUFFER LANDSCAPING				
ARA	15	*Acer rubrum* 'Armstrong Gold'	Armstrong Gold Red Maple	3" cal. B&B
LTF	8	*Liriodendron tulipifera* 'Fastigiata'	Fastigiate Tuliptree	3" cal. B&B

LANDSCAPE CALCULATIONS

FRONTAGE LANDSCAPING - Schooner Avenue (240 l.f.)
* One (1) deciduous or evergreen tree / 40 l.f. = 6 trees
* One (1) ornamental tree / 100 l.f. = 2.4 trees = 3 trees
* Eight (8) shrubs / 40 l.f. = 48 shrubs

PARKING LOT LANDSCAPING (88,352 sq. ft. of parking area)
* Interior landscaping shall account for a minimum of five percent of all paved parking areas
* 88,352 times .05 equals 4,418 sq. ft.
* One (1) deciduous tree shall be planted for each three hundred (300) sq. ft. or fraction thereof of interior landscaped area
* 4,418 divided by 300 = 14.73 trees = 15 trees
* Interior parking lot landscape provided equals 6,014 sq. ft.

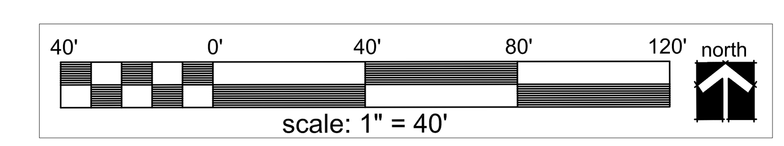
LOADING AREA LANDSCAPING
* Loading areas shall be screened from a perpindicular view from any public street rights-of-way
* Evergreen trees at least eight feet (8') in height and planted in staggered double row spaced fifteen feet (15') on center

OPEN SPACE LANDSCAPING (20,644 sq. ft.)
* One (1) deciduous or evergreen tree shall be planted per 3,000 sq. ft. of open area
* 20,644 divided by 3,000 equals 6.88 trees = 7 trees

STORMWATER BASIN LANDSCAPING
* The landscape treatment for the side slopes and bottom of the basin shall be planted with native plants consisting of a native seed mix and plugs
* Trees and shrubs shall be planted around the perimeter of the basin

GREENBELT BUFFER LANDSCAPING
* One (1) deciduous or evergreen tree shall be planted per 30 ln. ft. of required buffer

NOTE:
* See Sheet LP-2 for landscape planting details, landscape development notes, parking lot island detail, detention pond planting notes, and seed mix compositions.



date: March 2, 2022
revised:
05-16-2022 Revise for Township review ltr. dated April 14,2022.

Know what's below. Call before you dig.

LANDSCAPE PLAN FOR:
Davenport Brothers Construction
301 Industrial Park Drive
Belleville, Michigan 48111
(734) 697-2994

PROJECT LOCATION:
Proposed Trucking Facility
Schooner Avenue
Van Buren Township,
Michigan

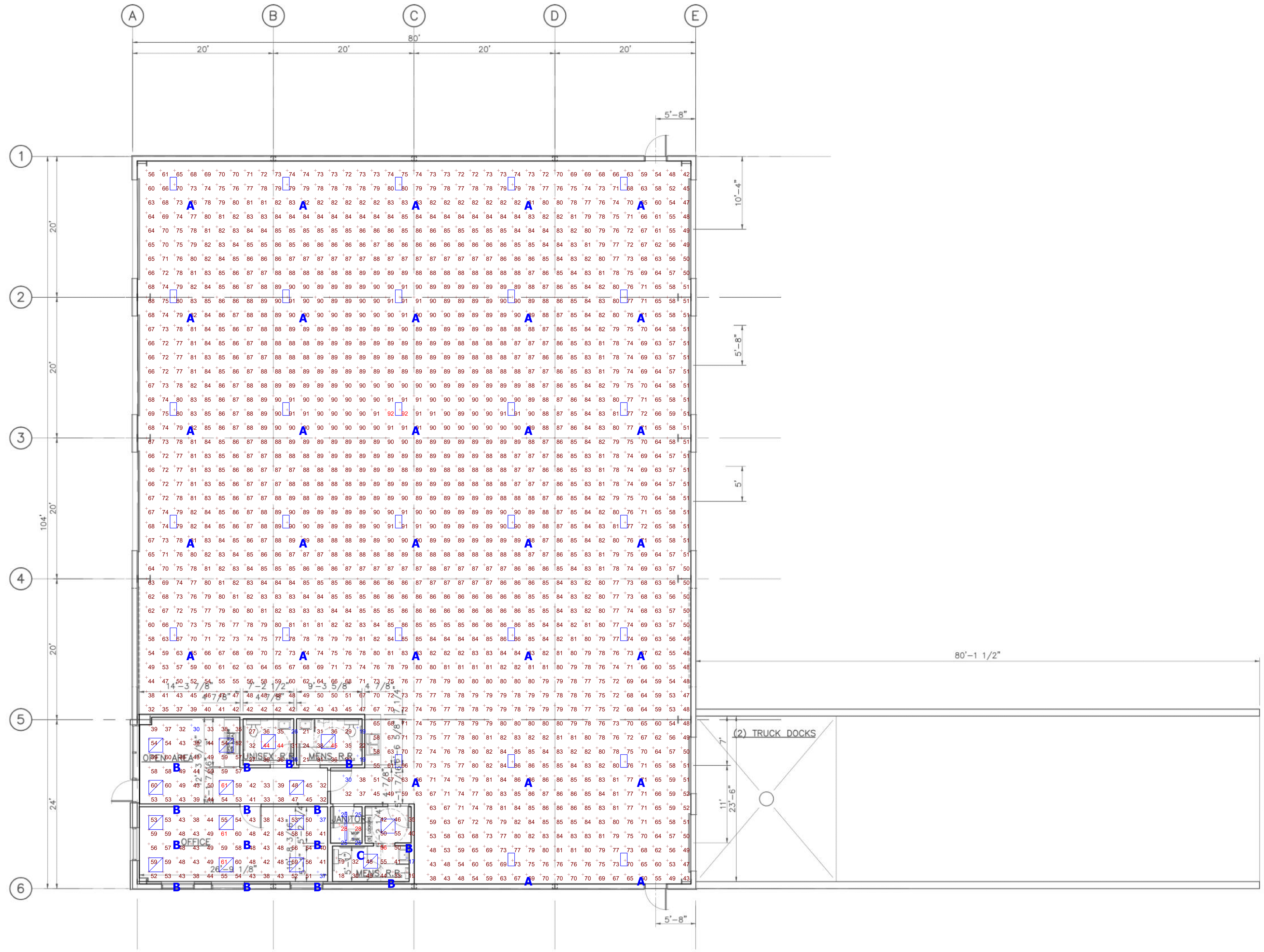
LANDSCAPE PLAN BY:
Nagy Devlin Land Design, L.L.C.
31736 West Chicago Ave.
Livonia, Michigan 48150
(734) 634-9208

STATE OF MICHIGAN J. BRIAN DEVLIN NO.1260 REGISTERED LANDSCAPE ARCHITECT

AUTOCAD SIGNATURE ORIGINAL IN BLUE

LP - 1: LANDSCAPE PLANTING PLAN

* Base data provided by Hardy Civil Design Services, L.L.C.



Plan View

Scale - 1/8" = 1ft

General Note

1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
2. SEE LUMINAIRE SCHEDULE FOR LIGHT LOSS FACTOR.
3. CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 2' - 6".
4. SHOP AREA REFLECTANCE IS: 60 / 40 / 10.
5. OFFICE AREA REFLECTANCES ARE: 70 / 40 / 10.

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

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

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

Ordering Note

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

Drawing Note

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

Statistics

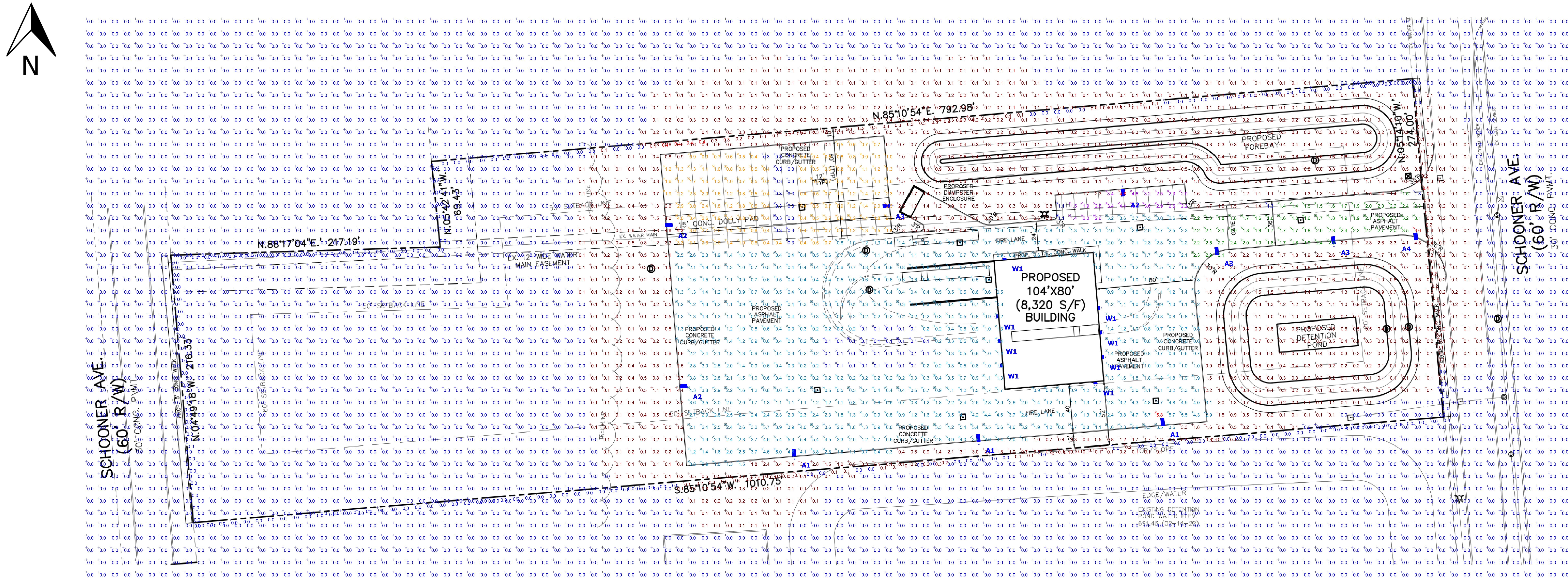
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
JANITOR	+	26 fc	28 fc	25 fc	1.1:1	1.0:1	0.9:1
MENS R.R.	+	39 fc	56 fc	17 fc	3.3:1	2.3:1	0.7:1
MENS R.R.	+	29 fc	45 fc	19 fc	2.4:1	1.5:1	0.6:1
OFFICE	+	49 fc	61 fc	37 fc	1.6:1	1.3:1	0.8:1
OPEN AREA	+	47 fc	61 fc	30 fc	2.0:1	1.6:1	0.8:1
SHOP AREA	+	78 fc	92 fc	30 fc	3.1:1	2.6:1	0.8:1
UNISEX R.R.	+	33 fc	44 fc	26 fc	1.7:1	1.3:1	0.8:1

Schedule

Symbol	Label	Quantity	Manufacturer	Catalog Number	Description	Lamp	Number Lamps	Lumens Per Lamp	Light Loss Factor	Wattage	Mounting Height
	A	30	Lithonia Lighting	CPHB 24000LM SEF GCL MD 40K 80CRI	Compact Pro Highbay, 24000 lumens, Standard efficiency, Glare control lens, Medium distribution, 40 K, 80CRI,	LED	1	24872	0.9	174.41	19'-0"
	B	15	Lithonia Lighting	2BLT2 40L ADP LP840	BLT 2X2, 4000 Nominal Lumens, Curved Linear Prismatic lens, 4000K CCT	LED	1	4105	0.9	31.1	8'-0"
	C	1	Lithonia Lighting	CLX L48 4000LM SEF FDL MVOLT GZ10 40K 80CRI	CLX LED Linear 48" 4,000 lumens, Standard Efficiency, Less louver, Flat diffuse lens, General distribution, MVOLT, 0-10V dimming, 4000 CCT, 80 CRI	LED	1	3758	0.9	27.58	8'-0"

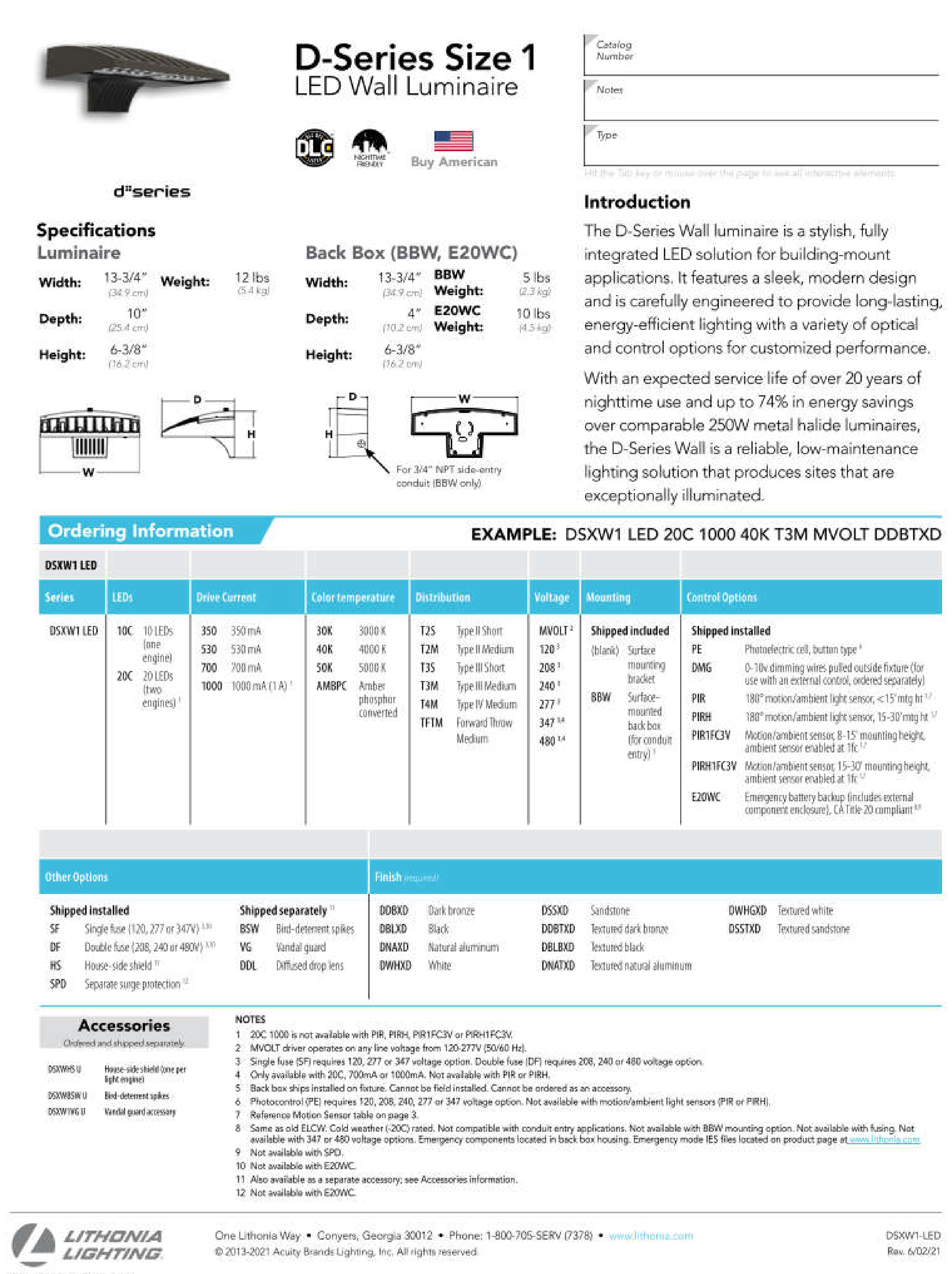
Semi-Truck Repair Facility - Schooner Road
PHOTOMETRIC INTERIOR PLAN
PREPARED FOR: GRAYBAR
GASSER BUSH ASSOCIATES
WWW.GASSERBUSH.COM

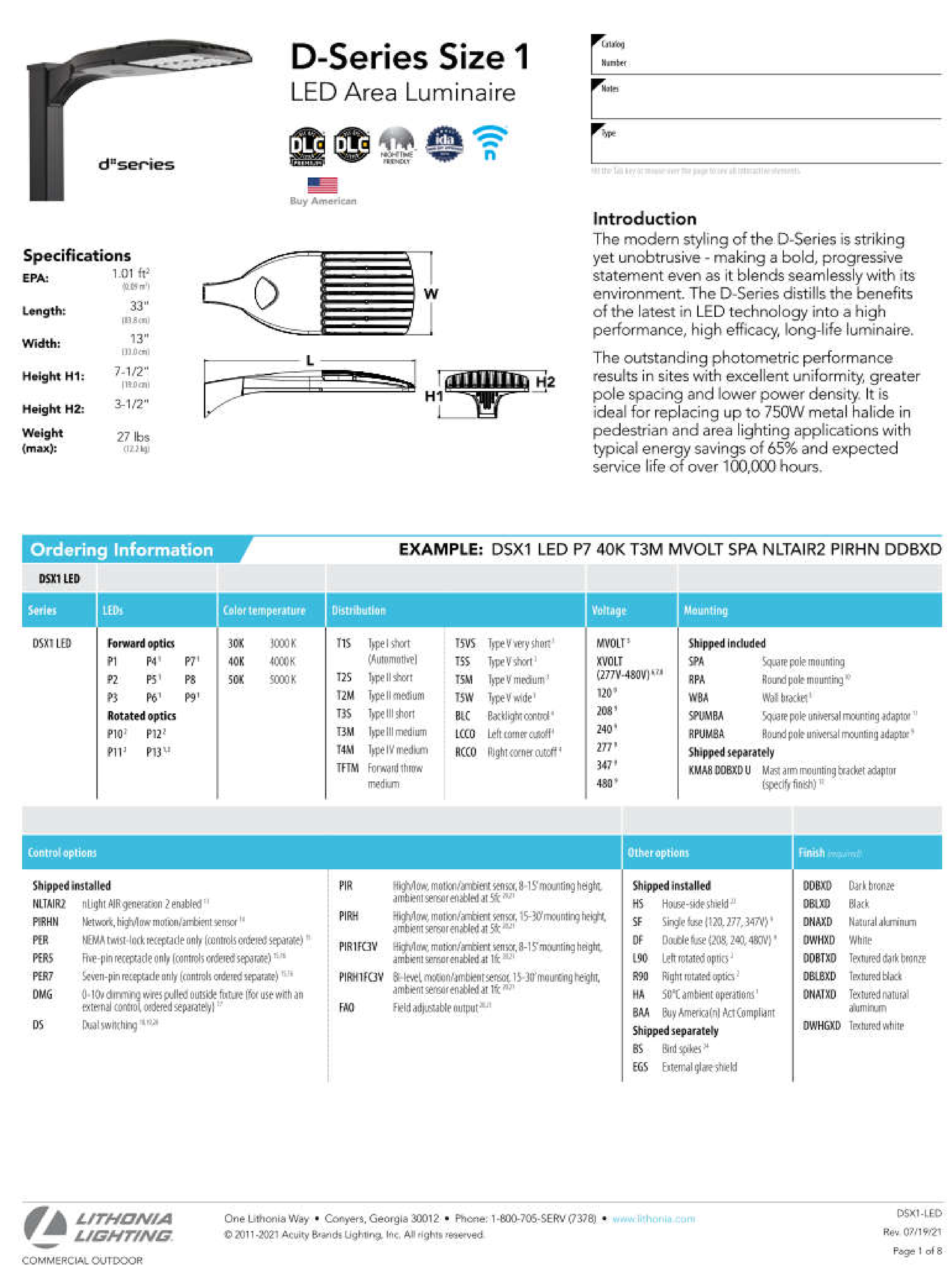
Designer
MW/KB
Date
03/02/2022
Scale
Not to Scale
Drawing No.
#22-72793-V1 INT.



Plan View

Scale - 1" = 40ft





General Note

1. SEE SCHEDULE FOR LUMINAIRE MOUNTING HEIGHT.
2. CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 0' - 0"
3. PROPERTY LINE CALCULATIONS ARE SHOWN IN FOOTCANDLES AT: 5' - 0"

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Mounting Height Note

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

Drawing Note

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Ordering Note

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

Statistics

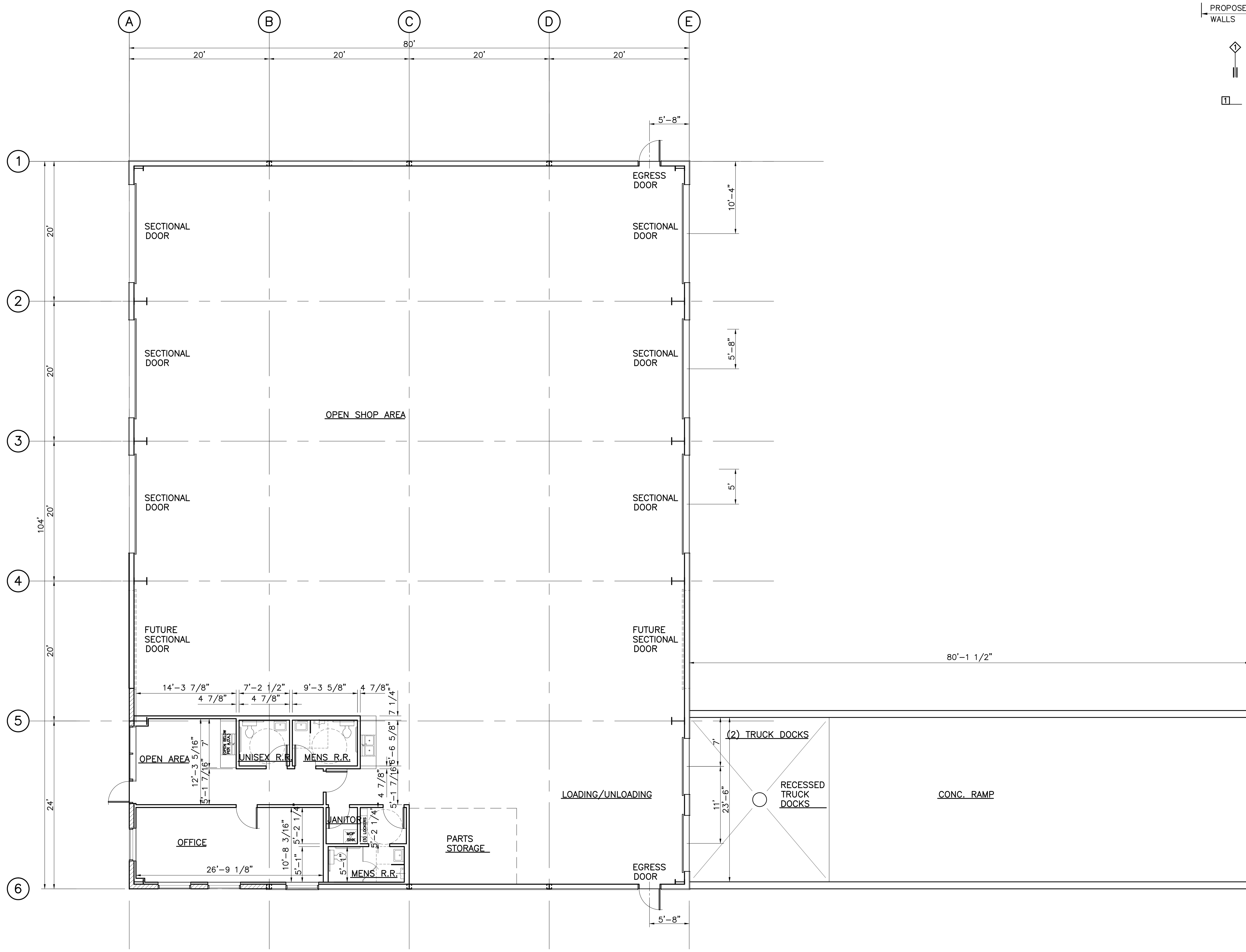
Description	Symbol	Avg	Max	Min	Max/Min	Avg/Min	Avg/Max
ENTRANCE	✱	2.1 fc	3.6 fc	1.3 fc	2.8:1	1.6:1	0.6:1
PARKING	✱	2.7 fc	4.8 fc	1.1 fc	4.4:1	2.5:1	0.6:1
PROPERTY LINE	+	0.1 fc	0.4 fc	0.0 fc	N/A	N/A	0.3:1
SEMI STAGING	✱	1.1 fc	4.2 fc	0.3 fc	14.0:1	3.7:1	0.3:1
SITE CIRCULATION	✱	1.4 fc	5.8 fc	0.1 fc	58.0:1	14.0:1	0.2:1

Schedule

Symbol	Label	Quantity	Manufacturer	Description	Lamp	Mounting Height
	A1	3	Lithonia Lighting	DSX1 LED AREA LIGHT, 4000K	LED	25'-0"
	A2	3	Lithonia Lighting	DSX1 LED AREA LIGHT, 4000K	LED	25'-0"
	A3	3	Lithonia Lighting	DSX1 LED AREA LIGHT, 4000K	LED	25'-0"
	W1	8	Lithonia Lighting	DSXW1 LED WALL LUMINAIRE, 4000K	LED	15'-0"
	A4	1	Lithonia Lighting	DSX0 LED AREA LIGHT, 4000K	LED	15'-0"

Semi-Truck Repair Facility - Schooner Road
PHOTOMETRIC SITE PLAN
PREPARED FOR: GRAYBAR
GASSER BUSH ASSOCIATES
WWW.GASSERBUSH.COM

Designer
MW/KB
Date
03/02/2022
rev. 5/17/2022
Scale
Not to Scale
Drawing No.
#22-72793-V2
SITE **1 of 1**



FLOOR PLAN

SCALE 1/8" = 1'-0"

PLAN LEGEND

ROOM NAME (A1--)	ROOM NAME AND NUMBER; SEE ROOM FINISH SCHEDULE ON SHEET A5.0.
(##)	FENESTRATION NUMBER, BOTH NEW AND EXISTING; SEE DOOR SCHEDULE ON SHEET A5.0.
PROPOSED WALLS	PROPOSED WALLS; SEE THE WALL TYPES DESCRIPTIONS ON THIS SHEET.
◇	WALL PARTITION TYPE; SEE THE WALL TYPES DESCRIPTIONS ON THIS SHEET.
1	CONSTRUCTION NOTE; SEE THE CONSTRUCTION NOTES KEY ON THIS SHEET.

2

FACILITY USE STATEMENT

THE PROPOSED USE OF THE FACILITY IS FOR MAJOR TRUCK REPAIR.

VEHICLES AND THEIR TRAILERS MAY REQUIRE AND RECEIVE REPLACEMENT OR REPAIR TO MANY COMPONENTS, SUCH AS ENGINES, EXHAUST SYSTEMS, TRANSMISSIONS, AND OR SUSPENSIONS.

NEW AND USED VEHICLE AND TRAILER COMPONENTS WILL BE REMOVED WITHIN THE PROPOSED BUILDING, AND ALL NEW AND USED COMPONENTS WILL BE STORED WITHIN THE PROPOSED BUILDING.

L. WARDEN, DESIGNER
LANCE WARDEN, BUILDING SPECIALIST L.L.C.
3819 PINEVIEW DRIVE EAST DEXTER, MICHIGAN 48130
PHONE No.: (734) 276-8672

NO.	REVISIONS	BY	DATE
1	REVIEW ONLY	L.D.W.	12/30/21
2	REVISED PER McKENNA 5/31/22 REVIEW LETTER COMMENTS	L.D.W.	6/14/22
3		-	-
4		-	-

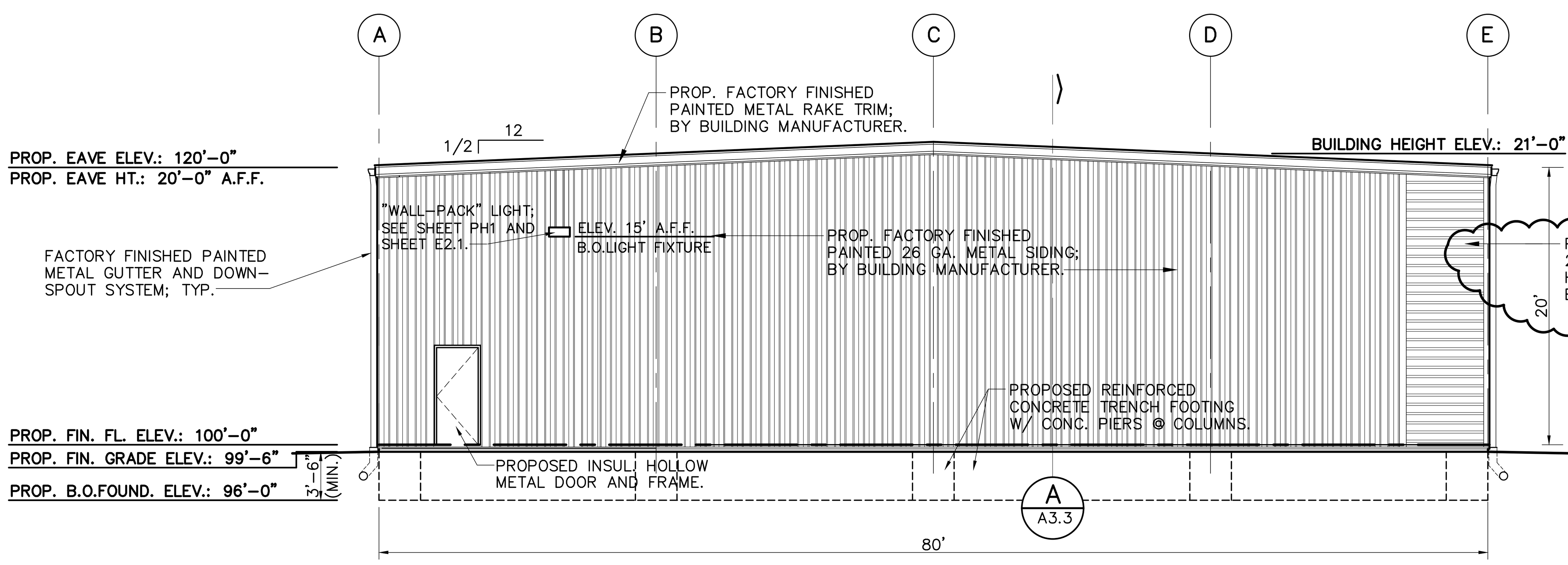
REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

SEMI-TRUCK REPAIR FACILITY
VAN BUREN TWP, MICHIGAN

FLOOR PLAN

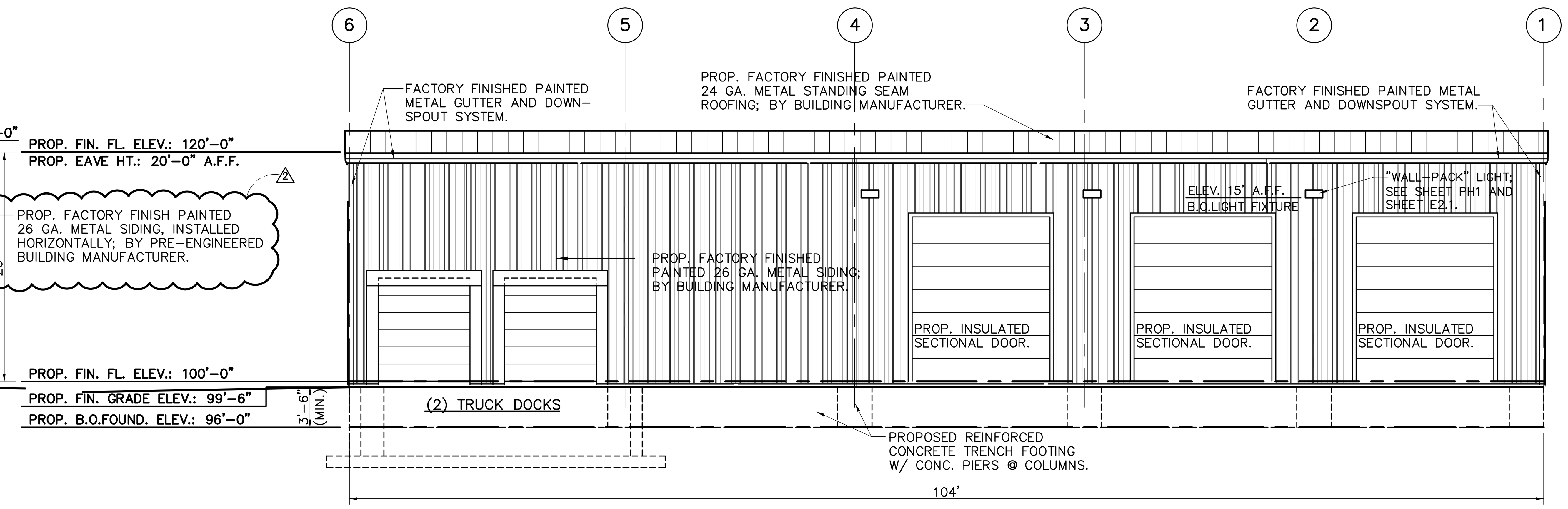
DESIGNED BY LDW	DATE DEC. 2021
DRAWN BY LDW	DATE DEC. 2021
CHECKED BY LDW	DATE DEC. 2021
EDIT	FILE
SCALE VARIES	DRAWING
	PLOT
PROJECT	211220

A1.0
SHEET NO.



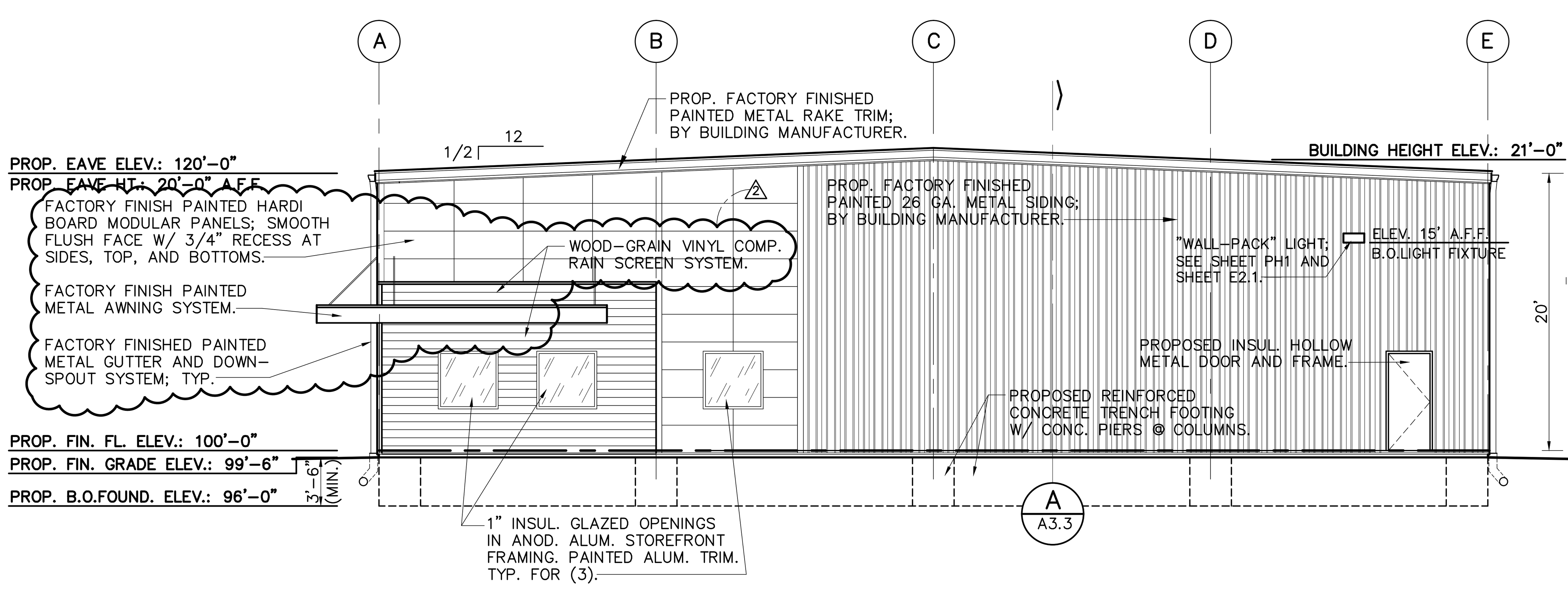
SOUTH EXTERIOR ELEVATION

SCALE 1/8" = 1'-0"



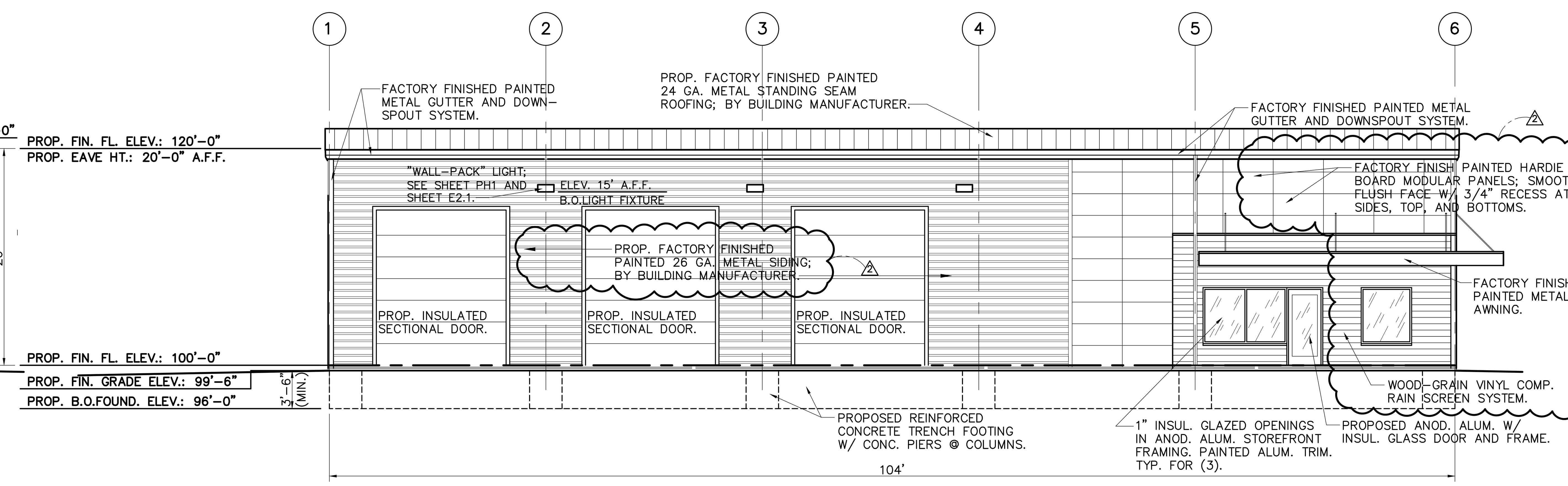
WEST EXTERIOR ELEVATION

SCALE 1/8" = 1'-0"



NORTH EXTERIOR ELEVATION

SCALE 1/8" = 1'-0"



EAST EXTERIOR ELEVATION

SCALE 1/8" = 1'-0"

L. WARDEN, DESIGNER
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3819 PINEVIEW DRIVE EAST DEXTER, MICHIGAN 48130
PHONE No.: (734) 276-8672

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3		-	-
4		-	-

REVISED IN ACCORDANCE WITH CONSTRUCTION RECORDS

SEMI-TRUCK REPAIR FACILITY

VAN BUREN TWP, MICHIGAN

BUILDING ELEVAIONS

DESIGNED BY LDW	DATE DEC. 2021
DRAWN BY LDW	DATE DEC. 2021
CHECKED BY LDW	DATE DEC. 2021
EDIT	FILE
SCALE VARIES	
DRAWING	
PLOT	
PROJECT 211220	

A2.0

SHEET NO.