Stantec

PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS PHASE 2

BID SET

JANUARY, 2023

PROJECT NUMBER: 2075140801

LWCF GRANT: 26-01847

PROJECT LOCATION MAPS

NOT TO SCALE

DRAWINGS INDEX (SITE WORK)		
Sheet Description	Sheet Number	Sheet Title
G001	01	COVER SHEET
G002	02	GENERAL NOTES, LEGEND, ABBREVIATIONS AND SYMBOLS
C001	03	OVERALL EXISTING CONDITIONS
C002	04	OVERALL PROPOSED SITE PLAN
C100	05	DEMOLITION AND SOIL EROSION CONTROL - SOUTH
C101	06	DEMOLITION AND SOIL EROSION CONTROL - MIDDLE
C102	07	DEMOLITION AND SOIL EROSION CONTROL - NORTH
C110	08	PROPOSED SITE PLAN - SOUTH
C111	09	PROPOSED SITE PLAN - MIDDLE
C112	10	PROPOSED SITE PLAN - NORTH
C201	11	PROPOSED UTILITY PLAN
C300	12	OVERALL GRADING PLAN
C301	13	PROPOSED GRADING PLAN I
C302	14	PROPOSED GRADING PLAN II
C303	15	PROPOSED GRADING PLAN III
C304	16	PROPOSED GRADING PLAN IV
C400	17	DETAILED SITE PLAN - SOUTH FIELD (ALTERNATE)
C401	18	DETAILED SITE PLAN - NORTH FIELD (ALTERNATE)
C402	19	DETAILED SITE PLAN - MISCELLANEOUS (ALTERNATE)
C403	20	DETAILED SITE PLAN - COURT SITE PLANS
C500	21	PROJECT DETAILS I
C501	22	PROJECT DETAILS II
C502	23	PROJECT DETAILS III (ALTERNATE)
L100	24	LANDSCAPE PLAN

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

CONSTRUCTION NOTES

1. PRE-CONSTRUCTION MEETING.
   A PRE-CONSTRUCTION MEETING SHALL BE HELD PRIOR TO ANY WORK BEING PERFORMED ON THE PROJECT. THE MEETING TIME, PLACE, AND ATTENDEES SHALL BE ARRANGED BY THE PROJECT ENGINEER. WASHTENAW COUNTY WATER RESOURCES COMMISSION AND PITTSFIELD CHARTER TOWNSHIP SHALL BE INVITED, AT A MINIMUM TO THE PRE-CONSTRUCTION MEETING.

2. SHOP DRAWINGS AND MATERIAL CERTIFICATES
   PRIOR TO THE START OF CONSTRUCTION THE CONTRACTOR SHALL FURNISH MATERIAL SOURCE LISTS AND CERTIFICATIONS TO THE PROJECT ENGINEER. VERIFYING THAT ALL MATERIALS USED ON THE PROJECT ARE IN ACCORDANCE WITH MICHIGAN DEPARTMENT OF TRANSPORTATION 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION. SHOP DRAWINGS AND/OR CATALOG CUTS SHALL BE REQUIRED FOR MAJOR MATERIALS.

3. MISS DIG UTILITY ALERT AND FIELD LOCATION OF UTILITIES
   THREE (3) WORKING DAYS PRIOR TO BEGINNING CONSTRUCTION, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CONTACT MISS DIG UTILITY PROTECTION SERVICE (811) TO VERIFY THE LOCATION OF ALL EXISTING UTILITIES. UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLANS WERE OBTAINED FROM UTILITY OWNERS AND WERE NOT FIELD LOCATED. THE CONTRACTOR SHALL ASSUME RESPONSIBILITY FOR THE PROTECTION OF ALL EXISTING UTILITIES DURING CONSTRUCTION. ALL UTILITIES DAMAGED DURING CONSTRUCTION SHALL BE REPAIRED WITH LIKE MATERIAL IN ACCORDANCE WITH THE UTILITY OWNER'S REQUIREMENTS. THE CONTRACTOR SHALL VERIFY THE DEPTH AND HORIZONTAL LOCATION OF ALL EXISTING UTILITIES. THE EXACT LOCATION OF EXISTING UTILITIES SHALL BE DETERMINED BY HAND DIGGING.

4. UTILITY INFORMATION
   PUBLIC UTILITY INFORMATION IS DELINEATED IN ACCORDANCE WITH LOCATIONS PROVIDED BY UTILITY OWNERS. THE DESIGN ENGINEER IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION OR THE LOCATION AT WHICH THESE SERVICES EXIST. DIFFERING FIELD CONDITIONS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

   THE LOCATION OF ALL PUBLIC UTILITIES SHOWN ON THE PLANS ARE TAKEN FROM THE BEST AVAILABLE DATA. THE OWNER WILL NOT BE RESPONSIBLE FOR ANY OMISSION OR VARIATIONS FROM THE LOCATIONS SHOWN.

   CONSTRUCTION OPERATIONS SHALL BE CONDUCTED IN A MANNER AS TO INSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED. REPARATIONS OF UTILITIES DAMAGED DURING CONSTRUCTION BY THE CONTRACTOR SHALL BE THE FULL RESPONSIBILITY OF THE CONTRACTOR IN ACCORDANCE WITH THE AFFECTED UTILITY OWNERS REQUIREMENTS.

   ALL PRIVATE UTILITY STRUCTURES WILL BE ADJUSTED TO GRADE BY THE OWNER OF THE FACILITY. THE CONTRACTOR SHALL PROVIDE THE ENGINEER WITH THREE (3) WORKING DAYS NOTICE PRIOR TO THE START OF SUCH WORK.

5. STORMWATER DRAINAGE DURING CONSTRUCTION
   THE CONTRACTOR SHALL MAINTAIN DITCH DRAINAGE DURING CONSTRUCTION AND SHALL NOT OBSTRUCT SUMP PUMP LEADS DISCHARGING TO THE DITCH. THE CONTRACTOR SHALL TAKE ALL NECESSARY MEASURES TO PROTECT ALL STORM SEWER FACILITIES SUCH AS CATCH BASINS, CULVERTS AND HEADWALLS DURING CONSTRUCTION. CULVERTS AND CATCH BASINS CONTAMINATED DURING CONSTRUCTION SHALL BE CLEANED AND THE COSTS SHALL BE INCLUDED IN THE EROSION CONTROL AND PROJECT CLEAN UP PAY ITEMS.

6. EXISTING UTILITIES
   THE CONTRACTOR SHALL MAINTAIN ALL EXISTING SANITARY SEWER, WATER OR STORM SEWER SERVICE CONNECTIONS IN SERVICE THROUGHOUT THE CONSTRUCTION PERIOD. THE CONTRACTOR SHALL PROVIDE OR ARRANGE FOR TEMPORARY SUPPORT OF GAS MAIN AND UTILITY POLES WHERE NEEDED. ALL STORM SEWERS DAMAGED OR REMOVED OR RELOCATED BY THE CONTRACTOR SHALL BE REPLACE WITH THE SAME SIZE AND QUALITY PIPE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE PROJECT. ALL UTILITIES UNDERMINED BY THE EXCAVATION SHALL HAVE COMPACTED CLASS II SAND BACKFILL PLACED UNDER THEM.

7. UTILITY COORDINATION
   FOR UTILITIES THAT NEED TO BE RELOCATED DURING CONSTRUCTION, THE CONTRACTOR WILL COORDINATE WITH THE RESPECTIVE UTILITY OWNER TO COMPLETE THIS TASK. THE COST TO RELOCATE UTILITIES WILL BE PAID FOR BY OTHERS. NO ADDITIONAL COST FOR COORDINATION EFFORTS INCURRED BY THE CONTRACTOR WILL BE PROVIDED.

8. PROTECTION OF HAZARDOUS AREAS / OPEN EXCAVATIONS
   EXCAVATIONS AND HAZARDOUS AREAS SHALL BE PROTECTED BY BARRICADES OR SNOW FENCE.

   THE PLACEMENT OF PROTECTIVE FENCING MEETING MIOSHA STANDARDS IS REQUIRED AROUND ALL OPEN EXCAVATIONS. THIS WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED AS HAVING BEEN IN THE CONTRACT UNIT PRICE BID FOR MINOR TRAFFIC DEVICES.

9. DISPOSAL OF EXCESS EXCAVATED MATERIAL
   ALL EXCESS EXCAVATED MATERIALS SHALL BE DISPOSED OF BY THE CONTRACTOR AT A LOCATION PROVIDED BY THE CONTRACTOR. ADJACENT PROPERTY OWNERS SHALL BE GIVEN PREFERENCE FOR DISPOSAL SITES.

10. SALVAGED MATERIALS
    SALVAGEABLE MATERIALS SHALL BECOME THE PROPERTY OF THE OWNER, AND SHALL BE STORED AS DIRECTED BY THE ENGINEER.

    ALL SIGNS RELOCATED BY CONSTRUCTION SHALL BE REPLACED. SIGNS AND POSTS REMOVED SHALL BE STOCKPILED AT A LOCATION SPECIFIED BY THE ENGINEER.

11. SAW CUTS
    ALL SAW CUTS SHOWN ON THE PLANS OR AS SPECIFIED WILL NOT BE PAID FOR SEPARATELY, BUT WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN PAVEMENT REMOVAL ITEMS.

12. TREE PROTECTION
    PRIOR TO GRADING/CLEARING, ALL TREES TO REMAIN SHALL BE PROTECTED USING FENCE, PROTECTIVE. THE FENCING SHALL BE PLACED AT THE DRIP LINE AROUND THE ENTIRE CIRCUMFERENCE.

13. TREE REMOVAL
    PRIOR TO ANY TREE REMOVAL, ENGINEER SHALL MARK TREE WITH APPROVED TAPE AND COORDINATE REMOVAL OF TREE WITH PITTSFIELD PARKS 72 HOURS IN ADVANCE.

14. HERBICIDE APPLICATION
    WITHIN 48 HOURS OF TREE AND BRUSH REMOVAL, CONTRACTOR SHALL APPLY GLYSOPHATE (OR APPROVED EQUAL) VEGETATION SOLUTION AT MANUFACTURER'S RECOMMENDED APPLICATION RATE TO ALL EXPOSED ROOT MATERIAL, PAID FOR AS; _GRADING, MODIFIED.

15. GRADING LIMITS
    THE GRADING/CLEARING LIMIT LINES SHOWN ON THE PLANS ARE GENERAL LIMITS PROVIDED IN ADDITION TO THE PATH PROFILE TO GUIDE THE CONTRACTOR IN ESTIMATING DISTURBANCE AREAS, AS WELL AS EXCAVATION AND EMBANKMENT. AREAS TO BE GRADED MAY EXTEND PAST THESE LIMITS WHEN WITHIN THE PARK PROPERTY WITH THE PERMISSION OF THE ENGINEER THE CONTRACTOR SHALL ESTIMATE RESTORATION IMPACTS BASED ON THEIR ANALYSIS OF THE INFORMATION PROVIDED, AND NOT NECESSARILY THE GRADING LIMIT LINES SHOWN ON THE PLANS, AND SHALL BE RESPONSIBLE FOR PROVIDING ALL SITE RESTORATION FOR A SQUARE YARD AMOUNT AS PROVIDED IN SLOPE RESTORATION AND PROJECT CLEAN UP PAY ITEMS.
    DISTURBANCE LIMITS SHALL BE MINIMIZED TO PROTECT ALL NATURAL AREAS. ALL DISTURBED AREAS SHALL BE RESTORED AS NEW.

16. COVERS AND CASTINGS
    ALL FINAL ELEVATIONS OF MANHOLE CASTINGS, HYDRANTS, VALVES AND VALVE BOXES SHALL BE DETERMINED BY THE ENGINEER IN THE FIELD. CASTINGS DAMAGED BY THE CONTRACTOR SHALL BE REPLACED AT THE EXPENSE OF THE CONTRACTOR, WITH MATERIALS APPROVED BY THE ENGINEER.

17. RESTORATION OF GRAVEL SHOULDERS
    FOR GRAVEL SHOULDERS CONTAMINATED BY CONSTRUCTION THE CONTRACTOR SHALL RE-GRAVEL WITH 23A CRUSHED LIMESTONE TO MICHIGAN DEPARTMENT OF TRANSPORTATION 2020 STANDARD SPECIFICATIONS FOR CONSTRUCTION. FOR SHOULDERS REMOVED BY CONSTRUCTION THE MINIMUM REPLACEMENT SHALL BE 4' WIDE BY 4" DEEP, INCIDENTAL TO OTHER PAY ITEMS.

18. A WASHTENAW COUNTY WATER RESOURCES PERMIT NUMBER DRA2021-00090 HAS BEEN ACQUIRED FOR THE PROJECT.

PROJECT AND UTILITY CONTACTS:

NAME: PITTSFIELD CHARTER TOWNSHIP (GRANTEE)
ADDR: 6201 WEST MICHIGAN AVE. ANN ARBOR, MI 48108
PHONE: 734-822-3134
EMAIL: WESTJ@PITTSFIELD-MI.GOV
CONTACT: JESSICA WEST

NAME: PITTSFIELD CHARTER TOWNSHIP (UTILITIES)
ADDR: 6201 WEST MICHIGAN AVE. ANN ARBOR, MI 48108
PHONE: 734-822-2110
EMAIL: UTILITIES@PITTSFIELD-MI.GOV
CONTACT: BILLY WEIRICH

NAME: PITTSFIELD CHARTER TOWNSHIP (PARKS AND RECREATION)
ADDR: 701 ELLSWORTH RD. ANN ARBOR, MI 48108
PHONE: 734-822-2114
EMAIL: WADER@PITTSFIELD-MI.GOV
CONTACT: RICH WADE

NAME: WASHTENAW COUNTY WATER RESOURCES COMMISSION
ADDR: 705 N. ZEEB RD. ANN ARBOR, MI 48103
PHONE: 734-222-6860
EMAIL: MILLERS@WASHTENAW.ORG
CONTACT: SCOTT MILLER, PE

NAME: STANTEC CONSULTING MICHIGAN INC. (PRIME PROFESSIONAL)
ADDR: 1168 OAK VALLEY DRIVE STE 100, ANN ARBOR, MI 48108
PHONE: 734-761-1010
EMAIL: CLAIRE.MARTIN@STANTEC.COM
CONTACT: CLAIRE MARTIN, PE

GENERAL NOTES

1. IF PROJECT DISTURBANCE AREA EXCEEDS 5 ACRES, CONTRACTOR MUST APPLY FOR NOTICE OF COVERAGE FROM EGLE.
2. PATHWAY TO MEET ALL BARRIER FREE UNIVERSAL ACCESS REQUIREMENTS.
3. THERE IS EXTENSIVE BRUSH ADJACENT TO THE PROPOSED PATH. BRUSH LIMITS ARE NOT SHOWN ON THE PLANS. CONTRACTOR TO FIELD VERIFY PRIOR TO SUBMITTING BID, AND INCLUDE COST OF ALL BRUSH CLEANING NECESSARY TO CONSTRUCT THE PATHWAY.
4. ALL PATH RAMPS ARE TO BE ADA COMPLIANT AND BE CONSTRUCTED WITH 6" THICK CONCRETE WITH THE INSTALLATION OF DETECTABLE WARNING SURFACES PER MDOT STANDARD DETAIL.
5. NO CHEMICALS ARE ALLOWED IN STORMWATER FEATURES OR BUFFER ZONES WITH THE FOLLOWING EXCEPTION: INVASIVE SPECIES MAY BE TREATED WITH CHEMICALS BY A CERTIFIED APPLICATOR.

TRAFFIC NOTES

1. ACCESS TO ALL DRIVEWAYS MUST BE MAINTAINED AT ALL TIMES. AT LEAST ONE PARKING LOT IN MONTIBELLER PARK MUST REMAIN OPEN AT ALL TIMES. PHASING OF PARKING LOT IMPROVEMENTS MUST BE CONSIDERED ACCORDINGLY.
2. ALL TRAFFIC CONTROL DEVICES AND THEIR USAGE MUST CONFORM TO THE MICHIGAN MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MMUTCD), LATEST EDITION.
3. ALL EXISTING PAVEMENT MARKINGS THAT ARE REMOVED FOR TRAFFIC CONTROL OR OBLITERATED DURING CONSTRUCTION OPERATIONS MUST BE REPLACED WITH POLYUREA FOR THE LONGITUDINAL, LANE LINES.
4. ALL SIGNS MATERIALS AND SUPPORTS MUST MEET NCHRP-350 CRASH WORTHY REQUIREMENTS.
5. THERE MUST BE NO HAULING OF MATERIALS INCLUDING TRUCKS ENTERING AND EXITING IN OR OUT OF THE SITE (WORK ZONE) BETWEEN THE HOURS OF 6:00 A.M. TO 9:00 A.M. AND 2:00 P.M. TO 7:00 P.M., MONDAY THROUGH FRIDAY.

Maintenance Tasks and Schedule

TASKS	COMPONENTS: STREETS	STORM DRAINAGE SYSTEM	CATCH BASIN INLETS	CATCH BASIN INLET CASTINGS	CHANNELS	OUTFLOW CONTROL STRUCTURES	RIP-RAP	FILTRATION BASIN	SEDIMENTATION AREAS	VEGETATION	EMERGENCY OVERFLOW	SCHEDULE
INSPECT FOR SEDIMENT ACCUMULATION		X	X		X	X	X		X			ANNUALLY
REMOVAL OF SEDIMENT ACCUMULATION		X	X		X	X	X		X			EVERY 5-10 YEARS AS NEEDED*
INSPECT FOR FLOATABLES AND DEBRIS		X	X	X	X	X	X		X			ANNUALLY
CLEANING FOR FLOATABLES AND DEBRIS		X	X	X	X	X	X		X			ANNUALLY
INSPECTION FOR EROSION		X			X		X					ANNUALLY
SESC INSPECTION FOLLOWING STORMS OF 1 INCH OF MORE								X	X			AS NEEDED
REESTABLISH PERMANENT VEGETATION ON ERODED SLOPES					X							AS NEEDED
REPLACEMENT OF GRAVEL JACKETS												EVERY 3-5 YEARS AS NEEDED*
CLEAN STREETS AND PARKING LOTS												SEMI-ANNUALLY
MOWING					X				X			1 TIME PER YEAR
INSPECT STRUCTURAL ELEMENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS (BY A PROFESSIONAL ENGINEER REPORTING TO THE OWNER)		X				X			X		X	ANNUALLY
MAKE ADJUSTMENTS OR REPLACEMENTS AS DETERMINED BY ANNUAL WET WEATHER INSPECTION		X				X	X		X		X	AS NEEDED
KEEP RECORDS OF ALL INSPECTIONS AND MAINTENANCE ACTIVITIES AND REPORT TO OWNER		X				X	X		X		X	ANNUALLY
KEEP RECORDS OF ALL COSTS FOR INSPECTIONS, MAINTENANCE AND REPAIRS. REPORT TO OWNER.		X	X			X	X		X		X	ANNUALLY
REVIEW COST EFFECTIVENESS OF THE PREVENTATIVE MAINTENANCE PROGRAM AND MAKE ADJUSTMENTS AS NEEDED		X	X			X	X		X			ANNUALLY
OWNER TO HAVE A PROFESSIONAL ENGINEER CARRY OUT EMERGENCY INSPECTIONS UPON IDENTIFICATION OF SEVERE PROBLEMS		X	X		X	X	X		X		X	AS NEEDED
WATER DISTURBED AREAS TO PROVIDE DUST CONTROL	ALL DISTURBED AREAS OF SITE											WEEKLY OR AS DETERMINED BY PERMITTING AGENCY

* "AS-NEEDED" MEANS WHEN SEDIMENT HAS ACCUMULATED TO A MAXIMUM OF ONE FOOT DEPTH
- REGULAR STORM WATER MANAGEMENT SYSTEM MAINTENANCE WILL BE PERFORMED BY AN OPERATIONS COMPANY, CONTRACTED BY PITTSFIELD TOWNSHIP.
- THE ESTIMATED ANNUAL BUDGET FOR MAINTENANCE IS:
  $200 - FOR YEARLY INSPECTION
  $100 - FOR YEARLY MOWING
  $1500/YEAR FOR SEDIMENT REMOVAL, REQUIRED REPAIRS
  $50/YEAR FOR RECORD KEEPING
  $50/YEAR FOR AS-NEEDED EMERGENCY INSPECTIONS
  $500 TOTAL ESTIMATED ANNUAL BUDGET

Table 1 – Infiltration Test Results

Test Pit	Test No.	Stabilized Infiltration Rate (in/hr)	Average Infiltration Rate (in/hr)	Design Infiltration Rate (in/hr)
TP-3	3.1	70 1/2	70 7/8	10*
	3.2	71 1/4		
TP-4	4.1	15	11 1/4	5 5/8
	4.2	7 1/2		

*WCWRC Procedures and Design Criteria for Stormwater Management specify a maximum design infiltration rate of 10 in/hr.

LEGEND

SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
835	EXIST. CONTOUR		EXIST. CURB AND GUTTER
835	PROP. CONTOUR		PROP. CURB AND GUTTER
× 854.6	EXIST. SPOT ELEVATION		CENTERLINE OF DITCH
× 854.6	PROP. SPOT ELEVATION		EDGE OF WATER
T/C	TOP OF CURB		EDGE OF WETLAND
T/P	TOP OF PAVEMENT		EXISTING FENCE
G	GUTTER		PROPOSED FENCE
12"ST	EXIST. STORM SEWER		TREE PROTECTION FENCE
12"ST	PROP. STORM SEWER		SILT FENCE
D S E	EXIST. MANHOLE		CLEARING LIMITS
D S	PROP. MANHOLE		EXIST. GUARDRAIL
	PROP. EDGE DRAIN		PROP. GUARDRAIL
	EXIST. CATCH BASIN/INLET	P	PROPERTY LINE
	PROP. CATCH BASIN/INLET	℄	CENTERLINE
	END SECTION/HEAD WALL	1	EXIST. SIGN
	CULVERT		PROP. SIGN
	INLET FILTER		ENCLOSED TRASH AREA
C.O.	PROP. CLEANOUT		DRAINAGE DIRECTION
8"S	EXIST. SANITARY SEWER		SIDEWALK RAMP
8"S	PROP. SANITARY SEWER		BARRIER FREE PARKING
8"W	EXIST. WATER MAIN	F.F.	FINISH FLOOR ELEV.
8"W	PROP. WATER MAIN	F.G.	FINISH GRADE ELEV.
	EXIST. HYDRANT	B.F.	BASEMENT FLOOR ELEV.
	PROP. HYDRANT	G.F.	GARAGE FLOOR ELEV.
P.I.V.	EXIST. POST INDICATOR VALVE		SECTION CORNER
	EXIST. GATE VALVE AND BOX/STOP BOX		CONTROL POINT
	PROP. CURB STOP BOX	○	FOUND IRON PIPE
W	EXIST. GATE VALVE AND WELL	○ S	SET IRON PIPE
	PROP. GATE VALVE AND WELL	◎	FOUND CONCRETE MONUMENT
	PROP. REDUCER	◎ S	SET CONCRETE MONUMENT
	PROP. END CAP	× F	FOUND PK NAIL
OHP	EXIST. OVERHEAD ELECTRIC	× S	SET PK NAIL
OHP	PROP. OVERHEAD ELECTRIC	✖ F	FOUND LEADED CHISEL HOLE
UGE	EXIST. UNDERGROUND ELECTRIC	✖ S	SET LEADED CHISEL HOLE
UGE	PROP. UNDERGROUND ELECTRIC	○ F-RR	FOUND REROD
	EXIST. LIGHT POLE		APPROX. LOCATION OF SOIL BORING
	PROP. LIGHT POLE		APPROX. LOCATION OF MONITORING WELL
U.P.	EXIST. UTILITY POLE		APPROX. LOCATION OF PENETRATION TEST
	GUY WIRE		EXIST. DECIDUOUS TREE
E	EXIST. ELECTRIC TRANSFORMER		EXIST. EVERGREEN TREE
E	PROP. ELECTRIC TRANSFORMER		EXIST. SHRUB
OHT	EXIST. OVERHEAD TELEPHONE		EXIST. TREE OR BRUSH LIMIT
OHT	PROP. OVERHEAD TELEPHONE		TREE TO BE REMOVED
UGT	EXIST. UNDERGROUND TELEPHONE		REMOVE AND REPLACE
UGT	PROP. UNDERGROUND TELEPHONE		
2"G	EXIST. GAS		BITUMINOUS PAVEMENT
2"G	PROP. GAS		
M	EXIST. MAILBOX		GRAVEL PAVEMENT
G	EXIST. GAS RISER		
T	EXIST. TELEPHONE RISER		CONCRETE PAVEMENT
	COMPACTED SAND BACKFILL		BRICK PAVERS

STORMWATER DESIGN CALCULATIONS

W1-a

Rational Method Variables	Cover Type	Soil Type	Area (SFT)	Area (Ac)	C	C x A (Ac)	C x A (sf)
	Roof	D	0	0.00	0.95	0.00	0
	Gravel (6-foot Limestone Pathway, South Baseball Field)	B/D	81222	1.86	0.85	1.58	69039
	Concrete (Brick Paver Areas, Sidewalk)	B/D	11853	0.27	0.95	0.26	11260
	Asphalt (Pickleball Court)	D	9148	0.21	0.95	0.20	8691
	Lawn (Slope 4-8%)	B/D	136343	3.13	0.46	1.44	62718
				Total C x A		3.48	151707
				Total Area		5.48	238565.8
				Weighted C - (Tot CxA)/(Tot A)		0.64	0.64

W1-b

NRCS Variables Pervious	Cover Type	Soil Type	Area (SFT)	Area (Ac)	CN	CN x A (Ac)	CN x A (sf)
	Lawn	B/D	136343	3.13	76	238.51	10389321
				Total CN x A		238.51	10389321.36
				Total Area		3.13	136342.8
				Weighted CN - (Tot CNxA)/(Tot A)		76	76

W1-c

NRCS Variables Impervious	Cover Type	Soil Type	Area (SFT)	Area (Ac)	CN	CN x A (Ac)	CN x A (sf)
	Roof	D	0	0.00	98	0.0	0
	Gravel (6" Limestone Pathway, South Baseball Field)	B/D	81222	1.86	91	169	7366835
	Concrete (Brick Paver Areas, Sidewalk)	B/D	11853	0.27	98	27	1161594
	Asphalt (Pickleball Court)	D	9148	0.21	98	21	896504
				Total CN x A		216	9424933.4
				Total Area		2.35	102223
				Weighted CN - (Tot CNxA)/(Tot A)		92	92

W2

First Flush Volume Rational		
Vff = (1")(1/12)*43560*A*C		
A	5.48	
C	0.64	
Vff	12642	CFT

W3

Presettlement Bankfull Runoff Calculation (Vbf-pre)			
2 yr / 24 hour storm	P	2.35	in
Determine Presettlement CN. Assume Good Cover Forrestland or Meadow	CN (Soil Type B/D)	74	
S = 1000/CN - 10	S	3.51	in
Q = (P - 0.2*S)^2 / (P + 0.8*S)	Q	0.53	in
Total site area exluding "Self Crediting" BMPs	A	238565.8	sf
Vbf-pre = Q(1/12)A	Vbf-pre	10453	cf

W4

Pervious Cover Post-Development Bankfull Runoff Calculation (Vbf-per-post)			
2 yr / 24 hour storm	P	2.35	in
	CN	76	
S = 1000/CN - 10	S	3.12	in
Q = (P - 0.2*S)^2 / (P + 0.8*S)	Q	0.61	in
Total site area exluding "Self Crediting" BMPs	A	136342.8	sf
Vbf-per-post = Q(1/12)A	Vbf-per-post	6975	cf

W5

Impervious Cover Post-Development Bankfull Runoff Calculation (Vbf-imp-post)			
2 yr / 24 hour storm	P	2.35	in
	CN	92	
S = 1000/CN - 10	S	0.85	in
Q = (P - 0.2*S)^2 / (P + 0.8*S)	Q	1.57	in
Total site area exluding "Self Crediting" BMPs	A	102223	sf
Vbf-imp-post = Q(1/12)A	Vbf-imp-post	13385	cf

W6

Pervious Cover Post-Development 1% Storm Runoff Calculation (V100-per-post)			
100-yr storm	P	5.11	in
	CN	76	
S = 1000/CN - 10	S	3.12	in
Q = (P - 0.2*S)^2 / (P + 0.8*S)	Q	2.64	in
Total site area exluding "Self Crediting" BMPs	A	136342.8	sf
V100-per-post = Q(1/12)A	V100-per-post	30042	cf

W7

Impervious Cover Post-Development 1% Storm Runoff Calculation (V100-imp-post)			
100-yr storm	P	5.11	in
	CN	92	
S = 1000/CN - 10	S	0.85	in
Q = (P - 0.2*S)^2 / (P + 0.8*S)	Q	4.22	in
Total site area exluding "Self Crediting" BMPs	A	102223	sf
V100-imp-post = Q(1/12)A	V100-imp-post	35935	cf

W9

Summary	
Vff	12642
Vbf-pre	10453
Vbf-per-post	6975
Vbf-imp-post	13385
V100-per-post	30042
V100-imp-post	35935

Infiltration Requirement	
Total Post-Development Bankfull Volume (Vbf-post)	20360
Presettlement Bankfull Volume	10453
Bankfull Volume Difference	9907
Infiltration Requirement equals the greater between the Bankful Volume Difference and the First Flush Volume Vff	**12642**

W10

Qp = 238.6*Tc^-.82 (Peak of the Unit Hydrograph)	Qp	790 cfs/in-mi^2
Total site area (Ac) excuding "Self-Crediting" BMPs	A	5.48 Ac
Q100 = Q100-per + Q100-imp	Q100	6.86 in
Peak Flow (PF) = (Qp*Q100*A)/640	PF	46.40 cfs
Change in flow = PF - 0.15*A	Delta	45.58
Required Detention Vdet = (Delta/PF)*V100 - Vinf	Vdet	**52167**
Required Volume Without Subtracting Infiltration	V	64809

W8

Flow Type	K	Change in Elev	Length	Slope %	Slope^0.5	V=K*S^0.5	Tc=L/(V*3600)
Sheet	0.48	3	300	1.00	1	0.48	0.17
Waterway	1.2	10	400	2.50	1.58113883	1.90	0.06
Small Trib.	2.1						

Total time of concentration Tc 0.23 Hrs. / 14 Min.

W11

	Area (SFT)	Storage Volume (cf) Surface	Soil	Design Infiltration Rate (in/hr)	Infiltration Volume During Storm (cf)	Total Volume Reduction (cf)
Detention	8275	53115	0	5.625	23273	**76388**
Pond						
						76388

W13

Stormwater Management Summary		
Minimum Onsite Infiltration Requirement	Vinf	12642 cf
Designed/Provided Infiltration Volume		23273 cf
% Minimum Required Infiltration Provided		184.09 %
Total Calculated Detention Volume	Vdet	64809 cf
Net Required Detention Volume		41536 cf

Detention Volume Increase (Required Infiltration Volume not Achieved)		
% Required Infiltration Not Provided		0.00 %
Net % Penalty		0.00 %
Total Required Detention Volume, Including Penalty		**41536** cf

Stantec
Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801_G-002		JDA	AMS	MDP 2020.03.10
		Dwn.	Dsgn.	Chkd. YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

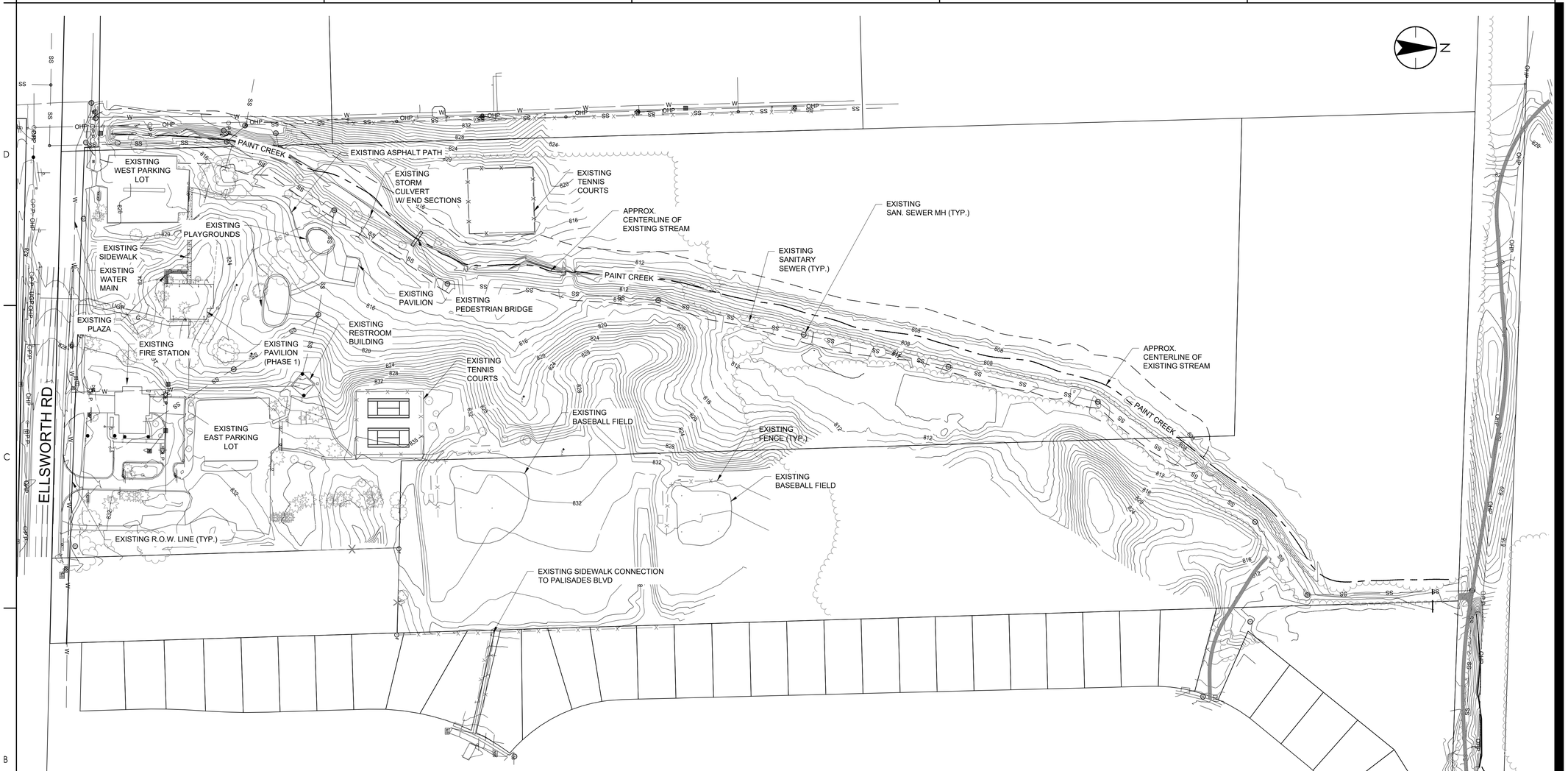
MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

GENERAL NOTES, LEGEND, ABBREVIATIONS AND SYMBOLS

Project No. 2075140801
Scale
Revision 0
Sheet 02 of 24
Drawing No. **G002**



Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-001		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project

PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

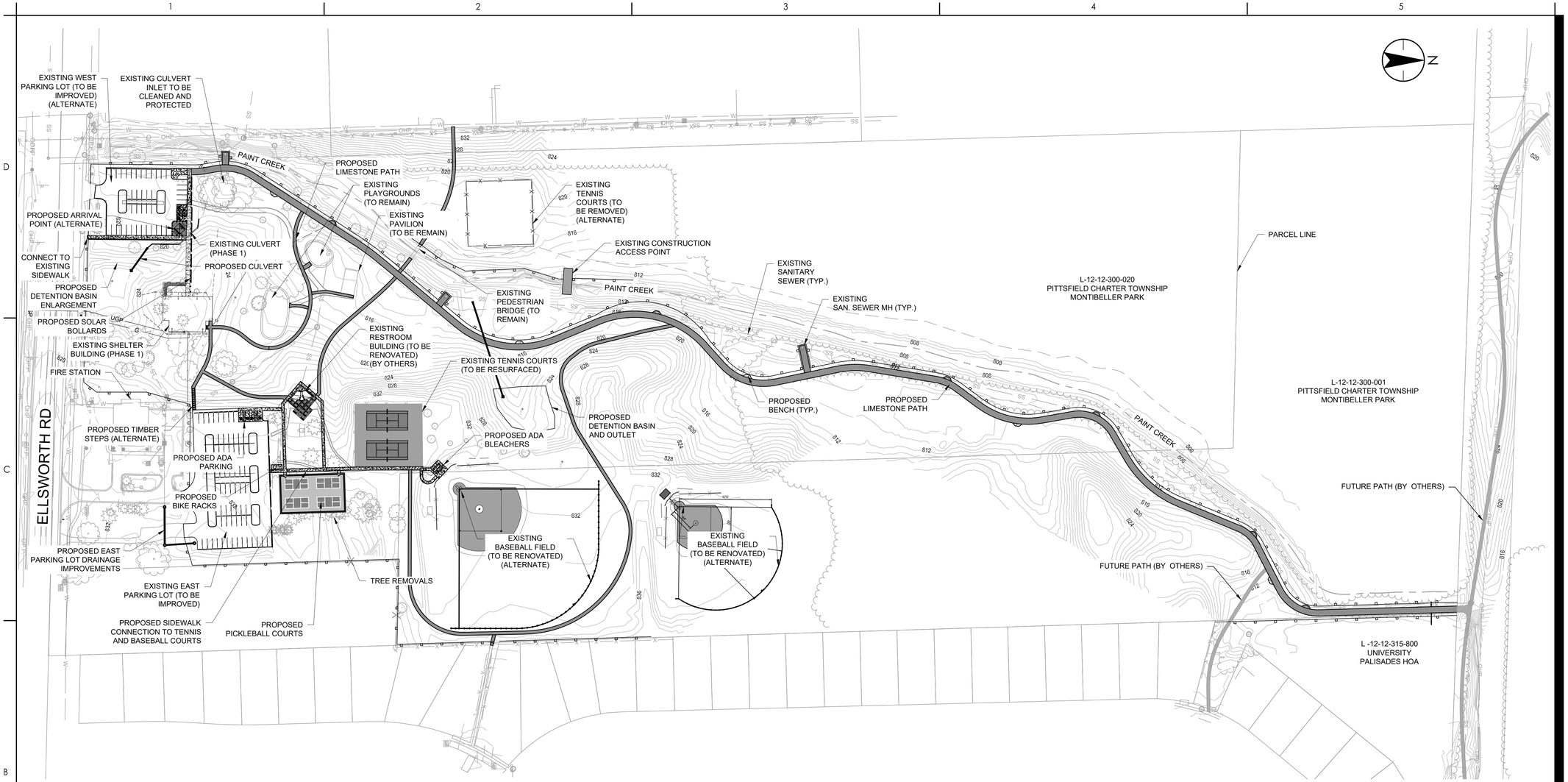
Pittsfield Township, Michigan

Title

OVERALL EXISTING CONDITIONS

Project No.	Scale
2075140801	0 100' 200'
Revision	Sheet
0	03 of 24

Drawing No.
C001



Base Bid Quantities

Item No.	Item Description	Quantity	Units
1	Mobilization & General Conditions (5% max.)	1	LS
2	Soil Erosion Controls	1	LS
3	Audio Visual File	1	LS
4	Project Cleanup	1	LS
5	Tree Removal	15	EA
6	Gravel Drive Regrading/Removal (East Parking Lot)	5000	SYD
7	Existing HMA Removal	856	SYD
8	Integral Curb (West Parking Lot Sidewalk)	267	LF
9	6" Straight Curb (East Parking Lot Islands)	318	LF
10	6' Wide Limestone Path	2544	LF
11	6' Concrete Sidewalk	1267	LF
12	12' Wide Limestone Path	2779	LF
13	Gravel Resurfacing (East Parking Lot)	3739	SYD
14	ADA Parking Area (East Parking Lot)	1	LS
15	Wheel Stop (East Parking Lot)	54	EA
16	Bike Rack	1	EA
17	Decorative Fence	574	LF
18	Existing Tennis Court Resurfacing	1800	SYD
19	Pickleball Court	1	LS
20	ADA Bleachers	1	LS
21	12' Wide Sanitary Manhole Access	9	EA
22	ADA Bench Area	4	EA
23	Existing Detention Basin Enlargement and Storm Outlet Structure	1	LS
24	Proposed Detention Basin and Storm Outlet Structure	1	LS
25	15" Diameter Storm Sewer	130	LF
26	48" Diameter Storm Structure with 2' Diameter Beehive Cover	1	EA
27	48" Diameter Storm Structure with 2' Diameter Flat Top Cover	2	EA
28	Remove Bulkhead and Connect to New Storm Structure	1	EA
29	Turf Establishment & Landscaping	1	LS
30	LED Solar Bollards	17	EA

Alternate No.	Item Description	Quantity	Units
Alternate No. 1 (Add-on: West Parking Lot Re-surfacing)	Gravel Drive Regrading/Removal	2128	SYD
	Concrete ADA Spaces	550	SFT
	6" Straight Curb	246	LF
	Gravel Resurface	1875	SYD
	Wheel Stop	25	EA
	Turf Establishment & Landscaping	1	LS
Alternate No. 2 (Add-on: Arrival Point)	Arrival Point Shelter	1	EA
	Integral Curb	70	FT
	Brick Pavers	750	SFT
	Bench	4	EA
	Trash Can	2	EA
	Turf Establishment & Landscaping	1	LS
	Bike Rack	3	EA
Alternate No. 3 (Add-on: Baseball Field Improvements)	4-feet High Chain Link Homerun Fence	490	LF
	4-feet High Chain Link Gate in Homerun Fence	1	EA
	Foul Pole	2	EA
	Infield Skin Material	1500	SYD
	4-feet High Chain Link Homerun Fence	136	LF
	4-feet High Chain Link Gate in Homerun Fence	1	EA
	Foul Pole	2	EA
	Infield Skin Material	735	SYD
Alternate No. 4 (Add-on: West Tennis Court Removal)	West Tennis Court HMA Removal	1740	SYD
	West Tennis Court Fence Removal	490	LF
	Turf Establishment & Landscaping	1	LS
Alternate No. 5 (Add-on: Additional Site Work)	Timber Steps	1	LS
	6' Wide Limestone Path	281	LF
	Brick Pavers	1147	SFT

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A BID SET PHASE 2	CRW	MDP	2023.01.26
Issued	By	Appd	YYYY.MM.DD
File Name: 140801C-002	JDA	AMS	MDP	2020.03.10
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project

PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

OVERALL PROPOSED SITE PLAN

Project No. 2075140801

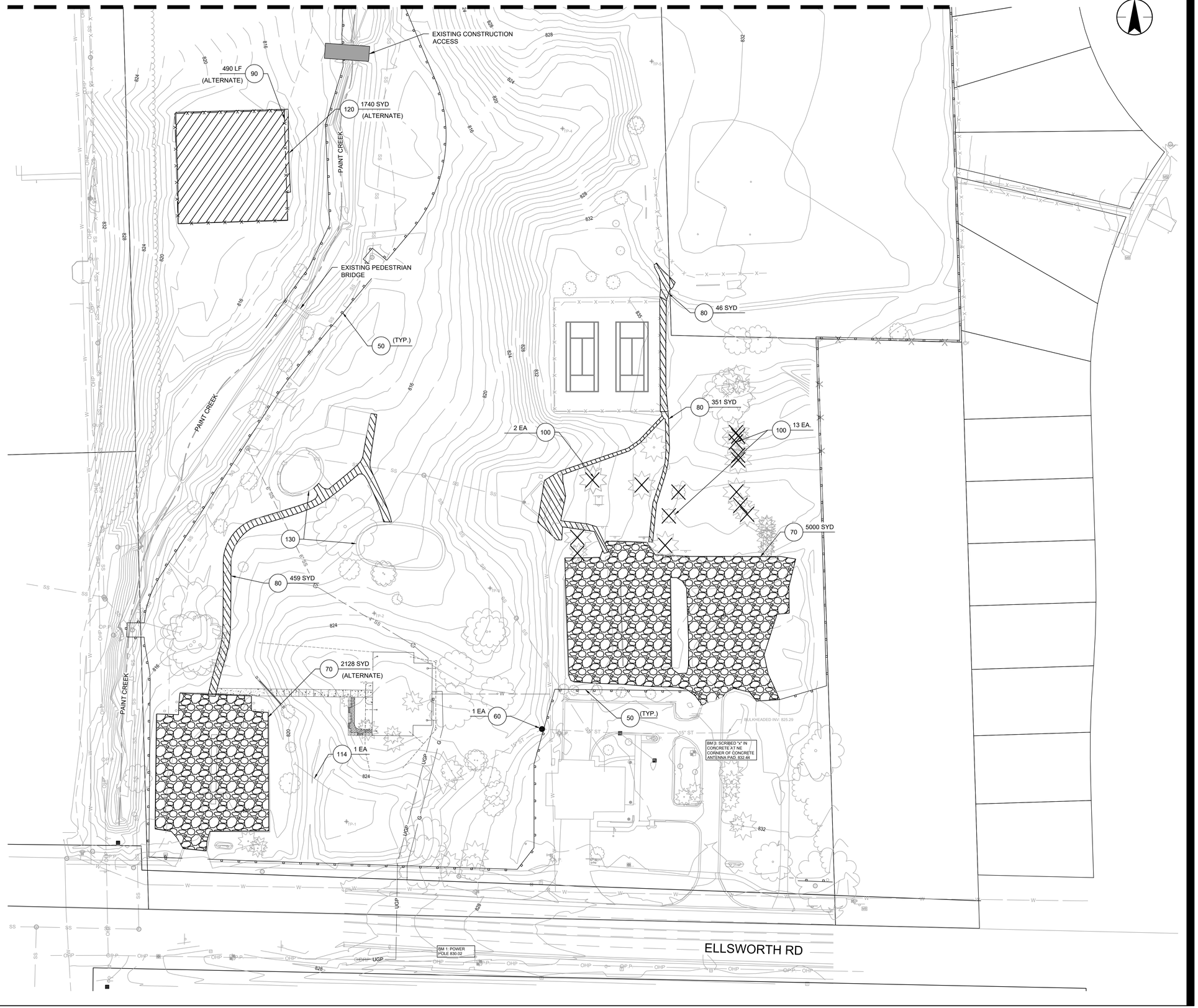
Scale 0 100' 200'

Revision 0

Sheet 04 of 24

Drawing No. **C002**

MATCH LINE - SHEET C-101



KEY NOTES:

50	SILT FENCE
60	INLET FILTER
70	GRAVEL DRIVE REGRADING/REMOVAL
80	EXISTING HMA REMOVAL
90	FENCE REMOVAL
100	TREE REMOVAL
114	EXISTING 12" CULVERT REMOVAL
120	EXISTING TENNIS COURT AND FENCE TO BE REMOVED
130	PROTECT EXISTING PLAYGROUNDS

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-100		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

DEMOLITION AND SOIL EROSION CONTROL - SOUTH

Project No.
2075140801

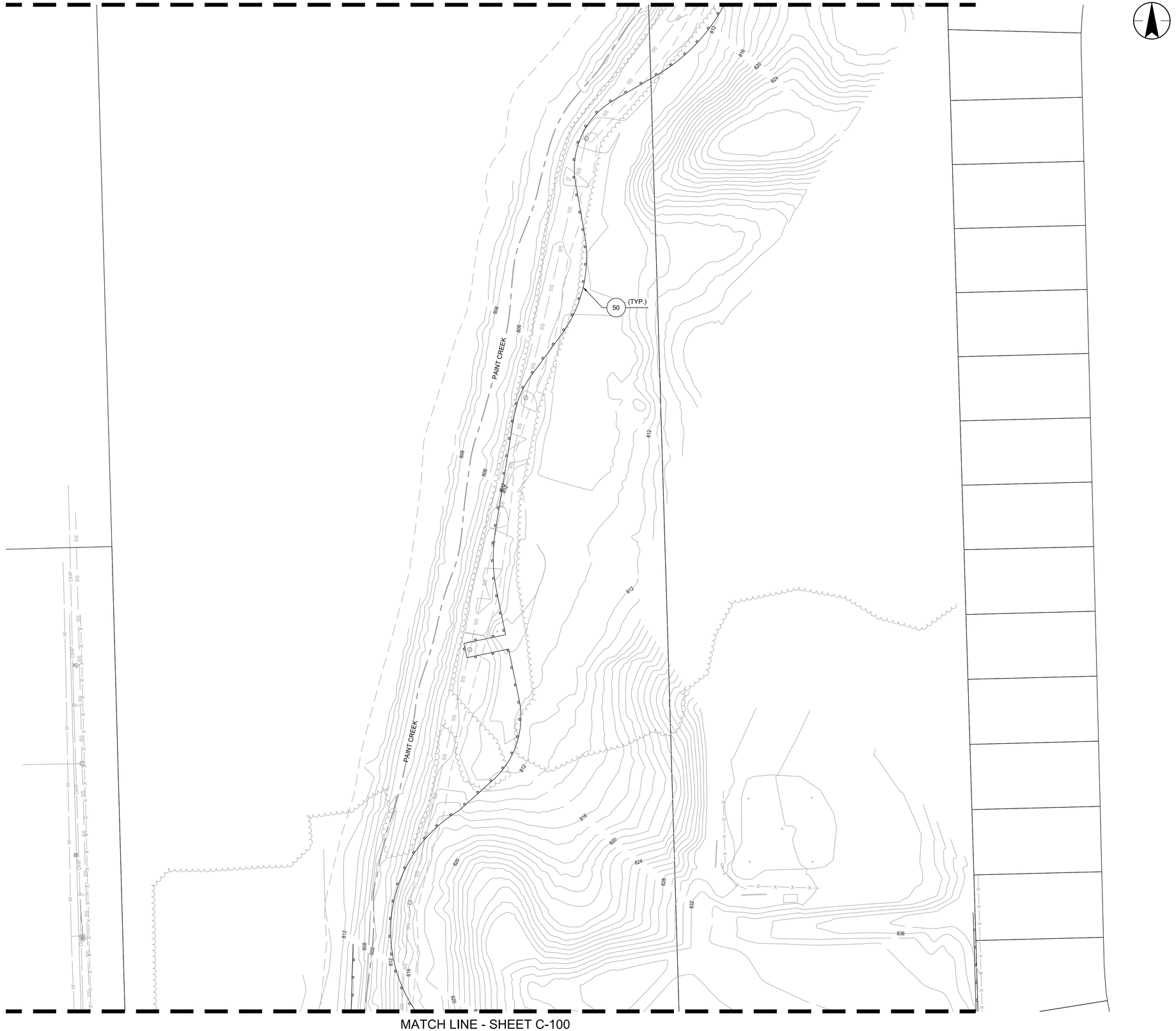
Scale
0 50' 100'

Revision
0

Sheet
05 of 24

Drawing No.
C100

MATCH LINE - SHEET C-102



MATCH LINE - SHEET C-100

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

50 SILT FENCE

A	BID SET PHASE 2	CRW	MDP	2023.01.26
	Issued	By	Appd	YYYY.MM.DD
File Name: 140801C-101		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

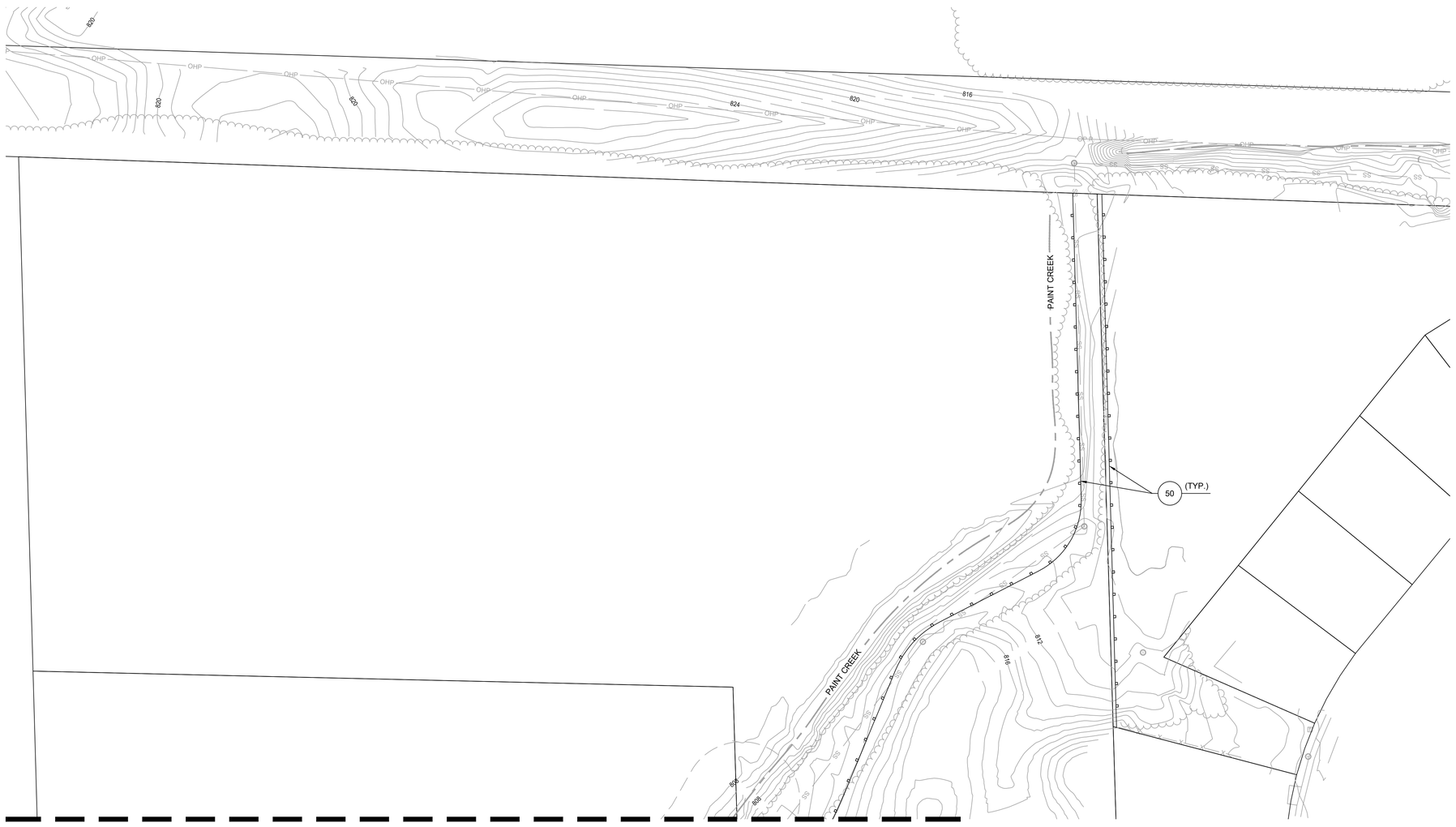
MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

DEMOLITION AND SOIL EROSION CONTROL - MIDDLE

Project No. 2075140801	Scale 0 50' 100'	
Revision 0	Sheet 06 of 24	Drawing No. C101



Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

50 SILT FENCE

A	BID SET PHASE 2	CRW	MDP	2023.01.26
	Issued	By	Appd	YYYY.MM.DD
File Name: 140801C-102		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

DEMOLITION AND SOIL EROSION CONTROL - NORTH

Project No.
2075140801

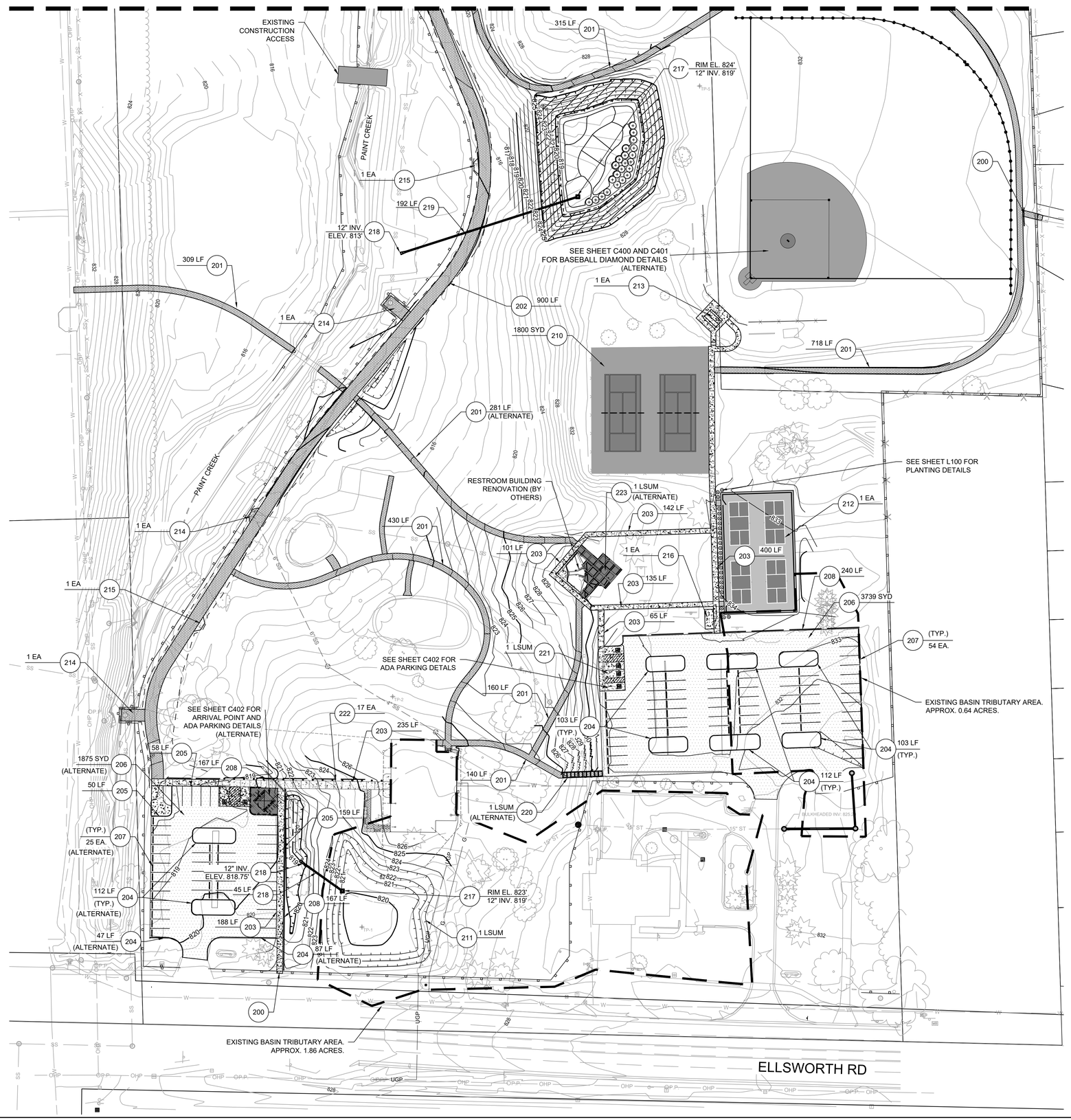
Scale
0 50' 100'

Revision
0

Sheet
07 of 24

Drawing No.
C102

MATCH LINE - SHEET C-111



KEY NOTES:

200 CONNECT TO EXISTING SIDEWALK

201 PROPOSED 6' WIDE LIMESTONE PATH

202 PROPOSED 12' WIDE LIMESTONE PATH

203 PROPOSED 6' CONCRETE SIDEWALK

204 PROPOSED 6" STRAIGHT CURB

205 PROPOSED 6" INTEGRAL CURB

206 PROPOSED GRAVEL RESURFACING

207 PROPOSED WHEEL STOP

208 PROPOSED DECORATIVE FENCE

210 EXISTING TENNIS COURT TO BE RESURFACED (SEE SHEET C403 FOR DETAILED PLAN)

211 ADJUST EXISTING UNDERDRAINS, REMOVE AND REPLACE EXISTING CULVERT AND ENLARGE EXISTING DETENTION BASIN (SEE SHEET C301)

212 PROPOSED PICKLEBALL COURT (SEE SHEET C403 FOR DETAILED PLAN)

213 ADA BLEACHERS (SEE SHEET C400)

214 PROPOSED 12' WIDE SANITARY MANHOLE ACCESS

215 ADA BENCH AREAS (SEE SHEET C501)

216 PROPOSED BIKE RACKS (SEE SHEET C501)

217 36" DETENTION BASIN WITH RISER (SEE DRAWING C500 FOR DETENTION OUTLET STRUCTURE DETAIL)

218 12" END SECTION

219 12" STORM OUTLET PIPE

220 TIMBER STEPS (ALTERNATE) (SEE SHEET C502 FOR DETAILS)

221 ADA PARKING SPACE (SEE SHEET C402 FOR DETAILS)

222 PROPOSED LED SOLAR BOLLARDS (SEE DETAIL LAYOUT SHEET C402)

223 BRICK PAVERS (ALTERNATE) (SEE SHEET C402 FOR DETAILS)

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-110		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project

PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

PROPOSED SITE PLAN - SOUTH

Project No. 2075140801

Scale 0 50' 100'

Revision 0

Sheet 08 of 24

Drawing No. **C110**

MATCH LINE - SHEET C-112

MATCH LINE - SHEET C-110

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

201	PROPOSED 6' WIDE LIMESTONE PATH
202	PROPOSED 12' WIDE LIMESTONE PATH
214	PROPOSED 12' WIDE SANITARY MANHOLE ACCESS
215	ADA BENCH AREA (SEE SHEET C501)

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-111		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

PROPOSED SITE PLAN - MIDDLE

Project No. 2075140801	Scale 0 50' 100'	
Revision 0	Sheet 09 of 24	Drawing No. C111

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

202 PROPOSED 12' WIDE LIMESTONE PATH

214 PROPOSED 12' WIDE SANITARY MANHOLE ACCESS

A BID SET PHASE 2	CRW	MDP	2023.01.26
Issued	By	Appd	YYYY.MM.DD
File Name: 140801C-112	JDA	AMS	MDP	2020.03.10
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

PROPOSED SITE PLAN - NORTH

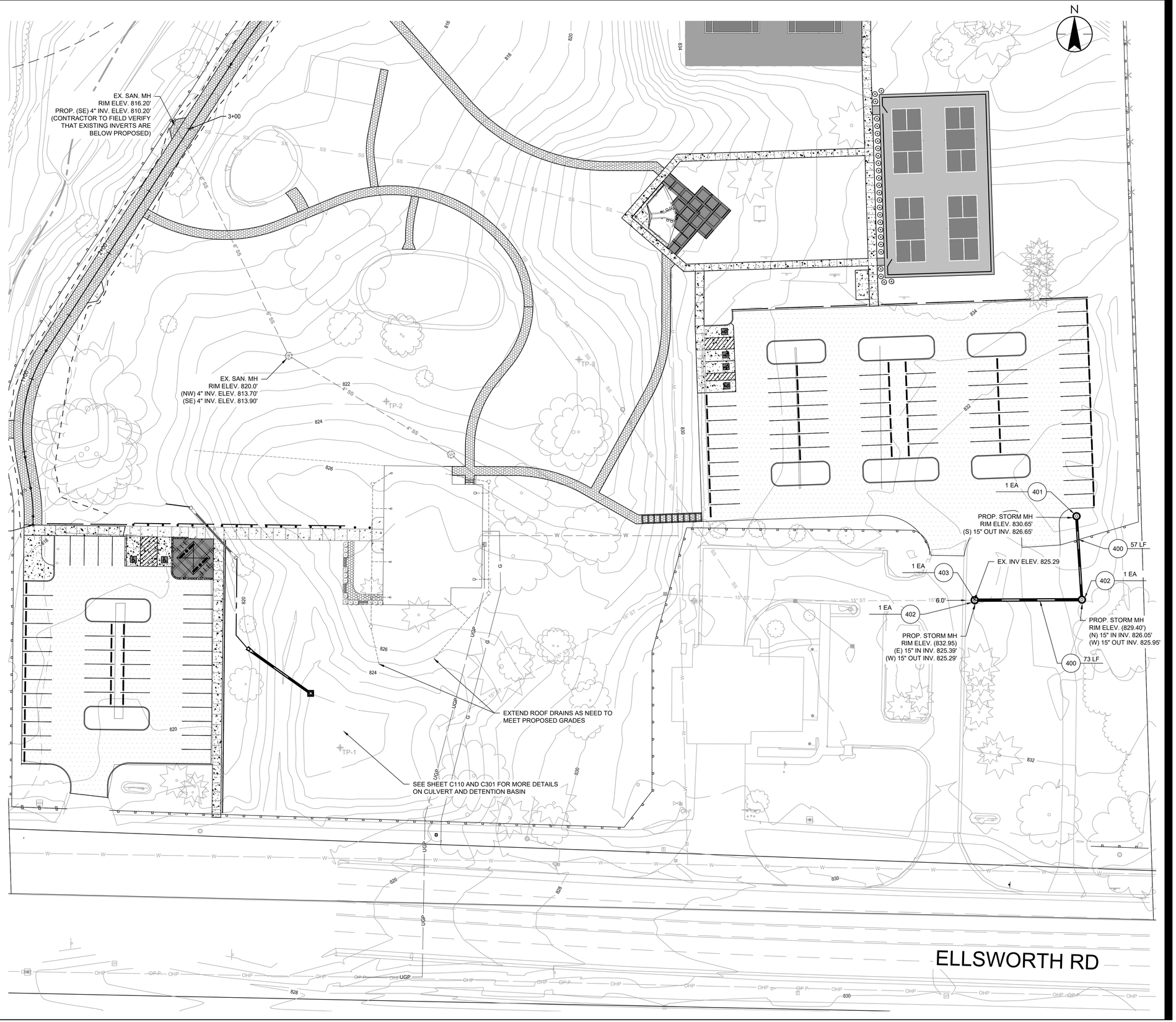
Project No.
2075140801

Scale
0 50' 100'

Revision
0

Sheet
10 of 24

Drawing No.
C112



Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

400	PROPOSED 15" DIAMETER STORM SEWER
401	48" DIAMETER STORM STRUCTURE WITH 2' DIAMETER BEEHIVE COVER
402	48" DIAMETER STORM STRUCTURE WITH 2' DIAMETER FLAT TOP COVER
403	REMOVE BULKHEAD AND CONNECT TO NEW STORM STRUCTURE

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-201		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE APPROXIMATE ONLY AND NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

PROPOSED UTILITY PLAN

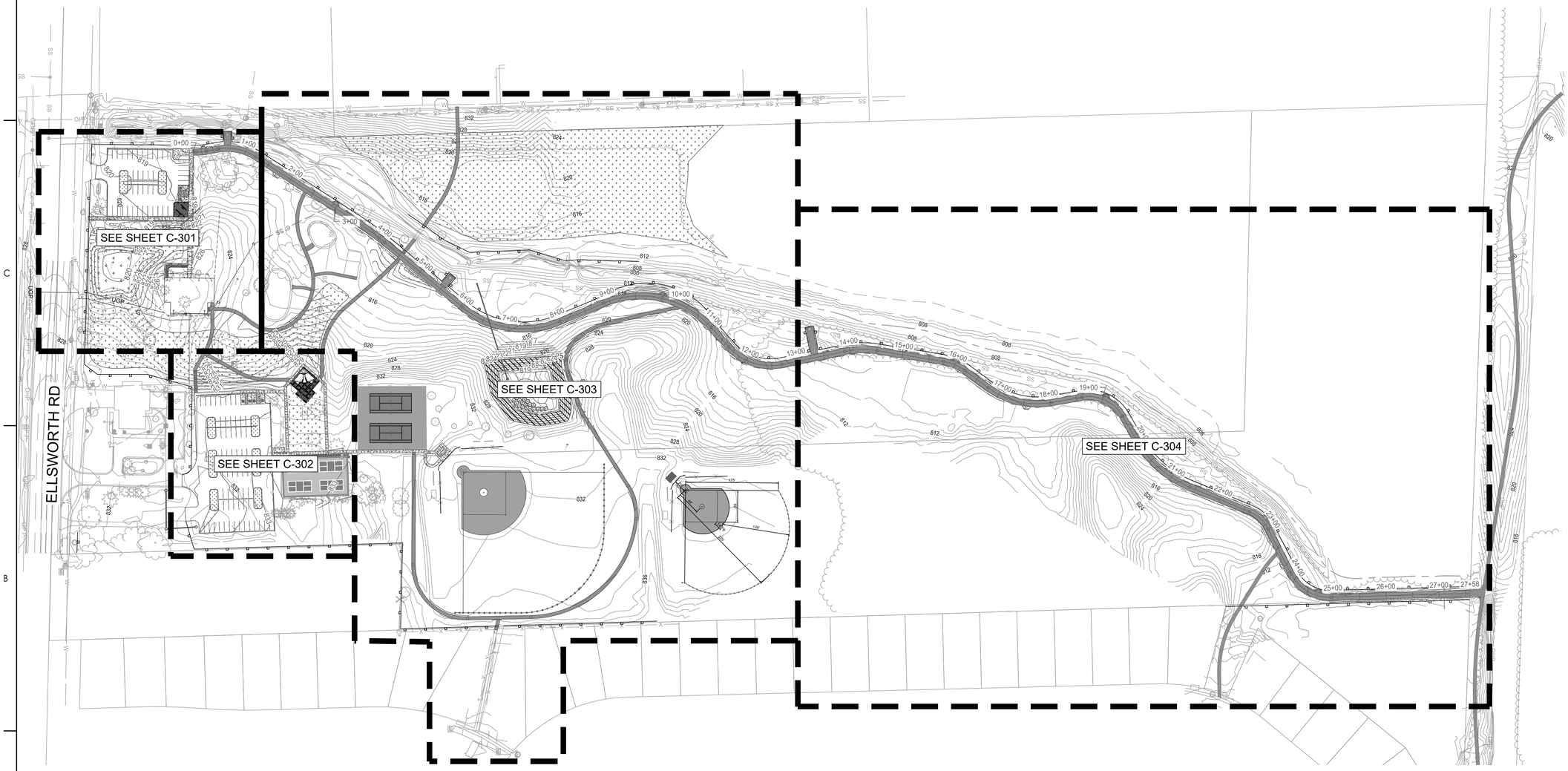
Project No.
2075140801

Scale
0 30' 60'

Revision
0

Sheet
11 of 24

Drawing No.
C201



Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-300		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

OVERALL GRADING PLAN

Project No.
2075140801

Scale
0 100' 200'

Revision
0

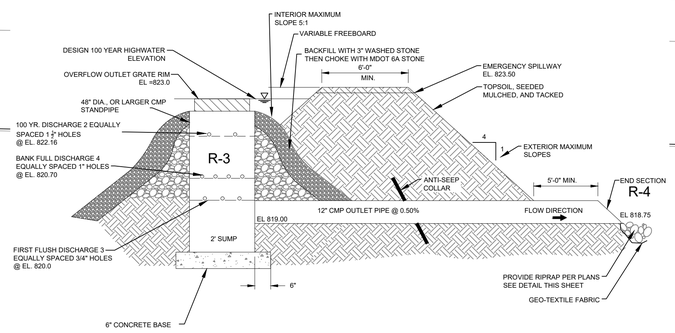
Sheet
12 of 24

Drawing No.
C300

MATCH LINE - SHEET C-303

MATCH LINE - SHEET C-302

I. Total Volume of Detention Area: 100 Year storm				
1)	Developed Area Contributing Runoff (a)	=	2.49	acres
2)	Maximum Allowable Runoff, Qa. = Qa = a * 0.15 cfs/acre	=	0.37	cfs
3)	Total Storage Required (based on added volume for building)	=	**20,998**	**cf**
II. Storage volume to detain "first flush" runoff				
	volume of 0.5 inch rain over entire watershed.			
	Volume = 1815 x acreage x relative imperv. factor Volume	=	**3,041**	**cf**
III. Storage volume to control "bankfull" flood (1.5 year storm/24 hr. event)				
	Volume = 8170 x acreage x relative imperv. factor (v Volume	=	**12,747**	**cf**
IV. Storage Elevations				
	Xo = 820.00	Xff=	820.70	
	Xbf= 822.16	X100 =	822.98	
Outlet Control Structure				
1. Outlet pipe sizing: (10 year un-restricted)				
Use 12-inch pipe at min. slope				
2. Standpipe outlet holes sizing - "first flush" runoff				
Qff= Vff / 24 hrs / 3600 sec	Qff=	0.035	cfs	
h = 2/3 x (Xff - Xo)	h =	0.467	ft	
A = Qff / .62 x sqrt(2*32.2*h)	A=	0.010	sf	
The area of a 3/4" orifice		**0.0031**	**sf**	
Number of orifice holes	=	**3**	**holes at elev**	**820.00**
3. Standpipe outlet holes sizing - "Bankfull flood" discharge				
Bankfull should discharge within 36 to 48 hours				
Release from first flush holes only				
Q=a x .62 x sqrt(2x32.2x2/3h) =	Q=	0.056	cfs	
Tbf with first flush holes only=		63	hrs	
Add holes at to decrease storage time				
The first flush volume will discharge in		**27**	**hrs**	
The volume between the Bankfull elevation and the First Flush Elevation				
Vbf-Vff=		9,706	cf	
should discharge (target 42 hour discharge time) in		15.0	hrs	
Qbf=		0.18	cfs	
A=area of bankfull holes		0.024	sf	
The area of a 1" orifice		**0.0055**	**sf**	
Number of orifice holes	=	**4**	**holes at elev**	**820.70**
Bankfull storage time check=		**43**	**hrs**	
4. Standpipe outlet holes sizing - "100-yr flood" discharge				
Q100=Qa	Q100=	0.370	cfs	
Release from above holes				
hff= (X100-Xo)	hff=	2.98	ft	
hbf= (X100-Xff)	hbf=	2.280	ft	
Release from above holes				
Q=a x.62 x sqrt(2x32.2xhff)+a x .62 x sqrt(2x32.2xhbf)=	Q=	0.245	cfs	
Remaining flow	Q100-Q=	0.125	cfs	
A = Q100 /(.62 x sqrt(2*32.2*h))	A =	0.028	sf	
The area of a 1 1/2" orifice		**0.0123**	**sf**	
Number of orifice holes	=	**2**	**holes at elev**	**822.16**
100-year storage time check=		**49**	**hrs**	
Allowable flow rate check =				
Qff+ Qbf + (0.62)(#orif)(A100)(2*g*h100)^0.50=		**0.36**	**cfs**	**< 0.37 cfs**



SOUTH INFILTRATION POND
TYPICAL DETENTION OUTLET STRUCTURE
NO SCALE

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A	BID SET PHASE 2	CRW By	MDP Appd	2023.01.26 YYYY.MM.DD
Issued				
File Name: 140801C-301		JDA Dwn.	AMS Dsgn.	MDP Chkd. 2020.03.10 YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

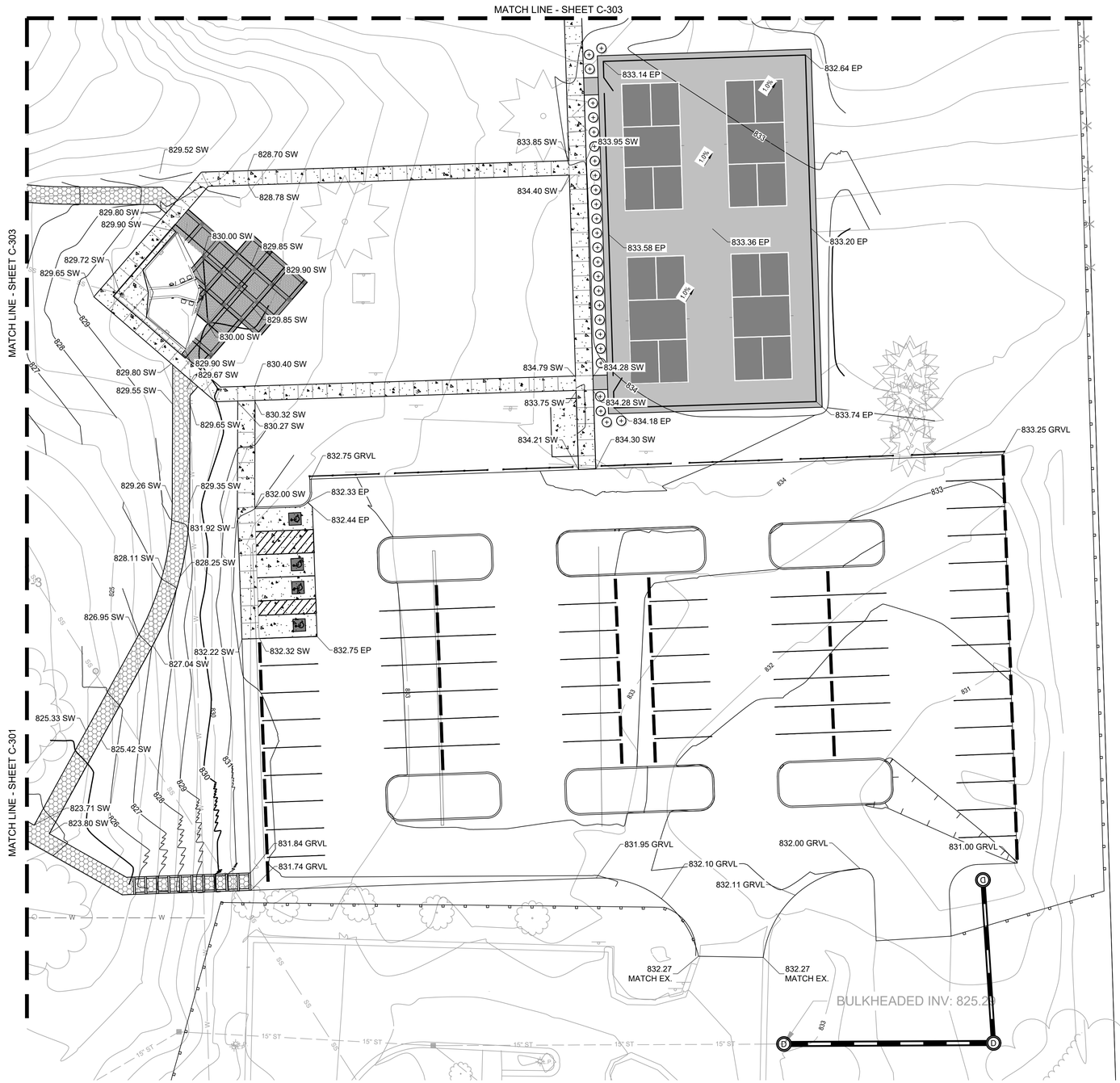
MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

PROPOSED GRADING PLAN I

Project No. 2075140801	Scale 0 30' 60'
Revision 0	Sheet 13 of 24
	Drawing No. C301



N

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-302		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE APPROXIMATE. NO REPRESENTATION OR GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION

Client/Project

PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

PROPOSED GRADING PLAN II

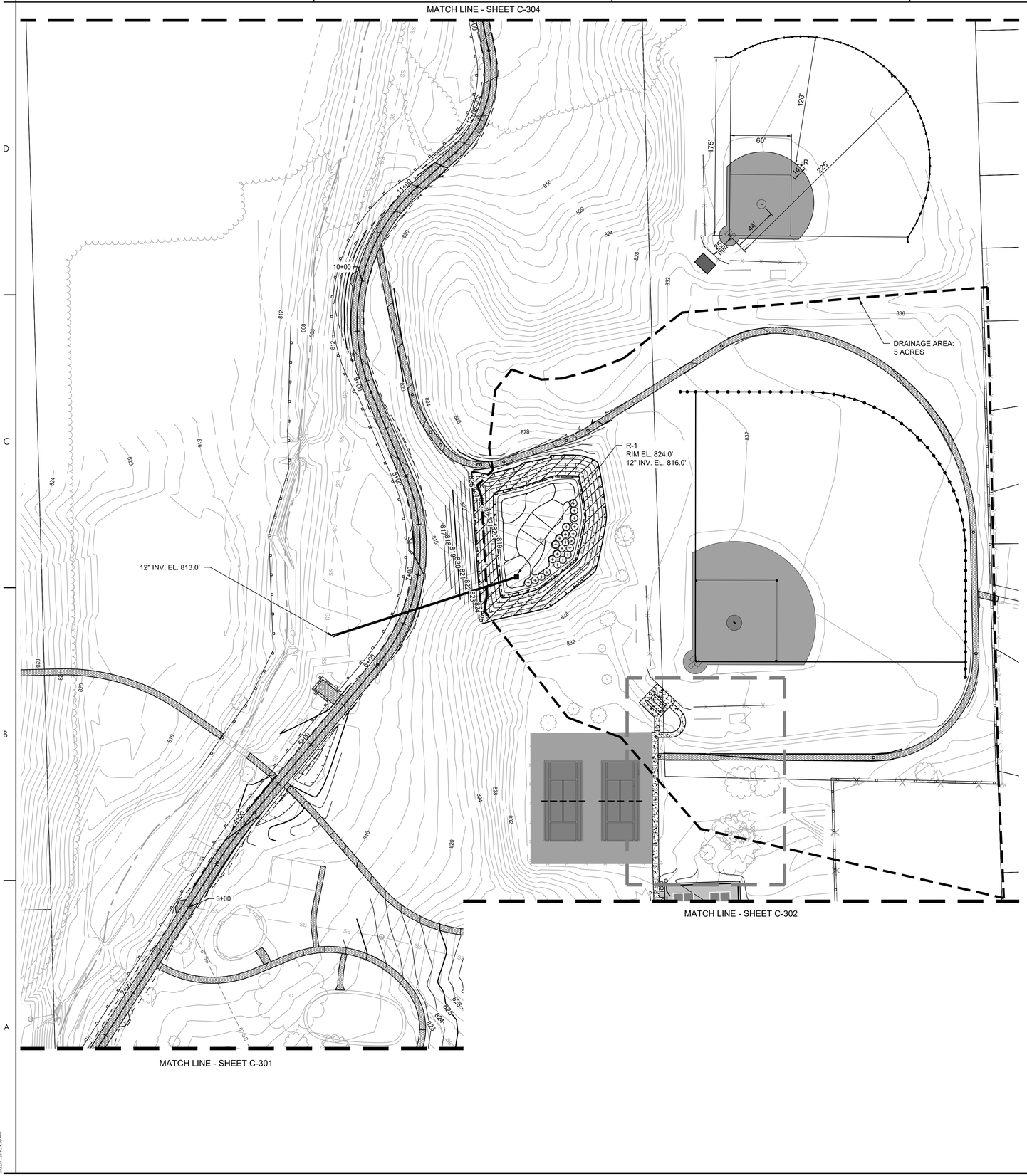
Project No.
2075140801

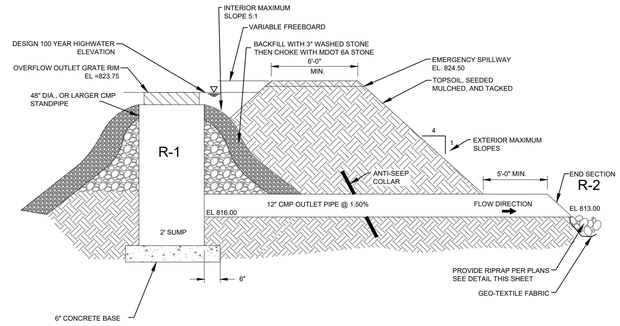
Scale
0 30' 60'

Revision
0

Sheet
14 of 24

Drawing No.
C302





NORTH INFILTRATION POND
TYPICAL DETENTION OUTLET STRUCTURE
NO SCALE

DETENTION VOLUME (NORTH INFILTRATION POND)

Volume Provided				
Elevation (ft)	**Area (sft)**	**Avg. Area (sft)**	**Height (ft)**	**Volume (cft)**
819.0	6850			0
		7533	1.0	
820.0	8216			7533
		8958	1.0	
821.0	9700			16491
		10502	1.0	
822.0	11303			26993
		12167	1.0	
823.0	13030			39160
		13955	1.0	
824.0	14880			**53115**

Stantec

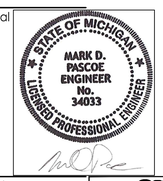
Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A BID SET PHASE 2	CRW	MDP	2023.01.26
Issued	By	Appd	YYYY.MM.DD
File Name: 140801C-303	JDA	AMS	MDP	2020.03.10
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal



Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

Know what's below. Call before you dig.

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

PROPOSED GRADING PLAN III AND DETENTION POND PLAN

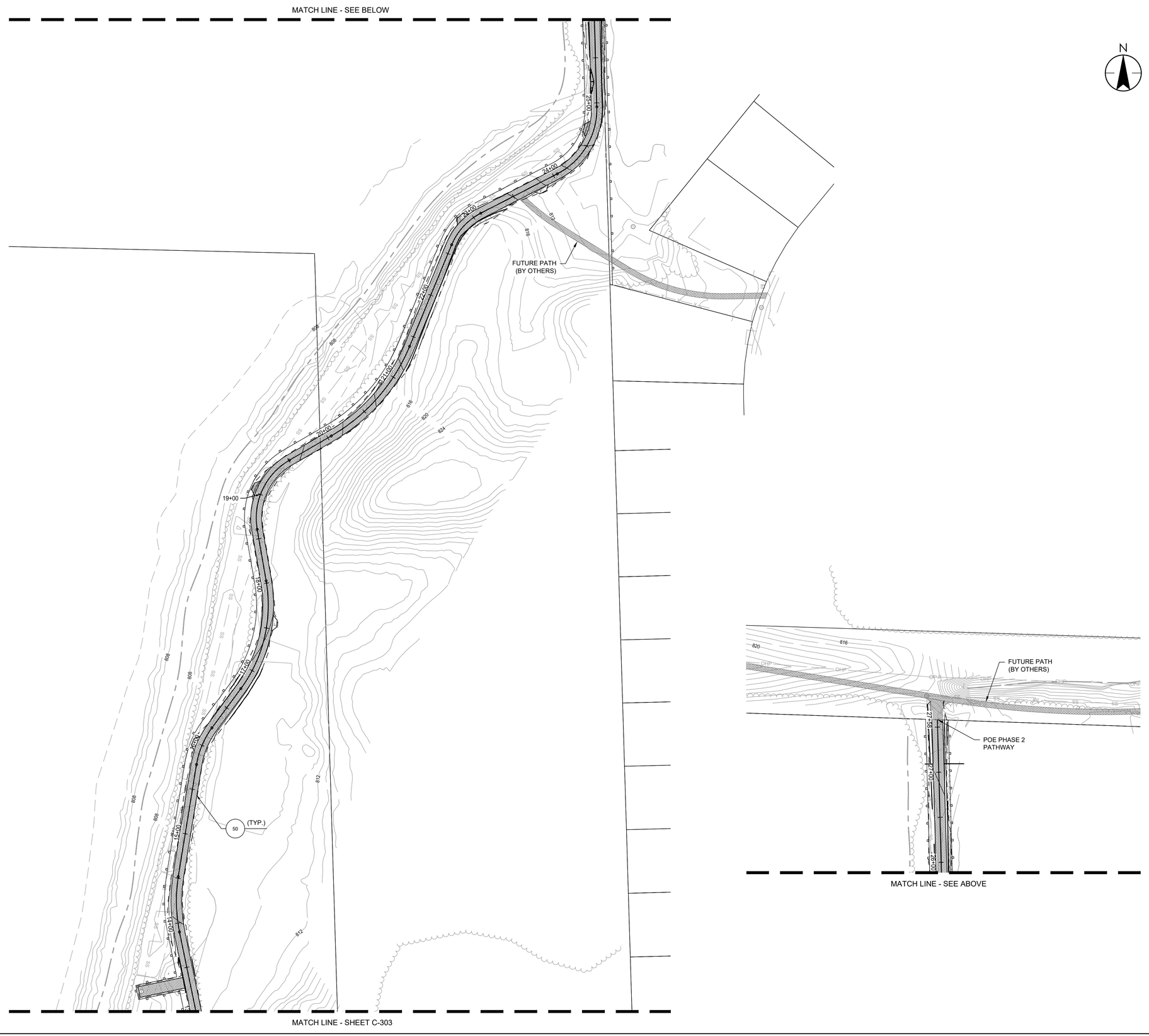
Project No.
2075140801

Scale
0 30' 60'

Revision
0

Sheet
15 of 24

Drawing No.
C303



Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

50 SILT FENCE

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-304		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

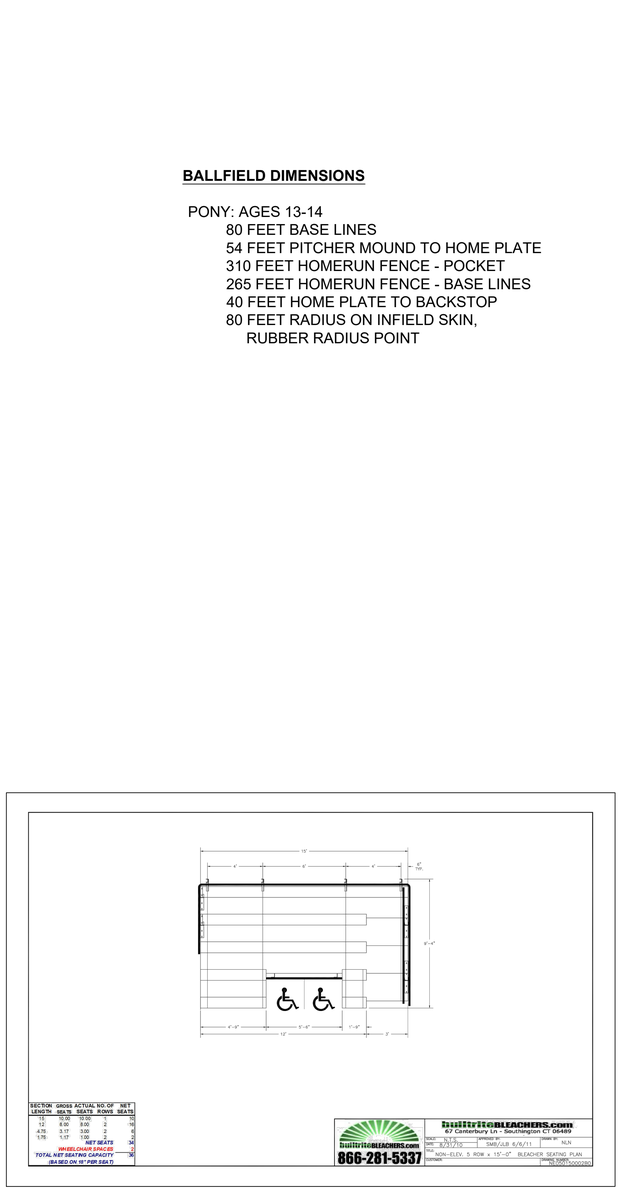
Title

PROPOSED GRADING PLAN IV

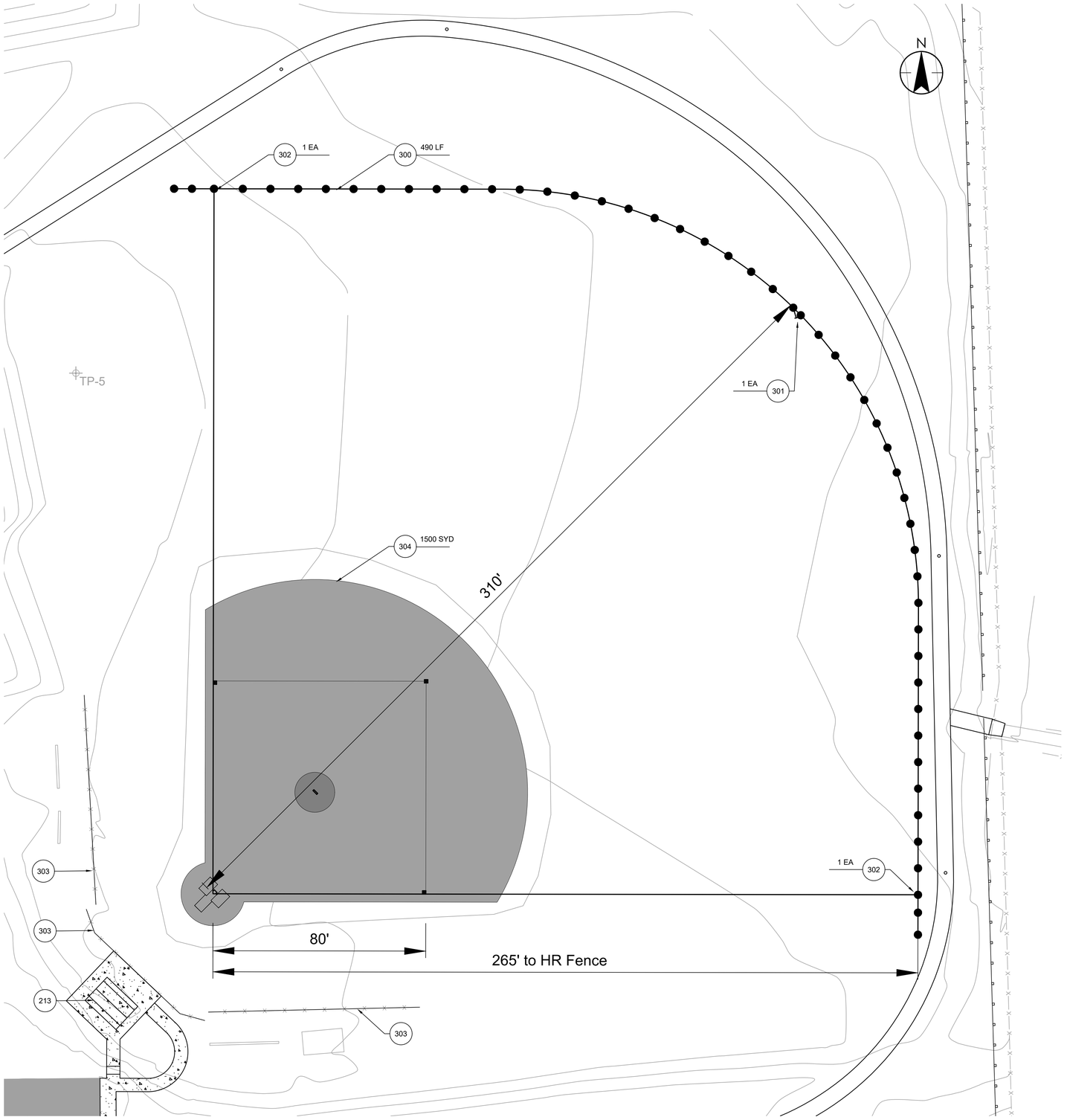
Project No.	Scale
2075140801	0 30' 60'
Revision 0	Sheet 16 of 24
	Drawing No. C304

BALLFIELD DIMENSIONS

PONY: AGES 13-14
- 80 FEET BASE LINES
- 54 FEET PITCHER MOUND TO HOME PLATE
- 310 FEET HOMERUN FENCE - POCKET
- 265 FEET HOMERUN FENCE - BASE LINES
- 40 FEET HOME PLATE TO BACKSTOP
- 80 FEET RADIUS ON INFIELD SKIN, RUBBER RADIUS POINT



PROPOSED ADA BLEACHER DETAIL



SOUTH FIELD DETAIL
(ALTERNATE)

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

213	ADA BLEACHERS
300	4 FEET HIGH CHAIN LINK HOMERUN FENCE SEE DETAIL SHEET C-401
301	4 FEET HIGH CHAIN LINK GATE IN HOMERUN FENCE SEE DETAIL SHEET C-401
302	FOUL POLE SEE DETAIL SHEET C-401
303	EXISTING BACKSTOP FENCE TO REMAIN
304	INFIELD SKIN MATERIAL

A BID SET PHASE 2	CRW	MDP	2023.01.26
Issued	By	Appd	YYYY.MM.DD
File Name: 140801C-400	JDA	AMS	MDP	2020.03.10
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

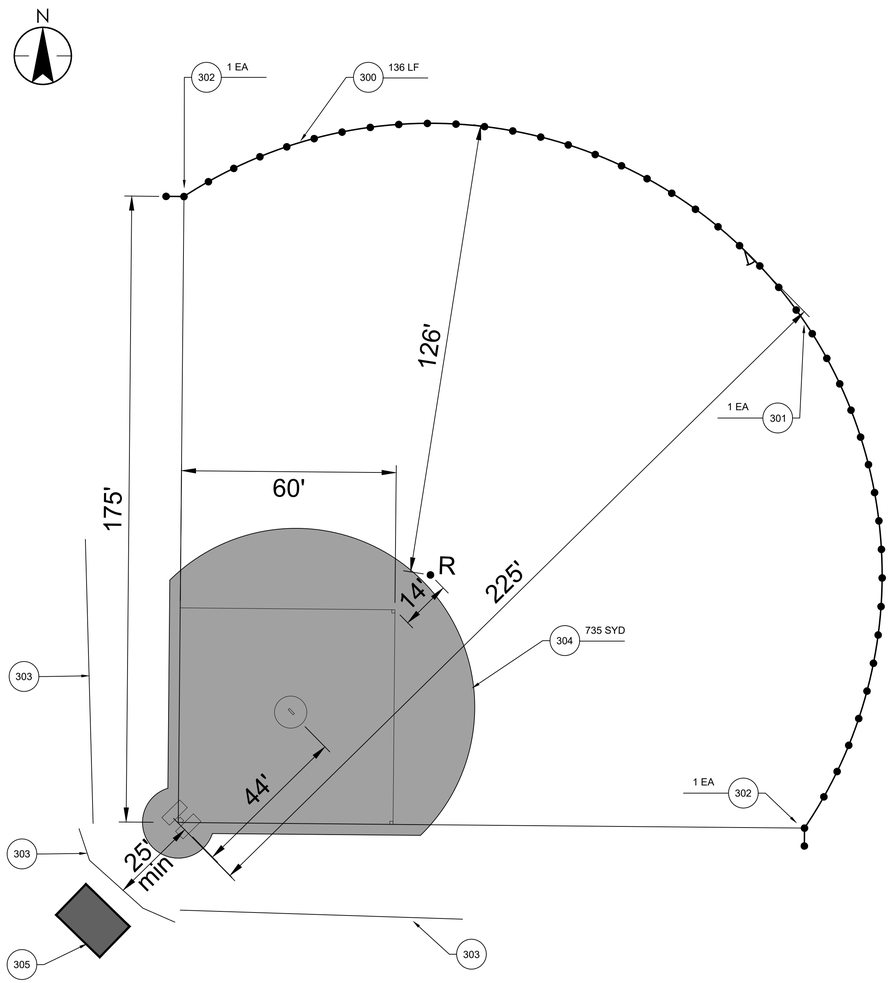
MONTIBELLER PARK IMPROVEMENTS
PHASE 2

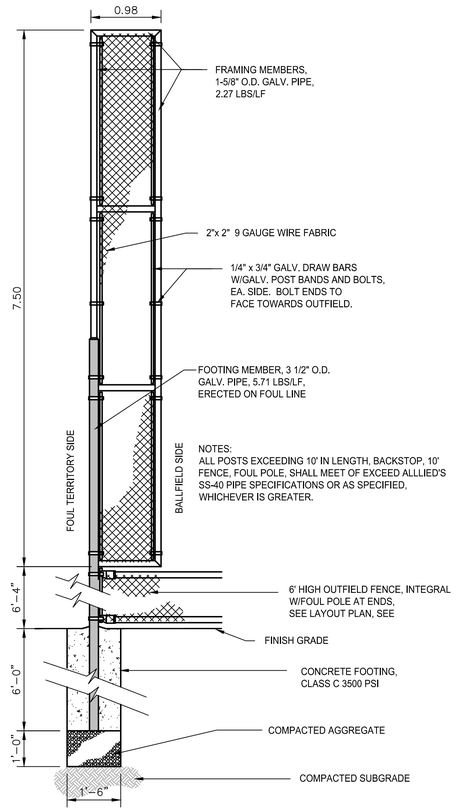
Pittsfield Township, Michigan

Title

DETAILED SITE PLAN - SOUTH FIELD
(ALTERNATE)

Project No. 2075140801	Scale 0 20' 40'	
Revision 0	Sheet 17 of 24	Drawing No. **C400**





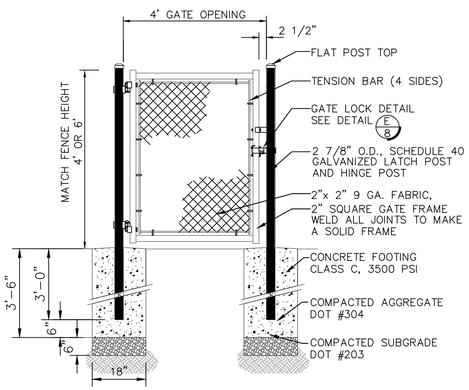
FOUL POST
NOT TO SCALE
(ALTERNATE)

BALLFIELD DIMENSIONS

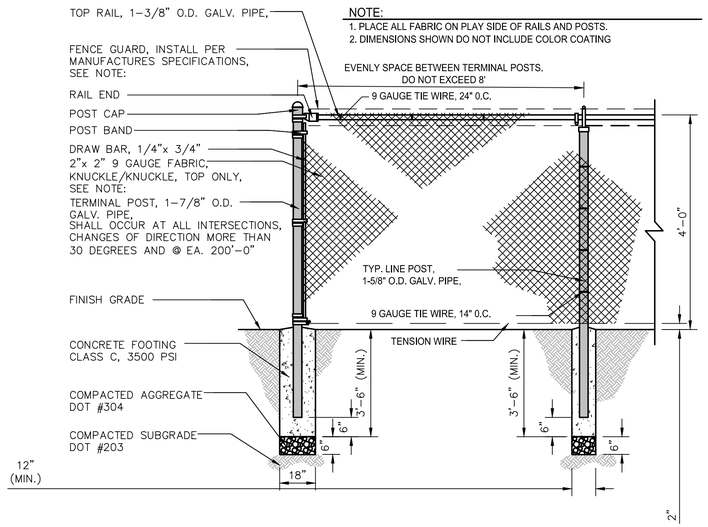
MUSTANG: AGES 9-10
- 60 FEET BASE LINES
- 44 FEET PITCHER MOUND TO HOME PLATE
- 225 FEET HOMERUN FENCE - POCKET
- 175 FEET HOMERUN FENCE - BASE LINES
- 20 FEET HOME PLATE TO BACKSTOP
- 50 FEET RADIUS ON INFIELD SKIN, RUBBER RADIUS POINT

GIRLS FAST PITCH SOFTBALL: AGE 16+
- 60 FEET BASE LINES
- 43 FEET PITCHER MOUND TO HOME PLATE
- 185-235 FEET HOMERUN FENCE
- 25 FEET HOME PLATE TO BACKSTOP
- 60 FEET RADIUS ON INFIELD SKIN, RUBBER RADIUS POINT

NORTH FIELD DETAIL
(ALTERNATE)



4' CHAINLINK GATE
NOT TO SCALE
(ALTERNATE)



4' CHAINLINK FENCE
NOT TO SCALE
(ALTERNATE)

SECTION 02821 - CHAIN-LINK FENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Special Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:
1. Color coated chain link fencing and accessories

B. Related Sections include the following:
1. Concrete Specifications

1.3 DEFINITIONS

A. CLFMI: Chain Link Fence Manufacturers Institute.

B. Zn-5-Al-MM Alloy: Zinc-5 percent aluminum-mischmetal alloy.

1.4 SUBMITTALS

A. Product Data: Material descriptions, construction details, dimensions of individual components and profiles, and finishes for the following: Fence and Accessories.

B. Shop Drawings: Show locations of fence, posts, rails, and tension wires and details of extended posts, extension arms, or other operation, hardware, and accessories. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, elevations, sections, and other required installation and operational clearances, and details of post anchorage and attachment and bracing.

C. Samples: Color selection and Color coating finish method.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed chain-link fences and gates similar in material, design, and extent to those indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Source Limitations for Chain-Link Fences and Gates: Obtain each color, grade, finish, type, and variety of component for chain-link fences and gates from one source with resources to provide chain-link fences and gates of consistent quality in appearance and physical properties.

1.6 PROJECT CONDITIONS

A. Field Measurements: Verify layout information for chain-link fences and gates shown on Drawings in relation to surrounding elements. Verify dimensions by field measurements.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE AND GATE FABRIC

A. Steel Chain-Link Fence Fabric: Height indicated on Drawings. Provide fabric fabricated in one-piece widths for fencing in height of 12 feet and less. Comply with CLFMI's "Product Manual" and with requirements indicated below:
1. Mesh and Wire Size: 2-inch mesh, 0.120-(9 gage)inch diameter.
2. Color coat using PVC elastomer coating, powder coating or equal. Submit coating specifications with shop drawings for review and approval.
   a. Color: Black
B. Selvage: Knuckled at top and bottom

2.2 FRAMING

A. Round Steel Pipe: Standard weight, Schedule 40, galvanized steel pipe complying with ASTM F 1083. Comply with ASTM F 1043, Material Design Group IA, external and internal coating Type A, consisting of not less than 1.8-oz./sq. ft. zinc; and the following strength and stiffness requirements:

A. Post Brace Rails: Match top rail for coating and strength and stiffness requirements. Provide brace rail with truss rod assembly for each gate, end, and pull post. Provide two brace rails extending in opposing directions, each with truss rod assembly, for each corner post and for pull posts. Provide rail ends and clamps for attaching rails to posts.

B. Top Rails: Fabricate top rail from lengths 21 feet or longer, with swedged-end or fabricated for expansion-type coupling, forming a continuous rail along top of chain-link fabric.

C. Intermediate Rails: Match top rail for coating and strength and stiffness requirements.

2.3 TENSION WIRE

A. General: Provide horizontal tension wire at the following locations:
1. Location: Extended along bottom of fence fabric when no bottom rail is specified.
B. Metallic-Coated Steel Wire: 0.177-inch diameter, marcelled tension wire complying with ASTM A 824 and the following:
1. Coating: Type I, aluminum coated (aluminized).

2.4 FITTINGS

A. General: Provide fittings for a complete fence installation, including special fittings for corners. Comply with ASTM F 626.
B. Post and Line Caps: Mill-finished aluminum. Provide weathertight closure cap for each

1. Provide line post caps with loop to receive tension wire or top rail.
C. Rail and Brace Ends: Mill-finished aluminum. Provide rail ends or other means for attaching rails securely to each gate, corner, pull, and end post.
D. Rail Fittings: Provide the following:
1. Top Rail Sleeves: Mill-finished aluminum Not less than 6 inches long.
E. Tension and Brace Bands: Mill-finished aluminum.
F. Tension Bars: Mill-finished aluminum, length not less than 2 inches shorter than full height of chain-link fabric. Provide one bar for each gate and end post, and two for each corner and pull post, unless fabric is integrally woven into post.
G. Truss Rod Assemblies: Mill-finished aluminum rod and turnbuckle or other means of adjustment.
H. Tie Wires, Clips, and Fasteners: Provide the following types according to ASTM F 626:
1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, complying with the following:
a. Aluminum: ASTM B 211; alloy 1350-H19; 0.148-inch-diameter, mill-finished wire.
2. Round Wire Hog Rings: Hot-dip galvanized steel or aluminum for attaching chain-link fabric to horizontal tension wires.

2.5 COLOR COATED ACCESSORIES

A. Coat all fence accessories (framing, tension wires, gates, and fittings) with color coated finish to match fence fabric.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and conditions, with Installer present, for compliance with requirements for site clearing, earthwork, pavement work, and other conditions affecting performance.
1. Do not begin installation before final grading is completed, unless otherwise permitted by owner.
B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Stake locations of fence lines every 200', and gates and terminal posts and angle points. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, storm pipes, benchmarks, and property monuments.

Do not install fence until shop drawings and staked fence locations have been approved by the Township and all necessary permits have been acquired.

3.3 INSTALLATION, GENERAL

A. General: Install chain-link fencing to comply with ASTM F 567 and more stringent requirements specified.
B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacing indicated, in firm, undisturbed or compacted

C. Post Setting: Hand-excavate holes for post foundations in firm, undisturbed or compacted soil. Set posts in concrete footing. Protect portion of posts aboveground from concrete splatter. Place concrete around posts and vibrate or tamp for consolidation. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during placement and finishing operations until concrete is sufficiently cured.
1. Dimensions and Profile: As indicated on Drawings.
2. Exposed Concrete Footings: Extend concrete 1 inch above grade, smooth, and shape to shed water.

3.4 CHAIN-LINK FENCE INSTALLATION

A. Terminal Posts: Locate terminal end, corner, and gate posts per ASTM F 567 and terminal pull posts at changes in horizontal or vertical alignment of 30 degrees or more.
B. Line Posts: Space line posts uniformly between terminal posts. Do not exceed 10'.

C. Post Bracing Assemblies: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Install braces at end and gate posts and at both sides of corner and pull posts. Locate horizontal braces at mid-height of fabric on fences with top rail and at two-thirds fabric height on fences without top rail. Install so posts are plumb when diagonal rod is under proper tension.
D. Tension Wire: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric.
1. Bottom Tension Wire: Install tension wire within 6 inches of bottom of fabric and tie to each post with not less than same gage and type of wire.
E. Top Rail: Install according to ASTM F 567, maintaining plumb position and alignment of fencing. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended by fencing manufacturer.
F. Chain-Link Fabric: Apply fabric to outside of enclosing framework, unless otherwise shown on drawings. Leave 2 inches between finish grade or surface and bottom selvage, unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
G. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts with tension bands spaced not more than 15 inches o.c.
H. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric per ASTM F 626. Bend ends of wire to minimize hazard to individuals and clothing.
1. Maximum Spacing: Tie fabric to line posts 14 inches o.c. and to braces 24 inches o.c.
I. Fasteners: Install nuts for tension bands and carriage bolts on the side of the fence opposite the fabric side.
END OF SECTION 02821

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

300 4 FEET HIGH CHAIN LINK HOMERUN FENCE SEE DETAIL THIS SHEET

301 4 FEET HIGH CHAIN LINK GATE IN HOMERUN FENCE SEE DETAIL THIS SHEET

302 FOUL POLE SEE DETAIL THIS SHEET

303 EXISTING BACKSTOP FENCE TO REMAIN

304 INFIELD SKIN MATERIAL

305 BLEACHER ON CONCRETE PAD

A BID SET PHASE 2	CRW By	MDP Appd	2023.01.26 YYYY.MM.DD
Issued			
File Name: 140801C-401	JDA Dwn.	AMS Dsgn.	MDP Chkd.	2020.03.10 YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

DETAILED SITE PLAN - NORTH FIELD
(ALTERNATE)

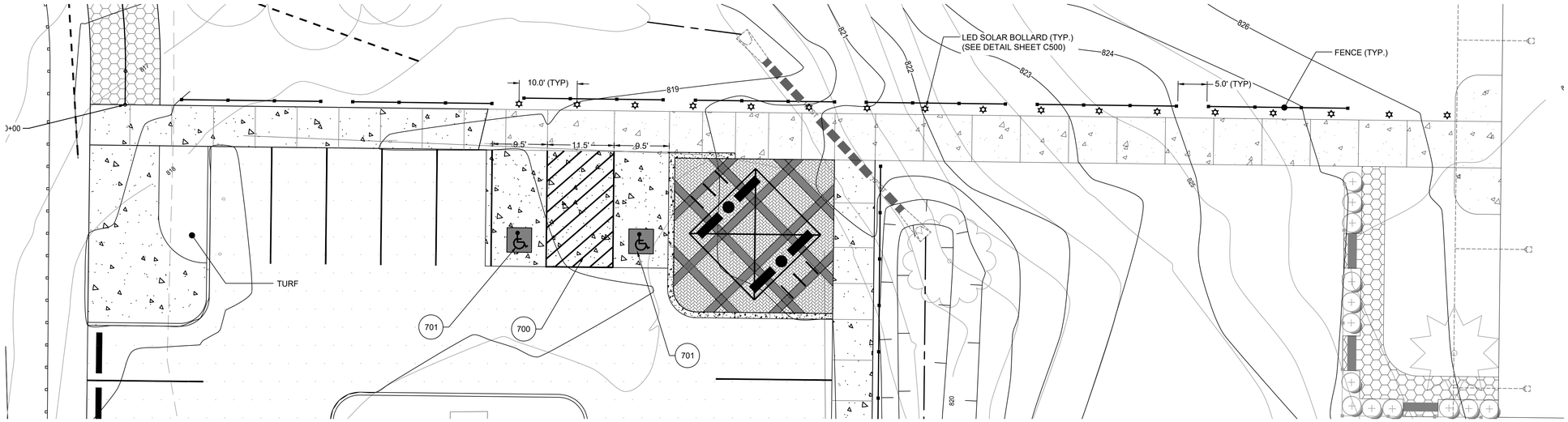
Project No. 2075140801

Scale 0 20' 40'

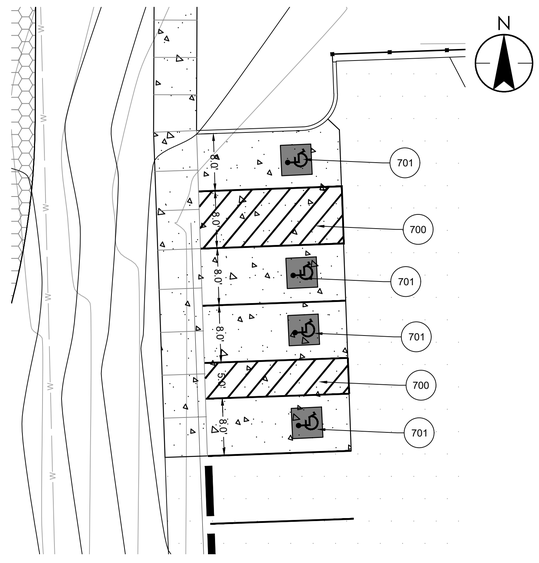
Revision 0

Sheet 18 of 24

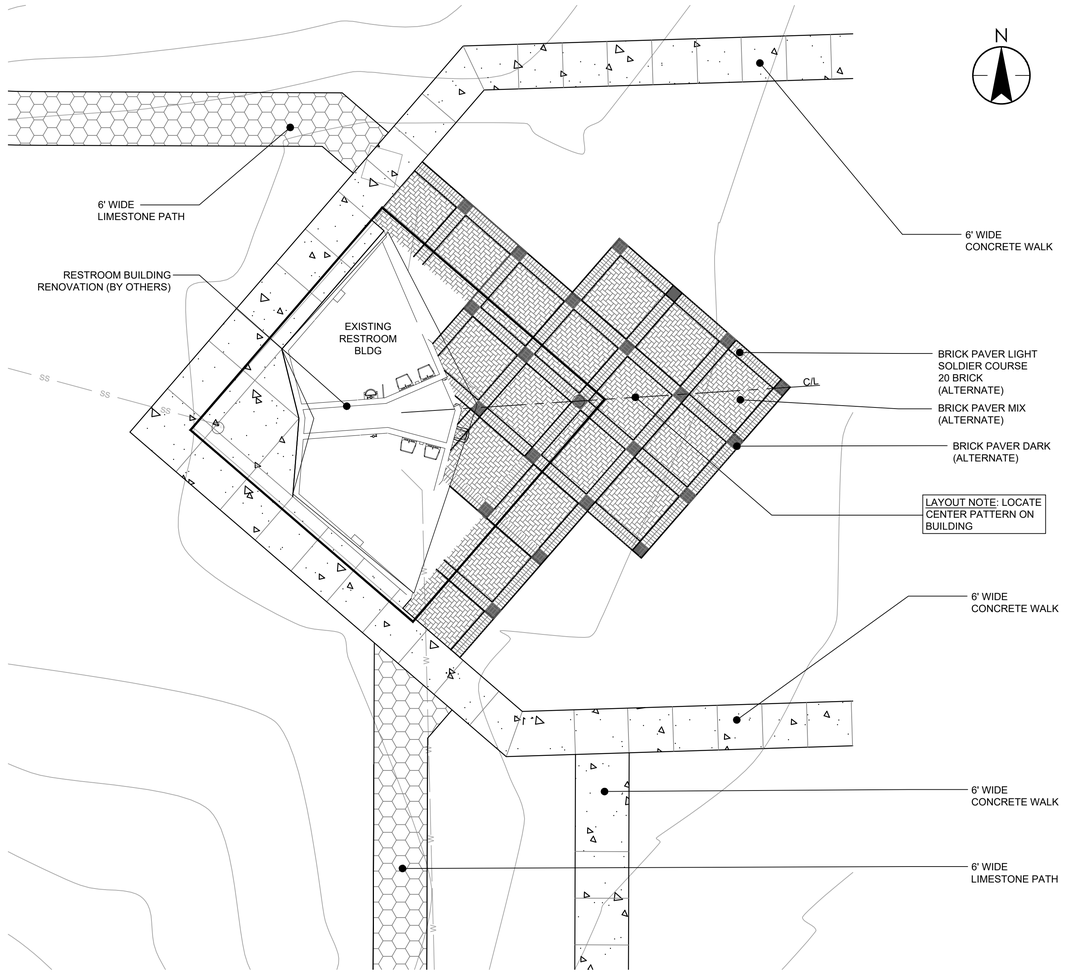
Drawing No. **C401**



WEST ADA PARKING AND ARRIVAL POINT DETAIL
(ALTERNATE)



PROPOSED EAST ADA PARKING DETAIL



RESTROOM PLAZA DETAIL
SCALE: 1" = 8'

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

700 4" BLUE PAVEMENT MARKINGS

701 BLUE ACCESSIBLE PARKING DETAIL

NOTE:
SEE SHEET C301 FOR GRADES.

A	BID SET PHASE 2	CRW	MDP	2023.01.26
	Issued	By	Appd	YYYY.MM.DD
File Name: 140801C-402		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

DETAILED SITE PLAN - MISCELLANEOUS

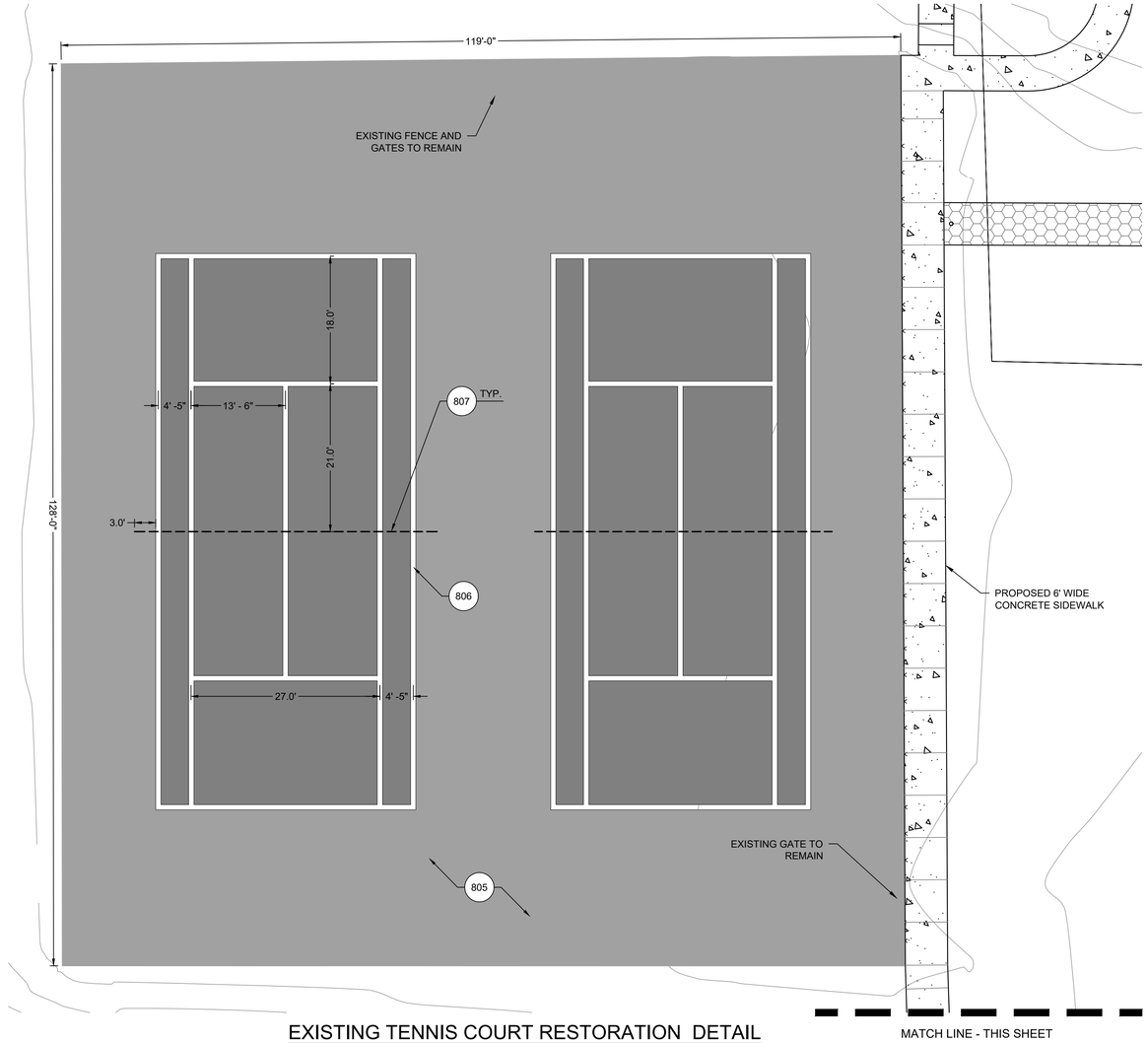
Project No.
2075140801

Scale
0 10' 20'

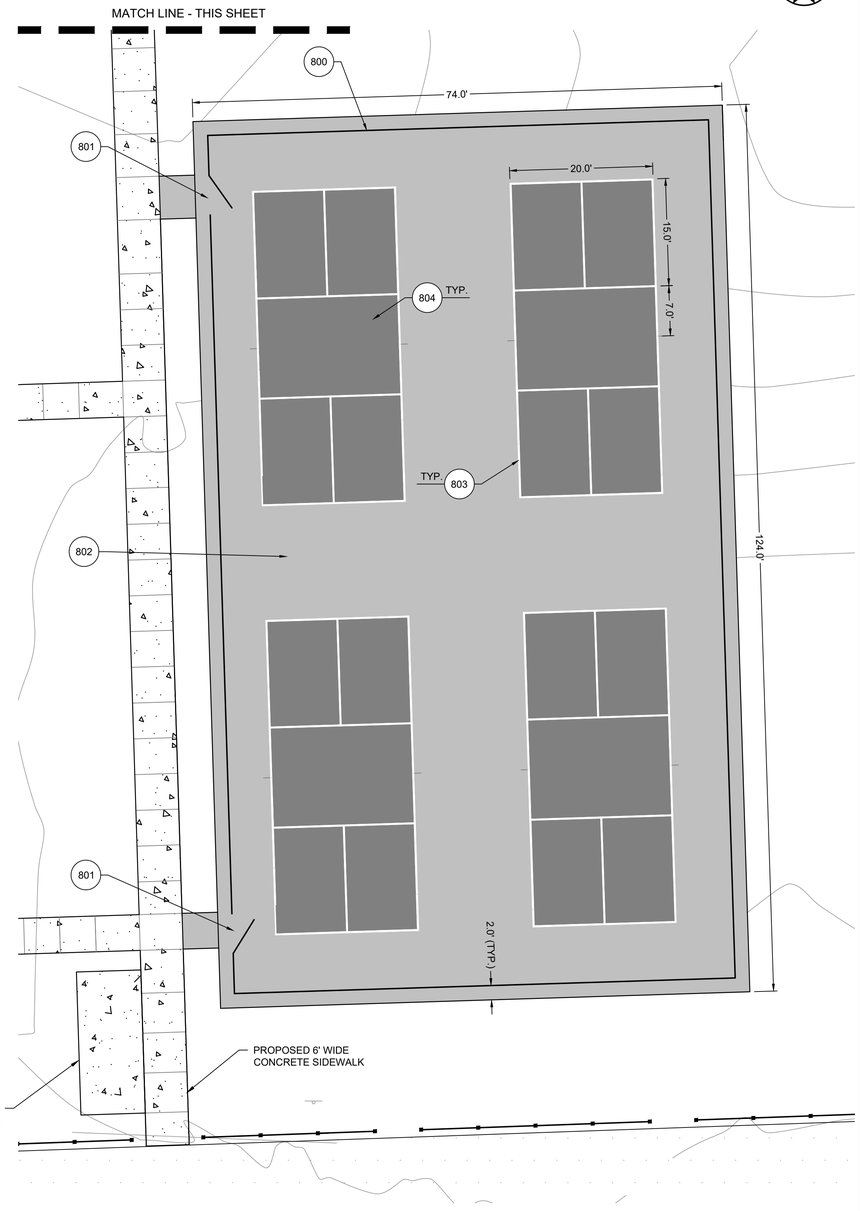
Revision
0

Sheet
19 of 24

Drawing No.
C402



EXISTING TENNIS COURT RESTORATION DETAIL



PROPOSED PICKLEBALL COURT DETAIL

N

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

NOTES:
1. SEE SHEET C302 FOR PICKBALL COURT GRADING.

2. PICKLEBALL EQUIPMENT:
PICKLEBALL EQUIPMENT SHALL BE AS MANUFACTURED BY JAYPRO SPORTS AVAILABLE AT WWW.JAYPRO.COM. POSTS SHALL BE MODEL PPR10GR DELUXE PICKLEBALL POST 2 7/8". HEAVY DUTY SELF LOCKING WINCH WITH REMOVABLE HANDLE. INCLUDE GROUND SLEEVES AND COVERS, TP278G. PICKLEBALL NET SHALL BE PT-2IN. INSTALL PICKBALL EQUIPMENT WITH GROUND SLEEVES AND PER THE MANUFACTURER'S RECOMMENDATION FOR LOCATION, METHODS, FOOTINGS, AND HEIGHT. EXCEPTION IS THAT FOOTING MUST BE TO A DEPTH OF NOT LESS THAN 42".

KEY NOTES:

800	PROPOSED 10' HIGH CHAIN LINK FENCE, PER SPEC SHEET C401
801	PROPOSED 6' WIDE GATE, 10' TALL
802	PROPOSED PICKLEBALL NOVA PROBOUNCE SURFACE, SEE DETAIL SHEET C501
803	PROPOSED PICKLEBALL COURT STRIPING
804	PROPOSED PICKLEBALL COURT NETS
805	CRACK SEAL EXISTING SURFACE, TOP WITH NOVA PROBOUNCE SURFACE, SEE DETAIL SHEET C501
806	TENNIS COURT STRIPING OF 2 COURTS WITH LATEX LINE PAINT PER USTA REQUIREMENTS
807	SALVAGE AND RE-INSTALL TENNIS COURT NETS AFTER RESURFACING

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-403		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title
DETAILED SITE PLAN - COURTS SITE PLAN

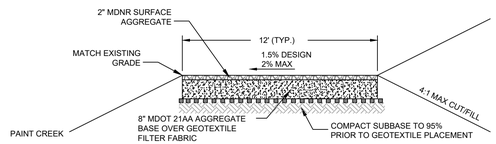
Project No.
2075140801

Scale
0 10' 20'

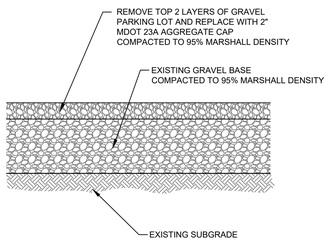
Revision
0

Sheet
20 of 24

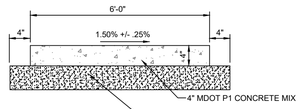
Drawing No.
C403



PROPOSED PAINT CREEK TRAIL/SANITARY SEWER ACCESS PATH
NO SCALE



GRAVEL PAVEMENT CROSS-SECTION
NO SCALE



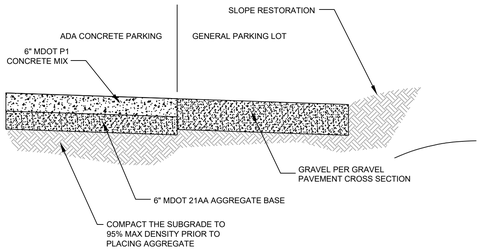
NOTES:

1. CONTRACTION JOINTS SHALL BE PLACED AT A DISTANCE APART EQUAL TO THE WIDTH OF THE SIDEWALK. EVERY TENTH JOINT SHALL BE A 1/2" EXPANSION JOINT.

2. WHERE SIDEWALK CROSSES A DRIVEWAY WALK SHALL BE THICKENED TO 6" THICK CONCRETE SECTION.

3. SUBBASE SHALL BE INCLUDED WITH THE SIDEWALK PAY ITEM.

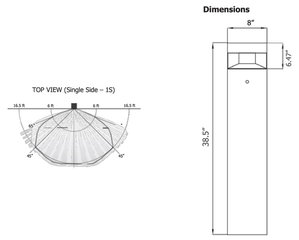
TYPICAL CONCRETE SIDEWALK SECTION
NO SCALE



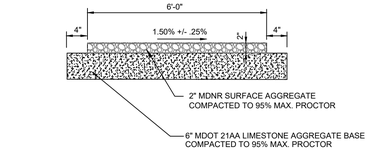
ADA PARKING LOT DETAIL
NO SCALE

SP018	40K	BLK	WD	AKE	1S

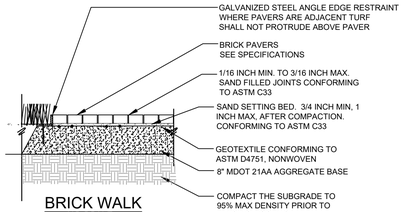
Motion Sensor Detection
SP-018 Smart Solar Illuminating Bollard incorporates the latest infrared motion sensor. Dimming mode is set at 1/3 brightness and lights to 100% brightness for 1 minute when motion sensor is triggered. The high performance motion sensor detects abrupt changes in temperature within a 16.5ft radius. Movement within designated radius is necessary to trigger sensor to turn on.



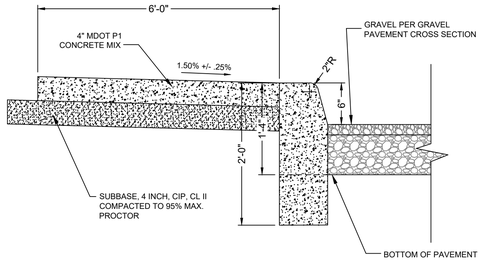
LED SOLAR BOLLARD DETAIL
NO SCALE



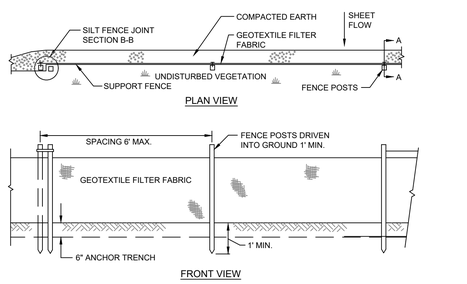
PROPOSED TYPICAL 6' GRAVEL PATH SECTION
NO SCALE



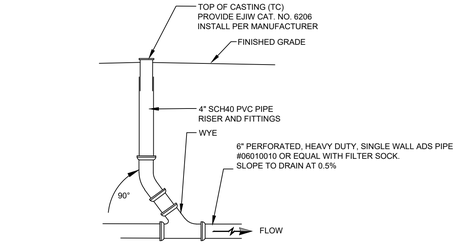
BRICK WALK
NO SCALE



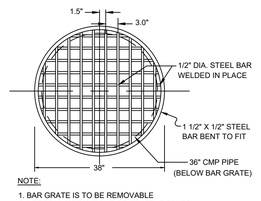
MDOT E2 CURB WITH INTEGRAL SIDEWALK DETAIL
NO SCALE



SILT FENCE
NO SCALE

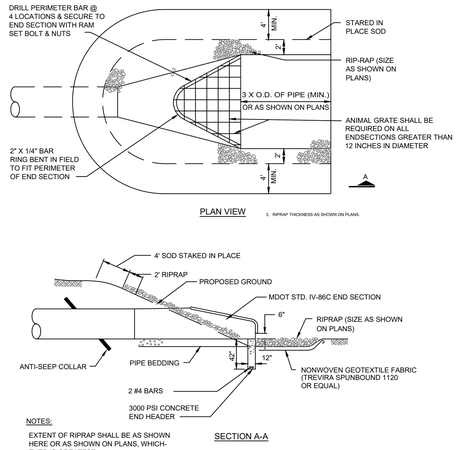


CLEANOUT DETAIL
NO SCALE

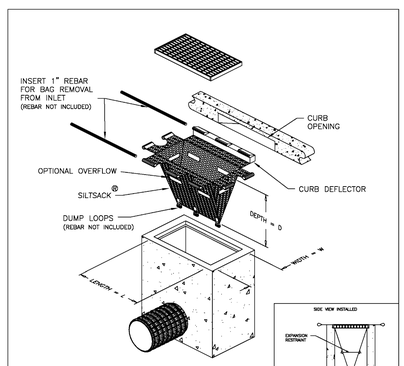


NOTE:
1. BAR GRATE IS TO BE REMOVABLE
2. APPROXIMATE WEIGHT OF GRATE IS 70 LBS.

OUTLET GRATE DETAIL
NOT TO SCALE



END SECTION AND RIPRAP DETAIL
NO SCALE



DETAIL OF INLET SEDIMENT CONTROL DEVICE
TYPE B – WITH CURB DEFLECTOR

ACF Environmental
Your Complete Source for Geosynthetic Solutions

ACF Environmental, Inc.
2831 Cardwell Rd.
Richmond, Virginia 23234
(800) 448-3636

SILTSACK®
SPECIFICATIONS

NOTE: THE SILTSACK ● WILL BE MANUFACTURED FROM A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS THE FOLLOWING SPECIFICATIONS:

REGULAR FLOW SILTSACK ●
©FOR AREAS OF LOW TO MODERATE PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS	
GRAB TENSILE STRENGTH	ASTM D-4632		300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632		50 %
PUNCTURE	ASTM D-4833		120 LBS
MULLEN BURST	ASTM D-3786		420 PSI
TRAPEZOID TEAR	ASTM D-4533		135 LBS
UV RESISTANCE	ASTM D-4355		80 %
APPARENT OPENING SIZE	ASTM D-4751		40 US SIEVE
FLOW RATE	ASTM D-4491		40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491		0.55 SEC -1

HI-FLOW SILTSACK ●
©FOR AREAS OF MODERATE TO HEAVY PRECIPITATION AND RUN-OFF)

PROPERTIES	TEST METHOD	UNITS	
GRAB TENSILE STRENGTH	ASTM D-4632		265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632		50 %
PUNCTURE	ASTM D-4833		125 LBS
MULLEN BURST	ASTM D-3786		420 PSI
TRAPEZOID TEAR	ASTM D-4533		45 LBS
UV RESISTANCE	ASTM D-4355		90 %
APPARENT OPENING SIZE	ASTM D-4751		30 US SIEVE
FLOW RATE	ASTM D-4491		150 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491		1.5 SEC -1

OIL-ABSORBANT SILTSACK ●
©FOR AREAS WHERE THERE IS A CONCERN FOR OIL RUN-OFF OR SPILLS)

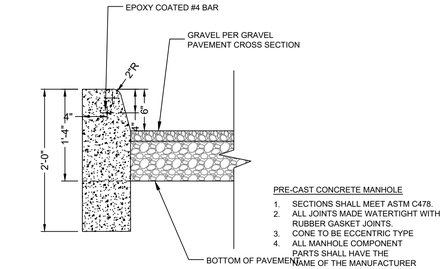
DEPENDING ON YOUR PARTICULAR APPLICATION, THE SILTSACK CAN BE MADE FROM EITHER ONE OF THE ABOVE FABRICS WITH AN OIL-ABSORBANT PILLOW INSERT OR, MADE COMPLETELY FROM AN OIL-ABSORBANT SILTSACK WITH A WOVEN PILLOW INSERT.

SILTSACK DISTRIBUTORS:
PRICE & COMPANY
(www.priceandcompany.com)

METRO GRAND RAPIDS, MI
425 36TH STREET SW
WYOMING, MI 49548-2108
1-800-248-8230

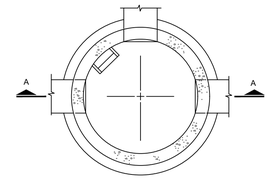
METRO DETROIT, MI
29165 WALL STREET
WIXOM, MI 48393-3525
1-866-960-4300

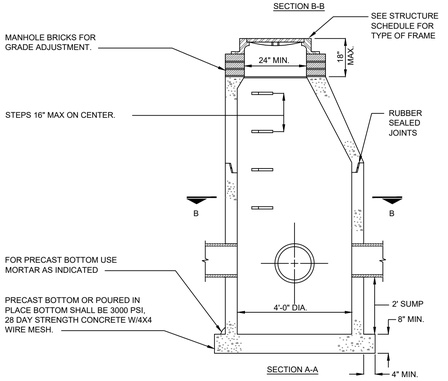
SILTSACK
NO SCALE



PRE-CAST CONCRETE MANHOLE
1. SECTIONS SHALL MEET ASTM C478.
2. ALL JOINTS MADE WATERTIGHT WITH RUBBER GASKET JOINTS.
3. CONE TO BE ECCENTRIC TYPE
4. ALL MANHOLE COMPONENT PARTS SHALL HAVE THE NAME OF THE MANUFACTURER STENCILED ON THE INSIDE. THE LETTERING SHALL BE A MINIMUM OF 4" HIGH.

MDOT E2 CURB DETAIL
NO SCALE





4' DIAMETER CATCH BASIN
NO SCALE

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-500		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title
PROJECT DETAILS I

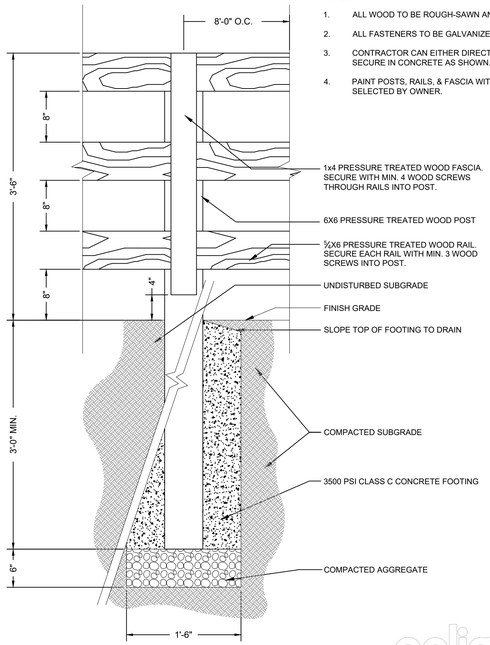
Project No.
2075140801

Scale

Revision
0

Sheet
21 of 24

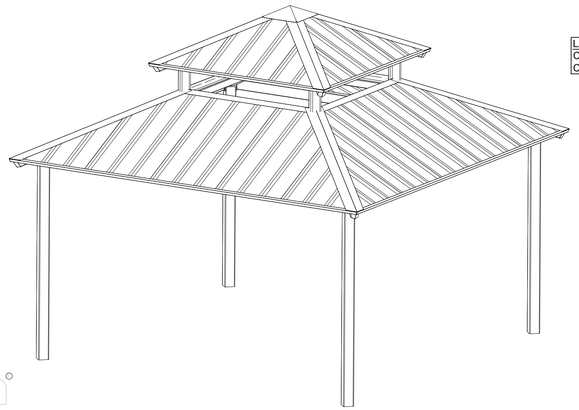
Drawing No.
C500



3 RAIL DECORATIVE FENCE DETAIL
NO SCALE

NOTES:

1. ALL WOOD TO BE ROUGH-SAWN AND PRESSURE TREATED.
2. ALL FASTENERS TO BE GALVANIZED.
3. CONTRACTOR CAN EITHER DIRECT BURY POSTS INTO UNDISTURBED SUBGRADE OR SECURE IN CONCRETE AS SHOWN.
4. PAINT POSTS, RAILS, & FASCIA WITH 2 COATS. COLOR AND MANUFACTURER TO BE SELECTED BY OWNER.



poligon®

CAR-16

FABRICATOR APPROVALS:
CITY OF PHOENIX, AZ APPROVED FABRICATOR #C08-2010
CITY OF LOS ANGELES, CA APPROVED FABRICATOR #1596
CITY OF RIVERSIDE, CA APPROVED FABRICATOR #SP06-0033
CITY OF HOUSTON, TX APPROVED FABRICATOR #470
CLARK COUNTY, NV APPROVED FABRICATOR #264
STATE OF UTAH APPROVED FABRICATOR 02008-14

CERTIFICATES:
MIAMI-DADE COUNTY CERTIFICATE OF COMPETENCY NO. 16-0813.16
PCI (POWDER COATING INSTITUTE) 4000 CERTIFIED

MATERIALS:

DESCRIPTION	ASTM DESIGNATION
TUBE STEEL	A500 (GRADE B)
SCHEDULE PIPE	A53 (GRADE B)
RMT PIPE	A519
LIGHT GAGE COLD FORMED	A1003 (GRADE 50)
STRUCTURAL STEEL PLATE	A36
ROOF PANELS (STEEL)	A653

GENERAL NOTES:
UNLESS NOTED OTHERWISE, THIS STRUCTURE WAS DESIGNED TO ONLY SUPPORT WHAT IS SHOWN ON THESE DRAWINGS. POLIGON MUST BE CONTACTED IF ANYTHING ELSE IS TO BE ATTACHED TO THIS STRUCTURE (WALLS, COLUMN WRAPS, RAILINGS, ETC.) SO THE DESIGN OF THIS STRUCTURE CAN BE REVIEWED AND POSSIBLY REVISED.

UNLESS NOTED OTHERWISE, THIS STRUCTURE WAS DESIGNED ASSUMING A 20' SEPARATION BETWEEN ANY ADJACENT STRUCTURE WITH AN EAVE HEIGHT EQUAL TO OR GREATER THAN THE EAVE HEIGHT OF THIS STRUCTURE. IF THAT SEPARATION DOES NOT EXIST, POLIGON MUST BE CONTACTED SO THE DESIGN OF THIS STRUCTURE CAN BE REVIEWED AND POSSIBLY REVISED.

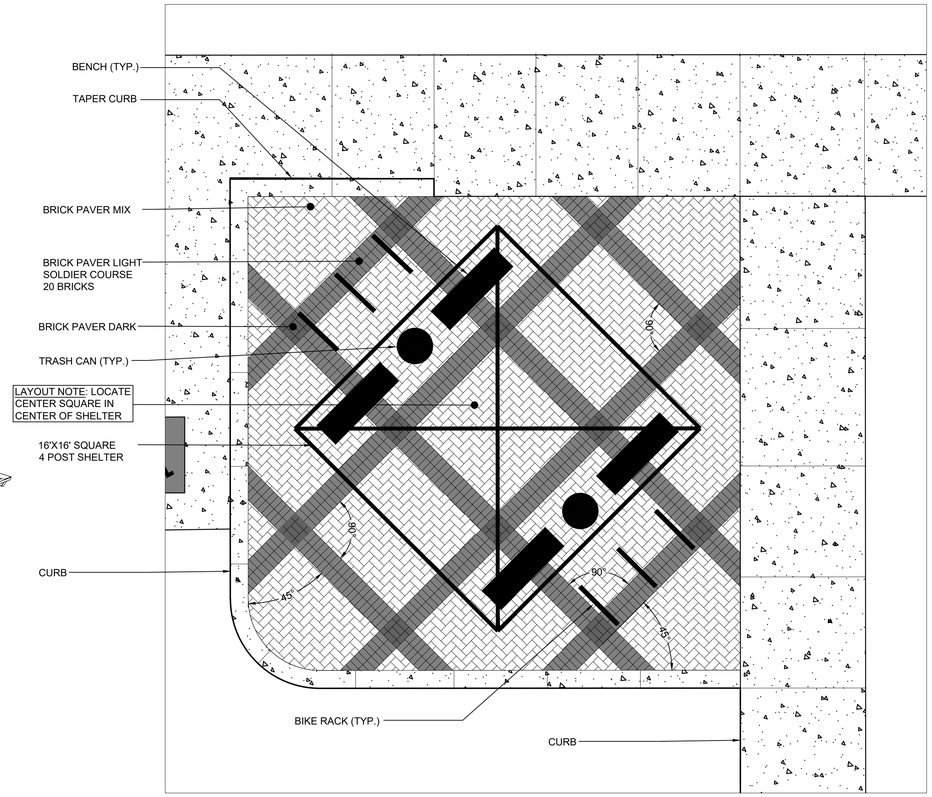
STRUCTURAL STEEL SHALL BE DETAILED, FABRICATED, AND ERECTED IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) SPECIFICATION MANUAL.

ALL WELDING IS PERFORMED BY AMERICAN WELDING SOCIETY CERTIFIED WELDERS AND CONFORMS TO THE LATEST EDITION OF AWS D1.1 OR D1.3 AS REQUIRED.

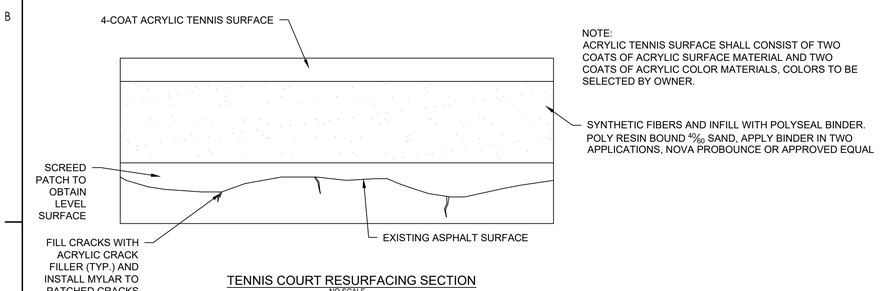
PARTS SHOWN MAY BE UPGRADED DUE TO STANDARDIZED FABRICATION. REFER TO THE SHIPPING BILL OF MATERIALS FOR POSSIBLE SUBSTITUTIONS.

FOR PROPER FIELD INSTALLATION OF THE BUILDING IT IS RECOMMENDED THAT THE PRIMARY FRAME INSTALLER AND THE ROOF INSTALLER HAVE A MINIMUM FIVE (5) YEARS DOCUMENTED EXPERIENCE INSTALLING THIS TYPE OF PRODUCT.

FOR PROPER FIELD INSTALLATION OF THE BUILDING IT IS RECOMMENDED THAT ELECTRIC WIRING, IF REQUIRED, BE RUN THROUGH THE STRUCTURAL MEMBERS BEFORE THE BUILDING IS ERECTED.



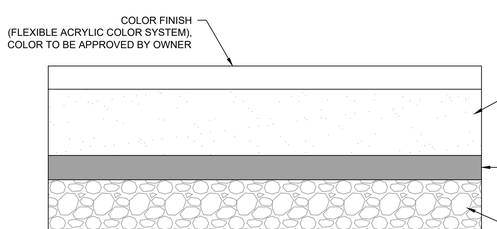
ARRIVAL POINT PAVER DETAIL
NO SCALE
(ALTERNATE)



NOTE:
ACRYLIC TENNIS SURFACE SHALL CONSIST OF TWO COATS OF ACRYLIC SURFACE MATERIAL AND TWO COATS OF ACRYLIC COLOR MATERIALS, COLORS TO BE SELECTED BY OWNER.

SYNTHETIC FIBERS AND INFILL WITH POLYSEAL BINDER. POLY RESIN BOUND 4/20 SAND, APPLY BINDER IN TWO APPLICATIONS, NOVA PROBOUNCE OR APPROVED EQUAL

TENNIS COURT RESURFACING SECTION
NO SCALE



NOTE:
ACRYLIC PICKLEBALL SURFACE SHALL CONSIST OF TWO COATS OF ACRYLIC SURFACE MATERIAL AND TWO COATS OF ACRYLIC COLOR MATERIALS, COLORS TO BE SELECTED BY OWNER.

SYNTHETIC FIBERS AND INFILL WITH POLYSEAL BINDER. POLY RESIN BOUND 4/20 SAND, APPLY BINDER IN TWO APPLICATIONS, NOVA PROBOUNCE OR APPROVED EQUAL

PICKLEBALL COURT SURFACE SECTION
NO SCALE

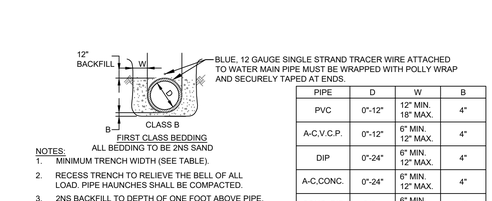
BLUE, 12 GAUGE SINGLE STRAND TRACER WIRE ATTACHED TO WATER MAIN PIPE MUST BE WRAPPED WITH POLLY WRAP AND SECURELY TAPED AT ENDS.

PIPE	D	W	B
PVC	0"-12"	12" MIN. 18" MAX.	4"
A-C,V.C.P.	0"-12"	6" MIN. 12" MAX.	4"
DIP	0"-24"	6" MIN. 12" MAX.	4"
A-C,CONC.	0"-24"	6" MIN. 12" MAX.	4"
CONC. DIP	24" +	6" MIN. 12" MAX.	4"

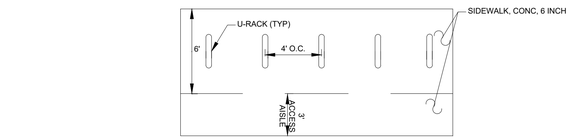
ALL BEDDING TO BE 2NS SAND

NOTES:
1. MINIMUM TRENCH WIDTH (SEE TABLE).
2. RECESS TRENCH TO RELIEVE THE BELL OF ALL LOAD. PIPE HAUNCHES SHALL BE COMPACTED.
3. 2NS BACKFILL TO DEPTH OF ONE FOOT ABOVE PIPE. TAMPED LAYERS NOT TO EXCEED 6" IN DEPTH. PLATE COMPACT ABOVE PIPE (ON 1st LIFT)
4. ALL PIPE TO BE PLACED AND JOINTED IN A DRY TRENCH AND LAID ACCURATELY TO LINE AND GRADE WITH BELLS UPHILL.
5. ALL CONCRETE ENCASEMENT AND CRADLING TO BE CLASS "A" CONCRETE.

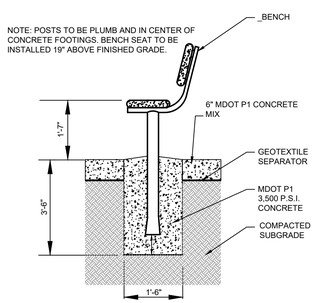
BEDDING
NO SCALE



PROPOSED ADA BENCH DETAIL
NO SCALE



BIKE RACK DETAIL
NO SCALE



BENCH INSTALLATION DETAIL
NO SCALE

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801C-501		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

PROJECT DETAILS II

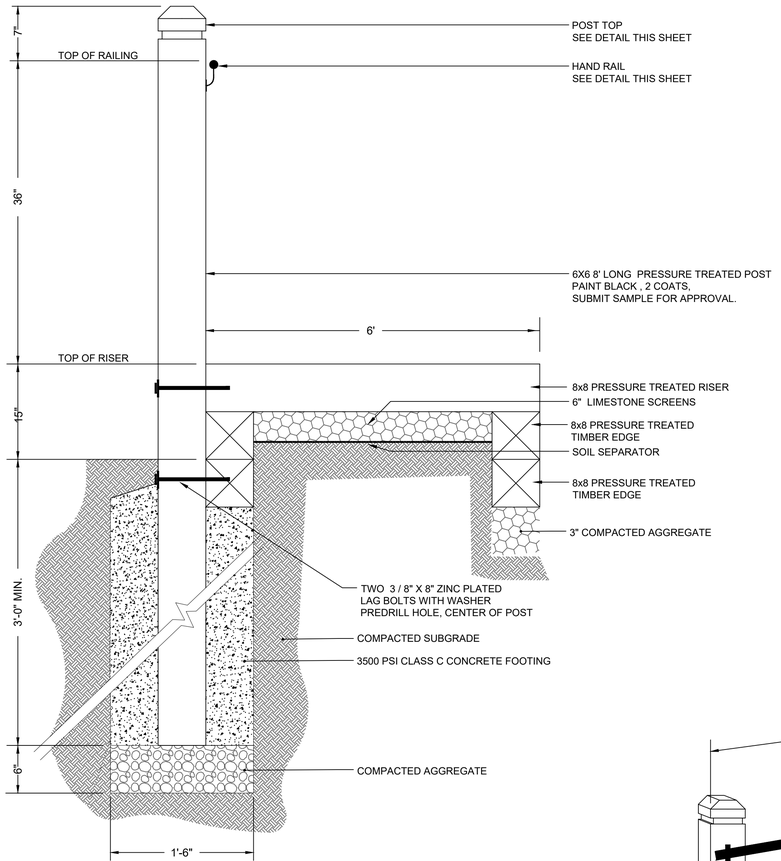
Project No.
2075140801

Scale

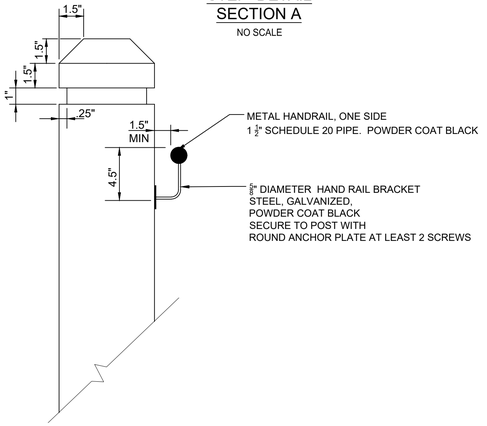
Revision
0

Sheet
22 of 24

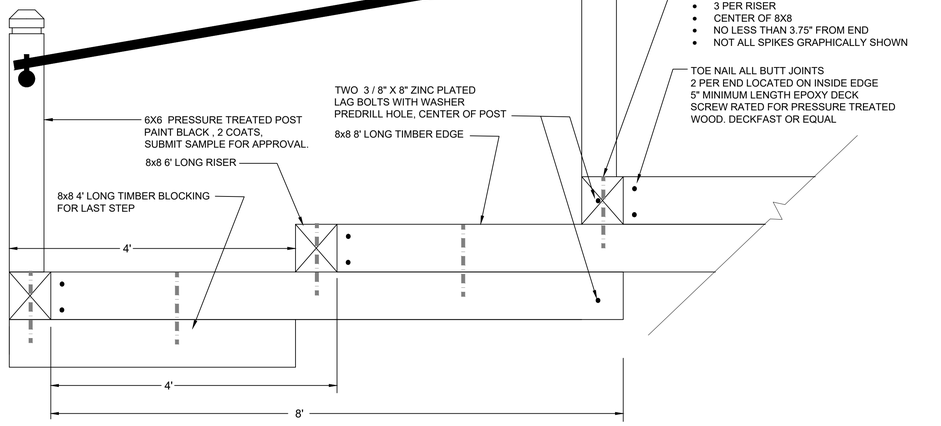
Drawing No.
C501



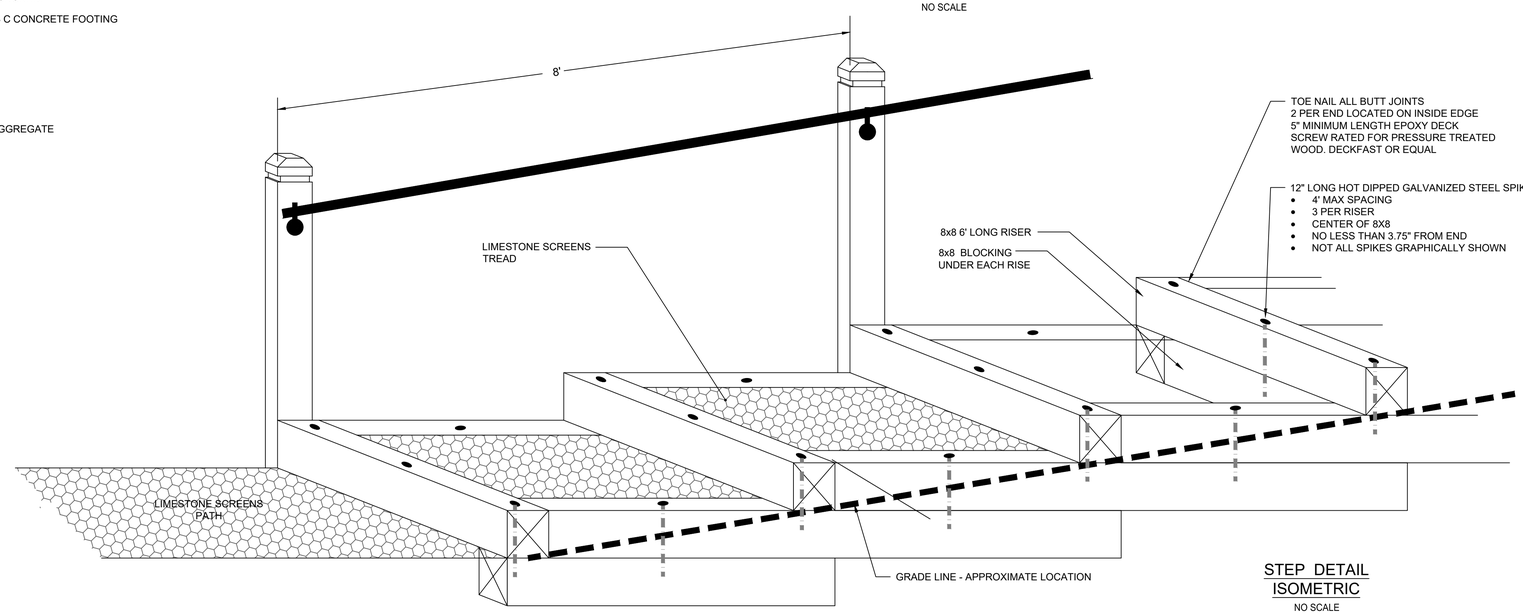
STEP DETAIL
SECTION A
NO SCALE



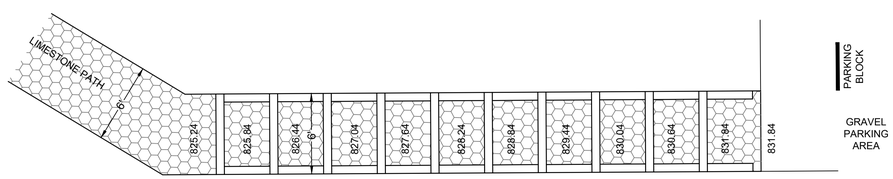
STEP DETAIL:
POST TOP AND RAILING
NO SCALE



STEP DETAIL
SECTION B
NO SCALE



STEP DETAIL
ISOMETRIC
NO SCALE



STEP DETAIL PLAN
NO SCALE

Stantec

Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

Notes

A BID SET PHASE 2	CRW	MDP	2023.01.24
Issued	By	Appd	YYYY.MM.DD
File Name: 140801C-502	JDA	AMS	MDP	2020.03.10
	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal

STATE OF MICHIGAN
MARK D. PASCOE
ENGINEER
No. 34033
LICENSED PROFESSIONAL ENGINEER

Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

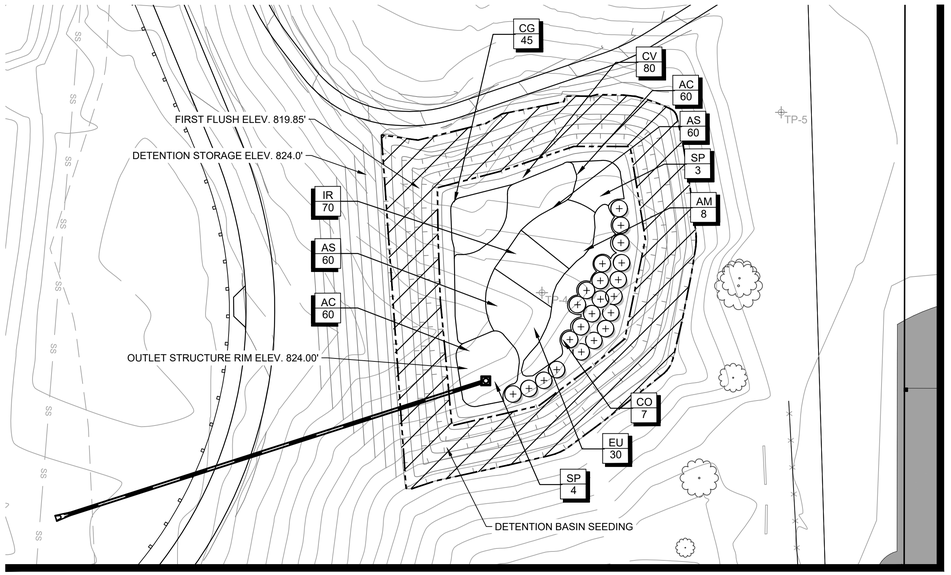
MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

PROJECT DETAILS III
ALTERNATE

Project No.	Scale
2075140801	
Revision	Sheet	Drawing No.
0	23 of 24	C502



First Flush Plantings (Elevation 819.85 and below)

Key	Quantity	Scientific Name	Common Name	Spacing	Size
Forbs					
AC	120	Anemone canadensis	Canada Anemone	2' o.c.	plug
AS	120	Asclepias incarnata	Swamp Milkweed	2' o.c.	plug
EU	30	Eupatorium maculatum	Joe Pye Weed	3' o.c.	plug
IR	70	Iris virginica	Blue Flag Iris	18" o.c.	plug
Grasses					
CG	45	Carex grayii	Gray's Sedge	18" o.c.	plug
CV	80	Carex vulipinoides	Brown Fox Sedge	2' o.c.	plug
Shrubs					
AM	8	Aronia melanocarpa	Black Chokeberry	5' o.c.	24" cont.
CO	7	Cornus sericea	Red-twig Dogwood	5' o.c.	30" cont.
SP	7	Spiraea tomentosa	Steeplebush	3' o.c.	18-24" cont.

Detention Basin Seeding (Elevation 819.85 to 824)

Onces		Pounds per acre
2.4	Andropogon gerardii	Big Bluestem	0.75
3.2	Bouteloua curtipendula	Side-Oats Grama	1
0.6	Carex spp.	Prairie Sedge Species	0.1875
4.8	Elymus canadensis	Canada Wild Rye	1.5
0.5	Panicum virgatum	Switch Grass	0.15625
6.4	Schizachyrium scoparium	Little Bluestem	2
2.4	Sorghastrum nutans	Indian Grass	0.75
0.2	Asclepias syriaca	Common Milkweed	0.0625
0.2	Asclepias tuberosa	Butterfly Weed	0.0625
2	Chamaecrista fasciculata	Partridge Pea	0.625
1.2	Coreopsis lanceolata	Sand Coreopsis	0.375
1.6	Echinacea purpurea	Broad-Leaved Purple Coneflowe	0.5
0.05	Heliopsis helianthoides	False Sunflower	0.01563
0.1	Monarda fistulosa	Wild Bergamot	0.03125
0.2	Penstemon digitalis	Foxglove Beard Tongue	0.0625
0.8	Ratibida pinnata	Yellow Coneflower	0.25
1.6	Rudbeckia hirta	Black-Eyed Susan	0.5
0.1	Solidago speciosa	Showy Goldenrod	0.03125
0.2	Symphyotrichum laeve	Smooth Blue Aster	0.0625
0.1	Symphyotrichum novae-angliae	New England Aster	0.03125

Temporary Cover Crop (Entire basin to elevation 824)

Onces		Pounds per acre
120	Lolium multiflorum	Annual Rye	22.5
33.3	Avena sativa	Seed Oats	6.25

Key	Qty	Botanical Name	Common Name	Size
Shrubs				
CA	13	Ceanothus americanus	New Jersy Tea	5 gallon
LB	19	Lindera benzoin	Spicebush	5 gallon
RA	7	Rhus aromatica	Fragrant Sumac	5 gallon
Trees				
AA	12	Amelanchier arborea	Serviceberry tree form	2.5" CAL
AG	1	Aesculus glabra	American Buckeye	2.5" CAL
AR	4	Acer rubrum	Red Maple	2.5" CAL
AS	2	Acer saccharum	Sugar Maple	2.5" CAL
GT	3	Gleditsia triacanthos inermis	Honeylocust	2.5" CAL
QM	2	Quercus macrocarpa	Burr Oak	2.5" CAL
QA	2	Quercus alba	White Oak	2.5" CAL
UAP	2	Ulmus americana	Princeton Elm	2.5" CAL
UAV	6	Ulmus americana	Valley Forge Elm	2.5" CAL

Stantec

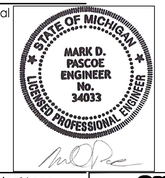
Stantec Consulting Michigan Inc.
3754 Ranchero Drive
Ann Arbor MI 48108-2771
Tel: (734) 761-1010
www.stantec.com

Consultant

KEY NOTES:

A	BID SET PHASE 2	CRW	MDP	2023.01.26
Issued		By	Appd	YYYY.MM.DD
File Name: 140801-L100		JDA	AMS	MDP	2020.03.10
		Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Permit/Seal



Client/Project Logo

PITTSFIELD CHARTER TOWNSHIP

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

NOTE:
THE LOCATIONS AND ELEVATIONS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS DRAWING ARE ONLY APPROXIMATE. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING MISS DIG PRIOR TO CONSTRUCTION.

Client/Project
PITTSFIELD CHARTER TOWNSHIP

MONTIBELLER PARK IMPROVEMENTS
PHASE 2

Pittsfield Township, Michigan

Title

LANDSCAPE PLAN

Project No.
2075140801

Scale
0 40' 80'

Revision
0

Sheet
24 of 24

Drawing No.
L100