GEORGETOWN CHARTER TOWNSHIP

OTTAWA COUNTY, MICHIGAN

TETON FARM PLAT

-2020-

PROPERTY DESCRIPTION
PROPOSED PLAT

PART OF THE SOUTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SECTION 17, TOWN 6 NORTH, RANGE 13 WEST, GEORGETOWN TOWNSHIP, OTTAWA COUNTY, MICHIGAN, DESCRIBED AS: COMMENCING AT THE SOUTH ONE-QUARTER CORNER OF SAID SECTION 17; THENCE NORTH 89°10'44" WEST 1322.96 FEET ALONG THE SOUTH LINE OF SAID SECTION AND ALONG PART OF THE NORTH LINE OF HICKORY GROVE FARM NO. 6 (AS RECORDED IN INSTRUMENT NO. 2014-0042329, OTTAWA COUNTY RECORDS); THENCE NORTH 01°17'26" EAST 332.00 FEET ALONG THE WEST LINE OF THE SOUTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION TO THE PLACE OF BEGINNING, SAID POINT ALSO BEING THE NORTHWEST CORNER OF LOT 157 OF SAID HICKORY GROVE FARM NO. 6; THENCE NORTH 01°17'26" EAST (RECORDED AS NORTH 01°17'28" EAST) 995.78 FEET ALONG SAID WEST LINE AND IN PART THE EAST LINE OF BREWER FARMS NO. 3 (AS RECORDED IN LIBER 39 OF PLATS, PAGES 56 AND 57, OTTAWA COUNTY RECORDS); THENCE SOUTH 89°04'58" EAST (RECORDED AS SOUTH 89°04'59" EAST) 1095.81 FEET ALONG THE SOUTH LINE OF BREWER FARMS NO. 2 (AS RECORDED IN LIBER 38 OF PLATS PAGES 14-16 OTTAWA COUNTY RECORDS) AND THE SOUTH LINE OF BREWER FARMS (AS RECORDED IN LIBER 36 OF PLATS PAGES 72-75 OTTAWA COUNTY RECORDS); THENCE SOUTH 00°49'16" WEST 254.74 FEET; THENCE SOUTH 89°10'44" EAST 228.00 FEET PARALLEL WITH THE SOUTH LINE OF SAID SECTION; THENCE SOUTH 00°12'30" WEST 341.02 FEET ALONG THE NORTH-SOUTH ONE-QUARTER LINE OF SAID SECTION; THENCE NORTH 89°10'44" WEST 689.43 FEET PARALLEL WITH THE SOUTH LINE OF SAID SECTION; THENCE SOUTH 00°17'26" WEST 398.18 FEET PARALLEL WITH THE AFORESAID WEST LINE OF THE SOUTHEAST ONE-QUARTER OF THE SOUTHWEST ONE-QUARTER OF SAID SECTION; THENCE NORTH 89°10'44" WEST 632.49 FEET ALONG THE NORTH LINE OF AFORESAID HICKORY GROVE FARM NO. 6 TO THE PLACE OF BEGINNING.

22.5522 ACRES INCLUDING 36TH AVENUE RIGHT-OF-WAY
22.2901 ACRES EXCLUDING 36TH AVENUE RIGHT-OF-WAY

PLAN INDEX

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2-4	SANITARY SEWER
5-7	WATER MAIN
8-13	IMPROVEMENTS
14	INTERSECTION GRADING DETAIL
15	SITE GRADING & SOIL EROSION CONTROL PLAN
16-17	STORM WATER MANAGEMENT BASIN
18	LOT LAYOUT PLAN
19	CROSS-SECTION AND DETAILS

NOTE:
ALL WORK SHALL BE COMPLETED TO GEORGETOWN TOWNSHIP SPECIFICATIONS.

UTILITY COMPANIES

CONSUMERS ENERGY (ELECTRIC)
PO BOX 201
GRAND RAPIDS, MI 49501-0201
(616) 530-4244

AT&T (TELEPHONE)
ROOM 5 (PROJECTS N. OF FRANKLIN ST.)
2ND FLOOR (PROJECTS S. OF FRANKLIN ST.)
955 36TH ST. SE
GRAND RAPIDS, MI 49508
(616) 246-7203 (PROJECTS N. OF FRANKLIN ST.)
(616) 246-7210 (PROJECTS S. OF FRANKLIN ST.)

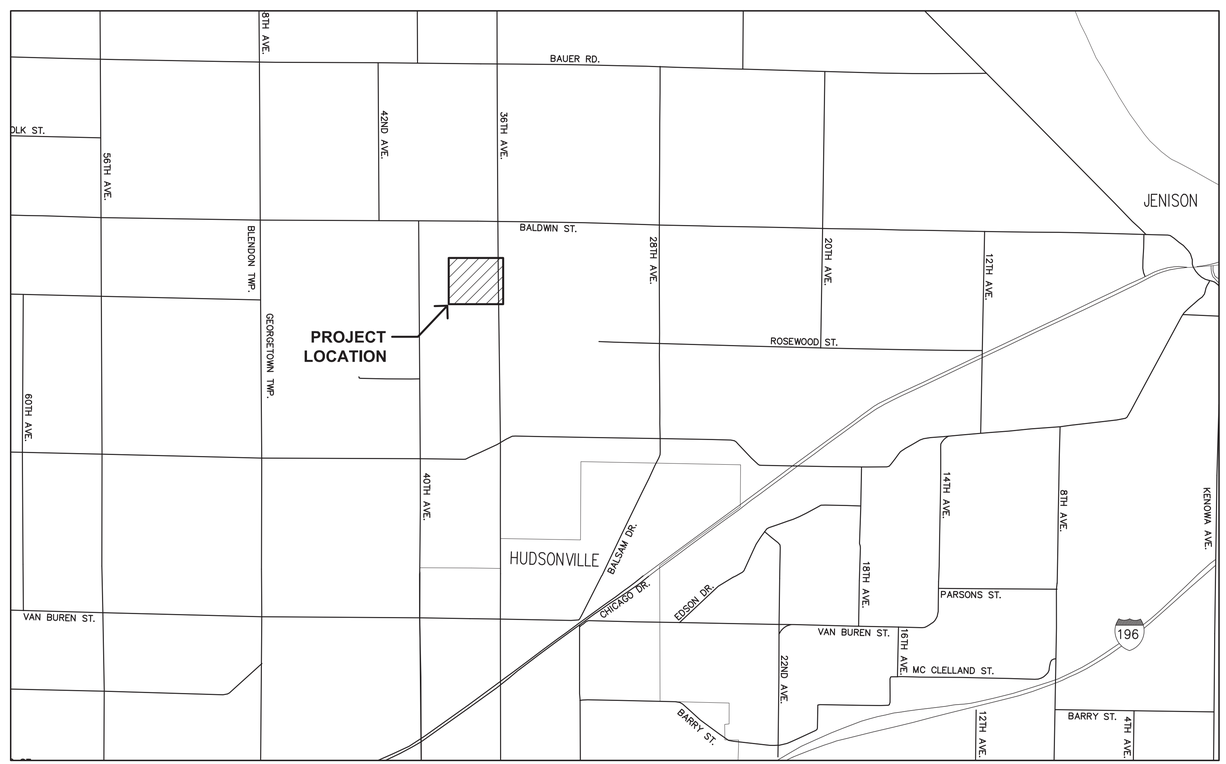
DTE ENERGY (NATURAL GAS)
444 WEALTHY ST. SW
GRAND RAPIDS, MI 49503
(800) 947-5000

XFINITY/COMCAST (CABLE TV)
955 CENTURY AVE. SW
GRAND RAPIDS, MI 49503
(616) 245-5039

VERIZON BUSINESS (FIBER OPTICS)
2855 OAK INDUSTRIAL DR. NE
GRAND RAPIDS, MI 49505
(616) 224-4944

CENTURY TEL (FIBER OPTICS)
320 N. WASHINGTON SQUARE
LANSING, MI 48933
(989) 239-8110

EARTHLINK (FIBER OPTICS)
2851 CHARLEVOIX DR. SE, STE. 209
GRAND RAPIDS, MI 49503
(616) 988-7100



PROJECT LOCATION MAP

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

PREPARED FOR:
E & A DeYOUNG L.L.C.
CONTACT: ED DeYOUNG
P.O. BOX 155
HUDSONVILLE, MI. 49426
(616) 669-6688

REVISED: JULY 1, 2020
REVISED: MARCH 21, 2020
DATE: FEBRUARY 14, 2020

SURVEYED & DESIGNED BY:
Moore+Bruggink
Consulting Engineers
2020 Monroe Ave.
Grand Rapids, MI 49505
(616) 363-9801 mailbox@mbce.com

GEORGETOWN CHARTER TOWNSHIP APPROVAL

JIM WIERENGA, SUPERVISOR

DATE

PREPARED UNDER SUPERVISION OF
ADAM DEYOUNG, P.E.
ENGINEER, P.E.

66501
REGISTRATION NO.

Moore+Bruggink
ORGANIZATION

2020 MONROE NW GRAND RAPIDS, MI 49505
ADDRESS

STATE OF MICHIGAN
ADAM LEE DEYOUNG
ENGINEER
No. 6201066501
LICENSED PROFESSIONAL ENGINEER

JOB NUMBER: 150182.01

SHEET NUMBER
1

P:\150182.1 7381 36TH AVE- HUDSONVILLE\CAD\DWG\150182_COVER SHEET.dwg, 6/29/2020 1:52:06 PM, MATT KOZAK

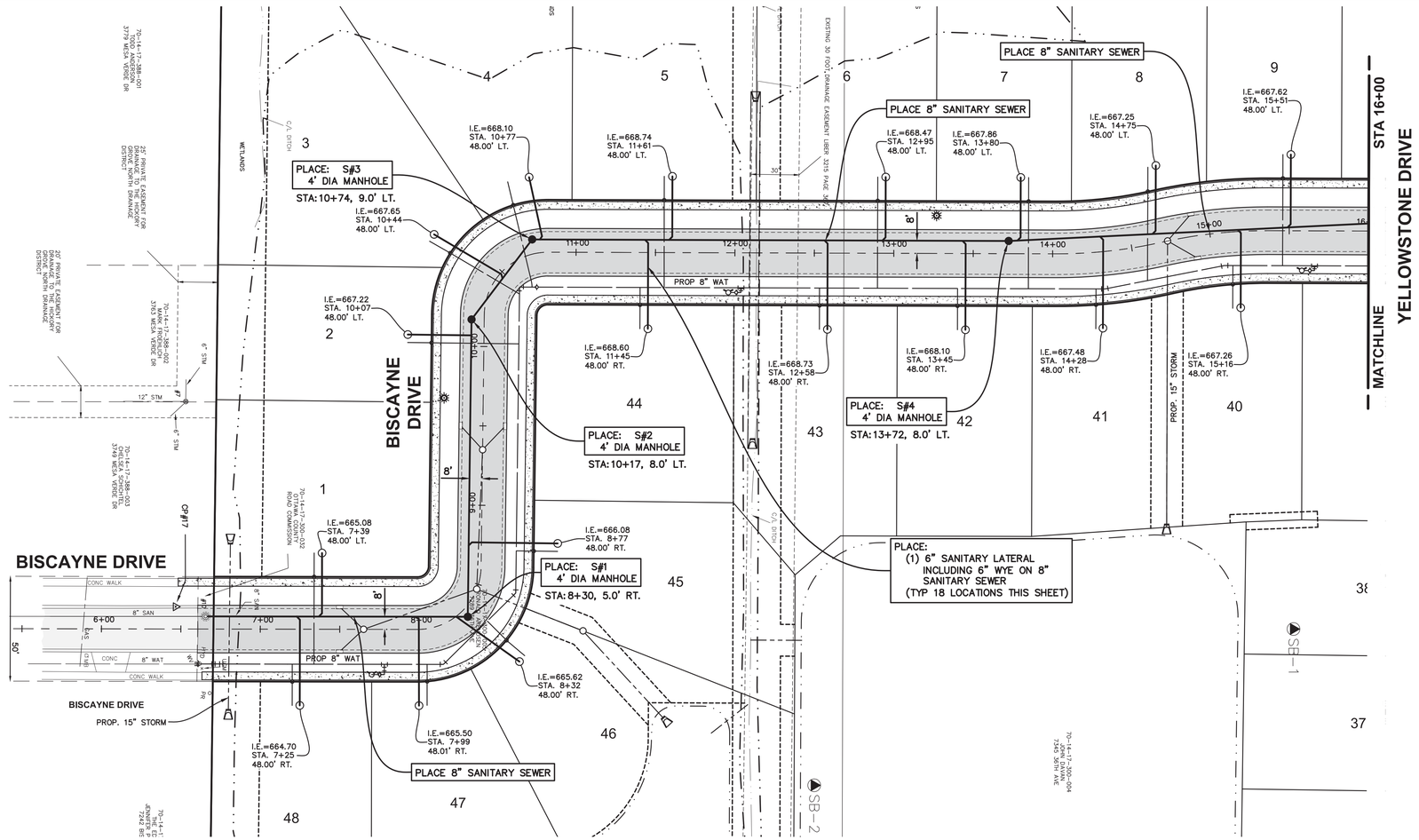
BENCHMARKS

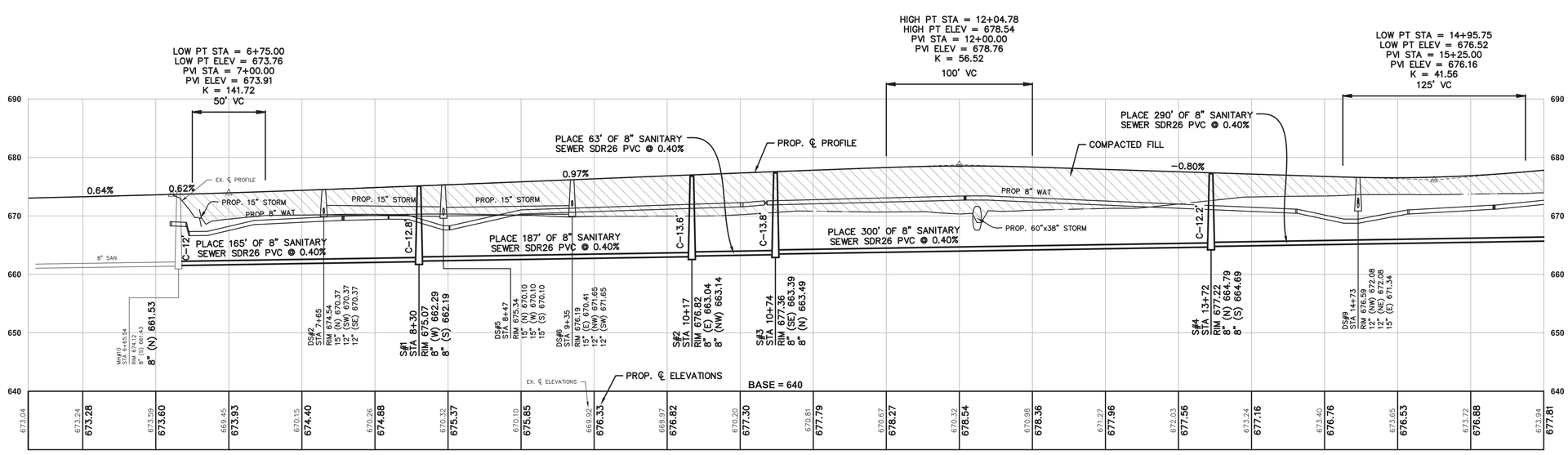
BM#1 ELEVATION 692.23
RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

BM#2 ELEVATION 683.59
RAILROAD SPIKE IN EAST SIDE OF UTILITY POLE, LOCATED AT THE SE BOUNDARY CORNER AND ON THE NORTH SIDE OF E-W DRAINAGE DITCH.

CONTROL POINTS

CP#3 CONCRETE MONUMENT N 6330.7930 E 4671.3670 ELEV 684.07	CP#5 1/2" REROD N 6326.1070 E 4971.9720 ELEV 690.83
CP#17 MAG NAIL N 5321.0310 E 4092.6770 ELEV 673.54	CP#18 M&B RED CAP N 5879.7920 E 4966.4770 ELEV 681.67





PLAN SCALE: 1" = 40'
PROFILE SCALES:
HORZ: 1" = 40'
VERT: 1" = 10'

Know what's below. Call before you dig.

PLAN REVISIONS
REVISED 04/21/2020

Moore+Bruggink
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Grand Rapids, MI 49505
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SANITARY SEWER
FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP,
OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE	M&B
PROJECT NO.:	150182.01
DESIGN DRAWN BY:	MJK
DESIGNED BY:	ALD
CHECKED BY:	ALD
PLAN DATE:	FEBRUARY 14, 2020
SHEET NUMBER	2 OF 19

P:\150182.1 7381 36TH AVE- HUDSONVILLE\CAD\DWG\150182_SANITARY SHEETS.dwg, 6/29/2020 1:52:23 PM, MATT KOZAK

BENCHMARKS

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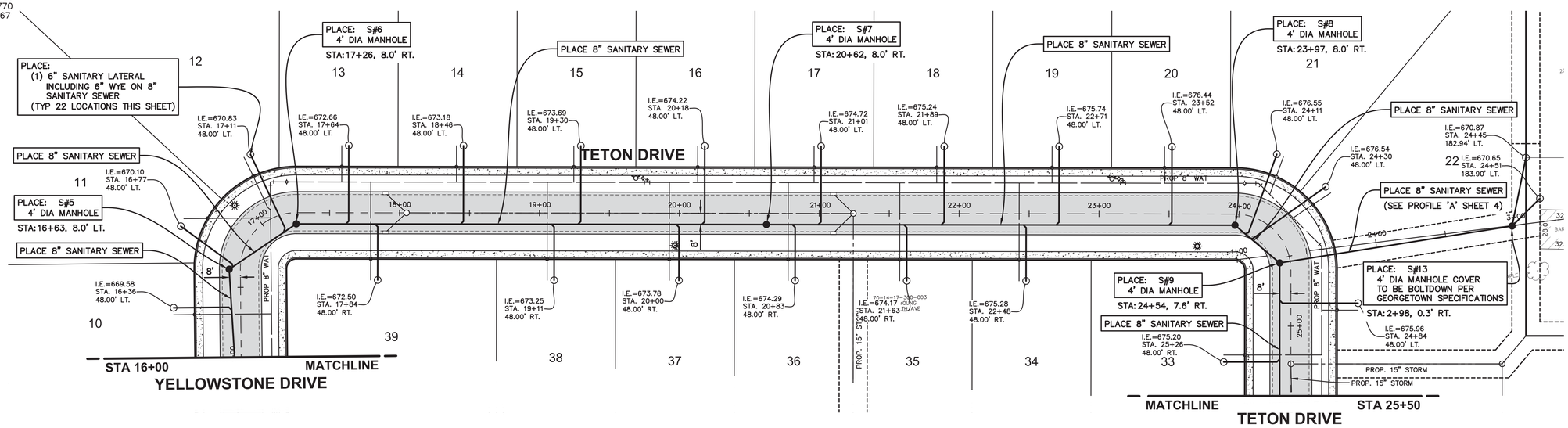
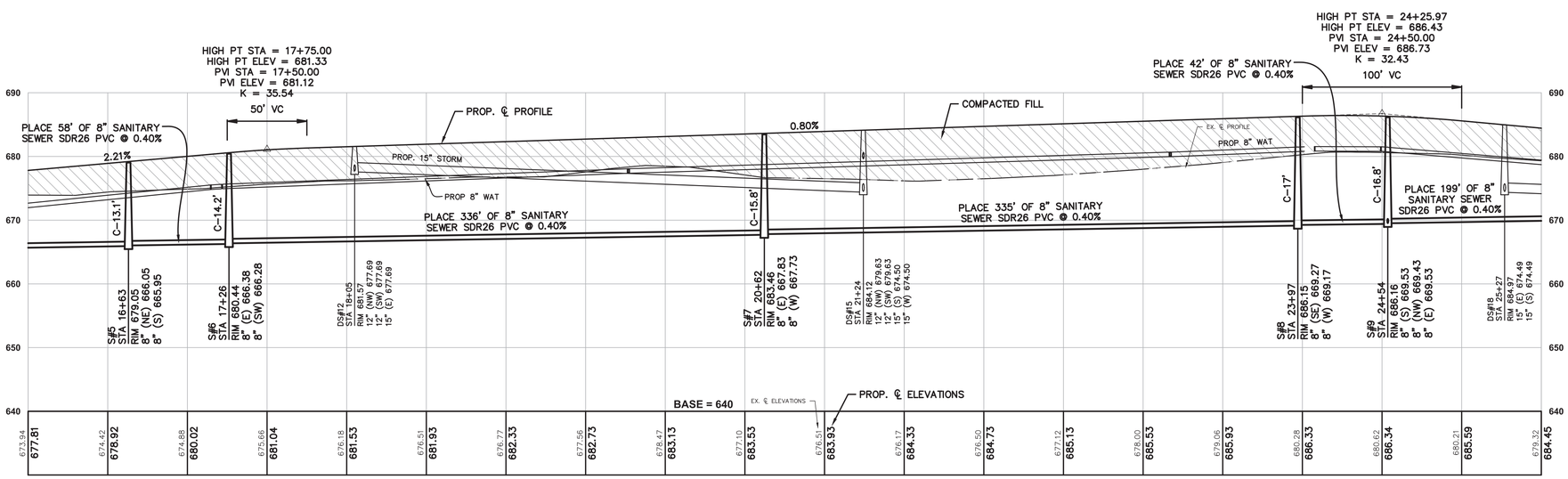
CONTROL POINTS

CP#3	CP#5
CONCRETE MONUMENT	1/2" REROD
N 6330.7930	N 6326.1070
E 4671.3670	E 4971.9720
ELEV 684.07	ELEV 690.83

CP#17	CP#18
MAG NAIL	M&B RED CAP
N 5321.0310	N 5879.7920
E 4092.6770	E 4966.4770
ELEV 673.54	ELEV 681.67





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SANITARY SEWER
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TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE	M&B
PROJECT NO.:	150182.01
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DESIGNED BY:	ALD
CHECKED BY:	ALD
PLAN DATE:	FEBRUARY 14, 2020
SHEET NUMBER	3 OF 19

P:\150182.1 7381 36TH AVE-HUDSONVILLE\CAD\DWG\150182_SANITARY SHEETS.dwg_6/29/2020 1:52:33 PM_MATT KOZAK

BENCHMARKS

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RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

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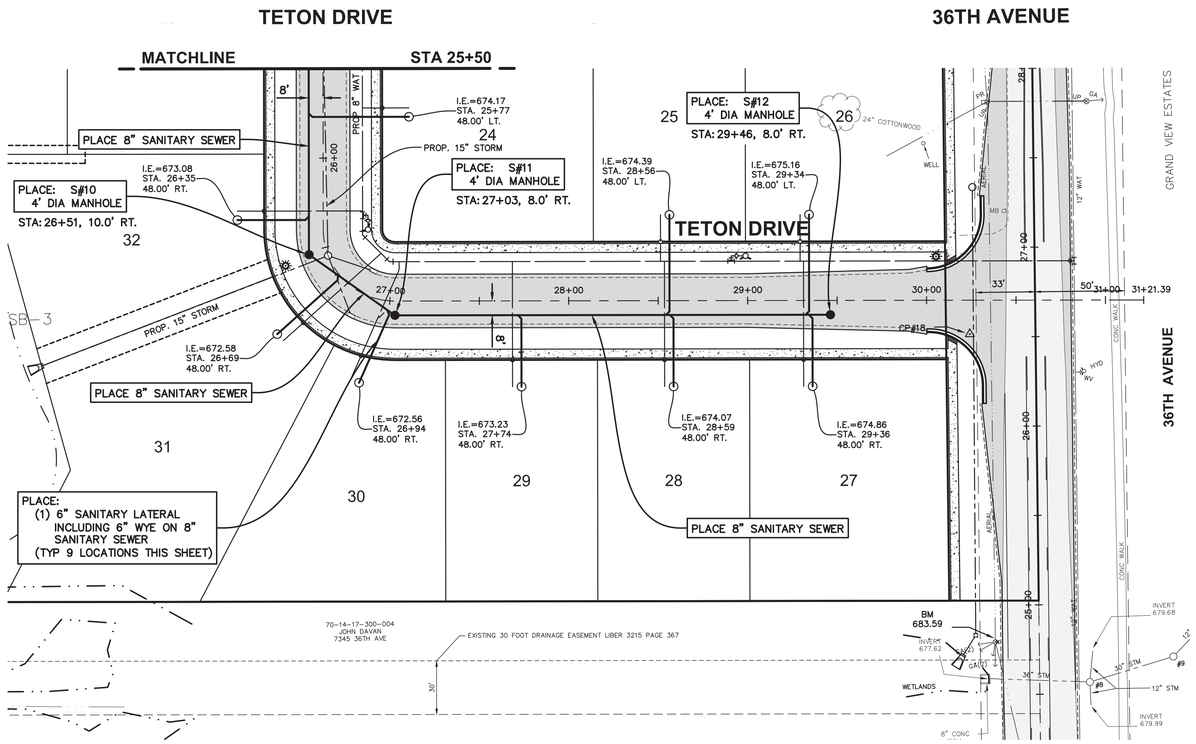

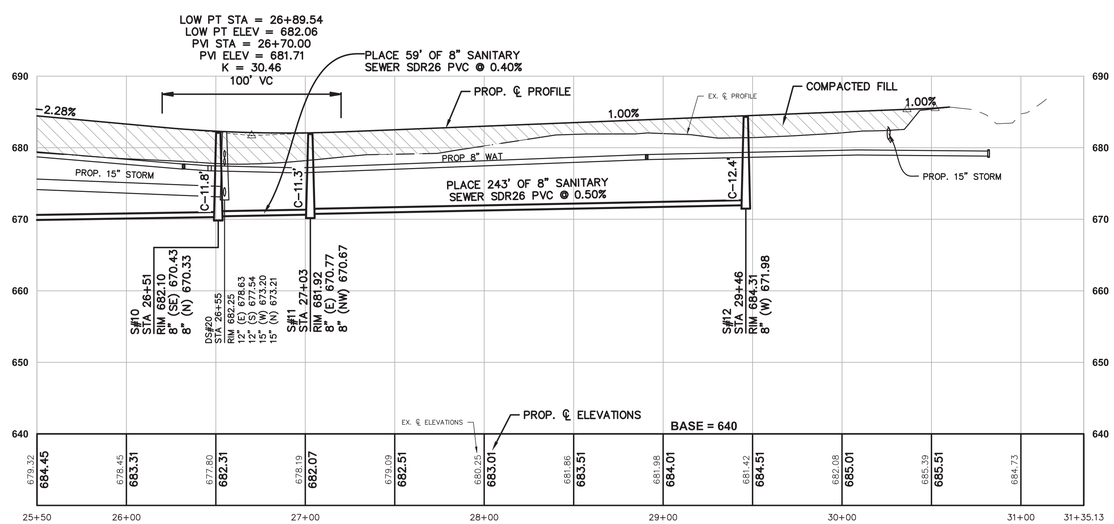

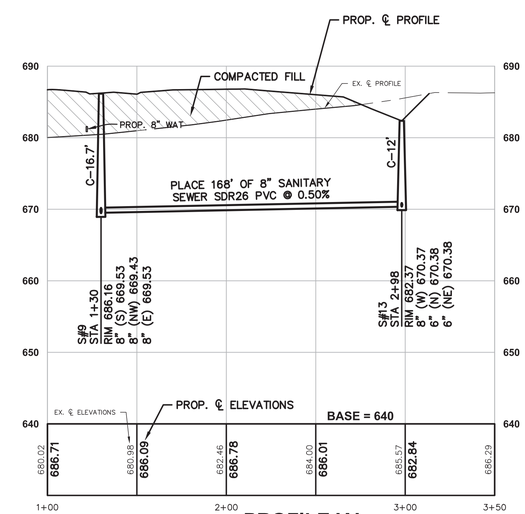

PROFILE 'A'

PLAN SCALE: 1" = 40'
PROFILE SCALES:
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REVISED 04/21/2020

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SANITARY SEWER
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TETON FARM PLAT
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OTTAWA COUNTY, MICHIGAN

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CHECKED BY:	ALD
PLAN DATE:	FEBRUARY 14, 2020

SHEET NUMBER
4 OF 19

P:\150182.1 7381 36TH AVE- HUDSONVILLE\CAD\DWG\150182_SANITARY SHEETS.dwg, 6/29/2020 1:52:43 PM, MATT KOZAK

BENCHMARKS

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RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

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RAILROAD SPIKE IN EAST SIDE OF UTILITY POLE, LOCATED AT THE SE BOUNDARY CORNER AND ON THE NORTH SIDE OF E-W DRAINAGE DITCH.

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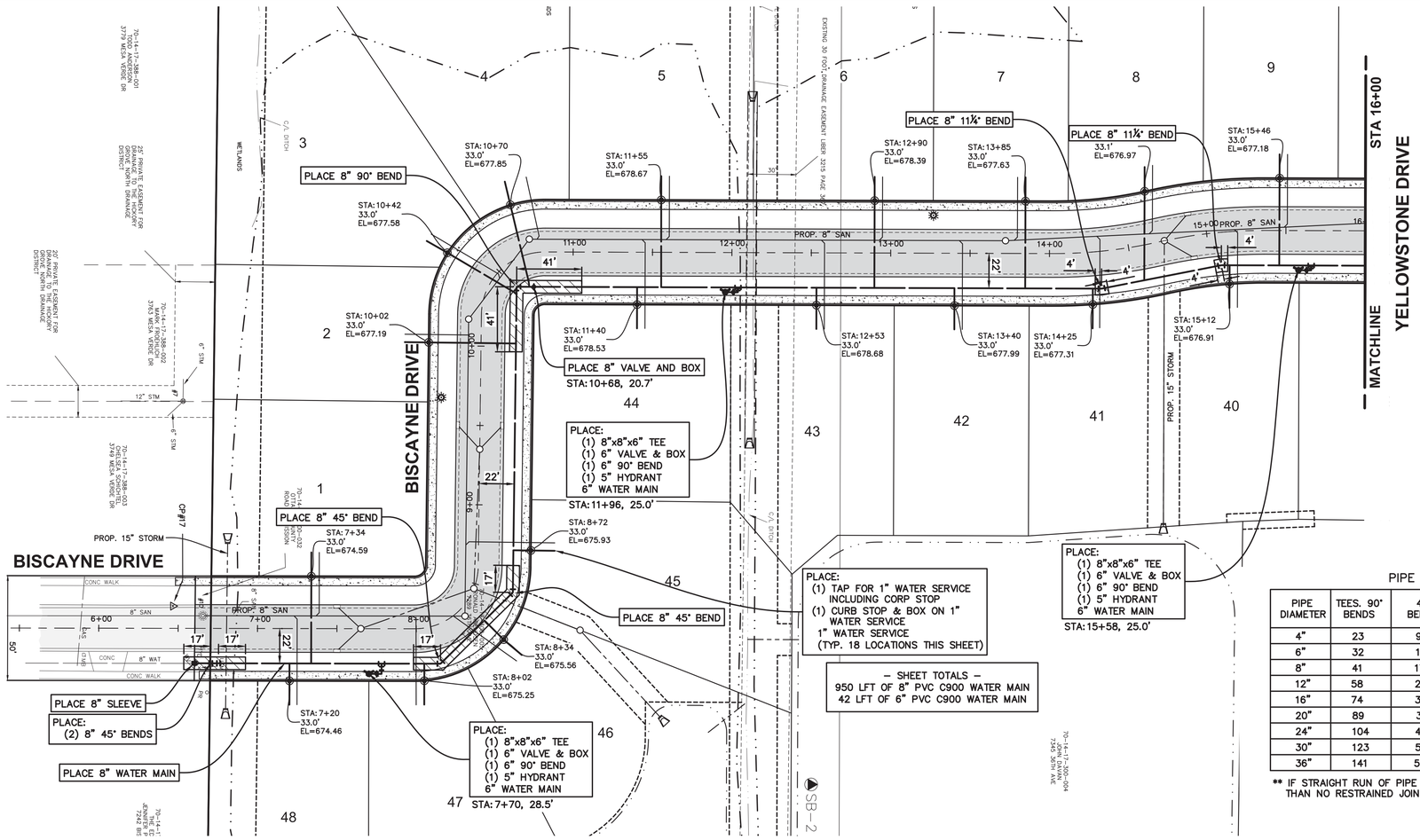
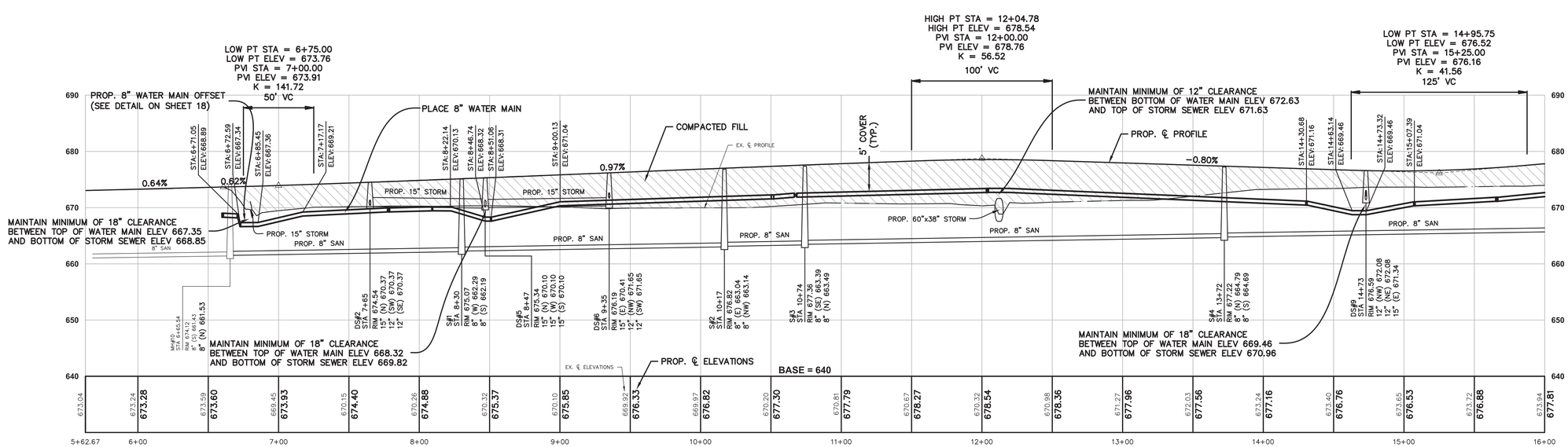


PIPE RESTRAINT LENGTH REQUIRED, FEET

PIPE DIAMETER	TEES, 90° BENDS	45° BENDS	22½° BENDS	11¼° BENDS	DEAD ENDS	REDUCERS (ONE SIZE)	**
4"	23	9	5	2	57		
6"	32	13	6	3	82	43	63
8"	41	17	8	4	104	43	55
12"	58	24	12	6	149	80	120
16"	74	31	15	7	192	82	110
20"	89	37	18	9	233	82	104
24"	104	43	21	10	272	82	99
30"	123	51	25	12	328	115	148
36"	141	58	28	14	379	115	140

** IF STRAIGHT RUN OF PIPE ON SMALL SIDE OF REDUCER EXCEEDS THIS VALUE, THAN NO RESTRAINED JOINTS ARE NECESSARY



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REVISED 04/21/2020

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Consulting Engineers
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Grand Rapids, MI 49505
(616) 363-9801 mailbox@mbce.com

WATER MAIN FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE: M&B
PROJECT NO.: 150182.01
DESIGN DRAWN BY: MJK
DESIGNED BY: ALD
CHECKED BY: ALD
PLAN DATE: FEBRUARY 14, 2020
SHEET NUMBER 5 OF 19

P:\150182.17381 36TH AVE-HUDSONVILLE\CAD\DWG\150182_WATER MAIN SHEETS.dwg, 6/29/2020 1:52:59 PM, MATT KOZAK

BENCHMARKS

BM#1 ELEVATION 692.23
RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

BM#2 ELEVATION 683.59
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CONTROL POINTS

CP#3
CONCRETE
MONUMENT
N 6330.7930
E 4671.3670
ELEV 684.07

CP#5
1/2" REROD
N 6326.1070
E 4971.9720
ELEV 690.83

CP#17
MAG NAIL
N 5321.0310
E 4092.6770
ELEV 673.54

CP#18
M&B RED CAP
N 5879.7920
E 4966.4770
ELEV 681.67

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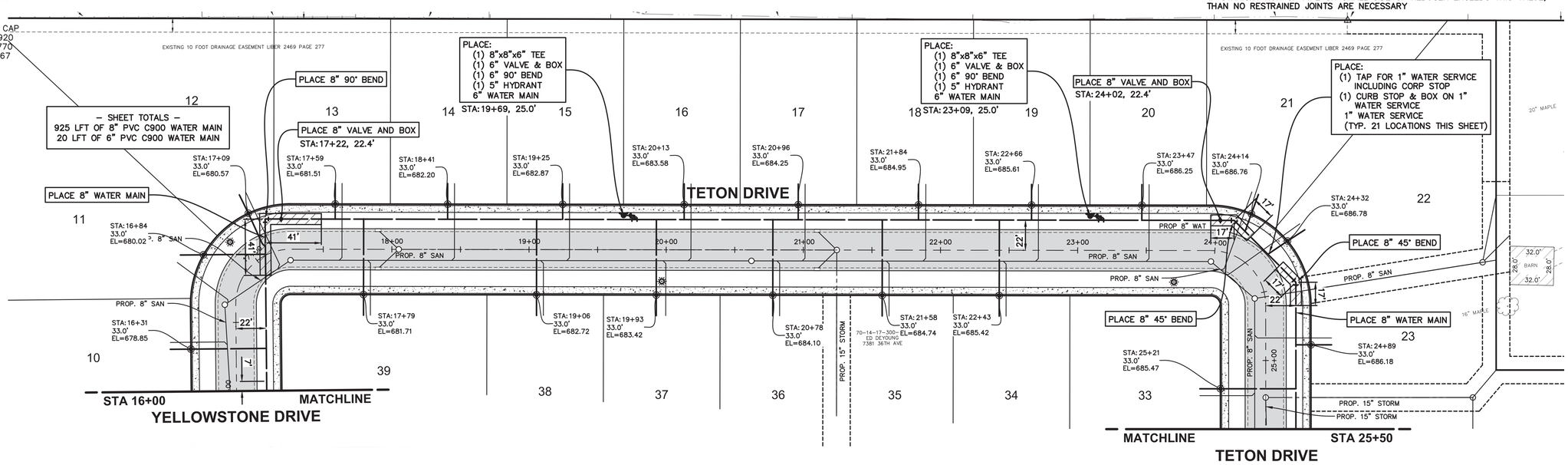

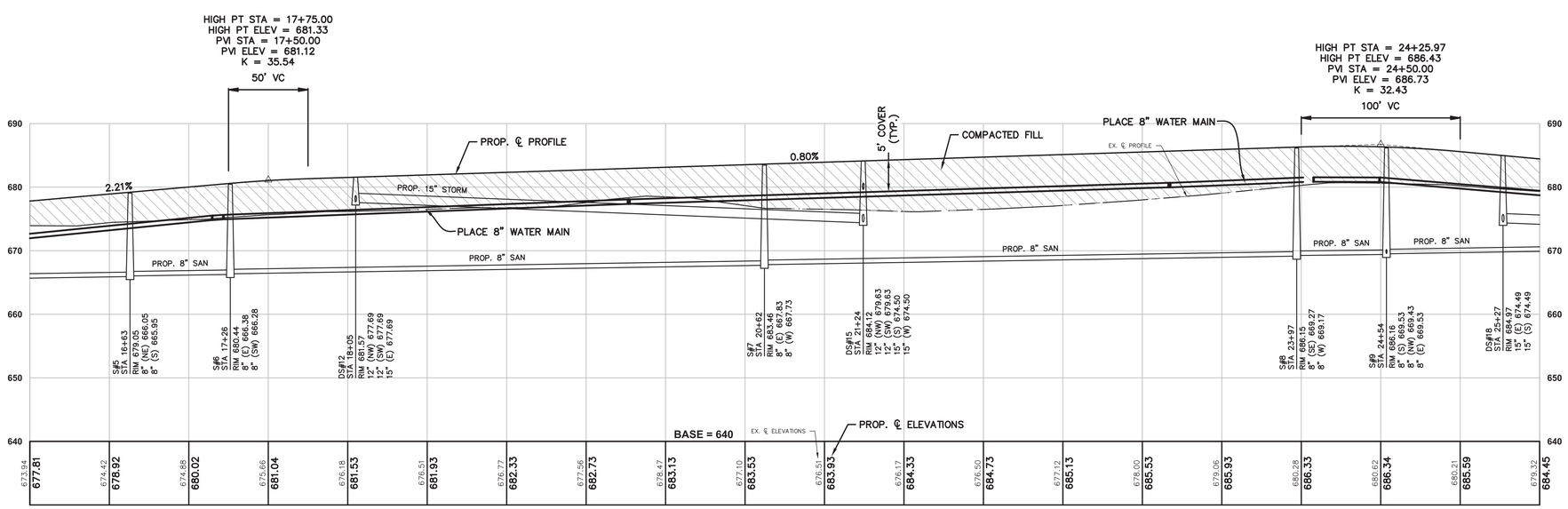

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WATER MAIN
FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP,
OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE	M&B
PROJECT NO.:	150182.01
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DESIGNED BY:	ALD
CHECKED BY:	ALD
PLAN DATE:	FEBRUARY 14, 2020

SHEET NUMBER
6 OF 19

P:\150182.1 7381 36TH AVE-HUDSONVILLE\CAD\DWG\150182_WATER MAIN SHEETS.dwg_6/29/2020 1:53:08 PM_MATT KOZAK

BENCHMARKS

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RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

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CONCRETE MONUMENT	1/2" REROD
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E 4671.3670	E 4971.9720
ELEV 684.07	ELEV 690.83

CP#17	CP#18
MAG NAIL	M&B RED CAP
N 5321.0310	N 5879.7920
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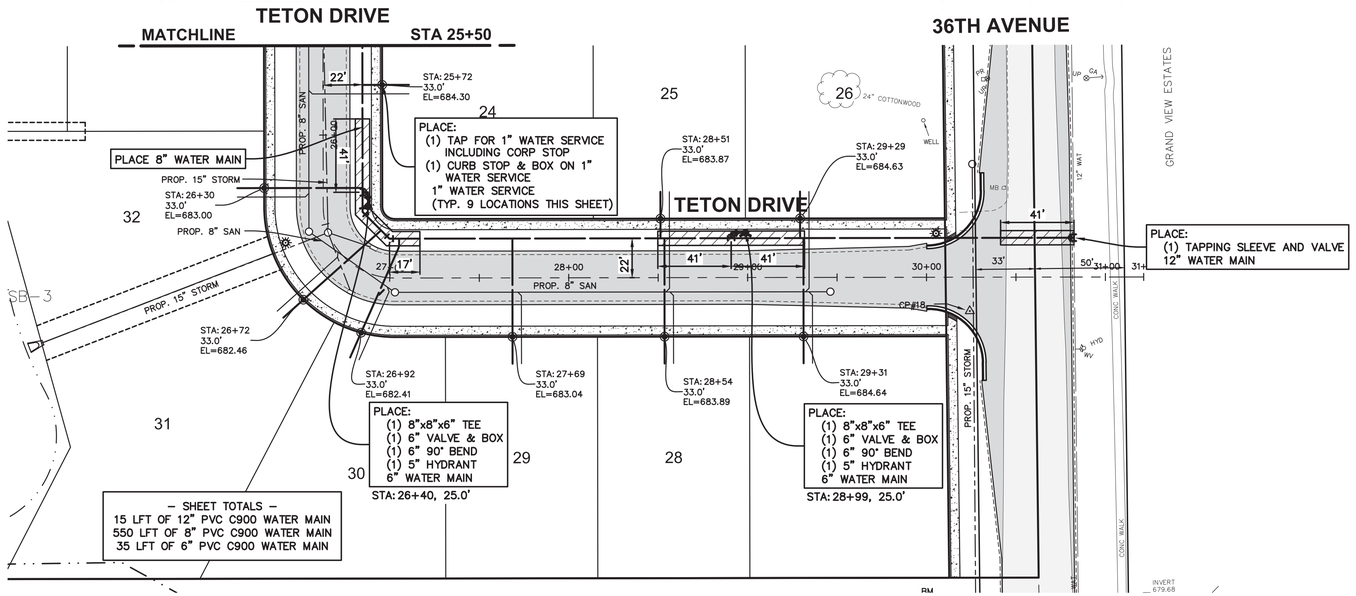

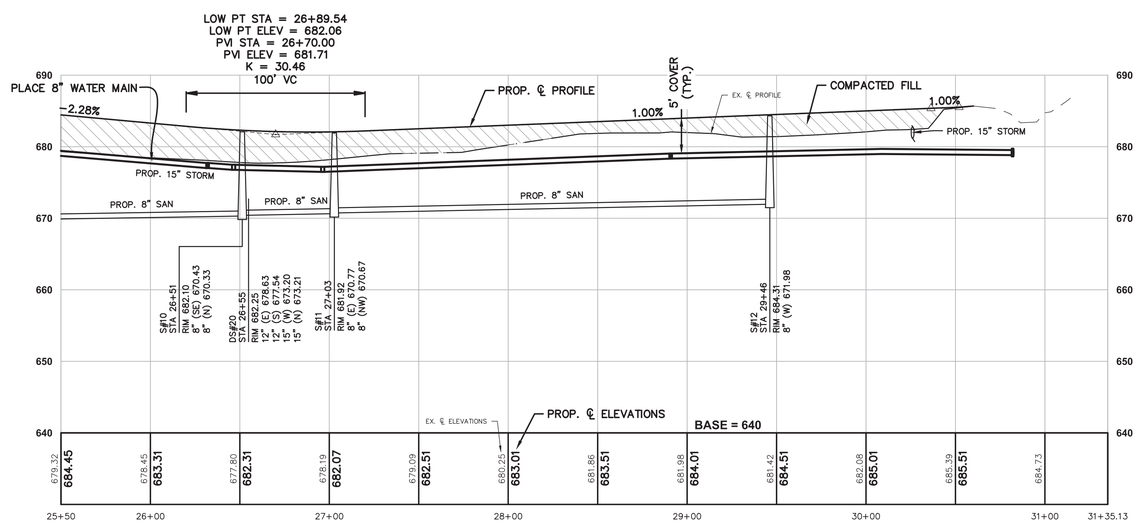

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WATER MAIN FOR
TETON FARM PLAT
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FIELD SURVEY / DATE: M&B
PROJECT NO.: 150182.01
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BENCHMARKS

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RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

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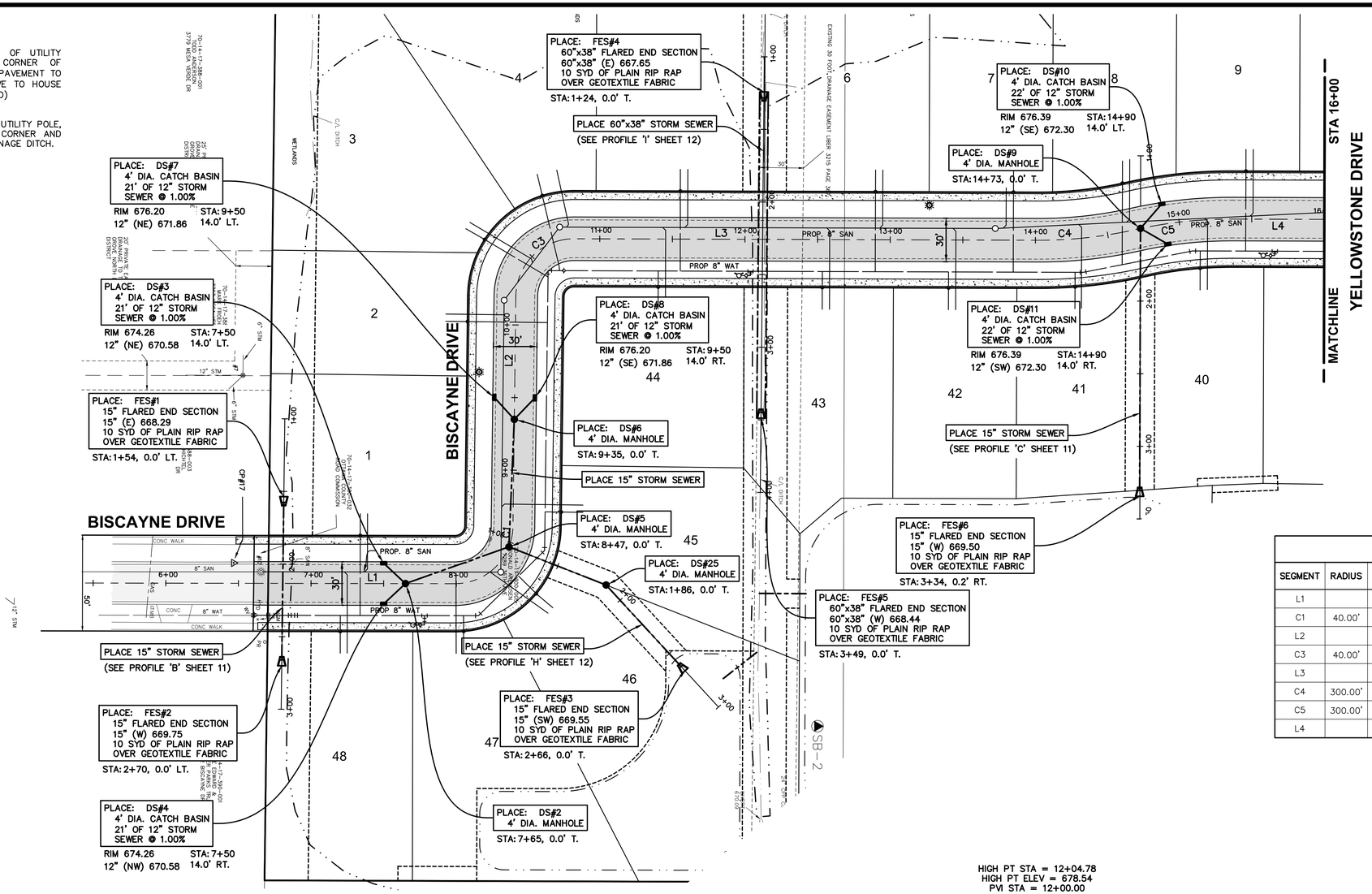
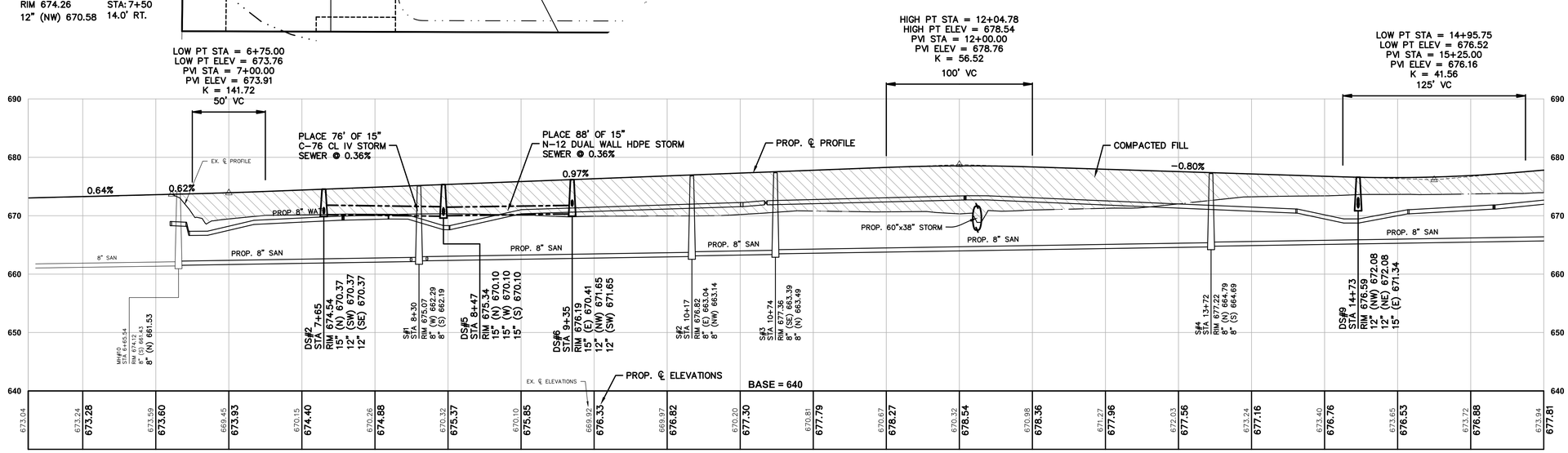
CP#3 CONCRETE MONUMENT N 6330.7930 E 4671.3670 ELEV 684.07	CP#5 1/2" REROD N 6326.1070 E 4971.9720 ELEV 690.83
CP#17 MAG NAIL N 5321.0310 E 4092.6770 ELEV 673.54	CP#18 M&B RED CAP N 5879.7920 E 4966.4770 ELEV 681.67



PROPOSED CENTER LINE							
SEGMENT	RADIUS	LENGTH	CHORD DIRECTION	DELTA	CHORD LENGTH	START STATION	END STATION
L1		316.09'	N 0° 12' 30" E			4+82.86	7+98.95
C1	40.00'	62.40'	N 44° 29' 07" W	89°23'14"	56.27'	7+98.95	8+61.36
L2		158.52'	N 89° 10' 44" W			8+61.36	10+19.87
C3	40.00'	62.46'	N 44° 26' 39" W	89°28'10"	56.31'	10+19.87	10+82.33
L3		319.48'	N 0° 17' 26" E			10+82.33	14+01.82
C4	300.00'	67.22'	N 6° 07' 43" W	12°50'19"	67.08'	14+01.82	14+69.04
C5	300.00'	67.22'	N 6° 07' 43" W	12°50'19"	67.08'	14+69.04	15+36.26
L4		126.73'	N 0° 17' 26" E			15+36.26	16+62.99



PLAN SCALE: 1" = 40'
PROFILE SCALES:
HORZ: 1" = 40'
VERT: 1" = 10'

Know what's below. Call before you dig.

PLAN REVISIONS
REVISED 04/21/2020

Moore+Bruggink
Consulting Engineers
2020 Monroe Ave.
Grand Rapids, MI 49505
(616) 363-9801 mailbox@mbce.com

IMPROVEMENTS FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE: M&B
PROJECT NO.: 150182.01
DESIGN DRAWN BY: MJK
DESIGNED BY: ALD
CHECKED BY: ALD
PLAN DATE: FEBRUARY 14, 2020

P:\150182.1 7381 36TH AVE- HUDSONVILLE\CAD\DWG\150182_IMPROVEMENT SHEETS.dwg_7/1/2020 10:41:11 AM_ADAM DEYOUNG

BENCHMARKS

BM#1 ELEVATION 692.23
RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

BM#2 ELEVATION 683.59
RAILROAD SPIKE IN EAST SIDE OF UTILITY POLE, LOCATED AT THE SE BOUNDARY CORNER AND ON THE NORTH SIDE OF E-W DRAINAGE DITCH.

CONTROL POINTS

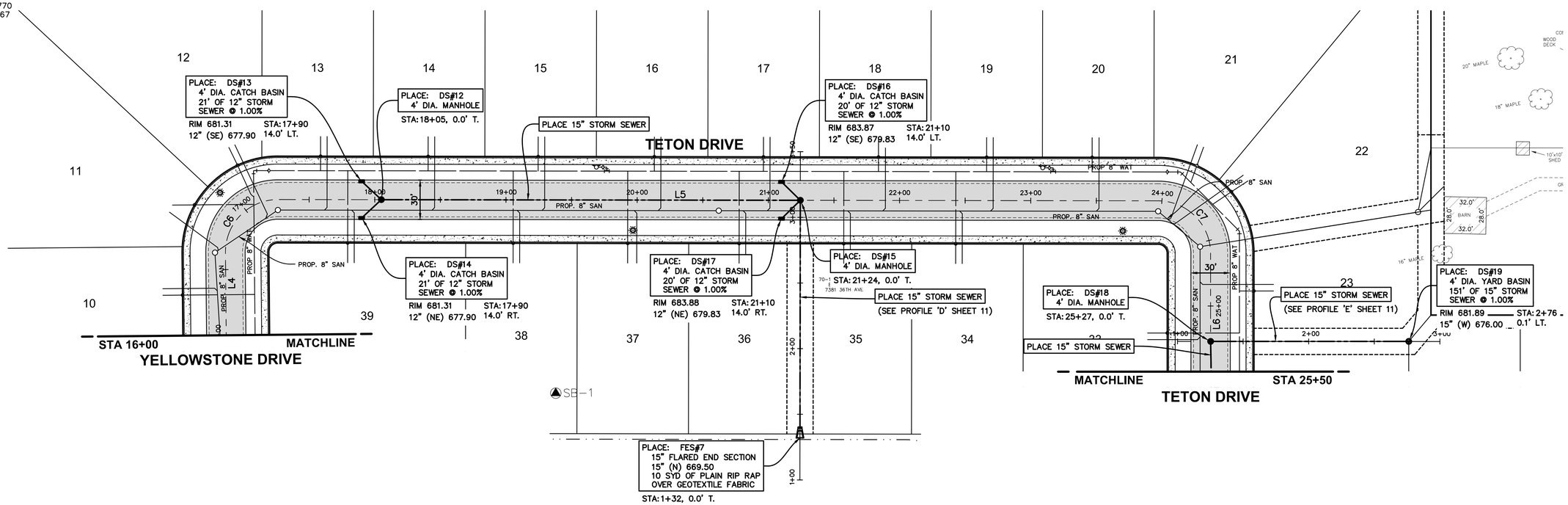
CP#3
CONCRETE MONUMENT
N 6330.7930
E 4671.3670
ELEV 684.07

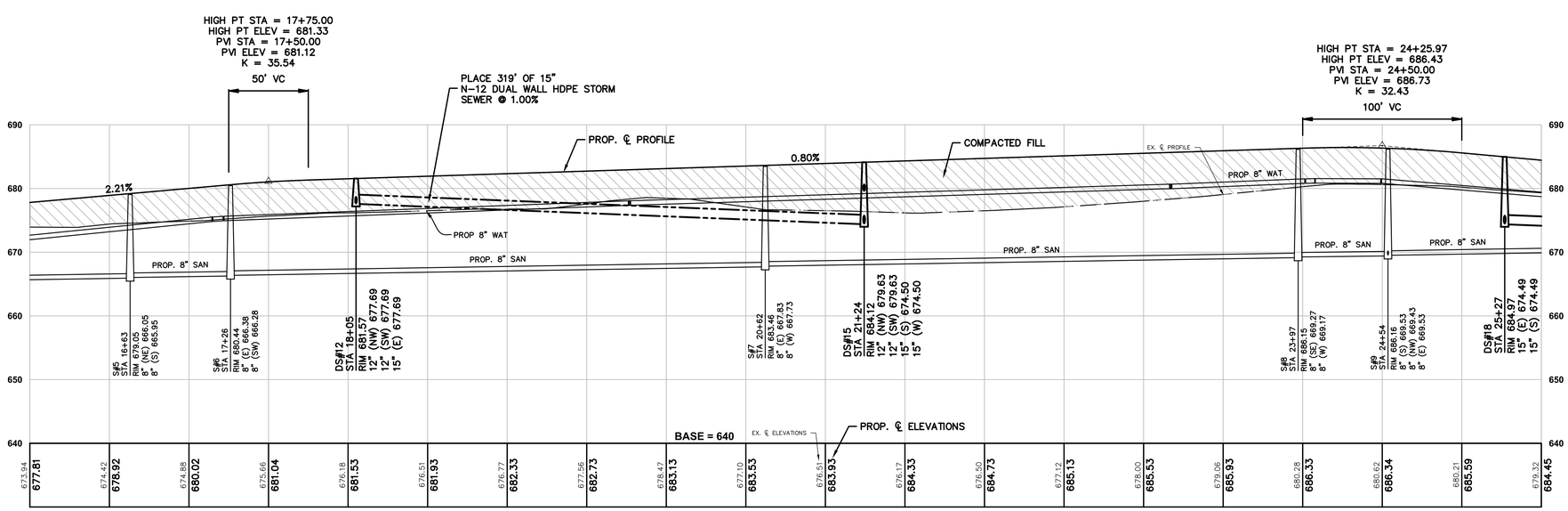
CP#5
1/2" REROD
N 6326.1070
E 4971.9720
ELEV 690.83

CP#17
MAG NAIL
N 5321.0310
E 4092.6770
ELEV 673.54

CP#18
M&B RED CAP
N 5879.7920
E 4966.4770
ELEV 681.67

PROPOSED CENTER LINE							
SEGMENT	RADIUS	LENGTH	CHORD DIRECTION	DELTA	CHORD LENGTH	START STATION	END STATION
L4		126.73'	N 0° 17' 26" E			15+36.26	16+62.99
C6	40.00'	63.27'	N 45° 36' 14" E	90°37'36"	56.88'	16+62.99	17+26.26
L5		670.87'	S 89° 04' 58" E			17+26.26	23+97.13
C7	40.00'	62.76'	S 44° 07' 51" E	89°54'14"	56.52'	23+97.13	24+59.90
L6		180.09'	S 0° 49' 16" W			24+59.90	26+39.99





PLAN SCALE: 1" = 40'
PROFILE SCALES:
HORZ: 1" = 40'
VERT: 1" = 10'

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REVISED 04/21/2020

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IMPROVEMENTS FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE: M&B
PROJECT NO.: 150182.01
DESIGN DRAWN BY: MJK
DESIGNED BY: ALD
CHECKED BY: ALD
PLAN DATE: FEBRUARY 14, 2020

P:\150182.1 7381 36TH AVE-HUDSONVILLE\CAD\DWG\150182_IMPROVEMENT SHEETS.dwg_ 7/1/2020 10:41:25 AM_ADAM DEYOUNG

BENCHMARKS

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RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

BM#2 ELEVATION 683.59
RAILROAD SPIKE IN EAST SIDE OF UTILITY POLE, LOCATED AT THE SE BOUNDARY CORNER AND ON THE NORTH SIDE OF E–W DRAINAGE DITCH.

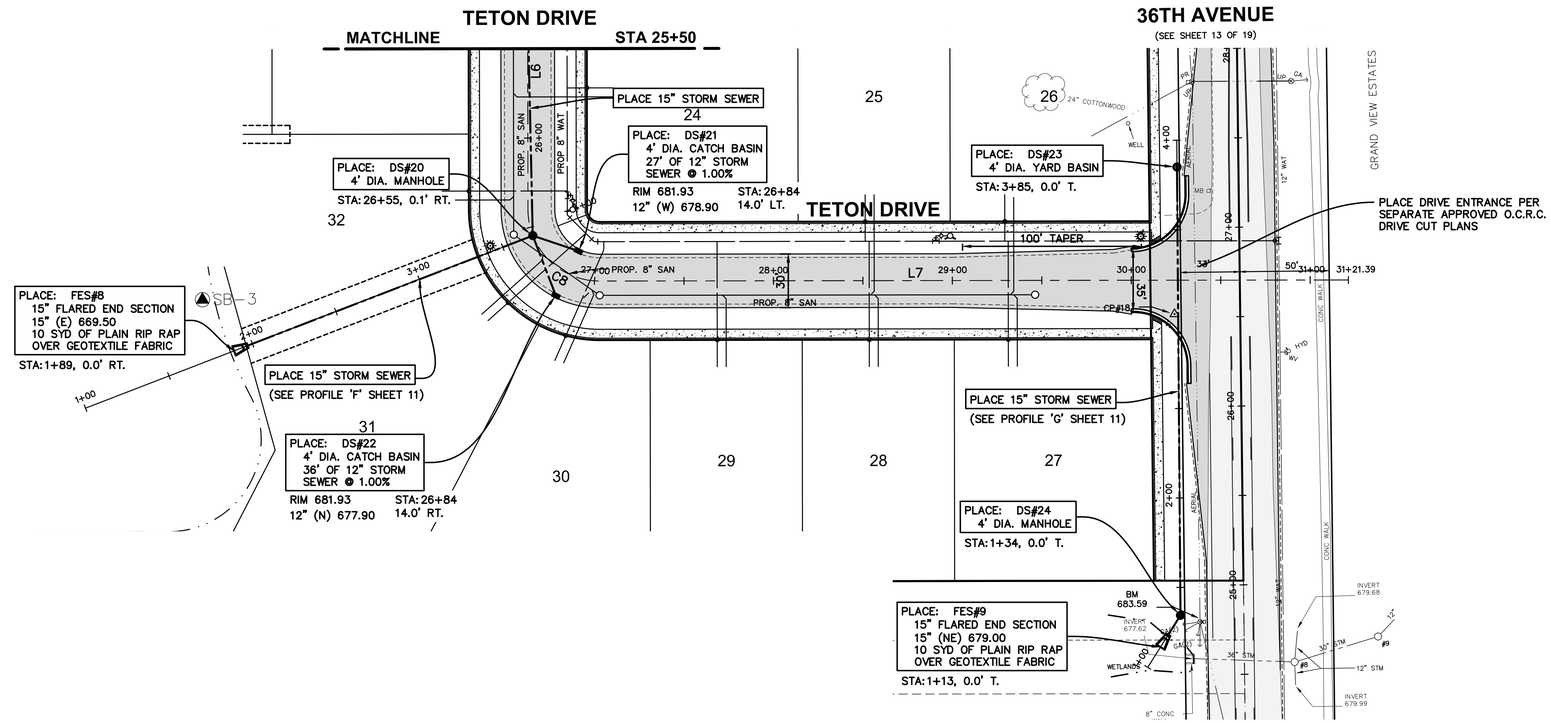
CONTROL POINTS

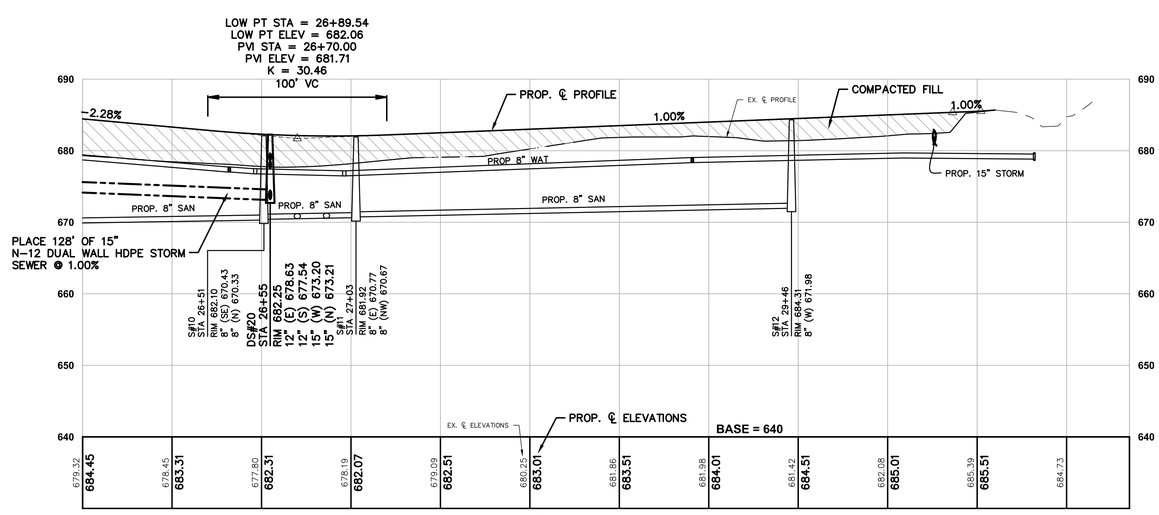
CP#3	CP#5
CONCRETE MONUMENT	1/2" REROD
N 6330.7930	N 6326.1070
E 4671.3670	E 4971.9720
ELEV 684.07	ELEV 690.83

CP#17	CP#18
MAG NAIL	M&B RED CAP
N 5321.0310	N 5879.7920
E 4092.6770	E 4966.4770
ELEV 673.54	ELEV 681.67

PROPOSED CENTER LINE

SEGMENT	RADIUS	LENGTH	CHORD DIRECTION	DELTA	CHORD LENGTH	START STATION	END STATION
L6		180.09'	S 0° 49' 16" W			24+59.90	26+39.99
C8	40.00'	62.83'	S 44° 10' 44" E	90°00'00"	56.57'	26+39.99	27+02.82
L7		418.57'	S 89° 10' 44" E			27+02.82	31+21.39





PLAN SCALE: 1" = 40'
PROFILE SCALES:
HORZ: 1" = 40'
VERT: 1" = 10'

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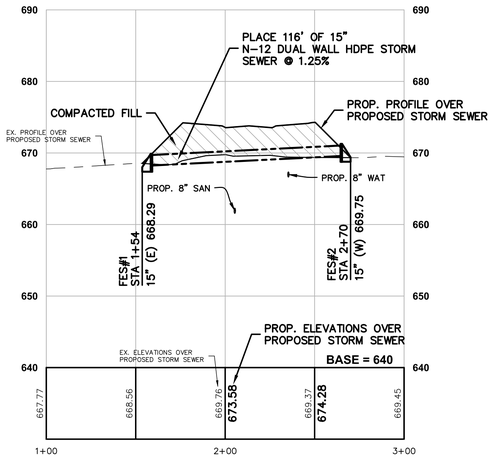
IMPROVEMENTS FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

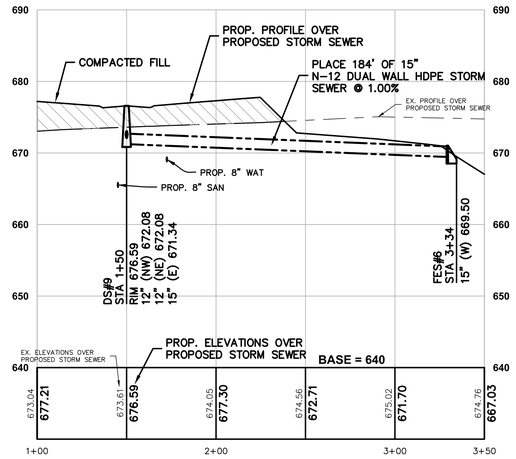
FIELD SURVEY / DATE	M&B
PROJECT NO.:	150182.01
DESIGN DRAWN BY:	MJK
DESIGNED BY:	ALD
CHECKED BY:	ALD
PLAN DATE:	FEBRUARY 14, 2020

SHEET NUMBER
10 OF 19

P:\150182.1 7381 36TH AVE-HUDSONVILLE\CAD\DWG\150182_IMPROVEMENT SHEETS.dwg_7/1/2020 10:41:38 AM_ADAM DEYOUNG



PROFILE 'B'



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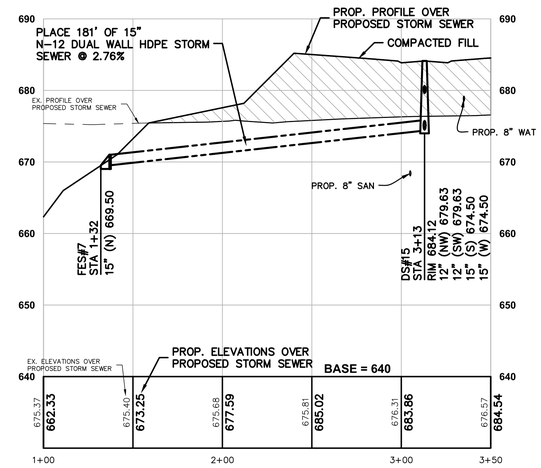

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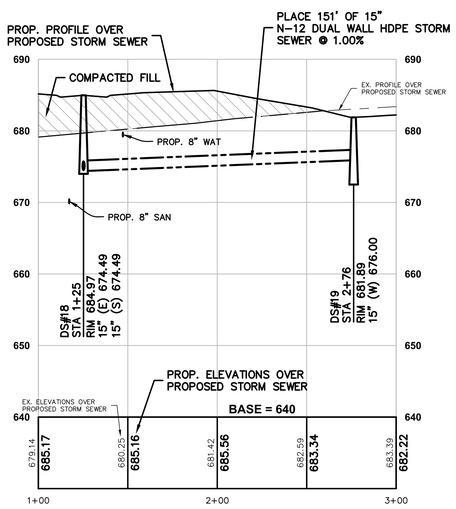

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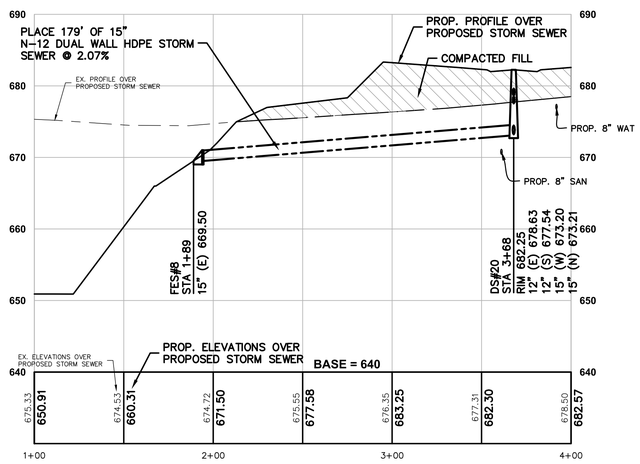

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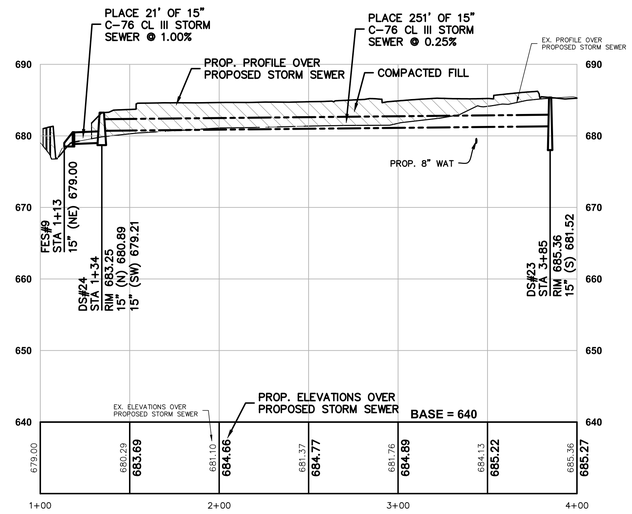

PROFILE 'G'

PLAN SCALE: 1" = 40'
PROFILE SCALES:
HORZ: 1" = 40'
VERT: 1" = 10'

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PLAN REVISIONS

REVISED 04/21/2020

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IMPROVEMENTS FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE	M&B
PROJECT NO.:	150182.01
DESIGN DRAWN BY:	MJK
DESIGNED BY:	ALD
CHECKED BY:	ALD
PLAN DATE:	FEBRUARY 14, 2020

SHEET NUMBER
11 OF 19

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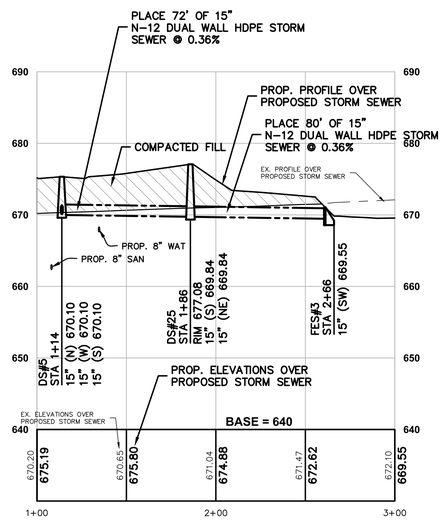

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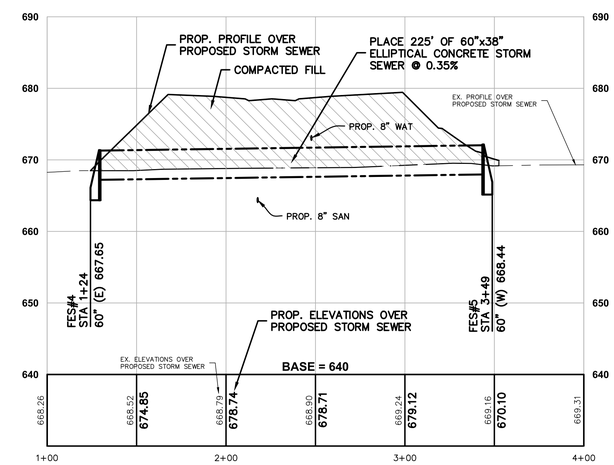

PROFILE 'I'

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IMPROVEMENTS FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE	M&B
PROJECT NO.:	150182.01
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DESIGNED BY:	ALD
CHECKED BY:	ALD
PLAN DATE:	FEBRUARY 14, 2020

SHEET NUMBER
12 OF 19

P:\150182.1 7381 36TH AVE- HUDSONVILLE\CAD\DWG\150182_IMPROVEMENT SHEETS.dwg_7/1/2020 10:41:52 AM_ADAM DEYOUNG

BENCHMARKS

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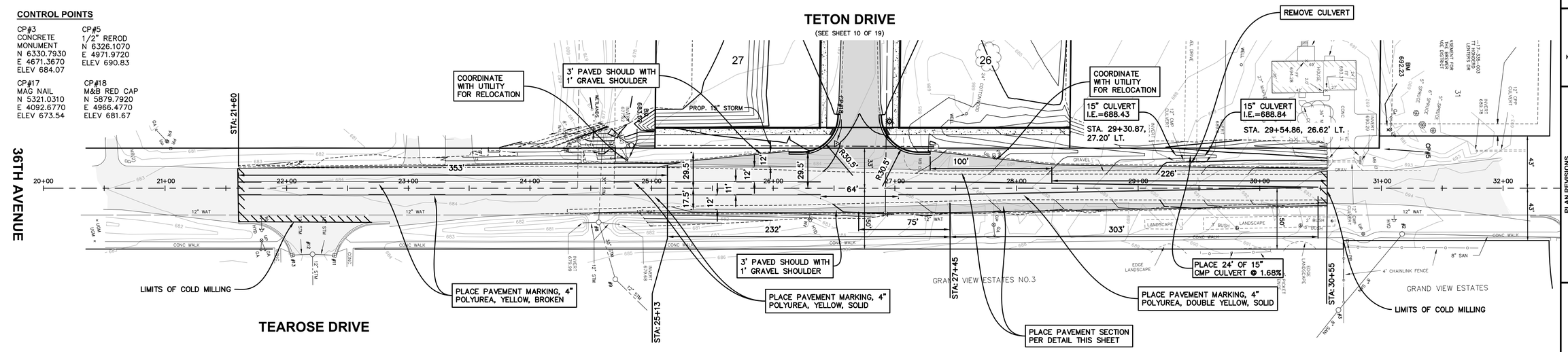
RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

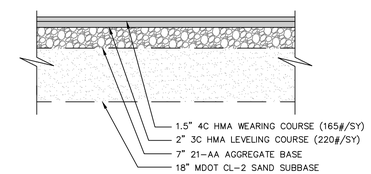
BM#2 ELEVATION 683.59
RAILROAD SPIKE IN EAST SIDE OF UTILITY POLE, LOCATED AT THE SE BOUNDARY CORNER AND ON THE NORTH SIDE OF E–W DRAINAGE DITCH.

CONTROL POINTS

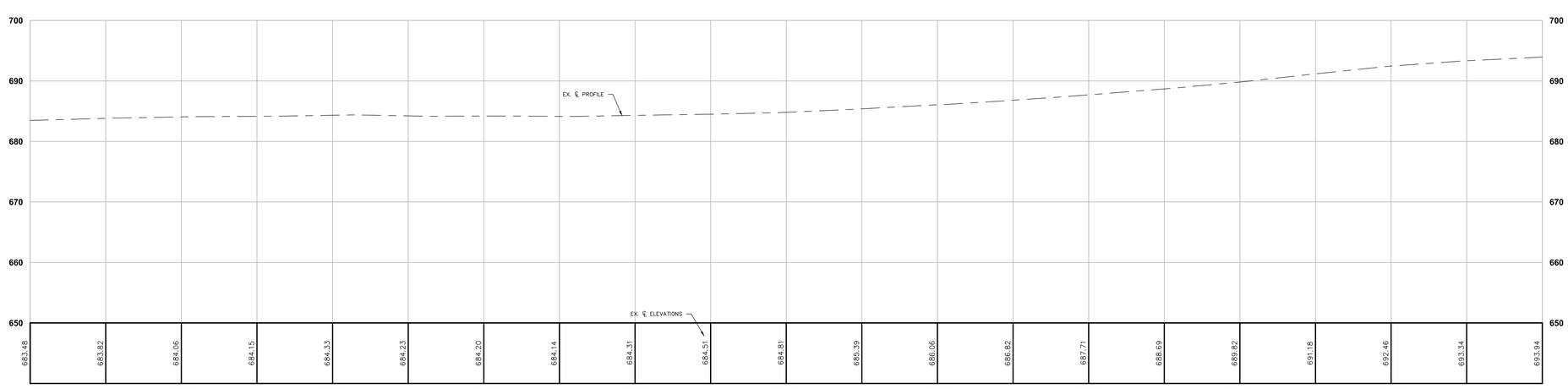
CP#3	CP#5
CONCRETE MONUMENT	1/2" REROD
N 6330.7930	N 6326.1070
E 4671.3670	E 4971.9720
ELEV 684.07	ELEV 690.83

CP#17	CP#18
MAG NAIL	M&B RED CAP
N 5321.0310	N 5879.7920
E 4092.6770	E 4966.4770
ELEV 673.54	ELEV 681.67





PAVEMENT SECTION
SCALE: 1"=2'



PLAN SCALE: 1" = 40'
PROFILE SCALES:
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Moore+Bruggink
Consulting Engineers
2020 Monroe Ave.
Grand Rapids, MI 49505
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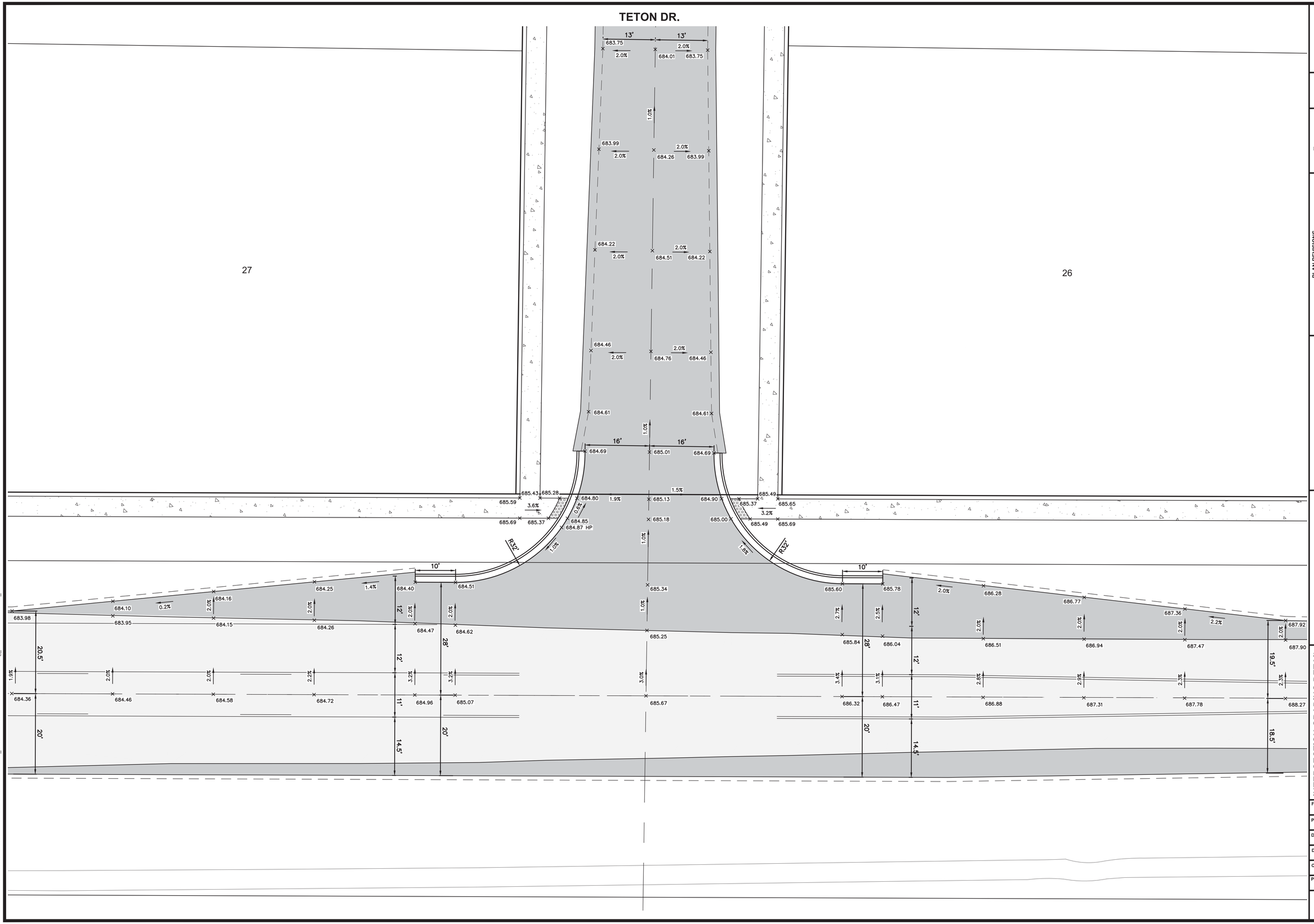
IMPROVEMENTS FOR
36TH AVENUE
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE	M&B
PROJECT NO.:	150182.01
DESIGN DRAWN BY:	MJK
DESIGNED BY:	ALD
CHECKED BY:	ALD
PLAN DATE:	FEBRUARY 14, 2020

SHEET NUMBER
13 OF 19

P:\150182.1 7381 36TH AVE- HUDSONVILLE\CAD\DWG\150182_36TH IMPROVEMENTS SHEET.dwg_7/1/2020 10:42:16 AM_ADAM DEYOUNG



PLAN SCALE: 1" = 10'

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2020 Monroe Ave.
Grand Rapids, MI 49505
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INTERSECTION GRADING DETAIL
FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE	M&B
PROJECT NO.:	150182.01
DESIGN DRAWN BY:	MJK
DESIGNED BY:	ALD
CHECKED BY:	ALD
PLAN DATE:	FEBRUARY 14, 2020

SHEET NUMBER
14 OF **19**

P:\150182.1 7381 36TH AVE- HUDSONVILLE\CAD\DWG\150182_INTERSECTION DETAIL SHEET.dwg, 6/29/2020 2:27:40 PM, MATT KOZAK

BENCHMARKS

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RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

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CONTROL POINTS

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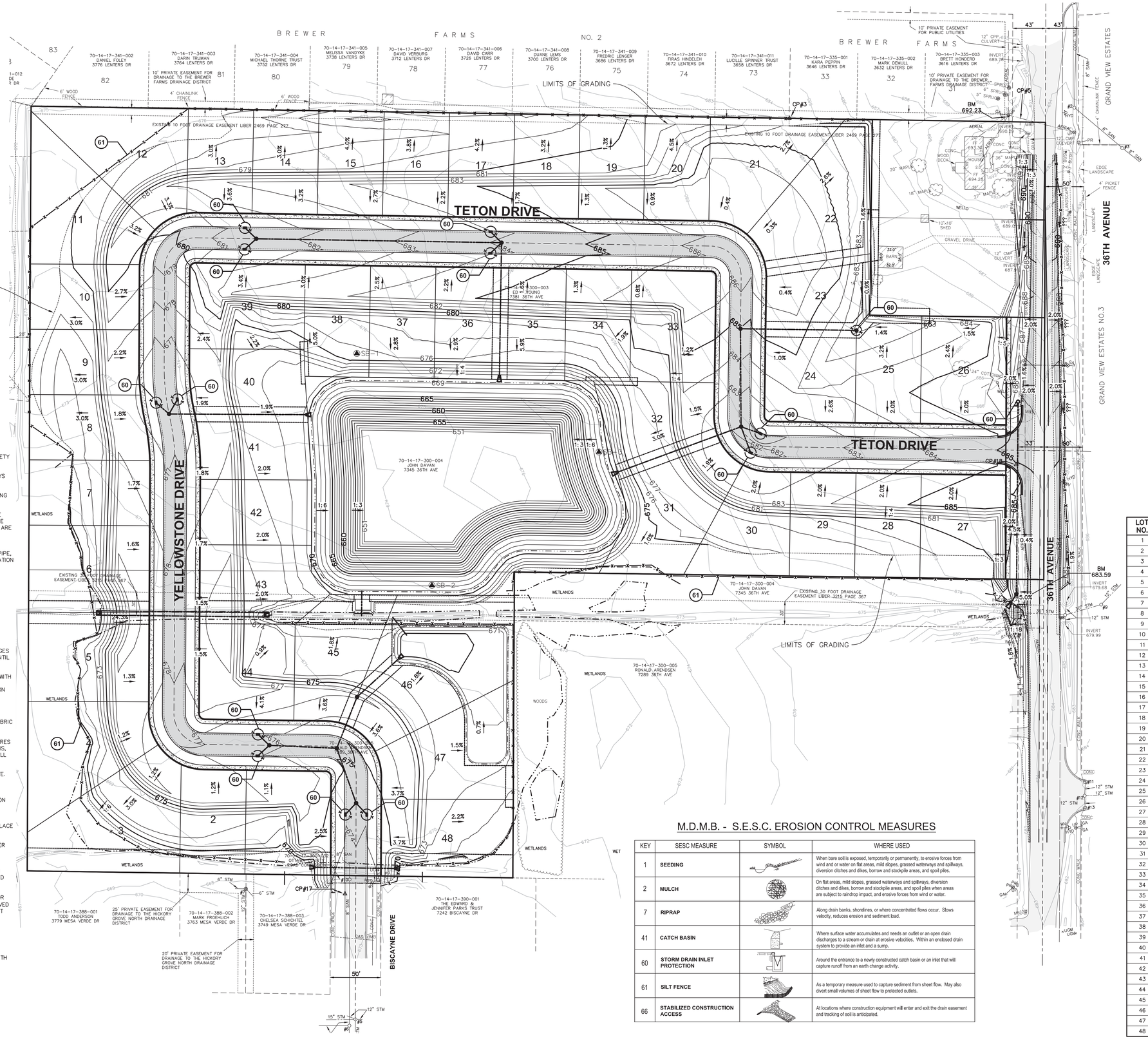


SOIL EROSION CONTROL NOTES:

1. THE CONTRACTOR SHALL OBTAIN ALL PERMITS AND SURETY AS PART OF THIS WORK.
2. THE CONTRACTOR SHALL CALL MISS DIG 3 WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.
3. THE CONTRACTOR SHALL REQUEST CONSTRUCTION STAKING BY EMAIL USING THE MOORE & BRUGGINK, INC. CONTRACTORS CONSTRUCTION STAKING REQUEST FORM. ONLY COMPLETED REQUESTS WILL BE SCHEDULED. NOTE THE PROJECT OWNER WILL PAY THE SURVEYOR TO PLACE STAKES ONLY ONCE. ALL LOST AND DAMAGED STAKES ARE THE CONTRACTORS RESPONSIBILITY.
4. THE CONTRACTOR SHALL REMOVE ALL CONCRETE, BIT PAVEMENT, STORM SEWER STRUCTURES, STORM SEWER PIPE, LIGHT POLES, FENCING, UNDERGROUND ELECTRIC, VEGETATION AND SO ON TO PREPARE THE SITE FOR IMPROVEMENTS. CASTINGS, VALVE BOXES AND/OR OTHER UTILITY STRUCTURES TO REMAIN SHALL BE ADJUSTED AND PROTECTED FROM DAMAGE.
5. NORTH AMERICAN GREEN DS-150 EROSION CONTROL BLANKET SHALL BE PLACED ON ALL SLOPES 1:3 OR GREATER. SECURE BLANKET TO SLOPE PER MANUFACTURERS SPECIFICATIONS.
6. ALL SILT FENCING SHALL BE TRENCHED IN PRIOR TO COMMENCEMENT OF EARTHWORK ACTIVITIES.
7. SILT FENCING IS REQUIRED ALONG ALL DOWNSTREAM EDGES OF THE GRADING LIMITS AND MUST REMAIN IN PLACE UNTIL VEGETATION IS UNIFORMLY RE-ESTABLISHED.
8. ALL SOIL EROSION CONTROL MEASURES SHALL COMPLY WITH THE CITY OF GRAND RAPIDS LUDS PERMIT, ACT 451 OF PUBLIC ACTS OF 1997, SOIL EROSION AND SEDIMENTATION CONTROL, NATURAL RESOURCES AND ENVIRONMENTAL PROTECTION ACT.
9. NEW & EXISTING STORM SEWER INLET POINTS SHALL BE PROTECTED FROM SEDIMENT INFILTRATION WITH INLET FABRIC DROP (SILT SACK).
10. ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE INSPECTED AND MAINTAINED ON A DAILY BASIS, AND IMMEDIATELY FOLLOWING EVERY SIGNIFICANT RAINFALL EVENT.
11. ALL EXCESS SPOILS ARE TO BE REMOVED FROM THE SITE. OTHERWISE STOCKPILES MUST BE PROVIDED WITH TEMPORARY AND PERMANENT STABILIZATION MEASURES.
12. IF EXCESS DIRT IS TO BE PLACED ON SITE, THE LOCATION SHALL BE APPROVED BY THE PROPERTY OWNER & ENGINEER.
13. ALL TEMPORARY EROSION CONTROLS MUST REMAIN IN PLACE UNTIL VEGETATION IS UNIFORMLY RE-ESTABLISHED.
14. DUST CONTROL SHALL BE PROVIDED BY MEANS OF WATER DISTRIBUTION ON A REGULAR BASIS OVER AREAS THAT COULD POTENTIALLY PRODUCE DUST CONDITIONS.
15. A TRACKING PAD MUST BE PROVIDED AT CONSTRUCTION ACCESS POINTS TO PREVENT SOILS FROM BEING TRACKED OFF-SITE, PER DETAIL THIS SHEET.
16. CONTRACTOR SHALL SWEEP PAVED AREAS EACH DAY (OR MORE AS NEEDED) BY MECHANICAL MEANS FOR ALL PAVED AREAS IN AND AROUND THE PERIMETER OF THE PROJECT AFFECTED BY TRUCKING OPERATIONS.
17. ALL DISTURBED AREAS SHALL BE RESTORED WITH 4" TOPSOIL (MIN), SEED, FERTILIZER AND MULCH UNLESS OTHERWISE NOTED.
18. CONSTRUCTION ENTRANCE SHALL BE PROVIDED FROM 36TH AVENUE.
19. EXISTING SOIL CONDITIONS: CLAY

M.D.M.B. - S.E.S.C. EROSION CONTROL MEASURES

KEY	SESC MEASURE	SYMBOL	WHERE USED
1	**SEEDING**		When bare soil is exposed, temporarily or permanently, to erosive forces from wind and or water on flat areas, mild slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles.
2	**MULCH**		On flat areas, mild slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles when areas are subject to raindrop impact, and erosive forces from wind or water.
7	**RIPRAP**		Along drain banks, shorelines, or where concentrated flows occur. Slows velocity, reduces erosion and sediment load.
41	**CATCH BASIN**		Where surface water accumulates and needs an outlet or an open drain discharges to a stream or drain at erosive velocities. Within an enclosed drain system to provide an inlet and a sump.
60	**STORM DRAIN INLET PROTECTION**		Around the entrance to a newly constructed catch basin or an inlet that will capture runoff from an earth change activity.
61	**SILT FENCE**		As a temporary measure used to capture sediment from sheet flow. May also divert small volumes of sheet flow to protected outlets.
66	**STABILIZED CONSTRUCTION ACCESS**		At locations where construction equipment will enter and exit the drain easement and tracking of soil is anticipated.

LOT ELEVATION CHART

LOT NO.	STANDARD	VIEW OUT	WALK OUT	M.B.O.
1			X	672
2			X	672
3			X	672
4			X	672
5			X	672
6			X	671
7			X	672
8			X	673
9			X	673
10			X	675.5
11			X	676
12			X	677
13			X	677.5
14			X	678.5
15			X	679
16			X	679.25
17			X	679.75
18			X	680.25
19			X	681
20			X	681.5
21	X			681
22	X			681
23	X			681
24	X			681
25	X			681
26	X			684
27			X	680
28			X	679.5
29			X	679
30			X	678.5
31			X	672
32			X	672
33			X	676
34			X	672
35			X	672
36			X	672
37			X	672
38			X	672
39			X	676
40			X	672
41			X	672
42			X	672
43			X	672
44			X	673
45		X		673
46		X		673
47		X		673
48		X		673

PLAN SCALE: 1" = 60'

Know what's below. Call before you dig.

PLAN REVISIONS
REVISED 04/21/2020

Moore+Bruggink
Consulting Engineers
2020 Monroe Ave.
Grand Rapids, MI 49505
(616) 363-9801 mailbox@mbce.com

SITE GRADING & SOIL EROSION CONTROL PLAN FOR TETON FARM PLAT

GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE: M&B
PROJECT NO.: 150182.01
DESIGN DRAWN BY: MJK
DESIGNED BY: ALD
CHECKED BY: ALD
PLAN DATE: FEBRUARY 14, 2020

P:\150182.1 7381 36TH AVE-HUDSONVILLE\CAD\DWG\150182_SITE GRADING SHEETS.dwg, 6/29/2020 1:54:47 PM, MATT KOZAK

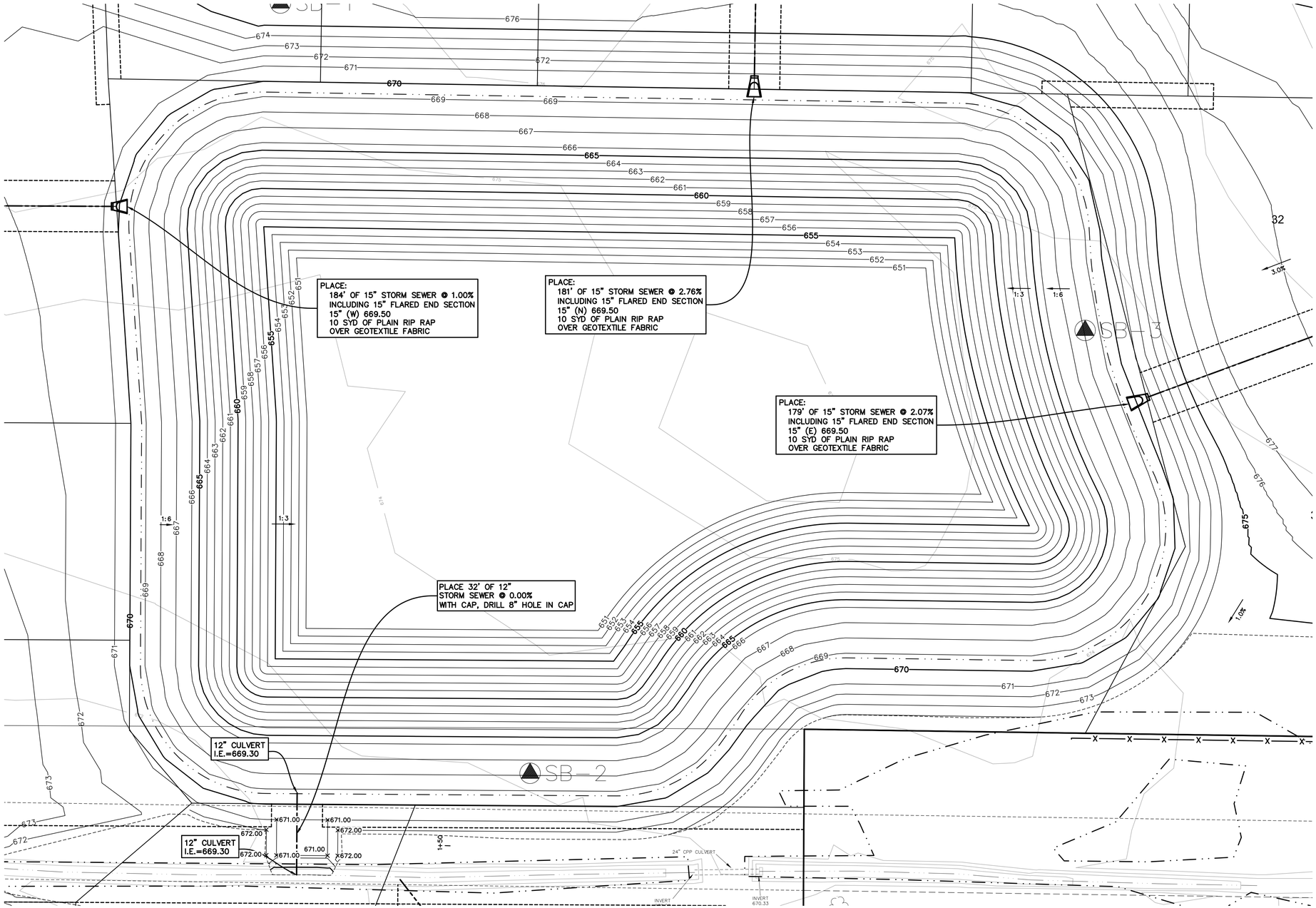
BENCHMARKS

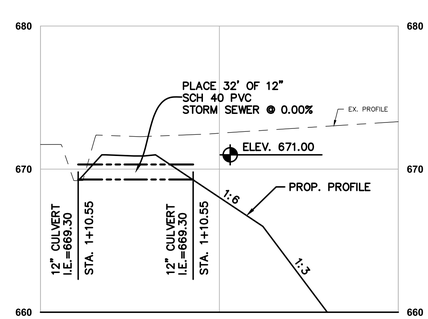
BM#1 ELEVATION 692.23
RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

BM#2 ELEVATION 683.59
RAILROAD SPIKE IN EAST SIDE OF UTILITY POLE, LOCATED AT THE SE BOUNDARY CORNER AND ON THE NORTH SIDE OF E-W DRAINAGE DITCH.

CONTROL POINTS

CP#3 CONCRETE MONUMENT N 6330.7930 E 4671.3670 ELEV 684.07	CP#5 1/2" REROD N 6326.1070 E 4971.9720 ELEV 690.83
CP#17 MAG NAIL N 5321.0310 E 4092.6770 ELEV 673.54	CP#18 M&B RED CAP N 5879.7920 E 4966.4770 ELEV 681.67





STAGE STORAGE TABLE

ELEV.	CUMULATIVE VOLUME (CFT.)	CUMULATIVE VOLUME (AC-FT)
669.3000	0.00	0.00
670.0000	68,378.67	1.57
671.0000	104,150.61	2.39
REQUIRED STORAGE VOLUME = 93,591 CFT = 2.15 AC-FT		

PLAN SCALE: 1" = 20'

Know what's below. Call before you dig.

PLAN REVISIONS

REVISED 04/21/2020

Moore+Bruggink
Consulting Engineers
2020 Monroe Ave.
Grand Rapids, MI 49505
(616) 363-9801 mailbox@mbce.com

STORM WATER MANAGEMENT BASIN
FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE: M&B
PROJECT NO.: 150182.01
DESIGN DRAWN BY: MJK
DESIGNED BY: ALD
CHECKED BY: ALD
PLAN DATE: FEBRUARY 14, 2020

P:\150182.1 7381 36TH AVE-HUDSONVILLE\CAD\DWG\150182_STORM WATER MANAGEMENT SHEETS.dwg_7/1/2020 12:02:17 PM_ADAM DEYOUNG

BENCHMARKS

BM#1 ELEVATION 692.23
RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

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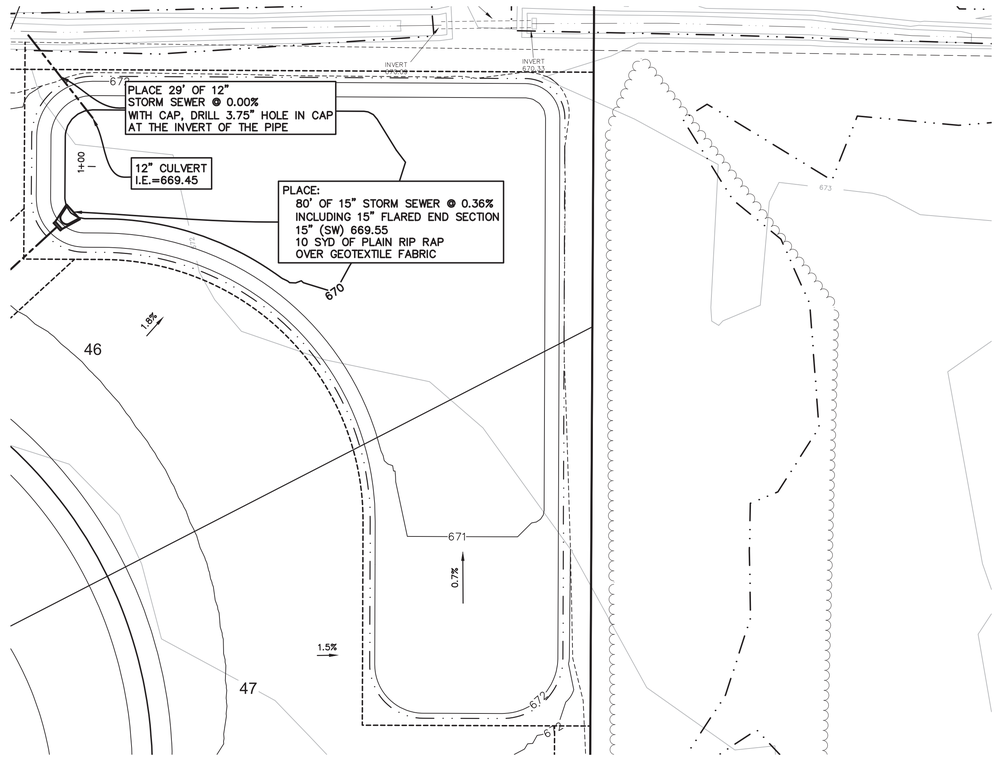

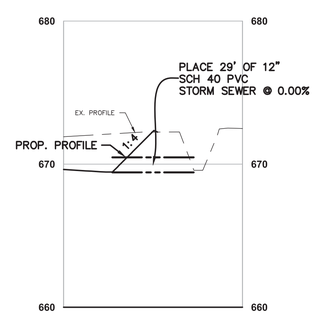

STAGE STORAGE TABLE

ELEV.	CUMULATIVE VOLUME (CFT.)	CUMULATIVE VOLUME (AC-FT)
669.45	0.00	0.00
670.00	935.97	0.02
671.00	7,729.76	0.18
671.85	18,062.64	0.41
REQUIRED STORAGE VOLUME = 16,949 CFT = 0.39 AC-FT		

PLAN SCALE: 1" = 20'

Know what's below. Call before you dig.

PLAN REVISIONS
REVISED 04/21/2020

Moore+Bruggink
Consulting Engineers
2020 Monroe Ave.
Grand Rapids, MI 49505
(616) 363-9801 mailbox@mbce.com

STORM WATER MANAGEMENT BASIN
FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE: M&B
PROJECT NO.: 150182.01
DESIGN DRAWN BY: MJK
DESIGNED BY: ALD
CHECKED BY: ALD
PLAN DATE: FEBRUARY 14, 2020

SHEET NUMBER
17 OF 19

P:\150182.1 7381 36TH AVE- HUDSONVILLE\CAD\DWG\150182_STORM WATER MANAGEMENT SHEETS.dwg_6/29/2020 1:55:32 PM_MATT KOZAK

BENCHMARKS

BM#1 ELEVATION 692.23
RAILROAD SPIKE IN SOUTH SIDE OF UTILITY POLE, LOCATED AT THE NE CORNER OF PROPERTY. 39'± W. OF EDGE OF PAVEMENT TO 36TH AVE AND 29'± N. OF DRIVE TO HOUSE #7381 36TH AVE. (1' ABOVE ROUND)

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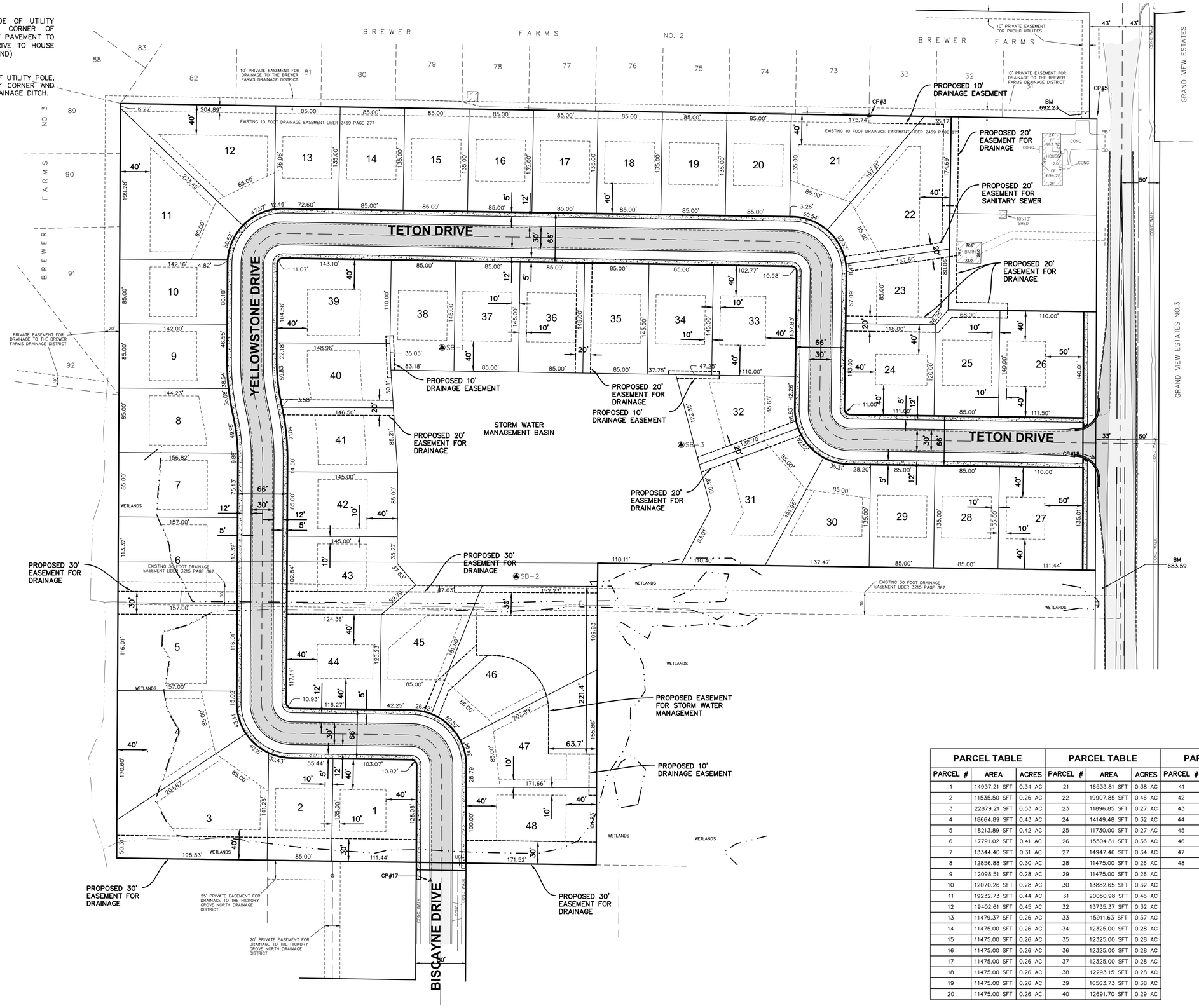
CP#17 MAG NAIL N 5321.0310 E 4092.6770 ELEV 673.54	CP#18 M&B RED CAP N 5879.7920 E 4966.4770 ELEV 681.67



PARCEL TABLE			PARCEL TABLE			PARCEL TABLE		
PARCEL #	AREA	ACRES	PARCEL #	AREA	ACRES	PARCEL #	AREA	ACRES
1	14937.21 SFT	0.34 AC	21	16533.81 SFT	0.38 AC	41	12244.66 SFT	0.28 AC
2	11535.50 SFT	0.26 AC	22	19907.85 SFT	0.46 AC	42	12325.00 SFT	0.28 AC
3	22879.21 SFT	0.53 AC	23	11896.85 SFT	0.27 AC	43	15338.88 SFT	0.35 AC
4	18664.89 SFT	0.43 AC	24	14149.48 SFT	0.32 AC	44	15418.80 SFT	0.35 AC
5	18213.89 SFT	0.42 AC	25	11730.00 SFT	0.27 AC	45	15837.29 SFT	0.36 AC
6	17791.02 SFT	0.41 AC	26	15504.81 SFT	0.36 AC	46	29614.52 SFT	0.68 AC
7	13344.40 SFT	0.31 AC	27	14947.46 SFT	0.34 AC	47	19213.78 SFT	0.44 AC
8	12856.88 SFT	0.30 AC	28	11475.00 SFT	0.26 AC	48	17315.77 SFT	0.40 AC
9	12098.51 SFT	0.28 AC	29	11475.00 SFT	0.26 AC			
10	12070.26 SFT	0.28 AC	30	13882.65 SFT	0.32 AC			
11	19232.73 SFT	0.44 AC	31	20050.98 SFT	0.46 AC			
12	19402.61 SFT	0.45 AC	32	13735.37 SFT	0.32 AC			
13	11479.37 SFT	0.26 AC	33	15911.63 SFT	0.37 AC			
14	11475.00 SFT	0.26 AC	34	12325.00 SFT	0.28 AC			
15	11475.00 SFT	0.26 AC	35	12325.00 SFT	0.28 AC			
16	11475.00 SFT	0.26 AC	36	12325.00 SFT	0.28 AC			
17	11475.00 SFT	0.26 AC	37	12325.00 SFT	0.28 AC			
18	11475.00 SFT	0.26 AC	38	12293.15 SFT	0.28 AC			
19	11475.00 SFT	0.26 AC	39	16563.73 SFT	0.38 AC			
20	11475.00 SFT	0.26 AC	40	12691.70 SFT	0.29 AC			

PLAN SCALE: 1" = 60'

Know what's below. Call before you dig.

PLAN REVISIONS
REVISED 04/21/2020

Moore+Bruggink
Consulting Engineers
2020 Monroe Ave.
Grand Rapids, MI 49505
(616) 363-9801 mailbox@mbce.com

LOT LAYOUT PLAN FOR TETON FARM PLAT

GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE: M&B
PROJECT NO.: 150182.01
DESIGN DRAWN BY: MJK
DESIGNED BY: ALD
CHECKED BY: ALD
PLAN DATE: FEBRUARY 14, 2020

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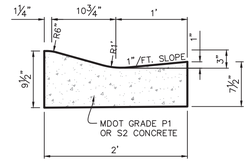
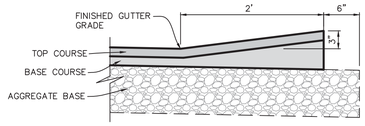
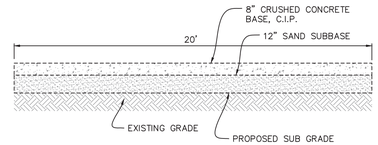


24" ROLLED CURB & GUTTER DETAIL
SCALE: 1"=1'



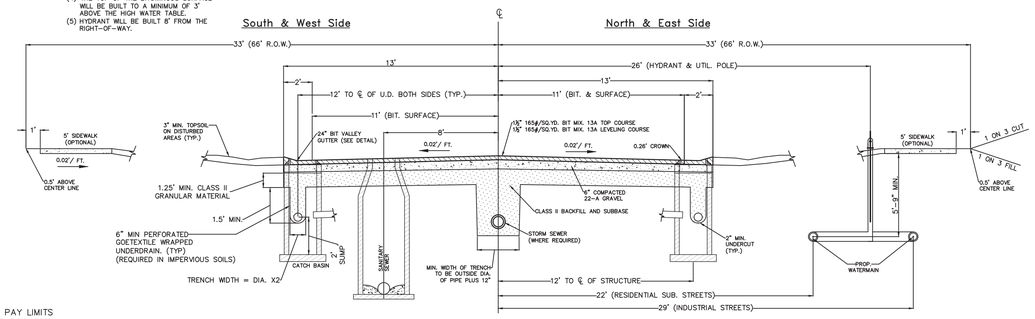
24" BITUMINOUS VALLEY GUTTER DETAIL
SCALE: 1"=1'

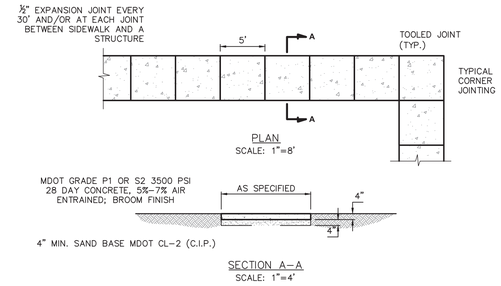


CONSTRUCTION TRACKING PAD
SCALE: 1"=4'

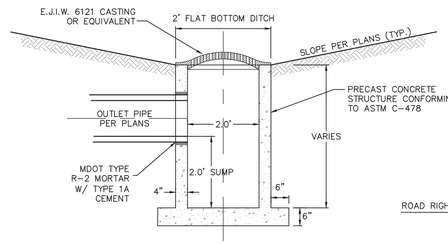
NOTES:
(1) MIN. GRADE SHALL BE 0.4%
(2) STORM SEWER SHALL BE CONSTRUCTED ALONG CENTERLINE.
(3) THIS STREET SECTION SHALL HAVE A SPRING WEIGHT REDUCTION OF 35%
(4) THE TOP OF THE BITUMINOUS SURFACE WILL BE BUILT TO A MINIMUM OF 3" ABOVE THE HIGH WATER TABLE.
(5) HYDRANT WILL BE BUILT 8' FROM THE RIGHT-OF-WAY.

OTTAWA COUNTY ROAD COMMISSION
TYPICAL RESIDENTIAL SECTION W/ CONCRETE CURB

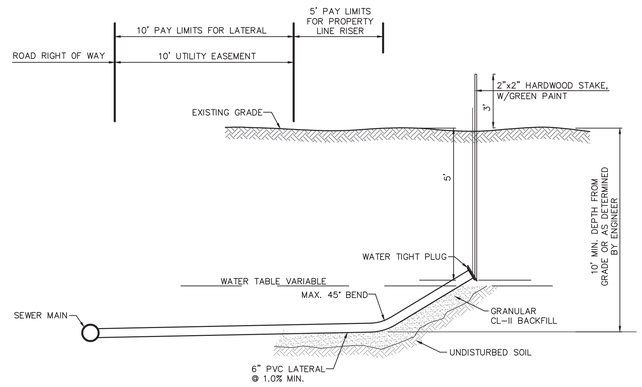




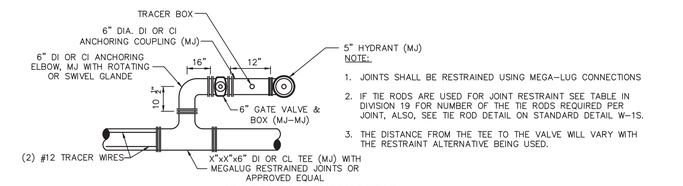
4" CONCRETE SIDEWALK DETAIL



2' DIA. YARD DRAIN DETAIL
SCALE: 1"=2'



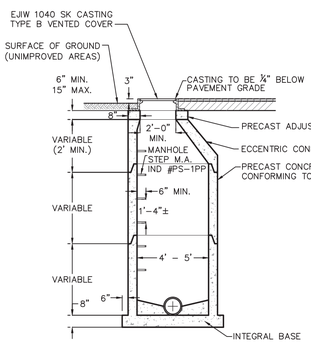
STANDARD SEWER RISER LOCATION DETAIL
SCALE: 1"=4'



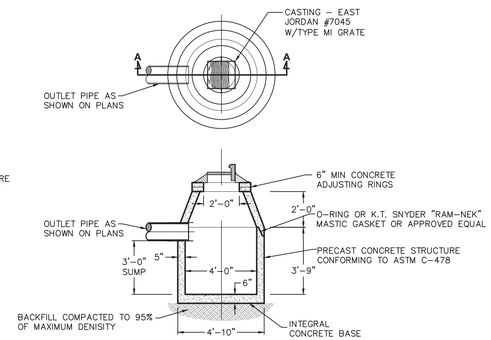
NOTE:

1. JOINTS SHALL BE RESTRAINED USING MEGA-LUG CONNECTIONS
2. IF TIE RODS ARE USED FOR JOINT RESTRAINT SEE TABLE IN DIVISION 19 FOR NUMBER OF THE TIE RODS REQUIRED PER JOINT, ALSO, SEE TIE ROD DETAIL ON STANDARD DETAIL W-1S.
3. THE DISTANCE FROM THE TEE TO THE VALVE WILL VARY WITH THE RESTRAINT ALTERNATIVE BEING USED.

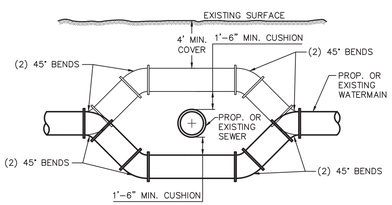
HYDRANT ASSEMBLY DETAIL
SCALE: 1"=3'



STORM SEWER MANHOLE DETAIL
SCALE: 1"=4'



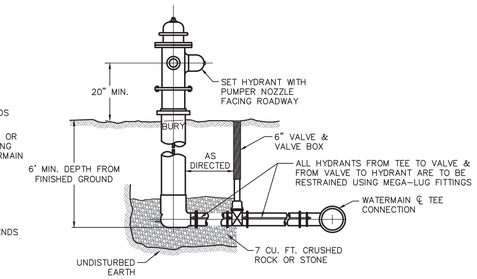
4' DIA. CATCH BASIN DETAIL (IN CURB AREAS)
SCALE: 1"=4'



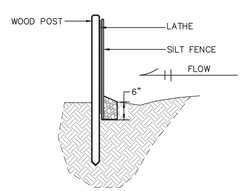
NOTE:

1. WHEN MINIMUM CLEARANCE AND COVER CANNOT BE OBTAINED, THE WATERMAIN IS TO BE OFFSET UNDER THE SEWER.
2. JOINT RESTRAINT SHALL BE OBTAINED BY MEGA LUG CONNECTIONS

WATERMAIN OFFSET DETAIL
SCALE: 1"=6'

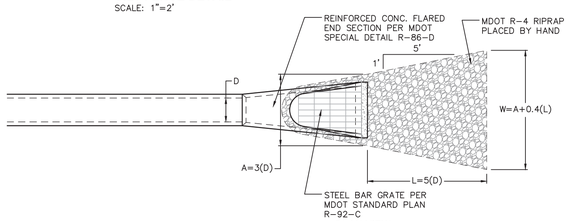


HYDRANT AND VALVE DETAIL
SCALE: 1"=4'

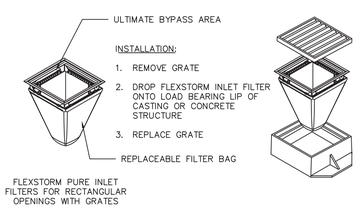


SILT FENCE DETAIL
SCALE: 1"=2'

SPLICE DETAIL



STORM SEWER OUTLET DETAIL
SCALE: 1"=3'



INSTALLATION:

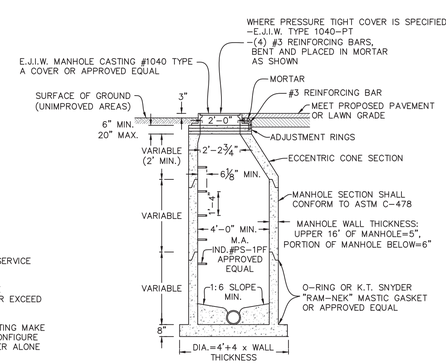
1. REMOVE GRATE
2. DROP FLEXSTORM INLET FILTER ONTO LOAD BEARING LIP OF CASTING OR CONCRETE STRUCTURE
3. REPLACE GRATE

NOTES:

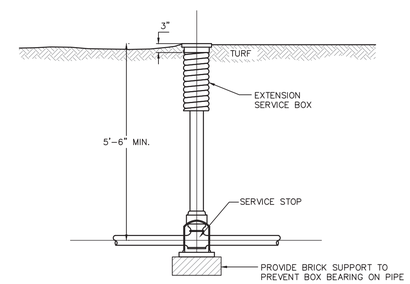
1. ALL FRAMING IS CONSTRUCTED OF 304 STAINLESS STEEL FOR 25 YEAR SERVICE LIFE RATING
2. TOTAL BYPASS CAPACITY: BYPASS CAPACITY WILL VARY WITH EACH SIZE DRAINAGE STRUCTURE. FLEXSTORM DESIGNS FRAMING BYPASS TO MEET OR EXCEED THE DESIGN FLOW OF THE PARTICULAR DRAINAGE STRUCTURE.
3. UPON ORDERING CONFIRMATION OF THE DOT CALLOUT, PRECAST OR CASTING MAKE AND MODEL, OR DETAILED DIMENSIONAL FORMS MUST BE PROVIDED TO CONFIGURE AND ASSEMBLE YOUR CUSTOMIZED FLEXSTORM INLET FILTER. PART NUMBER ALONE IS NOT SUFFICIENT.
4. FOR WRITTEN SPECIFICATIONS AND MAINTENANCE GUIDELINES VISIT WWW.INLETFILTERS.COM

INLET PROTECTION DETAIL

NOTE:
MANHOLE COVER SHALL HAVE A GEORGETOWN TOWNSHIP LOGO EMBOSSED ON IT. COVER SHALL HAVE TWO HOLES FOR MAINTENANCE AND REMOVAL.



SANITARY MANHOLE DETAIL
SCALE: 1"=4'



WATER SERVICE BOX DETAIL
SCALE: 1"=2'

PIPE RESTRAINT LENGTH REQUIRED, FEET

PIPE DIAMETER	TEES. 90° BENDS	45° BENDS	22½° BENDS	11¼° BENDS	DEAD ENDS	REDUCERS (ONE SIZE)	**
4"	23	9	5	2	57		
6"	32	13	6	3	82	43	63
8"	41	17	8	4	104	43	55
12"	58	24	12	6	149	80	120
16"	74	31	15	7	192	82	110
20"	89	37	18	9	233	82	104
24"	104	43	21	10	272	82	99
30"	123	51	25	12	328	115	148
36"	141	58	28	14	379	115	140

** IF STRAIGHT RUN OF PIPE ON SMALL SIDE OF REDUCER EXCEEDS THIS VALUE, THAN NO RESTRAINED JOINTS ARE NECESSARY

PLAN SCALE: N.T.S.

Know what's below. Call before you dig.

PLAN REVISIONS
REVISED 04/21/2020

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Consulting Engineers
2020 Monroe Ave.
Grand Rapids, MI 49505
(616) 363-9801 mailbox@mbce.com

CROSS-SECTION AND DETAILS
FOR
TETON FARM PLAT
GEORGETOWN CHARTER TOWNSHIP, OTTAWA COUNTY, MICHIGAN

FIELD SURVEY / DATE: M&B
PROJECT NO.: 150182.01
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SHEET NUMBER
19 OF 19

P:\150182.1 7381 36TH AVE-HUDSONVILLE\CAD\DWG\150182_X-SEC AND DETAILS SHEET.dwg_6/29/2020 1:55:52 PM_MATT KOZAK