

CHARLESTON CORNERS CONDOMINIUMS

JOY ROAD

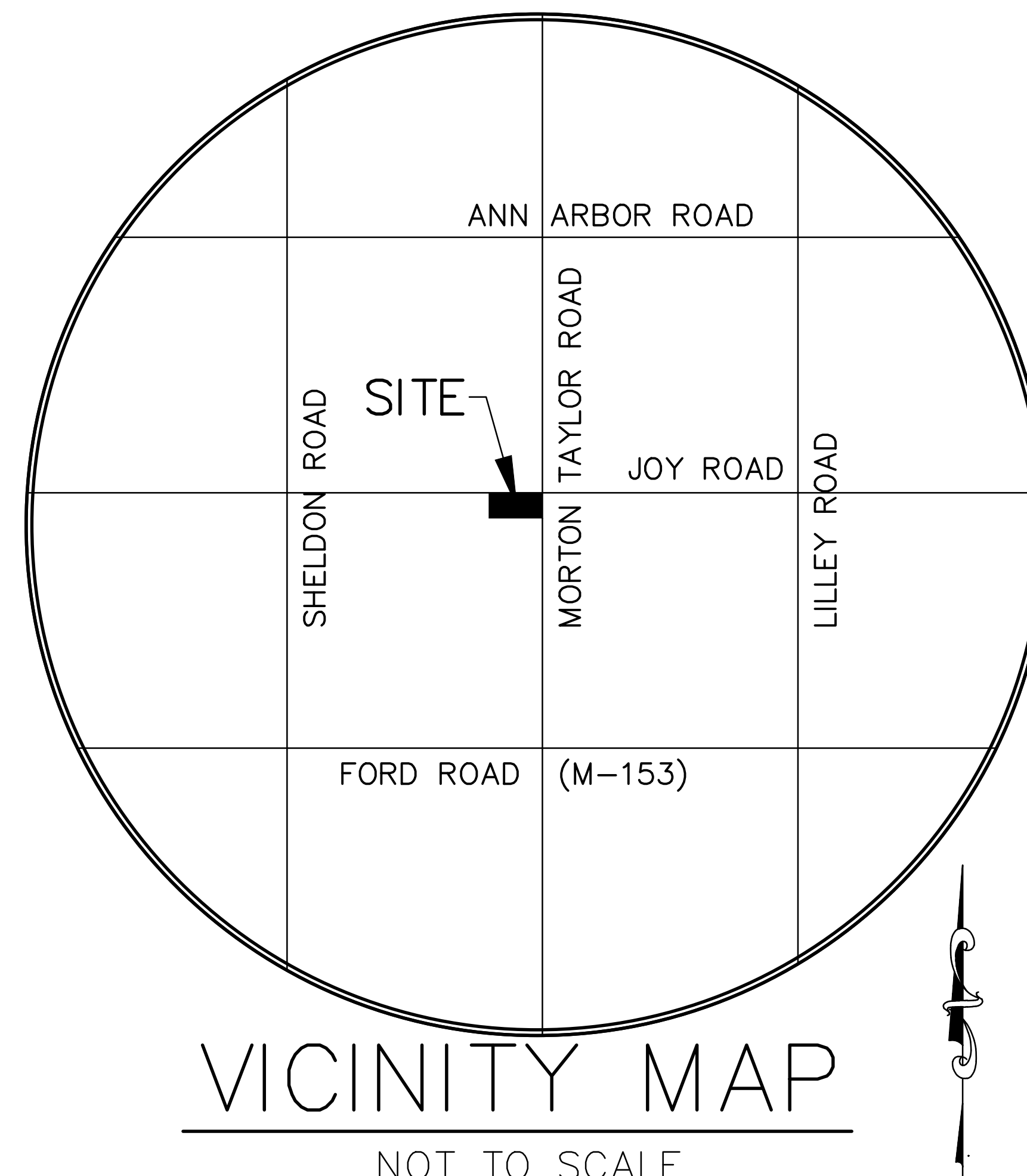
CANTON TOWNSHIP, WAYNE COUNTY, MICHIGAN

PROPERTY OWNER

S&S HOMES
9313 HAGGERTY ROAD
PLYMOUTH, MI 48170
PH. (734) 812-5791
CONTACT: TONY SPAGNOLI

DESIGN ENGINEERS

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



VICINITY MAP

NOT TO SCALE

WAYNE COUNTY DPS GENERAL NOTES

1. ALL WORK WITHIN WAYNE COUNTY ROAD RIGHT OF WAY SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARDS AND GENERAL SPECIFICATIONS, INCLUDING SOIL EROSION AND SEDIMENTATION CONTROL OF THE WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES, AND MDOT 2013 SPECIFICATIONS FOR CONSTRUCTION.
2. THESE PLANS ARE NOT VALID WITHOUT ATTACHMENT OF THE WAYNE COUNTY PERMIT SPECIFICATIONS FOR CONSTRUCTION WITHIN THE ROAD RIGHT OF WAY, (7-01-93) REVISED 12-15-2004.
3. CONTRACTOR SHALL CONTACT MISSDIG AT 811 TO IDENTIFY AND FLAG/MARK THE LOCATIONS OF ALL UNDERGROUND UTILITIES AT THE PROPOSED CONSTRUCTION AREAS PRIOR TO START OF CONSTRUCTION, AND SHALL BE RESPONSIBLE FOR DETERMINING THE EXACT LOCATIONS AND ELEVATIONS OF ALL UNDERGROUND UTILITIES, AND RESOLVE ANY CONFLICT BETWEEN THE PROPOSED WORK AND THE EXISTING UNDERGROUND OR ABOVEGROUND UTILITIES.
4. CONTRACTOR SHALL MAINTAIN 18" MINIMUM VERTICAL CLEARANCE AND 3 FEET MINIMUM HORIZONTAL CLEARANCE BETWEEN THE PROPOSED AND EXISTING UTILITIES. ANY PROPOSED UTILITY PERMITTED TO CROSS UNDER THE ROAD OR DRAIN, MUST BE PLACED A MINIMUM OF 7 FEET BELOW THE LOWEST POINT OF THE ROAD, OR 6 FEET BELOW THE DRAIN BOTTOM. TO RELOCATE ANY UTILITY WITHIN THE ROAD RIGHT OF WAY, THE CONTRACTOR SHALL COORDINATE THE RELOCATION WITH THE UTILITY COMPANY AND AS DIRECTED BY THE COUNTY ENGINEER.
5. ALL SURVEY MONUMENTS/CORNERS AND BENCHMARKS LOCATED WITHIN THE CONSTRUCTION AREA MUST BE PRESERVED IN ACCORDANCE WITH PUBLIC ACT 74 AS AMENDED (INCLUDING ACT 34, P.A. 2000) AND AS PER WAYNE COUNTY PERMIT RULE 1.5. THE PERMIT HOLDER AND CONTRACTOR SHALL COORDINATE THE WORK WITH A PROFESSIONAL SURVEYOR LICENSED IN THE STATE OF MICHIGAN DURING CONSTRUCTION ACTIVITIES FOR THE PURPOSE OF WITNESSING, PRESERVING OR REPLACING SURVEY MONUMENTS AND MONUMENT BOXES.
6. EXPOSURE OF ANY UTILITIES UNDER THE PAVEMENT WILL NOT BE PERMITTED, UNLESS APPROVED BY THE WAYNE COUNTY ENGINEER. PAVEMENT REMOVAL AND REPLACEMENT SHALL BE PERFORMED PER APPLICABLE WAYNE COUNTY STANDARD DETAILS AND AS DIRECTED BY THE WAYNE COUNTY ENGINEER.
7. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITHIN THE WAYNE COUNTY ROAD RIGHT OF WAY WITH 3" TOPSOIL, 10M SEED MIX AND MULCH. SLOPES STEEPER THAN 1 OF 3 SHALL BE RESTORED BY PLACING SOD ON 2" TOPSOIL.
8. ALL BACKFILLS UNDER OR WITHIN 3 FEET OF THE PROPOSED OR EXISTING PAVEMENT, CURB OR SIDEWALK SHALL CONFORM TO THE WAYNE COUNTY TRENCH "B" BACKFILL REQUIREMENTS. TRENCH "A" BACKFILL MAY BE USED WITHIN THE ROAD RIGHT OF WAY AREAS UNDER CONDITIONS OTHER THAN THOSE SPECIFIED FOR TRENCH "B".
9. CONTRACTOR IS RESPONSIBLE FOR RESTORING OR REPLACING ALL DISTURBED LANDSCAPED AREAS, SPRINKLER SYSTEMS, FENCES, SIGNS, MAIL BOXES, ETC., WITHIN THE WAYNE COUNTY ROAD RIGHT OF WAY OR AS DIRECTED BY THE COUNTY ENGINEER.
10. CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES. OTHERWISE, APPROVED TRAFFIC DETOUR PLANS MUST BE PROVIDED. ALL SIGNING AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF MUTCD AND SHALL MEET THE REQUIREMENTS OF THE AMERICAN TRAFFIC SAFETY ASSOCIATION, (ASTA) "QUALITY STANDARDS FOR WORK ZONE TRAFFIC CONTROL DEVICES 1992.
11. MAINTAIN A SAFE AND ADEQUATE TRAVEL ROUTE FOR PEDESTRIANS AT ALL TIMES THROUGHOUT THE PROJECT DURATION.
12. TUNNELING, BORING AND JACKING OPERATIONS SHALL BE IN ACCORDANCE WITH THE WAYNE COUNTY SPECIFICATIONS AND DETAILS. BORE PITS SHALL BE PLACED AT MINIMUM 10 FEET FROM THE BACK OF CURB OR EDGE OF PAVEMENT.
13. REMOVE ALL ABANDONED CONDUITS FROM THE COUNTY ROADS R.O.W. OR AS DIRECTED BY THE WAYNE COUNTY ENGINEER.
14. CONTRACTOR SHALL PROVIDE COLD WEATHER PROTECTION FOR ALL PROPOSED CONCRETE WORK (PAVEMENTS, SIDEWALKS, DRIVE APPROACHES, ETC.) AS DIRECTED BY THE WAYNE COUNTY ENGINEER.
15. CONSTRUCT THE PROPOSED STORM SEWER MANAGEMENT SYSTEM IN ACCORDANCE WITH THE CURRENT WAYNE COUNTY STORM WATER MANAGEMENT PROGRAM.
16. OVERNIGHT VEHICLE PARKING AND STORAGE OF CONSTRUCTION MATERIALS AND EQUIPMENTS ARE NOT PERMITTED WITHIN THE WAYNE COUNTY ROADS RIGHT OF WAY.
17. CONTRACTOR SHOULD OBTAIN SOIL EROSION AND SEDIMENTATION CONTROL PERMIT FROM THE WAYNE COUNTY DOE. CONTACT MR. DPS AT (734) 326-5565.
18. CONTRACTOR SHALL NOTIFY THE WAYNE COUNTY TRAFFIC SIGNAL SHOP AT (734) 955-2154 AS LEAST 72 HOURS PRIOR TO START OF WORK AT OR NEAR ANY SIGNALIZED INTERSECTIONS.
19. CONTRACTOR SHALL NOTIFY WAYNE COUNTY 3 BUSINESS DAYS PRIOR TO START OF CONSTRUCTION. CONTACT THE PERMIT OFFICE AT (734) 595-6504 EXTENSION 2009.

LEGAL DESCRIPTION

A PARCEL OF LAND BEING PART OF THE NORTHWEST 1/4 OF SECTION 2 AND PART OF THE NORTHEAST 1/4 OF SECTION 3, T.2S., R.8E., CANTON TOWNSHIP, WAYNE COUNTY, MICHIGAN; DESCRIBED AS FOLLOWS:

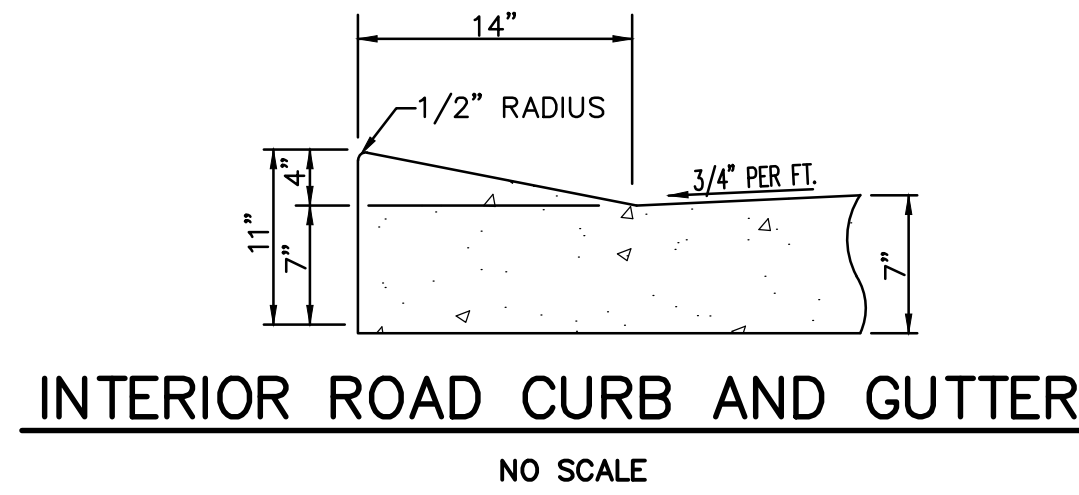
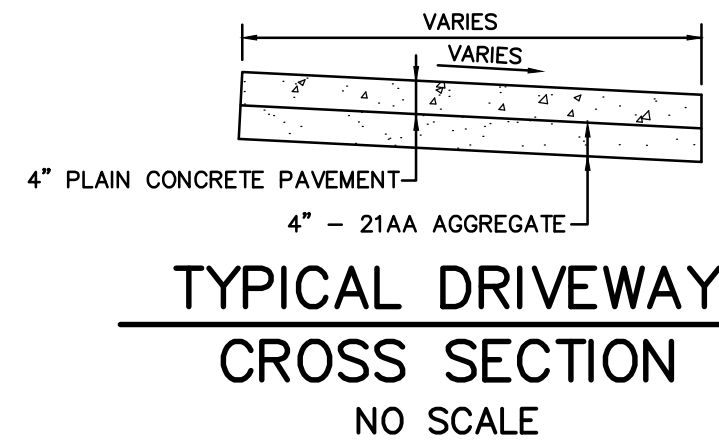
COMMENCING AT THE NORTHWEST CORNER OF SECTION 2, T.2S., R.8E., SAID POINT ALSO BEING THE NORTHEAST CORNER OF SECTION 3, T.2S., R.8E., AND PROCEEDING THENCE ALONG THE NORTH LINE OF SAID SECTION 2, S.89°50'55"E., 44.12 FEET AND S.00°14'20"W., 60.00 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED; THENCE ALONG THE WEST RIGHT OF WAY LINE OF MORTON TAYLOR ROAD (120 FEET WIDE) AND THE BOUNDARY OF MAYFAIR VILLAGE SUBDIVISION NUMBER 1 RECORDED IN LIBER 97, PAGE 7, S.00°14'20"W., 225.90 FEET; THENCE N.89°50'55"W., 437.56; THENCE N.00°09'05"E., 225.90 FEET TO A POINT ON THE SOUTH RIGHT OF WAY LINE OF JOY ROAD (93 FEET WIDE); THENCE ALONG SAID LINE S.89°50'55"E., 437.91 FEET TO THE POINT OF BEGINNING. CONTAINING 2.270 ACRES MORE OR LESS.

SHEET INDEX

1. SITE PLAN
2. TOPOGRAPHIC SURVEY & REMOVALS PLAN
3. GRADING & SOIL EROSION PLAN
4. STORM SEWER DESIGN AND UTILITY PLAN
5. TREE SURVEY PLAN
6. TREE SURVEY LIST
7. SANITARY & WATER MAIN PROFILES
8. STORM MAINTENANCE EXHIBITS AND DETAILS

NOT TO BE USED FOR CONSTRUCTION

WAYNE COUNTY DPS #R



PARKING SPACE DATA
REQUIRED SPACES

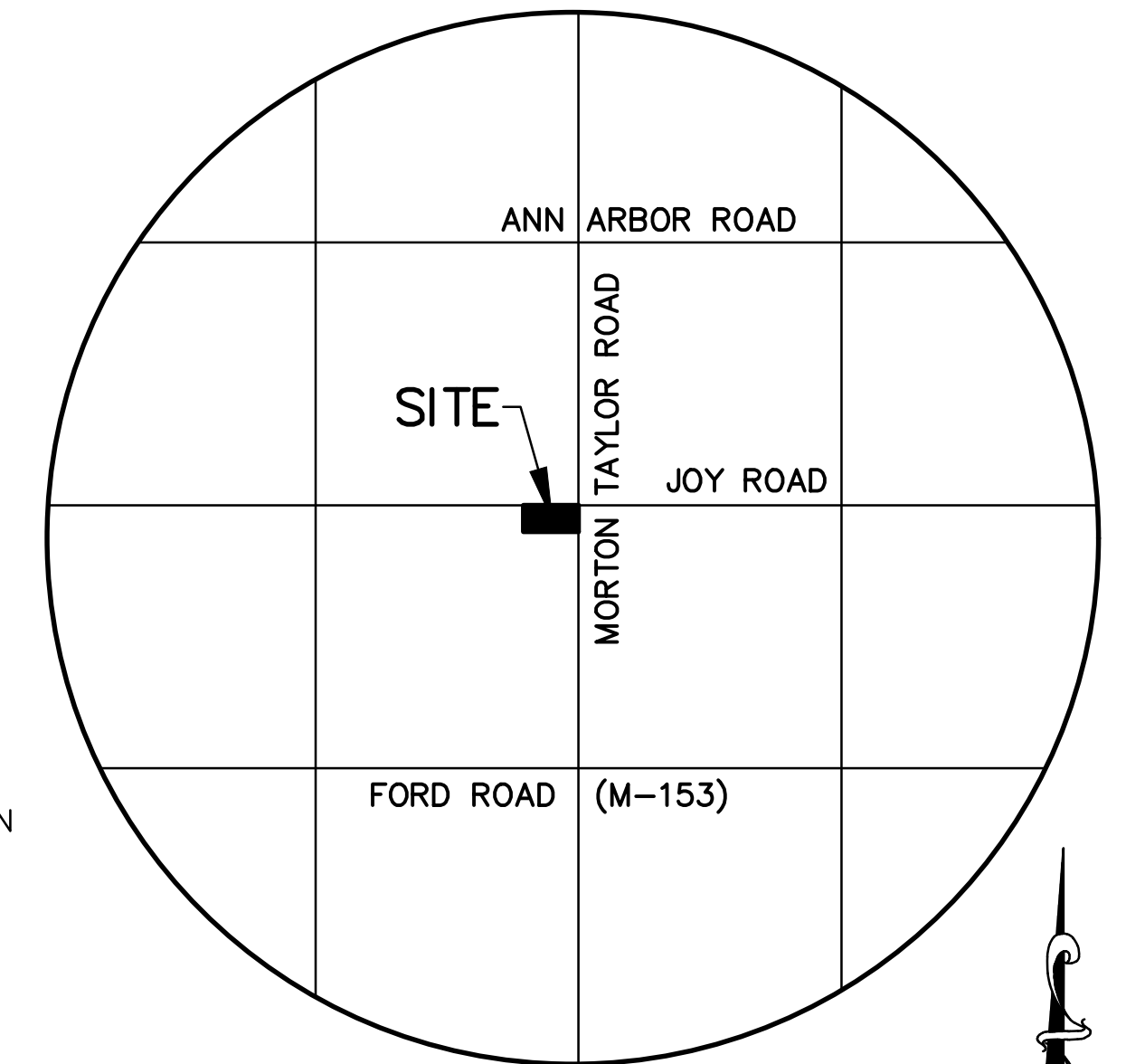
TWO SPACES PER UNIT
 11 UNITS * 2 = 22 REQUIRED SPACES

PROVIDED SPACES

GARAGE PARKING SPACES 2 SPACES PER GARAGE
 11 * 2 = 22 SPACES PROVIDED

SITE PLAN NOTES

1. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE CURRENT STANDARDS, SPECIFICATIONS, AND GENERAL CONDITIONS OF THE CHARTER TOWNSHIP OF CANTON.
2. ALL PROPOSED DRIVEWAYS MUST BE A MINIMUM OF 20 FEET IN LENGTH.
3. TRASH COLLECTION SHALL BE BY THE MUNICIPALITY ON AN INDIVIDUAL BASIS.

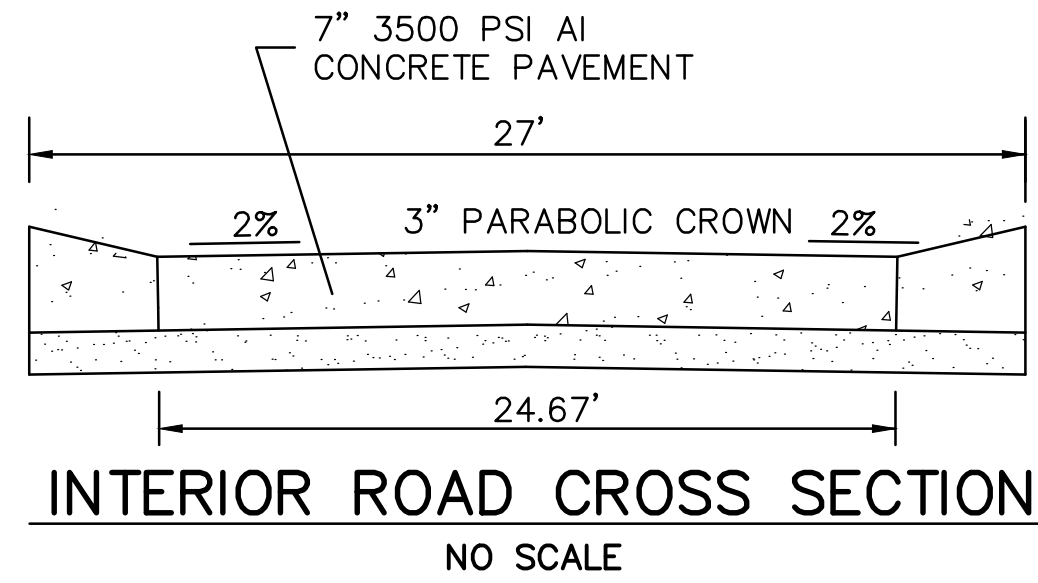
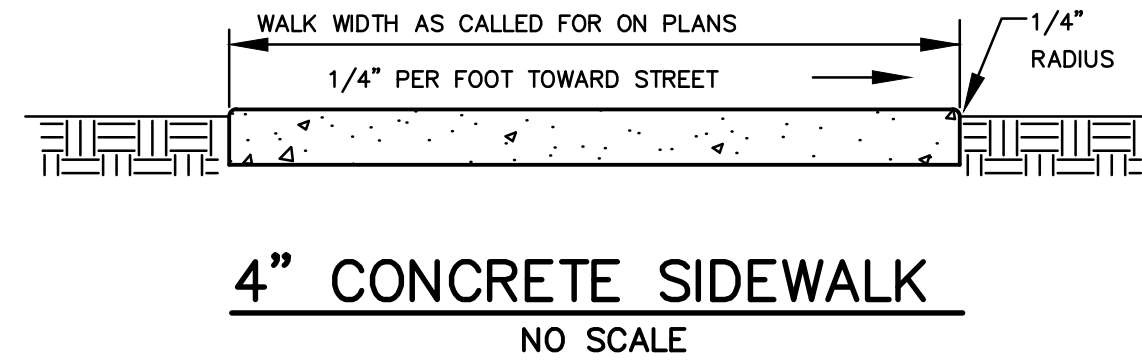


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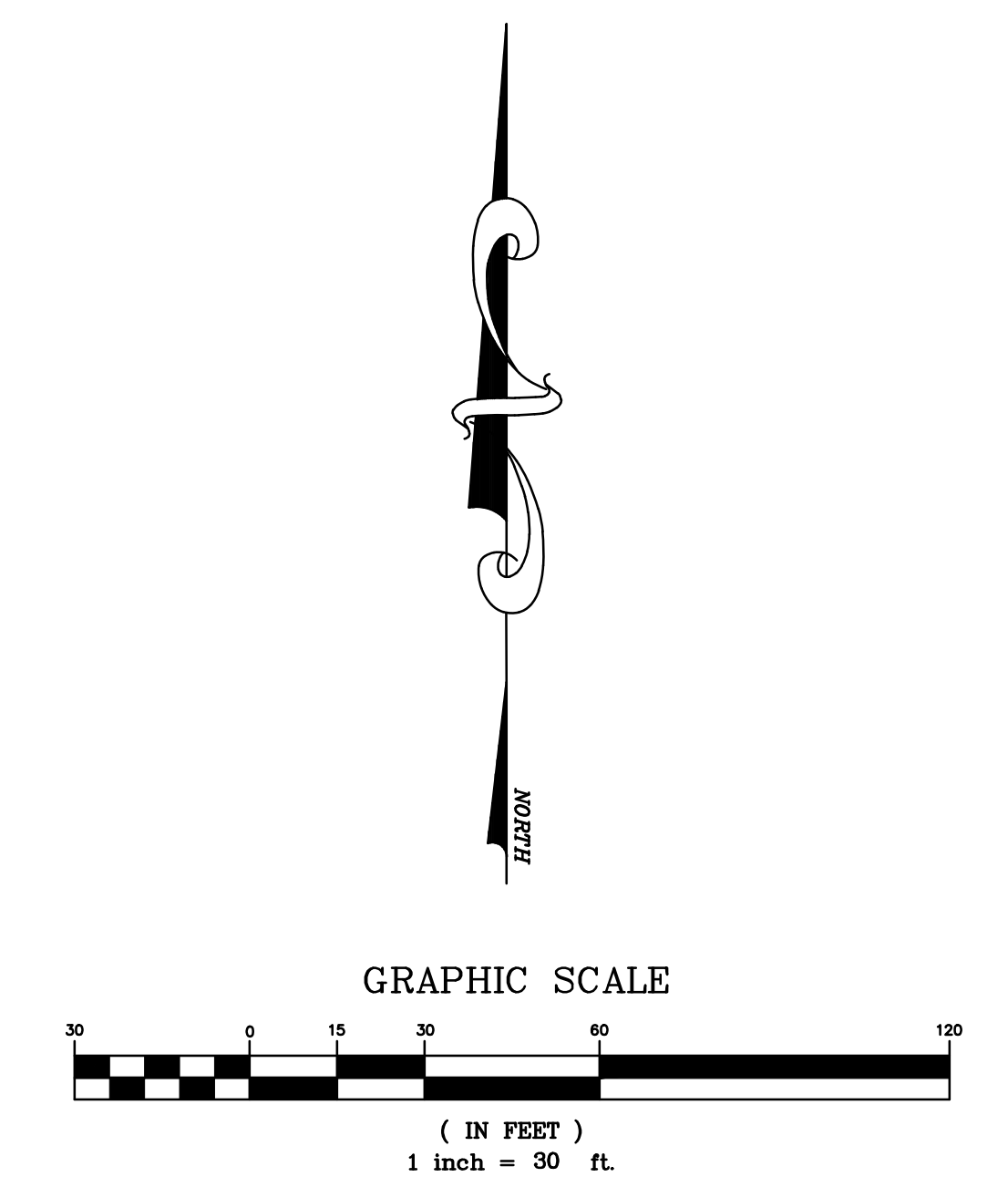
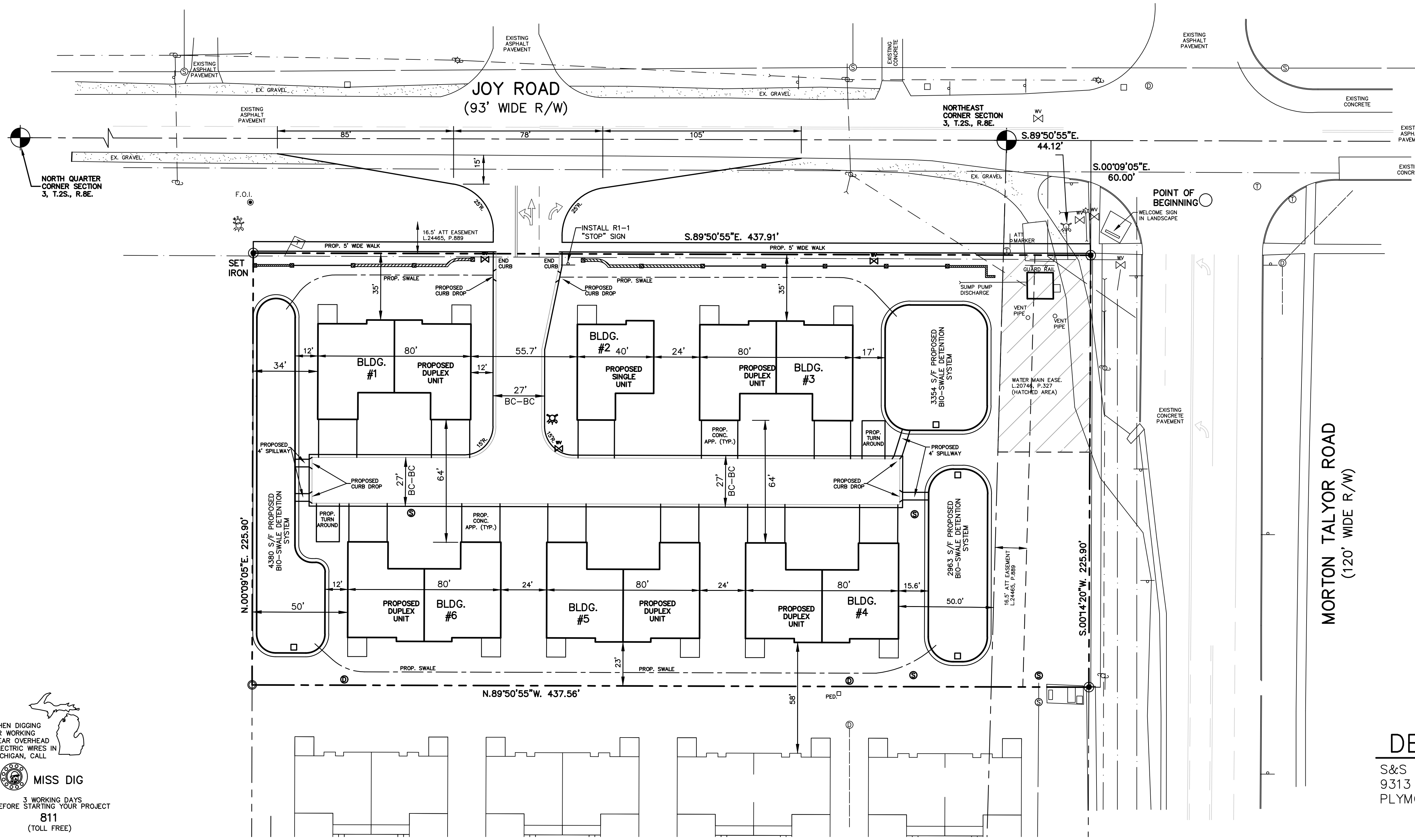
STORM SEWER DESIGN AND UTILITY PLAN

CHARLESTON CORNERS
 CANTON TOWNSHIP, WAYNE CO. MI
 SITE CONDOMINIUM

SHEET No.	JOB No.	DRAWING No.	DATE	REVISIONS
1 of 8	2018-06	A-	03-05-18	6-5-18
				9-30-19



6" 21-AA AGGREGATE BASE, COMPACTED TO 95% UNIT WEIGHT



LEGEND

	EX. SIGN
	EX. SANITARY MANHOLE
	EX. HYDRANT
	EX. LIGHT POLE
	EX. UTILITY POLE
	EX. VALVE WELL
	EX. FENCE
	PROPOSED HYDRANT
	PROPOSED SHUT-OFF
	PROPOSED CLEANOUT

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ZONING AND SETBACKS

SUBJECT PARCEL ZONED: C-2 (COMMUNITY COMMERCIAL)
 ADJACENT PARCELS ZONED: NORTH- C-2
 WEST- R-4
 SOUTH- R-4
 EAST- C-2

REQUIRED SETBACKS

FRONT 85' (C)
 SIDE 15' (D)
 REAR 30'

FLOOD HAZARD DATA

SUBJECT PARCEL IS LOCATED IN ZONE 'X' (AREA OF MINIMAL FLOOD HAZARD) AS SHOWN ON COMMUNITY PANEL 26163C0201E DATED FEBRUARY 02, 2012.

SOILS DATA

SUBJECT PARCEL CONSIST OF SOIL WaA - WASEPI LOAMY SAND, 0-2% DLOPES PER SOIL SURVEY OF WAYNE COUNTY AREA, MICHIGAN; USDA COVervation SERVICE.

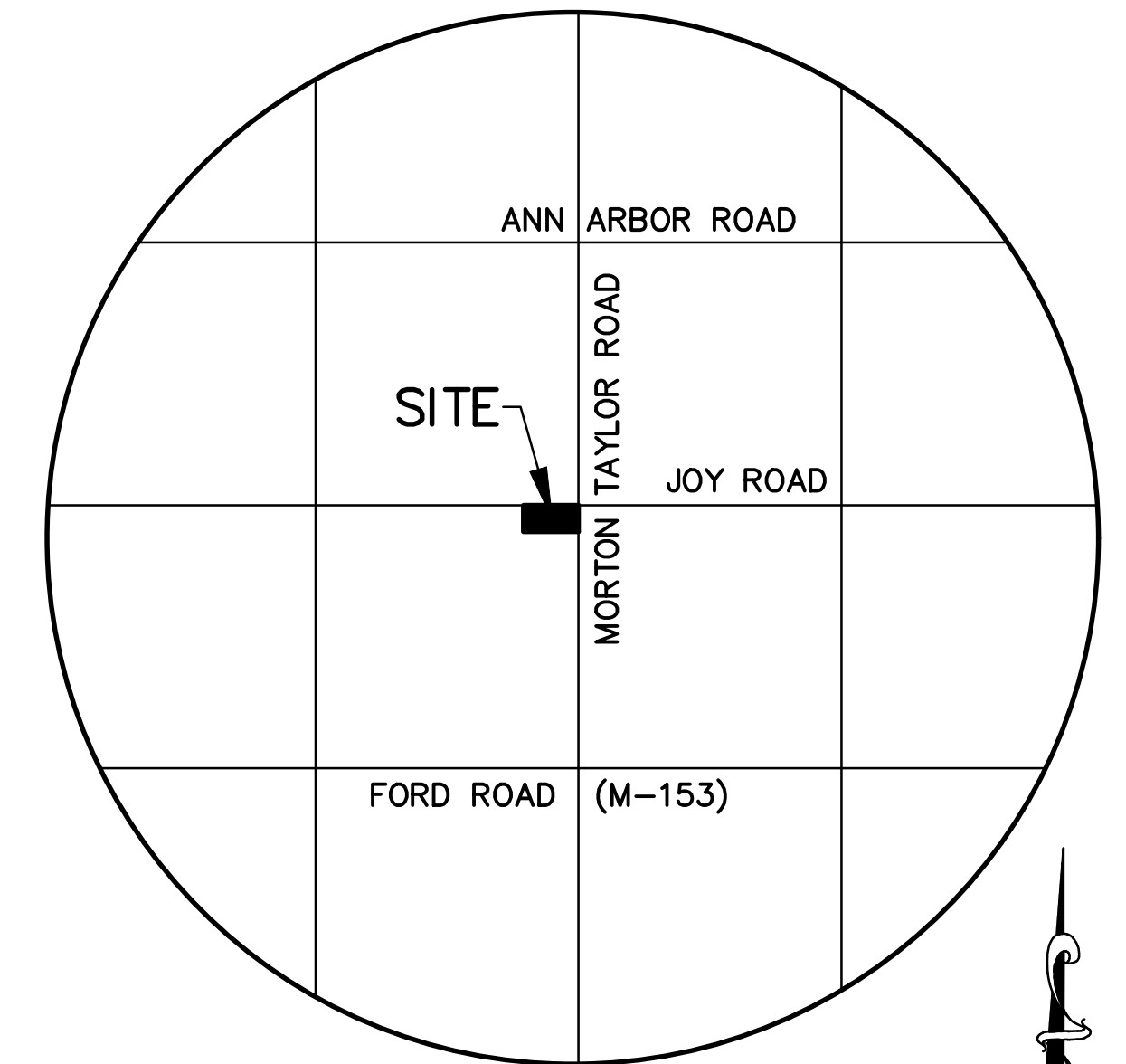
(C). FRONT SETBACK IN THE C-2 DISTRICT. WHEN A C-2 DISTRICT IS COMPOSED OF A SINGLE ISOLATED PARCEL SURROUNDED BY ZONING DISTRICTS OTHER THAN C-1 OR C-2, THE FRONT BUILDING SETBACK MAY BE REDUCED TO A MINIMUM OF THIRTY (30) FEET, PROVIDED THAT:

1. THE ENTIRE DEVELOPMENT SHALL BE CONSTRUCTED AT ONE TIME RATHER THAN IN PHASES, AND
2. THE SETBACK AREA SHALL BE RETAINED AS LANDSCAPE OPEN SPACE, UNPAVED, UNOCCUPIED AND UNOBSERVED FROM THE GROUND UP EXCEPT FOR LANDSCAPING, PERMITTED GROUND SIGNS, SIDEWALKS, OR DRIVEWAYS. (SUPP. 94-3, EFFECTIVE 11-3-94)
- (D). IN THE C-2 ZONING DISTRICT, THE INTERNAL SIDE SETBACK BETWEEN COMMON LOT OR PARCEL BOUNDARIES MAY BE ELIMINATED FOR PARCEL(S) ENCOMPASSED BY A PROPOSED PLANNED SHOPPING CENTER IF THE SITE PLAN MEETS THE FOLLOWING CRITERIA:
 1. THE SHOPPING CENTER IS DESIGNED AS AN INTEGRATED DEVELOPMENT WITH SHARED PARKING AND INTERNAL CONNECTING DRIVEWAYS; AND
 2. THE SHOPPING CENTER HAS RECORDED PRIVATE OPERATING EASEMENT AGREEMENTS AND/OR RECIPROCAL EASEMENT AGREEMENTS WITH ALL ADJACENT NON-RESIDENTIAL PARCELS (AS DEEMED NECESSARY BY THE TOWNSHIP) TO FACILITATE FLOW OF TRAFFIC BETWEEN SITES UNDER DIFFERENT OWNERSHIP; AND,
 3. THE SHOPPING CENTER DEVELOPER SHALL CONSTRUCT ANY PHYSICAL CONNECTION WITHIN THE ACCESS EASEMENTS TO THE POINT OF CONNECTION TO ANY EXISTING DEVELOPMENT. IN THE CASE WHERE A FUTURE CONNECTION IS REQUIRED TO BE MADE TO ANY VACANT NON-RESIDENTIAL PROPERTY, THE DEVELOPER SHALL CONSTRUCT THE REQUIRED ACCESS TO THE PROPERTY LINE OF THE VACANT PARCEL.

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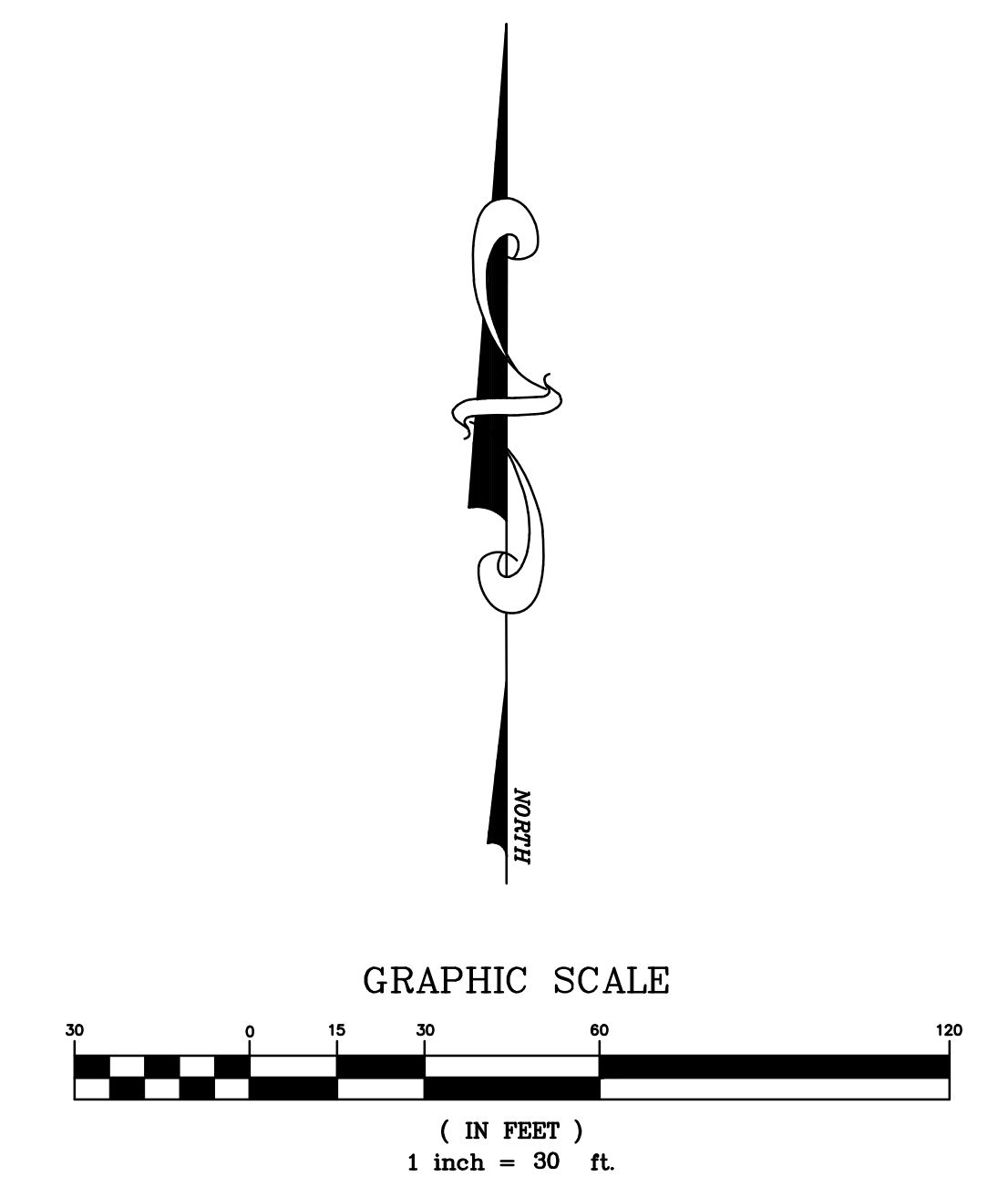
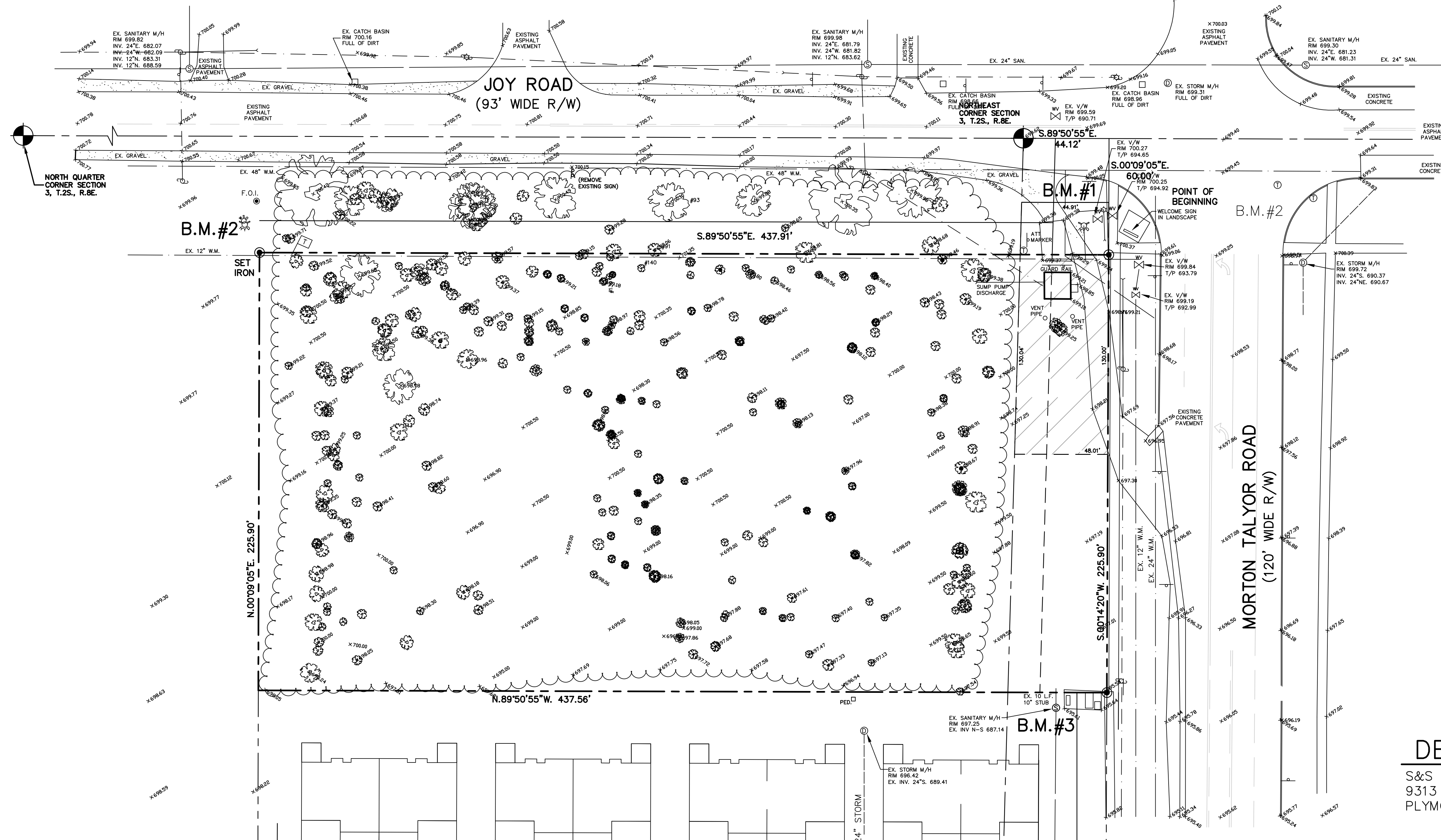
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LOCATION MAP
NOT TO SCALE

BENCHMARKS (U.S.C. & G.S. DATUM)

- #1 ARROW ON HYDRANT LOCATED AT THE SOUTHWEST CORNER OF JOY ROAD AND MORTON TAYLOR ROAD ELEV. 701.75
- #2 ARROW ON HYDRANT LOCATED NEAR THE NORTHWEST CORNER OF SUBJECT PROPERTY ELEV. 700.00
- #3 RIM EXISTING SANITARY MANHOLE LOCATED NEAR THE SOUTHEAST CORNER OF SUBJECT PROPERTY ELEV. 697.25

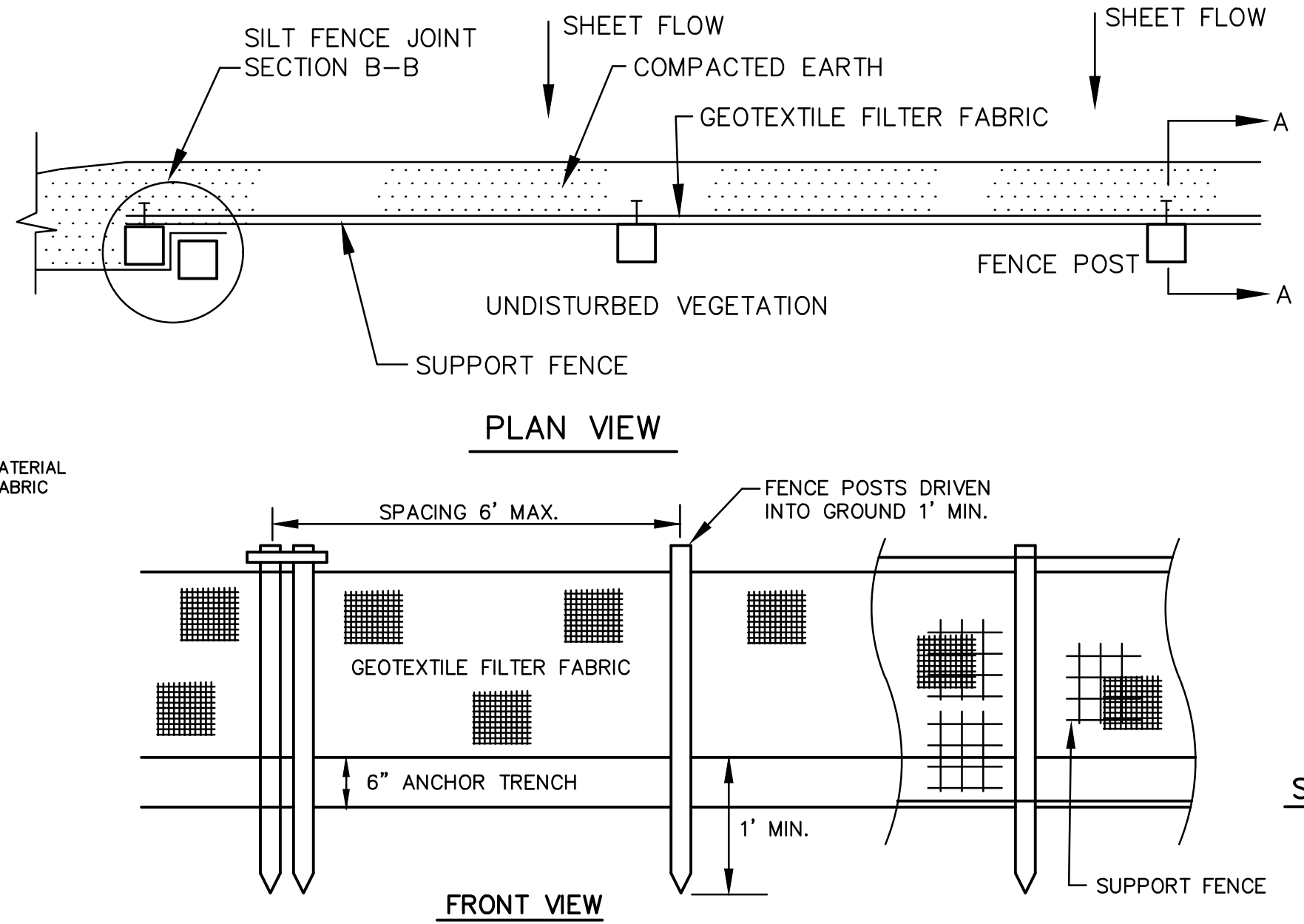
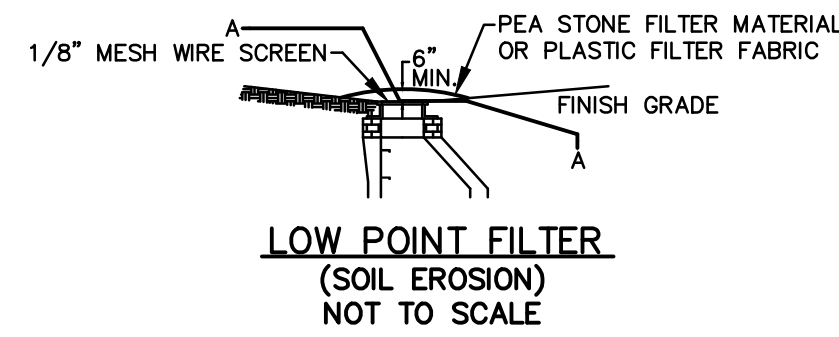
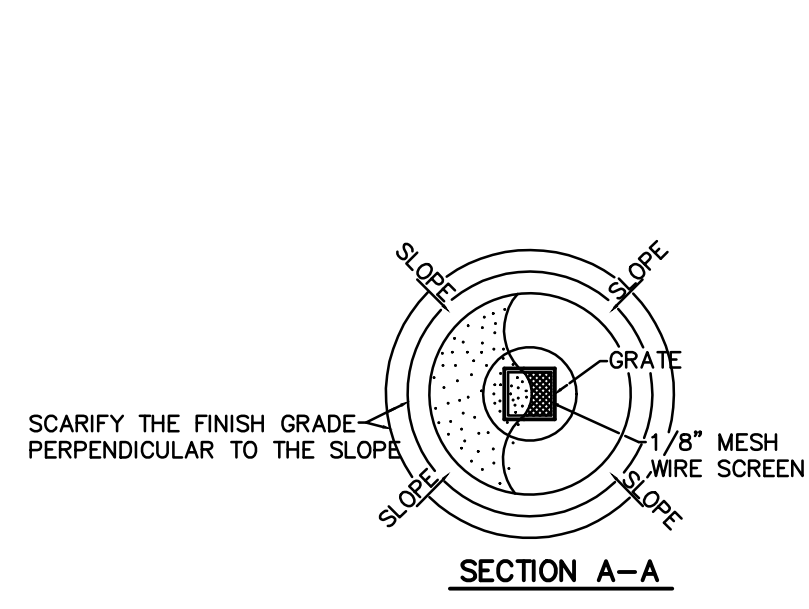


LEGEND

	EX. SIGN
	EX. SANITARY MANHOLE
	EX. HYDRANT
	EX. LIGHT POLE
	EX. UTILITY POLE
	EX. VALVE WELL
	EX. FENCE
	PROPOSED HYDRANT
	PROPOSED SHUT-OFF
	PROPOSED CLEANOUT

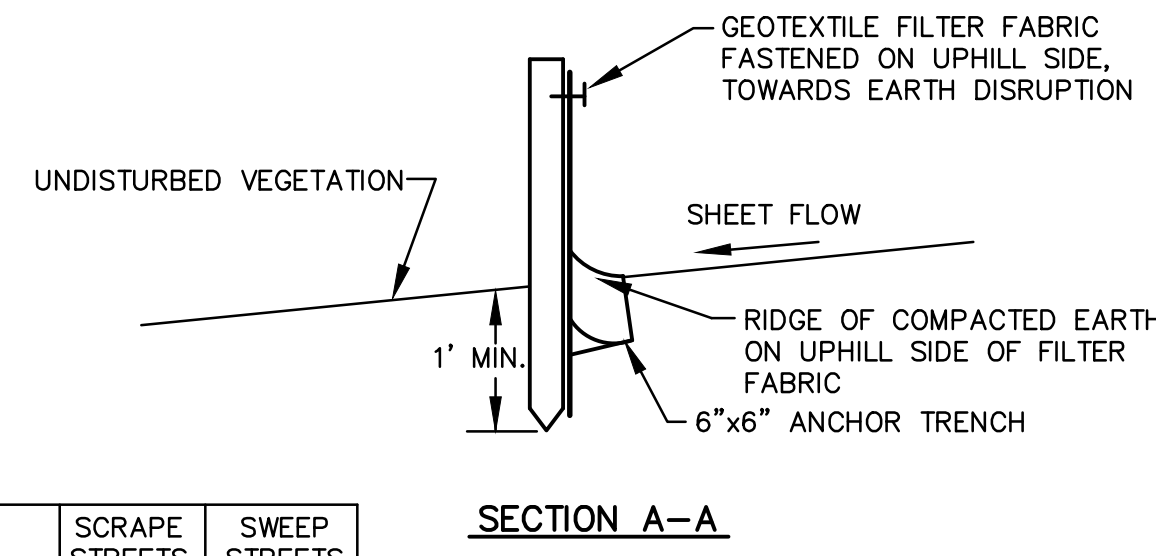
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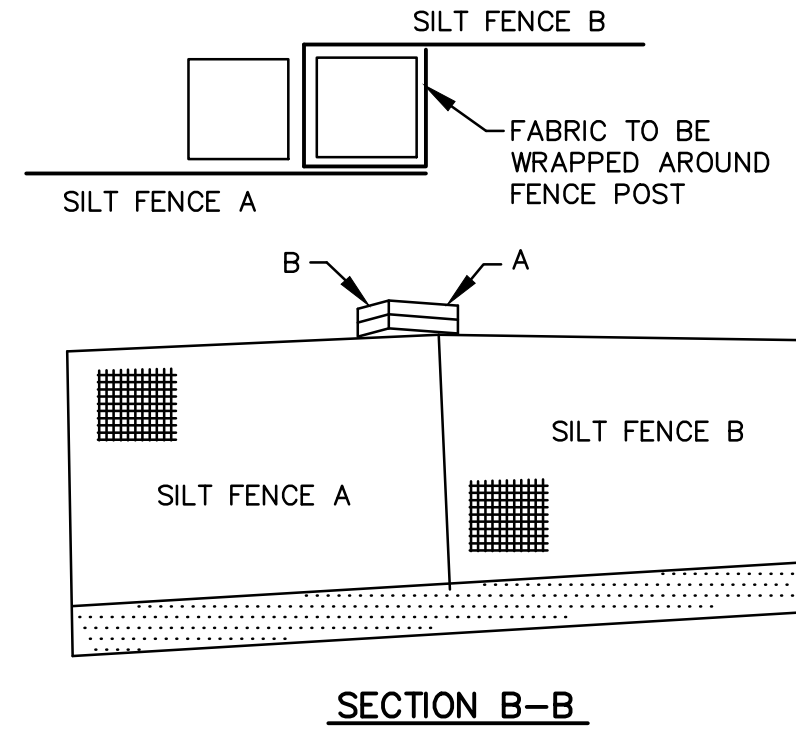
	SCRAPE STREETS	SWEEP STREETS
SUNDAY		
MONDAY	X	
TUESDAY	X	
WEDNESDAY	X	X
THURSDAY	X	
FRIDAY	X	
SATURDAY	X	

STREET CLEANING SCHEDULE



SECTION A-A

SILT FENCE



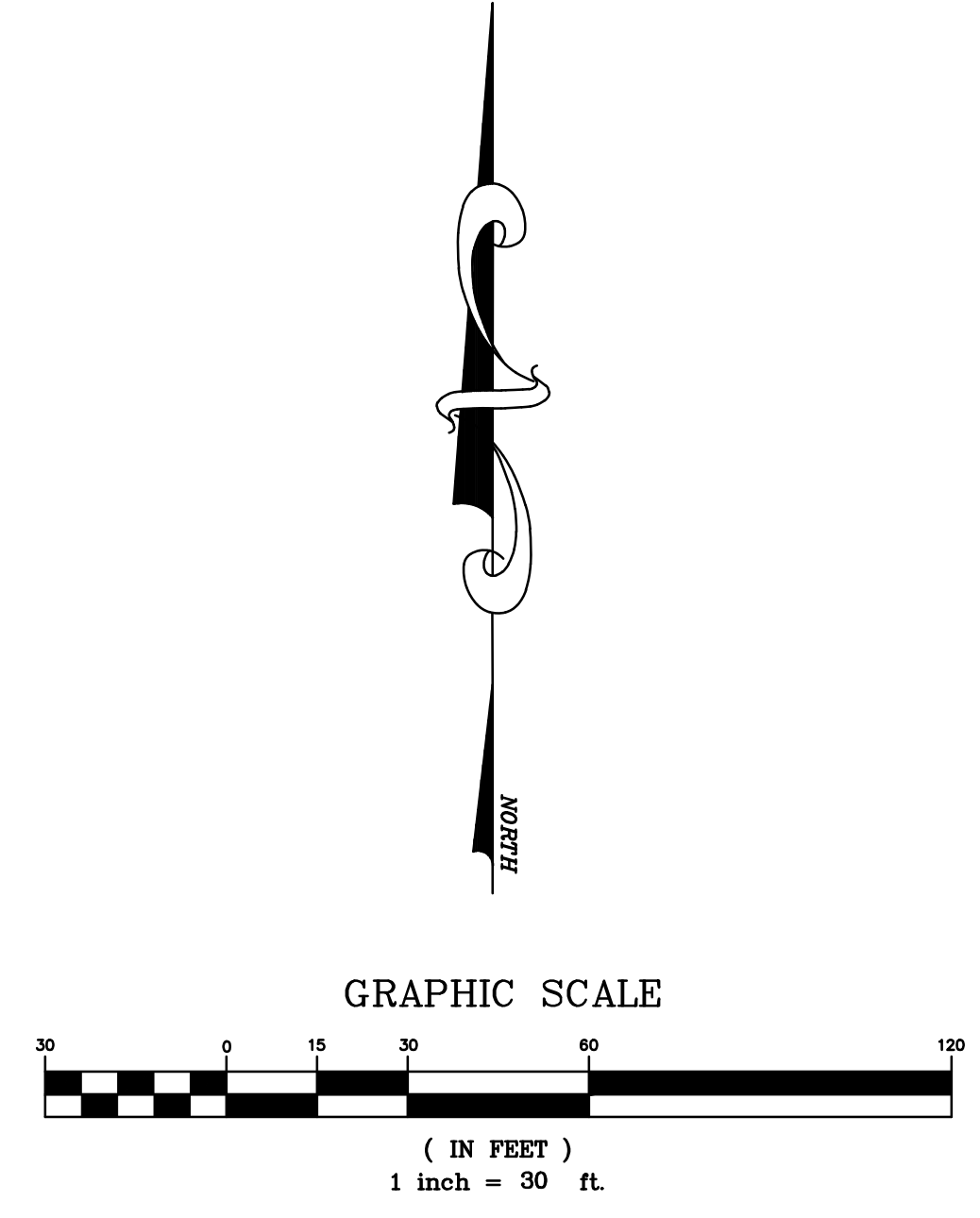
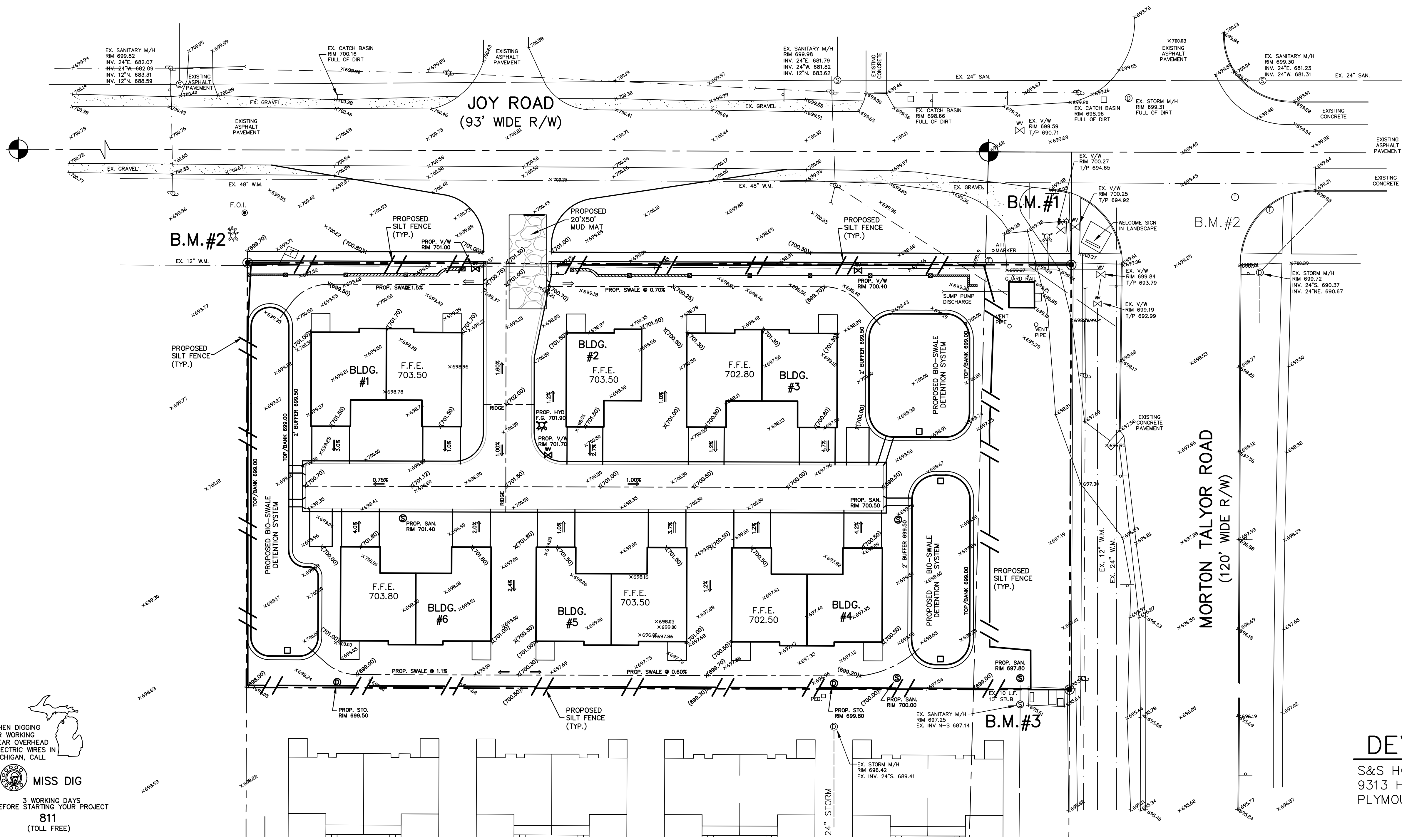
SECTION B-B

SOIL EROSION SEQUENCE OF CONSTRUCTION

1. INSTALL SILT FENCING AND PROTECTIVE FENCING.
2. STRIP AND STOCKPILE TOPSOIL.
3. PLACE STONE TRACKING PADS.
4. MASS GRADE SITE AS REQUIRED.
5. INSTALL UNDERGROUND UTILITIES. (I.E. SANITARY, STORM AND WATER MAIN).
6. PLACE INLET FILTERS.
7. INSTALL ALL PUBLIC UTILITIES COMPLETE (ELECTRIC, TELEPHONE, AND CABLE T.V.).
8. INSTALL PAVEMENT COMPLETE.
9. ESTABLISH VEGETATION FOR ALL DISTURBED AREAS.

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UTILITY PLAN NOTES

- NO CONNECTION RECEIVING STORM WATER, SURFACE WATER OR GROUND WATER SHALL BE MADE TO THE SANITARY SEWERS.
- SANITARY SEWER PIPE SHALL BE TRUSS PIPE OR APPROVED EQUIVALENT.
- REQUIRED PIPE BEDDING FOR SANITARY SEWER IS MAXIMUM 3/4" CRUSHED STONE.
- REQUIRED PIPE BEDDING FOR WATER MAIN IS CLASS II SAND.
- TRENCH "B" SAND BACKFILL IS REQUIRED FOR SANITARY SEWER AND WATER MAIN TRENCHES LOCATED UNDER OR WITHIN THREE FEET OF PAVEMENT.
- TRENCH "A" BACKFILL MATERIAL MUST BE FREE OF LARGE LUMPS OF CLAY, DEBRIS, AND ROCKS.
- THRUST BLOCKS ARE REQUIRED AT ALL BENDS, TEES, CROSSES, HYDRANTS, AND PLUGS AT THE END OF THE LINE.
- MINIMUM SANITARY SEWER LEAD SLOPE IS 1.0%.
- MINIMUM COVER ON PROPOSED WATER MAIN SHALL BE 5'.

SANITARY SEWER BASIS OF DESIGN

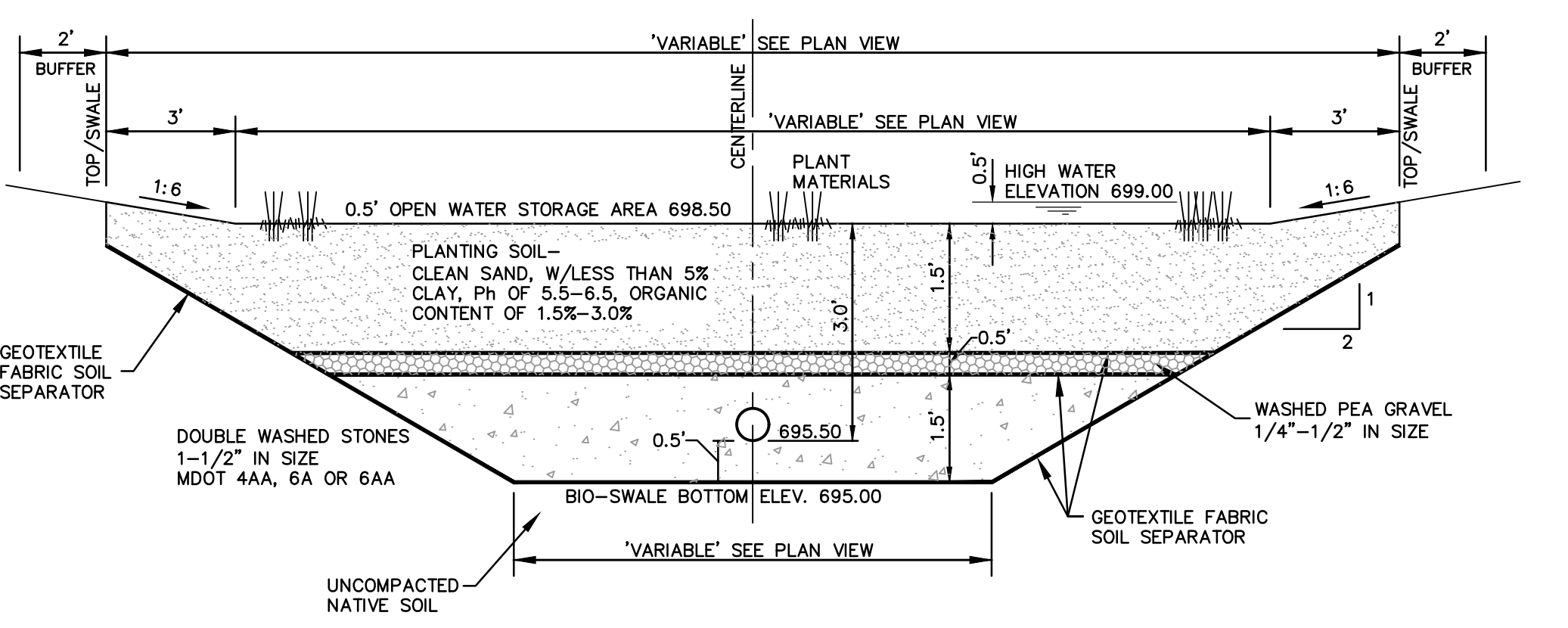
11 UNITS @ 3.5 PEOPLE PER UNIT = 39
 AVERAGE FLOW = 39 * 100 GPCD = 3,900 GPD = 0.006 CFS
 PEAKING FACTOR = 4.15
 PEAK FLOW = 39 * 415 = 16,185 = 0.025 CFS
 10" PIPE @ MIN. SLOPE OF 0.30% = 1.194 CFS

WATER MAIN QUANTITIES

275 L.F. 2" TYPE "K" COPPER LEAD W/SHUTOFF VALVE
 1 EA. HYDRANT ASSEMBLY
 2 EA. TAPPING SLEEVE VALVE & WELLS
 1 EA. GATE VALVE & WELL
 400 L.F. 8" CL.54 DUCTILE IRON PIPE
 33 L.F. 6" CL.54 DUCTILE IRON PIPE

SANITARY LEAD QUANTITIES

4 EA. 4" DIAMETER MANHOLES
 413 L.F. 10" ABS TRUSS PIPE
 285 L.F. 6" PVC Sch. 23.5 PIPE
 6 EACH 6" CLEANOUT



BIO-SWALE #1
10-YEAR DESIGN

LAND AREA	0.24 * 0.95 = 0.23
Blgd-Fvmt	0.00 * 0.85 = 0.00
Gravel	0.32 * 0.25 = 0.10
Grass	0.63 * 0.25 = 0.33

SITE COMPOSITE C = C/A = 0.50

BIORETENTION DESIGN
HIGH WATER ELEVATION = 699.00

DETENTION POND DESIGN
10-YEAR FLOOD CONTROL STORAGE REQUIRED:
 A (area) = 0.67
 C_{ave} = 0.52
 Q_a = 0.15*A = 0.101cfs
 Q_p = 0.30cfs/acri.imp
 T₁₀ = 102.38min.
 V_{s,10} = 6397cf
 V_{t,10} = 2143cf

DETENTION STORAGE PROVIDED:
 Depth at first layer = 0.50ft
 Depth at second layer = 3.00ft

Maximum 6" open water depth elev. area volume
 699.00 = 3354sf 0
 698.50 = 2740sf 1519cf

Storage in soils
 elev. area volume
 698.50 = 2740sf 0
 695.50 = 1670sf 6542cf
 ASSUME 20% STORAGE VOLUME
 6542*20% = 1309cf

TOTAL VOLUME PROVIDED:
 1519cf + 1309cf = 2828cf
 2828cf > 2143cf {OK}

BIO-SWALE #2
10-YEAR DESIGN

LAND AREA	0.24 * 0.95 = 0.23
Blgd-Fvmt	0.00 * 0.85 = 0.00
Gravel	0.32 * 0.25 = 0.10
Grass	0.63 * 0.25 = 0.33

SITE COMPOSITE C = C/A = 0.52

BIORETENTION DESIGN
HIGH WATER ELEVATION = 699.00

DETENTION POND DESIGN
10-YEAR FLOOD CONTROL STORAGE REQUIRED:
 A (area) = 0.63
 C_{ave} = 0.52
 Q_a = 0.15*A = 0.095cfs
 Q_p = 0.25cfs/acri.imp
 T₁₀ = 105.42min.
 V_{s,10} = 6445cf
 V_{t,10} = 2111cf

DETENTION STORAGE PROVIDED:
 Depth at first layer = 0.50ft
 Depth at second layer = 3.00ft

Maximum 6" open water depth elev. area volume
 699.00 = 2963sf 0
 698.50 = 2270sf 1303cf

Storage in soils
 elev. area volume
 698.50 = 2270sf 0
 695.50 = 1050sf 4860cf
 ASSUME 20% STORAGE VOLUME
 4860*20% = 972cf

TOTAL VOLUME PROVIDED:
 1303cf + 972cf = 2275cf
 2275cf > 2111cf {OK}

BIO-SWALE #3
10-YEAR DESIGN

LAND AREA	0.35 * 0.95 = 0.33
Blgd-Fvmt	0.00 * 0.85 = 0.00
Gravel	0.37 * 0.25 = 0.09
Grass	0.72 * 0.25 = 0.43

SITE COMPOSITE C = C/A = 0.59

BIORETENTION DESIGN
HIGH WATER ELEVATION = 699.00

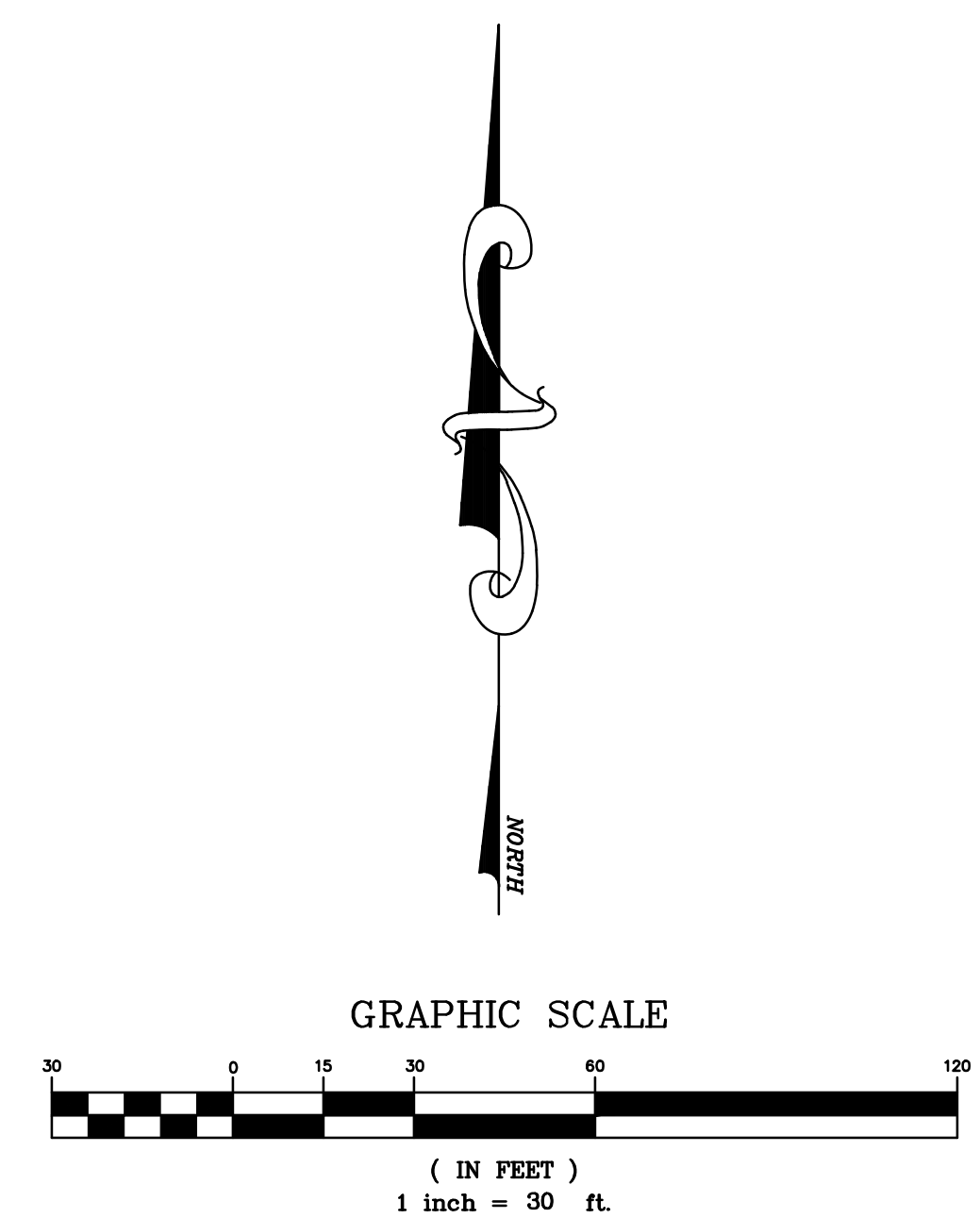
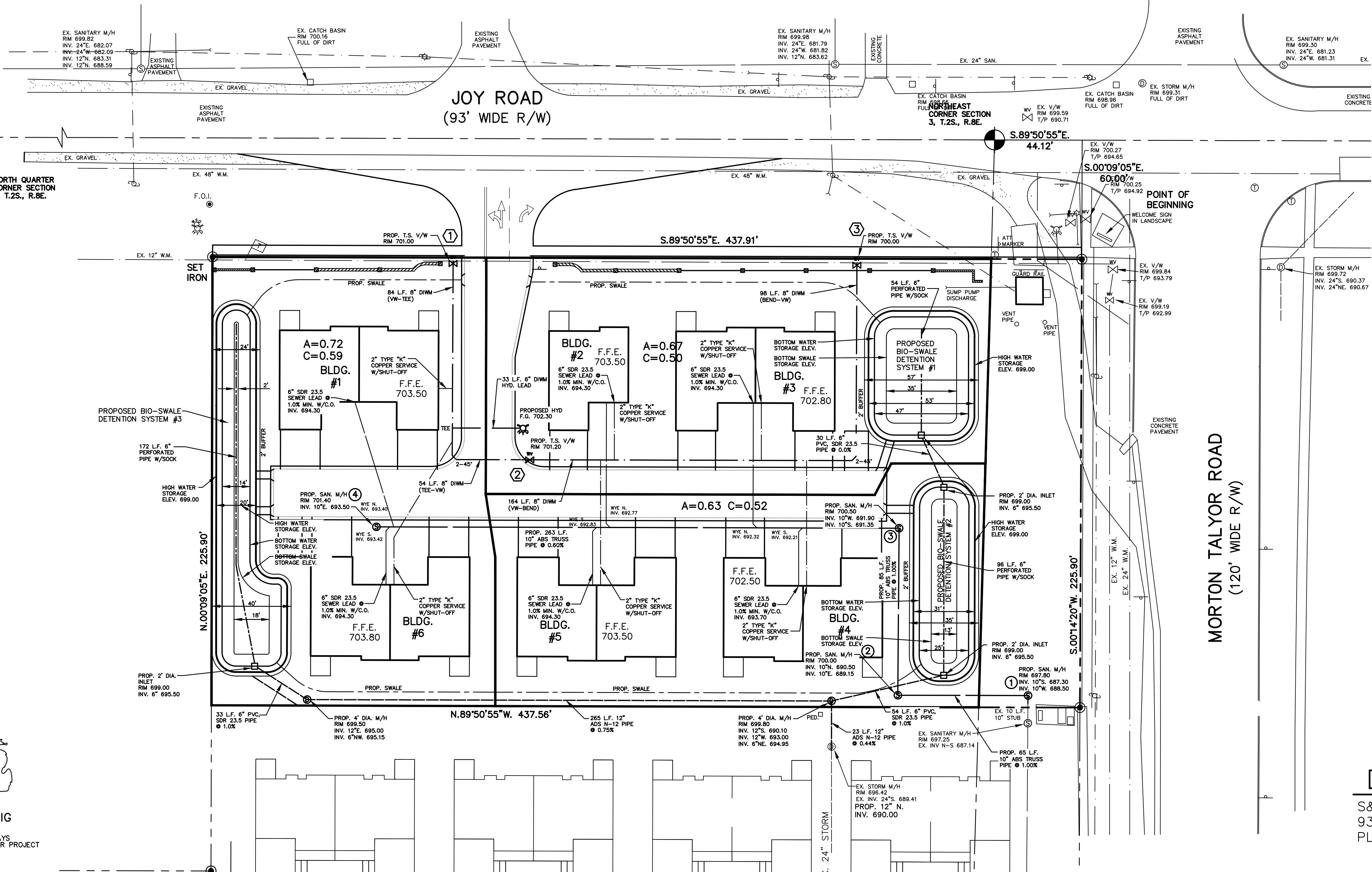
DETENTION POND DESIGN
10-YEAR FLOOD CONTROL STORAGE REQUIRED:
 A (area) = 0.72
 C_{ave} = 0.59
 Q_a = 0.15*A = 0.108cfs
 Q_p = 0.254cfs/acri.imp
 T₁₀ = 113.58min.
 V_{s,10} = 6595cf
 V_{t,10} = 2802cf

DETENTION STORAGE PROVIDED:
 Depth at first layer = 0.50ft
 Depth at second layer = 3.00ft

Maximum 6" open water depth elev. area volume
 699.00 = 4380sf 0
 698.50 = 3150sf 1872cf

Storage in soils
 elev. area volume
 698.50 = 3150sf 0
 695.50 = 865sf 5660cf
 ASSUME 20% STORAGE VOLUME
 5660*20% = 1132cf

TOTAL VOLUME PROVIDED:
 1872cf + 1132cf = 3004cf
 3004cf > 2802cf {OK}



LEGEND

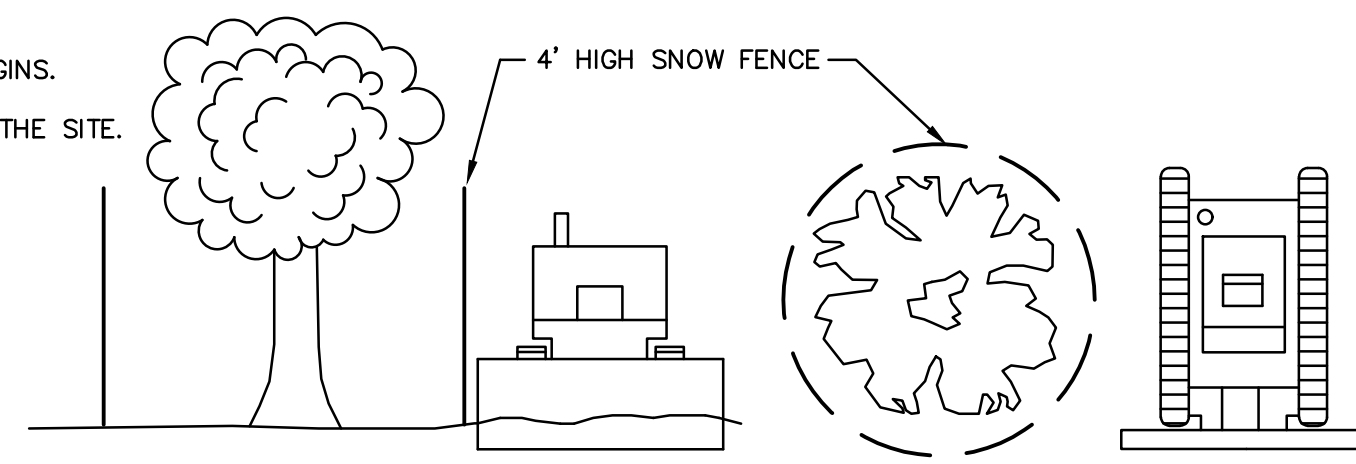
	EX. SIGN
	EX. SANITARY MANHOLE
	EX. HYDRANT
	EX. LIGHT POLE
	EX. UTILITY POLE
	EX. VALVE WELL
	EX. FENCE
	PROPOSED HYDRANT
	PROPOSED SHUT-OFF
	PROPOSED CLEANOUT

DEVELOPER
 S&S HOMES
 9313 HAGGERTY
 PLYMOUTH, MICHIGAN 48170

NOT TO BE USED FOR CONSTRUCTION

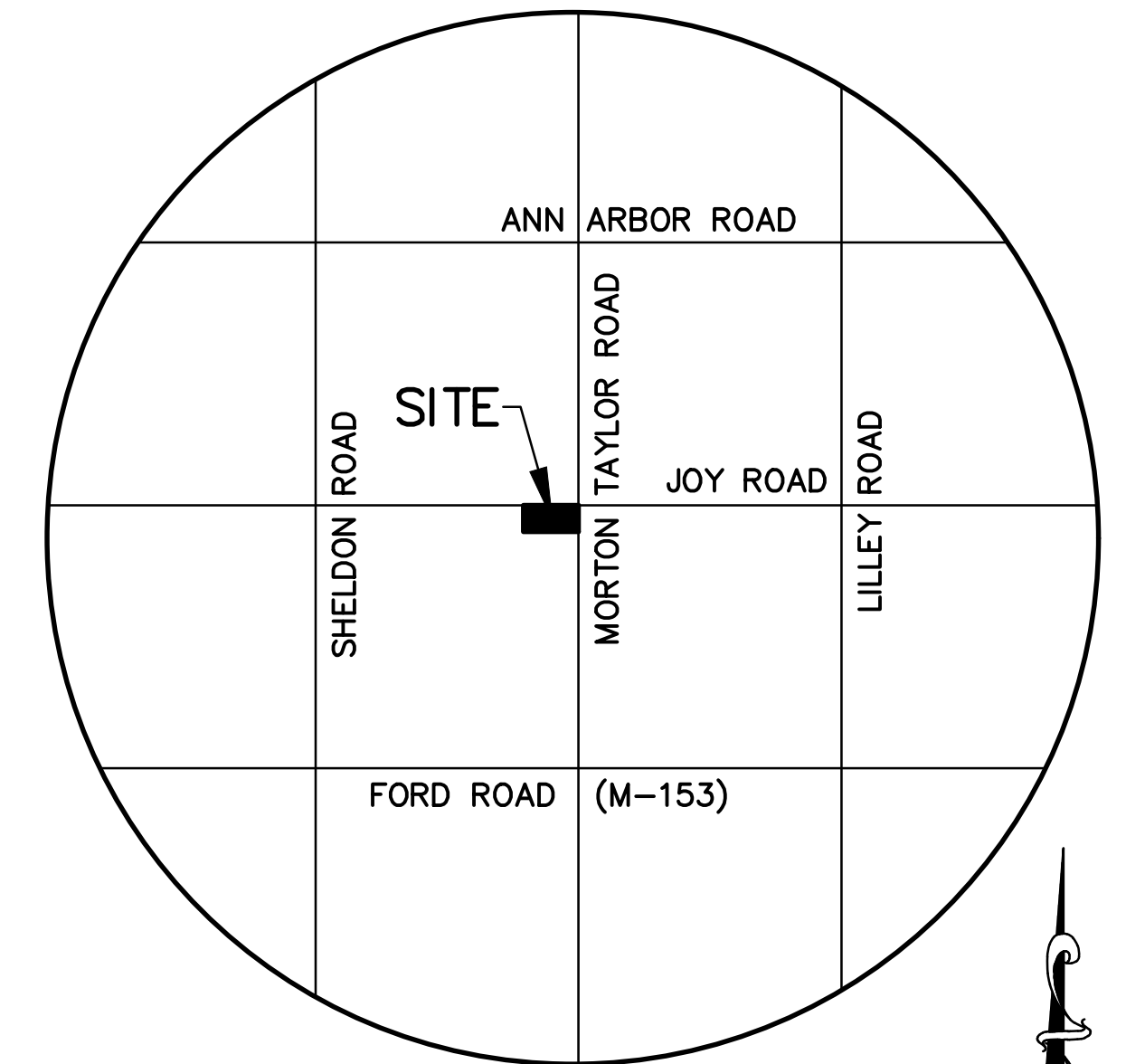
WHEN DIGGING OR WORKING NEAR OVERHEAD ELECTRIC WIRES IN MICHIGAN, CALL MISS DIG
 3 WORKING DAYS BEFORE STARTING YOUR PROJECT
 811 (TOLL FREE)

- (1) FENCING TO BE ERECTED BEFORE CONSTRUCTION BEGINS.
- (2) NO ACTIVITY IS TO TAKE PLACE WITHIN THE FENCED OFF AREA THROUGHOUT ALL PHASES OF WORK ON THE SITE.



SNOW FENCE
NO SCALE

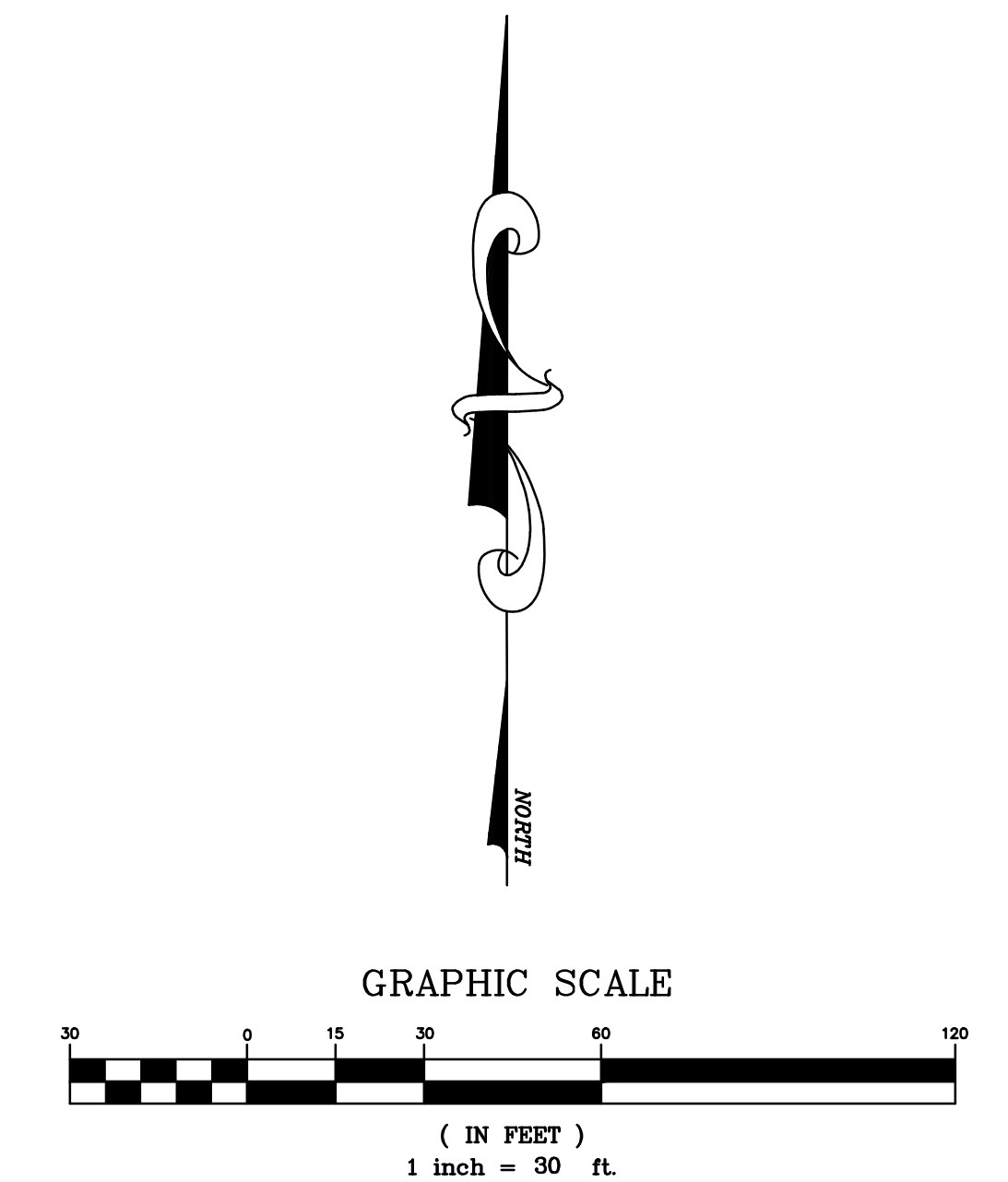
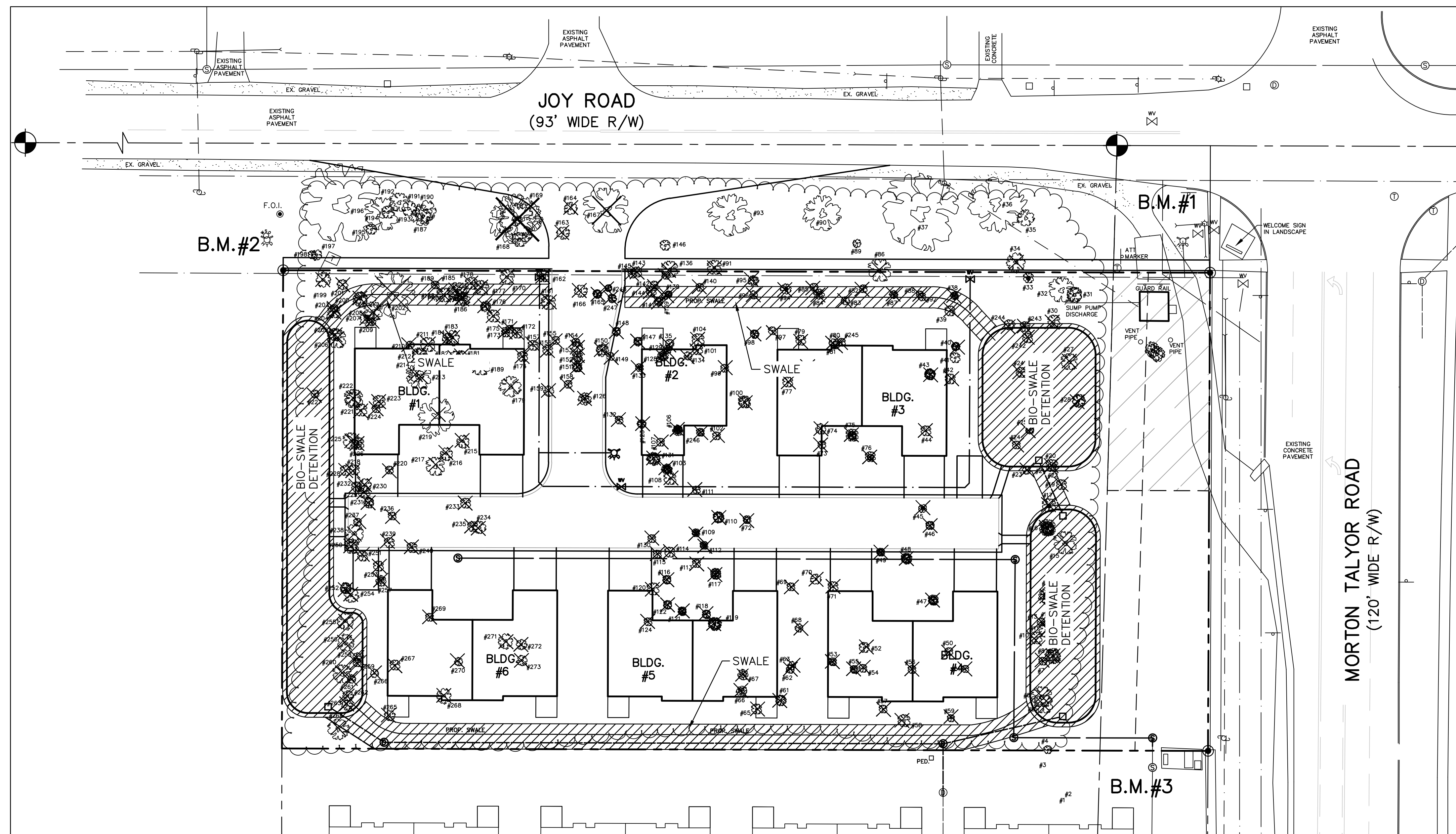
SNOW FENCE TO BE PLACED AROUND ALL TREES TO BE SAVED PRIOR TO SITE CONSTRUCTION.



LOCATION MAP
NOT TO SCALE

TREE LEGEND

- EXISTING TREE LOCATION
- TREE TO BE REMOVED
- #000 TREE TAG IDENTIFICATION NUMBER



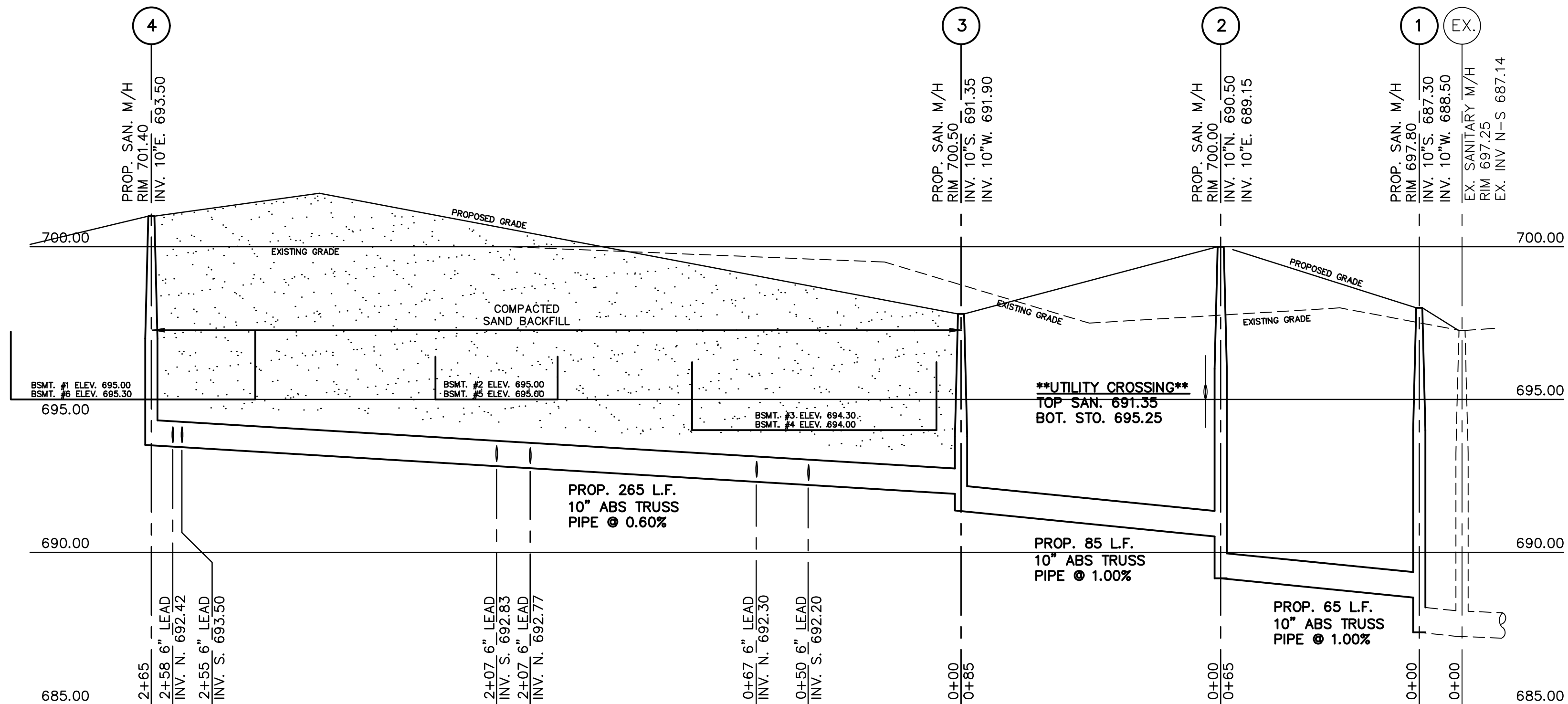
LEGEND

- EX. SIGN
- EX. SANITARY MANHOLE
- EX. HYDRANT
- EX. LIGHT POLE
- EX. UTILITY POLE
- EX. VALVE WELL
- EX. FENCE
- PROPOSED HYDRANT
- PROPOSED SHUT-OFF
- PROPOSED CLEANOUT

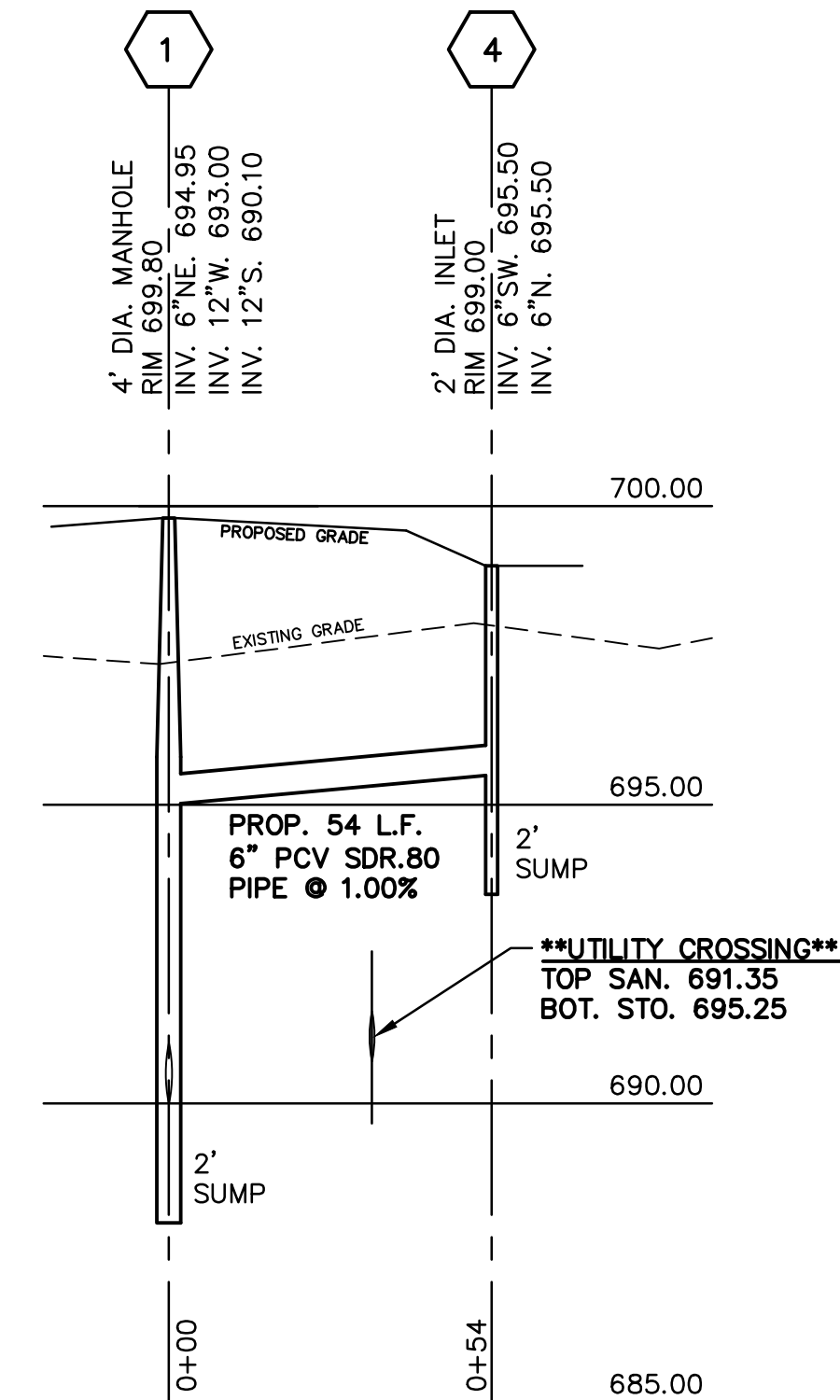
DEVELOPER

S&S HOMES
9313 HAGGERTY
PLYMOUTH, MICHIGAN 48170

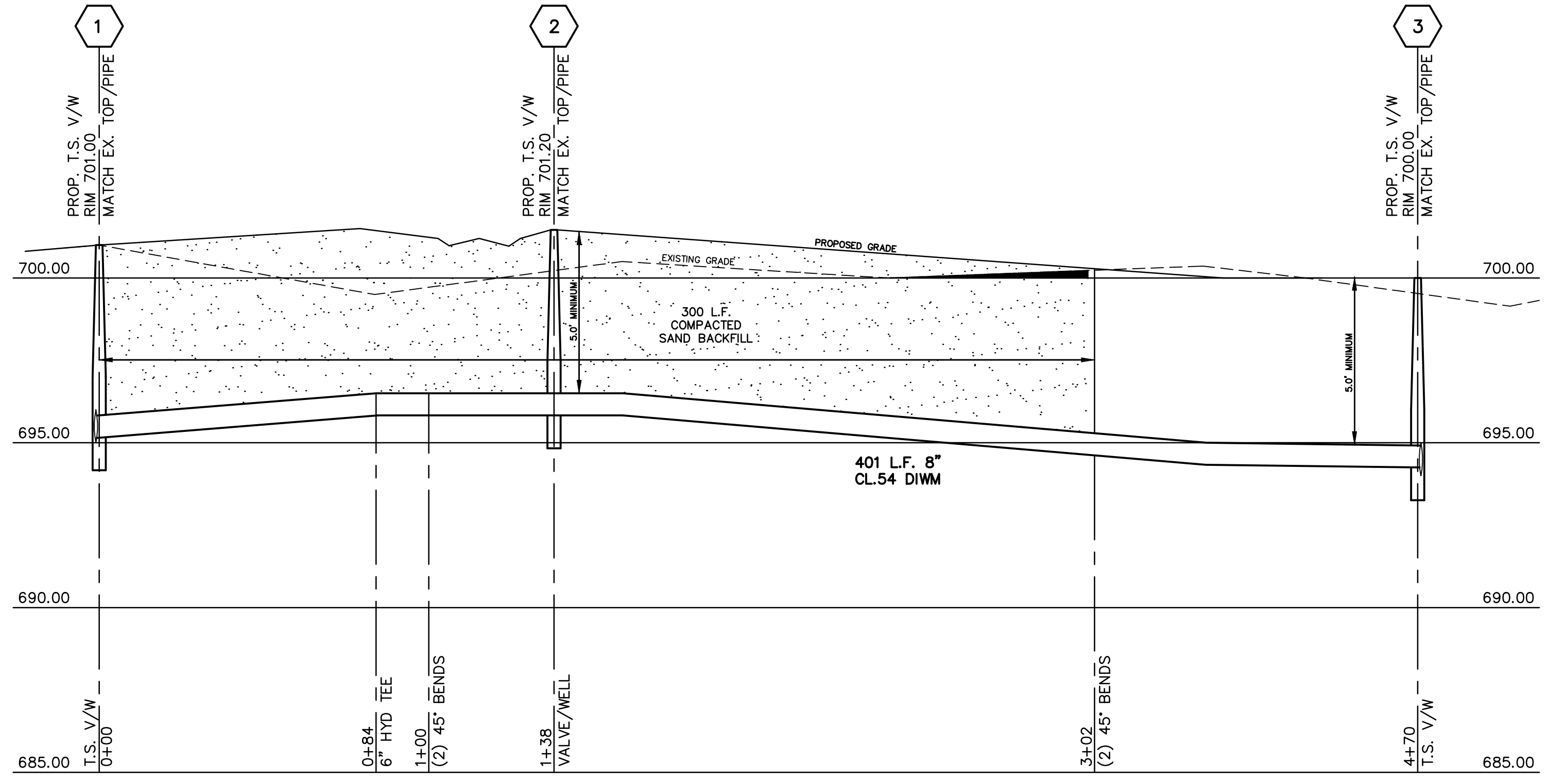
NOT TO BE USED FOR CONSTRUCTION



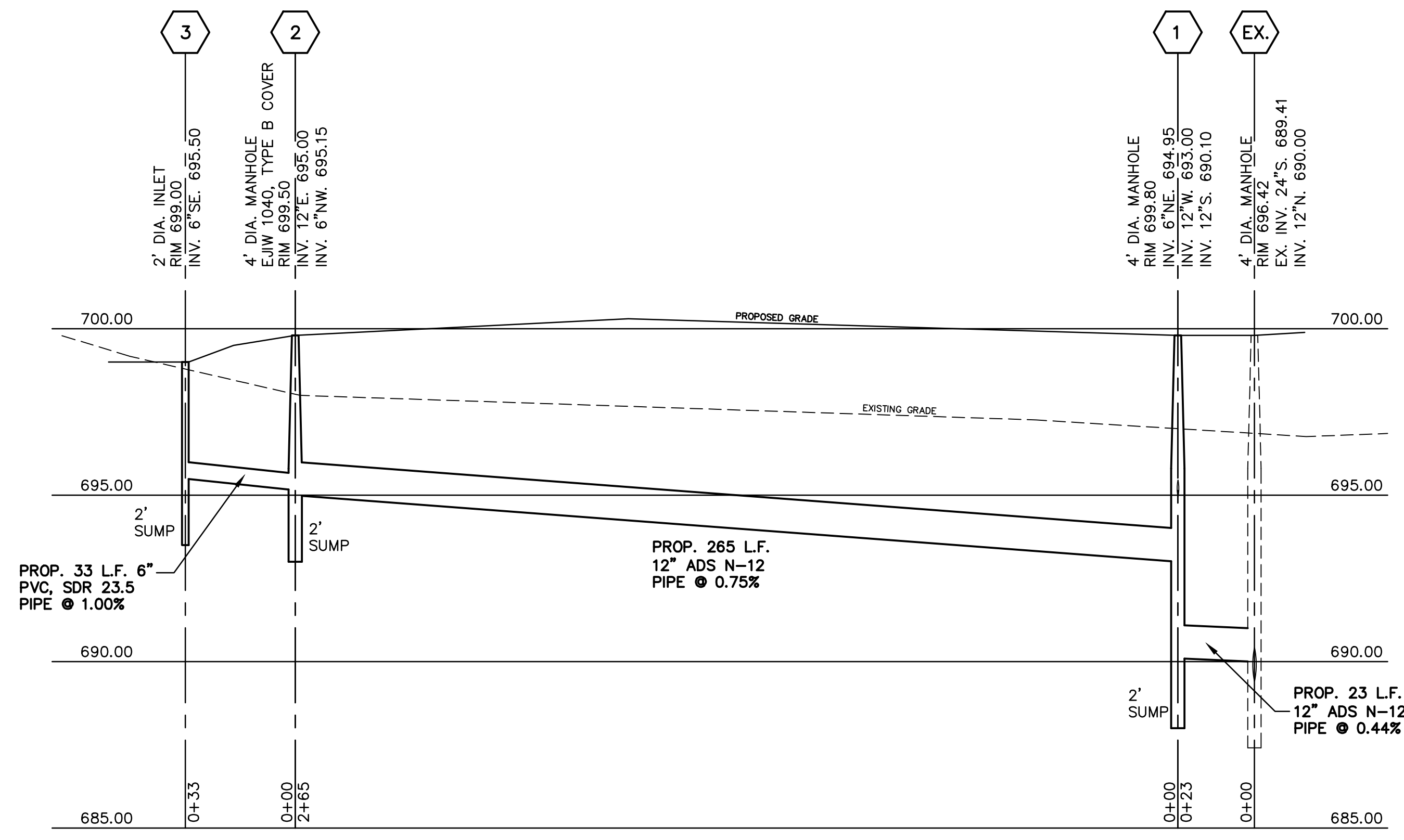
SANITARY SEWER PROFILE
 SCALE: 1"=30' HORIZONTAL
 1"= 3' VERTICAL



STORM SEWER PROFILE
 SCALE: 1"=30' HORIZONTAL
 1"= 3' VERTICAL

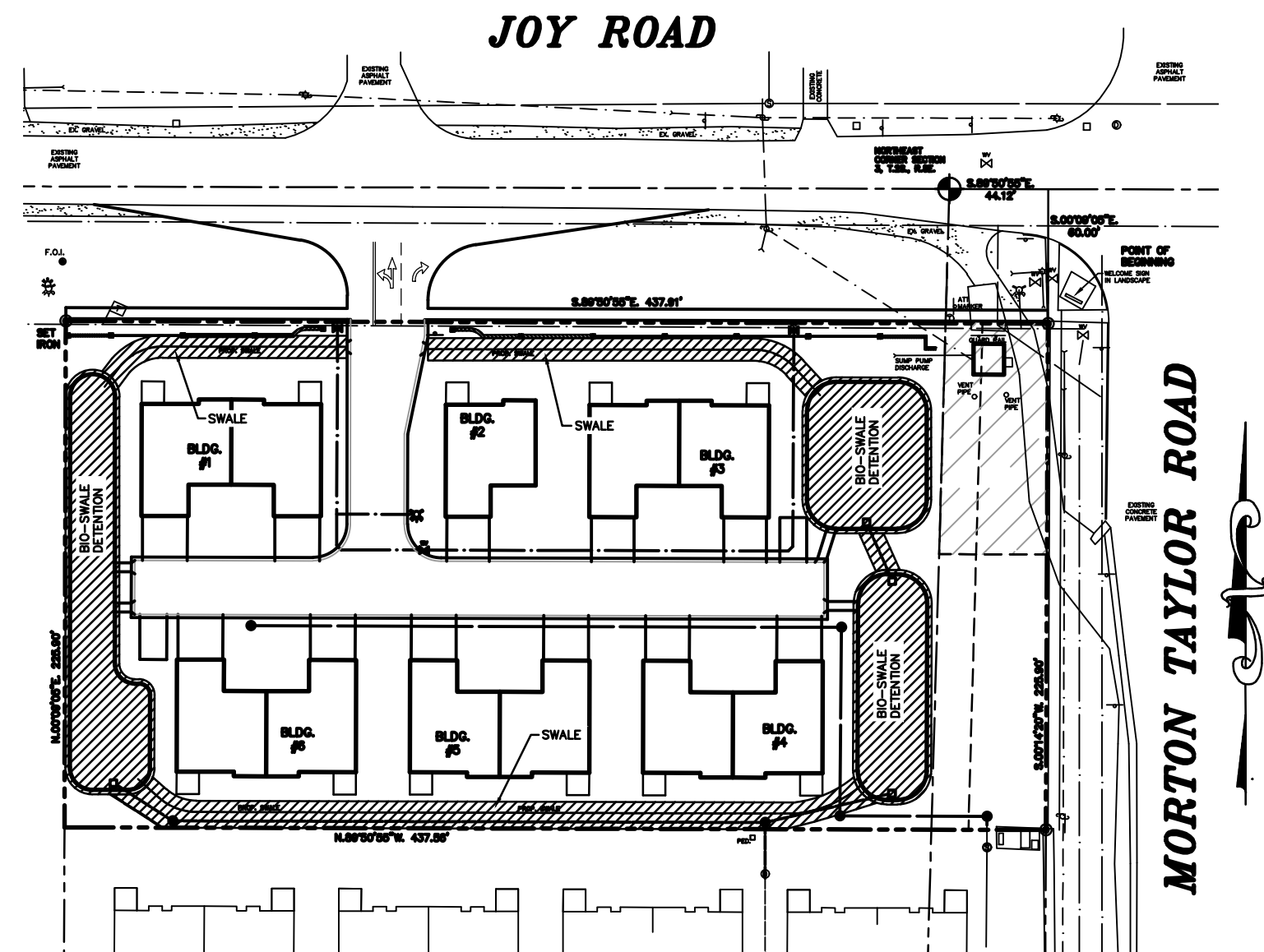


WATER MAIN PROFILE
 SCALE: 1"=30' HORIZONTAL
 1"= 3' VERTICAL



STORM SEWER PROFILE
 SCALE: 1"=30' HORIZONTAL
 1"= 3' VERTICAL

EXHIBIT "A"
PHYSICAL LIMITS OF STORM WATER MANAGEMENT SYSTEM



LEGAL DESCRIPTION

A PARCEL OF LAND BEING PART OF THE NORTHWEST 1/4 OF SECTION 2 AND PART OF THE NORTHEAST 1/4 OF SECTION 3, T.2S., R.8E., CANTON TOWNSHIP, WAYNE COUNTY, MICHIGAN; DESCRIBED AS FOLLOWS:

COMMENCING AT THE NORTHWEST CORNER OF SECTION 2, T.2S., R.8E., SAID POINT ALSO BEING THE NORTHEAST CORNER OF SECTION 3, T.2S., R.8E., AND PROCEEDING THENCE ALONG THE NORTH LINE OF SAID SECTION 2, S.89°50'55"E., 44.12 FEET AND S.00°14'20"W., 60.00 FEET TO THE POINT OF BEGINNING OF THE PARCEL HEREIN DESCRIBED; THENCE ALONG THE WEST RIGHT OF WAY LINE OF MORTON TAYLOR ROAD (120 FEET WIDE) AND THE BOUNDARY OF MAYFAIR VILLAGE SUBDIVISION NUMBER 1 RECORDED IN LIBER 97, PAGE 7, S.00°14'20"W., 225.90 FEET; THENCE N.89°50'55"W., 437.56; THENCE N.00°09'05"E., 225.90 FEET TO A POINT ON THE SOUTH RIGHT OF WAY LINE OF JOY ROAD (93 FEET WIDE); THENCE ALONG SAID LINE S.89°50'55"E., 437.91 FEET TO THE POINT OF BEGINNING. CONTAINING 2.270 ACRES MORE OR LESS.

PROPERTY OWNER

S&S HOMES
9313 HAGGERTY ROAD
PLYMOUTH, MI 48170
PH. (734) 812-5791
CONTACT: TONY SPAGNOLI

PROPERTY INFO

NORTH ABBEY WOODS
CANTON TOWNSHIP, MI 48170

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

DATE: 5-29-18
JOB No. 2018-06
DWG No. D-
SHEET: 1 of 1
SCALE: N/A

EXHIBIT "A"
STORM MAINTENANCE
CHARLESTON CORNERS
JOY ROAD, CANTON TWPSP,
WAYNE COUNTY, MI

EXHIBIT "B"
LONG TERM MAINTENANCE SCHEDULE CHART

WAYNE COUNTY DPS PERMIT No.: M-
WAYNE COUNTY DPS PLAN REVIEW No.: R-----

MAINTENANCE ACTIVITIES	SYSTEM COMPONENT						FREQUENCY
	INLET BASINS, TRAP AND SINKS AND STORM SEWERS	CHANNELS AND SWALES	INLETS TO BIORETENTION	BIORETENTION AREA	BUFFER STRIP	OVERFLOW STRUCTURES/OUTLET PIPE	
MONITORING/INSPECTION							
INSPECT FOR SEDIMENT ACCUMULATION	X	X	X	X	X	X	AS NEEDED / SEMI-ANNUALLY
INSPECT FOR FLOATABLES, DEAD VEGETATION AND DEBRIS	X	X	X	X	X	X	ANNUALLY & AFTER MAJOR EVENTS
INSPECT FOR EROSION AND INTEGRITY OF SYSTEM	X	X	X	X	X	X	ANNUALLY & AFTER MAJOR EVENTS
INSPECT ALL COMPONENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS	X	X	X	X	X	X	ANNUALLY
ENSURE MAINTENANCE ACCESS REMAIN OPEN/CLEAR	X	X	X	X	X	X	ANNUALLY
PREVENTATIVE MAINTENANCE							
REMOVE ACCUMULATED SEDIMENTS	X	X	X	X	X	X	AS NEEDED, SELECT AREAS ONLY
REMOVE FLOATABLES, INVASIVE & DEAD VEGETATION & DEBRIS	X	X	X	X	X	X	AS NEEDED
RE-APPLY / REPLACE MULCH LAYER	X	X	X	X	X	X	RE-APPLY EVERY 6 MONTHS, EVERY 5-YEARS OR WHEN WATER PONGS MORE THAN 2 HOURS
REPLACE SUBSURFACE COMPONENTS (SOILS, STONES, 6" UNDERDRAIN)	X	X	X	X	X	X	AS NEEDED / SEMI-ANNUALLY
SWEEPING OF PAVED SURFACES	X	X	X	X	X	X	AS NEEDED / SEMI-ANNUALLY
REMEDIAL ACTIONS							
REPAIR/STABILIZE AREAS OF EROSION, RESEED BARE AREAS	X	X	X	X	X	X	AS NEEDED
REPLACE DEAD PLANTINGS, LAWN	X	X	X	X	X	X	AS NEEDED
STRUCTURAL REPAIRS	X	X	X	X	X	X	AS NEEDED
MAKE ADJUSTMENTS/REPAIRS TO ENSURE PROPER FUNCTIONING	X	X	X	X	X	X	AS NEEDED

* NOT TO EXCEED THE LENGTH ALLOWED BY LOCAL COMMUNITY ORDINANCE.

A. PHYSICAL LIMITS OF THE STORM WATER MANAGEMENT SYSTEM
THE STORM WATER MANAGEMENT SYSTEM (SWMS) SUBJECT TO THIS LONG-TERM MAINTENANCE PLAN (PLAN) IS DEPICTED ON EXHIBIT A TO THE PERMIT AND INCLUDES WITHOUT LIMITATION THE STORM SEWER, SWALES, CATCH BASINS, MANHOLES, INLETS, BIORETENTION AREA, OVERFLOW STRUCTURE AND OUTLET PIPE THAT CONVEYS FLOW FROM THE BIORETENTION TO CHARLESTON CORNERS. FOR THE PURPOSES OF THIS PLAN, THIS STORM WATER MANAGEMENT SYSTEM AND ALL OF ITS COMPONENTS AS SHOWN ON EXHIBIT A IS REFERRED TO AS CHARLESTON CORNERS SWMS.

B. TIME FRAME FOR LONG-TERM MAINTENANCE RESPONSIBILITY
CHARLESTON CORNERS IS RESPONSIBLE FOR MAINTAINING THE CHARLESTON CORNERS SWMS, INCLUDING COMPLYING WITH APPLICABLE REQUIREMENTS OF THE LOCAL OR WAYNE COUNTY SOIL EROSION AND SEDIMENTATION CONTROL PROGRAM, UNTIL WAYNE COUNTY RELEASES THE CONSTRUCTION PERMIT. LONG-TERM MAINTENANCE RESPONSIBILITY FOR THE CHARLESTON CORNERS SWMS COMMENCES WHEN DEFINED BY THE MAINTENANCE PERMIT ISSUED BY THE COUNTY. LONG-TERM MAINTENANCE CONTINUES IN PERPETUITY.

C. MANNER OF ENSURING MAINTENANCE RESPONSIBILITY
CANTON TOWNSHIP HAS ASSUMED RESPONSIBILITY FOR LONG-TERM MAINTENANCE OF CHARLESTON CORNERS SWMS. THE RESOLUTION BY WHICH THE CITY HAS ASSUMED MAINTENANCE RESPONSIBILITY IS ATTACHED TO THE PERMIT AS EXHIBIT C. CHARLESTON CORNERS THROUGH A MAINTENANCE AGREEMENT WITH THE TOWNSHIP, HAS AGREED TO PERFORM THE MAINTENANCE ACTIVITIES REQUIRED BY THIS PLAN. CANTON TOWNSHIP RETAINS THE RIGHT TO ENTER THE PROPERTY AND PERFORM THE NECESSARY MAINTENANCE OF THE CHARLESTON CORNERS SWMS IF CHARLESTON CORNERS FAILS TO PERFORM THE REQUIRED MAINTENANCE ACTIVITIES. TO ENSURE THAT THE CHARLESTON CORNERS SWMS IS MAINTAINED IN PERPETUITY, THE MAP OF THE PHYSICAL LIMITS OF THE STORM WATER MANAGEMENT SYSTEM (EXHIBIT A), THIS PLAN (EXHIBIT B), THE RESOLUTION ATTACHED AS EXHIBIT C, AND THE MAINTENANCE AGREEMENT BETWEEN THE CANTON TOWNSHIP AND THE PROPERTY OWNER(S) WILL BE RECORDED WITH THE WAYNE COUNTY REGISTER OF DEEDS. UPON RECORDING, A COPY OF THE RECORDED DOCUMENTS WILL BE PROVIDED TO THE COUNTY.

D. LONG TERM MAINTENANCE PLAN AND SCHEDULE
TABLE 1 IDENTIFIES THE MAINTENANCE ACTIVITIES TO BE PERFORMED, ORGANIZED BY CATEGORY (MONITORING/INSPECTION, PREVENTATIVE MAINTENANCE, AND REMEDIAL ACTIONS). WHILE PERFORMING MAINTENANCE, CHEMICALS SHOULD NOT BE APPLIED TO THE FOREBAY, DETENTION BASIN, BUFFER STRIP, OR WATERCOURSES. TABLE 1 ALSO IDENTIFIES SITE-SPECIFIC WORK NEEDED TO ENSURE THAT THE STORM WATER MANAGEMENT SYSTEM FUNCTION PROPERLY AS DESIGNED.

PROPERTY OWNER

S&S HOMES
9313 HAGGERTY ROAD
PLYMOUTH, MI 48170
PH. (734) 812-5791
CONTACT: TONY SPAGNOLI

ENGINEER

ALLSTATE ENGINEERING
17060 CEDARCROFT
SOUTHFIELD, MI 48076
CONTACT: KEVIN HARDY
(734) 756-2196

DATE: 5-29-18
JOB No. 2018-06
DWG No. D-
SHEET: 1 of 1
SCALE: N/A

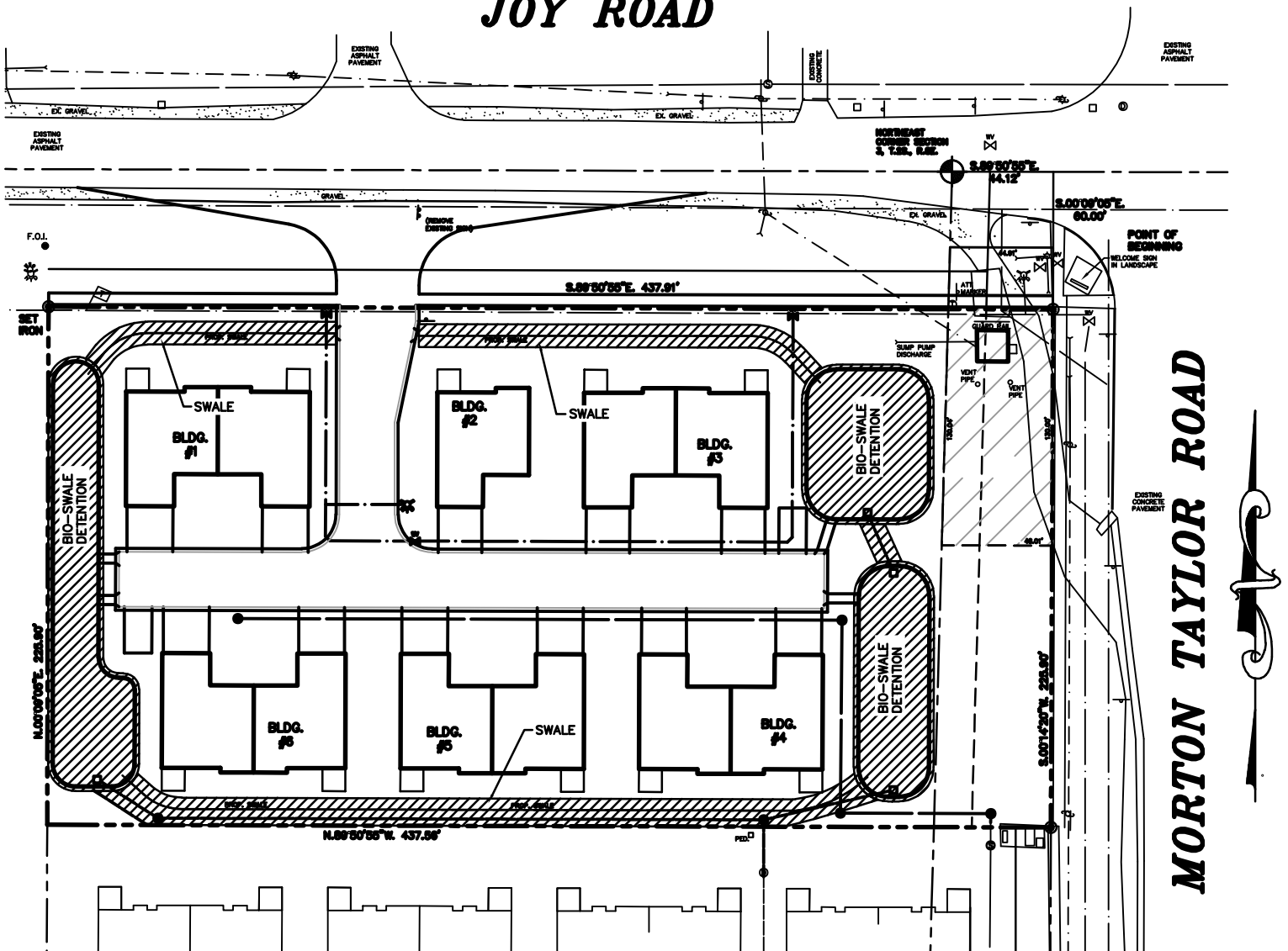
EXHIBIT "B"
STORM MAINTENANCE
CHARLESTON CORNERS
JOY ROAD, CANTON TWPSP,
WAYNE COUNTY, MI

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

EXHIBIT "A"

PHYSICAL LIMITS OF STORM WATER MANAGEMENT SYSTEM

JOY ROAD



LEGAL DESCRIPTION

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PROPERTY OWNER

S&S HOMES
 9313 HAGGERTY ROAD
 PLYMOUTH, MI 48170
 PH. (734) 812-5791
 CONTACT: TONY SPAGNOLI

PROPERTY INFO

NORTH ABBEY WOODS
 CANTON TOWNSHIP, MI 48170

DATE:	5-29-18	EXHIBIT "A" STORM MAINENANCE NORTH ABBEY WOODS JOY ROAD, CANTON TWSP, WAYNE COUNTY, MI
JOB No.	2018-06	
DWG No.	D-	
SHEET:	1 of 1	
SCALE:	N/A	

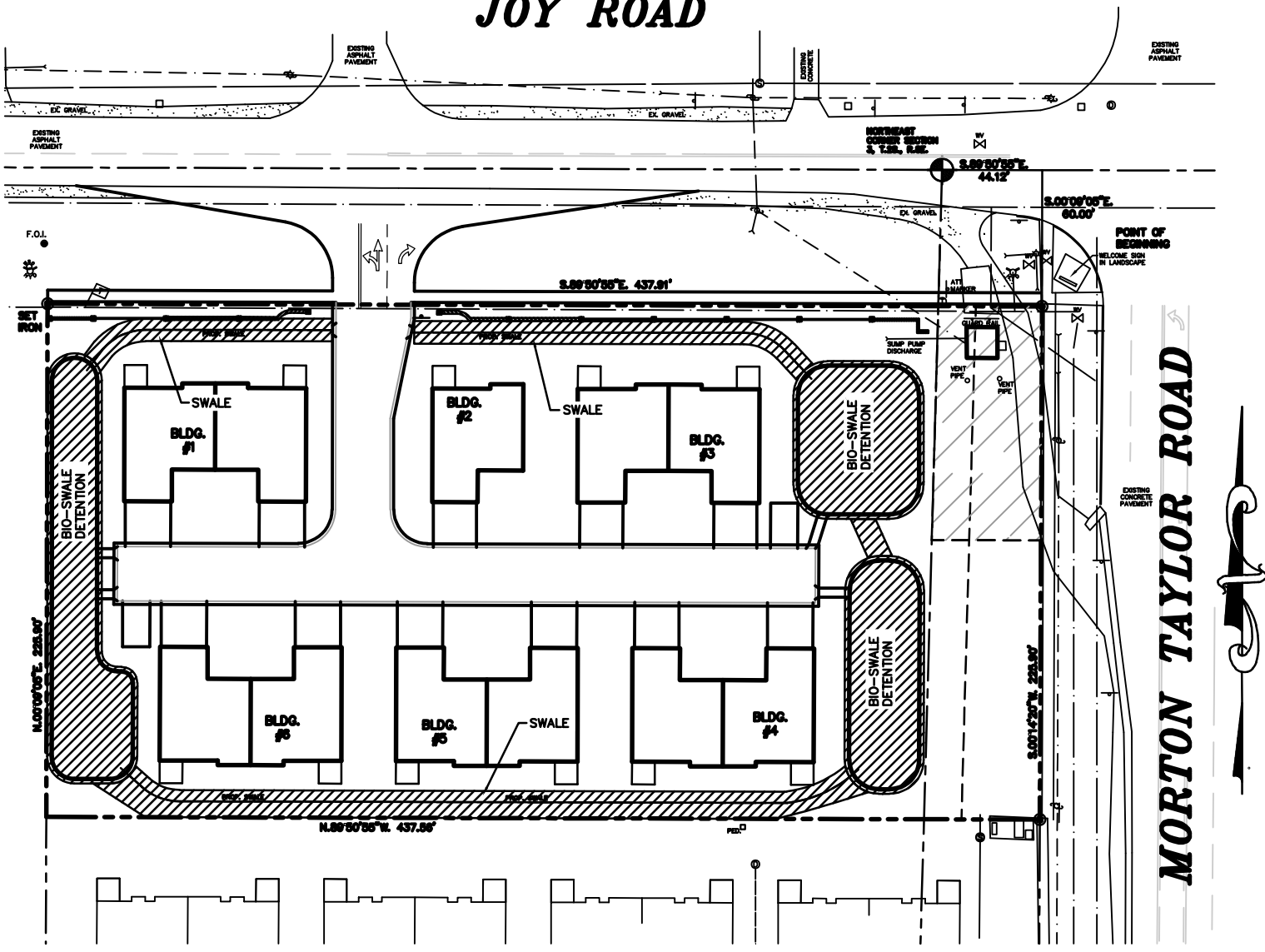
HARDY CIVIL DESIGN SERVICES LLC

4996 MOORE ST. WAYNE, MI 48184
 (734) 756-2196
 E-mail: hardy-cds@hotmail.com

EXHIBIT "A"

PHYSICAL LIMITS OF STORM WATER MANAGEMENT SYSTEM

JOY ROAD



LEGAL DESCRIPTION

A PARCEL OF LAND BEING PART OF THE NORTHWEST 1/4 OF SECTION 2 AND PART OF THE NORTHEAST 1/4 OF SECTION 3, T.2S., R.8E., CANTON TOWNSHIP, WAYNE COUNTY, MICHIGAN; DESCRIBED AS FOLLOWS:

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PROPERTY OWNER

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 PLYMOUTH, MI 48170
 PH. (734) 812-5791
 CONTACT: TONY SPAGNOLI

PROPERTY INFO

NORTH ABBEY WOODS
 CANTON TOWNSHIP, MI 48170

DATE:	5-29-18	EXHIBIT "A" STORM MAINEANCE CHARLESTON CORNERS JOY ROAD, CANTON TWSP, WAYNE COUNTY, MI
JOB No.	2018-06	
DWG No.	D-	
SHEET:	1 of 1	
SCALE:	N/A	

HARDY

CIVIL DESIGN SERVICES LLC

4996 MOORE ST. WAYNE, MI 48184
 (734) 756-2196
 E-mail: hardy-cds@hotmail.com

EXHIBIT "B"

LONG TERM MAINTENANCE SCHEDULE CHART SYSTEM COMPONENT

WAYNE COUNTY DPS PERMIT No.: M-
WAYNE COUNTY DPS PLAN REVIEW No.: R-----

MAINTENANCE ACTIVITIES	CATCH BASINS, INLETS AND STORM SEWERS	CHANNELS AND SWALES	INLETS TO BIORETENTION	BIORETENTION AREA	BUFFER STRIP	OVERFLOW STRUCTURES OUTLET PIPE	PAVEMENT AREAS	FREQUENCY
MONITORING/INSPECTION								
INSPECT FOR SEDIMENT ACCUMULATION	X	X	X	X	X	X		AS NEEDED / SEMI-ANNUALLY
INSPECT FOR FLOATABLES, DEAD VEGETATION AND DEBRIS	X	X	X	X	X	X		ANNUALLY & AFTER MAJOR EVENTS
INSPECT FOR EROSION AND INTEGRITY OF SYSTEM	X	X	X	X	X	X		ANNUALLY & AFTER MAJOR EVENTS
INSPECT ALL COMPONENTS DURING WET WEATHER AND COMPARE TO AS-BUILT PLANS	X	X	X	X	X	X		ANNUALLY
ENSURE MAINTENANCE ACCESS REMAIN OPEN/CLEAR	X	X	X	X	X	X		ANNUALLY
PREVENTATIVE MAINTENANCE								
REMOVE ACCUMULATED SEDIMENTS	X	X	X	X	X	X		AS NEEDED, SELECT AREAS ONLY
REMOVE FLOATABLES, INVASIVE & DEAD VEGETATION & DEBRIS	X	X	X	X	X	X		AS NEEDED
RE-APPLY / REPLACE MULCH LAYER				X				RE-APPLY EVERY 6 MONTHS, REPLACE EVERY 2-YEARS
REPLACE SUBSURFACE COMPONENTS (SOILS, STONES, 6" UNDERDRAIN)				X				EVERY 5-YEARS, OR WHEN WATER PONDS MORE THAN 6 HOURS
SWEEPING OF PAVED SURFACES							X	AS NEEDED / SEMI-ANNUALLY
REMEDIAL ACTIONS								
REPAIR/STABILIZE AREAS OF EROSION, RESEED BARE AREAS	X	X	X	X	X	X		AS NEEDED
REPLACE DEAD PLANTINGS, LAWN				X	X			AS NEEDED
STRUCTURAL REPAIRS	X	X	X			X	X	AS NEEDED
MAKE ADJUSTMENTS/REPAIRS TO ENSURE PROPER FUNCTIONING	X	X	X	X	X	X	X	AS NEEDED

* NOT TO EXCEED THE LENGTH ALLOWED BY LOCAL COMMUNITY ORDINANCE.

A. PHYSICAL LIMITS OF THE STORM WATER MANAGEMENT SYSTEM

THE STORM WATER MANAGEMENT SYSTEM (SWMS) SUBJECT TO THIS LONG-TERM MAINTENANCE PLAN (PLAN) IS DEPICTED ON EXHIBIT A TO THE PERMIT AND INCLUDES WITHOUT LIMITATION THE STORM SEWER, SWALES, CATCH BASINS, MANHOLES, INLETS, BIORETENTION AREA, OVERFLOW STRUCTURE AND OUTLET PIPE THAT CONVEYS FLOW FROM THE BIORETENTION TO NORTH ABBEY WOODS. FOR THE PURPOSES OF THIS PLAN, THIS STORM WATER MANAGEMENT SYSTEM AND ALL OF ITS COMPONENTS AS SHOWN ON EXHIBIT A IS REFERRED TO AS NORTH ABBEY WOODS SWMS.

B. TIME FRAME FOR LONG-TERM MAINTENANCE RESPONSIBILITY

NORTH ABBEY WOODS IS RESPONSIBLE FOR MAINTAINING THE NORTH ABBEY WOODS SWMS, INCLUDING COMPLYING WITH APPLICABLE REQUIREMENTS OF THE LOCAL OR WAYNE COUNTY SOIL EROSION AND SEDIMENTATION CONTROL PROGRAM, UNTIL WAYNE COUNTY RELEASES THE CONSTRUCTION PERMIT. LONG-TERM MAINTENANCE RESPONSIBILITY FOR THE NORTH ABBEY WOODS SWMS COMMENCES WHEN DEFINED BY THE MAINTENANCE PERMIT ISSUED BY THE COUNTY. LONG-TERM MAINTENANCE CONTINUES IN PERPETUITY.

C. MANNER OF ENSURING MAINTENANCE RESPONSIBILITY

CANTON TOWNSHIP HAS ASSUMED RESPONSIBILITY FOR LONG-TERM MAINTENANCE OF NORTH ABBEY WOODS SWMS. THE RESOLUTION BY WHICH THE CITY HAS ASSUMED MAINTENANCE RESPONSIBILITY IS ATTACHED TO THE PERMIT AS EXHIBIT C. NORTH ABBEY WOODS THROUGH A MAINTENANCE AGREEMENT WITH THE TOWNSHIP, HAS AGREED TO PERFORM THE MAINTENANCE ACTIVITIES REQUIRED BY THIS PLAN. CANTON TOWNSHIP RETAINS THE RIGHT TO ENTER THE PROPERTY AND PERFORM THE NECESSARY MAINTENANCE OF THE NORTH ABBEY WOODS SWMS IF NORTH ABBEY WOODS FAILS TO PERFORM THE REQUIRED MAINTNANCE ACTIVITIES. TO ENSURE THAT THE NORTH ABBEY WOODS SWMS IS MAINTAINED IN PERPETUITY, THE MAP OF THE PHYSICAL LIMITS OF THE STORM WATER MANAGEMENT SYSTEM (EXHIBIT A), THIS PLAN (EXHIBIT B), THE RESOLUTION ATTACHED AS EXHIBIT C, AND THE MAINTENANCE AGREEMENT BETWEEN THE CANTON TOWNSHIP AND THE PROPERTY OWNER(S) WILL BE RECORDED WITH THE WAYNE COUNTY REGISTER OF DEEDS. UPON RECORDING, A COPY OF THE RECORDED DOCUMENTS WILL BE PROVIDED TO THE COUNTY.

D. LONG TERM MAINTENANCE PLAN AND SCHEDULE

TABLE 1 IDENTIFIES THE MAINTENANCE ACTIVITIES TO BE PERFORMED, ORGANIZED BY CATEGORY (MONITORING/INSPECTION, PREVENTATIVE MAINTENANCE, AND REMEDIAL ACTIONS). WHILE PERFORMING MAINTENANCE, CHEMICALS SHOULD NOT BE APPLIED TO THE FOREBAY, DETENTION BASIN, BUFFER STRIP, OR WATERCOURSES. TABLE 1 ALSO IDENTIFIES SITE-SPECIFIC WORK NEEDED TO ENSURE THAT THE STORM WATER MANAGEMENT SYSTEM FUNCTION PROPERLY AS DESIGNED.

PROPERTY OWNER

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9313 HAGGERTY ROAD
PLYMOUTH, MI 48170
PH. (734) 812-5791
CONTACT: TONY SPAGNOLI

ENGINEER

ALLSTATE ENGINEERING
17060 CEDARCROFT
SOUTHFIELD, MI 48076
CONTACT: KEVIN HARDY
(734) 756-2196

DATE:	5-29-18	EXHIBIT "B" STORM MAINENANCE NORTH ABBEY WOODS JOY ROAD, CANTON TWSP, WAYNE COUNTY, MI
JOB No.	2018-06	
DWG No.	D-	
SHEET:	1 of 1	
SCALE:	N/A	

HARDY
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