

LEGAL DESCRIPTION

OVERALL PARCEL:
PART OF LOT 72, ALL OF LOTS 73-78, PART OF LOT 79, ALL OF LOTS 80-81, AND PART OF LOT 82 OF "ASSESSOR'S NORTHVILLE PLAT NO. 1", AS RECORDED IN LIBER 66 OF PLATS, PAGE 45, WAYNE COUNTY RECORDS; ALSO PART OF LOT 171 AND ALL OF LOTS 172-196 AND PART OF LOT 197 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS; ALSO ALL OF THAT PART VACATED CHURCH STREET AND VACATED BEAL AVENUE AS VACATED PER RESOLUTION RECORDED IN LIBER 2023, PAGE 101, WAYNE COUNTY RECORDS;

ALL OF THE AFOREMENTIONED BEING MORE PARTICULARLY DESCRIBED AS:
COMMENCING AT THE NORTHWEST CORNER OF LOT 168 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N84°33'43"E 174.61 FEET ALONG THE SOUTH LINE OF CADY STREET (50 FEET WIDE) TO THE NORTHWEST CORNER OF LOT 171 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; FOR A POINT OF BEGINNING; THENCE ALONG THE SOUTH LINE OF SAID CADY STREET THE FOLLOWING THREE (3) COURSES; 1) N84°53'43"E 682.35 FEET, 2) N79°20'27"E 42.12 FEET, AND 3) N85°47'04"E 218.30 FEET; THENCE ALONG THE WESTERLY LINE OF GRISWOLD STREET (VARIABLE WIDTH) THE FOLLOWING FIVE (5) COURSES; 1) S00°52'19"E 133.33 FEET, 2) S80°05'20"W 3.01 FEET, 3) S04°23'30"E 133.80 FEET, 4) N85°45'59"E 15.98 FEET, AND 5) S04°24'37"E 129.36 FEET; THENCE N84°12'51"W 100.00 FEET ALONG THE NORTH LINE OF BEAL AVENUE (50 FEET WIDE); THENCE S05°47'09"W 50.00 FEET ALONG THE EASTERLY LINE OF THAT PORTION OF VACATED BEAL AVENUE PER RESOLUTION RECORDED IN LIBER 2023, PAGE 101, WAYNE COUNTY RECORDS; THENCE S84°12'51"E 289.65 FEET ALONG THE SOUTH LINE OF SAID BEAL AVENUE; THENCE ALONG THE WEST LINE OF RIVER STREET THE FOLLOWING THREE (3) COURSES; 1) S09°44'28"E 227.57 FEET, 2) S15°01'28"E 427.16 FEET, AND 3) S15°34'36"E 462.92 FEET; THENCE S85°45'58"W 238.48 FEET; THENCE N89°00'21"W 563.09 FEET; THENCE N43°05'04"W 95.18 FEET; THENCE ALONG THE SOUTH LINE OF SAID LOT 183 THE FOLLOWING FOUR (4) COURSES; 1) S78°30'11"W 254.94 FEET, 2) S78°39'12"W 117.60 FEET, 3) N77°44'48"W 142.02 FEET, AND 4) N57°47'56"W 135.76 FEET; THENCE N05°49'49"W 578.08 FEET ALONG THE EAST LINE OF CENTER STREET (60 FEET WIDE); THENCE N05°12'42"W 537.43 FEET CONTINUING ALONG THE EAST LINE OF SAID CENTER STREET; THENCE N84°59'05"E 130.92 FEET ALONG THE SOUTH LINE OF LOT 164 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N04°02'34"W 179.19 FEET ALONG THE WEST LINE OF SAID LOT 174; THENCE N84°20'38"E 63.77 FEET ALONG THE SOUTH LINE OF LOTS 170 AND 171 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N05°05'12"W 114.16 FEET; THENCE S84°53'43"W 24.00 FEET; THENCE N05°05'12"W 12.00 FEET ALONG THE WEST LINE OF SAID LOT 171 TO THE POINT OF BEGINNING.

PARKING PARCEL:
LOT 223, LOT 224, LOT 226, LOT 227, LOT 228, AND PART OF LOT 225 OF "ASSESSOR'S NORTHVILLE PLAT NO. 3", AS RECORDED IN LIBER 66 OF PLATS, PAGE 43, WAYNE COUNTY RECORDS, MORE PARTICULARLY DESCRIBED AS: BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 223; THENCE S05°09'49"E 485.34 FEET ALONG THE WEST LINE OF CENTER STREET; THENCE N05°14'17"W 87.63 FEET ALONG THE NORTH LINE OF EDWARD HINES DRIVE; THENCE CONTINUING ALONG THE NORTH LINE OF SAID EDWARD HINES DRIVE, 258.72 FEET ALONG A 1842.59 FOOT CURVE TO THE RIGHT, SAID CURVE HAVING A CENTRAL ANGLE OF 08°02'42", AND A CHORD WHICH BEARS N74°02'51"W 258.51 FEET; THENCE N04°38'15"W 228.14 FEET ALONG THE EAST LINE OF SOUTH WING STREET; THENCE N84°11'48"E 49.85 FEET; THENCE S04°32'04"E 29.85 FEET; THENCE N84°10'17"E 161.44 FEET ALONG THE NORTH LINE OF SAID LOT 226; THENCE N05°57'44"W 160.02 FEET ALONG THE WEST LINE OF SAID LOT 224; THENCE N82°12'58"E 115.10 FEET ALONG THE SOUTH LINE OF FAIRBROOK STREET TO THE POINT OF BEGINNING.

VACANT PARCEL:
LOT 219 AND LOT 220 OF "ASSESSOR'S NORTHVILLE PLAT NO. 3", AS RECORDED IN LIBER 66 OF PLATS, PAGE 43, WAYNE COUNTY RECORDS, CITY OF NORTHVILLE, WAYNE COUNTY, MICHIGAN.

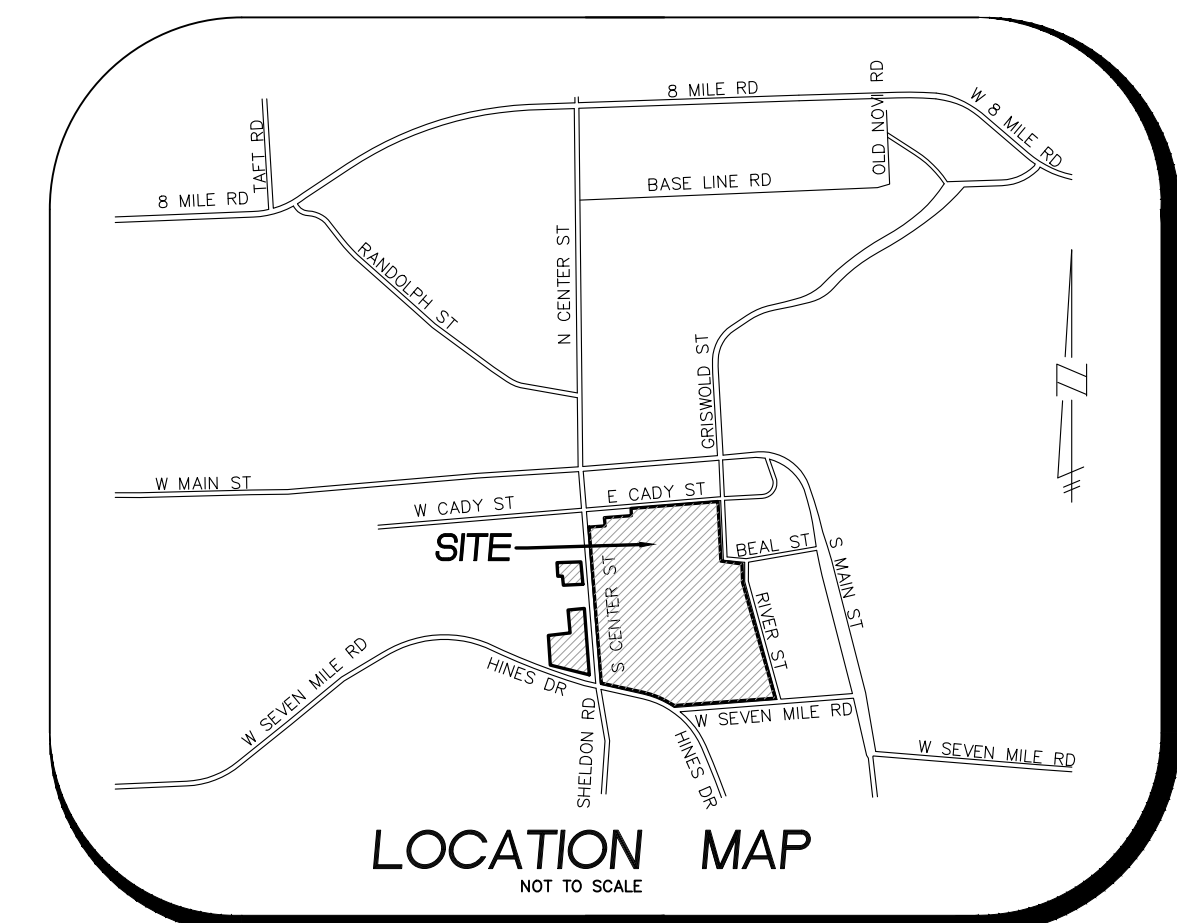
FINAL SITE PLAN FOR SOUTH

THE DOWNS

DOWNTOWN NORTHVILLE

SECTION 3, T1S, R8E, CITY OF NORTHVILLE WAYNE COUNTY, MICHIGAN
PREPARED FOR:
HUNTER PASTEUR, NORTHVILLE, LLC

32300 NORTHWESTERN HWY, SUITE 230
FARMINGTON HILLS, MI 48334

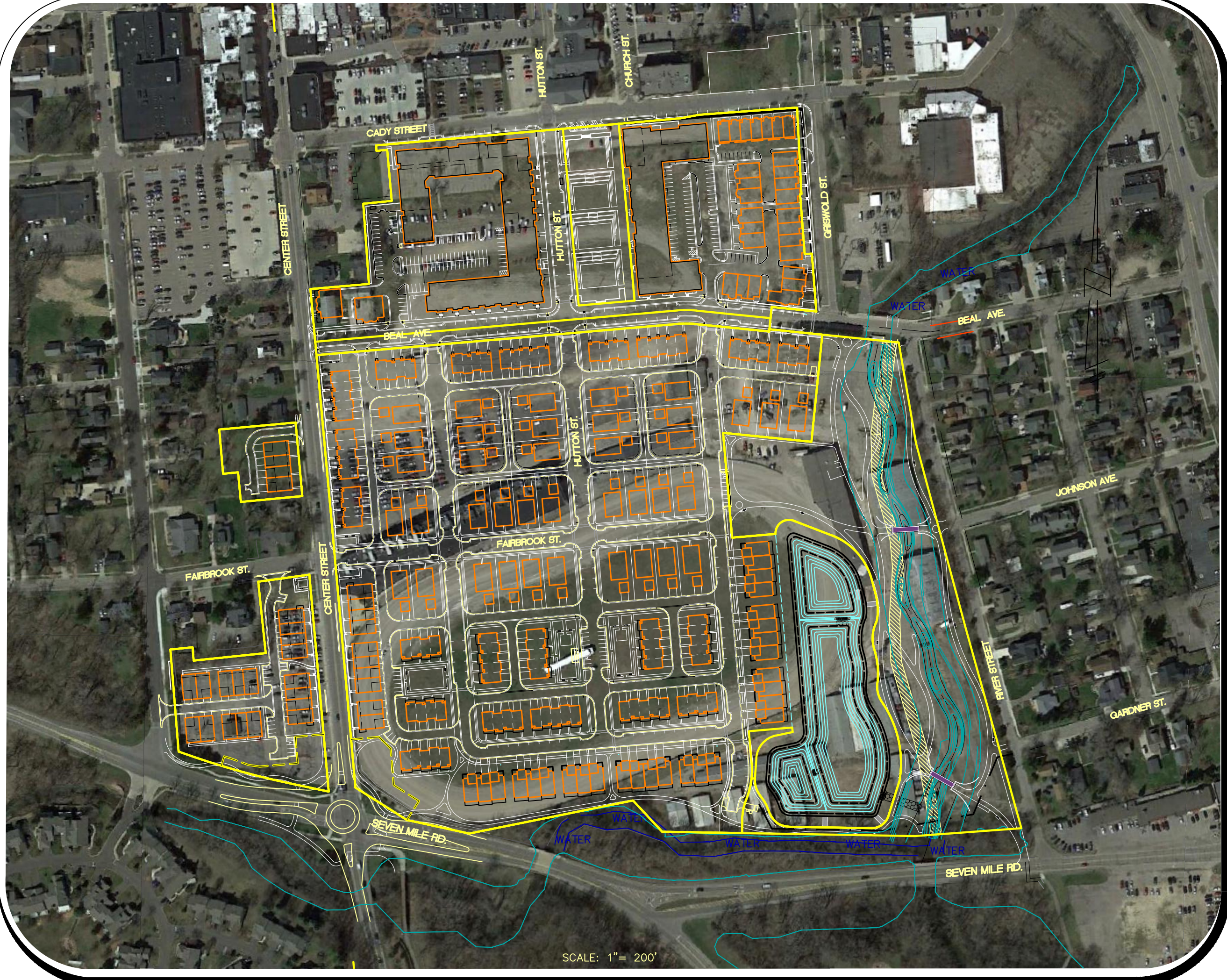


SHEET INDEX

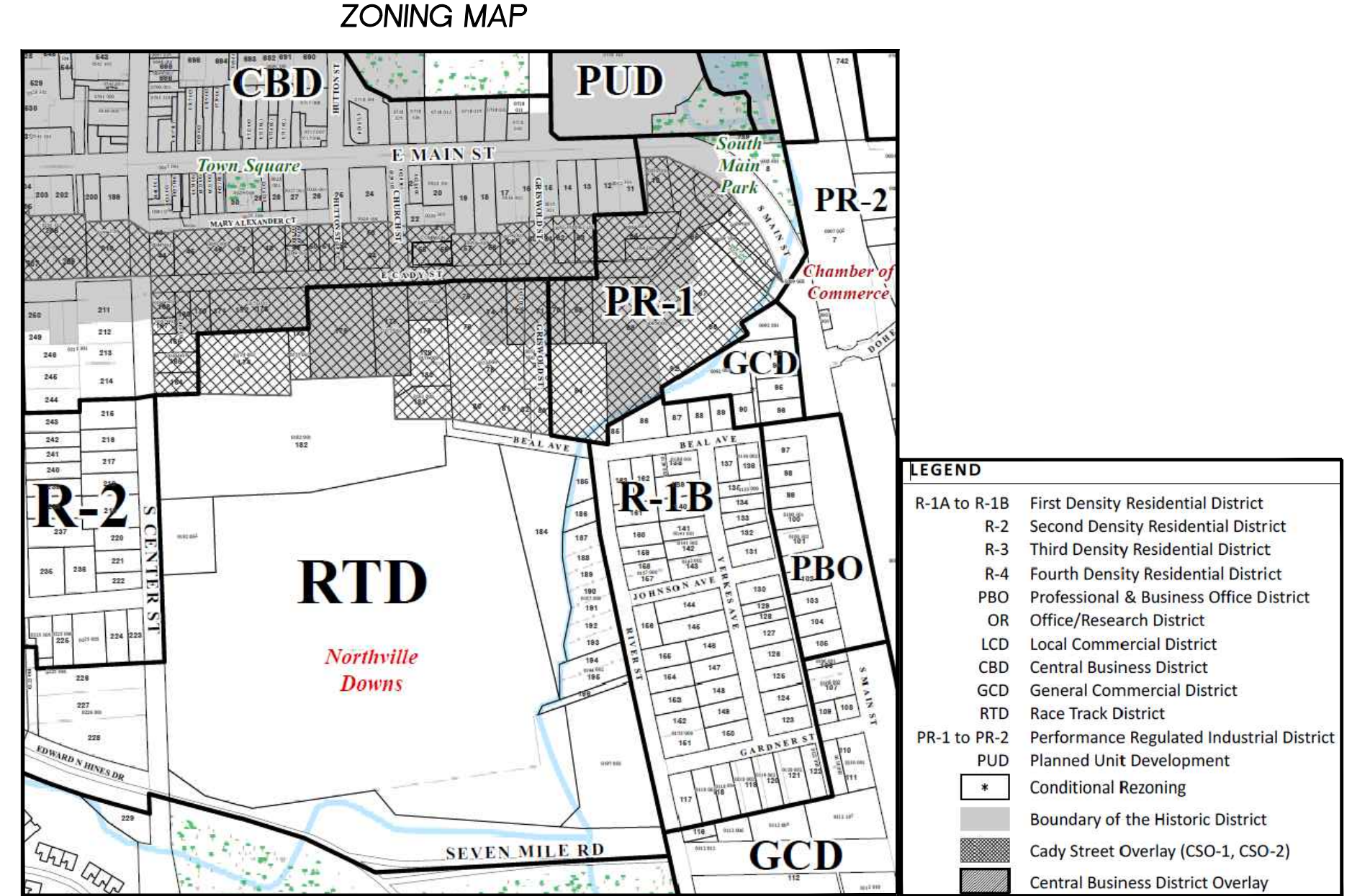
1.	COVER SHEET
2.-6.	TOPOGRAPHIC SURVEY PLANS
6A.-6B.	BOUNDARY SURVEY
7.	DEMOLITION PLAN
7A.-7C.	TREE LOCATION SURVEY
8.	OVERALL SITE PLAN
8A.	COMPOSITE UTILITY PLAN
9.-13.	GRADING PLAN
14.	ROAD CROSS SECTIONS
15.-28.	ROAD & WATER MAIN PLAN AND PROFILE
29.-39.	SANITARY SEWER PLAN AND PROFILE
40.-50.	STORM SEWER PLAN AND PROFILE
51.	STORM SEWER CALCULATIONS
52.	DRAINAGE DISTRIBUTION PLAN
53.	STORM WATER MANAGEMENT PLAN- AREA 1
54.	DETENTION BASIN PLAN AND PROFILE
55.	DETENTION BASIN PROFILE AND CALCS.
56.	STORM WATER MANAGEMENT PLAN- BASIN 2
57.-58.	UNDERGROUND DETENTION BASIN DETAILS-BASIN 2
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60.	FLOODPLAIN PLAN
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62.	EMERGENCY VEHICLE ACCESS PLAN
63.	ACCESSIBLE ROUTE PLAN
64.	POTENTIAL ROUNDABOUT PLAN
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68.	OPEN SPACE PLAN
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ND.	NOTES AND DETAILS
WC-1	WAYNE COUNTY STANDARD DETAILS
WC-2	WAYNE COUNTY STANDARD DETAILS
M-1	ADA RAMP, CROSSING AND PARKING DETAILS
CITY OF NORTHVILLE STANDARD DETAILS	
SANITARY SEWER CONSTRUCTION DETAILS STORM	
SEWER CONSTRUCTION DETAILS WATER MAIN	
CONSTRUCTION DETAILS	

WAYNE COUNTY DPS GENERAL NOTES:

- ALL WORK WITHIN THE WAYNE COUNTY ROAD RIGHT-OF-WAY (ROW) AND DRAIN EASEMENT 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 2012 SPECIFICATIONS FOR CONSTRUCTION.
- THESE PLANS ARE NOT VALID WITHOUT ATTACHMENT OF THE WAYNE COUNTY PERMIT SPECIFICATIONS FOR CONSTRUCTION WITHIN THE ROAD ROW, PARKS, DRAIN EASEMENT OR SANITARY SEWER UNDER JURISDICTION OF THE WAYNE COUNTY (07/01/193) REVISED 12/15/2004
- CONTRACTOR SHALL CONTACT MISS DIG 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.
- 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 8 FEET BELOW THE DRAIN BOTTOM. OVERHEAD WIRE/CABLES MUST BE INSTALLED 18 FEET MINIMUM ABOVE THE ROAD CENTERLINE. TO RELOCATE ANY UTILITY WITHIN THE ROAD ROW, THE CONTRACTOR SHALL COORDINATE THE RELOCATION WITH THE UTILITY COMPANY AND AS DIRECTED BY THE WAYNE COUNTY ENGINEER.
- ALL SURVEY MONUMENTS / CORNERS AND BENCH MARKS 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.
- 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 AS DIRECTED BY THE WAYNE COUNTY ENGINEER.
- CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS WITHIN THE WAYNE COUNTY ROAD ROW AND DRAIN EASEMENT WITH 3" TOPSOIL, 1/8" SEED MIX AND MULCH. SLOPES STEEPER THAN 1 ON 3 SHALL BE RESTORED BY PLACING SOG ON 2" TOPSOIL.
- 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 ROW AREAS UNDER CONDITIONS OTHER THAN THOSE SPECIFIED FOR TRENCH "B".
- CONTRACTOR IS RESPONSIBLE FOR RESTORING OR REPLACING ALL DISTURBED LANDSCAPED AREAS, SPRINKLER SYSTEMS, FENCES, SIGNS, MAIL BOXES, ETC. WITHIN THE WAYNE COUNTY ROAD ROW AND / OR AS DIRECTED BY THE COUNTY ENGINEER.
- CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC AT ALL TIMES, OTHERWISE, DETOURING TRAFFIC MUST BE PER APPROVED PLANS. ALL SIGNING AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF M.U.T.C.D.
- MAINTAIN A SAFE AND ADEQUATE TRAVEL ROUTE FOR PEDESTRIANS AT ALL TIMES THROUGHOUT THE PROJECT DURATION.
- OVERNIGHT VEHICLE PARKING AND STORAGE OF CONSTRUCTION MATERIALS AND EQUIPMENTS ARE NOT PERMITTED WITHIN THE WAYNE COUNTY ROADS RIGHTS-OF-WAY.
- CONTRACTOR SHOULD OBTAIN SOIL EROSION AND SEDIMENTATION CONTROL PERMIT FROM THE WAYNE COUNTY DOE. CONTACT MR. JOHN JONES AT (734) 326-5565.
- CONTRACTOR SHALL NOTIFY THE WAYNE COUNTY TRAFFIC SIGNAL SHOP AT (734) 955-2154 AT LEAST 72 HOURS PRIOR TO START OF WORK AT OR NEAR ANY SIGNALIZED INTERSECTIONS.
- CONTRACTOR SHALL NOTIFY WAYNE COUNTY 72 HOURS PRIOR TO START OF CONSTRUCTION, CONTACT THE PERMIT OFFICE AT (734) 595-6504 EXTENTION 2009.



ACCORDING TO THE FLOOD INSURANCE RATE MAP NUMBER 26163C0185E THIS SITE IS LOCATED IN A 100-YEAR FLOOD PLAIN.



BENCHMARKS

- RIM OF SANITARY MANHOLE AT THE INTERSECTION OF CENTER STREET AND FAIRBROOK STREET. MANHOLE IS 3.5' EAST OF THE CENTERLINE OF CENTER STREET AND 17.5' SOUTH OF THE CENTERLINE OF FAIRBROOK STREET. ELEVATION 780.07' (NAVD88)
 - RIM OF SANITARY MANHOLE AT THE INTERSECTION OF RIVER STREET AND BEAL STREET. MANHOLE IS 10' NORTH OF THE CENTERLINE OF BEAL STREET AND 1' WEST OF THE CENTERLINE OF RIVER STREET. ELEVATION 777.58' (NAVD88)
- NOTE: ALL ELEVATIONS SHOWN THROUGHOUT THE PLAN SET ARE ON NAVD88 DATUM.

15/2023-01-10 10:00 AM: THE COMPANY: HUNTER PASTEUR ARCHITECTS, LLC, 32300 NORTHWESTERN HWY, FARMINGTON HILLS, MI 48334, 734.955.2154

ARCHITECT ENGINEER BY:
ELKUS MANFREDI ARCHITECTS
25 DRYDOCK AVENUE SUITE 710E
BOSTON, MA 02210
PHONE: 617.638.3488

ENVIRONMENTAL CONSULTANT BY:
BARR ENGINEERING CO.
3005 BOARDWALK DRIVE, SUITE 100
ANN ARBOR, MI 48108
PHONE: 734.922.4400

SURVEY PROVIDED BY:
ALPINE ENGINEERING, INC.
46892 WEST ROAD, SUITE 109
NOVI, MI 48375
PHONE: 248.926.3765

LANDSCAPE PLAN PROVIDED BY:
GRISSIM METZ ANDRIESE ASSOCIATES
15000 EDWARD N. HINES DR., SUITE A
PLYMOUTH, MI 48170
PHONE: 248.347.7010

Hunter Pasteur
HOMES

THE FORBES COMPANY

Toll Brothers
AMERICA'S LUXURY HOME BUILDER

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

CLINTON TOWNSHIP OFFICE
17001 NINETEEN MILE ROAD, SUITE 3
CLINTON TOWNSHIP, MI 48038
586.412.7050

FARMINGTON HILLS OFFICE
39206 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
248.308.3331

AGENCY PERMITS REQUIRED

TITLE	DATE	PERMIT NO.	STATUS
1	EGLE PERMIT - PART 301 INLAND LAKE & STREAMS	TBD	TBD
2	EGLE PERMIT - ACT 399 WATER PERMIT	TBD	TBD
3	EGLE PERMIT - PART 41 - SANITARY SEWER	TBD	TBD
4	OCWRC HRSDS SANITARY CONNECTION CHAPTER 21 DRAIN	TBD	TBD
5	WAYNE COUNTY DEPT. OF ENV. - 7 MILE INTERCEPTOR CONNECTION	TBD	TBD
6	WAYNE COUNTY SOIL EROSION AND SEDIMENTATION CONTROL PERMIT	TBD	TBD
7	WAYNE COUNTY STORM WATER MANAGEMENT PERMIT TO CONSTRUCT, OPERATE, USE AND/OR MAINTAIN	6/9/2023	R21-316 APPROVED
8	CITY OF NORTHVILLE FIRE	TBD	TBD

Total South Site (BASIN 1 & 2) Land Use Summary

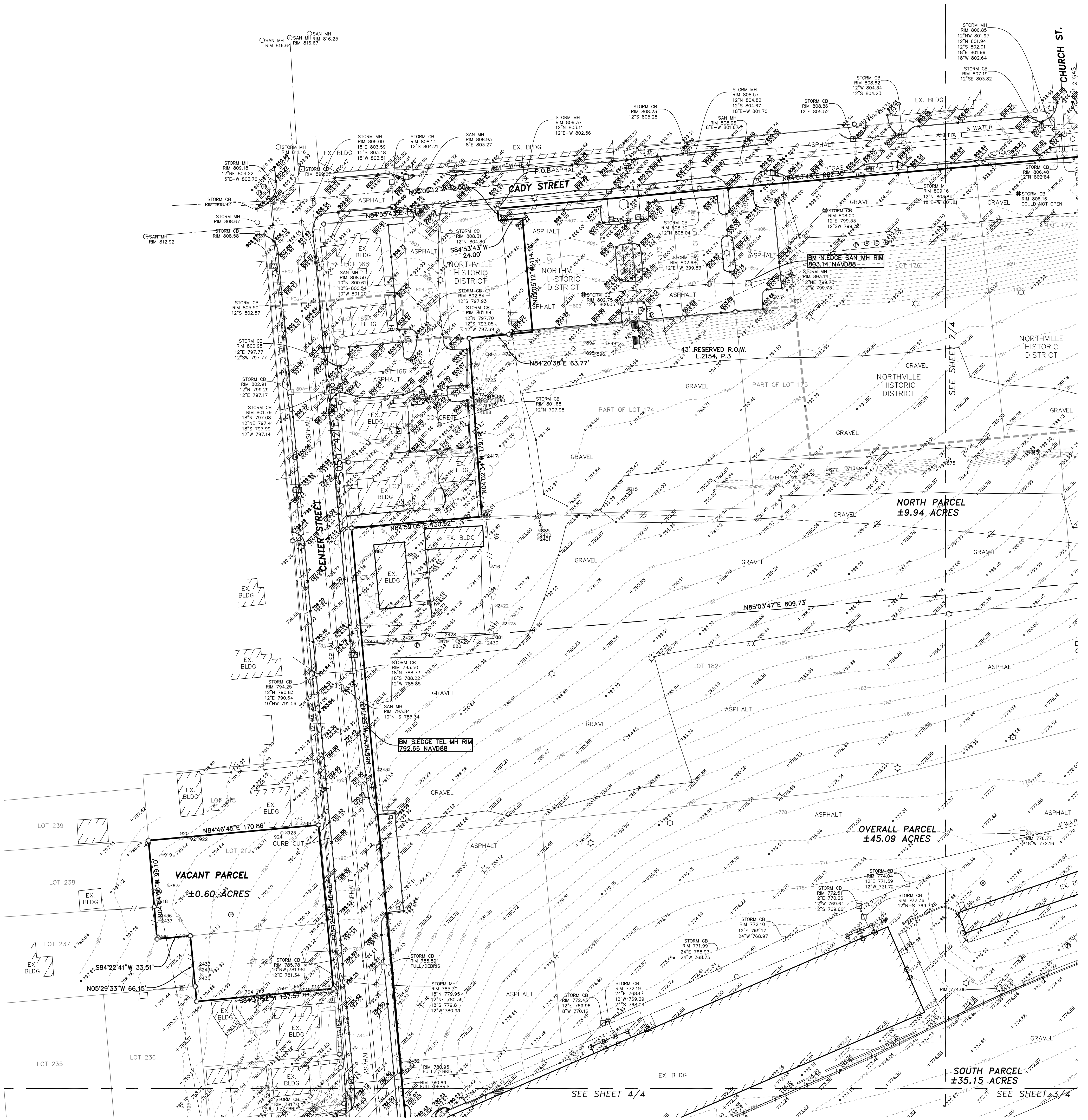
Characteristic	Existing Conditions	Proposed Conditions
	Total Development Area (ac)	32.31
Impervious Area (ac)	13.37	17.29
Total Pervious Area (ac)	18.94	15.02
Pervious Area Breakdown by Cover Type		
Meadow/fallow/natural areas (non-cultivated)	18.89	N/A
Predominant NRCS Soil Type (A, B, C, or D)	Type A	N/A
Improved areas (turf grass, landscape, rpw crops)	0	15.02
Predominant NRCS Soil Type (A, B, C, or D)	N/A	Type A
Wooded Areas	0.05	N/A
Predominant NRCS Soil Type (A, B, C, or D)	Type A	N/A
Calculated BANK FULL Volume (cubic feet)		100652
BANKFULL Volume Provided (cubic feet)		100652

REVISIONS

NO.	REVISION	DATE
1	100% SCHEMATIC DESIGN	06-10-2023
2	50% DESIGN DEVELOPMENT	02-03-2023
3	FINAL SITE PLAN	04-14-2023
4	REV PER CITY REVIEW	09-08-2023

ENGINEER'S SEAL

- LEGEND**
- EX. CATCH BASIN
 - EX. MANHOLE
 - EX. END SECTION
 - EX. OVERFLOW STRUCTURE
 - EX. CLEANOUT
 - EX. HYDRANT
 - EX. WATER SHUTOFF
 - EX. FIRE DEPT. CONNECTION
 - EX. WATER WELL
 - EX. LIGHTPOLE
 - EX. UTILITY POLE
 - EX. GUY ANCHOR
 - EX. TRAFFIC SIGNAL
 - EX. GAS SHUTOFF
 - EX. GAS VENT
 - EX. HANDHOLE
 - EX. PEDESTAL
 - EX. TRANSFORMER
 - EX. GENERATOR
 - EX. GAS METER
 - EX. ELECTRIC METER
 - EX. AIR CONDITIONER
 - EX. RAILROAD SIGNAL
 - EX. SIGN
 - EX. POST/BOLLARD
 - EX. FLAGPOLE
 - EX. MAILBOX
 - EX. PARKING METER
 - EX. SATELLITE DISH
 - EX. SOIL BORING
 - EX. MONITOR WELL
 - FOUND IRON
 - SET IRON
 - EX. BOULDER
 - EX. TREE STUMP
 - EX. TREE
 - EX. TREE TAG & NUMBER
 - EX. TREE LINE
 - EX. FENCE
 - EX. SANITARY SEWER
 - EX. STORM SEWER
 - EX. WATER MAIN
 - EX. ELECTRIC CABLE
 - EX. COMMUNICATION
 - EX. GAS LINE
 - EX. OVERHEAD LINE
 - - - HISTORIC DISTRICT BOUNDARY



UTILITY NOTE:
GAS MAIN AND WATER MAIN ARE SHOWN ON SURVEY AS DIGITIZED FROM UTILITY MAP. LOCATION OF LINES ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED IN THE FIELD.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

NOTE:
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AS DISCLOSED BY AVAILABLE UTILITY COMPANY RECORDS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE COMPANY. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY IF A CONFLICT IS APPARENT.

ALPINE ENGINEERING INC.
CIVIL ENGINEERS & LAND SURVEYORS

COMMERCIAL
SITE PLANNING
SITE ENGINEERING
INDUSTRIAL & MULTI-UNIT
LAND SURVEYING
CONSTRUCTION LAYOUT

SURVEYING
ALTA SURVEYS
BOUNDARY SURVEYS
TOPOGRAPHIC SURVEYS
PARCEL SPLITS

RESIDENTIAL
SUBDIVISIONS
SITE CONDOMINIUM
MULTI-FAMILY
SPLIT PLANS
CONSTRUCTION LAYOUT

46892 WEST ROAD
SUITE 109
NOVI, MICHIGAN 48377

(248) 926-3701 (BUS)
(248) 926-3765 (FAX)
WWW.ALPI-INC.NET

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CLIENT: HUNTER PASTEUR, NORTHVILLE, LLC

TOPOGRAPHIC SURVEY (NW)

SECTION: 3 TOWNSHIP: 15S RANGE: 8E
CITY OF NORTHVILLE WAYNE COUNTY MICHIGAN

REVISED	4/29/19 ADDED UTILITIES
	3/13/23 REVISED BOUNDARY
DATE: 7-3-18	
DRAWN BY: JRJ	
CHECKED BY: JDH	
FBK: 340	2
CHF: MJ	17-549
SCALE: HOR 1" = 50 FT. VER 1" = 10 FT.	

- LEGEND**
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RESIDENTIAL
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LOT PLANS
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(248) 926-3701 (BUS)
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CLIENT: HUNTER PASTEUR, NORTHVILLE, LLC

TOPOGRAPHIC SURVEY (NE)

RANGE: 8E
TOWNSHIP: 15S
CITY OF NORTHVILLE
WAYNE COUNTY
MICHIGAN

SECTION: 3

REVISED

4/29/19 ADDED UTILITIES

3/13/23 REVISED BOUNDARY

DATE: 7-3-18

DRAWN BY: JRJ

CHECKED BY: JDH

SCALE: HOR 1" = 50 FT.
VER 1" = 5 FT.

FBK: 340

CHF: MJ

3

17-549

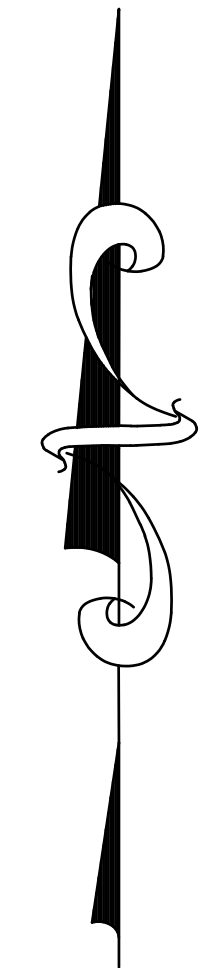
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GAS MAIN AND WATER MAIN ARE SHOWN ON SURVEY AS DIGITIZED FROM UTILITY MAP. LOCATION OF LINES ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED IN THE FIELD.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

NOTE:
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AS DISCLOSED BY AVAILABLE UTILITY COMPANY RECORDS AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE COMPANY. NO GUARANTEE IS EITHER EXPRESSED OR IMPLIED AS TO THE COMPLETENESS OR ACCURACY THEREOF. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE CONTRACTOR SHALL NOTIFY THE DESIGN ENGINEER IMMEDIATELY IF A CONFLICT IS APPARENT.



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SITE ENGINEERING
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LAND SURVEYING
CONSTRUCTION LAYOUT

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LAND PLANS
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ALPINE ENGINEERING, INC.
CIVIL ENGINEERS & LAND SURVEYORS

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NOVI, MICHIGAN 48377

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Know what's below
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CLIENT: HUNTER PASTEUR, NORTHVILLE, LLC

TOPOGRAPHIC SURVEY (SE)

RANGE: 8E
TOWNSHIP: 15S
CITY OF NORTHVILLE
WAYNE COUNTY
MICHIGAN

SECTION: 3

REVISED	
4/29/19 ADDED UTILITIES	
3/13/23 REVISED BOUNDARY	
DATE: 7-3-18	
DRAWN BY: JRV	
CHECKED BY: JDH	
FBK: 340	4
CHF: MJ	
SCALE: HOR 1" = 50 FT. VER 1" = 10 FT.	17-549

- LEGEND**
- EX. CATCH BASIN
 - EX. MANHOLE
 - EX. END SECTION
 - EX. OVERFLOW STRUCTURE
 - EX. CLEANOUT
 - EX. HYDRANT
 - EX. WATER SHUTOFF
 - EX. FIRE DEPT. CONNECTION
 - EX. WATER WELL
 - EX. LIGHTPOLE
 - EX. UTILITY POLE
 - EX. GUY ANCHOR
 - EX. TRAFFIC SIGNAL
 - EX. GAS SHUTOFF
 - EX. GAS VENT
 - EX. HANDHOLE
 - EX. PEDESTAL
 - EX. TRANSFORMER
 - EX. GENERATOR
 - EX. GAS METER
 - EX. ELECTRIC METER
 - EX. AIR CONDITIONER
 - EX. RAILROAD SIGNAL
 - EX. SIGN
 - EX. POST/BOLLARD
 - EX. FLAGPOLE
 - EX. MAILBOX
 - EX. PARKING METER
 - EX. SATELLITE DISH
 - EX. SOIL BORING
 - EX. MONITOR WELL
 - FOUND IRON
 - SET IRON
 - EX. BOULDER
 - EX. TREE STUMP
 - EX. TREE
 - EX. TREE TAG & NUMBER
 - EX. TREE LINE
 - EX. FENCE
 - EX. SANITARY SEWER
 - EX. STORM SEWER
 - EX. WATER MAIN
 - EX. ELECTRIC CABLE
 - EX. COMMUNICATION
 - EX. GAS LINE
 - EX. OVERHEAD LINE



UTILITY NOTE:
 GAS MAIN AND WATER MAIN ARE SHOWN ON SURVEY AS DIGITIZED FROM UTILITY MAP. LOCATION OF LINES ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED IN THE FIELD.

NOTICE:
 CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

NOTE:
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 ALTA SURVEYS
 BOUNDARY SURVEYS
 TOPOGRAPHIC SURVEYS
 PARCEL SPLITS

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CLIENT: HUNTER PASTEUR, NORTHVILLE, LLC

TOPOGRAPHIC SURVEY (SW)

SECTION: 3

TOWNSHIP: 15
 CITY OF NORTHVILLE
 WAYNE COUNTY
 MICHIGAN

RANGE: 8E

REVISED

4/29/19 ADDED UTILITIES

3/13/23 REVISED BOUNDARY

DATE: 7-3-18

DRAWN BY: JRV

CHECKED BY: JDH

FBK: 340

CHF: MJ

SCALE: HOR 1" = 50 FT.
 VER 1" = 10 FT.

5

17-549

Tag #	Dia. (inches)	Common Name	Condition
701	9	Cottonwood	Poor
702	11	Cottonwood	Good
703	12	Black Locust	Good
704	7, 8	Cottonwood	Good
705	8	Cottonwood	Good
706	10	Maple	Good
707	60	Black Locust	Poor, Stump
708	8, 7	Black Locust	Good
709	6, 8, 8	Black Locust	Good
710	9, 12	Black Locust	Good
711	8	Black Locust	Good
712	10	Box Elder	Good
713	10	Black Locust	Good
714	7, 8, 11	Black Locust	Good
715	10	Black Locust	Good
716	8	Black Locust	Good
717	7, 8	Black Locust	Good
718	6, 14	Black Locust	Good
719	10	Tree of Heaven	Good
720	9	Tree of Heaven	Good
721	9	Tree of Heaven	Good
722	10	Tree of Heaven	Good
723	8	Black Locust	Good
724	8	Black Locust	Good
725	9	Black Locust	Good
726	13	Pear	Good
727	11	Pear	Good
728	10	Pear	Good
729	11	Pear	Good
730	9	Pear	Good
731	11	Pear	Good
732	10	Pear	Good
733	14	Blue Spruce	Good
734	11	Blue Spruce	Good
735	9	Blue Spruce	Good
736	8, 9	Black Locust	Good
737	8	Black Locust	Good
738	9	Black Locust	Good
739	9	Black Locust	Good
740	6, 7, 12	Black Locust	Good
741	8	Black Locust	Good
742	17	Tree of Heaven	Good
743	8	Black Locust	Good
744	10	Black Locust	Good
745	8	Black Locust	Good
746	11	Black Locust	Good
747	9	Black Locust	Good
748	6, 10	Black Locust	Good
749	9	Black Locust	Good
750	8	Black Locust	Good
751	8	Black Locust	Good
752	18	Tree of Heaven	Good
753	6, 11, 14	Black Locust	Good
754	6, 11	Black Locust	Good
755	17	Black Locust	Good
756	24	Black Locust	Good
757	9, 11	Black Locust	Good
758	9	Black Locust	Good
759	14	Ash	Good
760	10	Black Locust	Good
761	9	Norway Maple	Good
762	13	Norway Maple	Good
763	14	Ash	Good
764	20	Ash	Good
765	24	Walnut	Good
766	8	Norway Maple	Good
767	11	Catalpa	Good

Tag #	Dia. (inches)	Common Name	Condition
768	11, 14	Walnut	Good
769	11	Blue Spruce	Good
770	16	Blue Spruce	Good
771	9	Black Locust	Fair
772	7	Black Locust	Good
773	4, 5, 6	Cedar	Good
774	3, 5, 5, 7	Cedar	Good
775	7, 7	Cedar	Good
776	7, 7	Cedar	Good
777	7, 8	Cedar	Good
778	11	Apple	Fair
779	4, 7	Cedar	Good
780	6, 6	Cedar	Good
781	7, 8	Cedar	Good
782	17, 18	Box Elder	Fair
783	6, 6	Cedar	Good
784	19	Black Locust	Good
785	7	Cedar	Good
786	14	Box Elder	Fair
787	11	Box Elder	Fair
788	10	Black Locust	Good
789	15	Black Locust	Good
790	17	Box Elder	Good
791	16	Box Elder	Fair
792	13	Oak	Good
793	8, 11	Apple	Good
794	5, 8, 9	Apple	Fair
795	7	Cedar	Good
796	12	Cedar	Good
797	9	Cedar	Good
798	15	Box Elder	Fair
799	9	Maple	Good
800	13	Box Elder	Poor
801	7	Box Elder	Poor
802	12	Box Elder	Poor
803	6, 7	Cedar	Good
804	9	Cedar	Good
805	34	Black Locust	Good
806	17	Ash	Fair
807	9	Scotch Pine	Fair
808	21	Ash	Good
809	11	Scotch Pine	Fair
810	15	Ash	Good
811	27	Ash	Good
812	9	Scotch Pine	Poor
813	17	Ash	Good
814	14	Maple	Good
815	13	Scotch Pine	Poor
816	18	Maple	Good
817	20	Maple	Good
818	14	Scotch Pine	Poor
819	14, 22	Maple	Good
820	12	Maple	Good
821	19	Maple	Good
822	11	Scotch Pine	Fair
823	8, 12	Maple	Good
824	17	Scotch Pine	Good
825	23	Maple	Good
826	21	Maple	Good
827	18	Maple	Good
828	7	Scotch Pine	Fair
829	16	Maple	Good
830	14	Maple	Poor
831	21	Maple	Good
832	14	Scotch Pine	Good
833	16	Scotch Pine	Fair
834	11	Apple	Poor, Dead

Tag #	Dia. (inches)	Common Name	Condition
835	8	Blue Spruce	Good
836	12	Locust	Good
837	10	Cedar	Good
838	11	Cedar	Good
839	10	Cedar	Good
840	9	Cedar	Good
841	9	Cedar	Good
842	10	Cedar	Good
843	10	Cedar	Good
844	10	Cedar	Good
845	12	Cedar	Good
846	10	Cedar	Good
847	11	Cedar	Good
848	7	Cedar	Good
849	13	Cedar	Good
850	12	Cedar	Good
851	12	Cedar	Good
852	13	Cedar	Good
853	11	Cedar	Good
854	12	Cedar	Good
855	11	Cedar	Good
856	10	Cedar	Good
857	11	Cedar	Good
858	10	Cedar	Good
860	13	Cedar	Good
861	11	Cedar	Good
862	6	Tree of Heaven	Good
863	6, 7	Black Locust	Good
864		Catalpa	Good
865	6	Cottonwood	Good
866	7	Black Locust	Good
867	6	Cottonwood	Good
868	6	Cottonwood	Good
869	8	Cottonwood	Good
870	7	Cottonwood	Good
871	8	Cottonwood	Good
872	8	Cottonwood	Good
873	5, 8	Cottonwood	Good
874	6	Cottonwood	Good
875	4, 4, 5, 5, 6	Cottonwood	Good
876	6, 4	Cottonwood	Good
877	7	Black Locust	Good
878	8	Black Locust	Good
879	6	Box Elder	Good
880	5, 7, 10	Black Locust	Good
881	8	Black Locust	Good
882	17	Black Locust	Good
883	8	Tree of Heaven	Good
884	23	Black Locust	Good
885	4, 7, 8	Box Elder	Good
886	6, 6, 6	Box Elder	Good
887	6	Box Elder	Good
888	7	Tree of Heaven	Good
889	6	Tree of Heaven	Good
890	7	Tree of Heaven	Good
891	5, 6, 7	Tree of Heaven	Good
892	7	Box Elder	Good
893	6, 6	Elm	Good
894	6, 7	Black Locust	Good
895	6	Black Locust	Good
896	7, 7	Black Locust	Good
897	8	Black Locust	Good
898	6, 7, 8	Black Locust	Good
899	7	Pear	Good
900	7	Black Locust	Good
901	7, 7	Maple	Good
902	6	Black Locust	Good

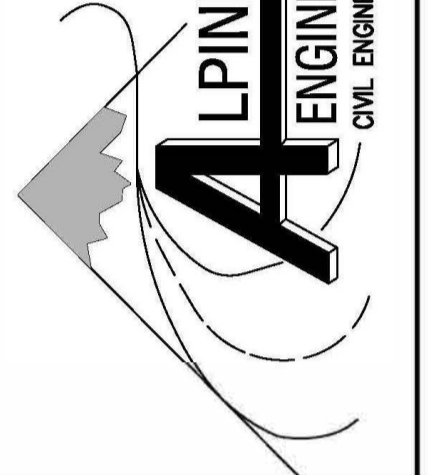
Tag #	Dia. (inches)	Common Name	Condition
903	6	Black Locust	Good
904	7	Black Locust	Good
905	8	Tree of Heaven	Good
906	5, 6, 7	Black Locust	Good
907	7	Tree of Heaven	Good
908	8	Box Elder	Good
909	18	Locust	Good
910	11	Pear	Good
911	11	Pear	Good
912	9	Pear	Good
913	9	Box Elder	Good
914	4, 7	Black Locust	Good
915	6, 7	Maple	Good
916	7, 5	Maple	Good
917	5, 6, 5, 4	Maple	Good
918	7	Maple	Good
919	7	Ash	Good
920	6	Cedar	Good
921	5, 6	Cedar	Good
922	6	Cedar	Good
923	8	Cedar	Good
924	5, 6	Cedar	Good
925	7	Cedar	Good
2401	31	Maple	Good
2402	10	Walnut	Good
2403	48	Walnut	Good
2404	18	Box Elder	Good
2405	11, 20	Elm	Good
2406			Not Used
2407	12	Elm	Good
2408	16	Maple	Good
2409	28	Ash	Fair
2410	10, 20	Locust	Good
2411	9, 14	Locust	Fair
2412	6, 8, 10, 10, 13	Locust	Fair
2413	8, 8, 10, 10, 14	Locust	Fair
2414	15	Black Locust	Good
2415	32	Maple, no tag	Good
2416	12	Blue Spruce	Good
2417	40	Black Locust	Good
2418	11	Tree of Heaven	Good
2419	13	Tree of Heaven	Fair
2420	12	Black Locust	Good
2421	12	Black Locust	Good
2422	22	Catalpa	Good
2423	41	Maple	Good
2424	15	Norway Maple	Good
2425	14	Cedar	Good
2426	15	Norway Maple	Fair
2427	13	Cedar	Good
2428	15	Maple	Good
2429	12	Cedar	Good
2430	18	Maple	Good
2431	12	Norway Maple	Good
2432	15	Locust	Good
2433	13	Box Elder	Good
2434	27	Box Elder	Good
2435	12	Box Elder	Good
2436			Not Used
2437	10	Box Elder	Good
2438	37	Black Locust	Good
2439	17, 20, 21	Cottonwood	Good
2440	9, 10, 13	Cottonwood	Good
2441	9	Box Elder	Poor
2442	19	Blue Spruce	Good
2443	14	Maple	Good
2444	14	Maple	Good
2445	14	Maple	Good
2446	14	Maple	Good
2447	12	Norway Maple	Good

TREES
REMOVED
166
TREES SAVED
105

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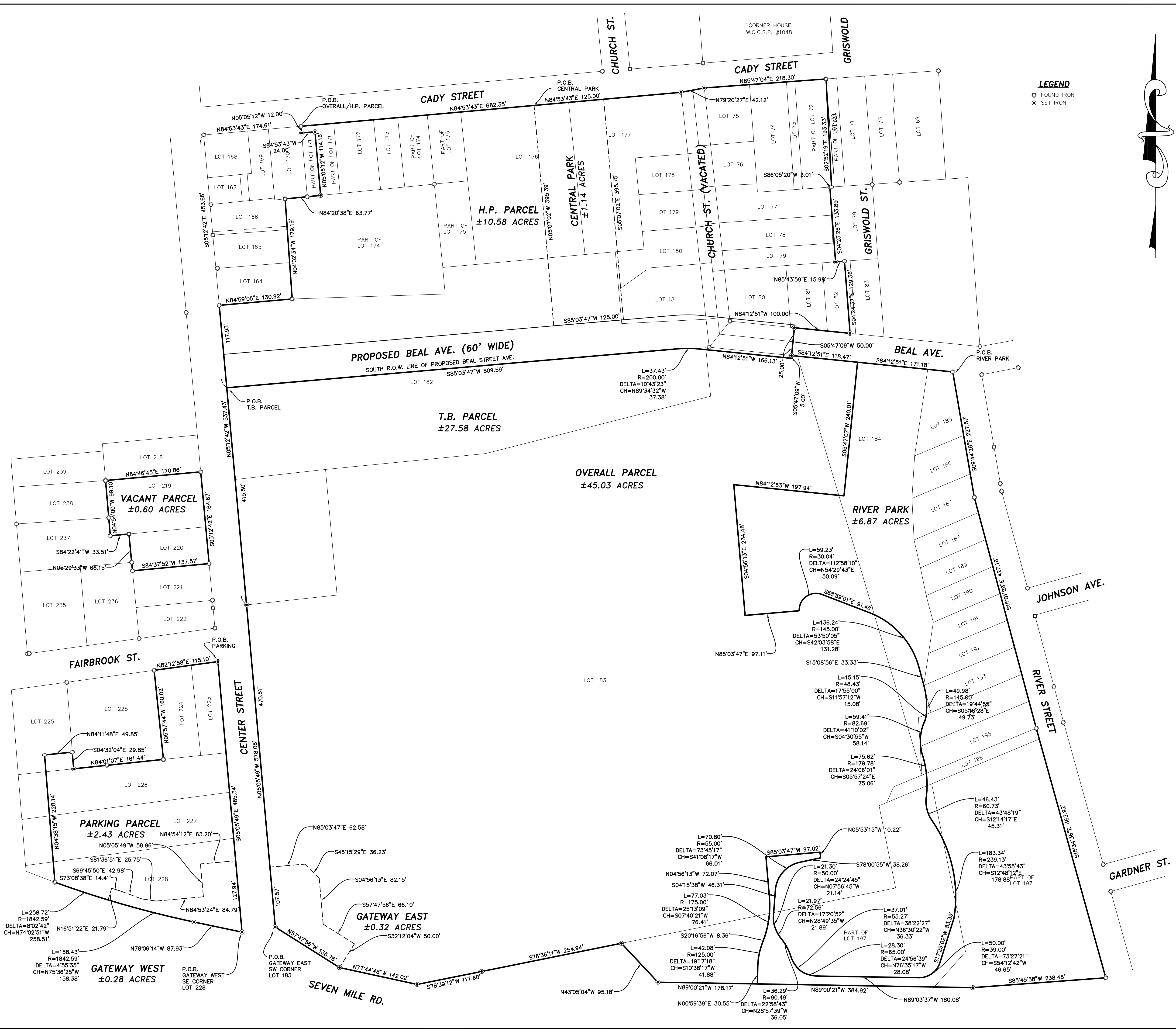
811
Know what's below
Call before you dig.

CLIENT: HUNTER PASTEUR, NORTHVILLE, LLC
TOWN: NORTHVILLE DOWNS
RANGE: BE
SECTION: 3
CITY: NORTHVILLE
WAYNE COUNTY
MICHIGAN

REVISED
3/13/23 REVISED BOUNDARY
9/6/23 UPDATED TREE LIST

DATE: 1-19-22
DRAWN BY: JRV
CHECKED BY: JDH

FBK: 393
CHF: RDF
SCALE: HOR 1" = 40 FT.
VER 1" = 4 FT.
17-549



LEGEND
 ○ FOUND IRON
 ● SET IRON

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CLIENT: HUNTER PASTEUR HOMES

BOUNDARY SURVEY

SECTION: 3 TOWNSHIP: 1S RANGE: 8E
 VILLAGE OF NORTHVILLE WAYNE COUNTY MICHIGAN

REVISED

DATE: 9-5-23

DRAWN BY: JDH

CHECKED BY: GLM

FBK:

CHP: MJ

SCALE: HOR 1"=80 FT.
 VER 1"=40 FT.

6A

17-549

DESCRIPTIONS:

OVERALL PARCEL:

PART OF LOT 72, ALL OF LOTS 73-78, PART OF LOT 79, ALL OF LOTS 80-81, AND PART OF LOT 82 OF "ASSESSOR'S NORTHVILLE PLAT NO. 1", AS RECORDED IN LIBER 66 OF PLATS, PAGE 45, WAYNE COUNTY RECORDS; ALSO PART OF LOT 171 AND ALL OF LOTS 172-196 AND PART OF LOT 197 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS; ALSO ALL OF THAT PART VACATED CHURCH STREET AND VACATED BEAL AVENUE AS VACATED PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS;

ALL OF THE AFOREMENTIONED BEING MORE PARTICULARLY DESCRIBED AS:
COMMENCING AT THE NORTHWEST CORNER OF LOT 168 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO.2"; THENCE N84°53'43"E 174.61 FEET ALONG THE SOUTH LINE OF CADY STREET (50 FEET WIDE) TO THE NORTHWEST CORNER OF LOT 171 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2" FOR A POINT OF BEGINNING; THENCE ALONG THE SOUTH LINE OF SAID CADY STREET THE FOLLOWING THREE (3) COURSES; 1) N84°53'43"E 682.35 FEET, 2) N79°20'27"E 42.12 FEET, AND 3) N85°47'04"E 218.30 FEET; THENCE ALONG THE WESTERLY LINE OF GRISWOLD STREET (VARIABLE WIDTH) THE FOLLOWING FIVE (5) COURSES; 1) S02°52'19"E 193.33 FEET, 2) S86°05'20"W 3.01 FEET, 3) S04°23'26"E 133.89 FEET, 4) N85°43'59"E 15.98 FEET, AND 5) S04°24'37"E 129.36 FEET; THENCE N84°12'51"W 100.00 FEET ALONG THE NORTH LINE OF BEAL AVENUE (50 FEET WIDE); THENCE S05°47'09"W 50.00 FEET ALONG THE EASTERLY LINE OF THAT PORTION OF VACATED BEAL AVENUE PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS; THENCE S84°12'51"E 289.65 FEET ALONG THE SOUTH LINE OF SAID BEAL AVENUE; THENCE ALONG THE WEST LINE OF RIVER STREET THE FOLLOWING THREE (3) COURSES; 1) S09°44'28"E 227.57 FEET, 2) S15°01'28"E 427.16 FEET, AND 3) S15°34'36"E 462.92 FEET; THENCE S85°45'58"W 238.48 FEET; THENCE N89°00'21"W 563.09 FEET; THENCE N43°05'04"W 95.18 FEET; THENCE ALONG THE SOUTH LINE OF SAID LOT 183 THE FOLLOWING FOUR (4) COURSES; 1) S78°36'11"W 254.94 FEET, 2) S78°39'12"W 117.60 FEET, 3) N77°44'48"W 142.02 FEET, AND 4) N57°47'56"W 135.76 FEET; THENCE N05°05'49"W 578.08 FEET ALONG THE EAST LINE OF CENTER STREET (60 FEET WIDE); THENCE N05°12'42"W 537.43 FEET CONTINUING ALONG THE EAST LINE OF SAID CENTER STREET; THENCE N84°59'05"E 130.92 FEET ALONG THE SOUTH LINE OF LOT 164 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N04°02'34"W 179.19 FEET ALONG THE WEST LINE OF SAID LOT 174; THENCE N84°20'38"E 63.77 FEET ALONG THE SOUTH LINE OF LOTS 170 AND 171 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N05°05'12"W 114.16 FEET; THENCE S84°53'43"W 24.00 FEET; THENCE N05°05'12"W 12.00 FEET ALONG THE WEST LINE OF SAID LOT 171 TO THE POINT OF BEGINNING.

PARKING PARCEL:

LOT 223, LOT 224, PART OF LOT(S) 225, 226, 227, AND 228 OF "ASSESSOR'S NORTHVILLE PLAT NO. 3", AS RECORDED IN LIBER 66 OF PLATS, PAGE 43, WAYNE COUNTY RECORDS, MORE PARTICULARLY DESCRIBED AS: BEGINNING AT THE NORTHEAST CORNER OF SAID LOT 223; THENCE S05°05'49"E 485.34 FEET ALONG THE WEST LINE OF CENTER STREET; THENCE N78°06'14"W 87.93 FEET ALONG THE NORTH LINE OF EDWARD HINES DRIVE; THENCE CONTINUING ALONG THE NORTH LINE OF SAID EDWARD HINES DRIVE, 258.72 FEET ALONG A 1842.59 FOOT CURVE TO THE RIGHT, SAID CURVE HAVING A CENTRAL ANGLE OF 08°02'42", AND A CHORD WHICH BEARS N74°02'51"W 258.51 FEET; THENCE N04°38'15"W 228.14 FEET ALONG THE EAST LINE OF SOUTH WING STREET; THENCE N84°11'48"E 49.85 FEET; THENCE S04°32'04"E 29.85 FEET; THENCE N84°01'07"E 161.44 FEET ALONG THE NORTH LINE OF SAID LOT 226; THENCE N05°57'44"W 160.02 FEET ALONG THE WEST LINE OF SAID LOT 224; THENCE N82°12'58"E 115.10 FEET ALONG THE SOUTH LINE OF FAIRBROOK STREET TO THE POINT OF BEGINNING.

VACANT PARCEL:

LOT 219 AND LOT 220 OF "ASSESSOR'S NORTHVILLE PLAT NO. 3", AS RECORDED IN LIBER 66 OF PLATS, PAGE 43, WAYNE COUNTY RECORDS, CITY OF NORTHVILLE, WAYNE COUNTY, MICHIGAN.

H.P. PARCEL:

PART OF LOT 72, ALL OF LOTS 73-78, PART OF LOT 79, ALL OF LOTS 80-81, AND PART OF LOT 82 OF "ASSESSOR'S NORTHVILLE PLAT NO. 1", AS RECORDED IN LIBER 66 OF PLATS, PAGE 45, WAYNE COUNTY RECORDS; ALSO PART OF LOT 171 AND ALL OF LOTS 172-181 AND PART OF LOTS 182 AND 183 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS, ALSO PART OF THAT PART OF VACATED CHURCH STREET AND VACATED BEAL AVENUE AS VACATED PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS;

ALL OF THE AFOREMENTIONED BEING MORE PARTICULARLY DESCRIBED AS:
COMMENCING AT THE NORTHWEST CORNER OF LOT 168 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N84°53'43"E 174.61 FEET ALONG THE SOUTH LINE OF CADY STREET (50 FEET WIDE) TO THE NORTHWEST CORNER OF LOT 171 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2" FOR A POINT OF BEGINNING; THENCE ALONG THE SOUTH LINE OF SAID CADY STREET THE FOLLOWING THREE (3) COURSES; 1) N84°53'43"E 682.35 FEET, 2) N79°20'27"E 42.12 FEET, AND 3) N85°47'04"E 218.30 FEET; THENCE ALONG THE WESTERLY LINE OF GRISWOLD STREET (VARIABLE WIDTH) THE FOLLOWING FIVE (5) COURSES; 1) S02°52'19"E 193.33 FEET, 2) S86°05'20"W 3.01 FEET, 3) S04°23'26"E 133.89 FEET, 4) N85°43'59"E 15.98 FEET, AND 5) S04°24'37"E 129.36 FEET; THENCE N84°12'51"W 100.00 FEET ALONG THE NORTH LINE OF BEAL AVENUE (50 FEET WIDE); THENCE S05°47'09"W 50.00 FEET ALONG THE EASTERLY LINE OF THAT PORTION OF VACATED BEAL AVENUE PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS, AND ITS SOUTHERLY EXTENSION; THENCE N84°12'51"W 166.13 FEET; THENCE 37.43 FEET ALONG A 200.00 FEET RADIUS CURVE TO THE LEFT, SAID CURVE HAVING A CENTRAL ANGLE OF 10°43'23" AND A CHORD WHICH BEARS N89°34'32"W 37.38 FEET; THENCE N05°12'42"W 809.59 FEET; THENCE N05°12'42"W 147.93 FEET ALONG THE EAST LINE OF CENTER STREET (50 FEET WIDE); THENCE N84°59'05"E 130.92 FEET ALONG THE SOUTH LINE OF LOT 164 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N04°02'34"W 179.19 FEET ALONG THE WEST LINE OF SAID LOT 174; THENCE N84°20'38"E 63.77 FEET ALONG THE SOUTH LINE OF LOTS 170 & 171 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE N05°05'12"W 114.16 FEET; THENCE S84°53'43"W 24.00 FEET; THENCE N05°05'12"W 12.00 FEET ALONG THE WEST LINE OF SAID LOT 171 TO THE POINT OF BEGINNING.

T.B. PARCEL:

PART OF LOTS 182, 183, 184, 192, 193, 194, 195, 196, AND 197 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS;

ALL OF THE AFOREMENTIONED BEING MORE PARTICULARLY DESCRIBED AS:
COMMENCING AT THE NORTHWEST CORNER OF LOT 168 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2"; THENCE S05°12'42"E 453.66 FEET ALONG THE EAST LINE OF CENTER STREET (50 FEET WIDE) TO THE POINT OF BEGINNING; THENCE N85°03'47"E 809.59 FEET; THENCE 37.43 FEET ALONG A 200.00 FEET RADIUS CURVE TO THE RIGHT, SAID CURVE HAVING A CENTRAL ANGLE OF 10°43'23" AND A CHORD WHICH BEARS S89°34'23"E 37.38 FEET; THENCE S84°12'51"E 166.13 FEET; THENCE N05°47'09"E 5.00 FEET ALONG THE SOUTHERLY EXTENSION OF THE EASTERLY LINE OF THAT PORTION OF VACATED BEAL AVENUE PER RESOLUTION RECORDED IN LIBER 20023, PAGE 101, WAYNE COUNTY RECORDS; THENCE S84°12'51"E 118.47 FEET ALONG THE SOUTH LINE OF BEAL AVENUE (50 FEET WIDE); THENCE S05°47'07"W 240.01 FEET; THENCE N84°12'51"W 197.94 FEET; THENCE S04°56'13"E 234.48 FEET; THENCE N85°03'47"E 97.11 FEET; THENCE 59.23 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 30.04 FEET, AND A CHORD BEARING N54°29'43"E 50.09 FEET; THENCE S68°59'01"E 91.46 FEET; THENCE 136.24 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 145.00 FEET, AND A CHORD BEARING S42°03'58"E 131.28 FEET; THENCE S15°08'56"E 33.33 FEET; THENCE 49.88 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 145.00 FEET, AND A CHORD BEARING S05°16'28"E 49.73 FEET; THENCE 15.15 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 48.43 FEET, AND A CHORD BEARING S11°57'12"W 15.08 FEET; THENCE 59.41 FEET ALONG A CURVE TO THE LEFT, WITH A RADIUS OF 82.69 FEET, AND A CHORD BEARING S04°30'55"W 58.14 FEET; THENCE 75.62 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 179.78 FEET, AND A CHORD BEARING S05°57'24"E 75.06 FEET; THENCE 46.43 FEET ALONG A CURVE TO THE LEFT, WITH A RADIUS OF 60.73 FEET, AND A CHORD BEARING S12°41'17"E 45.31 FEET; THENCE 183.34 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 239.13 FEET, AND A CHORD BEARING S12°48'12"E 178.88 FEET; THENCE S17°29'02"W 83.39 FEET; THENCE 50.00 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 39.00 FEET, AND A CHORD BEARING S54°12'42"W 46.65 FEET; THENCE N89°03'37"W 180.08 FEET; THENCE 28.30 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 65.00 FEET, AND A CHORD BEARING N78°35'17"W 28.08 FEET; THENCE 37.01 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 55.27 FEET, AND A CHORD BEARING N36°30'22"W 36.33 FEET; THENCE 36.29 FEET ALONG A CURVE TO THE LEFT, WITH A RADIUS OF 90.49 FEET, AND A CHORD BEARING N28°57'39"W 36.05 FEET; THENCE 21.97 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 72.56 FEET, AND A CHORD BEARING N28°49'35"W 21.89 FEET; THENCE 21.30 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 50.00 FEET, AND A CHORD BEARING N07°56'45"W 21.14 FEET; THENCE N04°15'38"E 46.31 FEET; THENCE 70.80 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 55.00 FEET, AND A CHORD BEARING N41°08'17"E 66.01 FEET; THENCE N78°00'55"E 38.36 FEET; THENCE N05°31'15"W 10.22 FEET; THENCE S85°03'17"W 97.02 FEET; THENCE S04°56'13"E 72.07 FEET; THENCE 77.03 FEET ALONG A CURVE TO THE RIGHT, WITH A RADIUS OF 175.00 FEET, AND A CHORD BEARING S07°40'21"W 76.41 FEET; THENCE S20°16'56"W 8.36 FEET; THENCE 42.08 FEET ALONG A CURVE TO THE LEFT, WITH A RADIUS OF 125.00 FEET, AND A CHORD BEARING S10°38'17"W 41.88 FEET; THENCE S00°59'39"W 30.55 FEET; THENCE N89°00'21"W 178.17 FEET; THENCE N43°05'04"W 95.18 FEET; THENCE ALONG THE SOUTH LINE OF SAID LOT 183 THE FOLLOWING FOUR (4) COURSES; 1) S78°36'11"W 254.94 FEET, 2) S78°39'12"W 117.60 FEET, 3) N77°44'48"W 142.02 FEET, AND 4) N57°47'56"W 135.76 FEET; THENCE N05°05'49"W 578.08 FEET ALONG THE EAST LINE OF CENTER STREET (60 FEET WIDE); THENCE N05°12'42"W 389.50 FEET CONTINUING ALONG THE EAST LINE OF SAID CENTER STREET TO THE POINT OF BEGINNING.

RIVER PARK:

LOTS 185-191, AND PART OF LOTS 183, 184, 192, 193, 194, 195, 196, AND 197 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS;

ALL OF THE AFOREMENTIONED BEING MORE PARTICULARLY DESCRIBED AS:
BEGINNING AT THE NORTHEAST CORNER OF LOT 185 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO. 2", SAID POINT ALSO BEING THE INTERSECTION OF THE SOUTH LINE OF BEAL AVENUE AND THE WEST LINE OF RIVER STREET; THENCE ALONG THE WEST LINE OF RIVER STREET THE FOLLOWING THREE (3) COURSES; 1) S09°44'28"E 227.57 FEET, 2) S15°01'28"E 427.16 FEET, AND 3) S15°34'36"E 462.92 FEET; THENCE S85°45'58"W 238.48 FEET; THENCE N89°00'21"W 563.09 FEET; THENCE N05°05'12"W 114.16 FEET; THENCE S84°53'43"W 24.00 FEET; THENCE N05°05'12"W 12.00 FEET ALONG THE WEST LINE OF SAID LOT 171 TO THE POINT OF BEGINNING; THENCE N84°12'51"E 171.18 FEET ALONG THE SOUTH LINE OF SAID BEAL AVENUE TO THE POINT OF BEGINNING.

DESCRIPTIONS:

CENTRAL PARK:

PART OF LOTS 176, 177, 180, 181, AND 182 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS;

ALL OF THE AFOREMENTIONED BEING MORE PARTICULARLY DESCRIBED AS:
COMMENCING AT THE NORTHWEST CORNER OF LOT 168 OF SAID "ASSESSOR'S NORTHVILLE PLAT NO.2"; THENCE N84°53'43"E 592.92 FEET ALONG THE SOUTH LINE OF CADY STREET (50 FEET WIDE) TO THE POINT OF BEGINNING; THENCE N84°53'43"E 125.00 FEET, CONTINUING ALONG THE SOUTH LINE OF SAID CADY STREET; THENCE S05°07'02"E 395.75 FEET; THENCE S85°03'47"W 125.00 FEET; THENCE N05°07'02"W 395.39 FEET TO THE POINT OF BEGINNING.

GATEWAY EAST:

PART OF LOT 183 OF "ASSESSOR'S NORTHVILLE PLAT NO. 2", AS RECORDED IN LIBER 66 OF PLATS, PAGE 44, WAYNE COUNTY RECORDS, DESCRIBED AS:

BEGINNING AT THE SOUTHWEST CORNER OF SAID LOT 183; THENCE N05°05'49"W 107.57 FEET ALONG THE EAST LINE OF CENTER STREET (60 FEET WIDE); THENCE N85°03'47"E 62.58 FEET; THENCE S45°15'29"E 36.23 FEET; THENCE S04°56'13"E 82.15 FEET; THENCE S57°47'56"E 66.10 FEET; THENCE S32°12'04"W 50.00 FEET; THENCE N57°47'56"W 135.76 FEET ALONG THE SOUTH LINE OF SAID LOT 183 TO THE POINT OF BEGINNING.

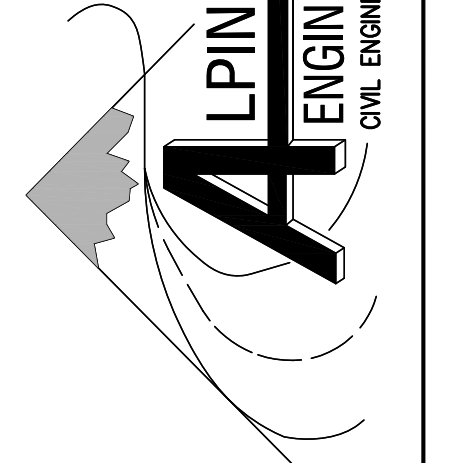
GATEWAY WEST:

PART OF LOT 228 OF "ASSESSOR'S NORTHVILLE PLAT NO. 3", AS RECORDED IN LIBER 66 OF PLATS, PAGE 43, WAYNE COUNTY RECORDS, MORE PARTICULARLY DESCRIBED AS: BEGINNING AT THE SOUTHEAST CORNER OF SAID LOT 228; THENCE N78°06'14"W 87.93 FEET ALONG THE NORTH LINE OF EDWARD HINES DRIVE; THENCE CONTINUING ALONG THE NORTH LINE OF SAID EDWARD HINES DRIVE 158.43 FEET ALONG A 1842.59 FOOT RADIUS CURVE TO THE RIGHT, WITH A CENTRAL ANGLE OF 04°55'35", AND A CHORD BEARING N75°36'25"W 158.38 FEET; THENCE N16°51'22"E 21.79 FEET; THENCE S73°08'38"E 14.41 FEET; THENCE S69°45'50"E 42.98 FEET; THENCE S81°36'51"E 25.75 FEET; THENCE N84°53'24"E 84.79 FEET; THENCE N05°05'49"W 58.96 FEET; THENCE N84°54'12"E 63.20 FEET; THENCE S05°05'49"E 127.94 FEET ALONG THE WEST LINE OF CENTER STREET (60 FEET WIDE) TO THE POINT OF BEGINNING.

COMMERCIAL
SITE PLANNING
SITE ENGINEERING
INDUSTRIAL & MULTI-UNIT
LAND SURVEYING
CONSTRUCTION LAYOUT

SURVEYING
ALTA SURVEYS
BOUNDARY SURVEYS
TOPOGRAPHIC SURVEYS
PARCEL SPLITS
CONSTRUCTION LAYOUT

RESIDENTIAL
SUBDIVISIONS
SITE CONDOMINIUM
MULTI-FAMILY
PLOT PLANS
CONSTRUCTION LAYOUT



811
Know what's below
Call before you dig.

HUNTER PASTEUR HOMES
BOUNDARY SURVEY
SECTION: 3
TOWNSHIP: 1S
VILLAGE OF NORTHVILLE
WAYNE COUNTY
MICHIGAN
RANGE: 8E

REVISED

DATE: 9-5-23

DRAWN BY: JDH

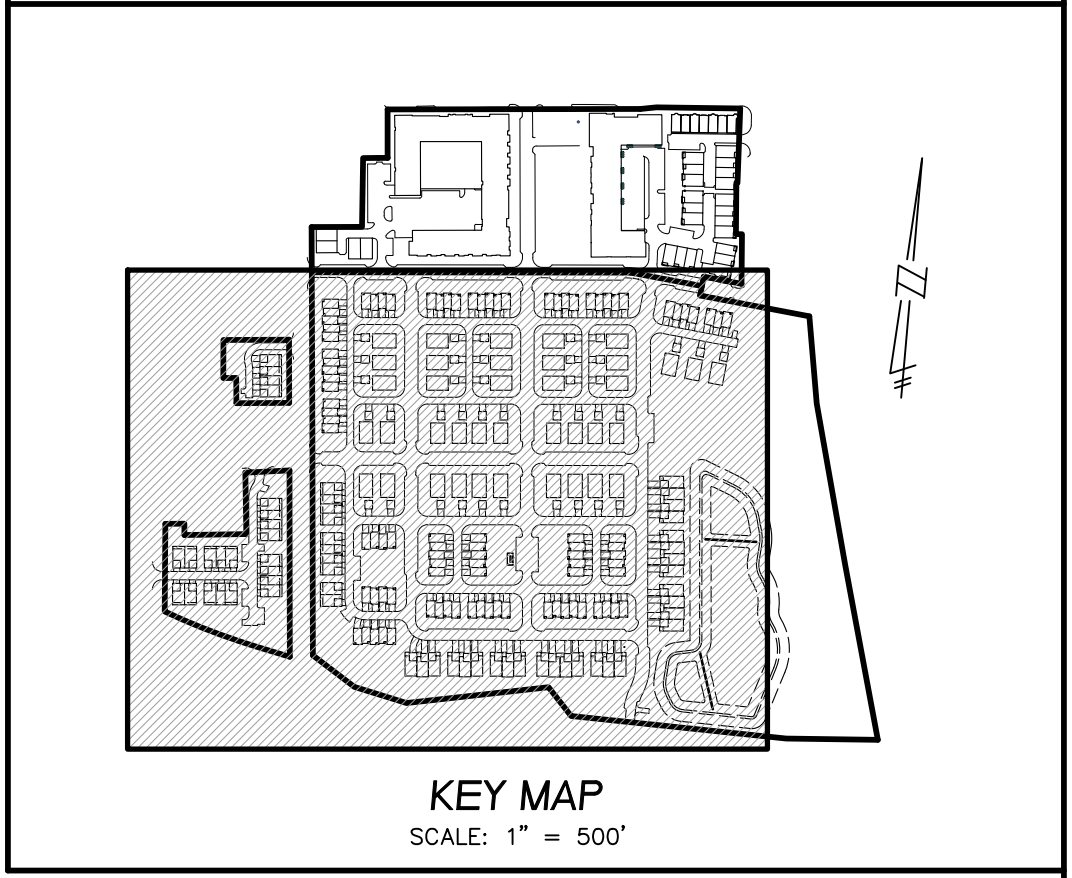
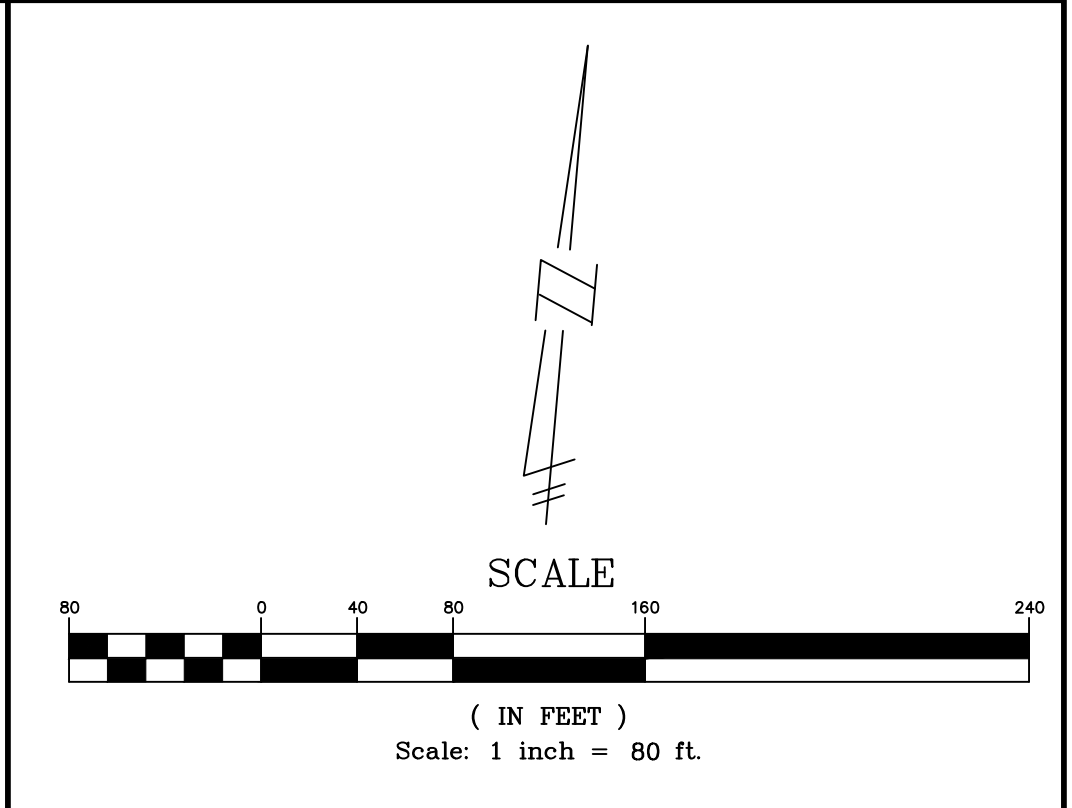
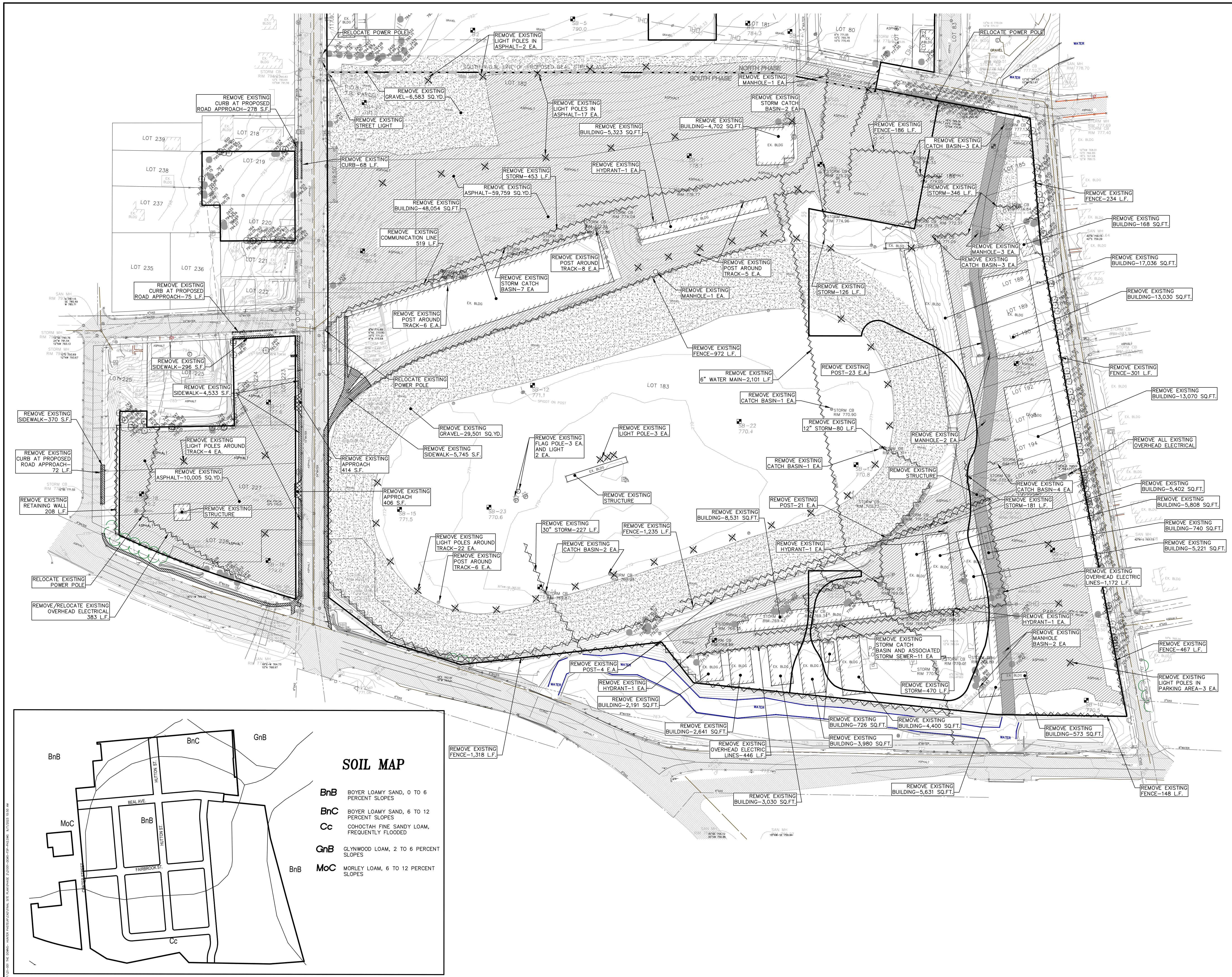
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FBK:

CHP: MJ

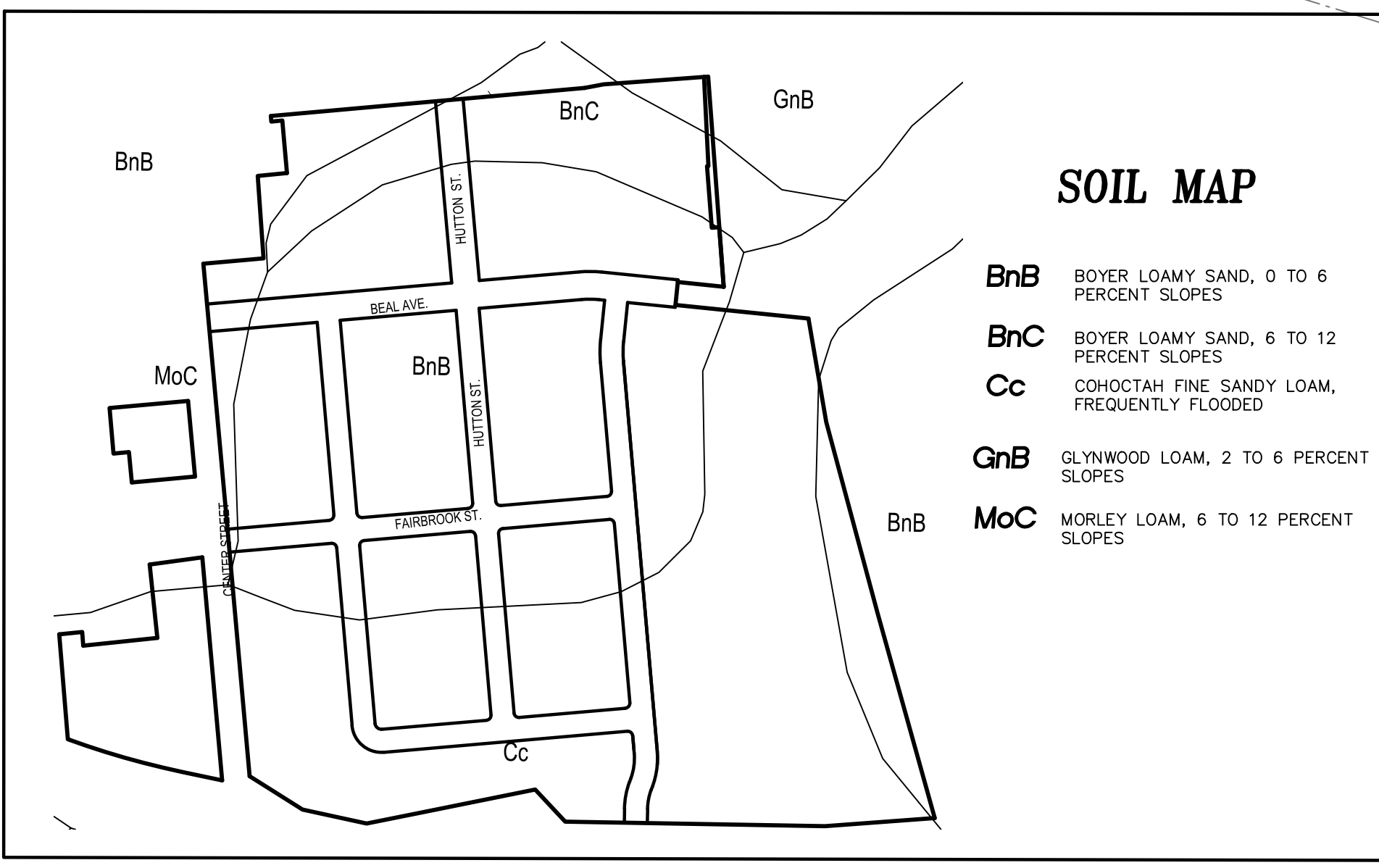
SCALE: HOR 1"=80 FT.
VER 1"=80 FT.

6B
17-549



LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Hatched pattern]	[Hatched pattern]	PAVEMENT (ASPHALT)
[Dashed line]	[Dashed line]	SIDE WALK (CONCRETE)
[Dotted line]	[Dotted line]	CONCRETE CURB AND GUTTER
[Dashed line]	[Dashed line]	STORM SEWER
[Dashed line]	[Dashed line]	SANITARY SEWER
[Dashed line]	[Dashed line]	WATER MAIN
[Circle with 'UD']	[Circle with 'UD']	UNDERDRAIN
[Circle with 'LS']	[Circle with 'LS']	LANDSCAPE DRAIN
[Circle with 'M']	[Circle with 'M']	MANHOLE
[Circle with 'C']	[Circle with 'C']	CATCH BASIN W/SED CATCH
[Circle with 'I']	[Circle with 'I']	CURB INLET W/SILT SAC
[Circle with 'E']	[Circle with 'E']	END SECTION
[Circle with 'G']	[Circle with 'G']	GATE VALVE
[Circle with 'H']	[Circle with 'H']	HYDRANT
[Circle with 'O']	[Circle with 'O']	OVERHEAD ELECTRICAL LINES
[Circle with 'S']	[Circle with 'S']	SPOT ELEVATION
[Circle with 'T']	[Circle with 'T']	FLOOD PLAN
[Circle with 'C']	[Circle with 'C']	CONTOURS
[Circle with 'E']	[Circle with 'E']	SURFACE DRAINAGE
[Circle with 'O']	[Circle with 'O']	OVERFLOW ROUTE
[Circle with 'T']	[Circle with 'T']	TREE FENCE
[Circle with 'S']	[Circle with 'S']	SILT FENCE
[Circle with 'D']	[Circle with 'D']	PROPOSED DRIVEWAY LOCATION
[Circle with 'X']	[Circle with 'X']	CROSSING NUMBER



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TYPE SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

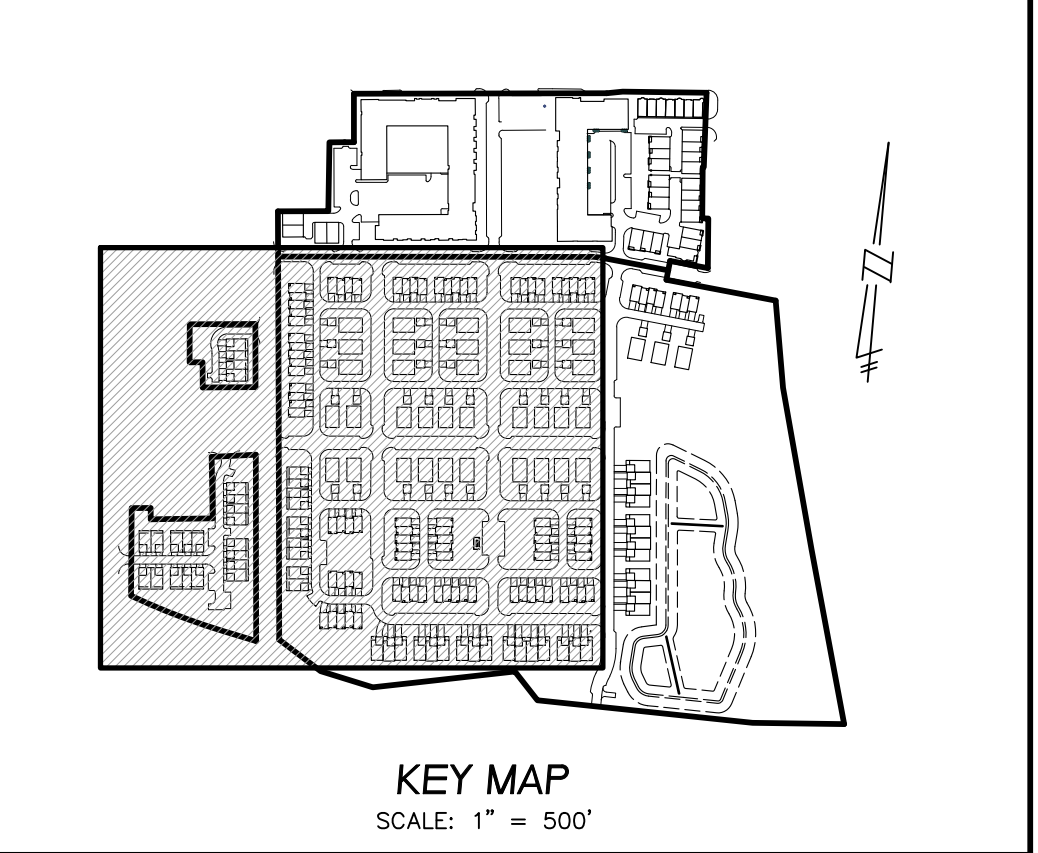
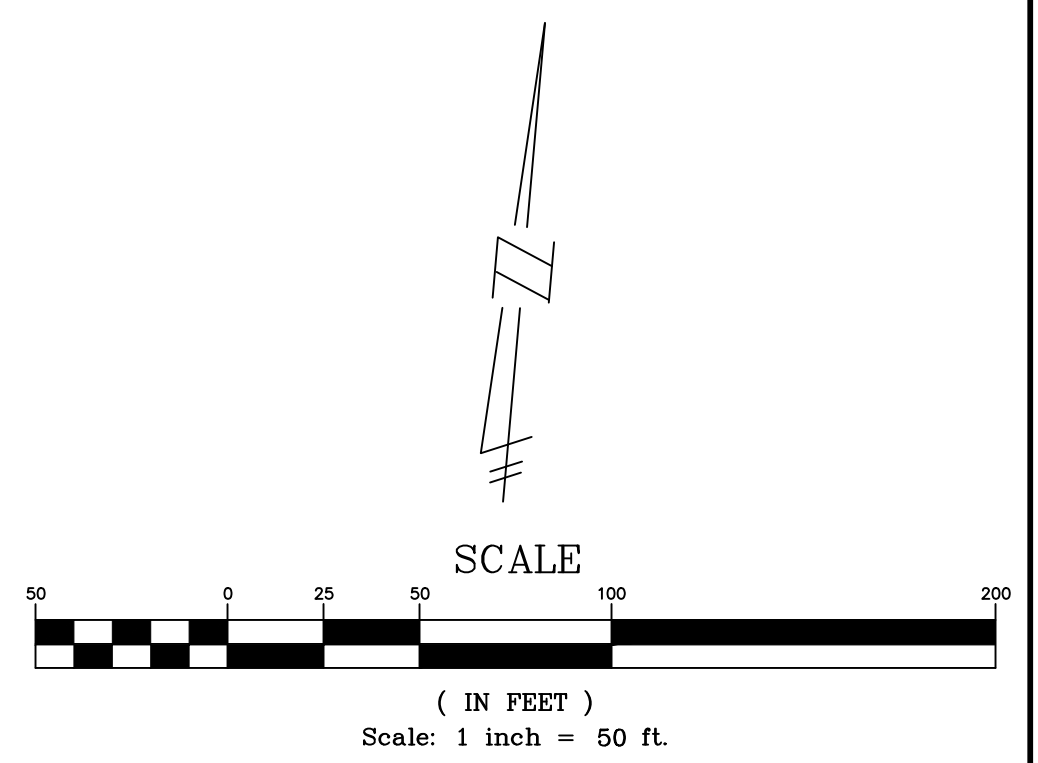
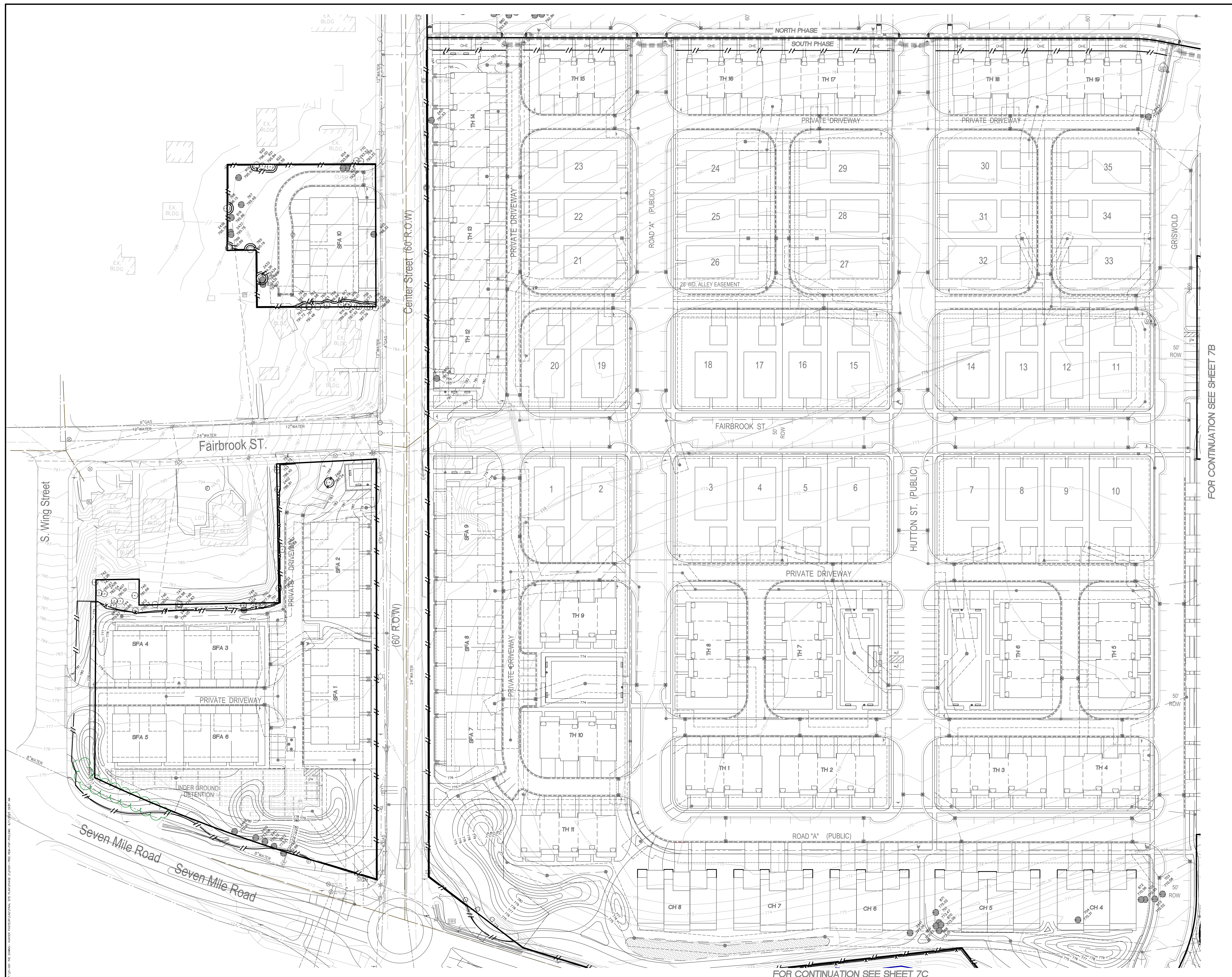
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: F.E. FILE: 21001-DEM0-FSP-PH2.DWG

DEMOLITION PLAN

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
7



LEGEND		
EXISTING	PROPOSED	
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	"UD" UNDERDRAIN
[Symbol]	[Symbol]	"LS" LANDSCAPE DRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED CATCH
[Symbol]	[Symbol]	CURB INLET W/SILT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAIN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	T/E
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: P.E. FILE: 21001-TRB-FRM-FSP-PHS.DWG

TREE LOCATION SURVEY

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 7A

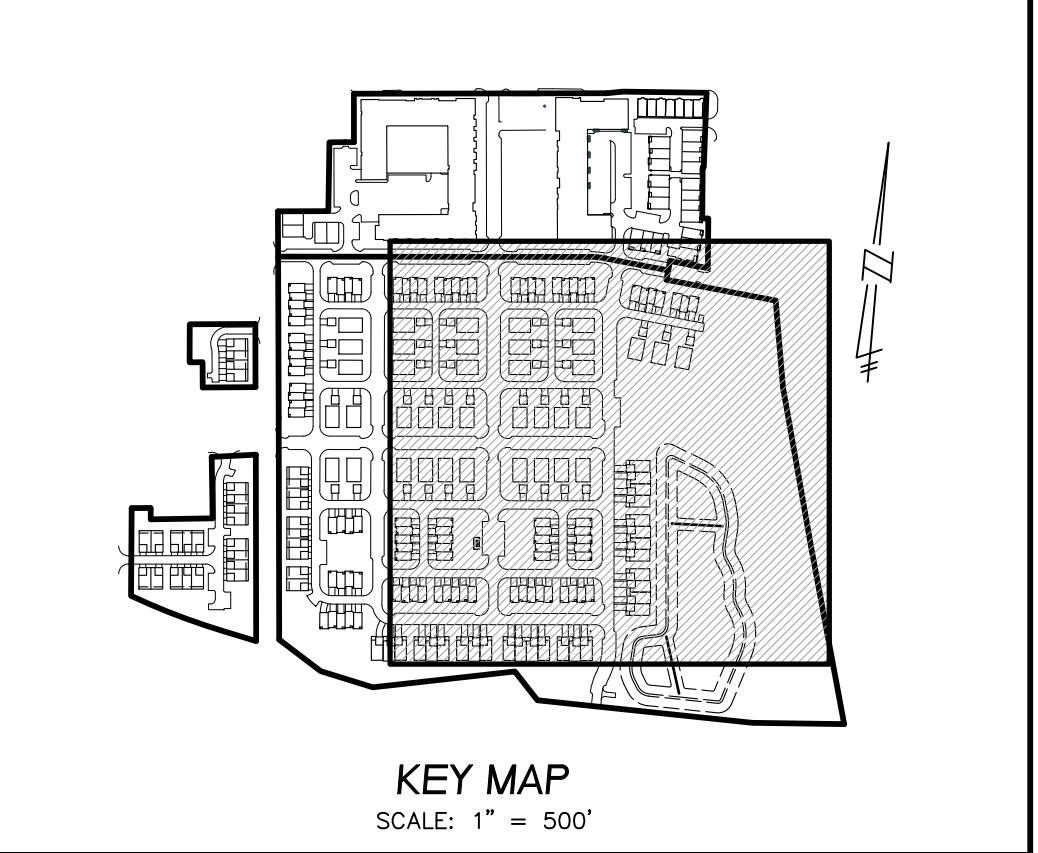
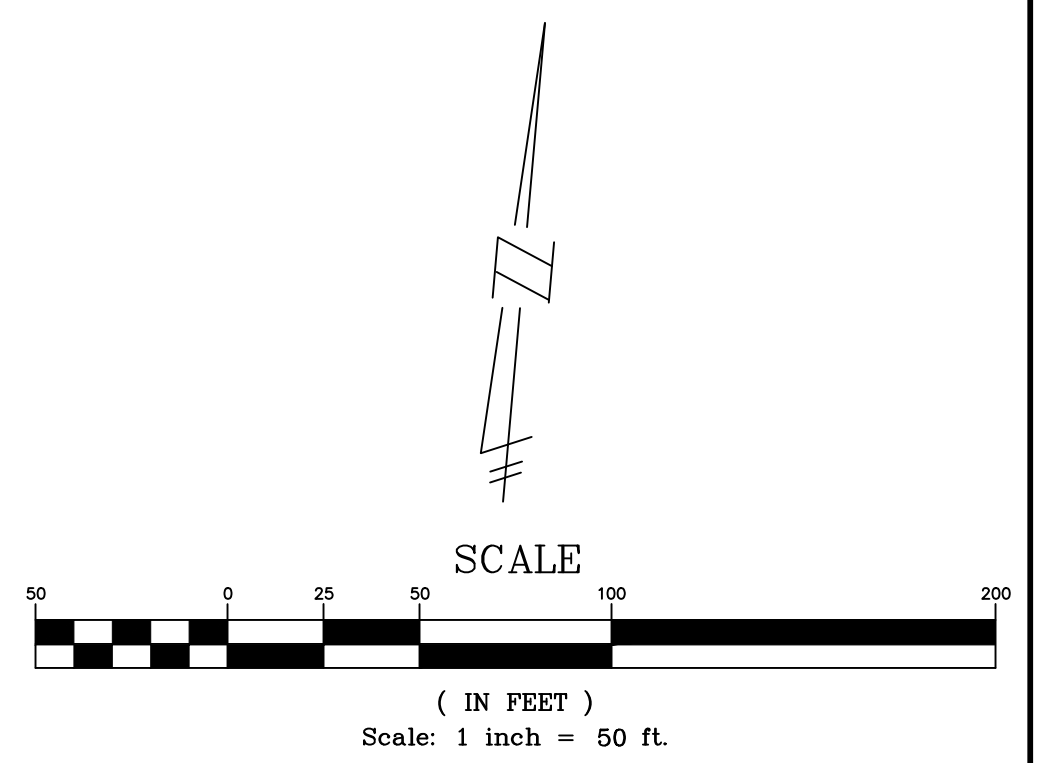
FOR CONTINUATION SEE SHEET 7B

FOR CONTINUATION SEE SHEET 7C



FOR CONTINUATION SEE SHEET 7A

FOR CONTINUATION SEE SHEET 7C



- TREE REMOVE

EXISTING		PROPOSED	
	PAVEMENT (ASPHALT)		SIDE WALK (CONCRETE)
	CONCRETE CURB AND GUTTER		CONCRETE CURB AND GUTTER
	STORM SEWER		STORM SEWER
	SANITARY SEWER		SANITARY SEWER
	WATER MAIN		WATER MAIN
	"UD" UNDERDRAIN		"LS" LANDSCAPE DRAIN
	MANHOLE		CATCH BASIN W/SED CATCH
	CURB INLET W/SILT SAC		END SECTION
	GATE VALVE		HYDRANT
	OVERHEAD ELECTRICAL LINES		FLOOD PLAN
	SPOT ELEVATION		CONTOURS
	TREE		EXISTING ELEVATION
	TREE REMOVE		DRIVEWAY
	FENCE		PROPOSED DRIVEWAY LOCATION
	NO. DRIVEWAY		CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.



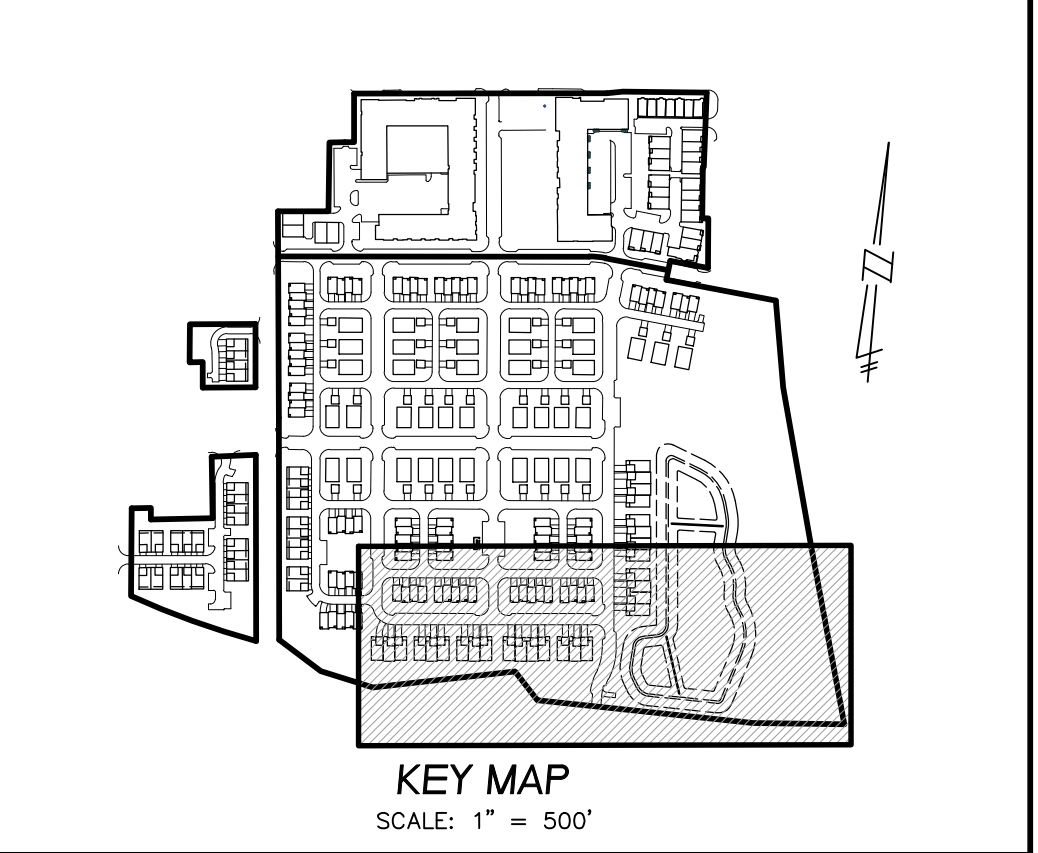
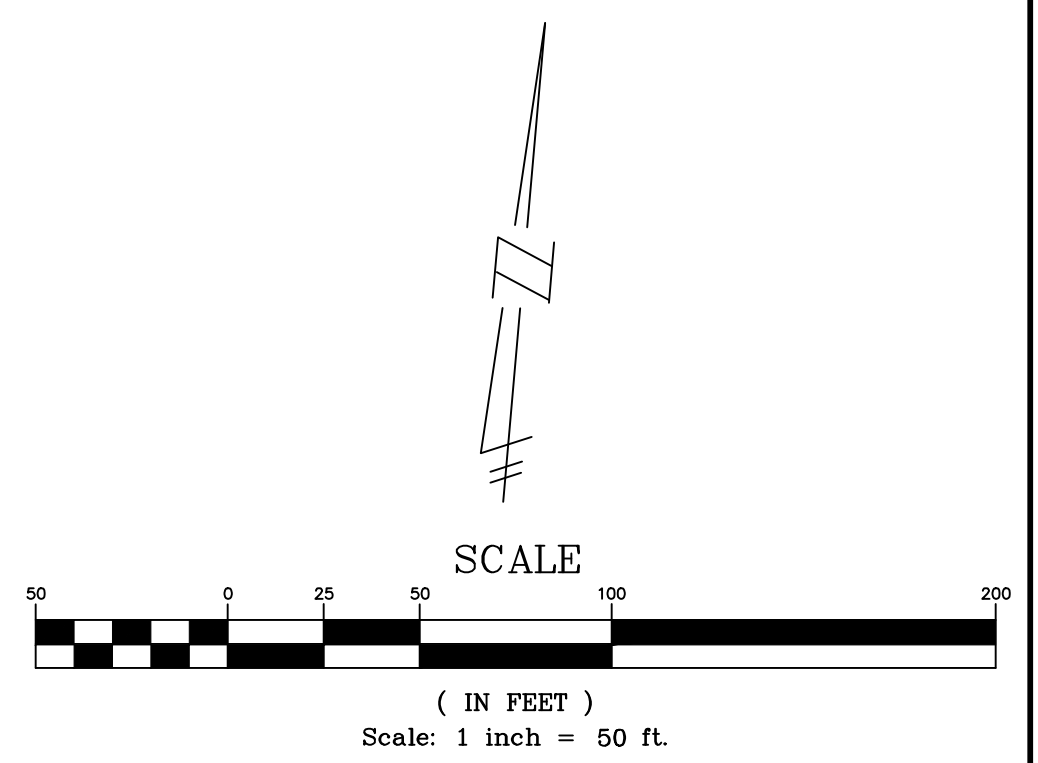
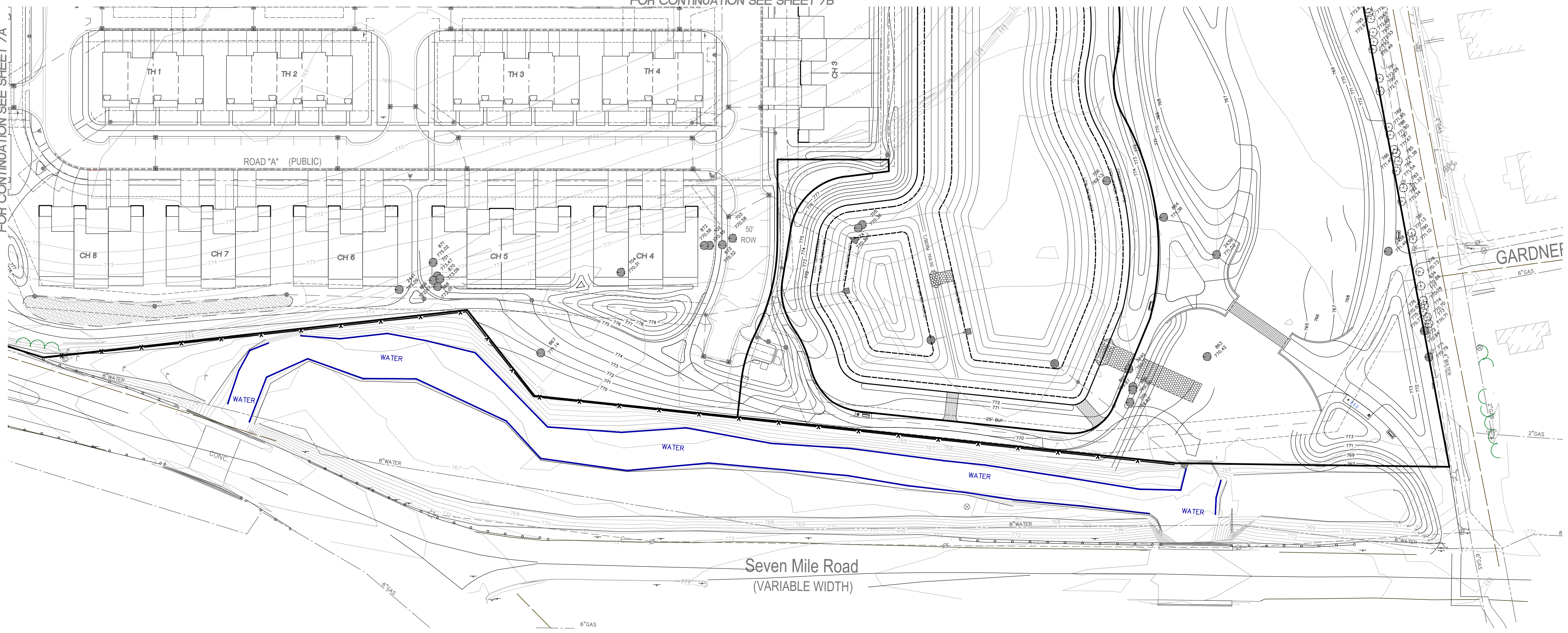
DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-TRB-FDM-FSP-PHS.DWG

TREE LOCATION SURVEY

<p>SEIBER KEAST LEHNER ENGINEERING SURVEYING</p> <p>39205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 PHONE: 248.308.3331</p>	<p>SHEET 7B</p>
--	----------------------------

FOR CONTINUATION SEE SHEET 7B

FOR CONTINUATION SEE SHEET 7A



LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		"UD" DENOTES UNDERDRAIN
		"LS" DENOTES LANDSCAPE DRAIN
		MANHOLE
		CATCH BASIN W/SED CATCH
		CURB INLET W/SILT SAC
		END SECTION
		GATE VALVE
		HYDRANT
		OVERHEAD ELECTRICAL LINES
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		T/F
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

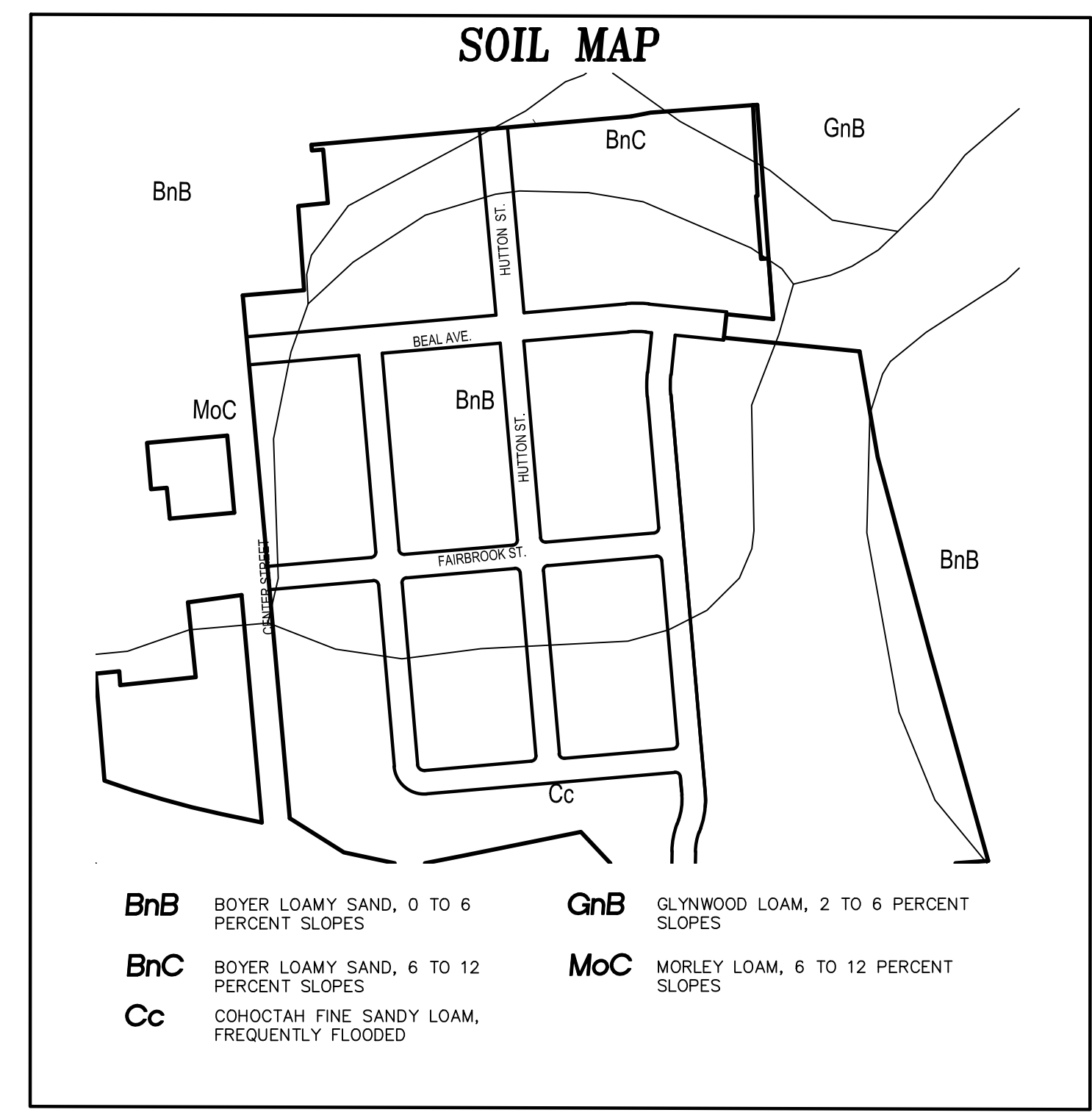
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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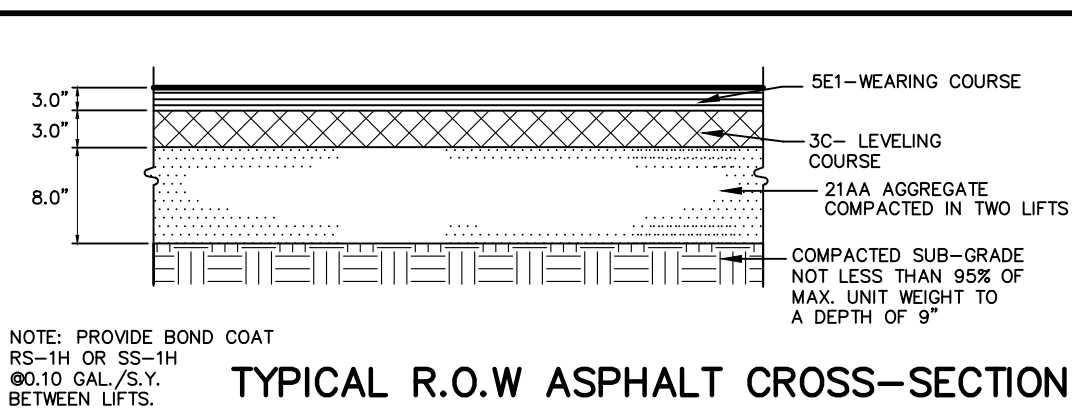
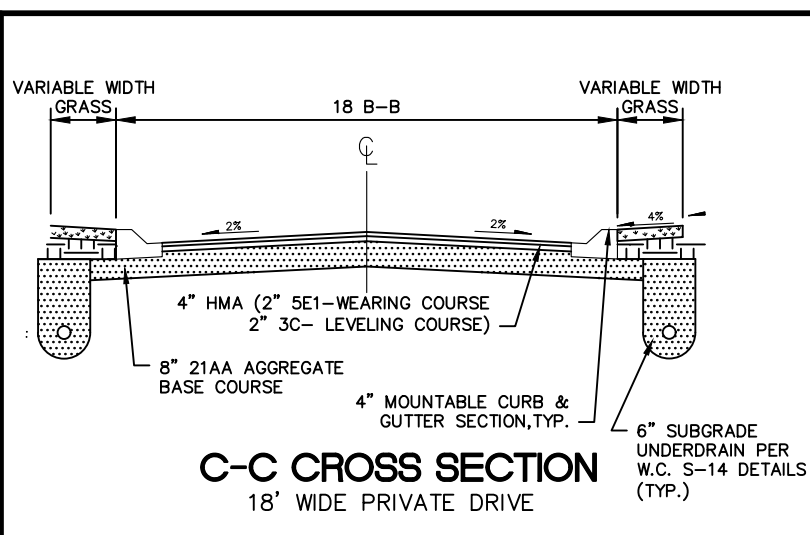
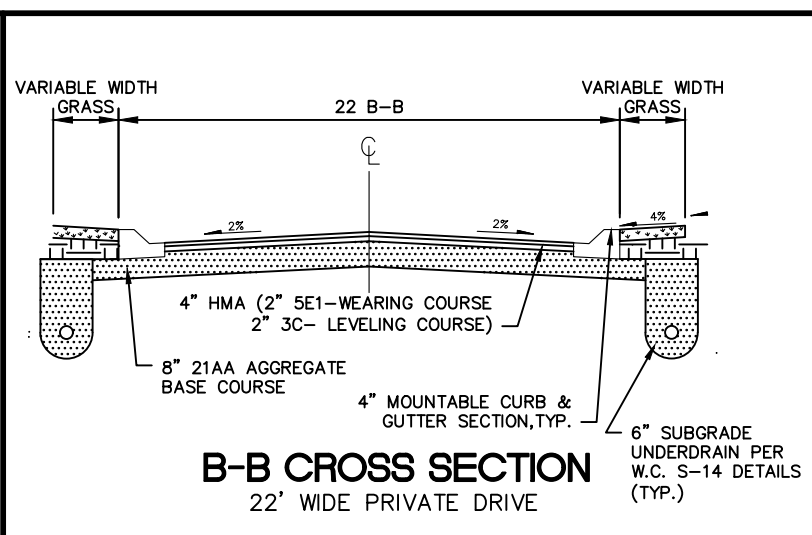
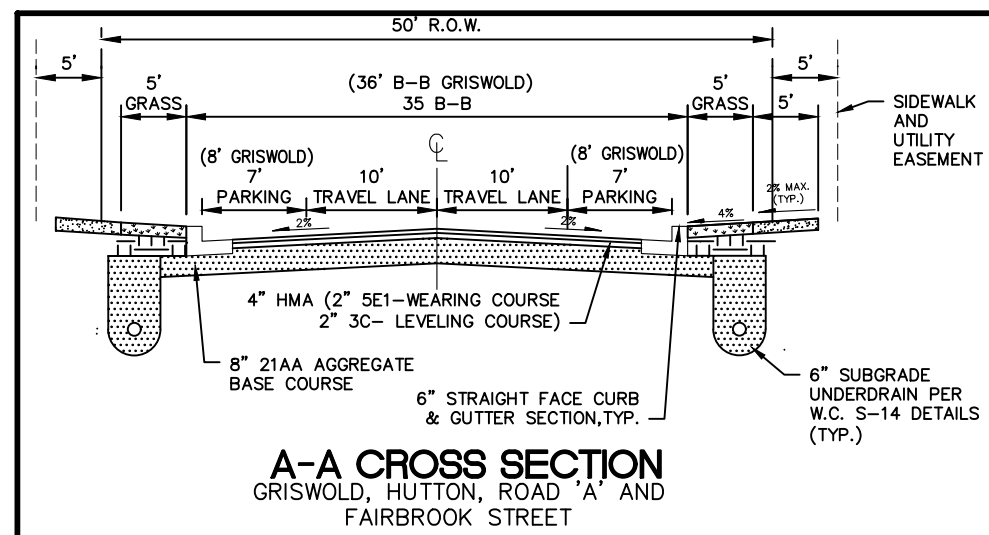
DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. PLS: 21001-TRB-FDM-FSP-PHS.DWG

TREE LOCATION SURVEY



SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 7C



NOTE: PROVIDE BOND COAT RS-1H OR SS-1H @ 0.10 GAL./S.Y. BETWEEN LIFTS.

SANITARY SEWER BASIS OF DESIGN

The Downs - West of Center Street

Usage

Equiv. Single Family Units (REU)
 22 Units (SF attached (West of Center St))
 22 Total Units (REU)

Population
 = 2.8 people/unit x 22.00 units
 = 61.6 people

AVERAGE FLOW
 = 61.6 people x 100 gal/cap/day
 = 6160 gal/day
 = 0.0095 cfs

PEAK FACTOR
 For service area populations greater than 500 people
 $P.F. = (18 + \sqrt{RT(P/1000)}) / (4 + \sqrt{RT(P/1000)})$
 = 4.30 Use 4.00 Max

PEAK FLOW
 = PEAK FACTOR X AVERAGE FLOW
 = 0.0381 cfs

CAPACITY OF A 8" PIPE @ 0.40 % IS 0.76 cfs THEREFORE PIPE CAPACITY IS SUFFICIENT

SANITARY SEWER BASIS OF DESIGN

The Downs - East of Center Street

Usage

13,339 SF (Gross) Commercial
 40 REU w/ 8358 SF Restaurant
 178 Units Apartments

Equiv. Single Family Units (REU)
 5.34 Units Commercial
 (0.4 Units / 1,500 s.f.)
 40 Units Restaurant
 106.80 Units MultiFamily
 (0.60 Units / Apt Unit)
 42 Units NE Condominiums
 31 Units Row Houses
 104 Units Townhomes/SF attached (East of Center St)
 28 Units Carriage Homes
 38 Units SF Homes
 395.14 Total Units (REU)

Population
 = 2.8 people/unit x 395.14 units
 = 1106.4 people

AVERAGE FLOW
 = 1106.4 people x 100 gal/cap/day
 = 110638.0 gal/day
 = 0.1712 cfs

PEAK FACTOR
 For service area populations greater than 500 people
 $P.F. = (18 + \sqrt{RT(P/1000)}) / (4 + \sqrt{RT(P/1000)})$
 = 3.77

PEAK FLOW
 = PEAK FACTOR X AVERAGE FLOW
 = 0.65 cfs

CAPACITY OF A 8" PIPE @ 0.40 % IS 0.76 cfs THEREFORE PIPE CAPACITY IS SUFFICIENT

EXISTING PARKING LOT REPLACEMENT:

EXISTING SPACES WITHIN CADY STREET SURFACE LOT = 92 SPACES
 REQUIRED SPACES WITHIN 600 FT. FROM SURFACE LOT = 92 SPACES

NEW PUBLIC SPACES PROVIDED:

HUTTON SOUTH OF CADY = 39 SPACES
 BEAL BETWEEN CENTER AND GRISWOLD = 47 SPACES
 CADY STREET = 6 SPACES
 TOTAL SPACES PROVIDED = 92 SPACES

SHARED DRIVE LANE / BIKE LANE ARE PROVIDED ON THE FOLLOWING ROADS:

- 1) FAIRBROOK STREET
- 2) HUTTON STREET
- 3) GRISWOLD STREET
- 4) BEAL STREET
- 5) CADY STREET

(SEE LANDSCAPE PLANS FOR STREETSCAPE CROSS SECTIONS AND DETAILS)

- NOTE: CENTER STREET HAS EXISTING DEDICATED BIKE LANES.

SITE SUMMARY

SITE AREA = 48.12 AC
 LESS PUBLIC R.O.W. = 6.82 AC
 NET SITE AREA = 41.30 AC

EXISTING ZONING = CBD, RTD, R-2, CSO
 PROPOSED ZONING = PUD

DEVELOPMENT BREAKDOWN

NW APARTMENTS = 3.36 AC
 UNITS SHOWN = 178 UNITS
 DENSITY SHOWN = 52.98 DU/AC

SETBACKS
 FRONT YARD = 10' (COMMERCIAL - CSO DISTRICT)
 REAR YARD = 15' (RESIDENTIAL - CSO DISTRICT)
 SIDE YARD = N/A

RESIDENTIAL USE = 231,295 SF
 COMMERCIAL / RETAIL USE = 7,970 SF
 GARAGE AREA = 71,688 SF
 TOTAL BUILDING AREA = 310,853 SF
 OUTDOOR AMENITY TERRACE = 19,811 SF

NE CONDOMINIUM BUILDING = 1.85 AC
 UNITS SHOWN = 42 UNITS
 DENSITY SHOWN = 22.70 DU/AC

SETBACKS
 FRONT YARD = 10' (COMMERCIAL - CSO DISTRICT)
 REAR YARD = 15' (RESIDENTIAL - CSO DISTRICT)
 SIDE YARD = N/A

RESIDENTIAL USE = 119,934 SF
 COMMERCIAL / RETAIL USE = 7,660 SF
 GARAGE AREA = 13,510 SF
 TOTAL BUILDING AREA = 141,104 SF
 OUTDOOR AMENITY TERRACE = 6,104 SF

ROW HOUSES = 2.27 AC
 UNITS SHOWN = 31 UNITS
 DENSITY SHOWN = 13.66 DU/AC

SETBACKS
 FRONT YARD = 15' (CADY STREET)
 BUILDING SEPARATION = 10' (GRISWOLD ST. PROP. ROW)
 REAR YARD = 12'
 N/A

RESIDENTIAL USE = 27,313 SF
 COMMERCIAL / FLEX USE = 2,084 GFA

TOWN HOMES / SF ATTACHED = 12.12 AC
 TOWN HOMES = 94 UNITS
 SF ATTACHED = 32 UNITS
 DENSITY SHOWN = 10.40 DU/AC

SETBACKS
 FRONT YARD = 10' MIN.
 BUILDING SEPARATION = 20'
 REAR YARD = N/A

CARRIAGE HOMES = 3.08 AC
 CARRIAGE HOMES = 28 UNITS
 DENSITY SHOWN = 9.09 DU/AC

SETBACKS
 FRONT YARD = 19'
 BUILDING SEPARATION = 20'
 REAR YARD = N/A

SINGLE FAMILY HOMES = 6.97 AC
 LOTS SHOWN = 38 UNITS
 DENSITY SHOWN = 5.45 LOTS/AC

SETBACKS
 FRONT YARD = 15'
 SIDE YARD = 7.5' (15' TOTAL)
 REAR YARD = 19' (FROM ALLEY)

TOTAL RESIDENTIAL = 443 UNITS
 TOTAL OVERALL NET DENSITY = 10.73 UNITS/AC
 TOTAL OVERALL GROSS DENSITY = 9.21 UNITS/AC

PARKING PROVIDED SUMMARY

NW APARTMENTS
 GARAGE = 160 SPACES
 CARRIAGES = 18 SPACES
 SURFACE LOT = 93 SPACES
 = 266 SPACES
 = 1.49 SPACES PER UNIT

NE CONDOMINIUM BUILDING
 GARAGE = 48 SPACES
 SURFACE LOT = 38 SPACES
 = 86 SPACES
 = 2.52 SPACES PER UNIT

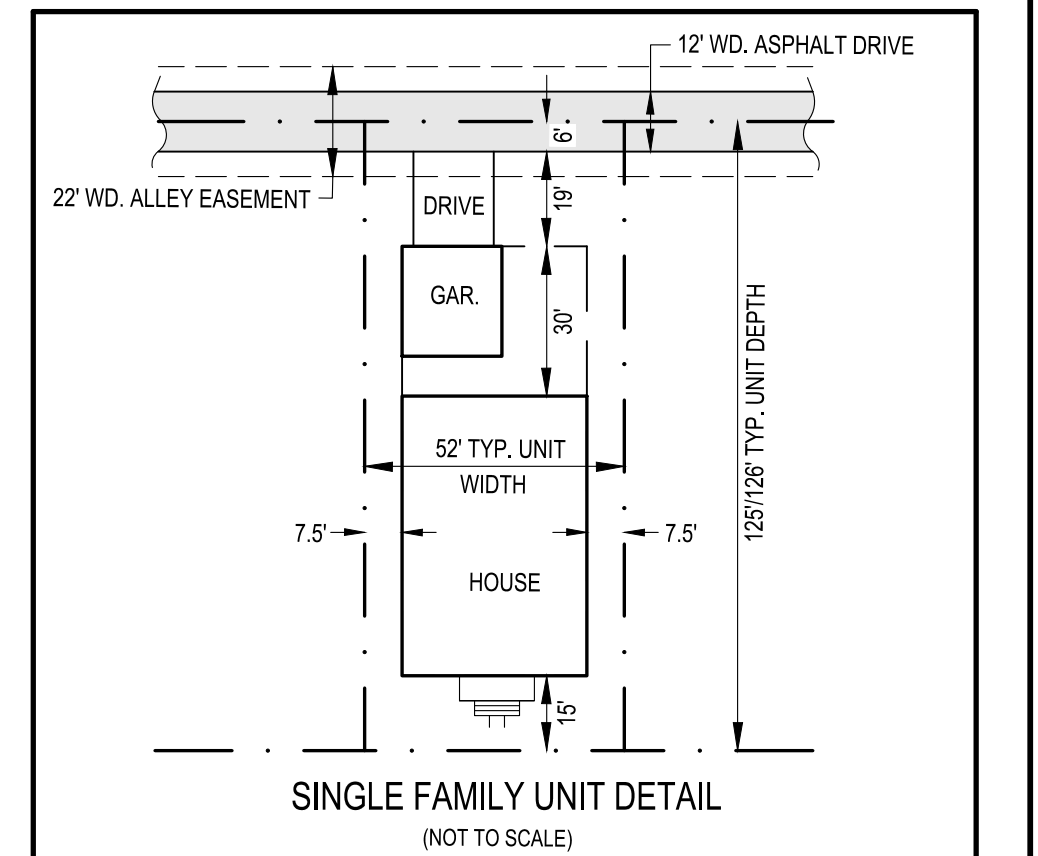
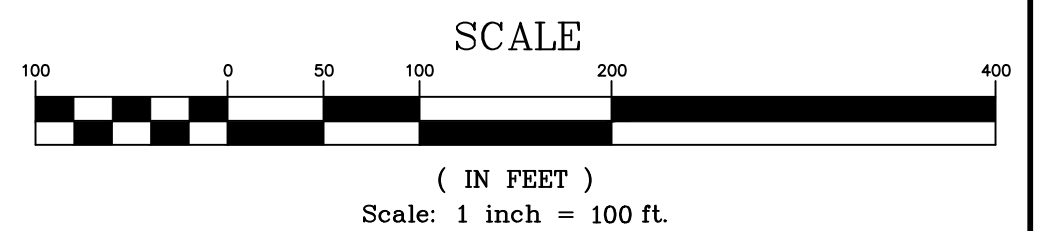
ROW HOUSES
 GARAGE = 62 SPACES (2 GAR)
 SURFACE LOT = 36 SPACES
 = 98 SPACES

PUBLIC STREET PARALLEL
 CADY STREET = 29 SPACES
 EX GRISWOLD STREET = 14 SPACES
 GRISWOLD EXTENSION = 14 SPACES
 BEAL STREET = 53 SPACES
 HUTTON STREET = 53 SPACES
 ROAD A = 23 SPACES
 FAIRBROOK STREET = 44 SPACES
 = 277 SPACES

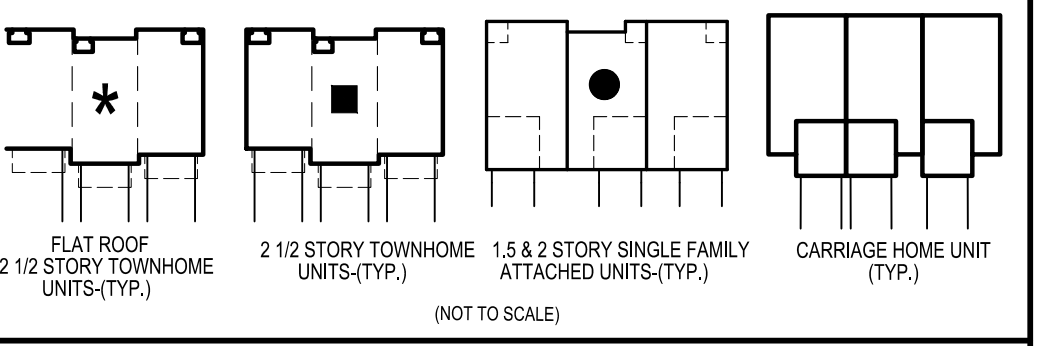
TOWNHOMES / SF ATTACHED / CARRIAGE
 GARAGES / DRIVES = 504 SPACES (2 GAR / 2 DRIVE)
 GARAGES ONLY = 50 SPACES (2 GAR)
 PARKING SPACES = 607 SPACES

SINGLE FAMILY HOMES
 GARAGES / DRIVES = 152 SPACES (2 GAR / 2 DRIVE)
 PARKING SPACES = 8 SPACES
 = 160 SPACES

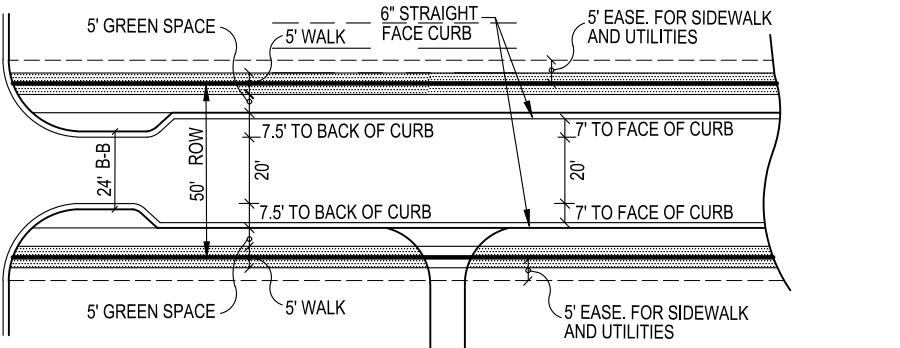
TOTAL PARKING PROVIDED = 1,494 SPACES
 TOTAL PUBLIC PARKING PROVIDED = 332 SPACES



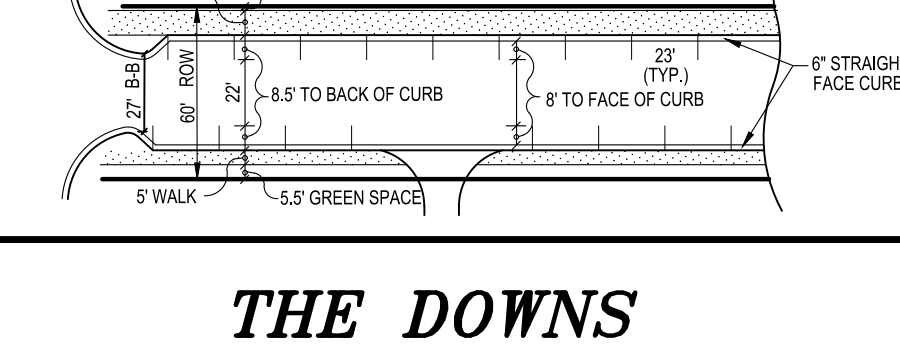
- * FLAT ROOF 2 1/2 STORY TOWNHOMES
- 2 1/2 STORY TOWNHOMES
- 2 STORY SINGLE FAMILY ATTACHED
- HIGH VISIBILITY LOT WITH ENHANCED SIDE ELEVATION



STREETS AND PARKING TYPICALS FOR 50' W.D. R.O.W. STREETS



STREETS AND PARKING TYPICALS FOR 60' W.D. R.O.W. STREETS



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
 WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING	
NO.	ITEM	DATE	DESCRIPTION
1.	ISSUE SCHEMATIC DESIGN	06-10-2022	
2.	50% DESIGN DEVELOPMENT	02-13-2023	
3.	FINAL SITE PLAN	04-14-2023	
4.	REV PER CITY REVIEW	09-08-2023	

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: F.E. TITLE: 21001-0A-RSP-PIR2.DWG

OVERALL SITE PLAN

SKL SEIBER KEAST LEHNER ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
 FARMINGTON HILLS, MI 48331
 PHONE: 248.308.3331

SHEET 8

The Downs South
 Quantity Summary

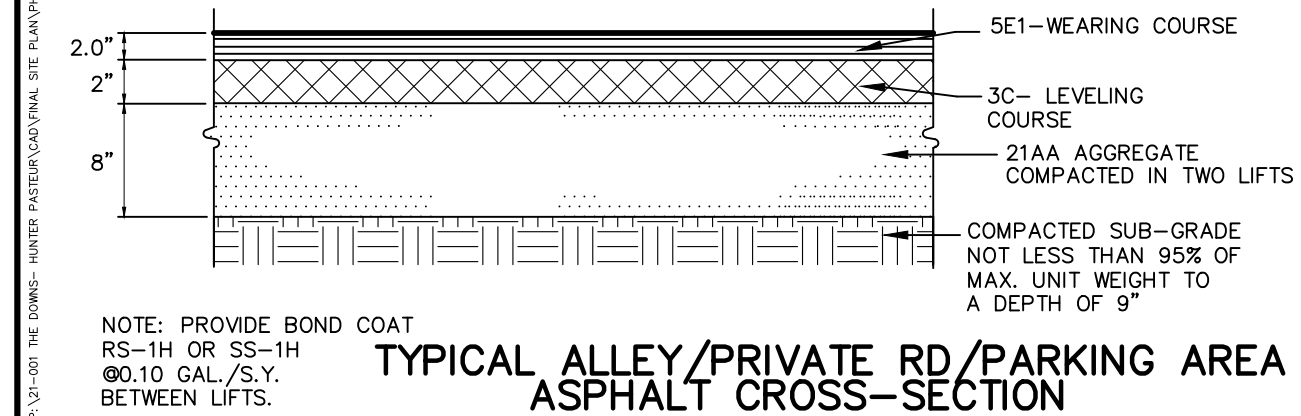
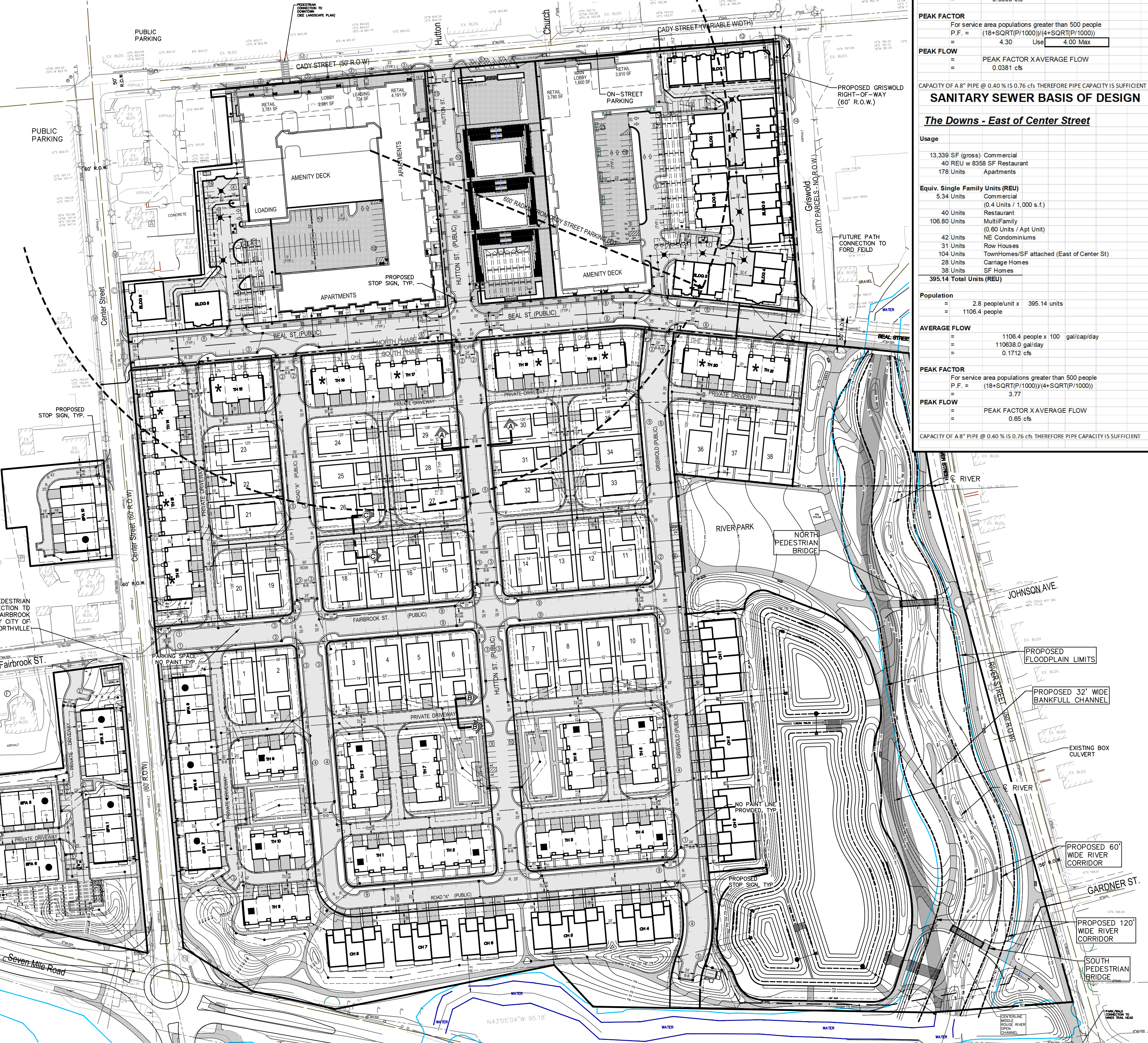
SANITARY SEWER ITEM	QUANTITY	UNIT
1 6" PVC SDR 23.5 HOUSE LEAD	2,270	L.F.
2 8" PVC SDR 26 SANITARY SEWER	4,930	L.F.
3 10" PVC SDR 26 SANITARY SEWER	1	L.F.
4 4" DIA. MANHOLE	38	EA.

WATER MAIN ITEM	QUANTITY	UNIT
1 8" WATER MAIN D.I. CL 54	7,024	L.F.
2 1" DOMESTIC WATER SERVICE-TYPE "K" COPPER	2,513	L.F.
3 HYDRANT, VALVE & BOX	14	EA.
4 8" EV. RW	12	EA.
5 8"x12" TSV&W	1	EA.

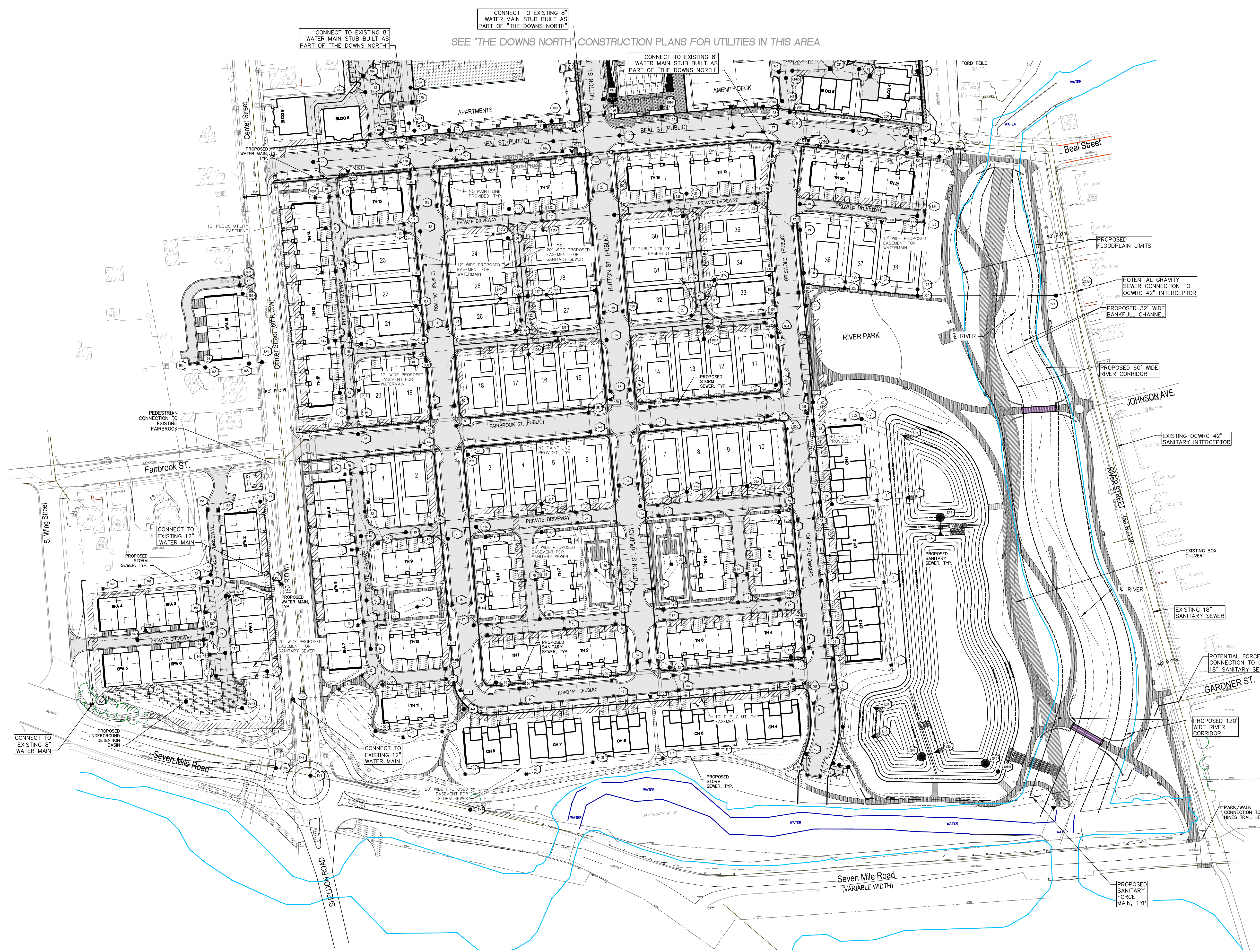
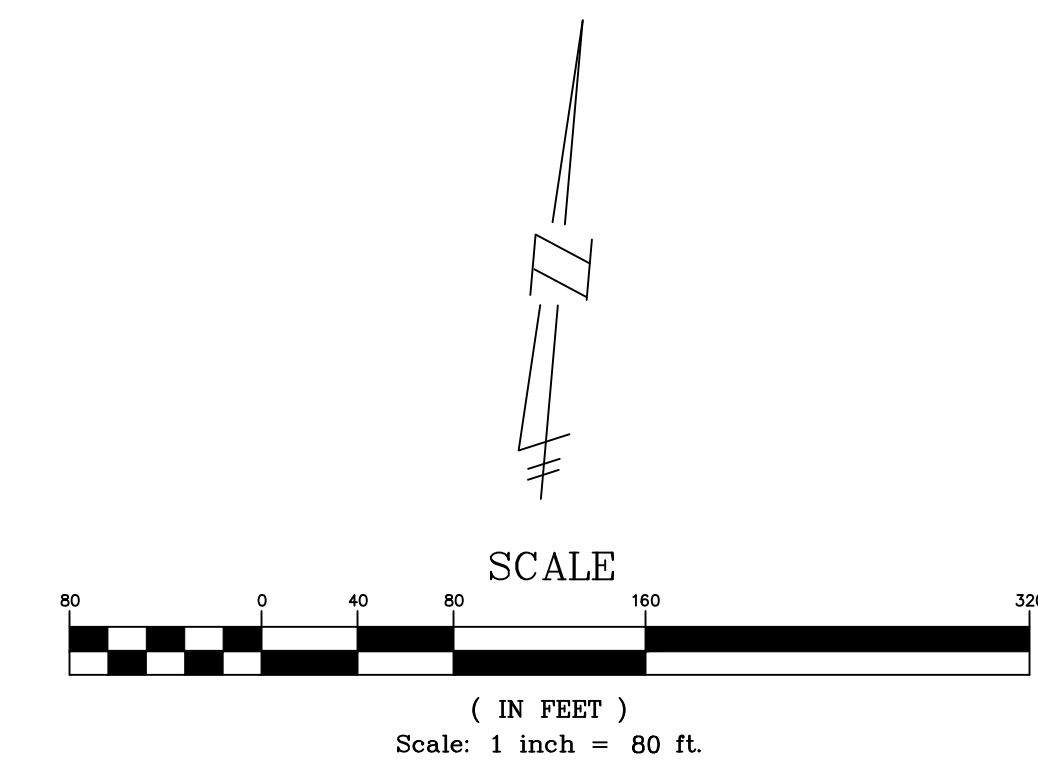
STORM SEWER ITEM	QUANTITY	UNIT
1 6" PVC LEAD	388	L.F.
2 8" PVC	495	L.F.
3 10" PVC	1	L.F.
4 12" C-76 CL 4	6,996	L.F.
5 15" C-76 CL 4	662	L.F.
6 18" C-76 CL 4	859	L.F.
7 22" C-76 CL 4	192	L.F.
8 24" C-76 CL 4	347	L.F.
9 27" C-76 CL 4	1,040	L.F.
10 2" DIA. INLET	39	EA.
11 4" DIA. CATCH BASIN	109	EA.
12 2" DIA. NANO/LAST CATCH BASIN	4	EA.
13 2" DIA. MANHOLE	7	EA.
14 4" DIA. MANHOLE	25	EA.
15 6" OVERFLOW MH	1	EA.
16 48" STAND PIPE	3	EA.
17 6" OVERFLOW MH	1	EA.
18 48" DIA. PIPE 16 BASIN	1	EA.
19 12" CONC. END SECTION	1	EA.
20 15" CONC. END SECTION	1	EA.
21 27" CONC. END SECTION	2	EA.

ITEM	QUANTITY	UNIT
1 ASPHALT PAVEMENT (4" ON 8")	25011	S.Y.
2 6" STRAIGHT FACE CONC. CURB & GUTTER	8296	L.F.
3 4" MOUNTABLE CONC. CURB & GUTTER	9945	L.F.

SIDEWALK AND PATHWAY ITEM	QUANTITY	UNIT
1 4" CONCRETE SIDEWALK	122,931	S.F.
2 CONCRETE DRIVEWAY	63,251	S.F.



NOTE: PROVIDE BOND COAT RS-1H OR SS-1H @ 0.10 GAL./S.Y. BETWEEN LIFTS.



LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		UNDER DRAIN
		MANHOLE
		CATCH BASIN W/SED CATCH
		CURB INLET W/SILT SAC
		END SECTION
		GATE VALVE
		HYDRANT
		OVERHEAD ELECTRICAL LINES
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		T/E
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2023
2.	50% DESIGN DEVELOPMENT	02-03-2024
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

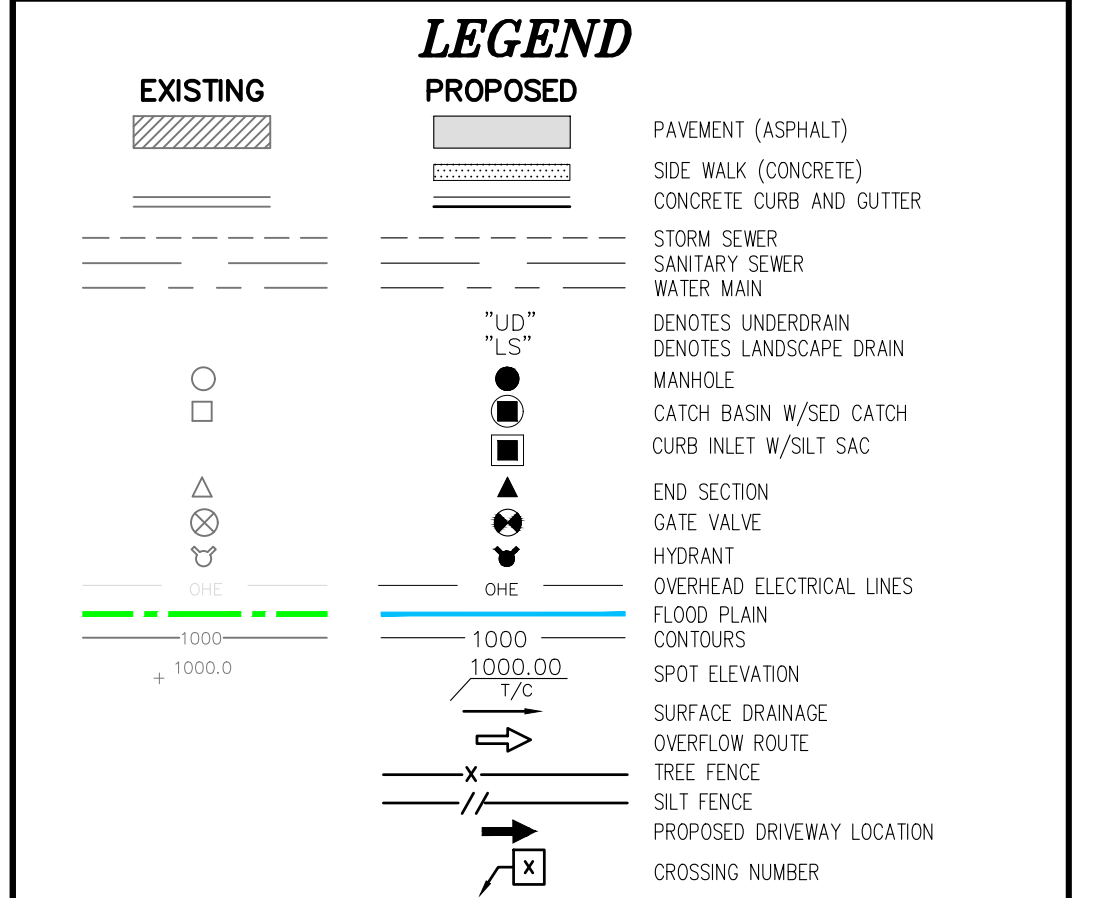
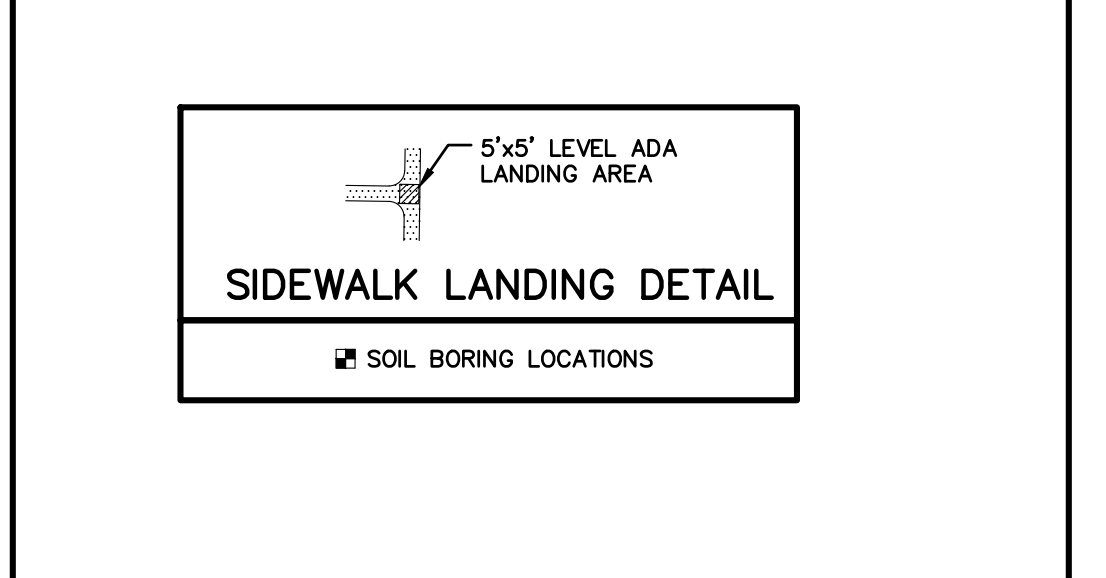
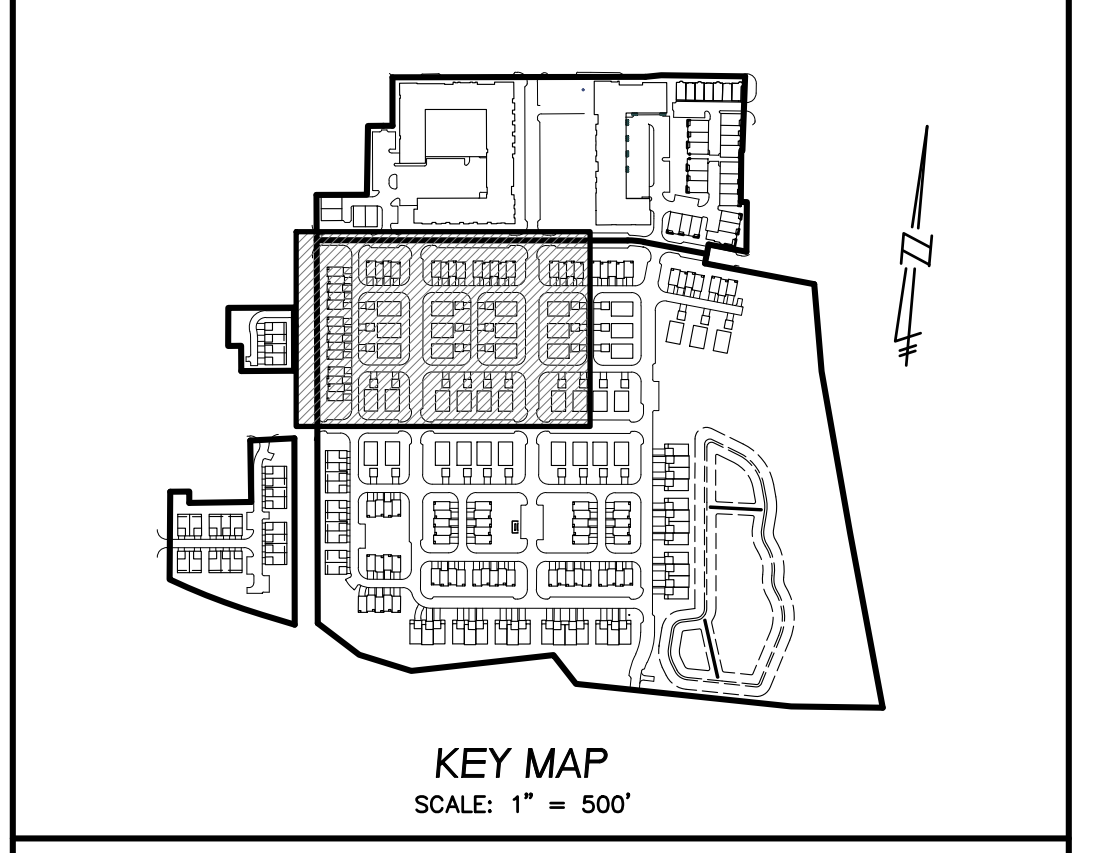
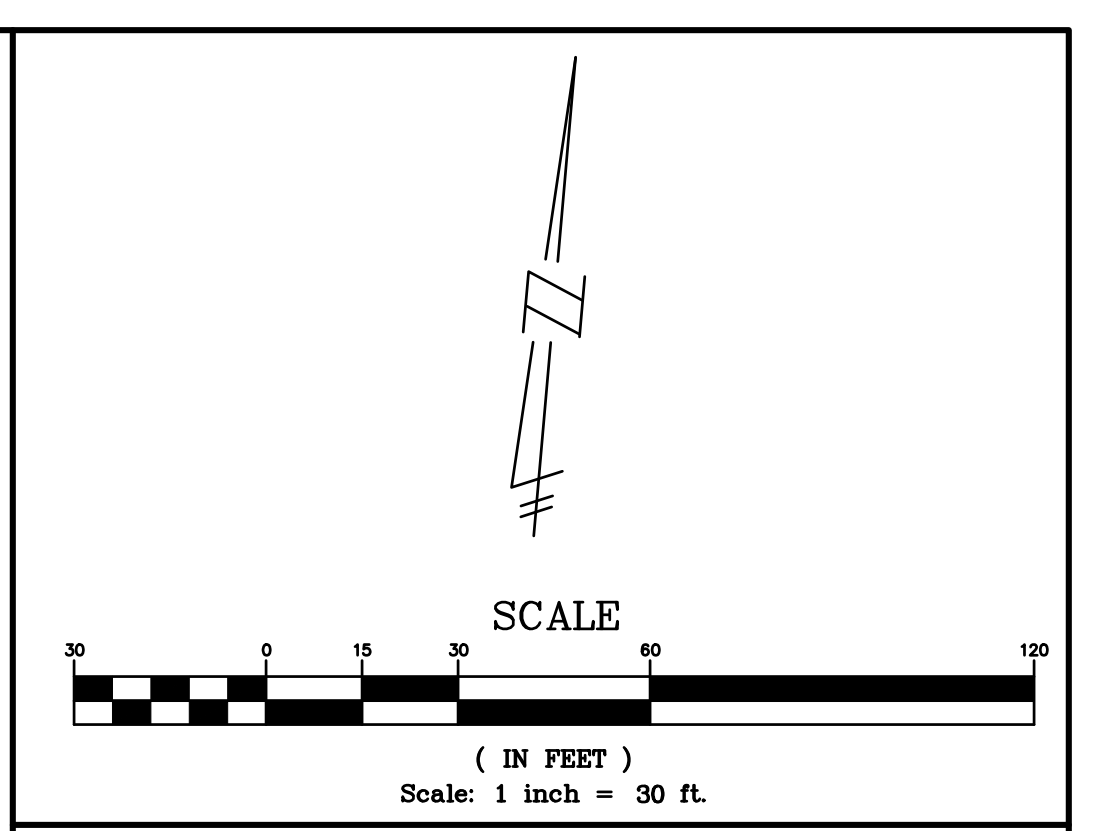
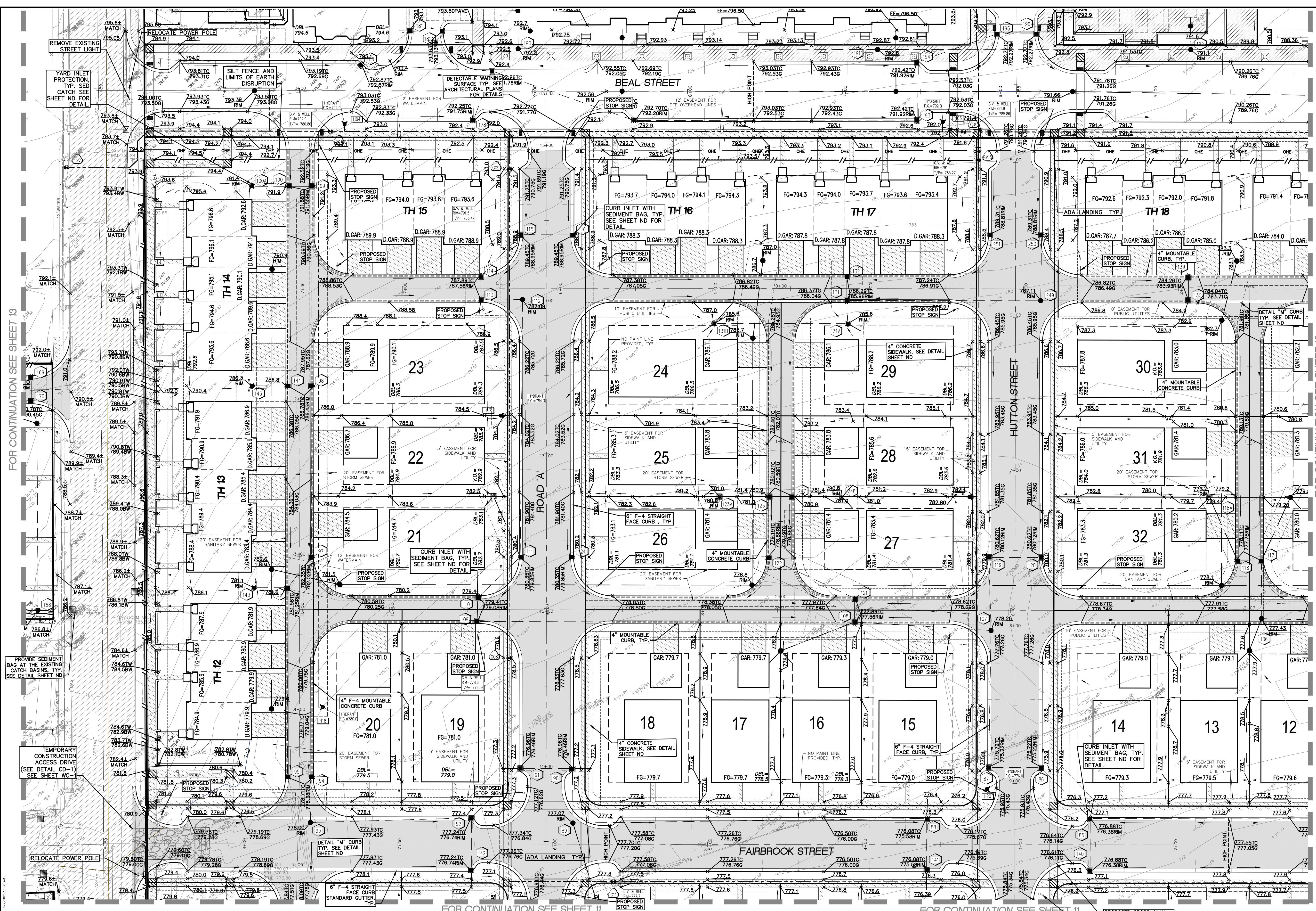
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DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: B.E. FILE: 21001-CI-RSP-PH2 2.DWG

COMPOSITE UTILITY PLAN

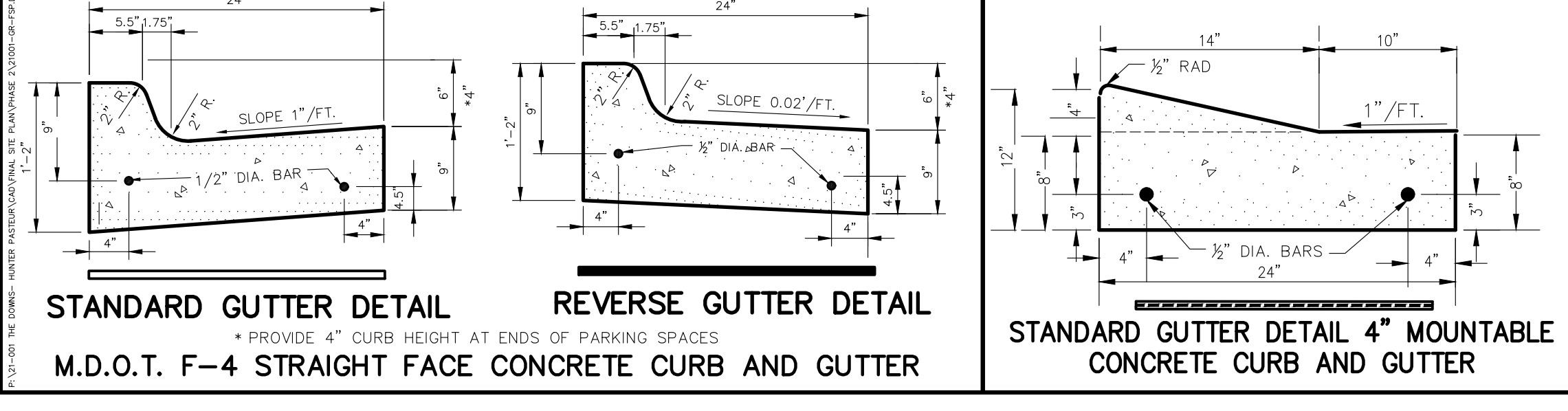
	SEIBER KEAST LEHNER ENGINEERING SURVEYING 39205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 PHONE: 248.308.3331	SHEET 8A
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REVISIONS		UTILITY WARNING	
NO.	DESCRIPTION	DATE	BY
1	TITLE SHEETING DESIGN	08-10-2022	S.M.
2	50% DESIGN DEVELOPMENT	02-03-2023	R.B.
3	FINAL SITE PLAN	04-14-2023	R.B.
4	REV PER CITY REVIEW	09-08-2023	R.B.

DATE: 04-25-23
DESIGNED BY: S.M.
CHECKED BY: R.B.

JOB NUMBER: 21-001
FILE: 21001-GR-SP.DWG



Sidewalk Requirements

1. THE MAXIMUM CROSS SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 2%.
2. THE MAXIMUM RUNNING SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 5%.
3. THE 5' X 5' ADA LANDING AREAS HAVE A MAXIMUM SLOPE IN ALL DIRECTIONS OF 2%.
4. THE MAXIMUM SLOPE FOR A RAMP IS 8% FOR A MAXIMUM DISTANCE OF 6 FEET.

THE CONTRACTOR SHALL CHECK THE FORMS TO ENSURE THAT THESE SLOPE REQUIREMENTS ARE MET BEFORE ANY CONCRETE IS PLACED.

SEE SHEET ND FOR SESC DETAILS, SEQUENCE OF CONSTRUCTION AND NOTES & DETAILS.

SIDEWALKS
ALL INTERSECTIONS SIDEWALK RAMPS AND SIDEWALKS ALONG OPEN SPACES SHALL BE INSTALLED BY THE DEVELOPER.

SIDEWALKS AND RAMP CONSTRUCTION
SHALL BE ACCORDANCE WITH ADA STANDARDS.
MAINTAIN A MAXIMUM 1V:4H GROUND SLOPE.

NOTES

SEE SHEET ND FOR STANDARD OPERATING PROCEDURES, SOIL EROSION SEQUENCE OF CONSTRUCTION AND SOIL EROSION CONTROL NOTES.

THE DEVELOPER IS RESPONSIBLE FOR RESOLVING ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH ARE A RESULT OF THE DEVELOPER'S ACTIVITIES.

SEE SHEET ND FOR SOIL EROSION CONTROL DETAILS.

USE SEDCATCH'S SEDCAGE FOR ALL YARD CATCH BASINS.

USE HANES GEO COMPONENTS INLET PRO SEDIMENT BAGS FOR PAVEMENT CATCH BASINS.

ALL STORM WATER RUNOFF FROM DEVELOPED AREAS WILL BE DIRECTED TO THE STORM WATER DETENTION BASIN AND DISCHARGE TO THE MIDDLE OF ROUGE RIVER.

SEE SHEET ND FOR PAVEMENT CROSS SECTIONS

FOR CONTINUATION SEE SHEET 9

FOR CONTINUATION SEE SHEET 9

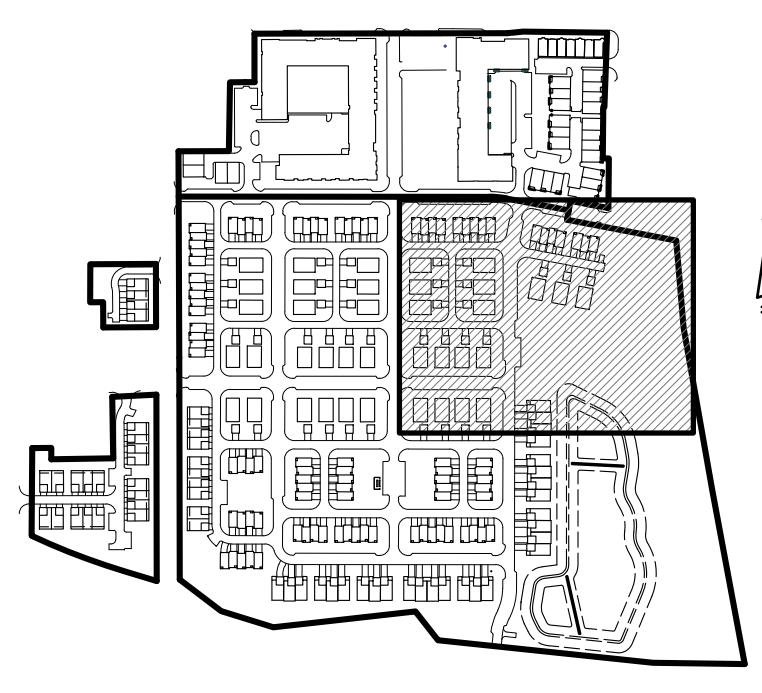
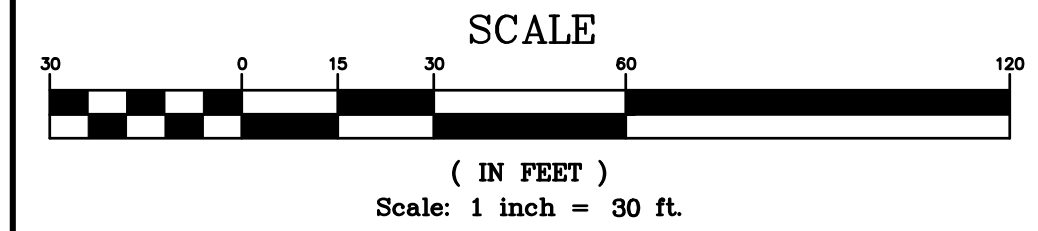
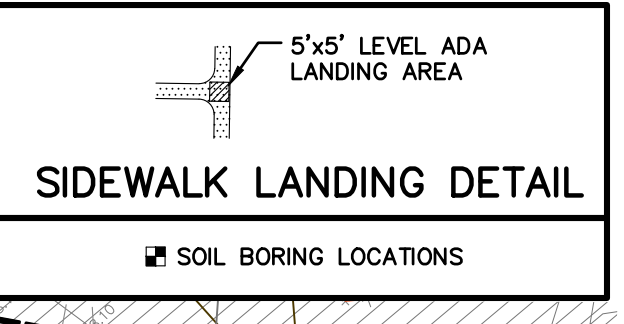
FOR CONTINUATION SEE SHEET 12



Sidewalk Requirements

1. THE MAXIMUM CROSS SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 2%
2. THE MAXIMUM RUNNING SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 5%
3. THE 5' X 5' ADA LANDING AREAS HAVE A MAXIMUM SLOPE IN ALL DIRECTIONS OF 2%
4. THE MAXIMUM SLOPE FOR A RAMP IS 8% FOR A MAXIMUM DISTANCE OF 6 FEET

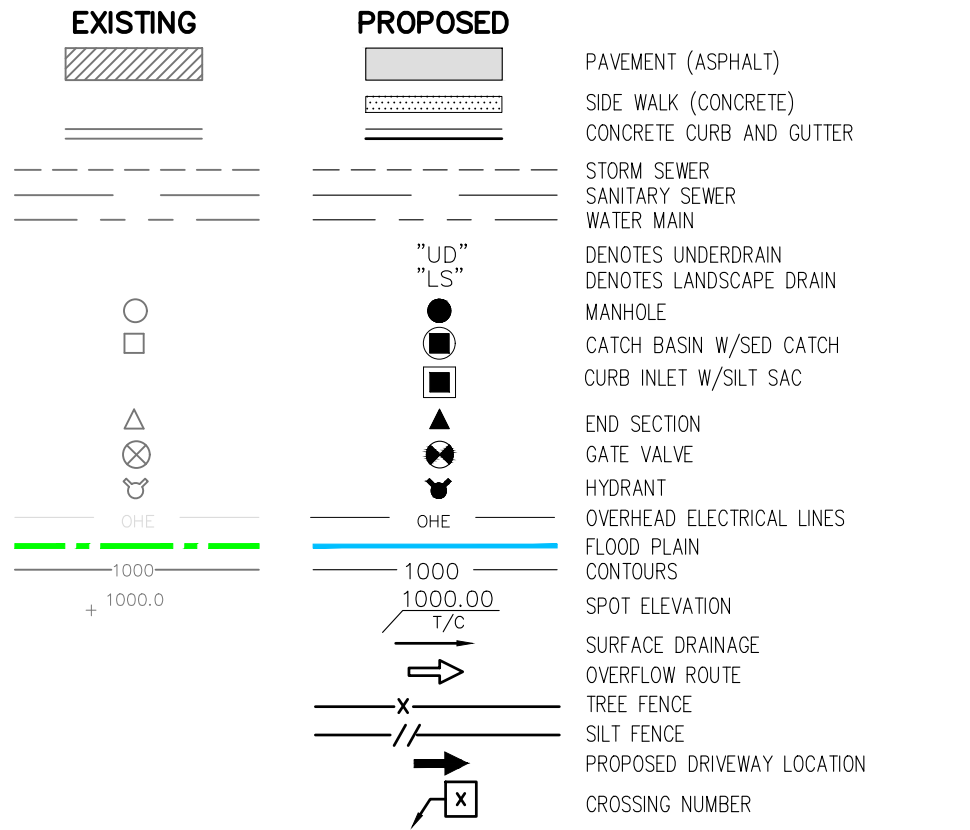
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NOTES

- SEE SHEET NO FOR SESC DETAILS, SEQUENCE OF CONSTRUCTION AND NOTES & DETAILS.
- SIDEWALKS**
ALL INTERSECTIONS SIDEWALK RAMP AND SIDEWALKS ALONG OPEN SPACES SHALL BE INSTALLED BY THE DEVELOPER
- SIDEWALKS AND RAMP CONSTRUCTION**
SHALL BE ACCORDANCE WITH ADA STANDARDS.
- MAINTAIN A MAXIMUM 1V:4H GROUND SLOPE.
- SEE SHEET NO FOR STANDARD OPERATING PROCEDURES, SOIL EROSION SEQUENCE OF CONSTRUCTION AND SOIL EROSION CONTROL NOTES.
- THE DEVELOPER IS RESPONSIBLE FOR RESOLVING ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH ARE A RESULT OF THE DEVELOPER'S ACTIVITIES.
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- ALL STORM WATER RUNOFF FROM DEVELOPED AREAS WILL BE DIRECTED TO THE STORM WATER DETENTION BASIN AND DISCHARGE TO THE MIDDLE OF ROUGE RIVER.

LEGEND



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING	
NO.	DESCRIPTION	DATE	BY
1.	FINAL DESIGN	08-10-2023	S.M.
2.	50% DESIGN DEVELOPMENT	02-03-2023	R.E.
3.	FINAL SITE PLAN	04-14-2023	S.M.
4.	REV PER CITY REVIEW	09-08-2023	S.M.

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

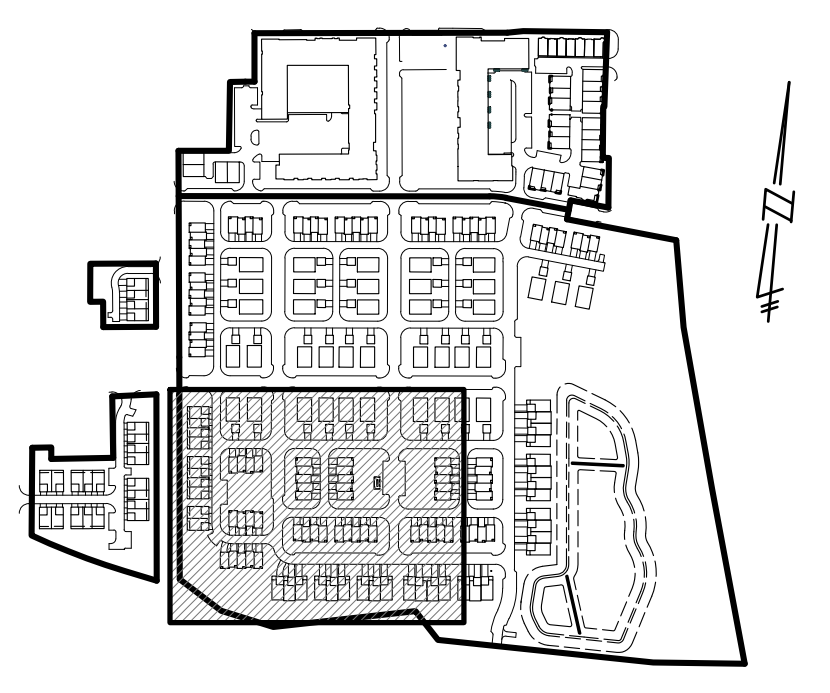
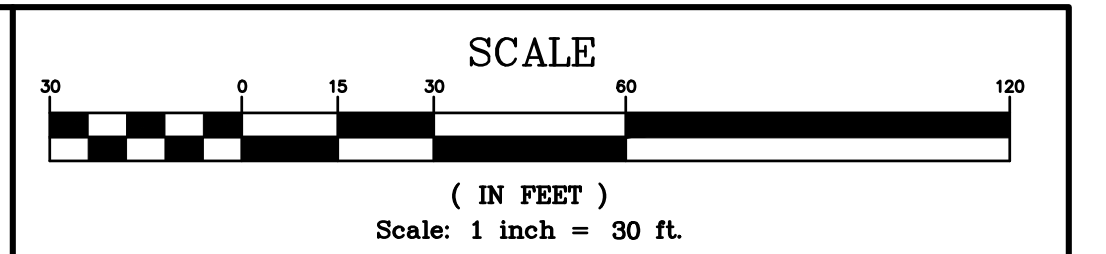
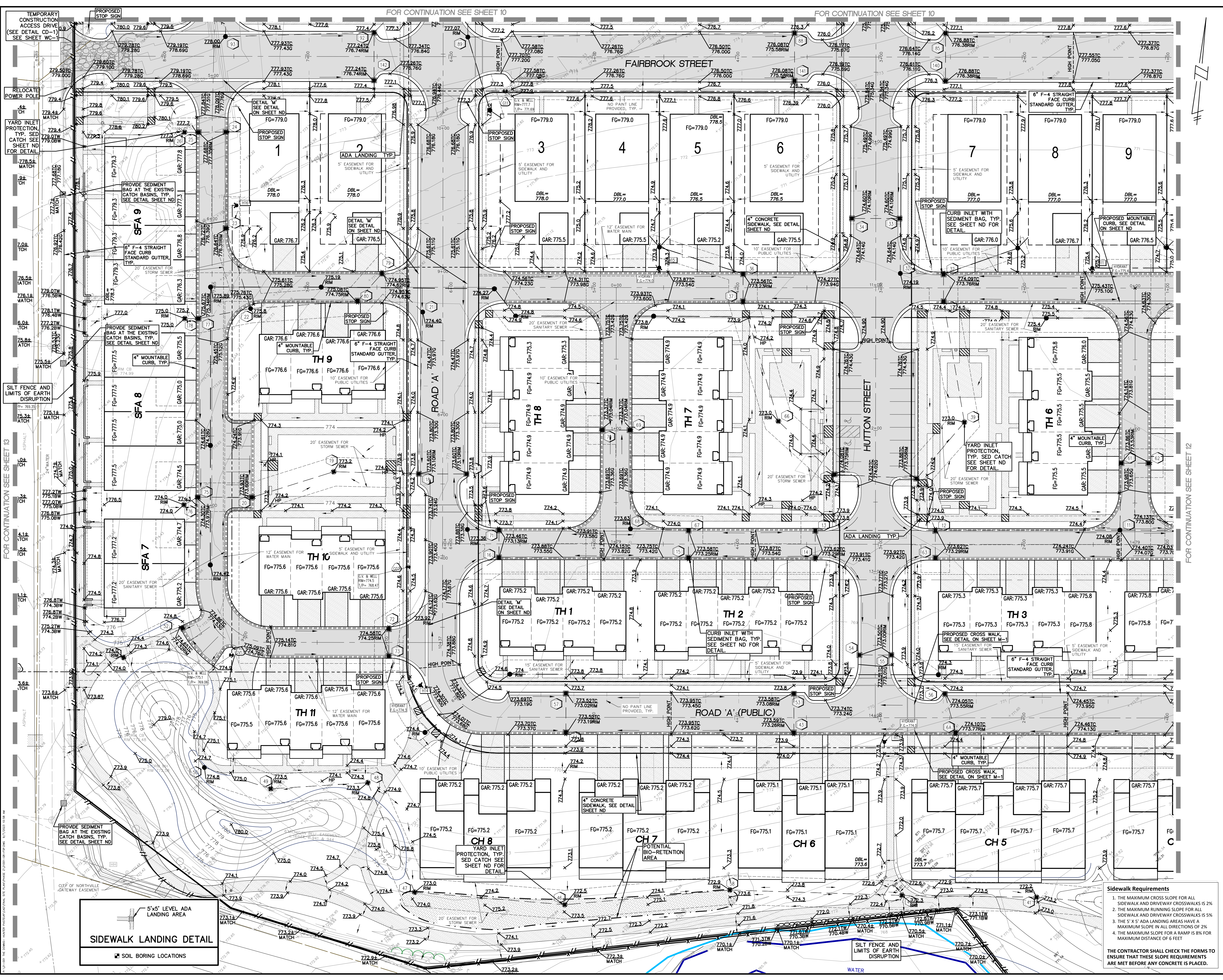
DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-GR-FSP.DWG

GRADING PLAN

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
10

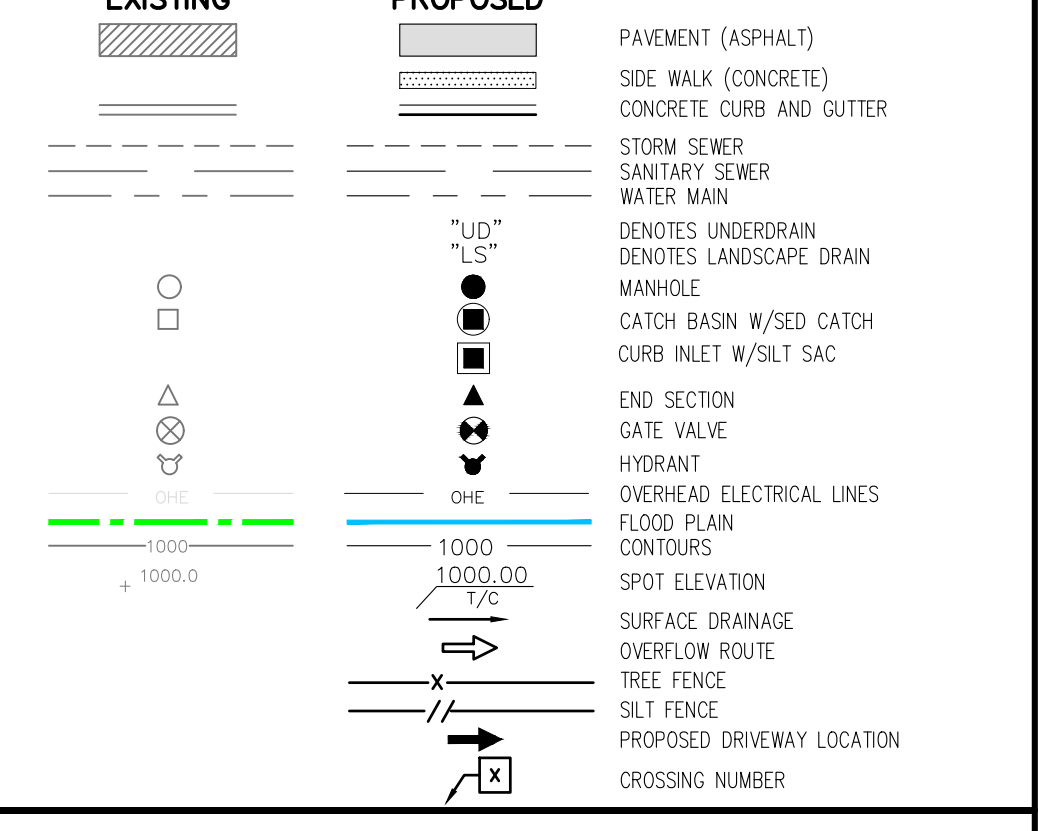


KEY MAP
SCALE: 1" = 500'

NOTES

- SEE SHEET ND FOR SESC DETAILS, SEQUENCE OF CONSTRUCTION AND NOTES & DETAILS.
- SIDEWALKS**
ALL INTERSECTIONS SIDEWALK RAMPS AND SIDEWALKS ALONG OPEN SPACES SHALL BE INSTALLED BY THE DEVELOPER
- SIDEWALKS AND RAMP CONSTRUCTION**
SHALL BE ACCORDANCE WITH ADA STANDARDS.
- MAINTAIN A MAXIMUM 1V:4H GROUND SLOPE.
- SEE SHEET ND FOR STANDARD OPERATING PROCEDURES, SOIL EROSION SEQUENCE OF CONSTRUCTION AND SOIL EROSION CONTROL NOTES.
- THE DEVELOPER IS RESPONSIBLE FOR RESOLVING ANY DRAINAGE PROBLEMS ON ADJACENT PROPERTIES WHICH ARE A RESULT OF THE DEVELOPER'S ACTIVITIES.
- SEE SHEET ND FOR SOIL EROSION CONTROL DETAILS.
- USE SEDCATCH'S SEDCAGE FOR ALL YARD CATCH BASINS.
- USE HANES GEO COMPONENTS INLET PRO SEDIMENT BAGS FOR PAVEMENT CATCH BASINS.
- ALL STORM WATER RUNOFF FROM DEVELOPED AREAS WILL BE DIRECTED TO THE STORM WATER DETENTION BASIN AND DISCHARGE TO THE MIDDLE OF ROUGE RIVER.

LEGEND



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

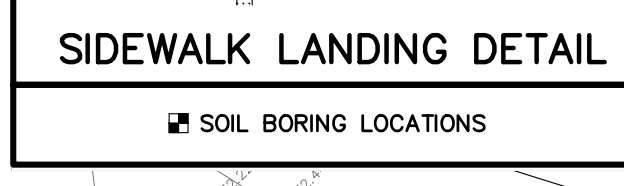
REVISIONS			UTILITY WARNING	
NO.	DESCRIPTION	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.	
1.	FINAL DESIGN DEVELOPMENT	02-03-2023		
2.	FINAL SITE PLAN	04-14-2023		
3.	REV PER CITY REVIEW	09-08-2023		

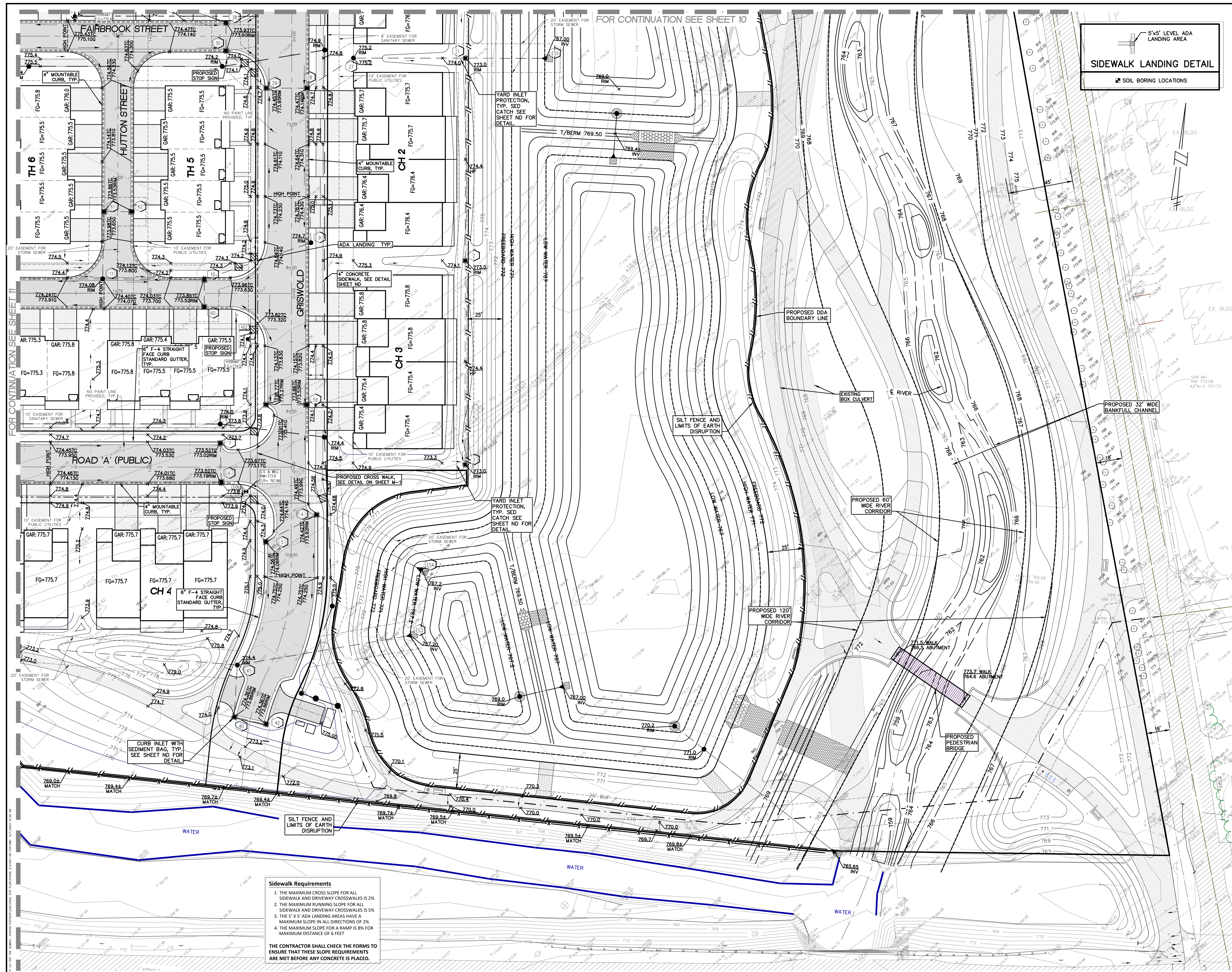


DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 81-001
CHECKED BY: R.E. FILE: 21001-GR-FSP.DWG

GRADING PLAN

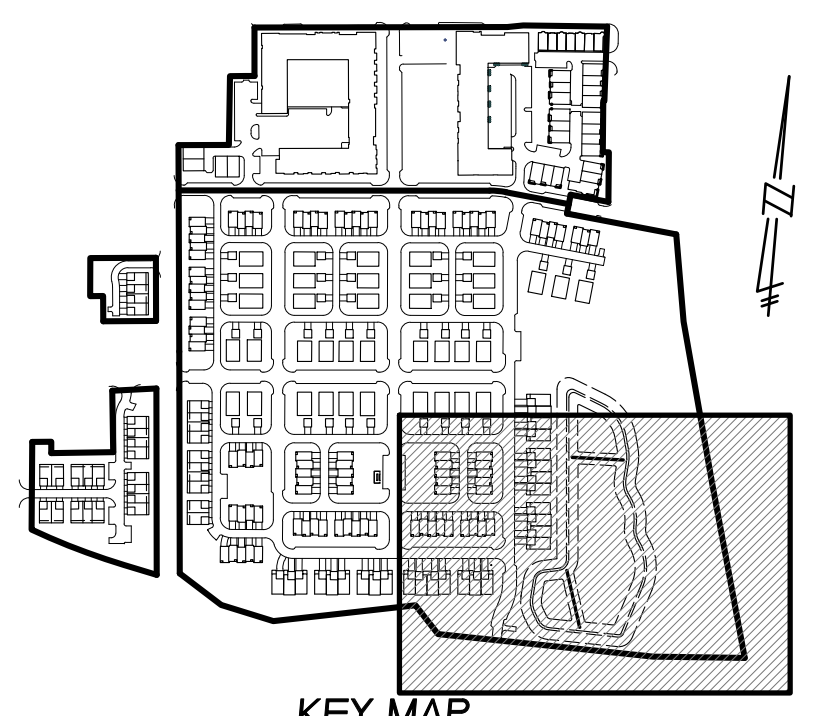
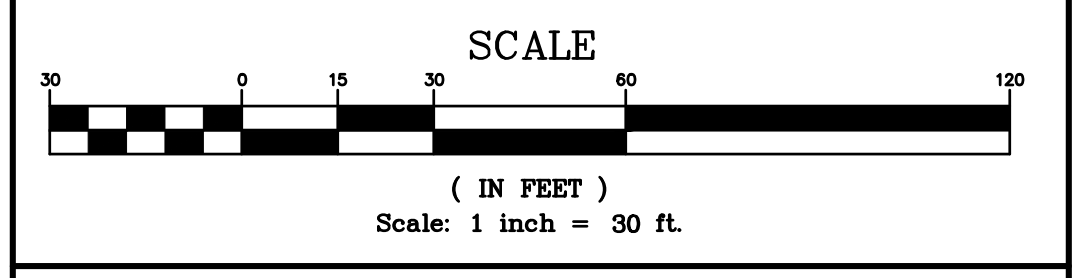
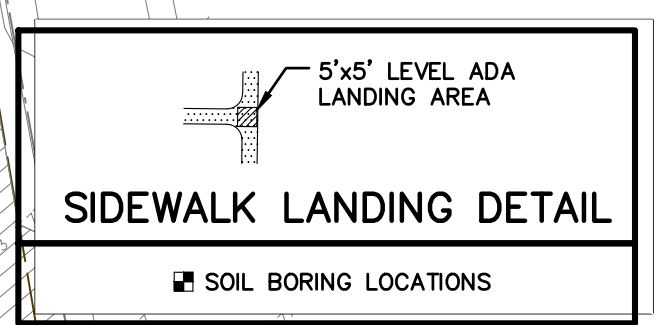
- Sidewalk Requirements**
- THE MAXIMUM CROSS SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSEWALKS IS 2%
 - THE MAXIMUM RUNNING SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSEWALKS IS 5%
 - THE 5' X 5' ADA LANDING AREAS HAVE A MAXIMUM SLOPE IN ALL DIRECTIONS OF 2%
 - THE MAXIMUM SLOPE FOR A RAMP IS 8% FOR MAXIMUM DISTANCE OF 6 FEET
- THE CONTRACTOR SHALL CHECK THE FORMS TO ENSURE THAT THESE SLOPE REQUIREMENTS ARE MET BEFORE ANY CONCRETE IS PLACED.





FOR CONTINUATION SEE SHEET 10

FOR CONTINUATION SEE SHEET 11

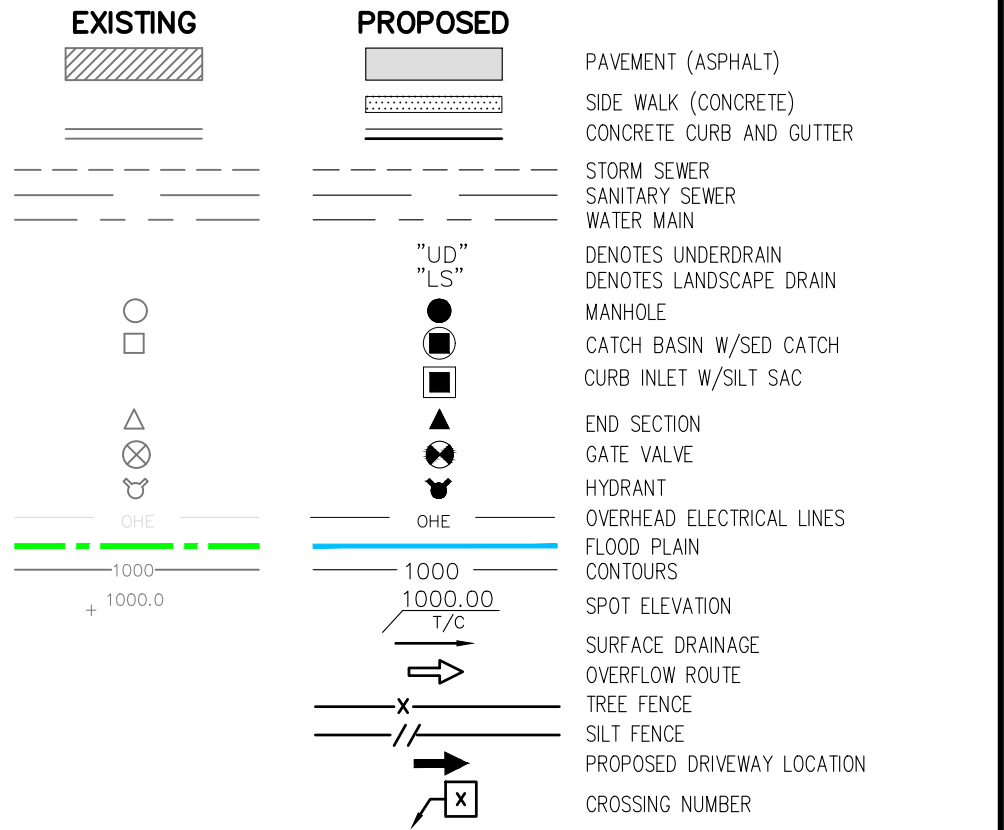


KEY MAP
SCALE: 1" = 500'

NOTES

- SEE SHEET NO FOR SESC DETAILS, SEQUENCE OF CONSTRUCTION AND NOTES & DETAILS.
- SIDEWALKS**
ALL INTERSECTIONS SIDEWALK RAMPS AND SIDEWALKS ALONG OPEN SPACES SHALL BE INSTALLED BY THE DEVELOPER
- SIDEWALKS AND RAMP CONSTRUCTION**
SHALL BE ACCORDANCE WITH ADA STANDARDS.
- MAINTAIN A MAXIMUM 1V:4H GROUND SLOPE.
- SEE SHEET NO FOR STANDARD OPERATING PROCEDURES, SOIL EROSION SEQUENCE OF CONSTRUCTION AND SOIL EROSION CONTROL NOTES.
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LEGEND



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS			UTILITY WARNING
NO.	ITEM	DATE	
1.	100% SCHEMATIC DESIGN	08-10-2022	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.
2.	50% DESIGN DEVELOPMENT	02-03-2023	
3.	FINAL SITE PLAN	04-14-2023	
4.	REV PER CITY REVIEW	09-08-2023	



THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

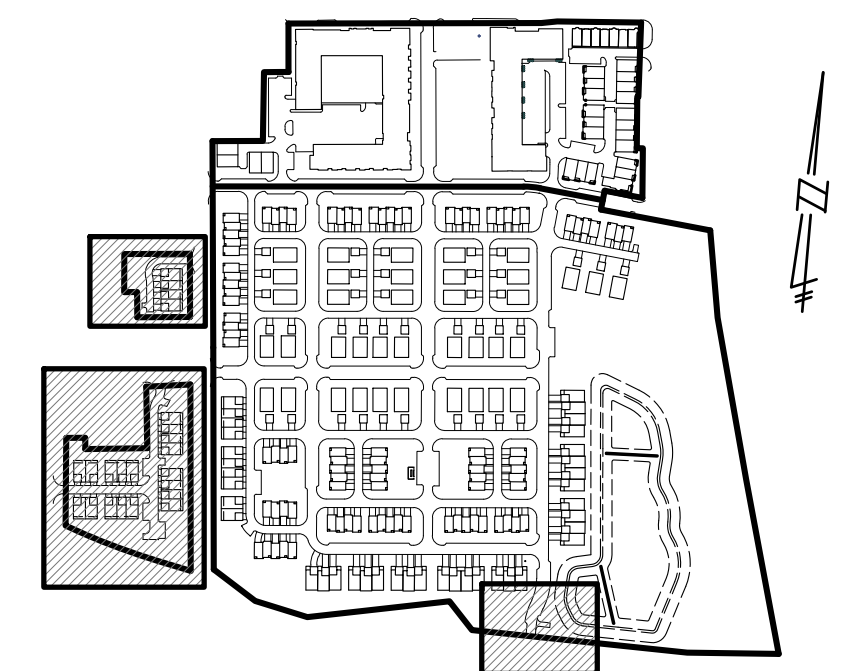
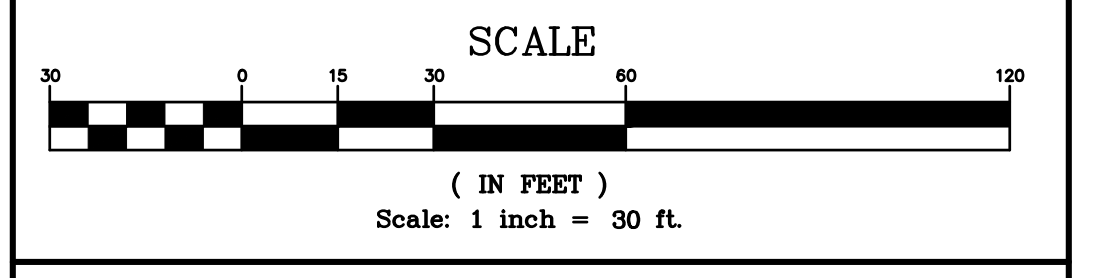
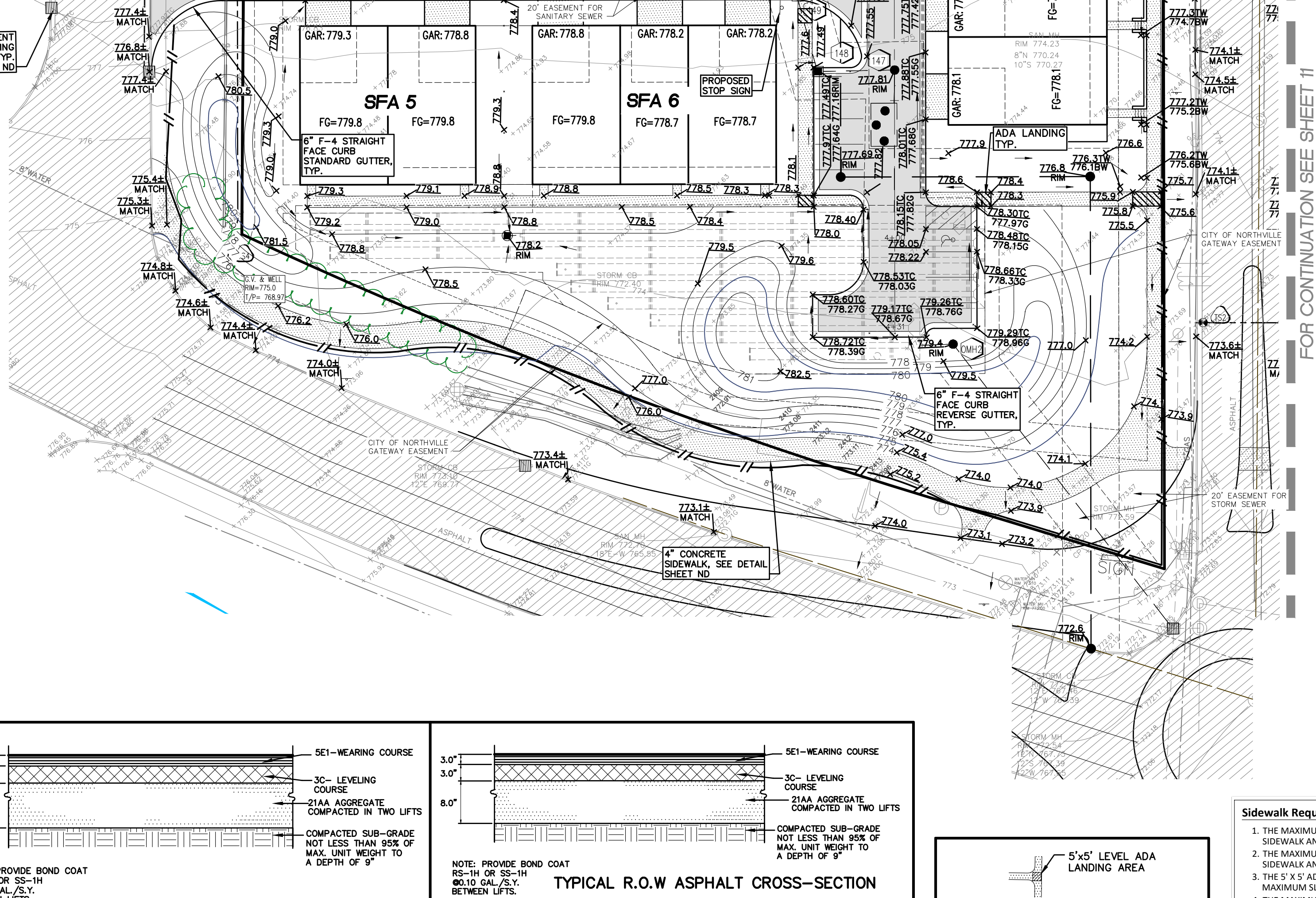
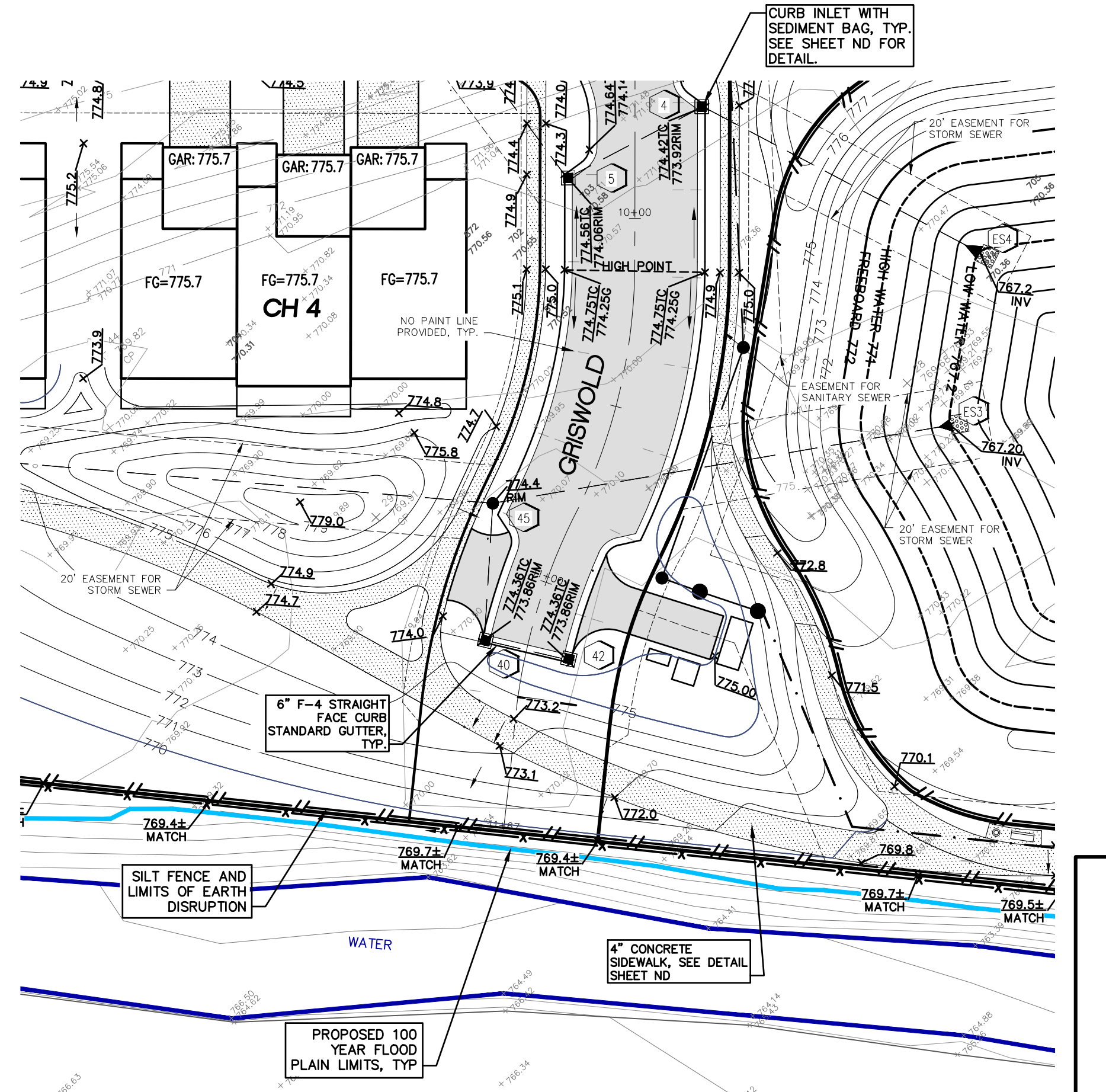
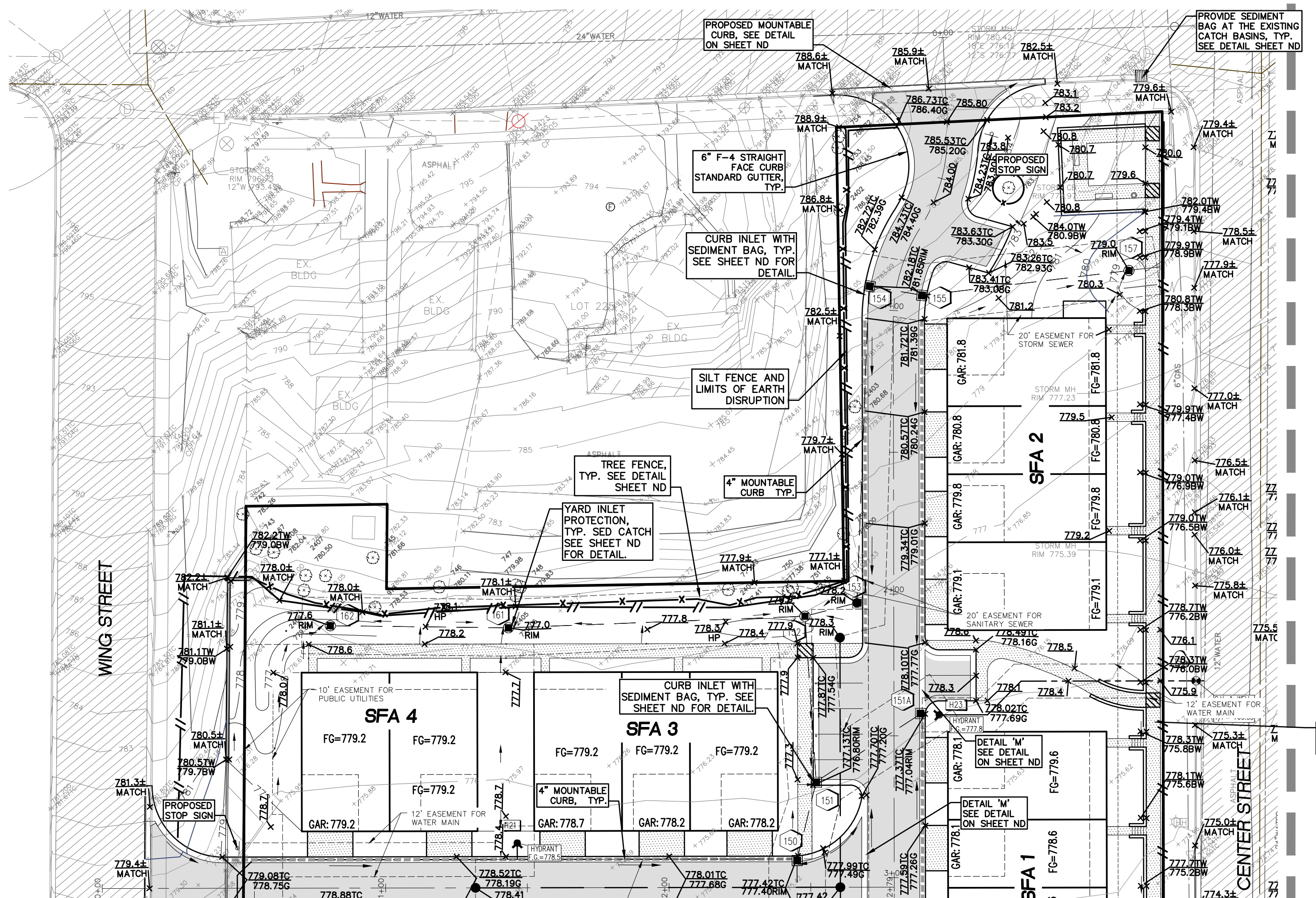
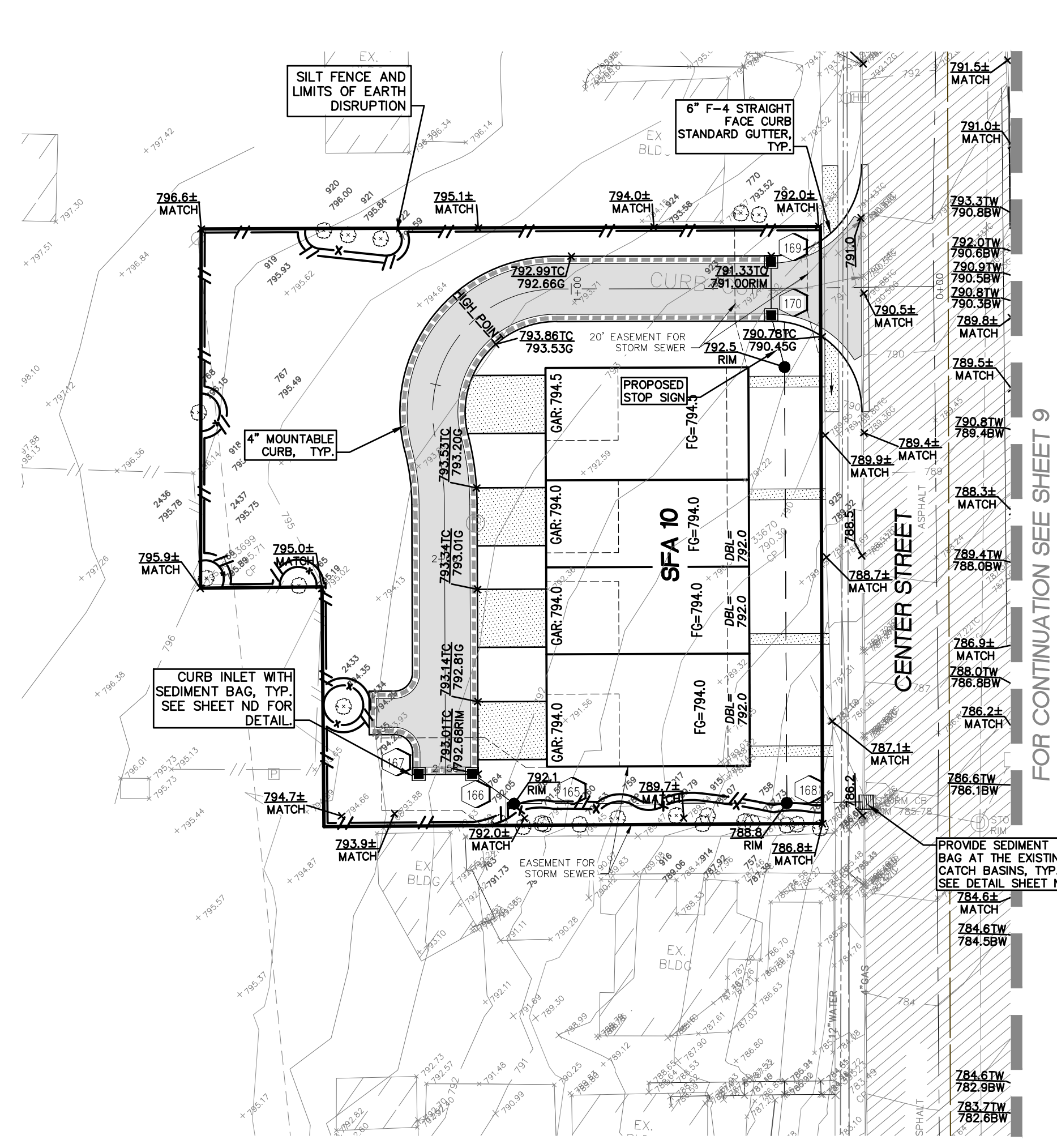
DATE: 04-25-23 DESIGNED BY: S.M. CHECKED BY: R.E. JOB NUMBER: 21-001 PILE: 21001-GR-FSP.DWG

Sidewalk Requirements

1. THE MAXIMUM CROSS SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 2%
2. THE MAXIMUM RUNNING SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 5%
3. THE 5' X 5' ADA LANDING AREAS HAVE A MAXIMUM SLOPE IN ALL DIRECTIONS OF 2%
4. THE MAXIMUM SLOPE FOR A RAMP IS 8% FOR MAXIMUM DISTANCE OF 6 FEET

THE CONTRACTOR SHALL CHECK THE FORMS TO ENSURE THAT THESE SLOPE REQUIREMENTS ARE MET BEFORE ANY CONCRETE IS PLACED.

GRADING PLAN



NOTES

SEE SHEET ND FOR SESC DETAILS, SEQUENCE OF CONSTRUCTION AND NOTES & DETAILS.

SIDEWALKS
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SIDEWALKS AND RAMP CONSTRUCTION
SHALL BE ACCORDANCE WITH ADA STANDARDS.

MAINTAIN A MAXIMUM 1%:4H GROUND SLOPE.

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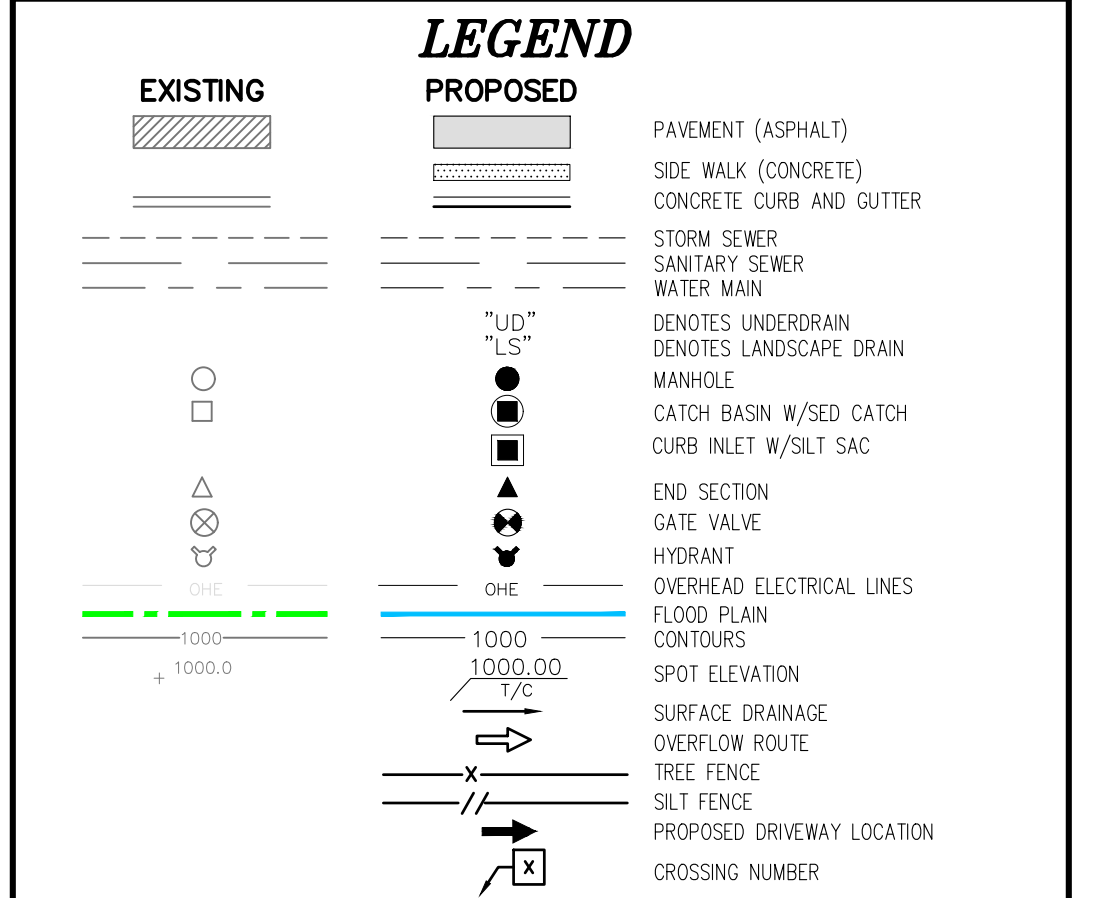
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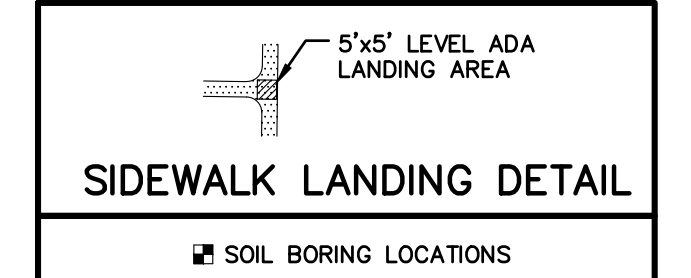
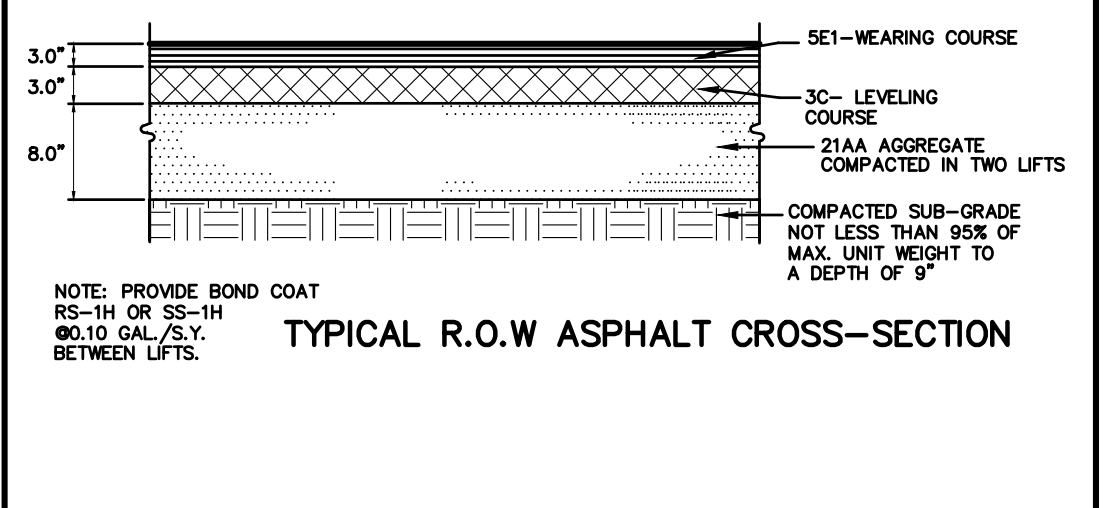
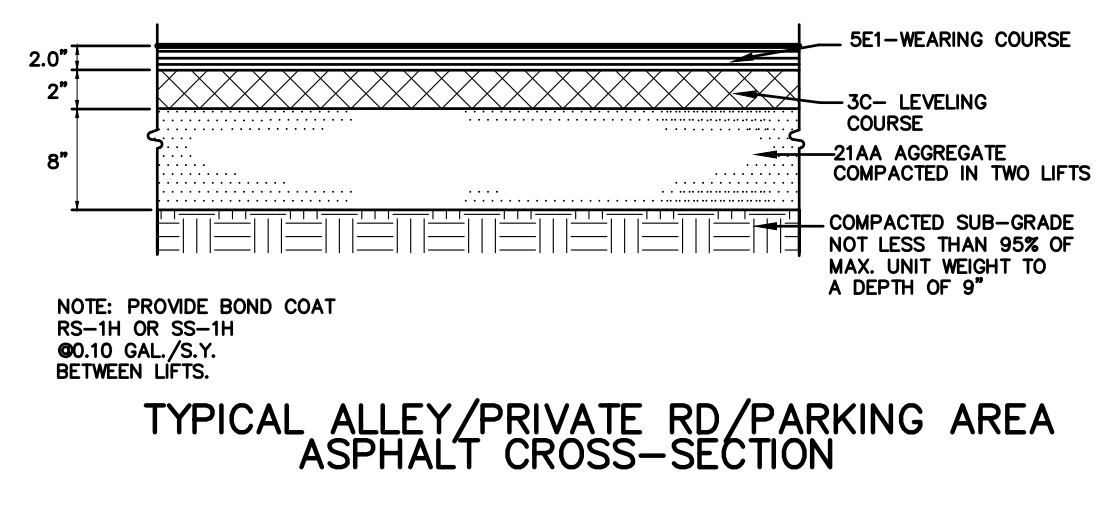


THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS			UTILITY WARNING
NO.	ITEM	DATE	
1.	100% SCHEDULING DESIGN	08-10-2022	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED. 811 Know what's below. Call before you dig. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.
2.	50% DESIGN DEVELOPMENT	02-03-2023	
3.	FINAL SITE PLAN	04-14-2023	
4.	REV PER CITY REVIEW	09-08-2023	

GRADING PLAN

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

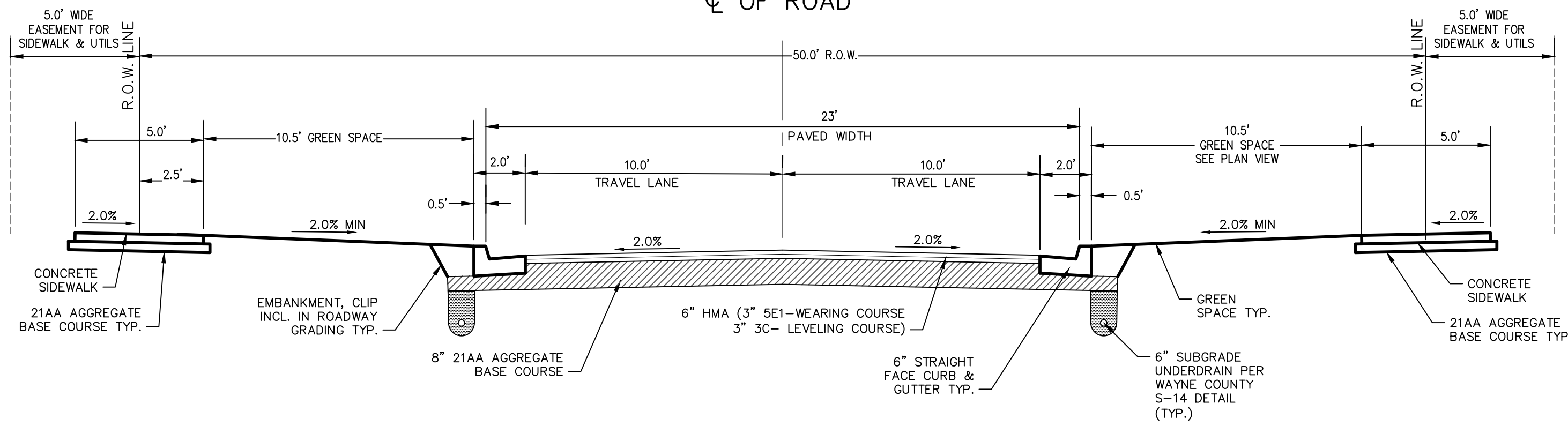


Sidewalk Requirements

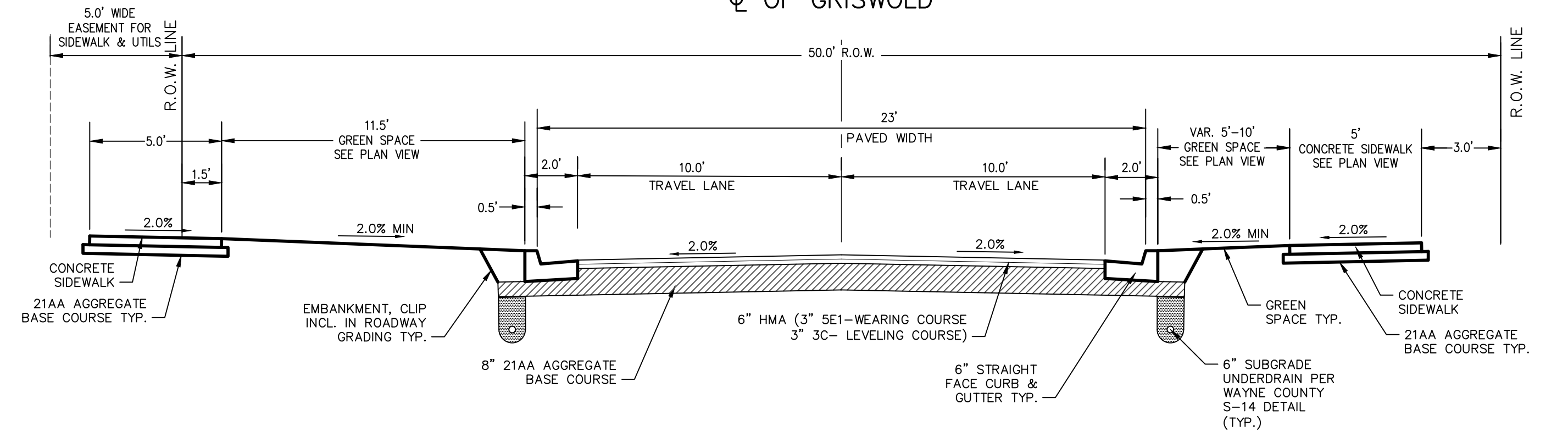
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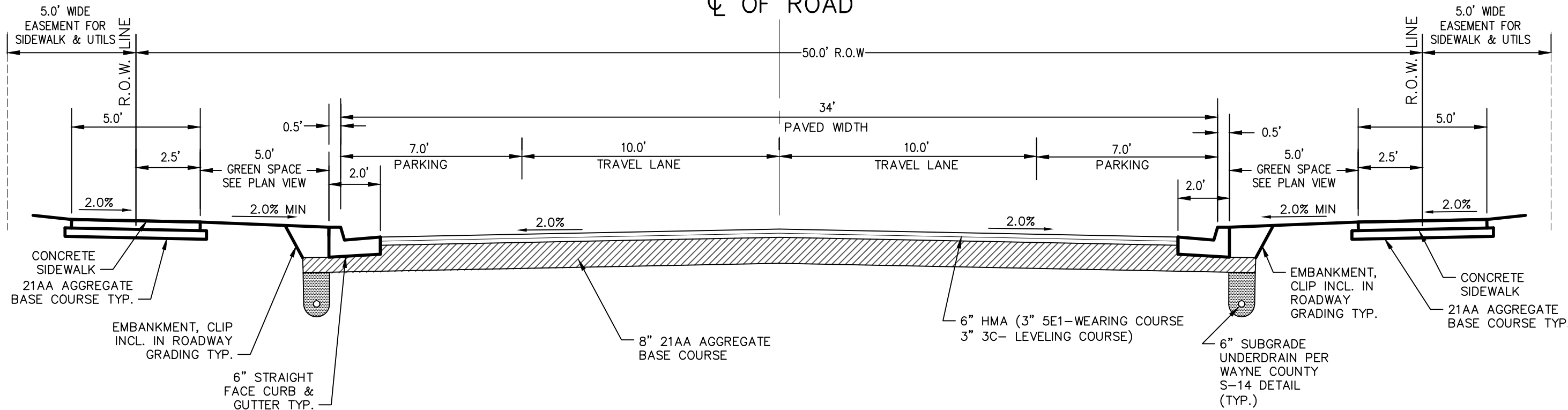
ROAD CROSS-SECTION
HUTTON STREET, FAIRBROOK AND ROAD 'A' STREET- STANDARD CROSS SECTION
CL OF ROAD



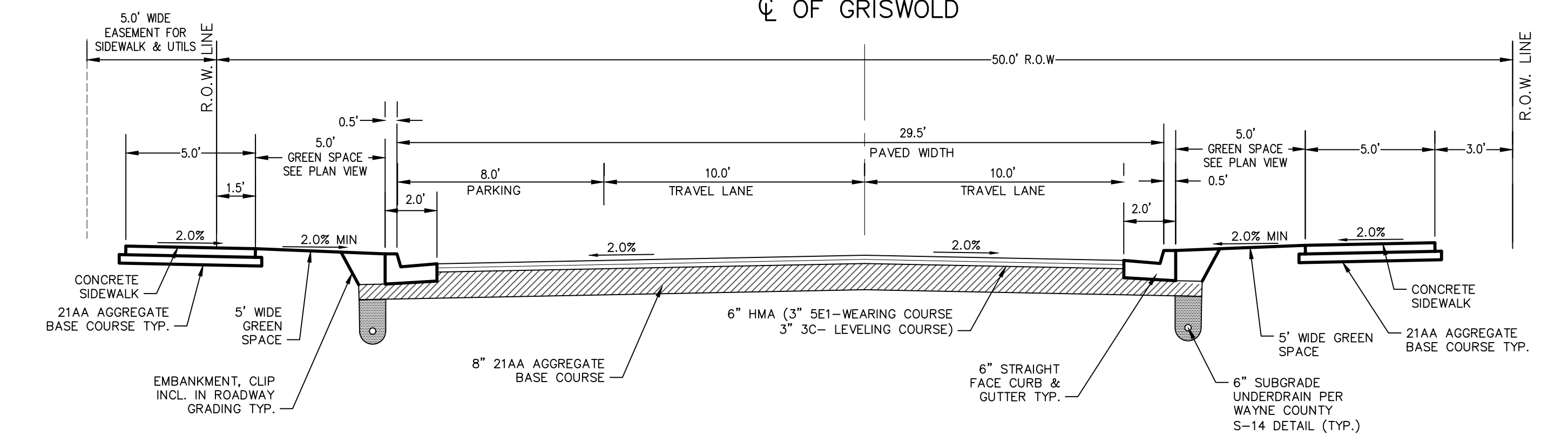
ROAD CROSS-SECTION
GRISWOLD- STANDARD CROSS SECTION
CL OF GRISWOLD



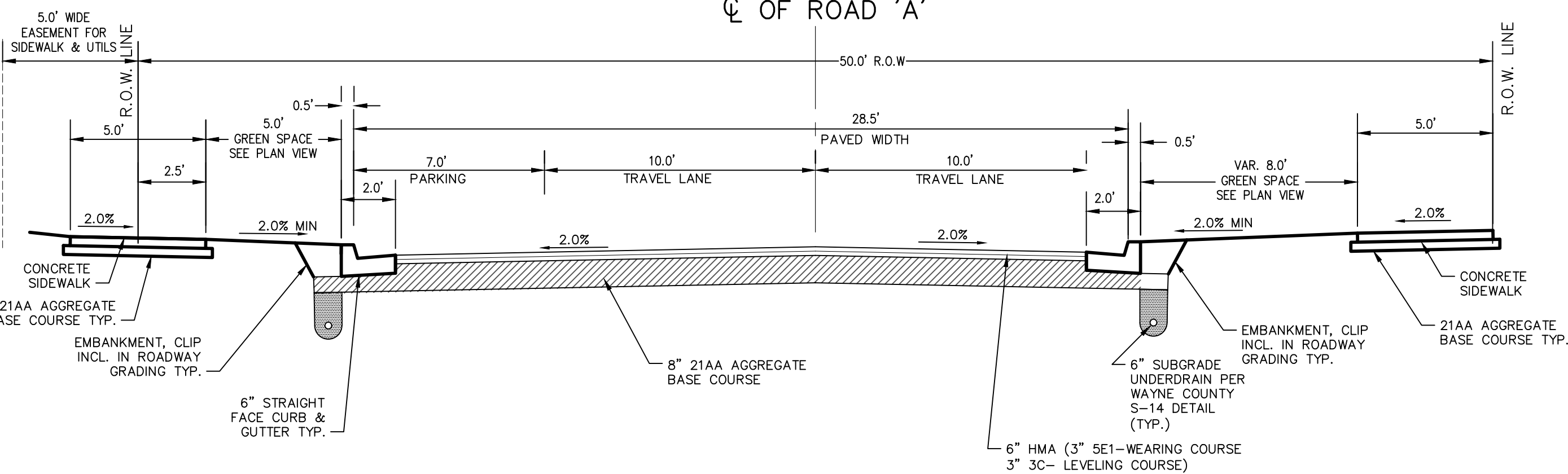
ROAD CROSS-SECTION
HUTTON STREET, FAIRBROOK + ROAD 'A'- PARKING BOTH SIDES
CL OF ROAD



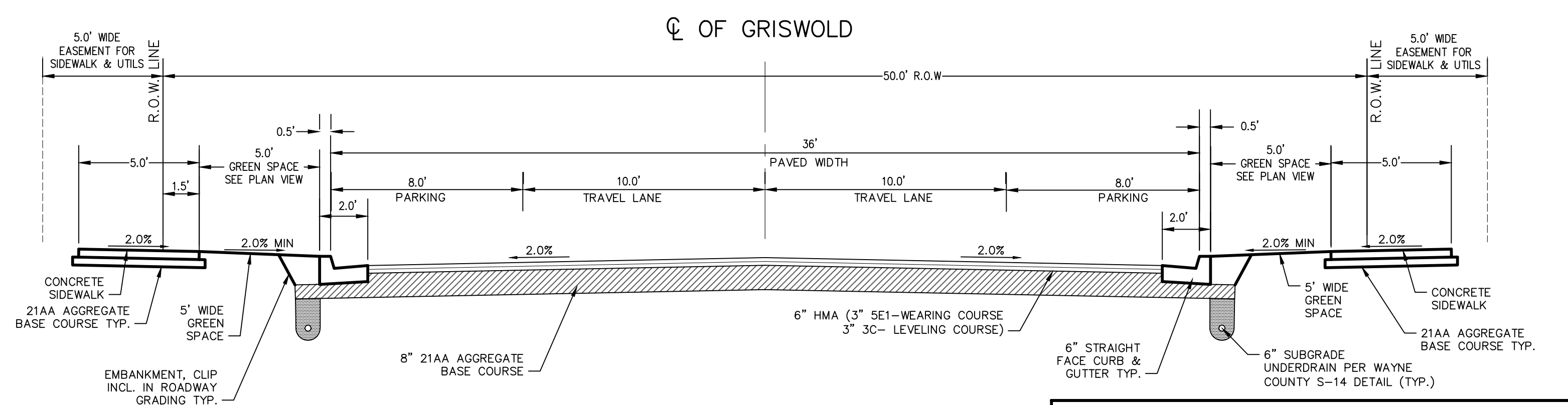
ROAD CROSS-SECTION
GRISWOLD- PARKING ONE SIDE
CL OF GRISWOLD



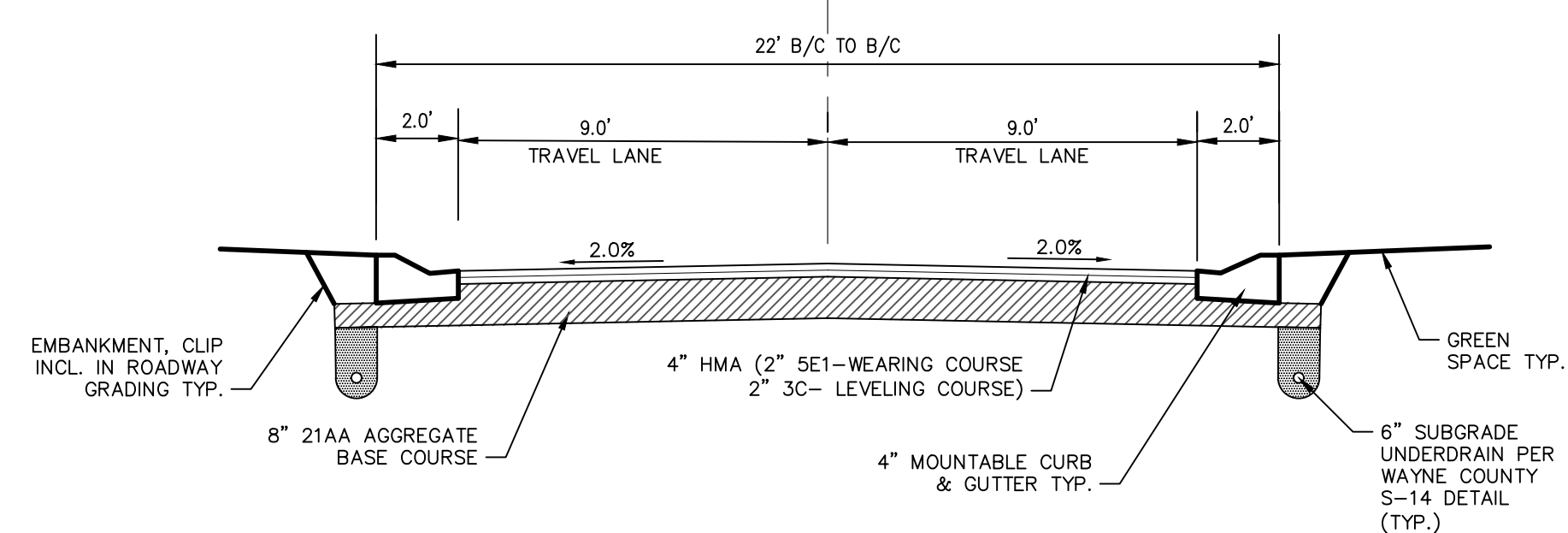
ROAD CROSS-SECTION
ROAD 'A'- PARKING ONE SIDE
CL OF ROAD 'A'



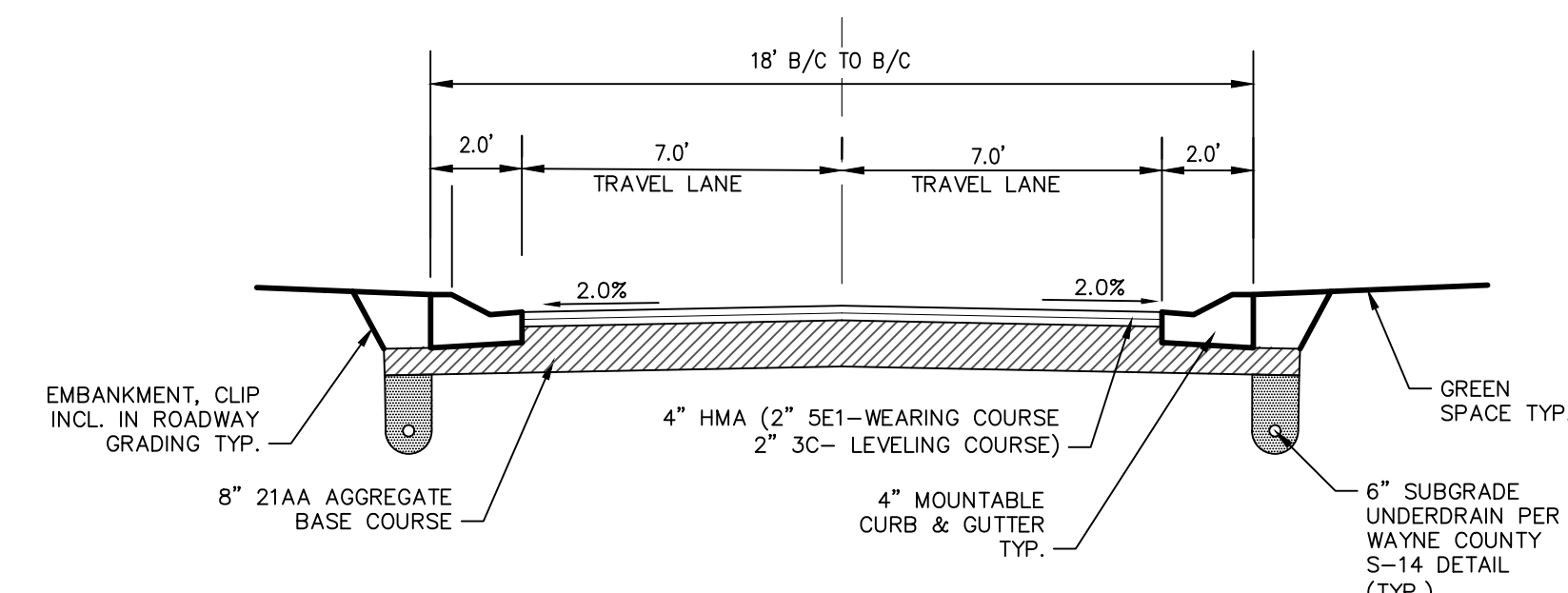
ROAD CROSS-SECTION
GRISWOLD- PARKING BOTH SIDES
CL OF GRISWOLD



ROAD CROSS-SECTION
22' WIDE PRIVATE DRIVE- STANDARD CROSS SECTION
CL OF ROAD



ROAD CROSS-SECTION
18' WIDE PRIVATE DRIVE- STANDARD CROSS SECTION
CL OF ROAD



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

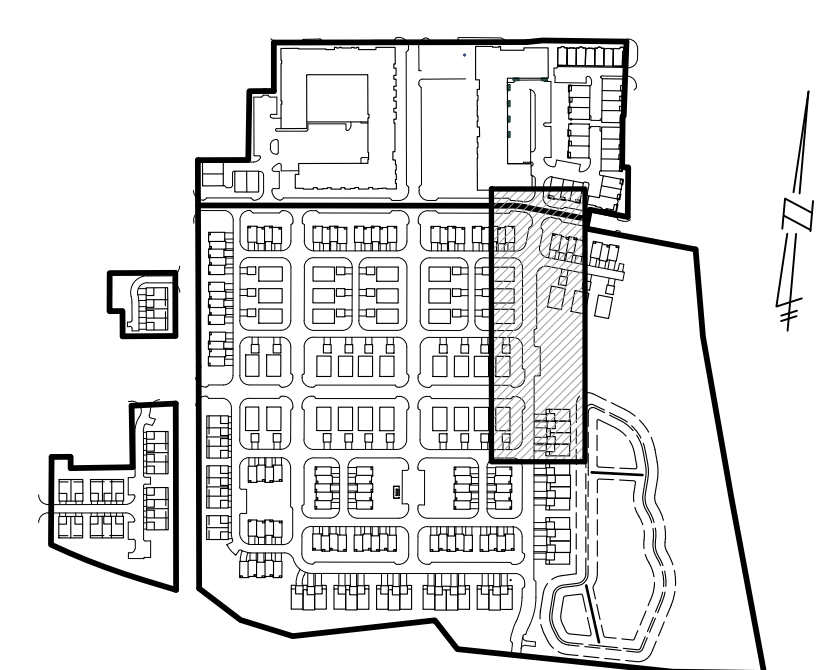
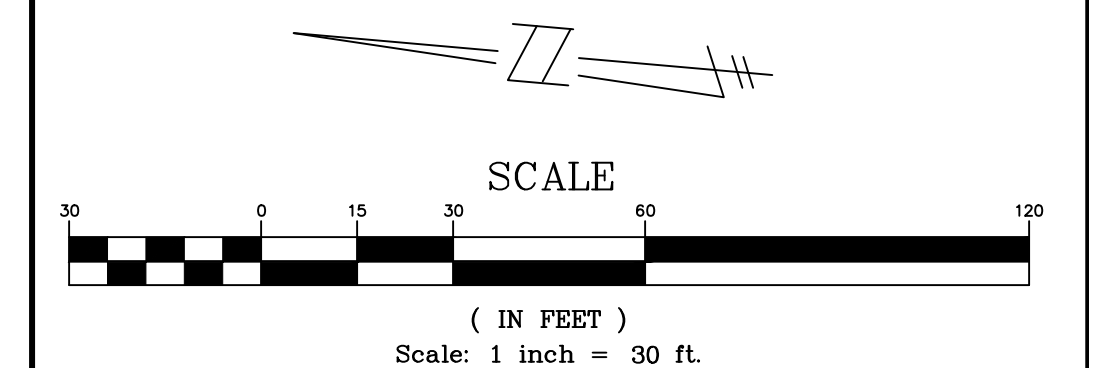
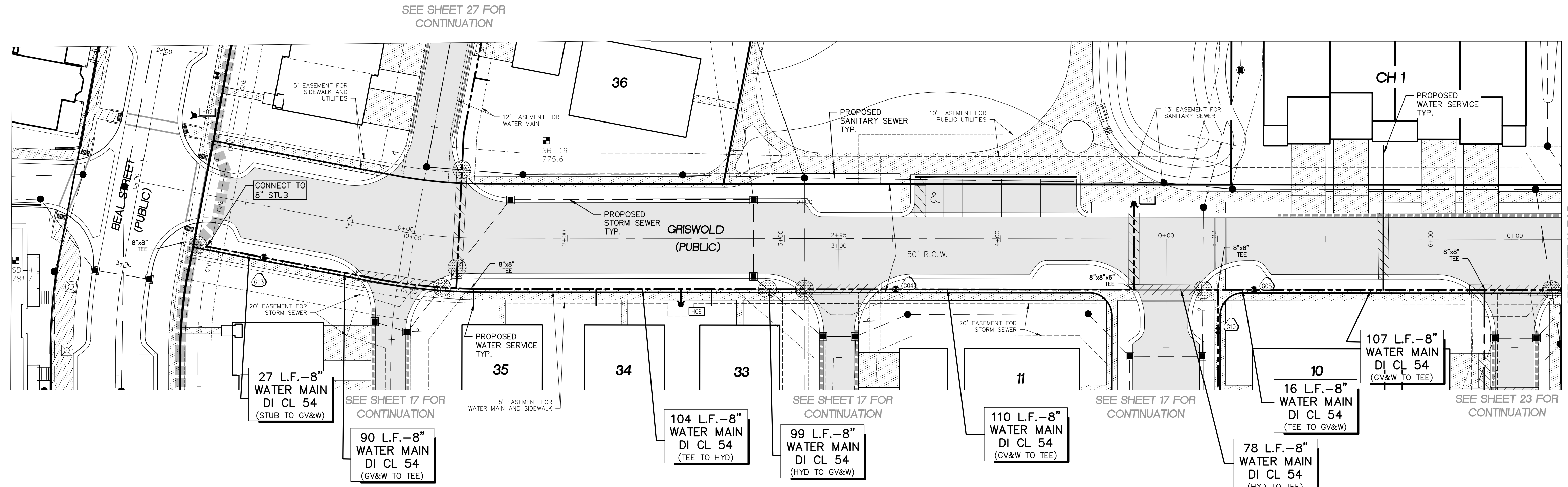
811 Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-RD-CS-RSP.DWG

ROAD CROSS SECTIONS

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331



NOTES:

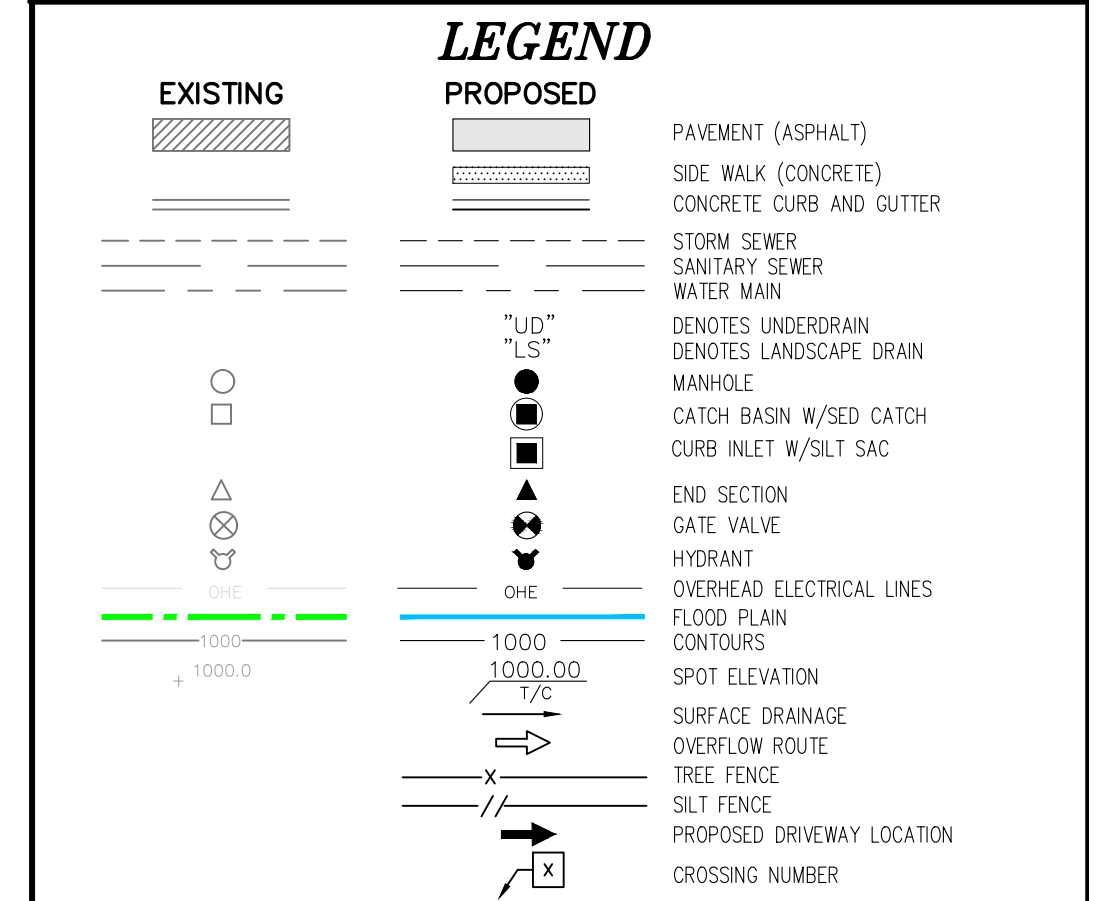
ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.

MAINTAIN 6" COVER OVER ALL WATER MAIN.

ALL WATER SERVICE LEADS SHALL BE MIN. 1" SEAMLESS COPPER WATER TUBE, ASTM DESIGNATION: B88, TYPE K, ANNEALED.

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	08-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

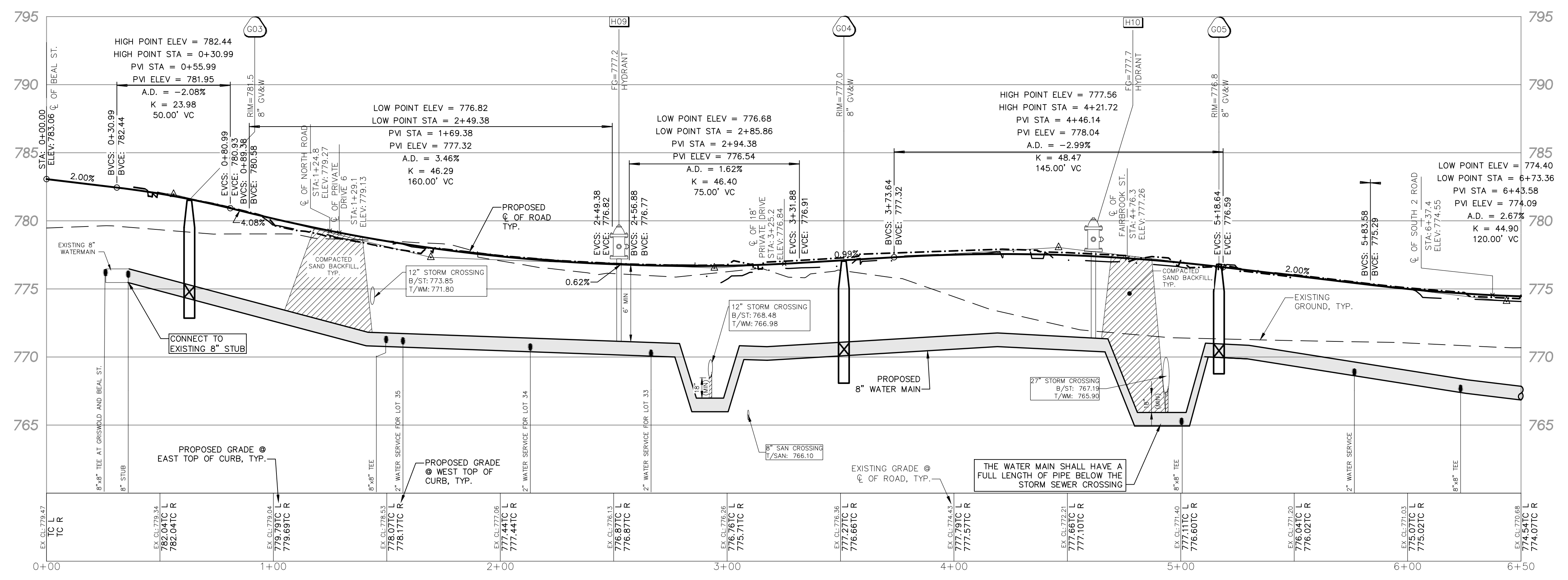
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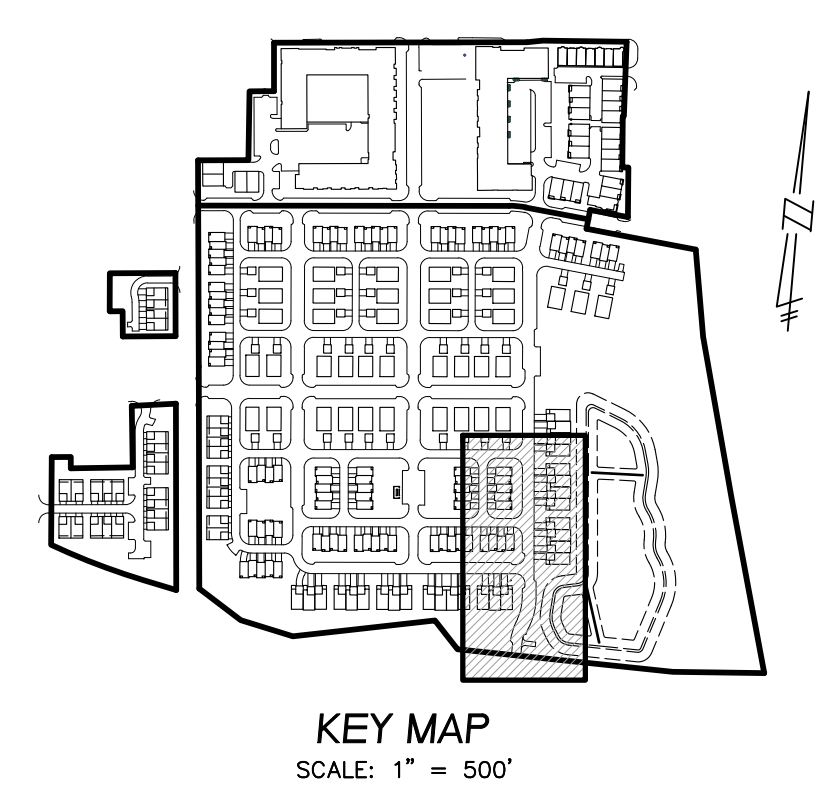
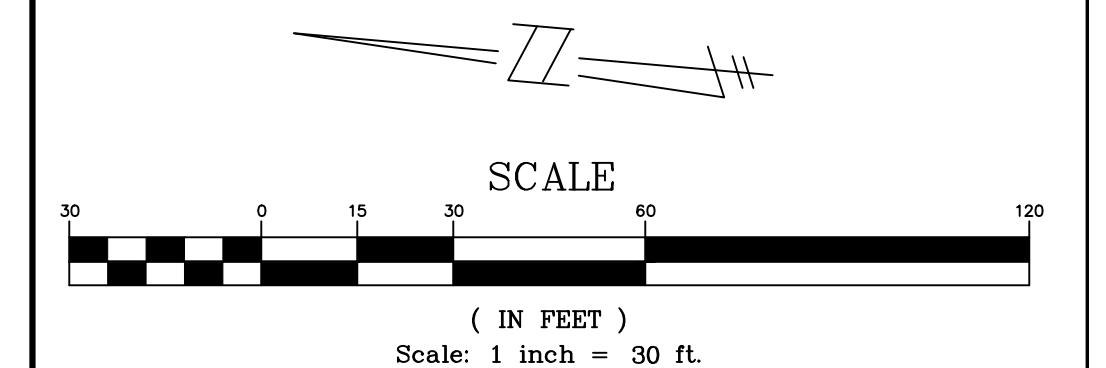
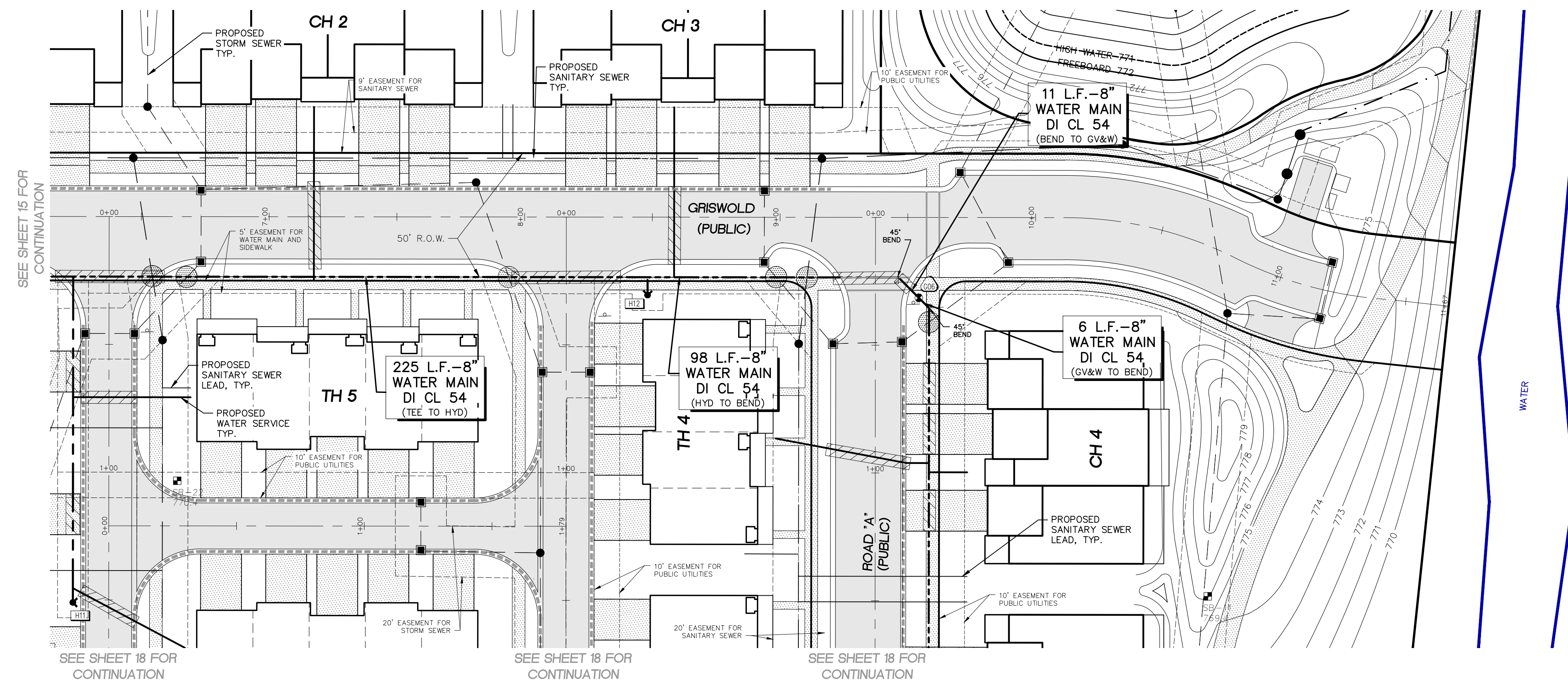
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CHECKED BY: R.E. FILE: 21001-RD-FSP-PH2.DWG

ROAD & WATER MAIN PLAN AND PROFILE



GRISWOLD STREET PROFILE
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'



NOTES:

ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.

MAINTAIN 6" COVER OVER ALL WATER MAIN.

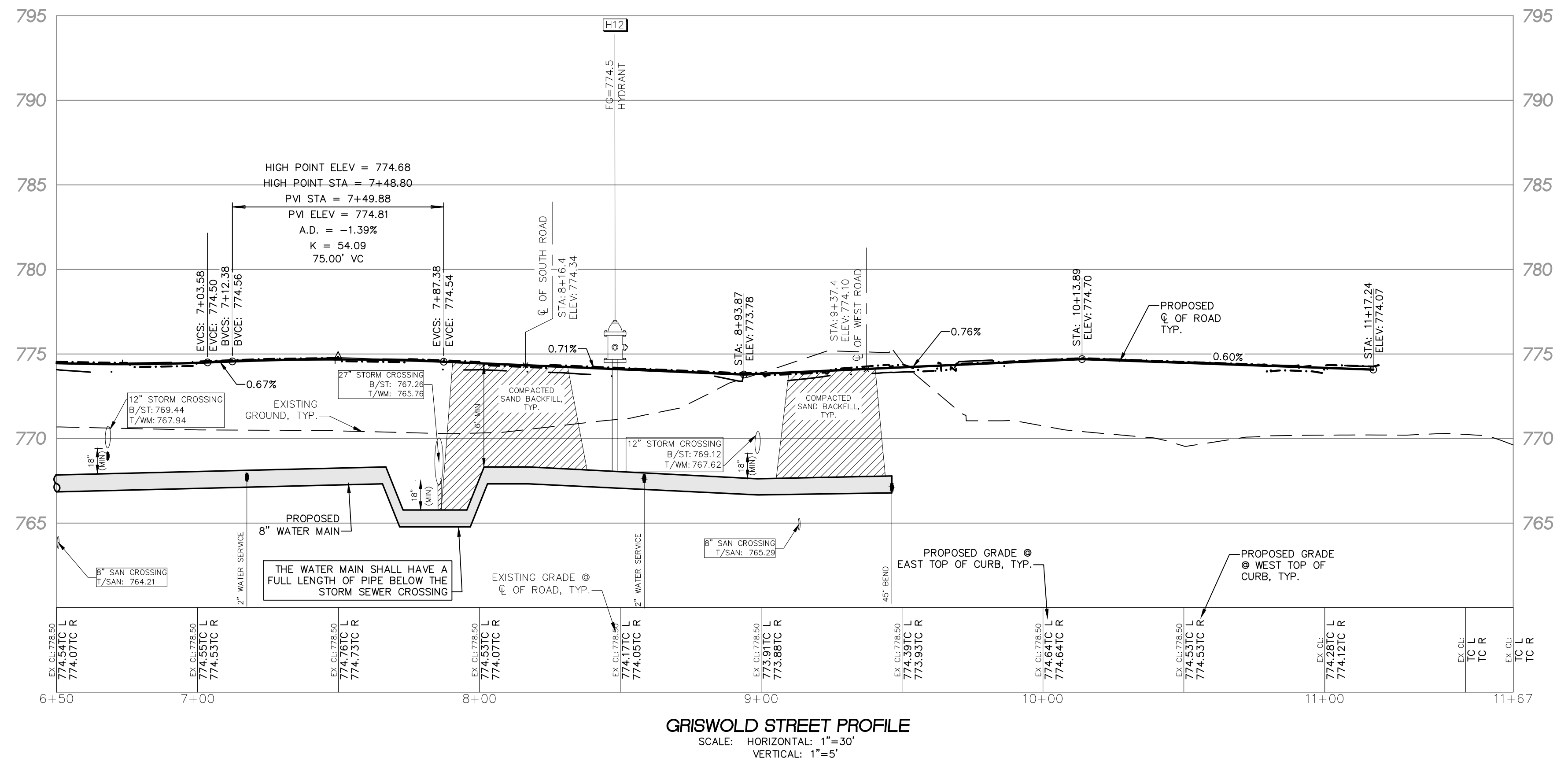
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LEGEND		
EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		DEVIATORS UNDERDRAIN
		DEVIATORS LANDSCAPE DRAIN
		MANHOLE
		CATCH BASIN W/SED CATCH
		CURB INLET W/SLT SAC
		END SECTION
		GATE VALVE
		HYDRANT
		OVERHEAD ELECTRICAL LINES
		FLOOD PLAN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN



GRISWOLD STREET PROFILE
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'

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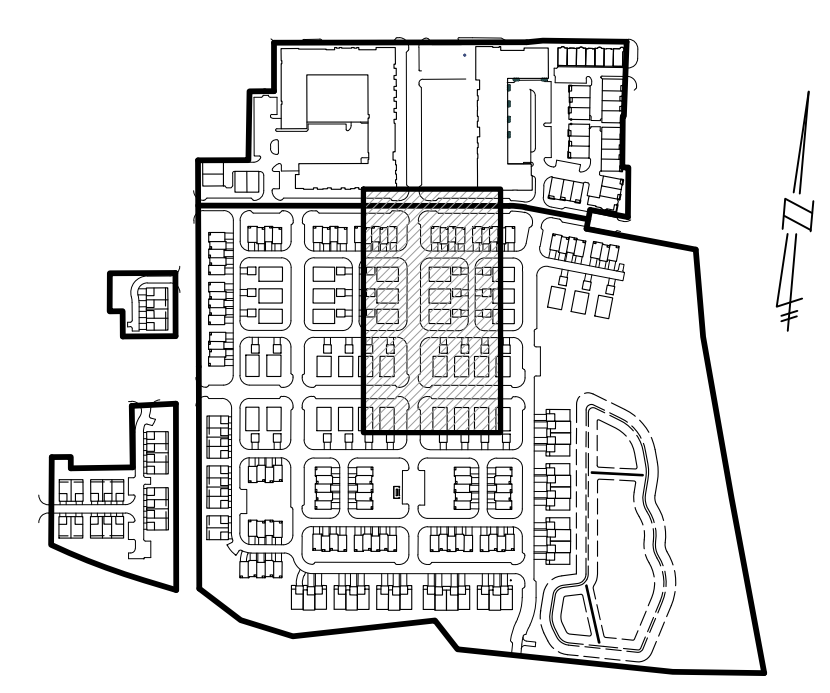
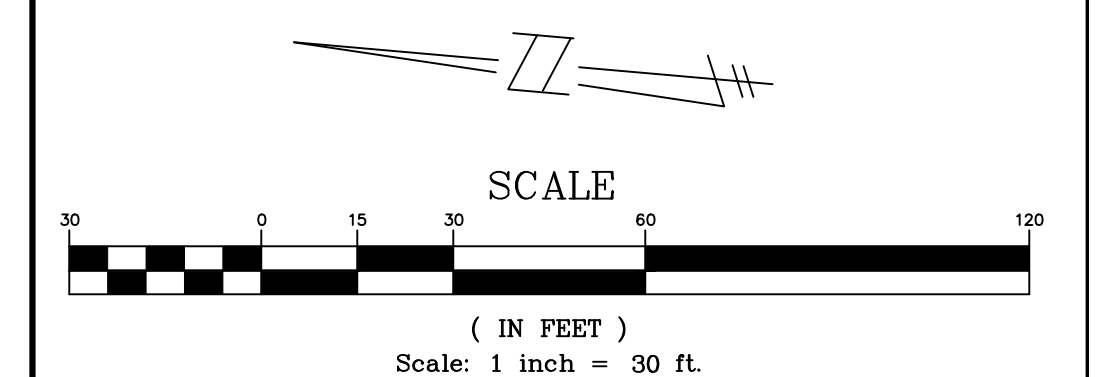
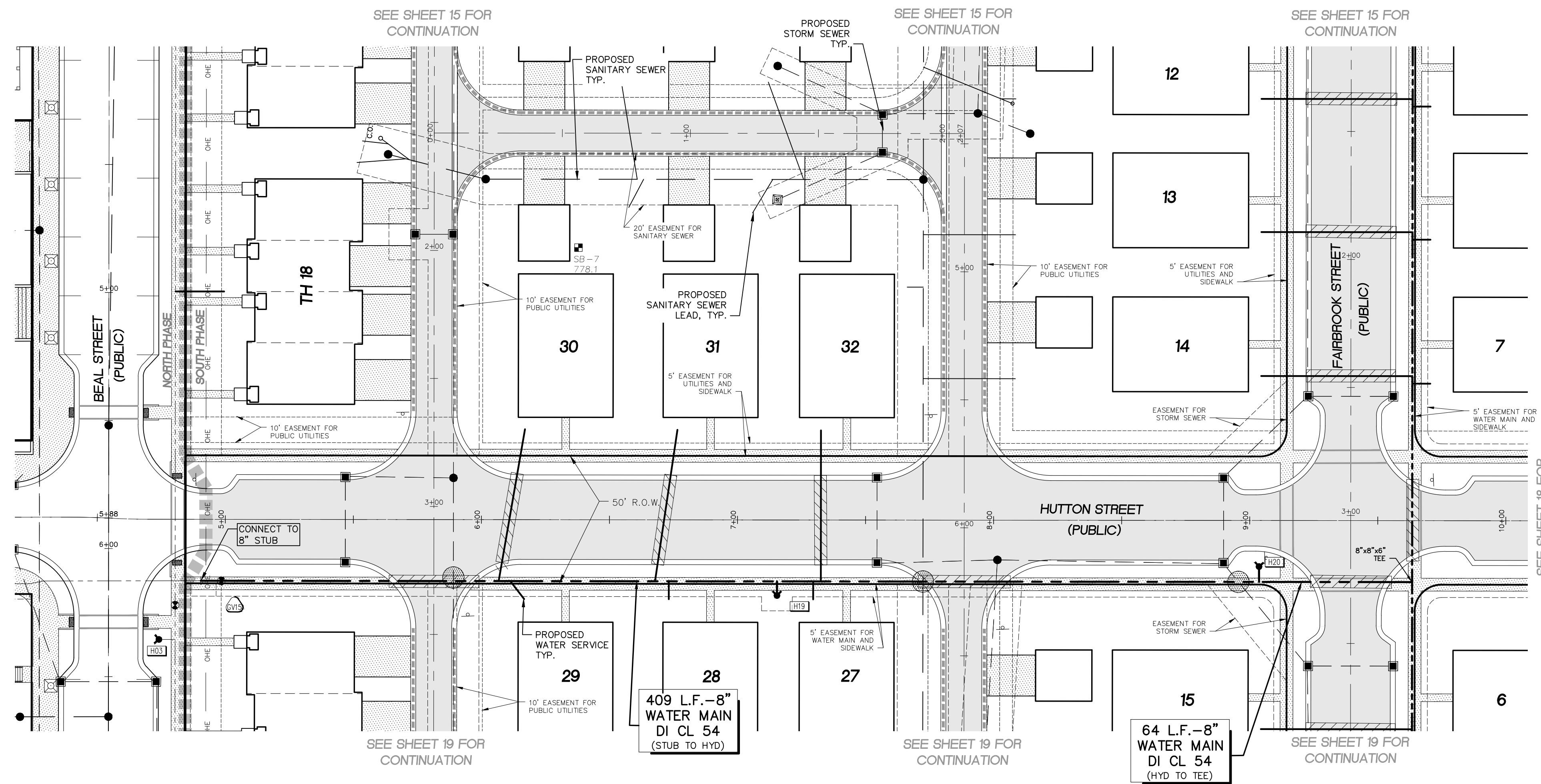
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ROAD & WATER MAIN PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
16



NOTES:

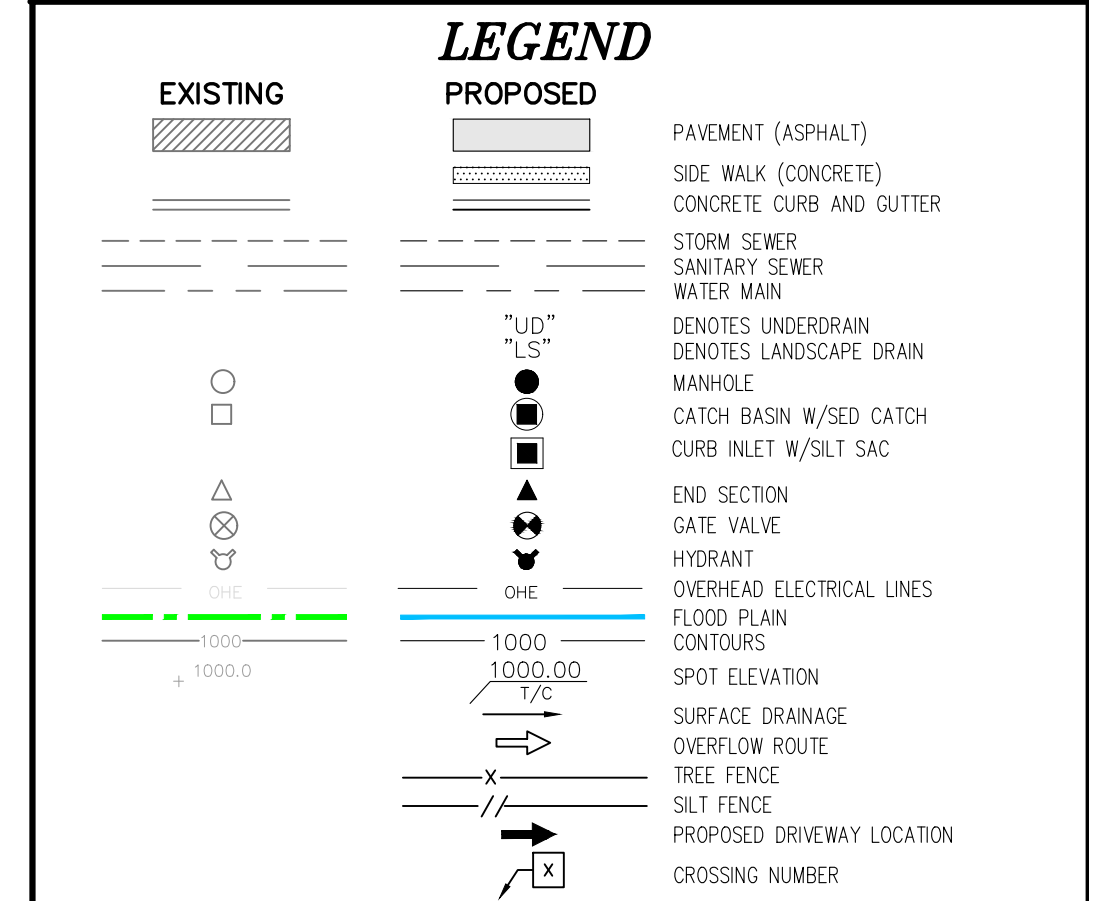
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THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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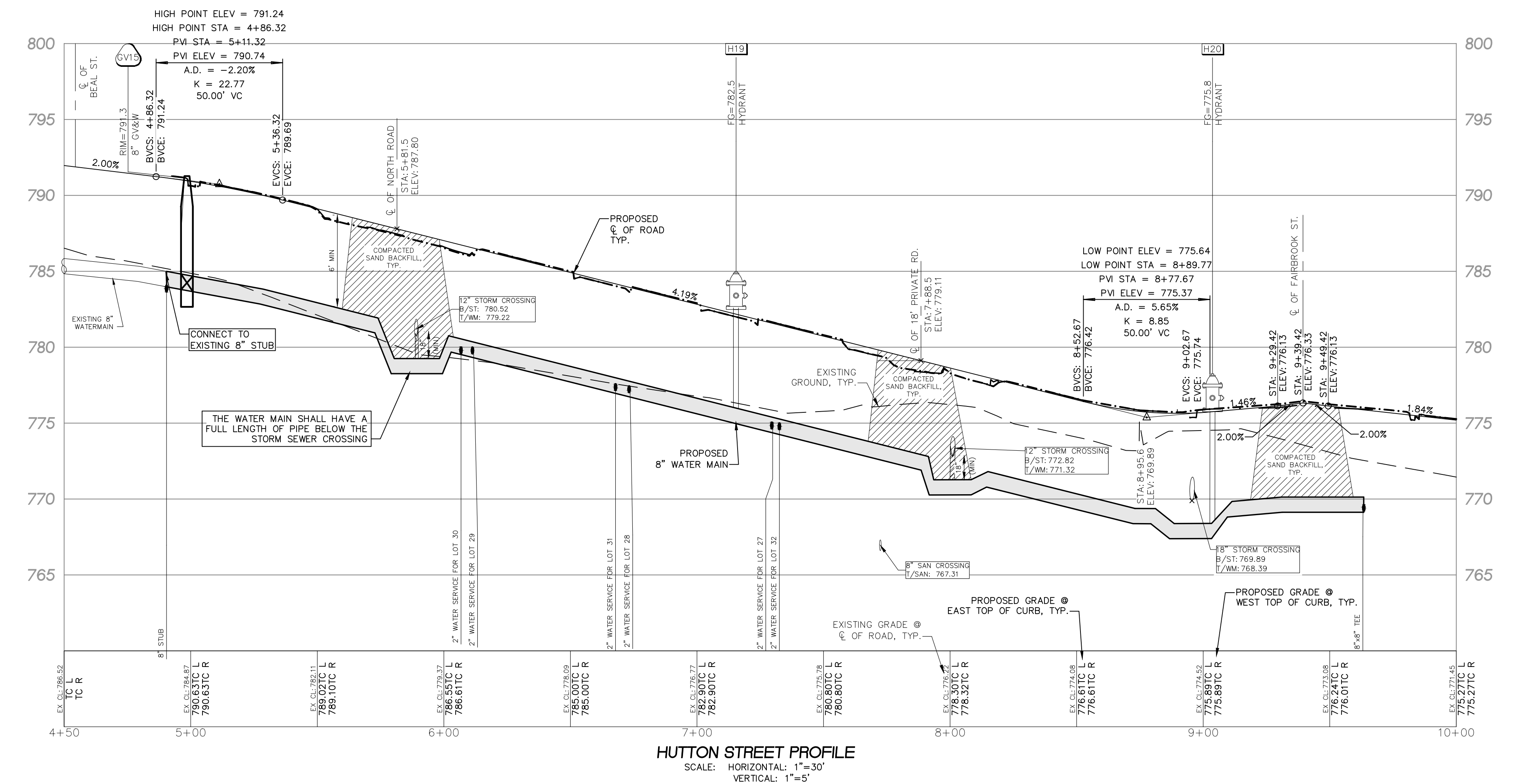
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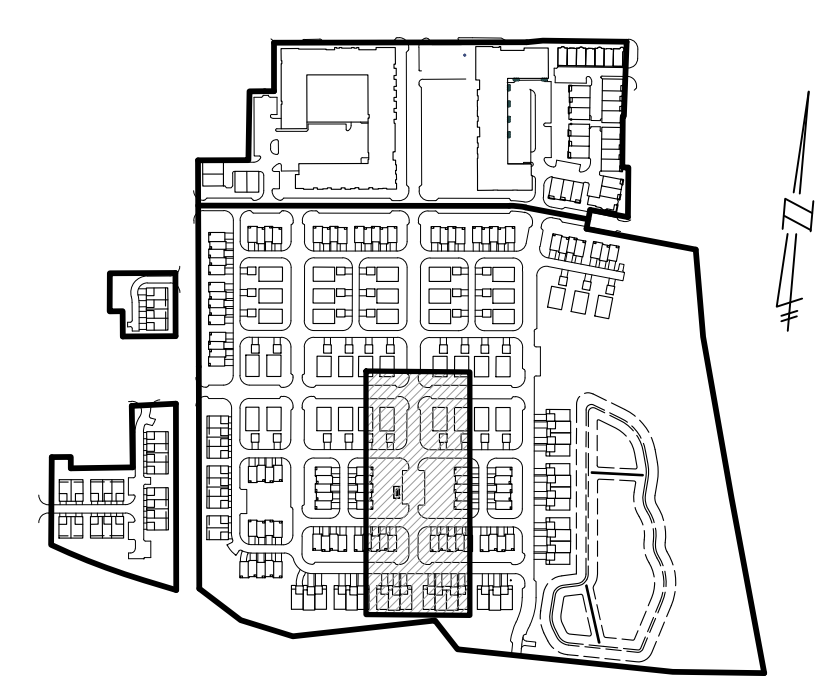
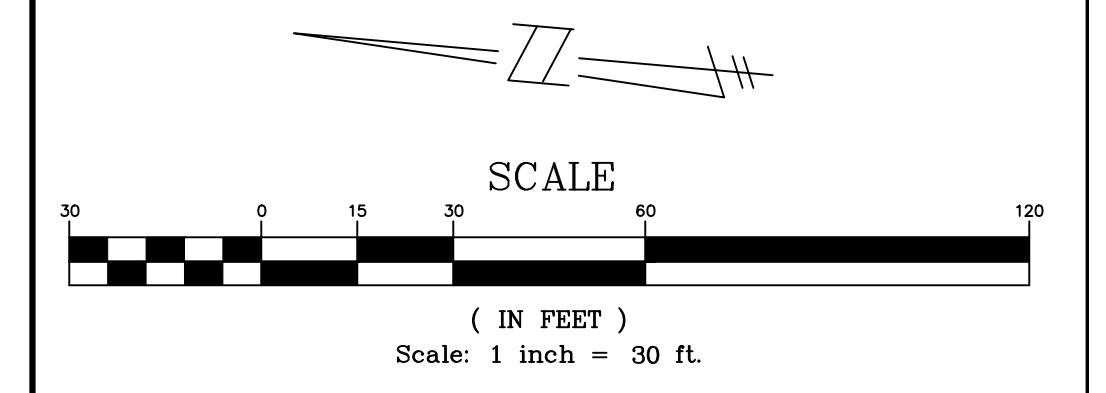
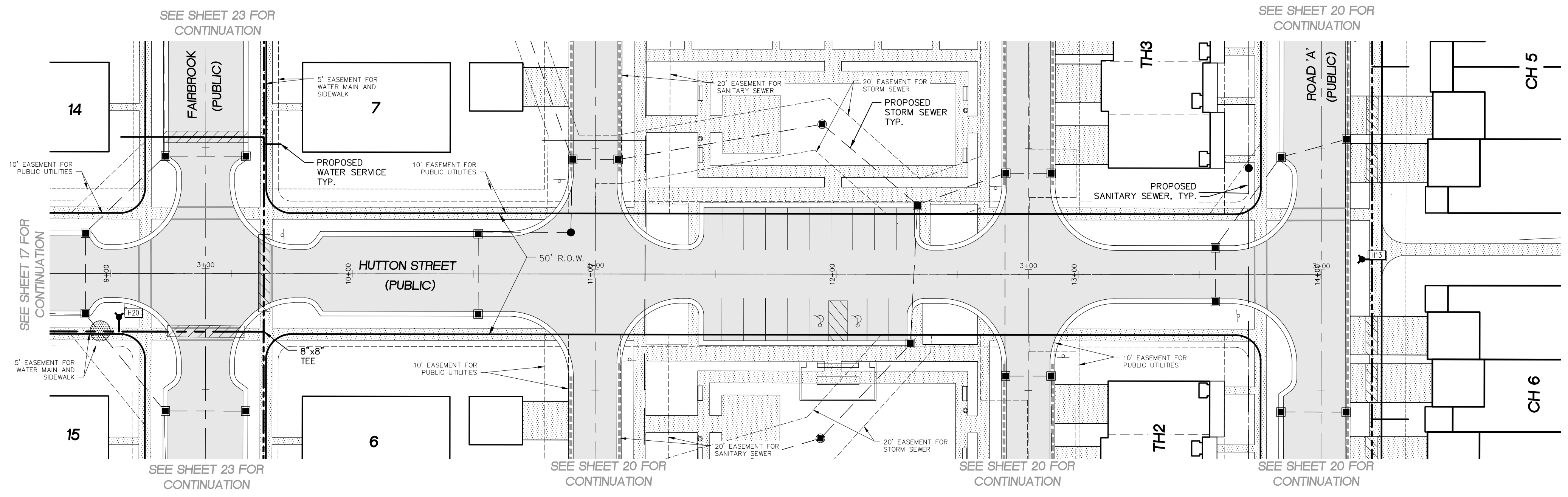
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ROAD & WATER MAIN PLAN AND PROFILE



HUTTON STREET PROFILE
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'

NOT TO SCALE - NORTH AND/OR EAST/UTILITY OWNERS. SEE PLAN SHEET 21001-RD-FSP-PH2.DWG. 07/2023 11:00 AM



NOTES:

ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.

MAINTAIN 6" COVER OVER ALL WATER MAIN.

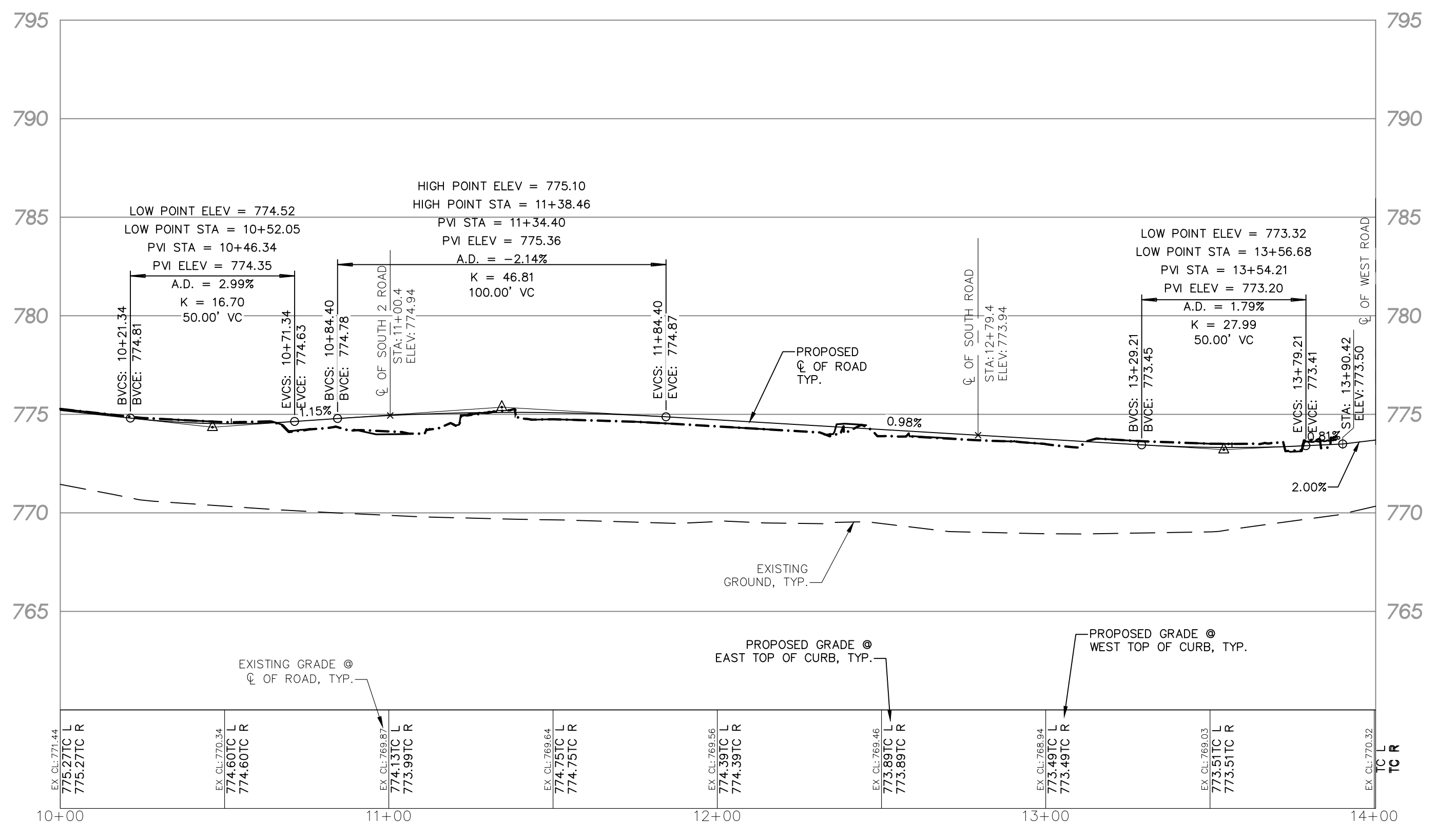
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LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	DENOTES UNDERDRAIN
[Symbol]	[Symbol]	DENOTES LANDSCAPE DRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED CATCH
[Symbol]	[Symbol]	CURB INLET W/SLT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	1/2"
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

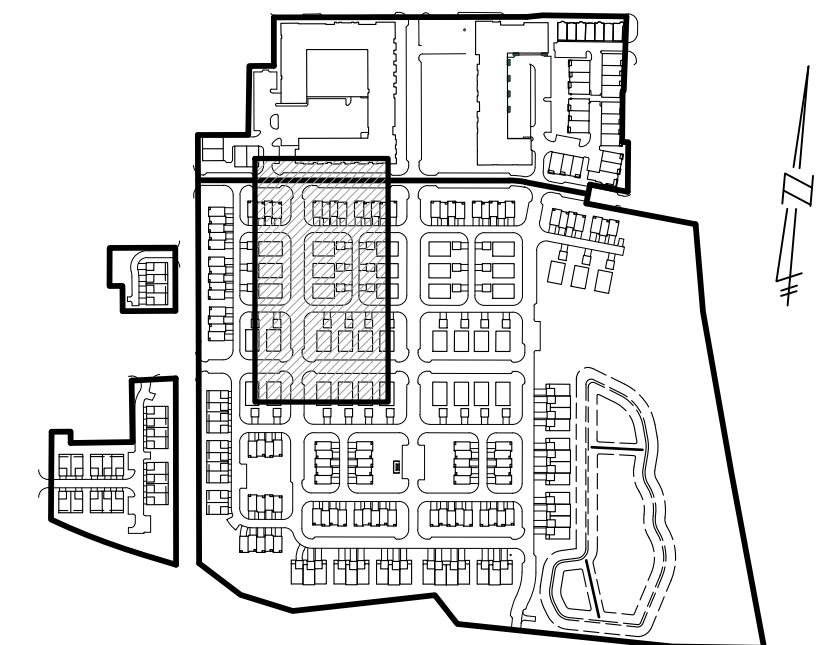
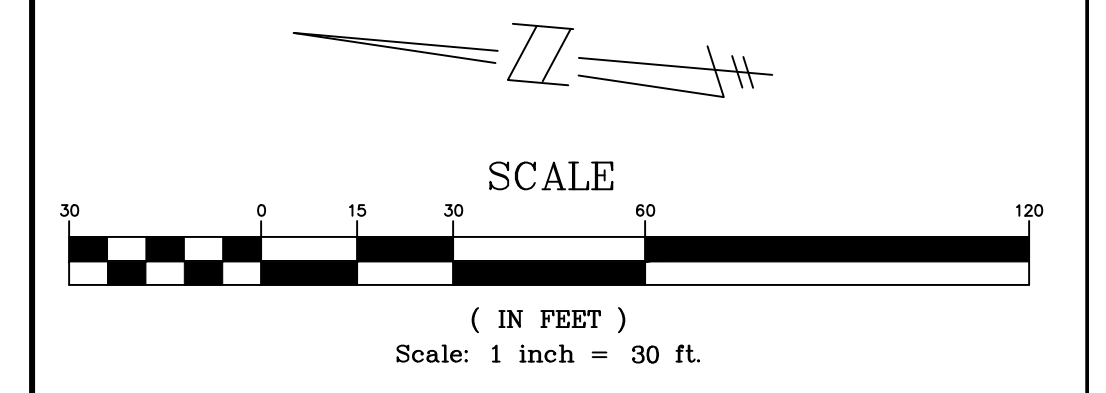
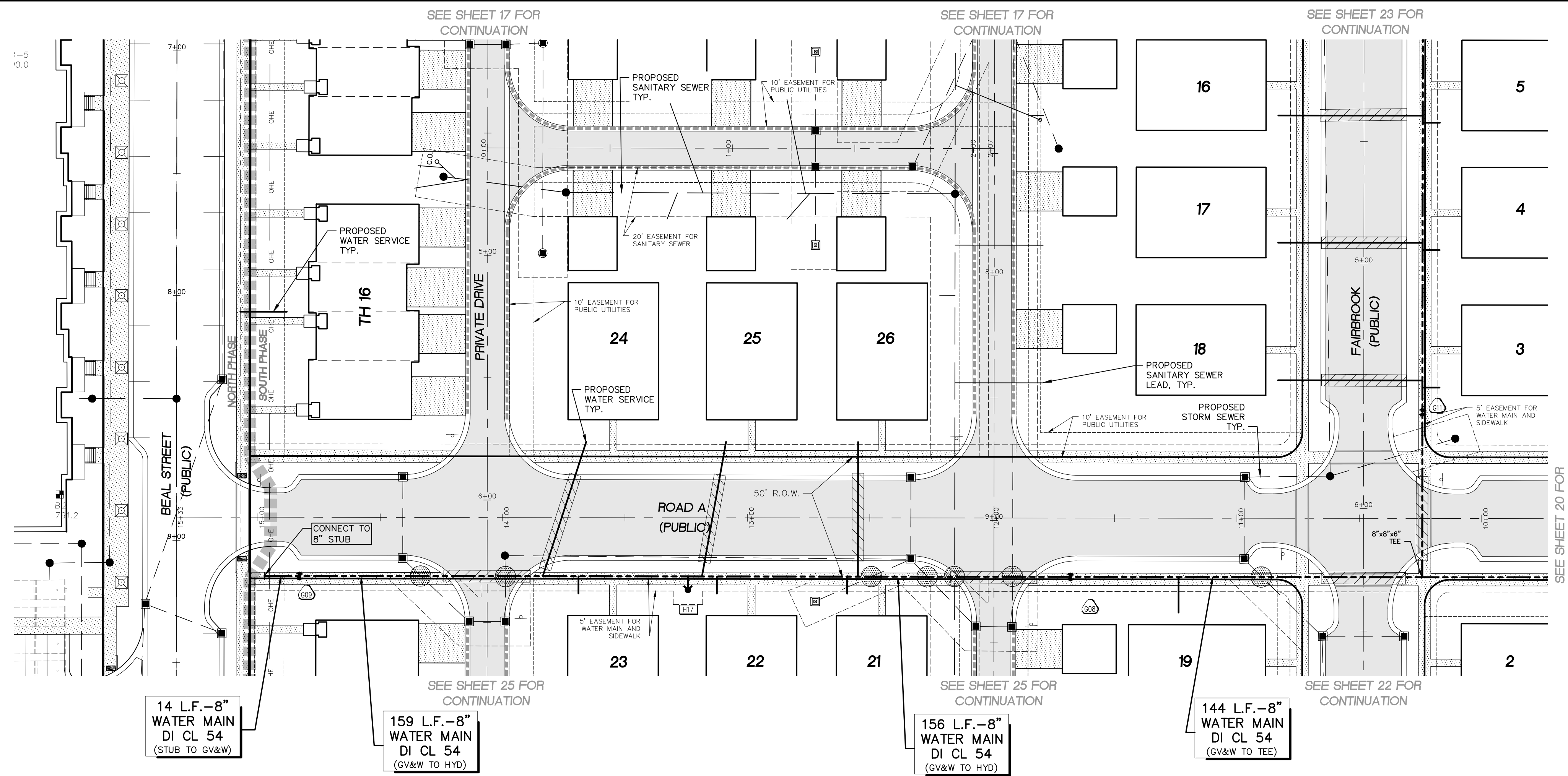
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-RD-FSP-PH2.DWG

ROAD & WATER MAIN PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 18



NOTES:

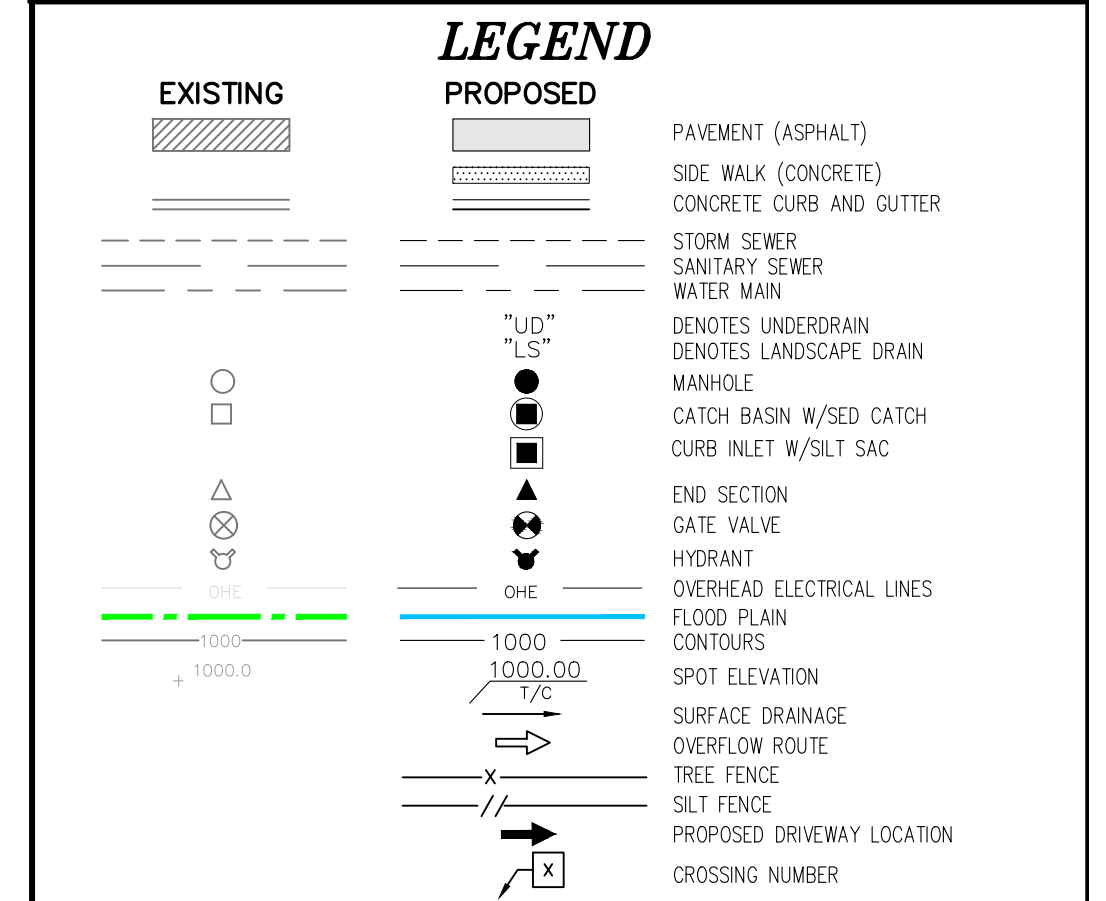
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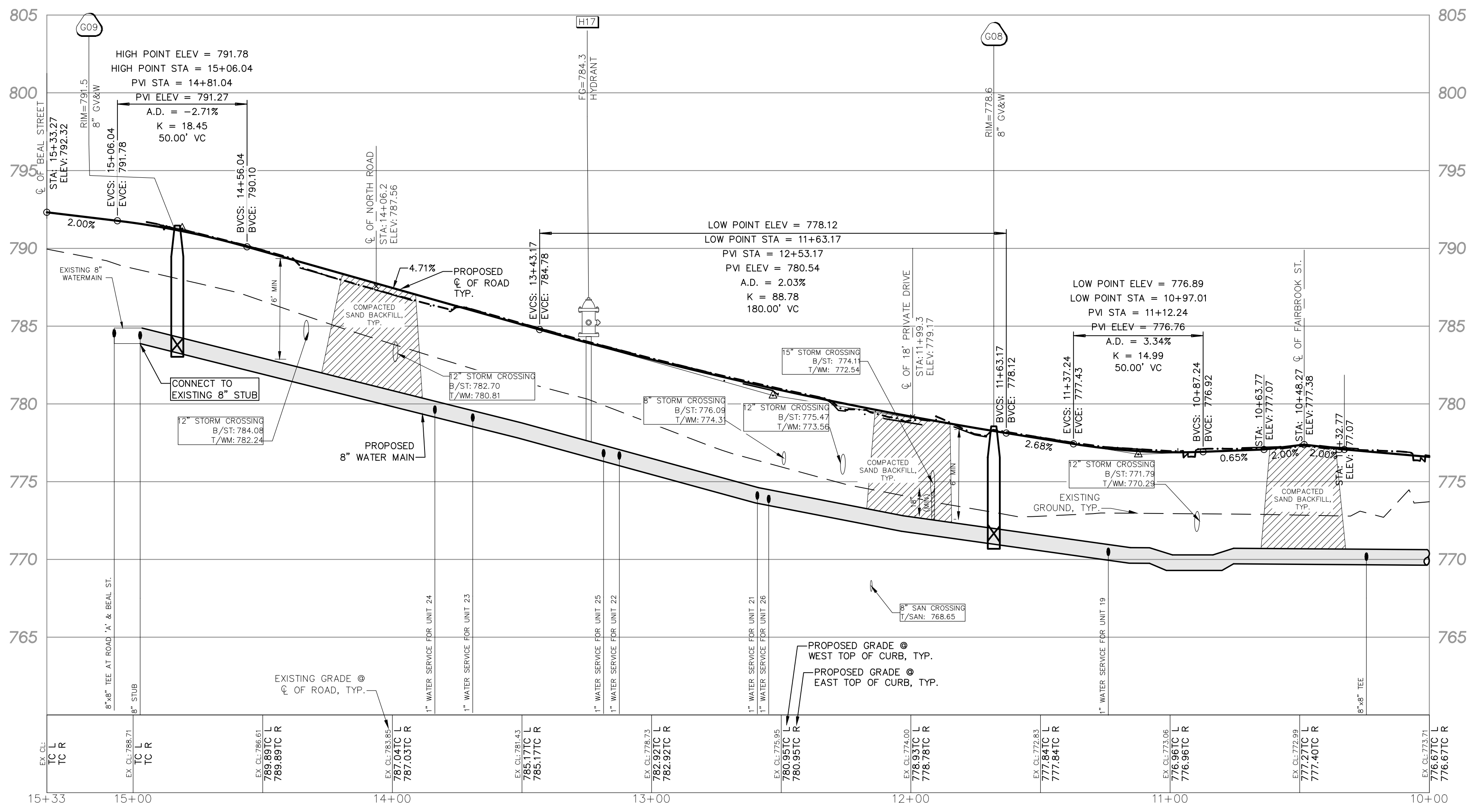
THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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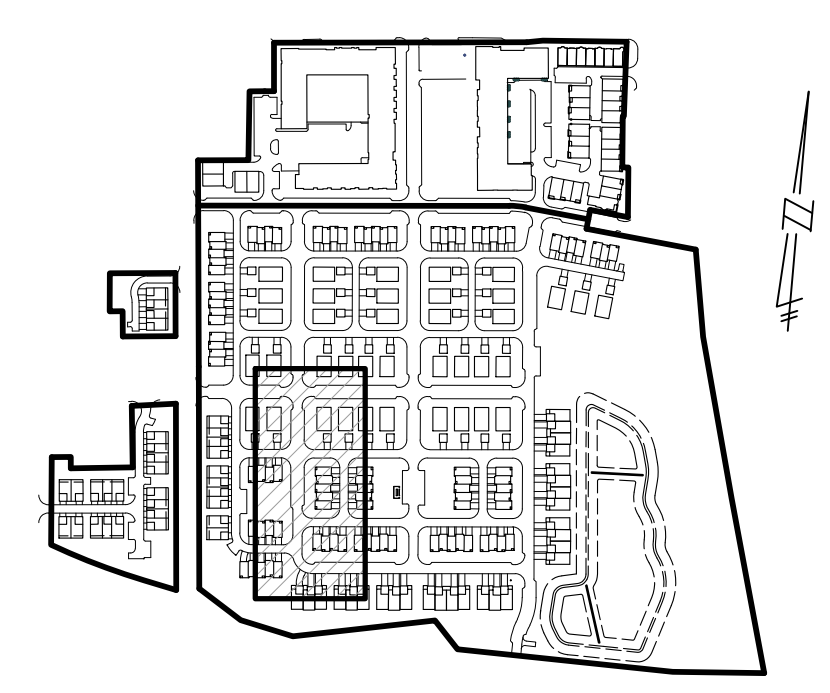
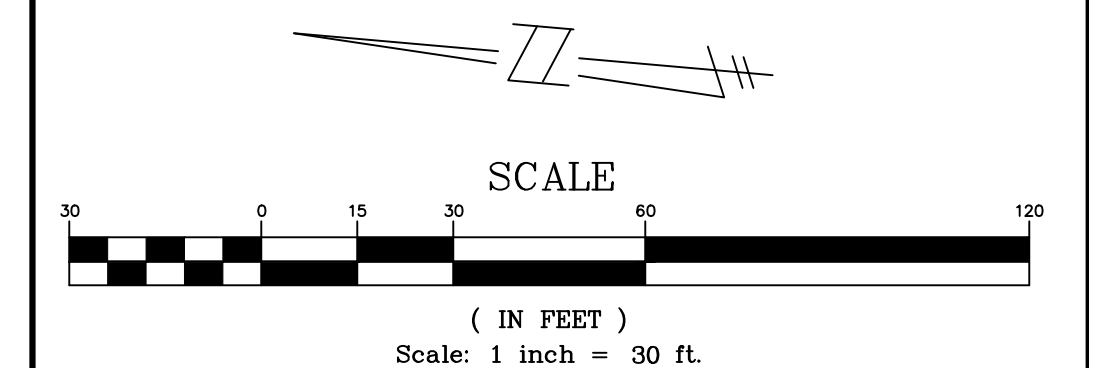
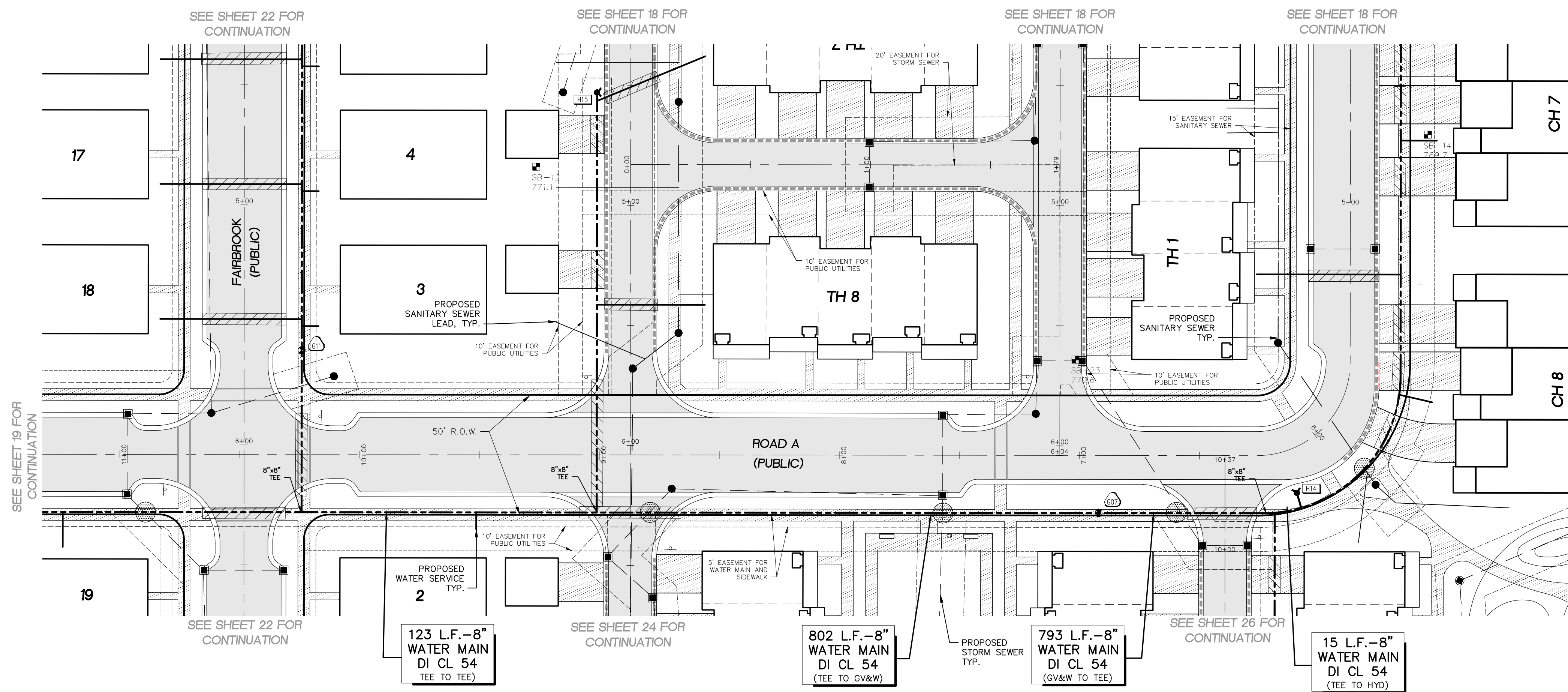
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ROAD & WATER MAIN PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 19



NOTES:

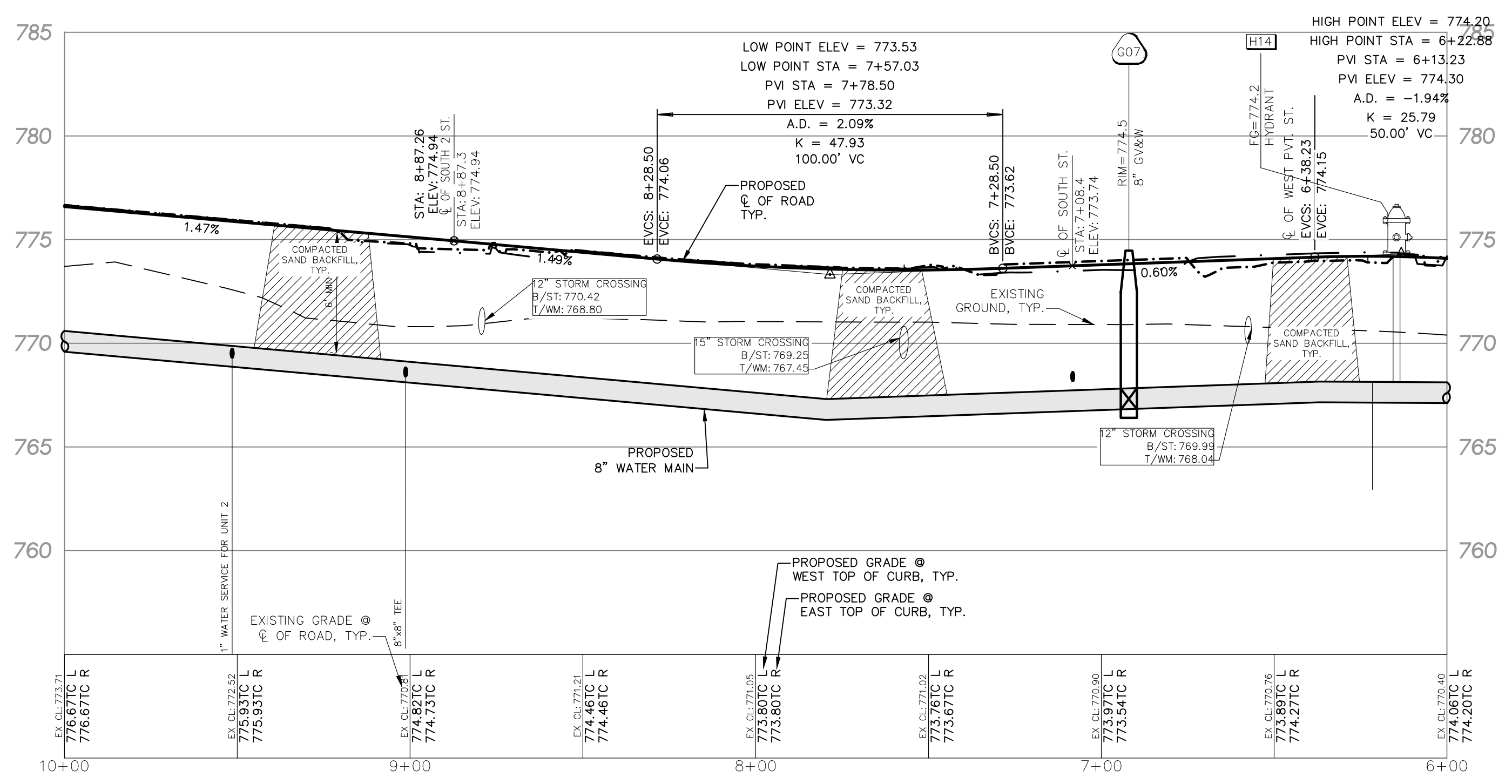
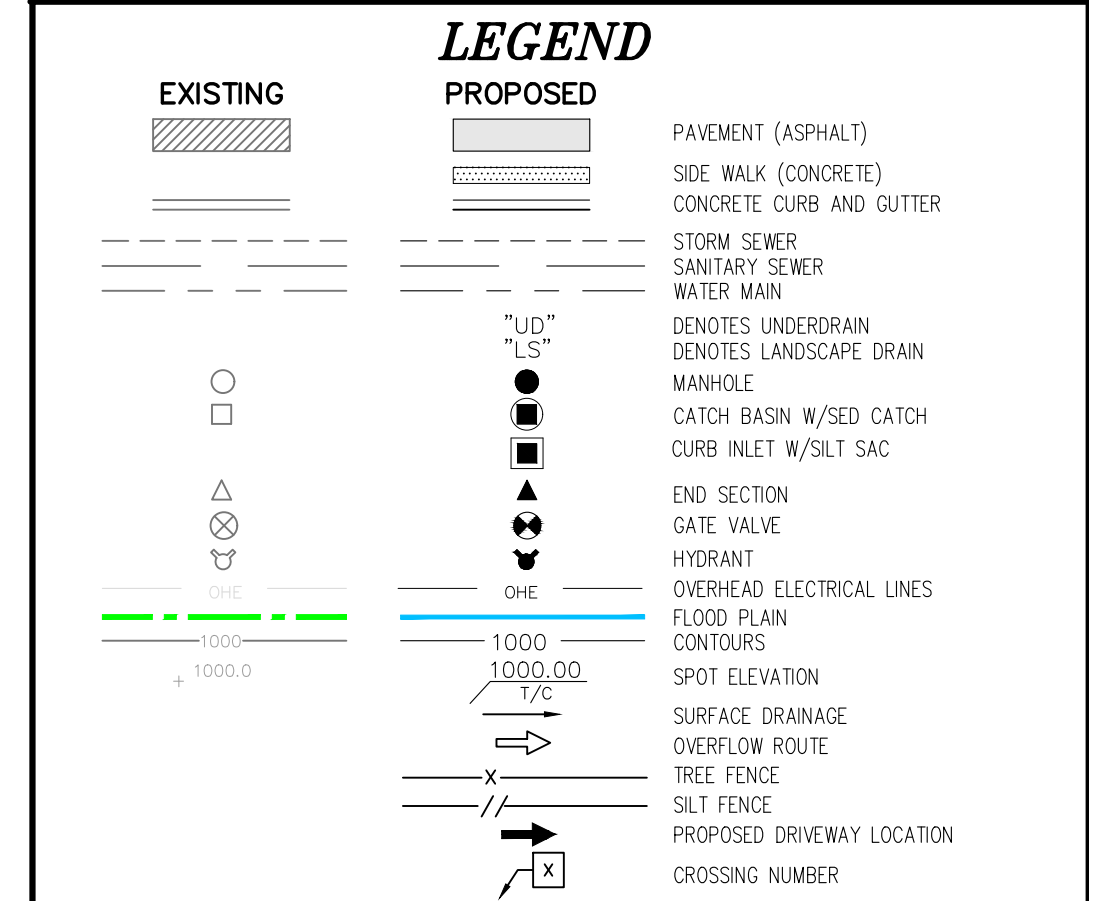
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ROAD A PROFILE
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
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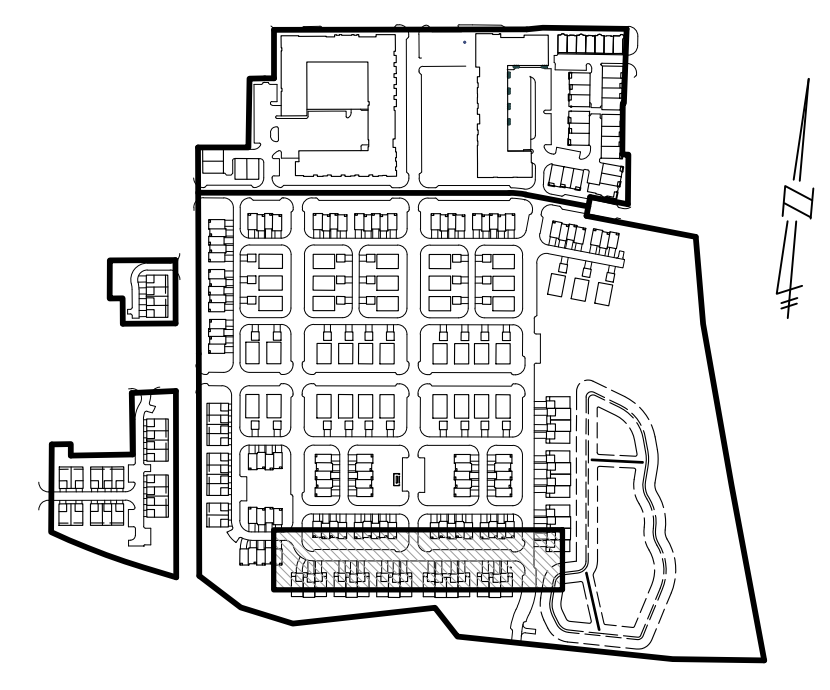
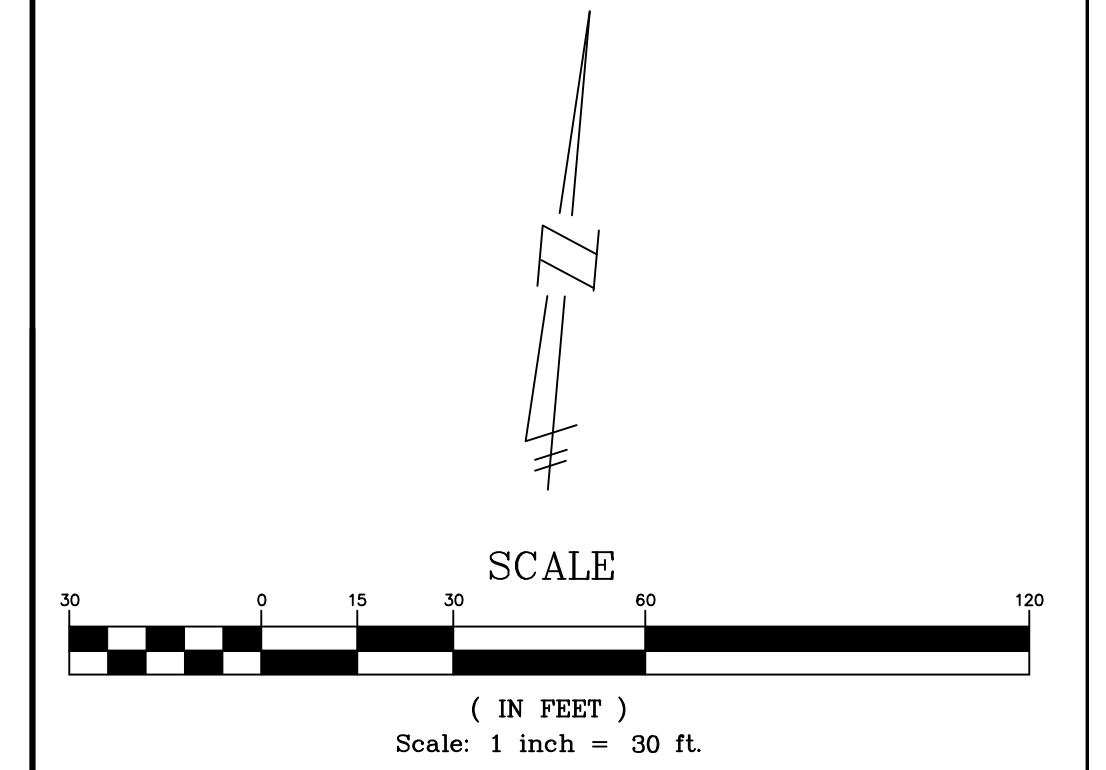
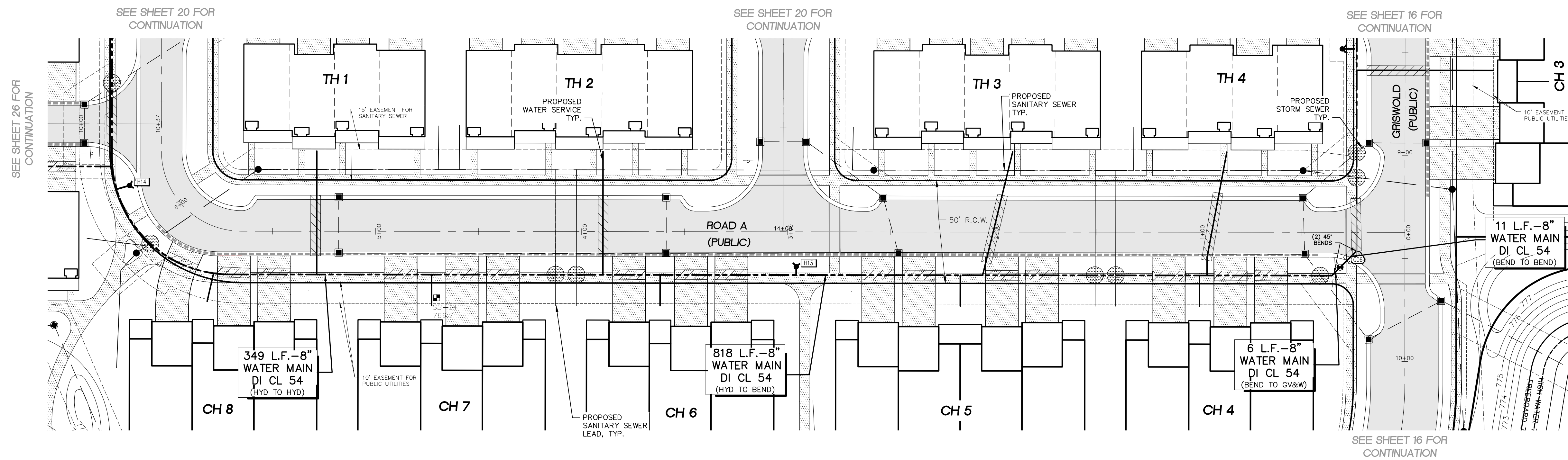
ROAD & WATER MAIN PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 20

11/21/2019 THE DOWNS - NORTHVILLE NORTHVILLE, MI WAYNE COUNTY 21001-RD-FSP-PH2.DWG 9/7/2023 11:05 AM



NOTES:

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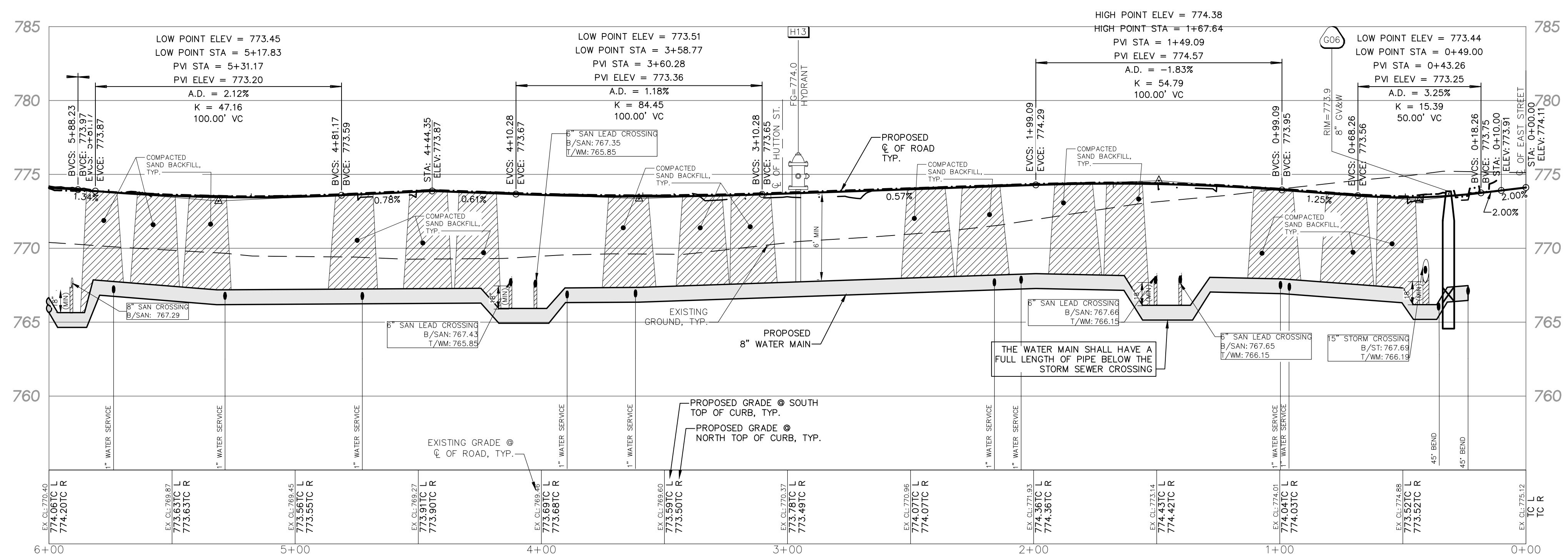
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[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
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[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	T/C
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	DESCRIPTION	DATE
1.	100% SCHEMATIC DESIGN	08-10-2022
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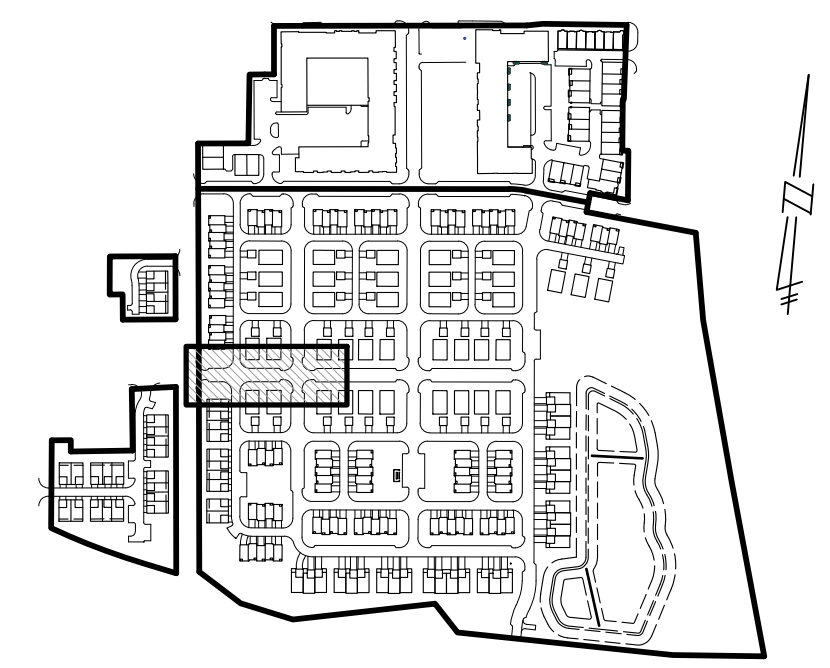
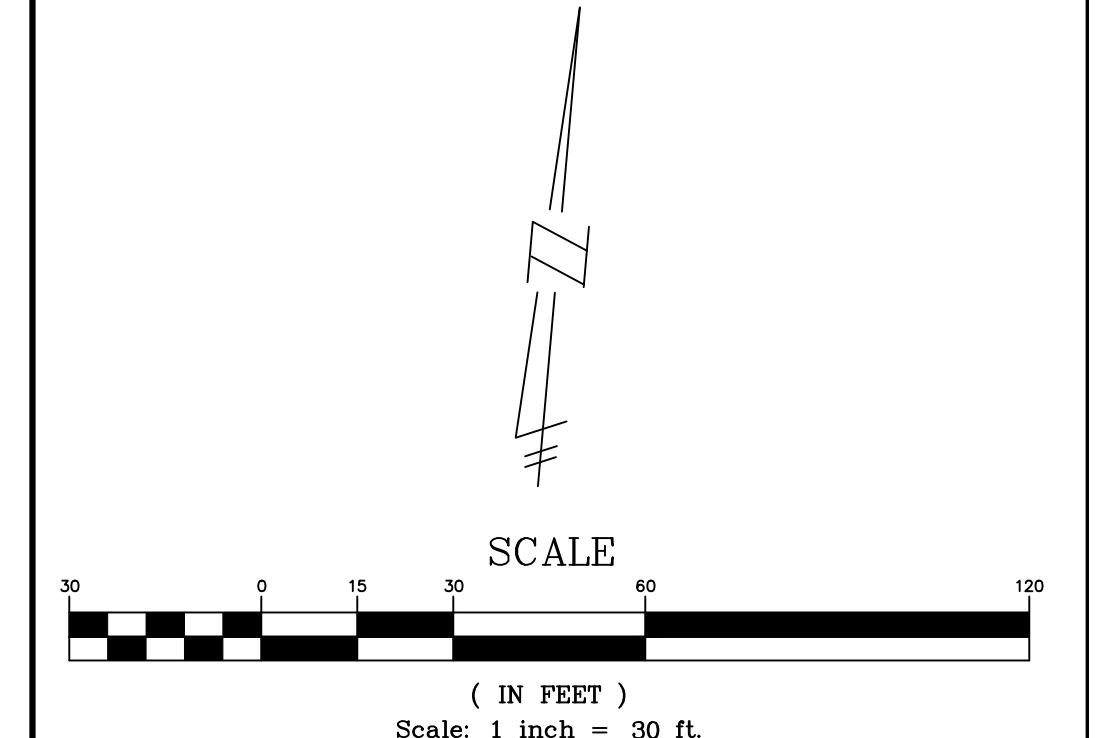
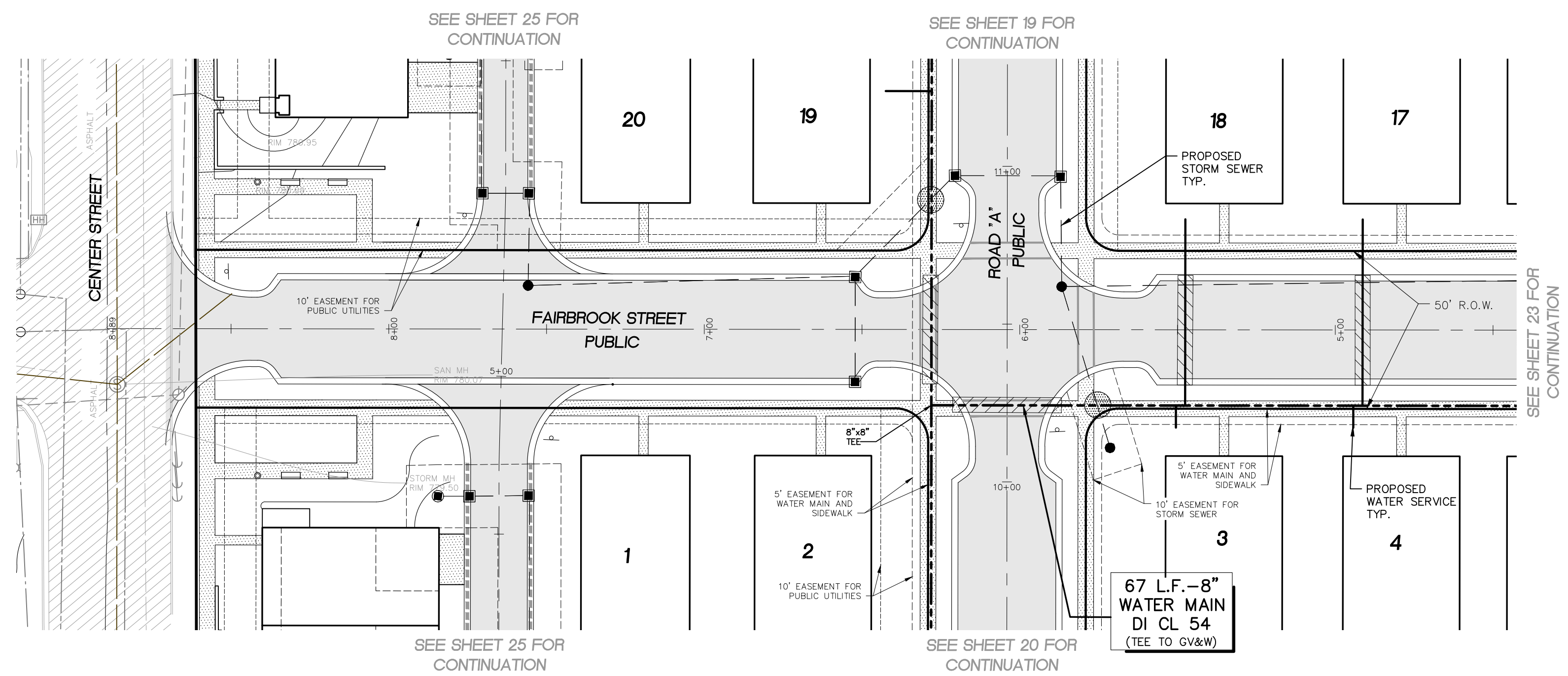
DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-RD-FSP-PH2.DWG

ROAD & WATER MAIN PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 21



NOTES:

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[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

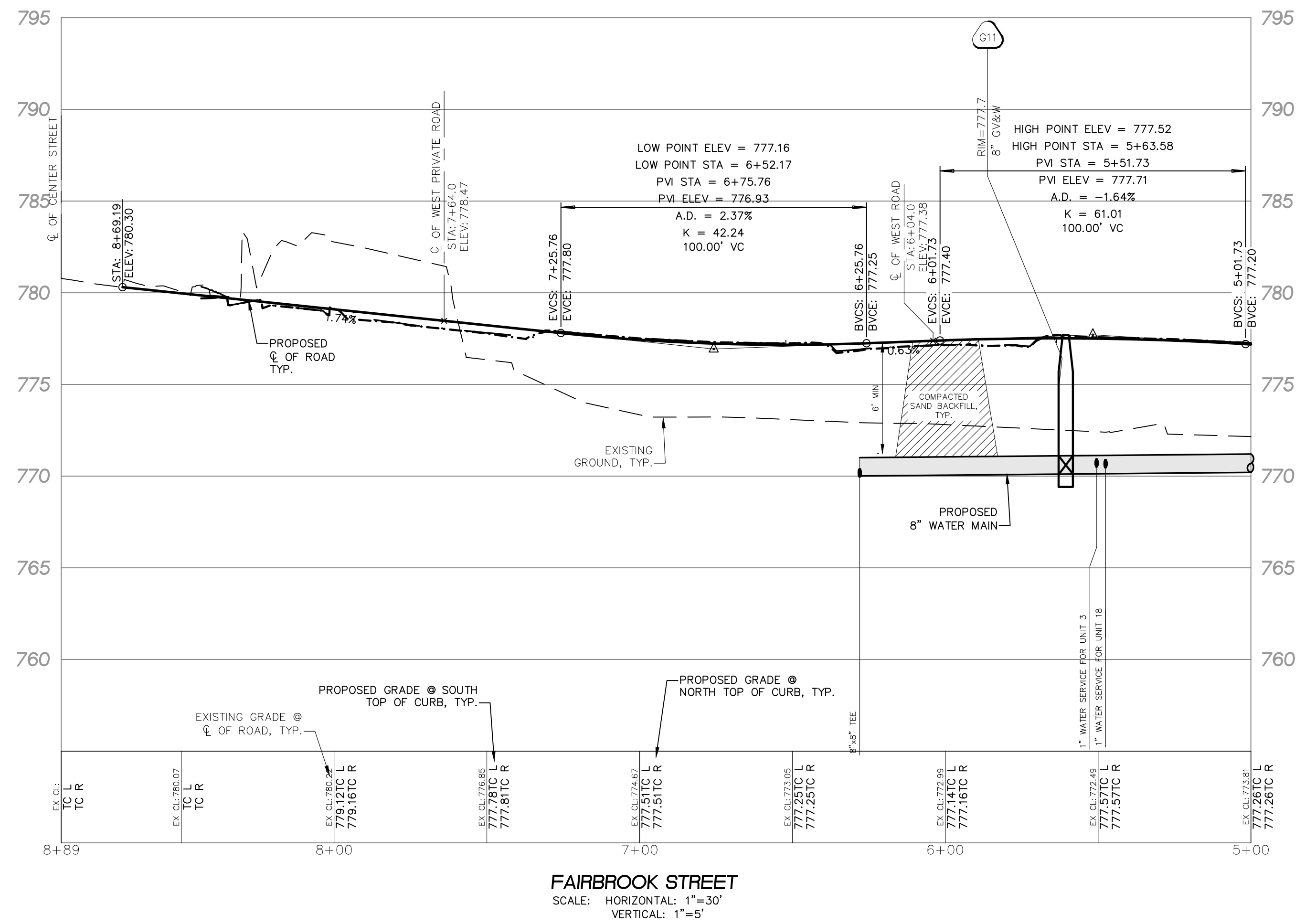
THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
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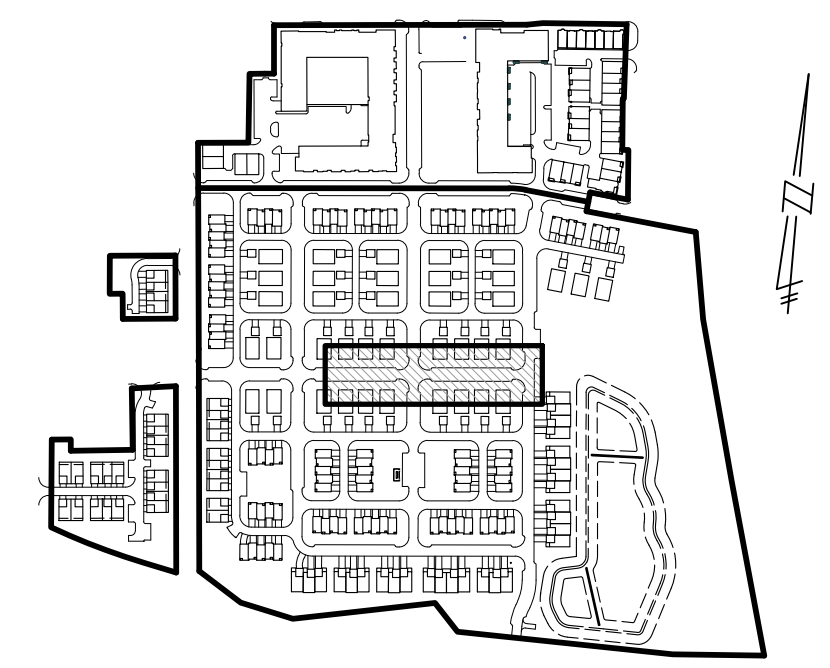
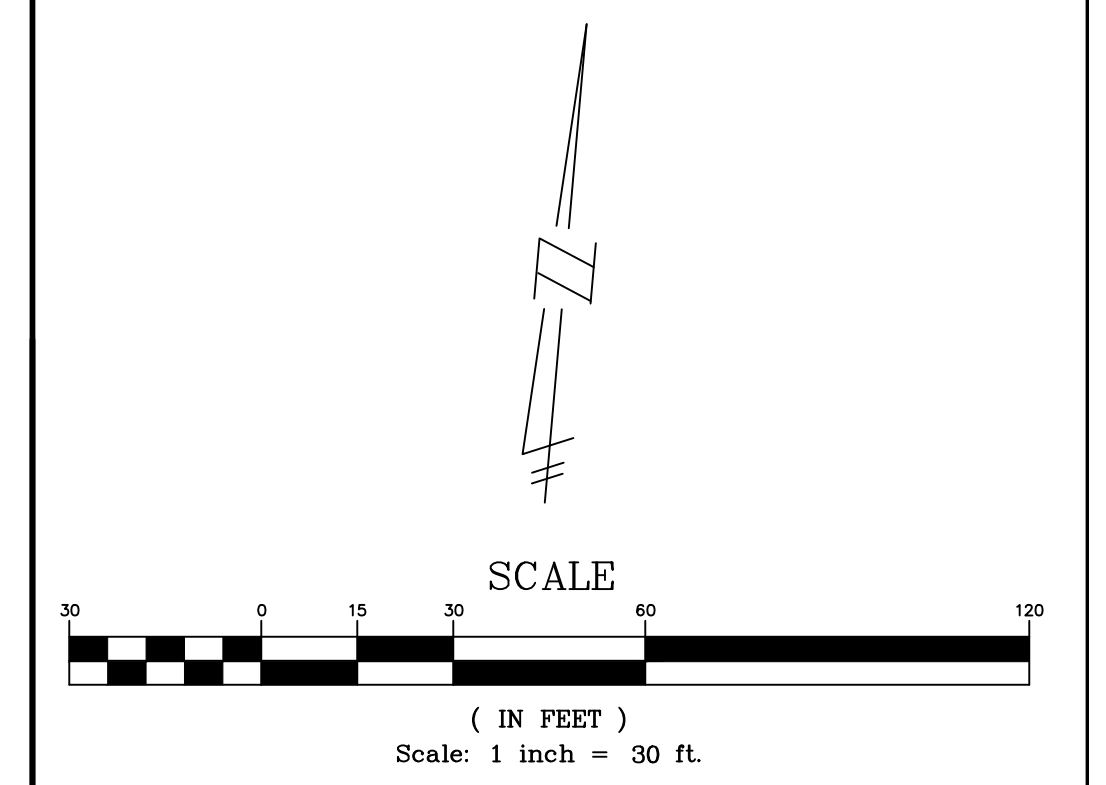
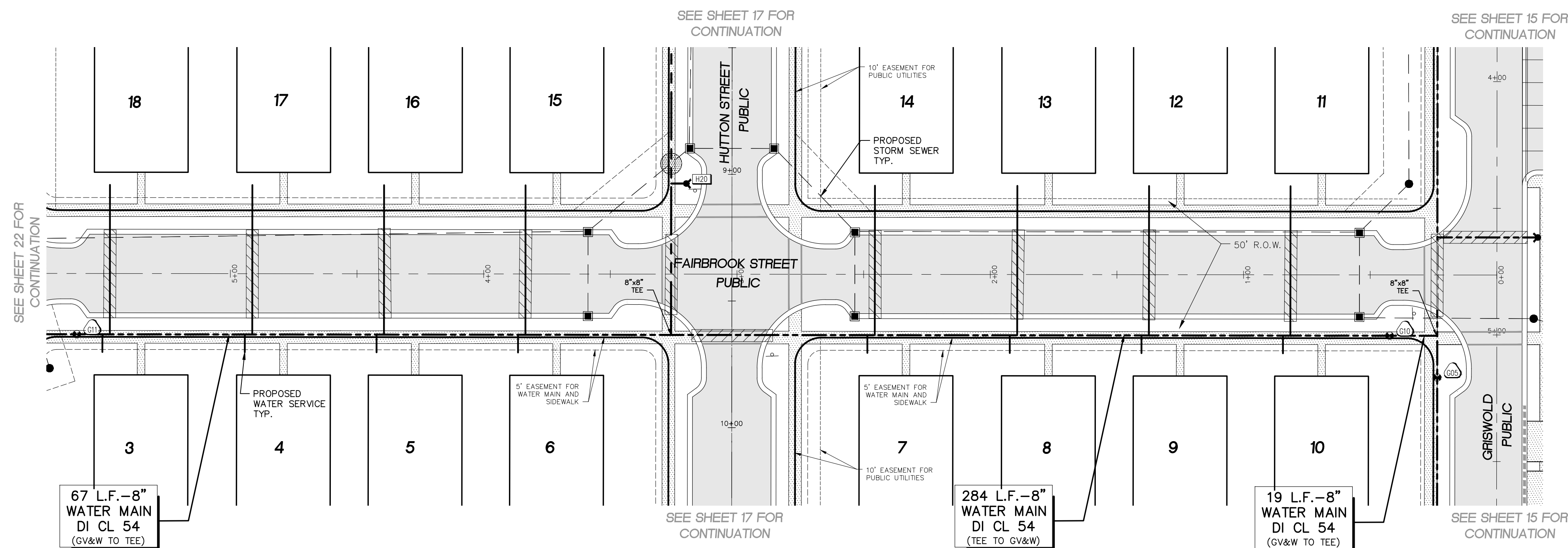
DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-RD-FSP-PH2.DWG

ROAD & WATER MAIN PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 22



NOTES:

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	PAVEMENT (ASPHALT)		PAVEMENT (ASPHALT)
	SIDE WALK (CONCRETE)		SIDE WALK (CONCRETE)
	CONCRETE CURB AND GUTTER		CONCRETE CURB AND GUTTER
	STORM SEWER		STORM SEWER
	SANITARY SEWER		SANITARY SEWER
	WATER MAIN		WATER MAIN
	DENOVIS UNDERDRAIN		DENOVIS UNDERDRAIN
	MANHOLE		MANHOLE
	CATCH BASIN W/SED CATCH		CATCH BASIN W/SED CATCH
	CURB INLET W/SLT SAC		CURB INLET W/SLT SAC
	END SECTION		END SECTION
	GATE VALVE		GATE VALVE
	HYDRANT		HYDRANT
	OVERHEAD ELECTRICAL LINES		OVERHEAD ELECTRICAL LINES
	FLOOD PLAN		FLOOD PLAN
	CONTOURS		CONTOURS
	SPOT ELEVATION		SPOT ELEVATION
	SURFACE DRAINAGE		SURFACE DRAINAGE
	OVERFLOW ROUTE		OVERFLOW ROUTE
	TREE FENCE		TREE FENCE
	SILT FENCE		SILT FENCE
	PROPOSED DRIVEWAY LOCATION		PROPOSED DRIVEWAY LOCATION
	CROSSING NUMBER		CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING	
NO.	DESCRIPTION	DATE	REVISIONS
1.	100% SCHEMATIC DESIGN	08-10-2022	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.
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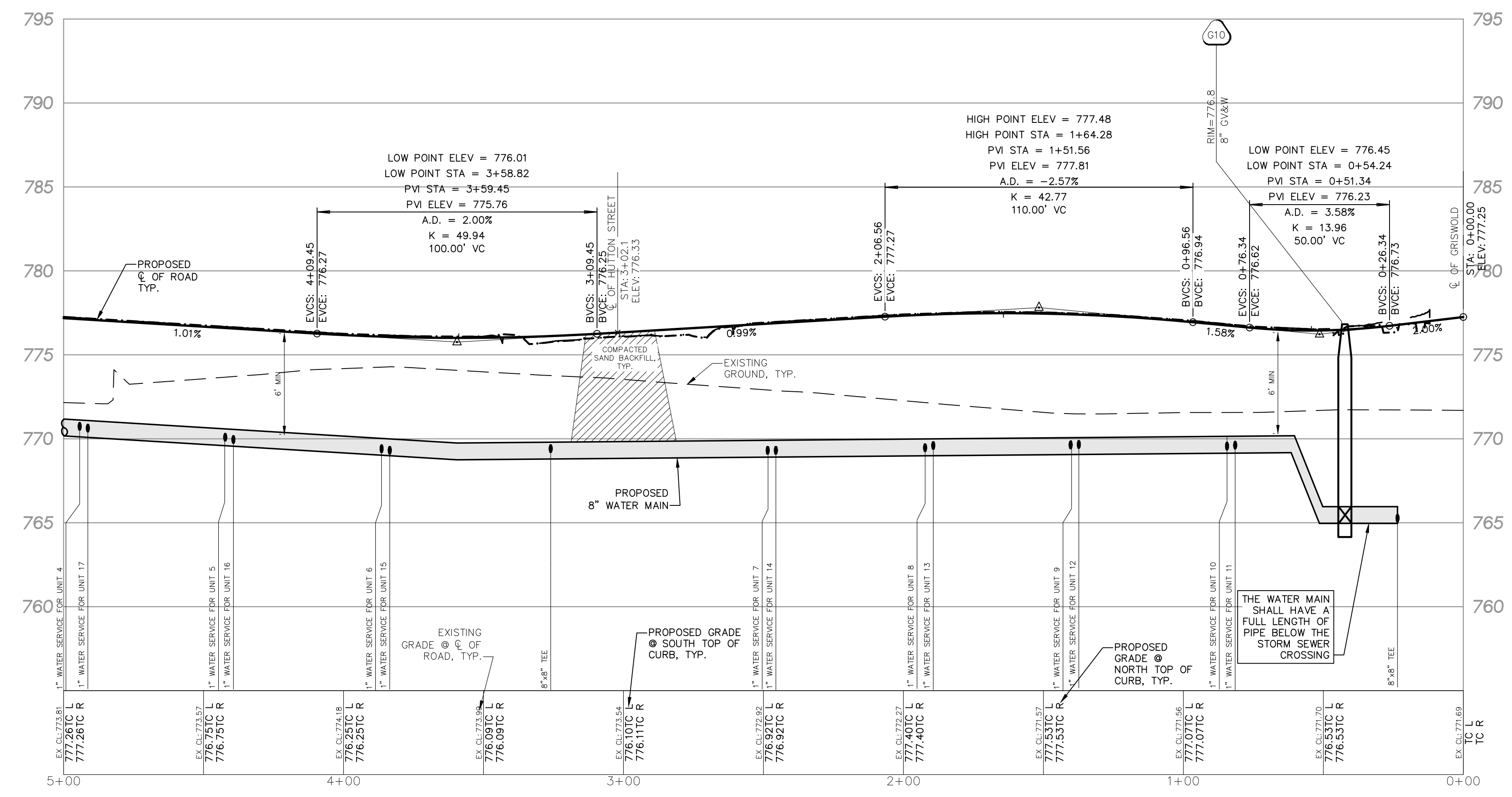
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ROAD & WATER MAIN PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

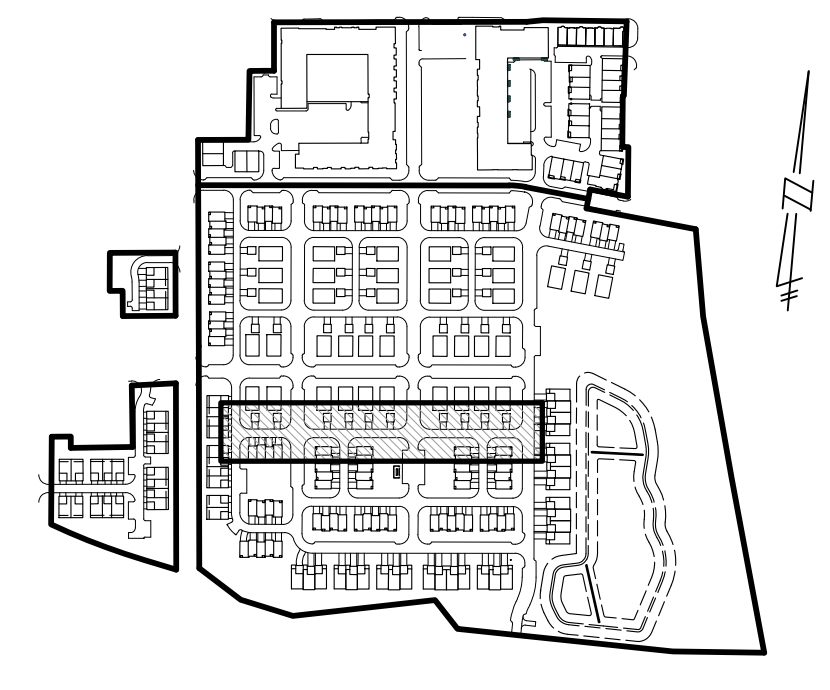
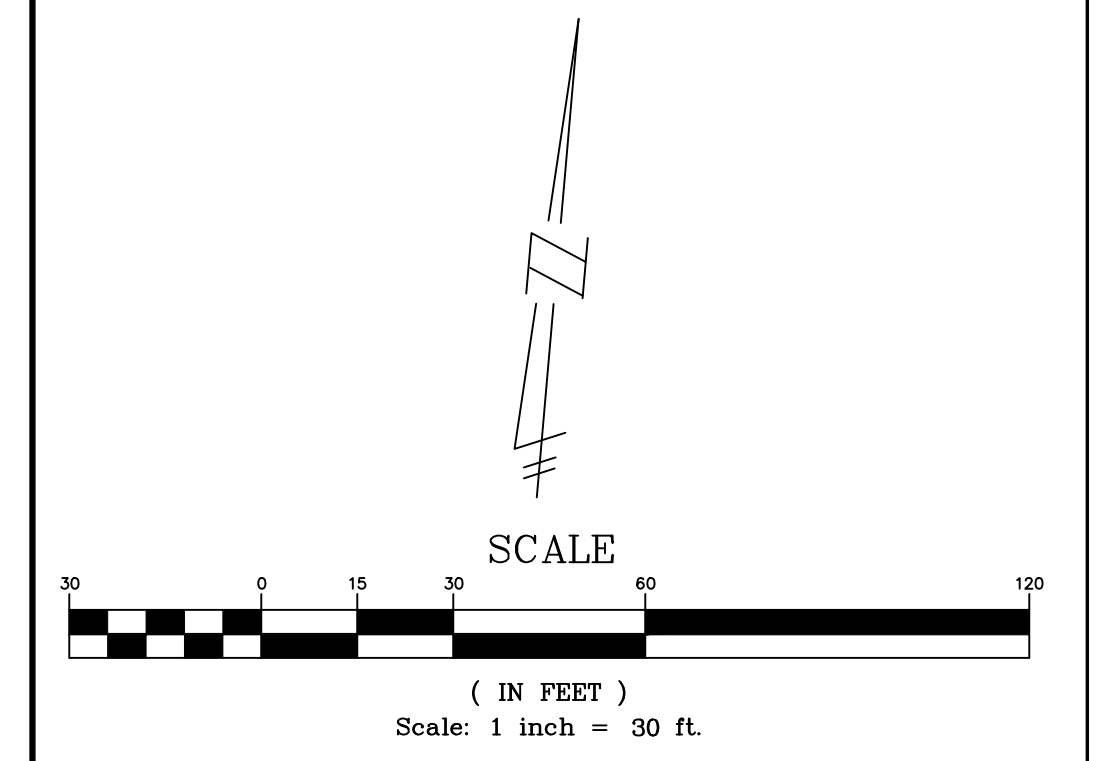
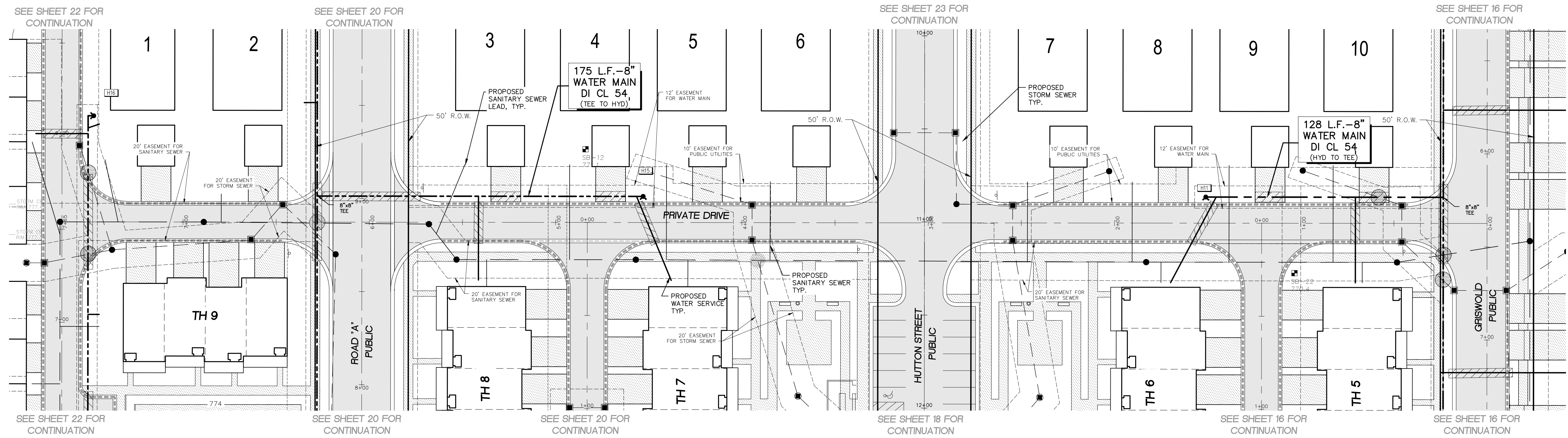
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 23



FAIRBROOK STREET
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'

S:\21001 RD DOWNS\21001-RD-FSP-PH2.DWG 2/20/23 11:11 AM



KEY MAP
SCALE: 1" = 500'

NOTES:

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LEGEND

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		HYDRANT
		OVERHEAD ELECTRICAL LINES
		FLOOD PLAN
		CONTOURS
		1000.00
		SPOT ELEVATION
		T/1/2
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
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		PROPOSED DRIVEWAY LOCATION
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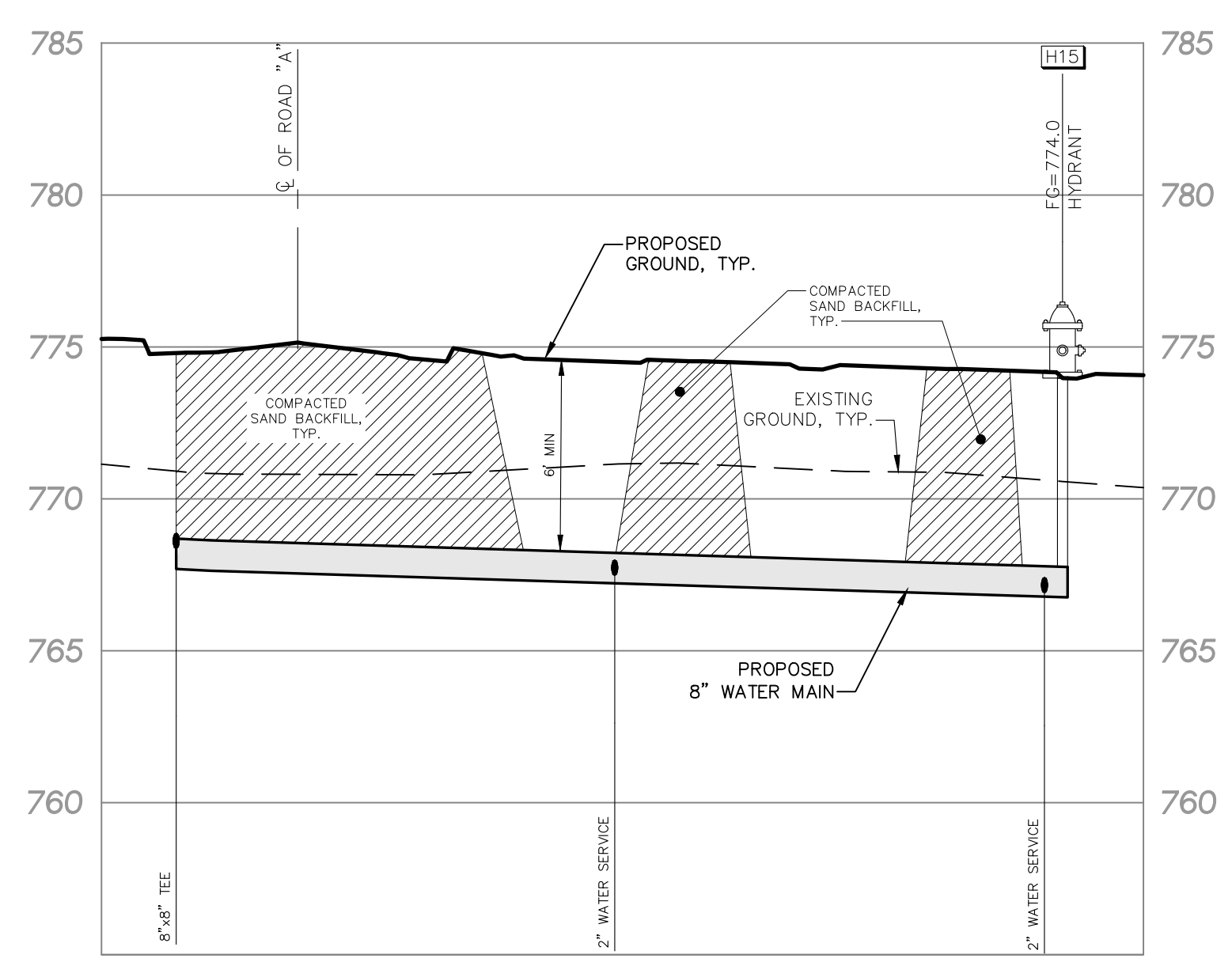
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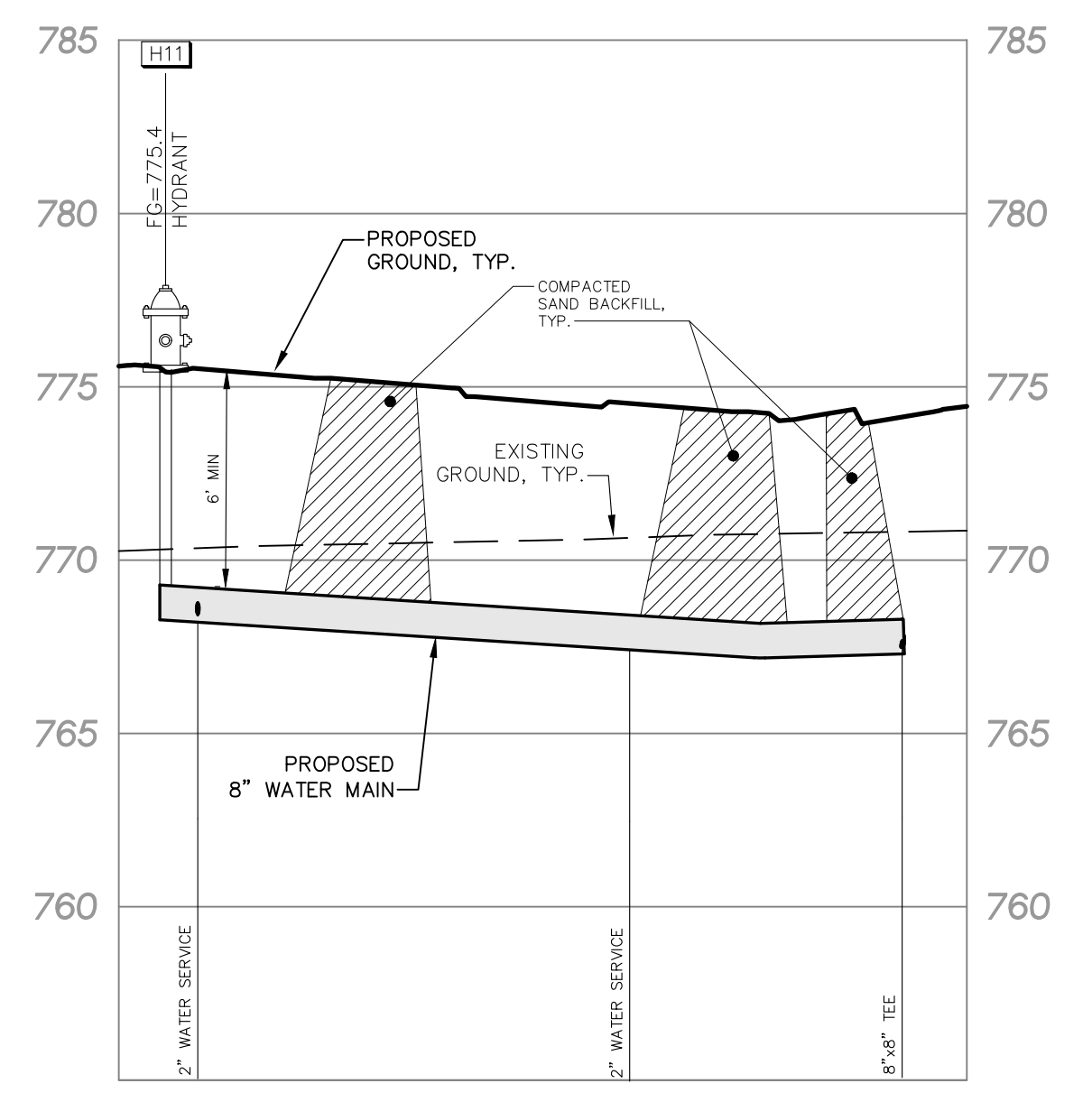
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CHECKED BY: R.E. FILE: 21001-RD-FSP-PH2.DWG

WATER MAIN PLAN AND PROFILE

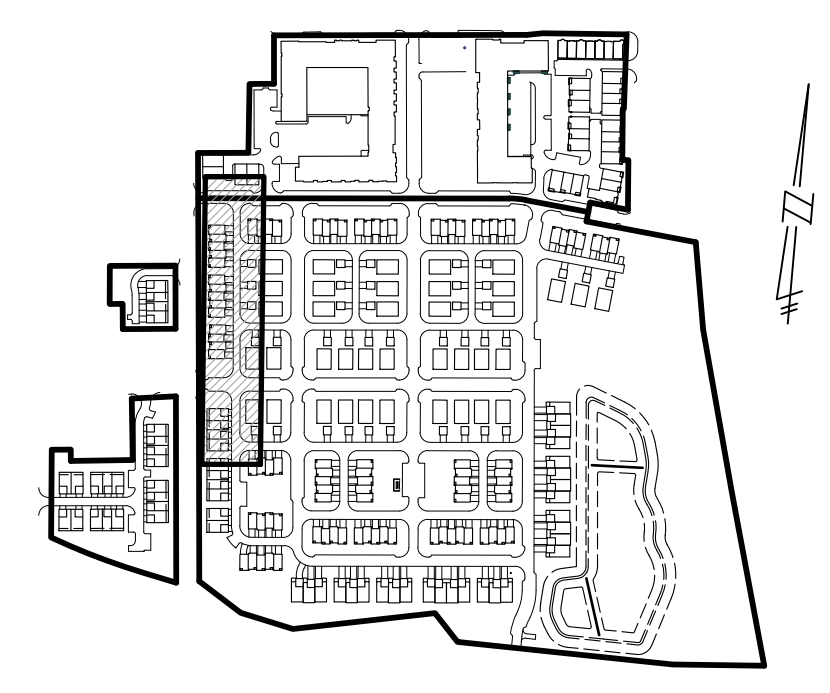
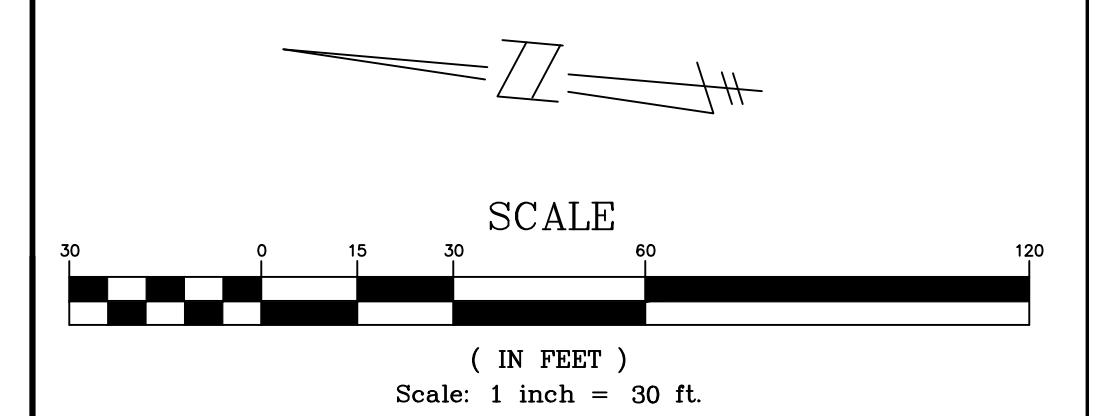
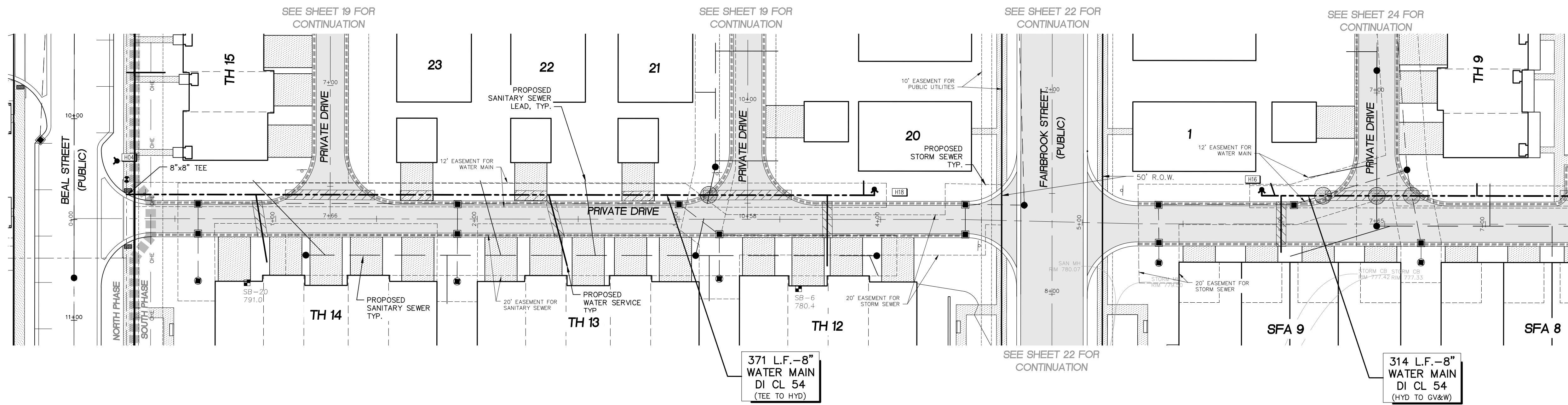


TEE TO H15
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'



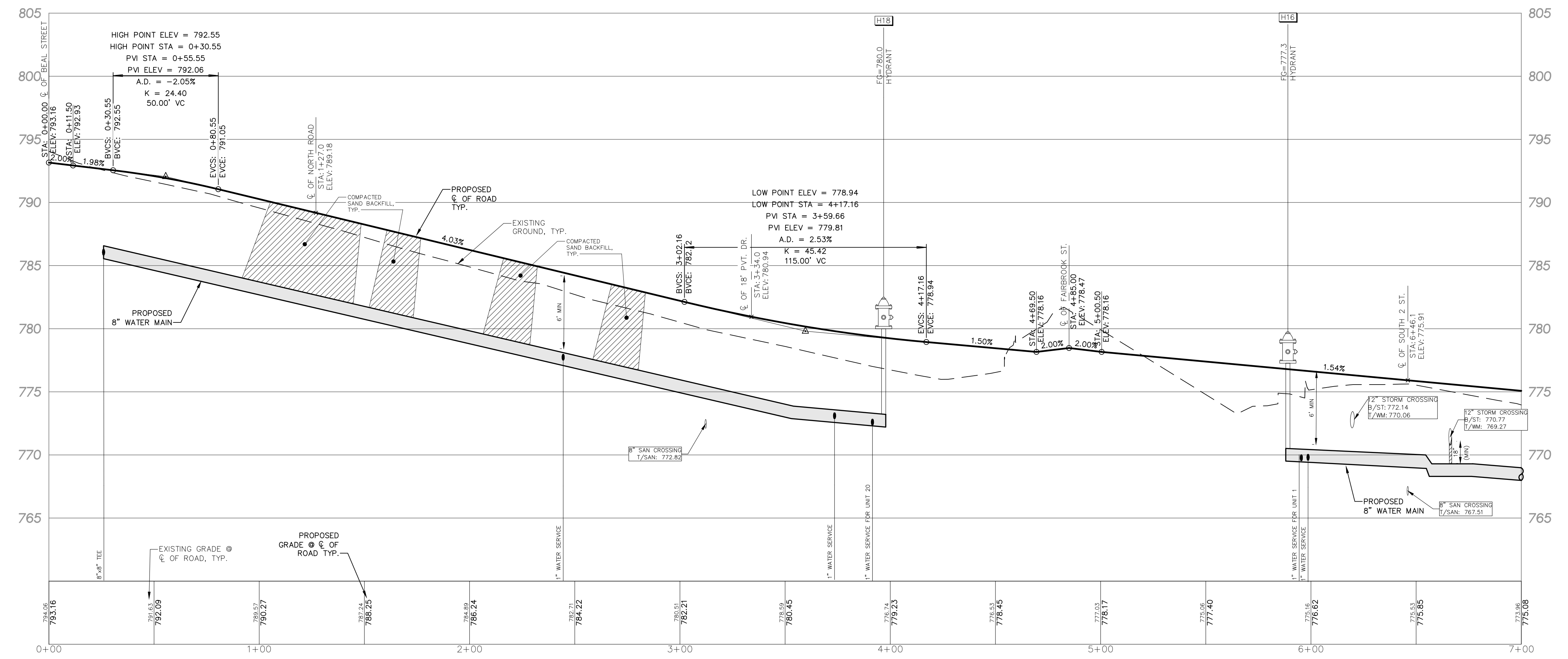
H11 TO TEE
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VERTICAL: 1"=5'

11/21/2019 10:40:00 AM C:\WORK\2023\21001-RD-FSP-PH2.DWG 21001-RD-FSP-PH2.DWG 9/27/2023 11:12 AM



KEY MAP
SCALE: 1" = 500'

NOTES:
ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
MAINTAIN 6" COVER OVER ALL WATER MAIN.
ALL WATER SERVICE LEADS SHALL BE MIN. 1" SEAMLESS COPPER WATER TUBE, ASTM DESIGNATION: B88, TYPE K, ANNEALED.



PRIVATE DRIVE
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND	
	EXISTING PAVEMENT (ASPHALT)
	PROPOSED PAVEMENT (ASPHALT)
	EXISTING SIDE WALK (CONCRETE)
	PROPOSED SIDE WALK (CONCRETE)
	EXISTING CONCRETE CURB AND GUTTER
	PROPOSED CONCRETE CURB AND GUTTER
	STORM SEWER
	SANITARY SEWER
	WATER MAIN
	DENOTES UNDERDRAIN
	DENOTES LANDSCAPE DRAIN
	MANHOLE
	CATCH BASIN W/SED CATCH
	CURB INLET W/SILT SAC
	END SECTION
	GATE VALVE
	HYDRANT
	OVERHEAD ELECTRICAL LINES
	FLOOD PLAN CONTOURS
	SPOT ELEVATION
	SURFACE DRAINAGE
	OVERFLOW ROUTE
	TREE FENCE
	SILT FENCE
	PROPOSED DRIVEWAY LOCATION
	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	DESCRIPTION	DATE
1.	100% SCHEMATIC DESIGN	08-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

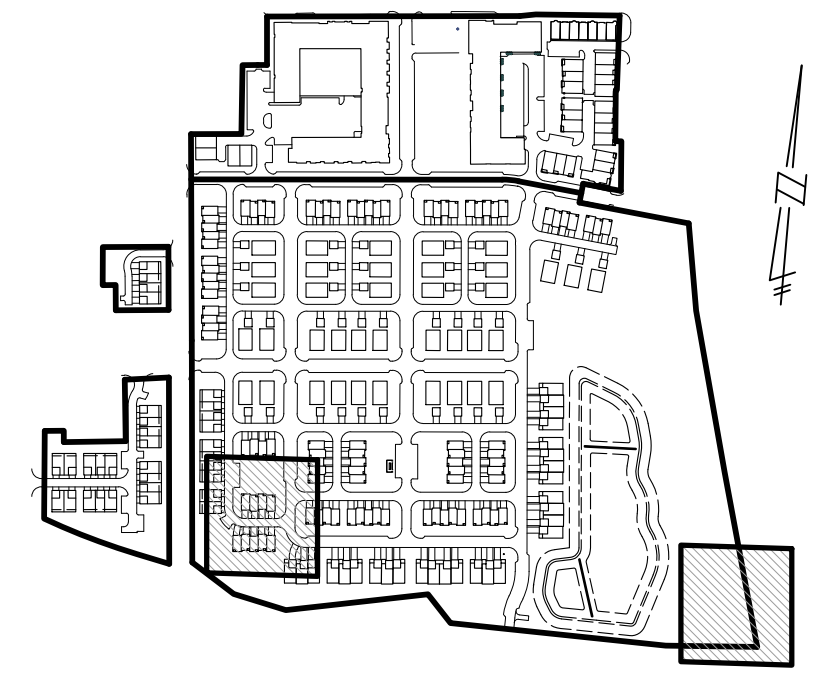
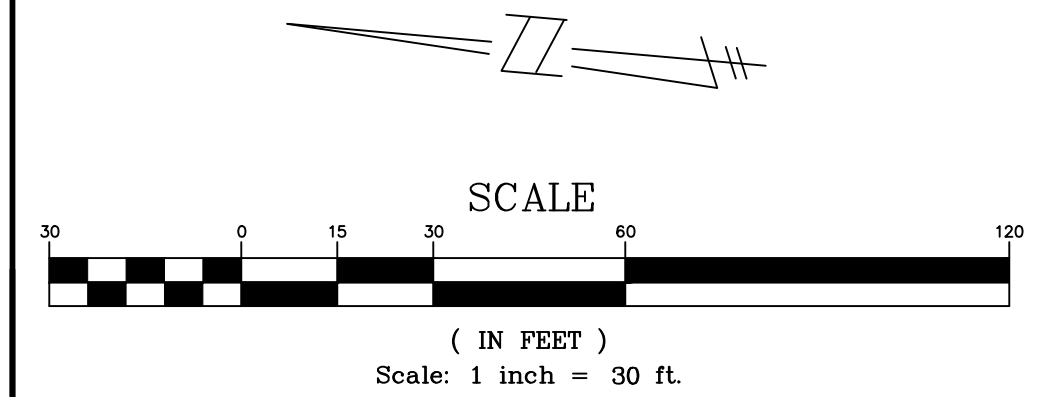
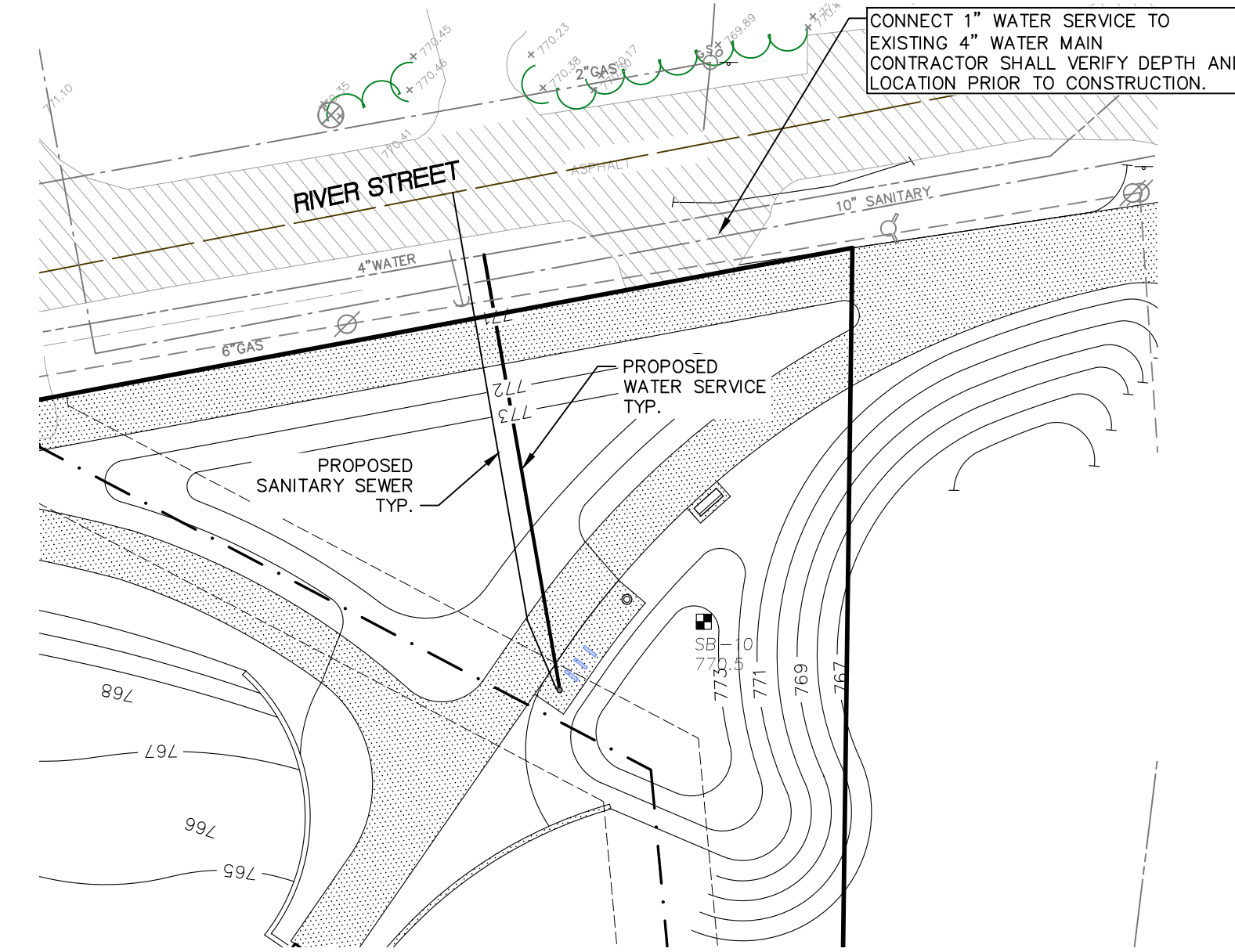
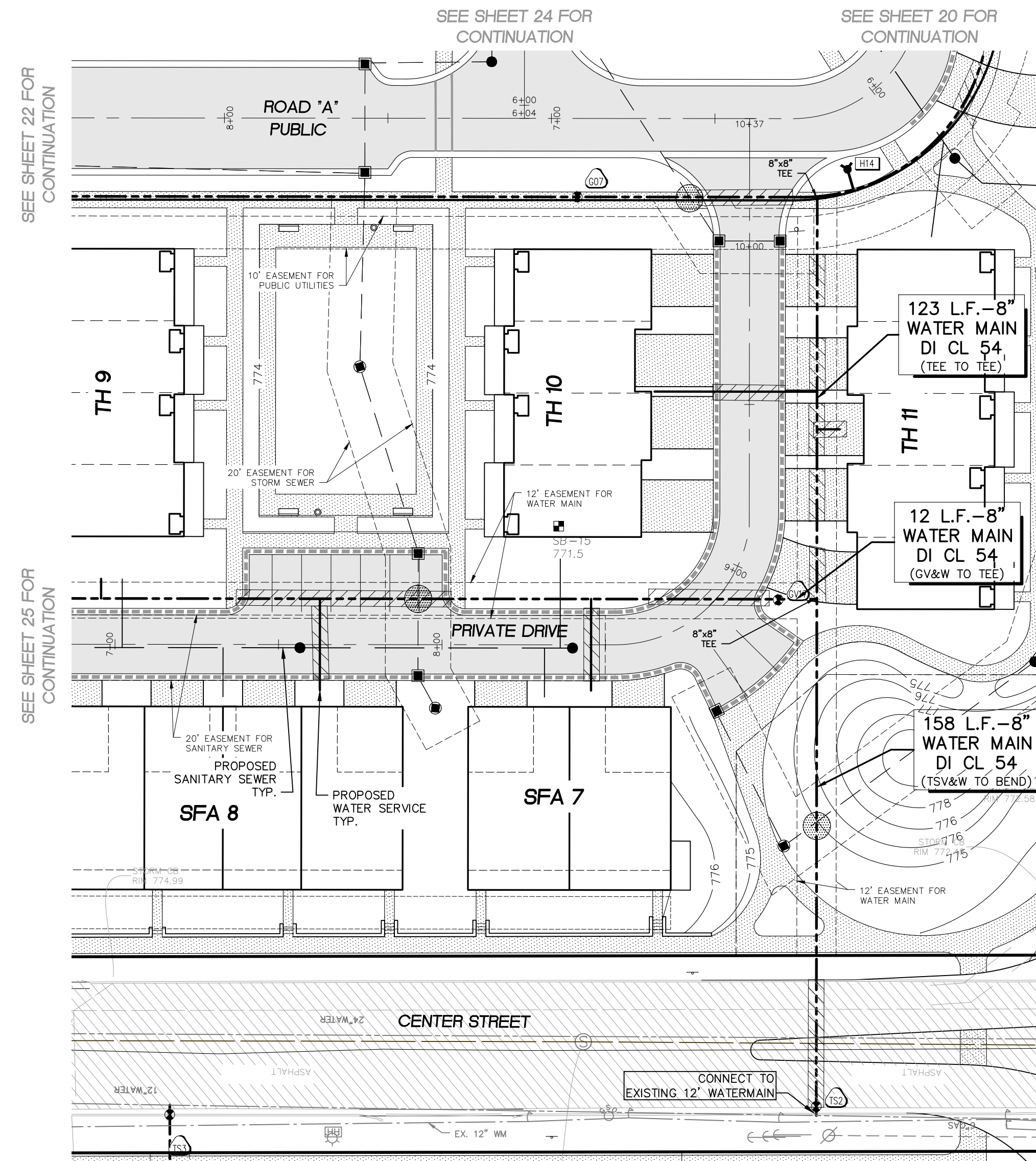
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-RD-FSP-PH2.DWG

ROAD & WATER MAIN PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
25



KEY MAP
SCALE: 1" = 500'

NOTES:
 ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 MAINTAIN 6" COVER OVER ALL WATER MAIN.
 ALL WATER SERVICE LEADS SHALL BE MIN. 1" SEAMLESS COPPER WATER TUBE, ASTM DESIGNATION: B88, TYPE K, ANNEALED.

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
 COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

EXISTING		PROPOSED		
	PAVEMENT (ASPHALT)		SIDE WALK (CONCRETE)	
	CONCRETE CURB AND GUTTER		CONCRETE CURB AND GUTTER	
	STORM SEWER		SANITARY SEWER	
	WATER MAIN		WATER MAIN	
	MANHOLE		MANHOLE	
	CATCH BASIN W/SED CATCH		CATCH BASIN W/SED CATCH	
	CURB INLET W/SLT SAC		CURB INLET W/SLT SAC	
	END SECTION		END SECTION	
	GATE VALVE		GATE VALVE	
	HYDRANT		HYDRANT	
	OVERHEAD ELECTRICAL LINES		OVERHEAD ELECTRICAL LINES	
	FLOOD PLAN		FLOOD PLAN	
	CONTOURS		CONTOURS	
	SPOT ELEVATION		SPOT ELEVATION	
	SURFACE DRAINAGE		SURFACE DRAINAGE	
	OVERFLOW ROUTE		OVERFLOW ROUTE	
	TREE FENCE		TREE FENCE	
	SILT FENCE		SILT FENCE	
	PROPOSED DRIVEWAY LOCATION		PROPOSED DRIVEWAY LOCATION	
	CROSSING NUMBER		CROSSING NUMBER	

THE DOWNS
 SECTION 3, T1S, R8E, CITY OF NORTHVILLE
 WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING	
NO.	DESCRIPTION	DATE	BY
1.	100% SCHEMATIC DESIGN	06-10-2022	
2.	50% DESIGN DEVELOPMENT	02-03-2023	
3.	FINAL SITE PLAN	04-14-2023	
4.	REV. PER CITY REVIEW	09-08-2023	

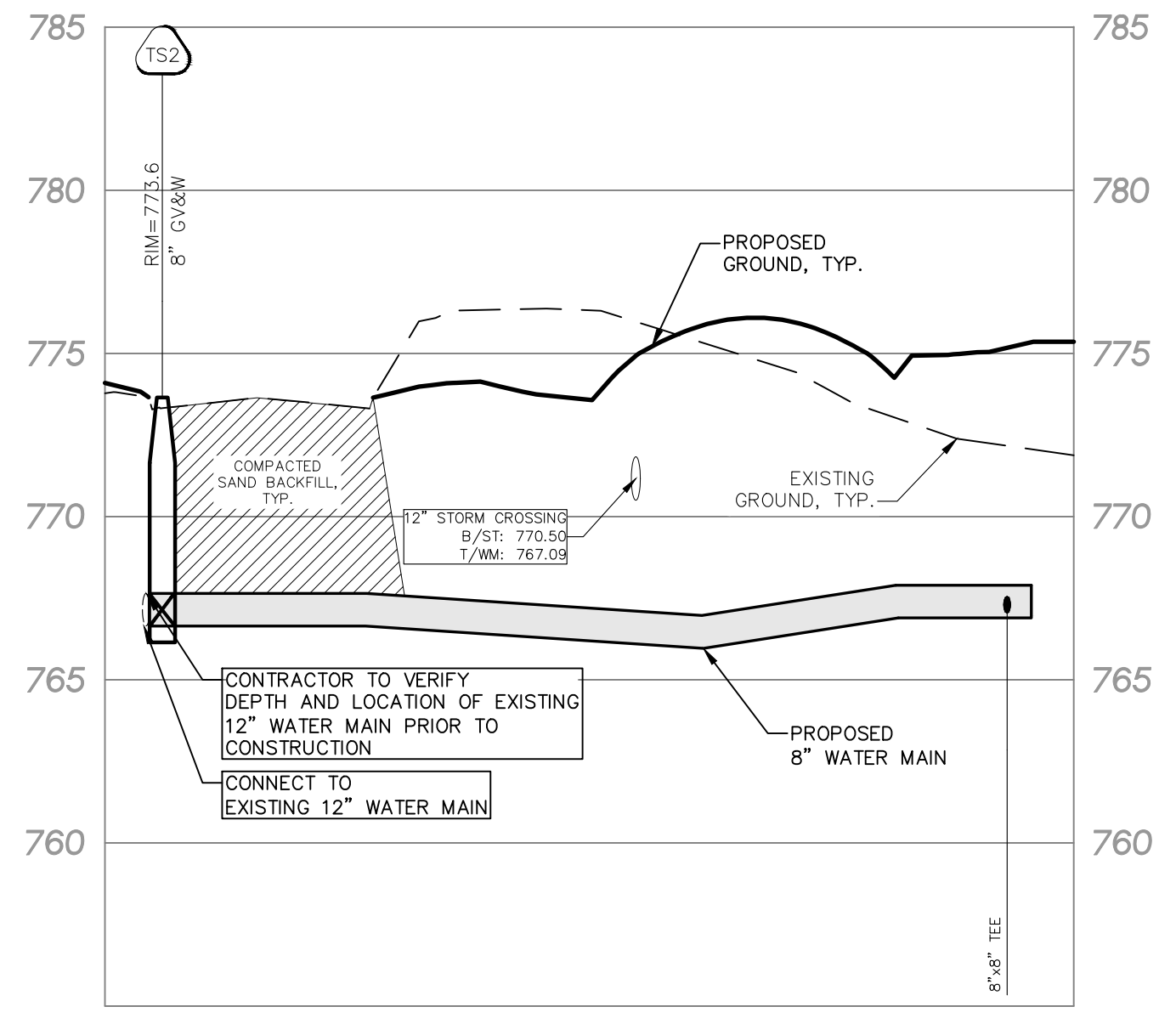
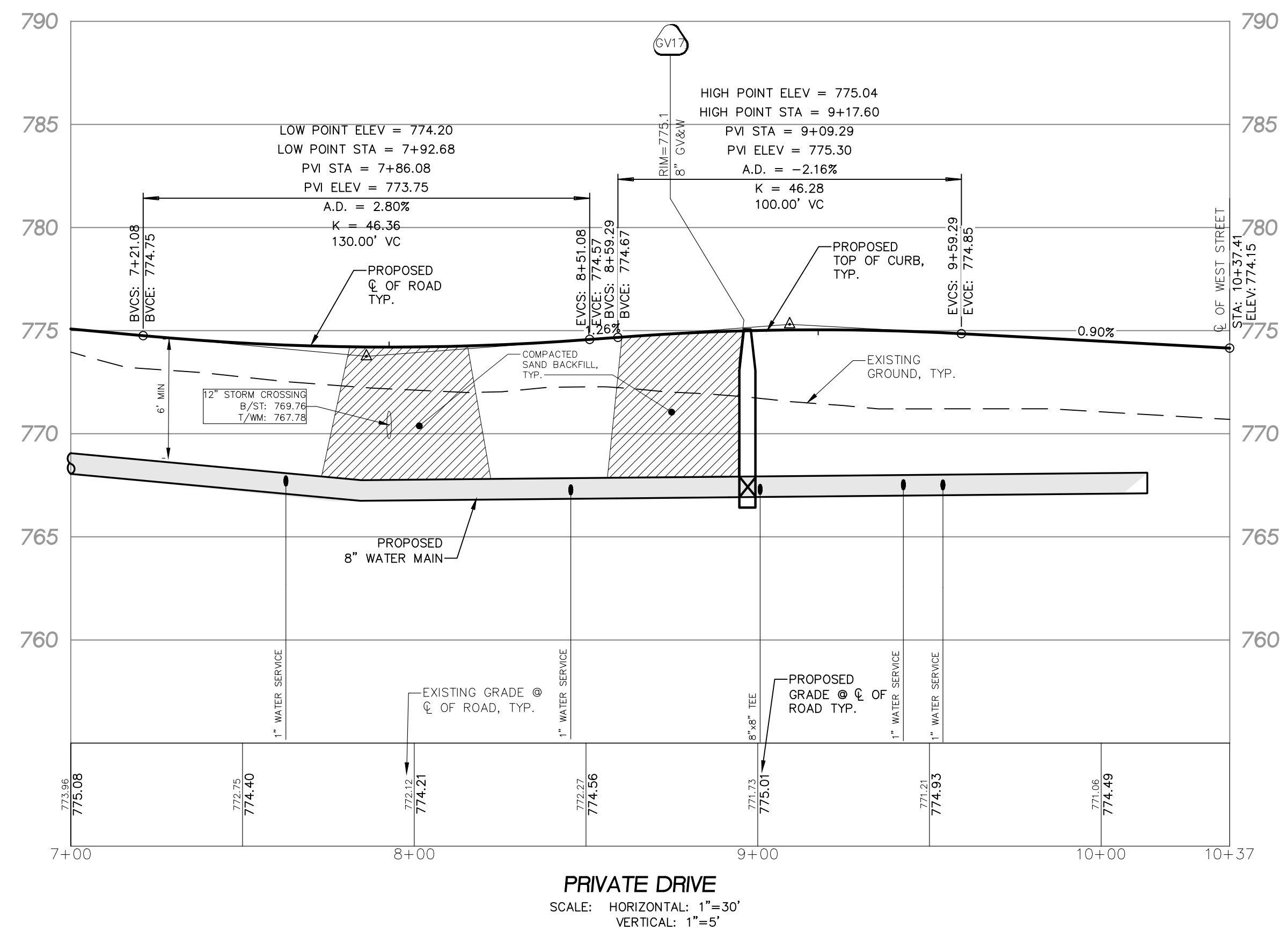
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER, AND NOT FIELD LOCATED.

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

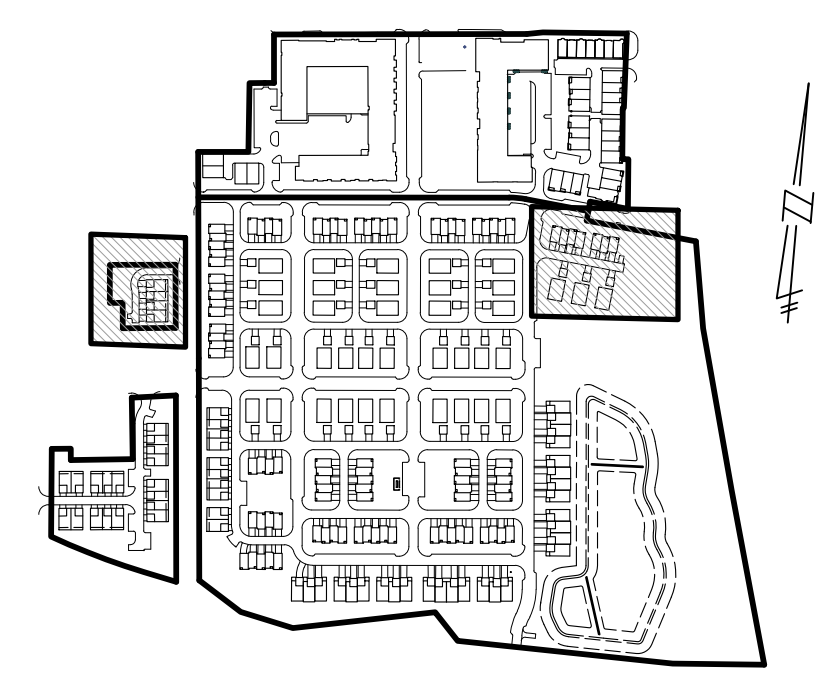
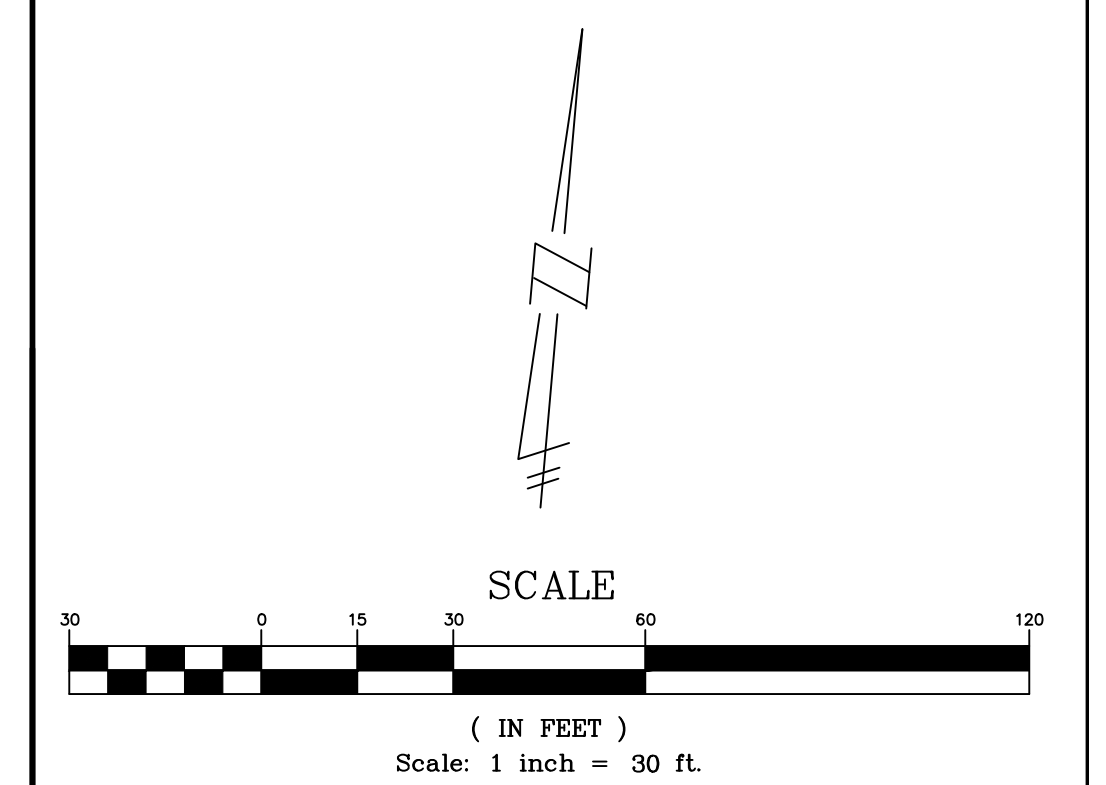
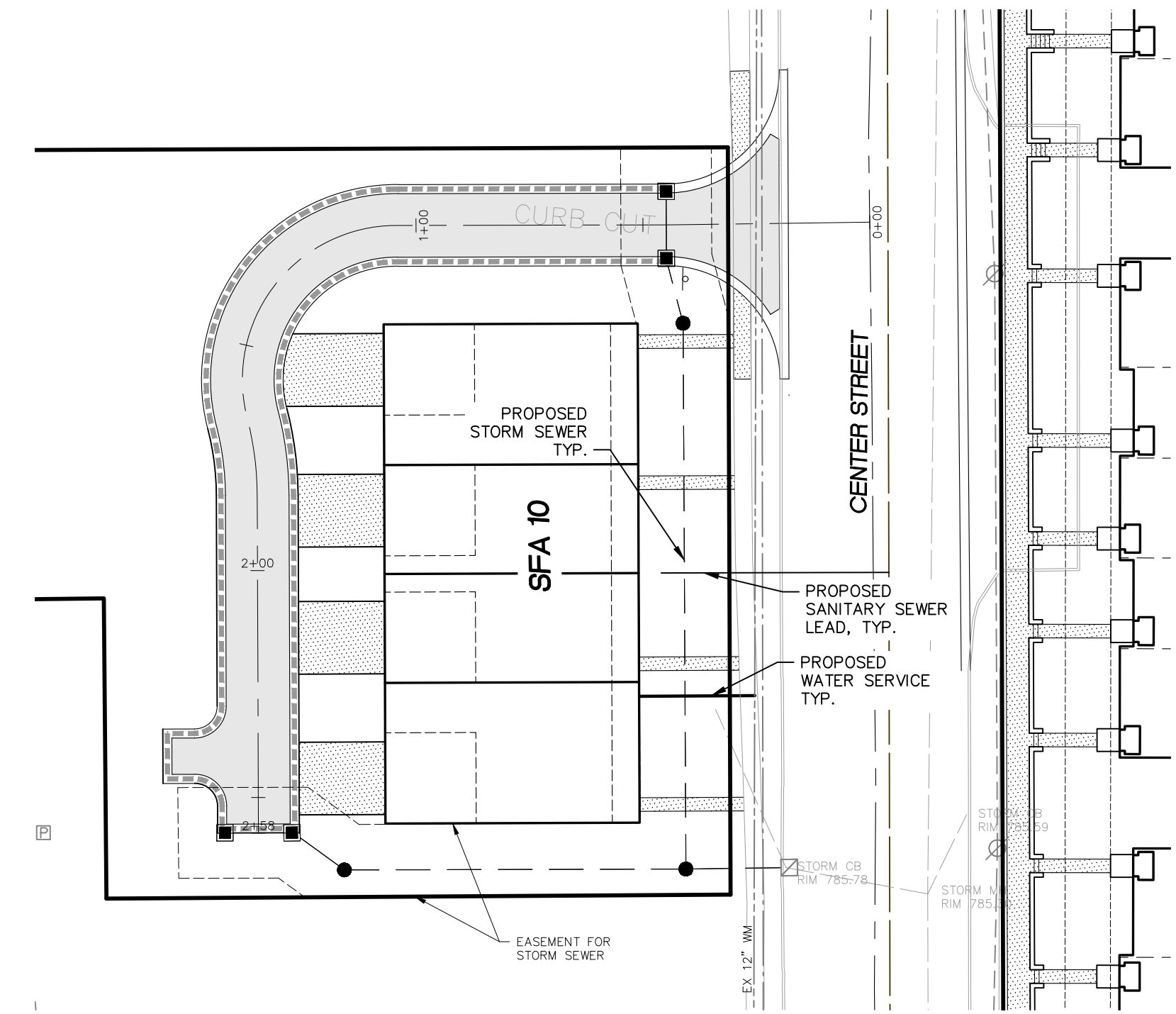
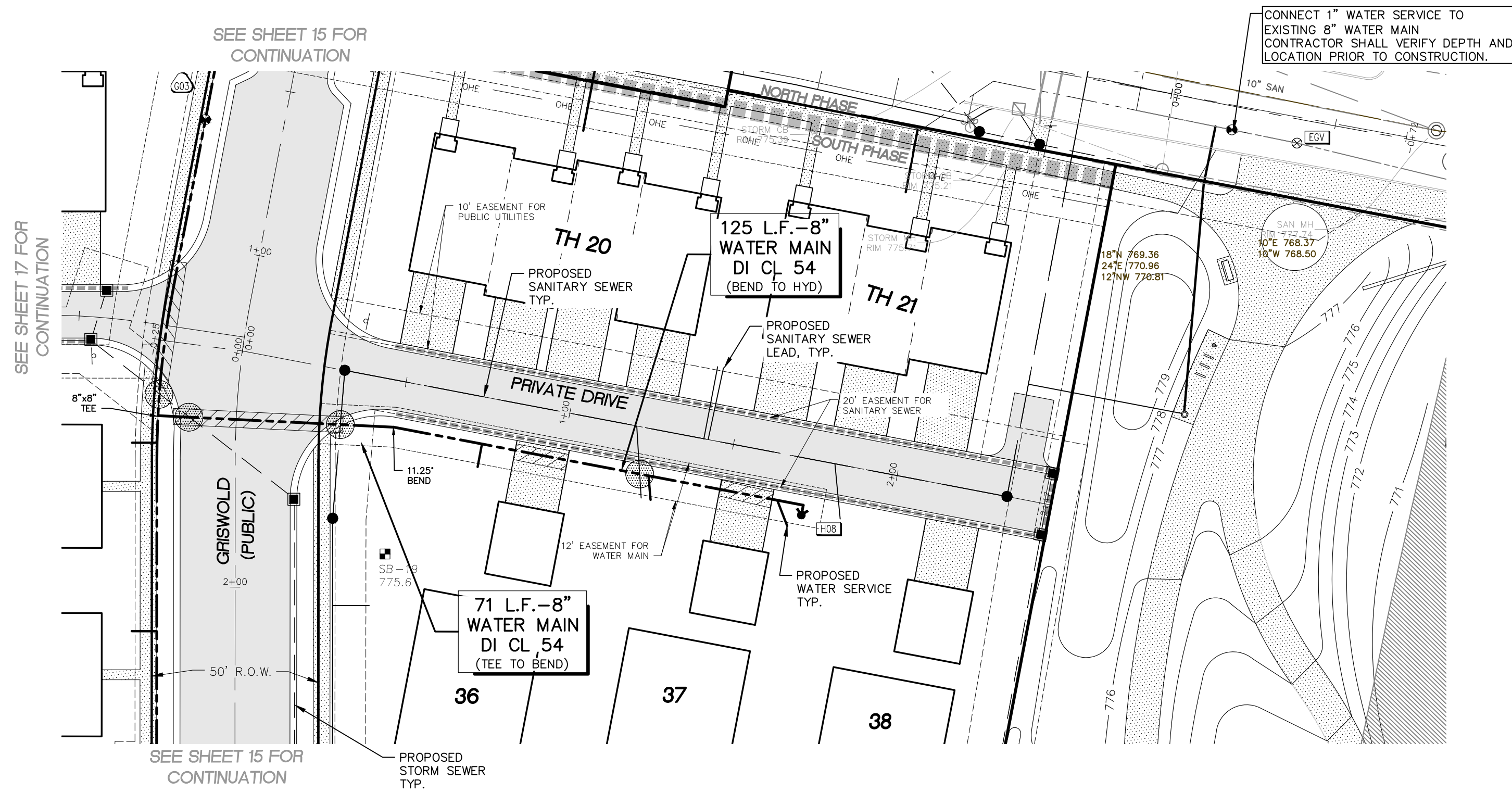
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: R.E. FILE: 21001-RD-FSP-PH2.DWG

ROAD & WATER MAIN PLAN AND PROFILE



WATER MAIN
 SCALE: HORIZONTAL: 1"=30'
 VERTICAL: 1"=5'



KEY MAP
SCALE: 1" = 500'

NOTES:
 ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 MAINTAIN 6' COVER OVER ALL WATER MAIN.
 ALL WATER SERVICE LEADS SHALL BE MIN. 1" SEAMLESS COPPER WATER TUBE, ASTM DESIGNATION: B88, TYPE K, ANNEALED.

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 COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		"LID" DENOTES UNDERDRAIN
		"LS" DENOTES LANDSCAPE DRAIN
		MANHOLE
		CATCH BASIN W/SED CATCH
		CURB INLET W/SLT SAC
		END SECTION
		GATE VALVE
		HYDRANT
		OVERHEAD ELECTRICAL LINES
		FLOOD PLAN
		CONTOURS
		1000.00
		SPOT ELEVATION
		T/C
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		CROSSING NUMBER

THE DOWNS
 SECTION 3, T1S, R8E, CITY OF NORTHVILLE
 WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	08-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

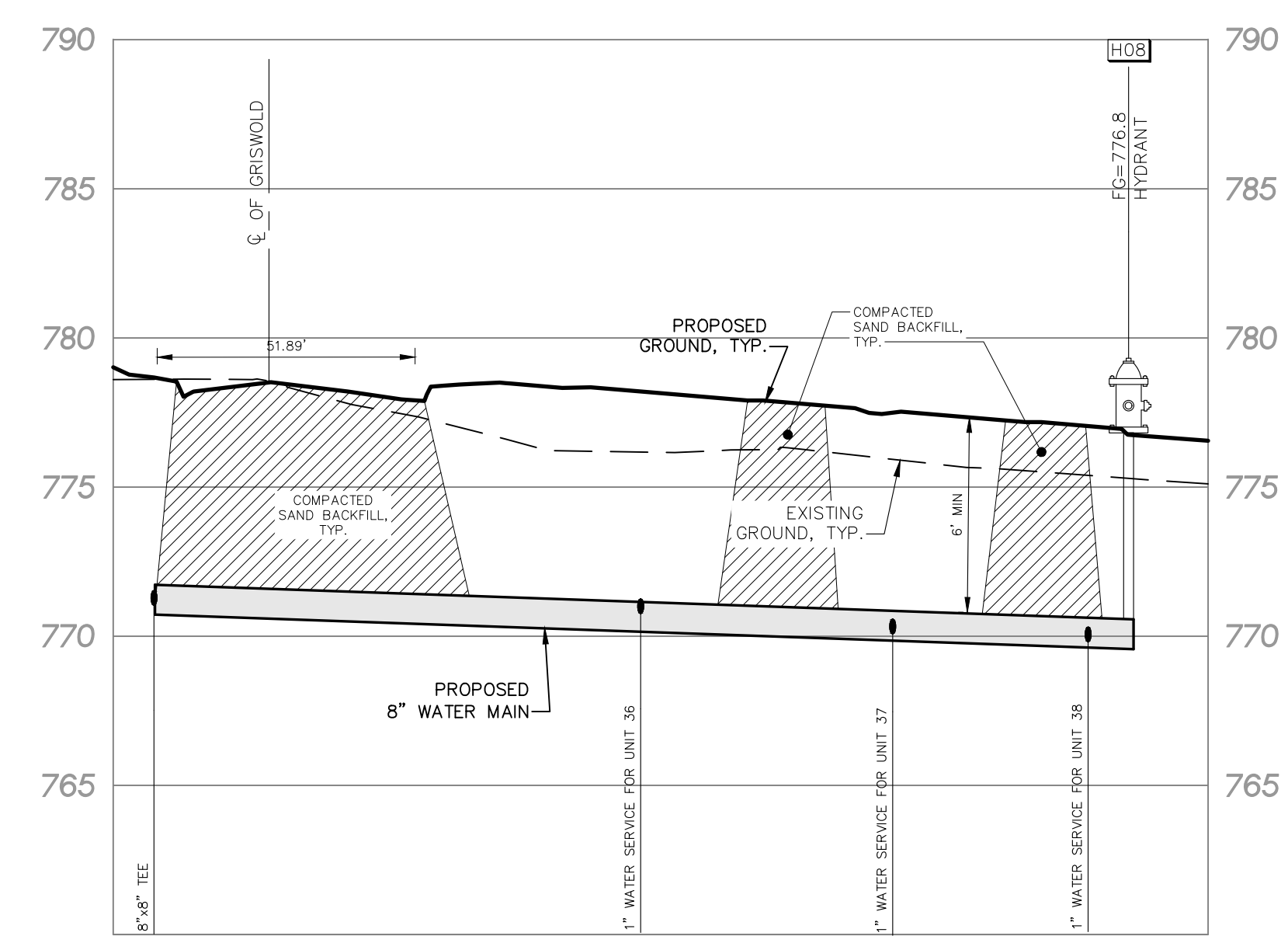
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: R.E. FILE: 21001-RD-FSP-PH2.DWG

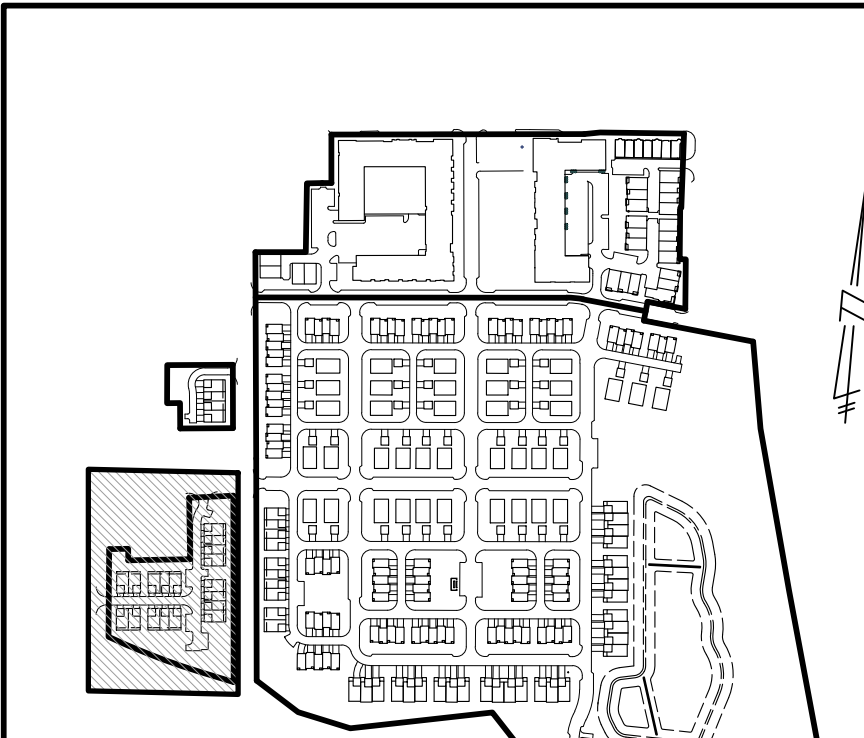
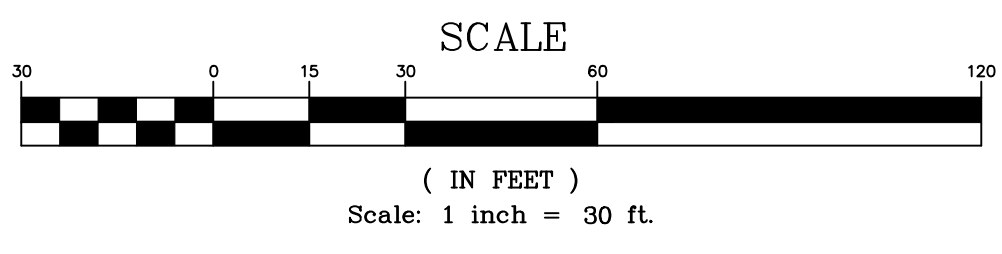
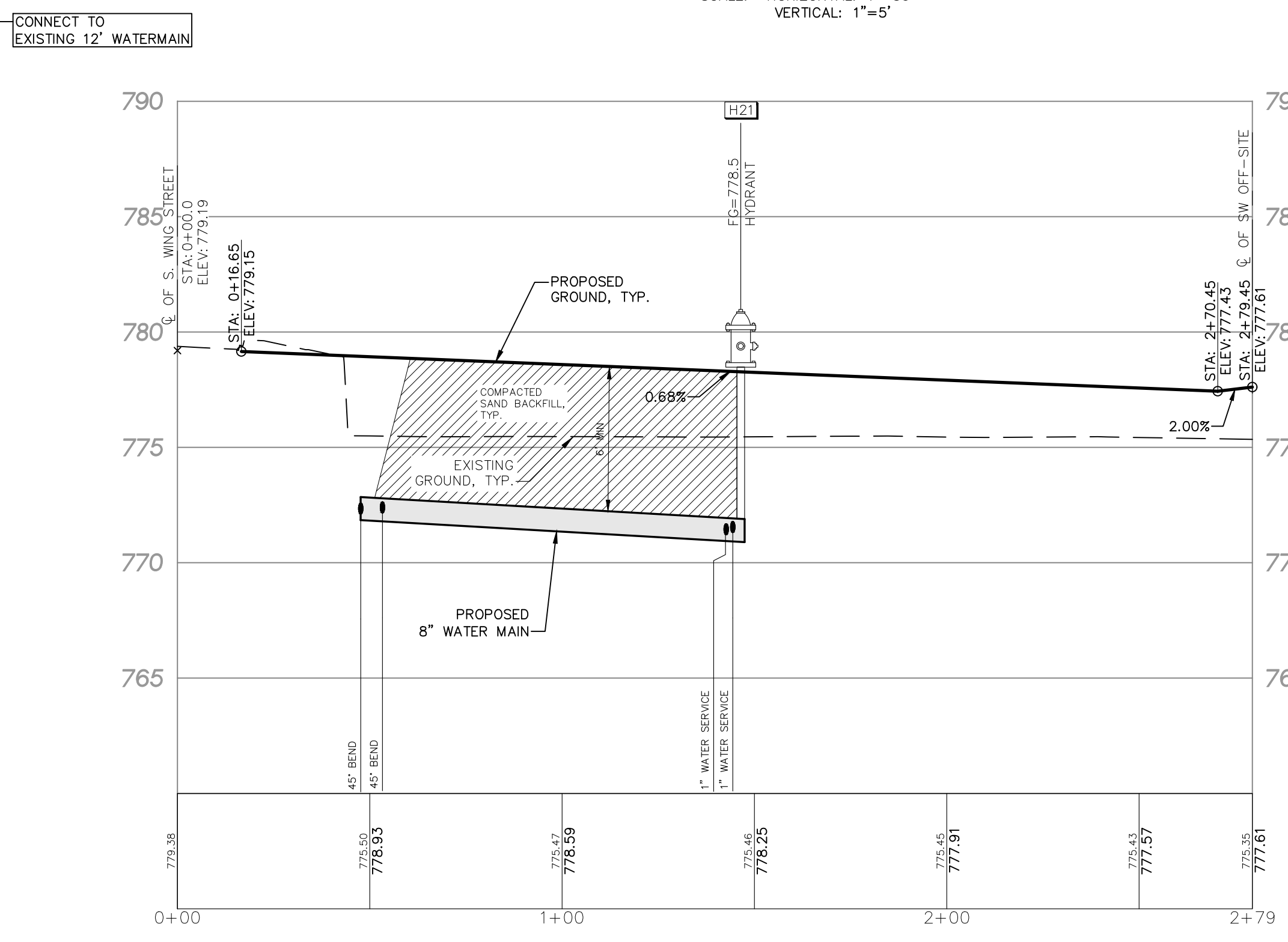
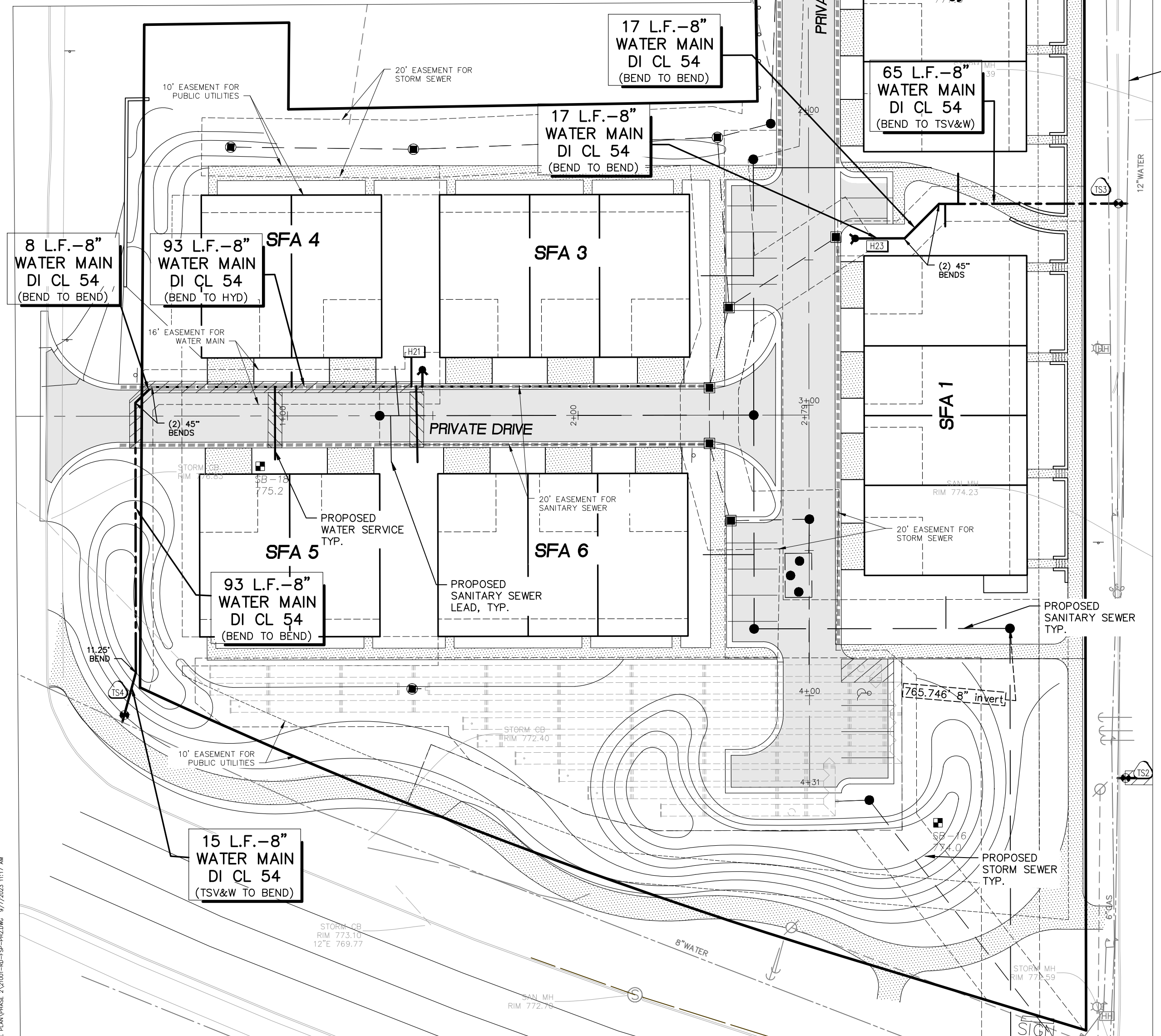
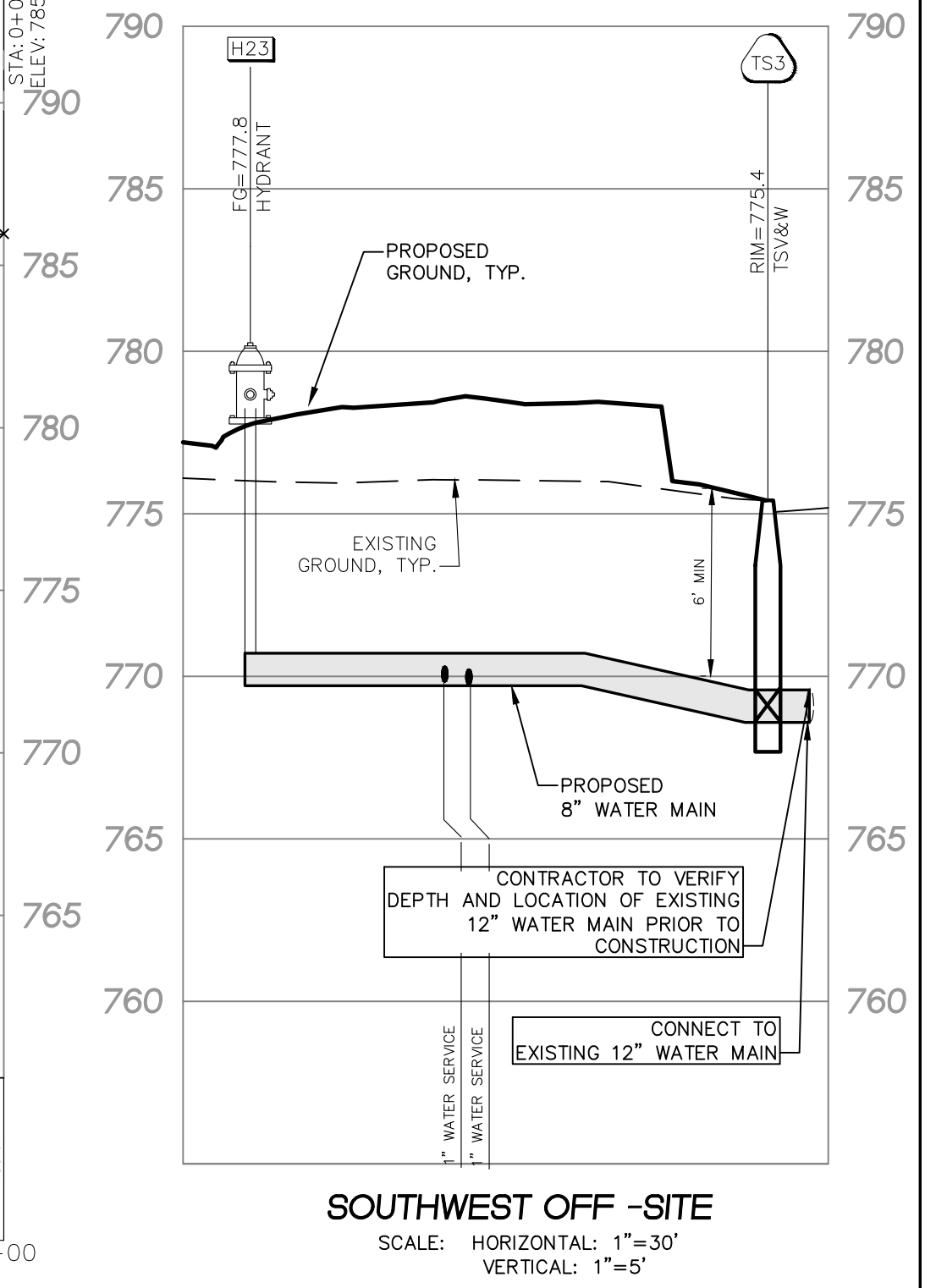
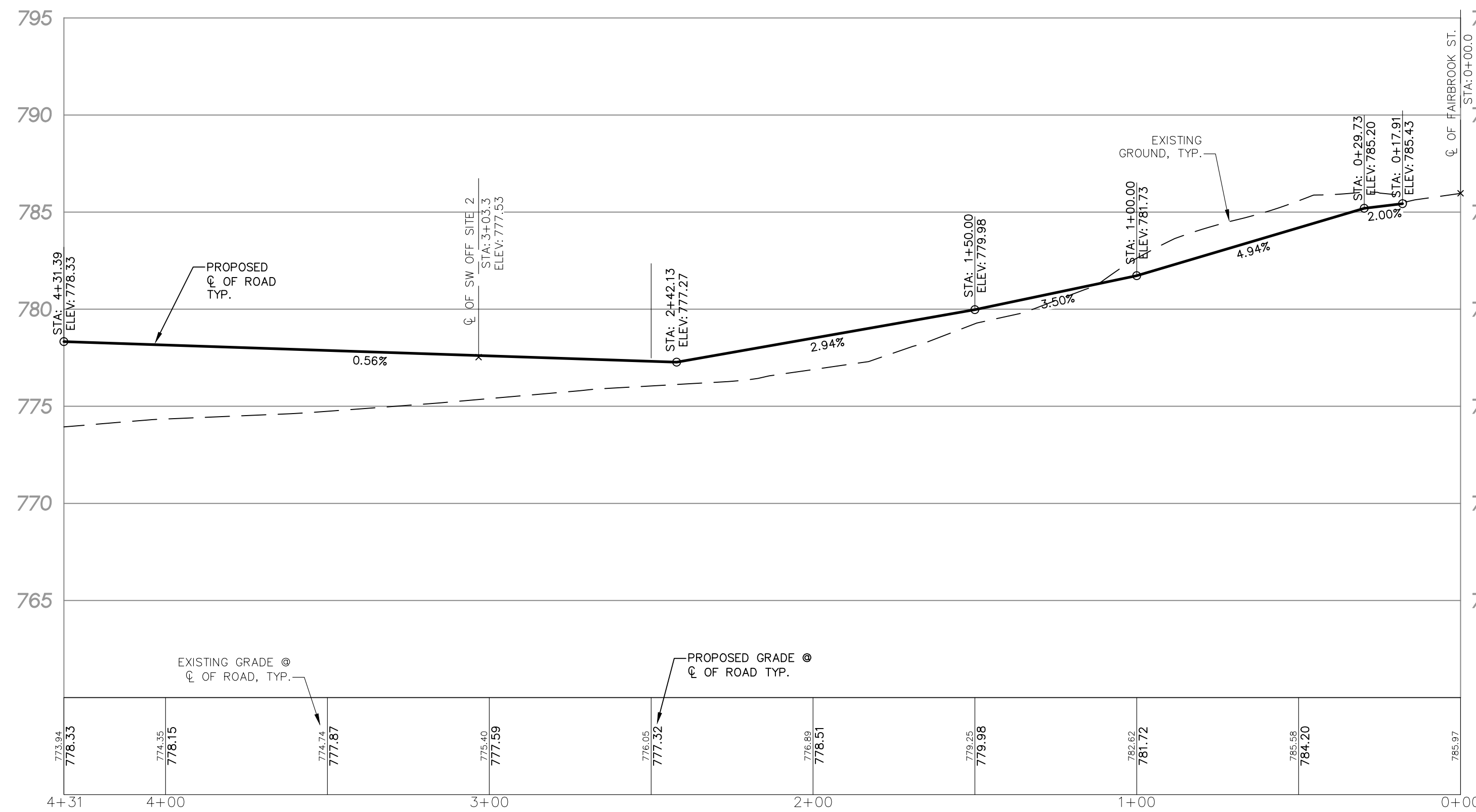
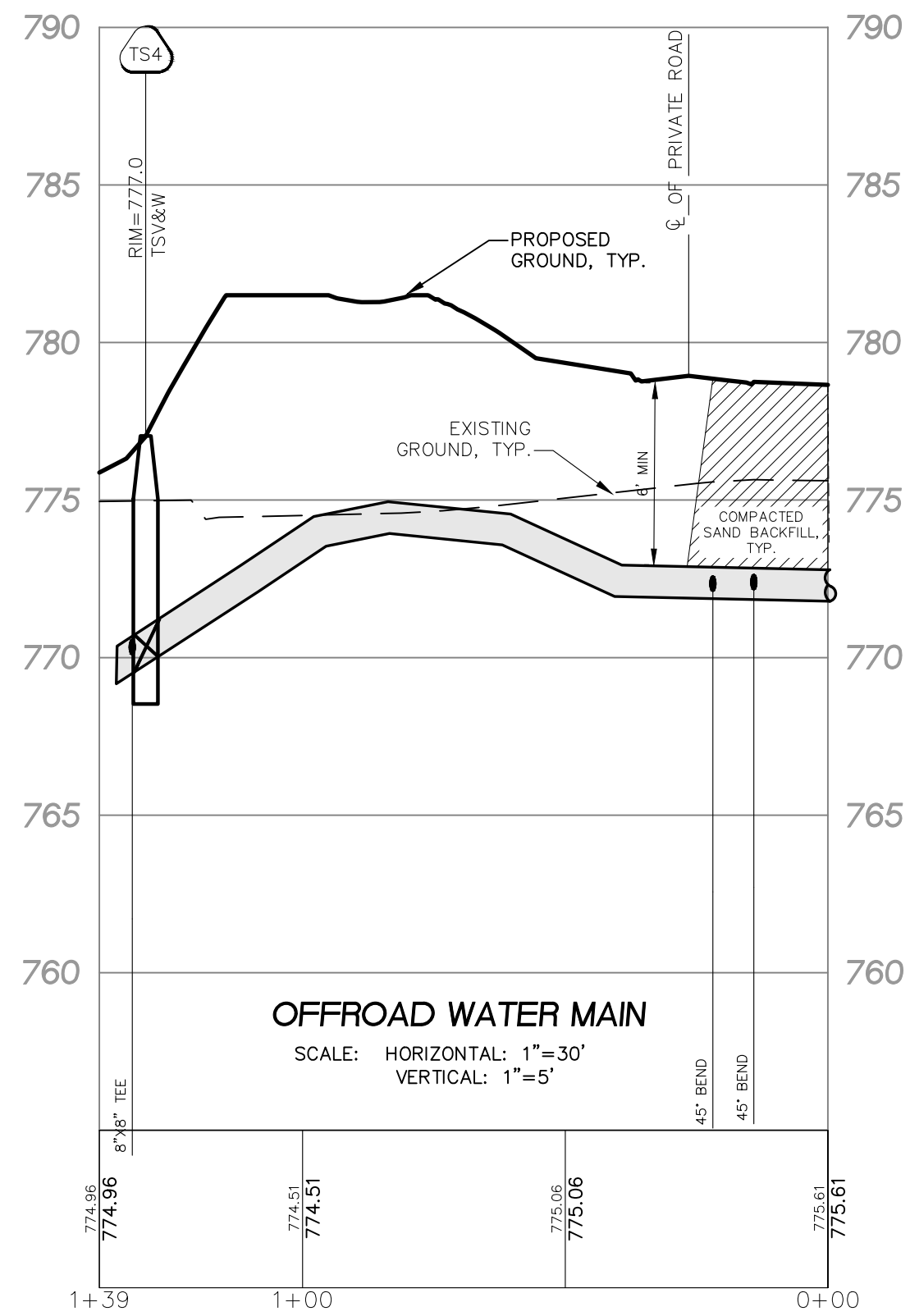
ROAD & WATER MAIN PLAN AND PROFILE



TEE TO H08
 SCALE: HORIZONTAL: 1"=30'
 VERTICAL: 1"=5'

SKL SEIBER KEAST LEHNER
 ENGINEERING | SURVEYING
 39205 COUNTRY CLUB DRIVE, SUITE C8
 FARMINGTON HILLS, MI 48331
 PHONE: 248.308.3331

SHEET 27



NOTES:
 ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 MAINTAIN 6" COVER OVER ALL WATER MAIN.
 ALL WATER SERVICE LEADS SHALL BE 1" SEAMLESS COPPER WATER TUBE, ASTM DESIGNATION: B88, TYPE K, ANNEALED.

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
 COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND	
	EXISTING PAVEMENT (ASPHALT)
	PROPOSED PAVEMENT (ASPHALT)
	EXISTING SIDE WALK (CONCRETE)
	PROPOSED SIDE WALK (CONCRETE)
	EXISTING CONCRETE CURB AND GUTTER
	PROPOSED CONCRETE CURB AND GUTTER
	EXISTING STORM SEWER
	PROPOSED STORM SEWER
	EXISTING SANITARY SEWER
	PROPOSED SANITARY SEWER
	EXISTING WATER MAIN
	PROPOSED WATER MAIN
	EXISTING MANHOLE
	PROPOSED MANHOLE
	EXISTING CATCH BASIN W/SED CATCH
	PROPOSED CATCH BASIN W/SED CATCH
	EXISTING CURB INLET W/SLT SAC
	PROPOSED CURB INLET W/SLT SAC
	EXISTING END SECTION
	PROPOSED END SECTION
	EXISTING GATE VALVE
	PROPOSED GATE VALVE
	EXISTING HYDRANT
	PROPOSED HYDRANT
	EXISTING OVERHEAD ELECTRICAL LINES
	PROPOSED OVERHEAD ELECTRICAL LINES
	EXISTING FLOOD PLAN
	PROPOSED FLOOD PLAN
	EXISTING CONTOURS
	PROPOSED CONTOURS
	EXISTING SPOT ELEVATION
	PROPOSED SPOT ELEVATION
	EXISTING SURFACE DRAINAGE
	PROPOSED SURFACE DRAINAGE
	EXISTING OVERFLOW ROUTE
	PROPOSED OVERFLOW ROUTE
	EXISTING TREE FENCE
	PROPOSED TREE FENCE
	EXISTING SILT FENCE
	PROPOSED SILT FENCE
	EXISTING PROPOSED DRIVEWAY LOCATION
	PROPOSED DRIVEWAY LOCATION
	EXISTING CROSSING NUMBER
	PROPOSED CROSSING NUMBER

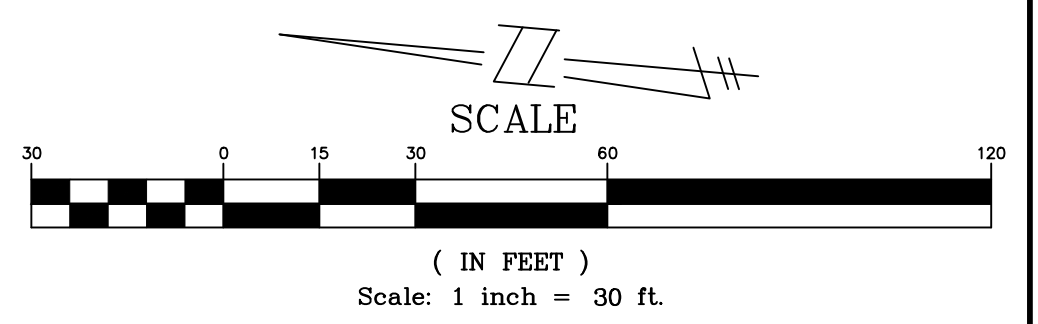
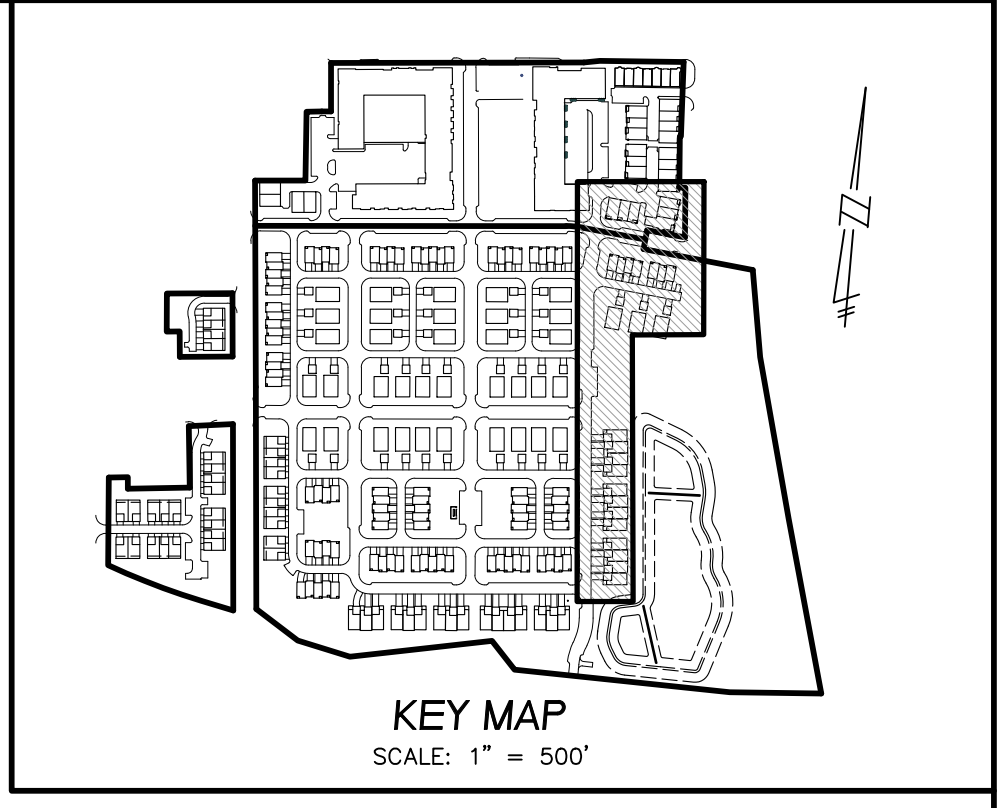
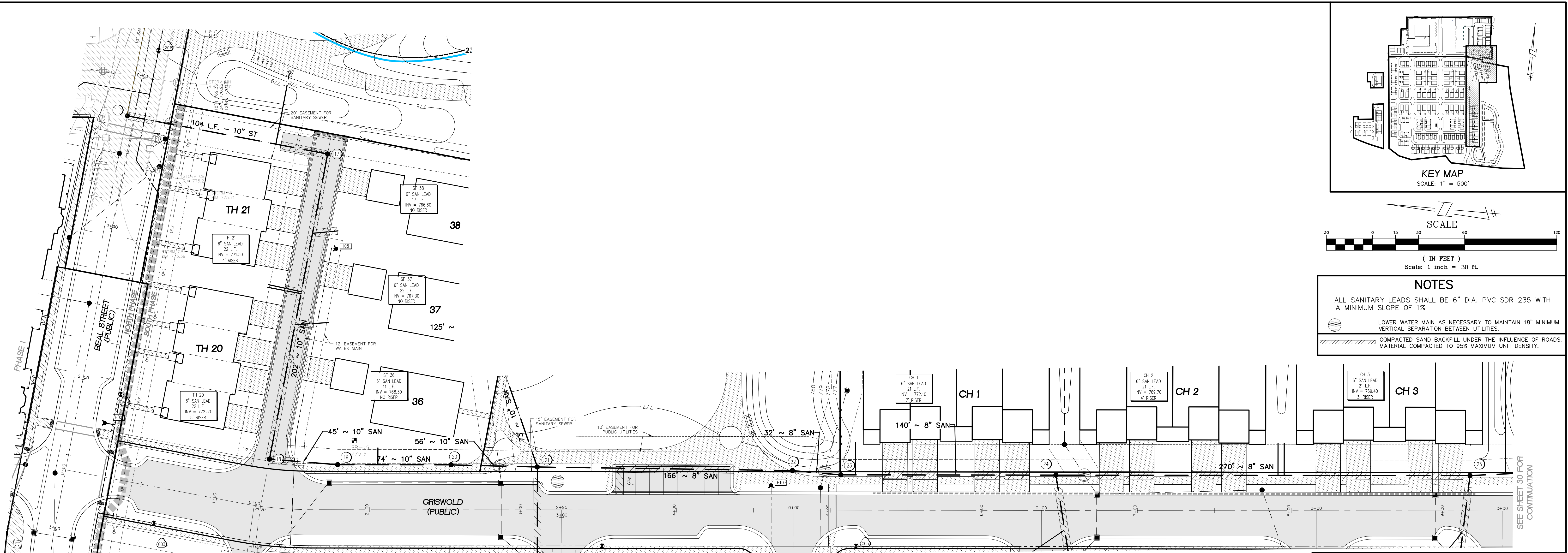
THE DOWNS
 SECTION 3, T1S, R8E, CITY OF NORTHVILLE
 WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING	
NO.	ITEM	DATE	DESCRIPTION
1.	100% SCHEMATIC DESIGN	08-10-2022	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.
2.	50% DESIGN DEVELOPMENT	02-03-2023	
3.	FINAL SITE PLAN	04-14-2023	
4.	REV. PER CITY REVIEW	09-08-2023	

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: R.E. FILE: 21001-RD-FSP-PH2.DWG

ROAD & WATER MAIN PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
 ENGINEERING | SURVEYING
 39205 COUNTRY CLUB DRIVE, SUITE C8
 FARMINGTON HILLS, MI 48331
 PHONE: 248.308.3331



NOTES

ALL SANITARY LEADS SHALL BE 6" DIA. PVC SDR 235 WITH A MINIMUM SLOPE OF 1%

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

SEE SHEET 31 FOR CONTINUATION

SEE SHEET 30 FOR CONTINUATION

LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	"UD" DENOTES UNDERDRAIN
[Symbol]	[Symbol]	"LS" DENOTES LANDSCAPE DRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED CATCH
[Symbol]	[Symbol]	CURB INLET W/SILT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	1000
[Symbol]	[Symbol]	1000.00
[Symbol]	[Symbol]	1/4"
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
2.	SITE DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-SAN-FSP-PHG.DWG

SANITARY SEWER PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

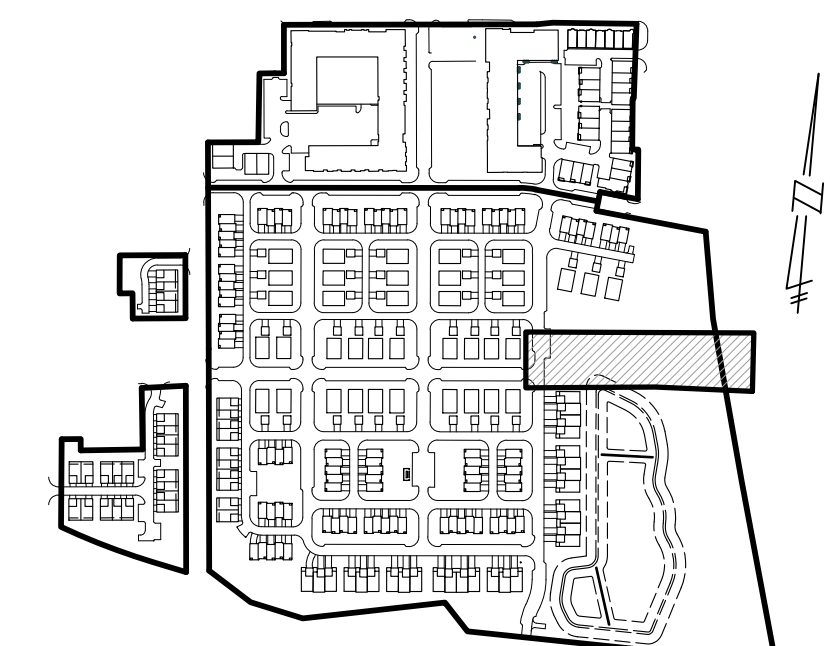
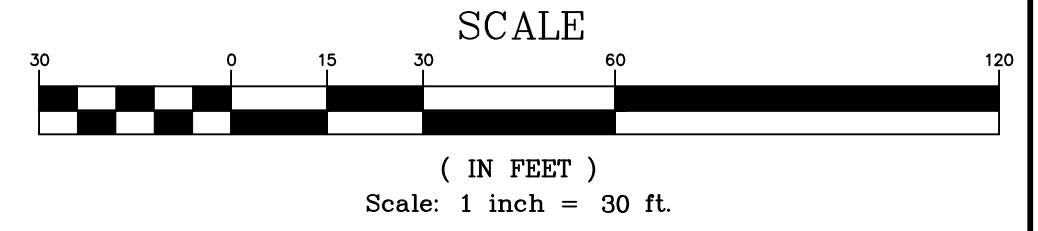
SHEET 29

P:\2023\THE DOWNS\THE DOWNS - 811\2023-04-25\21-001-SAN-FSP-PHG.DWG 9/7/2023 11:14

SEE SHEET 29 FOR CONTINUATION



SEE SHEET 29 FOR CONTINUATION



KEY MAP
SCALE: 1" = 500'

NOTES

ALL SANITARY LEADS SHALL BE 6" DIA. PVC SDR 235 WITH A MINIMUM SLOPE OF 1%

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		"UD" DENOTES UNDERDRAIN
		"LS" DENOTES LANDSCAPE DRAIN
		MANHOLE
		CATCH BASIN W/SED CATCH
		CURB INLET W/SILT SAC
		END SECTION
		GATE VALVE
		HYDRANT
		OVERHEAD ELECTRICAL LINES
		FLOOD PLAIN
		CONTOURS
		SPOT ELEVATION
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		CROSSING NUMBER

THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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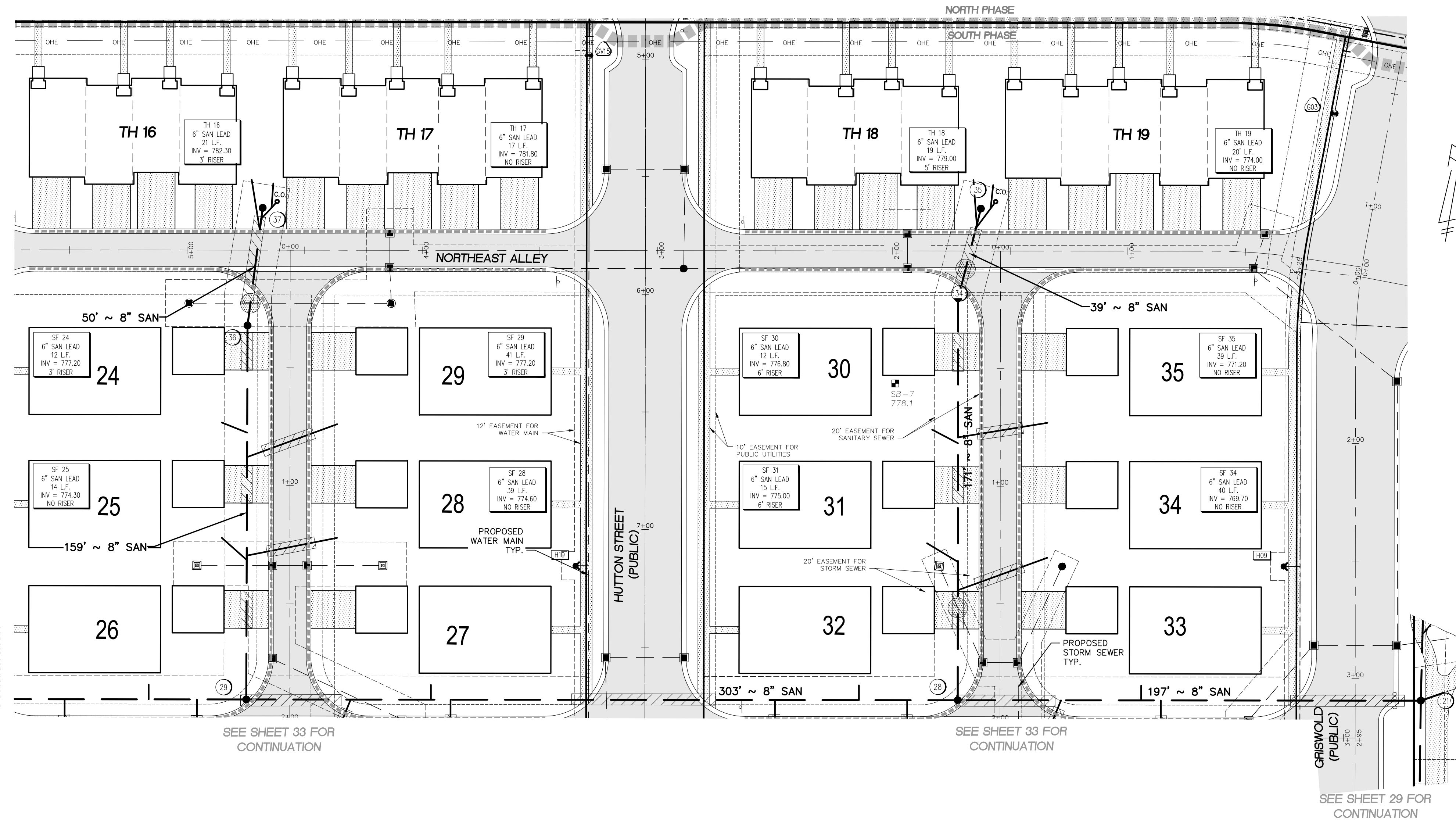
DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-SAN-FS9-PH0.DWG

SANITARY SEWER PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 30

P:\2023\THE DOWNS\100% FINAL\2023-04-14\21-001-SAN-FS9-PH0.DWG 9/7/2023 11:14 AM

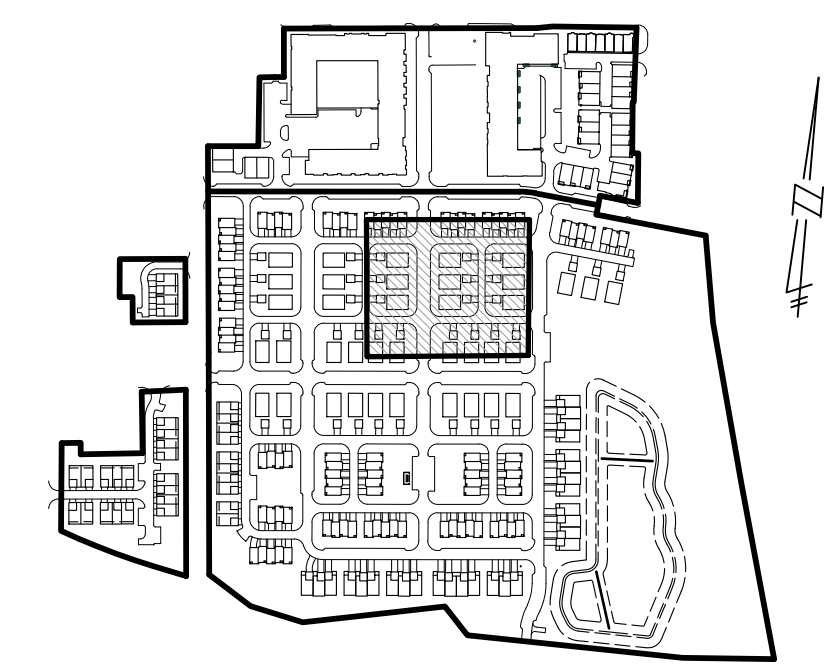
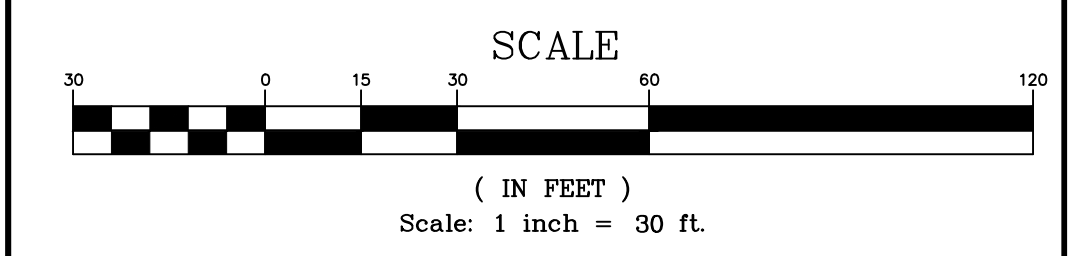


SEE SHEET 32 FOR CONTINUATION

SEE SHEET 33 FOR CONTINUATION

SEE SHEET 33 FOR CONTINUATION

SEE SHEET 29 FOR CONTINUATION

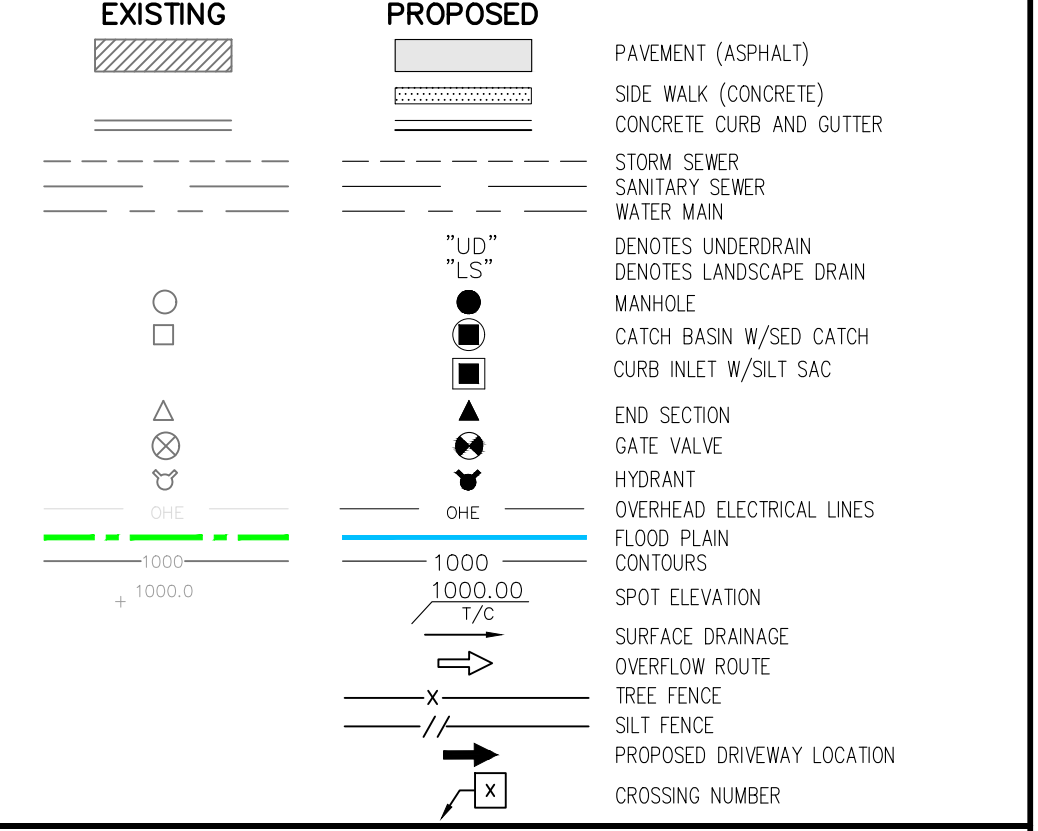


KEY MAP SCALE: 1" = 500'

NOTES

- ALL SANITARY LEADS SHALL BE 6" DIA. PVC SDR 235 WITH A MINIMUM SLOPE OF 1%
- LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
- COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.



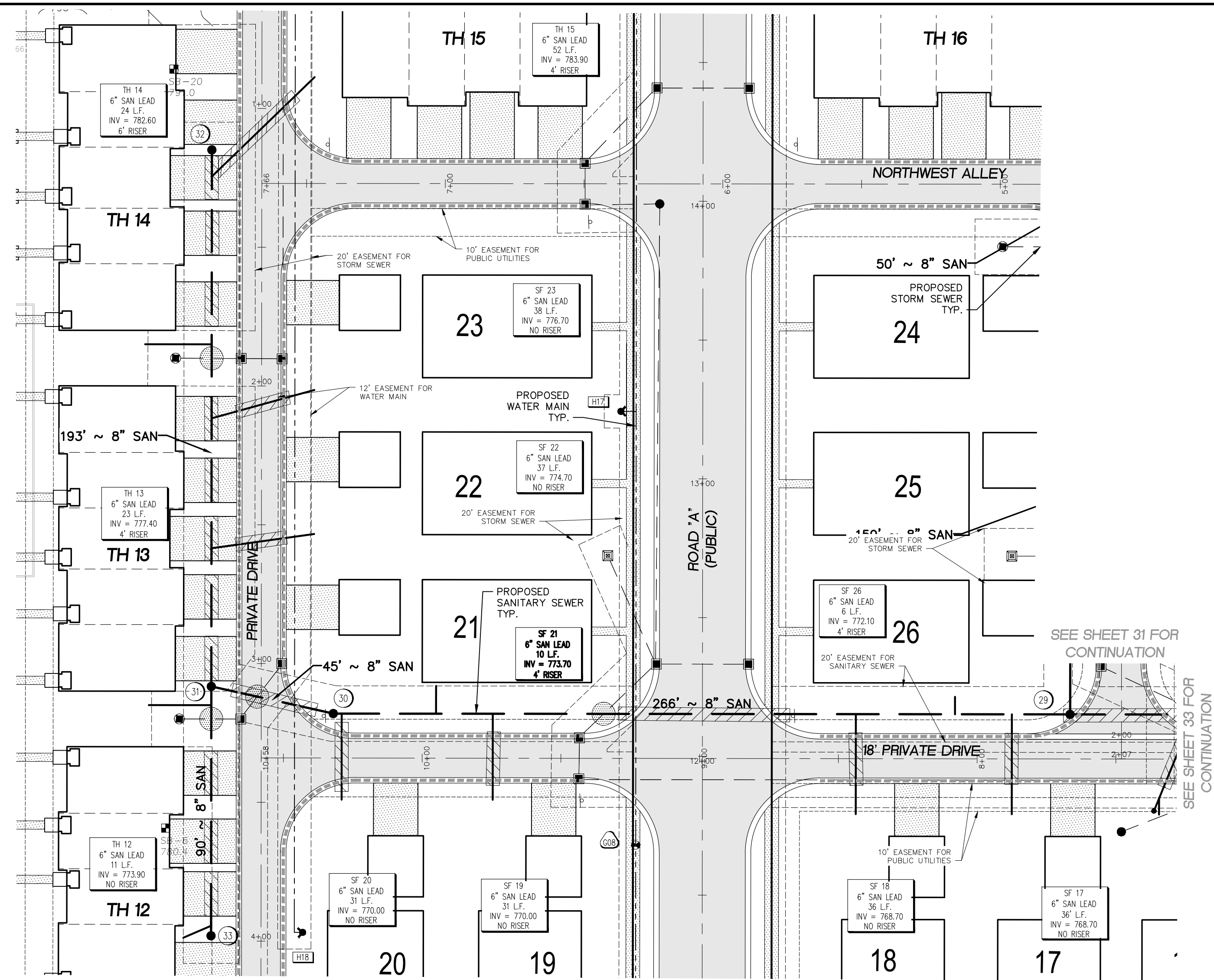
DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-SAN-FSY-PHO.DWG

SANITARY SEWER PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 31

P:\2023\THE DOWNS\100% FINAL\2023-09-08\21001-SAN-FSY-PHO.DWG 9/7/2023 10:24 AM



NOTES

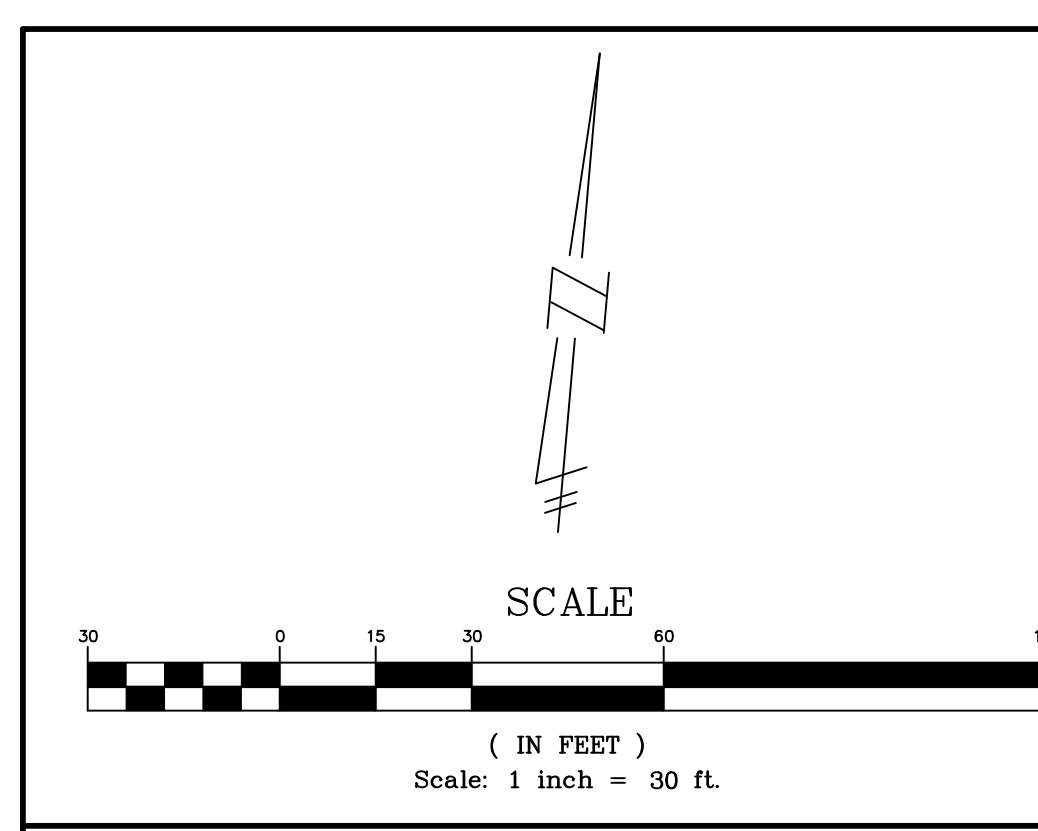
ALL SANITARY LEADS SHALL BE 6" DIA. PVC SDR 235 WITH A MINIMUM SLOPE OF 1%.

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	"UD" DENOTES UNDERDRAIN
[Symbol]	[Symbol]	"LS" DENOTES LANDSCAPE DRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED CATCH
[Symbol]	[Symbol]	CURB INLET W/SILT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OHE OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	1/4" SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

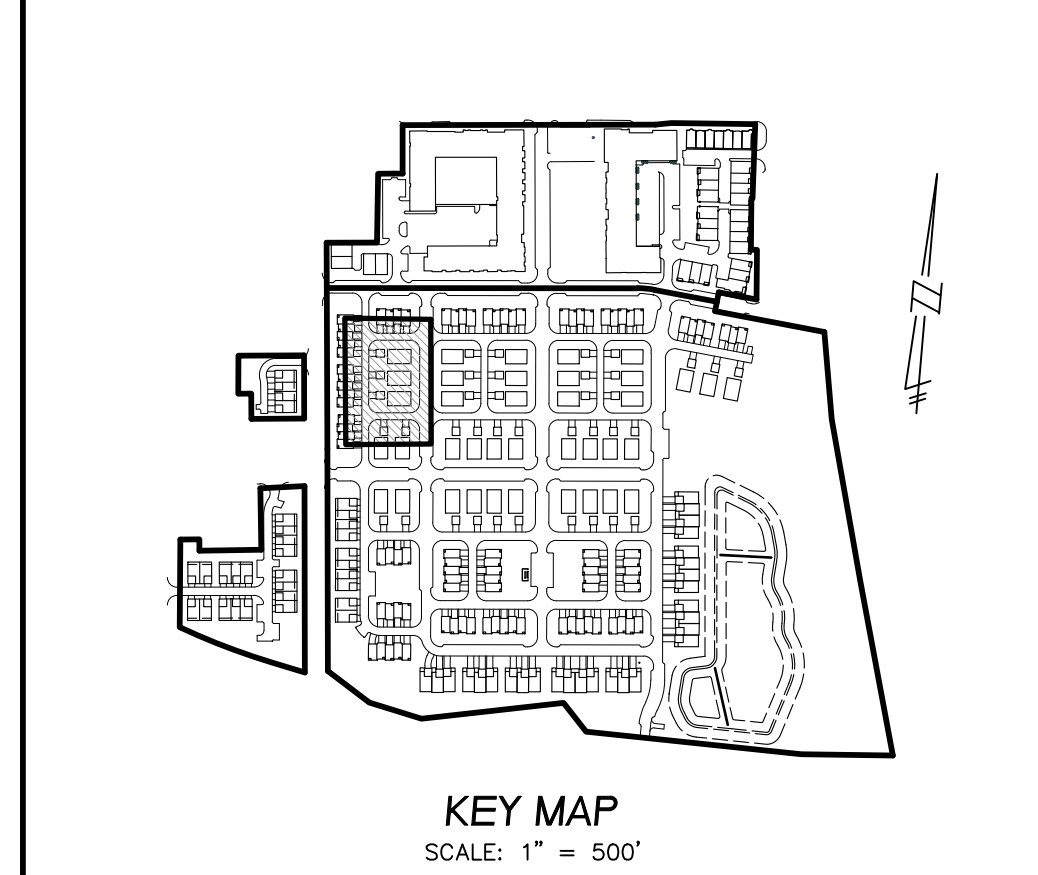
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

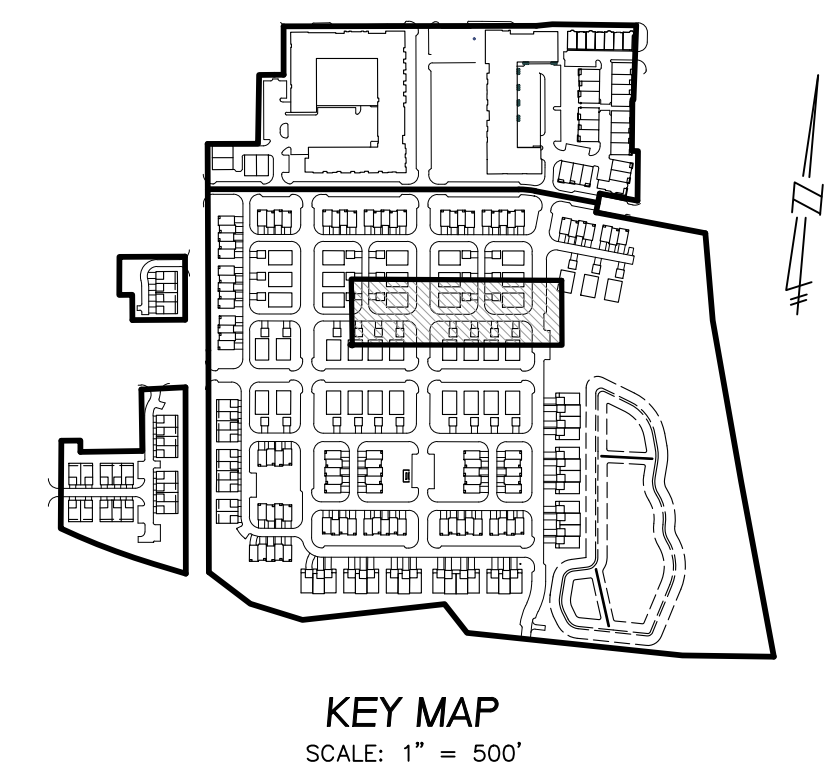
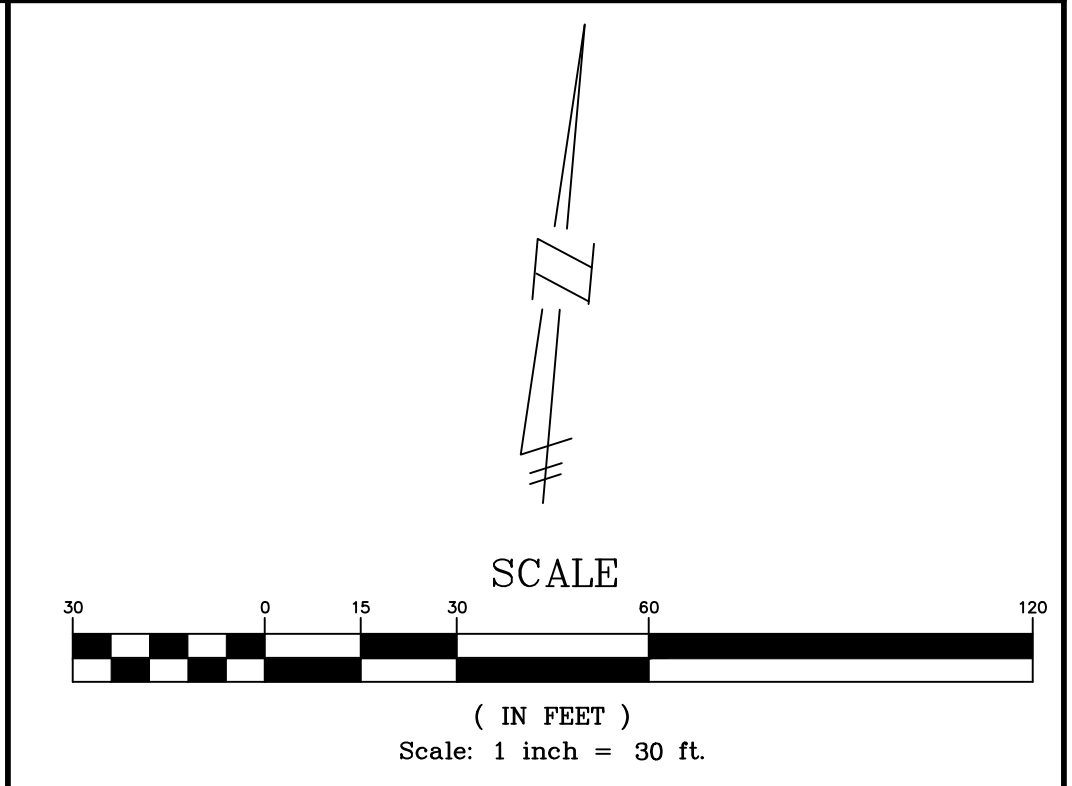
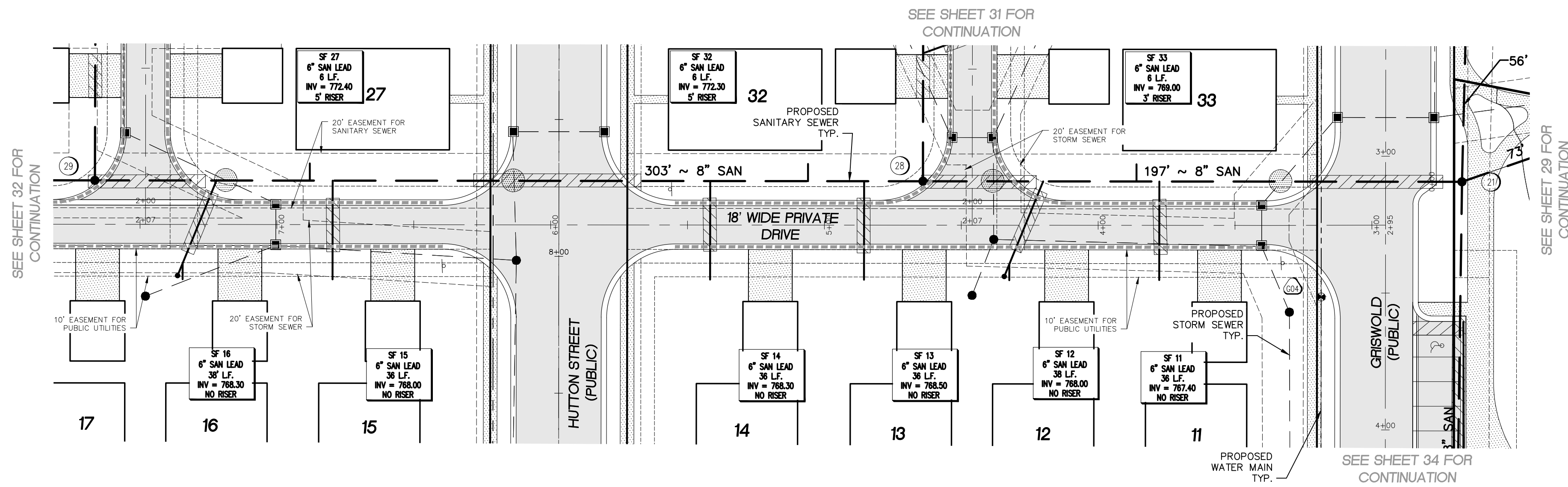
811 Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-SAN-FSP-PHO.DWG

SANITARY SEWER PLAN AND PROFILE



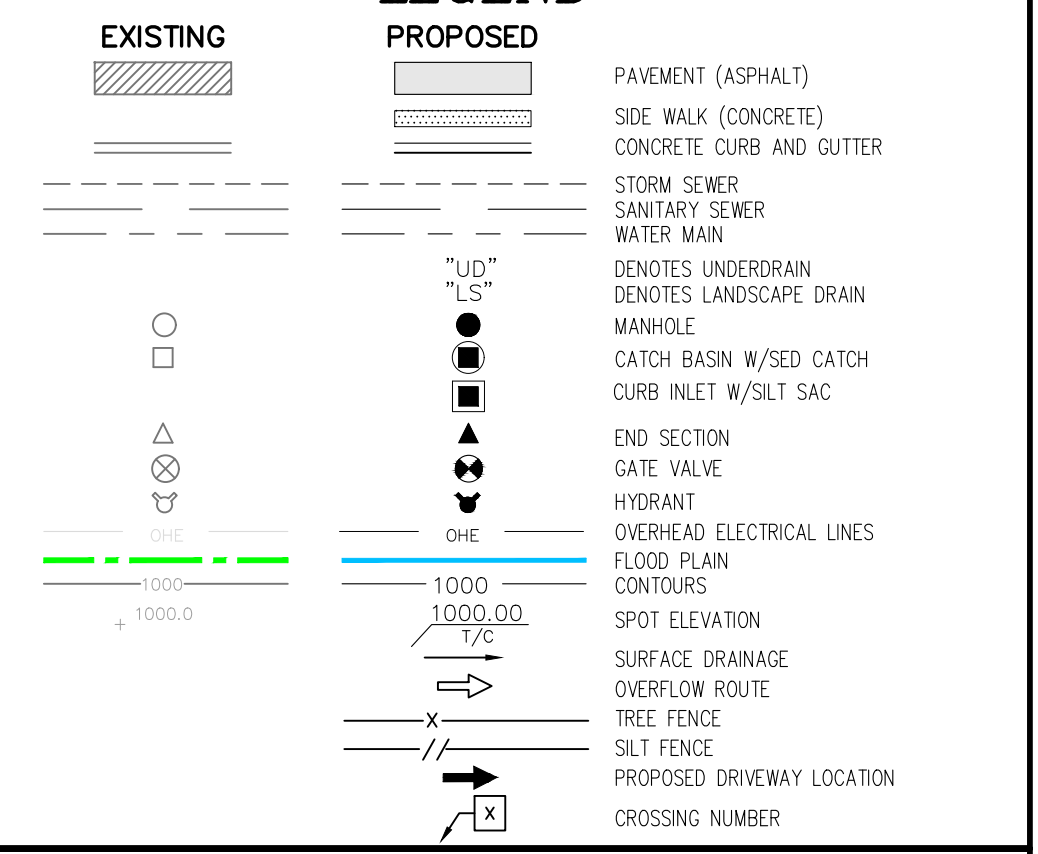


NOTES

ALL SANITARY LEADS SHALL BE 6" DIA. PVC SDR 235 WITH A MINIMUM SLOPE OF 1%

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
2.	S02 DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
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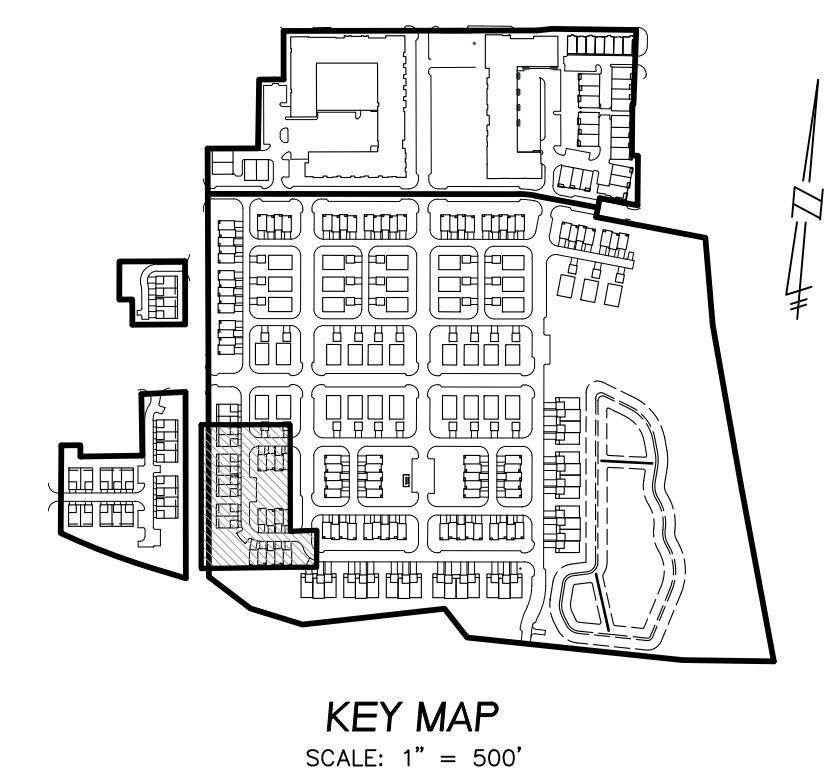
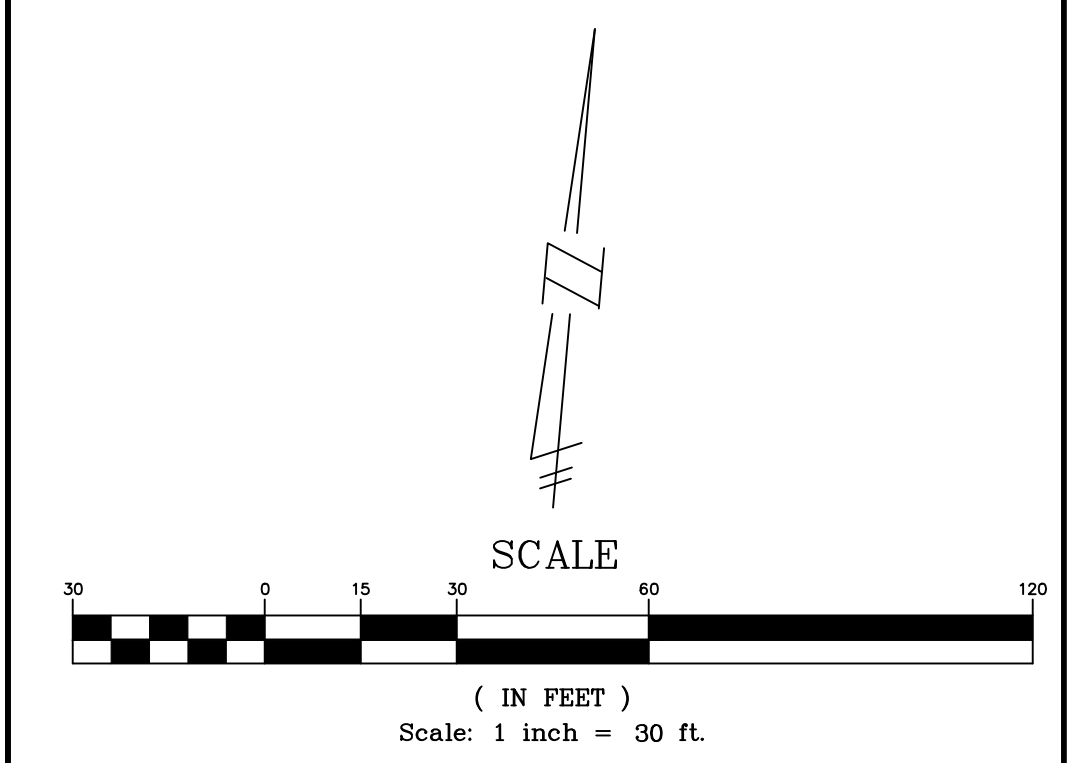
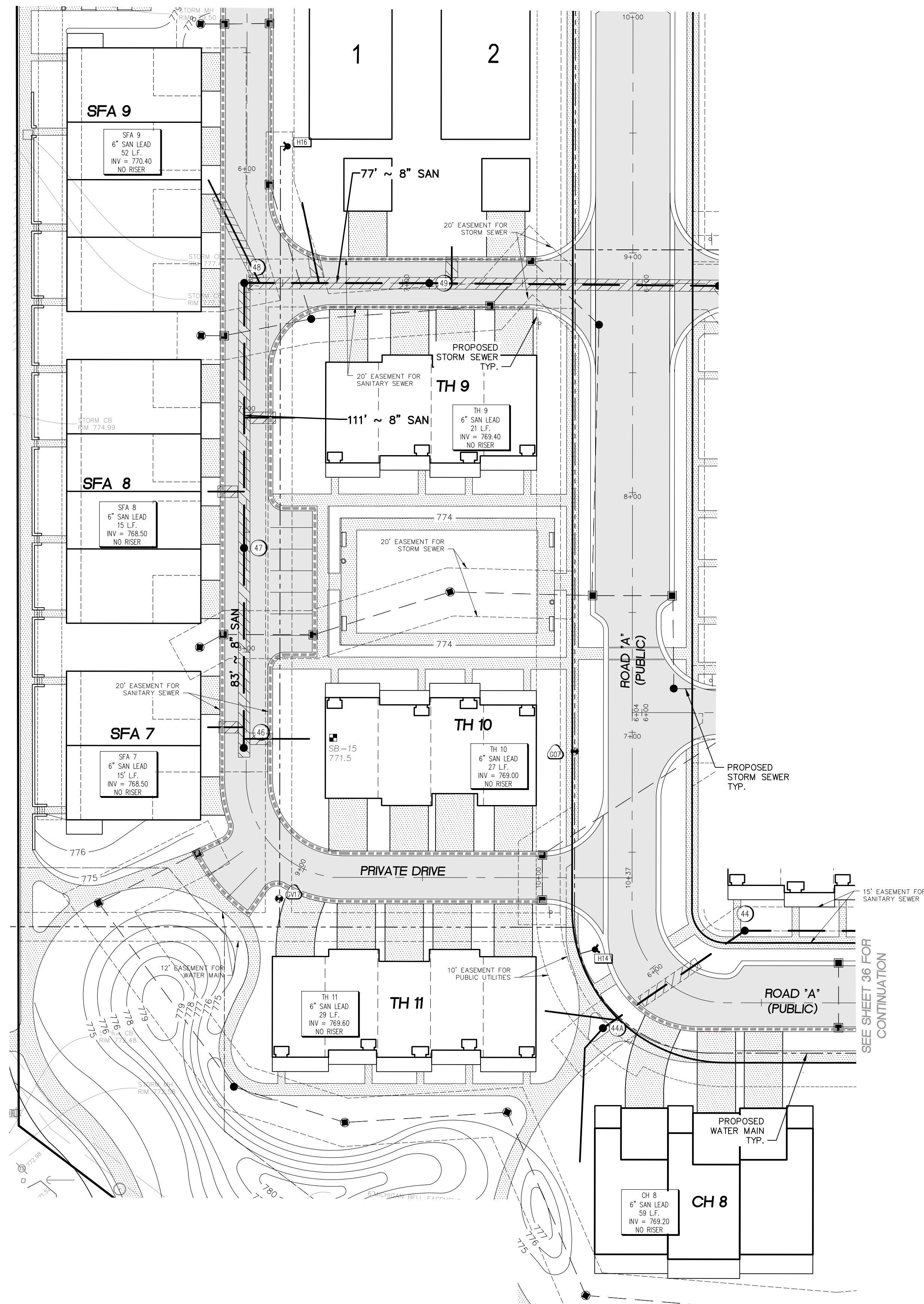
SANITARY SEWER PLAN AND PROFILE

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 33

P:\2023\THE DOWNS\110231-001\110231-001-01.dwg, 11/15/2023 11:14



NOTES
 ALL SANITARY LEADS SHALL BE 6" DIA. PVC SDR 235 WITH A MINIMUM SLOPE OF 1%

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
 COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	"UD" DENOTES UNDERDRAIN
[Symbol]	[Symbol]	"LS" DENOTES LANDSCAPE DRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED CATCH
[Symbol]	[Symbol]	CURB INLET W/SILT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	1000
[Symbol]	[Symbol]	1000.00
[Symbol]	[Symbol]	1/4"
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

THE DOWNS
 SECTION 3, T1S, R8E, CITY OF NORTHVILLE
 WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
2.	S&P DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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 Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

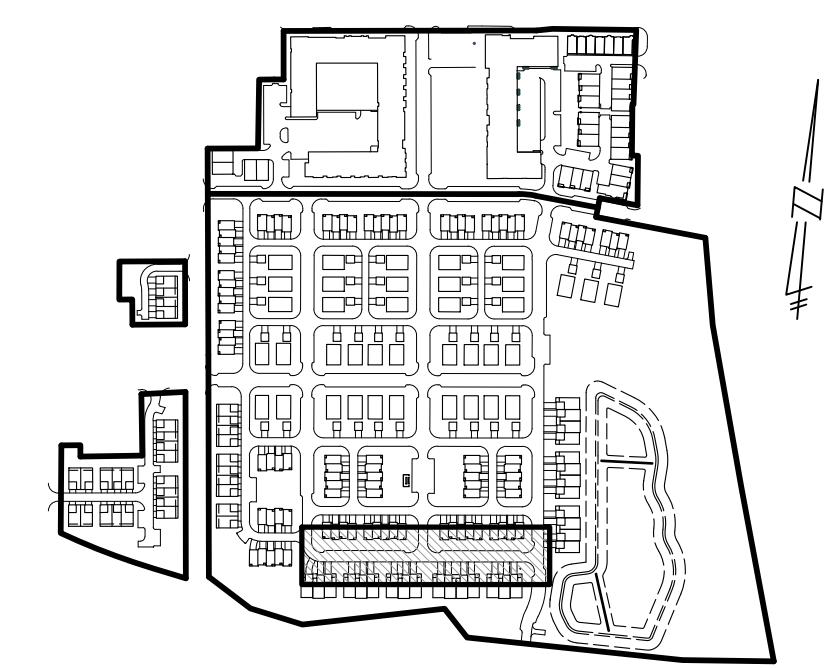
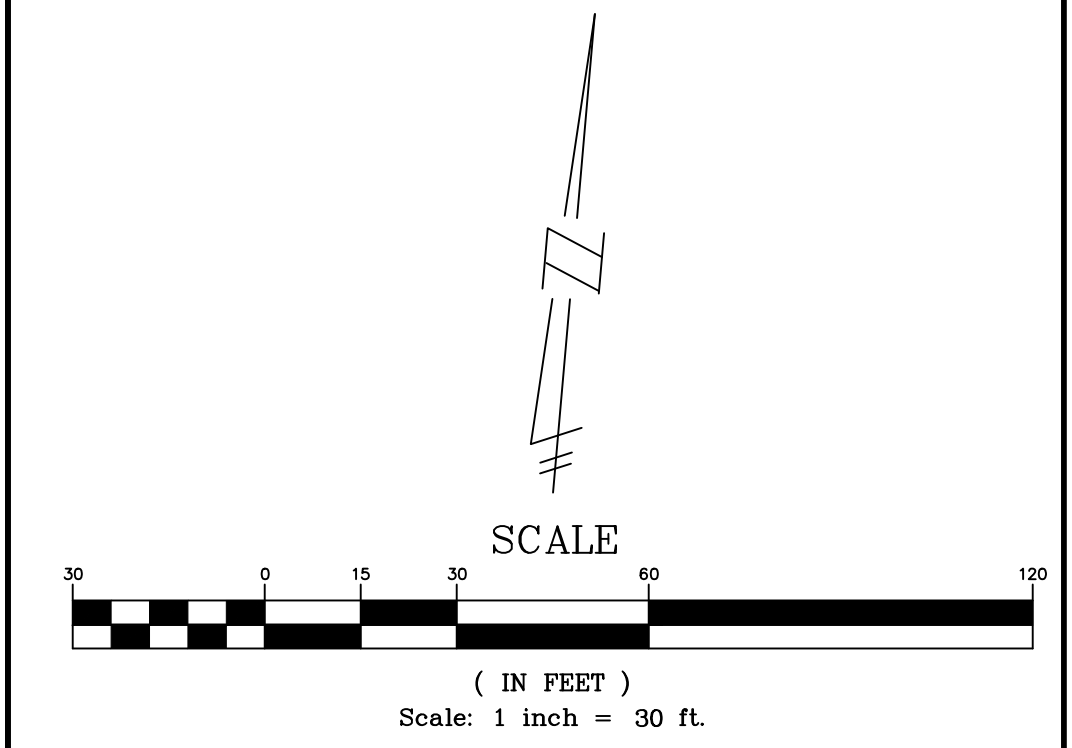
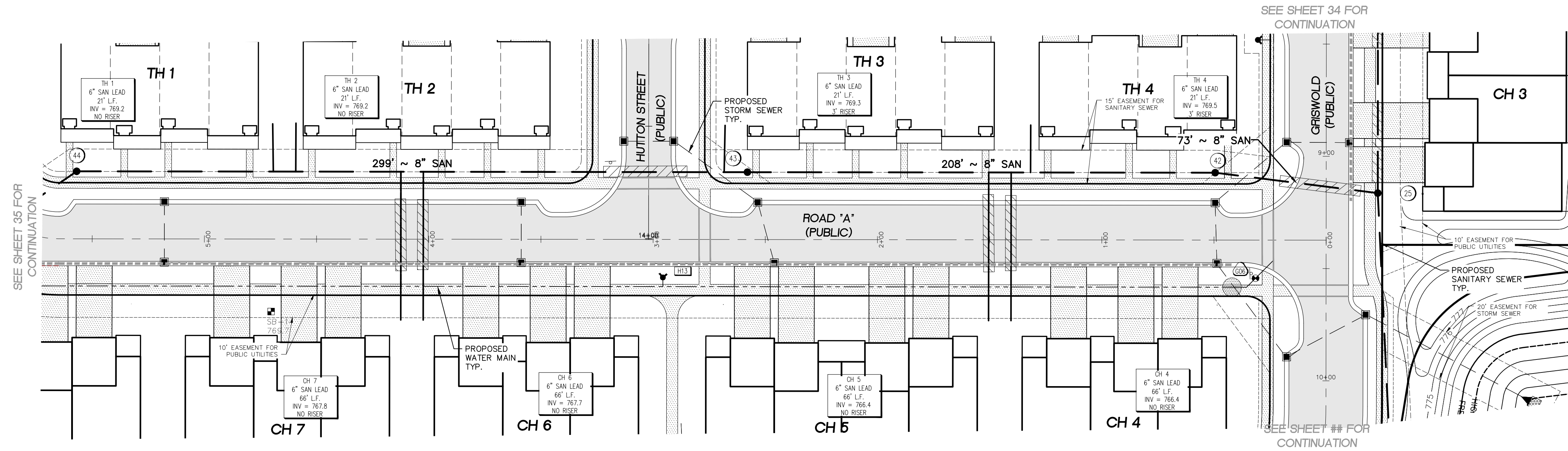
DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: E.E. FILE: 21001-SAN-FSP-PHO.DWG

SANITARY SEWER PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
 ENGINEERING | SURVEYING
 39205 COUNTRY CLUB DRIVE, SUITE C8
 FARMINGTON HILLS, MI 48331
 PHONE: 248.308.3331

SHEET 35

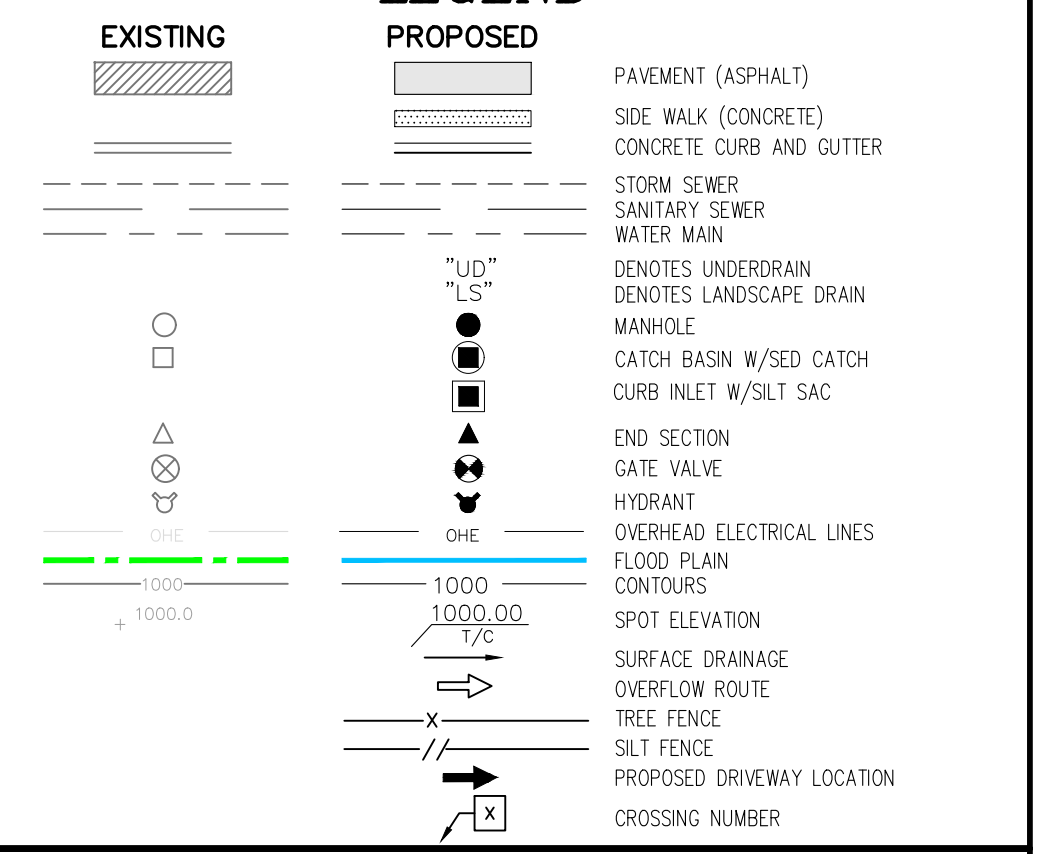
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NOTES

- ALL SANITARY LEADS SHALL BE 6" DIA. PVC SDR 235 WITH A MINIMUM SLOPE OF 1%
- LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
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LEGEND



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	TYPE SCHEMATIC DESIGN	06-10-2022
2.	SOP DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.



THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. P.L.R.: 21001-SAN-FSP-PHO.DWG

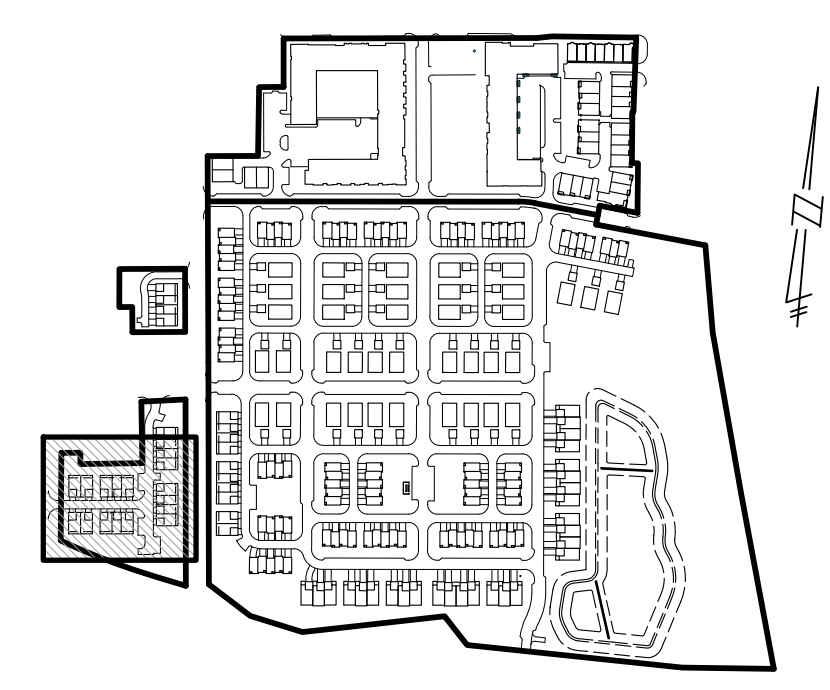
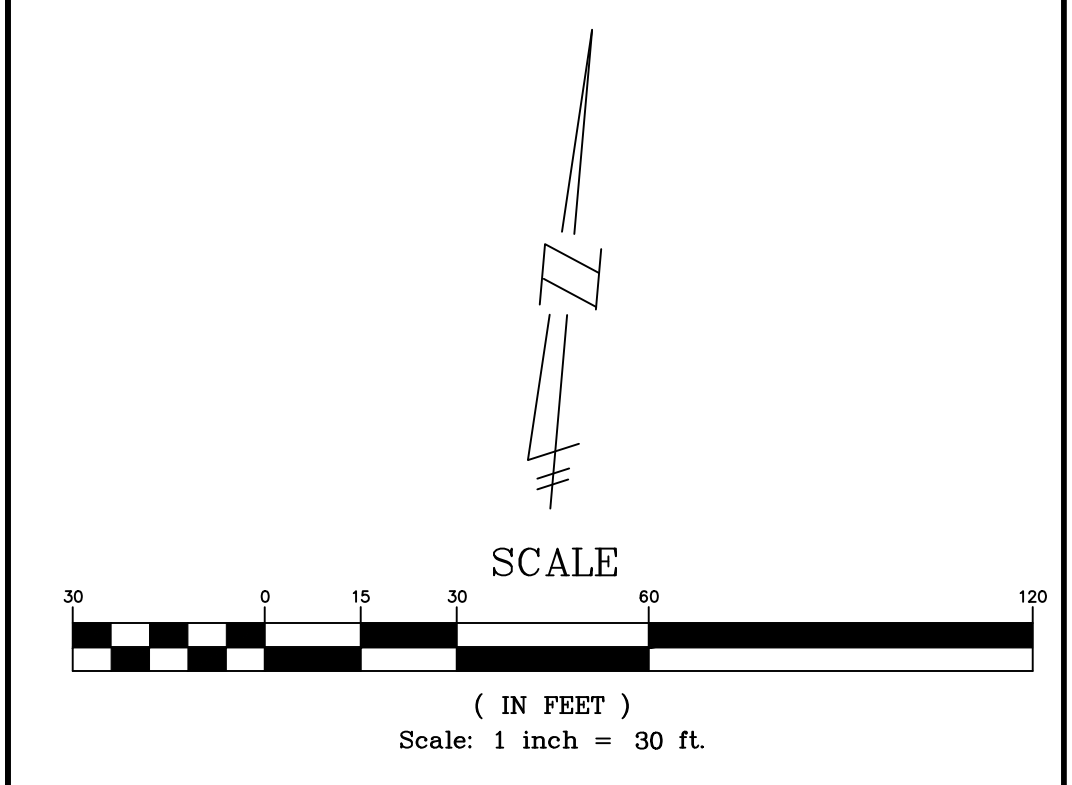
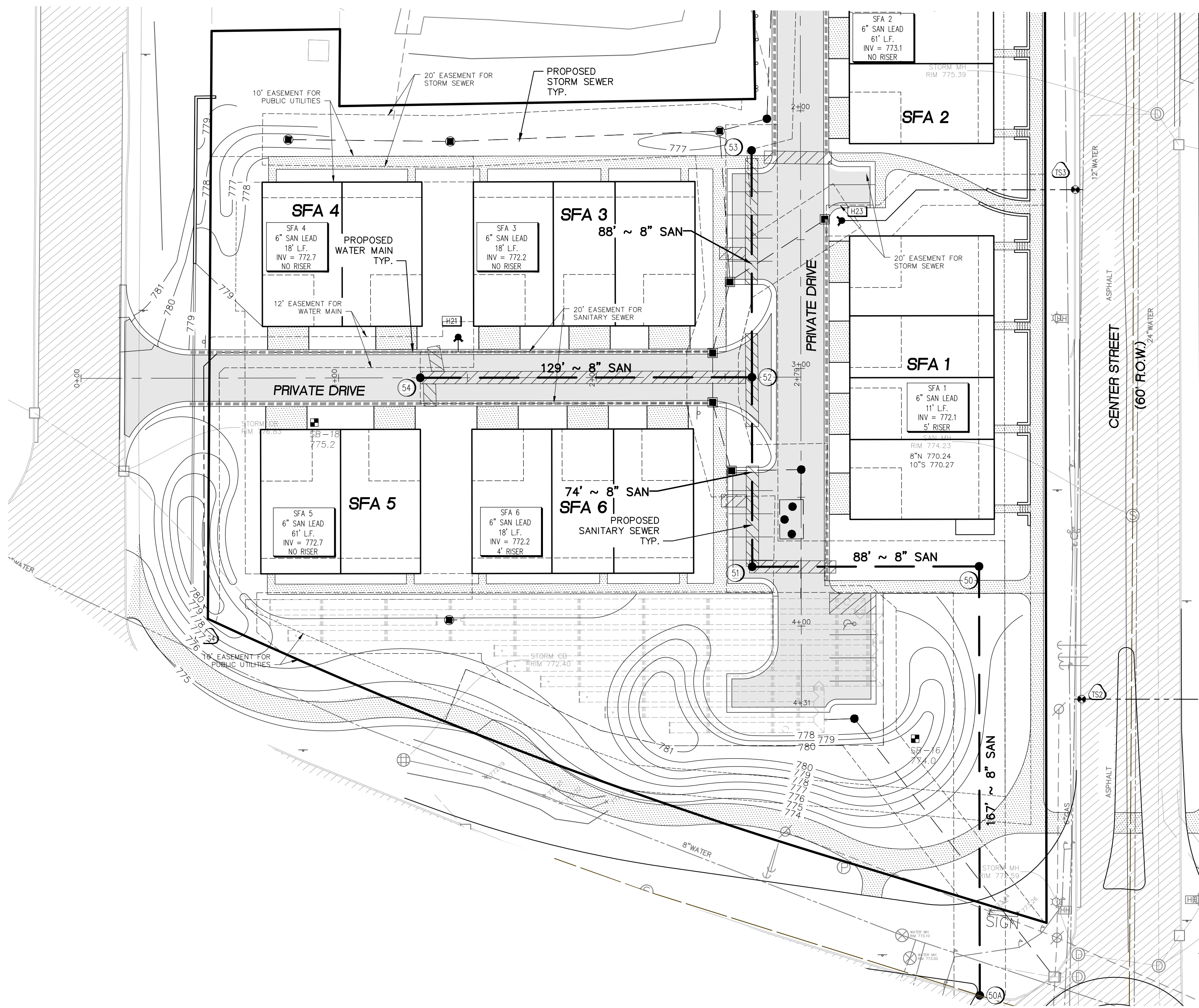
SANITARY SEWER PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 36

P:\2023\THE DOWNS\10001-2023\10001-SAN-FSP-PHO.DWG 07/2023 11:23 AM



NOTES
ALL SANITARY LEADS SHALL BE 6" DIA. PVC SDR 235 WITH A MINIMUM SLOPE OF 1%.

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	"UD" DENOTES UNDERDRAIN
[Symbol]	[Symbol]	"LS" DENOTES LANDSCAPE DRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED CATCH
[Symbol]	[Symbol]	CURB INLET W/SILT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	1000
[Symbol]	[Symbol]	1000.00
[Symbol]	[Symbol]	1/4"
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TOPE SCHEMATIC DESIGN	06-10-2022
2.	S02 DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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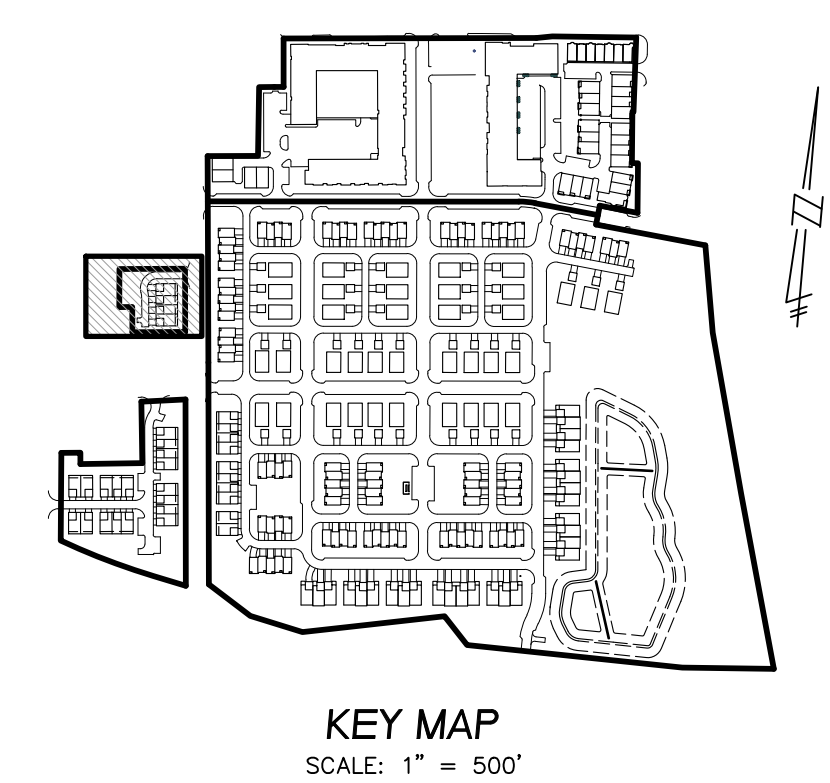
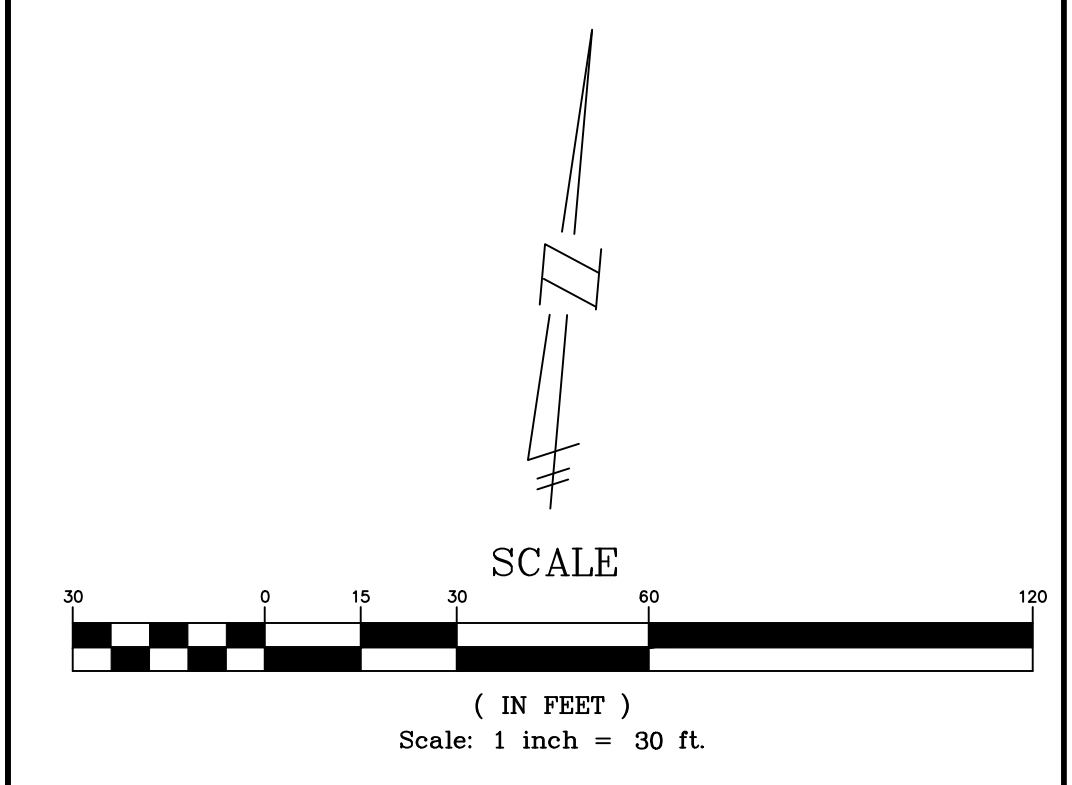
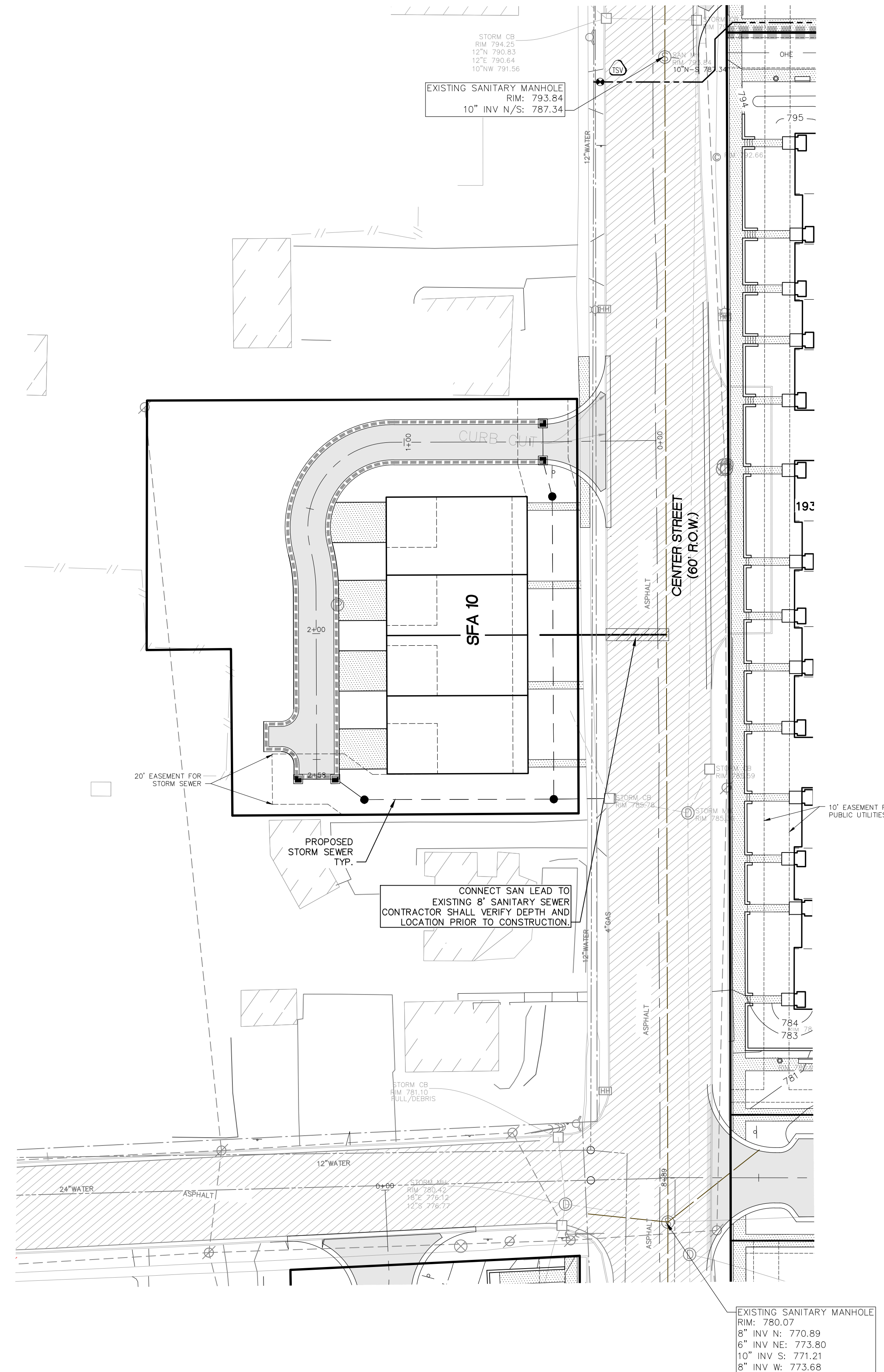
DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. PLR: 21001-SAN-FSP-PHO.DWG

SANITARY SEWER PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 37

P:\2023\THE DOWNS\110203-0001\110203-0001.dwg, 11.8.2023, 11:23:44 AM, 11/08/2023 11:23:44 AM



NOTES
ALL SANITARY LEADS SHALL BE 6" DIA. PVC SDR 235 WITH A MINIMUM SLOPE OF 1%

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LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	"UD" UNDERDRAIN
[Symbol]	[Symbol]	"LS" LANDSCAPE DRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED CATCH
[Symbol]	[Symbol]	CURB INLET W/SILT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
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[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
2.	S&P DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
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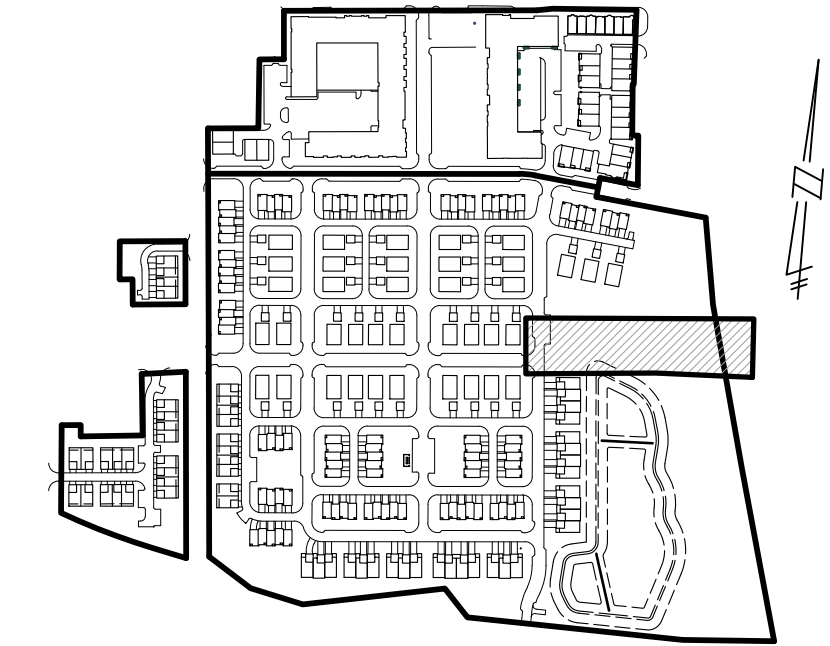
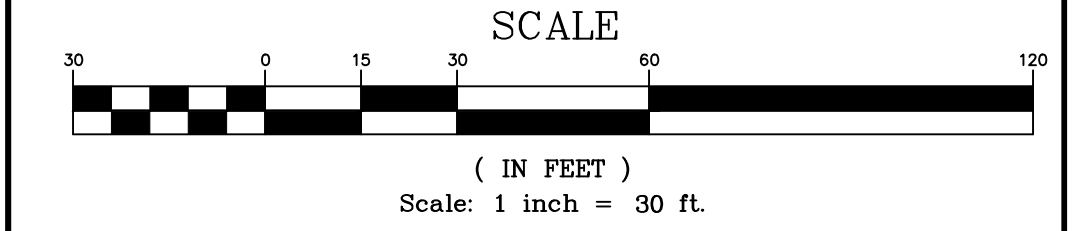
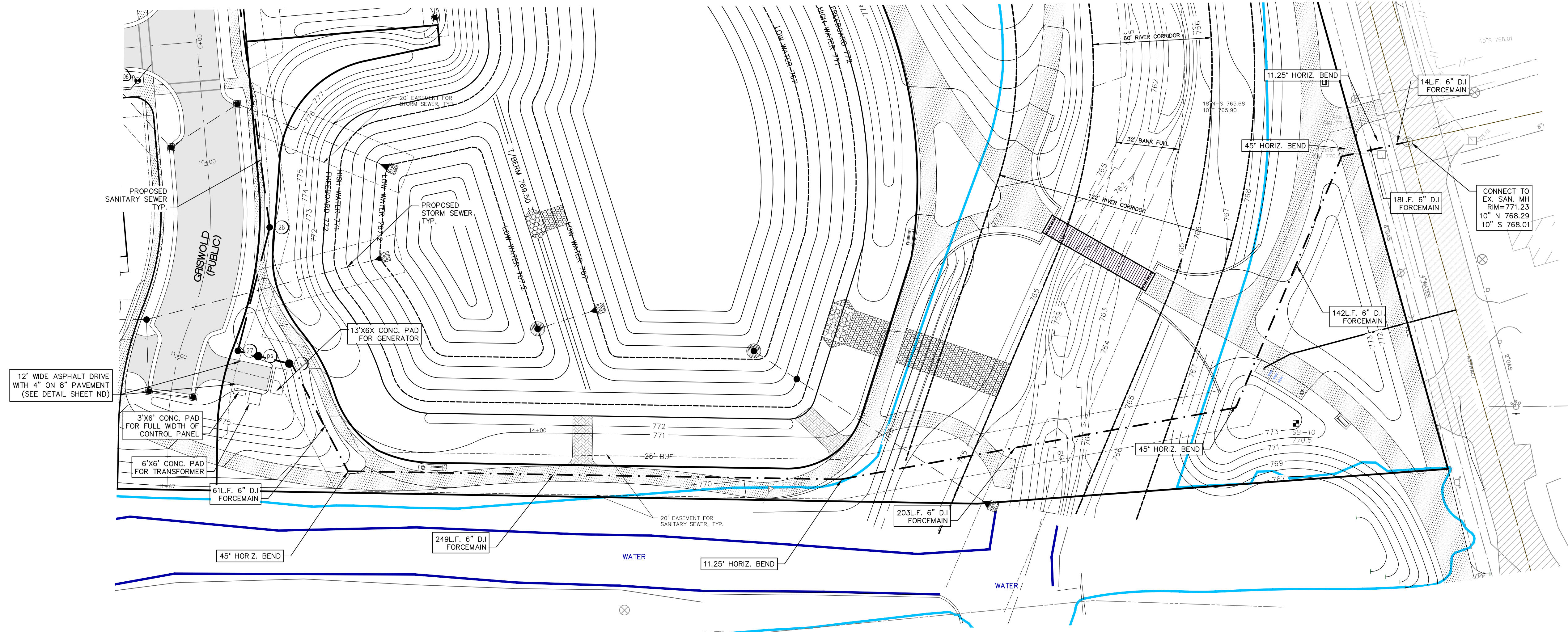
SANITARY SEWER PLAN AND PROFILE

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 38

P:\2023\THE DOWNS\THE DOWNS - 811\2023-04-25\21-001-SAN-FSP-PHO.DWG 9/7/2023 1:14 PM

SEE SHEET 30 FOR CONTINUATION

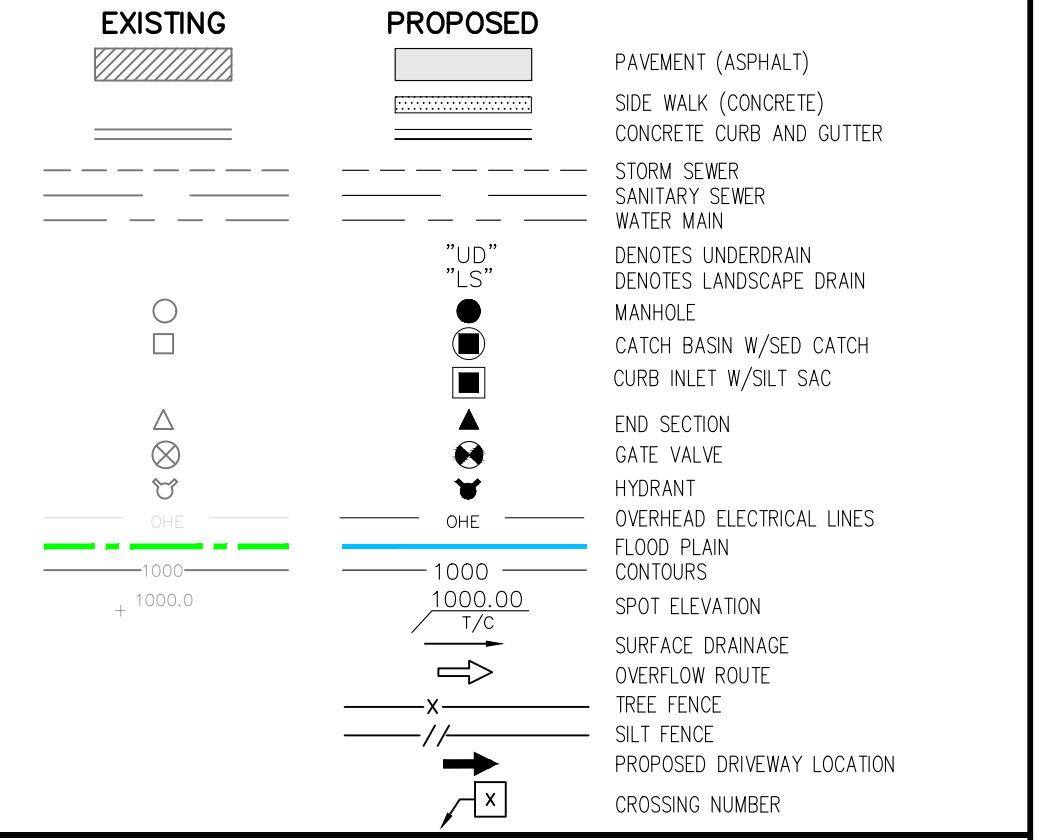


NOTES

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LEGEND



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
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UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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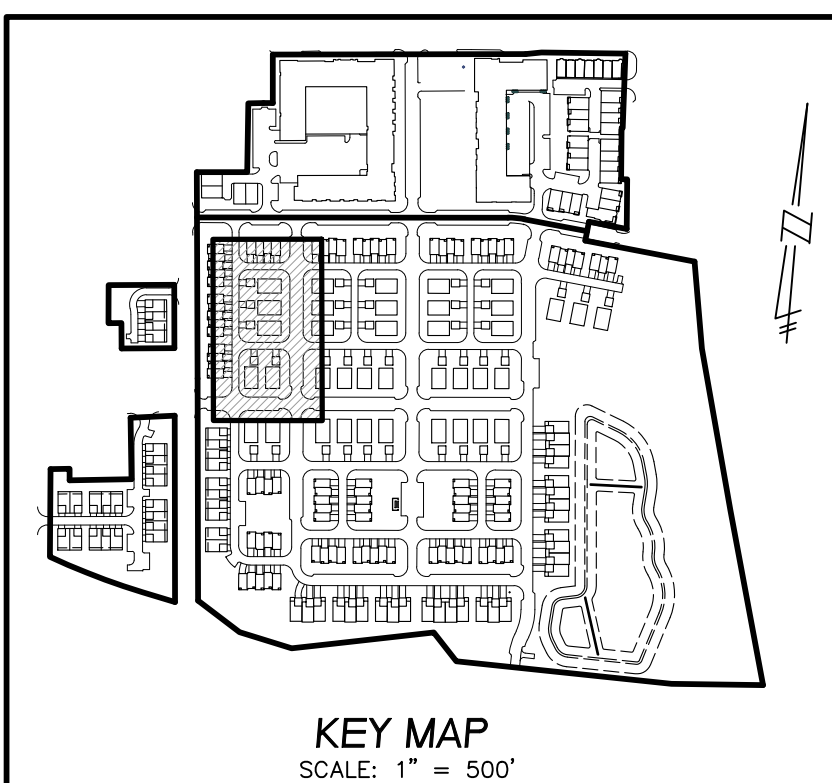
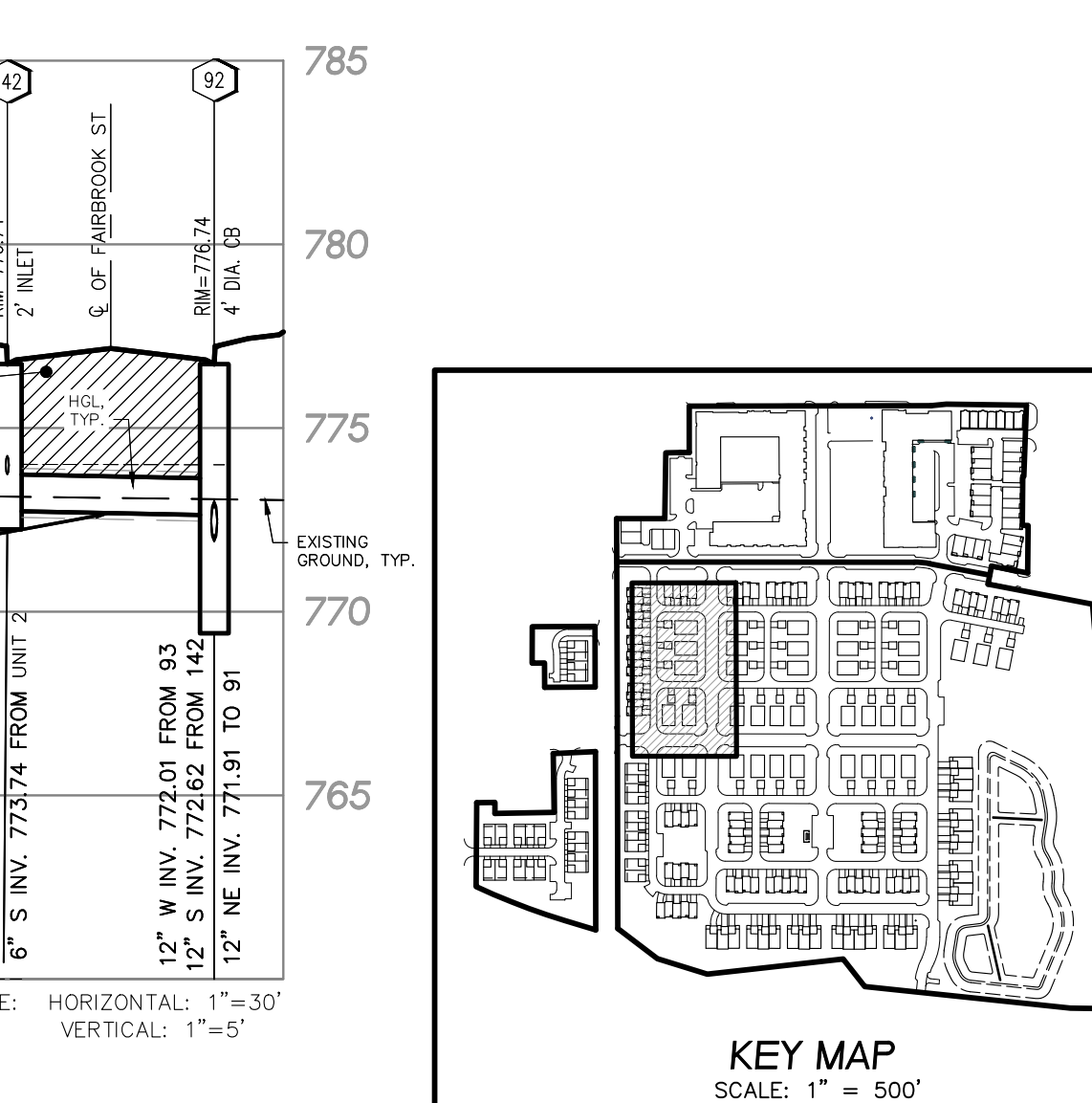
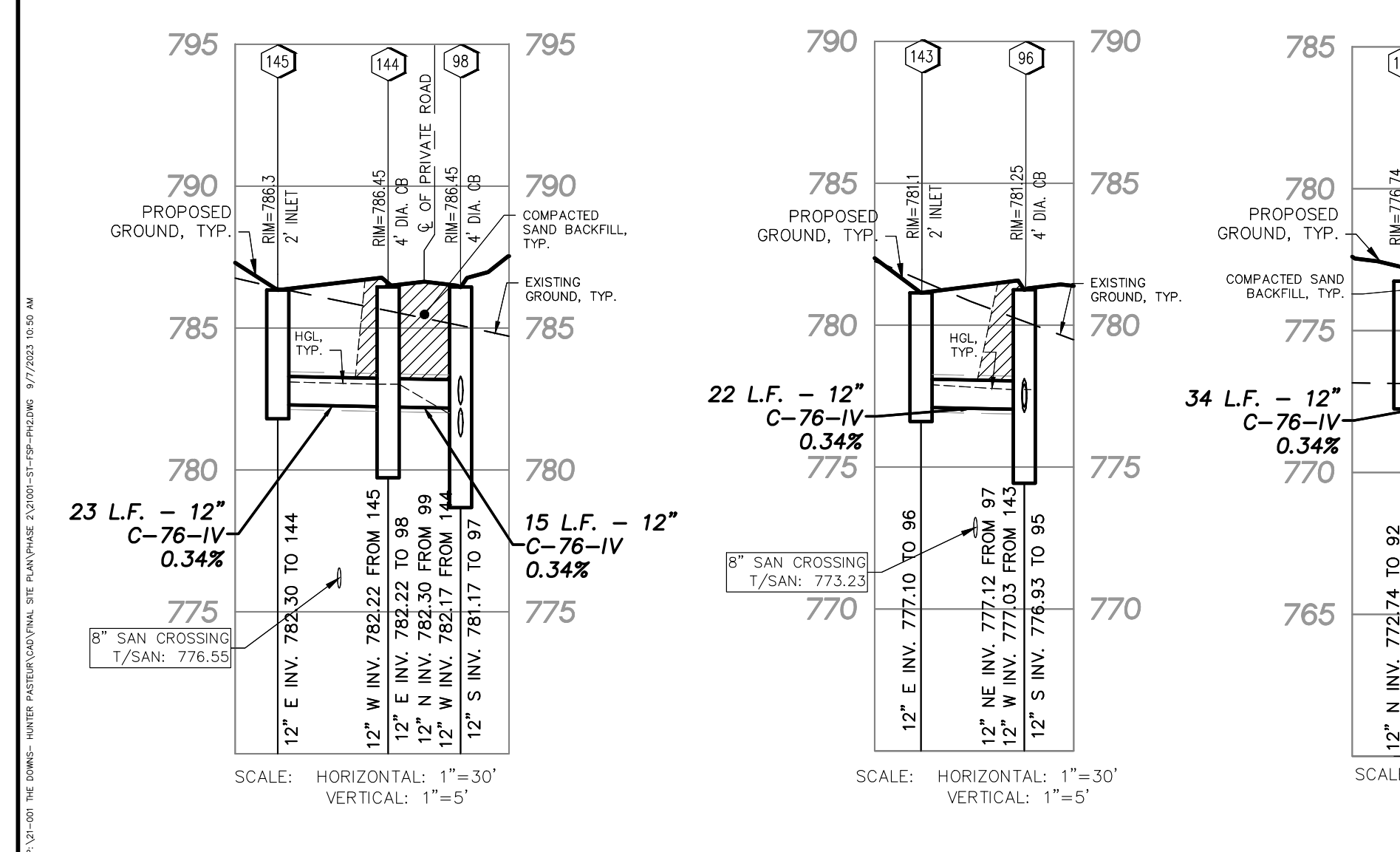
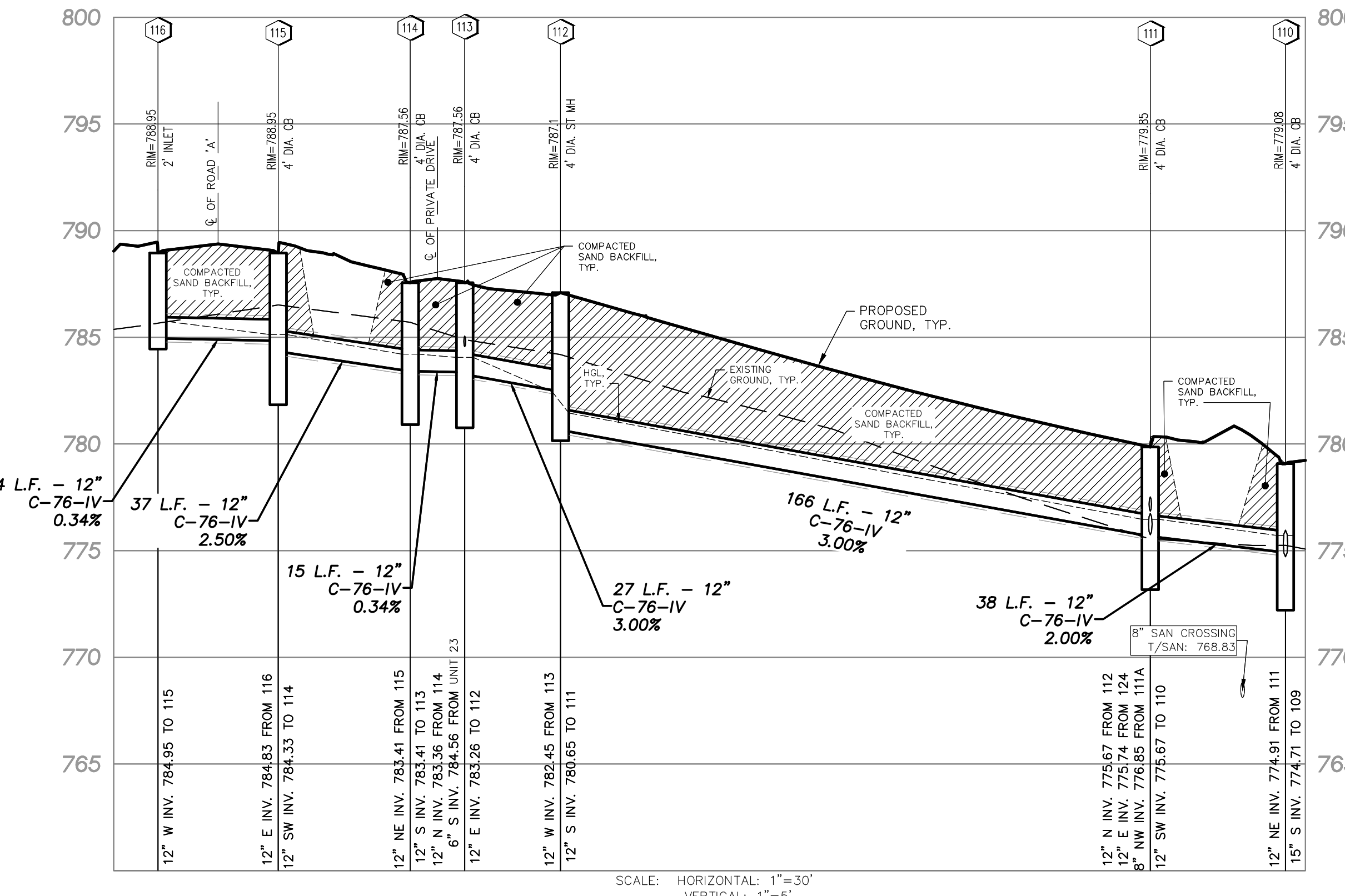
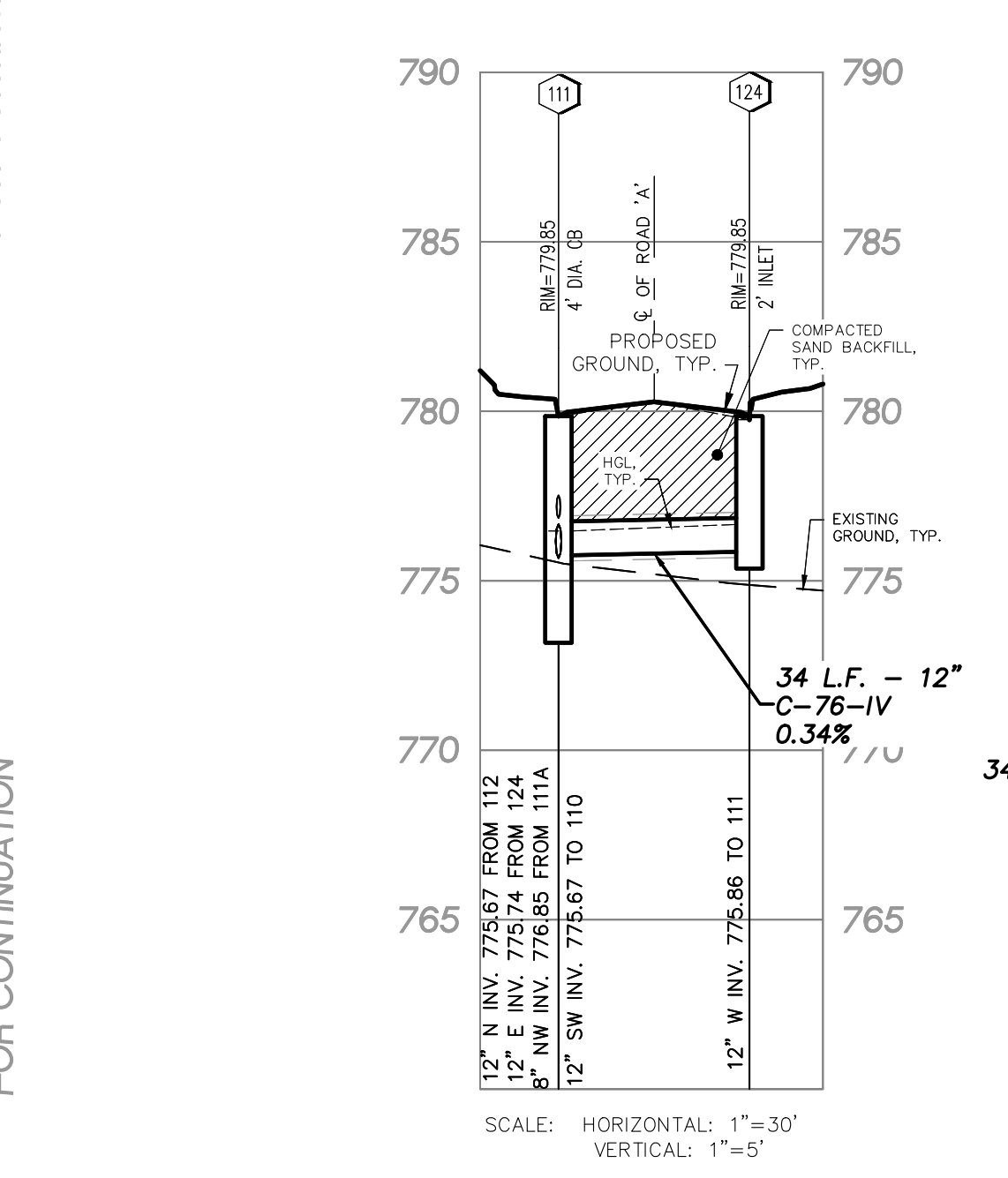
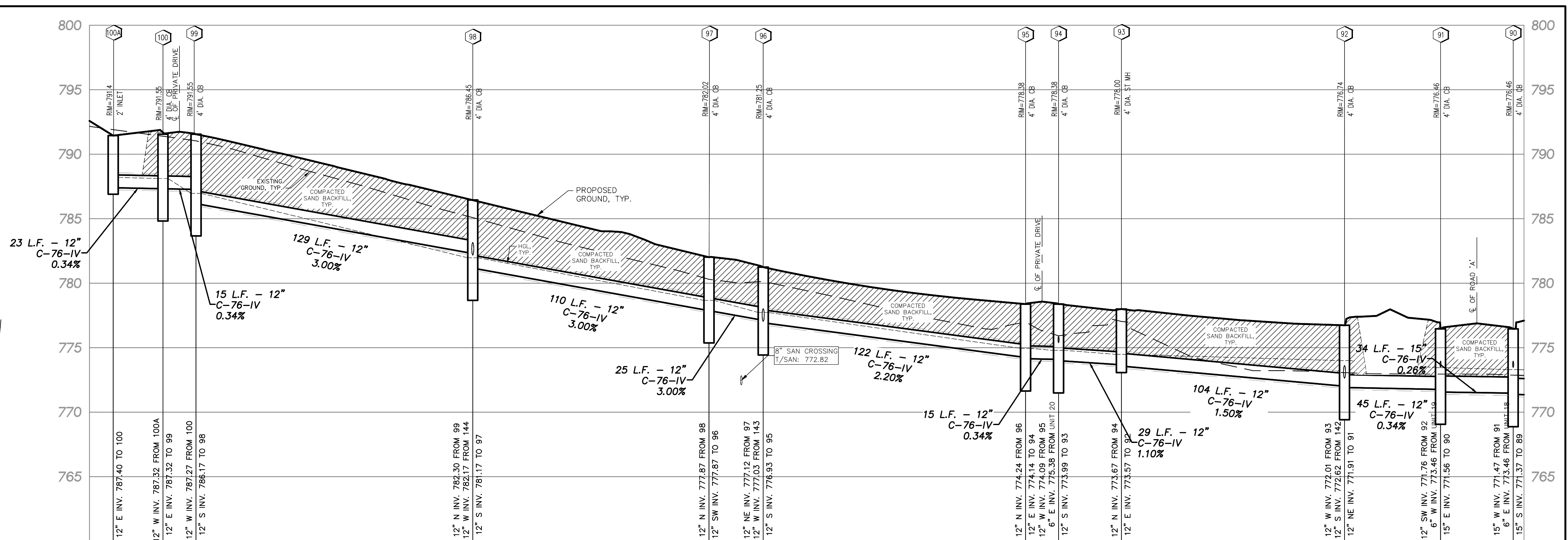
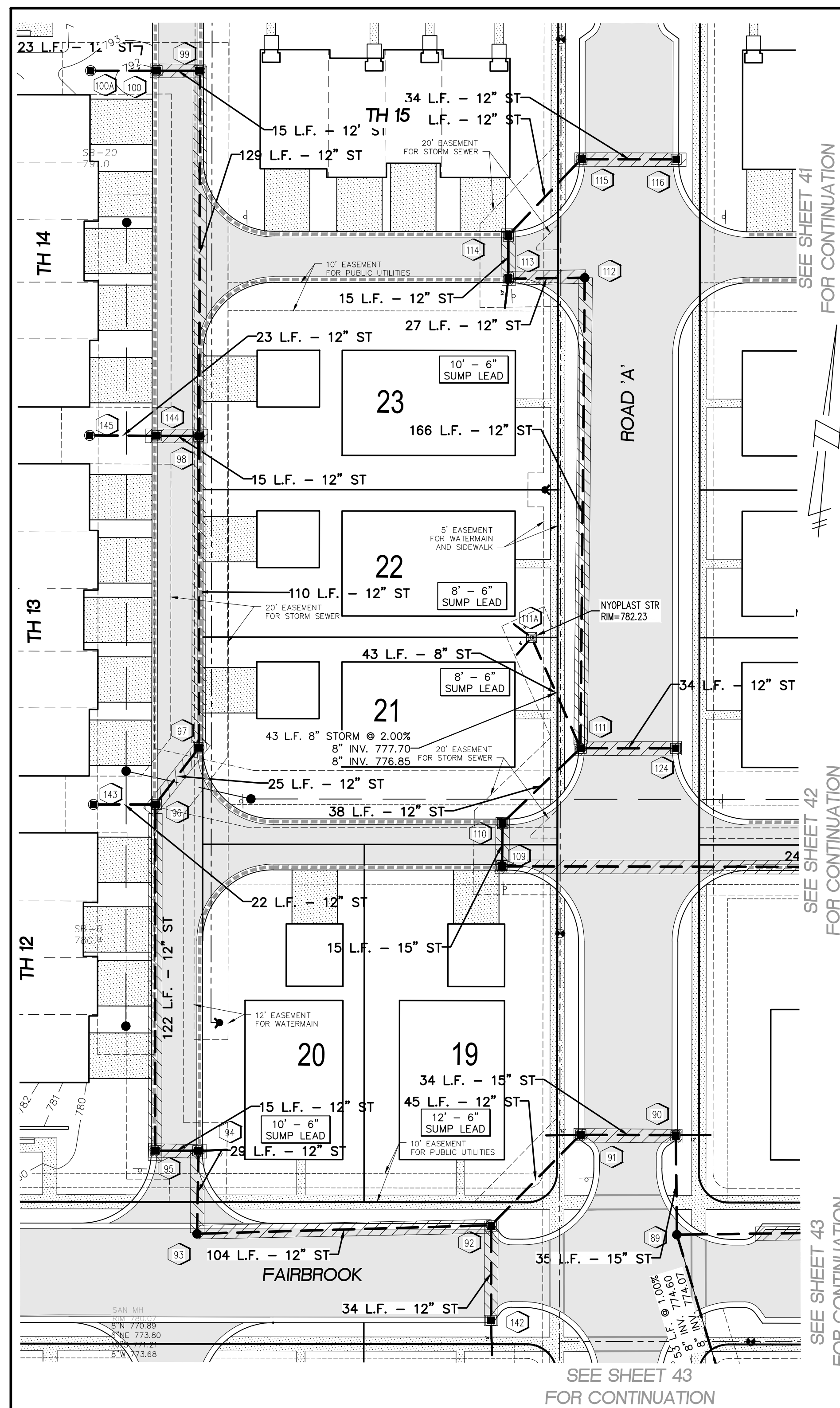
DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-SAN-FS9-PHQ.DWG

SANITARY SEWER PLAN AND PROFILE

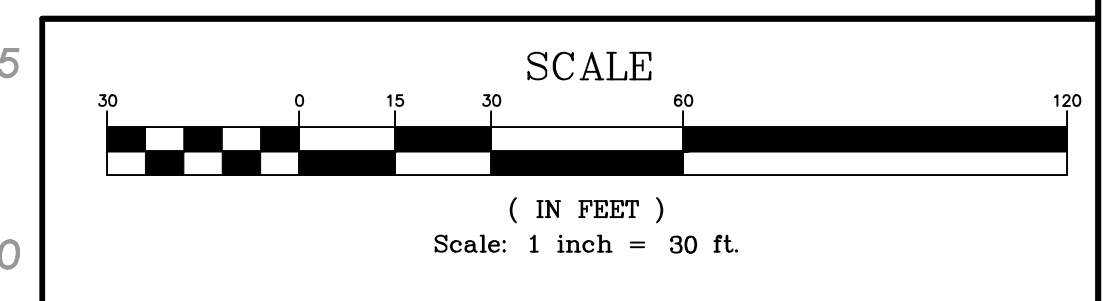
SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 39

P:\2023\THE DOWNS - 100% DESIGN\DWG\PHQ_21-001-SAN-FS9-PHQ.DWG 09/20/23 11:14 AM



- NOTES**
- ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 - PROVIDE MINIMUM 3 FEET DEPTH ON ALL SUMP LEADS AND MINIMUM 1% SLOPE TO ALL BUILDINGS.
- LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
- COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROAD. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.



LEGEND

EXISTING	PROPOSED
[Symbol]	[Symbol] PAVEMENT (ASPHALT)
[Symbol]	[Symbol] SIDE WALK (CONCRETE)
[Symbol]	[Symbol] CONCRETE CURB AND GUTTER
[Symbol]	[Symbol] STORM SEWER
[Symbol]	[Symbol] SANITARY SEWER
[Symbol]	[Symbol] WATER MAIN
[Symbol]	[Symbol] "UD" DENOTES UNDERDRAIN
[Symbol]	[Symbol] "LS" DENOTES LANDSCAPE DRAIN
[Symbol]	[Symbol] MANHOLE
[Symbol]	[Symbol] CATCH BASIN W/SED CATCH
[Symbol]	[Symbol] CURB INLET W/SILT SAC
[Symbol]	[Symbol] END SECTION
[Symbol]	[Symbol] GATE VALVE
[Symbol]	[Symbol] HYDRANT
[Symbol]	[Symbol] OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol] FLOOD PLAIN
[Symbol]	[Symbol] CONTOURS
[Symbol]	[Symbol] SPOT ELEVATION
[Symbol]	[Symbol] SURFACE DRAINAGE
[Symbol]	[Symbol] OVERFLOW ROUTE
[Symbol]	[Symbol] TREE FENCE
[Symbol]	[Symbol] SILT FENCE
[Symbol]	[Symbol] PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol] CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	09-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-07-SSP-FPG.DWG

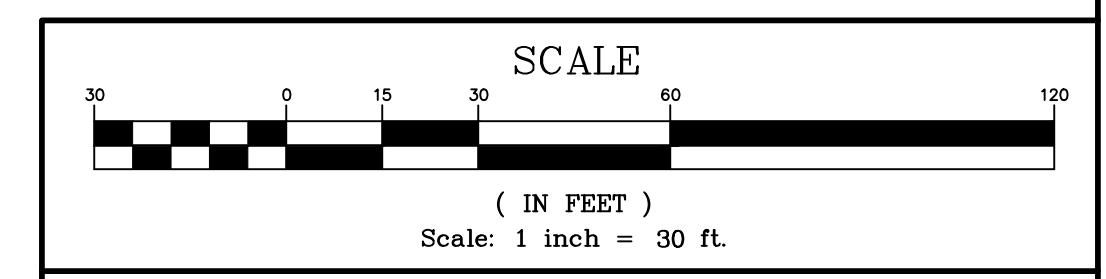
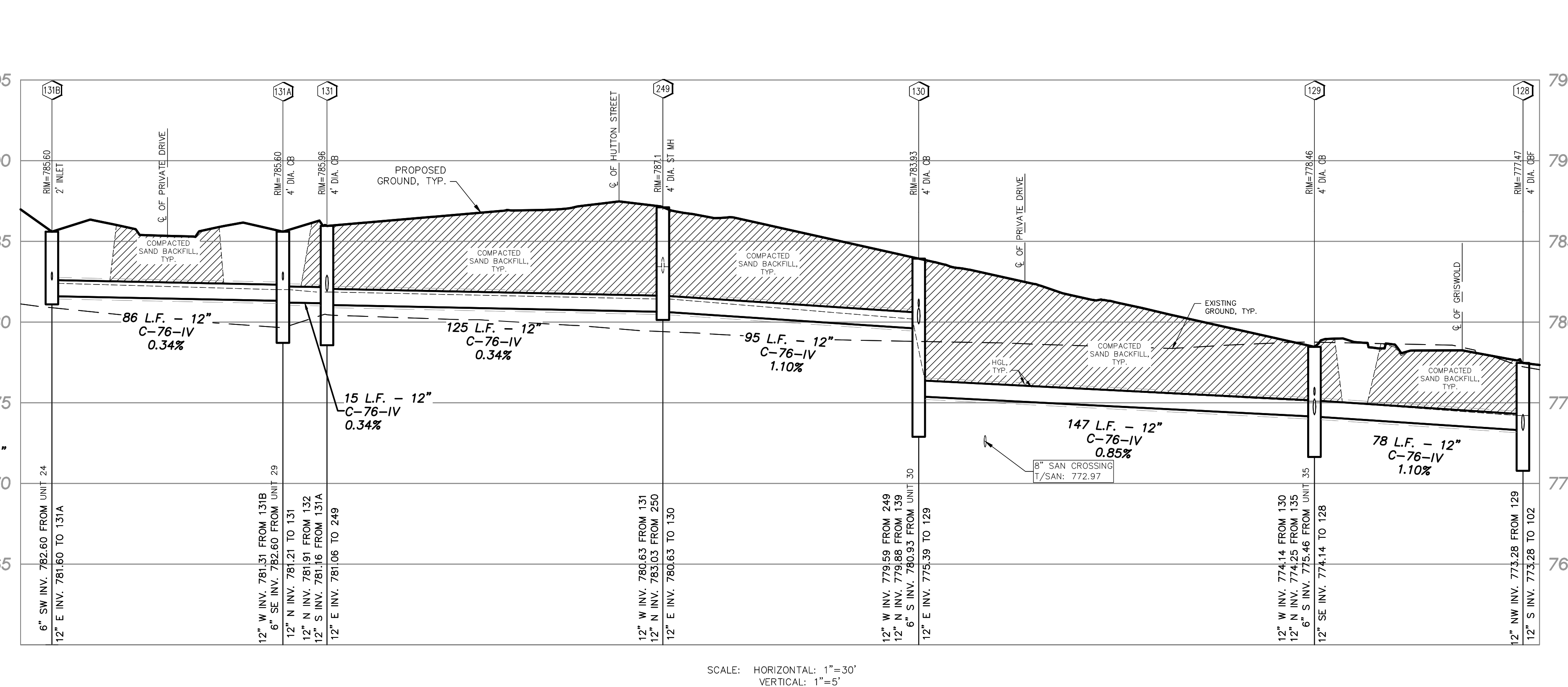
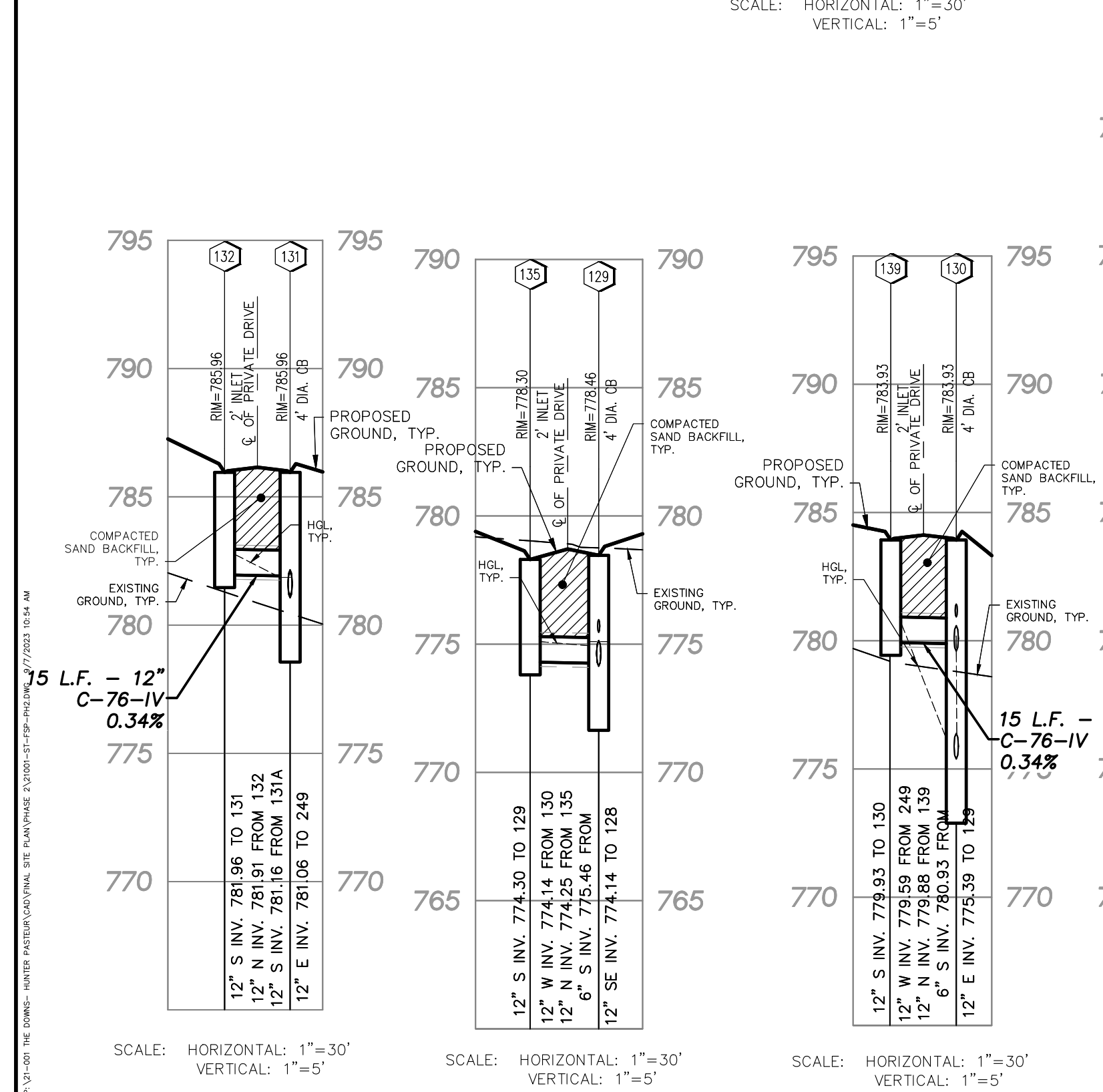
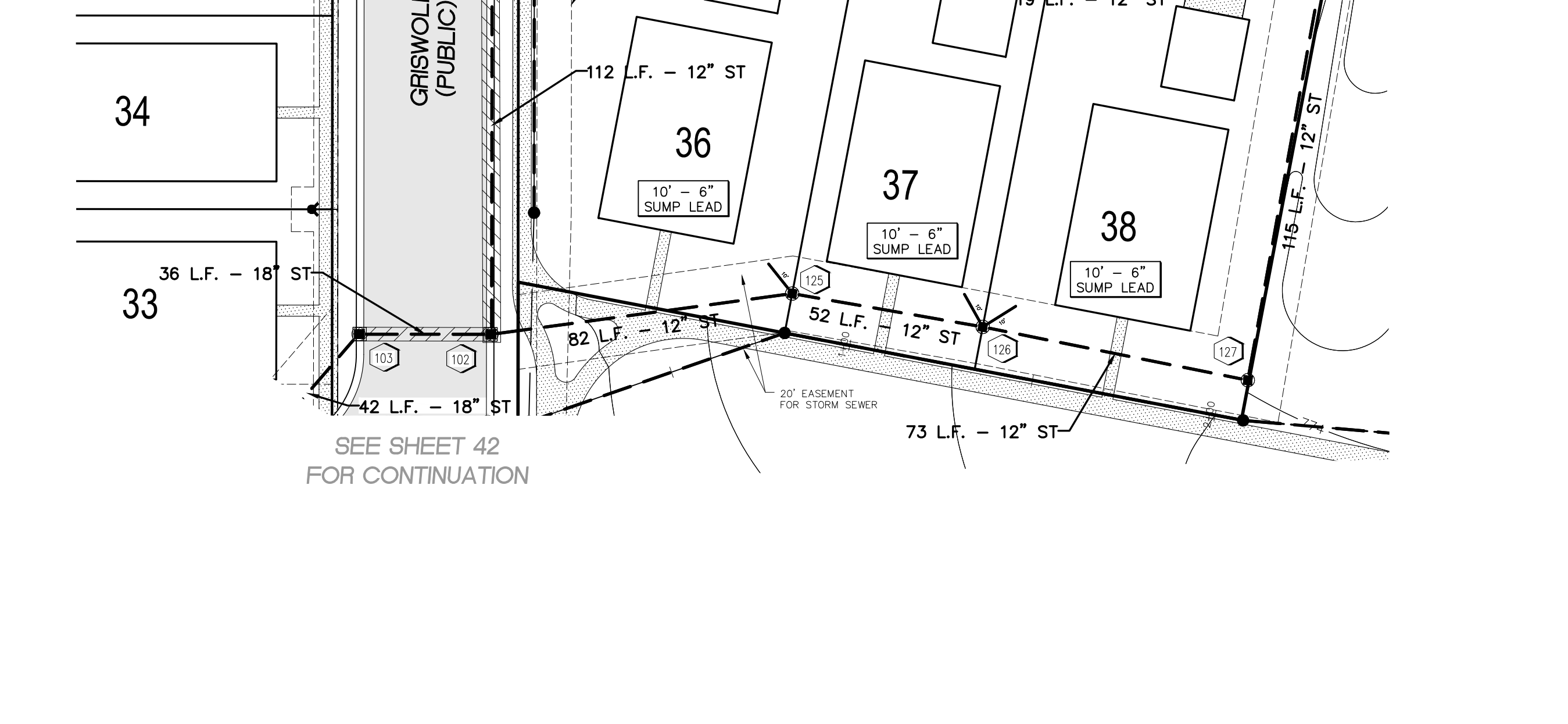
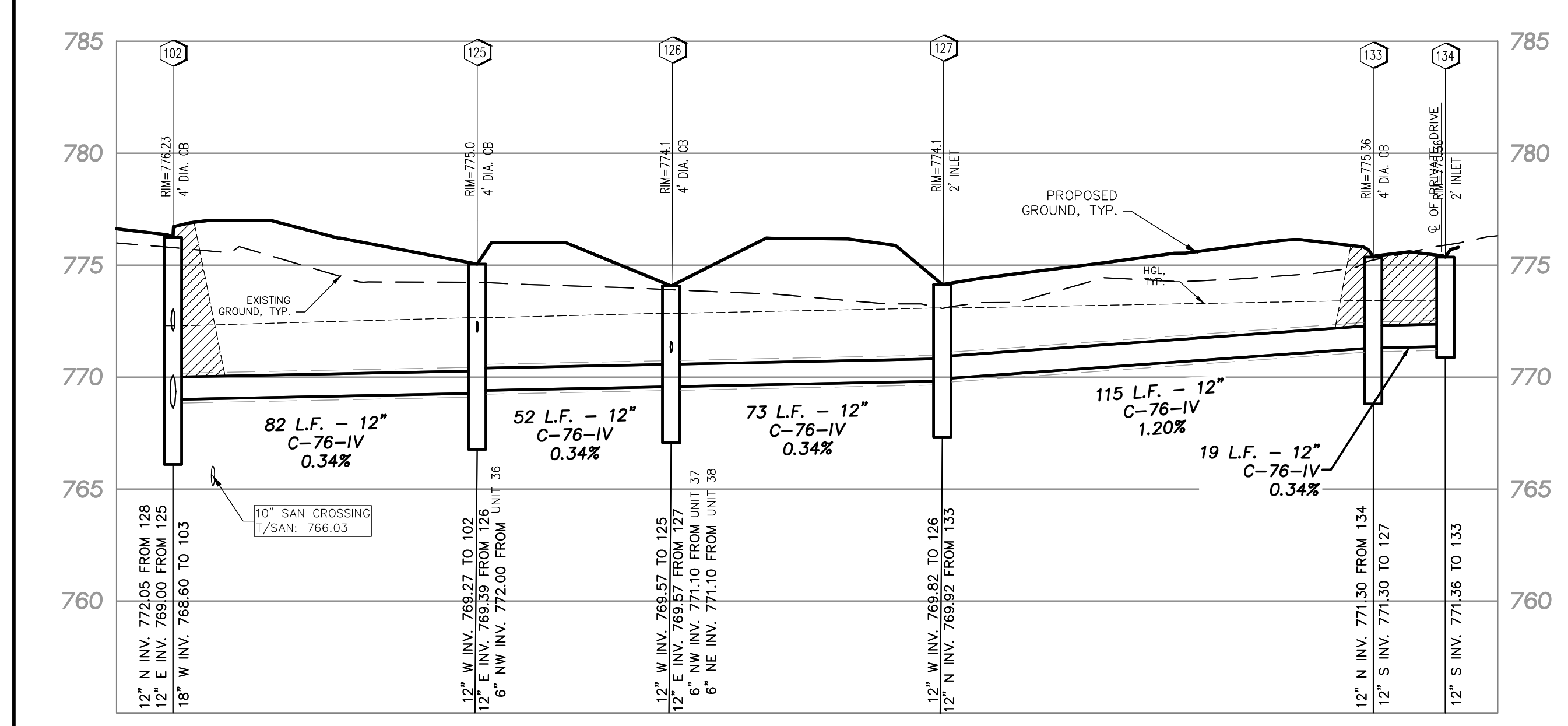
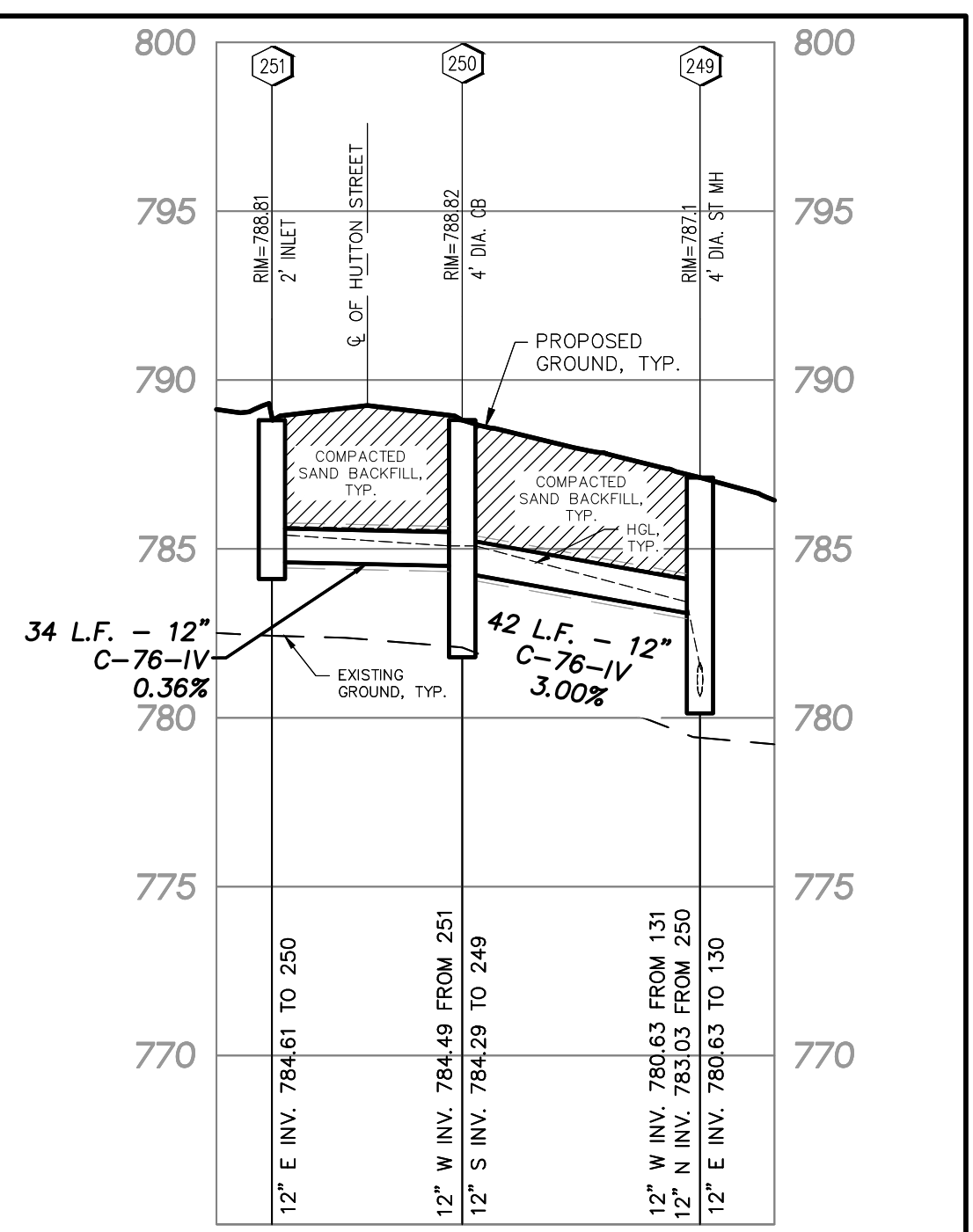
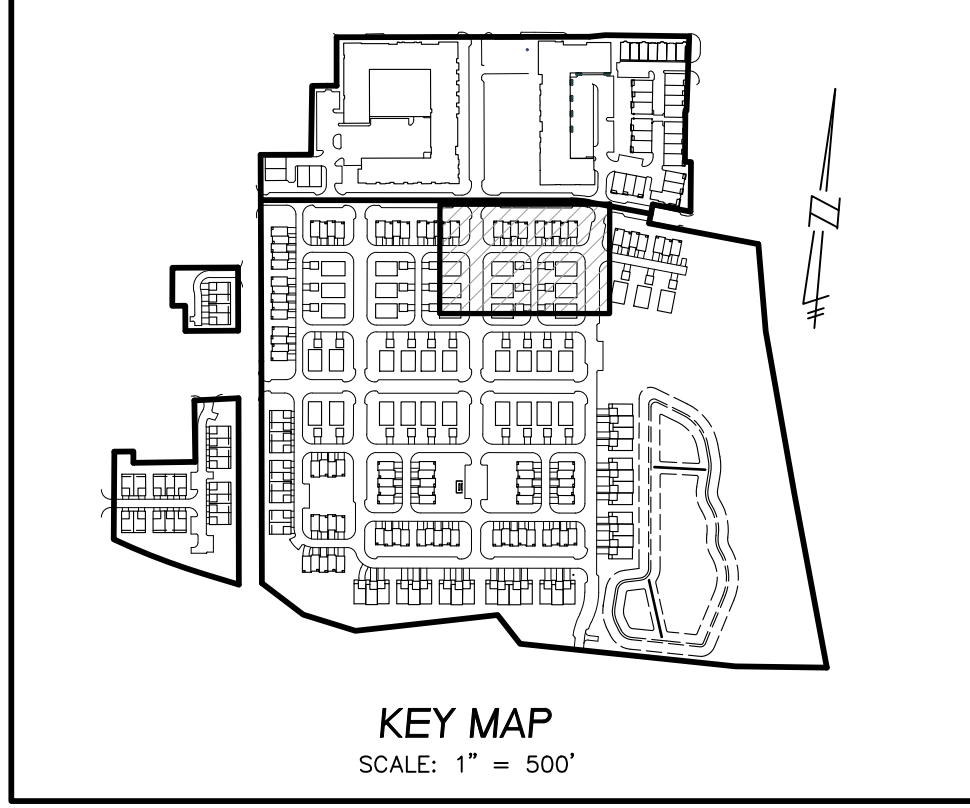
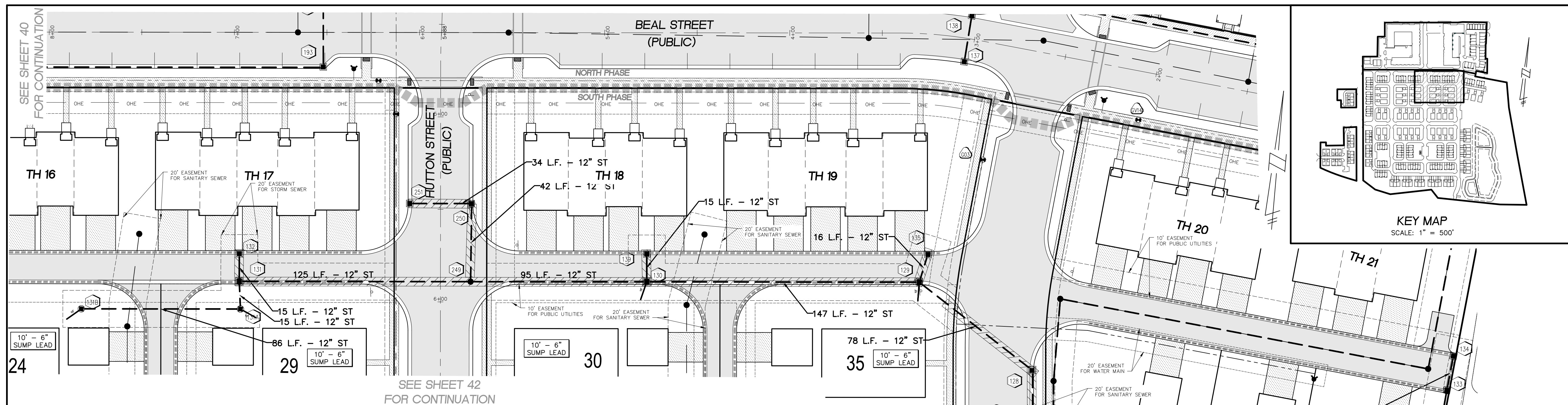
811 Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

STORM SEWER PLAN AND PROFILE

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

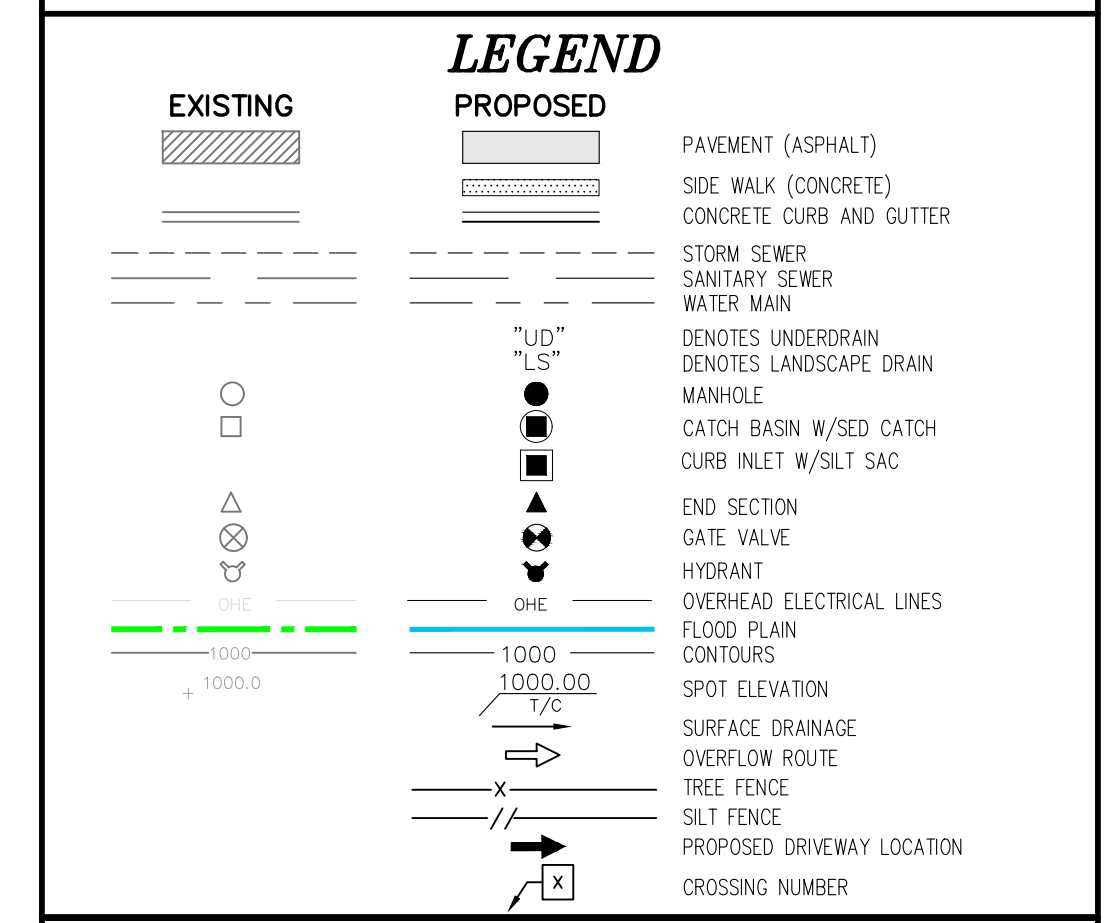
SHEET
40



- NOTES**
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 - PROVIDE MINIMUM 3 FEET DEPTH ON ALL SUMP LEADS AND MINIMUM 1% SLOPE TO ALL BUILDINGS.

LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.

COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS. MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	DESCRIPTION	DATE
1.	TYPE SCHEMATIC DESIGN	06-10-2023
2.	SUB DESIGN DEVELOPMENT	02-03-2024
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: P.E. FILE: 21001-ST-RSP-PKG.DWG

STORM SEWER PLAN AND PROFILE

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

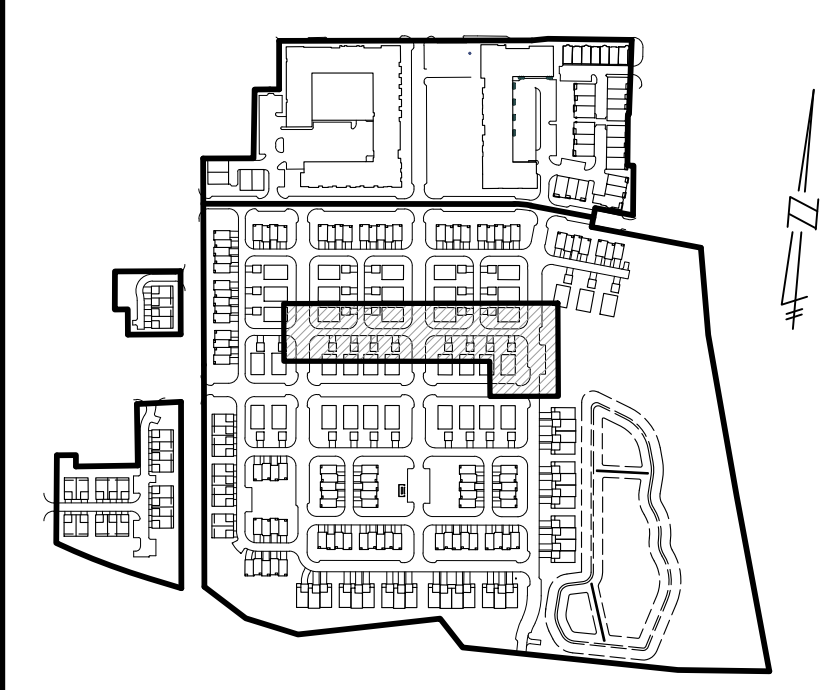
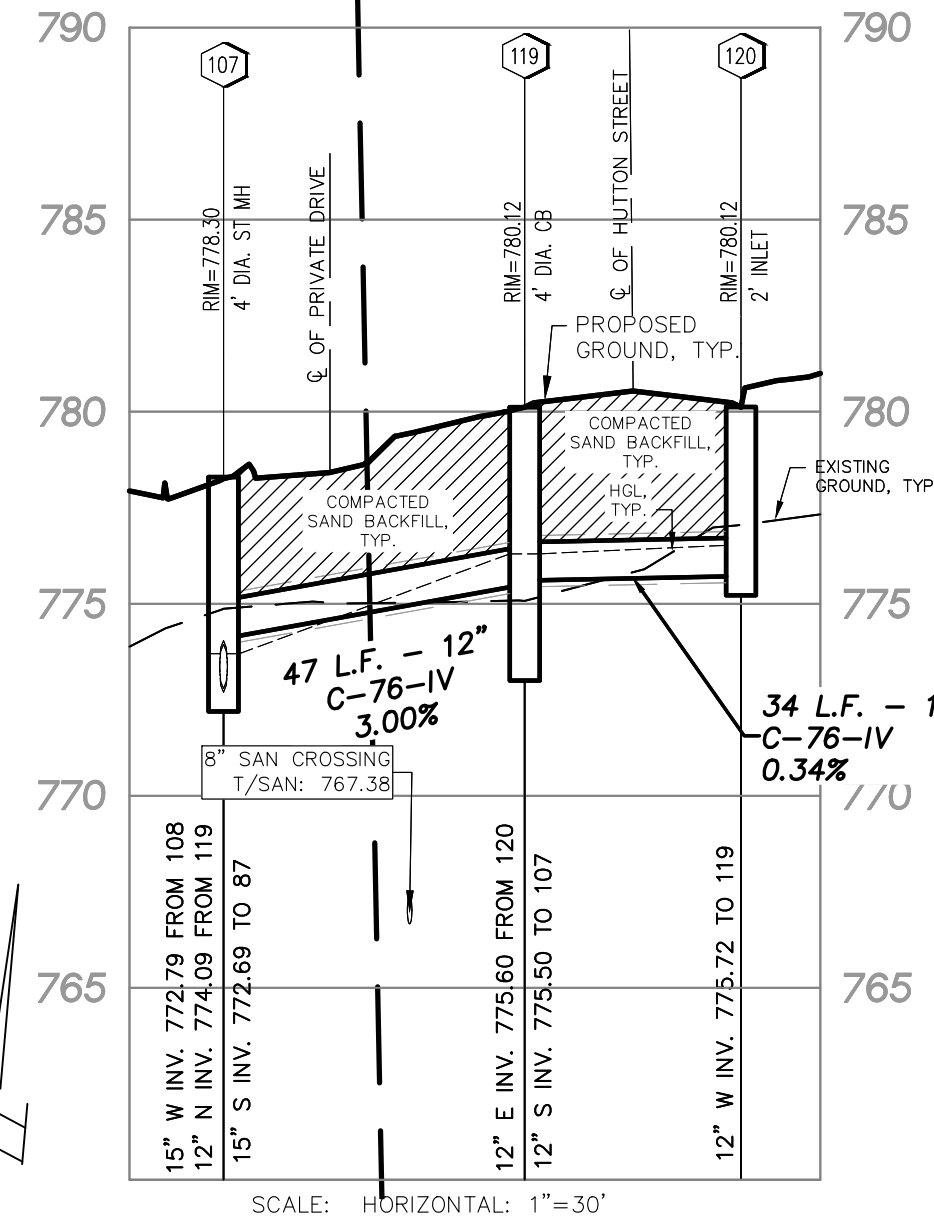
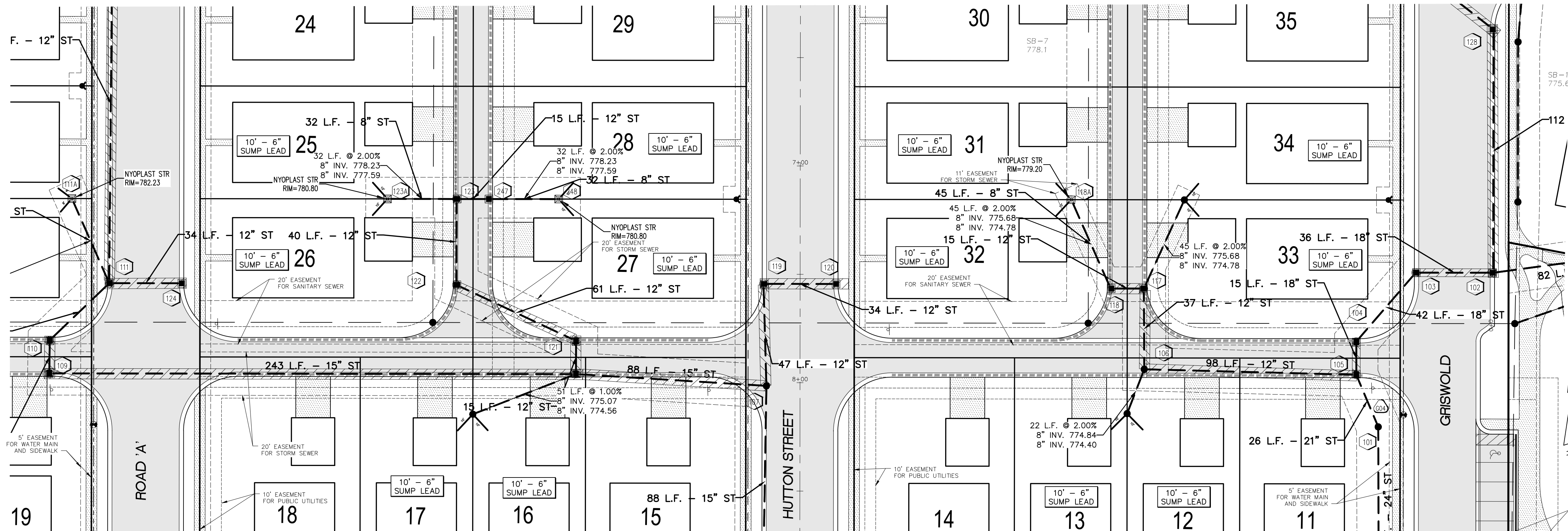
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 41

SEE SHEET 40 FOR CONTINUATION

SEE SHEET 41 FOR CONTINUATION

SEE SHEET 41 FOR CONTINUATION

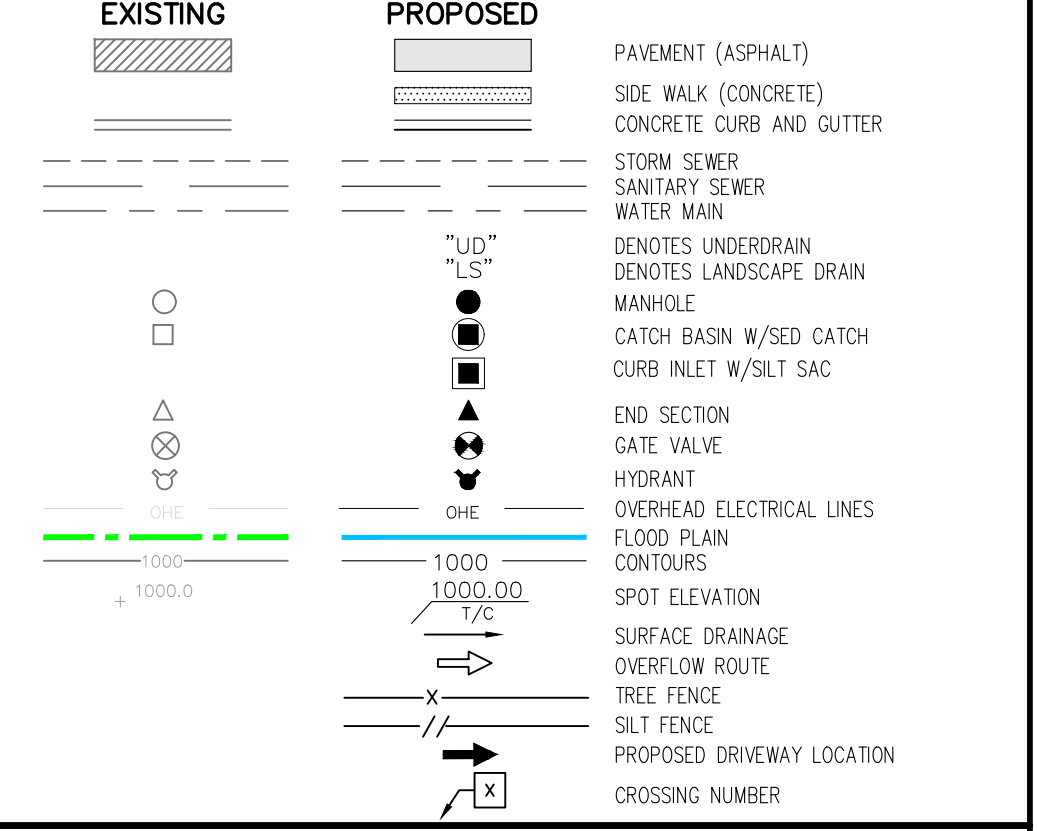


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NOTES

- ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
- PROVIDE MINIMUM 3 FEET DEPTH ON ALL SUMP LEADS AND MINIMUM 1% SLOPE TO ALL BUILDINGS.

LEGEND



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
 WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	TYPE SCHEMATIC DESIGN	06-10-2022
2.	SUB DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

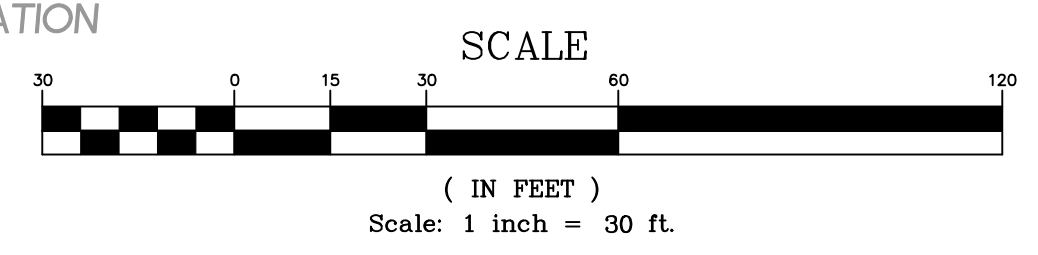
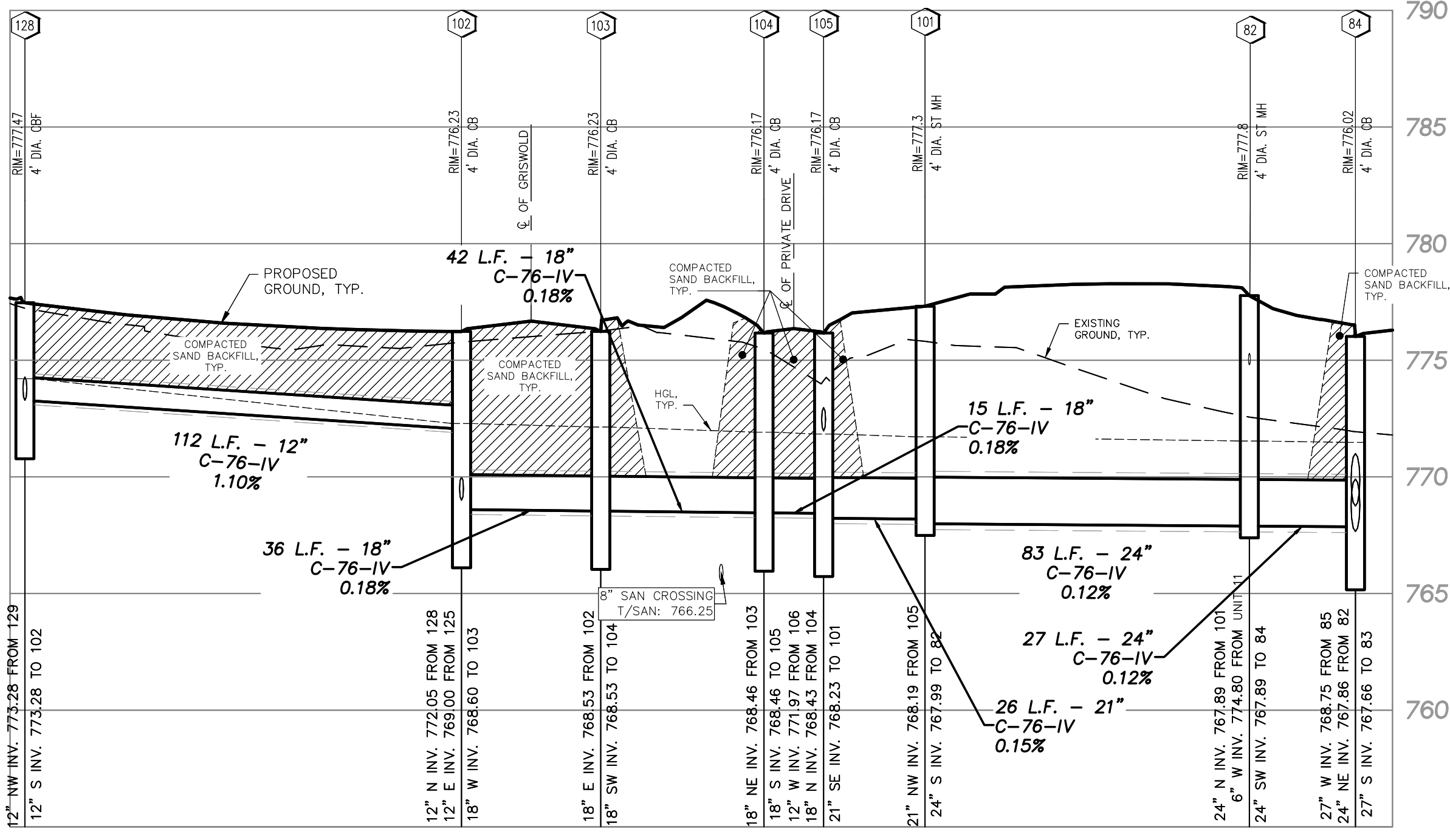
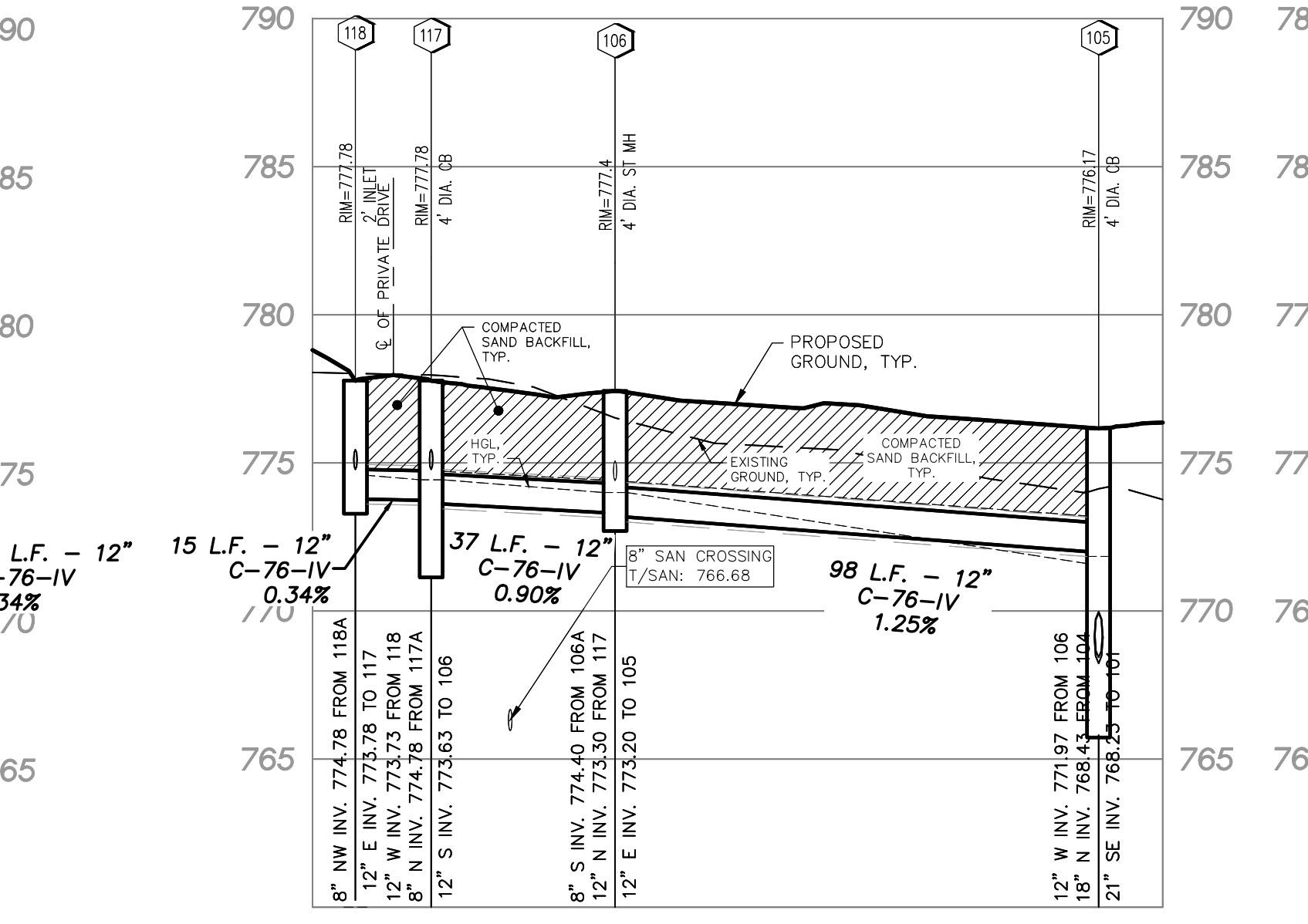
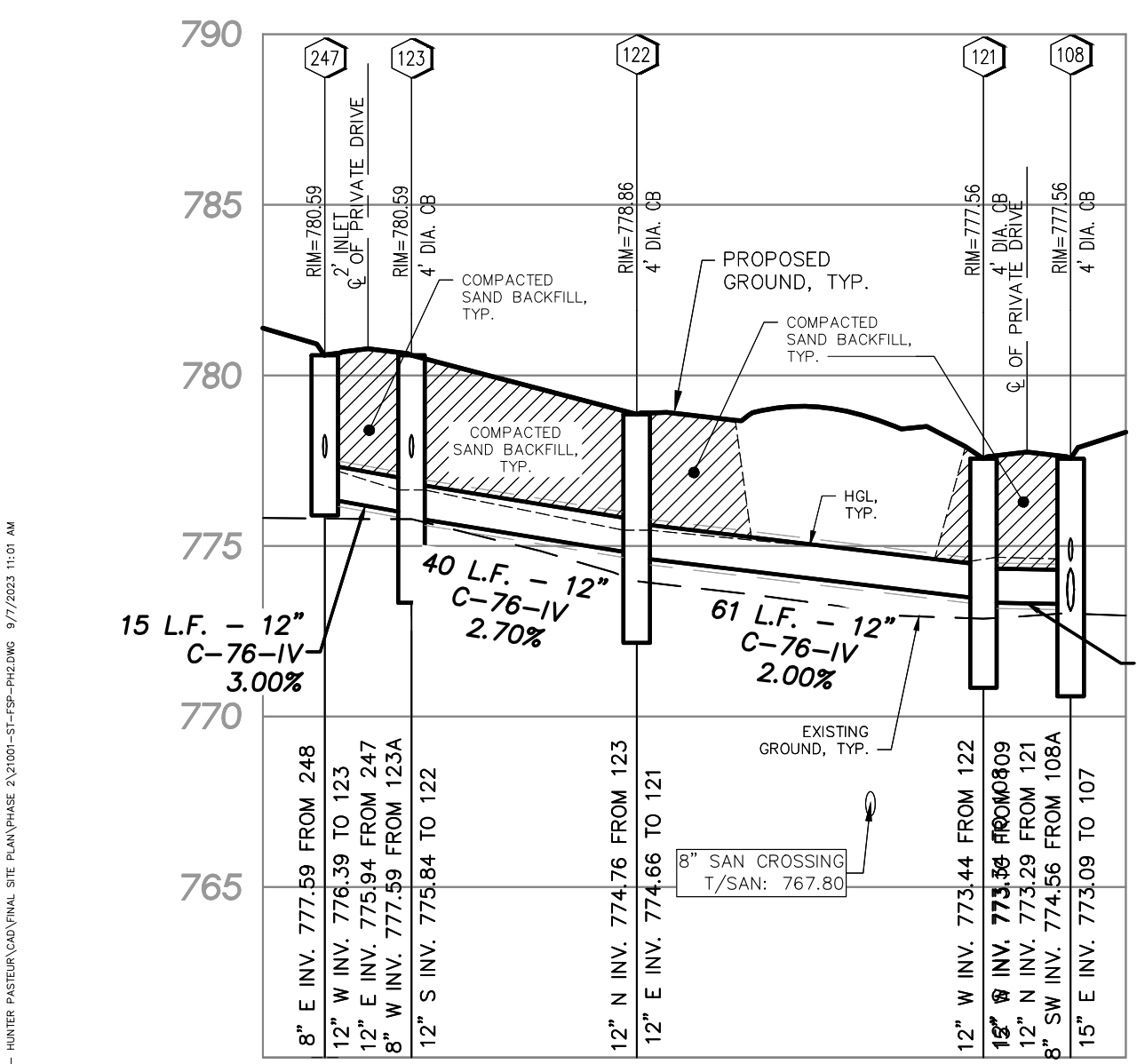
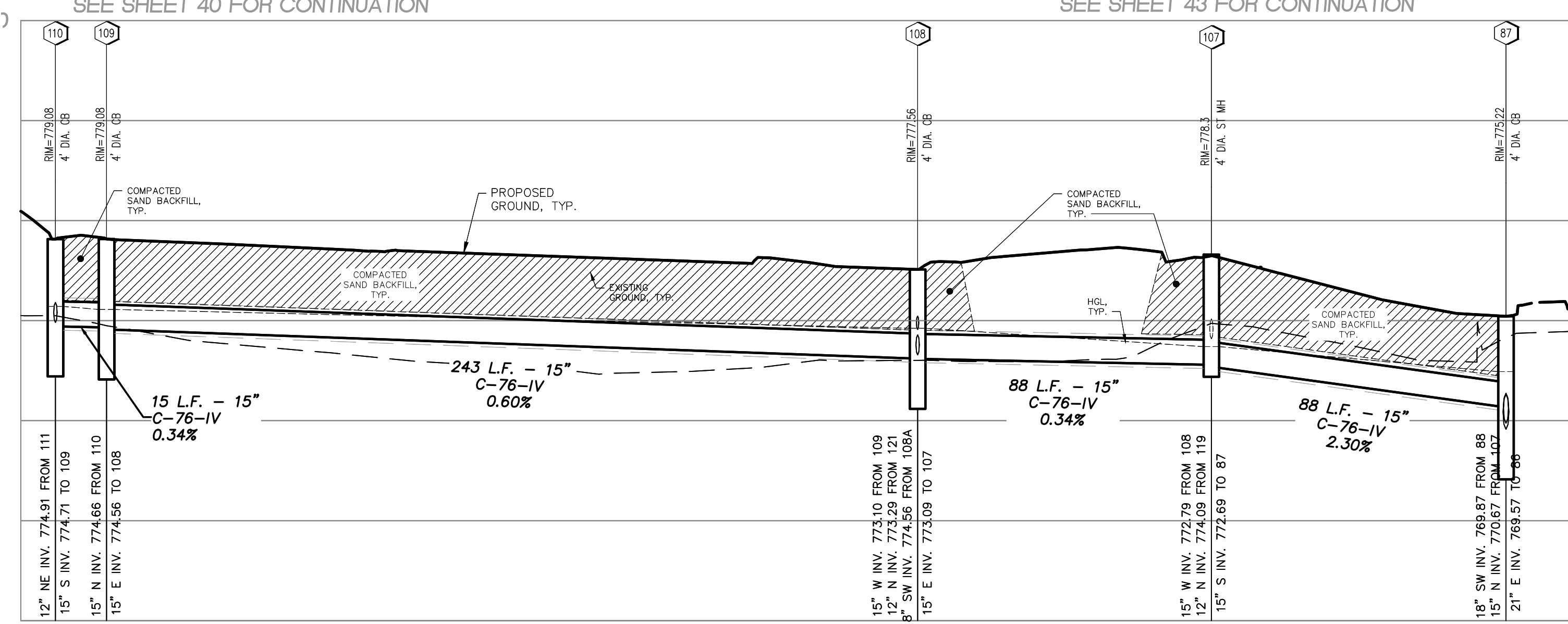
UTILITY WARNING
 UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.
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 THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

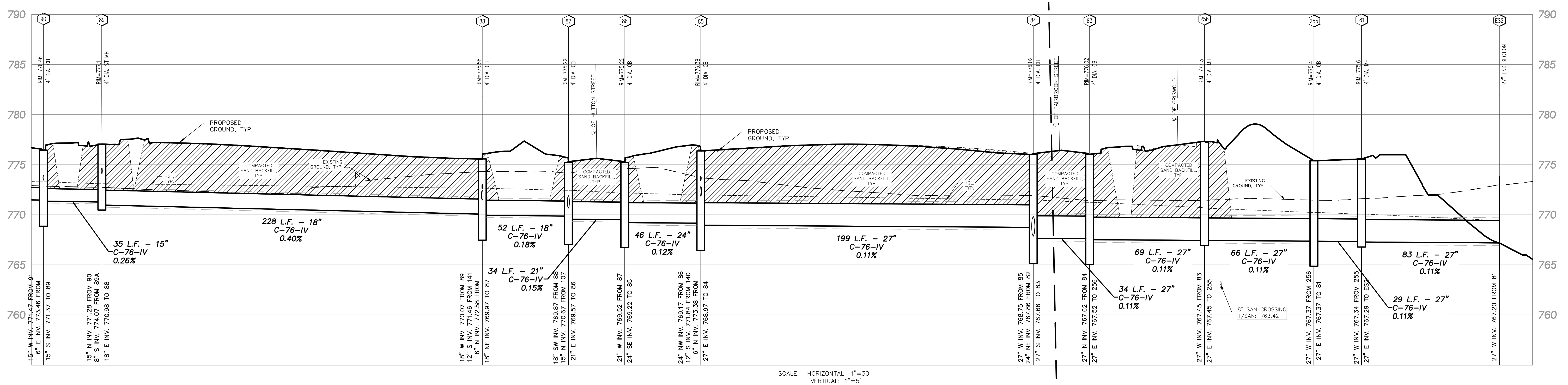
DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: P.E. FILE: 21001-ST-SSP-FIG.DWG

STORM SEWER PLAN AND PROFILE

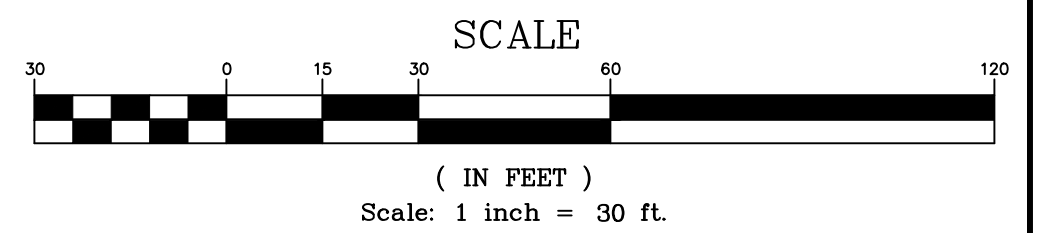
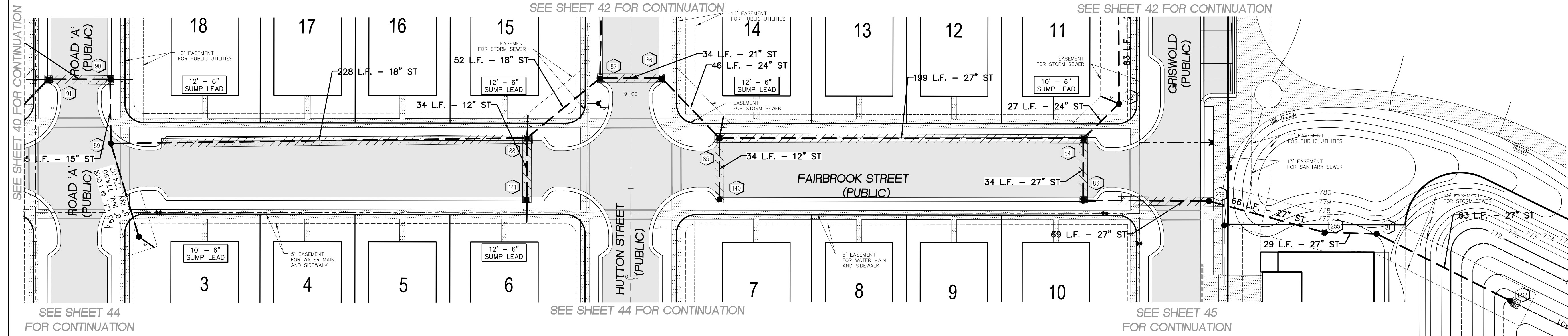
SKL SEIBER KEAST LEHNER
 ENGINEERING | SURVEYING
 39205 COUNTRY CLUB DRIVE, SUITE C8
 FARMINGTON HILLS, MI 48331
 PHONE: 248.308.3331

SHEET
42





SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'



LEGEND		
	EXISTING	PAVEMENT (ASPHALT)
	PROPOSED	SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
	"UD" MANHOLE	DENOTES UNDERDRAIN
	"LS" MANHOLE	DENOTES LANDSCAPE DRAIN
	CATCH BASIN	CATCH BASIN W/SED
	CURB INLET	CURB INLET W/SILT SAC
	END SECTION	END SECTION
	GATE VALVE	GATE VALVE
	HYDRANT	HYDRANT
	OVERHEAD ELECTRICAL LINES	OVERHEAD ELECTRICAL LINES
	FLOOD PLAIN CONTOURS	FLOOD PLAIN CONTOURS
	SPOT ELEVATION	SPOT ELEVATION
	SURFACE DRAINAGE	SURFACE DRAINAGE
	OVERFLOW ROUTE	OVERFLOW ROUTE
	TREE FENCE	TREE FENCE
	SILT FENCE	SILT FENCE
	PROPOSED DRIVEWAY LOCATION	PROPOSED DRIVEWAY LOCATION
	CROSSING NUMBER	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TYPE SCHEMATIC DESIGN	06-10-2022
2.	SUB DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: F.E. FILE: 21001-ST-RSP-PKG.DWG

STORM SEWER PLAN AND PROFILE

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

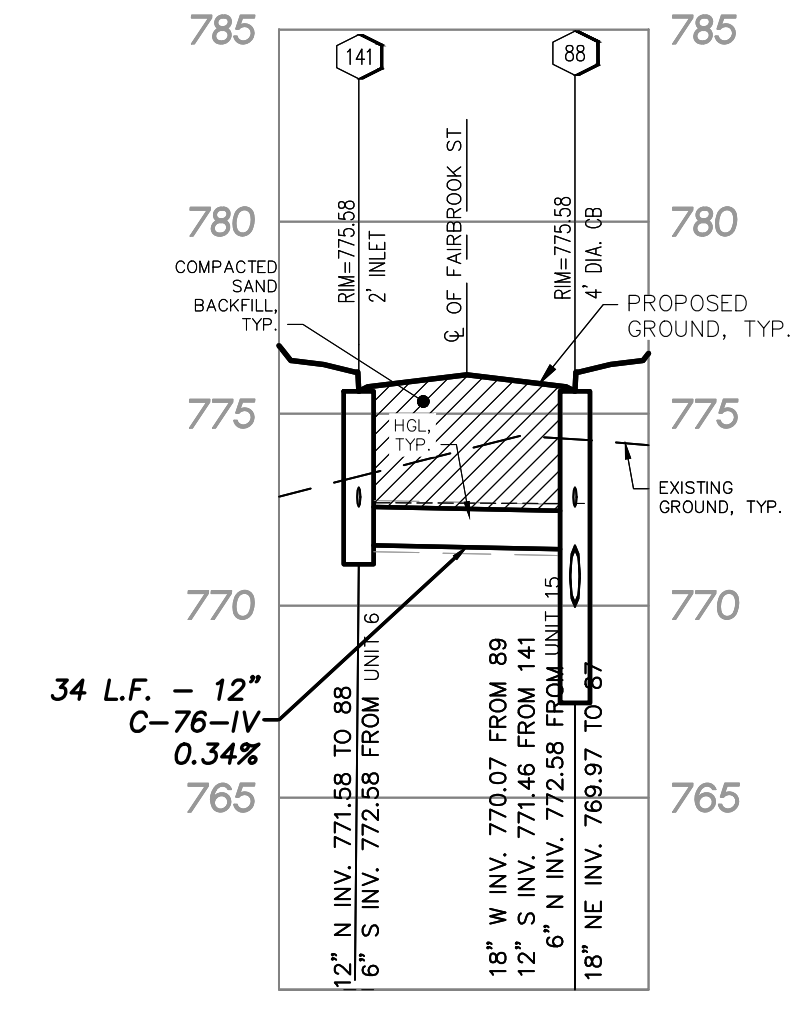
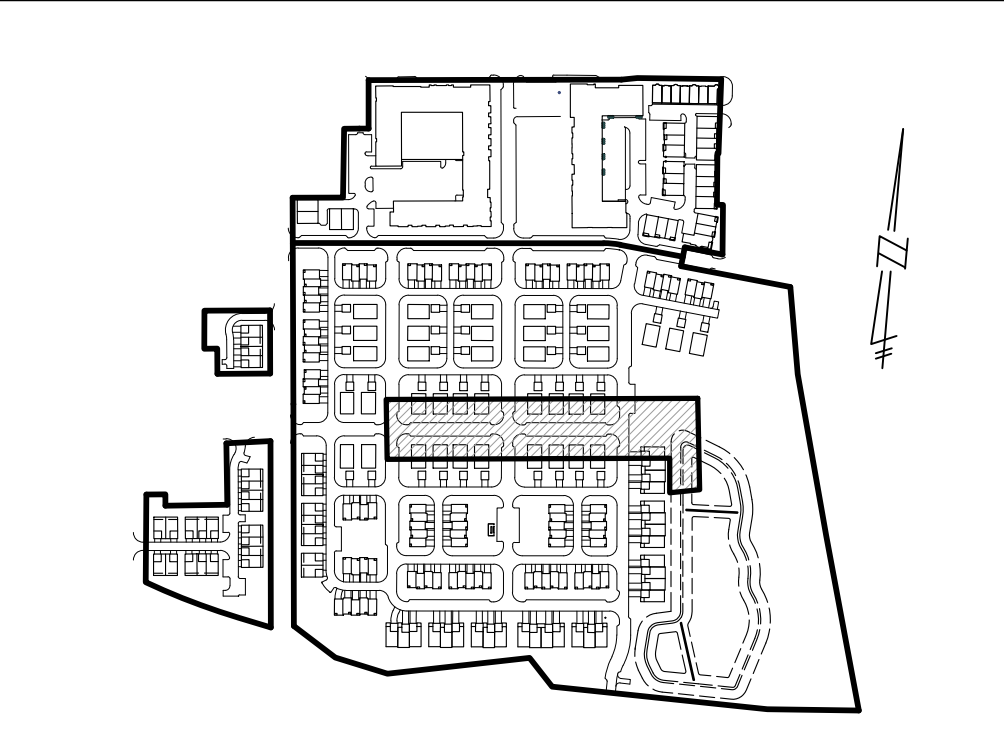
SHEET 43

NOTES

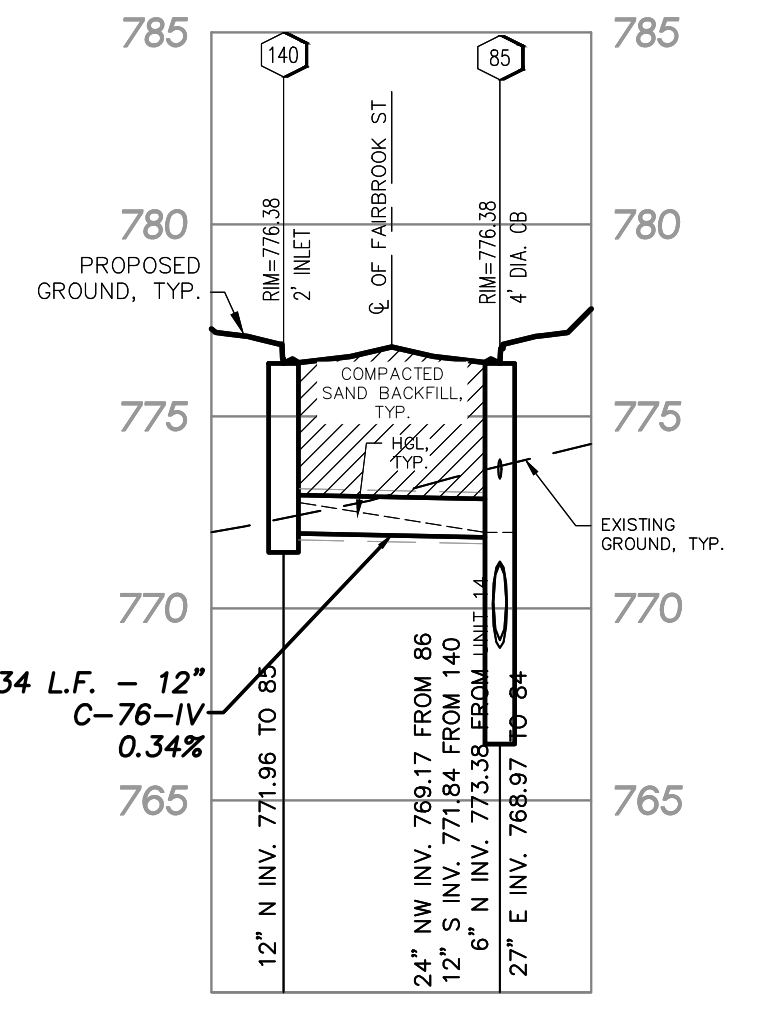
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- PROVIDE MINIMUM 3 FEET DEPTH ON ALL SUMP LEADS AND MINIMUM 1% SLOPE TO ALL BUILDINGS.

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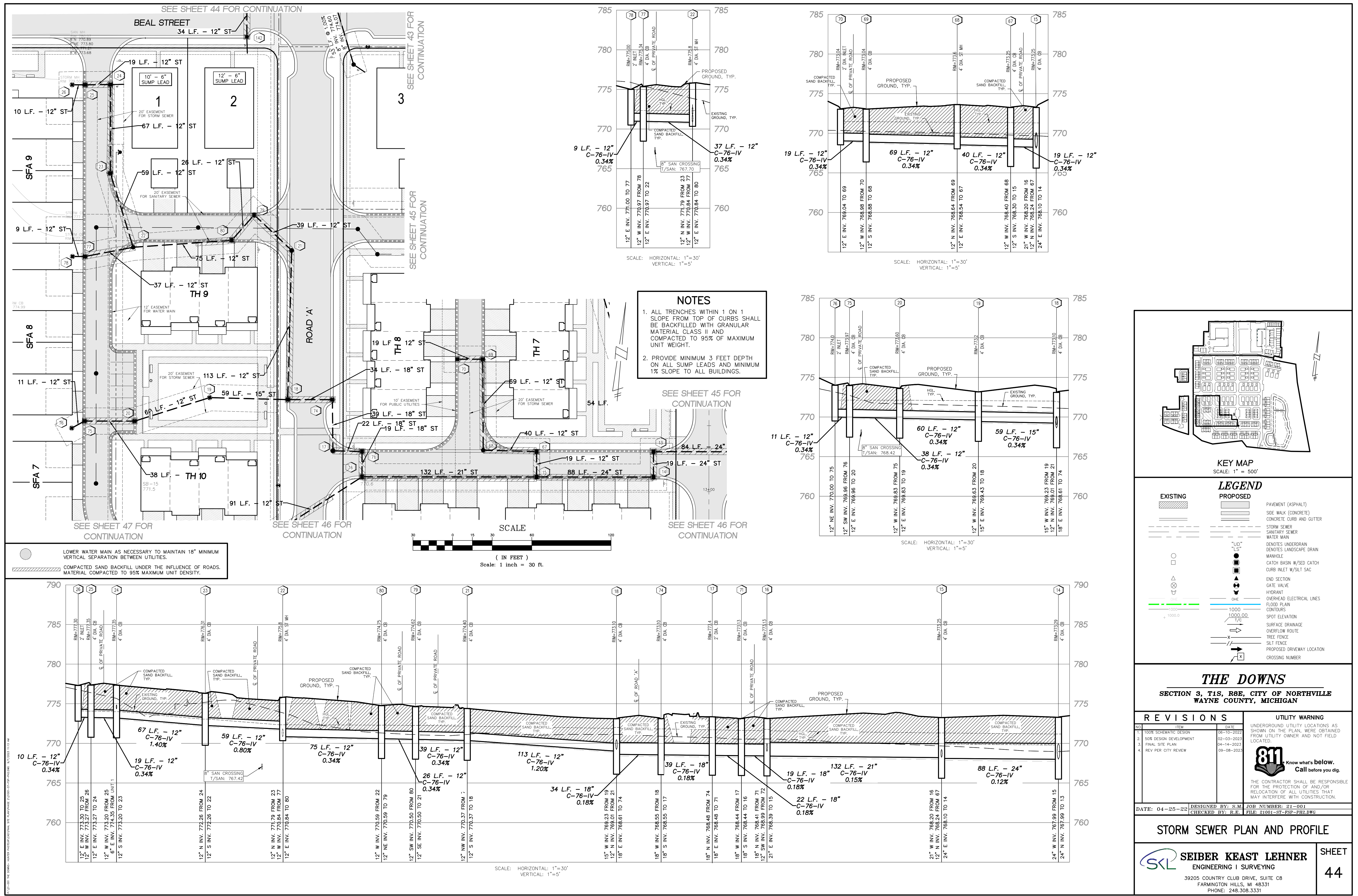


SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'

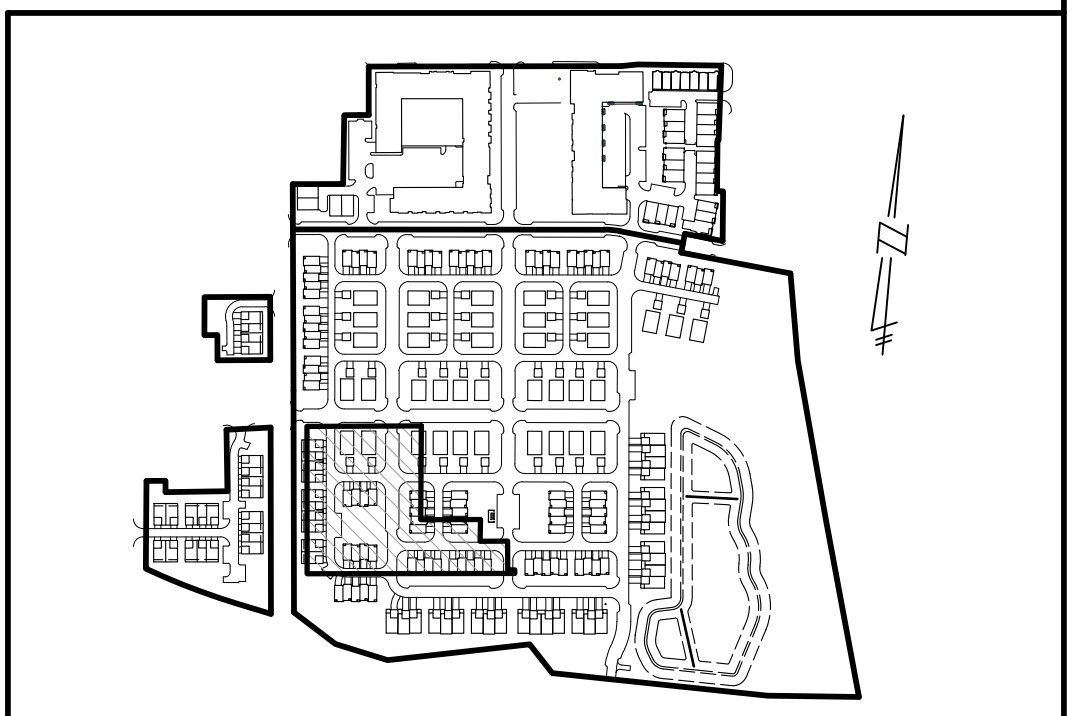


SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'

P:\2023\THE DOWNS\THE DOWNS - 11023\DWG\STORM SEWER PLAN AND PROFILE.dwg 10/25/23 10:08 AM



- NOTES**
1. ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 2. PROVIDE MINIMUM 3 FEET DEPTH ON ALL SUMP LEADS AND MINIMUM 1% SLOPE TO ALL BUILDINGS.



LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	UNDERDRAIN
[Symbol]	[Symbol]	LANDSCAPE DRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED
[Symbol]	[Symbol]	CATCH BASIN W/SILT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	T/E
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
2.	SITE DESIGN DEVELOPMENT	09-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: F.E. FILE: 21001-ST-RSP-PKG.DWG

STORM SEWER PLAN AND PROFILE

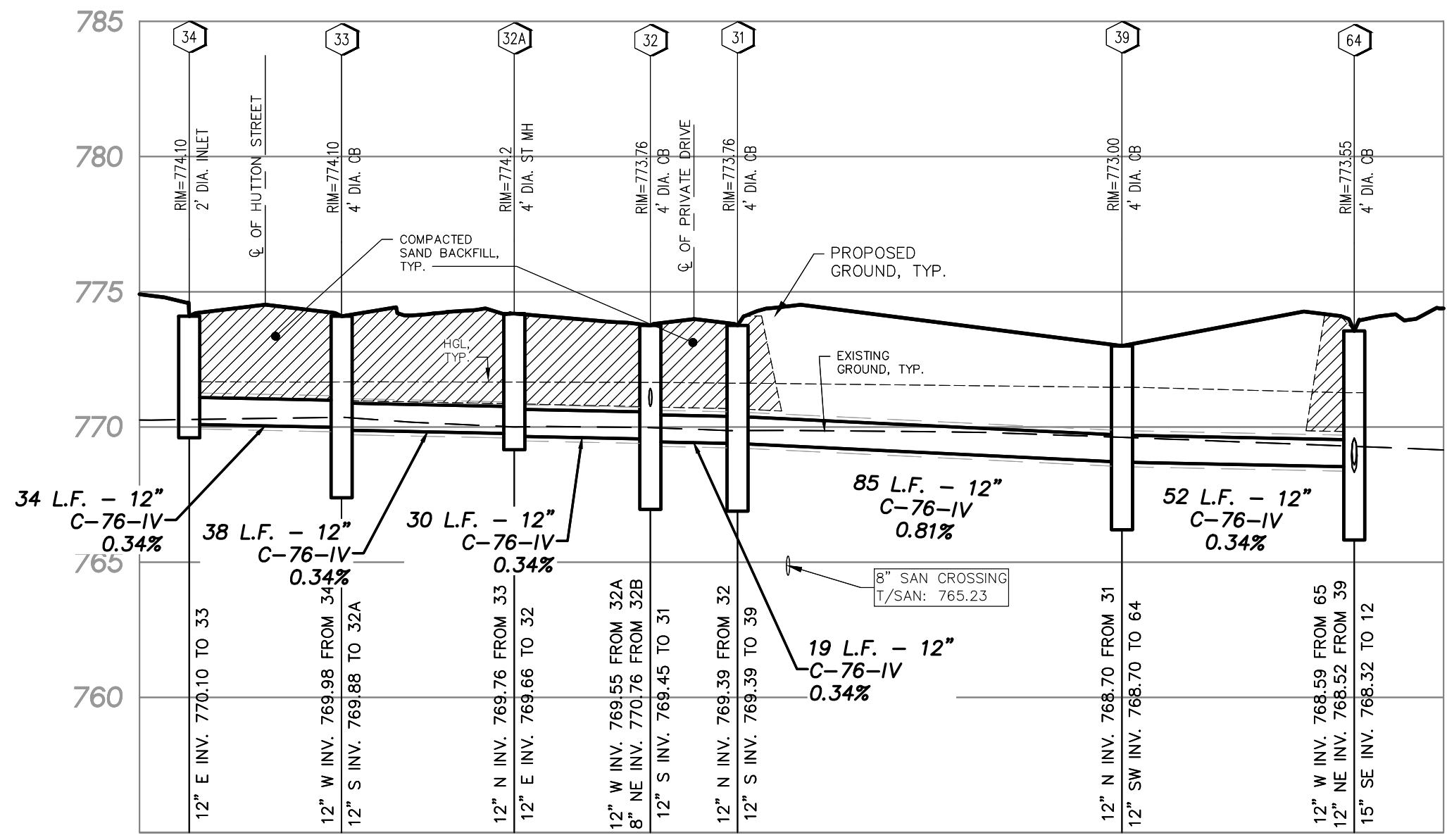
SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 44

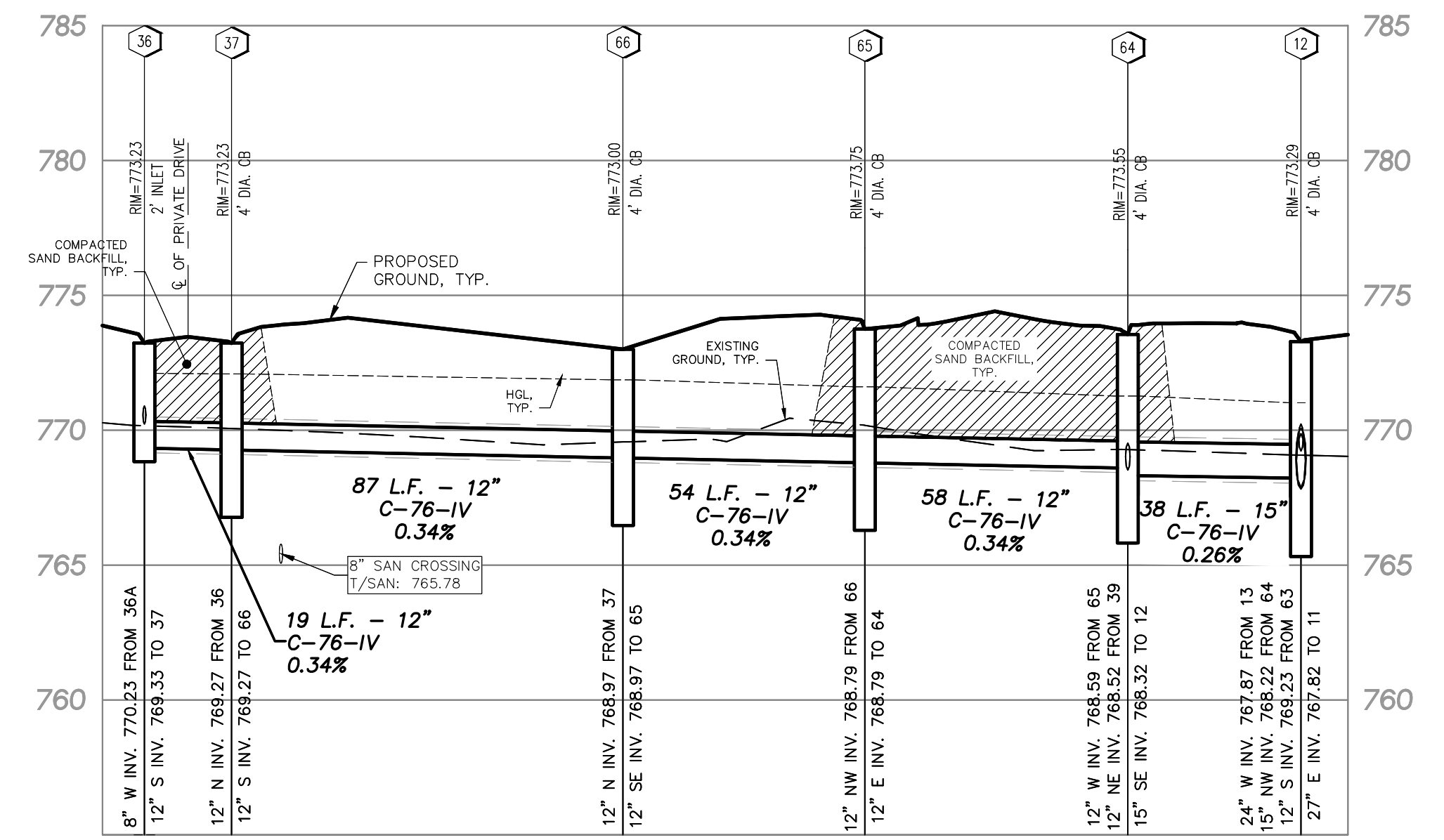
NOTES

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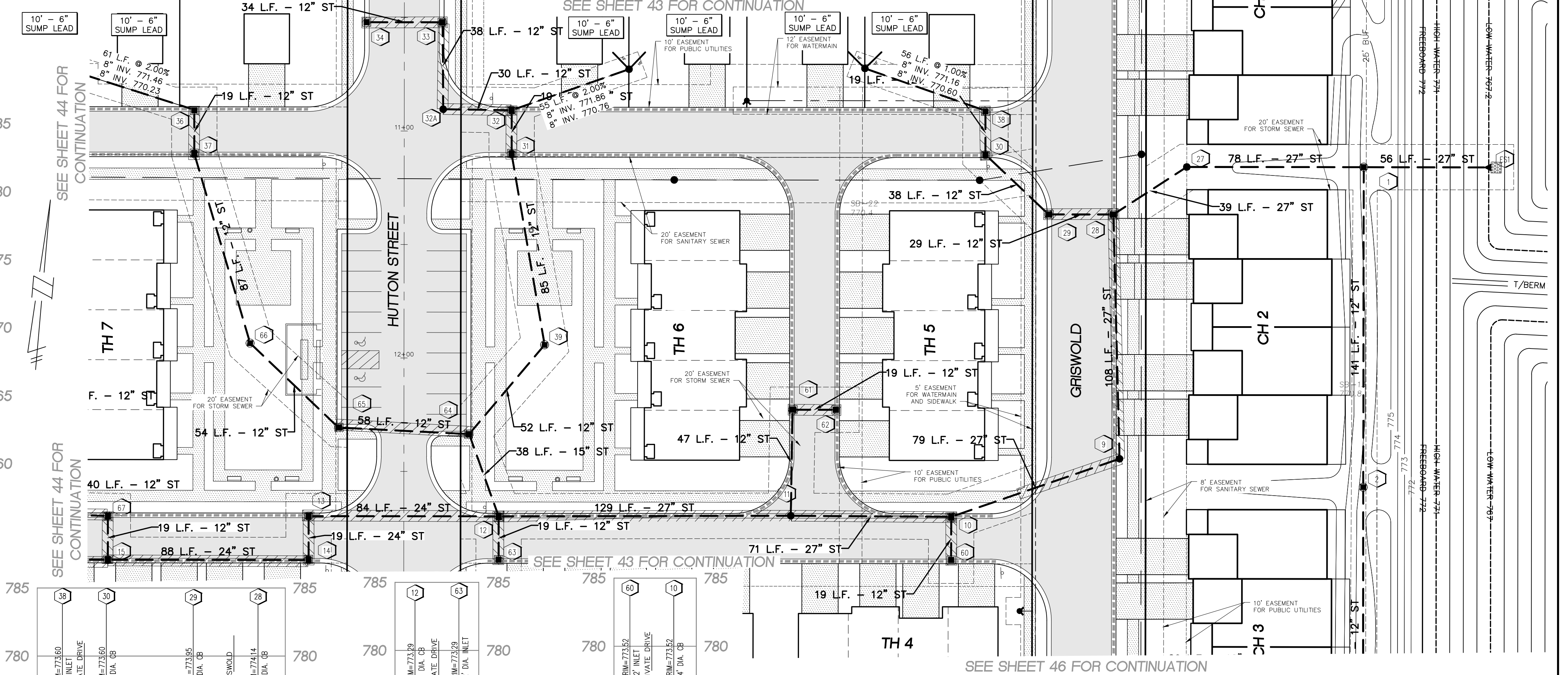
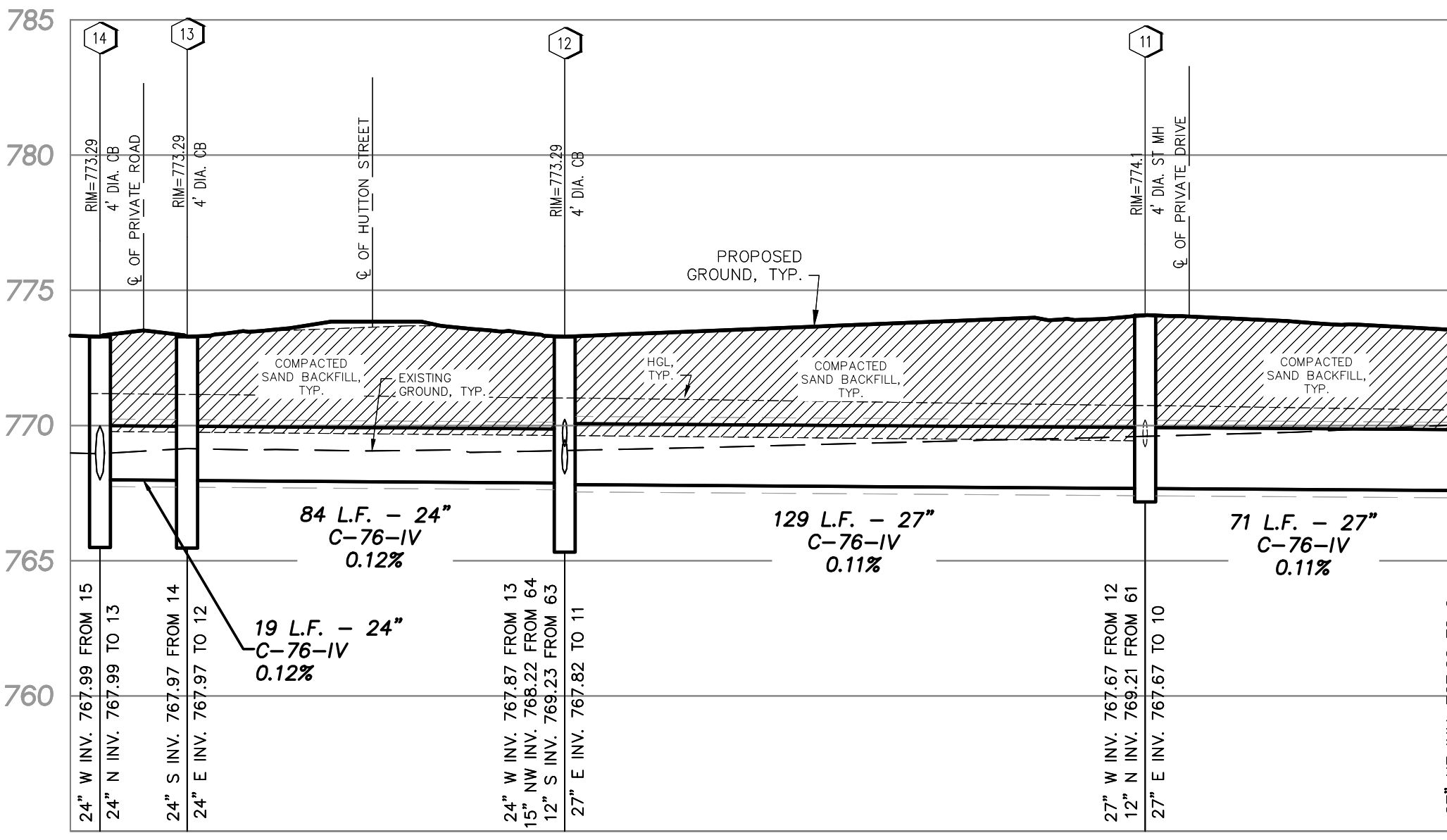
LOWER WATER MAIN AS NECESSARY TO MAINTAIN 18" MINIMUM VERTICAL SEPARATION BETWEEN UTILITIES.
 COMPACTED SAND BACKFILL UNDER THE INFLUENCE OF ROADS, MATERIAL COMPACTED TO 95% MAXIMUM UNIT DENSITY.



SCALE: HORIZONTAL: 1"=30'
 VERTICAL: 1"=5'



SCALE: HORIZONTAL: 1"=30'
 VERTICAL: 1"=5'

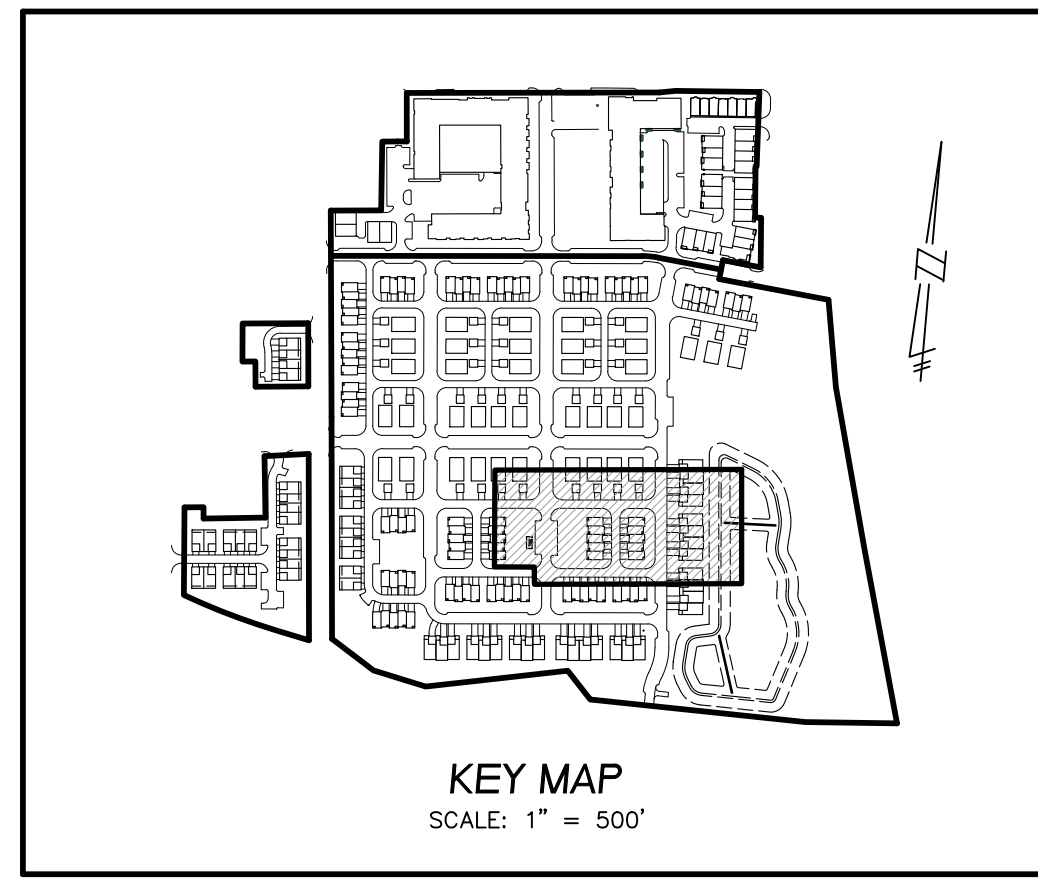


SEE SHEET 43 FOR CONTINUATION

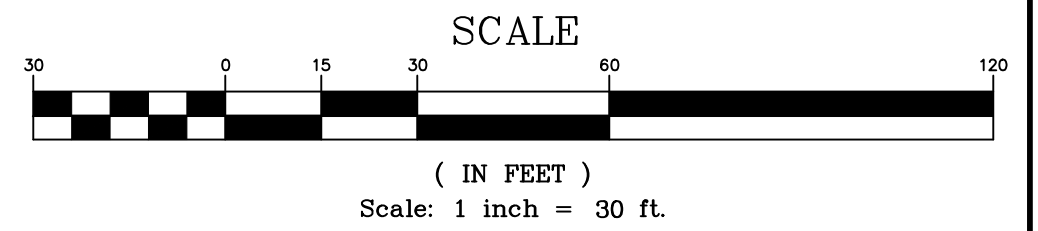
SEE SHEET 44 FOR CONTINUATION

SEE SHEET 43 FOR CONTINUATION

SEE SHEET 46 FOR CONTINUATION



SCALE: 1"=500'



LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	UNDERDRAIN
[Symbol]	[Symbol]	LANDSCAPE DRAIN
[Symbol]	[Symbol]	CATCH BASIN W/SIDEWALK
[Symbol]	[Symbol]	CURB INLET W/SILT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

THE DOWNS
 SECTION 3, T1S, R8E, CITY OF NORTHVILLE
 WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	SCHEMATIC DESIGN	06-10-2022
2.	SUB DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING
 UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

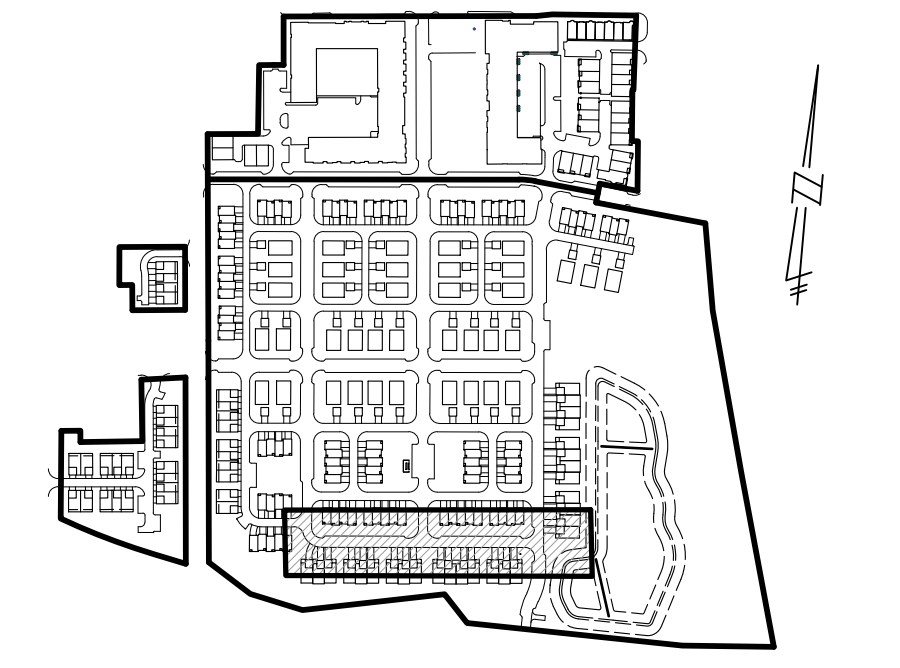
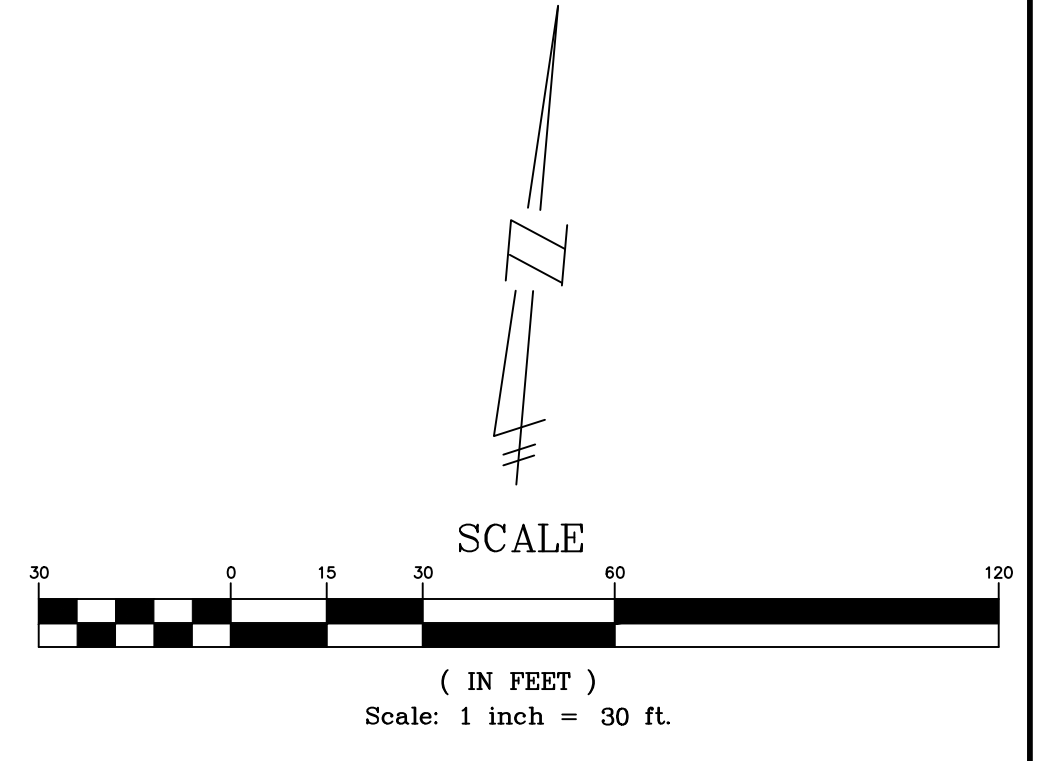
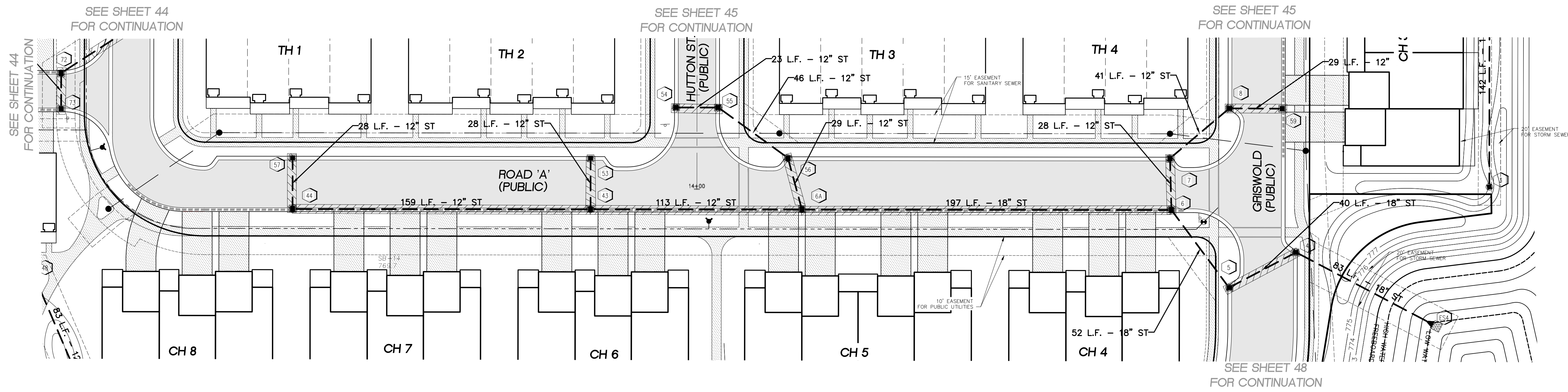
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STORM SEWER PLAN AND PROFILE

SEIBER KEAST LEHNER
 ENGINEERING | SURVEYING
 39205 COUNTRY CLUB DRIVE, SUITE C8
 FARMINGTON HILLS, MI 48331
 PHONE: 248.308.3331

SHEET 45



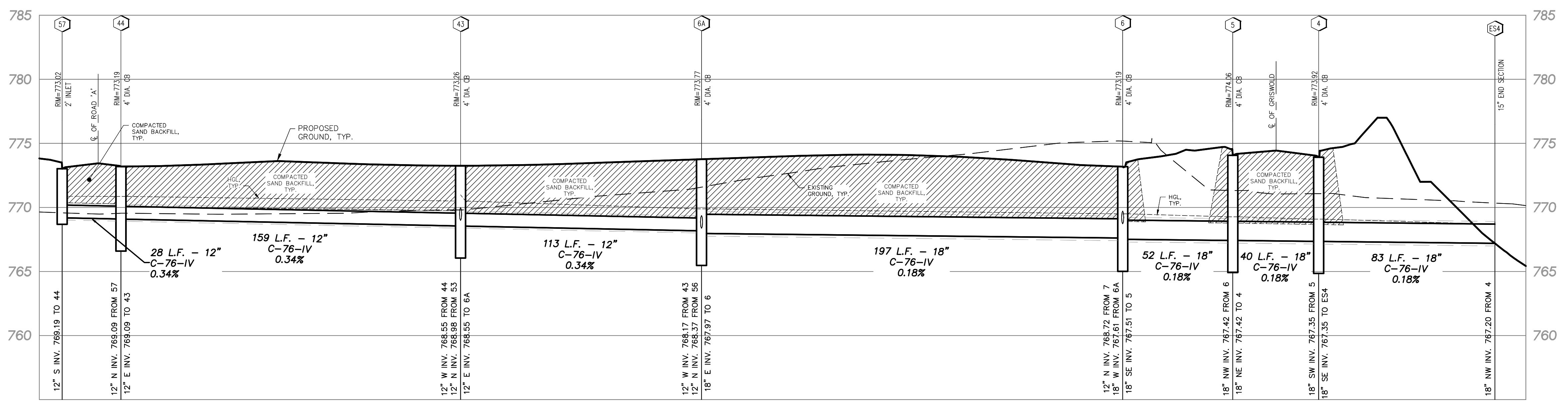
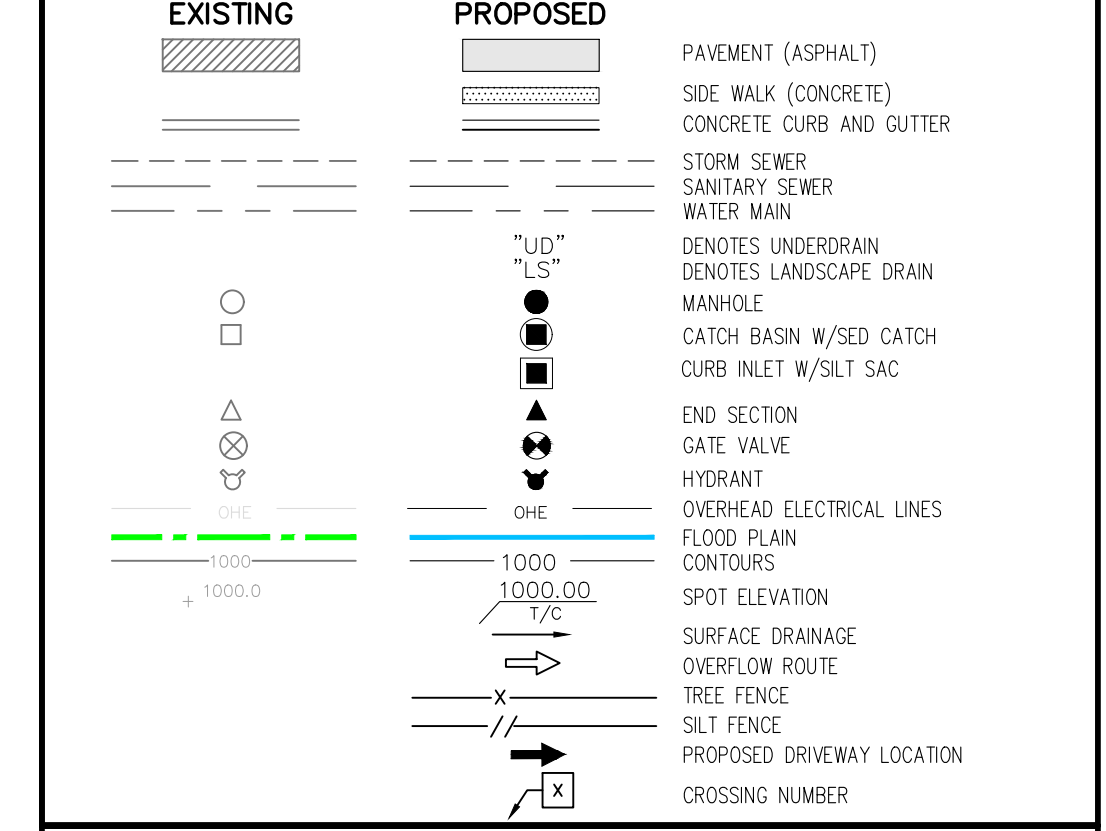
KEY MAP
SCALE: 1" = 500'

NOTES

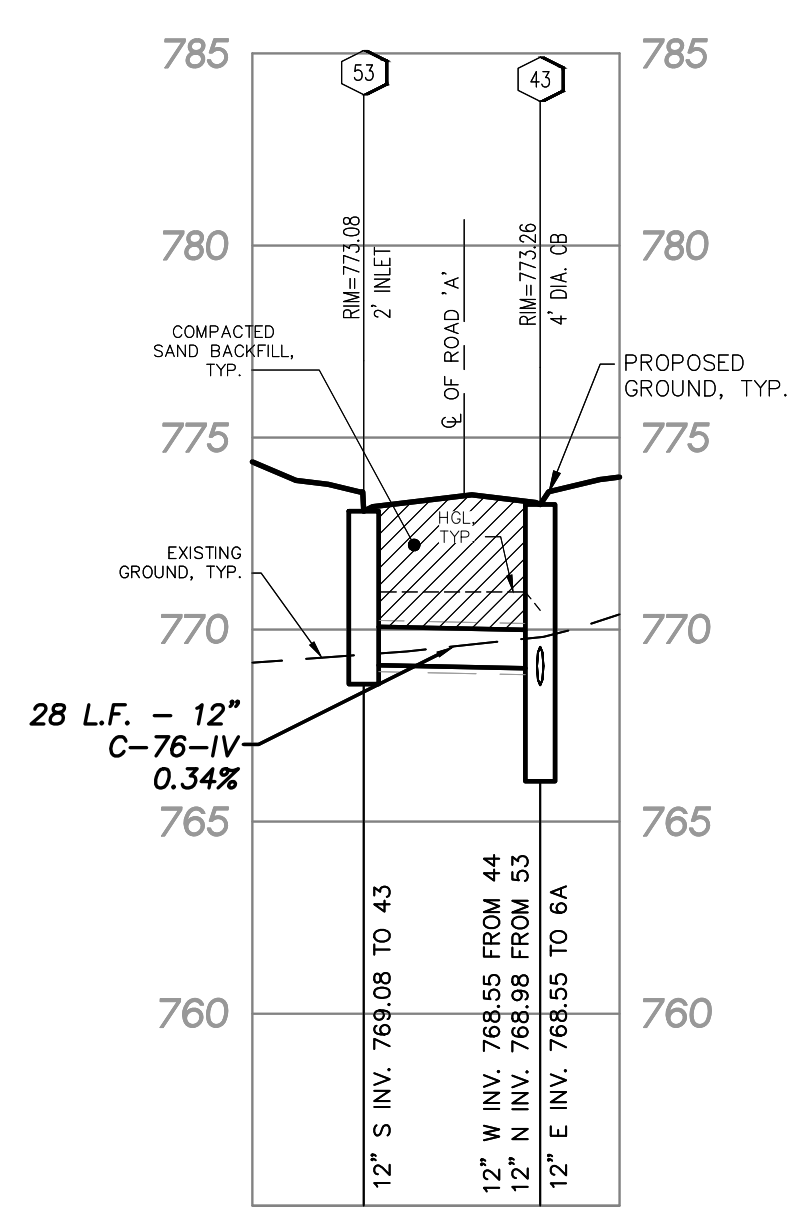
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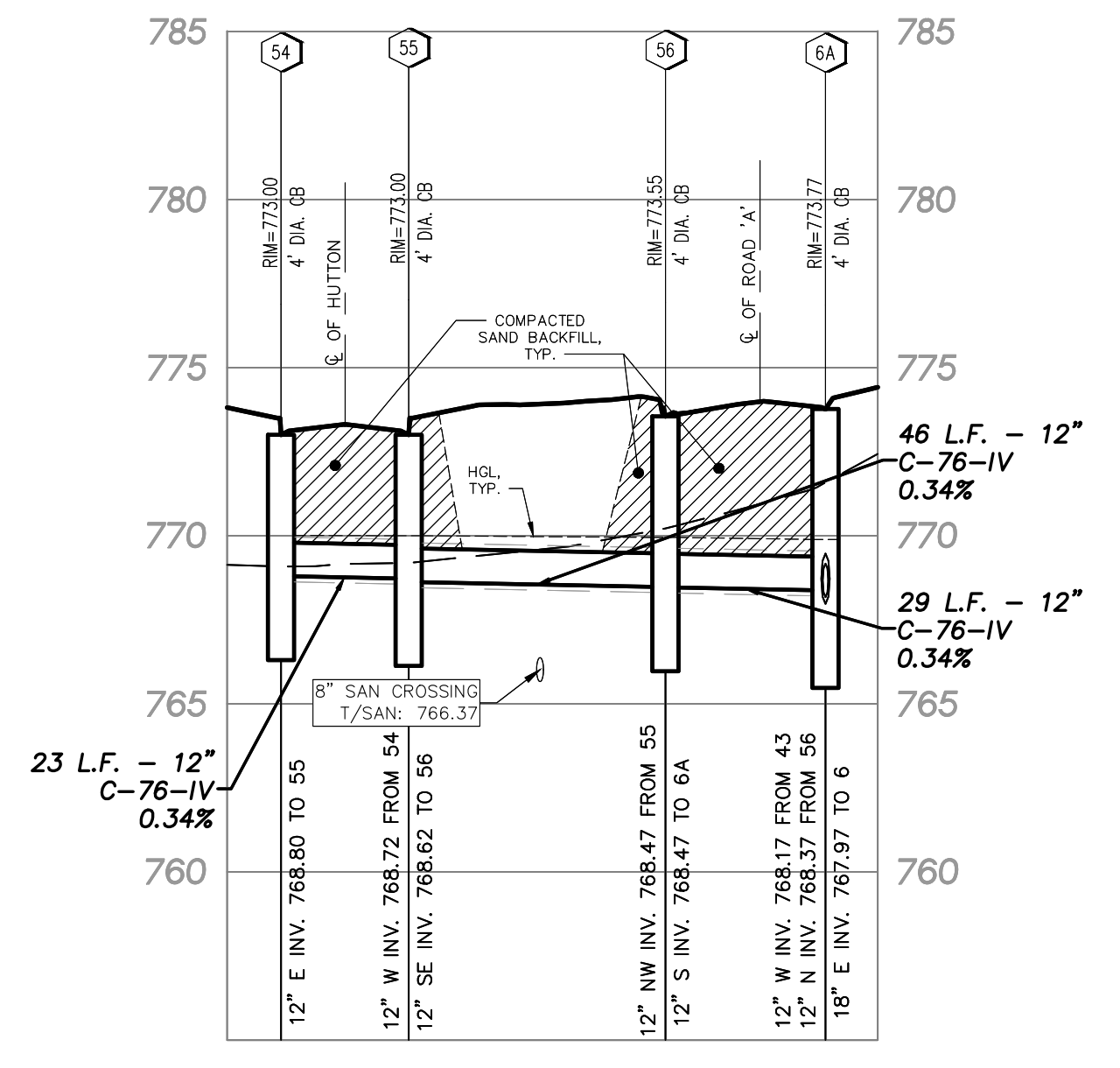
LEGEND



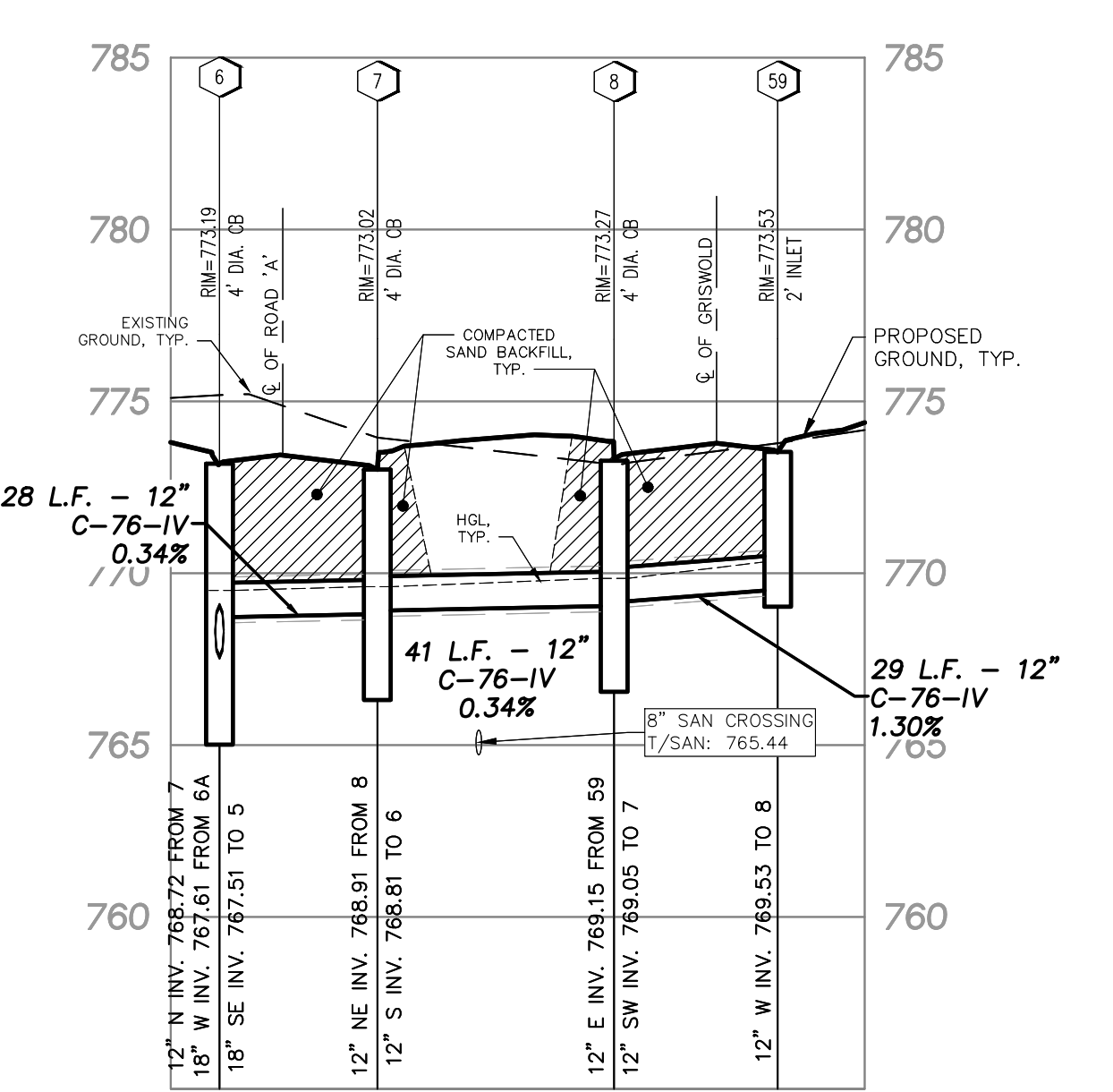
SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'



SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'



SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'



SCALE: HORIZONTAL: 1"=30'
VERTICAL: 1"=5'

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	DESCRIPTION	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
2.	S&P DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

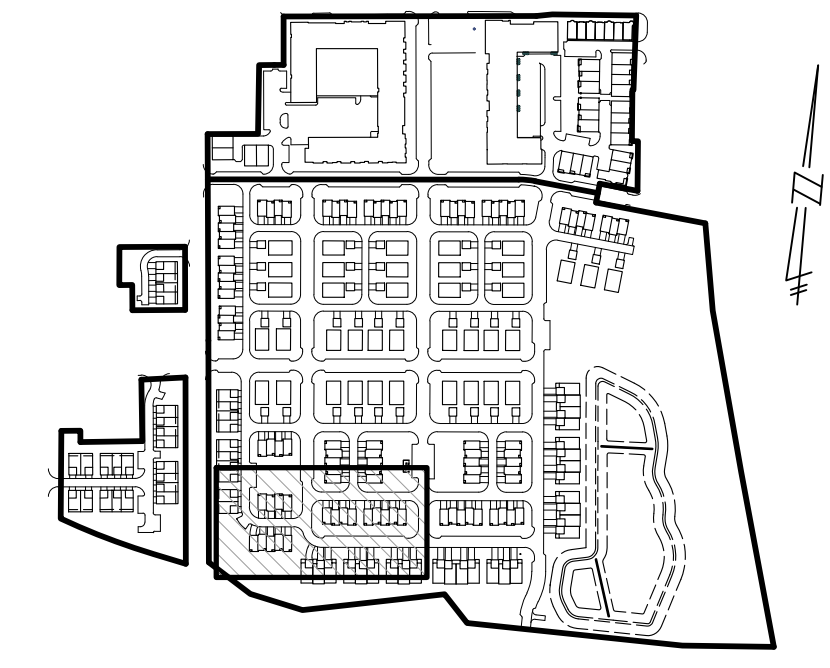
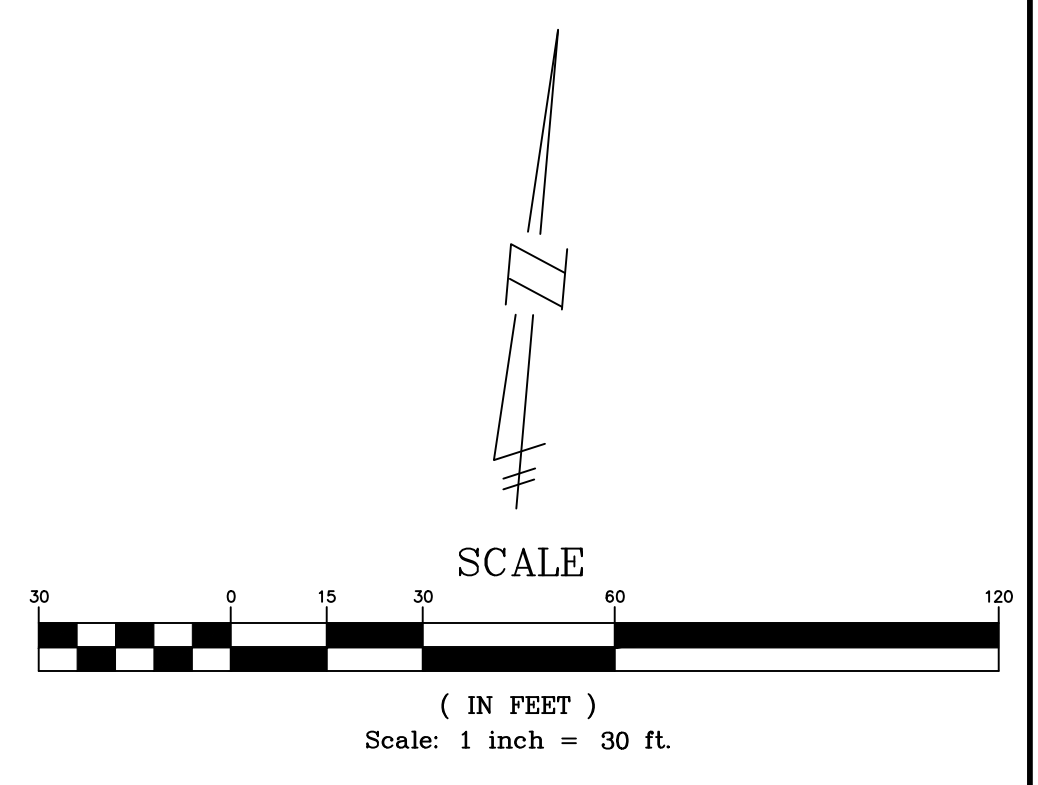
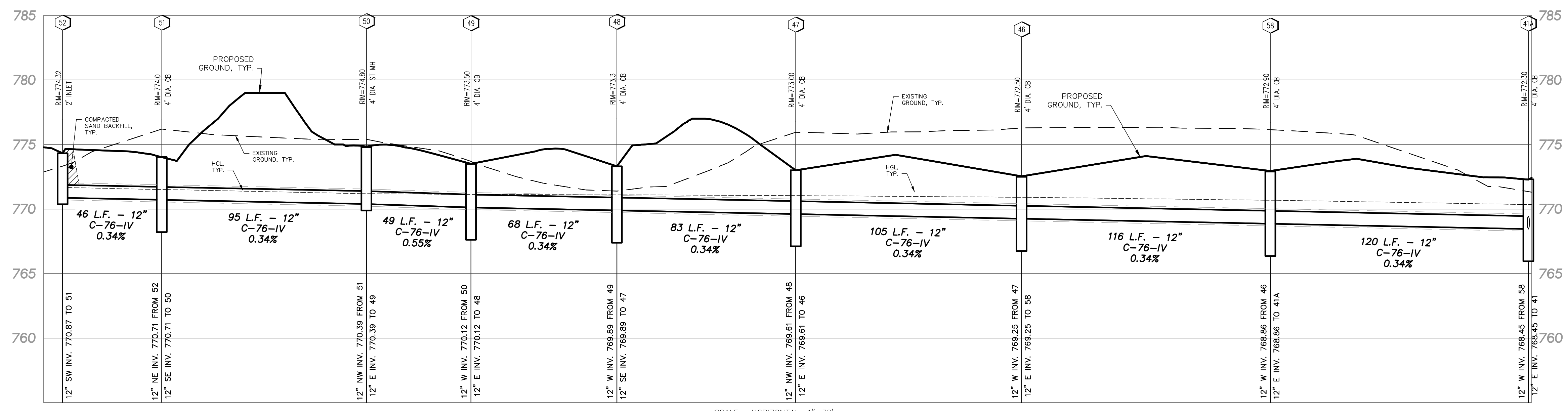
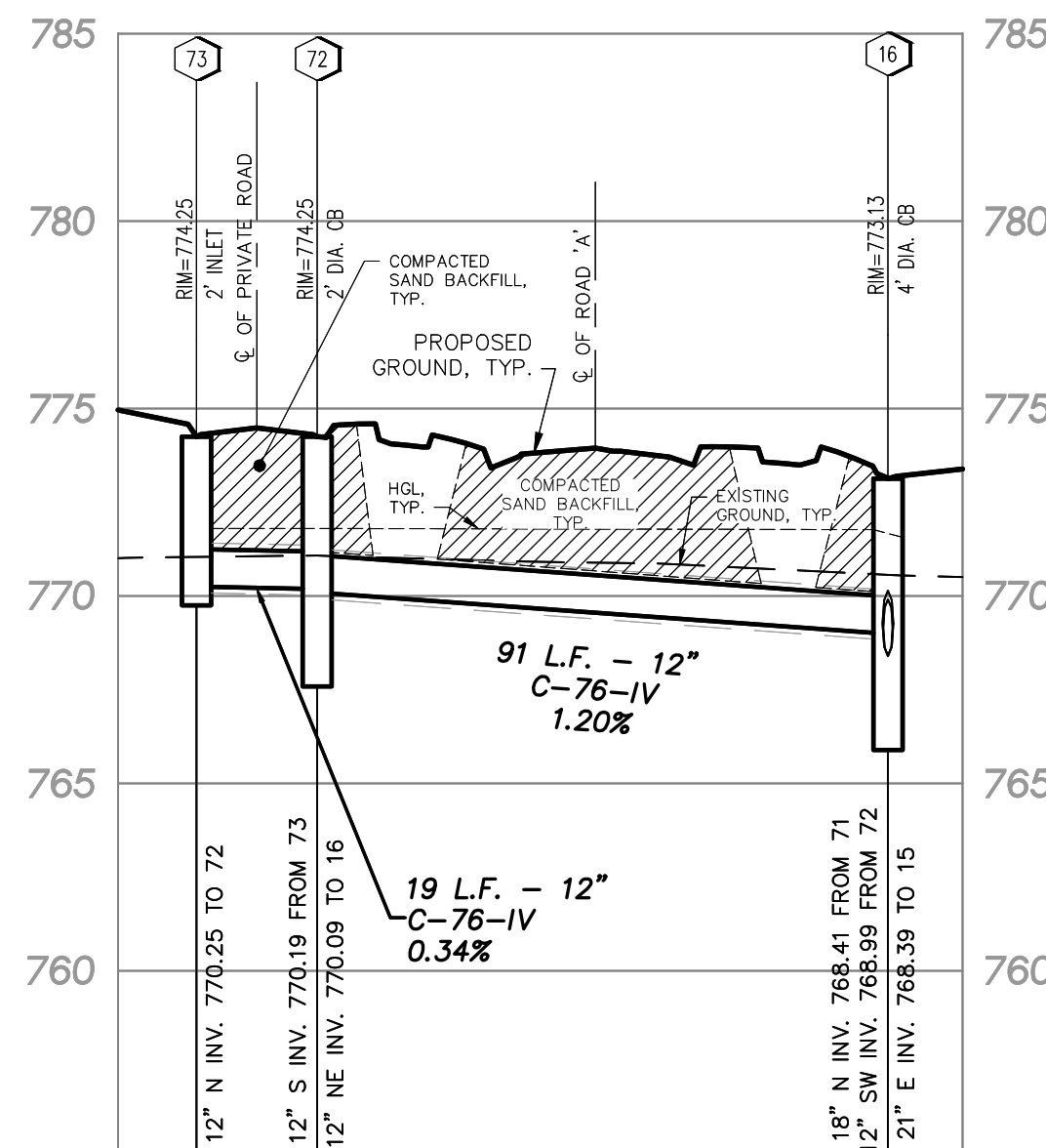
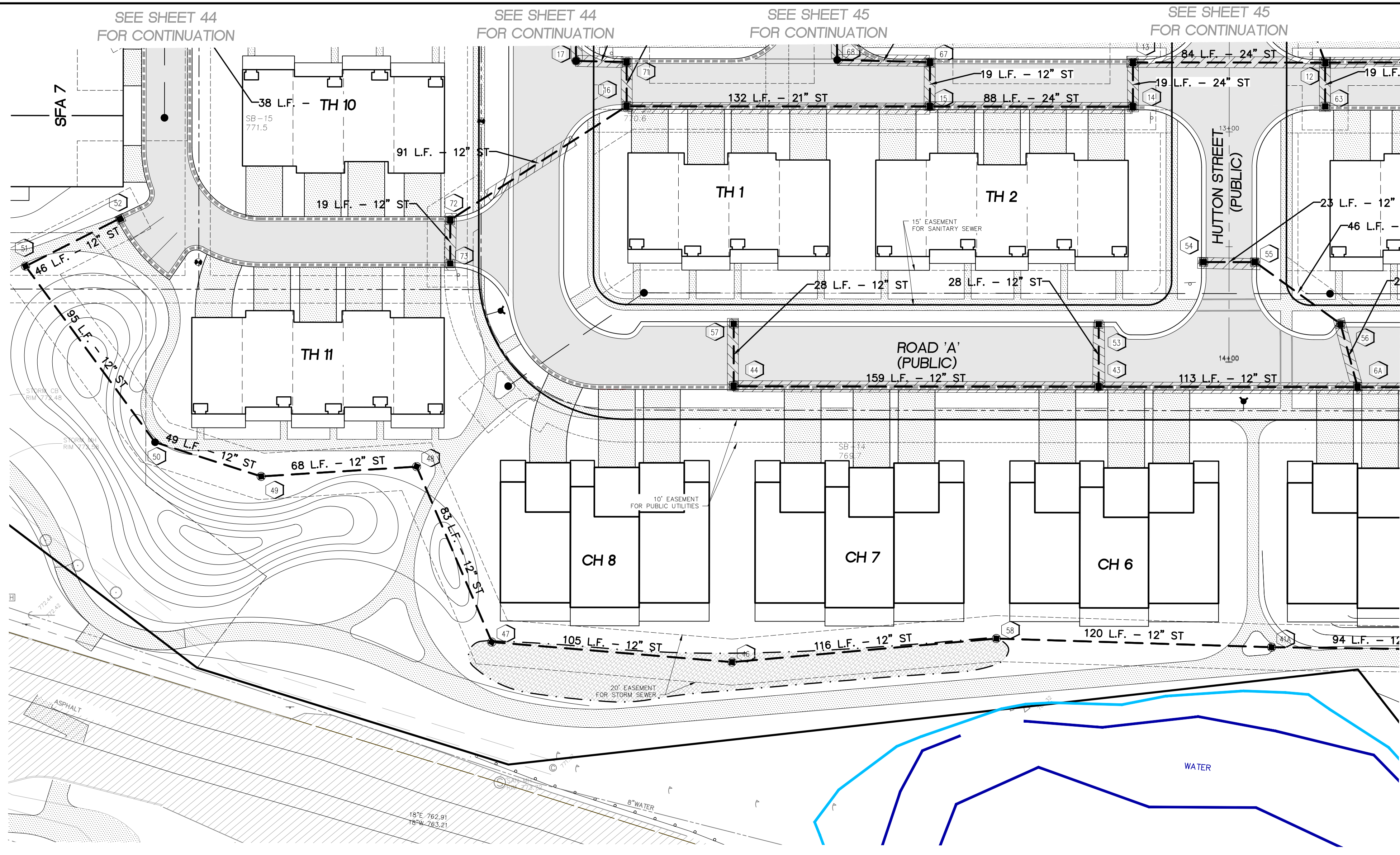
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: F.E. FILE: 21001-ST-RSP-P102.DWG

STORM SEWER PLAN AND PROFILE

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 46

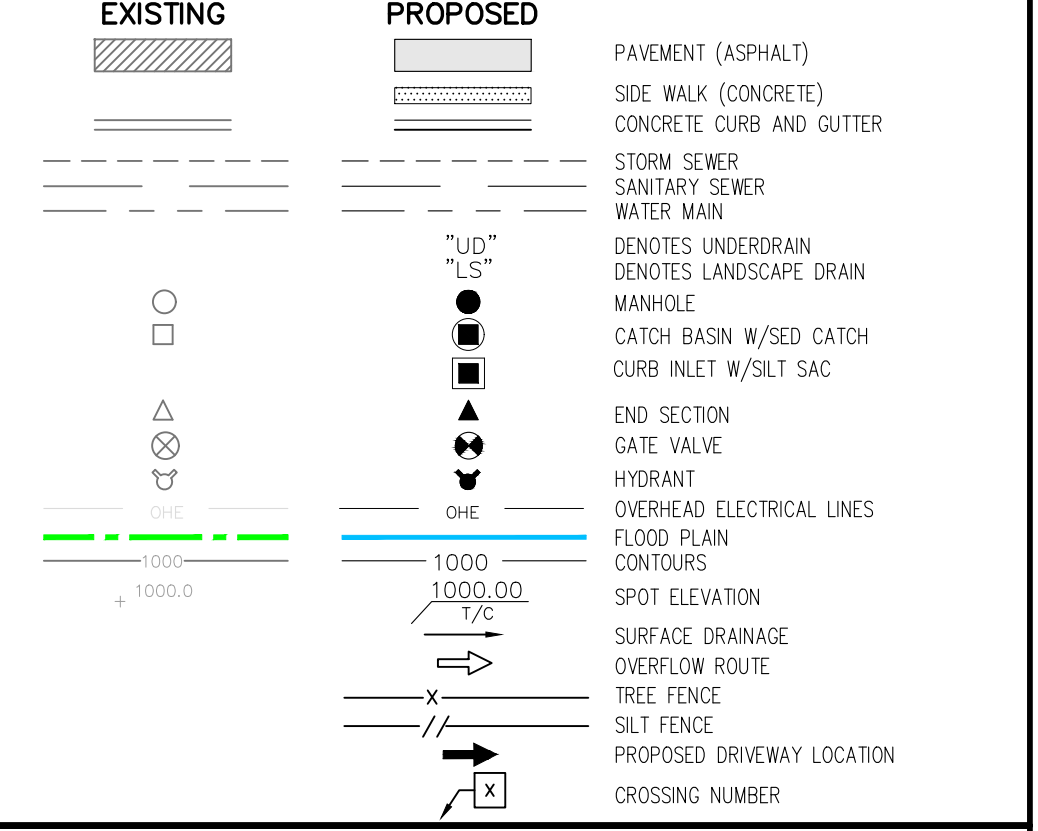


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LEGEND



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
2.	SITE DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

Know what's below.
Call before you dig.

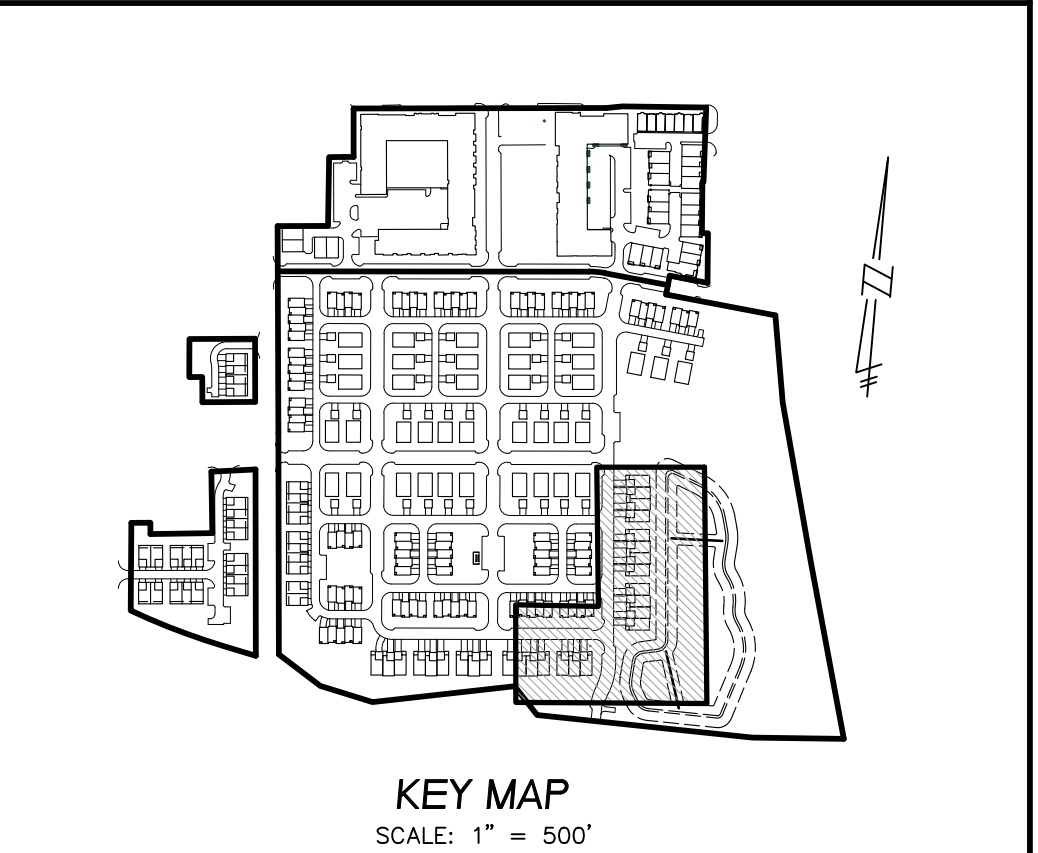
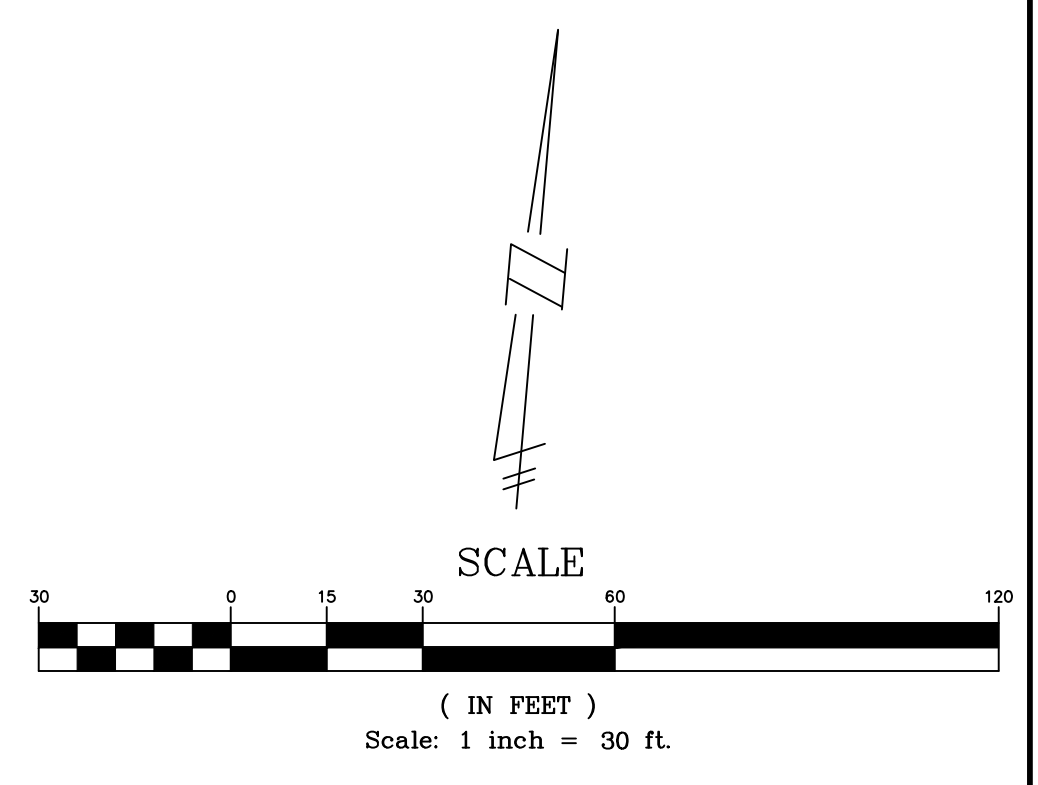
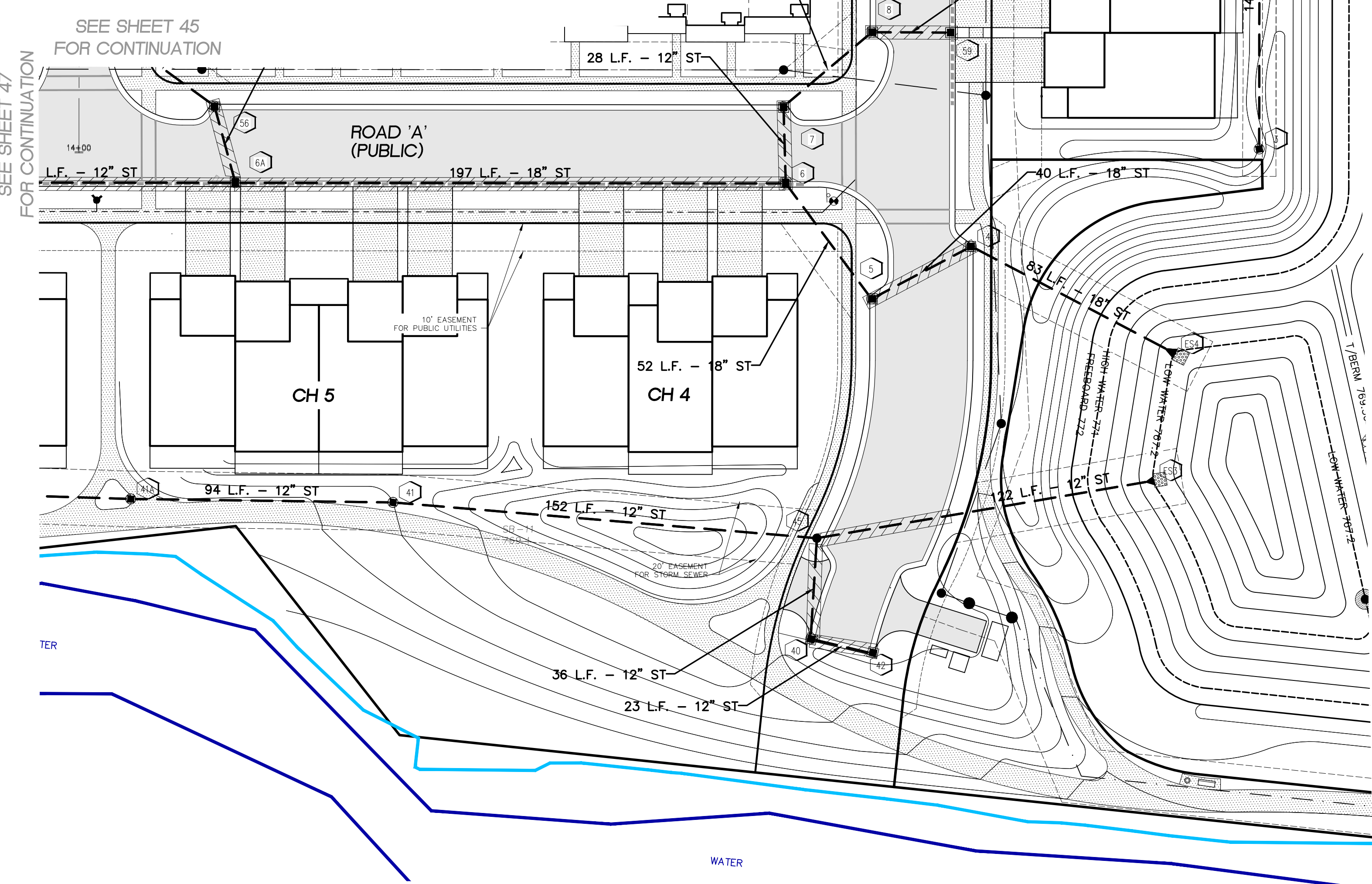
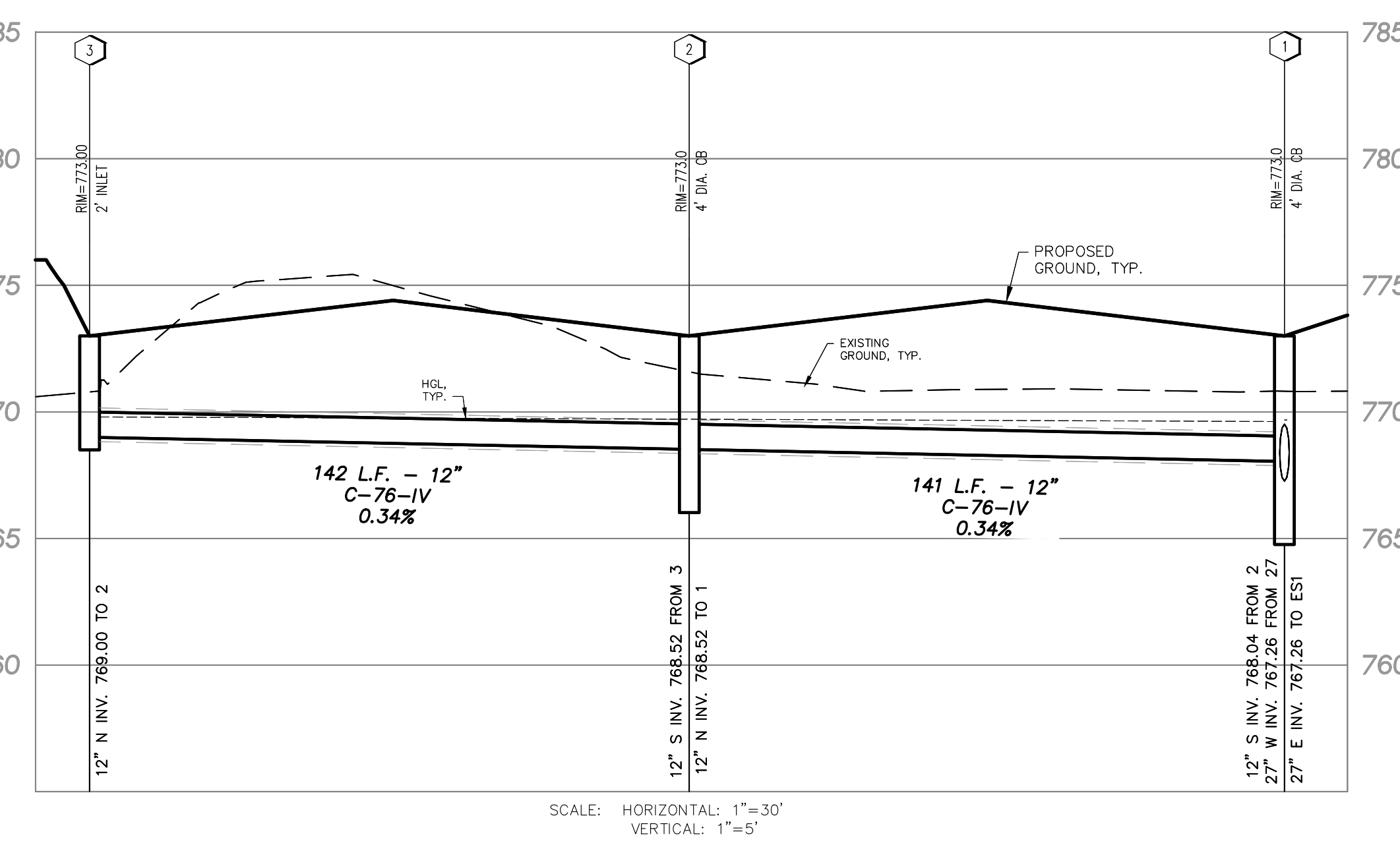
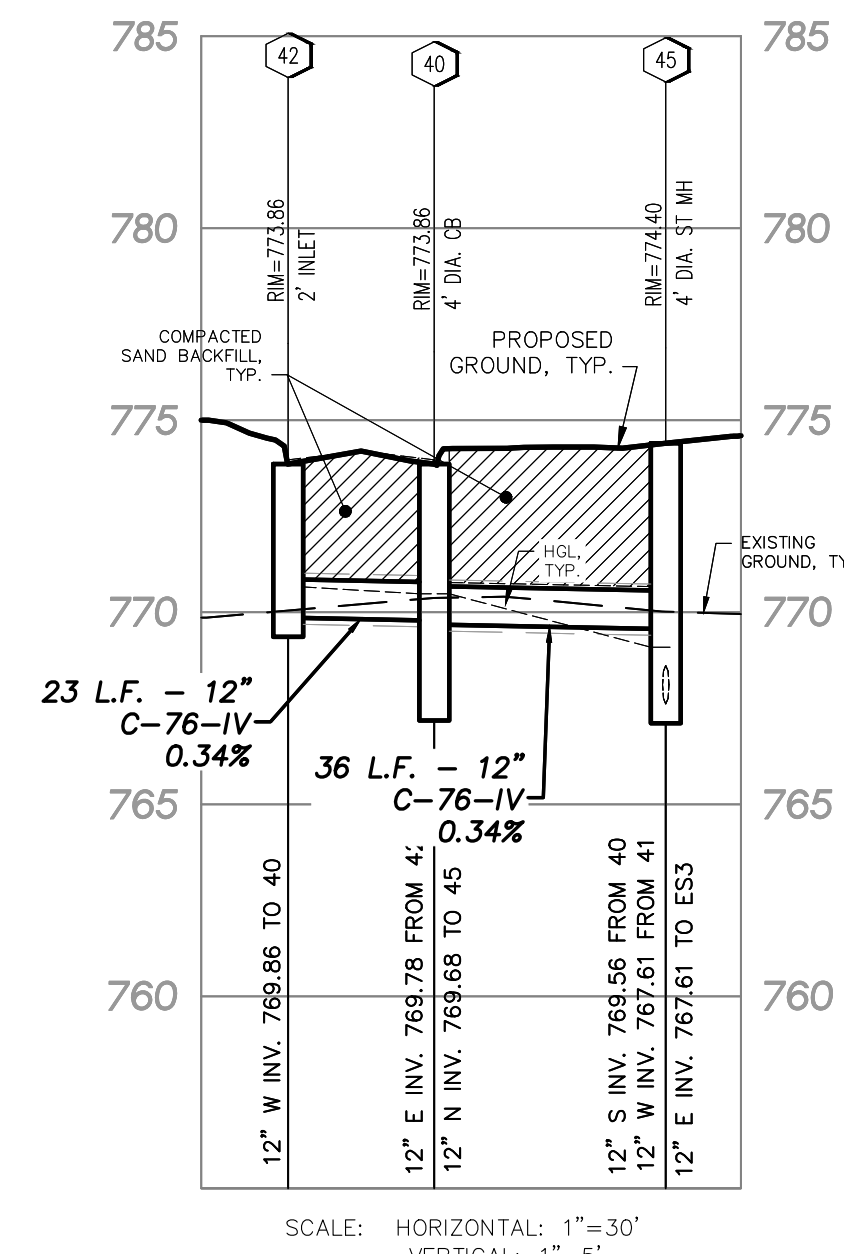
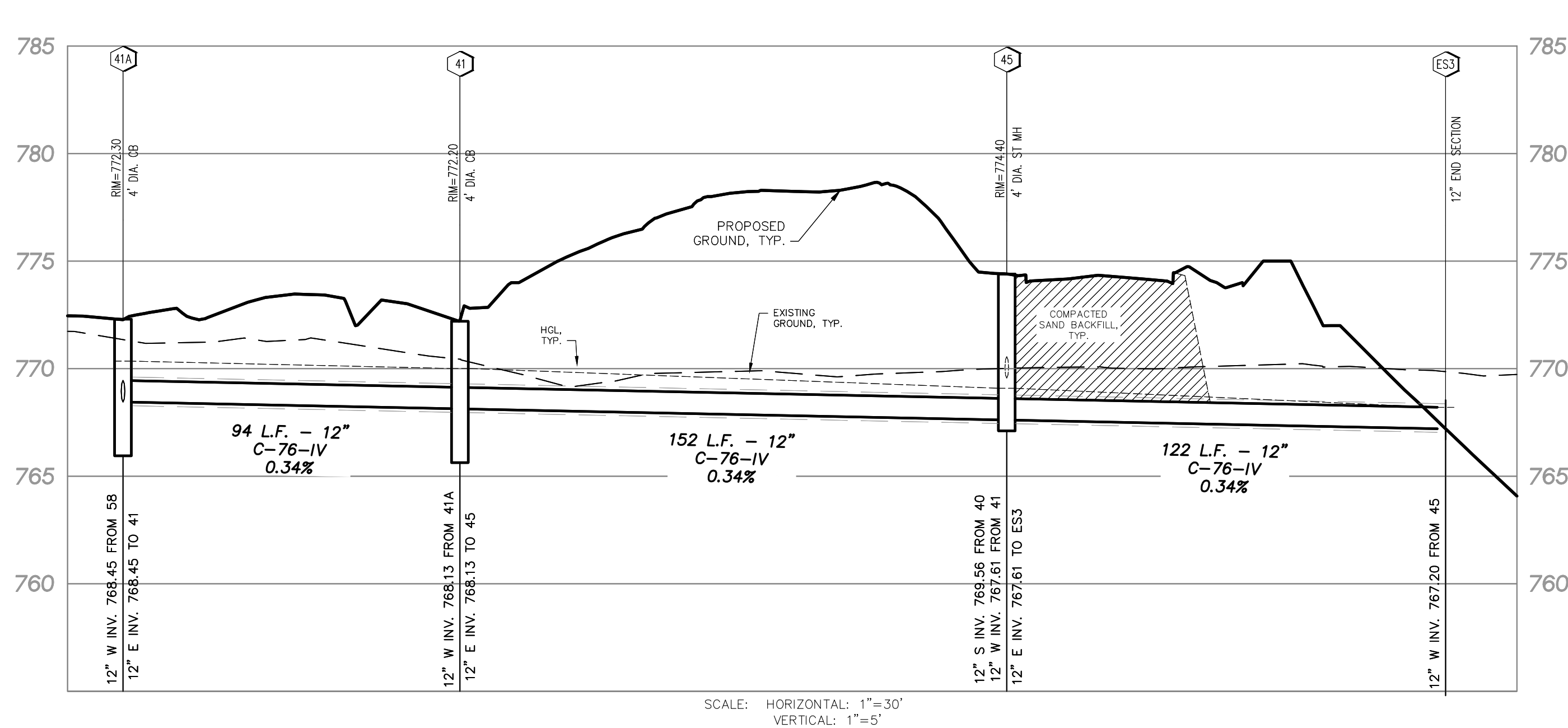
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DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-ST-PSF-PIS.DWG

STORM SEWER PLAN AND PROFILE

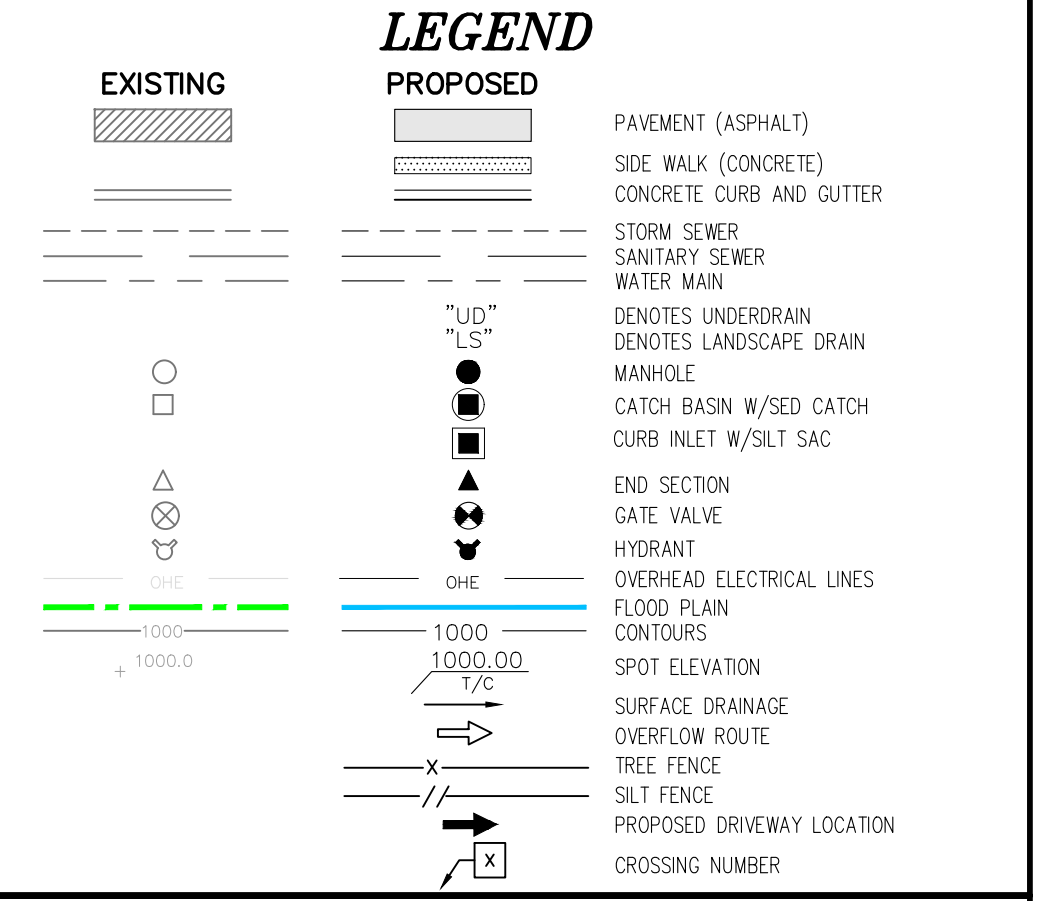
SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 47



- NOTES**
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THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
2.	S&B DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
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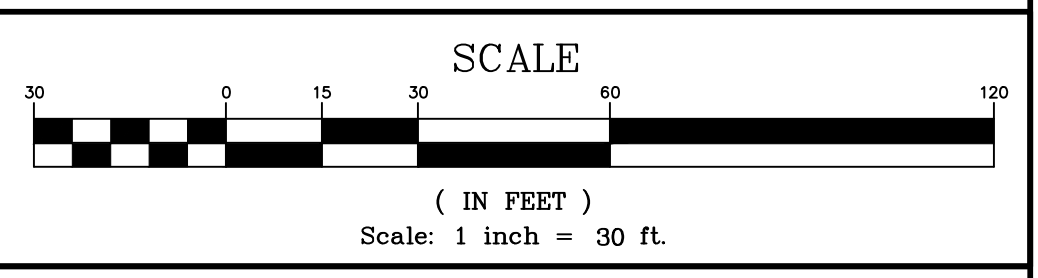
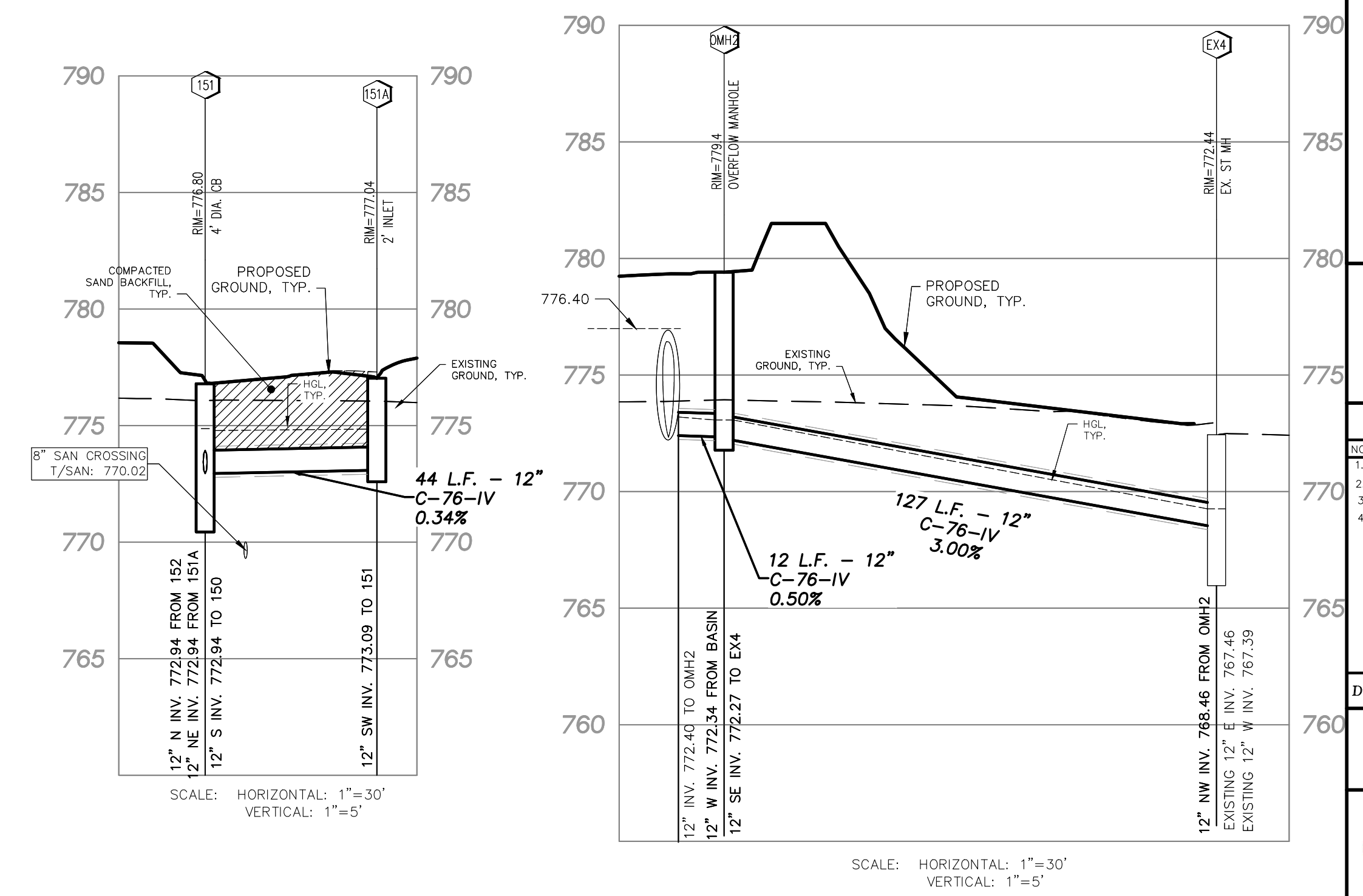
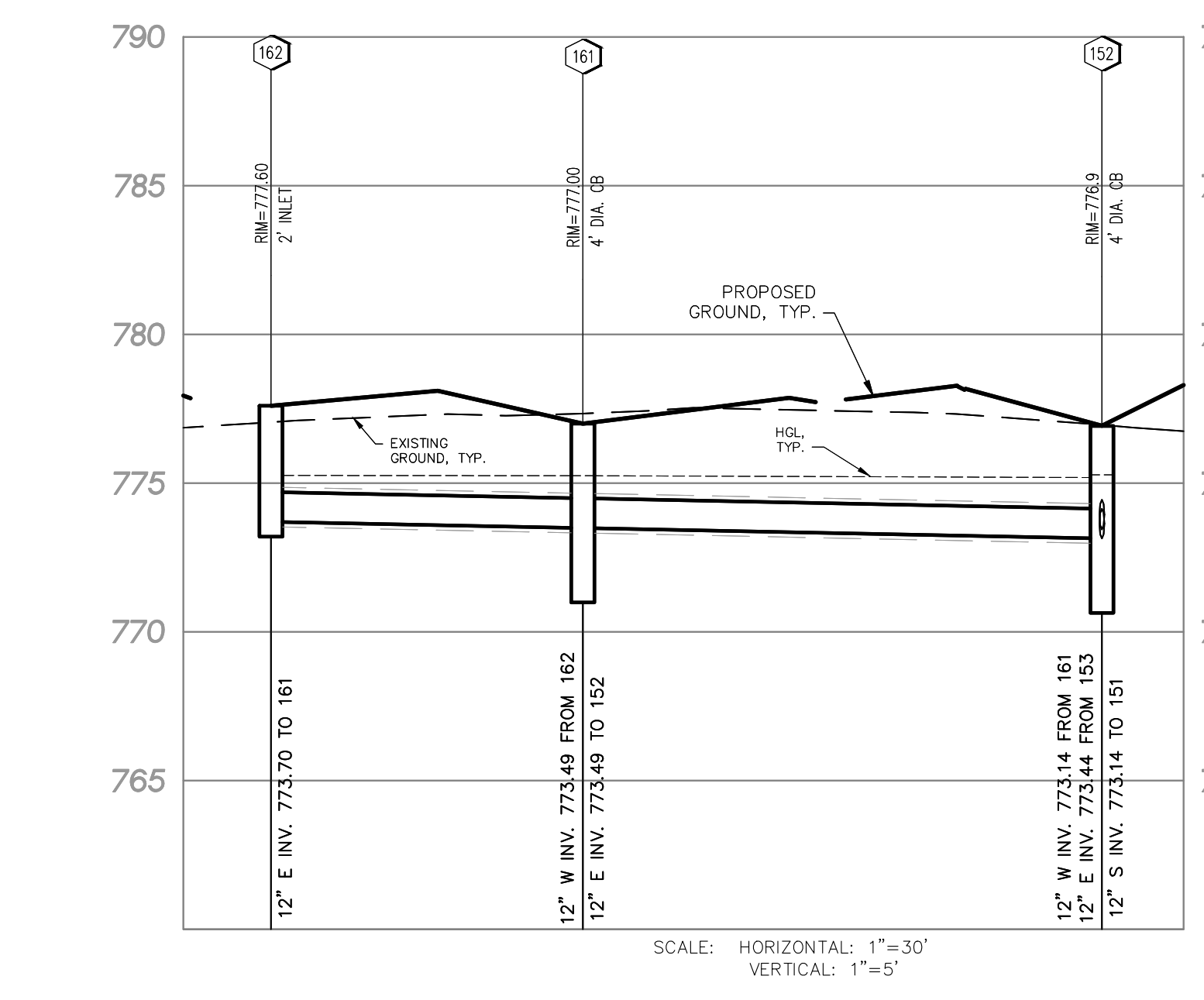
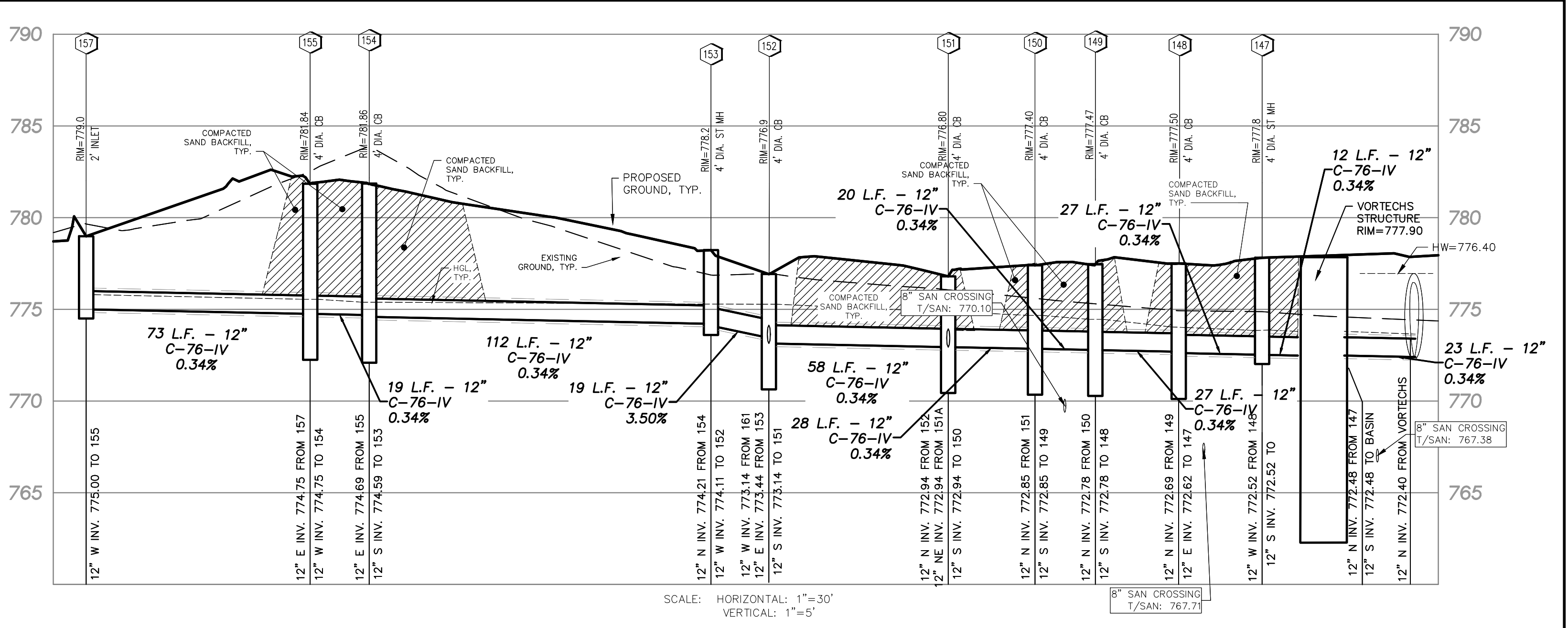
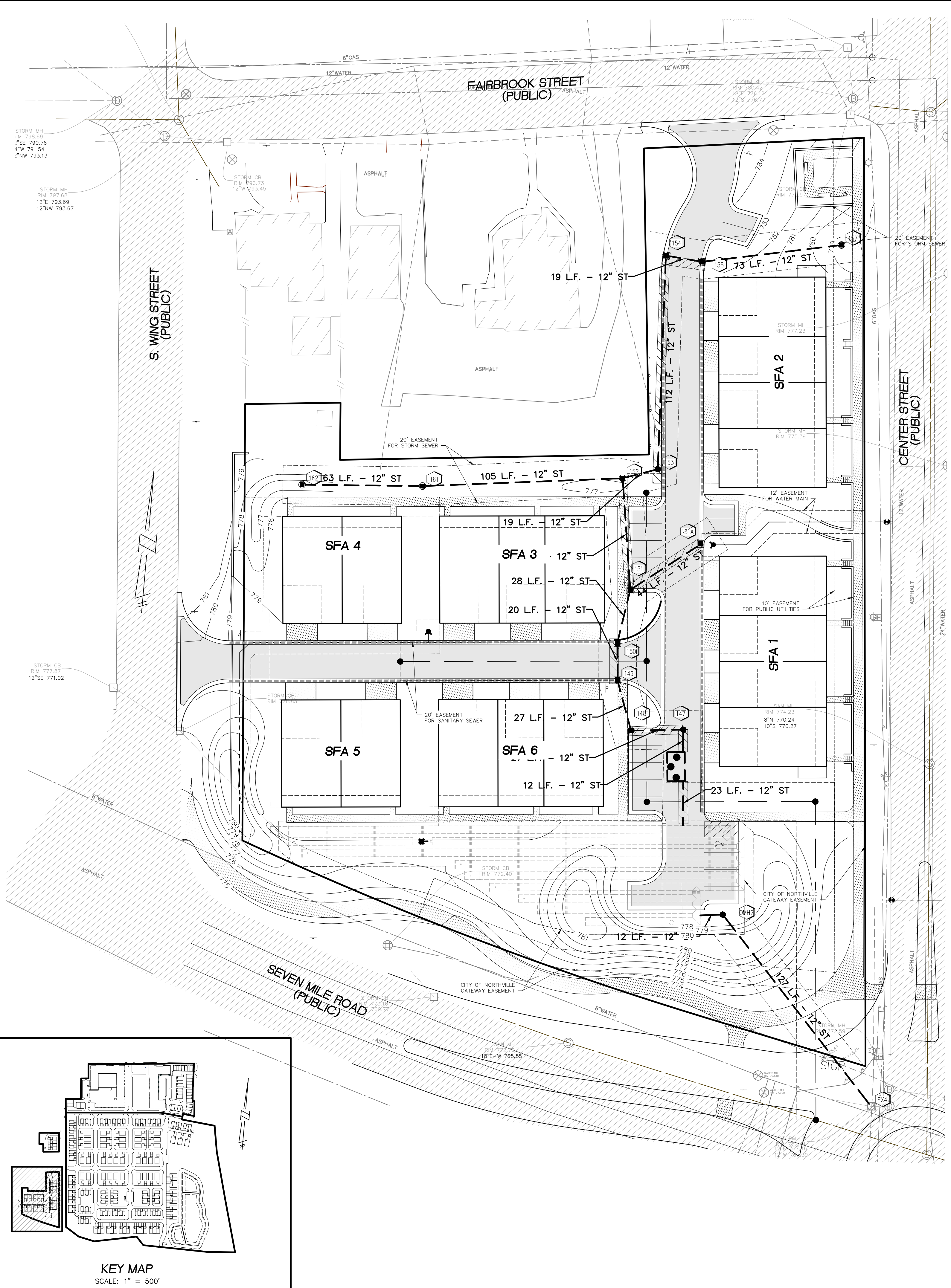
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DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: B.E. P.L.R.: 21001-ST-SP-PKG.DWG

STORM SEWER PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

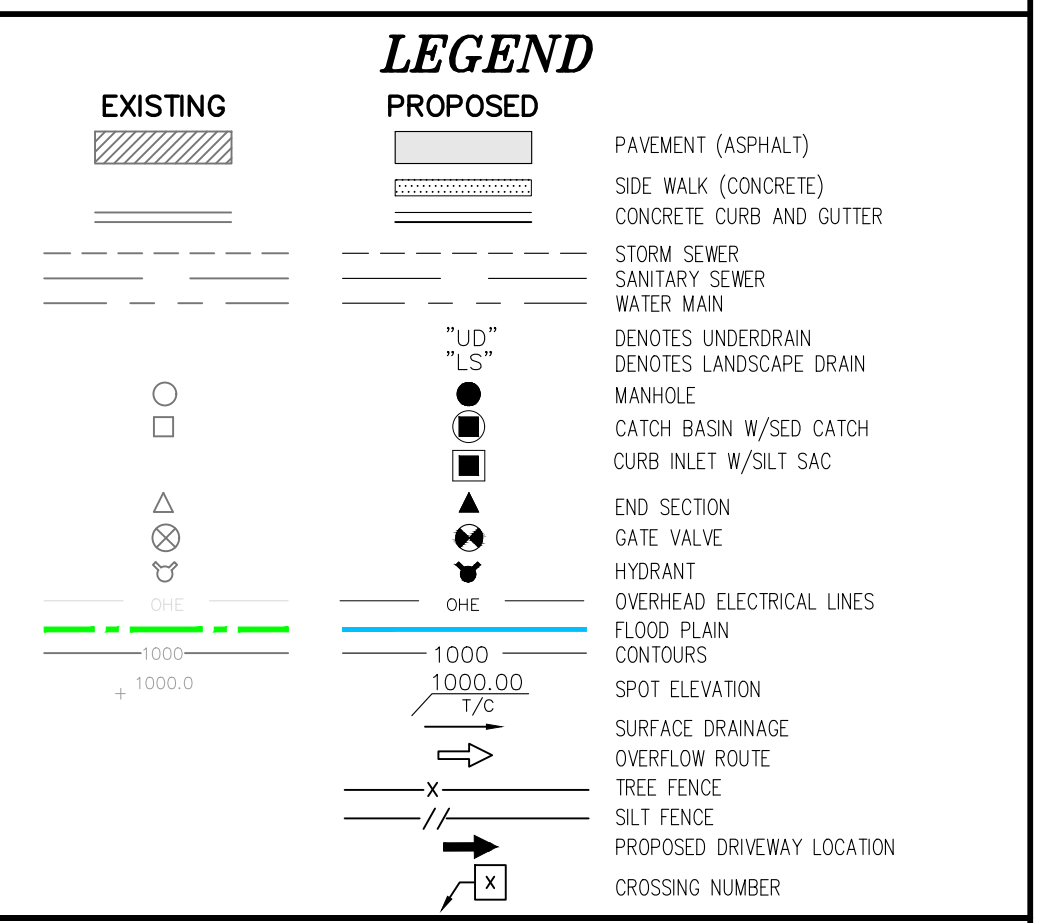
SHEET 48



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THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

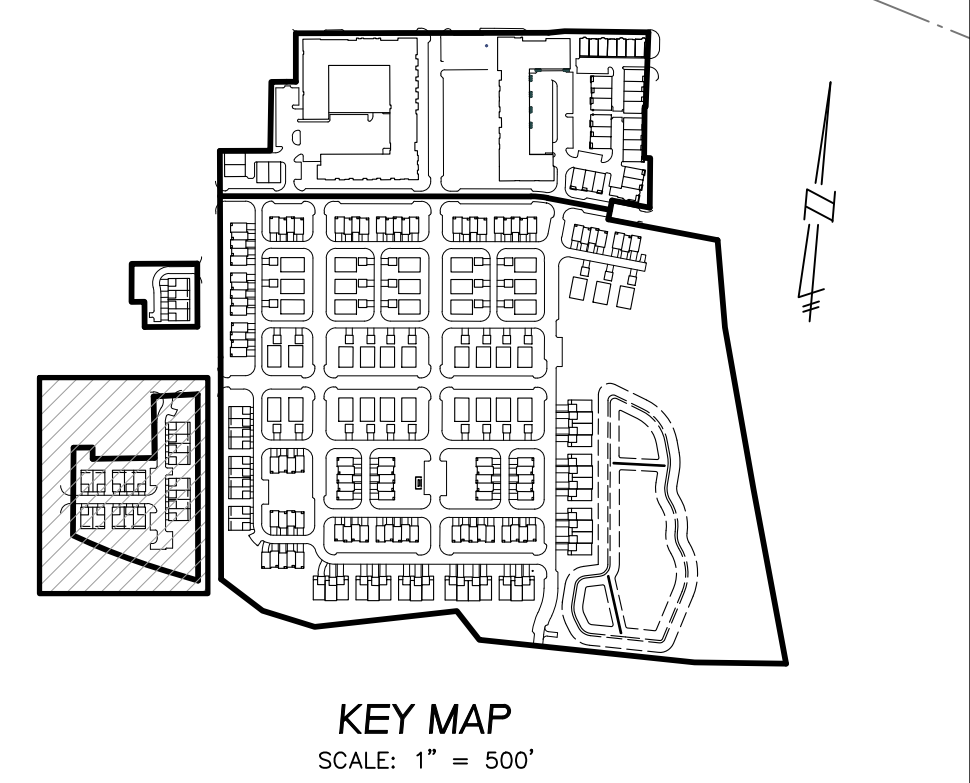
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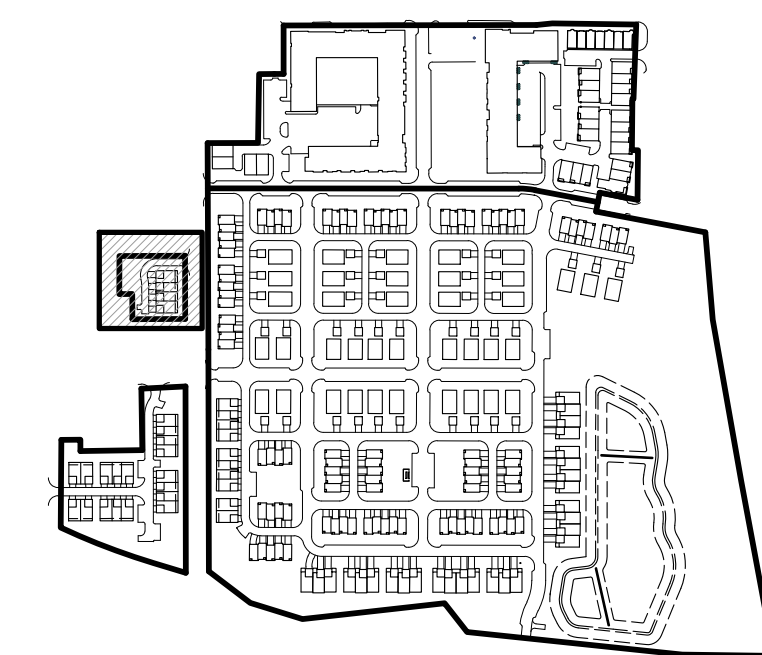
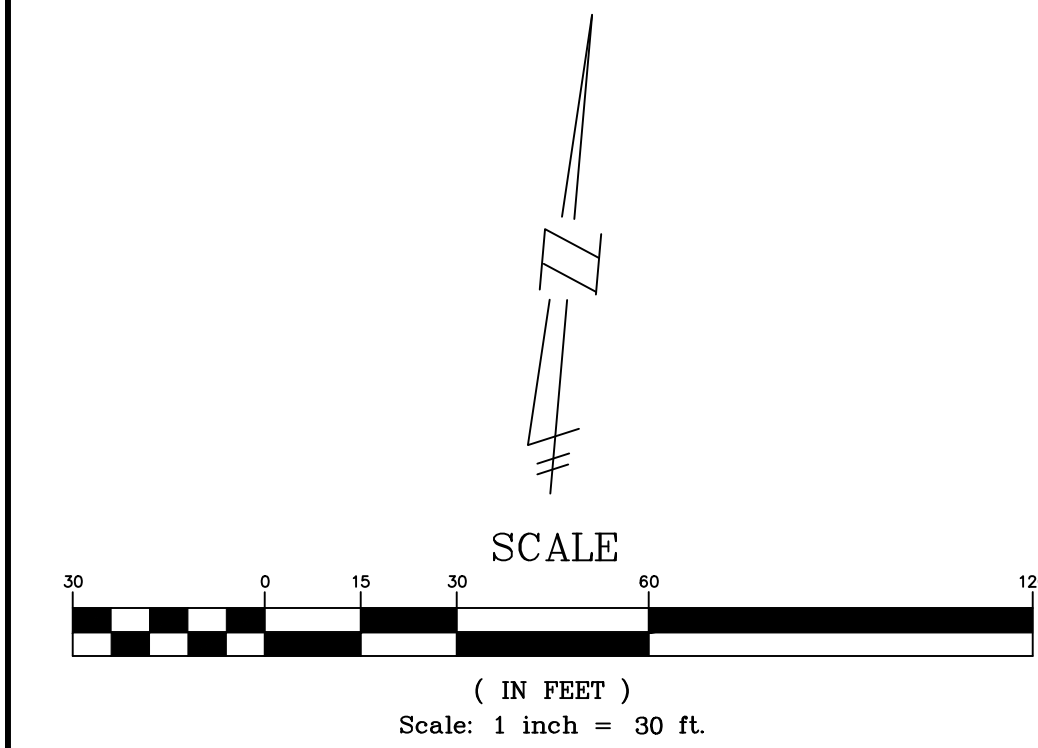
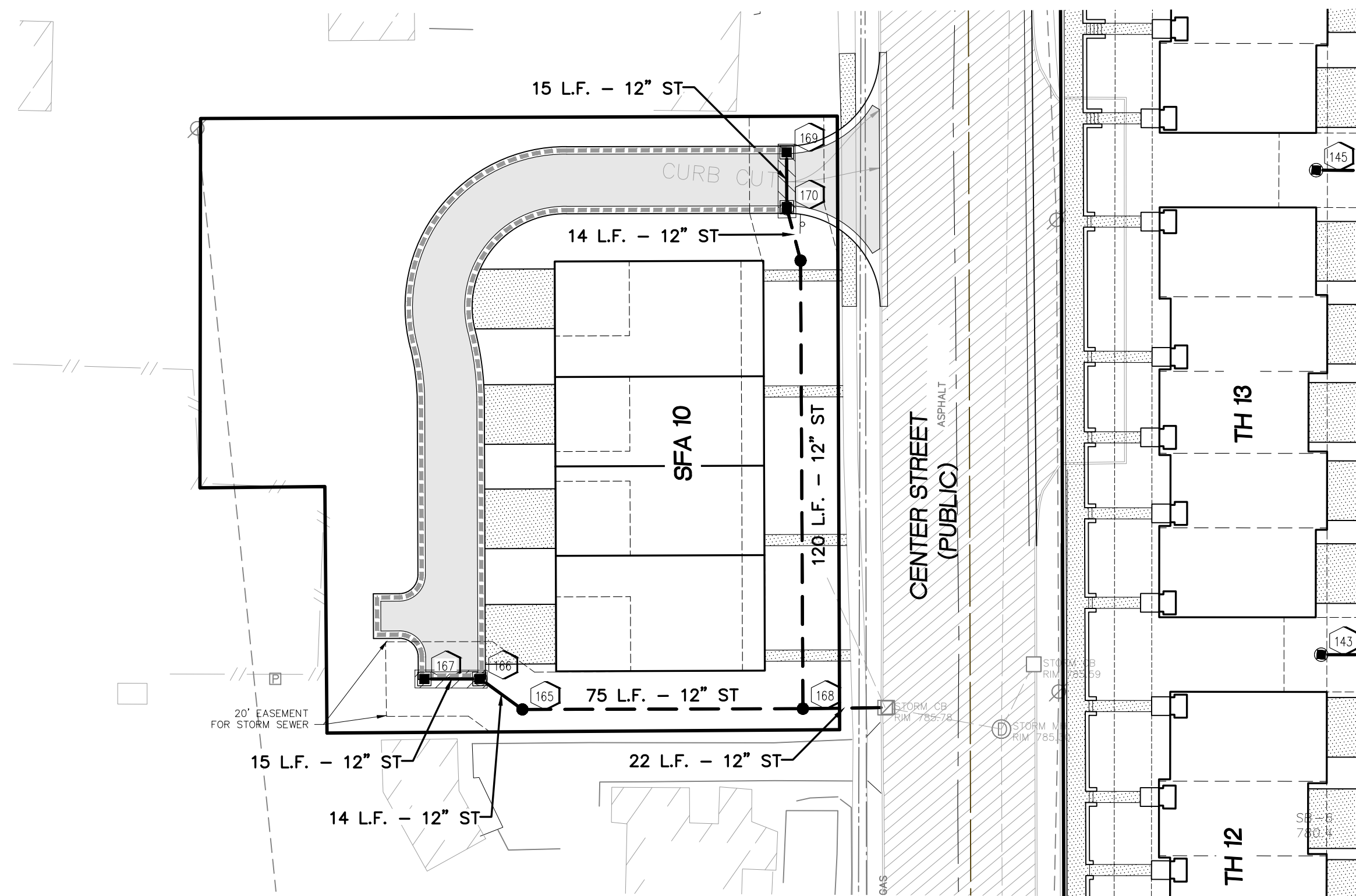
DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-ST-PSP-PKG.DWG

STORM SEWER PLAN AND PROFILE

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 49





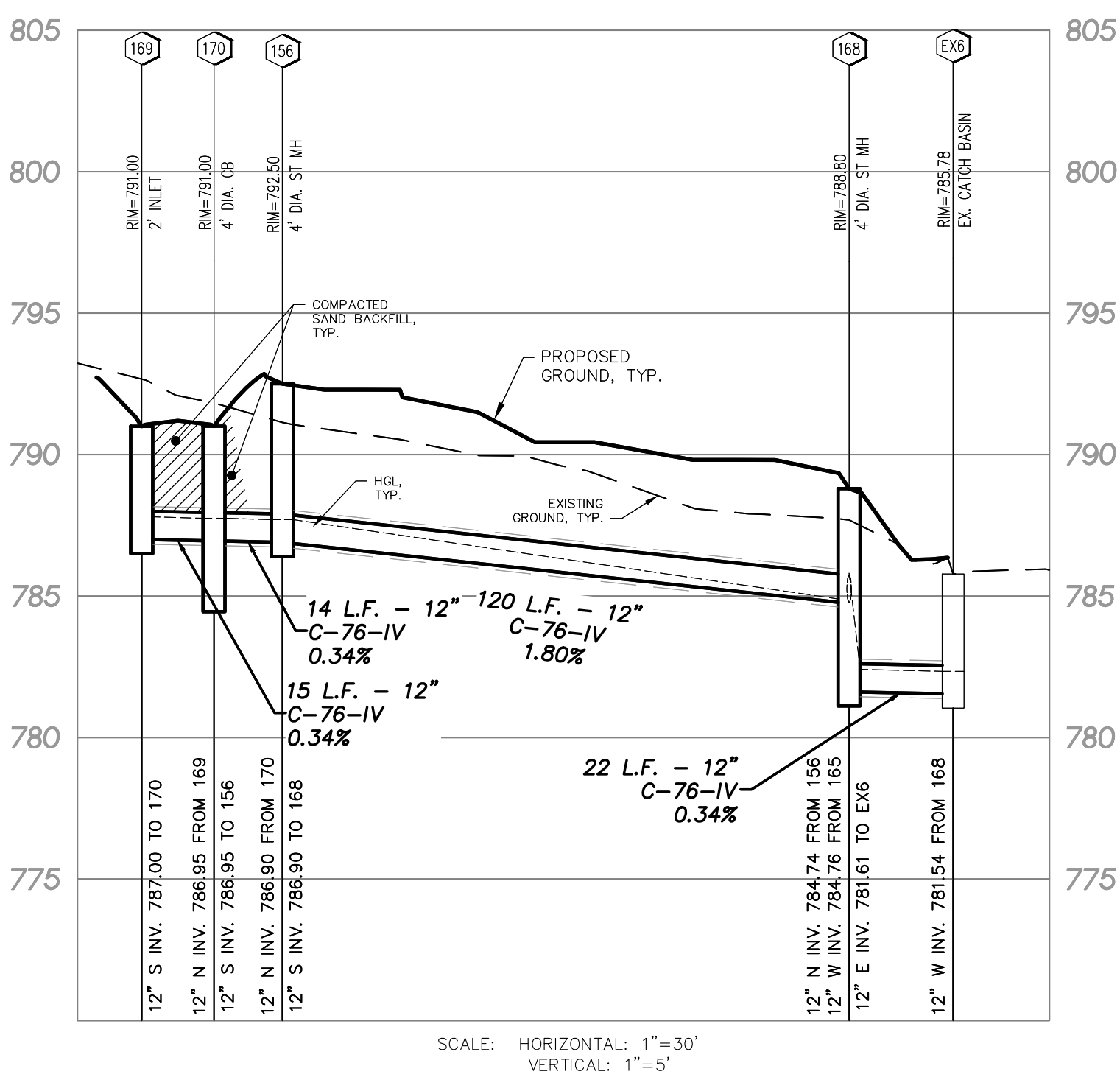
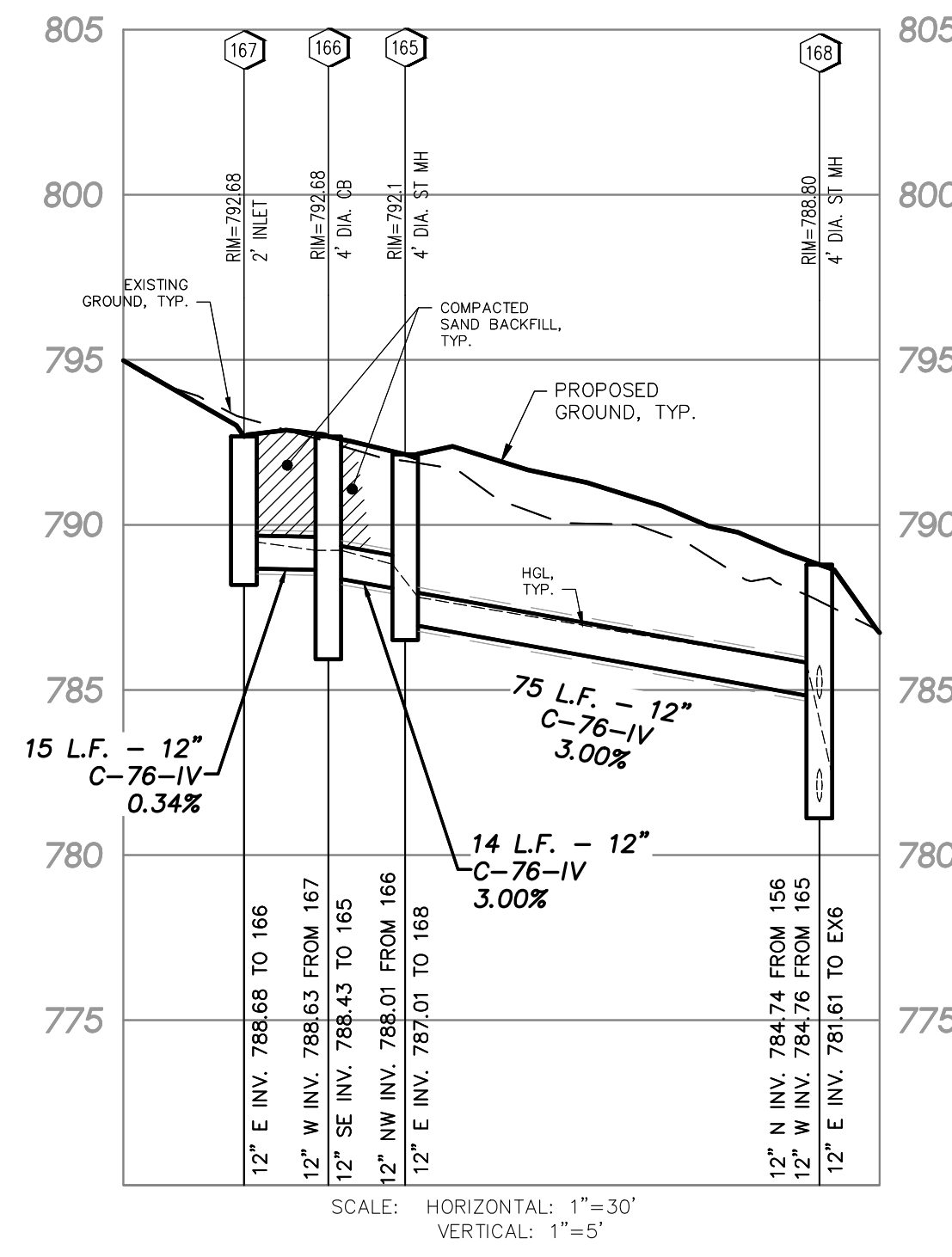
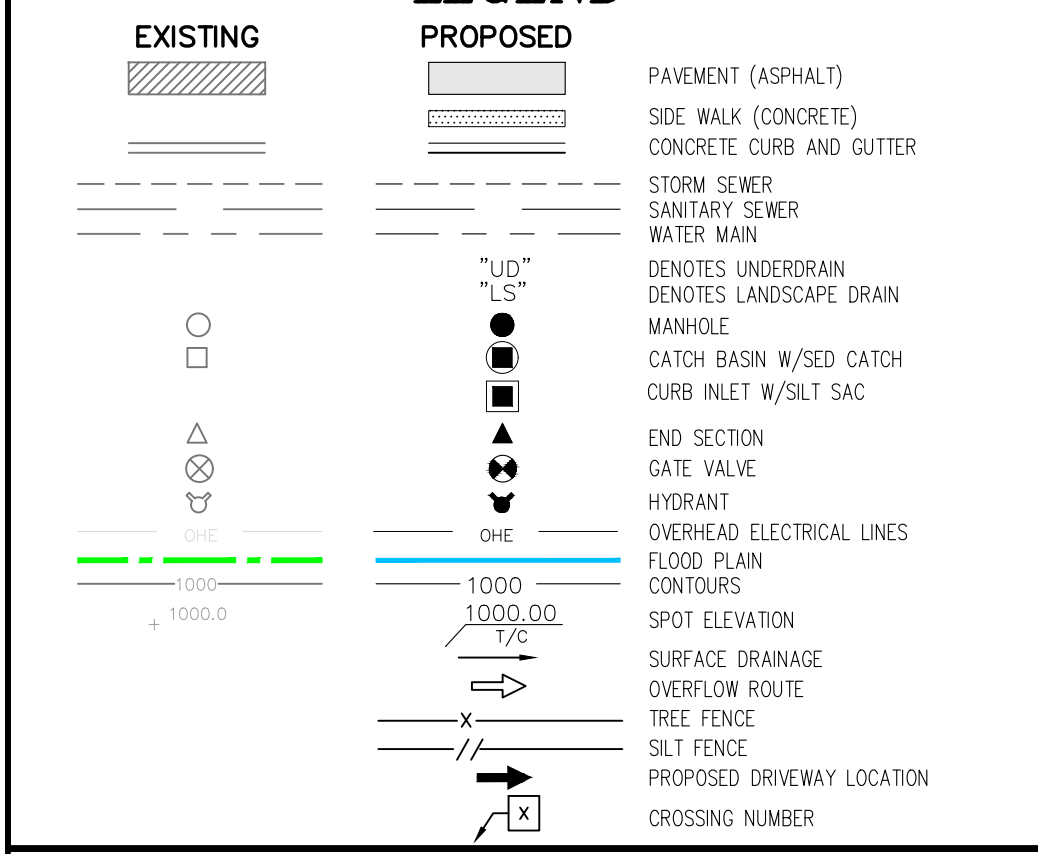
KEY MAP
SCALE: 1" = 500'

NOTES

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LEGEND



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TITLE SCHEMATIC DESIGN	06-10-2022
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3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

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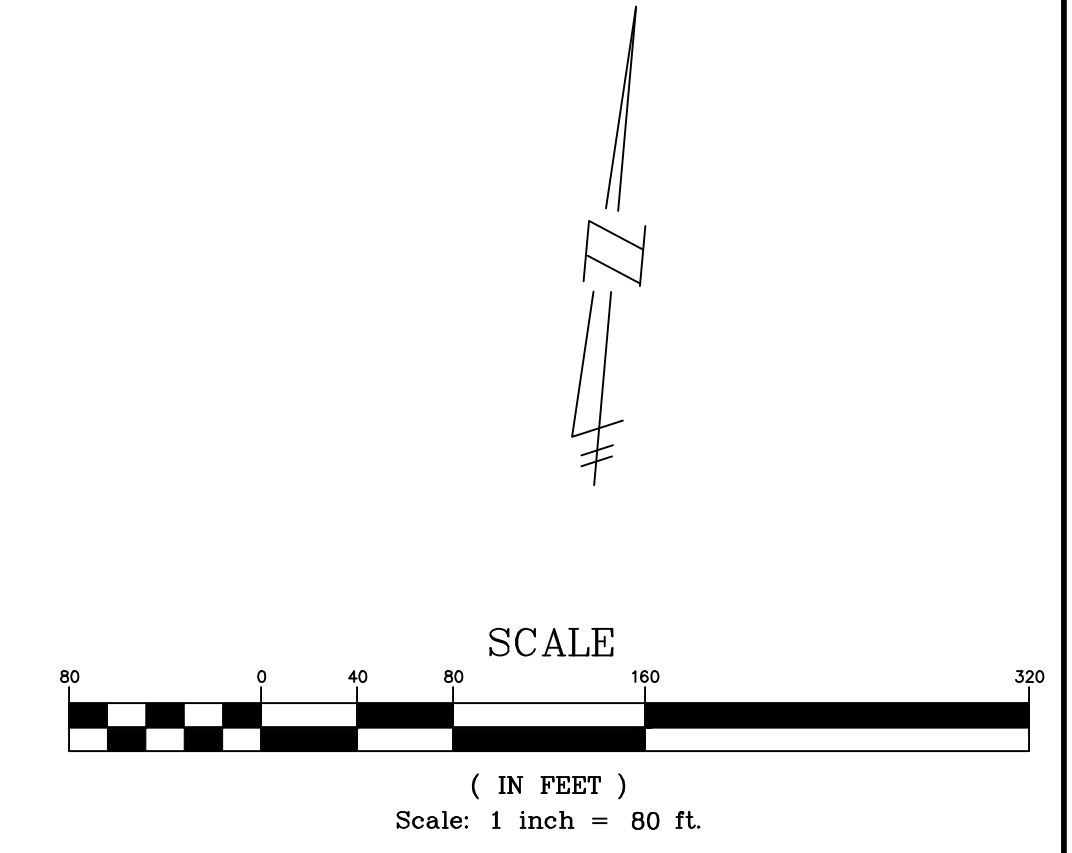
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CHECKED BY: E.E. FILE: 21001-ST-ISP-PIS.DWG

STORM SEWER PLAN AND PROFILE

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 50

P:\2023\THE DOWNS\THE DOWNS - 811\2023-04-25\2023-04-25-ISP-PIS.DWG 10/23/2023 11:54 AM



EXISTING		PROPOSED		
				PAVEMENT (ASPHALT)
				SIDE WALK (CONCRETE)
				CONCRETE CURB AND GUTTER
				STORM SEWER
				SANITARY SEWER
				WATER MAIN
				"UD" DENOTES UNDERDRAIN
				"LS" DENOTES LANDSCAPE DRAIN
				MANHOLE
				CATCH BASIN W/SED CATCH
				CURB INLET W/SILT SAC
				END SECTION
				GATE VALVE
				HYDRANT
				OVERHEAD ELECTRICAL LINES
				FLOOD PLAIN
				CONTOURS
				SPOT ELEVATION
				SURFACE DRAINAGE
				OVERFLOW ROUTE
				TREE FENCE
				SILT FENCE
				PROPOSED DRIVEWAY LOCATION
				CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
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2.	SOPR DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

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DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-00-FSP-P02 - LAYOUT1.DWG

DRAINAGE DISTRIBUTION PLAN

<p>SEIBER KEAST LEHNER ENGINEERING SURVEYING</p> <p>39205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 PHONE: 248.308.3331</p>	<p>SHEET 52</p>
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DETENTION BASIN CALCULATIONS: AREA 1

$W_{Ac} = 29.88$ Ac Area 1
 $C = 0.60$
DETERMINE VOLUME REQUIRED IN BASIN FOREBAYS - FIRST FLUSH
 Area (North) = 21.63 Ac
 $V_{1st} = 1815 * Ac * C = 1815 * (21.63 Ac) * (0.60) = 23,445$ ft³
 $Q_{1st} = V_{1st} / 86400 = (23,445) / (86400) = 0.27$ cfs

DETERMINE VOLUME REQUIRED IN BASIN FOREBAYS - FIRST FLUSH
 Area (South) = 5.68 Ac
 $V_{1st} = 1815 * Ac * C = 1815 * (5.68 Ac) * (0.60) = 6,157$ ft³
 $Q_{1st} = V_{1st} / 86400 = (4,953) / (86400) = 0.07$ cfs

Storage Provided in Forebay

Elevation (ft)	Area (ft ²)	Inc. Vol. (ft ³)	Cum. Vol. (ft ³)
767.2	11541	0	0
768	13840	10152	10152
769	16858	15349	25501
770	19677		
771	22620		

Storage Provided in Forebay

Elevation (ft)	Area (ft ²)	Inc. Vol. (ft ³)	Cum. Vol. (ft ³)
767.2	6020	0	0
768	7699	5491	5491
769	9984	8842	14333
770	12198		
771	14016		

Spillway Inv = 769.0 ft
 $Z_{100} = 768.87$ ft

DETERMINE BANK FULL FLOOD STORAGE VOLUME
 $V_{100} = 5160 * Ac * C = 92,084$ ft³
 $V_{100} = V_{100} - V_{100} = 92,084 - 21,862 = 70,222$ ft³
 $Q_{100} = V_{100} / 144000 = 70,222 / 144000 = 0.49$ cfs

DETERMINE DETENTION REQUIREMENTS (100-YEAR STORM)

$Q_{100} = 29.88 * 0.15 = 4.48$ cfs (0.15 cfs/Ac)
 $T_{100} = 45 + \sqrt{Q_{100}} = 45 + \sqrt{4.48} = 49.68$ min
 $V_{100} = (17649 * T_{100} / (1 + 45 * Q_{100} * T_{100})) = 12,452$ ft³/Ac Imp.
 $V_{100} = V_s * Ac * C = 222207 * 29.88 * 0.60 = 222,207$ ft³
 $V_{100} = 222207 - 21862 = 200,345$ ft³

Elevation (ft)	Area (ft ²)	Inc. Volume (ft ³)	Cum. Vol. (ft ³)
767.0	40192	0	0
768.0	46200	43196	43196
769.0	52503	26842	70038
770.0	59065	31875	101913
771.0	63802	36636	138549

$Z_{100} = 768.39$ ft
 $Z_{100} = 771.00$ ft

OPEN DETENTION BASIN 1 LAND USE SUMMARY

Characteristic	Existing Conditions	Proposed Conditions
Total Development Area (ac)	29.88	29.88
Impervious Area (ac)	11.77	15.73
Total Pervious Area (ac)	18.11	14.15
Pervious Area Breakdown by Cover Type		
Meadow/fallow/natural areas (non-cultivated)	18.08	N/A
Predominant NRCS Soil Type (A, B, C, or D)	Type A	N/A
Improved areas (turf grass, landscape, row crops)	0	14.15
Predominant NRCS Soil Type (A, B, C, or D)	N/A	Type A
Wooded Areas	0.03	N/A
Predominant NRCS Soil Type (A, B, C, or D)	Type A	N/A
Calculated BANK FULL Volume (cubic feet)		92084
BANKFULL Volume Provided (cubic feet)		92084

LEGEND

EXISTING
 - - - - - ASPHALT
 - - - - - SIDE WALK (CONCRETE)
 - - - - - CONCRETE CURB AND GUTTER
 - - - - - STORM SEWER
 - - - - - SANITARY SEWER
 - - - - - WATER MAIN
 - - - - - "UD" (UNDERDRAIN)
 - - - - - "LS" (LANDSCAPE DRAIN)
 - - - - - MANHOLE
 - - - - - CATCH BASIN W/SED CATCH
 - - - - - CURB INLET W/SILT SAC
 - - - - - END SECTION
 - - - - - GATE VALVE
 - - - - - HYDRANT
 - - - - - OVERHEAD ELECTRICAL LINES
 - - - - - FLOOD PLAN
 - - - - - CONTOURS
 - - - - - SPOT ELEVATION
 - - - - - SURFACE DRAINAGE
 - - - - - OVERFLOW ROUTE
 - - - - - TREE FENCE
 - - - - - SILT FENCE
 - - - - - PROPOSED DRIVEWAY LOCATION
 - - - - - CROSSING NUMBER

PROPOSED
 - - - - - ASPHALT
 - - - - - SIDE WALK (CONCRETE)
 - - - - - CONCRETE CURB AND GUTTER
 - - - - - STORM SEWER
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THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
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2.	50% DESIGN DEVELOPMENT	02-03-2023
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4.	REV PER CITY REVIEW	09-08-2023

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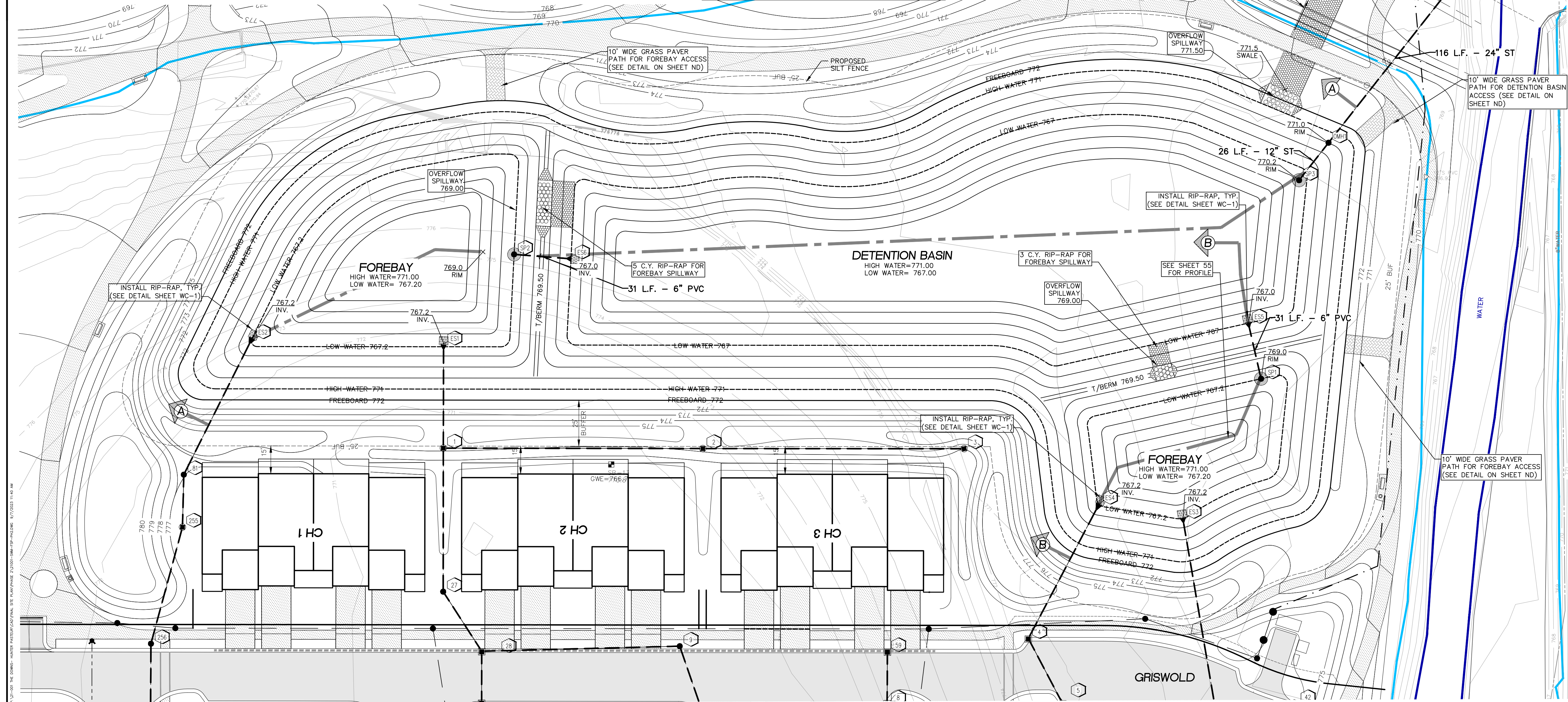
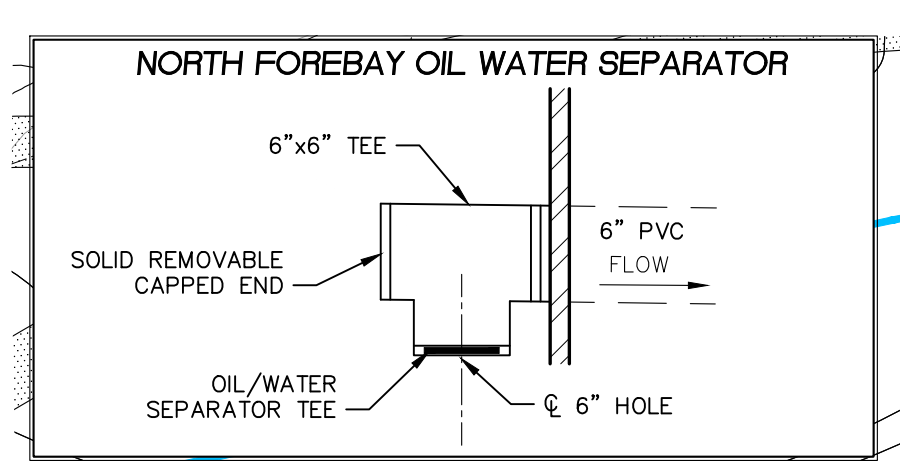
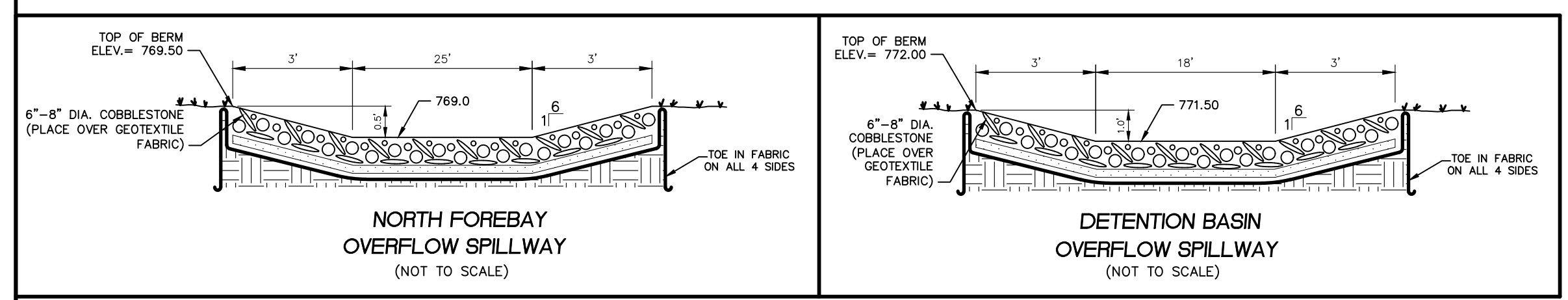
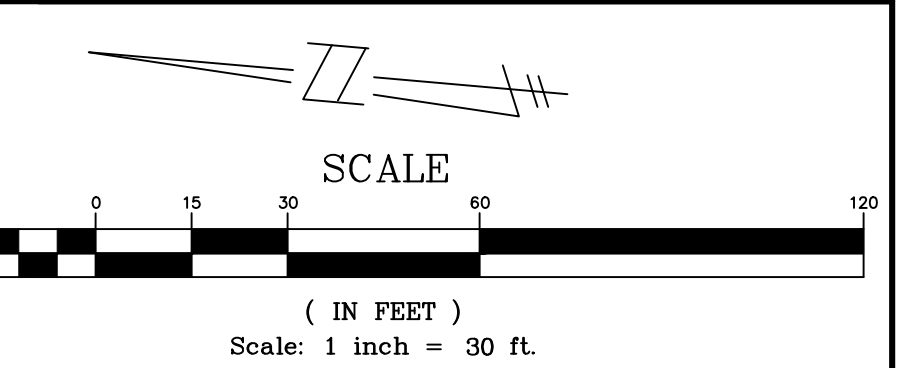
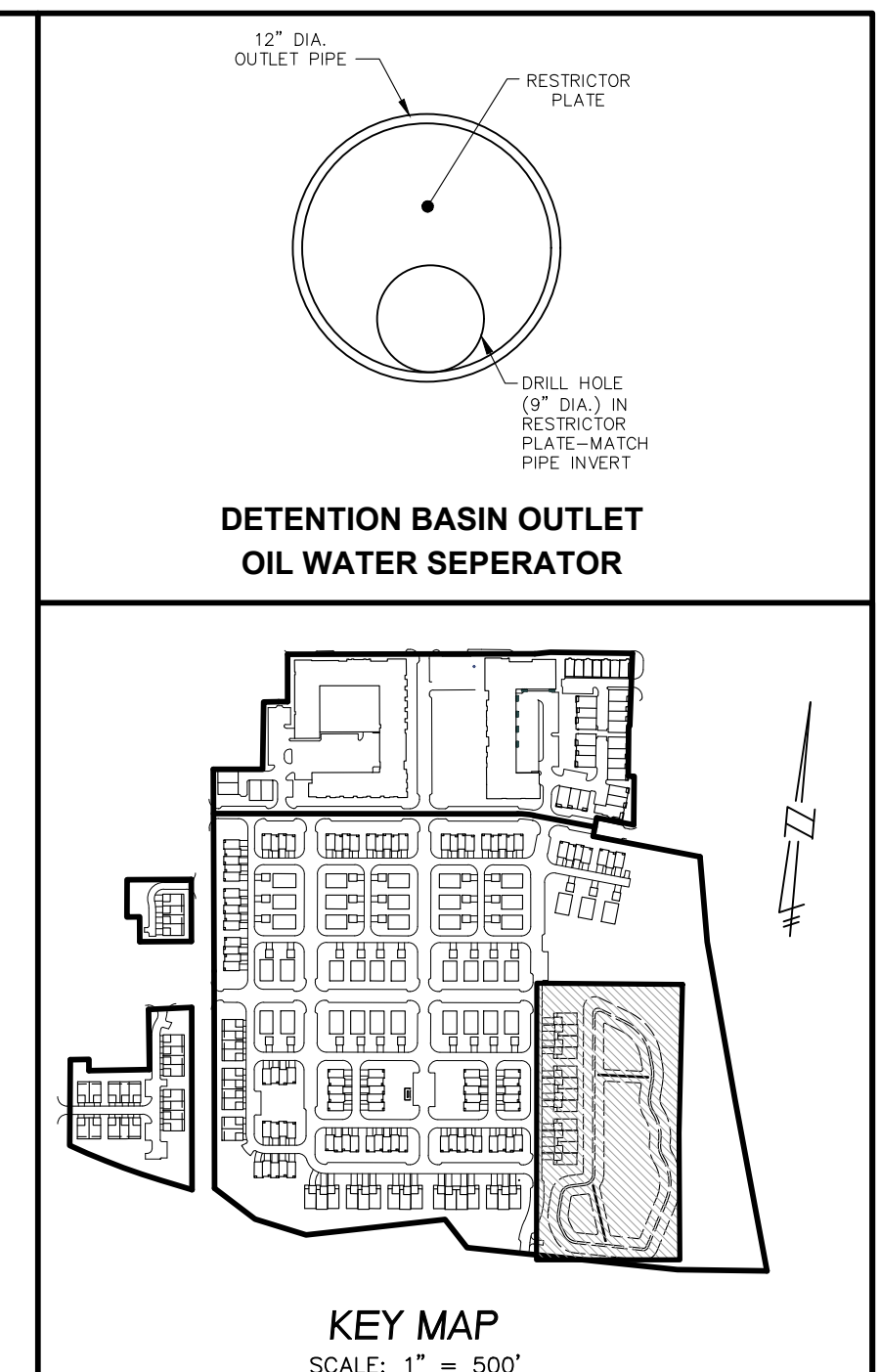
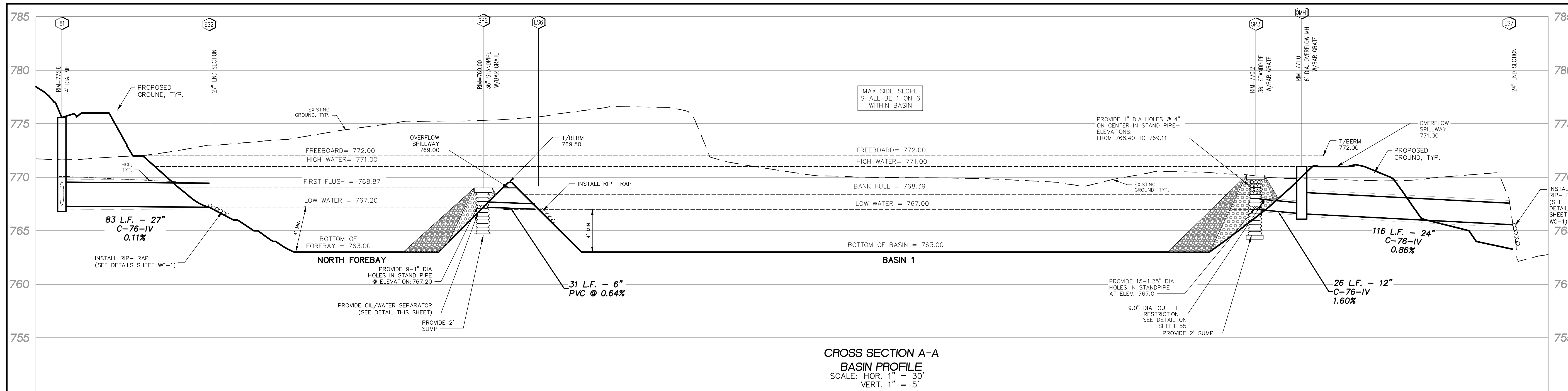
811 Know what's below. Call before you dig.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-23 DESIGNED BY: S.A. JOB NUMBER: 21-001
CHECKED BY: F.E. FILE: 21001-SWM-FSP-PIB.DWG
STORM WATER MANAGEMENT PLAN - AREA 1

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 53



- NOTES:**
- ALL TRENCHES WITHIN 1 ON 1 SLOPE FROM TOP OF CURBS SHALL BE BACKFILLED WITH GRANULAR MATERIAL CLASS II AND COMPACTED TO 95% OF MAXIMUM UNIT WEIGHT.
 - ALL END SECTIONS SHALL BE CONSTRUCTED ACCORDING TO THE "END SECTION AND BAR SCREEN DETAIL" ON SHEET ND.
 - PROPOSED STANDPIPE IS TEMPORARY. AFTER CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED, DEVELOPER SHALL REMOVE THE STANDPIPE AND REPLACE IT WITH A CONCRETE END SECTION. END SECTION SHALL BE EQUIPPED WITH AN ORIFICE "RESTRICTOR PLATE" IN ACCORDANCE WITH THE DETENTION BASIN PLAN.

LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	"UD" DENOTES UNDERDRAIN
[Symbol]	[Symbol]	"LS" DENOTES LANDSCAPE DRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED CATCH
[Symbol]	[Symbol]	CURB INLET W/SILT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	T/E
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: F.B. FILE: 21001-SWM-FSP-PH2.DWG

DETENTION BASIN PLAN AND PROFILE

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 54

OUTLET DESIGN
NORTH FOREBAY

FIRST FLUSH FLOW RESTRICTOR ORIFICE SIZING

Average Discharge Rate (Qave): $Q_{ave-f} = \frac{\text{First Flush Volume}}{60,480}$ [cfs, average discharge rate over a 24-hour period]
 $Q_{ave-f} = \frac{23,445}{60,480} = 0.388$ cubic feet per second

Average Head (have): $h_{ave} = 0.667 \times (Z_{ff} - Z_{out})$ Z_{ff} = First Flush Head, ft. resulting from storm volume table
 $h_{ave} = 0.667 \times (768.87 - 767.20) = 1.11$ feet
 Z_{out} = Outlet elevation, ft

Bank Full Flood Orifice Area (a): $A = \frac{Q_{ave}}{0.62 \sqrt{2g \cdot h_{ave}}}$ [A=orifice area in square feet]
 $A = \frac{0.388}{0.62 \sqrt{2 \times 32.2 \times 1.11}} = 0.0517$ square feet

Bank Full Flood Orifice Diameter (d): $d = 1.48 \sqrt{A}$ [d=orifice diameter in inches, assuming 1-in diameter orifice]
 $d = 1.48 \sqrt{0.0517} = 0.0545$ s.f.
 Required Number of 1-in holes = 9 EA. Use (8) 1-inch diameter holes at elevation 767.20

The actual average release rate through the orifice for the assumed condition is:
 $A = \text{No of 1-inch holes} \times 0.00545$ Actual Area (square feet)
 $A = 9 \times 0.00545 = 0.0491$ square feet
 $Q_{ave-f} = 0.62 \times A \sqrt{2g \cdot h_{ave}}$ cubic feet per second
 $Q_{ave-f} = 0.62 \times 0.0491 \sqrt{2 \times 32.2 \times 1.11} = 0.257$ cubic feet per second
 Actual holding time for the bank full flood for the assumed condition is:
 $T_{bf} = \frac{V}{Q_{ave-f}}$ hrs ok
 $T_{bf} = \frac{23,445}{0.257 \times 3600} = 25.31$ hrs ok

RISER OUTLET PIPE SLOPE

Size of pipe =	6	inch
Area = A = πr ²	0.196	sf
Invert of Pipe =	767.20	ft
Spring line of pipe =	767.45	ft
$h = Z_{ff} - Z_{spring\ line}$	1.42	ft
Capacity, Q=0.625*A*sqrt(64.4*h)	1.17	cfs
> Qave-f, therefore pipe size adequate		
Area = A = πr ²	0.196	sf
Hydraulic Radius = diam/4	0.125	ft
Manning's Coefficient (n)	0.013	
Qave =	0.271	cfs
Minimum Slope = >f/(Q*n/A*1.486*r ^{2/3})	0.23	% Min.
Use	0.64	% use 36" diameter CMP standpipe

FOREBAY OVERFLOW SPILLWAY SIZING:

ACREAGE TRIB TO SPILLWAY =	21.63	AC.
COMPOSITE RUNOFF COEFFICIENT "C" =	0.60	
LONGEST TIME OF FLOW INTO BASIN =	21.49	MIN (FROM PIPE FLOW CALCS - ES1)
SUM OF ALL FLOWS INTO BASIN (10 YR) =	43.42	CFS (FROM PIPE FLOW CALCS, ES1 + ES2)
VOLUME OF FOREBAY TO FIRST FLASH =	23,445	FT ³
TIME TO FILL TO FIRST FLASH =	9.00	MIN.
T _{max} = 21.63 MIN + 9.00 MIN =	30.49	MIN.
(10-yr) = (151.8) / [(Tc + 19.9)] =	2.11	IN/HR
Qexp = C x I x A =	27.28	CFS
C =	3.33	
L =	10	ft
H =	0.50	ft
Qprov =	29.43	cfs

SOUTH FOREBAY

FIRST FLUSH FLOW RESTRICTOR ORIFICE SIZING

Average Discharge Rate (Qave): $Q_{ave-f} = \frac{\text{First Flush Volume}}{60,480}$ [cfs, average discharge rate over a 24-hour period]
 $Q_{ave-f} = \frac{6,137}{60,480} = 0.101$ cubic feet per second

Average Head (have): $h_{ave} = 0.667 \times (Z_{ff} - Z_{out})$ Z_{ff} = First Flush Head, ft. resulting from storm volume table
 $h_{ave} = 0.667 \times (768.08 - 767.20) = 0.58$ feet
 Z_{out} = Outlet elevation, ft

Bank Full Flood Orifice Area (a): $A = \frac{Q_{ave}}{0.62 \sqrt{2g \cdot h_{ave}}}$ [A=orifice area in square feet]
 $A = \frac{0.101}{0.62 \sqrt{2 \times 32.2 \times 0.58}} = 0.0187$ square feet

Bank Full Flood Orifice Diameter (d): $d = 1.48 \sqrt{A}$ [d=orifice diameter in inches, assuming 1-in diameter orifice]
 $d = 1.48 \sqrt{0.0187} = 0.00545$ s.f.
 Required Number of 1-in holes = 3 EA. Use (3) 1-inch diameter holes at elevation 767.20

The actual average release rate through the orifice for the assumed condition is:
 $A = \text{No of 1-inch holes} \times 0.00545$ Actual Area (square feet)
 $A = 3 \times 0.00545 = 0.0164$ square feet ok
 $Q_{ave-f} = 0.62 \times A \sqrt{2g \cdot h_{ave}}$ cubic feet per second
 $Q_{ave-f} = 0.62 \times 0.0164 \sqrt{2 \times 32.2 \times 0.58} = 0.062$ cubic feet per second within the 10% of initial flow rate ok
 Actual holding time for the bank full flood for the assumed condition is:
 $T_{bf} = \frac{V}{Q_{ave-f}}$ hrs ok
 $T_{bf} = \frac{6,137}{0.062 \times 3600} = 27.51$ hrs ok

RISER OUTLET PIPE SLOPE

Size of pipe =	6	inch
Area = A = πr ²	0.196	sf
Invert of Pipe =	767.20	ft
Spring line of pipe =	767.45	ft
$h = Z_{ff} - Z_{spring\ line}$	0.63	ft
Capacity, Q=0.625*A*sqrt(64.4*h)	0.28	cfs
> Qave-f, therefore pipe size adequate		
Area = A = πr ²	0.196	sf
Hydraulic Radius = diam/4	0.125	ft
Manning's Coefficient (n)	0.013	
Qave =	0.07	cfs
Minimum Slope = >f/(Q*n/A*1.486*r ^{2/3})	0.02	% Min.
Use	0.65	% use 36" diameter CMP standpipe

FOREBAY OVERFLOW SPILLWAY SIZING:

ACREAGE TRIB TO SPILLWAY =	5.68	AC.
COMPOSITE RUNOFF COEFFICIENT "C" =	0.60	
LONGEST TIME OF FLOW INTO BASIN =	20.52	MIN (FROM PIPE FLOW CALCS - ES3)
SUM OF ALL FLOWS INTO BASIN (10 YR) =	9.12	CFS
VOLUME OF FOREBAY TO FIRST FLASH =	6,137	FT ³
TIME TO FILL TO FIRST FLASH =	11.25	MIN.
T _{max} = 21.63 MIN + 9.00 MIN =	31.77	MIN.
(10-yr) = (151.8) / [(Tc + 19.9)] =	2.94	IN/HR
Qexp = C x I x A =	9.97	CFS
C =	3.33	
L =	10	ft
H =	0.50	ft
Qprov =	11.77	cfs

DETENTION BASIN OUTLET DESIGN

BANK FULL FLOOD FLOW RESTRICTOR ORIFICE SIZING

Average Discharge Rate (Qave): $Q_{ave-f} = \frac{\text{Bank Full Volume}}{144,000}$ [cfs, average discharge rate over a 24-hour period]
 $Q_{ave-f} = \frac{92,084}{144,000} = 0.64$ cubic feet per second

Average Head (have): $h_{ave} = 0.667 \times (Z_{ff} - Z_{out})$ Z_{ff} = First Flush Head, ft. resulting from storm volume table
 $h_{ave} = 0.667 \times (768.59 - 767.00) = 0.93$ feet
 Z_{out} = Outlet elevation, ft

Bank Full Flood Orifice Area (a): $A = \frac{Q_{ave}}{0.62 \sqrt{2g \cdot h_{ave}}}$ [A=orifice area in square feet]
 $A = \frac{0.64}{0.62 \sqrt{2 \times 32.2 \times 0.93}} = 0.13$ square feet

Bank Full Flood Orifice Diameter (d): $d = 1.25 \sqrt{A}$ [d=orifice diameter in inches, assuming 1-in diameter orifice]
 $d = 1.25 \sqrt{0.13} = 0.00852$ s.f.
 Required Number of 1.25-in holes = 15 EA. Use (15) 1.25-inch diameter holes at elevation 767.00

The actual average release rate through the orifice for the assumed condition is:
 $A = \text{No of 1.25-inch holes} \times 0.00852$ Actual Area (square feet)
 $A = 15 \times 0.00852 = 0.1278$ square feet
 $Q_{ave-f} = 0.62 \times A \sqrt{2g \cdot h_{ave}}$ cubic feet per second
 $Q_{ave-f} = 0.62 \times 0.1278 \sqrt{2 \times 32.2 \times 0.93} = 0.612$ cubic feet per second
 Actual holding time for the bank full flood for the assumed condition is:
 $T_{bf} = \frac{V}{Q_{ave-f}}$ hrs ok
 $T_{bf} = \frac{92,084}{0.612 \times 3600} = 41.77$ hrs ok

100-YEAR FLOOD CONTROL FLOW RESTRICTOR

100-year Head: $h_{max} = 4.00$ [h_{max} = Maximum head in ft]
 $Q_{all} = 4.48$ [Q_{all} = Maximum allowable release flow in cfs]

Restrictor Orifice Area (a): $A = \frac{Q_{all}}{0.62 \sqrt{2g \cdot h_{max}}}$ [A=100-year flow restrictor orifice area in square feet]
 $A = \frac{4.48}{0.62 \sqrt{2 \times 32.2 \times 4}} = 0.450$ square feet

Restrictor Orifice Diameter (d): $d = 12 \sqrt{\frac{A}{144}}$ [d=Flow restrictor orifice diameter in inches]
 $d = 12 \sqrt{\frac{0.450}{144}} = 9.09$ inches
 $d = 12 \sqrt{\frac{0.4418}{144}} = 9$ inches Use 9 inches diameter orifice

Use 9 inch diameter flow restrictor plate @ LW elevation 767.00 as shown in basin cross section

The actual maximum release rate through the flow restrictor for the assumed condition is:
 $A = \frac{Q_{all}}{0.62 \sqrt{2g \cdot h_{max}}}$ Actual Area (square feet)
 $A = \frac{4.48}{0.62 \sqrt{2 \times 32.2 \times 4}} = 0.4418$ square feet ok
 $Q_{actual-out} = 0.62 \times A \sqrt{2g \cdot h_{max}}$ cubic feet per second
 $Q_{actual-out} = 0.62 \times 0.4418 \sqrt{2 \times 32.2 \times 4} = 4.40$ cubic feet per second ok

RISER OUTLET PIPE SLOPE

Size of pipe =	12	inch
Area = A = πr ²	0.79	sf
Invert of Pipe =	767.00	ft
Spring line of pipe =	0.250	ft
Hydraulic Radius = diam/4	0.013	
Qall (10-yr) =	4.48	cfs
Minimum Slope = >f/(Q*n/A*1.486*r ^{2/3})	1.58	% Min.
Outlet Velocity = Q/A =	5.71	fps
Use	1.60	%

OVERFLOW MANHOLE SIZING:

NO. OF OVERFLOW MANHOLES =	1	EA.
OVERFLOW MH DIAMETER =	6	FT
% OF MH THAT CAN BE USED AS WER =	100	%
CALCULATED LENGTH OF WER =	18.85	FT
ACREAGE TRIB TO OVERFLOW MH =	28.88	AC.
COMPOSITE RUNOFF COEFFICIENT "C" =	0.60	
LONGEST TIME OF FLOW INTO BASIN =	21.49	MIN (FROM STORM SEWER CALCS - ES1)
SUM OF ALL FLOWS INTO BASIN (10 YR) =	52.54	CFS (FROM STORM CALCS)
VOLUME OF THE DB (V _{max}) @ HW =	273,379	FT ³
RIM ELEVATION =	771.00	FT
FREBOARD ELEVATION =	772.00	FT
TIME TO FILL THE BASIN =	86.72	MIN.
T _{max} = 21.63 MIN + 87.57 MIN =	109.21	MIN.
(10-yr) = (151.8) / [(Tc + 19.9)] =	1.18	IN/HR
Qexp = C x I x A =	21.15	CFS
CALCULATE HOW HIGH WATER WILL RISE ABOVE MH STRUCTURE TO PASS Qexp.		
Qweir = 3.33(L) ^{1.5} h = 0.48 FT <SPILLWAY ELEVATION - OK		
Elevation of water during overflow conditions is less than Freeboard Elevation, MH size is adequate		

OVERFLOW STRUCTURE OUTLET PIPE SIZE AND SLOPE

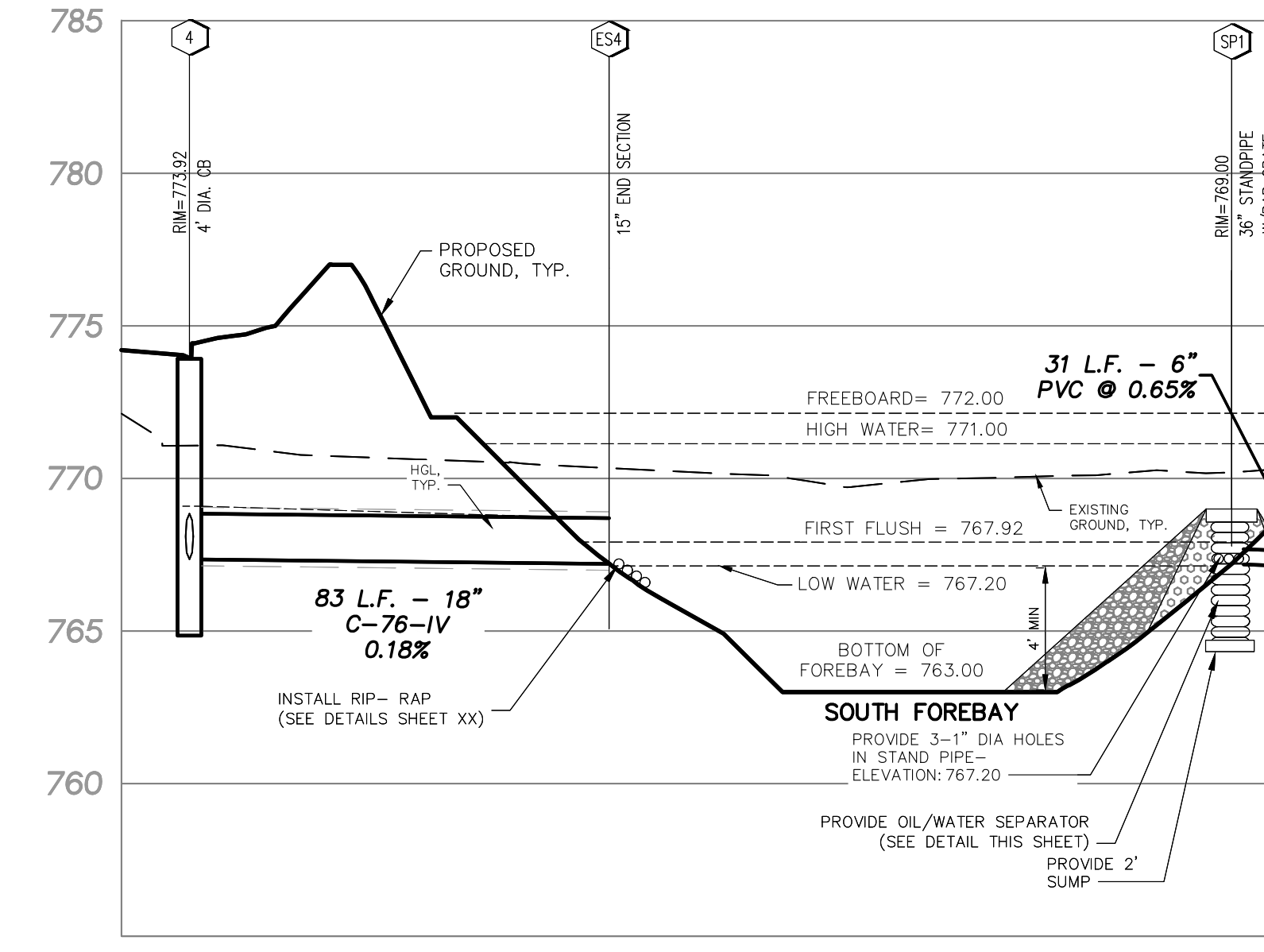
Size of pipe =	24	inch
Area = A = πr ²	3.14	sf
Invert of Pipe =	766.58	ft
Spring line of pipe =	767.58	ft
$h = Z_{out} - Z_{spring\ line}$	3.42	ft
Capacity, Q=0.625*A*sqrt(64.4*h)	29.14	cfs
> Qexp, therefore pipe size adequate		
Area = A = πr ²	3.14	sf
Hydraulic Radius = diam/4	0.500	ft
Manning's Coefficient (n)	0.013	
Qexp = C x I x A =	21.15	cfs
Minimum Slope = >f/(Q*n/A*1.486*r ^{2/3})	0.87	% Min.
Outlet Velocity = Q/A =	6.73	fps
Outlet velocity is between 2.5 fps and 8.0 fps, outlet pipe adequate		
Use	0.86	%

OVERFLOW SPILLWAY SIZING:

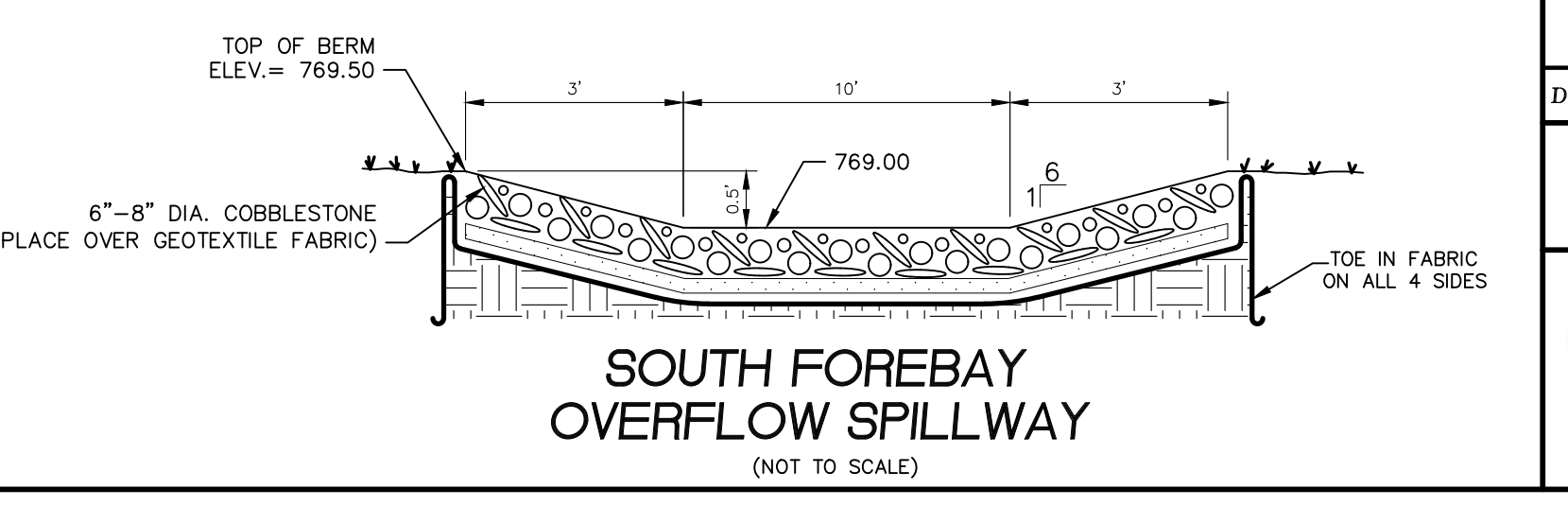
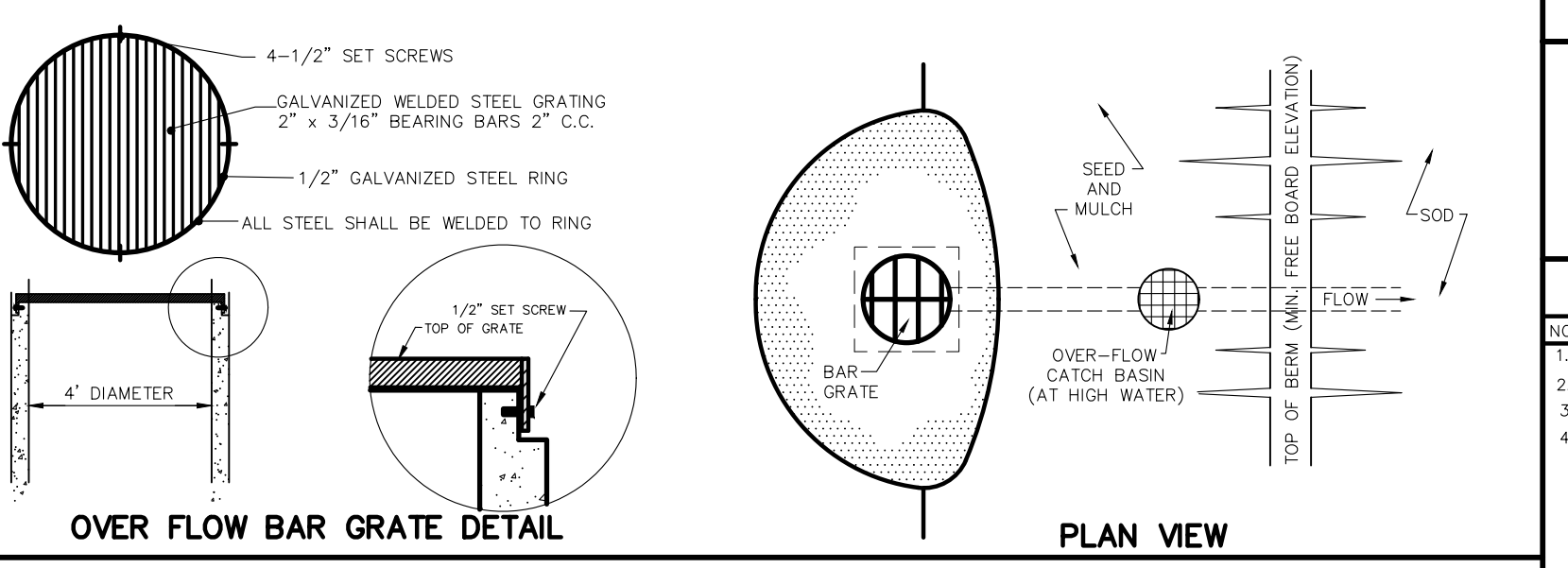
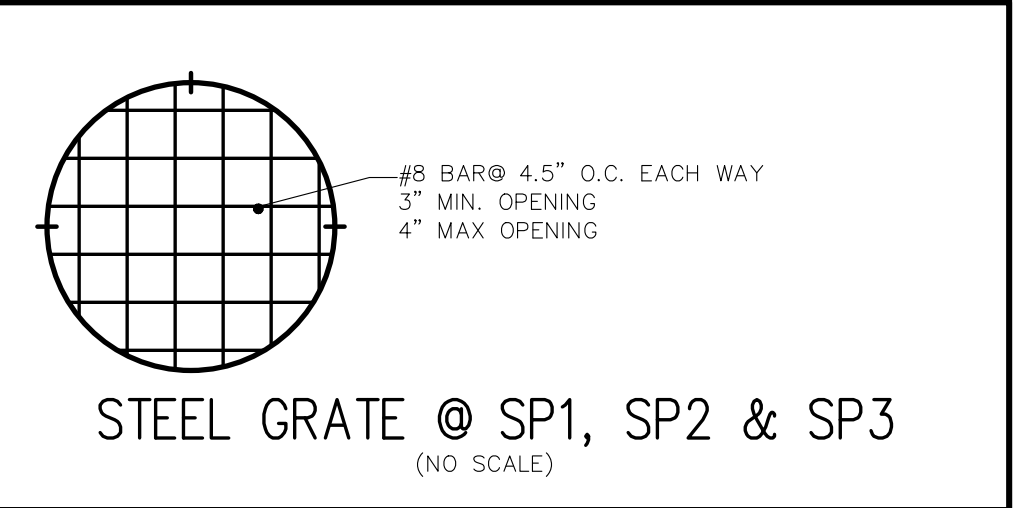
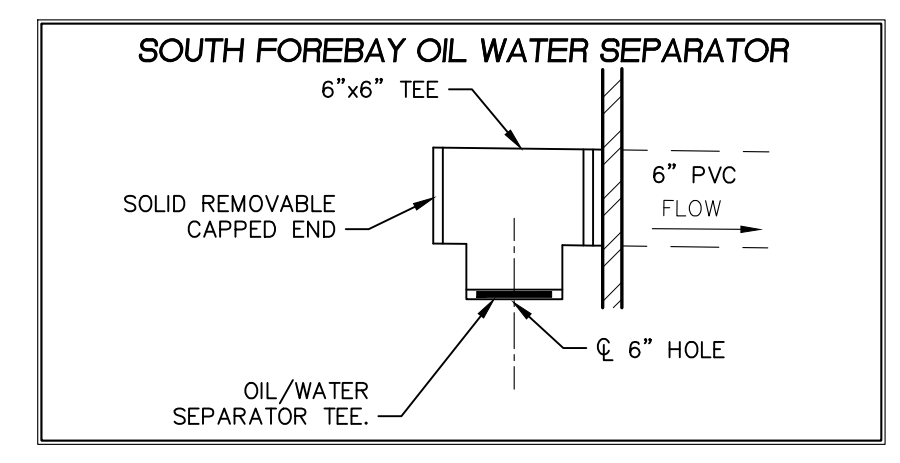
ACREAGE TRIB TO SPILLWAY =	28.88	AC.
COMPOSITE RUNOFF COEFFICIENT "C" =	0.60	
LONGEST TIME OF FLOW INTO BASIN =	21.49	MIN (FROM STORM SEWER CALCS - ES1)
SUM OF ALL FLOWS INTO BASIN (10 YR) =	52.54	CFS (FROM STORM CALCS)
VOLUME OF BASIN TO SPILLWAY =	273,379	FT ³
TIME TO FILL TO SPILLWAY =	86.72	MIN.
T _{max} = 21.63 MIN + 87.57 MIN =	109.21	MIN.
(10-yr) = (151.8) / [(Tc + 19.9)] =	1.18	IN/HR
Qexp = C x I x A =	21.15	CFS
C =	3.33	
L =	18	ft
H =	0.50	ft
Qprov =	21.19	cfs

PROPOSED DETENTION BASIN

C FACTOR FOR AREA 1	Area	C	A * C
TOTAL AREA TRIBUTARY TO DETENTION BASINS	= 29.88	Ac	
PAVING AREA (WALKS, DRIVE, ROAD)	= 8.79	Ac @ 0.95	= 8.35
BUILDING AREA	= 5.46	Ac @ 0.95	= 5.19
LAWN AREA	= 14.14	Ac @ 0.20	= 2.83
DETENTION (LOW WATER AREA)	= 1.48	Ac @ 1.00	= 1.48
TOTAL AREA	= 29.88	Ac @	= 17.85
C _{avg} = A * C / TOTAL ACRES =			= 0.60



- FOREBAY-DETENTION BASIN RISERS NOTES:**
- ALL RISER HOLES MUST BE PRE-DRILLED PRIOR TO RISER GALVANIZATION. THE MANUFACTURER OF CMP RISERS MUST CONTACT WAYNE COUNTY TESTING OFFICE AT 734.595.8504 X 2015 AT LEAST THREE (3) WORKING DAYS PRIOR TO FABRICATION TO SCHEDULE INSPECTION DURING FABRICATION.
 - SEE SECTION 8.1.4 OF THE WAYNE COUNTY STORM ORDINANCE FOR OTHER REQUIREMENTS FOR CONSTRUCTION OF THE FOREBAY AND BASIN RISERS.
 - A WAYNE COUNTY PERMIT ENGINEER MUST OBSERVE INSTALLATION OF ALL FOREBAY AND DETENTION BASIN COMPONENTS DURING INSTALLATION AT THE SITE. THE CONTRACTOR MUST CONTACT THE WAYNE COUNTY PERMIT OFFICE AT 734.595.8504 X 2009 AT LEAST THREE (3) WORKING DAYS PRIOR TO INSTALLATION OF THE FOREBAY-DETENTION BASIN COMPONENTS.



LEGEND

EXISTING	PROPOSED	DESCRIPTION
---	---	PAVEMENT (ASPHALT)
---	---	SIDE WALK (CONCRETE)
---	---	CONCRETE CURB AND GUTTER
---	---	STORM SEWER
---	---	SANITARY SEWER
---	---	WATER MAIN
---	---	DENOTES UNDERDRAIN
---	---	DENOTES LANDSCAPE DRAIN
---	---	MANHOLE
---	---	CATCH BASIN W/SED CATCH
---	---	CURB INLET W/SILT SAC
---	---	END SECTION
---	---	GATE VALVE
---	---	HYDRANT
---	---	OVERHEAD ELECTRICAL LINES
---	---	FLOOD PLAN CONTOURS
---	---	SPOT ELEVATION
---	---	1000.00
---	---	T/E
---	---	SURFACE DRAINAGE
---	---	OVERFLOW ROUTE
---	---	TREE FENCE
---	---	SILT FENCE
---	---	PROPOSED DRIVEWAY LOCATION
---	---	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

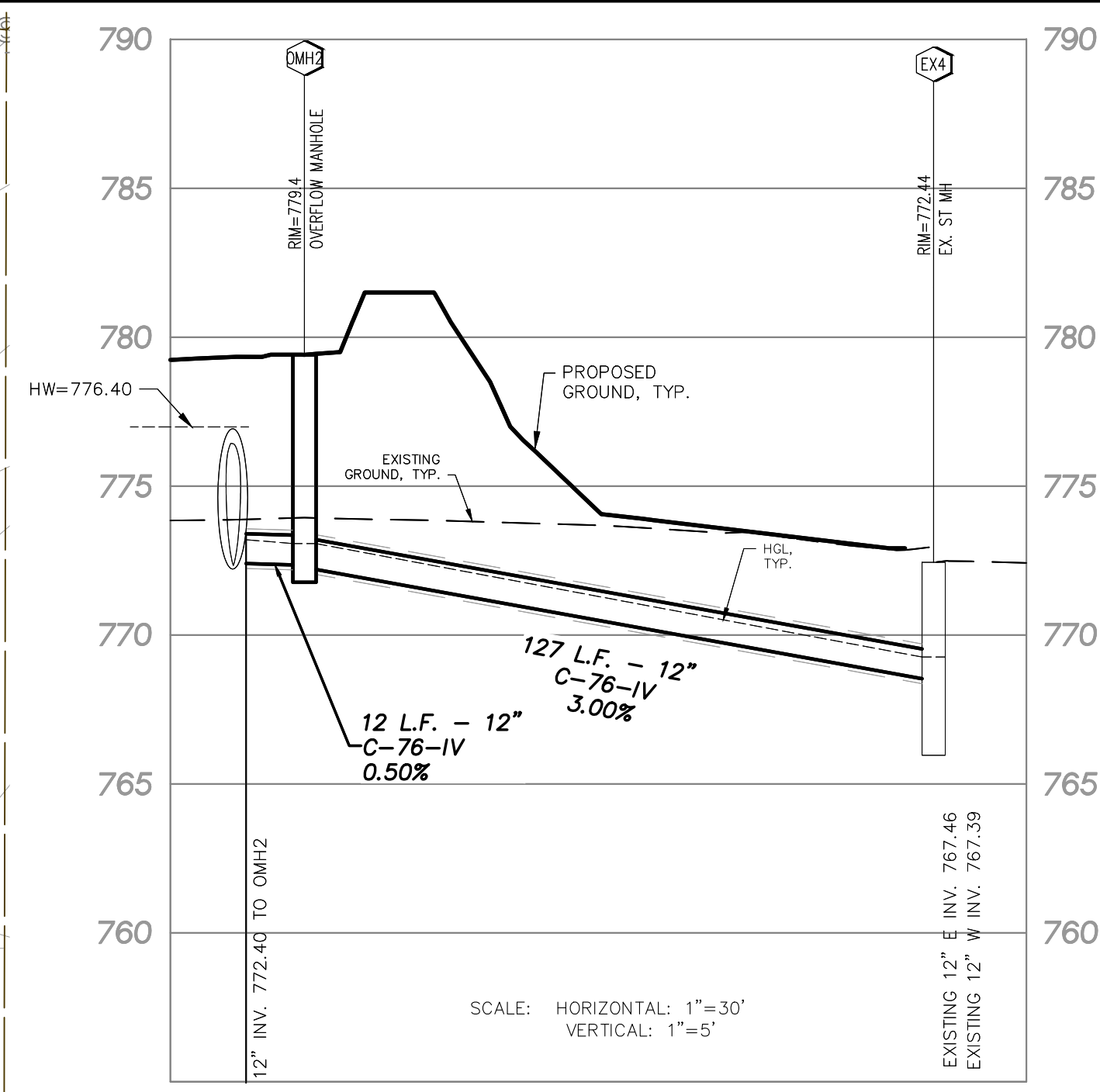
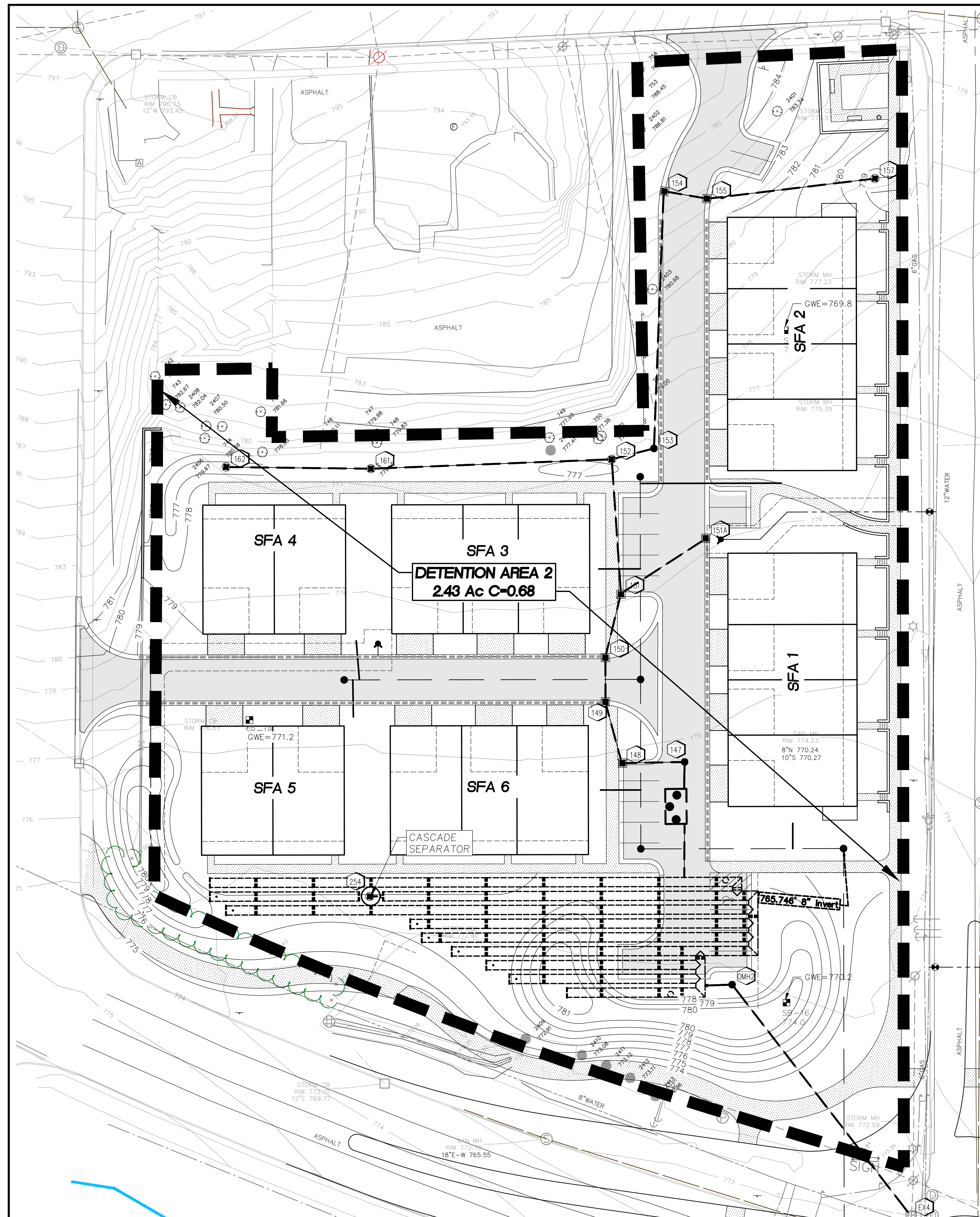
811 Know what's below. Call before you dig.

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: E.B. FILE: 21001-SWM-FSP-PH2.DWG

DETENTION BASIN PROFILE AND CALCS.

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 55



CONTECH ENGINEERED SOLUTIONS

Pipe Information:

- Diameter: 48 inches
- Out-to-out length: 151.1 feet
- Out-to-out width: 52 feet
- Pipe Spacing: 2 feet
- Number of Manifolds: 1 each
- Number of Barrels: 9 each

Desired increment for calcs: 1 in

System invert: 772.40 ft

Depth (ft)	Elevation (ft)	Cumulative Storage (cf)	Average Surface Area (sf)
0.00	783.00	0.00	2067.08
0.08	783.08	237.96	3246.30
0.17	783.17	529.24	3716.91
0.25	783.25	854.00	4065.62
0.33	783.33	1204.88	4349.01
0.42	783.42	1577.47	4589.19
0.50	783.50	1968.69	4797.60
0.58	783.58	2376.21	4981.06
0.67	783.67	2798.13	5144.03
0.75	783.75	3232.89	5289.63
0.83	783.83	3679.14	5420.11
0.92	783.92	4135.70	5537.19
1.00	784.00	4601.50	5642.17
1.08	784.08	5075.58	5736.11
1.17	784.17	5557.06	5819.82
1.25	784.25	6045.12	5893.99
1.33	784.33	6538.97	5959.15
1.42	784.42	7037.90	6015.75
1.50	784.50	7541.20	6064.16
1.58	784.58	8048.20	6104.66
BF	784.67	8558.25	6137.50
1.75	784.75	9070.73	6162.86
1.83	784.83	9585.02	6180.88
1.92	784.92	10100.51	6191.66
2.00	785.00	10616.59	6195.24

100-yr	2.08	785.08	11132.68	6191.66
	2.17	785.17	11648.16	6180.88
	2.25	785.25	12162.45	6162.86
	2.33	785.33	12674.93	6137.50
	2.42	785.42	13184.99	6104.66
	2.50	785.50	13691.99	6064.16
	2.58	785.58	14195.29	6015.75
	2.67	785.67	14694.21	5959.15
	2.75	785.75	15188.07	5893.99
	2.83	785.83	15676.12	5819.82
	2.92	785.92	16157.60	5736.11
	3.00	786.00	16631.68	5642.17
	3.08	786.08	17097.48	5537.19
	3.17	786.17	17554.04	5420.11
	3.25	786.25	18000.29	5289.63
	3.33	786.33	18445.05	5144.03
	3.42	786.42	18888.38	4981.06
	3.50	786.50	19324.49	4797.60
	3.58	786.58	19755.71	4589.19
	3.67	786.67	20182.30	4349.01
	3.75	786.75	20593.18	4065.62
	3.83	786.83	20970.94	3716.91
	3.92	786.92	20995.22	3246.30
	4.00	787.00	21233.18	2067.08

BANK FULL Volume = 8568 c.f.t.

100-YR FLOOD Volume = 21189 c.f.t.

Bank Full depth (ft) = Based on the interpolation depth (ft) = 1.671
Bank Full elevation (ft) = 774.07

Flood Control depth (ft) = Based on the interpolation depth (ft) = 3.983
100-yr elevation (ft) = 776.38

PROPOSED U.G. DETENTION BASIN

Area	C	A °C
TOTAL AREA TRIBUTARY TO DETENTION BASINS	0.68	0.73
PAVING AREA (WALKS, DRIVE, ROAD)	0.77	0.95
BUILDING AREA	0.79	0.95
LAWN AREA	0.87	0.20
DETECTION (LOW WATER AREA)	Ac	1.00
TOTAL AREA	2.43	0.68

U.G. DETENTION BASIN CALCULATIONS: AREA 2

Ac = 2.43 Ac

C = 0.68

Q₁₀₀ = 0.36 cfs (0.15 cfs/Ac)

Q₁₀ = 0.22 (1/4 Ac imp.)

T₁₀₀ = 45 + sqrt(19845/Q₁₀) = 295.61 min

V₁₀₀ = (17649*11)/(1+45)-40*Q₁₀*T₁₀₀ = 12762 ft³ Ac imp.

V₁₀ = V_s*Ac*C = 21169 ft³

UG BASIN

See Basin Detail Sheets

Pipe Dia = 48 in

Pipe Storage Volume = 17,292 ft³

Backfill Storage Volume = 3,941 ft³

Total Storage Provided = 21,233 ft³

Basin Invert = 772.40 ft

Z-100 = 776.38 ft

UNDER GROUND BASIN 2 LAND USE SUMMARY

Characteristic	Existing	Proposed
Total Development Area (ac)	2.43	2.43
Impervious Area (ac)	1.6	1.56
Total Pervious Area (ac)	0.83	0.87

Pervious Area Breakdown by Cover Type

Cover Type	Existing	Proposed
Meadow/fallow/natural areas (non-cultivated)	0.81	N/A
Predominant NRCS Soil Type (A, B, C, or D)	Type A	N/A
Improved areas (turf grass, landscape, rpw crops)	0	0.87
Predominant NRCS Soil Type (A, B, C, or D)	N/A	Type A
Wooded Areas	0.02	N/A
Predominant NRCS Soil Type (A, B, C, or D)	Type A	N/A

Calculated Bank Full Volume (cubic feet) = 8568

BANKFULL Volume Provided (cubic feet) = 8568

OUTLET DESIGN

BANK FULL FLOOD FLOW RESTRICTOR ORIFICE SIZING

Average Discharge Rate (Gall): $Q_{avg} = \frac{Bank\ Full\ Flood\ Volume}{Time}$

Average Head (feet): $h_{avg} = 0.5h(Z_{top} - Z_{out})$

Bank Full Flood Orifice Area (a): $A = \frac{Q_{avg}}{0.62 \sqrt{2g(h_{avg} - Z_{out})}}$

Bank Full Flood Orifice Diameter (d): $d = 12 \sqrt{\frac{A}{0.7854}}$

The actual average release rate through the orifice for the assumed condition is:

Actual holding time for the bank full flood for the assumed condition is:

100-YEAR FLOOD CONTROL ORIFICE SIZING

Maximum Head on BF Orifice: $h_{max} = Z_{top} - Z_{out}$

100-yr flow through Bank Full Orifice: $Q_{100} = 0.62 \sqrt{2g(h_{max} - Z_{out})}$

Remaining flow through 100-yr Orifice: $Q_{res} = Q_{100} - Q_{10}$

Flood Control Orifice Area (a): $A = \frac{Q_{res}}{0.62 \sqrt{2g(h_{max} - Z_{out})}}$

Flood Control Orifice Diameter (d): $d = 12 \sqrt{\frac{A}{0.7854}}$

The actual maximum release rate through the orifice for the assumed condition is:

FLOW RESTRICTOR ORIFICE PIPE SIZING

SUM OF ALL FLOWS + OFFSET FLOW INTO BASIN (10 YR) = TIME TO FILL THE BASIN = 21,189 cf / 0.32 cfs / 60 = 10,900 min

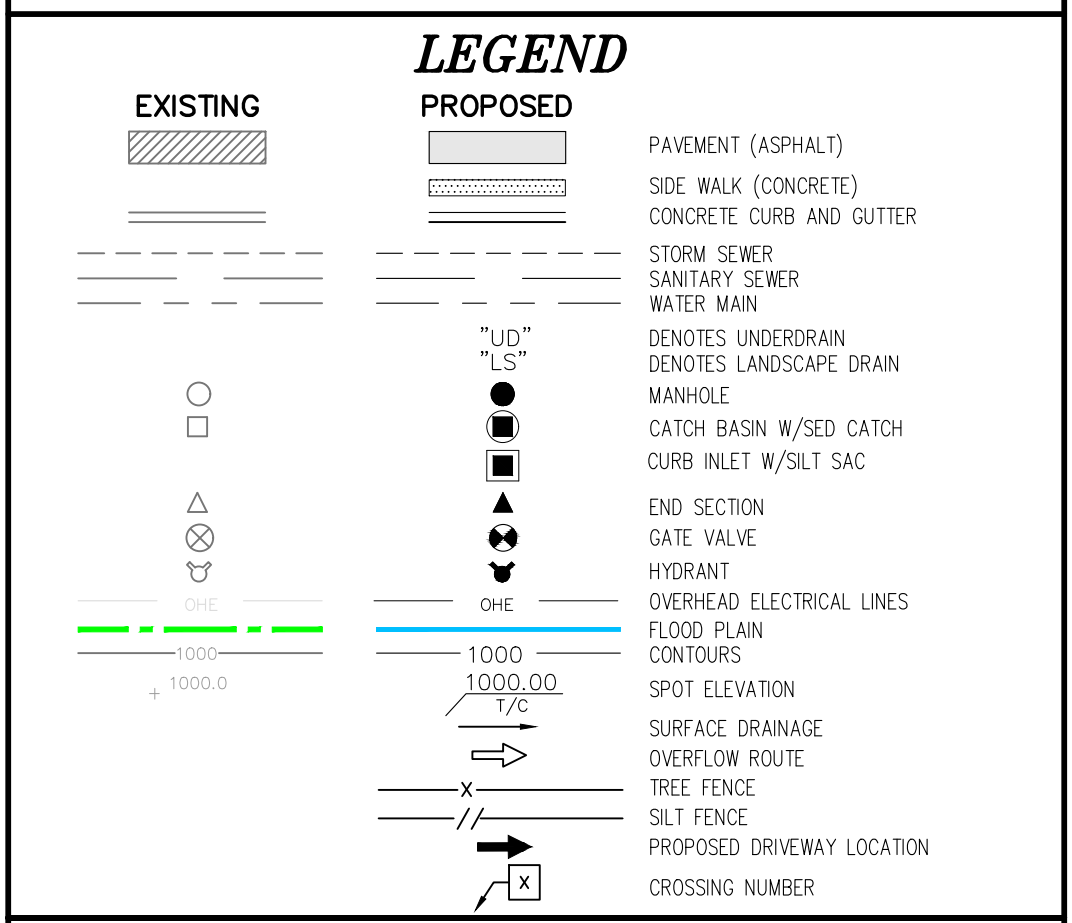
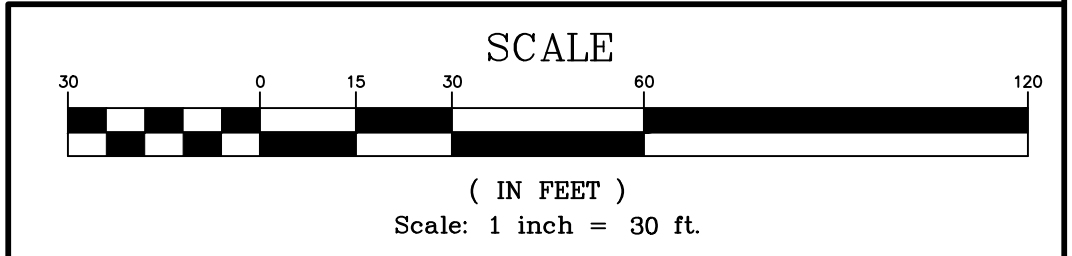
Size of pipe = 12 inch

Invert of Pipe = 772.40 ft

Spring line of pipe = 772.50 ft

h = Z_{top} - Z_{spring line} = 776.38 - 772.50 = 3.88 ft

Capacity, Q = 0.62 * A * sqrt(2 * g * h) = 0.36 cfs



THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHWILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	SITE DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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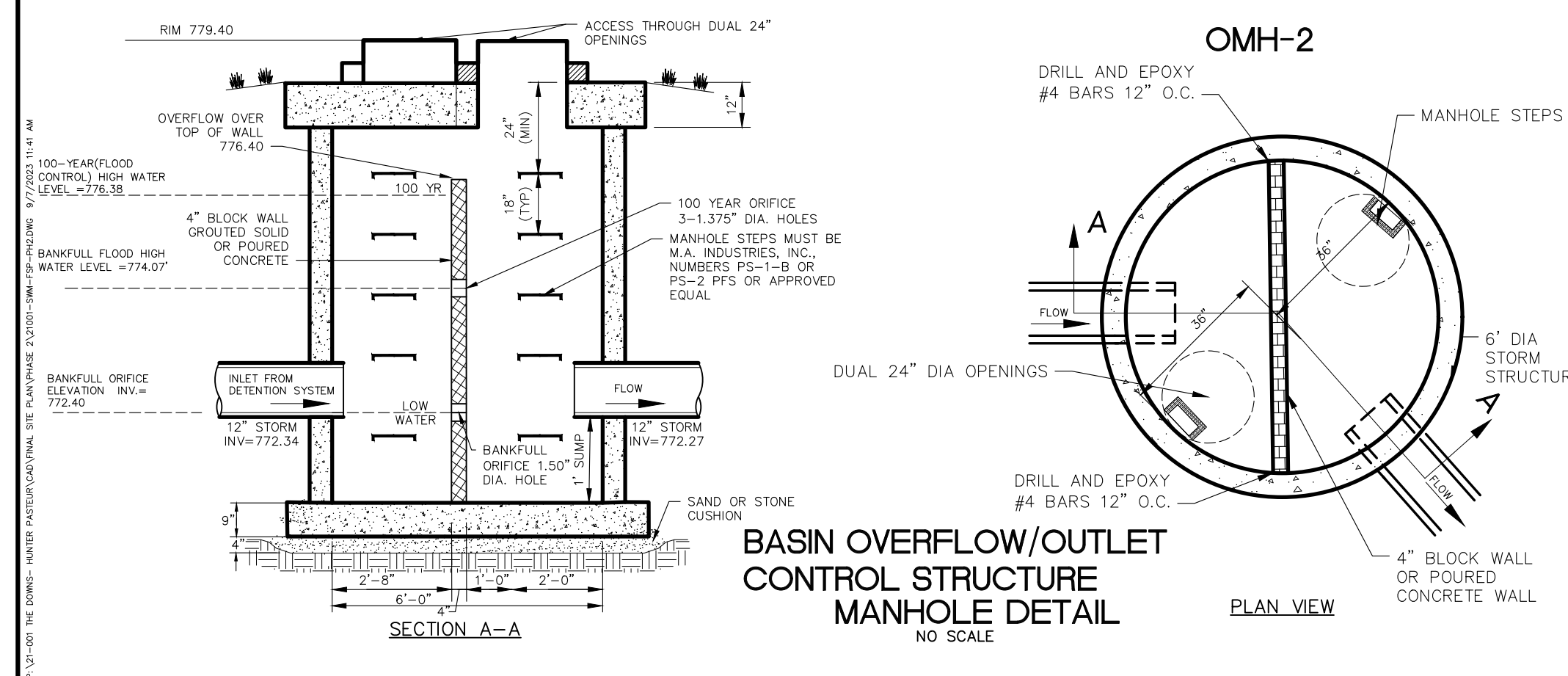
DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-SWM-RSP-PIB2.DWG

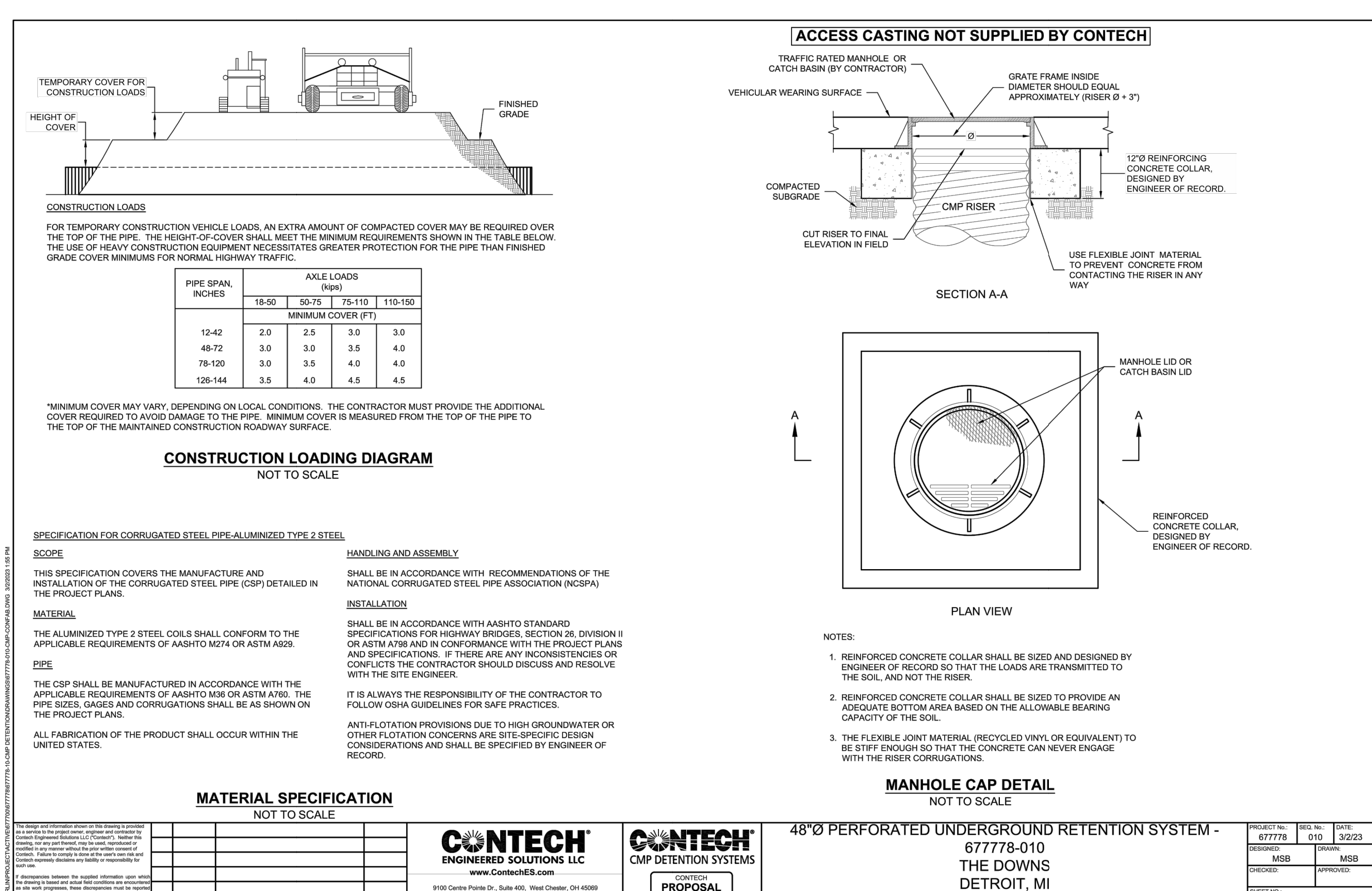
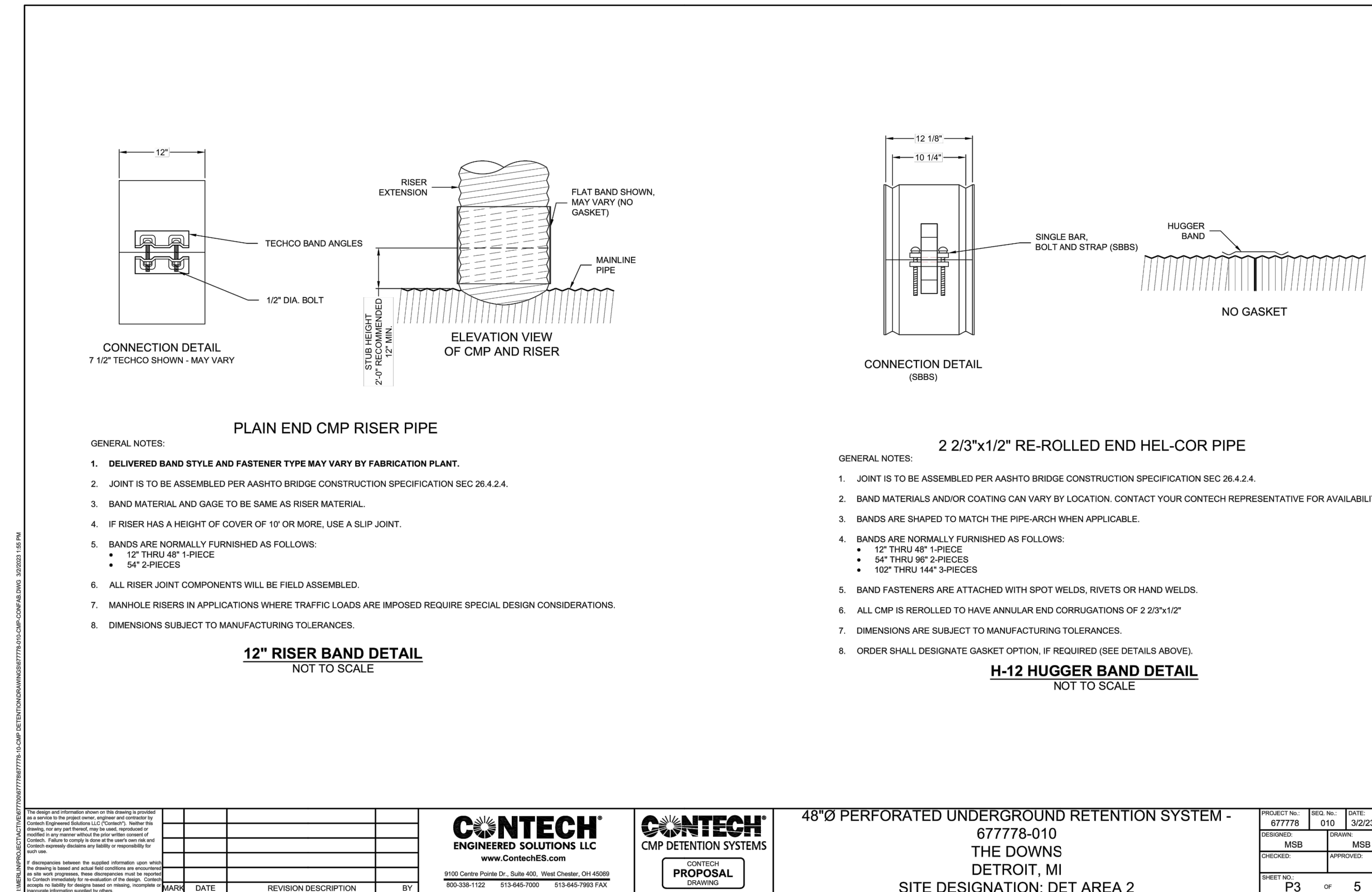
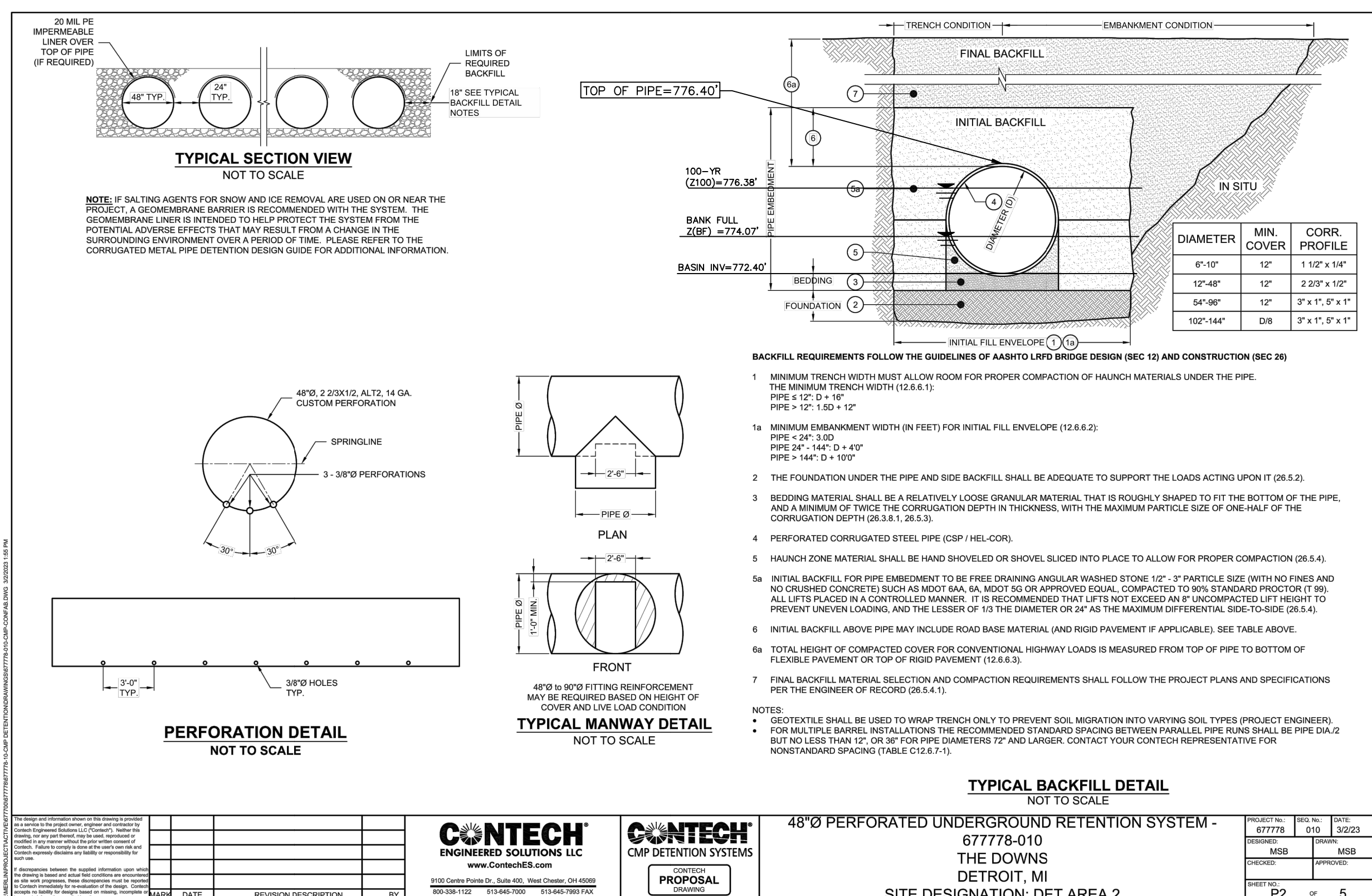
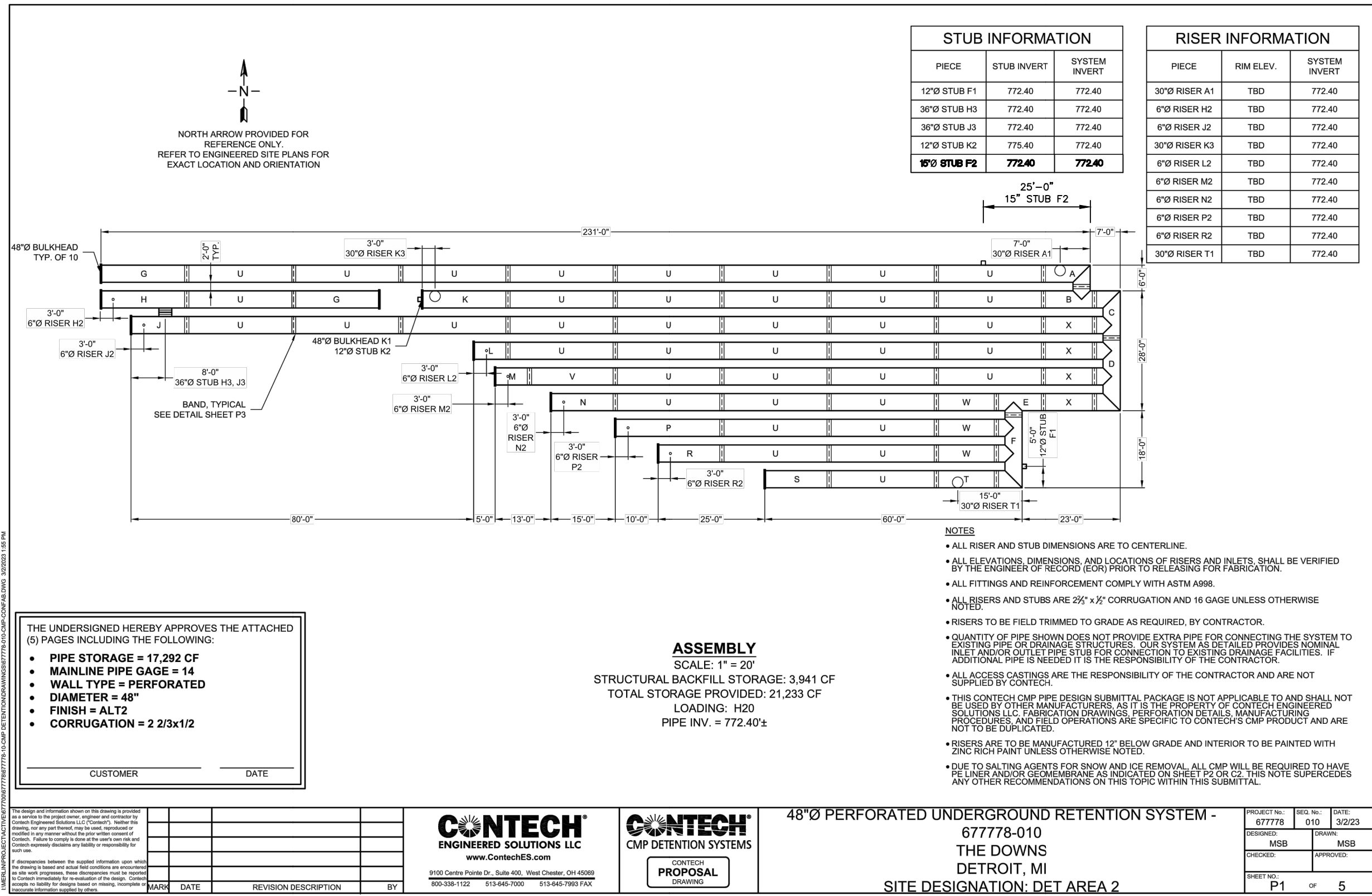
STORM WATER MANAGEMENT PLAN - BASIN 2

SEIBER KEAST LEHNER ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET 56





THE DOWNS
 SECTION 3, T1S, R8E, CITY OF NORTHWILLE
 WAYNE COUNTY, MICHIGAN

REVISIONS			UTILITY WARNING
NO.	ITEM	DATE	
1.	100% SCHEMATIC DESIGN	06-10-2022	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.
2.	50% DESIGN DEVELOPMENT	02-03-2023	
3.	FINAL SITE PLAN	04-14-2023	
4.	REV PER CITY REVIEW	09-08-2023	

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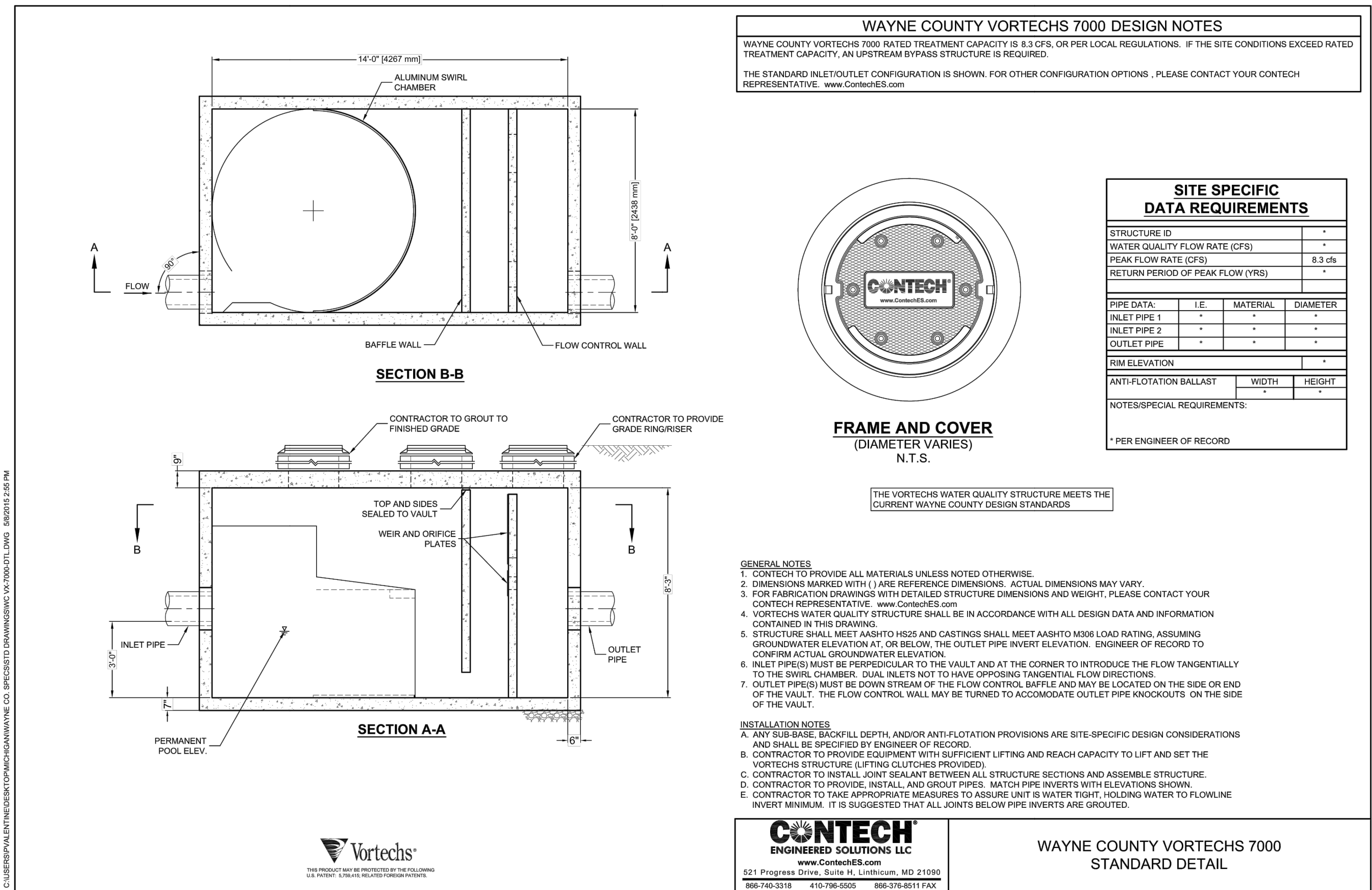
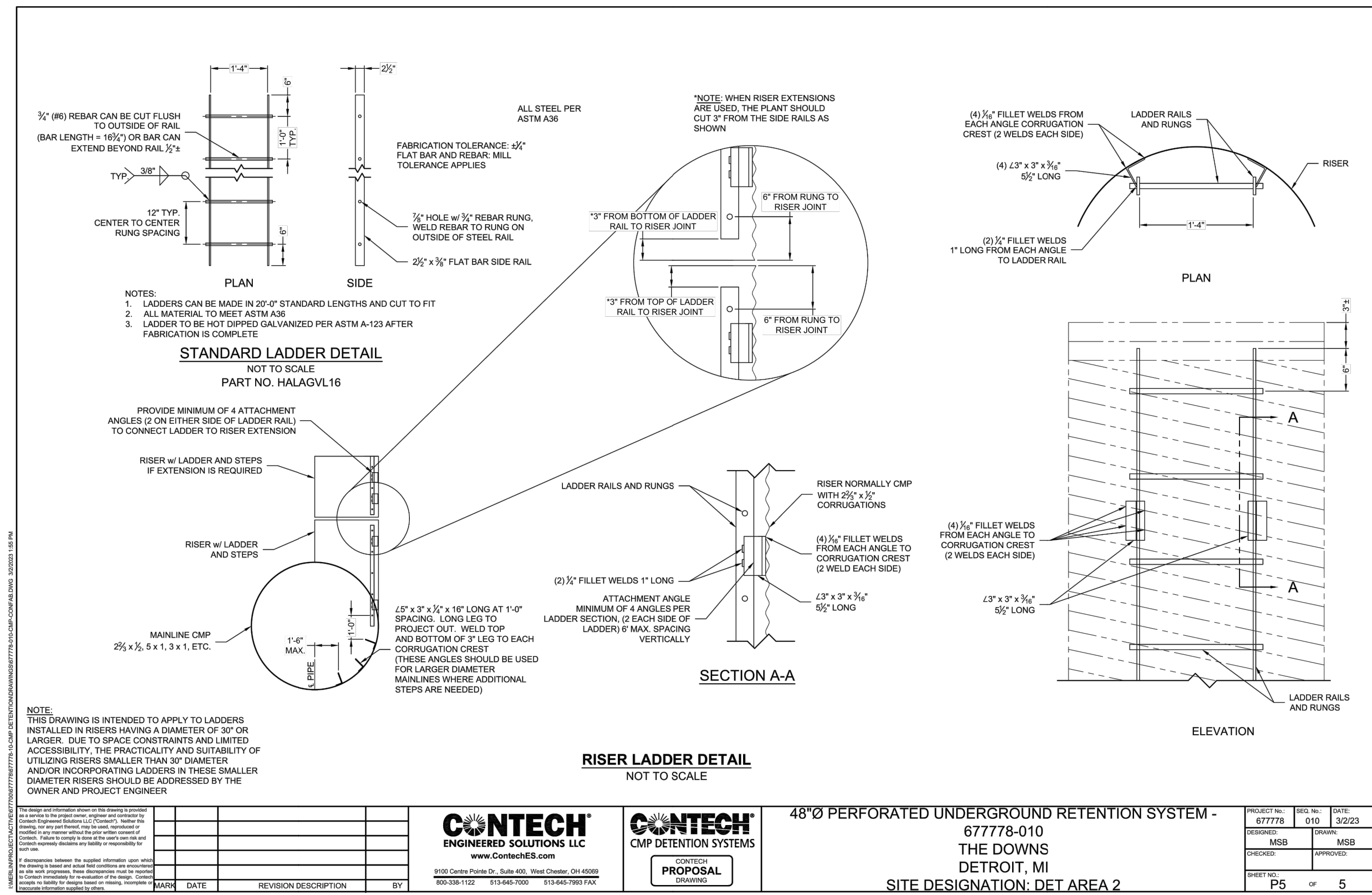
DATE: 04-25-23 DESIGNED BY: S.M. CHECKED BY: E.E. JOB NUMBER: 21-001
 FILE: 21001-SW-PSY-PIB2.DWG

UNDERGROUND DETENTION BASIN DETAILS-BASIN 2

SEIBER KEAST LEHNER
 ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
 FARMINGTON HILLS, MI 48331
 PHONE: 248.308.3331

SHEET 57



Project: The Downs
Location: Northville, MI



Wayne County
Manufactured Treatment Device Sizing Calculation

10-year flowrate (cfs)	14.67	8.18	9.22
Recommended Model	VX-16000	VX-7000	VX-9000

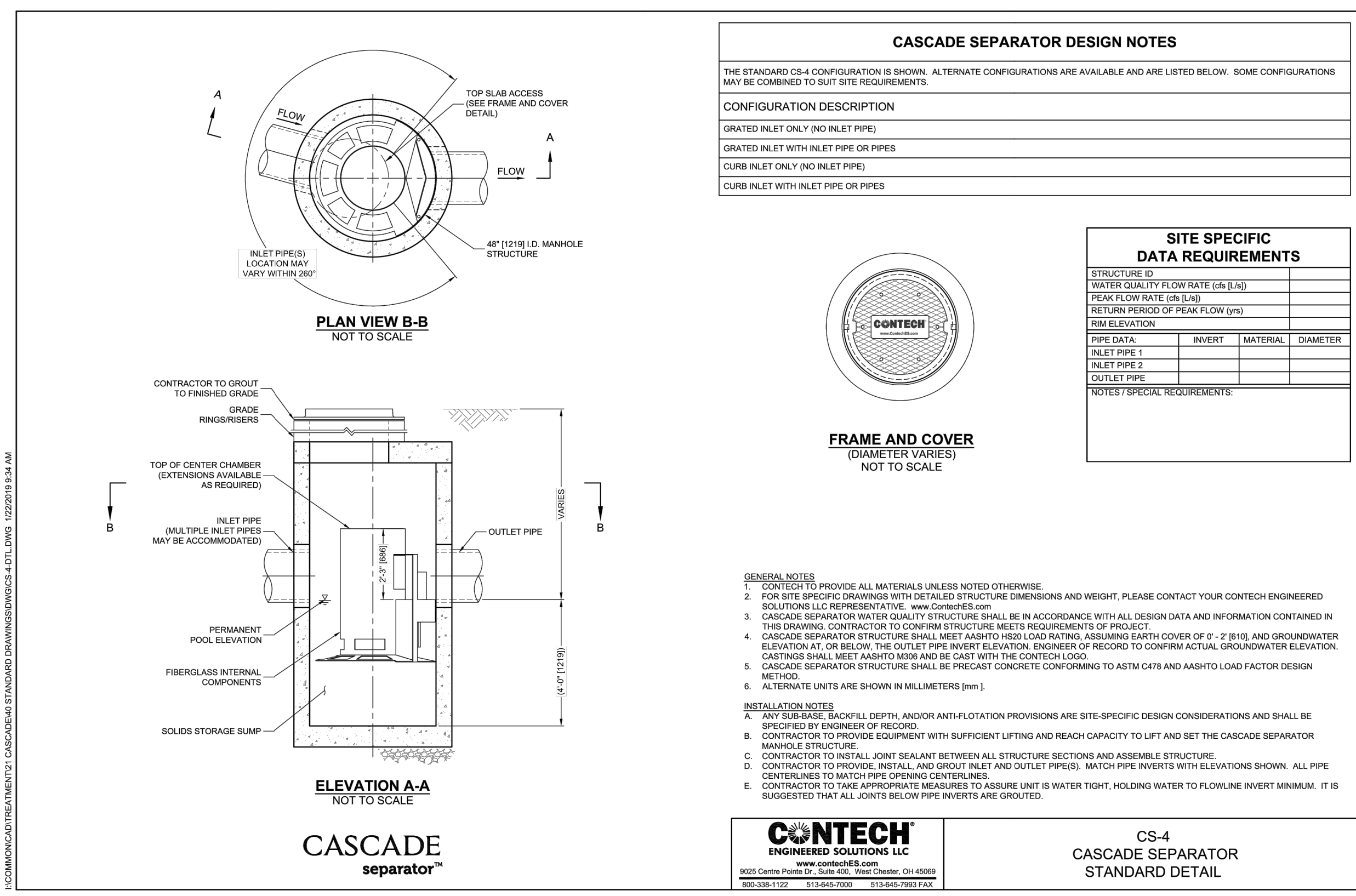
Area 5

Vortechs™ Model	Peak Flow (cfs)
1000	1.2
2000	2.1
3000	3.4
4000	4.5
5000	6.4
7000	8.3
9000	10.5
11000	13.1
16000	18.8

48"Ø PERFORATED UNDERGROUND RETENTION SYSTEM -
67778-010
THE DOWNS
DETROIT, MI
SITE DESIGNATION: DET AREA 2

REVISIONS: 01/22/23 PS of 5

CONTECH ENGINEERED SOLUTIONS
CONTECH CMP DETENTION SYSTEMS



CONTECH ENGINEERED SOLUTIONS
CONTECH separator™

CS-4 CASCADE SEPARATOR STANDARD DETAIL

Project: The Downs
Location: Northville, MI
Structure: Area 2 CB



Wayne County
Manufactured Treatment Device Sizing Calculation

Area (acres) = 0.18
Runoff Coefficient, C = 0.9
 T_c (min) = 15

1-year I_p (in/hr) (NOAA Atlas 14) = 2.00
IF $T_c \leq 15$ min, max. peak intensity = 2.0 in/hr

1-year Peak Flow (cfs) = $Q_{WQ} = C \times I_p \times A = 0.32$

Recommended Model: **CS-4**

CASCADE SEPARATOR™ MODEL SPECIFICATIONS PER NJDEP CERTIFICATION LETTER

Model	MTR (cfs)
CS-4	1.80
CS-5	2.81
CS-6	4.05
CS-8	7.20
CS-10	11.3
CS-12	16.2

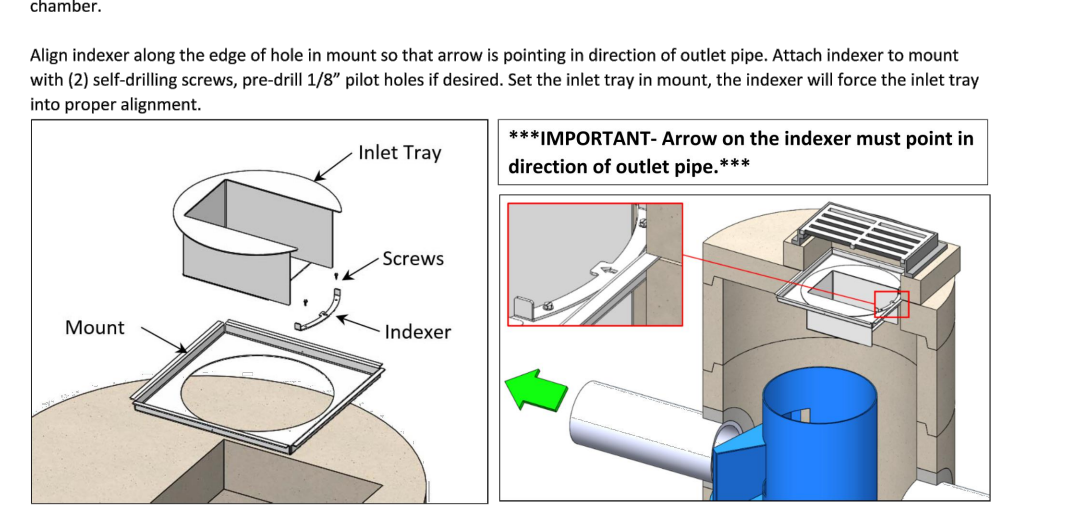
3/2/2023

CONTECH ENGINEERED SOLUTIONS
CONTECH separator™

Grate Inlet Tray Installation

The Cascade Separator can be configured with an optional grate inlet in place of the inlet pipe or in addition to the inlet pipe. This configuration requires the installation of an inlet tray assembly to ensure incoming water goes directly into the inlet chamber.

Align indexes along the edge of hole in mount so that arrow is pointing in direction of outlet pipe. Attach indexes to mount with (2) self-drilling screws, pre-drill 1/8" pilot holes if desired. Set the inlet tray in mount, the indexes will force the inlet tray into proper alignment.



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

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DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: B.E. FILE: 21001-SW-PS9-PIB2.DWG
**UNDERGROUND DETENTION BASIN
DETAILS-BASIN 2**

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
58

EXHIBIT B
STORM WATER MANAGEMENT SYSTEM LONG-TERM MAINTENANCE PLAN

Wayne County DPS Permit No.: M-xxx
Wayne County DPS Plan Review No.:

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 sewers, catch basins, manholes, inlets, swales, buffer strip, mechanical separator, underground detention basin, outlet control structure and outlet pipe that conveys flow from the underground detention basin to the existing outlet and drains into MIDDLE ROUGE RIVER. For the purposes of this plan, this storm water management system (SWMS) and all of its components as shown in Exhibit A is referred to as "THE DOWNS".

B. Time Frame for Long-Term Maintenance Responsibility

HUNTER PASTEUR, NORTHVILLE, LLC is responsible for maintaining THE DOWNS 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 DOWNS SWMS commences when defined by the maintenance permit issued by the County. Long-term maintenance continues in perpetuity.

C. Manner of Insuring Maintenance Responsibility

The City of Northville has assumed responsibility for long-term maintenance of THE DOWNS SWMS. The resolution, by which the City of Northville has assumed maintenance responsibility is attached to the permit as Exhibit C. HUNTER PASTEUR, NORTHVILLE, LLC, through a maintenance agreement with the City of Northville, has agreed to perform the maintenance activities required by this plan. The City of Northville retains the right to enter the property and perform the necessary maintenance of THE DOWNS SWMS if HUNTER PASTEUR, NORTHVILLE, LLC fails to perform the required maintenance activities. To ensure that THE DOWNS 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 City of Northville and the property owner will be recorded with the Wayne County Register of Deeds. Upon recording, a copy of the recorded documents will be provided to the City and the County.

D. Long-Term Maintenance Plan and Schedule

Table 1 identifies the maintenance activities to be performed, organized by category (monitoring/inspections, preventative maintenance and remedial actions). While performing maintenance, chemicals should not be applied to the underground detention basin, buffer strip, or watercourses or anywhere in the 25-foot buffer strip around surface water unless performed by a state of Michigan Licensed pesticide applicator and conducted under a valid aquatic nuisance control permit. Table 1 also identifies site-specific work needed to ensure that the storm water management system functions properly as designed.

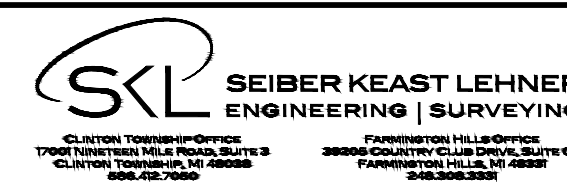
TABLE 1
STORM WATER MANAGEMENT SYSTEM LONG-TERM MAINTENANCE SCHEDULE

MAINTENANCE ACTIVITIES	Storm Collection System (Sewers, solid wall and perforated, Swales, Catch Basins, VORTECHS Unit	Underground Detention Basin	Outlet Control Structures & Outlet Pipe	Buffer Strip, Ripraps	Pavement Areas	FREQUENCY
Monitoring/Inspection						
Inspect for Sediment Accumulation/Clogging of stones	X	X	X	X		Semi/Annually/As Needed*
Inspect For Floatables, Dead Vegetation & Debris	X	X	X	X		Annually & After Major Events
Inspect For Erosion and Integrity of System	X		X			Annually & After Major Events
Inspect All Components During Wet weather & Compare To as-Built Plans	X	X	X	X		Annually
Ensure Maintenance Access Remain Open/Clear	X	X	X	X		Annually
Preventative Maintenance						
Mowing	X					As Needed/per local Community Ordinance
Remove Accumulated sediments	X	X	X	X		As Needed*
Remove Floatables, Invasive & Dead Vegetation & Debris	X	X	X	X		As Needed
Replace or Wash & Reuse risers stone filters						Every 3 Years, or As Needed**
Sweeping of Paved Areas & Clean Oil Spills Immediately				X		As Needed
Remedial Actions						
Repair/Stabilize Areas of Erosion	X			X		As Needed
Replace Dead Plantings & Reseed Bare Areas	X					As needed
Structural Repairs	X	X	X	X		As Needed
Make Adjustments/Repairs to Ensure Proper Functioning	X	X	X	X		As Needed

NOTES: * Manufactured treatment systems & underground detention basin to be cleaned according to manufacturer's recommendation; at a minimum, whenever sediment accumulates to a depth of 6-12 inches or if sediment resuspension is observed. ** Replace stones if they cannot be adequately cleaned.

PROPERTY INFORMATION: THE DOWNS E. Cady Street City of Northville, Wayne County, Michigan	PROPERTY OWNER: HUNTER PASTEUR, NORTHVILLE, LLC 32300 Northwestern Hwy, Suite 230, Farmington Hills, Michigan, 48334 Phone: (248) 539-5511	ENGINEER: Seiber Keast Lehner 39205 Country Club Dr, Suite C-8 Farmington Hills, MI 48331 Phone: (248) 308 - 3331	DATE: 02 / 24 /2022 SHEET 1 OF 1
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EXHIBIT A
**PHYSICAL LIMITS OF STORM WATER
MANAGEMENT SYSTEM**



THE DOWNS
SOUTH 3, TOWN 1 SOUTH, RANGE 8
EAST, CITY OF NORTHVILLE, WAYNE
COUNTY, MICHIGAN

SCALE: 1"=250'
DATE: 03-03-23
JOB NO.: 21-001
DWG FILE: 21-001-EXB1-PH2
DRAWN BY: DN
CHECK: BE
SHEET: 1 OF 1

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

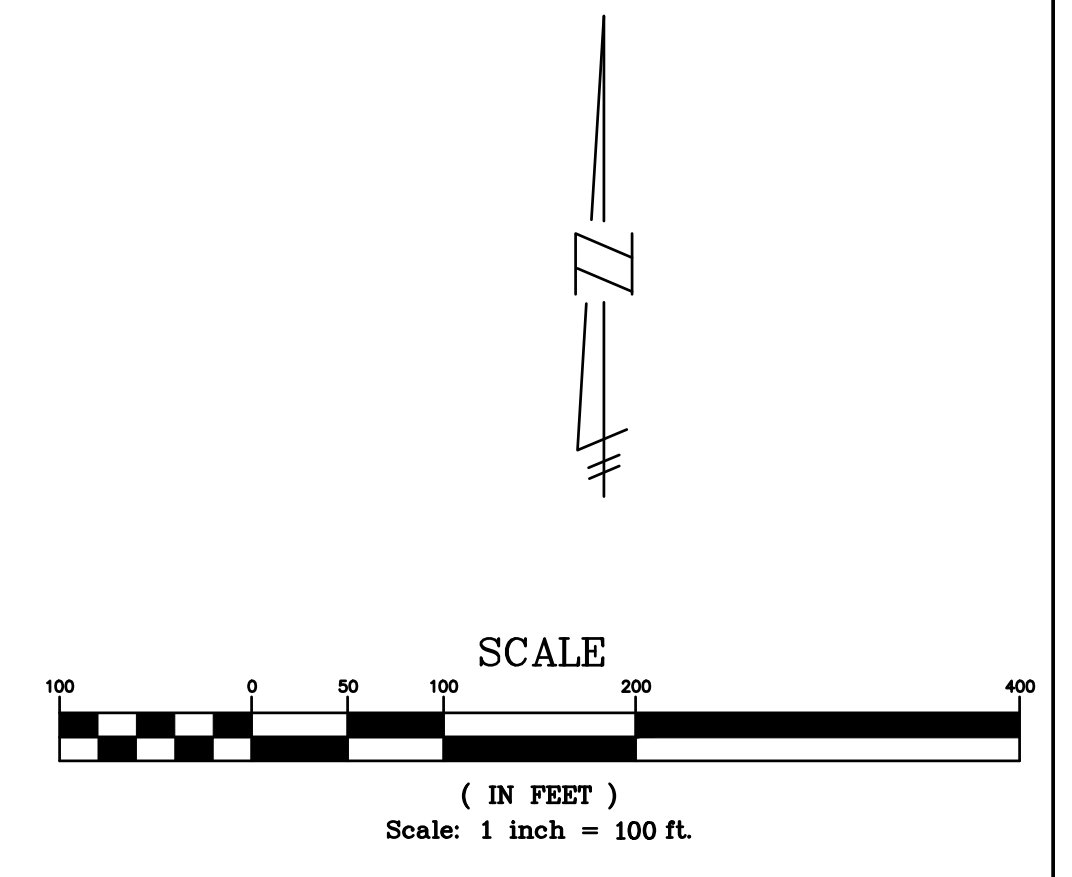
REVISIONS		
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING
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DATE: 04-25-22 DESIGNED BY: A.A. JOB NUMBER: 21-001
CHECKED BY: B.E. DRAWING FILE: 21001-EXB1-PH2.DWG


STORM WATER MAINTENANCE EXHIBIT

<p>SEIBER KEAST LEHNER ENGINEERING SURVEYING 39205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 PHONE: 248.308.3331</p>	<p>SHEET 59</p>
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THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN


REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	08-10-2022
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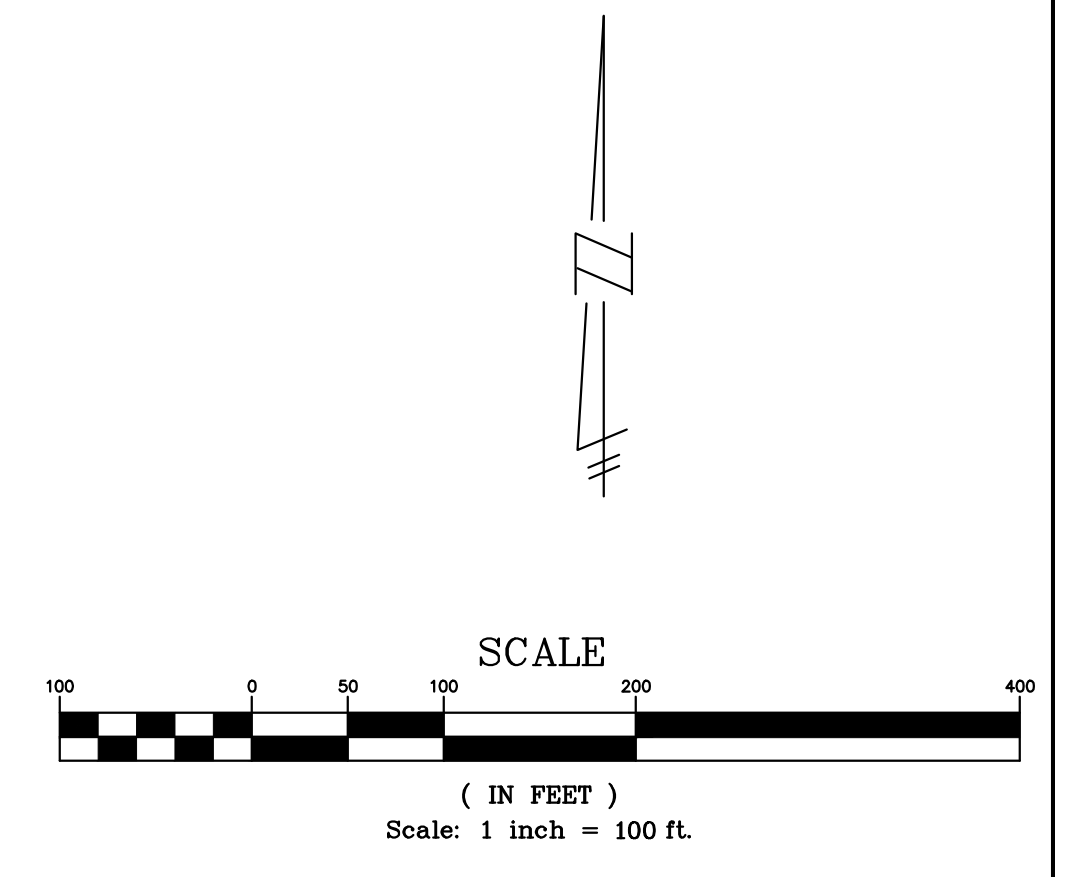
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DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: R.E. FILE: 21001PF-FSP-PH2.DWG

FLOODPLAIN PLAN

 SEIBER KEAST LEHNER ENGINEERING SURVEYING 39205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 PHONE: 248.308.3331	SHEET 60
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N:\2100 THE DOWNS\21001 PF-FSP-PH2.DWG 11/21/2023 11:42 AM
 11/21/2023 11:42 AM



HP/PERENNIAL	
	HP LAND DEVELOPMENT: APRIL 2024 – NOVEMBER 2024 (7 MONTHS)
	PHASE 1: NOVEMBER 2024 – DECEMBER 2026 (25 MONTHS) COMMENCEMENT OF LEASING: DECEMBER 2026 CENTRAL PARK: APRIL 2026 – OCTOBER 2026 (6 MONTHS) **CENTRAL PARK WILL BE CONTRACTED WITH THE CONTRACTOR OF THE NORTHWEST APARTMENT BUILDING
	PHASE 2: APRIL 2024 – MAY 2027 (37 MONTHS) DELIVERIES: AUGUST 2024 – MAY 2027 (33 MONTHS)
	PHASE 3: MARCH 2026 – NOVEMBER 2027 (32 MONTHS) DELIVERIES: NOVEMBER 2027 – NOVEMBER 2028 (12 MONTHS)
	RIVER PARK: JUNE 2024 – JUNE 2025 (12 MONTHS) *ENVIRONMENTAL REMEDIATION & DEMO OF THE DOWNS TRACK: FEBRUARY 2024 – JULY 2024 (5 MONTHS)
TOLL BROTHERS	
	PHASE 1: JANUARY 2024 – AUGUST 2026 (32 MONTHS) DELIVERIES: JULY 2025 – OCTOBER 2026 (15 MONTHS)
	PHASE 2: SEPTEMBER 2024 – OCTOBER 2027 (37 MONTHS) DELIVERIES: MARCH 2026 – APRIL 2028 (25 MONTHS)
	PHASE 3: SEPTEMBER 2025 – JANUARY 2027 (16 MONTHS) DELIVERIES: JULY 2026 – JULY 2027 (12 MONTHS)

THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

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CHECKED BY: R.E. FILE: 21001PH-FSP-PH2.DWG

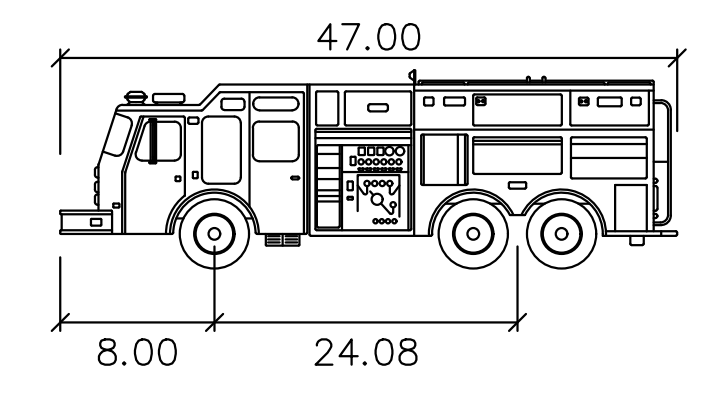
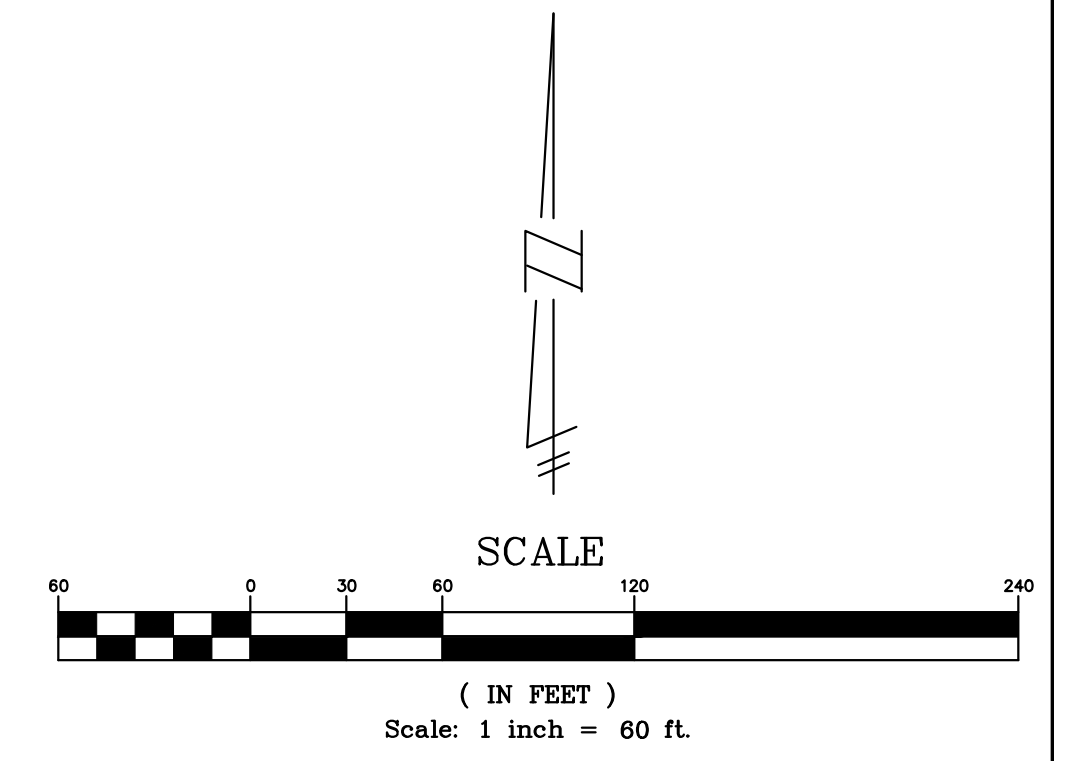
PHASING PLAN

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
61

157100 THE DOWNS - HANDED PARTIAL/COMPLETE SET PLAN/PHASING 2/20/2024 (PHASE 1) 04/25/2023 3.01 PM

SEE CONSTRUCTION PLANS FOR 'THE DOWNS NORTH' FOR EMERGENCY VEHICLE ACCESS PLAN IN THIS AREA



47' FIRE TRUCK

feet

Width : 8.42
 Track : 8.42
 Lock to Lock Time : 6.0
 Steering Angle : 33.3

THE DOWNS
 SECTION 3, T1S, R8E, CITY OF NORTHVILLE
 WAYNE COUNTY, MICHIGAN

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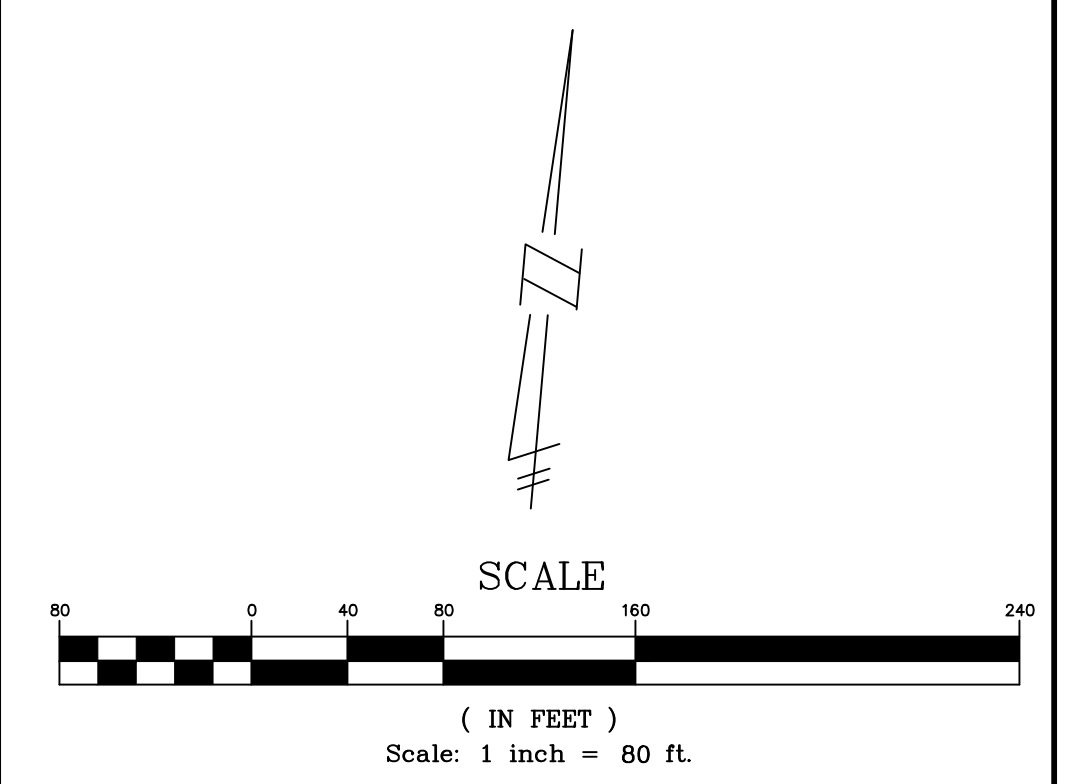
DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: R.R. FILE: 21001-AT-FSP-PH2 - AUTO TURN.DWG

EMERGENCY VEHICLE ACCESS PLAN

SKL SEIBER KEAST LEHNER
 ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
 FARMINGTON HILLS, MI 48331
 PHONE: 248.308.3331

SHEET
62



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	08-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV. PER CITY REVIEW	09-08-2023

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

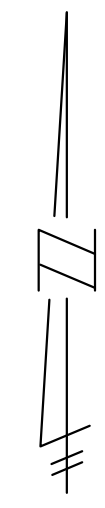
DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-AR-FSP - ACCESSIBLE ROUTE PLAN.DWG

ACCESSIBLE ROUTE PLAN

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
63

\P:\21001-AR-FSP\21001-AR-FSP-ACCESSIBLE ROUTE PLAN.DWG, 9/7/2023 11:42 AM



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS	
NO.	ITEM
1.	100% SCHEMATIC DESIGN
2.	50% DESIGN DEVELOPMENT
3.	FINAL SITE PLAN
4.	REV PER CITY REVIEW

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.



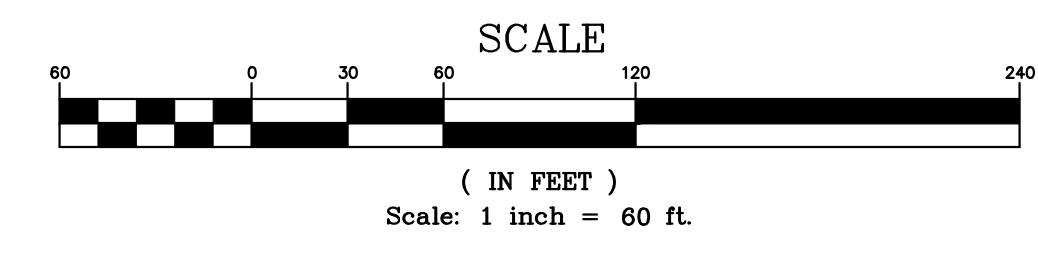
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DATE: 04-25-22 DESIGNED BY: S.M. JOD NUMBER: 21-001
CHECKED BY: R.R. FILE: 21001-POT ROUNDABOUT-FSP-PHS.DWG

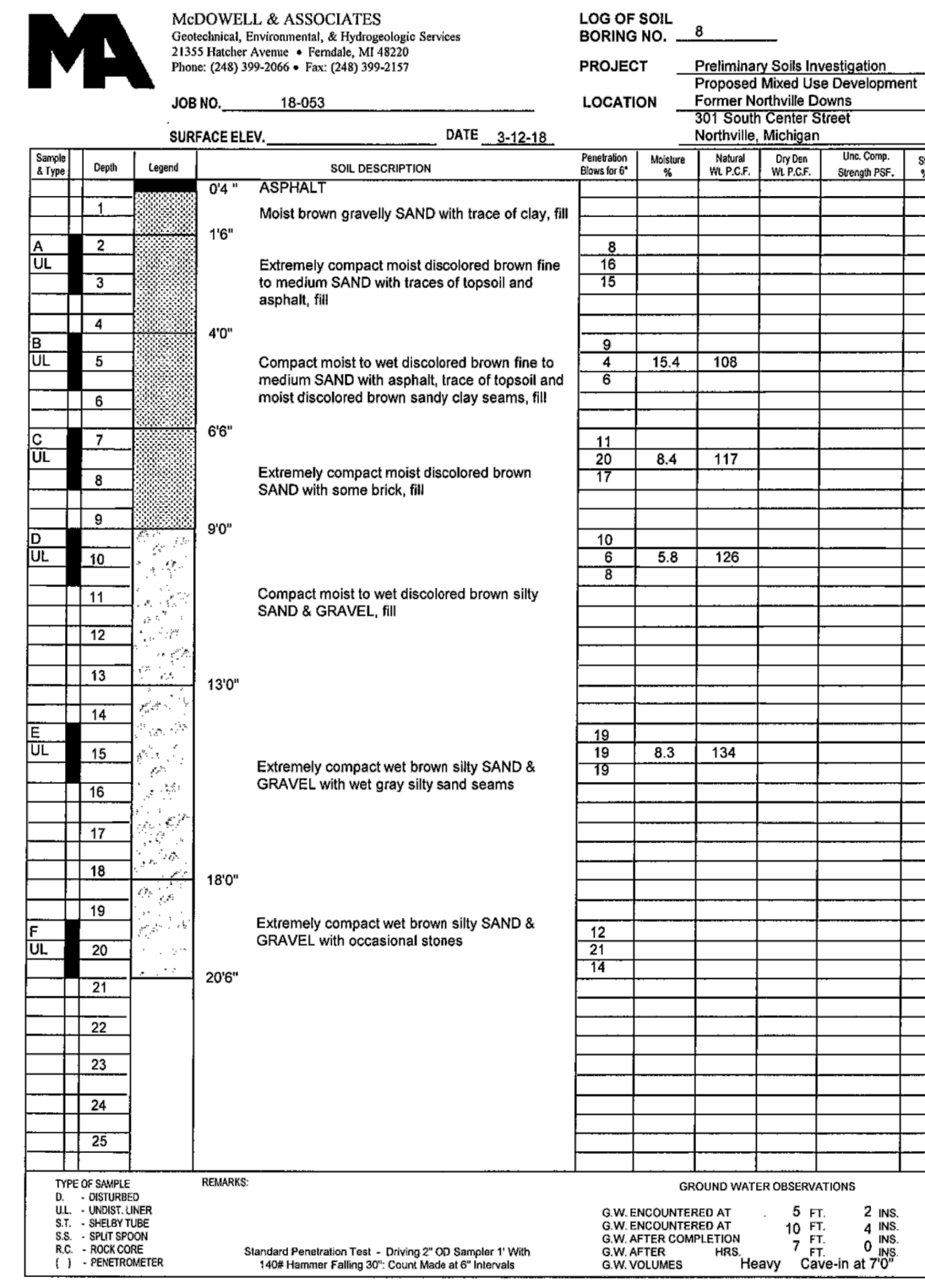
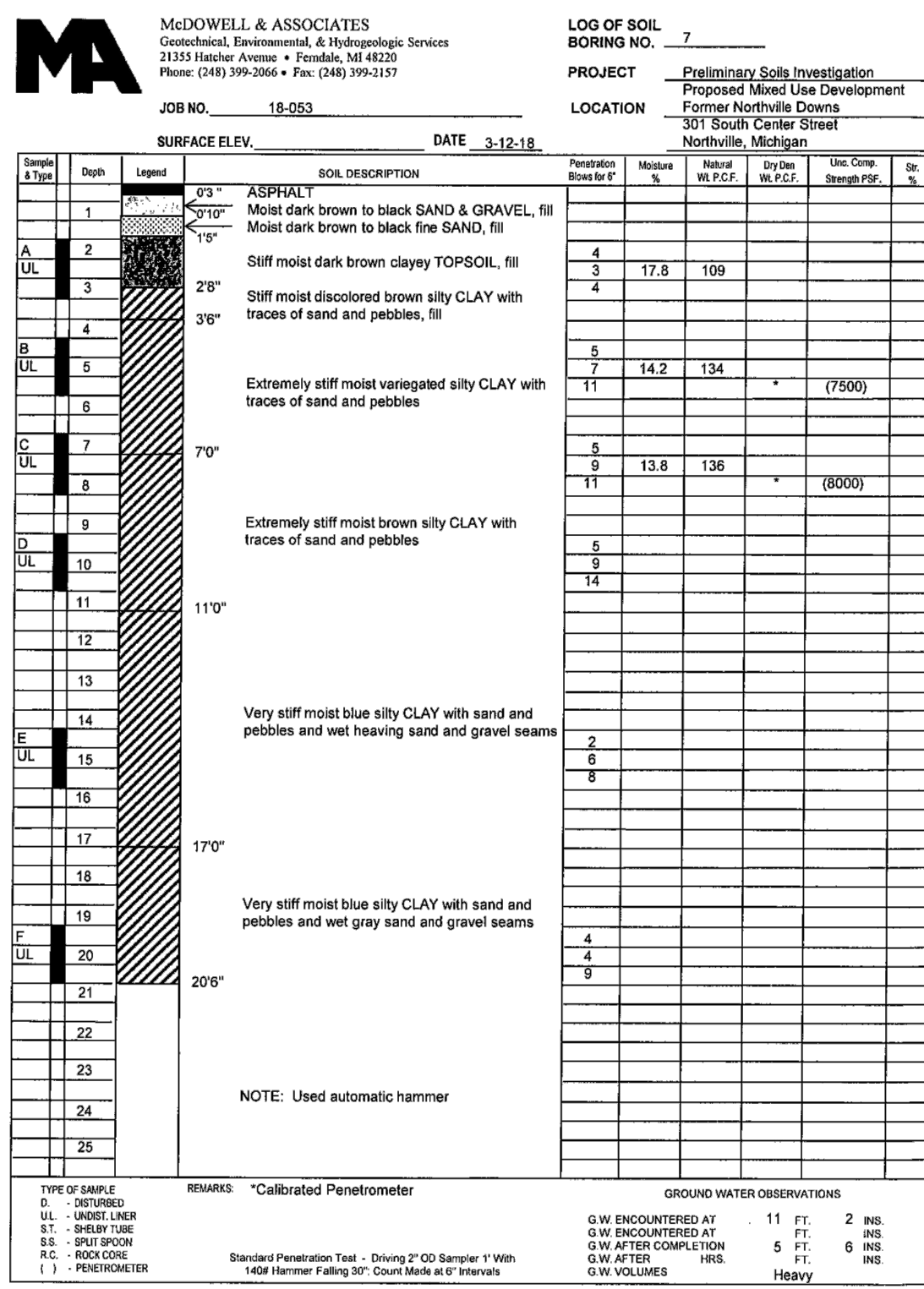
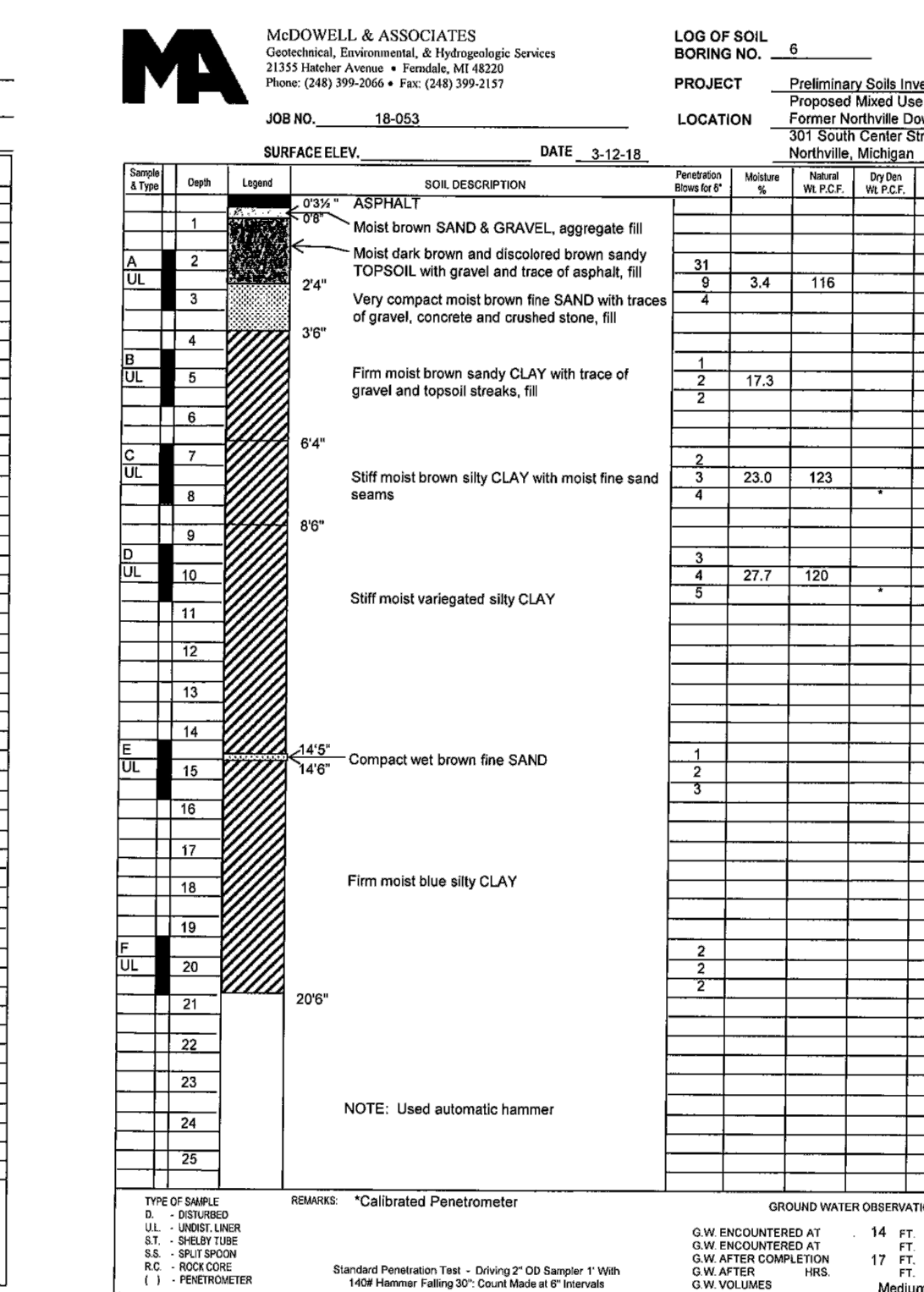
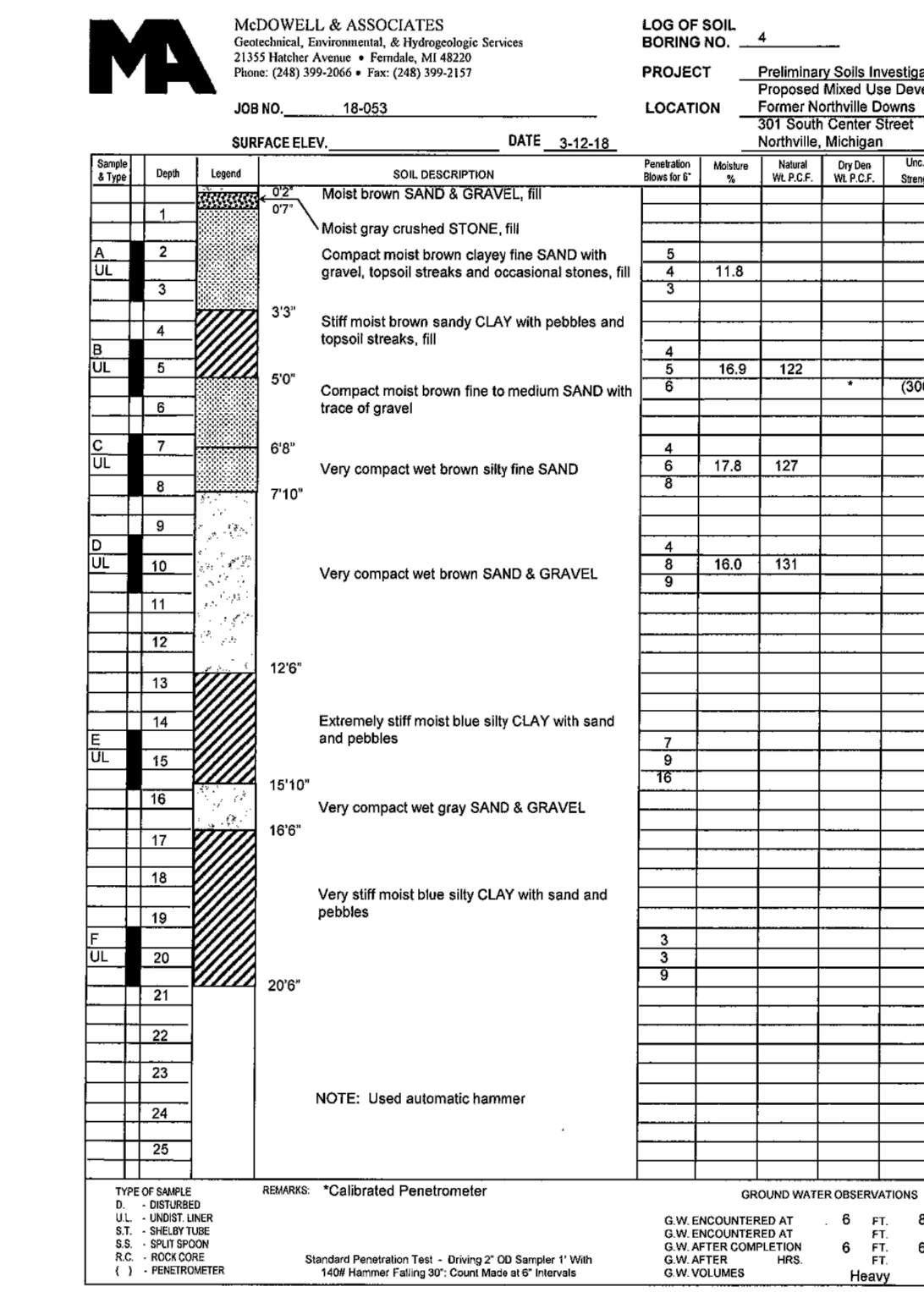
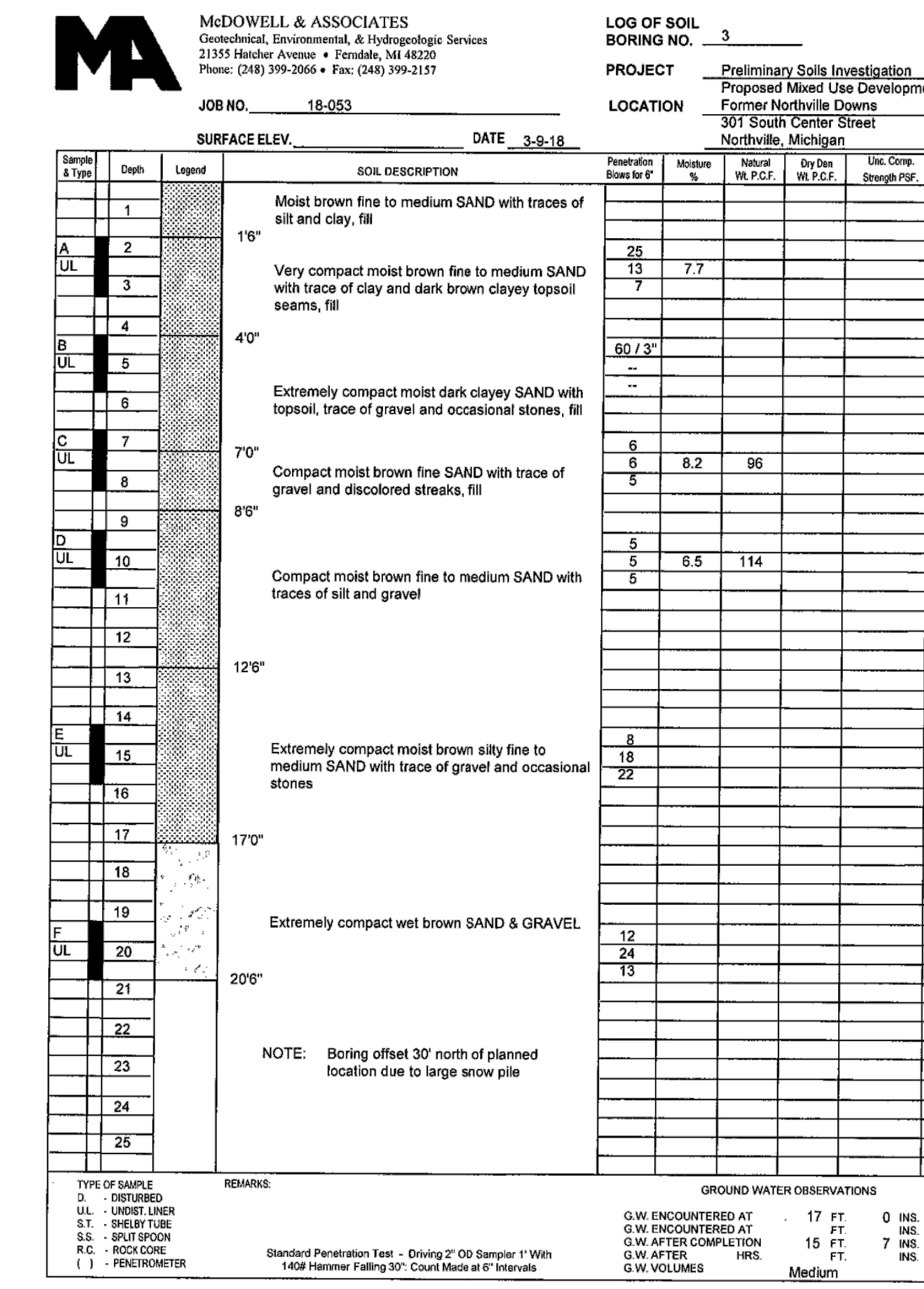
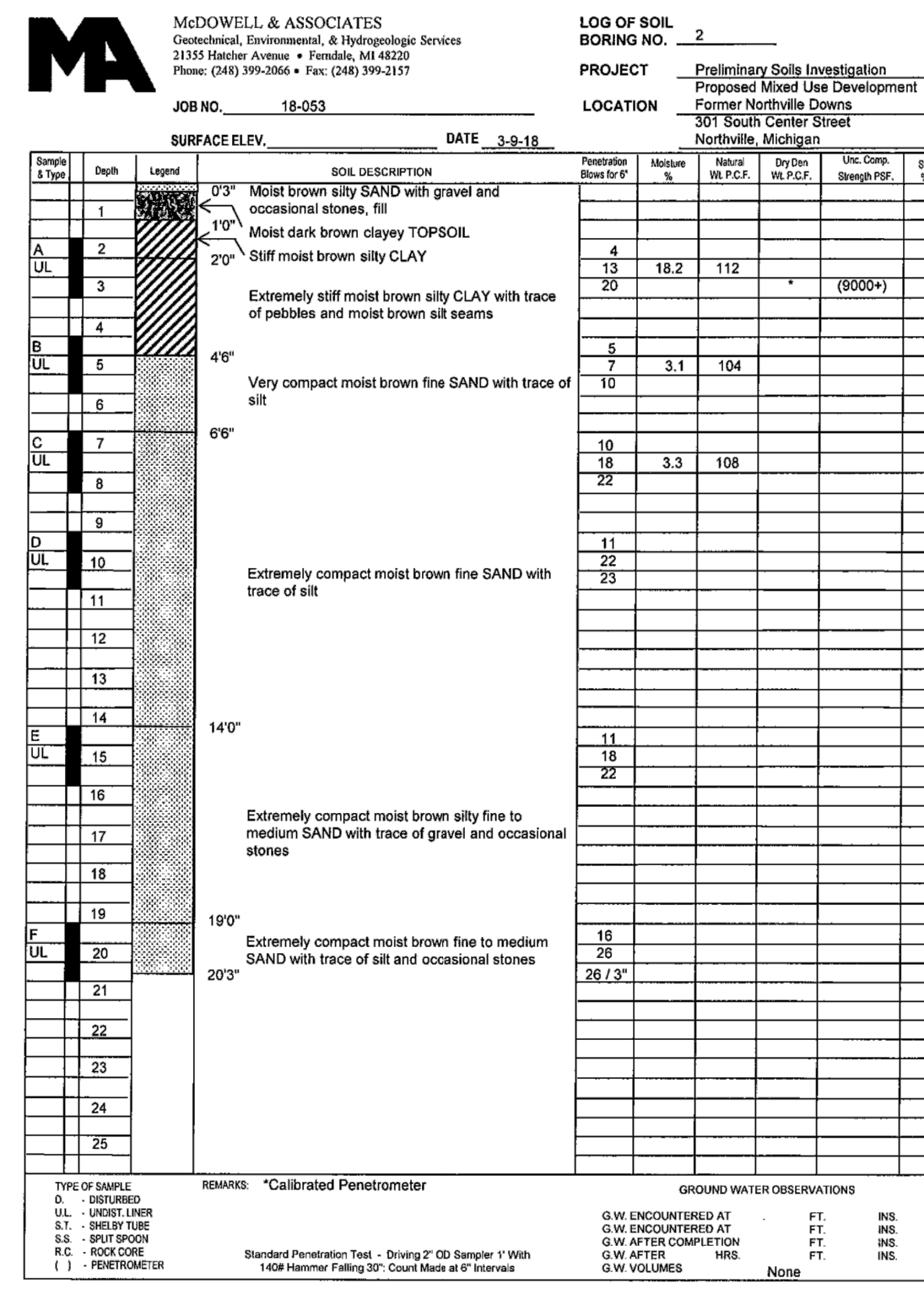
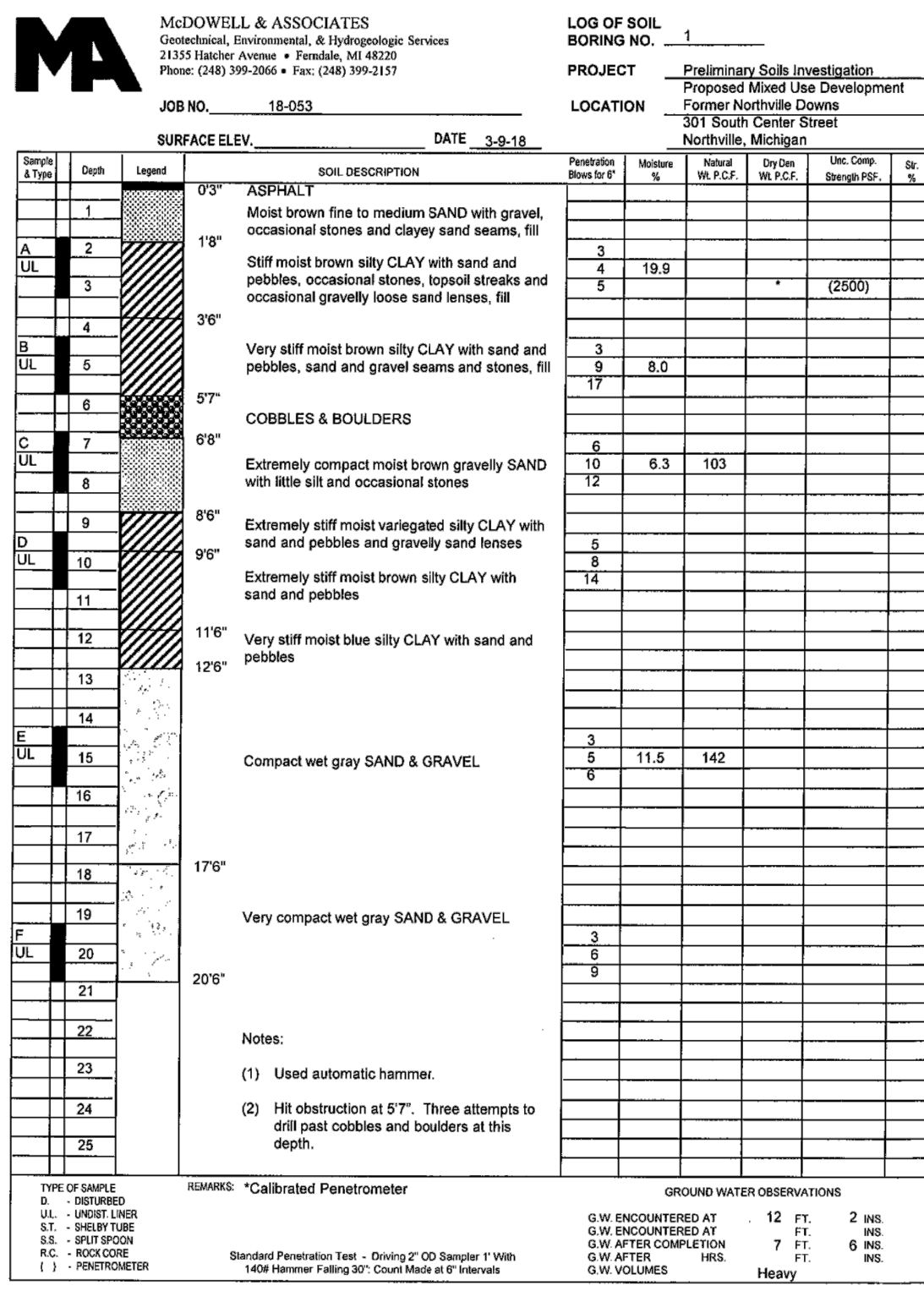
POTENTIAL ROUNDABOUT PLAN

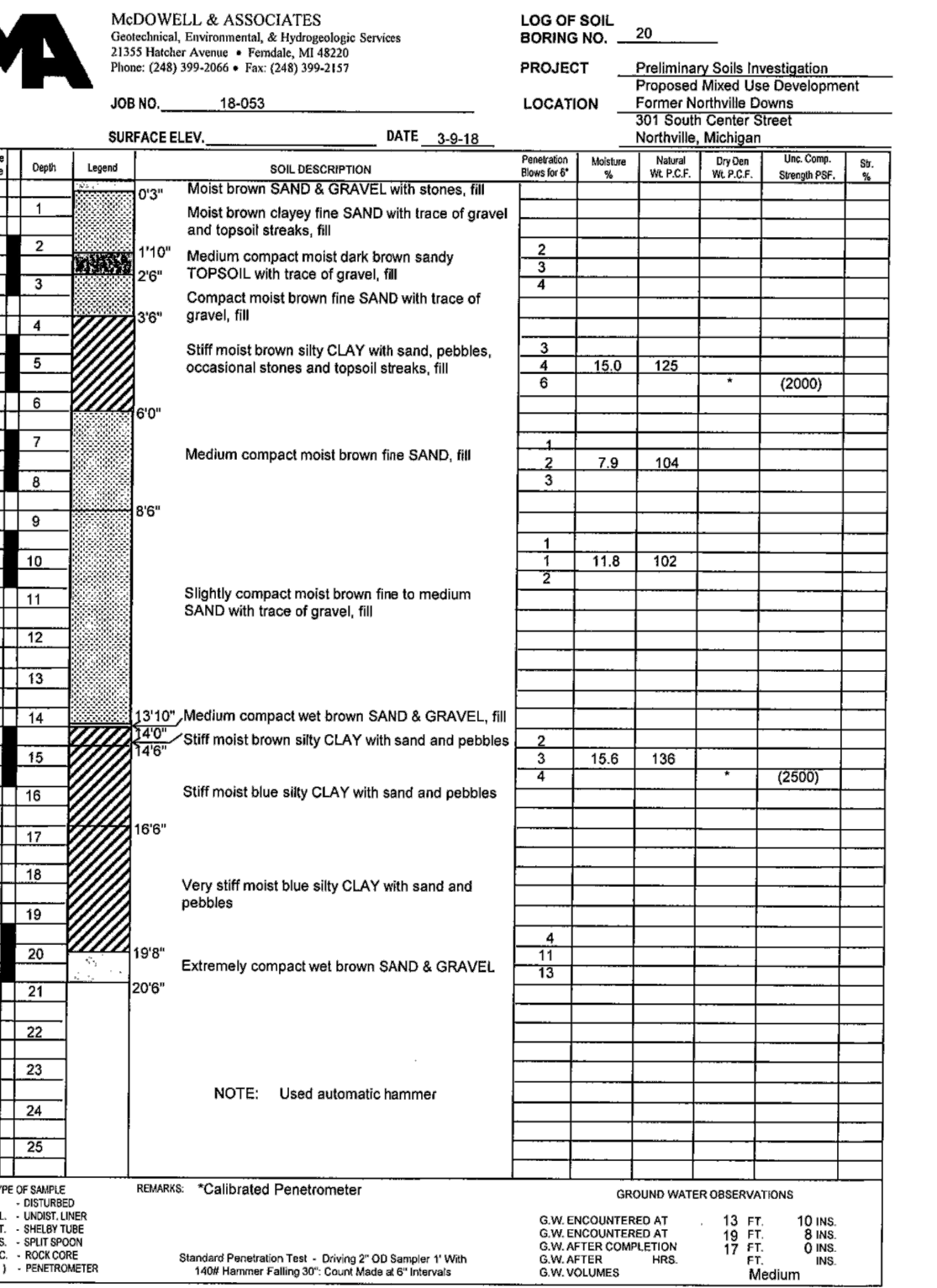
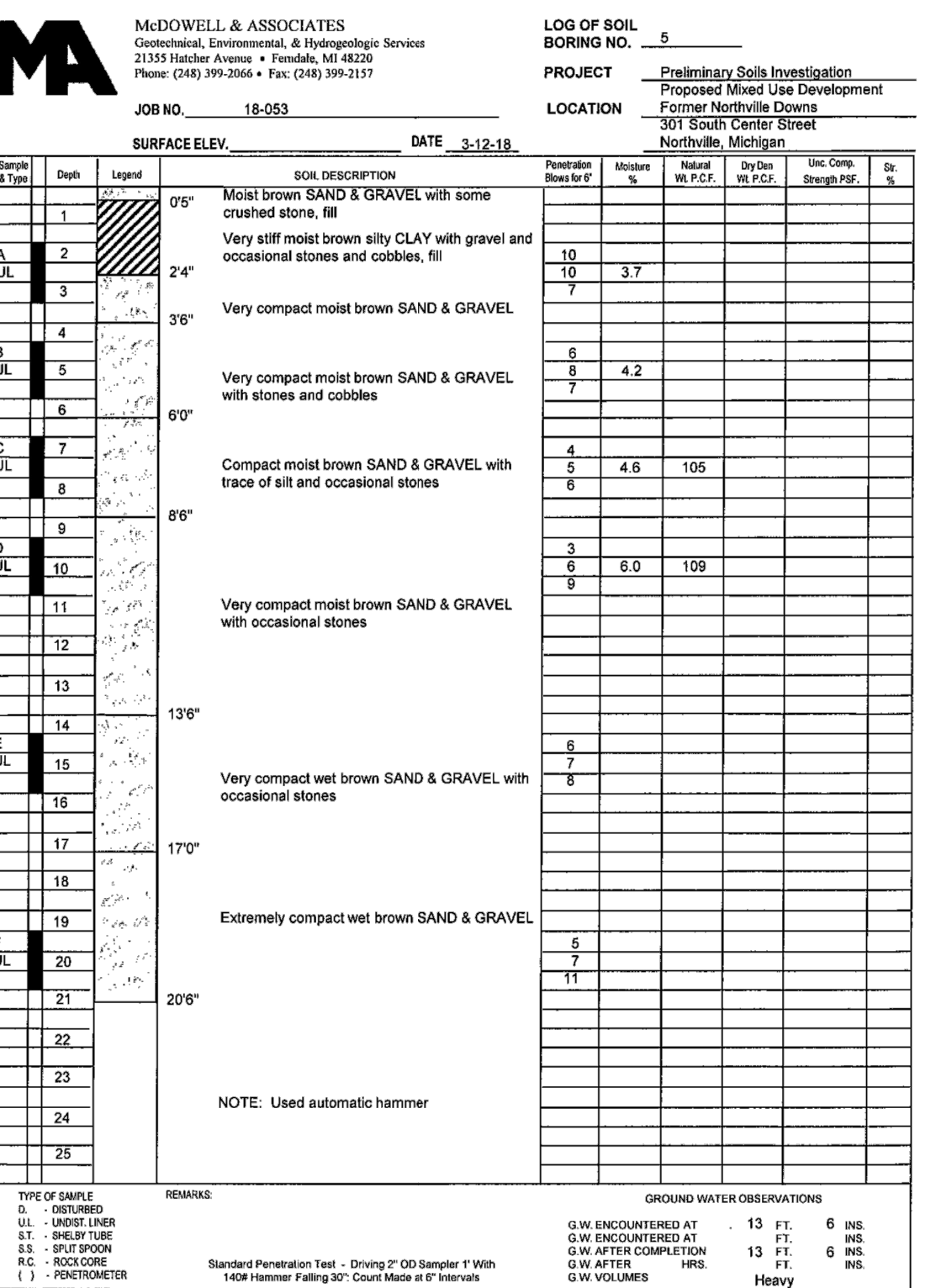
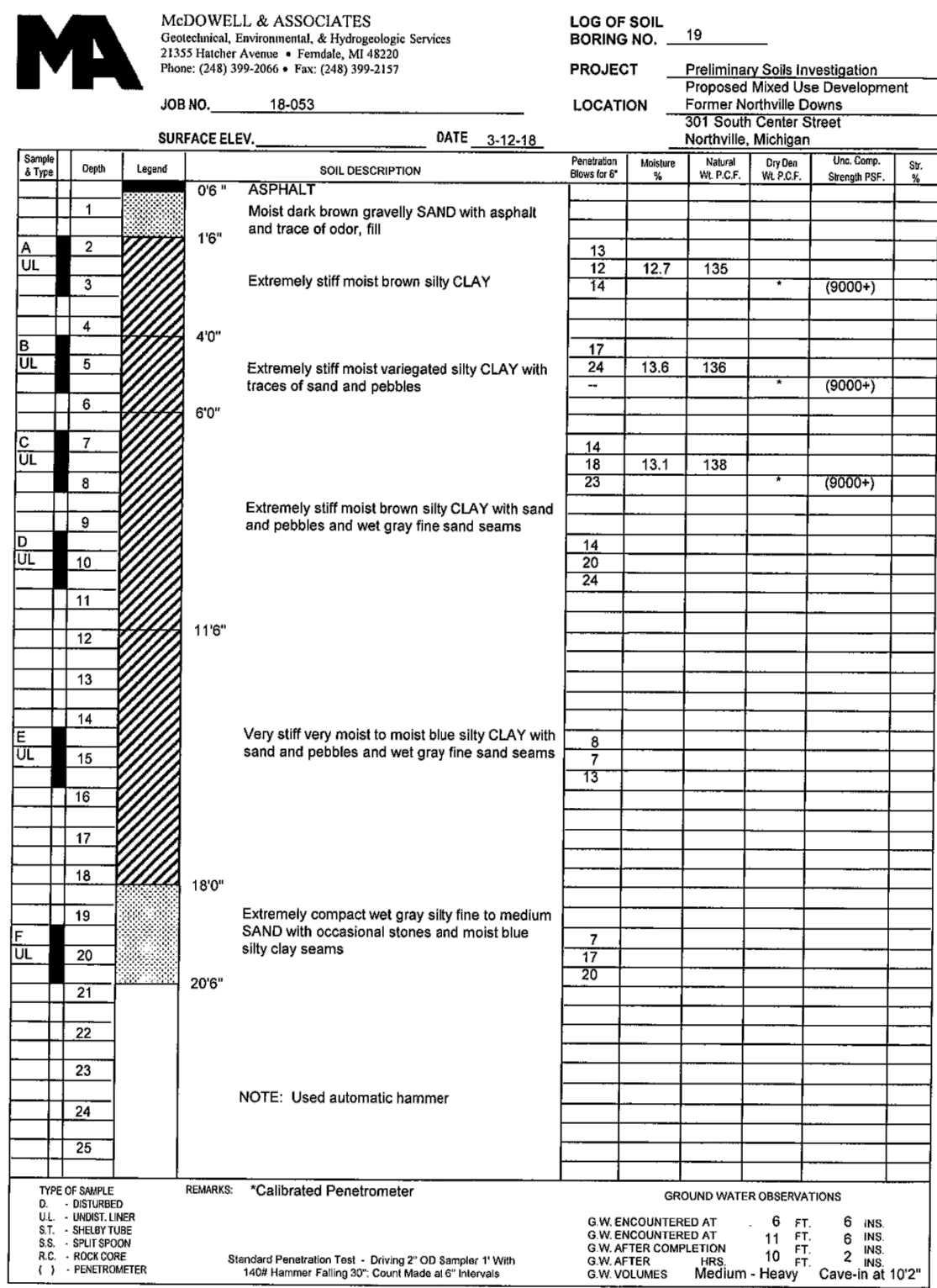
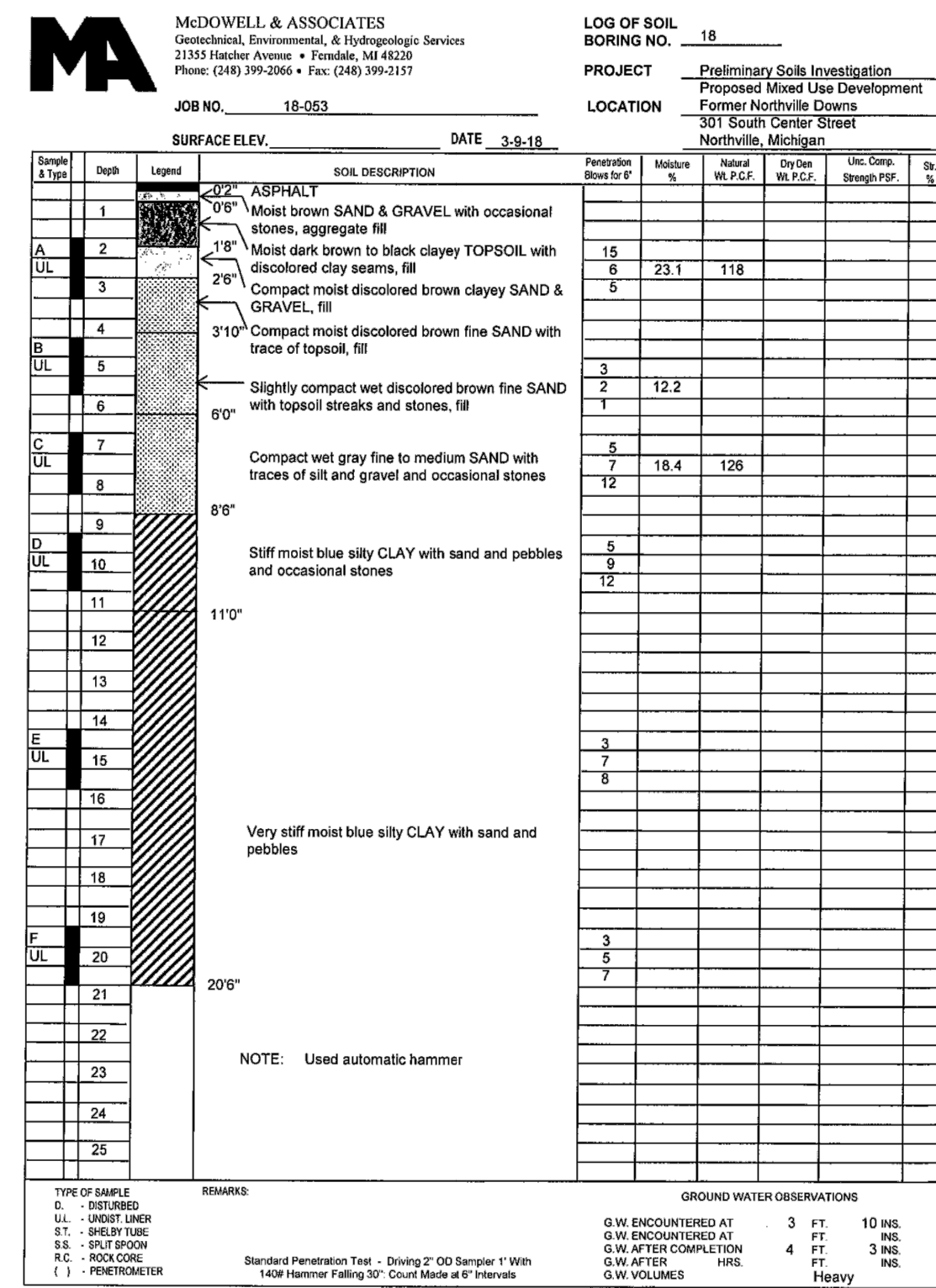
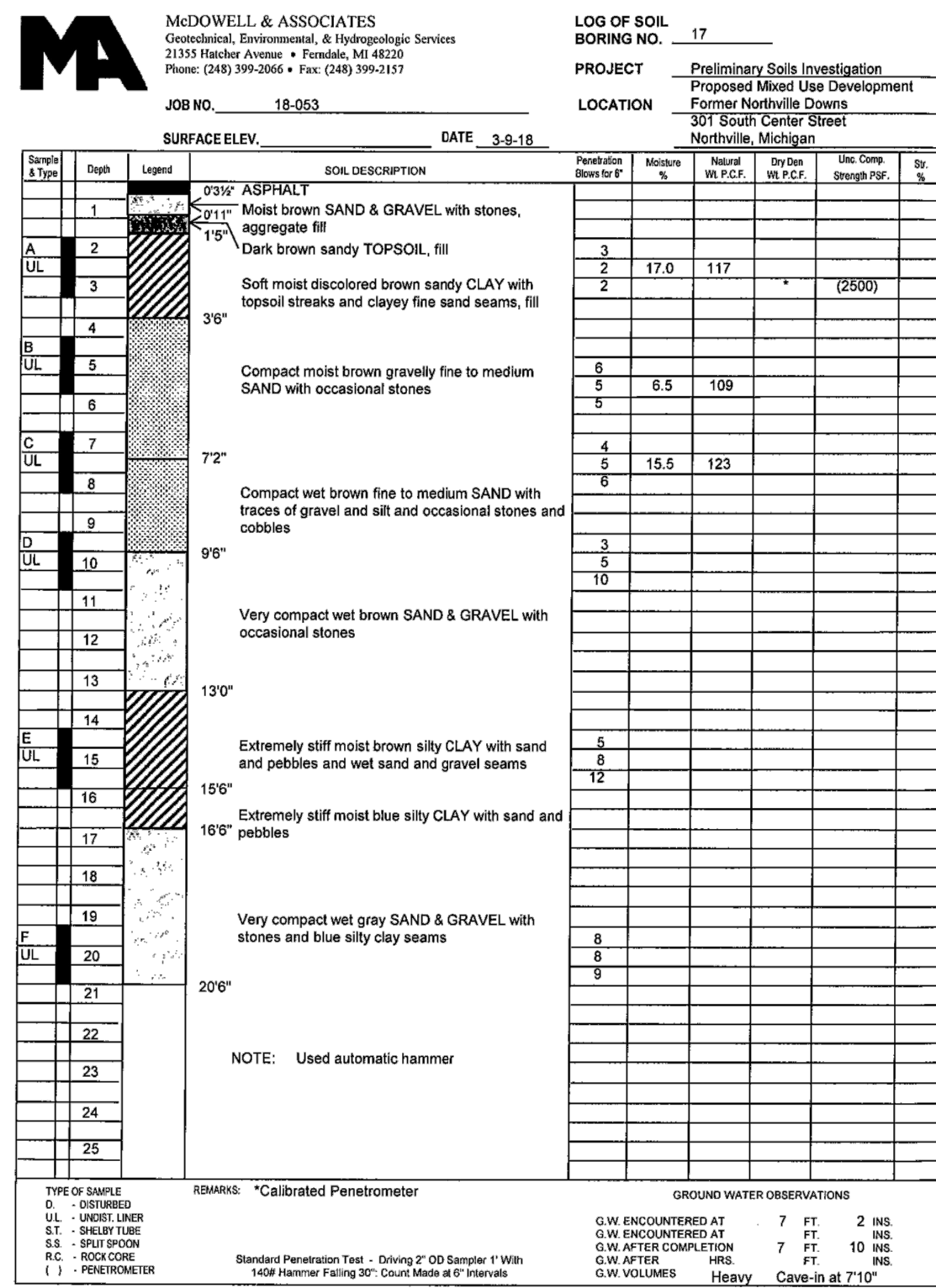
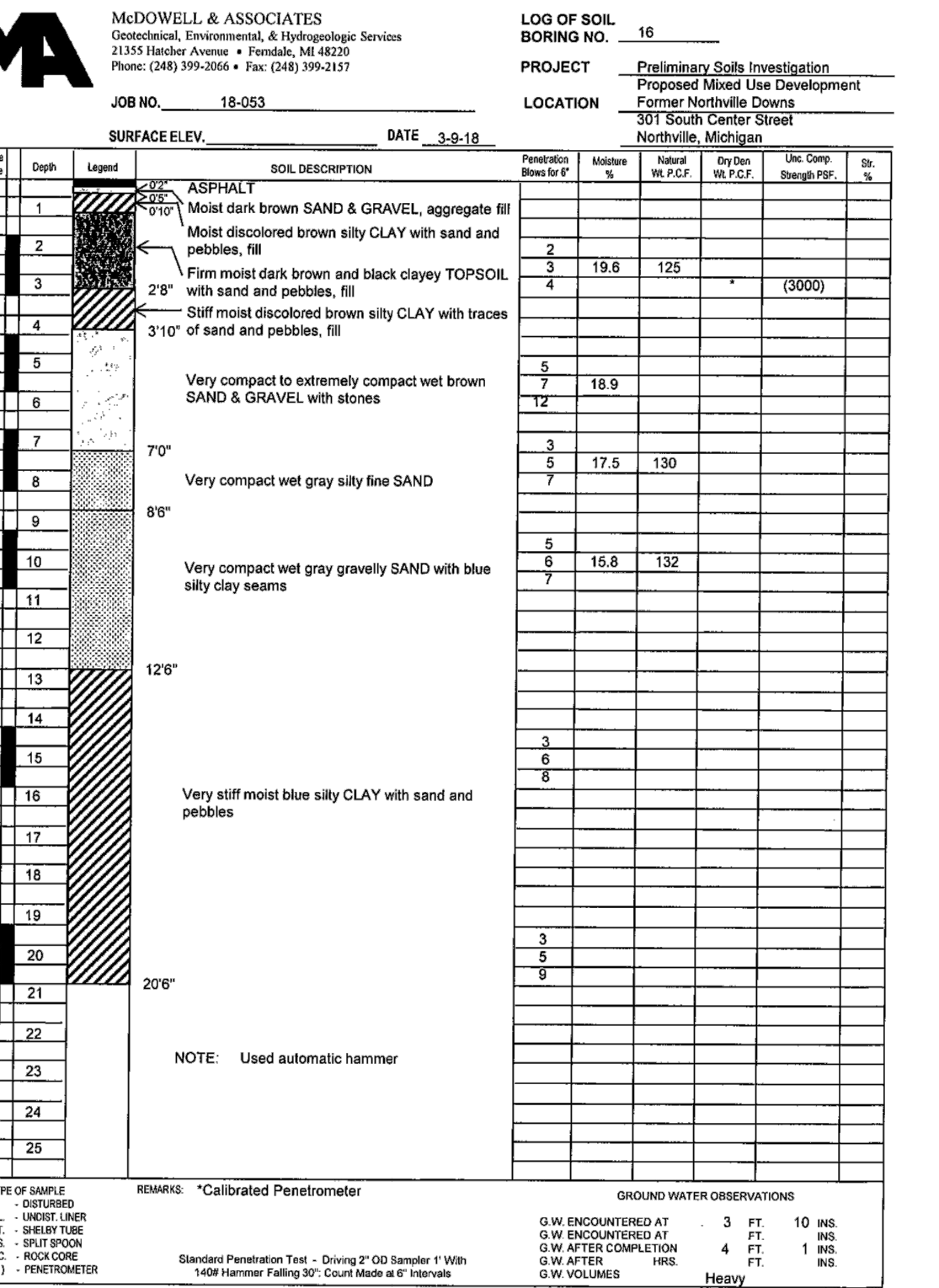
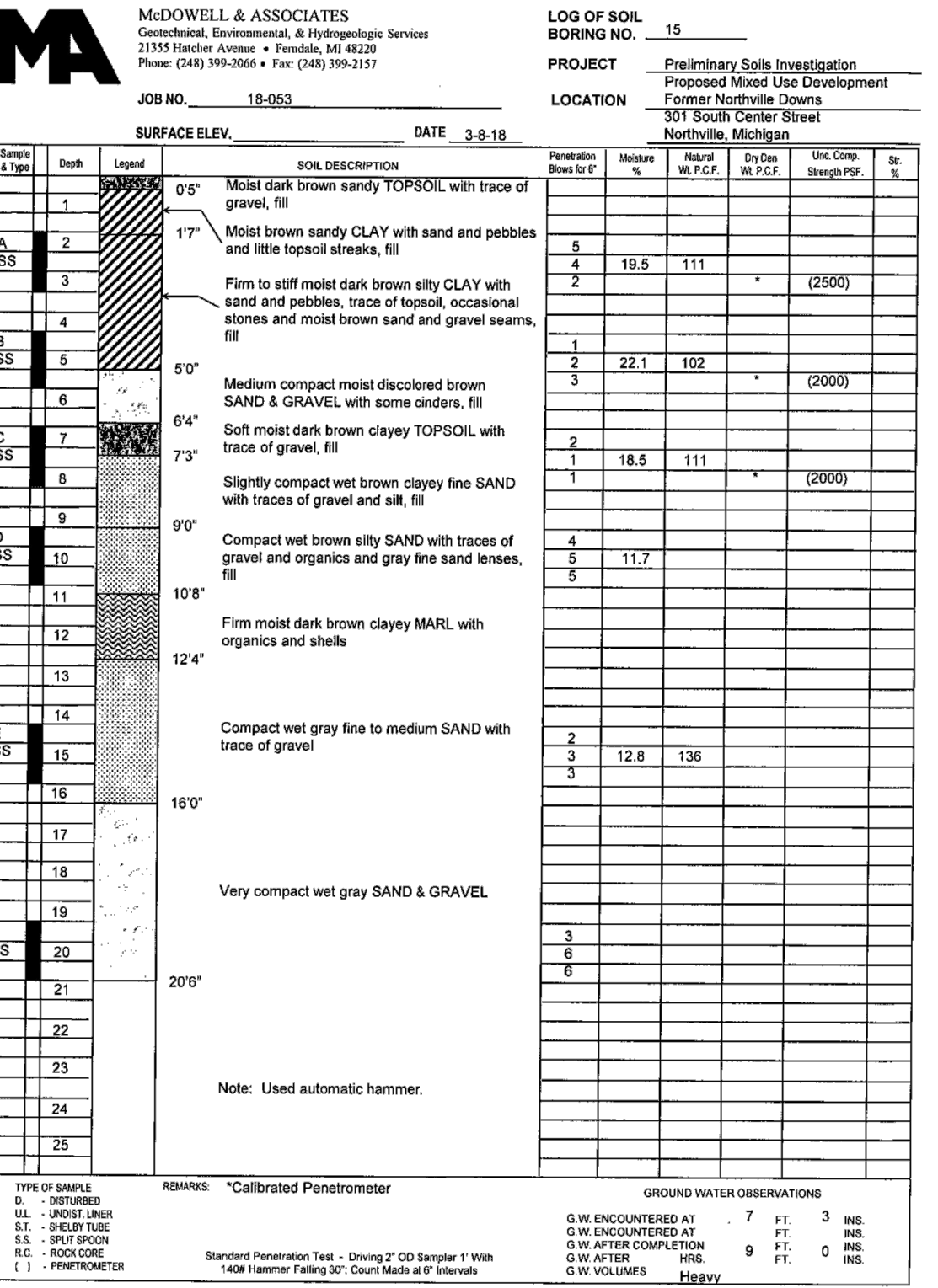
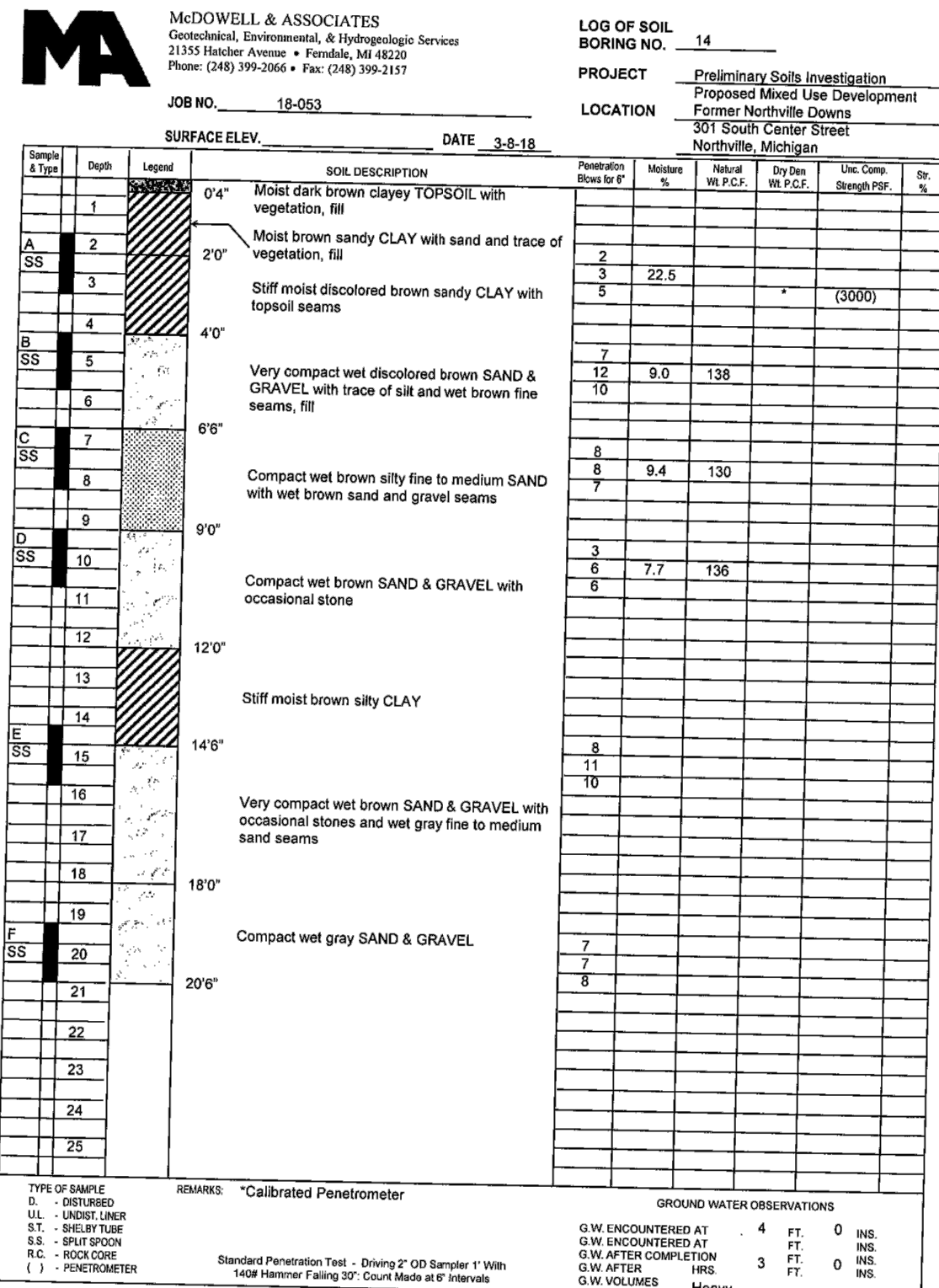
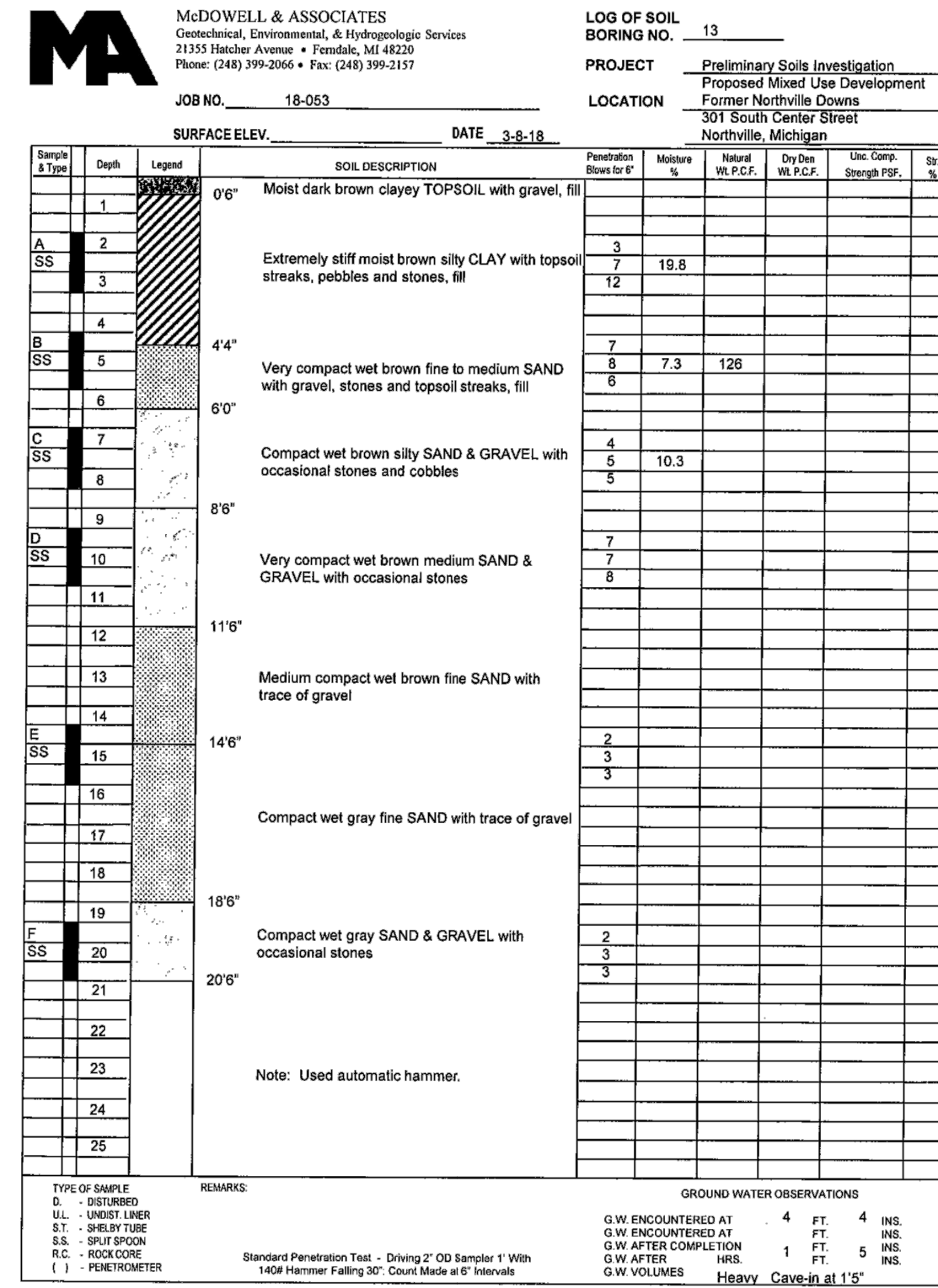
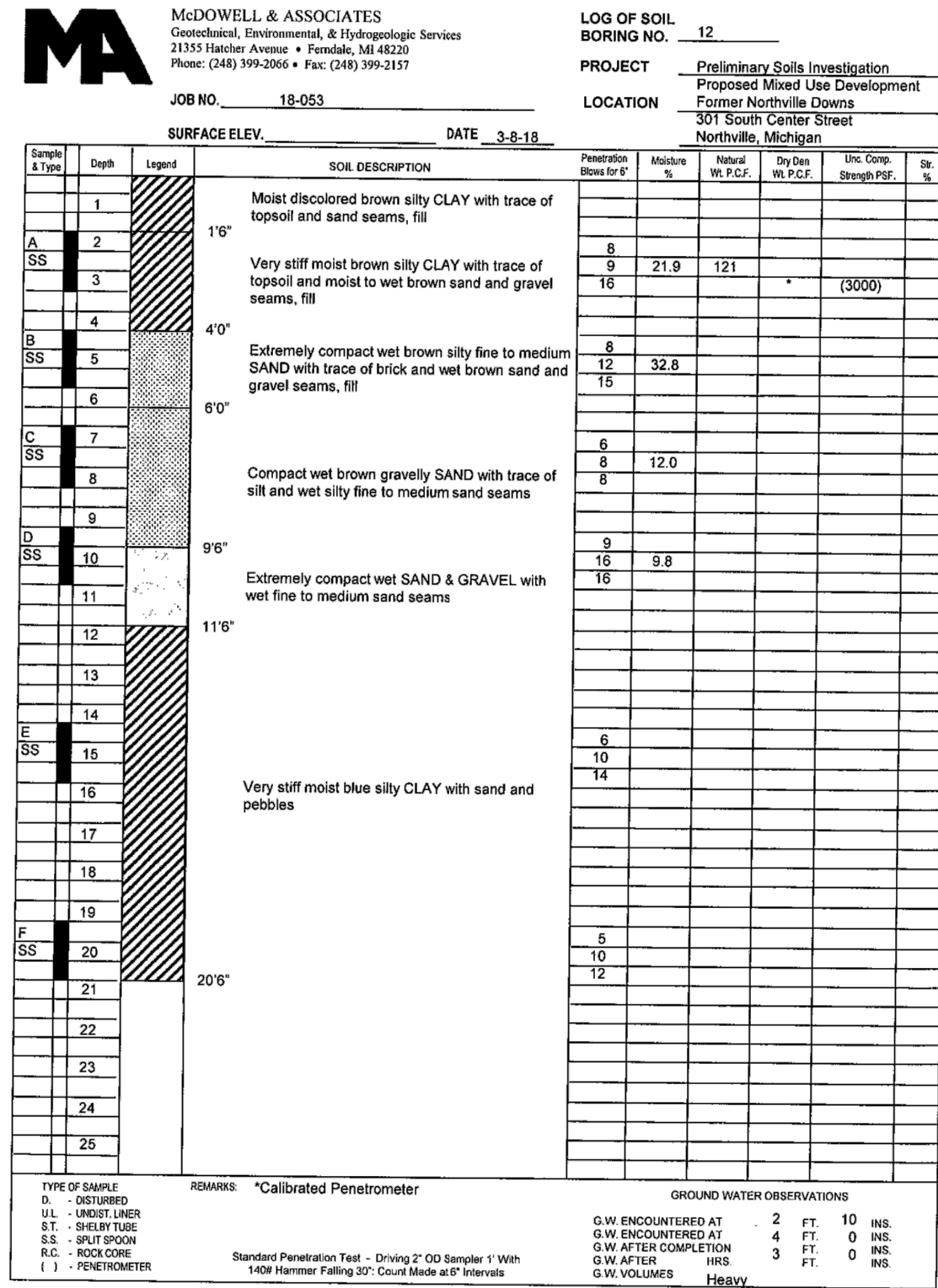
SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
64




P:\21001 THE DOWNS\21001-POT ROUNDABOUT-FSP-PHS.DWG (21001-POT ROUNDABOUT-FSP-PHS.DWG) 4/25/2022 11:42 AM






THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

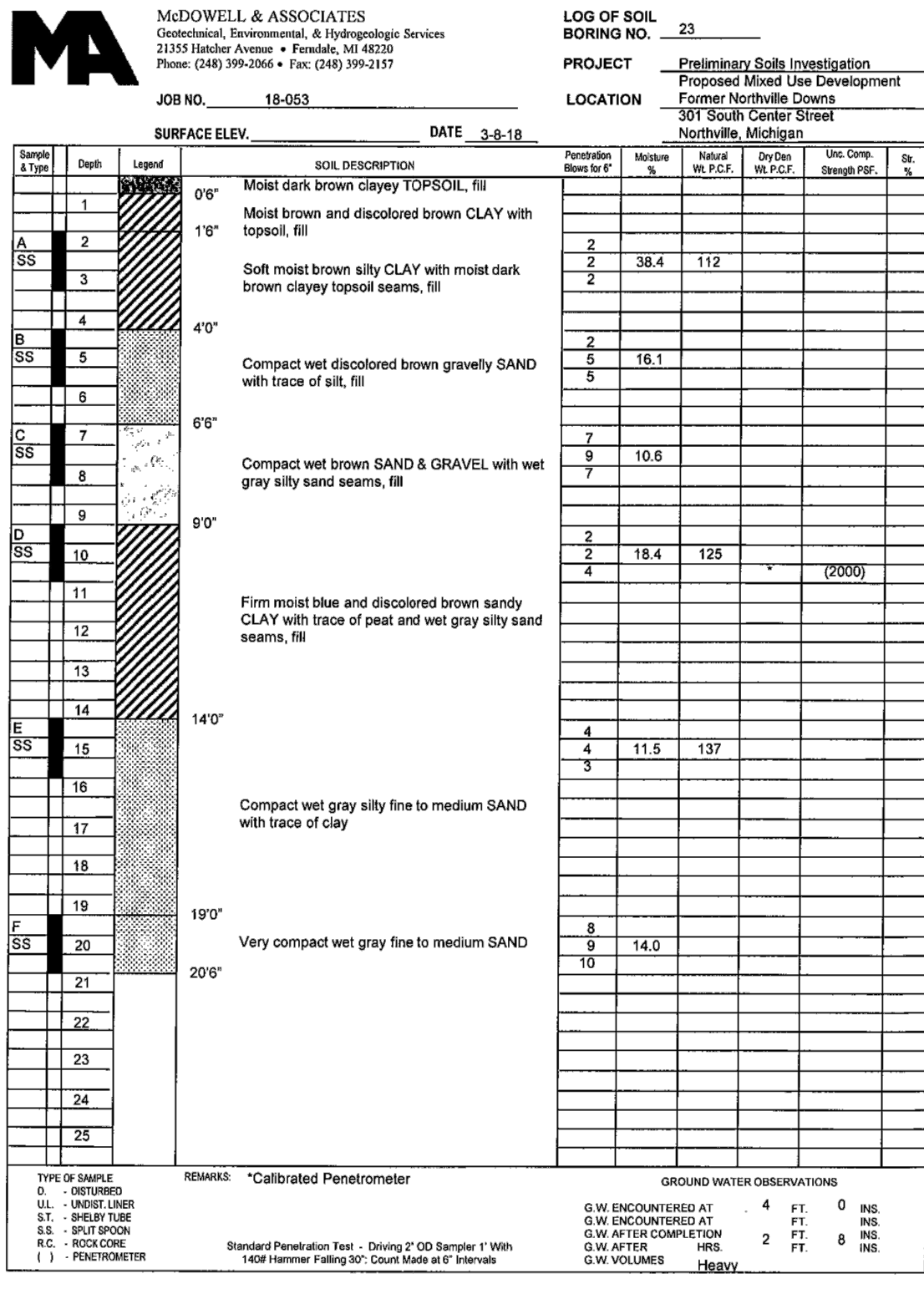
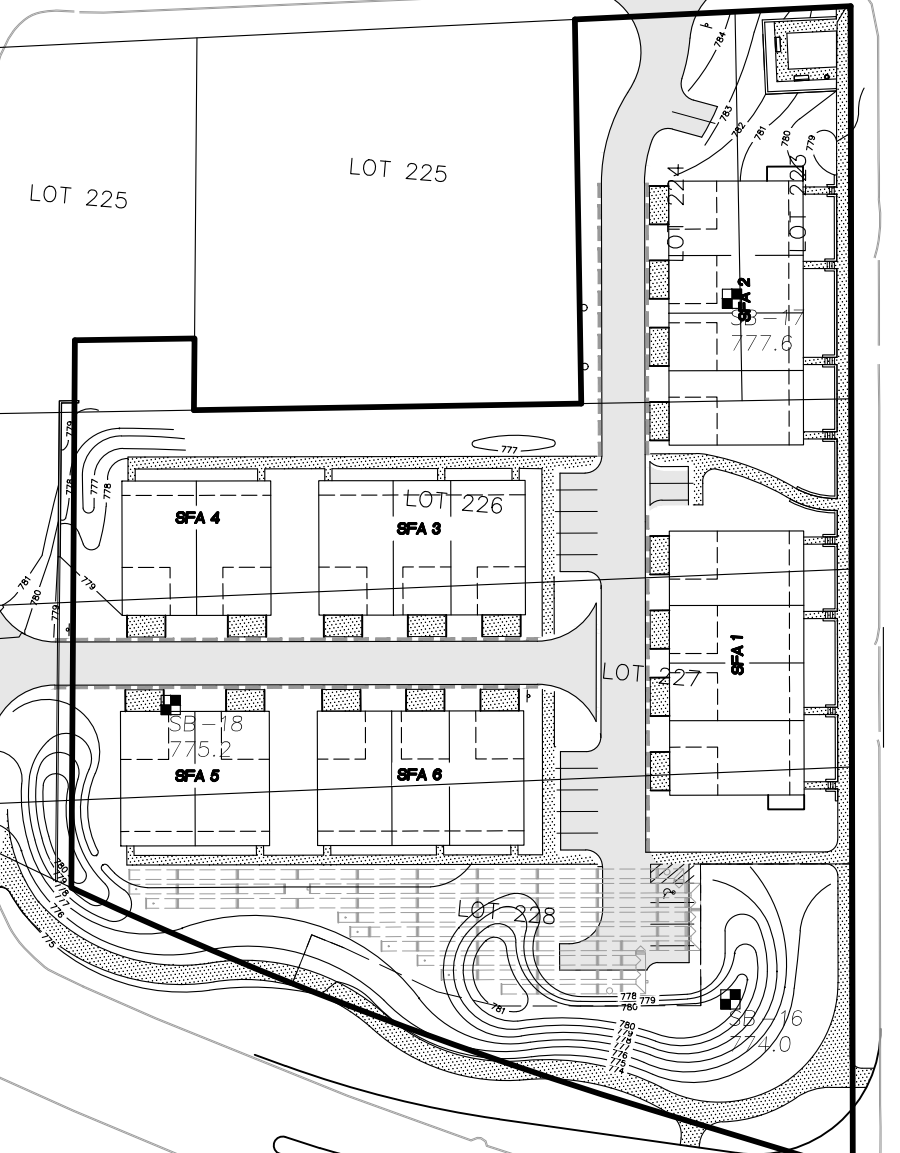
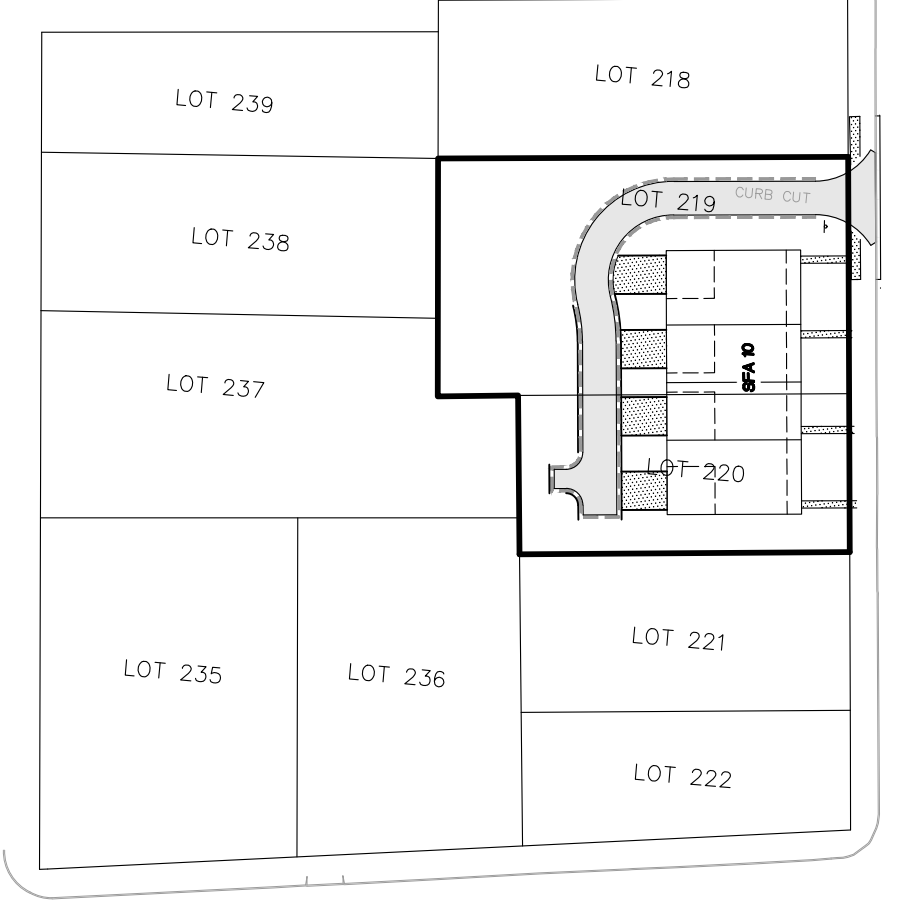
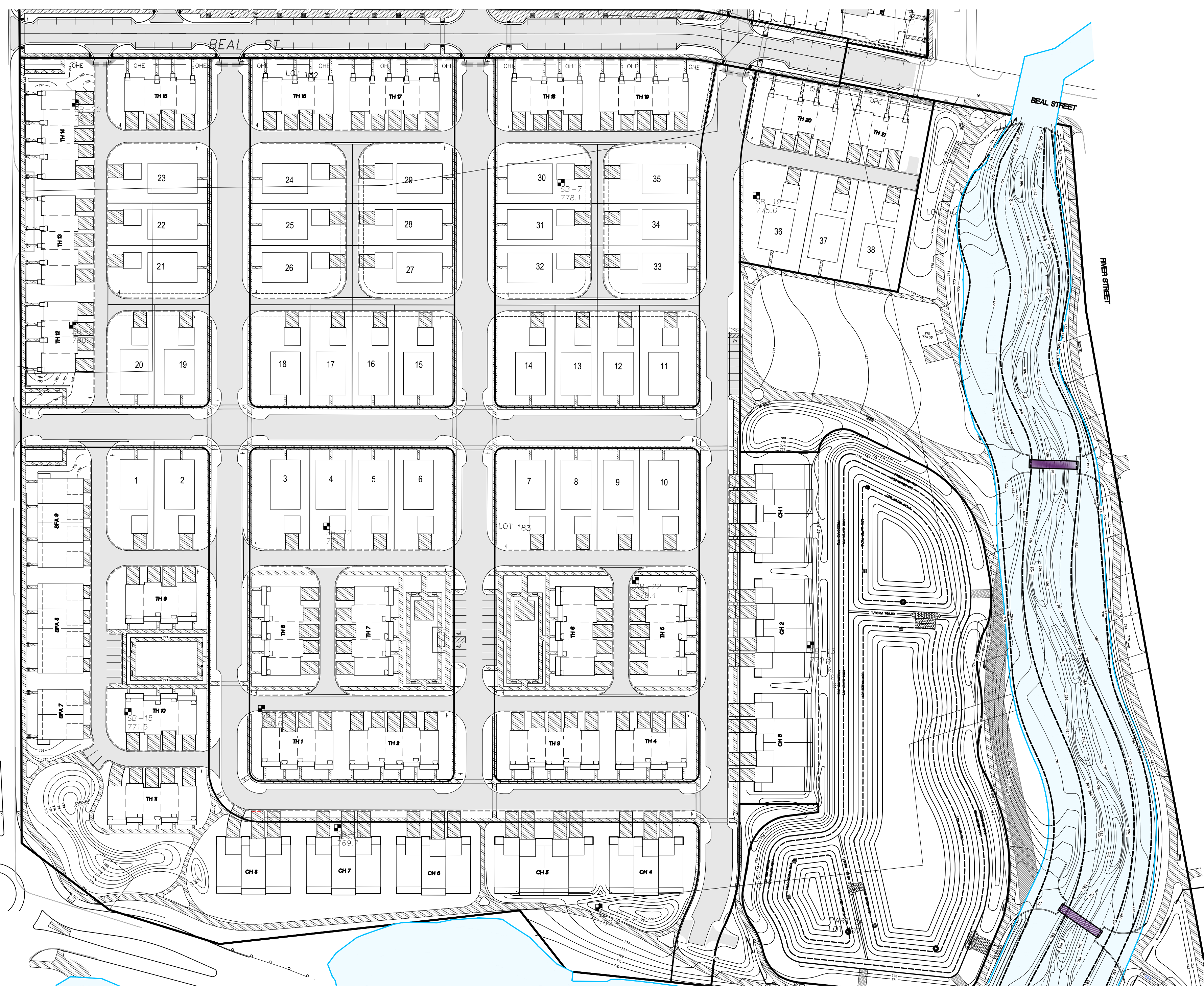
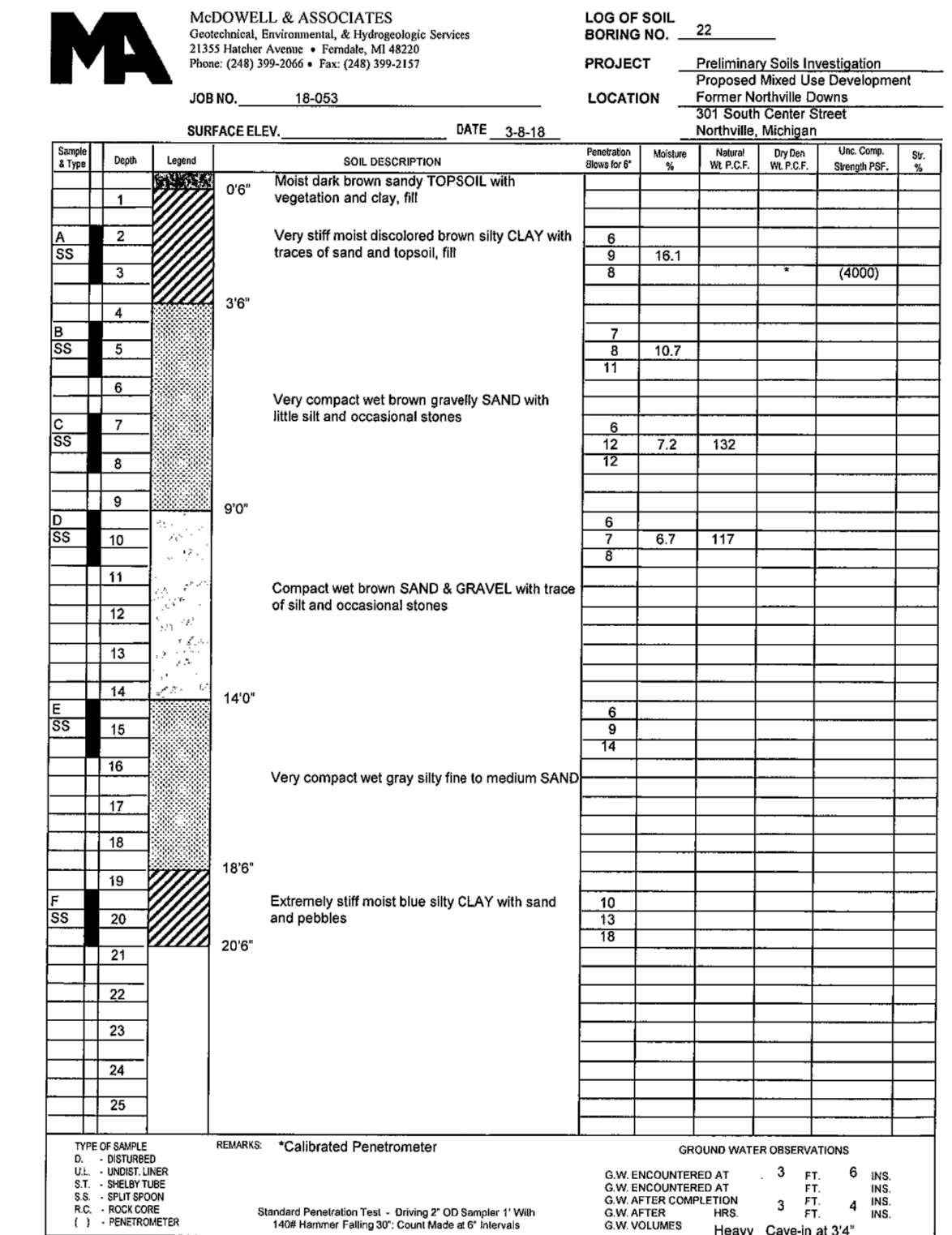
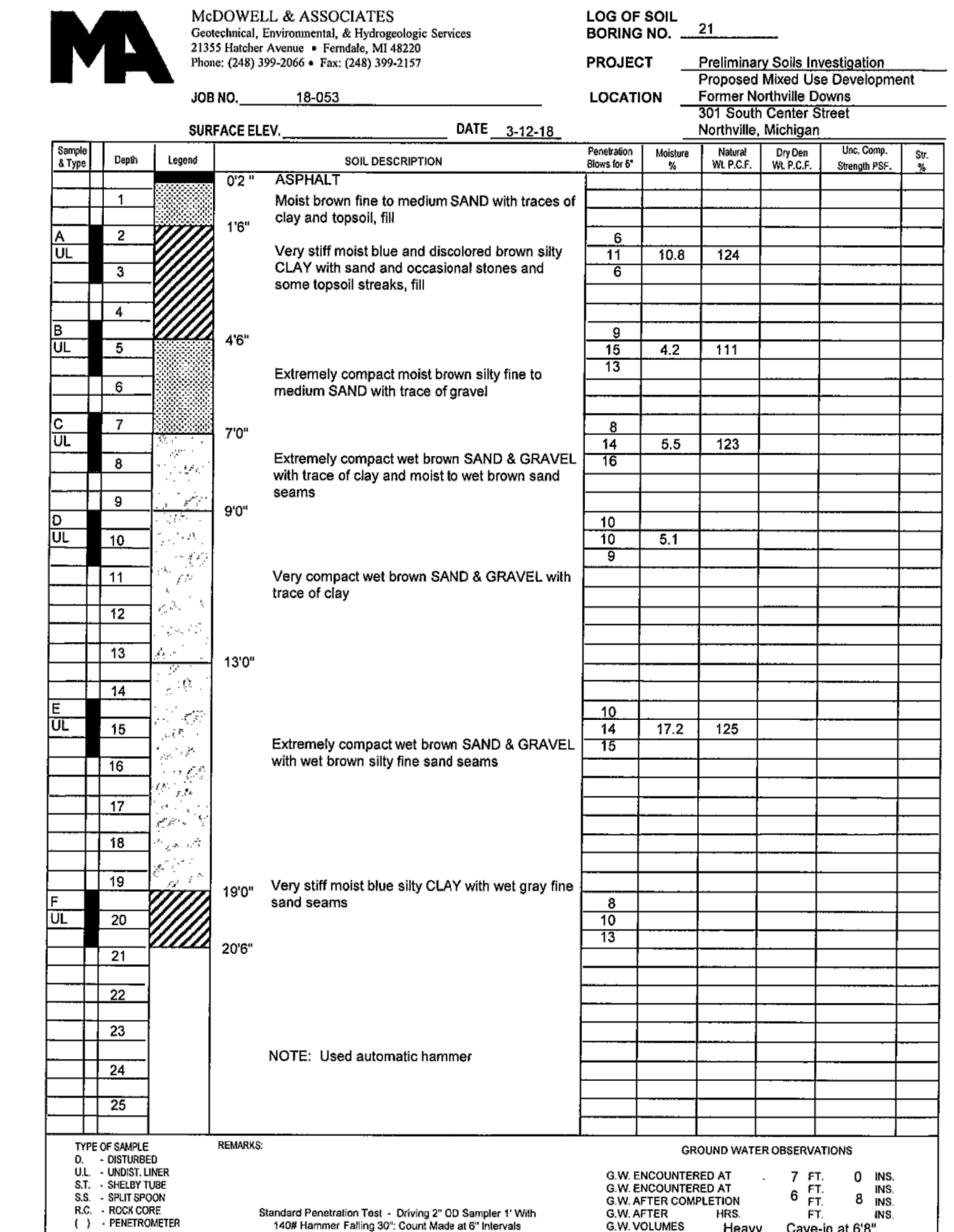
REVISIONS			UTILITY WARNING	
NO.	ITEM	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.	
1.	LOGIC SCHEMATIC DESIGN	06-10-2022	 Know what's below. Call before you dig.	
2.	SOIL DESIGN DEVELOPMENT	02-03-2023		
3.	FINAL SITE PLAN	04-14-2023		
4.	REV PER CITY REVIEW	09-08-2023		

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: P.E. FILE: 21001-SB-RSP.DWG

SOIL BORING REPORT


SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
66



THE DOWNS
 SECTION 3, T1S, R8E, CITY OF NORTHVILLE
 WAYNE COUNTY, MICHIGAN

NO.	REVISIONS	DATE
1.	TOUR SCHEMATIC DESIGN	06-10-2022
2.	SOIL DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING
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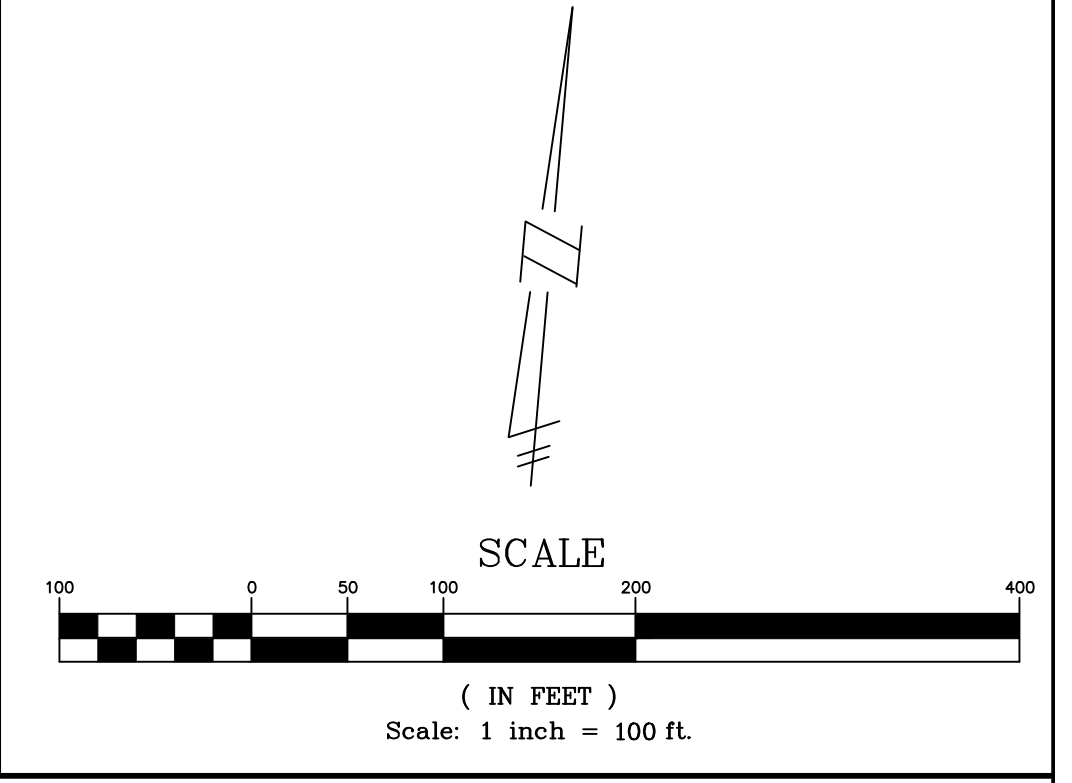
DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
 CHECKED BY: P.E. FILE: 21001-SB-FSP.DWG

SOIL BORING REPORT

SEIBER KEAST LEHNER
 ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
 FARMINGTON HILLS, MI 48331
 PHONE: 248.308.3331

SHEET
67



OPEN SPACE SUMMARY	
SITE AREA	48.12 ACRES
OPEN SPACE SHOWN	15.01 ACRES
OPEN SPACE PERCENTAGE	31.19%
OPEN SPACE EXCLUDING DETENTION	12.49 ACRES
OPEN SPACE PERCENTAGE	25.96%

LEGEND	
EXISTING	PROPOSED
SIDE WALK (CONCRETE)	SIDE WALK (CONCRETE)
CONCRETE CURB AND GUTTER	CONCRETE CURB AND GUTTER
STORM SEWER	STORM SEWER
SANITARY SEWER	SANITARY SEWER
WATER MAIN	WATER MAIN
DENOTES UNDERDRAIN	DENOTES UNDERDRAIN
DENOTES LANDSCAPE DRAIN	DENOTES LANDSCAPE DRAIN
MANHOLE	MANHOLE
CATCH BASIN W/SED CATCH	CATCH BASIN W/SED CATCH
CURB INLET W/SILT SAC	CURB INLET W/SILT SAC
END SECTION	END SECTION
GATE VALVE	GATE VALVE
HYDRANT	HYDRANT
OVERHEAD ELECTRICAL LINES	OVERHEAD ELECTRICAL LINES
FLOOD PLAN	FLOOD PLAN
CONTOURS	CONTOURS
SPOT ELEVATION	SPOT ELEVATION
SURFACE DRAINAGE	SURFACE DRAINAGE
OVERFLOW ROUTE	OVERFLOW ROUTE
TREE FENCE	TREE FENCE
SILT FENCE	SILT FENCE
PROPOSED DRIVEWAY LOCATION	PROPOSED DRIVEWAY LOCATION
CROSSING NUMBER	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	08-10-2023
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UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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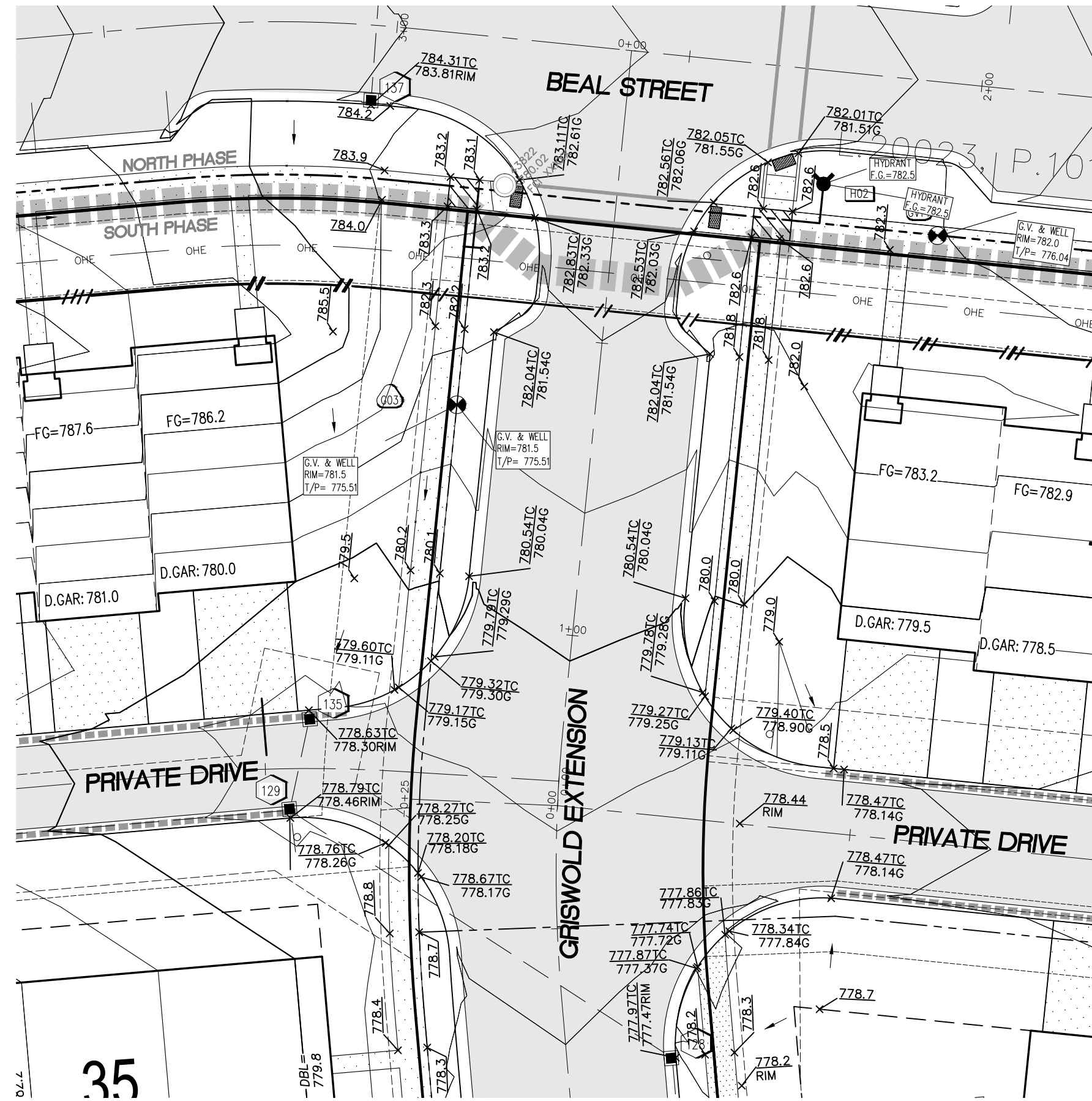
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-03-FSP-PH2.DWG

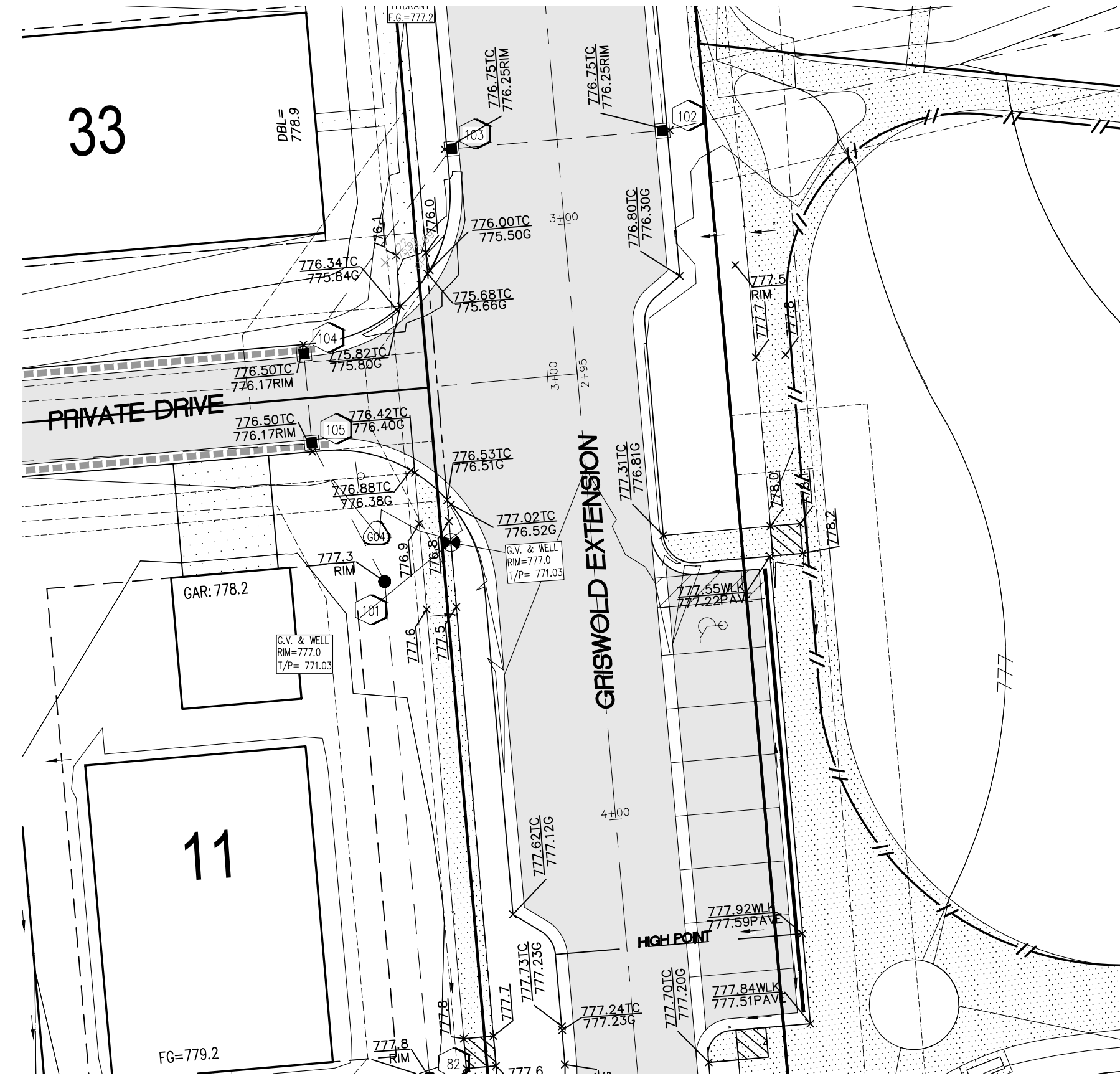
OPEN SPACE PLAN

SEIBER KEAST LEHNER ENGINEERING SURVEYING 39205 COUNTRY CLUB DRIVE, SUITE C8 FARMINGTON HILLS, MI 48331 PHONE: 248.308.3331	SHEET 68
--	------------------------

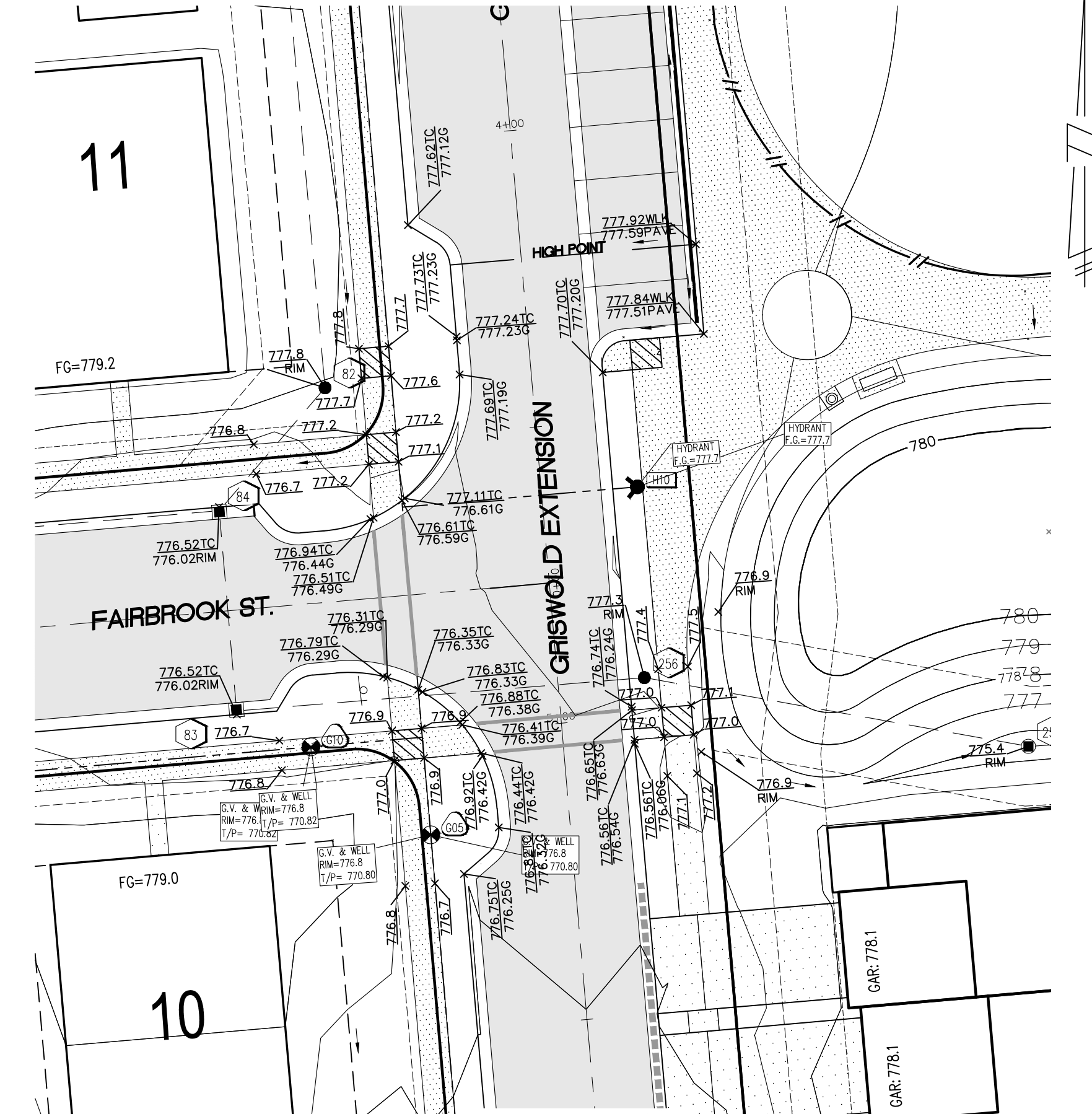
11/17/2010 THE DOWNS - NORTHVILLE, MICHIGAN. 21001-03-FSP-PH2.DWG. 9/7/2023 11:48 AM



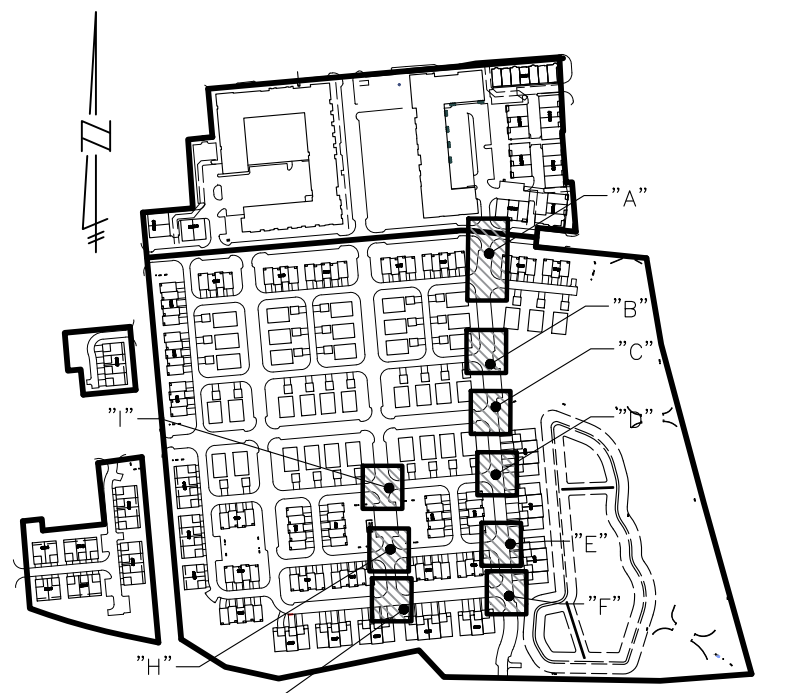
DETAIL "A"



DETAIL "B"



DETAIL "C"

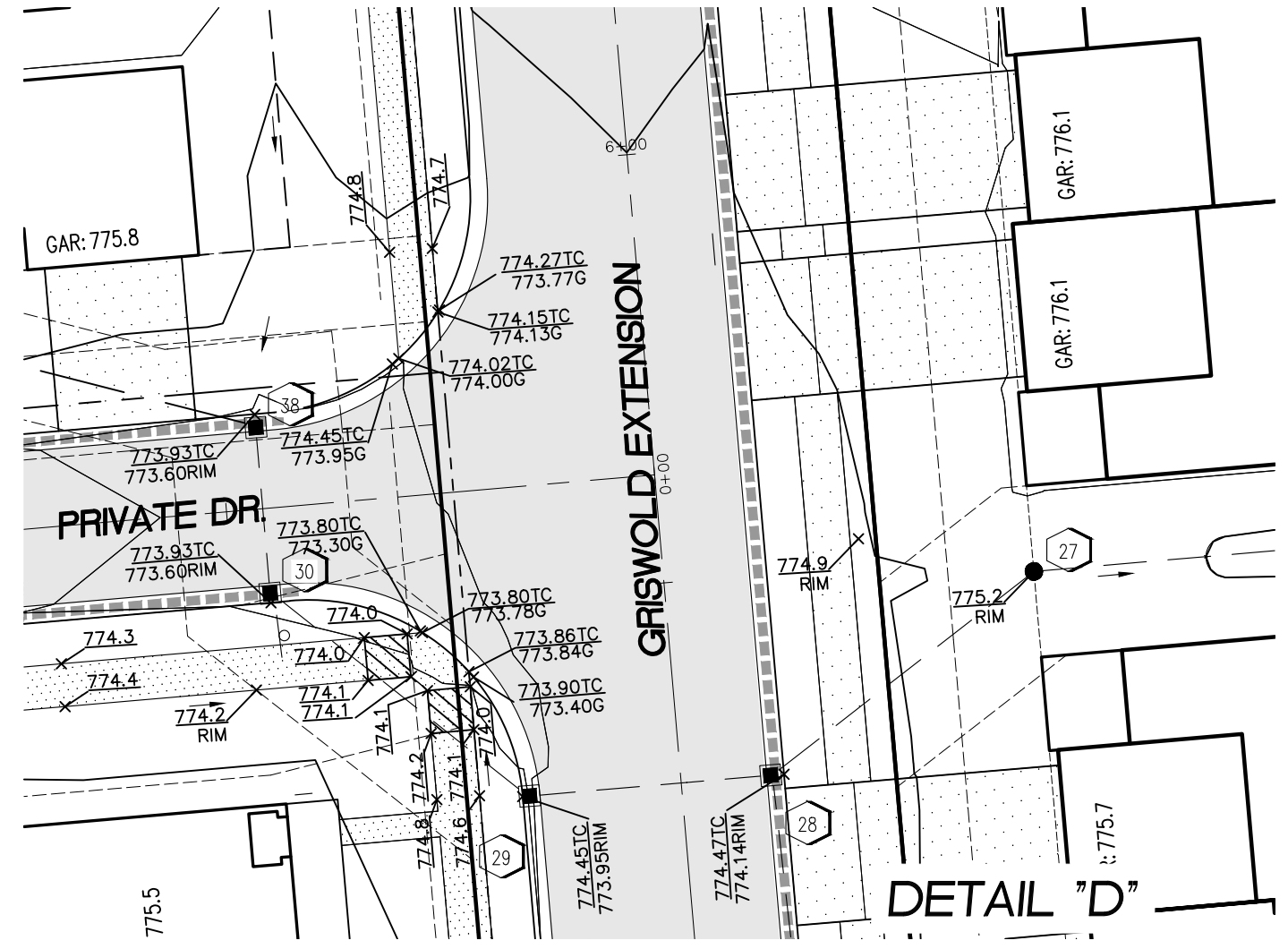


KEY MAP
SCALE: 1"=500'

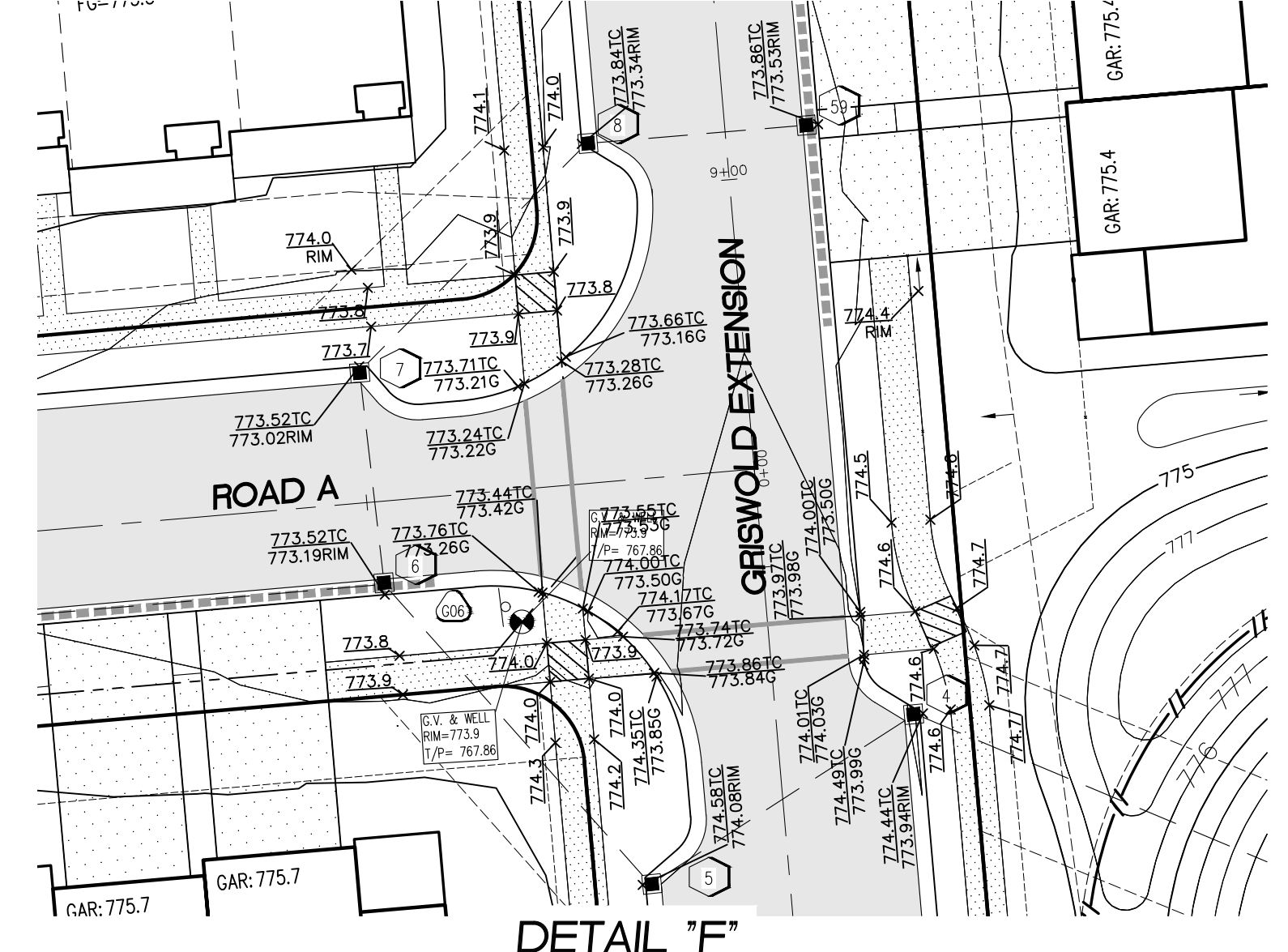
- SIDEWALK REQUIREMENTS:
1. THE MAXIMUM CROSS SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 2%
 2. THE RUNNING SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 5%
 3. THE 5'X5' ADA LANDING AREAS HAVE A MAXIMUM SLOPE IN ALL DIRECTIONS OF 2%
 4. THE MAXIMUM SLOPE FOR A RAMP IS 8% FOR MAXIMUM DISTANCE OF 6 FEET
- THE CONTRACTOR SHALL CHECK THE FORMS TO ENSURE THAT THESE SLOPE REQUIREMENTS ARE MET BEFORE ANY CONCRETE IS PLACED.



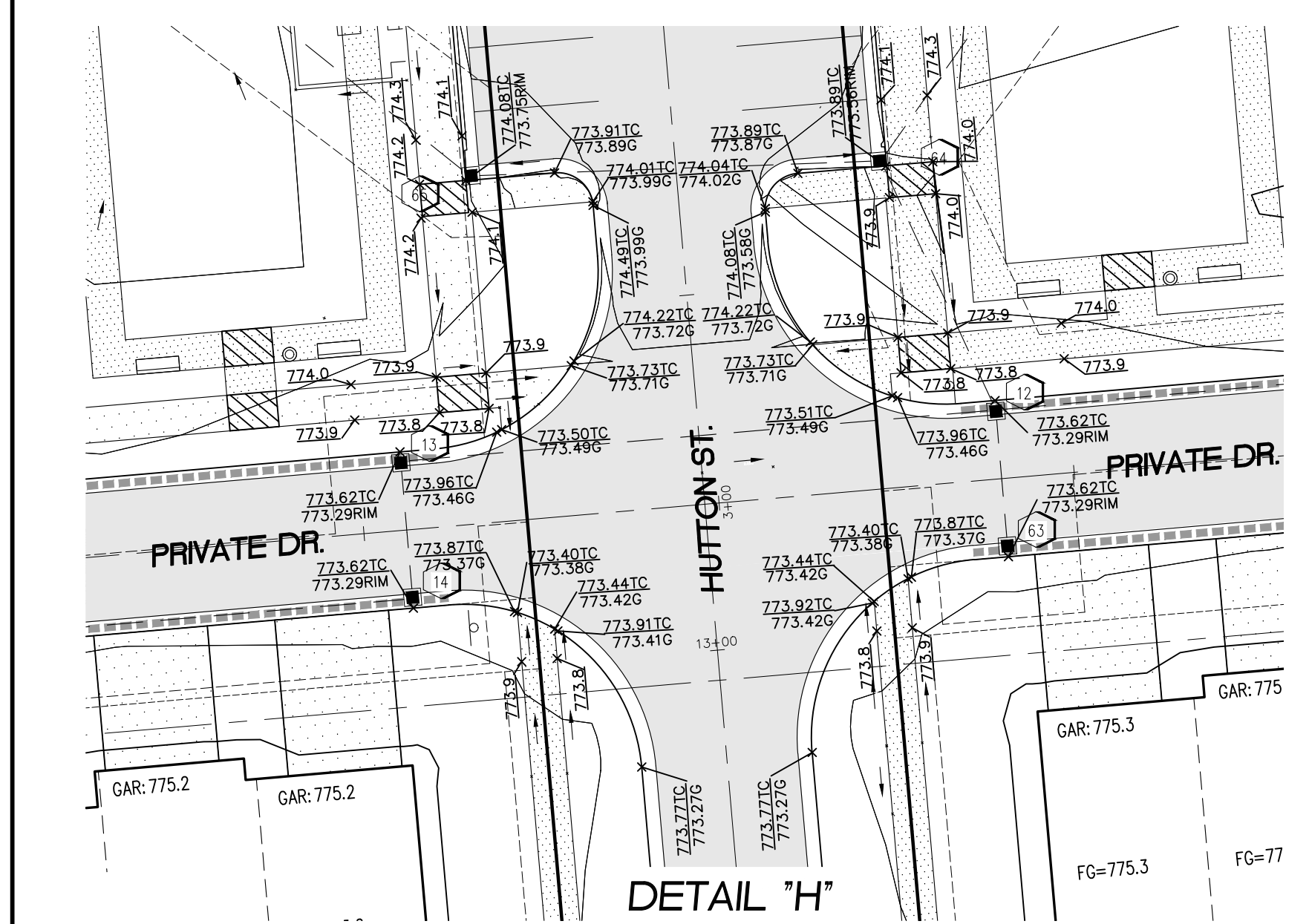
SIDEWALK LANDING DETAIL



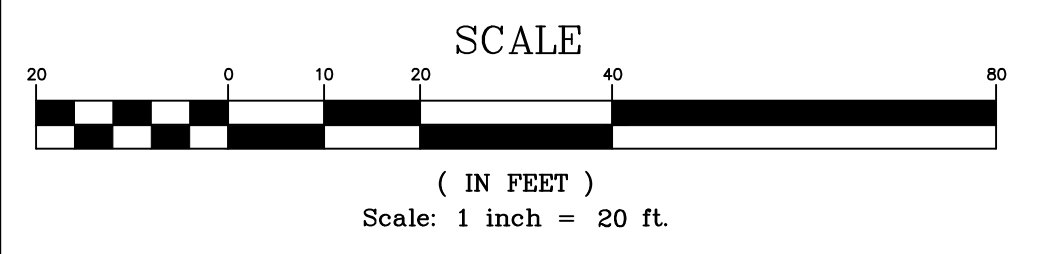
DETAIL "D"



DETAIL "F"

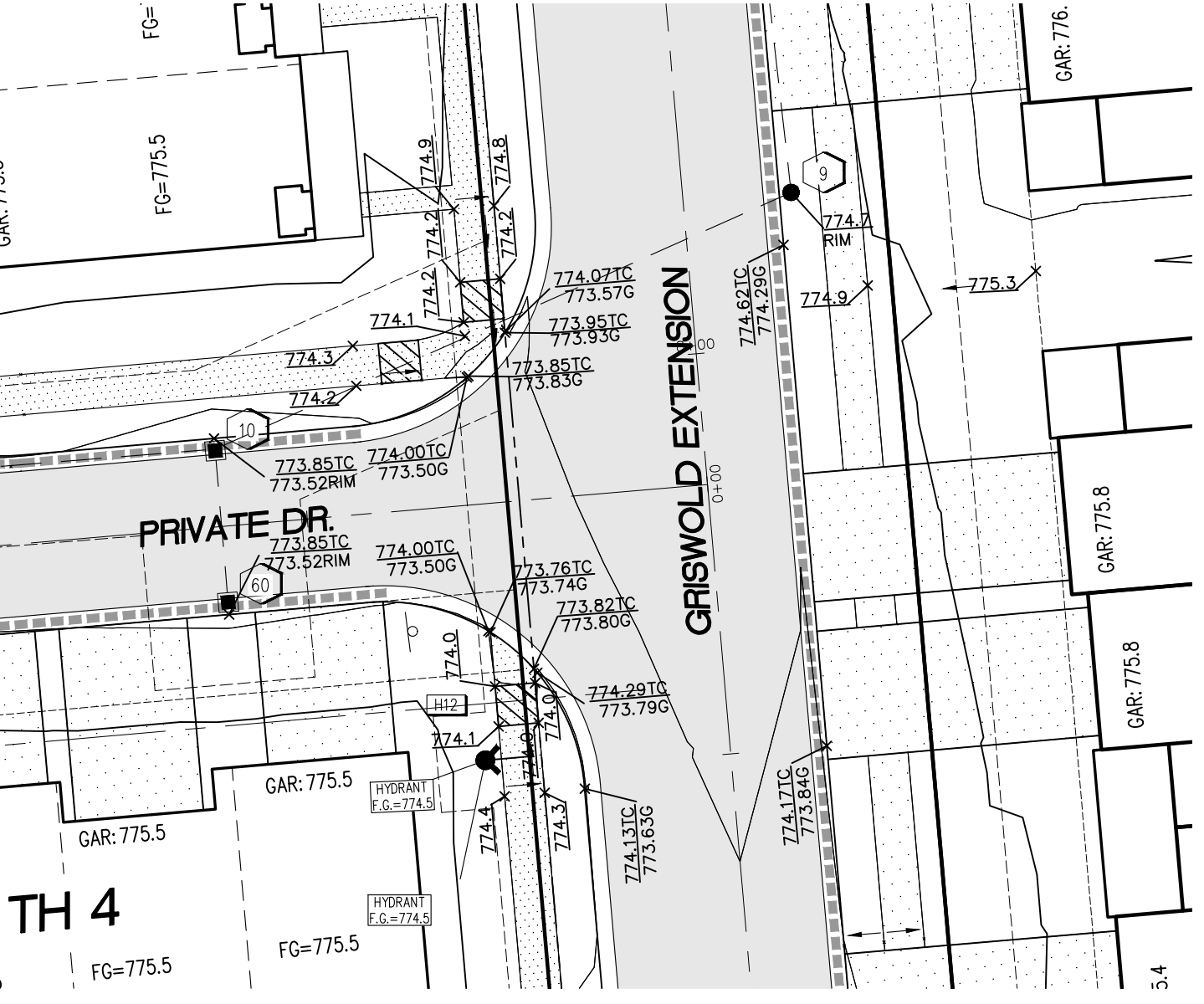


DETAIL "H"

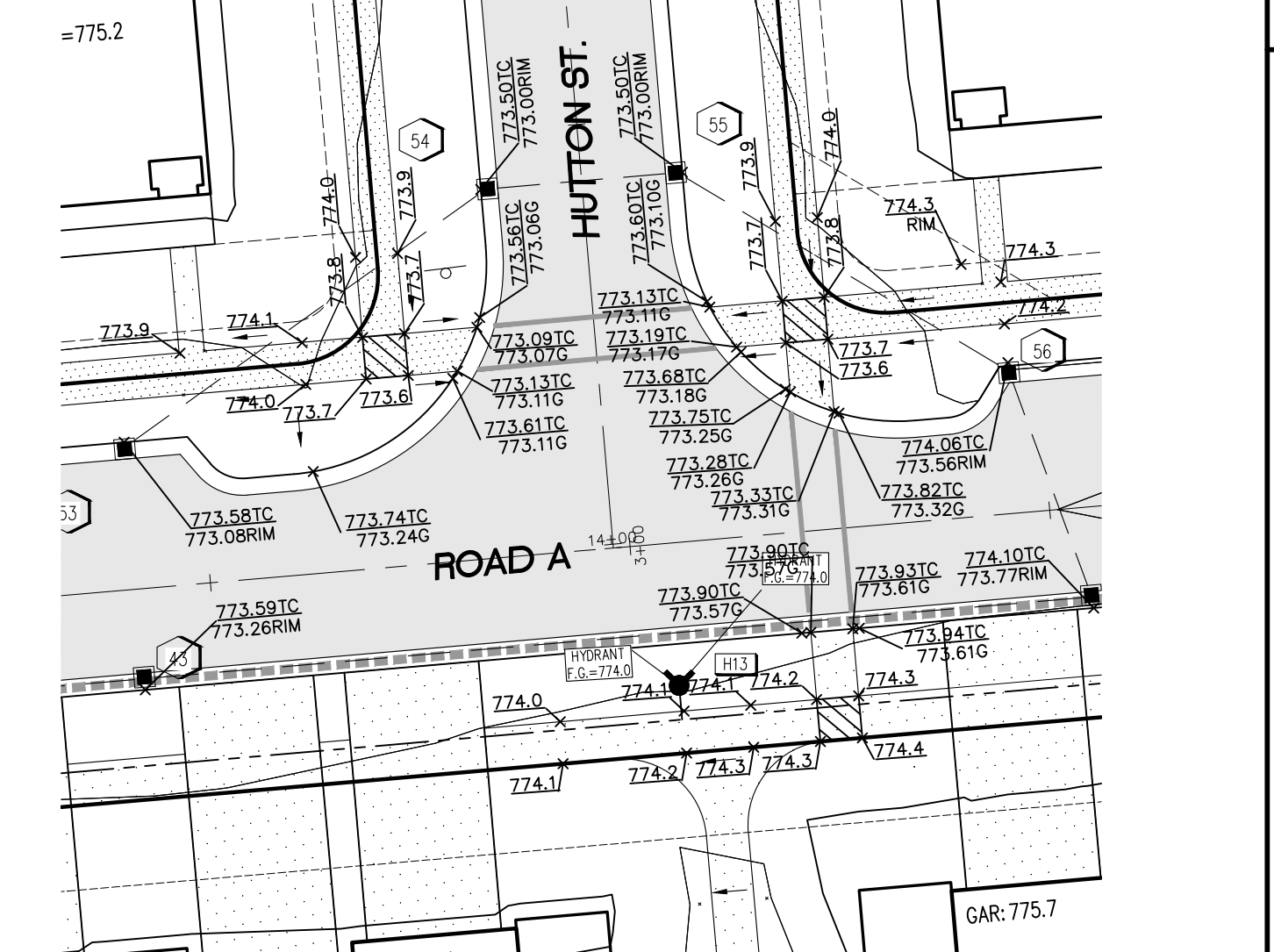


SCALE
(IN FEET)
Scale: 1 inch = 20 ft.

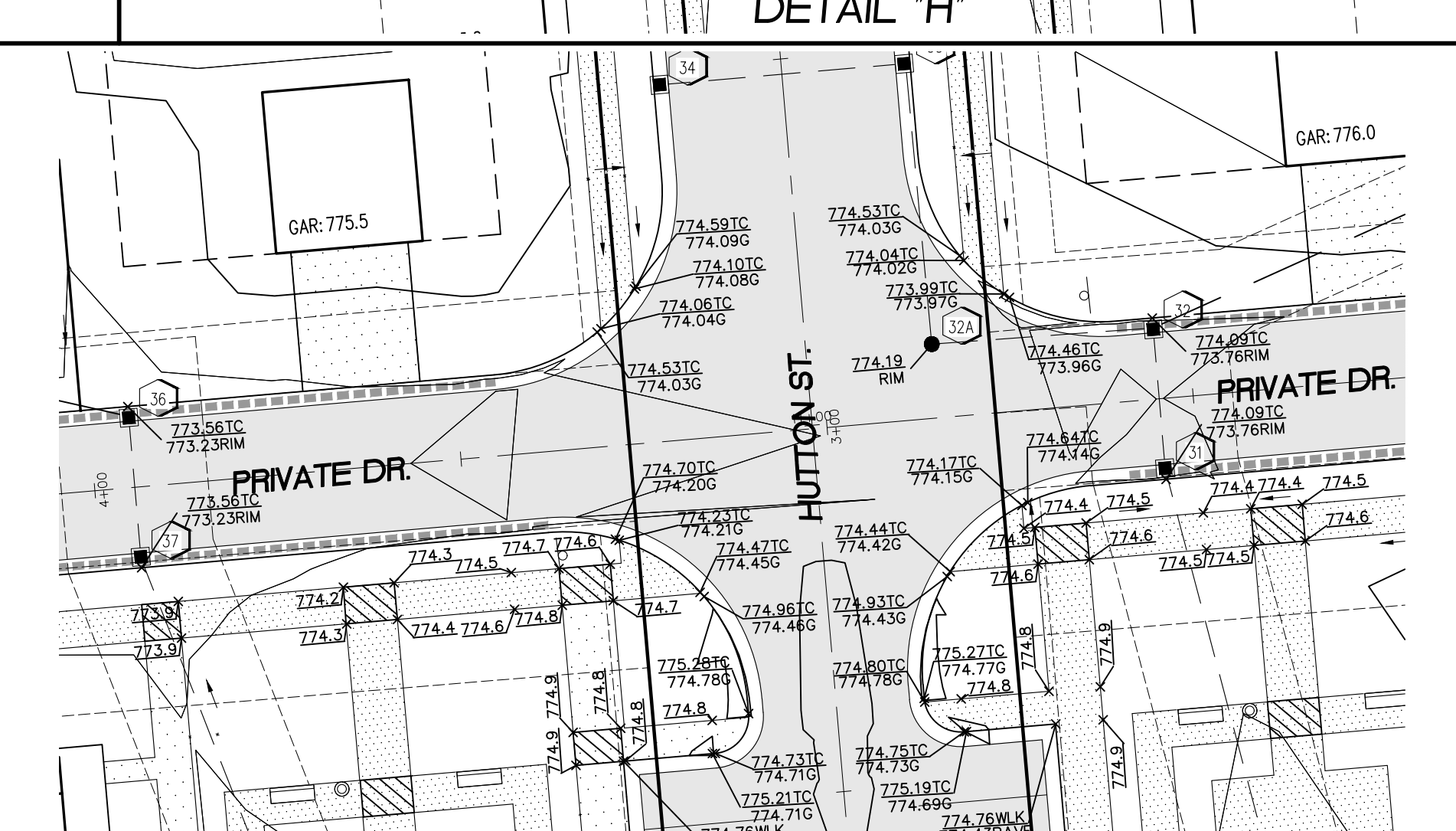
LEGEND	
EXISTING	PROPOSED



DETAIL "E"



DETAIL "G"



DETAIL "I"

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	DESCRIPTION	DATE
1	100% SCHEMATIC DESIGN	08-10-2023
2	50% DESIGN DEVELOPMENT	02-03-2023
3	FINAL SITE PLAN	04-14-2023
4	REV PER CITY REVIEW	09-08-2023

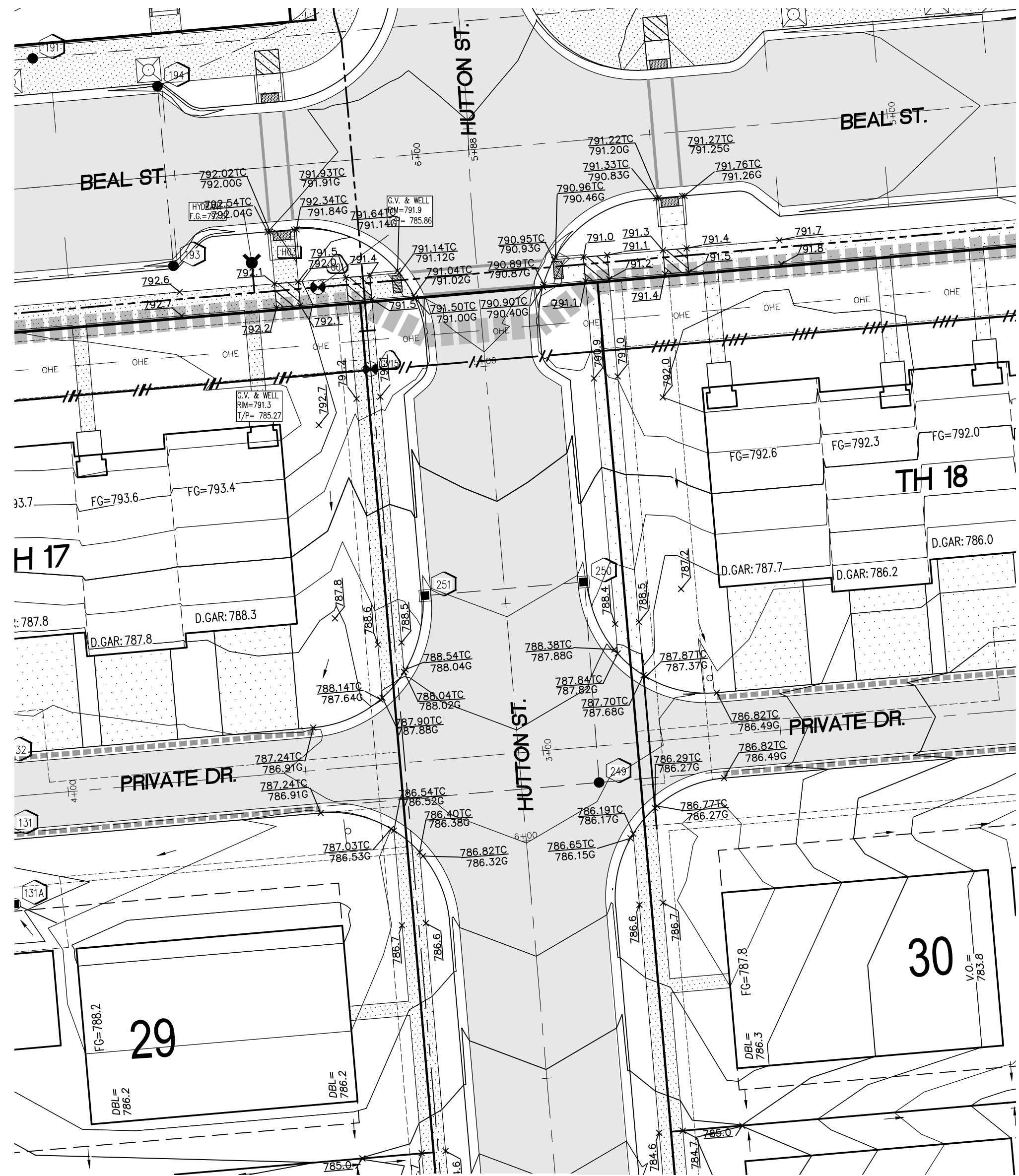
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.



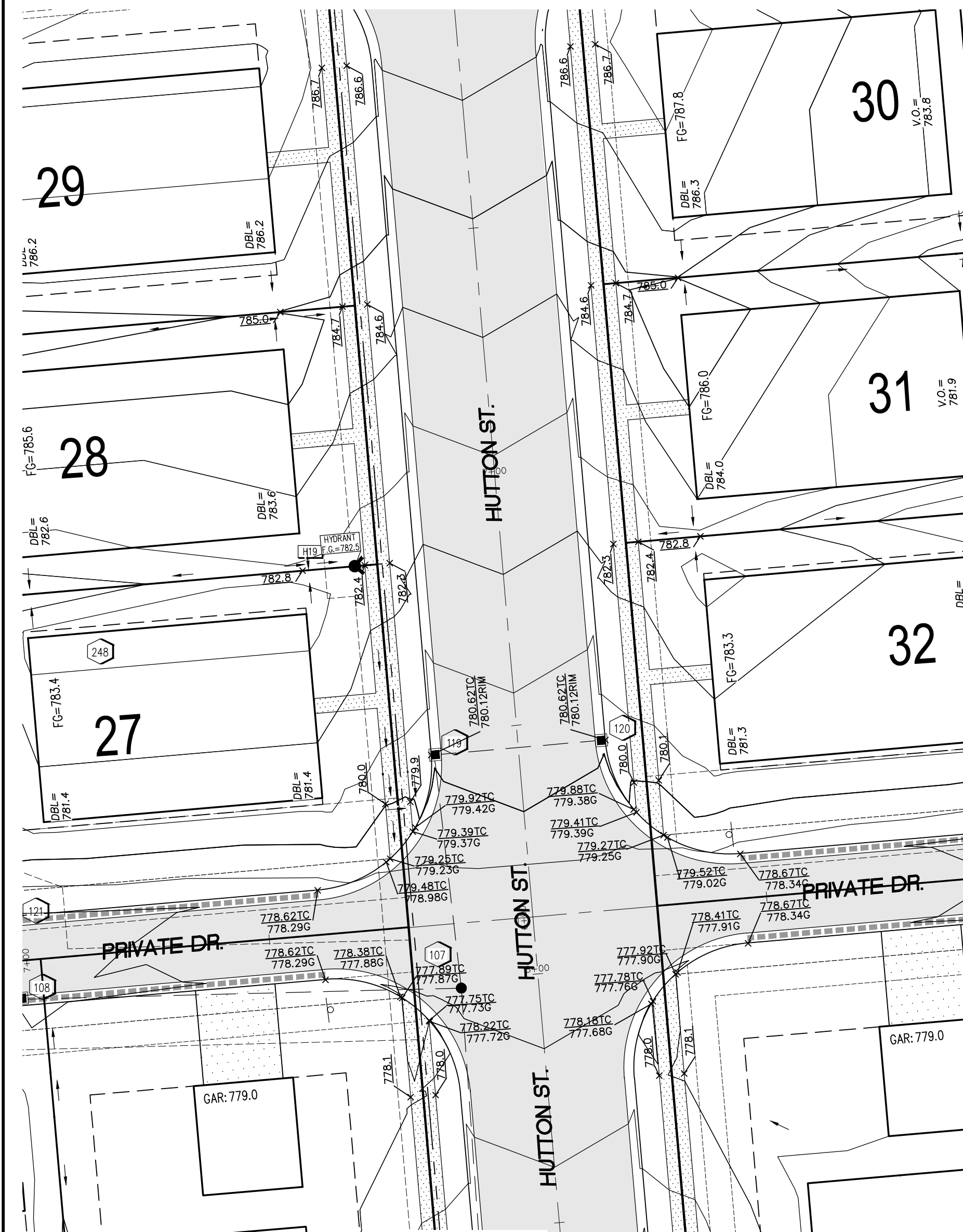
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DATE: 04-26-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-DETAIL-GR.DWG

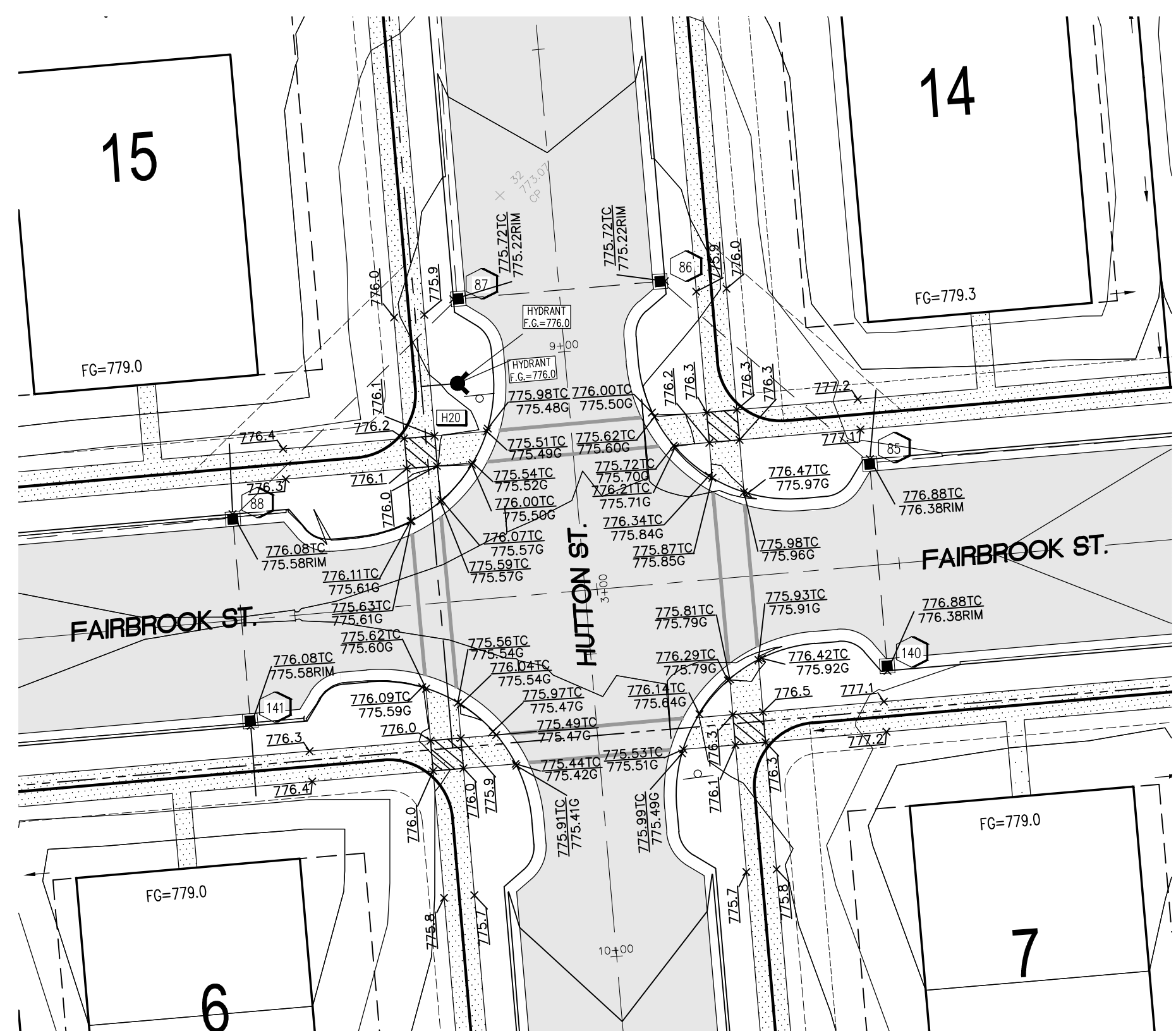
DETAIL GRADING PLAN



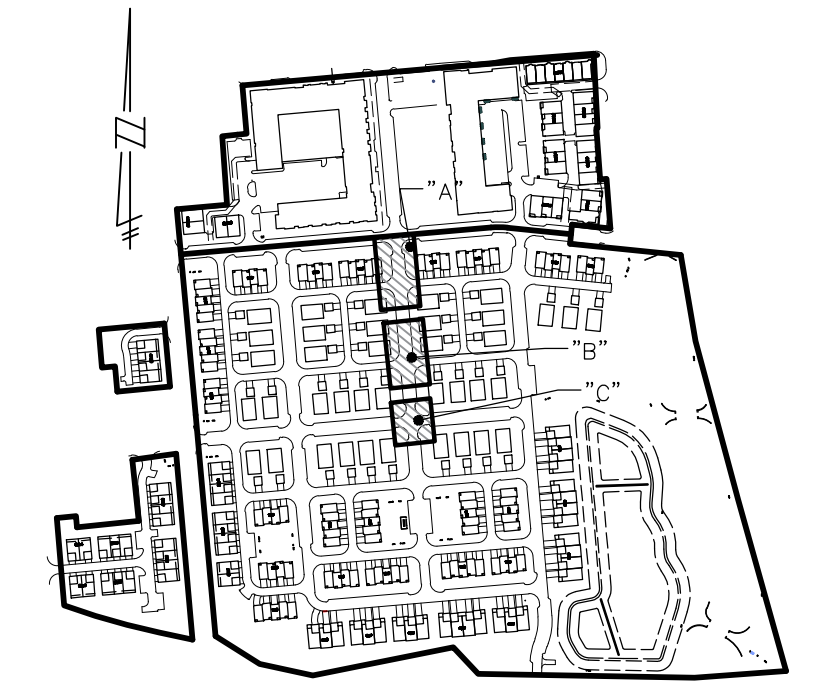
DETAIL "A"



DETAIL "B"



DETAIL "C"

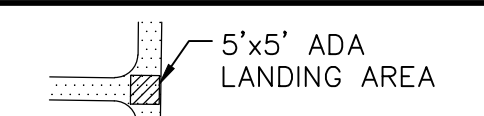


KEY MAP
SCALE: 1"=500'

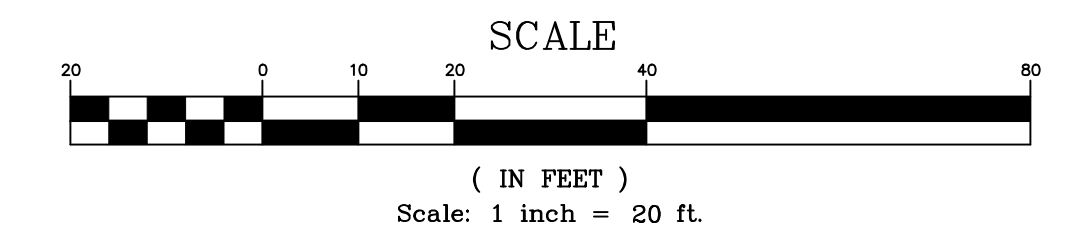
SIDEWALK REQUIREMENTS:

1. THE MAXIMUM CROSS SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 2%
2. THE RUNNING SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 5%
3. THE 5'x5' ADA LANDING AREAS HAVE A MAXIMUM SLOPE IN ALL DIRECTIONS OF 2%
4. THE MAXIMUM SLOPE FOR A RAMP IS 8% FOR MAXIMUM DISTANCE OF 6 FEET

THE CONTRACTOR SHALL CHECK THE FORMS TO ENSURE THAT THESE SLOPE REQUIREMENTS ARE MET BEFORE ANY CONCRETE IS PLACED.



5'x5' ADA LANDING AREA
SIDEWALK LANDING DETAIL



SCALE
(IN FEET)
Scale: 1 inch = 20 ft.

LEGEND

EXISTING	PROPOSED	
		PAVEMENT (ASPHALT)
		SIDE WALK (CONCRETE)
		CONCRETE CURB AND GUTTER
		STORM SEWER
		SANITARY SEWER
		WATER MAIN
		RENDS UNDERDRAIN
		RENDS LANDSCAPE DRAIN
		MANHOLE
		CATCH BASIN W/SED CATCH
		CURB INLET W/SLT SAC
		END SECTION
		GATE VALVE
		HYDRANT
		OVERHEAD ELECTRICAL LINES
		FLOOD PLAN
		CONTOURS
		1000.00
		SPOT ELEVATION
		T/C
		SURFACE DRAINAGE
		OVERFLOW ROUTE
		TREE FENCE
		SILT FENCE
		PROPOSED DRIVEWAY LOCATION
		CROSSING NUMBER

THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
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UTILITY WARNING

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER, AND NOT FIELD LOCATED.



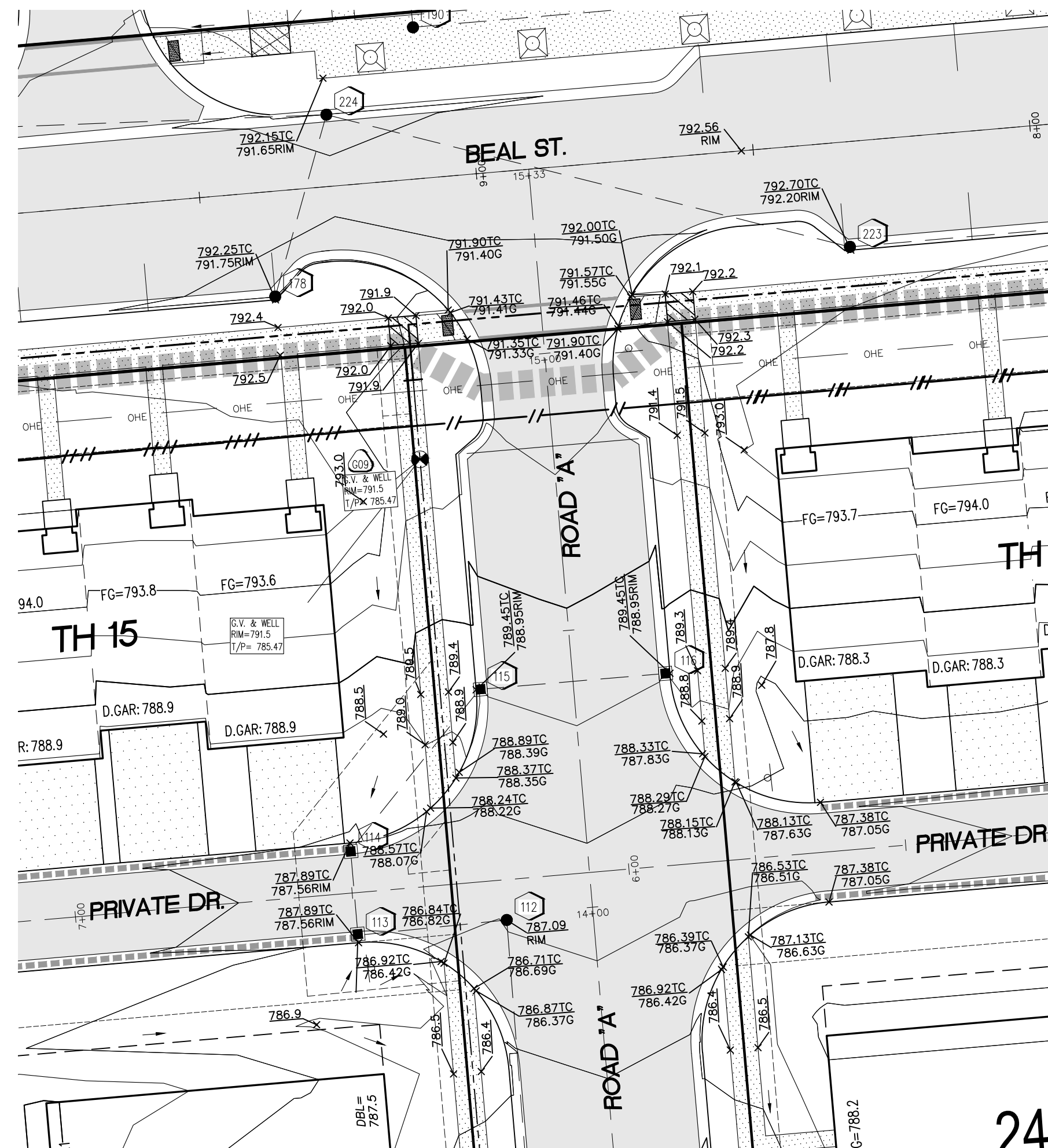
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DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-DETAIL-GR.DWG

DETAIL GRADING PLAN

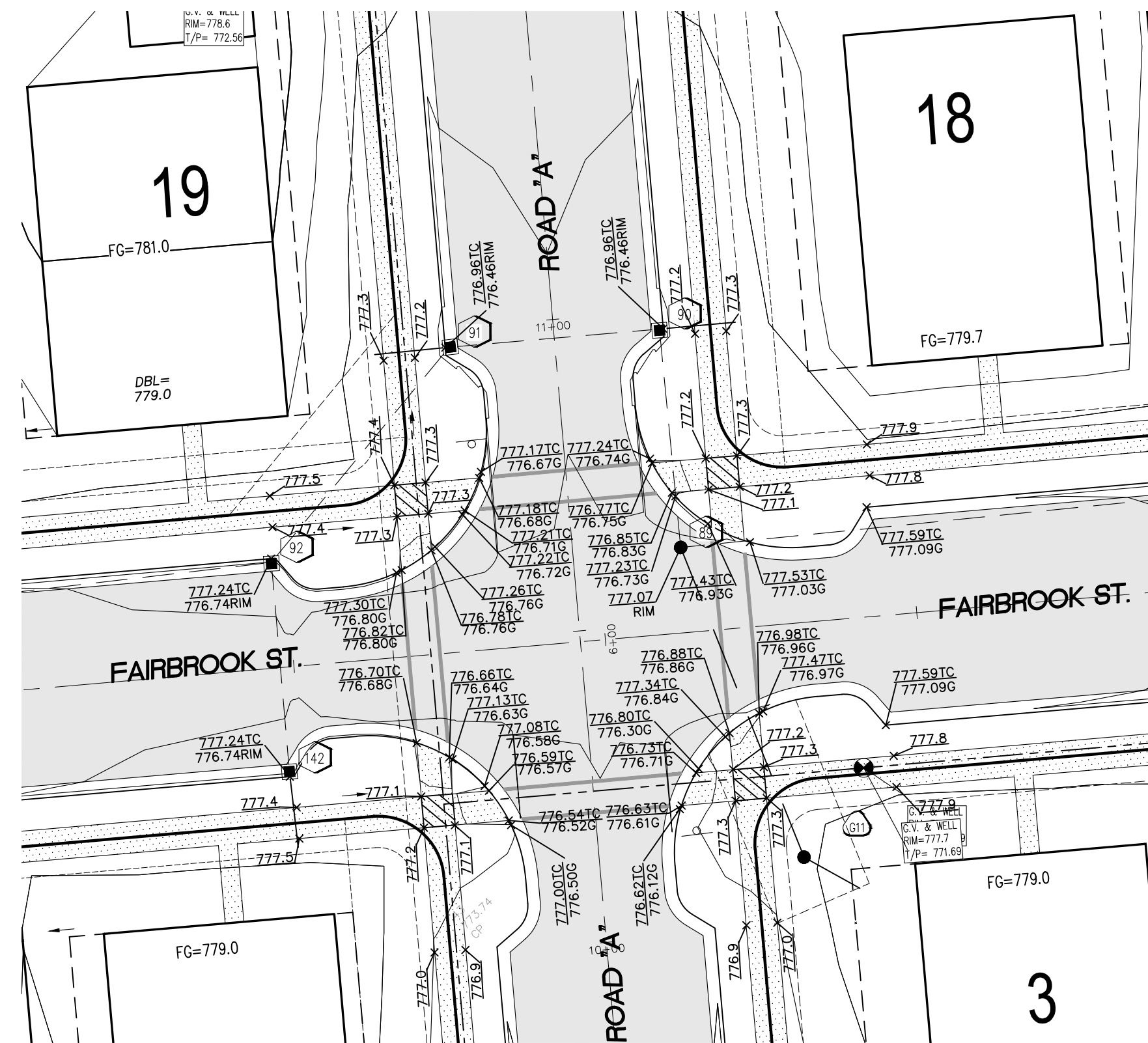
SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
70



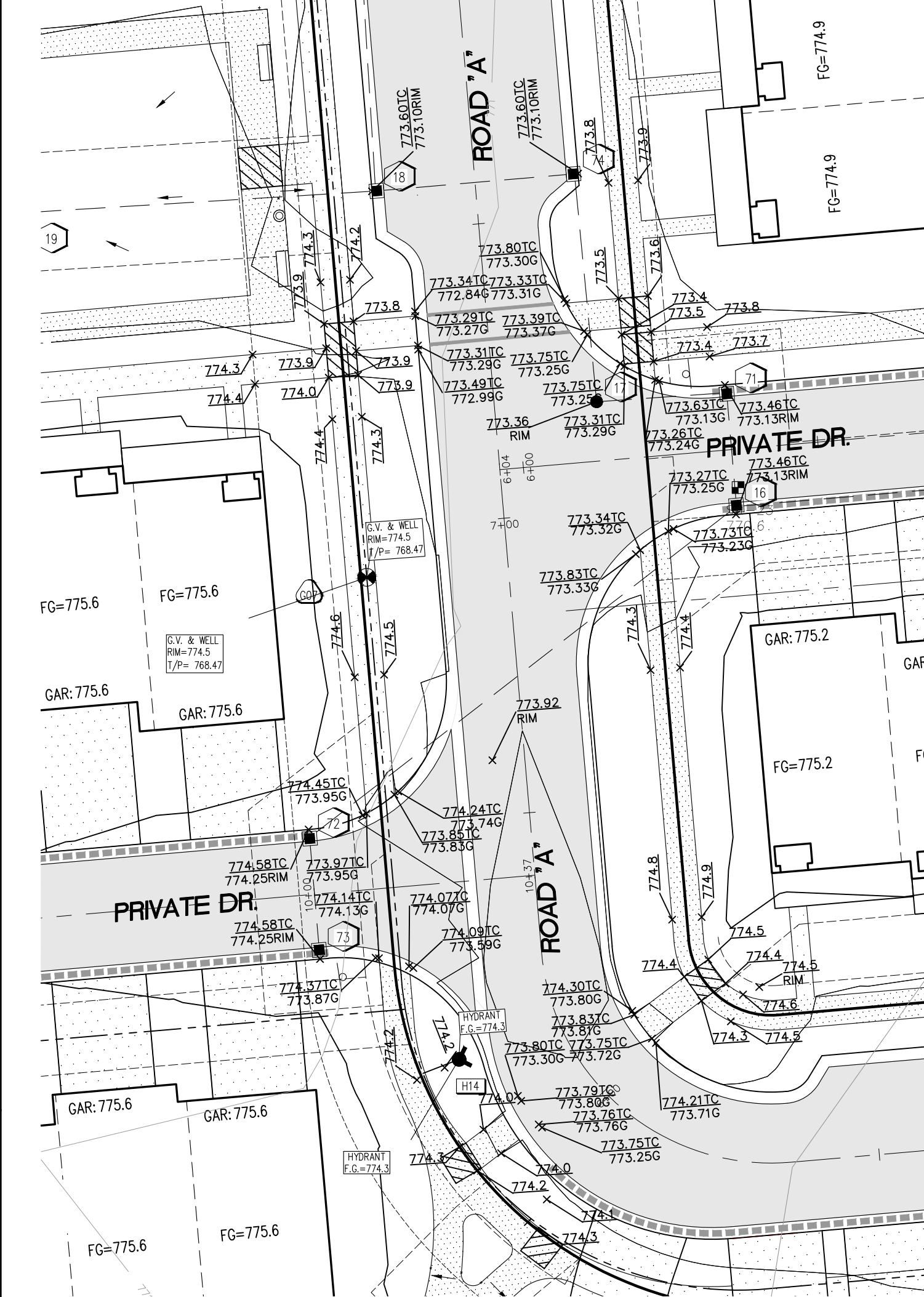
DETAIL "A"

24

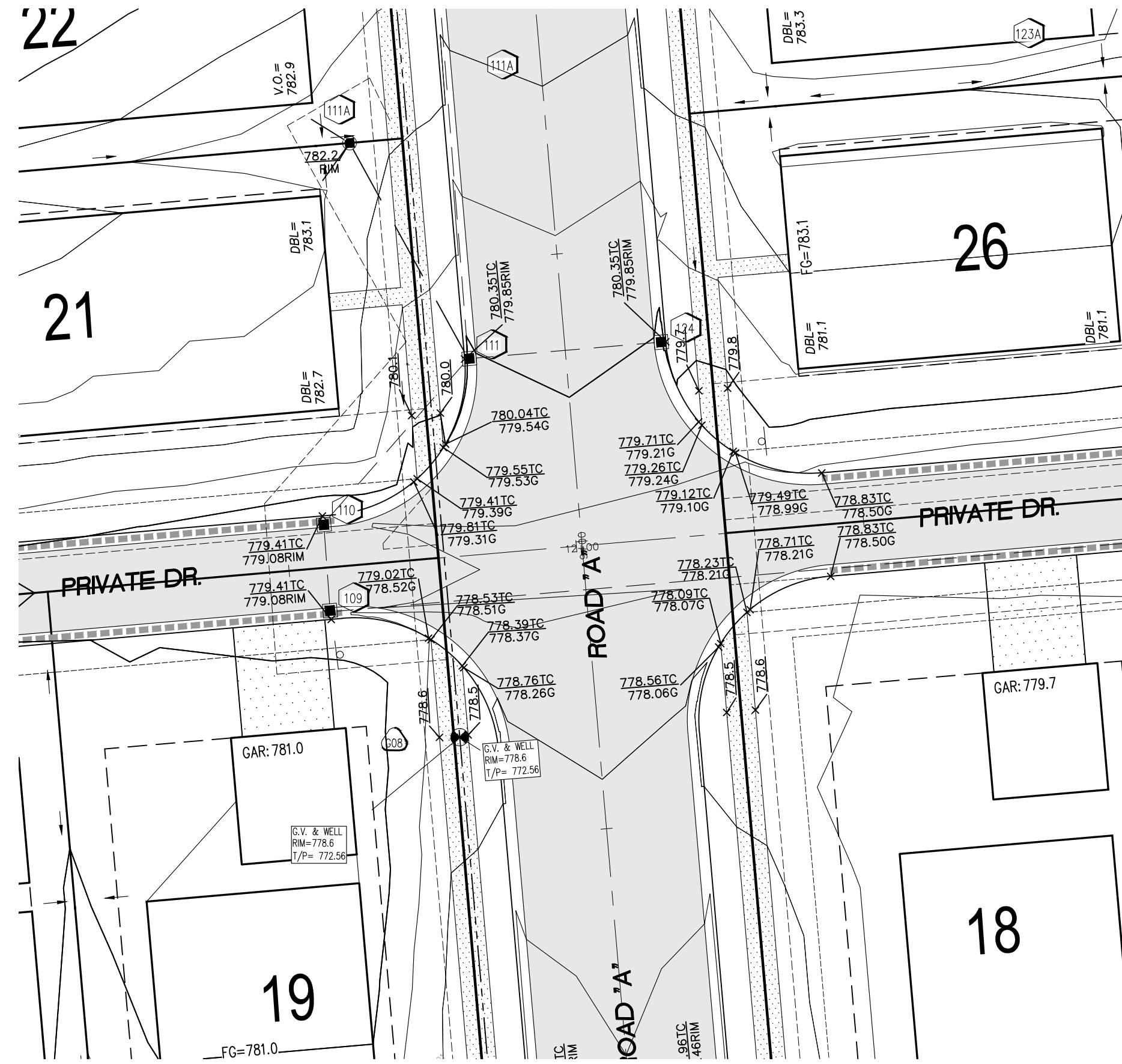


DETAIL "C"

3



DETAIL "E"



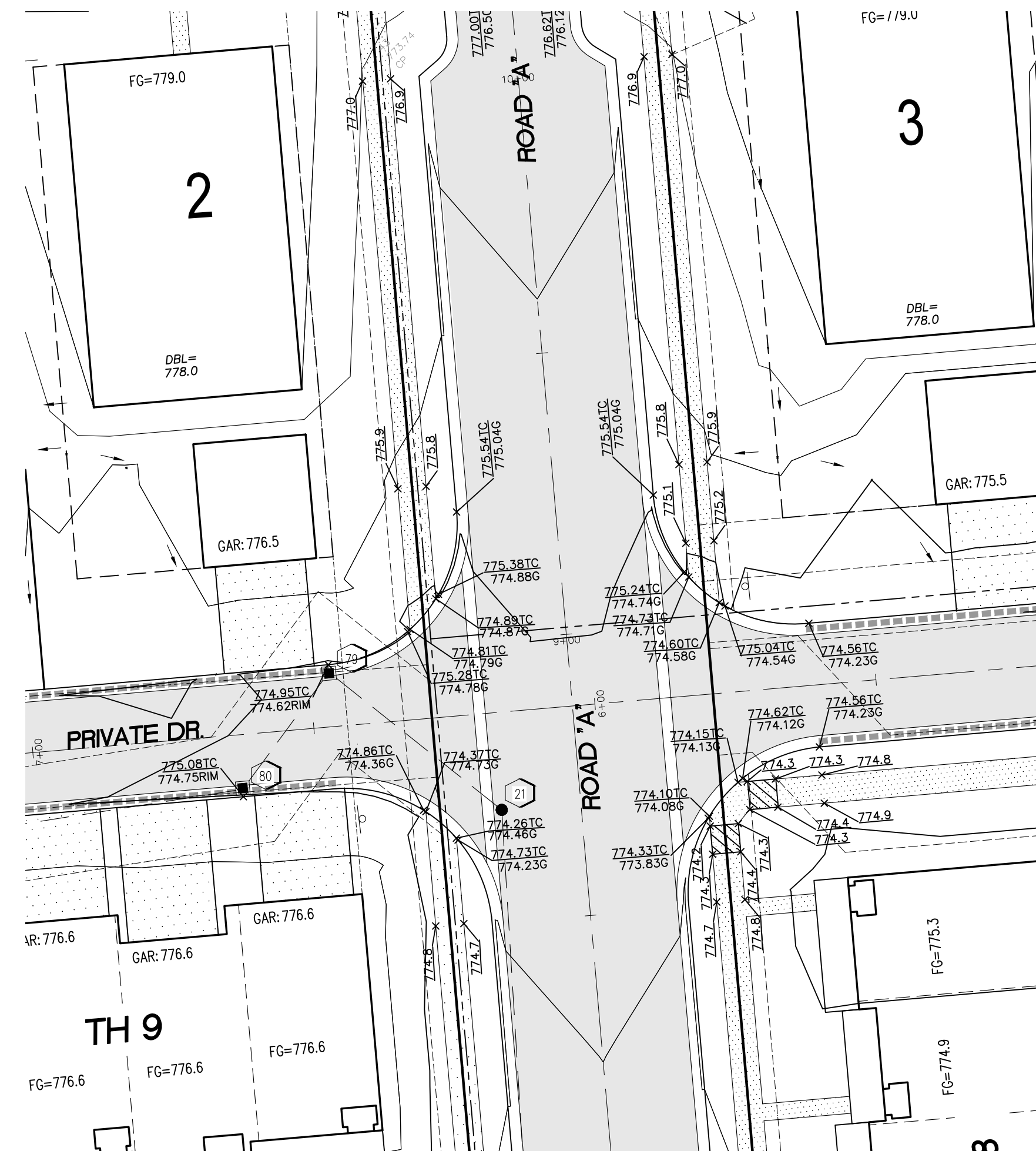
DETAIL "B"

22

21

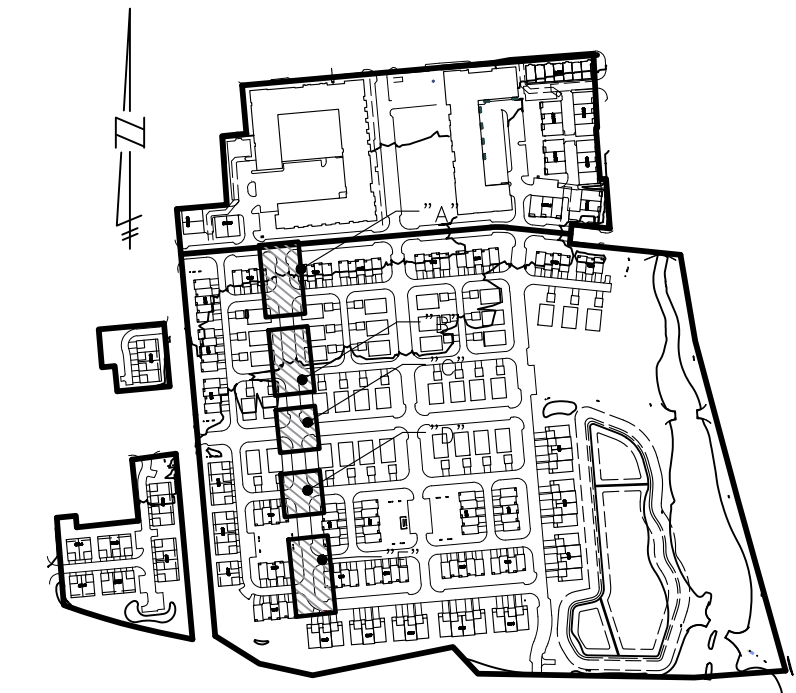
26

19



DETAIL "D"

8

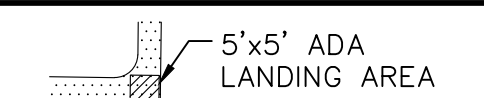


KEY MAP
SCALE: 1"=500'

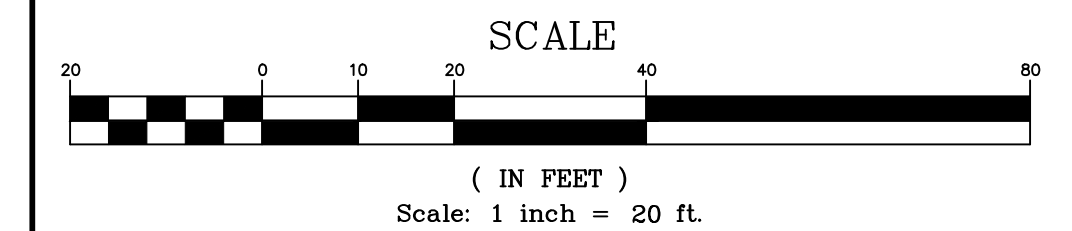
SIDEWALK REQUIREMENTS:

1. THE MAXIMUM CROSS SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 2%
2. THE RUNNING SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 5%
3. THE 5'x5' ADA LANDING AREAS HAVE A MAXIMUM SLOPE IN ALL DIRECTIONS OF 2%
4. THE MAXIMUM SLOPE FOR A RAMP IS 8% FOR MAXIMUM DISTANCE OF 6 FEET

THE CONTRACTOR SHALL CHECK THE FORMS TO ENSURE THAT THESE SLOPE REQUIREMENTS ARE MET BEFORE ANY CONCRETE IS PLACED.



SIDEWALK LANDING DETAIL



LEGEND

EXISTING	PROPOSED	DESCRIPTION
[Symbol]	[Symbol]	PAVEMENT (ASPHALT)
[Symbol]	[Symbol]	SIDE WALK (CONCRETE)
[Symbol]	[Symbol]	CONCRETE CURB AND GUTTER
[Symbol]	[Symbol]	STORM SEWER
[Symbol]	[Symbol]	SANITARY SEWER
[Symbol]	[Symbol]	WATER MAIN
[Symbol]	[Symbol]	GENERIC UNDERDRAIN
[Symbol]	[Symbol]	MANHOLE
[Symbol]	[Symbol]	CATCH BASIN W/SED CATCH
[Symbol]	[Symbol]	CURB INLET W/SLT SAC
[Symbol]	[Symbol]	END SECTION
[Symbol]	[Symbol]	GATE VALVE
[Symbol]	[Symbol]	HYDRANT
[Symbol]	[Symbol]	OVERHEAD ELECTRICAL LINES
[Symbol]	[Symbol]	FLOOD PLAN
[Symbol]	[Symbol]	CONTOURS
[Symbol]	[Symbol]	SPOT ELEVATION
[Symbol]	[Symbol]	1/2"
[Symbol]	[Symbol]	SURFACE DRAINAGE
[Symbol]	[Symbol]	OVERFLOW ROUTE
[Symbol]	[Symbol]	TREE FENCE
[Symbol]	[Symbol]	SILT FENCE
[Symbol]	[Symbol]	PROPOSED DRIVEWAY LOCATION
[Symbol]	[Symbol]	CROSSING NUMBER

THE DOWNS

SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	DESCRIPTION	DATE
1.	100% SCHEMATIC DESIGN	08-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV. PER CITY REVIEW	09-08-2023

UTILITY WARNING

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER, AND NOT FIELD LOCATED.



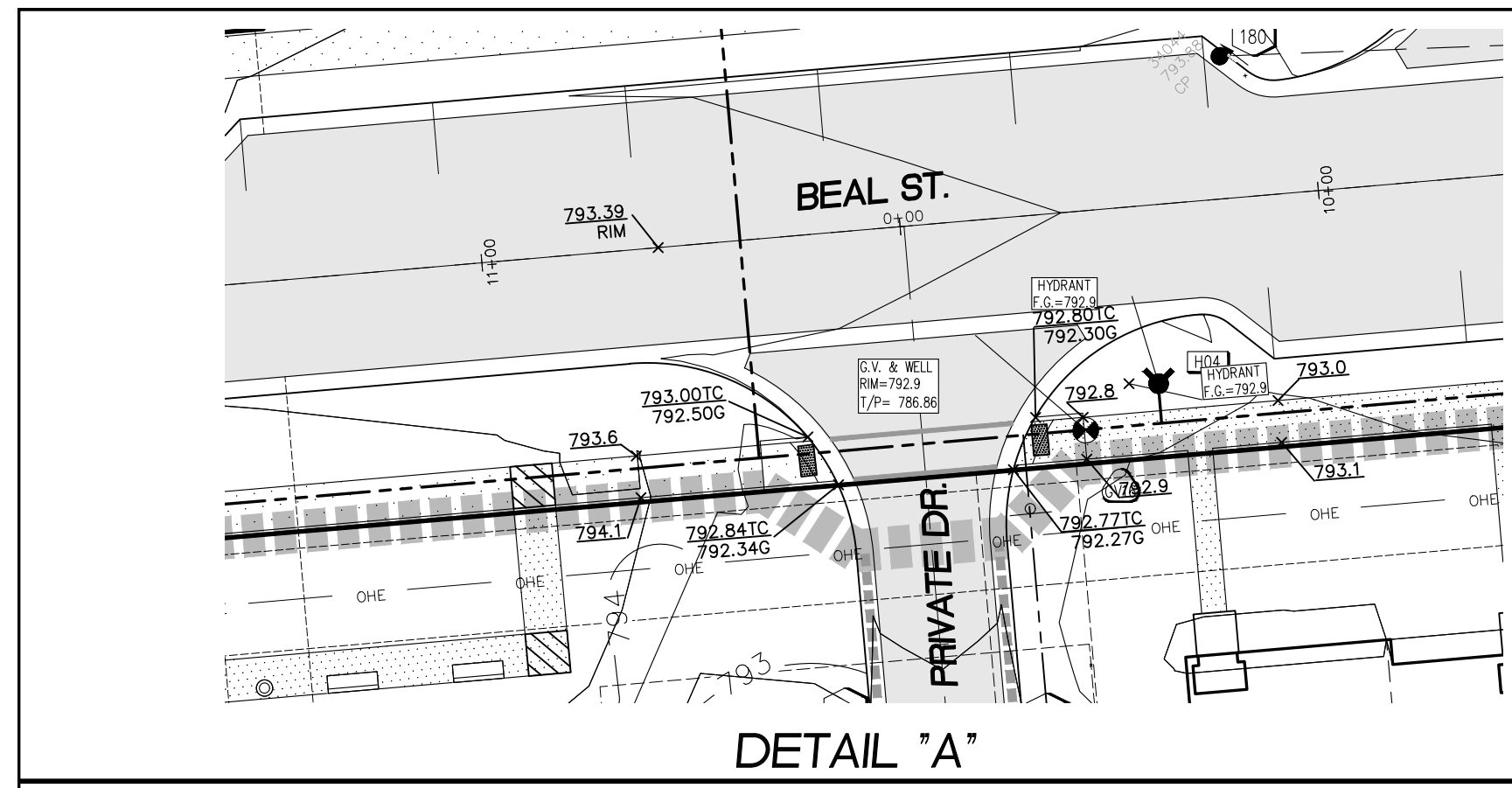
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-26-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-DETAIL-GR.DWG

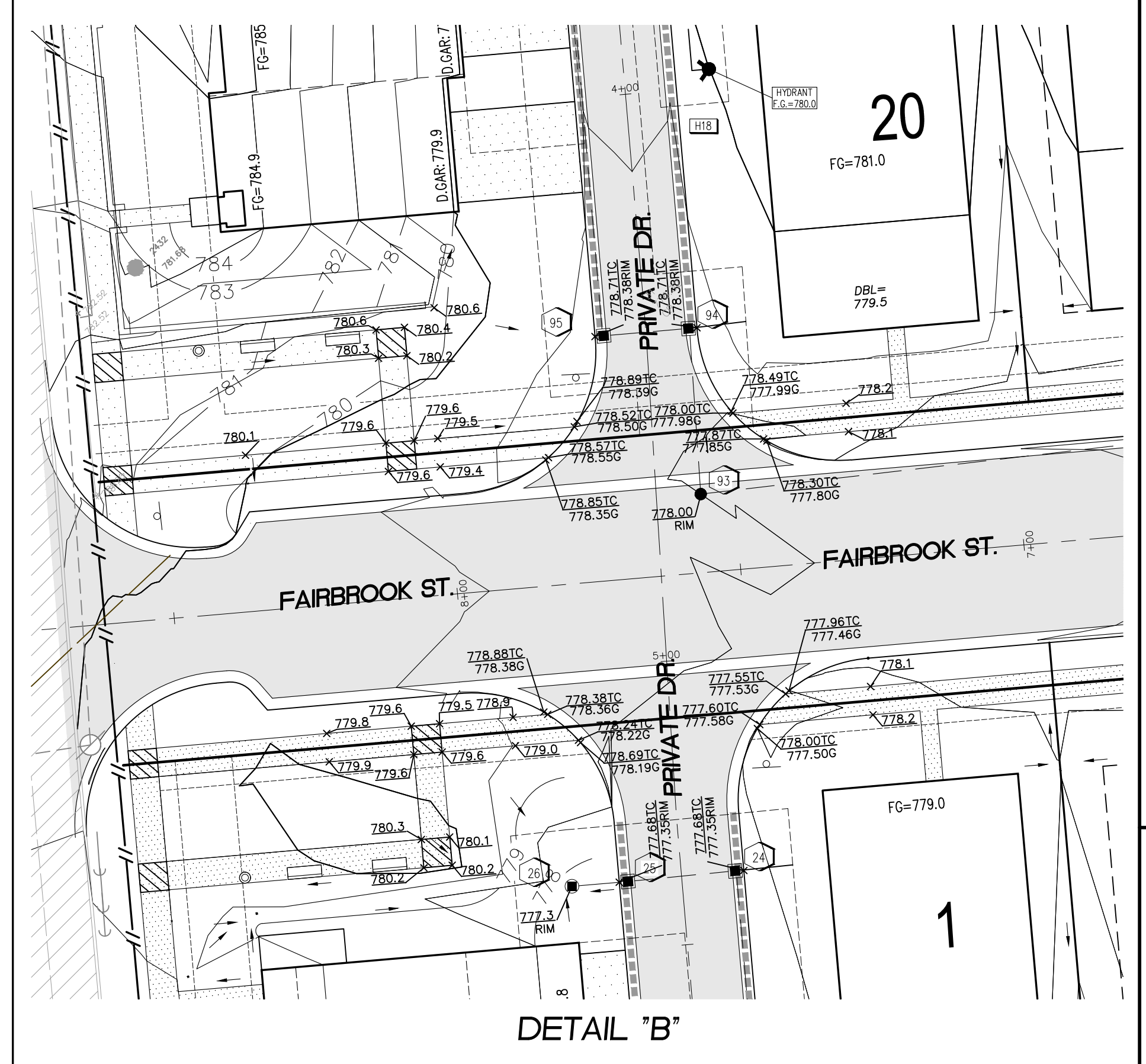
DETAIL GRADING PLAN

SKL SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

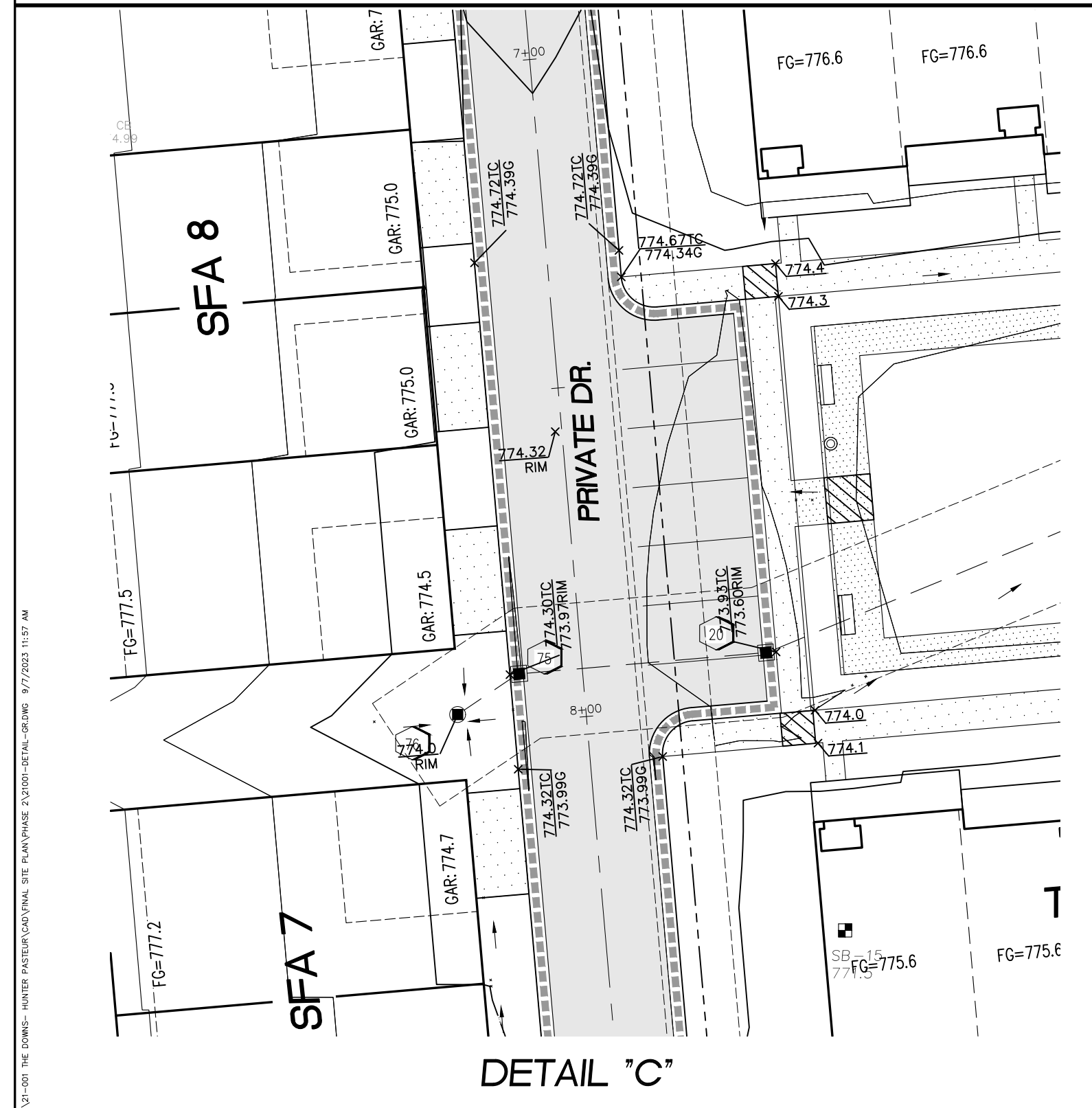
SHEET
71



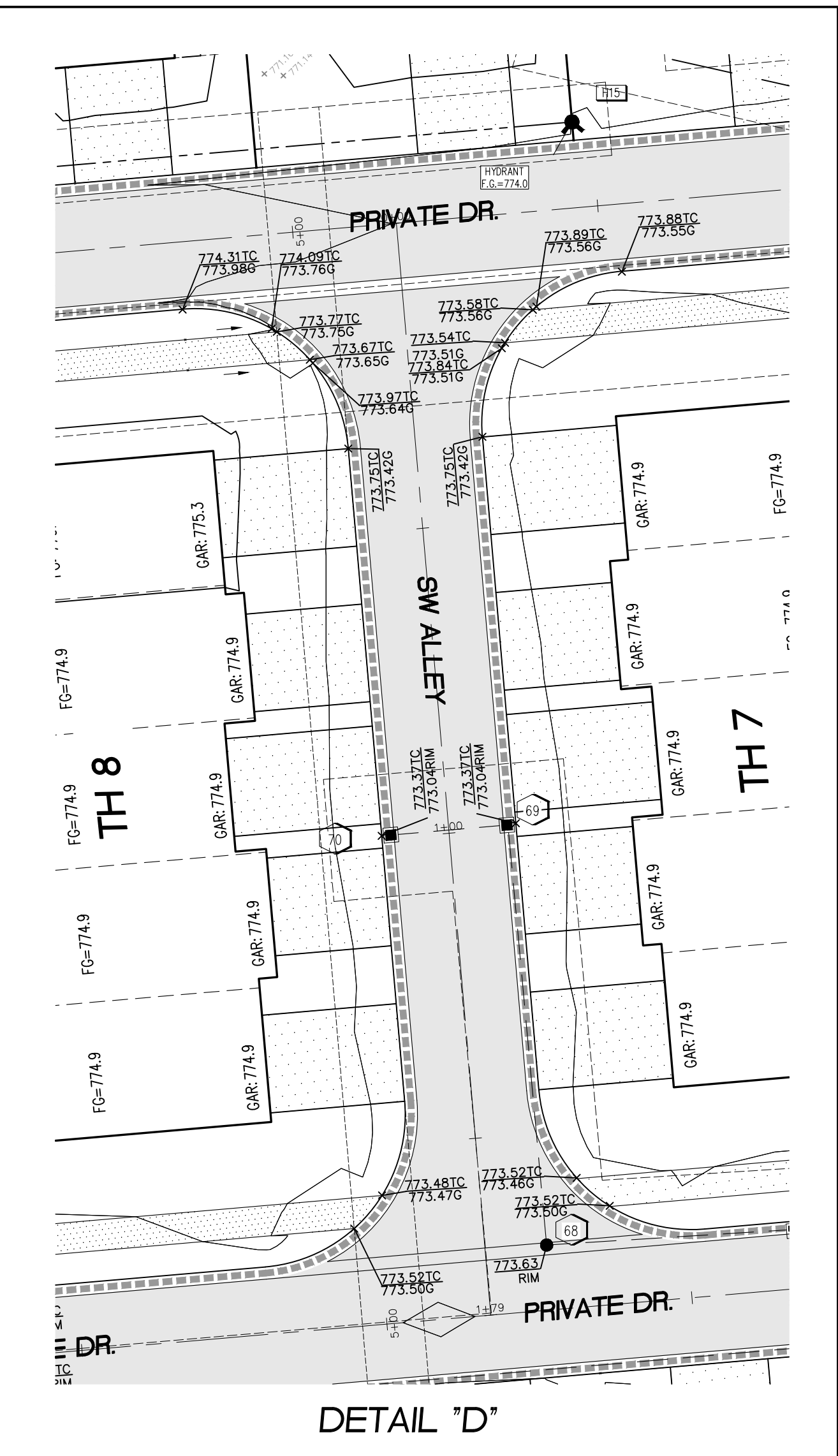
DETAIL "A"



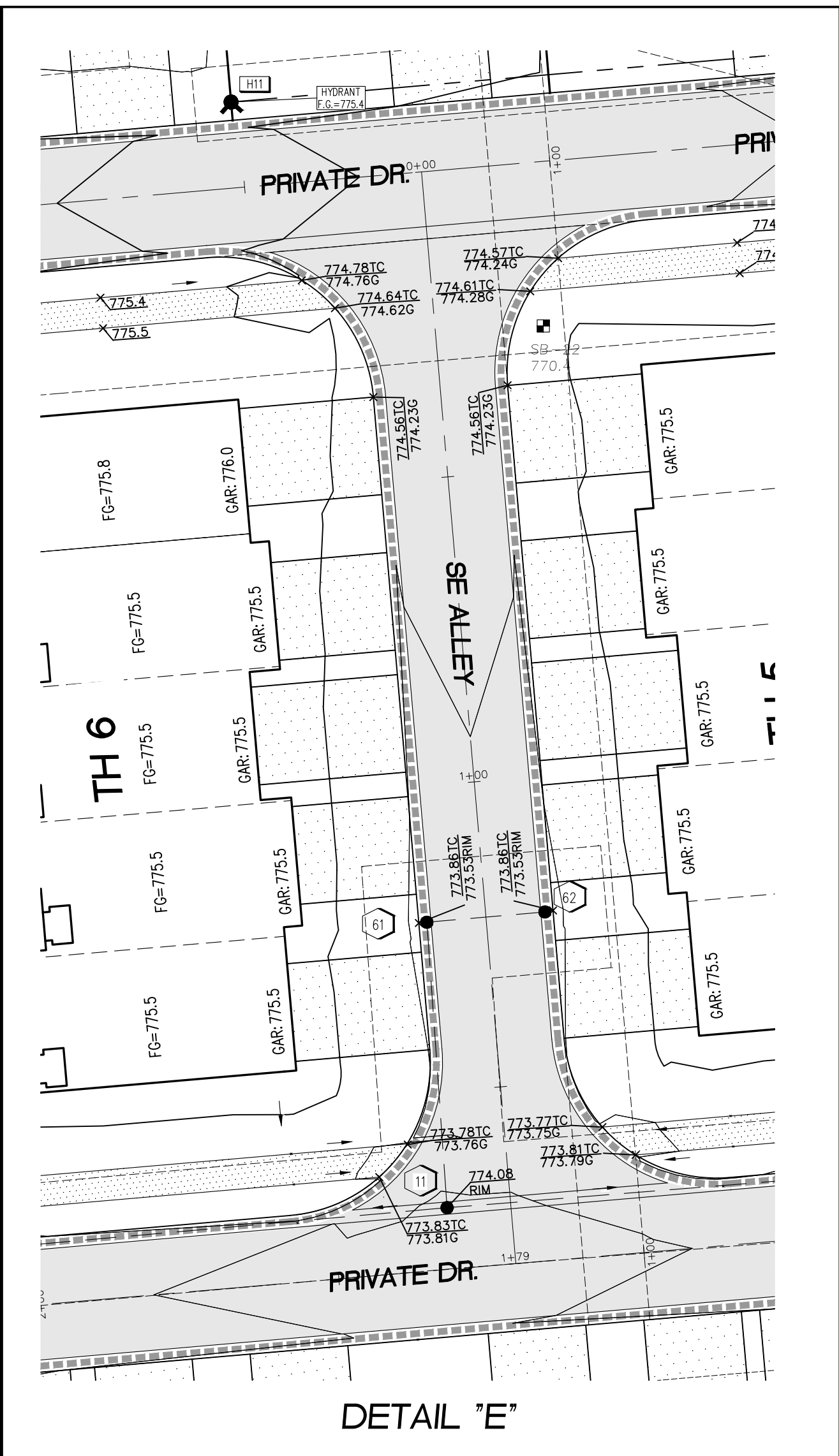
DETAIL "B"



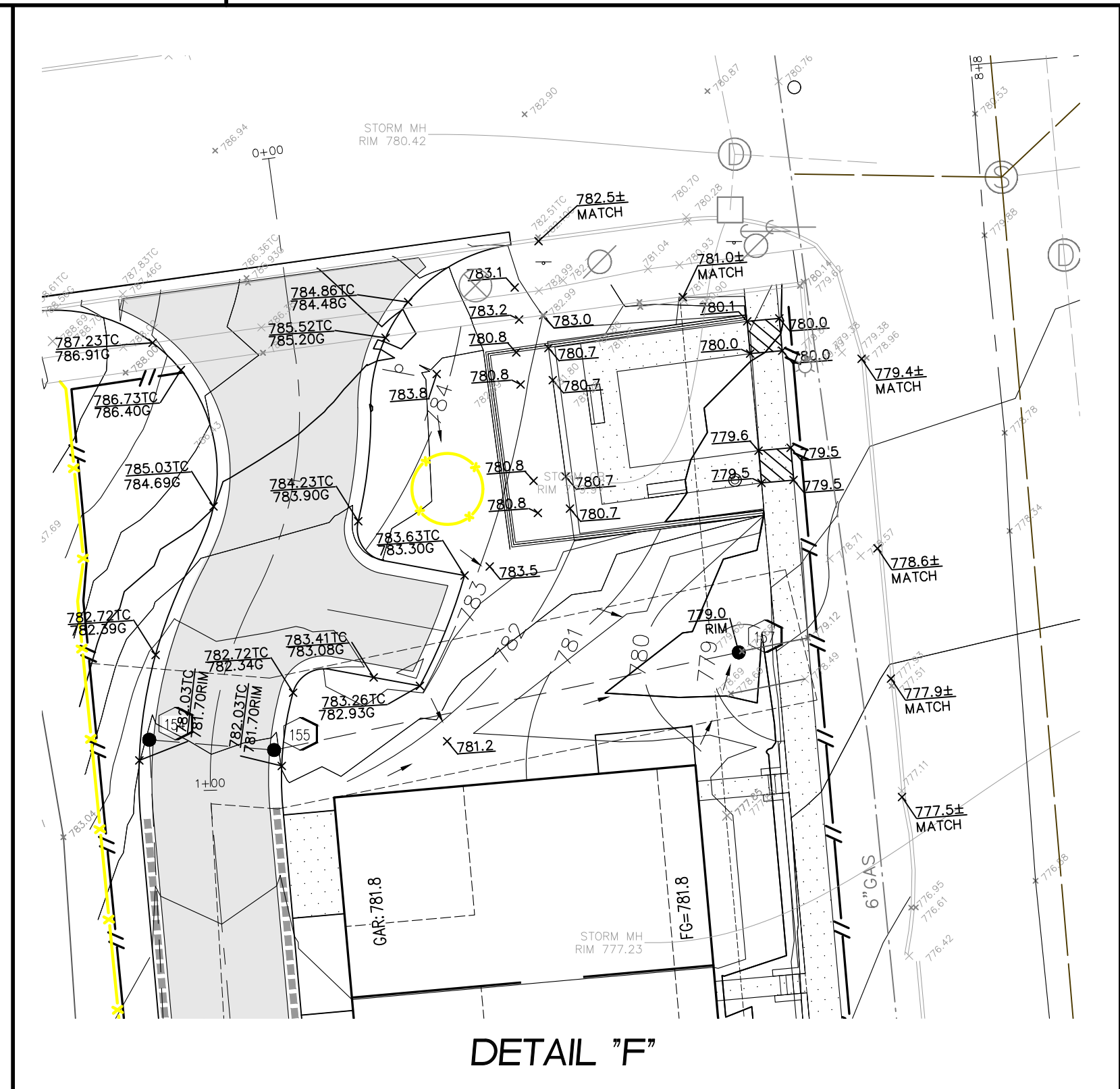
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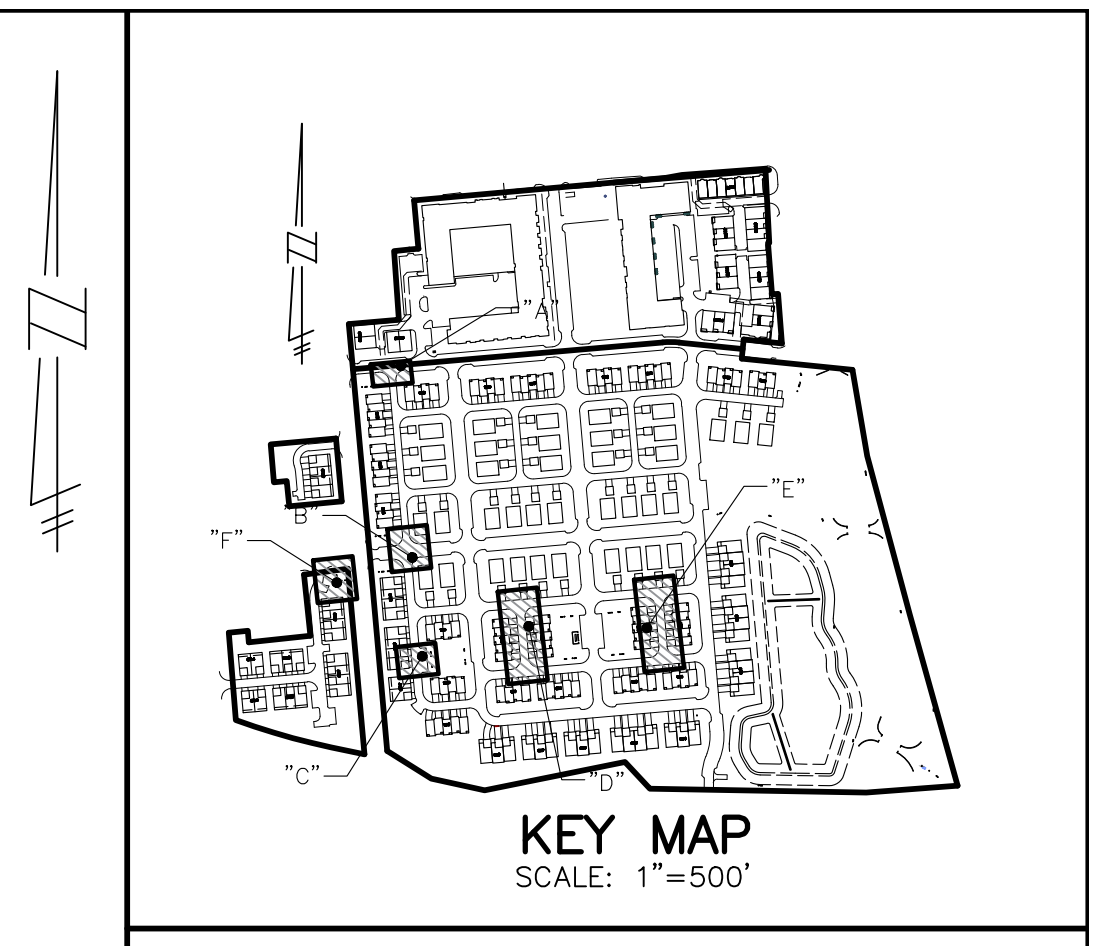
DETAIL "D"



DETAIL "E"



DETAIL "F"



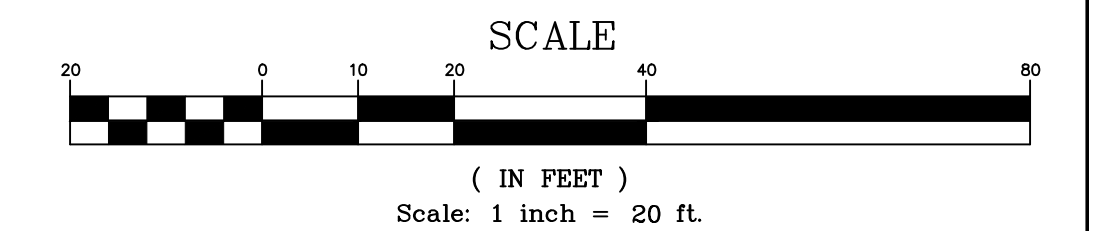
KEY MAP
SCALE: 1"=500'

- SIDEWALK REQUIREMENTS:
1. THE MAXIMUM CROSS SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 2%
 2. THE RUNNING SLOPE FOR ALL SIDEWALK AND DRIVEWAY CROSSWALKS IS 5%
 3. THE 5'x5' ADA LANDING AREAS HAVE A MAXIMUM SLOPE IN ALL DIRECTIONS OF 2%
 4. THE MAXIMUM SLOPE FOR A RAMP IS 8% FOR MAXIMUM DISTANCE OF 6 FEET

THE CONTRACTOR SHALL CHECK THE FORMS TO ENSURE THAT THESE SLOPE REQUIREMENTS ARE MET BEFORE ANY CONCRETE IS PLACED.



5'x5' ADA LANDING AREA
SIDEWALK LANDING DETAIL



LEGEND	
	EXISTING
	PROPOSED
	PAVEMENT (ASPHALT)
	SIDE WALK (CONCRETE)
	CONCRETE CURB AND GUTTER
	STORM SEWER
	SANITARY SEWER
	WATER MAIN
	DEMOS UNDERDRAIN
	DEMOS LANDSCAPE DRAIN
	MANHOLE
	CATCH BASIN W/SED CATCH
	CURB INLET W/SLT SAC
	END SECTION
	GATE VALVE
	HYDRANT
	OVERHEAD ELECTRICAL LINES
	FLOOD PLAN
	CONTOURS
	1000.00
	1000.00
	SPOT ELEVATION
	T/C
	SURFACE DRAINAGE
	OVERFLOW ROUTE
	TREE FENCE
	SILT FENCE
	PROPOSED DRIVEWAY LOCATION
	CROSSING NUMBER

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	100% SCHEMATIC DESIGN	06-10-2022
2.	50% DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV. PER CITY REVIEW	09-08-2023

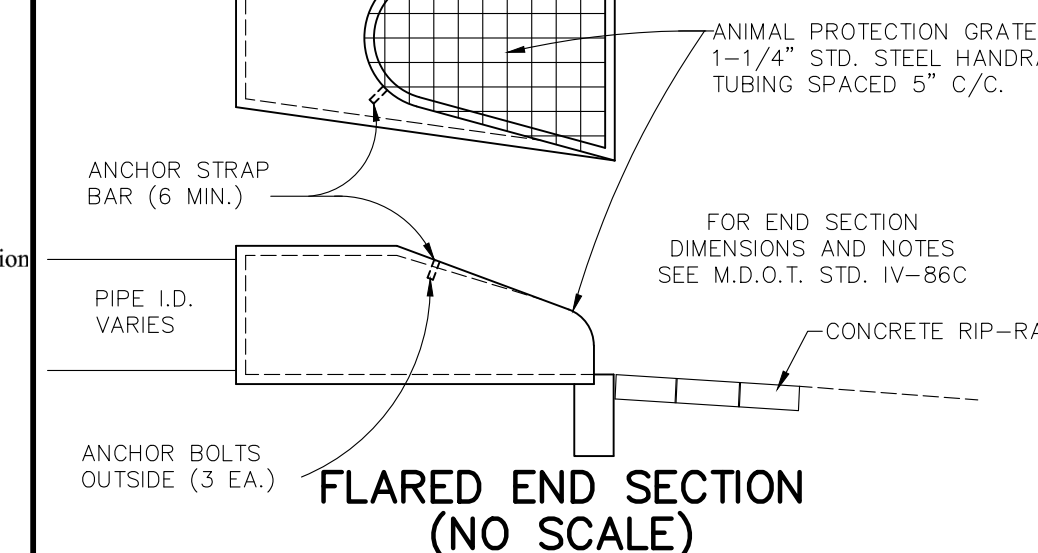
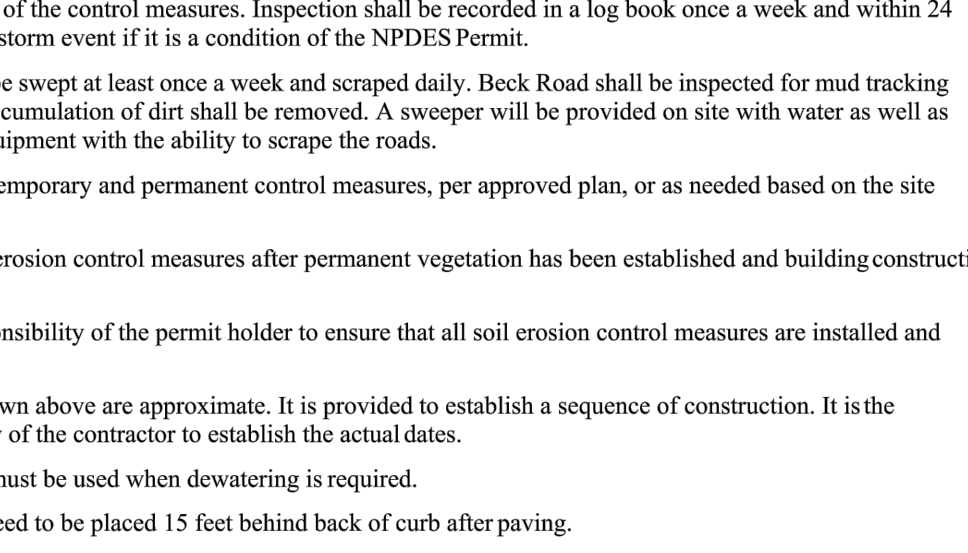
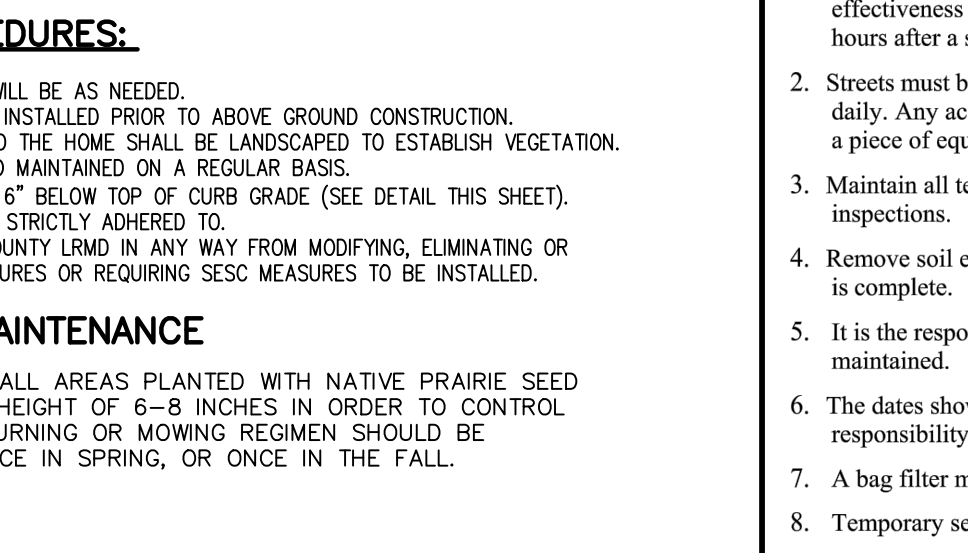
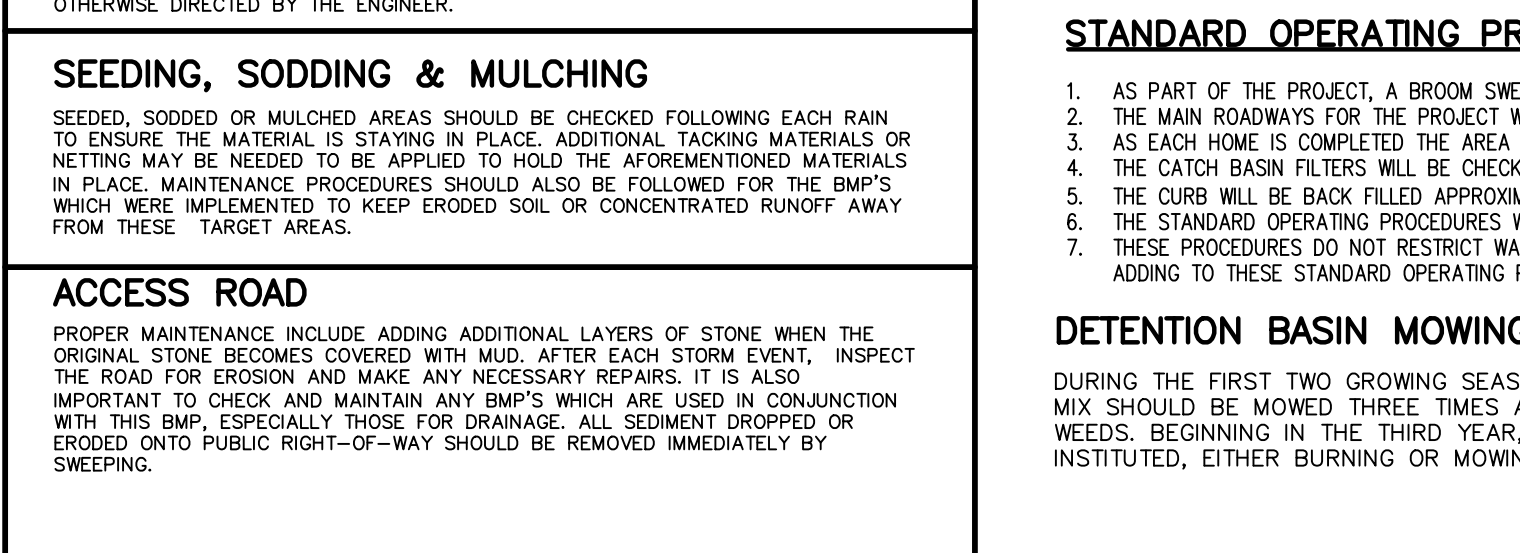
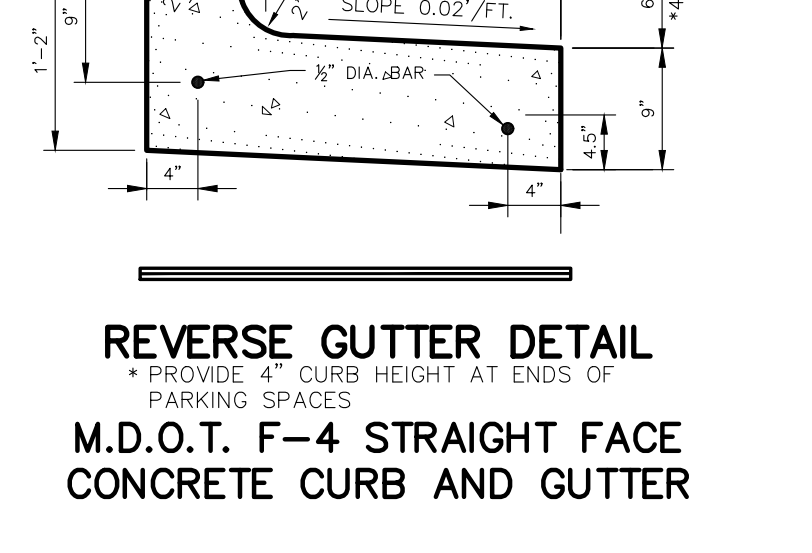
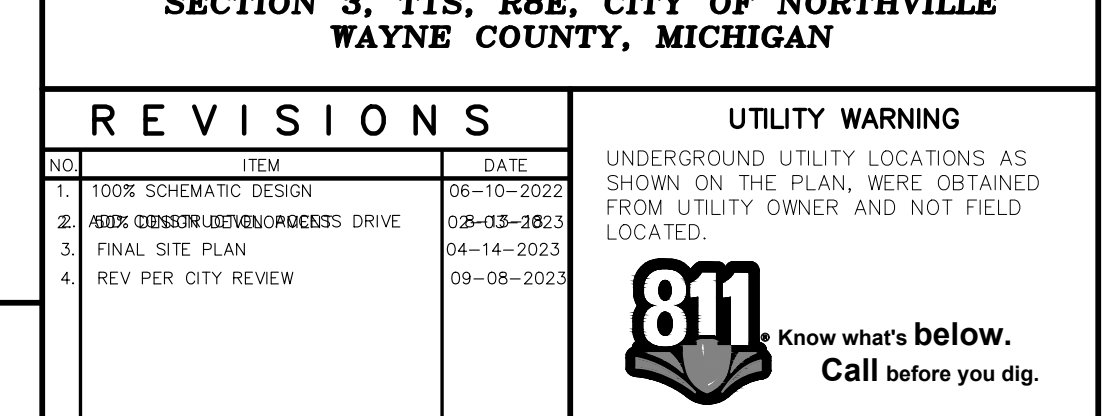
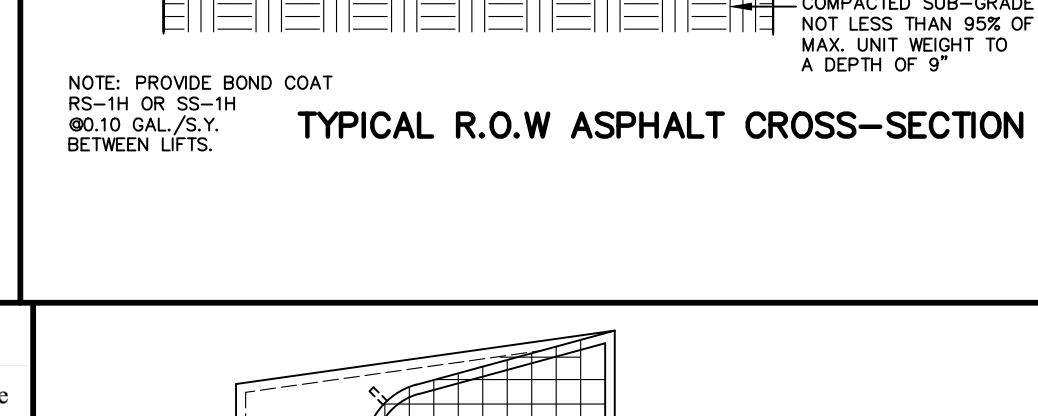
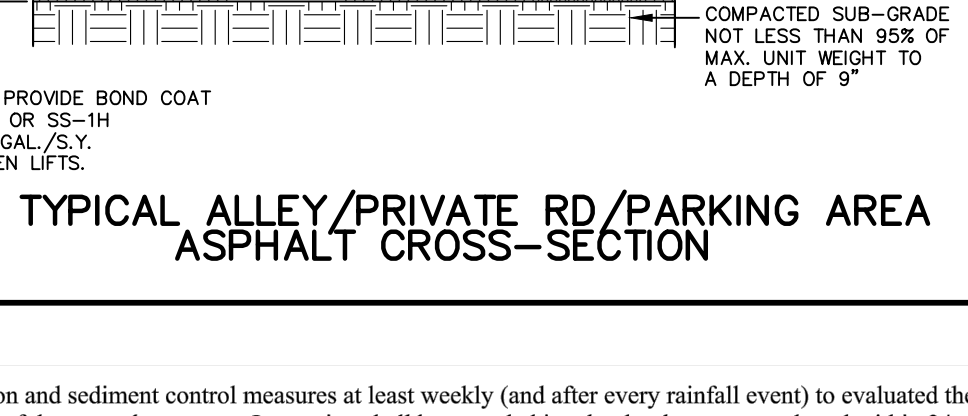
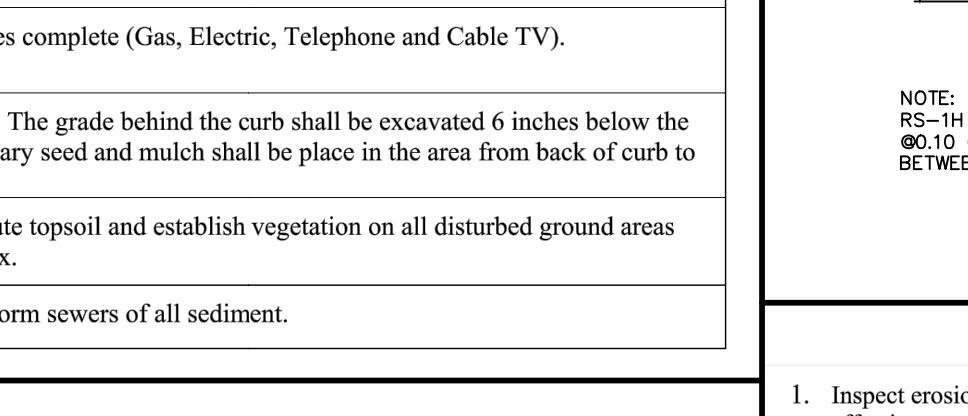
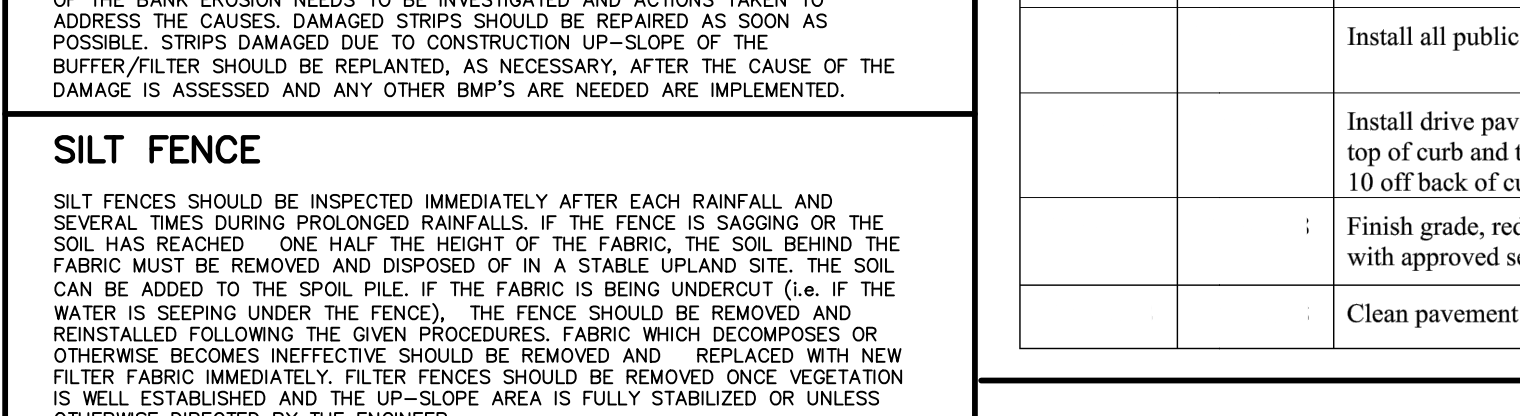
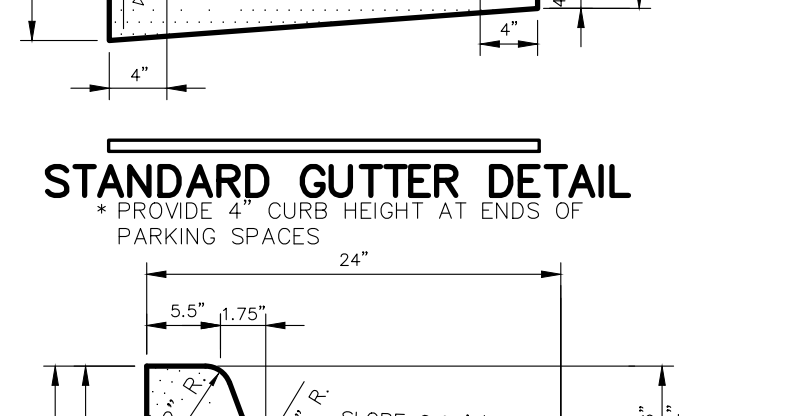
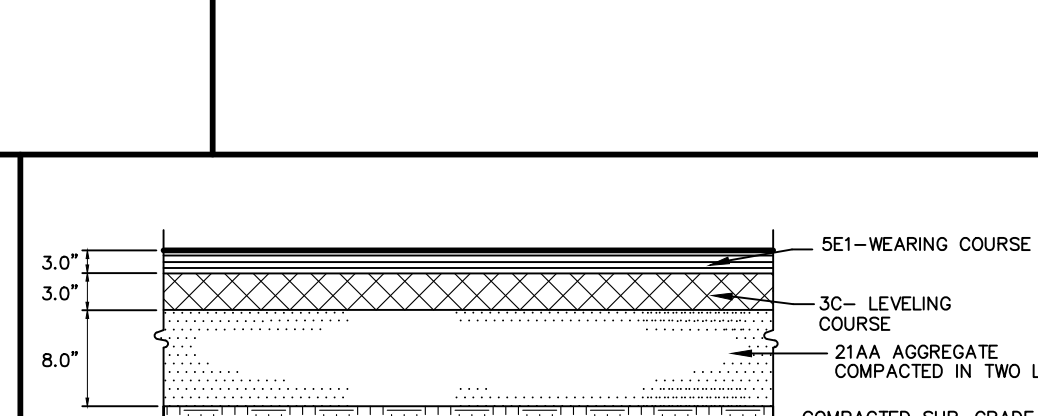
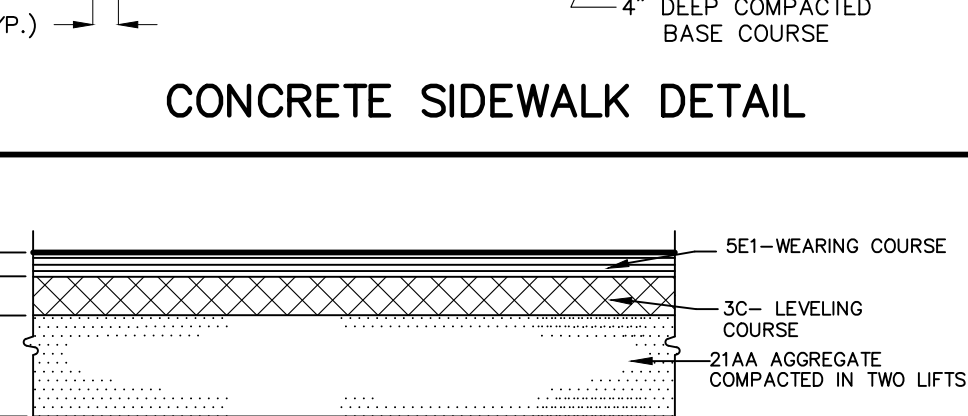
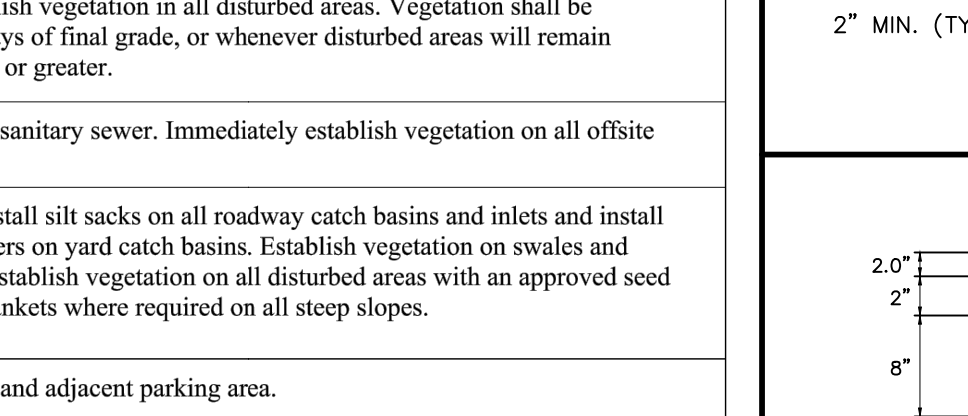
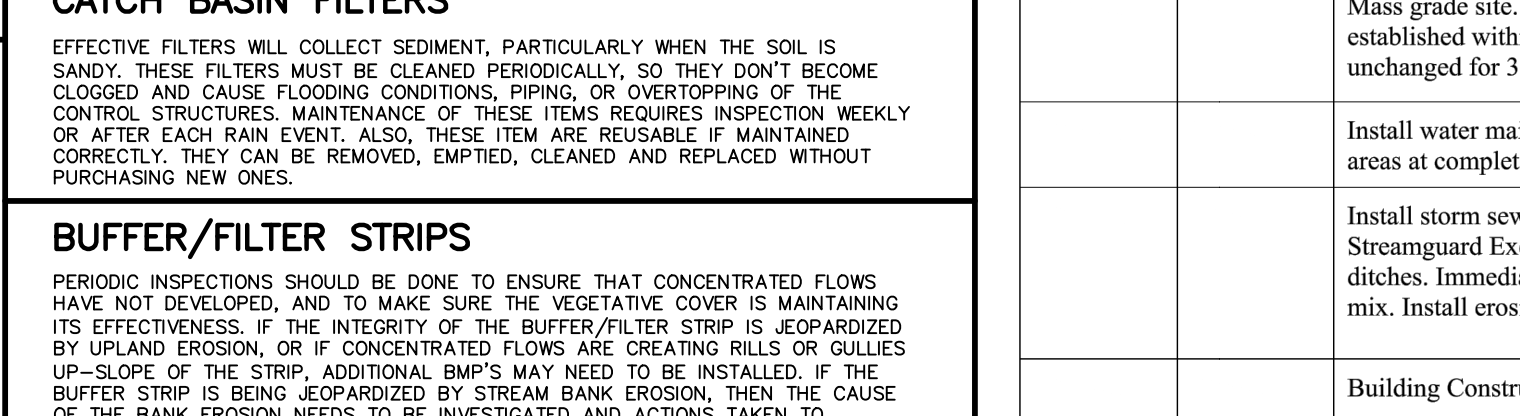
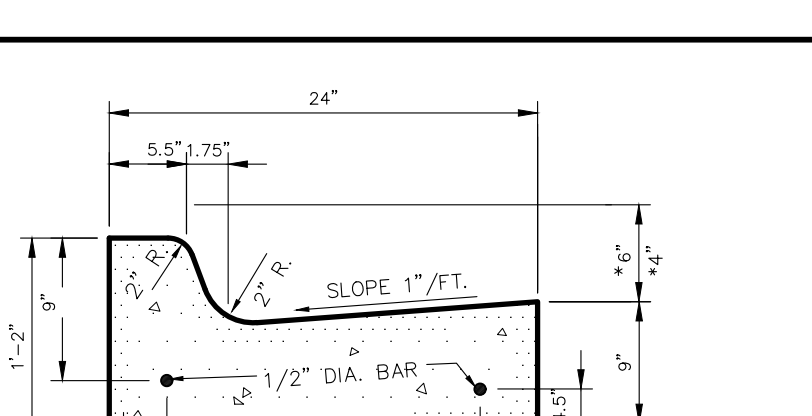
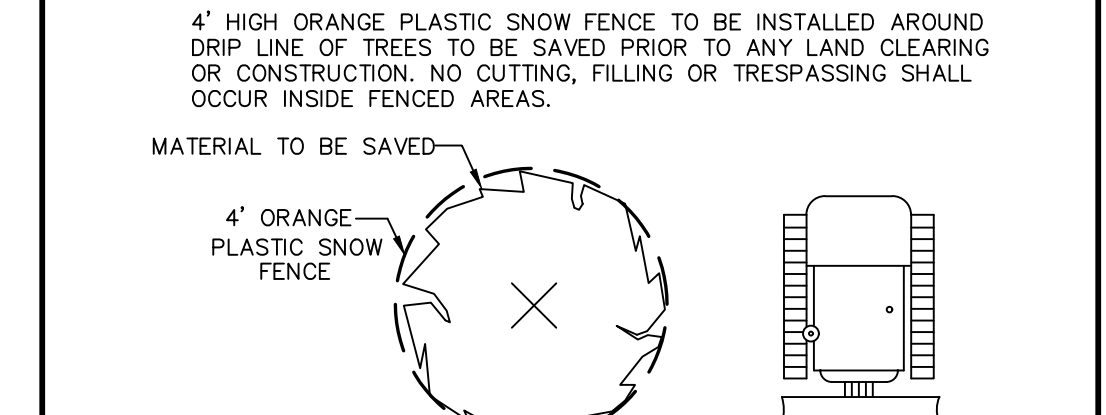
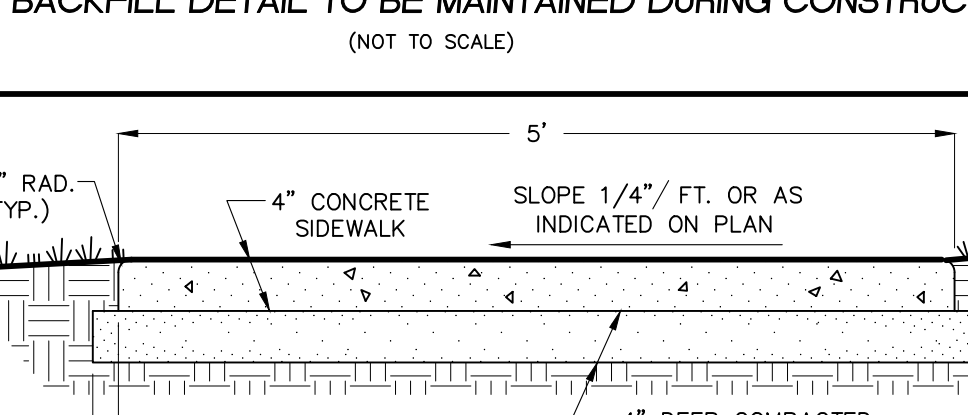
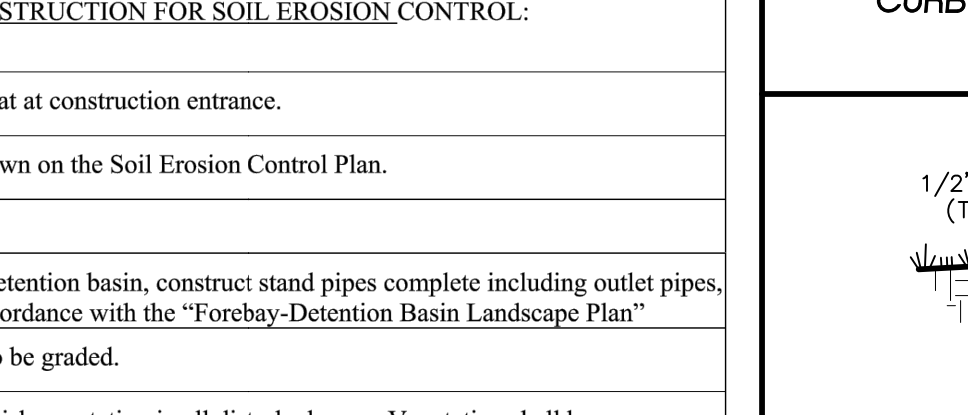
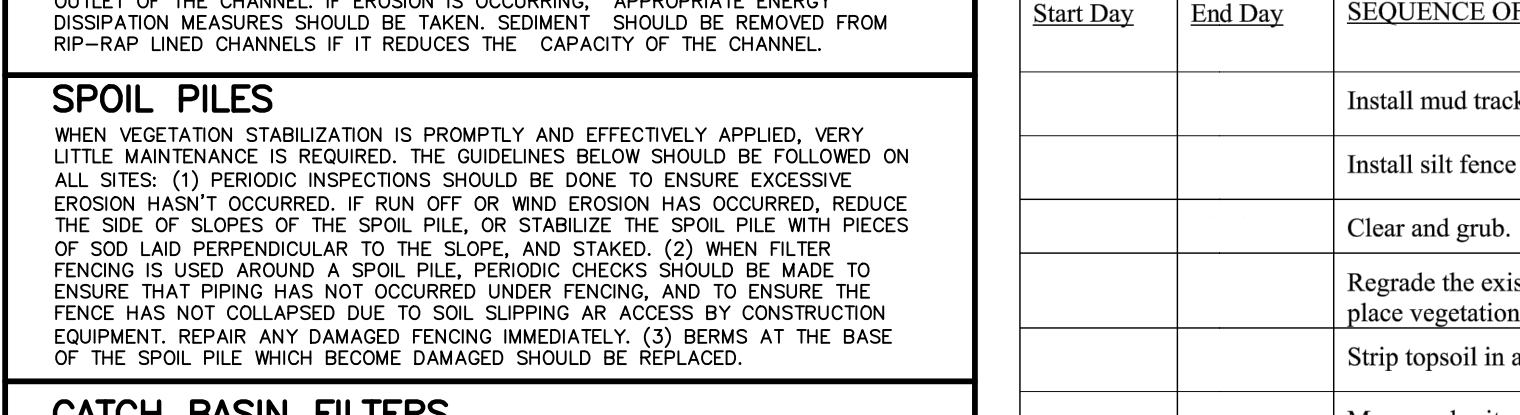
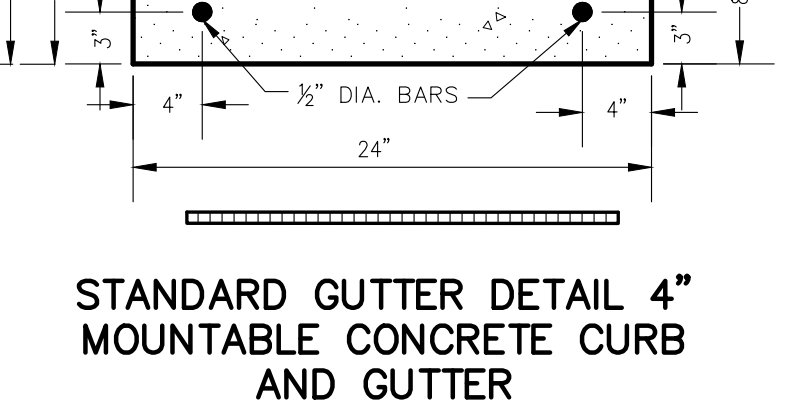
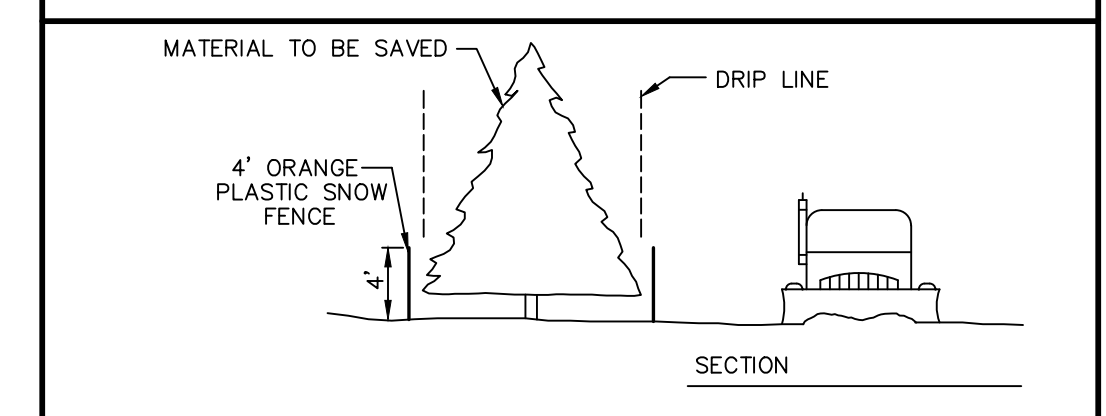
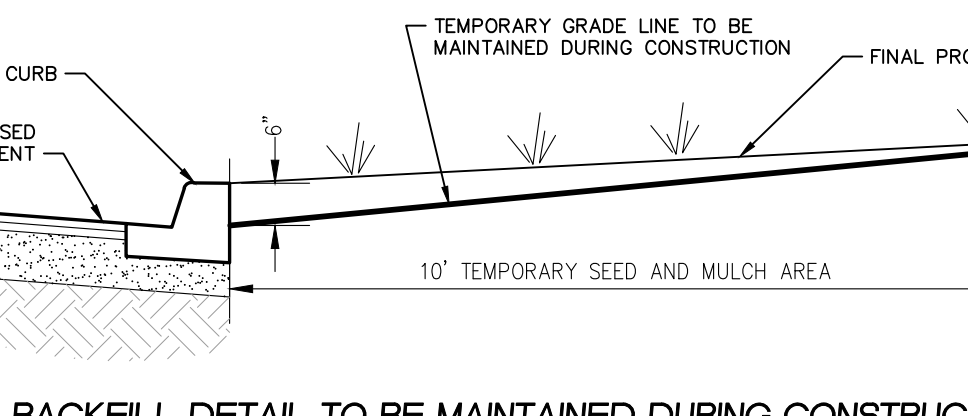
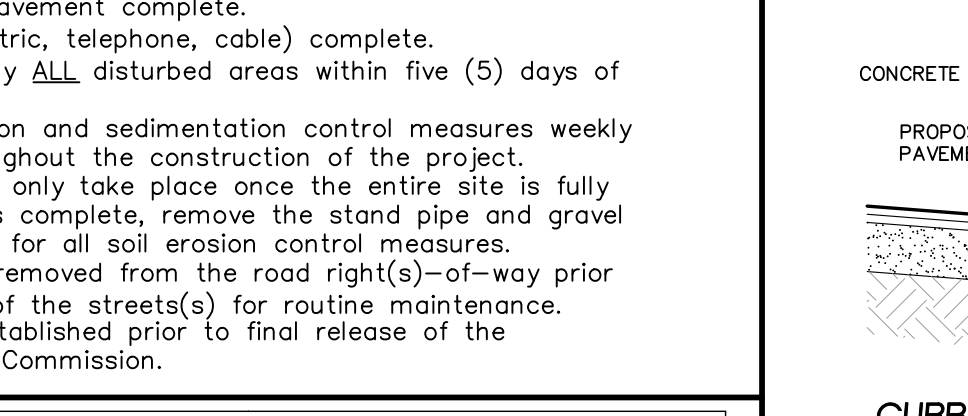
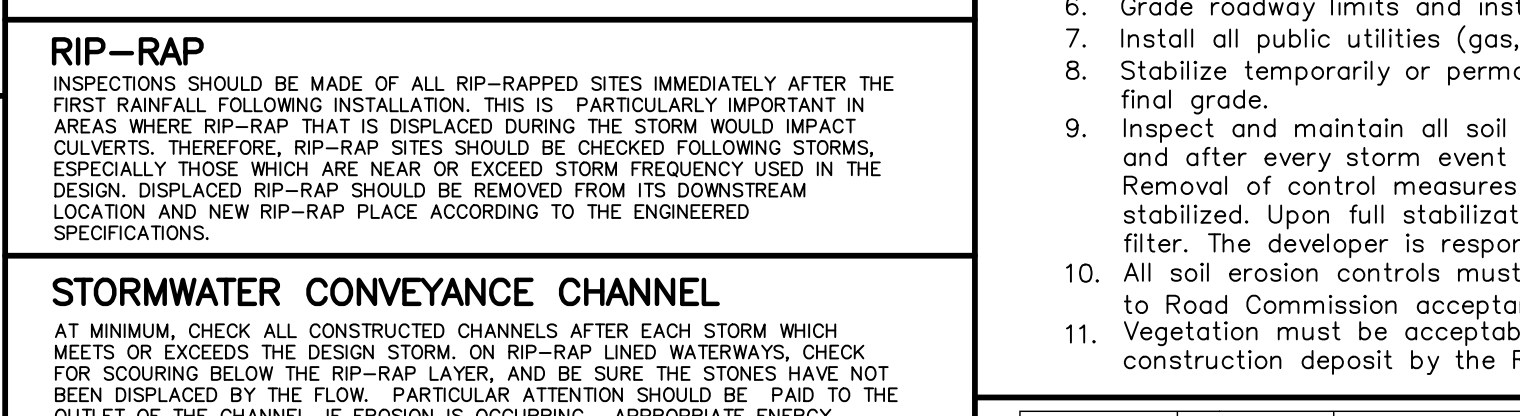
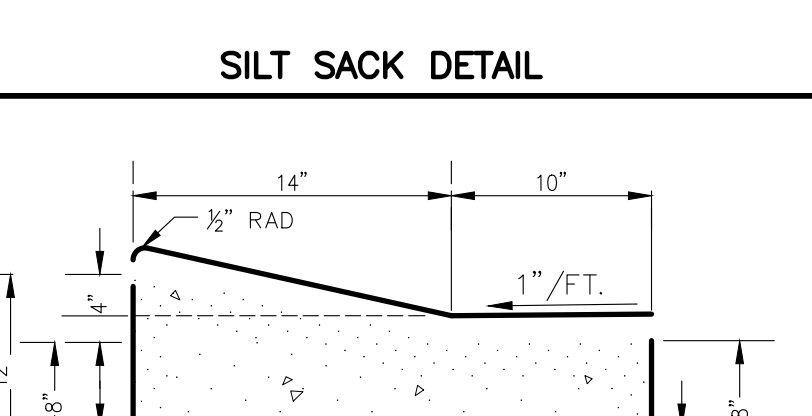
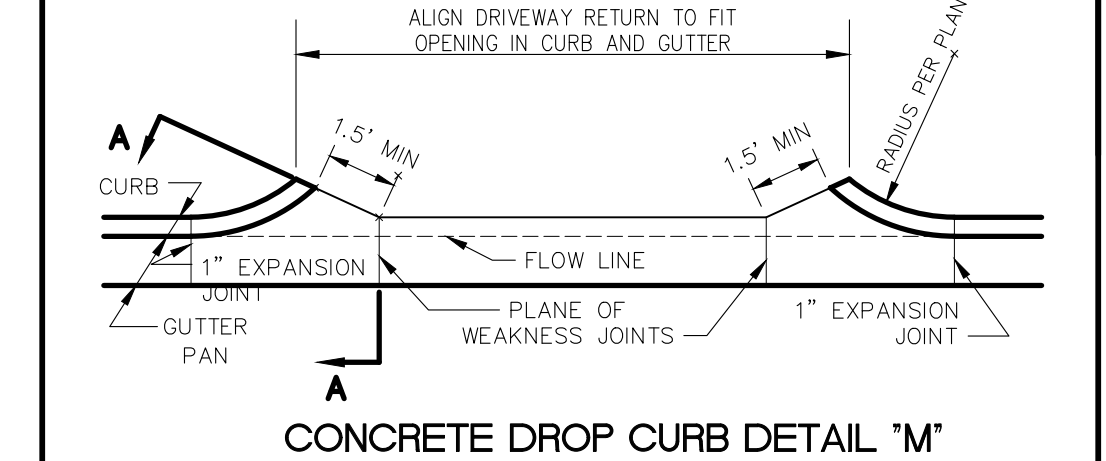
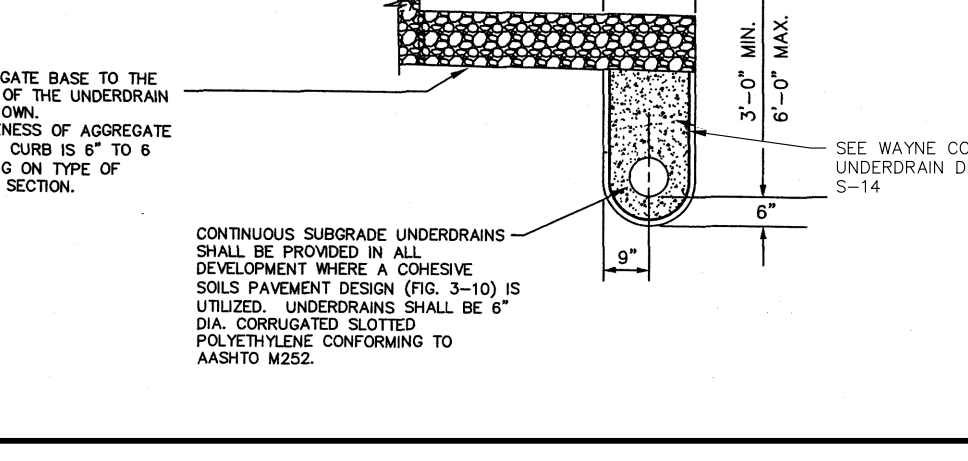
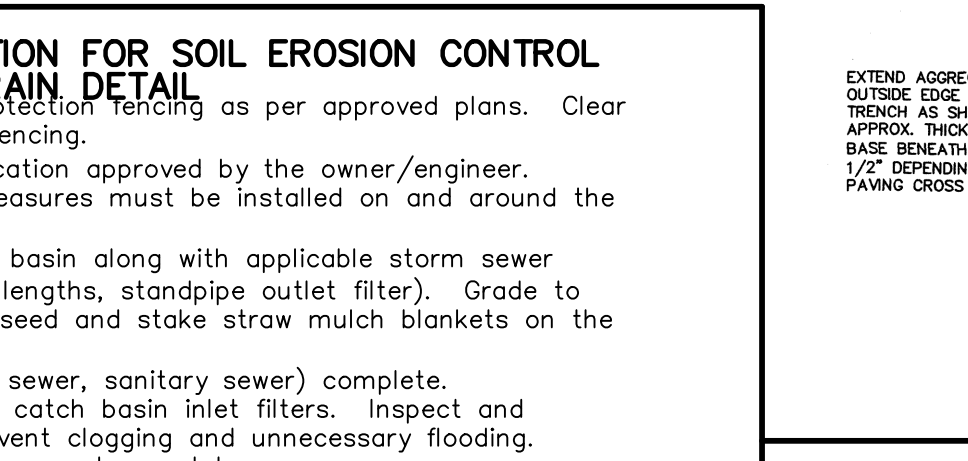
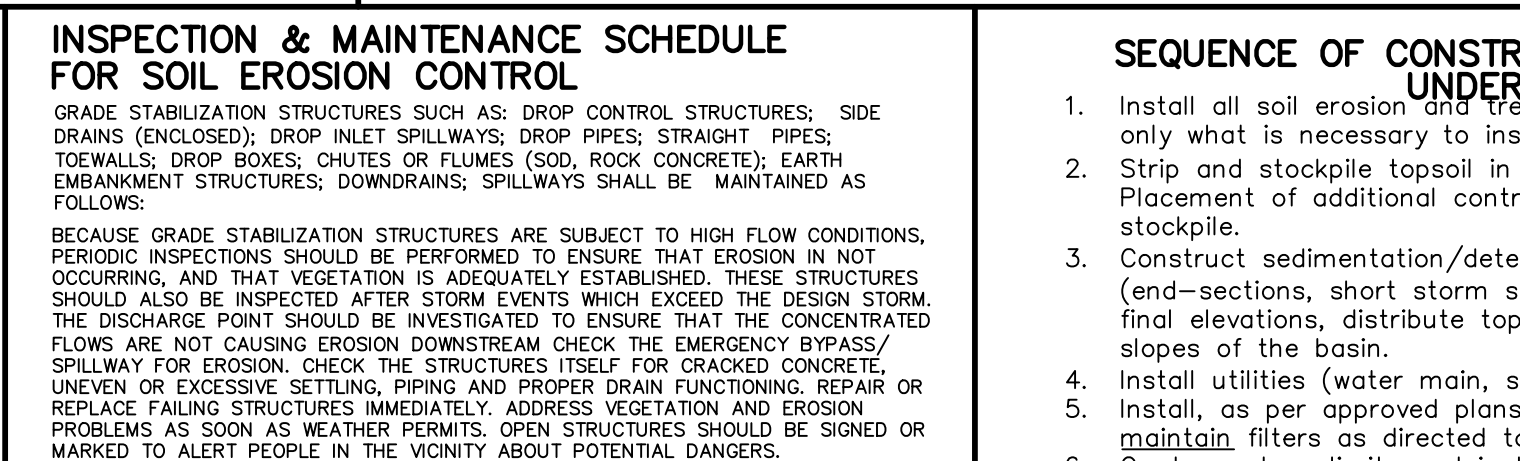
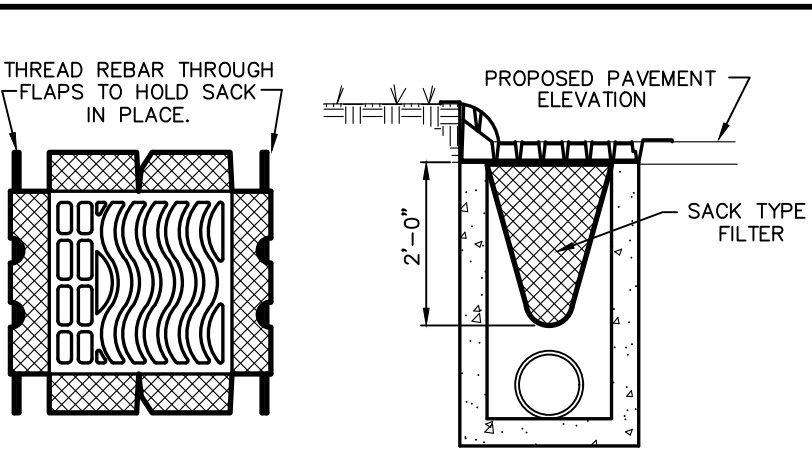
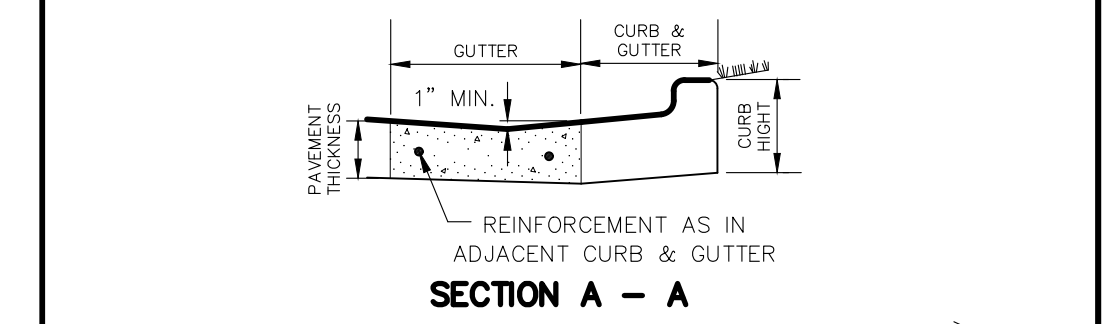
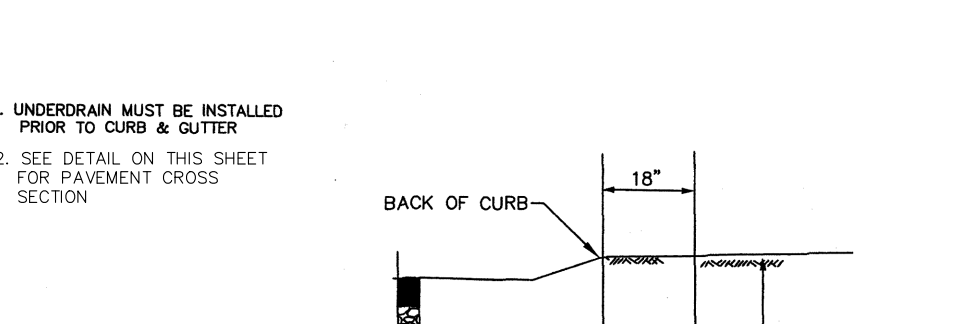
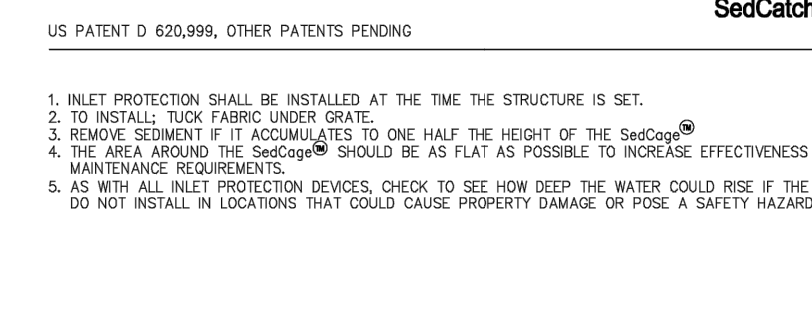
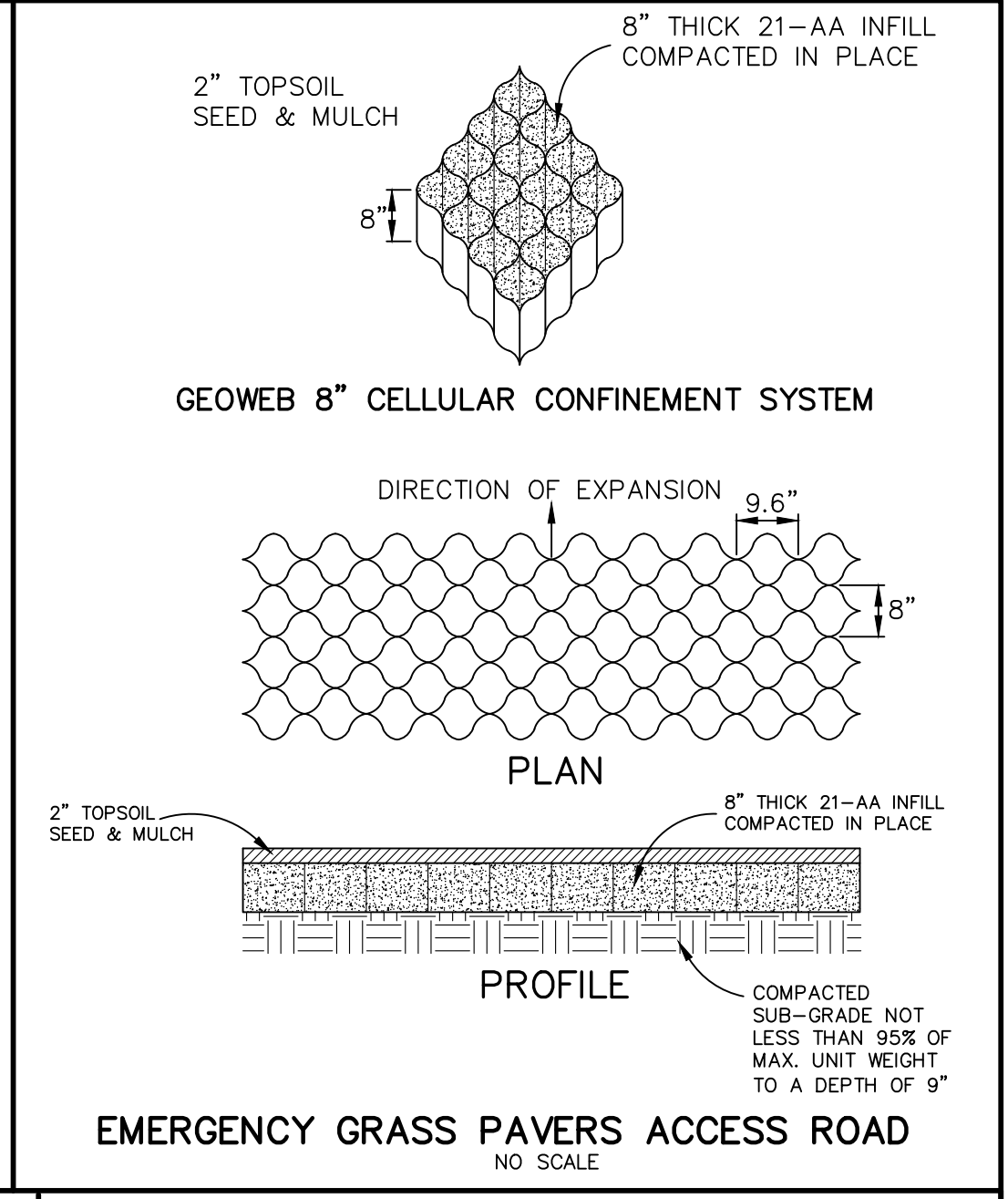
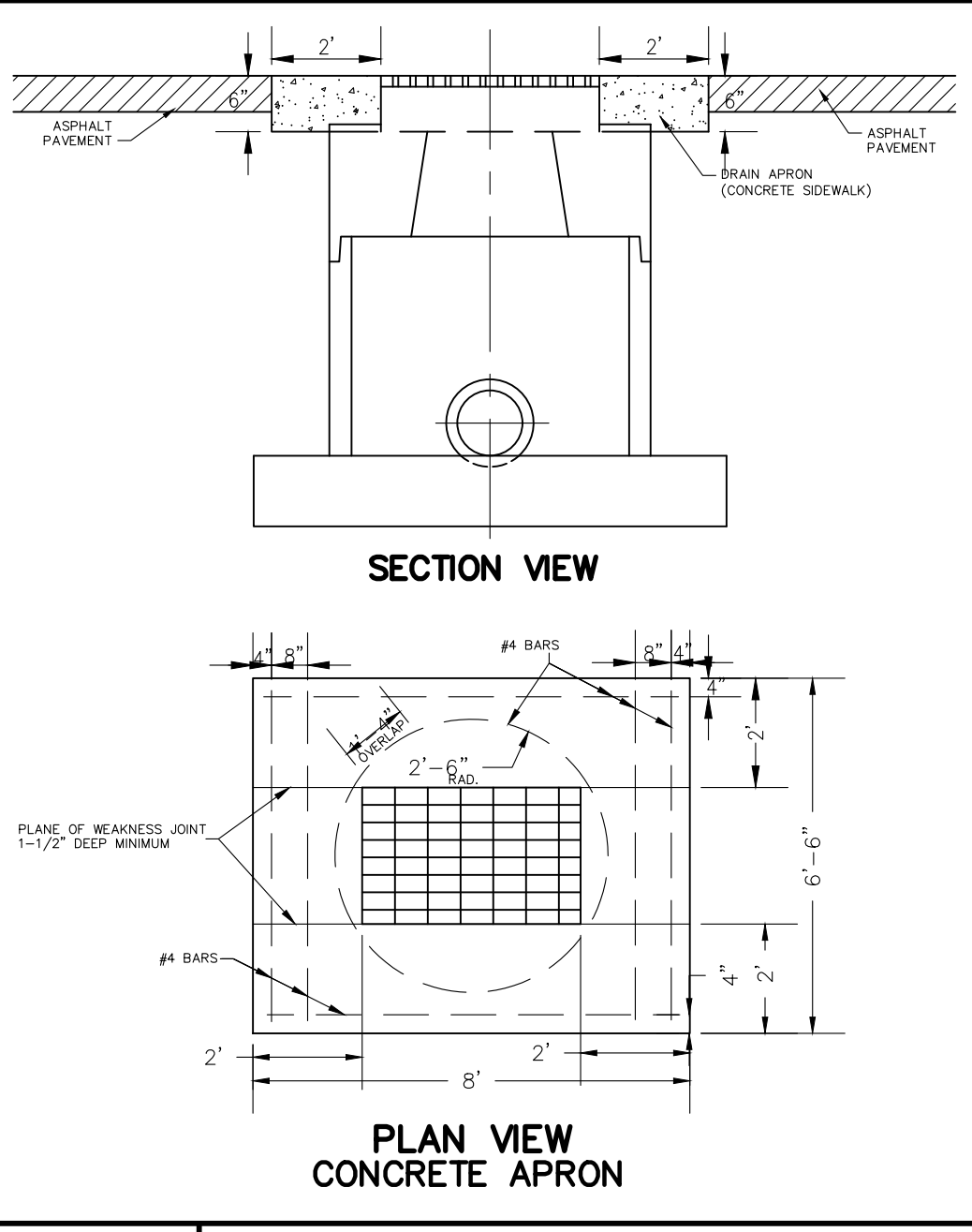
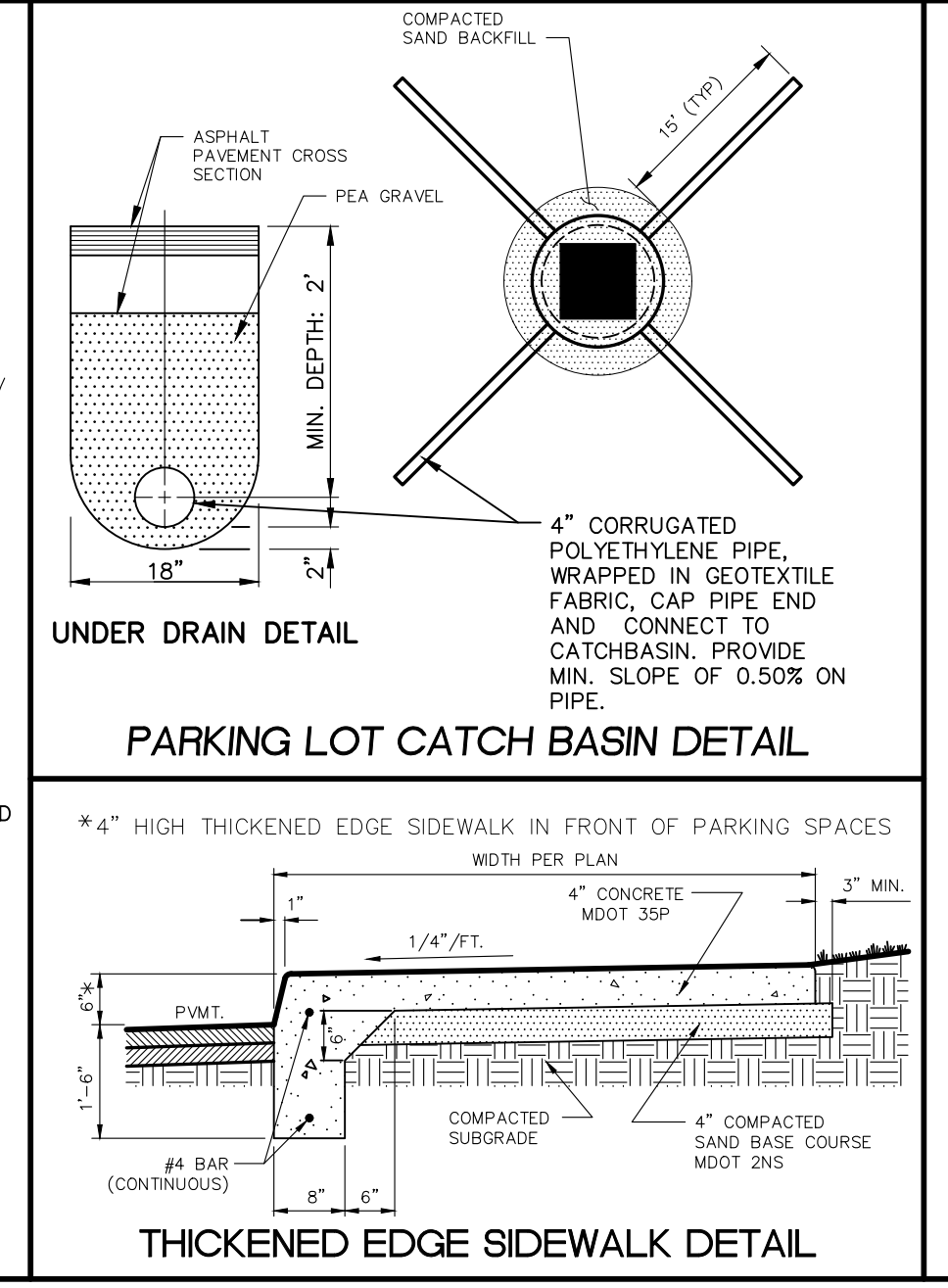
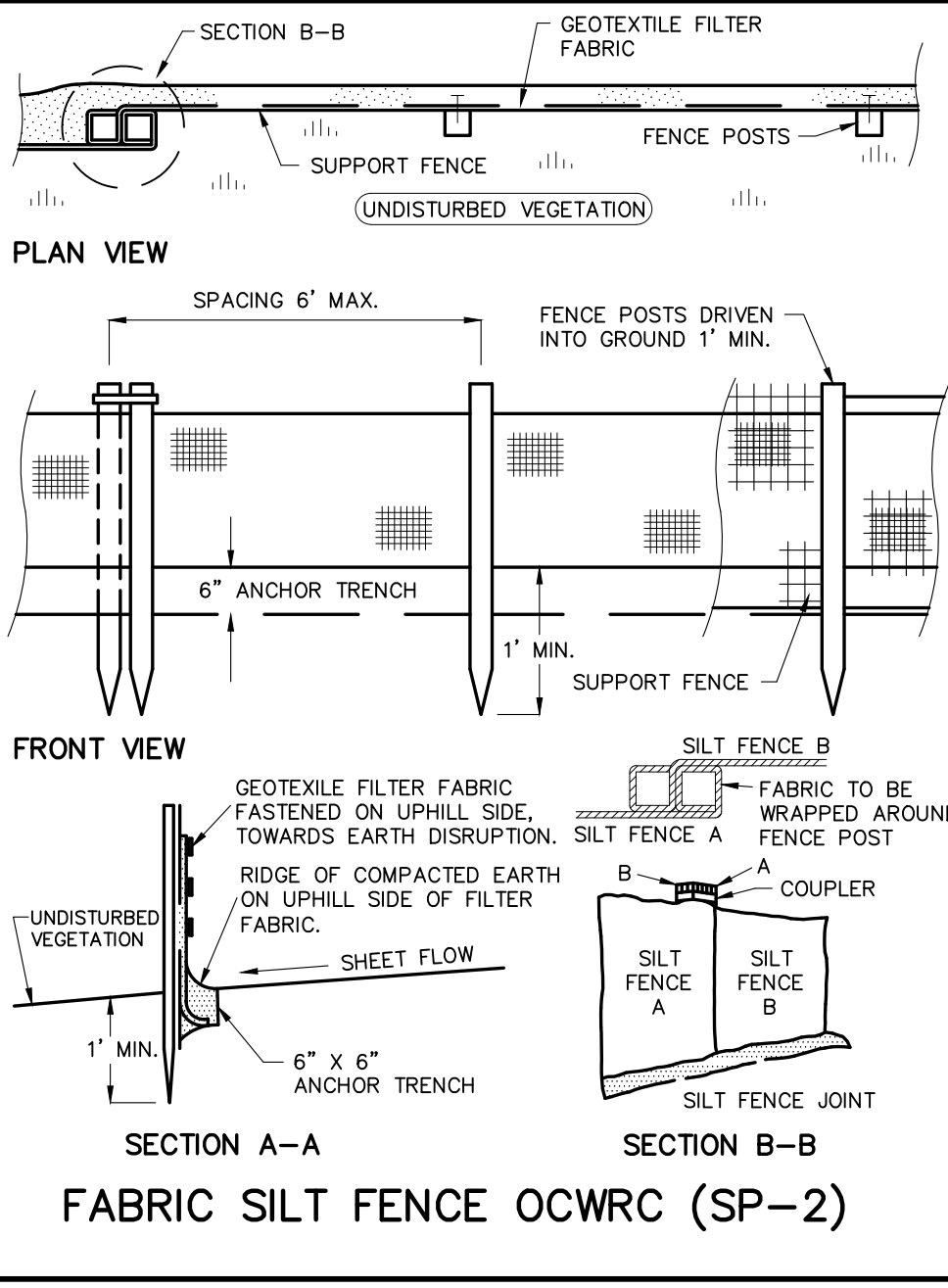
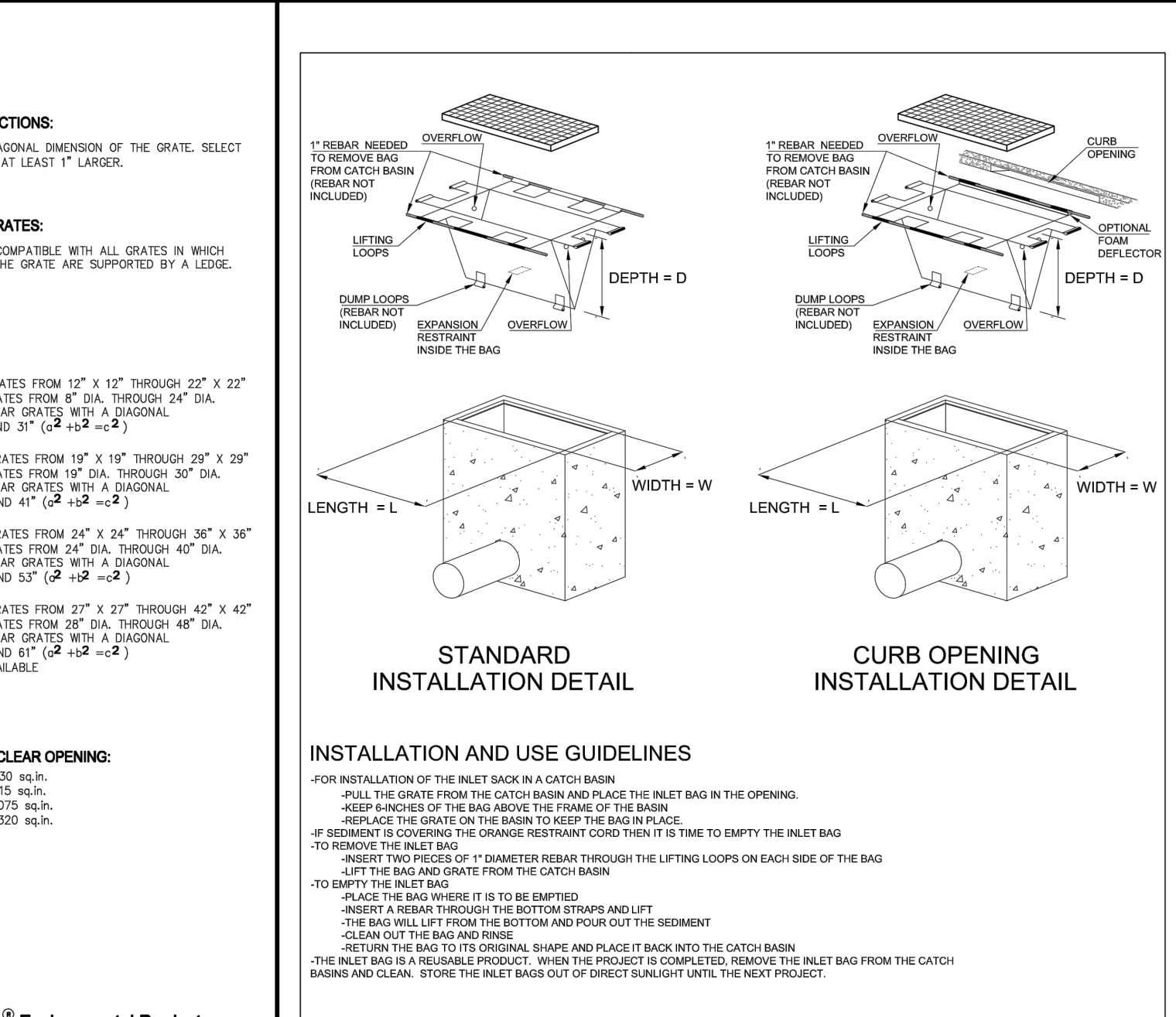
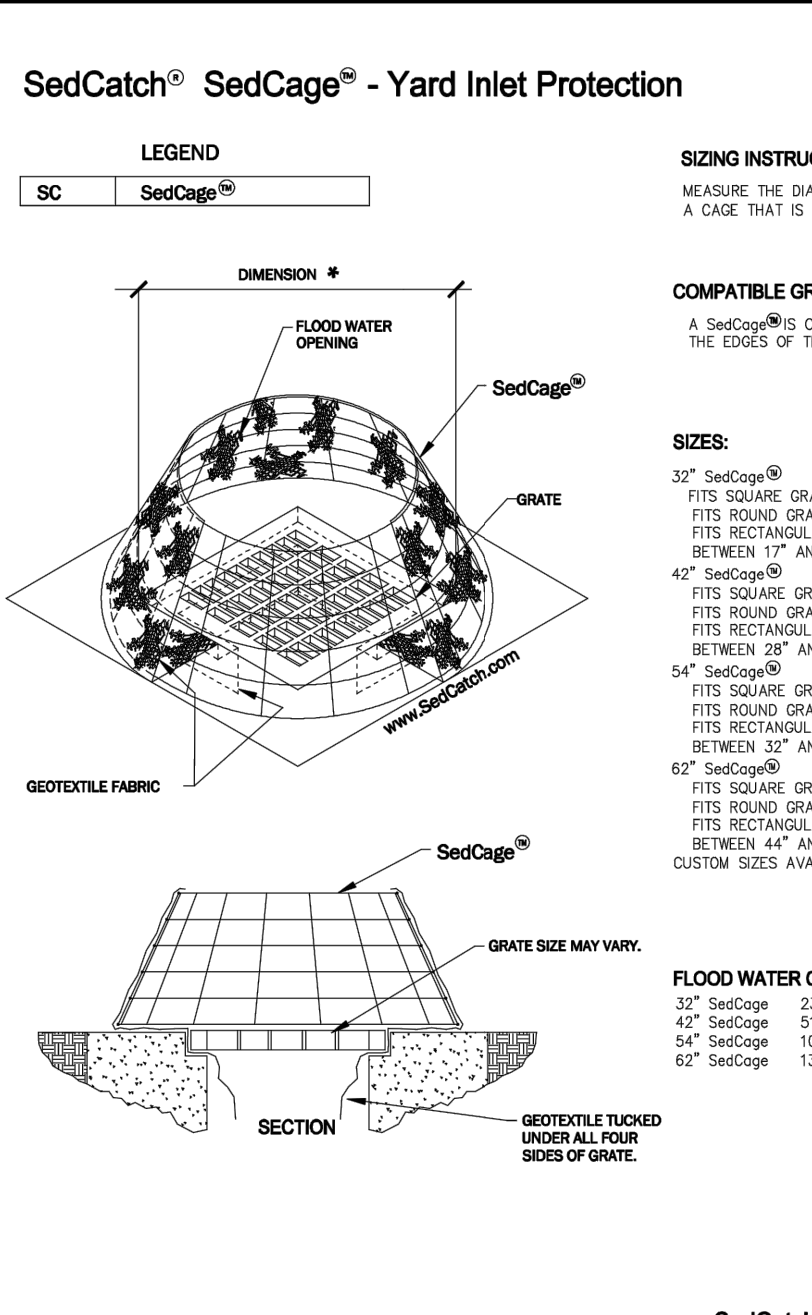
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER, AND NOT FIELD LOCATED.



THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: R.E. FILE: 21001-DETAIL-GR.DWG

DETAIL GRADING PLAN



THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS

NO.	ITEM	DATE
1.	SCHEMATIC DESIGN	06-10-2022
2.	ADJ. DRAINAGE/CONCRETE DRIVE	08-05-2022
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UTILITY WARNING
UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.
811 Know what's below. Call before you dig.
THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: F.E. FILE: 21001-ND-RSP.DWG

NOTES AND DETAILS

SEIBER KEAST LEHRN
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET
ND

NOTES:

1. WRITTEN PERMISSION SHALL BE SECURED TO CONSTRUCT DRIVE ON PRIVATE PROPERTY.
2. UPON PROJECT COMPLETION REMOVE TEMPORARY APPROACH, RESTORE THE RIGHT-OF-WAY TO ITS ORIGINAL CONDITIONS, AND RECONSTRUCT CURB AS PER CURB DETAIL "A" OR PLACE THE PERMANENT APPROACH WITHIN THE SAME LOCATION AND RECONSTRUCT CURB DROP AS PER CURB DETAIL "B".

GENERAL NOTES:

1. STONE SIZE SHOULD BE 2" MIN. RECLAIMED OR RECYCLED OF AN EQUIVALENT DIAMETER MAY ALSO BE USED.
2. WHERE ACCESS TO THE CONSTRUCTION SITE IS LIMITED IN LENGTH (SUCH AS IN URBAN AREAS), AS DIRECTED BY THE COUNTY ENGINEER, DAILY STREET SWEEPING MAY BE NEEDED TO REMOVE SOIL THAT IS TRACKED ONTO THE ROADS.
3. PROVIDE CULVERT AS SHOWN ON THE PLANS WHEN DITCH IS EXISTING. MIN. 12" DIA. RCP OR CMP.

CONSTRUCTION CONSIDERATIONS:

1. SAW-CUT HORIZONTALLY THE EXISTING CONCRETE CURB AS PER WAYNE COUNTY DETAIL "A" AND PREPARE THE EDGE OF PAVEMENT.
2. REMOVE AND DISPOSE OF UNWANTED TREES, OTHER VEGETATION, OR FOREIGN OBJECTS AND DEBRIS FROM THE AREA.
3. APPLY THE STONE IN LAYERS AND COMPACT IT AS DIRECTED BY THE WAYNE COUNTY ENGINEER.
4. PLACE H.M.A. TOP AND COMPACT IT TO ITS 97% OF THE UNIT WEIGHT OF THE MATERIALS OR AS DIRECTED BY THE WAYNE COUNTY ENGINEER.

AFTER CONSTRUCTION:

IF MUD AND SOIL ATTACHED TO TRUCK TIRES DOES NOT FALL OFF ONTO THE ASPHALT, THEN TRUCK TIRES SHOULD BE WASHED ON AN AREA STABILIZED WITH CRUSHED STONE. WASH TRACKS MAY BE USED.

MAINTENANCE:

PROPER MAINTENANCE MAY INCLUDE ADDITIONAL LAYERS OF STONE OR H.M.A. WHEN THE ORIGINAL LAYERS BECOMES COVERED WITH MUD OR BECOMES COMPLETELY OR PARTIALLY DETRIORATED DUE TO MOVEMENT OF HEAVY TRUCKS AND VEHICLES. AFTER EACH STORM EVENT, INSPECT THE ROAD FOR DEBRIS AND ALL SEDIMENT DROPPED OR ERODED ONTO PUBLIC R.O.W. SHOULD BE REMOVED IMMEDIATELY BY SWEEPING EFFECTIVELY.

REVISION DATE: 08/01/07

WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES
ENGINEERING DIVISION/PERMIT OFFICE
PERMIT STANDARDS

TEMPORARY ASPHALT ACCESS DRIVE

SCALE: NOT TO SCALE
SHEET: CD-1 OF 2

NOTES:

1. WRITTEN PERMISSION SHALL BE SECURED TO CONSTRUCT DRIVE ON PRIVATE PROPERTY.
2. UPON PROJECT COMPLETION REMOVE TEMPORARY APPROACH, RESTORE THE RIGHT-OF-WAY TO ITS ORIGINAL CONDITIONS, AND RECONSTRUCT CURB AS PER CURB DETAIL "A" OR PLACE THE PERMANENT APPROACH WITHIN THE SAME LOCATION.

GENERAL NOTES:

1. STONE SIZE SHOULD BE 2" MIN. RECLAIMED OR RECYCLED OF AN EQUIVALENT DIAMETER MAY ALSO BE USED.
2. WHERE ACCESS TO THE CONSTRUCTION SITE IS LIMITED IN LENGTH (SUCH AS IN URBAN AREAS), AS DIRECTED BY THE COUNTY ENGINEER, DAILY STREET SWEEPING MAY BE NEEDED TO REMOVE SOIL THAT IS TRACKED ONTO THE ROADS.

CONSTRUCTION CONSIDERATIONS:

1. REMOVE GRAVEL SHOULDER WITHIN APPROACH LIMITS.
2. REMOVE AND DISPOSE OF UNWANTED TREES, OTHER VEGETATION, OR FOREIGN OBJECTS AND DEBRIS FROM THE AREA.
3. APPLY THE STONE IN LAYERS AND COMPACT IT AS DIRECTED BY THE WAYNE COUNTY ENGINEER.
4. PLACE H.M.A. TOP AND COMPACT IT TO ITS 97% OF THE UNIT WEIGHT OF THE MATERIALS OR AS DIRECTED BY THE WAYNE COUNTY ENGINEER.

AFTER CONSTRUCTION:

IF MUD AND SOIL ATTACHED TO TRUCK TIRES DOES NOT FALL OFF ONTO THE ASPHALT, THEN TRUCK TIRES SHOULD BE WASHED ON AN AREA STABILIZED WITH CRUSHED STONE. WASH TRACKS MAY BE USED.

MAINTENANCE:

PROPER MAINTENANCE MAY INCLUDE ADDITIONAL LAYERS OF STONE OR H.M.A. WHEN THE ORIGINAL LAYERS BECOMES COVERED WITH MUD OR BECOMES COMPLETELY OR PARTIALLY DETRIORATED DUE TO MOVEMENT OF HEAVY TRUCKS AND VEHICLES. AFTER EACH STORM EVENT, INSPECT THE ROAD FOR DEBRIS AND ALL SEDIMENT DROPPED OR ERODED ONTO PUBLIC R.O.W. SHOULD BE REMOVED IMMEDIATELY BY SWEEPING EFFECTIVELY.

REVISION DATE: 08/01/07

WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES
ENGINEERING DIVISION/PERMIT OFFICE
PERMIT STANDARDS

TEMPORARY ASPHALT ACCESS DRIVE

SCALE: NOT TO SCALE
SHEET: CD-1 OF 2

NOTES:

1. CONSTRUCT THE DRIVE APPROACH WITH 8" NON-REINFORCED CONCRETE ON 6" OF 21AA AGGREGATE BASE COURSE COMPACTED IN PLACE (CIP) OR 6" HMA LEVELING ON 9" OF 21AA AGGREGATE BASE COURSE (CIP). CURBS SHALL BE CONSTRUCTED WITH HEIGHT VARYING FROM 6" AT BACK OF CURB TO 0" HEIGHT AT FACE OF SIDEWALK OR RIGHT-OF-WAY LINE. MAINTAIN NORMAL SIDEWALK GRADE ACROSS DRIVE. 2% SLOPE UP FROM FACE OF SIDEWALK.
2. AT ALL CONCRETE DRIVES, PLACE A 1" EXPANSION JOINT AT BACK OF CURB AND 1/2" EXPANSION JOINT AT FACE OF SIDEWALK OR RIGHT-OF-WAY LINE.
3. INBOUND OR OUTBOUND RADII SHALL BE REDUCED TO 5' FOR ONE-WAY TRAFFIC DRIVE APPROACH. DRIVE APPROACH SHALL NOT ENDOACH ACROSS PROPERTY LINE EXTENDED WITHOUT WRITTEN APPROVAL FROM THE ADJOINING PROPERTY OWNER.

REVISION DATE: 08/01/07

WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES
ENGINEERING DIVISION/PERMIT OFFICE
PERMIT STANDARDS

COMMERCIAL DRIVE APPROACH

SCALE: NOT TO SCALE
SHEET: D-6 OF 2

NOTES:

1. CONSTRUCT THE DRIVE APPROACH WITH 8" NON-REINFORCED CONCRETE ON 6" OF 21AA AGGREGATE BASE COURSE COMPACTED IN PLACE (CIP) OR 6" HMA LEVELING ON 9" OF 21AA AGGREGATE BASE COURSE (CIP). CURBS SHALL BE CONSTRUCTED WITH HEIGHT VARYING FROM 6" AT BACK OF CURB TO 0" HEIGHT AT FACE OF SIDEWALK OR RIGHT-OF-WAY LINE. MAINTAIN NORMAL SIDEWALK GRADE ACROSS DRIVE. 2% SLOPE UP FROM FACE OF SIDEWALK.
2. AT ALL CONCRETE DRIVES, PLACE A 1" EXPANSION JOINT AT BACK OF CURB AND 1/2" EXPANSION JOINT AT FACE OF SIDEWALK OR RIGHT-OF-WAY LINE.
3. INBOUND OR OUTBOUND RADII SHALL BE REDUCED TO 5' FOR ONE-WAY TRAFFIC DRIVE APPROACH. DRIVE APPROACH SHALL NOT ENDOACH ACROSS PROPERTY LINE EXTENDED WITHOUT WRITTEN APPROVAL FROM THE ADJOINING PROPERTY OWNER.

REVISION DATE: 08/01/07

WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES
ENGINEERING DIVISION/PERMIT OFFICE
PERMIT STANDARDS

COMMERCIAL DRIVE APPROACH

SCALE: NOT TO SCALE
SHEET: D-6 OF 2

NOTES:

1. CONSTRUCT DRIVE WITH 8" NON-REINFORCED CONCRETE ON 6" OF 21AA AGGREGATE BASE COURSE COMPACTED IN PLACE (CIP) OR 6" HMA LEVELING ON 9" OF 21AA AGGREGATE BASE COURSE (CIP). CURBS SHALL BE CONSTRUCTED WITH HEIGHT VARYING FROM 6" AT BACK OF CURB TO 0" HEIGHT AT FACE OF SIDEWALK OR RIGHT-OF-WAY LINE. MAINTAIN NORMAL SIDEWALK GRADE ACROSS DRIVE. 2% SLOPE UP FROM FACE OF SIDEWALK.
2. AT ALL CONCRETE DRIVES, PLACE A 1" EXPANSION JOINT AT BACK OF CURB AND 1/2" EXPANSION JOINT AT FACE OF SIDEWALK OR RIGHT-OF-WAY LINE.
3. INBOUND OR OUTBOUND RADII SHALL BE REDUCED TO 5' FOR ONE-WAY TRAFFIC DRIVE APPROACH. DRIVE APPROACH SHALL NOT ENDOACH ACROSS PROPERTY LINE EXTENDED WITHOUT WRITTEN APPROVAL FROM THE ADJOINING PROPERTY OWNER.

REVISION DATE: 08/01/07

WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES
ENGINEERING DIVISION/PERMIT OFFICE
PERMIT STANDARDS

TYPICAL CONCRETE TAPER

SCALE: NOT TO SCALE
SHEET: P-2 OF 1

HMA PAVEMENT REPAIR

The minimum HMA Base Course repair patch size shall be 6' x 6' with no less than 6' remain to any other joints, crack, or edge of pavement.

Saw cuts must extend completely through the pavement section. Any over-cuts except for at the outside corners of the patch will be required to be removed. (This will increase the size of the patch).

All over-cuts located at the outside corners of the patch shall be cleaned and sealed.

Unless otherwise approved, all full depth HMA repairs will be replaced with non-reinforced concrete base course with 1 1/2" HMA Top (F).

The required thickness of the non-reinforced concrete base course shall be 1 1/2" less than the existing pavement section with minimum thickness of 8".

Example 1: Existing pavement is 6" HMA. The repair will be 1 1/2" HMA Top (F) on 8" non-reinforced concrete.

Example 2: Existing pavement is 10 1/2" HMA. The repair will be 1 1/2" HMA Top (F) on 9" non-reinforced concrete.

Non-reinforced concrete base course repairs shall have transverse plane of weakness joints (WT) installed at 15' maximum or 6' minimum spacing.

The minimum HMA surface course repair on pavement under 10 years old shall be one lane wide and the length shall match the base repair limits. On pavement over 10 years old, the size will match the base repair.

When additional HMA surface course is to be removed, it shall be done using the cold milling method.

When replacing HMA pavement cores, slightly undermine existing HMA base along the outside diameter of the cores and fill the undermined area and core hole with H.E. concrete.

REVISION DATE: 08/01/07

WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES
ENGINEERING DIVISION/PERMIT OFFICE
PERMIT STANDARDS

PAVEMENT REMOVAL AND REPAIR (PATCHING)

SCALE: NOT TO SCALE
SHEET: PR-5 OF 1

1. All materials and workmanship shall be in accordance with Wayne County Specifications which are defined as the current Michigan Department of Transportation (MDOT) Standard Specifications for Construction as modified by Wayne County Special Provisions.
2. Paving Standard Plan Details may be shown with wire fabric reinforcement. Use of reinforcement shall be required as called for on the plans.
3. A Transverse End of Pour Joint, Symbol (H), shall be constructed when there is an interruption in concrete paving for more than 1/2 hour. Transverse End of Pour Joint, Symbol (H), shall be constructed in accordance with current MDOT Standard Plan, R-39 series (Reinforced Concrete Pavement) and R-39P series (Plain Concrete Pavement). This note applies to both concrete base and finished concrete pavement.
4. When it is anticipated that construction traffic will be using the pavement, endings will be protected by means of a temporary concrete header as shown on RS-4.
5. The Expansion Joint Foam Rod shall be a solid round heat resistant Polyurethane foam capable of withstanding the temperature of the sealant. Density of the foam shall be 2-4 Lb./Cft.
6. Wire Fabric Reinforcement shall lay flat when delivered to the work area. The use of spreader bars will be required for lifting bundles of reinforcement.
7. Where the lane width of the pavement differs from wire fabric reinforcement standards, special sheets of the required width may be used or standard sheets may be cut to the required size or split sheets may be added to standard sheets to obtain the required size. Side laps shall not be less than the spacing of the longitudinal wires.
8. The ends of the Wire Fabric Reinforcement sheets shall be fastened in at least two places at each lap to prevent horizontal and vertical displacement.
9. When Concrete Pavement Repairs are longer than 20 feet, Transverse Plane of Weakness Joints (WT) shall be placed in-line with existing transverse joints, working cracks, or at 15 feet maximum and 6 feet minimum spacings.
10. Existing concrete pavements with HMA surface requiring saw-cutting for removal shall have the saw cuts extend completely thru the concrete pavement. Sawn over-cuts occurring in adjacent slab, gutter or shoulder, which will remain in place, shall be sealed.

REVISION DATE: 08/01/07

WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES
ENGINEERING DIVISION/PERMIT OFFICE
PERMIT STANDARDS

GENERAL NOTES

SCALE: NOT TO SCALE
SHEET: RS-1 OF 1

4 INCH CONCRETE SIDEWALK

THICKENED CONCRETE SIDEWALK

FRONTAGE SIDEWALKS-EXISTING R.O.W.

APPROACH SIDEWALKS-NEW SUBDIVISIONS

TYPICAL SIDEWALK JOINT LAYOUTS

REVISION DATE: 08/01/07

WAYNE COUNTY DEPARTMENT OF PUBLIC SERVICES
ENGINEERING DIVISION/PERMIT OFFICE
PERMIT STANDARDS

CONCRETE SIDEWALK

SCALE: NOT TO SCALE
SHEET: RS-5 OF 1

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

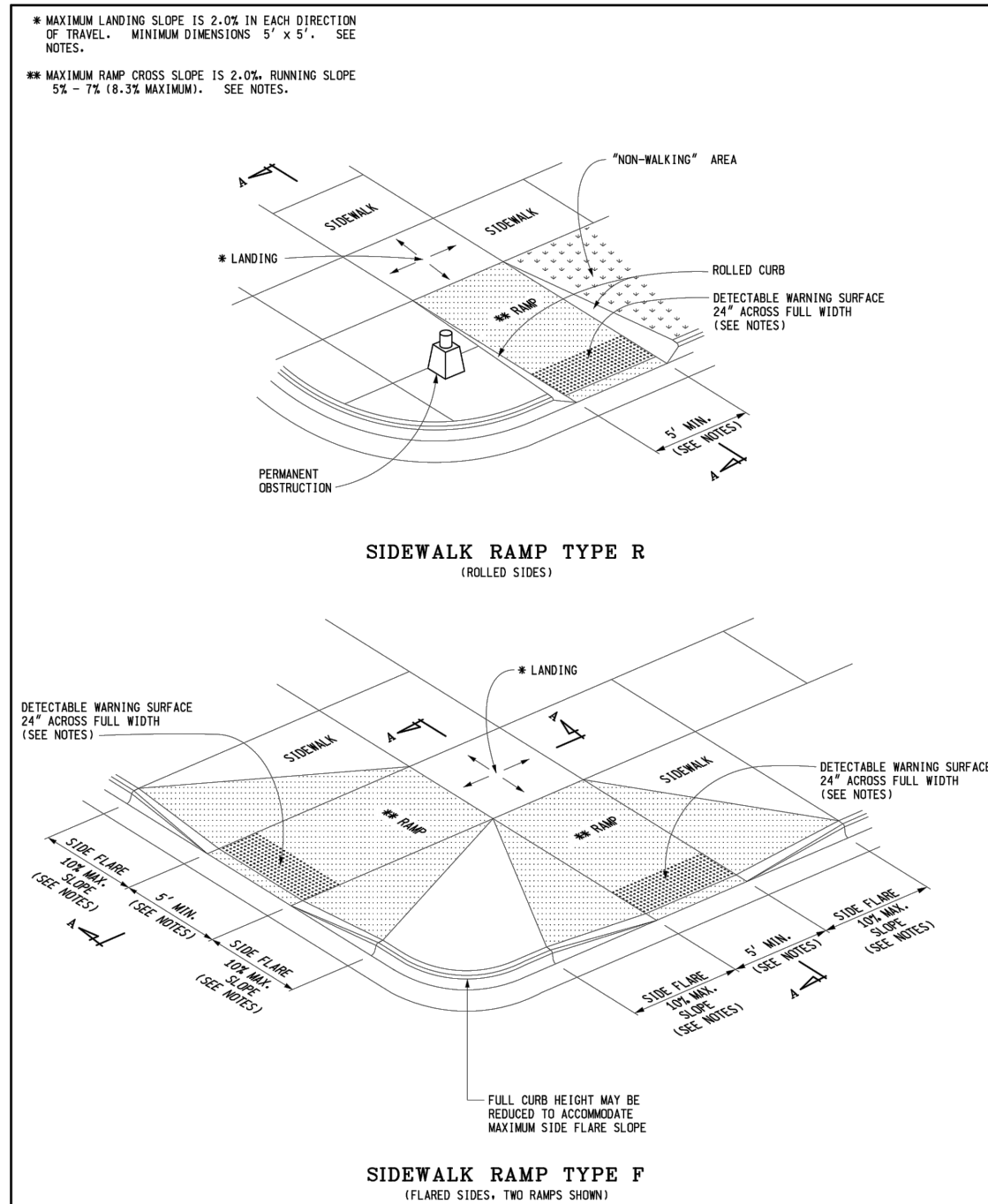
REVISIONS			UTILITY WARNING	
NO.	ITEM	DATE	UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.	
1.	TYPE SCHEMATIC DESIGN	06-10-2023	<p>Know what's below. Call before you dig.</p> <p>THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.</p>	
2.	SOB DESIGN DEVELOPMENT	02-03-2024		
3.	FINAL SITE PLAN	04-14-2023		
4.	REV PER CITY REVIEW	09-08-2023		

DATE: 04-25-23 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-ND-PSP.DWG

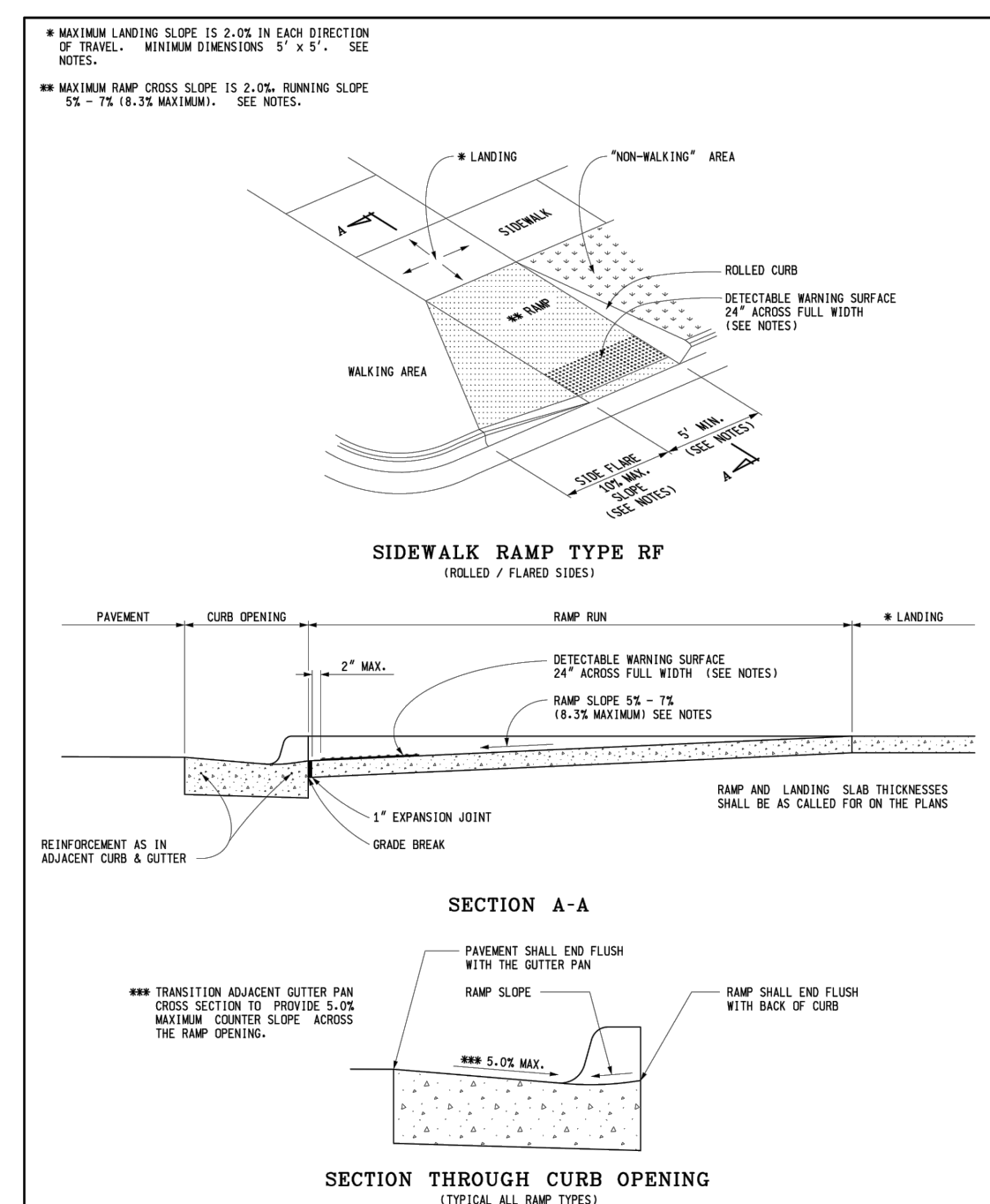
WAYNE COUNTY STANDARD DETAILS

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING
39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

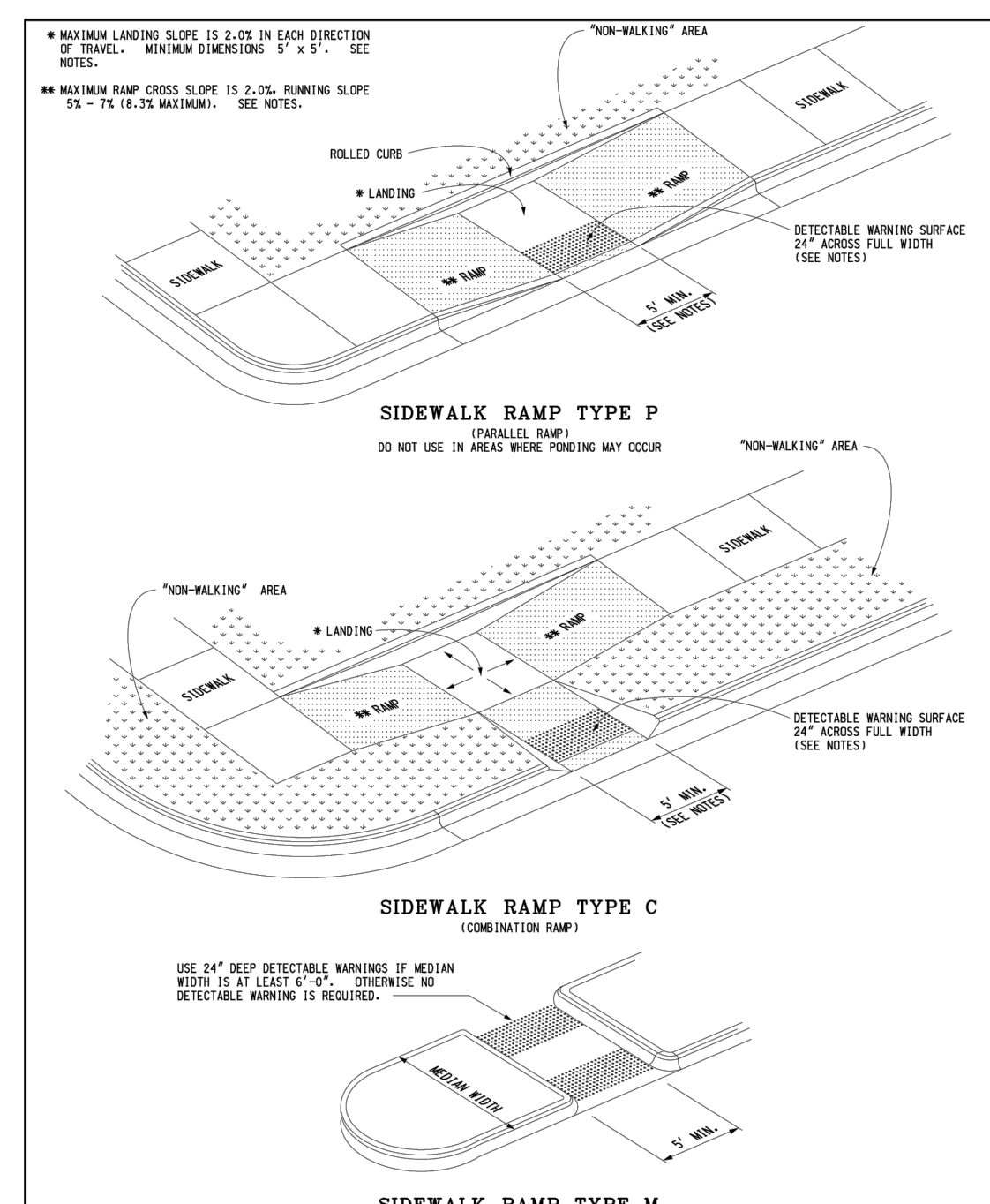
SHEET WC-1



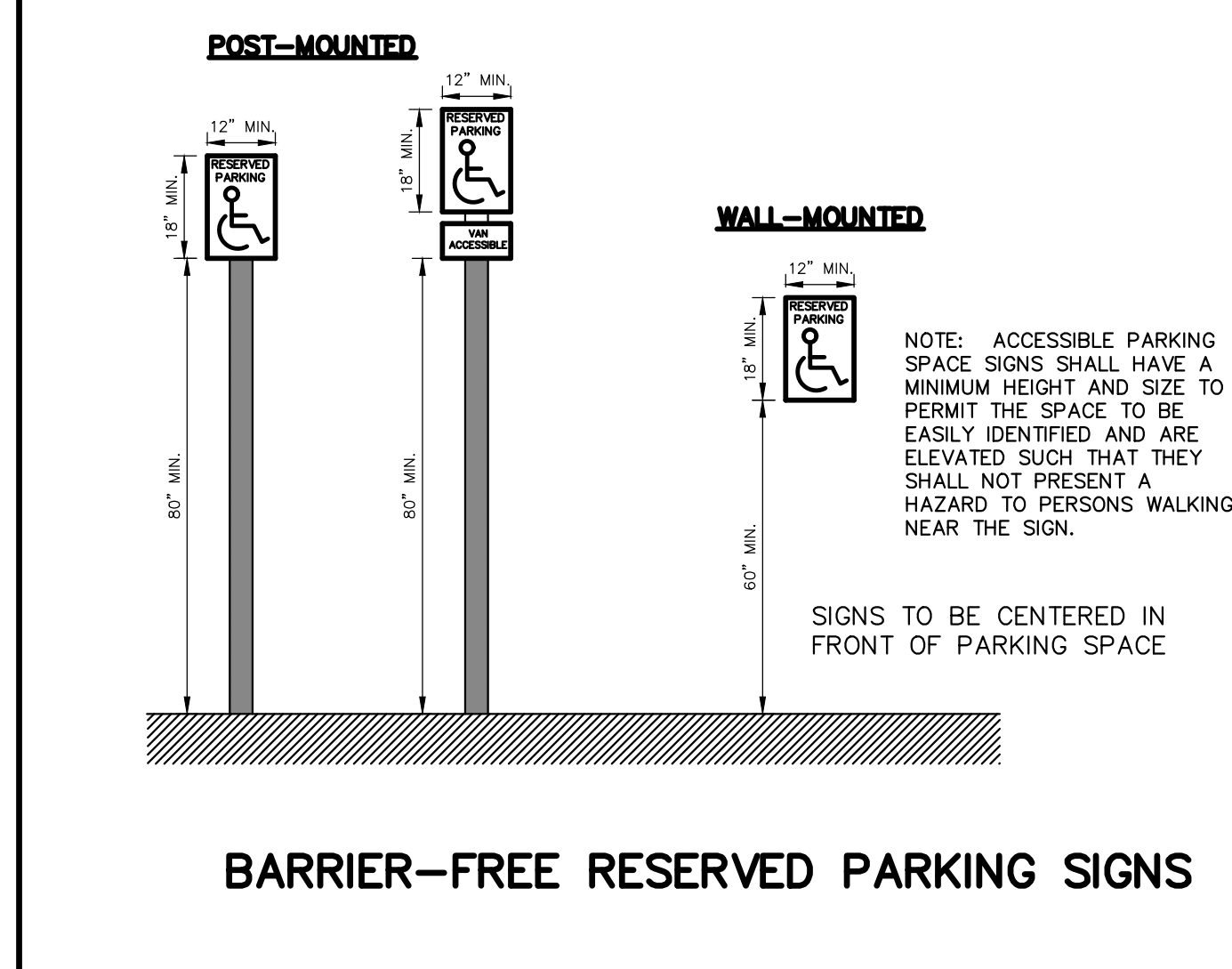
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	APPROVED BY: _____ DIRECTOR, BUREAU OF TRAFFIC SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS 3-15-2016 R-28-J SHEET 1 OF 1



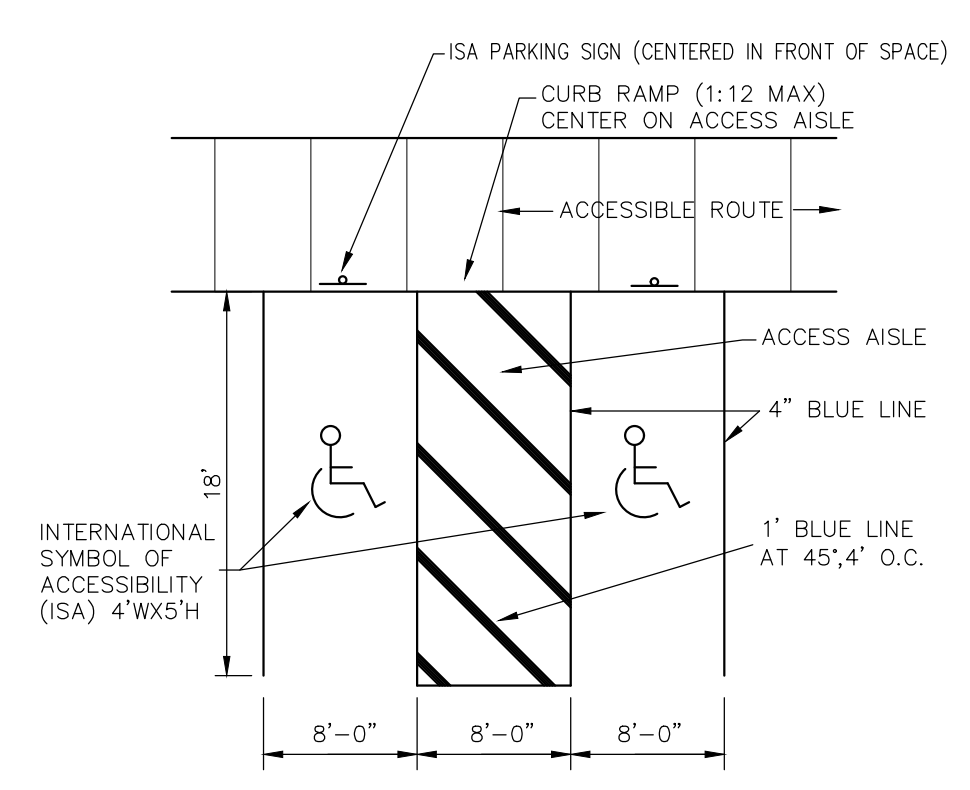
	DEPARTMENT DIRECTOR Kim T. Swails	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	APPROVED BY: _____ DIRECTOR, BUREAU OF TRAFFIC SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS 3-15-2016 R-28-J SHEET 2 OF 1



	DEPARTMENT DIRECTOR Kim T. Swails	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	APPROVED BY: _____ DIRECTOR, BUREAU OF TRAFFIC SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS 3-15-2016 R-28-J SHEET 3 OF 1



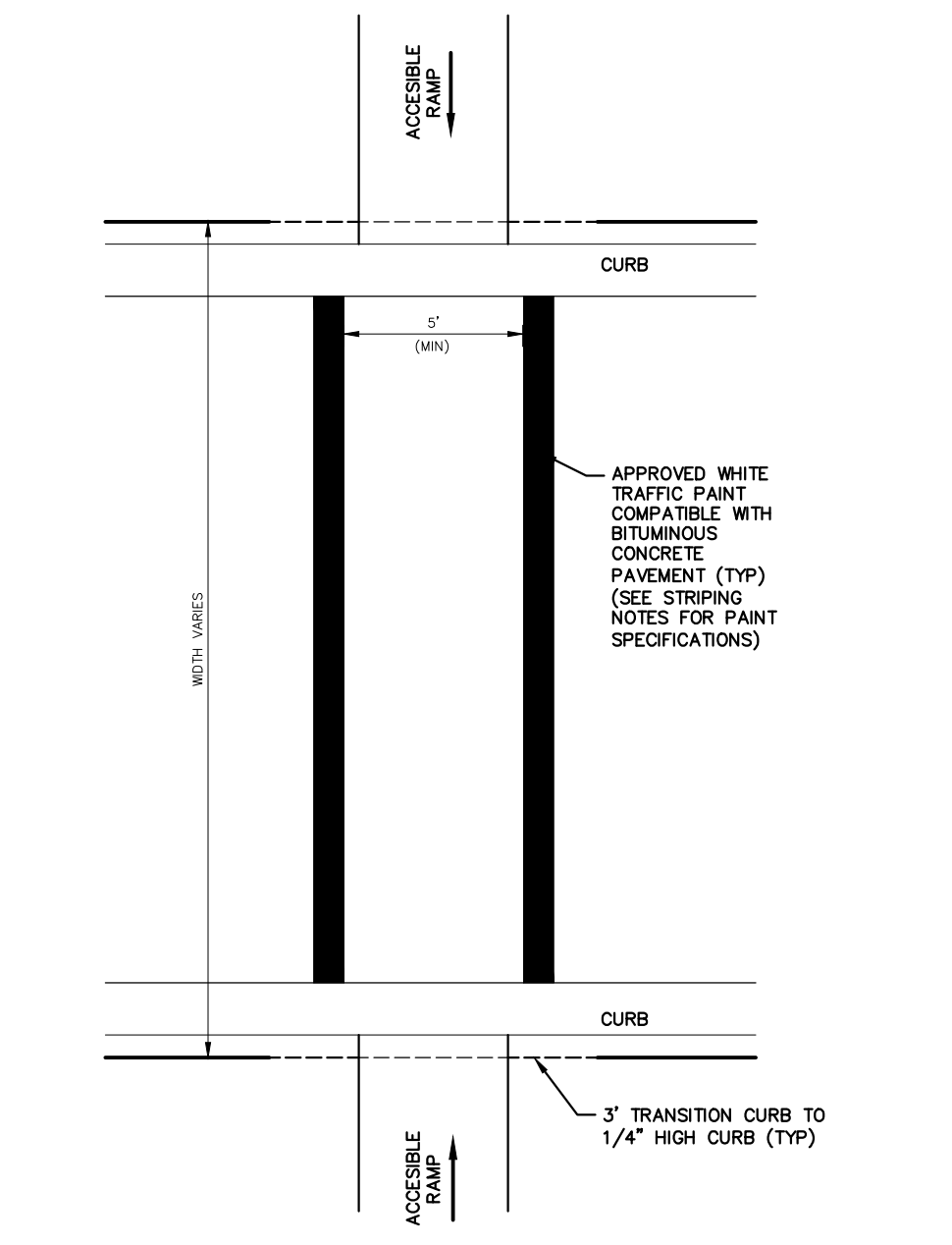
BARRIER-FREE RESERVED PARKING SIGNS



BARRIER-FREE PARKING SPACE LAYOUT VAN ACCESSIBLE

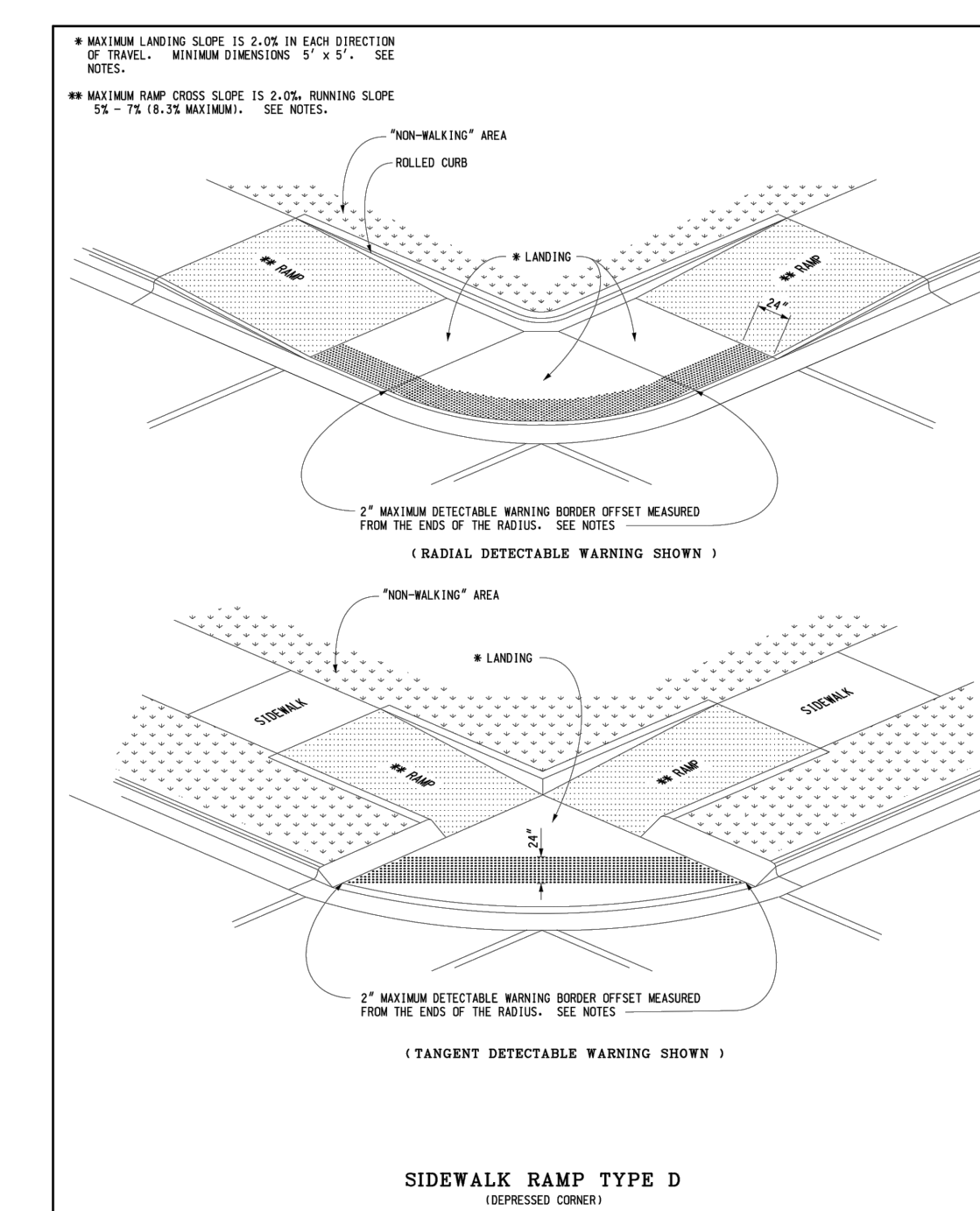
NOTE: BARRIER FREE SPACES SHALL BE LOCATED TO THE NEAREST ACCESSIBLE ENTRANCE ON AN ACCESSIBLE ROUTE. ONE (1) IN EVERY EIGHT (8) ACCESSIBLE SPACES, BUT NO LESS THAN ONE, SHALL BE SERVED BY AN ACCESS AISLE 8'-0" WIDE MINIMUM AND SHALL BE DESIGNATED "VAN ACCESSIBLE"

CROSSWALK MARKING DETAIL (TYP)
(NO SCALE)

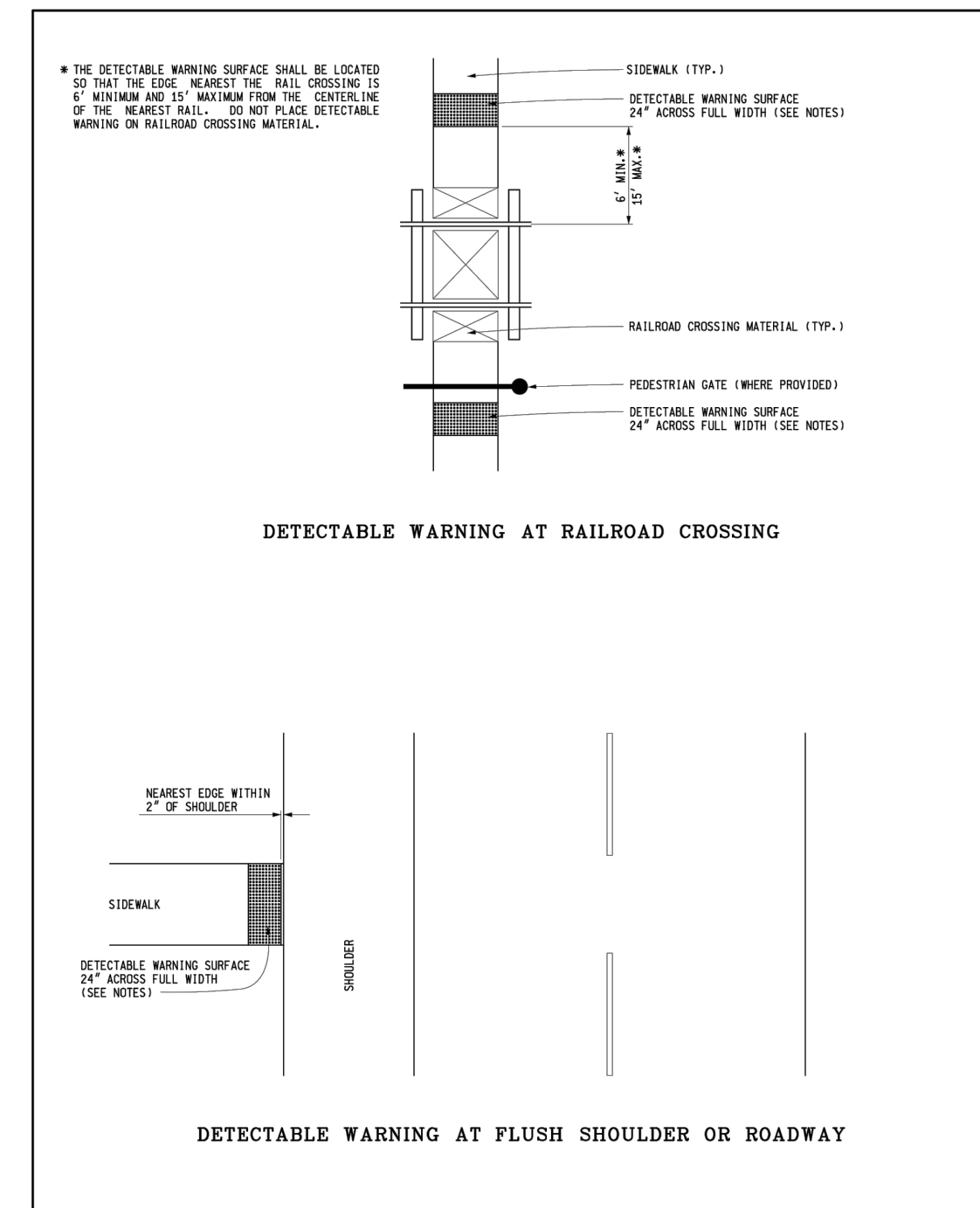


STRIPING NOTES:

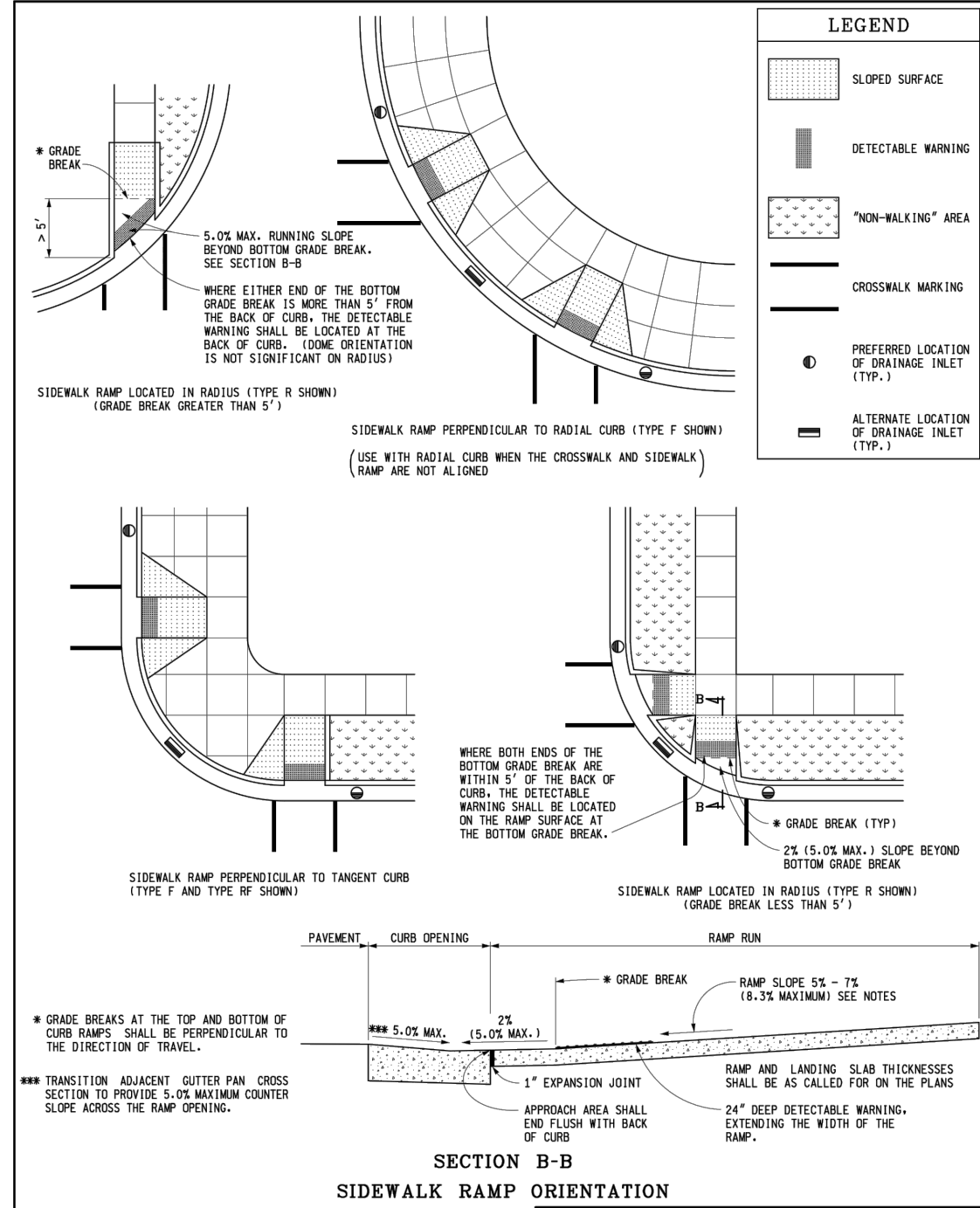
PARKING LOTS SHALL HAVE PARKING AREAS AND DRIVEWAYS MARKED BY PAINTED 4-INCH WIDE LINES ACCURATELY AND NEATLY ARRANGED AS INDICATED ON THE PLAN. LINES SHALL BE PAINTED WITH AN APPROVED WHITE TRAFFIC PAINT COMPATIBLE WITH BITUMINOUS CONCRETE SURFACES, SUCH AS SHERWIN WILLIAMS NO. B29W1; PPG TYPE 11-3 OR 11-4, OR AS APPROVED BY THE OWNER. PROTECT ALL PAINTED AREAS UNTIL PAINT IS COMPLETELY DRY. PARKING AREAS FOR THE PHYSICALLY HANDICAPPED SHALL BE PAINTED WITH BLUE PAINT FOR STRIPING AND WHEEL CHAIR SYMBOL. ALL PAINTED MARKINGS AND STRIPING SHALL BE PROVIDED IN TWO COATS. SEE SHEET ND2 FOR CROSS WALK DETAIL.



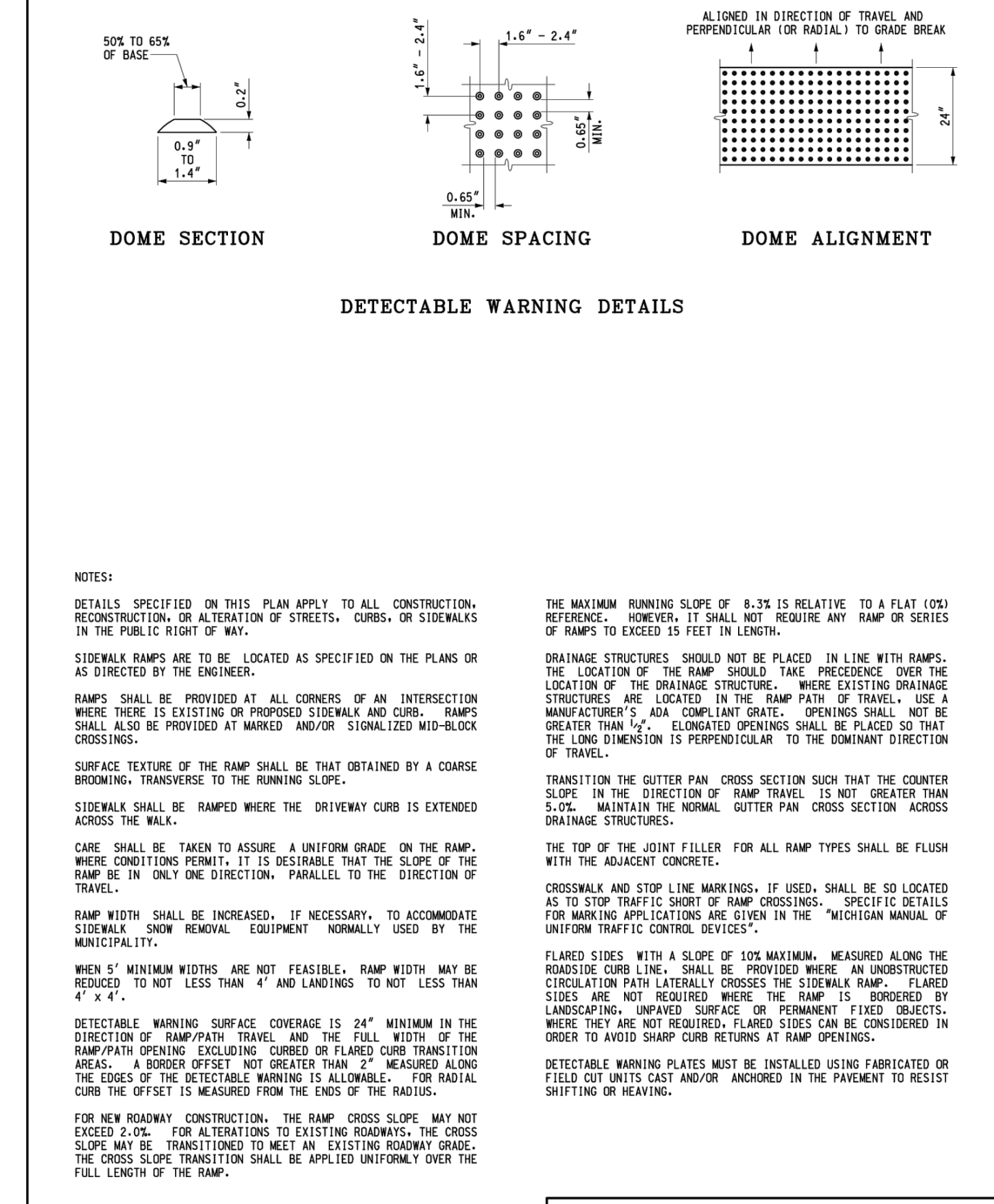
	DEPARTMENT DIRECTOR Kim T. Swails	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	APPROVED BY: _____ DIRECTOR, BUREAU OF TRAFFIC SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS 3-15-2016 R-28-J SHEET 4 OF 1



	DEPARTMENT DIRECTOR Kim T. Swails	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	APPROVED BY: _____ DIRECTOR, BUREAU OF TRAFFIC SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS 3-15-2016 R-28-J SHEET 5 OF 1



	DEPARTMENT DIRECTOR Kim T. Swails	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	APPROVED BY: _____ DIRECTOR, BUREAU OF TRAFFIC SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS 3-15-2016 R-28-J SHEET 6 OF 1



	DEPARTMENT DIRECTOR Kim T. Swails	MICHIGAN DEPARTMENT OF TRANSPORTATION BUREAU OF DEVELOPMENT STANDARD PLAN FOR
	APPROVED BY: _____ DIRECTOR, BUREAU OF TRAFFIC SERVICES	SIDEWALK RAMP AND DETECTABLE WARNING DETAILS 3-15-2016 R-28-J SHEET 7 OF 1

THE DOWNS
SECTION 3, T1S, R8E, CITY OF NORTHVILLE
WAYNE COUNTY, MICHIGAN

REVISIONS		UTILITY WARNING
NO.	ITEM	DATE
1.	TOUR SCHEMATIC DESIGN	06-10-2022
2.	SOFT DESIGN DEVELOPMENT	02-03-2023
3.	FINAL SITE PLAN	04-14-2023
4.	REV PER CITY REVIEW	09-08-2023

UNDERGROUND UTILITY LOCATIONS AS SHOWN ON THE PLAN, WERE OBTAINED FROM UTILITY OWNER AND NOT FIELD LOCATED.

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THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF AND/OR RELOCATION OF ALL UTILITIES THAT MAY INTERFERE WITH CONSTRUCTION.

DATE: 04-25-22 DESIGNED BY: S.M. JOB NUMBER: 21-001
CHECKED BY: E.E. FILE: 21001-ND-RSP.DWG

ADA RAMP, CROSSING AND PARKING DETAILS

SEIBER KEAST LEHNER
ENGINEERING | SURVEYING

39205 COUNTRY CLUB DRIVE, SUITE C8
FARMINGTON HILLS, MI 48331
PHONE: 248.308.3331

SHEET **M-1**