

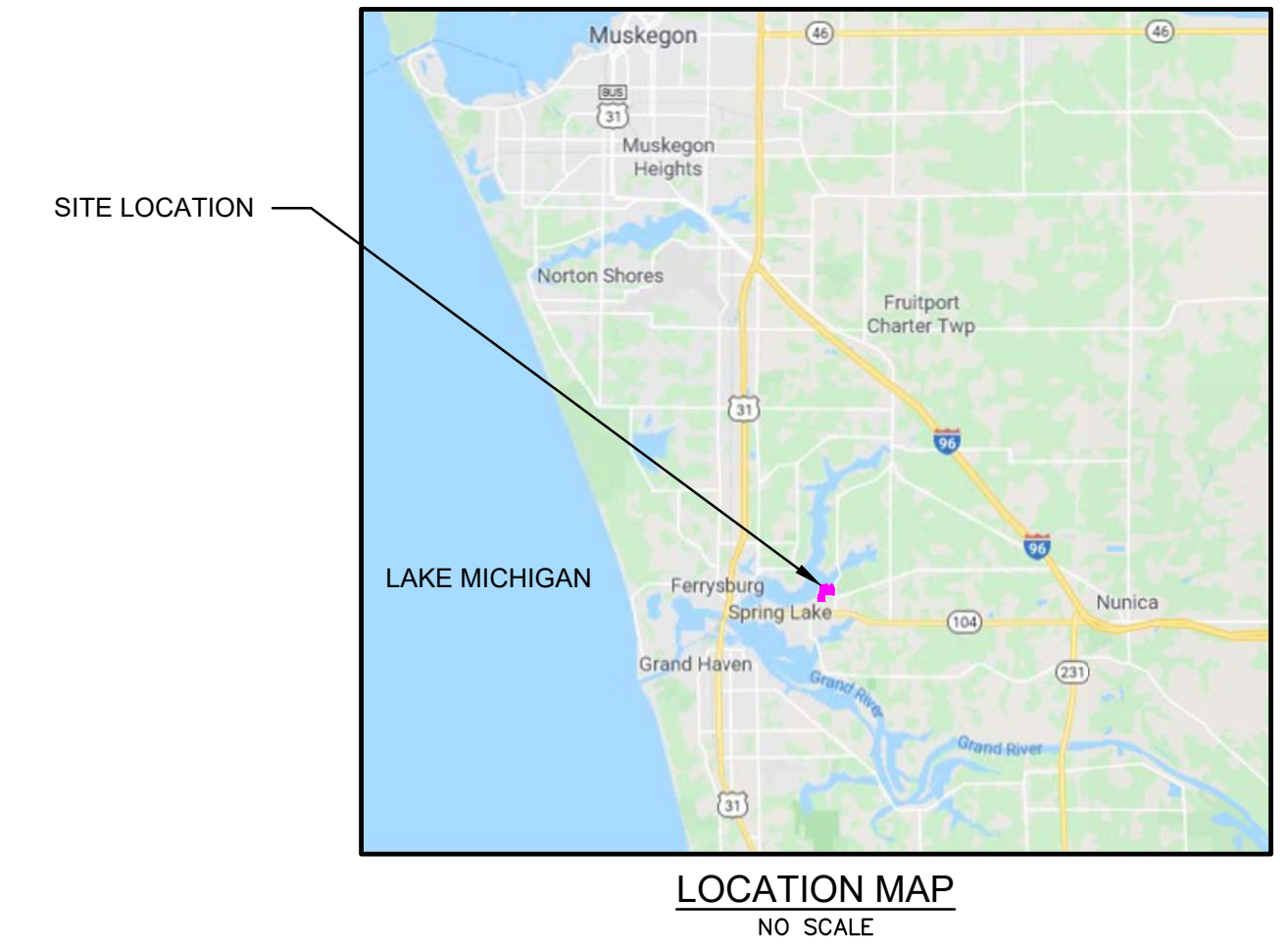
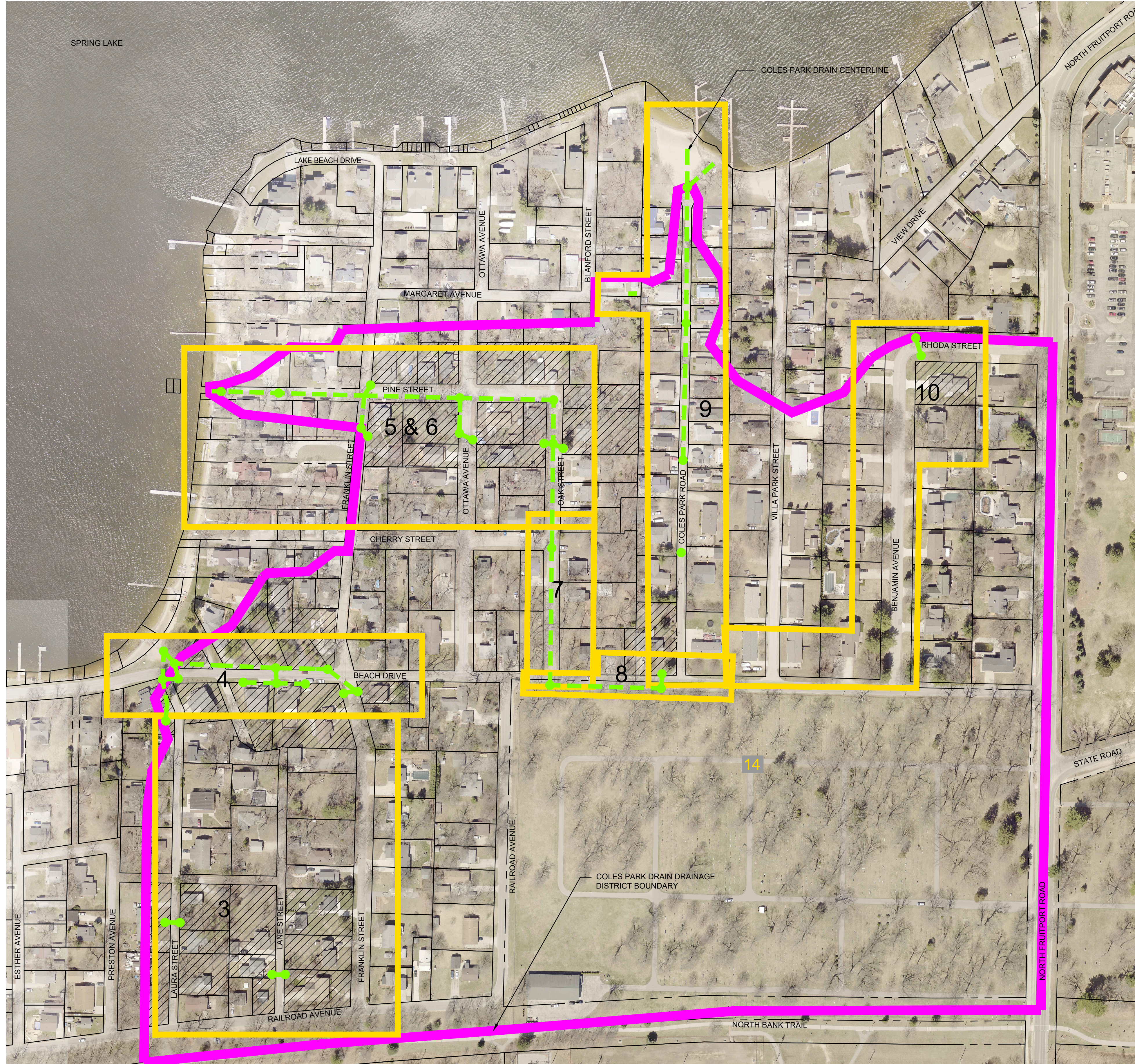


JOE BUSH

OTTAWA COUNTY WATER RESOURCES COMMISSIONER

COLES PARK DRAIN DRAINAGE DISTRICT

PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W, OTTAWA COUNTY, MICHIGAN



LIST OF DRAWINGS

SHEET NO.	TITLE
1	COVER SHEET
2	DRAINAGE DISTRICT BOUNDARY AND ROUTE & COURSE EXHIBIT
3	LAURA STREET AND LANE STREET
4	BEACH DRIVE AND LAURA STREET PLAN & PROFILE
5	PINE STREET PLAN & PROFILE STA 0+40 TO 8+10
6	FRANKLIN AVENUE, OTTAWA AVENUE, AND OAK STREET PLAN & PROFILES
7	OAK STREET - ALTERNATE 1 PLAN & PROFILE STA 2+50 TO STA 7+50
8	BEACH DRIVE - ALTERNATE 1 PLAN & PROFILE STA 11+00 TO STA 14+50
9	COLES PARK ROAD PLAN & PROFILE STA 0+00 TO STA 12+00
10	RHODA STREET AND BENJAMIN AVENUE
11	SESC PLAN AND STANDARD DETAILS
12	STANDARD DETAILS

LIST OF CONTACTS

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 WATER RESOURCES COMMISSIONER
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 WEST OLIVE, MI 49460
 PHONE: (616) 994-4530
 FAX: (616) 994-4529
 waterresourcescommissioner@mottawa.org

OTTAWA COUNTY ROAD COMMISSION
 JERRY OLMAN
 14110 LAKESHORE DRIVE
 PO BOX 739
 GRAND HAVEN, MI 49417
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ENGINEER
 RYAN C. MCENHILL, PE
 ENG., INC.
 16930 ROBBINS ROAD, STE 105
 GRAND HAVEN, MI 49417
 PHONE: (616) 743-7070
 FAX: (517) 887-6335
 mchenhillr@engdot.com

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 CHARTER COMMUNICATIONS
 315 DAVIS STREET
 GRAND HAVEN, MI 49417
 PHONE: (616) 607-2356

WATER AND SEWER
 KYLE BOTBYL
 SPRING LAKE TOWNSHIP
 DEPARTMENT OF PUBLIC WORKS
 101 S BUCHANAN STREET
 SPRING LAKE, MI 49456
 PHONE: (616) 846-2422
 kbotbyl@springlaketwp.org

GAS
 TODD SUBKA
 MICHIGAN GAS UTILITIES
 1708 EATON DRIVE
 GRAND RAPIDS, MI 49417
 PHONE: (616) 844-7519
 todd_subka@michigan Gasutilities.com

ELECTRIC
 ROBERT SHELLEY, PE
 GRAND HAVEN BOARD OF LIGHT & POWER
 1700 EATON DRIVE
 GRAND HAVEN, MI 49417
 PHONE: (616) 807-1263
 rshelley@ghblp.org

LEGEND

- = COLES PARK DRAIN DRAINAGE DISTRICT BOUNDARY
- = COLES PARK DRAIN CENTERLINE
- = PROPERTY LINE
- = SECTION LINE OR QUARTER LINE
- = SECTION NUMBER
- = SHEET NUMBER

FOR CONSTRUCTION

NO.	REVISIONS	BY	DATE	Drawn By	DATE
1	ADDENDUM NO. 1	SLM	5/18/22	JAJ	
2	ADDENDUM NO. 2	SLM	7/29/22		3/12/20

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JOE BUSH
 OTTAWA COUNTY WATER RESOURCES COMMISSIONER
 COLES PARK DRAIN DRAINAGE DISTRICT
 PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
 OTTAWA COUNTY, MICHIGAN

PROJECT NO.	19046
SHEET NO.	1 OF 12

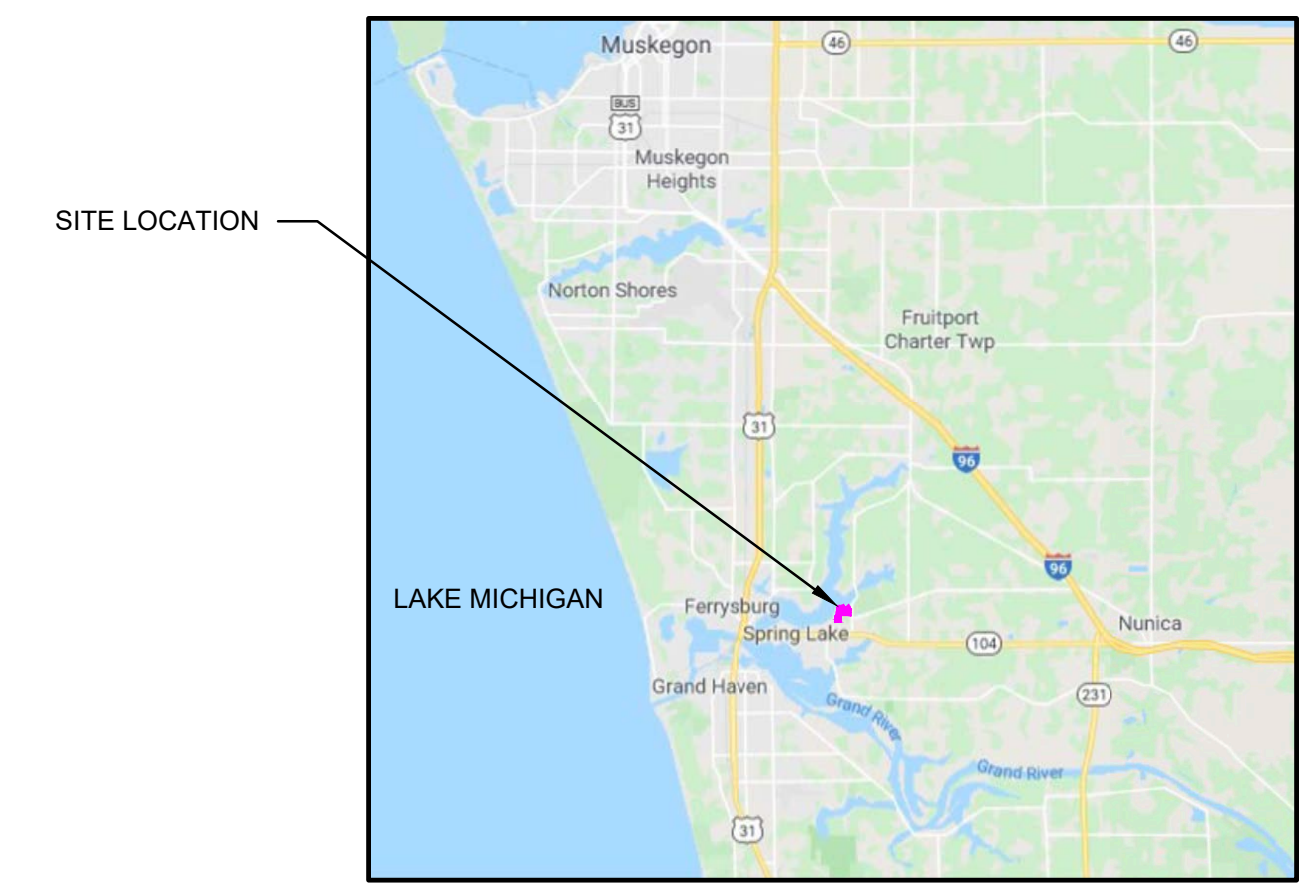
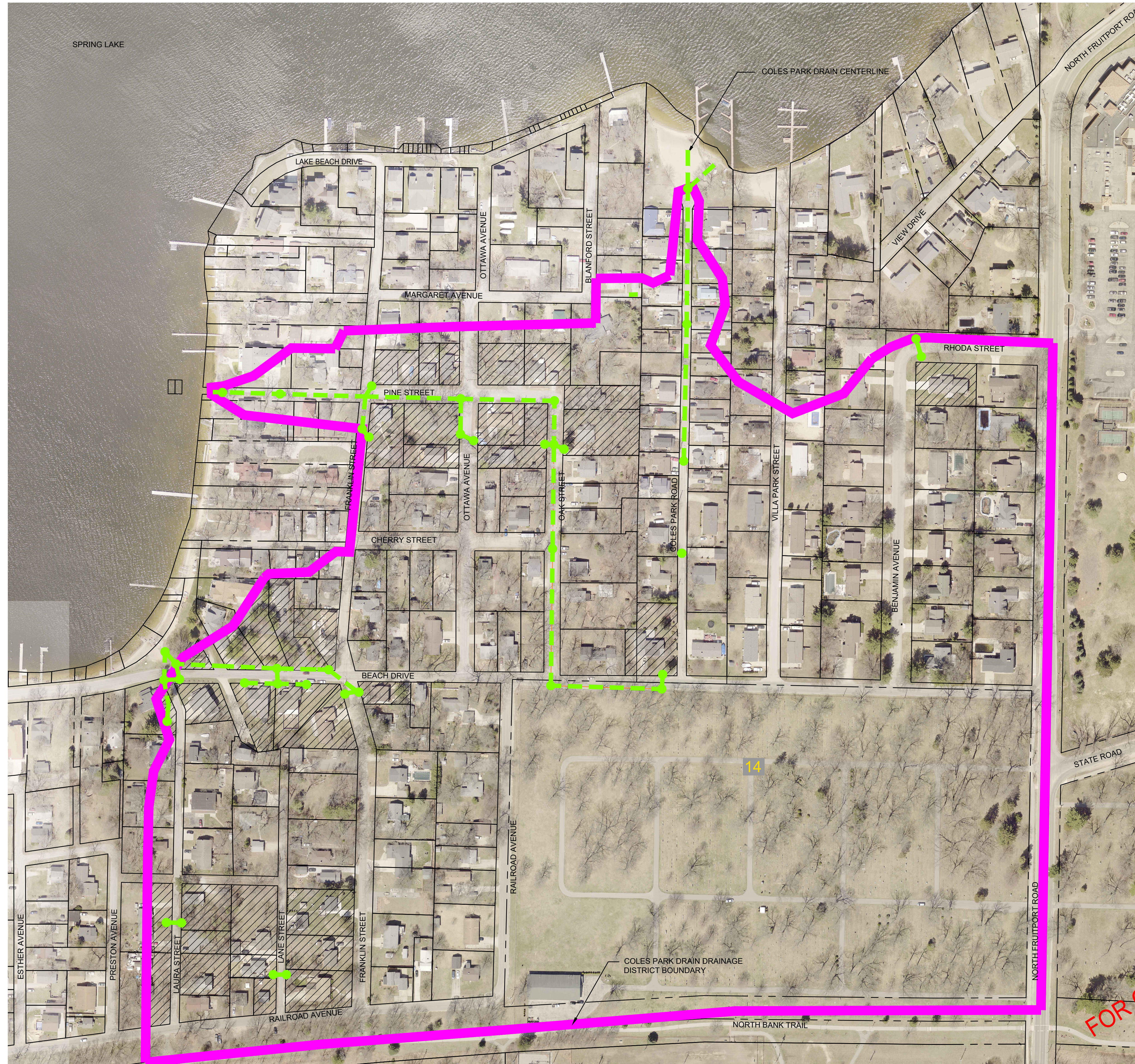


JOE BUSH

OTTAWA COUNTY WATER RESOURCES COMMISSIONER

COLES PARK DRAIN DRAINAGE DISTRICT

PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W, OTTAWA COUNTY, MICHIGAN



LOCATION MAP
NO SCALE

**COLES PARK DRAIN DRAINAGE DISTRICT
ROUTE AND COURSE DESCRIPTION
MAY 4, 2022**

BEGINNING AT A POINT 3764 FEET NORTH AND 1753 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 14, TOWNSHIP 8 NORTH, RANGE 16 WEST, SPRING LAKE TOWNSHIP, OTTAWA COUNTY, MICHIGAN, THENCE, SOUTH 82 FEET TO CONFLUENCE POINT "A"; THENCE S0°52'W 588 FEET TO THE POINT OF ENDING.

AND ALSO INCLUDING: BEGINNING AT CONFLUENCE POINT "A" DESCRIBED ABOVE, THENCE, N48°44'E 76 FEET TO THE POINT OF ENDING.

AND ALSO INCLUDING: COMMENCING AT A POINT 3352 FEET NORTH AND 2226 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 14, THENCE, N77°43'E 20 FEET; THENCE S16°43'E 40 FEET; THENCE EAST 20 FEET TO THE POINT OF ENDING.

AND ALSO INCLUDING: COMMENCING AT A POINT 3242 FEET NORTH AND 728 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 14, THENCE, S88°21'E 329 FEET TO CONFLUENCE POINT "B"; THENCE S88°34'E 206 FEET TO CONFLUENCE POINT "C"; THENCE S88°48'E 202 FEET; THENCE S0°37'W 94 FEET TO CONFLUENCE POINT "D"; THENCE S0°43'W 521 FEET; THENCE S88°22'E 239 FEET; THENCE N4°10'E 31 FEET TO THE POINT OF ENDING, AND ALSO BEGINNING AT CONFLUENCE POINT "B" DESCRIBED ABOVE, THENCE N31°11'E 28 FEET TO THE POINT OF ENDING, AND ALSO BEGINNING AT CONFLUENCE POINT "B" DESCRIBED ABOVE, THENCE S3°37'W 70 FEET; THENCE S37°11'E 18 FEET; THENCE S4°58'W 26 FEET TO THE POINT OF ENDING, AND ALSO BEGINNING AT CONFLUENCE POINT "C" DESCRIBED ABOVE, THENCE S0°39'W 78 FEET; THENCE S63°11'E 32 FEET; THENCE N0°24'E 35 FEET TO THE POINT OF ENDING, AND ALSO BEGINNING AT CONFLUENCE POINT "D" DESCRIBED ABOVE, THENCE S64°38'E 18 FEET TO THE POINT OF ENDING, AND ALSO BEGINNING AT CONFLUENCE POINT "D" DESCRIBED ABOVE, THENCE N89°38'W 12 FEET TO THE POINT OF ENDING.

AND ALSO INCLUDING: COMMENCING AT A POINT 2592 FEET NORTH AND 1019 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 14, THENCE, N80°33'E 20 FEET; THENCE N52°27'W 77 FEET; THENCE N88°35'W 112 FEET TO CONFLUENCE POINT "E"; THENCE S87°25'W 218 FEET TO CONFLUENCE POINT "F"; THENCE S13°22'E 34 FEET TO CONFLUENCE POINT "G"; THENCE S10°44'E 54 FEET; THENCE S5°17'W 36 FEET TO THE POINT OF ENDING, AND ALSO BEGINNING AT CONFLUENCE POINT "E" DESCRIBED ABOVE, THENCE S31°0'E 33 FEET TO CONFLUENCE POINT "H"; THENCE S88°37'E 62 FEET TO THE POINT OF ENDING, AND ALSO BEGINNING AT CONFLUENCE POINT "H" DESCRIBED ABOVE, THENCE N88°42'W 72 FEET TO THE POINT OF ENDING, AND ALSO BEGINNING AT CONFLUENCE POINT "F" DESCRIBED ABOVE, THENCE N42°8'W 36 FEET; THENCE S1°47'W 61 FEET TO CONFLUENCE POINT "G".

AND ALSO INCLUDING: COMMENCING AT A POINT 2591 FEET NORTH AND 632 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 14, THENCE S23°38'E 20 FEET TO THE POINT OF ENDING.

AND ALSO INCLUDING: COMMENCING AT A POINT 2514 FEET NORTH AND 648 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 14, THENCE S1°1'W 20 FEET TO THE POINT OF ENDING.

AND ALSO INCLUDING: COMMENCING AT A POINT 2117 FEET NORTH AND 632 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 14, THENCE S1°31'W 20 FEET; THENCE S88°42'E 25 FEET TO THE POINT OF ENDING.

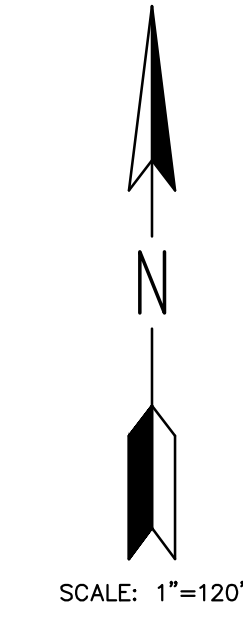
AND ALSO INCLUDING: COMMENCING AT A POINT 2018 FEET NORTH AND 661 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 14, THENCE S1°24'W 20 FEET TO THE POINT OF ENDING.

AND ALSO INCLUDING: COMMENCING AT A POINT 2005 FEET NORTH AND 861 FEET EAST OF THE SOUTHWEST CORNER OF SAID SECTION 14, THENCE S1°3'W 20 FEET; THENCE N89°60'E 22 FEET TO THE POINT OF ENDING.

TOTAL LENGTH OF DRAIN BEING 3759 FEET.

TOTAL LENGTH OF DRAIN BEING 631 FEET.

THE BASIS OF THIS DESCRIPTION WAS THE OTTAWA COUNTY GIS MAPPING SYSTEM AND IS SUBJECT TO ITS ACCURACY.



**COLES PARK DRAIN DRAINAGE DISTRICT
DRAINAGE DISTRICT DESCRIPTION
APRIL 27, 2022**

THAT PART OF SECTION 14, TOWNSHIP 8 NORTH, RANGE 16 WEST, SPRING LAKE TOWNSHIP, OTTAWA COUNTY, MICHIGAN, MORE PARTICULARLY DESCRIBED AS:

THENCE N0°19'E 312 FEET; THENCE N1°17'E 139 FEET; THENCE N1°11'E 100 FEET; THENCE N7°44'E 78 FEET; THENCE N26°31'E 76 FEET; THENCE N17°55'W 92 FEET; THENCE N32°30'E 107 FEET; THENCE N57°56'E 128 FEET; THENCE N32°50'E 123 FEET; THENCE N49°25'E 14 FEET; THENCE N87°33'E 86 FEET; THENCE N52°53'E 73 FEET; THENCE S88°51'E 29 FEET; THENCE N6°6'E 267 FEET; THENCE N83°17'W 257 FEET; THENCE N57°41'W 83 FEET; THENCE N0°3'W 15 FEET; THENCE N83°11'E 26 FEET; THENCE N71°17'E 69 FEET; THENCE N53°45'E 101 FEET; THENCE S89°17'E 94 FEET; THENCE N28°18'E 43 FEET; THENCE N88°13'E 543 FEET; THENCE N1°41'E 90 FEET; THENCE S89°27'E 99 FEET; THENCE S65°48'E 26 FEET; THENCE N64°52'E 39 FEET; THENCE N6°3'E 182 FEET; THENCE N70°42'E 32 FEET; THENCE S25°15'E 34 FEET; THENCE S23°33'W 94 FEET; THENCE S32°42'E 100 FEET; THENCE S35°38'E 58 FEET; THENCE S20°10'W 91 FEET; THENCE S37°0'E 99 FEET; THENCE S59°38'E 136 FEET; THENCE N68°42'E 118 FEET; THENCE N89°0'E 97 FEET; THENCE N68°18'E 48 FEET; THENCE N72°18'E 49 FEET; THENCE N81°41'E 33 FEET; THENCE S87°36'E 271 FEET; THENCE S1°3'W 1439 FEET; THENCE S89°49'W 659 FEET; THENCE S85°18'W 512 FEET; THENCE S85°32'W 383 FEET; THENCE 383 FEET TO THE POINT OF BEGINNING.

CONTAINING 61.4 ACRES MORE OR LESS.

THE BASIS OF THIS DESCRIPTION WAS THE OTTAWA COUNTY GIS MAPPING SYSTEM AND IS SUBJECT TO ITS ACCURACY.

LEGEND

- = PROPOSED COLES PARK DRAIN DRAINAGE DISTRICT BOUNDARY
- - - - - = EXISTING COLES PARK DRAIN CENTERLINE
- = PROPERTY LINE
- - - - - = SECTION LINE OR QUARTER LINE
- 14 = SECTION NUMBER

FOR CONSTRUCTION

**DRAINAGE DISTRICT BOUNDARY
AND ROUTE & COURSE EXHIBIT**

NO.	REVISIONS	BY	DATE	Drawn By	DATE
1	ADDENDUM NO. 1	SJM	5/18/22	JAJ	3/12/20
2	ADDENDUM NO. 2	SJM	7/29/22		

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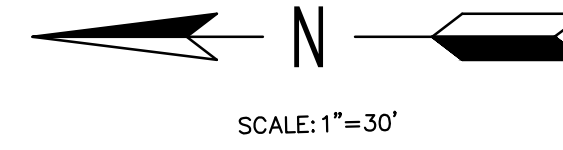
engdol.com



JOE BUSH
 OTTAWA COUNTY WATER RESOURCES COMMISSIONER
 COLES PARK DRAIN DRAINAGE DISTRICT
 PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
 OTTAWA COUNTY, MICHIGAN

PROJECT NO.	19046
SHEET NO.	2 OF 12

SHEET SPECIFIC NOTES:
 1. EXPLORATORY INVESTIGATION FOR WATER MAIN AND GAS MAIN LOCATIONS SHALL BE DONE 2 WEEKS PRIOR TO SCHEDULED WORK IN AREAS THAT MAY BE IMPACTED. THE ENGINEERS REPRESENTATIVE SHALL BE PRESENT DURING THIS WORK.



BM #1 ELEV=601.42
 WNW FLANGE BOLT ON HYDRANT W SIDE OF LAURA AVE IN FRONT OF HOUSE 17207
 BM #2 ELEV=600.74
 S FLANGE BOLT ON HYDRANT S SIDE OF RAILROAD AVE AT LAURA AVE
 BM #3 ELEV=599.17
 SET SPIKE E SIDE UTILITY POLE W SIDE OF FRANKLIN AVE N OF HOUSE 17171



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. 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.

SOIL TYPES AND ABBREVIATIONS	
Ah	Houghton-Adrian mucks, 0 to 1 percent slopes
PfifabB	Plainfield sand, lake plain, 0 to 6 percent slopes
W	Water

LEGEND

- = PROPERTY LINE OR R.O.W. LINE
- = EDGE OF PAVEMENT
- - - X - - - = FENCE
- = EXISTING GUARDRAIL
- = WETLANDS (AS MARKED BY OTHERS)
- +860 = EXISTING SPOT ELEVATION
- = EXISTING CONTOUR ELEVATION
- = EDGE OF WOODS
- = DECIDUOUS TREE
- = CONIFEROUS TREE
- = BUSH
- = STUMP
- = EXISTING GAS LINE
- = EXISTING STORM SEWER
- = EXISTING SANITARY SEWER
- = EXISTING WATER MAIN
- = EXISTING MANHOLE
- ⊕ = EXISTING STORM CATCH BASIN
- ⊗ = EXISTING WELL LOCATION
- ⊙ = EXISTING WATER VALVE
- ⊙ = EXISTING CURB STOP / METER
- ⊙ = EXISTING CATCH BASIN
- ⊙ = BENCH MARK LOCATION
- ⊙ = EXISTING SIGN
- ⊙ = EXISTING MAILBOX
- ⊙ = EXISTING LIGHT POLE
- ⊙ = EXISTING GUY ANCHOR
- ⊙ = EXISTING UTILITY POLE
- ⊙ = EXISTING TELEPHONE PEDESTAL
- = EXISTING DRAIN
- = PROPOSED DRAIN
- = PROPOSED STORM SEWER
- = PROPOSED TOE OF BANK
- La --- = SOIL TYPE
- ⊙ = PERMANENT SOIL EROSION CONTROL MEASURE OR RESTORATION DETAIL
- ⊙ = TEMPORARY SOIL EROSION CONTROL MEASURE
- ⊙ = SUMP LEAD TO PROPERTIES
- = HMA RESTORATION

CAUTION: HAZARDOUS OR FLAMMABLE MATERIAL



CB #1 (2' DIA W/ 2' SUMP)
 TYPE G COVER
 RIM ELEV = 598.10
 PROP 12" INV (W) = 593.95

PLACE 22 LF 12" SOLID DUAL WALL HDPE STM SEWER @ 1.00%

CAUTION: HAZARDOUS OR FLAMMABLE MATERIAL

CB #4 (4' DIA W/ 2' SUMP)
 TYPE G COVER
 RIM ELEV = 598.00
 PROP 12" INV (N) = 595.00

CB #3A (2' DIA W/ 2' SUMP)
 TYPE G COVER
 RIM ELEV = 597.15
 PROP 12" INV (W) = 593.00

CB #3 (4' DIA W/ 2' SUMP)
 TYPE G COVER
 RIM ELEV = 597.00
 PROP 12" INV (N) = 592.75

VERIFY LOCATION OF EX 6" WATER MAIN AND 2" GAS MAIN PRIOR TO CONSTRUCTION (TYP)



KEY PLAN
 NO SCALE

FOR CONSTRUCTION

NO.	REVISIONS	DATE	BY
1	ADDENDUM NO. 1	5/18/22	JAJ
2	ADDENDUM NO. 2	7/22/22	JAJ

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JOE BUSH
 OTTAWA COUNTY WATER RESOURCES COMMISSIONER

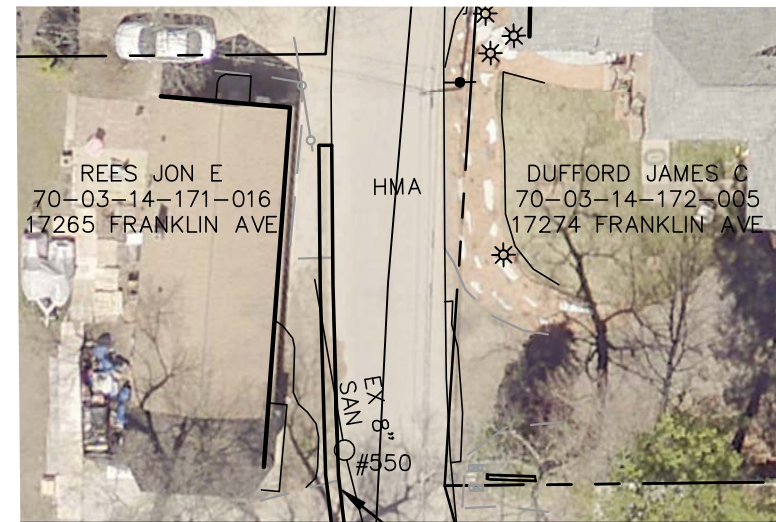
COLES PARK DRAIN DRAINAGE DISTRICT
 PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
 OTTAWA COUNTY, MICHIGAN

PROJECT NO.
19046

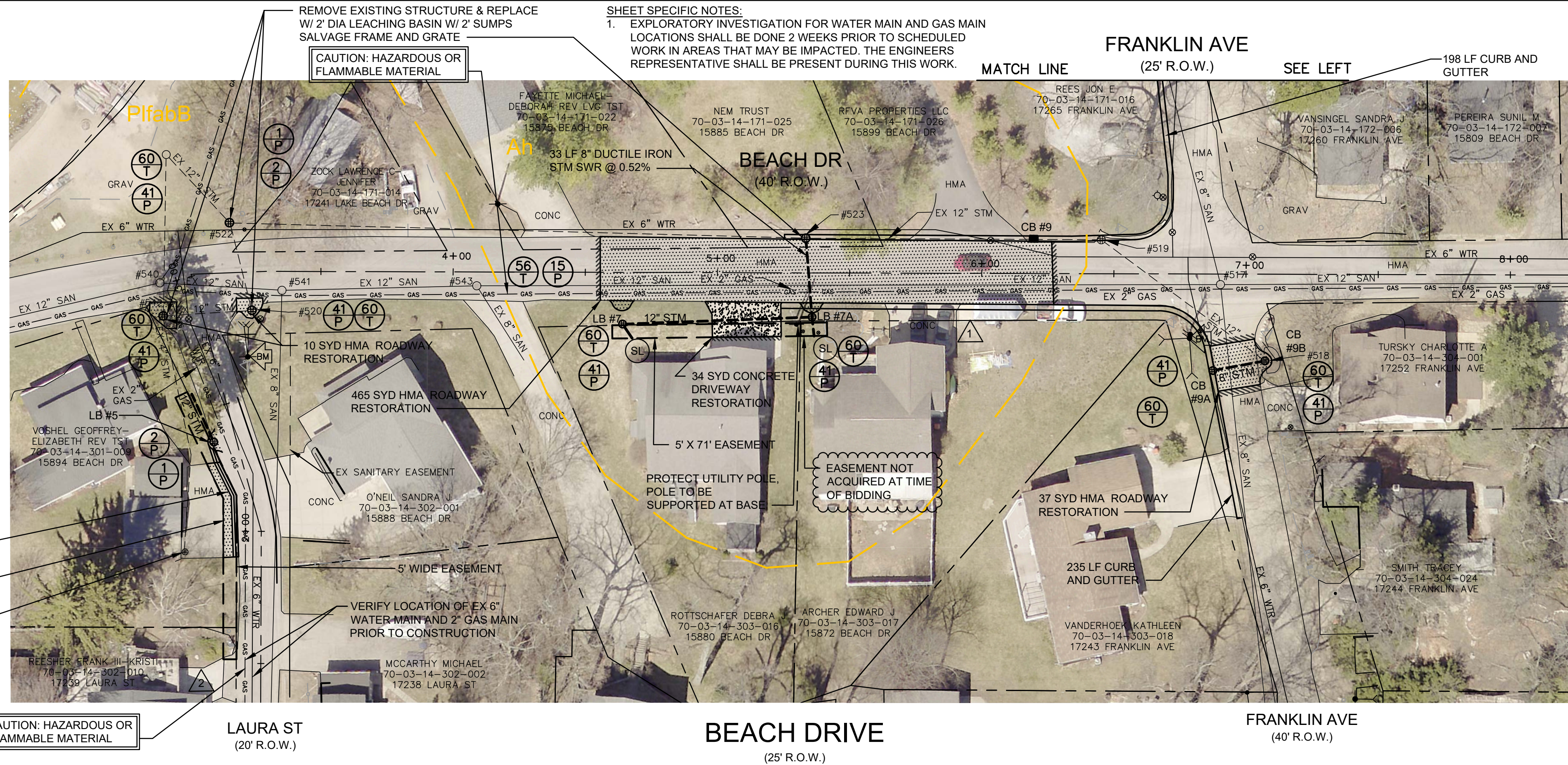
SHEET NO.
3 OF 12

LAURA STREET AND LANE STREET

FRANKLIN AVE
(25' R.O.W.)



MATCH LINE SEE RIGHT
58 LF OF CONCRETE ROLLED CURB AND GUTTER, GRADE BEHIND CURB AS NECESSARY TO MATCH GRADES



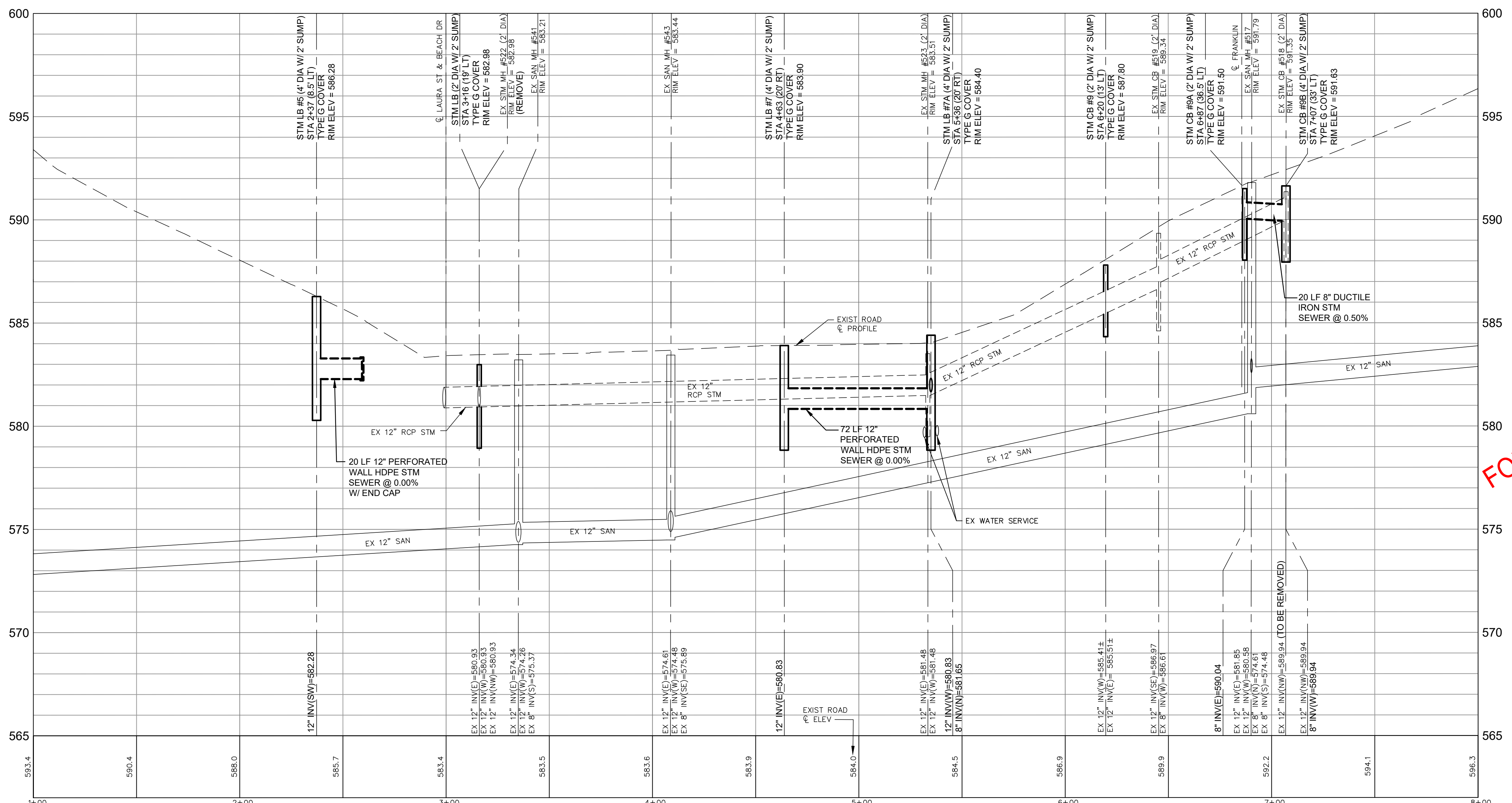
43 LF CURB AND GUTTER
14 SYD HMA ROADWAY RESTORATION
EX PLASTIC CATCH BASIN BOX (TO REMAIN)

CAUTION: HAZARDOUS OR FLAMMABLE MATERIAL

LAURA ST
(20' R.O.W.)

BEACH DRIVE
(25' R.O.W.)

FRANKLIN AVE
(40' R.O.W.)



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

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. 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.

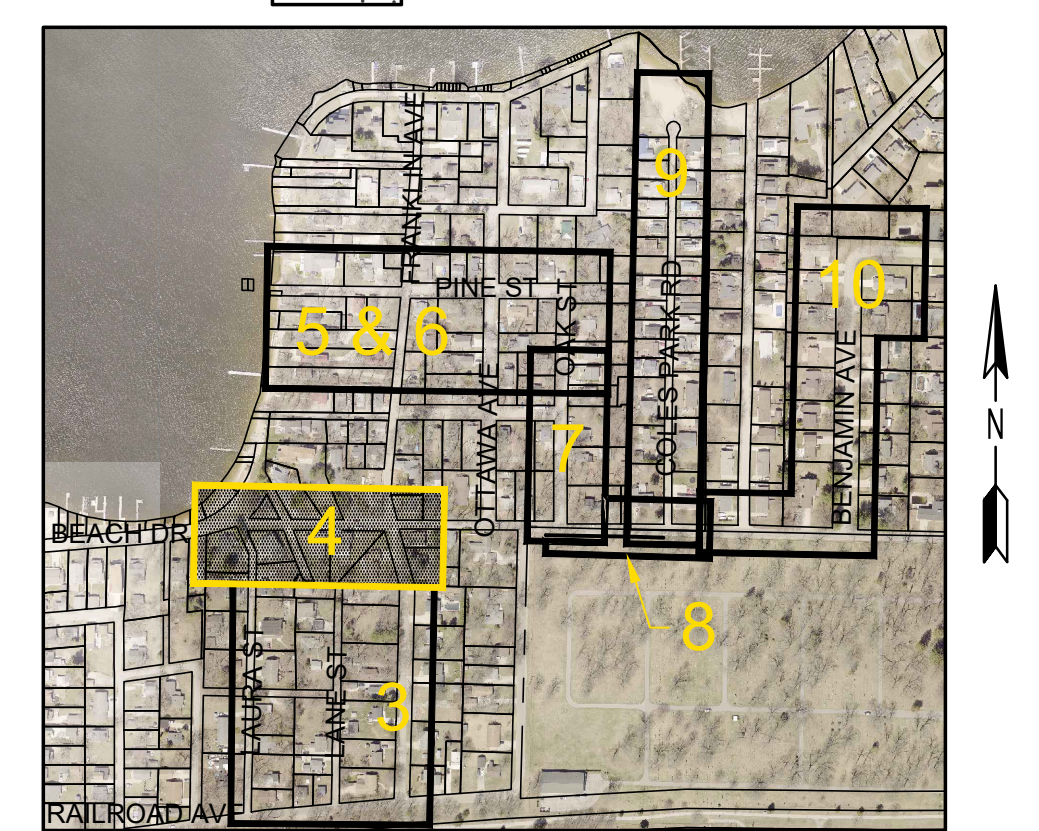
SOIL TYPES AND ABBREVIATIONS

Ah	Houghton-Adrian mucks, 0 to 1 percent slopes
Pf1abB	Plainfield sand, lake plain, 0 to 6 percent slopes
W	Water

LEGEND

- = PROPERTY LINE OR R.O.W. LINE
- = EDGE OF PAVEMENT
- X --- = FENCE
- = EXISTING GUARDRAIL
- = WETLANDS (AS MARKED BY OTHERS)
- = EXISTING SPOT ELEVATION
- = EXISTING CONTOUR ELEVATION
- = EDGE OF WOODS
- = DECIDUOUS TREE
- = CONIFEROUS TREE
- = BUSH
- = STUMP
- = EXISTING GAS LINE
- = EXISTING STORM SEWER
- = EXISTING SANITARY SEWER
- = EXISTING WATER MAIN
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- ⊗ = EXISTING WATER VALVE
- ⊙ = EXISTING CURB STOP / METER
- ⊕ = EXISTING CATCH BASIN
- ⊕ = BENCH MARK LOCATION
- ⊕ = EXISTING SIGN
- ⊕ = EXISTING MAILBOX
- ⊕ = EXISTING LIGHT POLE
- ⊕ = EXISTING GUY ANCHOR
- ⊕ = EXISTING UTILITY POLE
- ⊕ = EXISTING TELEPHONE PEDESTAL
- = EXISTING DRAIN
- = PROPOSED DRAIN
- = PROPOSED STORM SEWER
- = PROPOSED TOE OF BANK
- La --- = SOIL TYPE
- XX P = PERMANENT SOIL EROSION CONTROL MEASURE OR RESTORATION DETAIL
- XX = TEMPORARY SOIL EROSION CONTROL MEASURE
- SL = SUMP LEAD TO PROPERTIES
- = HMA RESTORATION
- = CONCRETE RESTORATION

SCALE:
1"=30' HORIZONTAL
1"=3' VERTICAL



KEY PLAN
NO SCALE
**BEACH DRIVE AND LAURA STREET
PLAN & PROFILE**

REVISIONS

NO.	DATE	BY	DESCRIPTION
1	5/18/23	JAJ	SUM
2	7/2/22	JAJ	SUM

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Eng
Engineering & Surveying

JOE BUSH
OTTAWA COUNTY WATER RESOURCES COMMISSIONER

COLES PARK DRAIN DRAINAGE DISTRICT
PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
OTTAWA COUNTY, MICHIGAN

PROJECT NO.
19046

SHEET NO.
4 OF 12

LEGEND

- = PROPERTY LINE OR R.O.W. LINE
- X --- = EDGE OF PAVEMENT
- X --- = FENCE
- = EXISTING GUARDRAIL
- GAS --- GAS --- GAS --- = EXISTING GAS LINE
- EX 12" SAN --- = EXISTING STORM SEWER
- EX 6" WTR --- = EXISTING SANITARY SEWER
- = EXISTING WATER MAIN
- = WETLANDS (AS MARKED BY OTHERS)
- = EXISTING TELEPHONE PEDESTAL
- 860 = EXISTING SPOT ELEVATION
- 860 = EXISTING CONTOUR ELEVATION
- = EDGE OF WOODS
- = DECIDUOUS TREE
- = CONIFEROUS TREE
- = BUSH
- = STUMP
- = EXISTING LIGHT POLE
- < --- = WETLANDS (AS MARKED BY OTHERS)
- = EXISTING UTILITY POLE
- = EXISTING MANHOLE
- ⊕ = EXISTING STORM CATCH BASIN
- ⊕ = EXISTING WELL LOCATION
- ⊕ = EXISTING WATER VALVE
- ⊕ = EXISTING CURB STOP / METER
- ⊕ = EXISTING CATCH BASIN
- BM = BENCH MARK LOCATION
- △ = EXISTING SIGN
- ⊕ = EXISTING GUY ANCHOR
- ⊕ = EXISTING MAILBOX
- = EXISTING DRAIN
- = PROPOSED DRAIN
- = PROPOSED STORM SEWER
- = PROPOSED STORM SEWER (ALTERNATE CONTRACT)
- = SOIL TYPE
- XX P = PERMANENT SOIL EROSION CONTROL MEASURE OR RESTORATION DETAIL
- XX T = TEMPORARY SOIL EROSION CONTROL MEASURE
- SL = SUMP LEAD TO PROPERTIES
- = HMA RESTORATION

SHEET SPECIFIC NOTES:

- DETAILS AND QUANTITIES FOR PROPOSED WORK IN FRANKLIN AVENUE, OTTAWA AVENUE, AND OAK STREET CAN BE SEEN ON SHEET 6.
- EXPLORATORY INVESTIGATION FOR WATER MAIN AND GAS MAIN LOCATIONS SHALL BE DONE 2 WEEKS PRIOR TO SCHEDULED WORK IN AREAS THAT MAY BE IMPACTED. THE ENGINEERS REPRESENTATIVE SHALL BE PRESENT DURING THIS WORK.

BM #6 ELEV=597.06
SET SPIKE SE SIDE UTILITY POLE
NW CORNER OF PINE ST AND
OTTAWA AVE

BM #7 ELEV=597.55
SET SPIKE W SIDE UTILITY POLE E
SIDE OAK ST 25' S OF E EXTENDED
PINE ST



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. 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.

NO.	REVISIONS	DATE	BY
1	ADDENDUM NO. 1	5/18/23	JAJ
2	ADDENDUM NO. 2	7/6/22	JAJ

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517.887.1100

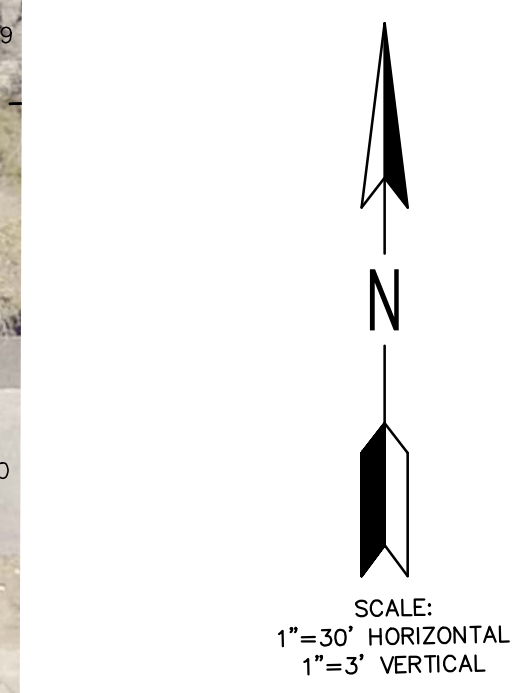
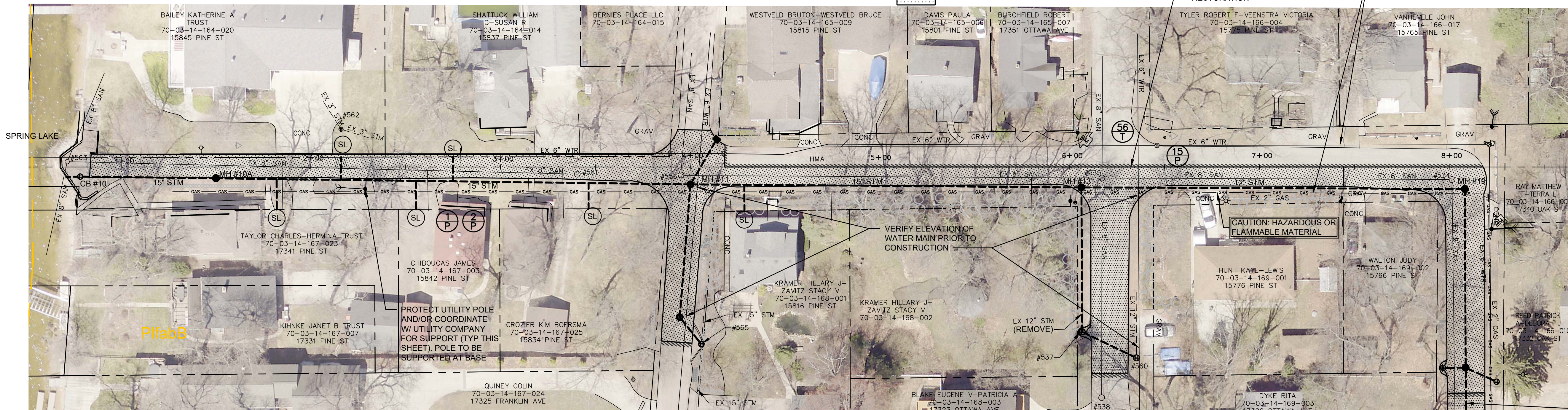
16930 Robbins Road Suite 105
Grand Haven, MI 49417
616.743.7070
engdol.com



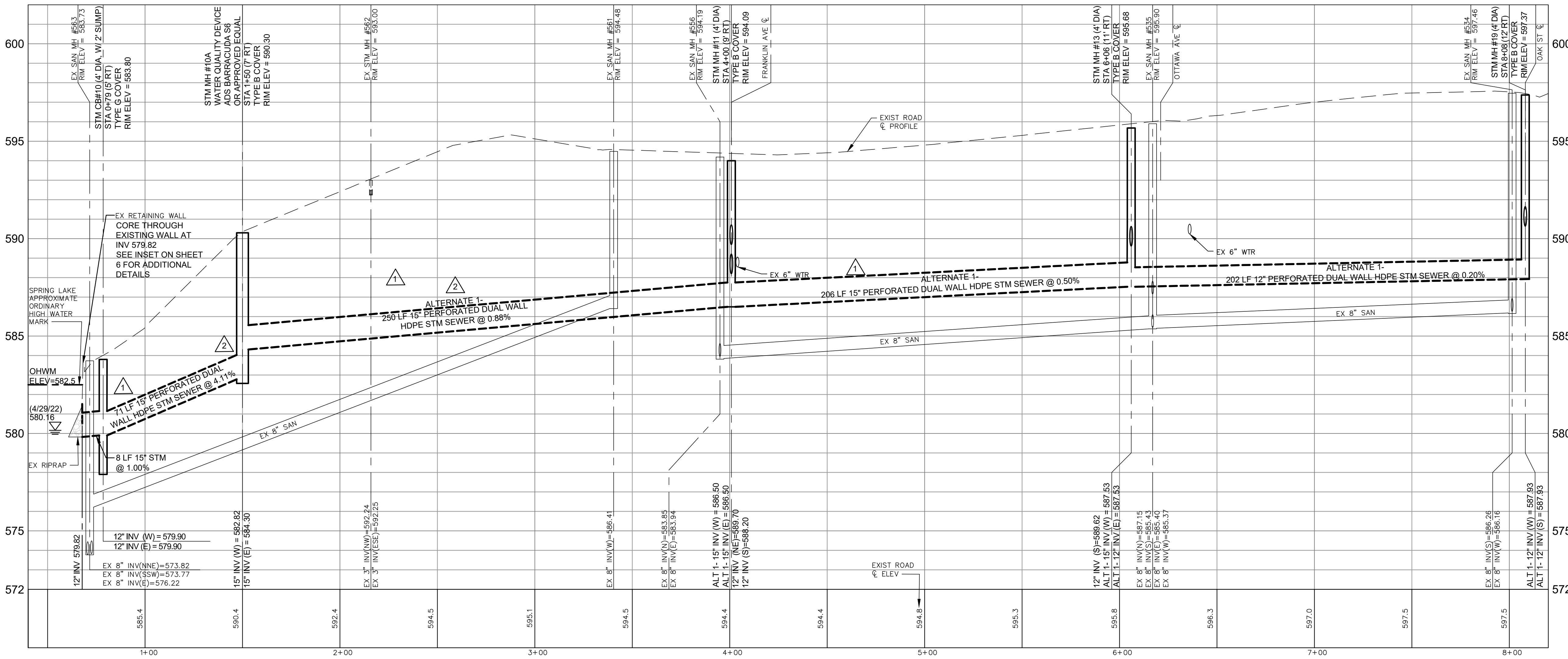
JOE BUSH
OTTAWA COUNTY WATER RESOURCES COMMISSIONER
COLES PARK DRAIN DRAINAGE DISTRICT
PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
OTTAWA COUNTY, MICHIGAN

PROJECT NO.
19046

SHEET NO.
5 OF 12

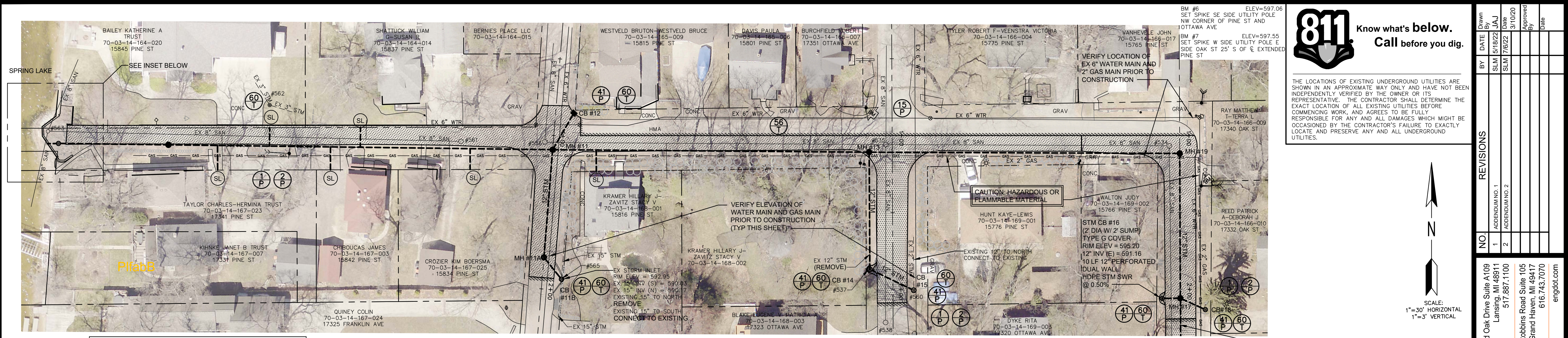


SOIL TYPES AND ABBREVIATIONS	
Ah	Houghton-Adrian mucks, 0 to 1 percent slopes
PifabB	Plainfield sand, lake plain, 0 to 6 percent slopes
W	Water



FOR CONSTRUCTION

**PINE STREET
PLAN & PROFILE
STA 0+40 TO STA 8+10**



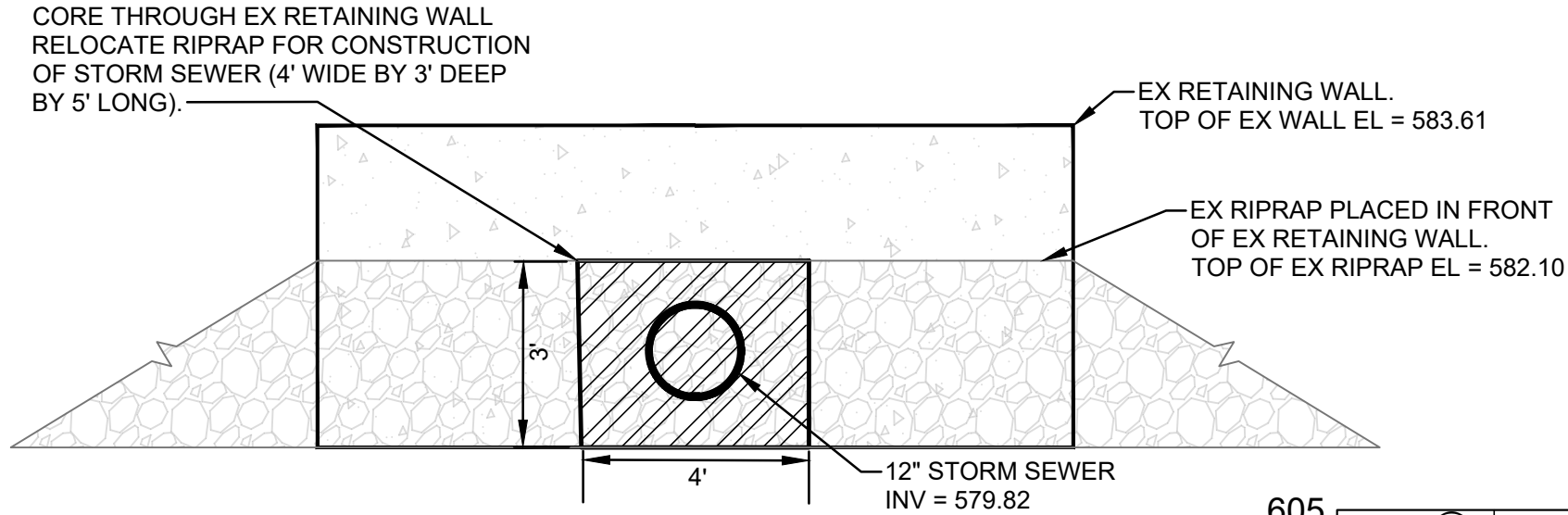
THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

SOIL TYPES AND ABBREVIATIONS	
Ah	Houghton-Adrian mucks, 0 to 1 percent slopes
PifabB	Plainfield sand, lake plain, 0 to 6 percent slopes
W	Water

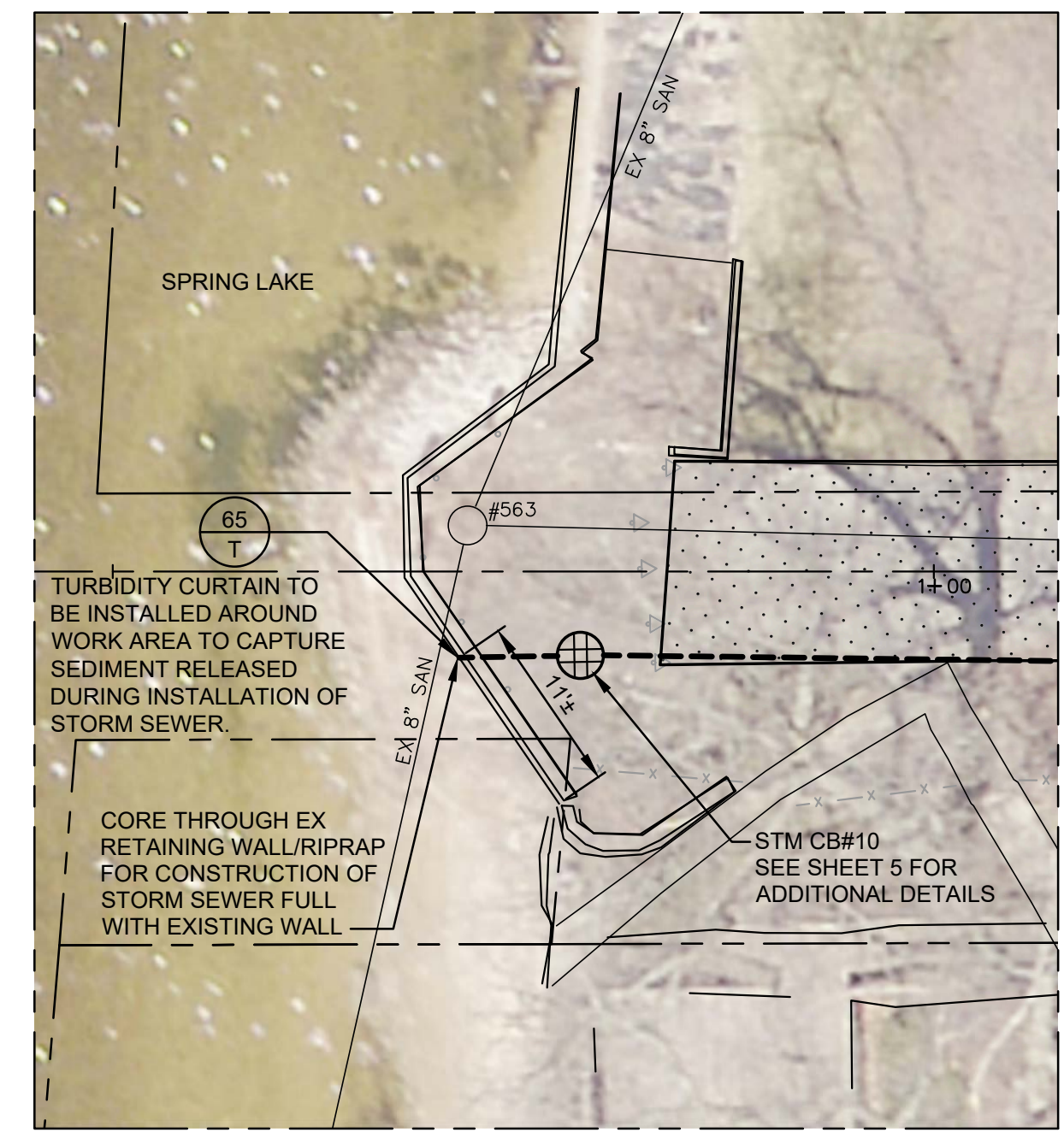
FRANKLIN AVE (25' R.O.W.)
PINE STREET (40' R.O.W.) (SEE SHEET 5)
OTTAWA AVE (40' R.O.W.)
OAK ST (35' R.O.W.)

- LEGEND**
- PROPERTY LINE OR R.O.W. LINE
 - EDGE OF PAVEMENT
 - X FENCE
 - EXISTING GUARDRAIL
 - EXISTING GAS LINE
 - EXISTING STORM SEWER
 - EXISTING SANITARY SEWER
 - EXISTING WATER MAIN
 - WETLANDS (AS MARKED BY OTHERS)
 - EXISTING TELEPHONE PEDESTAL
 - EXISTING SPOT ELEVATION
 - EXISTING CONTOUR ELEVATION
 - EDGE OF WOODS
 - EXISTING TREE
 - CONIFEROUS TREE
 - BUSH
 - STUMP
 - EXISTING LIGHT POLE
 - EXISTING GUY ANCHOR
 - EXISTING UTILITY POLE
 - EXISTING MANHOLE
 - EXISTING STORM CATCH BASIN
 - EXISTING WELL LOCATION
 - EXISTING WATER VALVE
 - EXISTING CURB STOP / METER
 - EXISTING CATCH BASIN
 - STUMP
 - EXISTING SIGN
 - EXISTING MAILBOX
 - EXISTING DRAIN
 - PROPOSED DRAIN
 - PROPOSED STORM SEWER
 - PROPOSED STORM SEWER (ALTERNATE CONTRACT)
 - SOIL TYPE
 - PERMANENT SOIL EROSION CONTROL MEASURE OR RESTORATION DETAIL
 - TEMPORARY SOIL EROSION CONTROL MEASURE
 - SUMP LEAD TO PROPERTIES
 - HMA RESTORATION

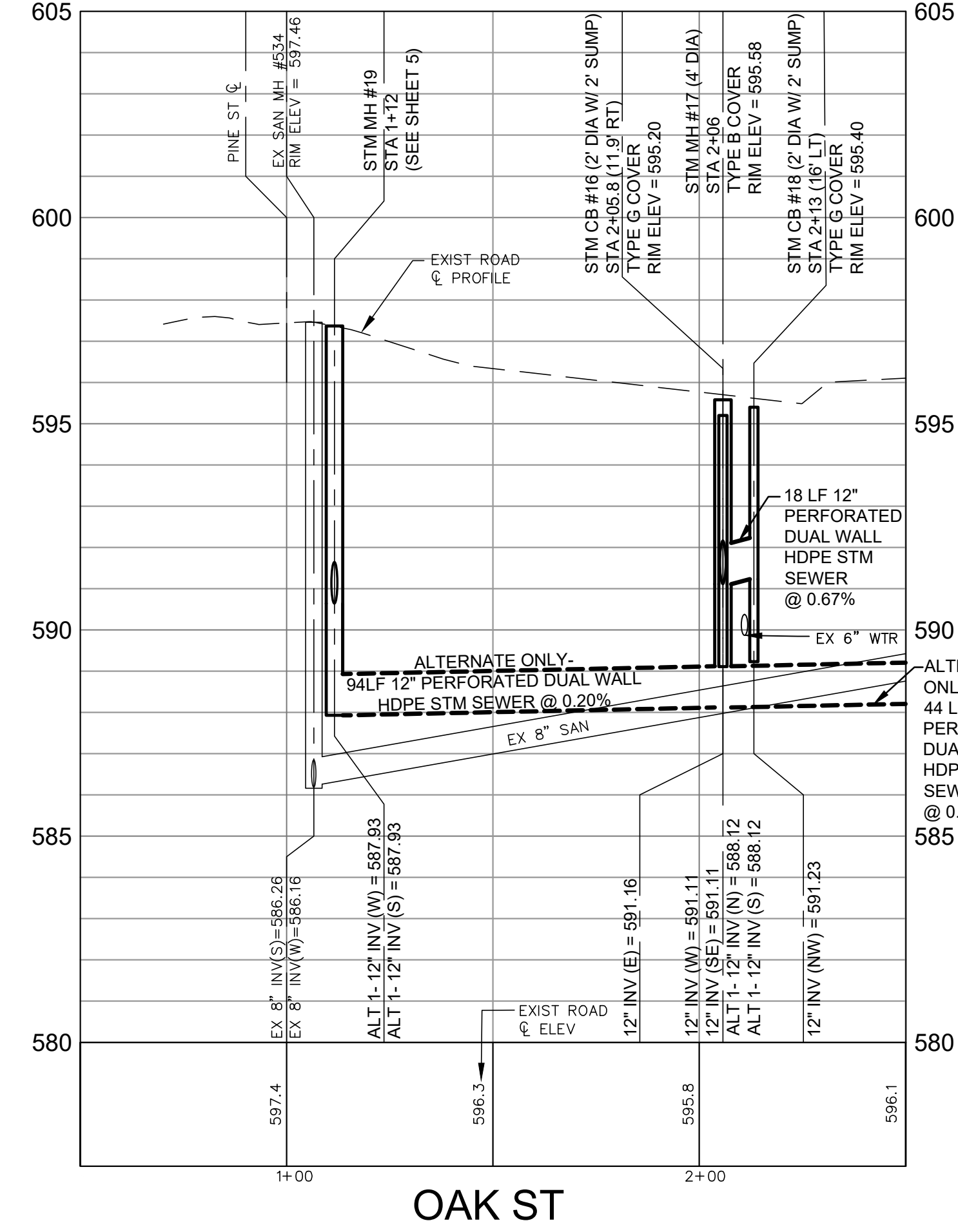
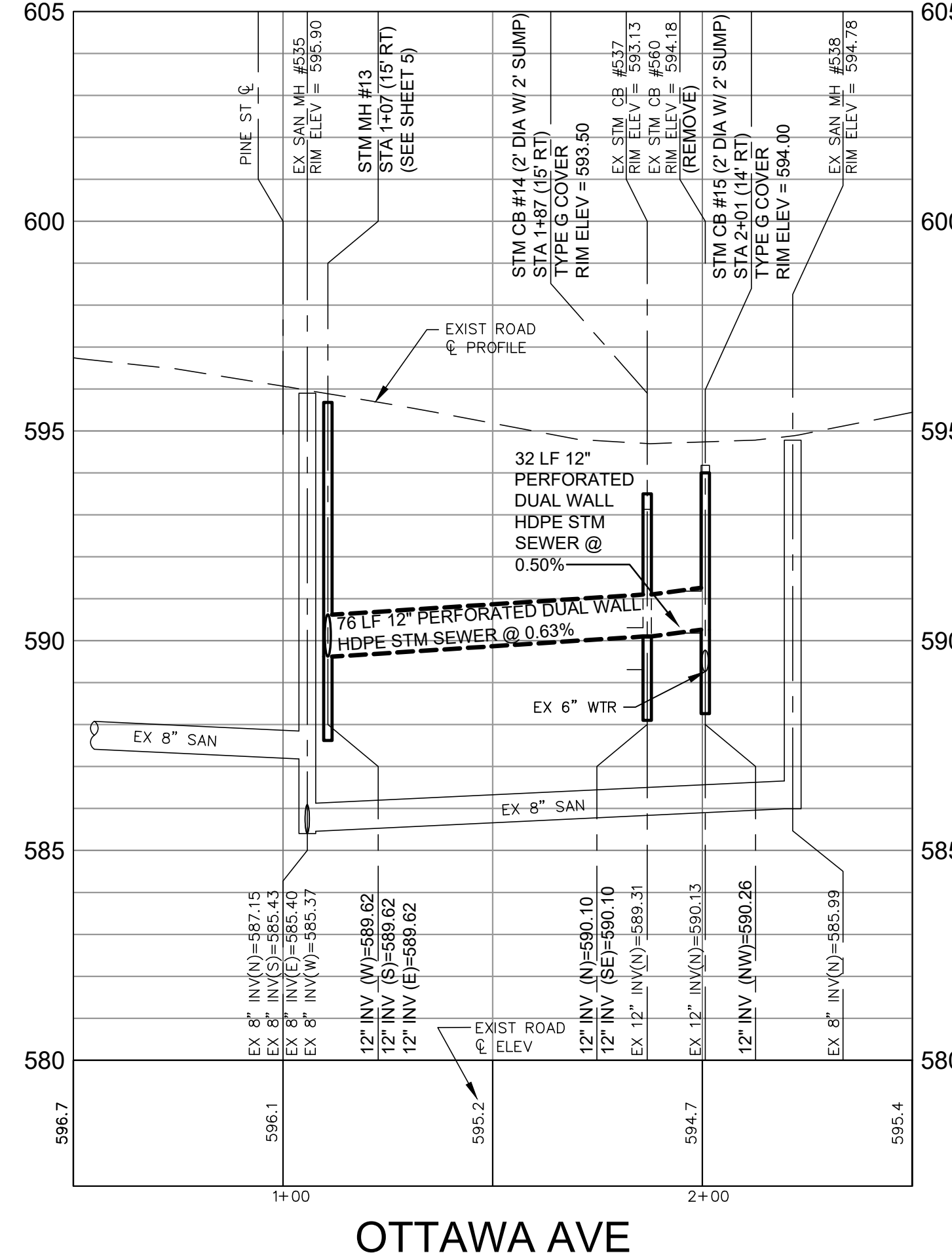
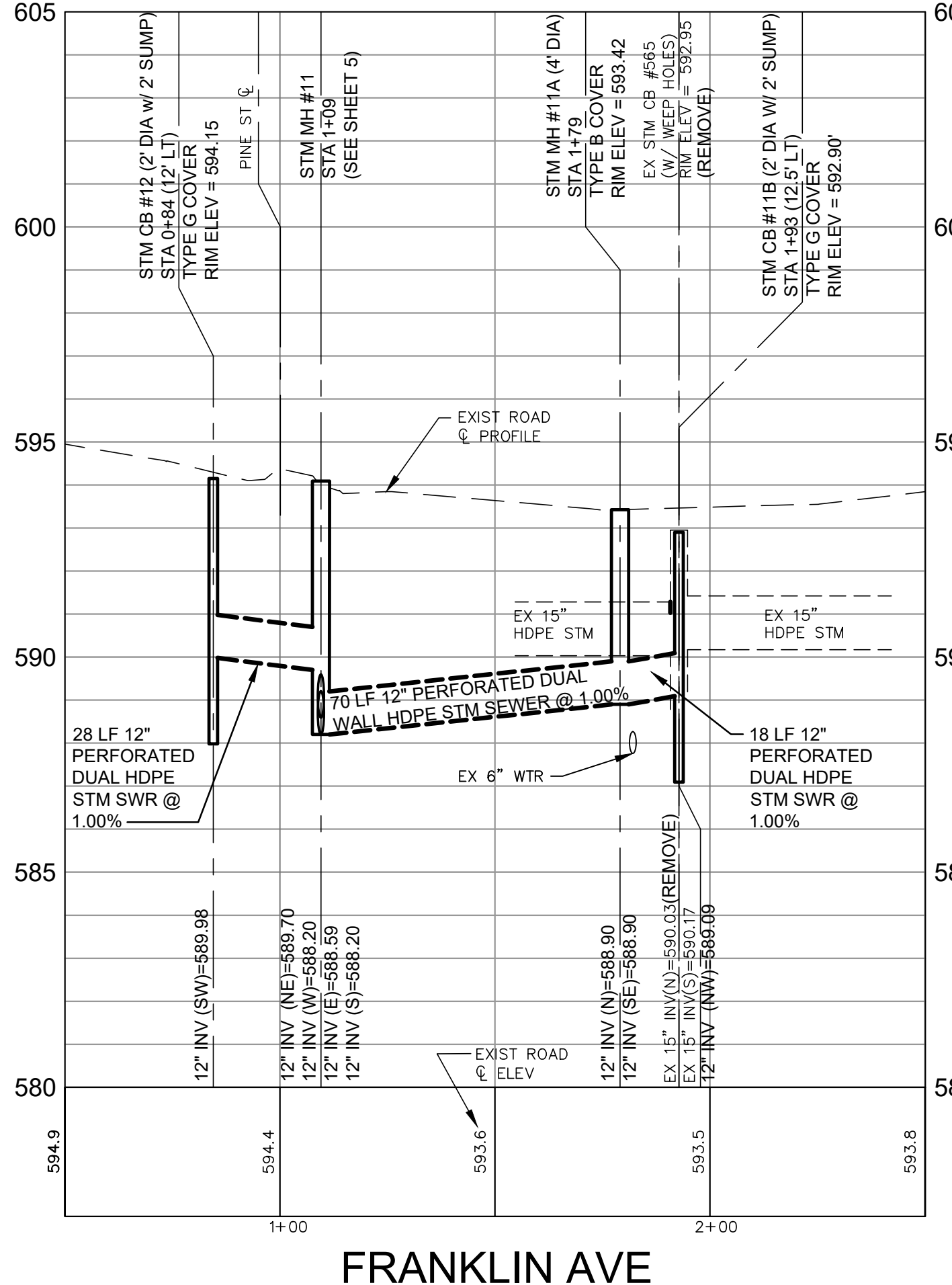
- SHEET SPECIFIC NOTES:**
- DETAILS AND QUANTITIES FOR PROPOSED WORK ON PINE STREET CAN BE SEEN ON SHEET 5.
 - EXPLORATORY INVESTIGATION FOR WATER MAIN AND GAS MAIN LOCATIONS SHALL BE DONE 2 WEEKS PRIOR TO SCHEDULED WORK IN AREAS THAT MAY BE IMPACTED. THE ENGINEERS REPRESENTATIVE SHALL BE PRESENT DURING THIS WORK.



STORM SEWER INSTALLATION AT SPRING LAKE
NOT TO SCALE



FOR CONSTRUCTION



**FRANKLIN AVENUE,
OTTAWA AVENUE AND OAK STREET
PLAN & PROFILES**

REVISIONS

NO.	DATE	BY	DESCRIPTION
1	5/18/23	JAJ	SUM
2	7/6/22	JAJ	SUM

4063 Grand Oak Drive Suite A109
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517.867.1100

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Grand Haven, MI 49417
616.743.7070

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Engineering & Surveying

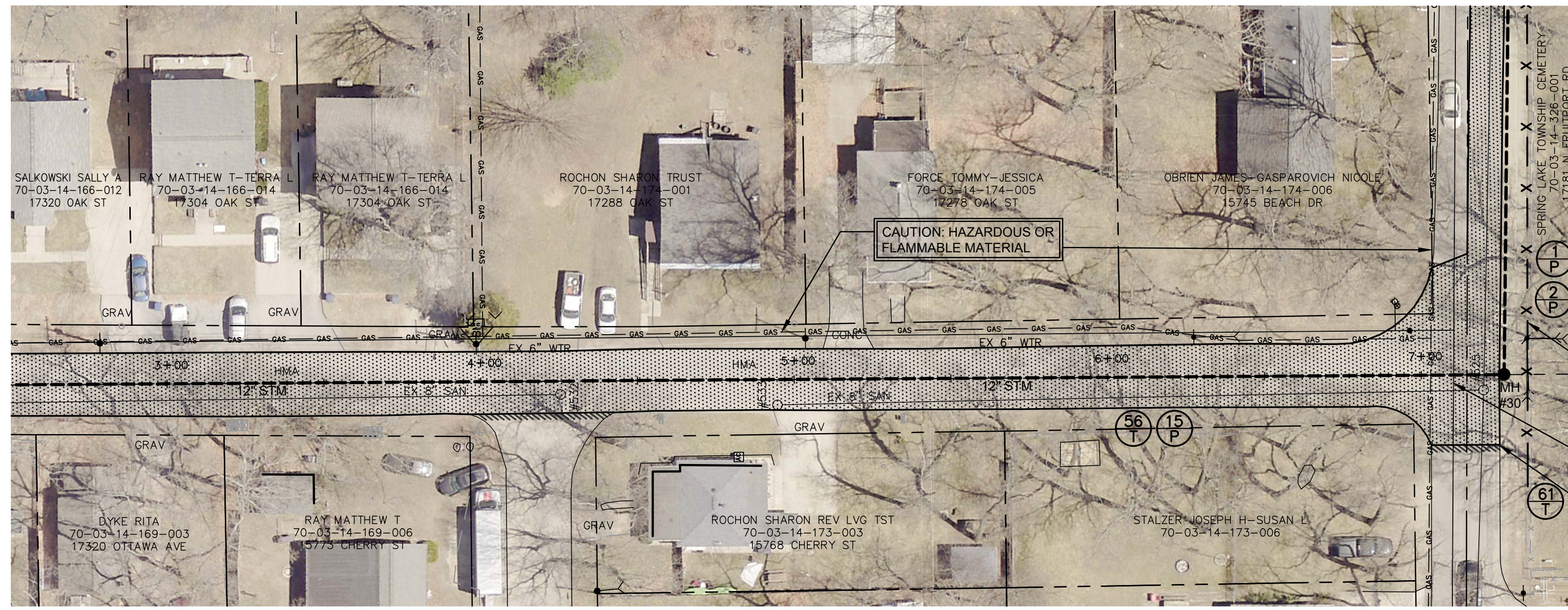
JOE BUSH
OTTAWA COUNTY WATER RESOURCES COMMISSIONER

COLES PARK DRAIN DRAINAGE DISTRICT
PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
OTTAWA COUNTY, MICHIGAN

PROJECT NO.
19046

SHEET NO.
6 OF 12

BEACH DR
(25' R.O.W.)
(SEE SHEET 8 OF 12)



SEE SHEET
6 OF 12

CHERRY ST
(40' R.O.W.)

OAK STREET
(35' R.O.W.)

ALTERNATE NO. 1

SHEET SPECIFIC NOTES:
1. EXPLORATORY INVESTIGATION FOR WATER MAIN AND GAS MAIN LOCATIONS SHALL BE DONE 2 WEEKS PRIOR TO SCHEDULED WORK IN AREAS THAT MAY BE IMPACTED. THE ENGINEERS REPRESENTATIVE SHALL BE PRESENT DURING THIS WORK.

BM #12 ELEV=595.22
SET SPIKE E SIDE UTILITY POLE ON S SIDE OF BEACH DR ACROSS FROM COLES PARK RD

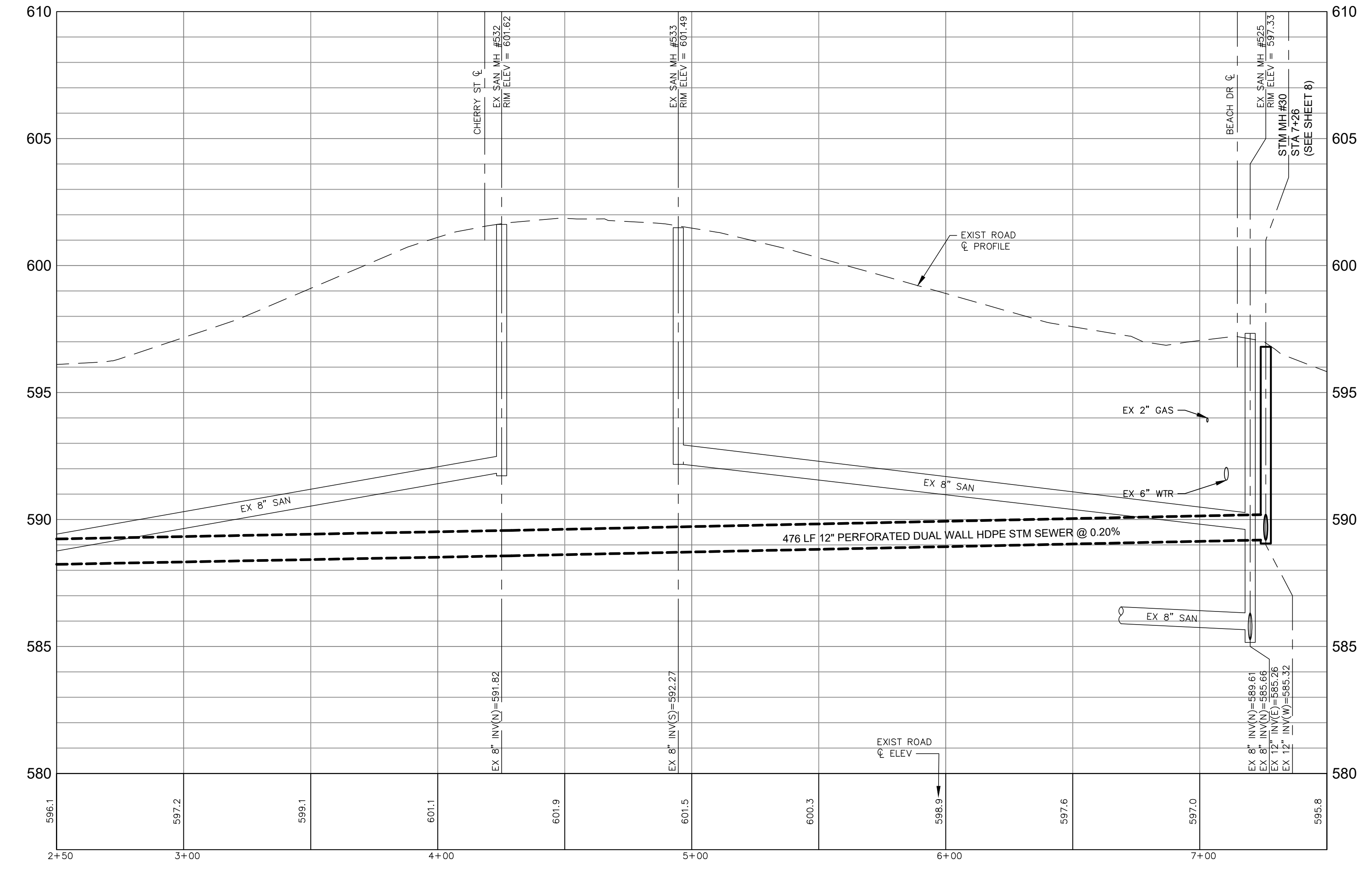
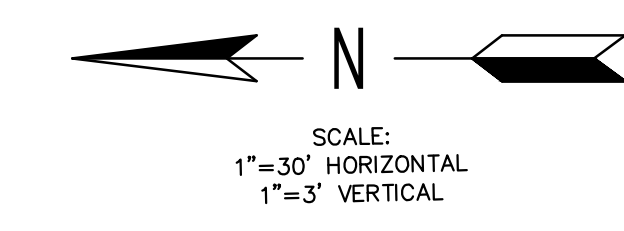
BM #16 ELEV=601.83
SET SPIKE W SIDE UTILITY POLE E SIDE OAK ST ACROSS FROM CHERRY ST

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

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LEGEND

- = PROPERTY LINE OR R.O.W. LINE
- = EDGE OF PAVEMENT
- X --- = FENCE
- = EXISTING GUARDRAIL
- = WETLANDS (AS MARKED BY OTHERS)
- +860 = EXISTING SPOT ELEVATION
- = EXISTING CONTOUR ELEVATION
- = EDGE OF WOODS
- = DECIDUOUS TREE
- = CONIFEROUS TREE
- = BUSH
- = STUMP
- = EXISTING GAS LINE
- = EXISTING STORM SEWER
- = EXISTING SANITARY SEWER
- = EXISTING WATER MAIN
- = EXISTING MANHOLE
- ⊕ = EXISTING STORM CATCH BASIN
- ⊙ = EXISTING WELL LOCATION
- ⊗ = EXISTING WATER VALVE
- = EXISTING CURB STOP / METER
- ⊞ = EXISTING CATCH BASIN
- ⊞ = BENCH MARK LOCATION
- △ = EXISTING SIGN
- ⊞ = EXISTING MAILBOX
- * = EXISTING LIGHT POLE
- < = EXISTING GUY ANCHOR
- = EXISTING UTILITY POLE
- ⊞ = EXISTING TELEPHONE PEDESTAL
- = EXISTING DRAIN
- = PROPOSED DRAIN
- = PROPOSED STORM SEWER
- La --- = SOIL TYPE
- ⊞ = PERMANENT SOIL EROSION CONTROL MEASURE OR RESTORATION DETAIL
- ⊞ = TEMPORARY SOIL EROSION CONTROL MEASURE
- ⊞ = SUMP LEAD TO PROPERTIES
- = HMA RESTORATION



FOR CONSTRUCTION



OAK STREET - ALTERNATE 1
PLAN & PROFILE
STA 2+50 TO STA 7+50

NO.	REVISIONS	BY	DATE
1	ADDENDUM NO. 1	SLM	5/18/22
2	ADDENDUM NO. 2	SLM	7/29/22

4063 Grand Oak Drive Suite A109
Lansing, MI 48911
517.867.1100

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Grand Haven, MI 49417
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JOE BUSH
OTTAWA COUNTY WATER RESOURCES COMMISSIONER

COLES PARK DRAIN DRAINAGE DISTRICT
PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
OTTAWA COUNTY, MICHIGAN

PROJECT NO.
19046

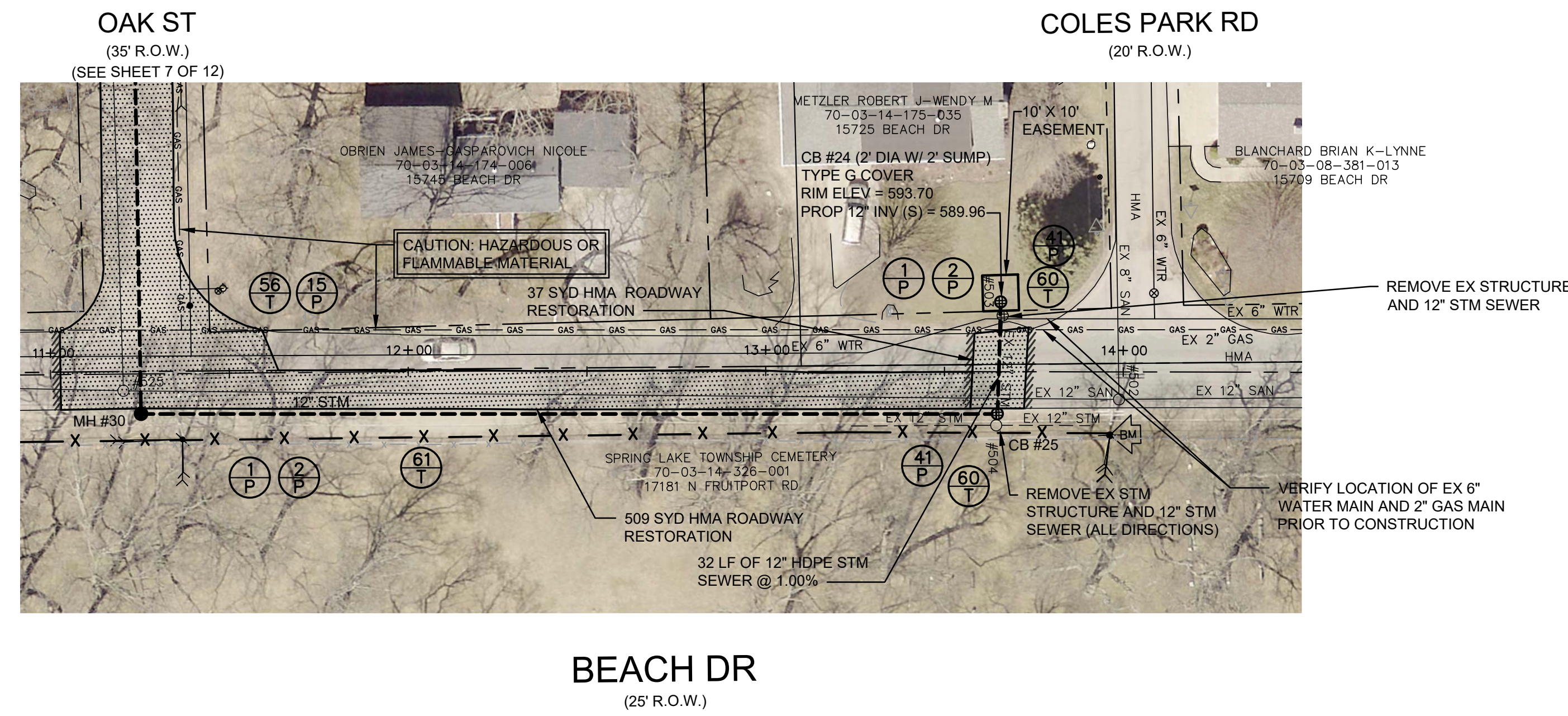
SHEET NO.
7 of 12

SHEET SPECIFIC NOTES:
 1. EXPLORATORY INVESTIGATION FOR WATER MAIN AND GAS MAIN LOCATIONS SHALL BE DONE 2 WEEKS PRIOR TO SCHEDULED WORK IN AREAS THAT MAY BE IMPACTED. THE ENGINEERS REPRESENTATIVE SHALL BE PRESENT DURING THIS WORK.

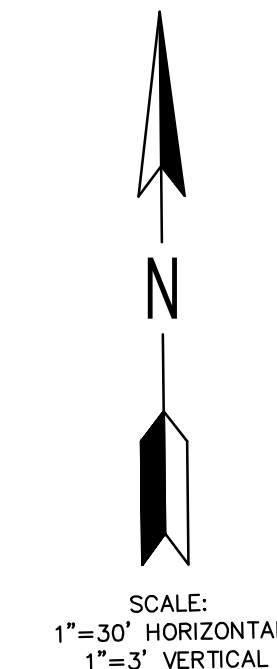
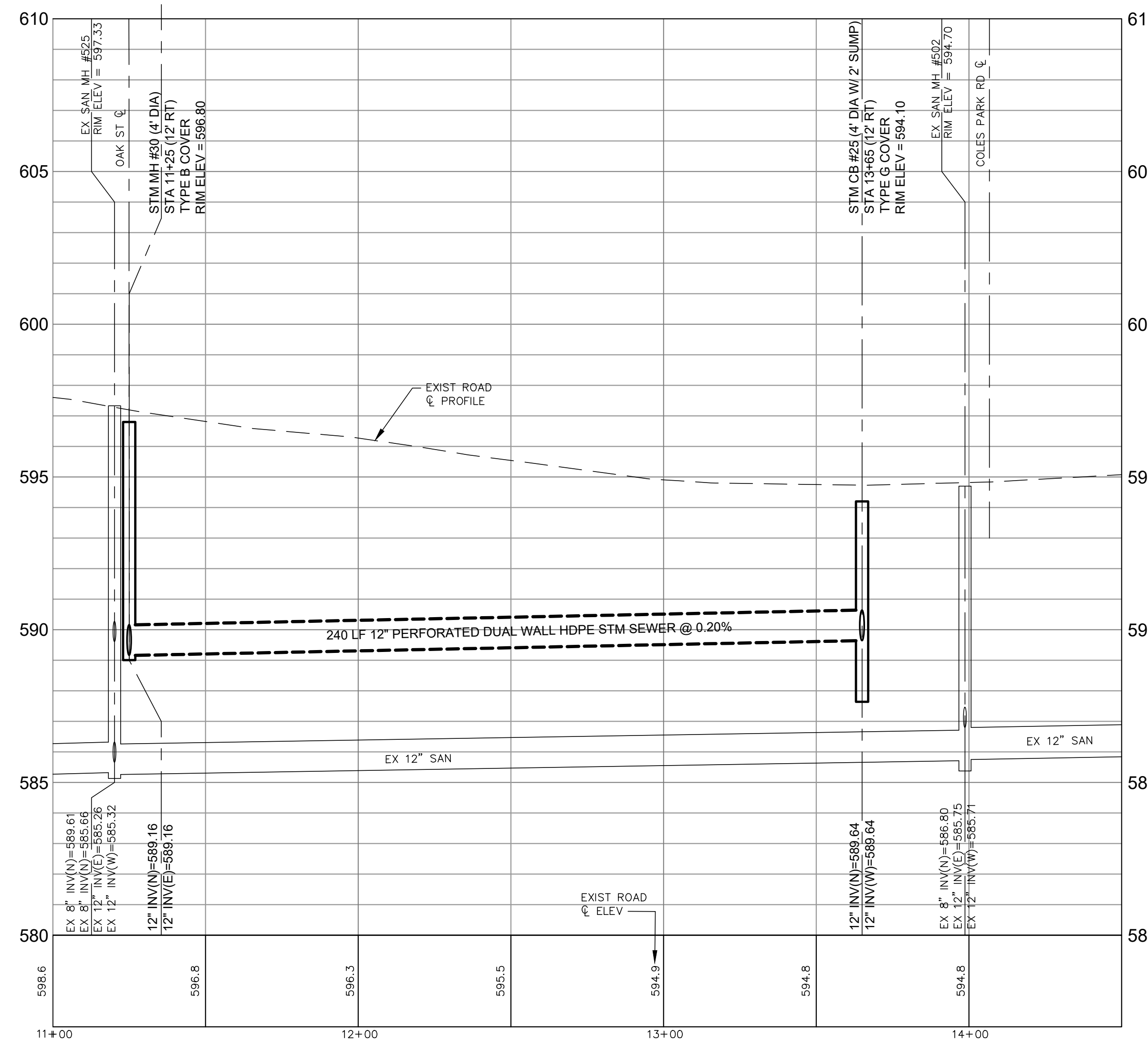
BM #11 ELEV=596.64
 SET SPIKE E SIDE LIGHT POLE ON W SIDE OF COLES PARK RD S SIDE OF HOUSE 17329
 BM #12 ELEV=595.22
 SET SPIKE E SIDE UTILITY POLE ON S SIDE OF BEACH DR ACROSS FROM COLES PARK RD

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

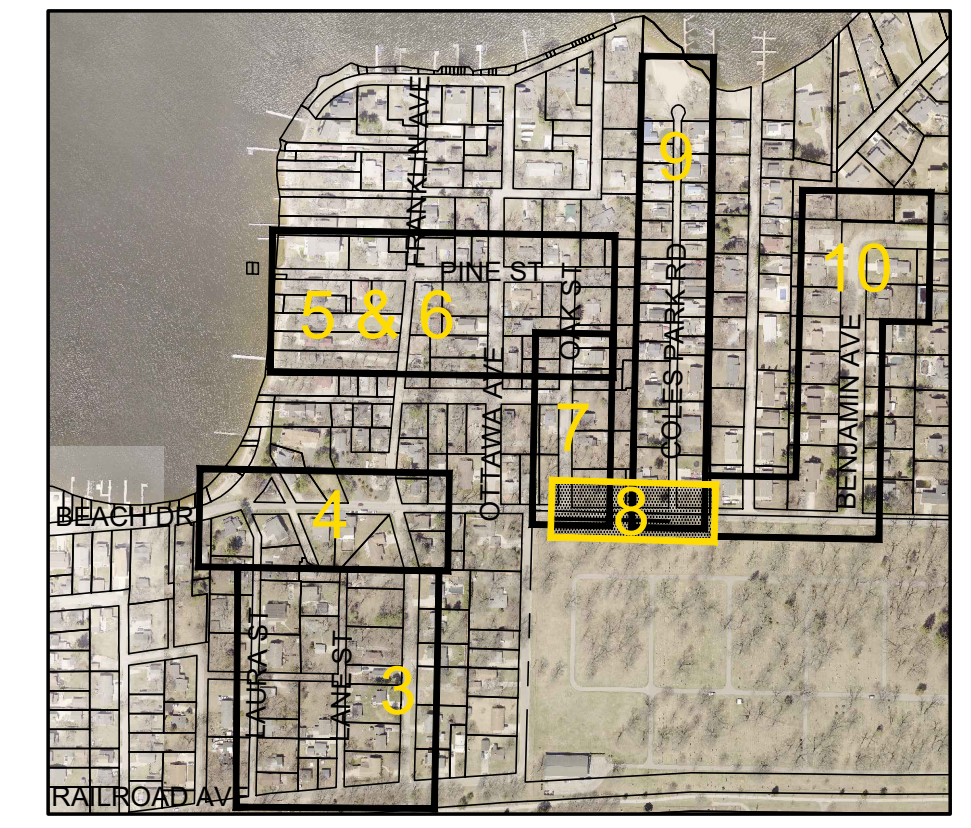
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ALTERNATE NO. 1



- LEGEND**
- = PROPERTY LINE OR R.O.W. LINE
 - = EDGE OF PAVEMENT
 - X — = FENCE
 - = EXISTING GUARDRAIL
 - WETLANDS (AS MARKED BY OTHERS)
 - +860 = EXISTING SPOT ELEVATION
 - = EXISTING CONTOUR ELEVATION
 - = EDGE OF WOODS
 - = DECIDUOUS TREE
 - = CONIFEROUS TREE
 - = BUSH
 - = STUMP
 - GAS — GAS — GAS = EXISTING GAS LINE
 - = EXISTING STORM SEWER
 - EX 12" SAN = EXISTING SANITARY SEWER
 - EX 6" WTR = EXISTING WATER MAIN
 - = EXISTING MANHOLE
 - ⊕ = EXISTING STORM CATCH BASIN
 - ⊙ = EXISTING WELL LOCATION
 - ⊗ = EXISTING WATER VALVE
 - = EXISTING CURB STOP / METER
 - ⊞ = EXISTING CATCH BASIN
 - ⊠ = BENCH MARK LOCATION
 - = EXISTING SIGN
 - = EXISTING MAILBOX
 - * = EXISTING LIGHT POLE
 - < = EXISTING GUY ANCHOR
 - = EXISTING UTILITY POLE
 - ⊞ = EXISTING TELEPHONE PEDESTAL
 - = EXISTING DRAIN
 - = PROPOSED DRAIN
 - = PROPOSED STORM SEWER
 - La — = SOIL TYPE
 - ⊗ = PERMANENT SOIL EROSION CONTROL MEASURE OR RESTORATION DETAIL
 - ⊗ = TEMPORARY SOIL EROSION CONTROL MEASURE
 - ⊞ = SUMP LEAD TO PROPERTIES
 - = HMA RESTORATION



FOR CONSTRUCTION

**BEACH DRIVE - ALTERNATE 1
 PLAN & PROFILE
 STA 11+00 TO STA 14+50**

NO.	REVISIONS	DATE	BY
1	ADDENDUM NO. 1	5/18/23	JAJ
2	ADDENDUM NO. 2	7/6/23	JAJ

4063 Grand Oak Drive Suite A109
 Lansing, MI 48911
 517.867.1100

16930 Robbins Road Suite 105
 Grand Haven, MI 49417
 616.743.7070

engdol.com



JOE BUSH
 OTTAWA COUNTY WATER RESOURCES COMMISSIONER

COLES PARK DRAIN DRAINAGE DISTRICT
 PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
 OTTAWA COUNTY, MICHIGAN

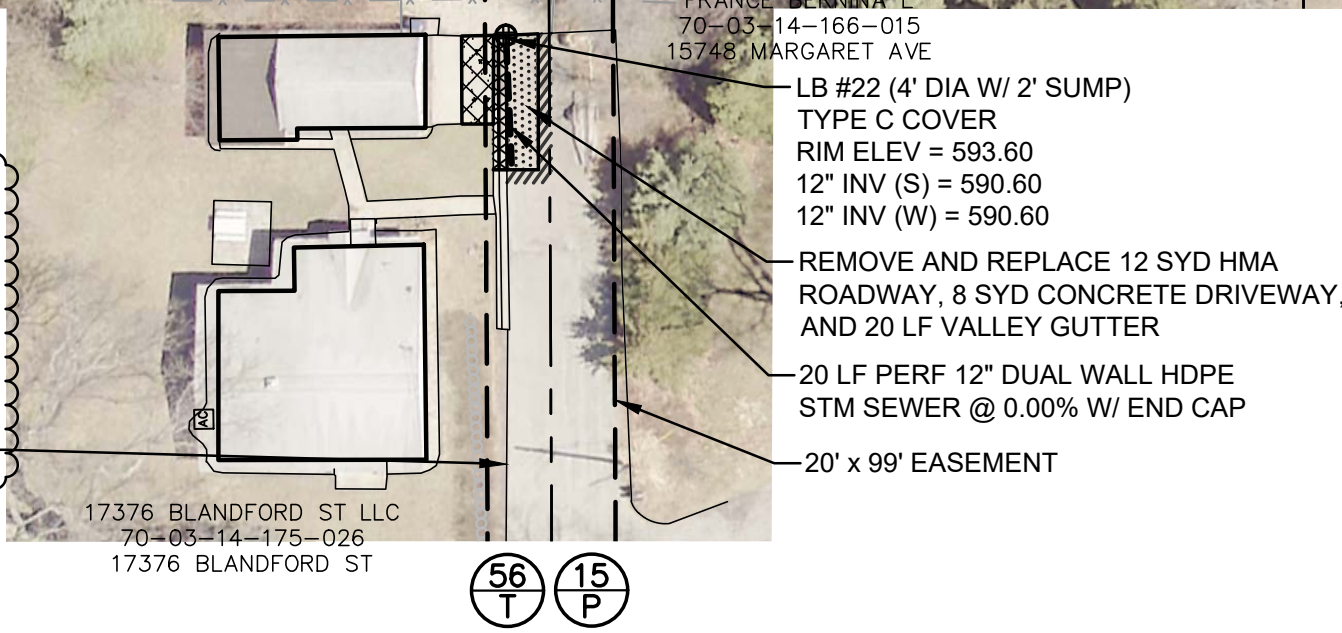
PROJECT NO.
19046

SHEET NO.
8 of 12



SOIL TYPES AND ABBREVIATIONS	
Ah	Houghton-Adrian mucks, 0 to 1 percent slopes
PifabB	Plainfield sand, lake plain, 0 to 6 percent slopes
W	Water

A TEMPORARY CONSTRUCTION EASEMENT ON PARCEL 70-03-14-166-015 WAS NOT GRANTED. CONTRACTOR SHALL ONLY USE PARCEL 70-03-14-175-026 FOR ACCESS AND CONSTRUCTION OF THE PROPOSED IMPROVEMENTS. CONTRACTOR TO REMOVE AND REPLACE SHRUBS AS NEEDED FOR ACCESS.



SHEET SPECIFIC NOTES:
 1. EXPLORATORY INVESTIGATION FOR WATER MAIN AND GAS MAIN LOCATIONS SHALL BE DONE 2 WEEKS PRIOR TO SCHEDULED WORK IN AREAS THAT MAY BE IMPACTED. THE ENGINEERS REPRESENTATIVE SHALL BE PRESENT DURING THIS WORK.

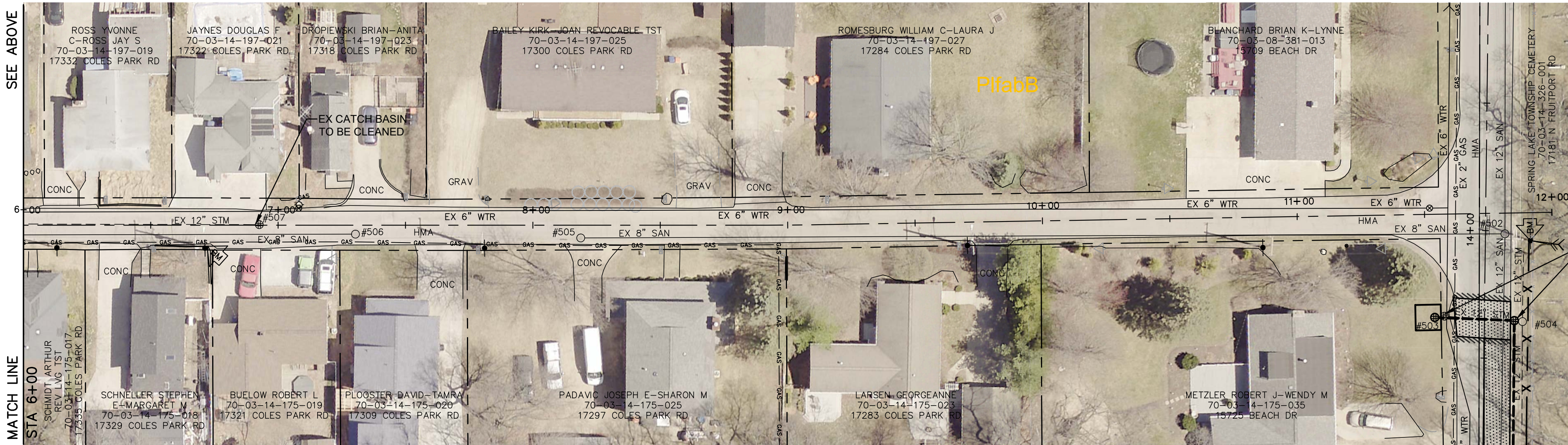
BM #8 ELEV=598.68
 SET SPIKE W SIDE LIGHT POLE AT N END OF COLES PARK RD
 BM #9 ELEV=595.69
 SET SPIKE S SIDE UTILITY POLE NE CORNER OF MARGARET AVE AND BLANFORD ST
 BM #10 ELEV=598.91
 SET SPIKE S SIDE UTILITY POLE NW CORNER OF MARGARET AVE AND OTTAWA AVE

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

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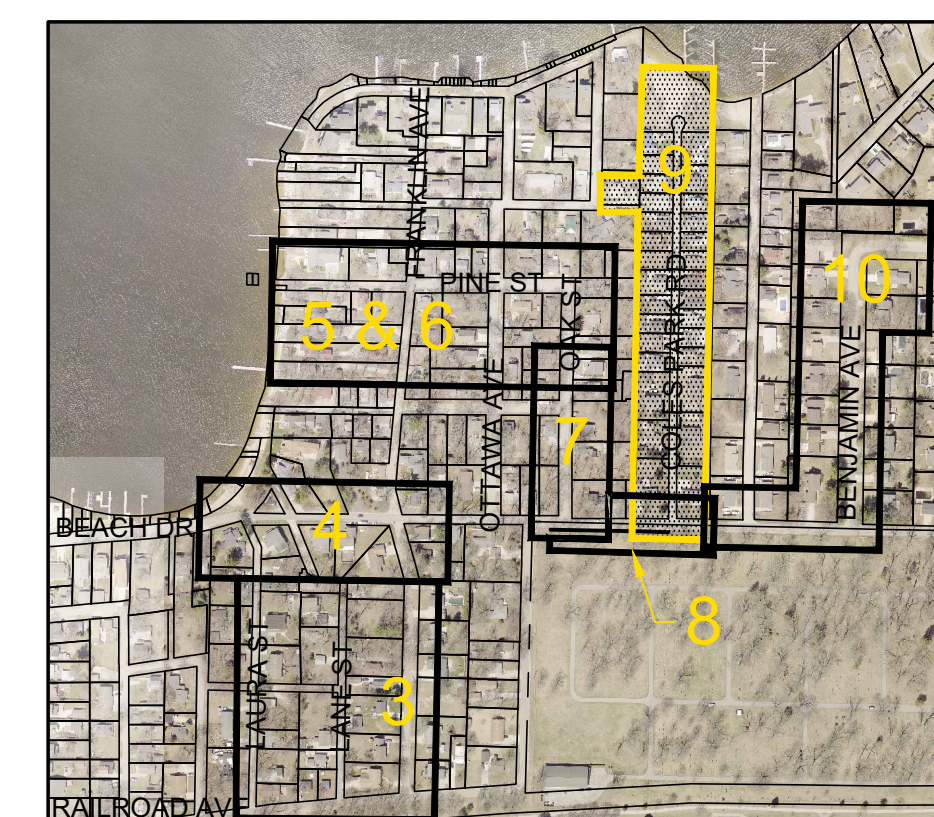
LEGEND

- PROPERTY LINE OR R.O.W. LINE
- EDGE OF PAVEMENT
- X- FENCE
- - - EXISTING GUARDRAIL
- WETLANDS (AS MARKED BY OTHERS)
- EXISTING SPOT ELEVATION
- EXISTING CONTOUR ELEVATION
- EDGE OF WOODS
- DECIDUOUS TREE
- CONIFEROUS TREE
- BUSH
- STUMP
- EXISTING GAS LINE
- EXISTING STORM SEWER
- EXISTING SANITARY SEWER
- EXISTING WATER MAIN
- EXISTING MANHOLE
- EXISTING STORM CATCH BASIN
- EXISTING WELL LOCATION
- EXISTING WATER VALVE
- EXISTING CURB STOP / METER
- EXISTING CATCH BASIN
- BENCH MARK LOCATION
- EXISTING SIGN
- EXISTING MAILBOX
- EXISTING LIGHT POLE
- EXISTING GUY ANCHOR
- EXISTING UTILITY POLE
- EXISTING TELEPHONE PEDESTAL
- EXISTING DRAIN
- PROPOSED DRAIN
- PROPOSED STORM SEWER
- SOIL TYPE
- PERMANENT SOIL EROSION CONTROL MEASURE OR RESTORATION DETAIL
- TEMPORARY SOIL EROSION CONTROL MEASURE
- SUMP LEAD TO PROPERTIES
- HMA RESTORATION



COLES PARK ROAD
(20' R.O.W.)

BEACH DR
(25' R.O.W.)



KEY PLAN
NO SCALE

COLES PARK ROAD
 STA 0+00 TO STA 12+00

FOR CONSTRUCTION

NO.	REVISIONS	DATE	BY
1	ADDENDUM NO. 1	5/18/23	JAJ
2	ADDENDUM NO. 2	7/2/22	JAJ

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JOE BUSH
 OTTAWA COUNTY WATER RESOURCES COMMISSIONER

COLES PARK DRAIN DRAINAGE DISTRICT
 PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
 OTTAWA COUNTY, MICHIGAN

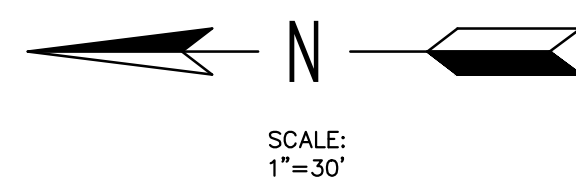
PROJECT NO.
19046

SHEET NO.
9 OF 12

RHODA ST
(66' R.O.W.)



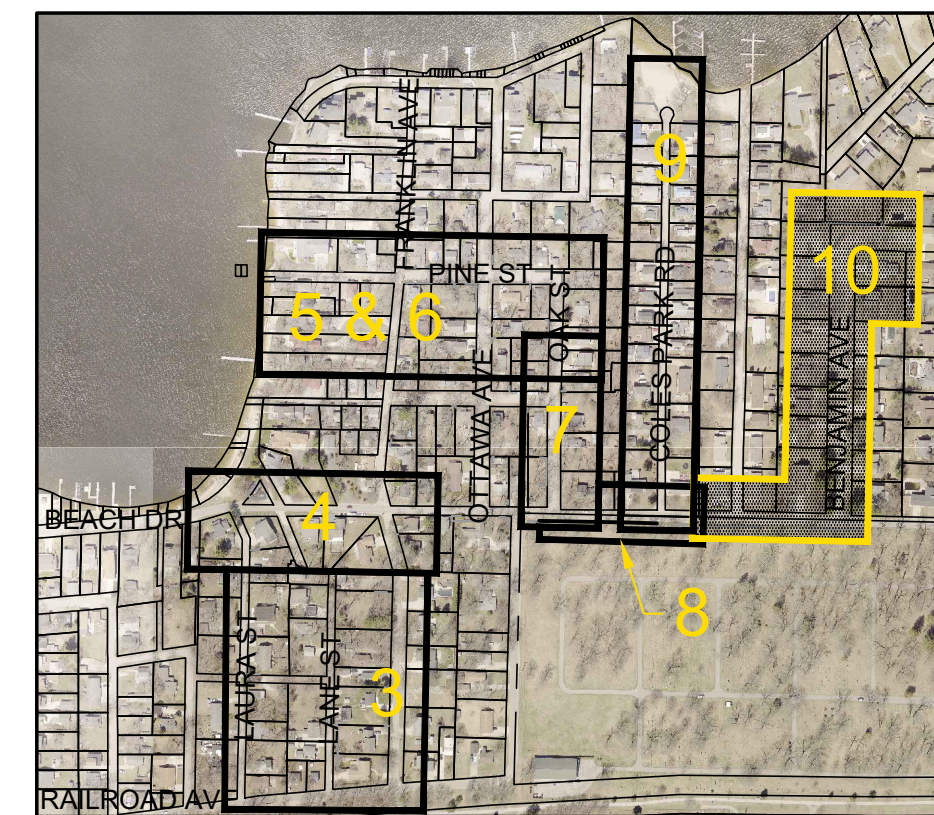
BENJAMIN AVENUE
(66' R.O.W.)



SOIL TYPES AND ABBREVIATIONS	
Ah	Houghton-Adrian mucks, 0 to 1 percent slopes
PifabB	Plainfield sand, lake plain, 0 to 6 percent slopes
W	Water

LEGEND

- = PROPERTY LINE OR R.O.W. LINE
- = EDGE OF PAVEMENT
- X- = FENCE
- o-o- = EXISTING GUARDRAIL
- [Wetland Symbol] = WETLANDS (AS MARKED BY OTHERS)
- +560 = EXISTING SPOT ELEVATION
- [Contour Symbol] = EXISTING CONTOUR ELEVATION
- [Woods Symbol] = EDGE OF WOODS
- [Deciduous Tree Symbol] = DECIDUOUS TREE
- [Coniferous Tree Symbol] = CONIFEROUS TREE
- [Bush Symbol] = BUSH
- [Stump Symbol] = STUMP
- GAS — = EXISTING GAS LINE
- - - EX 12" SAN = EXISTING STORM SEWER
- - - EX 12" SAN = EXISTING SANITARY SEWER
- - - = EXISTING WATER MAIN
- = EXISTING MANHOLE
- ⊕ = EXISTING STORM CATCH BASIN
- ⊙ = EXISTING WELL LOCATION
- ⊗ = EXISTING WATER VALVE
- = EXISTING CURB STOP / METER
- [BM Symbol] = EXISTING CATCH BASIN
- [BM Symbol] = BENCH MARK LOCATION
- [Sign Symbol] = EXISTING SIGN
- [Mailbox Symbol] = EXISTING MAILBOX
- [Light Pole Symbol] = EXISTING LIGHT POLE
- [Guy Anchor Symbol] = EXISTING GUY ANCHOR
- [Utility Pole Symbol] = EXISTING UTILITY POLE
- [Telephone Pedestal Symbol] = EXISTING TELEPHONE PEDESTAL
- = EXISTING DRAIN
- - - = PROPOSED DRAIN
- - - = PROPOSED STORM SEWER
- La = SOIL TYPE
- [XX P] = PERMANENT SOIL EROSION CONTROL MEASURE OR RESTORATION DETAIL
- [XX T] = TEMPORARY SOIL EROSION CONTROL MEASURE
- [SL] = SUMP LEAD TO PROPERTIES
- [HMA Symbol] = HMA RESTORATION



KEY PLAN
NO SCALE

FOR CONSTRUCTION

BM #13 ELEV=597.55
SET SPIKE N SIDE UTILITY POLE ON
S SIDE OF BEACH DR ACROSS
FROM BENJAMIN AVE

BM #14 ELEV=599.03
SET SPIKE W SIDE OF 8" TREE AT
SE CORNER OF BENJAMIN AVE AND
RHODA ST

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

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NO.	REVISIONS	DATE	BY
1	ADDENDUM NO. 1	5/18/22	JAJ
2	ADDENDUM NO. 2	7/6/22	JAJ

4063 Grand Oak Drive Suite A109
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Engineering & Surveying

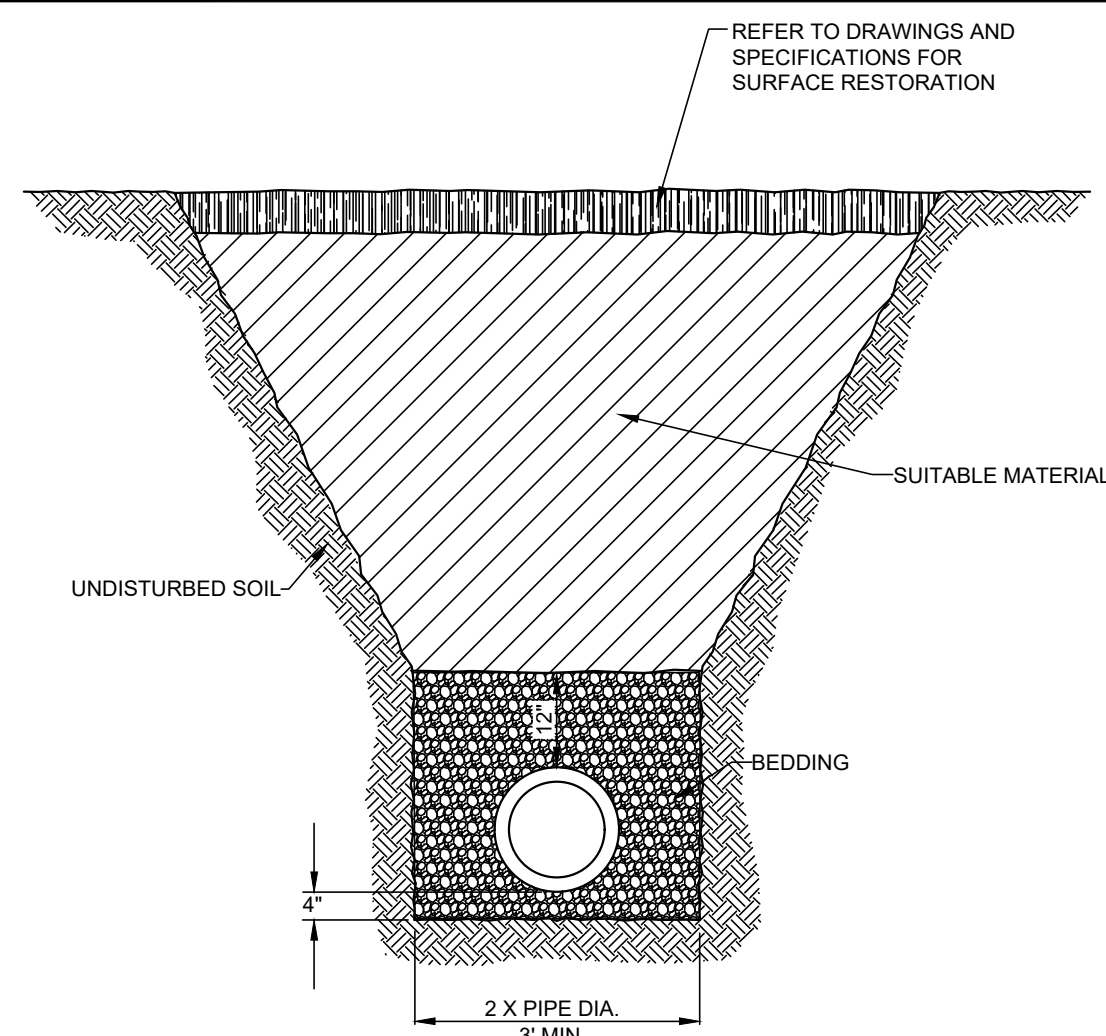
JOE BUSH
OTTAWA COUNTY WATER RESOURCES COMMISSIONER
COLES PARK DRAIN DRAINAGE DISTRICT
PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
OTTAWA COUNTY, MICHIGAN

PROJECT NO.
19046

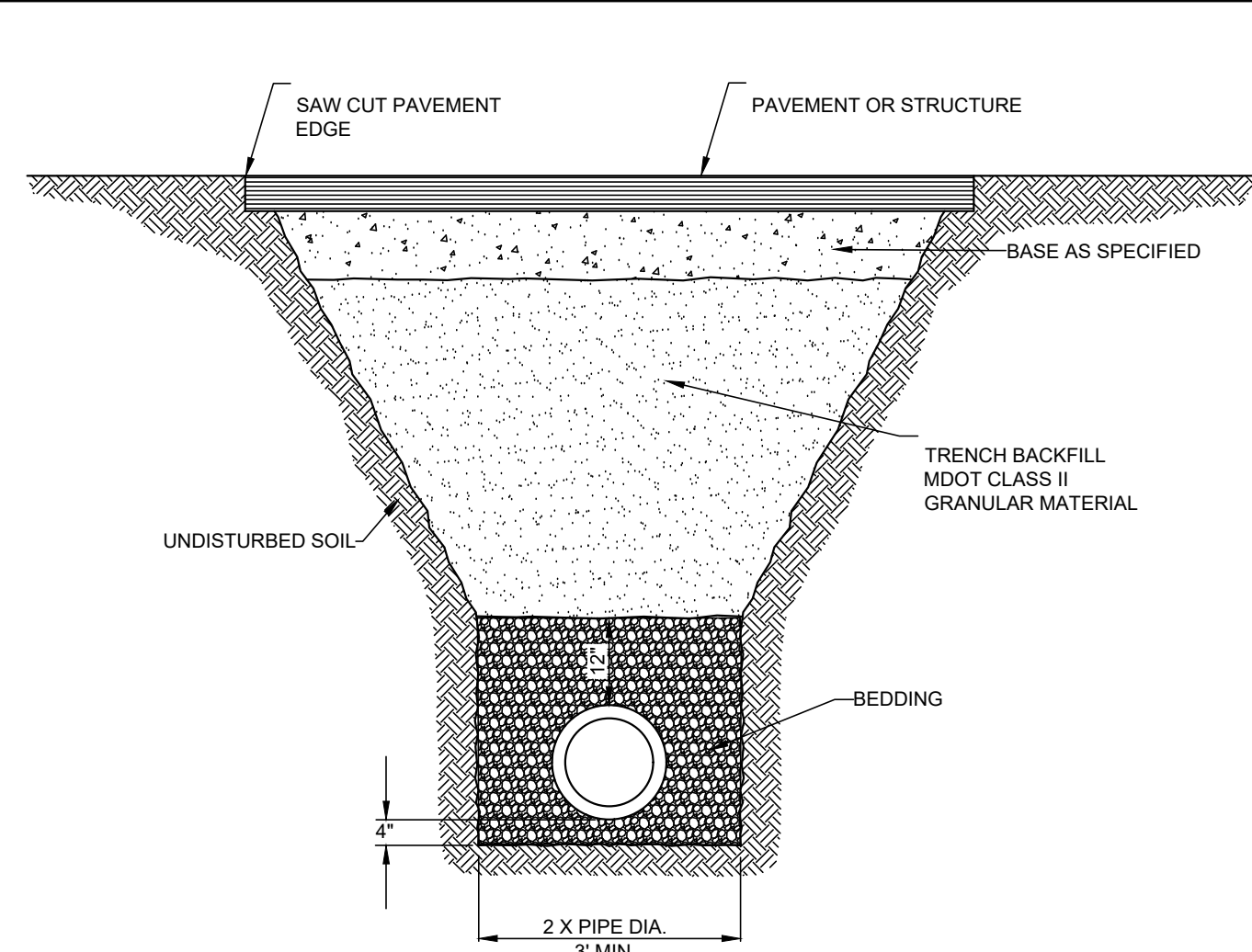
SHEET NO.
10 OF 12

RHODA STREET AND
BENJAMIN AVENUE

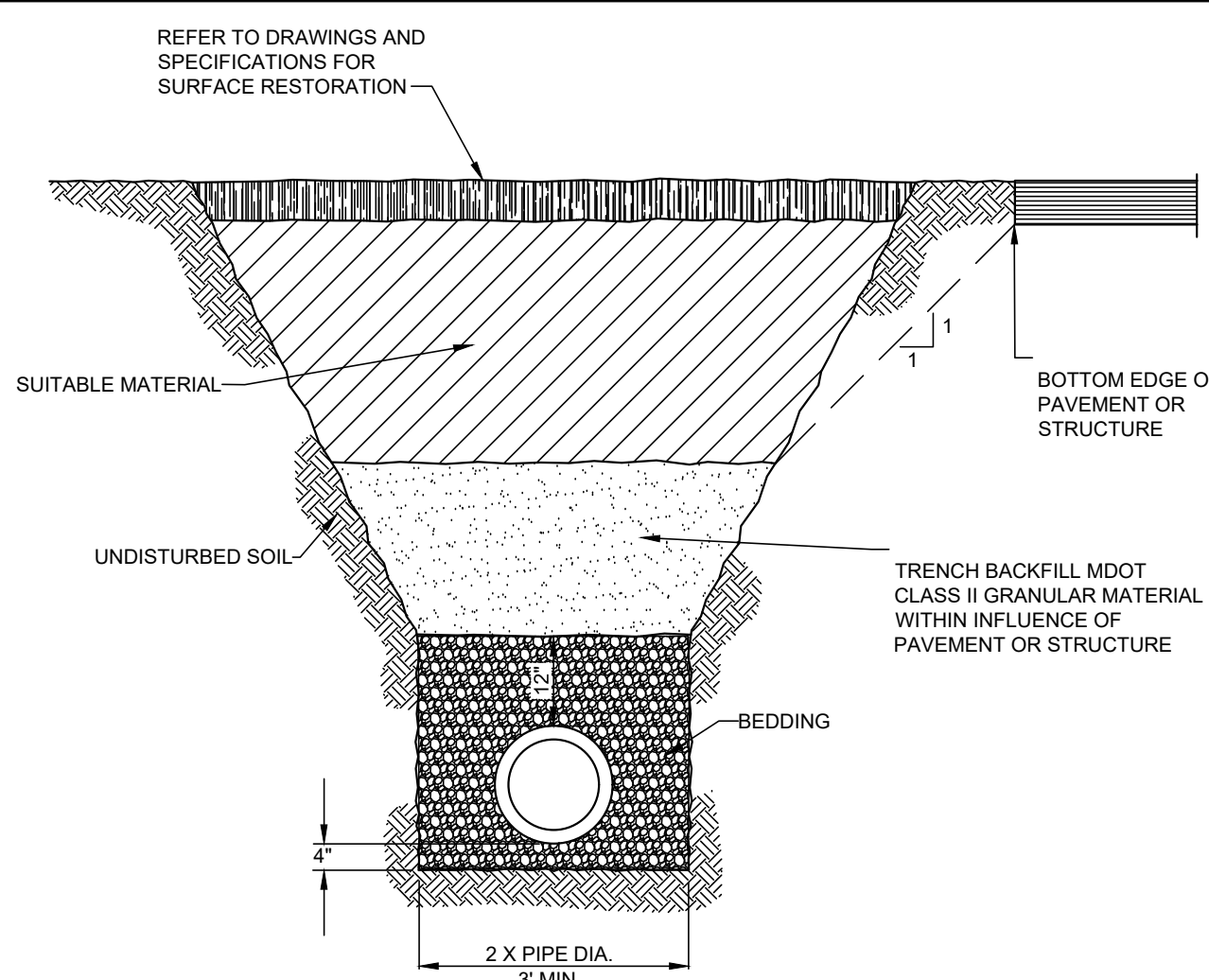
BEACH DR
(25' R.O.W.)
(SEE SHEET 8)



TRENCH NOT ADJACENT TO PAVEMENT OR STRUCTURE
SCALE: 1"=2'



TRENCH BELOW PAVEMENT OR STRUCTURE
SCALE: 1"=2'



TRENCH ADJACENT TO PAVEMENT OR STRUCTURE
SCALE: 1"=2'

APPROXIMATE CONSTRUCTION SCHEDULE FOR SESC MEASURES

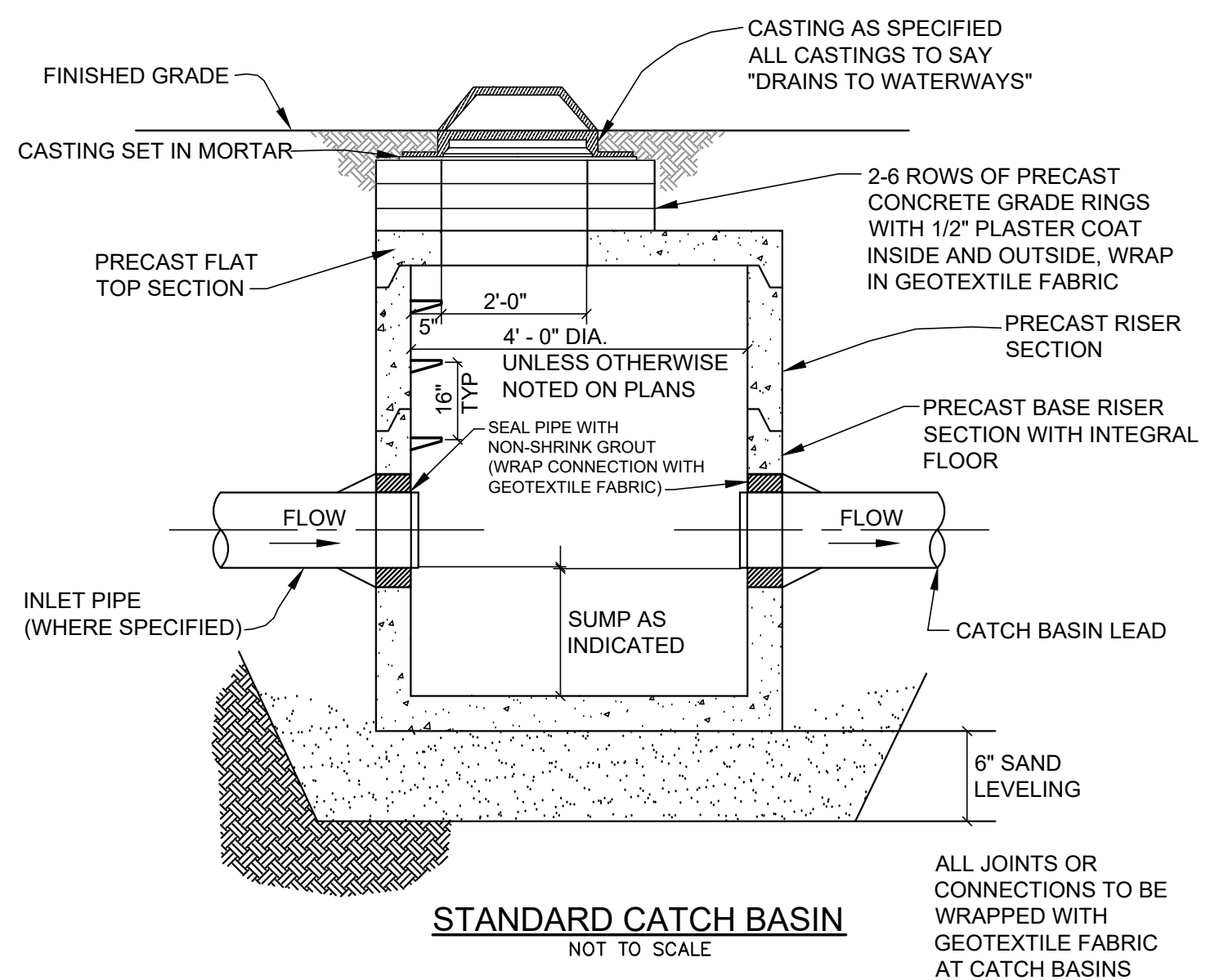
SESC - CONSTRUCTION SEQUENCE	JULY 2022	AUG 2022	SEP 2022	OCT 2022
INSTALL TEMPORARY SESC MEASURES:				
A. STABILIZED CONSTRUCTION ACCESSSES	■			
B. CONSTRUCTION/TREE PROTECTION FENCE	■			
C. CATCH BASIN PROTECTION	■			
D. STORM DRAIN INLET PROTECTION	■			
E. SEEDING		■	■	■
MAINTAIN TEMPORARY SESC MEASURES		■	■	■
STORM SEWER INSTALLATION			■	■
PAVEMENT CONSTRUCTION			■	■
FINAL GRADE			■	■
FINAL SITE STABILIZATION (TO BE COMPLETED WITHIN 24 HOURS OF FINAL GRADING OR ACTIVITY WITHIN THAT AREA)			■	■
REMOVE TEMPORARY SESC MEASURES				■
PERMANENT SESC MEASURES				■

P = PERMANENT MEASURE # T = TEMPORARY MEASURE

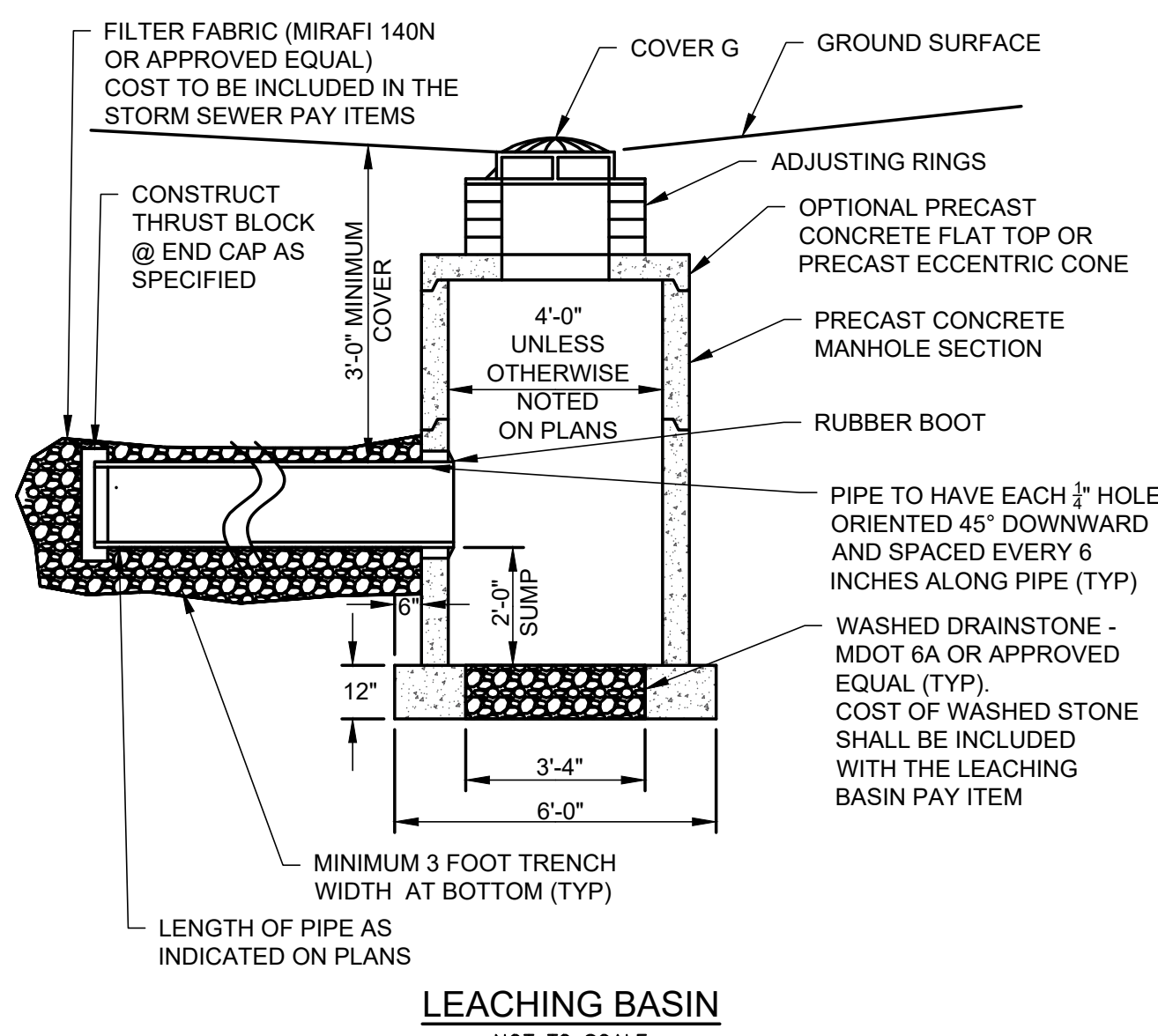
SOIL EROSION AND SEDIMENTATION CONTROL MEASURES

1	SEEDING	When bare soil is exposed, temporarily or permanently, to erode, surface water runoff, or erosion, seed the area with grass or other vegetation to stabilize the soil and prevent erosion.
2	MULCH	On flat areas, mild slopes, grassed waterways and spillways, erosion slopes and dikes, borrow and stockpile areas and spoil piles when areas are subject to raindrop impact, and erosion forces from wind or water.
15	PAVING	Protects areas which cannot otherwise be protected, but increases runoff volume and velocity. Irregular surface will help slow velocity.
41	CATCH BASIN	Where surface water accumulates and needs an outlet or an open drain discharges to a stream or drain of erodible velocities. With an enclosed drain system to provide an inlet and a sump.
56	STREET SWEEPING	Remove sediment from pavement minimizing non-point source pollution.
60	STORM DRAIN INLET PROTECTION	Around the entrance to a newly constructed catch basin or an inlet that will capture runoff from earth change activity.
61	SILT FENCE	As a temporary measure used to capture sediment from sheet flow. May also divert small volumes of sheet flow to protected outlets.
65	TURBIDITY CURTAIN	Within a stream or drain parallel to flow when a stock water area is necessary to isolate earth change activities from a lake or channel.

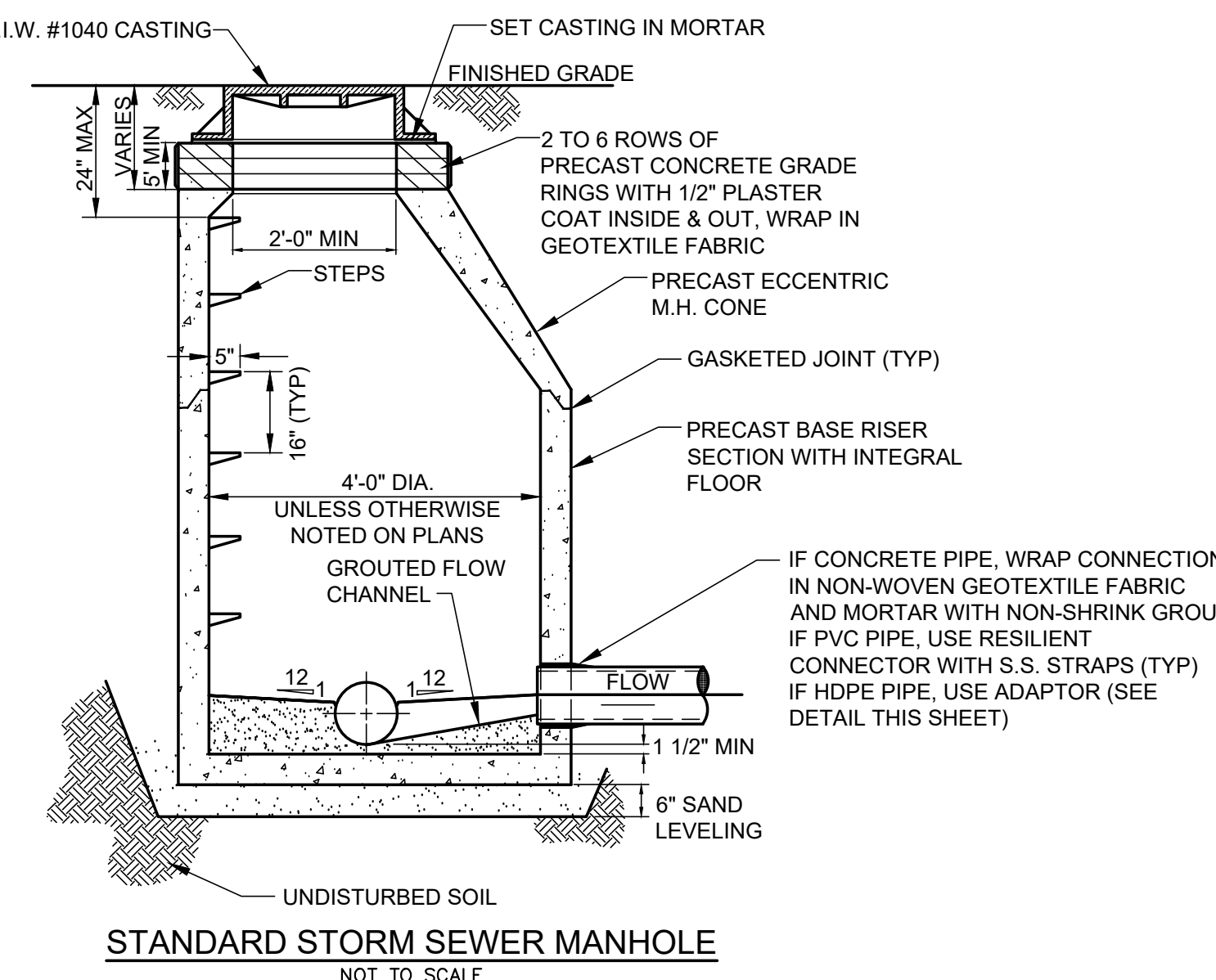
- GENERAL NOTES:
- MAINTAIN ONE LANE OF TRAFFIC PASSING EMERGENCY VEHICLES DURING CONSTRUCTION
 - SAW CUT AND REMOVE HMA ROADWAY AND DRIVEWAYS ONLY AT LIMITS OF CONSTRUCTION AS STAKED BY THE ENGINEER. PAVEMENT NOT SPECIFIED FOR REMOVAL AND DAMAGED BY WORK OPERATIONS SHALL BE REPAIRED AND COSTS BORNE BY THE CONTRACTOR.
 - VERIFY ELEVATIONS OF EXISTING UTILITIES PRIOR TO CONSTRUCTION OF STORM SEWER WHERE CONFLICTS MAY EXIST.
 - THE EXISTING WATER MAIN SHALL BE PROTECTED DURING CONSTRUCTION AND PROPER CARE GIVEN TO THE AMOUNT OF PIPE AND JOINTS EXPOSED.
 - THE SIZE, TYPE AND LOCATION OF THE EXISTING UTILITY INFORMATION SHOWN ON THIS DRAWING ARE FROM RECORD DRAWINGS MADE AVAILABLE TO ENG., INC. THIS PLAN IS NOT INTENDED FOR THE PURPOSE OF FIELD LOCATING UTILITIES. NOTIFY MISS DIG FOR ACTUAL FIELD LOCATIONS OF UNDERGROUND UTILITIES.
 - CONTRACTOR TO REMOVE AND REPLACE WATER AND SANITARY SERVICES AS REQUIRED TO INSTALL PROPOSED STORM SEWER. SERVICES TO BE REPLACED FROM R.O.W.
 - ALL SPOIL MATERIALS, INCLUDING HMA AND CONCRETE, SHALL BE REMOVED FROM THE SITE IMMEDIATELY. NO STOCKPILING OF SPOIL MATERIALS WILL BE ALLOWED UNLESS APPROVED IN WRITING BY THE ENGINEER.
 - ALL NEW CONNECTIONS INTO EXISTING STRUCTURES SHALL BE PROFESSIONALLY CORED.
 - CLEARING THAT INCLUDES CUTTING AND REMOVAL OF TREES, BRUSH AND SHRUBS UP TO 6 INCHES AS MEASURED AT BREAST HEIGHT (DBH) SHALL BE CONSIDERED AS INCLUDED WITH OTHER RELATED PAY ITEMS.
 - REMOVAL AND REINSTALLATION OF LANDSCAPING ITEMS AS NOTED ON THE DRAWINGS SHALL BE CONSIDERED AS INCLUDED WITH THE PAY ITEM BEING INSTALLED.
 - EXISTING TREES AND SHRUBS SHOWN AS BEING REMOVED AND/OR SALVAGED ON THE DRAWINGS, SHALL BE COORDINATED WITH EACH HOMEOWNER. IF THE HOMEOWNER WISHES TO SALVAGE THE EXISTING TREE AND/OR SHRUBS, THE CONTRACTOR SHALL SALVAGE EACH FOR THE HOMEOWNERS REPLANTING OUTSIDE OF THE EASEMENT. IF THEY DO NOT WISH TO SALVAGE, THE CONTRACTOR SHALL DISPOSE OF THEM.
 - SEED AND MULCH BLANKET ALL SLOPES AND BANKS AS SOON AS FINAL GRADE IS ACHIEVED.



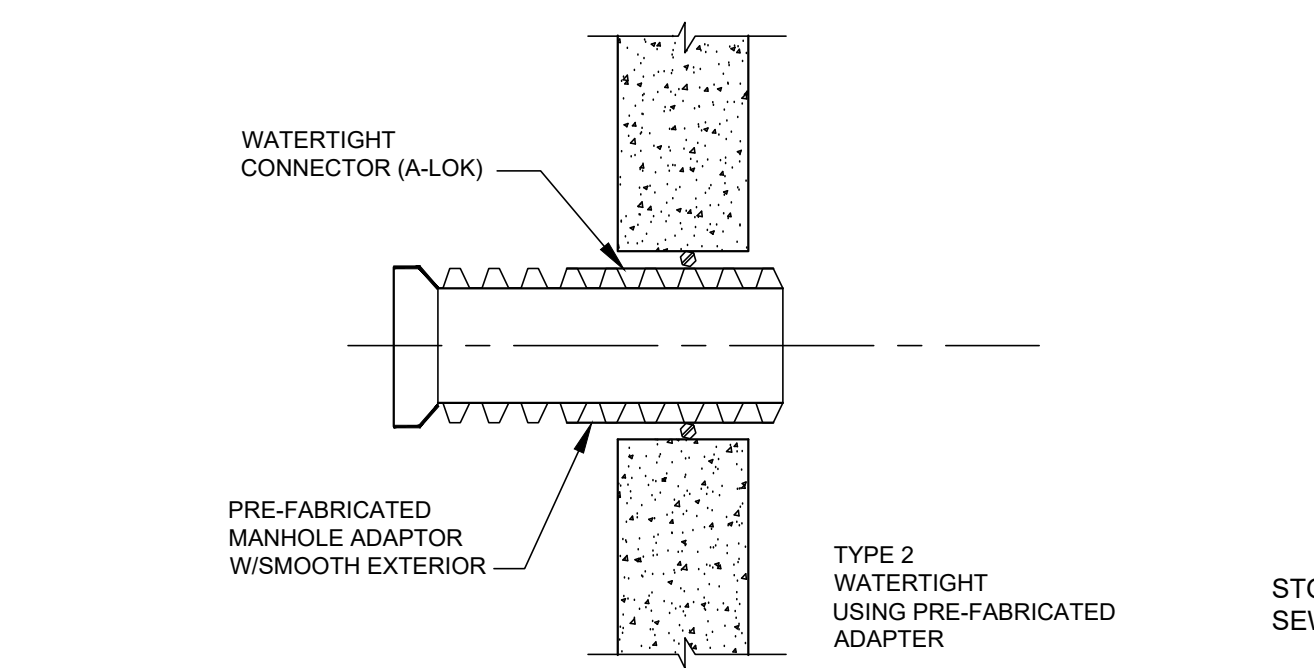
STANDARD CATCH BASIN
NOT TO SCALE



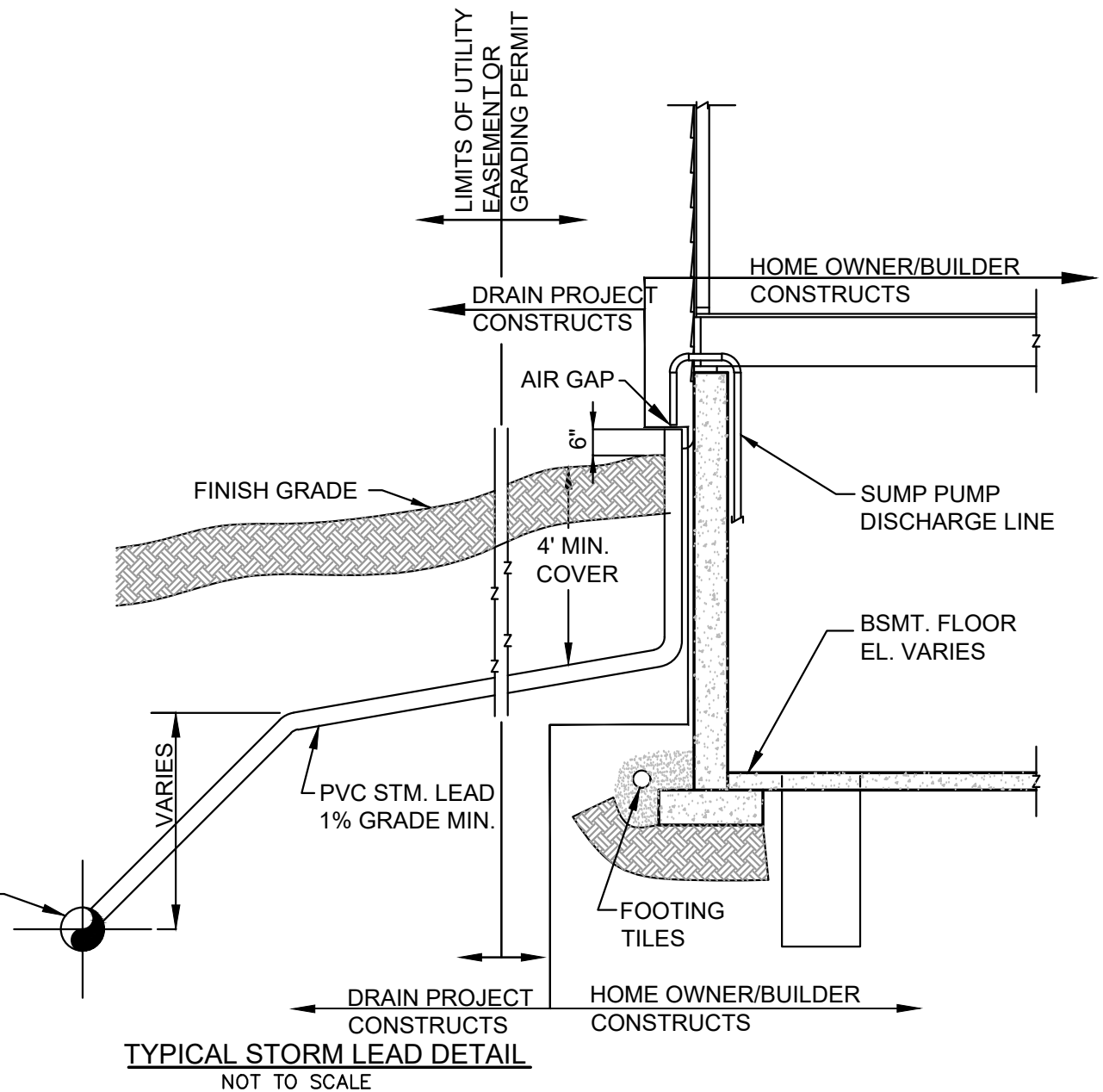
LEACHING BASIN
NOT TO SCALE



STANDARD STORM SEWER MANHOLE
NOT TO SCALE



HDPE CONNECTIONS TO CONCRETE STRUCTURES DETAIL
NO SCALE



TYPICAL STORM LEAD DETAIL
NOT TO SCALE

- CONSTRUCTION & SOIL EROSION AND SEDIMENTATION CONTROL NOTES:
- ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE IN PLACE BEFORE CONSTRUCTION BEGINS. THE CONTRACTOR IS RESPONSIBLE FOR INSPECTING ALL MEASURES AT LEAST ONCE EACH WEEK AND/OR WITHIN 24 HOURS OF A PRECIPITATION EVENT THAT RESULTS IN STORM WATER RUNOFF OR DISCHARGE.
 - SURFACE RESTORATION OF ALL SEWER TRENCHES IN LAWN AREAS SHALL BE TOP SOILED, SEEDED, AND MULCHED WITHIN 5 CALENDAR DAYS OF BACKFILLING THE TRENCH.
 - THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL AND SHALL PROVIDE ALL EQUIPMENT AND MATERIAL NECESSARY TO KEEP DUST IN CHECK AT ALL TIMES. THE CONTRACTOR SHALL RESPOND IMMEDIATELY TO ANY AND ALL COMPLAINTS. STREETS, PARKING LOTS, DRIVEWAYS, PAVED ACCESS ROADS, AND ALL OTHER PAVED SURFACES SHALL BE SWEEPED AT LEAST ONCE A DAY AND/OR AS NEEDED THROUGHOUT THE DAY.
 - MULCH AND/OR MULCH BLANKET SHALL BE APPLIED AND ANCHORED APPROPRIATELY ON ALL SLOPES 3:1 OR GREATER ON ALL SLOPES DEEMED NECESSARY TO PREVENT OR CORRECT EROSION PROBLEMS AND ON ALL DISTURBED AREA DUE TO CONSTRUCTION.
 - ALL TEMPORARY SOIL EROSION MEASURES SHALL BE REMOVED AFTER PERMANENT MEASURES HAVE BEEN ESTABLISHED.
 - ALL CONSTRUCTION SHALL BE CONFINED TO AREAS OF DISTURBANCE WITHIN THE ROAD RIGHT OF WAY AND/OR WITHIN STORM SEWER EASEMENTS. NO WORK, MATERIAL, OR STOCKPILES WILL BE ALLOWED OUTSIDE OF THESE LIMITS.
 - ALL TRENCHES SHALL BE BACKFILLED TO GRADE OR PROPERLY PROTECTED IN ACCORDANCE WITH PROJECT PLANS & SPECIFICATIONS AT THE END OF EVERY DAY. AT NO TIME SHALL A TRENCH BE LEFT OPEN FOR A PERIOD LONGER THAN 48 HOURS.
 - UNLESS SPECIFICALLY NOTED OTHERWISE, ALL UTILITY TRENCHES SHALL CONFORM TO TYPICAL TRENCH DETAIL. SEE SHEET 11 OF 12.
 - PROTECT ALL TREES AND VEGETATION NOT SCHEDULED TO BE REMOVED. ENGINEER APPROVAL IS REQUIRED FOR ANY UNSCHEDULED REMOVAL OF TREES, SHRUBS OR LANDSCAPING.
 - EROSION AND SEDIMENTATION FROM WORK ON THIS PROJECT SHALL BE CONTAINED WITHIN THE WORK AREA AND NOT ALLOWED TO COLLECT ON OFF-SITE AREAS OR IN WATERWAYS - WATERWAYS INCLUDE BOTH NATURAL AND MAN-MADE OPEN DITCHES, STREAMS, STORM DRAINS, LAKES AND PONDS.
 - SILT FENCE MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY BUILT-UP SEDIMENT. CONTRACTORS SHALL BE RESPONSIBLE TO REMOVE, REPLACE, RETRENCH OR REBACKFILL THE SILT FENCE SHOULD IT FAIL OR BECOME DAMAGED DURING THE CONSTRUCTION.
 - INLET FILTER MAINTENANCE SHALL INCLUDE THE REMOVAL OF ANY ACCUMULATED SILT OR OTHER DEBRIS. IF INLET FILTERS CANNOT BE CLEANED, OR ARE DAMAGED, THEN THE FILTER AND/OR STONE SHALL BE REPLACED.

- SESC NOTES
- GENERAL MAINTENANCE
- TEMPORARY SESC MEASURES TO BE MAINTAINED BY THE CONTRACTOR AT ALL TIMES.
- SILT FENCE
- SILT FENCE IS TO BE TRENCHED IN NO LESS THAN 6 INCHES BELOW THE GROUND SURFACE
 - INSPECT SILT FENCE IMMEDIATELY FOLLOWING EACH RAINFALL
 - REPAIR WHEN SILT FENCE IS SAGGING OR HAS BEEN REMOVED/TORN DOWN
 - WHEN SILT COLLECTS TO HALF THE HEIGHT OF THE FENCE ALL SILT IS TO BE REMOVED AND FENCE REPAIRED
 - REMOVE SILT FENCE WHEN PERMANENT SESC MEASURES ARE IN PLACE AND VEGETATION IS ESTABLISHED
- SEEDING AND MULCHING
- SEEDING PRACTICES INCLUDE TOPSOIL (AS REQUIRED), AND MULCH OR MULCH BLANKET (AS DIRECTED BY ENGINEER OR REQUIRED ON PLANS).
 - WHERE NECESSARY, APPROPRIATE MULCH BLANKET MUST BE APPLIED BASED ON SLOPE AND GROWING CONDITIONS AS APPROVED BY THE ENGINEER.
 - ALL SLOPES AND HIGHLY ERODIBLE AREAS WILL BE TEMPORARILY SEEDED AND MULCHED WHEN CONSTRUCTION ACTIVITY IS NOT TAKING PLACE.
 - SEED AND MULCH IS TO BE INSPECTED FOLLOWING EACH RAIN EVENT TO DETERMINE IF CONCENTRATED FLOWS ARE PRESENT
 - IN THE EVENT THAT SEED AND MULCH ARE REMOVED BY ERODIVE RUNOFF, REPAIRS ARE TO BE MADE IMMEDIATELY.
 - SITE WILL BE PERMANENTLY STABILIZED WITHIN 5 DAYS OF FINAL GRADE
- STORM DRAIN INLET PROTECTION
- STORM DRAIN INLETS TO BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT.
 - EMPTY SEDIMENT AND KEEP INLET PROTECTION CLEAN DURING INSPECTION AND MAINTENANCE OPERATIONS. COMPLIANCE WITH PART 91 OF PA 451
 - RESPOND IMMEDIATELY TO STORMWATER OPERATOR AND/OR SOIL EROSION AND SEDIMENTATION CONTROL INSPECTOR CONCERNS. MAKE CORRECTIVE MEASURES AS REQUIRED
- CONTINUED MAINTENANCE PLAN
- STORMWATER OPERATOR/APA OWNER OR MAINTENANCE SUPERVISOR WILL INSPECT MONTHLY THROUGH THE FIRST GROWING SEASON. NON ESTABLISHED VEGETATION WILL BE REPAIRED/RESEEDED AS NECESSARY

FOR CONSTRUCTION

SESC PLAN AND STANDARD DETAILS

NO.	REVISIONS	DATE	BY
1	APPENDIX NO. 1	5/18/22	JAJ
2	APPENDIX NO. 2	7/22/22	JAJ

4063 Grand Oak Drive Suite A109
Lansing, MI 48911
517.867.1100

16930 Robbins Road Suite 105
Grand Haven, MI 49417
616.743.7070
engdol.com

JOE BUSH
OTTAWA COUNTY WATER RESOURCES COMMISSIONER

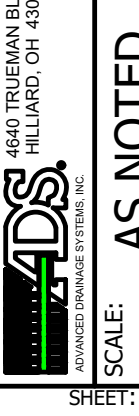
COLES PARK DRAIN DRAINAGE DISTRICT
PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
OTTAWA COUNTY, MICHIGAN

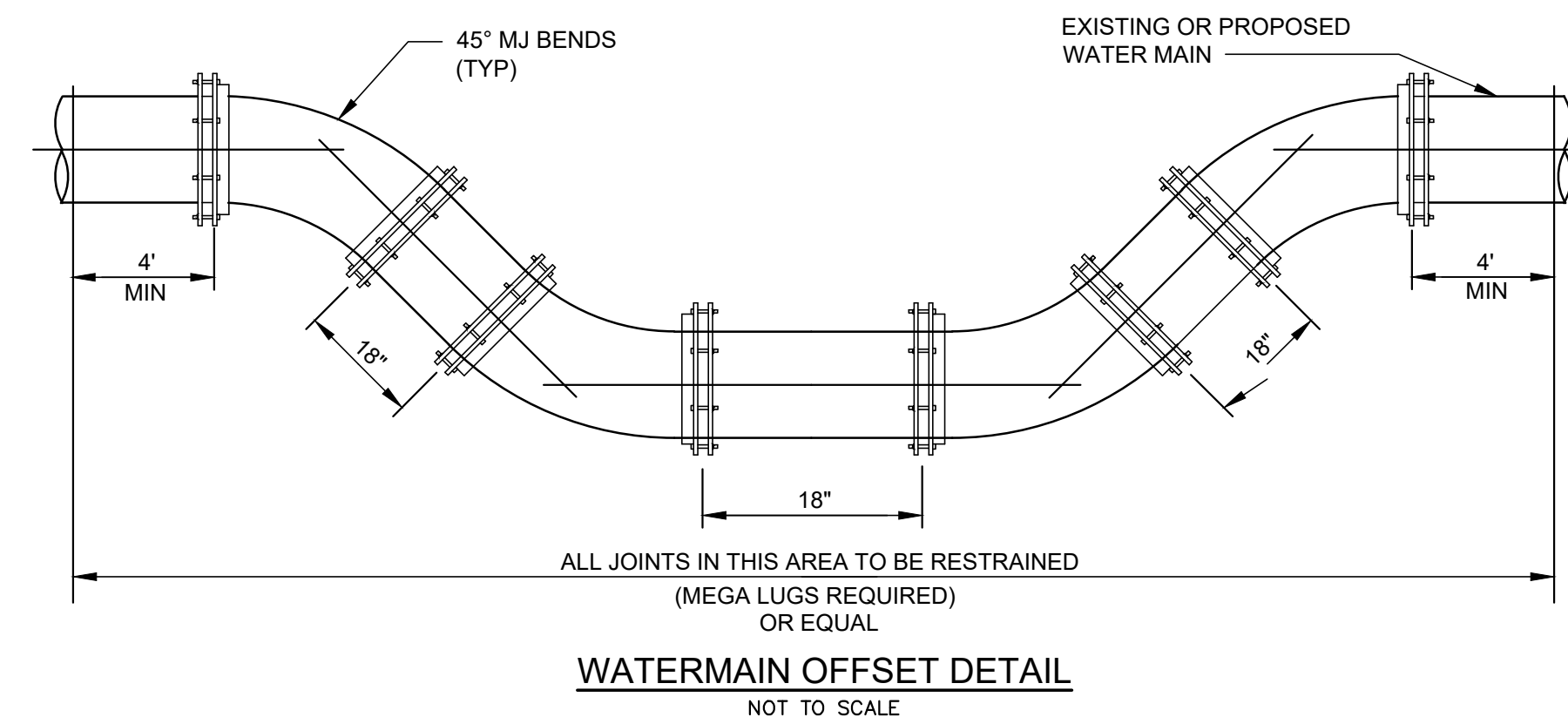
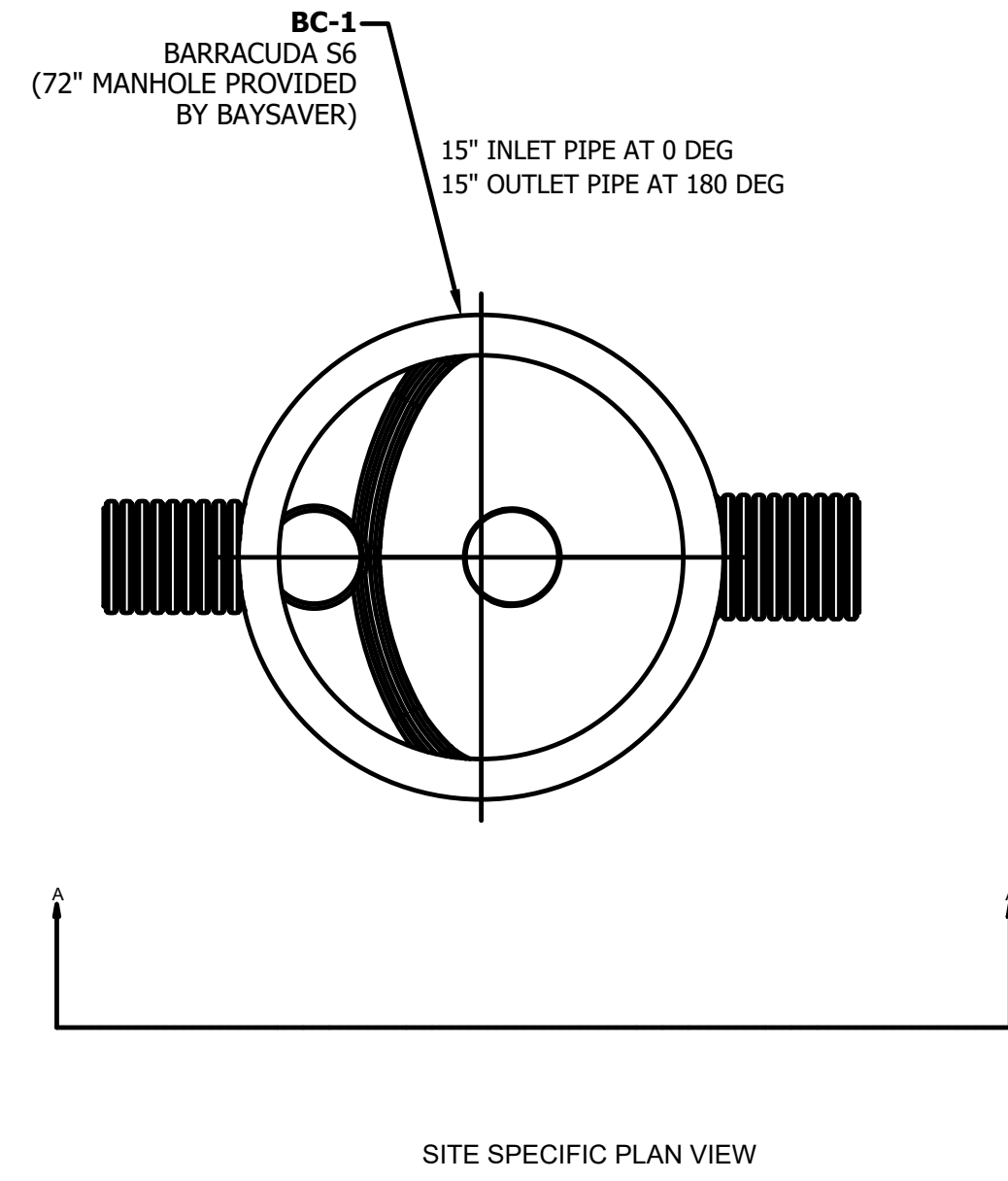
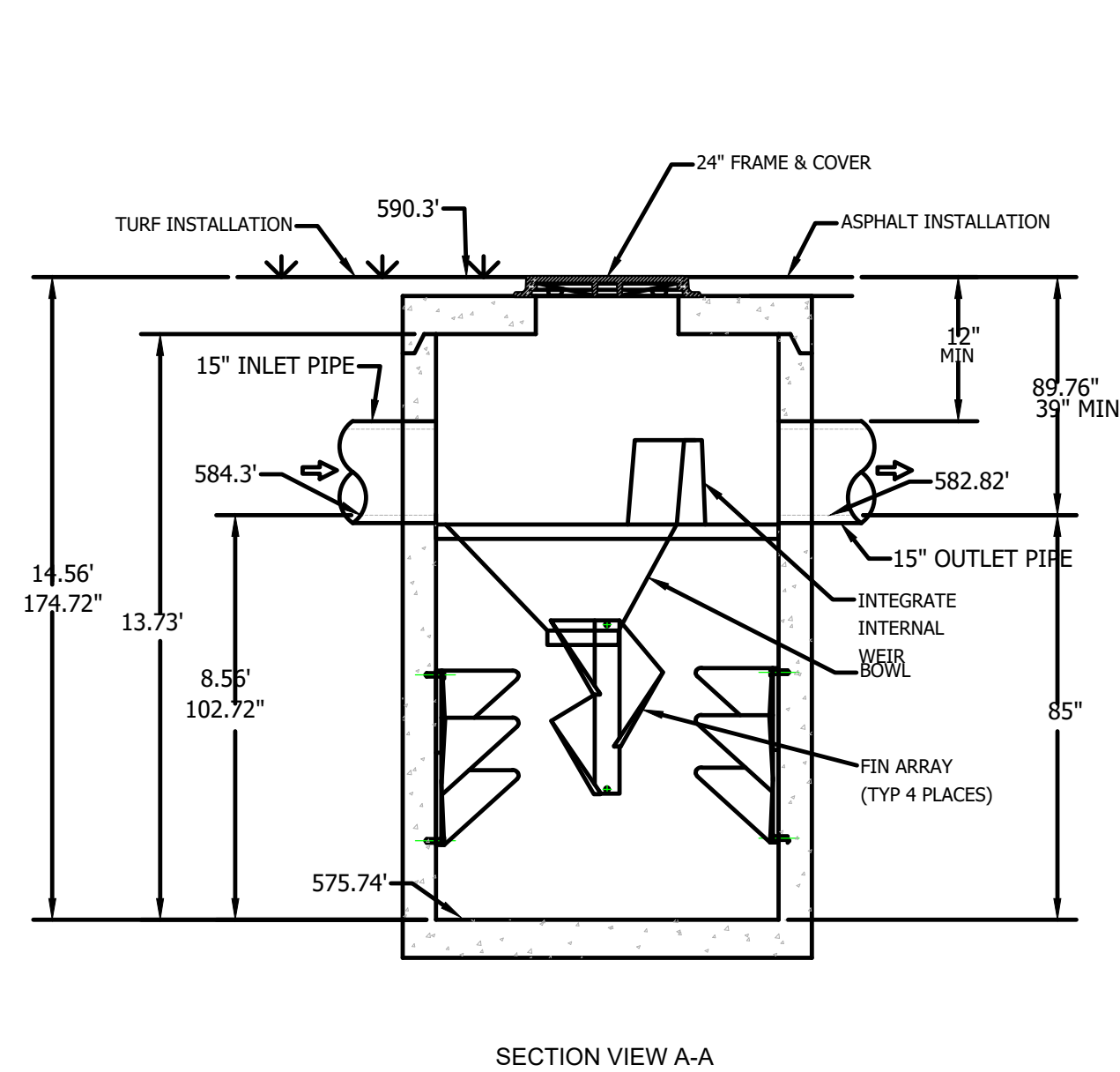
PROJECT NO.
19046

SHEET NO.
11 OF 12

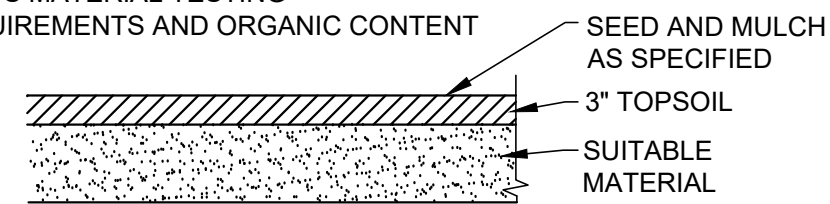
PRODUCT SPECIFICATIONS

THE STORMWATER TREATMENT UNIT SHALL BE AN INLINE UNIT CAPABLE OF CONVEYING 100% OF THE DESIGN PEAK FLOW. IF PEAK FLOW RATES EXCEED MAXIMUM HYDRAULIC RATE, THE UNIT SHALL BE INSTALLED OFFLINE.
 THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 80% OF THE SUSPENDED SOLIDS ON AN ANNUAL AGGREGATE REMOVAL BASIS. SAID REMOVAL SHALL BE BASED ON FULL-SCALE THIRD PARTY TESTING USING 0K-110 MEDIA GRADATION OR EQUIVALENT AND 300 mg/L INFLUENT CONCENTRATION. SAID FULL SCALE TESTING SHALL HAVE INCLUDED SEDIMENT CAPTURE BASED ON ACTUAL TOTAL MASS COLLECTED BY THE STORMWATER TREATMENT UNIT.
 -OR-
 THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS USING A MEDIA MIX WITH 450-75 MICRON AND 200 MG/L INFLUENT CONCENTRATION.
 -OR-
 THE BARRACUDA UNIT SHALL BE DESIGNED TO REMOVE AT LEAST 50% OF TSS PER CURRENT NJDEP/NJCAT HDS PROTOCOL.

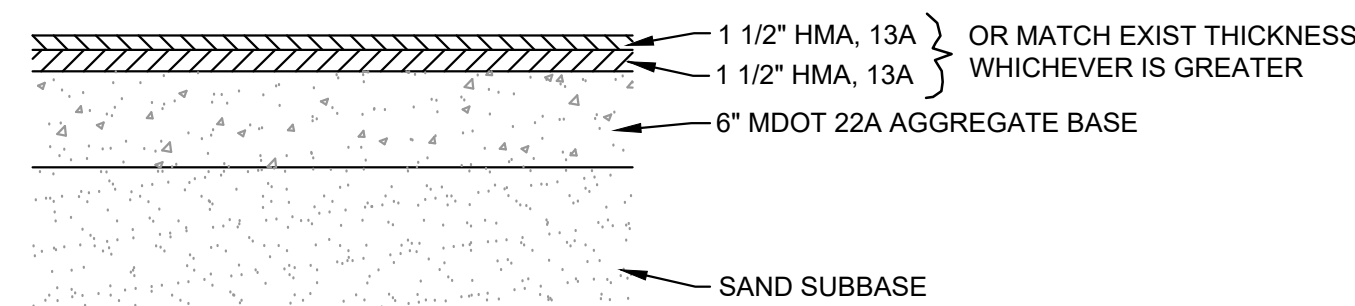
BARRACUDA S6	
UNIT ID	S6
PEAK FLOW RATE CFS	5
TREATMENT FLOW RATE CFS	2
TREATMENT FLOW RATE PER NJDEP	
PROJECT #	COLES PARK SPRING LAKE, MI
DRAWN	
CHECKED	
DATE	
PROJECT #	
	
<p>AS NOTED</p> <p>SCALE: 1" = 1'-0"</p> <p>SHEET: 1 OF 1</p>	



EXISTING TOPSOIL CAN BE USED IF STRIPPED PRIOR AND STOCKPILED AND MEETS MATERIAL TESTING REQUIREMENTS AND ORGANIC CONTENT

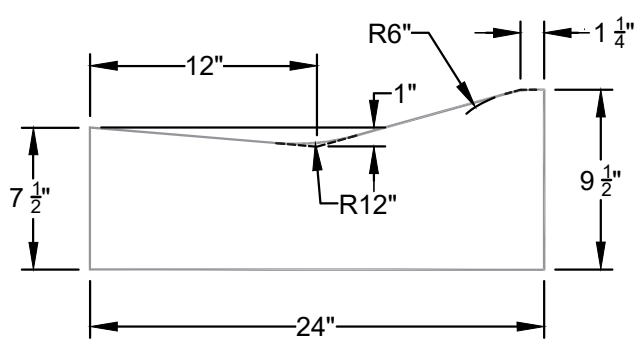


SURFACE RESTORATION CROSS SECTION
NOT TO SCALE

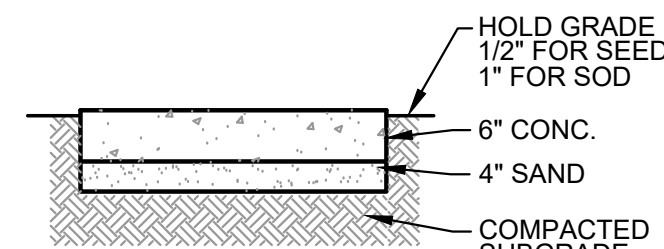


HMA ROADWAY RESTORATION PAVEMENT SECTION
NOT TO SCALE

*ROADWAY SHOULDERS SHALL BE COMPACTED MDOT 22A GRAVEL.



CONCRETE ROLLED CURB (RESIDENTIAL)
NOT TO SCALE



CONCRETE DRIVEWAY SECTION
NOT TO SCALE

FOR CONSTRUCTION

STANDARD DETAILS

NO.	REVISIONS	BY	DATE
1	ADDENDUM NO. 1	SJM	5/18/22
2	ADDENDUM NO. 2	SJM	7/6/22

4063 Grand Oak Drive Suite A109
Lansing, MI 48911
517.887.1100

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PART OF SECTION 14, SPRING LAKE TOWNSHIP, T8N, R16W,
OTTAWA COUNTY, MICHIGAN

PROJECT NO.
19046

SHEET NO.

12 OF 12