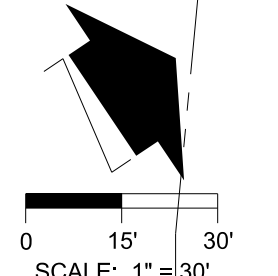
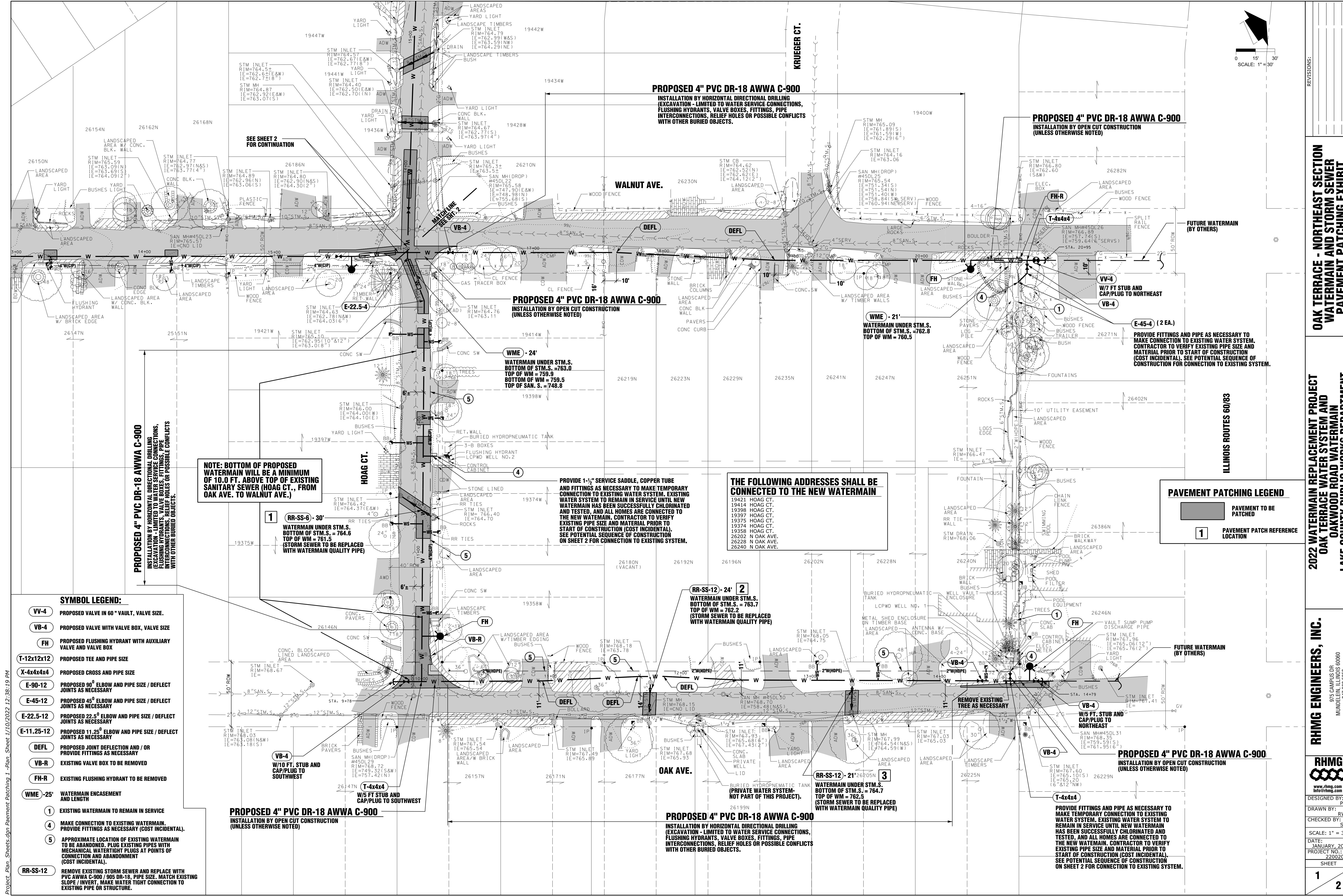


Project	Oak Terrace Water Main Replacement						
Project #	2015.003						
Date	1/11/2022						
Subject	LCPW and Fremont Township Patching and Storm Sewer R&R						
Exhibit A - Estimated Quantities and Costs							
Pavement Removal and Replacement							
		LCPW	Fremont	LCPW	Fremont	Pavement R&R	Fremont
Location #	Location	Patch Area (sf)	Patch Area (sf)	Patch Area (sy)	Patch Area (sy)	Unit Price/sy	Cost
1	19375 Hoag	200	80	22.2	8.9	\$120.00	\$1,066.67
2	26180 Oak	0	180	0.0	20.0	\$120.00	\$2,400.00
3	26202 Oak	20	160	2.2	17.8	\$120.00	\$2,133.33
4	19428 Hoag	180	20	20.0	2.2	\$120.00	\$266.67
5	19441 Hoag	200	30	22.2	3.3	\$120.00	\$400.00
6	19456 Hoag	220	60	24.4	6.7	\$120.00	\$804.00
7	Hoag and Acorn	<u>170</u>	<u>120</u>	<u>18.9</u>	<u>13.3</u>	\$120.00	<u>\$1,600.00</u>
Totals		1210	710	110.0	72		\$8,670.67
Pavement replacement shall consist of 1-1/2" Bituminous Surface Hot Mix, 3-1/2" Bituminous Binder Hot Mix and 12" CA6, Grade 8							
Storm Sewer Removal and Replacement							
		Storm	LCPW	Fremont	Total	Storm Sewer	Fremont
Location #	Location	Dia.	Storm Length (ft)	Storm Length (ft)	Storm Length (ft)	Unit Price/ft	Cost
1	19375 Hoag	6	22	8	30	\$50.00	\$400.00
2	26180 Oak	12	6	18	24	\$60.00	\$1,080.00
3	26202 Oak	12	8	13	21	\$60.00	\$780.00
4	19428 Hoag	8	20	10	30	\$55.00	\$550.00
5	19441 Hoag	8	24	9	33	\$55.00	\$495.00
6	19456 Hoag	16	22	13	35	\$90.00	\$1,170.00
7	Hoag and Acorn	16	<u>26</u>	<u>7</u>	<u>33</u>	\$90.00	<u>\$630.00</u>
Totals			128	78	206		\$5,105.00
Storm Sewer to be replaced with AWWA PVC C900/C905 DR-18 pipe.							
Total Estimated Cost		\$13,775.67					
Use		\$15,000.00					
Note: Unit Prices are an estimate.							



REVISIONS:

OAK TERRACE - NORTHEAST SECTION
WATERMAIN AND STORM SEWER
PAVEMENT PATCHING EXHIBIT

2022 WATERMAIN REPLACEMENT PROJECT
OAK TERRACE WATER SYSTEM AND
OAKWOOD ROAD WATERMAIN
LAKE COUNTY PUBLIC WORKS DEPARTMENT

RHMG ENGINEERS, INC.
975 CAMPUS DR
MUNDELEIN, ILLINOIS 60060
847.382.5959



DESIGNED BY: PDS
DRAWN BY: RWM
CHECKED BY: SEZ
SCALE: 1" = 30'
DATE: JANUARY, 2022
PROJECT NO.: 22002021
SHEET

PROPOSED 4" PVC DR-18 AWWA C-900
INSTALLATION BY HORIZONTAL DIRECTIONAL DRILLING
(EXCAVATION - LIMITED TO WATER SERVICE CONNECTIONS,
FLUSHING HYDRANTS, VALVE BOXES, FITTINGS, PIPE
INTERCONNECTIONS, RELIEF HOLES OR POSSIBLE CONFLICTS
WITH OTHER BURIED OBJECTS).

PROPOSED 4" PVC DR-18 AWWA C-900
INSTALLATION BY OPEN CUT CONSTRUCTION
(UNLESS OTHERWISE NOTED)

PROPOSED 4" PVC DR-18 AWWA C-900
INSTALLATION BY OPEN CUT CONSTRUCTION
(UNLESS OTHERWISE NOTED)

PROPOSED 4" PVC DR-18 AWWA C-900
INSTALLATION BY HORIZONTAL DIRECTIONAL DRILLING
(EXCAVATION - LIMITED TO WATER SERVICE CONNECTIONS,
FLUSHING HYDRANTS, VALVE BOXES, FITTINGS, PIPE
INTERCONNECTIONS, RELIEF HOLES OR POSSIBLE CONFLICTS
WITH OTHER BURIED OBJECTS).

**NOTE: BOTTOM OF PROPOSED
WATERMAIN WILL BE A MINIMUM
OF 10.0 FT. ABOVE TOP OF EXISTING
SANITARY SEWER (HOAG CT., FROM
OAK AVE. TO WALNUT AVE.)**

WME - 24'
WATERMAIN UNDER STM.S.
BOTTOM OF STM.S. = 763.0
TOP OF WM = 759.9
BOTTOM OF SAN. S. = 748.8

RR-SS-6 - 30'
WATERMAIN UNDER STM.S.
BOTTOM OF STM.S. = 764.6
TOP OF WM = 761.5
(STORM SEWER TO BE REPLACED
WITH WATERMAIN QUALITY PIPE)

**PROVIDE 1-1/2" SERVICE SADDLE, COPPER TUBE
AND FITTINGS AS NECESSARY TO MAKE TEMPORARY
CONNECTION TO EXISTING WATER SYSTEM. EXISTING
WATER SYSTEM TO REMAIN IN SERVICE UNTIL NEW
WATERMAIN HAS BEEN SUCCESSFULLY CHLORINATED
AND TESTED, AND ALL HOMES ARE CONNECTED TO
THE NEW WATERMAIN. CONTRACTOR TO VERIFY
EXISTING PIPE SIZE AND MATERIAL PRIOR TO
START OF CONSTRUCTION (COST INCIDENTAL).
SEE POTENTIAL SEQUENCE OF CONSTRUCTION
ON SHEET 2 FOR CONNECTION TO EXISTING SYSTEM.**

**THE FOLLOWING ADDRESSES SHALL BE
CONNECTED TO THE NEW WATERMAIN**
19421 HOAG CT.
19414 HOAG CT.
19398 HOAG CT.
19397 HOAG CT.
19375 HOAG CT.
19374 HOAG CT.
19358 HOAG CT.
26202 N OAK AVE.
26228 N OAK AVE.
26240 N OAK AVE.

PAVEMENT PATCHING LEGEND
[Symbol] PAVEMENT TO BE PATCHED
[Symbol] PAVEMENT PATCH REFERENCE LOCATION

RR-SS-12 - 24'
WATERMAIN UNDER STM.S.
BOTTOM OF STM.S. = 763.7
TOP OF WM = 762.2
(STORM SEWER TO BE REPLACED
WITH WATERMAIN QUALITY PIPE)

RR-SS-12 - 21'
WATERMAIN UNDER STM.S.
BOTTOM OF STM.S. = 764.7
TOP OF WM = 762.5
(STORM SEWER TO BE REPLACED
WITH WATERMAIN QUALITY PIPE)

PROPOSED 4" PVC DR-18 AWWA C-900
INSTALLATION BY HORIZONTAL DIRECTIONAL DRILLING
(EXCAVATION - LIMITED TO WATER SERVICE CONNECTIONS,
FLUSHING HYDRANTS, VALVE BOXES, FITTINGS, PIPE
INTERCONNECTIONS, RELIEF HOLES OR POSSIBLE CONFLICTS
WITH OTHER BURIED OBJECTS).

PROPOSED 4" PVC DR-18 AWWA C-900
INSTALLATION BY OPEN CUT CONSTRUCTION
(UNLESS OTHERWISE NOTED)

**PROVIDE FITTINGS AND PIPE AS NECESSARY TO
MAKE TEMPORARY CONNECTION TO EXISTING
WATER SYSTEM. EXISTING WATER SYSTEM TO
REMAIN IN SERVICE UNTIL NEW WATERMAIN
HAS BEEN SUCCESSFULLY CHLORINATED AND
TESTED, AND ALL HOMES ARE CONNECTED TO
THE NEW WATERMAIN. CONTRACTOR TO VERIFY
EXISTING PIPE SIZE AND MATERIAL PRIOR TO
START OF CONSTRUCTION (COST INCIDENTAL).
SEE POTENTIAL SEQUENCE OF CONSTRUCTION
ON SHEET 2 FOR CONNECTION TO EXISTING SYSTEM.**

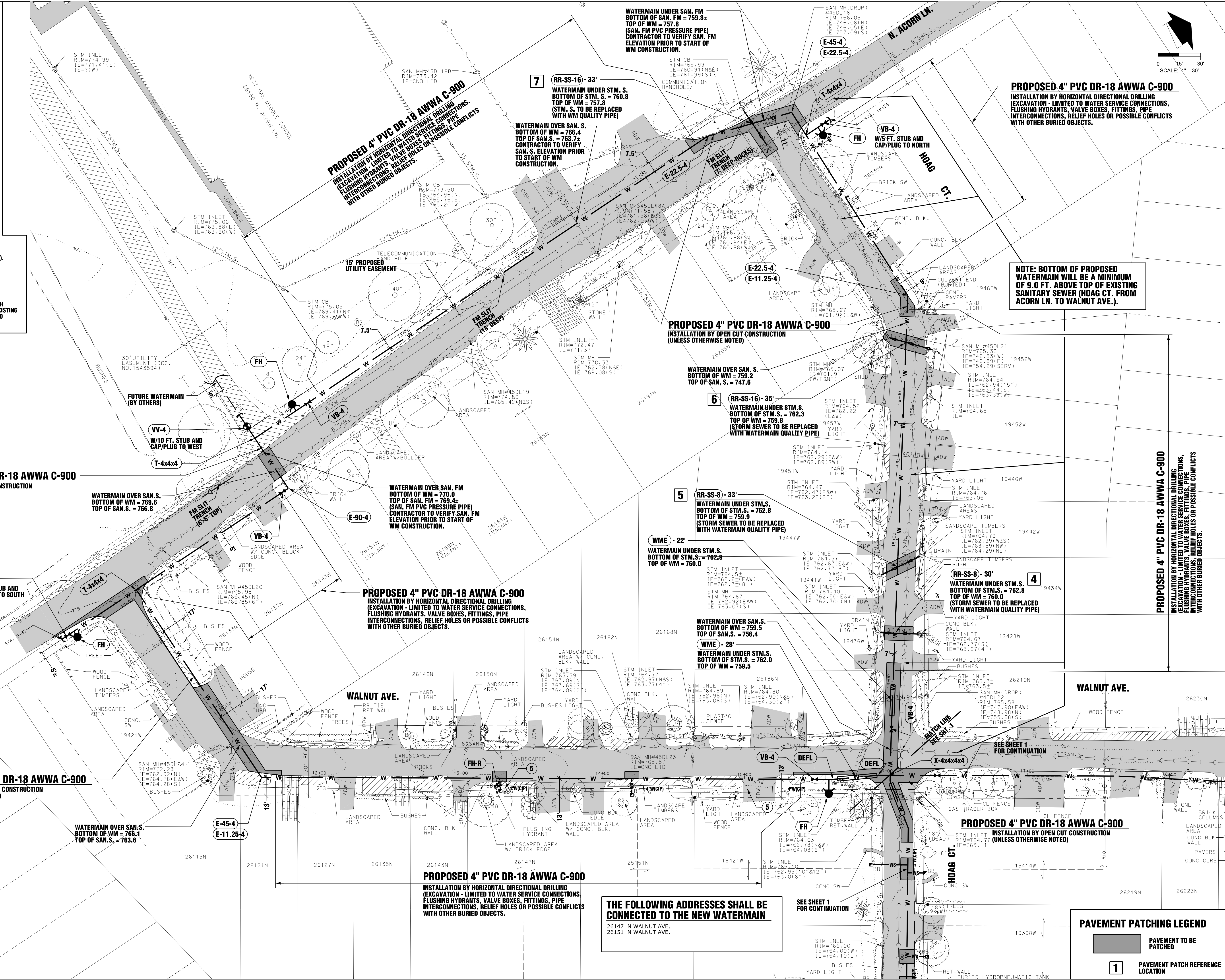
- SYMBOL LEGEND:**
- VV-4** PROPOSED VALVE IN 60" VAULT, VALVE SIZE.
 - VB-4** PROPOSED VALVE WITH VALVE BOX, VALVE SIZE
 - FH** PROPOSED FLUSHING HYDRANT WITH AUXILIARY VALVE AND VALVE BOX
 - T-12x12x12** PROPOSED TEE AND PIPE SIZE
 - X-4x4x4x4** PROPOSED CROSS AND PIPE SIZE
 - E-90-12** PROPOSED 90° ELBOW AND PIPE SIZE / DEFLECT JOINTS AS NECESSARY
 - E-45-12** PROPOSED 45° ELBOW AND PIPE SIZE / DEFLECT JOINTS AS NECESSARY
 - E-22.5-12** PROPOSED 22.5° ELBOW AND PIPE SIZE / DEFLECT JOINTS AS NECESSARY
 - E-11.25-12** PROPOSED 11.25° ELBOW AND PIPE SIZE / DEFLECT JOINTS AS NECESSARY
 - DEFL** PROPOSED JOINT DEFLECTION AND / OR PROVIDE FITTINGS AS NECESSARY
 - VB-R** EXISTING VALVE BOX TO BE REMOVED
 - FH-R** EXISTING FLUSHING HYDRANT TO BE REMOVED
 - WME - 25'** WATERMAIN ENCASEMENT AND LENGTH
 - 1** EXISTING WATERMAIN TO REMAIN IN SERVICE
 - 4** MAKE CONNECTION TO EXISTING WATERMAIN. PROVIDE FITTINGS AS NECESSARY (COST INCIDENTAL).
 - 5** APPROXIMATE LOCATION OF EXISTING WATERMAIN TO BE ABANDONED. PLUG EXISTING PIPES WITH MECHANICAL WATERTIGHT PLUGS AT POINTS OF CONNECTION AND ABANDONMENT (COST INCIDENTAL).
 - RR-SS-12** REMOVE EXISTING STORM SEWER AND REPLACE WITH PVC AWWA C-900 / 905 DR-18. PIPE SIZE, MATCH EXISTING SLOPE / INVERT, MAKE WATER TIGHT CONNECTION TO EXISTING PIPE OR STRUCTURE.

PROPOSED 4" PVC DR-18 AWWA C-900
INSTALLATION BY OPEN CUT CONSTRUCTION
(UNLESS OTHERWISE NOTED)

**PROVIDE FITTINGS AND PIPE AS NECESSARY TO
MAKE TEMPORARY CONNECTION TO EXISTING
WATER SYSTEM. EXISTING WATER SYSTEM TO
REMAIN IN SERVICE UNTIL NEW WATERMAIN
HAS BEEN SUCCESSFULLY CHLORINATED AND
TESTED, AND ALL HOMES ARE CONNECTED TO
THE NEW WATERMAIN. CONTRACTOR TO VERIFY
EXISTING PIPE SIZE AND MATERIAL PRIOR TO
START OF CONSTRUCTION (COST INCIDENTAL).
SEE POTENTIAL SEQUENCE OF CONSTRUCTION
ON SHEET 2 FOR CONNECTION TO EXISTING SYSTEM.**

SYMBOL LEGEND:

VV-4	PROPOSED VALVE IN 60" VAULT, VALVE SIZE.
VB-4	PROPOSED VALVE WITH VALVE BOX, VALVE SIZE
FH	PROPOSED FLUSHING HYDRANT WITH AUXILIARY VALVE AND VALVE BOX
T-12x12x12	PROPOSED TEE AND PIPE SIZE
X-4x4x4x4	PROPOSED CROSS AND PIPE SIZE
E-90-12	PROPOSED 90° ELBOW AND PIPE SIZE / DEFLECT JOINTS AS NECESSARY
E-45-12	PROPOSED 45° ELBOW AND PIPE SIZE / DEFLECT JOINTS AS NECESSARY
E-22.5-12	PROPOSED 22.5° ELBOW AND PIPE SIZE / DEFLECT JOINTS AS NECESSARY
E-11.25-12	PROPOSED 11.25° ELBOW AND PIPE SIZE / DEFLECT JOINTS AS NECESSARY
DEFL	PROPOSED JOINT DEFLECTION AND / OR PROVIDE FITTINGS AS NECESSARY
VB-R	EXISTING VALVE BOX TO BE REMOVED
FH-R	EXISTING FLUSHING HYDRANT TO BE REMOVED
WME -25'	WATERMAIN ENCASEMENT AND LENGTH
1	EXISTING WATERMAIN TO REMAIN IN SERVICE
4	MAKE CONNECTION TO EXISTING WATERMAIN. PROVIDE FITTINGS AS NECESSARY (COST INCIDENTAL).
5	APPROXIMATE LOCATION OF EXISTING WATERMAIN TO BE ABANDONED. PLUG EXISTING PIPES WITH MECHANICAL WATER TIGHT PLUGS AT POINTS OF CONNECTION AND ABANDONMENT (COST INCIDENTAL).
RR-SS-12	REMOVE EXISTING STORM SEWER AND REPLACE WITH PVC AWWA C-900 / 90S DR-18, PIPE SIZE. MATCH EXISTING SLOPE / INVERT, MAKE WATER TIGHT CONNECTION TO EXISTING PIPE OR STRUCTURE.



PROPOSED 4" PVC DR-18 AWWA C-900
 INSTALLATION BY HORIZONTAL DIRECTIONAL DRILLING (EXCAVATION - LIMITED TO WATER SERVICE CONNECTIONS, FLUSHING HYDRANTS, VALVE BOXES, FITTINGS, PIPE INTERCONNECTIONS, RELIEF HOLES OR POSSIBLE CONFLICTS WITH OTHER BURIED OBJECTS.)

NOTE: BOTTOM OF PROPOSED WATERMAIN WILL BE A MINIMUM OF 9.0 FT. ABOVE TOP OF EXISTING SANITARY SEWER (HOAG CT. FROM ACORN LN. TO WALNUT AVE.).

PROPOSED 4" PVC DR-18 AWWA C-900
 INSTALLATION BY OPEN CUT CONSTRUCTION (UNLESS OTHERWISE NOTED)

PROPOSED 4" PVC DR-18 AWWA C-900
 INSTALLATION BY OPEN CUT CONSTRUCTION (UNLESS OTHERWISE NOTED)

PROPOSED 4" PVC DR-18 AWWA C-900
 INSTALLATION BY HORIZONTAL DIRECTIONAL DRILLING (EXCAVATION - LIMITED TO WATER SERVICE CONNECTIONS, FLUSHING HYDRANTS, VALVE BOXES, FITTINGS, PIPE INTERCONNECTIONS, RELIEF HOLES OR POSSIBLE CONFLICTS WITH OTHER BURIED OBJECTS.)

PROPOSED 4" PVC DR-18 AWWA C-900
 INSTALLATION BY OPEN CUT CONSTRUCTION (UNLESS OTHERWISE NOTED)

PROPOSED 4" PVC DR-18 AWWA C-900
 INSTALLATION BY HORIZONTAL DIRECTIONAL DRILLING (EXCAVATION - LIMITED TO WATER SERVICE CONNECTIONS, FLUSHING HYDRANTS, VALVE BOXES, FITTINGS, PIPE INTERCONNECTIONS, RELIEF HOLES OR POSSIBLE CONFLICTS WITH OTHER BURIED OBJECTS.)

THE FOLLOWING ADDRESSES SHALL BE CONNECTED TO THE NEW WATERMAIN
 26147 N WALNUT AVE.
 26151 N WALNUT AVE.

PAVEMENT PATCHING LEGEND

	PAVEMENT TO BE PATCHED
	PAVEMENT PATCH REFERENCE LOCATION

REVISIONS:

OAK TERRACE - SOUTHWEST SECTION WATERMAIN AND STORM SEWER PAVEMENT PATCHING EXHIBIT

2022 WATERMAIN REPLACEMENT PROJECT OAK TERRACE WATER SYSTEM AND OAKWOOD ROAD WATERMAIN LAKE COUNTY PUBLIC WORKS DEPARTMENT

RHMG ENGINEERS, INC.
 975 CAMPUS DR
 MUNDLEIN, ILLINOIS 60060
 847.382.5959

RHMG
 www.rhmg.com
 info@rhmg.com

DESIGNED BY: PDS
 DRAWN BY: RWM
 CHECKED BY: SEZ
 SCALE 1" = 30'
 DATE: JANUARY, 2022
 PROJECT NO.: 22002021
 SHEET: 2

Project: Plan_Sheets.dgn Pavement Patching 2-Plan_Sheet 1/10/2022 12:36:52 PM