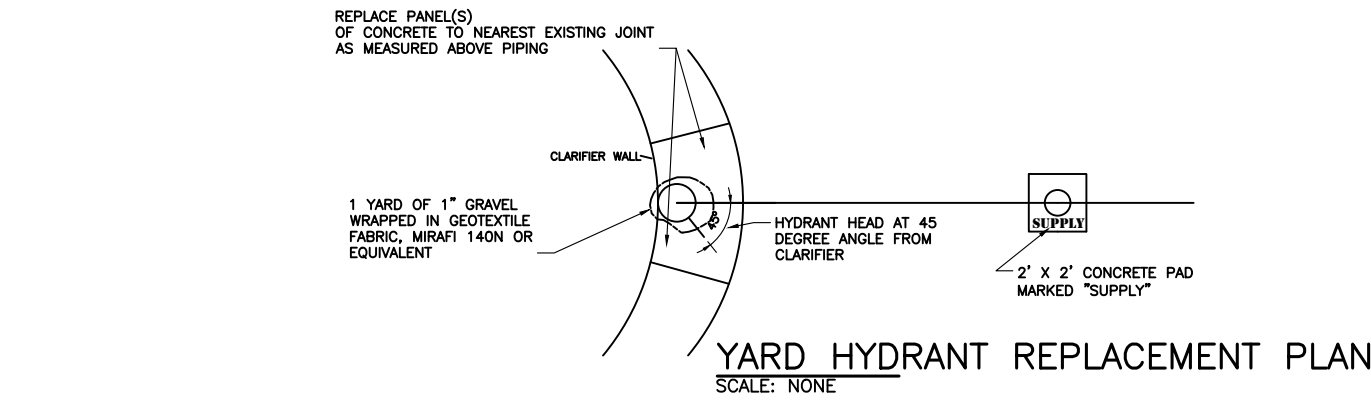
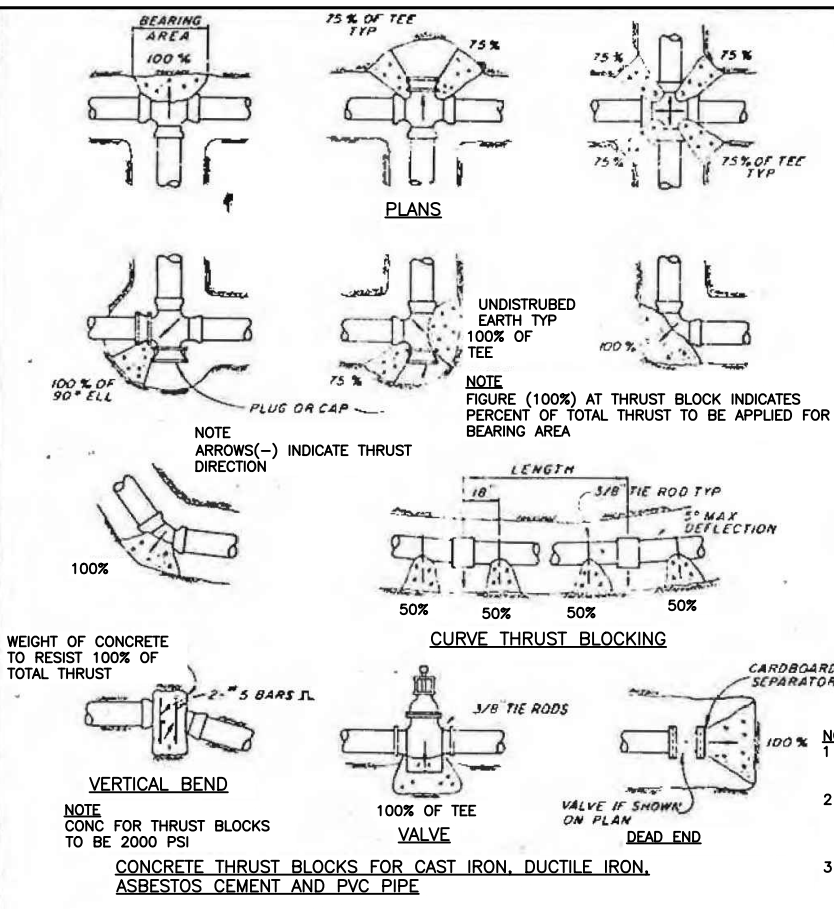


YARD HYDRANT REPLACEMENT PROFILE
SCALE: NONE



YARD HYDRANT REPLACEMENT PLAN
SCALE: NONE



THRUST PER POUND OF WATER PRESSURE AT VARIOUS FITTINGS

PIPE SIZE	DEAD END OR TEE	90° ELBOW	45° ELBOW	22-1/2° ELBOW
4	19	27	15	7
6	39	55	30	15
8	67	94	51	26
10	109	154	84	43
12	155	218	119	61
14	210	296	161	82
16	272	383	209	106
8	351	494	269	137
20	434	611	333	169
24	623	878	478	244

EXAMPLE:
8-INCH 90° ELBOW AT 200 LB MAXIMUM PRESSURE.
FROM TABLE THRUST = 94 * 200 = 18,800 LB.
ASSUME BEARING STRENGTH OF SOIL = 2000 LB/ SQ FT
18,800/2000 = 94 SQ FT = AREA OF BEARING REQUIRED FOR THRUST BLOCK

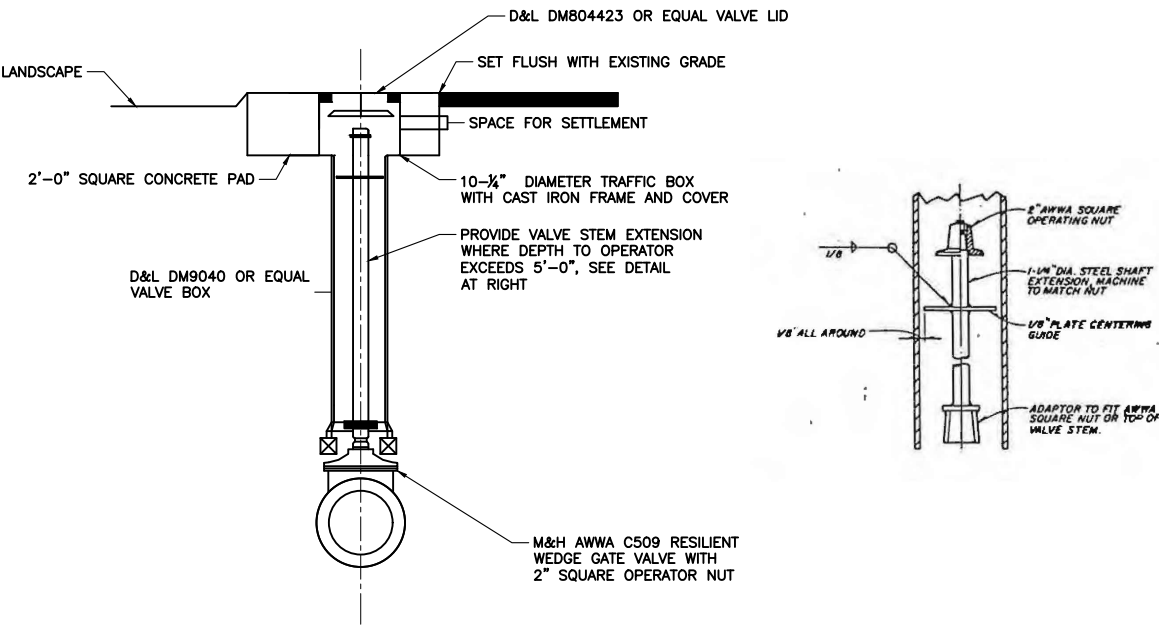
SIDE THRUST PER 100 LB/SQ IN PRESSURE PER DEGREE OF DEFLECTION

PIPE SIZE	SIDE THRUST-LB	PIPE SIZE	SIDE THRUST-LB
4	35	14	377
6	72	16	486
8	122	18	665
10	197	20	790
12	278	24	1150

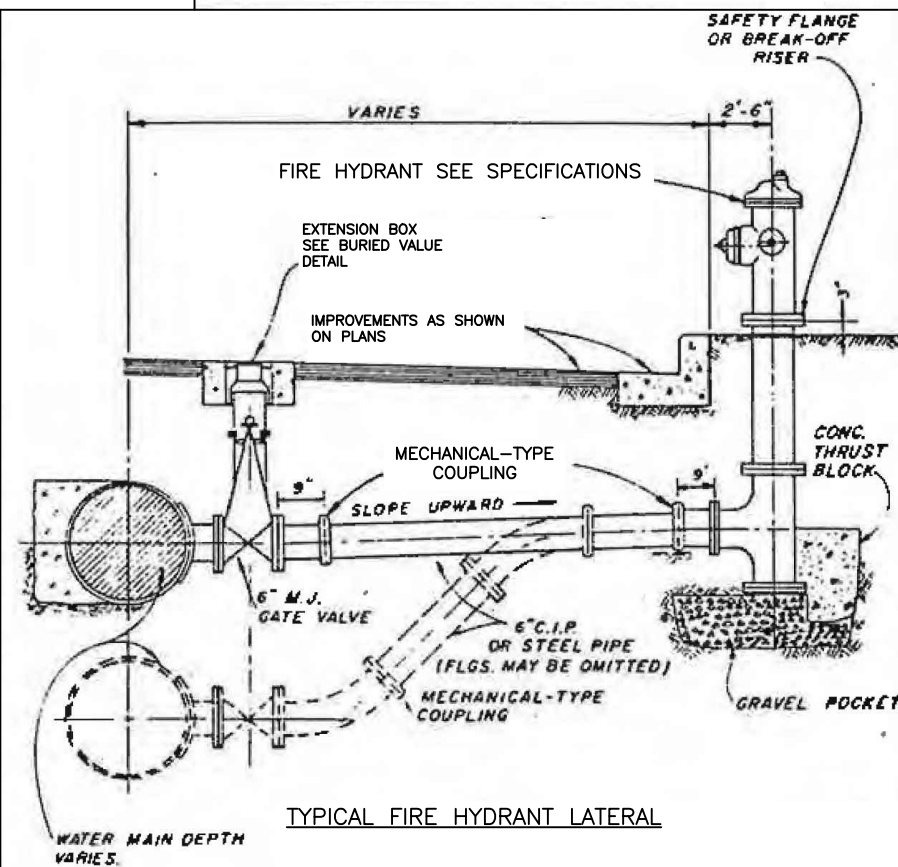
MULTIPLY THRUST BY DEGREE OF DEFLECTION TO OBTAIN TOTAL THRUST

NOTES:
1 IN USING THE ABOVE TABLES, USE THE MAXIMUM PRESSURE ANTICIPATED I.E. HYDROSTATIC TEST PRESSURE, POSSIBLE SURGE PRESSURE DUE TO PUMP SHUT-OFF, ETC.
2 SEE SOILS REPORT FOR BEARING STRENGTH OF SOIL. IN THE ABSENCE OF A SOILS REPORT, AN AVERAGE SOIL (SPADABLE MEDIUM CLAY) CAN BE ASSUMED TO HAVE A BEARING STRENGTH OF 2000 PSI.
3 THRUST BLOCKS ARE NOT REQUIRED ON PVC PIPE WITH SOLVENT MELDED JOINTS

NOTES: INSTALL 2' SQUARE BY 6" THICK CONCRETE PAD AT VALVE BOX COVER OPERATOR STEM EXTENSION WHERE PROVIDED SHALL EXTEND TO 12" BELOW VALVE COVER SUPPORT VALVE BOX ON 2"x2"x12" REDWOOD BLOCKS ON CRUSHED ROCK

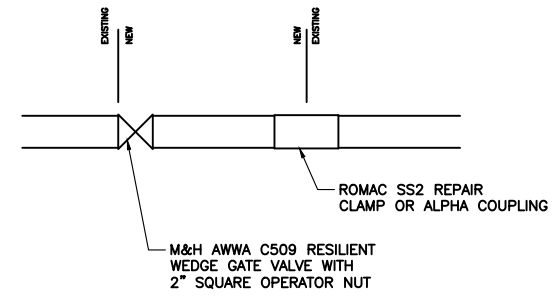


BURIED VALVE DETAIL
SCALE: NONE

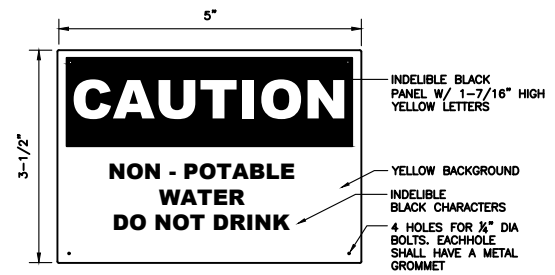


TYPICAL FIRE HYDRANT LATERAL

NOTES:
1 ALL FERROUS SURFACES OF PIPE AND APPURTENANCES TO BE PROVIDED WITH PROTECTIVE COATINGS PER SPECS
2 PROVIDE STAINLESS STEEL NUTS, BOLTS AND WSHERS TO BURIED FLANGES AND COUPLINGS, EXCEPT FOR NON-METALLIC WASHERS TO BE PROVIDED AS PART OF INSULATING FLANGE SET.

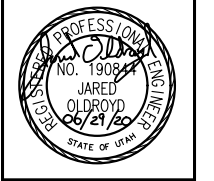


TYPICAL VALVE REPLACEMENT DETAIL
SCALE: NONE



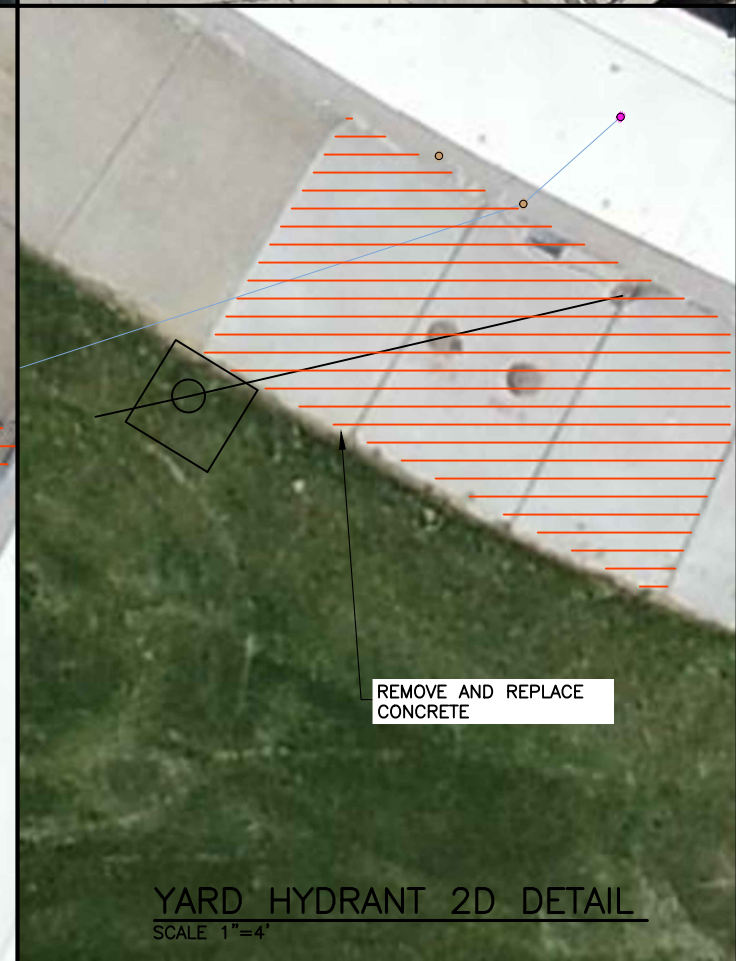
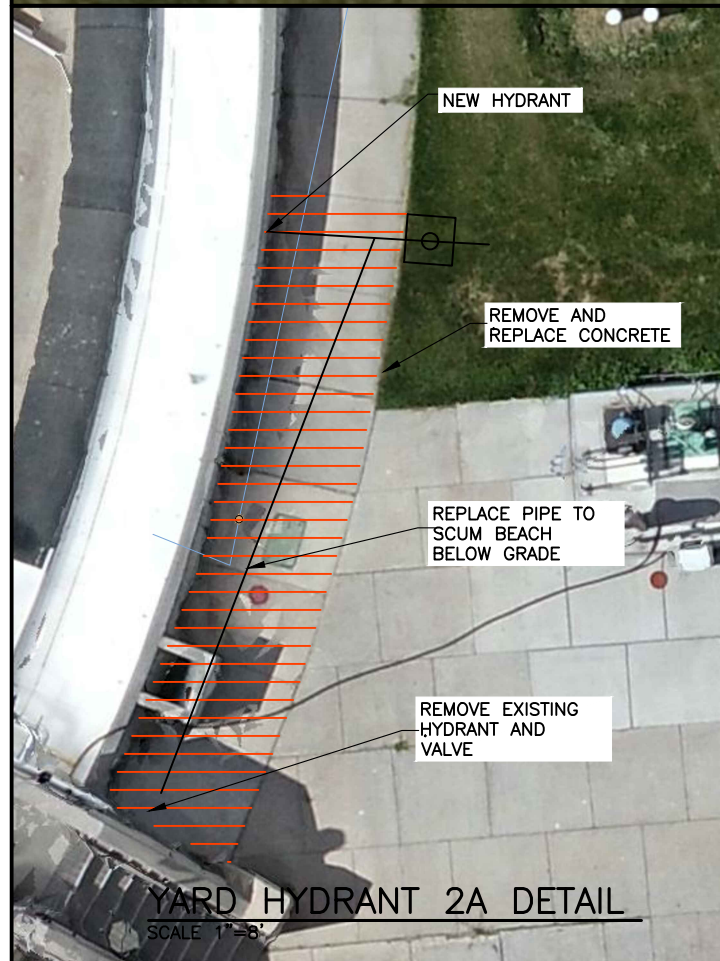
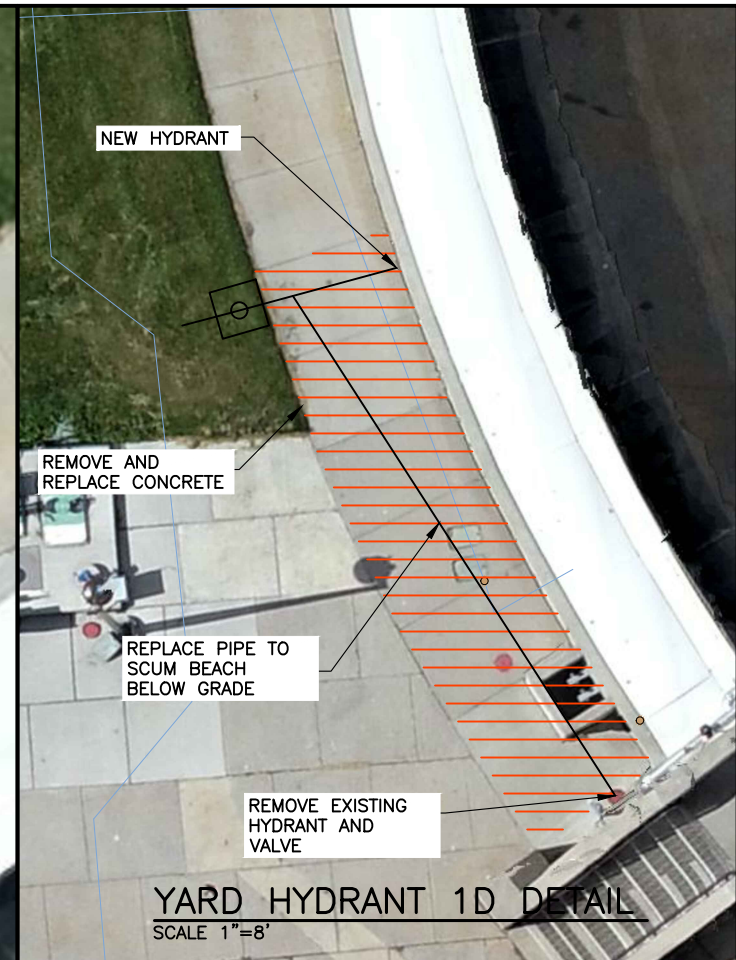
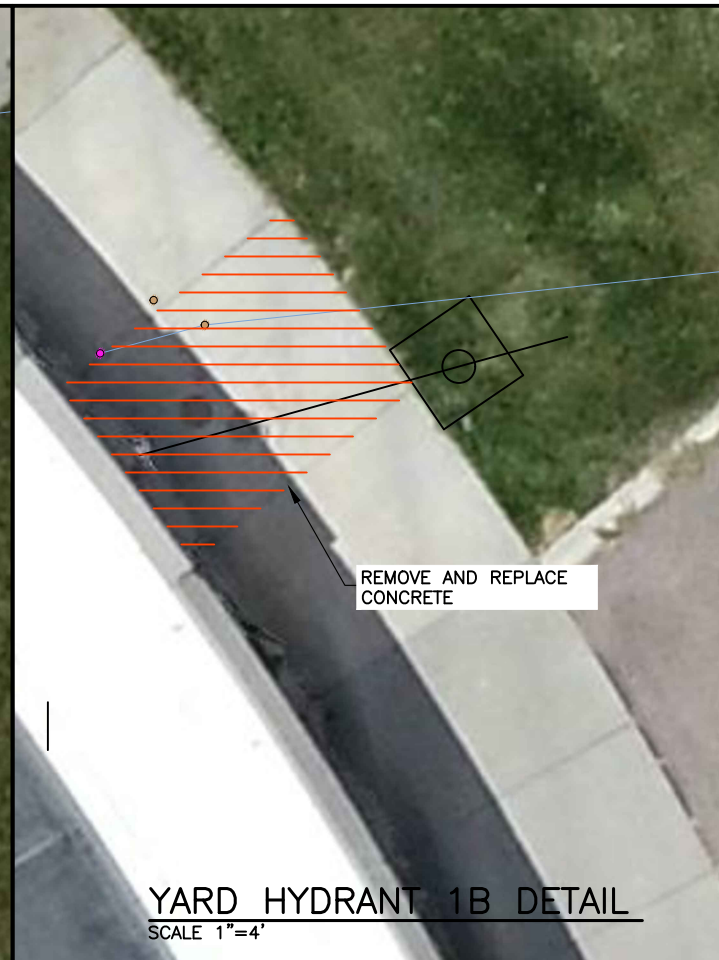
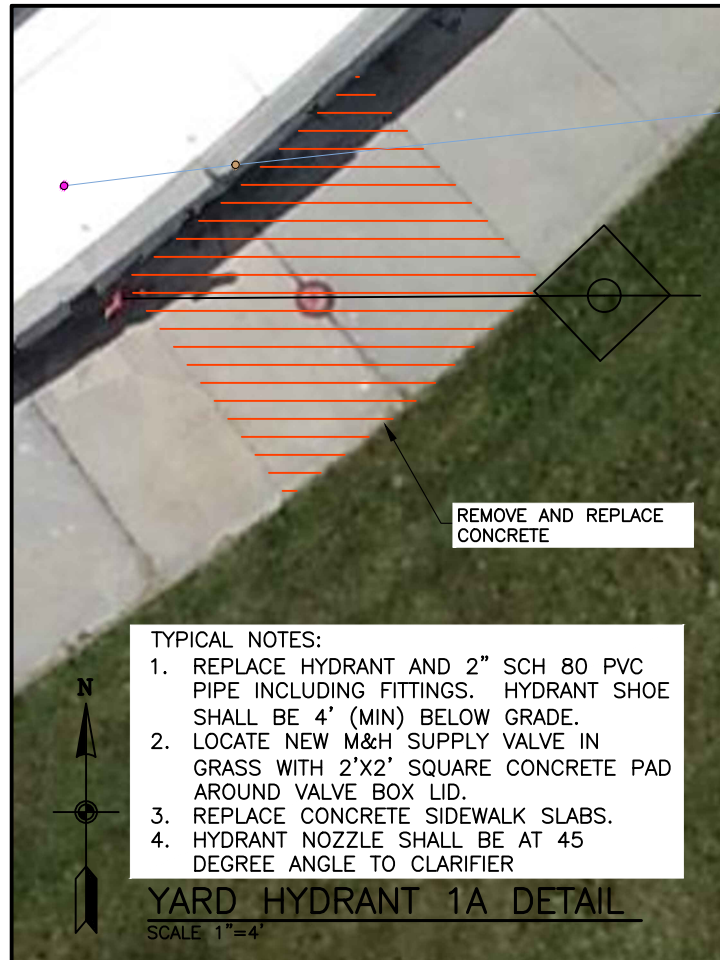
NOTES: MATERIAL TO BE SEMI-RIGID BUTYRATE OR APPROVED EQUAL, AS MANUFACTURED BY SETON NAME PLATE CORP, NEW HAVEN, CONN, 06500, W.H. BRADY CO, MILWAUKEE, WIS 53201 OR EQUAL
COLORS & LETTER SIZES TO BE PER OSHA STANDARDS FOR CAUTION SIGNS
PROVIDE THIS SIGN AT ALL HOSE BIBB LOCATIONS WHERE WATER IS NON-POTABLE
WARNING SIGN FOR NON-POTABLE WATER

JWO ENGINEERING
VERIFY SCALE: BAR IS 1" IN ORIGINAL DRAWING
PROJECT # 014-2020-001
DATE: 06/10/2020



REVISION	DATE	DRAWN BY	CHECKED BY	DESCRIPTION
BIDSET	06/29/2020	R. SPRAGUE	J. OLDROYD	

SWRF 2020 YARD PIPING IMPROVEMENTS PROJECT
DETAILS



JWO ENGINEERING

VERIFY SCALE: BAR IS 1" IN ORIGINAL DRAWING

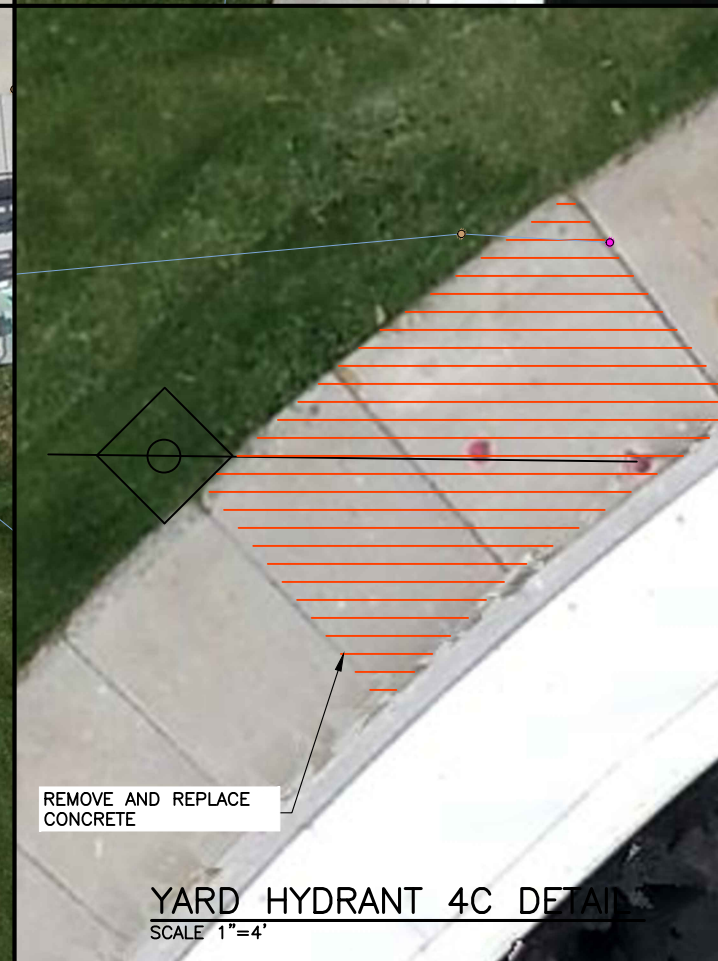
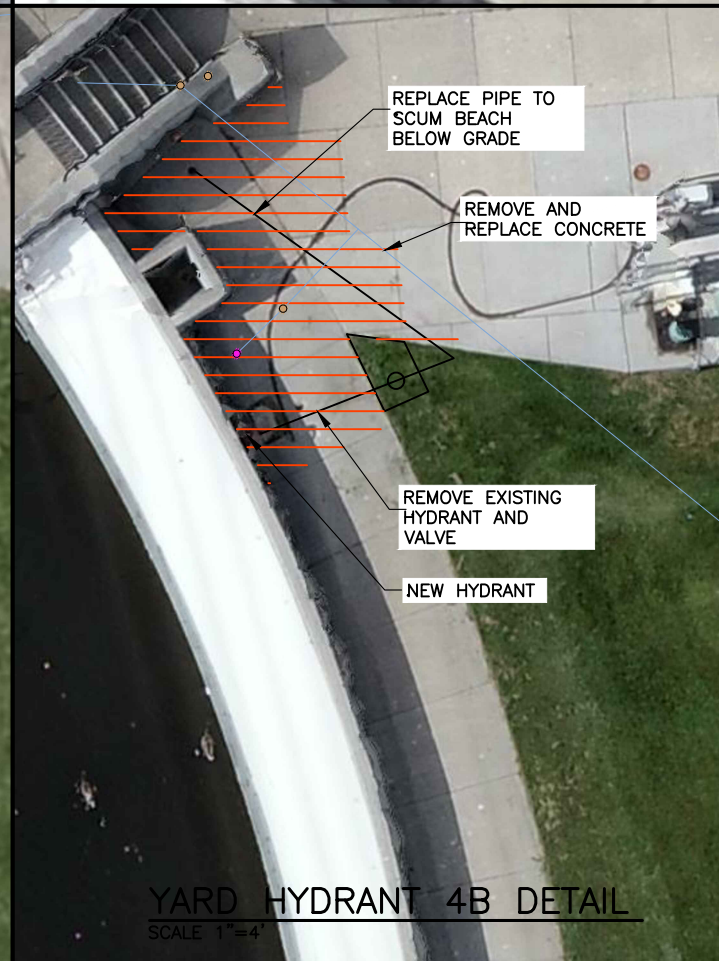
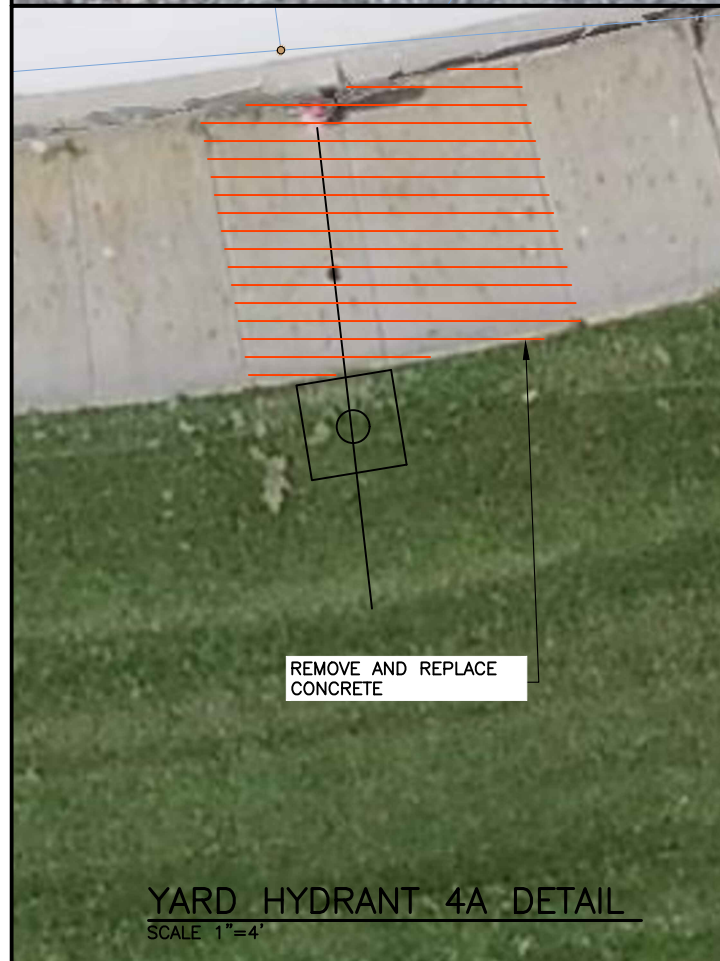
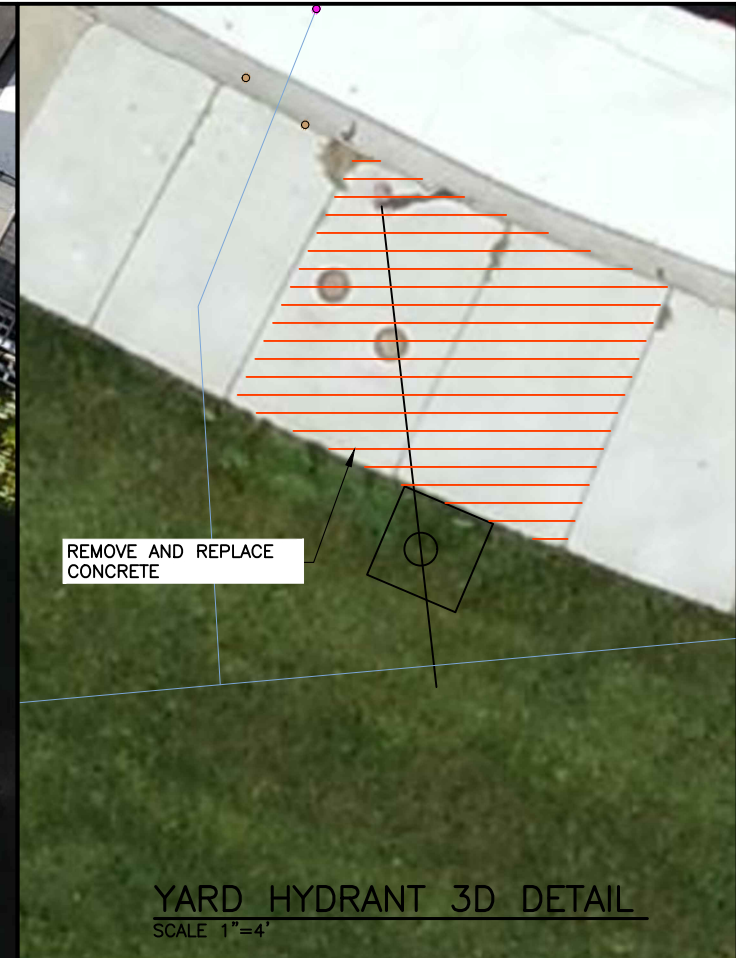
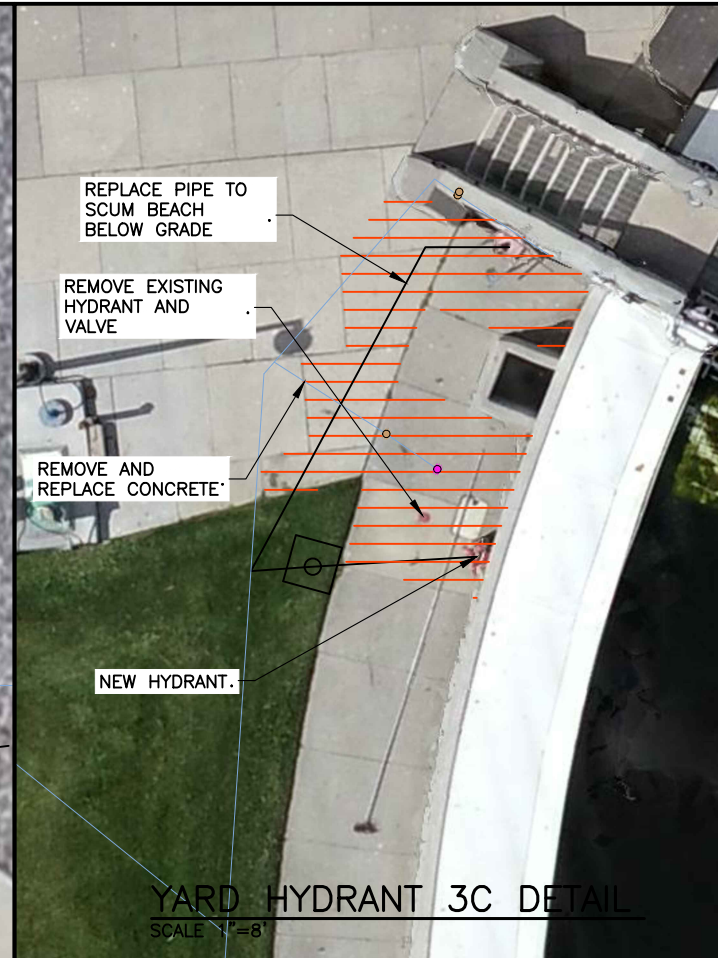
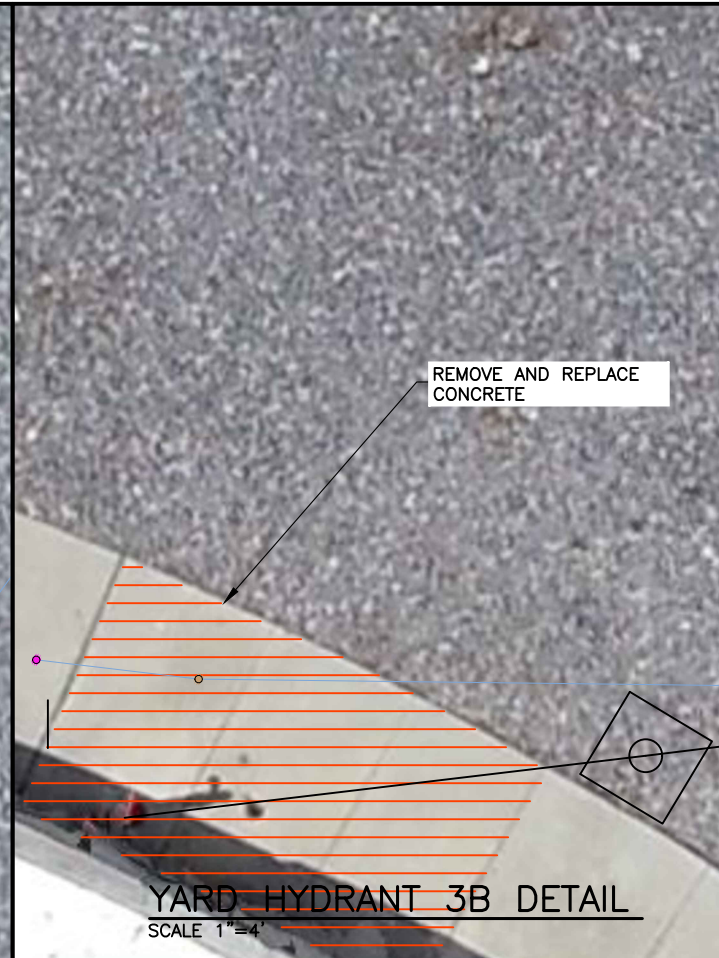
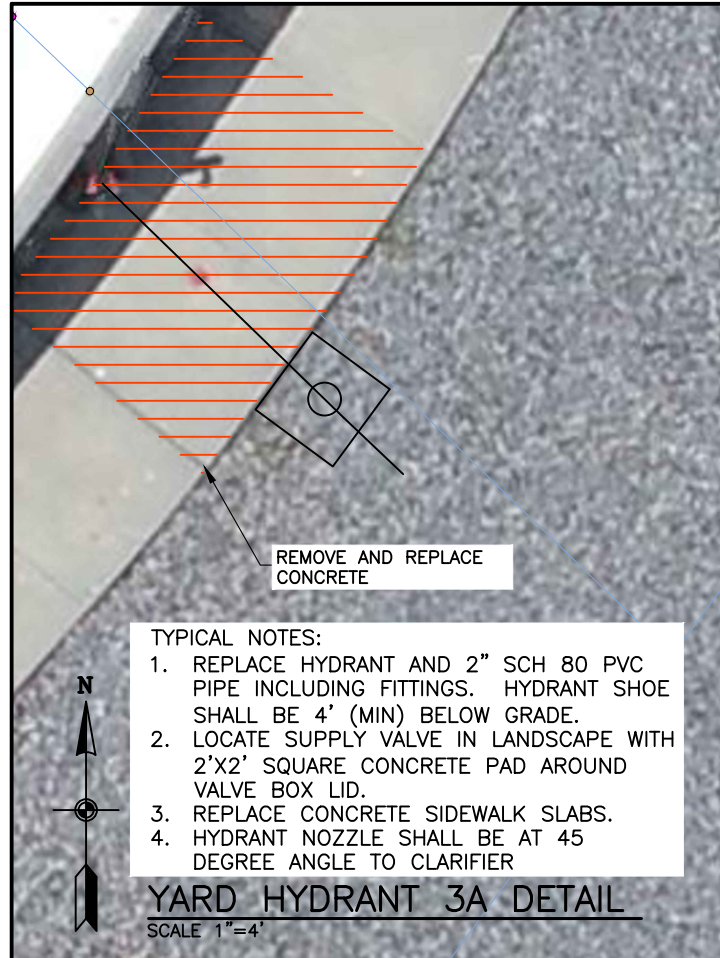
PROJECT # 014-2020-001 DATE: 06/10/2020

PROFESSIONAL ENGINEER
 NO. 1908
 JARED OLDROYD
 06/29/20

REVISION	DATE	DRAWN BY	CHECKED BY	DESCRIPTION
BIDSET	06/29/2020	R. SPRAGUE	J. OLDROYD	

SWRF 2020 YARD PIPING IMPROVEMENTS PROJECT
DETAILS 2

DRAWING D-02
 SHEET 6 OF 8



JWO ENGINEERING

VERIFY SCALE: BAR IS 1" IN ORIGINAL DRAWING

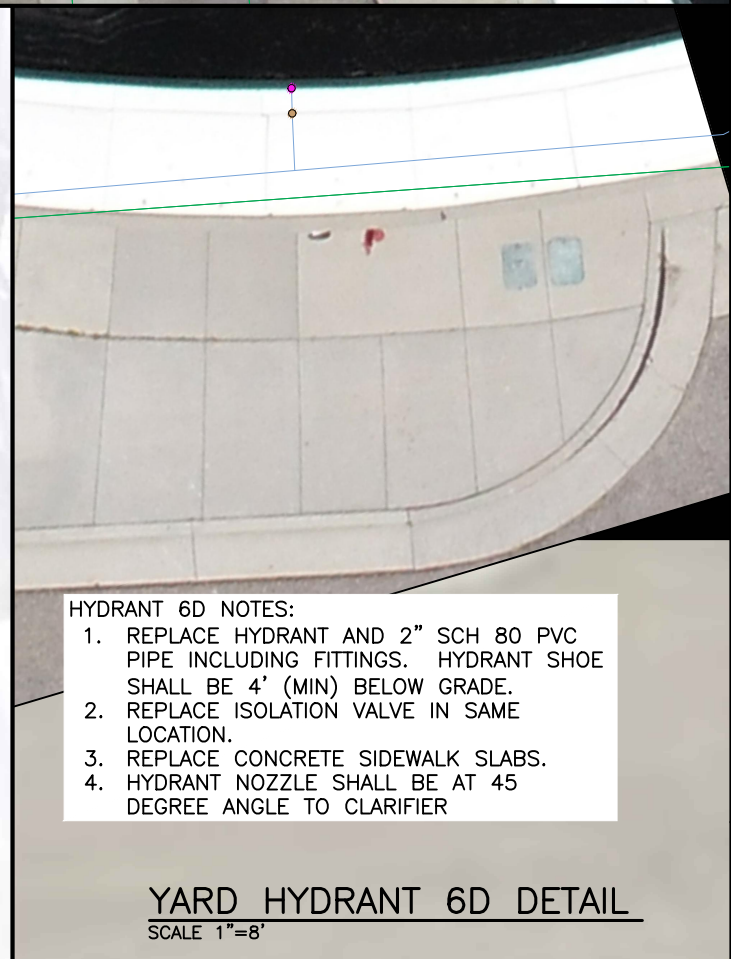
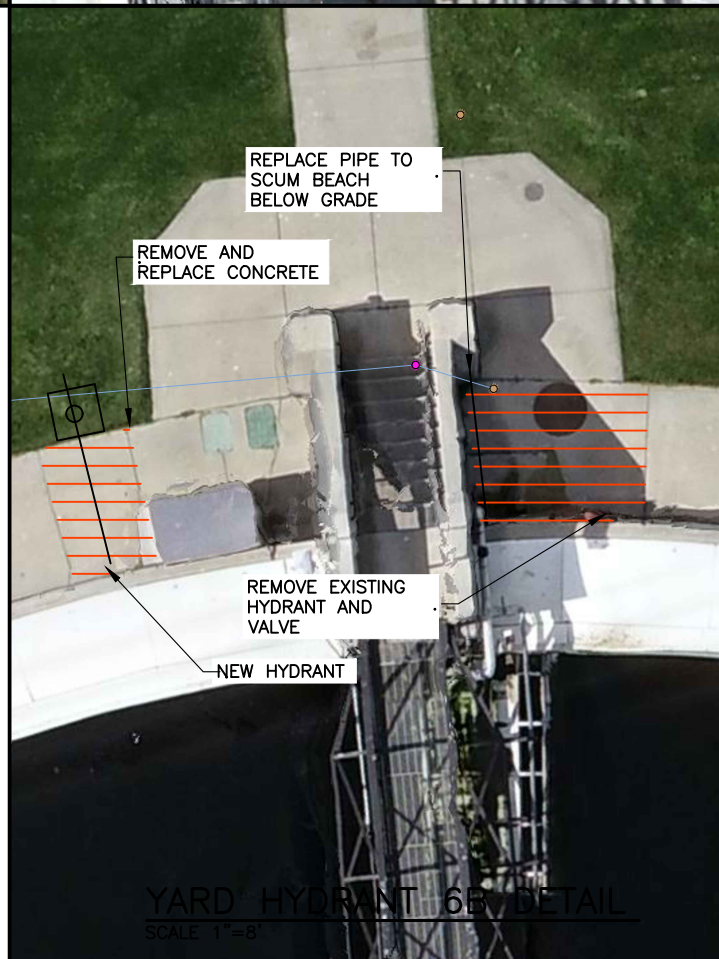
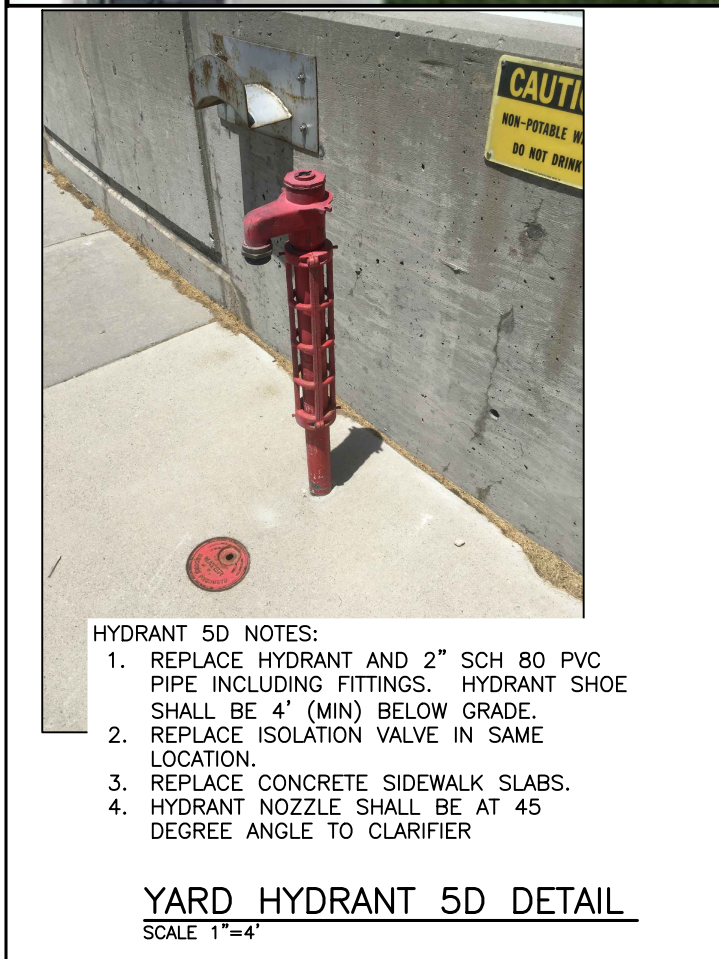
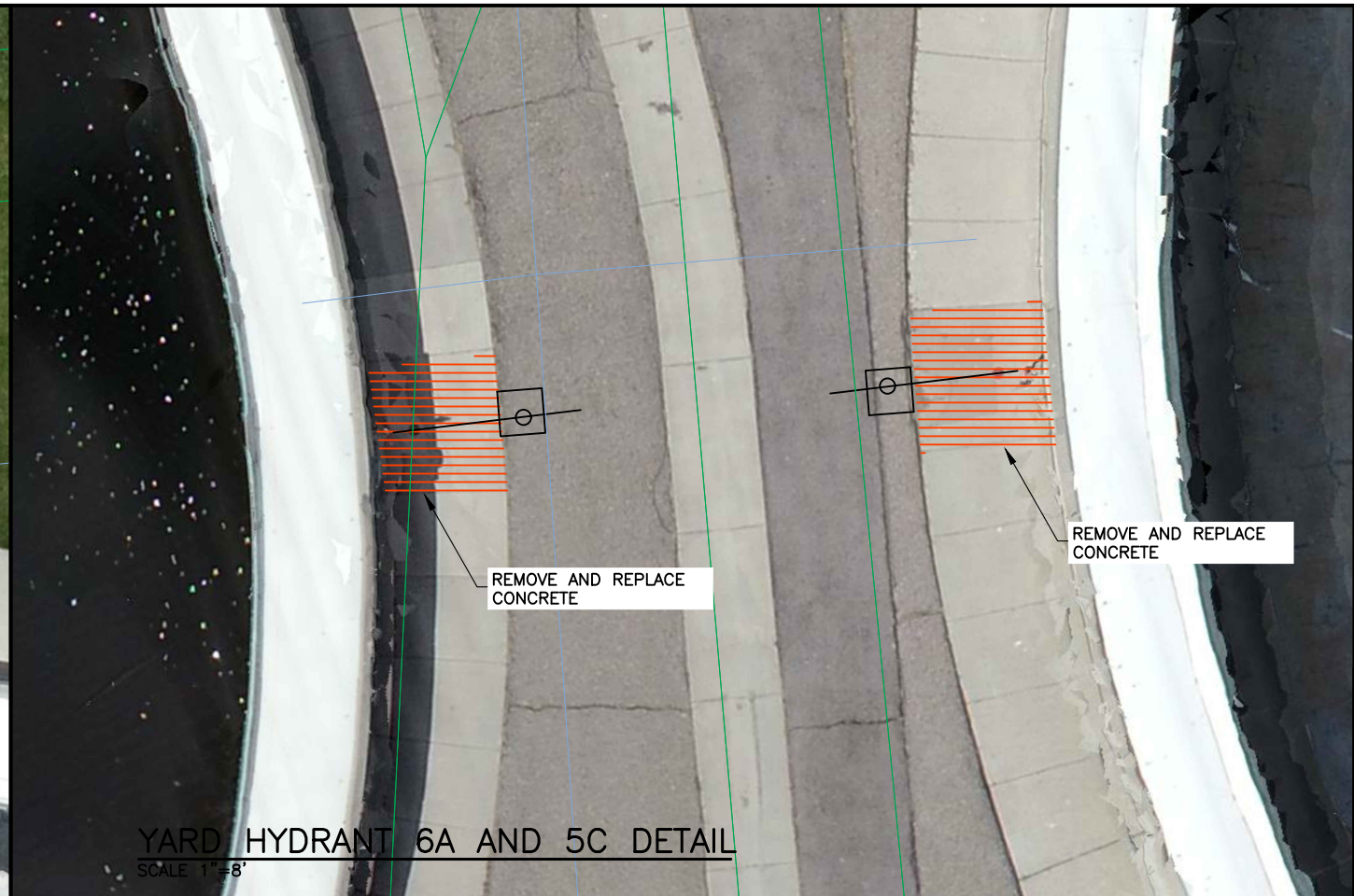
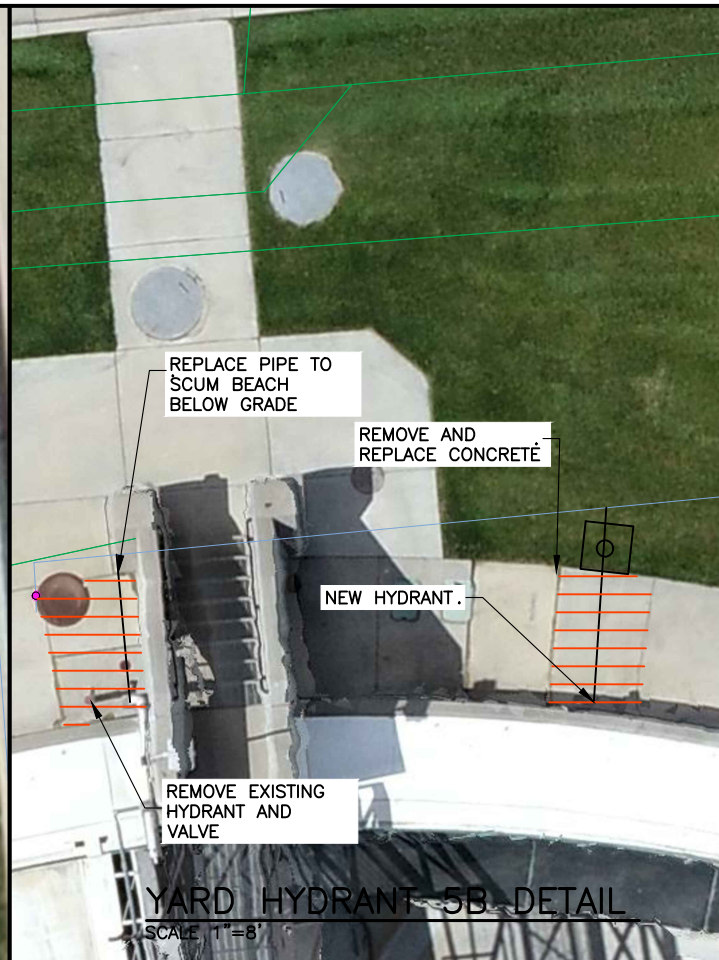
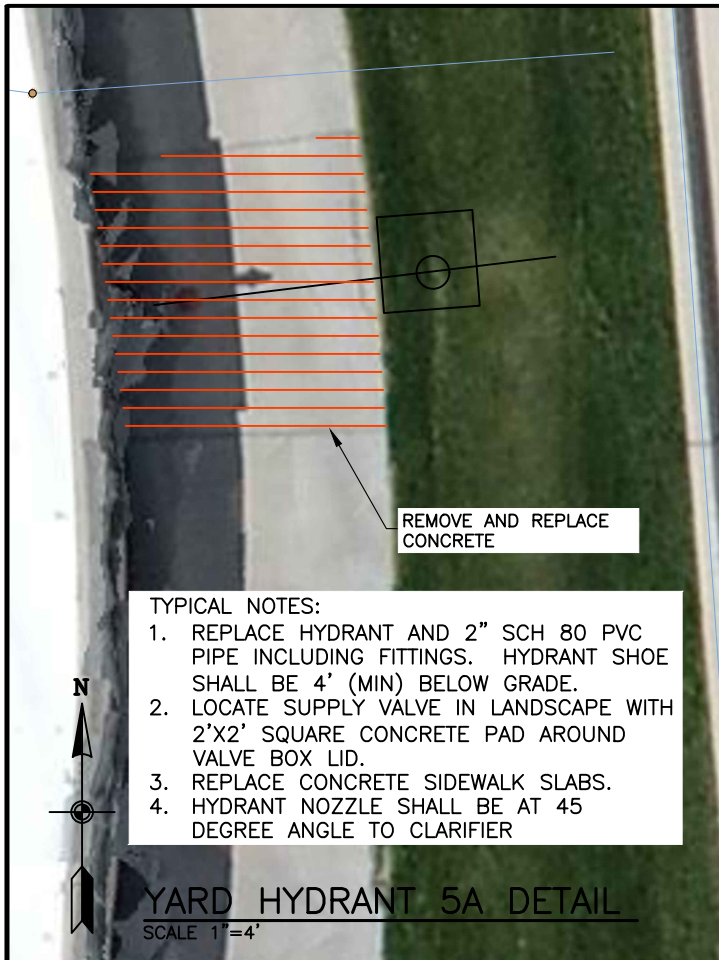
PROJECT # 014-2020-001 DATE: 06/10/2020

PROFESSIONAL ENGINEER
 JARED OLDROYD
 No. 1908
 06/29/20

REVISION	DATE	DRAWN BY	CHECKED BY	DESCRIPTION
BIDSET	06/29/2020	R. SPRAGUE	J. OLDROYD	

SWRF 2020 YARD PIPING IMPROVEMENTS PROJECT
DETAILS 3

DRAWING D-03
 SHEET 7 OF 8



JWO ENGINEERING

VERIFY SCALE: 1"=8' ORIGINAL DRAWING

PROJECT # 014-2020-001 DATE: 06/10/2020

PROFESSIONAL ENGINEER
 No. 1908
 JARED OLDROYD
 06/21/20

REVISION	DATE	DRAWN BY	CHECKED BY	DESCRIPTION
BIDSET	06/29/2020	R. SPRAGUE	J. OLDROYD	

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DETAILS 4

DRAWING D-04 SHEET 8 OF 8