

Town of Norwood

Raw Water System



Vicinity Map

Scope of Work

The project will consist of the installation of a raw water system for the Town of Norwood (Town). Construction includes installing a raw water pipeline network throughout the Town, a bulk water station, improvements to a raw water reservoir, irrigation ditch intake and appurtenances, and a raw water transmission main from the reservoir to Town. Project will include installation of a conduit in selected trenches for future broadband service. This project more specifically involves the following:

1. Diversion intake and flow measuring device off of existing irrigation ditch.
2. Improvements and appurtenances for the renovation and expansion of an existing earthen reservoir including conveyance pipes to and from the reservoir.
3. Installation of a 12 inch transmission main from the reservoir to Town, including a meter and strainer riser.
4. Installation of 8" and 4" raw water pipelines and appurtenances including gate valves, air and vacuum valve vaults, Blowoff valve vaults, and service lines to individual properties.
5. Installation of a bulk water delivery station.
6. Installation of a conduit for a future broad cable in selected raw water pipeline trenches.
7. This project will require bids for two different pipeline material, Class 200 PVC (SDR 21) with gasketed joints and high density polyethylene (HDPE) pipe DR 11, ductile iron pipe size. The Town will evaluate both bids before awarding the bid for the selected material.



555 RiverGate Lane, Suite B4-82
Durango, CO 81301
970.385.2340 www.sgm-inc.com

Project Engineer

Louis Meyer, P.E. 20797

Owner

Town of Norwood
1670 Naturita St.
Norwood, Colorado 81423
(970) 327-4288

Town of Norwood - Staff and Board of Trustees

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For Bid

November 1, 2017

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Notes

1. The Town of Norwood will provide an **on-site unsecured** staging area or an **off-site secured** staging area.
2. Town of Norwood will provide all water necessary required for construction purposes.
3. Trenches in alleys shall be resurfaced with Class 6 aggregate (3/4 inch compacted road base)



Know what's below.
Call before you dig.

CNCC 1-800-922-1987

#	Revision	Date	By
1			

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Legend

	EX. OVERHEAD TELEPHONE LINE		EX. DECIDUOUS TREE
	EX. UNDERGROUND TELEPHONE LINE		EX. CONIFEROUS TREE
	EX. UNDERGROUND GAS LINE		EX. MONUMENT MARKER
	EX. CABLE TELEVISION LINE		EX. TELEPHONE PEDESTAL
	EX. UNDERGROUND ELECTRICAL LINE		EX. TELEPHONE MANHOLE
	EX. OVERHEAD ELECTRICAL LINE		EX. CABLE PEDESTAL
	EX. DRAIN LINE		EX. ELECTRIC TRANSFORMER
	EX. WATER LINE		EX. ELECTRIC PEDESTAL
	EX. WATER SERVICE LINE		EX. ELECTRIC VAULT
	EX. SEWER LINE		EX. ELECTRIC SERVICE T-POST
	EX. SEWER SERVICE LINE		EX. ELECTRIC METER
	EX. FIBER OPTIC LINE		EX. ELECTRIC MANHOLE
	EX. IRRIGATION LINE		EX. GAS MARKER
	EX. SWALE FLOWLINE		EX. GAS METER
	EX. FENCE LINE		EX. GAS VALVE
	EX. CULVERT & SIZE		EX. GAS WELL
	EX. STORM DRAIN MANHOLE		EX. STORM DRAIN MANHOLE
	EX. EDGE OF WATER		EX. CURB INLET
	EX. CENTERLINE		EX. STORM DRAIN INLET
	EX. GUARDRAIL		EX. SEWER MANHOLE
	EX. ROCK WALL		EX. CLEAN-OUT
	EX. CONTOURS		EX. WATER VALVE
	PROPERTY LINE		EX. FIRE HYDRANT
	NEW CABLE LINE		EX. WATER SHUT-OFF VALVE
	NEW ELECTRIC LINE		EX. WATER METER
	NEW TELECOMMUNICATIONS LINE		EX. WATER MANHOLE
	NEW GAS LINE		EX. PVC PIPE
	NEW DRAIN LINE & SIZE		EX. IRRIGATION CONTROL VALVE
	NEW WATER LINE & SIZE		EX. UTILITY POLE
	NEW WATER SERVICE LINE		EX. STREET LIGHT POLE
	NEW SEWER LINE & SIZE		EX. SIGN
	NEW SEWER SERVICE LINE		EX. MAILBOX
	NEW FIBER OPTIC LINE		EX. BOLLARD
	NEW 4" IRRIGATION LINE		EX. FIBER OPTIC LINE MARKER
	NEW 8" IRRIGATION LINE		NEW CLEAN-OUT
	NEW 12" IRRIGATION LINE		NEW WATER VALVE
	NEW SWALE FLOWLINE		NEW FIRE HYDRANT
	NEW CULVERT W/FLARED END SECTION		NEW WATER SHUT-OFF VALVE
	NEW CHAINLINK FENCE LINE		NEW WATER METER
	NEW WIRE FENCE		NEW UTILITY POLE
	NEW ROCK WALL		NEW STREET LIGHT POLE
	NEW EDGE OF PAVEMENT		NEW SIGN
	NEW GUARDRAIL		NEW SEWER/STORM DRAIN MANHOLE W/RIM LOCATION
	PROPOSED CONTOURS		NEW CURB INLET
	ASPHALT MILLING		NEW STORM DRAIN INLET
	NEW HMA		FINISHED SPOT ELEV. W/ DESCRIPTION
	NEW CONCRETE SURFACING		NEW FLARED END SECTION (HDPE)
	NEW GRAVEL SURFACING		NEW FLARED END SECTION (CMP)
	NEW RIPRAP or RIVER ROCK		SOIL BORING LOCATION
	RE-ESTABLISH NATIVE VEGETATION		NEW BOLLARD
			NEW DECIDUOUS TREE
			NEW CONIFEROUS TREE
			SOIL BORING

Abbreviations

AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS	MAT'L	MATERIAL MAXIMUM MINIMUM
ABC	AGGREGATE BASE COURSE	MIN.	MINIMUM
ADT	AVERAGE DAILY TRAFFIC	MIT	METHOD OF HANDLING TRAFFIC
AP	ANGLE POINT	ML	MEGALUG
AS	ASPHALT	MLW	MASONRY LANDSCAPE WALL
ASPH	ASPHALT	N	NORTHING
ARV	AIR RELEASE VALVE	N/A	NOT APPLICABLE
BF	BLOCK FACING	NAT.	NATIVE GRASS AREA
BMP	BEST MANAGEMENT PRACTICES	NE	NORTH EAST
BOW	BACK OF SIDEWALK	NE	NATIONAL HIGHWAY SYSTEM
BP	BEGIN PROJECT	NO.	NUMBER
BVCE	BEGIN VERTICAL CURVE	N.T.S.	NOT TO SCALE
BVCS	BEGIN VERTICAL CURVE STATION	NW	NORTH WEST
BW	BOTTOM WALL	OC	ON CENTER
C	CURB	O/S	OFFSET
CC	CURB CUT	PC	POINT OF CURVATURE
CDOT	COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT	PERM	PERMANENT
COPHE	COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT	PG	PROFILE GRADE LINE
CG	CURB AND GUTTER	PI	POINT OF INTERSECTION
CL	CENTERLINE	PL	PROPERTY LINE
CMP	CORRUGATED METAL PIPE	PNT	POINT
CO	CONCRETE	PROP	PROPOSED
CONC	CONCRETE	PT	POINT OF TANGENCY
CONST	CONSTRUCTION	PVC	POLYVINYL CHLORIDE
CONT.	CONTINUOUS	PVI	POINT OF VERTICAL INTERSECTION
COR.	CONCRETE REACTION BLOCK	PVMT	PAVEMENT
CRB	CONCRETE REACTION BLOCK	R	RIGHT
CU	CUBIC	R-R	REMOVE & REPLACE
D	DEEP	RAD.	RADIUS
DR	DRAIN	REF.	REINFORCED CONCRETE PIPE
DW	DRIVEWAY	REQ.	REQUIRED
E	EASTING	REQ.	REQUIRED
EA	EACH	REVEG	REVEGETATE
EG	EXISTING GRADE	ROW	RIGHT-OF-WAY
EL	ELEVATION	RP	RADIUS POINT
ELEV	ELEVATION	RW	RETAINING WALL
EOA	EDGE OF ASPHALT	SD	STORM DRAIN
EOD	EDGE OF DRIVEWAY	SECT.	SECTION
EOP	EDGE OF PAVEMENT	SF	SQUARE FEET
EOG	EDGE OF GRAVEL	SHDR	SHOULDER
EP	END PROJECT	SMH	SEWER MANHOLE
ESMT	EASEMENT	SOD	GRASS AREA
EVCE	END VERTICAL CURVE ELEVATION	SOD	GRASS AREA
EVCS	END VERTICAL CURVE STATION	STA.	STATION
EX.	EXISTING	SE	SOUTH EAST
EXIST.	EXISTING	SL	SEWER LINE
EXIST.	EXISTING	SW	SIDEWALK
FG	FINISHED GRADE	T	TREAD STAIRS
FG	FINISHED GRADE	TBC	TOP BACK CURB
FH	FIRE HYDRANT	TC	TOP CURB
FL	FEDERAL HIGHWAY ADMINISTRATION	TELE	TELEPHONE
FL	FEET	TEMP	TEMPORARY
GB	GRADE BREAK	TP	TOP OF PIPE
GB	GRADE BREAK	TRANS.	TRANSITION
GR	GRAVEL	TR.FLG.	TRAFFIC FLANGE ON FIRE HYD.
GRAV.	GRAVEL	TW	TOP OF WALL
HCA	HANDICAP RAMP	TYP.	TYPICAL
HMA	HOT MIX ASPHALT	VC	VERTICAL CURVE
HORIZ.	HORIZONTAL	V.P.	VALLEY PAN
HP	HIGH POINT	W	WIDE
HPG	HIGH PRESSURE GAS	W/	WITH
HWY	HIGHWAY	WL	WATER LINE
HYD	HYDRANT	W.W.M.	WELDED WIRE MESH
INV.	INVERT	X-S	CROSS SLOPE
L	LEFT		
LF	LINEAL FEET		
LP	LOW POINT		
L.S.	LANDSCAPED AREA		

GENERAL NOTES:

- ALL CONSTRUCTION SHALL BE PERFORMED PER THE MOST CURRENT TOWN OF NORWOOD SPECIFICATIONS AND THESE CONSTRUCTION DRAWINGS, AND THE CONDITIONS IN THE PROJECT MANUAL. CONTRACTOR SHALL OBTAIN TOWN OF NORWOOD PERMITS FOR THIS PROJECT. CONTRACTOR SHALL COORDINATE PROJECT SCHEDULE WITH TOWN OF NORWOOD PUBLIC WORKS.
- CONTRACTOR SHALL PROVIDE SUBMITTALS OF ALL CONSTRUCTION MATERIALS AND SHOP DRAWINGS OF MATERIALS FOR ENGINEER APPROVAL.
- UTILITIES SHOWN WERE LOCATED WITH THE BEST AVAILABLE INFORMATION. CONTRACTOR SHALL VERIFY AND COORDINATE RE-MARKING OF UTILITIES. CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL UTILITIES DURING CONSTRUCTION.
- CONTRACTOR SHALL POTHOLE AHEAD OF THEIR WORK TO VERIFY UTILITIES, ALIGNMENT, AND SUB-SURFACE CONDITIONS. ALL TIE-INS SHALL BE POTHOLED PRIOR TO CONSTRUCTION EXCAVATION. POTHOLE EFFORTS ARE CONSIDERED INCIDENTAL TO WORK. NO SEPARATE BID ITEM IS INCLUDED FOR POTHOLE EFFORTS.
- CONTRACTOR IS REQUIRED TO COORDINATE WITH SHALLOW UTILITIES COMPANIES FOR ANY MOVING OR RELOCATION OF UTILITIES, IF REQUIRED. ANY PLANNED SHUT DOWN OF SERVICE REQUIRES 48 HOURS NOTICE TO THE UTILITY COMPANIES AND HOMEOWNERS.
- CONTRACTOR IS RESPONSIBLE FOR REPAIR/REPLACEMENT OF ANY LANDSCAPING, CONCRETE, ASPHALT, OR OTHER PAVED SURFACES DISTURBED OR REMOVED DURING CONSTRUCTION. THE ASPHALT ROADWAY SHALL BE PATCHED OR RECONSTRUCTED PER THE ROADWAY RECONSTRUCTION PLAN AND TOWN OF NORWOOD REQUIREMENTS.
- SHOULD FIELD CONDITIONS REQUIRE ADJUSTMENT TO THE DESIGN SHOWN IN THESE PLANS, NOTIFY TOWN OF NORWOOD AND ENGINEER IMMEDIATELY TO COORDINATE CHANGES.
- THE CONTRACTOR SHALL KEEP A RECORD SET OF DRAWINGS AVAILABLE TO THE ENGINEER AND TOWN OF NORWOOD FOR REVIEW FOR PAY APPLICATIONS. THESE PLANS SHALL DOCUMENT ALL FIELD CHANGES MADE BY THE CONTRACTOR. A FINAL RECORD SET OF DRAWINGS SHALL BE COMPLETED BY THE CONTRACTOR MEETING TOWN OF NORWOOD REQUIREMENTS.
- STAGING AREA SHALL BE COORDINATED WITH TOWN OF NORWOOD. ADDITIONAL STAGING ON PRIVATE PROPERTY MAY BE ARRANGED BY THE CONTRACTOR. TOWN LAND IS AVAILABLE FOR USE UNSECURED AT THE SOUTH END OF MARKET STREET NEAR THE BULK WATER STATION.
- ALL WORK IN THE FARMERS WATER DEVELOPMENT COMPANY SOUTH LATERAL DITCH OR THE LONE CONE DITCH SHALL BE DONE BEFORE IRRIGATION WATER IS TURNED ON. CONTACT DITCH COMPANIES PRIOR TO BEGINNING WORK.
- ALL PARCEL INFORMATION CONTAINED HEREIN, INCLUDING LOT LINES AND EASEMENTS, IS SHOWN APPROXIMATELY. THIS PARCEL INFORMATION HAS BEEN DERIVED PRIMARILY FROM GIS DATA AND RECORD DOCUMENTS, INCLUDING DEEDS AND PLATS, ALL FROM THE PUBLIC RECORDS OF SAN MIGUEL COUNTY. THE ORIENTATION OF SAID PARCELS IS BASED ON AVAILABLE EVIDENCE ON THE GROUND. ACTUAL PARCEL LOCATIONS AND CONFIGURATION MAY VARY FROM THOSE DEPICTED HEREON.
- PLEASE NOTE THAT THE WATER TRENCH STANDARD DETAIL AS SHOWN ON SHEET C006 AND AS REFERENCED IN THE BID SCHEDULES, DEPICTS A 2" BROADBAND CONDUIT TO BE PLACED IN A COMMON TRENCH WITH THE RAW WATER LINE. THE TOWN MAY ELECT TO DIRECT CONTRACTOR TO INSTALL CONDUIT TO FACILITATE A TOWN WIDE BROADBAND PROJECT. IF THE TOWN ELECTS TO PROCEED WITH THE CONDUIT PLACEMENT EXACT LOCATIONS ALONG THE RAW WATER ALIGNMENT WILL BE PROVIDED BY THE TOWN.

RAW WATER MAIN NOTES:

- LOCATIONS OF PROPOSED RAW WATER MAINS ARE APPROXIMATE. FINAL LOCATIONS TO BE DETERMINED BY FIELD SURVEY OF EASEMENTS AND RIGHT-OF-WAY LINES.
- CONTRACTOR SHALL INSTALL MIN. 2.5 FEET OF COVER TO TOP OF PIPE FOR 12 INCH TRANSMISSION MAIN. ALL PIPES LESS THAN 12 INCH IN DIAMETER SHALL HAVE 2 FEET OF COVER TO TOP OF PIPE.
- AIR RELEASE VALVES ARE SHOWN AT HIGH SPOTS. BLOW OFF VALVES ARE SHOWN AT LOW AREAS SO THAT THE PIPE CAN BE DRAINED. CONTRACTOR SHALL INSTALL IRRIGATION LINE AND AVOID HIGH SPOTS AND LOW SPOTS EXCEPT WHERE AIR RELEASE AND BLOW OFF VALVES ARE SHOWN.
- LOTS WITH RAW WATER SYMBOL SHALL RECEIVE TAPS.
- COORDINATE RAW WATER SERVICE LINE LOCATIONS WITH THE TOWN.

SEWER NOTES:

- SEWER SERVICE LINES ARE NOT SHOWN. CONTRACTOR SHALL POTHOLE AHEAD OF WATER MAIN INSTALLATION TO DETERMINE LOCATION OF SEWER LINE. CONTRACTOR SHALL NOTIFY OWNER AND ENGINEER OF POTENTIAL CONFLICT BETWEEN THE WATER MAIN AND SEWER LINE TO DETERMINE THE PROPER SOLUTION.
- IF REQUIRED SEWER SERVICE LINE SHALL BE REPAIRED OR REPLACED MEETING TOWN OF NORWOOD STANDARDS.

GROUNDWATER NOTES:

- CONTRACTOR MAY ENCOUNTER SEASONAL GROUNDWATER DURING CONSTRUCTION AND SHALL BE PREPARED TO MANAGE THE GROUNDWATER DURING CONSTRUCTION AND OBTAIN REQUIRED STATE AND LOCAL PERMITS AT NO ADDITIONAL COST TO THE OWNER.

ACCESS NOTES:

- CONTRACTOR SHALL PROVIDE MINIMUM 10-FT WIDE VEHICLE ACCESS AT ALL TIMES THROUGHOUT CONSTRUCTION DURATION. THE CONTRACTOR IS RESPONSIBLE FOR ALL TRAFFIC CONTROL PLANNING, MODIFICATION AND MAINTENANCE.
- CONTRACTOR SHALL PROVIDE A TRAFFIC CONTROL PLAN FOR R.O.W. PERMIT SUBMITTAL PER TOWN OF NORWOOD REQUIREMENTS. CONTRACTOR SHALL MAINTAIN EMERGENCY VEHICLE ACCESS AT ALL TIMES.

ROADWAY RECONSTRUCTION NOTES:

- ALL ROADWAY (PAVED OR UNPAVED) RECONSTRUCTION SHALL BE COMPLETED PER TOWN OF NORWOOD STANDARDS AND SPECIFICATIONS AND R.O.W. PERMIT REQUIREMENTS. CONTRACTOR SHALL SAWCUT ALL TRENCHES IN PAVED AREAS TO MINIMIZE DISTURBANCE TO EXISTING PAVEMENT.
- THE EXTENT OF UTILITY CUT IS APPROXIMATE. ACTUAL AREA WILL VARY BY DEPTH, EQUIPMENT USED, AND FIELD CONDITIONS. IF THE UTILITY CUT LEAVES A REMNANT OF ROAD SURFACE 3 FEET IN WIDTH OR LESS THE REMNANT SHALL BE REPLACED. A FINAL PATCH SAWCUT SHALL BE PERFORMED PRIOR TO PAVING ASPHALT.
- CONTRACTOR SHALL PROTECT EXISTING DRIVEWAYS IN PLACE AND INVENTORY CONDITION OF DRIVEWAY PRIOR TO CONSTRUCTION. ANY DAMAGE TO THE DRIVE DUE TO CONSTRUCTION ACTIVITIES SHALL BE REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER.
- ALL REPLACED ASPHALT AND GRAVEL ROADS SHALL BE SAME AS EXISTING DEPTH PLACED IN MAX. 2" LIFTS. THE BASE COURSE SHALL BE 8" DEPTH CLASS 6 MATERIAL. CONTRACTOR SHALL INSTALL SEAL COAT (CDOT CRS-2R) ON ALL ASPHALT REPAIRS.
- THE CONTRACTOR SHALL USE TRENCH SPOILS TO MAINTAIN DRIVE SURFACE OVER UTILITY CUT DURING CONSTRUCTION. CONTRACTOR SHALL THEN REMOVE MATERIAL AND PLACE RECOMPACTED SUBGRADE AND ASPHALT OR GRAVEL ABOVE UTILITY TRENCH.
- CONTRACTOR SHALL REPAIR ALLEY SURFACES WITH 6" CLASS 6 AGGREGATE. NO ADDITIONAL PAVING IS REQUIRED.

EROSION CONTROL NOTES:

- CONTRACTOR IS RESPONSIBLE TO INSTALL AND MAINTAIN NECESSARY EROSION CONTROL BEST MANAGEMENT PRACTICES (BMPs) TO COMPLY WITH THE CDPE AND TOWN OF NORWOOD REQUIREMENTS. CONTRACTOR SHALL MAINTAIN AN EROSION CONTROL LOG FOR RECORD KEEPING.

BASIC BMPs ARE AS FOLLOWS:

INSTALL SILT FENCE DOWNHILL AND DOWNSTREAM OF WORK AND STAGING AREAS AND TO PROTECT WETLANDS AND IRRIGATION DITCHES.
 - ESTABLISH STAGING AREA.
 - INSTALL INLET PROTECTION FOR EXISTING CULVERTS OR INLETS TRIBUTARY TO THE WORK
 - MODIFY OR MOVE EROSION CONTROL AS NECESSARY.
 - PROVIDE SEDIMENT PROTECTION OVER DISTURBED AREAS OUTSIDE OF THE PAVING IF THE PERMANENT RESTORATION IS NOT QUICKLY ESTABLISHED.
 - PAVING/PATCHING OF ROAD AND HARD SURFACES.
 - PERMANENT RESTORATION OF DISTURBED AREAS OUTSIDE OF PAVING.
 - DUST ABATEMENT
 - STREET SWEEPING
- CONTRACTOR SHALL PERFORM CONSTRUCTION OPERATIONS, PROVIDING FOR EROSION CONTROL MEASURES THROUGHOUT THE CONSTRUCTION PROCESS, PER TOWN LAND USE CODE. CONTRACTOR SHALL SELECT APPROPRIATE CONSTRUCTION PHASE BMPs FOR THE CONSTRUCTION SEASON AND MAINTAIN THEM THROUGH THE LIFE OF THE PROJECT.
- CONTRACTOR TO USE STRAW WATTLES, OR OTHER APPROVED DEVICES, TO FILTER RUNOFF FROM EXCAVATION AREAS REQUIRING DEWATERING. REMOVE ANY DEBRIS OR SEDIMENT ACCUMULATED IN THE ADJACENT DRAINAGE SYSTEM (DITCHES/CULVERTS) IMMEDIATELY. CONTRACTOR SHALL DOCUMENT EXISTING AREAS OF SEDIMENT WITHIN THE DRAINAGE SYSTEM WITH PHOTOGRAPHS AND PROVIDE TO SAN MIGUEL COUNTY AND TOWN OF NORWOOD ROW INSPECTORS.
- CONTRACTOR SHALL STOCKPILE TOPSOIL AND REPLACE OVER DISTURBED AREAS. ALL DISTURBED AREAS SHALL BE RE-VEGETATED USING APPROPRIATE SEED MIX. SEED MIX SHALL BE MONTANE MIX, MEADOW MIX, FROM WESTERN NATIVE SEED, OR APPROVED EQUAL. BROADCAST SEED PER RATE PER RECOMMENDATION.
- CONTRACTOR SHALL MAINTAIN A CLEAN SITE ENTRANCE AND INSPECT THE SITE ENTRANCE FOR VEHICLE TRACKING OR OTHER CONSTRUCTION DEBRIS DAILY. ACCUMULATED SEDIMENT AND OTHER DEBRIS SHALL BE REMOVED, AS NEEDED, MANUALLY USING A SHOVEL AND BROOM OR OTHER METHODS.
- CONTRACTOR SHALL ESTABLISH A STOCKPILE, STAGING, AND STORAGE AREA. THE LOCATION OF THIS FACILITY SHALL BE COORDINATED AND APPROVED WITH THE TOWN OF NORWOOD. THIS AREA SHALL BE RETURNED TO ITS ORIGINAL CONDITION OR BETTER UPON DEMOBILIZATION.

UTILITY CONTACT INFORMATION:

ELECTRICAL UTILITY CONTACT:	
SAN MIGUEL POWER ASSOCIATION	970-864-7311
TELECOM UTILITY CONTACT:	
CENTURY LINK	970-230-3454
GAS UTILITY CONTACT:	
BLACK HILLS ENERGY	970-773-2500
WATER/SEWER UTILITY CONTACT:	
TOWN OF NORWOOD	970-327-0451
SOUTH LATERAL DITCH CONTACT:	
WILTON BARRETT	970-428-2422
LONE CONE DITCH CONTACT:	
MONTIE SNYDER	970-729-0966

Bid Set



555 RiverGate Lane, Suite B4-82
Durango, CO 81301
970.385.2340 www.sgm-inc.com

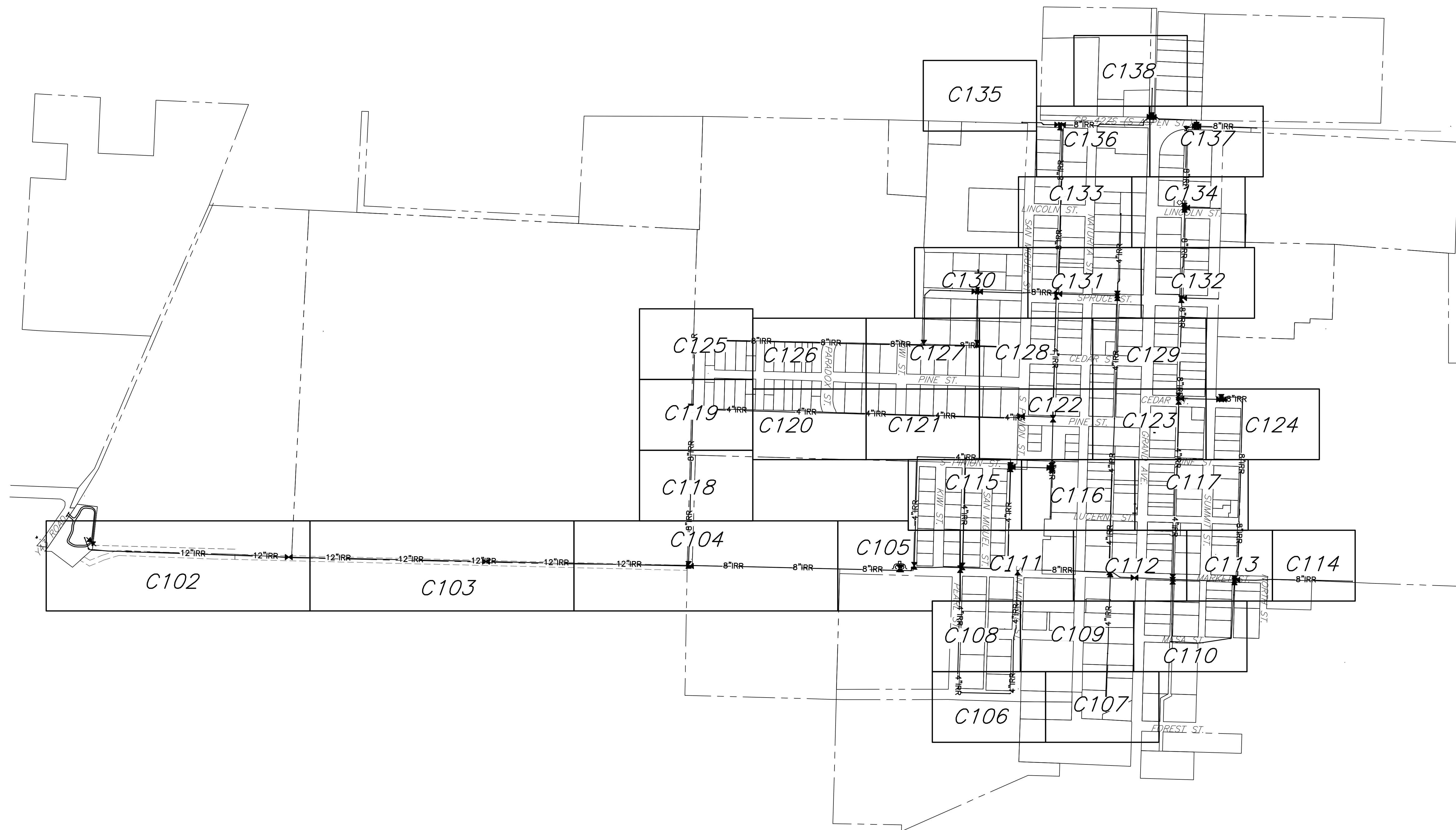
Town of Norwood
Raw Water System

#	Revision	Date	By
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Legend, Notes, and
Abbreviations

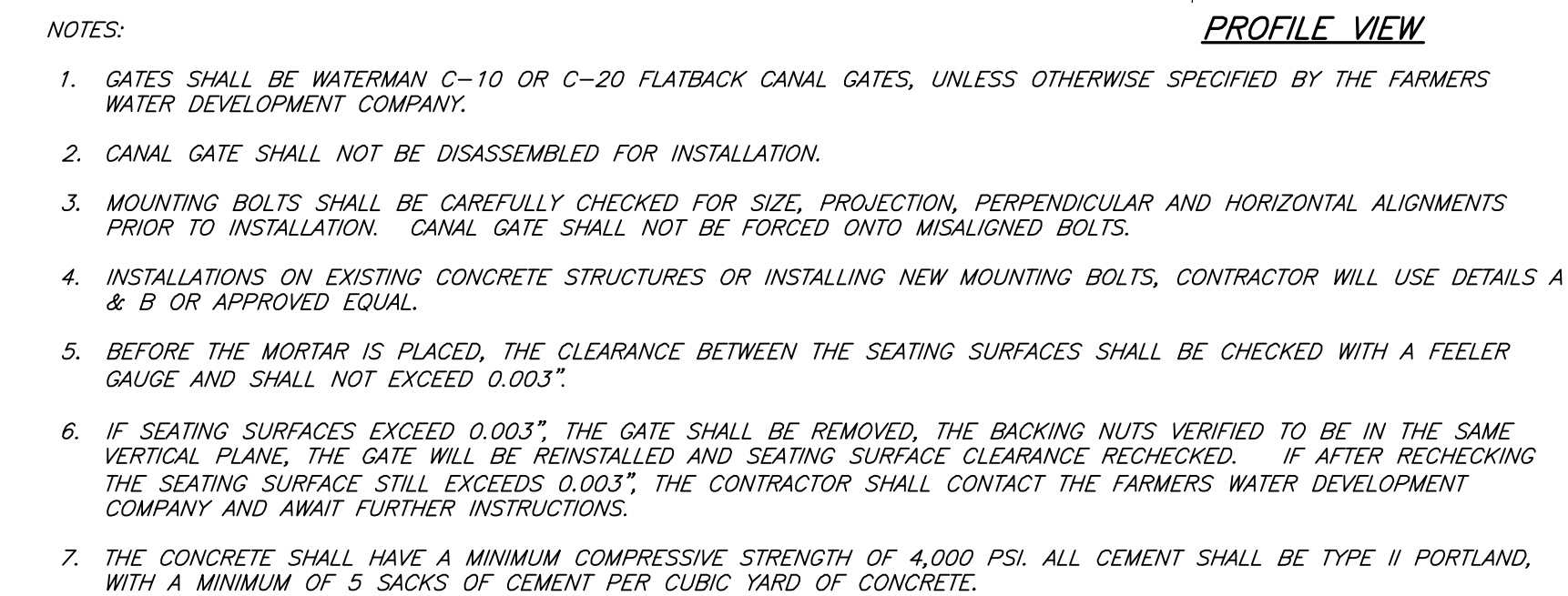
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C001
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C002

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TYPICAL WATERMAN CANAL GATE INSTALLATION DETAIL
NOT TO SCALE



DIVERSION BOX DETAIL



- DIVERSION BOX NOTES GENERAL NOTES:

 1. ALL WALLS AND FLOORS 8" THICK CONCRETE W/ #4 BARS @ 12" OC., CENTERED IN WALL.
 2. USE #4 BAR DIAMETERS FOR SPLICES AND LAPS.
 3. 3/4" CHAMFER ALL EXPOSED EDGES.
 4. SCARIFY ALL DISTURBED AREAS OF DITCH 12" DEEP. ADD A MIX BENTONITE @ 0.75LB/SF, RECOMPACT TO 95%+
 5. USE 2" X 6" REDWOOD FOR DIVERSION BOARDS, LENGTH TO BE SIZED IN FIELD.

SITE PREPARATION NOTES:

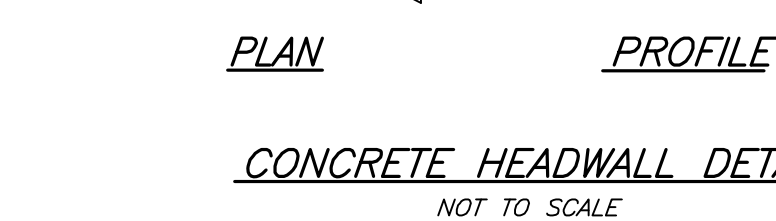
 1. PLACE NEW DIVERSION BOX ON 95% STANDARD PROCTOR RECONDITIONED SUBGRADE. SCARIFY AND RE-COMPACT 8" DEEP.
 2. WING WALL FILL SHALL BE PLACED IN 6" VERTICAL LIFTS WITH COMPACTION MATCHING SUBGRADE REQUIREMENT.

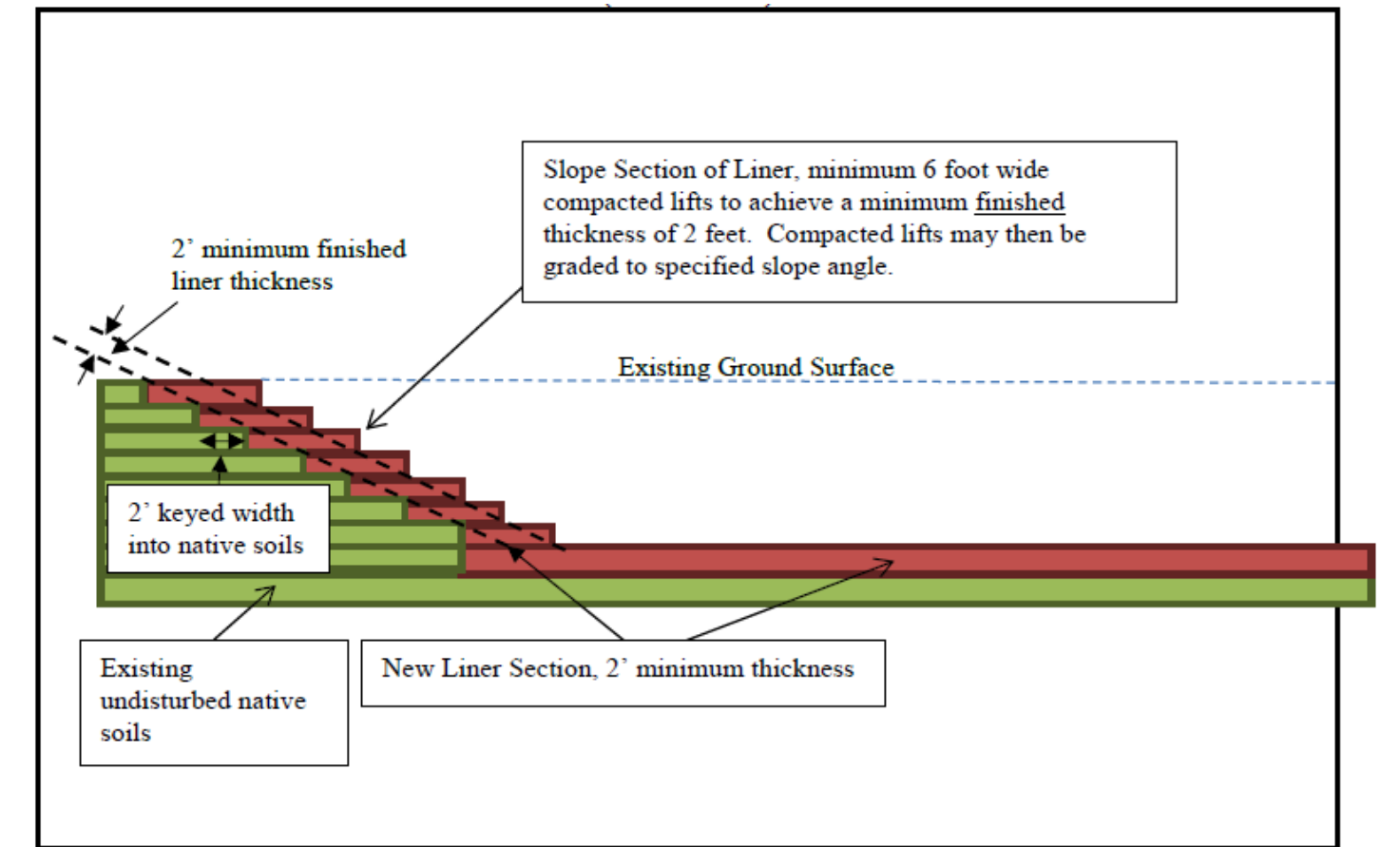
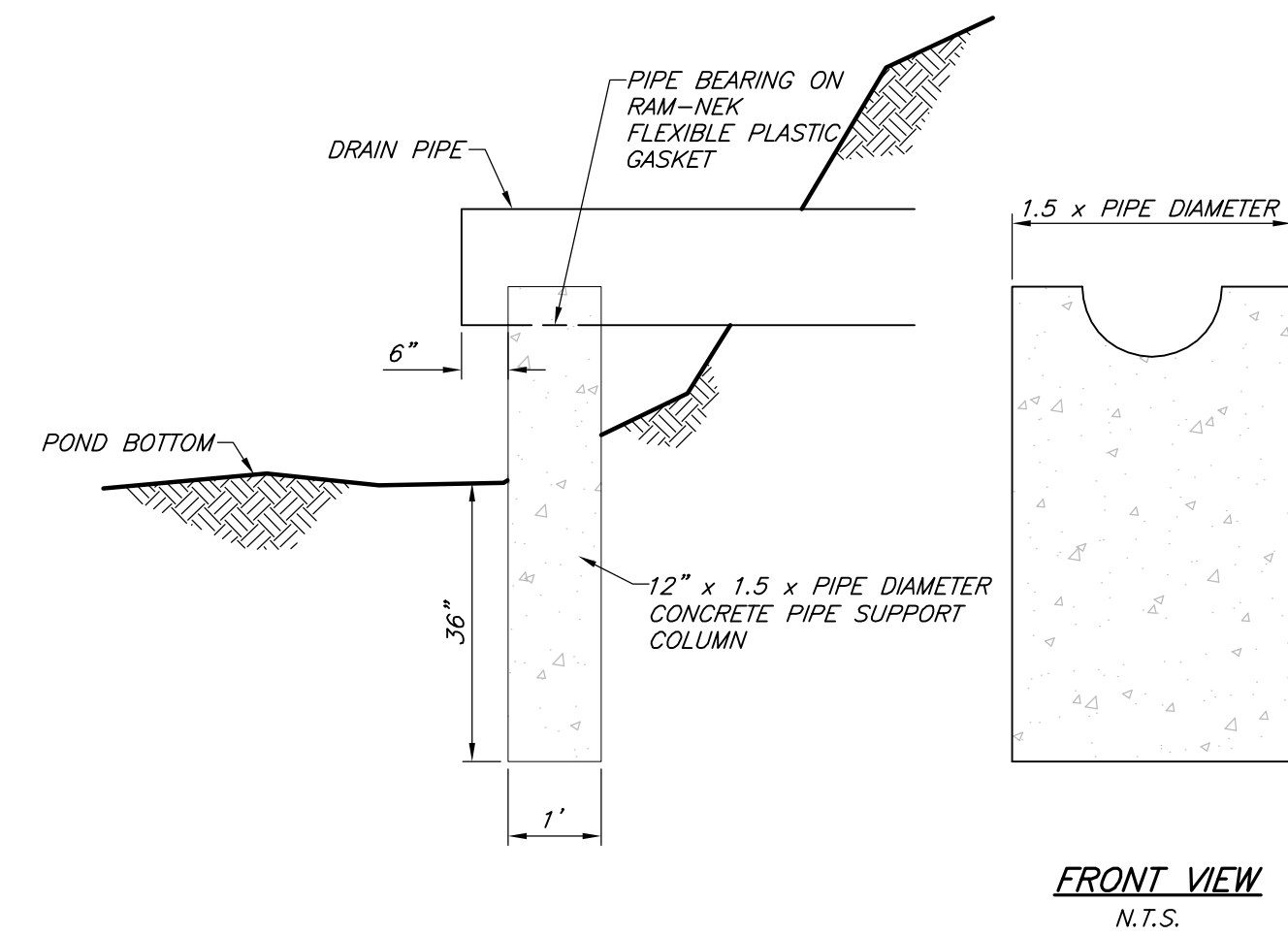
CONCRETE NOTES:

 1. ALL FLUID FILLED CONCRETE STRUCTURES HAVE BEEN DESIGNED IN ACCORDANCE W/ACI 350. ALL STRUCTURAL CONCRETE CONSTRUCTION WORK SHALL CONFORM TO ACI 301-05 (OR LATEST EDITION) UNLESS NOTED OTHERWISE.
 2. CONSTRUCTION JOINTS NOT SHOWN ON THE DRAWINGS SHALL NOT BE INSTALLED WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
 3. CONCRETE MIX SHALL CONFORM TO THE FOLLOWING:
 - MINIMUM 28 DAY COMPRESSIVE STRENGTH = 4,000 PSI
 - WATER/CEMENT RATIO = 0.45
 - UNTRAINED AIR = 5% TO 7%
 - MAXIMUM AGGREGATE SIZE = #67 (3/4")
 4. REINFORCING SHALL CONFORM TO ASTM A615, GRADE 60, EXCEPT TIES AND ANCHORS WHICH SHALL CONFORM TO ASTM A615, GRADE 40 OR ASTM A706 GRADE 60.
 5. A MINIMUM CONCRETE COVER OF 3-INCHES SHALL BE PROVIDED FOR ALL REINFORCING STEEL.

HEADWALL NO.	Ba	x	y	m	k	l	Φ
1	12"	5'-0"	5'-4"	2'-4"	0'-4"	2'-0"	62"
2	18"	5'-6"	5'-10"	2'-10"	0'-6"	2'-10"	67"
3	24"	6'-0"	6'-4"	3'-4"	0'-6"	3'-8"	67"
4	30"	6'-6"	6'-10"	3'-10"	1'-0"	4'-7"	69"
5	36"	7'-0"	7'-4"	4'-4"	1'-0"	5'-7"	64"
6	42"	7'-6"	7'-10"	4'-10"	1'-3"	6'-4"	65"
7	49"x 33"	8'-1"	7'-1"	4'-1"	1'-0"	7'-0"	68"

NOTE: HEADWALL TO INCLUDE APRON AND APRON TOE WALL. DIMENSIONS REFERENCE CDOT STANDARDS PLAN NO. M601-10 AND M-601-20



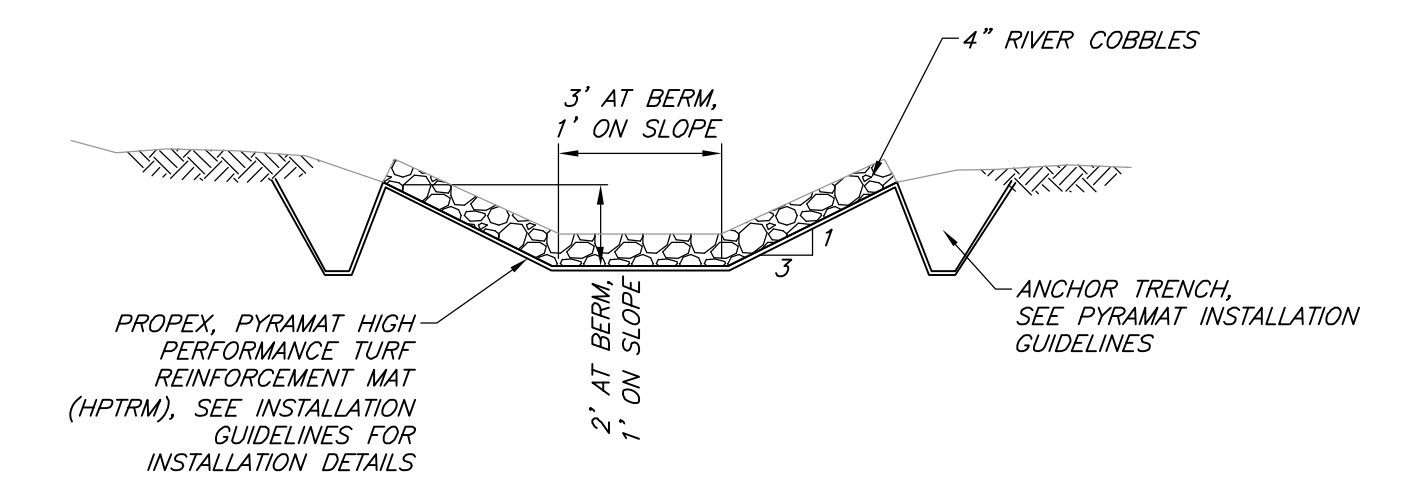
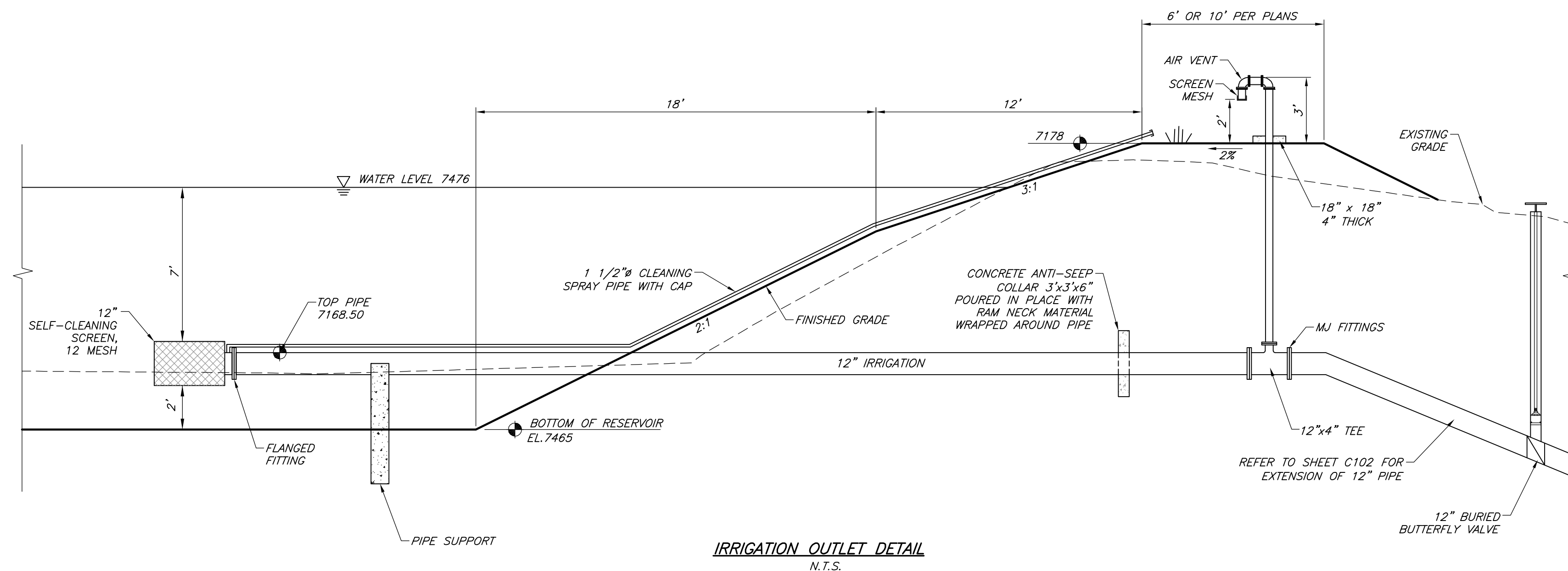


CONTRACTOR SHALL INSTALL A CLAY LINER ON THE BOTTOM AND SIDES OF THE RESERVOIR AS SHOWN IN THIS DETAIL. OTHER LINER INSTALLATION DETAILS CAN BE FOUND IN THE "GEOTECHNICAL ENGINEERING STUDY" THAT IS A PART OF THE PROJECT MANUAL.

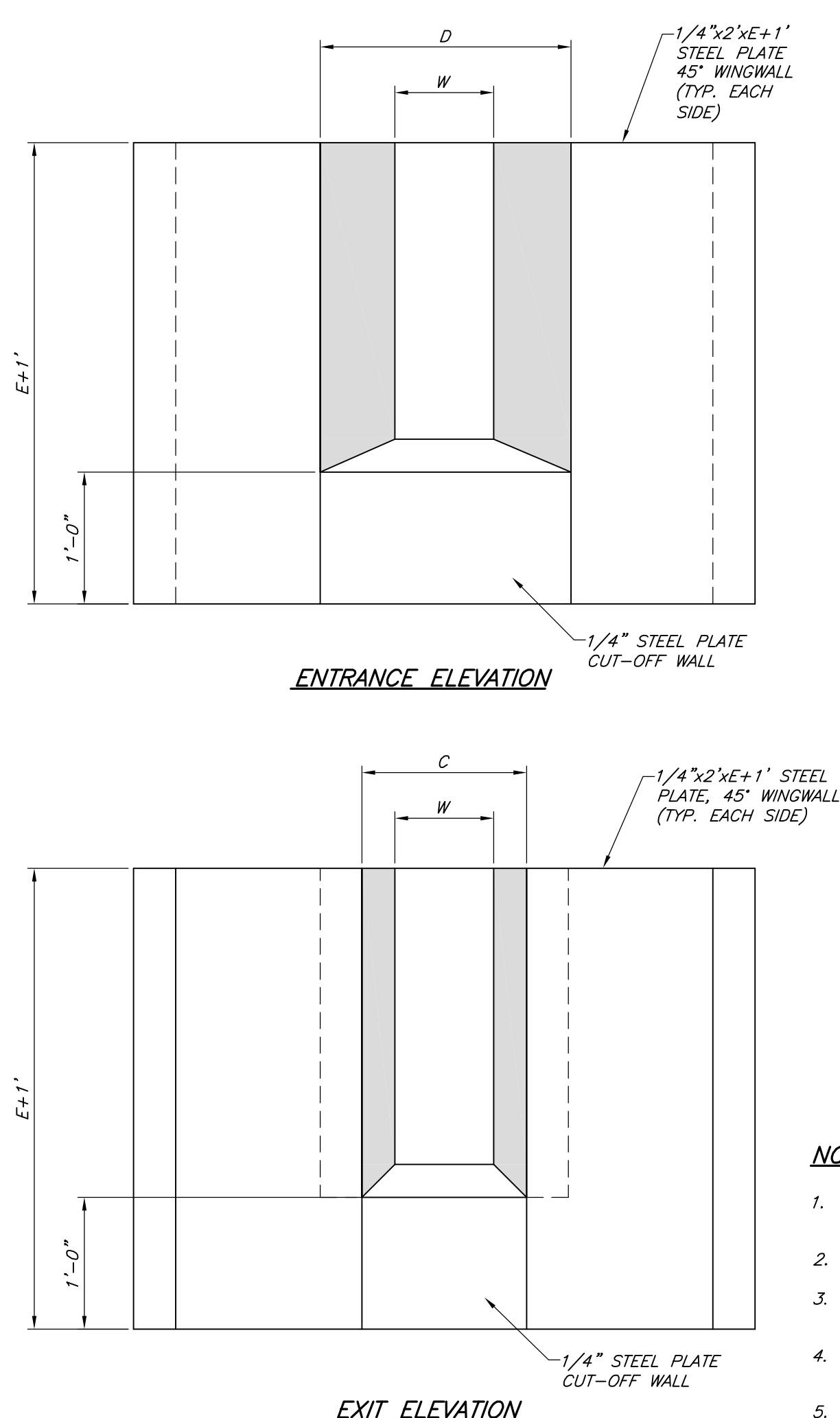


RESERVOIR CLAY LINER DETAIL
N.T.S.

- NOTES:
1. CLASS 6 MATERIAL UNDER SLAB WITH COMPACTION DENSITY OF 95% PER ASTM D698.
 2. CONCRETE MIX SHALL CONFORM TO THE FOLLOWING:
 - 28 DAY COMPRESSIVE STRENGTH = 3,000 psi
 - W/C RATIO = 0.45
 - ENTRAINED AIR = 5%-7%
 - MAXIMUM AGGREGATE SIZE = #67 (3/4")
 3. REINFORCEMENT SHALL BE 6"x6" MESH PATTERN WITH #10 GAUGE WIRE BOTH DIRECTIONS.
 4. FLANGED FITTINGS ABOVE GROUND. MJ FITTINGS WITH MEGALUGS BELOW GROUND. SEE SHEET C102 FOR LOCATION.

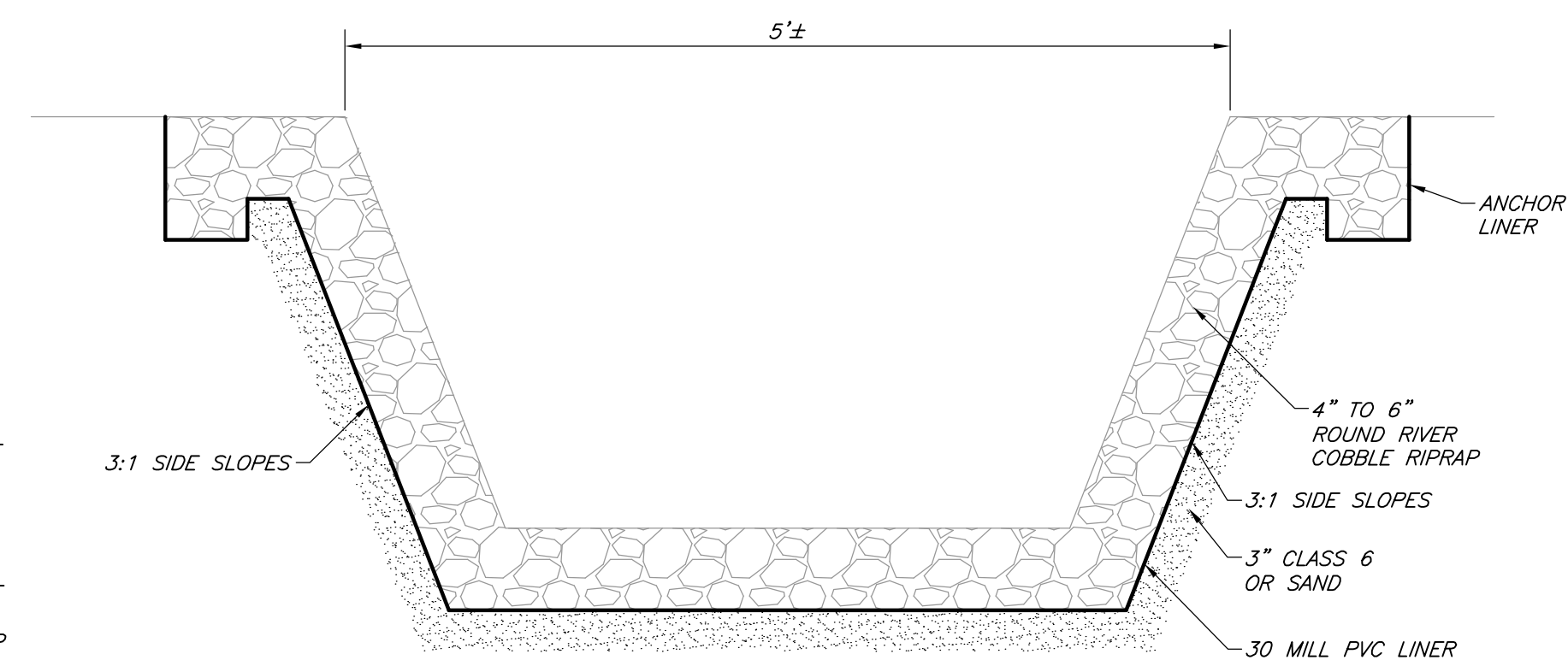


SPILLWAY OUTLET DITCH
N.T.S.



W (SIZE)	A	2/3 A	B	C	D	E	T	G	K	N	X	Y
1" (2.54 CM)	1'-2 9/32" (36.27 CM)	9 17/32" (24.21 CM)	1'-2" (35.56 CM)	3 21/32" (9.29 CM)	6 19/32" (16.75 CM)	9" (22.86 CM)	3" (7.62 CM)	8" (20.32 CM)	3/4" (1.91 CM)	1 1/8" (2.86 CM)	5/16" (0.79 CM)	1/2" (1.27 CM)
2" (5.08 CM)	1'-4 5/16" (41.43 CM)	10 7/8" (27.62 CM)	1'-4" (40.64 CM)	5 5/16" (13.49 CM)	8 13/32" (21.35 CM)	10" (25.4 CM)	4 1/2" (11.43 CM)	10" (25.4 CM)	7/8" (2.22 CM)	1 11/16" (4.29 CM)	5/8" (1.59 CM)	(2.54 CM)
3" (7.62 CM)	1'-6 3/8" (46.67 CM)	1'-0 1/4" (31.12 CM)	1'-6" (45.72 CM)	7" (17.78 CM)	10 3/16" (47.23 CM)	1'-6" (45.72 CM)	6" (15.24 CM)	1' (30.48 CM)	2" (5.08 CM)	2 1/4" (5.72 CM)	1" (2.54 CM)	1 1/2" (3.81 CM)
6" (15.24 CM)	2'-0 7/16" (62.07 CM)	1'-4 5/16" (41.44 CM)	2' (60.96 CM)	1'-3 1/2" (38.74 CM)	1'-3 5/8" (39.69 CM)	2' (60.96 CM)	1' (30.48 CM)	2' (60.96 CM)	3" (7.62 CM)	4 1/2" (11.43 CM)	2" (5.08 CM)	3" (7.62 CM)
9" (22.86 CM)	2'-10 5/8" (87.95 CM)	1'-11 1/8" (58.74 CM)	2'-10" (86.36 CM)	1'-3" (38.1 CM)	1'-10 5/8" (57.47 CM)	2'-6" (76.2 CM)	1' (30.48 CM)	1'-6" (45.72 CM)	3" (7.62 CM)	4 1/2" (11.43 CM)	2" (5.08 CM)	3" (7.62 CM)
12" (30.48 CM)	4'-6" (137.2 CM)	3' (91.44 CM)	4'-4 7/8" (134.3 CM)	2' (60.96 CM)	2'-9 1/4" (84.46 CM)	3' (91.44 CM)	2' (60.96 CM)	3' (91.44 CM)	3" (7.62 CM)	9" (22.86 CM)	2" (5.08 CM)	3" (7.62 CM)
18" (45.72 CM)	4'-9" (144.8 CM)	3'-2" (96.52 CM)	4'-7 7/8" (141.9 CM)	2'-6" (76.2 CM)	3'-4 3/8" (102.6 CM)	3' (91.44 CM)	2' (60.96 CM)	3' (91.44 CM)	3" (7.62 CM)	9" (22.86 CM)	2" (5.08 CM)	3" (7.62 CM)
24" (60.96 CM)	5' (152.4 CM)	3'-4" (101.6 CM)	4'-10 7/8" (149.5 CM)	3' (91.44 CM)	3'-11 1/2" (120.7 CM)	3' (91.44 CM)	2' (60.96 CM)	3' (91.44 CM)	3" (7.62 CM)	9" (22.86 CM)	2" (5.08 CM)	3" (7.62 CM)
36" (91.4 CM)	5'-6" (167.6 CM)	3'-8" (111.8 CM)	5'-4 3/4" (164.5 CM)	4' (121.9 CM)	5'-1 7/8" (157.2 CM)	3' (91.44 CM)	2' (60.96 CM)	3' (91.44 CM)	3" (7.62 CM)	9" (22.86 CM)	2" (5.08 CM)	3" (7.62 CM)
48" (121.9 CM)	6' (182.9 CM)	4' (121.9 CM)	5'-10 5/8" (179.4 CM)	5' (152.4 CM)	6'-4 1/4" (193.7 CM)	3' (91.44 CM)	2' (60.96 CM)	3' (91.44 CM)	3" (7.62 CM)	9" (22.86 CM)	2" (5.08 CM)	3" (7.62 CM)
60" (152.4 CM)	6'-6" (198.1 CM)	4'-4" (132.1 CM)	6'-4 1/2" (194.3 CM)	6' (182.9 CM)	7'-6 5/8" (230.2 CM)	3' (91.44 CM)	2' (60.96 CM)	3' (91.44 CM)	3" (7.62 CM)	9" (22.86 CM)	2" (5.08 CM)	3" (7.62 CM)
72" (182.9 CM)	7' (213.4 CM)	4'-8" (142.2 CM)	6'-10 3/8" (209.2 CM)	7' (213.4 CM)	8'-9" (266.7 CM)	3' (91.44 CM)	2' (60.96 CM)	3' (91.44 CM)	3" (7.62 CM)	9" (22.86 CM)	2" (5.08 CM)	3" (7.62 CM)
84" (213.4 CM)	7'-6" (228.6 CM)	5' (152.4 CM)	7'-4 1/4" (224.2 CM)	8' (243.8 CM)	9'-11 3/8" (303.2 CM)	3' (91.44 CM)	2' (60.96 CM)	3' (91.44 CM)	3" (7.62 CM)	9" (22.86 CM)	2" (5.08 CM)	3" (7.62 CM)
96" (243.8 CM)	8' (243.84 CM)	5'-4" (162.6 CM)	7'-10 1/8" (239.1 CM)	9' (274.3 CM)	11'-1 3/4" (339.7 CM)	3' (91.44 CM)	2' (60.96 CM)	3' (91.44 CM)	3" (7.62 CM)	9" (22.86 CM)	2" (5.08 CM)	3" (7.62 CM)
120" (304.8 CM)		6' (182.9 CM)	14' (426.7 CM)	12' (365.8 CM)	15'-7 1/4" (475.6 CM)	4' (121.9 CM)	3' (91.44 CM)	6' (182.9 CM)	15.24 CM)	1'-1 1/2" (34.29 CM)	1' (30.48 CM)	22.86 CM)
144" (365.8 CM)		6'-8" (203.2 CM)	16' (487.7 CM)	18'-4 3/4" (447.0 CM)	18'-8" (560.7 CM)	5' (152.4 CM)	3' (91.44 CM)	8' (243.8 CM)	15.24 CM)	1'-1 1/2" (34.29 CM)	1' (30.48 CM)	22.86 CM)

1. CONTRACTOR TO PURCHASE PARSHALL FLUME BASED ON REQUIRED DIMENSIONS.
2. FLUME SHALL BE 1/4" THICK STEEL.
3. NEME-TAR OR EQUAL COATING TO BE APPLIED TO ALL 1/4" STEEL SURFACES AND JOINTS.
4. PARSHALL FLUME MATERIAL TO BE GALVANIZED STEEL OR TAR-COATED BLACK STEEL.
5. CONTRACTOR TO WELD WINGWALL & CUTOFF WALLS TO FLUME WITH CONTINUOUS FLANGE WELD.
6. FLUME SHALL BE SET SO THAT IT IS CENTERED IN THE STREAM'S THALWEG.
7. THE INLET DOOR OF THE FLUME MUST BE INSTALLED LEVEL FROM FRONT TO BACK AND SIDE TO SIDE.
8. THE ENTRANCE TO THE APPROACH CHANNEL SHALL BE SET AT THE ELEVATION OF THE STREAM BED.
9. THE FLAT FLOOR OF THE PARSHALL FLUME (THE CREST) SHOULD BE SET AT UPSTREAM. THE INLET OF THE FLUME MUST BE SET AT OR ABOVE THE INVERT OF THE INLET CHANNEL/PIPE. IF SET HIGHER, A 4:1 SLOPE RAMP SHOULD BE GRADDED FROM THE CHANNEL/PIPE TO THE INLET OF THE FLUME. THE INLET OF THE FLUME SHOULD NEVER BE BELOW THE INVERT OF THE CHANNEL/PIPE.
10. THE OUTLET OF THE PARSHALL FLUME SHOULD BE SET AT OR ABOVE (DOWN) THE INLET OF THE OUTLET CHANNEL TO TRANSITION SOLIDS OUT OF THE FLUME AND TO MINIMIZE THE CHANCE OF SUBMERGENCE. FREE-SPILLING DISCHARGE IS ALLOWABLE OFF THE END OF A PARSHALL FLUME.
11. THE FLUME SHOULD BE INSTALLED ON FLOWABLE FILL BASE. FOR INSTALLATION ON SOGGY GROUND, HEAVY TIMBERS MAY BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW UNDER EACH END OF THE FLUME, AS WELL AS UNDER THE THROAT. FOR SUPPORT, THE FLUME SHOULD BE WEIGHTED AS WELL AS LINED AND BRACED INTERNALLY TO PREVENT DISTORTION DURING INSTALLATION.
12. ONCE THE FLUME HAS BEEN INSTALLED ON THE PREPARED BASE, BACK SOIL AGAINST BOTH SIDES OF THE FLUME. THE PACKED SOIL SHOULD EXTEND UP THE SIDEWALLS TO THE TOP OF THE FLUME.



INTAKE TRENCH DETAIL
N.T.S.

As a general installation guideline, the bottom of the flume inlet should be set at a calculated percentage below the high water mark of the channel bank. To calculate this percentage, refer to the free flow discharge table. First, locate the throat width of the flume. Follow that column down until the indicated discharge in C.F.S. equals that of the maximum flow rate to be measured in the channel. From that maximum flow rate, find the corresponding gauge height reading on the outside column of the table.

Take 70% of this gage height figure (use 60% for 3", 6", or 9" throat widths). The resulting number is the depth at which the bottom of the flume inlet should be set below the high water mark of the channel bank.



Prior to setting the flume, the bottom of the ditch should be graded to conform to the shape of the flume. The Marshall Measuring Flume should be completely level both lengthwise and crosswise as installed in the channel. In soggy ground, heavy timbers may be laid crosswise under each end of the flume and under the throat.

In fast moving stream conditions, riprapping may be advisable after backfill is completed.

When choosing a site, a straight section of ditch with fairly high banks is

preferable. The water entering the flume should be reasonably smooth, non-turbulent, and of uniform velocity. A good practice is to provide a straight approach channel approximately 10 times as long as the flume throat width.

Flow tables supplied for the Thompson Parshall Measuring Flume are intended for free flow discharge conditions. In extremely flat channels, where submergence is likely, or under other adverse conditions, an experienced engineer should always be consulted to assure satisfactory flume installation.

INSTALLATION NOTES:

THE FLUME SHALL BE SET SO THAT IT
IS CENTERED IN THE STREAM'S THWALWEG.

THE INLET FLOOR OF THE FLUME MUST BE INSTALLED LEVEL FROM FRONT-TO-BACK AND FROM SIDE-TO-SIDE.

THE ENTRANCE TO THE APPROACH CHANNEL
SHALL BE SET AT THE ELEVATION OF THE
STREAMBED.

THE FLUME SHALL BE WEIGHTED AND BRACED INTERNALLY TO PREVENT FLOTATION AND/OR DISTORTION DURING INSTALLATION.

FLUME SHALL BE 1/4" THICK STEEL. PROVIDE COATING TO PREVENT RUST.

FLUME INSTALLATION DETAIL

NOT TO SCALE

$$\frac{3}{8}$$

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Town of Norwood

Raw Water System

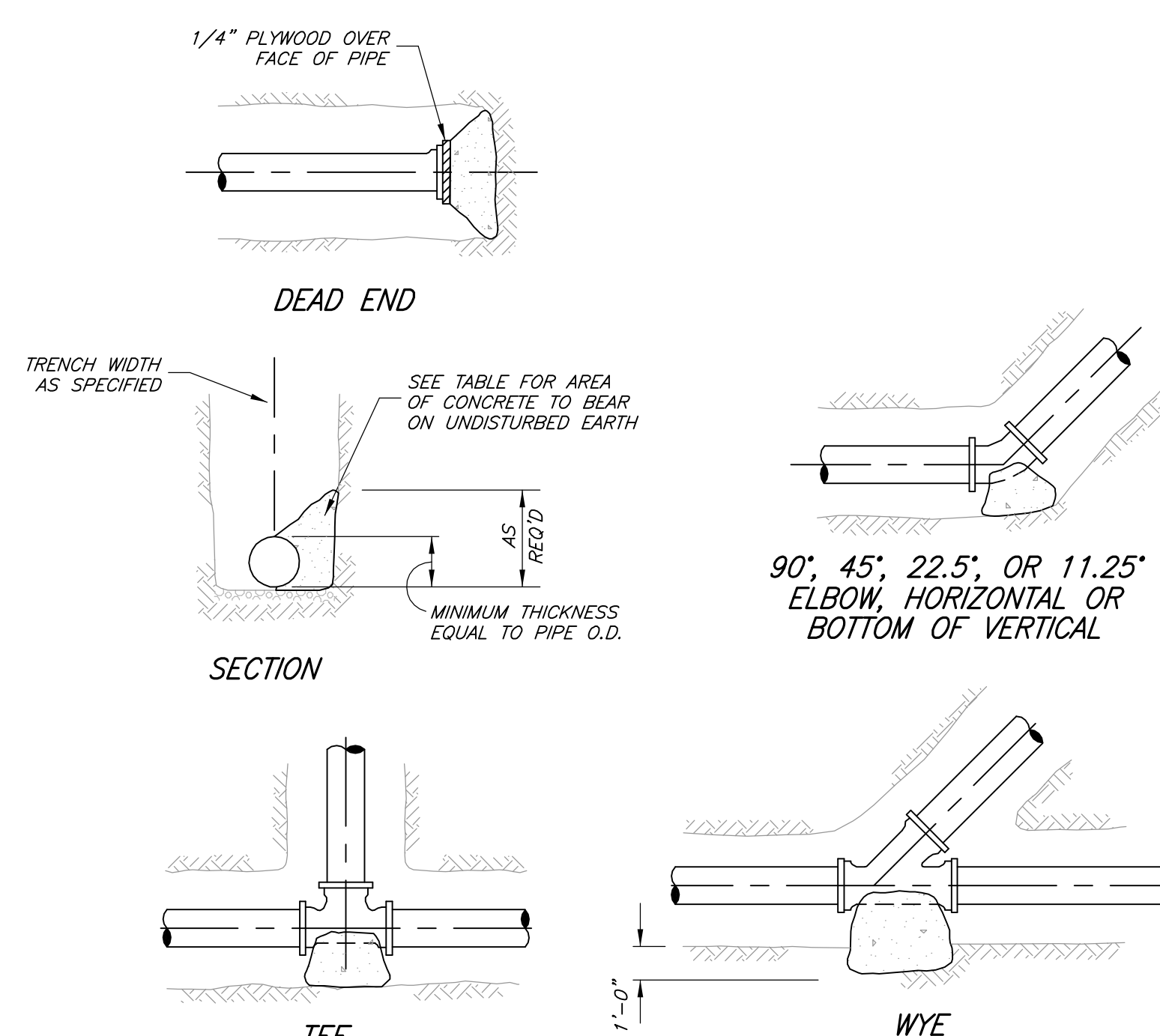
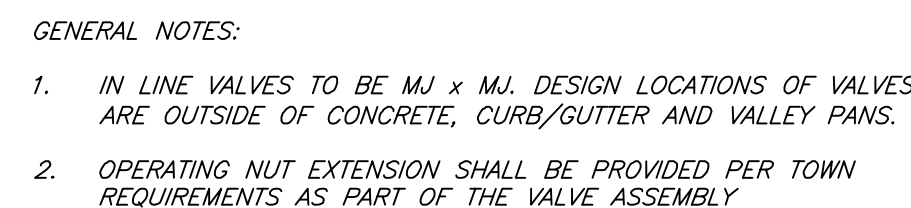
#	Revision	Date	By
1			

Parshall Flume Details

Job No.	2015-440.002		
Drawn by:	DPW		
Date:	11/01/17		
QC:	RM	PE:	LM
File:	2015-440.002-Details		

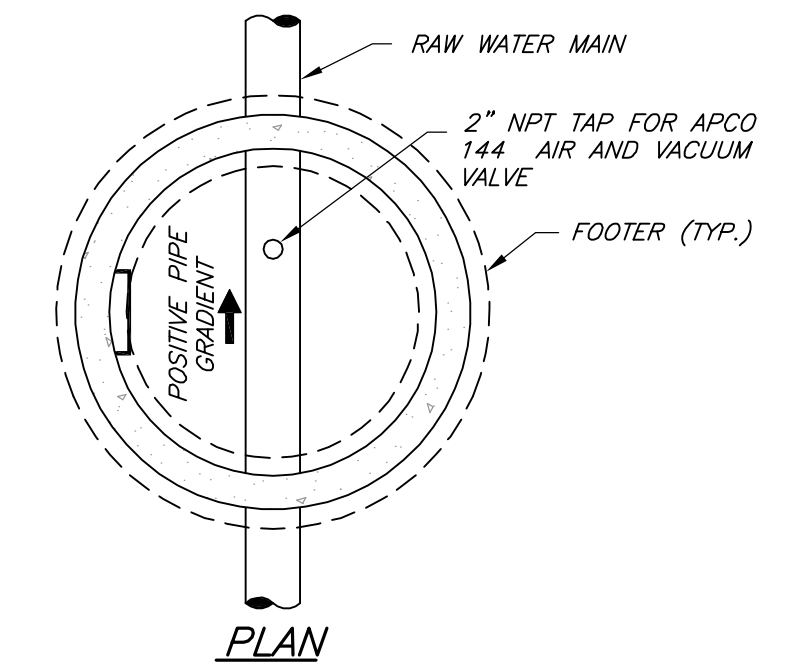
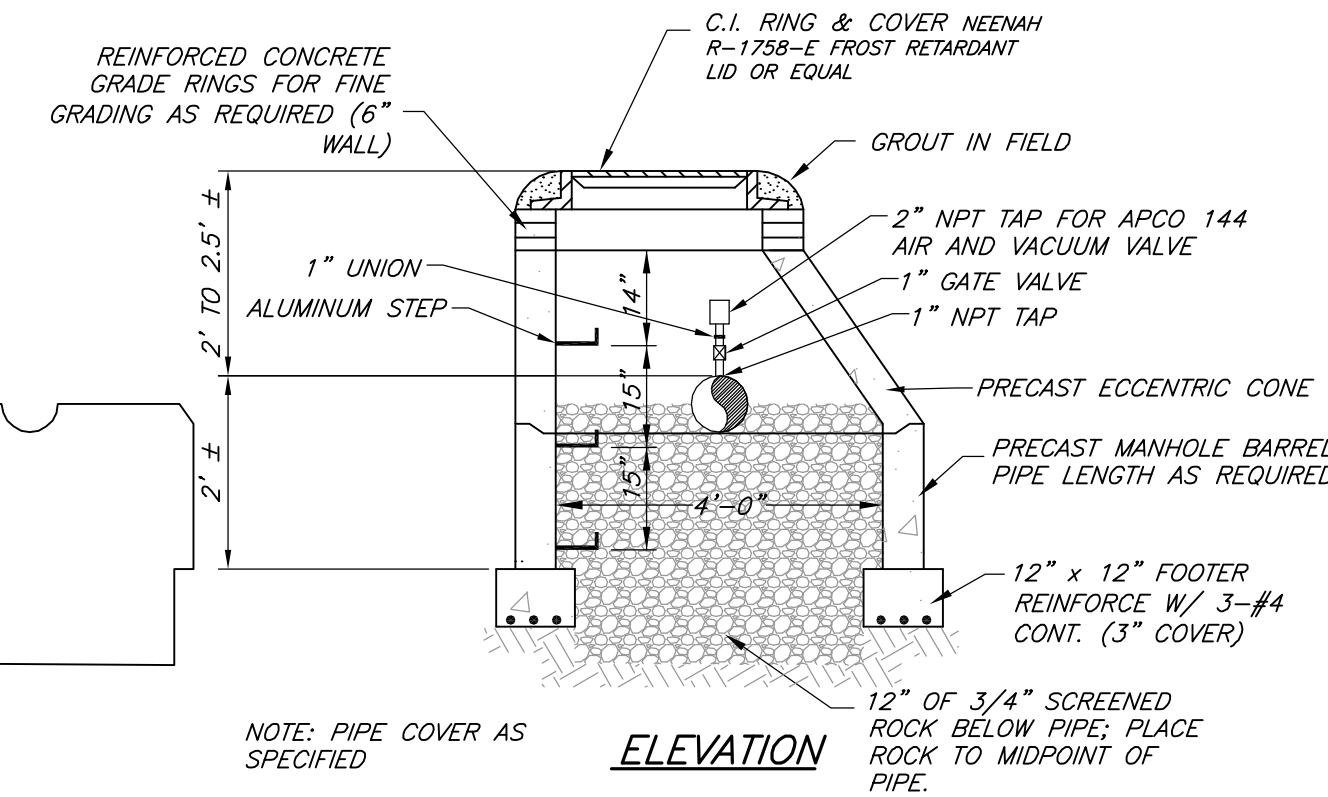
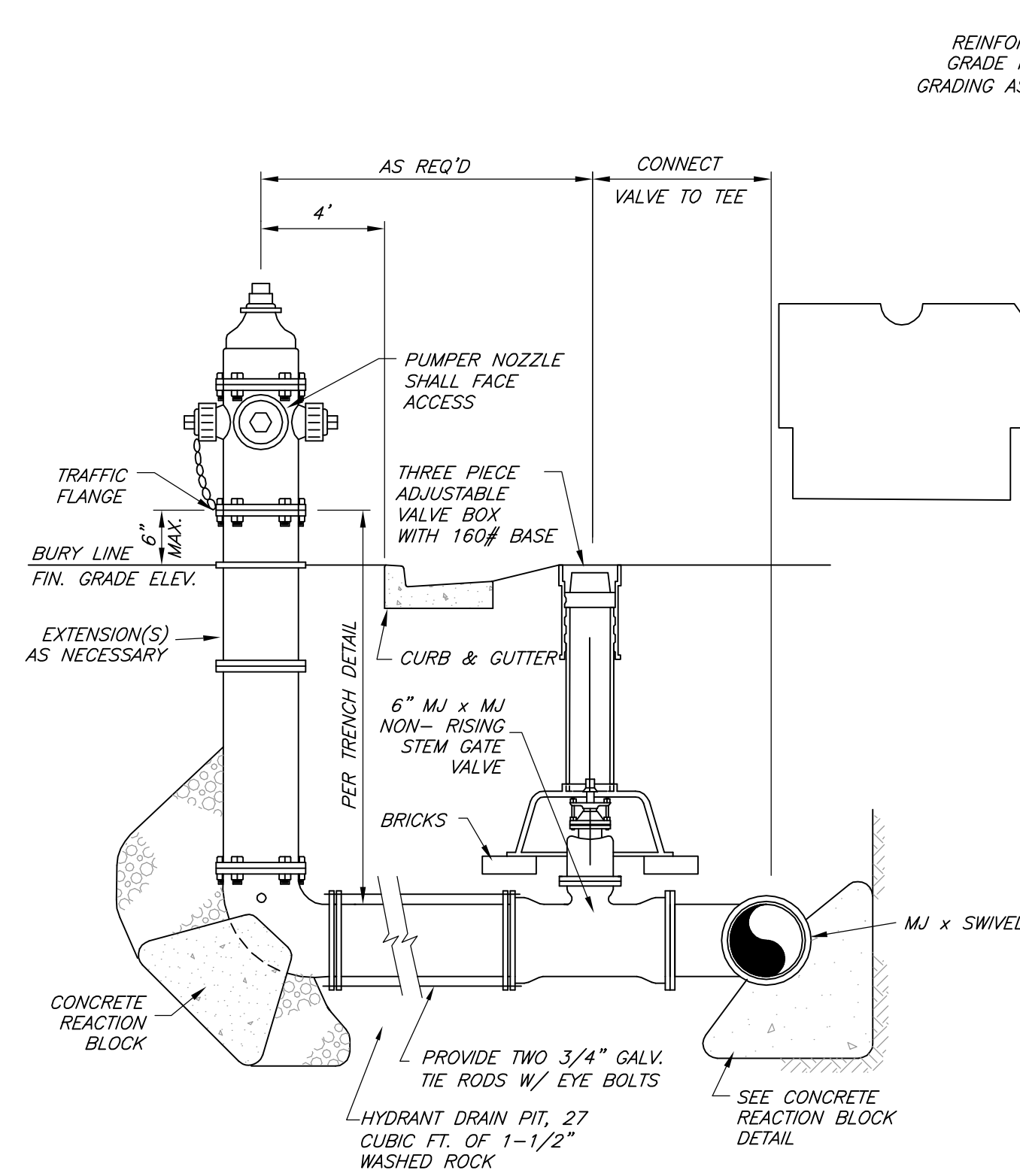
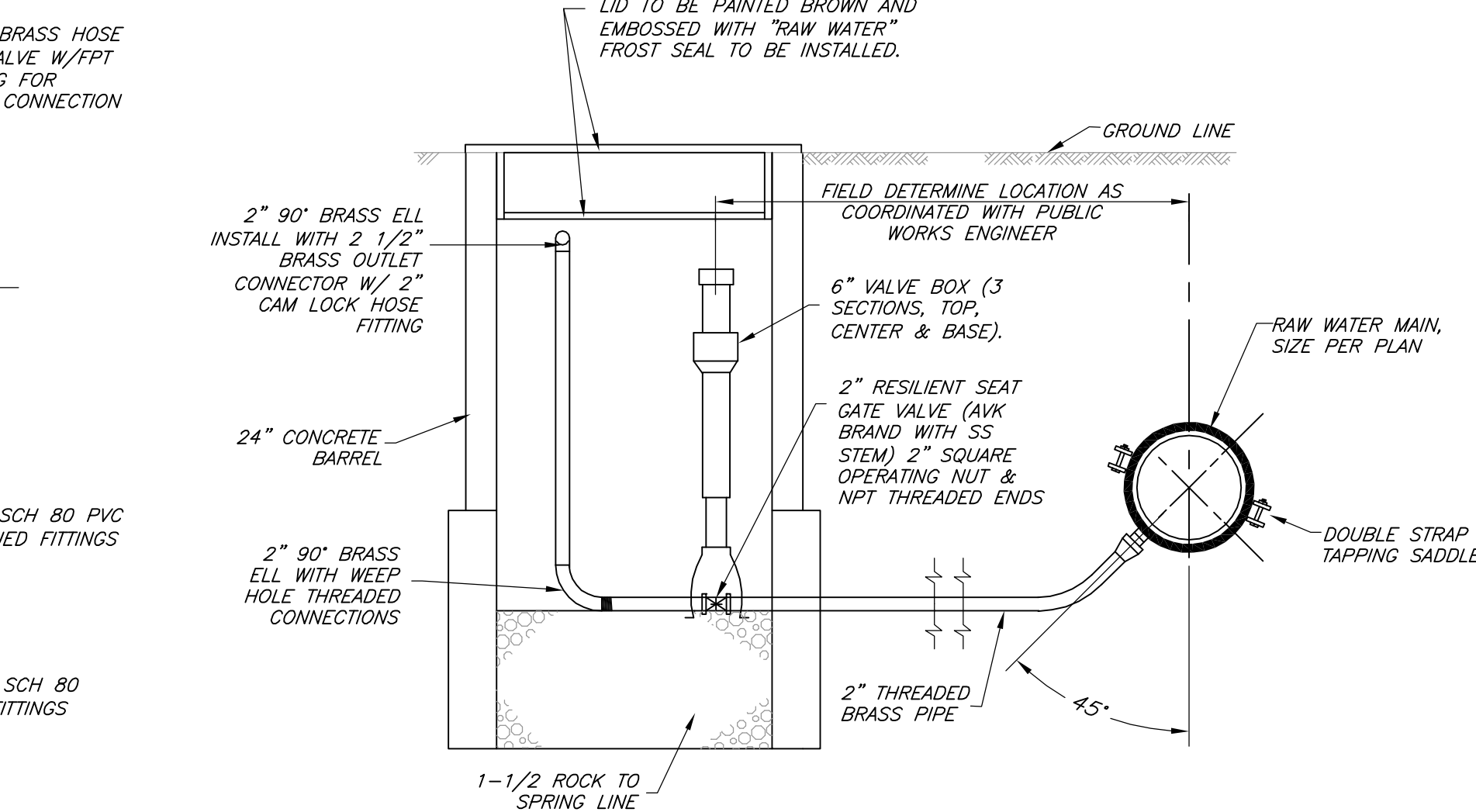
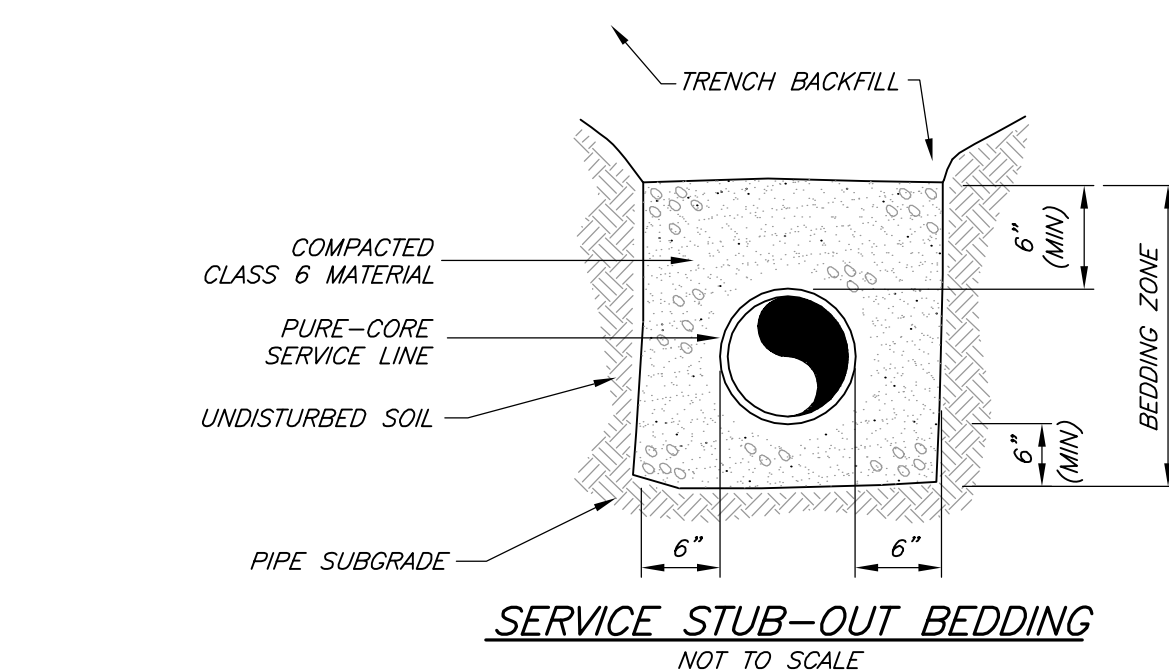
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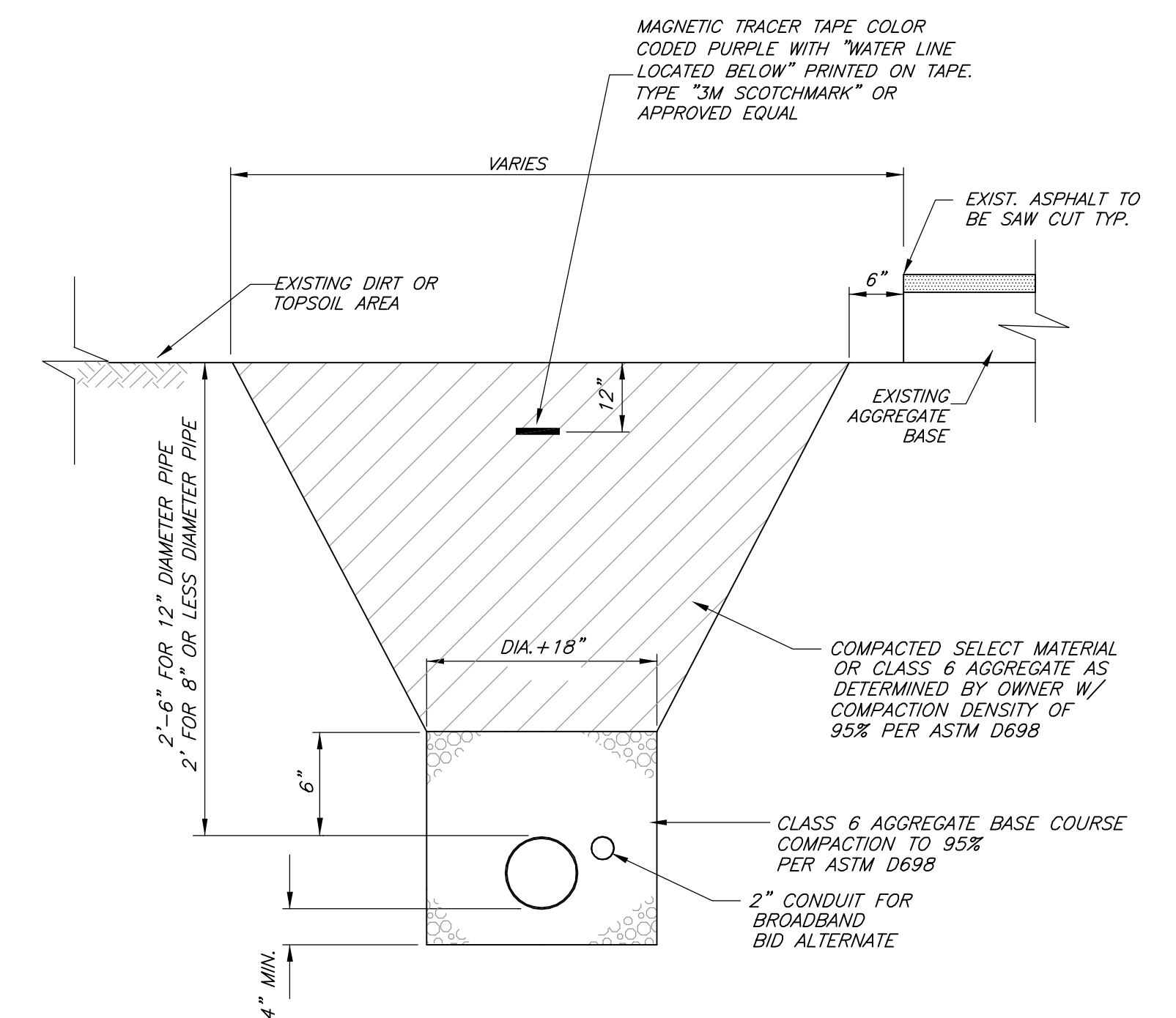
SIZE (INCHES)	ELBOWS				TEES & DEAD ENDS
	90° FT. (SQ. FT.)	45° (SQ. FT.)	22.5° (SQ. FT.)	11.25° (SQ. FT.)	
4	1.8	1.0	0.5	0	1.3
6	4.0	2.2	1.1	0	2.8
8	7.1	3.8	2.0	1.0	5.0
10	11.1	6.0	3.0	1.5	7.8
12	16.0	8.6	4.4	2.2	11.3
14	21.7	11.9	6.0	3.0	15.0
16	28.4	15.3	8.0	4.0	20.0
18	36.0	19.4	10.0	5.0	25.4

AREAS GIVEN IN TABLE ARE BASED UPON AN INTERNAL STATIC PRESSURE OF 100 P.S.I. AND A SOIL BEARING CAPACITY OF 1000 LBS. PER SQ. FT. BEARING AREAS FOR ANY PRESSURE AND SOIL BEARING CAPACITY MAY BE OBTAINED BY MULTIPLYING THE TABULATED VALUES BY A CORRECTION FACTOR "F".



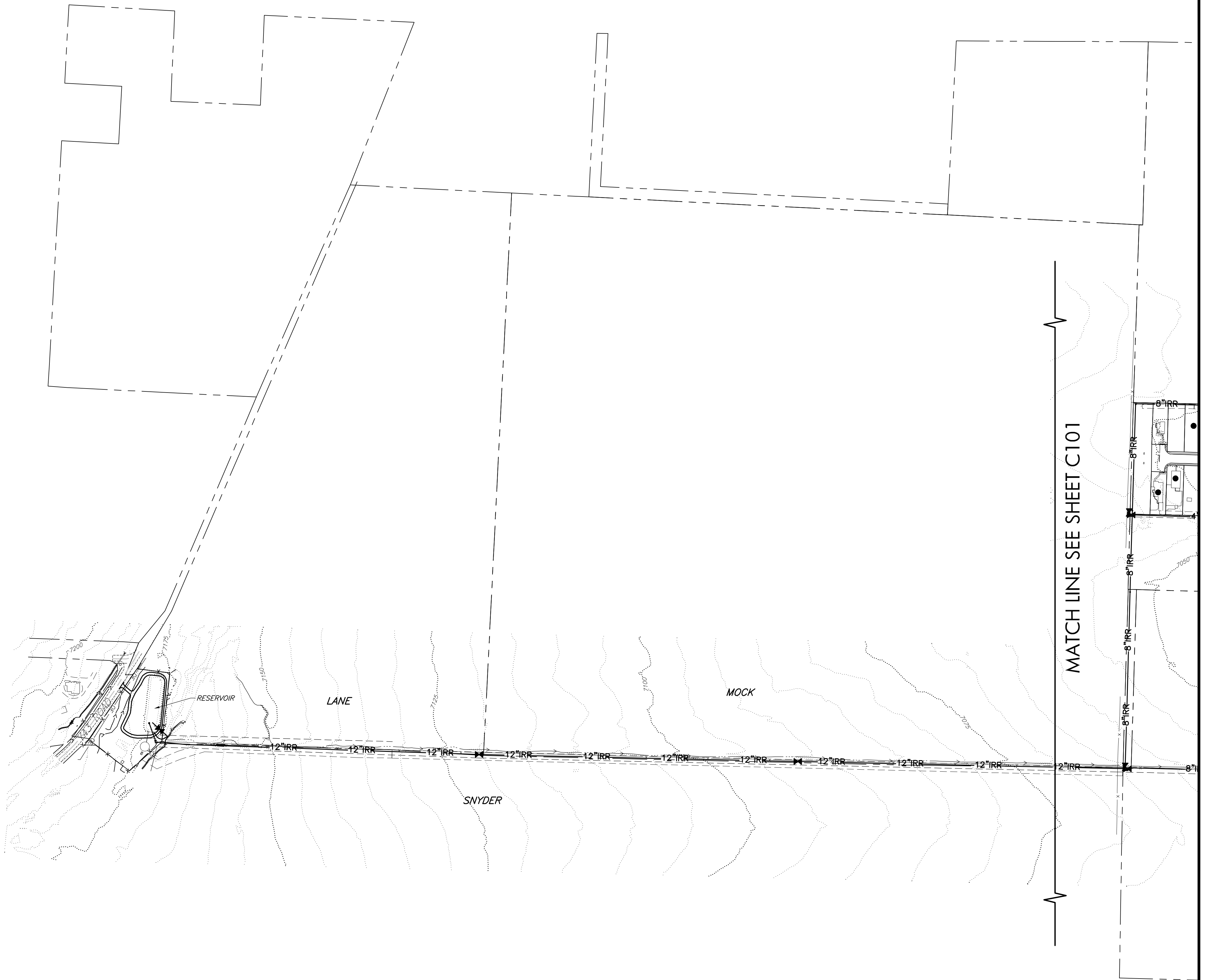
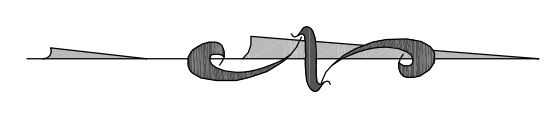
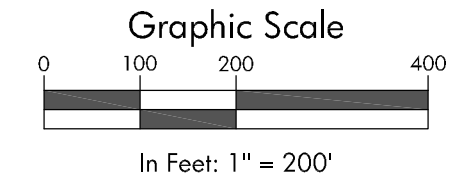
- MANHOLE CONSTRUCTION NOTES:

1. USE RUB-R-NEK PREFORMED GASKET (2 LAYERS) OR GROUT IN PLACE BETWEEN ALL BOTTOM SECTION, BARREL SECTIONS, CONCRETE GRADE RINGS, AND TOP CASTINGS.
2. BACKFILL WITHIN 24" OF MANHOLE: CLASS 2 AGGREGATE OR NATIVE MATERIALS WITH LESS THAN 3" SIZE.
3. PRECAST RINGS OR METAL RISER RING COURSE SHALL BE UTILIZED WHERE REQUIRED WITH 2 COURSES MINIMUM AND 12 COURSES MAXIMUM (2 MINIMUM, 12" MAXIMUM HEIGHT).
4. GRADE ADJUSTMENT AS FOLLOWS: GREATER THAN, OR EQUAL TO, 1 FOOT, CONCRETE BARREL SECTIONS; LESS THAN 1 FOOT, CONCRETE OR METAL RING SECTIONS.



- NOTES:

1. PAVEMENT REPLACEMENT SHALL MEET EXISTING THICKNESS AND KIND WITH THE FOLLOWING MINIMUMS:
 ASPHALT SURFACING = 3" MIN.
 AGGREGATE BASE COURSE = 8" MIN.
2. BASE COURSE REPLACEMENT SHALL MEET EXISTING THICKNESS WITH THE FOLLOWING MINIMUMS:
 AGGREGATE BASE COURSE = 12" MIN.
3. DIRT / TOPSOIL PLACEMENT SHALL MEET EXISTING THICKNESS AND KIND WITH THE FOLLOWING MINIMUMS:
 4" TOPSOIL.
4. SELECT MATERIAL AS FOLLOWS:
 6" MAXIMUM SIZE IN TOP 12" OF BACKFILL
 12" MAXIMUM SIZE IN REMAINDER OF BACKFILL



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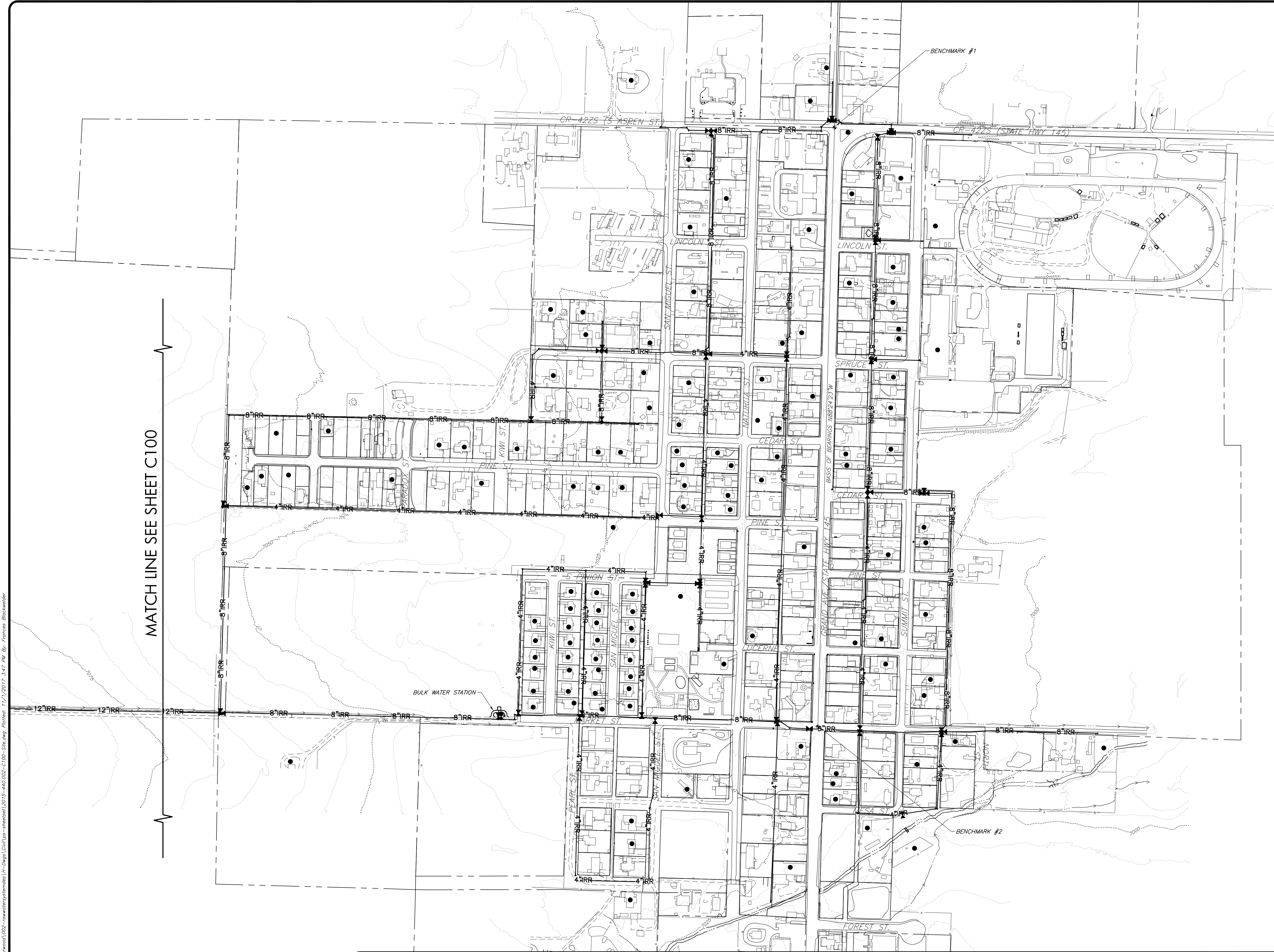
Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Overall Site Plan

Job No.	2015-440.002
Drawn by:	FB
Date:	11/01/17
QC:	RM
PE:	LM
File:	2015-440.002-C100Site

C100
Of 48



MATCH LINE SEE SHEET C100

● **BENCHMARK #1**
SECTION COR, SW SEC 22, NW SEC 27
FOUND SURVEY MONUMENT
1.5" BRASS CAP - UNREADABLE
SET IN ASPHALT
N 1545151.68
E 2195414.24
EL 7008.06

● **BENCHMARK #2**
1/4 COR, S SEC 22, N SEC 27
FOUND SURVEY MONUMENT
2.5" ALUMINUM CAP
STAMPED LS 24954
N 1540777.56
E 1298073.93
EL 7015.07

● **RAW WATER TAP SYMBOL**

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Raw Water System

#	Revision	Date	By
1			

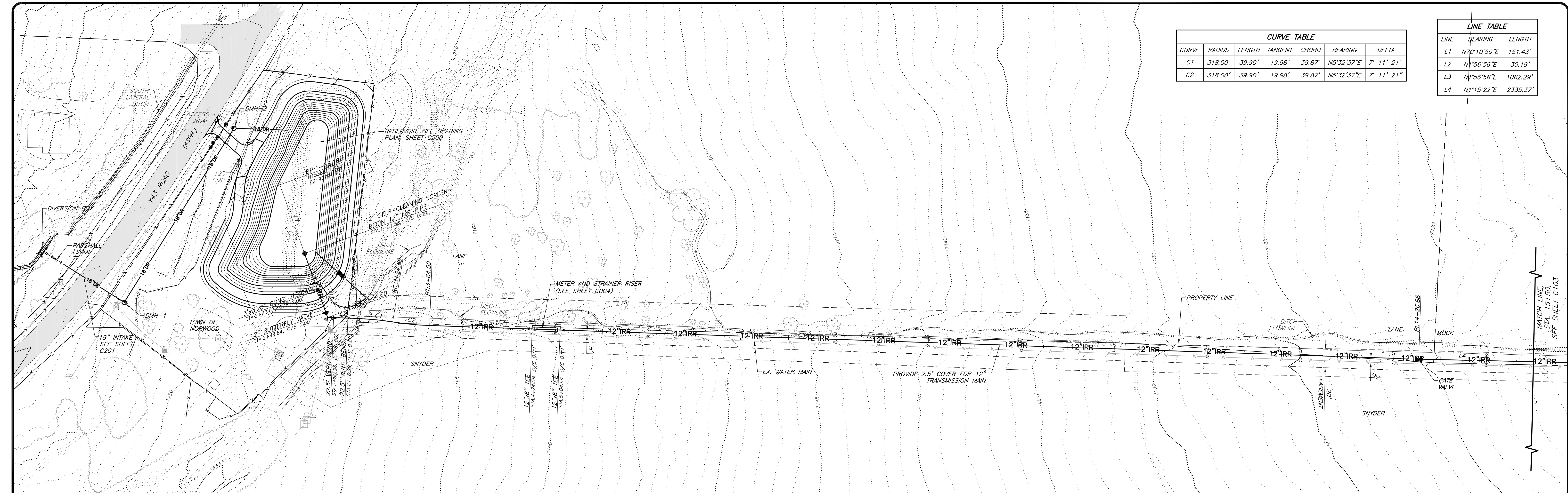
Overall Site Plan (2)

Job No.	2015-440.002		
Drawn by:	FB		
Date:	11/01/17		
QC:	RM	PE:	LM
File:	2015-440.002-C100-File		

C101

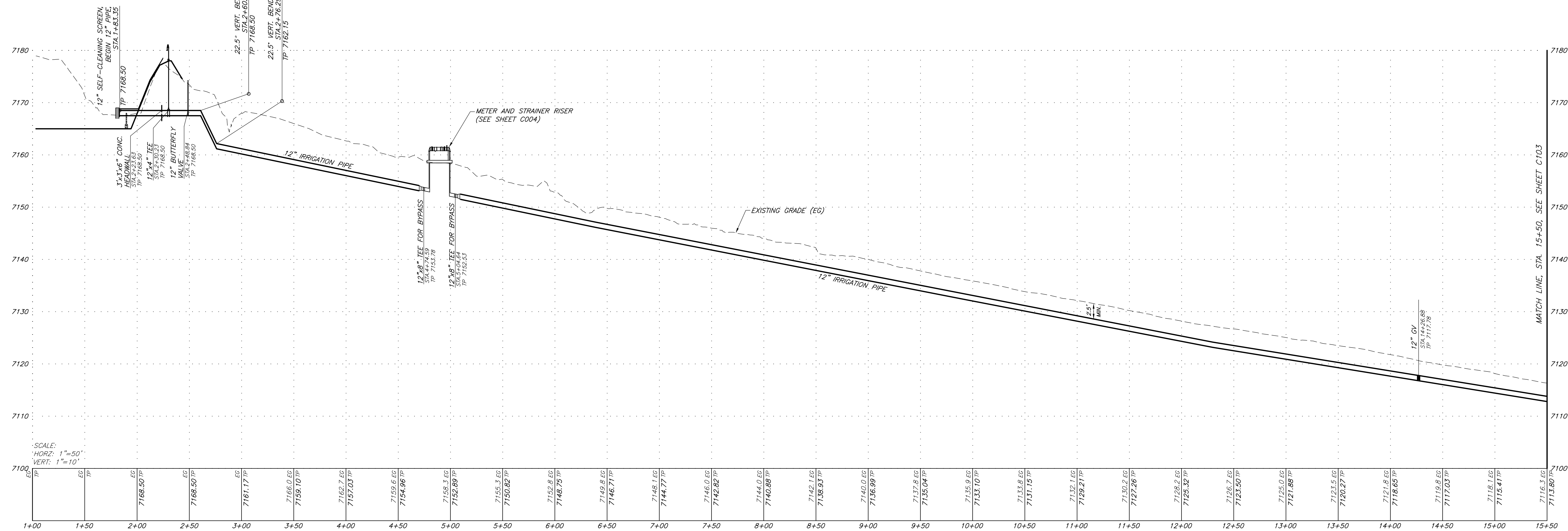
of 48

\\n0215\2015-440-norwood\002-rawwater\sgm\1\17\2017_3:50 PM By: Frances Blackwell

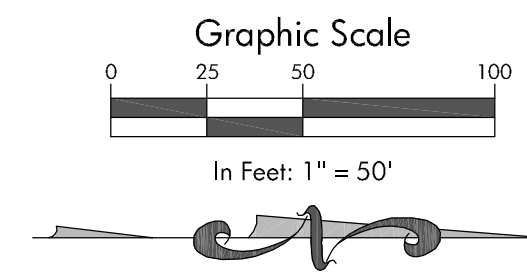


CURVE TABLE						
CURVE	RADIUS	LENGTH	TANGENT	CHORD	BEARING	DELTA
C1	318.00'	39.90'	19.98'	39.87'	N5°32'37"E	7° 11' 21"
C2	318.00'	39.90'	19.98'	39.87'	N5°32'37"E	7° 11' 21"

LINE TABLE		
LINE	BEARING	LENGTH
L1	N70°10'50"E	151.43'
L2	N1°56'56"E	30.19'
L3	N1°56'56"E	1062.29'
L4	N1°15'22"E	2335.37'



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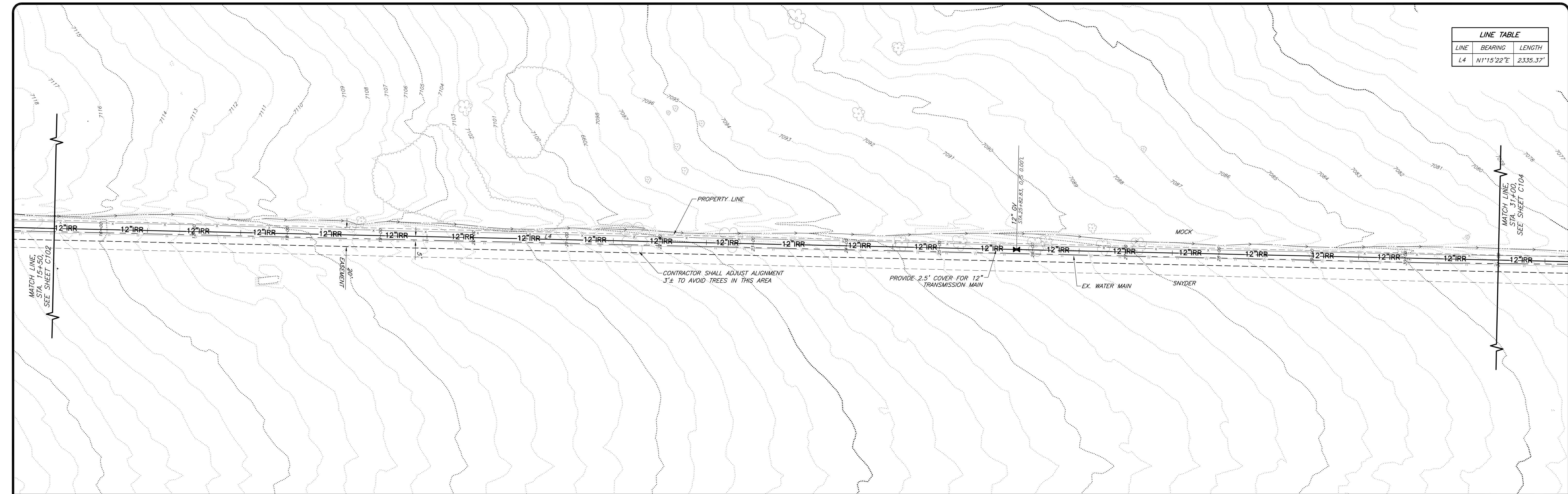
#	Revision	Date	By
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Irrigation Plan & Profile

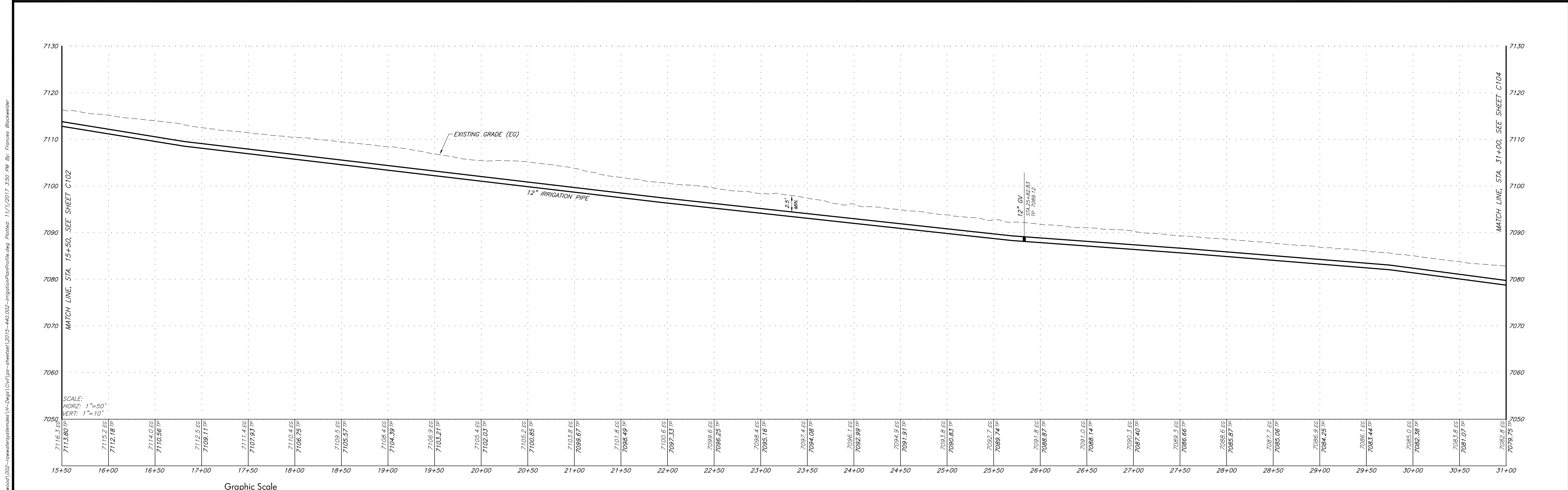
Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM
PE:	LM
File:	2015-440.002IrrigationPlanProfile

C102
48

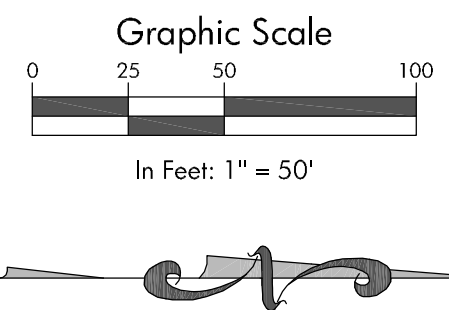
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LINE TABLE		
LINE	BEARING	LENGTH
L4	N1°15'22"E	2335.37'



SCALE:
HORZ: 1"=50'
VERT: 1"=10'



Bid Set



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Raw Water System

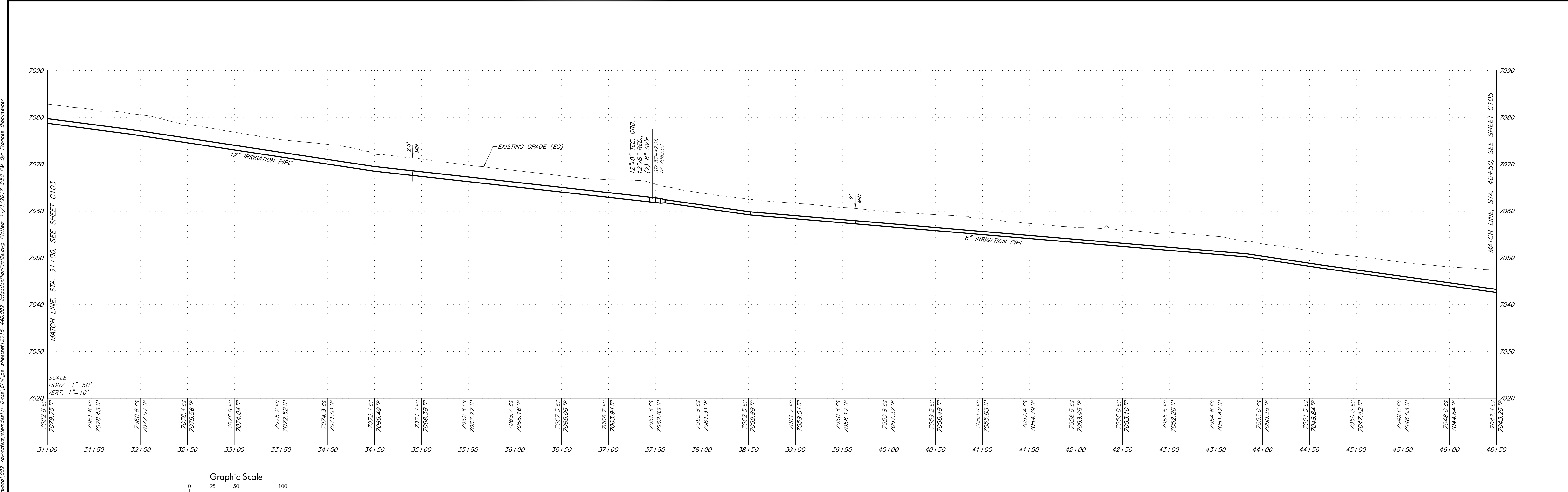
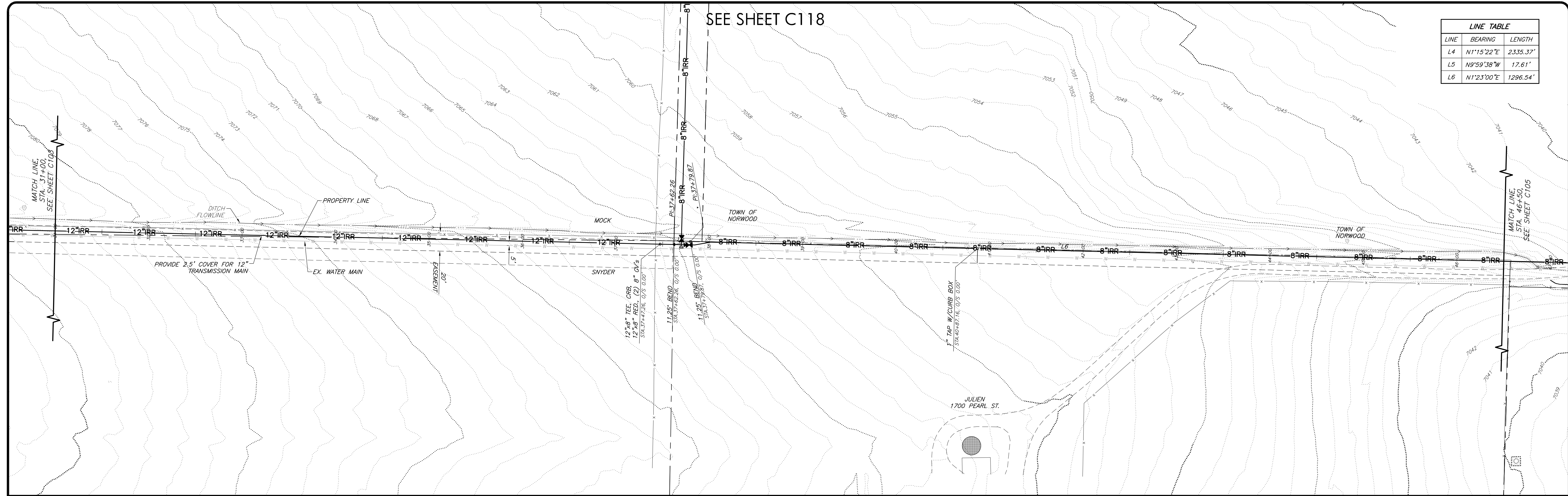
#	Revision	Date	By
1			

Irrigation Plan & Profile

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002-IrrigationPlanProfile

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#	Revision	Date	By
1			

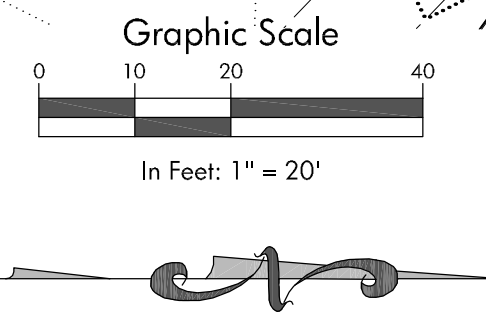
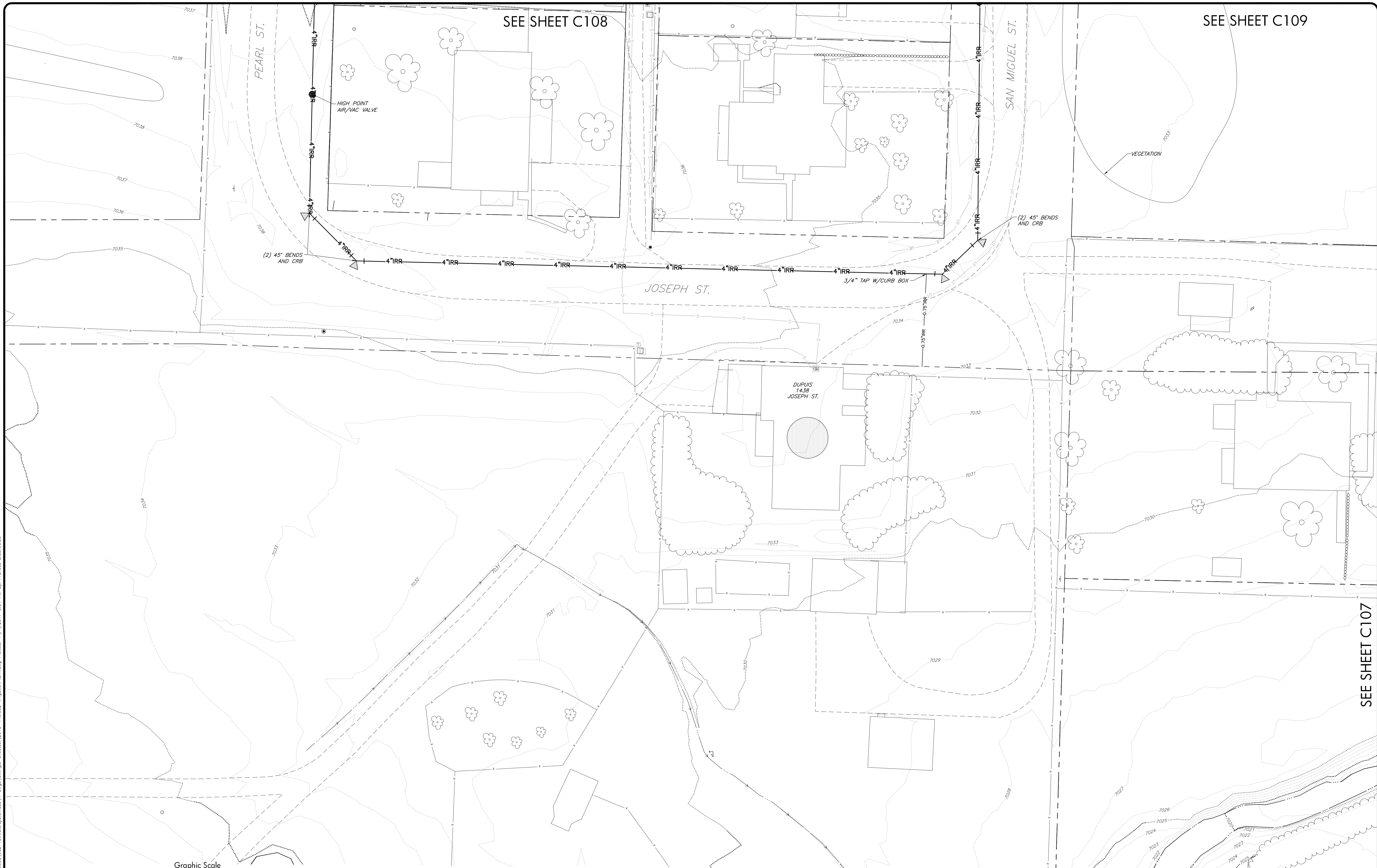
Irrigation Plan & Profile

Job No. 2015-440.002
Drawn by: TBS
Date: 11/01/17
QC: RM PE: LM
File: 2015-440.002-IrrigationPlanProfile

C104

48

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Bid Set

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Raw Water System

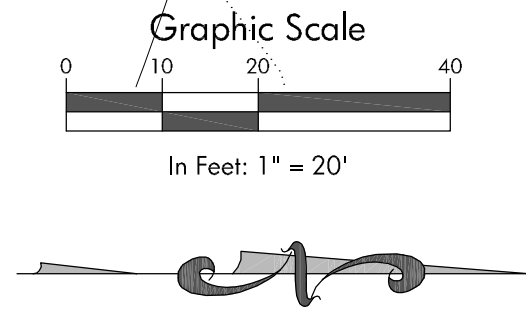
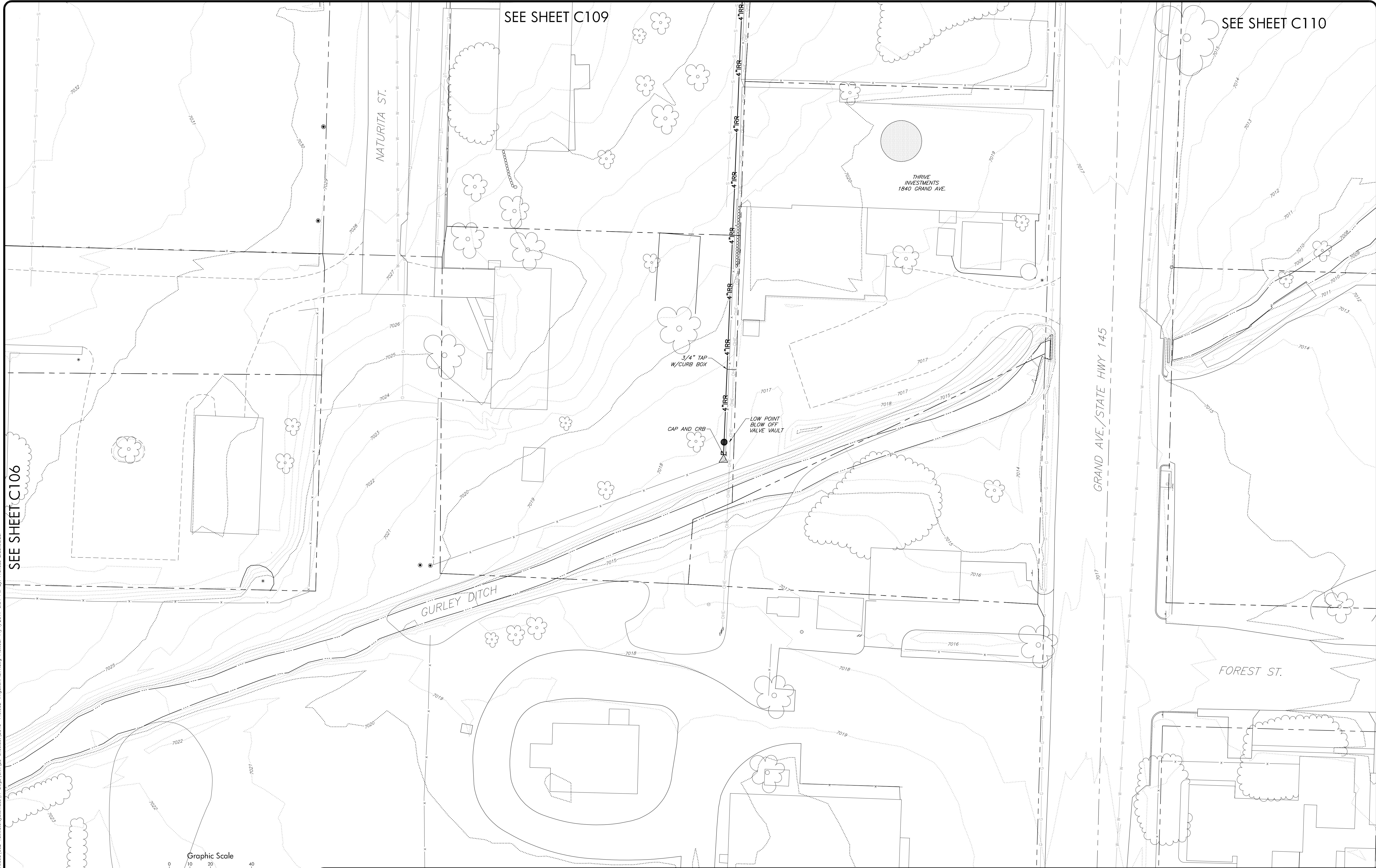
#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002IrrigationPlan1

C106
Of 48

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Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002IrrigationPlan1

C107
Of 48

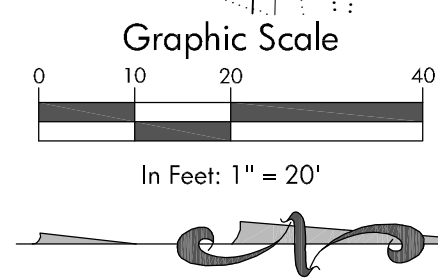
SEE SHEET C105

SEE SHEET C111

SEE SHEET C109

SEE SHEET C106

Bid Set



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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan


Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002IrrigationPlan1

C108
Of 48

SEE SHEET C112

SEE SHEET C110

HIGH POINT
ARV/VAC VALVE



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#	Revision	Date	By
1			

Job No.	2015-440.002		
Drawn by:	TBS		
Date:	11/01/17		
QC:	RM	PE:	LM
File:	2015-440.002-IrrigationPlan1		

48

i:\2015\2015-440-norwood\002-rowwatersystemides\H-Dwgs\Civil\ps-sheetset\2015-440.002-IrrigationPlan1.dwg Plotted: 11/1/2017 3:54 PM By: Frances Blackwelder

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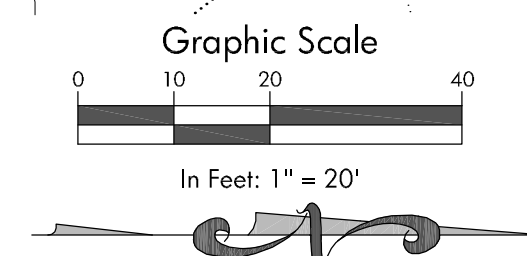
SEE SHEET C109

GRAND AVE./STATE HWY 145

SEE SHEET C112

SEE SHEET C113

SEE SHEET C107



Bid Set

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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

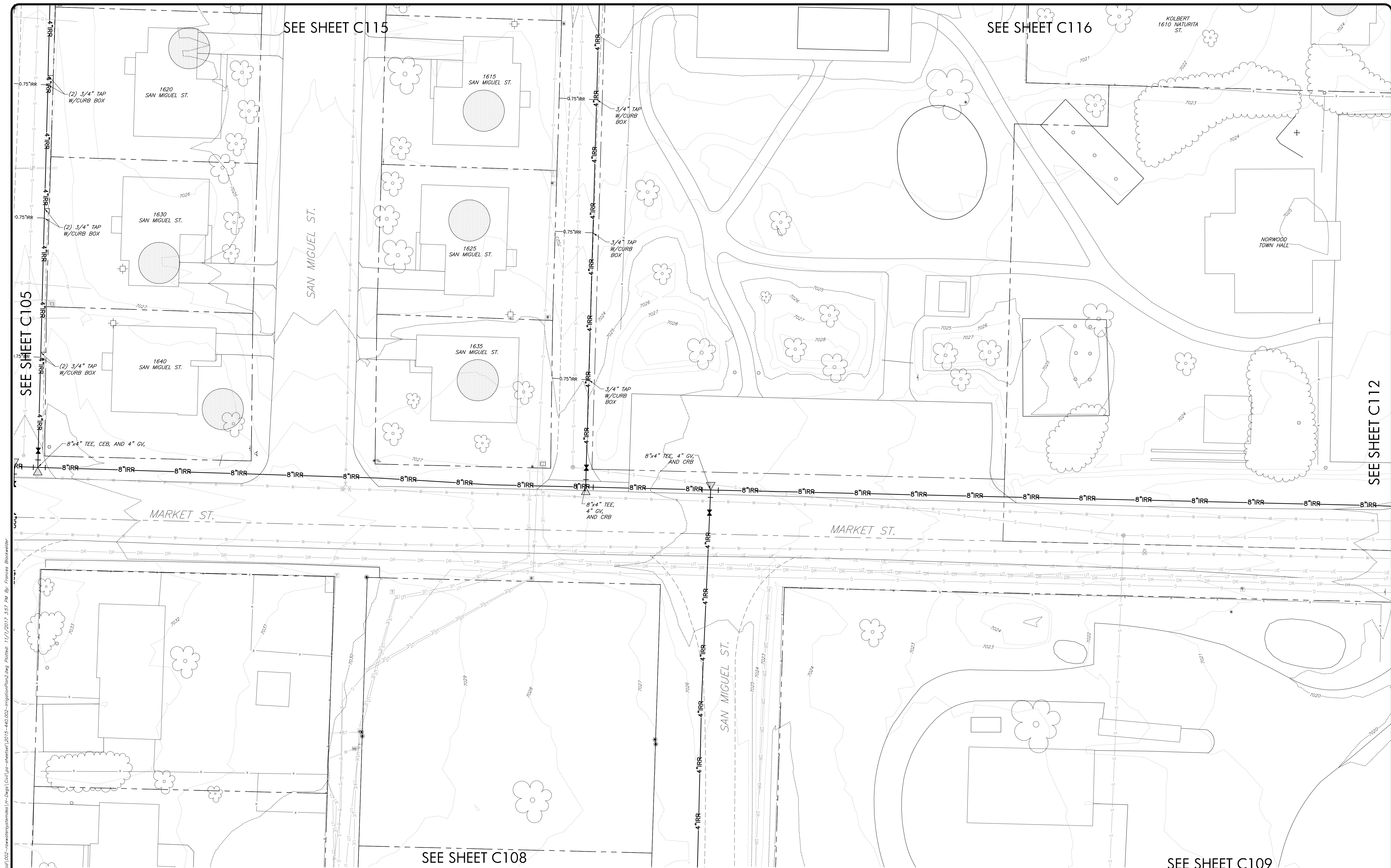
Irrigation Plan

Job No. 2015-440.002
Drawn by: TBS
Date: 11/01/17
QC: RM PE: LM
File: 2015-440.002IrrigationPlan1

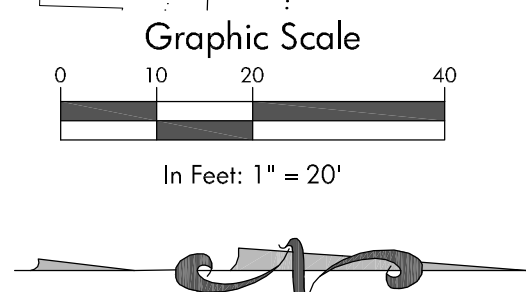
C110

Of 48

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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002IrrigationPlan2

C111

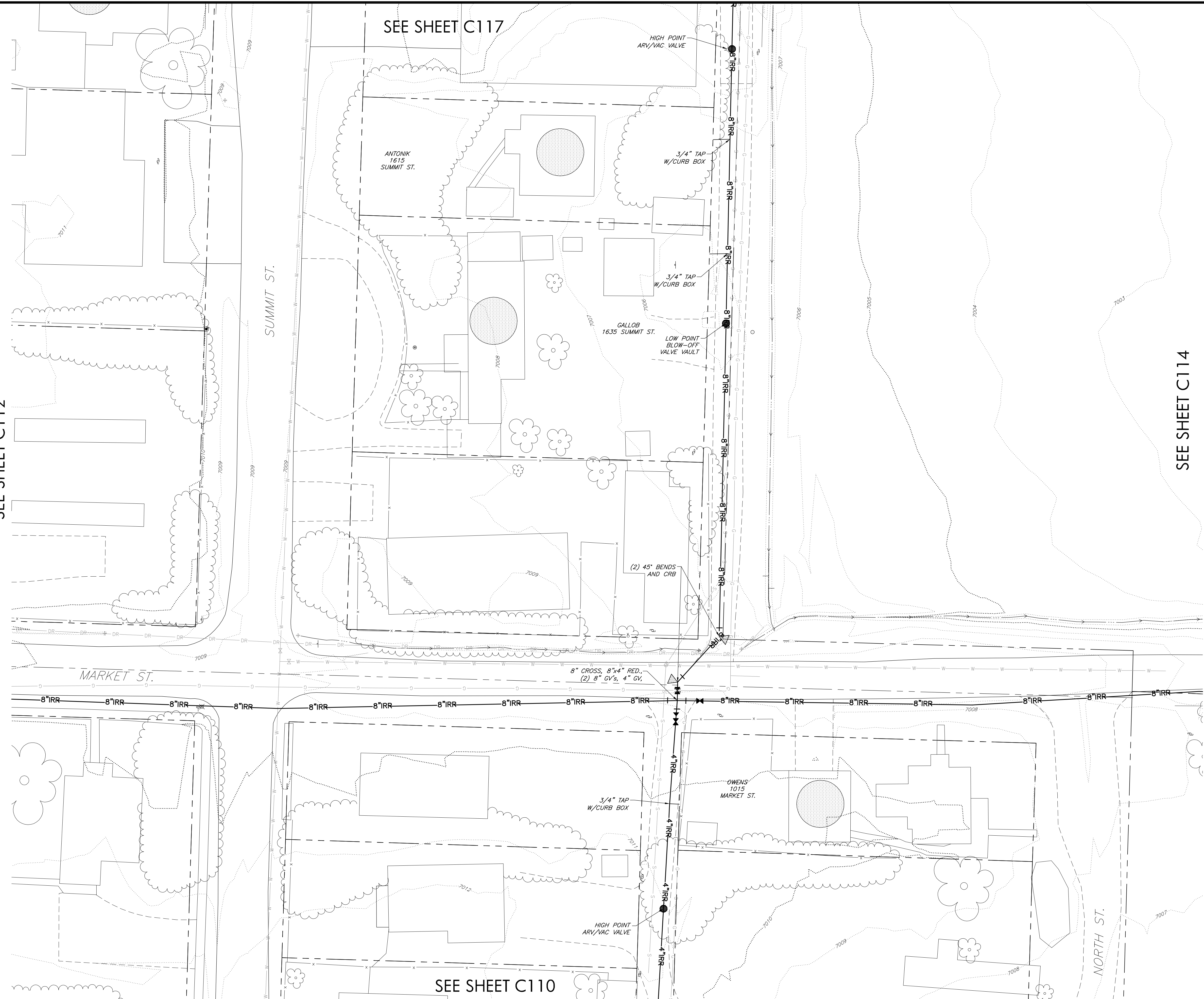
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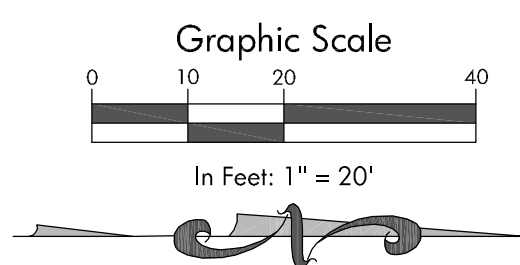
SEE SHEET C112

SEE SHEET C117

SEE SHEET C114



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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No. 2015-440.002
Drawn by: TBS
Date: 11/01/17
QC: RM PE: LM
File: 2015-440.002IrrigationPlan2

C113

Of 48

SEE SHEET C113



Graphic Scale

In Feet: 1" = 20'

Bid Set



Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

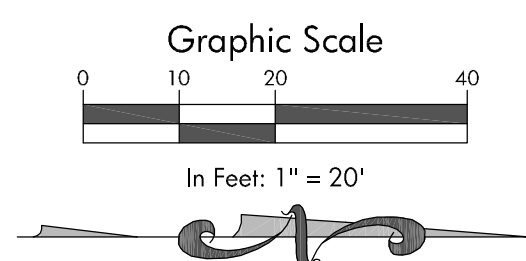
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QC:	RM	PE:	LM
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C114

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Bid Set



SEE SHEET C121

SEE SHEET C122

SEE SHEET C105

SEE SHEET C111

SEE SHEET C116



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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002IrrigationPlan2

C115

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SEE SHEET C123

SEE SHEET C124

PINE ST.

SUMMIT ST.

LUCERNE ST.

SEE SHEET C113

SEE SHEET CT 12

Graphic Scale

In Feet: 1" = 20'



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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002		
Drawn by:	TBS		
Date:	11/01/17		
QC:	RM	PE:	LM
File:	2015-440.002-IrrigationPlan3		

C117

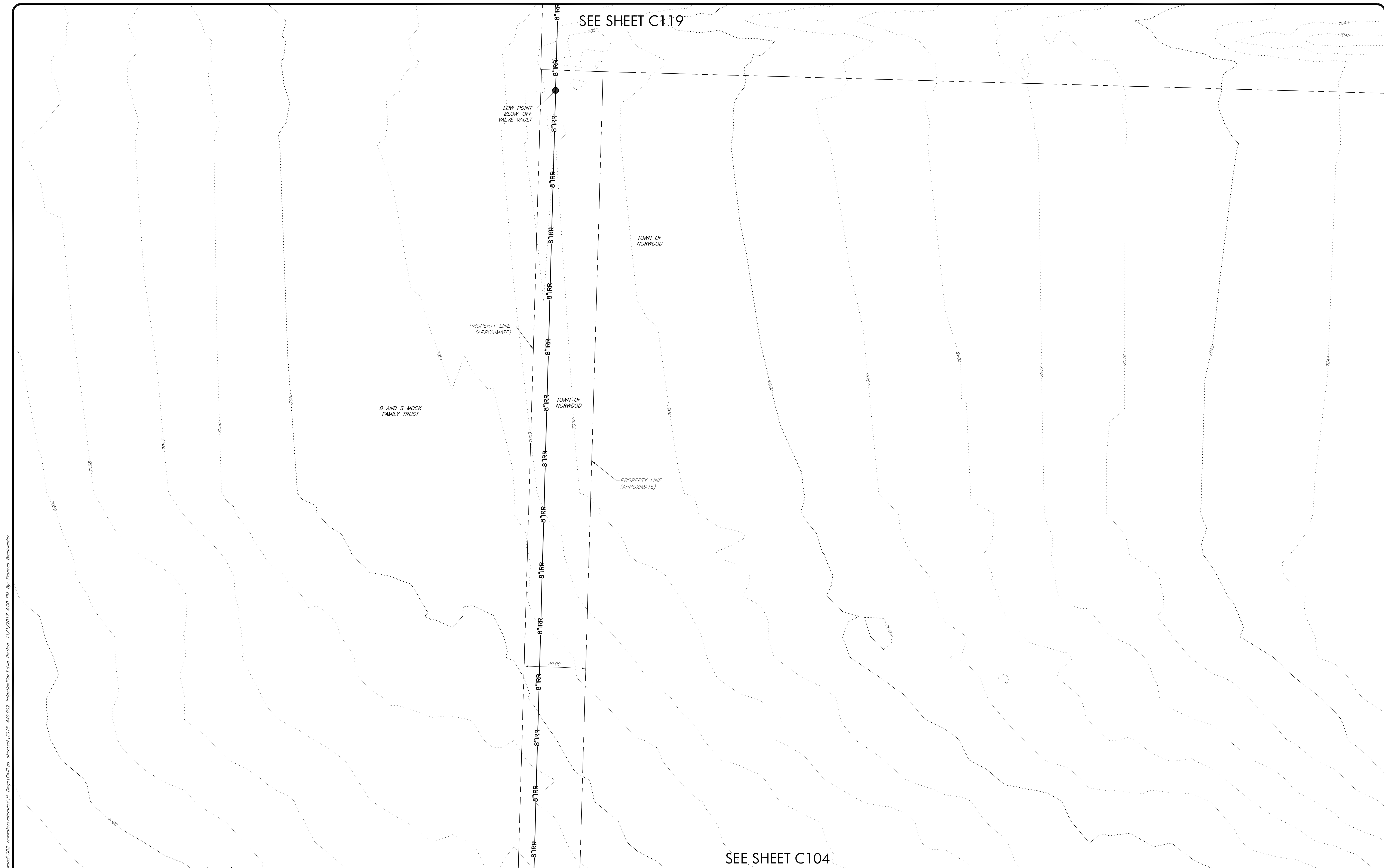
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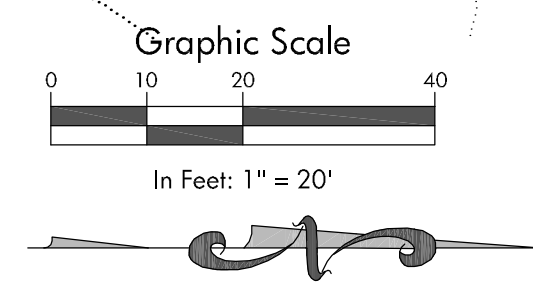
SEE SHEET C116

GRAND AVE./STATE HWY. 145

Bid Set



Bid Set



Town of Norwood
Raw Water System

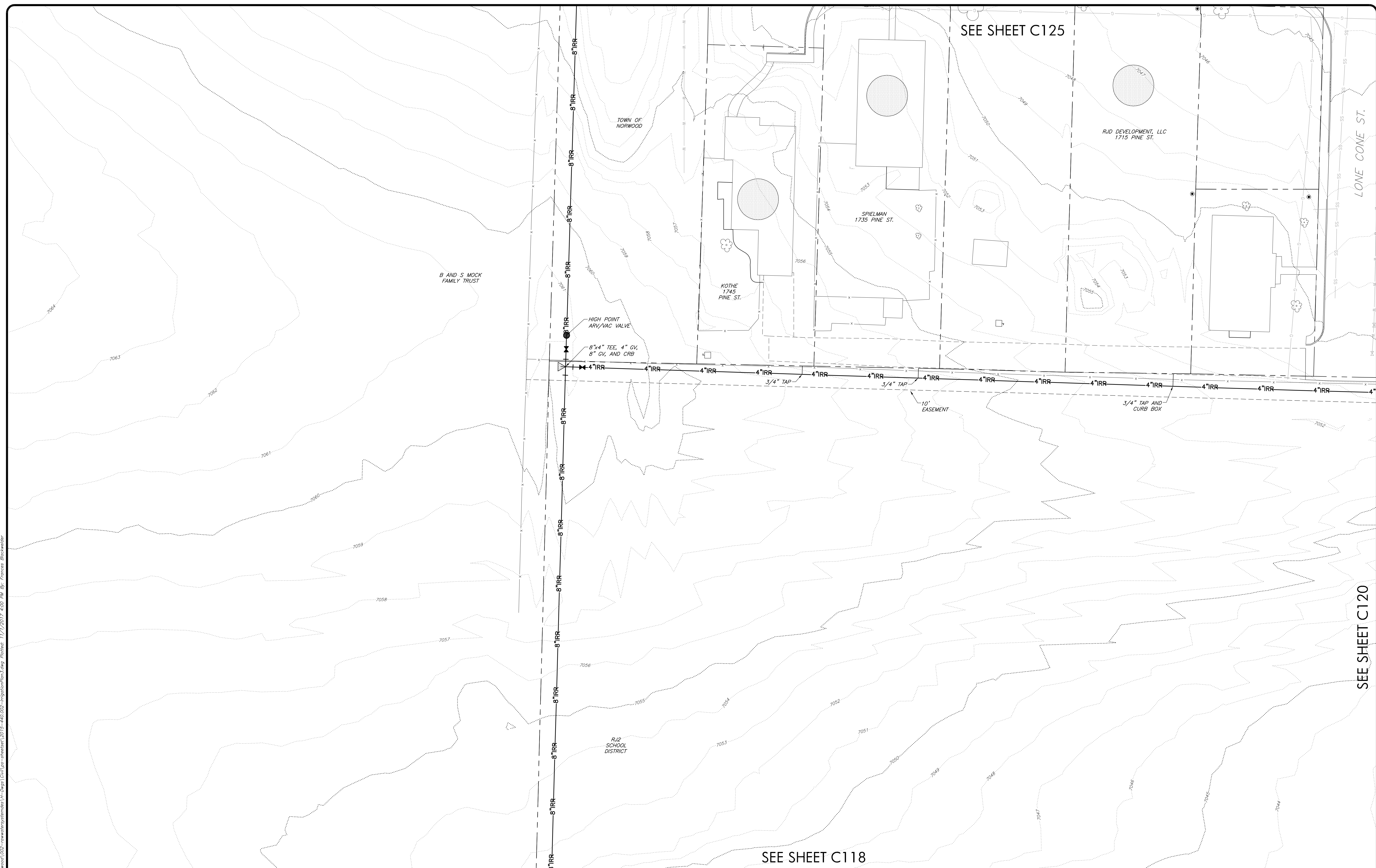
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1			

Irrigation Plan

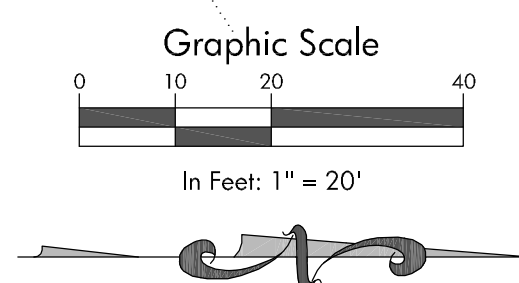
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Drawn by:	TBS		
Date:	11/01/17		
QC:	RM	PE:	LM
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of 48



Bid Set



Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002		
Drawn by:	TBS		
Date:	11/01/17		
QC:	RM	PE:	LM
File:	2015-440.002-IrrigationPlan3		


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of 48



SEE SHEET C121

Graphic Scale



In Feet: 1" = 20'



#	Revision	Date	By
1			

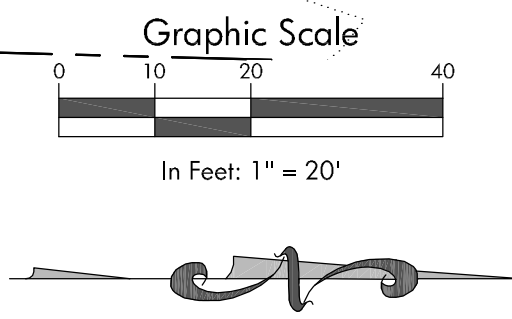
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48



I:\2015\2015-440-norwood\002-cowatong\plan\002-irrigation\plan\002-irrigation\plan.dwg Plot Date: 11/1/2017 4:03 PM By: Frances Boudewier

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#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002-IrrigationPlan4

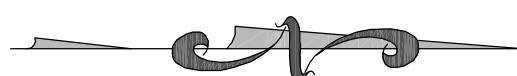
C121
48

SEE SHEET C121

SEE SHEET C123



In Feet: $1'' = 20'$



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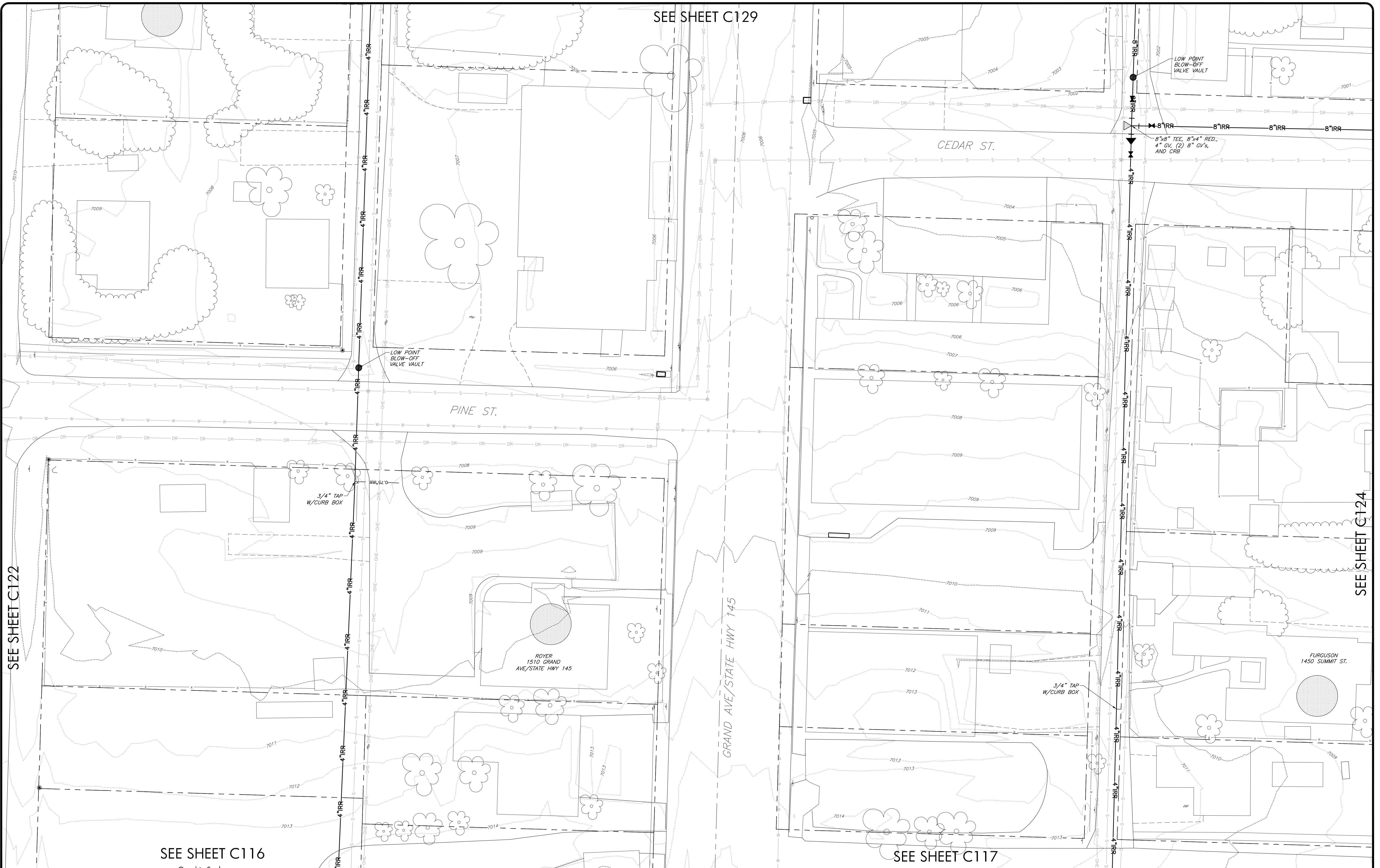
#	Revision	Date	By
1			

Job No.	2015-440.002		
Drawn by:	TBS		
Date:	11/01/17		
QC:	RM	PE:	LM
File:	2015-440.002-IrrigationPlan4		

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SEE SHEET C122

SEE SHEET C124



Graphic Scale

In Feet: 1" = 20'

Bid Set



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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002		
Drawn by:	TBS		
Date:	11/01/17		
QC:	RM	PE:	LM
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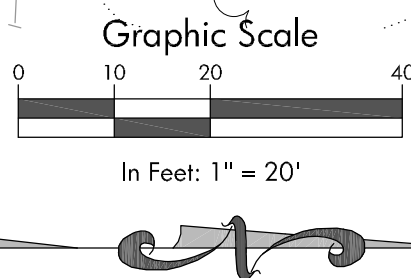
C123

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I:\2015\2015-440-norwood\002-cowatirp\dwg\15-440-002-irrigationPlan.dwg Plotter: 11/1/2017 4:03 PM By: Frances Boudewier

SEE SHEET C123

SEE SHEET C117



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1			

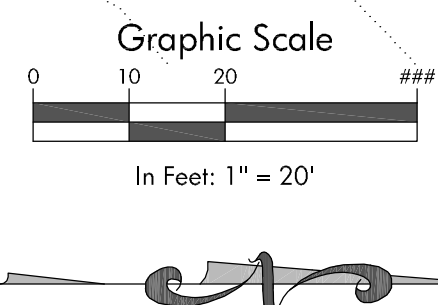
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QC:	RM PE: LM
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Of 48

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Town of Norwood
Raw Water System

SEE SHEET C119

#	Revision	Date	By
1			

Irrigation Plan

Job No. 2015-440.002
Drawn by: TBS
Date: 11/01/17
QC: RM PE: LM
File: 2015-440.002-IrrigationPlan4

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SEE SHEET C126

LONE CONE ST.

TUCKER

GONZALEZ
1720 PINE ST.

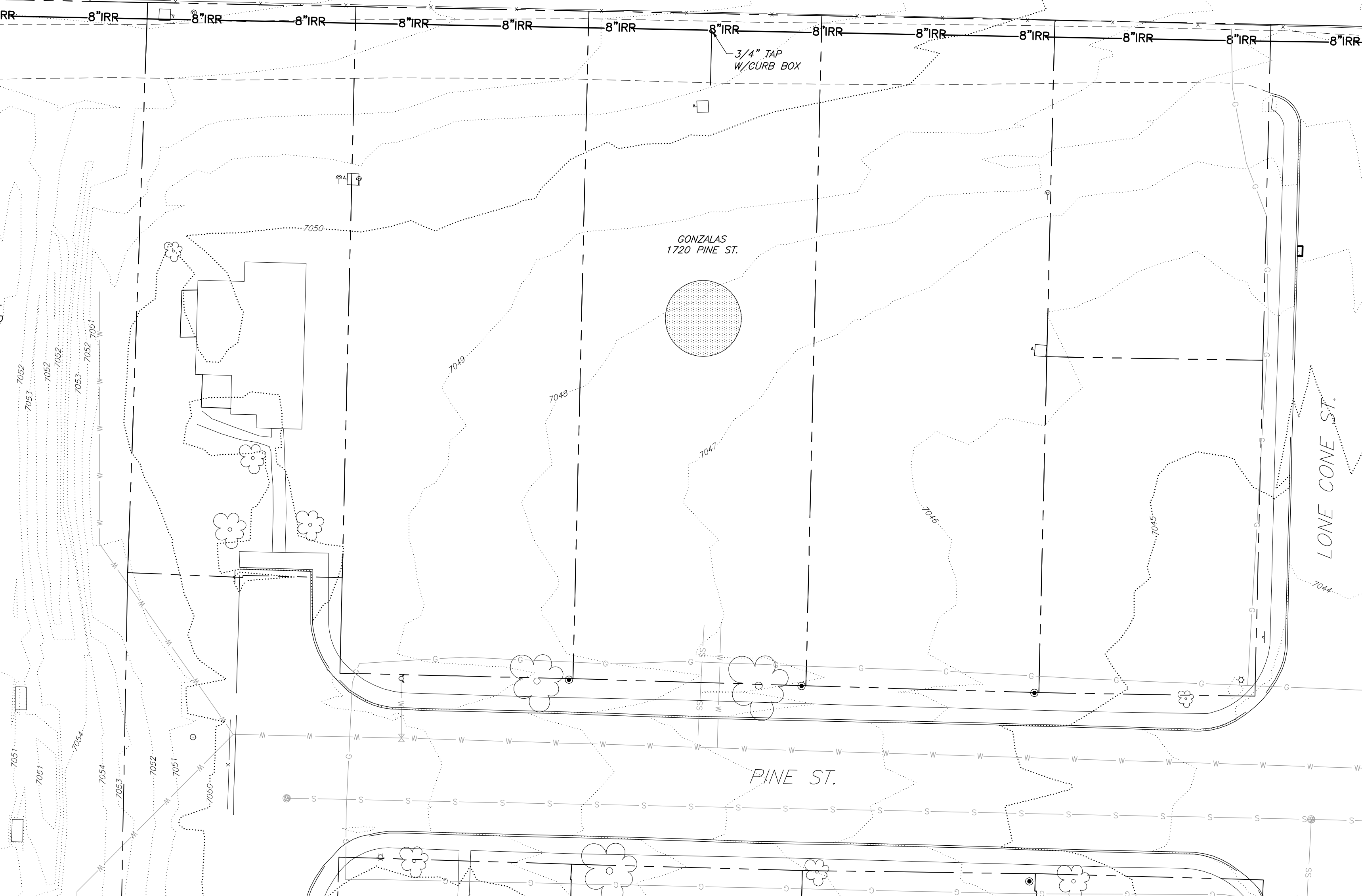
PINE ST.

90° BEND AND CRB

PROPERTY LINE
(APPROXIMATE)

B AND S MOCK
FAMILY TRUST

TOWN OF
NORWOOD





Graphic Scale

In Feet: 1" = 20'

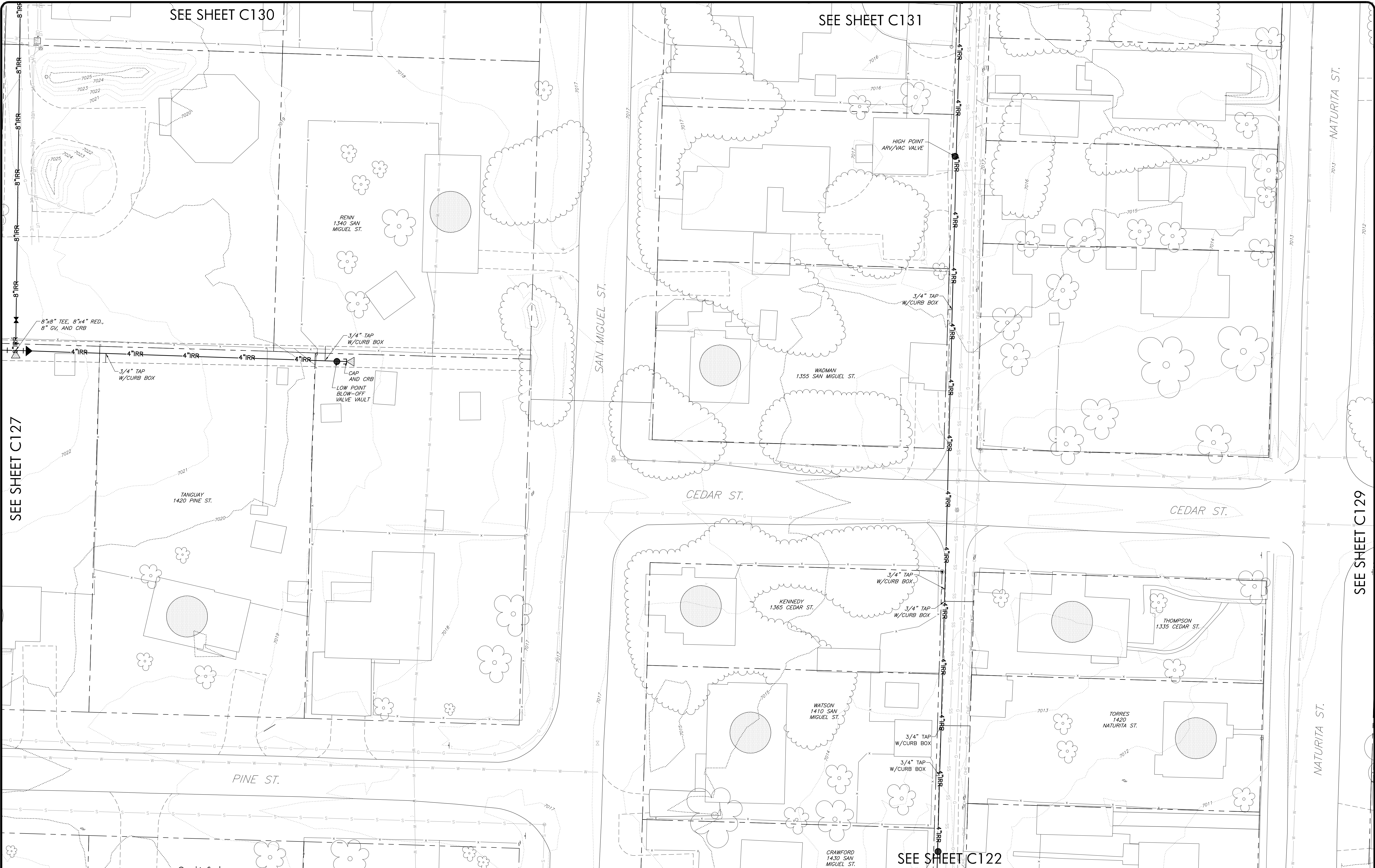


Irrigation Plan

C126

48

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Raw Water System

#	Revision	Date	By
1			

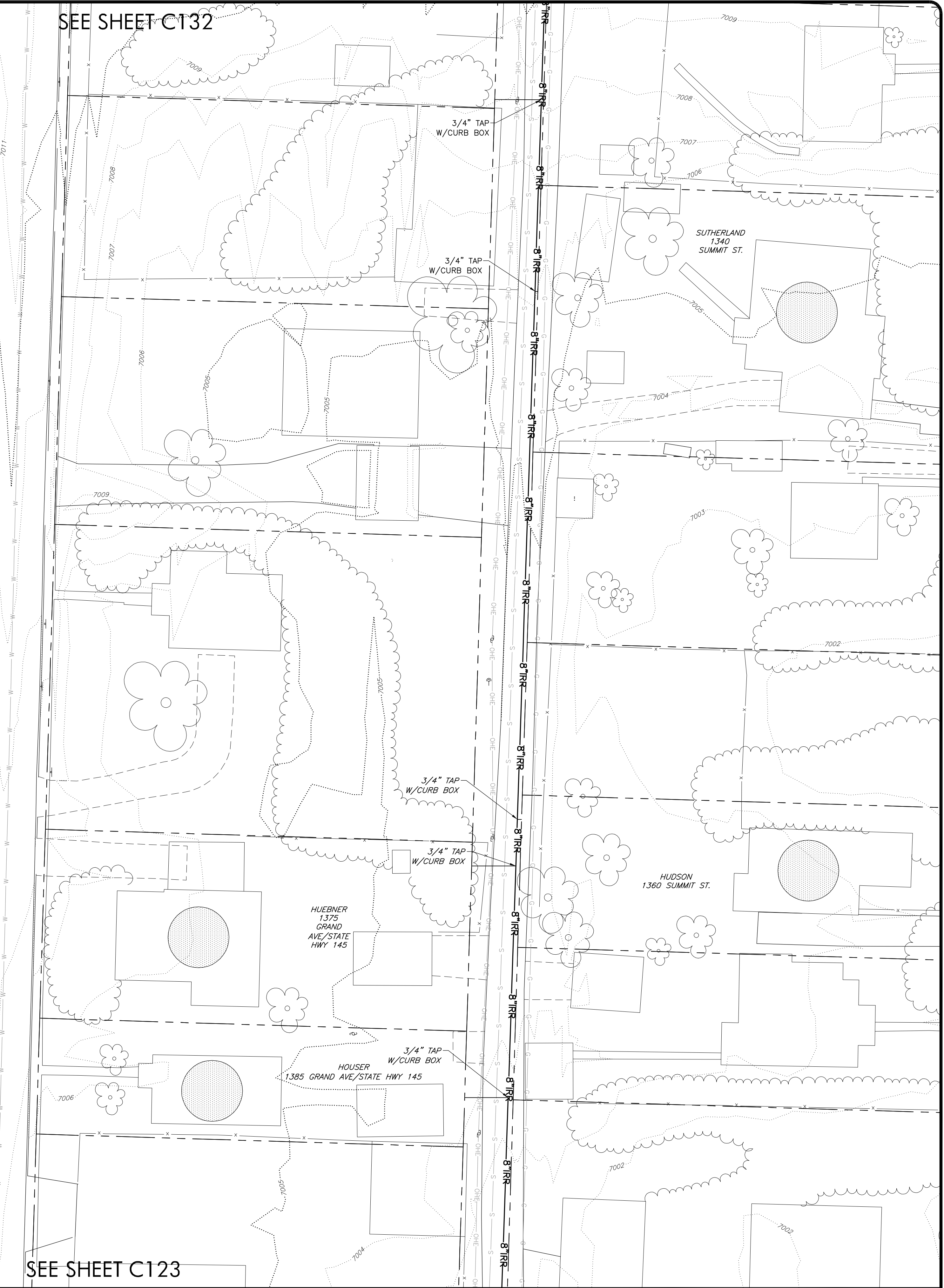
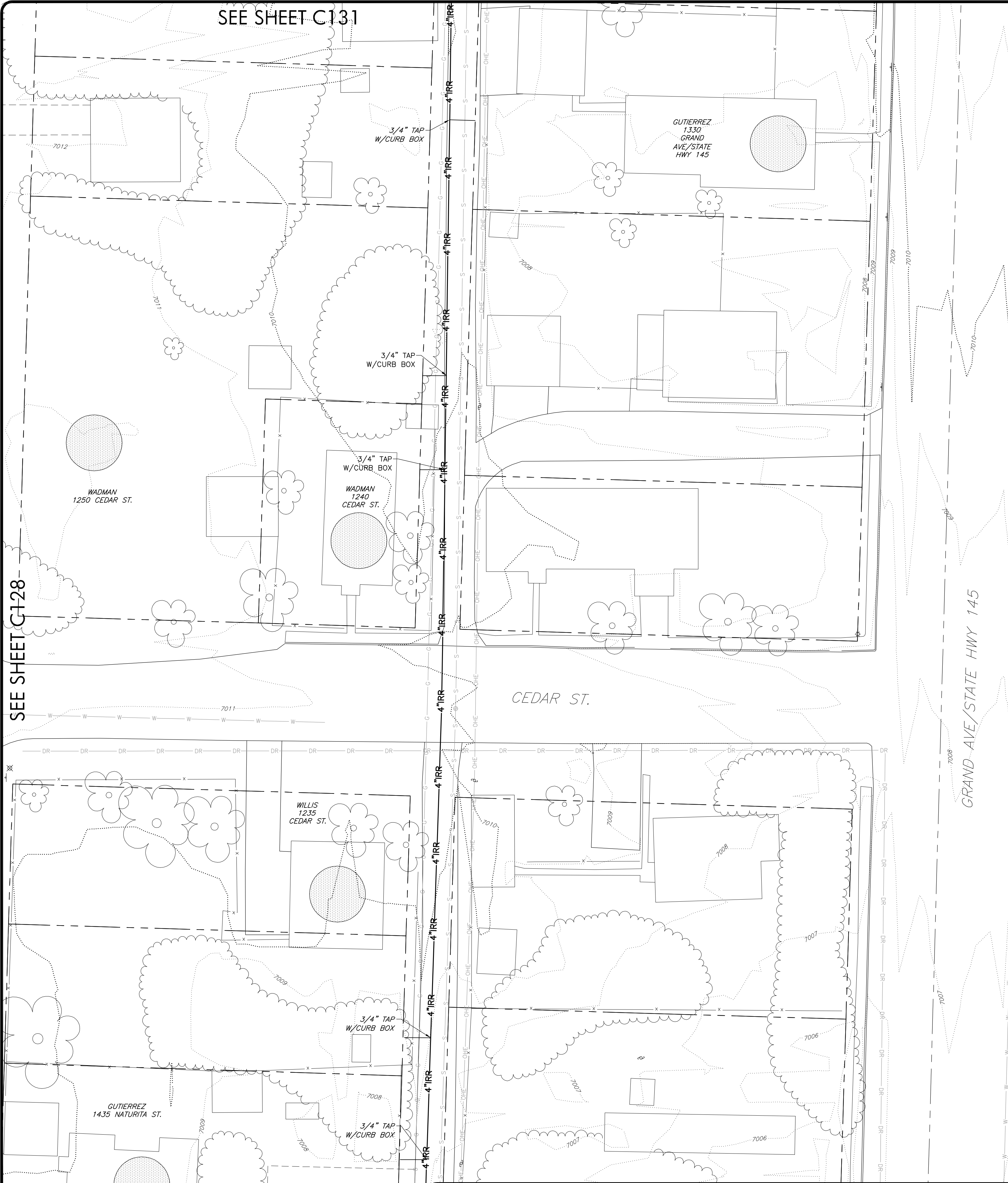
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Date: 11/01/17
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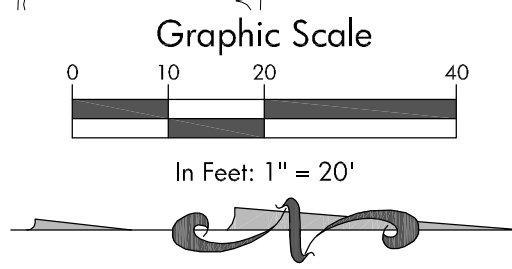
C128

48

\\2015-440-norwood\002-rawwater\pds\14-Dep\Civil\14-shelton\2015-440-002-irrigationPlan5.dwg Plot Date: 11/1/2017 4:07 PM By: Frances Boudewier



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Raw Water System

#	Revision	Date	By
1			

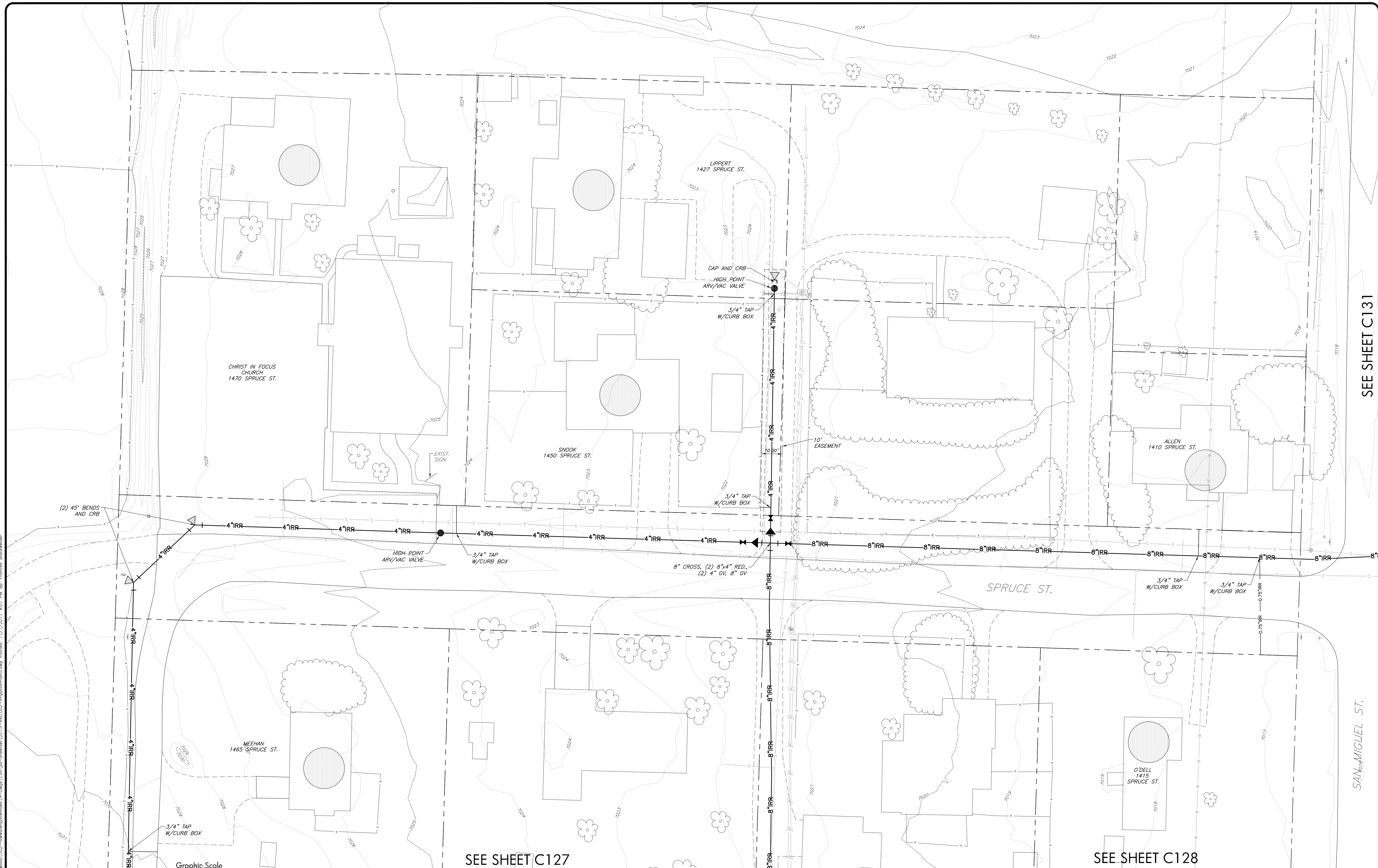
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Job No. 2015-440.002
Drawn by: TBS
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C129

48

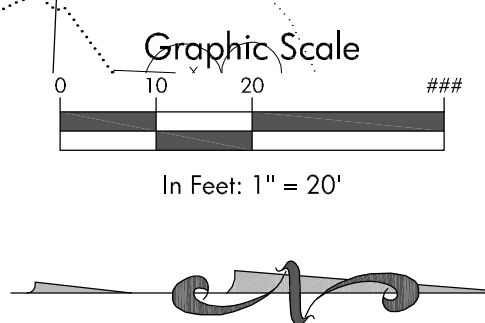
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SEE SHEET C131


SAN MIGUEL ST.

Bid Set



SEE SHEET C127

SEE SHEET C128

 555 RiverGate Lane, Suite B4-82 Durango, CO 81301 970.385.2340 www.sgm-inc.com		Town of Norwood Raw Water System		<table border="1"><thead><tr><th>#</th><th>Revision</th><th>Date</th><th>By</th></tr></thead><tbody><tr><td>1</td><td></td><td></td><td></td></tr><tr><td> </td><td></td><td></td><td></td></tr><tr><td> </td><td></td><td></td><td></td></tr><tr><td> </td><td></td><td></td><td></td></tr></tbody></table>		#	Revision	Date	By	1																Irrigation Plan	<table border="1"><tr><td>Job No.</td><td>2015-440.002</td></tr><tr><td>Drawn by:</td><td>TBS</td></tr><tr><td>Date:</td><td>11/01/17</td></tr><tr><td>QC:</td><td>RM PE: LM</td></tr><tr><td>File:</td><td>2015-440.002IrrigationPlan5</td></tr></table>		Job No.	2015-440.002	Drawn by:	TBS	Date:	11/01/17	QC:	RM PE: LM	File:	2015-440.002IrrigationPlan5	C130 48
		#	Revision	Date	By																																		
1																																							
Job No.	2015-440.002																																						
Drawn by:	TBS																																						
Date:	11/01/17																																						
QC:	RM PE: LM																																						
File:	2015-440.002IrrigationPlan5																																						

I:\2015\2015-440-norwood\002-norwood\pds\14-Dwg\Irrigation\IrrigationPlan.dwg Plot Date: 11/1/2017 4:09 PM By: Frances Boudewier

SEE SHEET C130

SEE SHEET C133

NATURITA ST.

SEE SHEET C132

LOW POINT
BLOW-OFF VALVE VAULT
T.O.P. 7010.5

MCKEEVER
1270 GRAND AVE./STATE
145

KLOTZ
1240 SPRUCE ST.

SPRUCE ST.

SANCHEZ
1305
NATURITA ST.

PARRINO
1325 SAN
MIGUEL ST.

Graphic Scale

In Feet: 1" = 20'

SEE SHEET C128

SEE SHEET C129

Bid Set

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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002-IrrigationPlan.dwg

C131

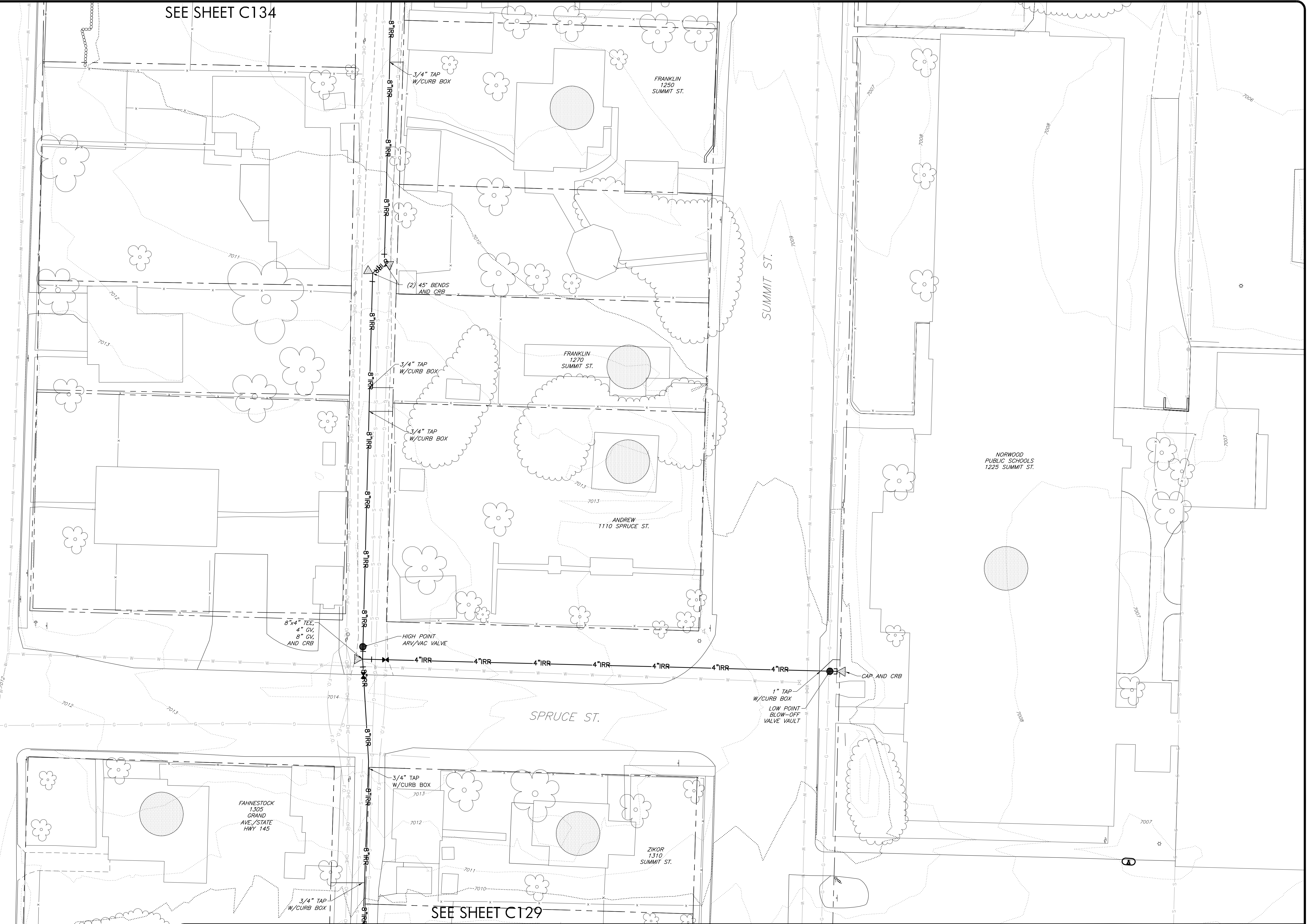
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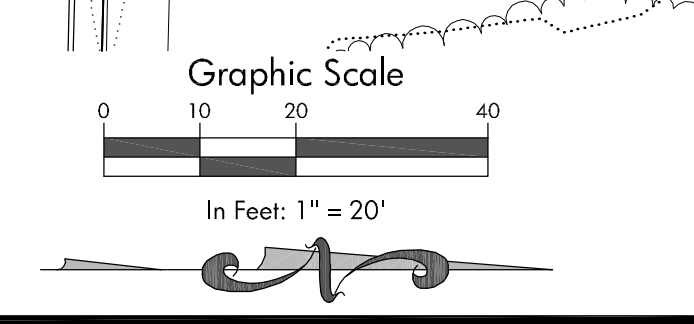
SEE SHEET C131

GRAND AVE./STATE HWY 145

SEE SHEET C134



SEE SHEET C129



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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002-IrrigationPlan6

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Graphic Scale

In Feet: 1" = 20'



#	Revision	Date	By
1			

Job No.	2015-440.002		
Drawn by:	TBS		
Date:	11/01/17		
QC:	RM	PE:	LM
File:	2015-440.002-IrrigationPlan6		

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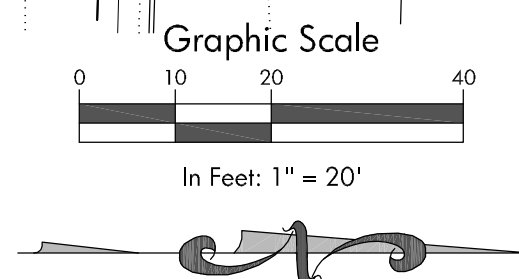
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SEE SHEET C133

SEE SHEET C137

SEE SHEET C132

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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002-IrrigationPlan.dwg

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Graphic Scale

In Feet: 1" = 20'

A horizontal scale bar with markings at 0, 10, 20, and 40 feet. Below the bar is a north arrow pointing towards the top of the page.



Town of Norwood

Raw Water System

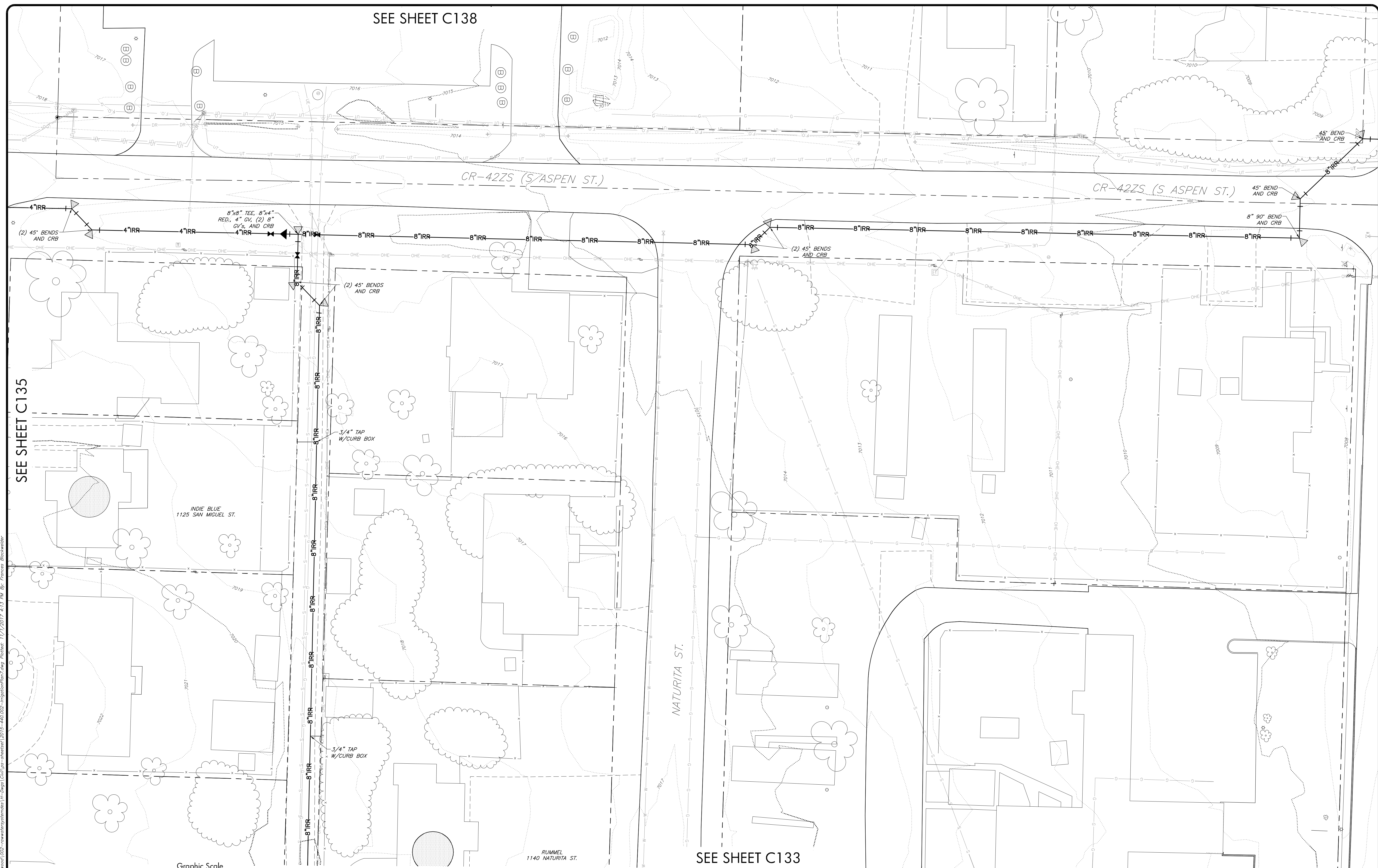
#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002		
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C135

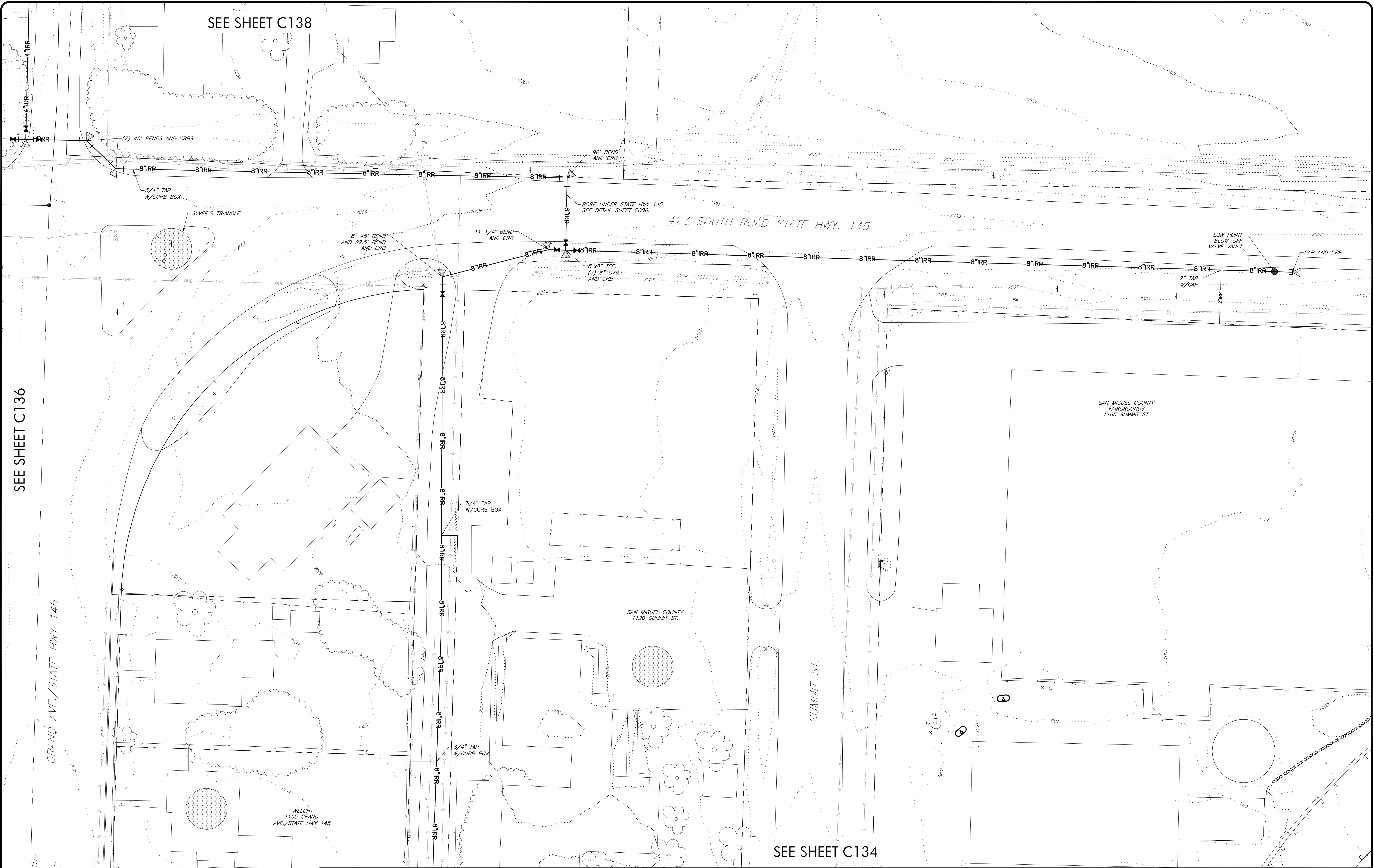
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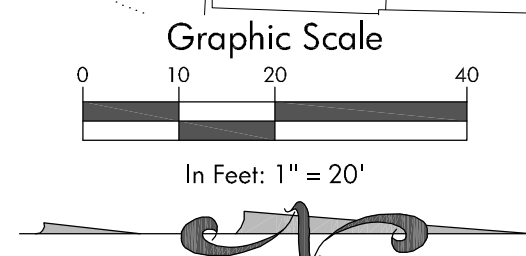
Bid Set



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Town of Norwood
Raw Water System

#	Revision	Date	By
1			

Irrigation Plan

Job No.	2015-440.002
Drawn by:	TBS
Date:	11/01/17
QC:	RM PE: LM
File:	2015-440.002-IrrigationPlan7

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Bid Set

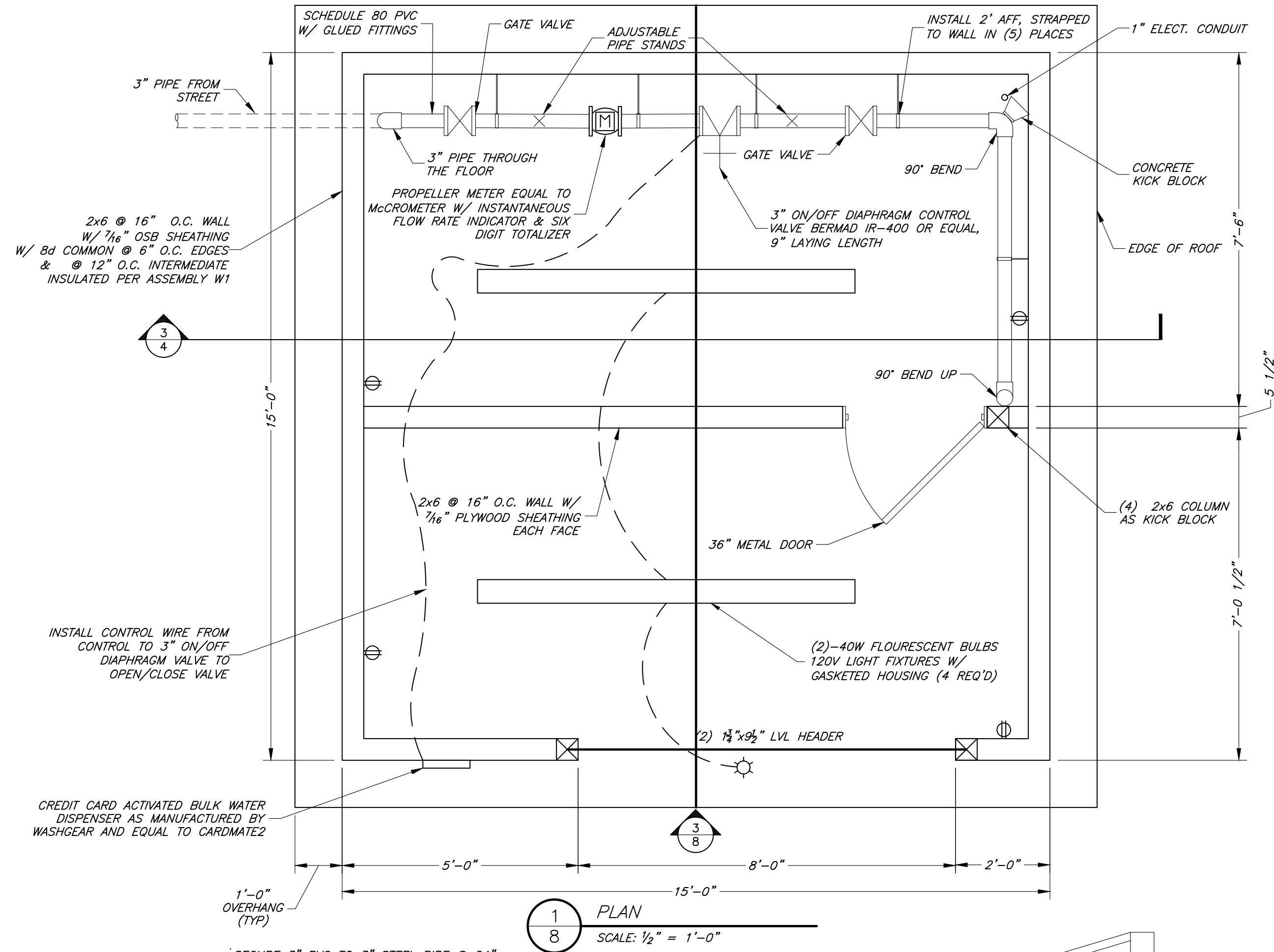
SEE SHEET C136

Town of Norwood
Raw Water System

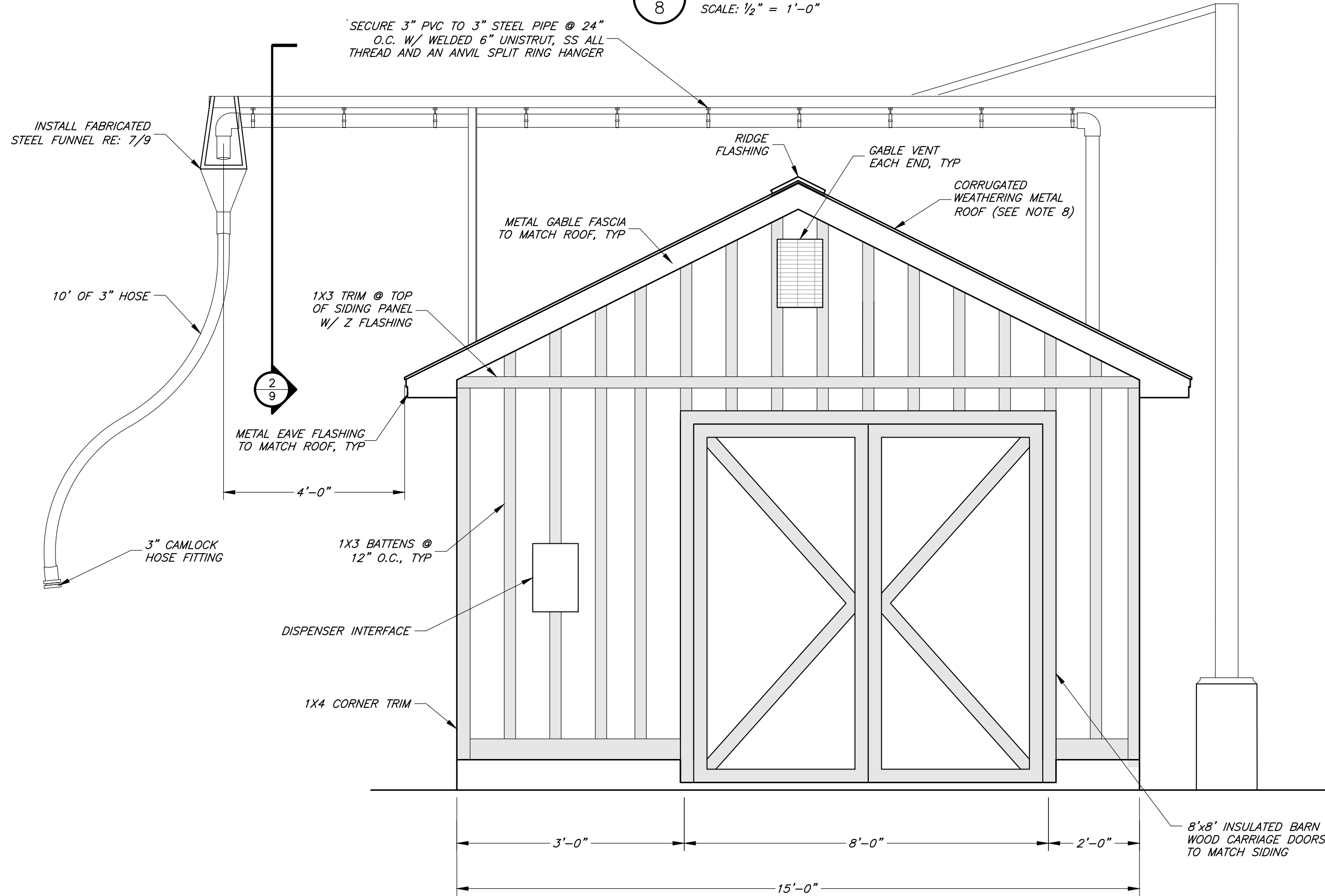
Irrigation Plan

C138

\\2015\2015-440-norwood\002--rawwater\systems\dwg\14-Drawings\Civil\pump-house\pump-house.dwg Plotted: 11/17/2017 10:18 AM By: Jaimal Proctor



1 PLAN
SCALE: 1/2" = 1'-0"



3 ELEVATION
SCALE: 1/2" = 1'-0"

NOTES:

1) Design and construction shall be in conformance with the 2009 International Building Code (IBC). Loads used in design are as follows:

- Roof DL 15 psf
- Roof LL 75 psf (snow)

Dimensions shown are to edge of concrete or edge of framing unless noted otherwise.

2) Slab shall bear on undisturbed natural soils or compacted on-site material, assumed to be gravels and sands.

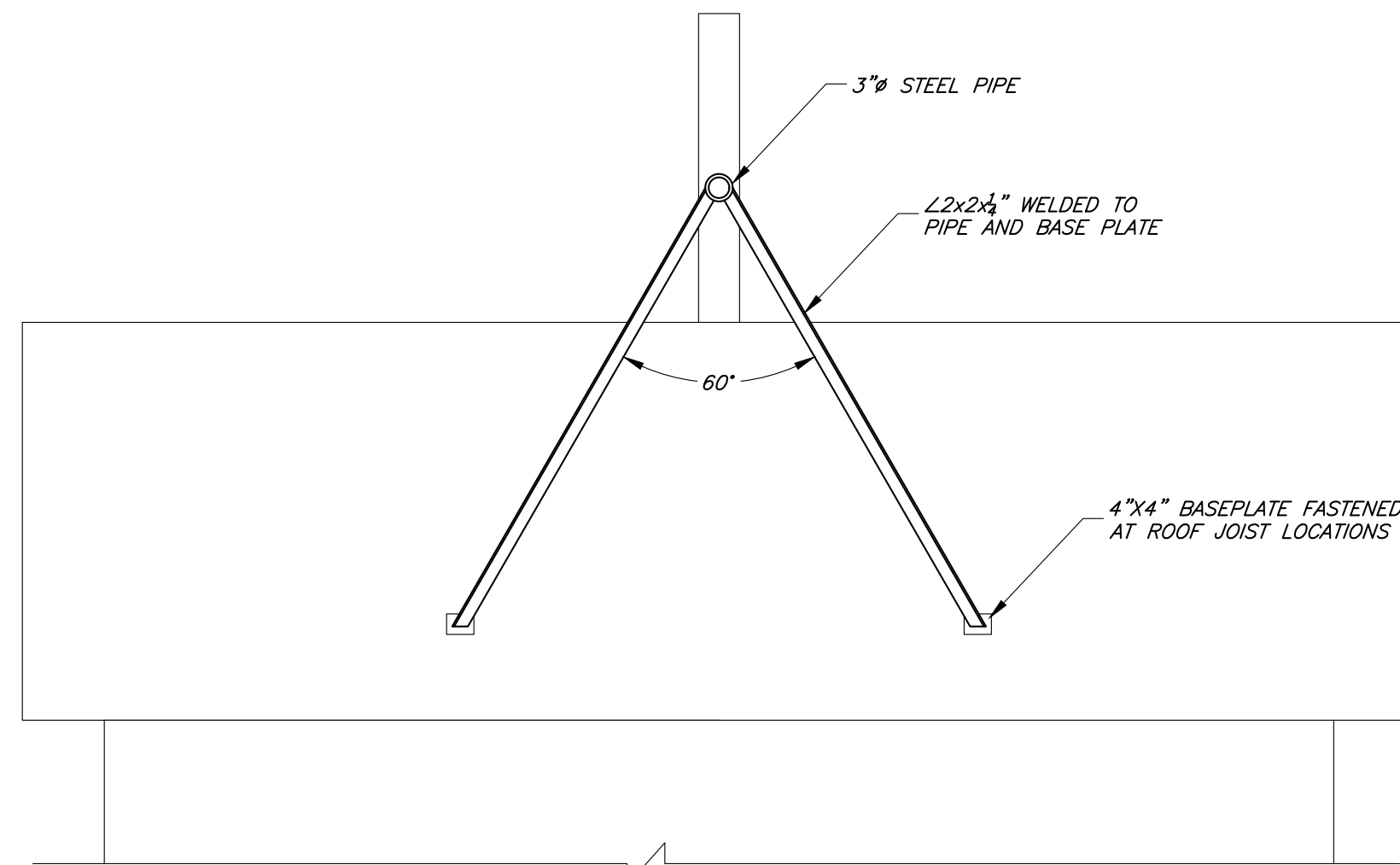
3) Concrete shall reach a minimum compressive strength of 4000 psi in 28 days and 3/4" maximum aggregate. Reinforcing shall be in conformance with ASTM A615, grade 60. All reinforcing shall be secured in place prior to concrete placement. Horizontal reinforcing shall be made continuous around corners by "L" bars, or by shop bending. Lap splices shall be a minimum of 44 bar diameters.

4) Framing and sheathing shall be installed and connected in accordance with the IBC 2009. Dimensioned lumber shall be Hem Fir, Douglas Fir #2 or better, visually graded. Roof framing shall be provided with Simpson Connectors fully installed prior to sheathing installation.

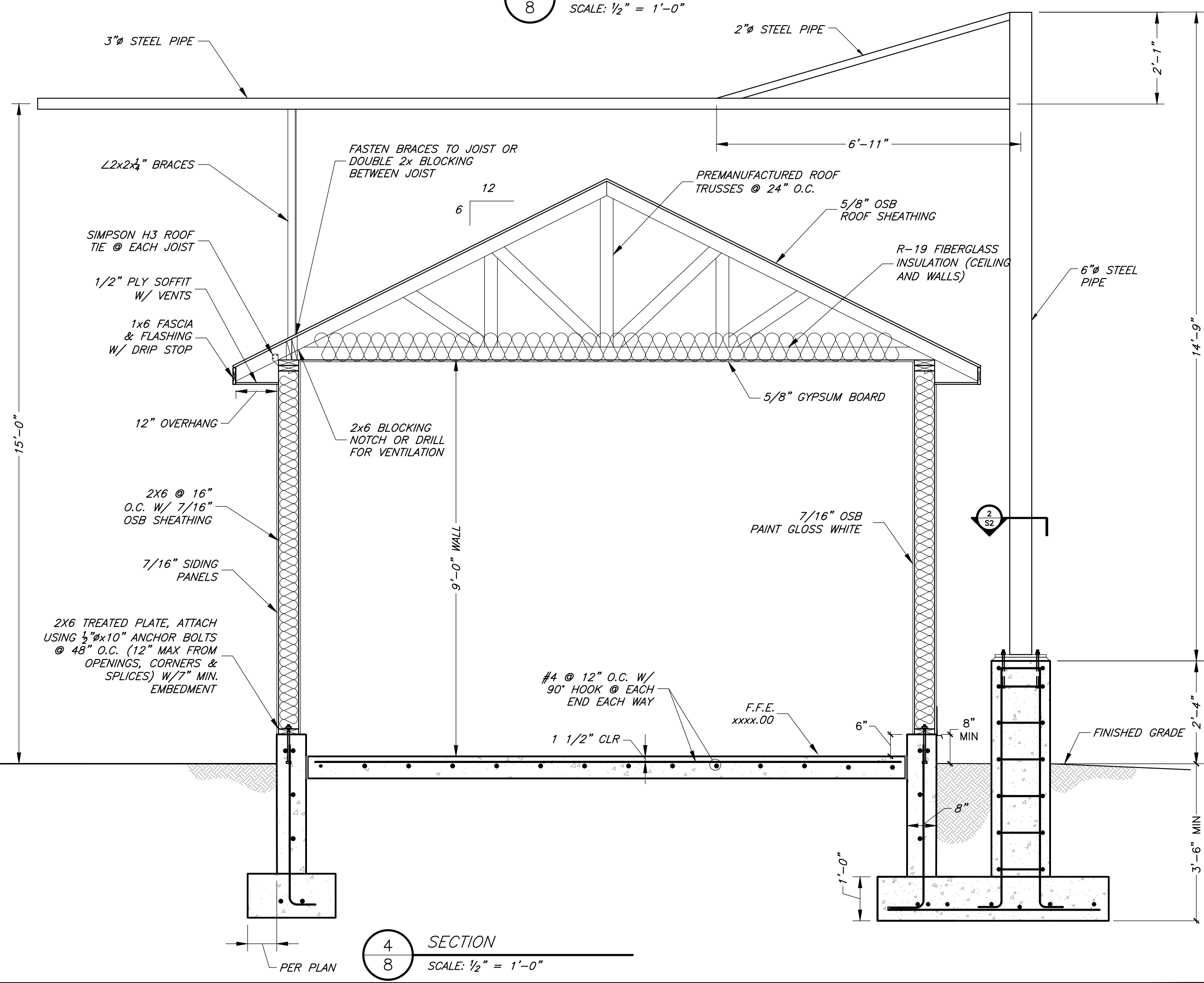
5) Stability During Erection. Framing is not stable until entire structure has been installed and connected in accordance with these plans and the IBC 2009. It is the responsibility of the contractor to provide temporary bracing to stabilize framing until the structure is complete.

6) Metal roof shall be corrugated weathering steel (Cor-Ten A606 or A588, or approved equal), 22 gauge.

7) Board and Batten siding and Trim shall be reclaimed or simulated barn wood. Color selection to be made based on availability and approved by owner.



2 ROOF DETAIL
SCALE: 1/2" = 1'-0"



4 SECTION
SCALE: 1/2" = 1'-0"

Bid Set

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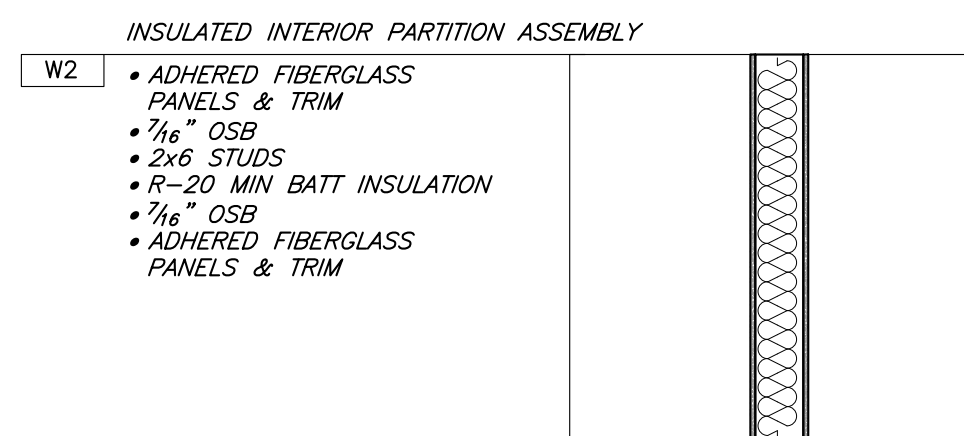
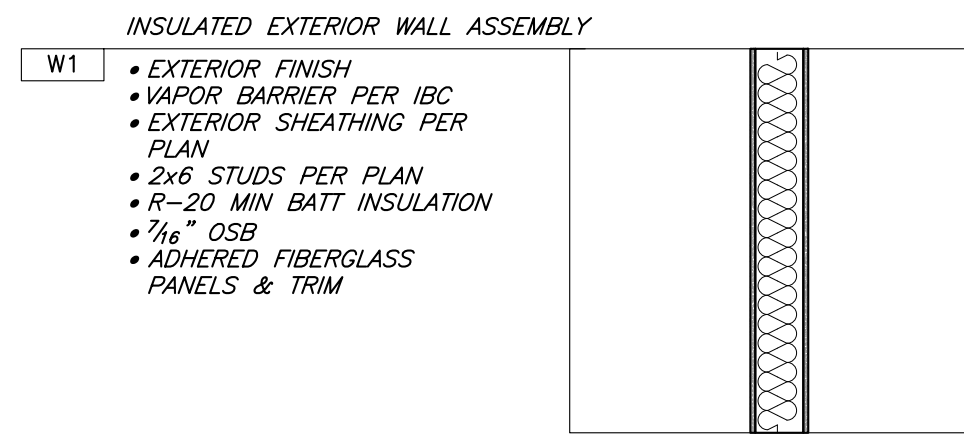
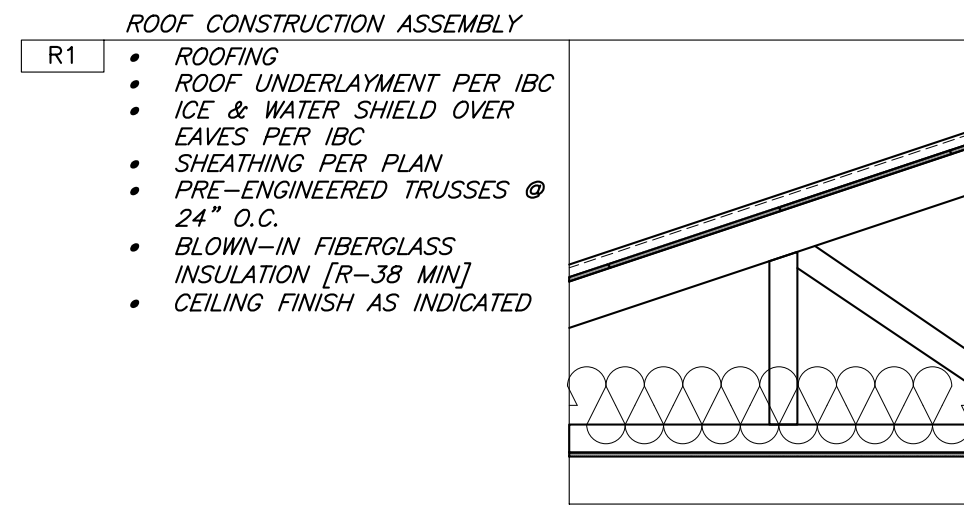
Town of Norwood
Raw Water System

#	Revision	Date	By
1			
1			

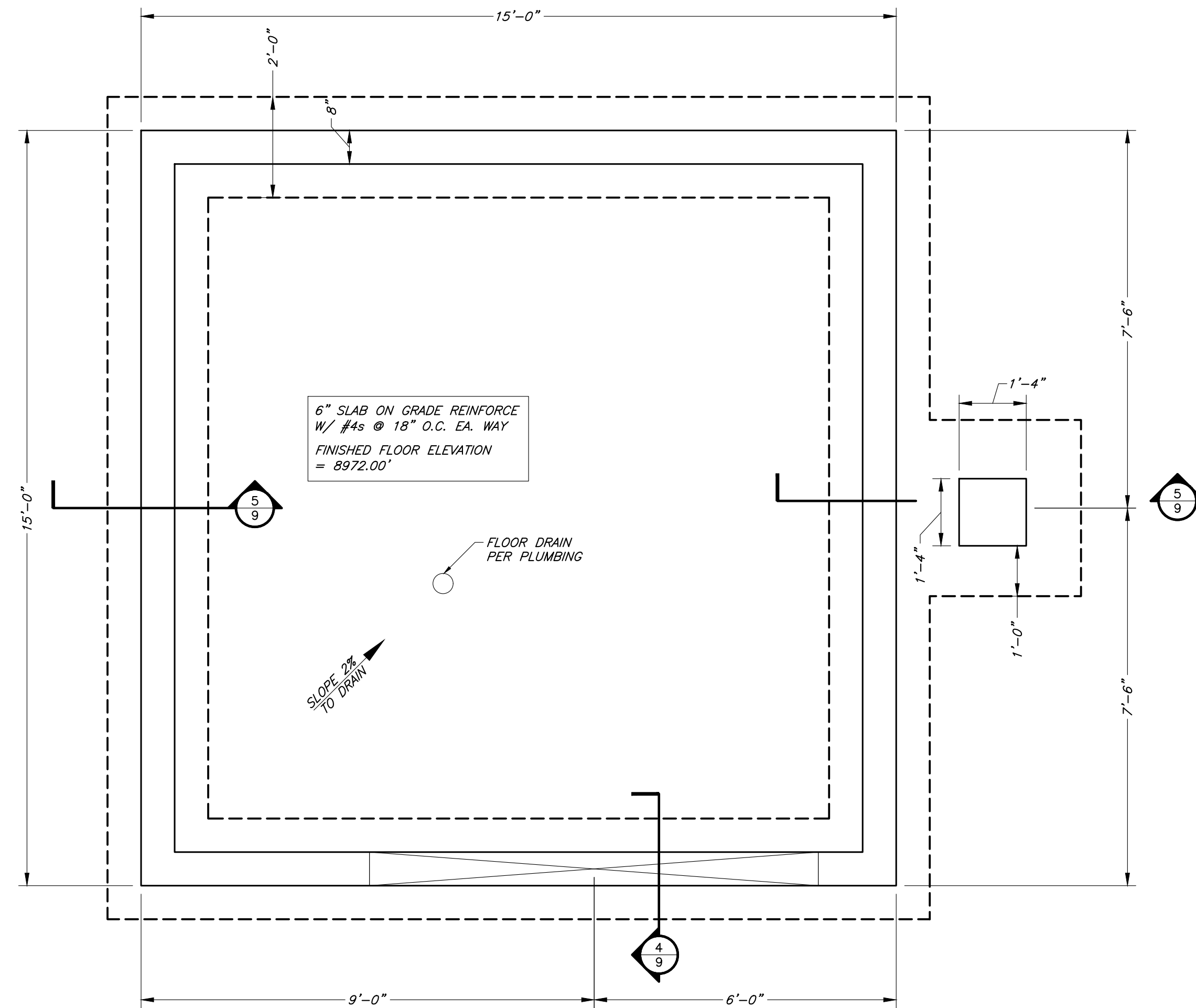
Bulk Water Station
Structure

Job No. 2015-440.002
Drawn by: JJP
Date: 11/01/17
QC: LM PE: LM
File: PumpHouse

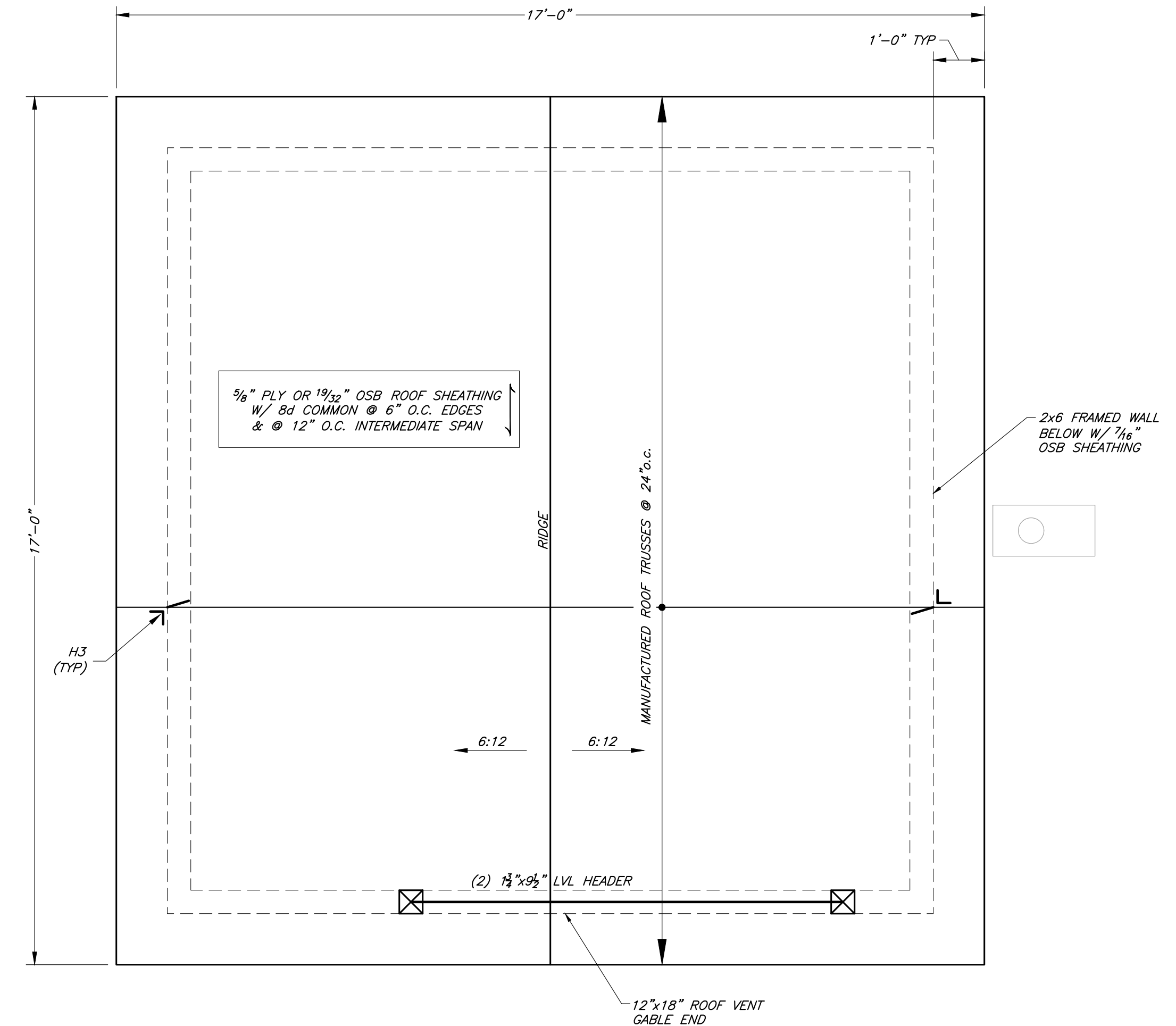
S100
48



3
9 CONSTRUCTION ASSEMBLIES
N.T.S.



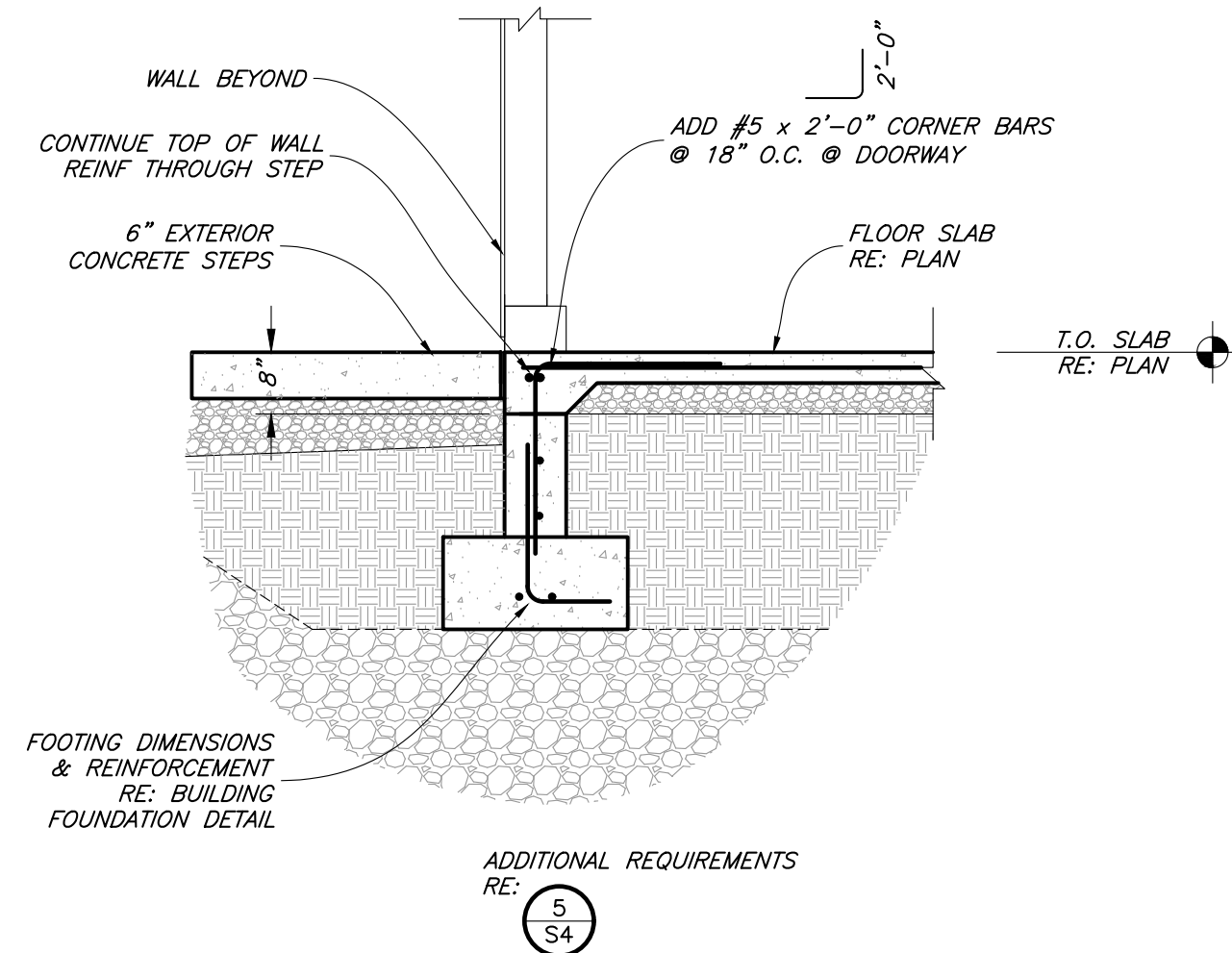
1
9 FOUNDATION PLAN
SCALE: 1/2" = 1'-0"



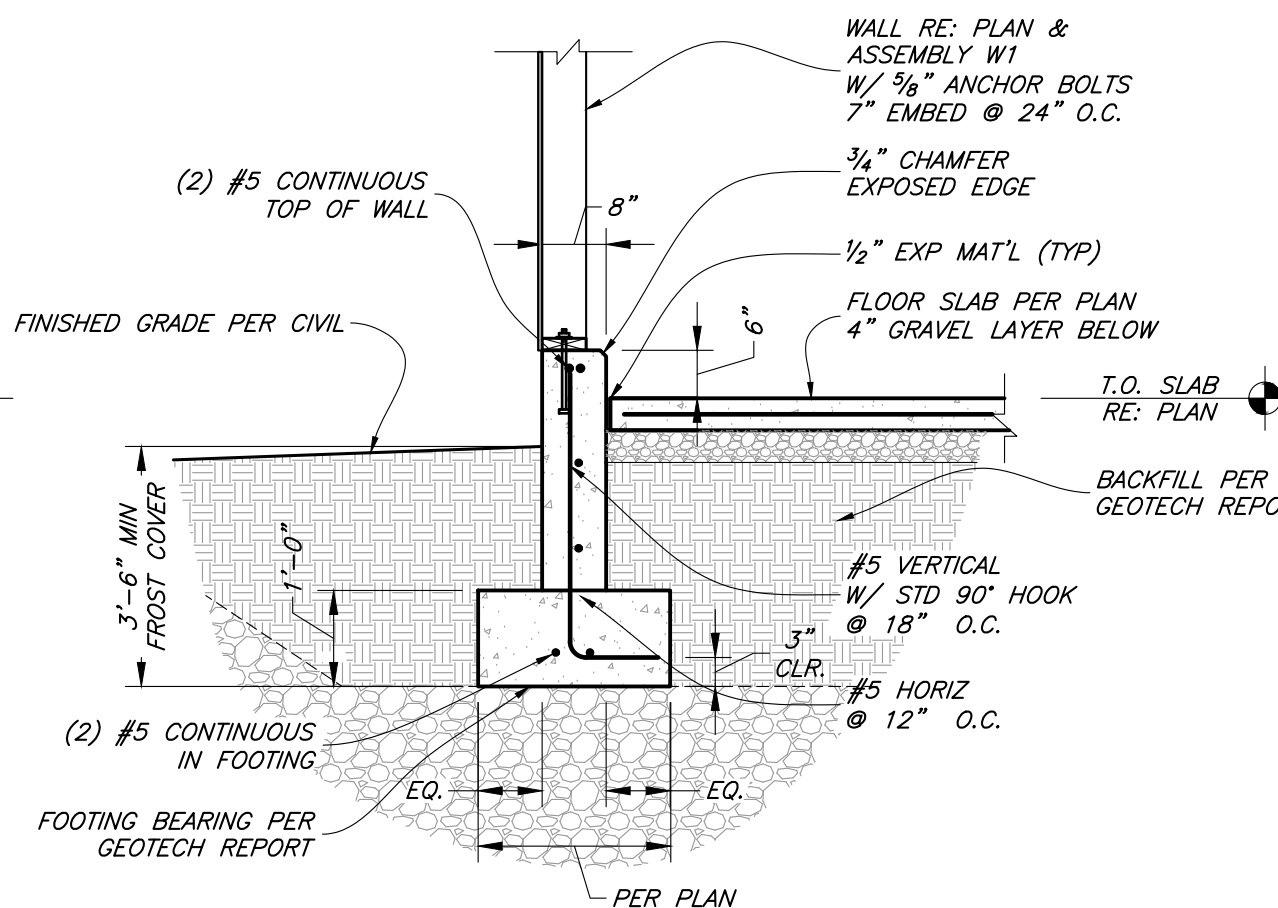
2
9 ROOF PLAN
SCALE: 1/2" = 1'-0"



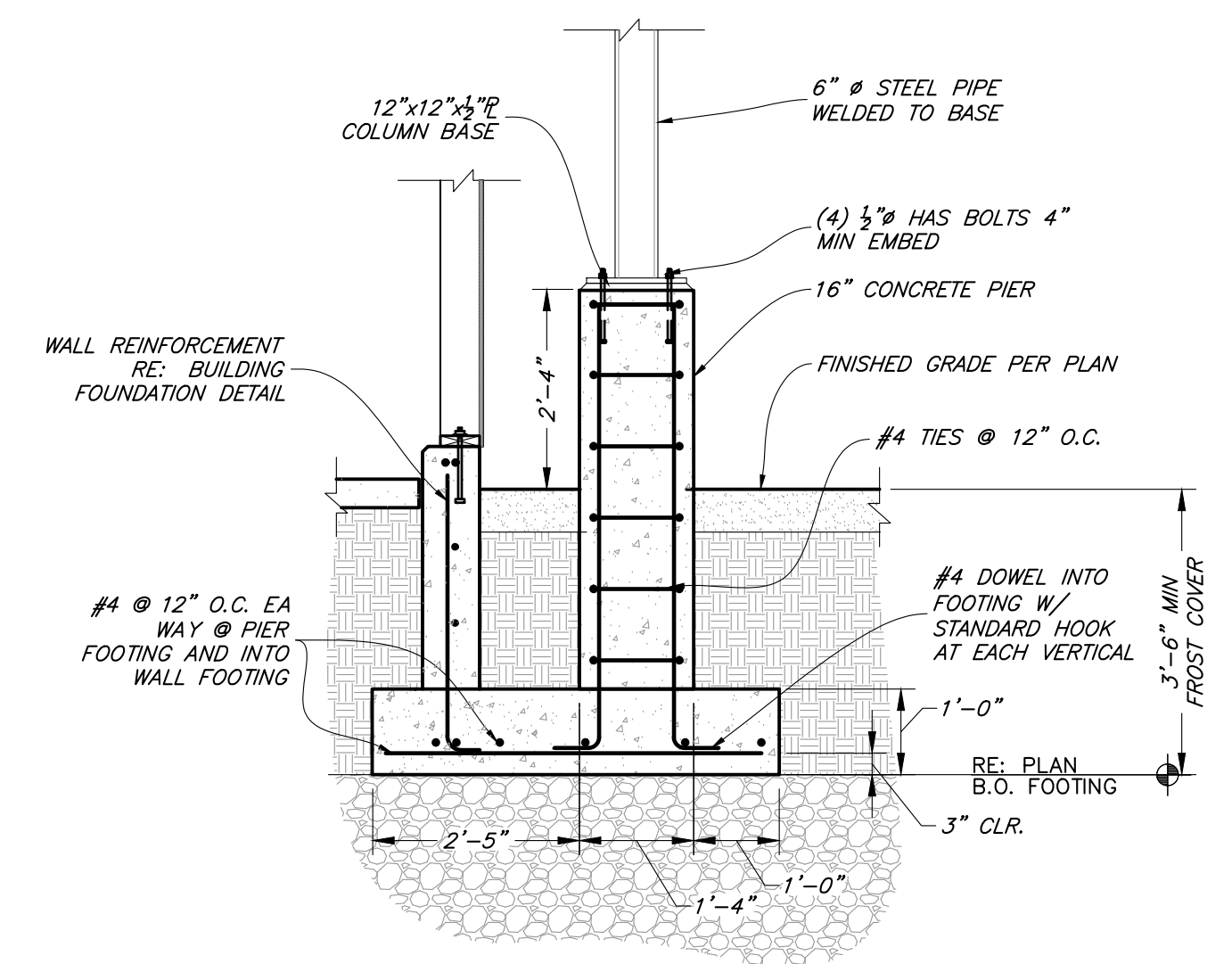
7
9 FUNNEL
N.T.S.



4
9 FOUNDATION WALL DETAIL AT DOOR OPENINGS
SCALE: 1/2" = 1'-0"



5
9 BUILDING FOUNDATION WALL DETAIL
SCALE: 1/2" = 1'-0"



6
9 CONCRETE PIER & FOOTING DETAIL AT WOOD COLUMN
SCALE: 1/2" = 1'-0"

Bid Set

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Town of Norwood
Raw Water System

#	Revision	Date	By
1			
1			
1			
1			
1			
1			

Bulk Water Station
Structure (2)

Job No. 2015-440.002
Drawn by: JJP
Date: 11/01/17
QC: LM PE: LM
File: PumpHouse

S101
48

I:\2015\2015-440-norwood\002-rawwater\systems\11-01-17\11-01-17 10:18 AM By: JJP.dwg Plotted: 11/1/2017 10:18 AM By: JJP.dwg