

LEGEND AND ABBREVIATIONS

	TRAVERSE POINT		TILE		DRAIN TILE
	POWER POLE		PVC P		PVC PIPE
	LIGHT POLE		CO		CLEANOUT
	FLAG POLE		R BAR		REBAR
	MANHOLE		BM.		BENCH MARK
	STORM INLET		TMH		TELEPHONE MANHOLE
	WATER VALVE		GSV		GAS SERVICE VALVE
	GAS VALVE		WSV		WATER SERVICE VALVE
	FIRE HYDRANT				CATCH BASIN
	MAIL BOX				CONIFEROUS TREE
	TELEPHONE PEDESTAL				STUMP
	CONTROL BOX				BUSH
	TRAFFIC SIGNAL		METAL		METAL POST
	GUY WIRE				HANDHOLE
	MONUMENT				MISCELLANEOUS METER
	1" IRON PIPE		WOOD		WOOD POST
	2" IRON PIPE				ABANDONED POLE
	VENT PIPE		YL		YARD LIGHT
	PULL BOX				SIGN
	A/C				INLET PROTECTION
	DECIDUOUS TREE				CULVERT PIPE DITCH CHECK

ASPH.	ASPHALT	I.E.	INVERT ELEVATION
BSM'T.	BASEMENT	I.P.	IRON PIPE
BIT.	BITUMINOUS	LAT.	LATERAL
CB.	CATCHBASIN	MH.	MANHOLE
C/L	CENTERLINE	M.J.	MECHANICAL JOINT
CIPP	CURED-IN-PLACE PIPE	PAV'T.	PAVEMENT
CONC.	CONCRETE	PROP.	PROPOSED
CMP	CORRUGATED METAL PIPE	PVC	POLYVINYL CHLORIDE
CMPA	CORRUGATED METAL PIPE ARCH	PVC P.	PVC PIPE
C. & G.	CURB & GUTTER	R. BAR	REBAR
DRAIN T.	DRAIN TILE	REQ'D.	REQUIRED
D.I.P.	DUCTILE IRON PIPE	R.J.	RESTRAINED JOINT
DWY.	DRIVEWAY	SAN.	SANITARY
ECC.	ECCENTRIC	S.	SLOPE
EXIST.	EXISTING	STL.	STEEL
F.F.	FIRST FLOOR	STM.	STORM
FM.	FORCE MAIN	SUMP D.	SUMP DISCHARGE
G.V.	GAS VALVE	TYP.	TYPICAL
GR.	GRAVEL	VENT P.	VENT PIPE
G.W.	GUY WIRE	WM.	WATER MAIN
HYD.	HYDRANT	W.V.	WATER VALVE
INL.	INLET	W/	WITH

SHEET INDEX

Sheet No.	01	COVER SHEET
Sheet No.	02	INDEX SHEET
Sheet No.	03-09	PROPOSED WATER MAIN RELAY
TOTAL SHEETS = 09		

SURFACE RESTORATION

- LAWN RESTORATION
- DRIVEWAY REPLACEMENT
- ROADWAY REPLACEMENT

BACKFILL LEGEND

- 3/4-INCH TRAFFIC BOND BACKFILL
- SPOIL BACKFILL

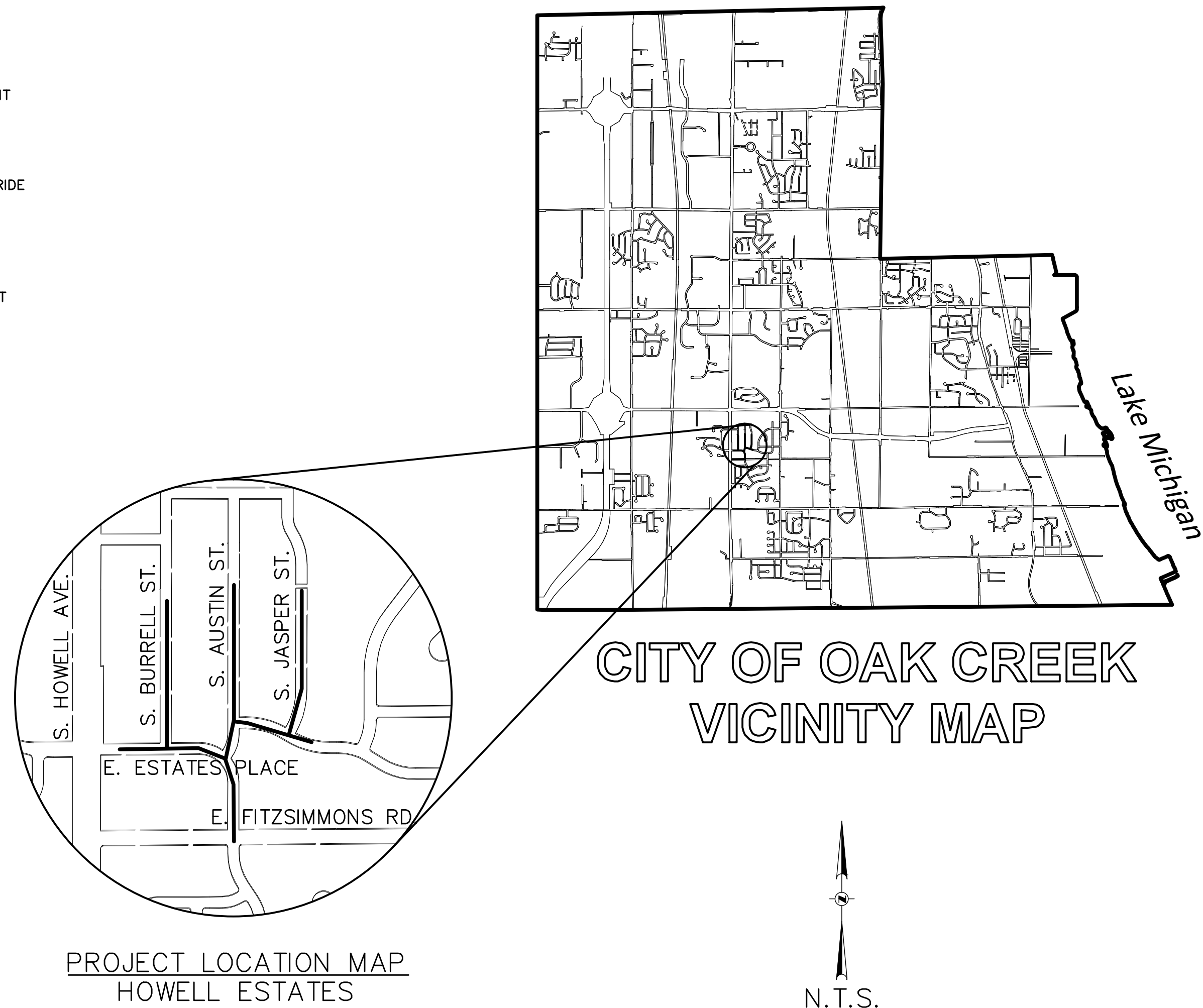
CITY OF OAK CREEK

WATER AND SEWER UTILITY

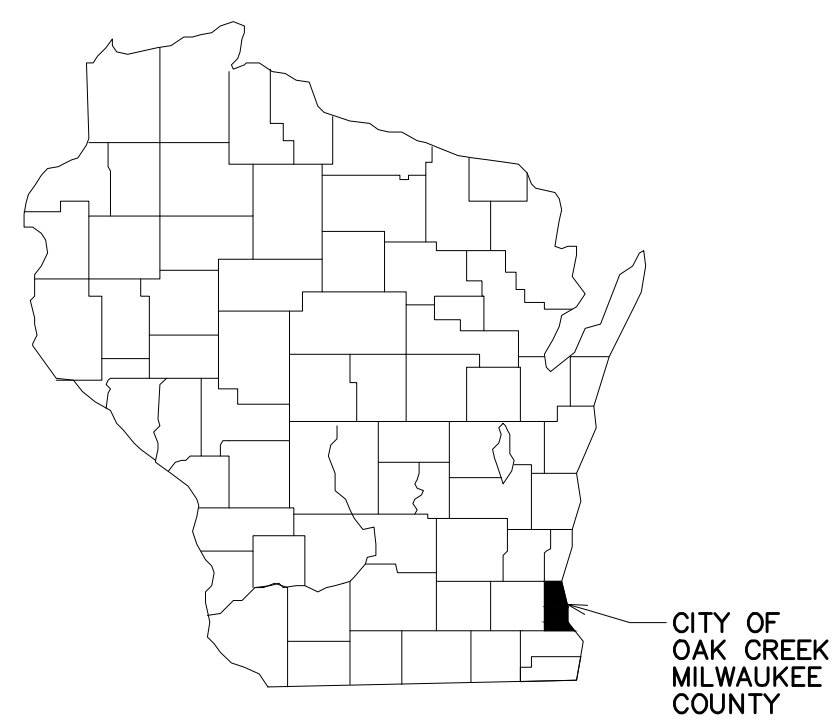
HOWELL ESTATES
WATER MAIN RELAY

PROJECT NUMBER
13104

MAY 30, 2013

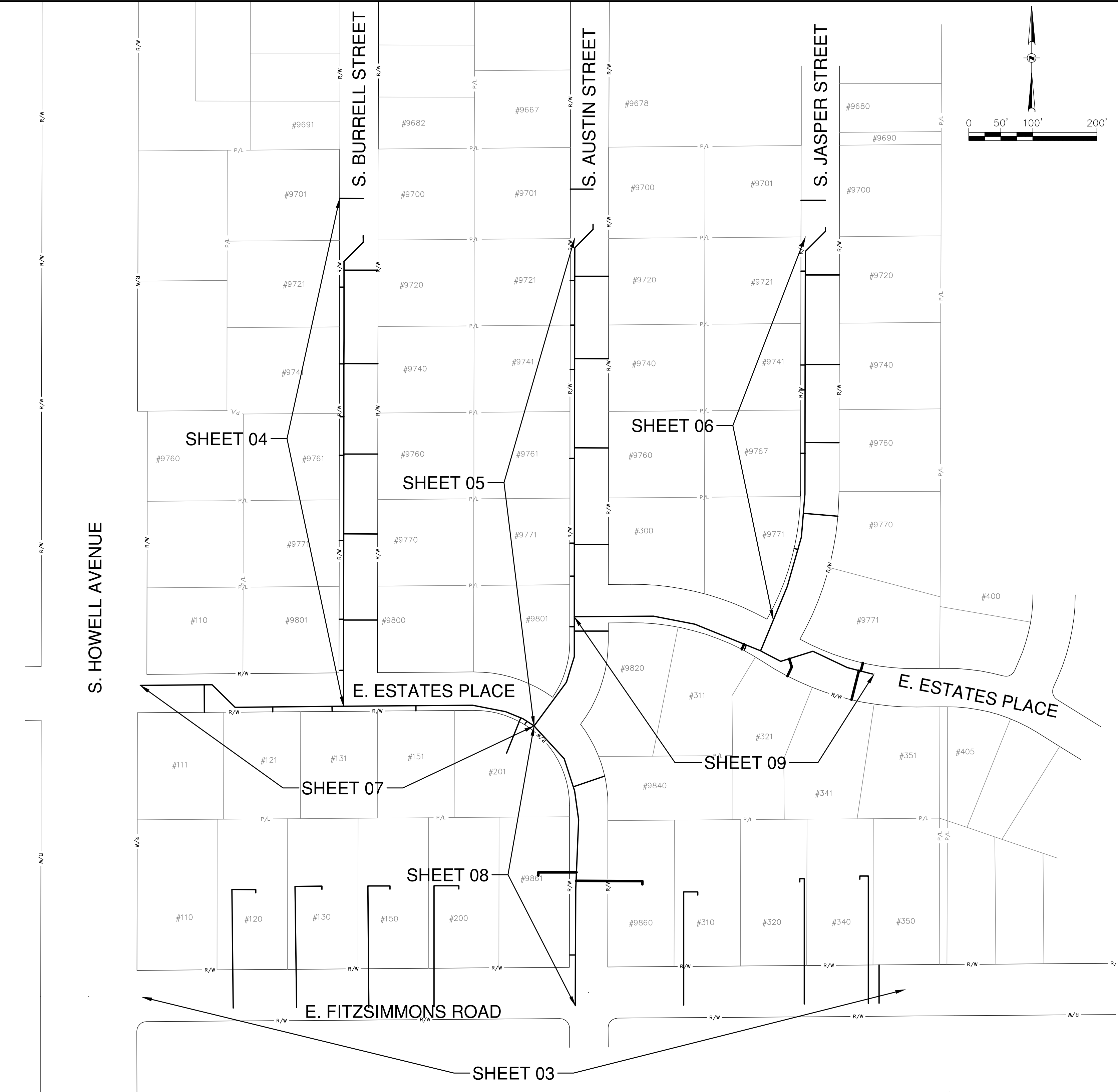


WATER and SEWER UTILITY
A COMMITMENT TO WATER QUALITY



Gräef
One Honey Creek Corporate Center
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GENERAL NOTES:

1. CONTRACTOR SHALL REMOVE SIGNS, MAILBOXES, ETC. DURING CONSTRUCTION. IMMEDIATELY AFTER PIPE INSTALLATION AND BACKFILL OCCURS, ALL SIGNS, MAILBOXES, ETC. SHALL BE RETURNED TO THEIR PREVIOUS LOCATION. ALL STOP SIGNS MUST BE DISPLAYED AT ALL TIMES.
2. INSULATION IS REQUIRED WHEREVER COVER OVER THE TOP OF WATER MAIN AND/OR WATER LATERAL IS LESS THEN 6 FT. OR WHERE SHOWN ON PLANS. (INCIDENTAL TO PROPOSED WATER MAIN)
3. RESTRAINING OF PROPOSED WATER MAIN IS INCIDENTAL TO WATER MAIN CONSTRUCTION.
4. SUPPORTING OF POWER/LIGHT POLES ALONG THE ENTIRE PROJECT LIMITS FOR PROPOSED WATER MAIN IS INCIDENTAL TO PROPOSED WATER MAIN CONSTRUCTION.
5. LOCATION OF PROPOSED WATER LATERALS ON PLANS ARE APPROXIMATE. FINAL LOCATION SHALL BE DETERMINED IN FIELD DURING CONSTRUCTION. ALL EXISTING WATER SERVICE LATERALS ARE COPPER, 1-INCH DIAMETER.
6. CONTRACTOR SHALL SALVAGE ALL EXISTING HYDRANTS CONNECTED TO EXISTING WATER MAIN TO BE ABANDONED BY DISASSEMBLING THE CONNECTION TO THE EXISTING 6" HYDRANT LEAD AT THE HYDRANT SHOE, AND SALVAGING THE HYDRANT, BARREL, SHOE, AND NOZZLE CAPS TO THE CITY OF OAK CREEK WATER AND SEWER UTILITY LOCATED AT 170 W. DREXEL AVE. OAK CREEK, WI 53154 BETWEEN THE HOURS OF 7:00 AM AND 3:00 PM.
7. CONTRACTOR SHALL INSTALL ALL WATER SERVICE LATERALS CROSSING UNDER PAVEMENT AND ALL WATER SERVICE LATERALS ON PRIVATE PROPERTY USING TRENCHLESS METHODS.
8. CONTRACTOR SHALL REINSTATE ALL SUMP PUMP DISCHARGES DAMAGED DURING CONSTRUCTION OR EXTEND EXISTING DISCHARGES AS REQUIRED WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL FURNISH NEW PIPE MATERIAL TO MATCH EXISTING PIPE, AND JOIN WITH A WATERTIGHT SEAL. (INCIDENTAL TO PROPOSED WATER MAIN)

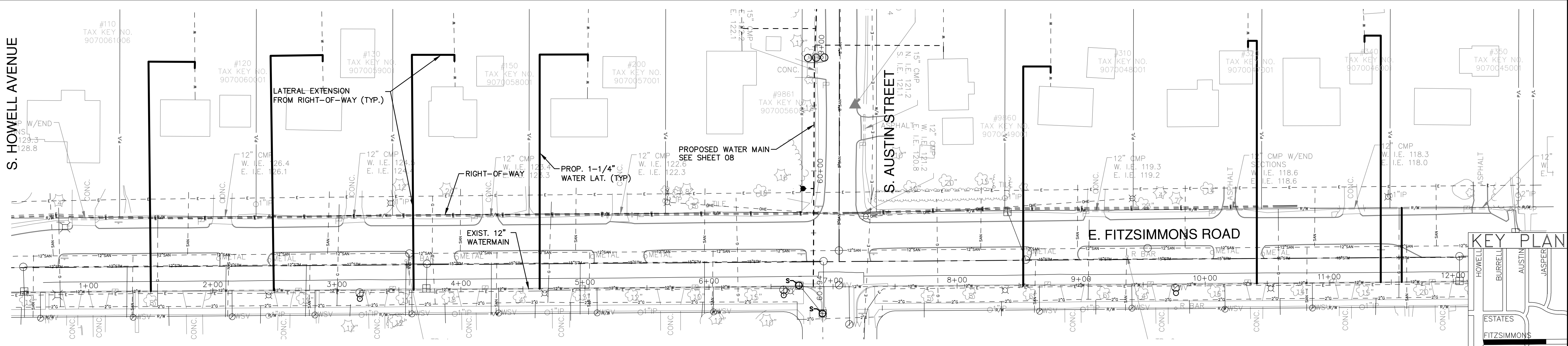
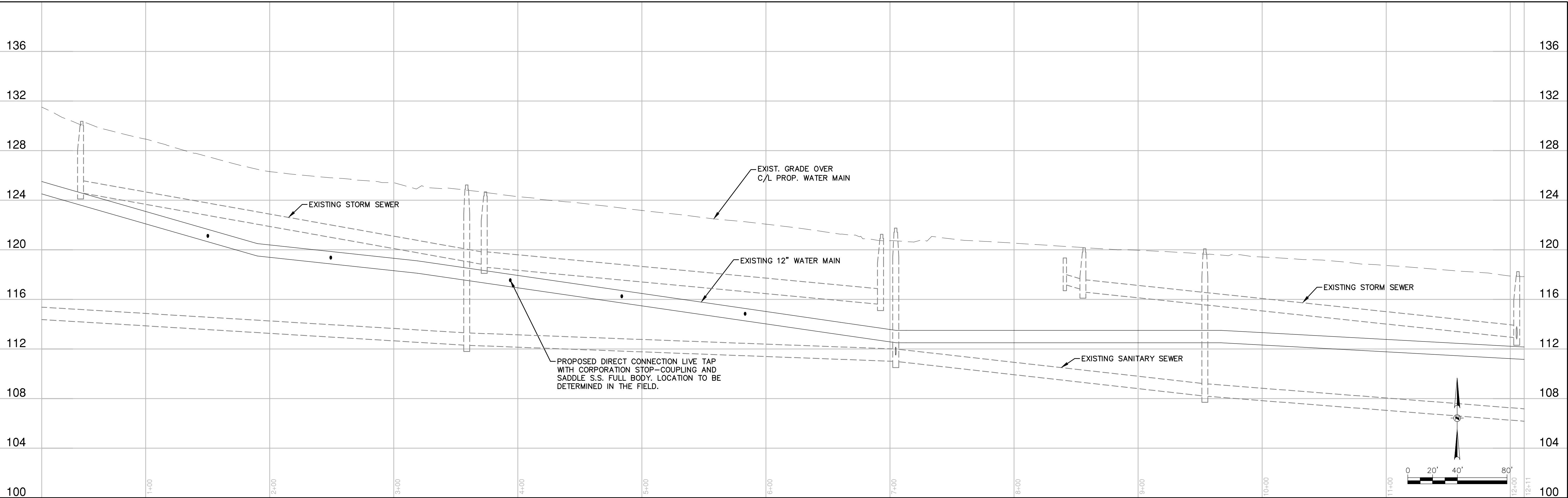
NOTICE:
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DISCLAIMER:
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BID ITEM NOS.	ESTIMATE OF QUANTITIES	WATER MAIN	SA.FKO	CITY OF OAK CREEK, WISCONSIN	APPROVED BY				
		CONTRACTOR:	ST.FKO						
		MAINLINE INSPECTED BY:	W. FKO		UTILITY ENGINEER DATE				
		LATERALS INSPECTED BY:	G. FKO		APPROVED BY				
		DATE COMPLETED:	E. FKO		DESIGNED BY DATE DRAWN BY DATE CHECKED BY DATE				
		TYPE OF PIPE, ASTM NO.	T. FKO		AS 5-30-13 FKO 5-30-13 MNP 5-30-13				
		TYPE OF PIPE, ASTM NO.	I. FKO		HOWELL ESTATES PROPOSED WATER MAIN RELAY				
		AS-BUILTS BY: DATE:	TS.FKO		IN:				
		This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.			PP.	FR:			
						TO:			
				REVISION BY DATE					
		Utility Engineer Date		FILE NO: 13104-2C-2152					



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BID ITEM NOS.		ESTIMATE OF QUANTITIES		WATER MAIN		SA.FKO		CITY OF OAK CREEK, WISCONSIN				APPROVED BY		
CONTRACTOR:		ST.FKO										UTILITY ENGINEER		DATE
8	1-1/4-inch Water Service Laterals (Polyethylene) Directional Drill	8 EA.	MAINLINE INSPECTED BY:	W. FKO		DESIGNED BY		DATE	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	
15	Extension of New Water Service Lateral from Right-of-Way for Direct Connect to Existing Property Water Service (Directional Drilling)	7 EA.	LATERALS INSPECTED BY:	G. FKO		AS		5-30-13	FKO	5-30-13	MNP	5-30-13		
			DATE COMPLETED:	E. FKO				HOWELL ESTATES PROPOSED WATER MAIN RELAY				CITY ENGINEER		DATE
			TYPE OF PIPE, ASTM NO.	T. FKO				IN: E. FITZSIMMONS ROAD				SCALE		SHEET
			TYPE OF PIPE, ASTM NO.	I. FKO				FR: S. HOWELL AVE.				PLAN		
			AS-BUILTS BY:	TS.FKO				TO: 500 FT. EAST OF S. AUSTIN ST.				HOR. 1"=40'		03
				PP.								PROFILE		OF
												HOR. 1"=40'		
												VER. 1"=4'		09

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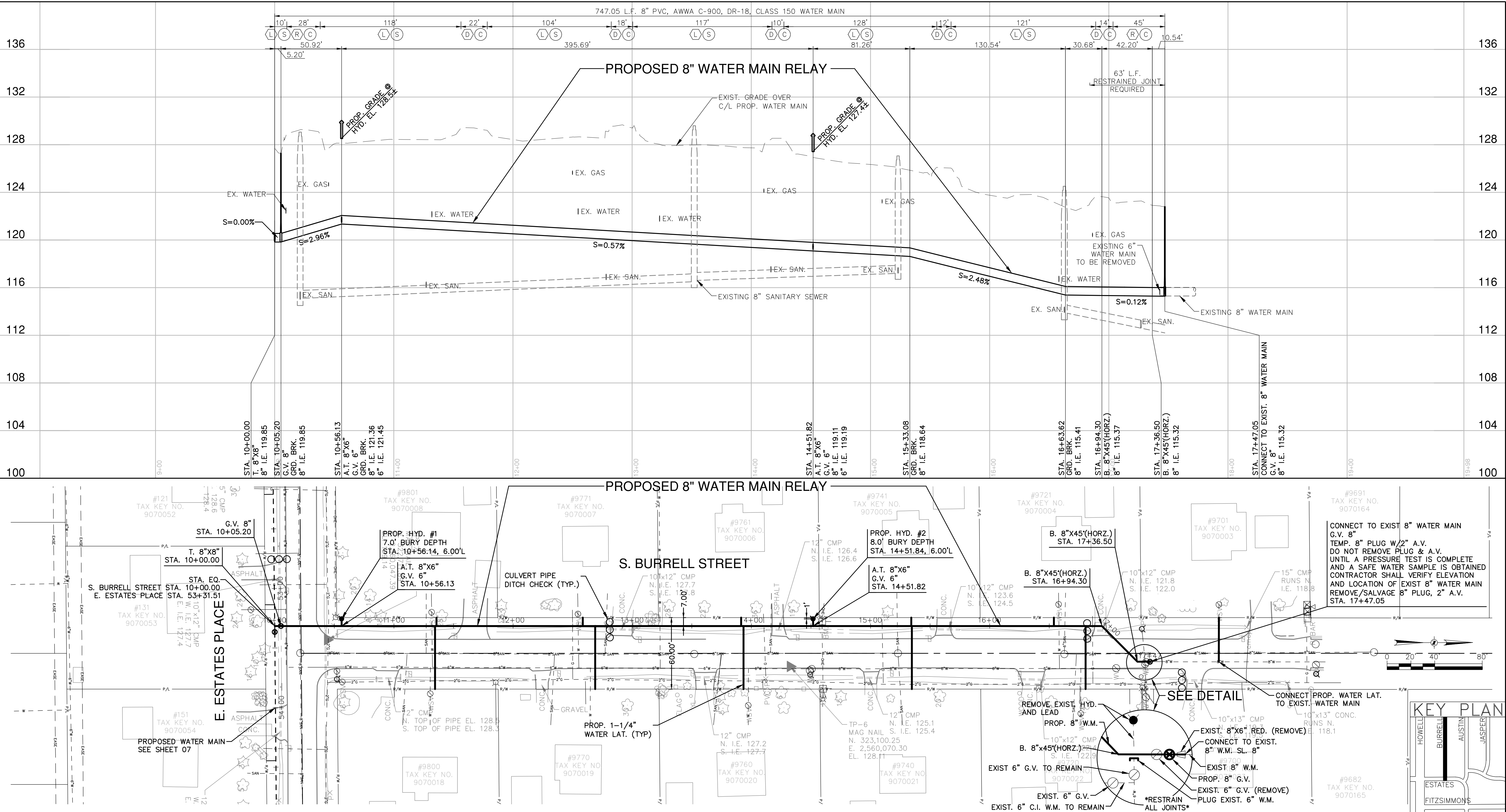
ESTIMATE OF QUANTITIES		
BID ITEM NOS.		
1	8-inch PVC Water Main, 3/4-inch T.B.B.F., Surf. Rest.	149 L.F.
2	8-inch PVC Water Main, Spoil B.F., Surf. Rest.	598 L.F.
3	Connect to Existing 8-inch Water Main	1 EA.
5	Hydrant, Lead and 6-inch Gate Valve	2 EA.
6	8-inch Gate Valve	2 EA.
7	1-1/4-inch Water Service Laterals (Polyethylene) Open Cut	5 EA.
8	1-1/4-inch Water Service Laterals (Polyethylene) Directional Drill	6 EA.
11	13-inch x 9-inch CMP Driveway Culverts	3 EA.
12	12-inch CMP Driveway Culverts	1 EA.

WATER MAIN	
CONTRACTOR:	
MAINLINE INSPECTED BY:	
LATERALS INSPECTED BY:	
DATE COMPLETED:	
TYPE OF PIPE, ASTM NO.	
TYPE OF PIPE, ASTM NO.	
AS-BUILTS BY:	
DATE:	
This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.	
Utility Engineer	Date

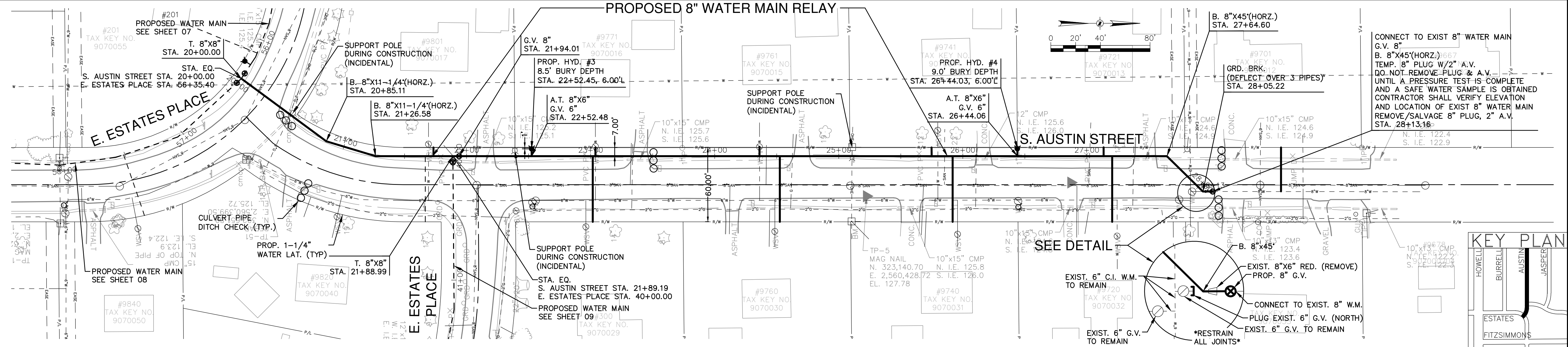
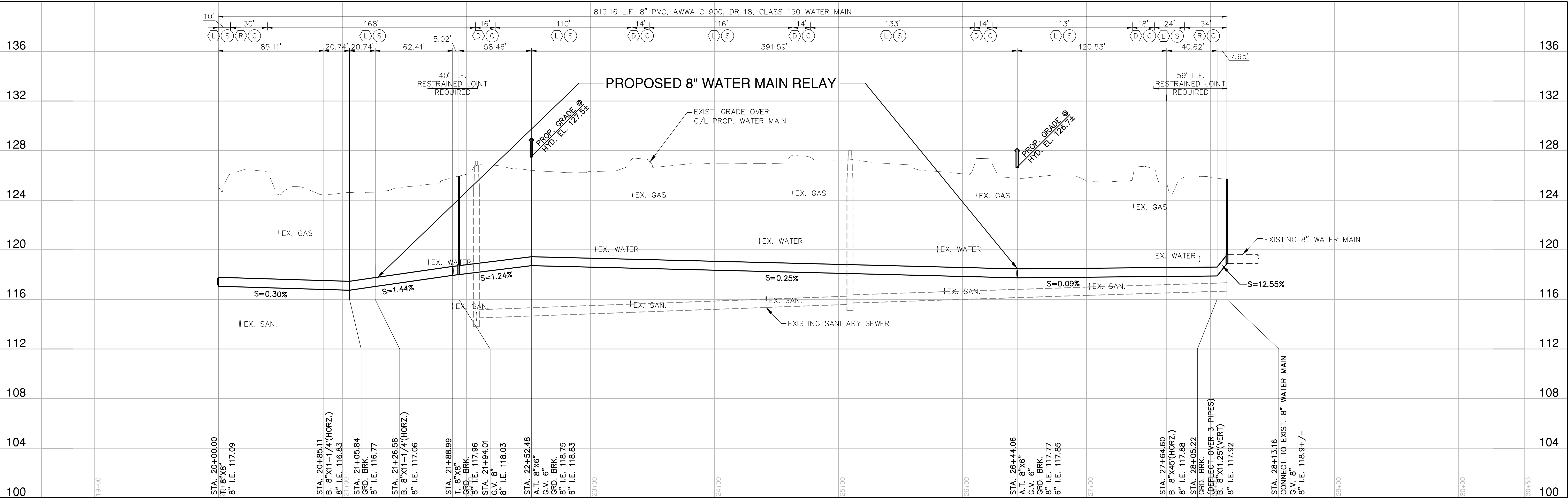
SAFKO
ST.FKO
W. FKO
G. FKO
E. FKO
T. FKO
I. FKO
TS.FKO
PP.

REVISION BY	DATE
-------------	------

CITY OF OAK CREEK, WISCONSIN				APPROVED BY	
DESIGNED BY	DATE	DRAWN BY	DATE	UTILITY ENGINEER	DATE
AS	5-30-13	FKO	5-30-13	MNP	5-30-13
HOWELL ESTATES PROPOSED WATER MAIN RELAY				CITY ENGINEER	DATE
IN: S. BURRELL STREET				SCALE	SHEET
FR: E. ESTATES PLACE				PLAN HOR. 1"=40'	04
TO: 750 FT. NORTH OF E. ESTATES PL.				PROFILE HOR. 1"=40'	OF
				VER. 1"=4'	09
				FILE NO: 13104-4C-2154	



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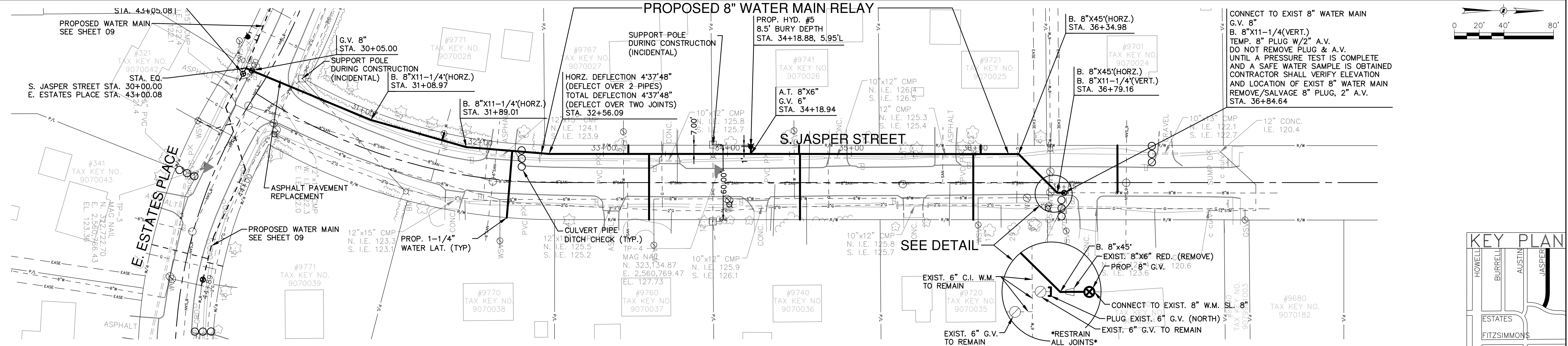
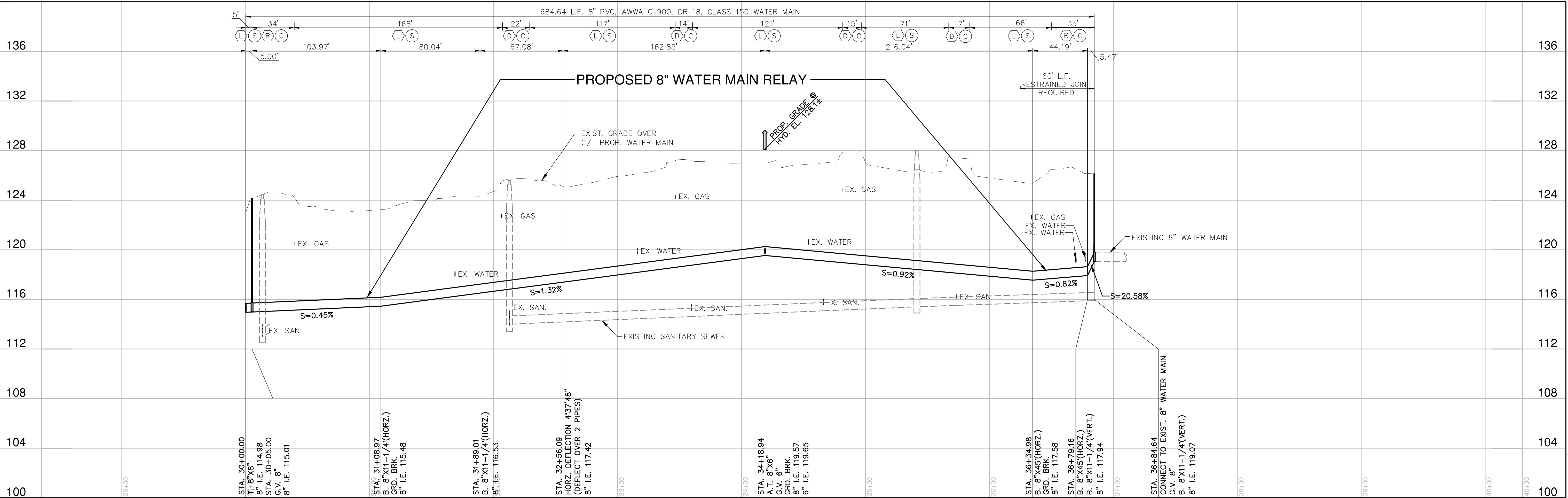
ESTIMATE OF QUANTITIES		
BID ITEM NOS.	DESCRIPTION	QUANTITY
1	8-inch PVC Water Main, 3/4-inch T.B.F., Surf. Rest.	140 L.F.
2	8-inch PVC Water Main, Spoil B.F., Surf. Rest.	674 L.F.
3	Connect to Existing 8-inch Water Main	1 EA.
5	Hydrant, Lead and 6-inch Gate Valve	2 EA.
6	8-inch Gate Valve	2 EA.
7	1-1/4-inch Water Service Laterals (Polyethylene) Open Cut	5 EA.
8	1-1/4-inch Water Service Laterals (Polyethylene) Directional Drill	6 EA.
11	13-inch x 9-inch CMP Driveway Culverts	3 EA.
12	12-inch CMP Driveway Culverts	1 EA.

WATER MAIN	
CONTRACTOR:	SAFKO ST.FKO
MAINLINE INSPECTED BY:	W. FKO
LATERALS INSPECTED BY:	G. FKO
DATE COMPLETED:	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
TYPE OF PIPE, ASTM NO.	I. FKO
AS-BUILTS BY:	TS.FKO
DATE:	PP.
This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.	
Utility Engineer	Date

REVISION BY	DATE
-------------	------

CITY OF OAK CREEK, WISCONSIN				APPROVED BY	
DESIGNED BY	DATE	DRAWN BY	DATE	UTILITY ENGINEER	DATE
AS	5-30-13	FKO	5-30-13	MNP	5-30-13
HOWELL ESTATES PROPOSED WATER MAIN RELAY				APPROVED BY	
IN: S. AUSTIN STREET				CITY ENGINEER	DATE
FR: E. ESTATES PL.				SCALE	SHEET
TO: 800 FT. NORTH OF E. ESTATES PL.				PLAN HOR. 1"=40'	05
				PROFILE HOR. 1"=40'	OF
				VER. 1"=4'	09
FILE NO: 13104-5C-2155					

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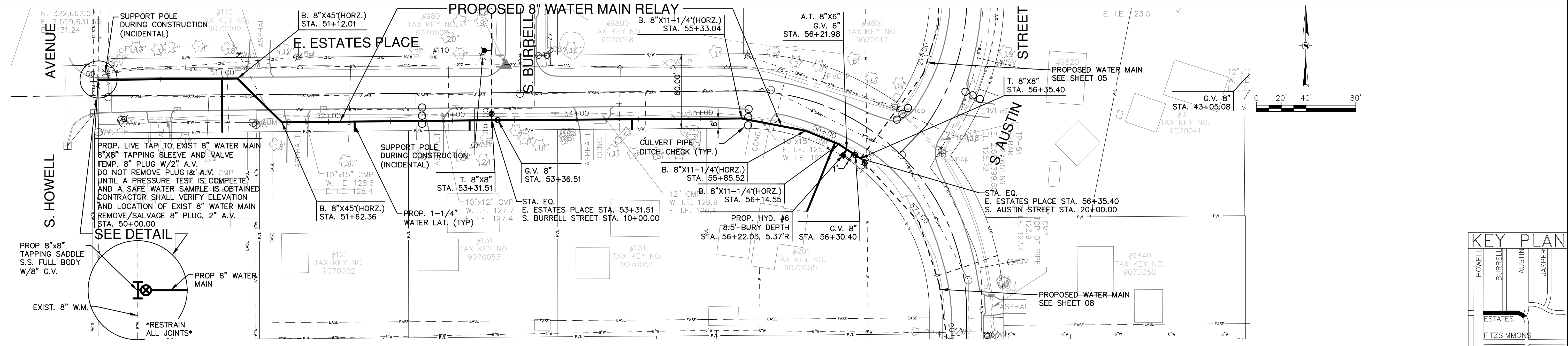
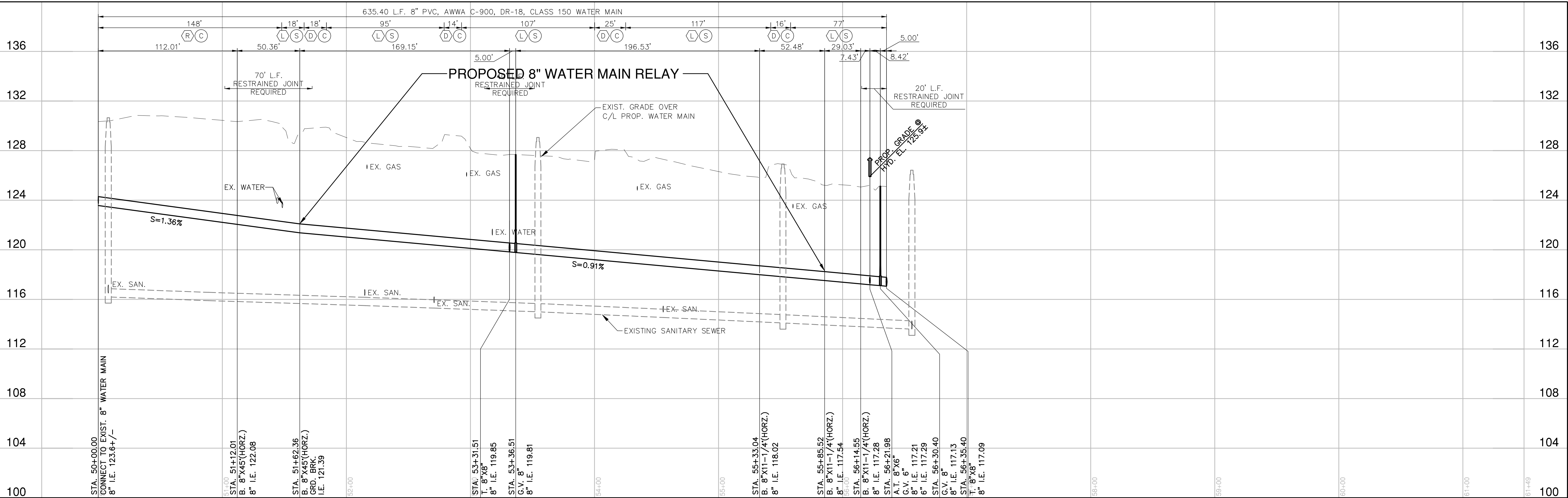
ESTIMATE OF QUANTITIES		
BID ITEM NOS.	DESCRIPTION	QUANTITY
1	8-inch PVC Water Main, 3/4-inch T.B.B.F., Surf. Rest.	137 L.F.
2	8-inch PVC Water Main, Spoil B.F., Surf. Rest.	548 L.F.
3	Connect to Existing 8-inch Water Main	1 E.A.
5	Hydrant, Lead and 6-inch Gate Valve	1 E.A.
6	8-inch Gate Valve	2 E.A.
7	1-1/4-inch Water Service Laterals (Polyethylene) Open Cut	4 E.A.
8	1-1/4-inch Water Service Laterals (Polyethylene) Directional Drill	5 E.A.
11	13-inch x 9-inch CMP Driveway Culverts	3 E.A.
12	12-inch CMP Driveway Culverts	1 E.A.

WATER MAIN	
CONTRACTOR:	
MAINLINE INSPECTED BY:	
LATERALS INSPECTED BY:	
DATE COMPLETED:	
TYPE OF PIPE, ASTM NO.	
TYPE OF PIPE, ASTM NO.	
AS-BUILTS BY:	
DATE:	
This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.	
Utility Engineer	Date

SA.FKO	ST.FKO
W. FKO	
G. FKO	
E. FKO	
T. FKO	
I. FKO	
TS.FKO	
PP.	

CITY OF OAK CREEK, WISCONSIN				APPROVED BY	
DESIGNED BY	DATE	DRAWN BY	DATE	UTILITY ENGINEER	DATE
AS	5-30-13	FKO	5-30-13	MNP	5-30-13
HOWELL ESTATES PROPOSED WATER MAIN RELAY				CITY ENGINEER	DATE
IN: S. JASPER STREET				SCALE	SHEET
FR: E. ESTATES PL.				PLAN HOR. 1"=40'	06
TO: 700 FT. NORTH OF ESTATES PL.				PROFILE HOR. 1"=40'	OF
				VER. 1"=4'	09
REVISION BY	DATE	FILE NO: 13104-6C-2156			

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ESTIMATE OF QUANTITIES		
BID ITEM NOS.	DESCRIPTION	QUANTITY
1	8-inch PVC Water Main, 3/4-inch T.B.B.F., Surf. Rest.	221 L.F.
2	8-inch PVC Water Main, Spoil B.F., Surf. Rest.	414 L.F.
3	Connect to Existing 8-inch Water Main	1 EA.
5	Hydrant, Lead, and 6-inch Gate Valve	1 EA.
6	8-inch Gate Valve	3 EA.
7	1-1/4-inch Water Service Laterals (Polyethylene) Open Cut	4 EA.
8	1-1/4-inch Water Service Laterals (Polyethylene) Directional Drill	1 EA.
11	13-inch x 9-inch CMP Driveway Culverts	3 EA.
12	12-inch CMP Driveway Culverts	1 EA.
15	Extension of New Water Service Lateral from Right-of-Way for Direct Connect to Existing Property Water Service (Directional Drilling Only)	1 EA.

WATER MAIN	
CONTRACTOR:	SA.FKO
MAINLINE INSPECTED BY:	ST.FKO
LATERALS INSPECTED BY:	W. FKO
DATE COMPLETED:	G. FKO
TYPE OF PIPE, ASTM NO.	E. FKO
TYPE OF PIPE, ASTM NO.	T. FKO
AS-BUILTS BY:	I. FKO
DATE:	TS.FKO
PP.	
Utility Engineer	Date

REVISION BY	DATE
-------------	------

CITY OF OAK CREEK, WISCONSIN				APPROVED BY _____	
				UTILITY ENGINEER _____ DATE _____	
DESIGNED BY	DATE	DRAWN BY	DATE	CHECKED BY	DATE
AS	5-30-13	FKO	5-30-13	MNP	5-30-13
HOWELL ESTATES PROPOSED WATER MAIN RELAY				APPROVED BY _____	
				CITY ENGINEER _____ DATE _____	
IN:		E. ESTATES PLACE		SCALE	SHEET
FR:	S. HOWELL AVE.			PLAN HOR. 1"=40'	07
TO:	S. AUSTIN ST.			PROFILE HOR. 1"=40'	08
				VER. 1"=4"	09
FILE NO: 13104-7C-2157					

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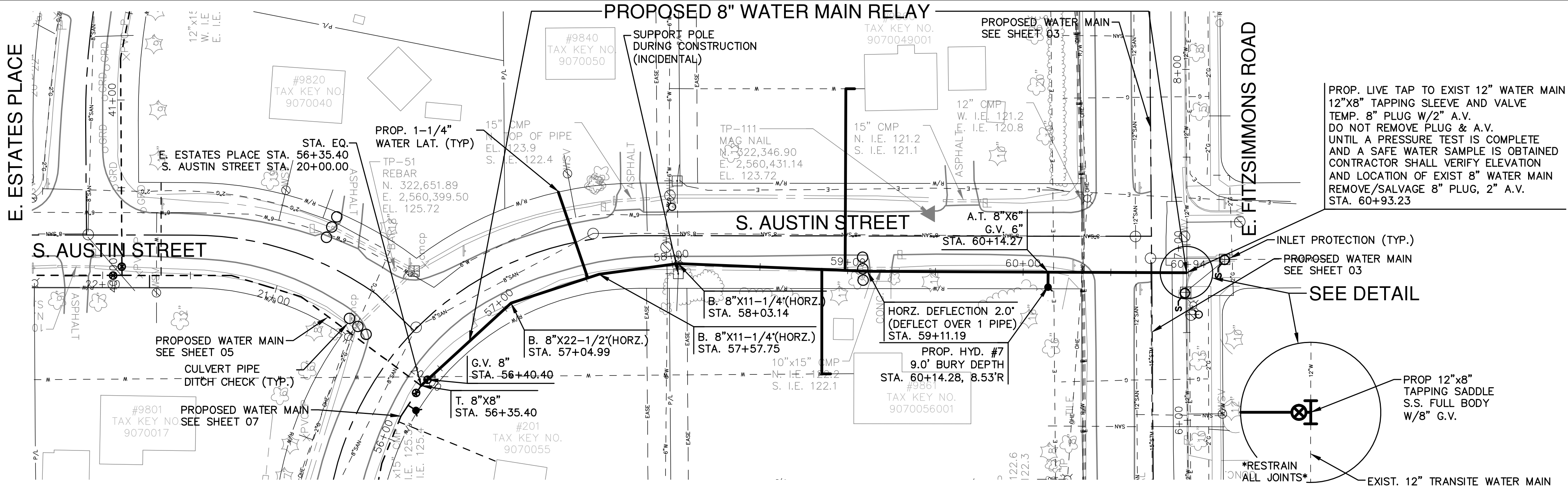
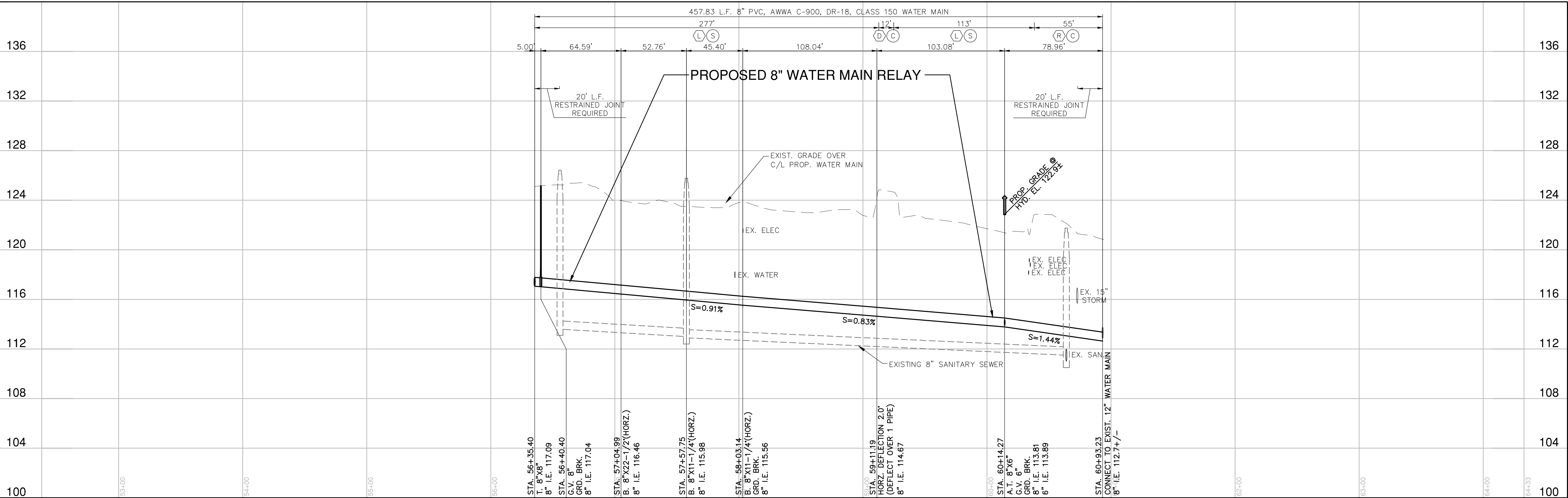
ESTIMATE OF QUANTITIES		
BID ITEM NOS.		
1	8-inch PVC Water Main, 3/4-inch T.B.B.F., Surf. Rest.	67 L.F.
2	8-inch PVC Water Main, Spoil B.F., Surf. Rest.	390 L.F.
4	Connect to Existing 12-inch Water Main	1 EA.
5	Hydrant, Lead, and 6-inch Gate Valve	1 EA.
6	8-inch Gate Valve	2 EA.
7	1-1/4-inch Water Service Laterals (Polyethylene) Open Cut	1 EA.
8	1-1/4-inch Water Service Laterals (Polyethylene) Directional Drill	2 EA.
11	13-inch x 9-inch CMP Driveway Culverts	1 EA.
15	Extension of New Water Service Lateral from Right-of-Way for Direct Connect to Existing Property Water Service (Directional Drilling Only)	2 EA.

WATER MAIN	
CONTRACTOR:	
MAINLINE INSPECTED BY:	
LATERALS INSPECTED BY:	
DATE COMPLETED:	
TYPE OF PIPE, ASTM NO.	
TYPE OF PIPE, ASTM NO.	
AS-BUILTS BY:	DATE:
This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.	
Utility Engineer	Date

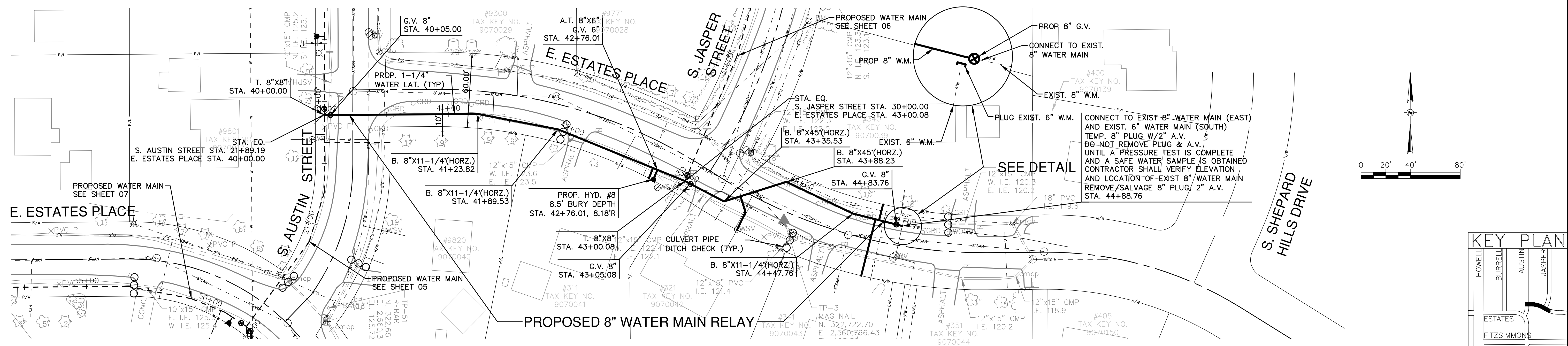
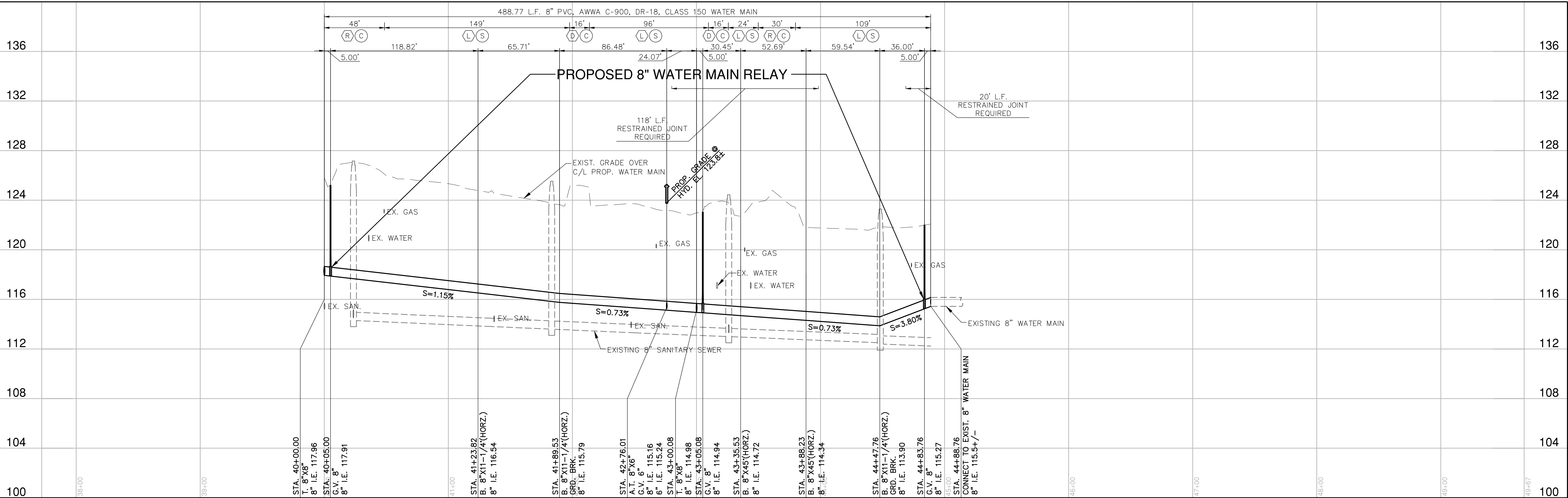
SA.FKO
ST.FKO
W. FKO
G. FKO
E. FKO
T. FKO
I. FKO
TS.FKO
PP.

REVISION BY	DATE
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CITY OF OAK CREEK, WISCONSIN				APPROVED BY	
DESIGNED BY	DATE	DRAWN BY	DATE	UTILITY ENGINEER	DATE
AS	5-30-13	FKO	5-30-13	MNP	5-30-13
HOWELL ESTATES PROPOSED WATER MAIN RELAY				CITY ENGINEER	DATE
IN: S. AUSTIN ST.				SCALE	SHEET
FR: 500 FT. NORTH OF E. FITZSIMMONS RD.				PLAN HOR. 1"=40'	08
TO: E. FITZSIMMONS RD.				PROFILE HOR. 1"=40'	OF
				VER. 1"=4'	09
FILE NO: 13104-8C-2158					



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NOTICE:
In accordance with Wisconsin statute 182.0175, damage to transmission facilities, excavator shall be solely responsible to provide advance notice to the designated "ONE CALL SYSTEM" not less than three working days prior to commencement of any excavation required to perform work contained on this drawing, and further, excavator shall comply with all other requirements of this statute relative to excavator's work.

DISCLAIMER:
The underground utilities shown have been located from field survey information and existing drawings. The surveyor makes no guarantees that the underground utilities shown comprise all such utilities in the area, either in service or abandoned. The surveyor further does not warrant that the underground utilities shown are in the exact location indicated although he does certify that they are located as accurately as possible from information available. The surveyor has not physically located the underground utilities.

GRAEF
One Honey Creek Corporate Center
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Milwaukee, WI 53214-1469
414 / 259 1500
414 / 259 0037 fax
www.graef-usa.com

ESTIMATE OF QUANTITIES		WATER MAIN		SAFKO	
BID ITEM NOS.			CONTRACTOR:	ST.FKO	
1	8-inch PVC Water Main, 3/4-inch T.B.B.F., Surf. Rest.	110 L.F.	MAINLINE INSPECTED BY:	W. FKO	
2	8-inch PVC Water Main, Spoil B.F., Surf. Rest.	378 L.F.	LATERALS INSPECTED BY:	G. FKO	
3	Connect to Existing 8-inch Water Main	1 EA.	DATE COMPLETED:	E. FKO	
5	Hydrant, Lead, and 6-inch Gate Valve	1 EA.	TYPE OF PIPE, ASTM NO.	T. FKO	
6	8-inch Gate Valve	3 EA.	TYPE OF PIPE, ASTM NO.	I. FKO	
7	1-1/4-inch Water Service Laterals (Polyethylene) Open Cut	4 EA.	AS-BUILTS BY:	TS.FKO	
8	1-1/4-inch Water Service Laterals (Polyethylene) Directional Drill	1 EA.	DATE:	PP.	
11	13-inch x 9-inch CMP Driveway Culverts	2 EA.	This is to certify that this plan was approved by the Water Works and Sewer Utility Commission of Oak Creek at a regular meeting.		
			Utility Engineer	Date	

CITY OF OAK CREEK, WISCONSIN				APPROVED BY	
DESIGNED BY	DATE	DRAWN BY	DATE	UTILITY ENGINEER	DATE
AS	5-30-13	FKO	5-30-13	MNP	5-30-13
HOWELL ESTATES PROPOSED WATER MAIN RELAY					
IN: E. ESTATES PLACE					
FR: S. AUSTIN ST.					
TO: 150 FT. EAST OF S. JASPER ST.					
REVISION BY				DATE	
FILE NO: 13104-9C-2159					