Malcolm Pirnie, Inc.
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www.pirnie.com

March 31, 2015

Ms. Eleanor Wehner, P.G.
Texas Commission on Environmental Quality
Remediation Division
VCP-CA Section, Mail Code MC-127
Post Office Box 13087
Austin, Texas 78753

Re: Texas Custodial Trust
Former ASARCO Smelter Site, El Paso, Texas

Subject: Plant Site Utilities Abandonment – Expedited Review Requested

Dear Ms. Wehner:

Malcolm Pirnie has prepared final Plant Site Grading, Cover and Drainage System Drawings which are being submitted to TCEQ under separate cover. Construction of the final Plant Site grading and drainage is on the critical path of the overall site closure schedule.

The purpose of this Plant Site Utilities Abandonment submittal is to request agency acknowledgment and acceptance of our proposed actions to abandon and properly close subsurface utilities on the former smelter plant site in preparation of constructing the final cover systems and drainage facilities.

OBJECTIVE

The objective of the utilities abandonment is to eliminate potential pathways for surface water to reach the subsurface of the plant site, which is consistent with the remedial strategy to significantly reduce infiltration to the subsurface.

PROPOSED ACTIONS

The abandonment actions will generally consist of plugging the locatable manholes that were associated with the site's buried gravity-flow piping systems (i.e., sanitary and storm sewers), capping of abandoned pipes that daylight to the site surface, and plugging of subsurface utility vaults that were part of the site's water and electric systems.

In the case of manholes, all pipes entering and leaving the structure will be blocked off using sandbags and the entire structure will be filled with cement-grout slurry up to a minimum of 12 inches above the highest pipe. The remainder of the structure will be filled to grade with clean aggregate fill material. Manholes that occur outside the

footprint of the planned final covers will be topped with an asphalt patch to promote drainage away from the abandoned structure.

Utility vaults will receive similar treatment, with valves, piping, and electrical ducts being covered with cement-grout slurry. The structure cavity will then be brought to grade with clean aggregate fill material that will be topped with asphalt as individual locations dictate.

Please refer to the Plant Site Grading, Cover and Drainage System Design Drawings for specific details. The sheets that apply to the utilities abandonment are attached for your reference:

- Sheet C-2: Existing Utility Plan
- Sheet C-3: Utility Abandonment Plan
- Sheet C-4: Utility Abandonment Partial Plan
- Sheet C-17: Utilities Abandonment Details

If you have any questions regarding this submittal, please call me or Mike Berry at 602-438-0883.

Very truly yours,

MALCOLM PIRNIE, INC.

Scott M. Brown, P.E.
Project Manager

cc: Charles Fischer, USEPA Region 6
Chuck Barnes, USEPA Region 6
Roberto Puga, Project Navigator
Mark Landress, Project Navigator
Former ASARCO Smelter Team

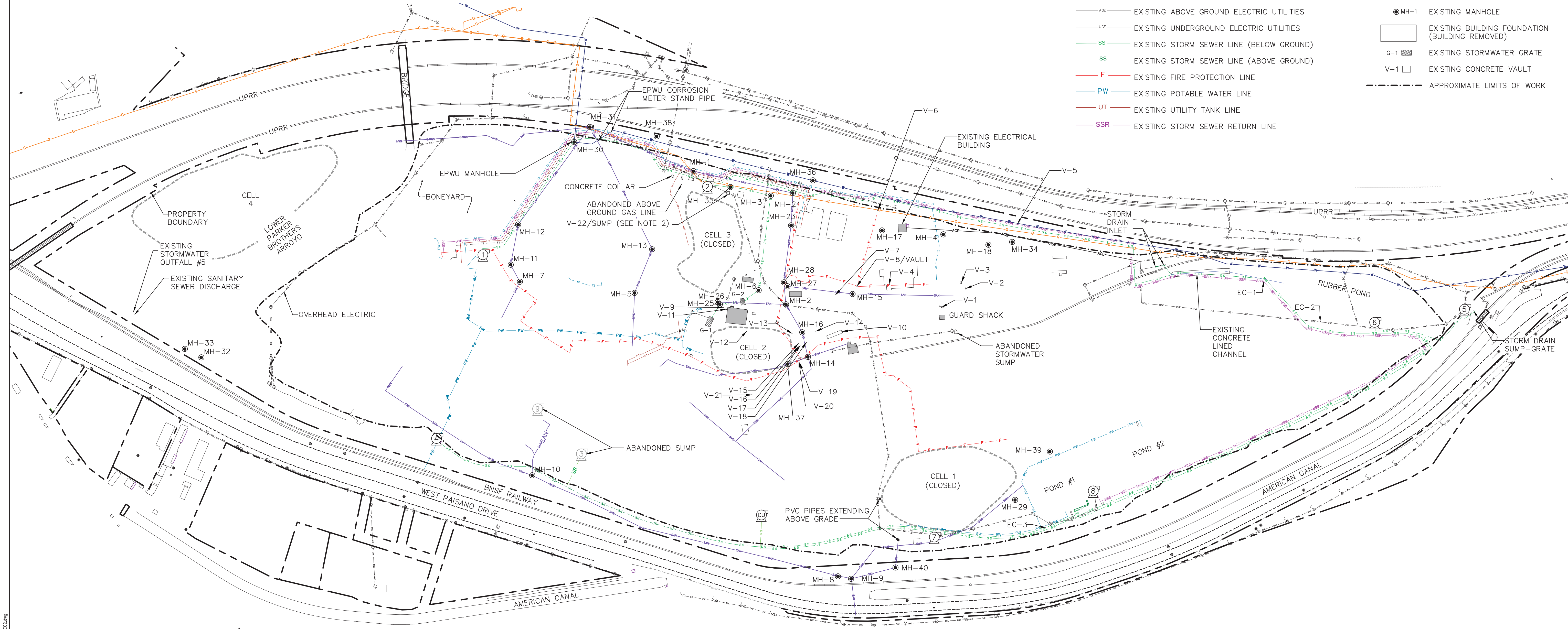
STORMWATER PUMP SCHEDULE:

1. SWPS-1: EXISTING STORMWATER PUMP-1,000 GPM (TO BE REMOVED)
2. SWPS-2: EXISTING STORMWATER PUMP-3,000 GPM (TO REMAIN IN SERVICE)
3. SWPS-3: PREVIOUSLY ABANDONED STORMWATER SUMP
4. SWPS-4: EXISTING STORMWATER PUMP-4,000 GPM (TO REMAIN IN SERVICE)
5. SWPS-5: EXISTING STORMWATER PUMP-7,000 GPM (TO REMAIN IN SERVICE)
6. SWPS-6: EXISTING RUBBER POND PUMP-400 GPM (TO REMAIN IN SERVICE)
7. SWPS-7: EXISTING STORMWATER PUMP-1,000 GPM (TO REMAIN IN SERVICE)
8. SWPS-8: EXISTING STORMWATER POND 1/2 PUMP-55 GPM (TO REMAIN IN SERVICE)
9. SWPS-9: PREVIOUSLY ABANDONED STORMWATER SUMP

CU COPPER SCRAP LOADING SUMP: EXISTING STORMWATER SUMP (TO BE ABANDONED IN PLACE)

LEGEND:

Symbol	Description
W	EXISTING EPWU 48"ø WATER LINE
G	EXISTING GAS LINE
SAN	EXISTING SANITARY SEWER LINE
⌀	EXISTING UTILITY POLE
δ	EXISTING LIGHT POLE
OHE	EXISTING OVERHEAD ELECTRIC LINE
AGE	EXISTING ABOVE GROUND ELECTRIC UTILITIES
UGE	EXISTING UNDERGROUND ELECTRIC UTILITIES
SS	EXISTING STORM SEWER LINE (BELOW GROUND)
SS (dashed)	EXISTING STORM SEWER LINE (ABOVE GROUND)
F	EXISTING FIRE PROTECTION LINE
PW	EXISTING POTABLE WATER LINE
UT	EXISTING UTILITY TANK LINE
SSR	EXISTING STORM SEWER RETURN LINE
SS	PREVIOUSLY ABANDONED STORM SEWER LINE
T1	EXISTING TANK 1 PROCESS WATER
T2	EXISTING TANK 2 PROCESS WATER
(heavy line)	PROPERTY BOUNDARY LINE
(shaded box)	EXISTING BUILDING
MH-1	EXISTING MANHOLE
(open box)	EXISTING BUILDING FOUNDATION (BUILDING REMOVED)
G-1	EXISTING STORMWATER GRATE
V-1	EXISTING CONCRETE VAULT
(dash-dot line)	APPROXIMATE LIMITS OF WORK



NOTES:

1. REFER TO COVER, G-2 AND C-1 FOR ADDITIONAL LEGEND, BASEMAP, AND TOPOGRAPHIC INFORMATION.
2. CONCRETE STRUCTURE IS BELOW GROUND AND FINISHED WITH AN APPROXIMATELY 4-FT-DIAMETER CONCRETE FLAT SLAB TOP. A REMOVABLE PVC PIPE EXTENDS SEVERAL FEET ABOVE GRADE FROM THE SLAB AND THE STRUCTURE WAS FILLED WITH WATER AT TIME OF INSPECTION. STATUS OF STRUCTURE TO BE DETERMINED AT TIME OF FIELD ACTIVITIES AND FOLLOWING REMOVAL OF SLAB TOP AND IMPOUNDED WATER AND AFTER INSPECTION.
3. ADDITIONAL SITE FEATURES (NOT SHOWN) MAY EXIST, THE LOCATIONS OF WHICH ARE NOT KNOWN AT THIS TIME. ALL RELEVANT SITE FEATURES/CONDITIONS SHALL BE FIELD VERIFIED/IDENTIFIED/LOCATED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
4. STATED PUMP CAPACITIES BASED ON "STORMWATER CONTROL/WATER REUSE PROJECT OVERALL PIPING PLAN" (16708-2) DEVELOPED BY ASARCO, INC. ENGINEERING DEPARTMENT DATED FEBRUARY 8, 2000.
5. UTILITY INFORMATION AND STATUS IS CURRENT AS OF MARCH 2015.
6. REFER TO DRAWINGS C-8A FOR EXISTING/PROPOSED ASPHALT LIMITS.

0 200' 400'

FIRM REGISTRATION F-979

MALCOLM PIRNIE

REVISIONS

NO.	BY	DATE	REMARKS

DES BMS/NWF
DWN KLS/KMD
CKD

PLANT SITE GRADING, COVER AND DRAINAGE SYSTEM DESIGN

CIVIL

EXISTING UTILITY PLAN

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DATE MARCH 2015

C-2 SHEET 4 OF 20

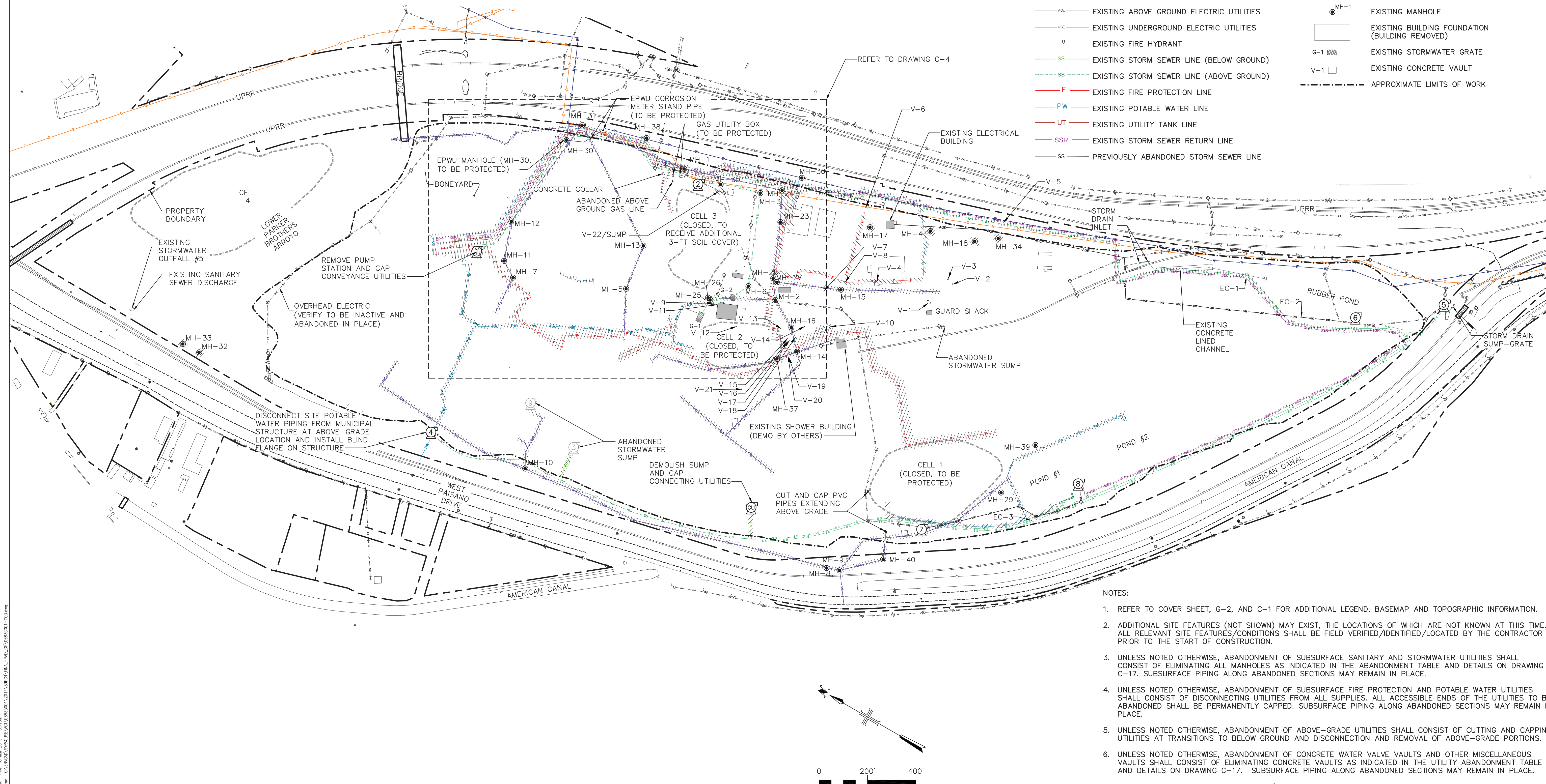
CAD REF. NO. 06835001-C02

STORMWATER PUMP SCHEDULE:

- (1) SWPS-1: EXISTING STORMWATER PUMP-1,000 GPM (TO BE RELOCATED)
- (2) SWPS-2: EXISTING STORMWATER PUMP-3,000 GPM (TO REMAIN IN SERVICE)
- (3) SWPS-3: PREVIOUSLY ABANDONED STORMWATER SUMP
- (4) SWPS-4: EXISTING STORMWATER PUMP-4,000 GPM (TO REMAIN IN SERVICE)
- (5) SWPS-5: EXISTING STORMWATER PUMP-7,000 GPM (TO REMAIN IN SERVICE)
- (6) SWPS-6: EXISTING RUBBER POND PUMP-400 GPM (TO REMAIN IN SERVICE)
- (7) SWPS-7: EXISTING STORMWATER PUMP-1,000 GPM (TO REMAIN IN SERVICE)
- (8) SWPS-8: EXISTING STORMWATER POND 1/2 PUMP-55 GPM (TO REMAIN IN SERVICE)
- (9) SWPS-9: PREVIOUSLY ABANDONED STORMWATER SUMP
- (CU) COPPER SCRAP LOADING SUMP: EXISTING STORMWATER SUMP (TO BE ABANDONED IN PLACE)

LEGEND:

Symbol	Description
W	EXISTING EPWU 48"ø WATER LINE
G	EXISTING GAS LINE
SAN	EXISTING SANITARY SEWER LINE
ø	EXISTING UTILITY POLE
	EXISTING LIGHT POLE
OHE	EXISTING OVERHEAD ELECTRIC LINE
AGE	EXISTING ABOVE GROUND ELECTRIC UTILITIES
UGE	EXISTING UNDERGROUND ELECTRIC UTILITIES
	EXISTING FIRE HYDRANT
SS	EXISTING STORM SEWER LINE (BELOW GROUND)
SS	EXISTING STORM SEWER LINE (ABOVE GROUND)
F	EXISTING FIRE PROTECTION LINE
PW	EXISTING POTABLE WATER LINE
UT	EXISTING UTILITY TANK LINE
SSR	EXISTING STORM SEWER RETURN LINE
SS	PREVIOUSLY ABANDONED STORM SEWER LINE
(1 C-17) (2 C-17)	EXISTING PIPE/STRUCTURE TO BE ABANDONED IN PLACE
T1	EXISTING TANK 1 PROCESS WATER
T2	EXISTING TANK 2 PROCESS WATER
	PROPERTY BOUNDARY LINE
	EXISTING BUILDING
MH-1	EXISTING MANHOLE
	EXISTING BUILDING FOUNDATION (BUILDING REMOVED)
G-1	EXISTING STORMWATER GRATE
V-1	EXISTING CONCRETE VAULT
	APPROXIMATE LIMITS OF WORK



NOTES:

1. REFER TO COVER SHEET, G-2, AND C-1 FOR ADDITIONAL LEGEND, BASEMAP AND TOPOGRAPHIC INFORMATION.
2. ADDITIONAL SITE FEATURES (NOT SHOWN) MAY EXIST, THE LOCATIONS OF WHICH ARE NOT KNOWN AT THIS TIME. ALL RELEVANT SITE FEATURES/CONDITIONS SHALL BE FIELD VERIFIED/IDENTIFIED/LOCATED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
3. UNLESS NOTED OTHERWISE, ABANDONMENT OF SUBSURFACE SANITARY AND STORMWATER UTILITIES SHALL CONSIST OF ELIMINATING ALL MANHOLES AS INDICATED IN THE ABANDONMENT TABLE AND DETAILS ON DRAWING C-17. SUBSURFACE PIPING ALONG ABANDONED SECTIONS MAY REMAIN IN PLACE.
4. UNLESS NOTED OTHERWISE, ABANDONMENT OF SUBSURFACE FIRE PROTECTION AND POTABLE WATER UTILITIES SHALL CONSIST OF DISCONNECTING UTILITIES FROM ALL SUPPLIES. ALL ACCESSIBLE ENDS OF THE UTILITIES TO BE ABANDONED SHALL BE PERMANENTLY CAPPED. SUBSURFACE PIPING ALONG ABANDONED SECTIONS MAY REMAIN IN PLACE.
5. UNLESS NOTED OTHERWISE, ABANDONMENT OF ABOVE-GRADE UTILITIES SHALL CONSIST OF CUTTING AND CAPPING UTILITIES AT TRANSITIONS TO BELOW GROUND AND DISCONNECTION AND REMOVAL OF ABOVE-GRADE PORTIONS.
6. UNLESS NOTED OTHERWISE, ABANDONMENT OF CONCRETE WATER VALVE VAULTS AND OTHER MISCELLANEOUS VAULTS SHALL CONSIST OF ELIMINATING CONCRETE VAULTS AS INDICATED IN THE UTILITY ABANDONMENT TABLE AND DETAILS ON DRAWING C-17. SUBSURFACE PIPING ALONG ABANDONED SECTIONS MAY REMAIN IN PLACE.
7. REFER TO DRAWING C-8A FOR EXISTING/PROPOSED ASPHALT LIMITS.

FIRM REGISTRATION F-979

MALCOLM PIRNIE

REVISIONS

NO.	BY	DATE	REMARKS

DES BMS/NWF
DWN KLS/KMD
CKD

PLANT SITE GRADING, COVER AND DRAINAGE SYSTEM DESIGN

CIVIL
UTILITY ABANDONMENT PLAN

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DATE MARCH 2015

C-3 SHEET 5 OF 20

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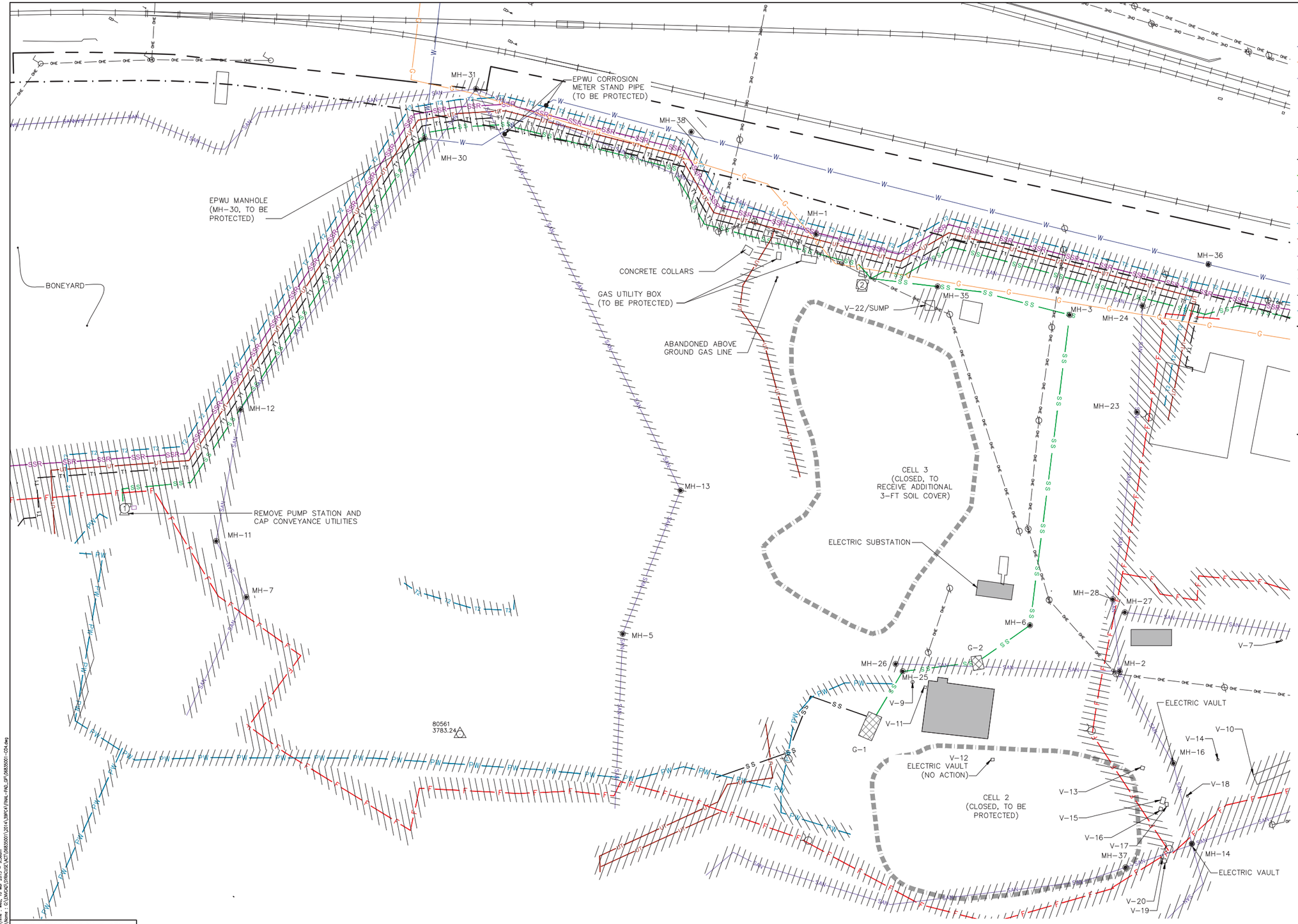

LEGEND:

- W — EXISTING EPWU 48"ø WATER LINE
- G — EXISTING GAS LINE
- SAN — EXISTING SANITARY SEWER LINE
- EXISTING UTILITY POLE
- EXISTING LIGHT POLE
- OHE — EXISTING OVERHEAD ELECTRIC LINE
- EXISTING FIRE HYDRANT
- SS — PREVIOUSLY ABANDONED STORM SEWER LINE
- SS — EXISTING STORM SEWER LINE (BELOW GROUND)
- SS — EXISTING STORM SEWER LINE (ABOVE GROUND)
- F — EXISTING FIRE PROTECTION LINE
- PW — EXISTING POTABLE WATER LINE
- UT — EXISTING UTILITY TANK LINE
- SSR — EXISTING STORM SEWER RETURN LINE
- EXISTING PIPE/STRUCTURE TO BE ABANDONED IN PLACE (1 C-17) (2 C-17)
- T1 — EXISTING TANK 1 PROCESS WATER
- T2 — EXISTING TANK 2 PROCESS WATER
- PROPERTY BOUNDARY LINE
- EXISTING BUILDING
- MH-1 — EXISTING MANHOLE
- EXISTING BUILDING FOUNDATION (BUILDING REMOVED)
- G-1 — EXISTING STORMWATER GRATE
- V-1 — EXISTING CONCRETE VAULT
- APPROXIMATE LIMITS OF WORK

NOTES:

1. REFER TO COVER, G-2, AND C-1 FOR ADDITIONAL BASEMAP, LEGEND, AND TOPOGRAPHIC INFORMATION.
2. ADDITIONAL SITE FEATURES (NOT SHOWN) MAY EXIST, THE LOCATIONS OF WHICH ARE NOT KNOWN AT THIS TIME. ALL RELEVANT SITE FEATURES/CONDITIONS SHALL BE VERIFIED/IDENTIFIED/LOCATED BY THE CONTRACTOR PRIOR TO THE START OF CONSTRUCTION.
3. UNLESS NOTED OTHERWISE, ABANDONMENT OF SUBSURFACE SANITARY AND STORMWATER UTILITIES SHALL CONSIST OF ELIMINATING ALL MANHOLES AS INDICATED IN THE ABANDONMENT TABLE AND DETAILS ON DRAWING C-17. SUBSURFACE PIPING ALONG ABANDONED SECTIONS MAY REMAIN IN PLACE.
4. UNLESS NOTED OTHERWISE, ABANDONMENT OF SUBSURFACE FIRE PROTECTION AND POTABLE WATER UTILITIES SHALL CONSIST OF DISCONNECTING UTILITIES FROM ALL SUPPLIES. ALL ACCESSIBLE ENDS OF THE UTILITIES TO BE ABANDONED SHALL BE PERMANENTLY CAPPED. SUBSURFACE PIPING ALONG ABANDONED SECTIONS MAY REMAIN IN PLACE.
5. UNLESS OTHERWISE NOTED, ABANDONMENT OF ABOVE-GRADE UTILITIES SHALL CONSIST OF CUTTING AND CAPPING UTILITIES AT TRANSITIONS TO BELOW GROUND AND DISCONNECTION AND REMOVAL OF ABOVE-GRADE PORTIONS.
6. UNLESS NOTED OTHERWISE, ABANDONMENT OF CONCRETE WATER VALVE VAULTS AND OTHER MISCELLANEOUS VAULTS SHALL CONSIST OF ELIMINATING CONCRETE VAULTS AS INDICATED IN THE UTILITY ABANDONMENT TABLE AND DETAILS ON DRAWING C-17. SUBSURFACE PIPING ALONG ABANDONED SECTIONS MAY REMAIN IN PLACE.
7. REFER TO DRAWING C-8A FOR EXISTING/PROPOSED ASPHALT LIMITS.

FIRM REGISTRATION F-979

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NO.	BY	DATE	REMARKS

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PLANT SITE GRADING, COVER AND DRAINAGE SYSTEM DESIGN

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UTILITY ABANDONMENT PARTIAL PLAN

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C-4 SHEET 6 OF 20

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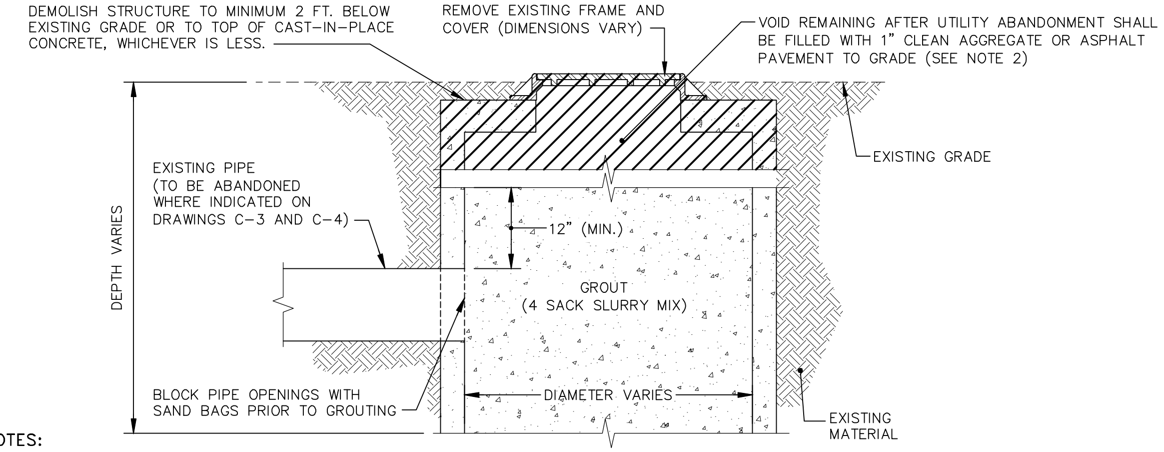
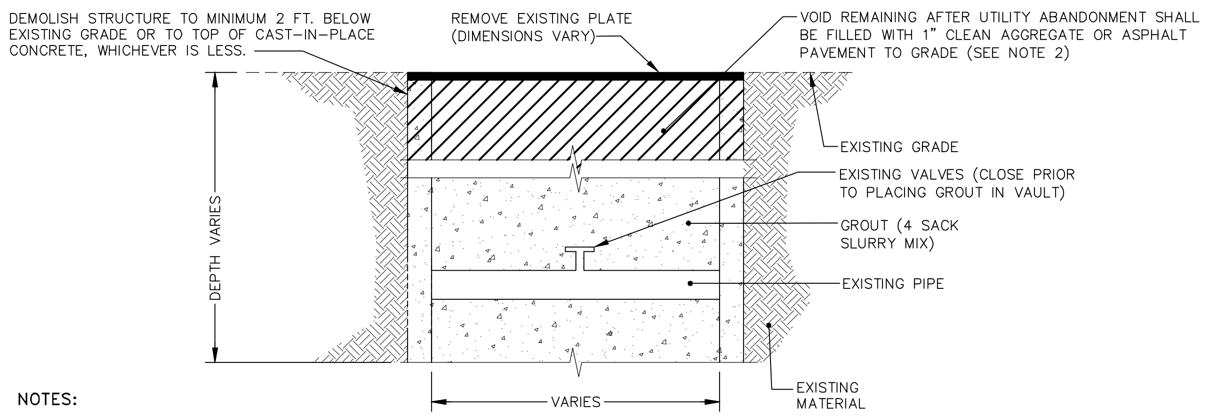


NOTES:

1. THIS DETAIL IS INTENDED ONLY TO SHOW A TYPICAL/CONCEPTUAL ABANDONMENT PROCEDURE, AS EXISTING UTILITY SIZES AND CONFIGURATIONS MAY VARY. PROCEDURES MAY BE MODIFIED WITH CONSENT OF THE ENGINEER, AS NECESSARY, BASED ON CONDITIONS ENCOUNTERED.
2. MANHOLES LOCATED IN AREAS WHERE PAVEMENT IS TO REMAIN SHALL BE PATCHED WITH ASPHALT PAVEMENT TO MATCH EXISTING GRADE.

TYPICAL UTILITY ABANDONMENT DETAIL AT MANHOLES (1)

NOT TO SCALE



NOTES:

1. THIS DETAIL IS INTENDED ONLY TO SHOW A TYPICAL/CONCEPTUAL ABANDONMENT PROCEDURE, AS EXISTING UTILITY SIZES AND CONFIGURATIONS MAY VARY. PROCEDURES MAY BE MODIFIED WITH CONSENT OF THE ENGINEER, AS NECESSARY, BASED ON CONDITIONS ENCOUNTERED.
2. VAULTS LOCATED IN AREAS WHERE PAVEMENT IS TO REMAIN SHALL BE PATCHED WITH ASPHALT PAVEMENT TO MATCH EXISTING GRADE.

TYPICAL UTILITY ABANDONMENT DETAIL AT VAULTS (2)

NOT TO SCALE

NOTES:

1. STRUCTURE LOCATIONS ARE APPROXIMATE.
2. PIPE DIMENSIONS ARE APPROXIMATE AND BASED ON FIELD OBSERVATIONS.
3. OTHER UTILITY-RELATED STRUCTURES MAY EXIST THAT ARE NOT INCLUDED IN THE ABOVE TABLE NOR INCLUDED ON THE SITE PLANS. THE IDENTITY AND FUNCTION OF EACH STRUCTURE SHOULD BE CONFIRMED PRIOR TO IMPLEMENTING ANY ABANDONMENT PROCEDURE.
4. UTILITY QUANTITY REFERS TO THE NUMBER OF PIPES OF A PARTICULAR UTILITY THAT MEET AT THE MANHOLE LOCATION (I.E., A MANHOLE AT THE PIPE TERMINUS WOULD HAVE A QUANTITY OF ONE, WHILE A MANHOLE IN THE CENTER OF ONE UTILITY PIPE WOULD HAVE A QUANTITY OF 2).
5. UNLESS NOTED OTHERWISE, ABANDONMENT OF SUBSURFACE FIRE PROTECTION AND POTABLE WATER UTILITIES SHALL CONSIST OF DISCONNECTING UTILITIES FROM ALL SUPPLIES. ALL ACCESSIBLE ENDS OF THE UTILITIES TO BE ABANDONED SHALL BE PERMANENTLY CAPPED. SUBSURFACE PIPING ALONG ABANDONED SECTIONS MAY REMAIN IN PLACE.
6. UNLESS NOTED OTHERWISE, ABANDONMENT OF ABOVE-GRADE UTILITIES SHALL CONSIST OF CUTTING AND CAPPING UTILITIES AT TRANSITIONS TO BELOW GROUND AND DISCONNECTION AND REMOVAL OF ABOVE-GRADE PORTIONS.
7. DISPOSITION CODES INCLUDE THE FOLLOWING:

- **AIP1 - ABANDON-IN-PLACE METHOD 1.** THIS IS THE DEFAULT ABANDONMENT PROCEDURE SHOWN IN DETAIL 4 ON DRAWING C-15 AND APPLIES TO ALL STRUCTURES AND VAULTS. PIPES SHALL BE BLOCKED WITH SANDBAG (OR SIMILAR) PRIOR TO CONCRETE PLACEMENT AND FILLED WITH CONCRETE TO A MINIMUM 1 FT. ABOVE THE TOP OF THE HIGHEST PIPE. THE TOP OF STRUCTURES OR VAULTS THAT EXTEND ABOVE ADJACENT EXISTING GRADE SHALL BE DEMOLISHED (DEBRIS MAY BE PLACED WITHIN STRUCTURE OR MIXED WITH CATEGORY II MATERIAL ELSEWHERE ON-SITE) AND BACKFILLED TO GRADE WITH IMPORTED AGGREGATE. STRUCTURES LOCATED OUTSIDE OF CAP LIMITS SHALL BE BACKFILLED TO GRADE WITH IMPORTED AGGREGATE.
- **AIP2 - ABANDON-IN-PLACE METHOD 2.** THIS ABANDONMENT PROCEDURE IS SPECIFIC TO STORMWATER PUMP STATIONS. STORMWATER SUMPS SHALL ABANDONED BY REMOVING ALL PUMPS AND EQUIPMENT AND ABOVE-GRADE STRUCTURES, DECOMMISSIONING ELECTRICITY, BLOCKING THE OPEN ENDS OF ALL SUBSURFACE PIPING WITH PNEUMATIC SEWER PLUGS (OR SIMILAR) PRIOR TO CONCRETE PLACEMENT, AND FILLING THE SUMPS WITH CONCRETE TO A MINIMUM 1 FT. ABOVE THE TOP OF THE HIGHEST PIPE. THE REMAINDER OF THE ABANDONMENT PROCEDURE FOR THE SUMPS SHALL COMPLY WITH METHOD 1. THE OPEN ENDS OF ANY ABOVE-GRADE PIPING SHALL BE SEALED BY INSTALLING BLIND FLANGES ONTO PIPE FLANGES AT DISCONNECTED ENDS. ALTERNATIVELY, A MECHANICALLY RESTRAINED CAP MAY BE INSTALLED ON OPEN PIPE ENDS.
- **CC1 - CUT AND CAP PIPES.** THIS PROCEDURE IS SPECIFIC TO TWO PVC PIPE STICKUPS SHOWN ON THE SITE PLANS AND IDENTIFIED IN THE TABLE ABOVE. THE PIPES SHALL BE ABANDONED BY SAW CUTTING AND REMOVING THE EXISTING ASPHALT AROUND PIPES AS NEEDED, EXCAVATING DOWN TO A MINIMUM OF 1.5 FT. BELOW EXISTING GRADE AROUND THE PIPES, CUTTING THE PIPES OFF AT A MINIMUM OF 1 FT. BELOW EXISTING GRADE, CAPPING THE PIPES BY SOLVENT WELDING PVC END CAPS ONTO THE CUT ENDS, BACKFILLING THE EXCAVATIONS WITH IMPORTED AGGREGATE, AND PATCHING THE ASPHALT REMOVAL AREA.
  RIS/TBP – REMAIN-IN-SERVICE/TO BE PROTECTED. TAKE NO ACTION FOR THESE STRUCTURES.

8. FIELD VERIFICATION OF STRUCTURES SHALL INCLUDE LOCATION, STRUCTURE SIZE, NUMBER/SIZE OF PIPES, DETERMINING WHAT CAN AND CANNOT BE SAFELY ENTERED, AND LABELED CODE ON STRUCTURE LID (I.E., SPRAY PAINTING OR SOME OTHER MARK BY THE STRUCTURE).

Structure ID	Associated Utility	Approximate Location		Utility Size/Type & Quantity	Structure Depth (ft)	Structure Diameter (ft)	Disposition Code	Approximate Volume (CY)
		Northing	Easting					
Manholes								
MH-1	Sanitary Sewer	10664897	375207	8" Steel Pipe (Qty 2)	-	-	AIP1	4.00
MH-2	Sanitary Sewer	10664300	374926	Unknown (Qty 3)	-	-	NA	0.00
MH-3	Storm Sewer	10664575	375278	32" HDPE Pipe (Qty 2)	-	-	RIS/TBP	N/A
MH-4	Unknown	10663888	375493	Unknown (Qty Unknown)	-	-	TBD (may receive new cover)	0.00
MH-5	Sanitary Sewer	10664857	374658	Unknown (Qty 2)	-	-	NA	0.00
MH-6	Storm Sewer	10664425	374920	32" HDPE Pipe (Qty 2)	-	-	RIS/TBP	N/A
MH-7	Sanitary Sewer	10665283	374465	8" Steel Pipe (Qty 2)	-	-	AIP1	4.00
MH-8	Sanitary Sewer	10663563	374073	Unknown (Qty 2)	-	-	AIP1 (on slope)	4.00
MH-9	Sanitary Sewer	10663512	374092	Unknown (Qty 3)	-	-	AIP1 (on slope)	4.00
MH-10	Sanitary Sewer	10664846	373807	Unknown (Qty 3)	-	-	AIP1 (on slope)	4.00
MH-11	Sanitary Sewer	10665350	374506	8" Steel Pipe (Qty 2)	-	-	AIP1/AIP2	4.00
MH-12	Sanitary Sewer	10665406	374662	8" Steel Pipe (Qty 2)	10.5	3.5	AIP1/AIP2	3.70
MH-13	Sanitary Sewer	10664883	374848	Unknown (Qty 2)	-	-	NA	0.00
MH-14	Elect Vault	10664116	374786	Elect Vault	7	8 x 8	AIP1	17.00
MH-15	Sanitary Sewer	10664086	375098	6" Clay Pipe (Qty 2)	6.5	4	AIP1	3.00
MH-16	Elect Vault	10664185	374861	Elect Vault	10.5	8x8x6.5 + 3'dia x 4	AIP1	16.00
MH-17	Water Valve	10664112	375382	Unknown (Qty Unknown)	3	3	AIP1	1.00
MH-18	Scale Vault	10663708	375548	Unknown (Qty Unknown)	-	-	TBD (may receive new cover)	0.00
MH-19 (removed from DWG)	Scale Vault	10664052	374938	Unknown (Qty Unknown)	-	-	Refer to Scale Vault (V-10)	See V-10
MH-20 (removed from DWG)	Scale Vault	10664062	374926	Unknown (Qty Unknown)	3	13x65	Refer to Scale Vault (V-10)	See V-10
MH-21 (removed from DWG)	Scale Vault	10664073	374913	Unknown (Qty Unknown)	-	-	Refer to Scale Vault (V-10)	See V-10
MH-22 (removed from DWG)	Scale Vault	10664082	374901	Unknown (Qty Unknown)	-	-	Refer to Scale Vault (V-10)	See V-10
MH-23	Sanitary Sewer	10664442	375215	10" Steel Pipe (Qty 2)	7	4.5	AIP1	4.10
MH-24	Sanitary Sewer	10664502	375333	10" Steel Pipe (Qty 2)	-	-	AIP1	4.00
MH-25	Storm Sewer	10664533	374792	32" HDPE Pipe (Qty 2)	11	6	RIS/TBP	N/A
MH-26	Sanitary Sewer	10664545	374795	Unknown Qty (1)	-	-	NA	0.00
MH-27	Sanitary Sewer	10664331	374993	6" Clay Pipe (Qty 1)	-	-	AIP1	4.00
MH-28	Sanitary Sewer	10664352	374999	10" Steel Pipe (Qty 2)	-	-	AIP1	4.00
MH-29	Sewer Sewer	10663095	374703	4" pipes (Qty 2)	6	4	RIS/TBP	2.80
MH-30	EPWU	10665381	375076	48" Dia Steel Pipe (Qty 2)	-	-	RIS/TBP	N/A
MH-31	Sanitary Sewer	10665352	375152	8" Steel Pipe (Qty 4)	-	-	AIP1	4.00
MH-32	Unknown	10666252	373550	Unknown (Qty Unknown)	-	-	AIP1 (on slope)	4.00
MH-33	Unknown	10666327	373546	Unknown (Qty Unknown)	-	-	AIP1 (on slope)	4.00
MH-34	Electric Utility	10663630	375606	Unknown (Qty 2)	4	4x4	AIP1	2.10
MH-35	Storm Sewer	10664734	375226	32 " HDPE Pipe (Qty 2)	-	-	RIS/TBP	N/A
MH-36	EPWU	10664457	375418	48" Dia Steel Pipe (Qty 2)	-	-	RIS/TBP	N/A
MH-37	Sanitary Sewer	10664172	374719	6" Dia Pipe (Qty 3)	9.5	2.5x2.5	AIP1	2.20
MH-38	Unknown	10665004	375264	6" Dia Pipe (Qty 3)	14.0	3' dia.	AIP1	2.00
MH-39	Unknown	10663071	374944	Unknown (Qty Unknown)	-	-	AIP1	4.00
MH-40	Unknown			Unknown (Qty Unknown)	-	-	AIP1 (on slope)	4.00
Miscellaneous Structures								
Previously Abandoned Gas Line	Gas Line	10664965	375152	Unknown	-	-	CC1	N/A
PVC stubout Pipes (2) near Sump 7	Sanitary Sewer	10663424	374324	6" die PVC (2)	-	-	CC1	0.10
PVC Riser Pipe Near Sump 7	Sanitary Sewer	10663585	374429	6" die PVC (1)	-	-	CC1	0.10
EC-1	Electrical Communications	10662664	375977	Unknown	2	2x2	AIP1	0.10
EC-2	Electrical Communications	10662382	375952	Unknown	2	2x2	AIP1	0.10
EC-3	Electrical Communications	10662930	374667	Unknown	2	2x2	AIP1	0.10
G-1	Stormwater Inlet Grate	10664533	374723	Unknown	-	-	RIS/TBP	N/A
G-2	Stormwater Inlet Grate	10664462	374848	Unknown	-	-	RIS/TBP	N/A
EPWU Standpipe	EPWU Corrosion Meter	10666529	375121	Unknown	-	-	RIS/TBP	N/A
EPWU Standpipe	EPWU Corrosion Meter	10665266	375178	Unknown	-	-	RIS/TBP	N/A
Stormwater Pumps								
SWPS-1	Stormwater	10665468	374485	1000 GPM	6	7x8	AIP2	13.00
SWPS-2	Stormwater	10664814	375181	3000 GPM	-	-	RIS/TBP	N/A
SWPS-4 (Also known as SWPS-9)	Stormwater	10665256	373742	4000 GPM	-	-	RIS/TBP	N/A
SWPS-5	Stormwater	10661896	376290	7000 GPM	-	-	RIS/TBP	N/A
SWPS-6	Stormwater	10662188	376060	4000 GPM	-	-	RIS/TBP	N/A
SWPS-7	Stormwater	10663302	374407	1000 GPM	-	-	RIS/TBP	N/A
Copper Scrap Loading Sump	Stormwater	10663954	374139	-	-	8x 14	AIP2	25.00
Stormwater Sump (Near Guard Shack)	Stormwater Sump	10663643	375174	Unknown	10.5	9x13	AIP1	46.00
Concrete Vaults								
V-1	Storm Sewer	10663739	375236	Unknown	4	3	AIP1	1.00
V-2	Sump	10663699	375348	Unknown	4.00	3x6	AIP1	3.00
V-3	Steel Cover Vault (Unknown)	10663729	375360	Unknown	3	6x10	AIP1	7.00
V-4	H2O Valves	10663864	375444	Unknown	5	5x5	AIP1	5.00
V-5	Landscaping Valve Vault	10663663	375661	Unknown	-	30"x48"	CC1	0.00
V-6	H2O Valves	10664167	375446	Unknown	7.00	5x5	AIP1	7.00
V-7	H2O Valves	10664146	375060	Unknown	2.00	2x2	AIP1	1.00
V-8	H20/Gas Vault	10664082	375136	Unknown	6.00	5x5	AIP1	6.00
V-9	H2O Valves	10664499	374789	Unknown	2.00	2	AIP1	1.00
V-10	Truck Scale Vault	10664069	374917	Unknown	3.00	13x65	AIP1	94.00
V-11	H2O Valves	10664516	374786	Unknown	3.50	3x3	AIP1	2.00
V-12	Electric Utility	10664139	374753	Unknown	6.5	10x10	RIS/TBP	N/A
V-13	H2O Valves	10664216	374837	Unknown	4.00	3.1x3.6	AIP1	2.00
V-14	H2O Valves	10664286	374982	Unknown	2	2	AIP1	1.00
V-15	H2O Valves	10664174	374814	Unknown	4.50	4.5x7.2	AIP1	6.00
V-16	H2O Valves	10664167	374813	Unknown	4.50	3x4.7	AIP1	3.00
V-17	H2O Valves	10664171	374804	Unknown	4.50	3x3	AIP1	2.00
V-18	H2O Valves	10664150	374834	Unknown	2.50	2x3	AIP1	1.00
V-19	H2O Valves	10664135	374751	Unknown	3.00	4x4	AIP1	2.00
V-20	H2O Valves	10664140	374754	Unknown	3.00	3x3	AIP1	1.00
V-21	Electrical	10664235.77	374538	Unknown	-	(8'x8'x6.5') + (3'dia. x 2.5')	AIP1	15.60
V-22	Concrete Sump	10664730	375201	48" Dia. Concrete Sump	7.00	4.00	AIP1	3.30

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MALCOLM PIRNIE

REVISIONS

NO.	BY	DATE	REMARKS

DES BMS/NWF
DWN KLS
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PLANT SITE GRADING, COVER AND DRAINAGE SYSTEM DESIGN

CIVIL
UTILITY ABANDONMENT DETAILS

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