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E-mail jwright@molycorp.com

Molycorp

Mr. Thomas G. McLaughlin, Ph.D.
Project Manager
U.S. Nuclear Regulatory Commission
Mail Stop T-7F27
Washington, DC 20555-0001

June 20, 2005

Re: **Water Management Plan for**
Molycorp's Washington, PA Radiological Decommissioning Site
NRC License SMB-1393

Dear Mr. McLaughlin:

As you are aware, Molycorp, Inc. (Molycorp) is undertaking an integrated closure and NRC license termination for our Washington, PA facility. An Erosion and Sedimentation Control (E&SC) Plan was prepared and submitted to both the Pennsylvania Department of Environmental Protection (PADEP) and Washington County Conservation District on April 4, 2005 in support of this decommissioning project. The Washington County Conservation District approved our E&SC Plan on May 18, 2005 and forwarded their approval notification onto PADEP for consideration of our pending NPDES permit required for the decommissioning activities at this site. Molycorp has prepared a Water Management Plan, which is a summary level of our E&SC Plan. This Water Management Plan is attached for the NRC's review and information. We welcome any suggestions or improvements to our Water Management Plan. Once the PADEP approves our pending E&SC Plan as a part of our NPDES Permit, a copy of the E&SC Plan will be maintained at the site for inspection by all regulatory agencies.

I look forward to our future discussions and the start of field remediation efforts this year. You can contact me by the information on this letterhead.

Sincerely,

MOLYCORP, INC.

John C. Wright, Jr.
Project Manager

Attachment

Cc. Bill Sharrer, Molycorp VP Environmental and Public Policy
Dave Partridge, Molycorp Technical Services Manager
George Dawes, Molycorp Assistant Project Manager
Al Shuckrow, Malcolm Pirnie Project Manager

Molycorp

Water Management Plan for Radiological Decommissioning of the Molycorp Washington Site Washington County, PA

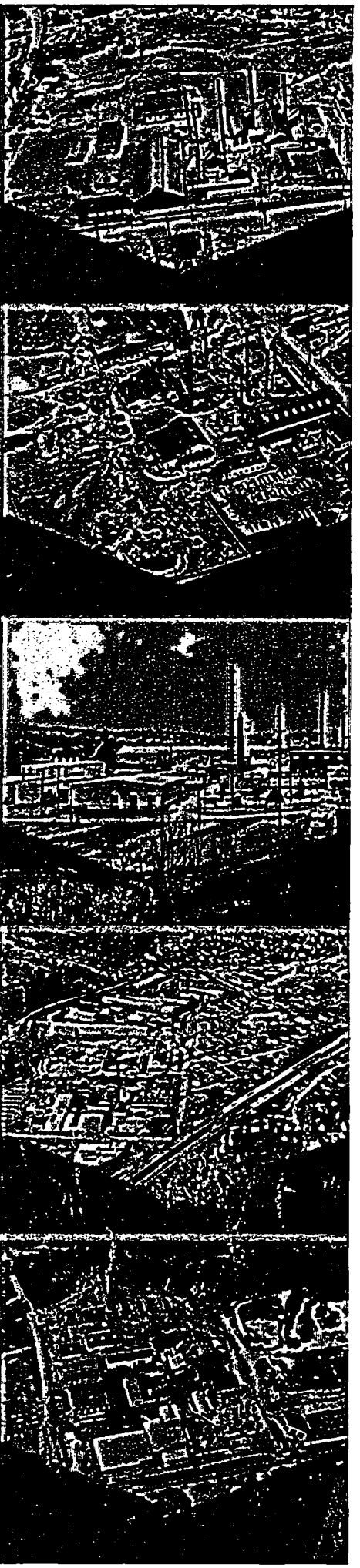
Prepared for
Nuclear Regulatory Commission

June, 2005

4812-014

MPIDocGen 038

MALCOLM PIRNIE



MALCOLM PIRNIE

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Figure 3: Stage 1 Best Management Practice Plan

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Introduction

SECTION 1

1.0 INTRODUCTION

Site Background

Molycorp's Washington Site is located in Canton Township, Washington County, Pennsylvania, approximately 35 miles southwest of Pittsburgh, Pennsylvania. The Site consists of approximately 73 acres ranging from woodlands to industrial areas. Molycorp actively utilized approximately 20 acres for manufacturing operations. Please refer to Figure 1.

Products generated at this facility included molybdenum trioxide powder, ferromolybdenum metal, ferrotungsten metal, ferrocolumbium metal and calcium boride. Primary processes that were used to manufacture these products included roasters for converting molybdenum disulfide concentrates to molybdenum trioxide powder and ferroalloy furnaces to produce ferromolybdenum, ferrotungsten and ferrocolumbium. Supplemental processes were used to enhance product recovery and/or to control offgases/reduce waste.

Ferrotungsten was produced at the Site from the 1920's into the 1970's. During this time several mines provided concentrates as feed material. Although the exact quantities in the various feed concentrates are unknown, it is expected that some slags resulting from this process contained uranium.

In 1963, the Molybdenum Corporation of America (Molycorp) obtained a Source Materials License from the Atomic Energy Commission (AEC) because of the processing of concentrates that contained 0.05 percent (or higher) of uranium and/or thorium. Between 1964 and 1970, Molycorp produced ferrocolumbium alloy from concentrate produced from ore mined in Araxa, Brazil. Slag from the production of the ferrocolumbium alloy was in the form of refractory glass/ceramic slag containing thorium.

Waste slags from the ferroalloy operations were utilized on Site to fill in low-lying areas and as a subbase in some building construction. Although the largest quantity of fill consisted of non-radioactive ferromolybdenum slags, thoriated slags associated with ferrocolumbium production and ferrotungsten slags possibly containing uranium also were deposited on the property

Molycorp ceased industrial operations and demolished all related buildings at the Site by 2002. The former industrial portions of the Site are dormant. Molycorp plans to remediate and decommission the Site to achieve the following objectives:

- To gain unrestricted release (radiological issues) of the property including termination of the Site's NRC Source Materials License.
- To gain release of liability (non-radiological issues) from PADEP under the Pennsylvania Land Recycling and Environmental Remediation Standards (Act 2), so that the property can be returned to beneficial use and thus provide tax revenue potential to Canton Township and Washington County.

Radiologically impacted portions of this Site will be remediated in accordance with the NRC approved Washington, PA Facility Decommissioning Plan Part 1 Revision (June, 1999) and with conditions specified in Source Materials License SMB-1393

Decommissioning related to radiological issues will entail identification, excavation, and disposal of all soil and slag containing contamination levels in excess of the Site Decommissioning Management Plan (SDPA) Action Plan unrestricted use criteria.

License Condition 13.A.3 requires that, prior to excavation of contamination, Molycorp submit to NRC information on the extent of excavation below the groundwater table and control measures that will be used to limit migration of radiological contamination. The planned radiological excavations are shown in Figure 2. It is anticipated that groundwater will be encountered in excavations greater than six feet deep. Thus groundwater must be managed in most excavations.

In addition to groundwater, since much of the Site is in the flood plain of Chartiers Creek, measures must be taken to protect against flooding as well as erosion and sedimentation.

This document addresses Molycorps' water management plan for the radiological remediation.

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Water Management

SECTION 2

2.0 WATER MANAGEMENT

Remedial construction activities at the Site will necessitate use of best management practices (BMPs), including drainage control systems, silt fencing, sheet piling, and straw bales, as well as sediment basins and a contact stormwater/groundwater treatment system. Drawings showing the four stages of the Best Management Practice Plan are included as Figures 3 - 6.

For design purposes, the project area was divided into four work areas (Figure 1):

1. North Radiological Area (defined as Area A)
2. South Radiological Area (defined as Area B)
3. MGP Tar Pond Area and Chartiers Creek Tar Area (defined as Area C)
4. Foundation MGP Tar Area (defined as Area D)

Areas C and D do no involve radiological remediation and thus will not be addressed further herein.

North and South Radiological Drainage Areas:

The North Radiological Drainage Area is bound by the fence line with Findlay Refractories Company to the north, the former CSX and B&O railway line to the east, Caldwell Avenue to the south and Chartiers Creek to the west. The drainage area constitutes approximately 14.5 acres.

The South Radiological Drainage Area is bound by Caldwell Avenue to the north, I-70 to the east, and Chartiers Creek to the west. The drainage area constitutes approximately 6.3 acres.

Two types of water will be generated in the North and South Radiological Drainage Areas:

1. Contact Water - This will include groundwater and stormwater which falls within and/or runs on/into excavation areas during excavation and backfilling operations. Contact stormwater will be combined with groundwater removed during dewatering operations, temporarily stored in on-site frac tanks, treated in an on-site treatment system and subsequently discharged to the local POTW (i.e., Washington-East Washington Joint Authority) Straw bales and silt fencing will be installed around excavation areas to minimize run on/run off potential during excavation and/or backfilling operations.

2. Non-contact Water - Stormwater which does not come in contact with excavation areas during excavation and/or backfilling operations will be directed to one of two sediment basins or diverted around designated work areas. The basins will be sized to allow time for solids to settle, reducing the amount of sediment in the stormwater. Non-contact stormwater will be captured for solids settling before being discharged to Chartiers Creek.

Radiological Remedial Construction

Radiological materials excavation will proceed in the general direction of west to east (with the exception of subarea A5A), from the edge of Chartiers Creek towards the Transshipment Area to minimize the potential for cross-contamination. Floodplain protection and stormwater management will require phasing as the excavations progress from the low-lying areas adjacent to Chartiers Creek to higher grades closer to Green Street. The four stages of excavation are described below.

Stage 1 --Figure 3

During Stage 1, remediation activities will focus on Subarea A5A of the North Radiological Area. Excavation, stockpiling and backfill operations will not be initiated until the contact stormwater system has been constructed, delivered to the Site and confirmed operational. Contact stormwater and groundwater collected in Subarea A5A during excavation and backfill activities will be collected in frac tanks and treated in the on-site treatment system before discharge to the POTW.

A sheet pile wall will be installed along the existing concrete pad adjacent to Area A5A. Fabric filter fence and straw bale barriers will be installed at a minimum around all active excavation areas and soil stockpiles.

Stage 2 – Figure 4 - During Stage 2, remediation activities will focus on Subareas A1 of the North Radiological Area and B1 of the South Radiological Area.

The sheet pile wall installed during Stage 1 will be removed. The North Radiological Sediment Basin (Basin No. 1) will be constructed in the northeast corner of the North Radiological Area to handle non-contact stormwater. The location of the basin is shown on drawing Figure 4. The discharge of the basin will be connected to an existing stormwater conveyance pipe which currently discharges to Chartiers Creek. Contact stormwater and groundwater collected in Subareas A1 and B1 will be collected in frac tanks and treated in the on-site treatment system before discharge to the POTW.

A sheet pile wall will be installed along the western and portions of the northern borders of the North Radiological Area and along the west and portions of the northern border of the South Radiological Area, as shown on Figure 4. A berm will be placed across Caldwell Avenue. The construction of the sheet piles and berm will temporarily remove the North and South Radiological Areas from the 100-year floodplain and will substantially eliminate sheet flow discharge to the creek.

In addition, drainage channels will be used to divert runoff from upslope undisturbed areas and to convey non-contact stormwater around disturbed areas. All drainage channels will be lined with erosion control matting. During Stage 2, all non-contact stormwater collected in catch basins will be conveyed (trucked or pumped) through filter bags to the North Radiological Area sediment basin.

Fabric filter fence and straw bale barriers will be installed at a minimum around all active excavation areas and soil stockpiles and along drainage channels.

Stage 3 – Figure 5

During Stage 3, remediation activities will focus on Subareas A2, A3 and A4 of the North Radiological Area and B2 of the South Radiological Area. Contact stormwater and

groundwater collected in Subareas A2, A3, A4 and B2 will be collected in frac tanks and treated in the on-site treatment system before being discharged to the POTW.

During this stage, a portion of the sheet pile along Chartiers Creek in the North Radiological Area will be removed and a temporary earthen berm will be constructed along the east side of Subarea A1, as shown on Figure 5.

In the remediated and backfilled Subarea B1, the South Radiological Area sediment basin (Basin No. 2) will be constructed. The location of the basin is shown on Figure 5. The overflow of the basin will discharge to Chartiers Creek. During Stage 3, non-contact stormwater collected in catch basins in the South Radiological Area will be conveyed through filter bags to the South Radiological Area sediment basin.

Fabric filter fence and straw bale barriers will be installed at a minimum around all active excavation activities and soil stockpiles and along all drainage channels.

Stage 4 – Figure 13

During Stage 4, remediation activities will focus on Subareas A5 and A6 of the North Radiological Area, and B3, B4 and B5 of the South Radiological Area. Contact stormwater and groundwater collected in Subareas A5, A6, B3,and B4 will be collected in frac tanks and treated in the on-site treatment system before being discharged to the POTW.

During Stage 4, the sheet pile and earthen berm constructed in Stage 3 in the North Radiological Area will remain. Three additional drainage channels will be constructed.

During Stage 4, all non-contact stormwater collected in the North Radiological Area catch basins will be conveyed through filter bags to the North Radiological sediment basin, and all non-contact stormwater collected in the South Radiological Area will be conveyed through filter bags to the South Radiological Area sediment basin.

Fabric filter fence and straw bale barriers will be installed at a minimum around all active excavation activities and soil stockpiles and along all drainage channels.

Transshipment Area

Radiological material excavated from Areas A and B will be transported on-site, managed and loaded into railcars. On-site management and load out activities will occur on the proposed Transshipment Area, which is located on a portion of Area A adjacent to the nearby rail line as shown on Figure 7. The proposed Transshipment Area is approximately 1.15 acres in size and includes areas for stockpiling and load out of Radiological material as well as a rail siding with two rail spurs totaling approximately 1,000 linear feet of track.

The proposed Transshipment Area currently encompasses an existing concrete pad and adjacent areas including proposed remediation area A5A which contains uranium material. The surface of the concrete pad is approximately eight feet lower than the rail siding. During remediation of Area A5A, which is one of the first planned construction activities, material will be excavated and loaded into intermodal containers (IMCs). IMCs will be loaded onto railcars using the existing concrete pad for staging.

Upon completion of Area A5A remedial activities, the Transshipment Area will be improved to facilitate stockpile management and load out of Radiological material over the remainder of the remedial program. Clean fill will be utilized to bring the Transshipment Area up to approximately 6-inches below the elevation of the rail siding. A geotextile layer will be placed prior to the last 6-inches of clean fill. A combination of perimeter stabilization berms and 2 ft x 2 ft x 6 ft concrete blocks will be utilized to contain the fill. The Transshipment Area then will be topped with concrete to bring the surface up to the level of the rail siding. Concrete blocks and/or jersey barriers will be installed around the perimeter of the elevated Transshipment Area to contain contact stormwater and to act as pushwalls. The concrete surface will be sloped to collection sumps to facilitate capture of contact stormwater. The existing access ramp will be maintained and a new access ramp will be constructed using clean fill starting about 15 feet north of the existing truck scales to allow trucks to enter and exit.

The Transshipment Area will be utilized for material storage and load out. The Contractor will load the Radiological material into lined gondola railcars using front end loaders.

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Contact Water Treatment

SECTION 3

3.0 CONTACT WATER TREATMENT

During excavation and backfilling activities, contact water will be generated from three primary sources:

- Construction dewatering to facilitate excavation of contaminated soil/fill, surveying, and backfill placement.
- Precipitation that falls on and accumulates in excavation and stockpile areas
- Precipitation which falls on and accumulates in equipment decontamination areas, as well as water generated in these areas.

Contact water removed during dewatering operations will be temporarily stored in on-site frac tanks, treated in an on-site treatment system, and subsequently discharged to the local POTW (i.e., Washington – East Washington Joint Authority).

The constituents of potential concern which may be present in contact water from the North and South Radiological areas include uranium, radium and thorium, metals including molybdenum, boron, arsenic, iron and lead, and suspended solids.

A review of historical groundwater quality and characterization data indicates that soluble radiological constituents will not likely be a significant concern when handling and treating contact water. Also, dissolved organic constituents may or may not be a problem. Consequently the design for treatment of contact water focuses on a modular approach. The base treatment system will address solids and metals removed in order to achieve compliance with discharge limits for metals and suspended solids established by the POTW. Optional additional treatment system modules will include ion exchange for removal of soluble inorganic constituents, and granular activated carbon for removal of soluble organics, if necessary.

The POTW has limited the amount of certain metals which can be discharged a summarized in the following table:

POTW Pretreatment Discharge Criteria

Parameter	Discharge Limits	Units
Arsenic	1.14335	lbs/day
Cadmium	0.122	lbs/day
Chromium	0.0231	lbs/day
Copper	0.3356	lbs/day
Lead	0.3257	lbs/day
Mercury	0.01685	lbs/day
Nickel	2.1563	lbs/day
Silver	0.36105	lbs/day
Zinc	0.5018	lbs/day

Representative treated water samples will be analyzed for metals and for radiological contamination to assure that activity concentrations are below the appropriate 10 CFR 20, Appendix B limits, for discharge to a POTW.

The base contact water treatment system will include the following processes to achieve suspended solids and metals removal:

- Pre-filtration (i.e. filter bags)
- Initial settling/equalization/storage (i.e. frac tanks)
- Physical/chemical solids separation (i.e. pH adjustment, coagulation, and flocculation)

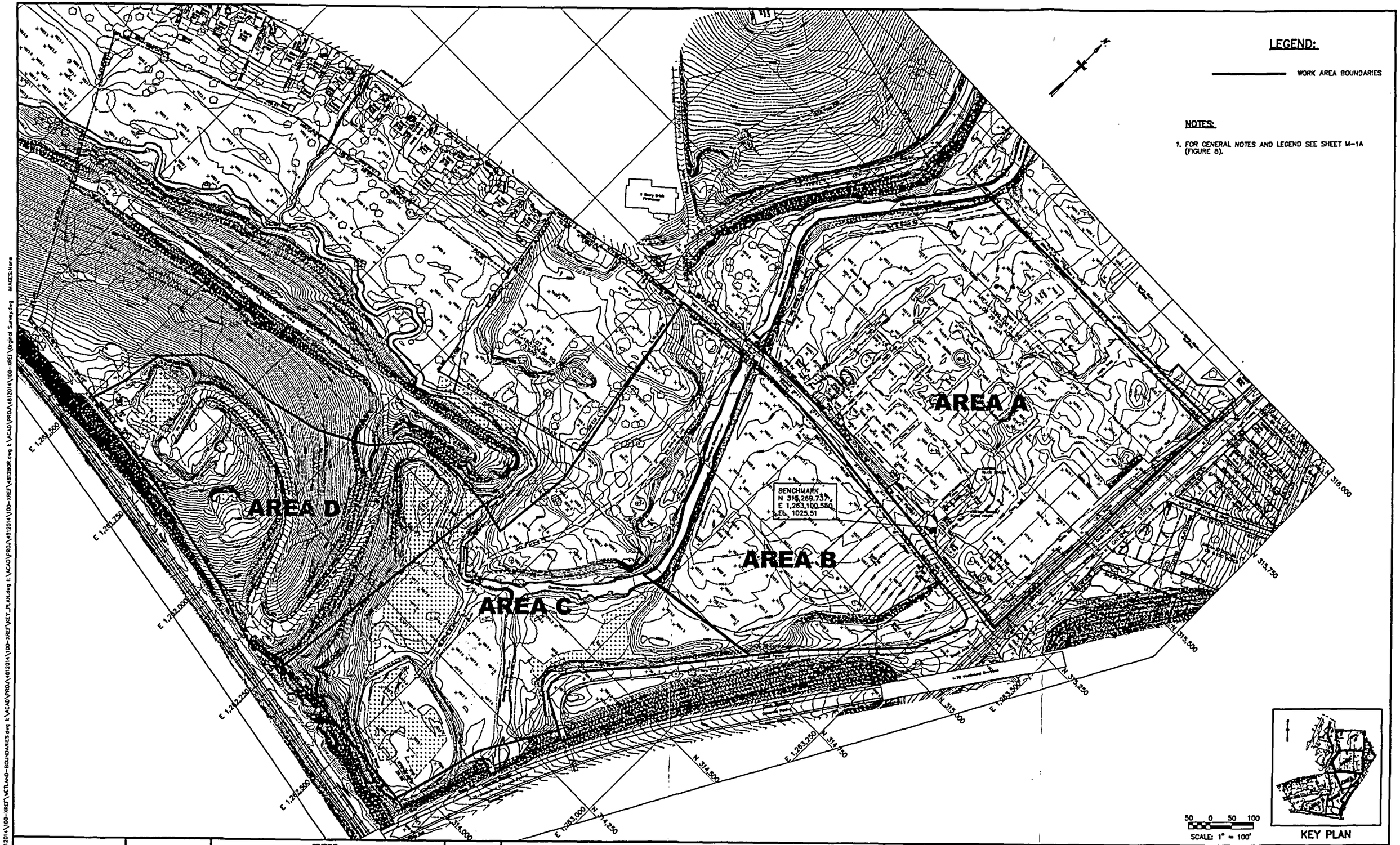
- Solids separation (i.e. clarifier)
- Bag or cartridge filtration
- Solids dewatering (i.e. filter press)

Contact water will be collected and pumped through filter bags into the frac tanks. The frac tanks will be used for initial settling, equalization and storage. pH adjustment, coagulation, flocculation, and clarification will be used to remove the solids (and soluble and insoluble metals) that pass through the filter bags and frac tanks. Final solids removal will be performed with a bag or cartridge filter. All solids removed by the treatment process and spent filter bags will be dewatered and tested to determine the proper disposal method. Solids separated in the clarifier will be stored in a properly sized sludge tank for future dewatering.

The base treatment system will include in-line monitoring of process effluent for pH and conductivity.

Two possible additional treatment system modules that may be added to the system include ion exchange and granular activated carbon (GAC). The function of the ion exchange process would be to remove potential dissolved inorganics including uranium, thorium and radium. The GAC would remove organic constituents.

FIGURES



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NO.	BY	DATE	REMARKS

DES TCS
DWN MAW
CKD BG

MOLYCORP, INC
WASHINGTON, PA

SITE REMEDIATION CONSTRUCTION

FIGURE 1

EXISTING SITE PLAN

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DATE JUNE 2005

M SHEET 2A OF 46

CAD REF. NO. M-2A

LEGEND:

AREAS ABOVE RADIOLOGICAL RELEASE CRITERIA

NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE SHEET M-1A (FIGURE 8).
2. ALL AREAS ON SITE NOT SHADED MEET RADIOLOGICAL RELEASE CRITERIA.

E 1,261,500 E 1,261,750 E 1,262,000 E 1,262,250 E 1,262,500 E 1,263,000 E 1,263,250 E 1,263,500 N 316,000 N 315,750 N 315,500 N 315,250 N 315,000 N 314,750 N 314,500 N 314,250

50 0 50 100
SCALE: 1" = 100'

KEY PLAN

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CKD BEG

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WASHINGTON, PA

SITE REMEDIATION CONSTRUCTION

FIGURE 2

LIMITS OF RADIOLOGICAL CONTAMINATION PLAN

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M SHEET 28 OF 46

CAD REF. NO. M-2B

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IMAGES:None

NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE SHEET M-1A (FIGURE 8).
2. DURING STAGE 1, REMEDIATION ACTIVITIES WILL BE CONDUCTED IN AREA A5A.
3. FABRIC FILTER FENCE AND STRAW BALE BARRIER SHALL BE INSTALLED AROUND ALL ACTIVE EXCAVATION AREAS, EQUIPMENT LAYDOWN, FRAC TANK STORAGE, TREATMENT SYSTEM STORAGE AREA, UTILITY TRENCH EXCAVATIONS AND SOIL STOCKPILES AS SHOWN AND AS REQUIRED FOR EROSION AND SEDIMENT CONTROL. LOCATIONS SHOWN ARE APPROXIMATE.
4. SEE EROSION AND SEDIMENT CONTROL PLAN FOR INSPECTION AND MAINTENANCE REQUIREMENTS.
5. CONTRACTOR IS RESPONSIBLE FOR CONVEYING (PUMPING OR TRUCKING) THE CONTACT STORMWATER FROM THE EXCAVATION AREAS THROUGH FILTER BAGS TO FRAC TANKS FOR FUTURE TREATMENT IN THE ON-SITE TREATMENT SYSTEM.
6. CONTRACTOR SHALL GRADE BACKFILL MATERIAL TO PROMOTE FLOW AWAY FROM PLANNED OR ACTIVE EXCAVATION AREAS.

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DES BEG
DWN TCS
CKD KRM

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WASHINGTON, PA

SITE REMEDIATION CONSTRUCTION

FIGURE 3
STAGE 1
BEST MANAGEMENT PRACTICE PLAN

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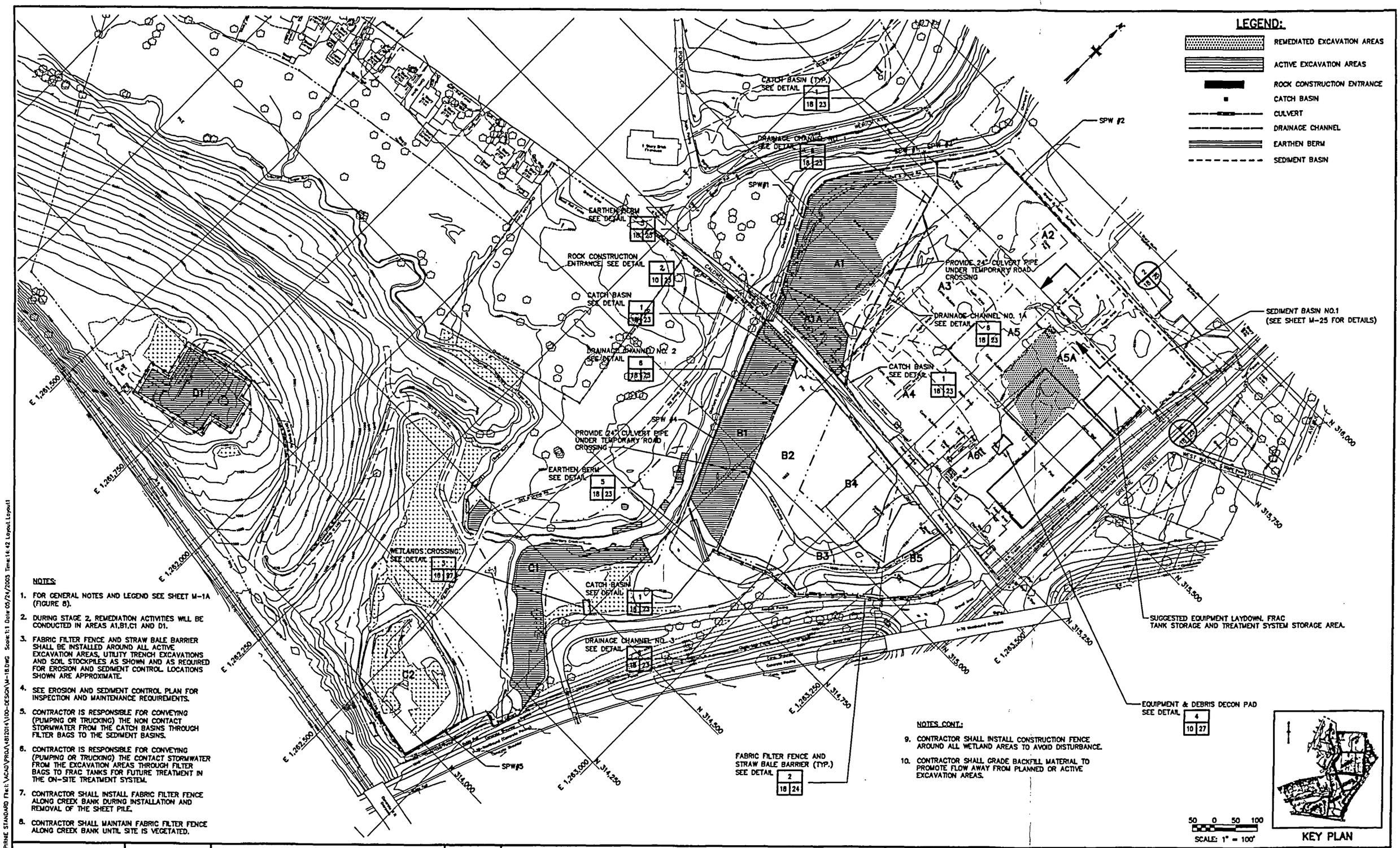

NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE SHEET M-1A (FIGURE 8).
2. DURING STAGE 2, REMEDIATION ACTIVITIES WILL BE CONDUCTED IN AREAS A1,B1,C1 AND D1.
3. FABRIC FILTER FENCE AND STRAW BALE BARRIER SHALL BE INSTALLED AROUND ALL ACTIVE EXCAVATION AREAS, UTILITY TRENCH EXCAVATIONS AND SOIL STOCKPILES AS SHOWN AND AS REQUIRED FOR EROSION AND SEDIMENT CONTROL. LOCATIONS SHOWN ARE APPROXIMATE.
4. SEE EROSION AND SEDIMENT CONTROL PLAN FOR INSPECTION AND MAINTENANCE REQUIREMENTS.
5. CONTRACTOR IS RESPONSIBLE FOR CONVEYING (PUMPING OR TRUCKING) THE NON CONTACT STORMWATER FROM THE CATCH BASINS THROUGH FILTER BAGS TO THE SEDIMENT BASINS.
6. CONTRACTOR IS RESPONSIBLE FOR CONVEYING (PUMPING OR TRUCKING) THE CONTACT STORMWATER FROM THE EXCAVATION AREAS THROUGH FILTER BAGS TO FRAC TANKS FOR FUTURE TREATMENT IN THE ON-SITE TREATMENT SYSTEM.
7. CONTRACTOR SHALL INSTALL FABRIC FILTER FENCE ALONG CREEK BANK DURING INSTALLATION AND REMOVAL OF THE SHEET PILE.
8. CONTRACTOR SHALL MAINTAIN FABRIC FILTER FENCE ALONG CREEK BANK UNTIL SITE IS VEGETATED.

NOTES CONT.:

9. CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND ALL WETLAND AREAS TO AVOID DISTURBANCE.
10. CONTRACTOR SHALL GRADE BACKFILL MATERIAL TO PROMOTE FLOW AWAY FROM PLANNED OR ACTIVE EXCAVATION AREAS.

MALCOLM PIRNIE

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DES TAW
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WASHINGTON, PA

SITE REMEDIATION CONSTRUCTION

FIGURE 4
STAGE 2
BEST MANAGEMENT PRACTICE PLAN

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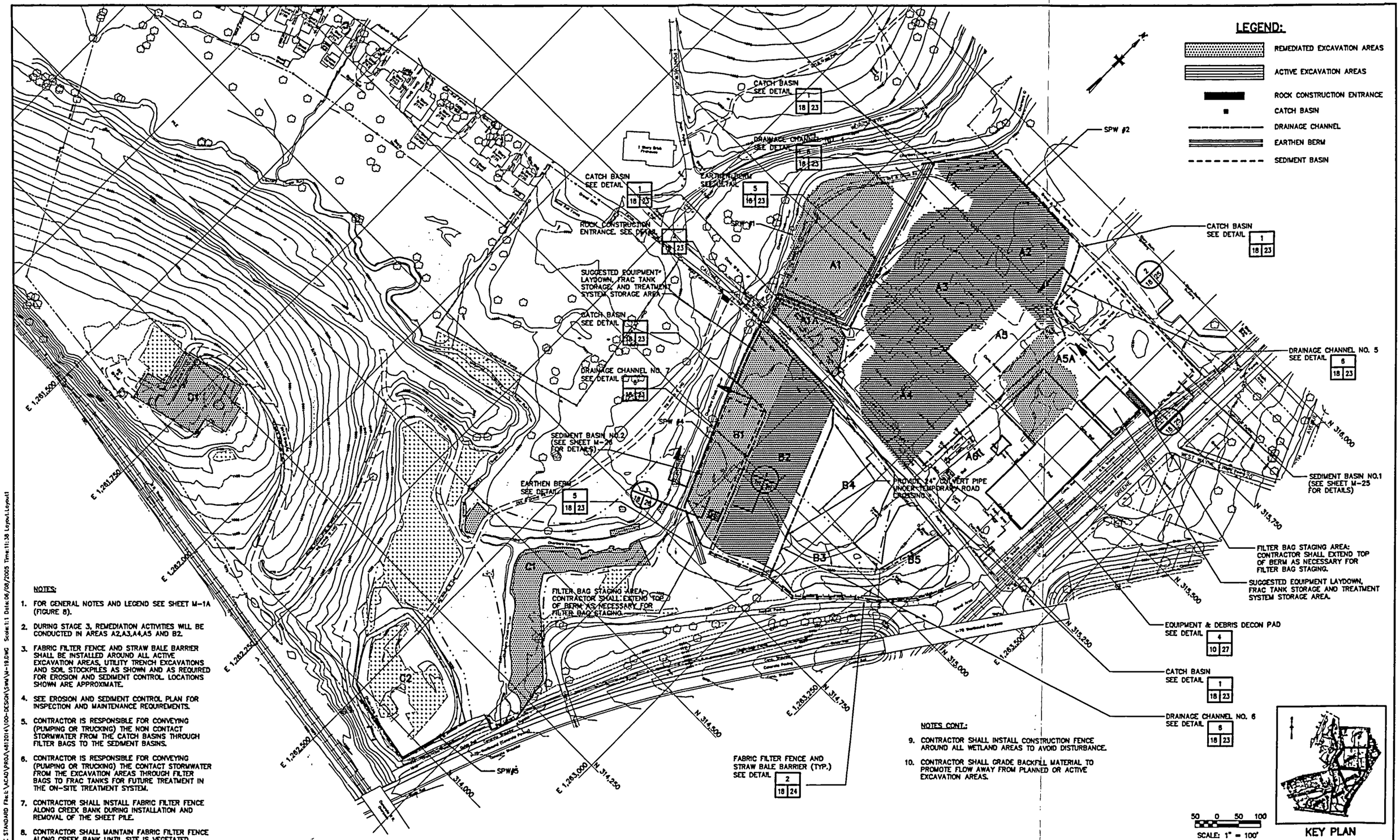

NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE SHEET M-1A (FIGURE 8).
2. DURING STAGE 3, REMEDIATION ACTIVITIES WILL BE CONDUCTED IN AREAS A2,A3,A4,A5 AND B2.
3. FABRIC FILTER FENCE AND STRAW BALE BARRIER SHALL BE INSTALLED AROUND ALL ACTIVE EXCAVATION AREAS, UTILITY TRENCH EXCAVATIONS AND SOIL STOCKPILES AS SHOWN AND AS REQUIRED FOR EROSION AND SEDIMENT CONTROL. LOCATIONS SHOWN ARE APPROXIMATE.
4. SEE EROSION AND SEDIMENT CONTROL PLAN FOR INSPECTION AND MAINTENANCE REQUIREMENTS.
5. CONTRACTOR IS RESPONSIBLE FOR CONVEYING (PUMPING OR TRUCKING) THE NON CONTACT STORMWATER FROM THE CATCH BASINS THROUGH FILTER BAGS TO THE SEDIMENT BASINS.
6. CONTRACTOR IS RESPONSIBLE FOR CONVEYING (PUMPING OR TRUCKING) THE CONTACT STORMWATER FROM THE EXCAVATION AREAS THROUGH FILTER BAGS TO FRAC TANKS FOR FUTURE TREATMENT IN THE ON-SITE TREATMENT SYSTEM.
7. CONTRACTOR SHALL INSTALL FABRIC FILTER FENCE ALONG CREEK BANK DURING INSTALLATION AND REMOVAL OF THE SHEET PILE.
8. CONTRACTOR SHALL MAINTAIN FABRIC FILTER FENCE ALONG CREEK BANK UNTIL SITE IS VEGETATED.

NOTES CONT.:

9. CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND ALL WETLAND AREAS TO AVOID DISTURBANCE.
10. CONTRACTOR SHALL GRADE BACKFILL MATERIAL TO PROMOTE FLOW AWAY FROM PLANNED OR ACTIVE EXCAVATION AREAS.

MALCOLM PIRNIE

REVISIONS			
NO.	BY	DATE	REMARKS

DES
DWN
CKD

MOLYCORP, INC
WASHINGTON, PA

SITE REMEDIATION CONSTRUCTION

FIGURE 5
STAGE 3
BEST MANAGEMENT PRACTICE PLAN

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M SHEET 19 OF 46

CAD REF. NO. M-19

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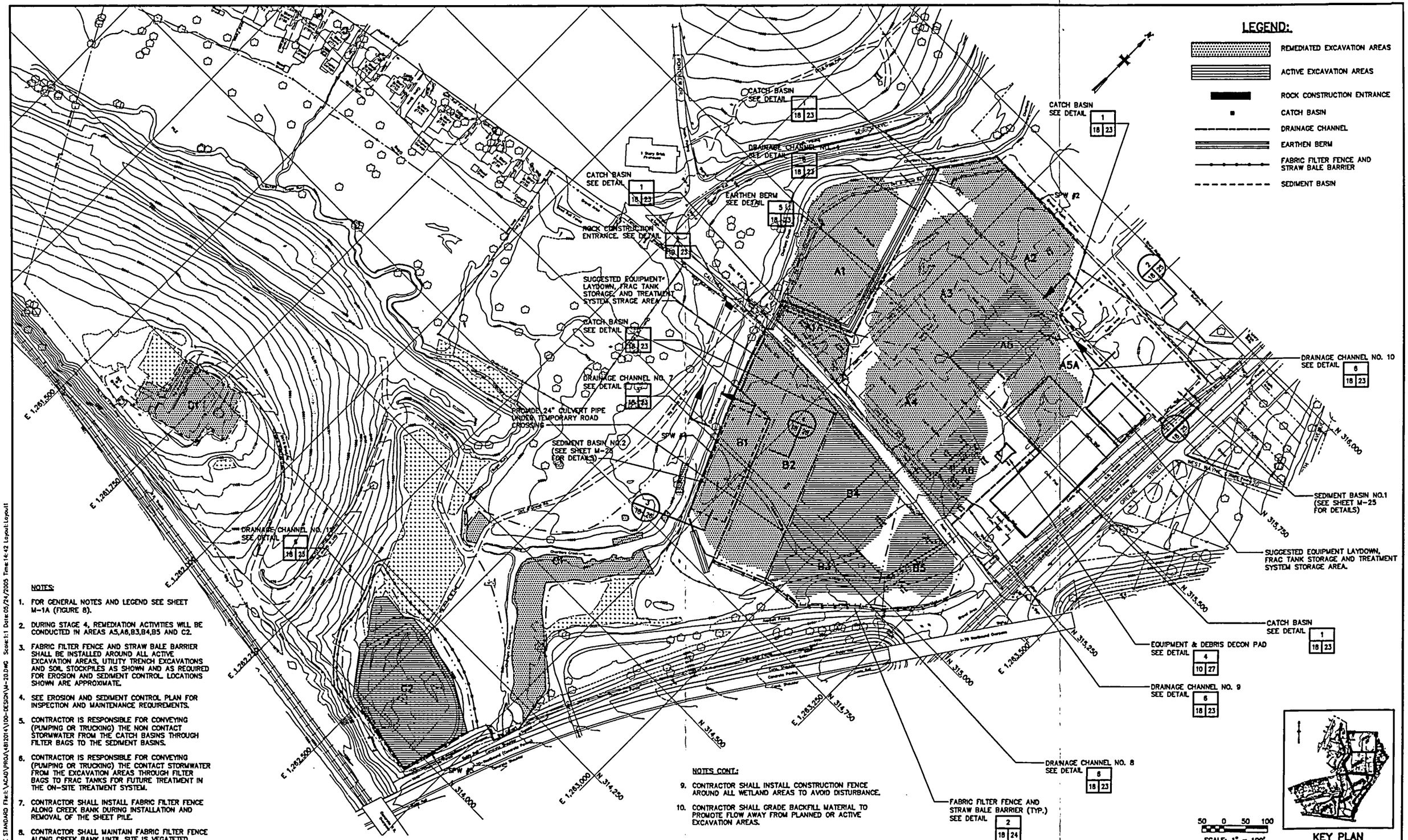

NOTES:

1. FOR GENERAL NOTES AND LEGEND SEE SHEET M-1A (FIGURE 8).
2. DURING STAGE 4, REMEDIATION ACTIVITIES WILL BE CONDUCTED IN AREAS A5,A6,B3,B4,B5 AND C2.
3. FABRIC FILTER FENCE AND STRAW BALE BARRIER SHALL BE INSTALLED AROUND ALL ACTIVE EXCAVATION AREAS, UTILITY TRENCH EXCAVATIONS AND SOIL STOCKPILES AS SHOWN AND AS REQUIRED FOR EROSION AND SEDIMENT CONTROL. LOCATIONS SHOWN ARE APPROXIMATE.
4. SEE EROSION AND SEDIMENT CONTROL PLAN FOR INSPECTION AND MAINTENANCE REQUIREMENTS.
5. CONTRACTOR IS RESPONSIBLE FOR CONVEYING (PUMPING OR TRUCKING) THE NON CONTACT STORMWATER FROM THE CATCH BASINS THROUGH FILTER BAGS TO THE SEDIMENT BASINS.
6. CONTRACTOR IS RESPONSIBLE FOR CONVEYING (PUMPING OR TRUCKING) THE CONTACT STORMWATER FROM THE EXCAVATION AREAS THROUGH FILTER BAGS TO FRAC TANKS FOR FUTURE TREATMENT IN THE ON-SITE TREATMENT SYSTEM.
7. CONTRACTOR SHALL INSTALL FABRIC FILTER FENCE ALONG CREEK BANK DURING INSTALLATION AND REMOVAL OF THE SHEET PILE.
8. CONTRACTOR SHALL MAINTAIN FABRIC FILTER FENCE ALONG CREEK BANK UNTIL SITE IS VEGATETED.

NOTES CONT.:

9. CONTRACTOR SHALL INSTALL CONSTRUCTION FENCE AROUND ALL WETLAND AREAS TO AVOID DISTURBANCE.
10. CONTRACTOR SHALL GRADE BACKFILL MATERIAL TO PROMOTE FLOW AWAY FROM PLANNED OR ACTIVE EXCAVATION AREAS.

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REVISIONS			
NO.	BY	DATE	REMARKS

DES
DWN
CKD

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WASHINGTON, PA

SITE REMEDIATION CONSTRUCTION

FIGURE 6
STAGE 4
BEST MANAGEMENT PRACTICE PLAN

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M SHEET 20 OF 46

CAD REF. NO. M-20

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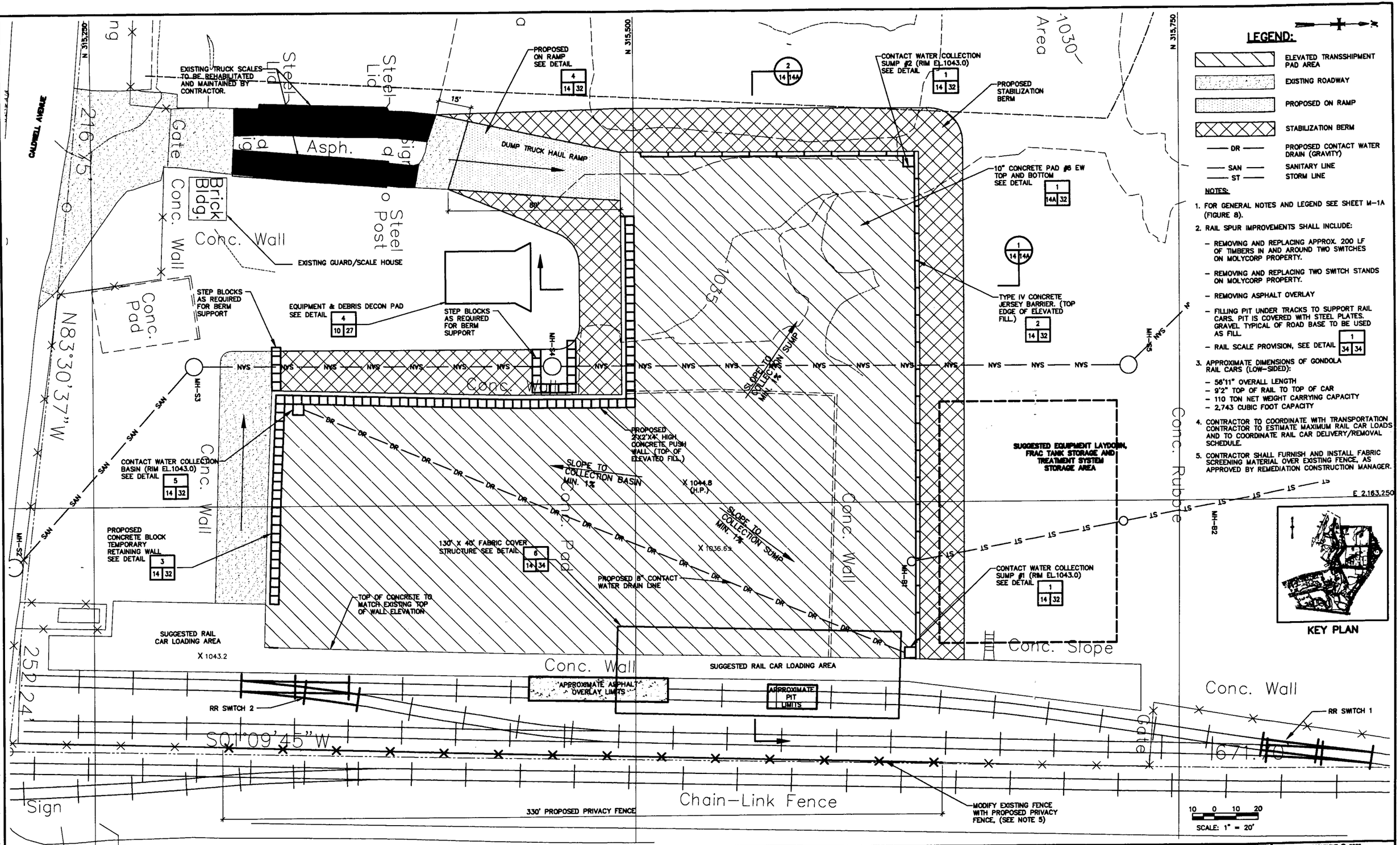

N 315,250
N 315,500
N 315,750
E 2,163,250
CALDWELL AVENUE
EXISTING TRUCK SCALES TO BE REHABILITATED AND MAINTAINED BY CONTRACTOR.
Steel Lid
Steel Post
Asph.
15'
PROPOSED ON RAMP SEE DETAIL 4 14 32
DUMP TRUCK HAUL RAMP
88'
CONTACT WATER COLLECTION SUMP #2 (RIM EL.1043.0) SEE DETAIL 1 14 32
PROPOSED STABILIZATION BERM
10" CONCRETE PAD #6 EW TOP AND BOTTOM SEE DETAIL 1 14A 32
1030 Area
1035
Brick Bldg.
Conc. Wall
Gate
Conc. Pad
EXISTING GUARD/SCALE HOUSE
STEP BLOCKS AS REQUIRED FOR BERM SUPPORT
EQUIPMENT & DEBRIS DECON PAD SEE DETAIL 4 10 27
1 14 14A
TYPE IV CONCRETE JERSEY BARRIER. (TOP EDGE OF ELEVATED FILL.) 2 14 32
SLOPE TO COLLECTION SUMP MIN. 1%
MH-S4
MH-S3
NVS
SAN
DR
ST
Conc. Rubble
PROPOSED 2'X2'X4' HIGH CONCRETE PUSH WALL (TOP OF ELEVATED FILL)
SLOPE TO COLLECTION BASIN MIN. 1%
X 1044.8 (H.P.)
SLOPE TO COLLECTION SUMP MIN. 1%
X 1036.6±
CONTACT WATER COLLECTION BASIN (RIM EL.1043.0) SEE DETAIL 5 14 32
PROPOSED CONCRETE BLOCK TEMPORARY RETAINING WALL SEE DETAIL 3 14 32
130' X 40' FABRIC COVER STRUCTURE SEE DETAIL 6 14 34
PROPOSED 8" CONTACT WATER DRAIN LINE
MH-S2
MH-S1
CONTACT WATER COLLECTION SUMP #1 (RIM EL.1043.0) SEE DETAIL 1 14 32
SUGGESTED EQUIPMENT LAYDOWN, FRAC TANK STORAGE AND TREATMENT SYSTEM STORAGE AREA
TOP OF CONCRETE TO MATCH EXISTING TOP OF WALL ELEVATION
SUGGESTED RAIL CAR LOADING AREA
X 1043.2
Conc. Slope
Conc. Wall
SUGGESTED RAIL CAR LOADING AREA
APPROXIMATE ASPHALT OVERLAY LIMITS
APPROXIMATE PIT LIMITS
RR SWITCH 2
RR SWITCH 1
N83°30'37"W
252.24'
S01°09'45"W
671.10'
Sign
Chain-Link Fence
330' PROPOSED PRIVACY FENCE
MODIFY EXISTING FENCE WITH PROPOSED PRIVACY FENCE, (SEE NOTE 5)
216.75'
Gate
Conc. Wall
Conc. Pad
Conc. Wall
Conc. Wall
Conc. Wall

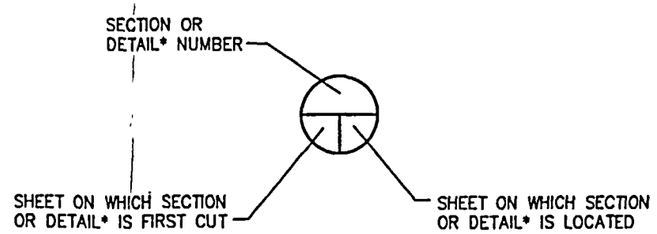
GENERAL NOTES:

1. EXISTING TOPOGRAPHY PROVIDED BY MACKIN ENGINEERING BASED ON SURVEY PERFORMED IN 2003.
2. HORIZONTAL DATUM SHOWN IS NAD 83
3. VERTICAL DATUM SHOWN IS NAVD 88
4. EXISTING CONTOURS MAY NOT REFLECT ACTUAL SITE CONDITIONS IN SOME AREAS.
5. UTILITY INFORMATION:
   IN ACCORDANCE WITH PA ACT 199 OF 2004, CONTRACTOR MUST NOTIFY UTILITIES PRIOR TO CONSTRUCTION USING "ONE CALL" AT 1-800-242-1776, SERIAL NUMBER 1176997.
6. LOCATION OF SHEET PILE WALLS SHALL BE CONFIRMED BY PERFORMING TEST PITS ON A UNIT PRICE BASIS IN ACCORDANCE WITH THE MASTER SERVICE AGREEMENT.
7. ADDITIONAL TEST PITS SHALL BE ADDED BASED ON THE FIELD OBSERVATIONS UNDER THE DIRECTION OF THE REMEDIATION CONSTRUCTION MANAGER.
8. CONTRACTOR SHALL RESTORE AREAS TO EXISTING GRADE ONCE IT HAS BEEN EXCAVATED AND BACKFILLED IN ACCORDANCE WITH THE TECHNICAL SPECIFICATIONS UNLESS OTHERWISE DIRECTED BY THE REMEDIATION CONSTRUCTION MANAGER.
9. CONTRACTOR SHALL COORDINATE THE RELOCATION OF ALL UTILITIES ALONG CALDWELL AVENUE IN ACCORDANCE WITH THE UTILITY RELOCATION PLAN SHOWN ON SHEETS M-8A AND M-8B PRIOR TO EXCAVATING IN THE CALDWELL AVENUE EASEMENT.
10. CONTRACTOR SHALL RESTORE ANY DISTURBED WETLAND AREA TO ORIGINAL CONDITION FOLLOWING CONSTRUCTION ACTIVITIES.

LEGEND:

- 1' CONTOUR
- 5' CONTOUR
- x 1044.8 — SPOT ELEVATION
- PROPERTY LINE
- PAVED ROAD
- DIRT/GRAVEL ROAD
- STRUCTURE
- RAILROAD
- TREES
- VEGETATION/BRUSH
- CHAIN LINK FENCE
- GUIDE RAIL
- APPROXIMATE WETLAND BOUNDARIES
- BENCHMARK
- EXISTING SANITARY MH
- EXISTING STORM MH
- ST — EXISTING STORM LINE
- SAN — EXISTING SANITARY LINE (GRAVITY)
- FM — EXISTING SANITARY FORCE MAIN
- G — EXISTING GAS LINE
- W — EXISTING WATER LINE
- OH — EXISTING OVERHEAD ELECTRIC LINE
- T — EXISTING TELEPHONE LINE
- EXISTING LIGHT POLE
- EXISTING CATCH BASIN
- EXISTING UTILITY POLE

- APPROXIMATE LIMITS OF PROPOSED EXCAVATION SUB-DIVISIONS
- A4 — EXCAVATION SUB-DIVISION DESIGNATION
- APPROXIMATE SHEET PILE WALL LOCATION (SPW)
- APPROXIMATE TEST PIT LOCATION
- FABRIC FILTER FENCE AND STRAW BALE BARRIER
- DRAINAGE SWALE AND CATCH BASIN COMBINATION
- DRAINAGE SWALE AND CULVERT COMBINATION
- PROPOSED SANITARY MH
- PROPOSED STORM MH
- PROPOSED AIR/VAC MH
- ST — PROPOSED STORM LINE
- SAN — PROPOSED SANITARY LINE (GRAVITY)
- FM — PROPOSED SANITARY FORCE MAIN



* WHEN PERTAINING TO DETAILS, CIRCLE IS REPLACED WITH A SQUARE

SECTION AND DETAIL KEY

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REVISIONS			
NO.	BY	DATE	REMARKS

DES TCS
DWN MAW
CKD BG

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WASHINGTON, PA

SITE REMEDIATION CONSTRUCTION

FIGURE 8
GENERAL NOTES AND LEGEND

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M SHEET 1A OF 46

CAD REF. NO. M-1A

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