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EXELON BLDG &
PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13

key plan

seal

issued	date	description

revision	date	description

title
SHEET INDEX

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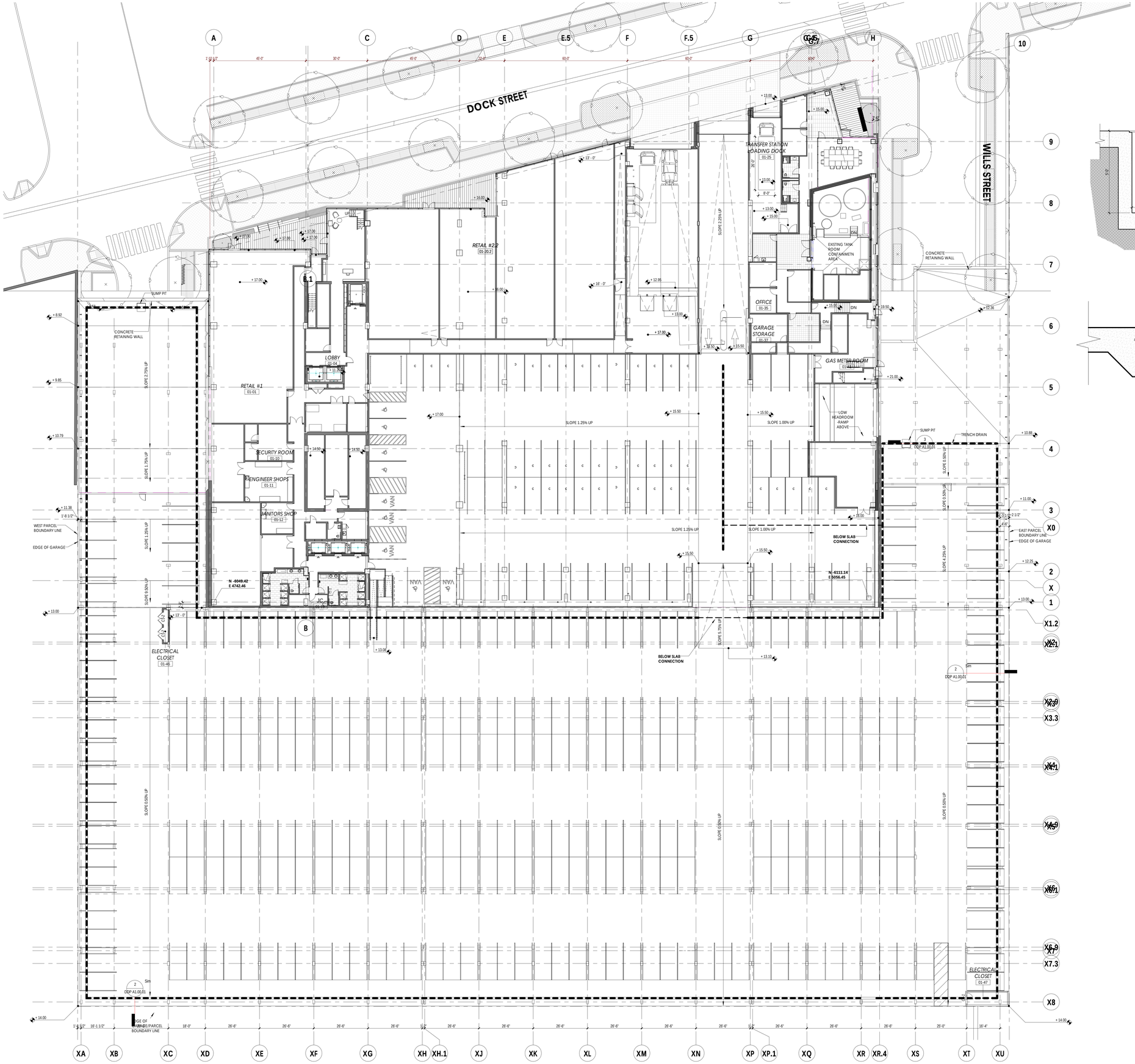
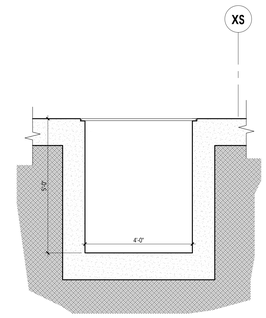
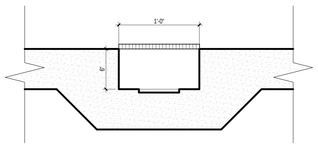




3 DDP A1.00.01 **SUMP PIT DETAIL** SEE DETAL DDP EN1.06.01
1'-0" = 1'-0"



2 DDP A1.00.01 **TRENCH DRAIN DETAIL**
1 1/2" = 1'-0"

1 DDP A1.00.01 **FLOOR PLAN LEVEL 1**
1/16" = 1'-0"

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EXELON BLDG & PLAZA GARAGE

HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
7/1/13

key plan

seal

issued	date	description

revision	date	description

title
FLOOR PLAN - LEVEL 1

date:	05/23/13
drawn by:	Author
checked by:	Approver
scale:	As indicated
project number:	09738.00

sheet number
DDP
A1.00.01

#DDP FLOOR PLAN - LEVEL 1
A1.00.01 -

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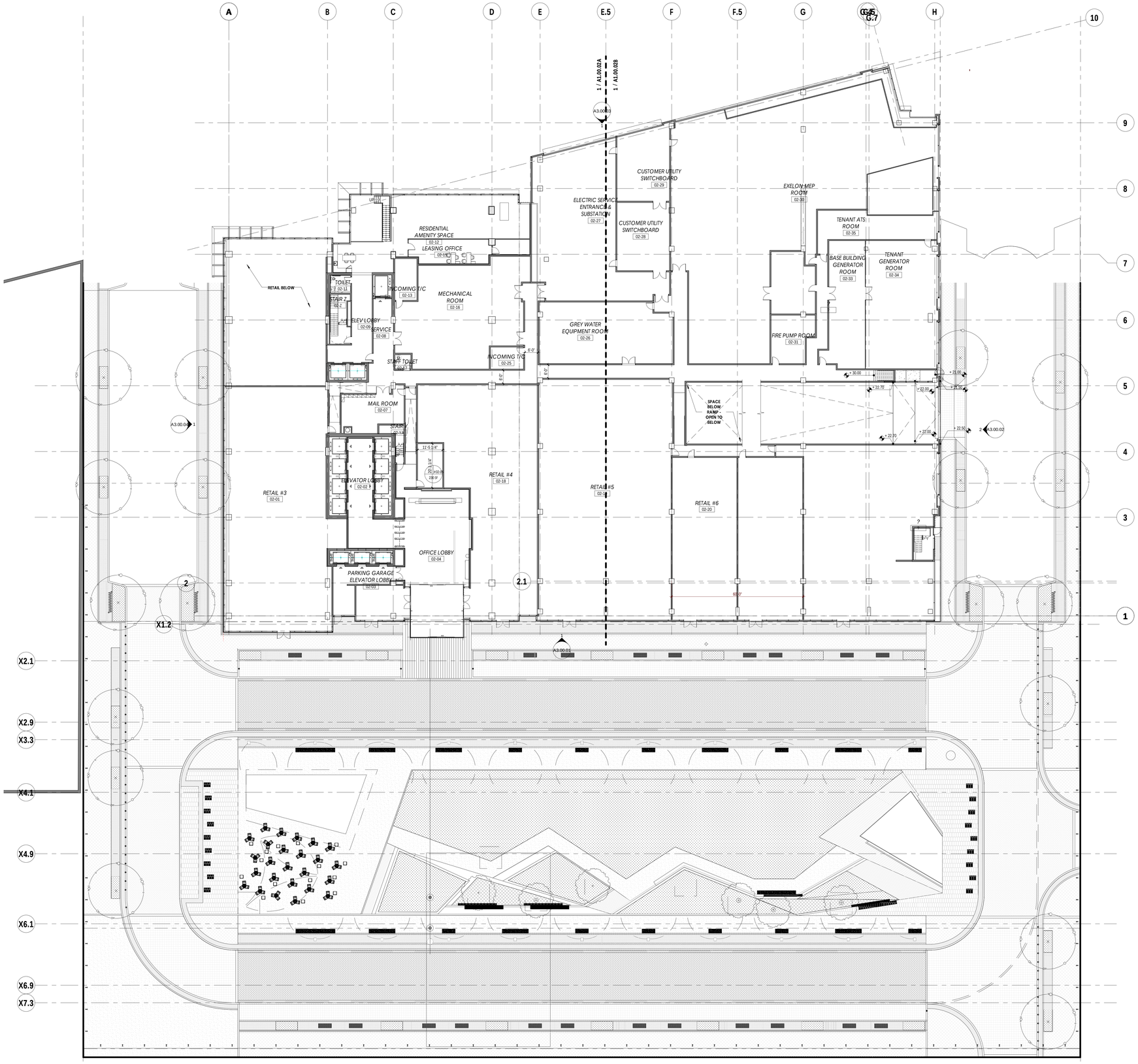

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HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
8/1/13

key plan

seal

issued	date	description

revision	date	description

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FLOOR PLAN - LEVEL 2

date:	05/31/13
drawn by:	Author
checked by:	Approver
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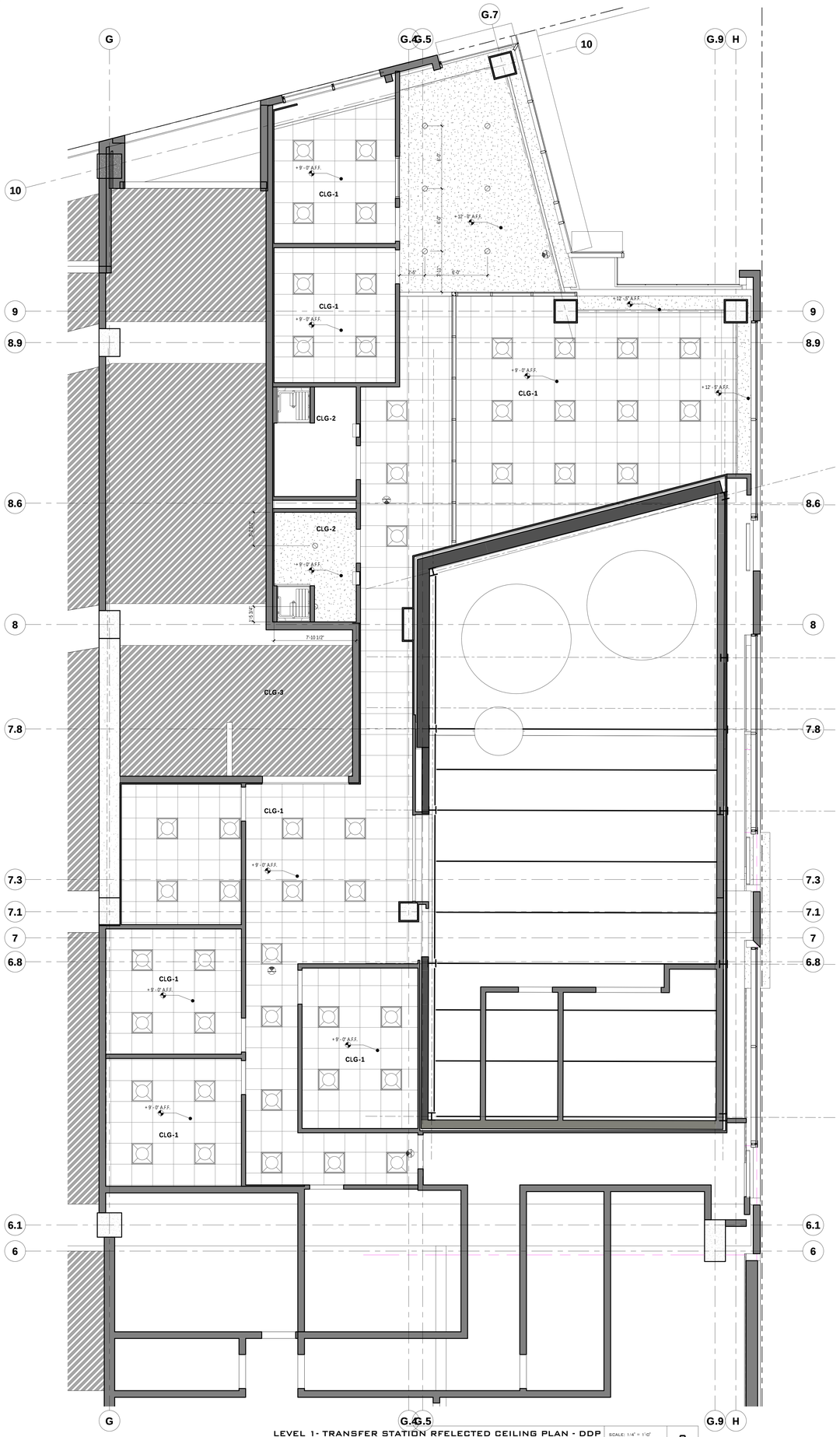
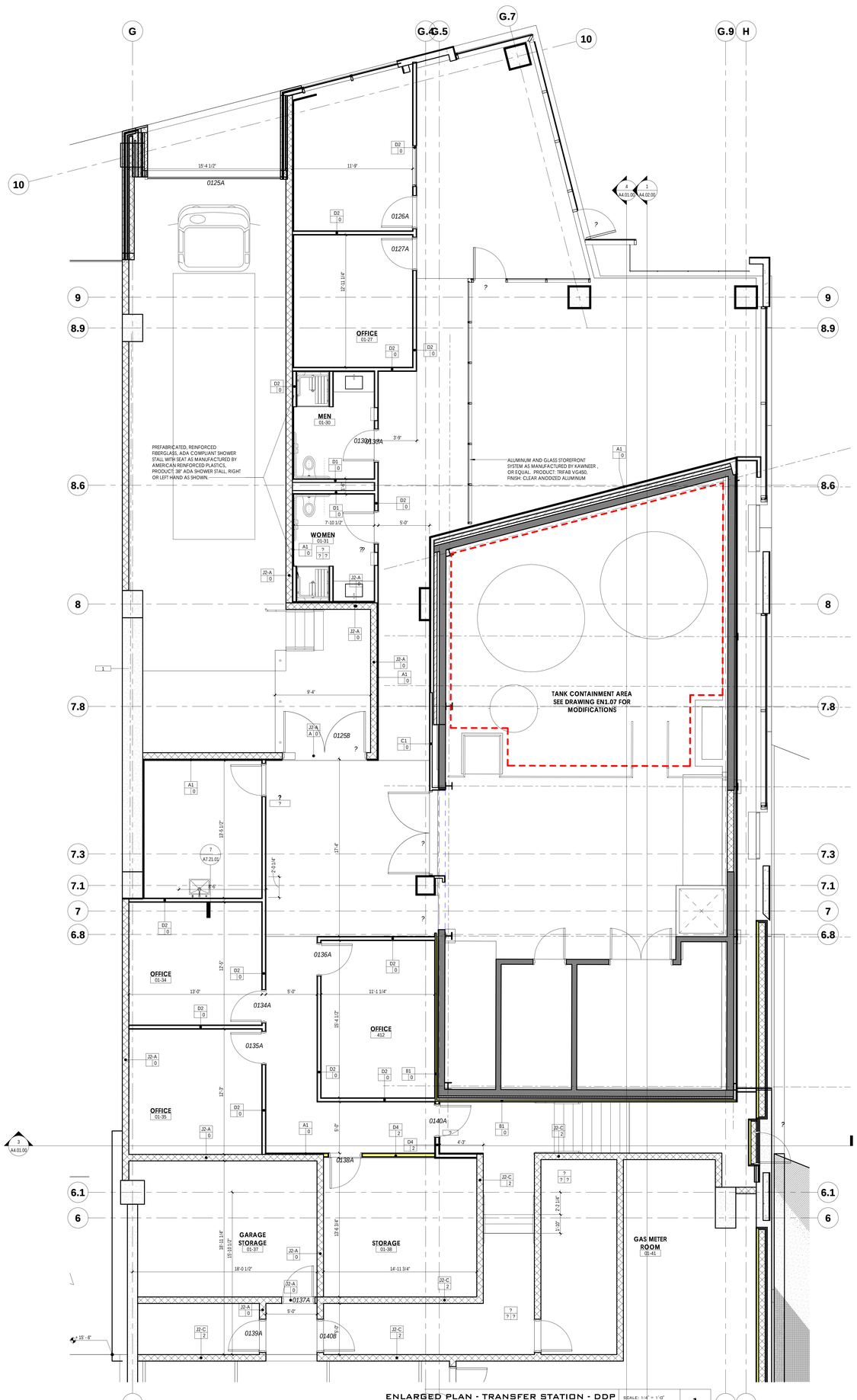


LEVEL 1- TRANSFER STATION RFELECTED CEILING PLAN - DDP

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

3

2



ENLARGED PLAN - TRANSFER STATION - DDP

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

1

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EXELON BLDG & PLAZA GARAGE

HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
8/1/13

key plan

seal

issued	date	description

revision	date	description

title
ENLARGED FLOOR PLANS - TRANSFER STATION

date:	06/4/13
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scale:	1/4" = 1'-0"
project number:	09709.00
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DDP
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NEW OUTBOARD EMBANKMENT
1. RIP–RAP (SEE NOTE 2)
–New Outboard Embankment Contract Documents Volume I
–New Outboard Embankment Contract Drawings
–Corrective Measures Implementation Report Phase I
–Contract and Specification for Subsurface Boring and Sampling for Dredging and Embankment Design

MULTIMEDIA CAP
1. SETTLEMENT POINTS
2. MULTIMEDIA CAP
3. INFILTRATION TRENCH
4. TOE DRAIN COLLECTION PIPING
5. DRAINAGE COMPOSITE
6. METHANE GAS VENT
–Final Remedial Construction Documents Volumes I to IV
–Final Remedial Construction Contract Drawings Subproject 4: Multimedia Cap
–Construction Completion Report
–Perimeter Settlement at Allied Signal Baltimore Works

HEAD MAINTENANCE SYSTEM (HMS) SEE GROUND LEASE EXHIBIT C SECTION 2.2 (b), 3.5 & 6.1
1. INBOARD AND OUTBOARD PIEZOMETERS
2. TRANSFER STATION
3. PIPING
4. JUNCTION MANHOLES
5. VAULTS AND PUMPING WELLS
–Final Remedial Construction Documents Volumes I to IV
–Final Remedial Construction Contract Drawings Subproject 3: Head Maintenance System Subproject 6: Transfer Station Transfer Station Utility Connections
–Construction Completion Report
–Operations and Maintenance Manual
–Groundwater Gradient Monitoring Plan

HYDRAULIC BARRIER
1. SOIL / BENTONITE CLAY BARRIER
2. HDPE BARRIER (SEE NOTE 3)
–Hydraulic Barrier Contract Documents Volumes I–III
–Hydraulic Barrier Contract Drawings
–Construction Completion Report
–Summary of 1988 Subsurface Investigation for Perimeter Cutoff Wall Evaluation
–Hydraulic Barrier Design Report Allied Baltimore Works (January 12,1993)

AREAS OF KNOWN OR POTENTIAL CONCERN SEE GROUND LEASE EXHIBIT C SECTION 2.2 (a)
1. TYPE "J" PLATFORM
2. COVERED SLIP
–Existing Subsurface Structures – A Review and Documentation
–Covered Slip Subsidence Repair Addendums

SHORELINE STABILIZATION EAST OF WILLS STREET
1. RIP–RAP / GABIONS
2. STEEL SHEETING
–Shoreline Stabilization East of Wills St. Contract Document Volume I
–Shoreline Stabilization East of Wills St. Contract Drawings
–Corrective Measures Implementation Report Phase I

LEGEND

- MULTIMEDIA CAP
- DOUBLE – LAYER SYNTHETIC DRAINAGE COMPOSITE
- INFILTRATION TRENCH
- METHANE GAS VENT
- SETTLEMENT PLATE
- TOE DRAIN COLLECTION PIPING
- RIP – RAP
- SOIL–BENTONITE BARRIER
- SETBACK FROM SOIL / BENTONITE AND HMS COMPONENTS
- PIEZOMETER SYSTEM
- MANHOLE JUNCTION
- VAULT JUNCTION WITH PUMPING WELL
- ABANDONED SOIL BORINGS
- SURFACE SOIL MONITORING POINT
- SETTELMENT MONITORING POINT
- SURFACE WATER MONITORING POINT – SEE NOTE 11
- APPROX. LIMIT OF BUILDING FOUNDATION ABANDONED IN PLACE
- PROPERTY BOUNDARY

PROGRESS SET NOT FOR CONSTRUCTION

40 0 40 80

SCALE: 1" = 40'

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

REMEDIAL DESIGN DOCUMENTS
Baltimore Site Remediation, Final Remedial Construction Volume I: Contract Documents Volume II: Specifications Volume III: Specifications Volume IV: Additional Information Contract Drawings: Subproject 1, Site Surcharge Contract Drawings: Subproject 3,Head Maintenance System Contract Drawings: Subproject 6,Transfer Station Transfer Station Utility Connections As–Built Drawings
Baltimore Works Remediation, Hydraulic Barrier Volume I: Contract Documents Volume II: Additional Information Volume III: Additional Information Contract Drawings As–Built Drawings
Baltimore Works Remediation, New Outboard Embankment Volume I: Contract Document Volume II: Additional Information Contract Drawings As–Built Drawings
Baltimore Works Remediation, Shoreline Stabilization East of Wills Street Volume I: Contract Drawings Contract Drawings As–Built Drawings
Baltimore Dismantlement Specifications
Allied Signal Supplemental Site Characterization Report
Contract and Specification for Subsurface Boring and Sampling for Dredging and Embankment Design, Allied Signal Baltimore Works
Section A Contract and Specifications for Subsurface Boring and Sampling for Final Design of the Hydraulic Barrier and Foundation Investigation at the Allied Signal Baltimore Works
Specification for Baltimore Plant Bulkhead Repairs

CONSENT DECREE PLANS
Enviromental Media Monitoring Plan (includes Air Emissions Monitoring Plan,Groundwater Quality Monitoring Plan,and Biological and Sediment Monitoring Plan)
Sediment Sampling Work Plan
Construction Quality Asssurance Plans
Corrective Measures Implementation Project Plans (CMIPP; includes Contingent Remediation Work Plan)
Groundwater Gradient Monitoring Plan
Surface Soil Monitoring Plan
Operations and Maintenance Manual (includes Contingency Plan)
Spill Prevention Control and Countermeasure Plan
Health and Safety Plan
Community Relations Plan
Surface Water Pollution Prevention Plan

NOTES:

1. Existing site features (including engineered remedial system (ERS) components, buildings, roads, property boundaries, fence lines and shoreline perimeter) are approximate and based on information and drawings provided by Rummel, Klepper & Kahl, LLP (RK&K). Utility information was obtained from documents provided to RK&K by Mueser Rutledge Consulting Engineers and may not accurately reflect pre–existing or current conditions. For exact locations of ERS components, refer to relevant as–built drawings.
2. Rip–rap along the shoreline perimeter extends to cover the shoreline embankment to BCCD Elev. –10.
3. Vertical HDPE panels have been installed in the soil bentonite barrier. Panels extend to a depth of 10' below mean sea level along the shoreline perimeter and 3' below mean sea level along the North Basin and Wills Street.
4. The AREA 1 multimedia cap components include, from top to bottom, crushed stone, cover soil, visual warning layer, geotextile drainage layer, barrier layer (geomembrane and geosynthetic clay liner), geotextile and capillary break layer, base geotextile (Total thickness varies – 36" min).
5. The AREA 2 soil cap consists, from top to bottom, of a 4" asphalt cover, 6" aggregate subbase course (CR–6), geotextile layer, 6" capillary break layer and geotextile layer (Total thickness 16").
6. The AREA 3 soil cap consists, from top to bottom, of an asphalt cover, aggregate subbase course and, 2' of clean fill over a visual warning layer. The AREA 3 soil cap is placed over Silver North and Silver South.
7. Required setback from the soil–bentonite barrier is 30' (typical each side) and from head maintenance system (HMS) components is 10' (typical each side), see ground lease exhibit C: construction requirements section 6.2, 4.1.1, 6.4 & 10.
8. Information referenced on this plan reflects surveys performed using Baltimore City Datum.
9. Access must be provided for Owner to all existing vaults and wells associated with the remedial system.
10. The points identified as "SSMP1" or "LSC–MP3" are references to monitoring points provided in the surface soil monitoring plan (SSMP). The "SSMP1" points shall remain in place and access to these points must be maintained. The "LSC–MP3" points shall remain in place until redevelopment plans require their removal.
11. Surface water monitoring points are shown for reference. Proposed redevelopment plans that require establishing new point locations must be coordinated with the Owner.

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13

key plan

seal

issued	date	description

revision	date	description

title
EXISTING CONDITIONS SITE CONSTRAINTS

date:	08-06-13
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checked by:	CDK
scale:	AS SHOWN
project number:	09738.00
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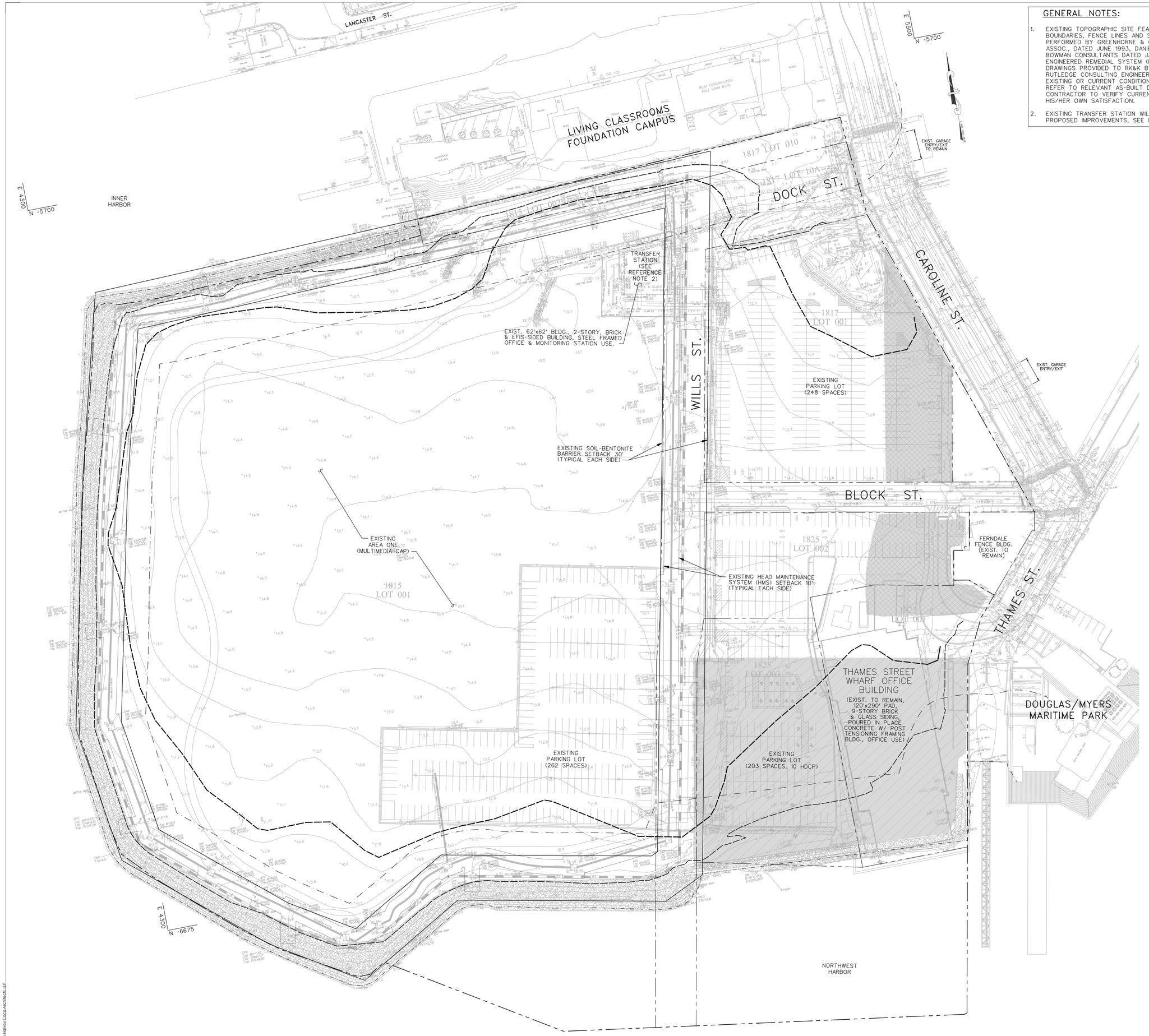
sheet number
DDP
C1.00



GENERAL NOTES:

1. EXISTING TOPOGRAPHIC SITE FEATURES SUCH AS (BUILDINGS, ROADS, PROPERTY BOUNDARIES, FENCE LINES AND SHORELINE PERIMETER) ARE BASED ON SURVEYS PERFORMED BY GREENHORNE & O'MARA, INC. DATED JAN. 2004, MORRIS RITCHIE ASSOC., DATED JUNE 1993, DANIEL CONSULTANTS, DATED MARCH 1999 AND BOWMAN CONSULTANTS DATED JAN. 2010. UTILITY INFORMATION (INCLUDING ENGINEERED REMEDIAL SYSTEM (ERS) COMPONENTS) WAS OBTAINED FROM RECORD DRAWINGS PROVIDED TO RK&K BY HONEYWELL, BALTIMORE CITY, AND MUESER RUTLEDGE CONSULTING ENGINEERS AND MAY NOT ACCURATELY REFLECT PRE-EXISTING OR CURRENT CONDITIONS. FOR EXACT LOCATIONS OF ERS COMPONENTS, REFER TO RELEVANT AS-BUILT DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION TO HIS/HER OWN SATISFACTION.
2. EXISTING TRANSFER STATION WILL BE MODIFIED AS NECESSARY TO ACCOMMODATE PROPOSED IMPROVEMENTS, SEE ENVIRONMENTAL DRAWINGS.

LEGEND

- SOIL–BENTONITE BARRIER
- HEAD MAINTENANCE SYSTEM PIPING
- WATER MAIN
- SANITARY SEWER
- STORM DRAIN
- TELECOMMUNICATIONS
- ELECTRICAL
- GAS MAIN
- WATER VALVE
- SANITARY MANHOLE
- STORM DRAIN MANHOLE
- TELECOM MANHOLE
- ELECTRICAL MANHOLE
- GAS VALVE
- FIRE HYDRANT
- CATCH BASIN
- LIGHT POLE
- TELE HANDBOX
- ELEC HANDBOX
- CLEANOUT
- EXTRACTION WELL VAULT
- PIEZOMETER SYSTEM
- CHAIN LINK FENCE
- RIP RAP
- CONTOUR (1' INTERVALS)
- SPOT ELEVATION
- EXISTING PROPERTY LINE
- 100 YEAR FLOODPLAIN (EL. 8.81)
- 500 YEAR FLOODPLAIN (EL. 11.4)
- 100' CRITICAL AREA BUFFER LINE
- MEAN HIGH WATER LINE (EL. 2.17)
- EXISTING AREA 2 SOIL CAP
- EXISTING AREA 3 SOIL CAP

PROGRESS SET NOT FOR CONSTRUCTION

40 0 40 80

SCALE: 1" = 40'

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8/1/13

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issued	date	description

revision	date	description

title
EXISTING CONDITIONS

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8/8/2013 9:23 AM

GENERAL NOTES:

1. EXISTING TOPOGRAPHIC SITE FEATURES SUCH AS (BUILDINGS, ROADS, PROPERTY BOUNDARIES, FENCE LINES AND SHORELINE PERIMETER) ARE BASED ON SURVEYS PERFORMED BY GREENHORNE & O'MARA, INC. DATED JAN. 2004, MORRIS RITCTHIE ASSOC., DATED JUNE 1993/MAY 2006 AND DANIEL CONSULTANTS, INC. DATED MARCH 1999. UTILITY INFORMATION (INCLUDING ENGINEERED REMEDIAL SYSTEM (ERS) COMPONENTS) WAS OBTAINED FROM RECORD DRAWINGS PROVIDED TO RK&K BY HONEYWELL, BALTIMORE CITY, AND MUESER RUTLEDGE CONSULTING ENGINEERS AND MAY NOT ACCURATELY REFLECT PRE-EXISTING OR CURRENT CONDITIONS. FOR EXACT LOCATIONS OF ERS COMPONENTS, REFER TO RELEVANT AS-BUILT DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION TO HIS/HER OWN SATISFACTION.
2. LIMIT OF DISTURBANCE IS APPROXIMATE AND DOES NOT RELIEVE THE CONTRACTOR OF GOING BEYOND THESE LIMITS AS REQUIRED TO COMPLETE ALL CONSTRUCTION REQUIREMENTS.
3. SEE ENVIRONMENTAL ENGINEERING AND FOUNDATION PLANS FOR EXTENT OF EXCAVATION INTO EXISTING SOIL CAPS AND DISPOSTION OF SOIL REMOVED.
4. SEE UTILITY DISPOSITION PLANS FOR INFORMATION ON EXISTING UTILITIES.
5. HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN
6. ALL EXISTING UTILITY STRUCTURE SURFACE FEATURES (INLETS, MANHOLES, ETC.) WITHIN THE LIMIT OF WORK TO BE ADJUSTED TO FINISHED GRADE UNLESS OTHERWISE NOTED.
7. THE CONTRACTOR SHALL CONTACT "MISS UTILITY", (1-800-257-7777) AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION ACTIVITIES.
8. THE CONTRACTOR IS REQUIRED TO OBTAIN ALL NECESSARY PERMITS FROM BALTIMORE CITY.
9. ALL PROPOSED WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF BALTIMORE CITY STANDARDS AND SPECIFICATIONS, UNLESS OTHERWISE NOTED.
10. ALL EXISTING FEATURES OUTSIDE THE LIMIT OF DISTURBANCE ARE TO REMAIN, UNLESS OTHERWISE NOTED. ITEMS OUTSIDE THESE LIMITS THAT ARE DAMAGED OR REMOVED BY THE CONTRACTOR SHALL BE RETURNED TO PRE-DEMOLITION CONDITIONS OR REPLACED IN-KIND AT NO ADDITIONAL COST TO THE OWNER.
11. A LICENSED HAULER WILL TRANSPORT THE CONTAMINATED MATERIAL TO A DESIGNATED LICENSED DISPOSAL SITE.

DEMOLITION NOTES:

1. REMOVE AND DISPOSE OFF-SITE THE FOLLOWING ITEMS LOCATED WITHIN THE LIMIT OF WORK. (UNLESS OTHERWISE NOTED IN ENVIRONMENTAL PLANS/SPECS):
   - CONCRETE CURB & GUTTER ADJACENT TO PAVEMENT REMOVAL
   - UTILITY FRAME AND COVERS ON ABANDONED UTILITY SYSTEMS
   - BITUMINOUS PAVEMENT/ CONCRETE PAVEMENT
   - CHAIN LINK/ WOODEN FENCE
   - CRUSHED STONE PAVEMENT
2. UNLESS OTHERWISE NOTED, REMOVE AND SALVAGE THE FOLLOWING ITEMS WITHIN THE LIMIT OF WORK. TRANSPORT ITEMS TO LOCATIONS IDENTIFIED BY OWNER:
   - CONCRETE WHEEL STOPS
   - TICKET SPITTERS
   - CHAIN LINK FENCE & GATES
   - STEEL BOLLARDS
   - CONCRETE TRAFFIC BARRIERS
   - LIGHT FIXTURES
   - BRICK PAVERS
3. CONTRACTOR SHALL SELECTIVELY REMOVE AREAS OF THE EXISTING BITUMINOUS PAVEMENT AND CRUSHED STONE PAVEMENT AS NECESSARY TO INSTALL PROPOSED FOUNDATIONS. EXISTING PAVEMENT TO REMAIN WHERE POSSIBLE – SEE FOUNDATION AND ENVIRONMENTAL ENGINEERING PLANS.
4. CONTRACTOR SHALL COORDINATE WITH HONEYWELL TO MAINTAIN EXISTING HEAD MAINTENANCE SYSTEM (HMS) OPERATIONS AT ALL TIMES. SEE UTILITY COMPOSITE PLAN FOR ADDITIONAL REQUIREMENTS.
5. EXISTING TRANSFER STATION WILL BE MODIFIED TO ACCOMMODATE PROPOSED BUILDINGS – SEE ARCHITECTURAL AND MEP DRAWINGS. TRANSFER STATION OPERATIONS MUST CONTINUE THROUGHOUT CONSTRUCTION AS REQUIRED FOR HMS PERFORMANCE.
6. DEMOLITION REQUIRED FOR EXISTING CENTRAL AVENUE/LANCASTER ST. AND PROPOSED CENTRAL AVENUE BRIDGE TO BE ACCOMMODATED BY OTHERS UNDER A SEPARATE CITY CONTRACT.
7. EX. RIPRAP EMBANKMENT TO REMAIN IN PLACE. CONTRACTOR SHALL NOT DISTURB WITHOUT PROPER AGENCY APPROVALS AND OWNER PERMISSION.
8. SEE DRAWING EN1.01 FOR DETAILS OF GAS VENT MODIFICATIONS.
9. FOR EXISTING ABANDONED FOUNDATION AND MISC. BELOW GRADE STRUCTURES DEMOLITION SEE DWG. F1.07, POTENTIAL OBSTRUCTIONS TO PILE FOUNDATIONS.
10. ADJUST SURFACE SOIL MONITORING POINT #4 TO FINAL GRADE ELEVATION – SEE ENVIRONMENTAL DRAWINGS.
11. REMOVE EXISTING LIGHT POLE MOUNTED TO HMS VAULT.

LEGEND

- EXISTING PROPERTY LINE
- LOD — LIMIT OF DISTURBANCE
- LOW — APPROX. LIMIT OF WORK
- EXISTING CONCRETE PAVEMENT TO BE REMOVED
- EXISTING BITUMINOUS PAVEMENT TO BE REMOVED
- EXISTING BRICK CROSSWALKS TO BE REMOVED

N.I.C.
PROPOSED CENTRAL AVENUE BRIDGE LIMIT OF WORK, SEE DEMOLITION NOTE 6

CENTRAL AVE.
LANCASTER ST.
LIVING CLASSROOMS FOUNDATION CAMPUS
PROPOSED WORK IN CITY PUBLIC RIGHT-OF-WAY TO BE COMPLETED UNDER DEVELOPER'S AGREEMENT #1328
DOCK ST.
WILLS ST.
CAROLINE ST.
THAMES ST.
BLOCK ST.
EXIST. TRANSFER STATION, SEE DEMOLITION NOTE 5
EXISTING PARKING LOT TO REMAIN
EXISTING AREA 1 MULTIMEDIA CAP
EXISTING AREA 3 SOIL CAP
EXISTING AREA 2 SOIL CAP
REMOVE & REPLACE CONCRETE BARRIER AND FENCE
REMOVE SECTION OF CONCRETE BARRIER AND FENCE TO INSTALL DRIVEWAY CONNECTION TO PROPOSED GARAGE
EXIST. FERNDALE FENCE BLDG. TO REMAIN
EXIST. THAMES ST. WHARF BLDG. TO REMAIN
DOUGLAS MYERS MARITIME PARK
TYP.

SCALE: 1" = 40'

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
(REVISED 11/12/13)

key plan

seal

issued	date	description
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title
SITE DEMOLITION PLAN

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drawn by:	DMB
checked by:	CDK
scale:	AS SHOWN
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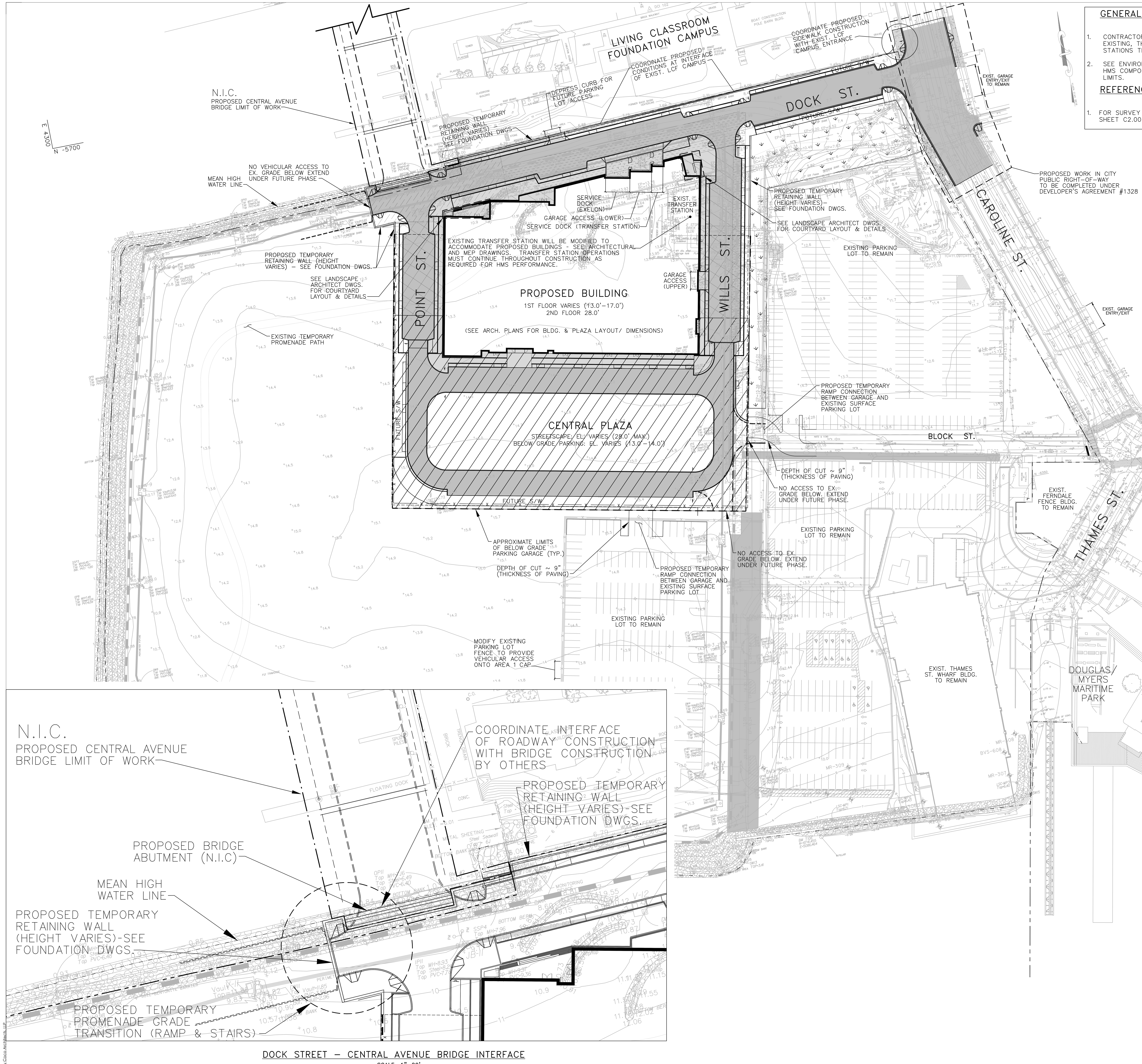
C2.00



LIVING CLASSROOM FOUNDATION CAMPUS
COORDINATE PROPOSED SIDEWALK CONSTRUCTION WITH EXIST. LCF CAMPUS ENTRANCE
COORDINATE PROPOSED CONDITIONS AT INTERFACE OF EXIST. LCF CAMPUS
DEPRESS CURB FOR FUTURE PARKING LOT ACCESS
N.I.C. PROPOSED CENTRAL AVENUE BRIDGE LIMIT OF WORK
PROPOSED TEMPORARY RETAINING WALL (HEIGHT VARIES) SEE FOUNDATION DWGS
DOCK ST.
EXIST. GARAGE ENTRY/EXIT TO REMAIN
NO VEHICULAR ACCESS TO EX. GRADE BELOW EXTEND UNDER FUTURE PHASE
MEAN HIGH WATER LINE
SERVICE DOCK (EXELON)
EXIST. TRANSFER STATION
GARAGE ACCESS (LOWER)
SERVICE DOCK (TRANSFER STATION)
EXISTING TRANSFER STATION WILL BE MODIFIED TO ACCOMMODATE PROPOSED BUILDINGS - SEE ARCHITECTURAL AND MEP DRAWINGS. TRANSFER STATION OPERATIONS MUST CONTINUE THROUGHOUT CONSTRUCTION AS REQUIRED FOR HMS PERFORMANCE.
PROPOSED TEMPORARY RETAINING WALL (HEIGHT VARIES) - SEE FOUNDATION DWGS.
SEE LANDSCAPE ARCHITECT DWGS. FOR COURTYARD LAYOUT & DETAILS
PROPOSED WORK IN CITY PUBLIC RIGHT-OF-WAY TO BE COMPLETED UNDER DEVELOPER'S AGREEMENT #1328
CAROLINE ST.
POINT ST.
WILLS ST.
PROPOSED BUILDING
1ST FLOOR VARIES (13.0'-17.0')
2ND FLOOR 28.0'
(SEE ARCH. PLANS FOR BLDG. & PLAZA LAYOUT/ DIMENSIONS)
GARAGE ACCESS (UPPER)
EXISTING PARKING LOT TO REMAIN
EXIST. GARAGE ENTRY/EXIT
EXISTING TEMPORARY PROMENADE PATH
CENTRAL PLAZA
STREETSCAPE: EL. VARIES (28.0' MAX.)
BELOW GRADE PARKING: EL. VARIES (13.0'-14.0')
FUTURE S/W
PROPOSED TEMPORARY RAMP CONNECTION BETWEEN GARAGE AND EXISTING SURFACE PARKING LOT
BLOCK ST.
DEPTH OF CUT ~ 9" (THICKNESS OF PAVING)
NO ACCESS TO EX. GRADE BELOW. EXTEND UNDER FUTURE PHASE.
EXIST. FERNDALE FENCE BLDG. TO REMAIN
THAMES ST.
APPROXIMATE LIMITS OF BELOW GRADE PARKING GARAGE (TYP.)
EXISTING PARKING LOT TO REMAIN
MODIFY EXISTING PARKING LOT FENCE TO PROVIDE VEHICULAR ACCESS ONTO AREA 1 CAP
EXIST. THAMES ST. WHARF BLDG. TO REMAIN
DOUGLAS/ MYERS MARITIME PARK
N.I.C. PROPOSED CENTRAL AVENUE BRIDGE LIMIT OF WORK
COORDINATE INTERFACE OF ROADWAY CONSTRUCTION WITH BRIDGE CONSTRUCTION BY OTHERS
PROPOSED TEMPORARY RETAINING WALL (HEIGHT VARIES)-SEE FOUNDATION DWGS.
PROPOSED BRIDGE ABUTMENT (N.I.C)
MEAN HIGH WATER LINE
PROPOSED TEMPORARY RETAINING WALL (HEIGHT VARIES)-SEE FOUNDATION DWGS.
PROPOSED TEMPORARY PROMENADE GRADE TRANSITION (RAMP & STAIRS)
DOCK STREET – CENTRAL AVENUE BRIDGE INTERFACE
SCALE: 1"=20'

GENERAL NOTES:

1. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED UTILITY SERVICE TO THE EXISTING, THE TEMPORARY, AND/OR THE PROPOSED PERMANENT TRANSFER STATIONS THROUGHOUT CONSTRUCTION.
2. SEE ENVIRONMENTAL AND STRUCTURAL DRAWINGS FOR ACCESS TO EXISTING HMS COMPONENTS (VAULTS, PIEZOMETERS, ETC.) WITHIN PROPOSED GARAGE LIMITS.

REFERENCE NOTES:

1. FOR SURVEY INFORMATION AND GENERAL NOTES, SEE GENERAL NOTES ON SHEET C2.00, DEMOLITION PLAN.

LEGEND

- EXISTING PROPERTY LINE
- PROPOSED SIDEWALK
- PROPOSED ROADWAY PAVEMENT
- PROPOSED DRIVEWAY APRON
- PROPOSED GARAGE ROOF DECK BELOW ROADWAY– SEE ARCH. & STRUC. DWGS.
- PROPOSED DECK (ACCESSIBLE VOID BELOW) – SEE ARCH. & STRUC. DWGS.
- PROPOSED 6" PROTECTIVE CONCRETE SLAB – SEE ARCH. & STRUC. DWGS.
- PROPOSED CONCRETE BRIDGE SLAB (ON GRADE) – SEE ARCH. & STRUC. DWGS.
- PROPOSED PILE SUPPORTED FILL – SEE FOUNDATION DWGS.
- PROPOSED MSE WALL – SEE FOUNDATION DWGS.
- PROPOSED CURB
- PROPOSED PEDESTRIAN RAMP
- PROPOSED TEMPORARY PEDESTRIAN & VEHICULAR BARRIER – SEE ARCH. & STRUC. DWGS.
- PROPOSED LAWN STABILIZATION – SEE EROSION/SEDIMENT CONTROL DWGS.

SCALE: 1" = 40'

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

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project: EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13

key plan

seal

issued date	description

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scale:	AS SHOWN
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GENERAL NOTES:

1. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED UTILITY SERVICE TO THE EXISTING, THE TEMPORARY, AND/OR THE PROPOSED PERMANENT TRANSFER STATIONS THROUGHOUT CONSTRUCTION.

REFERENCE NOTES:

1. FOR SURVEY INFORMATION AND GENERAL NOTES, SEE GENERAL NOTES ON SHEET C2.00, DEMOLITION PLAN.

HEAD MAINTENANCE SYSTEM

- (H-1) MODIFY EXISTING HEAD MAINTENANCE SYSTEM (HMS) TO PERMIT ACCESS INTO THE JUNCTION MANHOLES AND JUNCTION VAULTS FROM FINISHED GRADES, SEE ENVIRONMENTAL PLANS.
- (H-2) MODIFY EXISTING HEAD MAINTENANCE SYSTEM (HMS) INBOARD AND OUTBOARD PIEZOMETERS ACCESS.
- (H-3) MODIFY DRAINAGE LAYER/SOIL SETTLEMENT MONITORING STATIONS AS REQUIRED, SEE ENVIRONMENTAL PLANS.
- (H-4) MODIFY EXISTING GAS VENT, SEE ENVIRONMENTAL PLANS.
- (H-5) EXISTING HEAD MAINTENANCE SYSTEM (HMS) INSTRUMENTATION/GROUNDWATER CONTAINMENT PIPE LINES TO REMAIN UNDISTURBED, UNLESS OTHERWISE NOTED.
- (H-6) THE EXISTING HEAD MAINTENANCE SYSTEM (HMS) SOIL BENTONITE BARRIER TO REMAIN UNDISTURBED, UNLESS OTHERWISE NOTED.
- (H-7) SEE DWG EN1.01 FOR DISPOSITION OF EXISTING HEAD MAINTENANCE SYSTEM (HMS)
- (H-8) EXISTING DEEP WELL TO BE ABANDONED. SEE ENVIRONMENTAL DRAWINGS.

SANITARY SYSTEM

- (S-1) EXISTING SANITARY LINE TO REMAIN UNDISTURBED.
- (S-2) EXISTING SANITARY MANHOLE STRUCTURE TO REMAIN UNDISTURBED.
- (S-3) ABANDON/REMOVE EXISTING SANITARY LINE. PLUG AT EXISTING MANHOLE.
- (S-4) ABANDON/REMOVE EXISTING SANITARY MANHOLE.

GAS SYSTEM

- (G-1) EXISTING GAS LINE TO BE ABANDONED BY BGE, GAS LINE TO BE REMOVED AS REQUIRED BY THE CONTRACTOR

ELECTRIC SYSTEM

- (E-1) ABANDON/REMOVE EXISTING ELECTRIC CONDUIT RUN.
- (E-2) EXISTING PAD MOUNTED XFMR TO REMAIN UNDISTURBED.
- (E-3) EXISTING BOARD MOUNTED ELECTRICAL PANELS AND EQUIPMENT TO REMAIN UNDISTURBED.
- (E-4) EXISTING PRIMARY ELECTRIC CONDUIT SYSTEM TO REMAIN UNDISTURBED.
- (E-5) EXISTING PARKING LOT LIGHTING SYSTEM, LIGHT STANDARDS AND CONDUIT RUNS TO "E-3" TO REMAIN UNDISTURBED.
- (E-6) EXISTING CITY CONDUIT MANHOLE TO REMAIN UNDISTURBED.
- (E-7) EXISTING CITY DUCTBANK TO REMAIN UNDISTURBED.
- (E-8) EXISTING BGE SWITCHGEAR VAULT TO REMAIN UNDISTURBED.
- (E-9) EXISTING PRIVATE ELECTRICAL DUCTBANK TO REMAIN UNDISTURBED.
- (E-10) ABANDON/REMOVE EXISTING HANDOXES AND CONDUIT RUNS FOR CITY LIGHTING/TRAFFIC FACILITIES.
- (E-11) ABANDON/REMOVE EXISTING GATE CONTROL CONDUIT RUN.

WATER SYSTEM

- (W-1) ABANDON/REMOVE EXISTING WATER LINE.
- (W-2) REMOVE EXISTING WATER METER VALULT FOR TRANSFER STATION.
- (W-3) REMOVE EXISTING FIRE HYDRANT.
- (W-4) REMOVE EXISTING 10" VALVE AND SPACER PIPE FROM EXISTING 12"X10" TEE, INSTALL MJ PLUG IN BRANCH RUN OF TEE.

TELECOM SYSTEM

- (T-1) EXISTING VERIZON DUCTBANK TO REMAIN UNDISTURBED.
- (T-2) EXISTING VERIZON CONDUIT MANHOLE TO REMAIN UNDISTURBED.
- (T-3) EXISTING VERIZON REMOTE TERMINAL "RT" FACILITY TO REMAIN UNDISTURBED.
- (T-4) EXISTING TELECOM DUCTBANK TO BE ABANDONED BY VERIZON, DUCTBANK TO BE REMOVED AS REQUIRED BY THE CONTRACTOR.
- (T-5) ABANDON/REMOVE EXISTING VERIZON CONDUIT MANHOLE.
- (T-6) EXISTING PRIVATE TELECOM DUCTBANK TO REMAIN UNDISTURBED.

CITY LIGHTING SYSTEM

- (L-1) REMOVE EXISTING 12' DECORATIVE FIXTURE AND POLE.
- (L-2) EXISTING 32' INNER HARBOR LIGHT POLE TO REMAIN UNDISTURBED.
- (L-3) EXISTING 12' DECORATIVE FIXTURE AND POLE TO REMAIN UNDISTURBED.

STORM DRAINAGE SYSTEM

- (SD-1) EXISTING STORM DRAIN OUTLET PIPING SYSTEM FOR STORM WATER MANAGEMENT POND TO REMAIN UNDISTURBED
- (SD-2) ABANDON/REMOVE EXISTING STORM DRAIN PIPE RUNS.
- (SD-3) ABANDON/REMOVE EXISTING STORM DRAIN MANHOLE STRUCTURE.
- (SD-4) MAINTAIN IN SERVICE THE EXISTING STORM DRAIN MANHOLE/INLET STRUCTURE.
- (SD-5) ABANDON/REMOVE EXISTING STORM DRAIN INLET.
- (SD-6) EXISTING STORM DRAIN PIPE RUN TO REMAIN UNDISTURBED.
- (SD-7) EXISTING STORM DRAIN INLET TO REMAIN UNDISTURBED.

LEGEND

- EXISTING UTILITY SYSTEM TO BE ABANDONED
- EXISTING UTILITY SYSTEM PRESENTLY ABANDONED
- (X-1) UTILITY DISPOSITION CALLOUT

PROGRESS SET NOT FOR CONSTRUCTION

SCALE: 1" = 40'

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13

key plan

seal

issued	date	description

revision	date	description

title
EXISTING UTILITY DISPOSITION PLAN

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checked by:	CDK
scale:	AS SHOWN
project number:	09738.00
	scaled pitch

sheet number
DDP
C5.00

GENERAL NOTES:

1. CONTRACTOR SHALL COORDINATE WITH HONEYWELL ON ANY MODIFICATIONS REQUIRED TO THE EXISTING HMS SYSTEM, INCLUDING PIEZOMETERS, JUNCTION BOXES & MONITORING WELLS. SEE ENVIRONMENTAL DRAWINGS FOR DETAILS.
2. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED UTILITY SERVICE TO THE EXISTING, THE TEMPORARY, AND/OR THE PROPOSED PERMANENT TRANSFER STATION THROUGHOUT CONSTRUCTION.
3. FOR EXISTING UTILITY DISPOSITION, SEE SHEET C5.00, EXISTING UTILITY DISPOSITION.

REFERENCE NOTES:

1. FOR SURVEY INFORMATION AND GENERAL NOTES, SEE GENERAL NOTES ON SHEET C2.00, DEMOLITION PLAN.

UTILITY NOTES:

(U-1) LOCATION FOR PROPOSED WATER, SANITARY, STORM DRAIN AND TELECOM/ELECTRIC DUCTBANK SERVICES TO THE GARAGE AND EXELON BUILDING. COORDINATE SIZE AND LOCATION OF SERVICES WITH MEP DRAWINGS. SEE MEP DRAWINGS FOR INTERIOR PIPE AND CONDUIT RUNS.

(U-2) FUTURE UTILITY SYSTEM TO BE INSTALLED UNDER NEW BLOCK STREET CONSTRUCTION.

(SD-1) POSSIBLE CONFIGURATION FOR PROPOSED ROADWAY DRAINAGE PIPING SYSTEM WITHIN THE GARAGE STRUCTURE. PROPOSED STANDARD ROADWAY INLETS WITHIN THE GARAGE ROOF SLAB.

(W-1) POSSIBLE LOCATION FOR PROPOSED FIRE HYDRANT AT ROADWAY SURFACE.

LEGEND

- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN MH
- PROPOSED INLET
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY SEWER MH
- PROPOSED WATER MAIN
- PROPOSED FIRE HYDRANT
- PROPOSED ELECTRIC DUCT
- PROPOSED ELECTRIC VAULT
- PROPOSED TELECOM DUCT (BY OTHERS)
- PROPOSED TELECOM VAULT
- PROPOSED BGE GAS (BY OTHERS)
- GVP PROPOSEDE BGE GAS VENT POST (BY OTHERS)

PROGRESS SET NOT FOR CONSTRUCTION

40 0 40 80

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
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key plan

seal

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UTILITY COMPOSITE PLAN

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GENERAL NOTES:

1. CONTRACTOR SHALL MAINTAIN UNINTERRUPTED UTILITY SERVICE TO THE EXISTING, THE TEMPORARY, AND/OR THE PROPOSED PERMANENT TRANSFER STATION THROUGHOUT CONSTRUCTION.
2. FOR EXISTING UTILITY DISPOSITION, SEE SHEET C5.00, EXISTING UTILITY DISPOSITION.
3. SEE MECHANICAL/ELECTRICAL/PLUMBING (MEP) DRAWINGS AND COORDINATE UTILITY SERVICE CONNECTION LOCATIONS AND ELEVATIONS. FURNISH AND INSTALL ADAPTERS AND/OR CONNECTIONS AS REQUIRED TO TIE INTO M/E/P SYSTEMS.
4. SEE MEP DRAWINGS FOR UTILITY SYSTEMS WITHIN THE PROPOSED GARAGE.
5. CONTACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL EXISTING AND PROPOSED BUILDING ENTRANCES DURING ALL PHASES OF CONSTRUCTION. CONTRACTOR SHALL NOTIFY ENGINEER/OWNER IF EXISTING OR PROPOSED CONDITIONS RESTRICT ABILITY TO ACHIEVE POSITIVE DRAINAGE FROM BUILDINGS PRIOR TO THE START OF CONSTRUCTION.

REFERENCE NOTES:

1. FOR SURVEY INFORMATION AND GENERAL NOTES, SEE GENERAL NOTES ON SHEET C2.00, DEMOLITION PLAN.

UTILITY NOTES:

(U-1) LOCATION FOR PROPOSED WATER, SANITARY, STORM DRAIN AND TELECOM/ELECTRIC DUCTBANK SERVICES TO THE GARAGE AND EXELON BUILDING. COORDINATE SIZE AND LOCATION OF SERVICES WITH MEP DRAWINGS. SEE MEP DRAWINGS FOR INTERIOR PIPE AND CONDUIT RUNS.

(SD-1) POSSIBLE CONFIGURATION FOR PROPOSED ROADWAY DRAINAGE PIPING SYSTEM WITHIN THE GARAGE STRUCTURE. PROPOSED STANDARD ROADWAY INLET WITHIN THE GARAGE ROOF SLAB.

LEGEND

- EXISTING PROPERTY LINE
- LOD — LIMIT OF DISTURBANCE
- PROPOSED STORM DRAIN INLET
- PROPOSED TRENCH DRAIN
- PROPOSED CONTOUR (1' INTERVAL)
- PROPOSED SPOT ELEVATION
- PROPOSED GARAGE LIMITS
- LOW — APPROX. LIMIT OF WORK

SCALE: 1" = 40'

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
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8/1/13
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title
STORM DRAIN & GRADING PLAN

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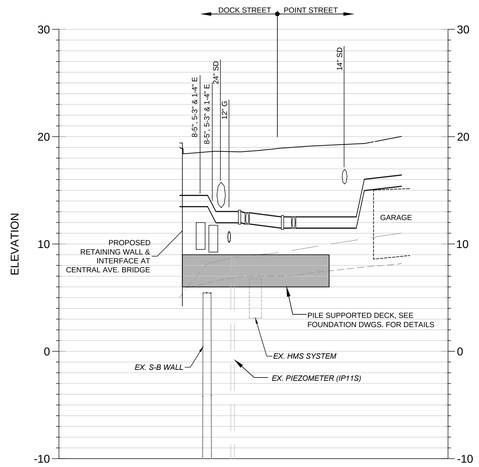
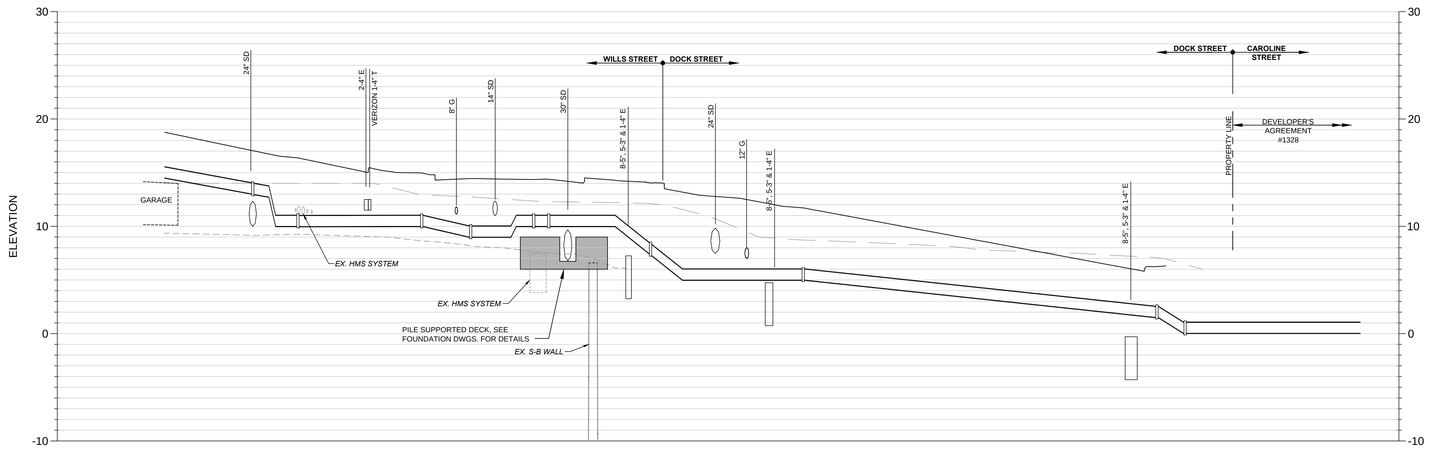
drawn by:	DMB
checked by:	CDK
scale:	AS SHOWN
project number:	09738.00

sheet number
DDP
C5.20



PROFILE 'A' -12in DIP (CL. 54) WATER (DOCK ST. & POINT ST.)



PROFILE 'B' - 12in DIP (CL. 54) WATER (WILLS ST. & DOCK ST.)

GENERAL NOTES:

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MULTIMEDIA CAP MODIFICATIONS

FOR ALL AREAS WHERE PROPOSED UTILITIES REQUIRE MODIFICATIONS TO THE MULTIMEDIA CAP, SEE FOUNDATION DRAWING F1.32 FOR DETAILS

PROFILE LEGEND

- PROPOSED SURFACE
- EXISTING SURFACE
- EXISTING GEOMEMBRANE SURFACE
- EXISTING RIP RAP EMBANKMENT

20 0 20 40
HORIZONTAL SCALE: 1" = 20'

5 0 5 10
VERTICAL SCALE: 1" = 5'

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

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EXELON BLDG &
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sheet number	scaled inch

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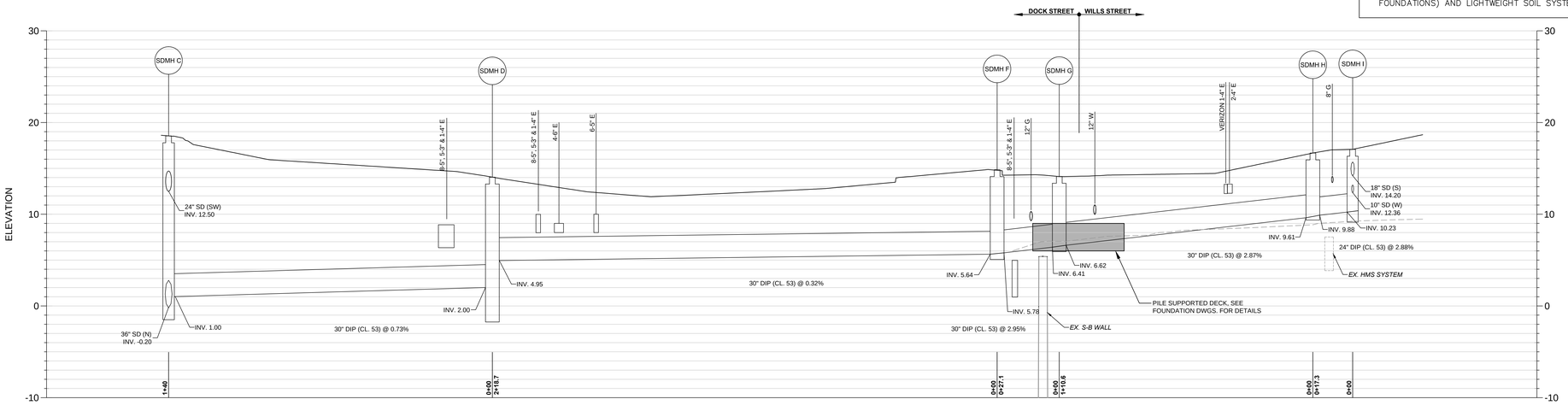
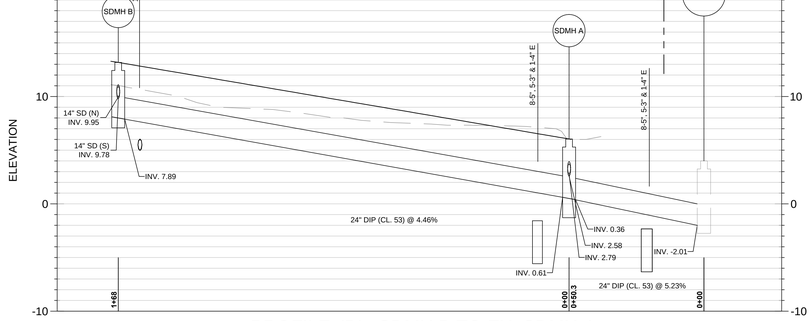
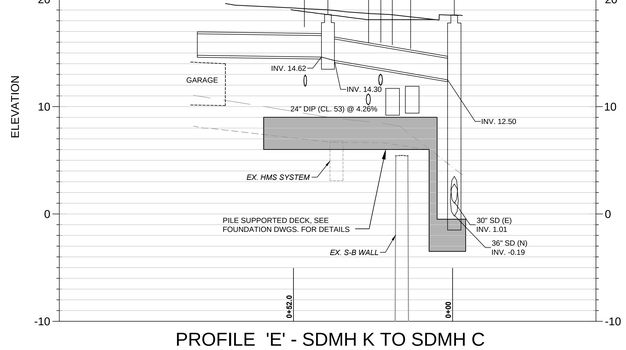


PROFILE 'C' - SDMH C to SDMH I



PROFILE 'D' - SDMH B TO EX. SDMH 4



PROFILE 'E' - SDMH K TO SDMH C

PROFILE LEGEND

- PROPOSED SURFACE
- EXISTING SURFACE
- EXISTING GEOMEMBRANE SURFACE
- EXISTING RIP RAP EMBANKMENT

20 0 20 40
HORIZONTAL SCALE: 1" = 20'

5 0 5 10
VERTICAL SCALE: 1" = 5'

MULTIMEDIA CAP MODIFICATIONS

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
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8/1/13
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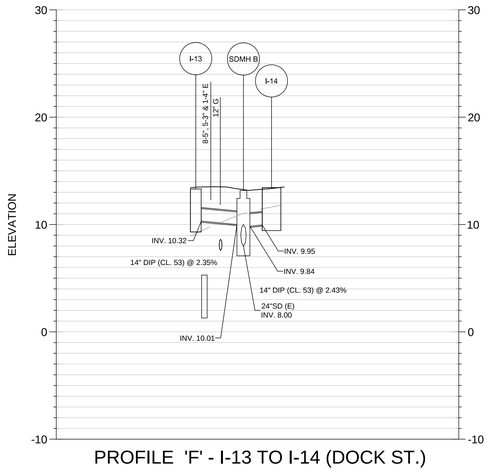
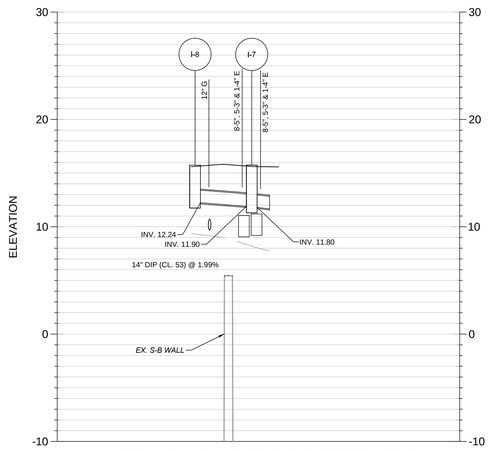
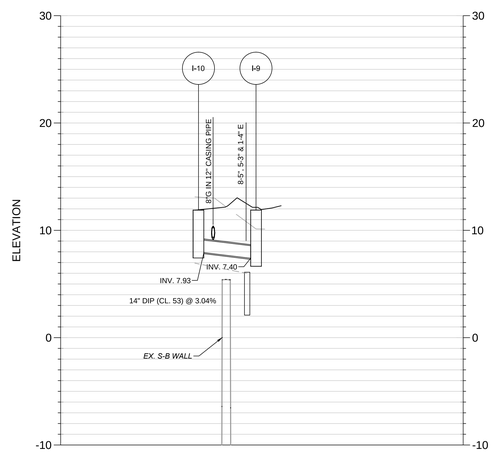


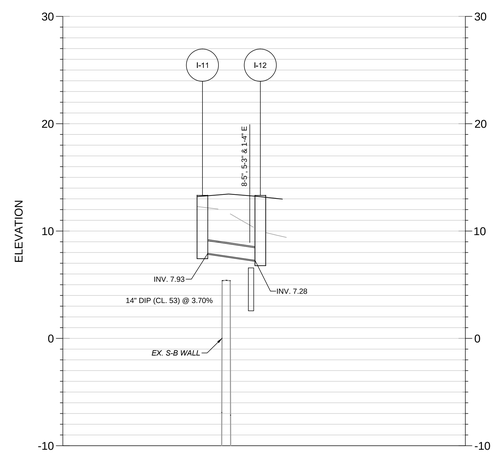
PROFILE 'F' - I-13 TO I-14 (DOCK ST.)



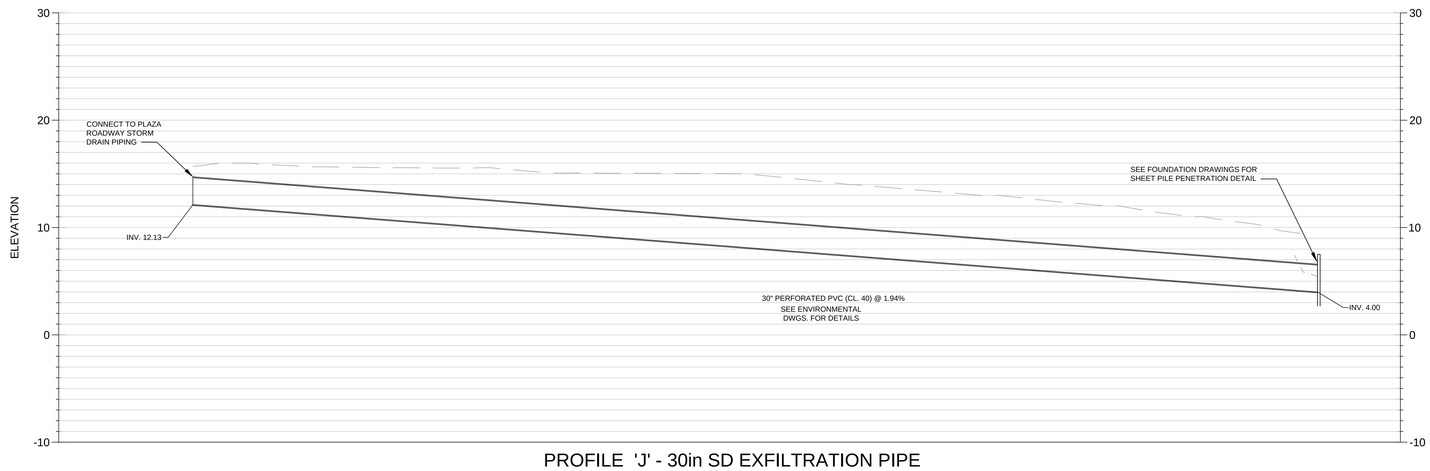
PROFILE 'G' - I-8 TO I-7 (DOCK ST.)



PROFILE 'H' - I-10 TO I-9 (DOCK ST.)



PROFILE 'I'-11 TO I-12 (DOCK ST.)



PROFILE 'J' - 30in SD EXFILTRATION PIPE

GENERAL NOTES:

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PROFILE LEGEND

- PROPOSED SURFACE
- EXISTING SURFACE
- EXISTING GEOMEMBRANE SURFACE
- EXISTING RIP RAP EMBANKMENT

20 0 20 40
HORIZONTAL SCALE: 1" = 20'

5 0 5 10
VERTICAL SCALE: 1" = 5'

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EXELON BLDG & PLAZA GARAGE

HARBOR POINT
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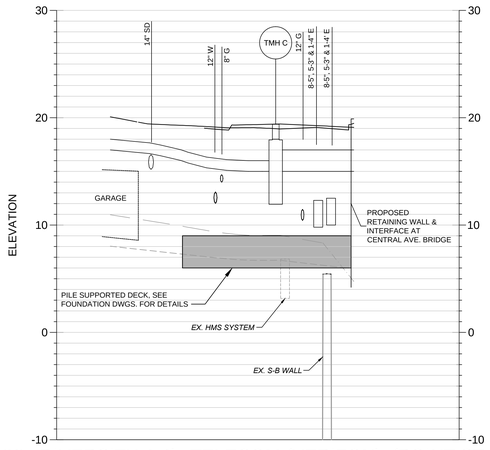
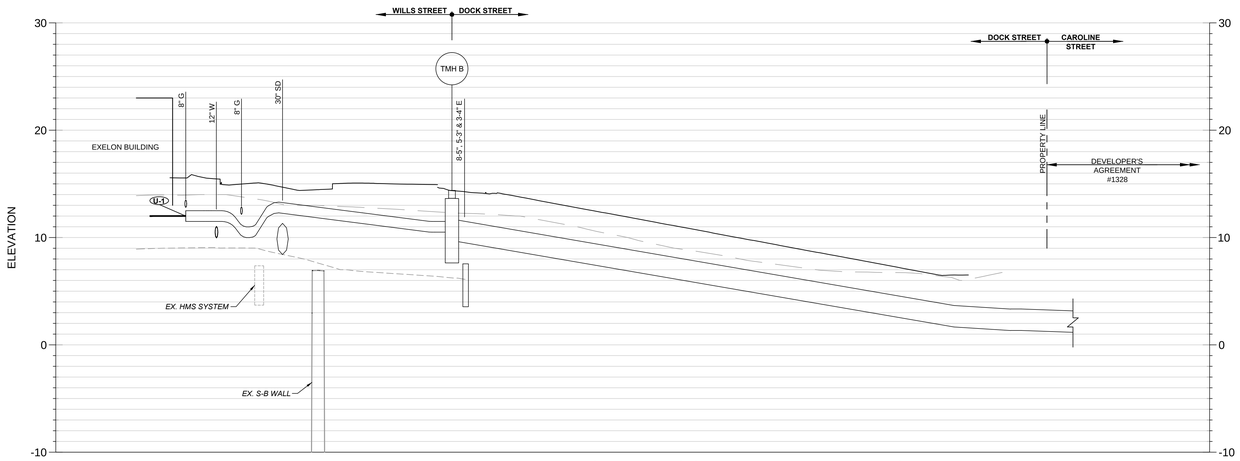


PROFILE 'K' - DIVERSITY 4-4in TELECOM (VERIZON) (POINT ST. & DOCK ST.)



PROFILE 'L' - TELECOM (VERIZON) (WILLS ST. & DOCK ST.)

PROFILE LEGEND

- PROPOSED SURFACE
- EXISTING SURFACE
- EXISTING GEOMEMBRANE SURFACE
- EXISTING RIP RAP EMBANKMENT

20 0 20 40
HORIZONTAL SCALE: 1" = 20'

5 0 5 10
VERTICAL SCALE: 1" = 5'

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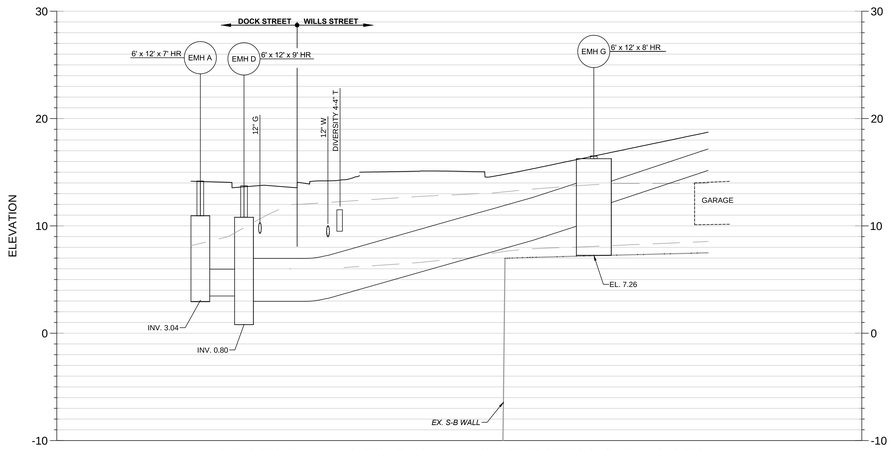
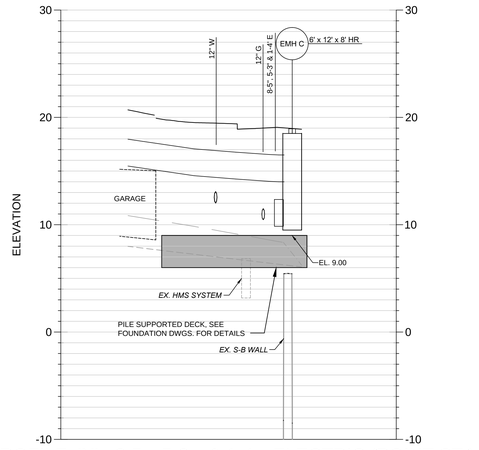


PROFILE 'M' - 8-5in 5-3in & 1-4in ELECTRIC (WILLS ST.)



PROFILE 'N' - 8-5in 5-3in & 1-4in ELECTRIC (POINT ST.)

GENERAL NOTES:

1. SEE MECHANICAL/ELECTRICAL/PLUMBING DRAWINGS AND COORDINATE UTILITY SERVICE CONNECTION LOCATIONS AND ELEVATIONS. FURNISH AND INSTALL ADAPTERS AND/OR CONNECTIONS AS REQUIRED TO TIE INTO M/E/P SYSTEMS.
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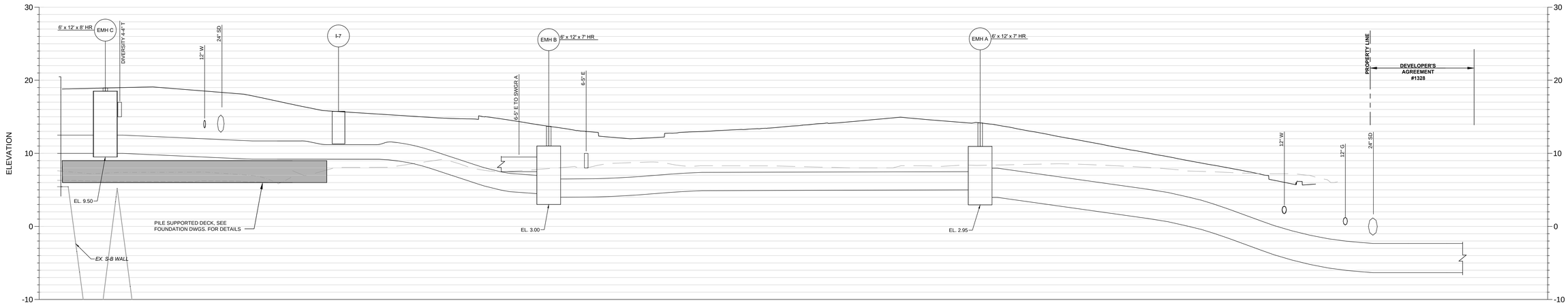
PROFILE LEGEND

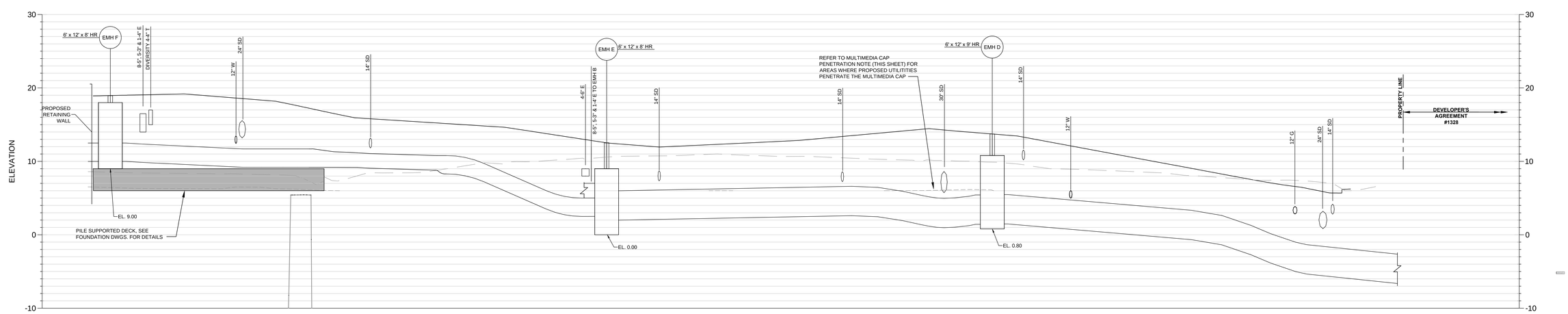
- PROPOSED SURFACE
- EXISTING SURFACE
- EXISTING GEOMEMBRANE SURFACE
- EXISTING RIP RAP EMBANKMENT

HORIZONTAL SCALE: 1" = 20'

VERTICAL SCALE: 1" = 5'



PROFILE 'O' - EMH C TO CONNECTION IN CAROLINE ST. (DOCK ST.)



PROFILE 'P' - EMH F TO CONNECTION IN CAROLINE ST. (DOCK ST.)

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

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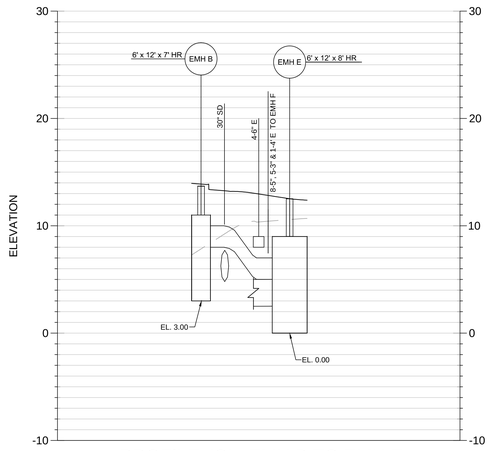
1	11/12/13	REVISIONS PER EPA/MDE 10/31/13 COMMENTS

revision	date	description

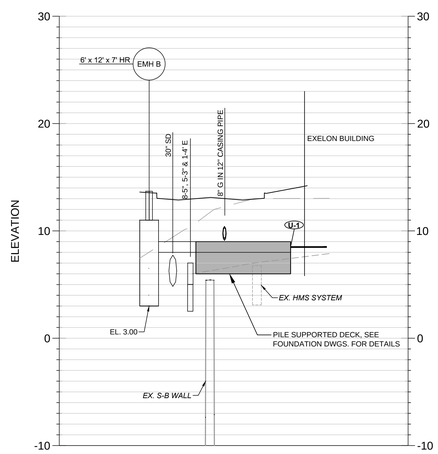
title
ELECTRIC
PROFILES &
DETAILS

date:	08-06-13
drawn by:	DMB
checked by:	CDK
scale:	AS SHOWN
project number:	09738.00

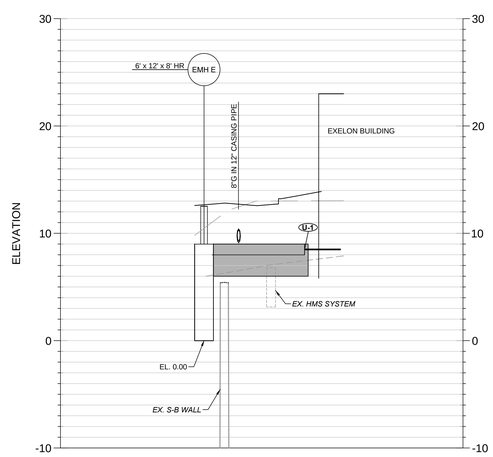
sheet number
DDP
C7.30



PROFILE 'Q' - EMH B TO EMH E



PROFILE 'R' - EMH B TO BLDG



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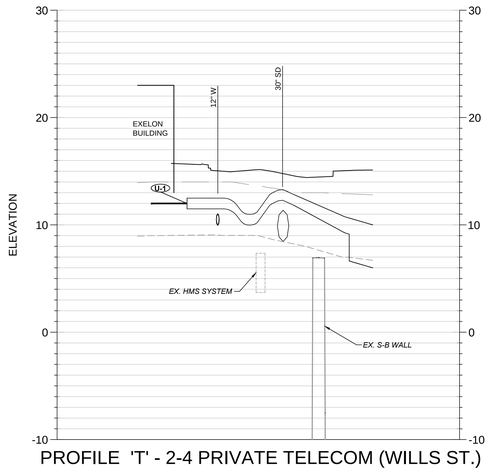

PROFILE 'T' - 2-4 PRIVATE TELECOM (WILLS ST.)

GENERAL NOTES:

1. SEE MECHANICAL/ELECTRICAL/PLUMBING DRAWINGS AND COORDINATE UTILITY SERVICE CONNECTION LOCATIONS AND ELEVATIONS. FURNISH AND INSTALL ADAPTERS AND/OR CONNECTIONS AS REQUIRED TO TIE INTO M/E/P SYSTEMS.
2. FOR UTILITY WORK ABOVE THE PROPOSED PLAZA GARAGE ROOF DECK, CONTRACTOR SHALL DEVELOP AND SUBMIT FOR APPROVAL COORDINATION DRAWINGS. COORDINATION DRAWINGS SHALL INCLUDE ALL PROPOSED UTILITY WORK IN ADDITION TO PROPOSED LANDSCAPE ARCHITECTURAL FEATURES (PLANTINGS, TREE PITS, SITE FURNISHINGS AND ASSOCIATED FOUNDATIONS) AND LIGHTWEIGHT SOIL SYSTEMS AS PROPOSED BY STRUCTURAL ENGINEER.

UTILITY NOTES:

(U-1) LOCATION FOR PROPOSED WATER, SANITARY, STORM DRAIN AND TELECOM/ELECTRIC DUCTBANK SERVICES TO THE GARAGE AND EXELON BUILDING. COORDINATE SIZE AND LOCATION OF SERVICES WITH MEP DRAWINGS. SEE MEP DRAWINGS FOR INTERIOR PIPE AND CONDUIT RUNS.

MULTIMEDIA CAP MODIFICATIONS

FOR ALL AREAS WHERE PROPOSED UTILITIES REQUIRE MODIFICATIONS TO THE MULTIMEDIA CAP, SEE FOUNDATION DRAWING F1.32 FOR DETAILS

⚠

PROFILE LEGEND

- PROPOSED SURFACE
- EXISTING SURFACE
- EXISTING GEOMEMBRANE SURFACE
- EXISTING RIP RAP EMBANKMENT

20 0 20 40
HORIZONTAL SCALE: 1" = 20'

5 0 5 10
VERTICAL SCALE: 1" = 5'

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

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structural engineer:
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P 410-728-2900

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P 410-235-6001

environmental engineer:
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P 410 266 0006

project
EXELON BLDG &
PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
(REVISED 11/12/13)

key plan

seal

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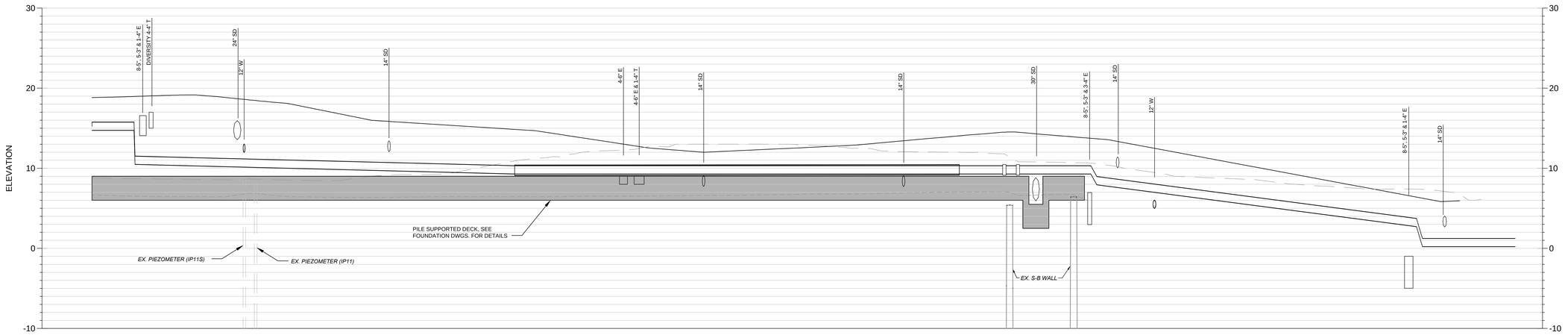
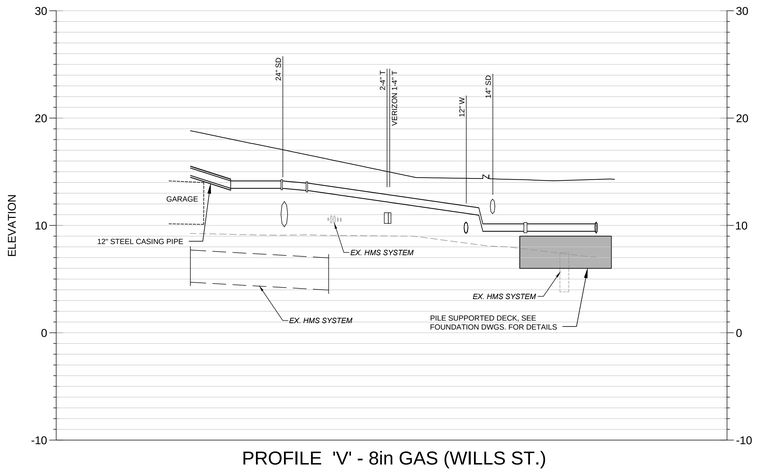
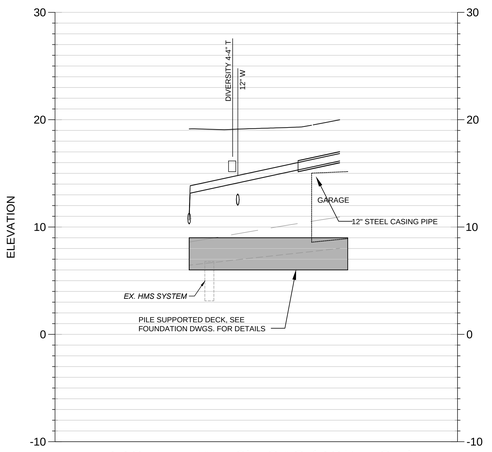
WORK SHOWN ON THIS DRAWING IS BY OTHERS (BGE). PROFILE SHOWS CONCEPTUAL ALIGNMENT TO BE FINALIZED BY BALTIMORE GAS & ELECTRIC.



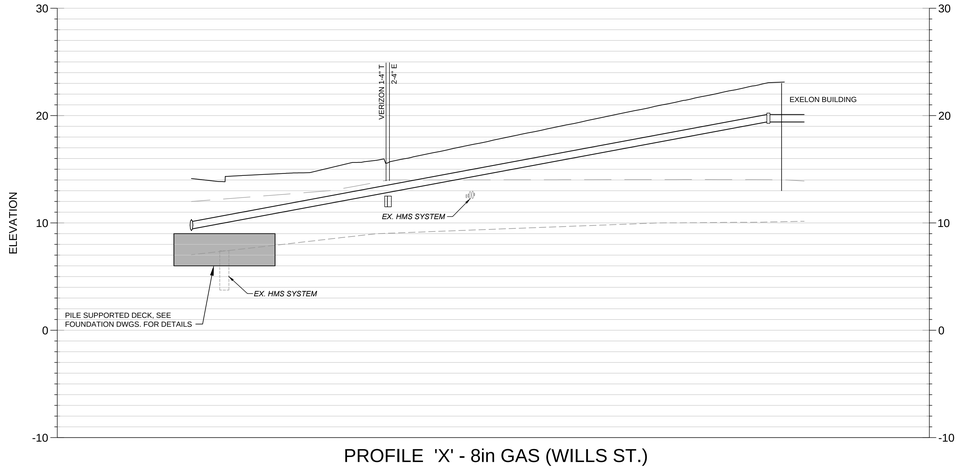
PROFILE 'U' - 12in GAS (DOCK ST.)



PROFILE 'V' - 8in GAS (WILLS ST.)



PROFILE 'W' - 8in GAS (POINT ST.)



PROFILE 'X' - 8in GAS (WILLS ST.)

MULTIMEDIA CAP MODIFICATIONS

FOR ALL AREAS WHERE PROPOSED UTILITIES REQUIRE MODIFICATIONS TO THE MULTIMEDIA CAP, SEE FOUNDATION DRAWING F1.32 FOR DETAILS

PROFILE LEGEND

- PROPOSED SURFACE
- EXISTING SURFACE
- EXISTING GEOMEMBRANE SURFACE
- EXISTING RIP RAP EMBANKMENT

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HORIZONTAL SCALE: 1" = 20'

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CONCEPTUAL GAS PROFILES

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project number:	09738.00

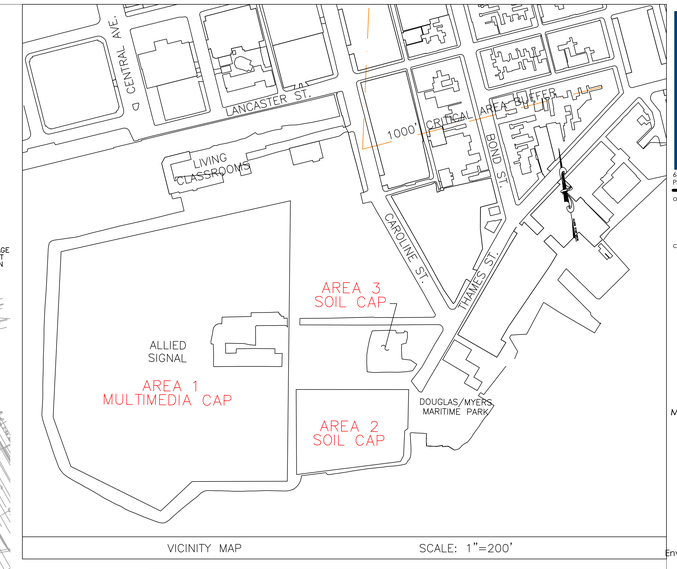
sheet number
DDP
C7.40

SITEWORK STABILIZATION SCHEDULE			
AREA	SQ. FT.	STABILIZATION TYPE	SEQUENCE
(A) BUILDING	68,065	EXCAVATION (TEMPORARY) BLDG. FOUNDATION (PERMANENT)	7 11
(B) STABILIZED CONSTRUCTION ENTRANCE	1,602	STONE BASE (TEMPORARY) BIT. PAVEMENT/TEMP. SEEDING (PERMANENT)	5 18
(C) STOCKPILE AREA	10,000	STONE BASE (TEMPORARY) SEE SITE PLAN (PERMANENT)	5 18
(D) STAGING AREA/ DECONTAMINATION PAD	11,740	STONE BASE (TEMPORARY) SEE SITE PLAN (PERMANENT)	5 18
(E) ROADWAY	80,680	STONE BASE (TEMPORARY) SEE SITE PLAN (PERMANENT)	13 14
(F) CURBS & SIDEWALK	53,130	STONE BASE (TEMPORARY) SEE SITE/LANDSCAPE PLAN (PERMANENT)	13 14
(G) LANDSCAPED AREAS	85,813	TEMPORARY SEEDING (TEMPORARY) SEE LANDSCAPE PLAN (PERMANENT)	13 15

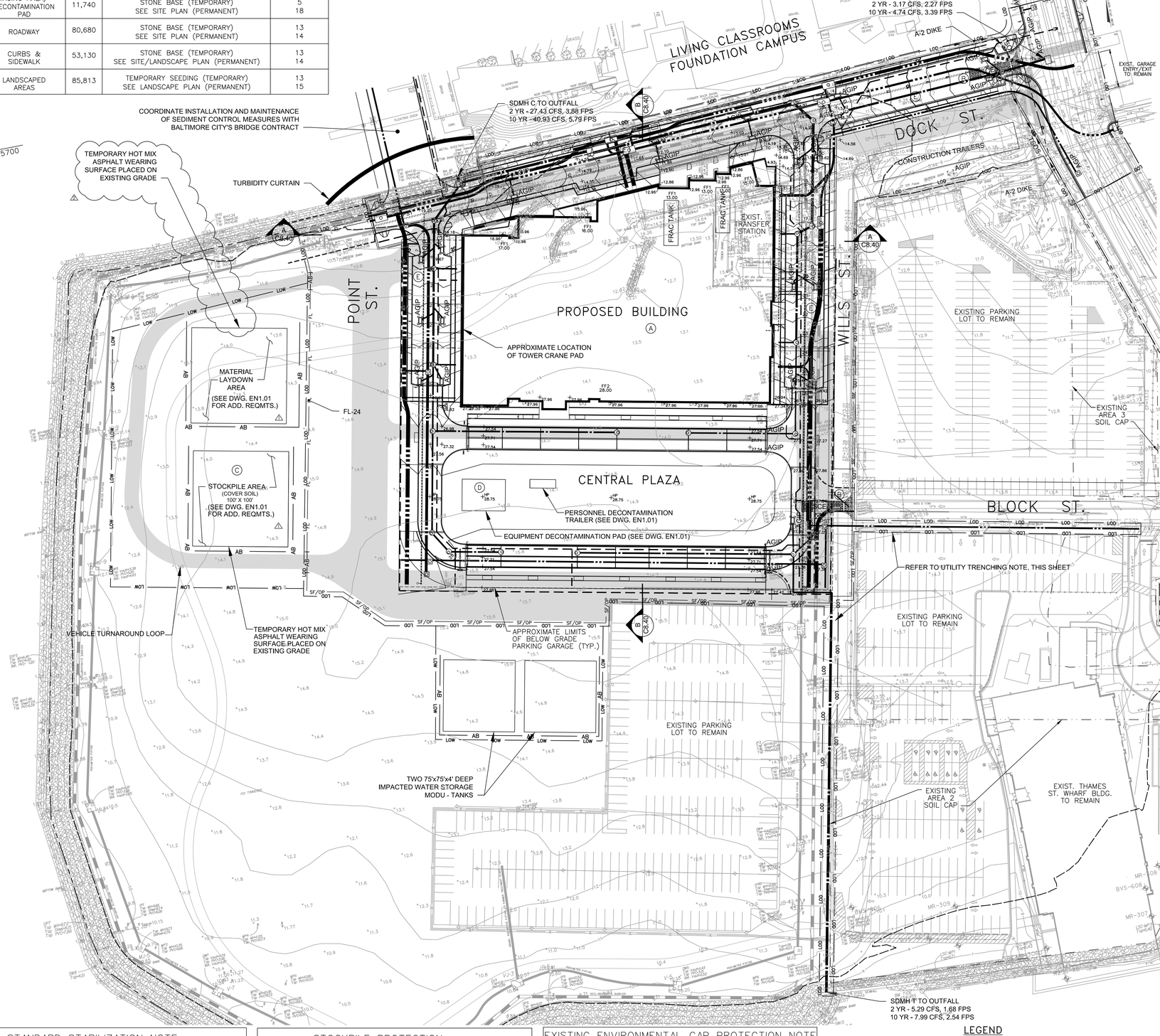
GRADING SUMMARY*

TOTAL DISTURBED AREA	339,938 SQ. FT.
TOTAL CUT	13,000 CY
TOTAL FILL	6,000 CY
CUT/FILL RATIO	1:2

* DATA IS APPROXIMATE AND IS PROVIDED FOR BALTIMORE CITY REVIEW ONLY. CONTRACTOR TO VERIFY DATA AND NOTIFY ENGINEER OF ANY DISCREPANCIES.

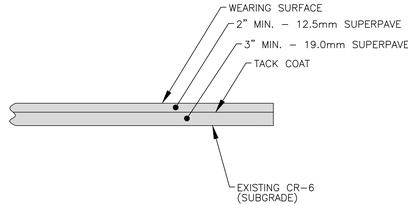


VICINITY MAP SCALE: 1"=200'



GENERAL NOTES:

1. EXISTING TOPOGRAPHIC SITE FEATURES SUCH AS (BUILDINGS, ROADS, PROPERTY BOUNDARIES, FENCE LINES AND SHORELINE PERIMETER) ARE BASED ON SURVEYS PERFORMED BY GREENHORNE & O'MARA, INC. DATED JAN. 2004, MORRIS RITCHIE ASSOC., DATED JUNE 1993, DANIEL CONSULTANTS, DATED MARCH 1999 AND BOWMAN CONSULTANTS DATED JAN. 2010. UTILITY INFORMATION (INCLUDING ENGINEERED REMEDIAL SYSTEM (ERS) COMPONENTS) WAS OBTAINED FROM RECORD DRAWINGS PROVIDED TO RK&K BY HONEYWELL, BALTIMORE CITY, AND MUESSER RUTLEDGE CONSULTING ENGINEERS AND MAY NOT ACCURATELY REFLECT PRE-EXISTING OR CURRENT CONDITIONS. FOR EXACT LOCATIONS OF ERS COMPONENTS, REFER TO RELEVANT AS-BUILT DRAWINGS. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY CURRENT TOPOGRAPHIC AND UTILITY INFORMATION TO HIS/HER OWN SATISFACTION.
2. ALL EROSION AND SEDIMENT CONTROL MEASURES AND PROCEDURES SHALL BE IN ACCORDANCE WITH THE 2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL.
3. TEMPORARY SUMPS WILL BE LOCATED AS REQUIRED TO PROVIDE DRY SUBGRADE FOR FOUNDATION AND UTILITY INSTALLATIONS. STORM WATER GENERATED WILL BE TEMPORARILY STORED AND TESTED PRIOR TO DISCHARGE TO STORM SEWER IN ACCORDANCE WITH THE PROJECT CONTROL DOCUMENT "MATERIALS HANDLING AND MANAGEMENT PLAN".
4. THE CONTRACTOR'S STAGING AND TEMPORARY STOCKPILE AREA MUST BE LOCATED WITHIN THE PROPOSED LIMIT OF WORK. ALL STOCKPILES SHALL BE COVERED TO PREVENT WINDBLOWN DUST FROM LEAVING THE CONSTRUCTION SITE.
5. CONTRACTOR SHALL VERIFY TYPE OF EXISTING INLETS (AT GRADE, CURB INLET, ETC.) AND APPLY APPROPRIATE INLET PROTECTION.
6. SEE MATERIALS HANDLING AND MANAGEMENT PLAN FOR EXCAVATED MATERIALS TESTING, REUSE AND DISPOSAL PROCEDURES.
7. CONTRACTOR SHALL PROVIDE POSITIVE DRAINAGE AWAY FROM ALL BUILDING ENTRIES AT ALL TIMES DURING CONSTRUCTION.
8. AS SHOWN ON PLAN, WASH RACKS SHALL BE OUTLET TO PORTABLE SEDIMENT TANKS.
9. CONTRACTOR TO REPAIR IN-KIND ALL PAVEMENT REMOVAL AREAS NECESSARY ONLY FOR INSTALLATION OF SEDIMENT CONTROL DEVICES.
10. NO AREA SHALL BE DISTURBED AND LEFT UNSTABILIZED OVERNIGHT UNLESS RUNOFF IS DIRECTED TO AN APPROVED EROSION & SEDIMENT CONTROL DEVICE.
11. CONTRACTOR MUST RESET ANY SEDIMENT CONTROLS AT THE END OF EACH WORK DAY THAT HAVE BEEN TEMPORARILY REMOVED TO FACILITATE CONSTRUCTION, UNLESS OTHERWISE APPROVED BY THE SEDIMENT CONTROL INSPECTOR.



TYPICAL ASPHALT CONSTRUCTION ACCESS ROAD SECTION

STANDARD STABILIZATION NOTE

FOLLOWING INITIAL SOIL DISTURBANCE OR REDISTURBANCE, PERMANENT OR TEMPORARY STABILIZATION SHALL BE COMPLETED WITHIN THREE (3) CALENDAR DAYS AS TO THE SURFACE OF ALL PERIMETER CONTROLS, DIKES, SWALES, DITCHES, PERIMETER SLOPES, AND ALL SLOPES GREATER THAN 3 HORIZONTAL TO 1 VERTICAL (3:1); AND SEVEN (7) DAYS AS TO ALL OTHER DISTURBED OR GRADED AREAS ON THE PROJECT SITE.

STOCKPILE PROTECTION

EXCESS CUT OR REQUIRED BORROW MATERIAL STOCKPILED ON SITE PRIOR TO ITS DISPOSAL OR USE SHALL BE LOCATED WITHIN THE DESIGNATED LIMIT OF DISTURBANCE IN SUCH A MANNER SO AS TO NOT INTERFERE WITH THE FUNCTION OF ANY EROSION/SEDIMENT CONTROL DEVICES.

EXISTING ENVIRONMENTAL CAP PROTECTION NOTE

PROPOSED WORK IS WITHIN LIMITS OF EXISTING ENVIRONMENTAL CAP SYSTEM. PROPOSED SEDIMENT CONTROL OPERATIONS SHALL NOT DAMAGE THE EXISTING CAP. ANY MODIFICATIONS TO THE PLANS FOR PROTECTION AND MODIFICATION OF THE CAP WILL REQUIRE MDE & EPA APPROVAL. SEE FOUNDATION DRAWINGS FOR REQUIREMENTS ASSOCIATED WITH PROTECTING AND MODIFYING THE EXISTING ENVIRONMENTAL CAP.

MAINTENANCE OF SEDIMENT CONTROL

CONTRACTOR SHALL, WITHOUT EXTRA COST TO THE PROJECT, REPAIR AND MAINTAIN EXISTING SEDIMENT CONTROL DEVICES UNTIL ALL AREAS WITHIN LIMITS OF CONSTRUCTION ARE STABILIZED. ALL SEDIMENT CONTROL MEASURES REFERRED TO ON THESE PLANS SHALL BE IN ACCORDANCE WITH PUBLICATION ENTITLED "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL"

UTILITY TRENCHING NOTE

SEDIMENT CONTROL FOR UTILITY CONSTRUCTION FOR AREAS OUTSIDE OF DESIGNED CONTROLS OR AS DIRECTED BY ENGINEER OR ESC INSPECTOR:

A. CALL "MISS UTILITY at 1-800-257-7777, 48 HOURS PRIOR TO THE START OF WORK.
B. EXCAVATED TRENCH MATERIAL SHALL BE PLACED ONT HE HIGH SIDE OF THE TRENCH.
C. TRENCHES FOR UTILITY INSTALLATION SHALL BACKFILLED, COMPACTED, AND STABILIZED AT THE END OF EACH WORKING DAY. NO MORE TRENCH SHALL BE OPENED THAN CAN BE COMPLETED THE SAME DAY, UNLESS:
D. TEMPORARY SILT FENCE SHALL BE PLACED IMMEDIATELY DOWNSTREAM OF ANY DISTURBED AREA INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE DAY.

LEGEND

- EXISTING PROPERTY LINE
- LOD — APPROXIMATE LIMIT OF DISTURBANCE
- LOW — APPROXIMATE LIMIT OF WORK
- SCE — STABILIZED CONSTRUCTION ENTRANCE WITH WASH RACK
- SSF — SUPER SILT FENCE
- SF/OP — SILT FENCE ON PAVEMENT
- AGIP — AT-GRADE INLET PROTECTION
- PST — PORTABLE SEDIMENT TANK
- TSOS — TEMPORARY STONE OUTLET STRUCTURE
- TURBIDITY CURTAIN
- EARTH DIKE
- AB — ASPHALT BERM
- FL — FILTER LOG
- PROPOSED STORM DRAIN
- PROPOSED STORM DRAIN MH
- PROPOSED INLET
- PROPOSED SANITARY SEWER
- PROPOSED SANITARY SEWER MH
- PROPOSED WATER MAIN
- PROPOSED FIRE HYDRANT
- PROPOSED ELECTRIC DUCT
- PROPOSED ELECTRIC VAULT
- PROPOSED TELECOM DUCT (BY OTHERS)
- PROPOSED TELECOM VAULT
- PROPOSED BGE GAS (BY OTHERS)
- GVP — PROPOSED BGE GAS VENT POST (BY OTHERS)
- TEMPORARY ASPHALT CONSTRUCTION ACCESS ROAD (SEE DETAIL THIS SHEET)
- SOIL-BENTONITE BARRIER
- 100 YEAR FLOODPLAIN (EL. 8.81)

40 0 40 80
SCALE: 1" = 40'

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

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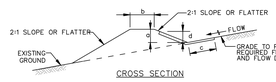
ESD# 6763A

DETAIL C-1 EARTH DIKE

STANDARD SYMBOL: A-1

PLACE DESIGNATION (e.g. A-2) ON FLOW CHANNEL SIDE OF DIKE.



CROSS SECTION

CONTINUOUS GRADE 0.5% MIN. TO 10% MAX. SLOPE

PLAN VIEW

	DIKE TYPE A	DIKE TYPE B
a – DIKE HEIGHT	18 IN MIN.	30 IN MIN.
b – DIKE WIDTH	24 IN MIN.	36 IN MIN.
c – FLOW WIDTH	4 FT MIN.	6 FT MIN.
d – FLOW DEPTH	12 IN MIN.	24 IN MIN.

FLOW CHANNEL STABILIZATION

A–1 SEED WITH STRAW MULCH AND TACK. (NOT ALLOWED FOR CLEAR WATER DIVERSION.)

A–2/B–2 SEED WITH SOIL STABILIZATION MATTING OR LINE WITH SOD.

A–3/B–3 4 TO 7 INCH STONE OR EQUIVALENT RECYCLED CONCRETE PRESSED INTO SOIL A MINIMUM OF 7 INCHES AND FLUSH WITH GROUND.

CONSTRUCTION SPECIFICATIONS

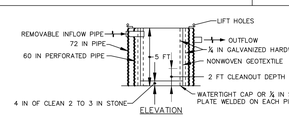
1. REMOVE AND DISPOSE OF ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS, AND OTHER OBJECTIONABLE MATERIAL SO AS NOT TO INTERFERE WITH PROPER FUNCTION OF EARTHDIKE.
2. EXCAVATE OR SHAPE EARTH DIKE TO LINE, GRADE, AND CROSS SECTION AS SPECIFIED. BANK PROJECTIONS OR OTHER IRREGULARITIES ARE NOT ALLOWED.
3. COMPACT FILL.
4. CONSTRUCT FLOW CHANNEL ON AN UNINTERRUPTED, CONTINUOUS GRADE, ADJUSTING THE LOCATION DUE TO FIELD CONDITIONS AS NECESSARY TO MAINTAIN POSITIVE DRAINAGE.
5. PROVIDE OUTLET PROTECTION AS REQUIRED ON APPROVED PLAN.
6. STABILIZE EARTH DIKE WITHIN THREE DAYS OF INSTALLATION. STABILIZE FLOW CHANNEL FOR CLEAR WATER DIVERSION WITHIN 24 HOURS OF INSTALLATION.
7. MAINTAIN LINE, GRADE, AND CROSS SECTION. REMOVE ACCUMULATED SEDIMENT AND DEBRIS, AND MAINTAIN POSITIVE DRAINAGE. KEEP EARTH DIKE AND POINT OF DISCHARGE FREE OF EROSION, AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
8. UPON REMOVAL OF EARTH DIKE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS OF REMOVAL STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

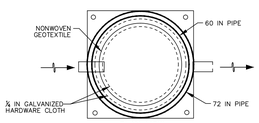
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL F-3 PORTABLE SEDIMENT TANK

STANDARD SYMBOL: PST



ELEVATION



PLAN VIEW

CONSTRUCTION SPECIFICATIONS

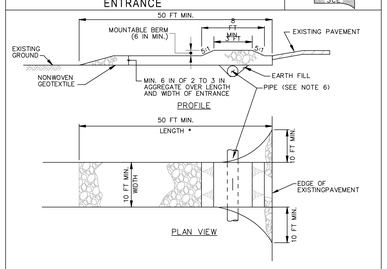
1. PROVIDE 1 CUBIC FOOT OF STORAGE FOR EACH GALLON PER MINUTE OF PUMP CAPACITY. REQUIRED STORAGE VOLUME MAY BE ATTAINED BY PLACEMENT OF TANKS IN PARALLEL WITH INFLOW EVENLY DISTRIBUTED AMONG TANKS. OVERTOPPING OF TANKS IS NOT PERMITTED.
2. USE 60 INCH CORRUGATED METAL OR PLASTIC PIPE WITH 1 INCH DIAMETER PERFORATIONS, 6 INCHES ON CENTER FOR THE INNER PIPE. LINE PIPE WITH NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS, SANDWICHED BETWEEN, AND ATTACHED TO, ¾ INCH HARDWARE CLOTH.
3. OVERLAP GEOTEXTILE 8 INCHES MINIMUM AT VERTICAL SEAM AND AT THE BOTTOM PLATE.
4. ANCHOR GEOTEXTILE AT BOTTOM OF TANK WITH 4 INCHES OF 2 TO 3 INCH CLEAN STONE OR EQUIVALENT RECYCLED CONCRETE.
5. USE 72 INCH CORRUGATED METAL OR PLASTIC OUTER PIPE WITH PERMANENT OUTFLOW PIPE WITH INVERT LOWER THAN INFLOW PIPE
6. INFLOW PIPE MUST DISCHARGE INTO INNER PIPE AND BE REMOVABLE.
7. PLACE TANK ON LEVEL SURFACE AND DISCHARGE TO A STABLE AREA AT A NONEROSIVE RATE.
8. A PORTABLE SEDIMENT TANK REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF SYSTEM CLOGS, PULL OUT INNER PIPE, REMOVE ACCUMULATED SEDIMENT, AND REPLACE GEOTEXTILE. KEEP POINT OF DISCHARGE FREE OF EROSION.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL B-1 STABILIZED CONSTRUCTION ENTRANCE

STANDARD SYMBOL: SCE



PROFILE

PLAN VIEW

CONSTRUCTION SPECIFICATIONS

1. PLACE STABILIZED CONSTRUCTION ENTRANCE IN ACCORDANCE WITH THE APPROVED PLAN. VEHICLES MUST TRAVEL OVER THE ENTIRE LENGTH OF THE SCE. USE MINIMUM LENGTH OF 50 FEET (*)30 FEET FOR SINGLE RESIDENCE LOT). USE MINIMUM WIDTH OF 10 FEET. FLARE SCE 10 FEET MINIMUM AT THE EXISTING ROAD TO PROVIDE A TURNING RADIUS.
2. PIPE ALL SURFACE WATER FLOWING TO OR DIVERTED TOWARD THE SCE UNDER THE ENTRANCE, MAINTAINING POSITIVE DRAINAGE. PROTECT PIPE INSTALLED THROUGH THE SCE WITH A MOUNTABLE BERM WITH 5:1 SLOPES AND A MINIMUM OF 12 INCHES OF STONE OVER THE PIPE. PROVIDE PIPE AS SPECIFIED ON APPROVED PLAN. WHEN THE SCE IS LOCATED AT A HIGH SPOT AND HAS NO DRAINAGE TO CONVEY, A PIPE IS NOT NECESSARY. A MOUNTABLE BERM IS REQUIRED WHEN SCE IS NOT LOCATED AT A HIGH SPOT.
3. PREPARE SUBGRADE AND PLACE NONWOVEN GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS.
4. PLACE CRUSHED AGGREGATE (2 TO 3 INCHES IN SIZE) OR EQUIVALENT RECYCLED CONCRETE (WITHOUT REBAR) AT LEAST 6 INCHES DEEP OVER THE LENGTH AND WIDTH OF THE SCE.
5. MAINTAIN ENTRANCE IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. ADD STONE OR MAKE OTHER REPAIRS AS CONDITIONS DEMAND TO MAINTAIN CLEAN SURFACE, MOUNTABLE BERM, AND SPECIFIED DIMENSIONS. IMMEDIATELY REMOVE STONE AND/OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY BY VACUUMING, SCRAPING, AND/OR SWEEPING. WASHING ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

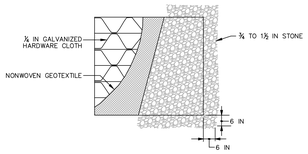
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

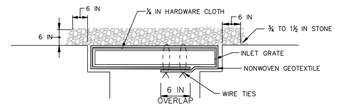
DETAIL E-9-2 AT-GRADE INLET PROTECTION

STANDARD SYMBOL: AGIP

MAXIMUM DRAINAGE AREA = 1 ACRE



PLAN / CUT AWAY VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. USE NONWOVEN GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS.
2. LIFT GRATE AND WRAP WITH NONWOVEN GEOTEXTILE TO COMPLETELY COVER ALL OPENINGS. SECURE WITH WIRE TIES AND SET GRATE BACK IN PLACE.
3. PLACE CLEAN ¾ TO 1½ INCH STONE OR EQUIVALENT RECYCLED CONCRETE 6 INCHES THICK ON THE GRATE.
4. STORM DRAIN INLET PROTECTION REQUIRES FREQUENT MAINTENANCE. REMOVE ACCUMULATED SEDIMENT AFTER EACH RAIN EVENT TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING. IF INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE GEOTEXTILE AND STONE.

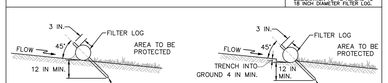
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-6 FILTER LOG

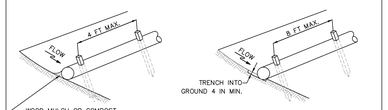
STANDARD SYMBOL: FL–18

DESIGNATION FL–18 REFERS TO 18 INCH DIAMETER FILTER LOG.



SECTION

SECTION



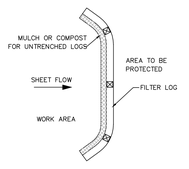
UNTRENCHED INSTALLATION

OR

ENTRENCHED INSTALLATION*

*THIS APPLICATION MAY NOT BE USED WITH LOGS SMALLER THAN 12 IN.

ISOMETRIC VIEW



PLAN

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-6 FILTER LOG

STANDARD SYMBOL: FL–18

DESIGNATION FL–18 REFERS TO 18 INCH DIAMETER FILTER LOG.

CONSTRUCTION SPECIFICATIONS

1. PRIOR TO INSTALLATION, CLEAR ALL OBSTRUCTIONS INCLUDING ROCKS, CLODS, AND DEBRIS GREATER THAN ONE INCH THAT MAY INTERFERE WITH PROPER FUNCTION OF FILTER LOG.
2. FILL LOG NETTING UNIFORMLY WITH COMPOST (IN ACCORDANCE WITH SECTION H–1 MATERIALS), OR OTHER APPROVED BIODEGRADABLE MATERIAL TO DESIRED LENGTH SUCH THAT LOGS DO NOT DEFORM.
3. INSTALL FILTER LOGS PERPENDICULAR TO THE FLOW DIRECTION AND PARALLEL TO THE SLOPE WITH THE BEGINNING AND END OF THE INSTALLATION POINTING SLIGHTLY UP THE SLOPE CREATING A "J" SHAPE AT EACH END TO PREVENT BYPASS.
4. FOR UNTRENCHED INSTALLATION BLOW OR HAND PLACE MULCH OR COMPOST ON UPHILL SIDE OF THE SLOPE ALONG LOG.
5. STAKE FILTER LOG EVERY 4 FEET OR CLOSER ALONG ENTIRE LENGTH OF LOG OR TRENCH LOG INTO GROUND A MINIMUM OF 4 INCHES AND STAKE LOG EVERY 8 FEET OR CLOSER.
6. USE STAKES WITH A MINIMUM NOMINAL CROSS SECTION OF 2X2 INCH AND OF SUFFICIENT LENGTH TO ATTAIN A MINIMUM OF 12 INCHES INTO THE GROUND AND 3 INCHES PROTRUDING ABOVE LOG.
7. WHEN MORE THAN ONE LOG IS NEEDED, OVERLAP ENDS 12 INCHES MINIMUM AND STAKE.
8. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO A DEPTH OF ½ THE EXPOSED HEIGHT OF LOG AND REPLACE MULCH. REPLACE FILTER LOG IF TORN. REINSTALL FILTER LOG IF UNDERMINING OR DISLODGING OCCURS. REPLACE CLOGGED FILTER LOGS. FOR PERMANENT APPLICATIONS, ESTABLISH AND CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

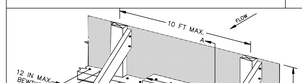
2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

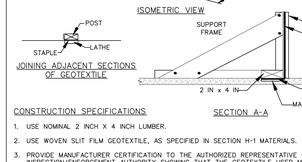
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-2 SILT FENCE ON PAVEMENT

STANDARD SYMBOL: SFOP



ISOMETRIC VIEW



SECTION A–A

CONSTRUCTION SPECIFICATIONS

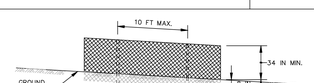
1. USE NOMINAL 2 INCH X 4 INCH LUMBER.
2. USE WOVEN SLIT FILM GEOTEXTILE, AS SPECIFIED IN SECTION H–1 MATERIALS.
3. PROVIDE MANUFACTURER CERTIFICATION TO THE AUTHORIZED REPRESENTATIVE OF THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT THE GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
4. SPACE UPRIGHT SUPPORTS NO MORE THAN 10 FEET APART.
5. PROVIDE A TWO FOOT OPENING BETWEEN EVERY SET OF SUPPORTS AND PLACE STONE IN THE OPENING OVER GEOTEXTILE.
6. KEEP SILT FENCE TAUT AND SECURELY STAPLE TO THE UPSLOPE SIDE OF UPRIGHT SUPPORTS. EXTEND GEOTEXTILE UNDER 2x4.
7. WHERE TWO SECTIONS OF GEOTEXTILE ADJOIN: OVERLAP, FOLD, AND STAPLE TO POST IN ACCORDANCE WITH THIS DETAIL. ATTACH LATHE.
8. PROVIDE A MASTIC SEAL BETWEEN PAVEMENT, GEOTEXTILE, AND 2x4 TO PREVENT SEDIMENT-LADEN WATER FROM ESCAPING BENEATH SILT FENCE INSTALLATION.
9. SECURE BOARDS TO PAVEMENT WITH 40D 5 INCH MINIMUM LENGTH NAILS.
10. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN SILT FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. MAINTAIN WATER TIGHT SEAL ALONG BOTTOM. REPLACE STONE IF DISPLACED.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

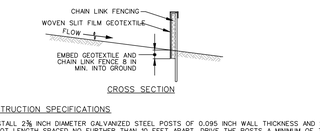
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-3 SUPER SILT FENCE

STANDARD SYMBOL: SSF



ELEVATION



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. INSTALL 2⅜ INCH DIAMETER GALVANIZED STEEL POSTS OF 0.095 INCH WALL THICKNESS AND SIX FOOT LENGTH SPACED NO FURTHER THAN 10 FEET APART. DRIVE THE POSTS A MINIMUM OF 36 INCHES INTO THE GROUND.
2. FASTEN 9 GAUGE OR HEAVIER GALVANIZED CHAIN LINK FENCE (2⅜ INCH MAXIMUM OPENING) 42 INCHES IN HEIGHT SECURELY TO THE FENCE POSTS WITH WIRE TIES OR HOG RINGS.
3. FASTEN WOVEN SLIT FILM GEOTEXTILE AS SPECIFIED IN SECTION H–1 MATERIALS, SECURELY TO THE UPSLOPE SIDE OF CHAIN LINK FENCE WITH TIES SPACED EVERY 24 INCHES AT THE TOP AND MID SECTION. EMBED GEOTEXTILE AND CHAIN LINK FENCE A MINIMUM OF 8 INCHES INTO THE GROUND.
4. WHERE ENDS OF THE GEOTEXTILE COME TOGETHER, THE ENDS SHALL BE OVERLAPPED BY 6 INCHES, FOLDED, AND STAPLED TO PREVENT SEDIMENT BY PASS.
5. EXTEND BOTH ENDS OF THE SUPER SILT FENCE A MINIMUM OF FIVE HORIZONTAL FEET UPSLOPE AT 45 DEGREES TO THE MAIN FENCE ALIGNMENT TO PREVENT RUNOFF FROM GOING AROUND THE ENDS OF THE SUPER SILT FENCE.
6. PROVIDE MANUFACTURER CERTIFICATION TO THE INSPECTION/ENFORCEMENT AUTHORITY SHOWING THAT GEOTEXTILE USED MEETS THE REQUIREMENTS IN SECTION H–1 MATERIALS.
7. REMOVE ACCUMULATED SEDIMENT AND DEBRIS WHEN BULGES DEVELOP IN FENCE OR WHEN SEDIMENT REACHES 25% OF FENCE HEIGHT. REPLACE GEOTEXTILE IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

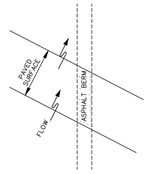
U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

* MULTIMEDIA CAP PROTECTION NOTE:

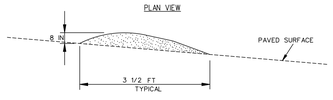
THIS STANDARD DETAIL WITH STEEL POST EMBEDMENT (GREATER THAN 12" DEPTH) IS ONLY AUTHORIZED IN AREAS OUTSIDE OF THE EXISTING ENVIRONMENTAL CAPS. WITHIN ON-CAP AREAS, ALTERNATE DETAILS MUST BE USED THAT LIMIT DEPTH OF POST EMBEDMENT TO 12" MAX. (I.E. SILT FENCE ON PAVEMENT)

DETAIL C-5 TEMPORARY ASPHALT BERM

STANDARD SYMBOL: TAB



PLAN VIEW



CROSS SECTION

CONSTRUCTION SPECIFICATIONS

1. CONSTRUCT BERM ON AN UNINTERRUPTED, CONTINUOUS GRADE.
2. INSTALL BERM TO CONFORM TO CROSS SECTION DIMENSIONS OF A UNIFORM HEIGHT OF 8 INCHES MINIMUM AND APPROXIMATE WIDTH OF 3½ FEET.
3. PROVIDE OUTLET PROTECTION AS REQUIRED ON PLAN.
4. COMPACT ASPHALT BERM.
5. REPAIR DAMAGED ASPHALT. REMOVE ACCUMULATED SEDIMENT AND DEBRIS. MAINTAIN POSITIVE DRAINAGE.
6. UPON REMOVAL OF ASPHALT BERM, RETURN TO ORIGINAL CONDITIONS OR AS SPECIFIED ON APPROVED PLAN.

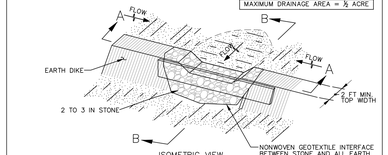
MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

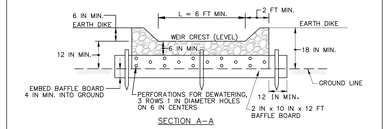
DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

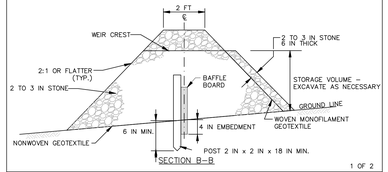
MAXIMUM DRAINAGE AREA = ½ ACRE



ISOMETRIC VIEW



SECTION A–A



SECTION B–B

1 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION

DETAIL E-7 TEMPORARY STONE OUTLET STRUCTURE

STANDARD SYMBOL: TSOS

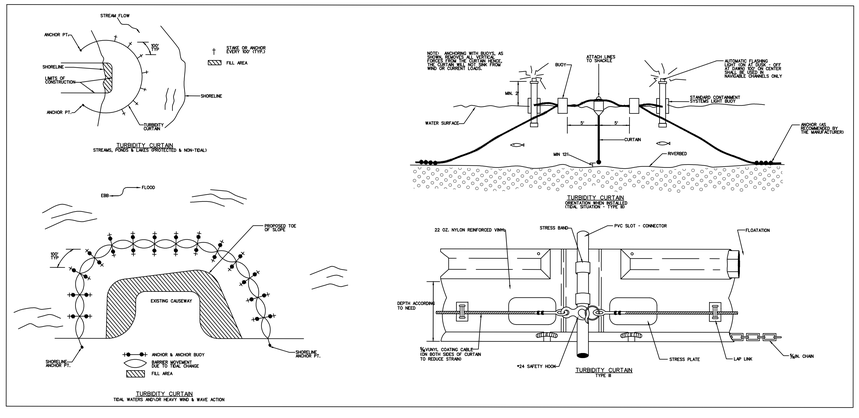
CONSTRUCTION SPECIFICATIONS

1. PROVIDE STORAGE VOLUME AS SPECIFIED ON APPROVED PLANS.
2. USE NONWOVEN GEOTEXTILE ON INTERFACE BETWEEN GROUND AND STONE.
3. PERFORATE BAFFLE BOARD WITH 3 ROWS OF 1 INCH DIAMETER HOLES 6 INCHES ON CENTER. EMBED A MINIMUM OF 4 INCHES INTO GROUND. AND EXTEND BAFFEL BOARD MINIMUM OF 12 INCHES INTO EARTH DIKE.
4. USE CLEAN 2 TO 3 INCH STONE OR EQUIVALENT RECYCLED CONCRETE. PLACE WOVEN MONOFILAMENT GEOTEXTILE ON UPSTREAM FACE AND COVER WITH A MINIMUM OF 6 INCHES OF ADDITIONAL STONE.
5. USE NONWOVEN AND WOVEN MONOFILAMENT GEOTEXTILES AS SPECIFIED IN SECTION H–1 MATERIALS.
6. SET WEIR CREST OF STONE 6 INCHES LOWER THAN THE TOP OF EARTH DIKE. USE MINIMUM LENGTH OF 6 FEET FOR WEIR CREST.
7. REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN 6 INCHES OF WEIR CREST. REPLACE GEOTEXTILE AND STONE FACING WHEN STRUCTURE CEASES TO DRAIN. MAINTAIN LINE, GRADE, AND CROSS SECTION.
8. UPON REMOVAL OF STONE OUTLET STRUCTURE, GRADE AREA FLUSH WITH EXISTING GROUND. WITHIN 24 HOURS STABILIZE DISTURBED AREA WITH TOPSOIL, SEED, AND MULCH, OR AS SPECIFIED ON APPROVED PLAN.

2 OF 2

MARYLAND STANDARDS AND SPECIFICATIONS FOR SOIL EROSION AND SEDIMENT CONTROL

U.S. DEPARTMENT OF AGRICULTURE NATURAL RESOURCES CONSERVATION SERVICE	2011	MARYLAND DEPARTMENT OF ENVIRONMENT WATER MANAGEMENT ADMINISTRATION



PROGRESS SET NOT FOR CONSTRUCTION

BHC ARCHITECTS
650 S. Exeter Street, Suite 200, Baltimore, MD 21202
Phone 410 752 2739

owner/developer
developer:
Beatty Development Group
1300 Thames Street, Suite 10
Baltimore, MD 21231
P 410-332-1100

consultants
design consultant:
Elkus Manfredi Architects
300 A Street
Boston, MA 02210
F 617.426.7502 P 617.368.3311

structural engineer:
Tadjer Cohen Edelson & Associates
1109 King Street
Silver Spring, MD 20910
P 301-587-1820

mep & fp engineer:
Vanderweil
625 N. Washington Street
Alexandria, VA 22314-1913
P 703-683-9700

foundation engineers:
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 West 34th Street
New York, NY 10122
P 917-339-9300

civil engineers:
Rummel, Klepper & Kahl
81 Mosher Street
Baltimore, MD 21217-4250
P 410-728-2900

landscape architect:
Mahan Rykiel Associates
800 Wyman Park Drive, Suite 310
Baltimore, Maryland 21211
P 410-235-6001

environmental engineer:
Environmental Resources Management
200 Harry S Truman Parkway, Suite 400
Annapolis, Maryland 21401
P 410.266.0006

project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13

key plan

seal

issued	date	description

revision	date	description

title
EROSION & SEDIMENT CONTROL DETAILS

date:	08-06-13
drawn by:	DMB
checked by:	CDK
scale:	AS SHOWN
project number:	09738.00

sheet number
DDP
C8.10
ESD# 6763A

B-4 STANDARDS AND SPECIFICATIONS

FOR

VEGETATIVE STABILIZATION

Definition

Using vegetation as cover to protect exposed soil from erosion.

Purpose

To promote the establishment of vegetation on exposed soil.

Conditions Where Practice Applies

On all disturbed areas not stabilized by other methods. This specification is divided into sections on incremental stabilization; soil preparation, soil amendments and topsoiling; seeding and mulching; temporary stabilization; and permanent stabilization.

Effects on Water Quality and Quantity

Stabilization practices are used to promote the establishment of vegetation on exposed soil. When soil is stabilized with vegetation, the soil is less likely to erode and more likely to allow infiltration of rainfall, thereby reducing sediment loads and runoff to downstream areas.

Planting vegetation in disturbed areas will have an effect on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, percolation, and groundwater recharge. Over time, vegetation will increase organic matter content and improve the water holding capacity of the soil and subsequent plant growth.

Vegetation will help reduce the movement of sediment, nutrients, and other chemicals carried by runoff to receiving waters. Plants will also help protect groundwater supplies by assimilating those substances present within the root zone.

Sediment control practices must remain in place during grading, seedbed preparation, seeding, mulching, and vegetative establishment.

Adequate Vegetative Establishment

Inspect seeded areas for vegetative establishment and make necessary repairs, replacements, and reseedings within the planting season.

1. Adequate vegetative stabilization requires 95 percent groundcover.
2. If an area has less than 40 percent groundcover, restabilize following the original recommendations for lime, fertilizer, seedbed preparation, and seeding.
3. If an area has between 40 and 94 percent groundcover, over-seed and fertilize using half of the rates originally specified.
4. Maintenance fertilizer rates for permanent seeding are shown in Table B.6.

B-4-1 STANDARDS AND SPECIFICATIONS

FOR

INCREMENTAL STABILIZATION

Definition

Establishment of vegetative cover on cut and fill slopes.

Purpose

To provide timely vegetative cover on cut and fill slopes as work progresses.

Conditions Where Practice Applies

Any cut or fill slope greater than 15 feet in height. This practice also applies to stockpiles.

Criteria

A. Incremental Stabilization - Cut Slopes

1. Excavate and stabilize cut slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all cut slopes as the work progresses.
2. Construction sequence example (Refer to Figure B.1):
   a. Construct and stabilize all temporary swales or dikes that will be used to convey runoff around the excavation.
   b. Perform Phase 1 excavation, prepare seedbed, and stabilize.
   c. Perform Phase 2 excavation, prepare seedbed, and stabilize. Overseed Phase 1 areas as necessary.
   d. Perform final phase excavation, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once excavation has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

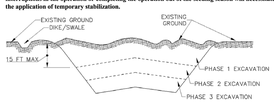


Figure B.1: Incremental Stabilization – Cut

B. Incremental Stabilization - Fill Slopes

1. Construct and stabilize fill slopes in increments not to exceed 15 feet in height. Prepare seedbed and apply seed and mulch on all slopes as the work progresses.
2. Stabilize slopes immediately when the vertical height of a lift reaches 15 feet, or when the grading operation ceases as prescribed in the plans.
3. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
4. Construction sequence example (Refer to Figure B.2):
   a. Construct and stabilize all temporary swales or dikes that will be used to divert runoff around the fill. Construct silt fence on low side of fill unless other methods shown on the plans address this area.
   b. At the end of each day, install temporary water conveyance practice(s), as necessary, to intercept surface runoff and convey it down the slope in a non-erosive manner.
   c. Place Phase 1 fill, prepare seedbed, and stabilize.
   d. Place Phase 2 fill, prepare seedbed, and stabilize.
   e. Place final phase fill, prepare seedbed, and stabilize. Overseed previously seeded areas as necessary.

Note: Once the placement of fill has begun the operation should be continuous from grubbing through the completion of grading and placement of topsoil (if required) and permanent seed and mulch. Any interruptions in the operation or completing the operation out of the seeding season will necessitate the application of temporary stabilization.

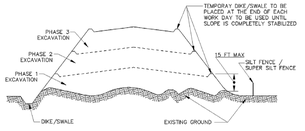


Figure B.2: Incremental Stabilization – Fill

B-4-2 STANDARDS AND SPECIFICATIONS

FOR

SOIL PREPARATION, TOPSOILING, AND SOIL AMENDMENTS

Definition

The process of preparing the soils to sustain adequate vegetative stabilization.

Purpose

To provide a suitable soil medium for vegetative growth.

Conditions Where Practice Applies

Where vegetative stabilization is to be established.

Criteria

A. Soil Preparation

1. Temporary Stabilization
   a. Seedbed preparation consists of loosening soil to a depth of 3 to 5 inches by means of suitable agricultural or construction equipment, such as disc harrows or chisel plows or rippers mounted on construction equipment. After the soil is loosened, it must not be rolled or dragged smooth but left in the roughened condition. Slopes 3:1 or flatter are to be tracked with ridges running parallel to the contour of the slope.
   b. Apply fertilizer and lime as prescribed on the plans.
   c. Incorporate lime and fertilizer into the top 3 to 5 inches of soil by disking or other suitable means.
2. Permanent Stabilization
   a. A soil test is required for any earth disturbance of 5 acres or more. The minimum soil conditions required for permanent vegetative establishment are:
      i. Soil pH between 6.0 and 7.0.
      ii. Soluble salts less than 500 parts per million (ppm).
      iii. Soil contains less than 40 percent clay but enough fine grained material (greater than 30 percent silt plus clay) to provide the capacity to hold a moderate amount of moisture. An exception: if lovegrass will be planted, then a sandy soil (less than 30 percent silt plus clay) would be acceptable.
      iv. Soil contains 1.5 percent minimum organic matter by weight.
      v. Soil contains sufficient pore space to permit adequate root penetration.
   b. Application of amendments or topsoil is required if on-site soils do not meet the above conditions.
   c. Graded areas must be maintained in a true and even grade as specified on the approved plan, then scarified or otherwise loosened to a depth of 3 to 5 inches.

   d. Apply soil amendments as specified on the approved plan or as indicated by the results of a soil test.
   e. Mix soil amendments into the top 3 to 5 inches of soil by disking or other suitable means. Rake lawn areas to smooth the surface, remove large objects like stones and branches, and ready the area for seed application. Loosen surface soil by dragging with a heavy chain or other equipment to roughen the surface where site conditions will not permit normal seedbed preparation. Track slopes 3:1 or flatter with tracked equipment leaving the soil in an irregular condition with ridges running parallel to the contour of the slope. Leave the top 1 to 3 inches of soil loose and friable. Seedbed loosening may be unnecessary on newly disturbed areas.

B. Topsoiling

1. Topsoil is placed over prepared subsoil prior to establishment of permanent vegetation. The purpose is to provide a suitable soil medium for vegetative growth. Soils of concern have low moisture content, low nutrient levels, low pH, materials toxic to plants, and/or unacceptable soil gradation.
2. Topsoil salvaged from an existing site may be used provided it meets the standards as set forth in these specifications. Typically, the depth of topsoil to be salvaged for a given soil type can be found in the representative soil profile section in the Soil Survey published by USDA-NRCS.
3. Topsoiling is limited to areas having 2:1 or flatter slopes where:
   a. The texture of the exposed subsoil/parent material is not adequate to produce vegetative growth.
   b. The soil material is so shallow that the rooting zone is not deep enough to support plants or furnish continuing supplies of moisture and plant nutrients.
   c. The original soil to be vegetated contains material toxic to plant growth.
   d. The soil is so acidic that treatment with limestone is not feasible.
4. Areas having slopes steeper than 2:1 require special consideration and design.
5. Topsoil Specifications: Soil to be used as topsoil must meet the following criteria:
   a. Topsoil must be a loam, sandy loam, clay loam, silt loam, sandy clay loam, or loamy sand. Other soils may be used if recommended by an agronomist or soil scientist and approved by the appropriate approval authority. Topsoil must not be a mixture of contrasting textured subsoils and must contain less than 5 percent by volume of cinders, stones, slag, coarse fragments, gravel, sticks, roots, trash, or other materials larger than 1½ inches in diameter.
   b. Topsoil must be free of noxious plants or plant parts such as Bermuda grass, quack grass, Johnson grass, nut sedge, poison ivy, thistle, or others as specified.
   c. Topsoil substitutes or amendments, as recommended by a qualified agronomist or soil scientist and approved by the appropriate approval authority, may be used in lieu of natural topsoil.
6. Topsoil Application
   a. Erosion and sediment control practices must be maintained when applying topsoil.
   b. Uniformly distribute topsoil in a 5 to 8 inch layer and lightly compact to a minimum thickness of 4 inches. Spreading is to be performed in such a manner that sodding or seeding can proceed with a minimum of additional soil preparation and tillage. Any irregularities in the surface resulting from topsoiling or other operations must be corrected in order to prevent the formation of depressions or water pockets.
   c. Topsoil must not be placed if the topsoil or subsoil is in a frozen or muddy condition, when the subsoil is excessively wet or in a condition that may otherwise be detrimental to proper grading

B-4-5 STANDARDS AND SPECIFICATIONS

FOR

PERMANENT STABILIZATION

Definition

To stabilize disturbed soils with permanent vegetation.

Purpose

To use long-lived perennial grasses and legumes to establish permanent ground cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for 6 months or more.

Criteria

A. Seed Mixtures

1. General Use
   a. Select one or more of the species or mixtures listed in Table B.3 for the appropriate Plant Hardiness Zone (from Figure B.3) and based on the site condition or purpose found on Table B.2. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The Summary is to be placed on the plan.
   b. Additional planting specifications for exceptional sites such as shorelines, stream banks, or dunes or for special purposes such as wildlife or aesthetic treatment may be found in USDA-NRCS Technical Field Office Guide, Section 342 - Critical Area Planting.
   c. For sites having disturbed area over 5 acres, use and show the rates recommended by the soil testing agency.
   d. For areas receiving low maintenance, apply urea form fertilizer (46-0-0) at 3 ½ pounds per 1000 square feet (150 pounds per acre) at the time of seeding in addition to the soil amendments shown in the Permanent Seeding Summary .
2. Turfgrass Mixtures
   a. Areas where turfgrass may be desired include lawns, parks, playgrounds, and commercial sites which will receive a medium to high level of maintenance.
   b. Select one or more of the species or mixtures listed below based on the site conditions or purpose. Enter selected mixture(s), application rates, and seeding dates in the Permanent Seeding Summary. The summary is to be placed on the plan.
      i. Kentucky Bluegrass: Full Sun Mixture: For use in areas that receive intensive management. Irrigation required in the areas of central Maryland and Eastern Shore. Recommended Certified Kentucky Bluegrass Cultivars Seeding Rate: 1.5 to 2.0 pounds per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.
      ii. Kentucky Bluegrass/Perennial Rye: Full Sun Mixture: For use in full sun areas where

B-4-3 STANDARDS AND SPECIFICATIONS

FOR

SEEDING AND MULCHING

Definition

The application of seed and mulch to establish vegetative cover.

Purpose

To protect disturbed soils from erosion during and at the end of construction.

Conditions Where Practice Applies

To the surface of all perimeter controls, slopes, and any disturbed area not under active grading.

Criteria

A. Seeding

1. Specifications
   a. All seed must meet the requirements of the Maryland State Seed Law. All seed must be subject to re-testing by a recognized seed laboratory. All seed used must have been tested within the 6 months immediately preceding the date of sowing such material on any project. Refer to Table B.4 regarding the quality of seed. Seed tags must be available upon request to the inspector to verify type of seed and seeding rate.
   b. Mulch alone may be applied between the fall and spring seeding dates only if the ground is frozen. The appropriate seeding mixture must be applied when the ground thaws.
   c. Inoculants: The inoculant for treating legume seed in the seed mixtures must be a pure culture of nitrogen fixing bacteria prepared specifically for the species. Inoculants must not be used later than the date indicated on the container. Add fresh inoculants as directed on the package. Use four times the recommended rate when hydroseeding. Note: It is very important to keep inoculant as cool as possible until used. Temperatures above 75 to 80 degrees Fahrenheit can weaken bacteria and make the inoculant less effective.
   d. Sod or seed must not be placed on soil which has been treated with soil sterilants or chemicals used for weed control until sufficient time has elapsed (14 days min.) to permit dissipation of phyto-toxic materials.
2. Application
   a. Dry Seeding: This includes use of conventional drop or broadcast spreaders.
      i. Incorporate seed into the subsoil at the rates prescribed on Temporary Seeding Table B.1, Permanent Seeding Table B.3, or site-specific seeding summaries.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction. Roll the seeded area with a weighted roller to provide good seed to soil contact.

   b. Drill or Cultipacker Seeding: Mechanized seeders that apply and cover seed with soil.
      i. Cultipacking seeders are required to bury the seed in such a fashion as to provide at least 1/4 inch of soil covering. Seedbed must be firm after planting.
      ii. Apply seed in two directions, perpendicular to each other. Apply half the seeding rate in each direction.
   c. Hydroseeding: Apply seed uniformly with hydroseeder (slurry includes seed and fertilizer).
      i. If fertilizer is being applied at the time of seeding, the application rates should not exceed the following: nitrogen, 100 pounds per acre total of soluble nitrogen; P_2O_5 (phosphorous), 200 pounds per acre; K_2O (potassium), 200 pounds per acre.
      ii. Lime: Use only ground agricultural limestone (up to 3 tons per acre may be applied by hydroseeding). Normally, not more than 2 tons are applied by hydroseeding at any one time. Do not use burnt or hydrated lime when hydroseeding.
      iii. Mix seed and fertilizer on site and seed immediately and without interruption.
      iv. When hydroseeding do not incorporate seed into the soil.

B. Mulching

1. Mulch Materials (in order of preference)
   a. Straw consisting of thoroughly threshed wheat, rye, oat, or barley and reasonably bright in color. Straw is to be free of noxious weed seeds as specified in the Maryland Seed Law and not musty, moldy, caked, decayed, or excessively dusty. **Note: Use only sterile straw mulch in areas where one species of grass is desired.**
   b. Wood Cellulose Fiber Mulch (WCFM) consisting of specially prepared wood cellulose processed into a uniform fibrous physical state.
      i. WCFM is to be dyed green or contain a green dye in the package that will provide an appropriate color to facilitate visual inspection of the uniformly spread slurry.
      ii. WCFM, including dye, must contain no germination or growth inhibiting factors.
      iii. WCFM materials are to be manufactured and processed in such a manner that the wood cellulose fiber mulch will remain in uniform suspension in water under agitation and will blend with seed, fertilizer and other additives to form a homogeneous slurry. The mulch material must form a blotter-like ground cover, on application, having moisture absorption and percolation properties and must cover and hold grass seed in contact with the soil without inhibiting the growth of the grass seedlings.
      iv. WCFM material must not contain elements or compounds at concentration levels that will be phyto-toxic.
      v. WCFM must conform to the following physical requirements: fiber length of approximately 10 millimeters, diameter approximately 1 millimeter, pH range of 4.0 to 8.5, ash content of 1.6 percent maximum and water holding capacity of 90 percent minimum.

2. Application
   a. Apply mulch to all seeded areas immediately after seeding.
   b. When straw mulch is used, spread it over all seeded areas at the rate of 2 tons per acre to a uniform loose depth of 1 to 2 inches. Apply mulch to achieve a uniform distribution and depth so that the soil surface is not exposed. When using a mulch anchoring tool, increase the application rate to 2.5 tons per acre.
   c. Wood cellulose fiber used as mulch must be applied at a net dry weight of 1500 pounds per acre. Mix the wood cellulose fiber with water to attain a mixture with a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
3. Anchoring
   a. Perform mulch anchoring immediately following application of mulch to minimize loss by wind or water. This may be done by one of the following methods (listed by preference), depending upon the size of the area and erosion hazard:
      i. A mulch anchoring tool is a tractor drawn implement designed to punch and anchor mulch into the soil surface a minimum of 2 inches. This practice is most effective on large areas, but is limited to flatter slopes where equipment can operate safely. If used on sloping land, this practice should follow the contour.
      ii. Wood cellulose fiber may be used for anchoring straw. Apply the fiber binder at a net dry weight of 750 pounds per acre. Mix the wood cellulose fiber with water at a maximum of 50 pounds of wood cellulose fiber per 100 gallons of water.
      iii. Synthetic binders such as Acrylic DLR (Agro-Tack), DCA-70, Petroset, Terra Tax II, Terra Tack AR or other approved equal may be used. Follow application rates as specified by the manufacturer. Application of liquid binders needs to be heavier at the edges where wind catches mulch, such as in valleys and on crests of banks. **Use of asphalt binders is strictly prohibited.**
      iv. Lightweight plastic netting may be stapled over the mulch according to manufacturer recommendations. Netting is usually available in rolls 4 to 15 feet wide and 300 to 3,000 feet long.

B-4-4 STANDARDS AND SPECIFICATIONS

FOR

TEMPORARY STABILIZATION

Definition

To stabilize disturbed soils with vegetation for up to 6 months.

Purpose

To use fast growing vegetation that provides cover on disturbed soils.

Conditions Where Practice Applies

Exposed soils where ground cover is needed for a period of 6 months or less. For longer duration of time, permanent stabilization practices are required.

Criteria

1. Select one or more of the species or seed mixtures listed in Table B.1 for the appropriate Plant Hardiness Zone (from Figure B.3), and enter them in the Temporary Seeding Summary below along with application rates, seeding dates and seeding depths. If this Summary is not put on the plan and completed, then Table B.1 plus fertilizer and lime rates must be put on the plan.
2. For sites having soil tests performed, use and show the recommended rates by the testing agency. Soil tests are not required for Temporary Seeding.
3. When stabilization is required outside of a seeding season, apply seed and mulch or straw mulch alone as prescribed in Section B-4-3.A.1.b and maintain until the next seeding season.

Temporary Seeding Summary

Hardiness Zone (From Figure B.3):7a Seed Mixture (From Table B.1):					Fertilizer Rate (10-20-20)	Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths		
N/A	Barley (Hordeum vulgare)	96	2/15 to 4/30; 8/15 to 11/30	1.0"	436 lb/ac (10 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
N/A	Oats (Avena sativa)	72	2/15 to 4/30; 8/15 to 11/30	1.0"		
N/A	Foxtail Millet (Setaria italica)	30	5/1 to 8/14	0.5"		
N/A	Pearl Millet (Pennisetum glaucum)	20	5/1 to 8/14	0.5"		

rapid establishment is necessary and when turf will receive medium to intensive management. Certified Perennial Ryegrass Cultivars/Certified Kentucky Bluegrass Seeding Rate: 2 pounds mixture per 1000 square feet. Choose a minimum of three Kentucky bluegrass cultivars with each ranging from 10 to 35 percent of the total mixture by weight.

      iii. Tall Fescue/Kentucky Bluegrass: Full Sun Mixture: For use in drought prone areas and/or for areas receiving low to medium management in full sun to medium shade. Recommended mixture includes; Certified Tall Fescue Cultivars 95 to 100 percent, Certified Kentucky Bluegrass Cultivars 0 to 5 percent. Seeding Rate: 5 to 8 pounds per 1000 square feet. One or more cultivars may be blended.

      iv. Kentucky Bluegrass/Fine Fescue: Shade Mixture: For use in areas with shade in Bluegrass lawns. For establishment in high quality, intensively managed turf area. Mixture includes; Certified Kentucky Bluegrass Cultivars 30 to 40 percent and Certified Fine Fescue and 60 to 70 percent. Seeding Rate: 1½ to 3 pounds per 1000 square feet.

      Notes:
      Select turfgrass varieties from those listed in the most current University of Maryland Publication, Agronomy Memo #77, "Turfgrass Cultivar Recommendations for Maryland"

      Choose certified material. Certified material is the best guarantee of cultivar purity. The certification program of the Maryland Department of Agriculture, Turf and Seed Section, provides a reliable means of consumer protection and assures a pure genetic line

   c. Ideal Times of Seeding for Turf Grass Mixtures

      Western MD: March 15 to June 1, August 1 to October 1 (Hardiness Zones: 5b, 6a)

      Central MD: March 1 to May 15, August 15 to October 15 (Hardiness Zone: 6b)

      Southern MD, Eastern Shore: March 1 to May 15, August 15 to October 15 (Hardiness Zones: 7a, 7b)

   d. Till areas to receive seed by disking or other approved methods to a depth of 2 to 4 inches, level and rake the areas to prepare a proper seedbed. Remove stones and debris over 1½ inches in diameter. The resulting seedbed must be in such condition that future mowing of grasses will pose no difficulty.
   e. If soil moisture is deficient, supply new seedings with adequate water for plant growth (½ to 1 inch every 3 to 4 days depending on soil texture) until they are firmly established. This is especially true when seedings are made late in the planting season, in abnormally dry or hot seasons, or on adverse sites.

Permanent Seeding Summary

Hardiness Zone (From Figure B.3): 7a Seed Mixture (From Table B.3):					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P_2O_5	K_2O	
9	Tall Fescue	60	2/15 to 4/30; 8/15 to 10/31	1/4" - 1/2"	46 lb/ac (1.0 lb/1000 sf)	92 lb/ac (2 lb/1000 sf)	92 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	Kentucky Bluegrass	40	2/15 to 4/30; 8/15 - 10/31	1/4" - 1/2"				
	Perennial Ryegrass	20	2/15 to 4/30; 8/15 to 10/31	1/4" - 1/2"				
N/A	Temporary Seeding	See Temp. Seed Summary	See Temp. Seed Summary	See Temp. Seed Summary	See Temp. Seed Summary	See Temp. Seed Summary	See Temp. Seed Summary	See Temp Seed Summary

B. Sod: To provide quick cover on disturbed areas (2:1 grade or flatter).

1. General Specifications
   a. Class of turfgrass sod must be Maryland State Certified. Sod labels must be made available to the job foreman and inspector.
   b. Sod must be machine cut at a uniform soil thickness of ¾ inch, plus or minus ½ inch, at the time of cutting. Measurement for thickness must exclude top growth and thatch. Broken pads and torn or uneven ends will not be acceptable.
   c. Standard size sections of sod must be strong enough to support their own weight and retain their size and shape when suspended vertically with a firm grasp on the upper 10 percent of the section.
   d. Sod must not be harvested or transplanted when moisture content (excessively dry or wet) may adversely affect its survival.
   e. Sod must be harvested, delivered, and installed within a period of 36 hours. Sod not transplanted within this period must be approved by an agronomist or soil scientist prior to its installation.

2. Sod Installation
   a. During periods of excessively high temperature or in areas having dry subsoil, lightly irrigate the subsoil immediately prior to laying the sod.
   b. Lay the first row of sod in a straight line with subsequent rows placed parallel to it and tightly wedged against each other. Stagger lateral joints to promote more uniform growth and strength. Ensure that sod is not stretched or overlapped and that all joints are butted tight in order to prevent voids which would cause air drying of the roots.
   c. Wherever possible, lay sod with the long edges parallel to the contour and with staggering joints. Roll and tamp, peg or otherwise secure the sod to prevent slippage on slopes. Ensure solid contact exists between sod roots and the underlying soil surface.
   d. Water the sod immediately following rolling and tamping until the underside of the new sod pad and soil surface below the sod are thoroughly wet. Complete the operations of laying, tamping and irrigating for any piece of sod within eight hours.

3. Sod Maintenance
   a. In the absence of adequate rainfall, water daily during the first week or as often and sufficiently as necessary to maintain moist soil to a depth of 4 inches. Water sod during the heat of the day to prevent wilting.
   b. After the first week, sod watering is required as necessary to maintain adequate moisture content.
   c. Do not mow until the sod is firmly rooted. No more than ½ of the grass leaf must be removed by the initial cutting or subsequent cuttings. Maintain a grass height of at least 3 inches unless otherwise specified.

ADDITIONAL WARM-SEASON/COOL-SEASON GRASS MIXES:

Permanent Seeding Summary

Hardiness Zone (From Figure B.3): 7a Seed Mixture (From Table B.3):					Fertilizer Rate (10-20-20)			Lime Rate
No.	Species	Application Rate (lb/ac)	Seeding Dates	Seeding Depths	N	P_2O_5	K_2O	
1	Coastal Panic Grass	10	2/15 to 4/30; 5/1 to 5/31	1/4" - 1/2"	46 lb/ac (1.0 lb/1000 sf)	92 lb/ac (2 lb/1000 sf)	92 lb/ac (2 lb/1000 sf)	2 tons/ac (90 lb/1000 sf)
	Creeping Red Fescue	10	2/15 to 4/30; 5/1 to 5/31	1/4" - 1/2"				
	Patridge Pea	4	2/15 to 4/30; 5/1 to 5/31	1/4" - 1/2"				

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13

key plan

seal

issued date description

revision date description

title
EROSION & SEDIMENT CONTROL GENERAL NOTES

date: 08-06-13
drawn by: DMB
checked by: CDK
scale: AS SHOWN
project number: 09738.00
scaled inch

sheet number
DDP
C8.20
ESD# 6763A

PROGRESS SET NOT FOR CONSTRUCTION

MAINTENANCE OF SEDIMENT CONTROL DEVICES:

1. SCE: SCE MUST BE MAINTAINED IN A CONDITION THAT MINIMIZES TRACKING OF SEDIMENT. THIS MAY REQUIRE ADDING STONE OR A CLEAN SURFACE, THE MOUNTABLE BERM, AND THE SPECIFIED DIMENSIONS. ALL STONE OR SEDIMENT SPILLED, DROPPED, OR TRACKED ONTO ADJACENT ROADWAY TO REMOVE MUD TRACKED ONTO PAVEMENT IS NOT ACCEPTABLE UNLESS THE WASH WATER IS DIRECTED TO AN APPROVED SEDIMENT CONTROL PRACTICE.

2. WASH RACK: THE AREA UNDER THE WASH RACK MUST BE MAINTAINED FREE OF ACCUMULATED SEDIMENT. IF DAMAGED, THE WASH RACK MUST BE REPAIRED OR REPLACED.

3. SILT FENCE ON PAVEMENT: ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE OR WHEN SEDIMENT REACHES 25 PERCENT OF THE FENCE HEIGHT. THE GEOTEXTILE MUST BE REPLACED IF TORN. THE WATER TIGHT SEAL ALONG THE BOTTOM MUST BE MAINTAINED AND THE STONE REPLACED IF DISPLACED.

4. SUPER SILT FENCE: ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED WHEN BULGES DEVELOP IN THE SILT FENCE OR WHEN SEDIMENT REACHES 25 PERCENT OF THE FENCE HEIGHT. THE GEOTEXTILE MUST BE REPLACED IF TORN. IF UNDERMINING OCCURS, REINSTALL CHAIN LINK FENCING AND GEOTEXTILE.

5. PORTABLE SEDIMENT TANK: REMOVE ACCUMULATED SEDIMENT FROM INNER PIPE WHEN IT REACHES TWO FEET IN DEPTH. IF THE SYSTEM CLOGS, THE INNER PIPE NEEDS TO BE PULLED OUT, ACCUMULATED SEDIMENT REMOVED, AND THE GEOTEXTILE REPLACED. THE POINT OF DISCHARGE MUST BE KEPT FREE OF EROSION.

6. EARTH DIKE: THE LINE, GRADE, AND CROSS SECTION MUST BE MAINTAINED. ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED AND POSITIVE DRAINAGE MAINTAINED. THE EARTH DIKE AND POINT OF DISCHARGE MUST BE KEPT FREE OF EROSION AND CONTINUOUSLY MEET THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

7. TEMPORARY ASHPHALT BERM: DAMAGED ASPHALT MUST BE REPAIRED. ACCUMULATED SEDIMENT AND DEBRIS MUST BE REMOVED AND POSTIVE DRAINAGE MAINTAINED.

8. FILTER LOG: SEDIMENT AND DEBRIS MUST BE REMOVED AND MULCH REPLACED WHEN SEDIMENT HAS ACCUMULATED TO A DEPTH OF ONE HALF OF EXPOSED HEIGHT OF THE LOG. THE FILTER LOG MUST BE REPLACED IF CLOGGED OR TORN. THE FILTER LOG NEEDS TO BE REINSTALLED IF UNDERMINED OR DISLODGED. FOR PERMANENT APPLICATIONS, VEGETATION MUST BE ESTABLISHED AND MAINTAINED SO THAT THE REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT ARE MET IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.

9. TEMPORARY STONE STRUCTURE OUTLET: REMOVE SEDIMENT WHEN IT HAS ACCUMULATED TO WITHIN SIX INCHES OF THE WEIR CREST. REPLACE THE GEOTEXTILE AND STONE FACING WHEN THE STRUCTURE CEASES TO DRAIN. THE LINE, GRADE, AND CROSS SECTION MUST BE MAINTAINED.

10. STORM DRAIN INLET PROTECTION:TO MAINTAIN FUNCTION AND AVOID PREMATURE CLOGGING ACCUMULATED SEDIMENT NEEDS TO BE REMOVED AFTER EACH RAIN EVENT. IF THE INLET PROTECTION DOES NOT COMPLETELY DRAIN WITHIN 24 HOURS AFTER A STORM EVENT, IT IS CLOGGED. WHEN THIS OCCURS, REMOVE ACCUMULATED SEDIMENT AND CLEAN, OR REPLACE THE GEOTEXTILE AND STONE.

EPA/MDE CONSENT DECREE GENERAL CONSTRUCTION NOTE

CONTRACTOR TO REVIEW THE CONSENT DECREE BY AND BETWEEN THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY, THE MARYLAND DEPARTMENT OF THE ENVIRONMENT AND ALLIED-SIGNAL AND ALL AMENDMENTS FOR THE HARBOR POINT SITE, FORMERLY THE ALLIED SIGNAL BALTIMORE WORKS SITE.

CONTRACTOR SHALL REVIEW THE ABOVE REFERENCED CONSENT DECREE PRIOR TO THE BEGINNING OF DEMOLITION, EXCAVATION, CONSTRUCTION, EARTHWORK, GRADING OR UTILITY ACTIVITIES. THE CONSENT DECREE SPECIFIES PROVISIONS FOR CONTAINMENT REMEDIES SUCH AS SITE CAPPING, UTILITY TRENCHING, HEAD MAINTENANCE SYSTEM, SOIL-BENTONITE BARRIER WALL, AS WELL AS HEALTH AND SAFETY PROTOCOLS. TO THE EXTENT POSSIBLE FOR THE CONTRACTOR'S CONVENIENCE, CONSTRUCTION DETAILS HAVE BEEN INCORPORATED INTO THESE PLANS FROM THE CONSENT DECREE. HOWEVER, THE CONSENT DECREE AND ALL ITS AMENDMENTS SHALL SUPERCEDE ANY DETAIL OR INFORMATION DEPICTED ON THESE CONTRACT DRAWINGS. THE CONTRACTOR SHALL FOLLOW ALL GUIDELINES SET FORTH IN THE CONSENT DECREE AND ITS AMENDMENTS FOR ALL CONSTRUCTION RELATED ACTIVITIES ON THE SITE.

OWNER'S/DEVELOPERS CERTIFICATION:

I/WE DO HEREBY CERTIFY THAT ANY CLEARING, GRADING, CONSTRUCTION, AND/OR DEVELOPMENT WILL BE DONE PURSUANT TO THIS APPROVED EROSION AND SEDIMENT CONTROL PLAN, ALL RESPONSIBLE PERSONNEL INVOLVED IN THE CONSTRUCTION PROJECT WILL HAVE CERTIFICATION OF ATTENDANCE AT AN APPROVED MARYLAND DEPARTMENT OF ENVIRONMENTAL SEDIMENT AND EROSION CONTROL TRAINING PROGRAM PRIOR TO THE BEGINNING OF WORK AND BALTIMORE CITY'S DPW AND DHCD AND MDE WILL BE ALLOWED RIGHT OF ENTRY FOR PERIODIC ON-SITE EVALUATION.

JONATHAN FLESHER		
PRINT NAME	SIGNATURE	DATE
1300 THAMES STREET SUITE 10		
BALTIMORE, MD 21231	410-332-1100	
ADDRESS	TELEPHONE NUMBER	

ENGINEERS CERTIFICATION:

I/WE DO HEREBY CERTIFY THAT THIS PLAN FOR EROSION SEDIMENT CONTROL REPRESENTS A PRACTICAL AND WORKABLE PLAN BASED UPON PERSONAL KNOWLEDGE OF THE SITE CONDITIONS AND THAT IT WAS PREPARED ON ACCORDANCE WITH THE REQUIREMENTS OF THE BALTIMORE CITY SWM/ESC PLANS REVIEW SECTION.

CHRISTOPHER KRUPINSKI		
PRINT NAME	SIGNATURE	DATE
81 W. MOSHER STREET		
BALTIMORE, MD 21217	410-728-2900	
ADDRESS	TELEPHONE NUMBER	

EROSION AND SEDIMENT CONTROL NOTES

1. THE CONTRACTOR WILL COMPLY WITH ALL REQUIREMENTS OF SEDIMENT AND EROSION CONTROL AS SET FORTH IN THE MARYLAND SEDIMENT AND EROSION MANUAL AND BALTIMORE CITY CODE ARTICLE 7.

2. SUBMIT A WRITTEN NOTIFICATION TO: THE DEPARTMENT OF PUBLIC WORKS, SURFACE WATER MANAGEMENT DIVISION: 3001 DRUID PARK DRIVE, ROOM 228, BALTIMORE, MD 21215, PHONE NUMBER, 410-396-0732, FAX 410-523-9047, SWM@BALTIMORECITY.GOV, AT LEAST 72 HOURS PRIOR TO START OF CONSTRUCTION STATING:
   a. WHEN CONTRACTOR INTENDS TO BEGIN CONSTRUCTION
   b. DISPOSAL AREA OF SITE MATERIAL
   c. CONTRACTOR'S TENTATIVE CLOSING DATE.

3. INITIAL DISTURBANCE WILL BE LIMITED TO THAT NECESSARY TO GAIN ENTRANCE TO THE SITE AND INSTALL NECESSARY SEDIMENT CONTROLS AS PER THE APPROVED PLANS.

4. ALL SEDIMENT CONTROLS AND CRITICAL SLOPES MUST BE STABILIZED WITHIN THREE CALENDAR DAYS. ALL OTHER INACTIVE DISTURBED AREAS ON THE PROJECT SITE MUST BE STABILIZED WITHIN SEVEN CALENDAR DAYS.

5. ALL EXCAVATED MATERIAL SHALL BE PLACED ON THE HIGH SIDE WHENEVER POSSIBLE AND CONFINED TO AN AREA WHERE IT WILL NOT BE OBSTRUCT THE NORMAL COURSE OF DRAINAGE.

6. PUMPING OF SEDIMENT LADEN WATER WILL NOT BE ALLOWED UNLESS IT IS FILTERED BY WAY OF AN APPROVED SEDIMENT TRAPPING DEVICE.

7. CONTINUOUS INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL DEVICES IS MANDATORY.

8. ANY SEDIMENT CONTROL DEVICES DISTURBED DURING UTILITY CONSTRUCTION MUST BE RESTORED IMMEDIATELY.

9. ALL POINTS OF INGRESS AND EGRESS SHALL BE PROTECTED TO MINIMIZE TRACKING OF MUD ON TO PUBLIC RIGHT-OF-WAYS.

10. ANY EARTH, GRAVEL, AND/OR OTHER MATERIAL TRACKED, SPILLED OR WASHED ON TO ADJACENT ROADS MUST BE IMMEDIATELY REMOVED AND DISPOSED OF IN A PROPER MANNER. NO FLUSHING WILL NOT BE PERMITTED. ALL MATERIAL MUST BE REMOVED BY MEANS OF SHOVELING AND SWEEPING.

11. ON ALL SITES WITH DISTURBED AREAS IN EXCESS OF 5,000 SQ. FT, THE CONTRACTOR SHALL HAVE A BALTIMORE CITY EROSION AND SEDIMENT CONTROL INSPECTOR INSPECT AND APPROVE THE WORK COMPLETED AT THE STAGES OF CONSTRUCTION SPECIFIED BELOW:
   a. UPON COMPLETION OF THE INSTALLATION OF THE PERIMETER SEDIMENT CONTROLS;
   b. DURING ALL GRADING AND BUILDING OPERATIONS;
   c. UPON FINAL STABILIZATION OF THE ENTIRE SITE PRIOR TO REMOVAL OF THE SEDIMENT CONTROLS

12. THE CONTRACTOR SHALL NOT DEVIATE FROM THE APPROVED SEDIMENT AND EROSION CONTROL PLAN WITHOUT FIRST RECEIVING APPROVAL FROM THE SURFACE WATER MANAGEMENT DIVISION. VARIATIONS TO THE ORIGINAL PLAN MUST BE SUBMITTED IN WRITING WITH ALL PROPOSED MODIFICATIONS STILL BEING HIGHLIGHTED. SUBSTANTIAL CHANGES WILL NECESSITATE AMENDMENT OF THE GRADING /BUILDING PERMIT.

GENERAL EROSION AND SEDIMENT CONTROL NOTES

1. CONTRACTOR SHALL PAY ALL FEES AND OBTAIN ALL PERMITS. THE CONTRACTOR WILL COMPLY WITH ALL REQUIREMENTS OF SEDIMENT AND EROSION CONTROL AS SET FORTH IN THE 2011 MD STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL AND BALTIMORE CITY CODE ARTICLE 7.

2. ALL SEDIMENT CONTROLS AND CRITICAL SLOPES MUST BE STABILIZED WITHIN THREE CALENDAR DAYS. ALL OTHER DISTURBED AREAS OF THE PROJECT SITE MUST BE STABILIZED WITHIN SEVEN CALENDAR DAYS.

3. BALTIMORE CITY SURFACE WATER MANAGEMENT DIVISION MUST BE NOTIFIED IN WRITING OF WHERE ANY EXCESS MATERIAL WILL BE DISPOSED OR WHERE ANY BORROWED MATERIALS WILL COME FROM.

BALTIMORE CITY SEDIMENT CONTROL NOTES

1. TITLE 4, SUBTITLE I ENVIRONMENTAL, ANNOTATED CODE OF MARYLAND AND BALTIMORE CITY ORDNANCE 1013, REQUIRE THAT PROVISIONS TO CONTROL EROSION AND SEDIMENT SHALL BE INCLUDED FOR ALL CITY LAND DISTURBANCE. AS REQUIRED BY STATE LAW, CONSTRUCTION CANNOT BE STARTED UNTIL SUCH EROSION AND SEDIMENT CONTROL PROVISIONS ARE APPROVED.

2. THE CONTRACTOR MUST FILTER ALL RUN-OFF AND CONTROL ALL SEDIMENT WITHIN THE PROJECT. ALL WORK MUST COMPLY WITH ALL REQUIREMENTS OF "BALTIMORE CITY CODE ARTICLE 7" AND THE "2011 MARYLAND STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL" AS DISTRIBUTED AND MODIFIED BY THE BALTIMORE CITY SURFACE WATER MANAGEMENT DIVISION.
3. NOTHING HEREON RELIEVES THE CONTRACTOR FROM COMPLYING WITH ANY AND ALL OTHER FEDERAL, STATE OR MUNICIPAL REGULATIONS.

EROSION & SEDIMENT CONTROL SEQUENCE OF OPERATIONS

1. OBTAIN PROPER PERMITS.
2. CONTRACTOR MUST SUBMIT WRITTEN NOTIFICATION TO: THE DEPARTMENT OF PUBLIC WORKS, SURFACE WATER MANAGEMENT, 3001 DRUID HILL PARK DRIVE, ROOM 228, BALTIMORE, MD, 2125, PHONE 410-396-0732, FAX 410-523-9047, SWM@BALTIMORECITY.GOV, 72 HOURS PRIOR TO START OF CONSTRUCTION STATING:
   A) WHEN CONTRACTOR INTENDS TO BEGIN CONSTRUCTION.
   B) DISPOSAL AREA OF SITE MATERIAL.
   C) CONTRACTOR'S TENTATIVE CLOSING DATE.
3. THE CONTRACTOR SHALL NOT EXPOSE MORE EARTH THAN CAN BE STABILIZED WITHIN 24 HOURS, WITH THE EXCEPTION OF BUILDING FOUNDATIONS. THE CONTRACTOR WILL BE RESPONSIBLE FOR DEVELOPING A PHASING PLAN FOR THE FOUNDATION EXCAVATION THAT COMPLIES WITH THE PROJECT MATERIAL HANDLING AND MANAGEMENT PLAN. THE PHASING PLAN MUST BE APPROVED (BY MDE.) ⚠
4. CLEAR AND GRUB THE SITE AS REQUIRED TO INSTALL EROSION & SEDIMENT CONTROL DEVICES.
5. INSTALL PERIMETER SUPER SILT FENCE, SILT FENCE ON PAVEMENT, STABILIZED CONSTRUCTION ENTRANCE, TURBIDITY CURTAIN, TEMPORARY ASPHALT BERM, TEMPORARY STONE OUTLET STRUCTURE, FILTER LOG, CLEAR WATER DIVERSION EARTH DIKES, TEMPORARY CONSTRUCTION FENCE & GATES, PORTABLE SEDIMENT TANKS AND INLET PROTECTION.
6. CONSTRUCT AND STABILIZE ACCESS ROADS AS NECESSARY.
7. BEGIN EXCAVATION TO BOTTOM OF FOUNDATION SYSTEM WITHIN PHASE LIMITS, ALL EXCAVATION SHALL BE HANDLED IN ACCORDANCE WITH THE PROJECT SOIL MANAGEMENT PLAN. SEE THE EXISTING ENVIRONMENTAL CAP PROTECTION NOTE, SHEET C8.00.
8. PROVIDE DEWATERING OF EXCAVATION AS NECESSARY TO CONTINUE WORK OPERATIONS. WATER GENERATED WILL BE HANDLED AND DISPOSED OF IN ACCORDANCE WITH SECTION 5, WATER MANAGEMENT, OF THE PROJECT MATERIAL HANDLING AND MANAGEMENT PLAN. AS NOTED IN THE PLAN, THE MAJORITY OF THE SITE RUNOFF WILL REQUIRE COLLECTION, TESTING, AND PROPER DISPOSAL, UNLESS OTHERWISE QUALIFIED AS SAFE TO ENTER THE STORM DRAIN SYSTEM OR THE BAY.
9. BEGIN DISCRETE EXCAVATION FOR PILE CAPS AND GRADE BEAMS. INSTALL PILE CAPS, GRADE BEAMS AND BACKFILL. SEE THE EXISTING ENVIRONMENTAL CAP PROTECTION NOTE, SHEET C8.00.
10. TEMPORARILY STABILIZE AREAS DISTURBED DURING PHASES OF OPERATIONS.
11. CONSTRUCT FOUNDATION WALLS AND SLABS, BACKFILL BUILDING FOUNDATION.
12. INSTALL PROPOSED UTILITIES AND SERVICE CONNECTIONS. BEGIN BUILDING CONSTRUCTION. INSTALL THE GREEN ROOF AND RAINWATER HARVESTING SYSTEMS AS FURTHER DESCRIBED BY THE STORMWATER MANAGEMENT SEQUENCE OF CONSTRUCTION, SHEET C9.40. ALL THE WORK IS ABOVE THE CAP.
13. PERFORM REMAINING SELECTIVE DEMOLITION AND ROUGH GRADE THE SITE AS NECESSARY FOR ROADWAY AND SIDEWALK INSTALLATION.
14. INSTALL PROPOSED ROADWAYS, SIDEWALK AND PROMENADE.
15. FINE GRADE AND INSTALL LANDSCAPING.
16. UPON COMPLETION OF EARTH DISTURBING ACTIVITIES AND WITH PRIOR APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR, REMOVE EROSION & SEDIMENT CONTROL DEVICES.
17. PERMANENTLY STABILIZE ALL AREAS WITH PRIOR APPROVAL FROM THE SEDIMENT CONTROL INSPECTOR, REPLACE EXISTING ROADWAY PAVEMENT OR SIDEWALK DAMAGED OR REMOVED BY EROSION AND SEDIMENT CONTROL DEVICES TO MATCH PRE-CONSTRUCTION CONDITIONS.

PROJECT NAME AND ADDRESS:
EXELON DEVELOPMENT (HARBOR POINT PARCEL 2)
1000 WILLS STREET
BALTIMORE, MD 21231

OWNERS NAME AND ADDRESS:
HARBOR POINT LAND, LLC.
1300 THAMES STREET, SUITE 10
BALTIMORE, MD 21231

APPLICANT'S NAME AND ADDRESS:
BEATTY DEVELOPMENT GROUP, LLC.
1300 THAMES STREET, SUITE 10
BALTIMORE, MD 21231
C/O JONATHAN FLESHER

DESIGNER'S NAME, ADDRESS AND PHONE NO.:
RUMMEL, KLEPPER & KAHL, LLP.
81 W. MOSHER STREET
BALTIMORE, MD 21217
410-728-2900
C/O CHRIS KRUPINSKI

HORIZONTAL AND VERTICAL DATUM ARE BASED UPON BALTIMORE CITY GRID MERIDIAN

BHC ARCHITECTS
650 S. Exeter Street, Suite 200, Baltimore, MD 21202
Phone 410 752 2739

owner/developer
developer:
Beatty Development Group
1300 Thames Street, Suite 10
Baltimore, MD 21231
P 410-332-1100

consultants
design consultant:
Elkus Manfredi Architects
300 A Street
Boston, MA 02210
F 617.426.7502 P 617.368.3311

structural engineer:
Tadjer Cohen Edelson & Associates
1109 Spring Street
Silver Spring, MD 20910
P 301-587-1820

mep & fp engineer:
Vanderweil
625 N. Washington Street
Alexandria, VA 22314-1913
P 703-683-9700

foundation engineers:
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 West 34th Street
New York, NY 10122
P 917-339-9300

civil engineers:
Rummel, Klepper & Kahl
81 Mosher Street
Baltimore, MD 21217-4250
P 410-728-2900

landscape architect:
Mahan Rykiel Associates
800 Wyman Park Drive, Suite 310
Baltimore, Maryland 21211
P 410-235-6001

environmental engineer:
Environmental Resources Management
200 Hory S Truman Parkway, Suite 400
Annapolis, Maryland 21401
P 410 266 0006

project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
(REVISED 11/12/13)

key plan

seal

issued	date	description
⚠	11/12/13	REVISIONS PER EPA/MDE 10/31/13 COMMENTS

revision	date	description

title
EROSION & SEDIMENT CONTROL NOTES

date:	08-06-13
drawn by:	DMB
checked by:	CDK
scale:	AS SHOWN
project number:	09738.00

sheet number — scaled inch

DDP
C8.30
ESD# 6763A

General Notes:

1. All work shall be performed in accordance with applicable federal, state and local codes and regulations and in accordance with the contractor's health and safety plan.
2. Elevations are referenced to Baltimore County and City Metropolitan Datum (BCCM), which equals −0.811 feet on the National Geodetic Vertical Datum (NGVD 29). Horizontal datum is referenced to Baltimore City Grid Meridian.
3. Base plan for foundation drawings developed from information available in:
   A. Phase II construction completion report prepared by Black & Veatch, dated January 2000.
   B. Geotechnical investigations performed by Mueser Rutledge Consulting Engineers in 1988, 1989, 1991, 1999, 1993, 2006 and 2013.
   C. Historic foundation information from Allied Signal.
   D. Flyover survey prepared by Greenhorne & O'Mara, dated April 1993.
   E. Existing physical features shown of the various waterfront structures are based on available original design drawings and the 1987 Whitman Requardt Report. Descriptions of existing conditions as revealed by diver and test pit investigations are provided in the 1990 MRCE report "Condition Survey of Waterfront Structures."
4. General Contractor shall obtain all state and local permits not provided by Developer before starting construction.
5. General Contractor shall verify and mark location of all existing underground utilities and structures within 15 feet of the work before starting construction.
2 6. General Contractor shall verify location of all existing underground utilities and structures before starting construction.
7. General Contractor shall coordinate all construction activities performed within 50 feet of the Honeywell Transfer Station (HTS) with HTS operations. HTS operations shall take precedence over construction activities.
8. Construction is being performed on the surface of a multi−media cap (MMC). The cap shall be preserved for continued functional use. All protective measures shall be taken to prevent contamination of the cap from chromium (soil or groundwater) or oil/fuel product.
1
9. Provide access for the Developer's representatives to all aspects of the work.
10. For list of references of available subsurface information see drawing F1.10.

Responsibilities:

The following assignment of responsibilities applies to the Work Contained in the F−Series Drawings Only:

1. The General Contractor shall be responsible for:
   A. obtaining the required state and local permits, obtain competitive bids for all the work items and award sub−contracts, site access, site security, support sub−contractors as required to move equipment and material around the site, scheduling the various construction activities, providing access to Honeywell Transfer Station, excavation of pits at pile cap locations, test pit program to locate obstructions at pile locations and demolition and excavation of obstructions, disposal of excavated soil, demolition debris and ground water.
   B. for maintaining all areas in a neat and unobstructed condition, both during and upon completion of the work. All waste material and construction debris shall become the property of the General Contractor and shall be promptly removed from the site.
   C. engaging the Pile Driving Contractor who shall be responsible for the Sheet Pile Installation, PDA/Indicator Pile Program, Foundation Pile Installation, provide all the required submittals as detailed in the submittal section of the notes, produce a schedule for the pile driving and coordinate this work with other contractors for efficient pile installation.
   D. engaging the Demolition Contractor who shall be responsible for the partial demolition of the superstructure and foundations at the Honeywell Transfer Station, provide all the required submittals as detailed in the submittal section of the notes for review and approval. Demolition contractor shall produce a schedule for the demolition and coordinate this work with other contractors for efficient completion of the project.
   E. engaging the Surveyor who shall be licensed in the state of Maryland. The Surveyor shall be responsible for pile layout in the field, survey of as−built pile locations and preparation of as−built surveyed pile location plan. The as−built survey of piles shall be performed on a weekly basis during pile driving and partially complete as−built drawing transmitted to the owner on a weekly basis.
   F. retaining a Certified Concrete Testing Facility after approval of qualifications by the Foundation Engineer prior to the first concrete pour.
2 G. conduct a pre−construction condition survey of the HMS system and components. Where pile driving or other ground disturbance below the visual warning layer occurs within 50 feet of the HMS system and components, monitor for proper operation. Where damage is observed, perform repairs without causing interruption to the performance of the HMS system and components.
2. The Dynamic Testing Contractor (DTC) will be engaged by the Owner. Dynamic Testing will be performed on each PDA/Indicator Pile by the DTC, in accordance with the requirements of ASTM D 4945. The DTC will provide a report with evaluation of capacity.
3. The Foundation Engineer shall be engaged by the Owner. The Foundation Engineer shall:
   A. prepare driving logs for each Sheet Pile and Foundation Pile and submit pile driving logs to the owner in a timely manner. All piles shall be installed under the continuous inspection of the Foundation Engineer or his representative. The Foundation Engineer shall prepare driving records for all Sheet Piles and Foundation Piles consisting of pile identification mark, type, size, and length of pile, pile hammer used, hammer speed and pressure, splice locations and type, tip and cut off elevations, plumbness checks before and after driving, driving resistance per foot, date and time of driving, and any unusual occurrences. Records shall be submitted to the owner after completion of project. Copies of pile driving logs, notes & daily field reports shall be made available for inspection by the owner.
   B. review the report from the DTC and arrive at a Pile Driving Criteria for the particular pile hammer to be used for the installation of Foundation Piles.
   C. provide construction inspection of membrane isolation, membrane restoration and pile cap construction.

General:

Earthwork:

1. Excavation will be advanced through a multimedia cap into a former industrial facility. Foundations and slabs of the former facility remain in place. Ground and groundwater below the multimedia cap may be contaminated.
2. Protect the multimedia cap (MMC) from mechanical damage (puncture, overloading, bearing capacity failure, tearing, cutting, etc.) and chemical contamination (cross−contamination by soil or debris mingling, groundwater discharge to MMC surface, etc.).
3. Treat excavated spoils as if they are contaminated with hexavalent chromium; demolish, handle, and manage debris in accordance with the Materials Management and Handling Plan (MMHP).
4. Protect side slopes of excavation from raveling as a result of pile driving vibrations, erosion, etc. If side slopes ravel, cease excavation to prevent disturbance of geomembrane. Adjust excavation slope to protect MMC against raveling.
5. Materials excavated from above the geomembrane may be stockpiled for re−use on site.
6. Remove obstructions which conflict with pile elements and pile cap elevations as provided on the Contract Drawings.
1 7. Decontaminate or cover excavation and demolition tools before removing them from a contaminated area. Use heavy duty polyethylene plastic to isolate contaminated soil from clean soil during excavation and loading operations. For further details refer to MHMP.
2
8. Place clean cover soil to cover site.
9. Collect rain water and groundwater from excavations. Prevent water from rising to the base of the capillary break gravel. Convey rain water to holding tanks with double wall pipe; water in the outer pipe wall shall be collected and removed.
10. Material density in place will be tested by the Developer using ASTM D6938 "Standard Test Method for In−Place Density and Water Content of Soil and Soil−Aggregate by Nuclear Methods (Shallow Depth)", and/or ASTM D1556 "Standard Test Method for Density and Unit Weight of Soil in Place by the Sand−Cone Method".
11. The Developer will review test results and authorize the General Contractor to dispose, re−use, or purchase materials. The Owner will designate disposal management method and disposal destination.
1 12. Cover all stockpiles and temporary debris collections.
13. Apply moisture as required to control visible dust.
14. Segregate synthetic materials from soil for disposal. The Warning Layer, Cover Geotextile, and drainage net (above geomembrane) shall be managed separate from geomembrane and underlying synthetic materials.
15. Remove, handle, segregate, and replace rip rap removed for foundation construction.

Submittals:

1. Submit for Developer approval more than 10 work days before performing work:
   A. Imported Materials: Provide 5 gallon minimum bulk sample and perform physical testing of particle size distribution ASTM D422, and moisture−density ASTM D698 (5 points minimum).
   B. Provide materials delivery tickets daily.
2. Submit for Developer approval within 5 work days after performing the work in any area:
   A. Survey elevation of existing geomembrane at four locations at each pile cap and survey elevation of repair geomembrane at two locations below each pile cap.
   B. Record plan fill drawing indicating final grades.

Equipment:

1. Use a flat bucket without teeth, and labor as required, to prevent intermixing of materials upon excavation.
2. After excavating, handling, or transporting potentially contaminated materials, cover or decontaminate demolition and excavation tools before removing from the excavation.
3. Decontaminate trucks, loaders, or other equipment used to transport excavation spoils between material type duties.

Materials:

1. Capillary Break Stone − source shall be approved by the Owner and conform to the following:
   A. Consist of hard, strong, durable, sub−rounded to well−rounded particles of granite, granitic gneiss or diorite stone, free of roots, trees, stumps, concrete, construction debris, organic matter and other deleterious materials.
   B. Meet the gradation requirements set forth by the Maryland Department of Transportation (MDOT) Standard Specifications for Construction and Materials or AASHTO M43, No. 57 aggregate as given below and as determined by ASTM C136:

Sieve Size	Percent Passing
1 ½"−inch	100
1"−inch	95 to 100
¾"−inch	−−
½"−inch	25 to 60
⅜"−inch	−−
No. 4	0 to 10
No. 8	0 to 5

   C. Washed free of particles passing the No. 200 sieve.
2. Select Granular Fill − Natural sand and gravel products of the excavation or MDOT Graded Aggregate Subbase containing no more than 5% retained on the ¾ inch sieve and containing less than 12% by dry weight passing the No. 200 sieve.
3. Select Structural Fill − Natural sand and gravel products of the excavation, or MDOT Graded Aggregate Subbase containing less than 12% by dry weight passing the No. 200 sieve; or MDOT Crusher Run Aggregate CR−6, containing not more than 15% by dry weight passing the No. 200 sieve.
4. Protective Stone Barrier / Utility Bedding − Blend by total weight 25% Select Structural Fill and 75% of AASHTO M34, No. 1 coarse aggregate to obtain a uniform gradation.
5. Separation Geotextile − Non−woven geotextile, 10 oz. per square yard or heavier.
6. Lightweight Fill − Coarse expanded shale aggregate such as "Solite®" produced by the Northeast Solite Corporation, having a maximum uniform particle size of ¾ inch. The aggregate shall be free from organic matter, clay, coal, limestone, shale or other deleterious materials, compacted unit weight shall be greater than 55, but not more than 65 pounds per cubic foot under standard Proctor compaction effort.
7. Rigid Insulation − Extruded Polystyrene Board, Type IV Rigid Cellular Polystyrene, 1.6 pounds per cubic foot minimum density, 2 inch thick board.
8. Flowable Fill − Portland cement and fly ash pozzolanic mortar fill.
9. Soil−Bentonite Backfill − A mix of bentonite slurry, clean onsite soils, dry SW−101 bentonite. Thoroughly mix to achieve uniform consistency with soil clods less than ¾" in size, meeting the following requirements:
   A. SW−101 Bentonite − as manufactured by WYO−BEN, Inc.
   B. Slump of 4" min. to 6" max.
   C. Calculate and mix dry SW−101 bentonite to be 3% by dry weight of the backfill. Add bentonite slurry to achieve specified slump.
   D. Backfill Gradation meeting the following criteria:

Sieve Size	Percent Passing
3"	100
¾"	85−100
#4	65−95
#40	35−75
#200	20−35

   E. Sample and test to confirm an in−place permeability of 1x10−7 cm/sec or less.
   F. Backfill should be free of all deleterious materials including: organics, construction debris, and refuse, etc
10. Imported materials shall be obtained from an environmentally clean source approved by the Owner and qualify as clean imported Fill Material under the MDE voluntary cleanup program. Test samples shall be taken from stockpiles prepared for import. Provide supplier certification and submit analytical test data documenting that materials are free of chemical and organic contamination.
11. Contaminated or otherwise unsuitable materials delivered and placed shall be removed and replaced without compensation and without time extension.
12. Excavation spoils and imported materials shall be stored at the locations and in the manner indicated on the Contract Drawings with Owner approval.
13. Manufactured materials shall be handled and stored in accordance with manufacturer recommendations. UV sensitive materials shall be covered and protected in storage.
14. Materials which the Owner suspects may be contaminated shall be handled separately from materials which are clean.

Utilities:

1. Close and abandon utilities servicing the site as indicated on the Contract Drawings. Coordinate closure with utility companies and owners, maintain service to neighboring properties. Remove all utilities encountered within the excavations to the limits of the excavation. Fill and cap utility pipes or conduits abandoned in place. Dispose removed utility pipes, etc.
2. Locations and dimensions of utilities shown on the Contract Drawings are approximate. Other utilities may exist at unknown locations and depths. Utility locations and depths shall be verified by the General Contractor prior to performing excavation and termination work.
3. Do not excavate below surface of protective concrete barrier in utility corridors.
4. Place backfill at new utilities in accordance with the requirements for each utility company. Use natural sand and gravel products of the excavation for controlled backfill around utilities.
5. Place protective stone barrier / utility bedding in lifts 8 inches in maximum loose thickness and compact with vibratory compactor.

Controlled Backfill:

1 1. Place and compact fill in lifts 8 inches in maximum loose thickness natural sand and gravel products of the excavation, and imported materials in a controlled manner to the lines and grades indicated on the Contract Drawings.
2. Compact all materials placed to obtain:
   A. 95% standard Proctor maximum dry density below pile supported subgrade;
   B. 98% standard Proctor maximum dry density below slab−on−grade;
   C. 98% standard Proctor maximum dry density for all trench backfill;
   D. Crushed stone shall be tamped or rolled in place, as access allows;
2 E. 98% standard Proctor maximum dry density for street and sidewalk backfill.
3. Controlled fill which fails to meet the compaction criteria shall be re−compacted, reworked, wetted etc. as necessary to achieve compaction criteria.
4. The Owner will test the density of soil in place to demonstrate proper compaction of fill. At least one sand cone test with moisture content determination will be performed adjacent to a nuclear density meter reading for each five nuclear density meter readings, no fewer than once weekly during fill operations to confirm nuclear density readings. Minimum testing includes:
   A. One density test for each 5,000 square feet of each lift placed, but not less than one for every 150 cubic yards of Controlled Fill placed;
   B. One test for every 75 cubic yards of utility trench backfill;
   C. Testing is not required of capillary break or crushed stone bedding;

Quality Assurance / Quality Control:

1. The General Contractor shall be responsible for: Quality Control of all materials and installation work; protection of completed work, and for documenting that the work meets the minimum requirements of the Contract Drawings. The General Contractor shall designate an experienced Quality Control Manager, and shall delegate the responsibility and authority to the Quality Control Manager to control materials and work processes, and confirm and document the work.
2. The General Contractor shall provide support for sampling and testing, and shall provide access to the Work area for Owner inspection, sampling, and testing.
3. The Owner will provide for stockpile sampling, excavation, and controlled fill construction.

Instrumentation and Monitoring Notes:

Pre−Construction Condition Survey:

Pre−construction condition survey documenting existing conditions of the Transfer Station tank pad, tanks and connections, mechanical room, and mechanical connections shall be performed prior to demolition and pile installation.

Optical Survey:

1. The existing Transfer Station tank pad and equipment room shall be optically monitored for lateral and vertical movement (Northing, Easting and Elevation). Monitor two points each side of the tank pad and floor areas at min. 25 ft. spacing. On exterior walls monitor at two different levels to determine slope of wall. Reference readings to a stable horizontal control. Survey accuracy shall be 1/16" accuracy or better.
2. Masonry Survey Nails (PK Nails) shall be placed at each corner of vaults V−1, V−2, V−11, and V−12.
3. Survey of ground surface above existing soil−bentonite hydraulic barrier is not required after steel sheet pile is installed to augment barrier. Place and survey PK Nails at 25 ft. spacing above barrier centerline if sheet pile is not installed.
4. Baseline reading shall consist of at least three consistent survey readings of each monitoring point prior to demolition or pile installation. Survey monitoring points daily when driving piles within 100 ft. of survey point. Take final reading after all piles within 100 ft. have been installed. Provide reading table computing vertical movement within 24 hours of each survey. Increased frequency of reading may be required depending on data trends.
1 5. A "threshold value" of 0.125 inches settlement and a "limiting value" of 0.25 inches settlement shall be established.

Crack Gage Monitoring:

1. Install and baseline crack monitoring gages on any cracks observed on the inside walls or floor of the Transfer Station tank pad. Three baseline readings shall be taken prior to demolition or pile installation.
2. Record outside temperature, and time of reading daily during pile installation.
3. Provide data to Foundation Engineer within 24 hours of reading.
4. A "threshold value" of 1 mm and a "limiting value" of 2 mm shall be established.

Vibration Monitoring:

1. Provide calibrated seismograph tri−axial geophones and monitor vibrations (peak particle velocity and frequency) when pile installation occurs within 50 feet of the following structures:
   A. Transfer Station tank pad
   B. Transfer Station mechanical room
   C. Vault
   D. Living Classroom
2. Vibration monitoring at ground surface above existing soil−bentonite hydraulic barrier is not required after steel sheet pile is installed to augment barrier.
3. The geophones monitoring the tank pad and mechanical room shall be anchored to the concrete floor slab. Geophones monitoring the Living Classroom and the vault shall be sandbagged on to the ground surface directly adjacent to the structures. Sandbag must be filled with loosely filled material such as sand. The sandbag should be as low and wide as possible with maximum amount of firm contact with the ground.
4. Seismographs shall be installed and monitored one hour prior to pile installation daily. Seismographs shall record vibrations continuously during periods of all pile driving activity.
5. Seismographs shall be capable of recording peak particle velocity and frequency as 1 minute histograms and provide full waveforms for events above threshold limits.
6. Seismographs shall be equipped with a wireless broadband modem which enables remote communication with the seismograph and allows automatic alerts to designated field personnel when vibrations exceed the pre−established threshold value.
7. A "threshold value" of 1.0 in/sec and a "limiting value" of 2.0 in/sec shall be established for the hydraulic barrier and vault. A "threshold value" of 0.5 in/sec and a "limiting value" of 1.0 in/sec shall be established for the Transfer Station tank pad and mechanical room.

Exceedances:

1. If the displacement of any monitoring point exceeds the "threshold value" during pile installation the Engineer, Pile Driving Contractor, Construction Manager, Developer and approved third parties shall be notified and the pile installation method shall be modified to prevent further exceedance.
2. If the displacement of any monitoring point exceeds the "limiting value" during pile installation the Engineer, Pile Driving Contractor, Construction Manager, Developer and approved third parties shall be notified. Stop pile driving and revise methods. Inspect condition of structures (see Item 1 above). Seal any new or opened cracks in Tank Pad with epoxy grout.

Submittals:

Surveyors:

1. Provide name and qualifications of Surveyor licensed in the state of Maryland.
2. Provide a Plan Drawing showing locations and ID of the benchmark/control points and monitoring points.
3. Provide a table giving the x, y, and z coordinates of optical monitoring points.

Vibration Monitoring Contractor:

1. Provide name and qualifications of the Vibration Monitoring Contractor. Submit qualifications of the Contractor demonstrating performance of at least 5 projects of similar scope within 5 years.
2. Provide a resume for the technician indicating at least 3 years' experience in the field of engineering and construction monitoring.
3. Provide a summary report of vibration readings giving distance of seismograph from pile driving and Pile ID for each record.

Demolition Notes:

1. All demolition shall be performed in accordance with these Contract Documents and all applicable laws and codes, including but not limited to those of the City of Baltimore and the State of Maryland.
2. It is the responsibility of the demolition contractor to obtain all required permits and file all required notices.
3. This contract requires demolition of a portion of the Transfer Station building and the protection of the remainder of the Transfer Station building. the Transfer Station is a one− and two−story steel frame building. The portion to be demolished is the two−story Office Building portion.
4. The Tank Room, and Mechanical Room are to remain. All Tank Room, and Mechanical Room and structures and components must be protected during demolition.
5. The demolition shall be performed in sequence shown on this drawing. Stage 1 demolition shall be performed, piles and pile caps installed and then stage 2 demolition shall commence.
6. The Transfer Station is supported on spread foundations.
7. The spread foundations and slabs−on−grade bear on fill soils over a concrete mud mat. The fill soils and concrete mud mat are the upper layers of a multi−media cap.
8. All elements of the multi−media cap must be protected from damage at all times. The multi−media cap shall not be punctured.
9. Contaminated materials shall not be placed above the multi−media cap.
10. All utilities that cross beneath the Office Building from the HMS Vault in the Wills Street sidewalk to the Mechanical Room must be protected during demolition and pile driving.
11. Available drawings for the Office Building are provided in these contract documents.
12. All demolition products are the property and responsibility of the demolition contractor.

Submittals:

Demolition Contractor:

1. Provide name and qualifications of the Demolition Contractor. Submit qualifications of the Contractor demonstrating performance at least 5 projects of similar scope over the previous 5 years.
2. Provide a resume for the lead Supervisor indicating at least 3 years' experience with similar projects.
3. Demolition Details, Sequence and Schedule.
4. Detailed information on Demolition Equipment to be used.

PROGRESS SET NOT FOR CONSTRUCTION

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650 S. Exeter Street, Suite 200, Baltimore, MD 21202
Phone 410 752 2759

owner/developer
developer:
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Baltimore, MD 21231
P 410-332-1100

consultants
design consultant:
Elkus Manfredi Architects
300 A Street
Boston, MA 02210
F 617.426.7502 P 617.368.3311

structural engineer:
Tadjer Cohen Edelson & Associates
1109 Spring Street
Silver Spring, MD 20910
P 301-587-1820

mep & fp engineer:
Vanderweil
625 N. Washington Street
Alexandria, VA 22314-1913
P 703-683-9700

foundation engineers:
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 West 34th Street
New York, NY 10122
P 917-339-9300

civil engineers:
Rummel, Klepper & Kahl
81 Mosher Street
Baltimore, MD 21217-4250
P 410-728-2900

landscape architect:
Mahan Rykiel Associates
800 Wyman Park Drive, Suite 310
Baltimore, Maryland 21211
P 410-235-6001

environmental engineer:
Environmental Resources Management
200 Harry S Truman Parkway, Suite 400
Annapolis, Maryland 21401
P 410 266 0006

project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

seal

issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS
2	11/25/2013	REVISIONS PER EPA/MDE 11/22/2013 COMMENTS

title
GENERAL AND TECHNICAL NOTES

date:	06/14/13
drawn by:	E.C.
checked by:	G.S.
scale:	NONE
project number:	MRCE-11896A
sheet number	DDP-F1.01

Eugina Cherkasskaya G:\DWGS\118\11896\11896a\DDP Drawings\DDP-F1.01.dwg

Foundation Pile Notes:

1. Pile tip elevations shown on drawings are an estimate and may vary based on actual subsurface conditions and results of PDA testing.
2. Steel Pipe Piles shall be of size shown on drawings and shall be in conformance with ASTM A252 Grade 3 Fy=45 ksi with tips seal welded.
3. All steel Pipe Piles shall be driven to the required capacity and to the minimum tip elevations shown on drawings. The drawings indicate the estimated pile length based on advancing the piles to Sand Stratum S4. However, subsurface soil investigations have been made and data is available from the engineer for general information. The contractor shall interpret for himself the subsurface soil and rock conditions.
4. Piles shall be driven with a variable stroke hammer delivering a rated energy range of 50,000 to 120,000 foot-pounds, such as the Delmag D46-32 or similar, and shall be capable of achieving the pile capacity indicated considering: hammer impact velocity; ram weight; stiffness of hammer and pile cushions; cross section, length, and total weight of pile; and character of subsurface material to be encountered, without damaging the pile. The pile hammer shall be subject to prior approval by the Developer.
5. Piles shall be driven within 3 inches of the plan location. Piles shall not be out of plumb or specified batter by more than 2 percent.
6. Required Minimum Allowable Load for the 18 inch OD Pipe Piles is 287 tons and 16 inch OD Pipe Piles is 250 tons.
7. Pile Cutting and Splicing
   A. Perform all welding in accordance with AWS D1.1. Only use welders qualified by tests prescribed in AWS D1.1.
   B. Piles damaged by driving at pile head and cut off to permit further driving shall be extended by splicing as approved by the engineer.
   C. Ends of piles to be spliced shall be squared before splicing
   D. Splices shall develop the full structural strength of the member
   E. Pile Installation using followers is not permitted
8. Pile driving operations shall not be conducted within 50 feet of any freshly placed concrete until a minimum 72 hours setting time has elapsed.
9. Each pile shall be marked by painting horizontal lines at one-foot intervals and the number of feet at five-foot intervals. Piles shall be marked in inches in the upper length to facilitate determination of driving resistance.
10. Any pile out of tolerance may be rejected. If rejected, it shall be replaced by another pile or piles, at locations specified by the engineer.
11. Obstructions shall be removed or penetrated by means as approved by the engineer.
12. Tops of pile shall be cut level. The cut shall be neat and clean. All cutoff lengths shall become the property of the contractor and shall be removed from the site.
13. Jetting of piles is not permitted. Prior to ordering pile material and start of production pile installation, the Pile Driving Contractor shall execute the PDA/Indicator Pile Program as detailed below:

Pile Load Testing (PDA) and Indicator Pile Pogram:

1. Piles to be installed in this program are indicated on the Plan Drawings.
2. Perform dynamic testing of each test pile in accordance with ASTM D 4945. Perform dynamic testing for the full length of pile driving and one restrike effort for each pile driven.
3. Dynamic test equipment, instruments, assembly, recorders, analysis programs, and reporting shall comply with ASTM D4945. Attach two strain transducers and two accelerometers to the top of each test pile, as indicated in Part 5.2 of ASTM D4945. Pile driving analyzer and accessories shall be manufactured by Pile Dynamics, Inc. or approved equal.
4. Dynamic testing equipment shall have been calibrated within 6 months of use. Supply all power needed for operating the equipment.
5. Restrike each test pile more than 24 hours after driving. Warm hammer up prior to restrike driving. Apply energy / blows as for the original driving. Stop driving after obtaining 3 inches of pile penetration. In the event the pile butt movement is less than 1/4 inch during restrike with full energy, the restrike may be terminated after 20 blows.
6. For restrike, use a hammer setting and a cap block which are computed to produce acceptable driving stresses at absolute refusal.
7. Analyze test readings to interpret pile load capacity. For each test pile, record and provide:
   A. Kinetic energy developed by the hammer
   B. Transferred energy (or efficiency) from hammer to pile
   C. Maximum impact velocity at pile top
   D. Maximum acceleration at pile top
   E. Maximum compression force in pile
   F. Maximum tension force in pile
   G. Capacity evaluation at end of driving
   H. Capacity evaluation at beginning re-strike
8. Submit a report summarizing the dynamic testing and analysis to the Foundation Engineer. Evaluate pile tip elevations for maximum allowable axial pile load, hammer energy.
9. Foundation Engineer will define production pile driving resistance criteria.

Concrete:

1. All concrete work shall be in accordance with the latest edition of ACI 318, "Building Code Requirements for Structural Concrete."
2. Concrete shall be air-entrained stone concrete (see note 16 below) with a minimum compressive strength (f'c) of:
   A. 4000 psi at 28 days for pile fill
   B. 6000 psi for the Honeywell Transfer Station Transfer Pad Slab walls and Grade Beams. Concrete shall contain fiber reinforcement. The fiber shall be virgin nylon Type monofilament, white color, 3/4" long (uniform size).
   C. 8000 psi at 28 days for all pile caps The cement used shall be Type II Portland Cement. Potable water shall be used. Aggregates used shall meet the requirements of ASTM C33 and maximum size shall be 3/4 inch.
3. General pile cap concrete shall have a maximum water-cementicious material ratio of 0.40. The slump shall be between 3 and 5 inches (without water reducers or plasticizers).
4. Concrete shall contain an approved admixture to provide 6% plus or minus 1% air entrainment.
5. All admixtures used shall be approved by the engineer. Admixtures containing chemical chlorides shall not be used.
6. Concrete mix shall be designed by the contractor in accordance with the ACI Manual of Concrete Practice and submitted to engineer for approval.
7. Concrete reinforcing steel bars shall be deformed new billet steel conforming to ASTM A615, Grade 60.
8. Concrete Reinforcing Bars used as dowels at the Concentric Pile to Column connection at the Plaza Garage shall be epoxy coated.
9. Development and splice lengths for reinforcing steel shall be based on latest edition of ACI 318, Building Code Requirement for reinforced concrete. Reinforcement splices shall be tension lap splices Class B.
10. Unless noted minimum concrete cover to reinforcing bars shall be 1.5 inch, for concrete placed against earth concrete cover shall be 3 inches
11. All exposed concrete corners shall have a minimum of one inch chamfer, cut at 45 degrees.
12. Expansion joint filler shall be pre-molded.
13. Contractor shall provide shop drawings of reinforcing steel bars to engineer for approval before material procurement and fabrication.
14. Concrete samples shall be collected by a certified testing facility and compressive strength tests performed at 7 days, 14 days, and 28 days. One set of samples shall be collected for each 25 cubic yards of concrete placement or a minimum of one set of samples per day.
15. No equipment is to be set on concrete foundations and slabs without written acceptance of the 7, 14 & 28 day break test results by the Foundation Engineer.
16. White stone from "Texas Quarry" source shall not be used in foundation concrete.

Sheet Pile Notes (for sheet pile barrier walls):

1. Steel sheeting for sheet pile barrier shall be installed prior to installation of any sheet pile or foundation piles within 30' of the existing soil-bentonite hydraulic barrier.
2. Sheet piles are intended as a hydraulic barrier. Sheet piles have been designed carry vertical load along Dock Street.
3. Lay out barrier centerline by optical survey.
4. All sheet piles:
   A. Shall be heavy gage hot-rolled sheet piling and shall conform to ASTM A 572/A 572M, Grade 50 and of the size shown on drawings. The interlock of sheet piling shall be free-sliding, allow a swing angle of at least 5 degrees when threaded and maintain continuous interlocking when installed. Sheet piling shall be full-length sections of the dimensions shown.
   B. Shall be provided in pairs, with the pair interlock full length seal welded.
   C. Shall be provided with interlock sealant in one open interlock of each pair for full length of sheet pile.
5. Fabrication:
   A. Sheet pile pairs will be shop seal welded in a horizontal position. Welding procedures, including electrode classification and required preheat temperature, shall be in conformance with AWS D1.1, latest edition. Welders and welding operators shall be qualified by applicable tests as described by AWS D1.1.
   B. All welds shall receive a 100% visual examination by a qualified inspector.
6. The verticality of the sheet piles shall not deviate from the plumb by more than one percent. Plan location shall be within 3 inches of theoretical.
7. Handle steel sheet piling using handling holes or lifting devices. Handle steel sheet piles with care to prevent damage. Support on level blocks or racks spaced not more than 10 feet apart and not more than 2 feet from the ends. Supports between multiple lifts shall be in a vertical plane. Protect steel sheet piling to prevent corrosion prior to installation.
8. Pile hammer: Use a pile hammer having a delivered force or energy suitable for the total weight of the pile and the character of SB barrier material to be encountered. Operate hammer at the rate(s) recommended by the manufacturer throughout the entire driving period. Repair any damage to piling caused by use of the pile hammer.
9. Pile Protection: Use a protecting cap during driving to prevent damage to the top of the sheet piling.
10. Drive templates:
    A. Prior to driving, provide template or driving frame suitable for aligning, supporting and maintaining sheet piling in the correct position during setting and driving. Use a system of structural framing sufficiently rigid to resist lateral and driving forces and to adequately support the sheet piling until design tip elevation is achieved.
    B. Templates shall not move when supporting sheet piling. Fit templates with wood blocking to bear against sheet piles and hold the sheet pile at the design location alignment. Provide outer template straps or other restraints as necessary to prevent the sheets from warping or wandering from the alignment, or racking along the alignment. Template shall be designed such that it rests on grade. Use of piles to support the template is not permitted. The template shall be two sided.
11. Sheet piles completed and driven to final tip elevation may be welded to adjacent completed sheets if required to limit movement of completed sheets.
12. Drive sheet piles to the minimum tip elevation(s) shown on the drawings.
13. Do not drive steel sheet piles until debris and other materials have been removed that may interfere with steel sheet pile driving. See Environmental drawings for resolution of conflicts with existing instrumentation.
14. Cutting and splicing:
    A. Piles driven below the required tip elevation and piles damaged by driving and cut off to permit further driving shall be extended as required to reach the top elevation by splicing as approved by the engineer.
    B. Ends of piles to be spliced shall be squared before splicing to eliminate dips or camber. Splice piles with concentric alignment of the interlocks.
    C. Spliced piles shall be free sliding and able to obtain the maximum swing with contiguous piles.
    D. Splices shall develop the full structural strength of the member.
15. Welding: shop and field welding for splicing and other conditions, qualification of welding procedures, welders, and welding operations shall be in accordance with AWS D1.1.
16. Remove and replace steel sheet piles found to be out of interlock, out of tolerance, damaged or otherwise deficient.
17. Provide Work Plan with Decon Procedure to Developer for Approval prior to extraction.
18. Trim the tops of piles as needed after driving. Use a straight edge in cutting by burning to avoid abrupt nicks. Steel Sheet Pile cut-offs shall become the property of the Contractor and shall be removed from the site.

Sealed Sheet Pile Interlocks:

1. Material:
   A. Sealant shall be Swellseal Gungrade WA, hydrophilic polyurethane waterstop, manufactured by De Neef Construction Chemicals, Houston, TX. Sealant shall be installed using the dry cure method, in accordance with manufacturer's instructions, or below, whichever is more stringent.
   B. Swellseal will be tested for expansion in fresh water, harbor water and site groundwater by the Engineer. Assist the Engineer with preparation of test samples. Handle all contaminated materials in accordance with the MHMP. Test performance will be submitted for review and approval prior to production.
2. Sealant application:
   A. Steel surface and interlock void to receive sealant shall be free of oil, moisture, soil, metal shavings, or other contaminants.
   B. Apply sealant and allow to dry cure 72 hours or more prior to driving. Surface temperature shall be above 45F for 24 hours prior and 48 hours after application.
   C. Apply Sealant in an approximately $\frac{7}{8}$" diameter bead into the interlock recess. Do not tool bead into joint. (Approximate application rate = 2/3 Volumetric ounce per lineal foot; Equivalent to 30 feet per 20 ounce tube). Track sealant supply and confirm application rate for each completed sheet pile interlock.
   D. After air drying, interlocks with sealant applied shall be covered during storage and transport; cover shall remain in place until the pile is lifted for placement. Prior to transport, flip sheets so water is unable to puddle within interlock. Sheets shall remain in this orientation until lifted for placement.
   E. Any holes in the sheets (lifting hole, etc.) below finished grade shall be covered with plate steel and seal welded.
   F. If sealant swells before sheet pile is placed, cover and dry to permit shrinkage, or replace sealant.
3. Sheet pile installation:
   A. The bottom of each clear interlock shall be plugged to prevent soil entry during driving. Interlock plug shall be tight fitting and secured in place to prevent loss during handling and placement. If the interlock plug is longer than 2", it shall be knocked out/displaced by adjacent sheet.
   B. Any sheet pile with interlock sealant applied shall be placed and driven to final tip elevation within a 4 hour period from the time it is in contact with the water.
   C. Sheets with sealant applied which are not driven to final tip within 4 hours shall be removed and replaced with new sealant applied.
   D. Sheets removed due to 4 hour sealant limit shall have the sealant removed by scraping and replaced with new sealant.
   E. If sealant does not adhere to sheet, apply wet sealant prior to driving sheet further.
   F. Upon completion of driving sheeting, where surface of soil-bentonite barrier has settled below El. 6 along Dock St. or El. 7 along Wills St., backfill with replacement soil-bentonite backfill as shown on Dwg. F1.01 Earthwork notes to the required elevation.

Sheet Pile Quality Control:

1. Perform continuous inspection during sheet pile driving. Inspect all steel sheet piles for compliance with tolerance requirements. Bring any unusual problems that may occur to the attention of the engineer.
2. Maintain a pile driving record for each sheet pile. Indicate on the installation record installation dates and times, type and size of hammer, rate of operation, total driving time, dimensions of driving helmet and cap used, blows required per foot for each foot of penetration, pile locations, pile plumbness, tip elevations, ground elevations, cut-off elevations, splice locations and any reheading or cutting of sheet piles. Record any unusual sheet pile driving problems during driving.
   A. Inspection of Driven Steel Sheet Piling for compliance with tolerance requirements. Bring any unusual problems to the attention of the engineer.
   B. Inspect interlocks periodically. Contractor may be required to pull selected steel sheet piles after driving to determine the condition of the underground portions of the sheet piles. Contract work shall include pulling and redriving/replacement of piles, if necessary, if any pile is found to be damaged.
   C. Remove and replace steel sheet piles found to be out of interlock at no additional cost to the Developer. The sheet pile pulling method must be approved by the Engineer.

Sheet Pile Notes (for Dock Street and Wills Street sheet pile retaining walls):

1. Sheet piles shall be coated with coal tar epoxy or glass flake epoxy to elevation -5.0 on both sides of the sheet pile.
2. Provide shoes for sheet piles capable of cutting through synthetic reinforcing layers. Alternately, add 1' to sheet pile length (prior to order) and cut the bottom 6" of sheet at 30 degrees to horizontal to form jagged edge.

Submittals:

Pile Driving Contractor:

1. The contractor shall develop and submit a work plan for both Sheet Piles and foundation Piles which shall consist of:
   A. Construction sequence.
   B. Description of means and methods of construction.
   C. Description of equipment to be used to perform the work.
   D. Safety controls for pile driving equipment material use and containment.
   E. Proposed staging and laydown area.
2. Equipment Data: Submit complete description of each pile hammer for driving steel Sheet Piles and Foundation Piles, including operational characteristics, rated energy, date of purchase, and date and description of last overhaul. Include data for driving helmets and templates, cap blocks, and pile cushions. Descriptive information shall include manufacturer's name, model numbers, and capacity.
3. Pile Identification Plan: Prior to any pile driving submit a pile identification plan showing pile locations, cut-off elevations, and pile numbering system for both Foundation Piles and Sheet Piles.
4. Pile Driving Template: Submit drawings or a detailed description of steel Sheet Pile driving template showing conformance with provisions for templates indicated in the notes.
5. Steel Sheet Piles: Submit shop drawings for approval prior to start of the work or ordering materials. Include details of top protection, sealant, cut-off method(s), etc. Include:
   A. Steel Sheet Pile order lengths.
   B. Shop drawings for Sheet piling, including fabricated sections, shall show complete dimensions including minimum section properties and details of steel Sheet piling and the driving sequence and location of steel Sheet piling.
   C. Include details of the method of handling piling to prevent permanent deflection, distortion, or damage to steel Sheet piling interlocks.
   D. Proposed sequence for driving all steel Sheet Piles.
   E. Proposed procedure for splicing steel Sheet Piles, including a plan for positioning all field and shop splices and detailed procedures for performing field splices
   F. Work Plan with Pile pulling method and Decon Procedure
6. Material Certificates: Certified steel material mill test reports for steel Sheet Pile material and Foundation Pile material. Submit for each shipment identified with specific lots prior to installation. Identification data should include piling type, dimensions, chemical composition, mechanical properties, section properties, heat number, and mill identification mark. Cross referencing between field shipments and stored materials and the submitted material certificates must be made, by referencing heat numbers, mill ID marks, etc., on each truck delivery ticket and on individual field tags, etc.
7. Verification of welder qualifications for any field welding.
8. Seal weld inspection record for each Sheet Pile pair; certify seal welds prior to delivery to site.
9. Sealant application, verify application rate and curing time; certify sealant application prior to driving Sheet Piles.
10. Prepare and Submit "As-built" Record Drawings showing Pile locations and plumbness for both Sheet Piles and Foundation Piles.

Dynamic Testing firm:

1. Provide name and qualifications of the Dynamic Testing firm. Submit qualifications of the specialty Dynamic Testing firm demonstrating performance of at least 5 projects of similar scope over the previous 5 years, and demonstrating experience in performing analysis, dynamic testing, interpretation of results, and analysis and interpretation of dynamic testing.
2. Provide a resume for the lead field engineer indicating at least 3 years' experience in installing and operating dynamic testing equipment for similar projects.
3. Provide a Dynamic Testing Report meeting the requirements of ASTM D 4945 for both original driving and restrike testing. Describe velocity of stress wave propagation, acceleration, evaluation of hammer and driving system performance, driving stress levels, and pile integrity.
4. Perform a CAPWAP, or similar, analysis of the dynamic test data on data obtained from the end of initial driving and the beginning of restrike for each test pile to evaluate pile capacity, establish resistance distribution, and quake and damping factors. Estimate pile tip elevation for maximum capacity. Evaluate pile ultimate capacity obtained from dynamic testing.
5. Perform a refined wave equation analysis incorporating the results of dynamic testing for each test pile. Include the Pile driving record as an attachment and also address the items listed in paragraph "7 Report" of ASTM D4945.
6. Submit the date record of the Pile driving analyzer together with information needed to correlate the records with the respective pile driving record.

General Contractor:

1. Submit Rebar Shop Drawings for all Reinforced Concrete Work detailed in the drawings for review and approval prior to material order or fabrication.
2. Rebar Mill Certifications.
3. Licensed welder qualifications.
4. Product or design data for crane with design calculations demonstrating less than 2 KSF bearing pressure imparted onto drainage net.
5. Concrete mix design including admixtures used for structural concrete for all the structures.
6. Certified concrete testing facility qualifications.
7. Concrete and grout strength results from tests performed at 7 days, 14 days, and 28 days.

Surveyor:

1. Piles As-built Location Survey Plan on a weekly basis for the piles completed during that week.

Foundation Engineer:

1. Submit Completed Pile Installation Records to the Developer for Record.
2. Submit Daily Field Reports to the Developer on a regular basis.

PROGRESS SET NOT FOR CONSTRUCTION

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consultants
design consultant:
Elkus Manfredi Architects
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Boston, MA 02210
F 617.426.7502 P 617.368.3311
structural engineer:
Tadjer Cohen Edelson & Associates
1109 Spring Street
Silver Spring, MD 20910
P 301-587-1820
mep & fp engineer:
Vanderweil
625 N. Washington Street
Alexandria, VA 22314-1913
P 703-683-9700
foundation engineers:
Mueser Rutledge Consulting Engineers
14 Penn Plaza, 225 West 34th Street
New York, NY 10122
P 917-339-9300
civil engineers:
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81 Mosher Street
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P 410-728-2900
landscape architect:
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P 410-235-6001
environmental engineer:
Environmental Resources Management
200 Harry S Truman Parkway, Suite 400
Annapolis, Maryland 21401
P 410 266 0006

project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

seal

issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS
2	11/25/2013	REVISIONS PER EPA/MDE 11/22/2013 COMMENTS
3	12/03/2013	REVISIONS PER EPA/MDE 11/22/2013 COMMENTS

title
GENERAL AND TECHNICAL NOTES

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drawn by:	E.C.
checked by:	G.S.
scale:	NONE
project number:	MRCE-11896A
	scaled inch

sheet number
DDP-F1.02

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Synthetic Layer Penetrations and Repairs:

Installer:

1. All alterations and repairs to the geomembrane shall be performed by an Approved Installation Contractor (AIC) by the International Association of Geosynthetics Installers (IAGI).

Materials:

1. Procure, maintain, and store the following materials onsite in a location that is dry, level, and readily accessible to the work. While in storage and upon installation, limit synthetic material exposure to moisture, intense heat and sunlight. Storage of synthetic rolled materials on raised supports is not acceptable. Submit samples, material data sheets, and manufacturer testing to the Developer for review and approval no less than 10 work days prior to delivery on site. Compare delivery tickets with the approved submittal for compliance. Non-complying materials will be rejected and shall be removed from the site.

2. 60 mil Linear Low Density Polyethylene (LLDPE) Geomembrane:

Physical Property	Test Method	Requirement	Manufacturer Testing Frequency
Carbon Black Content, Percent, (allowable range)	ASTM 1603	2.0–3.0	50,000 ft^2
Carbon Black Dispersion, (acceptable level)	ASTM 3015	Grade A–1, A–2 or B–1	Once per 180,000 lbs of resin
Thickness, mils (minimum average lowest individual)	ASTM D 751 Modified	60 (54)	Each roll
Density, g/cm^3 (maximum)	ASTM D 15085	0.930	50,000 ft^2
Minimum Tensile Properties (each direction)	ASTM D 638 Modified	--	50,000 ft^2
Tensile Strength at Break (lb/in. width)		184	
Elongation Break (percent)		625	
Tear Resistance, lbs (minimum)	ASTM D 1004 Die C (1988)	24	50,000 ft^2
Low Temperature Impact, °C (maximum allowable failure temp.)	ASTM D 746	–60	Once per 1,800,000 lbs of resin
Dimensional Stability, % (allowable range)	ASTM D 1204 1 hour at 100°C	±3.0	Once per 1,800,000 lbs of resin
Environmental Stress Crack, hrs (minimum with no failure)	ASTM D 1693 Modified	1500	Once per 1,800,000 lbs of resin
Puncture Resistance, lbs (minimum)	FTMS 101C Method 2065	78	50,000 ft^2

3. Base Geotextile, Cover Geotextile, and Cushion Geotextile:
Manufacturer testing no less than 1 test for each 75,000 square feet manufactured, shall show:

Property	Method	Manufacturer Minimum Average Roll Value
Fabric Weight, oz/yd^2	ASTM D 5261	16
Grab Strength, lbs	ASTM D 4632	325
Grab Elongation, Percent	ASTM D 4632	70
Trapezoid Tear Strength, lbs	ASTM D 4533	150
Mullen Burst Strength, lbs/in^2	ASTM D 3786	700
Puncture Strength, lbs	ASTM D 4833	195
Apparent Opening Size, U.S. Standard Sieve – (AOS)	ASTM D 4751	70
U.V. Resistance (500 hours)	ASTM D 4355	70

4. Geosynthetic Drainage:
Consists of Cover Geotextile over Geonet as required below.

Geonet: Manufacturer testing no less than 1 test for each 75,000 square feet manufactured, shall show:

Property	Test Method	Manufacturer Minimum Average Roll Value
Resin Density, g/cm^3 (minimum)	ASTM D 1505	0.940
Resin Melt Index, g/10 min (maximum)	ASTM D 1238	1.0
Carbon Black Content, Percent (minimum	ASTM D 1603	2
Thickness, inches (minimum)	ASTM D 1777	0.250
Foaming Agents, % (maximum)	N/A	0
Transmissivity, m^2/sec (at 2000 psf, gradient 0.1	ASTM D 4716	2.8 x 10^{-3}

5. Geosynthetic Clay Liner (GCL):

Shall be a factory manufactured product consisting of a layer of granular sodium bentonite clay encapsulated between two geotextiles. The geotextile shall be held together by needling or by stitching. The granular bentonite shall be continuously adhered throughout the GCL and to the backing material so that no significant displacement of bentonite occurs when the GCL is. cut with a utility knife, punctured, or torn. No disassociation of the backing materials from the bentonite core shall occur.

A. Sodium Bentonite:
The bentonite utilized in the manufacture of the GCL, as well any accessory bentonite provided for seaming and detail work, shall be a virgin, first quality product mined and processed specifically for the purpose of manufacturing a GCL. The bentonite producer shall provide certificates of analysis for the montmorillonite content certification, moisture content, fluid loss and swell index for each lot of the bentonite clay to be used in the GCL manufacturing. Manufacturer testing no less than 1 test for each 50,000 square feet manufactured, shows:

Property	Test Method	Manufacturer Test Value
Moisture Content	ASTM D 4643 or 2216	20% maximum as shipped
Fluid Loss	API 13A	18 ml maximum
Free Swell	USP–NF–XVII	22 ml minimum

B. Geotextiles:
The upper carrier geotextile shall be a woven product with a minimum mass per unit area of 3.25 oz/sy, in accordance with ASTM D 3776. The lower carrier geotextile shall be a nonwoven product with a minimum mass per unit area of 6.00 oz/sy, in accordance with ASTM D 3776.

C. Composite Geosynthetic Clay Liner:
Manufacturer testing no less than 1 test for each 75,000 square feet manufactured, shows:

Property	Test Method	Manufacturer Test Value
Clay Mass/Area (lb/sf)	ASTM D 5261	1 (at 20% moisture)
Water Permeability (cm/sec) (5psi maximum effective confining stress)	ASTM D 5084 or GRI–GCL–2	1.0 x 10^{-9} cm/sec
Grab Strength (lbs)	ASTM D 4632	75
Grab Elongation (%)	ASTM D 4632	20
Puncture Resistance	ASTM D 4833	102

6. Visual Barrier:
Shall be durable, non–degradable brightly or lightly colored and shall not impede drainage within cover soil.

7. PVC Piping:
Manufacturer testing in accordance with ASTM D2729, Schedule 80, Cell Classifications 12454–B, or 12454–C.

A. Perforated Sections:
$\frac{1}{2}$ inch holes, on one side spacing in accordance with ASTM D2729.

Demonstration:

8. Construct a mockup independent of the existing multimedia cap with complete pile penetration repair/seal. In the presence of MDE demonstrate performance of methods and materials to be leak–free with Smoke Test in accordance with Geosynthetics Research Institute Geomembrane (GM) Standard GM26.

Production:

9. Construct multimedia cap penetrations as indicated on Contract Drawings.

A. Prior to welding, prepare surface of geomembrane by steam cleaning, hand cleaning or applying an approved solvent to provide adequate welding surface.

10. Limit exposure of geomembrane to intense heat and sunlight. Place temporary cover over exposed synthetic layers at the end of shift. Do not place permanent cover or fill until approved by Foundation Engineer.

11. Seal geomembrane cuts, overlaps, and wrinkles with continuous extrusion welds.

Installation:

12. Together with the Engineer inspecting the work, observe material during installation, where material appears damaged or compromised, remove material and replace.

13. Installation of synthetic layers shall be in accordance with MMC specifications as prepared by Black and Veatch for original construction in all cases except where superseded by these notes and drawings.

Quality Control Testing:

14. Upon delivery of LLDPE Geomembrane, for each roll test Thickness, for each 3,000 square feet test Density, Minimum Tensile Properties, Tensile Strength at Break, Tear Resistance, and Puncture Resistance in accordance with Test Methods shown on Drawing DDP F1.03 Materials Note 2. Reject and remove from the site any materials that do not meet the minimum required test values.

Quality Assurance Testing:

15. Perform vacuum chamber testing on each geomembrane penetration, including boot assembly with mechanical clamp and gaskets, and all field welds; in accordance with ASTM D5641. In locations where field vacuum chamber testing is not feasible, perform spark test in accordance with ASTM D6395. In the event a test fails, repair all holidays and leaks, re–test to demonstrate acceptance. Provide a summary of testing to Developer.

Submittals:

16. Submit to the Developer for approval no less than 20 work days prior to delivery on site, samples, technical data sheets, and manufacturer's quality control testing of all proposed synthetic materials for geomembrane penetration repairs and MMC cap component replacement.

17. Submit results of quality control testing to the Developer for review and approval no less than 1 work day prior to use on site.

PROGRESS SET
NOT FOR
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DDP-F1.03

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project
EXELON BLDG &
PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

seal

issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS
2	11/25/2013	REVISIONS PER EPA/MDE 11/22/2013 COMMENTS

title
GENERAL AND
TECHNICAL
NOTES

date:	06/14/13
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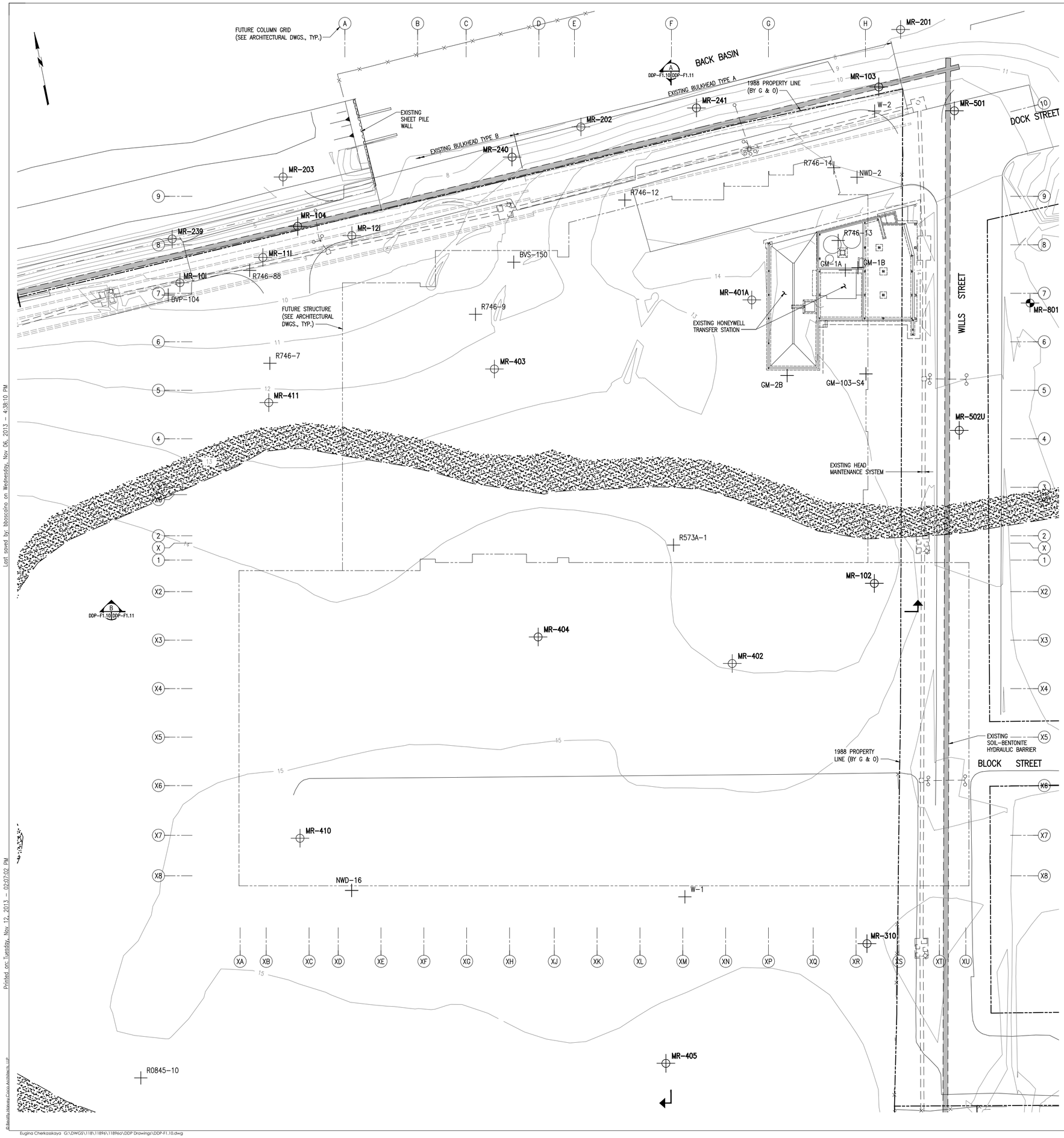
checked by:	G.S.
scale:	NONE
project number:	MRCE-11896A
	scaled inch

sheet number



NOTES:

1. For General and Technical notes, see drawings DDP-F1.01 and DDP-F1.02.
2. Borings shown are those which are within 50 feet of proposed development and extend into or through Stratum M.
3. Borings identified with the prefix "MR-" were drilled under inspection of MRCE. Other borings are available. MRCE makes no representation as to the accuracy of borings by others.
4. Limits of compressible stratum shown are based on widely spaced borings and historical shoreline information and as such are approximate. Actual conditions may vary.

References:

Reports by MRCE:

1. "Summary of the 1988 Subsurface Investigation for Perimeter Cutoff Wall Evaluation," Mueser Rutledge Consulting Engineers, New York, New York 1988.
2. "Condition Survey of Waterfront Structures," Mueser Rutledge Consulting Engineers, New York, NY 1990.
3. "Summary of the 1989-1990 Subsurface Investigation for Perimeter Embankment and Cut-Off Wall Design," Mueser Rutledge Consulting Engineers, New York, New York 1990.
4. "Summary of the 1991 Subsurface Investigation and Review of Interior Subsurface Conditions," Mueser Rutledge Consulting Engineers, New York, New York 1991.
5. "Summary of the 1991 Subsurface Investigation and Laboratory Testing Back Basin," Mueser Rutledge Consulting Engineers, New York, New York, 1992.
6. "Existing Subsurface Structures Review and Documentation," Mueser Rutledge Consulting Engineers, New York, New York 1992.
7. "Summary of Subsurface Information Along the Hydraulic Barrier," Mueser Rutledge Consulting Engineers, New York, New York 1994.
8. "Pile Load Tests and Pile Selection" and "Summary of Field Work for Pile Load Test," Mueser Rutledge Consulting Engineers, New York, New York, 2013.
9. "Preliminary Seismic Design Parameters," Mueser Rutledge Consulting Engineers, New York, New York, January 3, 2013.

Reports by Others:

10. "Baltimore Works Remedial Investigation Report," NUS Corporation, Gaithersburg, Maryland 1986.
11. "Summary of Aquifer Testing Completed at the Baltimore Works," Geraghty and Miller, Annapolis, Maryland 1989.
12. "Corrective Measures Implementation Report: Phase I Construction," Black and Veatch Waste Science Technology, Philadelphia, Pennsylvania 1993.
13. "Sidney Meyer Property Investigation Results," Black and Veatch Waste Science Technology, Philadelphia, Pennsylvania 1993.
14. "Construction Completion Report, Phase II: Soil-Bentonite Hydraulic Barrier Wall and Phase III: Final Remedial Construction," Black and Veatch Waste Science Technology, Philadelphia, Pennsylvania 2000.

LEGEND:

- MR-101 – Borings made in previous MRCE subsurface investigations
- – Borings made by others
- MR-801 – 2013 Boring made for Project Pile Load Test Program
- Area where organic deposits encountered
- Approximate limits of organic deposits encountered in borings
- 11 – Existing ground surface elevation

GRAPHIC SCALE
20' 10' 0 20' 40'

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EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
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8/1/13
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key plan

seal

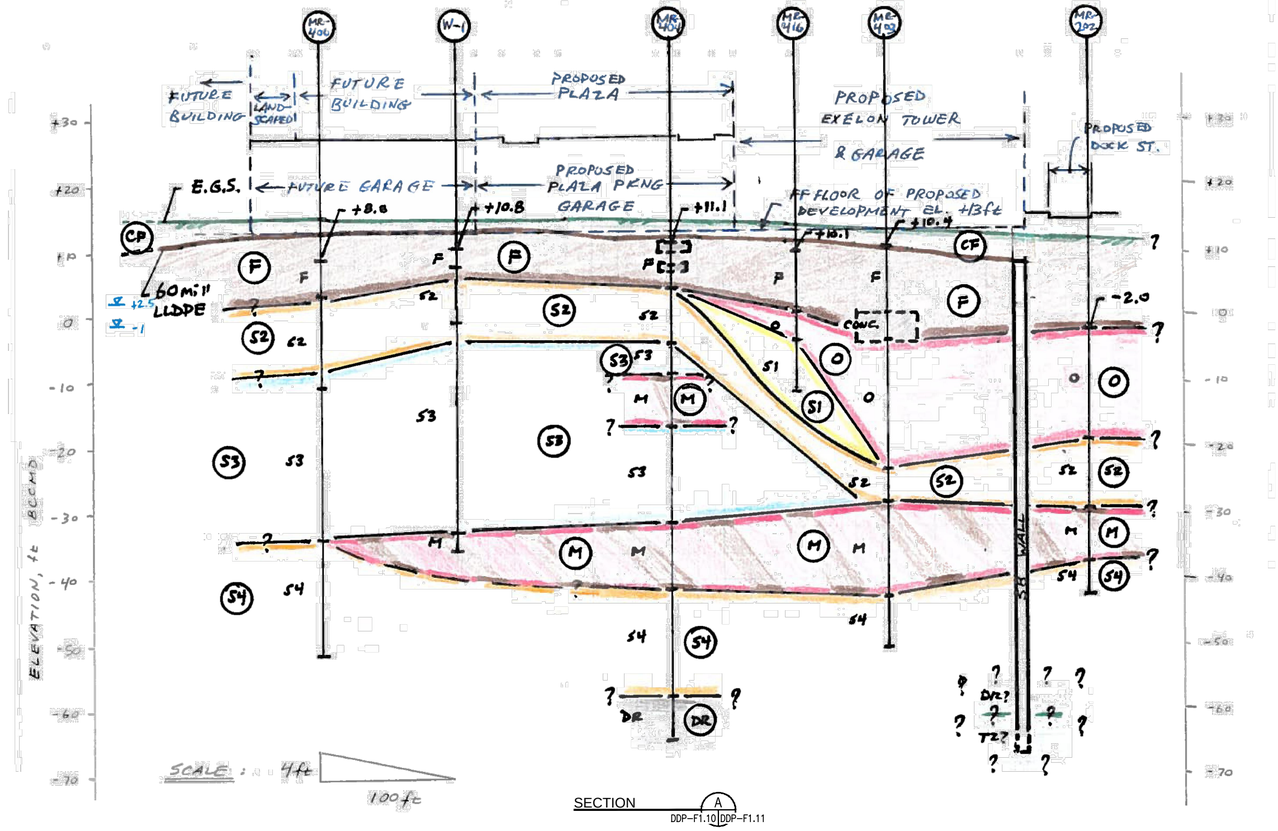
issued	date	description

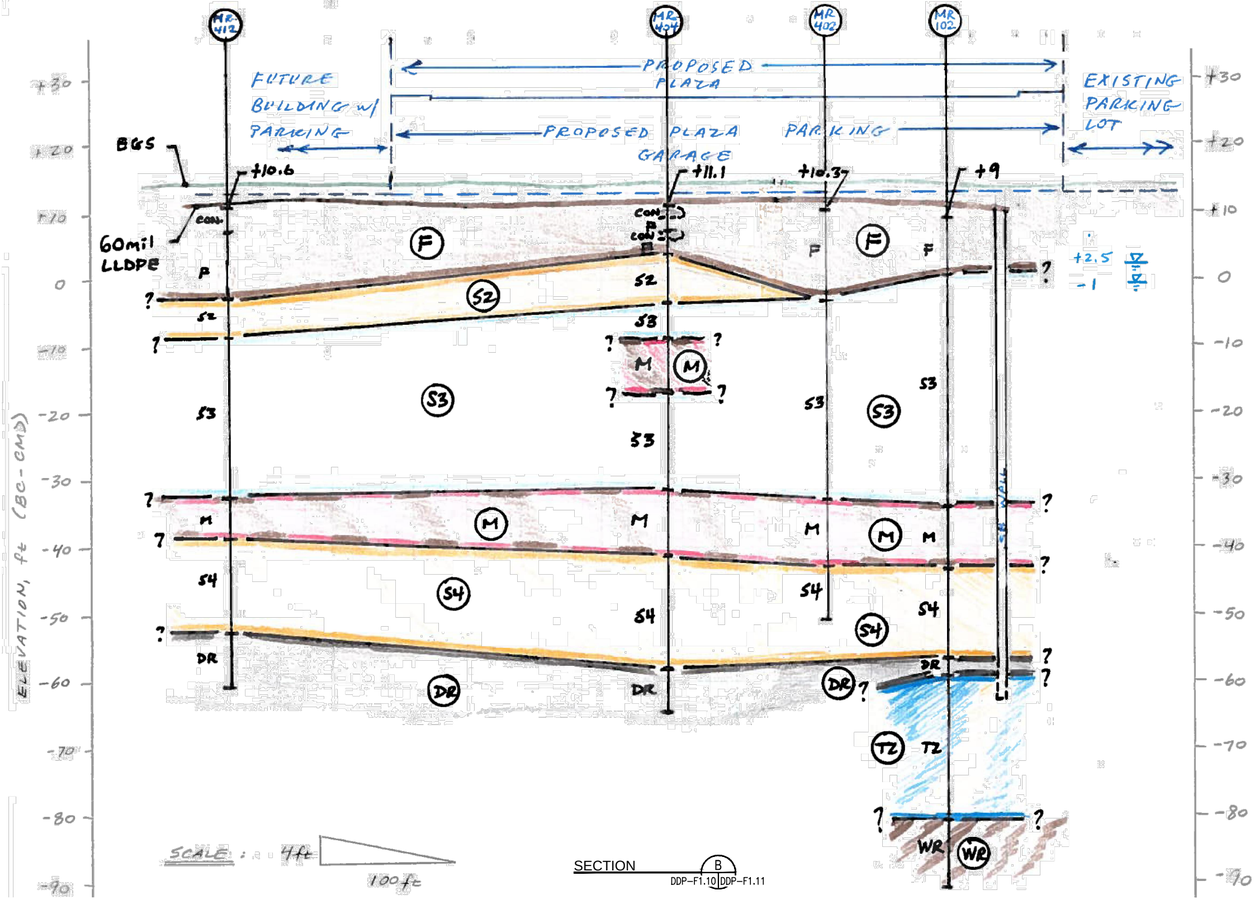
revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
BORING LOCATION PLAN

date:	06/14/13
drawn by:	K.J.
checked by:	A.M.D.
scale:	1:20
project number:	MRCE-11896A
sheet number	scaled inch

DDP-F1.10





NOTES:

1. For General and Technical notes, see drawings DDP-F1.01 and DDP-F1.02.

GENERAL STRATA DESCRIPTIONS

F — **Fill.** Compact red-brown to gray silty fine to coarse sand, gravel and cinders. may consist of clay and silt, construction debris, oyster shells, wood, coal, ore tailings, and other miscellaneous materials.

O — **Black Organic Silty Clay.** Soft black organic silty clay to clayey silt, trace fine sand, wood.

S1 — **Gray Silty Fine Sand.** Loose to compact dark gray silty fine sand, to fine sand trace to some silt, and containing a trace of mica and organic matter.

S2 — **Gray Sand.** Compact gray fine to coarse sand, trace to some gravel, trace silt. Stratum S-2 sand is outboard of the original shoreline. Green and yellow coloration may be present, presumably due to the presence of chromium.

M — **White Clayey Silt.** Very compact white clayey silt, some fine sand, to sandy silt. In some areas Stratum M consists of a hard mottled white and red brown silty clay, trace sand. Red-brown materials exhibit higher plasticity than the white.

S3 — **White Silty Sand.** Very compact white to light gray-brown fine to medium sand, some silt, and silty fine sand. Yellow to yellow-green coloration present in some areas, presumably due to the presence of chromium.

S4 — **White Sand and Gravel.** Very compact white to pink-gray coarse to fine sand and gravel, to fine to coarse sand, some gravel, trace silt. Stratum S-4 may contain cobbles.

DR — **Decomposed Rock.** Yellow-brown clayey fine to coarse sand. Relict rock structure visible in some samples.

TZ — **Transition Zone.** White fine to coarse sand within a white clayey silt matrix, and gray-green and brown fine to coarse sand, trace to some silt.

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HARBOR POINT
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revision	date	description
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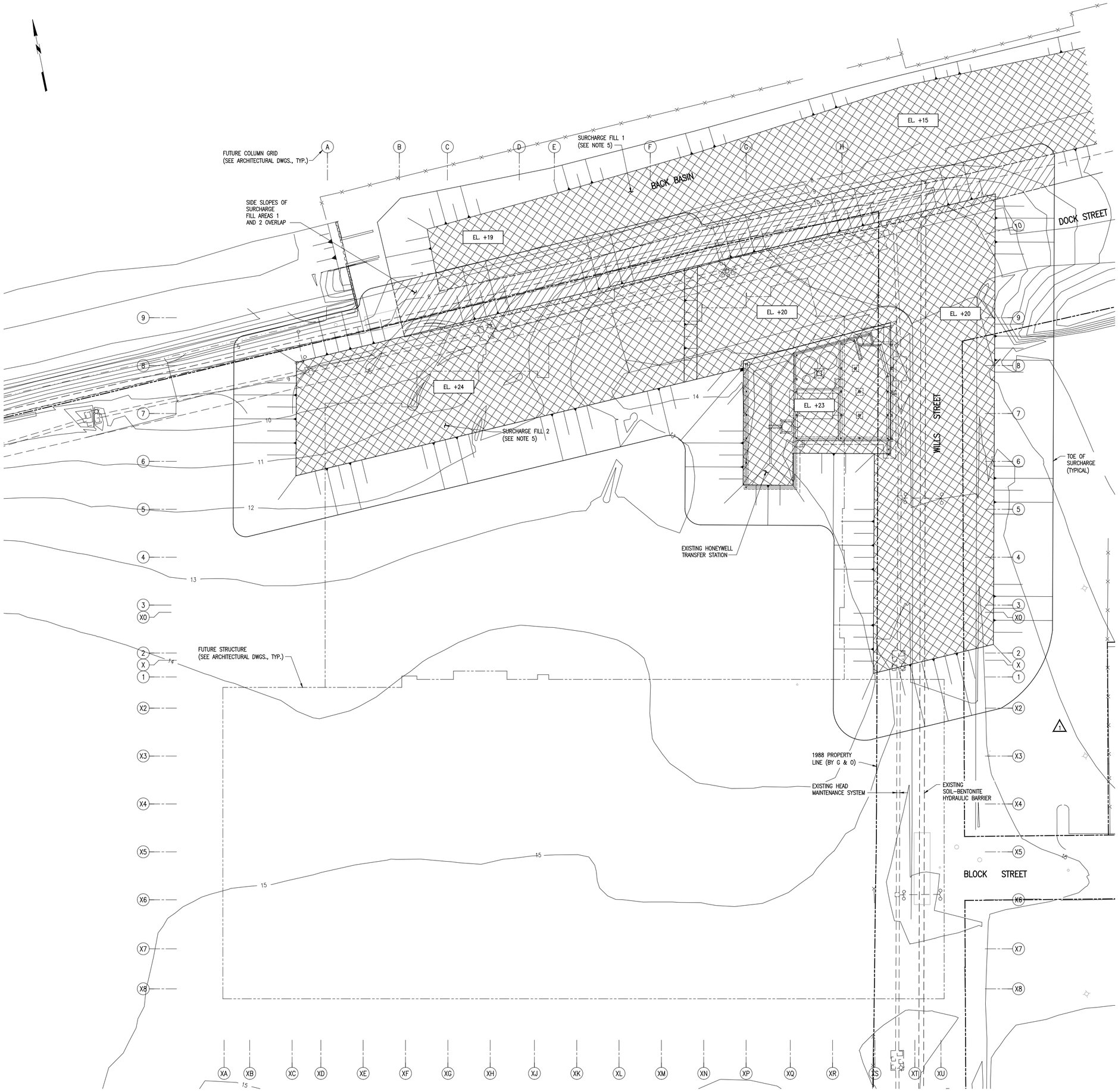
title
GEOLOGIC SECTIONS

date:	06/14/13
drawn by:	E.C.
checked by:	A.M.D.
scale:	AS SHOWN
project number:	MRCE-11896A

sheet number
DDP-F1.11



NOTES:

1. For General and Technical notes, see drawings DDP–F1.01 and DDP–F1.02.
2. For Details of Surcharge Fill 1 see Corrective Measures Implementation Report prepared by Black & Veatch dated February 1993.
3. For Details of Surcharge Fill 2 see Phase II Construction Completion Report prepared by Black & Veatch dated February 2000.
4. Fill area extents as shown by hatching with slopes graded between 2H:1V and 1H:1V.
5. Surcharge Fill Placement:

   Fill 1: Placed to surcharge Stratum O in Back Basin and support SB–Barrier trench excavation.

   Fill 2: Placed to surcharge Stratum O in area of Honeywall Transfer Station, future Wills St., and future Dock St.

1 6. Strip Drains were installed with a triangular spacing at approximately 5 feet.

LEGEND:

- EL. ... – Elev. of Surcharge
- Top of slope
- Toe of slope
- Top of Surcharge Fill
- Side Slopes of Surcharge Fill overlap
- 11 – Existing ground surface elevation

FOR REFERENCE ONLY

GRAPHIC SCALE
20' 10' 0 20' 40'

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HARBOR POINT
PHASE 1 AREA 1
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revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
HISTORIC PRE-LOAD AREAS PLAN

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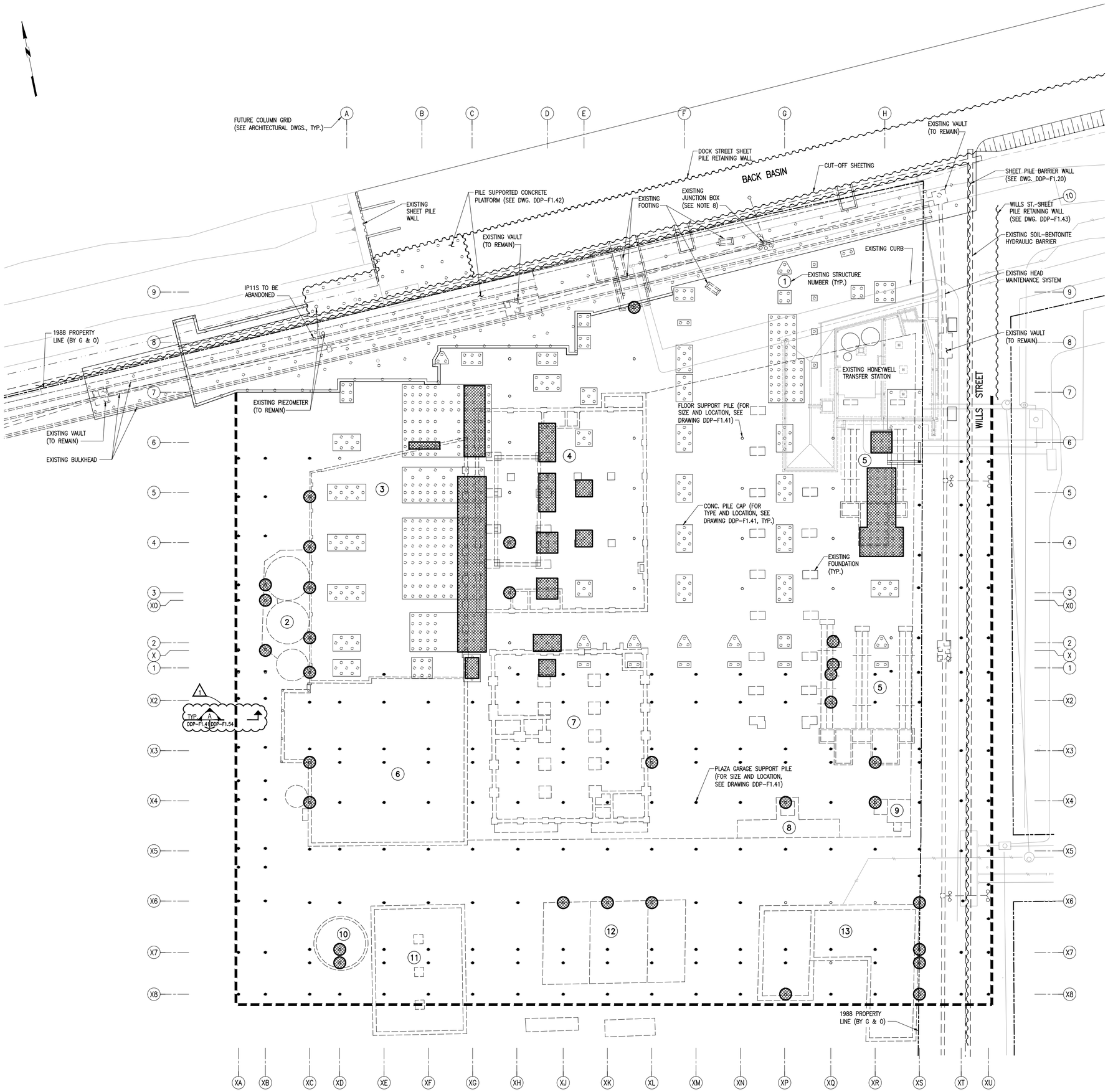
drawn by:	K.J.
checked by:	A.M.D.
scale:	1:20
project number:	MRCE-11896A

sheet number DDP-F1.12



NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. Obstructions may be encountered at any pile location.
3. Demolish and remove obstructions and materials to obtain sufficient depth for pile cap and MMC below pile cap, as shown on drawing DDP-F1.30.
4. At pile cap: where obstruction demolition or removal is not feasible (as approved by Owner), relocate piles to avoid obstruction. Owner will re-design pile cap to support columns.
5. At concrete slab on piles: piles have been laid out based on theoretical location of existing timber bulkhead, timber piles and timber tie back frame. The spacing shown between the piles is maximum. The Owner will re-design concrete slab and grade beams and additional piles based on obstructions encountered during pile installation.
6. At concentric pile: demolish concrete obstructions and remove timber piles necessary to place new pile at designated location. (concentric pile: Plaza Garage, Point St. Deck, Wills St. Deck)
7. See Material Handling and Management Plan, July 2013, by ERM.
8. At Existing Junction Box, Cement bollards and pad around junction box to be removed during elevation change to the box (See DDP-EN1.06).

LEGEND:

- Pile Cap and/or Pile Potential Obstruction
- MSE Wall

Existing Foundations

Structure Number	Structure Name	Foundation Type Description (All dimensions and elevations shown are approximate)
1	Tramway	No Foundation Information Available
2	Chromic Acid Solution Storage	Reinforced Concrete Slab (no piers). Two 25' diameter tanks rest on 26.5' diameter 15" thick concrete slabs. Smaller tank rests on 22.75' diameter 15" thick concrete slab
3	Container Warehouse	No Foundation Information Available
4	Stores Building	Perimeter of building supported on 1' wide wall footing with 2'x2'x1' spread footings spaced at 20' . Interior column footings 4'x4'x1'. 6" reinforced concrete floor slab first floor EL. 10.7
5	Chrome Processing Facilities	No Foundation Information Available
6	Boiler House	No Foundation Information Available
7	Engineering Cafeteria	Perimeter walls N-S direction 1'1" wall footing bearing on 3'3"x3'3"x1'0" spread footings spaced at 16' approximately
8	Truck Scale	Reinforced concrete vault with 8" wide walls. Vault is 4' deep.
9	Guard House	No Foundation Information Available
10	Water Tank Hydrant House	No Foundation Information Available
11	Locker Building	2'1" wide spread footing around perimeter of building with interior column footings. Column footings are 5'6" x 5'6"x 1' at base. First floor has 4" concrete slab
12	Locker Medical	No Foundation Information Available
13	Main Office and Laboratory	1'1" wide wall footing; 2'6"x2'6"x1' spread footings; 4'x4'x1' column footings

GRAPHIC SCALE
20' 10' 0 20' 40'

PROGRESS SET
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issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
POTENTIAL
OBSTRUCTIONS
PLAN

date:	05/24/13
drawn by:	E.C.
checked by:	Y.S.
scale:	1:20
project number:	MRCE-11896A
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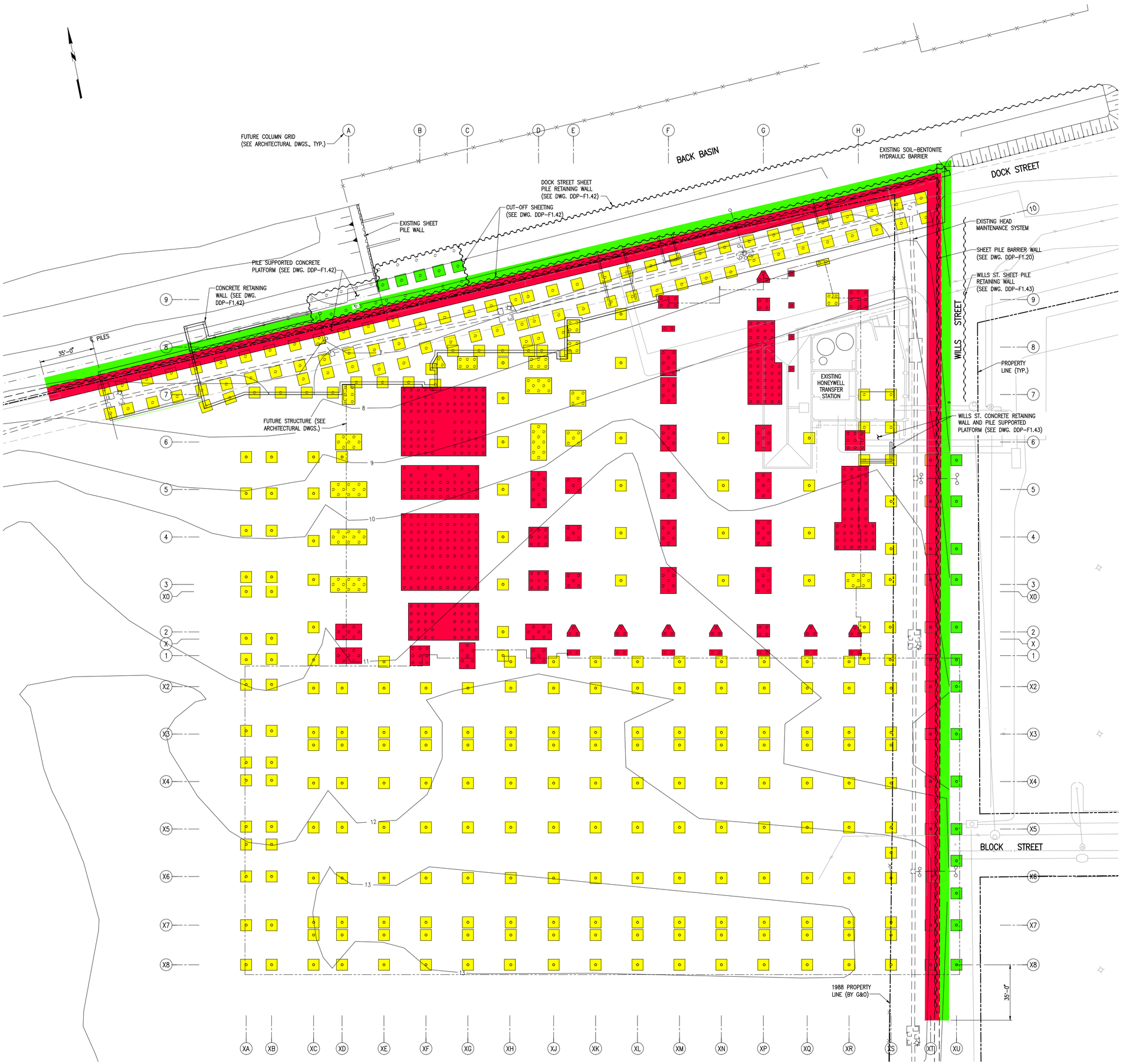
sheet number
DDP-F1.13



NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02, and DDP-F1.03.
2. Obstructions may be encountered at any pile location.
3. Demolish and remove obstructions and materials to obtain sufficient depth for pile cap and MMC below pile cap, as shown on drawing DDP-F1.30.
4. At pile cap: where obstruction demolition or removal is not feasible (as approved by Owner), relocate piles to avoid obstruction. Owner will re-design pile cap to support columns.
5. At concrete slab on piles: piles have been laid out based on theoretical location of existing timber bulkhead, timber piles and timber tie back frame. The spacing shown between the piles is maximum. The Owner will re-design pile cap and additional piles based on obstructions encountered during pile installation.
6. At concentric pile: demolish concrete obstructions and remove timber piles necessary to place new pile at designated location. (concentric pile: Plaza Garage, Point St. Deck, Wills St. Deck)
7. See Materials, Handling and Management Plan July 2013, by ERM.
8. As-Built elevation contour of Synthetic Layers from survey by Morris Ritchie Associate.
9. For number of piles see Pile Schedule on Dwg. F1-55.

LEGEND:

- ○ – Concentric Pile
- – Excavation outside S-B Barrier
- – Excavation below Warning layer to Synthetic Layers (At piles or Pile Caps)
- – Excavation below Synthetic Layers remove spoils to create volume for foundation / pile cap.
- 13 – Existing Synthetic Layers Contours

GRAPHIC SCALE
20' 10' 0 20' 40'

PROGRESS SET
NOT FOR
CONSTRUCTION

DDP-F1.14

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project
EXELON BLDG &
PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

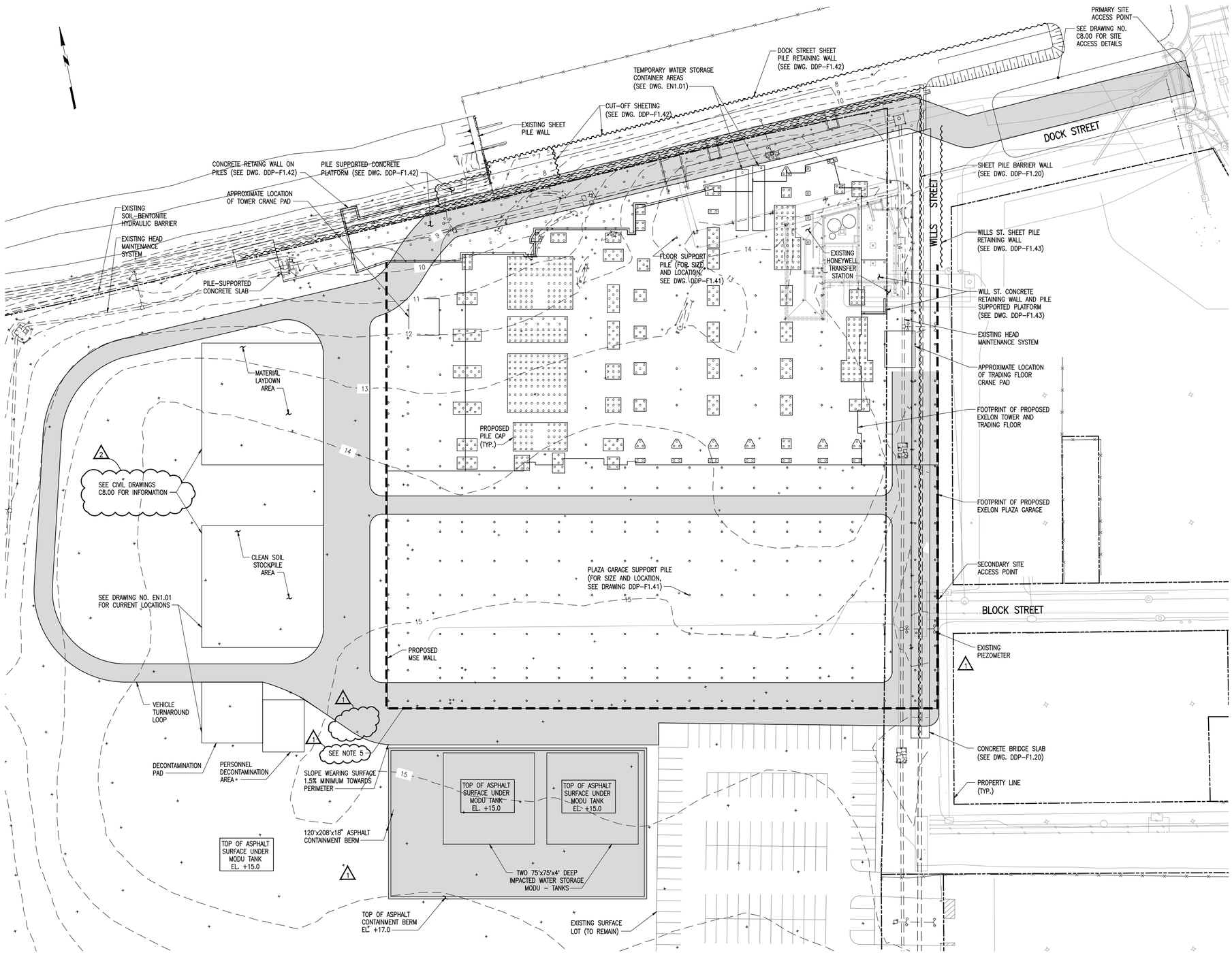
seal

issued	date	description
issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
FOUNDATION
EXCAVATION
AREAS PLAN

date:	05/24/13
drawn by:	E.C.
checked by:	G.S.
scale:	1:20
project number:	MRCE-11896A
sheet number	scaled.pct



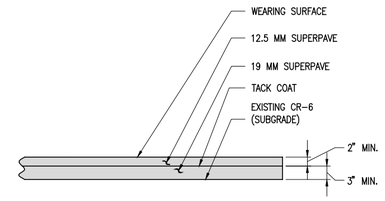
NOTES:

1. For General and Technical notes, see Drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. Plaza Garage piles shall be filled with concrete prior to placement of cover soil or placement of bridge slab. See detailed sequence shown on Drawing F1.31.
3. Construction access road in the area indicated should be demolished up to 6' minimum south of the proposed MSE wall prior to start of MSE wall installation.
4. Raise existing manhole rims and lids. Remove and replace flush with new pavement surface.
5. See Material, Handling and Management Plan, July 2013, by ERM.
6. Vehicular speed must be less than 15 mph. Provide signage consistent with MDOT, road work construction standards.
7. For the storage volume shown, during a 100-year storm event, the total area of excavations that drain beneath the MMC must be less than 16,000 square feet. Maintain water level in modutanks a minimum of 6 inches below capacity at all times.
8. Confirm storage and roadway construction layout by survey for conformance with approved workplans.

LEGEND:

13 – As-Built elevation contour at grade

– Proposed Asphalt Construction Access Road



DETAIL 1: TYPICAL ASPHALT SECTION
SCALE: 1:1

THIS DRAWING HAS BEPREPARED AS A GUIDELINE FOR CONSTRUCTION LAYDOWN AREAS, ACCESS, STORAGE AREAS ETC THAT MAY BE REQUIRED DURING CONSTRUCTION. CONTRACTOR MAY SUBMIT ALTERNATIVES FOR REVIEW AND APPROVAL AS A PART OF CONTRACTOR WORK PLAN PRIOR TO START OF ANY CONSTRUCTION ACTIVITY.

GRAPHIC SCALE
30' 20' 10' 0 30' 60'

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EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

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seal

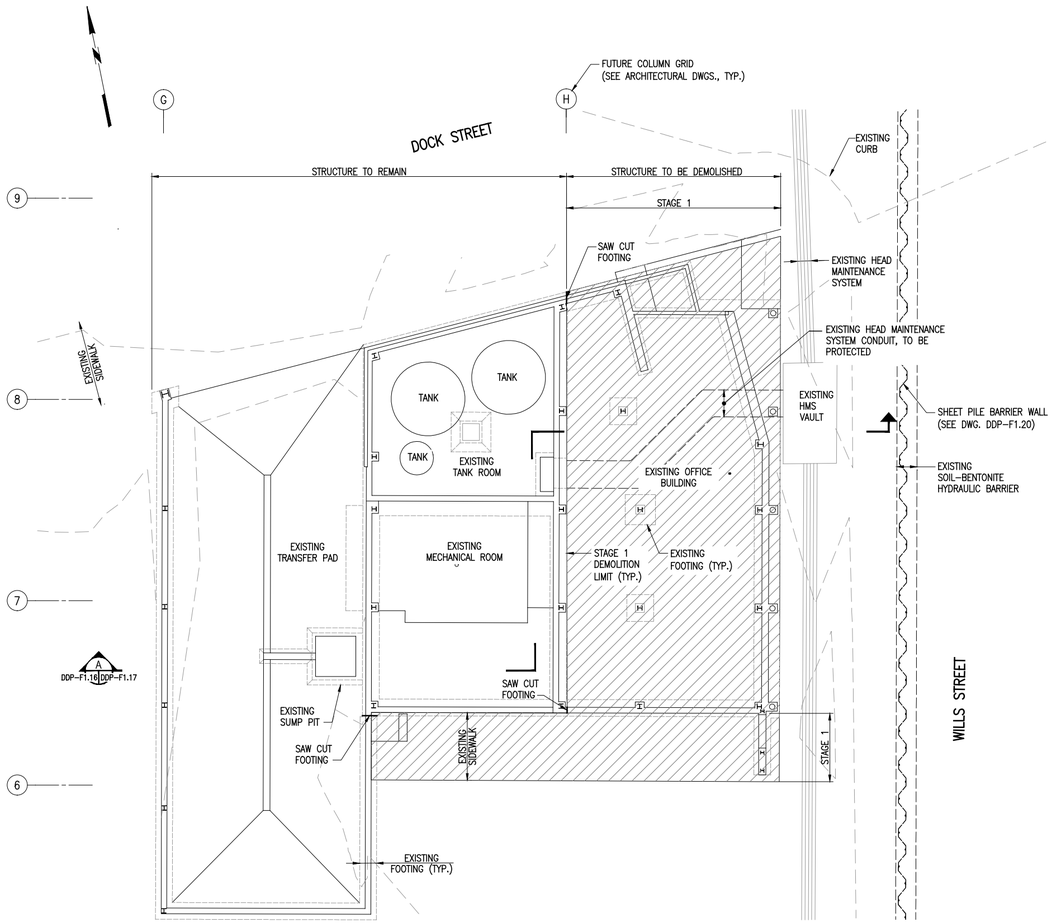
issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS
2	11/25/2013	REVISIONS PER EPA/MDE 11/22/2013 COMMENTS

title
CONSTRUCTION ACCESS ROADS PLAN

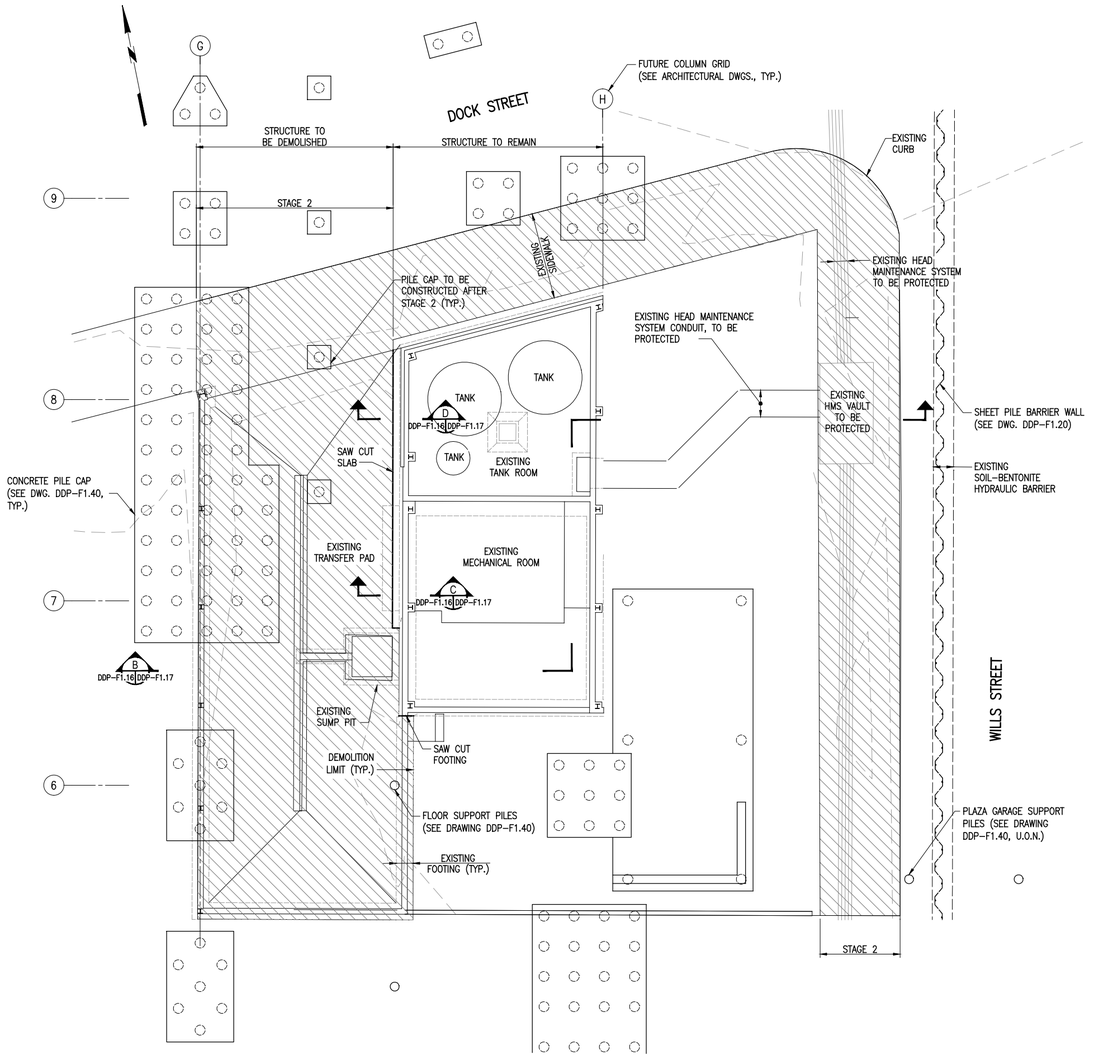
date:	07/01/13
drawn by:	E.C.
checked by:	D.J.G.
scale:	1:30
project number:	MRCE-11896A
sheet number	scaled inch

DDP-F1.15



DEMOLITION PLAN - STAGE 1

SCALE: 1/8"=1'-0"



DEMOLITION PLAN - STAGE 2

SCALE: 1/8"=1'-0"

Stage 1 Demolition Sequence:

1. Contract for performance of a hazardous materials assessment of the Stage 1 and 2 demolition areas by a licensed hazardous materials assessor. Provide three copies of a written report prepared by the licensed hazardous materials assessor summarizing the findings 3 weeks prior to demolition.
2. Prior to the start of demolition, remove all hazardous materials identified in the assessment, if any, from the stage 1 demolition areas including but not limited to asbestos, fluorescent light tubes, fluorescent light fixtures. Dispose of all hazardous materials in accordance with all applicable codes and laws.
3. Provide water line to supply water for dust control during demolition. Control dust at all times.
4. Protect multi-media cap from damage at all times.
5. Perform demolition in a careful manner so as to not damage the Tank Room, Mechanical Room and Transfer Pad which are to remain.
6. Demolish Office Building from the top down, removing the roof, then the second floor elements, then the first floor elements.
7. Cut structural steel at Stage 1 Demolition Limit Line.
8. Remove the structural steel columns to the tops of the pedestals; cut off anchor bolts and grind flat.
9. Prior to ground floor slab demolition, cut openings in slab at four corners and center.
10. Hand-excavate to top of multi-media cap at slab openings and determine thickness of soil above mud mat. Record this information for use during slab demolition.
11. Cut three openings in slab above Head Maintenance System (HMS) conduits at west, center and east areas of slab.
12. Hand excavate through slab openings to expose HMS conduits.
13. Secure HMS conduits prior to slab demolition to protect conduits from demolition activities.
14. Remove slab by jackhammer.
15. Saw cut north and south wall footings at the locations indicated.
16. Remove the footings within the Office Building footprint.
17. Remove all associated debris from demolition of Office Building.
18. Recycle all recyclable structural elements in accordance with all applicable laws and codes.
19. Dispose of all demolition products in a lawful manner.

Stage 2 Demolition Sequence:

1. Prior to the start of demolition, remove all hazardous materials identified in the assessment, if any, from the Stage 2 demolition area including but not limited to asbestos, fluorescent light tubes, fluorescent light fixtures. Dispose of all hazardous materials in accordance with all applicable codes and laws.
2. Provide water line to supply water for dust control during demolition. Control dust at all times.
3. Protect multi-media cap, HMS vault and HMS conduit at all times.
4. Saw cut slab and footing where shown.
5. Remove and store grating for future use.
6. Remove slab footing and sump pit by jackhammer.
7. Remove sidewalk by jackhammer.
8. Construct slope protection as shown.

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.

LEGEND:

– DENOTES AREA TO DEMOLISHED

GRAPHIC SCALE

8' 4' 0 8' 16'

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EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

seal

issued	date	description

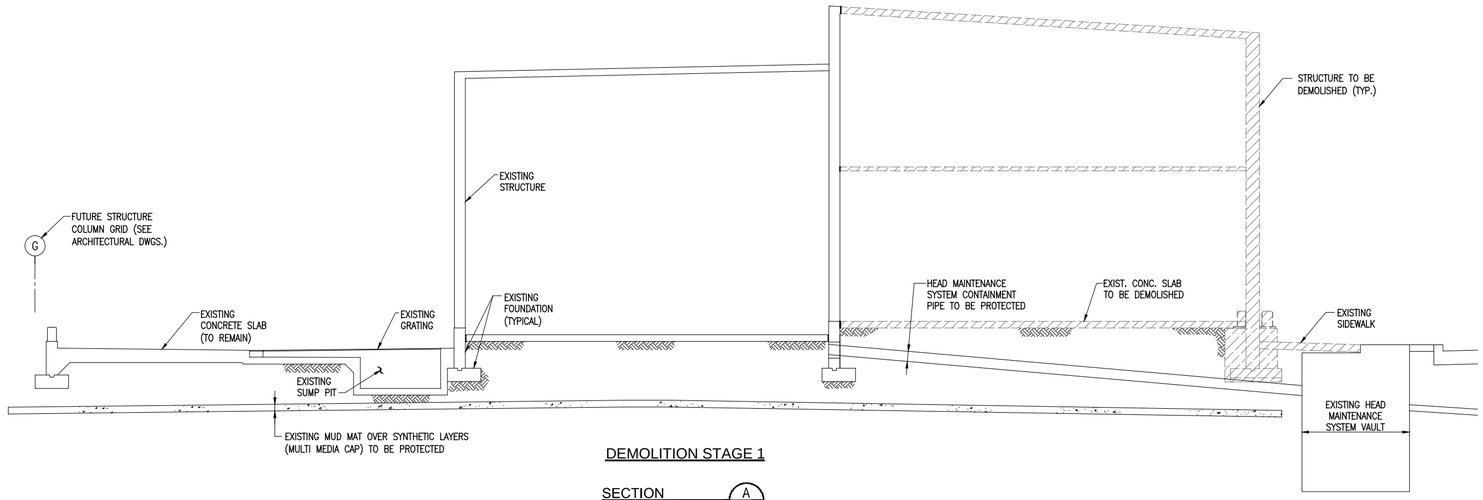
revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title

DEMOLITION OF HONEYWELL OFFICES PLAN

date:	06/14/13
drawn by:	C.J.W.
checked by:	D.W.C.
scale:	1/8"=1'-0"
project number:	MRCE-11896A

sheet number DDP-F1.16



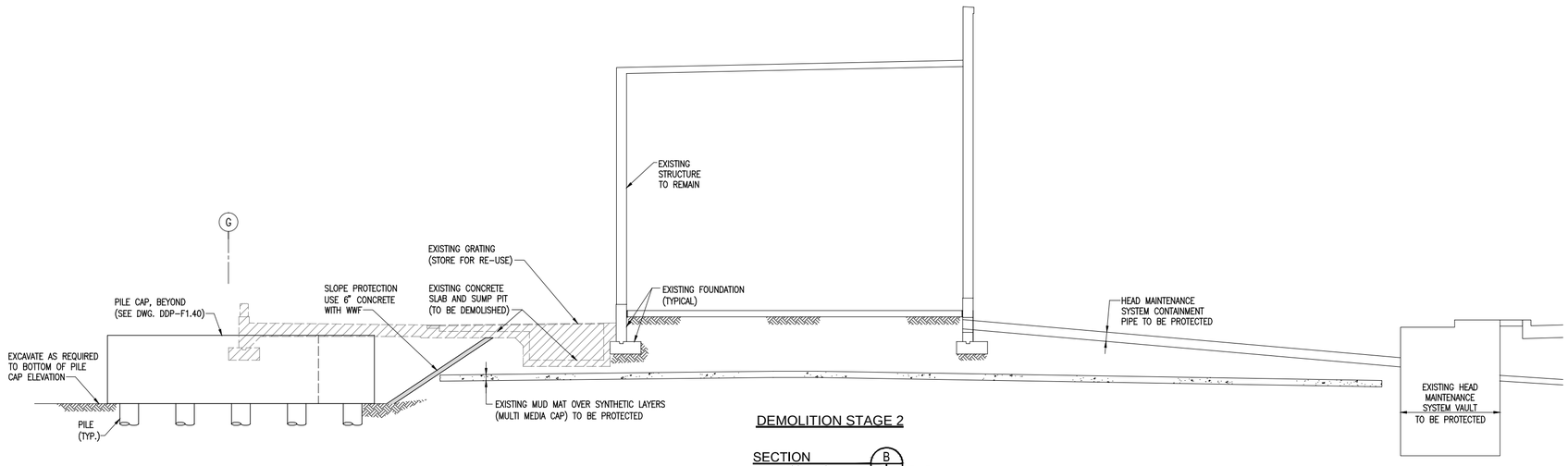
DEMOLITION STAGE 1

SECTION A
SCALE: 1/4"=1'-0" DDP-F1.16 DDP-F1.17

GRAPHIC SCALE
4' 2' 0 4' 8'

NOTES:

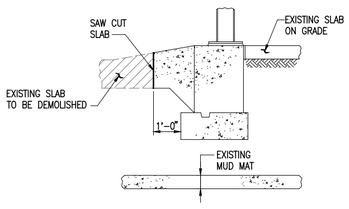
1. For General and Technical notes, see Drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. For demolition sequence and legend, see Drawing DDP-F1.16.



DEMOLITION STAGE 2

SECTION B
SCALE: 1/4"=1'-0" DDP-F1.16 DDP-F1.17

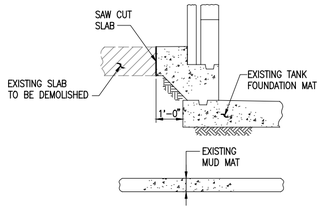
GRAPHIC SCALE
4' 2' 0 4' 8'



DEMOLITION STAGE 2

SECTION C
SCALE: 1/2"=1'-0" DDP-F1.16 DDP-F1.17

GRAPHIC SCALE
2' 1' 0 2' 4'



DEMOLITION STAGE 2

SECTION D
SCALE: 1/2"=1'-0" DDP-F1.16 DDP-F1.17

GRAPHIC SCALE
2' 1' 0 2' 4'

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EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

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seal

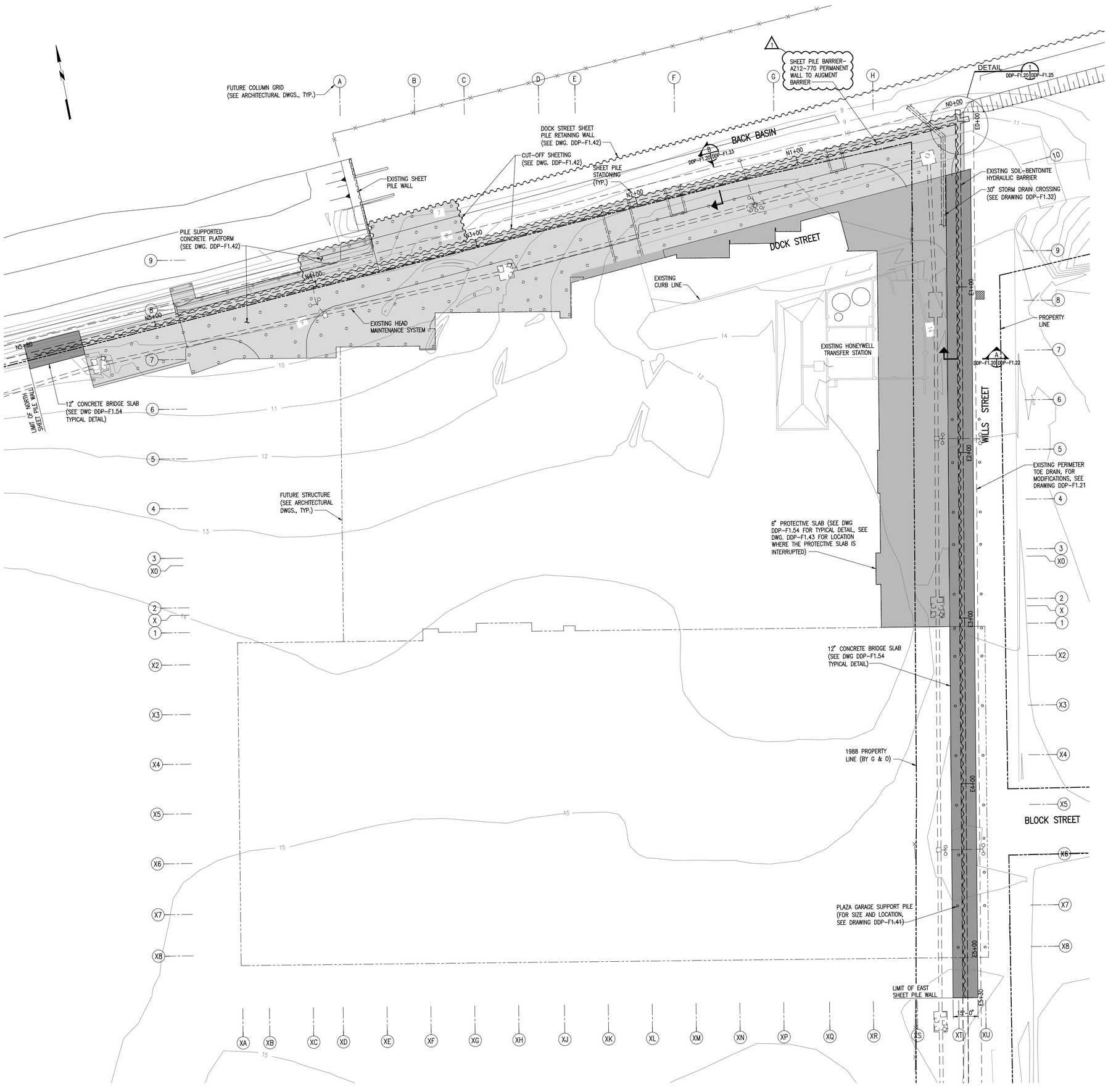
issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
DEMOLITION OF HONEYWELL OFFICES SECTIONS

date:	06/14/13
drawn by:	C.J.W.
checked by:	D.W.C.
scale:	AS SHOWN
project number:	MRCE-11896A

sheet number
DDP-F1.17



NOTES:

1. For General and Technical notes, see drawings DDP–F1.01, DDP–F1.02 and DDP–F1.03.
2. See note 1 under sheet pile notes on drawing DDP–F1.02.

LEGEND:

11 – As–Built elevation contour at grade

1 – Dock Street pile supported platform
– 6" concrete protective slab
– Bridge slab

Table 1: Sheet Pile Elevations

Sheet Pile Stationing	Proposed Sheet Pile Top Elevation	Proposed Sheet Pile Tip Elevation
N0+00 to N0+19	+ 3.33	–57
N0+19 to N0+46	+ 7.33	–57
N0+46 to N0+86	+ 7.33	–55
N0+86 to N1+86	+ 7.33	–54
N1+86 to N3+16	+ 7.33	–53
N3+16 to N3+81	+ 7.33	–54
N3+81 to N5+00	+ 7.33	–54
N5+00 to N5+80	+ 6	–55
E0+00 to E0+32	+ 3.33	–60
E0+32 to E0+77.5	+ 6	–60
E0+77.5 to E1+77.5	+ 7	–60
E1+77.5 to E2+57.5	+ 8	–61
E2+57.5 to E3+24	+ 9	–61
E3+24 to E3+63	+ 10	–63
E3+63 to E4+10	+ 10	–64
E4+10 to E4+77.5	+ 11	–64
E4+77.5 to E5+30	+ 11	–68

GRAPHIC SCALE
20' 10' 0 20' 40'

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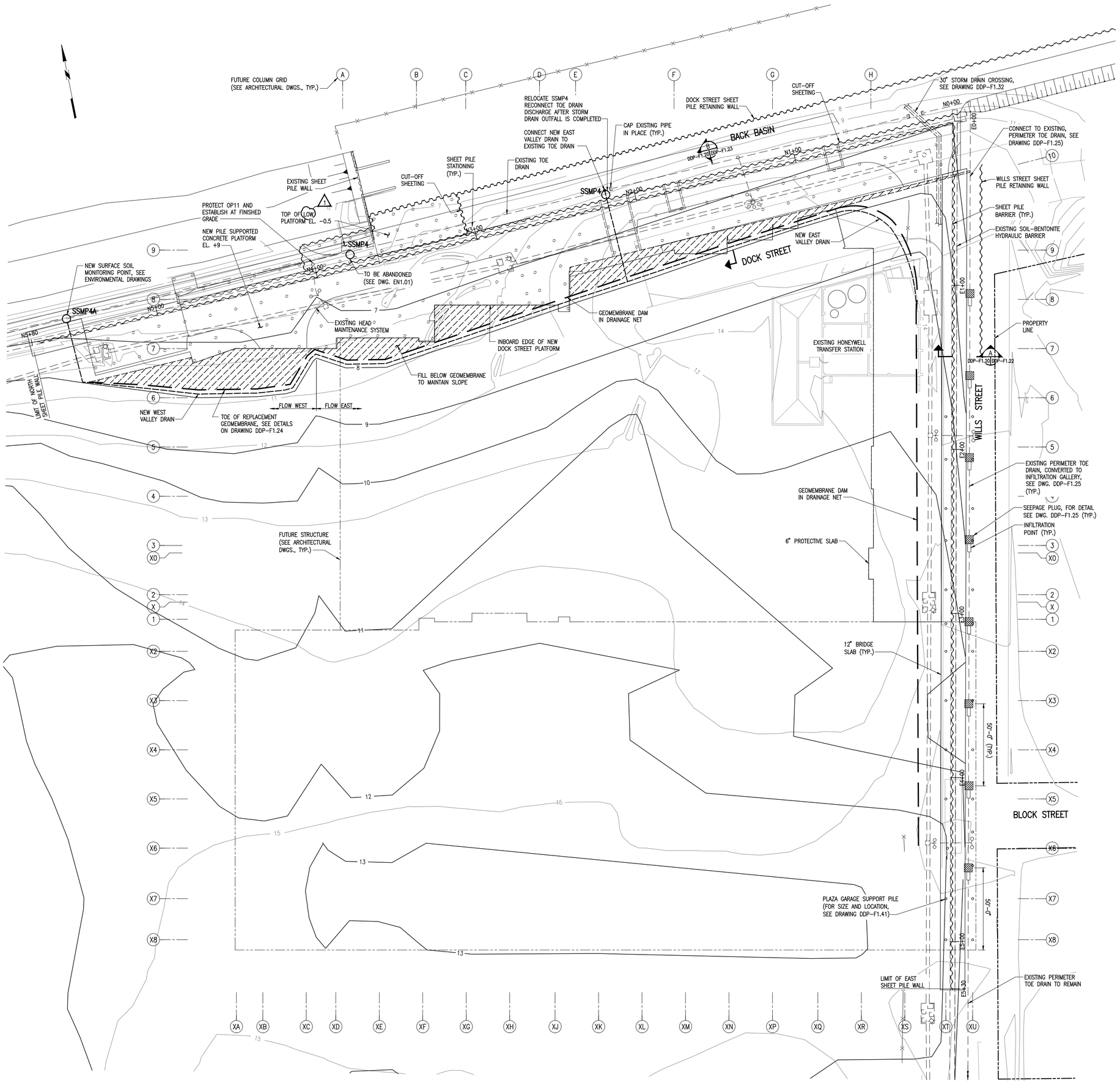
issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
SHEET PILE BARRIER WALL PLAN

date:	06/14/13
drawn by:	K.J.
checked by:	D.J.G.
scale:	AS NOTED
project number:	MRCE-11896A
sheet number	location/path

DDP-F1.20



NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. See note 1 under Sheet Pile Notes on drawing DDP-F1.02.
3. Verify synthetic layer elevation +8 contour in the field.
4. MMC QC/QA. Inspect MMC construction. Perform QC testing. Perform QA inspection and testing, Approve MMC for burial.

LEGEND:

- 11 — Existing contour at grade
- 8 — Existing synthetic layer contours
- Geomembrane dam in drainage net
- New valley drain
- SSMP4 — Surface soil monitoring point

Construction Sequence at Dock Street

1. Locate and mark HMS conduit alignment. Use magnetic survey tool.
2. Locate and mark centerline of hydraulic barrier.
3. Locate and mark planned alignment of Valley Drain.
4. Drive Retaining Wall Sheeting along North Property Line. Leave sheets above final cutoff.
5. Shape cover soil /construct diversion berms to promote storm water runoff.
6. Valley Drain.
   A. Excavate upslope to encounter geomembrane and install geomembrane dam and Valley Drain (Note 1). Secure excavation. Cover for traffic needs.
   B. Proceed from discharge to high point. Install SSP4A at embankment discharge location.
   C. Place geomembrane dam along Wills St.
   D. Locate and mark actual alignment of Valley Drain.
   E. Connect east Valley Drain discharge at Power Corridor to existing toe drain in Dock St.
   F. Abandon Dock St. toe drain east of connection.
7. Wills St. Infiltration
   A. Place seepage plugs and infiltration points to convert Wills St. toe drain to infiltration gallery.
8. Sheet Pile Barrier
   A. Expose hydraulic barrier centerline and install Sheet Pile Barrier.
   B. Cut off sheet pile barrier to final cut off.
   C. Provide temporary cover.
9. Drive Cut Off Sheeting at north platform edge. Install studs to connect sheeting to concrete platform and provide lateral support to sheeting.
10. Drive foundation piles supporting Dock St. platform (High Platform) and storm drain discharge (Low Platform) from existing grade. Monitor HMS during pile driving within 15 ft of conduits or vaults.
11. Excavate cover soil to dock St. platform (High Platform) subgrade (at EL+7). Excavate below geomembrane where needed for utility clearance. Where excavations are below geomembrane grade, over-excavate 6 in and provide cover geotextile and 6" clean cover soil over exposed subgrade areas, or perform temporary restoration of geomembrane.
12. Install dowels to engage HMS structures V11, V12, MJ1 with structural concrete platform.
13. Excavate at HMS conduit alignment and install hangers (See Drawing EN1.09). Place cover soil to restore platform subgrade or perform temporary restoration of geomembrane.
14. Cut off Piles to final cut off and place concrete fill.
15. Place Dock St. platform (High Platform) reinforcing steel and concrete. Create depressions for planter boxes, manholes, etc.
16. Form and place concrete retaining walls supported on Dock St. platform.
17. Cover platform with MMC synthetic layers. Seal geomembrane to Valley Drain dam and HMS vaults (Note 1).
18. Place Protective Concrete cover over platform and all areas outside of the building wall.
19. Place structural fill over platform to restore HS-20 truck loading and to allow vehicles to cross over the retaining structure onto Point St. footprint at west end of Dock St. (Temporary Construction Roadway).
20. Low Platform
   A. Excavate to Low Platform Subgrade EL-2.5. Install Bracing as Required.
   B. Dewater to obtain water level at Elev. -4.5 or below. (See EN Drawings for Water Management.)
   C. Cut off foundation piles to final elevation and place concrete infill.
   D. Place platform reinforcing steel and concrete. Allow 14 days cure before placing backfill.
   E. Place backfill on platform to Elev. +3 (prevent buoyancy) before terminating dewatering below platform.
21. Construct foundations for Exelon Tower and TF Garage. Construct HMS Truck Loading Dock Containment Pad.
22. Place structural fill to obtain Dock St. grades (or utility subgrades as applicable).
23. Excavate and place utilities under the Temporary Construction Roadway.
24. Place finish grade, street, concrete, landscaping etc.

GRAPHIC SCALE
20' 10' 0 20' 40'

PROGRESS SET NOT FOR CONSTRUCTION

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

seal

issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

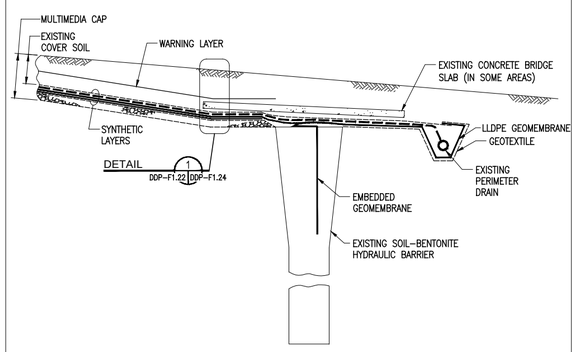
title
MULTIMEDIA CAP DRAINAGE PLAN

date:	06/14/13
drawn by:	K.J.
checked by:	D.J.G.
scale:	AS NOTED
project number:	MRCE-11896A

sheet number
DDP-F1.21

WILLS ST. ALIGNMENT

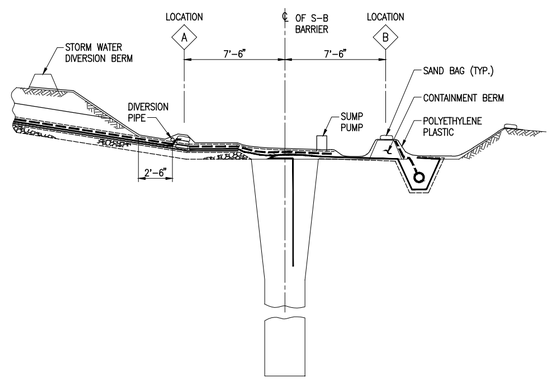
1 TYPICAL EXISTING CONDITIONS



SECTION A EXISTING
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.22

1. Existing piezometer and HMS conduits to be protected against damage (not shown).
2. Existing outboard piezometer communication wiring to be temporarily relocated prior to removal of Multimedia Cap (MMC) (not shown). Communication wiring and conduits to be replaced after repair of MMC. See EN Series drawings for relocation of wiring. (1)
3. Install geomembrane dam see drawing DDP-DDP-F1.21 for location and DDP-DDP-F1.24 for detail.

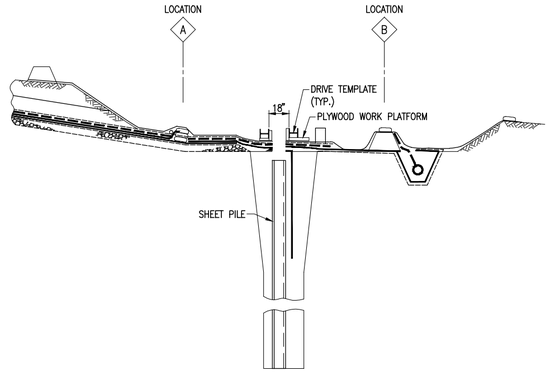
2 EXCAVATE TO EXPOSE SYNTHETIC LAYERS



SECTION A EXCAVATE
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.22

1. Lay out barrier center line by survey.
2. Build storm water diversion berm to prevent sheet flow run-on.
3. Excavate to expose synthetic layers with 1.5H:1.0V slopes or flatter.
4. Cut and dispose cover Geotextile and Drainage Net from outboard of Soil-Bentonite Barrier to Location B.
5. Place containment berm at Location B.
6. Seal/protect face of Drainage Net outboard of Location B against contamination intake on containment berm.
7. *Shingle cut (see Detail 2) Cover Geotextile, Drainage Net, Geomembrane and GCL inboard of sheet pile at Location A.*
8. *Secure Geomembrane diversion with sand bags and storm water diversion pipe at Location A..*
9. *Use pumps and pipes to remove ponded storm water upslope of diversion berm as needed.*
10. *Cover exposed synthetic layers and containment berm with polyethylene plastic sheeting. Secure with sand bags. Manage storm water with bucket sump pumps.*

3 CUT SYNTHETIC LAYERS AND DRIVE SHEET PILES



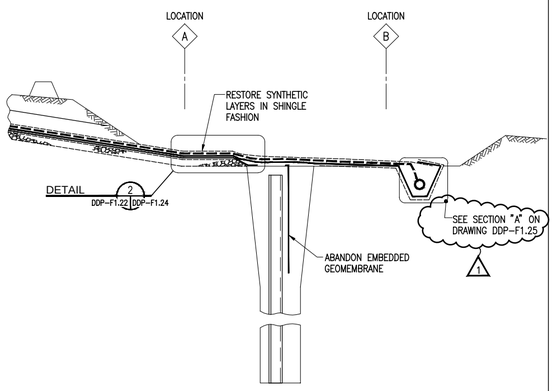
SECTION A DRIVE SHEET PILE
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.22

1. *Lay out barrier center line.*
2. *Use plywood or other materials to provide stable work platform and protect polyethylene plastic.*
3. *Cut and remove 18" wide strip of all polyethylene plastic and MMC synthetic layers at center line of Soil-Bentonite Barrier.*
4. *Place and secure drive template.*
5. *Place interlocking sheet pile with sealed interlocks.*
6. *Cover work area with polyethylene plastic at end of each work day.*
7. *If sheet pile is pulled, remove barrier backfill from sheet pile (scrape and power wash into excavation) so that no more than 10 feet of unwashed sheet is exposed above work surface.*
8. *Drive sheet to obtain penetration refusal at bottom of barrier.*

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. Steps in Italic require Level D-Modified PPE.

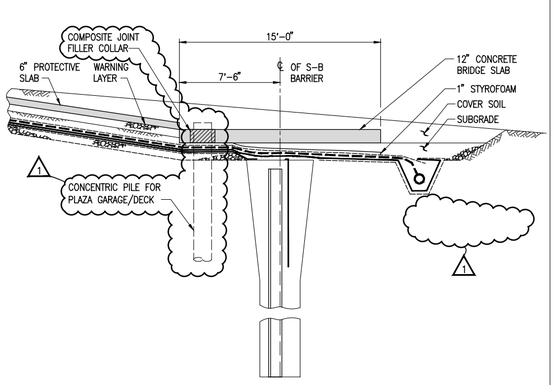
4 RESTORE SYNTHETIC LAYERS



SECTION A RESTORE
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.22

1. *Remove and dispose polyethylene plastic.*
2. *Remove containment berm from Location B.*
3. *Abandon embedded Geomembrane (do not restore connection at top).*
4. *Replace synthetic layers from Location A to Location B.*
5. *Perform quality control and quality assurance testing of Geomembrane.*
6. Concentric piles (see DDP-F1.31) shall be installed after sheet pile barrier is installed within 30 ft.
7. Perform quality control and quality assurance testing of Geomembrane.

5 MULTIMEDIA CAP WITH CONCRETE BRIDGE SLAB



SECTION A
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.22

1. Lay out barrier center line by optical survey.
2. Place 1" Styrofoam on synthetic layers where total future cover soil is less than 30".
3. Place clean Cover Soil on Styrofoam to create a level subgrade.
4. Place Concrete Bridge Slab over barrier where barrier is below future street. All supports for slab reinforcement shall not penetrate the Styrofoam into the membrane. No form stakes, pins, etc., shall be driven over the geomembrane layer.
5. Place composite joint filler collar around pile at concrete slab interface.
6. Place Cover soil to Warning Layer, place warning layer.
7. Place Concrete Protective Slab above the Warning Layer where MMC is below street or Utility Corridor outside of street where bridge slab does not cover synthetic layer.
8. Place Cover Soil to final grade.

GRAPHIC SCALE
4' 2' 0 4' 8'

PROGRESS SET NOT FOR CONSTRUCTION

DDP-F1.22

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HARBOR POINT
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REVISED 11/12/13

key plan

seal

issued	date	description

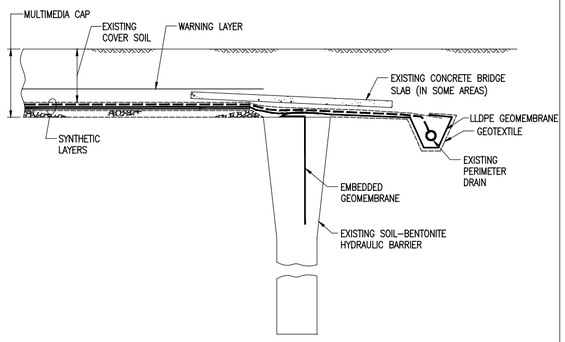
revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
SHEET PILE WALL CONSTRUCTION SEQUENCE

date:	06/14/13
drawn by:	K.J.
checked by:	D.J.G.
scale:	AS NOTED
project number:	MRCE-11896A
sheet number	scaled inch

DOCK ST. ALIGNMENT

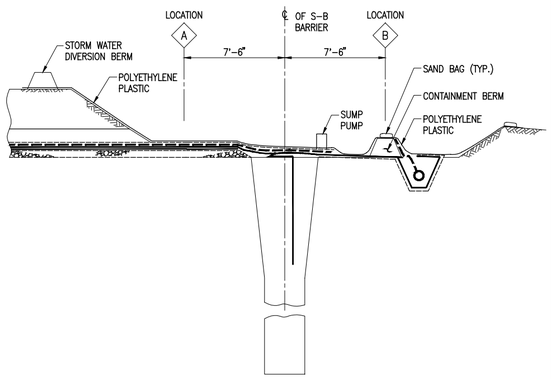
1 TYPICAL EXISTING CONDITIONS



SECTION B EXISTING
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.23

1. Existing piezometer and HMS conduits to be protected against damage (not shown).
2. Existing outboard piezometer communication wiring to be temporarily relocated prior to removal of Multimedia Cap (MMC) (not shown). Communication wiring and conduits to be replaced after repair of MMC.

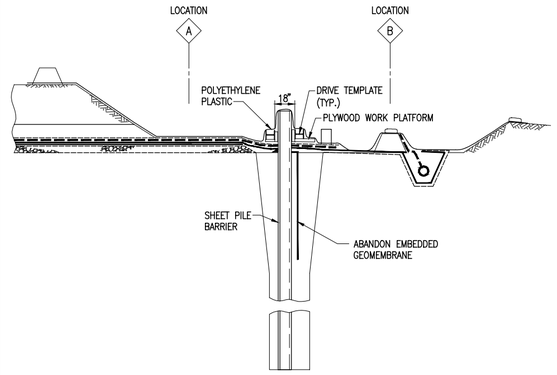
2 EXCAVATE TO EXPOSE SYNTHETIC LAYERS



SECTION B EXCAVATE
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.23

1. Lay out barrier center line by survey.
2. Build storm water diversion berm to prevent sheet flow run-on.
3. *Complete Valley Drain and geomembrane dam upslope. Backfill with compacted granular fill to permit construction access.*
4. Excavate to expose synthetic layers with 1.5H:1.0V slopes or flatter.
5. Cut and dispose cover Geotextile and Drainage Net from outboard of Soil-Bentonite Barrier to Location B.
6. Place containment berm at Location B.
7. Seal/protect face of Drainage Net outboard of Location B against contamination intake on containment berm.
8. *Use pumps and pipes to remove ponded storm water upslope of diversion berm as needed.*
9. *Cover exposed synthetic layers and containment berm with polyethylene plastic sheeting. Secure with sand bags. Manage storm water with bucket sump pumps.*

3 CUT SYNTHETIC LAYERS AND DRIVE SHEET PILES



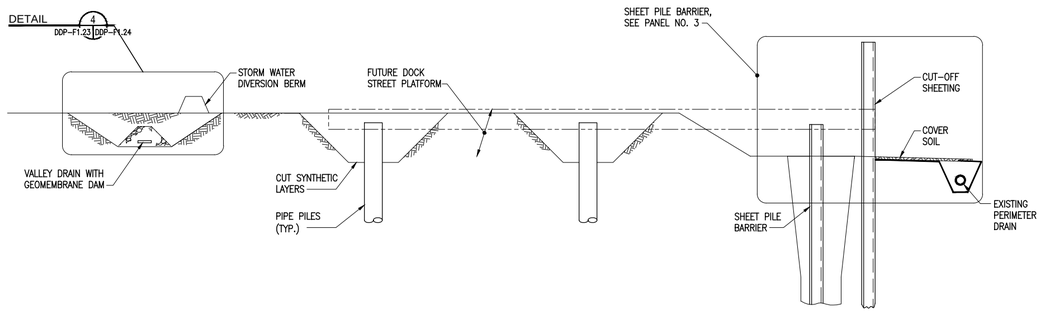
SECTION B DRIVE SHEET PILE
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.23

1. *Lay out barrier center line.*
2. *Use plywood or other materials to provide stable work platform and protect polyethylene plastic.*
3. *Cut and remove 18" wide strip of all polyethylene plastic and MMC synthetic layers at center line of Soil-Bentonite Barrier.*
4. *Place and secure drive template.*
5. *Place interlocking sheet pile with sealed interlocks.*
6. *Cover work area with polyethylene plastic at end of each work day.*
7. *If sheet pile is pulled, remove barrier backfill from sheet pile (scrape and power wash into excavation) so that no more than 10 feet of unwashed sheet is exposed above work surface.*
8. *Drive sheet to obtain penetration refusal at bottom of barrier.*
9. *Cut and remove containment berm at Location B, and remove Drainage Net between Sheet Pile Barrier and Toe Drain.*
10. *Cover S-B Backfill and Geomembrane outboard of Sheet Pile Barrier with Cover Geotextile and 6 inch thickness of Crushed Stone cover.*
11. *Cut off Sheet Pile Barrier at Elevation shown on DDP-F1.21.*

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. Steps in Italic require Level D-Modified PPE.

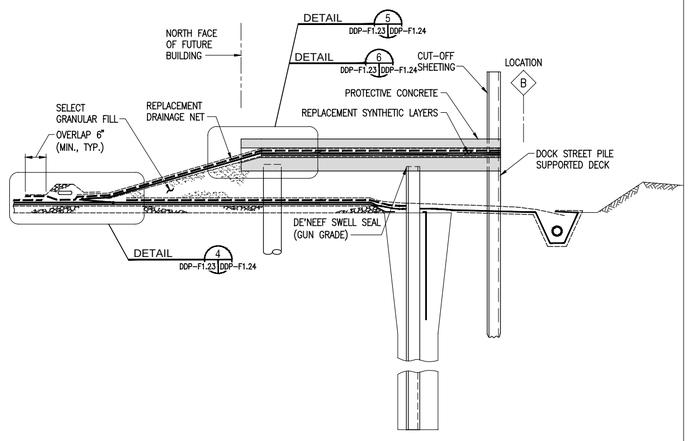
4 DRIVE PILES AND CONSTRUCT DOCK STREET PLATFORM



SECTION B DRIVE PILES
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.23

1. *Complete Valley Drain and geomembrane dam upslope. Backfill with compacted granular fill to permit construction access.*
2. *Divert storm water away from active construction areas in Dock St.*
3. *Collect and dispose storm water within MMC between Valley Drain and Sheet Pile Barrier.*
4. *Excavate cover soil, and expose and cut synthetic layers at each pile location.*
5. *Drive pipe piles. Cut off piles at same Elevations as Sheet Pile Barrier shown on DDP-F1.21. Place concrete fill to complete piles.*
6. *Drive cut-off sheeting. cut top of sheet pile to below final street subgrade.*
7. *Excavate to final grade for Dock St. platform. Place Cover Geotextile and select granular fill around piles to cover openings in synthetic layers exposed by pile installation (piles are not sealed to geomembrane).* (1)
8. *Place concrete forms and reinforcing steel, sealant, and other miscellaneous items.*
9. *Place concrete for Dock St. platform.*

5 ASSEMBLY OF DOCK ST. PLATFORM WITH VALLEY DRAIN



SECTION B RESTORE
SCALE: 1/4"=1'-0" DDP-F1.20 DDP-F1.23

1. *Abandon synthetic layers in place below Dock St. platform.*
2. *Place and compact select granular fill and/or excavate MMC Cover Soil to expose Geomembrane Dam of Valley Drain.*
3. *Apply replacement Synthetic Layers (Detail 1 Sheet DDP-F1.24) over top of Dock St. platform. See Detail 6 Sheet DDP-F1.24. Attach geomembrane with batten strip to north edge outboard of sheet pile.*
4. *Extend Synthetic Layers to Geomembrane Dam. Weld geomembrane to Geomembrane Dam.*
5. *Attach geomembrane to Dock St. platform where retaining wall interrupts synthetic layers. See Detail 5 Sheet DDP-F1.24.*
6. *Perform QC and QA testing of Geomembrane connections.*

GRAPHIC SCALE
4' 2' 0 4' 8'

PROGRESS SET NOT FOR CONSTRUCTION

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
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8/1/13
REVISED 11/12/13

key plan

seal

issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
SHEET PILE WALL CONSTRUCTION SEQUENCE

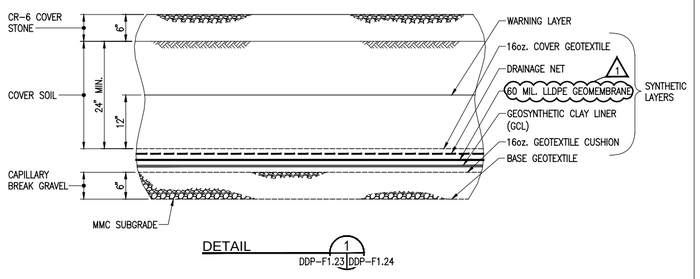
date:	06/14/13
drawn by:	K.J.
checked by:	D.J.G.
scale:	AS NOTED
project number:	MRCE-11896A
	scaled jpeg

sheet number
DDP-F1.23

NOTES:

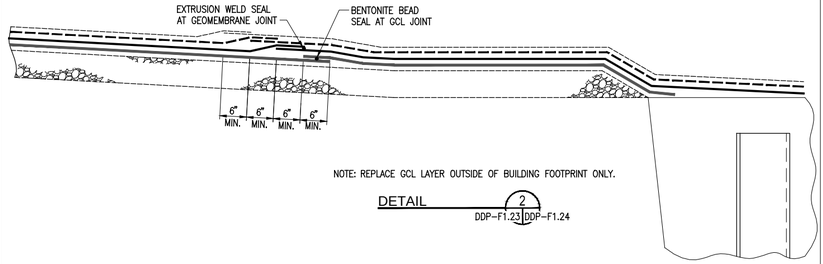
1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. Steps in Italic require Level D-Modified PPE.

DETAIL 1: EXISTING MULTIMEDIA CAP (MMC)



DETAIL 1 / DDP-F1.23 | DDP-F1.24

DETAIL 2: SHINGLE CUT AND REPAIR OF MULTIMEDIA CAP SYNTHETIC LAYERS AT LOCATION A



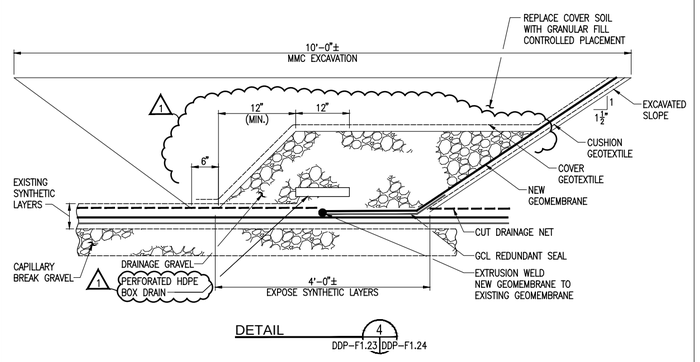
NOTE: REPLACE GCL LAYER OUTSIDE OF BUILDING FOOTPRINT ONLY.

DETAIL 2 / DDP-F1.23 | DDP-F1.24

Construction Sequence:

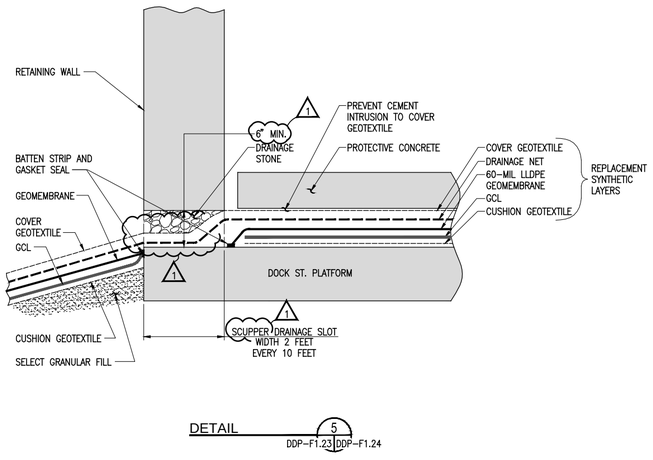
1. Expose synthetic layers sufficient width to allow handling.
2. Make initial cut outboard of final shingle repair location.
3. At final cut location use backing board to protect underlying layers.
4. Use hot knife, shears, or razor. Do not tear.
5. Cut bonded materials as a single layer.
6. Place new Geomembrane and Drainage Net in shingle fashion to protect against top-down moisture penetration.
7. Repair and test Geomembrane as indicated and specified. Restore downslope edge to Drainage Net before connecting upslope layers.
8. Perform Quality Control and Quality Assurance testing of Geomembrane.

DETAIL 4: VALLEY DRAIN AND GEOMEMBRANE DAM DETAIL



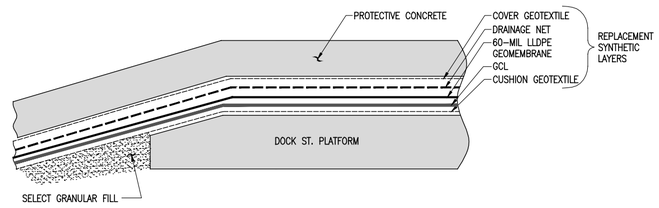
DETAIL 4 / DDP-F1.23 | DDP-F1.24

DETAIL 5: RESTORE SYNTHETIC LAYERS AT DOCK ST. PLATFORM WITH RETAINING WALL



DETAIL 5 / DDP-F1.23 | DDP-F1.24

DETAIL 6: RESTORE SYNTHETIC LAYERS AT DOCK ST. PLATFORM WITHOUT RETAINING WALL



DETAIL 6 / DDP-F1.23 | DDP-F1.24

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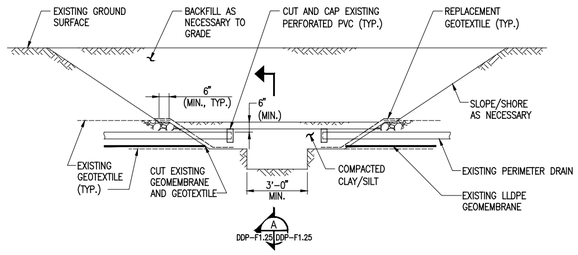
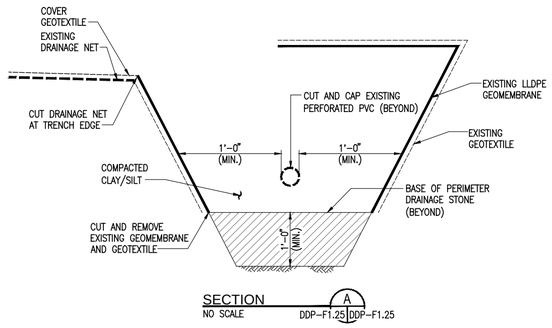
title
SHEET PILE WALL TYPICAL DETAILS

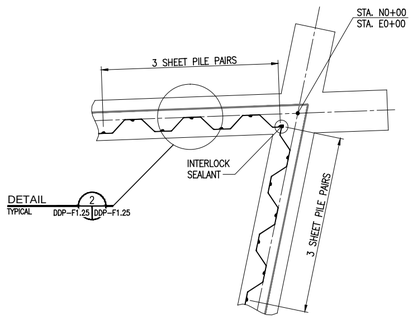
date:	06/04/13
drawn by:	K.J.
checked by:	D.J.G.
scale:	N.T.S.
project number:	MRCE-11896A
	scaled (inch)

sheet number
DDP-F1.24



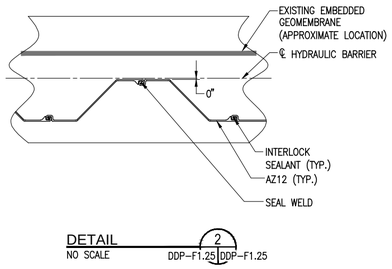
TYPICAL SEEPAGE PLUG DETAIL
NO SCALE





NOTE: Drive first six sheet pile pairs as indicated above, and connect with sheet connector before subsequent sheets are driven.

DETAIL
NO SCALE
1
DDP-F1.20 DDP-F1.25



DETAIL
NO SCALE
2
DDP-F1.25 DDP-F1.25

NOTES:
1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. Steps in Italic require Level D-Modified PPE.

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DDP SUBMISSION
8/1/13
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key plan

seal

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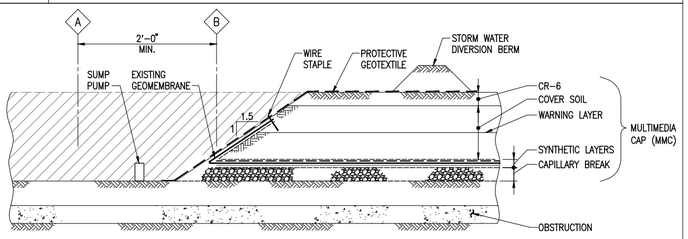
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
SHEET PILE WALL TYPICAL DETAILS

date:	06/04/13
drawn by:	K.J.
checked by:	D.J.G.
scale:	AS SHOWN
project number:	MRCE-11896A

sheet number
DDP-F1.25

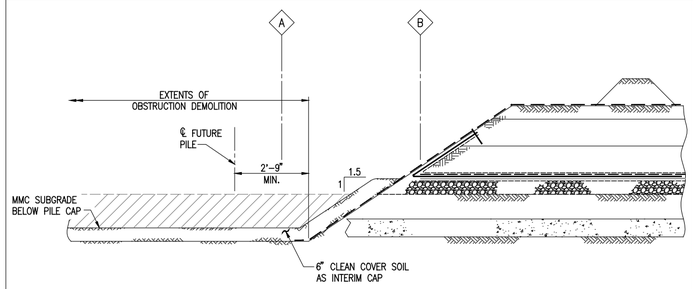
1 EXCAVATE TO EXPOSE SYNTHETIC LAYERS AND PROTECT MMC CAP FACE



1. Place Protective Geotextile at top of future excavation.
2. Place storm water diversion berm at up-slope perimeter.
3. Excavate CR-6 and Cover Soil at 1.5H:1V slope or flatter. Place toe of slope at synthetic layers at Location B. Control dust throughout MMC removal.
4. Edge cut and dispose Cover Geotextile 2.5 feet inboard of Location B. Fold onto up-slope face.
5. Edge cut and dispose Drainage Net inboard of Location B.
6. *Edge cut and dispose Geomembrane from 2.5 feet inboard at Location B. Fold onto up-slope face and secure with wire staple (6' maximum length).*
7. *Edge cut and dispose GCL and Geotextile Cushion inboard of Location B to expose and remove Capillary Break Gravel.*
8. *Cut and dispose Base Geotextile at toe of slope.*
9. *Place Protective Geotextile to cover slopes.*
10. *Use sump pumps in excavation to remove storm water.*
11. *Proceed to remove MMC across pile cap footprint. Machine excavation below warning layer is permitted inboard of Location B. Secure all edges outboard of Location A. Cut and secure up-slope face first.*

GRAPHIC SCALE 2' 1' 0 2' 4'

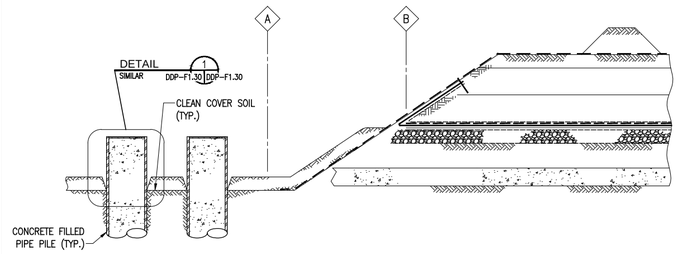
2 DEMOLISH OBSTRUCTIONS



1. *Control dust throughout obstruction removal.*
2. *Expose and demolish obstruction at pile locations.*
3. *Remove debris (See Area 1, Phase 1 Material Handling and Management Plan, July 2013, by ERM).*
4. *Place aggregate soil in demolition void (Capillary Break Gravel or other).*
5. *Place 6" clean Cover Soil as Interim Cap to obtain MMC subgrade and cover exposed soil.*

GRAPHIC SCALE 2' 1' 0 2' 4'

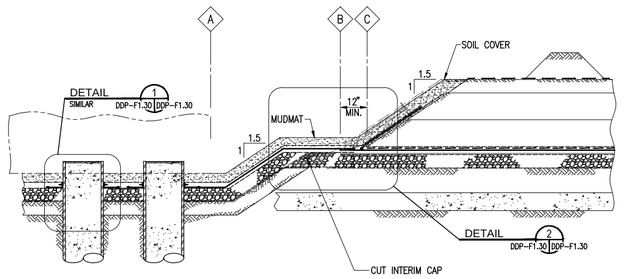
3 CONSTRUCT PILES



1. Survey and mark pile locations.
2. Drive pile.
3. Replace clean Cover Soil around pile shaft after driving is complete.
4. Cut off at designated elevation.
5. Place concrete fill. Clean pile surface free of concrete or mortar spillage at and above boot elevation.
6. Place high-strength epoxy grout after concrete fill has cured seven days (Detail 1).

GRAPHIC SCALE 2' 1' 0 2' 4'

4A REPLACE MMC SYNTHETIC LAYERS – DIAGRAM

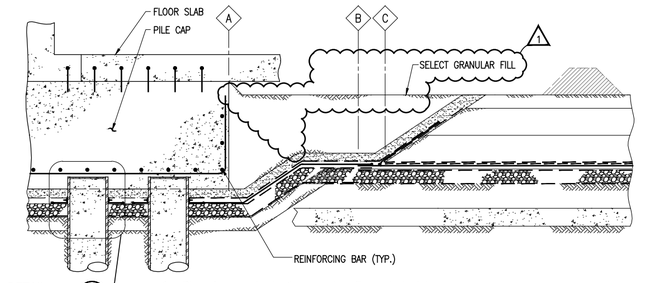


GRAPHIC SCALE 2' 1' 0 2' 4'

4B REPLACE MMC SYNTHETIC LAYERS – SEQUENCE

1. *Remove and dispose interim cap above existing Geotextile cushion inboard of Location B.*
2. *Cut and dispose Protective Geotextile from top of slope to Location B.*
3. *Remove Cover Soil. Place toe of slope at synthetic layers at Location C. Control dust throughout MMC removal.*
4. *Fold Cover Geotextile onto up-slope face.*
5. *Edge cut and dispose Drainage Net inboard of Location C.*
6. *Expose Base Geotextile inboard of Location B.*
7. *Place New Base Geotextile across pile cap. Cut Base Geotextile within 1/2" of pile wall; use pre-made panel with overlap joints. Overlap Base Geotextile with existing at Location B.*
8. *Place and compact imported Capillary Break Gravel under pile cap footprint inboard of Location B. Use vibrating plate compactor to flatten gravel surface.*
9. *Place new Geotextile Cushion across pile cap. Overlap Geotextile Cushion with existing at Location B. Cut Geotextile Cushion within 1/2" of pile wall; use pre-made panel with overlap joints.*
10. *Extrusion weld Geomembrane Dam inboard of Location C to isolate pile cap from Drainage Net. Extend Geomembrane Dam 30" minimum on up-slope face along 3' up hill side perimeter faces (See Detail 2). On down hill side of excavation cut Geomembrane dam 9" on up-slope face.*
11. *Place new Geomembrane. Overlap Geomembrane with existing at Location B. Over-cut at piles.*
12. Place pre-made boots over piles. Place gasket and clamp boot to pile wall. Extrusion weld boot to Geomembrane.
13. Extrusion weld Geomembrane to existing MMC Geomembrane using shingle repair in Detail 2. Manage corners and grade changes with additional Geomembrane and extrusion welding.
14. Perform Quality Control and Quality Assurance testing of Geomembrane and boots.
15. Place new Cover Geotextile across pile cap to cover Geomembrane Dam. Protect boot with Cover Geotextile.
16. Place mudmat to protect MMC synthetic layers across pile cap footprint to top of slope.

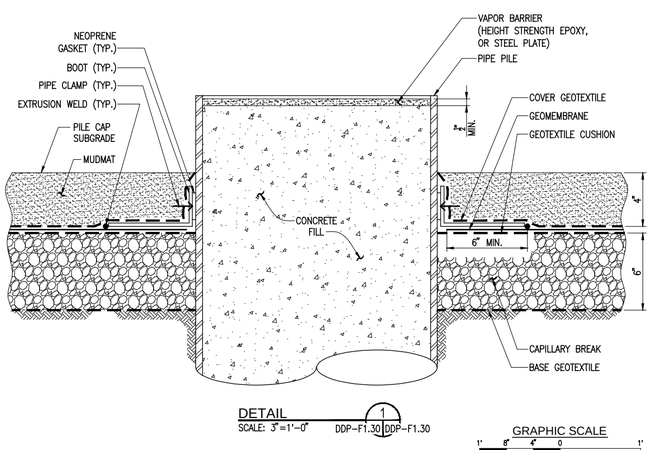
5 PLACE PILE CAP AND GRADE BEAMS



1. Place form work at pile cap edge. Form strut stakes maximum 12" length to prevent puncture of synthetic layers.
2. Place reinforcing steel.
3. Place concrete.
4. Remove form work.
5. Place imported or stockpiled Cover Soil to restore existing grades. Grade may be raised only where indicated on Drawing C8.00.
6. Remove storm water diversion berm.
7. Place concrete floor slab and column.

GRAPHIC SCALE 2' 1' 0 2' 4'

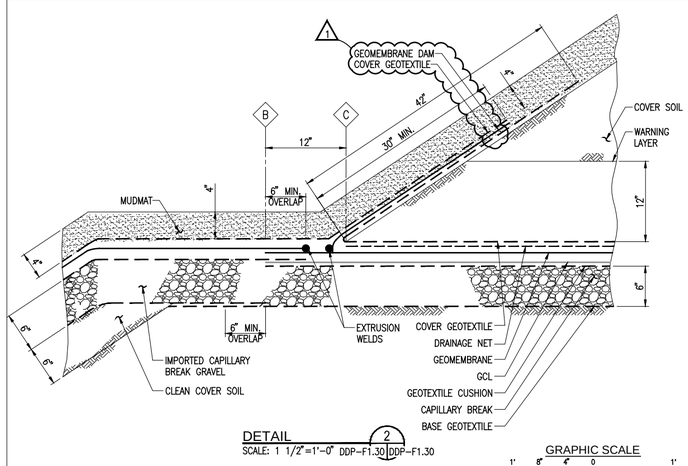
PILE CONNECTION AND RESTORED MMC BELOW PILE CAP



DETAIL 1 SCALE: 3"=1'-0" DDP-F1.30 DDP-F1.30

GRAPHIC SCALE 1' 8" 4" 0 1'

MMC REPAIR AT LOCATION C



DETAIL 2 SCALE: 1 1/2"=1'-0" DDP-F1.30 DDP-F1.30

GRAPHIC SCALE 1' 8" 4" 0 1'

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. Steps in Italics require Level D-Modified PPE.
3. For Potential Obstruction, see drawing DDP-F1.13.

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
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key plan

seal

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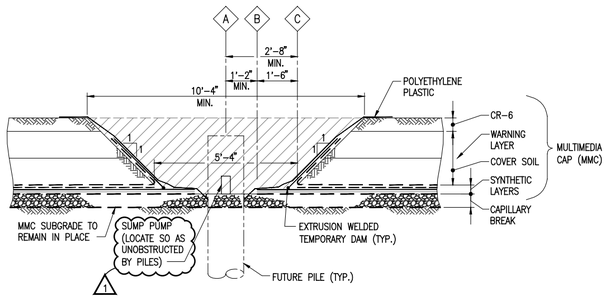
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
PILE CAP CONSTRUCTION SEQUENCE

date:	06/14/13
drawn by:	L.L.
checked by:	D.J.G.
scale:	AS SHOWN
project number:	MRCE-11896A

scaled inch
sheet number
DDP-F1.30

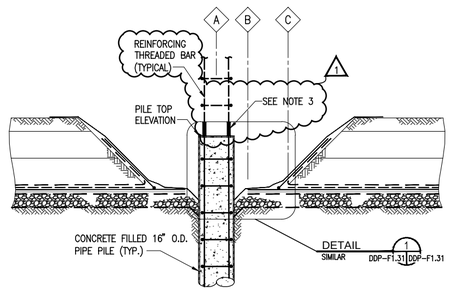
1 EXCAVATE AND CUT SYNTHETIC LAYERS



1. Survey and mark pile location.
2. Excavate CR-6 and Cover Soil at 1H:1V slope or flatter. Place toe of slope at synthetic layers at Location C.
3. Edge cut and dispose Cover Geotextile between Location B and Location C. Edge cut and dispose Drainage Net inboard of Location C.
4. Extrusion weld geomembrane dam and secure with wire staple to divert clean water around excavation.
5. *Edge cut and dispose Geomembrane, GCL, and Geotextile Cushion inboard of Location B to expose Capillary Break gravel.*
6. *Cover MMC side slopes with polyethylene plastic. Probe for obstructions. if obstructions are encountered, expand excavation and protect MMC using Pile Cap Construction Sequence on Drawing DDP-F1.30. Demolish or remove obstructions.*

GRAPHIC SCALE
2' 1' 0 2' 4'

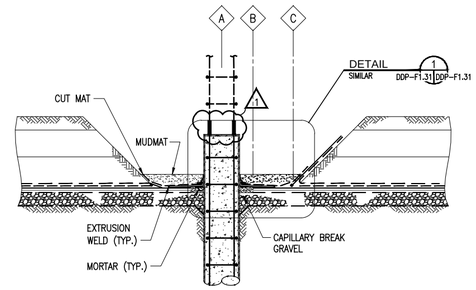
2 CONSTRUCT PILES



1. *Survey and mark pile location.*
2. *Drive pile.*
3. *Cut pile at designated elevation. Place concrete fill and column reinforcing bars. Leave enough bar stick up to accommodate future rebar coupler. Protect bar threads by wrapping.*
4. *Clean pile surface free of concrete or mortar spillage at and above boot elevation.*

GRAPHIC SCALE
2' 1' 0 2' 4'

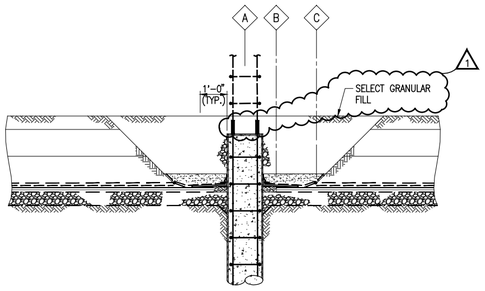
3 REPLACE MMC SYNTHETIC LAYERS



1. *Remove polyethylene plastic.*
2. *Place imported Capillary Break gravel around pile to restore original elevation.*
3. *Place mortar around pile for boot connection subgrade (Detail 1).*
4. *Cover mortar with new Geotextile Cushion. Cut Geotextile Cushion within 1/2" of pile wall; use pre-made panel with overlap joints.*
5. *Place pre-made boot over pile. Extrusion weld boot to existing Geomembrane at Location C. Place gasket and clamp boot to pile wall.*
6. Perform Quality Control and Quality Assurance testing of geomembrane and boot.
7. Place Cover Geotextile to protect boot. Overlap with Cover Geotextile at Location C.
8. Place mudmat to cover synthetic layers around pile to Location C. Place 6 mil. plastic sheet bond breaker below mud mat if mud mat is to be removed for column construction.
9. Cut geomembrane dam at top of mud mat.

GRAPHIC SCALE
2' 1' 0 2' 4'

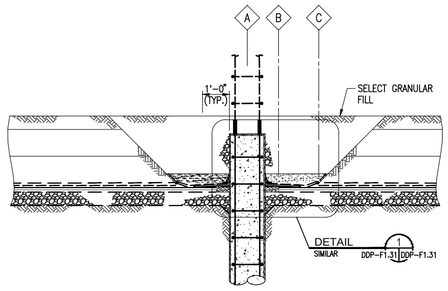
4 PLACE INTERIM CAP



1. Cover pile and reinforcing bars with polyethylene plastic and secure to pile.
2. Place and compact select granular fill to restore grade. 1

GRAPHIC SCALE
2' 1' 0 2' 4'

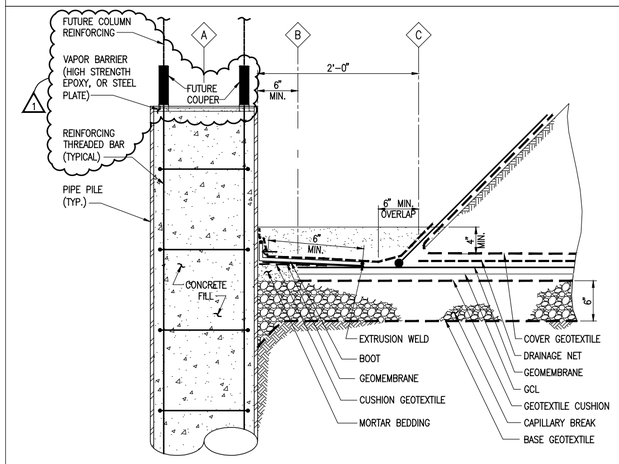
5 COLUMN CONSTRUCTION (FUTURE STAGE)



1. Excavate select granular fill to column subgrade.
2. Remove protective wrap and clean reinforcing.
3. Clean top of pile concrete with compressed air or water.
4. Place column reinforcing and couple to existing pile reinforcing using standard couplers.
5. Place vapor barrier (high strength epoxy or steel plate).
6. Place column formwork and construct column.

GRAPHIC SCALE
2' 1' 0 2' 4'

MMC REPAIR



DETAIL 1
SCALE: 1-1/2"=1'-0" DDP-F1.31 DDP-F1.31

GRAPHIC SCALE
1' 8" 4" 0 1'

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. Steps in Italic require Level D-Modified PPE.
3. For Potential Obstructions, see drawing DDP-F1.13.
4. Excavation for Central Plaza Garage Slab-On-Grade.
   A. The existing MMC will be left in place to facilitate construction of the central plaza deck structure. After the deck work is completed, the MMC will be excavated for slab-on-grade garage floor construction. The excavation will be advanced below the warning layer over the southern half of the garage footprint. Final excavation methods will be determined by the Contractor and submitted in a Work Plan for Plaza Garage Floor Excavation for review and approval. Excavation and concrete placement, and inspection of the work will be required to include the following:
   B. Equipment may only operate on areas having 12" or more fill over the MMC synthetic layers.
   C. Excavation below the warning layer will have labor assistance. Excavation buckets shall have smooth edge, without teeth. Machine excavation will be controlled by labor observation to prevent exposure and damage of the synthetic layers. Soil removal within 2" of the synthetic layers will be performed by labor only using hand rakes, hoe, and square shovel.
   D. Excavation work will be observed by HDG inspection.
   E. Locations where the machine operated bucket encounter the synthetic layers will be marked for examination, testing, and repair prior to placing cover fill or concrete. Each location will be identified, investigated, and reported. Repair work will be performed under HDG inspection:
      a. Observe for mechanical damage to the cover geotextile. Visible permanent stretch / abrasion / tear constitute damage.
      b. Remove damaged cover geotextile and observe for mechanical damage to the drainage net. Visible tear or indentation constitutes damage.
      c. Remove damaged drainage net and perform visual examination and vacuum box test of underlying geomembrane. Repair geomembrane as directed by the HDG inspector.
5. "Concentric Piles" are referred to as "Plaza Garage support piles" on Foundation Plan drawings.

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
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key plan

seal

issued	date	description

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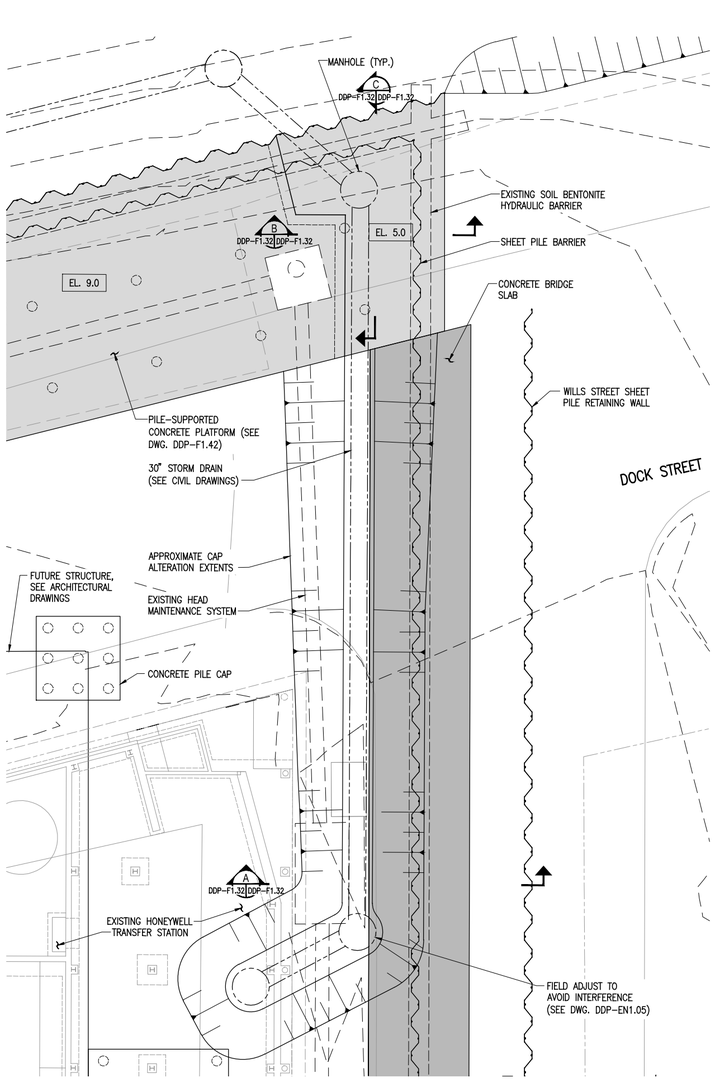
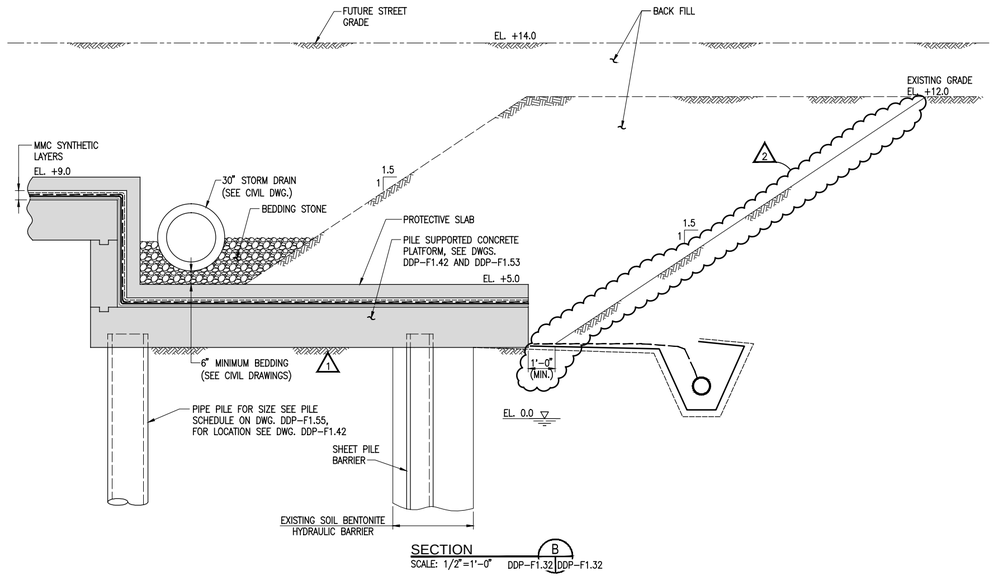
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
CONCENTRIC PILE CONSTRUCTION SEQUENCE

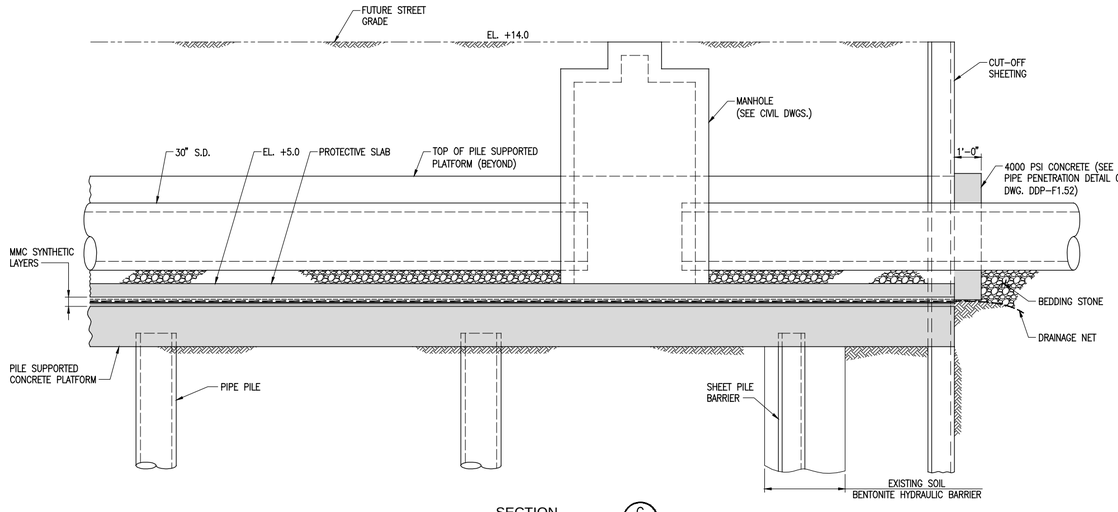
date:	06/14/13
drawn by:	K.J.
checked by:	D.J.G.
scale:	AS SHOWN
project number:	MRCE-11896A
sheet number	DDP-F1.31



P L A N
SCALE: 1/8"=1'-0"



SECTION B
SCALE: 1/2"=1'-0" DDP-F1.32 DDP-F1.32



SECTION C
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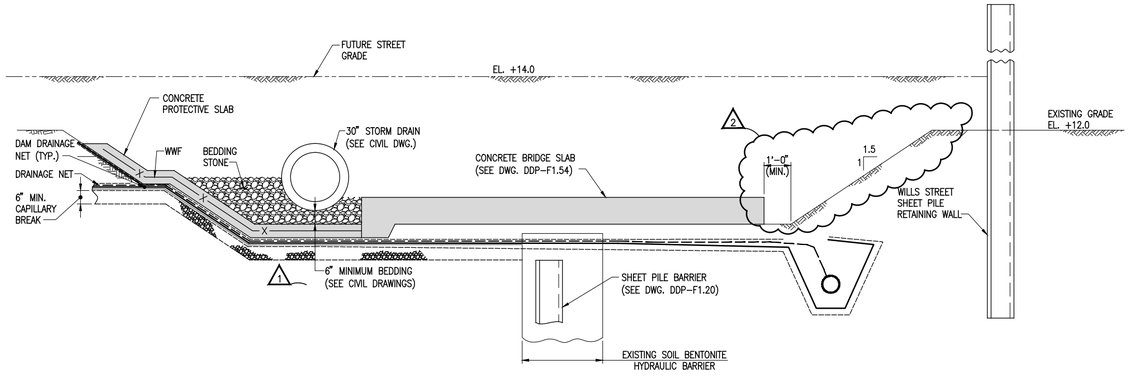
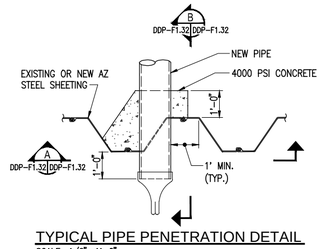
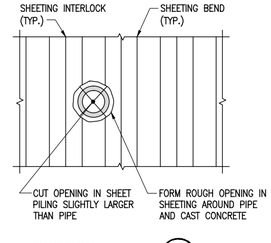


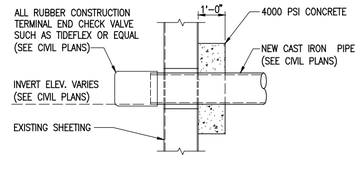
SECTION A
NO SCALE DDP-F1.32 DDP-F1.32



TYPICAL PIPE PENETRATION DETAIL
SCALE: 1/2"=1'-0"



SECTION A
SCALE: 1/2"=1'-0" DDP-F1.32 DDP-F1.32



SECTION B
SCALE: 1/2"=1'-0" DDP-F1.32 DDP-F1.32

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. For Construction Sequence, see drawing DDP-F1.21.

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
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REVISED 11/12/13

key plan

seal

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revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS
2	11/25/2013	REVISIONS PER EPA/MDE 11/22/2013 COMMENTS

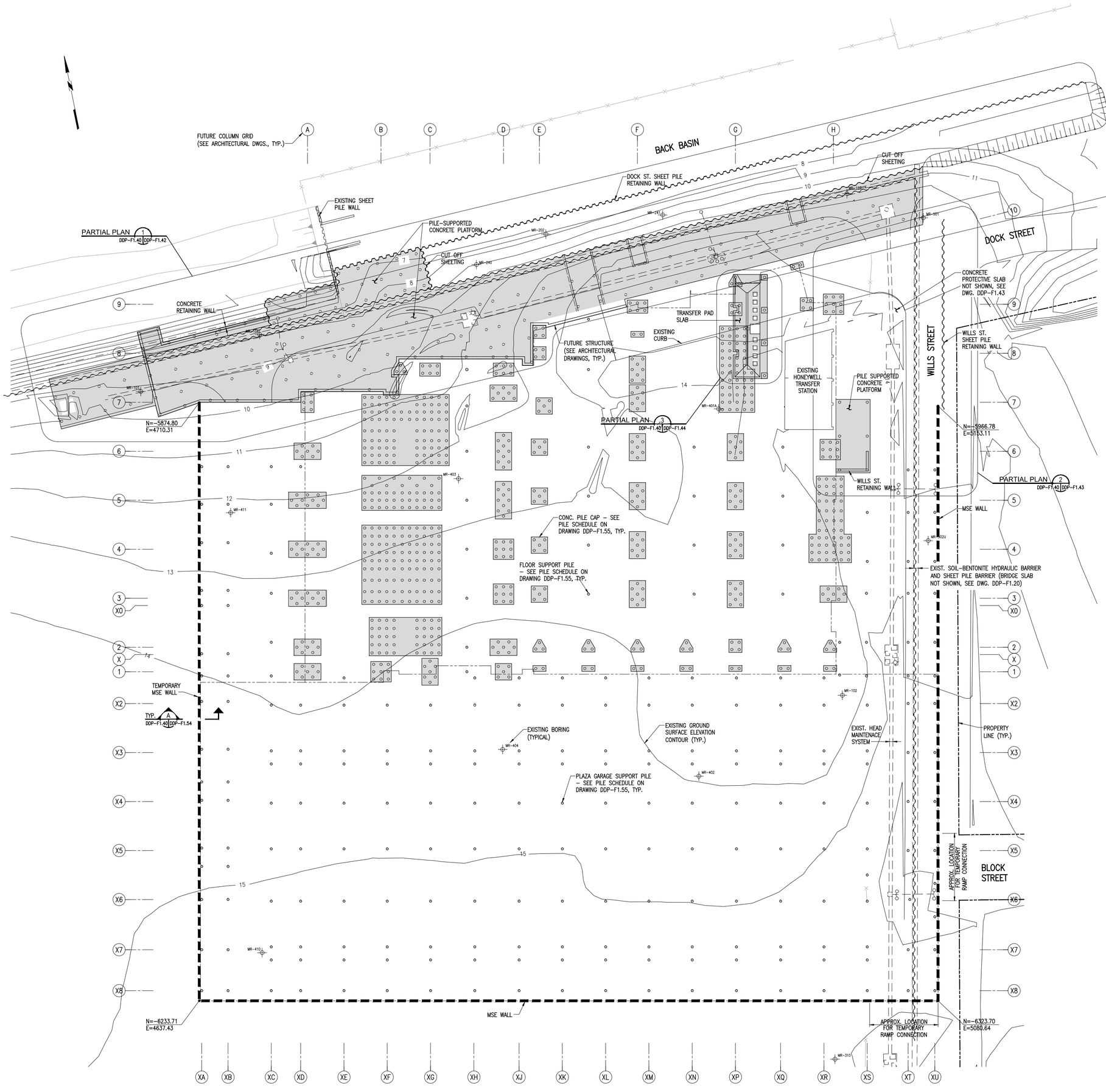
title
UTILITY CROSSING PLAN AND SECTIONS

date:	07/01/13
drawn by:	K.J.
checked by:	A.M.D.
scale:	AS SHOWN
project number:	MRCE-11896A

sheet number
DDP-F1.32

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. For as-built elevation contours of synthetic layers, see drawing DDP-F1.14.
3. For Dock Street Construction Sequence see drawing DDP-F1.21.



GRAPHIC SCALE
20' 10' 0 20' 40'

PROGRESS SET NOT FOR CONSTRUCTION

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

seal

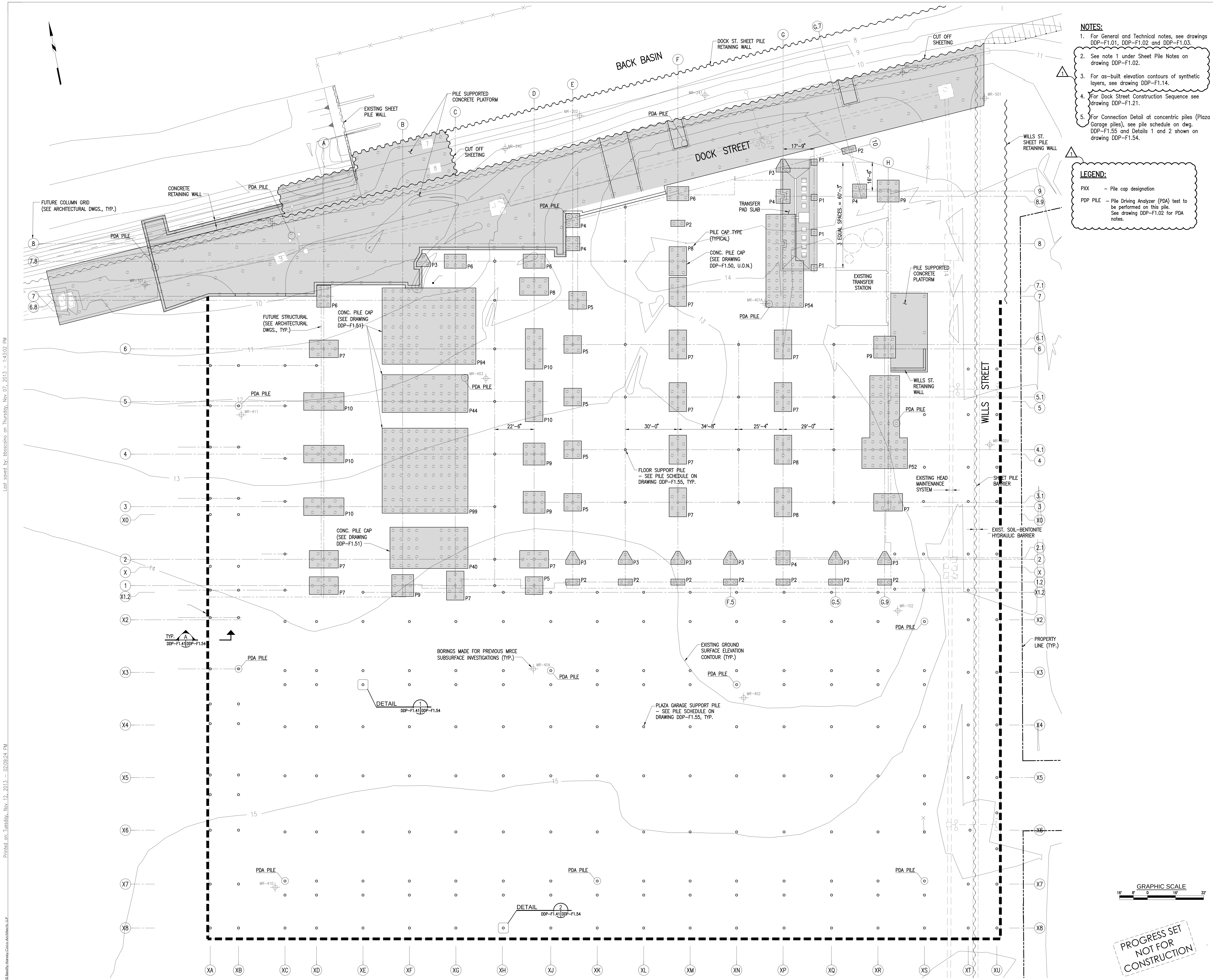
issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
FOUNDATION PLAN

date:	06/14/13
drawn by:	E.D.
checked by:	S.Y.
scale:	1:20
project number:	MRCE-11896A

sheet number
DDP-F1.40



NOTES:

1. For General and Technical notes, see drawings DDP–F1.01, DDP–F1.02 and DDP–F1.03.
2. See note 1 under Sheet Pile Notes on drawing DDP–F1.02.
3. For as–built elevation contours of synthetic layers, see drawing DDP–F1.14.
4. For Dock Street Construction Sequence see drawing DDP–F1.21.
5. For Connection Detail at concentric piles (Plaza Garage piles), see pile schedule on dwg. DDP–F1.55 and Details 1 and 2 shown on drawing DDP–F1.54.

LEGEND:

PXX – Pile cap designation

PDP PILE – Pile Driving Analyzer (PDA) test to be performed on this pile. See drawing DDP–F1.02 for PDA notes.

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title
FOUNDATION PARTIAL PLAN

date:	07/01/13
drawn by:	E.D.
checked by:	S.Y.
scale:	1/16"=1'-0"
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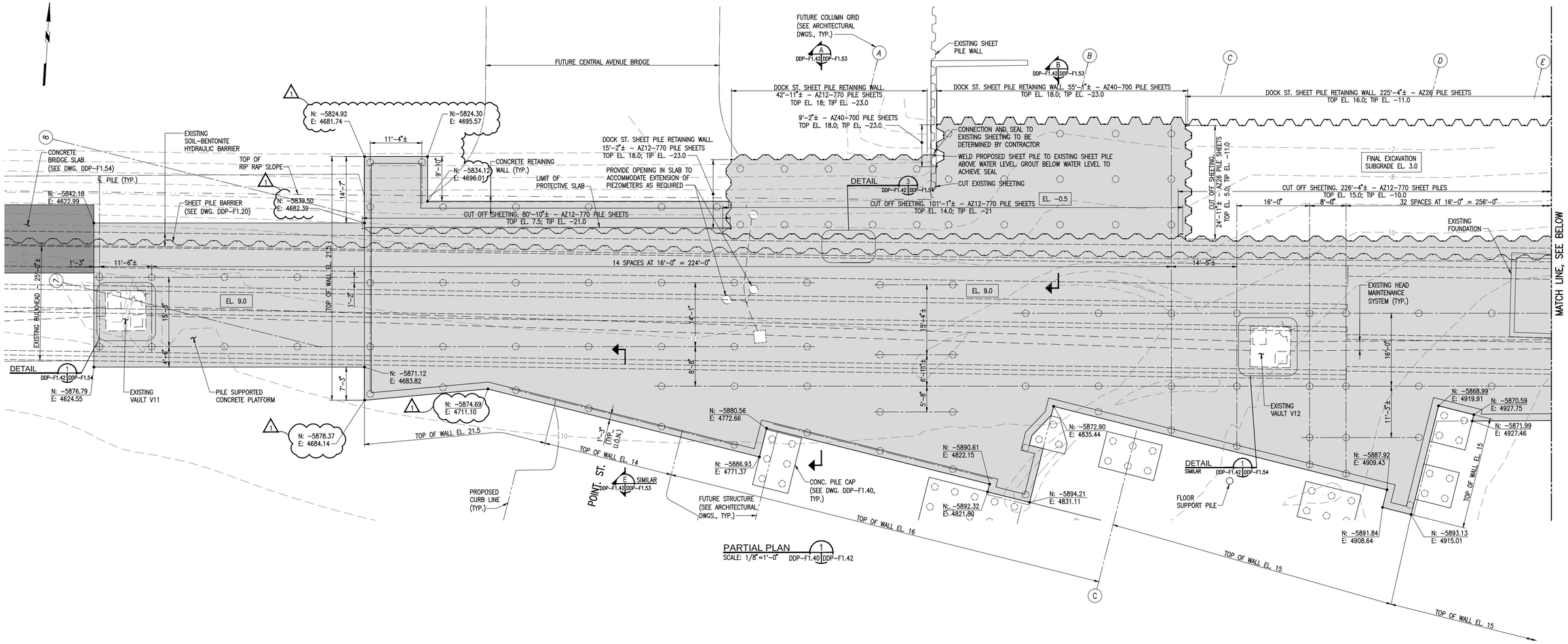
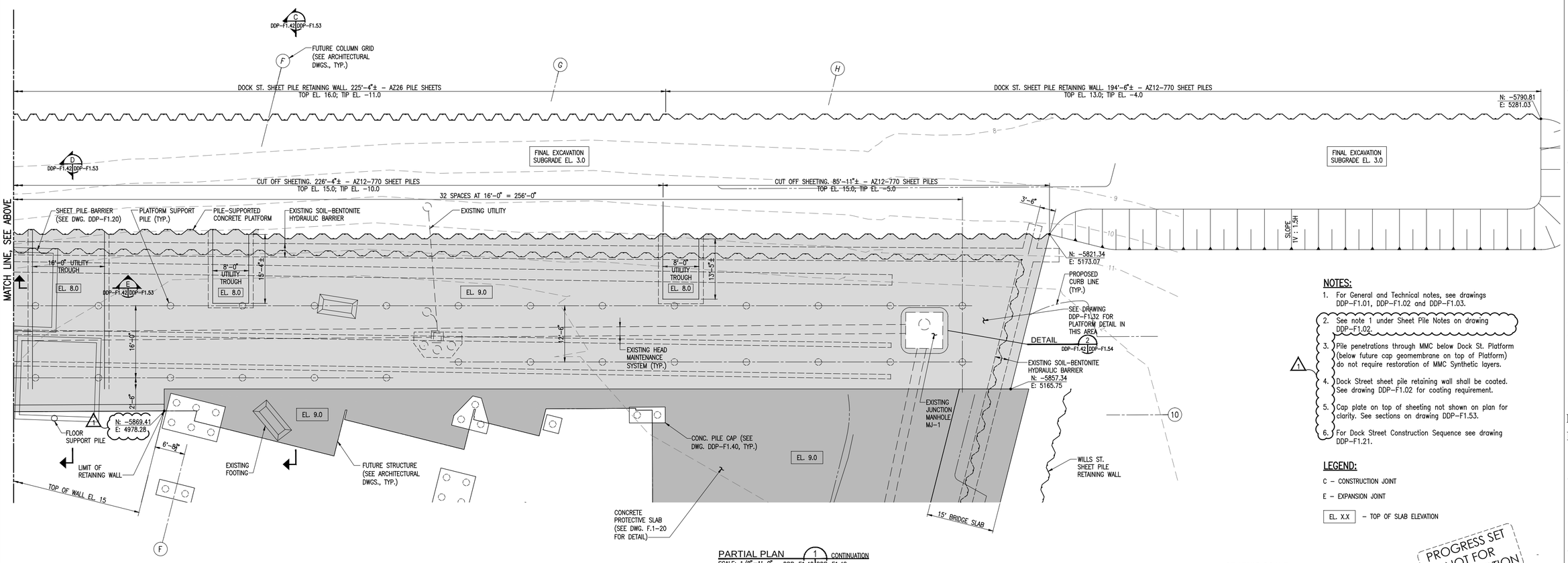
scaled inch

sheet number
DDP-F1.41





NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. See note 1 under Sheet Pile Notes on drawing DDP-F1.02.
3. Pile penetrations through MMC below Dock St. Platform (below future cap geomembrane on top of Platform) do not require restoration of MMC Synthetic layers.
4. Dock Street sheet pile retaining wall shall be coated. See drawing DDP-F1.02 for coating requirement.
5. Cap plate on top of sheeting not shown on plan for clarity. See sections on drawing DDP-F1.53.
6. For Dock Street Construction Sequence see drawing DDP-F1.21.

LEGEND:

C – CONSTRUCTION JOINT

E – EXPANSION JOINT

EL. X.X – TOP OF SLAB ELEVATION

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title
FOUNDATION PARTIAL PLAN

date:	07/01/13
drawn by:	L.L.
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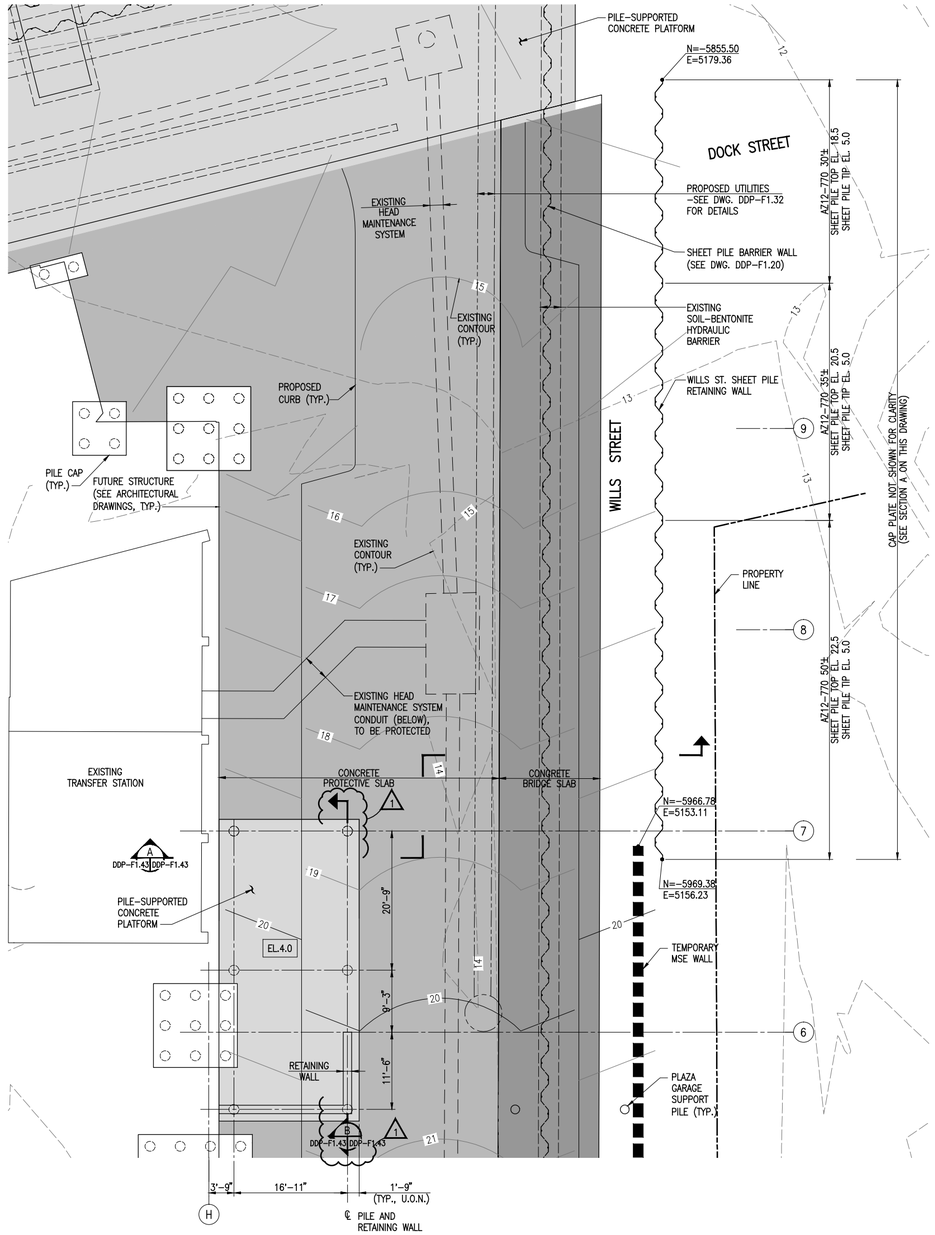
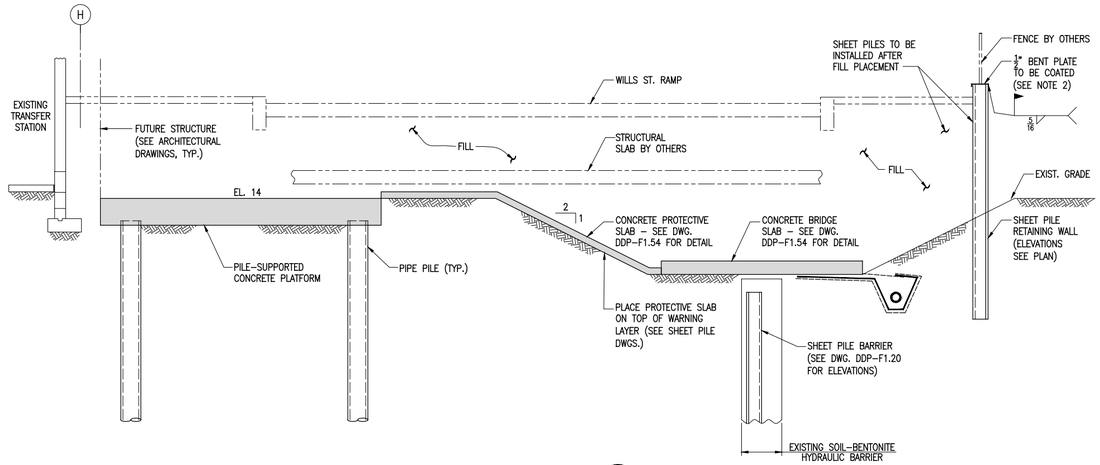
scale:	1/8"=1'-0"
project number:	MRCE-11896A
sheet number	DDP-F1.42



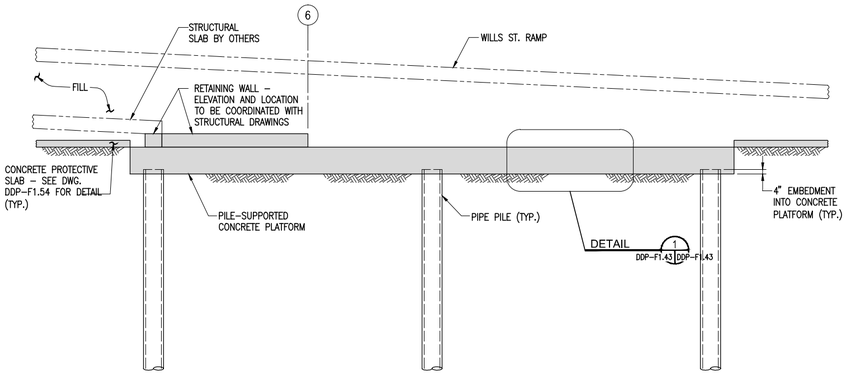
PARTIAL PLAN 2
SCALE: 1/8"=1'-0" DDP-F1.40 DDP-F1.43

GRAPHIC SCALE
8' 4' 0 8' 16'



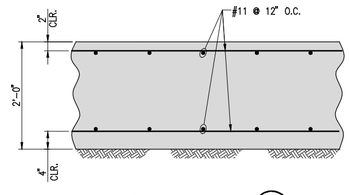
SECTION A
SCALE: 1/4"=1'-0" DDP-F1.43 DDP-F1.43

GRAPHIC SCALE
4' 2' 0 4' 8'



SECTION B
SCALE: 1/4"=1'-0" DDP-F1.43 DDP-F1.43

GRAPHIC SCALE
4' 2' 0 4' 8'



DETAIL 1
SCALE: 1"=1'-0" DDP-F1.43 DDP-F1.43

PROGRESS SET NOT FOR CONSTRUCTION

NOTES:
1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02, and DDP-F1.03.
2. Bent plate to be placed after backfilling to final grade. Coating for bent plate to match sheet pile coating.

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checked by:	S.Y.
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project number:	MRCE-11896A
	scaled inch

sheet number
DDP-F1.43

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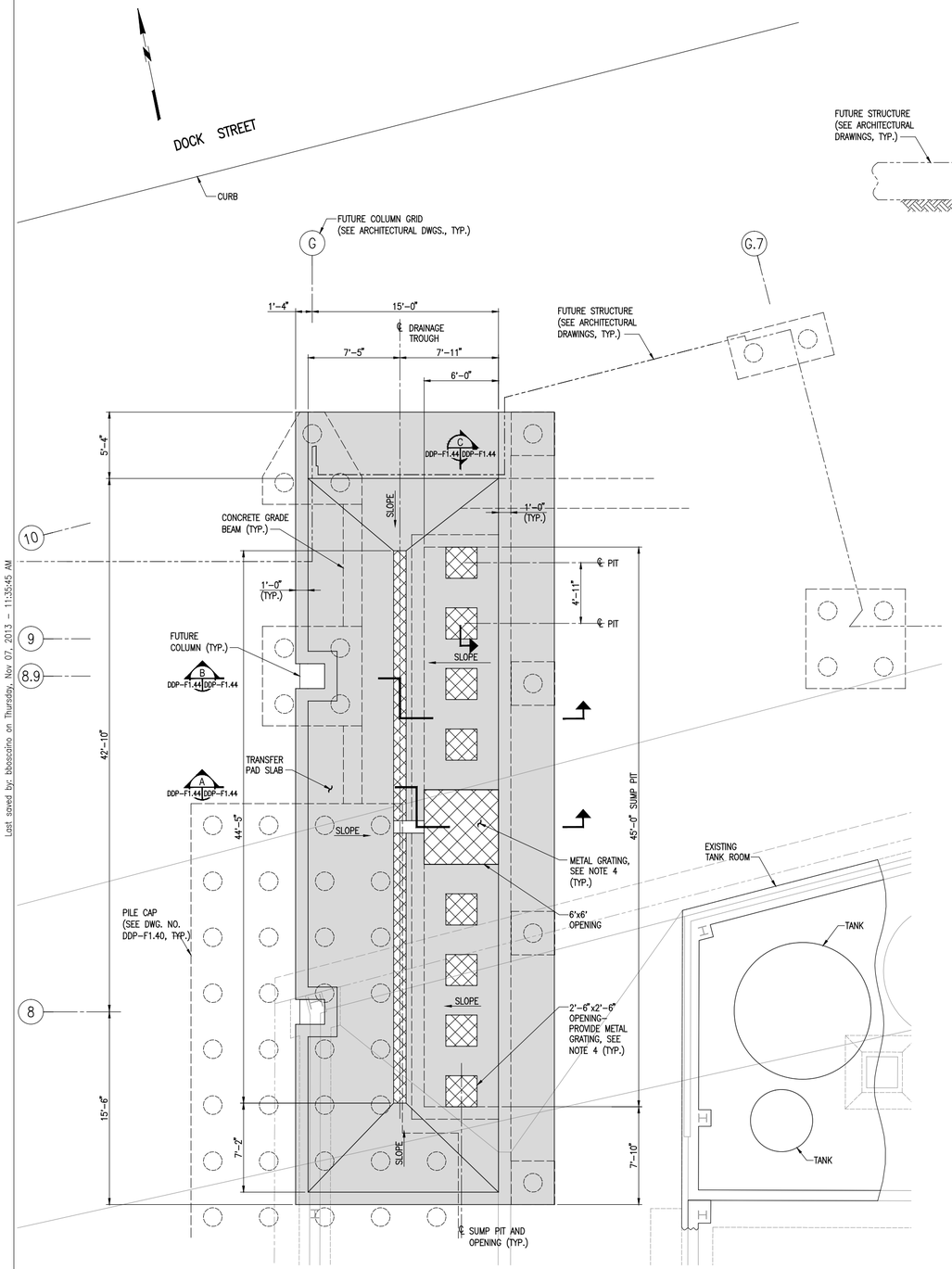
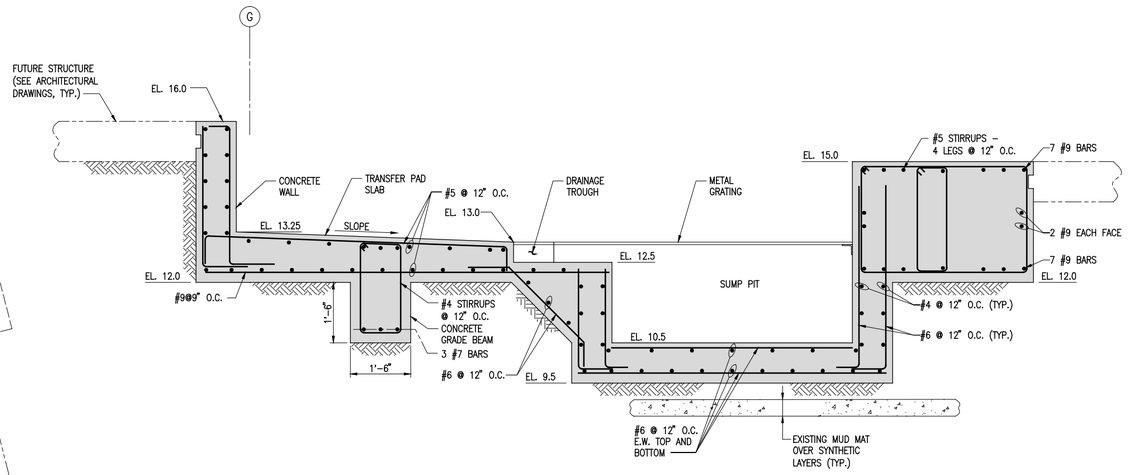


PARTIAL PLAN 3
SCALE: 1/4"=1'-0" DDP-F1.40 DDP-F1.44

GRAPHIC SCALE
4' 2' 0 4' 8'



SECTION A
SCALE: 3/4"=1'-0" DDP-F1.44 DDP-F1.44

GRAPHIC SCALE
1' 0 1' 2' 3'

SECTION B
SCALE: 3/4"=1'-0" DDP-F1.44 DDP-F1.44

GRAPHIC SCALE
1' 0 1' 2' 3'

SECTION C
SCALE: 3/4"=1'-0" DDP-F1.44 DDP-F1.44

GRAPHIC SCALE
1' 0 1' 2' 3'

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01 and DDP-F1.02.
2. Sump pit, concrete slab and walls to be poured in a single pour without joints.
3. For special concrete requirements see drawing DDP-F1.02.
4. Provide metal bar grating similar to existing, with regard to:
   a. Type of grating: welded or Pressure-locked
   b. Bearing bar spacing (V.I.F. existing)
   c. Cross bar spacing (V.I.F. existing)
   d. Materials and finishes (V.I.F. existing)
5. Coat hardened concrete slab with corrosion inhibitor such as silane sealer or approved equal.

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scale:	AS SHOWN
project number:	MRCE-11896A

sheet number
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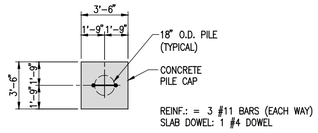
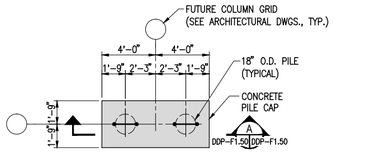


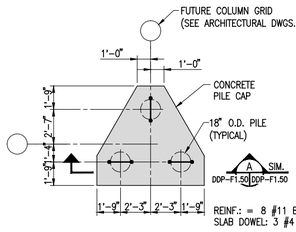
REINF.: = 3 #11 BARS (EACH WAY)
SLAB DOWEL: 1 #4 DOWEL

TYPICAL PILE CAP P1 DETAIL
SCALE: NO SCALE



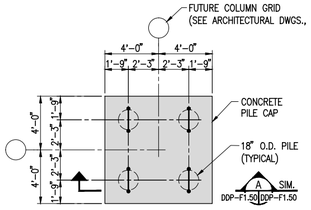
REINF.: = 7 #11 BARS (LONG WAY)
5 #8 BARS (SHORT WAY)
SLAB DOWEL: 2 #4 DOWELS

TYPICAL PILE CAP P2 DETAIL
SCALE: NO SCALE



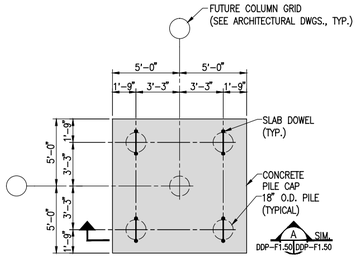
REINF.: = 8 #11 BARS (3 WAYS)
SLAB DOWEL: 3 #4 DOWELS

TYPICAL PILE CAP P3 DETAIL
SCALE: NO SCALE



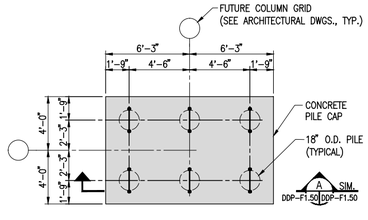
REINF.: = 13 #11 BARS (EACH WAY)
SLAB DOWELS: 4 #4 DOWELS

TYPICAL PILE CAP P4 DETAIL
SCALE: NO SCALE



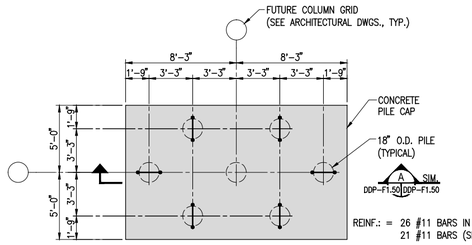
REINF.: = 16 #11 BARS EACH WAY
SLAB DOWELS: 4 #4 DOWELS

TYPICAL PILE CAP P5 DETAIL
SCALE: NO SCALE



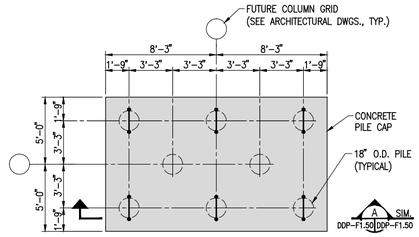
REINF.: = 17 #11 BARS (EACH WAY)
SLAB DOWELS: 6 #4 DOWELS

TYPICAL PILE CAP P6 DETAIL
SCALE: NO SCALE



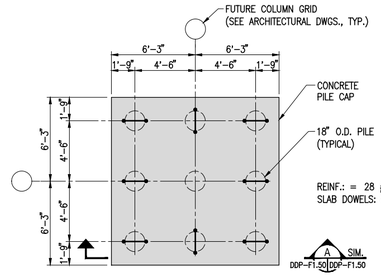
REINF.: = 26 #11 BARS IN BUNDLED PAIRS (LONG WAY)
21 #11 BARS (SHORT WAY)

TYPICAL PILE CAP P7 DETAIL
SCALE: NO SCALE



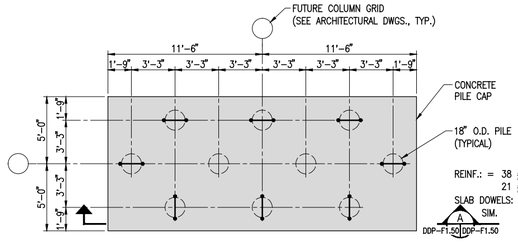
REINF.: = 28 #11 BARS (LONG WAY)
20 #11 BARS (SHORT WAY)
SLAB DOWELS: 6 #4 DOWELS

TYPICAL PILE CAP P8 DETAIL
SCALE: NO SCALE



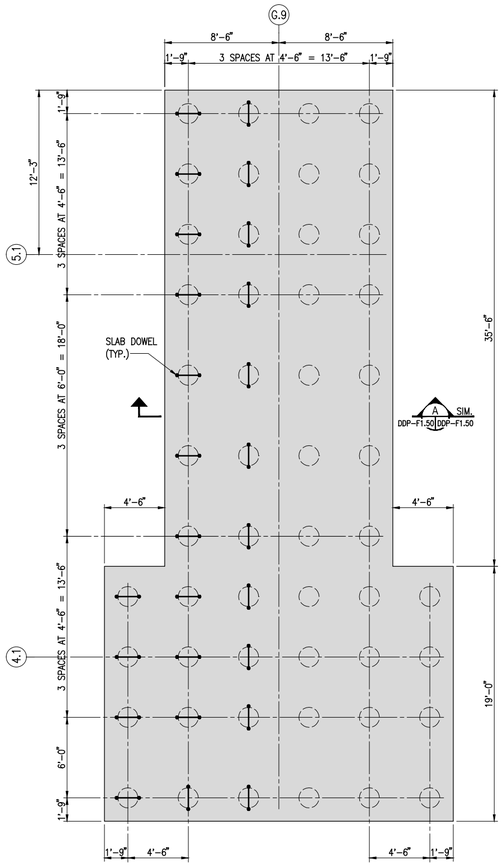
REINF.: = 28 #11 BARS (EACH WAY)
SLAB DOWELS: 8 #4 DOWELS

TYPICAL PILE CAP P9 DETAIL
SCALE: NO SCALE



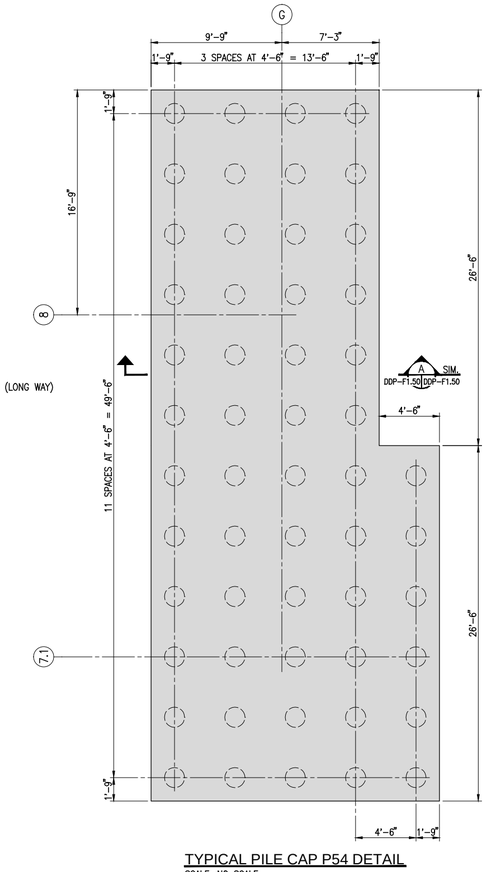
REINF.: = 38 #11 BARS IN BUNDLED PAIRS (LONG WAY)
21 #11 BARS (SHORT WAY)
SLAB DOWELS: 8 #4 DOWELS

TYPICAL PILE CAP P10 DETAIL
SCALE: NO SCALE



TYPICAL PILE CAP P52 DETAIL
SCALE: NO SCALE

REINF.: = #9@9" O.C. EACH WAY AT TOP
#11@9" O.C. EACH WAY AT BOTTOM
PROVIDE TWO ROWS OF #11 AT 9" O.C. AT BOTTOM
FOR 4' ON EITHER SIDE OF COLUMN LINE G.9, 5.1 AND 4.1

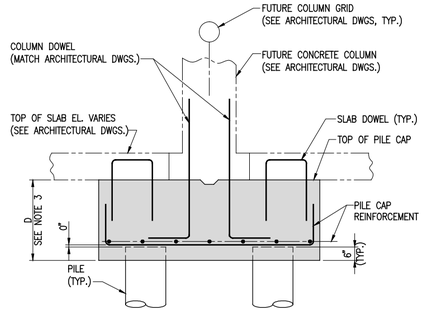


TYPICAL PILE CAP P54 DETAIL
SCALE: NO SCALE

REINF.: = #9@9" O.C. EACH WAY AT TOP
#11@9" O.C. EACH WAY AT BOTTOM
PROVIDE TWO ROWS OF #11 AT 9" O.C. AT BOTTOM
FOR 4' ON EITHER SIDE OF COLUMN LINE G.8 AND 7.1.

NOTE:
SLAB DOWELS NOT SHOWN. ASSUME
ONE DOWEL PER PILE.

NOTES:
1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. For Foundation Plan, see drawing DDP-F1.40.
3. For pile cap depth, see pile schedule on drawing DDP-F1.55.
4. Pile cap design assumes 1'-0" slab thickness.
5. For synthetic layer replacement see drawing DDP-F1.30.



SECTION
SCALE: NO SCALE — A — DDP-F1.50 DDP-F1.50

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DETAILS AND
SECTIONS

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checked by:	S.Y.
scale:	NONE
project number:	MRCE-11896A
sheet number	DDP-F1.50

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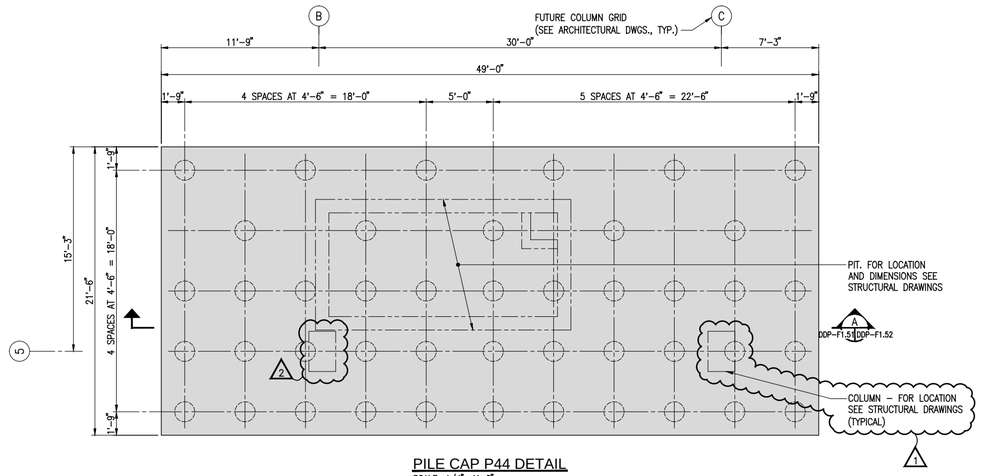
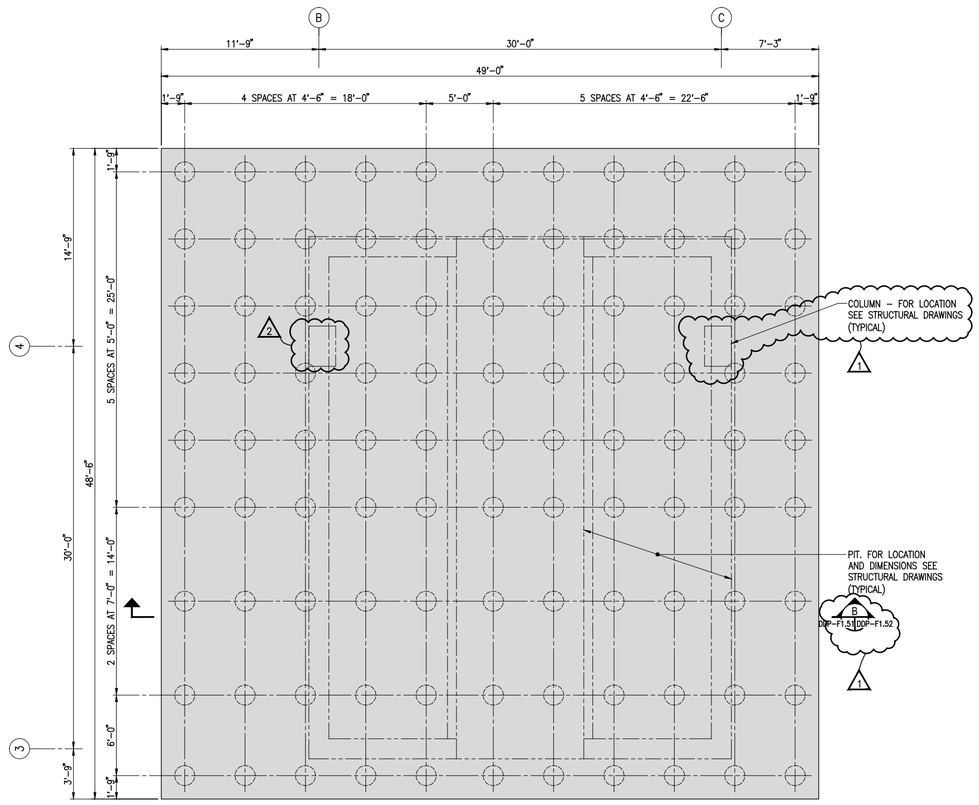
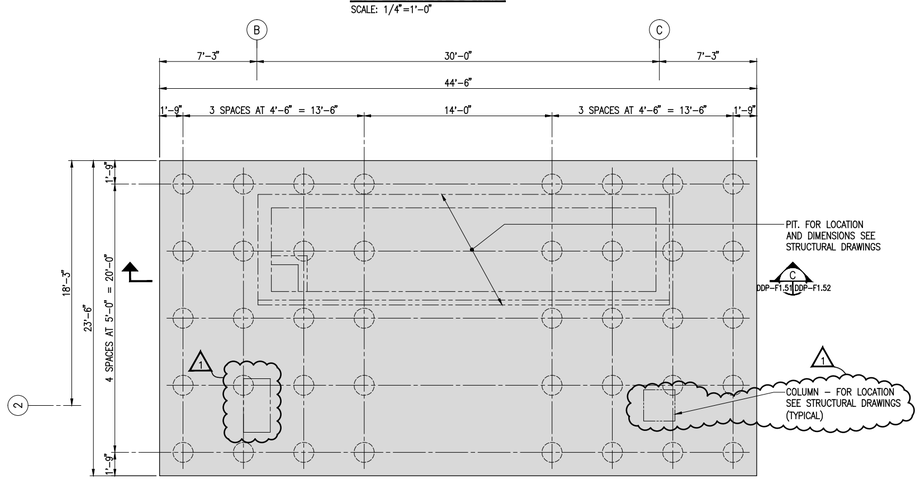
CONSTRUCTION



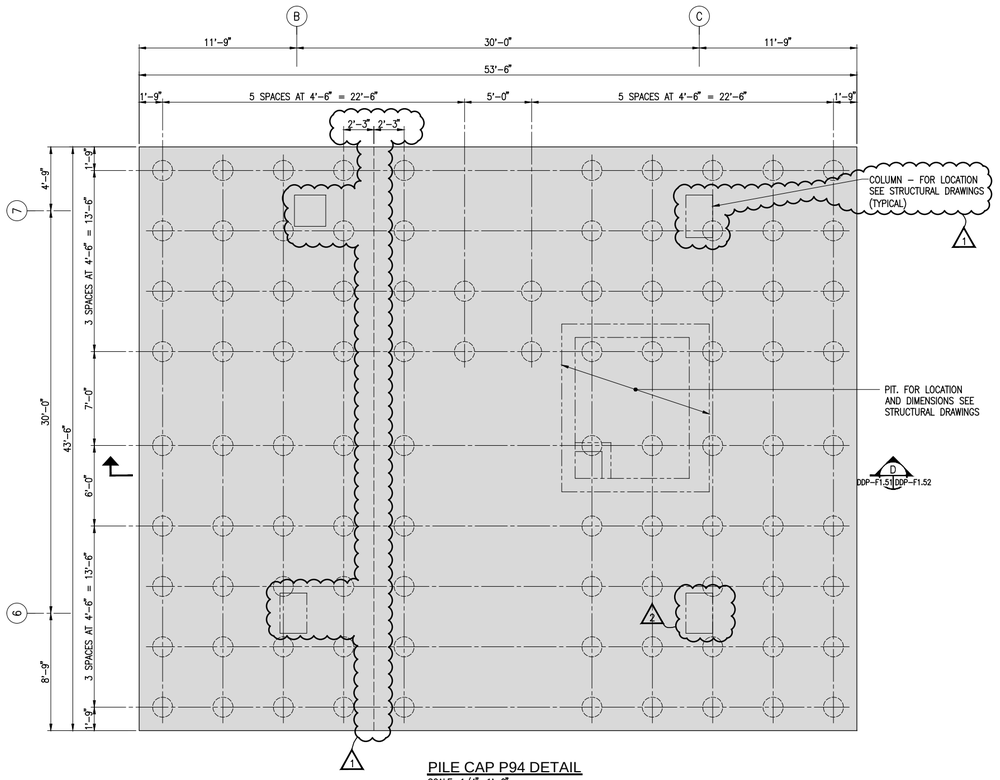
PILE CAP P44 DETAIL
SCALE: 1/4"=1'-0"



PILE CAP P99 DETAIL
SCALE: 1/4"=1'-0"



PILE CAP P40 DETAIL
SCALE: 1/4"=1'-0"



PILE CAP P94 DETAIL
SCALE: 1/4"=1'-0"

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01 and DDP-F1.02.
2. For Foundation Plan, see drawing DDP-F1.40.
3. For synthetic layer replacement see drawing DDP-F1.30.

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EXELON BLDG &
PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

seal

issued	date	description

revision	date	description
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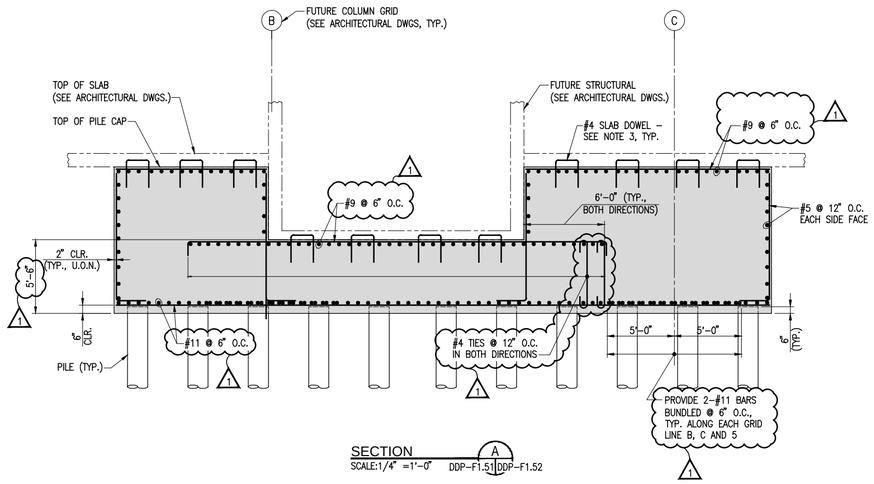
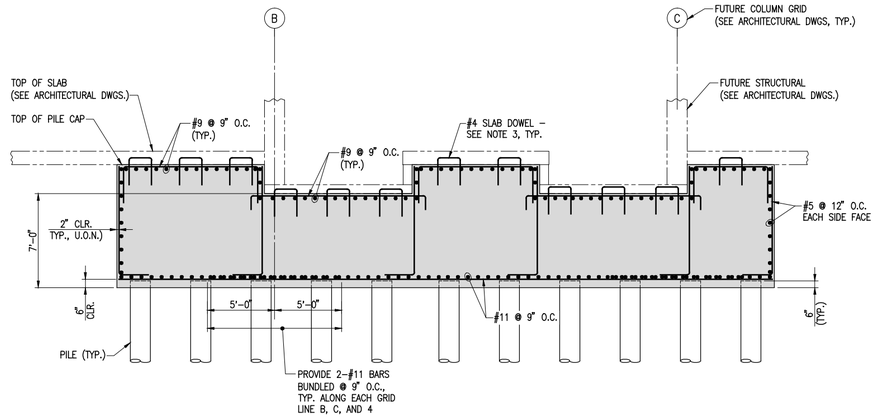
title
FOUNDATION
DETAILS AND
SECTIONS

date:	07/01/13
drawn by:	K.J.
checked by:	S.Y.
scale:	AS SHOWN
project number:	MRCE-11896A

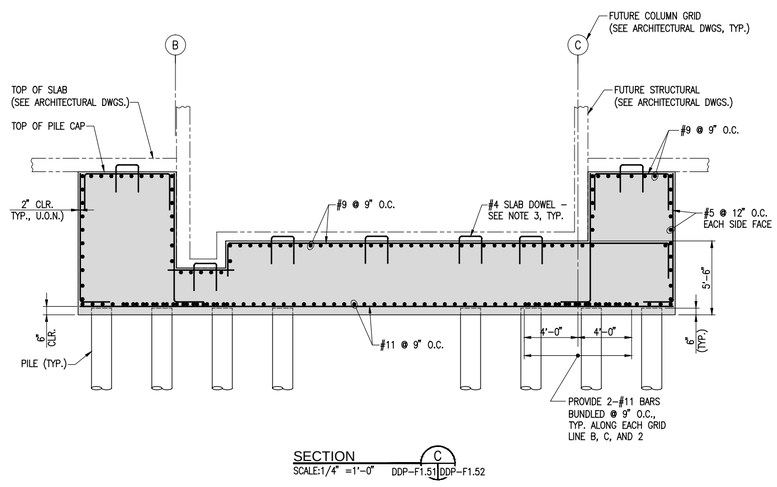
sheet number
DDP-F1.51



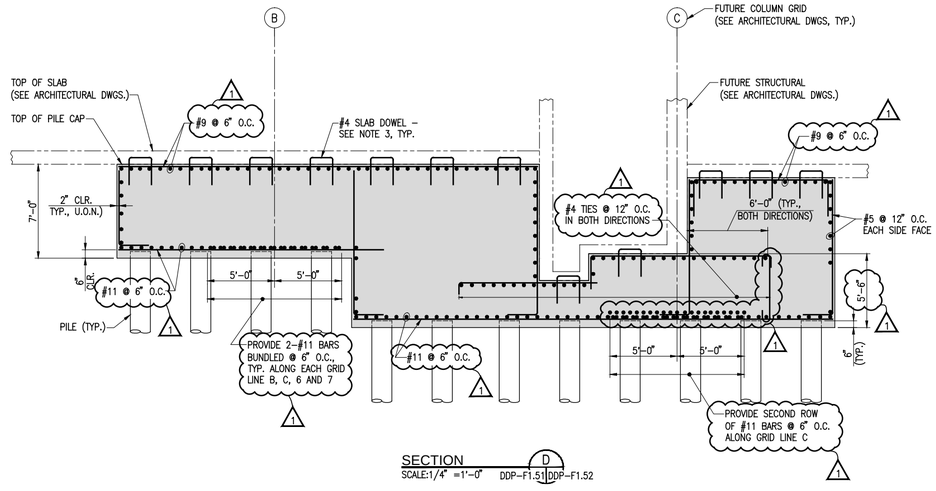
SECTION A
SCALE:1/4" =1'–0" DDP–F1.51 DDP–F1.52



SECTION B
SCALE:1/4" =1'–0" DDP–F1.51 DDP–F1.52



SECTION C
SCALE:1/4" =1'–0" DDP–F1.51 DDP–F1.52



SECTION D
SCALE:1/4" =1'–0" DDP–F1.51 DDP–F1.52

1

NOTES:

1. For General and Technical notes, see drawings DDP–F1.01 and DDP–F1.02.
2. For Foundation Plan, see drawing DDP–F1.40.
3. Place one slab dowel per pile. Place dowel such that it is centered on pile, as shown in sections.
4. For synthetic layer replacement see drawing DDP–F1.30.

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HARBOR POINT
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scale:	AS SHOWN
project number:	MRCE-11896A
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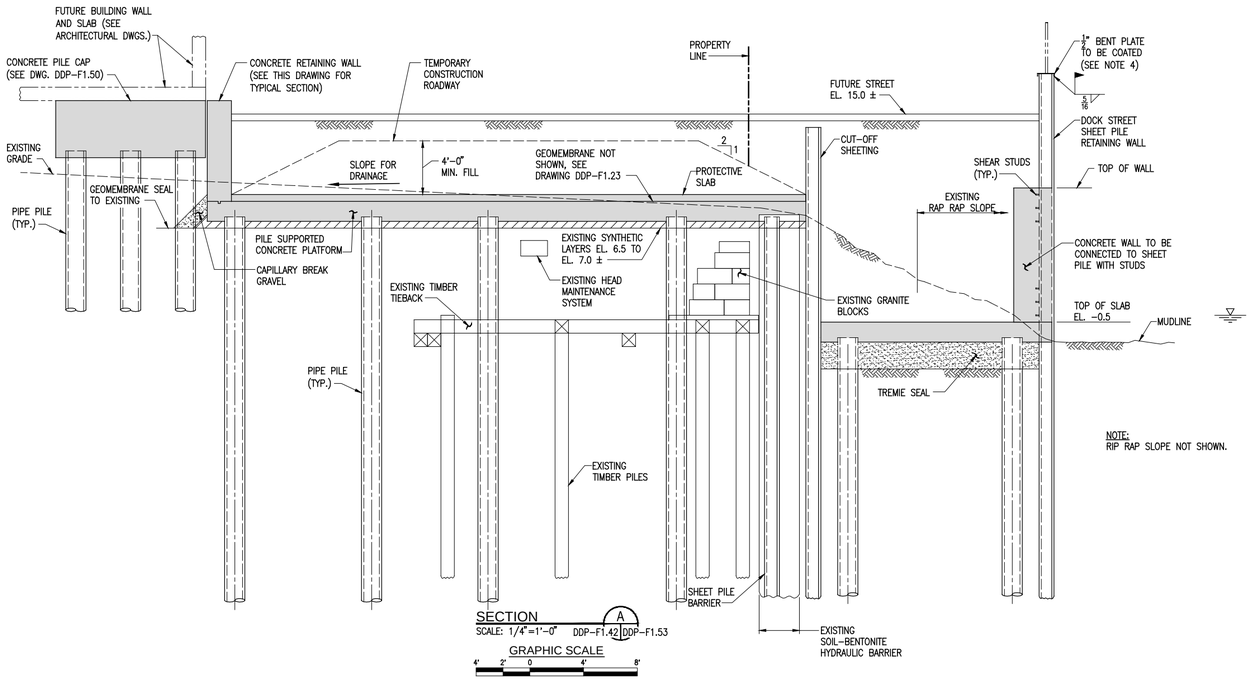
sheet number
DDP-F1.52

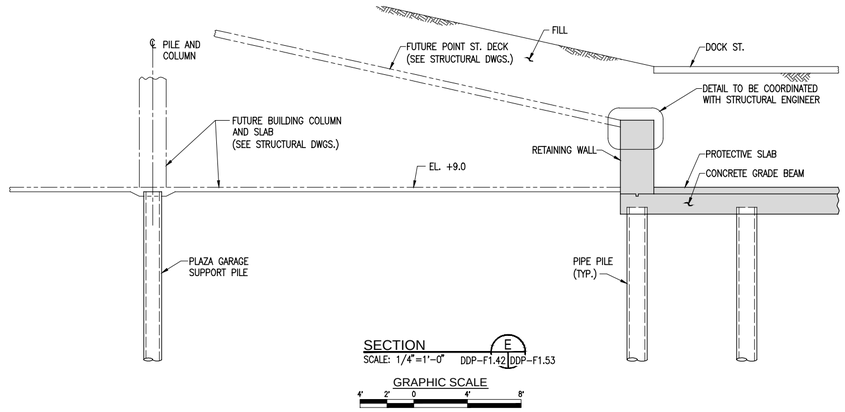
Eugina Cherkasskaya G:\DWGS\118\11896\11896a\DDP Drawings\DDP-F1.52.dwg



NOTE:
RIP RAP SLOPE NOT SHOWN.

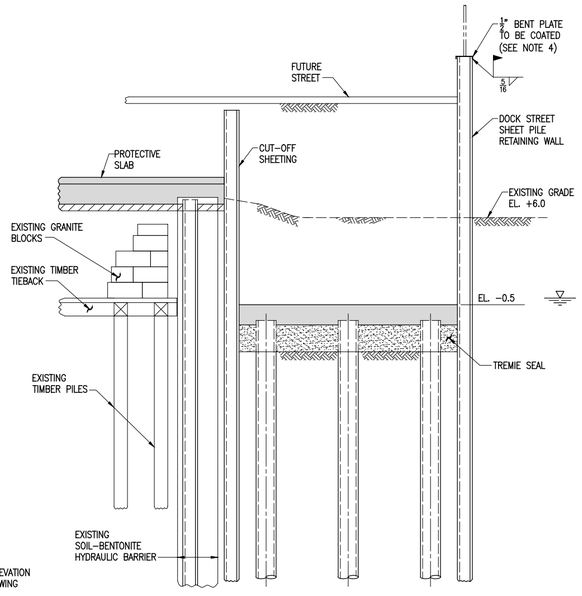
SECTION A
SCALE: 1/4"=1'-0" DDP-F1.42 DDP-F1.53

GRAPHIC SCALE
4' 2' 0 4' 8'



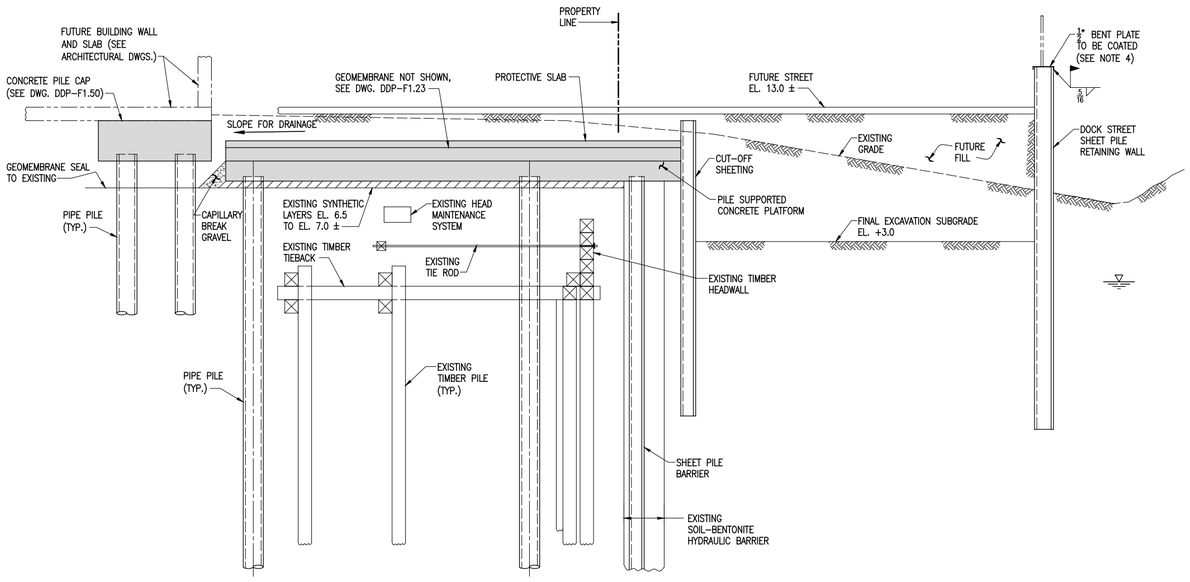
SECTION E
SCALE: 1/4"=1'-0" DDP-F1.42 DDP-F1.53

GRAPHIC SCALE
4' 2' 0 4' 8'



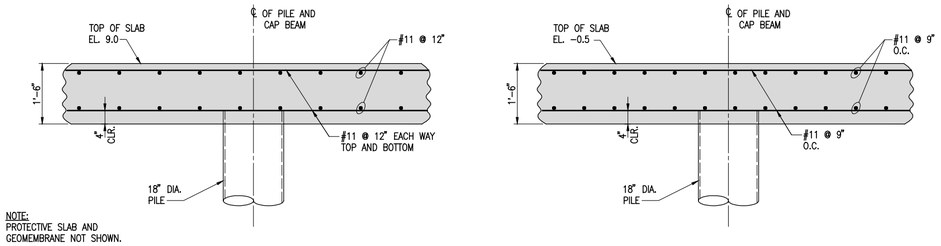
SECTION B
SCALE: 1/4"=1'-0" DDP-F1.42 DDP-F1.53

GRAPHIC SCALE
4' 2' 0 4' 8'



SECTION C
SCALE: 1/4"=1'-0" DDP-F1.42 DDP-F1.53

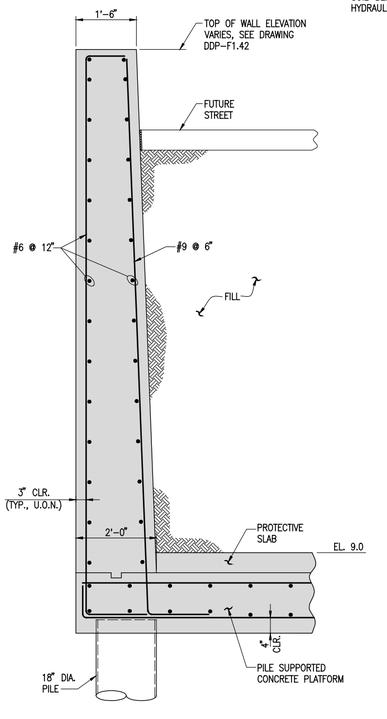
GRAPHIC SCALE
4' 2' 0 4' 8'



NOTE:
PROTECTIVE SLAB AND GEOMEMBRANE NOT SHOWN.

TYPICAL PILE SUPPORTED PLATFORM DETAIL
SCALE: 3/4"=1'-0"

GRAPHIC SCALE
1' 0 1' 2' 3'



TYPICAL RETAINING WALL SECTION
SCALE: 3/4"=1'-0"

GRAPHIC SCALE
1' 0 1' 2' 3'

NOTES:
1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. See note 1 under Sheet Pile Notes on drawing DDP-F1.02.
3. For Foundation Plan, see drawing DDP-F1.40.
4. For synthetic layer replacement see drawing DDP-F1.23.
5. Bent Plate to be placed after backfilling to final grade. Coating for Bent Plate to match sheet pile coating.

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HARBOR POINT
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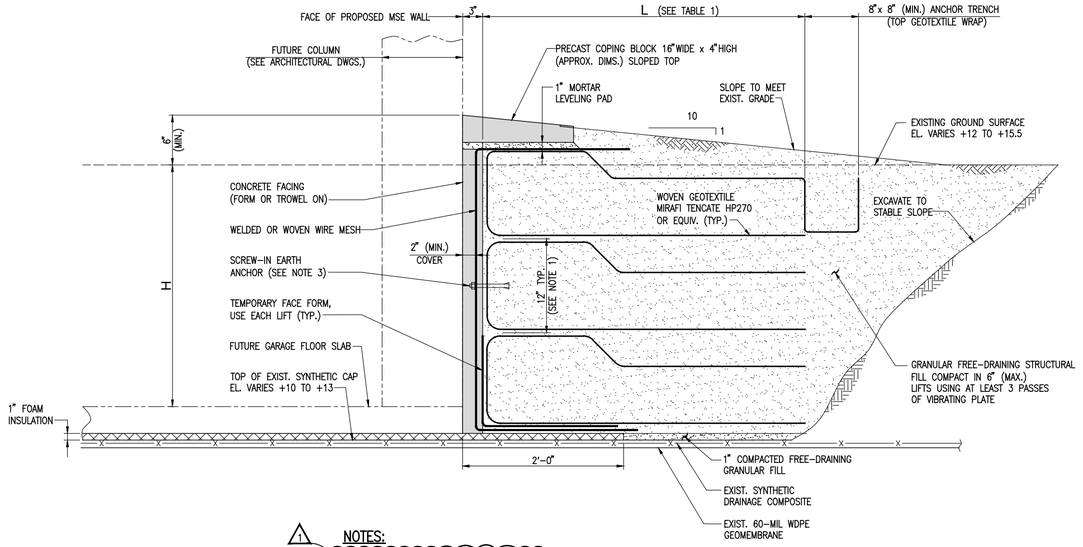
checked by:	S.Y.
scale:	AS SHOWN
project number:	MRCE-11896A

sheet number
DDP-F1.53



1 NOTES:

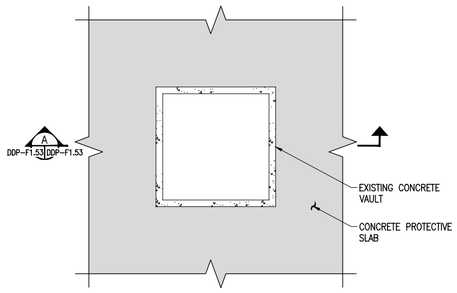
1. For wall limits see drawing DDP-F1.40
2. Adjust height of top geotextile wrap to meet planned grade. Omit top wrap if necessary. Wrap height shall not exceed 12".
3. Where H exceeds 3 ft, use screw-in earth anchors to secure wire mesh to reinforced soil at a maximum spacing of 2 ft. vertically and 5 ft. horizontally.
4. All geotextile joints shall be perpendicular to wall face. Overlap geotextile a minimum of 1'-0" at joints.
5. Design allows a maximum uniform surcharge of 100 psf at the ground surface, over width L.

TABLE 1

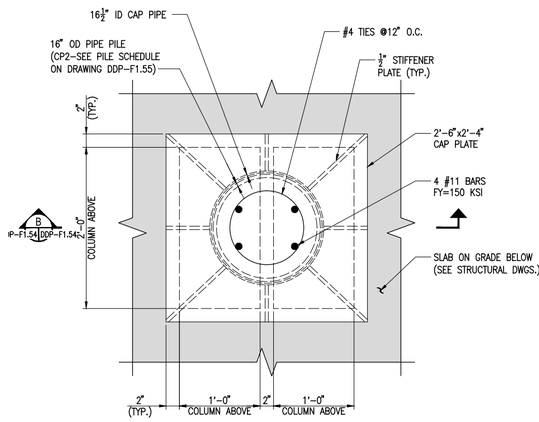
Wall Height, H (FT)	Required Reinforcement Length, L (FT)
0 – 2.5	3.5
2.5 – 3.5	4.0
3.5 – 4.5	4.5

TEMPORARY MSE WALL AT PLAZA GARAGE WHERE UNDERLAIN BY SYNTHETIC CAP

SECTION A
SCALE: 1 1/2"=1'-0" DDP-F1.40 DDP-F1.54

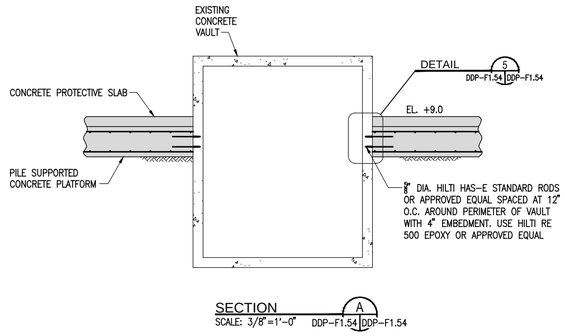


DETAIL 1
SCALE: 1/4"=1'-0" DDP-F1.42 DDP-F1.54

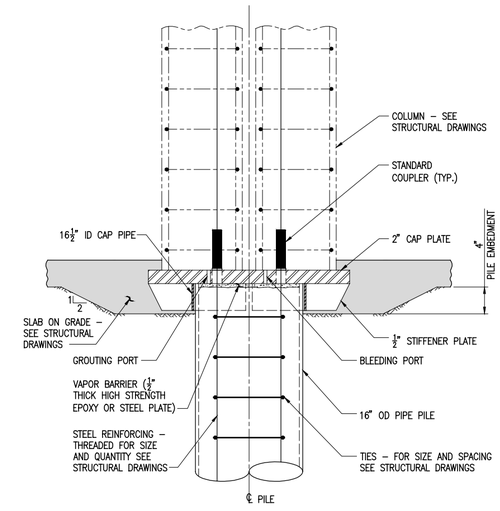


NOTE: SEE PILE SCHEDULE ON DRAWING DDP-F1.55 FOR LOCATIONS WHERE THIS DETAIL IS APPLICABLE.

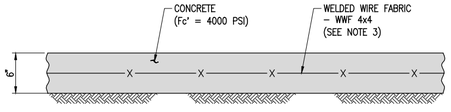
DETAIL 2
SCALE: 1-1/2"=1'-0" DDP-F1.41 DDP-F1.54



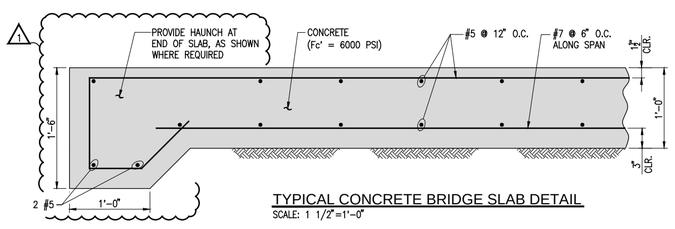
SECTION A
SCALE: 3/8"=1'-0" DDP-F1.54 DDP-F1.54



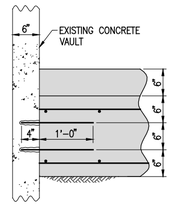
SECTION B
SCALE: 1-1/2"=1'-0" DDP-F1.54 DDP-F1.54



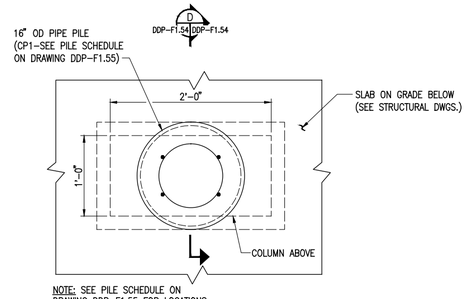
TYPICAL CONCRETE PROTECTIVE SLAB DETAIL
SCALE: 1 1/2"=1'-0"



TYPICAL CONCRETE BRIDGE SLAB DETAIL
SCALE: 1 1/2"=1'-0"

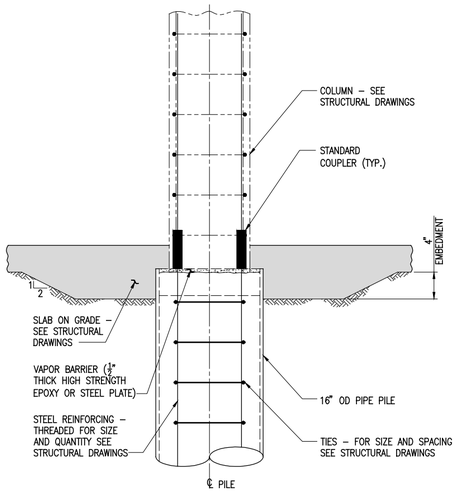


DETAIL 5
SCALE: 1"=1'-0" DDP-F1.54 DDP-F1.54

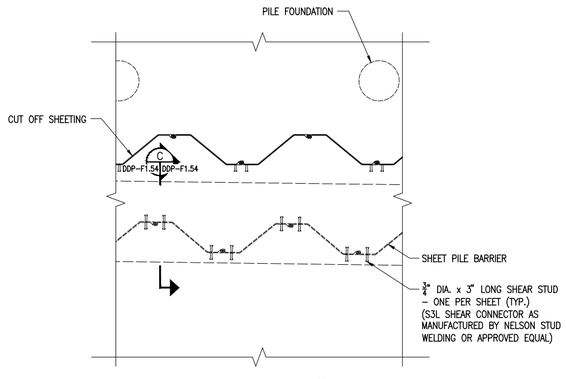


NOTE: SEE PILE SCHEDULE ON DRAWING DDP-F1.55 FOR LOCATIONS WHERE THIS DETAIL IS APPLICABLE.

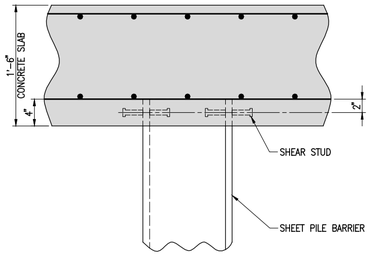
DETAIL 1
SCALE: 1-1/2"=1'-0" DDP-F1.41 DDP-F1.54



SECTION D
SCALE: 1-1/2"=1'-0" DDP-F1.54 DDP-F1.54



DETAIL 3
SCALE: 1/2"=1'-0" DDP-F1.42 DDP-F1.53



SECTION C
SCALE: 1 1/2"=1'-0" DDP-F1.54 DDP-F1.54

GRAPHIC SCALE
1' 8" 4" 0 1'

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01, DDP-F1.02 and DDP-F1.03.
2. For Foundation Plan, see drawing DDP-F1.40.
3. Welded Wire Fabric shall be Galvanized Steel and conform to ASTM A82.
4. For synthetic layer replacement see drawing DDP-F1.31.

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checked by:	S.Y.
scale:	NONE
project number:	MRCE-11896A

sheet number
DDP-F1.54

PILE SCHEDULE

Foundation Location		Pile Diameter (Inches)	Pile Cap Designation	Top of Pile Cap EL. (Feet)	Pile Cap Depth (Feet)	Pile Cut-Off EL. (Feet)	Estimated Top of S4 Strata EL. (Feet)	Estimated Tip EL. (Feet)	Estimated Pile Length (Feet)	Estimated Pile Order Length (Feet)
Office Building	A-7	18	P6	16.0	5.50	11.00	-40	-44.0	56.0	60
	A-6	18	P7	16.0	5.25	11.25	-40	-44.0	57.0	61
	A-5	18	P10	16.0	6.50	10.00	-40	-44.0	55.0	59
	A-4	18	P10	16.0	6.50	10.00	-39	-43.0	54.0	58
	A-3	18	P10	16.0	6.50	10.00	-39	-43.0	54.0	58
	A-2	18	P7	16.0	5.25	11.25	-39	-43.0	56.0	60
	A-1	18	P7	16.0	5.25	11.25	-39	-43.0	56.0	60
	B-1	18	P9	16.0	6.00	10.50	-40	-44.0	56.0	60
	C-1	18	P7	16.0	5.25	11.25	-41	-45.0	58.0	62
	D-7.8	18	P6	15.0	5.50	10.00	-41	-45.0	56.0	60
	D-6	18	P10	15.0	5.50	10.00	-43	-47.0	59.0	63
	D-5	18	P10	16.0	5.50	11.00	-43	-47.0	59.0	63
	D-4	18	P9	16.0	5.00	11.50	-43	-47.0	59.0	63
	D-3.1	18	P9	16.0	5.00	11.50	-43	-47.0	59.0	63
	D-2	18	P7	16.0	4.25	12.25	-43	-47.0	60.0	64
	D-1	18	P5	16.0	4.50	12.00	-43	-47.0	60.0	64
	B.1-7.8	18	P3	16.0	4.00	12.50	-41	-45.0	59.0	63
	C-7.8	18	P6	15.0	5.50	10.00	-41	-45.0	56.0	60
	D-7.3	18	P8	15.0	5.25	10.25	-41	-45.0	56.0	60
Slab Support	C.5-1	18	FSP	17.0	1.67	15.83	-42	-46.0	62.0	66
	C.5-2	18	FSP	17.0	1.67	15.83	-42	-46.0	62.0	66
	C.5-3	18	FSP	17.0	1.67	15.83	-43	-47.0	63.0	67
	C.5-4	18	FSP	17.0	1.67	15.83	-43	-47.0	63.0	67
	C.5-5	18	FSP	17.0	1.67	15.83	-43	-47.0	63.0	67
	C.5-6	18	FSP	16.0	1.67	14.83	-43	-47.0	62.0	66
	C.5-6.8	18	FSP	16.0	1.67	14.83	-41	-45.0	60.0	64
	C.5-7.8	18	FSP	16.0	1.67	14.83	-41	-45.0	60.0	64
Trade Floor Garage Building	E.2-6.8	18	P5	15.0	3.50	12.00	-42	-46.0	58.0	62
	E-8	18	P4	15.0	3.00	12.50	-41	-45.0	58.0	62
	E-10	18	P4	15.0	4.00	11.50	-40	-44.0	57.0	61
	E-6.1	18	P5	15.0	3.50	12.00	-43	-47.0	60.0	64
	E-5.1	18	P5	15.7	3.50	12.70	-44	-48.0	61.0	65
	E-4.1	18	P5	15.7	3.50	12.70	-44	-48.0	61.0	65
	E-3.1	18	P5	15.7	3.50	12.70	-43	-47.0	60.0	64
	E-2.1	18	P3	15.7	3.00	13.20	-43	-47.0	60.0	64
	E-1.2	18	P2	15.7	4.00	12.20	-43	-47.0	60.0	64
	F-1.2	18	P2	14.9	4.00	11.40	-44	-48.0	60.0	64
	F-2.1	18	P3	14.9	3.00	12.40	-45	-49.0	61.0	65
	F-3.1	18	P7	14.9	4.25	11.15	-45	-49.0	60.0	64
	F-4.1	18	P7	14.9	4.25	11.15	-45	-49.0	60.0	64
	F-5.1	18	P7	14.9	4.25	11.15	-45	-49.0	60.0	64
	F-6.1	18	P7	14.5	4.25	10.75	-44	-48.0	57.0	61
	F-7.1	18	P7	12.0	4.25	8.25	-43	-47.0	56.0	60
	F-7.8	18	P8	12.0	5.25	7.25	-42	-46.0	54.0	58
	F-10	18	P6	12.0	5.50	7.00	-41	-45.0	53.0	57
	G-10	18	P3	12.0	4.00	8.50	-38	-42.0	52.0	56
	G-8.9	18	P5	12.0	4.50	8.00	-39	-43.0	52.0	56
	G-6.1	18	P7	14.0	4.25	10.25	-45	-49.0	60.0	64
	G-4.1	18	P8	14.0	5.25	9.25	-46	-50.0	60.0	64
	G-3.1	18	P8	14.0	5.25	9.25	-45	-49.0	59.0	63
	G-2.1	18	P4	14.0	3.00	11.50	-45	-49.0	61.0	65
	G-1.2	18	P2	14.0	4.00	10.50	-45	-49.0	61.0	65
	G.9-1.2	18	P2	15.0	4.00	11.50	-45	-49.0	62.0	66
	G.9-2.1	18	P3	15.0	4.00	11.50	-45	-49.0	62.0	66
	H-3.1	18	P7	15.0	5.25	10.25	-45	-49.0	60.0	64
	G.9-6	18	P9	14.0	6.00	8.50	-45	-49.0	59.0	63
	G.7-9	18	P4	14.0	4.00	10.50	-38	-42.0	54.0	58
	G.7-10	18	P2	14.0	4.00	10.50	-38	-42.0	54.0	58
	G-5.1	18	P7	14.5	4.25	10.75	-46	-50.0	61.0	65
	H-9	18	P9	14.0	6.00	8.50	-41	-45.0	55.0	59
	E.5-1.2	18	P2	15.3	4.00	11.80	-43	-47.0	60.0	64
	F.5-1.2	18	P2	14.5	4.00	11.00	-45	-49.0	61.0	65
	G.5-1.2	18	P2	14.7	4.00	11.20	-45	-49.0	61.0	65
	E.5-2.1	18	P3	15.3	3.00	12.80	-44	-48.0	61.0	65
	F.5-2.1	18	P3	14.5	3.00	12.00	-45	-49.0	61.0	65
	G.5-2.1	18	P3	14.7	3.00	12.20	-45	-49.0	61.0	65
	F-8.7	18	P2	12.0	3.00	9.50	-41	-45.0	55.0	59
Slab Support	E.5-3.1	18	FSP	16.3	1.67	15.13	-44	-48.0	63.0	67
	E.5-4.1	18	FSP	16.3	1.67	15.13	-45	-49.0	64.0	68
	E.5-5.1	18	FSP	16.3	1.67	15.13	-45	-49.0	64.0	68
	E.5-6.1	18	FSP	16.0	1.67	14.83	-44	-48.0	63.0	67
	E.5-7.8	18	FSP	16.0	1.67	14.83	-42	-46.0	61.0	65
	E.5-10	18	FSP	16.0	1.67	14.83	-40	-44.0	59.0	63
	F.6-3.1	18	FSP	15.6	1.67	14.43	-45	-49.0	64.0	68
	F.6-4.1	18	FSP	15.6	1.67	14.43	-46	-50.0	65.0	69
	F.6-5.1	18	FSP	15.6	1.67	14.43	-46	-50.0	65.0	69
	F.6-6.1	18	FSP	15.5	1.67	14.33	-45	-49.0	61.0	65
	G.4.1-3.1	18	FSP	15.75	1.67	14.58	-46	-50.0	65.0	69
	G.4.1-4.1	18	FSP	15.75	1.67	14.58	-46	-50.0	65.0	69
	G.4.1-5.1	18	FSP	15.75	1.67	14.58	-46	-50.0	65.0	69
	G.4.1-6.1	18	FSP	15.0	1.67	13.83	-46	-50.0	64.0	68
Plaza Garage South	XA-X1.3	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63
	XA-X2.8	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XA-X3.9	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XA-X4.8	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XA-X6	16	CP1	13.8	n/a	13.42	-42	-46.0	60.0	64
	XA-X7	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XA-X8	16	CP1	14.0	n/a	13.67	-42	-46.0	60.0	64
	XB-X1.3	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63
	XB-X2.8	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XB-X3.9	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XB-X4.8	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XB-X6	16	CP1	13.8	n/a	13.42	-42	-46.0	60.0	64
	XB-X7	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XB-X8	16	CP1	14.0	n/a	13.67	-42	-46.0	60.0	64
	XC-X2.1	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63
	XC-X2.9	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XC-X4.1	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XC-X4.9	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XC-X6.1	16	CP1	13.8	n/a	13.42	-42	-46.0	60.0	64
	XC-X6.9	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XC-X8	16	CP1	14.0	n/a	13.67	-42	-46.0	60.0	64
	XD-X2.1	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63
	XD-X3.3	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XD-X4.1	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XD-X4.9	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XD-X6.1	16	CP1	13.8	n/a	13.42	-42	-46.0	60.0	64
	XD-X6.9	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XD-X8	16	CP1	14.0	n/a	13.67	-42	-46.0	60.0	64
	XE-X1.2	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63
	XE-X2.1	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63

PILE SCHEDULE

Foundation Location		Pile Diameter (Inches)	Pile Cap Designation	Top of Pile Cap EL. (Feet)	Pile Cap Depth (Feet)	Pile Cut-Off EL. (Feet)	Estimated Top of S4 Strata EL. (Feet)	Estimated Tip EL. (Feet)	Estimated Pile Length (Feet)	Estimated Pile Order Length (Feet)
Plaza Garage South	XE-X3.3	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XE-X4.1	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XE-X4.9	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XE-X6.1	16	CP1	13.8	n/a	13.42	-42	-46.0	60.0	64
	XE-X6.9	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XE-X8	16	CP1	14.0	n/a	13.67	-42	-46.0	60.0	64
	XF-X2.1	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63
	XF-X3.3	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XF-X4.1	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XF-X4.9	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XF-X6.1	16	CP1	13.8	n/a	13.42	-42	-46.0	60.0	64
	XF-X6.9	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XF-X8	16	CP1	14.0	n/a	13.67	-42	-46.0	60.0	64
	XG-X2.1	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63
	XG-X3.3	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XG-X4.1	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XG-X4.9	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XG-X6.1	16	CP1	13.8	n/a	13.42	-42	-46.0	60.0	64
	XG-X6.9	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XG-X8	16	CP1	14.0	n/a	13.67	-42	-46.0	60.0	64
	XH-X1.2	16	CP2	13.0	n/a	12.67	-42	-46.0	59.0	63
	XH-X2.1	16	CP2	13.0	n/a	12.67	-42	-46.0	59.0	63
	XH-X3.3	16	CP2	13.3	n/a	12.92	-42	-46.0	59.0	63
	XH-X4.1	16	CP2	13.5	n/a	13.17	-42	-46.0	60.0	64
	XH-X4.9	16	CP2	13.6	n/a	13.27	-42	-46.0	60.0	64
	XH-X6.1	16	CP2	13.8	n/a	13.42	-42	-46.0	60.0	64
	XH-X6.9	16	CP2	13.8	n/a	13.47	-42	-46.0	60.0	64
	XH-X8	16	CP2	14.0	n/a	13.67	-42	-46.0	60.0	64
	XJ-X1.2	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63
	XJ-X2.1	16	CP1	13.0	n/a	12.67	-42	-46.0	59.0	63
	XJ-X3.3	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XJ-X4.1	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XJ-X4.9	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XJ-X6.1	16	CP1	13.8	n/a	13.42	-42	-46.0	60.0	64
	XJ-X6.9	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XJ-X8	16	CP1	14.0	n/a	13.67	-42	-46.0	60.0	64
	XK-X1.2	16	CP1	13.0	n/a	12.67	-43	-47.0	60.0	64
	XK-X2.1	16	CP1	13.0	n/a	12.67	-43	-47.0	60.0	64
	XK-X3.3	16	CP1	13.3	n/a	12.92	-43	-47.0	60.0	64
	XK-X4.1	16	CP1	13.5	n/a	13.17	-43	-47.0	61.0	65
	XK-X4.9	16	CP1	13.6	n/a	13.27	-43	-47.0	61.0	65
	XK-X6.1	16	CP1	13.8	n/a	13.42	-43	-47.0	61.0	65
	XK-X6.9	16	CP1	13.8	n/a	13.47	-43	-47.0	61.0	65
	XK-X8	16	CP1	14.0	n/a	13.67	-43	-47.0	61.0	65
	XL-X1.2	16	CP1	13.0	n/a	12.67	-43	-47.0	60.0	64
	XL-X2.1	16	CP1	13.0	n/a	12.67	-43	-47.0	60.0	64
	XL-X3.3	16	CP1	13.3	n/a	12.92	-43	-47.0	60.0	64
	XL-X4.1	16	CP1	13.5	n/a	13.17	-43	-47.0	61.0	65
	XL-X4.9	16	CP1	13.6	n/a	13.27	-43	-47.0	61.0	65
	XL-X6.1	16	CP1	13.8	n/a	13.42	-43	-47.0	61.0	65
	XL-X6.9	16	CP1	13.8	n/a	13.47	-43	-47.0	61.0	65
	XL-X8	16	CP1	14.0	n/a	13.67	-43	-47.0	61.0	65
	XM-X1.2	16	CP1	13.0	n/a	12.67	-43	-47.0	60.0	64
	XM-X2.1	16	CP1	13.0	n/a	12.67	-43	-47.0	60.0	64
	XM-X3.3	16	CP1	13.3	n/a	12.92	-43	-47.0	60.0	64
	XM-X4.1	16	CP1	13.5	n/a	13.17	-43	-47.0	61.0	65
	XM-X4.9	16	CP1	13.6	n/a	13.27	-43	-47.0	61.0	65
	XM-X6.1	16	CP1	13.8	n/a	13.42	-43	-47.0	61.0	65
	XM-X6.9	16	CP1	13.8	n/a	13.47	-43	-47.0	61.0	65
	XM-X8	16	CP1	14.0	n/a	13.67	-43	-47.0	61.0	65
Plaza Garage South	XN-X1.2	16	CP1	13.0	n/a	12.67	-46	-50.0	63.0	67
	XN-X2.1	16	CP1	13.0	n/a	12.67	-46	-50.0	63.0	67
	XN-X3.3	16	CP1	13.3	n/a	12.92	-46	-50.0	63.0	67
	XN-X4.1	16	CP1	13.5	n/a	13.17	-46	-50.0	64.0	68
	XN-X4.9	16	CP1	13.6	n/a	13.27	-44	-48.0	62.0	66
	XN-X6.1	16	CP1	13.8	n/a	13.42	-43	-47.0	61.0	65
	XN-X6.9	16	CP1	13.8	n/a	13.47	-45	-49.0	63.0	67
	XN-X8	16	CP1	14.0	n/a	13.67	-45	-49.0	63.0	67
	XP-X1.2	16	CP2	13.0	n/a	12.67	-46	-50.0	63.0	67
	XP-X2.1	16	CP2	13.0	n/a	12.67	-46	-50.0	63.0	67
	XP-X3.3	16	CP2	13.3	n/a	12.92	-46	-50.0	63.0	67
	XP-X4.1	16	CP2	13.5	n/a	13.17	-46	-50.0	64.0	68
	XP-X4.9	16	CP2	13.6	n/a	13.27	-44	-48.0	62.0	66
	XP-X6.1	16	CP2	13.8	n/a	13.42	-45	-49.0	63.0	67
	XP-X6.9	16	CP2	13.8	n/a	13.47	-48	-52.0	66.0	70
	XP-X8	16	CP2	14.0	n/a	13.67	-48	-52.0	66.0	70
	XQ-X1.2	16	CP1	13.0	n/a	12.67	-46	-50.0	63.0	67
	XQ-X2.1	16	CP1	13.0	n/a	12.67	-46	-50.0	63.0	67
	XQ-X3.3	16	CP1	13.3	n/a	12.92	-46	-50.0	63.0	67
	XQ-X4.1	16	CP1	13.5	n/a	13.17	-46	-50.0	64.0	68
	XQ-X4.9	16	CP1	13.6	n/a	13.27	-48	-52.0	66.0	70
	XQ-X6.1	16	CP1	13.8	n/a	13.42	-50	-54.0	68.0	72
	XQ-X6.9	16	CP1	13.8	n/a	13.47	-51	-55.0	69.0	73
	XQ-X8	16	CP1	14.0	n/a	13.67	-52	-56.0	70.0	74
	XR-X1.2	16	CP1	13.0	n/a	12.67	-49	-53.0	66.0	70
	XR-X2.1	16	CP1	13.0	n/a	12.67	-49	-53.0	66.0	70
	XR-X3.3	16	CP1	13.3	n/a	12.92	-49	-53.0	66.0	70
	XR-X4.1	16	CP1	13.5	n/a	13.17	-49	-53.0	67.0	71
	XR-X4.9	16	CP1	13.6	n/a	13.27	-49	-53.0	67.0	71
	XR-X6.1	16	CP1	13.8	n/a	13.42	-51	-55.0	69.0	73
	XR-X6.9	16	CP1	13.8	n/a	13.47	-53	-57.0	71.0	75
	XR-X8	16	CP1	14.0	n/a	13.67	-54	-58.0	72.0	76
	XS-X2.1	16	CP1	13.0	n/a	12.67	-49	-53.0	66.0	70
	XS-X3.3	16	CP1	13.3	n/a	12.92	-49	-53.0	66.0	70
	XS-X4.1	16	CP1	13.5	n/a	13.17	-49	-53.0	67.0	71
	XS-X4.9	16	CP1	13.6	n/a	13.27	-50	-54.0	68.0	72
	XS-X6.1	16	CP1	13.8	n/a	13.42	-51	-55.0	69.0	73
	XS-X6.9	16	CP1	13.8	n/a	13.47	-53	-57.0	71.0	75
	XS-X8	16	CP1	14.0	n/a	13.67	-53	-57.0	71.0	75
	XT-X2	16	CP1	13.0	n/a	12.67	-49	-53.0	66.0	70
	XT-X3	16	CP1	13.3	n/a	12.92	-49	-53.0	66.0	70
	XT-X4	16	CP1	13.5	n/a	13.17	-49	-53.0	67.0	71
	XT-X5	16	CP1	13.6	n/a	13.27	-49	-53.0	67.0	71
	XT-X6	16	CP1	13.8	n/a	13.42	-51	-55.0	69.0	73
	XT-X7	16	CP1	13.8	n/a	13.47	-53	-57.0	71.0	75

PILE SCHEDULE

Foundation Location		Pile Diameter (Inches)	Pile Cap Designation	Top of Pile Cap EL. (Feet)	Pile Cap Depth (Feet)	Pile Cut-Off EL. (Feet)	Estimated Top of S4 Strata EL. (Feet)	Estimated Tip EL. (Feet)	Estimated Pile Length (Feet)	Estimated Pile Order Length (Feet)
Plaza Garage South	XT-X8	16	CP1	14.0	n/a	13.67	-53	-57.0	71.0	75
	XU-X2	16	CP1	13.0	n/a	12.67	-49	-53.0	66.0	70
	XU-X3	16	CP1	13.3	n/a	12.92	-49	-53.0	66.0	70
	XU-X4	16	CP1	13.5	n/a	13.17	-49	-53.0	67.0	71
	XU-X5	16	CP1	13.6	n/a	13.27	-49	-53.0	67.0	71
	XU-X5.3	16	CP1	13.7	n/a	13.37	-51	-55.0	69.0	73
	XU-X6.1A	16	CP1	13.8	n/a	13.47	-53	-57.0	71.0	75
	XU-X7	16	CP1	13.8	n/a	13.47	-52	-56.0	70.0	74
	XU-X8	16	CP1	14.0	n/a	13.67	-53	-57.0	71.0	75
	XA-X3.4	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XA-X5.1	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XB-X3.4	16	CP1	13.5	n/a	13.17	-42	-46.0	60.0	64
	XB-X5.1	16	CP1	13.6	n/a	13.27	-42	-46.0	60.0	64
	XC-X3.3	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XC-X7.3	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XD-X2.9	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XD-X7.3	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XE-X2.9	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XE-X7.3	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XF-X2.9	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XF-X7.3	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XG-X2.9	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XG-X7.3	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XH-X2.9	16	CP2	13.3	n/a	12.92	-42	-46.0	59.0	63
	XH-X7.3	16	CP2	13.8	n/a	13.47	-42	-46.0	60.0	64
	XJ-X2.9	16	CP1	13.3	n/a	12.92	-42	-46.0	59.0	63
	XJ-X7.3	16	CP1	13.8	n/a	13.47	-42	-46.0	60.0	64
	XK-X2.9	16	CP1	13.3	n/a	12.92	-43	-47.0	60.0	64
	XK-X7.3	16	CP1	13.8	n/a	13.47	-43	-47.0	61.0	65
	XL-X2.9	16	CP1	13.3	n/a	12.92	-43	-47.0	60.0	64
	XL-X7.3	16	CP1	13.8	n/a	13.47	-43	-47.0	61.0	65
	XM-X2.9	16	CP1	13.3	n/a	12.92	-43	-47.0	60.0	64
	XM-X7.3	16	CP1	13.8	n/a	13.47	-43	-47.0	61.0	65
	XN-X2.9	16	CP1	13.3	n/a	12.92	-46	-50.0	63.0	67
	XN-X7.3	16	CP1	13.8	n/a	13.47	-45	-49.0	63.0	67
	XP-X2.9	16	CP2	13.3	n/a	12.92	-46	-50.0	63.0	67
	XP-X7.3	16	CP2	13.8	n/a	13.47	-48	-52.0	66.0	70
	XQ-X2.9	16	CP1	13.3	n/a	12.92	-46	-50.0	63.0	67
	XQ-X7.3	16	CP1	13.8	n/a	13.47	-51	-55.0	69.0	73
	XR-X2.9	16	CP1	13.3	n/a	12.92	-49	-53.0	66.0	70
	XR-X7.3	16	CP1	13.8	n/a	13.47	-53	-57.0	71.0	75
	XS-X2.9	16	CP1	13.3	n/a	12.92	-49	-53.0	66.0	70
	XS-X5.2	16	CP1	13.6	n/a	13.27	-50	-54.0	68.0	72
	XS-X7.3	16	CP1	13.8	n/a	13.47	-53	-57.0	71.0	75
Plaza Garage West	XA-5.3	18	CP1	9.2	n/a	8.87	-39	-43.0	52.0	56
	XA-4.3	18	CP1	9.9	n/a	9.57	-39	-43.0	53.0	57
	XA-4.1	18	CP1	10.7	n/a	10.37	-39	-43.0	54.0	58
	XA-X0	18	CP1	11.4	n/a	11.05	-39	-43.0	55.0	59
	XA-X0.2	18	CP1	12.3	n/a	11.92	-39	-43.0	55.0	59
	XA-X1.1	18	CP1	13.0	n/a	12.67	-39	-43.0	56.0	60
	XB-5.3	18	CP1	9.2	n/a	8.87	-39	-43.0	52.0	56
	XB-4.3	18	CP1	9.9	n/a	9.57	-39	-43.0	53.0	57
	XB-4.1	18	CP1	10.7	n/a	10.37	-39	-43.0	54.0	58
	XB-X0	18	CP1	11.4	n/a	11.05	-39	-43.0	55.0	59
	XB-X0.2	18	CP1	12.3	n/a	11.92	-39	-43.0	55.0	59
	XB-X1.1	18	CP1	13.0	n/a	12.67	-39	-43.0	56.0	60
	XC-5.3	18	CP1	9.2	n/a	8.87	-39	-43.0	52.0	56
	XC-4.3	18	CP1	9.9	n/a	9.57	-39	-43.0	53.0	57
	XC-3.5	18	CP1	10.8	n/a	10.47	-39	-43.0	54.0	58
	XC-3.2	18	CP1	11.1	n/a	10.77	-39	-43.0	54.0	58
	XC-X0.1	18	CP1	12.3	n/a	11.92	-39	-43.0	55.0	59
	XC-X1.1	18	CP1	13.0	n/a	12.67	-39	-43.0	56.0	60
	XD-5.3	18	CP1	9.2	n/a	8.87	-39	-43.0	52.0	56
	XA-3.3	18	CP1	11.4	n/a	11.05	-39	-43.0	55.0	59
	XB-3.3	18	CP1	11.4	n/a	11.05	-39	-43.0	55.0	59
Plaza Garage East	XR.1-X0.1	18	CP1	12.1	n/a	11.77	-46	-50.0	62.0	66
	XR.1-X1.0	18	CP1	13.0	n/a	12.67	-46	-50.0	63.0	67
	XS-4.2	18	CP1	10.4	n/a	10.07	-48	-52.0	63.0	67
	XS-3.4	18	CP1	11.0	n/a	10.67	-48	-52.0	63.0	67
	XS-3.2	18	CP1	11.0	n/a	10.67	-48	-52.0	63.0	67
	XS-X0.1	18	CP1	12.1	n/a	11.77	-48	-52.0	64.0	68
	XT-5.2	18	CP1	10.2	n/a	9.87	-50	-54.0	64.0	68
	XT-4.2	18	CP1	10.4	n/a	10.07	-50	-54.0	65.0	69
	XT-3.4	18	CP1	11.0	n/a	10.67	-50	-54.0	65.0	69
	XT-3.2	18	CP1	11.0	n/a	10.67	-50	-54.0	65.0	69
	XT-X0.1	18	CP1	12.1	n/a	11.77	-50	-54.0	66.0	70
	XU-5.2	18	CP1	10.2	n/a	9.87	-50	-54.0	64.0	68
	XU-4.2	18	CP1	10.4	n/a	10.07	-50	-54.0	65.0	69
	XU-3.4	18	CP1	11.0	n/a	10.67	-52	-56.0	67.0	71
	XU-3.2	18	CP1	11.0	n/a	10.67	-52	-56.0	67.0	71
	XU-X0.1	18	CP1	12.1	n/a	11.77	-50	-54.0	66.0	70
	XS-X1.1	18	CP1	13.0	n/a	12.67	-48	-52.0	65.0	69
	XT-X1.1	18	CP1	13.0	n/a	12.67	-50	-54.0	67.0	71
	XU-X1.1	18	CP1	13.0	n/a	12.67	-50	-54.0	67.0	71
Transfer Station	G.4-9.5	18	P1	12.0	3.00	9.50	-41	-45.0	54.5	59
	G.4-9.1	18	P1	12.0	3.00	9.50	-41	-45.0	54.5	59
	G.4-8.1	18	P1	12.0	3.00	9.50	-41	-45.0	54.5	59
	G.4-7.4	18	P1	12.0	3.00	9.50	-41	-45.0	54.5	59
Shear Wall Pile Caps	B/C-7/6	18	P94	Varies	Varies	2.50	-41	-45.0	48.0	52
						9.50	-41	-45.0	55.0	56
	B/C-5	18	P44	Varies	Varies	4.75	-41	-45.0	50.0	54
	B/C-4/3	18	P99	Varies	Varies	8.00	-41	-45.0	53.0	57
	B/C-2	18	P40	Varies	Varies	6.00	-41	-45.0	51.0	55
	G-7.1/8	18	P54	Varies	7.00	5.50	-41	-45.0	51.0	55
	G.9-5.1/4.1	18	P52	Varies	5.00	10.50	-45	-49.0	60.0	64
Wills St. Platform Support	XR.1-7	18	FSP	14.0	n/a	12.30	-46	-50.0	63.0	67
	XR.1-6.2	18	FSP	14.0	n/a	12.30	-46	-50.0	63.0	67
	XS-7	18	FSP	14.0	n/a	12.30	-48	-52.0	65.0	69
	XS-6.2	18	FSP	14.0	n/a	12.30	-48	-52.0	65.0	69
	XR.1-5.2	18	FSP	14.0	n/a	12.30	-46	-50.0	63.0	67
	XS-5.2	18	FSP	14.0	n/a	12.30	-48	-52.0	65.0	69
Dock Street Platform	Piles East of Column Grid Line G	16	NA	8.5	1.5	7.5	-40	-44	52	56
	Piles West of Column Grid Line G	16	NA	8.5	1.5	7.5	-42	-46	54	58

NOTES:

1. Piles shown as 16 inch OD Piles shall be – 16 inch OD Pipe x ½" Wall ASTM A252 Grade (Fy = 45ksi) with Conical Tip Filled with Concrete (fc'=4000 psi).
2. Piles shown as 18 inch OD Piles shall be – 18 inch OD Pipe x ½" Wall ASTM A252 Grade (Fy = 45ksi) with Conical Tip Filled with Concrete (fc'=4000 psi).
3. Conical tip shall be P-14006 Conical Point inside flange as manufactured by Associated Pile and Fitting or approved equal.
4. Conical tip shall be full penetration welded to steel pipe.
5. Steel grade of conical tip shall match that of pipe.
6. Pile Lengths shown are based on actual pile lengths estimated from cut off elevation to an estimated tip elevation and do not include the additional length that may be required for installing piles from existing grades.

Abbreviations:

FSP – Floor Support Slab
CP1 – Concentric Pile Single Column (see Detail 2 on drawing DDP-F1.54)
CP2 – Concentric Pile Double Column (see Detail 1 on drawing DDP-F1.54)
P6 – Pile Cap with 6 Piles

PROGRESS SET
NOT FOR
CONSTRUCTION

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project
EXELON BLDG &
PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

seal

issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
PILE
SCHEDULE

date: 06/14/13
drawn by: K.J.
checked by: S.Y.
scale: NONE
project number: MRCE-11896A

scaled inch

sheet number
DDP-F1.55

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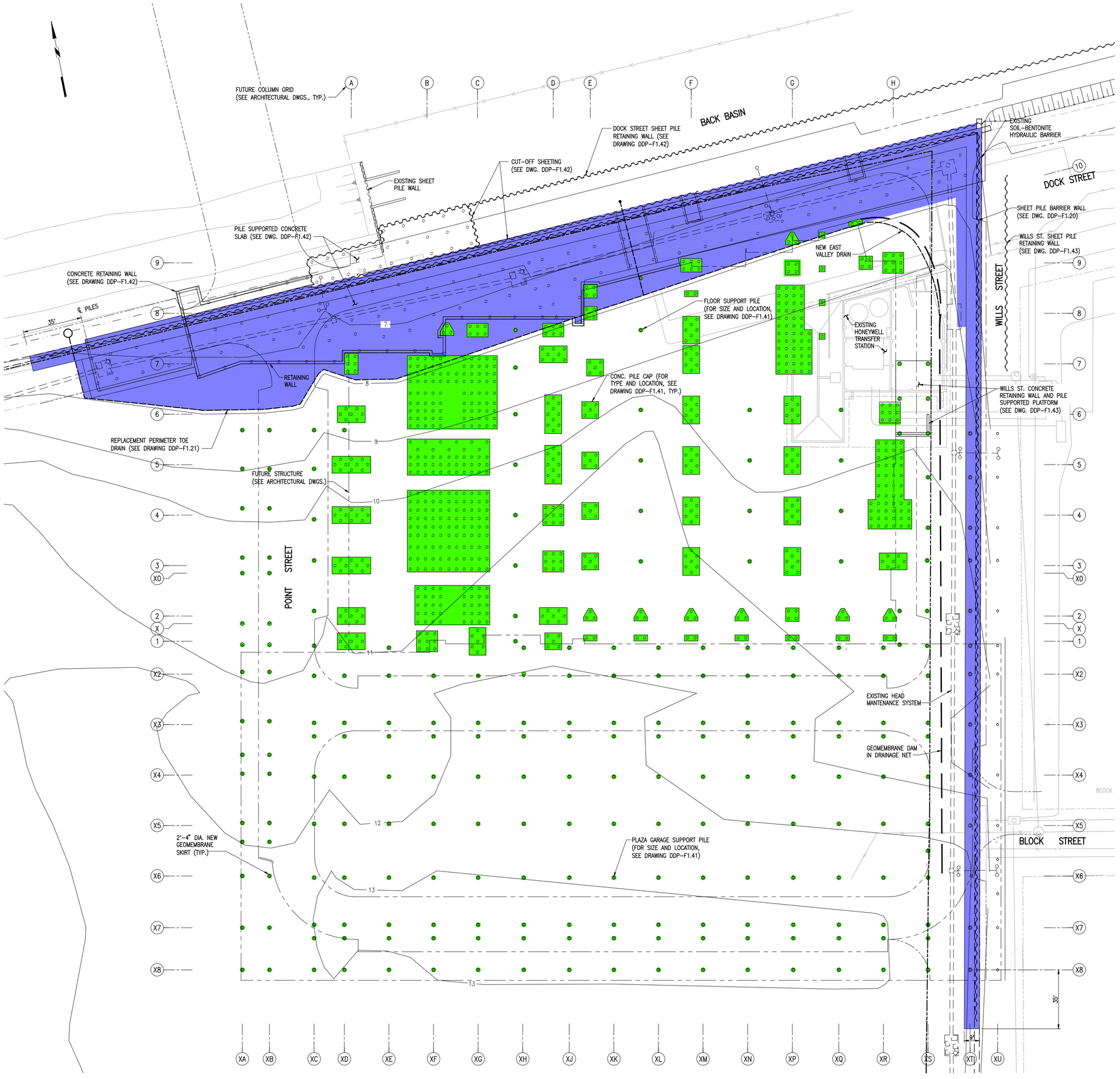

NOTES:

1. For General and Technical notes, see drawings DDP-F1.01 and DDP-F1.02.
2. Contours shown are necessary interpolations between survey points and may not represent actual subsurface conditions.
3. As-Built elevation contour of Synthetic Cap. From survey by Morris Ritchies Associate.

LEGEND:

- 13 – Existing Synthetic Layers Contours
- – Restore all synthetic layers except GCL and Drainage Net
- – Restore all synthetic layers
- – – – – – Geomembrane dam in drainage net
- – – – – – – – – – – – New valley drain

GRAPHIC SCALE
20' 10' 0 20' 40'

PROGRESS SET
NOT FOR
CONSTRUCTION

DDP-F1.60

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project
EXELON BLDG &
PLAZA GARAGE

HARBOR POINT
PHASE 1 AREA 1
DDP SUBMISSION
8/1/13
REVISED 11/12/13

key plan

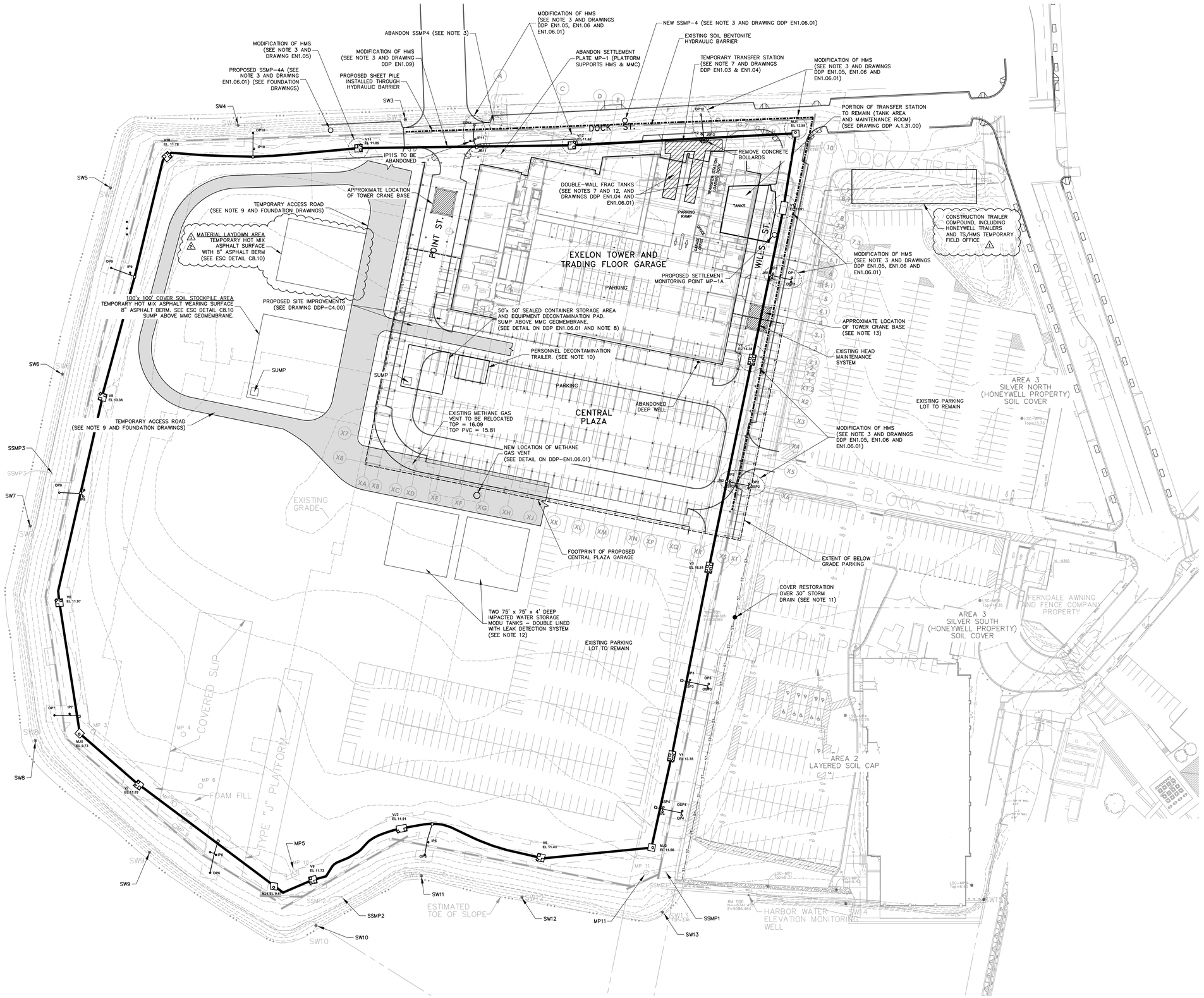
seal

issued	date	description

revision	date	description
1	11/12/2013	REVISIONS PER EPA/MDE 10/31/2013 COMMENTS

title
DEVELOPMENT
CAP PLAN

date:	06/14/13
drawn by:	E.C.
checked by:	G.S.
scale:	1:20
project number:	MRCE-11896A
sheet number	scaled 8x11



LEGEND

- PILE CAPS
- SW = SURFACE WATER SAMPLE POINT
- PILES/COLUMN
- HYDRAULIC BARRIER
- OP7 IP7 — PIEZOMETER SYSTEM
- MJ2 EL 12.16 — MANHOLE JUNCTION
- PROPOSED SHEET PILE WALL

NOTES

1. UTILITIES PLAN AND PROFILES ARE SHOWN ON CIVIL DRAWINGS (SEE DRAWINGS DDP–C5.10 THROUGH C7.40).
2. PENETRATION INTO THE MULTIMEDIA CAP FOR INSTALLATION OF PILE FOUNDATIONS ARE SHOWN ON DRAWINGS DDP–F1.30 AND DDP–F1.31.
3. IN LOCALIZED AREAS, MODIFICATION OF HMS COMPONENTS PRESENTED BELOW WILL BE REQUIRED. SEE DRAWINGS DDP EN1.05, EN1.06, EN1.06.01, AND EN1.09 FOR DETAILS. (1)
   A. VAULTS: V1, V2, V11, AND V12 REQUIRE ENTRY MANHOLE ELEVATION ADJUSTMENT. (SEE DDP EN1.05).
   B. PIEZOMETERS: IP1, ISP1, OP1, OSP1, IP2, ISP2, OP2, OSP2, IP11, OP11, IP12 AND OP12 WILL REQUIRE ELEVATION ADJUSTMENT. (SEE DETAILS ON DDP EN1.06 AND EN1.06.01).
   C. JUNCTION BOX: REPLACE AND ADJUST JB1, JB2 AND JB12 TO NEW ELEVATION. JB11 SHALL BE RELOCATED (SEE DETAILS ON DDP EN1.06 AND EN1.06.01).
   D. JUNCTION MANHOLE: MJ–1 WILL REQUIRE ELEVATION ADJUSTMENT (SEE DDP EN1.09).
   E. DRAINAGE SAMPLING POINTS: ABANDON EXISTING AND INSTALL NEW SSMP–4. INSTALL NEW SSMP–4A (SEE DRAWING EN1.06.01).
   F. HMS CONDUITS BETWEEN MJ–1 AND V11 WILL BE SUPPORTED ON STEEL PIPE RACK HANGING FROM THE STRUCTURAL SLAB. MJ–1, V11, AND V12 WILL ALSO BE SUPPORTED FROM THE STRUCTURAL SLAB (SEE DRAWING EN 1.09). SEE FOUNDATION DRAWINGS FOR STRUCTURAL SUPPORT CONNECTION OF MJ–1, V11, AND V12 TO THE STRUCTURAL SLAB.
4. EXISTING METHANE GAS VENT SHALL BE ABANDONED BY CUTTING THE VENT 6 INCHES ABOVE THE SYNTHETIC DRAINAGE COMPOSITE AND PLUGGING WITH CONCRETE.
5. THE NEW PROPOSED METHANE GAS VENT SHALL BE LOCATED AT A MINIMUM 5 FEET AWAY FROM THE EDGE OF CENTRAL PLAZA. THE VENT IS SITUATED HEREIN AT THE HIGHEST GEOMEMBRANE AREA LOCATED SOUTH OF THE PROPOSED STRUCTURE. SEE DETAIL DDP EN1.06.
6. DURING THE INSTALLATION OF SHEET PILE INBOARD AND OUTBOARD PERIMETER S–C–21 AND 12 SHALL REMAIN OPERATIONAL USING TEMPORARY MEANS (WIRE EXTENSION OR WIRELESS – SEE DRAWING DDP EN1.02). AFTER INSTALLATION OF THE SHEET PILE, THE CONNECTION SHALL BE RESTORED IN ACCORDANCE WITH DETAILS IN DRAWING DDP EN1.06 (ALSO SEE DRAWINGS DDP–F1.20, F1.21 AND F1.22). (1)
7. THE DOUBLE WALLED FRAC TANKS SHALL BE STAGED ON STANDARD CONSTRUCTION MAT. (PRESTO GEO TERRA MATS OR SIMILAR) SEE DRAWING DDP EN1.06.01.
8. IMPACTED SOIL SHALL BE SEGREGATED FROM NON–IMPACTED SOIL. ALL IMPACTED/CONTAMINATED MATERIALS SHALL BE PLACED DIRECTLY FROM THE EXCAVATION INTO LINED ROLL–OFF CONTAINERS WITH ALUMINUM LIDS TO SEAL THE CONTAINERS. THE CONTAINERS SHALL BE TRANSPORTED OFF–SITE FOR DISPOSAL EVERY WORKDAY. IF THE LOADED CONTAINER CANNOT BE HAULED FOR DISPOSAL AT THE END OF THE CONSTRUCTION DAY, THOSE CONTAINERS SHALL BE TEMPORALLY STORED IN THE CONTROLLED STORAGE AREA.
9. SEE FOUNDATION DRAWINGS FOR TEMPORARY ACCESS ROAD LAYOUT.
10. PERSONNEL SHALL REMOVE ALL CONTAMINATED PPE AND CONTAINERIZE IN DRUMS BEFORE EXITING THE AREA. THE PERSONNEL DECONTAMINATION AREA SHALL BE SERVICED WITH FACE/HAND WASH, CONTAMINATED PPE DRUMS AND DRY/WET BOOT DECONTAMINATION. RELOCATE PERSONNEL DECONTAMINATION TRAILER ADJACENT TO CRZ AS NEEDED. (1)
11. REFER TO C 5.10 FOR 30" STORM DRAIN EXFILTRATION PIPE (ALTERNATIVE). IF THE PIPE IS INSTALLED WITHIN AREA 2 THE AREA 2 COVER SHALL BE RESTORED TO MATCH EXISTING IN ACCORDANCE WITH DETAIL ON DDP EN1.06.01.
12. THE IMPACTED WATER FROM THE STORAGE TANK (MODU DOUBLE LINED) SHALL BE PUMPED DIRECTLY TO A TANKER TRUCK ON AN AS NEEDED BASIS FOR OFFSITE DISPOSAL. (1)
13. THE TOWER CRANE BASE IS FOUNDED ON THE PILES. THE CONTRACTOR SHALL ENSURE THAT THE TOWER CRANE BASE SHALL NOT PLACE UNDUE STRAIN ON THE HMS CONDUITS, AND THAT THE CRANE OPERATION WILL NOT RESTRICT ACCESS TO THE NEARBY HMS COMPONENTS, INCLUDING PIEZOMETERS, DURING CONSTRUCTION.

SPECIFIC CONSTRUCTION NOTES

1. THE CONTRACTOR SHALL PROTECT EXISTING STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES DETAILED ON PLANS FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, AND OTHER HAZARDS CREATED BY PILE DRIVING AND EARTHWORK OPERATIONS.
2. THE CONTRACTOR SHALL MOVE AND REESTABLISH THE AIR RECEIVER INSIDE THE TS BUILDING TO MAINTAIN OPERATION OF THE COMPRESSED AIR SYSTEM DURING THE COURSE OF CONSTRUCTION (SEE DRAWING DDP EN1.07). THE CONTRACTOR SHALL PROVIDE A MOBILE COMPRESSED AIR SYSTEM IN CONFORMANCE WITH THE CONTINGENCY PLAN IF REQUIRED AS DETAILED ON DDP EN1.04.
3. THE CONTRACTOR SHALL RELOCATE ALL EQUIPMENT AND CONTROLS SYSTEMS ASSOCIATED WITH HMS SYSTEM OPERATION IN ACCORDANCE WITH THE DRAWINGS OR AS SPECIFIED BY THE FIELD ENGINEER AND AS SHOWN ON DRAWING DDP EN1.02, EN1.03, EN1.04, EN1.07, AND EN1.08). (1)
4. SUBPROJECT 3 – HMS AND SUBPROJECT 6 – TS AS–BUILT DRAWINGS SETS AND SPECIFICATIONS ARE INCORPORATED INTO THIS DESIGN IN THEIR ENTIRETY BY REFERENCE FOR PURPOSES OF MAINTAINING HMS AND TS SYSTEM OPERATIONS OR POST CONSTRUCTION HMS OR TS SYSTEM RESTORATIONS UNLESS OTHERWISE SPECIFIED ON THE PLANS OR APPROVED BY THE ENGINEER.
5. THE CONTRACTOR SHALL REPLACE ALL TRANSFER STATION AND HEAD MAINTENANCE SYSTEM COMPONENTS AS NECESSARY TO RESTORE THE HMS AND TS TO IN–KIND/PRE–CONSTRUCTION CONDITIONS AS PER THE SUBPROJECT 3 – HMS AND SUBPROJECT 6 – TS DRAWINGS SETS OR AS OTHERWISE SPECIFIED BY THE ENGINEER.
6. THE CONTRACTOR SHALL COORDINATE WITH THE TS/HMS OPERATOR TO PROVIDE SCHEDULED ACCESS TO THE TS AND HMS SYSTEM AS NECESSARY FOR THE OPERATOR TO MAINTAIN REGULATORY COMPLIANCE. THE CONTRACTOR SHALL HALT CONSTRUCTION ACTIVITIES AS NECESSARY TO PROVIDE OPERATOR ACCESS. CONTRACTOR SHALL PRESSURE TEST WATER AND MOD–DUCTWORK LINES UPON COMPLETION OF PILES TO ENSURE INTEGRITY OF EXISTING PIPING UTILITIES. (1)
8. INSPECT ALL MONITORING POINTS WITHIN 80 FT. OF PILE DRIVING ACTIVITY BEFORE DRIVING PILES. INSPECT AFTER ALL PILES WITHIN 80 FT. ARE DRIVEN TO CONFIRM PROPER PERFORMANCE.

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EXELON BLDG & PLAZA GARAGE

HARBOR POINT AREA 1 PHASE 1 DDP SUBMISSION 8/1/13 (REVISED 11/25/13)

key plan

seal

issued	date	description

revision	date	description
1	11/11/2013	ADDED MATERIAL LAYDOWN AREA. REVISED CALLOUT. UPDATED NOTES
2	11/22/2013	UPDATED NOTES

title

ENVIRONMENTAL REMEDIATION SYSTEM IMPROVEMENTS

date:	8/1/13
drawn by:	ERM
checked by:	AK
scale:	NOTED
project number:	0199768

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DDP EN1.01

A. PREPARATION AND OPERATION OF THE TRANSFER STATION AND HEAD MAINTENANCE SYSTEM DURING DEMOLITION AND CONSTRUCTION:

△1 OPERATION OF THE TRANSFER STATION (TS) AND HEAD MAINTENANCE SYSTEM (HMS) DURING DEMOLITION AND CONSTRUCTION SHALL BE CONDUCTED BASED ON A TWO LEVEL CONTINGENCY PLAN (LEVEL 1 AND LEVEL 2). THE LEVEL 1 CONTINGENCY PLAN (CP) ELEMENTS ARE REQUIRED PRIOR TO THE START OF THE CONSTRUCTION AND AT ALL TIMES DURING CONSTRUCTION. LEVEL 2 CP ELEMENTS SHALL BE IMPLEMENTED ON AN AS NEEDED BASIS. ALL LEVEL 1 AND LEVEL 2 CP ACTIVITIES SHALL BE PERFORMED IN ACCORDANCE WITH THE FULL CP CONTROL DOCUMENT TO INCLUDE OBTAINING ALL SPECIFIED SPARE PARTS/EQUIPMENT IN ORDER TO LIMIT SYSTEM DOWNTIME TO ONE WORKDAY OR LESS.

PLEASE NOTE THAT THE EXISTING FIRE SUPPRESSION SYSTEM ONLY SERVES THE EXISTING TS OFFICE SPACE SLATED FOR DEMOLITION. HOWEVER, A WATER MAIN AND NATURAL GAS LINE IS ROUTED THROUGH THE ELECTRICAL/MECHANICAL ROOM AND POSES A SIGNIFICANT RISK TO THOSE SYSTEMS IF DAMAGED DURING CONSTRUCTION. THE CONTRACTOR SHALL SHUT OFF AND PROPERLY PREPARE ALL WATER AND GAS UTILITIES PRIOR TO CONSTRUCTION. ALL NATURAL GAS UNIT HEATERS IN THE TANK ROOM WILL BE REPLACED WITH ELECTRIC UNIT HEATERS AS SPECIFIED ON **DRAWING DDP-EN-1.08** IN ORDER TO ELIMINATE NATURAL GAS LINES TO THE TS.

UNDER THE LEVEL 1 CP, GROUNDWATER WILL BE ROUTED TO THE EXISTING TANKS. LEVEL 1 SHALL CONSIST OF PREPARING THE EXISTING SYSTEMS AND MAKING MINOR MODIFICATIONS TO THE EXISTING SYSTEMS IN ANTICIPATION OF DUST AND VIBRATION THAT MAY CAUSE EQUIPMENT, ELECTRICAL AND CONTROL SYSTEM FAILURE. GROUNDWATER FROM THE TANKS SHALL BE TRANSFERRED TO THE TEMPORARY LOADING AREA USING THE EXISTING 3" KAMLOCK CONNECTION LOCATED ON THE WESTERN WALL OF THE TANK ROOM.

UNDER THE LEVEL 2 CP, THE HMS CONTROLS WILL BE ISOLATED AND ALL IMPACTED GROUNDWATER DIVERTED FROM VAULT 1 TO A TEMPORARY TRANSFER STATION (TTS) IN THE EVENT THE EXISTING TS WOULD BECOME INOPERABLE. HOWEVER, ALL THE CONNECTION AND MODIFICATION FOR LEVEL 2 OPERATION WILL BE MADE UNDER THE LEVEL 1 CP.

SEQUENCING AND MODIFICATION REQUIRED DURING EACH LEVEL ARE PROVIDED BELOW:

a. LEVEL 1 OPERATION:

FOLLOWING STEPS WILL BE PERFORMED DURING LEVEL 1 OPERATION:

1. THE EXISTING TS, PROGRAMMABLE LOGIC CONTROLLER (PLC) AND REMOTE INTELLIGENT CONTROL (RIC OR "NODE") SHALL BE KEPT IN-PLACE WITHOUT MODIFICATION.

2. BACKUP THE EXISTING PLC PROGRAMMING IN THE TS AND HMS SYSTEMS. THE EXISTING PLC CONSISTS OF SIEMENS TYPE SIMATIC-200 IN TS AND THE RICs IN HMS VAULTS. ALL COMPONENTS FOR THESE SYSTEMS ARE AVAILABLE AND REPLACEABLE. THE FIELD ENGINEER SHALL BACK-UP THE EXISTING PROGRAMS IN THE EVENT THAT ANY PLC COMPONENT IS DAMAGED AND NEEDS TO BE REPLACED. THE FIELD ENGINEER SHALL ALSO EMPLOY A HARD-DRIVE IMAGING STRATEGY PERIODICALLY DURING CONSTRUCTION TO ENSURE THE OPERATOR TERMINAL MAINTAINS DATA-INTEGRITY THROUGHOUT THE WORK SCHEDULE. THIS MEASURE WILL AVOID THE COSTLY AND TIME INTENSIVE PROCESS OF REPROGRAMMING AND CONFIGURING OF THE WONDERWARE TERMINAL IN THE EVENT THAT THE HARD DRIVE WAS TO BECOME CORRUPTED.

3. RELOCATE THE EXISTING WONDERWARE MASTER SUPERVISORY SYSTEM/ HUMAN-MACHINE INTERFACE MSS/HMI COMPUTER SYSTEM TO A FIELD OFFICE. △1 BAW-1 SHALL BE RELOCATED AND SET UP FIRST TO VERIFY WIRELESS OPERATION. THE BACKUP CONTROL COMPUTER BAW-2 SHALL THEN BE RELOCATED WITHIN THE ELECTRICAL/MECHANICAL (ROOM TO BE PLACED UNDER POSITIVE PRESSURE FOR DUST PROTECTION AS DETAILED BELOW) AND PLACED IN A HARDENED CONSOLE (SEE FULL CP). THE CONTRACTOR SHALL PROVIDE POWER, PORTABLE AIR CONDITIONING UNIT(S), HARD WIRING OR ANY OTHER APPURTENANCES NECESSARY TO RELOCATE BAW-2 WITHIN THE REMAINING TS. THIS SYSTEM CONFIGURATION IS SHOWN AS SCENARIO 1 ON **DRAWING DDP-EN1.03** AND INVOLVES THE USE OF A WIRELESS ETHERNET NETWORK SWITCH (ENS) AT THE EXISTING 8 PORT HARD-LINE ENS. A SECOND WIRELESS ENS SHALL BE PLACED IN A TEMPORARY FIELD OFFICE IN ORDER TO CONNECT THE FIELD HMI TO THE EXISTING CONTROLS SYSTEM.

   △1 ALL WIRELESS NETWORKING EQUIPMENT/METHODS DETAILED IN THIS CONTINGENCY PLAN SHALL BE TESTED AND SECURED BY THE CONTRACTOR. THE WIRELESS NETWORK SHALL BE SECURED USING THE FOLLOWING: HIDDEN SSID, 256 BIT ASE-2 ENCRYPTION AND STRONG PASSWORD(S) (UTILIZING MIXED CASE, NUMERIC AND ASC II SYMBOLS). THE HMI RELOCATION WILL ALLOW THE OPERATOR TO BE SAFELY OUT OF THE CONTROL BUILDING DURING CONSTRUCTION, AND ALLOWS 24/7 MONITORING OF THE PROCESS IN CASE OF COMPONENT FAILURE OR WIRE BREAKAGE. THE FIELD ENGINEER SHALL REFERENCE THE WONDERWARE HMI TO TROUBLESHOOT AFFECTED INSTRUMENTATION AND CONTROLS WITHOUT HAVING TO STOP WORK TO ENTER THE CONSTRUCTION ZONE OR CONTROL ROOM. △1 THE CONTRACTOR SHALL HALT WORK AS NECESSARY IN THE EVENT THE TS OPERATOR NEEDS TO ENTER THE EXISTING TS OR OTHER WORK ZONES.

4. PROVIDE BACKUP POWER SUPPLY. THE FIELD ENGINEER SHALL INSTALL AN - AMERICAN POWER CONVERSION (APC) 3000VA AND SERIAL 120 V SMART - UNINTERRUPTIBLE POWER SUPPLY (UPS) (SEE PARTS SOURCING FOR REQUIREMENTS) CAPABLE OF HANDLING THE SENSITIVE PLC IN THE TEMPORARY OFFICE, AND IN THE TS POWER SUPPLY AND INPUT/OUTPUT COMPONENTS FOR OVER FOUR (4) HOURS. IN CONJUNCTION WITH AN ON-SITE GENERATOR, THESE SHOULD PROVIDE SMOOTH POWER SUPPORT DURING THE CONSTRUCTION. THE WONDERWARE HMI COMPUTER AND MONITOR AND WIRELESS LINK(S) SHALL ALSO BE PLUGGED INTO A UPS SYSTEM FOR SMOOTH POWER DELIVERY.

5. PROVIDE DUST CONTROL IN THE ELECTRICAL/MECHANICAL ROOM BY PLACING THE ELECTRICAL/MECHANICAL ROOM UNDER A MINIMUM POSITIVE PRESSURE OF 0.1 INCH W.C. DURING CONSTRUCTION. PLACING THE ROOM UNDER POSITIVE PRESSURE SHALL REQUIRE ISOLATING THE SECTIONS OF THE HVAC DUCTWORK SPECIFIC TO THE ELECTRICAL/MECHANICAL ROOM **(SEE DRAWING DDP EN1.08)** AND FEEDING AIR INTO THE ROOM WITH AN INTAKE FAN EQUIPPED WITH A PARTICULATE FILTER. FAN EF-203 (SEE SUBPROJECT 6 DRAWINGS TM-2 AND TM-7) SHALL BE TAKEN OFFLINE. OTHER MATERIALS AND EQUIPMENT SHALL BE PROTECTED USING TARPS OR PLASTIC.

6. RELOCATE AIR RECEIVER WHICH IS CURRENTLY LOCATED IN THE CORNER OF THE EXISTING LOADING DOCK. ANY CONTROLS ASSOCIATED WITH THE AIR RECEIVER SHALL ALSO HAVE TO BE RE-LOCATED. SEE **DRAWING DDP EN1.07** FOR RELOCATION AND ASSOCIATED PIPING.

7. MAKE MODIFICATION TO EXISTING COMPRESSED AIR SYSTEM. INSTALL QUICK CONNECT AS DETAILED ON DRAWING **DDP EN1.03** TO ACCEPT COMPRESSED AIR FROM A TEMPORARY OR PORTABLE AIR COMPRESSOR.

8. MAKE MODIFICATION AND NEW CONNECTION IN VAULT V1 TO DIVERT ALL FLOW FROM V1 DURING LEVEL 2 OPERATION AS DETAILED ON **DRAWING DDP EN1.03**.

9. DURING LOADING OPERATION, GROUNDWATER FROM THE TANKS SHALL BE TRANSFERRED TO THE TEMPORARY LOADING AREA **(DRAWING DDP EN1.03)** USING THE EXISTING 3 " KAMLOCK CONNECTION LOCATED ON THE WESTERN WALL OF THE TANK ROOM. △1 THE TEMPORARY LOADING DOCK SHALL BE PORTABLE CONSISTING OF PIG COLLAPSE-A-TRAINER CONTAINMENT SYSTEM THAT SHALL BE LAID ONLY ON AN AS NEEDED BASIS. AFTER LOADING IS COMPLETE, THE CONTAINMENT SYSTEM SHALL BE FOLDED AND PIPING DISCONNECTED AND STORED FOR FUTURE USE.

10. THE TANKS SHALL BE EMPTIED PRIOR TO DEMOLITION AND DURING THE PILE/PILE CAPS INSTALLATION IN THE VICINITY OF THE TANK ROOM, USING THE EXISTING 3" KAMLOCK CONNECTION. THE GROUNDWATER SHALL BE ROUTED TO A DOUBLE WALLED WATER STORAGE TANK. (**SEE DRAWING DDP EN1.03**)

11. △1 PERFORM DAILY INSPECTIONS OF TS AND HMS SYSTEMS. IT IS ANTICIPATED THAT DOWNTIME WILL BE SCHEDULED WITH THE CONTRACTOR TO ALLOW THE OPERATOR TO ACCESS THE TS AND HMS VAULTS TO MAINTAIN AND INSPECT THE EXISTING SYSTEM. THE OPERATOR SHALL CHECK ALARMS, GENERAL SYSTEM CONDITIONS AND INSPECT LINES FOR LEAKS AND GENERAL SYSTEM ISSUES. THE PLC GASKET SEAL WILL BE INSPECTED ON A REGULAR SCHEDULE (EVERY OTHER WEEK) IN BETWEEN CONSTRUCTION WORK. IF NECESSARY CONSTRUCTION WORK IN PROXIMITY TO THE EXISTING TS WILL BE HALTED IN ORDER TO PROVIDE THE OPERATOR SAFE ACCESS TO THE EXISTING TS. SOME OF THE JUNCTION BOXES DO NOT HAVE SEALS AS INSTALLED, SO THE FIELD ENGINEER SHALL MONITOR THE DUST AND MOISTURE IN THE CONTROL ROOM PERIODICALLY (DURING STOP-WORK ROUNDS).

b. LEVEL 2 OPERATION:

FOLLOWING STEPS WILL BE PERFORMED IN ADDITION TO LEVEL 1 OPERATION AS NECESSARY:

1. PROVIDE WIRELESS TELEMETRY. THE HMS CONTROLS NETWORK CONSISTS OF DAISY-CHAINED LAN LINES CONNECTED BY ENSS IN EACH VAULT. THE ENS IN EACH VAULT BOOST THE CONTROLS SIGNAL BETWEEN EACH VAULT AND CONTAINS OPEN ETHERNET PORTS FOR CONNECTING ADDITIONAL WIRELESS ENSS. IN THE EVENT THAT A SIGNAL WIRE IS SEVERED BETWEEN VAULTS, WIRELESS ENSS SHALL BE INSTALLED AT EACH EFFECTED HMS VAULT IN ORDER TO MAINTAIN THE DATA SIGNAL AS REPRESENTED BY SCENARIO 2 ON **DRAWING DDP-EN1.04**.

   △1 AS PART OF THE CONTROLS SYSTEM PREPARATION THE CONTRACTOR SHALL SIMULATE A SEVERED COMMUNICATION LINE BETWEEN TWO HMS VAULTS UNDER CONTROLS SCENARIO II AS DETAILED ON **DRAWING DDP.EN.1.04**. TO PERFORM THIS TEST THE CONTRACTOR SHALL TEMPORARILY DISCONNECT THE RIC HARDLINES BETWEEN THE SELECTED HMS VAULTS AND INSTALL THE WIRELESS ENS. THE CONTRACTOR SHALL DOCUMENT THE TEST WAS PERFORMED AND SUCCESSFUL CONNECTION WAS MADE. THE CONTRACTOR SHALL REESTABLISH THE HARDLINE CONNECTION AFTER THE WIRELESS CONNECTION TEST IS COMPLETE.

   IT IS ANTICIPATED THAT ESTABLISHING A WIRELESS CONNECTION WILL TAKE LESS THAN ONE WORKDAY. THE CONTRACTOR SHALL REPAIR HARD LINE CONNECTIONS WHENEVER POSSIBLE. A WIRELESS CONNECTION WILL ONLY BE ESTABLISHED IF THE SEVERED HARDLINE CANNOT BE REPAIRED WITHIN ONE WORKDAY. ANY BROKEN NETWORK LINK(S) SHALL BE REPAIRED BEFORE BACK-FILLING OR BEFORE OTHER ABOVE-GRADE CONSTRUCTION CEASES. THE FIELD REPRESENTATIVE AND CONTROL SUPPORT PERSONNEL SHALL FIELD TEST WIRELESS OPERATIONS WITH THE TS/HMS OPERATOR AFTER THE HMI IS RELOCATED BY SIMULATING A SEVERED LINE IN CONFORMANCE WITH THE FULL CP.

2. ISOLATE THE ENTIRE HMS CONTROL SYSTEM: THE INDIVIDUAL WELL VAULTS ARE LINKED TOGETHER WITH AN ETHERNET NETWORK. WIRELESS TELEMETRY CAN BE QUICKLY ESTABLISHED TO RE-LINK DAMAGED RIC NETWORK NODE TO THE HMI. AS REPRESENTED BY THE SCENARIO 3 CONTROL DETAIL ON **DRAWING DDP-EN1.04** AN ENS WILL BE INSTALLED WITHIN V1 AND V2 IN ORDER TO ESTABLISH A DATA LINK WITH THE WIRELESS FIELD HMI ENS.

3. DIVERT IMPACTED GROUNDWATER: IN THE EVENT THAT THE TANKS ARE DAMAGED OR THE IMPACTED GROUNDWATER NEEDS TO BE ROUTED AWAY FROM THE TS, THE PIPING IN VAULT V1 HAS BEEN MODIFIED IN LEVEL 1 TO DIVERT ALL FLOW FROM V1 TO A DOUBLE-WALL WATER STORAGE TANKS AS DETAILED ON **DRAWING DDP EN1.04**. THE PIPING OUTSIDE OF VAULT 1 SHALL BE FLEX PIPE WITH SECONDARY CONTAINMENT. THE PIPE SHALL BE HEAT TRACED DURING COLDER CLIMATES AS NECESSARY. THE PROPER TANKER TURNING RADIUS WILL BE PROVIDED IN ORDER TO MAINTAIN A TEMPORARY LOADING DOCK WITH SECONDARY CONTAINMENT AT ALL TIMES. LINE DRAINAGE SHALL BE ACCOMPLISHED BY ROUTING THE PIPE VOLUME TO THE VAULT 1 SUMP.

4. △1 INSTALL WIRELESS I/O AND INSTRUMENTATION: TEMPORARY WIRELESS I/O (RECEIVER/TRANSMITTER/TRANSCEIVER) SHALL BE INSTALLED AS NECESSARY TO MAINTAIN COMMUNICATIONS WITH INDIVIDUAL PIECES OF EQUIPMENT (FOR DATA LOGGING OR CONTROLS). THIS INSTRUMENTATION SHALL BE PURCHASED PRIOR TO CONSTRUCTION IN CONFORMANCE WITH THE FULL CONTINGENCY PLAN.

   THE WIRELESS TRANSCEIVERS WILL BE NECESSARY IF AN INDIVIDUAL DATA/CONTROL LINE IS SEVERED (E.G. THE TRANSDUCER LINE AT A PIEZOMETER IS SEVERED) OR A TEMPORARY SYSTEM IS PLACED INTO OPERATION (E.G. A TEMPORARY WIRELESS PRESSURE TRANSMITTER RELAYING COMPRESSED AIR SYSTEM PRESSURE TO THE HMI).

   △1 AS PART OF THE CONTROLS SYSTEM PREPARATION THE CONTRACTOR SHALL SIMULATE A SEVERED COMMUNICATION LINE BETWEEN A RIC AND A PIEZOMETER REPRESENTING CONTROLS SCENARIO III ON **DRAWING DDP.EN.1.04** PRIOR TO CONSTRUCTION. THIS DOES NOT NEED TO BE PERFORMED ON AN ACTUAL PIEZOMETER IN THE FIELD. THE CONTRACTOR MAY PERFORM AND DOCUMENT A SUCCESSFUL WIRELESS CONNECTION BETWEEN A SIMULATED RIC AND PIEZOMETER USING A REMOTE I/O CONFIGURATION IN A REMOTE TEST LAB. THE CONFIGURATION, EQUIPMENT, SETUP AND TEST RESULT SHALL BE DOCUMENTED FOR FIELD IMPLEMENTATION IF PERFORMED IN A TEST LAB.

   IN THE CASE OF A SEVERED SIGNAL LINE, THE CONTRACTOR SHALL REPAIR THE SEVERED LINE AS SOON AS POSSIBLE TO MINIMIZE THE USE OF BATTERY AND MAXIMIZE THE AVAILABILITY OF WIRELESS I/OS FOR OTHER SYSTEM REPAIRS. THE WIRELESS I/O DEVICES ACT AS A "REPEATER" OF DISCRETE OR ANALOG (4-20mA) SIGNALS. BOTH TRANSMITTER AND RECEIVER NEED TO BE DC POWERED AND FITTED WITH APPROPRIATE ANTENNAS FOR COMMUNICATIONS.

5. PROVIDE A TEMPORARY TRAILER MOUNTED COMPRESSED AIR SYSTEM: IN THE EVENT THAT THE EXISTING COMPRESSOR NEEDS TO BE TAKEN OUT OF SERVICE AND A TEMPORARY PORTABLE COMPRESSOR CANNOT BE PLACED INSIDE THE TS, THEN A COMPLETE TRAILER MOUNTED COMPRESSED AIR PACKAGE SYSTEM SHALL BE PLACED ON SITE AND CONNECTED TO THE COMPRESSED AIR HEADER LOCATED IN V1 AS DETAILED ON **DRAWING DDP EN1.04**.

B. POST CONSTRUCTION AND RESTORATION OF THE TRANSFER STATION:

1. AIR, WATER, TANK VENTS AND OTHER PIPING SHALL BE REROUTED FROM THE TANK AREA TO THE NEW TRANSFER STATION LOADING DOCK AS SHOWN ON **DRAWING DDP EN01.07**.

2. THE CONNECTION MADE IN VAULT 1 TO TEMPORARILY REROUTE THE IMPACTED GROUNDWATER FROM VAULT 1 SHALL BE DISCONNECTED AND BLIND FLANGED AT THE TEE CONNECTION WITH THE ORIGINAL SYSTEM AS SHOWN ON **DRAWING DDP EN1.04**

3. THE CONTROL SYSTEM SHALL BE REWIRED TO ITS ORIGINAL STATE TO OPERATE THE HMS AND TS AS ORIGINALLY DESIGNED.

4. THE HVAC SYSTEM SHALL BE MODIFIED AS SHOWN ON **DRAWING DDP EN1.08**

C. PARTS SOURCING:

THE FOLLOWING ITEMS SHALL BE SOURCED PRIOR TO CONSTRUCTION TO SUPPORT THE TS AND HMS DURING LEVEL 1 AND LEVEL 2 OPERATIONS:

1. UNINTERRUPTIBLE POWER SUPPLY (3000KVA OR BETTER) FOR PLC.
2. UNINTERRUPTIBLE POWER SUPPLY (3000KVA OR BETTER) FOR HMI AND COMPUTER.
3. TWO (2) WIRELESS G ROUTERS FOR PLC AND HMI.
4. TWO (2) HIGH-GAIN ANTENNAS FOR WIRELESS ROUTERS.
5. APPROPRIATE CABLING (POWER, SIGNAL, DATA) TO SUPPORT REMOTE HMI.
6. ETHERNET-TO-SERIAL ADAPTER TO CONNECT WIRELESS HMI TO PLC

THE FOLLOWING ITEMS SHALL BE SOURCED FROM THE LISTED VENDORS (SEE CONTINGENCY PLAN, SECTION 6.0) PRIOR TO CONSTRUCTION TO SERVE AS AN IMMEDIATE BACK-UP:

1. ONE MASTER INPUT/OUTPUT TELEMETRY RADIO AND ANTENNA.
2. ONE SLAVE INPUT/OUTPUT TELEMETRY RADIO AND ANTENNA.
3. SIEMENS SIMATIC PLC PROGRAMMING CABLE.
4. SIEMENS SIMATIC PLC PROGRAMMING SOFTWARE.
5. STOCK OF SIGNAL CABLE TO CONNECT INSTRUMENT(S) TO WIRELESS TELEMETRY.
6. BACKUP HARD DRIVE TO IMAGE WONDERWARE HMI COMPUTER SYSTEM.
7. PROVIDE HARDENED CONSOLE FOR BAW-2 WITHIN TS.

THE FOLLOWING PARTS SHALL BE SOURCED (SEE CONTINGENCY PLAN, SECTION 6.0 FOR LISTED VENDORS) DURING CONSTRUCTION ON AN AS-NEEDED BASIS:

1. SIEMENS SIMATIC I/O CARD(S).
2. FUSES.
3. TERMINAL BLOCKS.
4. WIRE AND CABLE.
5. INSTRUMENT(S) (TO REPLACE DAMAGED PIEZOMETER FOR INSTANCE).

PROGRESS SET
NOT FOR
CONSTRUCTION

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project

EXELON BLDG & PLAZA GARAGE

HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
8/1/13
(REVISED 11/12/13)

key plan

seal

issued	date	description

revision	date	description
△1	11/11/2013	UPDATED NOTES

title
TRANSFER STATION OPERATION AND SEQUENCING PLAN

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drawn by:	ERM
checked by:	AK
scale:	NOTED
project number:	0199768

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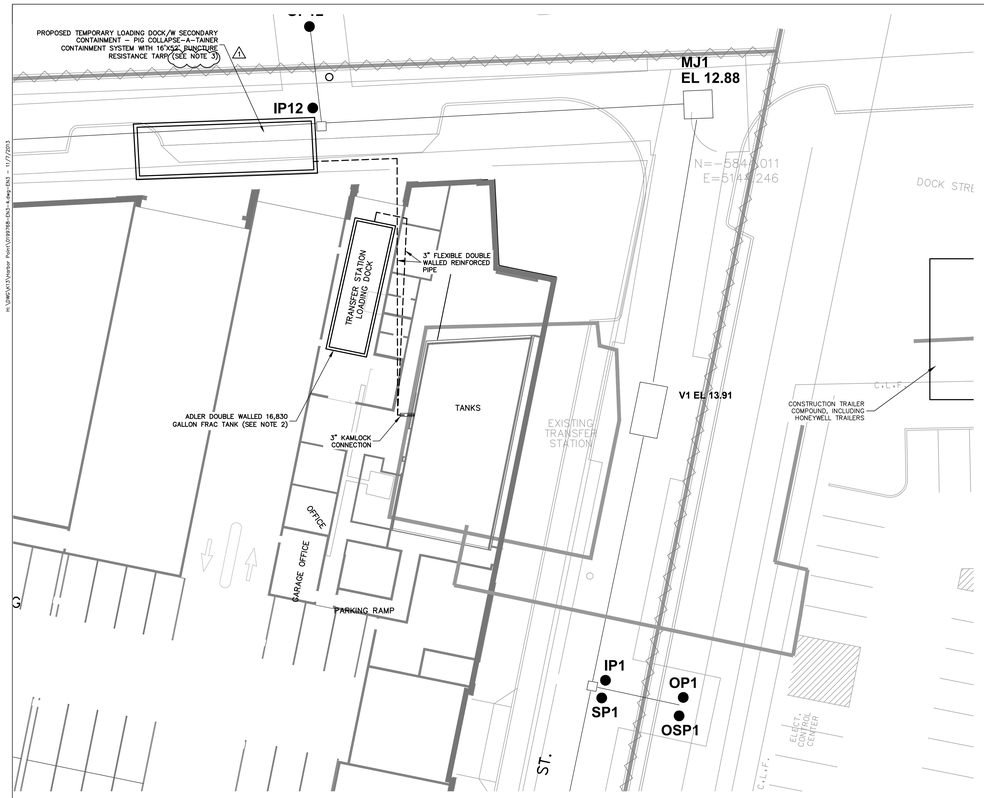
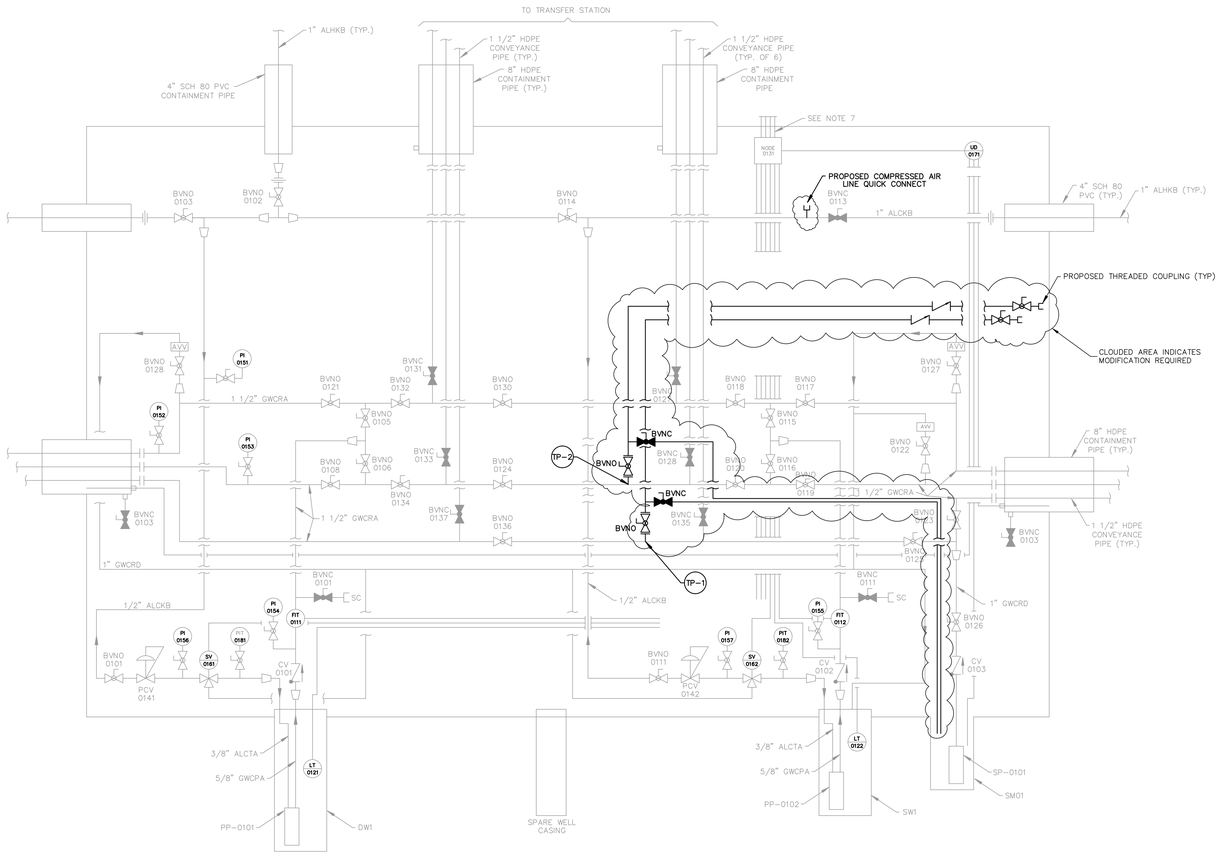
DDP EN1.02

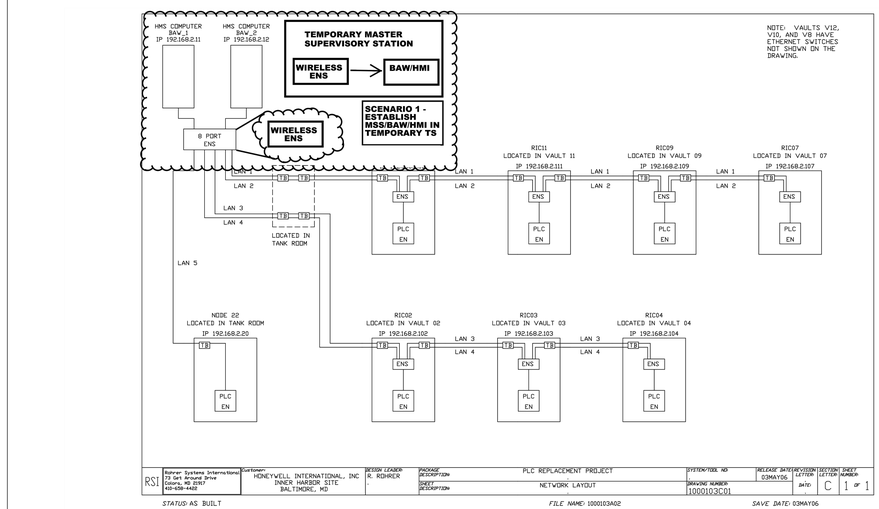


TEMPORARY TRANSFER STATION LAYOUT

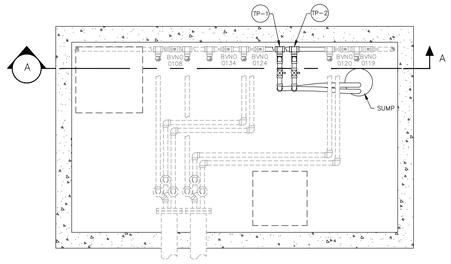
NOTES:
1. SEE LEVEL 1 OPERATION NOTES ON DRAWING DPP EN1.02
2. THE FRAC TANK SHALL BE USED TO EMPTY TANKS (INSIDE TANK ROOM) DURING DEMOLITION AND PILE INSTALLATION WORK IN THE VICINITY OF THE TANK ROOM.
3. THE TEMPORARY LOADING DOCK IS A MOBILE STATION AND THE FRAC TANKS FOR TEMPORARY TRANSFER STATION WILL BE STAGED ON PORTABLE CONSTRUCTION MATS (PRESTO GEO TERRA OR SIMILAR AS APPROVED BY THE ENGINEER). IN THE EVENT PROPOSED LOCATION CONFLICTS WITH THE CONSTRUCTION THE FRAC TANKS SHALL BE RELOCATED IN A SUITABLE LOCATION AS APPROVED BY THE ENGINEER.



VAULT 1 P&ID: LEVEL 1 MODIFICATIONS



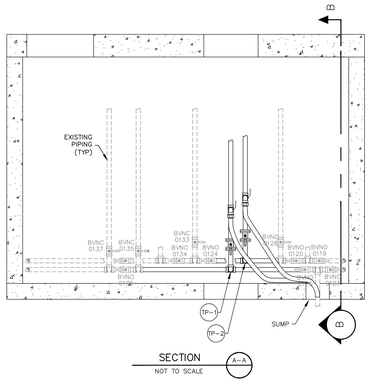
CONTROLS DETAIL: SCENARIO 1



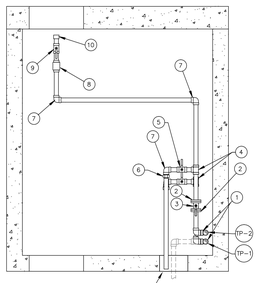
VAULT V-1 PLAN
NOT TO SCALE

PARTS LIST FOR DETAIL 1
1. 1 ½" SCH. 80 PVC TEE AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
2. 1 ½" SCH. 80 PVC SOCKET X FLANGE WITH EPDM GASKETS AND BOLT HARDWARE AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
3. 1 ½" PVC FLANGED TRUE UNION 2000 BALL VALVE AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
4. 1 ½" SCH. 80 PVC TEE AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
5. 1 ½" SOCKET TRUE UNION 2000 BALL VALVE AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
6. 1 ½" DRAINAGE HOSE OR ENGINEER APPROVED EQUAL.
7. 1 ½" SCH. 80 PVC SOCKET 90(TYP.) AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
8. 1 ½" SOCKET swing check valve AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
9. 1 ½" SOCKET TRUE UNION 2000 BALL VALVE AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
10. 1 ½" SCHEDULE 80 PVC F-NPT THREADED COUPLING WITH STEEL REINFORCED THREADS AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.

NOTES FOR DETAIL 1
1. SOCKET AND FLANGED PVC PIPE CONNECTIONS SHALL HAVE A MIN PRESSURE RATING OF 120 PSI. PIPE SHALL BE PRESSURE TESTED IN CONFORMANCE WITH DIVISION 3, SECTION 02704 OF THE EXISTING BALTIMORE SITE REMEDIATION SUBPROJECT NO. 3 HMS SPECIFICATIONS DATED 03/01/96 OR AS SPECIFIED BY THE PROJECT ENGINEER.
2. CONTRACTOR TO DRAIN DIVERSION PIPES/HOSES TO SUMP IN V1 AS NECESSARY TO MINIMIZE SPREADING OF IMPACTED GROUNDWATER.
3. THE TRANSITION TO THE FLEXWORKS DOUBLE WALL PRIMARY PIPE OUTLET WILL BE POSITIONED OVER THE 24" X 24" VAULT MANWAY. THE PRIMARY ACCESS TO THE VAULT'S INTERIOR IS FROM THE 30" X 36" MANWAY WHICH SHALL NOT BE BLOCKED FROM THE PROPOSED PIPING MODIFICATION.
4. CONTRACTOR RESPONSIBLE FOR PROVIDING ALL NECESSARY PIPE SUPPORT (NOT SHOWN).



SECTION A-A
NOT TO SCALE



SECTION B-B
NOT TO SCALE

DETAIL No. 1
VAULT V-1 AND DIVERSION PIPING PLAN
SCALE: NONE

SCOPE OF WORK

THE SCOPE OR WORK PRESENTED BELOW SHALL BE IMPLEMENTED IN CONJUNCTION WITH TRANSFER STATION OPERATION AND SEQUENCING PLAN (DRAWING DDP EN1.02) AND TRANSFER STATION AND CONTINGENCY MODIFICATIONS (DRAWING DDP EN1.08)

1. INSTALL LEVEL 1 CONTINGENCY DIVERSION PIPING AND TIE IN TO VAULT 1.
2. RELOCATE BAW/HMI FROM TRANSFER STATION CONTROL ROOM TO TEMPORARY TRANSFER STATION USING WIRELESS ENS AS DETAILED IN CONTROL DETAILS: SCENARIO 1 ON DRAWING DDP EN1.03.
3. PROVIDE TEMPORARY LOADING DOCK AREA AND A FRAC TANK.
4. PROVIDE DOUBLE WALLED FLEXIBLE PIPING FROM TRANSFER STATION TO TEMPORARY LOADING DOCK AND FRAC TANK AREA.

NOTES:

1. THE CONTINGENCY PLAN IS DIVIDED INTO TWO LEVELS: THE LEVEL 1 CONTINGENCY PLAN IS DESIGNED TO PREPARE THE EXISTING TS TO OPERATE DURING CONSTRUCTION; THE LEVEL II CONTINGENCY PLAN IS IN PLACE IN THE EVENT THAT GROUNDWATER FLOW NEEDS TO BE DIVERTED FROM THE HMS TO TEMPORARY TS. THE LEVEL I CONTINGENCY PLAN IS MANDATORY. THE LEVEL II CONTINGENCY PLAN CAN BE IMPLEMENTED ON AN AS NEEDED BASIS. PLEASE SEE THE FULL CONTINGENCY PLAN TEXT FOR FULL DETAILS OF THE SCOPE OF BOTH THE LEVEL I AND LEVEL II CONTINGENCY PLANS.
2. UNDER THE LEVEL I CONTINGENCY PLAN, PLANT CONTROLS WOULD BE DIVERTED TO A TEMPORARY MASTER SUPERVISORY STATION (SEE CONTROLS SCENARIO 1 ON DRAWING DDP EN1.03) LOCATED IN A TEMPORARY CONSTRUCTION TRAILER DETAILED IN THE TEMPORARY LAYDOWN DRAWING ON DRAWING DDP EN1.03 AND DDP EN1.04.
3. TEMPORARY WIRELESS SYSTEMS NECESSARY TO RESTORE THE DATA NETWORK BETWEEN VAULTS/VAULT AND TS ARE DETAILED IN CONTROLS DETAILS: SCENARIO 2 AND SCENARIO 3 UNDER THE LEVEL II CONTINGENCY PLAN SHOWN ON DRAWING DDP EN1.04. THIS SCENARIO CAN BE INTEGRATED WITH SCENARIO 1 OR SCENARIO 2 AS NECESSARY.
4. THE OPERATOR SHALL MAINTAIN REPLACEMENT EQUIPMENT SUCH AS A RIC, WIRELESS TRANSCEIVER, ETC. IN CONFORMANCE WITH THE CONTINGENCY PLAN THROUGHOUT CONSTRUCTION.
5. THE LEVEL I CONTINGENCY PLAN ON DRAWING DDP EN1.03 DETAILS THE INSTALLATION OF AN AIR LINE QUICK CONNECT IN ORDER TO INSTALL A TEMPORARY COMPRESSOR IN THE EVENT THE EXISTING COMPRESSOR FAILS.
6. THE LEVEL I CONTINGENCY PLAN ALSO DETAILS THE INSTALLATION OF BAFFLES WITHIN THE EXISTING AIR DUCTING TO ISOLATE AND FILTER THE AIR INTAKE TO THE ELECTRICAL MECHANICAL ROOM AS SHOWN ON DRAWING DDP EN1.08.
7. TS AND HMS OPERATIONS WILL BE RETURNED TO PRE CONSTRUCTION CONDITIONS EXCEPT FOR AS SPECIFIED ON THE DRAWINGS.

PROGRESS SET NOT FOR CONSTRUCTION

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
8/1/13
(REVISED 11/12/13)

key plan

seal

issued	date	description

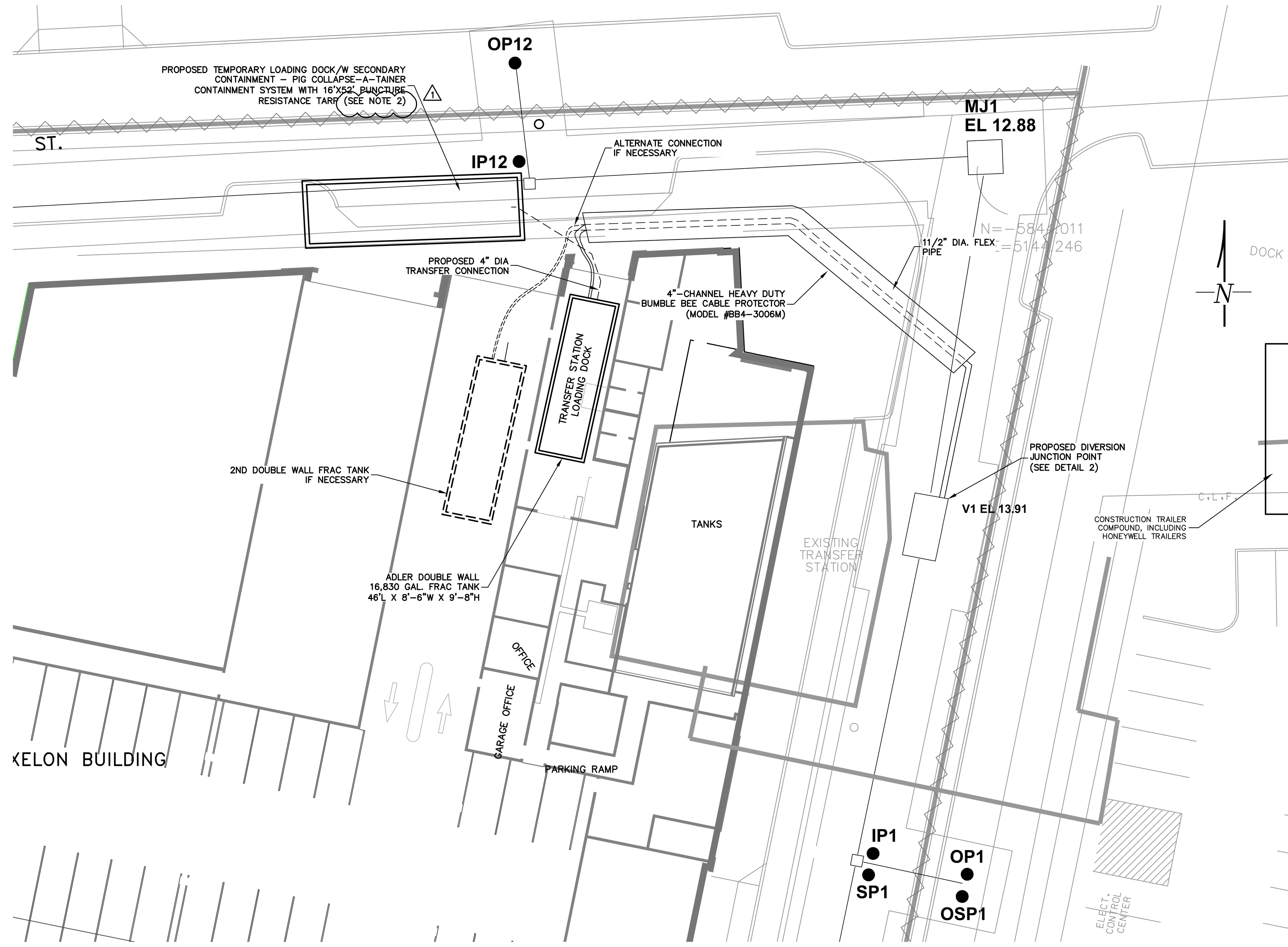
revision	date	description
1	11/6/2013	UPDATED NOTES

title
LEVEL 1 CONTINGENCY PIPING PLAN AND DETAILS

date:	07/15/13
drawn by:	ERM
checked by:	STP
scale:	AS SHOWN
project number:	0199768

scaled inch

sheet number
DDP EN1.03



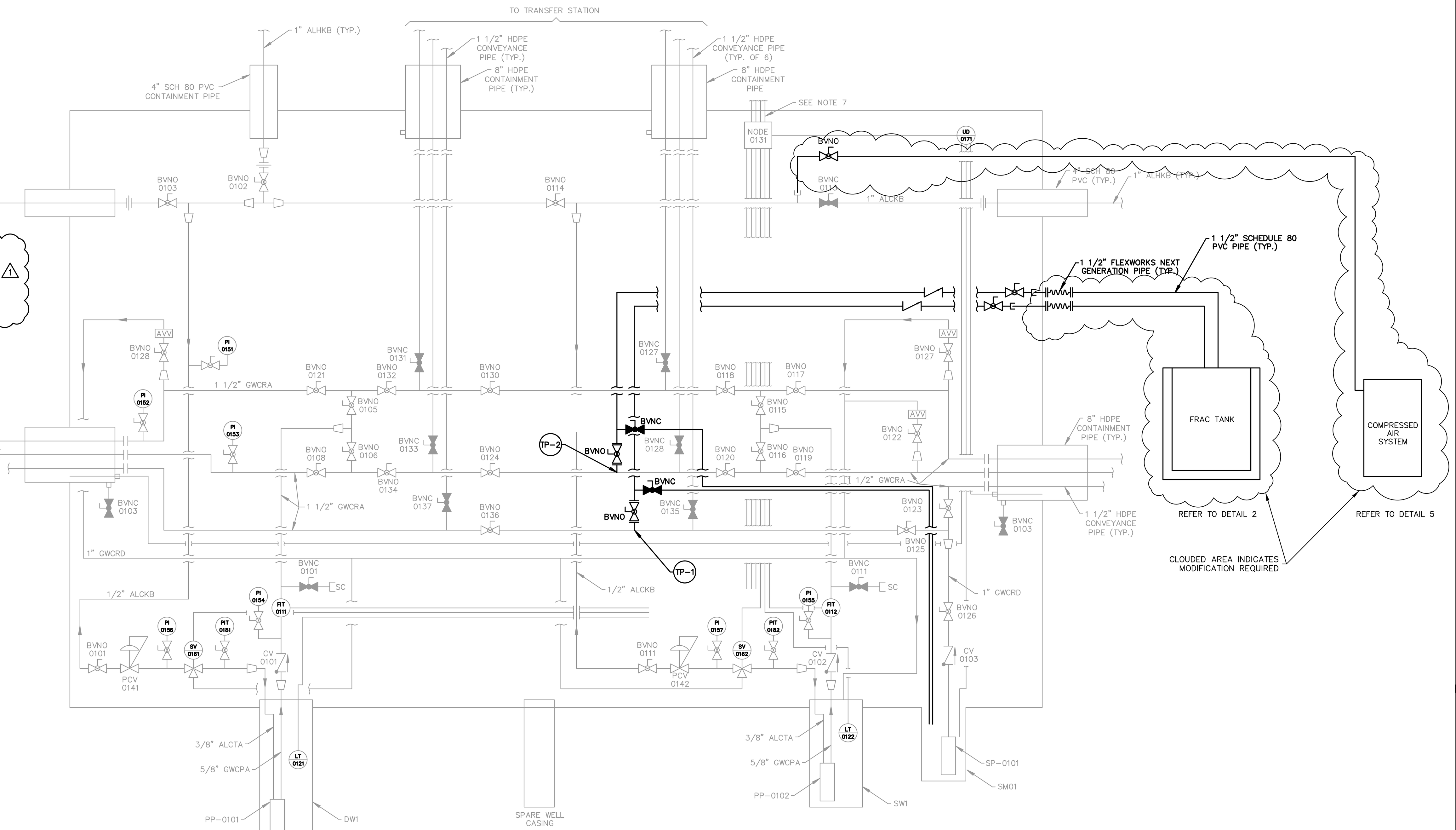
TEMPORARY TRANSFER STATION LAYOUT

LEGEND

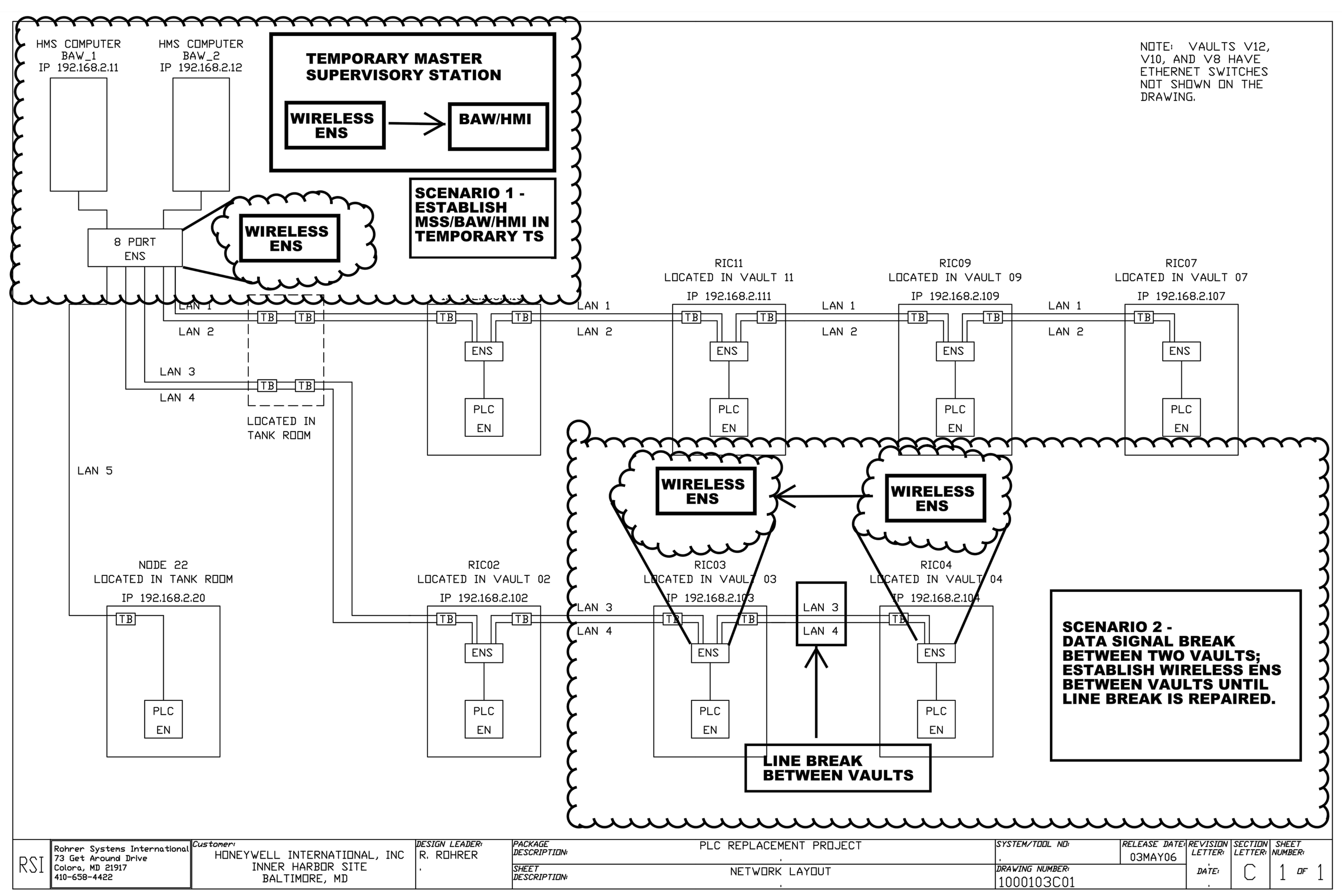
HYDRAULIC BARRIER
PIEZOMETER SYSTEM
MANHOLE JUNCTION
PROPOSED SHEET PILE

NOTES

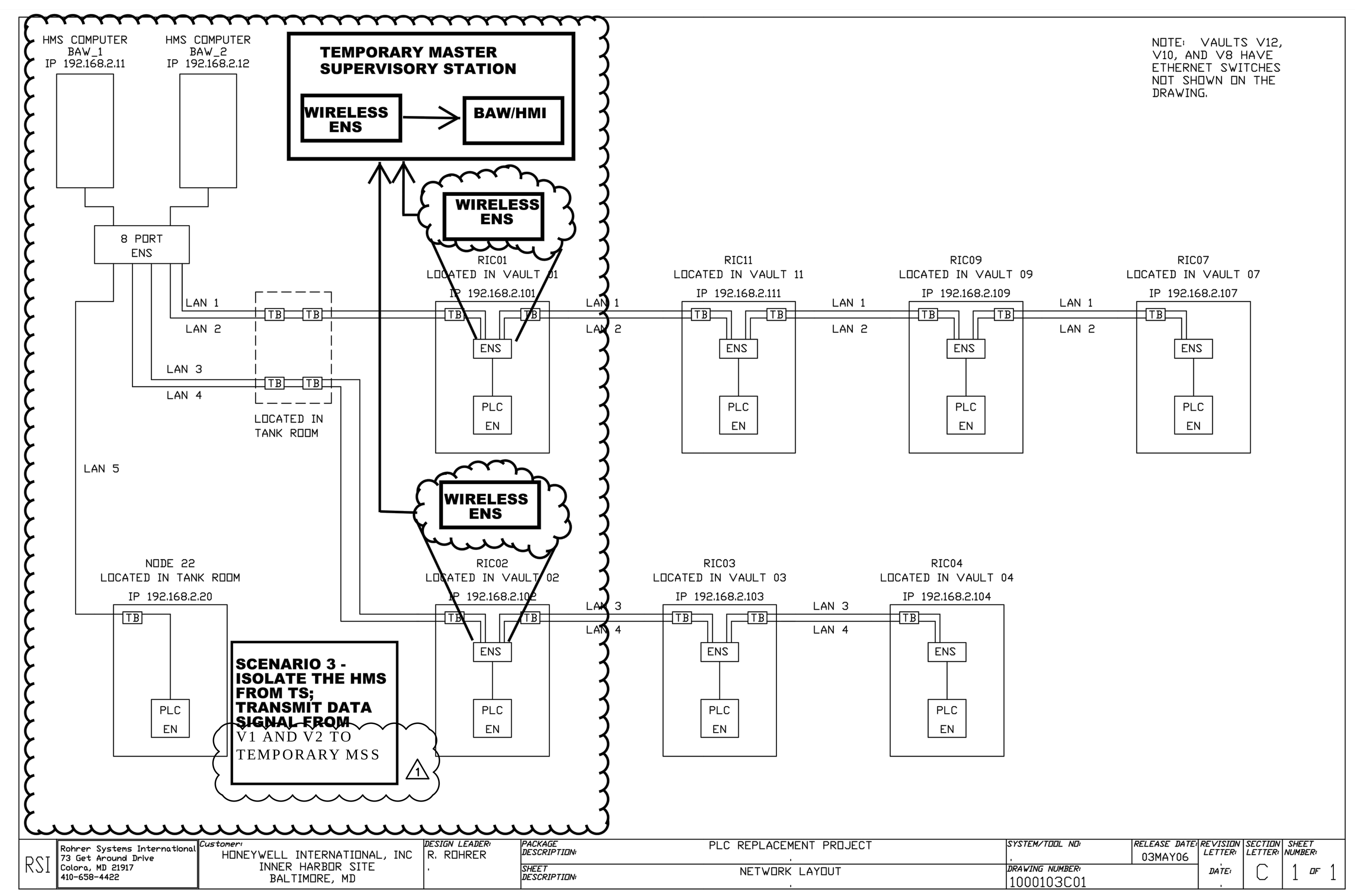
1. REFER TO OPERATION NOTES ON DRAWING DDP EN 1.02.
2. THE TEMPORARY LOADING DOCK IS A MOBILE STATION AND THE FRAC TANKS FOR TEMPORARY TRANSFER STATION WILL BE STAGED ON PORTABLE CONSTRUCTION MATS (PRESTO GEO TERRA OR SIMILAR AS APPROVED BY THE ENGINEER). IN THE EVENT PROPOSED LOCATION CONFLICTS WITH THE CONSTRUCTION THE FRAC TANKS SHALL BE RELOCATED IN A SUITABLE LOCATION AS APPROVED BY THE ENGINEER.



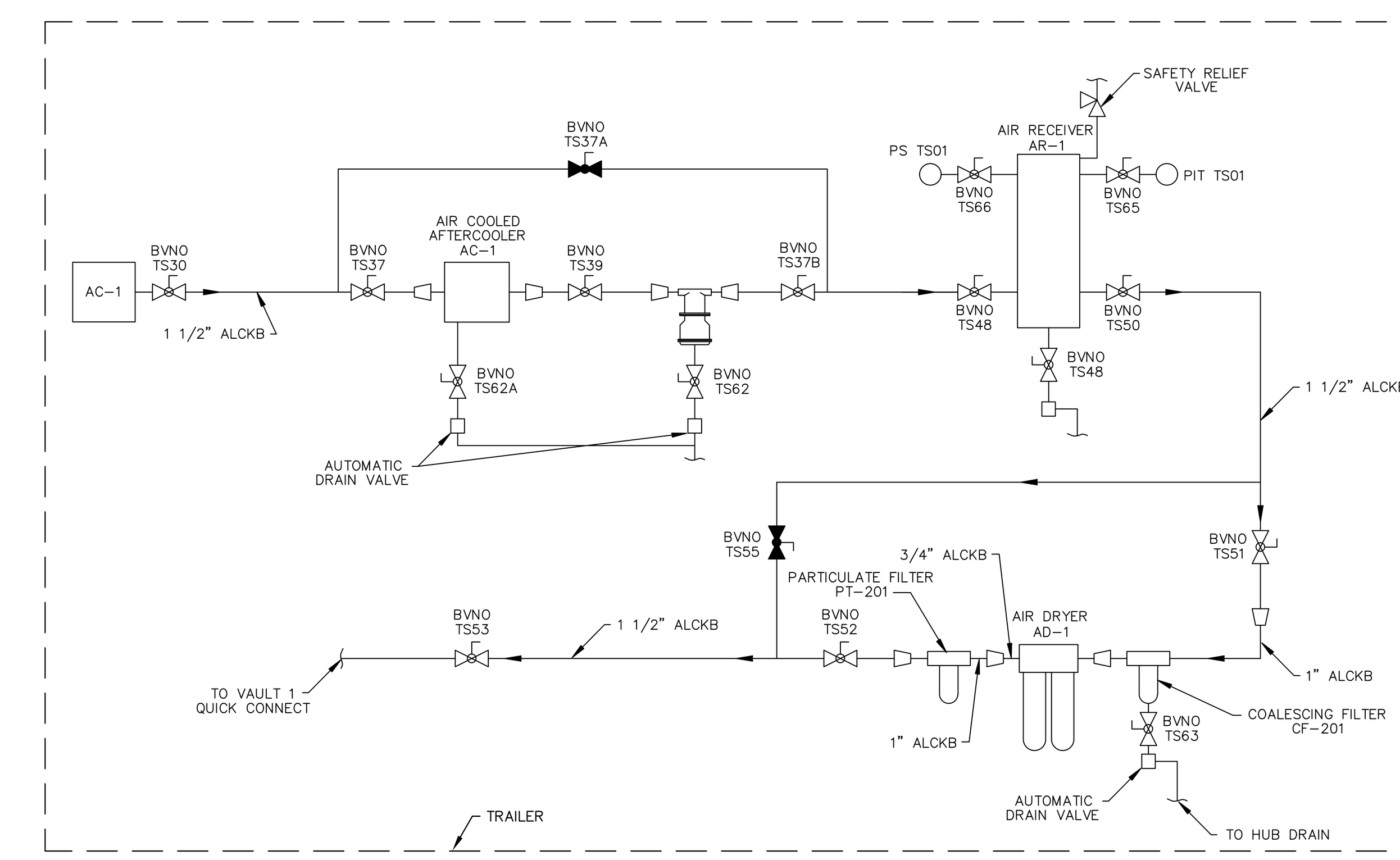
VAULT 1 P&ID: LEVEL 2 MODIFICATIONS



CONTROLS DETAIL SCENARIO 2



CONTROLS DETAIL SCENARIO 3



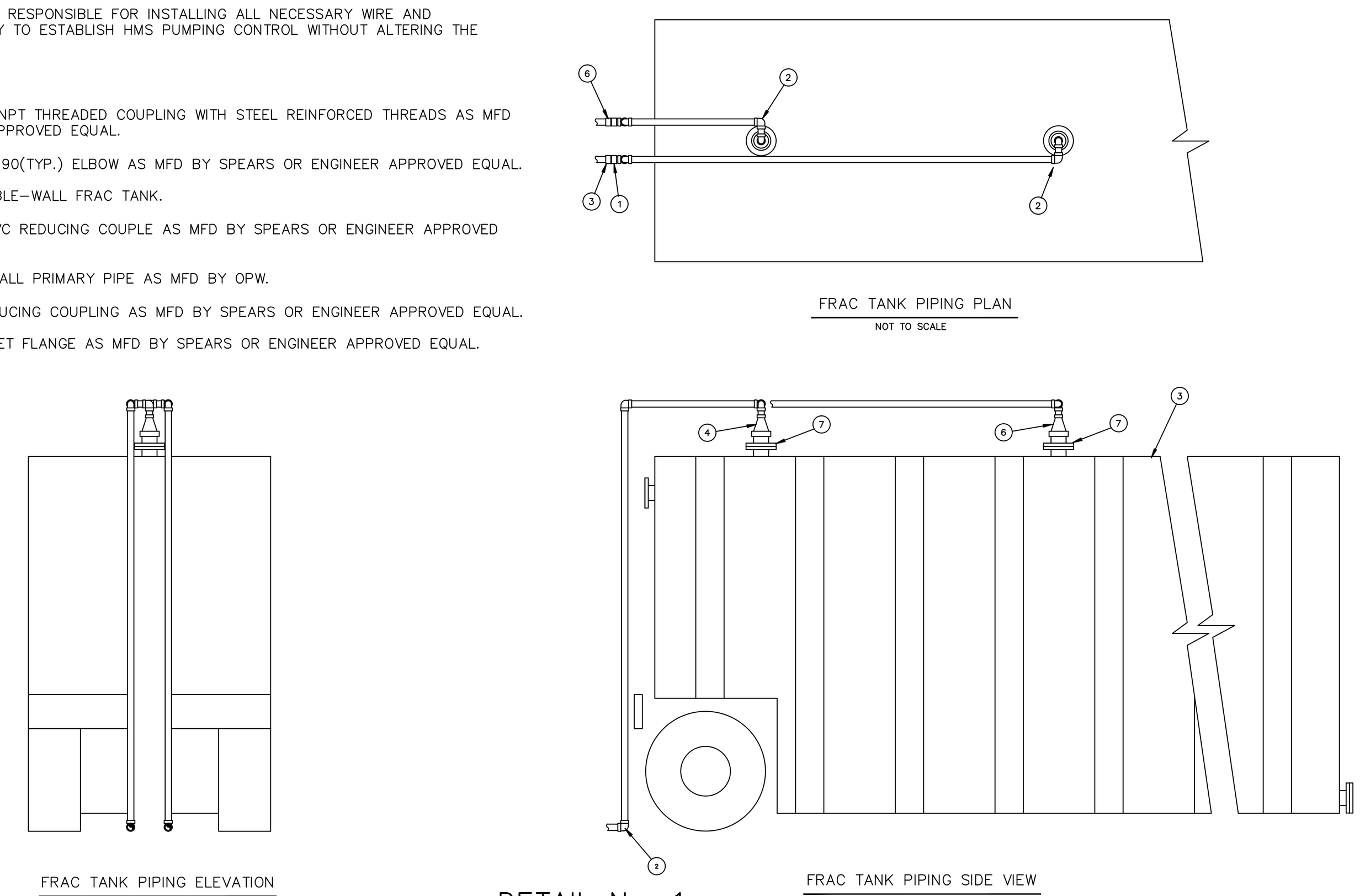
DETAIL 4: P&ID – TRAILER MOUNTED COMPRESSED AIR SYSTEM

NOTES FOR DETAIL No. 1

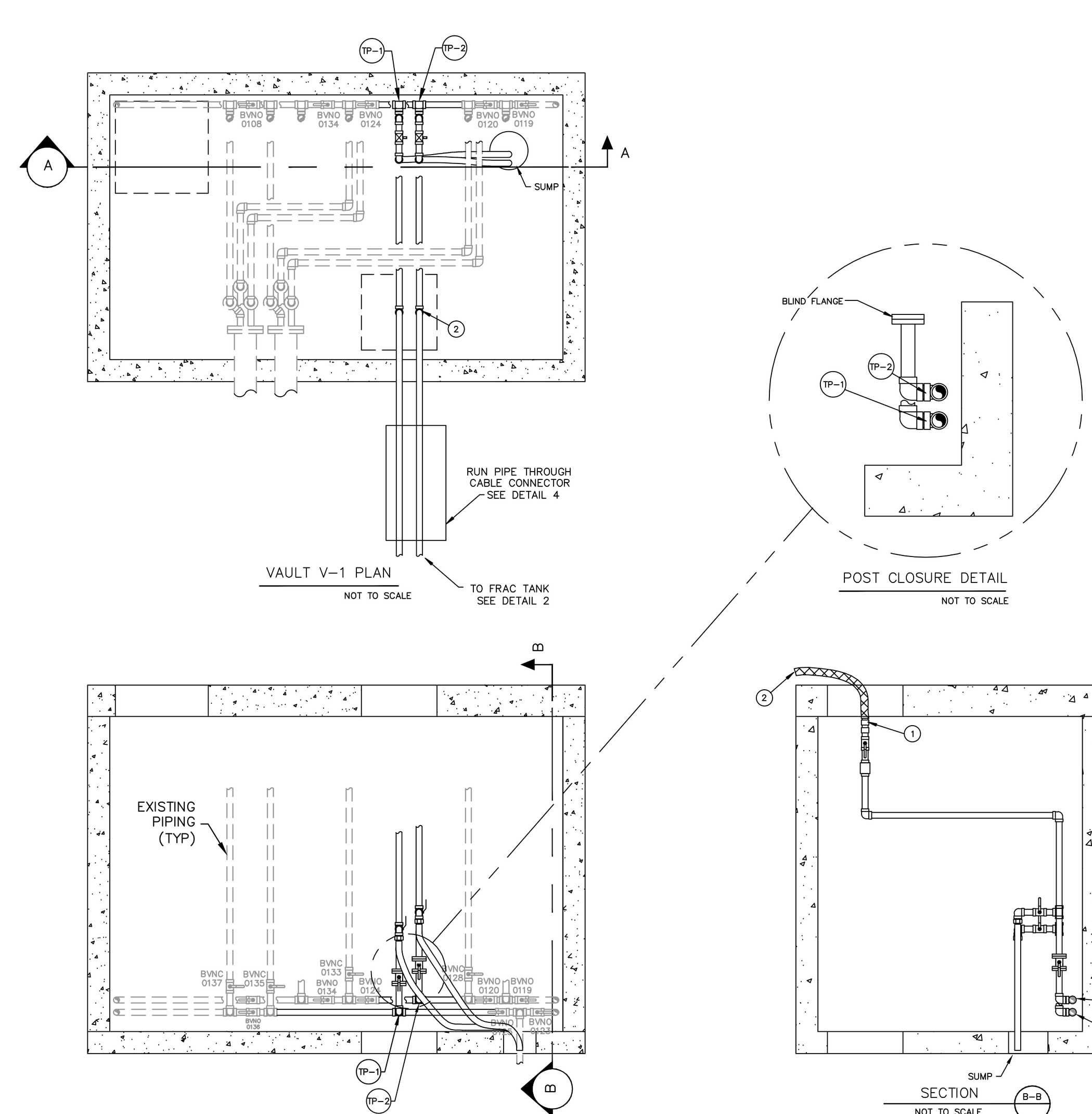
1. HARD PIPING INTO FRAC TANK WILL BE FASTENED TO THE STAIRWELL AT END OF FRAC TANK; LOCATION AND MATERIALS OF FASTENING WILL BE FIELD DETERMINED.
2. SECONDARY BACK UP FRAC TANK WILL BE POSITIONED NEXT TO PRIMARY TANK.
3. CONNECTION MUST BE TRANSFERABLE TO SECONDARY FRAC TANKS AS NECESSARY.
4. PUMP USED TO DEWATER SECONDARY CONTAINMENT WILL ONLY BE USED ON AN AS NEED BASIS.
5. CONTRACTOR TO SELECT AND SUPPLY A TRANSFER PUMP FOR TRANSFERRING GROUNDWATER FROM THE SECONDARY CONTAINMENT PAD TO THE FRAC TANKS.
6. THE CONTRACTOR SHALL INSTALL A PRESSURE TRANSDUCER IN THE FRAC TANK FOR ESTABLISHING HMS PUMPING INTERLOCKS TO PREVENT THE FRAC TANKS FROM BEING OVERFILLED.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING ALL NECESSARY WIRE AND APPURTENANCES NECESSARY TO ESTABLISH HMS PUMPING CONTROL WITHOUT ALTERING THE EXISTING CONTROLS LOGIC.

PARTS LIST FOR DETAIL No. 1

1. 1 ½" SCHEDULE 80 PVC F–NPT THREADED COUPLING WITH STEEL REINFORCED THREADS AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
2. 1 ½" SCH. 80 PVC SOCKET 90(TYP.) ELBOW AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
3. ADLER 16,380 GALLON DOUBLE–WALL FRAC TANK.
4. 4" X 1 ½" SCHEDULE 80 PVC REDUCING COUPLE AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
5. FLEXWORKS 1 ½" DOUBLE WALL PRIMARY PIPE AS MFD BY OPW.
6. 4"X 1 ½" SCH. 80 PVC REDUCING COUPLING AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.
7. 4" SCHEDULE 80 PVC SOCKET FLANGE AS MFD BY SPEARS OR ENGINEER APPROVED EQUAL.



DETAIL No. 1
PROPOSED DISCHARGE CONNECTION DETAIL
SCALE: NONE



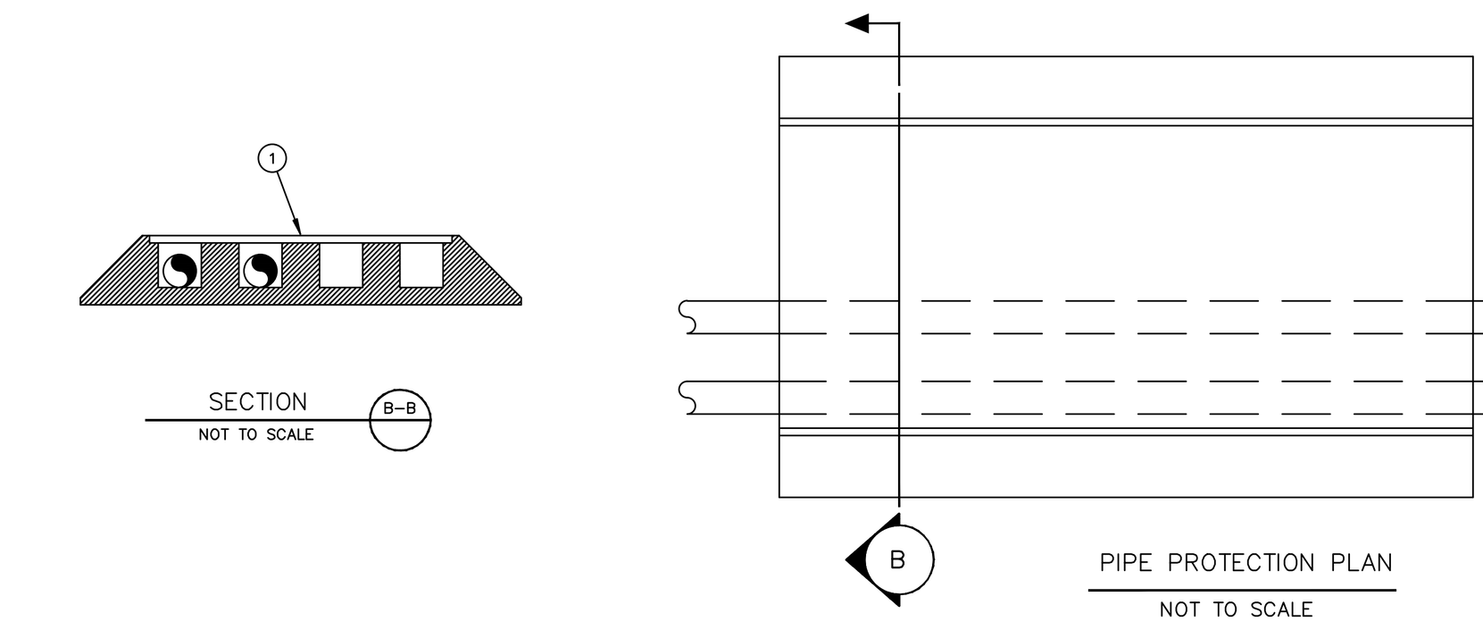
PARTS LIST AND NOTES FOR DETAIL No. 2

1. 1 ½" M–NPT SWIVEL BOLT–ON COUPLING, PART NO. SBC–2150, AS MFD BY OPW OR ENGINEER APPROVED EQUAL.
2. 1 ½" FLEXWORKS DOUBLE WALL DIVERSION PIPE AS MFD BY OPW OR ENGINEER APPROVED EQUAL.

DETAIL No. 2
VAULT V–1 AND DIVERSION PIPING PLAN
SCALE: NONE

PARTS LIST AND NOTES FOR DETAIL No. 3

1. FOUR (4), 4–CHANNEL HEAVY DUTY CABLE PROTECTOR AS MNFG'D BY BUMBLE BEE MODEL NO. BB4–300GM



DETAIL No. 3
BUMBLE BEE CABLE PROTECTOR
SCALE: NONE

NOTES:

1. REFER TO NOTES ON DRAWING DDP EN 1.02, 1.03, AND 1.04 FOR OPERATION UNDER LEVEL I AND LEVEL II CONTINGENCY PLAN.

SCOPE OF WORK

1. TEMPORARY TRANSFER STATION FOR LEVEL 2 CONTINGENCY.
2. TEMPORARY PIPE ROUTING FROM VAULT TO TRANSFER STATION.
3. FRAC TANK PIPING DETAILS.
4. MISC. RELOCATIONS AND MODIFICATION AS CLOUDED ON THIS DRAWING.

PROGRESS SET
NOT FOR
CONSTRUCTION

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project
EXELON BLDG &
PLAZA GARAGE

HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
8/1/13
(REVISED 11/12/13)

key plan

seal

issued	date	description

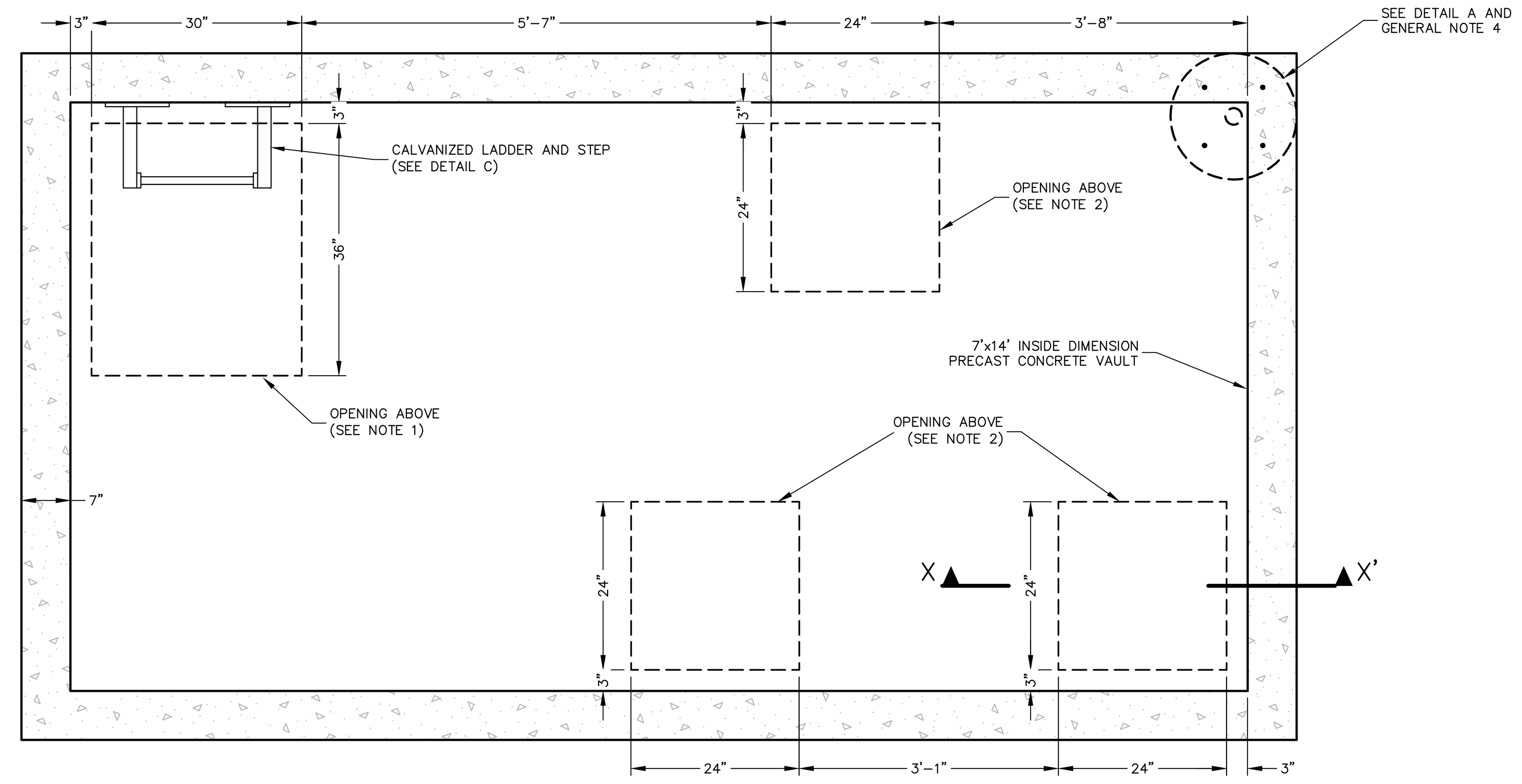
revision	date	description
1	11/6/2013	REVISED CALLOUTS, UPDATED NOTES

title
LEVEL 2
CONTINGENCY
PIPING PLAN
AND DETAILS

date: 04/30/13
drawn by: ERM
checked by: STP
scale: AS SHOWN
project number: 0199768

scaled inch

sheet number
DDP EN1.04

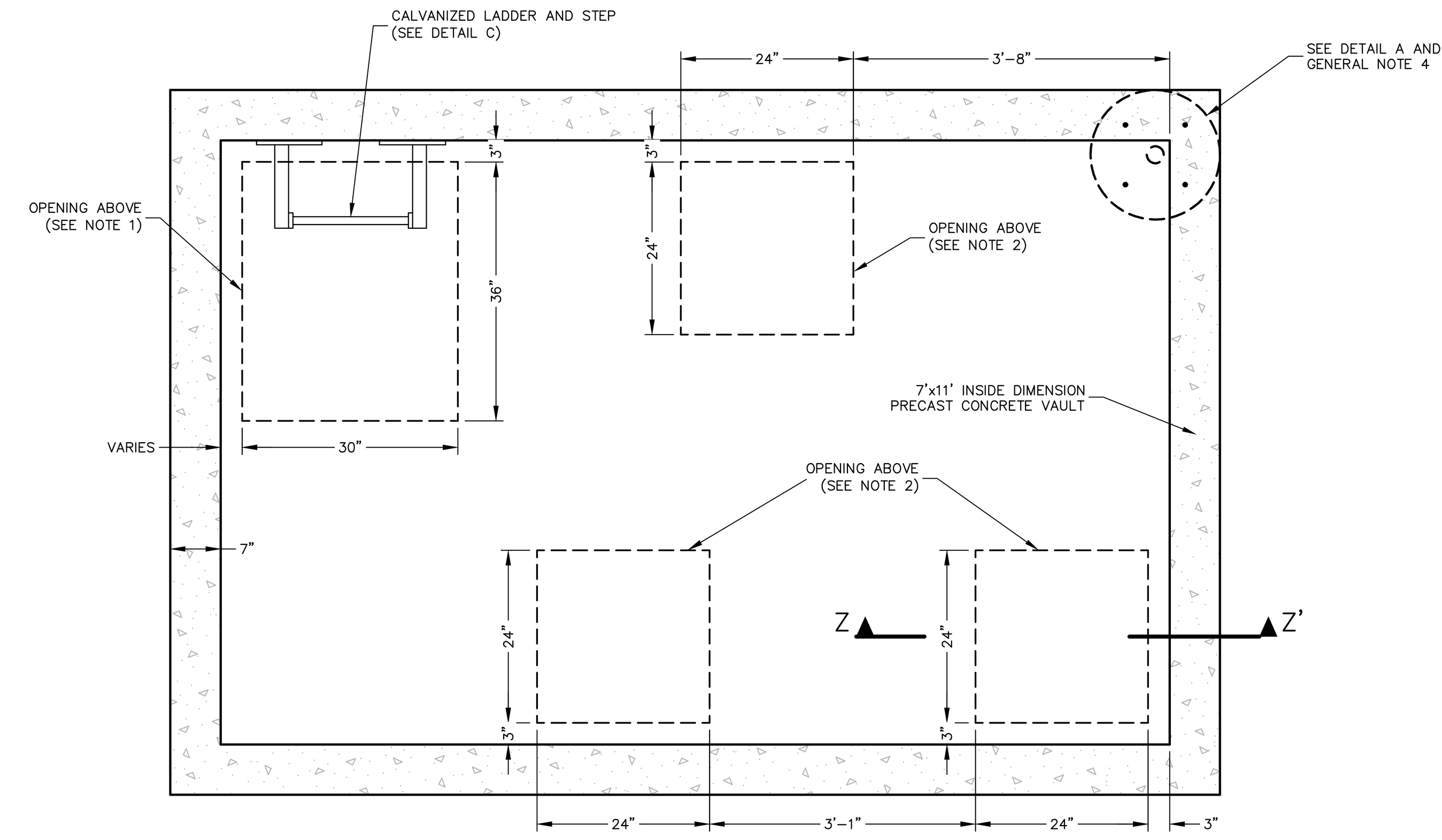


VAULT V1 PLAN VIEW–EXISTING TOP SLAB ONLY

NOT TO SCALE

NOTES

1. THE 30 IN. X 36 IN. OPENING CONTAINS A HEAVY DUTY DOOR MANUFACTURED BY PENNSYLVANIA INSERT CORPORATION. THE DOOR CONSISTS OF 6 ½ INCHES DEEP GALVANIZED STEEL FRAME WITH ¼ INCH DIAMOND PLATE DOOR LEAF BUILT FOR H20 LOADING WITH IMPACT. THE EXISTING ENTRY DOOR FRAME AND COVER SHALL BE REMOVED AND STORED FOR REPLACEMENT AFTER THE VAULT RISERS ARE ADJUSTED.
2. THE EXISTING 24 IN. X 24 IN. OPENING CONTAINS A SQUARE SLAB TYPE FRAME WITH A HINGED AND BOLTED COVER (NEENAH R6665–3LH). THE EXISTING FRAME AND COVER SHALL BE REMOVED AND STORED FOR REPLACEMENT AFTER THE VAULT RISERS ARE ADJUSTED.

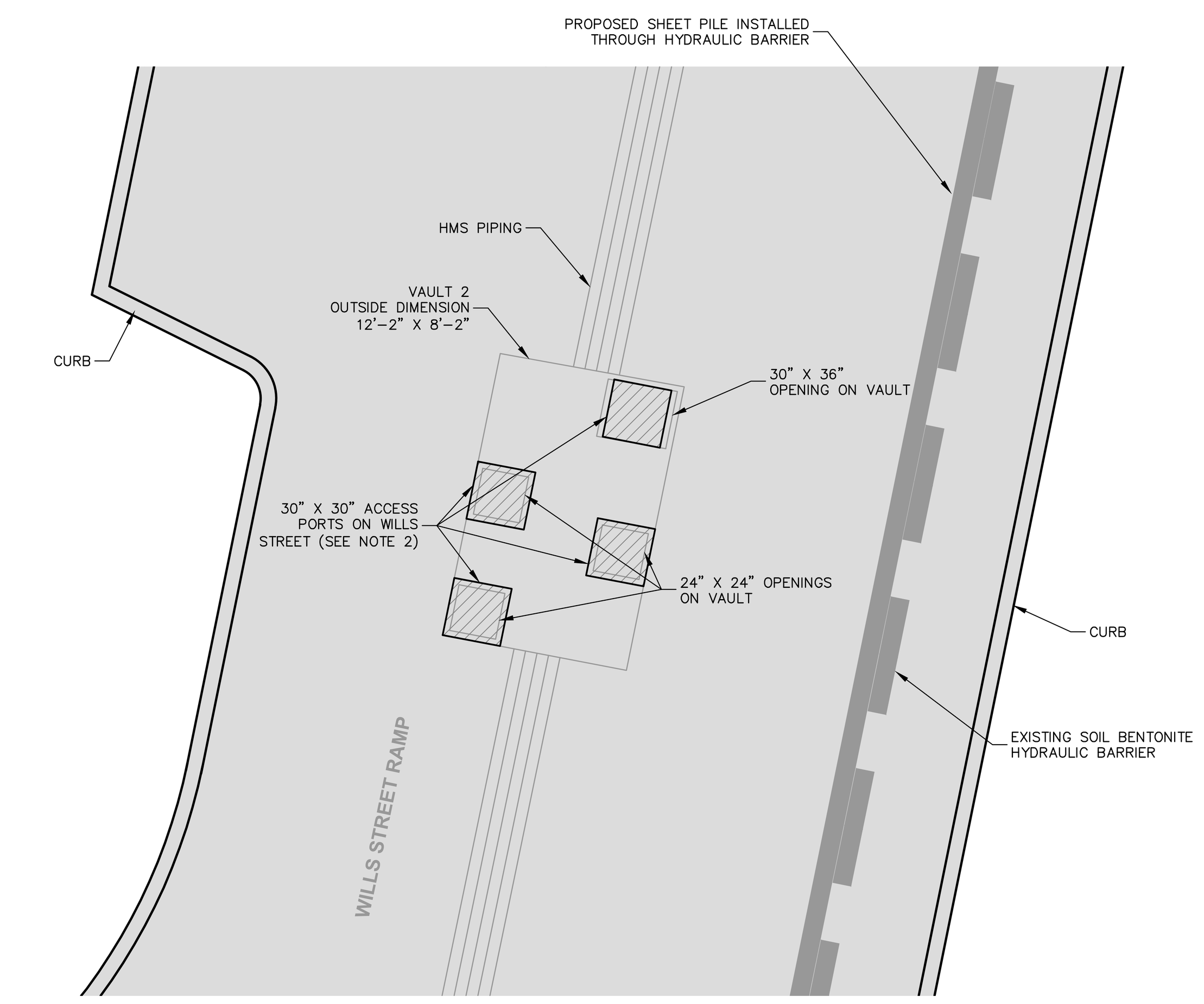


VAULT V2 PLAN VIEW–EXISTING TOP SLAB ONLY

NOT TO SCALE

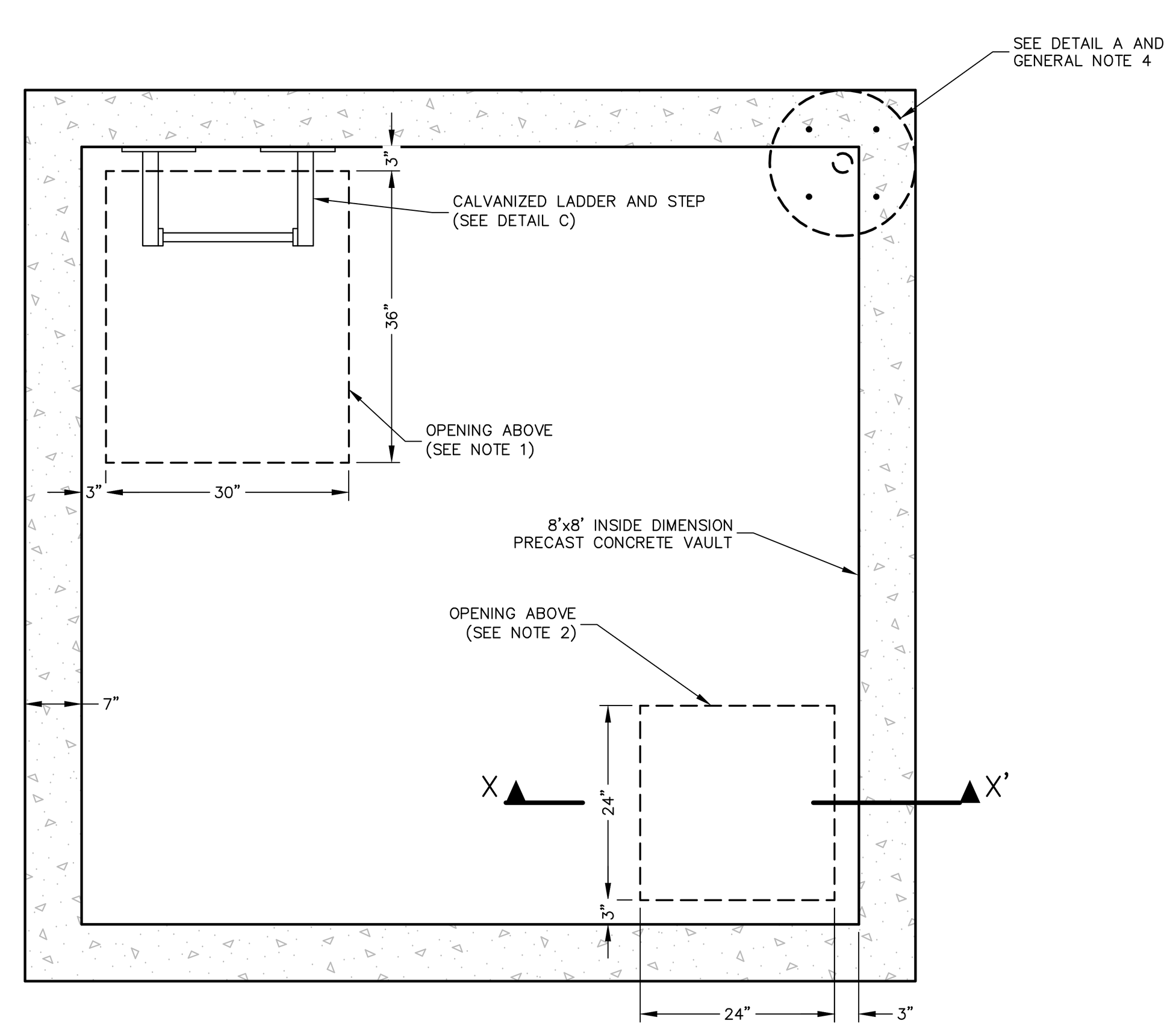
NOTES

1. THE 30 IN. X 36 IN. OPENING CONTAINS A HEAVY DUTY DOOR MANUFACTURED BY PENNSYLVANIA INSERT CORPORATION. THE DOOR CONSISTS OF 6 ½ INCHES DEEP GALVANIZED STEEL FRAME WITH ¼ INCH DIAMOND PLATE DOOR LEAF BUILT FOR H20 LOADING WITH IMPACT. THE EXISTING ENTRY DOOR FRAME AND COVER SHALL BE REMOVED AND STORED FOR REPLACEMENT AFTER THE VAULT RISERS ARE ADJUSTED.
2. THE EXISTING 24 IN. X 24 IN. OPENING CONTAINS A SQUARE SLAB TYPE FRAME WITH A HINGED AND BOLTED COVER (NEENAH R6665–3LH). THE EXISTING FRAME AND COVER SHALL BE REMOVED AND STORED FOR REPLACEMENT AFTER THE VAULT RISERS ARE ADJUSTED.



VAULT V2 ACCESS PORT PLAN

SCALE: 1" = 5'

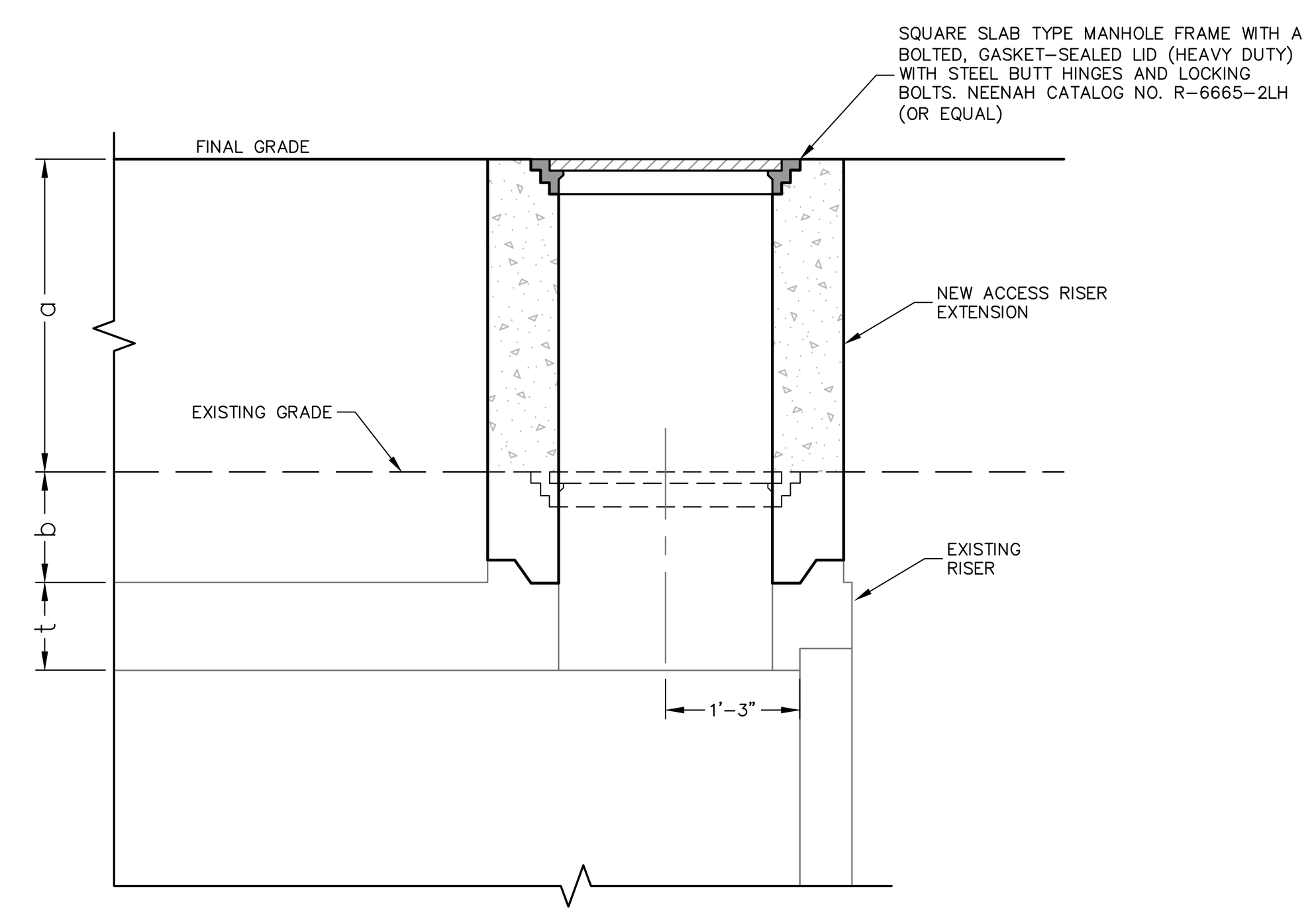


VAULT V11 & V12 PLAN VIEW–EXISTING TOP SLAB ONLY

NOT TO SCALE

NOTES

1. THE 30 IN. X 36 IN. OPENING CONTAINS A HEAVY DUTY DOOR MANUFACTURED BY PENNSYLVANIA INSERT CORPORATION. THE DOOR CONSISTS OF 6 ½ INCHES DEEP GALVANIZED STEEL FRAME WITH ¼ INCH DIAMOND PLATE DOOR LEAF BUILT FOR H20 LOADING WITH IMPACT. THE EXISTING ENTRY DOOR FRAME AND COVER SHALL BE REMOVED AND STORED FOR REPLACEMENT AFTER THE VAULT RISERS ARE ADJUSTED.
2. THE EXISTING 24 IN. X 24 IN. OPENING CONTAINS A SQUARE SLAB TYPE FRAME WITH A HINGED AND BOLTED COVER (NEENAH R6665–3LH). THE EXISTING FRAME AND COVER SHALL BE REMOVED AND STORED FOR REPLACEMENT AFTER THE VAULT RISERS ARE ADJUSTED.



NOTES

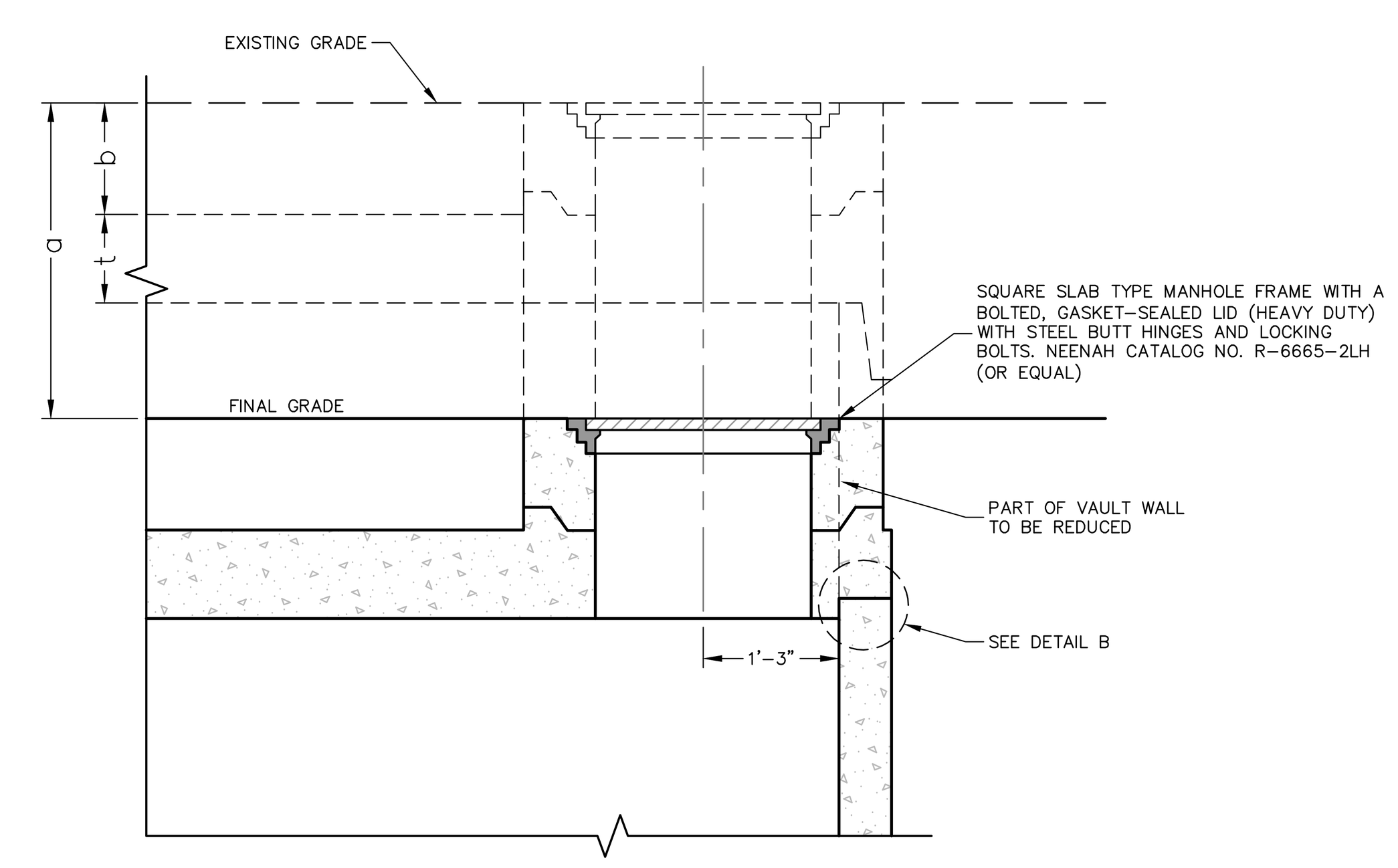
1. ALL ACCESS RISER OF THE VAULT (FOUR FOR VAULT 1 AND TWO FOR VAULTS 11 AND 12) SHALL BE ADJUSTED TO THE FINISH GRADE AS INDICATED IN THE SCHEDULE BELOW. THE FINAL ELEVATION SHALL CONFIRM WITH THE FINAL GRADING PLAN AND SHALL BE ADJUSTED TO FIELD CONDITIONS.
2. THE MAXIMUM COVER OVER THE VAULT CEILING (a+b IN THE SCHEDULE BELOW) SHALL NOT EXCEED THE MAXIMUM COVER HEIGHT INDICATED ON THE SCHEDULE.
3. THE VAULT RISER HEIGHT ADJUSTMENT SHALL BE COORDINATED WITH GRADING AND PAVEMENT/ROAD CONSTRUCTION.

VAULT RISER EXTENSION SCHEDULE

Vault #	Existing Grade (ft)	Final Grade (ft)	Top Slab Thickness (in.) "t"	Existing Surcharge Depth (ft) "b"	Access Riser Extension (ft) "a"	Maximum cover over the Vault Ceiling (ft)
1	13.9	17.5	10	1.66	3.60	5.2
11	11.86	17	8	1.02	5.14	7.5
12	11.46	15.5	8	1.25	4.04	7.5

SECTION X–X': VAULT RISER EXTENSION DETAIL

NOT TO SCALE



NOTES

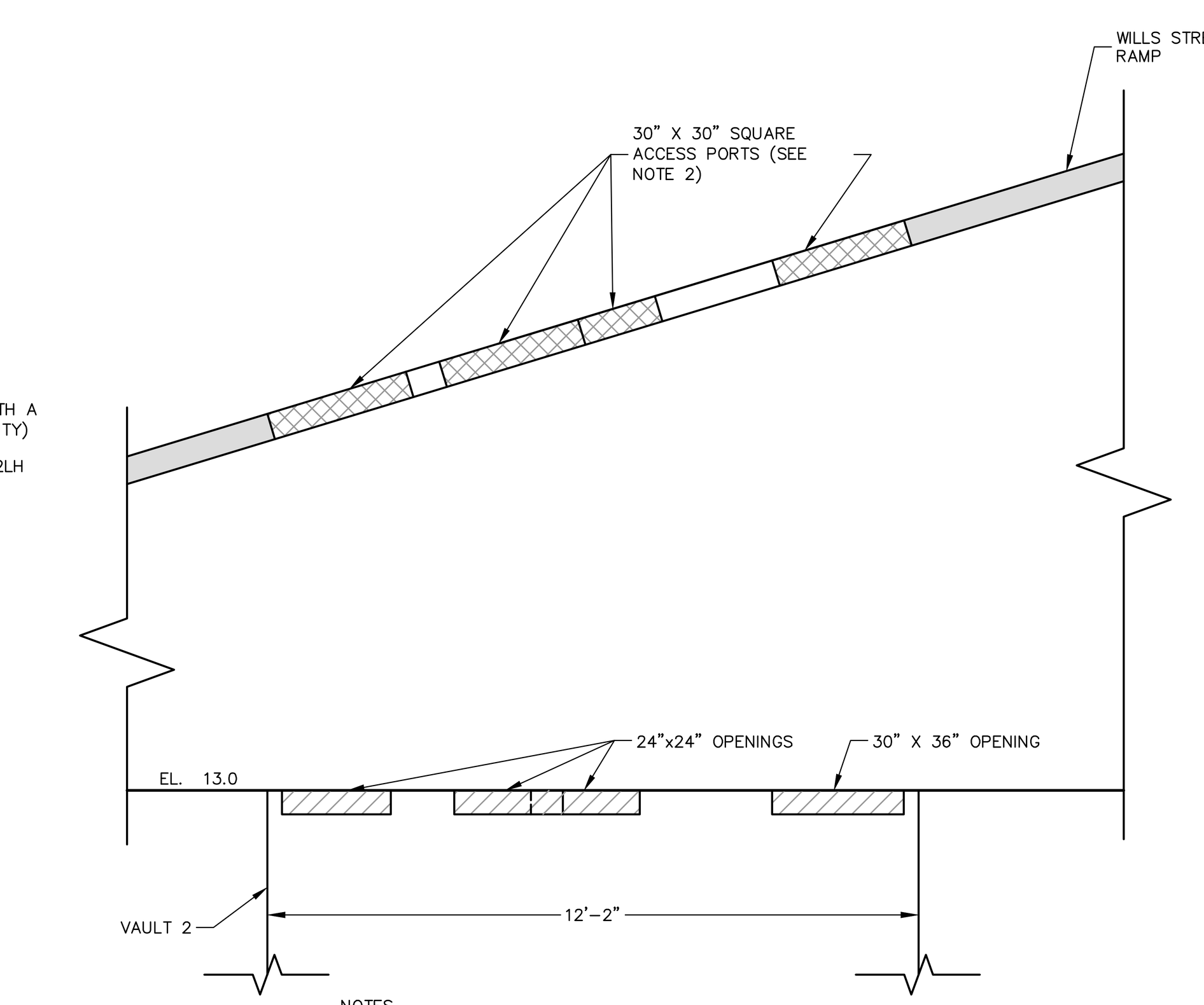
1. TOP SLAB SHALL BE REMOVED, AND REPLACED LATER AFTER ADJUSTING THE RISER AND WALLS OF THE VAULT TO HEIGHT INDICATED IN THE SCHEDULE BELOW. THE FINAL ELEVATION SHALL CONFIRM WITH THE FINAL GRADING PLAN AND SHALL BE ADJUSTED TO FIELD CONDITIONS.
2. THE EXISTING 16.5–INCH LONG RISER SHALL BE REPLACED WITH A NEW 10–INCH LONG RISER. UPPER 1.83 FT. OF THE WALLS OF THE VAULT SHALL BE SAW CUT TO ACHIEVE THE TOTAL HEIGHT REDUCTION OF 2.38 FT. REQUIRED FOR ELEVATION ADJUSTMENT.
3. (1) VAULT LIGHTING AND 480 VOLT CONDUITS (NOT SHOWN) ARE CONNECTED TO THE CEILINGS. SUCH ITEMS SHALL BE TEMPORARILY DISCONNECTED AND REPLACED LATER AFTER ADJUSTING THE VAULT WALLS. DURING THE TEMPORARY DISCONNECTION, THE CONTRACTOR SHALL PROVIDE TEMPORARY POWER SUPPLY TO MAINTAIN UNINTERRUPTED OPERATION OF THE HMS SYSTEM. THE EXISTING ACCESS LADDER ON THE WALL SHALL ALSO BE ADJUSTED OR REPLACED IN KIND TO ACCOMMODATE THE VAULT HEIGHT MODIFICATION.
4. ANY EQUIPMENT AND PIPING THAT ARE WITHIN THE TOP 1.83 FEET OF THE WALL SHALL BE LOWERED TO ADJUST TO THE ELEVATION CHANGE.
5. (1) THE WALLS SHALL BE SAW CUT TO ADJUST THE ELEVATION. THE CUT WALL SHALL HAVE A MIN. 1–INCH GROUT BED. EXTERIOR WALLS OF THE VAULT ARE COATED WITH GSE STUD–LINER, AND A GEOMEMBRANE OF MMC IS CONNECTED TO THE STUD–LINER AT 3.06 FEET BELOW THE TOP OF THE VAULT WALLS. WHILE SAW CUTTING UPPER 1.83 FEET OF THE VAULT WALLS, THE LINER SHALL ALSO BE CAREFULLY CUT SO AS NOT TO DISLODGE OR DAMAGE THE STUD–LINER FROM THE REMAINING UNCUT PORTION OF THE WALL OR ADVERSELY IMPACT THE CONNECTION TO THE GEOMEMBRANE. CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIR OR REINSTALLATION OF THE DAMAGED LINER AND GEOMEMBRANE.
6. V2 IS LOCATED INSIDE CENTRAL PLAZA PARKING LOT. THE V2 MODIFICATION SHALL BE COORDINATED WITH GRADING & CENTRAL PLAZA GARAGE CONSTRUCTION.
7. (1) AFTER HEIGHT ADJUSTMENT, VAULT 2 WILL BE LOCATED APPROXIMATELY 13' BENEATH THE WILLS STREET RAMP. ACCESS PORT (SEE VAULT 2 ACCESS PORT PLAN AND ELEVATION ON THIS SHEET) IS REQUIRED ON THE WILLS STREET RAMP IMMEDIATELY ABOVE THE VAULT 2 FOR ACCESSING THE LOCATION FOR POTENTIAL FUTURE WELL REPLACEMENT (SEE V2 ACCESS PORT LOCATION THIS SHEET).

VAULT REDUCTION SCHEDULE

Vault #	Existing Grade (ft)	Final Grade (ft)	Top Slab Thickness (in.) "t"	Existing Surcharge Depth (ft) "b"	Vault Reduction (ft) "a"
2	15.38	13	10	1.37	-2.38

SECTION Z–Z': VAULT WALL REDUCTION DETAIL

NOT TO SCALE



NOTES

1. (1) AFTER HEIGHT ADJUSTMENT, VAULT 2 WILL BE LOCATED APPROXIMATELY 13' BENEATH THE WILLS STREET RAMP. ACCESS PORT IS REQUIRED ON THE WILLS STREET RAMP IMMEDIATELY ABOVE THE VAULT 2 OPENINGS FOR ACCESSING THE LOCATION AND FOR POTENTIAL FUTURE WELL REPLACEMENT.
2. THE ACCESS PORTS ARE INSTALLED ON THE STRUCTURAL DECK. THE ACCESS PORTS SHALL BE STEEL LOCKABLE HINGED HATCH CAPABLE OF SUPPORTING H20 LOADING CONDITIONS. SHOP DRAWINGS OF THE HATCH SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.
3. ROAD FINAL ELEVATION SHALL BE VERIFIED WITH ROAD GRADING PLAN (SEE CIVIL DRAWINGS).

VAULT 2 ACCESS PORT ELEVATION

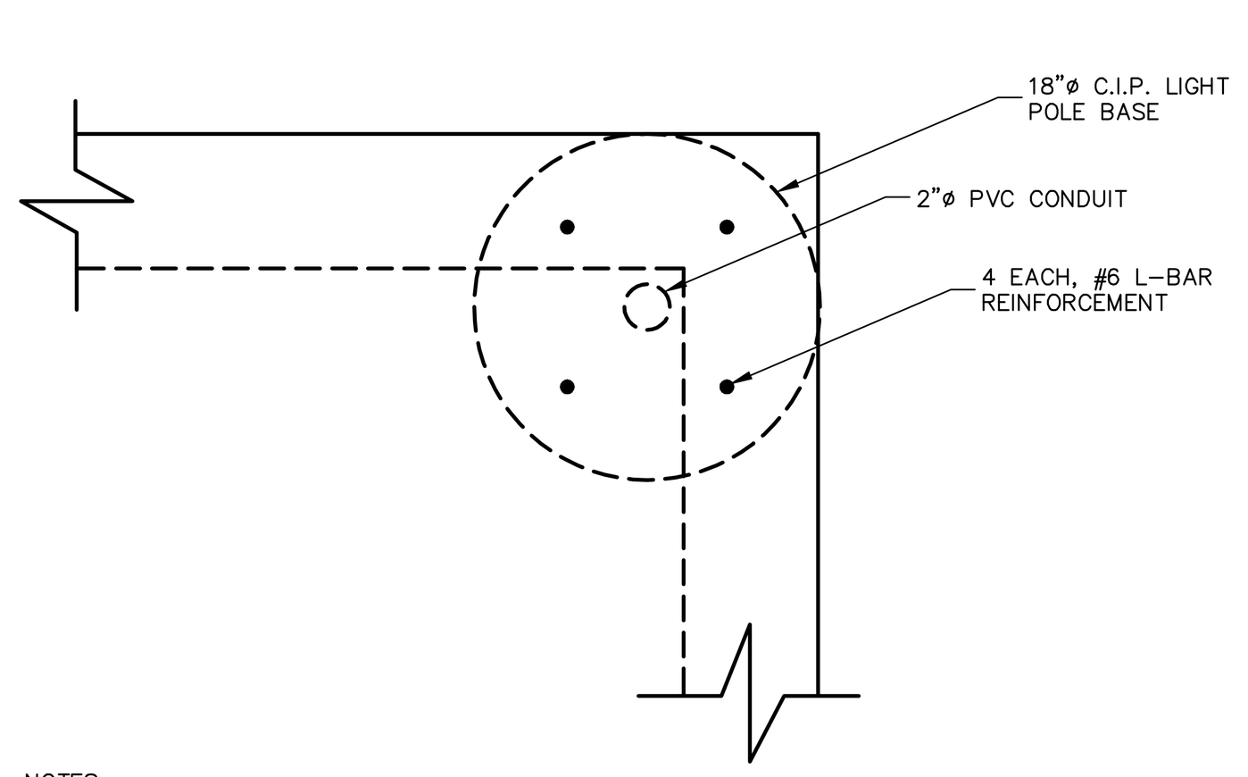
NOT TO SCALE

GENERAL NOTES:

1. THE EXISTING GRADE ELEVATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED.
2. PLAN VIEWS OF THE VAULTS DO NOT SHOW VAULT FLOOR AND/OR WALL FEATURES.
3. VAULT 1 AND VAULT 12 REQUIRES EXTENSION OF ACCESS RISERS. VAULT 2 REQUIRES REDUCTION OF THE VAULT WALLS AS INDICATED ON THE DETAILS PRESENTED ON THIS DRAWING.
4. THE EXISTING LIGHT POLE INCLUDING POLE ATTACHMENTS SHALL BE REMOVED.
5. ALL MODIFICATION AND FABRICATION TO THE VAULTS SHALL BE WATER TIGHT AND SHALL MEET ACI 350. THE EXTERIOR OF THE MANHOLES SHALL BE LINED WITH GSE STUDLINER.
6. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL THE MODIFICATION INCLUDING CONNECTION, STRUCTURAL DESIGN AND FABRICATION OF THE VAULTS.

DESIGN NOTES:

1. MODIFICATION PRESENTED ON THIS DRAWING SHALL MEET THE FOLLOWING SPECIFICATION. THE EXISTING VAULTS MEET THESE SPECIFICATIONS.
   CONCRETE MINIMUM STRENGTH: 5,000 PSI @ 28 DAYS
   STEEL REINFORCEMENT: ASTM A–615. GRADE 60
   COVER TO STEEL: 1 INCH
   DESGIN LOADING: AASHTO HS20–44 (30% IMPACT ALLOWANCE)
   CONSTRUCTION JOIN: SEALED WITH 1–INCH DIAMETER BUTYL RUBBER
2. SHOP DRAWINGS OF THE EXISTING VAULTS 1, 2 AND 12 WILL BE PROVIDED IN THE BID DOCUMENT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE DIMENSIONS SHOWN ON THE PLANS. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE TO MEET THE EXISTING DESIGN SPECIFICATION INCLUDING BUT NOT LIMITED TO MATERIALS, LINER, COATINGS, REINFORCEMENT, AND LOADING.

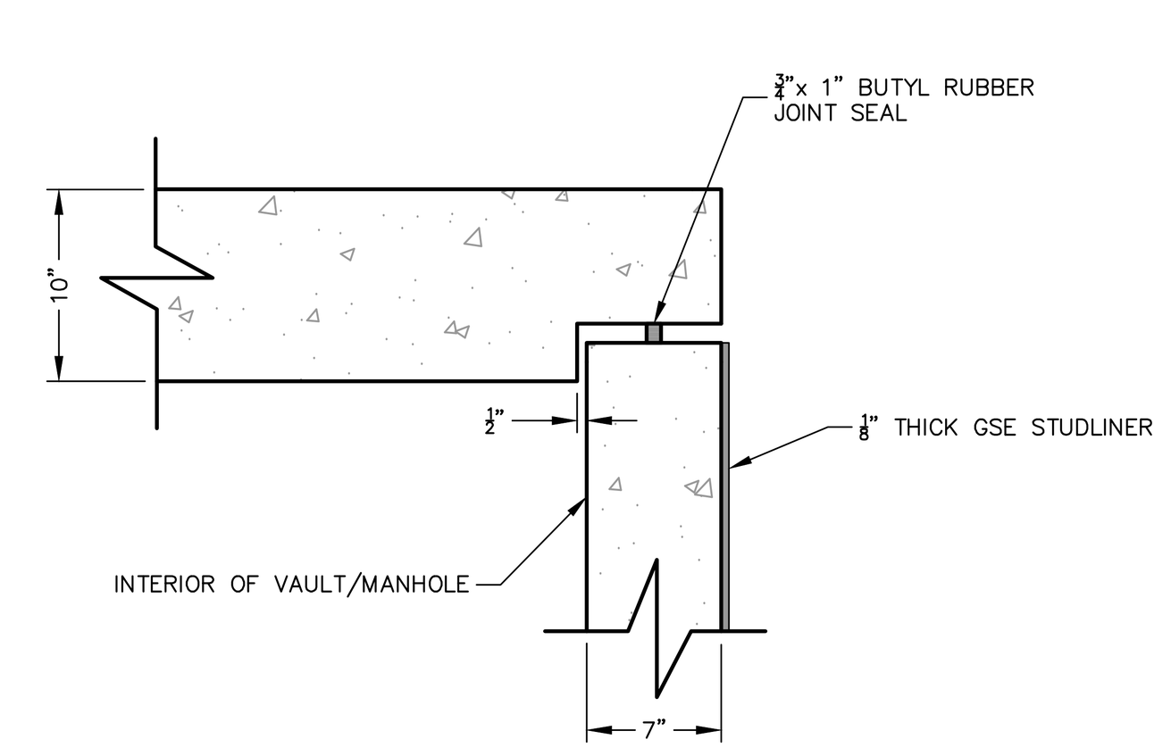


NOTES:

1. THE EXISTING LIGHT POLE ATTACHMENT SHALL BE REMOVED

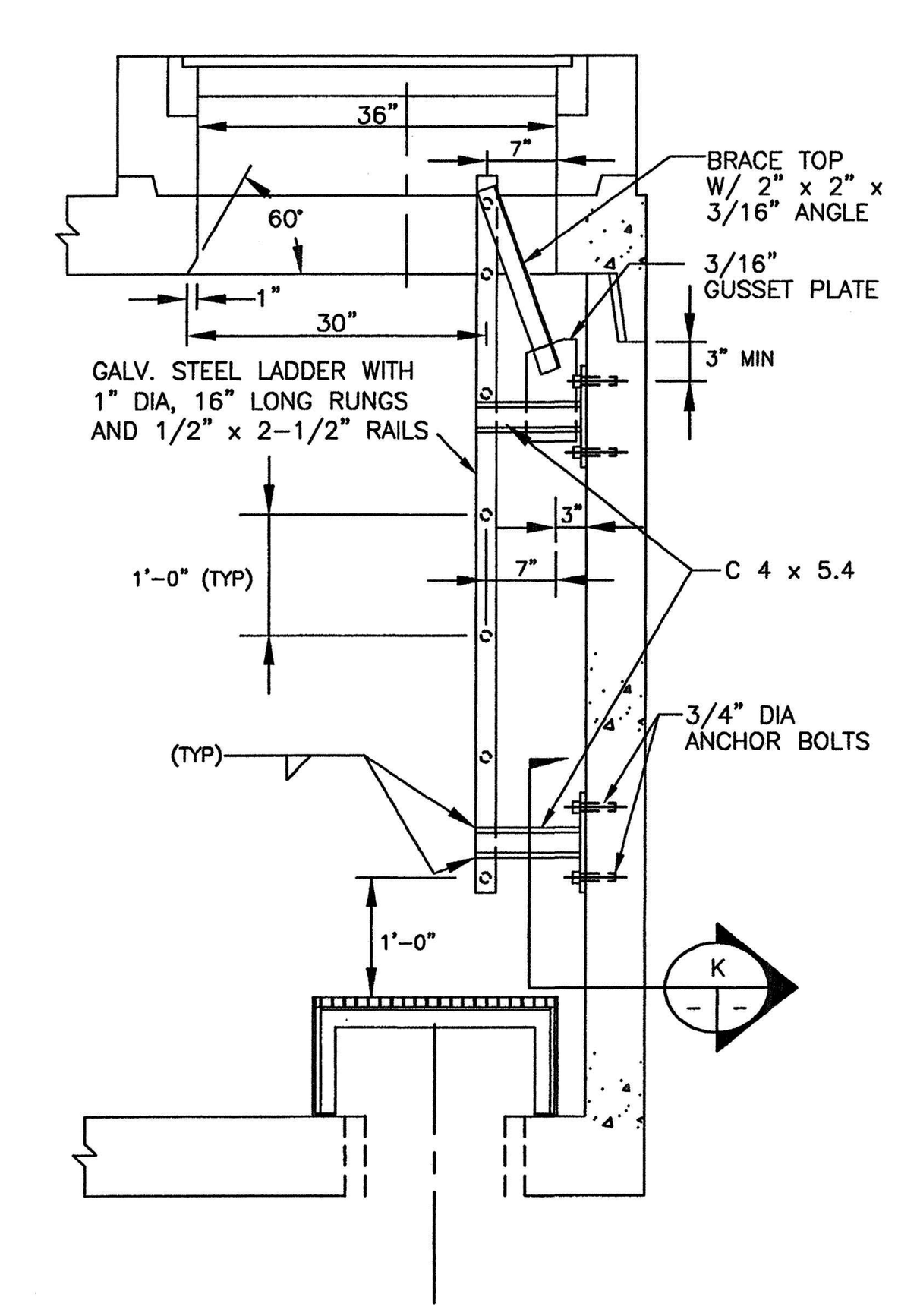
DETAIL A: EXISTING LIGHT POLE ATTACHMENT

NOT TO SCALE



DETAIL B: TYPICAL JOINT DETAIL

NOT TO SCALE

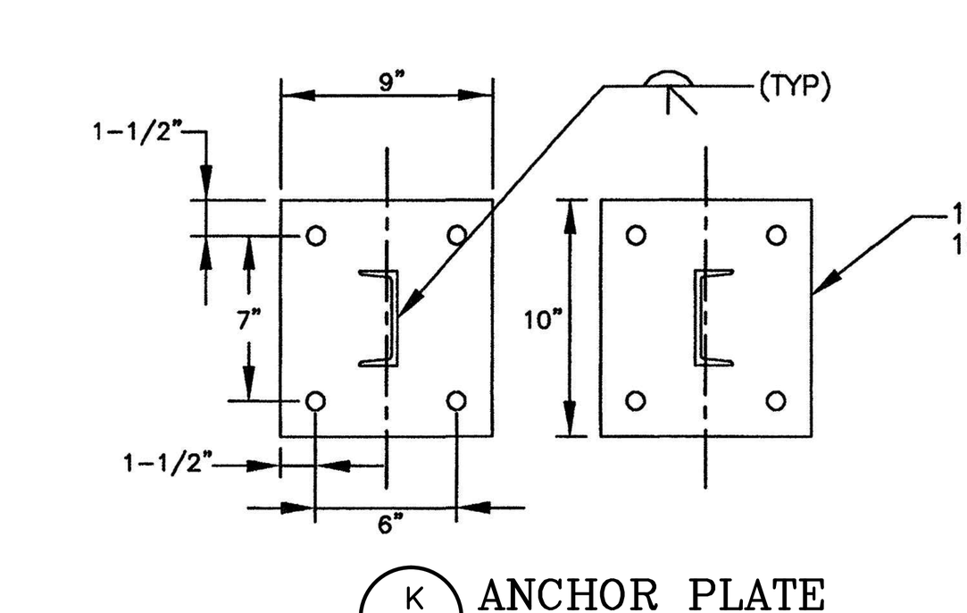


NOTES:

1. THE EXISTING LADDER SHALL BE REPLACED WITH THE SIMILAR KIND TO ADJUST TO THE ELEVATION CHANGES AS INDICATED ON THIS DRAWING.

DETAIL C: LADDER DETAIL

NOT TO SCALE



ANCHOR PLATE

NOT TO SCALE

PROGRESS SET NOT FOR CONSTRUCTION

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project

EXELON BLDG & PLAZA GARAGE

HARBOR POINT AREA 1 PHASE 1 DDP SUBMISSION 8/1/13 (REVISED 11/12/13)

key plan

seal

issued	date	description

revision	date	description
1	11/8/2013	UPDATED NOTES

title

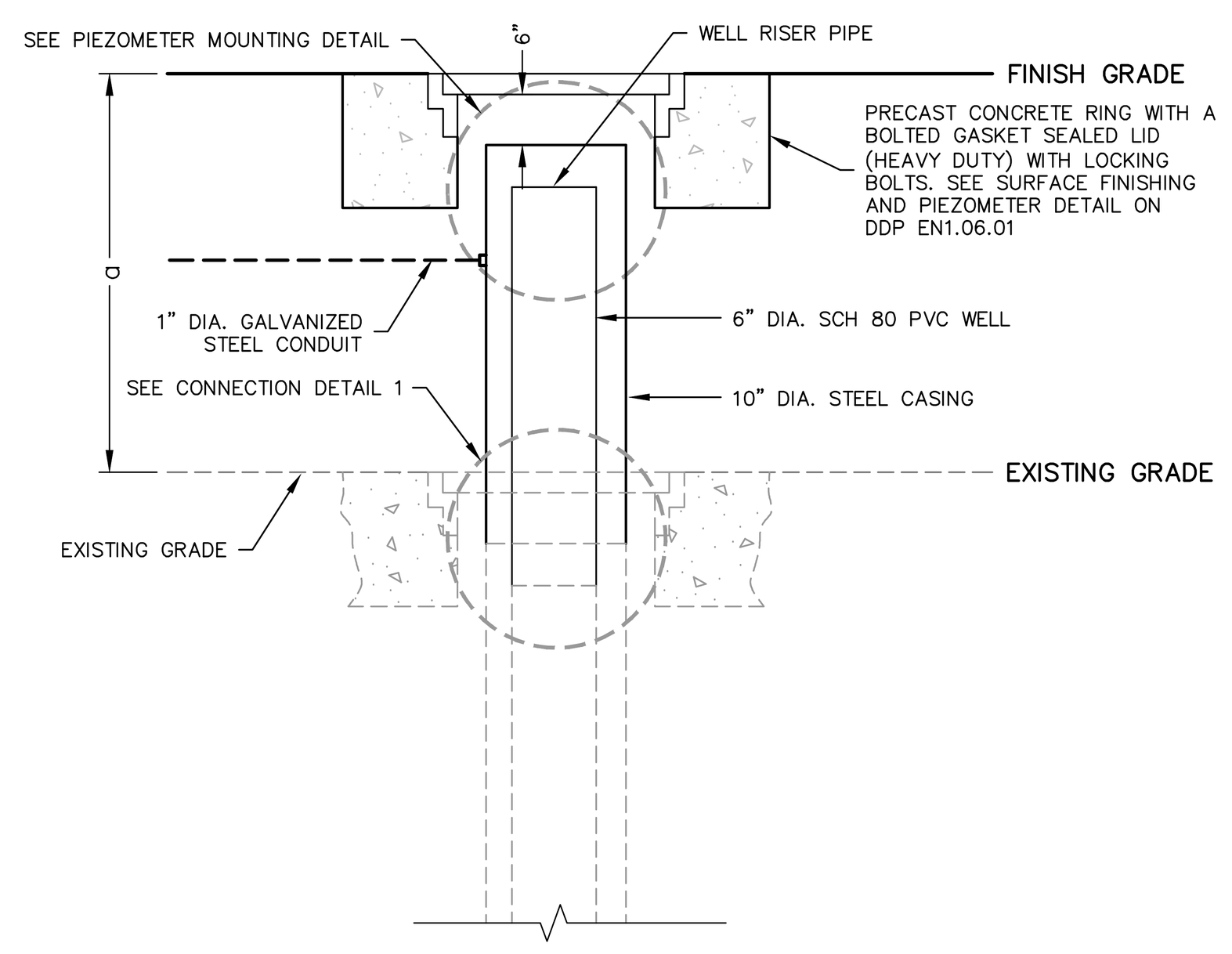
VAULT MODIFICATION DETAILS

date: 8/1/13
drawn by: ERM
checked by: AK
scale: NOTED
project number: 0199768

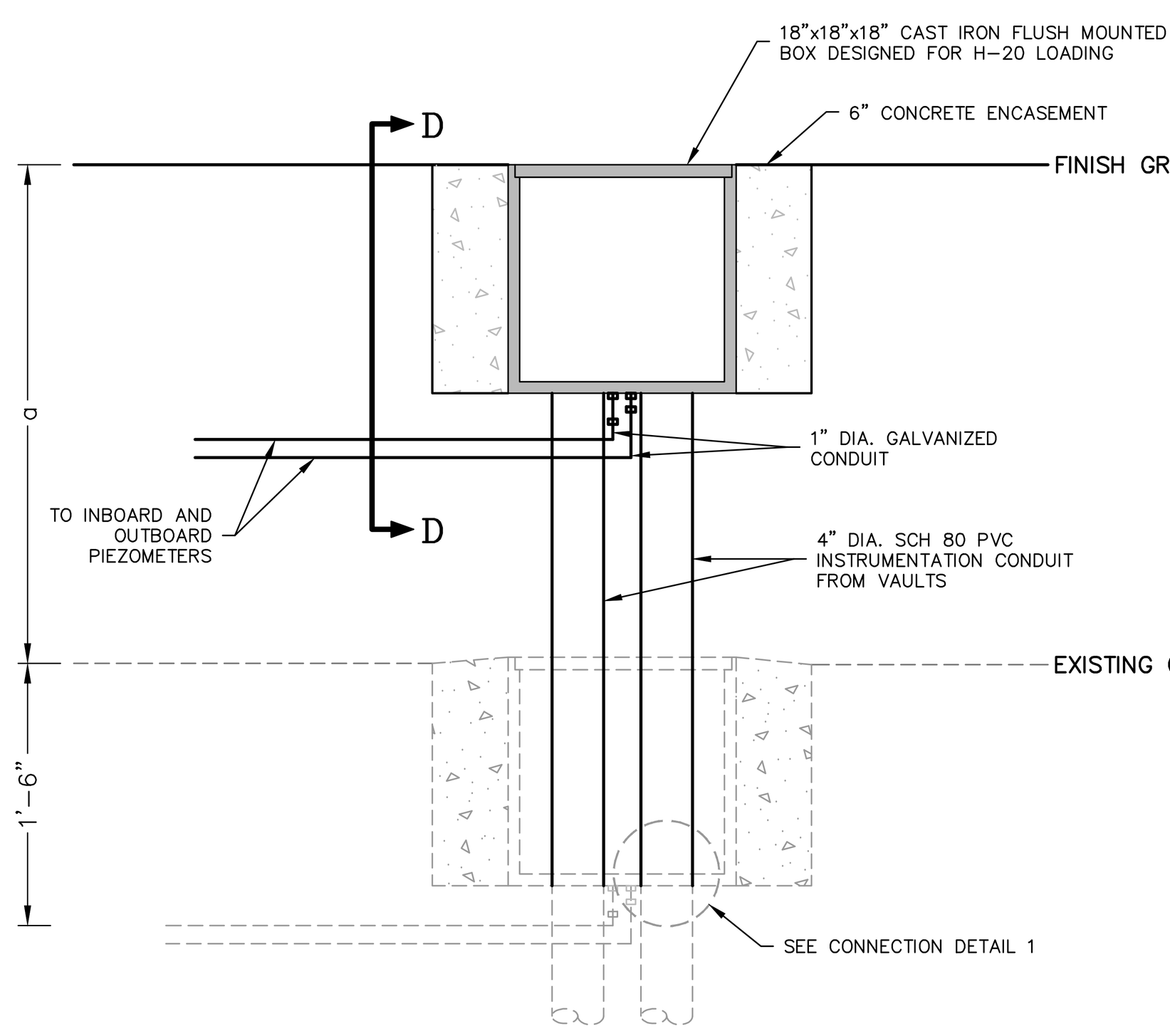
scaled inch

sheet number

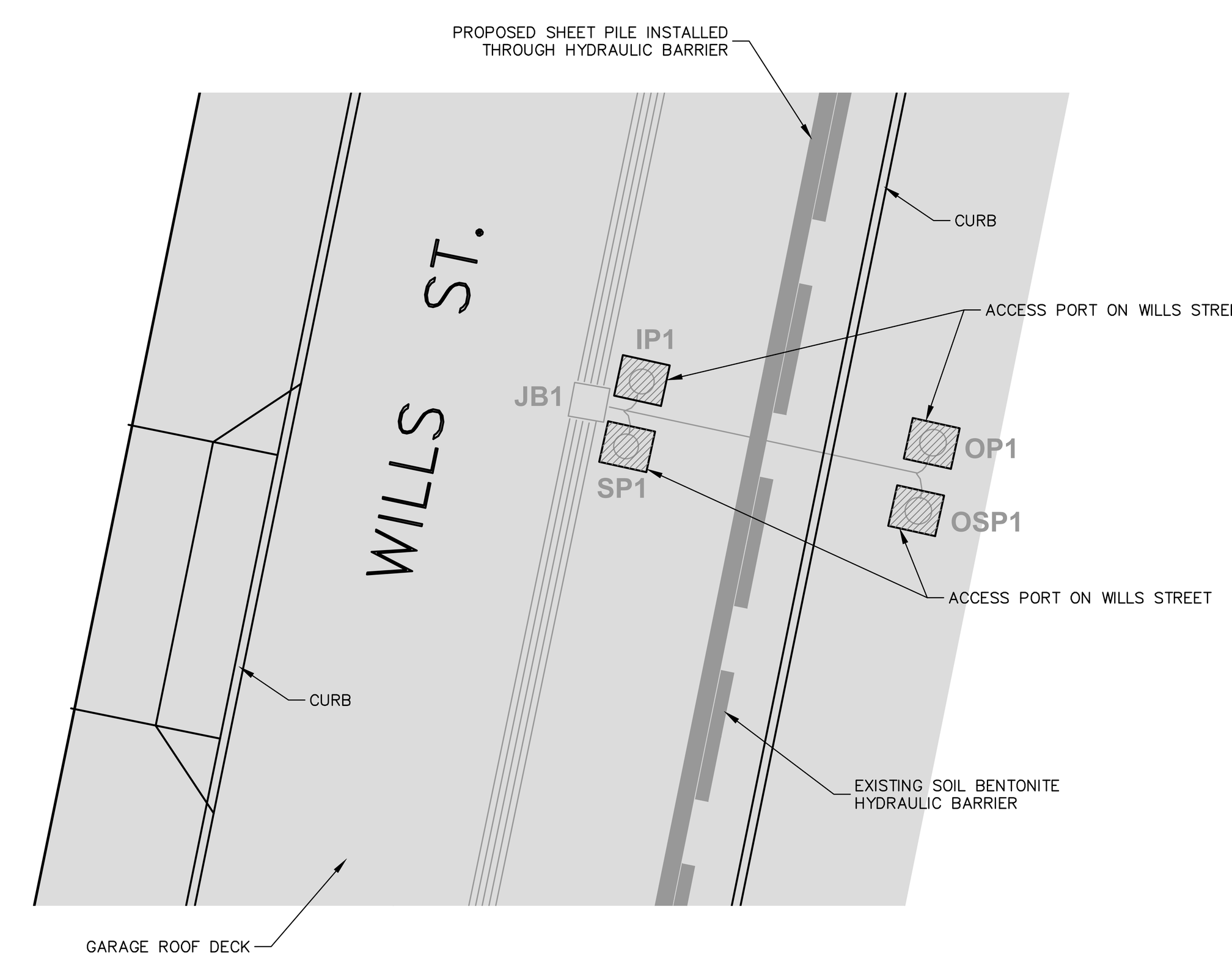
DDP EN1.05



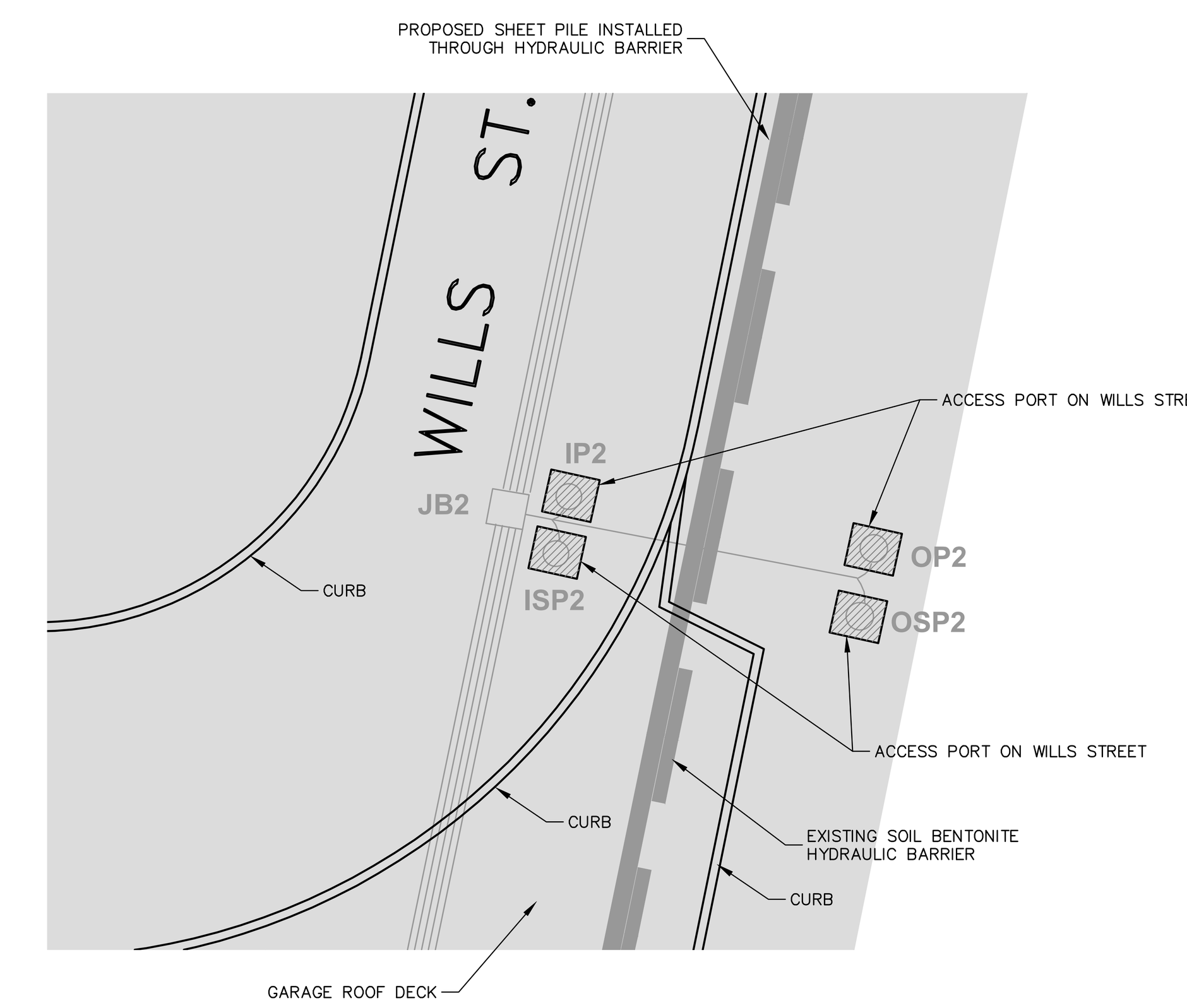
PIEZOMETER HEIGHT EXTENSION DETAIL
NOT TO SCALE



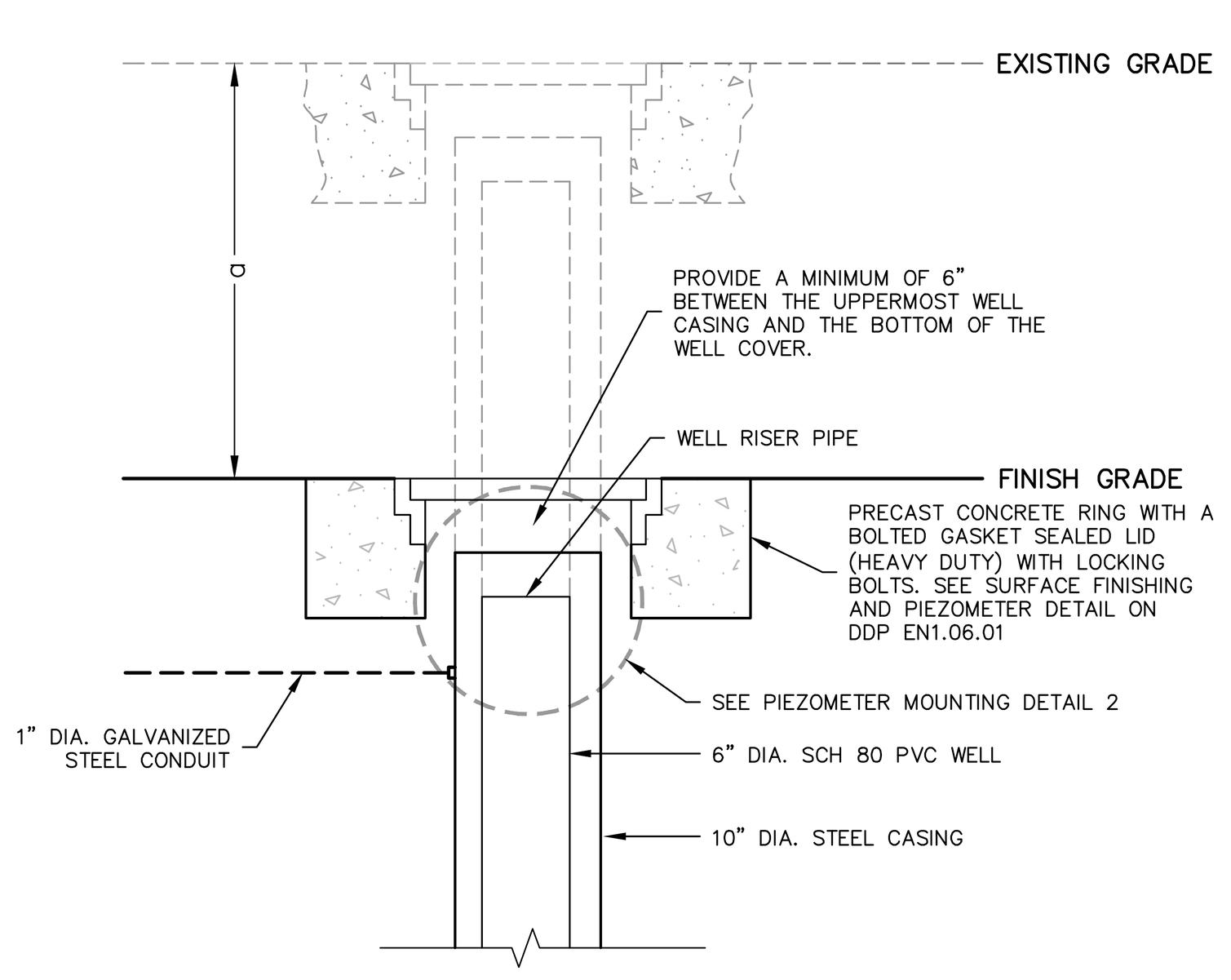
JUNCTION BOX HEIGHT EXTENSION DETAIL
NOT TO SCALE



IP1/OP1 ACCESS PORT LOCATION



IP2/OP2 ACCESS PORT LOCATION

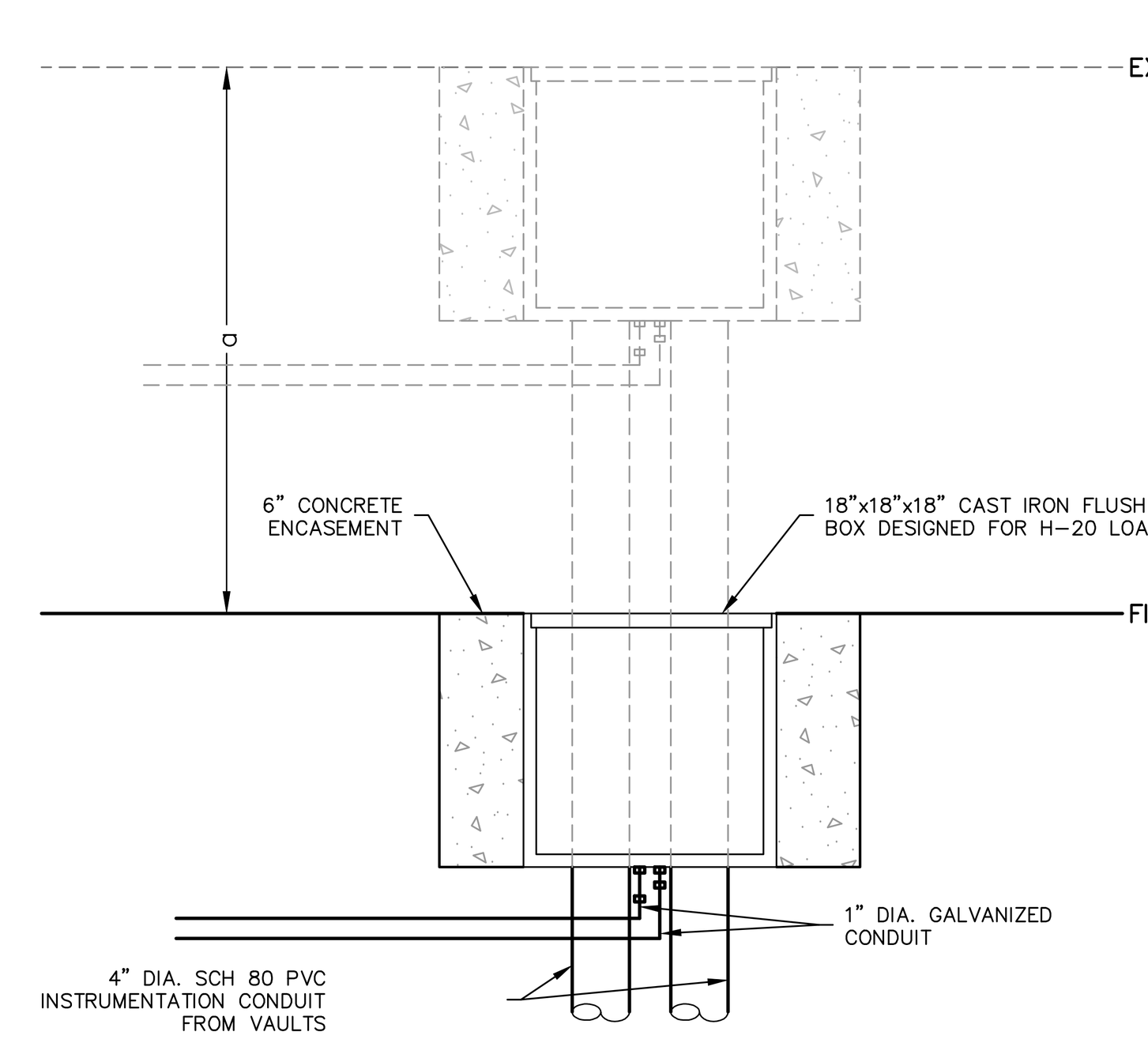


PIEZOMETER HEIGHT REDUCTION DETAIL
NOT TO SCALE

NOTES
1. THE EXISTING GRADE ELEVATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED.
2. PIEZOMETERS SHALL BE ADJUSTED TO THE HEIGHT INDICATED IN THE SCHEDULE BELOW. THE FINAL ELEVATION SHALL CONFIRM WITH FINAL GRADING PLAN AND SHALL BE ADJUSTED TO FIELD CONDITIONS.
3. THE ADJUSTMENT SHALL BE COORDINATED WITH GRADING AND ROAD CONSTRUCTION WORK.
4. AFTER HEIGHT ADJUSTMENT, PIEZOMETER SET 1 (IP/OP-1 AND IP/OP-1S) WILL BE LOCATED APPROXIMATELY 6 TO 8 FEET AND SET 2 (IP/OP-2 & IP/OP-2S) WILL BE LOCATED APPROXIMATELY 12 TO 14 FEET BENEATH THE WILLS STREET RAMP. ACCESS PORTS ARE REQUIRED ON WILLS STREET IMMEDIATELY ABOVE THE PIEZOMETERS FOR ACCESSING PIEZOMETERS AND FOR POTENTIAL FUTURE PIEZOMETER REPLACEMENT (SEE PIEZOMETER ACCESS PORT LOCATION).

PIEZOMETER ADJUSTMENT SCHEDULE

Location	Exisiting Finish Grade (ft)	Proposed Finish Elevation (ft)	Finish Elevation Adjustment (ft) "a"
IP1	14.35	13	-1.35
ISP1	14.41	13	-1.41
OP1	14.23	13	-1.23
OSP1	14.23	13	-1.23
IP2	16.32	14	-2.32
ISP2	16.35	14	-2.35
OP2	16.16	14	-2.16
OSP2	16.28	14	-2.28
IP11	8.93	18	9.07
OP11	7.16	18	10.84
IP12	14.09	13	-1.09
OP12	10.66	13	2.34

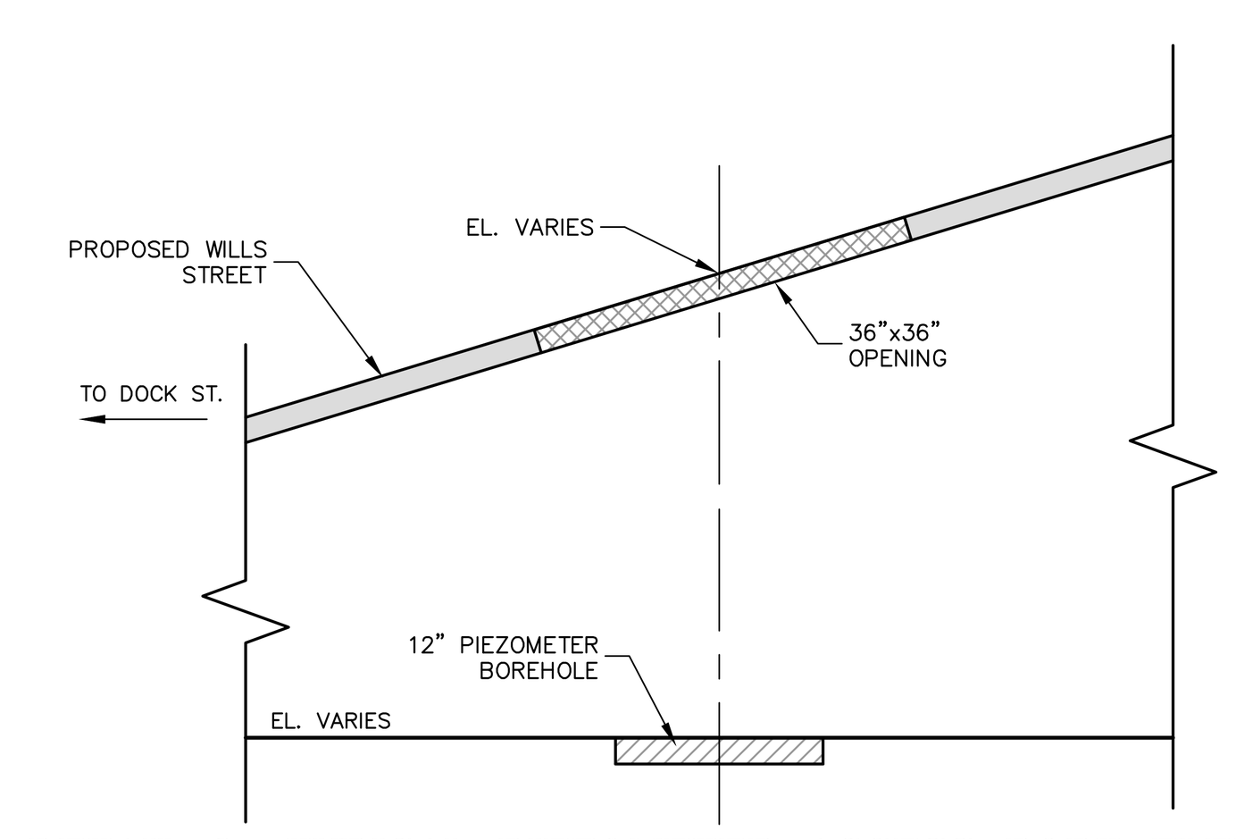


JUNCTION BOX HEIGHT REDUCTION DETAIL
NOT TO SCALE

NOTES
1. THE EXISTING GRADE ELEVATIONS AND DIMENSIONS SHALL BE FIELD VERIFIED.
2. EXISTING JUNCTION BOXES SHALL BE REPLACED WITH THE NEW JUNCTION BOXES. THE 1" DIAMETER GALVANIZED CONDUIT BETWEEN JUNCTION BOX AND PIEZOMETERS SHALL BE ADJUSTED SUCH THAT THE CONDUIT IS A MINIMUM OF 18" BELOW THE FINAL FINISH SURFACE.
3. IF LLDPE BOOT FOR THE MMC IS ENCOUNTERED ABOVE THE NOTED ELEVATION, THE BOOT WILL BE REDUCED IN HEIGHT AND REPAIRED WITH QA/QC MEETING THE STANDARD ON THE PILE BOOTING SHEET (SEE FOUNDATION DRAWINGS).
4. THE ADJUSTMENT SHALL BE COORDINATED WITH GRADING AND ROAD CONSTRUCTION WORK. THE FINAL ELEVATION SHALL CONFIRM WITH FINAL GRADING PLAN AND SHALL BE ADJUSTED TO FIELD CONDITIONS.
5. CABLES SHALL NOT BE CUT AND SPLICED. IF REQUIRED CONTRACTOR SHALL REPLACE THE ENTIRE EXISTING CABLES FROM PIEZOMETER TO JUNCTION BOX. THE CONTRACTOR SHALL ALSO PROVIDE AN ADDITIONAL 15 FEET OF CAT 3 CABLES AND PIEZOMETER CABLES AT EACH JUNCTION BOX AND COIL THE EXCESS FOR FUTURE EXTENSION.
6. JUNCTION BOX ALSO CONTAINS BELDEN SHIELDED SECURITY CABLES (NOT SHOWN ON THE DETAILS) CONNECTING VAULTS SENSORS TO THE NEXT RIC. JUNCTION BOX 1, 11, AND12 CONTAINS MULTI-PAIR SECURITY CABLES. SUCH CABLES SHALL NOT BE CUT AND SPLICED, BUT REPLACED ENTIRE SECTION IN KIND. REMOVAL AND INSTALLATION OF WIRING COORDINATED WITH SITE OPERATION PERSONNEL.

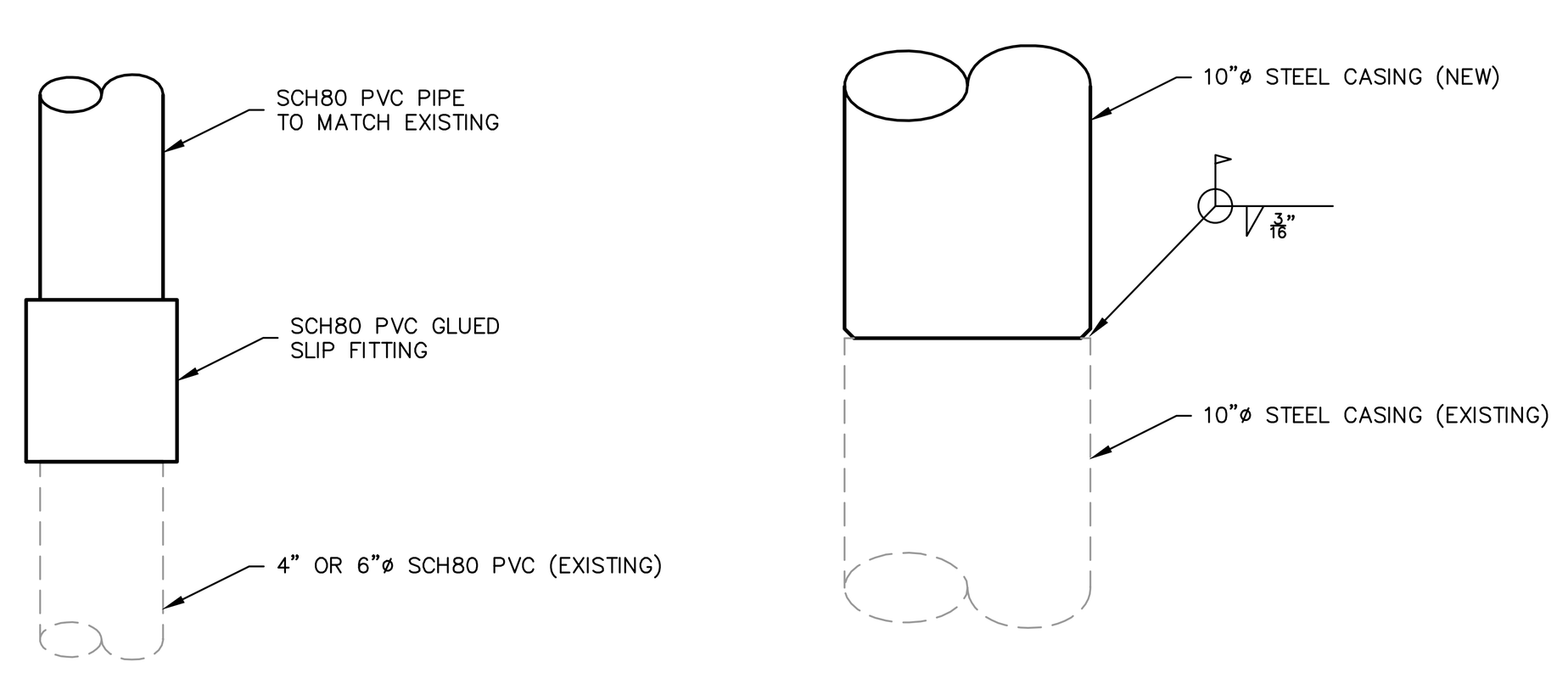
JUNCTION BOX ADJUSTMENT SCHEDULE

JB #	EXISTING FINISH ELEVATION (FT.)	FINAL FINISH ELEVATION (FT.)	EXTENSION/REDUCTION "a" FT.
JB-1	14.31	13.0	-1.31
JB-2	16.68	14.0	-2.68
JB-11	9.17	18.0	+8.83
JB-12	14.30	13.0	-1.30



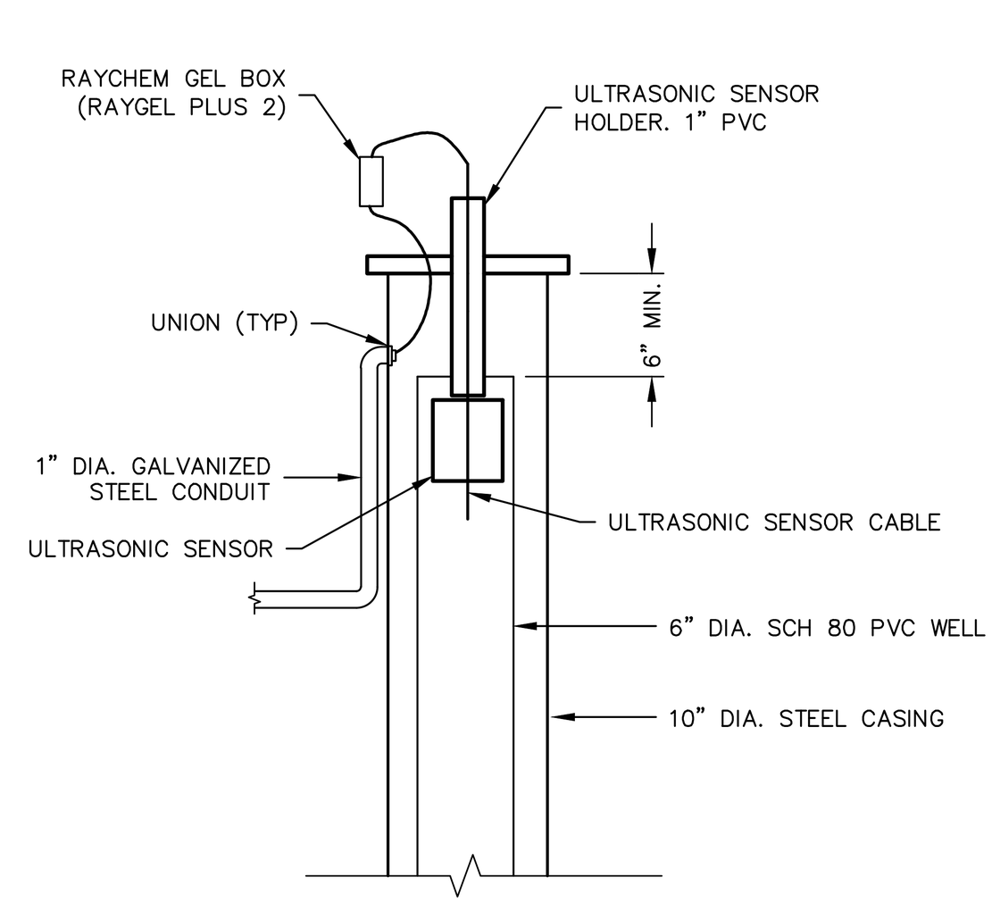
DETAIL 3: TYPICAL PIEZOMETER ACCESS PORT ELEVATION
NOT TO SCALE

NOTES
1. ELEVATION SHALL BE FIELD VERIFIED.
2. THE DETAILS PROVIDED DEPICT OPENING DIMENSION AND LOCATION ON THE WILL STREET RAMP FOR ACCESSING THE LOCATION FOR PIEZOMETER REPLACEMENT IN THE FUTURE. THE STRUCTURAL DESIGN WITH MATERIAL SPECIFICATIONS TO BE PROVIDED BY OTHERS.

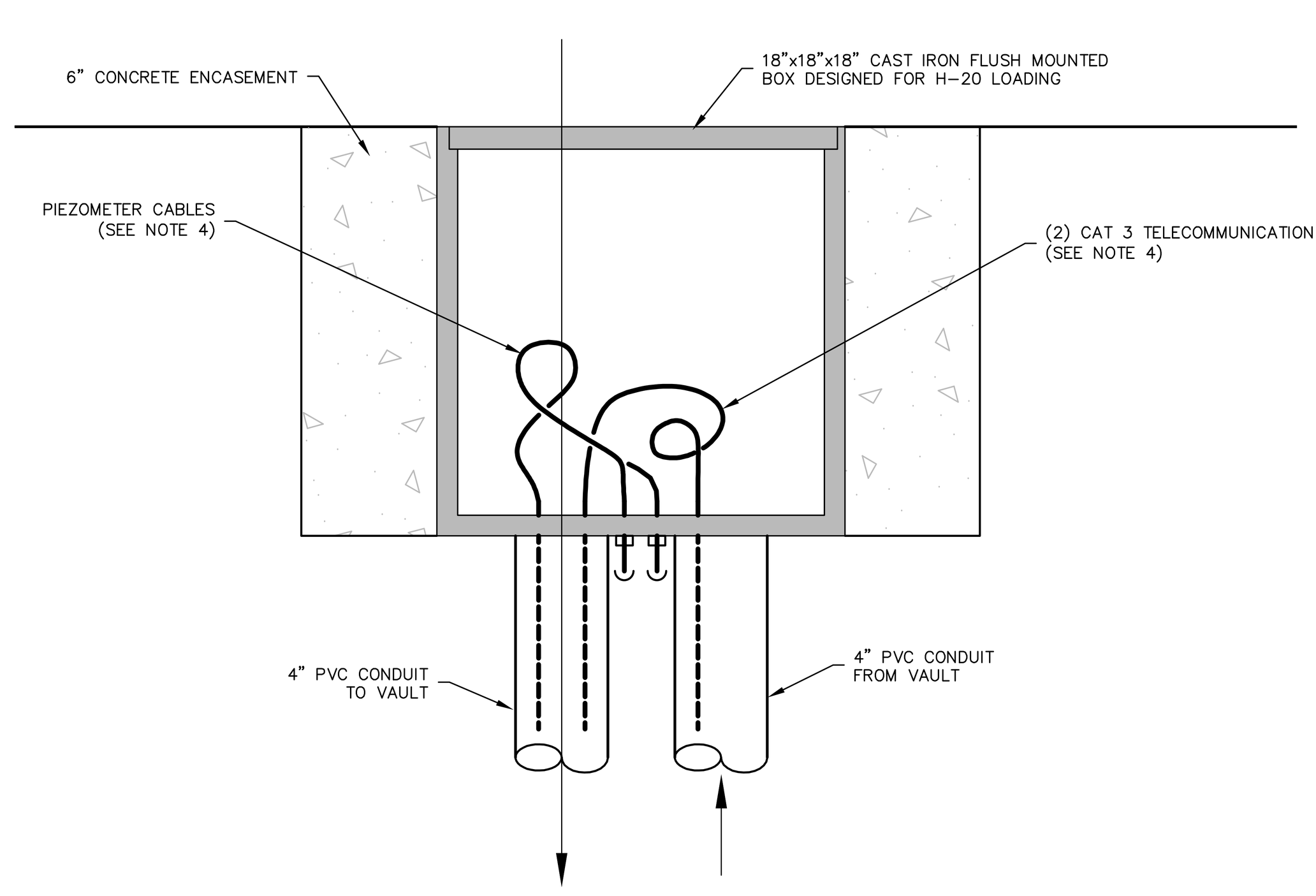


DETAIL 1 – CONNECTION DETAIL
NOT TO SCALE

NOTES
1. ALL PVC FITTINGS SHALL BE IN ACCORDANCE WITH ASTM D-2564 AND D-2855



DETAIL 2 – PIEZOMETER MOUNTING DETAIL
NOT TO SCALE



SECTION D-D
NOT TO SCALE

GENERAL MODIFICATION NOTES:
1. ANY DOWNTIME OF THE HMS OPERATION DUE TO PROPOSED MODIFICATION SHALL BE COORDINATED WITH HONEYWELL.
2. THE EXISTING CONDITION OF PIEZOMETERS, VAULTS, AND JUNCTION BOXES, INCLUDING DIMENSION, CONNECTION DETAILS, AND ELEVATIONS SHALL BE FILED VERIFIED.

PIEZOMETER MODIFICATIONS:
1. PRIOR TO PIEZOMETER MODIFICATION THE EXISTING CONNECTION SUCH AS ULTRASONIC SENSOR, ASSOCIATED CABLES AND CABLE HOLDER SHALL BE TEMPORARILY DISCONNECTED.
2. FOR SPECIFIED PIEZOMETERS BOTH THE PVC RISER AND STEEL PROTECTION CASING SHALL BE ADJUSTED IN ACCORDANCE TO THE DETAILS PRESENTED ON THE DRAWINGS.
3. AFTER HEIGHT ADJUSTMENT AND INSTALLATION OF REPLACEMENT PIEZOMETERS, ALL THE TEMPORARY DISCONNECTION SHALL BE RECONNECTED TO MATCH THE PRIOR CONDITION.
4. WATER LEVEL SHALL BE MONITORED AND INSTRUMENT ADJUSTED AND CALIBRATED TO MEET THE EXISTING OPERATING CONDITIONS. INSTRUMENT CALIBRATION SHALL BE PERFORMED PRIOR TO A CHECKOUT OF THE OPERATION OF THE SYSTEM.

JUNCTION BOX MODIFICATIONS:
1. EXISTING MULTIMEDIA CAP (MMC) SHALL NOT BE PENETRATED FOR THE PROPOSED MODIFICATION. THE CONTRACTOR SHALL USE ELECTRICAL CONDUIT FITTINGS SUCH AS 90/45 DEGREE ELBOWS TO AVOID PENETRATING INTO THE MMC. ONLY THOSE PIPE FITTINGS SHALL BE USED THAT DO NOT RESIST WIRE EXTENSION.
2. PRIOR TO JUNCTION BOX HEIGHT ADJUSTMENTS THE EXISTING CONNECTION SUCH AS ULTRASONIC SENSOR, ASSOCIATED CABLES AND CABLE HOLDER SHALL BE TEMPORARILY DISCONNECTED.
3. JUNCTION BOX 11 SHALL BE SHIFTED AS DETAILED ON THE DRAWING DDP EN1.06.01 TO AVOID CONFLICT WITH CURB
4. CABLES SHALL NOT BE CUT AND PATCHED. IF NEW CABLE IS REQUIRED, THE ENTIRE CABLE SHALL BE REPLACED TO ITS ENTIRETY. THERE ARE ADDITIONAL CABLES THAT NOT SHOWN ON THE DRAWINGS SUCH AS MULTI-PAIR OR SINGLE-PAIR (BELDON SHIELDED WIRE) FOR VAULT SECURITY SENSOR WHICH RUN FROM VAULT TO JUNCTION BOX. THE CONTRACTOR SHALL VERIFY THE EXISTING CABLE MAKE AND TYPE, AND SHALL REPLACE (IF REQUIRED) WITH THE SIMILAR KIND.
5. WHILE PULLING REPLACEMENT OR NEW CABLES CARE SHALL BE GIVEN NOT TO DAMAGE THE EXISTING/REMAINING WIRING SYSTEM.
6. AFTER MODIFICATION, ALL THE TEMPORARY DISCONNECTION SHALL BE RECONNECTED TO MATCH THE PRIOR CONDITION.

PROGRESS SET NOT FOR CONSTRUCTION

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
8/1/13
(REVISED 11/12/13)

key plan

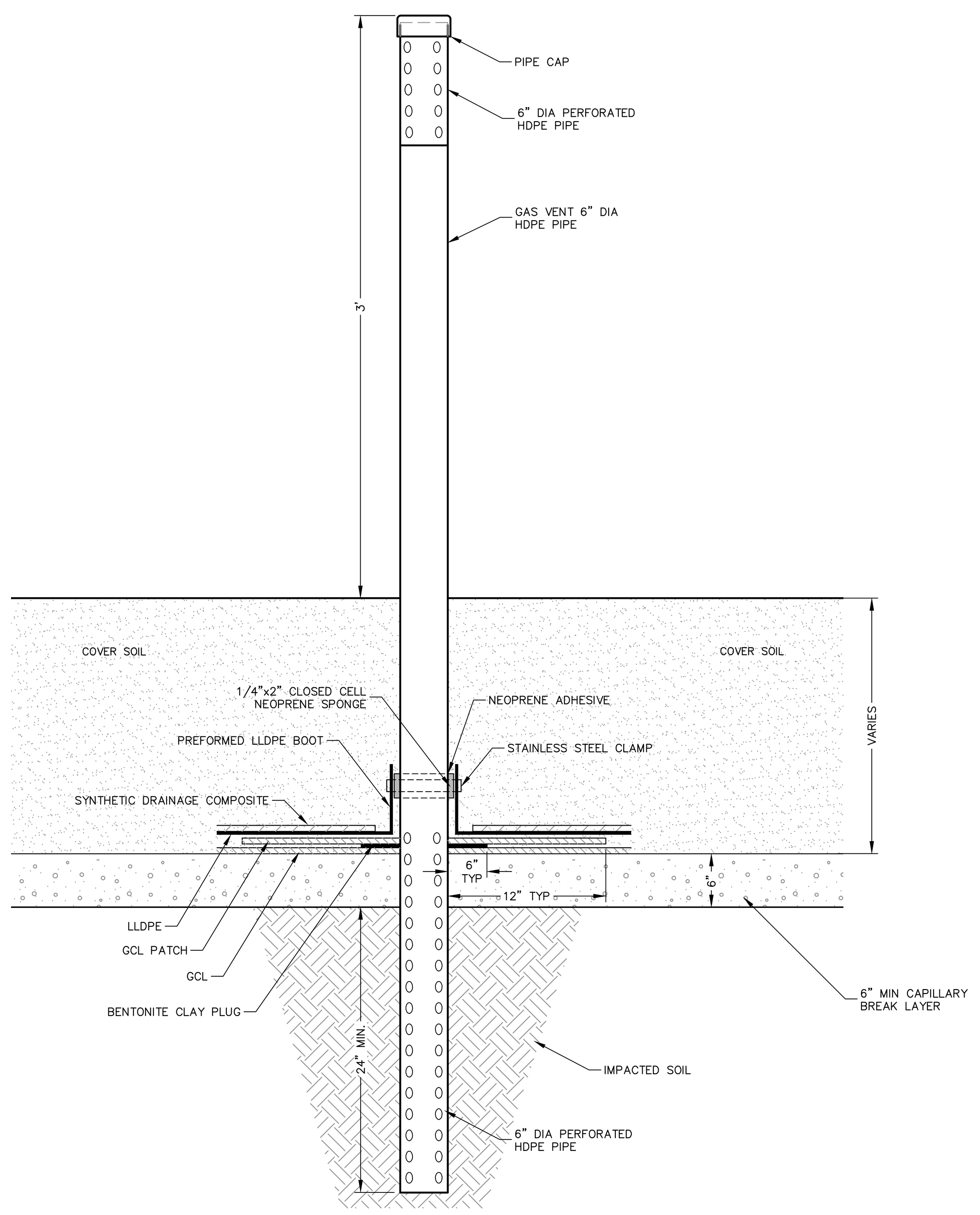
seal

issued	date	description

revision	date	description
1	11/8/2013	UPDATED NOTES

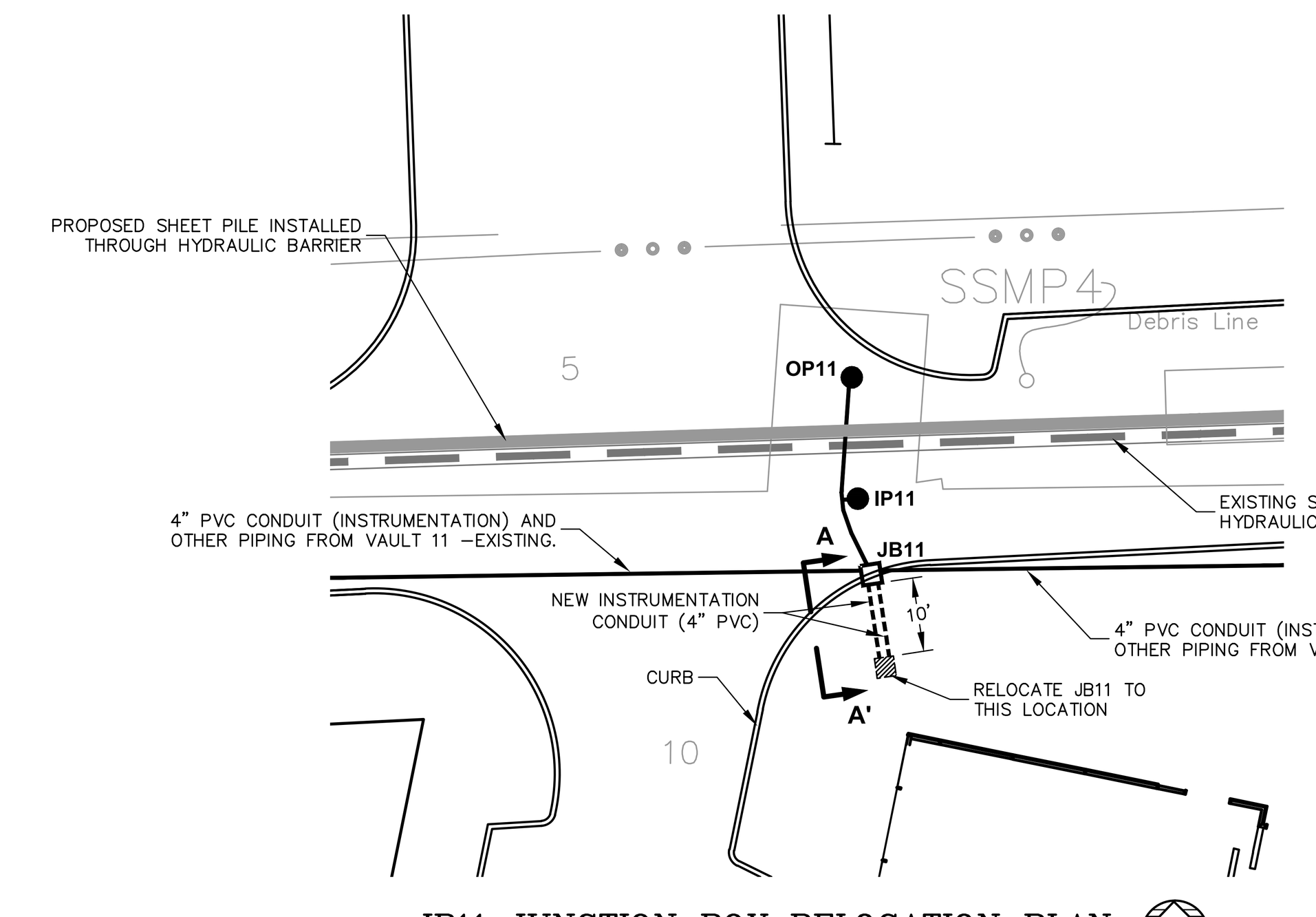
title
PIEZOMETER, JUNCTION BOX AND OTHER DETAILS (1 OF 2)

date: 8/1/13
drawn by: ERM
checked by: AK
scale: NOTED
project number: 0199768
scaled inch
sheet number
DDP EN1.06



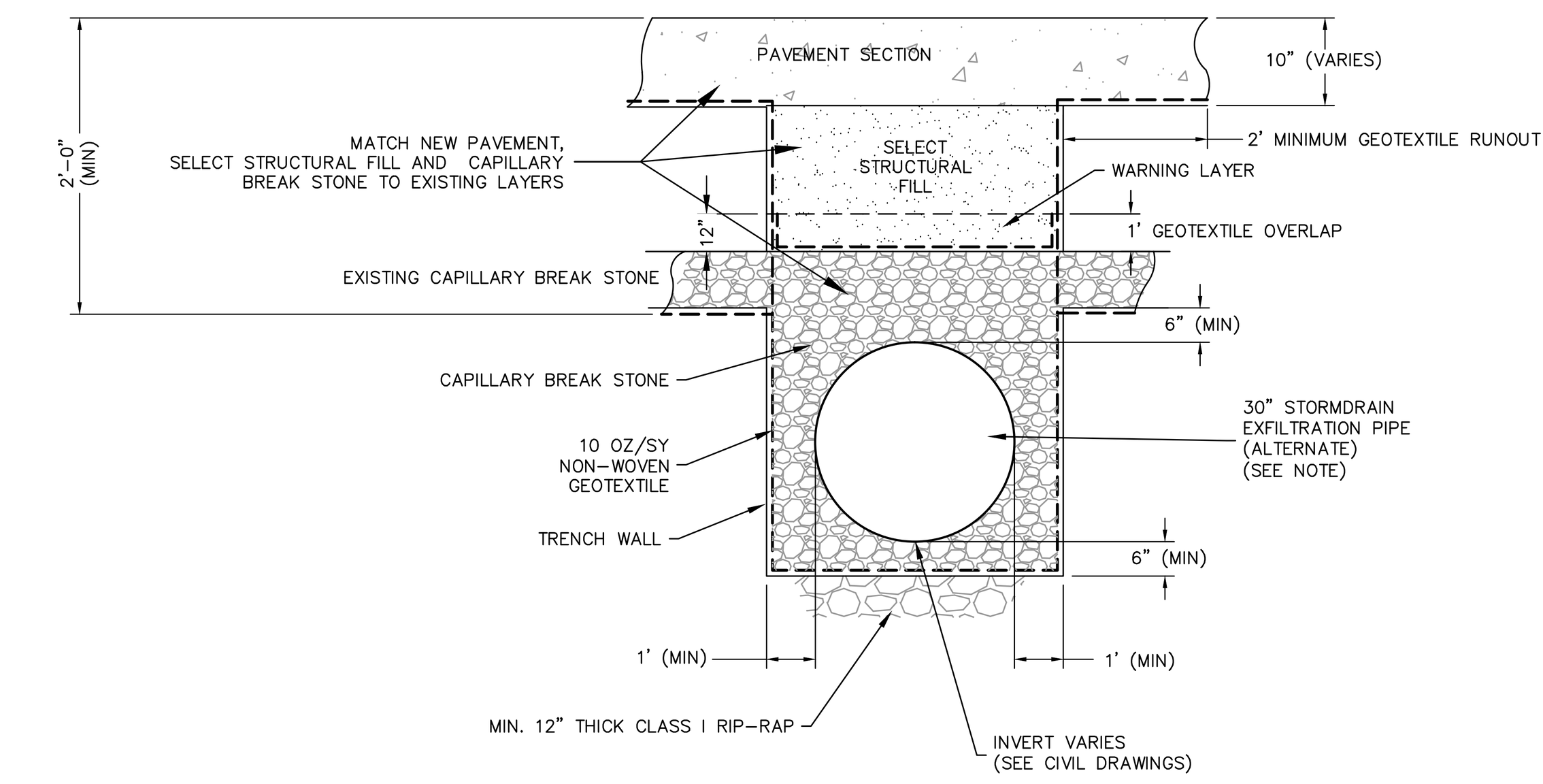
METHANE VENT SECTION

NOT TO SCALE



JB11 JUNCTION BOX RELOCATION PLAN

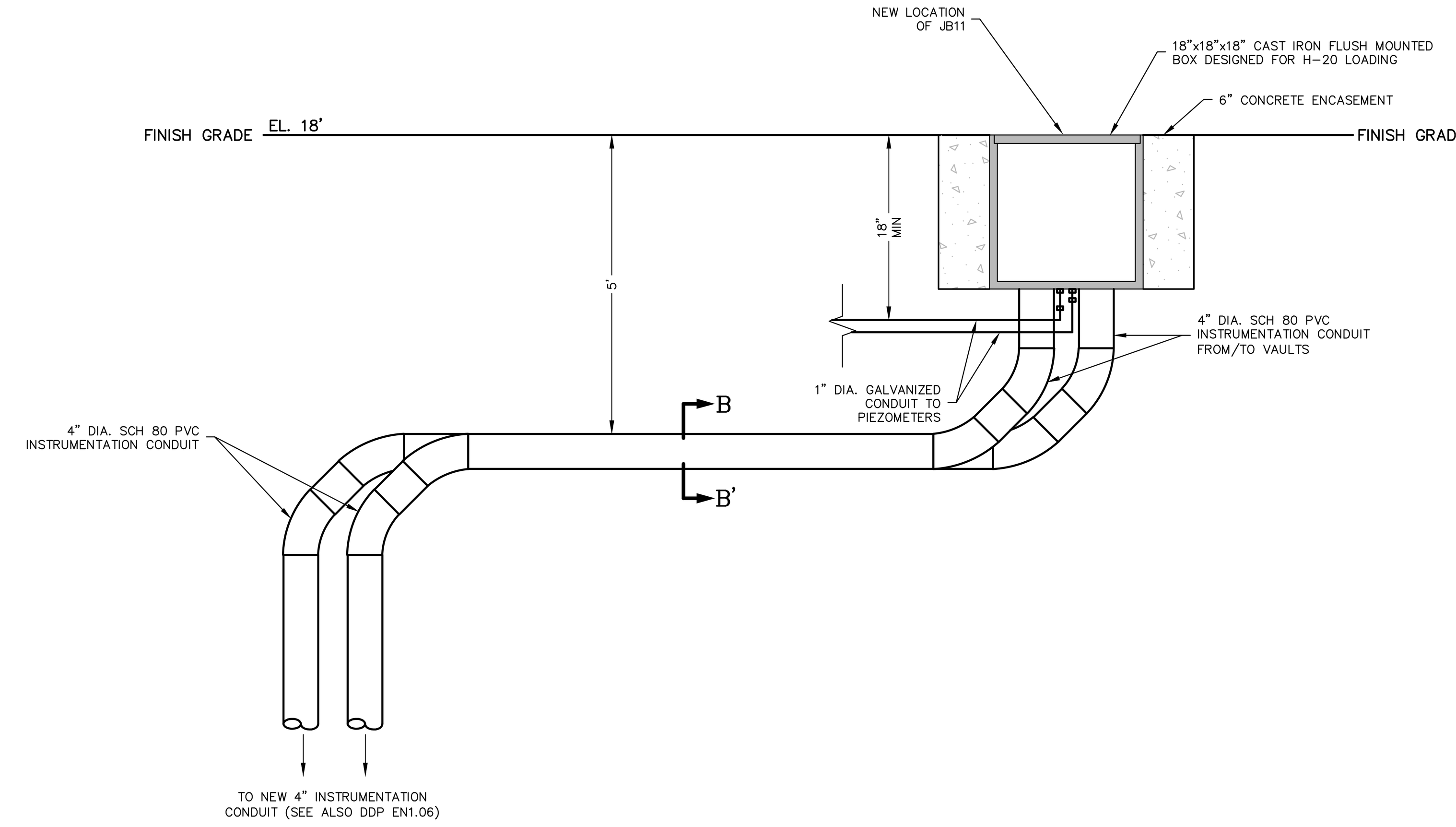
SCALE: 1"=20'



TYPICAL COVER RESTORATION OVER 30 INCH STORM DRAIN EXFILTRATION PIPE AREA 2 DETAIL

NOT TO SCALE

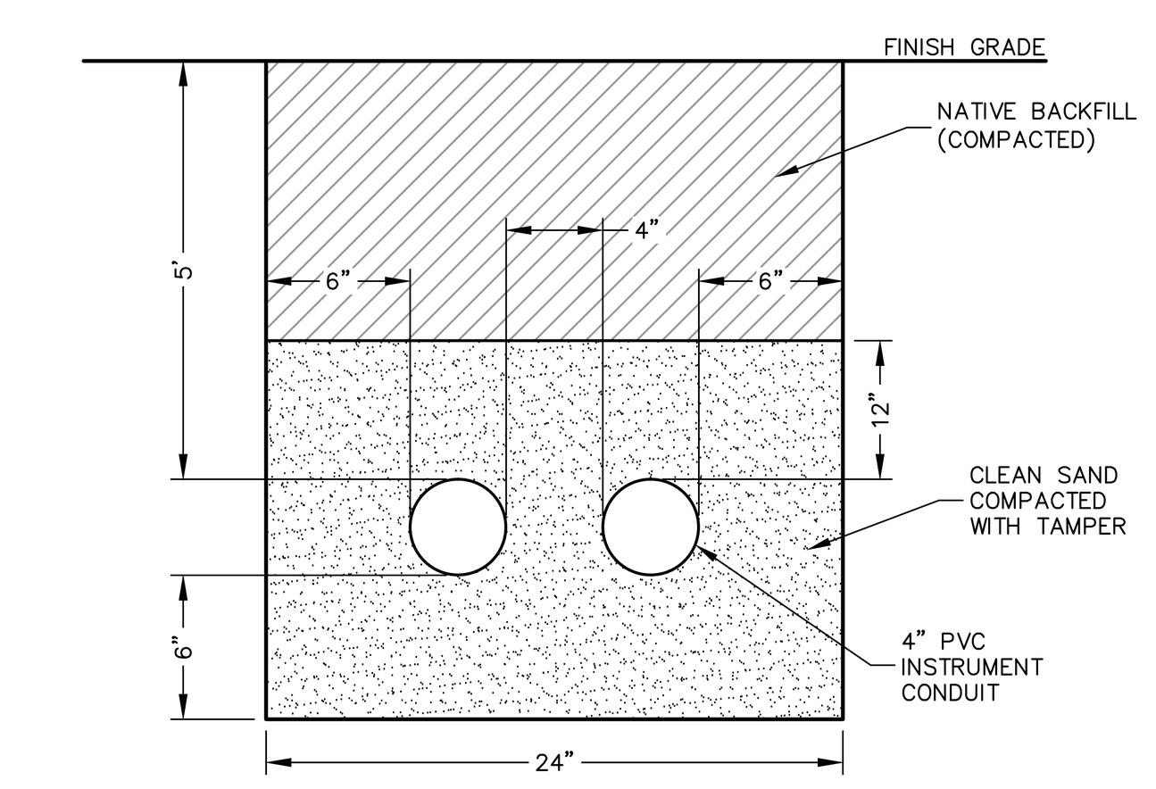
NOTES:
1. THE 30-INCH STORM DRAIN EXFILTRATION PIPE IS AN ALTERNATE AS PRESENTED DRAWING C5.10. THE PIPE IS PROPOSED JUST WITHIN THE LIMITS OF AREA 2 AND THEREFORE THE AREA 2 COVER SHALL BE RESTORED.
2. THE PAVEMENT, SELECT STRUCTURAL FILL AND CAPILLARY BREAK STONE LAYERS IN THE TRENCH SHALL MATCH THE EXISTING LAYERS. THE CAPILLARY BREAK STONE IN THE TRENCH SHALL EXTEND BELOW THE CAPILLARY BREAK ADJACENT TO THE TRENCH.



SECTION A-A' JB11 JUNCTION BOX RELOCATION

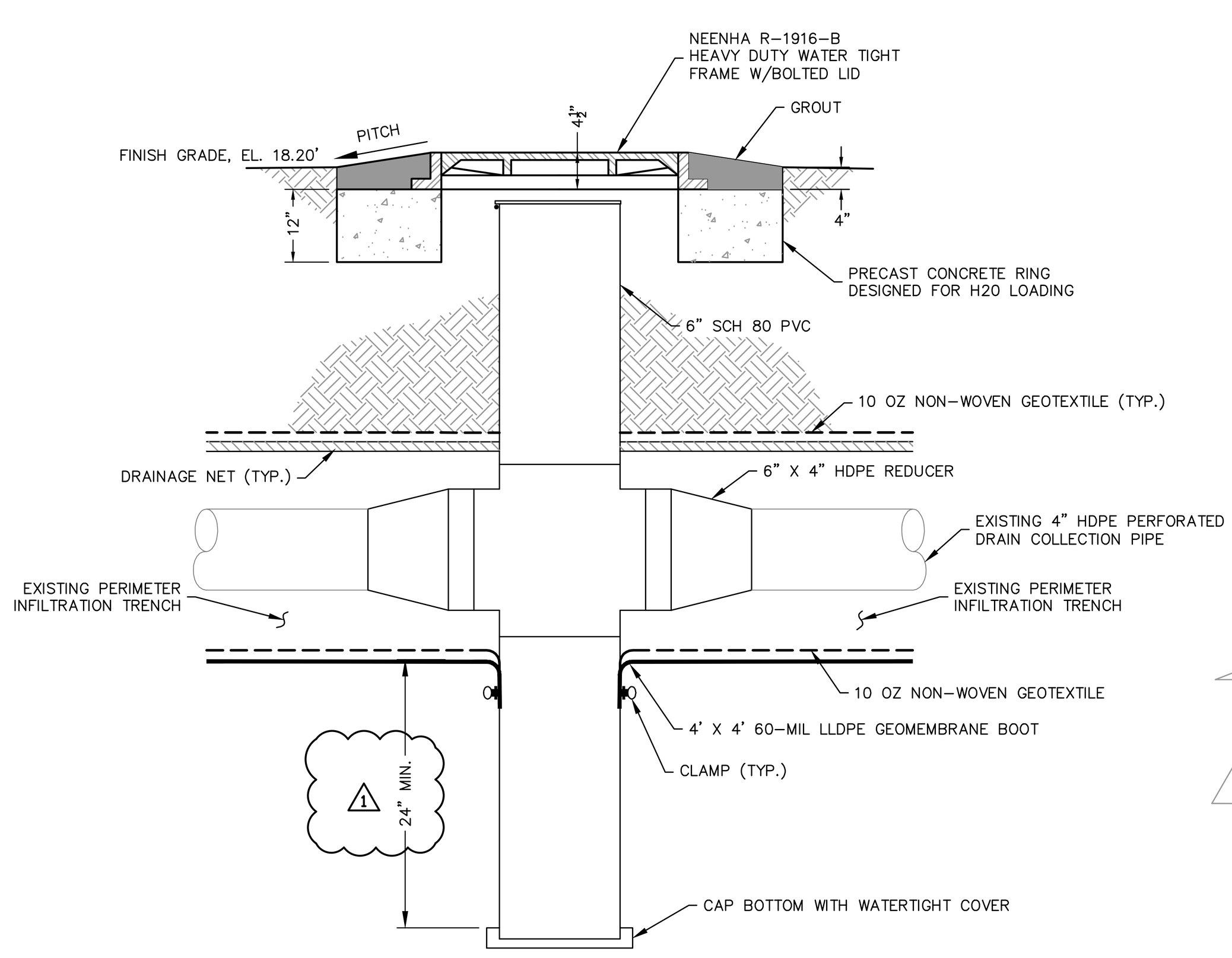
NOT TO SCALE

NOTES:
1. THE EXISTING GRADE ELEVATION AND DIMENSIONS SHALL BE FIELD VERIFIED.
2. THE FINAL ELEVATION SHALL CONFORM WITH FINAL GRADING PLAN AND SHALL BE ADJUSTED TO FIELD CONDITIONS.
3. THE LATERAL EXTENSION OF 4" PVC INSTRUMENTATION PIPE SHALL BE ABOVE MMC.



SECTION B-B' TRENCH DETAIL

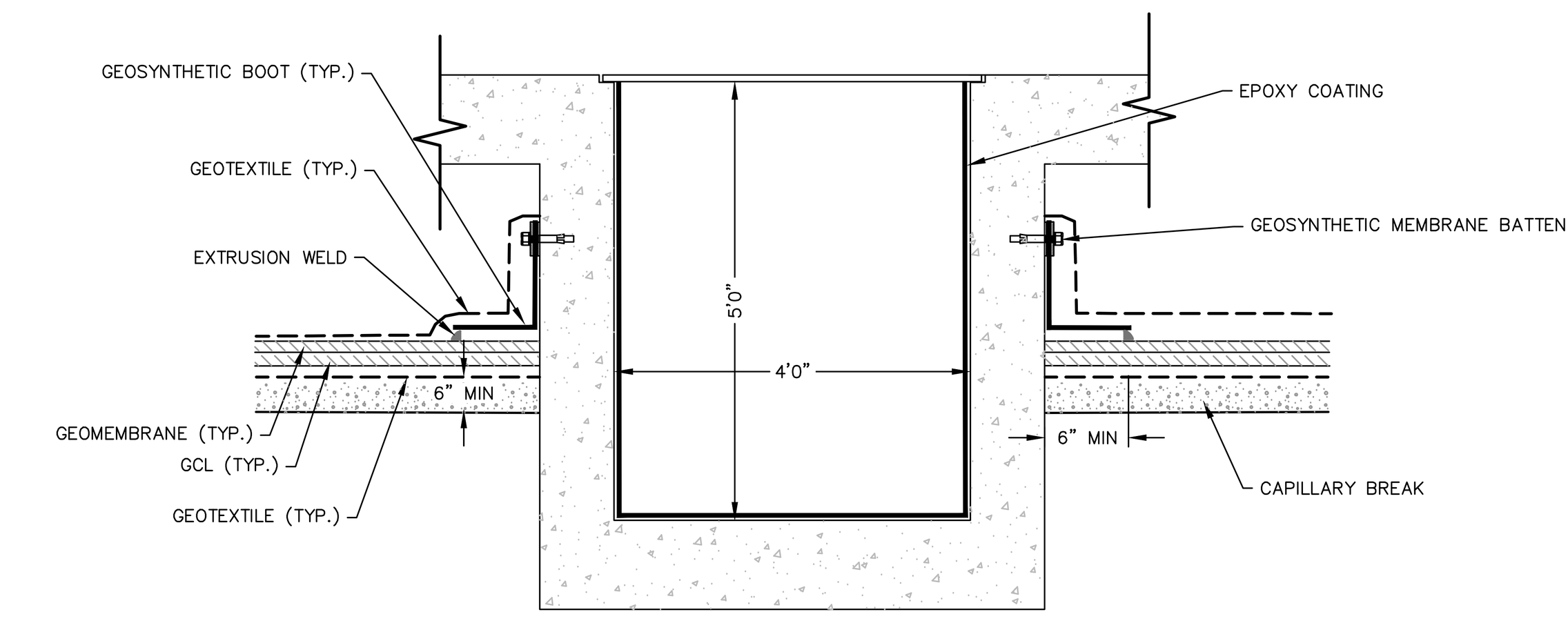
NOT TO SCALE



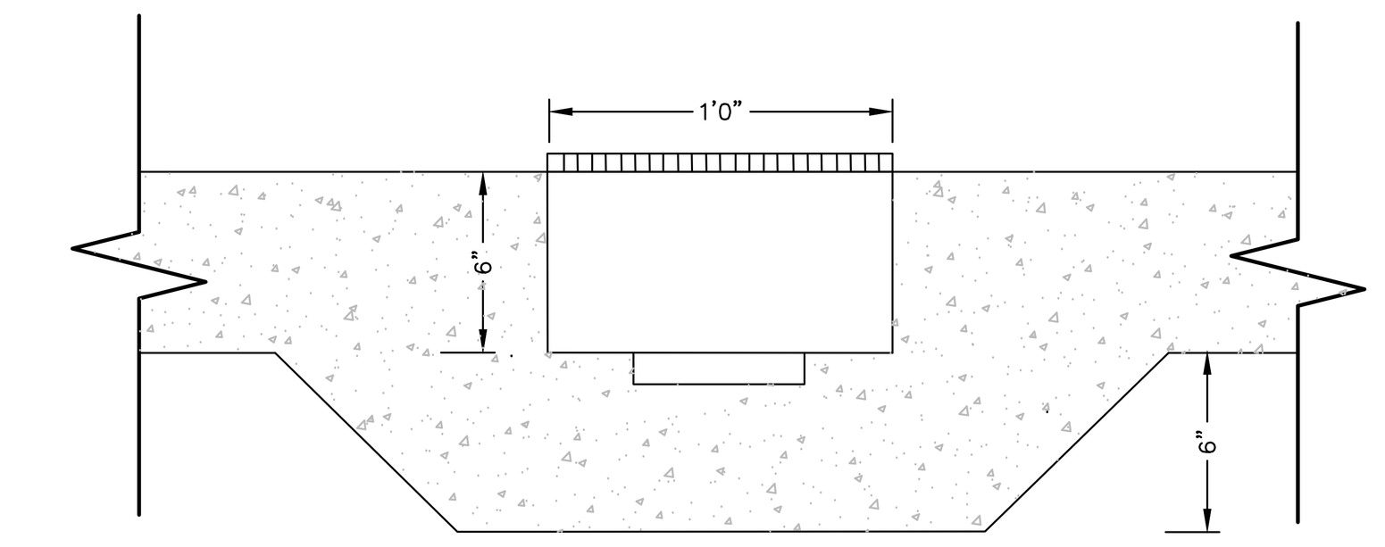
SSMP-4 AND SSMP-4A INSTALLATION DETAIL

NOT TO SCALE

NOTES:
1. NEW SAMPLING POINTS (SSMP-4 AND SSMP-4A) SHALL BE INSTALLED AT LOCATION SHOWN ON EN 1.01.



SUMP PIT

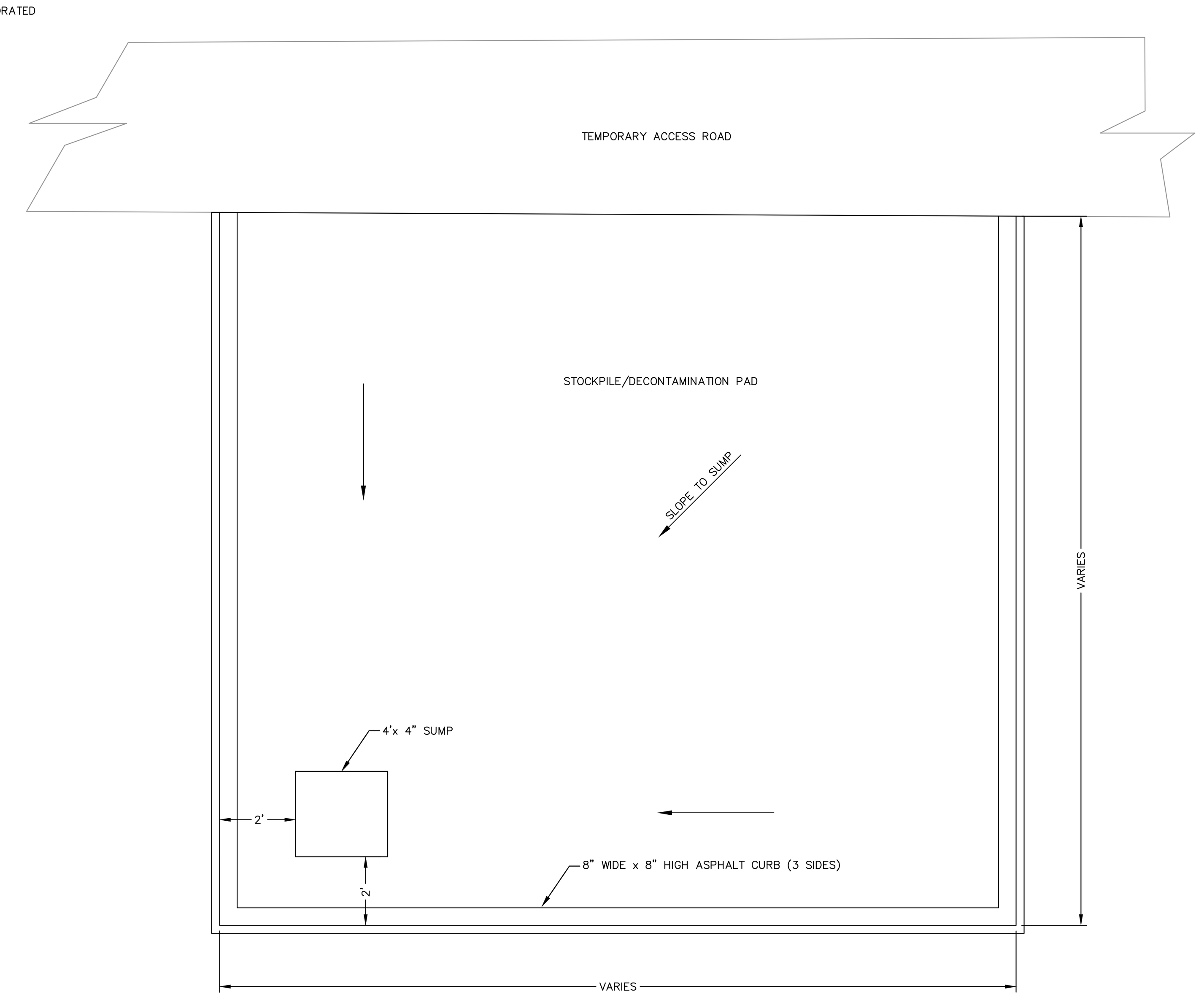


TRENCH DRAIN

SUMP PIT & TRENCH DRAIN DETAIL IN CENTRAL PLAZA

NOT TO SCALE

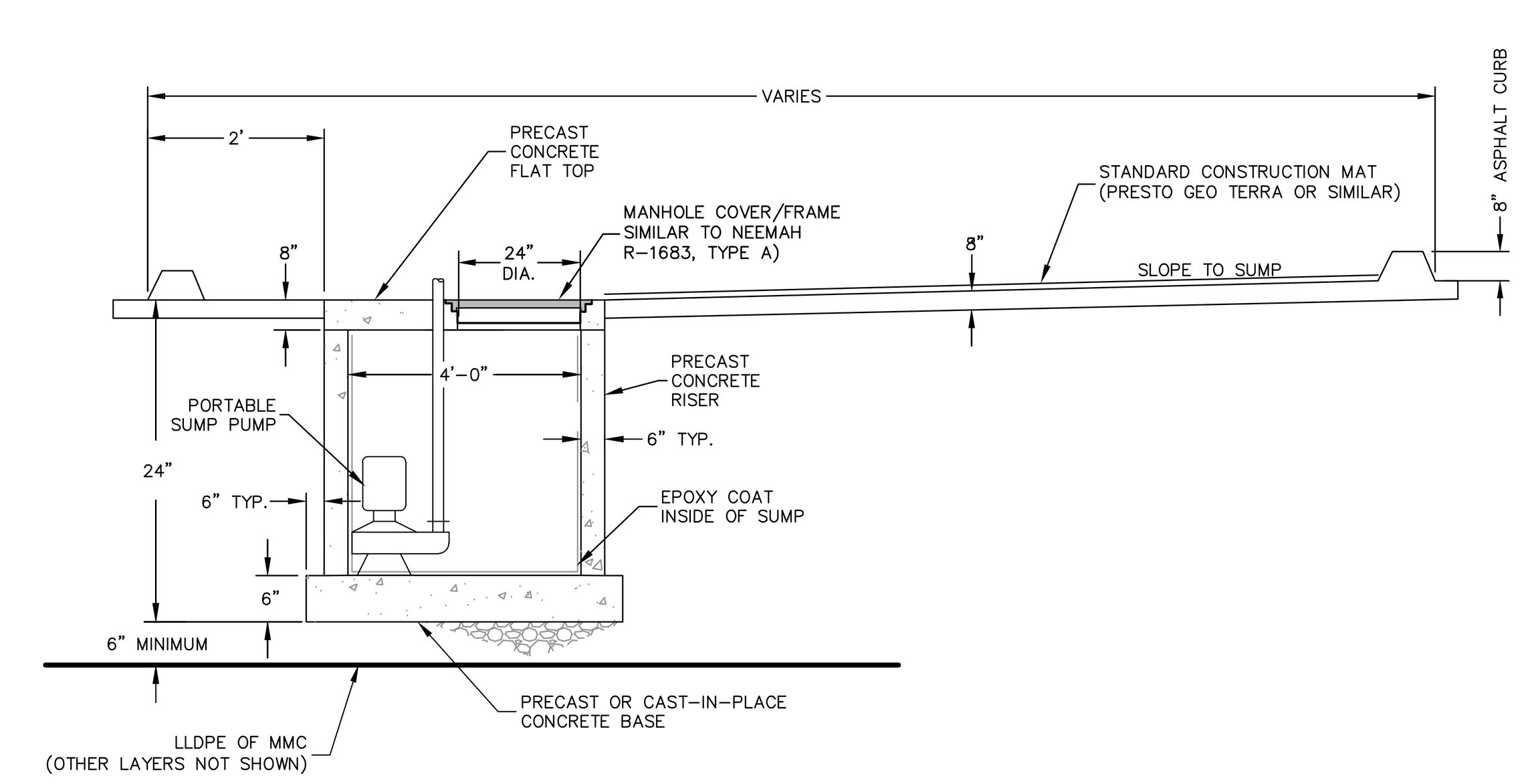
NOTES:
1. SEE DRAWING DDP A1.00.01 FOR LOCATION OF TRENCH DRAIN AND SUMP PIT.



STOCKPILE AND DECONTAMINATION PAD DETAIL

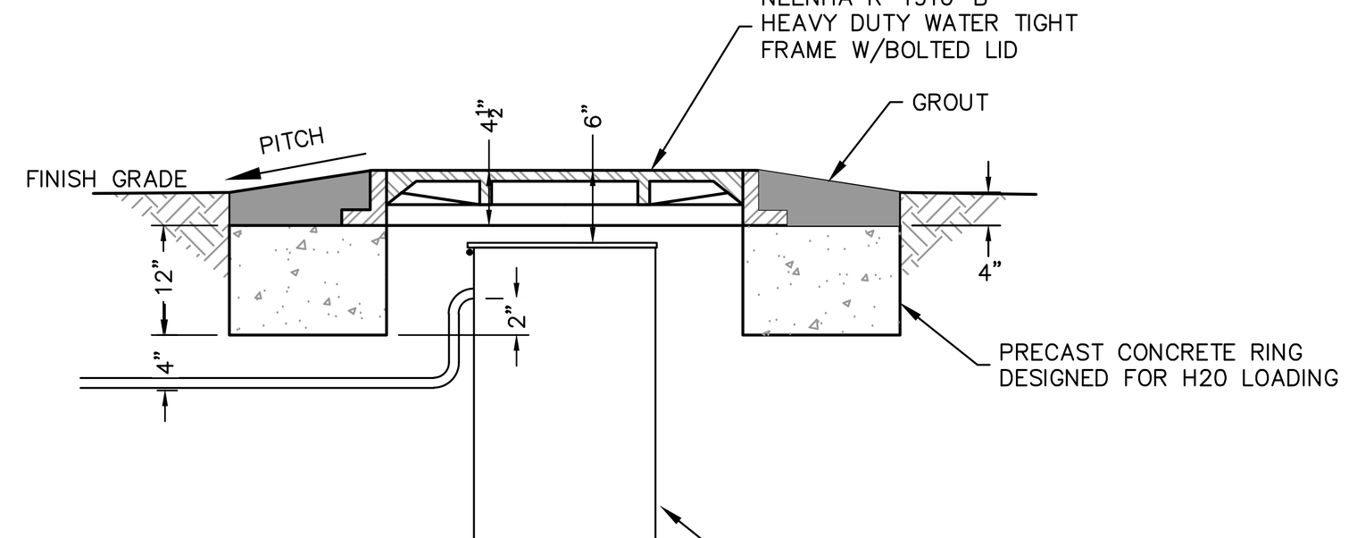
NOT TO SCALE

NOTES:
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE DECONTAMINATION PAD AND STOCKPILE AREA THROUGHOUT THE DURATION OF THE PROJECT AND FOR DEMOLITION AND DISPOSAL OF THE DECONTAMINATION PAD AND STOCKPILE AREA AT THE CONCLUSION OF THE PROJECT.
2. (Revision 1) THE CONTRACTOR SHALL PROVIDE A SUMP PUMP IN THE SUMP AND NECESSARY PIPING FOR DISCHARGE OF COLLECTED CONTAMINATION WATER INTO THE ON-SITE FRAC TANK, OR SIMILAR CONTAINMENT, AS APPROVED BY THE ENGINEER. THE COLLECTED CONTAMINATED WATER IN THE SUMP WILL BE TRANSFERRED INTO THE ON-SITE FRAC TANK, OR SIMILAR CONTAINMENT ON AN AS NEEDED BASIS.
3. SOIL STOCKPILE AREA WILL NOT HAVE CONSTRUCTION MAT.



TYPICAL SUMP DETAIL FOR TEMPORARY DECON/STOCKPILE PAD

NOT TO SCALE



SURFACE FINISHING OF PIEZOMETERS

NOT TO SCALE

NOTES:
1. FINISHING SHALL BE COORDINATED WITH GRADING WORK.
2. NEW PRECAST CONCRETE RING SHALL BE INSTALLED.
3. REMOVE AND STORE EXISTING MANHOLE COVER (NEENHA) FOR REUSE.

PROGRESS SET NOT FOR CONSTRUCTION

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project

EXELON BLDG & PLAZA GARAGE

HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
8/1/13
(REVISED 11/12/13)

key plan

seal

issued	date	description

revision	date	description
1	11/4/2013	REVISED DEPTH OF 6" PVC BELOW GEOMEMBRANE TO 24", UPDATED NOTES

title

PIEZOMETER, JUNCTION BOX AND OTHER DETAILS (2 OF 2)

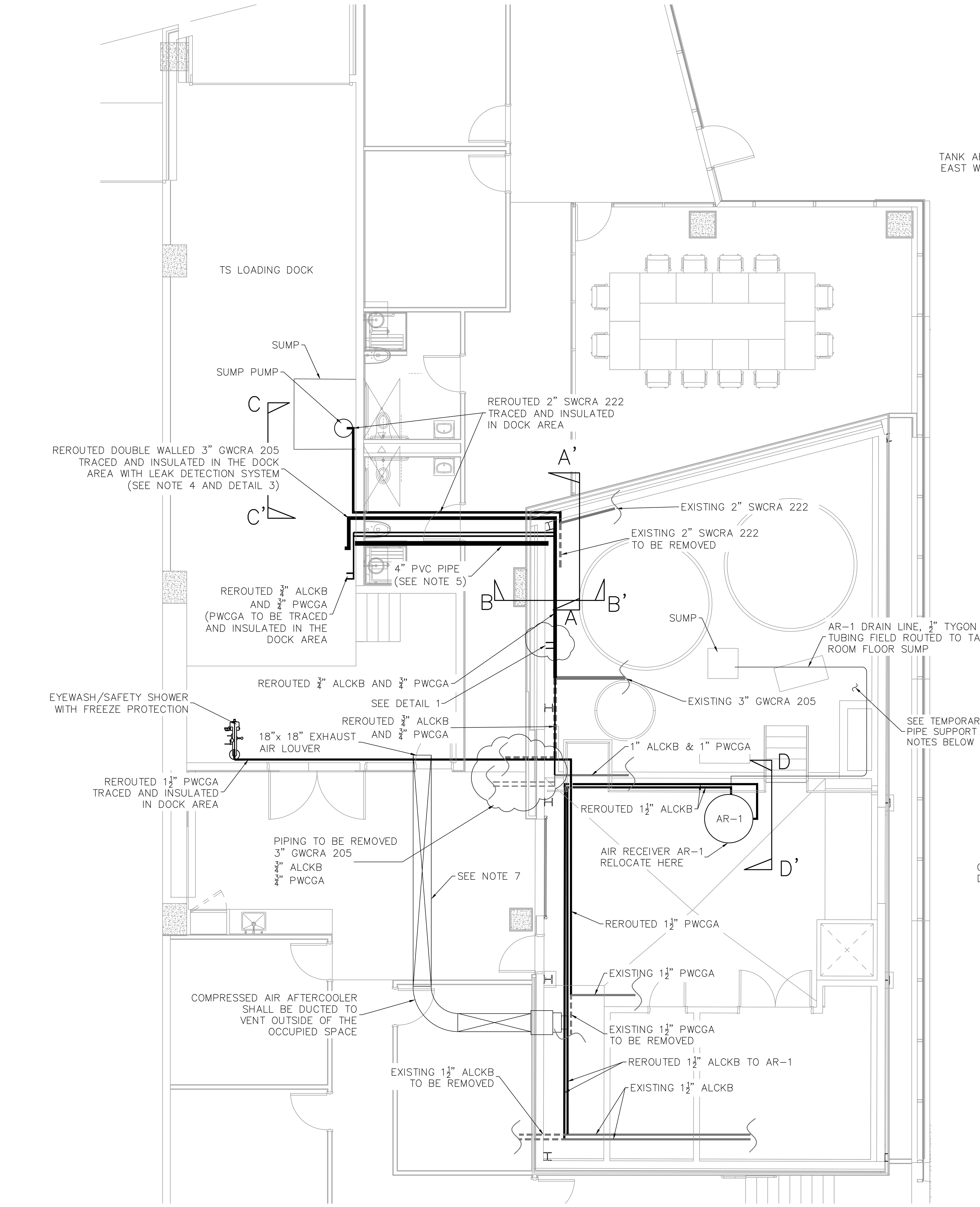
date:	8/1/13
drawn by:	ERM
checked by:	AK
scale:	NOTED
project number:	0199768

scaled inch

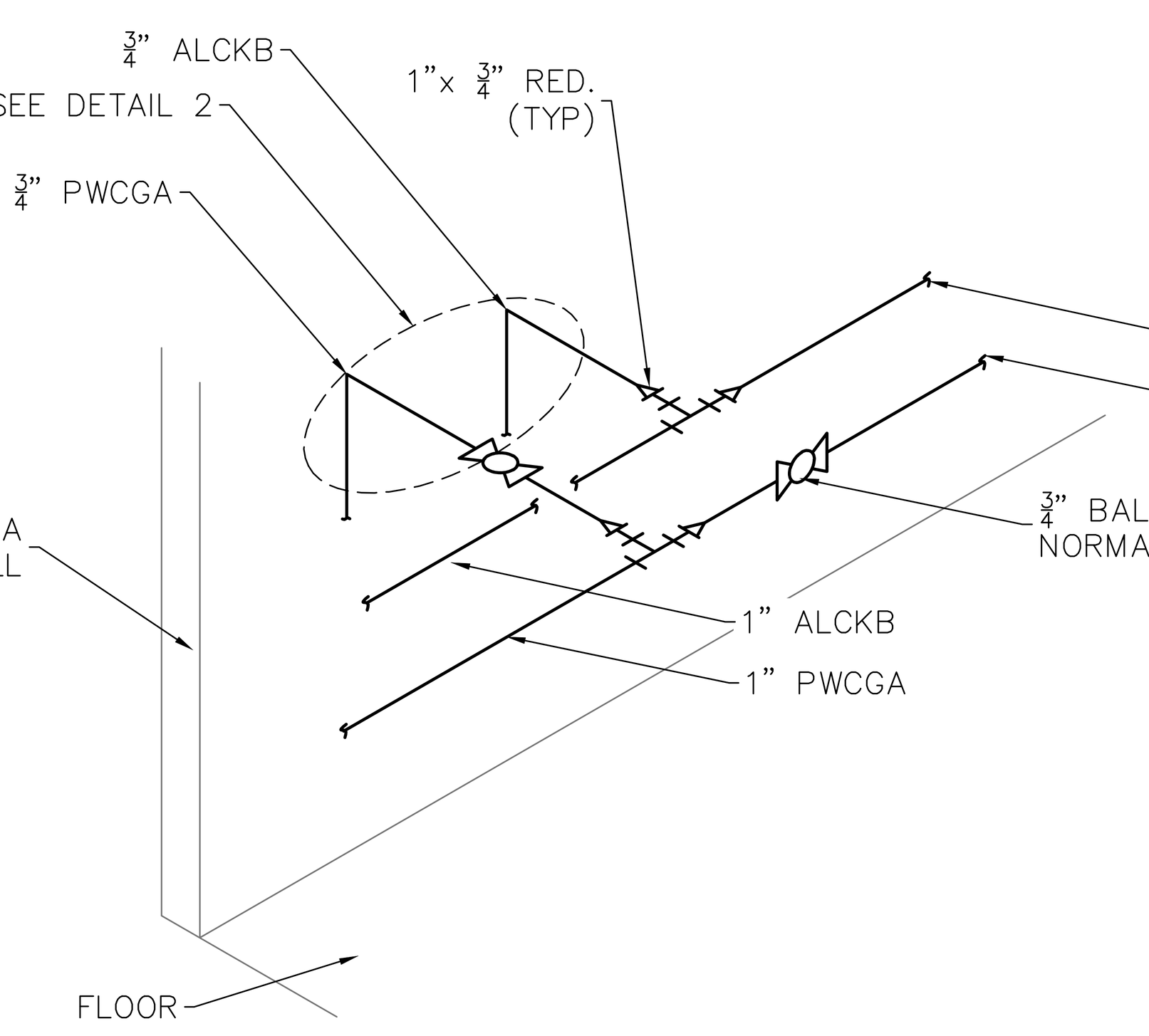
sheet number

DDP EN1.06.01

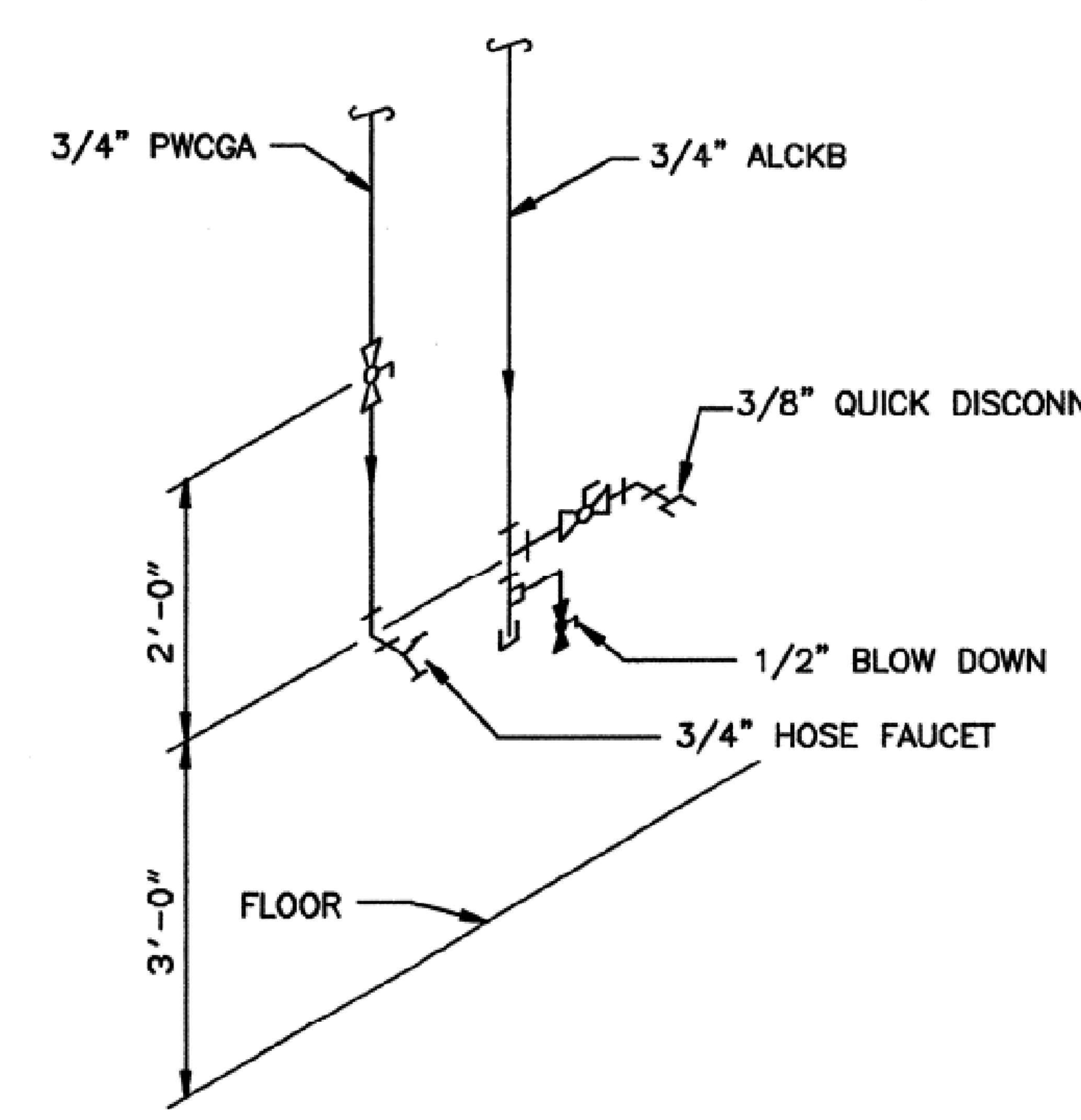
0199768-01/MISC DETAILS



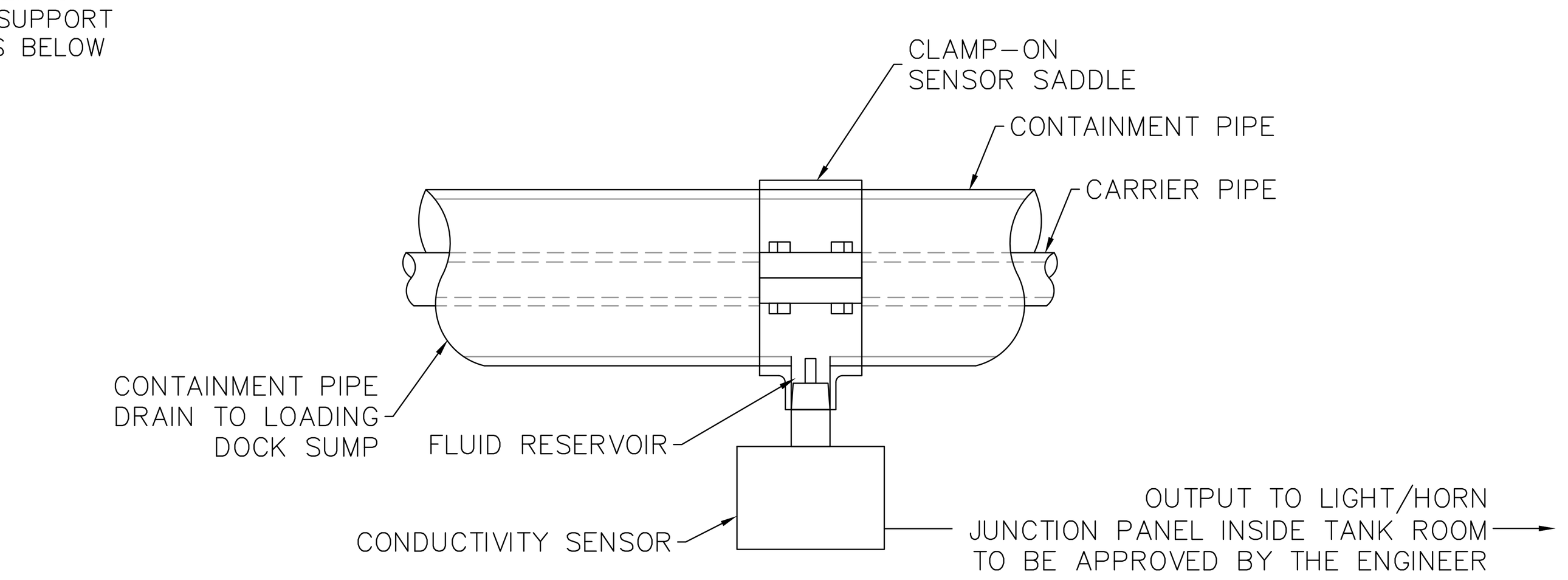
TANK AREA PIPING REROUTE PLAN VIEW
SCALE: 1/4" = 1'-0" ⚠1



DETAIL 1 – AIR AND WATER LINE CONNECTION
NOT TO SCALE

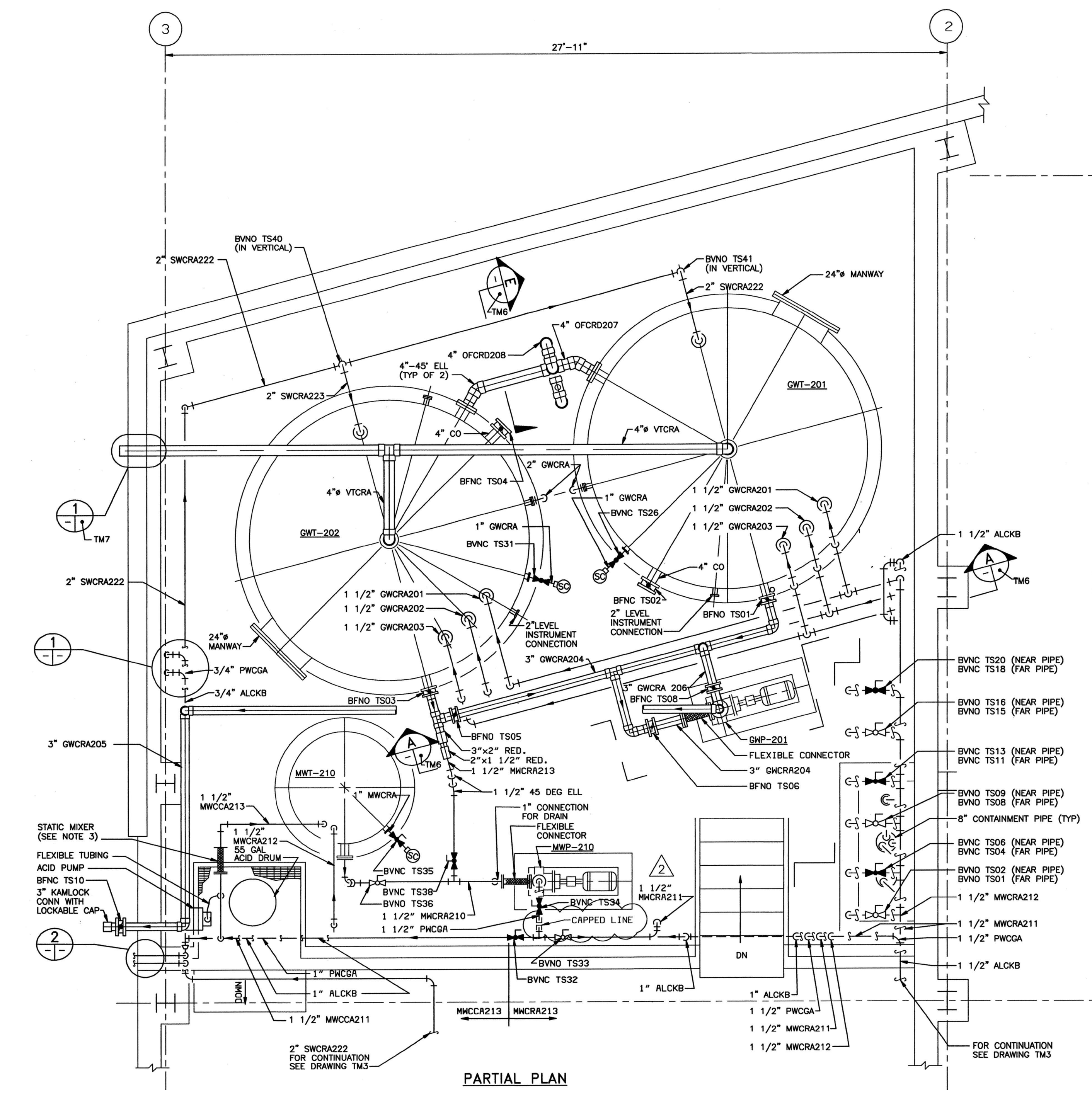


DETAIL 2 – EXISTING LINE AND CONNECTION
NOT TO SCALE



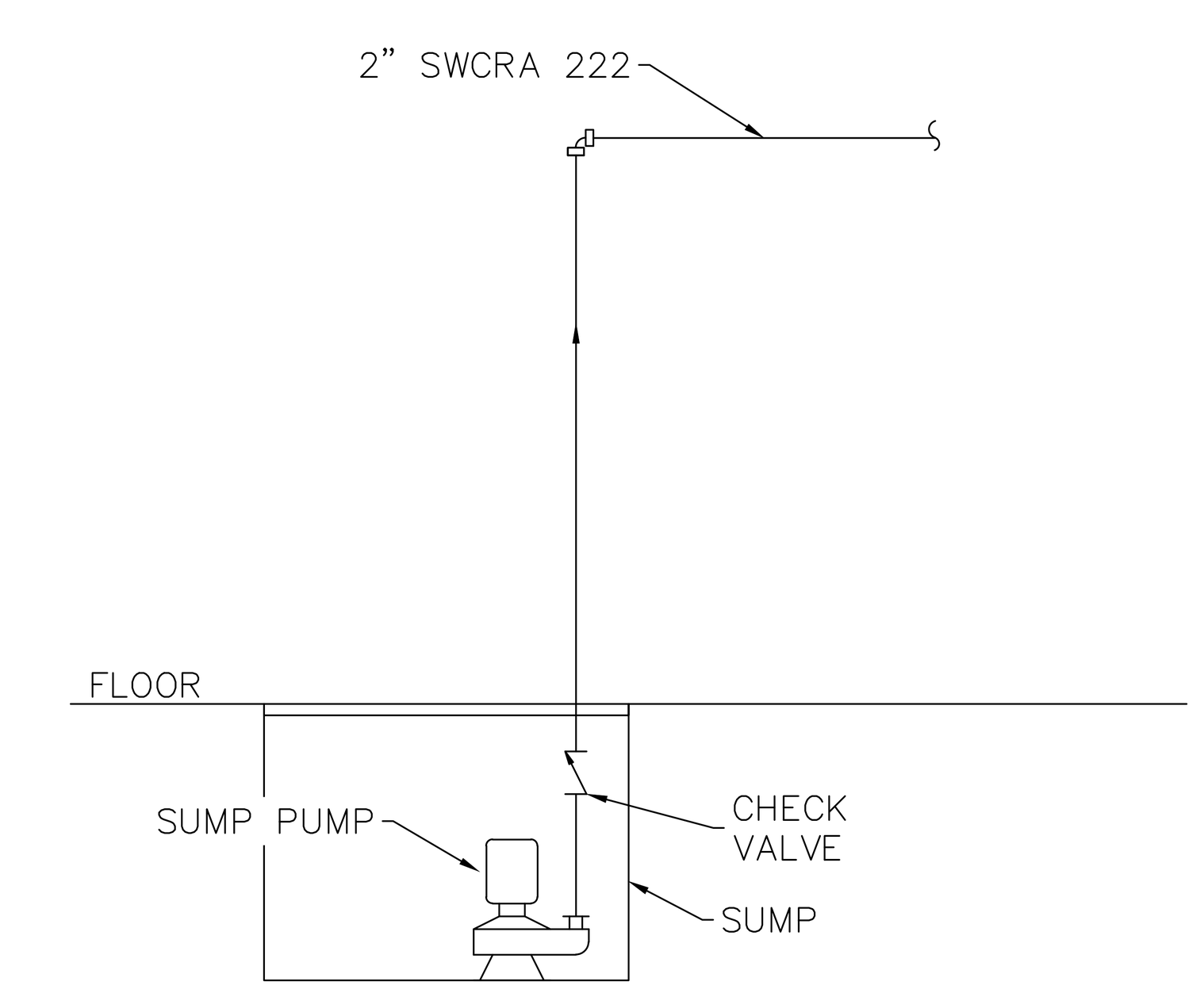
NOTES:
1. LEAK DETECTION PANEL (SENTRY LEAK DETECTION MANUFACTURED BY SPEC-TECH INDUSTRIAL ELECTRIC OR EQUIVALENT) SHALL BE MOUNTED INSIDE THE TANK ROOM BY THE CONTRACTOR IN A LOCATION APPROVED BY THE ENGINEER. POWER TO THE PANEL SHALL BE PROVIDED BY THE CONTRACTOR.

DETAIL 3 – LEAK DETECTION DETAIL
NOT TO SCALE



EXISTING TANK AREA DETAILED PLAN VIEW
NOT TO SCALE

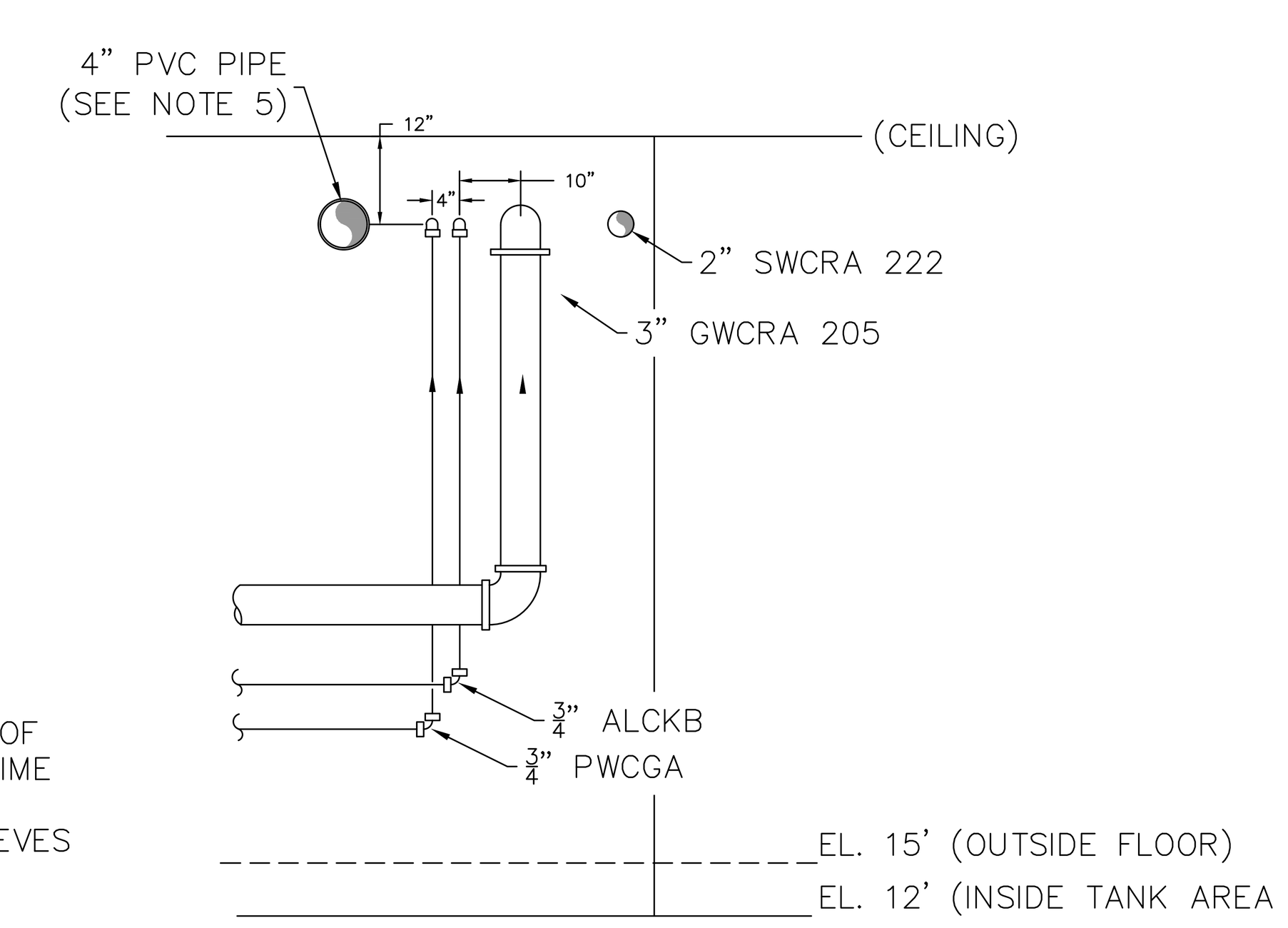
NOTES:
THE SECTIONS AND CALL OUTS IN THIS PLAN ARE NOT SHOWN IN THIS DRAWING SET. THEY ARE ASSOCIATED WITH AS-BUILT PLANS FOR STATION (SUBPROJECT #6) DRAWINGS DATED 05/30/2000



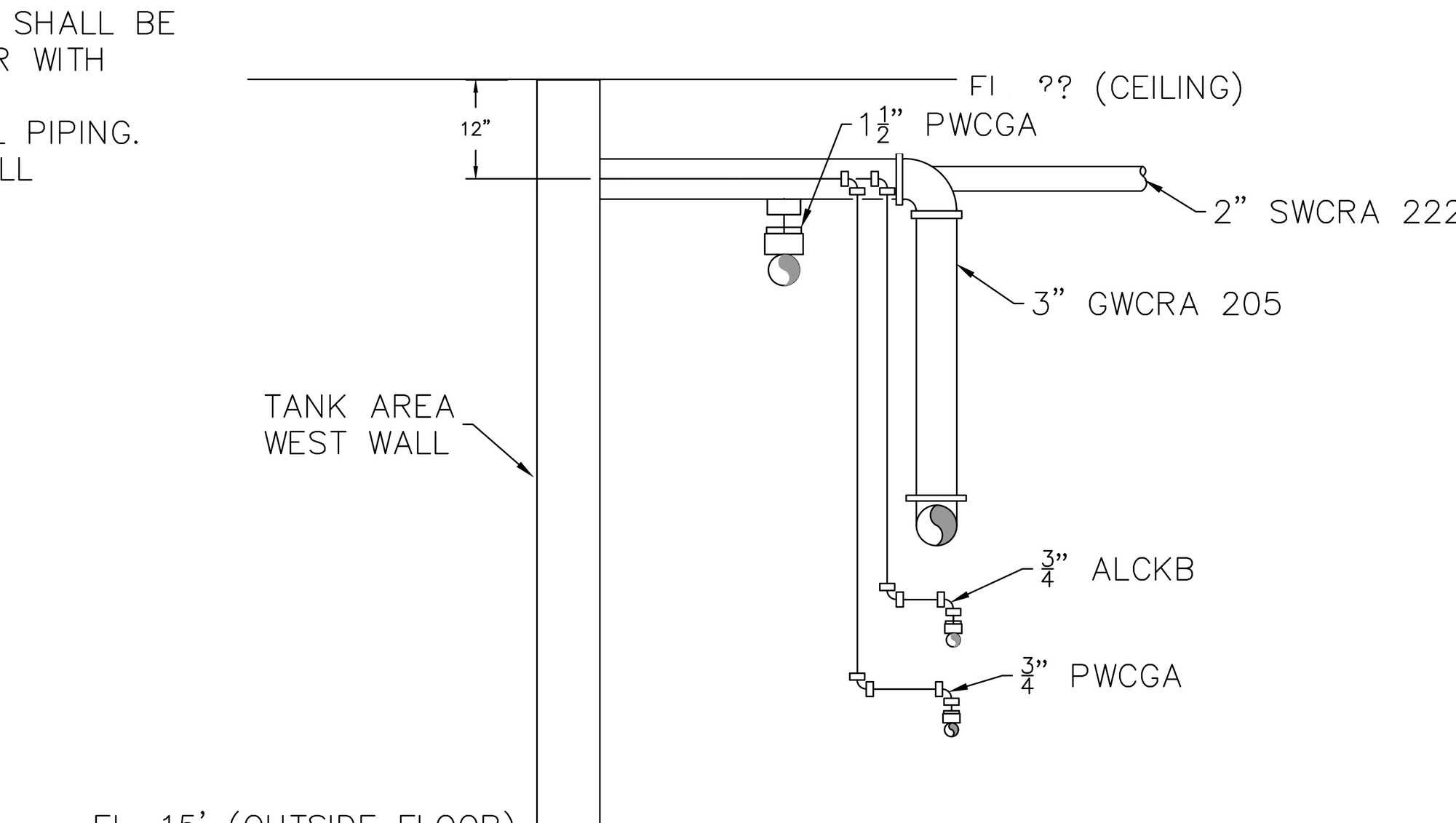
NOTES:
1. REFER TO DDP-F1.20 FOR SUMP SIZE
2. THE EXISTING SUBMERSIBLE SUMP PUMP (2-INCH DISCHARGE,0.5HP/280 VOLTS/3PHASE/60 HZ/3,500 RPM) SHALL BE RELOCATED TO THE NEW SUMP AREA.

SECTION C–C'
NOT TO SCALE

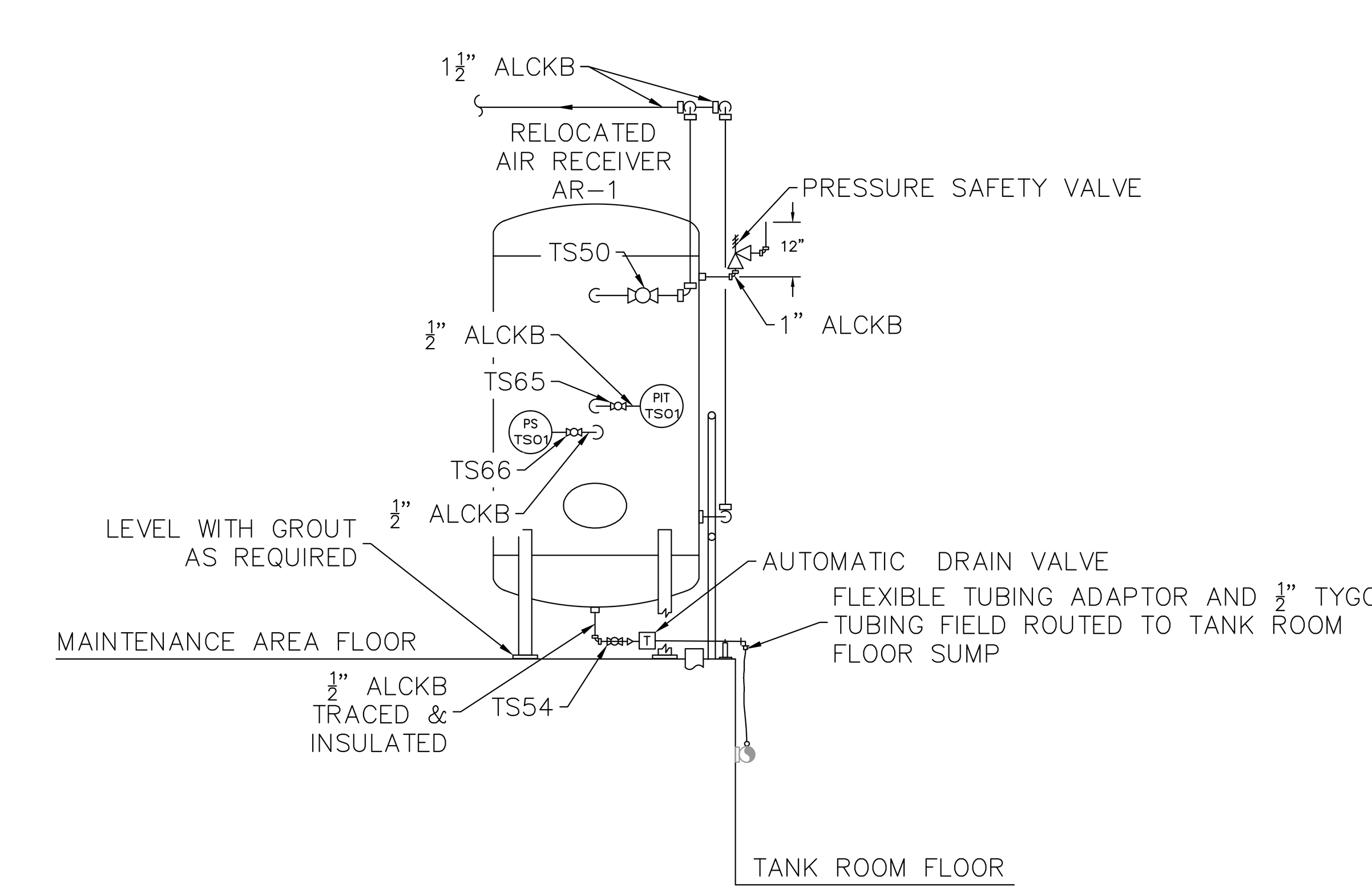
PROGRESS SET NOT FOR CONSTRUCTION



SECTION A–A'
NOT TO SCALE



SECTION B–B'
NOT TO SCALE



SECTION D–D'
NOT TO SCALE

LEGEND:
PWCGA = PROCESS WATER PIPE, ABOVE GRADE, GALVANIZED, 120 PSIG WORKING PRESSURE

ALCKB = COMPRESSED AIR PIPE, ABOVE GRADE, COPPER, 150 PSIG WORKING PRESSURE

GWCRA 205 = GROUNDWATER PIPE, ABOVE GRADE, RIGID PVC, 120 PSIG WORKING PRESSURE (PIPE IDENTIFICATION NO. 205)

VTCRA = VENT PIPE, ABOVE GRADE, RIGID PVC, 120 PSIG WORKING PRESSURE

SWCRA 222 = SUMP WATER PIPE, ABOVE GRADE, RIGID PVC, 120 PSIG WORKING PRESSURE (PIPE IDENTIFICATION NO. 222)

BALL VALVE

NOTES:
1. ANY DOWNTIME OF THE TS AND HMS OPERATION DUE TO PROPOSED MODIFICATION SHALL BE COORDINATED WITH HONEYWELL.
2. THE EXISTING CONDITION OF TANK AREA, PIPING, PUMPS AND OTHER FEATURES SHALL BE FIELD VERIFIED.
3. ONLY THOSE PIPING ARE SHOWN THAT REQUIRES REROUTING INCLUDING RELOCATION OF AIR RECEIVER (AR-1)
4. RELOCATED GROUNDWATER PIPE, GWCRA 205, SHALL BE DOUBLE CONTAINED WHERE IT PASSES THROUGH THE OCCUPIED SPACE. LEAK DETECTION SHALL BE PROVIDED AT THE LOW POINT IN THE TRANSFER STATION LOADING DOCK. SPEARS PVC DOUBLE CONTAINMENT PIPING SYSTEM, OR APPROVED EQUAL SHALL BE USED. THE PIPE SHALL BE SLOPED DOWN AT 1/8" PER FOOT TOWARDS THE LOADING DOCK SUCH THAT ANY LEAKED GROUNDWATER IN THE CONTAINMENT PIPE IS DRAINED INTO THE LOADING DOCK SUMP. SEE DETAIL 3 FOR LEAK DETECTION SYSTEM DETAIL.
5. 4-INCH PVC PIPING SHALL BE INSTALLED WITH THREADED CAPS ON BOTH SIDES TO PROVIDE ACCESS ROUTE FOR 2 INCH HOSE FOR PERIODIC TANK CLEANING.
6. FOR TANK VENT REROUTING SEE MEP DRAWINGS.
7. AFTER-COOLER SHALL BE DUCTED TO VENT OUTSIDE ALONG WITH TANK VENT. THE ROUTING AND LOCATION SHALL BE COORDINATED WITH MEP AND SHALL NOT OBSTRUCT PASSAGE OF LARGE EQUIPMENTS IN AND OUT OF THE MAINTENANCE ROOM.
⚠1 8. ALL ABANDONED PENETRATIONS THROUGH THE WALL SHALL BE SEALED.
9. PVC PIPE, FITTINGS, AND INSTALLATION SHALL CONFIRM TO ASTM D-1785, ASTM D-2564 AND ASTM D-2855
10. ALL PIPE FITTINGS AND CONNECTIONS SHALL BE LEAK TESTED PRIOR TO CONNECTING TO THE HMS SYSTEM.
11. NEWLY ASSEMBLED JOINTS SHALL BE SUITABLY BLOCKED OR RESTRAINED TO PREVENT MOVEMENT DURING THE SET TIME RECOMMENDED BY THE MANUFACTURER. PRESSURE TESTING OF SOLVENT WELDED PIPING SYSTEM SHALL NOT BE PERFORMED UNTIL THE APPLICABLE CURING TIME HAS ELAPSED IN ACCORDANCE WITH ASTM D2855.
12. PIPE PASSING THROUGH CONCRETE OR MASONRY SHALL BE INSTALLED THROUGH PIPE SLEEVES INSTALLED BEFORE THE CONCRETE IS PLACED. IN LOCATIONS WHERE PIPES PASS THROUGH FLOORS, PIPE SLEEVES SHALL PROJECT NOT LESS THAN ONE INCH NOR MORE THAN 2 INCHES ABOVE THE FLOOR SURFACE, WITH THE PROJECTION UNIFORM IN EACH FLOOR AREA. IN CASE OF INSULATED PIPES, THE INSULATION SHALL EXTEND THROUGH PIPE SLEEVES.
13. UNLESS OTHERWISE INDICATED ON THE DRAWINGS, ALL PIPES PASSING THROUGH WALLS OR SLABS WHICH HAVE ONE SIDE IN CONTACT WITH EARTH OR EXPOSED TO THE WEATHER SHALL BE SEALED WATERTIGHT WITH SPECIAL RUBBER GASKET SLEEVE AND JOINT ASSEMBLIES, OR WITH SLEEVES AND MODULAR RUBBER SEALING ELEMENTS.
14. PROVISIONS SHALL BE TAKEN TO PROVIDE FOR EXPANSION AS NECESSARY FOR ALL PIPING.
15. ALL PIPING CONCEALED IN WALLS, ETC., SHALL BE TESTED PRIOR TO ENCLOSING. ALL UNDERGROUND PIPING SHALL BE TESTED PRIOR TO BACKFILLING.

TEMPORARY PIPE SUPPORT NOTES:

1. CURRENTLY GROUNDWATER AND OTHER PIPING INCLUDING INSTRUMENTATION BOX ARE SUPPORTED BY METAL FRAME ON THE CINDER BLOCK WALL EAST OF TANK ROOM.
2. PRIOR TO DEMOLITION AND PILE DRIVING IN THE VICINITY OF THE TANK ROOM, ALL PIPING, INSTRUMENTATION BOXES AND OTHER FEATURES THAT ARE SUPPORTED ON THE EASTERN WALL SHALL BE DETACHED AND TEMPORARILY SUPPORTED ON A FRAME STRUCTURE GROUNDED ON THE FLOOR.
3. CONTRACTOR SHALL INSPECT THE AREA TO IDENTIFY THE REQUIRED SUPPORT AND SHALL PROVIDE DESIGN OF THE TEMPORARY SUPPORT SYSTEM TO THE ENGINEER FOR APPROVAL.
⚠1 4. AFTER COMPLETION OF DEMOLITION AND PILE INSTALLATION WORK IN THE VICINITY OF THE TANK ROOM, ALL TEMPORARILY SUPPORTED FEATURES SHALL BE RELOCATED BACK PERMANENTLY TO THE PRE-CONSTRUCTION LOCATION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ANY DAMAGE OF THE PIPING AND OTHER ITEMS DURING TEMPORARY RELOCATION.

0199768-05/PIPING REROUTING

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EXELON BLDG & PLAZA GARAGE

HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
8/1/13
(REVISED 11/12/13)

key plan

seal

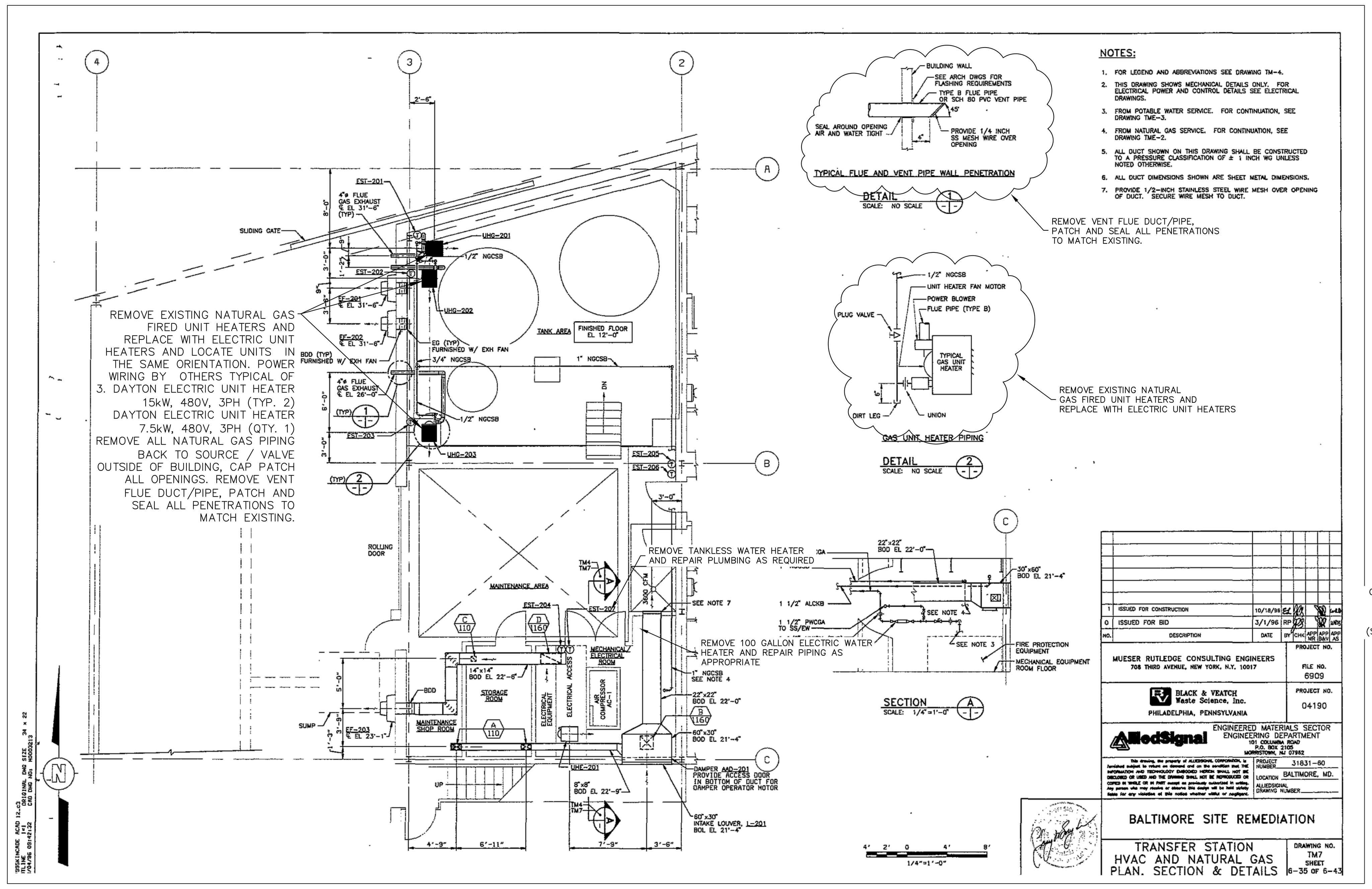
issued	date	description

revision	date	description
⚠1	11/11/2013	REVISED SCALE, UPDATED NOTES

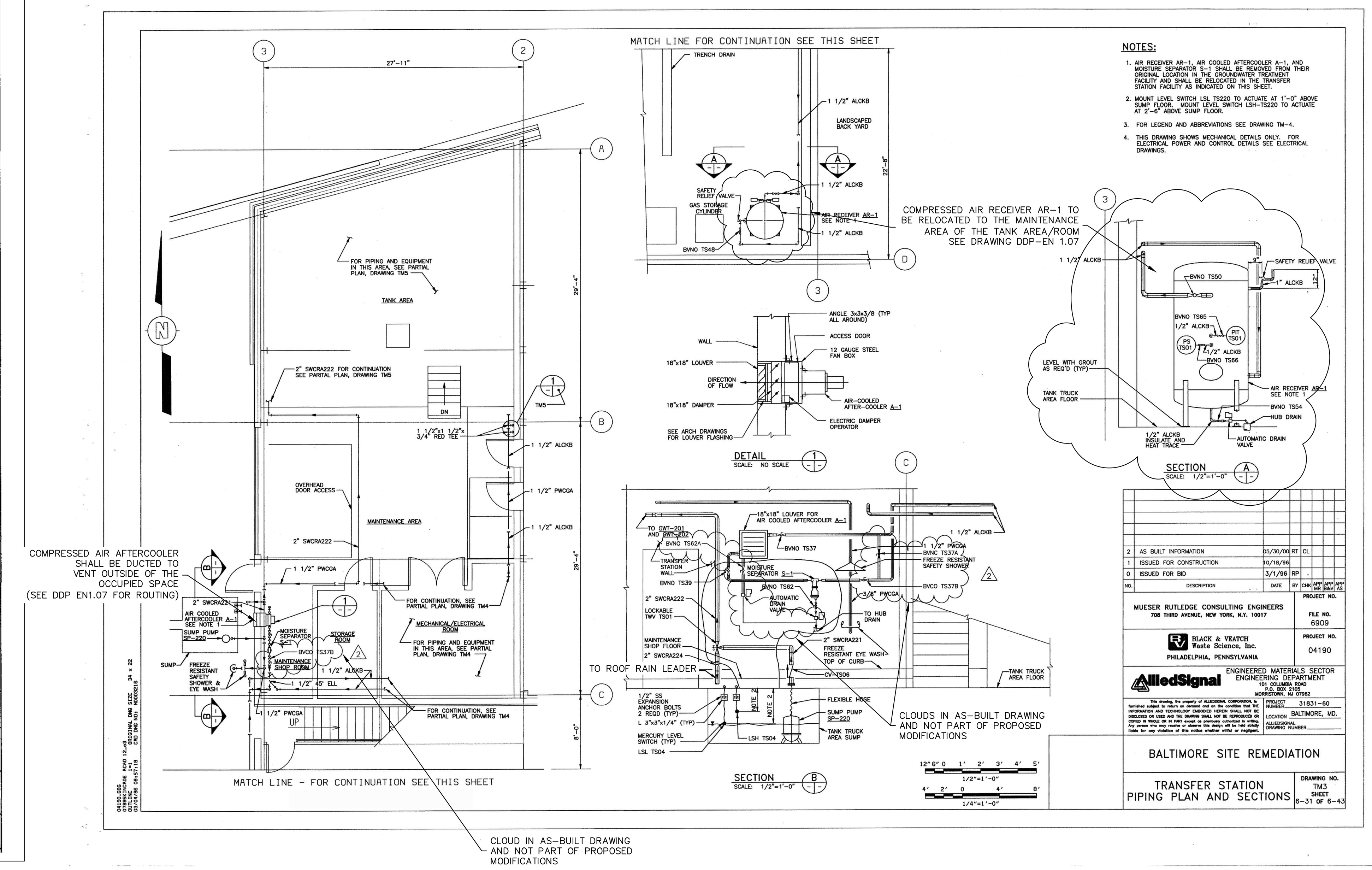
title
TRANSFER STATION PIPING AND CONDUIT PLAN

date: 5/8/13
drawn by: ERM
checked by: AK
scale: NOTED
project number: 0199768
scaled inch
sheet number

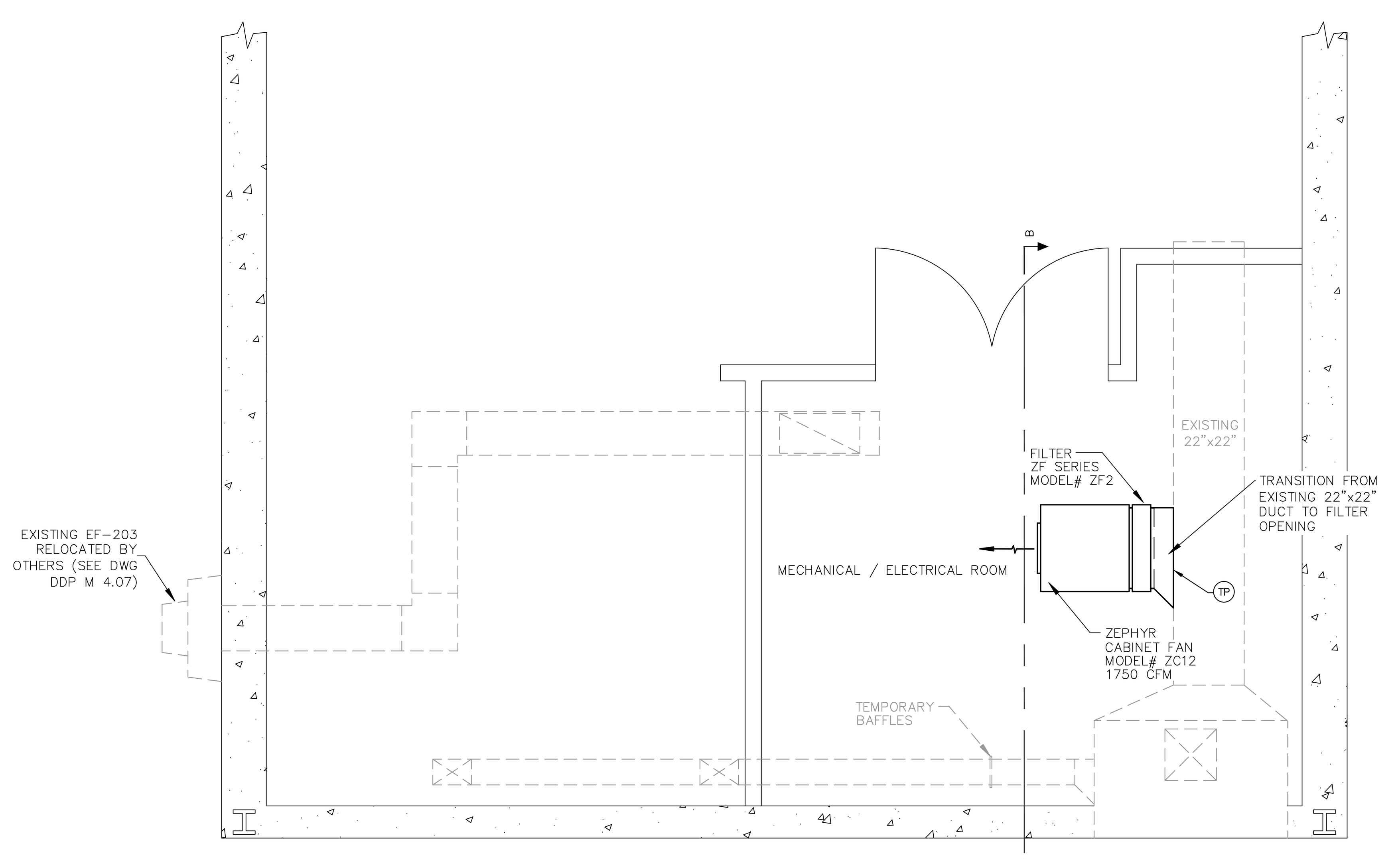
DDP EN1.07



HVAC CONFLICTS

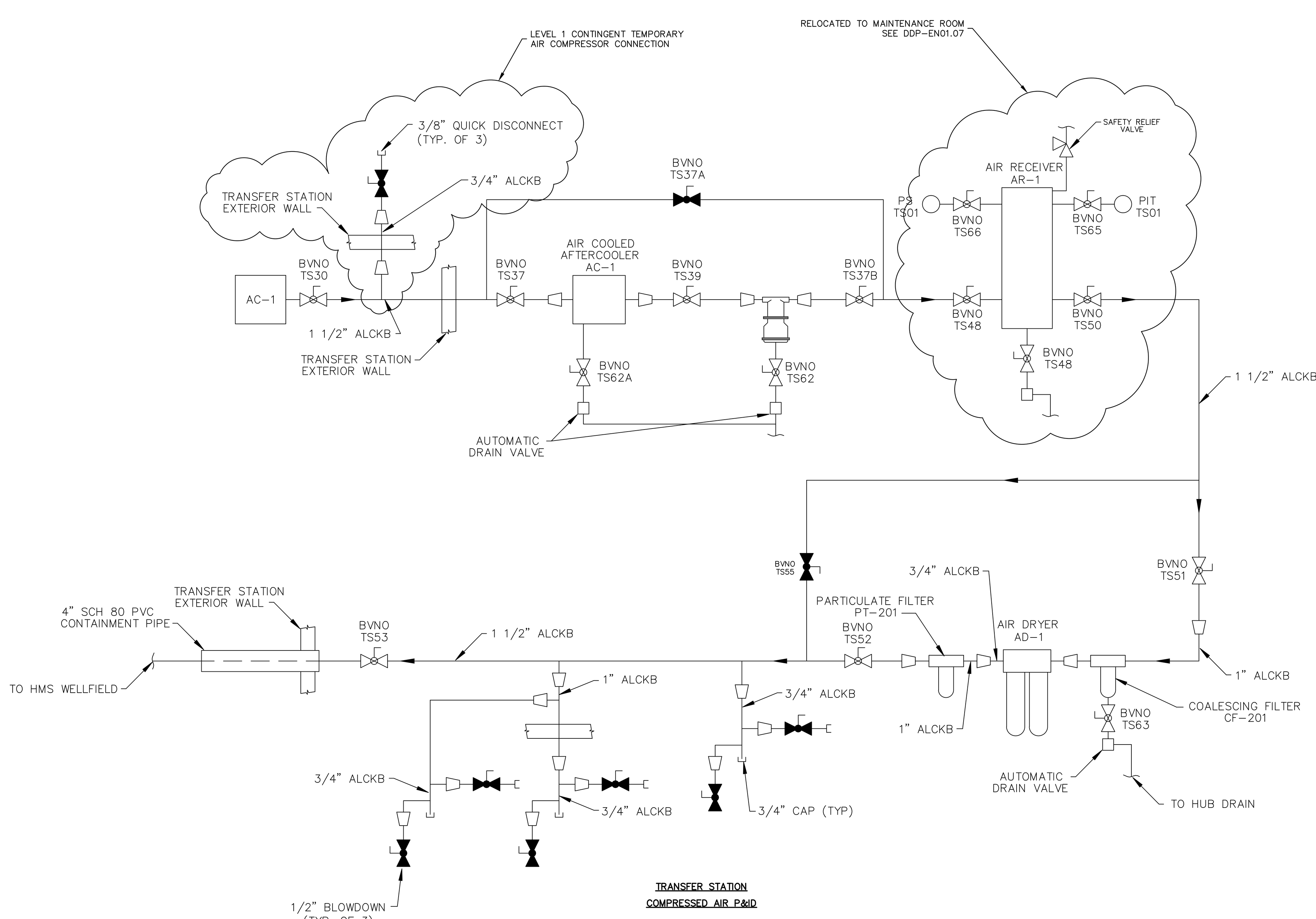


EXISTING PLAN, AIR RECEIVER AR-1 RELOCATION

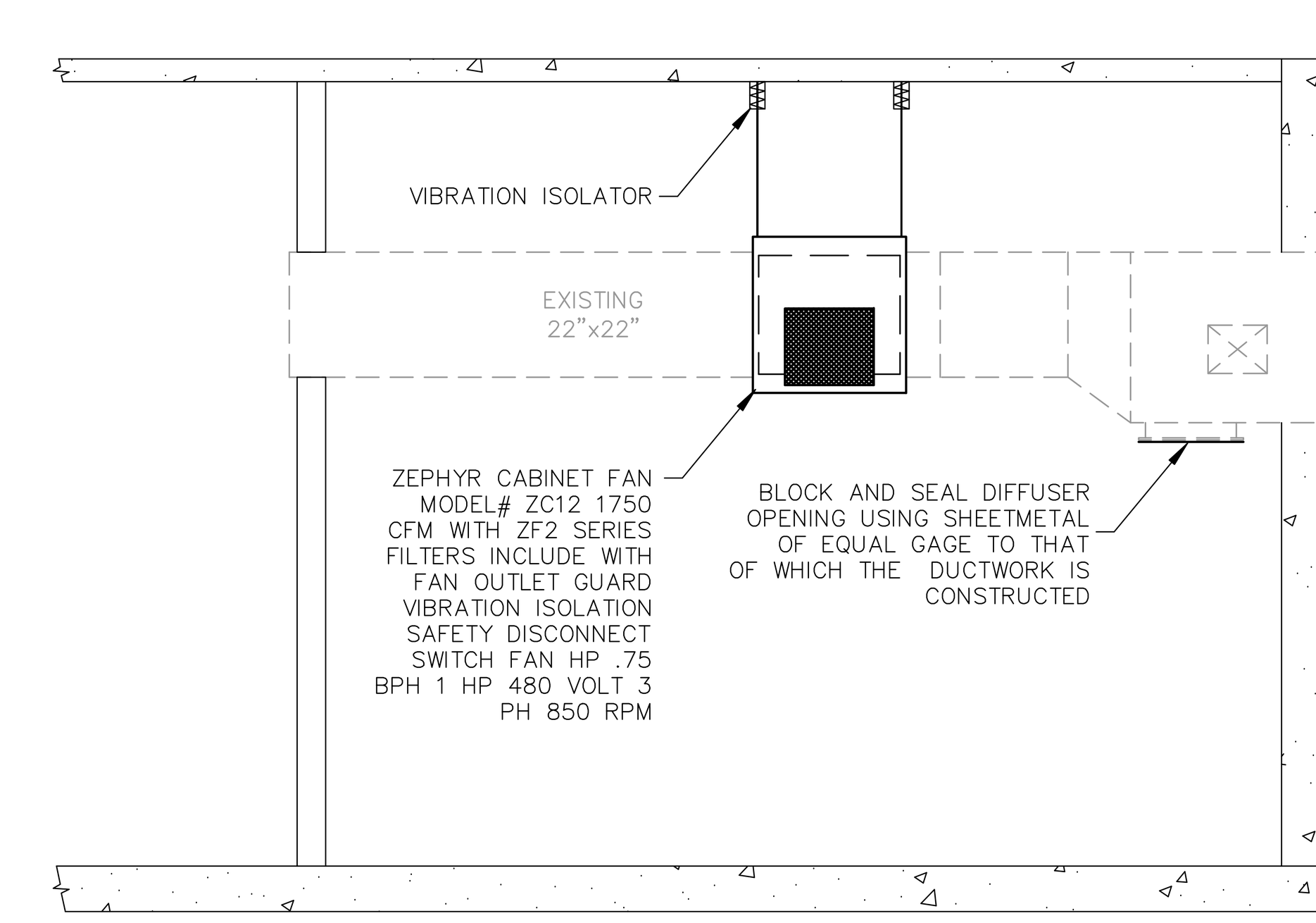


ROOM HAVC TEMPORARY PLAN

NOT TO SCALE



TRANSFER STATION COMPRESSED AIR P&ID



SECTION B-B

NOT TO SCALE

SCOPE OF WORK

1. CLOUDED SECTIONS REPRESENT MODIFICATIONS TO THE EXISTING TS.
2. UNIT HEATER REPLACEMENT – EXISTING GAS FIRED UNIT HEATERS TO BE REPLACED WITH ELECTRIC UNIT HEATERS. CONTRACTOR SHALL PROVIDE ELECTRICAL POWER WIRING FROM EXISTING ADJACENT ELECTRICAL ROOM IN ACCORD WITH NEC WITH A DISCONNECT SWITCH AT EACH UNIT.
3. PROVIDE FAN FILTER UNIT TO MINIMIZE THE POTENTIAL FOR DUST INTRUSION IN THE ELECTRICAL ROOM. THE FAN FILTER UNIT SHALL BE CONNECTED TO THE EXISTING OUTSIDE AIR DUCT. CONTRACTOR SHALL PROVIDE ELECTRICAL POWER WIRING FROM EXISTING ADJACENT ELECTRICAL ROOM IN ACCORD WITH NEC WITH A DISCONNECT SWITCH AT UNIT.
4. MAKE MODIFICATIONS TO COMPRESSED AIR SYSTEM AS SPECIFIED.

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project
EXELON BLDG & PLAZA GARAGE

HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
8/1/13

key plan

seal

issued	date	description

revision	date	description

title
TRANSFER STATION AND CONTINGENCY MODIFICATIONS

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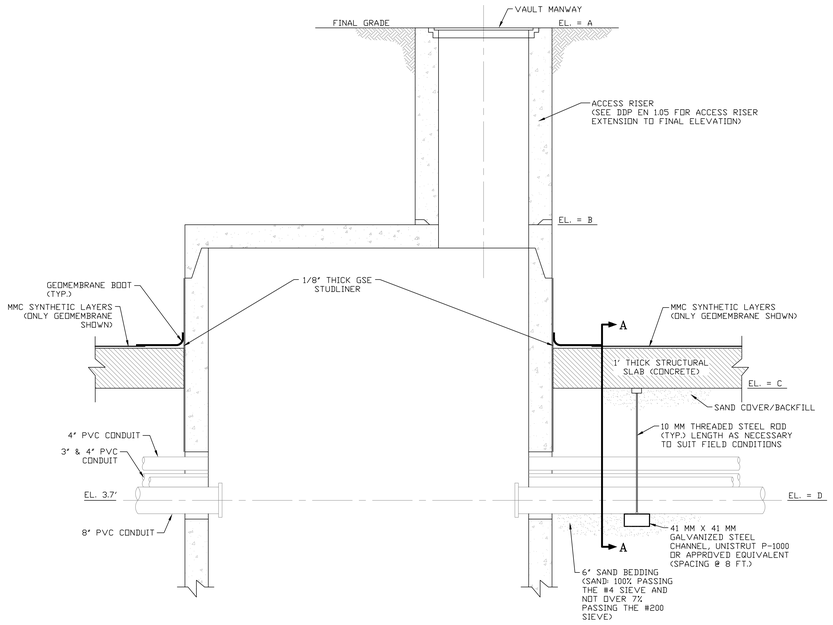
project number:	0199768

scaled inch

sheet number
DDP EN1.08

0199768-04



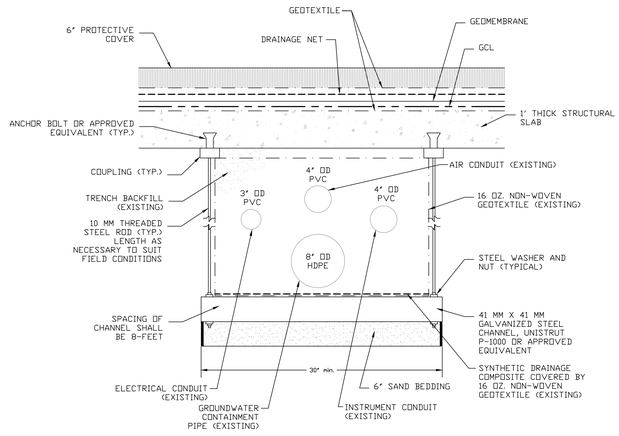
NOTES

1. THE EXISTING ELEVATION SHALL BE FIELD VERIFIED.
2. THE FINAL GRADE ELEVATION SHALL CONFIRM WITH THE FINAL GRADING PLAN AND SHALL BE ADJUSTED TO FIELD CONDITIONS (SEE DDP EN 1.05 FOR MAXIMUM FILL OVER VAULT).
3. HMS CONDUITS BETWEEN MJ-1 AND V-11 WILL BE SUPPORTED ON STEEL PIPE RACK.

VAULT ID	ELEVATION (FT.)			
	A	B	C	D
V-11	17.0	10.83	6.5	4.5
V-12	15.5	10.33	6.5	4.0

HMS PIPE SUPPORT ON STRUCTURAL SLAB

NOT TO SCALE



NOTES

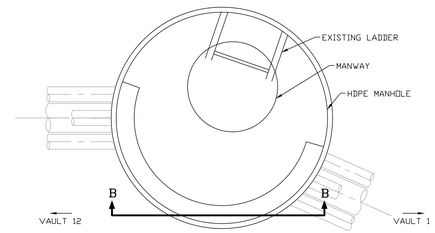
1. PIPE SUPPORT SYSTEM INCLUDING SAND BEDDING WILL ONLY BE CONSTRUCTED AT EVERY 8 FEET ALONG THE EXISTING HMS PIPING BETWEEN MJ-1 AND V-11.

CONSTRUCTION SEQUENCE:

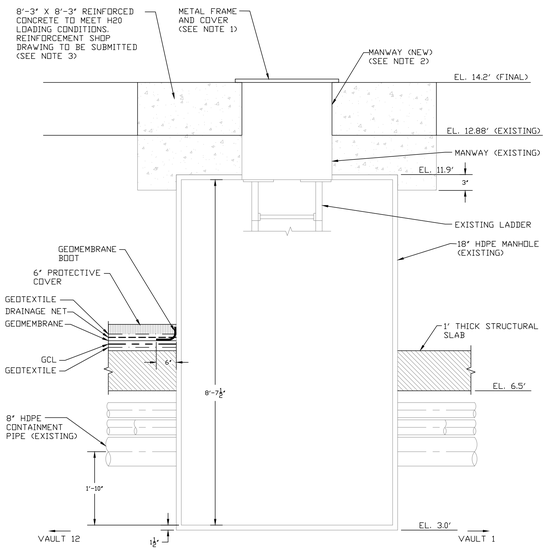
1. LOCATE AND MARK HMS CONDUIT ALIGNMENT BETWEEN MJ-1 AND V-11. MARK THE EDGES OF THE TRENCH ALONG THE ALIGNMENT.
2. MARK LOCATIONS FOR PIPE SUPPORT AT EVERY 8 FEET ALONG THE HMS CONDUIT BETWEEN MJ-1 AND V-11.
3. AT EACH MARKED LOCATION, HAND EXCAVATE THE SOIL COVER OUTSIDE OF EXISTING GEOTEXTILE WRAPPED TRENCH BACKFILL.
4. ALIGN THE STEEL CHANNEL UNDER THE EXISTING GEOTEXTILE.
5. ATTACH STEEL ROD TO THE CHANNEL. ATTACH TEMPORARY PROTECTIVE CAP ON THE EXPOSED ROD ENDS UNTIL ATTACHED TO THE STRUCTURAL SLAB.
6. BACKFILL DISTURBED AREAS WITH SAND AND HAND TAMPER THE BACKFILL.

SECTION A-A

NOT TO SCALE



PLAN



SECTION B-B

NOTES

1. METAL FRAME AND COVER SHALL BE REMOVED AND STORED FOR REUSE.
2. A NEW HDPE MANWAY SHALL BE INSTALLED TO ADJUST TO THE RAISED ELEVATION AND SHALL MATCH IN SIZE, THICKNESS AND MATERIAL WITH THE EXISTING MANWAY. THE NEW MANWAY SHALL BE FIXED IN-PLACE WITH REINFORCED CONCRETE AS SHOWN ON THE DETAIL.
3. THE NEW REINFORCED CONCRETE SHALL BE DOWELED TO THE EXISTING REINFORCED CONCRETE. REINFORCEMENT SHOP DRAWING INCLUDING CONNECTION TO THE EXISTING REINFORCED CONCRETE SHALL BE SUBMITTED.

MJ-1 HEIGHT ADJUSTMENT

NOT TO SCALE

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HARBOR POINT
AREA 1 PHASE 1
DDP SUBMISSION
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key plan

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issued	date	description

revision	date	description

title
MODIFICATIONS FOR PILE SUPPORTED HMS VAULTS AND PIPING IN DOCK STREET

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sheet number

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