



May 15, 2015

Honorable Members of the West Hartford Town Council
Town of West Hartford
Town Hall
50 South Main Street
West Hartford, Connecticut 06107

Re: Change of Zone from RM-3 to IR and Special Development Designation for Property fronting on Talcott Road (1 Charter Oak Boulevard), West Hartford, Proposed to be used by the Metropolitan District Commission in conjunction with the South Hartford Conveyance and Storage Tunnel Project.

Dear Mayor Slifka and Honorable Members of the Town Council:

Application is hereby filed on behalf of the Metropolitan District Commission ("Applicant") the contract purchaser under agreement with Triumph Engine Control Systems, LLC of an approximately 67,977 square feet (SF) parcel fronting on Talcott Road (1 Charter Oak Boulevard), West Hartford, Connecticut ("Property"). With this application, the Applicant proposes to construct a Tunnel Access Shaft, and permanent Air Treatment Facility which are key components of the South Hartford Conveyance and Storage Tunnel Project (South Tunnel). To do so, the Applicant seeks to change the current zoning designation for the Property from Multifamily Residential District ("RM-3") to a Restricted Industrial District ("IR") underlying zoning district within a new special development district, pursuant to the provisions of §177-44 of the Code of West Hartford, Connecticut.

As shown on Figure 1 (Zoning Area for Tunnel Access Shaft), the parcel currently zoned as RM-3 is located immediately adjacent to a much larger property to the north and east, zoned as IR. The parcels to the west are zoned residential. In addition, the parcels located directly across Talcott Road are currently zoned as IG (General Industrial District). A legal description of the boundary of this Property for which the change of zone approval is sought, as well as a proposed ordinance, is attached as Enclosures (B) and (C), respectively. They are incorporated as part of this application, along with the information contained in Enclosures (A) through (F) noted below ("Application").

The Metropolitan District 

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ZONING CODE - BG
GENERAL BUSINESS
DISTRICT

ZONING CODE - RM-3
RESIDENTIAL DISTRICT

PLAN

SCALE: 1"=20'



SCALE: 1" = 20'

NOTES:

1. FOR LEGEND SEE SHEET 500 C-001.
2. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEET 500 C-002.

VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92



The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 551_C-ZONING
DESIGNED BY: S. GANESH
DRAWN BY: S. GANESH
CHK'D BY: R. BERLANDY
X-CHK'D BY: J. SULLIVAN
APPROVED BY: J. SULLIVAN
DATE: APRIL 2015

90% SUBMITTAL
NOT FOR
CONSTRUCTION



500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 265-5900

In association with
BLACK & VEATCH

CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE AND
STORAGE TUNNEL

CONTRACT 5
**ZONING AREA FOR
DROP SHAFT DS-1**
CIVIL

PLAN NUMBER

SHEET NO.
FIGURE 1



OVERVIEW

The Property is integral to the Applicant's proposed plan to construct the proposed Talcott Road South Tunnel facilities. The project area for the Tunnel Access Shaft and associated facilities will encompass a total area of approximately 67,977 SF. The site will be extensively landscaped to provide screening for residences located to the west, and traffic on Talcott Road to the south.

TRAFFIC AND PARKING CONSIDERATIONS

The Access Shaft and Air Treatment Facility will be unmanned, with only periodic visits for routine maintenance and site checks. Therefore, there will be minimal parking needs and no net increase in traffic to and from the site.

NOISE CONSIDERATIONS

The proposed Tunnel Access Shaft site will be situated in an Industrial district. In accordance with the Town of West Hartford noise ordinance, any nighttime noise exceeding 51 dBA at the western residential receptor property line shall be considered excessive and unnecessary noise and is not allowed. Also per the ordinance, a nighttime noise of 70 dBA at the northern industrial receptor also cannot be exceeded. The following paragraphs document compliance with the Town of West Hartford noise ordinance.

Engine Generator. The stand-by natural gas generator for the facility will provide back-up power in case of a power outage. This will be located approximately 180 feet from the residential property line (in the east-west direction) and 80 feet the Industrial property line (in the north-south direction). An evaluation of the generator noise was performed with the 51 dBA and 70 dBA thresholds at each property line. The 51 dBA threshold governed. Sound attenuation enclosures for engine generators are specified based upon a noise level 23 feet from the unit. With a noise threshold of 51 dBA at 180 feet from the unit, a calculated value of 69 dBA would be allowed at a distance of 23 feet. To meet this threshold, the project has specified a sound attenuation enclosure for the generator with a rating of 65 dBA.

Air Treatment Facility. The Air Treatment Facility is made up of fans with electric motors, air ductwork, and carbon vessels; all equipment located behind masonry walls. Air is moved out of the tunnel by the fans and through the carbon vessel and exhausted into the atmosphere. Three fans will be installed initially and space will be provided for a future fan, if necessary. Only two of the three installed fans will be required to operate, and the third is a standby fan. The closest fan will be located approximately 80 feet from the residential property line (in the east-west direction) and 60 feet from the Industrial property line (in the north-south direction). The closest carbon vessel will be located approximately 90 feet and 85 feet from those same property lines. An evaluation of the noise from the air treatment facility was performed with the 51 dBA and 70 dBA thresholds at each property line. Based on this evaluation, each fan will be required to

The Metropolitan District 



produce no more than 60 dBA sound pressure at a distance of 3 feet from the unit. Maintaining this sound level at each unit will result in noise levels of less than the threshold requirement at the property line with two fans running. In addition to the fan requirements, the air treatment facility will include insulated exposed ductwork and will include a silencer on the carbon vessel outlet.

DESIGN AND LANDSCAPING ELEMENTS

The proposed Air Treatment Facility will be contained in a roofless 95 ft by 75 ft brick structure, 20 ft in height. The paved site and entrance from Talcott Road will be surrounded by grass, with extensive shrubs and other plantings along the western and southern boundary.

OUTREACH EFFORTS

A neighborhood public meeting was held on Thursday, April 30, 2015, at 6:30 P.M., at the Elmwood Community Center, located at 1106 New Britain Avenue in West Hartford, CT. Approximately 180 residents and business owners adjacent to the Talcott Road site were mailed an invitation to attend this meeting. The invitations included a three page project information handout describing the South Tunnel project. At the meeting a technical presentation was given to explain the South Tunnel Project in more detail, describe in greater detail structures that are anticipated to be constructed in this area, describe the local regulatory process that the MDC will follow, and to obtain feedback from the public adjacent to aspects of the project. All attendees were given ample opportunity to speak. They asked questions looking for more technical explanation about the project. They did not indicate any objection to what was presented and proposed.

To-date, the Applicant has held two public meetings with the Design Review Advisory Committee, where details of the proposed project were presented and discussed. These meetings were open to the public. The first was held on 1/22/15 and the second was held on 4/2/15.

STORMWATER

Based on topography and existing contour data, the entire Tunnel Access Shaft site is a single watershed that slopes south towards Talcott Road, to a catch basin located just outside the southwest corner of the lot. The proposed site improvements will reduce the impervious area footprint by approximately 20,000 SF and also improve site drainage. This will be an improvement to the quality and quantity of stormwater runoff from the project as compared to existing conditions.

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FINDINGS

The proposed Application is worthy of approval for the following reasons:

1. The change of the underlying zone for the Property from Multifamily Residence District (RM-3) to Restricted Industrial District (IR) is appropriate as it will allow for the construction of an integral component of the South Tunnel project, which will greatly benefit the residents of West Hartford in the form of improved surface water quality.
2. The change of the underlying zone for the Property from Multifamily Residence District (RM-3) to Restricted Industrial District (IR) is appropriate as it will result in an overall improvement in the current site aesthetics, by way of extensive landscaping, elimination of approximately 20,000 SF of paved area, and reduction in stormwater related impacts to downstream receiving waters.

The Proposed Ordinance, application fee and information required pursuant to Section 177-44 of the Zoning Ordinance, are enclosed.

Respectfully submitted,

Andrew Perham
Project Manager
The Metropolitan District

List of Enclosures:

- A) Letter from Triumph Engine Control Systems, LLC giving Agent Authorization to the Applicant
- B) Description of Premises (Acquisition and Easement Plan)
- C) Proposed Ordinance
- D) Affidavit of Interest
- E) Description of Proposed Uses
- F) Design Drawings

The Metropolitan District 

Enclosure A

Letter from Triumph Engine Control Systems, LLC giving Agent Authorization to the Applicant



Triumph Engine Control Systems

A Triumph Group Company

April 15, 2015

Honorable Members of the West Hartford Town Council
Town of West Hartford
Town Hall
50 South Main Street
West Hartford, CT 06107

Re: Change of Zone from RM-3 to IR and Special Development District Designation for Property Proposed to be Used by The Metropolitan District in conjunction with the South Hartford Conveyance Tunnel

Dear Mayor Slifka and Honorable Members of the Town Council:

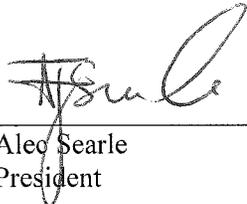
Please be advised that Triumph Engine Control Systems, LLC ("Triumph"), located at 1 Charter Oak Boulevard, West Hartford, Connecticut, has entered or intends to enter into a Purchase and Sale Agreement with The Metropolitan District (the "MDC") regarding the sale of a portion of property currently owned by Triumph located along Talcott Road in West Hartford. As the owner of the fee interest in the land located along Talcott Road, Triumph hereby authorizes the MDC to submit, on behalf of Triumph, any and all land use applications to the various agencies of the Town of West Hartford which may be necessary for the construction of the improvements contemplated including, but not limited to, applications for the creation, amendment and approval of a special development district, applications for zone changes, variances, special use permits, special exceptions, wetlands permits, subdivisions/resubdivision approvals and lot split approvals, if necessary, and Triumph hereby joins in all such applications.

By granting the above authorization and joining in the applications to be submitted by the MDC, the undersigned in no manner is committing itself to consummate the land transaction described above, which transaction will be governed by the terms of the referenced Purchase and Sale Agreement. The undersigned executes this consent and joinder for the sole purpose of facilitating the filing and pursuit of the required applications and complying with the requirements of the ordinances of the Town of West Hartford.

A photocopy or facsimile copy of this authorization shall be considered as effective and valid as the original, and this authorization shall remain in effect unless terminated, in writing, by Triumph.

Respectfully submitted,

TRIUMPH ENGINE CONTROL SYSTEMS, LLC

By:  4/15/15
Alec Searle
President

Enclosure B

Description of Premises (Acquisition and Easement Plan)

Description of Premises

A certain parcel of land on the property of now or formerly Triumph Engine Control Systems, LLC, containing 67,977 square feet, 1.56 acres, situated in the Town of West Hartford, State of Connecticut and being shown on a map entitled: "Acquisition and Easement Plan, 1 Charter Oak Boulevard, West Hartford, Connecticut" prepared for The Metropolitan District, Hartford, Connecticut, prepared by Zuvic, Carr and Associates, Inc. and dated December 4, 2014.

Said Parcel Acquisition Area is more particularly bounded and described as follows:

Commencing at an iron pin on the northerly right-of-way line of Talcott Road and the southwesterly corner of land now or formerly of Triumph Engine Control Systems, LLC;

Thence running North 1°52'06" East along the easterly property line of land now or formerly of Fillion Berthier, 177.54 feet to a point;

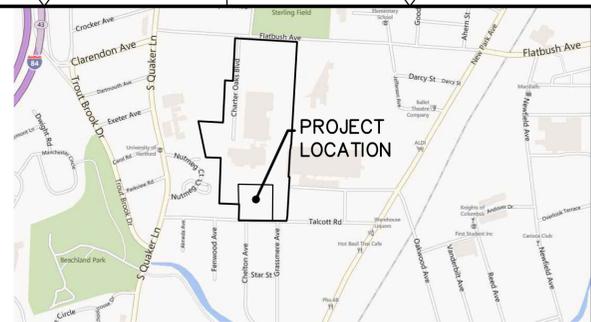
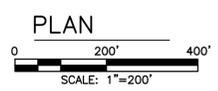
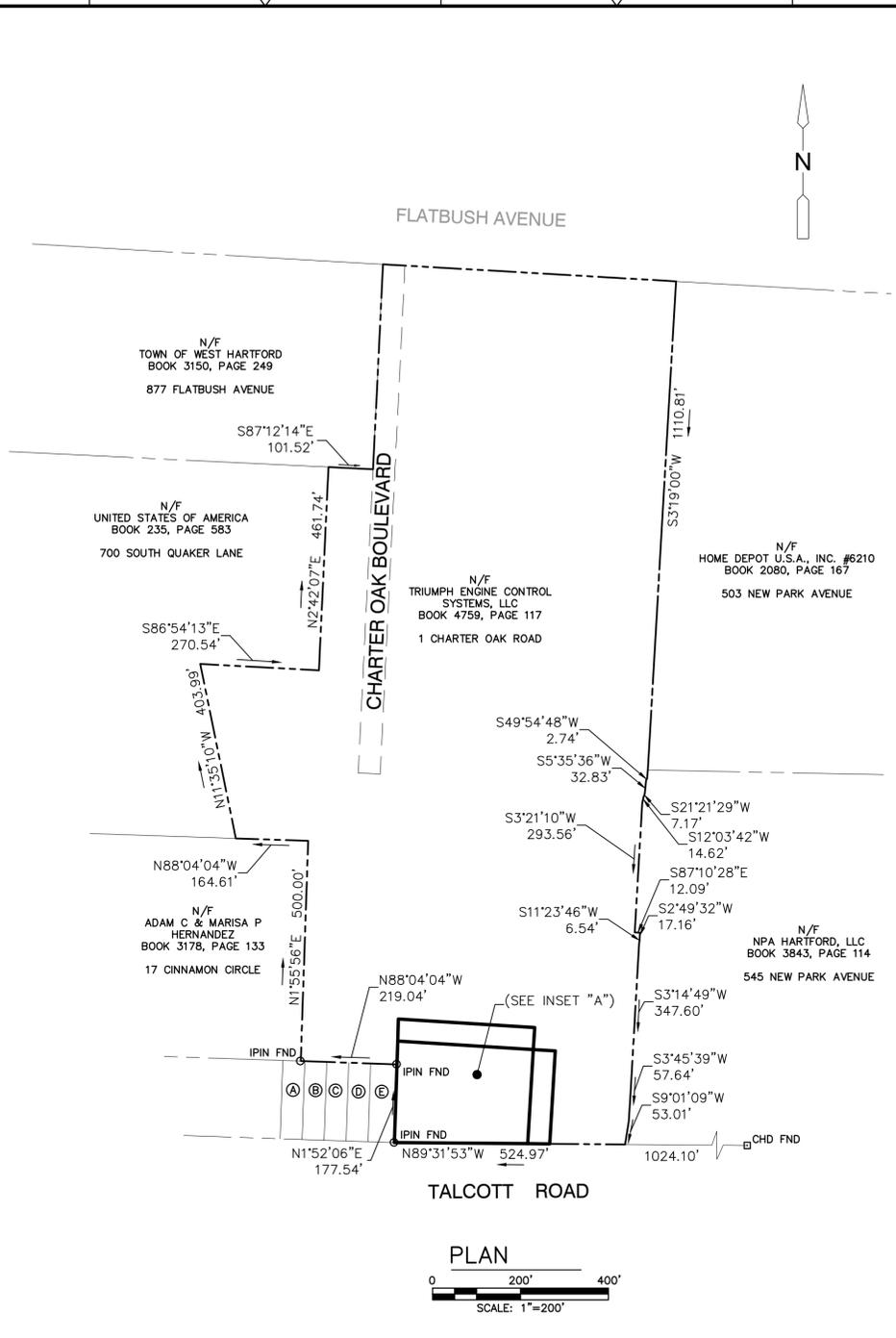
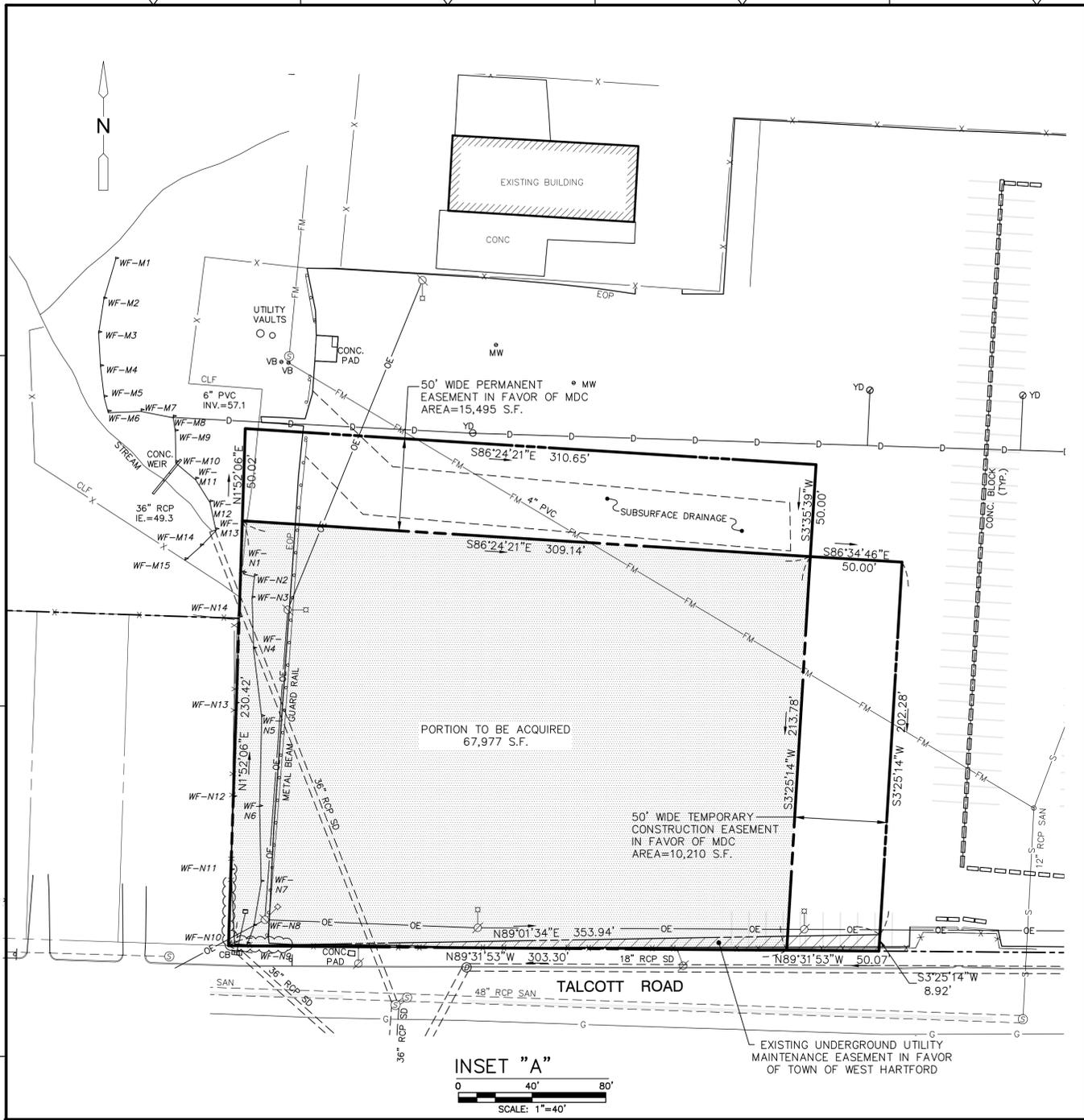
Thence running North 1°52'06" East through land now or formerly of Triumph Engine Control Systems, LLC, 52.88 feet to a point;

Thence running South 86°24'21" East through land now or formerly of Triumph Engine Control Systems, LLC, 309.14 feet to a point;

Thence running South 3°25'14" West through land now or formerly of Triumph Engine Control Systems, LLC, 213.78 feet to a point on the northerly right-of-way of Talcott Road;

Thence North 89°31'53" West along the northerly right-of-way line of Talcott Road, 303.30 feet, to the southwesterly corner of the herein described Parcel Acquisition Area, and place of beginning.

FILE PATH: H:\Projects\1749 - AECOM - SHCST-Hills-W- Hill Survey\AutoCAD\Easement\1749-CSD-TALCOTT-ESMT-1-CHARTER OAK-CURRENT.dwg PLOT DATE: 4/22/2015 PLOT TIME: 3:21:28 PM



LOCATION MAP
SCALE: 1"=1000'

LEGEND:

- PROPERTY LINE EXISTING
- PROPERTY LINE PROPOSED
- EASEMENT LINE EXISTING
- EASEMENT LINE PROPOSED
- CURB
- EOP --- EDGE OF PAVEMENT
- CHD --- MONUMENT
- IPIN --- IRON PIN
- CLF --- CHAIN LINK FENCE
- BIT --- EXISTING BITUMINOUS
- TREE/VEGETATION LINE
- UTILITY POLE W/ LIGHT
- OVERHEAD ELECTRIC
- LIGHTPOST
- UNDERGROUND SANITARY LINE
- UNDERGROUND DRAINAGE LINE
- FM --- UNDERGROUND FORCE MAIN
- WF-M --- LIMITS OF WETLANDS
- ⊙ --- STORM MANHOLE
- ⊙ --- SANITARY MANHOLE
- ⊙ --- ELECTRIC MANHOLE
- ⊙ --- UTILITY MANHOLE
- ⊙SD --- STORM YARD DRAIN
- ⊙ --- SIGN
- FND --- FOUND
- VB --- VALVE BOX
- MW --- MONITORING WELL

SURVEY NOTES:

1. THIS SURVEY AND MAP WERE PREPARED IN ACCORDANCE WITH THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THRU 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS, INC. ON SEPTEMBER 26, 1996. IT IS AN ACQUISITION AND EASEMENT PLAN CONFORMING TO HORIZONTAL ACCURACY CLASS A-2 ALONG THE LINES SPECIFIC TO THE PARCEL TO BE ACQUIRED. IT IS INTENDED TO DEPICT AN AREA TO BE ACQUIRED WITH RESPECT TO EXISTING FEATURES ALONG WITH AN EASEMENT AREA TO BE GRANTED. THE PROPERTY/BOUNDARY DETERMINATION OPINION PRESENTED HEREON IS BASED ON A LIMITED RESURVEY. THE REMAINDER OF THE PROPERTY WAS COMPILED FROM OTHER MAPS, RECORD RESEARCH OR OTHER SOURCES OF INFORMATION. IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY, AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.
2. REFERENCE IS HEREBY MADE TO THE FOLLOWING MAP ENTITLED:
 - A. "SURVEY-PROPERTY OF FREDERICK K. KUHN, JR.-TALCOTT ROAD, WEST HARTFORD, CONN." BY ERIC A. OSTERLING, SCALE: 1"=60' AND DATED: SEPT. 1941.
 - B. "SCHEDULE A-3, SURVEY, SPICE GLEN, A PLANNED COMMUNITY, 766 QUAKER LANE SOUTH, WEST HARTFORD, CONN." BY THE BONGIOVANNI GROUP, SCALE: 1"=40', DATED: 7-26-90 AND REVISED LAST ON 10/1/91.
 - C. "RESUBDIVISION PLAN - PROPERTY OF COLTEC INDUSTRIES, INC., NEW PARK AVENUE, TALCOTT ROAD, QUAKER LANE SOUTH & FLATBUSH AVENUE, WEST HARTFORD, CONNECTICUT" BY ALFORD ASSOCIATES, INC., SCALE: 1"=60', DATED: JULY 15, 2002 AND REVISED LAST ON 11-04-02.
3. BEARINGS ARE BASED ON THE CONNECTICUT COORDINATE SYSTEM, NAD83.
4. THE UNDERGROUND UTILITIES SHOWN HEREON HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED, ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM THE INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES.
5. EASEMENT TO BE ESTABLISHED ALONG FINAL LOCATION OF FORCE MAIN WHERE IT IS LOCATED WITHIN THE PARCEL TO BE ACQUIRED. EASEMENT TO ALLOW FOR FUTURE MAINTENANCE OF THE FORCE MAIN BY OWNER OF 1 CHARTER OAK ROAD PROPERTY. EASEMENT TO BE 20 FEET WIDE AND CENTERED ON FORCE MAIN.
6. THE PARCEL IS SUBJECT TO AN UNDERGROUND UTILITY MAINTENANCE EASEMENT IN FAVOR OF THE TOWN OF WEST HARTFORD AS RECORDED IN VOLUME 1944, PAGE 254 OF THE WEST HARTFORD LAND RECORDS.

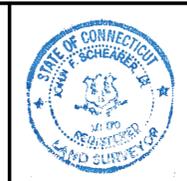
PARTIAL LIST OF ABUTTING PROPERTY OWNERS		
OWNER	BOOK / PAGE	ADDRESS
A	PAUL, JOSEPH & LUCIA FIGUEIREDO	BOOK 1941, PAGE 246 144 TALCOTT ROAD
B	PAUL J. FIGUEIREDO	BOOK 2717, PAGE 194 140 TALCOTT ROAD
C	MANUEL & MARIA DOS REIS	BOOK 670, PAGE 293 136 TALCOTT ROAD
D	JOANNE ROCHE	BOOK 1669, PAGE 250 132 TALCOTT ROAD
E	FILLION BERTHIER	BOOK 1880, PAGE 278 128 TALCOTT ROAD

PROJECT NO.:	1749-4
DESIGNED BY:	
DRAWN BY:	LA
SHEET CHK'D BY:	RMG
CROSS CHK'D BY:	JFS
APPROVED BY:	JFS
DATE:	APRIL 2, 2014

PREPARED FOR:
THE METROPOLITAN DISTRICT
555 MAIN STREET
HARTFORD, CT 06142

PREPARED BY:
ZUVIC-CARR AND ASSOCIATES CONSULTING ENGINEERS
40 Cold Spring Road • Rocky Hill, CT 06067
Phone 860.436.4901 • Fax 860.436.4953

ACQUISITION & EASEMENT PLAN
1 CHARTER OAK BOULEVARD
WEST HARTFORD, CONNECTICUT



TO THE BEST OF MY KNOWLEDGE AND BELIEF THIS MAP IS SUBSTANTIALLY CORRECT AS NOTED HEREON
John F. Schearer, Jr.
JOHN F. SCHEARER, JR. L.S. #10370

SHEET NO.
1

Enclosure C
Proposed Ordinance

**An Ordinance Amending an Ordinance Establishing
Zoning Regulations of the Town of West Hartford**

BE IT ORDAINED BY THE TOWN COUNCIL OF WEST HARTFORD:

That the boundaries and districts shown on the Building Zone Map entitled “Revised Zoning Map, Town of West Hartford, Connecticut,” which map is on file in the Town Clerk’s Office of the Town of West Hartford, are hereby amended as follows:

The zoning district designation for a portion of Talcott Road (specific address to be determined), more particularly described below, is hereby changed from Multifamily Residential District (“RM-3”) to a Restricted Industrial District (“IR”) underlying zoning district within a new special development district, pursuant to the provisions of §177-44 of the Code of West Hartford, Connecticut, all in accordance with a set of plans entitled “Zone Change Request for South Tunnel Access Shaft in West Hartford” and consisting of 6 sheets including the cover sheet as they be amended and approved by the West Hartford Town Council and filed on the West Hartford Land Records, all as effect the land as described below:

Commencing at an iron pin on the northerly right-of-way line of Talcott Road and the southwesterly corner of land now or formerly of Triumph Engine Control Systems, LLC;

Thence running North 1°52’06” East along the easterly property line of land now or formerly of Fillion Berthier, 177.54 feet to a point;

Thence running North 1°52’06” East through land now or formerly of Triumph Engine Control Systems, LLC, 52.88 feet to a point;

Thence running South 86°24’21” East through land now or formerly of Triumph Engine Control Systems, LLC, 309.14 feet to a point;

Thence running South 3°25’14” West through land now or formerly of Triumph Engine Control Systems, LLC, 213.78 feet to a point on the northerly right-of-way of Talcott Road;

Thence North 89°31’53” West along the northerly right-of-way line of Talcott Road, 303.30 feet, to the southwesterly corner of the herein described Parcel Acquisition Area, and place of beginning.

Enclosure D
Affidavit of Interest

Affidavit of Interest

The undersigned, being duly sworn, hereby deposes and says:

The names and addresses of any person, firm or corporation having a direct or indirect interest in a personal or financial sense in the application of The Metropolitan District Commission (MDC) to purchase an area of approximately 67,977 square feet on property located on Talcott Road (the "Premises") in order to construct public improvements associated with the South Hartford Conveyance and Storage Tunnel (South Tunnel) project, which application will require a change in the current zoning designation for the Premises from a RM-3 to an IR underlying zoning district within a new special development district to be known as (specific address to be determined), are as follows:

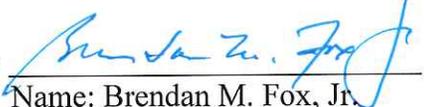
1. Triumph Engine Control Systems, LLC, as owner of property located on Talcott Road and the intended seller of the Premises should the requisite land use approvals in connection with the MDC's proposal to develop the proposed improvements be approved. The address for Triumph Engine Control Systems, LLC is 1 Charter Oak Boulevard, West Hartford, Connecticut.

2. The Metropolitan District as intended buyer of the Premises and as the entity responsible for the improvements on the Premises. The MDC is a specially chartered municipality comprised of eight member towns, including the Town of West Hartford. The address for the MDC is 555 Main Street, Hartford, Connecticut.

Further your affiant sayeth not.

Executed this 15th day of May, 2015

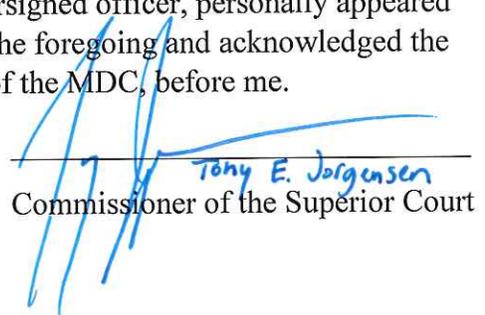
THE METROPOLITAN DISTRICT

By: 
 Name: Brendan M. Fox, Jr.
 Title: Assistant District Counsel

STATE OF CONNECTICUT)
)
 COUNTY OF HARTFORD)

SS: Hartford

On this 15th day of May, 2015 before me, the undersigned officer, personally appeared Brendan M. Fox, Jr., Assistant District Counsel, signer of the foregoing and acknowledged the same to be his free act and deed and the free act and deed of the MDC, before me.


 Commissioner of the Superior Court

Enclosure E

Description of Proposed Uses

Description of Proposed Uses

This application seeks to amend the underlying zone for Property located on Talcott Road, West Hartford from Multifamily Residence District (RM-3) to Restricted Industrial District (IR) for the purposes of construct a Tunnel Access Shaft and an Air Treatment Facility associated with the Metropolitan District Commission South Hartford Conveyance and Storage Tunnel.

No unusual noise, vibration radiation, odor or dust, smoke, gas fumes, or other atmospheric pollution is expected to be produced from the operation and maintenance of the Air Treatment Facility. The Facility will be compatible with the amended zoning use, and well buffered from the residences located to the west and Talcott to the south.

Enclosure F

Design Drawings
(See attached)



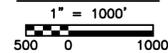
**THE METROPOLITAN DISTRICT
HARTFORD, CONNECTICUT**

**ZONE CHANGE REQUEST FOR SOUTH
TUNNEL ACCESS SHAFT IN
TOWN OF WEST HARTFORD
MAY 2015**

CITY OF HARTFORD AND TOWN OF WEST HARTFORD, CT



LOCUS MAP



SHEET NO. TITLE

- 210 C-101 RETRIEVAL SHAFT SITE 2D LANDSCAPING
- 220 C-101 RETRIEVAL SHAFT SITE RENDERING

CIVIL

- 230 C-101 RETRIEVAL SHAFT SITE AND INTEGRAL DROP SHAFT PLAN AND PROFILE
- 230 C-102 RETRIEVAL SHAFT SITE AND UTILITY LAYOUT PLAN
- 230 C-103 RETRIEVAL SHAFT GRADING AND DRAINAGE PLAN
- 230 C-104 RETRIEVAL SHAFT ENTRANCE ROAD PLAN & PROFILE
- 230 C-131 RETRIEVAL SHAFT & TALCOTT ROAD RESTORATION PLAN
- 230 C-144 RETRIEVAL SHAFT FINAL SITE - PLANTING PLAN
- 299 C-101 CIVIL DETAIL SHEET I
- 299 C-103 CIVIL DETAIL SHEET III
- 299 C-104 CIVIL DETAIL SHEET IV
- 299 C-111 PLANTING DETAILS 1
- 299 C-112 PLANTING LIST AND PLANTING NOTES

ARCHITECTURAL

- 216 A-101 RETRIEVAL SHAFT ODOR CONTROL ENCLOSURE - PLAN
- 216 A-201 RETRIEVAL SHAFT ODOR CONTROL ENCLOSURE - ELEVATIONS
- 216 A-301 RETRIEVAL SHAFT ODOR CONTROL ENCLOSURE - WALL SECTIONS
- 299 A-501 GENERAL SCHEDULES AND DETAILS

MECHANICAL PROCESS

- 231 D-101 RETRIEVAL SHAFT ODOR CONTROL PLAN
- 231 D-102 RETRIEVAL SHAFT PLUMBING PLAN, DETAILS AND SCHEDULES
- 231 D-301 RETRIEVAL SHAFT SECTION AND DETAILS
- 240 D-101 WEST HARTFORD INLET CONTROL GATE CHAMBER
- 299 D-101 TRASH RACK DETAIL

STRUCTURAL

- 203 S-101 RETRIEVAL SHAFT PLANS
- 203 S-301 RETRIEVAL SHAFT SECTION

ELECTRICAL

- 230 E-104 RETRIEVAL SHAFT AND WEST HARTFORD CONDUIT - SYSTEMS PLAN
- 230 E-601 MISCELLANEOUS SCHEDULES



500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
(860) 263-5800

in association with



90% SUBMITTAL - NOT FOR CONSTRUCTION

CONTRACT NO. 20 -



VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____
DESIGNED BY: _____
DRAWN BY: _____
CHK'D BY: _____
X-CHK'D BY: _____
APPROVED BY: J. SULLIVAN
DATE: MAY 2015

90% SUBMITTAL
NOT FOR
CONSTRUCTION

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

in association with
BLACK & VEATCH

CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE AND
STORAGE TUNNEL

**RETRIEVAL SHAFT SITE
2D LANDSCAPING**

CIVIL

PLAN NUMBER
SHEET NO.
210 C-101



VERTICAL DATUM IS NGVD 29
 HORIZONTAL DATUM IS NAD 83/92



The Metropolitan District
 555 Main Street
 Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____
 DESIGNED BY: _____
 DRAWN BY: _____
 CHK'D BY: _____
 X-CHK'D BY: _____
 APPROVED BY: J. SULLIVAN
 DATE: MAY 2015

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
 ROCKY HILL, CT 06067
 PHONE (860) 263-5800

in association with
BLACK & VEATCH

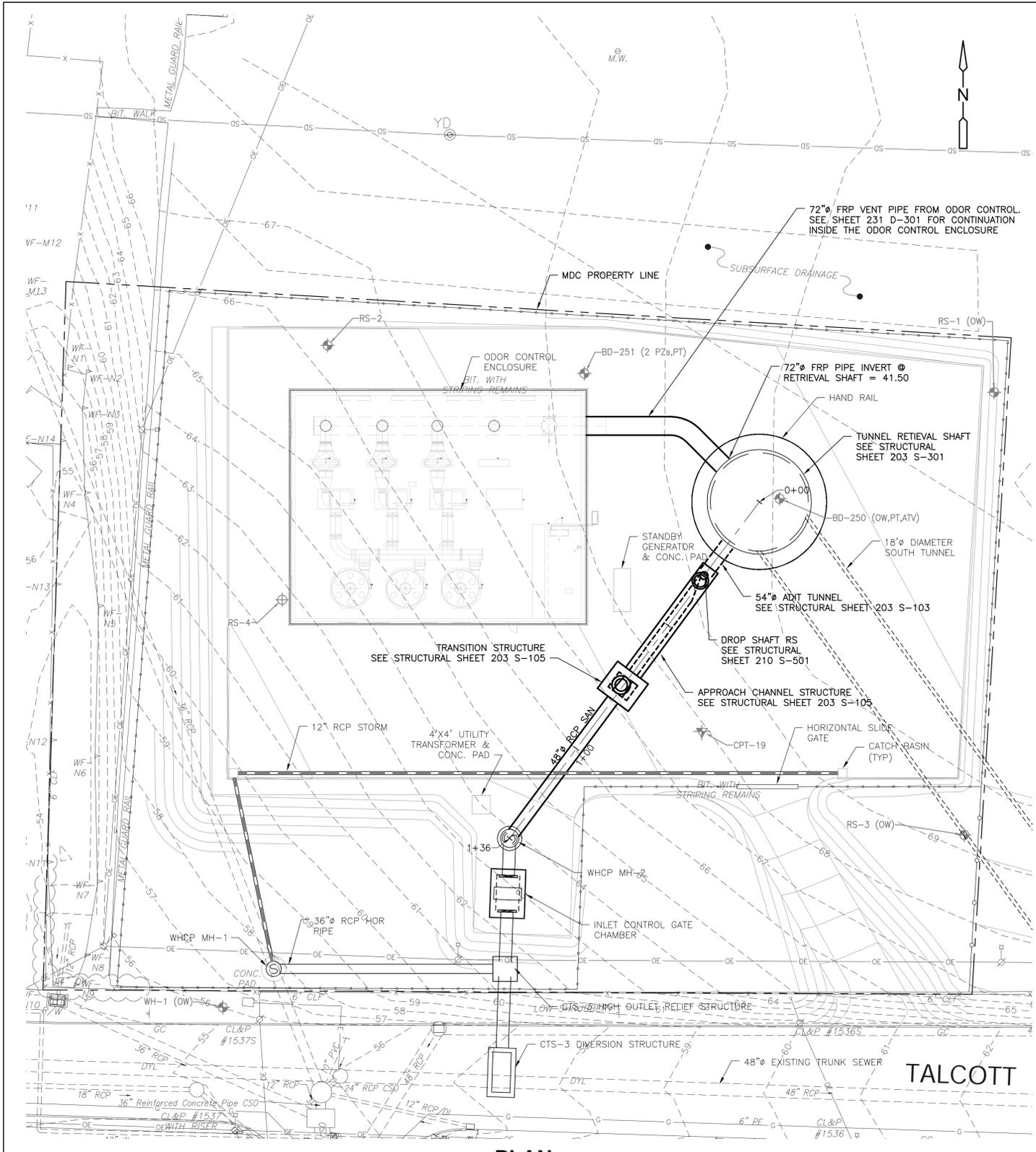
CONTRACT NO. 2015B-27
 SOUTH HARTFORD CONVEYANCE AND
 STORAGE TUNNEL

RETRIEVAL SHAFT SITE RENDERING

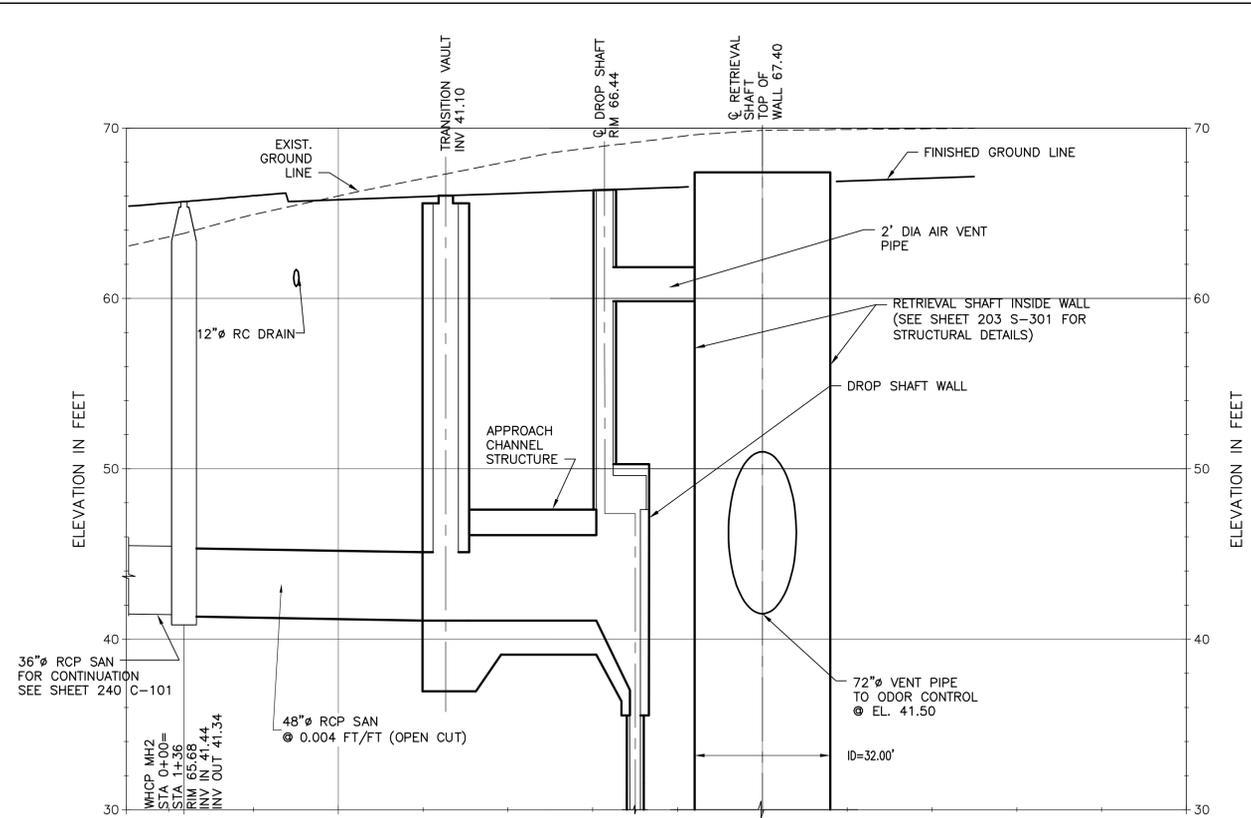
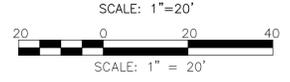
CIVIL

PLAN NUMBER

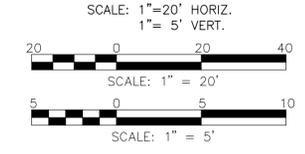
SHEET NO.
220 C-101



PLAN



PROFILE



NOTES:

1. FOR LEGEND SEE SHEET 200 C-001.
2. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEET 200 C-002.

VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC
The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 230_C-101
DESIGNED BY: S.GANESH
DRAWN BY: M.THIRODEAU
CHK'D BY: R.BERLANDY
X-CHK'D BY: J.SULLIVAN
APPROVED BY: J.SULLIVAN
DATE: MAY 2015

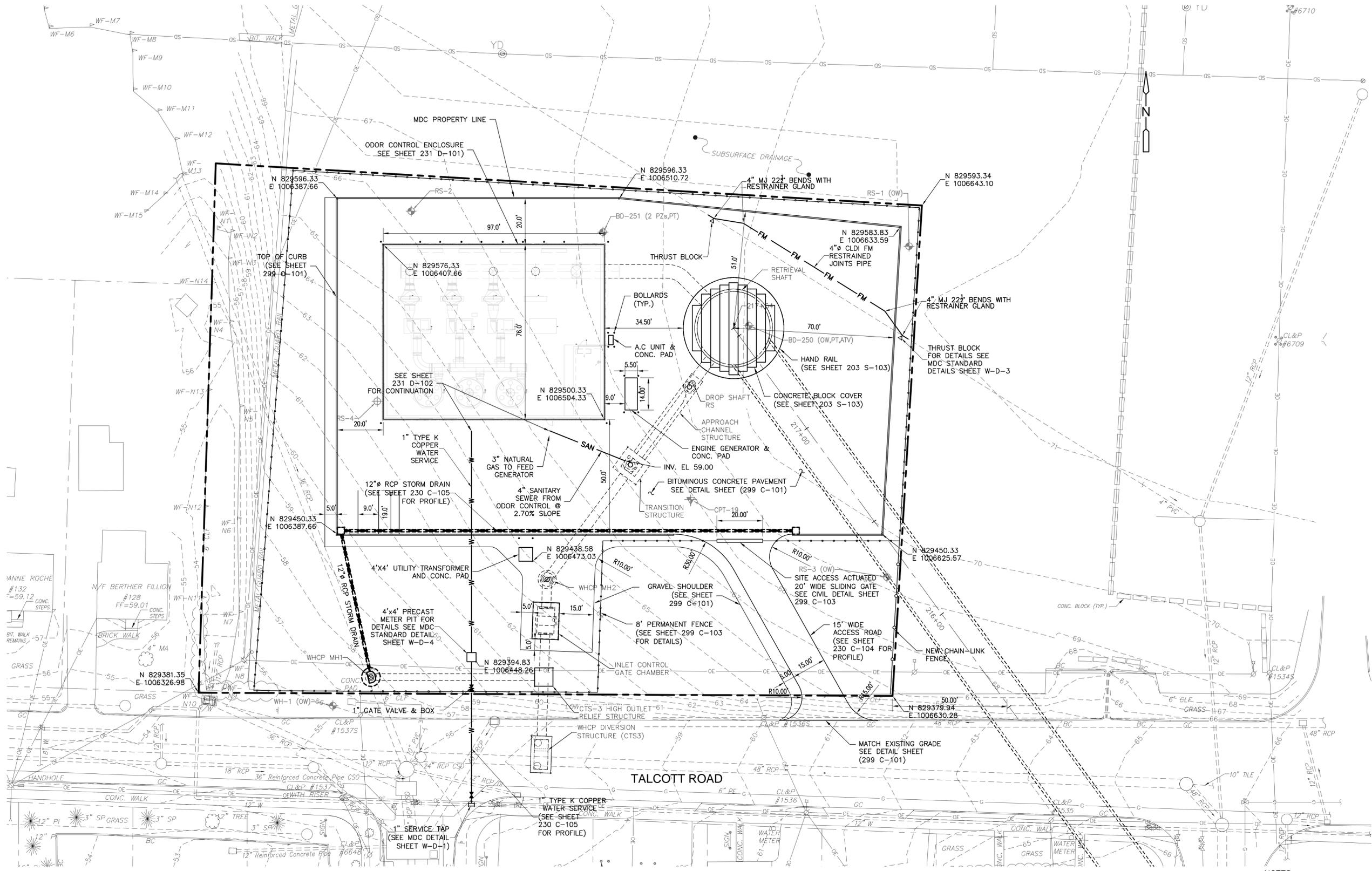
AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

in association with
BLACK & VEATCH

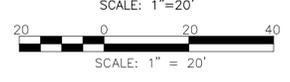
CONTRACT NO. 2015B-27
SOUTH HARTFORD CONVEYANCE AND
STORAGE TUNNEL

CONTRACT 2
**RETRIEVAL SHAFT AND INTEGRAL DROP SHAFT
PLAN AND PROFILE**
CIVIL

PLAN NUMBER
SHEET NO.
230 C-101



PLAN



- NOTES:**
1. FOR LEGEND SEE SHEET 200 C-001.
 2. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEET 200 C-002.
 3. FOR LANDSCAPING DETAILS SEE SHEET 230 C-141
 4. FOR ELECTRICAL SITE PLAN SEE SHEET 230 E-101

VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 230 C-102
DESIGNED BY: S.GANESH
DRAWN BY: M.THIBODEAU
CHK'D BY: R.BERLANDY
X-CHK'D BY: J.SULLIVAN
APPROVED BY: J. SULLIVAN
DATE: MAY 2015

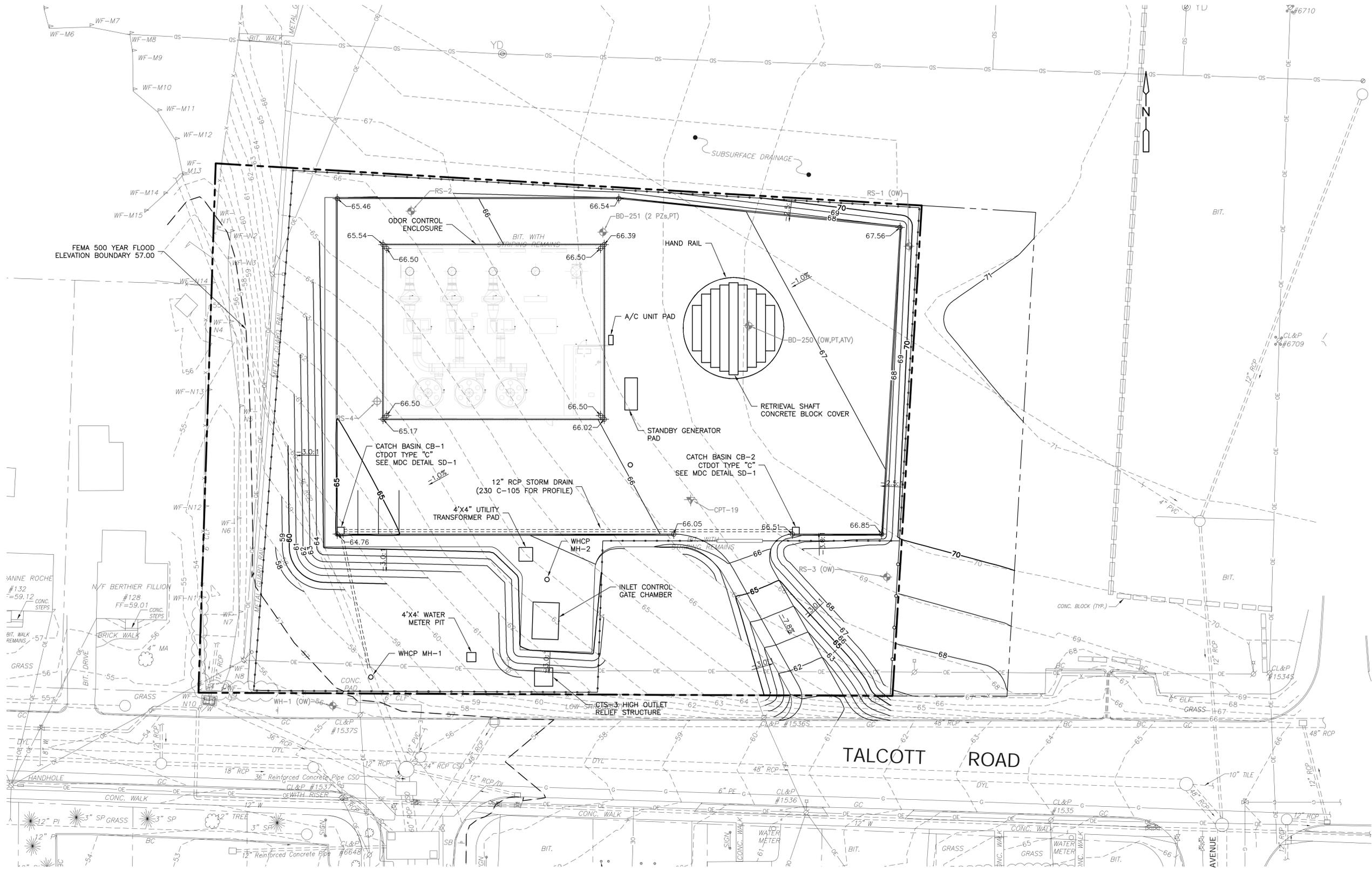
500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06867
PHONE (860) 263-5800

in association with
 BLACK & VEATCH

CONTRACT NO. 2015B-27
SOUTH HARTFORD CONVEYANCE AND STORAGE TUNNEL

CONTRACT 2
RETRIEVAL SHAFT SITE & UTILITY LAYOUT PLAN
CIVIL

PLAN NUMBER
SHEET NO.
230 C-102



PLAN

SCALE: 1"=20'



SCALE: 1" = 20'

NOTES:

1. FOR LEGEND SEE SHEET 200 C-001.
2. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEET 200 C-002.

VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC
The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 230 C-103
DESIGNED BY: S.GANESH
DRAWN BY: M.THIBODEAU
CHK'D BY: R.BERLANDY
X-CHK'D BY: J.SULLIVAN
APPROVED BY: J.SULLIVAN
DATE: MAY 2015

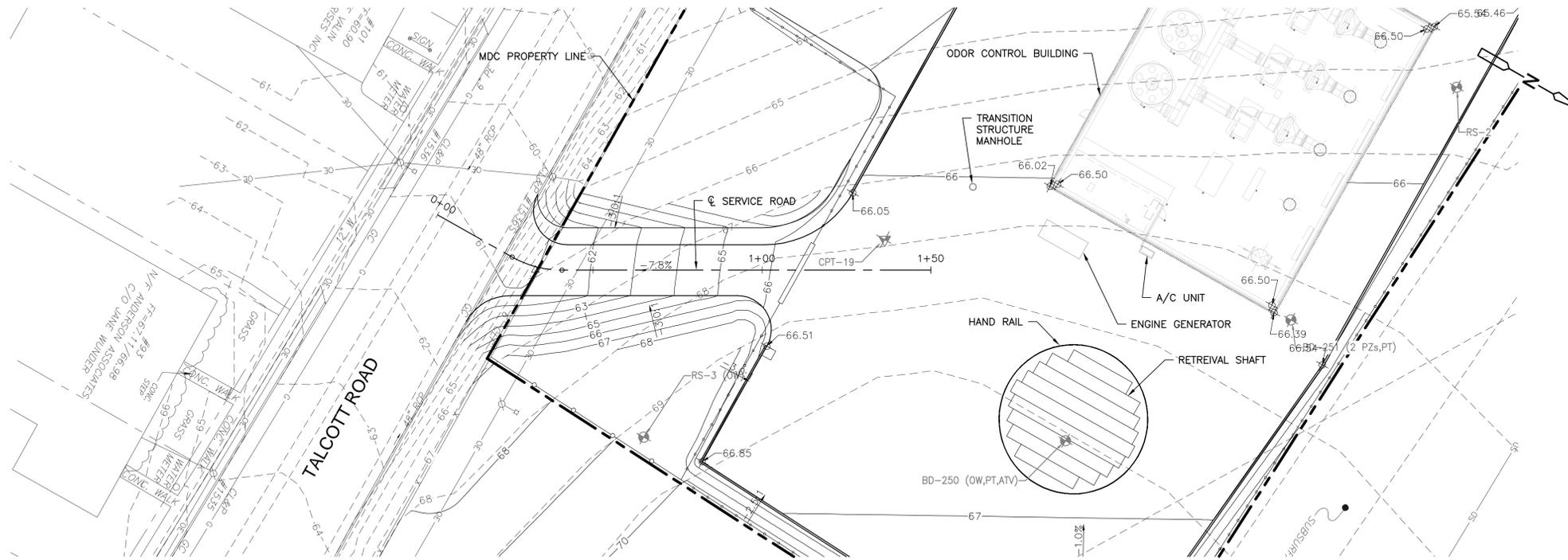
AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06867
PHONE (860) 263-5800

in association with
BLACK & VEATCH

CONTRACT NO. 2015B-27
SOUTH HARTFORD CONVEYANCE AND STORAGE TUNNEL

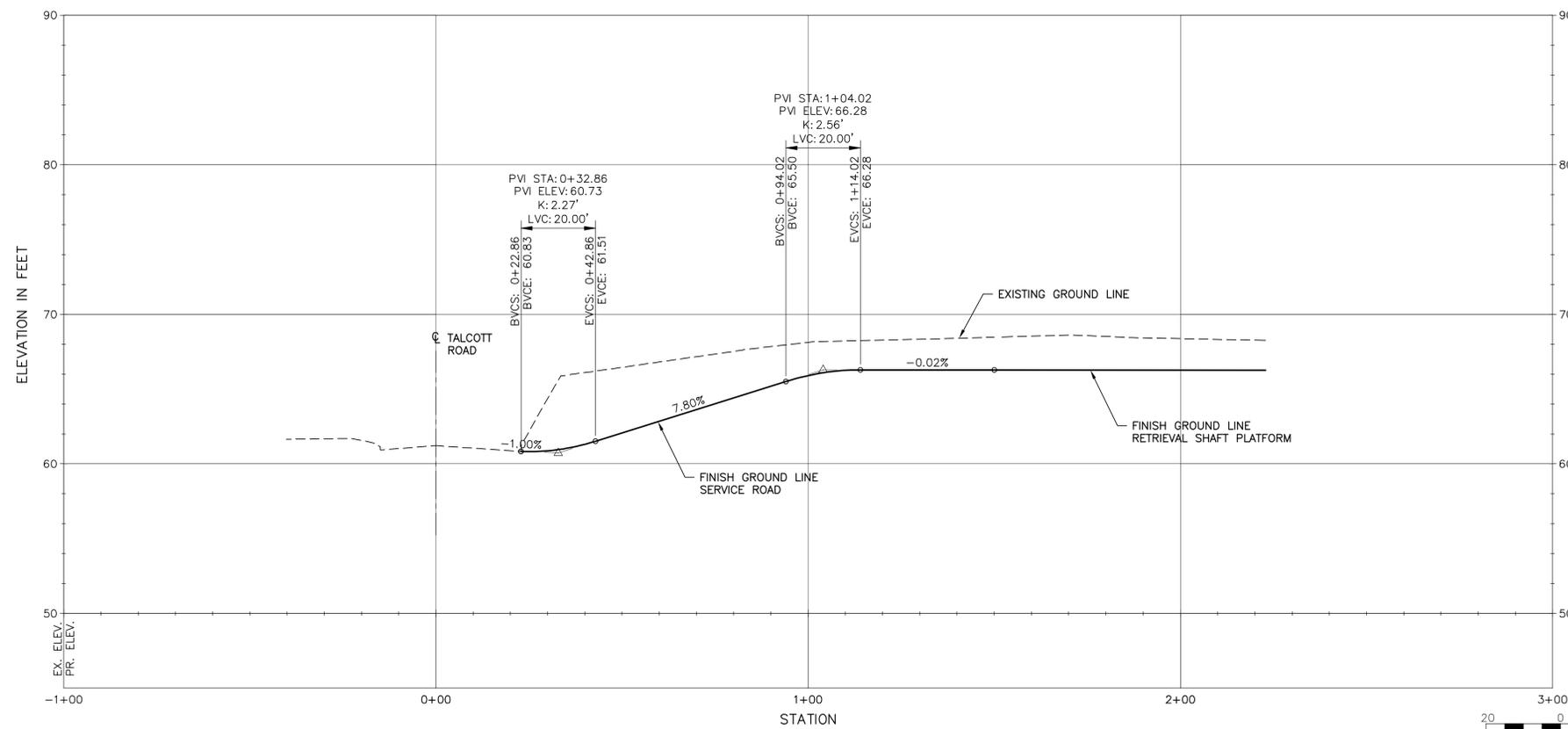
CONTRACT 2
RETRIVAL SHAFT GRADING & DRAINAGE PLAN
CIVIL

PLAN NUMBER
SHEET NO.
230 C-103



PLAN

SCALE: 1"=20'

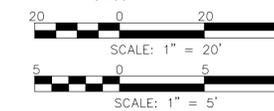


PROFILE

SCALE: 1"=20' HOR.
1"= 5' VERT.

NOTES:

1. FOR LEGEND SEE SHEET 200 C-001.
2. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEET 200 C-002.



VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC
The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 230_C-104
DESIGNED BY: S.GANESH
DRAWN BY: M.THIBODEAU
CHK'D BY: R.BERLANDY
X-CHK'D BY: J.SULLIVAN
APPROVED BY: J. SULLIVAN
DATE: MAY 2015

AECOM
500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

in association with
BLACK & VEATCH

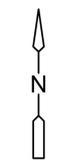
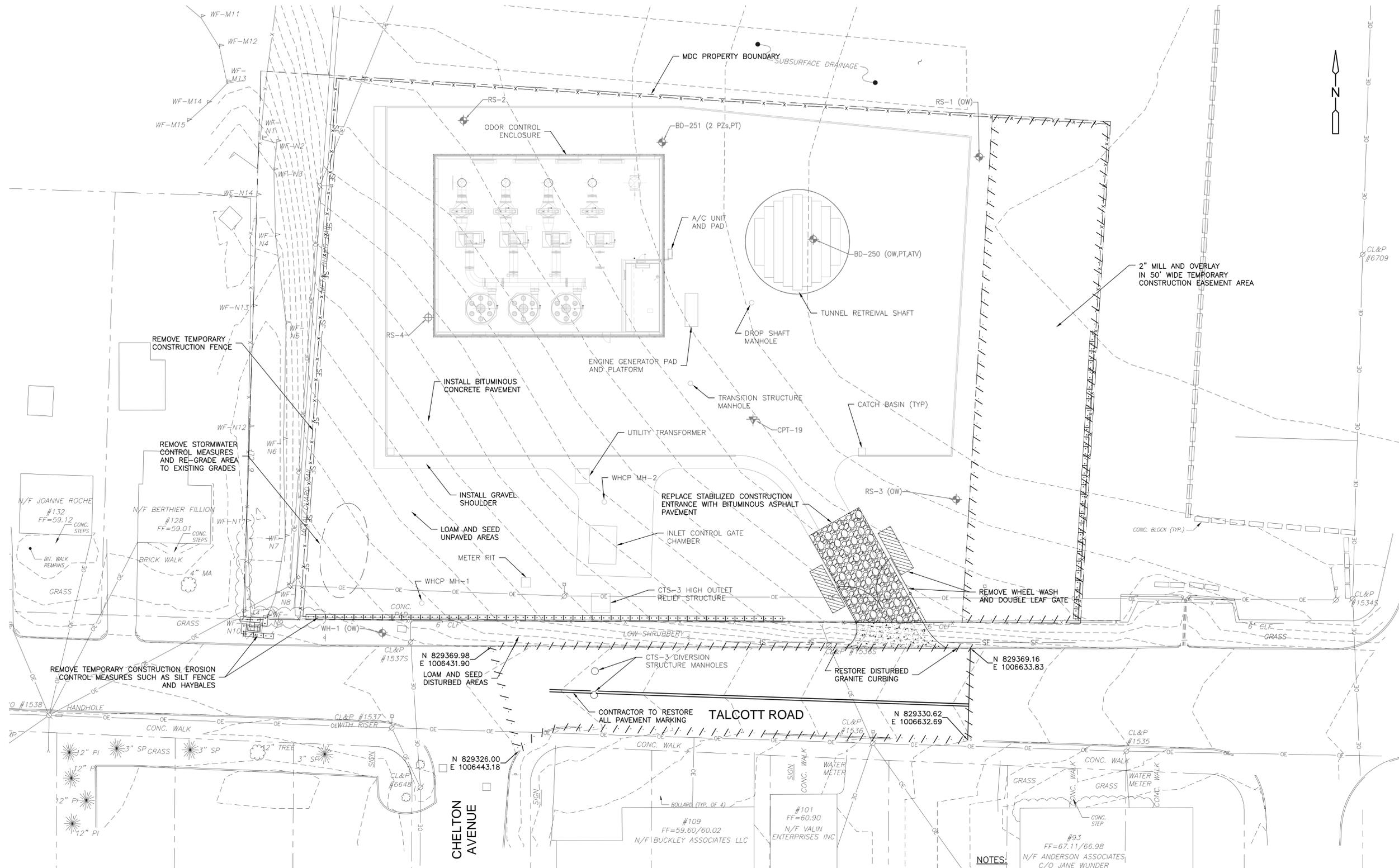
CONTRACT NO. 2015B-27
SOUTH HARTFORD CONVEYANCE AND
STORAGE TUNNEL

CONTRACT 2
**RETRIEVAL SHAFT ENTRANCE ROAD
PLAN AND PROFILE**
CIVIL

PLAN NUMBER

SHEET NO.

230 C-104



PLAN

SCALE: 1"=20'



SCALE: 1" = 20'

- NOTES:**
1. FOR LEGEND SEE SHEET 200 C-001.
 2. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEET 200 C-002.
 3. FOR PROPOSED SITE PLAN SEE SHEET 230 C-102
 4. FOR LANDSCAPING PLAN SEE SHEET 230 C-141
 5. FOR CTS-3 DIVERSION STRUCTURE STAGING AREA SEE SHEET 240 C-111
 6. FOR MAINTENANCE AND PROTECTION OF TRAFFIC IN TALCOTT STREET SEE SHEET 602 T-103

VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC
The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 230 C-131
DESIGNED BY: S.GANESH
DRAWN BY: M.THIBODEAU
CHK'D BY: R.BERLANDY
X-CHECK'D BY: J.SULLIVAN
APPROVED BY: J.SULLIVAN
DATE: MAY 2015

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 08667
PHONE (860) 263-5800

in association with
BLACK & VEATCH

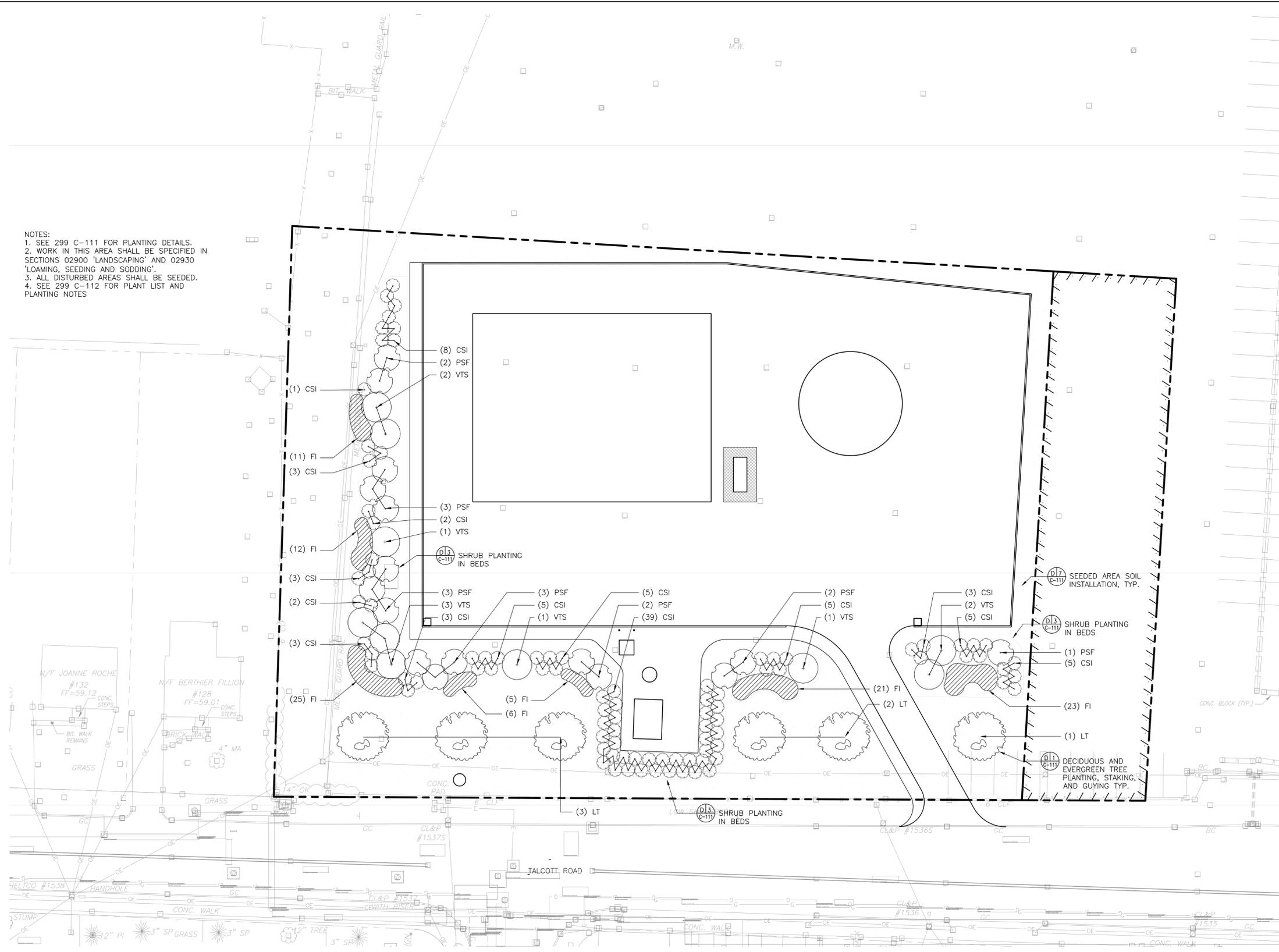
CONTRACT NO. 2015B-27
SOUTH HARTFORD CONVEYANCE AND STORAGE TUNNEL

CONTRACT 2
RETRIEVAL SHAFT SITE & TALCOTT ROAD RESTORATION PLAN
CIVIL

PLAN NUMBER
SHEET NO.
230 C-131



- NOTES:
 1. SEE 299 C-111 FOR PLANTING DETAILS.
 2. WORK IN THIS AREA SHALL BE SPECIFIED IN SECTIONS 02900 'LANDSCAPING' AND 02930 'LOAMING, SEEDING AND SODDING'.
 3. ALL DISTURBED AREAS SHALL BE SEEDDED.
 4. SEE 299 C-112 FOR PLANT LIST AND PLANTING NOTES



PLAN



VERTICAL DATUM IS NGVD 29
 HORIZONTAL DATUM IS NAD 83/92

PLOTTED DATE
 SAVED DATE
 C:\NAME_ID

MDC
The Metropolitan District
 555 Main Street
 Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 230 C-144
 DESIGNED BY: V.VAYMER
 DRAWN BY: H.BEALL
 CHK'D BY: T.A.T.
 X-CHK'D BY: J.SULLIVAN
 APPROVED BY: J.SULLIVAN
 DATE: 2015

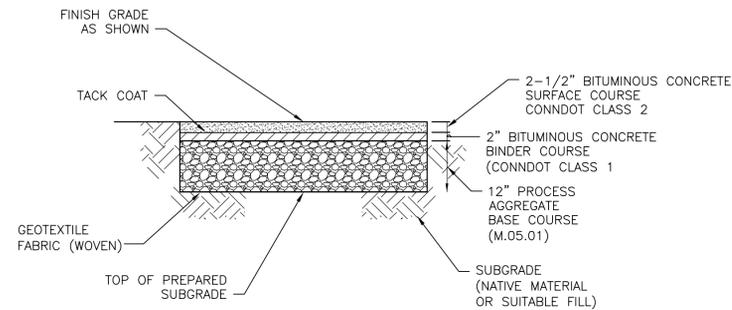
AECOM 500 ENTERPRISE DRIVE, SUITE 1A
 ROCKY HILL, CT 06867
 PHONE (860) 263-5800

in association with
BLACK & VEATCH

CERTIFICATE OF AUTHORIZATION NO. XXXXXXXXX
CONTRACT NO. 2015B-27
 SOUTH HARTFORD CONVEYANCE AND
 STORAGE TUNNEL

CONTRACT 2
RETRIEVAL SHAFT FINAL SITE
 - PLANTING PLAN
 LANDSCAPE

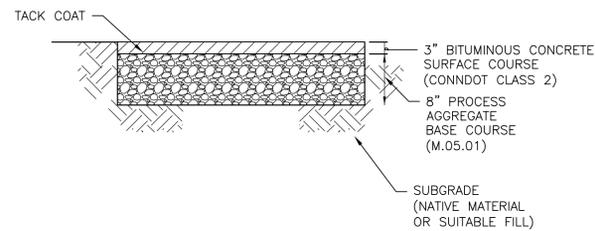
PLAN NUMBER
 SHEET NO.
230 C-144



NOTES:
1. PROVIDE BITUMINOUS CONCRETE PAVEMENT TYPES PER CONNDOT STANDARD SPECIFICATIONS.

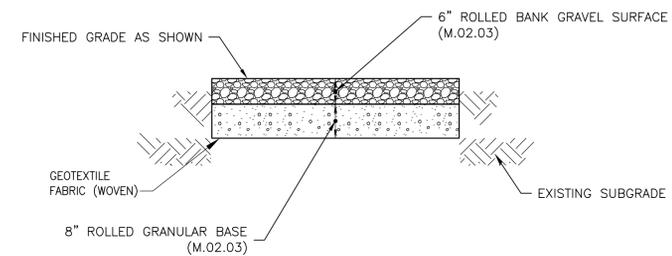
BITUMINOUS CONCRETE PAVEMENT SECTION DETAIL

SCALE: NOT TO SCALE



TEMPORARY BITUMINOUS CONCRETE PAVEMENT SECTION DETAIL

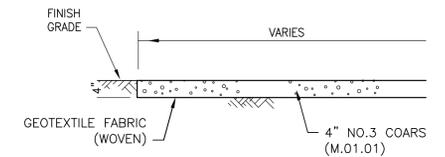
SCALE: NOT TO SCALE



NOTES:
1. PROVIDE GRAVEL SHOULDER PER CONNDOT STANDARD SPECIFICATIONS.

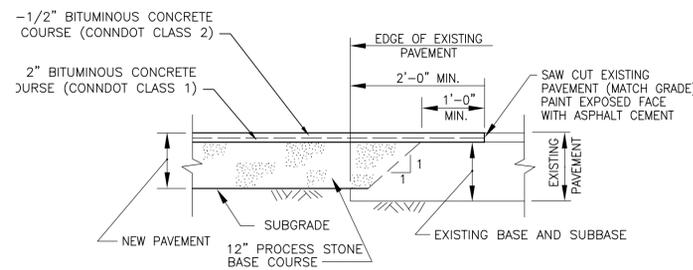
GRAVEL SHOULDER DETAIL

NOT TO SCALE



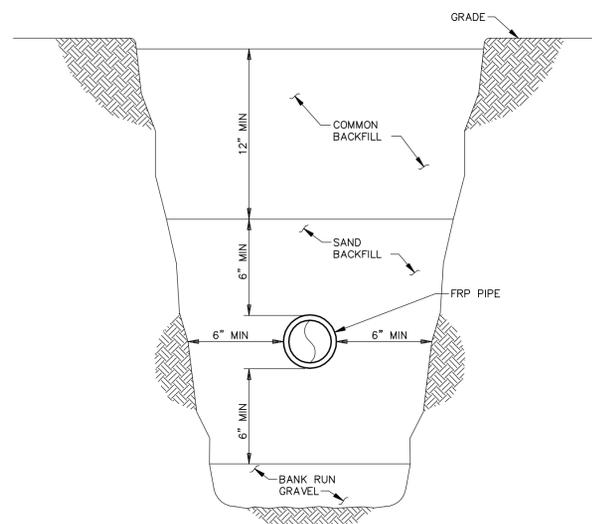
4\"/>

NOT TO SCALE



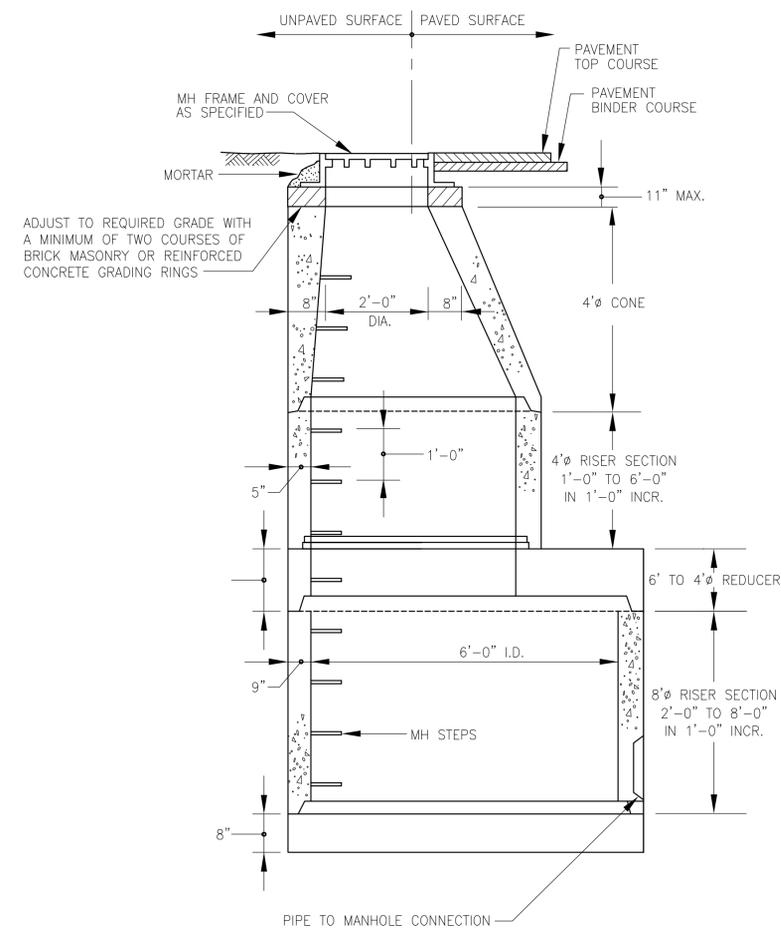
TYPICAL FORMAT OF PAVEMENT MATCHING DETAIL

NOT TO SCALE



TRENCH DETAIL FOR FRP PIPE INSTALLATION

NO SCALE



6\"/>

NO SCALE

NOTES:

- FOR LEGEND SEE SHEET 200 C-001.
- FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEET 200 C-002.

VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 299_C-101
DESIGNED BY: R. CANTERBURY
DRAWN BY: M.T.
CHK'D BY: R. BERLANDY
X-CHK'D BY: J. SULLIVAN
APPROVED BY: J. SULLIVAN
DATE: MAY 2015



500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800



CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE AND STORAGE TUNNEL

CONTRACT 2

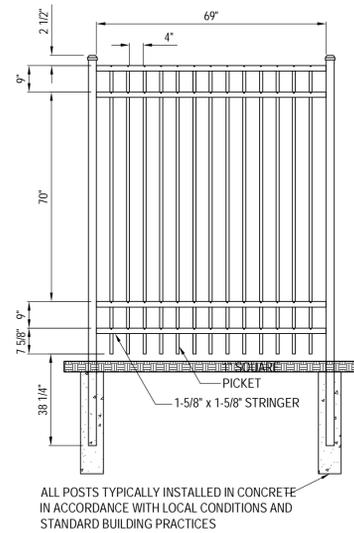
CIVIL DETAIL SHEET I

CIVIL

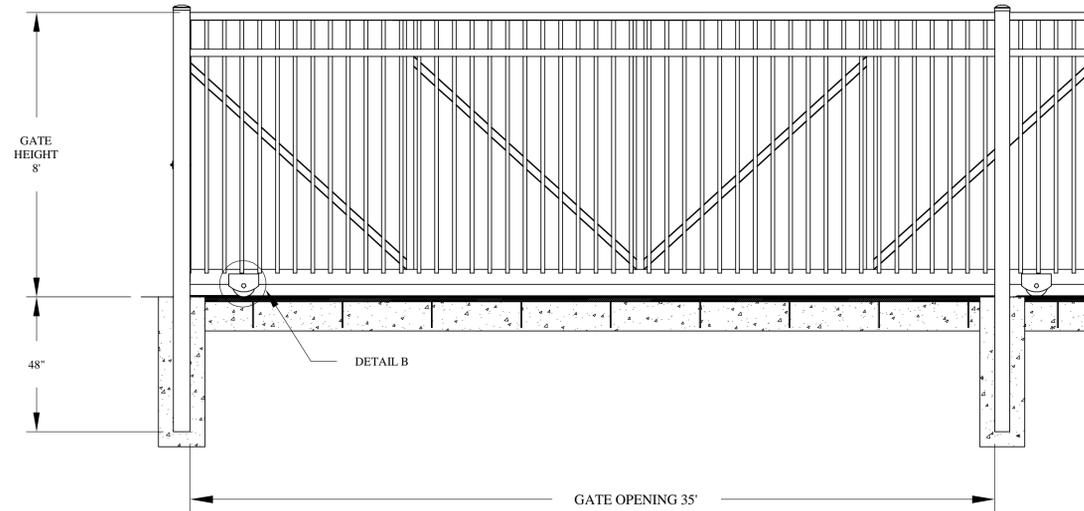
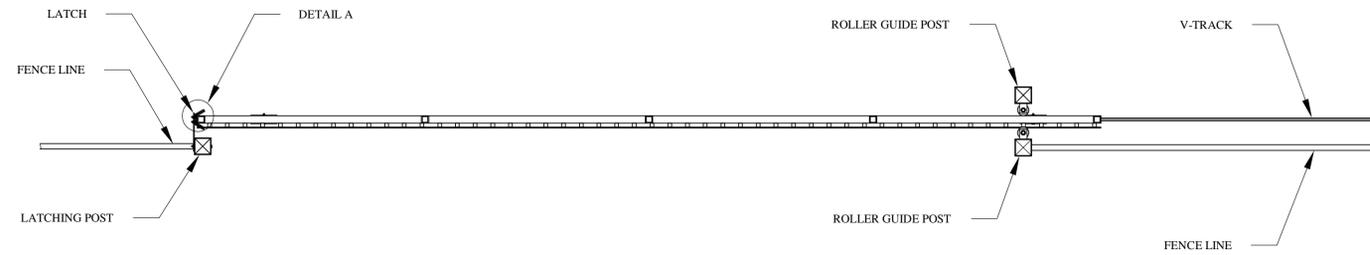
PLAN NUMBER

SHEET NO.

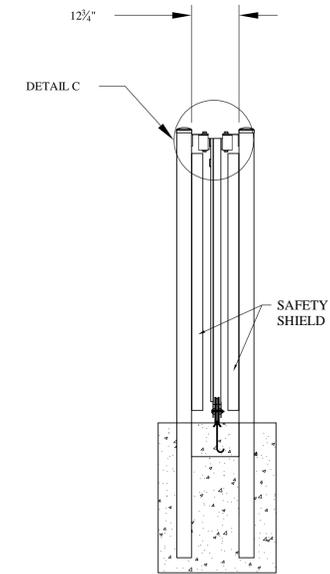
299 C-101



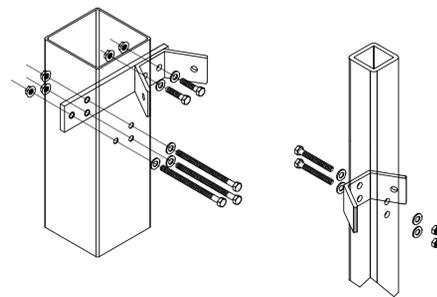
8' HIGH FENCE DETAIL
NOT TO SCALE



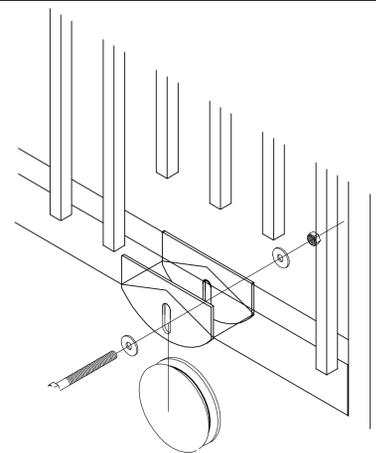
8' HORIZONTAL SLIDING GATE DETAIL
NOT TO SCALE



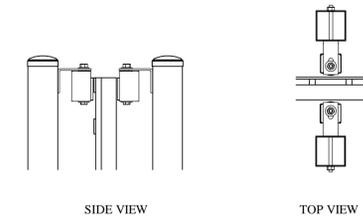
DETAIL A



DETAIL B



DETAIL C



NOTES:

1. FOR LEGEND SEE SHEET 200 C-001.
2. FOR GENERAL NOTES AND ABBREVIATIONS SEE SHEET 200 C-002.

VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 299_C-102
DESIGNED BY: R. CANTERBURY
DRAWN BY: M.T.
CHK'D BY: R. BERLANDY
X-CHK'D BY: J. SULLIVAN
APPROVED BY: J. SULLIVAN
DATE: MAY 2015

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

in association with
BLACK & VEATCH

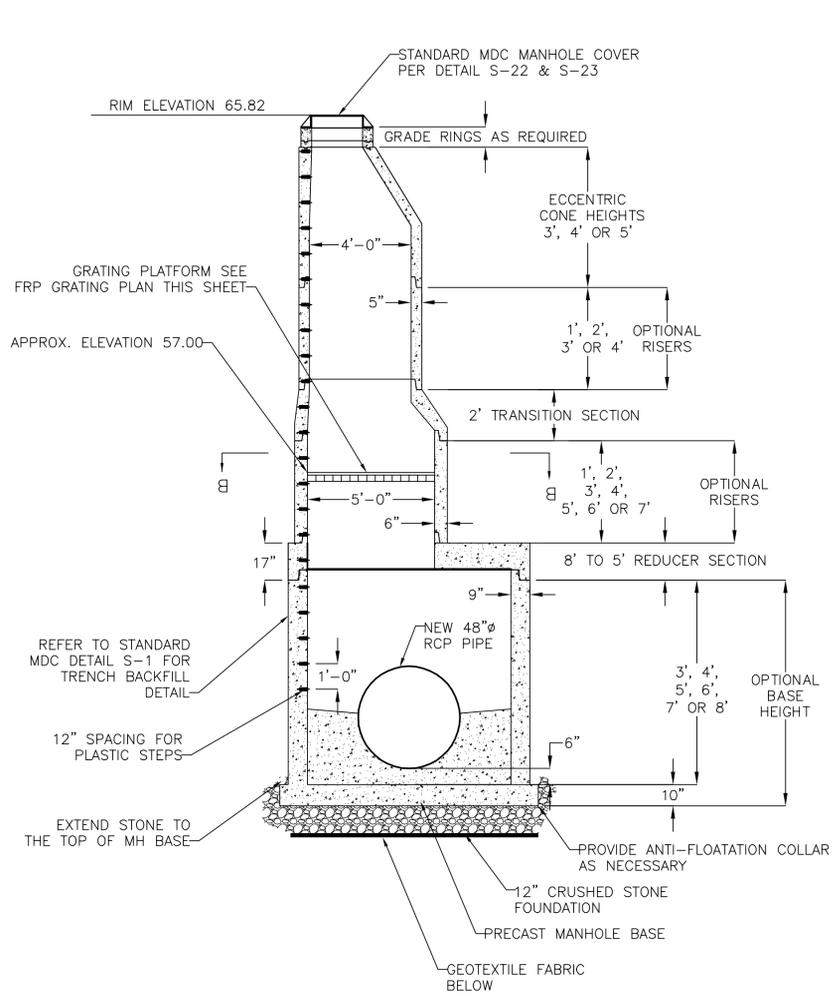
CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE AND
STORAGE TUNNEL

CONTRACT 2
CIVIL DETAIL SHEET III
CIVIL

PLAN NUMBER

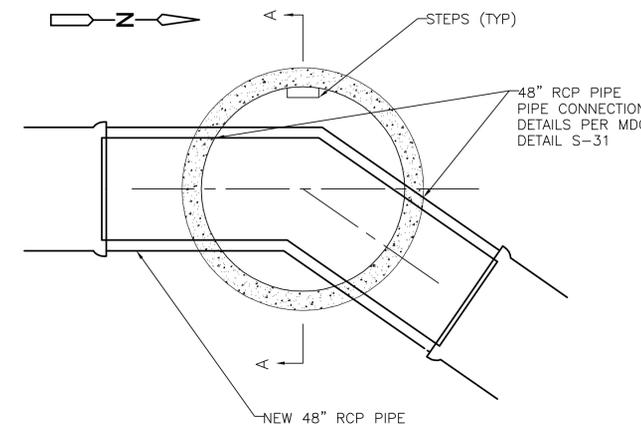
SHEET NO.

299 C-103

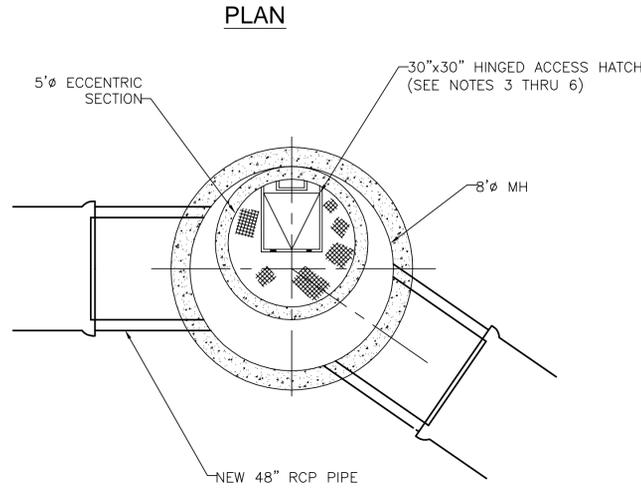


SECTION A-A

WHCP MH-2 8' DIAMETER PRECAST MANHOLE DETAIL
N.T.S

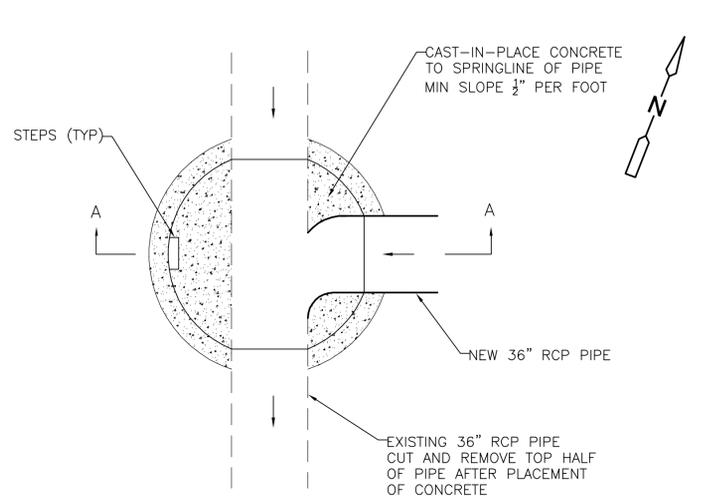


PLAN

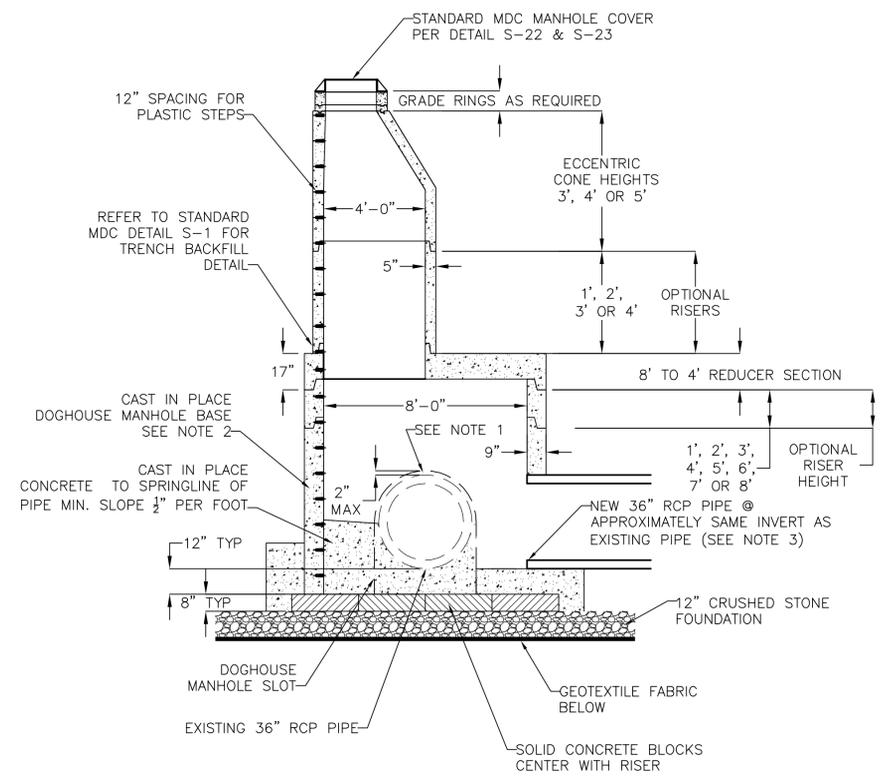


SECTION B-B

- NOTES:**
1. INVERTS SHALL BE FIELD FORMED AND NOT FORMED IN SHOP/YARD
 2. DISTANCE BETWEEN TOP OF MANHOLE COVER TO FIRST PLASTIC STEP SHALL BE BETWEEN 12" AND 16"
 3. GRATING ANGLES AND ALL APPURTENANCES ARE TO BE MANUFACTURERS STANDARD DESIGN DETAILS
 4. STRUCTURAL DESIGN TO BE PERFORMED BY FRP GRATING MANUFACTURER AND BE SIGNED AND STAMPED BY A CONNECTICUT PROFESSIONAL ENGINEER
 5. DESIGN LOAD: 100 LB/SF WITH MAX. DEFLECTION LIMITED TO 0.125 INCH.



PLAN



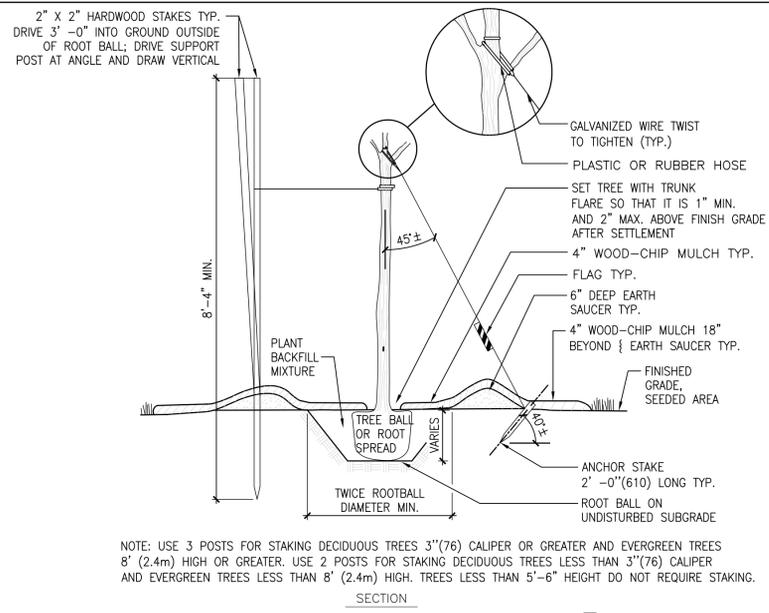
SECTION A-A

WHCP MH-1 8' DIAMETER DOGHOUSE MANHOLE DETAIL
N.T.S

- NOTES:**
1. FILL ANNULAR SPACE AROUND PIPE WITH NON-SHRINK GROUT.
 2. DOGHOUSE MANHOLE SLOT SIZE BASED ON EXISTING PIPE SIZE, CONTRACTOR SHALL CONFIRM PIPE SIZE, ANGLES AND CONFIGURATION PRIOR TO CONSTRUCTION
 3. NEW PIPE CONNECTION TO DOGHOUSE MANHOLE PER MDC STANDARD DETAIL S-31.
 4. EXISTING PIPE TO REMAIN IN SERVICE, CONSTRUCT NEW INVERT AND TRANSFER FLOWS AS REQUIRED.
 5. CAST-IN PLACE DOGHOUSE MANHOLE SHALL BE INSTALLED ONLY WHEN AUTHORIZED BY ENGINEER.
 6. DISTANCE BETWEEN TOP OF MANHOLE COVER TO FIRST PLASTIC STEP SHALL BE BETWEEN 12" AND 16"

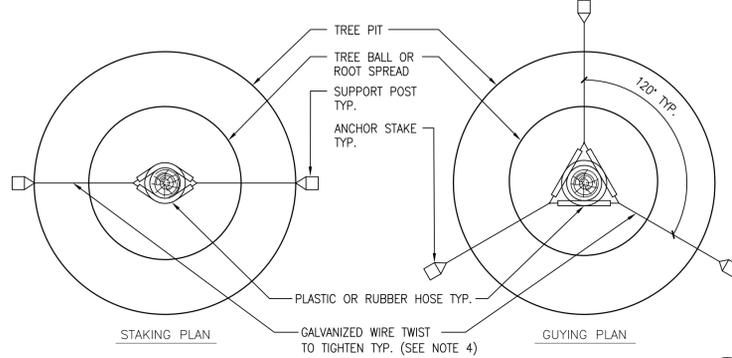
REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 299_C-104
DESIGNED BY: S.GANESH
DRAWN BY: M.THIBODEAU
CHK'D BY: ----
X-CHK'D BY: J. SULLIVAN
APPROVED BY: J. SULLIVAN
DATE: MAY 2015

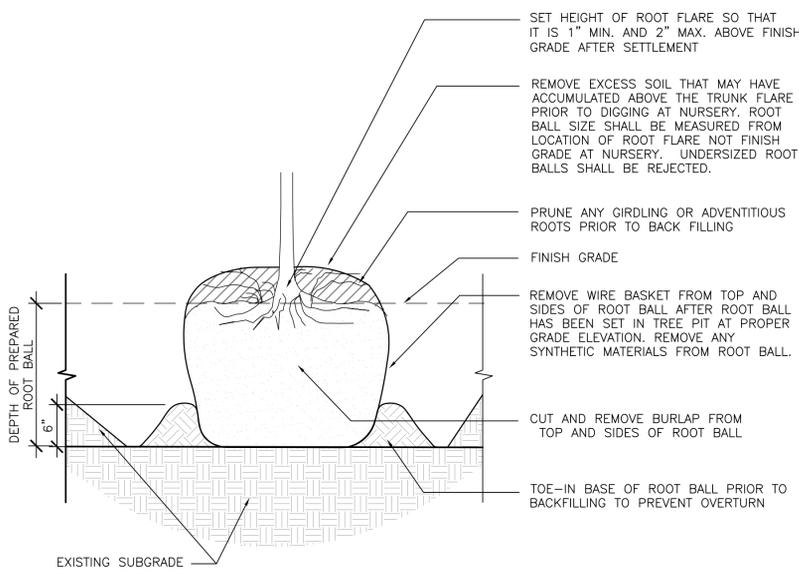


NOTE: USE 3 POSTS FOR STAKING DECIDUOUS TREES 3\"/>

SECTION

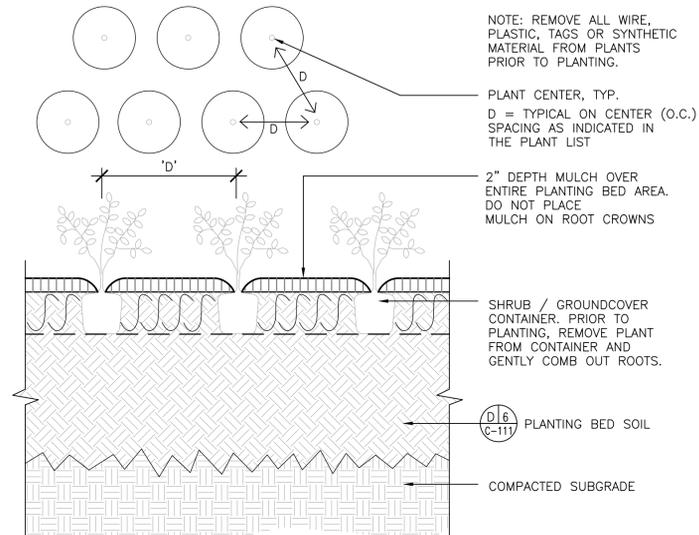


DECIDUOUS AND EVERGREEN TREE PLANTING, STAKING AND GUYING (D 1 C-111)

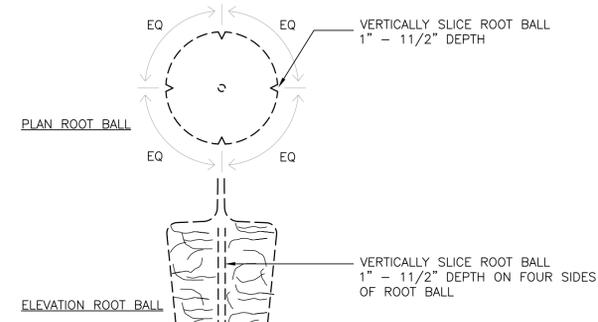


NOTE:
 1. IF GROUNDWATER IS DISCOVERED IN PLANTING HOLE, CEASE OPERATION AND FOLLOW INSTRUCTIONS FROM ENGINEER AND/OR RESTORATION SPECIALIST.
 2. EXPOSE TRUNK FLARE IN BALL PRIOR TO DIGGING HOLE TO DETERMINE CORRECT DEPTH.

ROOT BALL PREPARATION FOR B&B ROOT BALL (D 2 C-111)

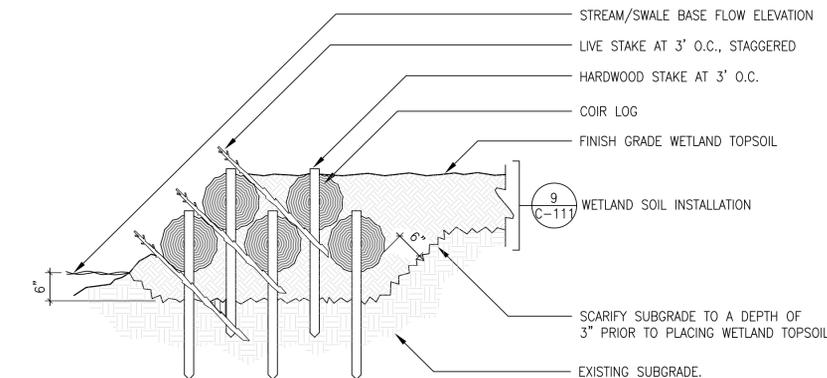


SHRUB PLANTING IN BEDS (D 3 C-111)

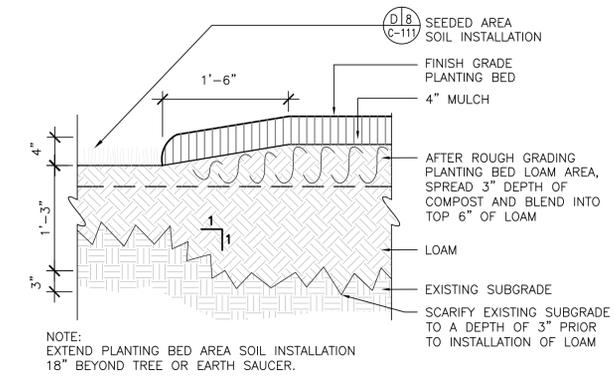


NOTE:
 THIS DETAIL APPLIES TO CONTAINERIZED TREES, SHRUBS, AND PERENNIALS, BUT NOT TO HERBACEOUS PLUGS.

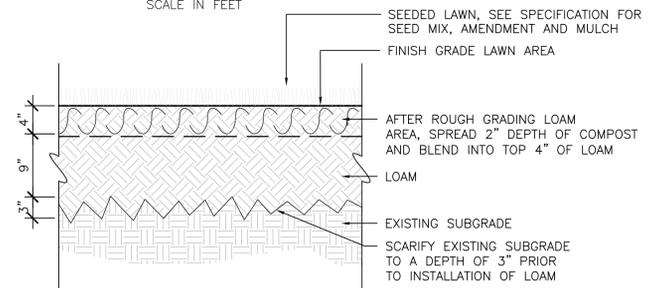
ROOT BALL PREPARATION FOR CONTAINERIZED ROOT BALL (D 4 C-111)



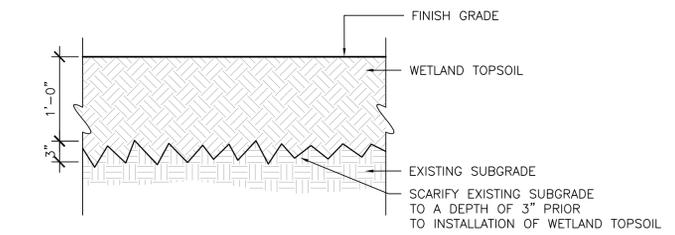
COIR LOG AND LIVE STAKING (D 5 C-111)



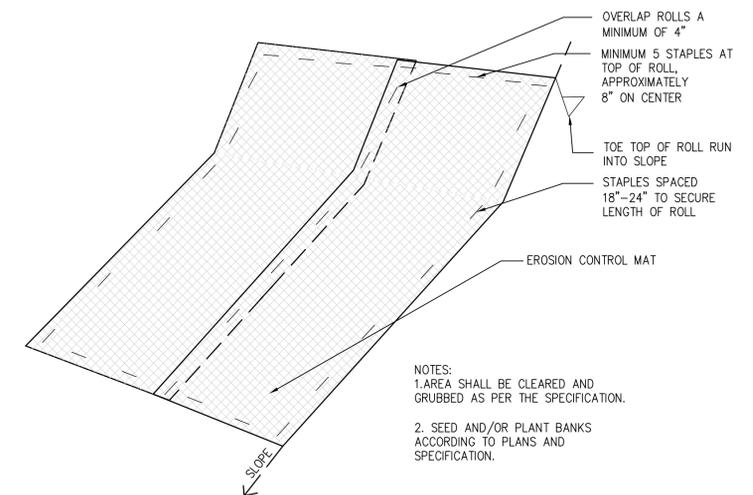
PLANTING BED SOIL INSTALLATION (D 6 C-111)



SEEDING AREA SOIL INSTALLATION (D 7 C-111)



WETLAND SOIL INSTALLATION (D 8 C-111)



EROSION MAT INSTALLATION (D 9 C-111)



NOTES:
 1. AREA SHALL BE CLEARED AND GRUBBED AS PER THE SPECIFICATION.
 2. SEED AND/OR PLANT BANKS ACCORDING TO PLANS AND SPECIFICATION.

VERTICAL DATUM IS NGVD 29
 HORIZONTAL DATUM IS NAD 83/92

PLOTTED_DATE
 SAVED_DATE
 C:\NET_ID

MDC
The Metropolitan District
 555 Main Street
 Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 299 C-111
 DESIGNED BY: A.LAVALLEE
 DRAWN BY: H.BEALL
 CHK'D BY: T.A.T.
 X-CHK'D BY: J. SULLIVAN
 APPROVED BY: J. SULLIVAN
 DATE: 2014

90% SUBMITTAL
 NOT FOR
 CONSTRUCTION

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
 ROCKY HILL, CT 06067
 PHONE (860) 263-5800

in association with
BLACK & VEATCH

CERTIFICATE OF AUTHORIZATION NO. XXXXXXXXXX
 CONTRACT NO. 20XX-XX
 SOUTH HARTFORD CONVEYANCE AND
 STORAGE TUNNEL

LANDSCAPING DETAILS 1

PLAN NUMBER

SHEET NO.

299 C-111

PEM-1

BOTANICAL NAME	COMMON NAME	INDICATOR	SIZE	SPACING	LOCATION
					WETLAND Z
AREA (S.F.)					32,301
Emergent					QUANTITY
<i>Sparganium americanum</i>	Bur-reed	FAC	12" Ht Container	3' O.C.	719
<i>Scirpus validus</i>	Bulrush	FACW	12" Ht Container	3' O.C.	719
<i>Carex stricta</i>	Tussock Sedge	FACW	12" Ht Container	3' O.C.	719
<i>Peltandra virginica</i>	Arrow Arum	FACW	12" Ht Container	3' O.C.	719
<i>Salix discolor</i>	Pussy Willow	FACW	1-2" Diameter Live Stake	3' O.C.	719
TOTAL QTY=					3,595

PEM-2

BOTANICAL NAME	COMMON NAME	INDICATOR	SIZE	SPACING	LOCATION
					North PFO & PSS
AREA (S.F.)					8,654
Emergent					QUANTITY
<i>Scirpus cyperinus</i>	Wool grass	FACW	12" Ht Container	3' O.C.	322
<i>Juncus effusus</i>	Soft Rush	FACW	12" Ht Container	3' O.C.	322
<i>Juncus canadensis</i>	Canada Rush	FACW	12" Ht Container	3' O.C.	322
TOTAL QTY=					966

UPLAND BUFFER

BOTANICAL NAME	COMMON NAME	INDICATOR	SIZE	SPACING	LOCATION
					Upland Buffer
AREA (S.F.)					10,373
TREES					Quantity
<i>JUNIPERUS VIRGINIANA</i>	EASTERN RED CEDAR	FACU	3'-4' HT B.B.	10' O.C.	27
<i>BETULA POPULIFOLIA</i>	GRAY BIRCH	FAC	18" - 24" HT B.B.	10' O.C.	27
<i>PRUNUS SEROTINA</i>	BLACK CHERRY	FACU	24"-36" HT B.B.	10' O.C.	28
TOTAL QUANTITY=					82
SHRUBS					Quantity
<i>RHUS GLABRA</i>	SMOOTH SUMAC	—	18" - 24" HT B.B.	5' O.C.	95
<i>VIBURNUM LENTAGO</i>	NANNYBERRY	—	18" - 24" HT B.B.	5' O.C.	95
<i>MYRICA PENNSYLVANICA</i>	NORTHERN BAYBERRY	FAC	18" - 24" HT B.B.	5' O.C.	95
<i>VIBURNUM DENTATUM</i>	ARROWWOOD	FACW	2'-3' HT B.B.	5' O.C.	95
TOTAL QUANTITY=					380

PLANT LIST FOR WETLAND RESTORATION AREA 1
C-112

SYMB	QTY	BOTANICAL NAME	COMMON NAME	ROOT	SIZE	COMMENTS
TREES						
LT	6	LIRIODENDRON TULIPIFERA	TULIP TREE	B&B	2 1/2"-3" CAL.	
PSF	16	PINUS STROBIS 'FASTIGIATA'	FASTIGIATE WHITE PINE	B&B	5'-6" HT.	FULL TO GROUND
SHRUBS						
CSI	92	CORNUS SERICEA 'ISANTI'	ISANTI DOGWOOD	#5 CONT.	24"-30" HT.	SPACE AT 5' O.C.
FI	103	FORSYTHIA X INTERMEDIA 'GOLD TIDE'	GOLD TIDE FORSYTHIA	#3 CONT.	15"-18" HT.	SPACE AT 2'-6" O.C.
VTS	10	VIBURNUM PLICATUM T. 'SHASTA'	SHASTA VIBURNUM	B&B	3'-4" HT.	FULL TO GROUND

PLANT LIST FOR RETRIEVAL SHAFT SITE 2
C-112

NOTES:

- SEE DRAWING 220 C-116 FOR WETLAND Z MITIGATION PLAN.
- SEE DRAWING 230 C-141 FOR RETRIEVAL SHAFT FINAL SITE LANDSCAPE PLAN.
- SEE DRAWING 299 C-111 FOR LANDSCAPING DETAILS 1.

VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

PLOTTED_DATE
SAVED_DATE
C:\GNET_ID



The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 299 C-112
DESIGNED BY: A.LAVALLEE
DRAWN BY: H.BEALL
CHK'D BY: T.A.T.
X-CHK'D BY:
APPROVED BY: J. SULLIVAN
DATE: 2014

90% SUBMITTAL
NOT FOR
CONSTRUCTION



500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

in association with
 **BLACK & VEATCH**

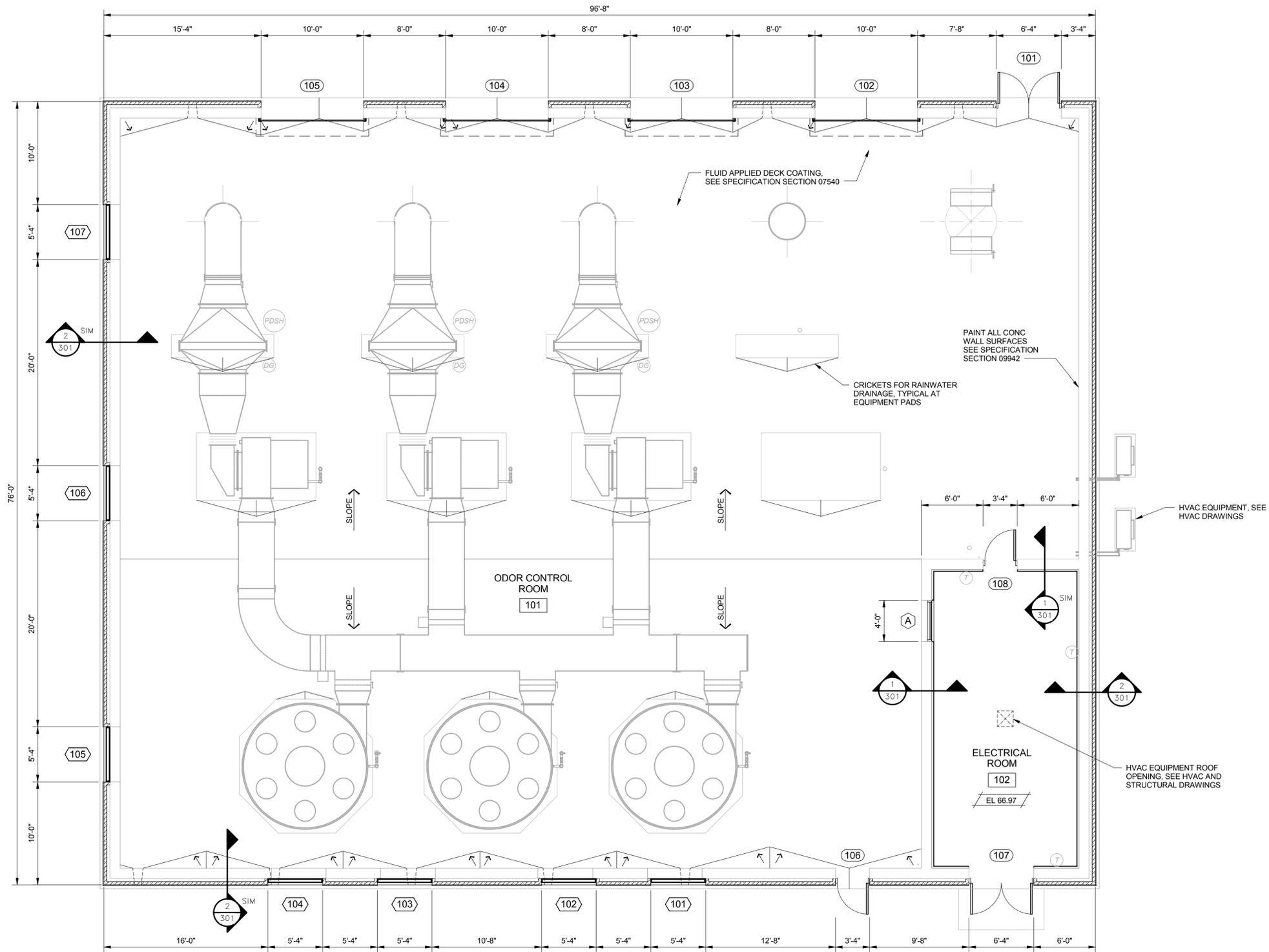
CERTIFICATE OF AUTHORIZATION NO. XXXXXXXXXX
CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE AND
STORAGE TUNNEL

PLANT LIST AND PLANTING NOTES

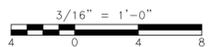
PLAN NUMBER

SHEET NO.

299 C-112



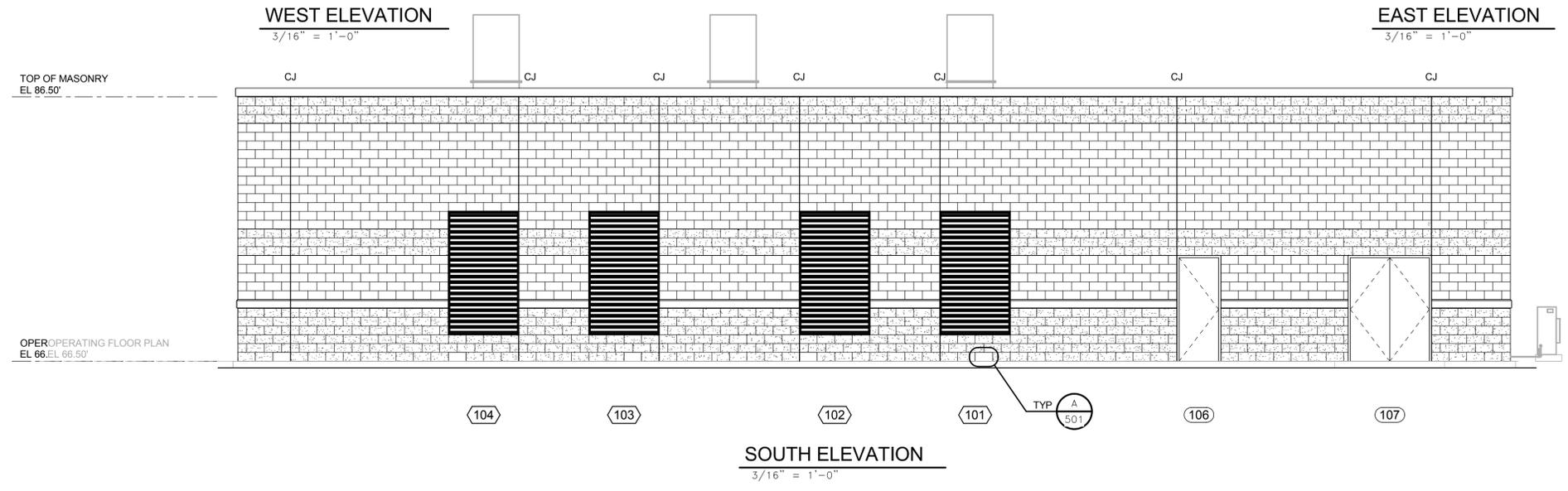
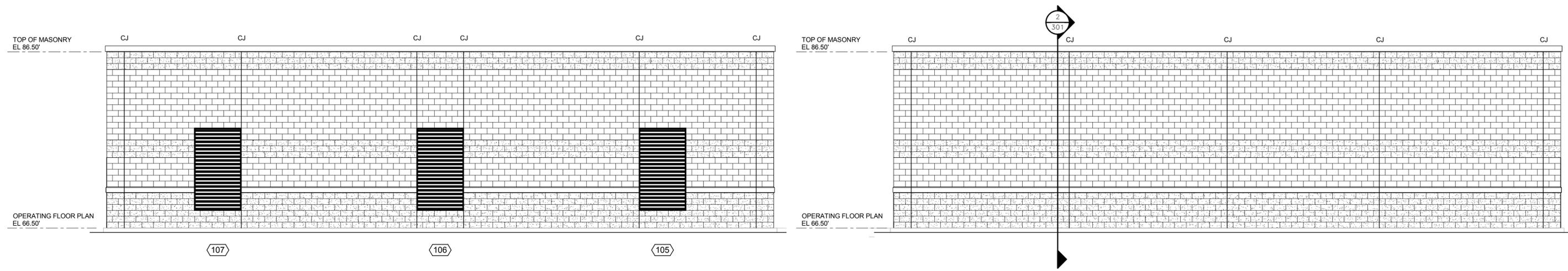
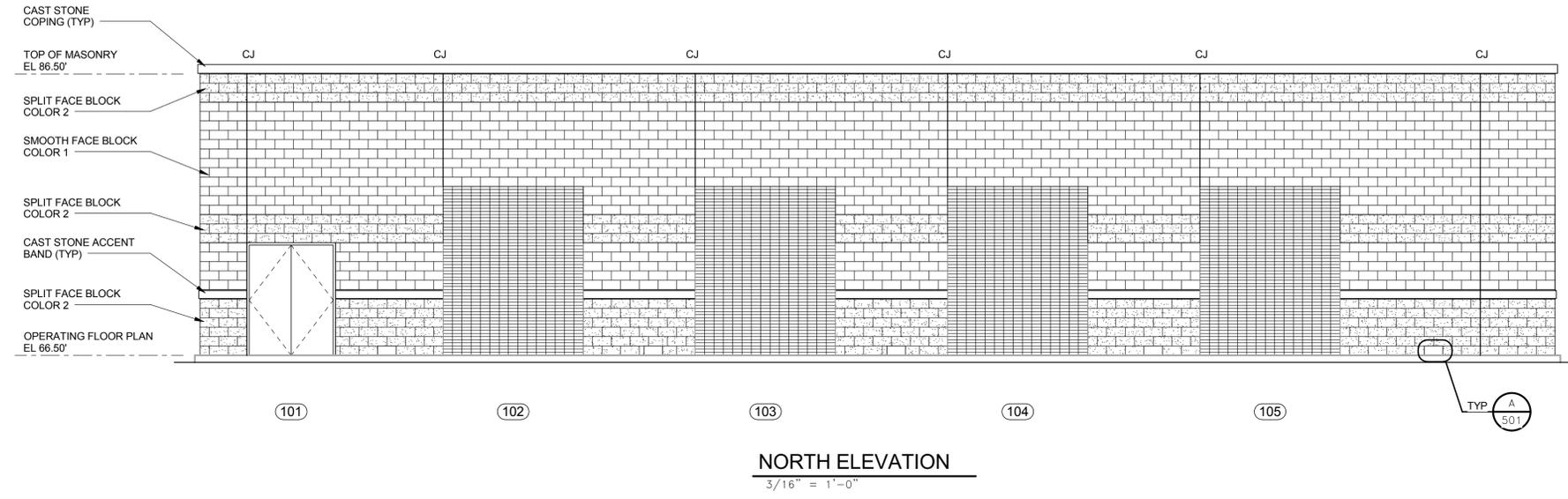
OPERATING FLOOR PLAN
3/16" = 1'-0"



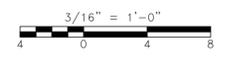
VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____	DESIGNED BY: _____ PDR
DRAWN BY: _____ CTH	CHK'D BY: _____
X-CHK'D BY: _____	APPROVED BY: _____
DATE: MAY 2015	



- NOTES:**
- VENEER CONTROL JOINT (CJ)
 - SEE STRUCTURAL DRAWINGS FOR CONCRETE BACK-UP WALL DESIGN.



VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC
The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____
DESIGNED BY: _____ PDR
DRAWN BY: _____ CTH
CHK'D BY: _____
X-CHK'D BY: _____
APPROVED BY: _____
DATE: MAY 2015

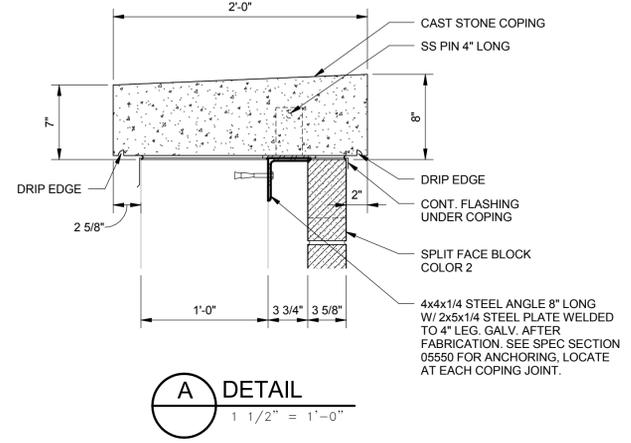
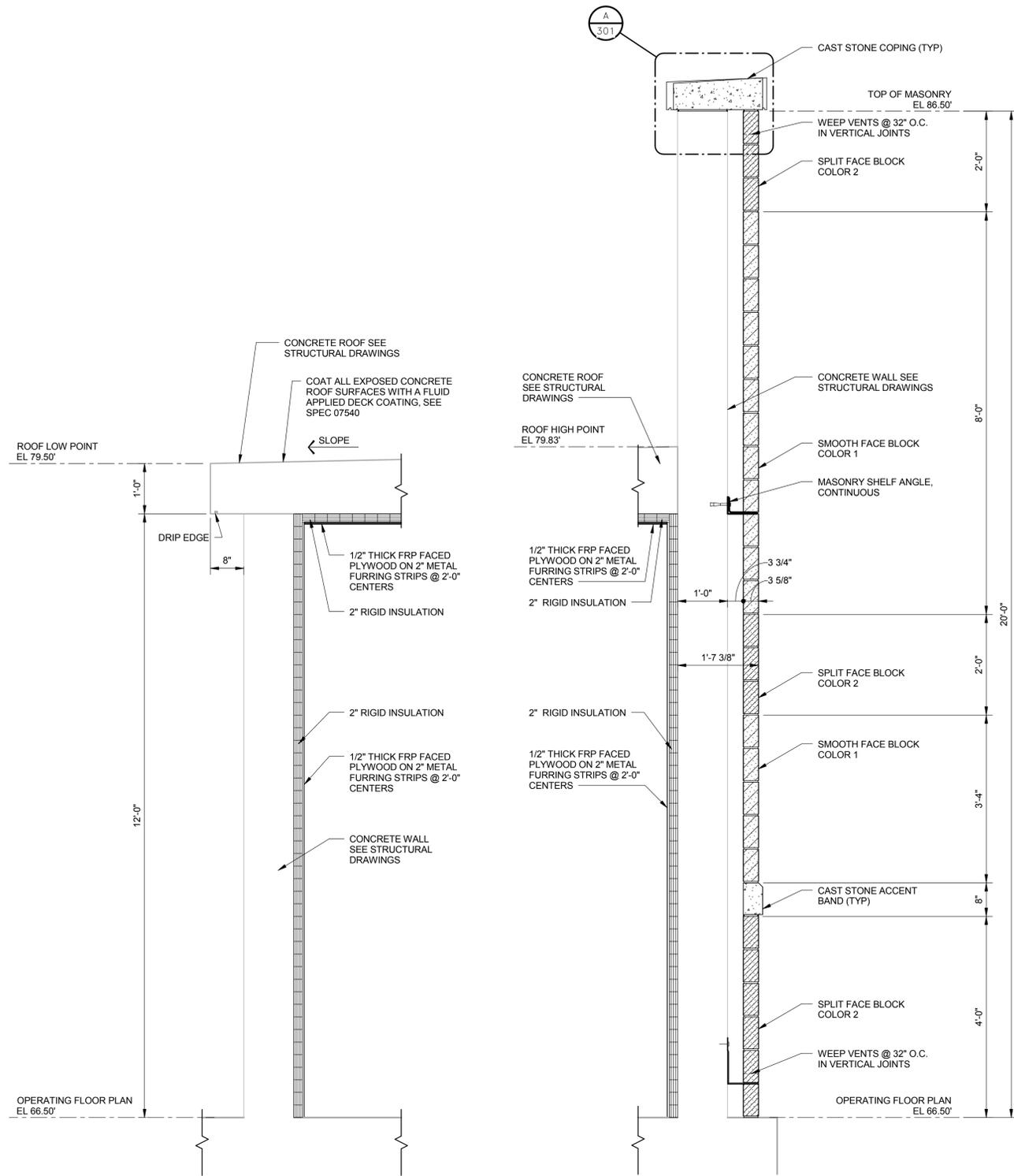
AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

in association with
BLACK & VEATCH

CONTRACT NO. 2015B-27
SOUTH HARTFORD CONVEYANCE
AND STORAGE TUNNEL

CONTRACT 2
RETRIEVAL SHAFT
ODOR CONTROL ENCLOSURE -
ELEVATIONS
ARCHITECTURAL

PLAN NUMBER
SHEET NO.
216 A-201



VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____	DESIGNED BY: _____ PDR
DRAWN BY: _____ CTH	CHK'D BY: _____
X-CHK'D BY: _____	APPROVED BY: _____
DATE: MAY 2015	

RETRIEVAL SHAFT ODOR CONTROL ENCLOSURE ROOM FINISH SCHEDULE																		
ROOM No.	ROOM NAME	FLOOR		WALLS												CEILING		REMARKS
		MATRL	FINISH	NORTH			EAST			SOUTH			WEST			MATRL	FINISH	
101	ODOR CONTROL ROOM	CO	LE	CO	LE	NO	CO	LE	NO	CO	LE	NO	CO	LE	NO	CO	LE	20'-0"
102	ELECTRICAL ROOM	CO	FS	FRP	FF	NO	FRP	FF	NO	FRP	FF	NO	FRP	FF	NO	FRP	FF	12'-0"

RETRIEVAL SHAFT ODOR CONTROL ENCLOSURE DOOR SCHEDULE													
No. (D)	DOOR SIZE		DOOR										REMARKS
	WIDTH	HEIGHT	MATERIAL	HEAD	JAMB	SILL	TYPE (D)	HDWR	RATING	MATERIAL	DEPTH		
101	PR	6'-0"	7'-10"	FRP	1	2	3	A	1	-	FRP	5 3/4"	MANUAL OPERATION
102		10'-0"	12'-0"	RA	7	8	9	C	-	-	RA	0"	
103		10'-0"	12'-0"	RA	7	8	9	C	-	-	RA	0"	
104		10'-0"	12'-0"	RA	7	8	9	C	-	-	RA	0"	
105		10'-0"	12'-0"	RA	7	8	9	C	-	-	RA	0"	
106		3'-0"	7'-10"	FRP	1	2	3	B	2	-	FRP	5 3/4"	
107	PR	6'-0"	7'-10"	FRP	1	2	3	A	3	-	FRP	5 3/4"	
108		3'-0"	7'-10"	FRP	4	5	6	B	4	-	FRP	5 3/4"	

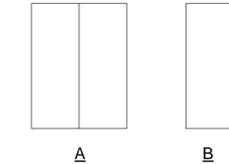
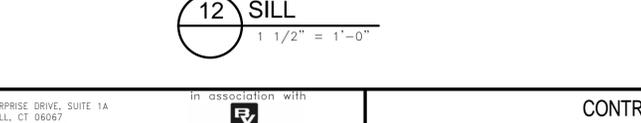
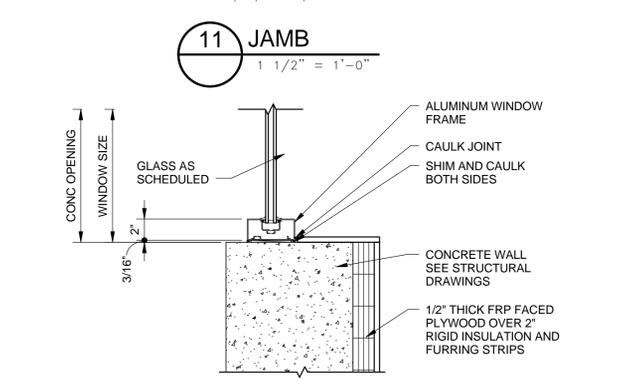
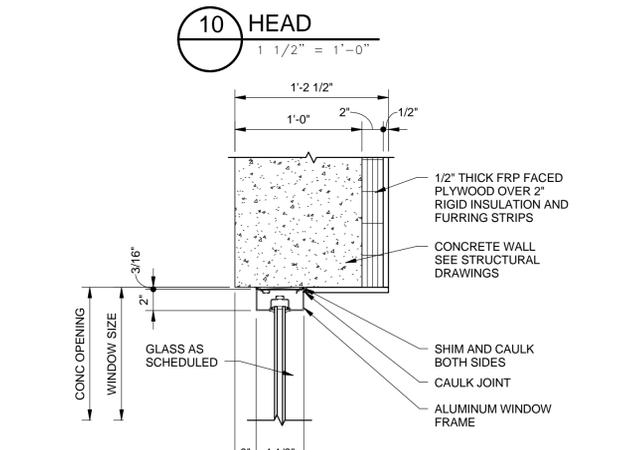
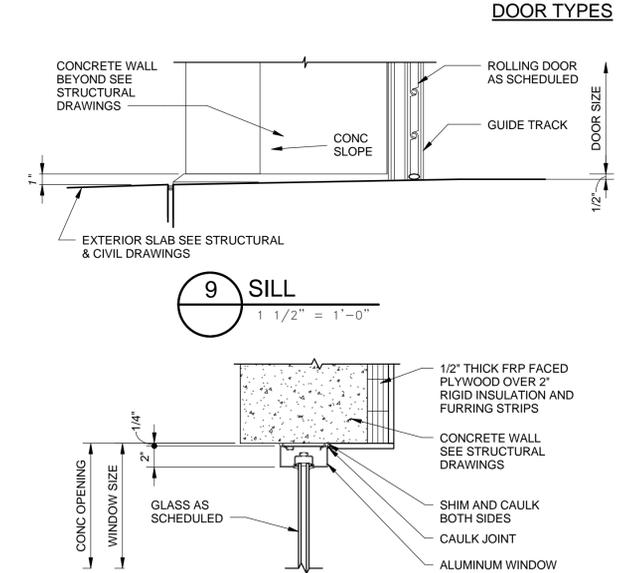
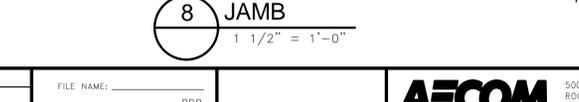
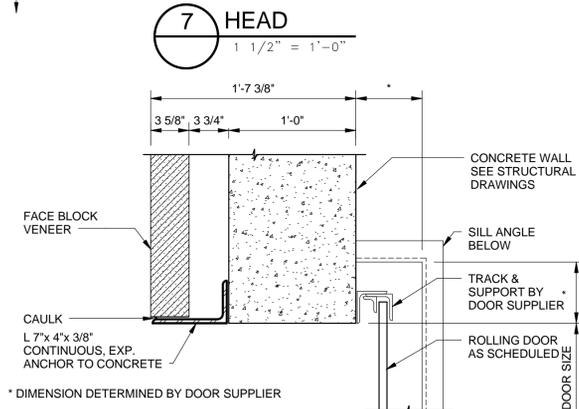
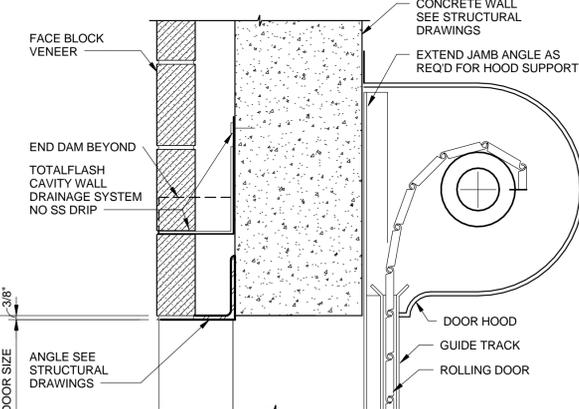
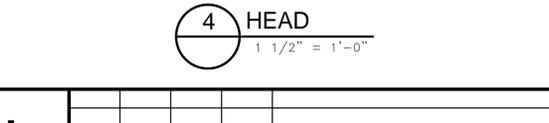
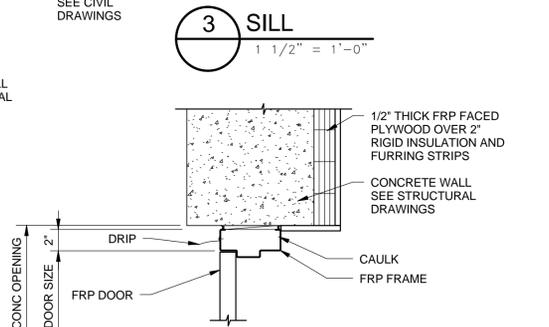
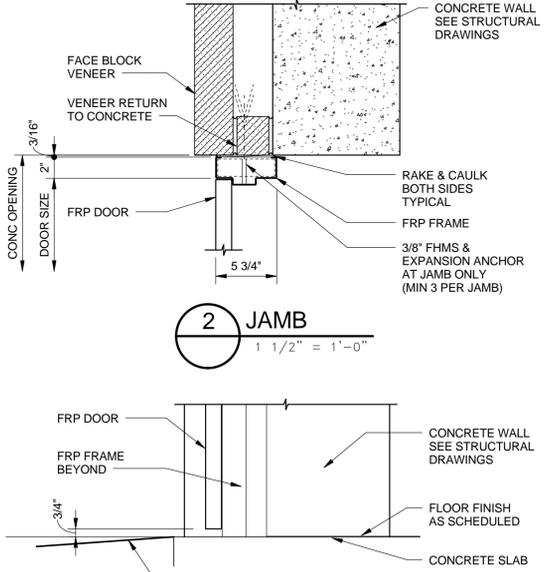
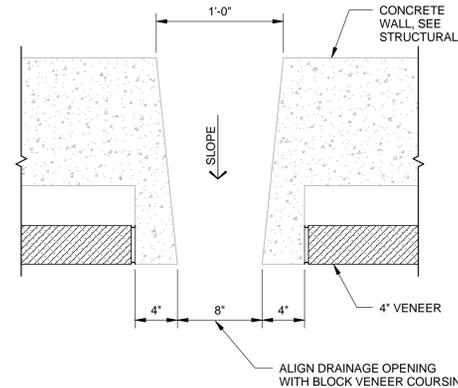
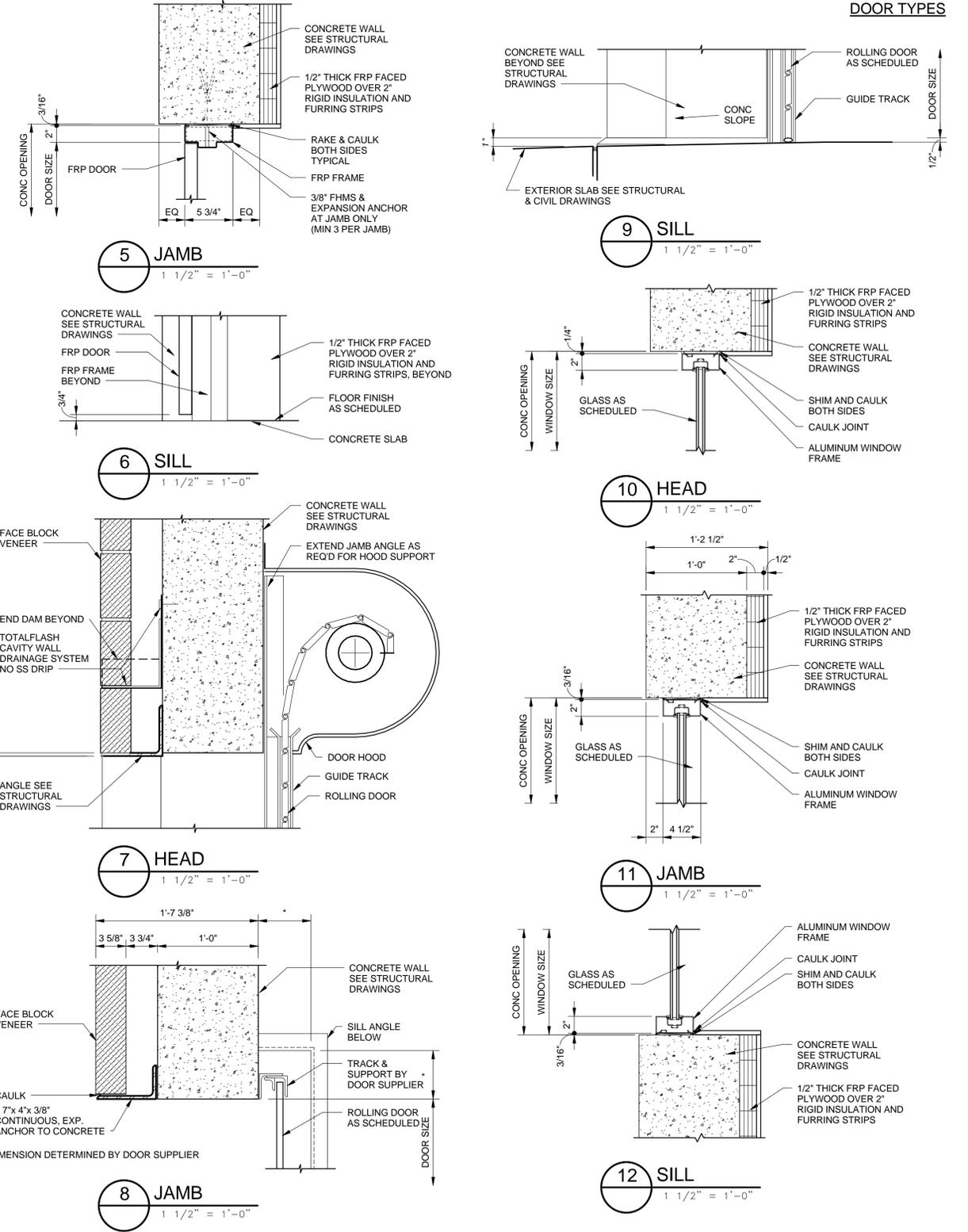
RETRIEVAL SHAFT ODOR CONTROL ENCLOSURE WINDOW SCHEDULE											
COUNT	TYPE (W)	OPENING		WINDOW				GLASS	TOP ELEV	COMMENTS	
		WIDTH	HEIGHT	MATERIAL	HEAD	JAMB	MULL				SILL
1	B	4'-0"	4'-0"	AL	10	11	-	12	1" INSULATED	74'-6"	

RETRIEVAL SHAFT ODOR CONTROL ENCLOSURE LOUVER SCHEDULE							
No. (L)	OPENING		LOUVER				REMARKS
	WIDTH	HEIGHT	TYPE	HEAD	JAMB	SILL	
101	5'-4"	9'-4"	AL	-	-	-	77'-10"
102	5'-4"	9'-4"	AL	-	-	-	77'-10"
103	5'-4"	9'-4"	AL	-	-	-	77'-10"
104	5'-4"	9'-4"	AL	-	-	-	77'-10"
105	5'-4"	9'-4"	AL	-	-	-	77'-10"
106	5'-4"	9'-4"	AL	-	-	-	77'-10"
107	5'-4"	9'-4"	AL	-	-	-	77'-10"

LEGEND

AL - ALUMINUM
CO - CONCRETE
FF - FACTORY FINISH
FS - FLOOR SEALER

FRP - FIBERGLASS REINFORCED PLASTIC
LE - LIQUID ELASTOMERIC COVERING
NO - NONE
RA - ROLLING ALUMINUM

1 1/2" = 1'-0"

VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____
DESIGNED BY: PDR
DRAWN BY: CTH
CHK'D BY: _____
X-CHK'D BY: _____
APPROVED BY: _____
DATE: FEBRUARY 2015

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

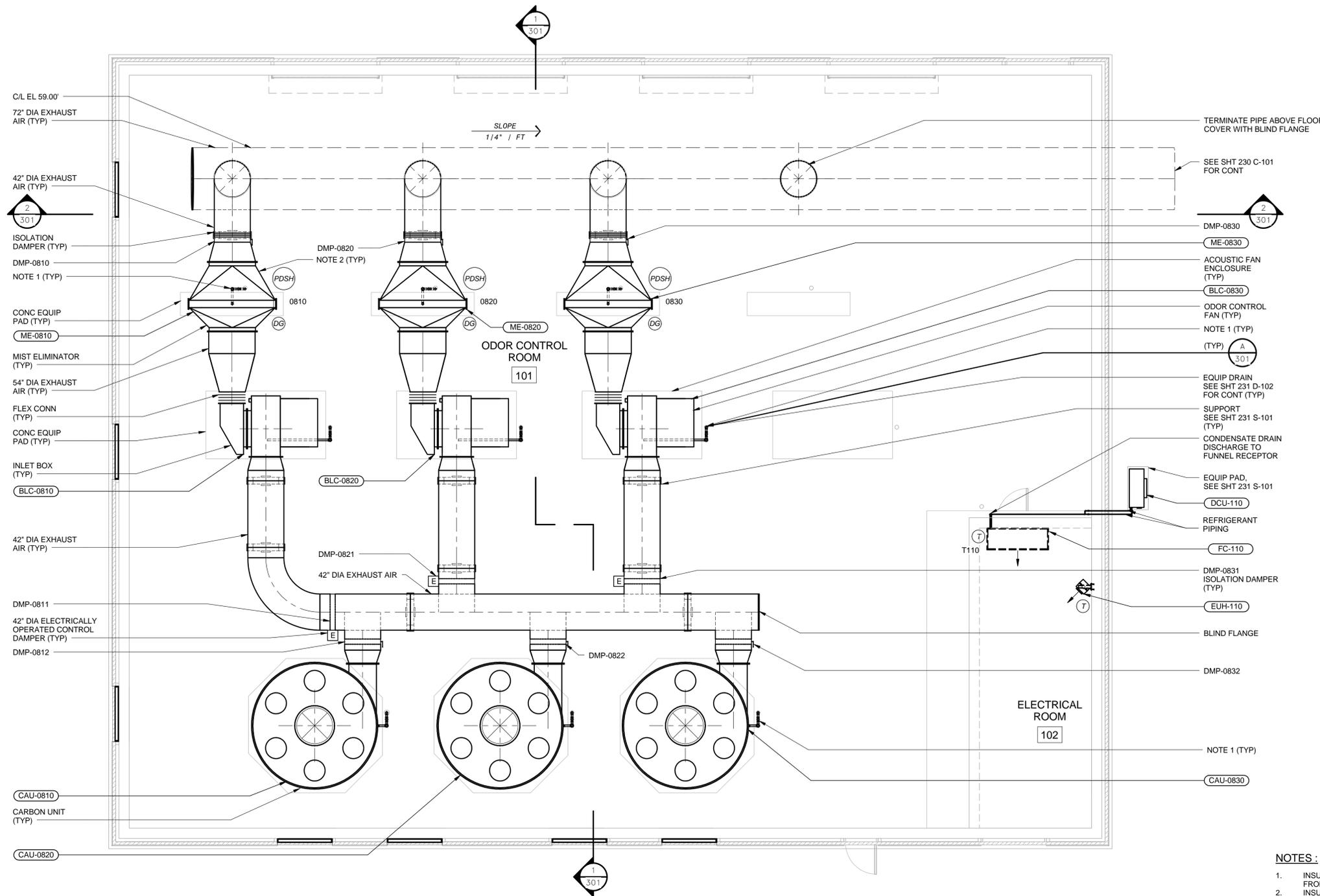
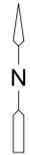
in association with
BLACK & VEATCH

90% SUBMITTAL
NOT FOR
CONSTRUCTION

CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE
AND STORAGE TUNNEL

CONTRACT 2
GENERAL
SCHEDULES AND DETAILS
ARCHITECTURAL

PLAN NUMBER
SHEET NO.
299 A-501



PLAN AT EL 66.50'
3/16" = 1'-0"

- NOTES:**
- INSULATE AND HEAT TRACE ALL ABOVE GROUND CONDENSATE PIPE FROM CAU, BLC AND ME.
 - INSULATE MIST ELIMINATOR LEAVING ACCESS FOR FILTER REMOVAL.



VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC
The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____
DESIGNED BY: _____
DRAWN BY: _____
CHK'D BY: _____
X-CHK'D BY: _____
APPROVED BY: _____
DATE: FEBRUARY 2015

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

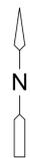
in association with
BLACK & VEATCH

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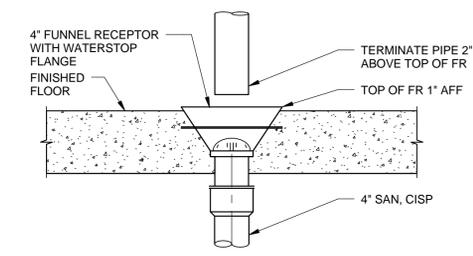
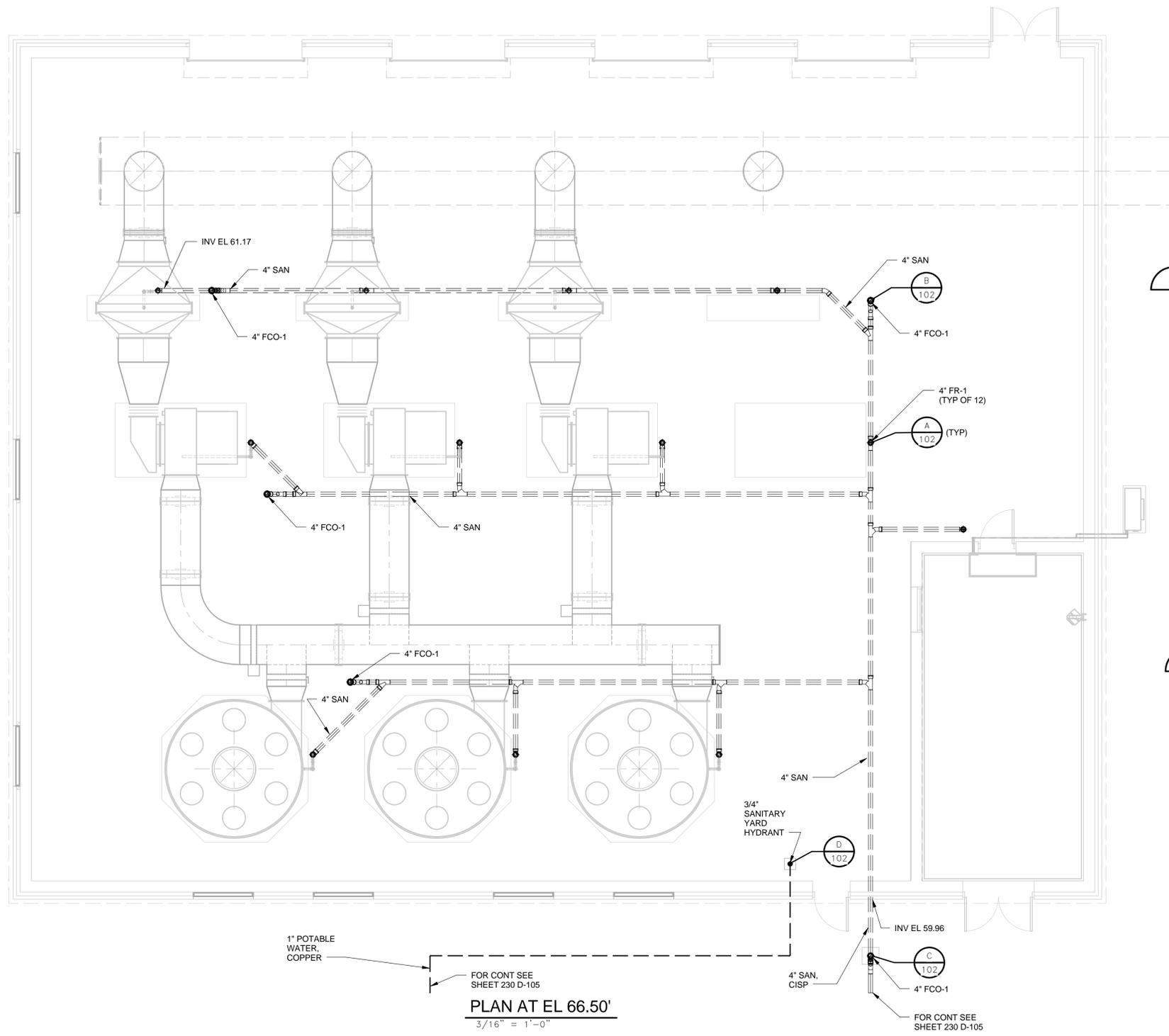
CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE
AND STORAGE TUNNEL

CONTRACT 2
**RETRIEVAL SHAFT
ODOR CONTROL PLAN**
MECHANICAL

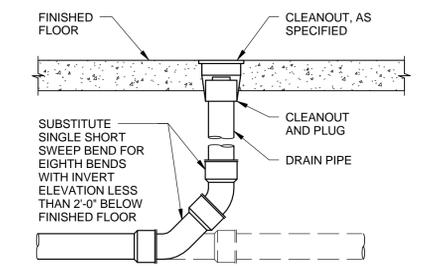
PLAN NUMBER
SHEET NO.
231 D-101



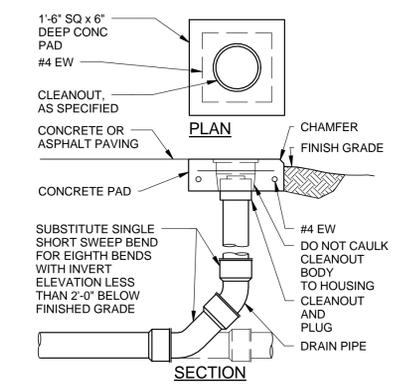
PLUMBING - PIPING ACCESSORIES SCHEDULE				
UNIT NUMBER	MANUFACTURER	MODEL	DESCRIPTION	NOTES
FCO-1	SMITH	4111 SERIES	HEAVY DUTY FLOOR CLEANOUT, SECURED ROUND ADJUSTABLE NICKEL BRONZE TOP.	
FR-1	SMITH	SERIES 3800 FIGURE SQ-3-1793-DBS	MEDIUM DUTY CAST IRON FUNNEL RECEPTOR, WATERSTOP FLANGE, THREADED OR NO-HUB CONNECTION.	



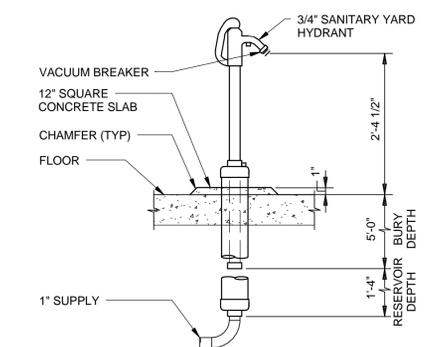
A FUNNEL DRAIN - NEW FLOOR
NO SCALE



B FLOOR CLEANOUT - NEW FLOOR
NO SCALE

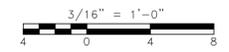


C GRADE CLEANOUT
NO SCALE



D POST HYDRANT
NO SCALE

1" POTABLE WATER, COPPER
FOR CONT SEE SHEET 230 D-105
PLAN AT EL 66.50'
3/16" = 1'-0"



VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC
The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____
DESIGNED BY: _____
DRAWN BY: _____
CHK'D BY: _____
X-CHK'D BY: _____
APPROVED BY: _____
DATE: _____

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CONSTRUCTION**

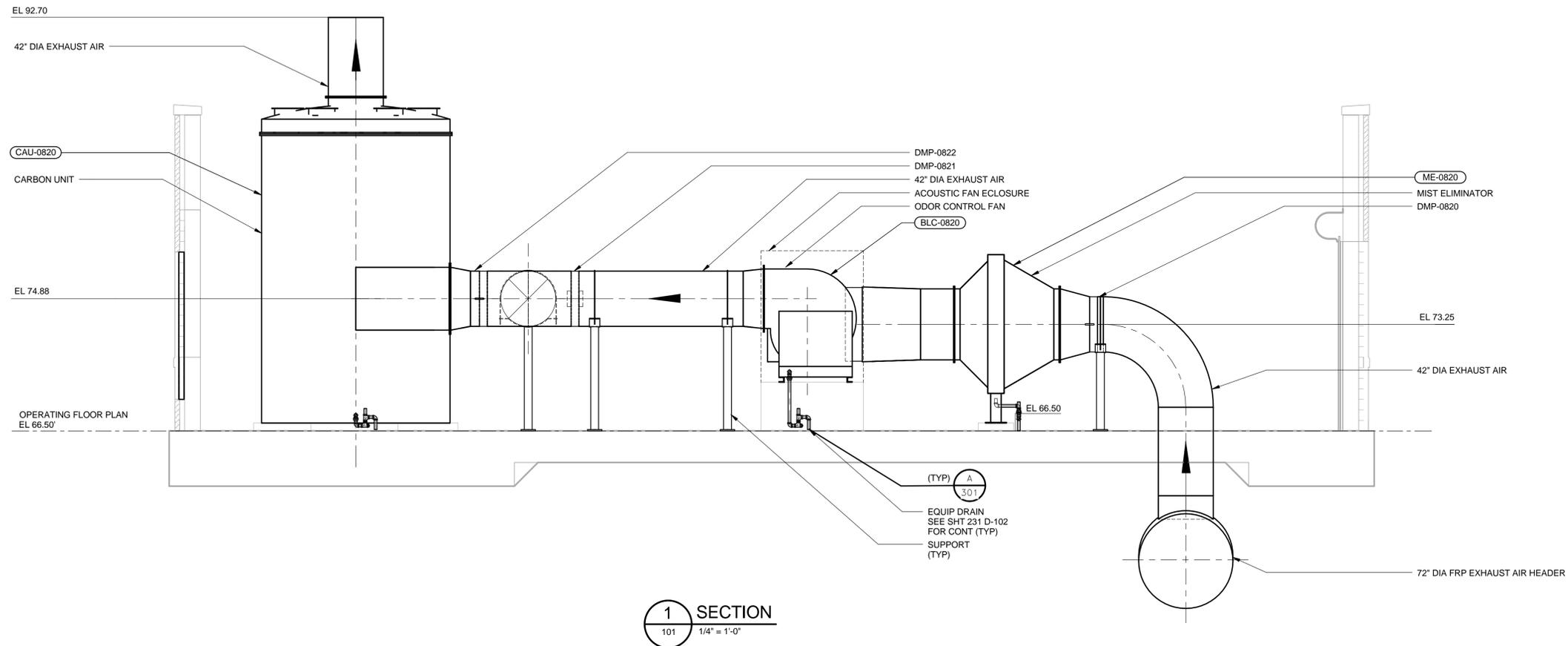
AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

in association with
BLACK & VEATCH

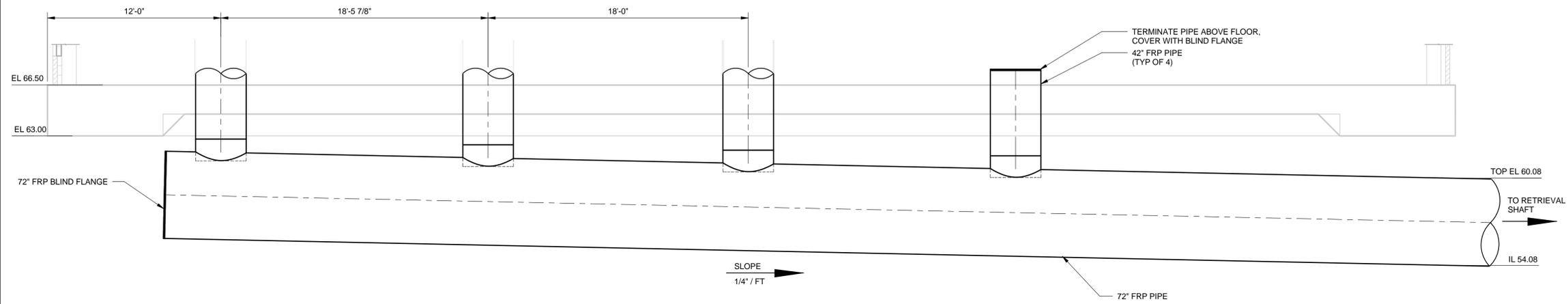
**CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE
AND STORAGE TUNNEL**

**CONTRACT 2
RETRIEVAL SHAFT
PLUMBING PLAN, DETAILS AND
SCHEDULES
MECHANICAL**

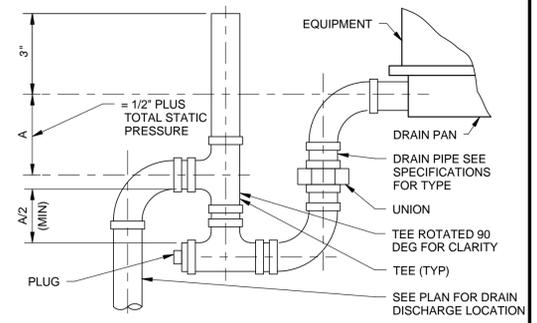
PLAN NUMBER
SHEET NO.
231 D-102



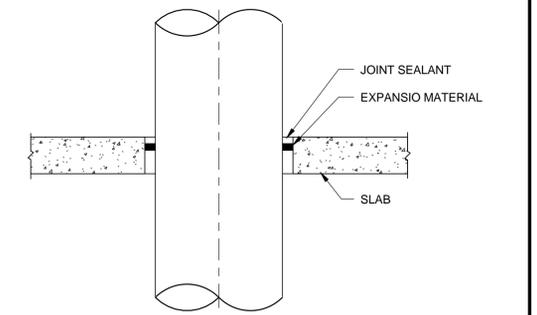
1 SECTION
101 1/4" = 1'-0"



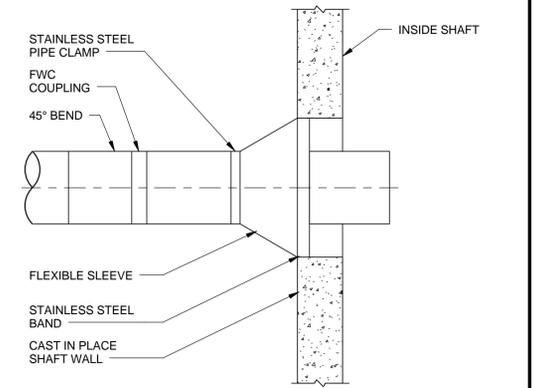
2 SECTION
101 1/4" = 1'-0"



A DRAIN PAN TRAP - DRAW THROUGH
NO SCALE

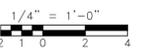


B SLAB PANETRATION DETAILS
NO SCALE



C SHAFT WALL PENETRATION DETAIL
NO SCALE

- NOTES:**
- INSULATE AND HEAT TRACE ALL ABOVE GROUND CONDENSATE PIPE FROM CAU, BLC AND ME.
 - INSULATE MIST ELIMINATOR LEAVING ACCESS FOR FILTER REMOVAL.



VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____
DESIGNED BY: _____
DRAWN BY: _____
CHK'D BY: _____
X-CHK'D BY: _____
APPROVED BY: _____
DATE: FEBRUARY 2015

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

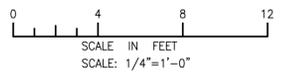
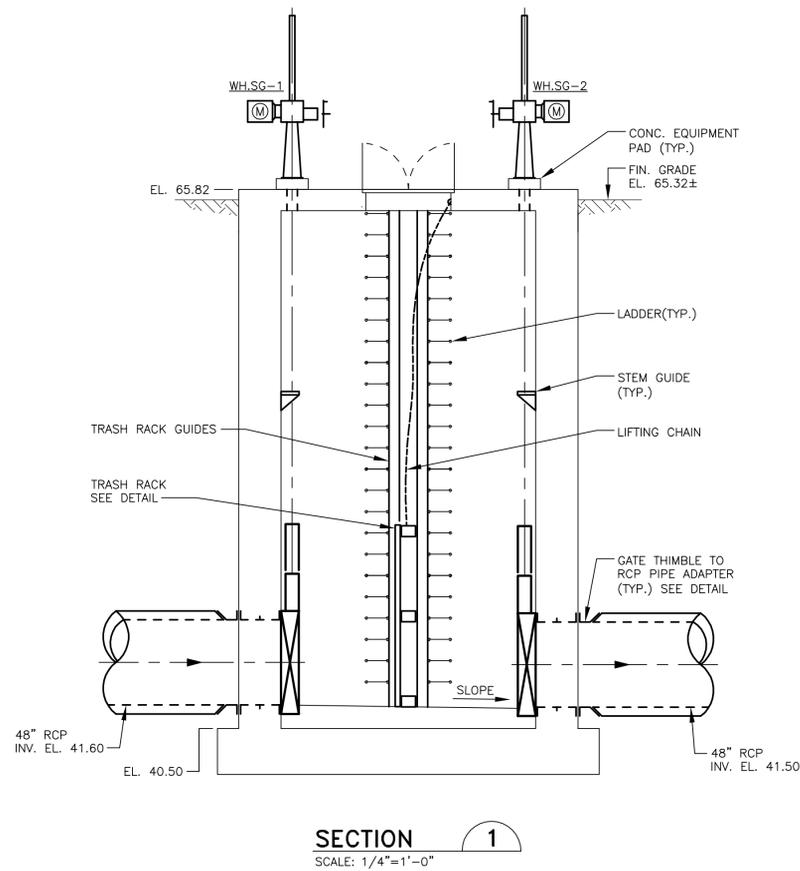
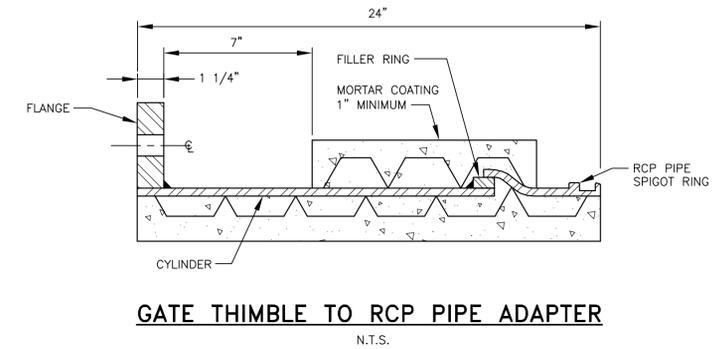
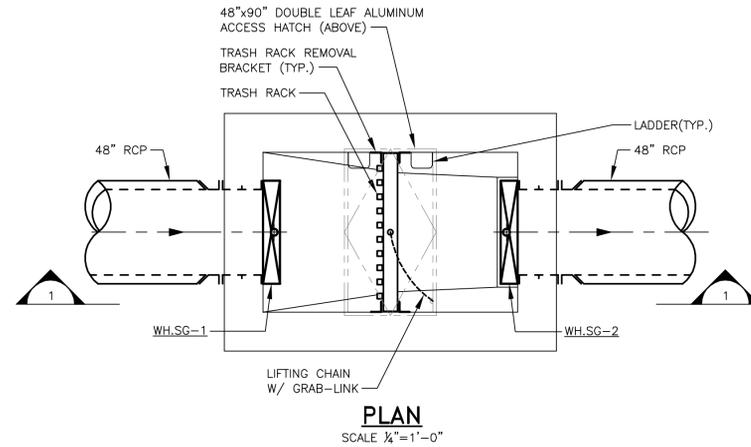
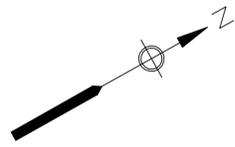
in association with
BLACK & VEATCH

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CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE AND STORAGE TUNNEL

CONTRACT 2
RETRIEVAL SHAFT SECTION AND DETAILS
MECHANICAL

PLAN NUMBER
SHEET NO.
231 D-301



VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC
The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 240_D-101
DESIGNED BY: ---
DRAWN BY: ---
CHK'D BY: ---
X-CHK'D BY: ---
APPROVED BY: J. SULLIVAN
DATE: FEBRUARY 2015

**90% SUBMITTAL
NOT FOR
CONSTRUCTION**

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

in association with
BLACK & VEATCH

**CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE AND
STORAGE TUNNEL**

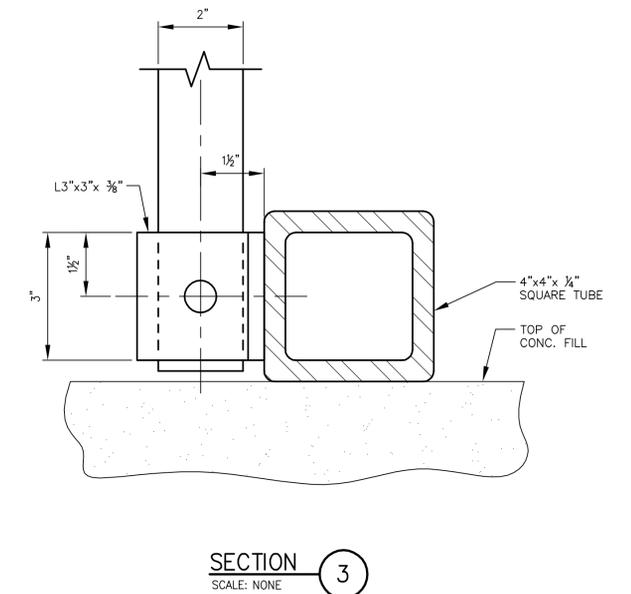
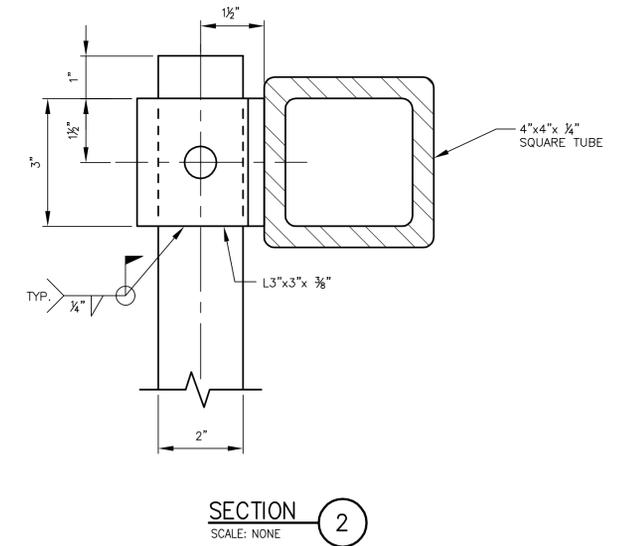
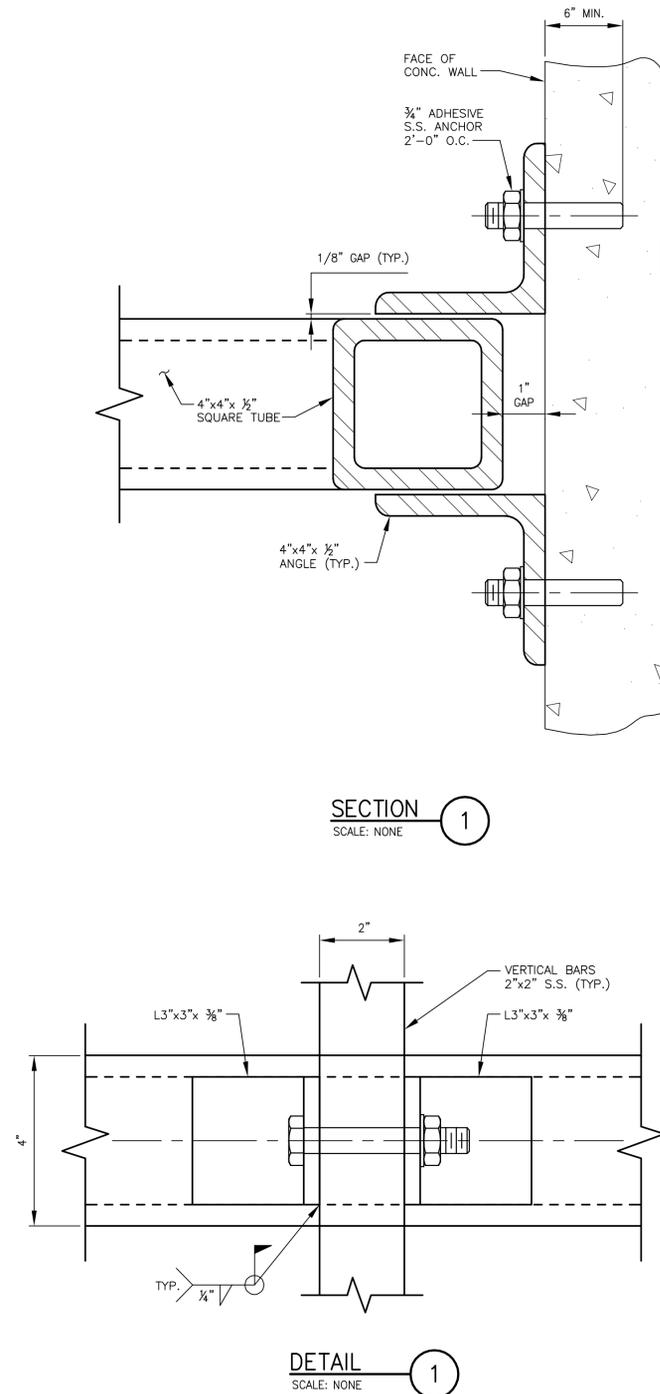
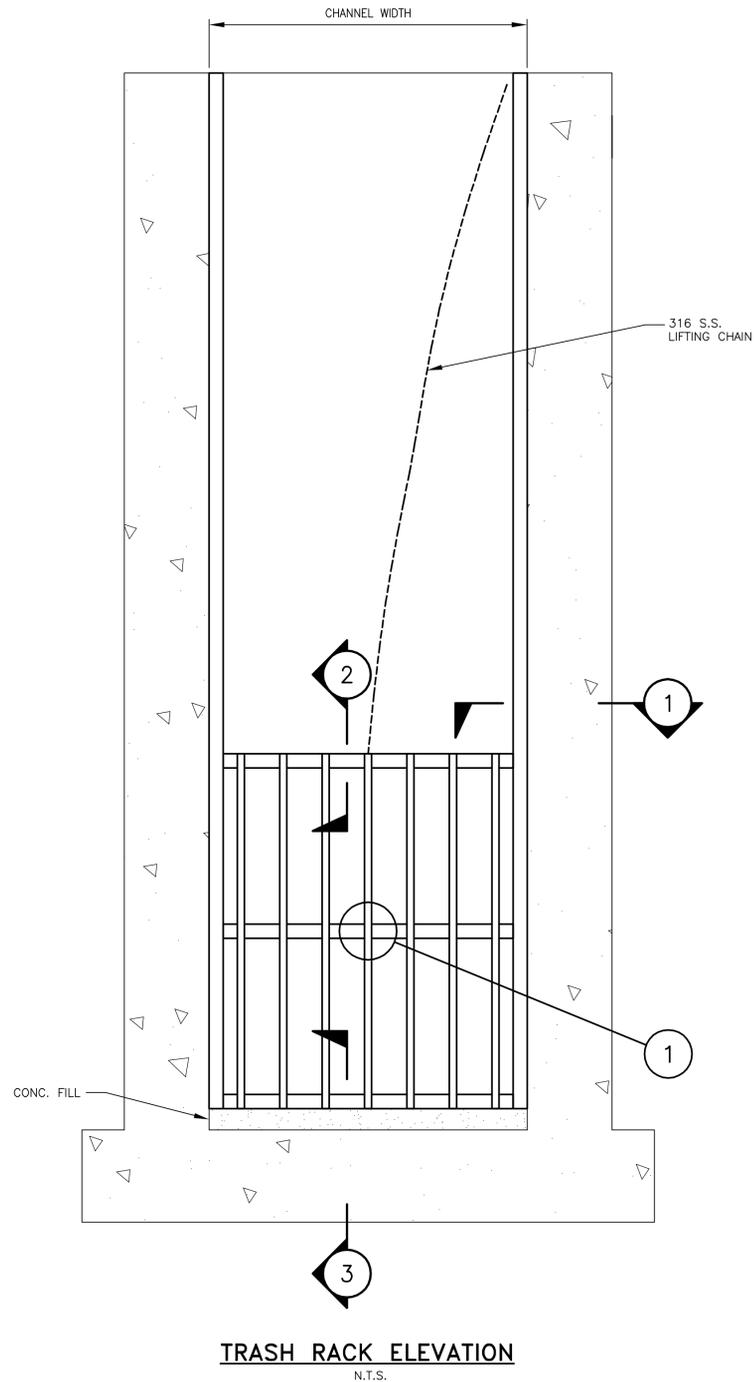
**CONTRACT 2
WEST HARTFORD INLET
CONTROL GATE CHAMBER
MECHANICAL PROCESS**

PLAN NUMBER
SHEET NO.
240 D-101

NOTES:

1. ALL MATERIAL FOR CONSTRUCTION OF THE TRASH RACKS SHALL BE STAINLESS STEEL TYPE 316L. ALL BOLTS TO BE 3/4" DIAMETER. USE TYPE 316 STAINLESS STEEL WASHERS, NUTS AND BOLTS.
2. CONNECTED MEMBERS SHALL BEAR ONLY UPON UNTHREADED PORTIONS OF BOLTS. BURNING OF HOLES IS NOT ALLOWED. BOLT HOLES SHALL BE 1/16" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED. UNLESS NOTED OTHERWISE, ANCHOR BOLT HOLES SHALL BE 1/8" LARGER IN DIAMETER THAN NOMINAL SIZE OF BOLT USED.
3. END CAPS ARE NOT REQUIRED FOR SQUARE TUBE MEMBERS.

LOCATION	CHANNEL WIDTH	TRASH RACK WIDTH	BAR SPACING (CENTERLINE)	RACK HEIGHT	VERTICAL SPACES	VERTICAL SPACING
WEST HARTFORD INLET CONTROL GATE CHAMBER	7'-6"	7'-4"	12"	8'-0"	2	4'-0"

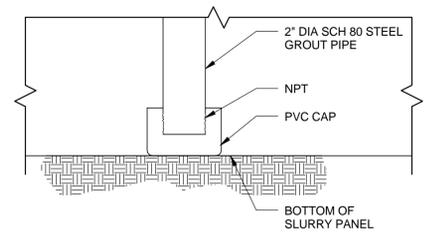


VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

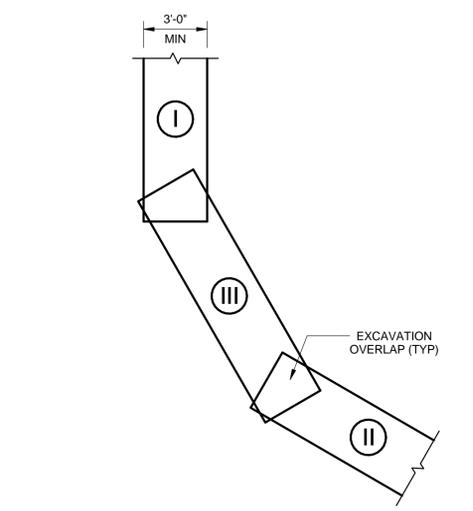
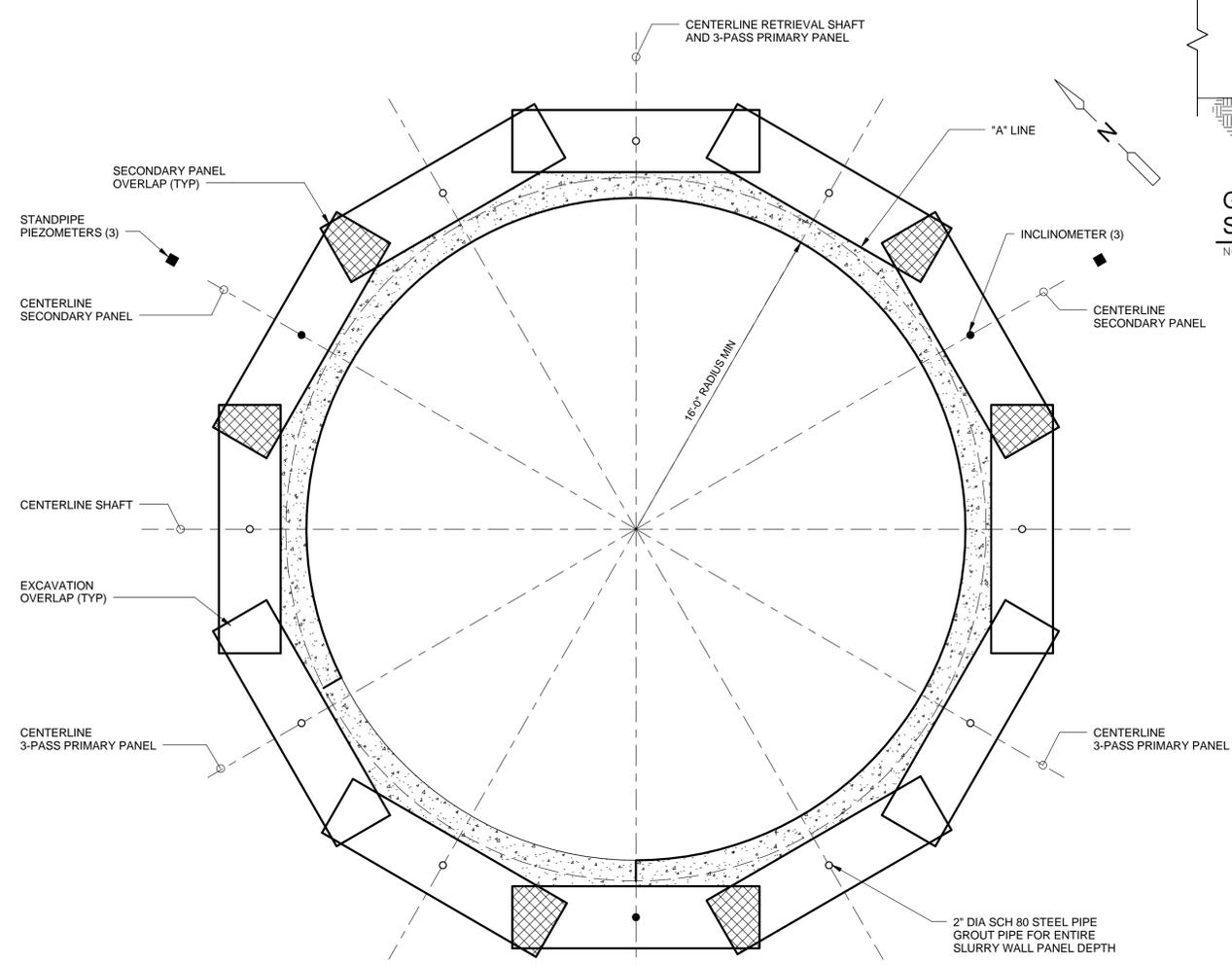
REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 000_D-004
DESIGNED BY: ---
DRAWN BY: ---
CHK'D BY: ---
X-CHK'D BY: ---
APPROVED BY: J. SULLIVAN
DATE: FEBRUARY 2015

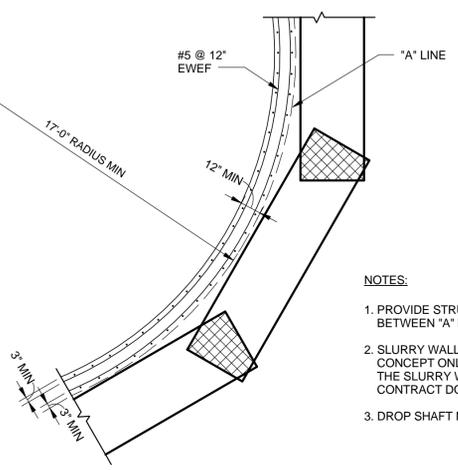
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CONSTRUCTION**



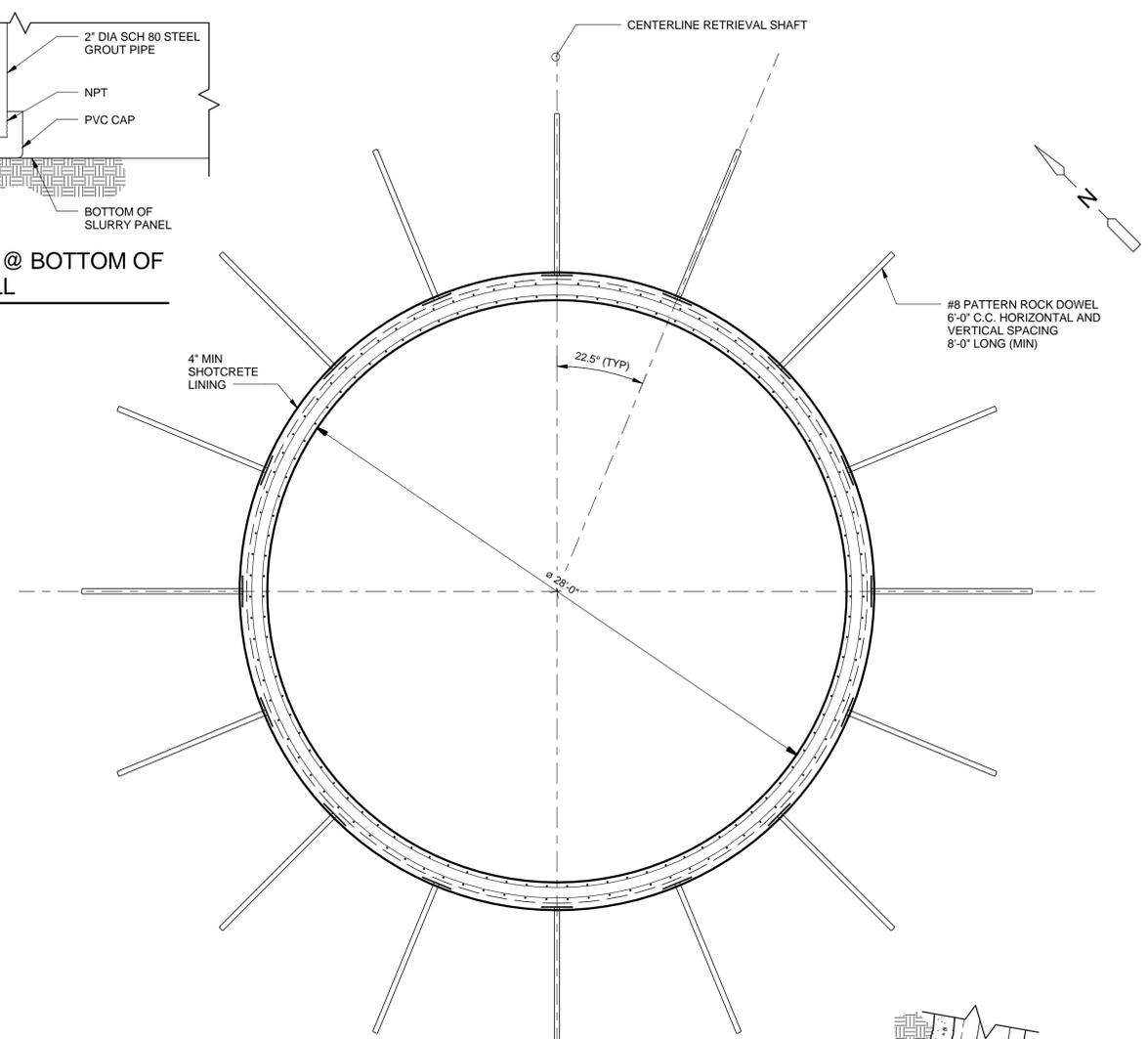
GROUT PIPE @ BOTTOM OF SLURRY WALL
NO SCALE



TYPICAL 3-PASS PRIMARY PANEL
1/4" = 1'-0"

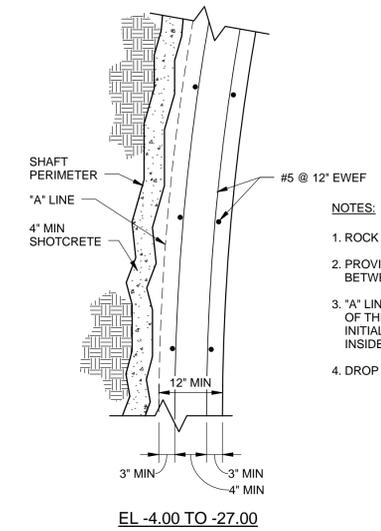


TYPICAL SECONDARY PANEL
1/4" = 1'-0"



EL -4.00 TO -27.00

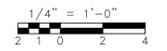
2 SECTION
301 1/4" = 1'-0"



ROCK SECTION WALL DETAIL
NOT TO SCALE

- NOTES:**
1. ROCK DOWELS NOT SHOWN FOR CLARITY.
 2. PROVIDE STRUCTURAL CONCRETE IN GAP BETWEEN 'A' LINE AND SHOTCRETE.
 3. 'A' LINE ESTABLISHES THE MINIMUM THICKNESS OF THE CAST-IN-PLACE LINING, SOIL, ROCK, OR INITIAL SUPPORT ELEMENTS SHALL NOT PROTRUDE INSIDE THE 'A' LINE.
 4. DROP SHAFT NOT SHOWN.

- NOTES:**
1. PROVIDE STRUCTURAL CONCRETE IN GAP BETWEEN 'A' LINE AND SLURRY WALL.
 2. SLURRY WALL SOCKETED IN ROCK SHOWN IS A CONCEPT ONLY. CONTRACTOR SHALL DESIGN THE SLURRY WALL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 3. DROP SHAFT NOT SHOWN.



VERTICAL DATUM IS NGVD 29
HORIZONTAL DATUM IS NAD 83/92

MDC The Metropolitan District
555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____
DESIGNED BY: CEH
DRAWN BY: CTH
CHK'D BY: ME
X-CHK'D BY: KC
APPROVED BY: _____
DATE: FEBRUARY 2015

AECOM 500 ENTERPRISE DRIVE, SUITE 1A
ROCKY HILL, CT 06067
PHONE (860) 263-5800

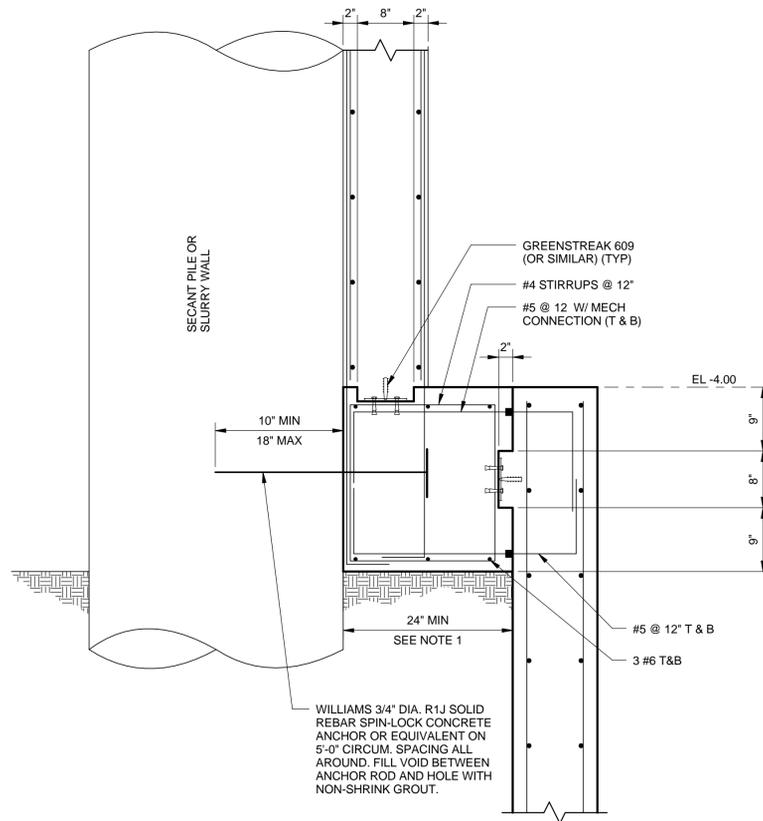
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CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE AND STORAGE TUNNEL

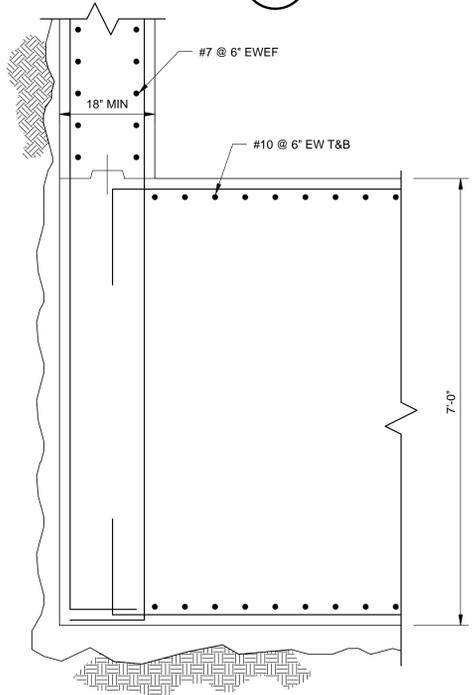
CONTRACT 2
RETRIEVAL SHAFT PLANS
STRUCTURAL

PLAN NUMBER
SHEET NO.
203 S-101

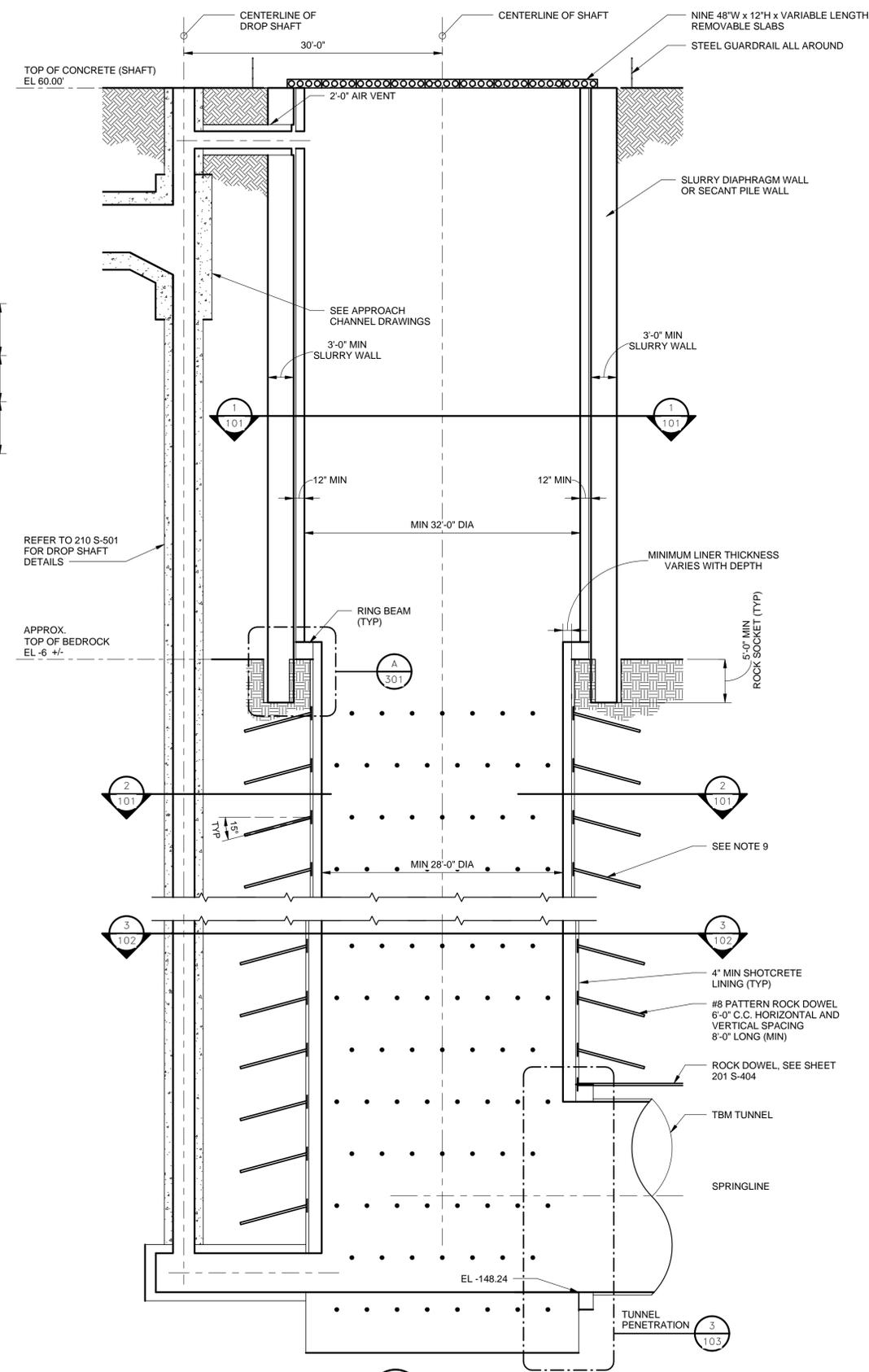


NOTES:
 1. RING BEAM WIDTH WILL VARY BASED ON CONFIGURATION OF SECANT PILE WALL OR SLURRY WALL. MINIMUM THICKNESS SHALL BE 24 INCHES.

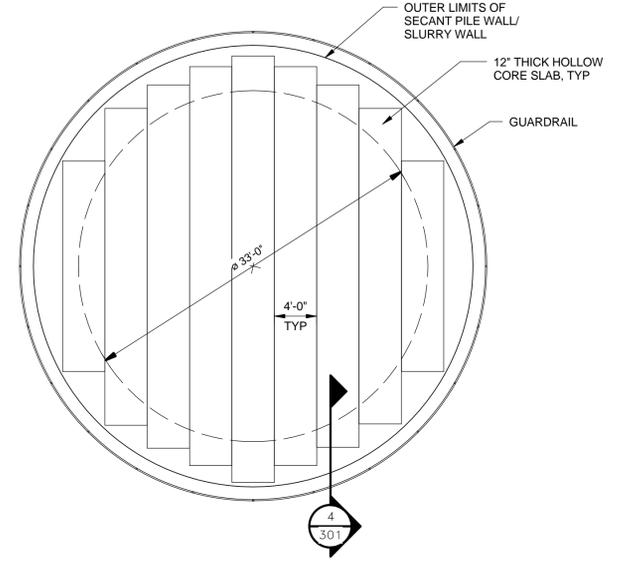
A RING BEAM
 301 1" = 1'-0"



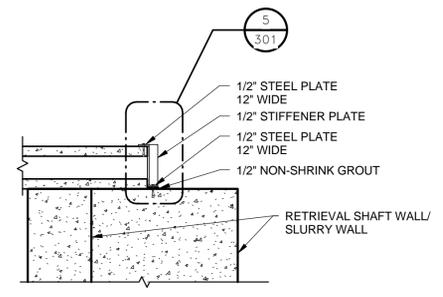
BASE SLAB DETAIL
 3/4" = 1'-0"



1 SECTION
 1/8" = 1'-0"



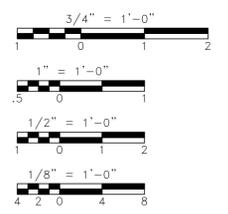
REMOVABLE SLAB PLAN
 1/8" = 1'-0"



4 SECTION
 301 1/2" = 1'-0"

5 DETAIL A/301
 1 1/2" = 1'-0"

- NOTES:
- CONTRACTOR SHALL EMPLOY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF CONNECTICUT TO DESIGN THE INITIAL SUPPORT OF THE SHAFT.
 - IF SELECTED, SLURRY WALLS SHALL HAVE A MINIMUM THICKNESS OF 36 INCHES AND INCLUDE CONCRETE WITH A MINIMUM 28 DAY STRENGTH OF 4,500 PSI. REINFORCING STEEL IN THE SLURRY WALL SHALL BE DESIGNED BY THE CONTRACTOR'S ENGINEER. SLURRY WALL JOINTS AND PANEL LENGTH SHALL BE DESIGNED BY THE CONTRACTOR'S ENGINEER. SLURRY WALL SHALL BE SOCKETTED TO AN ELEVATION OF -11.00+/- OR FIVE FEET INTO COMPETENT BEDROCK WHICHEVER IS THE LOWEST ELEVATION. THE ELEVATION OF THE SOIL/ROCK INTERFACE IS AN APPROXIMATION. THE SLURRY WALL BASE ELEVATION SHALL BE ADJUSTED BASED ON CONDITIONS ACTUALLY ENCOUNTERED. CONTRACTOR SHALL ACCOUNT FOR FIVE FEET BEDROCK ELEVATION VARIATION OVER THE SHAFT CIRCUMFERENCE. CONSTRUCT RING BEAM AT ELEVATION INDICATED REGARDLESS OF ACTUAL BEDROCK ELEVATION.
 - CONTRACTOR SHALL DESIGN THE SLURRY WALL IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.
 - CONTRACTOR SHALL CONSTRUCT RING BEAM AT SOIL/ROCK INTERFACE IMMEDIATELY AFTER COMPLETION OF SOIL EXCAVATION. CONTRACTOR SHALL CONSTRUCT CONCRETE WALL INSIDE OF SLURRY WALL IMMEDIATELY AFTER CONSTRUCTION OF RING BEAM.
 - IF SECANT PILES ARE SELECTED, SEE ADDITIONAL NOTES ON SHEET 202 S-301.
 - CONTRACTOR SHALL CONSTRUCT CONCRETE LINING TO EL -118.00 BEFORE EXCAVATING THE SHAFT TO TUNNEL GRADE.
 - SPOT ROCK DOWELS SHALL BE PROVIDED AS NEEDED TO STABILIZE ROCK WEDGES IN ADDITION TO THE PATTERN ROCK DOWELS.
 - PERMISSIBLE BLASTING HOURS ARE DICTATED BY LOCAL ORDINANCES.
 - DOWEL ORIENTATION CAN BE MODIFIED IN ACCORDANCE WITH BEDDING PLANES.



VERTICAL DATUM IS NGVD 29
 HORIZONTAL DATUM IS NAD 83/92

MDC The Metropolitan District
 555 Main Street
 Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: _____
 DESIGNED BY: CEH
 DRAWN BY: CTH
 CHK'D BY: ME
 X-CHK'D BY: KC
 APPROVED BY: _____
 DATE: FEBRUARY 2015

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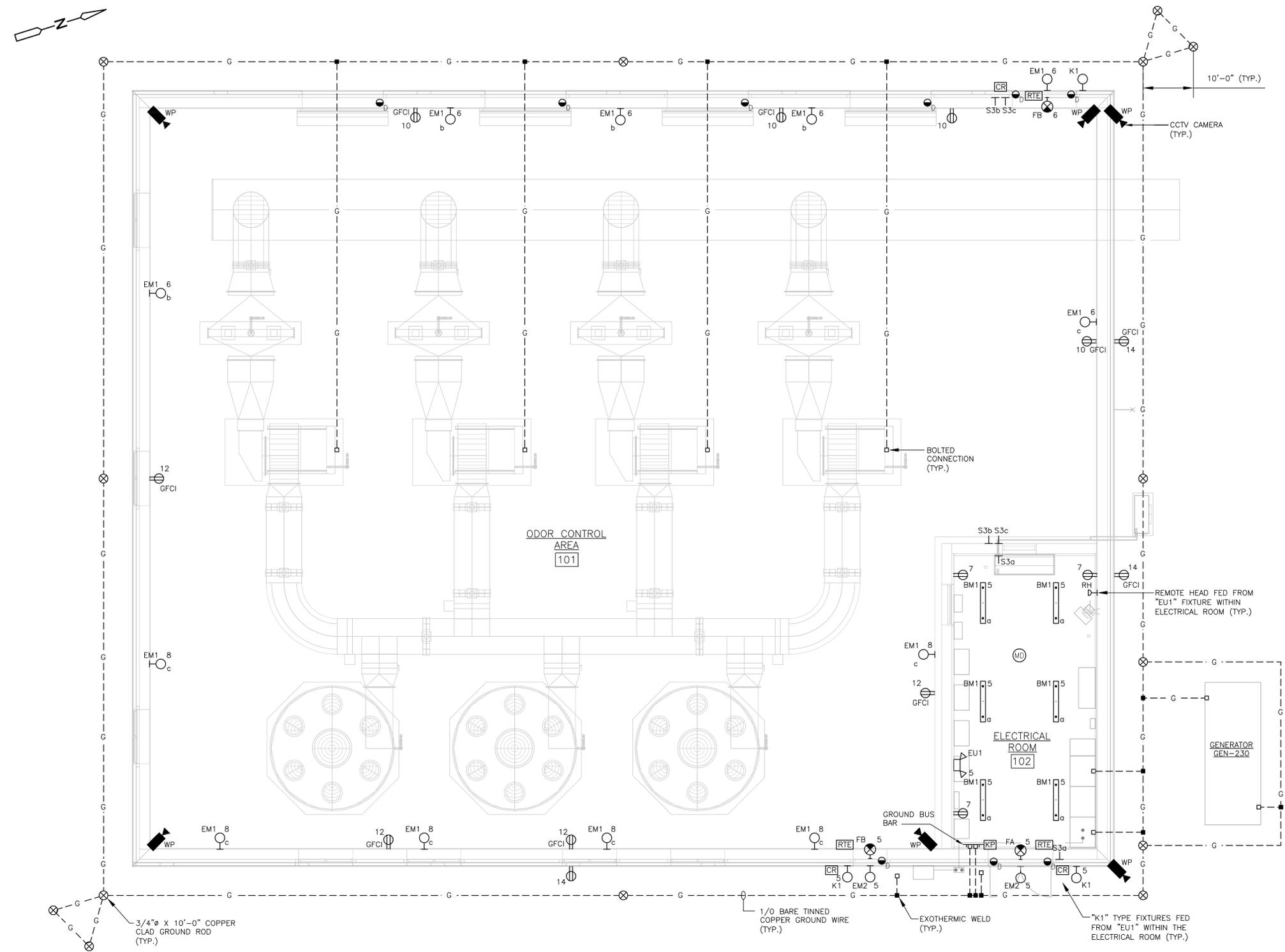
90% SUBMITTAL NOT FOR CONSTRUCTION

CONTRACT NO. 20XX-XX
 SOUTH HARTFORD CONVEYANCE AND STORAGE TUNNEL

CONTRACT 2
 RETRIEVAL SHAFT
 SECTION
 STRUCTURAL

PLAN NUMBER
 SHEET NO.
 203 S-301

NOTES:
 1. FOR LEGEND, SYMBOLS AND GENERAL NOTES SEE SHEET 00 E-001.



**RETRIEVAL SHAFT
 ODOR CONTROL FACILITY
 SYSTEMS PLAN**
 SCALE: 3/16" = 1'-0"



VERTICAL DATUM IS NGVD 29
 HORIZONTAL DATUM IS NAD 83/92

MDC
The Metropolitan District
 555 Main Street
 Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 230 E-104
 DESIGNED BY: D. ASPESI
 DRAWN BY: D. ASPESI
 CHK'D BY: Y. RIZK
 X-CHK'D BY: --
 APPROVED BY: J. SULLIVAN
 DATE: FEBRUARY 2015

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**CONTRACT NO. 20XX-XX
 SOUTH HARTFORD CONVEYANCE AND
 STORAGE TUNNEL**

**CONTRACT 2
 RETRIEVAL SHAFT AND WEST HARTFORD
 CONDUIT SYSTEMS PLAN**

ELECTRICAL

PLAN NUMBER
 SHEET NO.
230 E-104

LUMINAIRE SCHEDULE							
LUMINAIRE TYPE	MTG	LAMP		VOLTAGE	MANUFACTURER AND BASE MODEL NUMBER		REMARKS AND OPTIONS
		TYPE	WATTS				
BM1	PEND	FLUOR.	2-32	120	HOLOPHANE SERIES CONTROLUME	OR EQUAL	LUMINAIRE 4'-0" UV STABILIZED POLYCARBONATE HOUSING, UV STABILIZED POLYCARBONATE LENS, SPREAD LIGHT DISTRIBUTION, GENERAL ELECTRONIC BALLAST, WET LOCATION LISTED.
EM1	WALL	LED	70	120	LITHONIA SERIES CSXW	OR EQUAL	WALL LUMINAIRE, DIE CAST ALUMINUM HOUSING, ALUMINUM REFLECTOR, ACRYLIC LENS, -40°C TO 40°C AMBIENT RATED, LED'S MOUNTED TO CORE CIRCUIT BOARD, 0-10V DIMMING, HIGH EFFICIENCY DRIVER, 4000K LED'S, THERMOSET POWDER COAT PAINT, DARK BRONZE FINISH, BUG RATING OF 2-0-2 (DARK SKY COMPLIANT), MINIMUM CRI OF 70, WET LOCATION.
EM2	WALL	LED	70	120	LITHONIA SERIES CSXW	OR EQUAL	WALL LUMINAIRE, DIE CAST ALUMINUM HOUSING, ALUMINUM REFLECTOR, ACRYLIC LENS, -40°C TO 40°C AMBIENT RATED, LED'S MOUNTED TO CORE CIRCUIT BOARD, 0-10V DIMMING, HIGH EFFICIENCY DRIVER, 4000K LED'S, THERMOSET POWDER COAT PAINT, DARK BRONZE FINISH, BUG RATING OF 2-0-2 (DARK SKY COMPLIANT), MINIMUM CRI OF 70, PHOTOCELL, WET LOCATION.
EU1	WALL	KRYPTON	2-9	120	LITHONIA SERIES ELM 6-12	OR EQUAL	EMERGENCY LUMINAIRE, WHITE UV STABLE THERMOPLASTIC HOUSING, EQUIPPED WITH 12V, 54 WATT NICKEL CADMIUM BATTERY, 2-9 WATT KRYPTON HEADS, TEST SWITCH, SELF-DIAGNOSTICS, DAMP LOCATION LISTED.
FA	PEND/WALL	LED	-	120	LITHONIA SERIES SOLO	OR EQUAL	EXIT SIGN, INJECTION-MOLDED ACRYLIC ENCLOSURE, SINGLE FACE, RED LETTERS, WHITE BACKGROUND, NICKEL-CADMIUM BATTERY, SELF DIAGNOSTICS WITH AUDIBLE ALARM, NEMA 1.
FB	PEND/WALL	LED	-	120	EMERGI-LITE SERIES SURVIVE-ALL	OR EQUAL	EXIT SIGN, POLYVINYL CHLORIDE ENCLOSURE (GREY COLOR), SINGLE FACE, RED LETTERS, GRAY BACKGROUND, NICKEL-CADMIUM BATTERY, SELF DIAGNOSTICS, NEMA-4X.
K1	WALL	HALOGEN	12	-	LITHONIA ELA NX	OR EQUAL	EMERGENCY LUMINAIRE WEATHER-RESISTANT, LED REMOTE HEAD, 12 WATT, WET LOCATION.

EMERGENCY FIXTURES

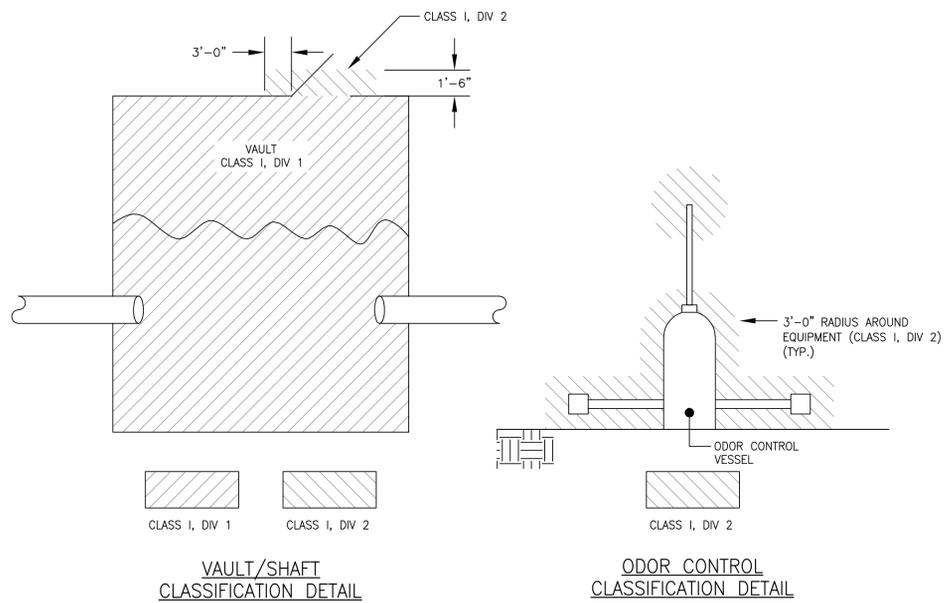
EQUIPMENT GROUNDING SCHEDULE			
PROVIDE GROUNDING CONDUITS AND WIRES INDICATED FROM EQUIPMENT LISTED TO THE GROUNDING LOOP OR TO THE GROUNDING BUS BARS AS INDICATED AND IN ACCORDANCE WITH THE CONDUIT AND WIRE SCHEDULE. FOR GROUNDING OF PIPING AND OTHER MISCELLANEOUS ITEMS PROVIDE COMPLETE GROUNDING SYSTEM IN ACCORDANCE WITH THE REQUIREMENTS OF THE LOCAL REGULATIONS.			
EQUIPMENT	GROUNDING CONDUIT AND WIRE	QUANTITY	NOTES
100 AMPS DISTRIBUTION PANEL	[G3]	ONE	TO GROUNDING BUS BAR
30 KVA DRY TYPE TRANSFORMER	[G4]	ONE	TO GROUNDING BUS BAR
UTILITY PAD MOUNTED TRANSFORMER	[G11]	TWO	TO GROUNDING LOOP
50 HP TO LESS THAN 100 HP VFD UNIT	[G4]	ONE	TO GROUNDING BUS BAR
PLC CONTROL PANELS	[G3]	ONE	TO GROUNDING BUS BAR
SWITCHBOARD SWB0-1	[G7]	TWO	TO GROUNDING BUS BAR
480 VAC EQUIPMENT LOCAL CONTROL PANELS	[G2]	ONE	TO GROUNDING BUS BAR
GENERATOR ENCLOSURE	[G7]	TWO	TO GROUNDING LOOP
ANY STEEL TANK	[G4]	TWO	RUN CONDUIT TO THE GROUNDING LOOP OR TO THE NEAREST GROUND BUS BAR.
GROUND BUS BAR	[G7]	TWO	TO GROUNDING LOOP
ANTENNA	[G4]	ONE	TO GROUND ROD

AREA CLASSIFICATION SCHEDULE							
LOCATION	NEMA TYPE						
	1	3	4	4X	12	NEMA 7	
						CLASS 1 DIV 1	CLASS 1 DIV 2
ELECTRICAL ROOM [101]	X						
ODOR CONTROL AREA [102]							X (R1)
OUTDOORS				X			
INLET CONTROL GATE CHAMBER							
VAULT INTERIOR						X (R2)	X (R2)
WHCP DIVERSION STRUCTURE (CTS3)							
VAULT INTERIOR						X (R2)	X (R2)
TUNNEL RETRIEVAL SHAFT							
VAULT INTERIOR						X (R2)	X (R2)

REMARKS
R1 - AREAS WITHIN 3'-0" OF LEAKAGE SOURCES SUCH AS FANS, DAMPERS, FLEXIBLE CONNECTIONS, FLANGES, PRESSURIZED UNWELDED DUCTWORK AND ODOR CONTROL VESSELS. REFER TO ODOR CONTROL CLASSIFICATION DETAIL FOR FURTHER DETAILS.
R2 - CLASS 1, DIV 1 WITHIN VAULT/SHAFT. CLASS 1, DIV 2 WITHIN RADIUS. REFER TO VAULT/SHAFT CLASSIFICATION DETAIL FOR EXTENT OF CLASS 1, DIV 2 BOUNDARY.

CONDUIT AND WIRING SCHEDULE

- POWER WIRING:**
- [PA] 3/4"C, 2-12 AWG, 1-12 AWG (G)
 - [PB] 3/4"C, 3-12 AWG, 1-12 AWG (G)
 - [PC] 3/4"C, 3-10 AWG, 1-10 AWG (G)
 - [PD] 3/4"C, 3-8 AWG, 1-10 AWG (G)
 - [PE] 3/4"C, 3-6 AWG, 1-10 AWG (G)
 - [PF] 1"C, 3-4 AWG, 1-10 AWG (G)
 - [PG] 1"C, 3-4 AWG, 1-8 AWG (G)
 - [PH] 1 1/4"C, 3-2 AWG, 1-8 AWG (G)
 - [PJ] 1 1/2"C, 3-1 AWG, 1-8 AWG (G)
 - [PJ-4] 1 1/2"C, 4-1 AWG, 1-8 AWG (G)
 - [PK] 1 1/2"C, 3-1 AWG, 1-6 AWG (G)
 - [PK-4] 1 1/2"C, 4-1 AWG, 1-6 AWG (G)
 - [PL] 1 1/2"C, 3-1/0 AWG, 1-6 AWG (G)
 - [PX] TWO SETS OF 4"C, 3-350 KCM, 1-1 AWG (G)
 - [PX-4] TWP SETS OF 4"C, 4-350 KCM, 1-1 AWG (G)
- NOTE: ALL CONDUIT SIZING BASED ON THWN/THHN TYPE CABLE.
- DISCRETE WIRING:**
- [D2] 1/2"C, 2-14 AWG, 1-14 AWG (G)
 - [D4] 1/2"C, 4-14 AWG, 1-14 AWG (G)
 - [D6] 1/2"C, 6-14 AWG, 1-14 AWG (G)
 - [D8] 1/2"C, 8-14 AWG, 1-14 AWG (G)
 - [D10] 1/2"C, 10-14 AWG, 1-14 AWG (G)
 - [D12] 3/4"C, 12-14 AWG, 1-14 AWG (G)
 - [D14] 3/4"C, 14-14 AWG, 1-14 AWG (G)
 - [D16] 3/4"C, 16-14 AWG, 1-14 AWG (G)
 - [D18] 3/4"C, 18-14 AWG, 1-14 AWG (G)
 - [D20] 3/4"C, 20-14 AWG, 1-14 AWG (G)
 - [D30] 1"C, 30-14 AWG, 1-14 AWG (G)
 - [D40] 1 1/2"C, 40-14 AWG, 1-14 AWG (G)
- SIGNAL WIRING:**
- [C] 1"C, VENDOR SUPPLIED CABLE
 - [C1] 3/4"C, 1-TSP 16 AWG
 - [C2] 1"C, 2-TSP 16 AWG
 - [C3] 1"C, 3-TSP 16 AWG
 - [C4] 1 1/2"C, 4-TSP 16 AWG
 - [C5] 1 1/2"C, 5-TSP 16 AWG
 - [C6] 1 1/2"C, 6-TSP 16 AWG
- GROUND WIRING:**
- NOTE: ALL G SERIES WIRING SHALL BE CONNECTED TO GROUNDING BUS BAR LOCATED IN THE ELECTRICAL ROOM UNLESS OTHERWISE INDICATED. INSTALL IN PVC CONDUIT.
- [G1] 1/2"C, 1-12 AWG (G)
 - [G2] 1/2"C, 1-10 AWG (G)
 - [G3] 1/2"C, 1-8 AWG (G)
 - [G4] 3/4"C, 1-6 AWG (G)
 - [G5] 1"C, 1-4 AWG (G)
 - [G6] 1"C, 1-2 AWG (G)
 - [G7] 1"C, 1-1/0 AWG (G)
 - [G8] 1"C, 1-2/0 AWG (G)
 - [G9] 1 1/2"C, 1-3/0 AWG (G)
 - [G10] 1 1/2"C, 1-4/0 AWG (G)
 - [G11] 1 1/2"C, 1-250 KCM (G)
 - [G12] 2"C, 1-350 KCM (G)
 - [G13] 2"C, 1-500 KCM (G)



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MDC
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555 Main Street
Hartford, Connecticut

REV. NO.	DATE	DRWN	CHKD	REMARKS

FILE NAME: 230 E-601
DESIGNED BY: D. ASPESI
DRAWN BY: D. ASPESI
CHK'D BY: Y. RIZK
X-CHK'D BY: --
APPROVED BY: J. SULLIVAN
DATE: FEBRUARY 2015

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CONTRACT NO. 20XX-XX
SOUTH HARTFORD CONVEYANCE AND STORAGE TUNNEL

CONTRACT 2
MISCELLANEOUS SCHEDULES
ELECTRICAL

PLAN NUMBER
SHEET NO.
230 E-601