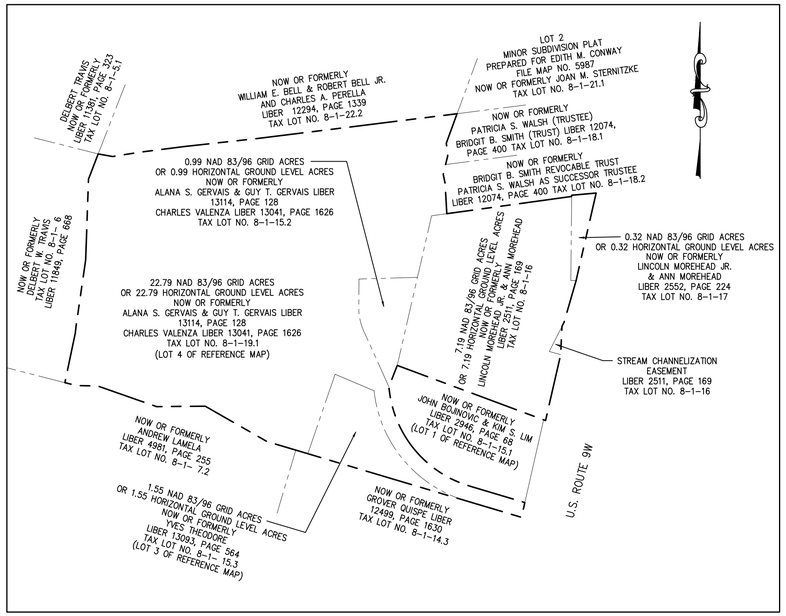
NEW YORK CITY
ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN AND CONSTRUCTION

RONDOUT - WEST BRANCH BYPASS TUNNEL

SHAFT 5B
THE TOWN OF NEWBURGH, NY

DATE: MAY 31, 2012

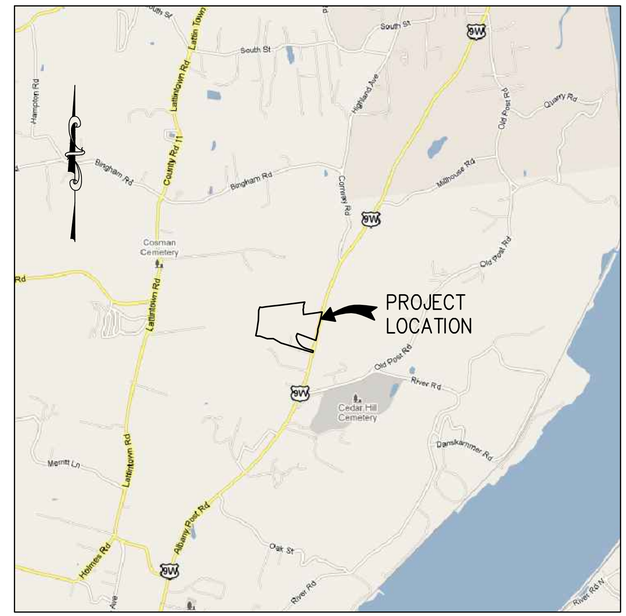
WEST CONNECTION SITE
SITE PLAN APPLICATION



ADJOINING LAND OWNERS

SCALE: 1" = 250'

1"=250' 0 250 500 FT.



LOCATION PLAN–WEST CONNECTION SITE

SCALE: 1" = 2000' (APPROX)

1"=2000' 0 2000 4000 FT.

ABBREVIATIONS

AC	ASPHALTIC CONCRETE	#, NO	NUMBER
BLDG	BUILDING	OD	OUTER DIAMETER
B/	BOTTOM	PROJ	PROJECTION
CAP	CAPACITY	PVC	POLY VINYL CHLORIDE
CMP	CORRUGATED METAL PIPE	PW	POTABLE WATER
CJ	CONSTRUCTION JOINT	RQD	REQUIRED
CY	CUBIC YARD	RW	RAW WATER
DE	DEWATERING WATER	S	SLOPE, SOUTH
DFM	DEWATERING FORCE MAIN	SAN SWR	SANITARY SEWER
DWLS	DOWELS	SMP	STORMWATER MANAGEMENT PRACTICE
EHH	ELECTRICAL HAND HOLE	SWPPP	STORM WATER POLLUTION PREVENTION PLAN
EMH	ELECTRICAL MANHOLE	SQ	SQUARE
ENGR	ENGINEERING	SS	SANITARY SEWER
FA	FIRE ALARM	SPEC	SPECIFICATION
FND	FOUNDATION, FOUND	T/C	TOP OF CONCRETE
FO	FUEL OIL	TC	TOP OF CURB
FT	FOOT, FEET	THK	THICKNESS
G	GAS	TW	TOP OF WALK
GAL	GALLON	V	VALVE
GALV	GALVANIZED	W	WATER, WEST
GV	GAS VALVE	WV	WATER VALVE
MJ	MECHANICAL JOINT	WWF	WELDED WIRE FABRIC
MON	MONUMENT		

SEE MECHANICAL AND ELECTRICAL DRAWINGS
FOR ADDITIONAL ABBREVIATIONS.

ENVIRONMENTAL COMMITMENTS:

THE CONTRACTOR SHALL COORDINATE WITH THE NEW YORK CITY DEPARTMENT OF ENVIRONMENTAL PROTECTION (NYCDEP, THE DEPARTMENT) AND THE CONSTRUCTION MANAGER (CM), AS APPROPRIATE, TO SUPPORT PROJECT COMPLIANCE WITH ALL FEDERAL, STATE, AND LOCAL REGULATIONS AND ENVIRONMENTAL COMMITMENTS GOVERNING THE PROJECT, INCLUDING COMMITMENTS AND CONDITIONS ASSOCIATED WITH ALL PERMITS, THE FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS), AND PRIVATE AND MUNICIPAL GOVERNMENT AGREEMENTS.

ENVIRONMENTAL COMMITMENTS INCLUDE, BUT ARE NOT LIMITED TO, THOSE LISTED IN THE FOLLOWING DOCUMENTS:

1. RWB BYPASS TUNNEL SITE PLAN APPLICATION DRAWING SET
2. FINAL ENVIRONMENTAL IMPACT STATEMENT (FEIS), CEQR NO. 10DEP042U, PROJECT: WATER FOR THE FUTURE PROGRAM: RONDOUT–WEST BRANCH BYPASS TUNNEL REPAIR, MAY 18, 2012
3. CONCEPTUAL NOISE MITIGATION PLAN (CNMP), FEIS APPENDIX 2.19, SECTION 2.19–2
4. BLASTING PROTOCOLS AND WELL MONITORING/PROTECTION PROTOCOLS DOCUMENTED IN THE CONTRACT SPECIFICATIONS AND IN ANY INTER–GOVERNMENTAL AGREEMENT (IGA) BETWEEN THE DEPARTMENT AND LOCAL MUNICIPALITIES
5. LANDSCAPING PLANS
6. STORMWATER POLLUTION PREVENTION PLANS (SWPPP)
7. BUILDING CODE SELF–CERTIFICATION DOCUMENTATION
8. ILLUMINATION CONTROL PLANS
9. TRAFFIC CONTROL PLANS
10. ALL PROJECT PERMITS AND OTHER APPROVALS

EXISTING	NEW	
		BRUSH/TREE LINE
428.6	+ 465	SPOT ELEVATION
		WETLAND AREA
	X X	CHAIN LINK FENCE
	PF PF	PROTECTIVE FENCE
		SPLIT RAIL FENCE
	SF SF	SILT FENCE
	X X X	WELDED WIRE FABRIC
		CONCRETE BARRIER
		LIMITS OF DISTURBANCE
		50' STREAM BUFFER
		100 YEAR FLOOD PLAIN
	PW PW	POTABLE WATER
	NPW	NON–POTABLE WATER
	DFM	DEWATERING FORCE MAIN
	DR DR	DRAIN
		HYDRAULIC GRADE LINE
		CHECK DAM
		STONE OUTLET SEDIMENT TRAP
		RIP–RAP OUTLET PROTECTION
	–0.1%	SLOPE
	10:1	
	10 1	
	1 10	
		DROP INLET
		INLET SEDIMENT PROTECTION
	TP	TREE PROTECTION
		SHIPPING/STORAGE CONTAINERS FOR NOISE ABATEMENT
		ASPHALT
		CONCRETE
		GRAVEL
		EARTH
		ROCK

	TRAFFIC CHANNELING DEVICES
	TRAFFIC SIGN
1–WAY 2–WAY	TRAFFIC DIRECTION OF TRAVEL
	TRAFFIC SIGNAL LIGHT
	LANE LINE
	NORMAL BROKEN LINE
	ARROWS–WHITE PREFORMED REFLECTORIZED
	TRAFFIC SIGNAL MODULE
	TRAFFIC SIGNAL POLE
	MICROWAVE VEHICLE DETECTOR
	REINFORCED CONCRETE PULL BOX
WXL	INDUCTANCE LOOP WIRE
	MICROCOMPUTER STRETCH CABINET
	RIP–RAP
	CONSTRUCTION STAGING AREA
	SAND/ BACKFILL
	DEMOLITION
	GRUBBING AND STRIPPING
	50' STREAM BUFFER
	100 YEAR FLOOD PLAIN
#B–##	BORING LOCATION AND ID NO.
PH	POST HYDRANT
	COMMON FILL
A / 5S–201	SECTION DESIGNATION OR DETAIL NUMBER; DWG. NUMBER ON WHICH THE SECTION OR DETAIL IS CUT OR SHOWN

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
IT IS A REDUCED PRINT.
SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: DEP
DRAWN BY: CURTIS CUMBERBATCH
CHECKED BY: MIGUEL RODRIGUEZ
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

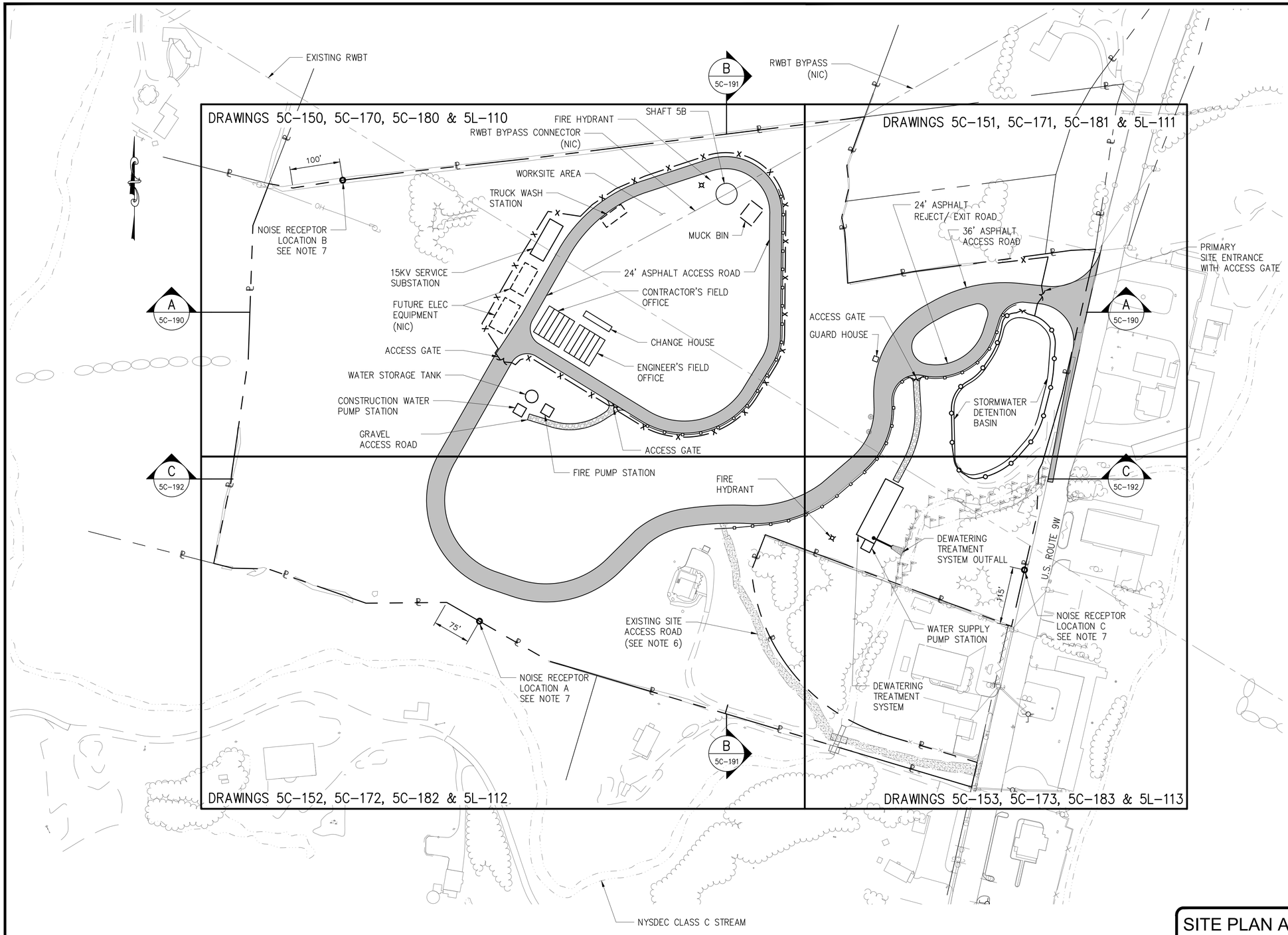
Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
SYMBOLS, NOTES
AND ABBREVIATIONS

DATE: 05/31/2012
SCALE: N.T.S
SHEET NO: 2 OF 77
DRAWING NO. **GC–001.00**



NOTES:

1. PLANIMETRIC FEATURES ARE FROM TOPOGRAPHIC SURVEYS OF THE VALENZA, MOREHEAD AND THEODORE PROPERTIES BY MUNOZ ENGINEERING & LAND SURVEYING, P.C., DATED AUGUST 2011 REVISED 10-19-11.
2. HORIZONTAL DATUM IS NAD-83-96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101 (NEW YORK EAST).
3. VERTICAL DATUM IS NGVD 29.
4. STREAM CHANNEL IS FROM THE LAND ACQUISITION SURVEYS OF THE GERVAIS-VALENZA PROPERTY DATED APRIL 26, 2011 AND THE MOREHEAD PROPERTY DATED JUNE 20, 2011 BOTH BY MUNOZ ENGINEERING & LAND SURVEYING, P.C.
5. SITE LANDSCAPING NOT SHOWN. SEE DRAWINGS 5L-100 TO 5L-120.
6. EXISTING SITE ACCESS ROAD SHALL BE USED DURING INITIAL STAGES OF SITE PREPARATION, UNTIL PRIMARY SITE ENTRANCE AND ACCESS ROAD ARE CONSTRUCTED. EXISTING SITE ACCESS ROAD SHALL NOT BE USED EXCEPT IN CASES OF EMERGENCY ONCE PRIMARY SITE ENTRANCE AND ACCESS ROAD ARE COMPLETE.
7. NOISE RECEPTORS SHALL BE PLACED AT A HEIGHT OF 13.5'. REFER TO THE DETAILED SPECIFICATIONS FOR NOISE ABATEMENT REQUIREMENTS.
8. SITE LAYOUT SHOWN IS BASED ON ANTICIPATED CONSTRUCTION REQUIREMENTS FOR THE SHAFT CONSTRUCTION PHASE OF PROJECT 1. REFER TO DRAWINGS 5C-140 TO 5C-145 FOR ANTICIPATED SITE LAYOUTS THROUGHOUT ALL PHASES OF CONSTRUCTION.

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: R.B.T.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
SITE KEY PLAN

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 3 OF 77
DRAWING NO. **5C-100.00**

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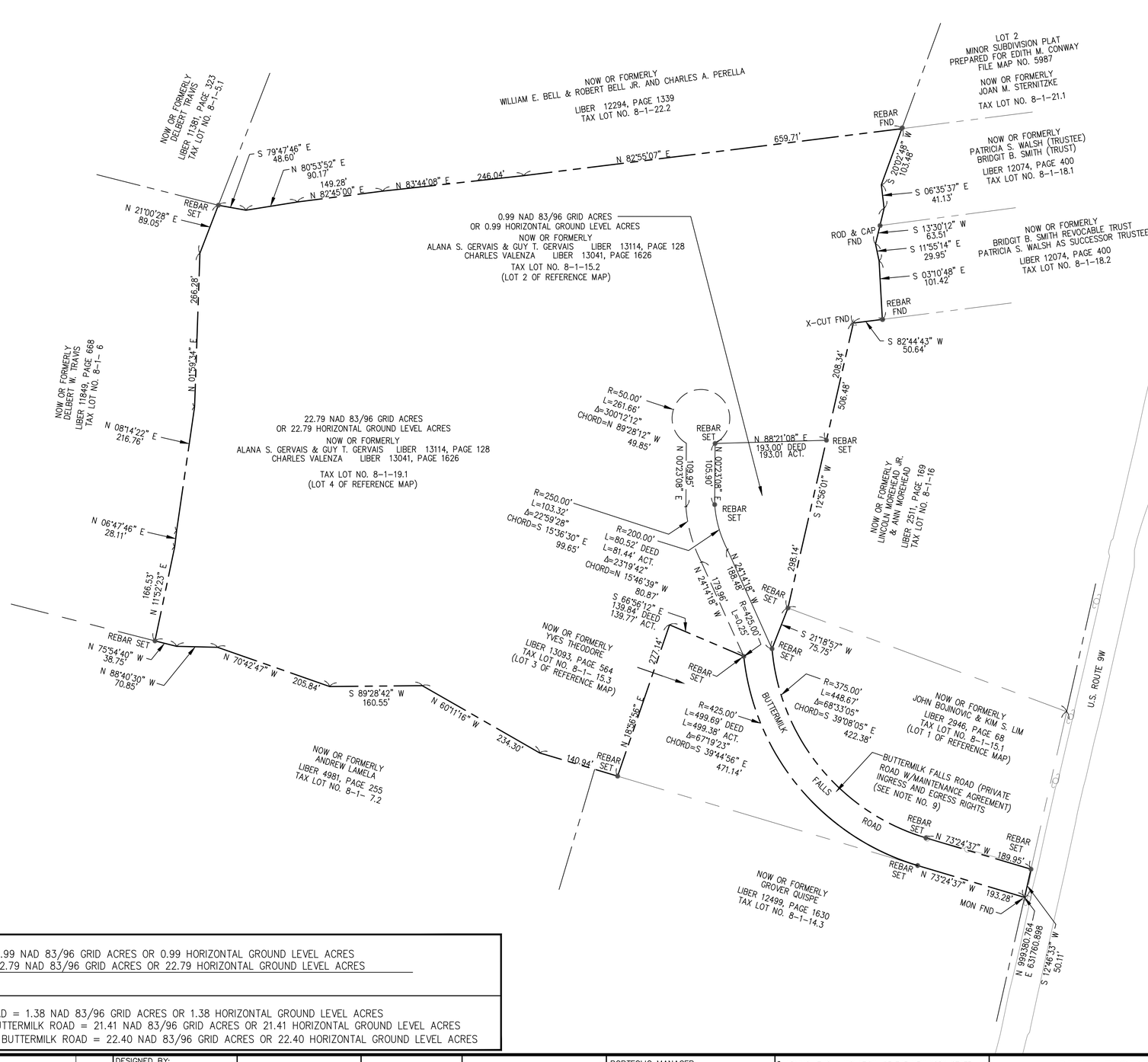
Date Plotted: 5/25/2012 3:20 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c100-00.dwg



NOTES:

1. BEARINGS SHOWN ARE IN THE HORIZONTAL DATUM NAD–83–96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101.
2. VERTICAL DATUM IS NGVD 29.
3. SURVEY CONTROL WAS ESTABLISHED BY G.P.S. AND A GROUND TRAVERSE. ALL DISTANCES ON THIS MAP ARE "GROUND".
4. FEATURES SHOWN OUTSIDE OF THE DEFINED BOUNDARY OF THIS MAP ARE FOR DESCRIPTIVE PURPOSES ONLY.
5. ANY UNAUTHORIZED OR ALTERATION OR ADDITION TO A SURVEY MAP BEARING THE SIGNATURE AND SEAL OF A LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209–A, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
6. COPIES FROM THE ORIGINAL OF THIS SURVEY MAP NOT MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S INKED SEAL OR HIS EMBOSSED SEAL SHALL NOT BE CONSIDERED A VALID TRUE COPY.
7. THIS PROPERTY SUBJECT TO A UTILITY EASEMENT LIBER 789, PAGE 32.
8. THIS PROPERTY MAY BE SUBJECT TO VARIOUS UTILITY EASEMENTS (I.E. POWER, TELEPHONE, SANITARY & OR STORM SEWER, WATER, GAS, ETC.) THAT WERE NOT NOTED EITHER IN THE REFERENCE DEED OR REFERENCE PLATS ASSOCIATED WITH THIS PROPERTY.
9. INGRESS AND EGRESS RIGHTS TO USE 50' WIDE ROAD KNOWN AS BUTTERMILK FALLS ROAD, BEING A PORTION OF TAX MAP SECTION 8, BLOCK 1, LOT 19.1, AND SHOWN ON THE FILED MAP NO. 8601 (LIBER 4856 PAGE 121).

REFERENCE MAP:

BEING LOTS 15.2 AND 19.1 ON THE MAP ENTITLED "SUBDIVISION PLAT PREPARED FOR MICHAEL SMITH & GUY GERVAIS" FILED NOVEMBER 20, 1987 IN THE ORANGE COUNTY CLERK'S OFFICE AS FILE MAP NO. 8601.

TAX PARCEL NUMBER:

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK
SECTION 8, BLOCK 1, LOTS 15.2 AND 19.1

DEED REFERENCE:

8–1–LOT 15.2
LIBER 13114, PAGE 128

8–1–LOT 19.1
LIBER 11888, PAGE 1823

BOUNDARY SURVEY PREPARED BY
MUNOZ ENGINEERING & LAND SURVEYING, P.C., TITLED
"THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
LAND ACQUISITION SURVEY
IN THE MATTER OF ACQUIRING LANDS OF
ALANA S. GERVAIS & CHARLES VALENZA"
DATED APRIL 26, 2011
CERTIFIED BY YEFIM ITSKOVSKY, PLS

AREA OF TAX LOT NO. 15.2 = 0.99 NAD 83/96 GRID ACRES OR 0.99 HORIZONTAL GROUND LEVEL ACRES
AREA OF TAX LOT NO. 19.1 = 22.79 NAD 83/96 GRID ACRES OR 22.79 HORIZONTAL GROUND LEVEL ACRES

AREA OF BUTTERMILK FALLS ROAD = 1.38 NAD 83/96 GRID ACRES OR 1.38 HORIZONTAL GROUND LEVEL ACRES
AREA OF LOT 19.1 EXCLUDING BUTTERMILK ROAD = 21.41 NAD 83/96 GRID ACRES OR 21.41 HORIZONTAL GROUND LEVEL ACRES
TOTAL AREA OF SITE EXCLUDING BUTTERMILK ROAD = 22.40 NAD 83/96 GRID ACRES OR 22.40 HORIZONTAL GROUND LEVEL ACRES

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
IT IS A REDUCED PRINT.
SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: R.B.T.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture IN ASSOCIATION WITH AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

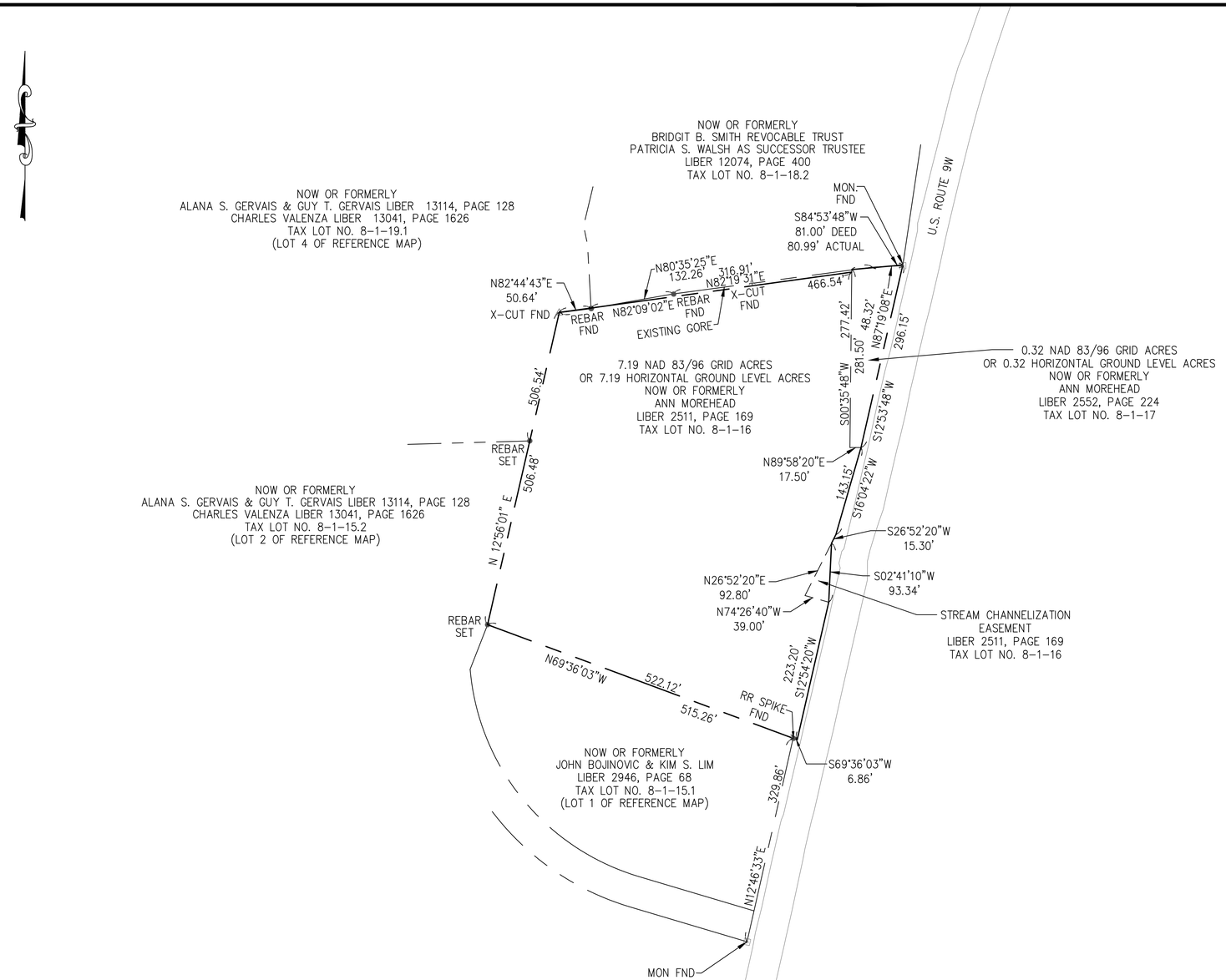
PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

"WARNING–IT IS A VIOLATION, OF THE NEW YORK STATE EDUCATION LAW, SECTION, 7209.2, FOR ANY PERSON, UNLESS (S)HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION, LAW, SECTION, 7209.2."

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
BOUNDARY SURVEY
SHEET 1

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 4 OF 77
DRAWING NO. 5C–120.00



NOTES:

1. BEARINGS SHOWN ARE IN THE HORIZONTAL DATUM NAD-83-96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101.
2. VERTICAL DATUM IS NGVD 29.
3. SURVEY CONTROL WAS ESTABLISHED BY G.P.S. AND A GROUND TRAVERSE. ALL DISTANCES ON THIS MAP ARE "GROUND".
4. THE TRAVERSE AND FEATURES ALONG THE BOUNDARY WERE SURVEYED ON THE GROUND BY MUNOZ ENGINEERING, P.C. IN JUNE 2011. OTHER TOPOGRAPHICAL INFORMATION SHOWN, IS BASED ON AERIAL MAPPING PERFORMED BY ERDMAN ANTHONY IN 2010.
5. FEATURES SHOWN OUTSIDE OF THE DEFINED BOUNDARY OF THIS MAP ARE FOR DESCRIPTIVE PURPOSES ONLY.
6. ANY UNAUTHORIZED OR ALTERATION OR ADDITION TO A SURVEY MAP BEARING THE SIGNATURE AND SEAL OF A LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209-A, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
7. COPIES FROM THE ORIGINAL OF THIS SURVEY MAP NOT MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S INKED SEAL OR HIS EMBOSSED SEAL SHALL NOT BE CONSIDERED A VALID TRUE COPY.
8. THIS PROPERTY SUBJECT TO A STREAM CHANNELIZATION EASEMENT LIBER 2511, PAGE 169.
9. THIS PROPERTY MAY BE SUBJECT TO VARIOUS UTILITY EASEMENTS (I.E. POWER, TELEPHONE, SANITARY & OR STORM SEWER, WATER, GAS, ETC.) THAT WERE NOT NOTED EITHER IN THE REFERENCE DEED OR REFERENCE PLATS ASSOCIATED WITH THIS PROPERTY.

REFERENCE MAP (FOR ADJOINING DEEDS ONLY):

MAP ENTITLED "SUBDIVISION PLAT PREPARED FOR MICHAEL SMITH & GUY GERVAIS" FILED NOVEMBER 20, 1987 IN THE ORANGE COUNTY CLERK'S OFFICE AS FILE MAP NO. 8601.

TAX PARCEL NUMBER:

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK
SECTION 8, BLOCK 1, LOTS 16 AND 17

DEED REFERENCE:

8-1-LOT 16
LIBER 2552, PAGE 224

8-1-LOT 17
LIBER 2511, PAGE 169

AREA OF TAX LOT NO. 16 = 7.19 NAD 83/96 GRID ACRES OR 7.19 HORIZONTAL GROUND LEVEL ACRES
AREA OF TAX LOT NO. 17 = 0.32 NAD 83/96 GRID ACRES OR 0.32 HORIZONTAL GROUND LEVEL ACRES
TOTAL AREA OF SITE = 7.51 NAD 83/96 GRID ACRES OR 7.51 HORIZONTAL GROUND LEVEL ACRES

BOUNDARY SURVEY PREPARED BY
MUNOZ ENGINEERING & LAND SURVEYING, P.C., TITLED
"THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
LAND ACQUISITION SURVEY
IN THE MATTER OF ACQUIRING LANDS OF
"ANN MOREHEAD"
DATED JUNE 21, 2011
CERTIFIED BY YEFIM ITSKOVSKY, PLS

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE
IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: R.B.T.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM a joint venture PIRNIE in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

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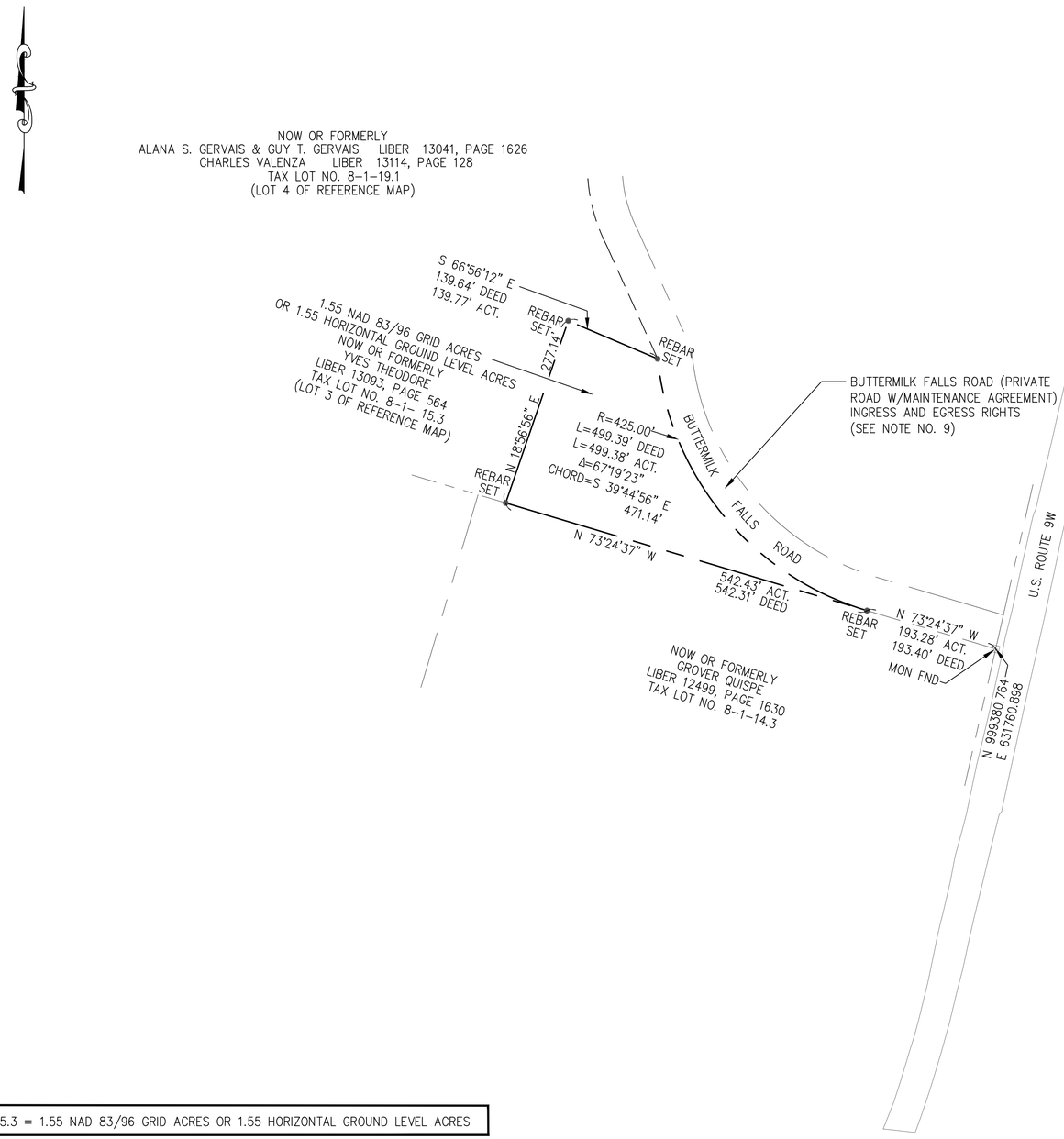
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
BOUNDARY SURVEY
SHEET 2

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 5 OF 77
DRAWING NO. **5C-121.00**



NOTES:

1. BEARINGS SHOWN ARE IN THE HORIZONTAL DATUM NAD-83-96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101.
2. VERTICAL DATUM IS NGVD 29.
3. SURVEY CONTROL WAS ESTABLISHED BY G.P.S. AND A GROUND TRAVERSE. ALL DISTANCES ON THIS MAP ARE "GROUND".
4. THE TRAVERSE AND FEATURES ALONG THE BOUNDARY WERE SURVEYED ON THE GROUND BY MUNOZ ENGINEERING, P.C. IN MARCH 2011. OTHER TOPOGRAPHICAL INFORMATION SHOWN, IS BASED ON AERIAL MAPPING PERFORMED BY ERDMAN ANTHONY IN 2010.
5. FEATURES SHOWN OUTSIDE OF THE DEFINED BOUNDARY OF THIS MAP ARE FOR DESCRIPTIVE PURPOSES ONLY.
6. ANY UNAUTHORIZED ALTERATION OR ADDITION TO A SURVEY MAP BEARING THE SIGNATURE AND SEAL OF A LICENSED LAND SURVEYOR IS A VIOLATION OF SECTION 7209-A, SUBDIVISION 2, OF THE NEW YORK STATE EDUCATION LAW.
7. COPIES FROM THE ORIGINAL OF THIS SURVEY MAP NOT MARKED WITH AN ORIGINAL OF THE LAND SURVEYOR'S INKED SEAL OR HIS EMBOSSED SEAL SHALL NOT BE CONSIDERED A VALID TRUE COPY.
8. THIS PROPERTY MAY BE SUBJECT TO VARIOUS UTILITY EASEMENTS (I.E. POWER, TELEPHONE, SANITARY & OR STORM SEWER, WATER, GAS, ETC.) THAT WERE NOT NOTED EITHER IN THE REFERENCE DEED OR REFERENCE PLATS ASSOCIATED WITH THIS PROPERTY.
9. INGRESS AND EGRESS RIGHTS TO USE 50' WIDE ROAD KNOWN AS BUTTERMILK FALLS ROAD, BEING A PORTION OF TAX MAP SECTION 8, BLOCK 1, LOT 19.1, AND SHOWN ON THE FILED MAP NO. 8601 (LIBER 4856 PAGE 121).

REFERENCE MAP

BEING LOT 3 ON THE MAP ENTITLED "SUBDIVISION PLAT PREPARED FOR MICHAEL SMITH & GUY GERVAIS" FILED NOVEMBER 20, 1987 IN THE ORANGE COUNTY CLERK'S OFFICE AS FILE MAP NO. 8601.

TAX PARCEL NUMBER:

TOWN OF NEWBURGH, ORANGE COUNTY, NEW YORK
SECTION 8, BLOCK 1, LOTS 15.3

DEED REFERENCE:

8-1-LOT 15.3
LIBER 13093, PAGE 564

BOUNDARY SURVEY PREPARED BY
MUNOZ ENGINEERING & LAND SURVEYING, P.C., TITLED
"THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
LAND ACQUISITION SURVEY
IN THE MATTER OF ACQUIRING LANDS OF
"YVES THEODORE"
DATED AUGUST 5, 2011
CERTIFIED BY YEFIM ITSKOVSKY, PLS

AREA OF TAX LOT NO. 15.3 = 1.55 NAD 83/96 GRID ACRES OR 1.55 HORIZONTAL GROUND LEVEL ACRES

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
IT IS A REDUCED PRINT.
SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: R.B.T.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

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DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
BOUNDARY SURVEY
SHEET 3

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 6 OF 77
DRAWING NO. **5C-122.00**

NOTES:

1. LIMITS OF DISTURBANCE AND GRADING SHOWN ARE BASED ON ASSUMED REQUIREMENTS FOR ALL PROJECT PHASES, INCLUDING TUNNEL EXCAVATION, LINING AND CONNECTIONS.
2. PLANIMETRIC FEATURES ARE FROM TOPOGRAPHIC SURVEYS OF THE VALENZA, MOREHEAD AND THEODORE PROPERTIES BY MUNOZ ENGINEERING & LAND SURVEYING, P.C., DATED AUGUST 2011 REVISED 10-19-11.
3. HORIZONTAL DATUM IS NAD-83-96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101 (NEW YORK EAST).
4. VERTICAL DATUM IS NGVD 29.
5. STREAM CHANNEL IS FROM THE LAND ACQUISITION SURVEYS OF THE GERVAIS-VALENZA PROPERTY DATED APRIL 26, 2011 AND THE MOREHEAD PROPERTY DATED JUNE 20, 2011 BOTH BY MUNOZ ENGINEERING & LAND SURVEYING, P.C.
6. EROSION AND SEDIMENT CONTROL MEASURES WILL BE ESTABLISHED AT THE LIMITS OF CONSTRUCTION AND ADJUSTED AS SITE DEVELOPMENT PROGRESSES.
7. EXISTING SITE ENTRANCE AND TEMPORARY STAGING AREA WILL BE UTILIZED DURING PHASE 1 WHILE NEW SITE ENTRANCE, ACCESS ROAD AND WORK SITE ARE GRADED AND PREPARED FOR USE.

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
IT IS A REDUCED PRINT.
SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: R.B.T.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
PROJECT DEVELOPMENT PLAN
PHASE 1 - SITE PREPARATION

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 7 OF 77
DRAWING NO. **5C-140.00**

Last Save By Date and Time:shrestha\5/4/2012 8:39 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:21 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c140-00.dwg

NOTES:

1. LIMITS OF DISTURBANCE AND GRADING AND WORKSITE AREA SHOWN ARE BASED ON ASSUMED REQUIREMENTS FOR ALL PROJECT PHASES, INCLUDING TUNNEL EXCAVATION, LINING AND CONNECTION.
2. PLANIMETRIC FEATURES ARE FROM TOPOGRAPHIC SURVEYS OF THE VALENZA, MOREHEAD AND THEODORE PROPERTIES BY MUNOZ ENGINEERING & LAND SURVEYING, P.C., DATED AUGUST 2011 REVISED 10-19-11.
3. HORIZONTAL DATUM IS NAD-83-96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101 (NEW YORK EAST).
4. VERTICAL DATUM IS NGVD 29.
5. STREAM CHANNEL IS FROM THE LAND ACQUISITION SURVEYS OF THE GERVAIS-VALENZA PROPERTY DATED APRIL 26, 2011 AND THE MOREHEAD PROPERTY DATED JUNE 20, 2011 BOTH BY MUNOZ ENGINEERING & LAND SURVEYING, P.C.
6. EROSION AND SEDIMENT CONTROL MEASURES WILL BE ESTABLISHED AT THE LIMITS OF CONSTRUCTION AND SELECT LOCATIONS WITHIN THE SITE THROUGHOUT CONSTRUCTION.
7. LANDSCAPING WILL BE ESTABLISHED DURING PHASE 2 TO PROVIDE SCREENING OF SITE ACTIVITIES TO THE EXTENT PRACTICAL. SEE DRAWINGS 5L-100 TO 5L-120 FOR DETAILS.

1"=100' 0 100 200 FT.

Hirani Group

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
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SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: P.J.P.
DRAWN BY: E.R.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE, a joint venture, IN ASSOCIATION WITH AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
PROJECT DEVELOPMENT PLAN
PHASE 2 - SHAFT CONSTRUCTION

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 8 OF 77
DRAWING NO. **5C-141.00**

Last Save By Date and Time:shrestha\5/4/2012 12:52 PM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:21 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c141-00.dwg

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7. SEE DRAWINGS 5L-100 TO 5L-120 FOR LANDSCAPING DETAILS.
8. INUNDATION PUMP GENERATION FACILITY WILL BE USED ONLY AS A BACKUP POWER SUPPLY DURING PHASE 5 (TUNNEL CONNECTION).

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION

MAY 2012

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REVISIONS

DESIGNED BY: P.P.
DRAWN BY: E.R.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
PROJECT DEVELOPMENT PLAN
PHASE 3 - TUNNEL EXCAVATION

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 9 OF 77
DRAWING NO. **5C-142.00**

Last Save By Date and Time:shrestho\5/4/2012 12:53 PM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:22 PM\Author:shrestho\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c142-00.dwg

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7. SEE DRAWINGS 5L–100 TO 5L–120 FOR LANDSCAPING DETAILS.
8. INUNDATION PUMP GENERATION FACILITY WILL BE USED ONLY AS A BACKUP POWER SUPPLY DURING PHASE 5 (TUNNEL CONNECTION).

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION

MAY 2012

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Hirani Group

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REVISIONS

DESIGNED BY: P.P.
DRAWN BY: E.R.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
PROJECT DEVELOPMENT PLAN
PHASE 4 - TUNNEL LINING

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 10 OF 77
DRAWING NO. **5C–143.00**

Last Save By Date and Time:shrestho\5/4/2012 12:55 PM\Plotstyle Table: dep–bedc – 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:23 PM\Author:shrestho\File Location:i:\dep–bedc\bt–1\design\1.1 drawings\00 site plan application\civil\bt–1–5c143–00.dwg

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7. SEE DRAWINGS 5L–100 TO 5L–120 FOR LANDSCAPING DETAILS.
8. INUNDATION PUMP GENERATION FACILITY WILL BE USED ONLY AS A BACKUP POWER SUPPLY DURING PHASE 5 (TUNNEL CONNECTION).

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES CHECK BEFORE USE

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Hirani Group

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: P.P.
DRAWN BY: E.R.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
PROJECT DEVELOPMENT PLAN
PHASE 5 - TUNNEL CONNECTION

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 11 OF 77
DRAWING NO. **5C–144.00**

NOTES:

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6. LANDSCAPING WILL BE ADDED AT COMPLETION OF SITE ACTIVITY TO RESTORE NATURAL (PRE-CONSTRUCTION) CONDITIONS AND INHIBIT GROWTH OF INVASIVE PLANT SPECIES.
7. FOR TREE PLANTING SCHEDULE, REFER TO DRAWING 5L-101.00.

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION

MAY 2012

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Hirani Group

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: P.P.
DRAWN BY: E.R.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM joint venture PIRNIE in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

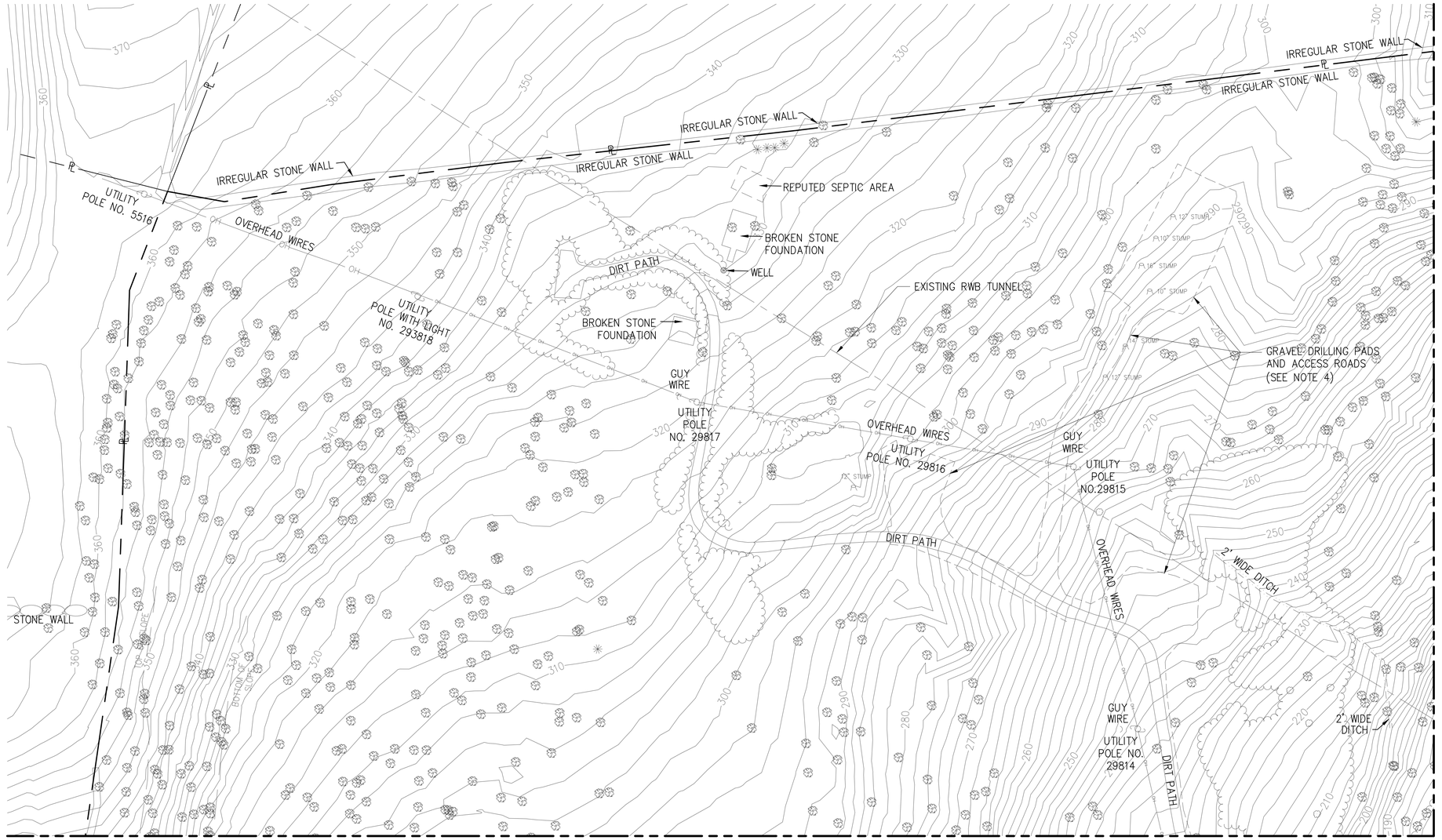
PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
PROJECT DEVELOPMENT PLAN
PHASE 6- POST CONSTRUCTION

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 12 OF 77
DRAWING NO. **5C-145.00**

Last Save By Date and Time:shrestho\5/4/2012 1:01 PM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:24 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c145-00.dwg



NOTES:

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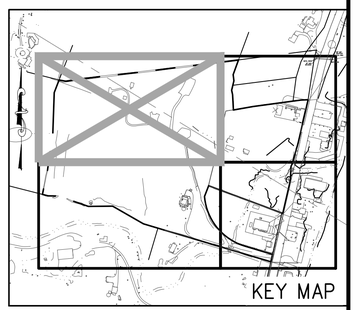
2. HORIZONTAL DATUM IS NAD-83-96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101 (NEW YORK EAST).
3. VERTICAL DATUM IS NGVD 29.
4. EXISTING GRADE IN AREAS IDENTIFIED AS 'GRAVEL DRILLING PADS AND ACCESS ROADS' MAY VARY FROM TOPOGRAPHIC CONTOUR LINES SHOWN. CONTRACTOR SHALL FIELD VERIFY EXISTING CONDITIONS.



1"=50' 0 50 100 FT.

SITE PLAN APPLICATION

MAY 2012

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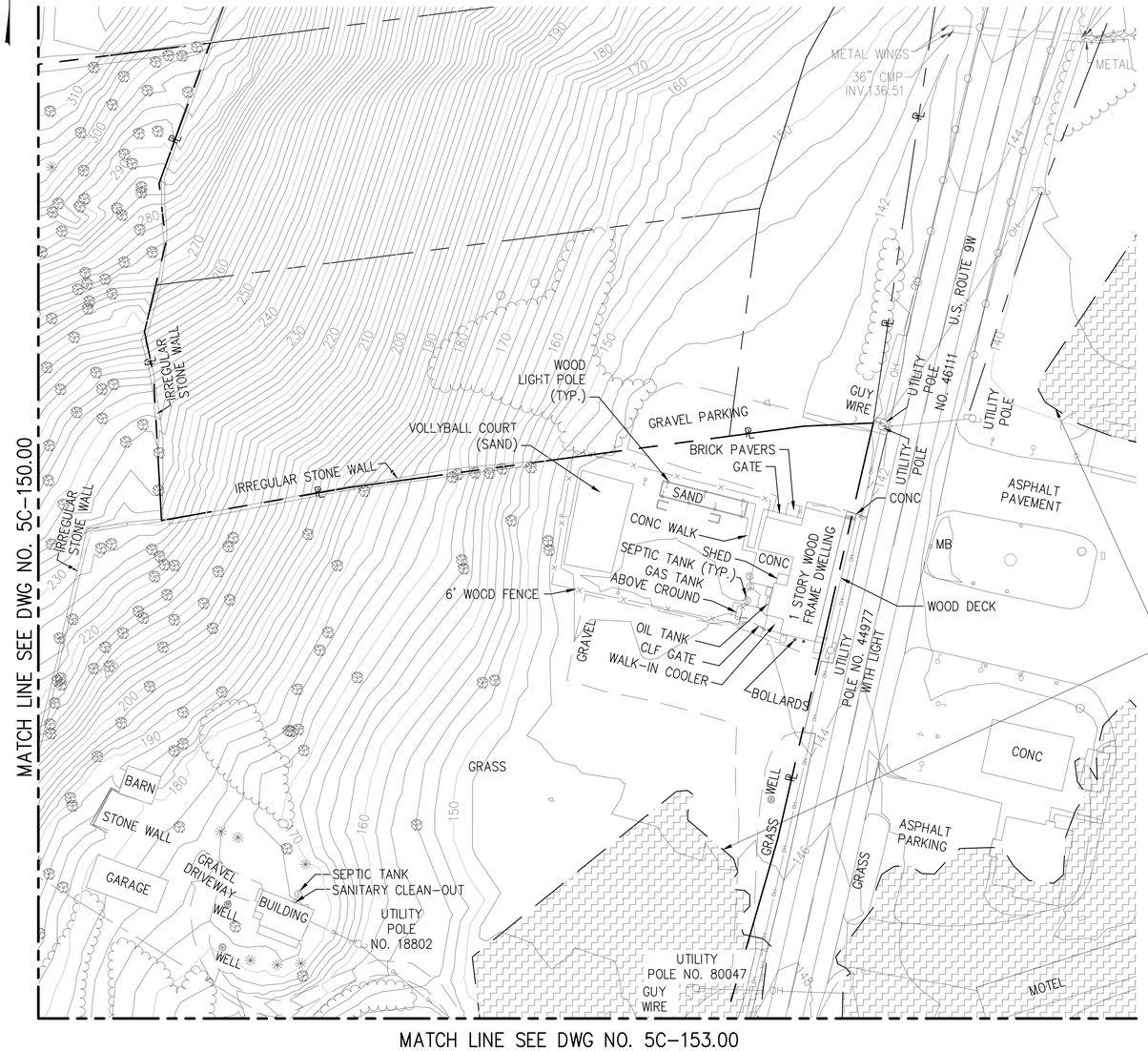
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
EXISTING SITE PLAN
SHEET 1

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 13 OF 77
DRAWING NO. **5C-150.00**



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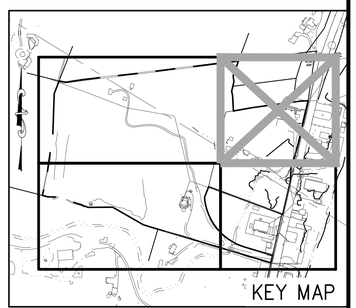
3. VERTICAL DATUM IS NGVD 29.
4. FLOOD PLAIN LIMITS ARE FROM FEMA FLOOD INSURANCE RATE MAP NUMBER 36071C0153E, EFFECTIVE DATE AUGUST 3, 2009.
5. STREAM CHANNEL IS FROM THE LAND ACQUISITION SURVEYS OF THE GERVAIS-VALENZA PROPERTY DATED APRIL 26, 2011 AND THE MOREHEAD PROPERTY DATED JUNE 20, 2011 BOTH BY MUNOZ ENGINEERING & LAND SURVEYING, P.C.



1"=50' 0 50 100 FT.

SITE PLAN APPLICATION

MAY 2012

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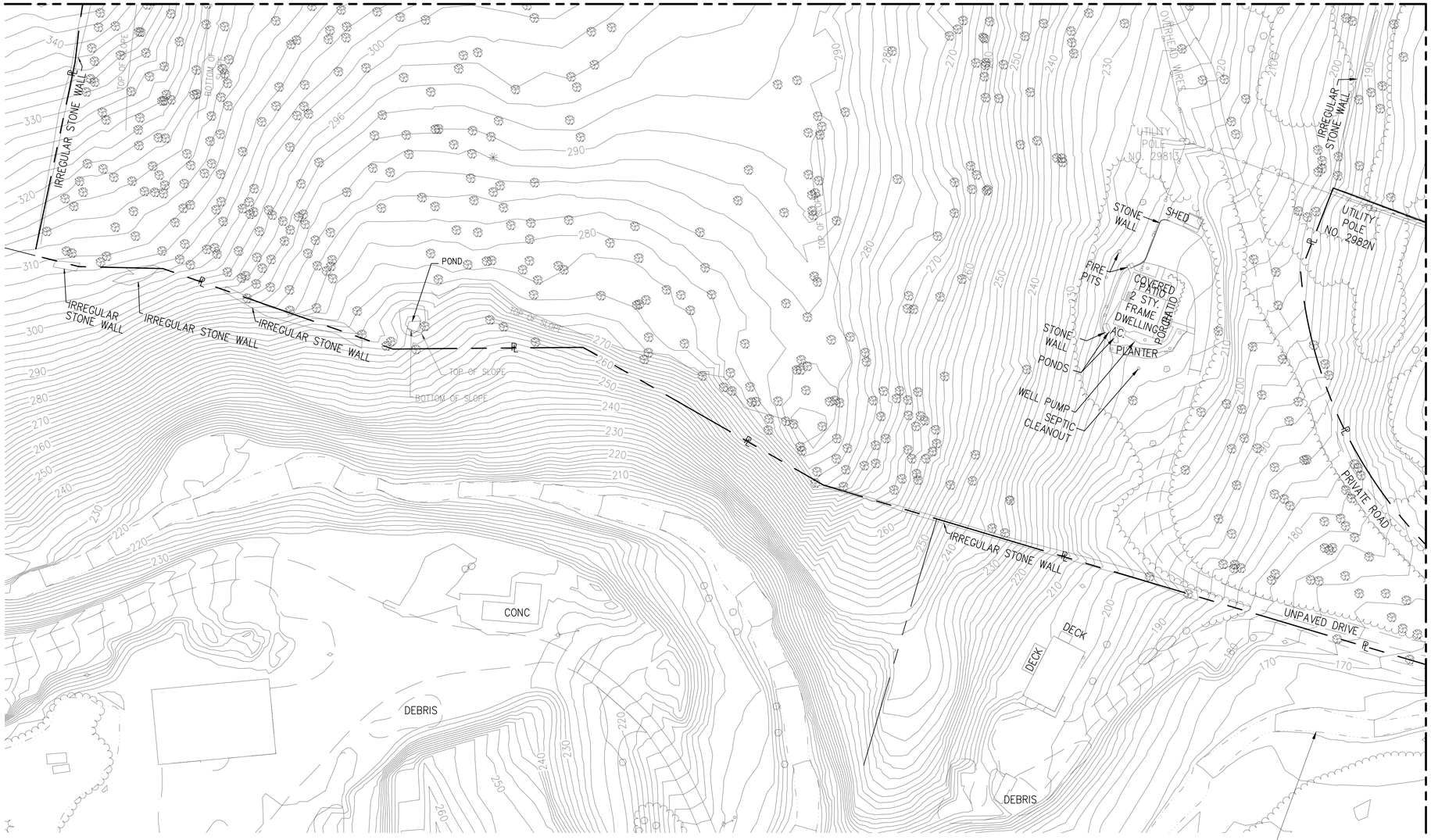
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
EXISTING SITE PLAN
SHEET 2

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 14 OF 77
DRAWING NO. **5C-151.00**

MATCH LINE SEE DWG NO. 5C-150.00



MATCH LINE SEE DWG NO. 5C-153.00

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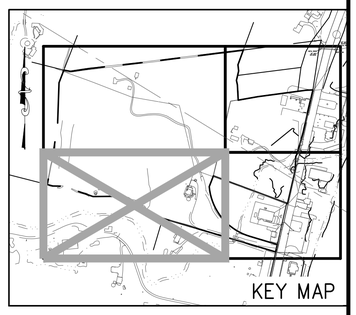

1"=50' 0 50 100 FT.

SITE PLAN APPLICATION
MAY 2012

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REVISIONS

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DRAWN BY: R.B.T.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
EXISTING SITE PLAN
SHEET 3

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 15 OF 77
DRAWING NO. **5C-152.00**

NOTES:

1. PLANIMETRIC FEATURES ARE FROM TOPOGRAPHIC SURVEYS OF THE VALENZA, MOREHEAD AND THEODORE PROPERTIES BY MUNOZ ENGINEERING & LAND SURVEYING, P.C., DATED AUGUST 2011 REVISED 10-19-11.
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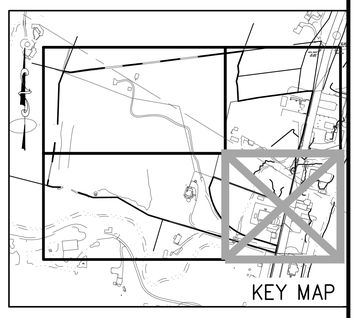

1"=50' 0 50 100 FT.

SITE PLAN APPLICATION

MAY 2012

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SCALE ACCORDINGLY

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REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: R.B.T.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

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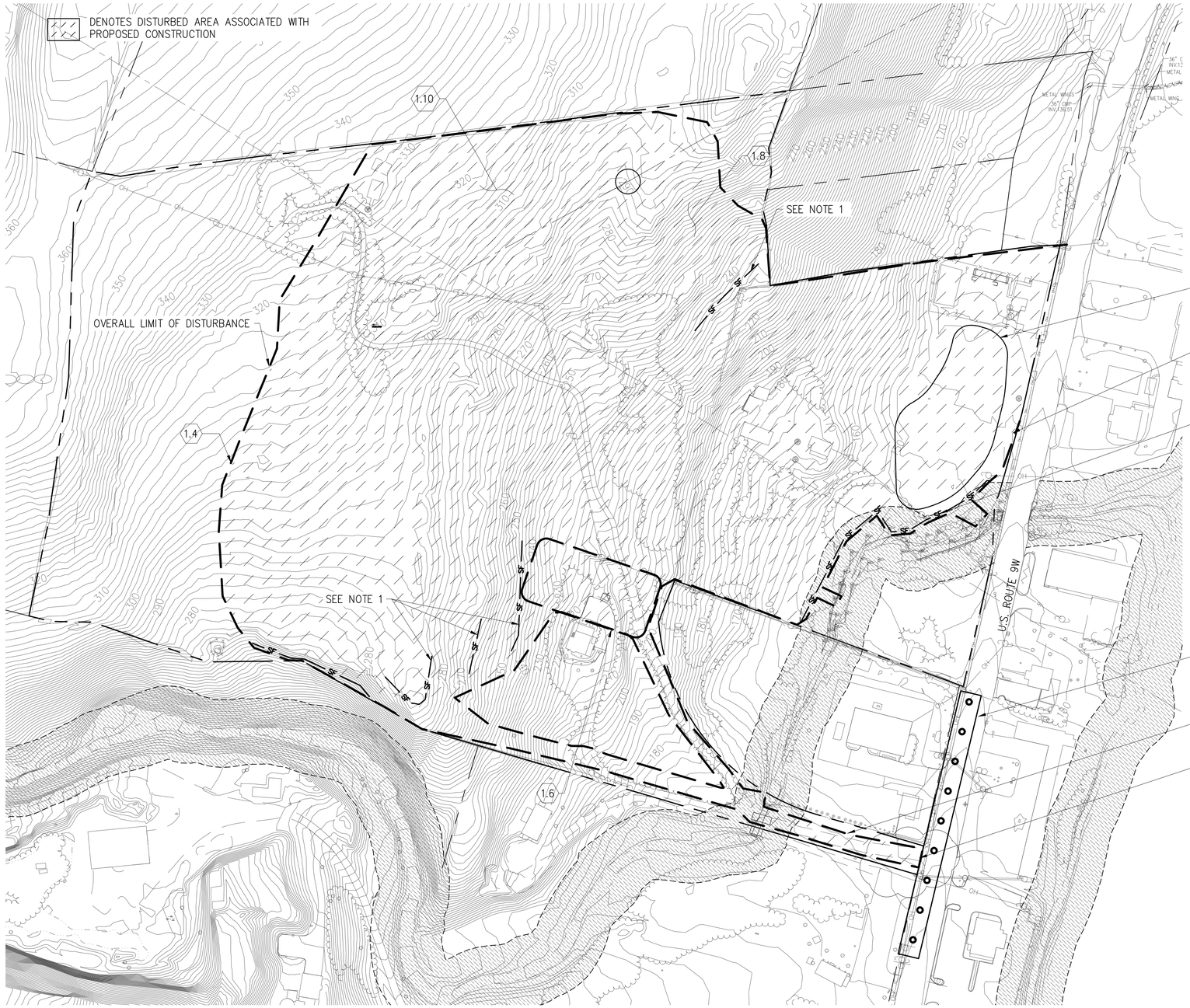
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
EXISTING SITE PLAN
SHEET 4

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 16 OF 77
DRAWING NO. **5C-153.00**

LEGEND

DENOTES DISTURBED AREA ASSOCIATED WITH PROPOSED CONSTRUCTION



STAGE 1

1.1 ESTABLISH LONG TERM SHOULDER CLOSURE ON SOUTH BOUND ROUTE 9W AT EXISTING SITE ENTRANCE.

1.2 INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCE. SEE DETAIL ON DRAWING GC-103.

1.4 INSTALL TEMPORARY TREE PROTECTION FENCING, SEE DETAIL ON DRAWING GC-401, ALONG OVERALL LIMIT OF DISTURBANCE (EXCEPT ALONG ROUTE 9W). INSTALL PROTECTIVE FENCE, SEE DETAIL ON DRAWING GC-401, AROUND THEODORE HOUSE.

1.5 IMPROVE EXISTING ACCESS ROAD AS NEEDED TO SUPPORT CONSTRUCTION ACTIVITIES UNTIL PERMANENT SITE ACCESS ROAD IS ESTABLISHED.

1.6 ESTABLISH TEMPORARY STAGING AREA

1.7.A INSTALL CHANNEL PROTECTION SILT FENCE ALONG STREAM. SEE DETAIL ON DRAWING GC-401.

1.7.B INSTALL SILT FENCE ALONG SOUTH BOUND ROUTE 9W FRONTAGE. SEE DETAIL ON DRAWING GC-401.

1.8 COMMENCE TREE FELLING.

1.9 CONSTRUCT STORMWATER DETENTION BASIN. SEE DETAIL ON DRAWING 5C-186.

1.10 COMMENCE DEMOLITION THROUGHOUT SITE. DEMOLISHED MATERIAL SHALL BE REMOVED FROM SITE DAILY AND STOCKPILE OF MATERIAL ON SITE IS NOT ALLOWED. COMPLETE TREE FELLING.

NOTES:

1. CONTRACTOR SHALL PROVIDE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND AREAS OF DISTURBANCE AS THE WORK PROGRESSES.
2. TREE CUTTING IS PROHIBITED BETWEEN APRIL 1ST AND SEPTEMBER 30TH.
3. LIMIT OF DISTURBANCE SHALL BE NO MORE THAN 5 ACRES AT A TIME REGARDLESS OF LOCATION.
4. KEEP CLEAR OF EXISTING/RELOCATED UTILITY LINES.
5. ADD GRAVEL PLACEMENT IN TEMPORARY STAGING AREA.
6. REFER TO GENERAL CIVIL (GC) DRAWINGS FOR ALL EROSION CONTROL NOTES AND DETAILS.

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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REVISIONS

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL SHAFT 5B
SUGGESTED CONSTRUCTION SEQUENCE EROSION & SEDIMENT CONTROL PLAN - SHEET 1

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 17 OF 77
DRAWING NO. **5C-160.00**

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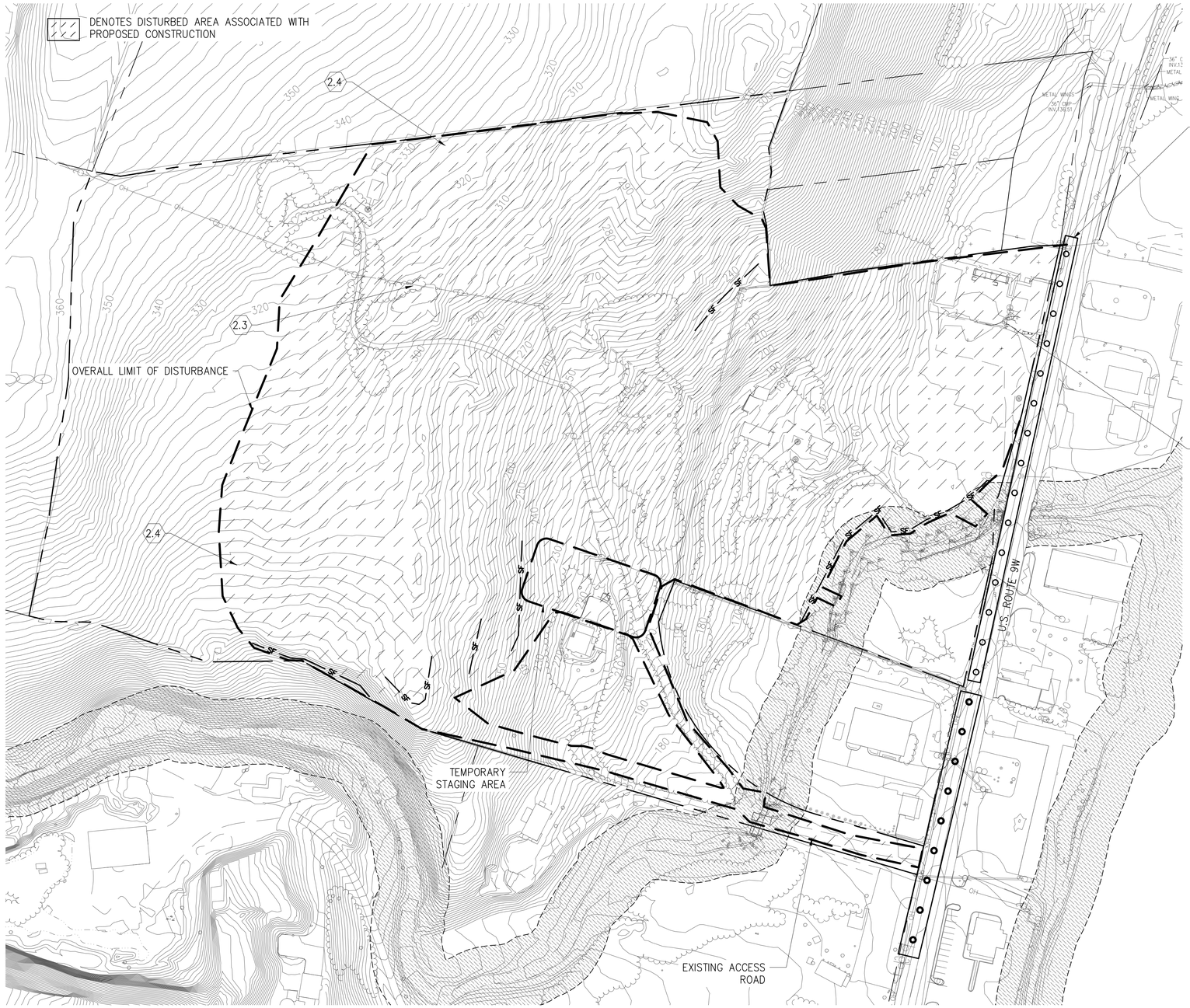
Date Plotted: 5/25/2012 3:55 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c160-00.dwg

LEGEND

DENOTES DISTURBED AREA ASSOCIATED WITH PROPOSED CONSTRUCTION



STAGE 2

2.1 EXTEND LONG TERM SHOULDER CLOSURE ON SOUTH BOUND ROUTE 9W TO NORTH OF INTERSECTION WITH PRIMARY SITE ENTRANCE.

2.2 COMPLETE DEMOLITION THROUGHOUT SITE. DEMOLISHED MATERIAL SHALL BE REMOVED FROM SITE DAILY AND STOCKPILE OF MATERIAL ON SITE IS NOT ALLOWED.

2.3 RELOCATE EXISTING OVERHEAD ELECTRIC LINES. CONTRACTOR SHALL COORDINATE RELOCATION OF ELECTRIC LINES WITH GRADING. POLES MAY NEED TO BE INSTALLED AFTER GRADING IS DONE.

2.4 INSTALL PERMANENT DIVERSION CHANNELS WITH STONE CHECK DAMS. SEE DETAILS ON DRAWINGS GC-203 AND GC-205.

NOTES:

1. CONTRACTOR SHALL PROVIDE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND AREAS OF DISTURBANCE AS THE WORK PROGRESSES.
2. TREE CUTTING IS PROHIBITED BETWEEN APRIL 1ST AND SEPTEMBER 30TH.
3. LIMIT OF DISTURBANCE SHALL BE NO MORE THAN 5 ACRES AT A TIME, REGARDLESS OF LOCATION.
4. KEEP CLEAR OF EXISTING/RELOCATED UTILITY LINES.
5. REFER TO GENERAL CIVIL (GC) DRAWINGS FOR ALL EROSION CONTROL NOTES AND DETAILS.

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

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HMM a joint venture PIRNIE in association with AKRF

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL SHAFT 5B
SUGGESTED CONSTRUCTION SEQUENCE EROSION & SEDIMENT CONTROL PLAN - SHEET 2

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 18 OF 77
DRAWING NO. **5C-161.00**

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Date Plotted: 5/25/2012 3:54 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c161-00.dwg

LEGEND

- (1) SEDIMENT TRAP POSITIONED TO TREAT RUNOFF UPSTREAM OF DRAINAGE STRUCTURE
- (7) SEDIMENT TRAP POSITIONED TO TREAT RUNOFF ENTERING DRAINAGE STRUCTURE FROM ALL DIRECTIONS
- CHECK DAM
- DENOTES DISTURBED AREA ASSOCIATED WITH PROPOSED CONSTRUCTION

STAGE 3

- 3.1 INSTALL SEDIMENT TRAPS 1, 2, 3, 4 AND 6 AS STONE OUTLET SEDIMENT TRAPS AS SOON AS ROUGH-FINISHED GRADE IS ACHIEVED. SEE DETAIL ON DRAWING GC-402.
- 3.2 EXTEND TEMPORARY ACCESS ROAD TO THE WORK SITE AREA.
- 3.3 COMMENCE MAJOR GRADING & ROCK EXCAVATION OF WORK SITE AREAS UTILIZING SUITABLE SPOILS TO CREATE THE EMBANKMENT.
- 3.4 COMMENCE ROUGH GRADING OF LOOP ROADWAYS ADJACENT TO THE WORK SITE AREAS AND COORDINATE ELECTRICAL DUCT BANK & SITE PIPING CONSTRUCTION.
- 3.5 INSTALL SLOPE WITH BENCHES. INSTALL CHECK DAMS IN BENCH CHANNELS AS SHOWN IN DETAIL ON DRAWING GC-205.
- 3.6 COORDINATE WITH SITE GRADING PRIOR TO THE INSTALLATION AND BULKHEADING OF DRAIN PIPING FROM SHAFT 5B TO DEWATERING TREATMENT PLANT.
- 3.7 INSTALL LOOP ROAD AND ASSOCIATED DRAINAGE. STABILIZE WORK AREAS.
- 3.8 CONVERT SEDIMENT TRAPS 2, 3, 4 AND 6 TO CATCH BASIN SEDIMENT TRAPS. INSTALL CATCH BASIN SEDIMENT TRAPS 5 AND 9. SEE DETAILS ON DRAWING GC-402.

STAGE 4

- 4.1.A INSTALL SOIL EROSION AND SEDIMENT CONTROL DEVICES FOR THE ACCESS ROAD.
- 4.1.B INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCE. SEE DETAIL ON DRAWING GC-103.
- 4.2 COMMENCE CONSTRUCTION OF 36' ACCESS ROAD, SITE ENTRANCE, AND REJECT/EXIT LOOP.
- 4.3 INSTALL DRAINAGE SYSTEM BETWEEN LOOP ROAD AND SEDIMENTATION BASIN. INSTALL CHECK DAMS, SEE DETAIL ON DRAWING GC-205, AND CATCH BASIN SEDIMENT TRAPS 7 AND 8, SEE DETAIL ON DRAWING GC-402.

NOTES:

1. CONTRACTOR SHALL PROVIDE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND AREAS OF DISTURBANCE AS THE WORK PROGRESSES.
2. TREE CUTTING IS PROHIBITED BETWEEN APRIL 1ST AND SEPTEMBER 30TH.
3. KEEP CLEAR OF EXISTING/RELOCATED UTILITY LINES.
4. GRUB AND REMOVE FELLED TREES AS REQUIRED FOR EARTHWORK.
5. STAGE 3 AREA IS GREATER THAN 5 ACRES OF DISTURBANCE. WORK SHALL BE MINIMIZED TO ALLOTTED SCHEDULE.
6. REFER TO GENERAL CIVIL (GC) DRAWINGS FOR ALL EROSION CONTROL NOTES AND DETAILS.

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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REVISIONS

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DRAWN BY: E.R.
CHECKED BY: S.H.H
DESIGN LEAD: MICHAEL WOODEN, P.E.

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BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL - SHAFT 5B
SUGGESTED CONSTRUCTION SEQUENCE EROSION & SEDIMENT CONTROL PLAN - SHEET 3

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 19 OF 77
DRAWING NO. **5C-162.00**

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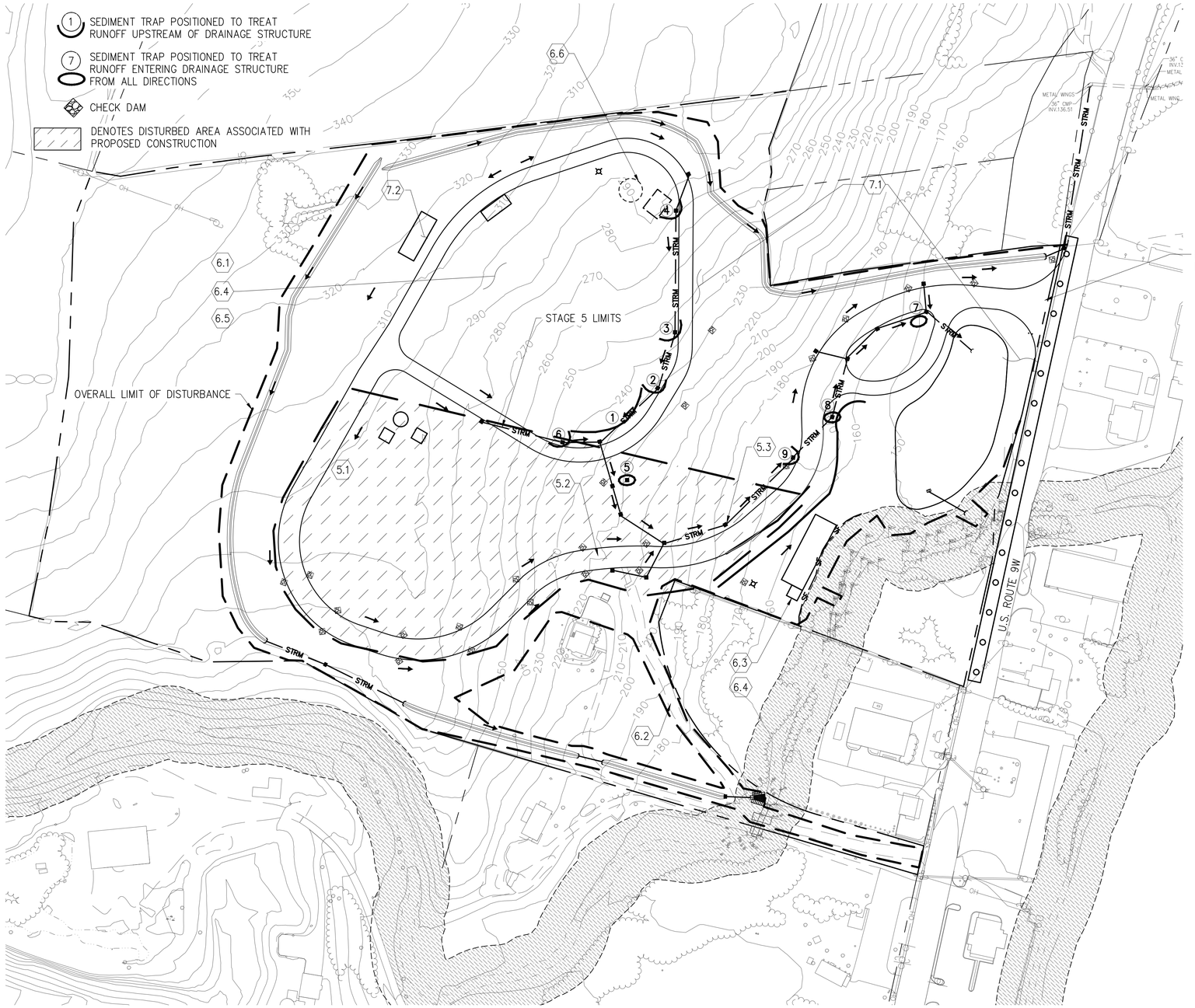
Date Plotted: 5/25/2012 4:04 PM \Author: shrestha \File Location: i: \dep-bedc \bt-1 \design \1.1 drawings \00 site plan application \civil \bt-1-5c162-00.dwg

LEGEND

- (1) SEDIMENT TRAP POSITIONED TO TREAT RUNOFF UPSTREAM OF DRAINAGE STRUCTURE
- (7) SEDIMENT TRAP POSITIONED TO TREAT RUNOFF ENTERING DRAINAGE STRUCTURE FROM ALL DIRECTIONS
- CHECK DAM
- DENOTES DISTURBED AREA ASSOCIATED WITH PROPOSED CONSTRUCTION



STAGE 5

- (5.1) CONTINUE ROCK EXCAVATION & FINAL SITE GRADING.
- (5.2) CONTINUE CONSTRUCTION OF ACCESS ROAD.
- (5.3) CONTINUE INSTALLATION OF INLET SEDIMENT CONTROLS, SEE DETAIL ON DRAWING GC-402, AND CHECK DAMS, SEE DETAIL ON DRAWING GC-205, AS DRAINAGE SYSTEM IS COMPLETED

STAGE 6

- (6.1) ESTABLISH GROUND SURFACES OF THE WORK SITE AREA.
- (6.2) COMPLETE SITE ACCESS ROAD & DISCONTINUE USE OF EXISTING SITE ENTRANCE.
- (6.3) INSTALL SILT FENCE AT DOWN HILL LIMIT OF SOIL DISTURBANCE FOR DEWATERING TREATMENT SYSTEM AND WATER PUMP STATION CONSTRUCTION, PARALLEL TO CONTOURS.
- (6.4) CONSTRUCT OFFICES, PARKING, MUCK BIN, SUBSTATION, LAY DOWN AREAS, WATER TANK, DEWATERING TREATMENT SYSTEM, WATER PUMP STATION, FIRE PUMP STATION, AND CONSTRUCTION WATER PUMP STATION (IF REQUIRED).
- (6.5) ERECT CHAIN LINK FENCE AROUND WORK AREA. SEE DETAIL ON DRAWING GC-401 AND DRAWING 5C-250.
- (6.6) COMMENCE SHAFT CONSTRUCTION.

STAGE 7

- (7.1) ESTABLISH LANDSCAPING AND VEGETATION. SEE DRAWINGS 5L-100 TO 5L-120.
- (7.2) COMPLETE CONSTRUCTION OF 15 KV SERVICE SUBSTATION. SEE DRAWING 5E-120.

NOTES:

1. CONTRACTOR SHALL PROVIDE TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES AROUND AREAS OF DISTURBANCE AS THE WORK PROGRESSES.
2. TREE CUTTING IS PROHIBITED BETWEEN APRIL 1ST AND SEPTEMBER 30TH.
3. KEEP CLEAR OF EXISTING/RELOCATED UTILITY LINES.
4. GRUB AND REMOVE FELLED TREES AS REQUIRED FOR EARTHWORK.
5. REFER TO GENERAL CIVIL (GC) DRAWINGS FOR ALL EROSION CONTROL NOTES AND DETAILS.

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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REVISIONS

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DRAWN BY: E.R.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

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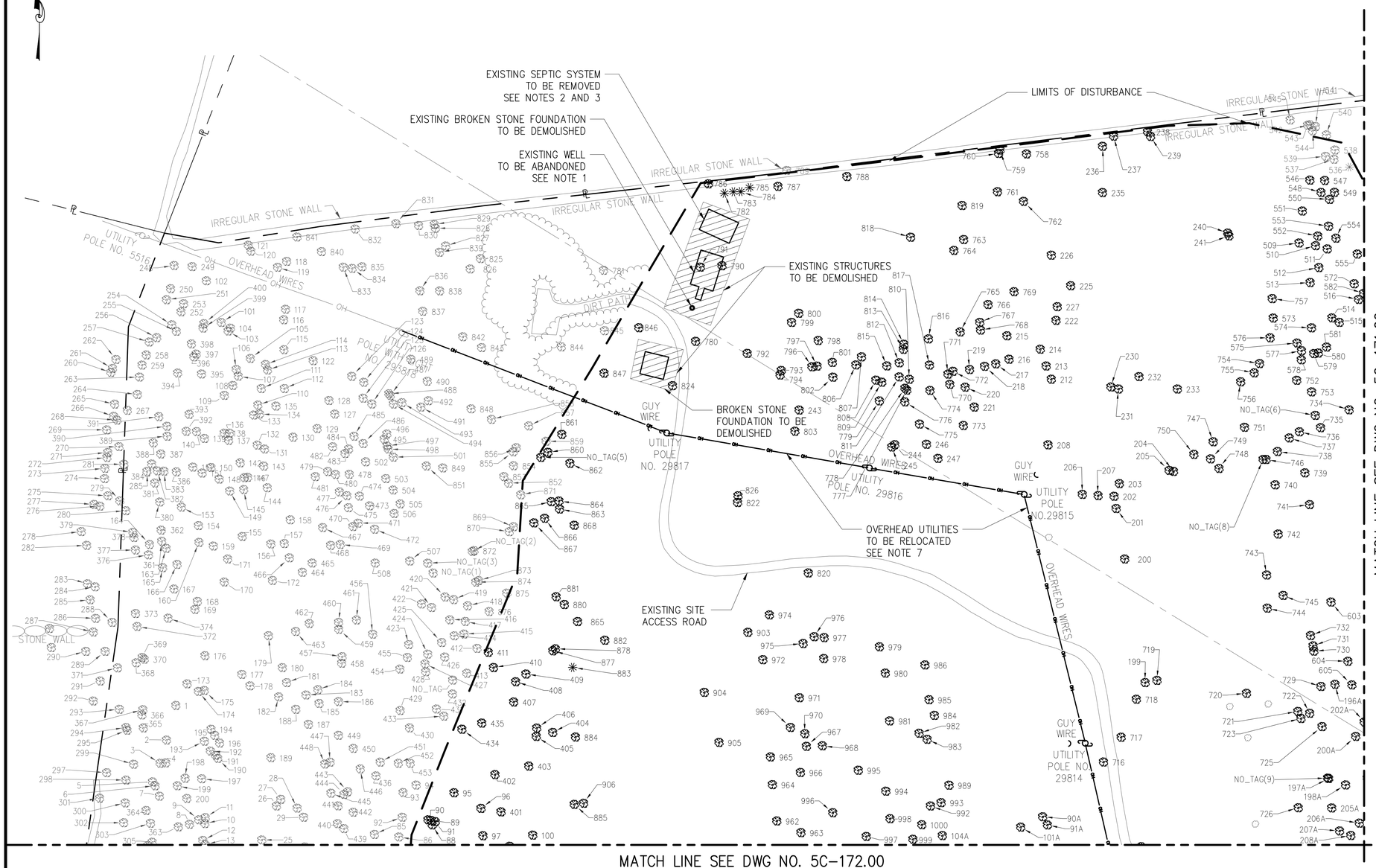
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

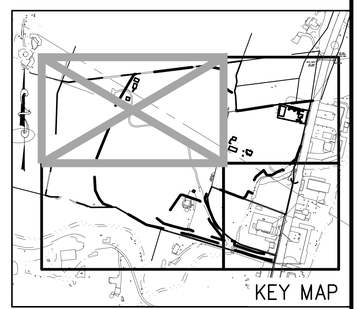
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL - SHAFT 5B
SUGGESTED CONSTRUCTION SEQUENCE EROSION & SEDIMENT CONTROL PLAN - SHEET 4

DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 20 OF 77
DRAWING NO. **5C-163.00**



NOTES:

1. CONTRACTOR IS RESPONSIBLE TO COMPLY WITH ALL STATE, COUNTY AND TOWN REGULATIONS FOR ABANDONING EXISTING WELLS AND SEPTIC SYSTEM.
2. CONTRACTOR SHALL EXCAVATE AND REMOVE EXISTING SEPTIC SYSTEM. OVER EXCAVATION REQUIRED FOR SEPTIC SYSTEM REMOVAL SHALL BE BACKFILLED IN ACCORDANCE WITH THE DETAILED SPECIFICATION.
3. CONTRACTOR SHALL DEMOLISH ALL EXISTING DRAINFIELDS ALONG WITH SEPTIC TANKS. THE LOCATIONS OF SEPTIC DRAINFIELDS ARE NOT SHOWN ON THE PLANS.
4. CONTRACTOR SHALL REMOVE ALL TREES UP TO THE LIMIT OF DISTURBANCE SHOWN. TREE REMOVAL IS PROHIBITED BETWEEN APRIL 1 AND SEPTEMBER 30.
5. CONTRACTOR SHALL PROTECT EXISTING TREES OUTSIDE THE DESIGNATED LIMITS OF DISTURBANCE SHOWN. REFER TO DRAWING GC-401 FOR DETAILS.
6. REFER TO GC DRAWINGS FOR ALL EROSION AND SEDIMENT CONTROL NOTES, DETAILS AND PLANS.
7. COORDINATE RELOCATION OF OVERHEAD ELECTRIC LINES WITH CENTRAL HUDSON GAS AND ELECTRIC. COORDINATE RELOCATION OF OVERHEAD PHONELINE WITH TELEPHONE COMPANY.
8. CONTRACTOR SHALL ESTABLISH PROTECTIVE FENCE AND CONTROL MEASURES AT THE LIMITS OF DISTURBANCE SHOWN (REFER TO DRAWING 5C-250). NO ACTIVITY SHALL BE PERMITTED OUTSIDE THE LIMITS OF DISTURBANCE.
9. REFER TO DRAWING 5C-176 FOR TREES TO BE REMOVED.
10. NOT USED.
11. REMOVE IRREGULAR STONE WALL AS REQUIRED TO ACCOMMODATE SITE GRADING.



1"=50' 0 50 100 FT.

SITE PLAN APPLICATION
MAY 2012

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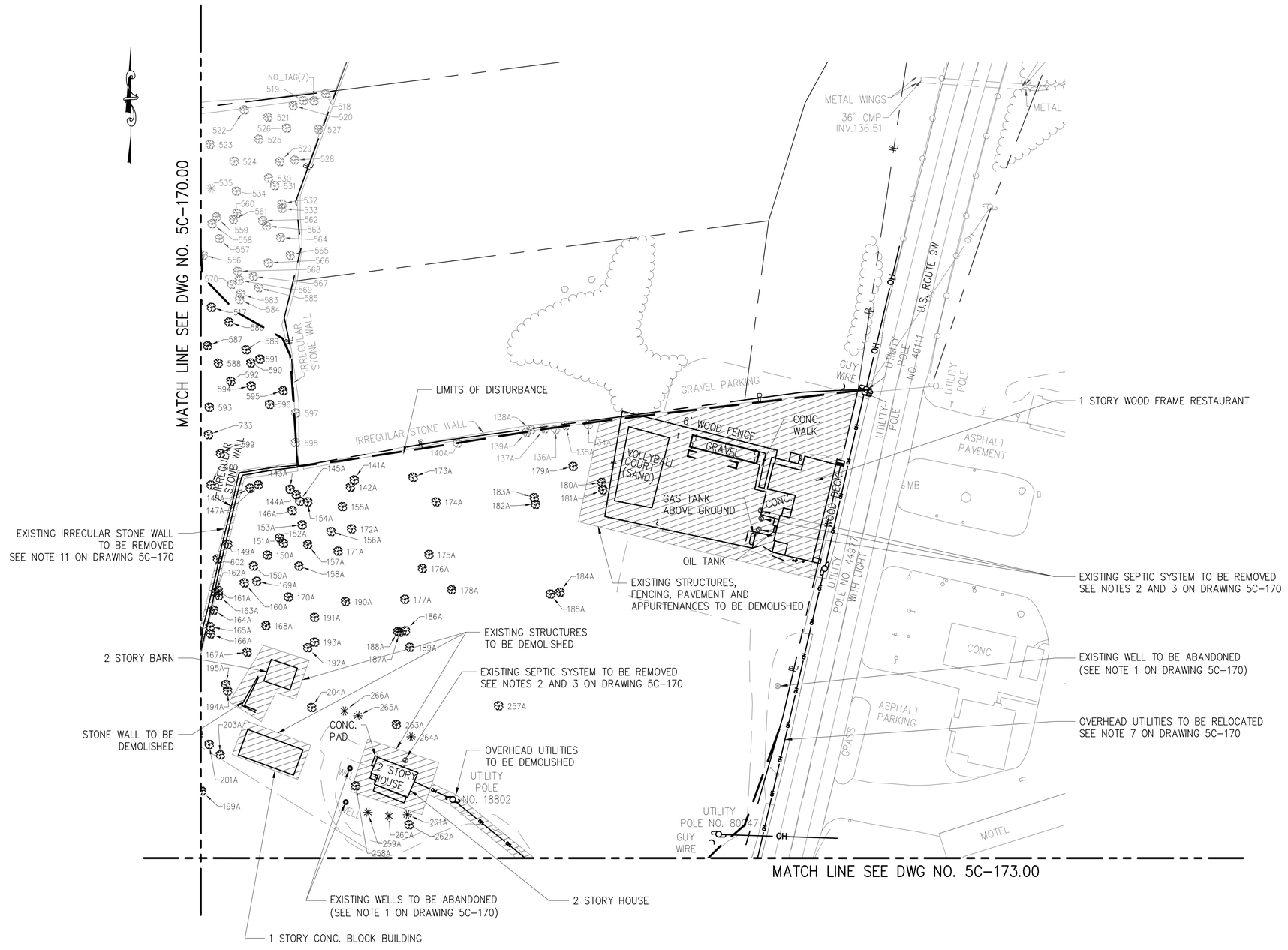
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

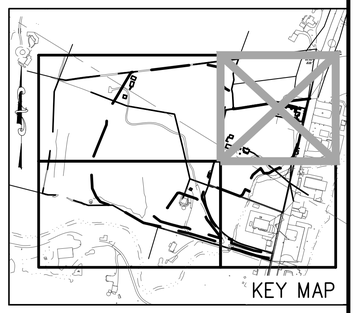
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
SITE DEMOLITION AND CLEARING PLAN - SHEET 1

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 21 OF 77
DRAWING NO. **5C-170.00**

NOTES:

1. SEE DRAWING 5C–170 FOR NOTES REGARDING DEMOLITION AND CLEARING.





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1"=50' 0 50 100 FT.

SITE PLAN APPLICATION
MAY 2012

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
SITE DEMOLITION AND CLEARING PLAN - SHEET 2

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 22 OF 77
DRAWING NO. **5C–171.00**

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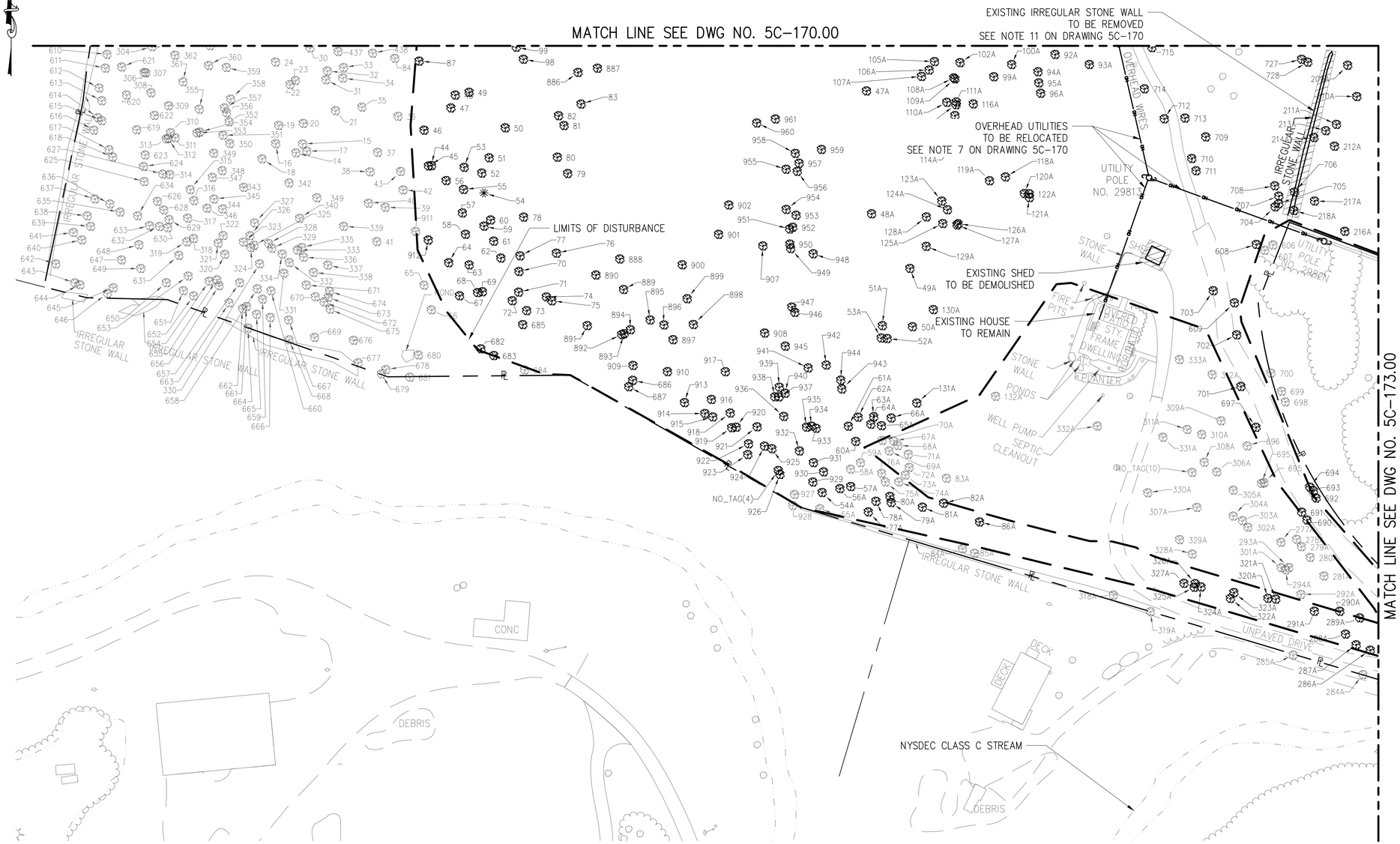
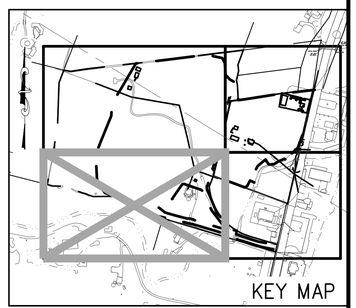
Date Plotted: 5/25/2012 3:43 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c171-00.dwg





1"=40' 0 40 80 FT.

1"=50' 0 50 100 FT.

NOTES:

1. SEE DRAWING 5C-170 FOR NOTES REGARDING DEMOLITION AND CLEARING.

SITE PLAN APPLICATION

MAY 2012

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NEW YORK CITY ENVIRONMENTAL PROTECTION
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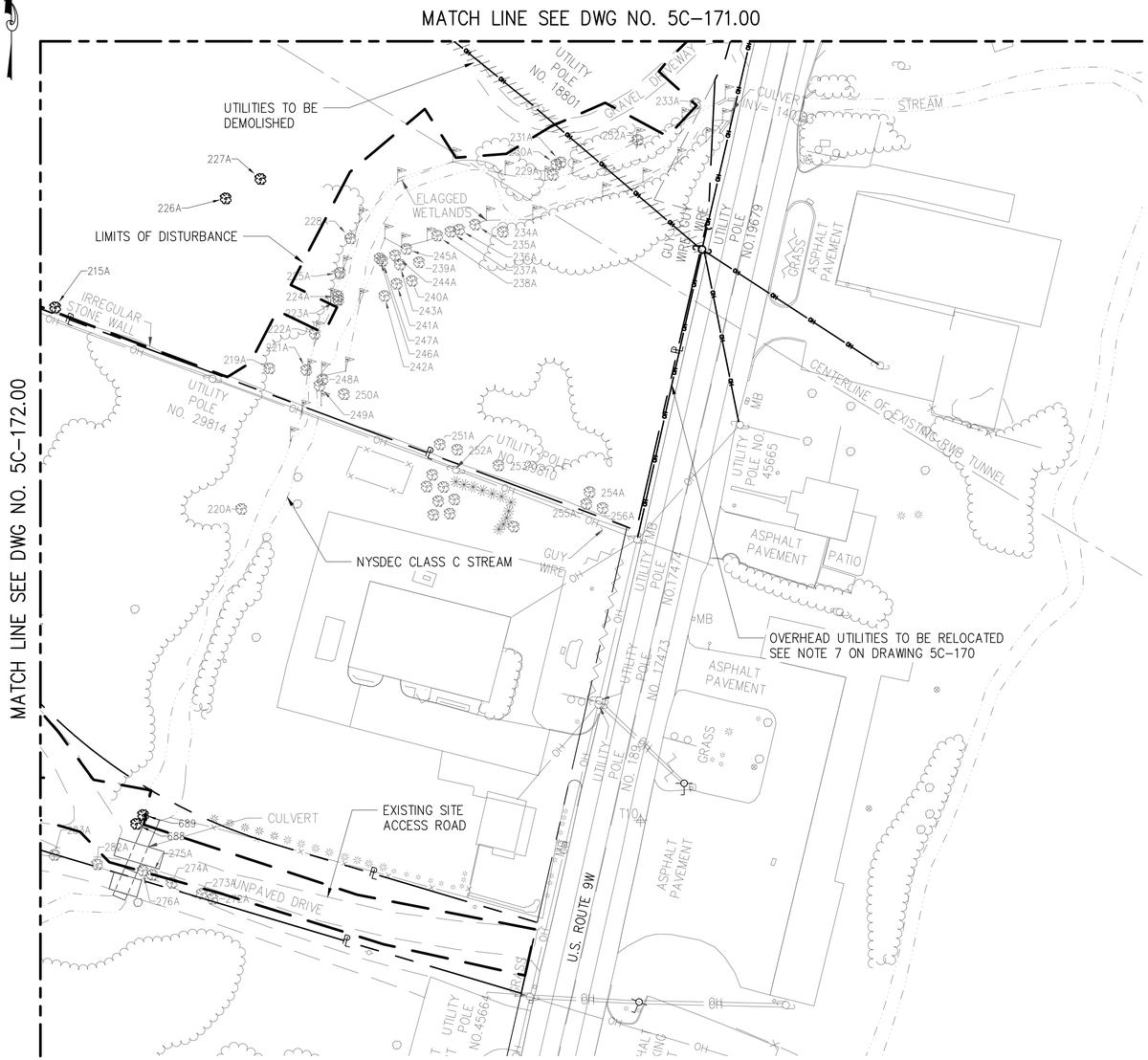
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
SITE DEMOLITION AND CLEARING PLAN - SHEET 3

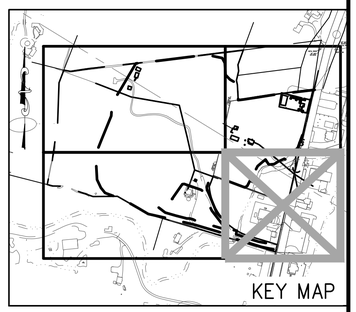
DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 23 OF 77
DRAWING NO. **5C-172.00**

Last Save By Date and Time:shrestha\5/4/2012 9:37 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:44 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c172-00.dwg



NOTES:

1. SEE DRAWING 5C-170 FOR NOTES REGARDING DEMOLITION AND CLEARING.



1"=40' 0 40 80 FT.

1"=50' 0 50 100 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
IT IS A REDUCED PRINT.
SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: P.J.P.
DRAWN BY: S.P.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
SITE DEMOLITION AND CLEARING PLAN - SHEET 4

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 24 OF 77
DRAWING NO. **5C-173.00**

Last Save By Date and Time:shrestha\5/4/2012 9:39 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:45 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c173-00.dwg

NOTES:

1. PLANIMETRIC FEATURES ARE FROM TOPOGRAPHIC SURVEYS OF THE VALENZA, MOREHEAD AND THEODORE PROPERTIES BY MUNOZ ENGINEERING & LAND SURVEYING, P.C., DATED AUGUST 2011 REVISED 10-19-11.
2. STREAM CHANNEL IS FROM THE LAND ACQUISITION SURVEYS OF THE GERVAIS-VALENZA PROPERTY DATED APRIL 26, 2011 AND THE MOREHEAD PROPERTY DATED JUNE 20, 2011 BOTH BY MUNOZ ENGINEERING & LAND SURVEYING, P.C.
3. CONTRACTOR SHALL REMOVE TREES AS SHOWN. TREE REMOVE IS PROHIBITED BETWEEN APRIL 1 AND SEPTEMBER 30.
4. REFER TO TREE SCHEDULE ON DRAWINGS 5C-177 AND 5C-178 FOR SIZE AND SPECIES OF TREES SHOWN.

LEGEND:

- TREES TO BE REMOVED
- TREES TO REMAIN

1"=60' 0 60 120 FT.

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
IT IS A REDUCED PRINT.
SCALE ACCORDINGLY

SITE PLAN APPLICATION

MAY 2012

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: J.T.
DRAWN BY: A.S.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
TREE CLEARING PLAN

DATE: 05/31/2012
SCALE: 1"=60'
SHEET NO: 25 OF 77
DRAWING NO. **5C-176.00**

Last Save By Date and Time:shrestha\5/4/2012 9:45 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:46 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c176-00.dwg

Tag #	DBH (in)	Common Name	Scientific Name
1	20	black oak	Quercus velutina
2	16	black oak	Quercus velutina
3	9	black oak	Quercus velutina
4	8	white oak	Quercus alba
5	8	black oak	Quercus velutina
6	14	black oak	Quercus velutina
7	18	black oak	Quercus velutina
8	16	black oak	Quercus velutina
9	17	black oak	Quercus velutina
10	23	black oak	Quercus velutina
11	9	unknown	unknown
12	15	black oak	Quercus velutina
13	9	oak snag	Quercus sp. - dead
14	21	maple sp.	Acer sp.
15	15	black cherry	Prunus serotina
16	9	black oak	Quercus velutina
17	11	maple sp.	Acer sp.
18	10	black oak	Quercus velutina
19	10	maple sp.	Acer sp.
20	11	maple sp.	Acer sp.
21	14	black oak	Quercus velutina
22	11	maple sp.	Acer sp.
23	14	tulip	Liriodendron tulipifera
24	22	black oak	Quercus velutina
25	8	maple sp.	Acer sp.
26	15	black cherry	Prunus serotina
27	19	black oak	Quercus velutina
28	8	maple sp.	Acer sp.
29	8	maple sp.	Acer sp.
30	16	red maple	Acer rubrum
31	15	tulip	Liriodendron tulipifera
32	11	red maple	Acer rubrum
33	16	tulip	Liriodendron tulipifera
34	17	tulip	Liriodendron tulipifera
35	9	black cherry	Prunus serotina
36	17	red maple	Acer rubrum
37	12	red maple	Acer rubrum
38	17	catalpa	Catalpa bignonioides
39	22	tulip	Liriodendron tulipifera
40	8	catalpa	Catalpa bignonioides
41	10	red maple	Acer rubrum
42	9	white oak	Quercus alba
43	13	red maple	Acer rubrum
44	8	red maple	Acer rubrum
45	10	catalpa	Catalpa bignonioides
46	11	red maple	Acer rubrum
47	14	catalpa	Catalpa bignonioides
47A*	25	black oak	Quercus velutina
48	10	catalpa	Catalpa bignonioides
48A	8	black birch	Betula nigra
49	11	tulip	Liriodendron tulipifera
49A	8	black cherry	Prunus serotina
50	11	red maple	Acer rubrum
50A	13	maple sp.	Acer sp.
51	12	black oak	Quercus velutina
51A	11	tree-of-heaven	Ailanthus altissima
52	11	red maple	Acer rubrum
52A	10	tree-of-heaven	Ailanthus altissima
53	9	red maple	Acer rubrum
53A	9	tree-of-heaven	Ailanthus altissima
54	8	red cedar	Juniperus virginiana
54A	10	black oak	Quercus velutina
55	11	tulip	Liriodendron tulipifera
55A	9	black oak	Quercus velutina
56	8	black oak	Quercus velutina
56A	11	black oak	Quercus velutina
57	13	red oak	Quercus rubra
57A	12	black oak	Quercus velutina
58	10	red maple	Acer rubrum
58A	10	black oak	Quercus velutina
59	12	red oak	Quercus rubra
59A	9	black oak	Quercus velutina
60	13	tulip	Liriodendron tulipifera
60A	10	black oak	Quercus velutina
61	10	chestnut oak	Quercus prinus
61A	12	black oak	Quercus velutina
62	9	red oak	Quercus rubra
62A	9	black oak	Quercus velutina
63	8	maple sp.	acer sp.
63A	19	black oak	Quercus velutina
64	8	maple sp.	acer sp.
64A	8	pin oak	Quercus palustris
65	21	red maple	Acer rubrum
65A	10	black oak	Quercus velutina
66	14	Norway maple	Acer platanoides
66A	16	black oak	Quercus velutina
67	19	red oak	Quercus rubra
67A	12	black oak	Quercus velutina
68	8	maple sp.	Acer sp.
68A	13	black oak	Quercus velutina
69	17	catalpa	Catalpa bignonioides
69A	10	black oak	Quercus velutina
70	8	tulip	Liriodendron tulipifera
70A	11	black oak	Quercus velutina

Tag #	DBH (in)	Common Name	Scientific Name
71	8	black birch	Betula lenta
71A	11	black oak	Quercus velutina
72	9	tree-of-heaven	Ailanthus altissima
72A	16	black oak	Quercus velutina
73	13	tree-of-heaven	Ailanthus altissima
73A	13	black oak	Quercus velutina
74	9	tulip	Liriodendron tulipifera
74A	9	black oak	Quercus velutina
75	14	poplar	Populus sp.
75A	14	black oak	Quercus velutina
76	12	black oak	Quercus velutina
76A	10	black oak	Quercus velutina
77	9	tulip	Liriodendron tulipifera
77A	9	black oak	Quercus velutina
78	8	black oak	Quercus velutina
78A	8	black oak	Quercus velutina
79	15	black oak	Quercus velutina
79A	8	black oak	Quercus velutina
80	12	red cedar	Juniperus virginiana
80A	8	black oak	Quercus velutina
81	13	maple sp.	Acer sp.
81A	11	red oak	Quercus rubra
82	9	catalpa	Catalpa bignonioides
82A	11	red oak	Quercus rubra
83	12	ash sp.	Fraxinus sp.
83A	14	red oak	Quercus rubra
84	11	catalpa	Catalpa bignonioides
84A	14	red oak	Quercus rubra
85	20	tulip	Liriodendron tulipifera
85A	9	maple sp.	Acer sp.
86	8	maple sp.	Acer sp.
86A	8	poplar	Populus sp.
87	10	catalpa	Catalpa bignonioides
87A	9	tree-of-heaven	Ailanthus altissima
88	9	catalpa	Catalpa bignonioides
88A	9	tree-of-heaven	Ailanthus altissima
89	9	catalpa	Catalpa bignonioides
89A	15	tree-of-heaven	Ailanthus altissima
90	8	catalpa	Catalpa bignonioides
90A	10	tree-of-heaven	Ailanthus altissima
91	9	catalpa	Catalpa bignonioides
91A	8	tree-of-heaven	Ailanthus altissima
92	8	maple	Acer sp.
92A	12	tree-of-heaven	Ailanthus altissima
93	12	catalpa	Catalpa bignonioides
93A	8	catalpa	Catalpa bignonioides
94	8	oak sp.	Quercus sp.
94A	11	tree-of-heaven	Ailanthus altissima
95	9	catalpa	Catalpa bignonioides
95A	13	tree-of-heaven	Ailanthus altissima
96	15	tulip	Liriodendron tulipifera
96A	11	tree-of-heaven	Ailanthus altissima
97	10	tulip	Liriodendron tulipifera
97A	9	tree-of-heaven	Ailanthus altissima
98	10	maple sp.	Acer sp.
98A	9	tree-of-heaven	Ailanthus altissima
99	12	catalpa	Catalpa bignonioides
99A	23	black oak	Quercus velutina
100	13	white oak	Quercus alba
100A	9	tree-of-heaven	Ailanthus altissima
101	11	aspen	Populus sp.
101A	10	tree-of-heaven	Ailanthus altissima
102	10	tulip	Liriodendron tulipifera
102A	13	black cherry	Prunus serotina
103	10	tulip	Liriodendron tulipifera
103A	13	black cherry	Prunus serotina
104	9	tulip	Liriodendron tulipifera
104A	16	pin oak	Quercus palustris
105	12	black oak	Quercus velutina
105A	16	black oak	Quercus velutina
106	13	aspen	Populus sp.
106A	10	pin oak	Quercus palustris
107	11	aspen	Populus sp.
107A	13	white oak	Quercus alba
108	8	tulip	Liriodendron tulipifera
108A	9	pin oak	Quercus palustris
109	9	aspen	Populus sp.
109A	12	pin oak	Quercus palustris
110	13	tulip	Liriodendron tulipifera
110A	13	black oak	Quercus velutina
111	12	aspen	Populus sp.
111A	17	black oak	Quercus velutina
112	10	tulip	Liriodendron tulipifera
112A	14	black oak	Quercus velutina
113	8	tulip	Liriodendron tulipifera
113A	10	black oak	Quercus velutina
114	9	tulip	Liriodendron tulipifera
114A	22	black oak	Quercus velutina
115	11	tulip	Liriodendron tulipifera
115A	8	black oak	Quercus velutina
116	9	tulip	Liriodendron tulipifera
116A	9	black cherry	Prunus serotina
117	8	tulip	Liriodendron tulipifera
117A	25	black oak	Quercus velutina
118	13	tulip	Liriodendron tulipifera
118A	9	tree-of-heaven	Ailanthus altissima

Tag #	DBH (in)	Common Name	Scientific Name
119	13	tulip	Liriodendron tulipifera
119A	11	white oak	Quercus alba
120	8	tulip	Liriodendron tulipifera
120A	10	tree-of-heaven	Ailanthus altissima
121	10	black cherry	Prunus serotina
121A	8	tree-of-heaven	Ailanthus altissima
122	10	tulip	Liriodendron tulipifera
122A	9	tree-of-heaven	Ailanthus altissima
123	8	tulip	Liriodendron tulipifera
123A	20	red oak	Quercus rubra
124	8	tulip	Liriodendron tulipifera
124A	13	black oak	Quercus velutina
125	8	aspen	Populus sp.
125A	14	black oak	Quercus velutina
126	11	aspen	Populus sp.
126A	13	pin oak	Quercus palustris
127	8	tulip	Liriodendron tulipifera
127A	8	white oak	Quercus alba
128	9	tulip	Liriodendron tulipifera
128A	13	American beech	Fagus grandifolia
129	12	aspen	Populus sp.
129A	15	black cherry	Prunus serotina
130	10	aspen	Populus sp.
130A	30	black oak	Quercus velutina
131	10	tulip	Liriodendron tulipifera
131A	21	red oak	Quercus rubra
132	9	tulip	Liriodendron tulipifera
132A	22	red oak	Quercus rubra
133	12	aspen	Populus sp.
133A	13	black cherry	Prunus serotina
134	8	aspen	Populus sp.
134A	8	shagbark hickory	Carya ovata
135	8	tulip	Liriodendron tulipifera
135A	15	hickory sp.	Carya sp.
136	11	maple sp.	Acer sp.
136A	8.5	hickory sp.	Carya sp.
137	14	tulip	Liriodendron tulipifera
137A	9	sugar maple	Acer saccharum
138	9	tulip	Liriodendron tulipifera
138A	12	hickory sp.	Carya sp.
139	9	tulip	Liriodendron tulipifera
139A	9	hickory sp.	Carya sp.
140	11	tulip	Liriodendron tulipifera
140A	9	sugar maple	Acer saccharum
141	11	tulip	Liriodendron tulipifera
141A	12	black oak	Quercus velutina
142	15	tulip	Liriodendron tulipifera
142A	8	black oak	Quercus velutina
143	12	tulip	Liriodendron tulipifera
143A	19	black oak	Quercus velutina
144	11	tulip	Liriodendron tulipifera
144A	16	black oak	Quercus velutina
145	15	tulip	Liriodendron tulipifera
145A	11	black oak	Quercus velutina
146	8	tulip	Liriodendron tulipifera
146A	14	black oak	Quercus velutina
147	8	maple sp.	Acer sp.
147A	22	sugar maple	Acer saccharum
148	15	tulip	Liriodendron tulipifera
148A	8	shagbark hickory	Carya ovata
149	13	tulip	Liriodendron tulipifera
149A	15	hickory sp.	Carya sp.
150	9	tulip	Liriodendron tulipifera
150A	8	snag	dead
151	11	tulip	Liriodendron tulipifera
151A	8	hickory sp.	Carya sp.
152	9	tulip	Liriodendron tulipifera
152A	8	black cherry	Prunus serotina
153	15	tulip	Liriodendron tulipifera
153A	8	hickory sp.	Carya sp.
154	8	maple sp.	Acer sp.
154A	9	white oak	Quercus alba
155	16	tulip	Liriodendron tulipifera
155A	16	sugar maple	Acer saccharum
156	15	tulip	Liriodendron tulipifera
156A	21	black oak	Quercus velutina
157	11	tulip	Liriodendron tulipifera
157A	8	shagbark hickory	Carya ovata
158	38	white pine	Pinus strobus
158A	10	black cherry	Prunus serotina
159	12	maple sp.	Acer sp.
159A	24	black oak	Quercus velutina
160	15	tulip	Liriodendron tulipifera
160A	11	sugar maple	Acer saccharum
161	9	maple sp.	Acer sp.
161A	11	black cherry	Prunus serotina
162	8	sassafras	Sassafras albidum
162A	10	hickory sp.	Carya sp.
163	17	tulip	Liriodendron tulipifera
163A	8	black cherry	Prunus serotina
164	10	tulip	Liriodendron tulipifera
164A	8	black cherry	Prunus serotina
165	9	aspen	Populus sp.
165A	15	sugar maple	Acer saccharum
166	9	aspen	Populus sp.
166A	9	sugar maple	Acer saccharum

Tag #	DBH (in)	Common Name	Scientific Name
167	10	aspen	Populus sp.
167A	8	tree-of-heaven	Ailanthus altissima
168	21	tulip	Liriodendron tulipifera
168A	18	sugar maple	Acer saccharum
169	21	black oak	Quercus velutina
169A	9	shagbark hickory	Carya ovata
170	21	black oak	Quercus velutina
170A	9	black cherry	Prunus serotina
171	8	black cherry	Prunus serotina
171A	16	white oak	Quercus alba
172	29	tulip	Liriodendron tulipifera
172A	18	black oak	Quercus velutina
173	22	black oak	Quercus velutina
173A	14	black oak	Quercus velutina
174	10	black oak	Quercus velutina
174A	15	white oak	Quercus alba
175	9	American beech	Fagus grandifolia
175A	8	white oak	Quercus alba
176	9	black cherry	Prunus serotina
176A	9	hickory sp.	Carya sp.
177	21	black oak	Quercus velutina
177A	8	black cherry	Prunus serotina
178	12	pin oak	Quercus palustris
178A	8	black cherry	Prunus serotina
179	27	sugar maple	Acer saccharum
179A	10	black cherry	Prunus serotina
180	9	red maple	Acer rubrum
180A	11	tree-of-heaven	Ailanthus altissima
181	17	tulip	Liriodendron tulipifera
181A	16	tree-of-heaven	Ailanthus altissima
182	17	tulip	Liriodendron tulipifera
182A	8	red maple	Acer rubrum
183	10	black oak	Quercus velutina
183A	9	Norway maple	Acer platanoides
184	8	red maple	Acer rubrum
184A	9	black cherry	Prunus serotina
185	10	black oak	Quercus velutina
185A	9	black cherry	Prunus serotina
186	19	red oak	Quercus rubra
186A	9	tree-of-heaven	Ailanthus altissima
187	10	black oak	Quercus velutina
187A	10	tree-of-heaven	Ailanthus altissima
188	9	black cherry	Prunus serotina
188A	8	tree-of-heaven	Ailanthus altissima
189	17	black cherry	Prunus serotina
189A	13	tree-of-heaven	Ailanthus altissima
190	8	black cherry	Prunus serotina
190A	15	shagbark hickory	Carya ovata
191	18	black oak	Quercus velutina
191A	10	hickory sp.	Carya sp.
192	16	black oak	Quercus velutina
192A	13	tree-of-heaven	Ailanthus altissima
193	16	black oak	Quercus velutina
193A	8	tree-of-heaven	Ailanthus altissima
194	12	black oak	Quercus velutina
194A	12	catalpa	Catalpa bignonioides
195	13	black oak	Quercus velutina
195A	9	catalpa	Catalpa bignonioides
196	18	black oak	Quercus velutina
196A	8	tree-of-heaven	Ailanthus altissima
197	13	black oak	Quercus velutina
197A	8	sweet cherry	Prunus avium
198	11	pin oak	Quercus palustris
198A	15	black cherry	Prunus serotina
199	9	black oak	Quercus velutina
199*	13	tree-of-heaven	Ailanthus altissima
199A	13	tree-of-heaven	Ailanthus altissima
200	9	black oak	Quercus velutina
200*	8	tree-of-heaven	Ailanthus altissima
200A	12	Norway maple	Acer platanoides
201	8	Aspen	Populus sp.
201A	12	black walnut	Juglans nigra
202	9	Aspen	Populus sp.
202A	10	black walnut	Juglans nigra
203	9	Cottonwood	Populus deltoides
203A	9	black walnut	Juglans nigra
204	8	Tree-of-heaven	Ailanthus altissima
204A	8	gray birch	Betula populifolia
205	8	Tree-of-heaven	Ailanthus altissima
205A	9	black cherry	Prunus serotina
206	11	aspen	Populus sp.
206A	10	black cherry	Prunus serotina
207	10	Tree-of-heaven	Ailanthus altissima
207A	13	black walnut	Juglans nigra
208	18	Pin Oak	Quercus palustris
208A	12	black walnut	Juglans nigra
209	8	Eastern Red Cedar	Juniperus virginiana
209A	13	catalpa	Catalpa bignonioides
210	10	Pin Oak	Quercus palustris
210A	13	catalpa	Catalpa bignonioides
211	15	Pin Oak	Quercus palustris
211A	12	catalpa	Catalpa bignonioides
212	9	Black Cherry	Prunus serotina
212A	9	black walnut	Juglans nigra
213	8	Black Cherry	Prunus serotina
213A	13	black walnut	Juglans nigra

Tag #	DBH (in)	Common Name	Scientific Name
214	14	Black Cherry	Prunus serotina
214A	12	black cherry	Prunus serotina
215	8	Cherry	Prunus sp.
215A	23	sugar maple	Acer saccharum
216	9	Black Cherry	Prunus serotina
216A	13	catalpa	Catalpa bignonioides
217	8	Catalpa	Catalpa bignonioides
217A	8	black walnut	Juglans nigra
218	14	Catalpa	Catalpa bignonioides
218A	11	black cherry	Prunus serotina
219	9	Catalpa	Catalpa bignonioides
219A	8	catalpa	Catalpa bignonioides
220	8	Catalpa	Catalpa bignonioides
220A	33	American sycamore	Platanus occidentalis
221	14	Catalpa	Catalpa bignonioides
221A	20	willow sp.	Salix sp.
222	8	Black Cherry	Prunus serotina
222A	8	sugar maple	Acer saccharum
223	18	Oak sp.	Quercus sp.
223A	16	American sycamore	Platanus occidentalis
224	9	Catalpa	Catalpa bignonioides
224A	8	sugar maple	Acer saccharum
225	11	Black Cherry	Prunus serotina
225A	16	sugar maple	Acer saccharum
226	10	Black Cherry	Prunus serotina
226A	9	catalpa	Catalpa bignonioides
227	9	Black Cherry	Prunus serotina
227A	8	tree-of-heaven	Ailanthus altissima
228*	10	Pin Oak	Quercus palustris
228A	11	mullberry sp.	Morus sp.
229A	25	snag	dead
230	12	Black Cherry	Prunus serotina
230A	10	mullberry sp.	Morus sp.
231	20	Catalpa	Catalpa bignonioides
231A	13	mullberry sp.	Morus sp.
232	11	Ash sp.	Fraxinus sp.
232A	10	black walnut	Juglans nigra
233	12	Black Cherry	Prunus serotina
233A	8	black walnut	Juglans nigra
234	12	Maple sp.	Acer sp.
234A	14	Norway maple	Acer platanoides
235	9	Ash sp.	Fraxinus sp.
235A	22	cottonwood	Populus deltoides
236	8	Black Cherry	Prunus serotina
236A	16	cottonwood	Populus deltoides
237	12	Cherry sp.	Prunus sp.
237A	27	cottonwood	Populus deltoides
238	12	Cherry sp.	Prunus sp.
238A	22	cottonwood	Populus deltoides
239	9	Hackberry	Celtis sp.
239A	9	tree-of-heaven	Ailanthus altissima
240	9	Pin Oak	Quercus palustris
240A	8	tree-of-heaven	Ailanthus altissima
241	18	Pin Oak	Quercus palustris
241A	10	mullberry sp.	Morus sp.
242	10	Cottonwood	Populus deltoides
242A	10	mullberry sp.	Morus sp.
243	11	Tulip	Liriodendron tulipifera
243A	12	tree-of-heaven	Ailanthus altissima
244	9	Catalpa	Catalpa bignonioides
244A	26	cottonwood	Populus deltoides
245	9	Catalpa	Catalpa bignonioides
245A	19	American sycamore	Platanus occidentalis
246	9	Aspen	Populus sp.
246A	11	norway maple	Acer platanoides
247	11	Catalpa	Catalpa bignonioides
247A	16	willow sp.	Salix sp.
248	10	Aspen	Populus sp.
248A	9	Norway maple	Acer platanoides
249	8	Aspen	Populus sp.
249A	24	American sycamore	Platanus occidentalis
250	8	Aspen	Populus sp.
250A	18	black walnut	Juglans nigra
251	8	Tulip	Liriodendron tulipifera
251A	16	mullberry sp.	Morus sp.
252	8	Tulip	Liriodendron tulipifera
252A	26	catalpa	Catalpa bignonioides
253	10	Aspen	Populus sp.
253A	9	black cherry	Prunus serotina
254	9	Aspen	Populus sp.
254A	9	honey locust	Gleditsia triacanthos
255	10	Pin oak	Quercus palustris
255A	13	Norway maple	Acer platanoides
256	12	Aspen	Populus sp.
256A	14	white ash	Fraxinus americana
257	8	Tulip	Liriodendron tulipifera
257A	18	white oak	Quercus alba
258	13	Tulip	Liriodendron tulipifera
258A	15	magnolia sp.	Magnolia sp.
259	11	Tulip	Liriodendron tulipifera
259A	30	white pine	Pinus strobus
260	8	Black cherry	Prunus serotina
260A	14	Norway spruce	Picea abies
261	11	Black cherry	Prunus serotina
261A	18	nNorway spruce	Picea abies
262	11	Black cherry	Prunus serotina

Tag #	DBH (in)	Common Name	Scientific Name
262A	15	black oak	Quercus velutina
263	9	Tulip	Liriodendron tulipifera
263A	10	snag	dead
264	16	Tulip	Liriodendron tulipifera
264A	8	eastern red cedar	Juniperus virginiana
265	12	Sugar maple	Acer saccharum
265A	8	eastern red cedar	Juniperus virginiana
266	16	Tulip	Liriodendron tulipifera
266A	9	eastern red cedar	Juniperus virginiana
267	8	Red maple	Acer rubrum
267A	16	black cherry	Prunus serotina
268	9	Tulip	Liriodendron tulipifera
268A	9	catalpa	Catalpa bignonioides
269	11	Tulip	Liriodendron tulipifera
269A	14	poplar	Populus sp.
270	8	Tulip	Liriodendron tulipifera
270A	10	ash sp.	Fraxinus sp.
271	11	Tulip	Liriodendron tulipifera
271A	8	red oak	Quercus rubra
272	11	Tulip	Liriodendron tulipifera
272A	9	Catalpa	Catalpa bignonioides
273	9	Tulip	Liriodendron tulipifera
273A	11	Cottonwood	Populus deltoides
274	12	Tulip	Liriodendron tulipifera
274A	11	Tree-of-Heaven	Ailanthus altissima
275	9	Black birch	Betula lenta
275A	10	Tree-of-Heaven	Ailanthus altissima
276	11	Cottonwood	Populus deltoides
276A	9	Tree-of-Heaven	Ailanthus altissima
277	12	Pin oak	Quercus palustris
277A	8	American sycamore	Platanus occidentalis
278	15	Black oak	Quercus velutina
278A	11	Cottonwood	Populus deltoides
279	10	Tulip	Liriodendron tulipifera
279A	14	Cottonwood	Populus deltoides
280	11	Tulip	Liriodendron tulipifera
280A	11	Cottonwood	Populus deltoides
281	10	Tulip	Liriodendron tulipifera
281A	10	Chinese Elm	Ulmus parvifolia
282	10	Tulip	Liriodendron tulipifera
282A	18	Cottonwood	Populus deltoides
283	22	Red oak	Quercus rubra
283A	16	Norway Maple	Acer platanoides
284	12	Red oak	Quercus rubra
284A	10	Tree-of-Heaven	Ailanthus altissima
285	16	Red oak	Quercus rubra
285A	16	Sugar Maple	Acer saccharum
286	10	Black cherry	Prunus serotina
286A	13	Cottonwood	Populus deltoides
287	12	Hickory sp.	Carya sp.
287A	17	Chinese Elm	Ulmus parvifolia
288	8	Black birch	Betula lenta
288A	11	Chinese Elm	Ulmus parvifolia
289	16	Red oak	Quercus rubra
289A	8	Poplar	Populus sp.
290	20	Black oak	Quercus velutina
290A	8	Chinese Elm	Ulmus parvifolia
291	22	Black oak	Quercus velutina
291A	13	Chinese Elm	Ulmus parvifolia
292	19	Black oak	Quercus velutina
292A	10	Chinese Elm	Ulmus parvifolia
293	9	Black birch	Betula lenta
293A	8	Chinese Elm	Ulmus parvifolia
294	9	Black oak	Quercus velutina
294A	13	Cottonwood	Populus deltoides
295	13	Red oak	Quercus rubra
296	19	Black oak	Quercus velutina
297	9	Black oak	Quercus velutina
298	10	Black oak	Quercus velutina
299	18	Black oak	Quercus velutina
300	12	Black oak	Quercus velutina
301	14	Hickory sp.	Carya sp.
301A	8	Chinese Elm	Ulmus parvifolia
302	16	black oak	Quercus velutina
302A	8	Tree-of-Heaven	Ailanthus altissima
303	13	black oak	Quercus velutina
303A	9	Tree-of-Heaven	Ailanthus altissima
304	14	black oak	Quercus velutina
304A	9	Tree-of-Heaven	Ailanthus altissima
305	9	American beech	Fagus grandifolia)
305A	9	American sycamore	Platanus occidentalis
306	16	black oak	Quercus velutina
306A	10	Catalpa	Catalpa bignonioides

Tag #	DBH (in)	Common Name	Scientific Name
307	9	black oak	Quercus velutina
307A	18	Black Oak	Quercus velutina
308	12	black oak	Quercus velutina
308A	8	Tree-of-Heaven	Ailanthus altissima
309	17	black oak	Quercus velutina
309A	8	Poplar	Populus sp.
310	13	black oak	Quercus velutina
310A	9	Tree-of-Heaven	Ailanthus altissima
311	12	black oak	Quercus velutina
311A	17	Catalpa	Catalpa bignonioides
312	9	black oak	Quercus velutina
312A	8	Poplar	Populus sp.
313	14	black oak	Quercus velutina
313A	8	Tree-of-Heaven	Ailanthus altissima
314	15	black oak	Quercus velutina
314A	8	Black Walnut	Juglans nigra
315	17	black oak	Quercus velutina
315A	12	Tree-of-Heaven	Ailanthus altissima
316	9	black oak	Quercus velutina
316A	8	Poplar	Populus sp.
317	11	black oak	Quercus velutina
317A	8	Poplar	Populus sp.
318	13	red oak	Quercus rubra
318A	10	Black Oak	Quercus velutina
319	10	red oak	Quercus rubra
319A	13	White Oak	Quercus alba
320	8	red oak	Quercus rubra
320A	15	Cottonwood	Populus deltoides
321	13	black oak	Quercus velutina
321A	9	Cottonwood	Populus deltoides
322	11	black oak	Quercus velutina
322A	11	Tree-of-Heaven	Ailanthus altissima
323	11	aspen	Populus sp.
323A	9	Tree-of-Heaven	Ailanthus altissima
324	8	black birch	Betula lenta
324A	9	Tree-of-Heaven	Ailanthus altissima
325	9	black birch	Betula lenta
325A	9	Tree-of-Heaven	Ailanthus altissima
326	9	black birch	Betula lenta
326A	8	Tree-of-Heaven	Ailanthus altissima
327	15	black birch	Betula lenta
327A	8	Tree-of-Heaven	Ailanthus altissima
328	9	black birch	Betula lenta
328A	9	Tree-of-Heaven	Ailanthus altissima
329	9	black birch	Betula lenta
329A	9	Tree-of-Heaven	Ailanthus altissima
330	11	black birch	Betula lenta
330A	15	Black Walnut	Juglans nigra
331	9	black birch	Betula lenta
331A	17	Sugar Maple	Acer saccharum
332	11	black birch	Betula lenta
332A	21	Sugar Maple	Acer saccharum
333	8	black birch	Betula lenta
333A	42	Sugar Maple	Acer saccharum
334	8	black birch	Betula lenta
335	9	black birch	Betula lenta
336	8	black birch	Betula lenta
337	16	red oak	Quercus rubra
338	11	aspen	Populus sp.
339	18	red oak	Quercus rubra
340	19	red oak	Quercus rubra
341	9	red oak	Quercus rubra
342	10	red oak	Quercus rubra
343	20	black oak	Quercus velutina
344	12	black oak	Quercus velutina
345	13	black oak	Quercus velutina
346	13	black birch	Betula lenta
347	12	black oak	Quercus velutina
348	10	black oak	Quercus velutina
349	21	black oak	Quercus velutina
350	9	hophornbeam	Ostrya virginiana
351	10	American beech	Fagus grandifolia
352	15	black oak	Quercus velutina
353	8	white oak	Quercus alba
354	9	black oak	Quercus velutina
355	13	black oak	Quercus velutina
356	14	black oak	Quercus velutina
357	12	black oak	Quercus velutina
358	23	black oak	Quercus velutina
359	22	black oak	Quercus velutina
360	11	black oak	Quercus velutina

SITE PLAN APPLICATION

MAY 2012

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
TREE SCHEDULE
SHEET 1

DATE: 05/31/2012
SCALE: N.T.S.
SHEET NO: 26 OF 77
DRAWING NO. 5C–177.00

Tag #	DBH (in)	Common Name	Scientific Name
361	11	tulip	Liriodendron tulipifera
362	16	black oak	Quercus velutina
363	9	pin oak	Quercus palustris
364	8	maple sp.	Acer sp.
365	8	black birch	Betula lenta
366	9	black birch	Betula lenta
367	11	black birch	Betula lenta
368	11	black oak	Quercus velutina
369	20	black oak	Quercus velutina
370	8	black birch	Betula lenta
371	8	black oak	Quercus velutina
372	19	black oak	Quercus velutina
373	10	black oak	Quercus velutina
374	26	tulip	Liriodendron tulipifera
375	17	tulip	Liriodendron tulipifera
376	10	tulip	Liriodendron tulipifera
377	8	tulip	Liriodendron tulipifera
378	12	tulip	Liriodendron tulipifera
379	16	tulip	Liriodendron tulipifera
380	13	tulip	Liriodendron tulipifera
381	14	tulip	Liriodendron tulipifera
382	9	tulip	Liriodendron tulipifera
383	8	maple sp.	Acer sp.
384	17	tulip	Liriodendron tulipifera
385	8	tulip	Liriodendron tulipifera
386	13	black oak	Quercus velutina
387	8	tulip	Liriodendron tulipifera
388	13	tulip	Liriodendron tulipifera
389	9	tulip	Liriodendron tulipifera
390	14	tulip	Liriodendron tulipifera
391	10	tulip	Liriodendron tulipifera
392	15	tulip	Liriodendron tulipifera
393	10	tulip	Liriodendron tulipifera
394	9	tulip	Liriodendron tulipifera
395	10	aspen	Populus sp.
396	8	tulip	Liriodendron tulipifera
397	9	tulip	Liriodendron tulipifera
398	10	aspen	Populus sp.
399	10	aspen	Populus sp.
400	11	aspen	Populus sp.
401	8	catalpa	Catalpa bignonioides
402	8	catalpa	Catalpa bignonioides
403	17	tulip	Liriodendron tulipifera
404	10	maple sp.	Acer sp.
405	13	tulip	Liriodendron tulipifera
406	9	catalpa	Catalpa bignonioides
407	10	catalpa	Catalpa bignonioides
408	12	catalpa	Catalpa bignonioides
409	8	catalpa	Catalpa bignonioides
410	9	red cedar	Juniperus virginiana
411	9	catalpa	Catalpa bignonioides
412	12	catalpa	Catalpa bignonioides
413	10	catalpa	Catalpa bignonioides
414	11	catalpa	Catalpa bignonioides
415	9	catalpa	Catalpa bignonioides
416	16	catalpa	Catalpa bignonioides
417	15	catalpa	Catalpa bignonioides
418	11	catalpa	Catalpa bignonioides
419	11	catalpa	Catalpa bignonioides
420	10	catalpa	Catalpa bignonioides
421	8	catalpa	Catalpa bignonioides
422	12	catalpa	Catalpa bignonioides
423	17	catalpa	Catalpa bignonioides
424	9	catalpa	Catalpa bignonioides
425	12	catalpa	Catalpa bignonioides
426	10	catalpa	Catalpa bignonioides
427	8	catalpa	Catalpa bignonioides
428	11	catalpa	Catalpa bignonioides
429	40	red maple	Acer rubrum
430	9	catalpa	Catalpa bignonioides
431	12	catalpa	Catalpa bignonioides
432	10	catalpa	Catalpa bignonioides
433	10	catalpa	Catalpa bignonioides
434	8	catalpa	Catalpa bignonioides
435	8	catalpa	Catalpa bignonioides
436	10	tulip	Liriodendron tulipifera
437	12	maple sp.	Acer sp.
438	8	black cherry	Prunus serotina
439	8	maple sp.	Acer sp.
440	8	maple sp.	Acer sp.
441	8	black cherry	Prunus serotina
442	12	maple sp.	Acer sp.
443	11	black cherry	Prunus serotina
444	9	black cherry	Prunus serotina
445	11	maple sp.	Acer sp.
446	12	tulip	Liriodendron tulipifera
447	10	red maple	Acer rubrum
448	16	red maple	Acer rubrum
449	10	red maple	Acer rubrum
450	8	black cherry	Prunus serotina
451	15	tulip	Liriodendron tulipifera
452	15	catalpa	Catalpa bignonioides
453	13	catalpa	Catalpa bignonioides
454	16	catalpa	Catalpa bignonioides

Tag #	DBH (in)	Common Name	Scientific Name
455	15	catalpa	Catalpa bignonioides
456	8	catalpa	Catalpa bignonioides
457	12	catalpa	Catalpa bignonioides
458	8	black oak	Quercus velutina
459	9	black cherry	Prunus serotina
460	8	black cherry	Prunus serotina
461	10	tulip	Liriodendron tulipifera
462	14	tulip	Liriodendron tulipifera
463	8	tulip	Liriodendron tulipifera
464	15	maple sp.	Acer sp.
465	13	black cherry	Prunus serotina
466	8	black cherry	Prunus serotina
467	8	tulip	Liriodendron tulipifera
468	10	snag	dead
469	13	maple sp.	Acer sp.
470	13	poplar	Populus sp.
471	10	poplar	Populus sp.
472	11	tulip	Liriodendron tulipifera
473	8	tulip	Liriodendron tulipifera
474	8	poplar	Populus sp.
475	10	poplar	Populus sp.
476	8	poplar	Populus sp.
477	11	poplar	Populus sp.
478	12	poplar	Populus sp.
479	9	poplar	Populus sp.
480	9	poplar	Populus sp.
481	15	tulip	Liriodendron tulipifera
482	8	tulip	Liriodendron tulipifera
483	8	poplar	Populus sp.
484	12	poplar	Populus sp.
485	10	black oak	Quercus velutina
486	8	black oak	Quercus velutina
487	10	tulip	Liriodendron tulipifera
488	8	tulip	Liriodendron tulipifera
489	10	poplar	Populus sp.
490	14	tulip	Liriodendron tulipifera
491	10	catalpa	Catalpa bignonioides
492	11	catalpa	Catalpa bignonioides
493	8	tulip	Liriodendron tulipifera
494	10	tulip	Liriodendron tulipifera
495	12	poplar	Populus sp.
496	11	poplar	Populus sp.
497	9	poplar	Populus sp.
498*	10	poplar	Populus sp.
501	12	tulip	Liriodendron tulipifera
502	9	tulip	Liriodendron tulipifera
503	8	poplar	Populus sp.
504	8	poplar	Populus sp.
505	12	tulip	Liriodendron tulipifera
506	8	tulip	Liriodendron tulipifera
507	26	poplar	Populus sp.
508	14	catalpa	Catalpa bignonioides
509	17	red oak	Quercus rubra
510	8	pin oak	Quercus palustris
511	13	black oak	Quercus velutina
512	12	black oak	Quercus velutina
513	9	black oak	Quercus velutina
514	14	pin oak	Quercus palustris
515	14	black oak	Quercus velutina
516	19	black oak	Quercus velutina
517	13	black oak	Quercus velutina
518	10	black oak	Quercus velutina
519	20	red oak	Quercus rubra
520	14	oak sp.	Quercus sp.
521	12	red oak	Quercus rubra
522	9	red oak	Quercus rubra
523	12	black oak	Quercus velutina
524	26	red oak	Quercus rubra
525	22	red oak	Quercus rubra
526	9	chestnut oak	Quercus prinus
527	16	red oak	Quercus rubra
528	8	white oak	Quercus alba
529	10	red oak	Quercus rubra
530	12	black oak	Quercus velutina
531	14	red oak	Quercus rubra
532	11	red oak	Quercus rubra
533	12	red oak	Quercus rubra
534	12	red oak	Quercus rubra
535	9	eastern red cedar	Juniperus virginiana
536	9	eastern red cedar	Juniperus virginiana
537	15	red oak	Quercus rubra
538	11	red oak	Quercus rubra
539	11	red oak	Quercus rubra
540	11	red oak	Quercus rubra
541	14	black oak	Quercus velutina
542	16	black oak	Quercus velutina
543	16	black oak	Quercus velutina
544	12	black oak	Quercus velutina
545	20	pin oak	Quercus palustris
546	12	black oak	Quercus velutina
547	9	black oak	Quercus velutina
548	9	red oak	Quercus rubra
549	8	black oak	Quercus velutina
550	13	red oak	Quercus rubra
551	8	red oak	Quercus rubra
552	9	red oak	Quercus rubra

Tag #	DBH (in)	Common Name	Scientific Name
553	11	red oak	Quercus rubra
554	8	red oak	Quercus rubra
555	9	red oak	Quercus rubra
556	15	red oak	Quercus rubra
557	13	black oak	Quercus velutina
558	12	white oak	Quercus alba
559	10	red oak	Quercus rubra
560	12	red oak	Quercus rubra
561	10	red oak	Quercus rubra
562	9	red oak	Quercus rubra
563	12	black oak	Quercus velutina
564	12	red oak	Quercus rubra
565	9	white oak	Quercus alba
566	10	red oak	Quercus rubra
567	11	black oak	Quercus velutina
568	9	red oak	Quercus rubra
569	16	red oak	Quercus rubra
570	16	red oak	Quercus rubra
571	14	red oak	Quercus rubra
572	11	red oak	Quercus rubra
573	10	tree-of-heaven	Ailanthus altissima
574	25	red oak	Quercus rubra
575	11	red oak	Quercus rubra
576	9	black cherry	Prunus serotina
577	10	red oak	Quercus rubra
578	8	white oak	Quercus alba
579	16	red oak	Quercus rubra
580	11	red oak	Quercus rubra
581	12	black oak	Quercus velutina
582	10	shagbark hickory	Carya ovata
583	10	red oak	Quercus rubra
584	15	red oak	Quercus rubra
585	12	white oak	Quercus alba
586	8	red oak	Quercus rubra
587	13	red oak	Quercus rubra
588	14	black oak	Quercus velutina
589	12	red oak	Quercus rubra
590	14	black oak	Quercus velutina
591	12	red oak	Quercus rubra
592	13	pin oak	Quercus palustris
593	17	red oak	Quercus rubra
594	15	red oak	Quercus rubra
595	9	red oak	Quercus rubra
596	10	red oak	Quercus rubra
597	12	black cherry	Prunus serotina
598	21	sugar maple	Acer saccharum
599	8	black cherry	Prunus serotina
600	10	tree-of-heaven	Ailanthus altissima
601	9	black cherry	Prunus serotina
602	9	black cherry	Prunus serotina
603	28	black oak	Quercus velutina
604	9	Norway maple	Acer platanoides
605	14	red maple	Acer rubrum
606	8	black cherry	Prunus serotina
607	12	black cherry	Prunus serotina
608	14	catalpa	Catalpa bignonioides
609	12	poplar	Populus sp.
610	18	black oak	Quercus velutina
611	14	black oak	Quercus velutina
612	9	hickory sp.	Carya sp.
613	13	black oak	Quercus velutina
614	14	black oak	Quercus velutina
615	8	black oak	Quercus velutina
616	14	black oak	Quercus velutina
617	14	black oak	Quercus velutina
618	11	black oak	Quercus velutina
619	12	black oak	Quercus velutina
620	11	black oak	Quercus velutina
621	10	black oak	Quercus velutina
622	8	black oak	Quercus velutina
623	8	black oak	Quercus velutina
624	10	black oak	Quercus velutina
625	22	black oak	Quercus velutina
626	9	black oak	Quercus velutina
627	8	white oak	Quercus alba
628	13	black oak	Quercus velutina
629	10	black oak	Quercus velutina
630	12	black oak	Quercus velutina
631	15	black oak	Quercus velutina
632	13	black oak	Quercus velutina
633	8	black oak	Quercus velutina
634	18	black oak	Quercus velutina
635	11	black oak	Quercus velutina
636	8	black oak	Quercus velutina
637	14	black oak	Quercus velutina
638	9	black oak	Quercus velutina
639	8	black birch	Betula lenta
640	10	black oak	Quercus velutina
641	11	poplar	Populus sp.
642	9	white oak	Quercus alba
643	21	red oak	Quercus rubra
644	8	hickory sp.	Carya sp.
645	11	hickory sp.	Carya sp.
646	16	black oak	Quercus velutina
647	8	American beech	Fagus grandifolia
648	11	black oak	Quercus velutina

Tag #	DBH (in)	Common Name	Scientific Name
649	15	red oak	Quercus rubra
650	8	American beech	Fagus grandifolia
651	15	black birch	Betula lenta
652	14	black birch	Betula lenta
653	10	black birch	Betula lenta
654	8	black birch	Betula lenta
655	10	black birch	Betula lenta
656	10	black birch	Betula lenta
657	8	black birch	Betula lenta
658	8	black birch	Betula lenta
659	9	black birch	Betula lenta
660	12	black birch	Betula lenta
661	15	black birch	Betula lenta
662	12	black birch	Betula lenta
663	16	black oak	Quercus velutina
664	11	black birch	Betula lenta
665	10	black birch	Betula lenta
666	15	black birch	Betula lenta
667	12	black birch	Betula lenta
668	9	black birch	Betula lenta
669	16	black birch	Betula lenta
670	10	red oak	Quercus rubra
671	9	black birch	Betula lenta
672	8	black birch	Betula lenta
673	15	poplar	Populus sp.
674	8	black birch	Betula lenta
675	8	black birch	Betula lenta
676	8	black birch	Betula lenta
677	9	black cherry	Prunus serotina
678	15	black birch	Betula lenta
679	11	Norway maple	Acer platanoides
680	22	sugar maple	Acer saccharum
681	13	tree-of-heaven	Ailanthus altissima
682	17	sugar maple	Acer saccharum
683	16	black cherry	Prunus serotina
684	20	chestnut oak	Quercus prinus
685	8	tree-of-heaven	Ailanthus altissima
686	53	red oak	Quercus rubra
687	17	red oak	Quercus rubra
688	15	tree-of-heaven	Ailanthus altissima
689	9	tree-of-heaven	Ailanthus altissima
690	10	poplar	Populus sp.
691	11	poplar	Populus sp.
692	8	poplar	Populus sp.
693	11	tree-of-heaven	Ailanthus altissima
694	10	American sycamore	Platanus occidentalis
695	13	poplar	Populus sp.
696	8	poplar	Populus sp.
697	9	tree-of-heaven	Ailanthus altissima
698	10	poplar	Populus sp.
699	8	tree-of-heaven	Ailanthus altissima
700	9	elm sp.	Ulmus sp.
701	9	poplar	Populus sp.
702	13	poplar	Populus sp.
703	10	poplar	Populus sp.
704	11	sweet cherry	Prunus avium
705	13	poplar	Populus sp.
706	11	tree-of-heaven	Ailanthus altissima
707	9	black cherry	Prunus serotina
708	12	black cherry	Prunus serotina
709	9	catalpa	Catalpa bignonioides
710	12	poplar	Populus sp.
711	9	poplar	Populus sp.
712	8	tree-of-heaven	Ailanthus altissima
713	8	catalpa	Catalpa bignonioides
714	8	poplar	Populus sp.
715	8	poplar	Populus sp.
716	11	poplar	Populus sp.
717	8	poplar	Populus sp.
718	9	poplar	Populus sp.
719	8	tree-of-heaven	Ailanthus altissima
720	8	catalpa	Catalpa bignonioides
721	8	tree-of-heaven	Ailanthus altissima
722	11	tree-of-heaven	Ailanthus altissima
723	11	tree-of-heaven	Ailanthus altissima
724	13	tree-of-heaven	Ailanthus altissima
725	14	tree-of-heaven	Ailanthus altissima
726	12	catalpa	Catalpa bignonioides
727	16	black cherry	Prunus serotina
728	11	catalpa	Catalpa bignonioides
729	9	tree-of-heaven	Ailanthus altissima
730	10	black cherry	Prunus serotina
731	8	black cherry	Prunus serotina
732	9	black cherry	Prunus serotina
733	9	black cherry	Prunus serotina
734	11	white oak	Quercus alba
735	10	black cherry	Prunus serotina
736	11	black cherry	Prunus serotina
737	9	black cherry	Prunus serotina
738	14	black cherry	Prunus serotina
739	25	catalpa	Catalpa bignonioides
740	8	tree-of-heaven	Ailanthus altissima
741	9	black cherry	Prunus serotina
742	9	black cherry	Prunus serotina
743	12	black cherry	Prunus serotina
744	12	black cherry	Prunus serotina

Tag #	DBH (in)	Common Name	Scientific Name
745	10	black cherry	Prunus serotina
746	17	black cherry	Prunus serotina
747	10	black cherry	Prunus serotina
748	11	black cherry	Prunus serotina
749	9	black oak	Quercus velutina
750	8	black cherry	Prunus serotina
751	8	black cherry	Prunus serotina
752	12	white oak	Quercus alba
753	16	red oak	Quercus rubra
754	11	black oak	Quercus velutina
755	11	red oak	Quercus rubra
756	8	black cherry	Prunus serotina
757	12	black cherry	Prunus serotina
758	10	black cherry	Prunus serotina
759	8	black cherry	Prunus serotina
760	8	black cherry	Prunus serotina
761	10	red maple	Acer rubrum
762	11	red maple	Acer rubrum
763	10	catalpa	Catalpa bignonioides
764	8	catalpa	Catalpa bignonioides
765	13	sweet cherry	Prunus avium
766	13	catalpa	Catalpa bignonioides
767	8	sweet cherry	Prunus avium
768	12	catalpa	Catalpa bignonioides
769	13	black cherry	Prunus serotina
770	8	pin oak	Quercus palustris
771	9	catalpa	Catalpa bignonioides
772	10	catalpa	Catalpa bignonioides
773	8	catalpa	Catalpa bignonioides
774	9	catalpa	Catalpa bignonioides
775	10	black cherry	Prunus serotina
776	12	catalpa	Catalpa bignonioides
777	13	catalpa	Catalpa bignonioides
778	8	catalpa	Catalpa bignonioides
779	17	catalpa	Catalpa bignonioides
780	23	catalpa	Catalpa bignonioides
781	9	pin oak	Quercus palustris
782	28	Norway spruce	Picea abies
783	18	Norway spruce	Picea abies
784	22	Norway spruce	Picea abies
785	27	Norway spruce	Picea abies
786	11	sweet cherry	Prunus avium
787	9	catalpa	Catalpa bignonioides
788	10	catalpa	Catalpa bignonioides
789	8	prunus sp.	Prunus sp.
790	10	poplar	Populus sp.
791	9	poplar	Populus sp.
792	14	catalpa	Catalpa bignonioides
793	9	catalpa	Catalpa bignonioides
794*	12	catalpa	Catalpa bignonioides
796	17	catalpa	Catalpa bignonioides
797	8	catalpa	Catalpa bignonioides
798	9	catalpa	Catalpa bignonioides
799	13	catalpa	Catalpa bignonioides
800	9	elm sp.	Ulmus sp.
801	9	catalpa	Catalpa bignonioides
802	8	catalpa	Catalpa bignonioides
803	9	poplar	Populus sp.
804	8	poplar	Populus sp.
805	8	eastern red cedar	Juniperus virginiana
806	9	catalpa	Catalpa bignonioides
807	12	catalpa	Catalpa bignonioides
808	10	catalpa	Catalpa bignonioides
809	8	catalpa	Catalpa bignonioides
810	8	catalpa	Catalpa bignonioides
811	8	catalpa	Catalpa bignonioides
812	13	catalpa	Catalpa bignonioides
813	10	catalpa	Catalpa bignonioides
814	13	catalpa	Catalpa bignonioides
815	17	catalpa	Catalpa bignonioides
816	15	catalpa	Catalpa bignonioides
817	9	catalpa	Catalpa bignonioides
818	10	black cherry	Prunus serotina
819	11	catalpa	Catalpa bignonioides
820	8	white birch	Betula papyrifera
821	10	poplar	Populus sp.
822	8	poplar	Populus sp.
823	9	poplar	Populus sp.
824	8	catalpa	Catalpa bignonioides
825	12	tulip	Liriodendron tulipifera
826	11	red oak	Quercus rubra
827	11	tulip	Liriodendron tulipifera
828	12	black birch	Betula nigra
829	11	unknown	unknown
830	13	snag	dead
831	12	black cherry	Prunus serotina
832	11	cherry or birch snag	dead
833	8	tulip	Liriodendron tulipifera
834	8	tulip	Liriodendron tulipifera
835	11	tulip	Liriodendron tulipifera
836	10	poplar	Populus sp.
837	10	poplar	Populus sp.
838	9	tulip	Liriodendron tulipifera
839	9	tulip	Liriodendron tulipifera
840	9	tulip	Liriodendron tulipifera
841	9	black cherry	Prunus serotina

Tag #	DBH (in)	Common Name	Scientific Name
842	9	tulip	Liriodendron tulipifera
843	8	tulip	Liriodendron tulipifera
844	12	catalpa	Catalpa bignonioides
845	8	catalpa	Catalpa bignonioides
846	12	catalpa	Catalpa bignonioides
847	13	catalpa	Catalpa bignonioides
848	19	black cherry	Prunus serotina
849	15	red maple	Acer rubrum
850	11	eastern red cedar	Juniperus virginiana
851	11	catalpa	Catalpa bignonioides
852	12	catalpa	Catalpa bignonioides
853	9	catalpa	Catalpa bignonioides
854	16	catalpa	Catalpa bignonioides
855	8	catalpa	Catalpa bignonioides
856	14	catalpa	Catalpa bignonioides
857	14	catalpa	Catalpa bignonioides
858	17	catalpa	Catalpa bignonioides
859	9	catalpa	Catalpa bignonioides
860	14	catalpa	Catalpa bignonioides
861	9	catalpa	Catalpa bignonioides
862	12	catalpa	Catalpa bignonioides
863	12	tulip	Liriodendron tulipifera
864	10	catalpa	Catalpa bignonioides
865	10	catalpa	Catalpa bignonioides
866	8	tulip	Liriodendron tulipifera
867	9	catalpa	Catalpa bignonioides
868	15	black cherry	Prunus serotina
869	12	catalpa	Catalpa bignonioides
870	10	catalpa	Catalpa bignonioides
871	11	catalpa	Catalpa bignonioides
872	14	poplar	Populus sp.
873	15	catalpa	Catalpa bignonioides
874	11	catalpa	Catalpa bignonioides
875	11	catalpa	Catalpa bignonioides
876	8	catalpa	Catalpa bignonioides
877	9	catalpa	Catalpa bignonioides
878	8	catalpa	Catalpa bignonioides
879	8	catalpa	Catalpa bignonioides
880	12	catalpa	Catalpa bignonioides
881	8	catalpa	Catalpa bignonioides
882	8	catalpa	Catalpa bignonioides
883	9	eastern red cedar	Juniperus virginiana
884	9	catalpa	Catalpa bignonioides
885	9	white oak	Quercus alba
886	8	catalpa	Catalpa bignonioides
887	8	catalpa	Catalpa bignonioides
888	10	tulip	Liriodendron tulipifera
889	10	tulip	Liriodendron tulipifera
890	9	poplar	Populus sp.
891	10	poplar	Populus sp.
892	9	poplar	Populus sp.
893	9	poplar	Populus sp.
894	13	poplar	Populus sp.
895	15	poplar	Populus sp.
896	9	black birch	Betula nigra
897	10	poplar	Populus sp.
898	8	maple sp.	Acer sp.
899	10	black birch	Betula nigra
900	15	pin oak	Quercus palustris
901	8	unknown	unknown
902	12	tulip	Liriodendron tulipifera
903	10	catalpa	Catalpa bignonioides
904	8	poplar	Populus sp.
905	10	catalpa	Catalpa bignonioides
906	8	black cherry	Prunus serotina
907	8	tulip	Liriodendron tulipifera
908	8	black cherry	Prunus serotina
909	10	tree-of-heaven	Ailanthus altissima
910	15	poplar snag	Populus sp. - dead
911	11	red maple	acer rubrum
912	8	red maple	acer rubrum
913	15	red maple	acer rubrum
914	15	red oak	Quercus rubra
915	11	black birch	Betula nigra
916	10	tulip	Liriodendron tulipifera
917	18	black oak	Quercus velutina
918	9	poplar	Populus sp.
919	14	black oak	Quercus velutina
920	12	black oak	Quercus velutina
921	15	black oak	Quercus velutina
922	10	black oak	Quercus velutina
923	13	black oak	Quercus velutina
924	12	black oak	Quercus velutina

Tag #	DBH (in)	Common Name	Scientific Name
925	16	black oak	Quercus velutina
926	9	red oak	Quercus rubra
927	9	black oak	Quercus velutina
928	13	black oak	Quercus velutina
929	11	black oak	Quercus velutina
930	11	pin oak	Quercus palustris
931	12	black oak	Quercus velutina
932	14	black oak	Quercus velutina
933	17	black oak	Quercus velutina
934	11	black oak	Quercus velutina
935	12	black oak	Quercus velutina
936	10	black oak	Quercus velutina
937	12	pin oak	Quercus palustris
938	14	black oak	Quercus velutina
939	9	black oak	Quercus velutina
940	9	black oak	Quercus velutina
941	8	black oak	Quercus velutina
942	9	tree-of-heaven	Ailanthus altissima
943	13	red maple	acer rubrum
944	9	poplar	Populus sp.
945	9	tree-of-heaven	Ailanthus altissima
946	12	tree-of-heaven	Ailanthus altissima
947	12	poplar	Populus sp.
948	15	black cherry	Prunus serotina
949	8	tree-of-heaven	Ailanthus altissima
950	8	tree-of-heaven snag	Ailanthus altissima - dead
951	9	tree-of-heaven	Ailanthus altissima
952	15	poplar	Populus sp.
953	8	tree-of-heaven	Ailanthus altissima
954	12	poplar	Populus sp.
955	12	poplar	Populus sp.
956	12	tree-of-heaven	Ailanthus altissima
957	9	poplar	Populus sp.
958	19	tree-of-heaven	Ailanthus altissima
959	10	snag	dead
960	8	poplar	Populus sp.
961	8	unknown	unknown
962	8	dying cherry sp.	Prunus sp.
963	9	cherry sp.	Prunus sp.
964	9	poplar	Populus sp.
965	9	tree-of-heaven	Ailanthus altissima
966	9	catalpa	Catalpa bignonioides
967	9	tree-of-heaven	Ailanthus altissima
968	9	black birch	Betula nigra
969	9	tree-of-heaven	Ailanthus altissima
970	12	catalpa	Catalpa bignonioides
971	35	black oak	Quercus velutina
972	10	poplar	Populus sp.
973	11	poplar	Populus sp.
974	11	poplar	Populus sp.
975	8	tree-of-heaven	Ailanthus altissima
976	14	catalpa	Catalpa bignonioides
977	11	catalpa	Catalpa bignonioides
978	18	red oak	Quercus rubra
979	27	black oak	Quercus velutina
980	13	tree-of-heaven	Ailanthus altissima
981	20	black oak	Quercus velutina
982	9	tree-of-heaven	Ailanthus altissima
983	9	black cherry	Prunus serotina
984	9	tree-of-heaven	Ailanthus altissima
985	10	poplar	Populus sp.
986	15	catalpa	Catalpa bignonioides
987	9	poplar	Populus sp.
988	14	tree-of-heaven	Ailanthus altissima
989	23	black oak	Quercus velutina
990	25	black oak	Quercus velutina
991	26	black oak	Quercus velutina
992	9	tree-of-heaven	Ailanthus altissima
993	9	tree-of-heaven	Ailanthus altissima
994	11	tree-of-heaven	Ailanthus altissima
995	36	black oak	Quercus velutina
996	27	black oak	Quercus velutina
997	27	black oak	Quercus velutina
998	8	black cherry	Prunus serotina
999	9	tree-of-heaven	Ailanthus altissima
1000	9	black cherry	Prunus serotina
997	27	black oak	Quercus velutina
998	8	black cherry	Prunus serotina
999	9	tree-of-heaven	Ailanthus altissima
1000	9	black cherry	Prunus serotina

SITE PLAN APPLICATION

MAY 2012

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REVISIONS

DESIGNED BY: S.C.
DRAWN BY: R.B.A.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM a joint venture PIRNIE in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
TREE SCHEDULE
SHEET 2

DATE: 05/31/2012
SCALE: N.T.S.
SHEET NO: 27 OF 77
DRAWING NO. **5C–178.00**

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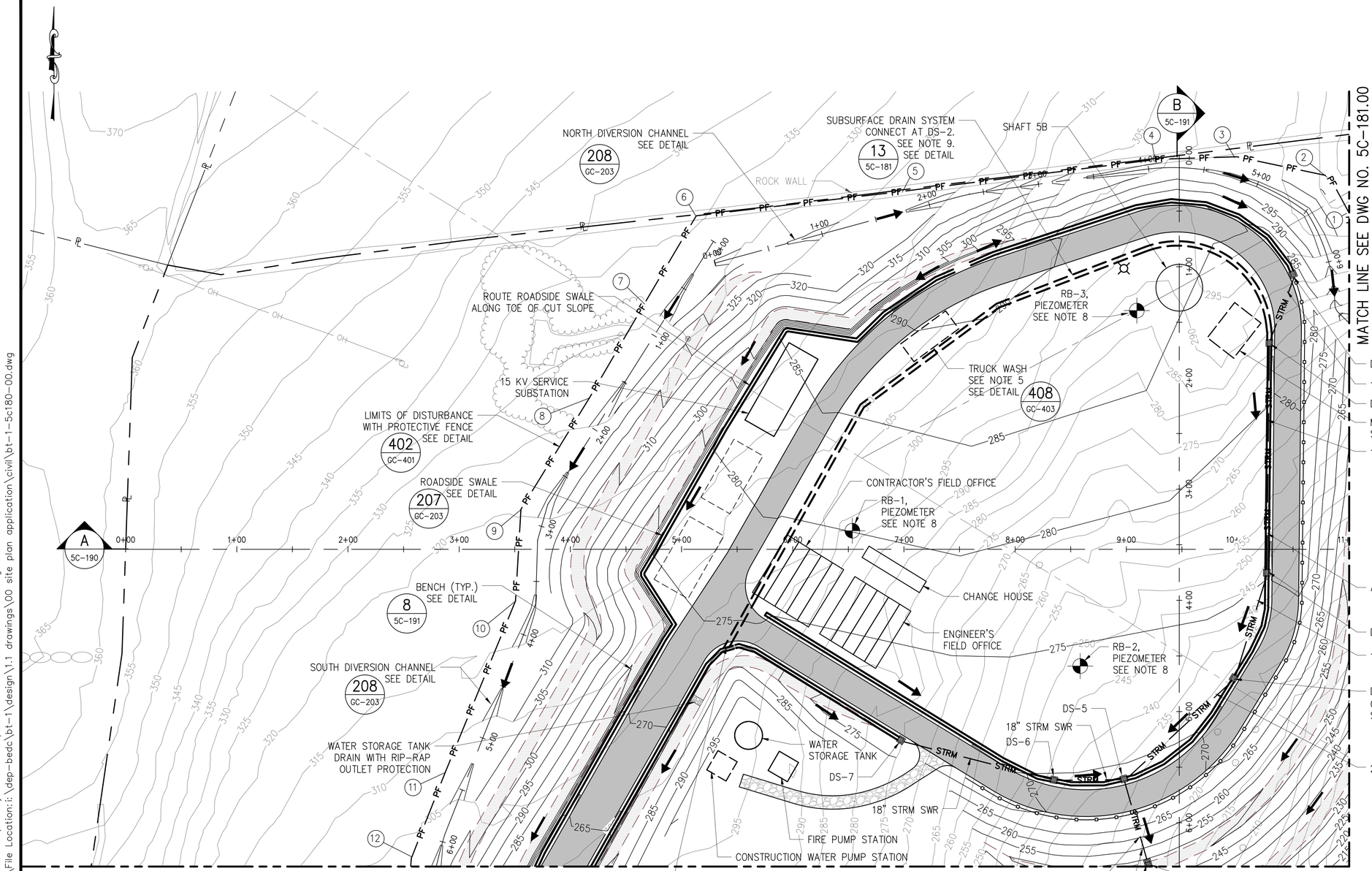
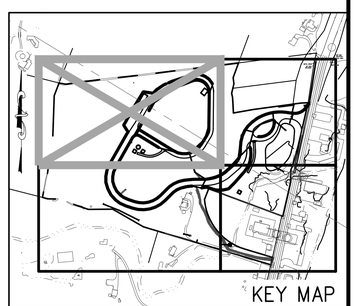
Date Plotted: 5/25/2012 3:46 PM\Author: shrestha\File Location: i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c178-00.dwg



NOTES:

1. PLANIMETRIC FEATURES ARE FROM TOPOGRAPHIC SURVEYS OF THE VALENZA, MOREHEAD AND THEODORE PROPERTIES BY MUNOZ ENGINEERING & LAND SURVEYING, P.C., DATED AUGUST 2011 REVISED 10-19-11.
2. HORIZONTAL DATUM IS NAD-83-96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101 (NEW YORK EAST).
3. VERTICAL DATUM IS NGVD 29.
4. DRAINAGE INLETS WITHIN WORK AREAS SHALL BE PROTECTED FROM SEDIMENTATION WITH INLET SEDIMENT PROTECTION FOR DRAINAGE STRUCTURES AS DETAILED ON DRAWING GC-402.
5. LOCATION OF TRUCK WASH STATION AND MUCK BIN IS APPROXIMATE. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING EROSION AND SEDIMENT CONTROL MEASURES AROUND INSTALLED LOCATION OF THESE FACILITIES. ALL RUNOFF FROM MUCK STOCKPILE, MUCK BIN AND TRUCK WASH STATION MUST BE CONTAINED AND SENT DIRECTLY TO THE DEWATERING TREATMENT FACILITY. REFER TO DRAWING 5C-211 FOR THE SITE PIPING PLAN AND DRAWING GC-403 FOR THE TRUCK WASH STATION DETAIL.
6. SEE DRAINAGE TABLE ON DRAWING 5C-183 FOR FURTHER INFORMATION ON STORMWATER PIPING.
7. NOT USED.
8. EXISTING PIEZOMETERS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION. CASINGS FOR RB-1, RB-2 AND RB-3 SHALL BE CUT OR EXTENDED AND ROADWAY BOXES SHALL BE RESET OR REPLACED AS NECESSARY DURING GRADING. SEE DETAIL ON DRAWING GC-304.
9. INSTALL SUBSURFACE DRAIN SYSTEM AT MINIMUM 1% SLOPE. SEE DETAIL ON DRAWING 5C-181.
10. SEE DRAWING 5C-188 FOR PROTECTIVE FENCE STAKE-OUT DATA TABLE. SEE DRAWINGS 5C-183 FOR DRAINAGE STRUCTURE STAKE-OUT DATA. SEE DRAWING 5C-210 FOR ALL OTHER STAKE-OUT DATA.
11. SITE LAYOUT SHOWN IS BASED ON ANTICIPATED CONSTRUCTION REQUIREMENTS FOR THE SHAFT CONSTRUCTION PHASE OF PROJECT 1. REFER TO DRAWINGS 5C-140 TO 5C-145 FOR ANTICIPATED SITE LAYOUTS THROUGHOUT ALL PHASES OF CONSTRUCTION.
12. LAYOUTS WILL BE SUBJECT TO ACTUAL CHANGE TO SUIT CONTRACTOR'S MEANS AND METHODS.



0 50 100 FT.
1"=50'

ESTIMATED EXCAVATION VOLUMES

	CUT (C.Y.)	FILL (C.Y.)	NET (C.Y.)	
TOTALS	228,000	230,000	2,000	Fill

VOLUME OF ROCK CUT = 67,000 C.Y.

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: R.B.T.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM a joint venture PIRNIE in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

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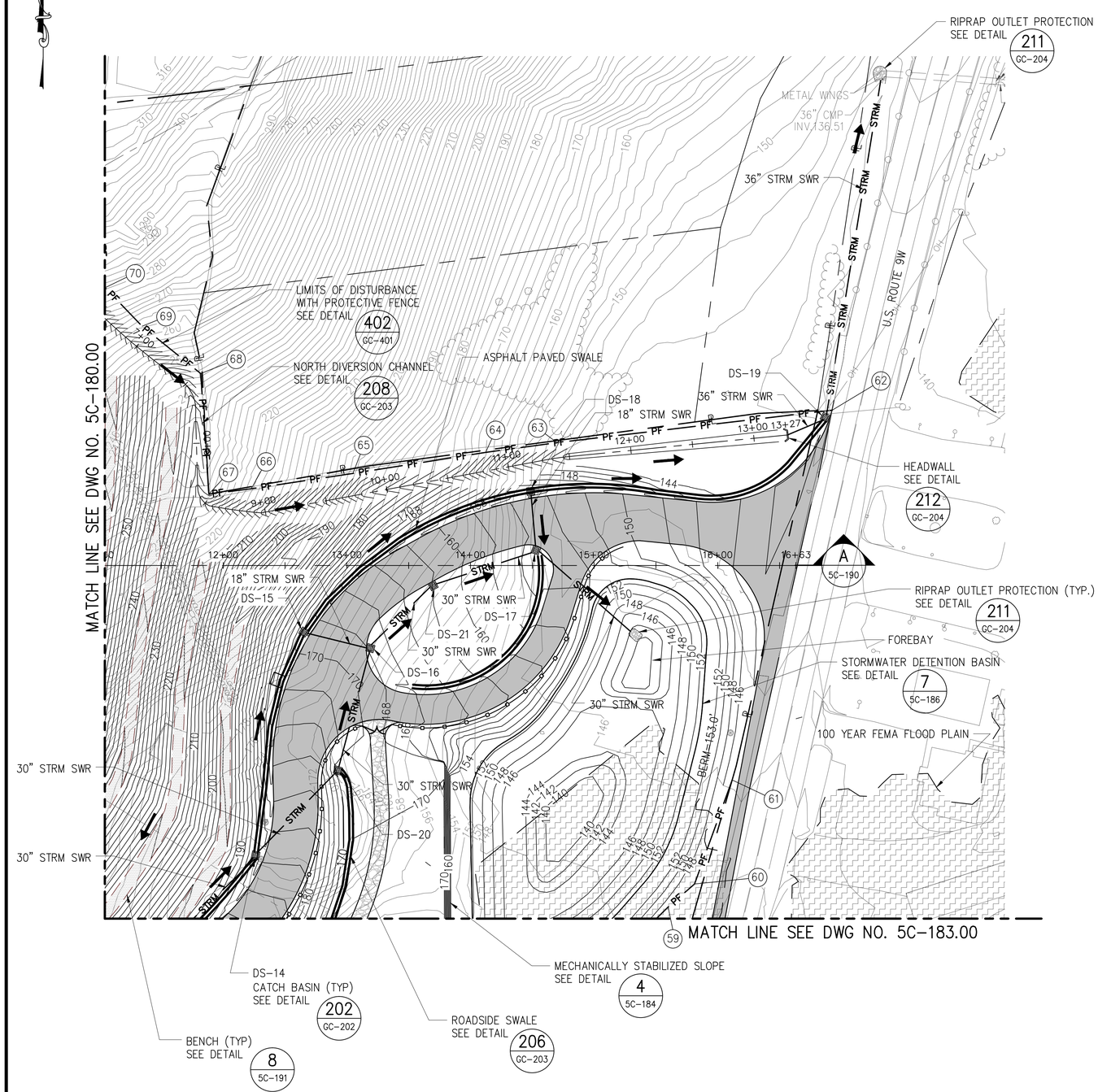
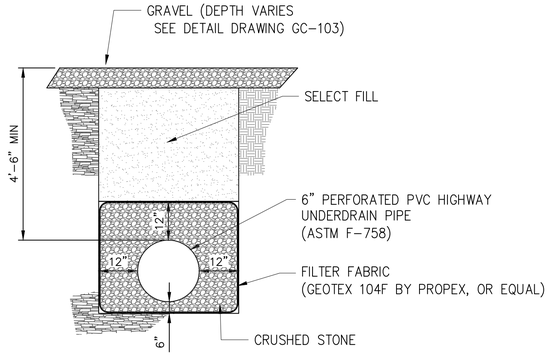
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
GRADING AND DRAINAGE PLAN
SHEET 1

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 28 OF 77
DRAWING NO. **5C-180.00**

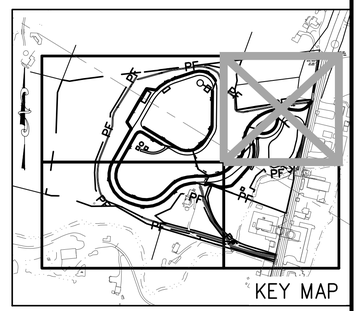




13 – SUBSURFACE DRAIN DETAIL
SCALE : N.T.S.

NOTES:

1. PLANIMETRIC FEATURES ARE FROM TOPOGRAPHIC SURVEYS OF THE VALENZA, MOREHEAD AND THEODORE PROPERTIES BY MUNOZ ENGINEERING & LAND SURVEYING, P.C., DATED AUGUST 2011 REVISED 10-19-11.
2. HORIZONTAL DATUM IS NAD-83-96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101 (NEW YORK EAST).
3. VERTICAL DATUM IS NGVD 29.
4. FLOOD PLAIN LIMITS ARE FROM FEMA FLOOD INSURANCE RATE MAP NUMBER 36071C0153E, EFFECTIVE DATE AUGUST 3, 2009.
5. STREAM CHANNEL IS FROM THE LAND ACQUISITION SURVEYS OF THE GERVAIS-VALENZA PROPERTY DATED APRIL 26, 2011 AND THE MOREHEAD PROPERTY DATED JUNE 20, 2011 BOTH BY MUNOZ ENGINEERING & LAND SURVEYING, P.C.
6. SEE DRAINAGE TABLE ON DRAWING 5C-183 FOR FURTHER INFORMATION ON STORMWATER PIPING.
7. SEE DRAWING 5C-188 FOR PROTECTIVE FENCE STAKE-OUT DATA TABLE. SEE DRAWINGS 5C-183 FOR DRAINAGE STRUCTURE STAKE-OUT DATA. SEE DRAWING 5C-210 FOR ALL OTHER STAKE-OUT DATA.
8. SITE LAYOUT SHOWN IS BASED ON ANTICIPATED CONSTRUCTION REQUIREMENTS FOR THE SHAFT CONSTRUCTION PHASE OF PROJECT 1. REFER TO DRAWINGS 5C-140 TO 5C-145 FOR ANTICIPATED SITE LAYOUTS THROUGHOUT ALL PHASES OF CONSTRUCTION.
9. LAYOUTS WILL BE SUBJECT TO ACTUAL CHANGE TO SUIT CONTRACTOR'S MEANS AND METHODS.



1"=50' 0 50 100 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES CHECK BEFORE USE
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NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

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CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

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CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

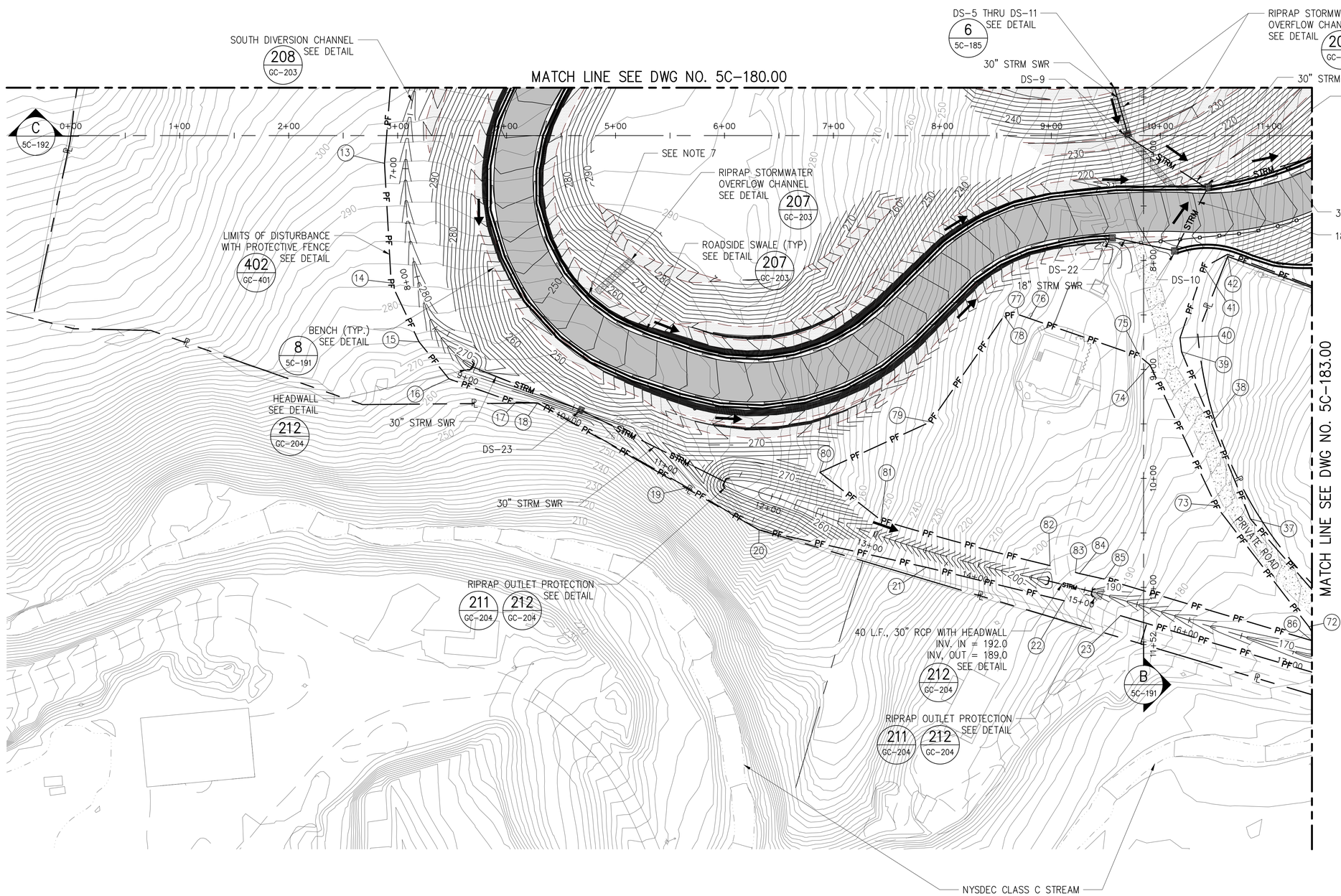
PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
GRADING AND DRAINAGE PLAN
SHEET 2

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 29 OF 77
DRAWING NO. **5C-181.00**

Last Save By Date and Time: shrestho\5/4/2012 10:23 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:49 PM\Author: shrestho\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c181-00.dwg



NOTES:

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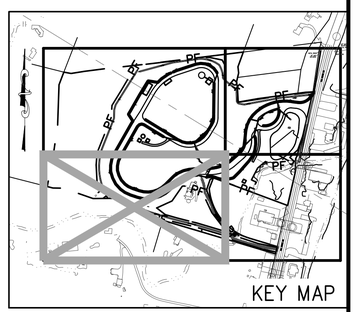
6. SEE DRAINAGE TABLE ON DRAWING 5C-183 FOR FURTHER INFORMATION ON STORMWATER PIPING.
7. GRADE LOW POINT IN BENCH TO PROVIDE OUTLET OVER ROCK SLOPE TO ROADSIDE DITCH BELOW.
8. SEE DRAWING 5C-188 FOR PROTECTIVE FENCE STAKE-OUT DATA TABLE. SEE DRAWINGS 5C-183 FOR DRAINAGE STRUCTURE STAKE-OUT DATA. SEE DRAWING 5C-210 FOR ALL OTHER STAKE-OUT DATA.
9. SITE LAYOUT SHOWN IS BASED ON ANTICIPATED CONSTRUCTION REQUIREMENTS FOR THE SHAFT CONSTRUCTION PHASE OF PROJECT 1. REFER TO DRAWINGS 5C-140 TO 5C-145 FOR ANTICIPATED SITE LAYOUTS THROUGHOUT ALL PHASES OF CONSTRUCTION.
10. LAYOUTS WILL BE SUBJECT TO ACTUAL CHANGE TO SUIT CONTRACTOR'S MEANS AND METHODS.



1"=50' 0 50 100 FT.

SITE PLAN APPLICATION

MAY 2012

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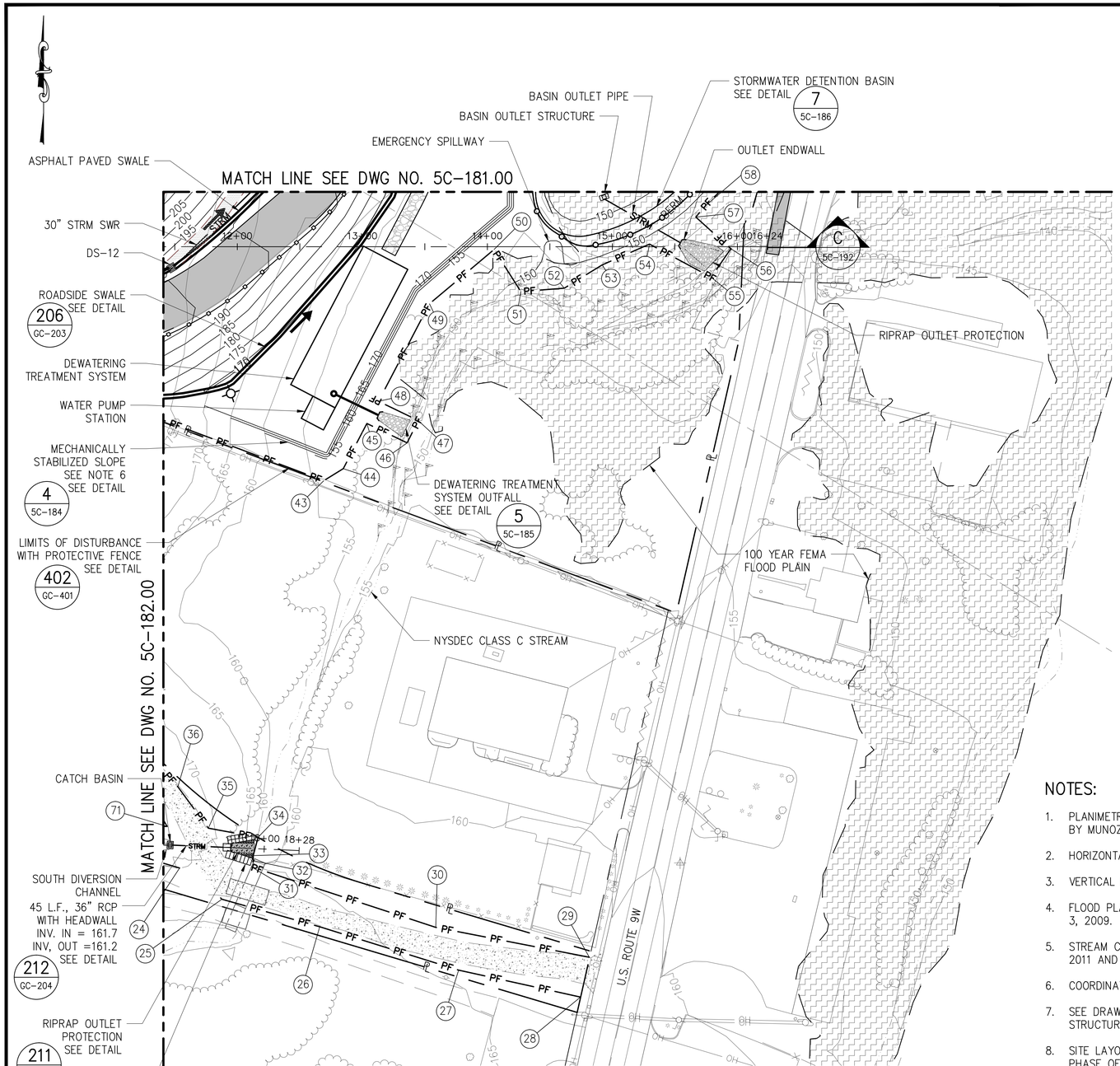
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
GRADING AND DRAINAGE PLAN
SHEET 3

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 30 OF 77
DRAWING NO. **5C-182.00**



RWB BYPASS TUNNEL CONTRACT BT-1
DRAINAGE PIPE INFORMATION

FROM							TO			PIPE DESCRIPTION		
DRAINAGE STRUCTURE NUMBER	NORTHING	EASTING	STRUCTURE SIZE	GRATE TYPE	TOP OF GRATE/RIM ELEVATION	INVERT ELEVATION	DRAINAGE STRUCTURE NUMBER	TOP OF GRATE/RIM ELEVATION	INVERT ELEVATION	LENGTH [FT]	SIZE [IN]	SLOPE
DS-1	1000571.67	631375.31	2 x 2	TYPE 2	282.40	278.90	DS-2	280.30	276.80	62	18	-3.39%
DS-2	1000509.74	631353.99	2 x 2	TYPE 2	280.30	276.80	DS-3	274.10	270.60	203	18	-3.05%
DS-3	1000303.19	631351.67	2 x 2	TYPE 2	274.10	270.60	DS-4	270.80	267.30	96	18	-3.44%
DS-4	1000208.45	631321.88	3 x 2	TYPE 2	270.80	266.80	DS-5	266.90	262.90	98	24	-3.98%
DS-5	1000117.88	631223.19	3 x 3	TYPE 1	266.90	262.90	DS-8	248.30	242.00	75	24	-27.87%
DS-6	1000116.95	631160.21	2 x 2	TYPE 2	268.50	265.00	DS-5	266.90	263.40	60	18	-2.67%
DS-7	1000152.72	631022.70	2 x 2	TYPE 2	271.00	267.50	DS-6	268.50	265.00	139	18	-1.80%
DS-8	1000042.54	631244.60	3 x 2	TYPE 1	248.30	231.90	DS-9	229.30	223.20	47	30	-18.51%
DS-9	999994.36	631258.36	3 x 3	TYPE 2	229.30	213.30	DS-11	201.50	197.00	86	30	-18.95%
DS-10	999887.18	631301.54	2 x 2	TYPE 2	204.30	200.80	DS-11	201.50	198.00	52	18	-5.38%
DS-11	999945.75	631332.10	3 x 3	TYPE 1	201.50	197.00	DS-12	193.20	188.70	105	30	-7.90%
DS-12	999976.17	631435.86	3 x 2	TYPE 2	193.20	188.70	DS-14	180.70	176.20	159	30	-7.86%
DS-14	1000089.85	631551.48	3 x 2	TYPE 2	180.70	176.20	DS-20	169.00	164.50	92	30	-12.72%
DS-15	1000270.48	631590.56	2 x 2	TYPE 2	167.80	163.25	DS-16	167.80	162.74	52	18	-0.99%
DS-16	1000257.37	631644.36	3 x 3	TYPE 2	167.80	161.74	DS-21	162.00	157.50	69	30	-6.14%
DS-17	1000336.63	631778.23	3 x 3	TYPE 1	154.00	148.07	BASIN	NA	144.50	100	30	-3.56%
DS-18	1000384.28	631773.99	2 x 2	TYPE 2	153.00	149.50	DS-17	154.00	149.07	44	18	-0.99%
DIVERSION NORTH	1000429.85	631981.46	–	–	–	138.00	DS-19	142.00	137.00	32	36	-3.13%
DS-19	1000444.22	632012.18	3 x 4	TYPE 2	142.00	137.00	EXIST. CULVERT	–	135.25	274	36	-0.64%
DS-20	1000158.50	631618.08	3 x 2	TYPE 2	168.00	164.50	DS-16	167.80	161.74	99	30	-2.79%
DS-21	1000308.01	631695.12	3 x 2	TYPE 2	162.00	157.50	DS-17	154.00	148.07	83	30	-11.36%
DS-22	999899.08	631244.04	2 x 2	TYPE 2	208.00	204.50	DS-10	204.30	200.80	54	18	-6.93%
DIVERSION SOUTH	999780.96	630656.27	–	–	–	264.95	DS-23	266.00	261.25	100	30	-3.70%
DS-23	999741.02	630756.36	3 x 4	TYPE 1	266.00	261.25	DIVERSION SOUTH	–	260.50	148	30	-0.51%
DS-24	999514.61	631434.57	3 x 4	TYPE 2	167.50	161.70	OUTFALL	–	161.20	45	36	-1.11%

NOTES:

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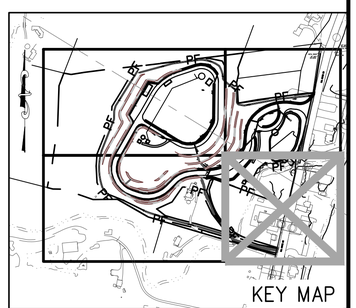
6. COORDINATE CONSTRUCTION OF MECHANICALLY STABILIZED SLOPE WITH SITE PIPING AS SHOWN ON 5C-211.
7. SEE DRAWING 5C-188 FOR PROTECTIVE FENCE STAKE-OUT DATA TABLE. SEE TABLE ON THIS SHEET FOR DRAINAGE STRUCTURE STAKE-OUT DATA. SEE DRAWING 5C-210 FOR ALL OTHER STAKE-OUT DATA.
8. SITE LAYOUT SHOWN IS BASED ON ANTICIPATED CONSTRUCTION REQUIREMENTS FOR THE SHAFT CONSTRUCTION PHASE OF PROJECT 1. REFER TO DRAWINGS 5C-140 TO 5C-145 FOR ANTICIPATED SITE LAYOUTS THROUGHOUT ALL PHASES OF CONSTRUCTION.
9. LAYOUTS WILL BE SUBJECT TO ACTUAL CHANGE TO SUIT CONTRACTOR'S MEANS AND METHODS.



0 50 100 FT.
1"=50'

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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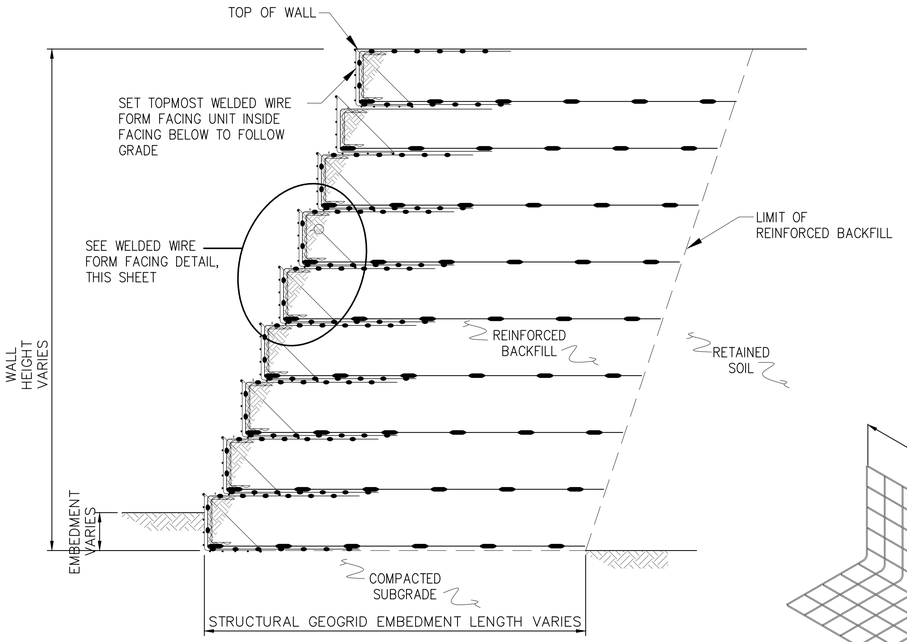
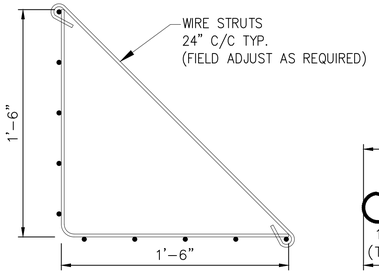
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
GRADING AND DRAINAGE PLAN
SHEET 4

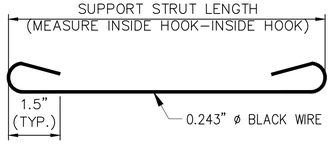
DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 31 OF 77
DRAWING NO. **5C-183.00**



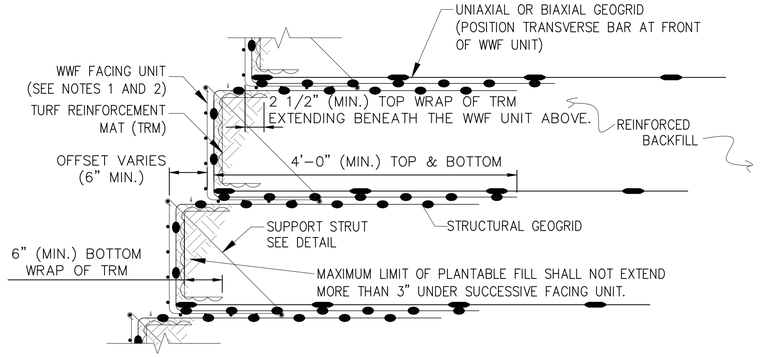
TYPICAL CROSS-SECTION



A 5C-184 SECTION VIEW
N.T.S



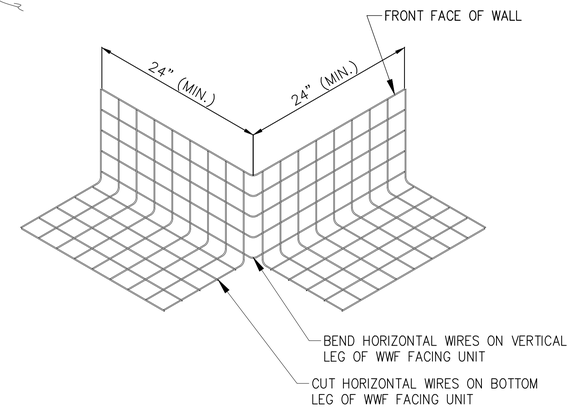
SUPPORT STRUT DETAIL
NOT TO SCALE



NOTES:

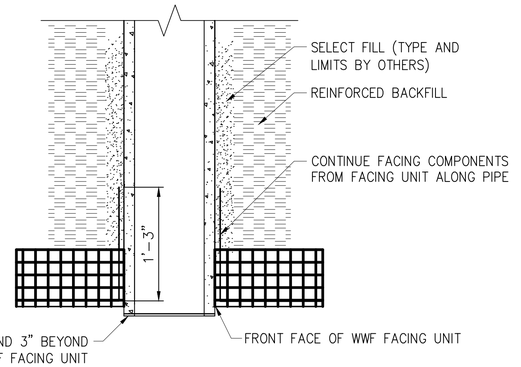
1. SEE WELDED WIRE FORM (WWF) FACING UNIT DETAIL FOR FACING MATERIAL AND DIMENSIONS.
2. ALL FACING UNITS SHALL BE FABRICATED FROM BLACK STEEL.

WELDED WIRE FORM FACING DETAIL (PLANTABLE FACE FILL)
NOT TO SCALE

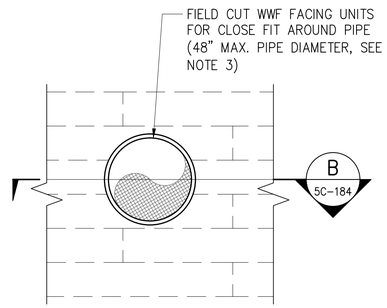


NOTE: SEE WELDED WIRE FORM (WWF) FACING DETAIL FOR FACING MATERIALS AND DIMENSIONS

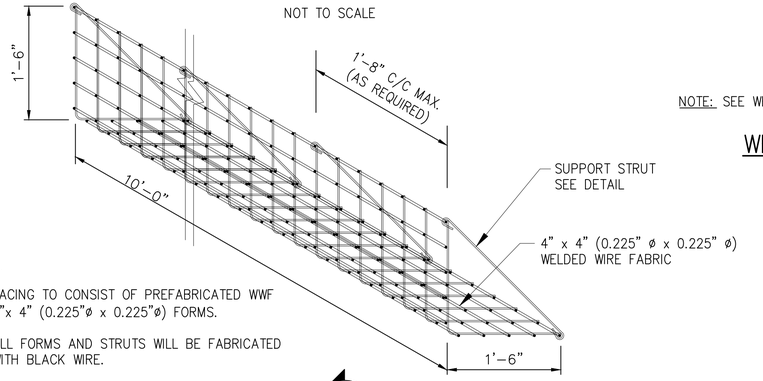
WELDED WIRE FORM INSIDE CORNER UNIT
NOT TO SCALE



B 5C-184 SECTION
SCALE: NTS

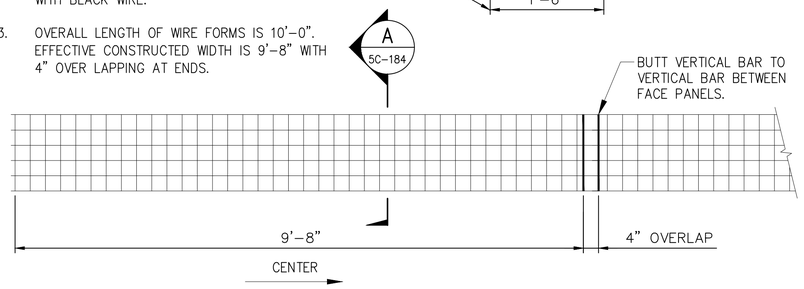


ELEVATION

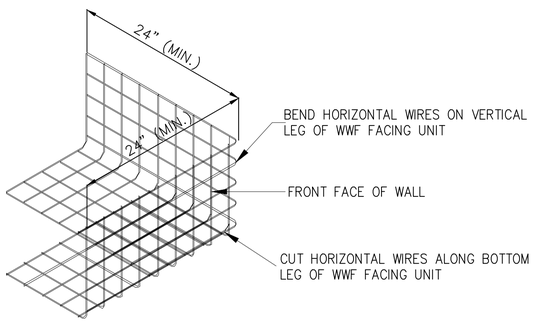


NOTES:

1. FACING TO CONSIST OF PREFABRICATED WWF 4"x 4" (0.225"ø x 0.225"ø) FORMS.
2. ALL FORMS AND STRUTS WILL BE FABRICATED WITH BLACK WIRE.
3. OVERALL LENGTH OF WIRE FORMS IS 10'-0". EFFECTIVE CONSTRUCTED WIDTH IS 9'-8" WITH 4" OVER LAPPING AT ENDS.



WELDED WIRE FORM FACING UNIT
NOT TO SCALE



WELDED WIRE FORM OUTSIDE CORNER UNIT
NOT TO SCALE

NOTES:

1. SEE WELDED WIRE FORM (WWF) FACING UNIT DETAIL FOR FACING MATERIALS AND DIMENSIONS.
2. SEE ELEVATION VIEW FOR GEOGRID TYPE, LOCATION, AND DIMENSIONS.
3. TERMINATE GEOGRIDS NO MORE THAN 3" FROM PIPE.
4. CONTRACTOR RESPONSIBLE TO INSTALL PIPE WITH LEAK-PROOF JOINTS.

PIPE PENETRATION DETAIL AT WWF WALL FACE
NOT TO SCALE

4 5C-181 MECHANICALLY STABILIZED SLOPE DETAIL
SCALE: NOT TO SCALE

SITE PLAN APPLICATION
MAY 2012

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NO.	DATE	DESCRIPTION	APPR'D.
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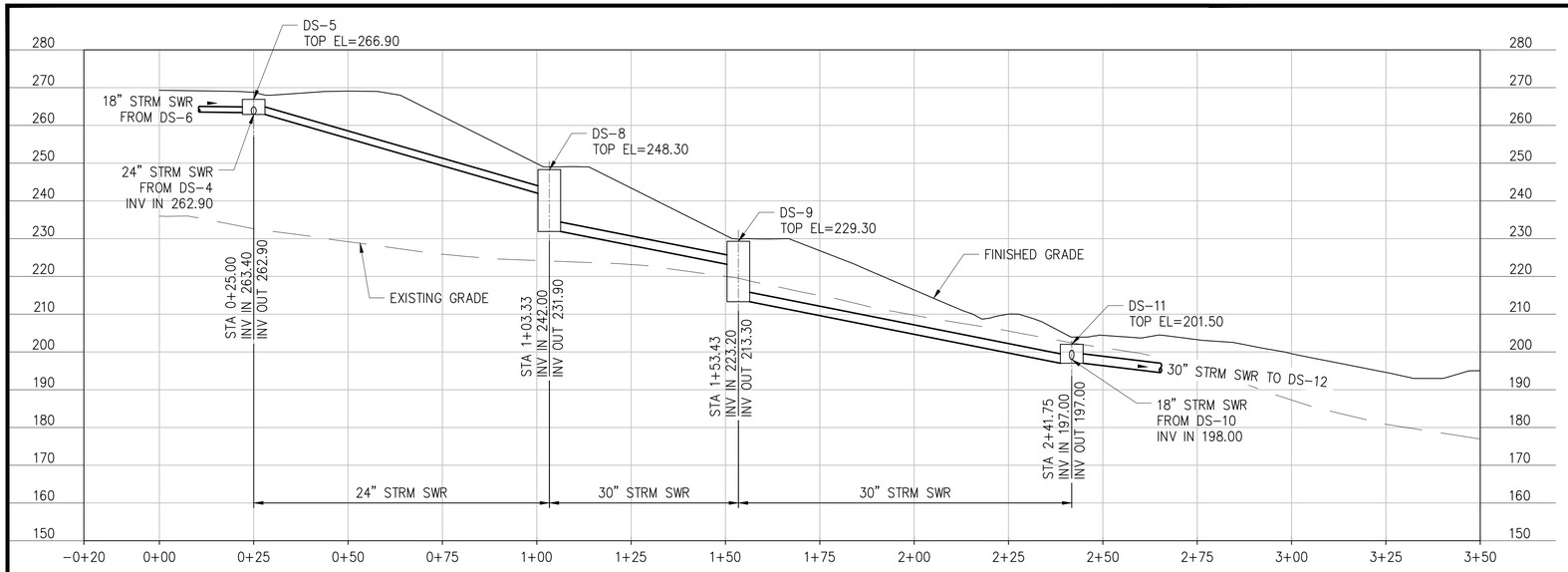
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
CIVIL
GRADING AND DRAINAGE DETAILS
SHEET 1

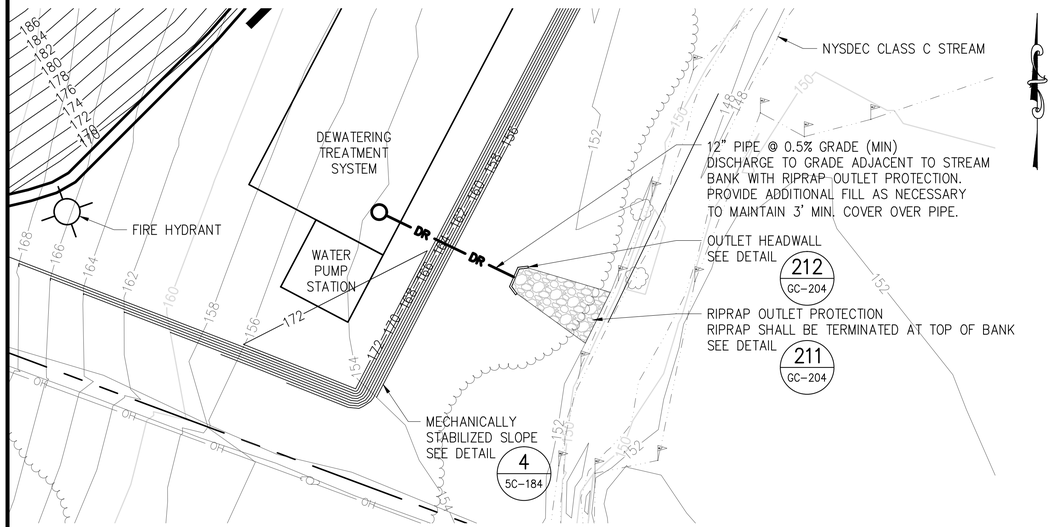
DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 32 OF 77
DRAWING NO. **5C-184.00**



A
5C-185
SECTION: DS-5 THRU DS-11

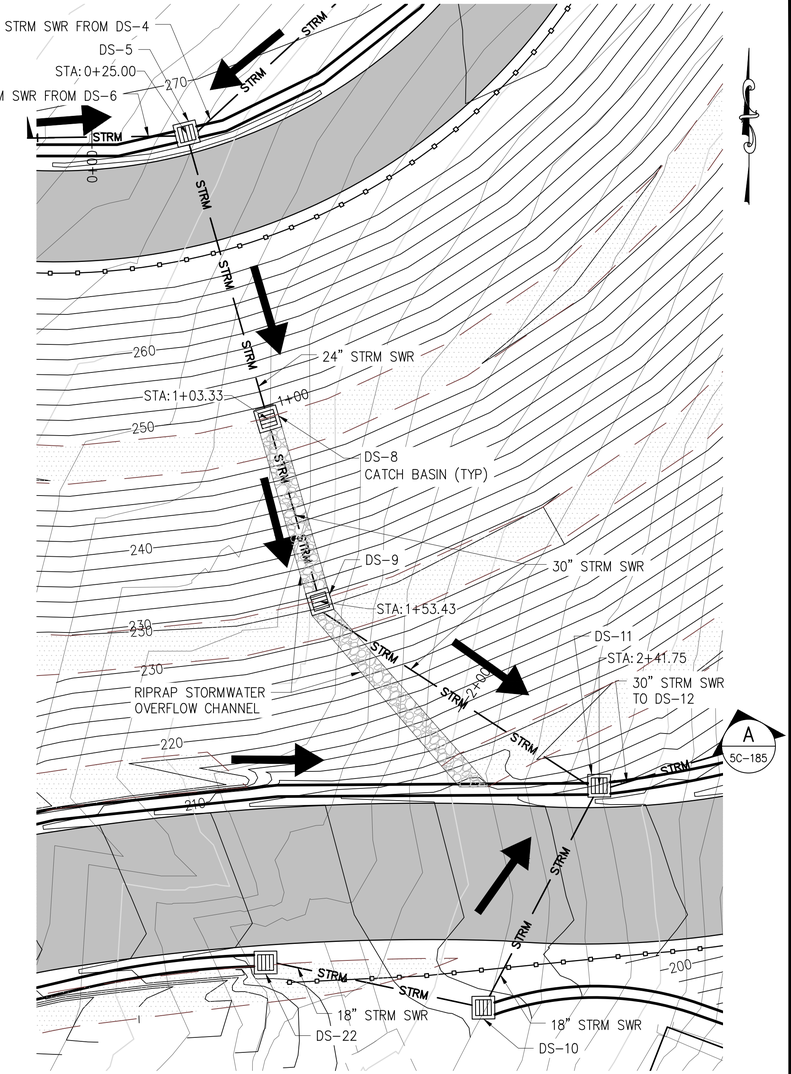
SCALE: 1" = 20' (HOR & VERT)

NOTE: SEE DRAINAGE PIPE INFORMATION TABLE ON DRAWING 5C-183.00 REGARDING PIPE LENGTHS AND SLOPES.



5
5C-183
DEWATERING TREATMENT SYSTEM OUTFALL DETAIL

SCALE : 1" = 20'



PLAN

6
–
DS-5 THRU DS-11 DETAIL

SCALE : 1"=40'

1"=20' 0 20 40 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
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NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.J.T.
DRAWN BY: A.S.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM a joint venture PIRNIE in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

"WARNING-IT IS A VIOLATION, OF THE NEW YORK STATE EDUCATION LAW, SECTION, 7209.2, FOR ANY PERSON, UNLESS (S)HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION, LAW, SECTION, 7209.2."

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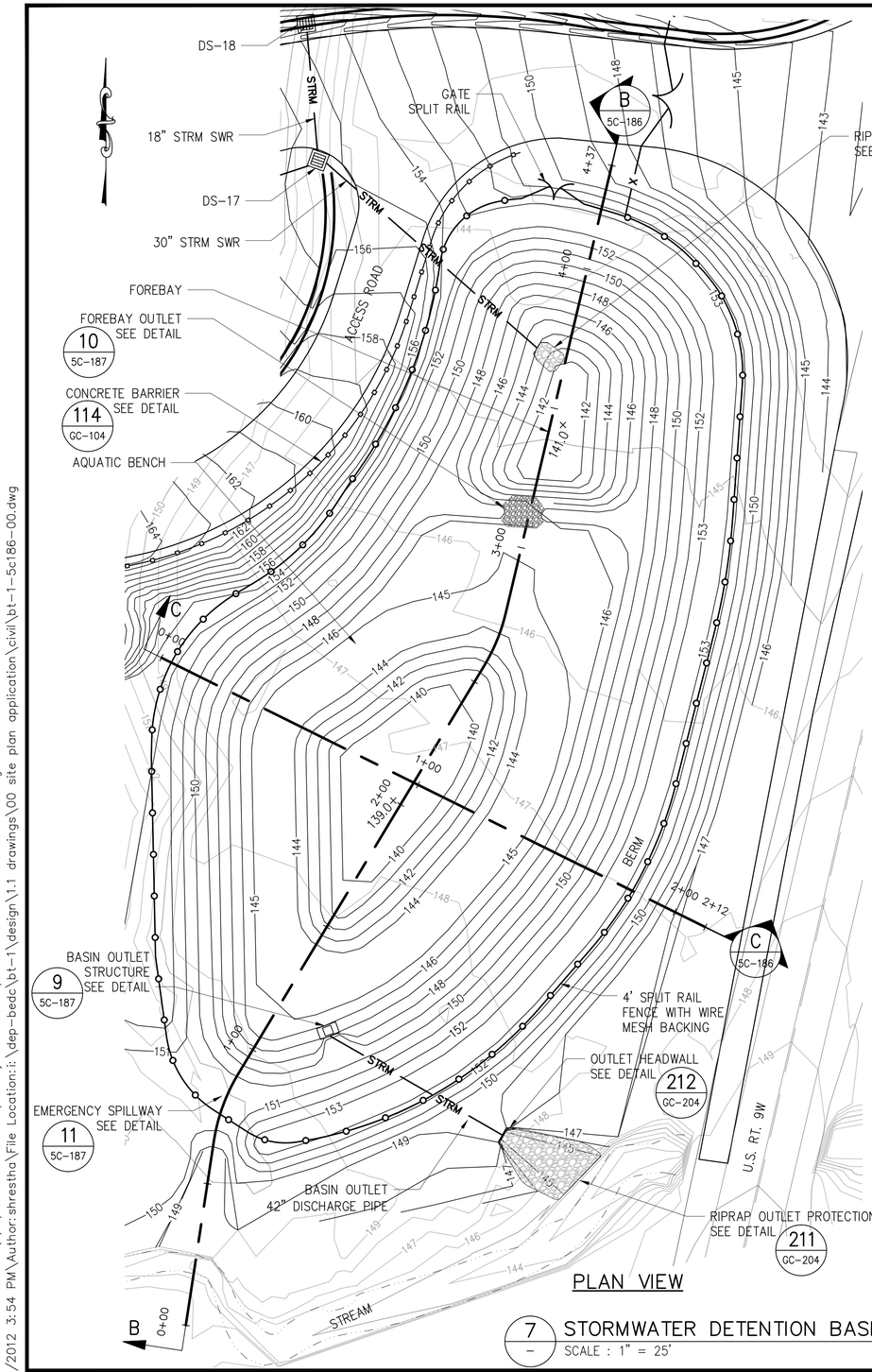
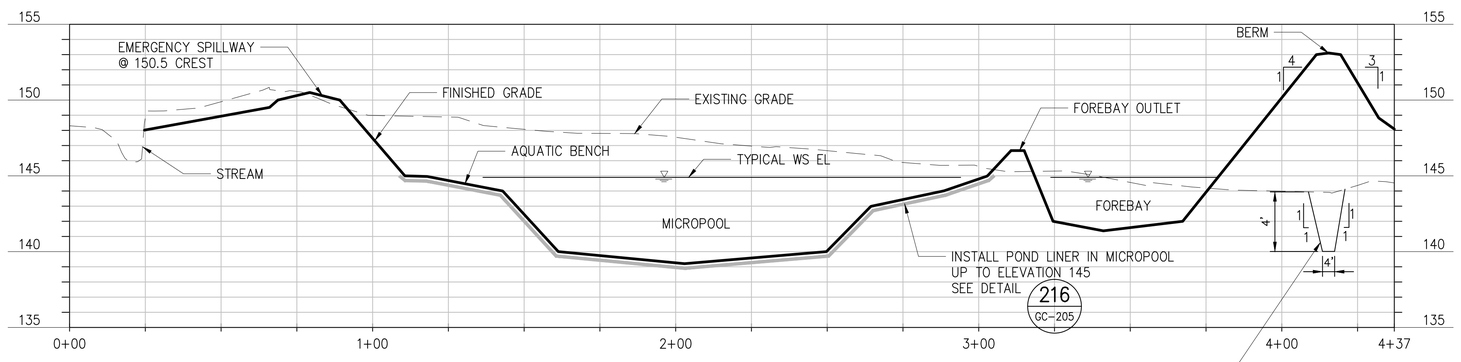
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
GRADING AND DRAINAGE DETAILS
SHEET 2

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 33 OF 77
DRAWING NO. **5C-185.00**



PLAN VIEW

7 – STORMWATER DETENTION BASIN DETAIL
SCALE : 1" = 25'



B 5C-186 SECTION
SCALE : HORZ. 1" = 25' & VERT. 1" = 5'

EXCAVATE CUT-OFF TRENCH ALONG ENTIRE LENGTH OF BERM CENTERLINE. BACKFILL WITH MATERIAL TO BE USED FOR BERM, COMPACT AND COMPLETE ENTIRE BERM CONTIGUOUSLY.

C 5C-186 SECTION
SCALE : HORZ. 1" = 25' & VERT. 1" = 5'

1"=5' 0 5 10 FT.
1"=25' 0 25 50 FT.

SITE PLAN APPLICATION
MAY 2012

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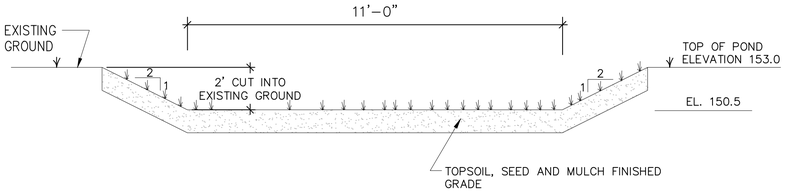
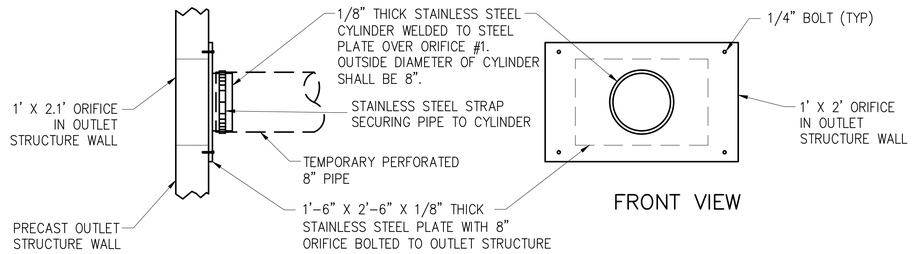
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
GRADING AND DRAINAGE DETAILS
SHEET 3

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 34 OF 77
DRAWING NO. **5C-186.00**

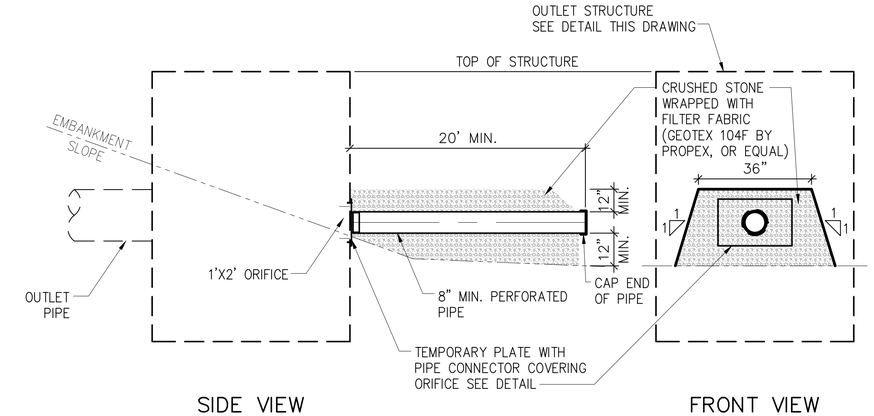


11 – EMERGENCY SPILLWAY DETAIL
SCALE = NOT TO SCALE

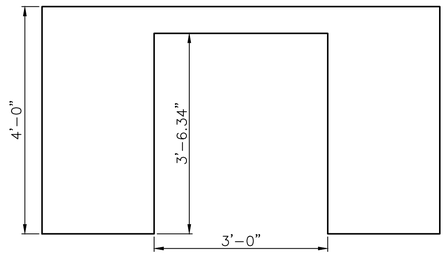


TEMPORARY ORIFICE PLATE DETAIL
SCALE = NOT TO SCALE

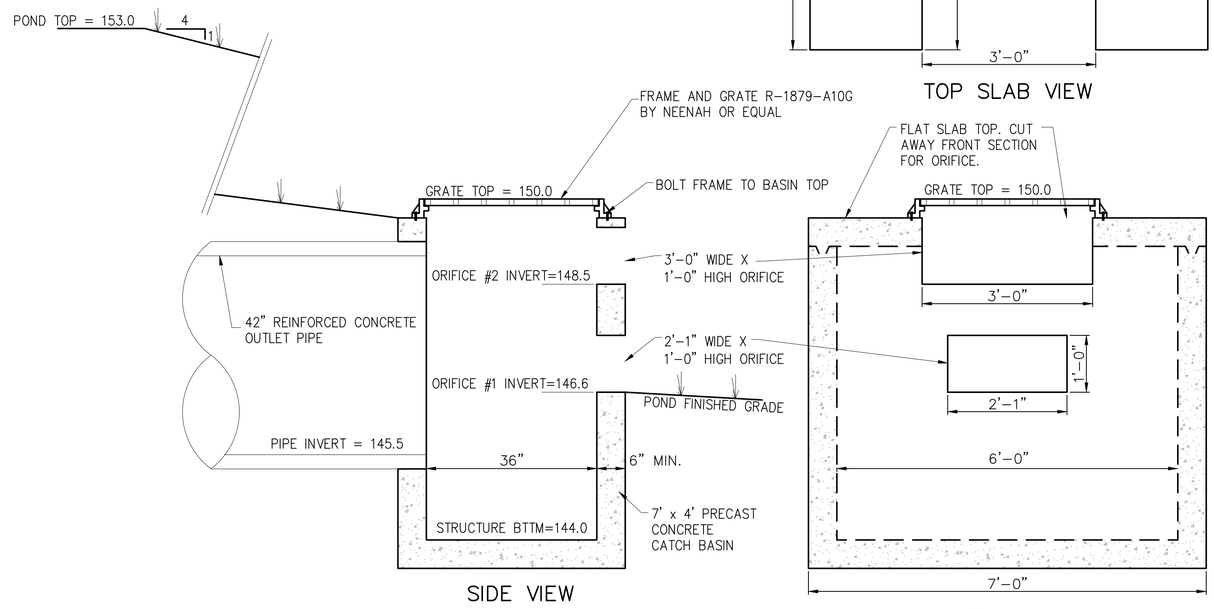
NOTE: INSTALL A STEEL PLATE COVERING ORIFICE #2. WITHOUT A CYLINDER OR OPENING.



TEMPORARY OUTLET STRUCTURE MODIFICATIONS DETAIL
SCALE = NOT TO SCALE



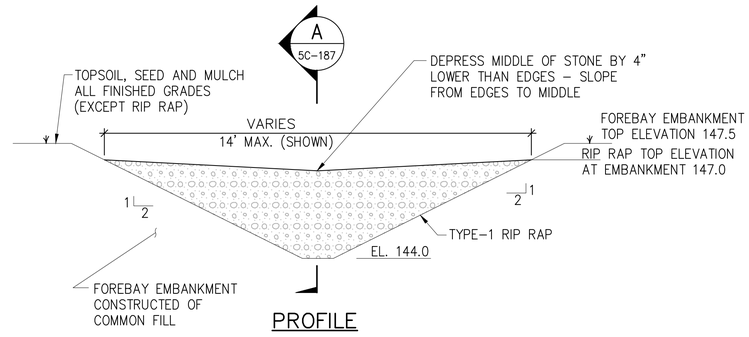
TOP SLAB VIEW

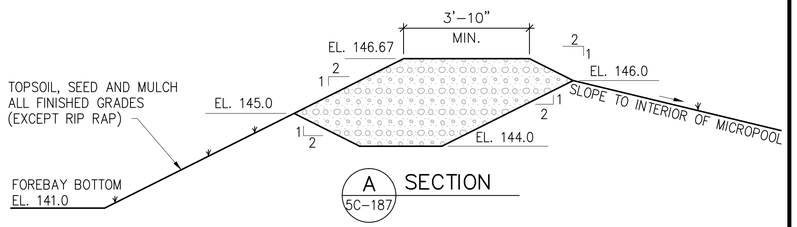


9 – BASIN OUTLET STRUCTURE DETAIL
SCALE: 3/4" = 1-0"

SEDIMENTATION BASIN NOTES:

1. CLEARING AND GRUBBING. AREA UNDER BERM SHALL BE CLEARED, GRUBBED AND STRIPPED OF ANY VEGETATION AND ROOT MAT. THE POOL AREA SHALL BE CLEARED, BUT NOT GRUBBED. UNLESS EXCAVATION TO CREATE A POOL IS REQUIRED.
2. EARTH BERM CONSTRUCTION. THE FILL MATERIAL FOR THE EARTH BERM SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL, OR OTHER NON-SUITABLE MATERIAL. THE EARTH BERM SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED IN 6" TO 8" LIFTS.
3. INSTALL SEDIMENTATION BASIN AT PERMANENT GRADES SHOWN EXCEPT FOR MICROPOOL AND FOREBAY BERM. INTERIOR SIDE SLOPES AT 4:1, EXTERIOR AT 3:1.
4. INSTALL OUTLET STRUCTURE WITH PERMANENT ORIFICES AND RISER GRATE AS SHOWN. COVER UPPER ORIFICE WITH ⅛" THICK STAINLESS STEEL PLATE. COVER LOWER ORIFICE WITH PLATE AND PIPE CONNECTION AS SHOWN.
5. INSTALL AT LEAST 3 SEDIMENTATION LEVEL INDICATORS IN BASIN. THESE CAN BE WOODEN STAKES WITH MARKS INDICATING LEVEL WHEN SEDIMENT MUST BE REMOVED.
6. WHEN SITE IS COMPLETE AND STABILIZED, EXCAVATE BASIN TO FINISHED GRADES INCLUDING MICROPOOL, AQUATIC BENCH, AND FOREBAY BERM WITH RIPRAP. REMOVE TEMPORARY PLATES FROM RISER. TOPSOIL SEED AND MULCH ENTIRE BASIN EXCEPT AQUATIC BENCH WHICH WILL BE PLANTED WITH ACCEPTABLE WETLAND FLORA.





10 – FOREBAY OUTLET WITH RIP RAP DETAIL
SCALE = NOT TO SCALE

SITE PLAN APPLICATION
MAY 2012

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RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
GRADING AND DRAINAGE DETAILS
SHEET 4

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 35 OF 77
DRAWING NO. **5C-187.00**

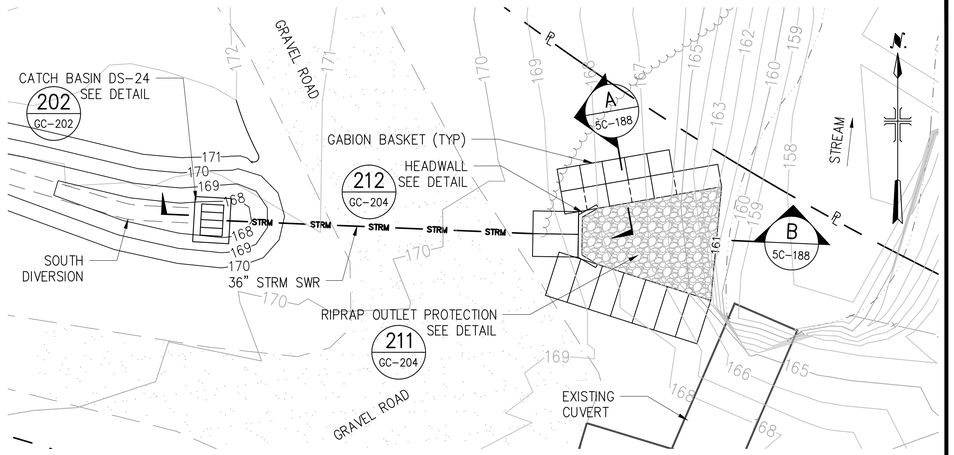
Last Save By Date and Time:shrestha\5/4/2012 10:58 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:54 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c187-00.dwg

PROTECTIVE FENCE STAKE-OUT DATA TABLE

TAG REF.	LOCATION	NORTHING	EASTING
1	PROTECTIVE FENCE	1,000,627.12	631,425.46
2	PROTECTIVE FENCE	1,000,659.81	631,407.73
3	PROTECTIVE FENCE	1,000,677.23	631,324.58
4	PROTECTIVE FENCE	1,000,674.85	631,252.84
5	PROTECTIVE FENCE	1,000,646.16	631,024.44
6	PROTECTIVE FENCE	1,000,624.13	630,838.53
7	PROTECTIVE FENCE	1,000,545.30	630,792.00
8	PROTECTIVE FENCE	1,000,460.70	630,742.64
9	PROTECTIVE FENCE	1,000,360.28	630,680.88
10	PROTECTIVE FENCE	1,000,277.79	630,675.95
11	PROTECTIVE FENCE	1,000,122.91	630,612.45
12	PROTECTIVE FENCE	1,000,046.42	630,582.27
13	PROTECTIVE FENCE	999,967.43	630,576.20
14	PROTECTIVE FENCE	999,857.76	630,582.33
15	PROTECTIVE FENCE	999,803.84	630,607.75
16	PROTECTIVE FENCE	999,769.77	630,635.32
17	PROTECTIVE FENCE	999,748.53	630,693.79
18	PROTECTIVE FENCE	999,747.59	630,716.88
19	PROTECTIVE FENCE	999,669.98	630,854.26
20	PROTECTIVE FENCE	999,631.07	630,919.95
21	PROTECTIVE FENCE	999,596.79	631,073.41
22	PROTECTIVE FENCE	999,566.09	631,200.01
23	PROTECTIVE FENCE	999,552.41	631,251.70
24	PROTECTIVE FENCE	999,496.24	631,442.10
25	PROTECTIVE FENCE	999,471.26	631,475.91
26	PROTECTIVE FENCE	999,449.25	631,554.18
27	PROTECTIVE FENCE	999,414.60	631,665.25
28	PROTECTIVE FENCE	999,393.05	631,762.73
29	PROTECTIVE FENCE	999,424.90	631,769.76
30	PROTECTIVE FENCE	999,448.78	631,646.97
31	PROTECTIVE FENCE	999,497.14	631,499.64
32	PROTECTIVE FENCE	999,502.12	631,501.00
33	PROTECTIVE FENCE	999,506.15	631,500.97
34	PROTECTIVE FENCE	999,520.75	631,504.86
35	PROTECTIVE FENCE	999,528.07	631,465.05
36	PROTECTIVE FENCE	999,561.21	631,440.68
37	PROTECTIVE FENCE	999,641.25	631,370.93
38	PROTECTIVE FENCE	999,729.12	631,335.09
39	PROTECTIVE FENCE	999,794.57	631,307.76
40	PROTECTIVE FENCE	999,807.28	631,306.35
41	PROTECTIVE FENCE	999,872.04	631,328.32
42	PROTECTIVE FENCE	999,884.03	631,350.03
43	PROTECTIVE FENCE	999,805.89	631,557.37

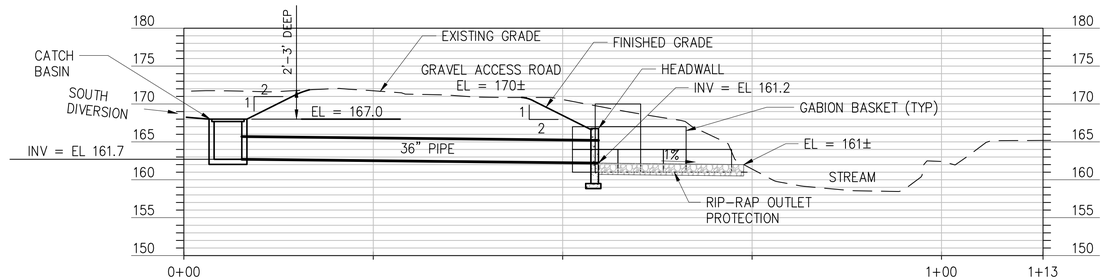
PROTECTIVE FENCE STAKE-OUT DATA TABLE

TAG REF.	LOCATION	NORTHING	EASTING
44	PROTECTIVE FENCE	999,815.54	631,573.01
45	PROTECTIVE FENCE	999,851.64	631,591.90
46	PROTECTIVE FENCE	999,836.13	631,624.06
47	PROTECTIVE FENCE	999,854.01	631,633.01
48	PROTECTIVE FENCE	999,869.37	631,601.17
49	PROTECTIVE FENCE	999,947.32	631,641.97
50	PROTECTIVE FENCE	999,990.73	631,693.59
51	PROTECTIVE FENCE	999,957.13	631,715.04
52	PROTECTIVE FENCE	999,959.83	631,749.80
53	PROTECTIVE FENCE	999,978.45	631,780.13
54	PROTECTIVE FENCE	999,995.05	631,817.98
55	PROTECTIVE FENCE	999,968.59	631,867.22
56	PROTECTIVE FENCE	999,991.38	631,883.02
57	PROTECTIVE FENCE	1,000,016.66	631,854.98
58	PROTECTIVE FENCE	1,000,025.42	631,862.35
59	PROTECTIVE FENCE	1,000,047.96	631,885.15
60	PROTECTIVE FENCE	1,000,066.61	631,906.56
61	PROTECTIVE FENCE	1,000,150.78	631,936.98
62	PROTECTIVE FENCE	1,000,449.93	632,017.89
63	PROTECTIVE FENCE	1,000,423.68	631,795.31
64	PROTECTIVE FENCE	1,000,415.80	631,737.59
65	PROTECTIVE FENCE	1,000,398.75	631,630.18
66	PROTECTIVE FENCE	1,000,386.36	631,547.98
67	PROTECTIVE FENCE	1,000,382.08	631,513.68
68	PROTECTIVE FENCE	1,000,479.58	631,507.10
69	PROTECTIVE FENCE	1,000,517.86	631,459.68
70	PROTECTIVE FENCE	1,000,549.04	631,429.78
71	PROTECTIVE FENCE	999,529.48	631,432.11
72	PROTECTIVE FENCE	999,542.34	631,424.55
73	PROTECTIVE FENCE	999,653.26	631,339.32
74	PROTECTIVE FENCE	999,782.52	631,278.77
75	PROTECTIVE FENCE	999,790.24	631,269.47
76	PROTECTIVE FENCE	999,825.09	631,168.43
77	PROTECTIVE FENCE	999,828.73	631,157.89
78	PROTECTIVE FENCE	999,827.64	631,144.92
79	PROTECTIVE FENCE	999,730.24	631,077.24
80	PROTECTIVE FENCE	999,683.92	630,975.76
81	PROTECTIVE FENCE	999,640.03	631,031.95
82	PROTECTIVE FENCE	999,598.36	631,187.07
83	PROTECTIVE FENCE	999,592.10	631,210.39
84	PROTECTIVE FENCE	999,591.09	631,213.94
85	PROTECTIVE FENCE	999,585.92	631,237.11
86	PROTECTIVE FENCE	999,529.48	631,427.39



GABION BASKET RETAINING WALL PLAN

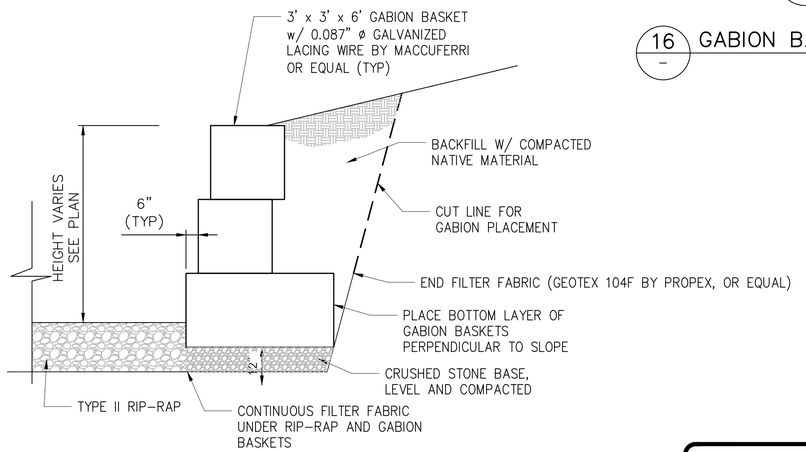
SCALE: 1"=10'



B 5C-188 SECTION

SCALE: 1"=10'

16 – GABION BASKET RETAINING WALL DETAIL



A 5C-188 SECTION

NOT TO SCALE

1"=10' 0 10 20 FT.

SITE PLAN APPLICATION

MAY 2012

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RWB BYPASS TUNNEL
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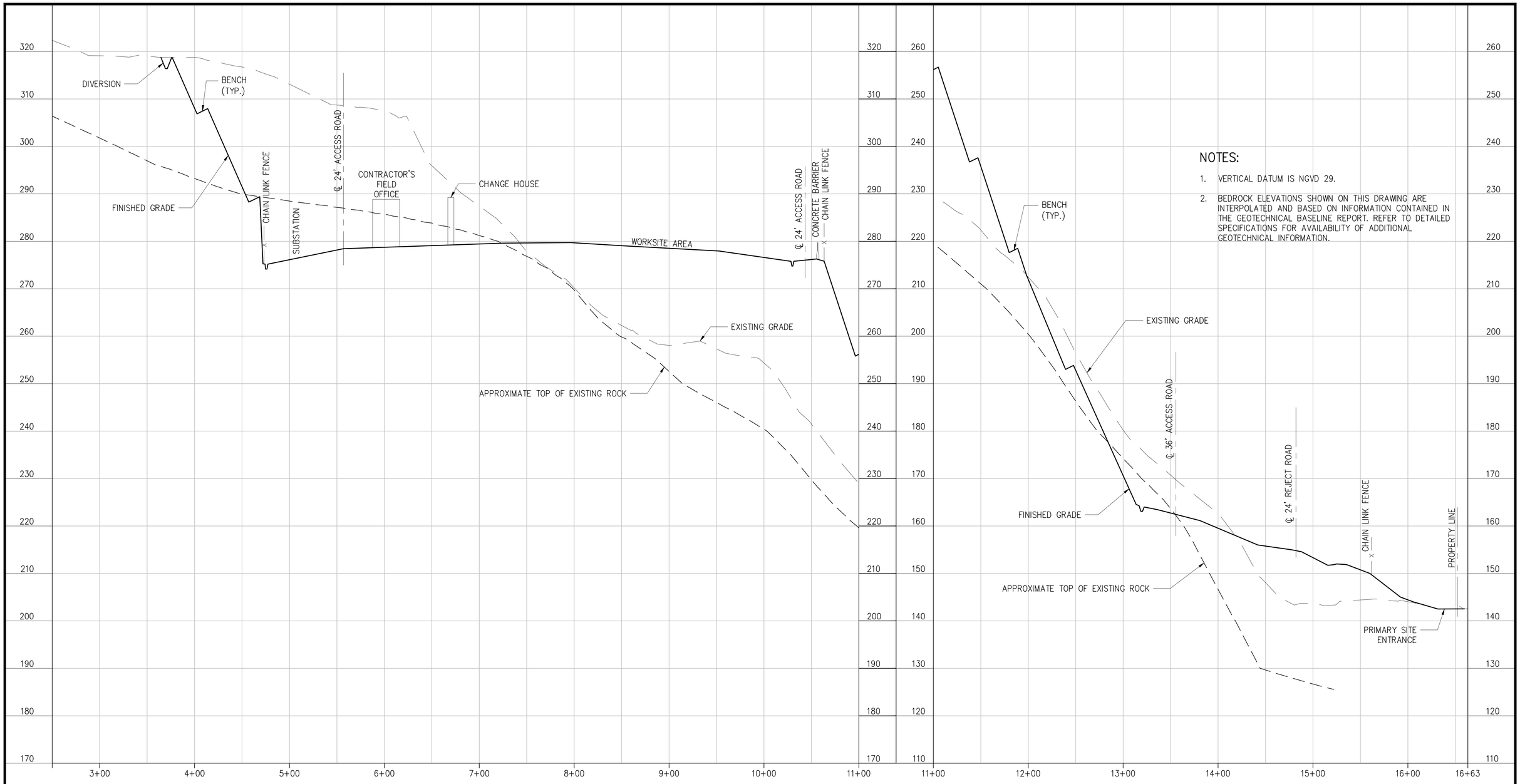
SHAFT 5B
GENERAL CIVIL
GRADING AND DRAINAGE DETAILS
SHEET 5

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 36 OF 77
DRAWING NO. **5C-188.00**



NOTES:

1. VERTICAL DATUM IS NGVD 29.
2. BEDROCK ELEVATIONS SHOWN ON THIS DRAWING ARE INTERPOLATED AND BASED ON INFORMATION CONTAINED IN THE GEOTECHNICAL BASELINE REPORT. REFER TO DETAILED SPECIFICATIONS FOR AVAILABILITY OF ADDITIONAL GEOTECHNICAL INFORMATION.

A 5C-100 SECTION
SCALE: 1"=50' H; 1"=10' V

1"=50' HORIZONTAL 0 50 100 FT.
1"=10' VERTICAL 0 10 20 FT.

SITE PLAN APPLICATION
MAY 2012

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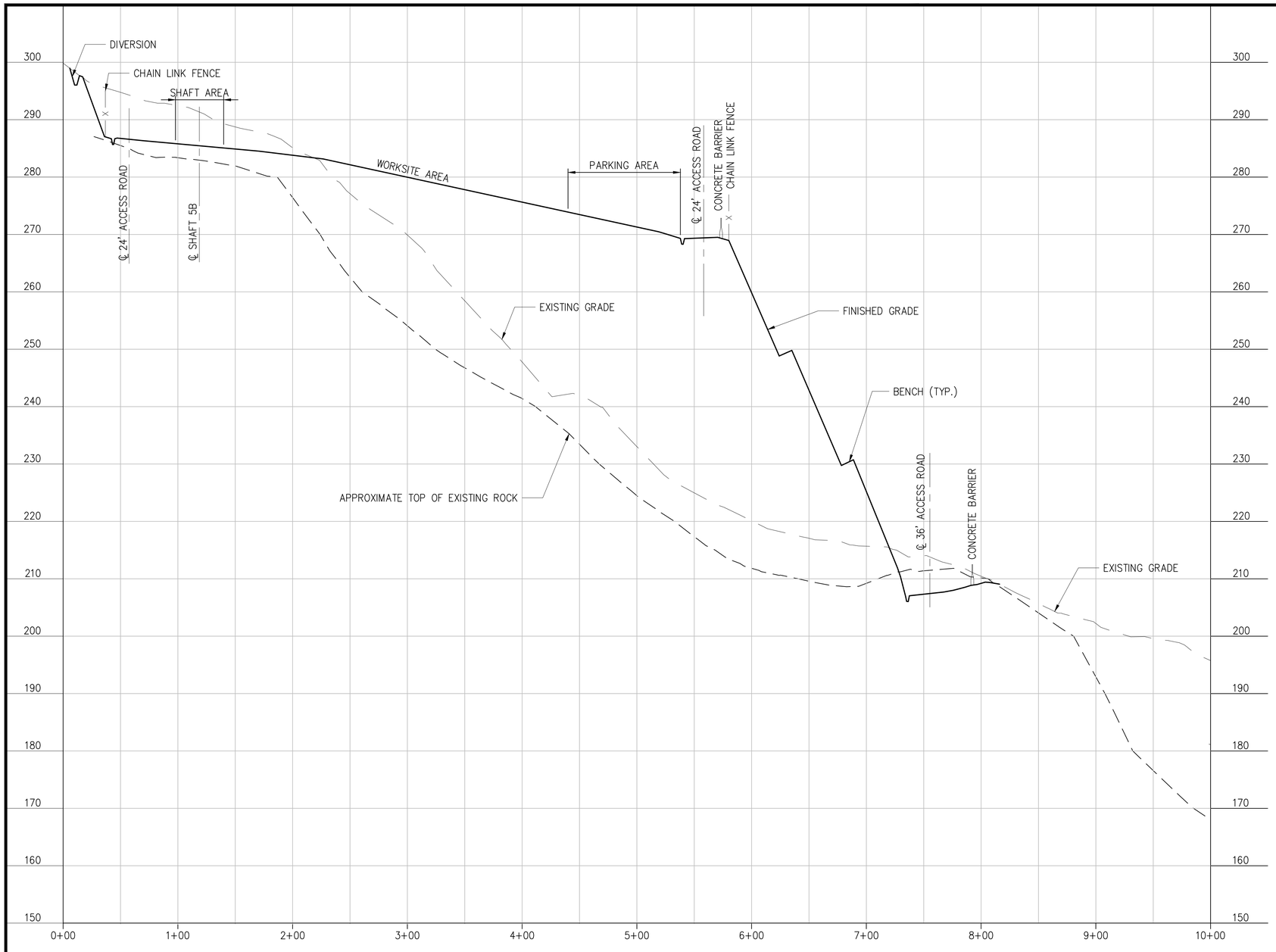
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
GRADING SECTIONS
SHEET 1

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 37 OF 77
DRAWING NO. **5C-190.00**



B / 5C-100 SECTION
SCALE: 1"=50' H; 1"=10' V

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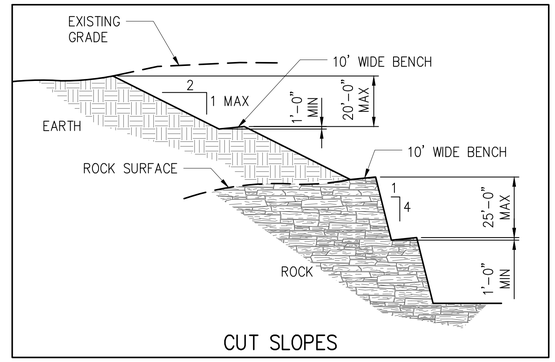
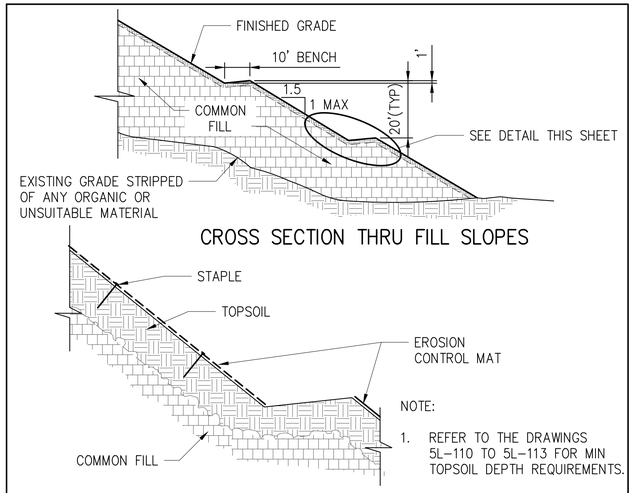


CUT SLOPES



FILL SLOPE
(FILL SLOPES STEEPER THAN 2:1)

8 / - SLOPE BENCHING DETAIL
SCALE = NOT TO SCALE

1"=50' HORIZONTAL 0 50 100 FT.
1"=10' VERTICAL 0 10 20 FT.

SITE PLAN APPLICATION
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NYC Environmental Protection

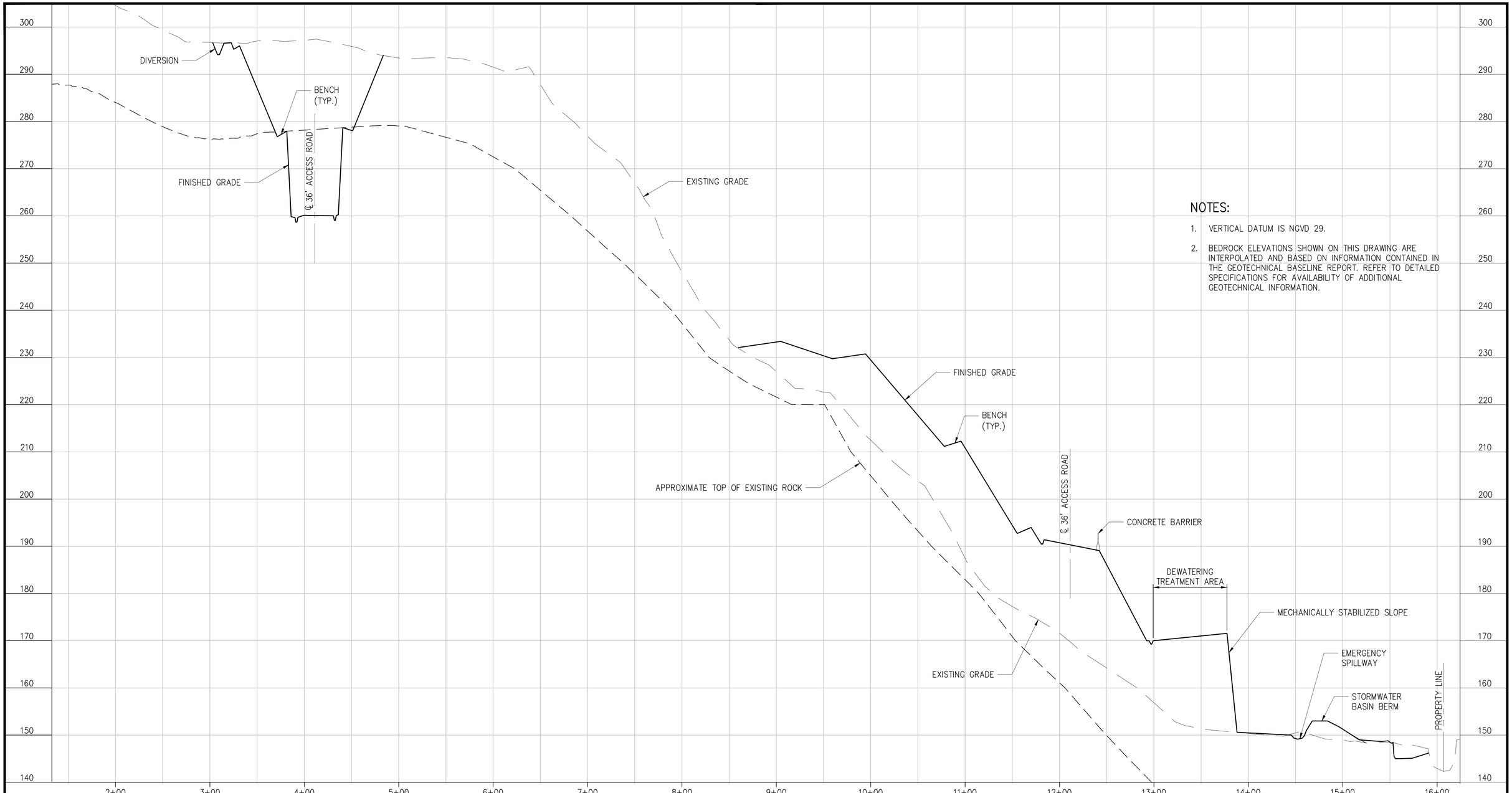
PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
GRADING SECTIONS
SHEET 2

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 38 OF 77
DRAWING NO. **5C-191.00**

Last Save By Date and Time: shrestha\5/4/2012 11:23 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:55 PM\Author: shrestha\File Location: i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c191-00.dwg



NOTES:

1. VERTICAL DATUM IS NGVD 29.
2. BEDROCK ELEVATIONS SHOWN ON THIS DRAWING ARE INTERPOLATED AND BASED ON INFORMATION CONTAINED IN THE GEOTECHNICAL BASELINE REPORT. REFER TO DETAILED SPECIFICATIONS FOR AVAILABILITY OF ADDITIONAL GEOTECHNICAL INFORMATION.

1"=50' HORIZONTAL 0 50 100 FT.

1"=10' VERTICAL 0 10 20 FT.

C / 5C-100 SECTION

SCALE: 1"=50' H; 1"=10' V

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
IT IS A REDUCED PRINT.
SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: A.S.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

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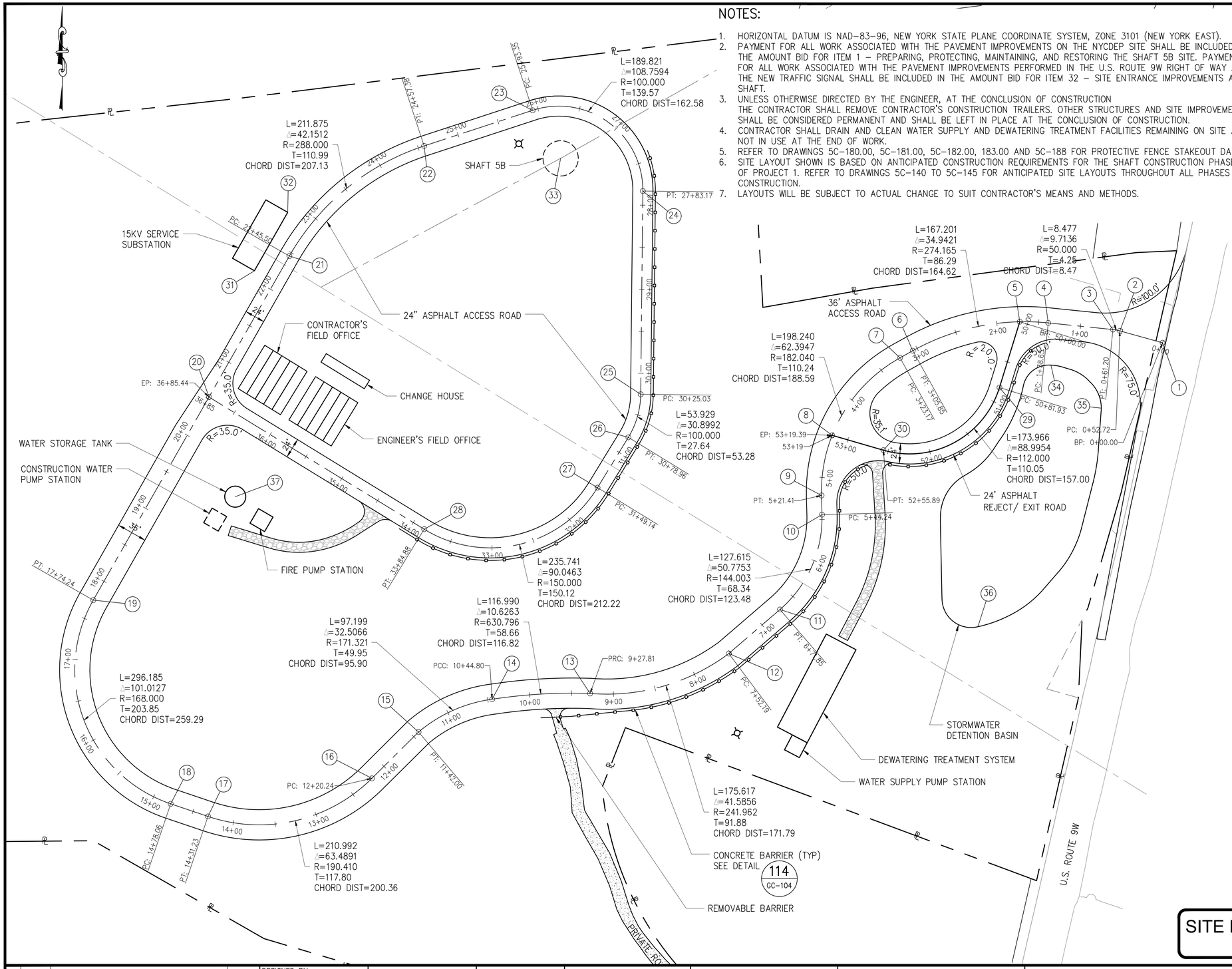
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
GRADING SECTIONS
SHEET 3

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 39 OF 77
DRAWING NO. **5C–192.00**

NOTES:

1. HORIZONTAL DATUM IS NAD–83–96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101 (NEW YORK EAST).
2. PAYMENT FOR ALL WORK ASSOCIATED WITH THE PAVEMENT IMPROVEMENTS ON THE NYCDEP SITE SHALL BE INCLUDED IN THE AMOUNT BID FOR ITEM 1 – PREPARING, PROTECTING, MAINTAINING, AND RESTORING THE SHAFT 5B SITE. PAYMENT FOR ALL WORK ASSOCIATED WITH THE PAVEMENT IMPROVEMENTS PERFORMED IN THE U.S. ROUTE 9W RIGHT OF WAY AND THE NEW TRAFFIC SIGNAL SHALL BE INCLUDED IN THE AMOUNT BID FOR ITEM 32 – SITE ENTRANCE IMPROVEMENTS AT SHAFT.
3. UNLESS OTHERWISE DIRECTED BY THE ENGINEER, AT THE CONCLUSION OF CONSTRUCTION THE CONTRACTOR SHALL REMOVE CONTRACTOR'S CONSTRUCTION TRAILERS. OTHER STRUCTURES AND SITE IMPROVEMENTS SHALL BE CONSIDERED PERMANENT AND SHALL BE LEFT IN PLACE AT THE CONCLUSION OF CONSTRUCTION.
4. CONTRACTOR SHALL DRAIN AND CLEAN WATER SUPPLY AND DEWATERING TREATMENT FACILITIES REMAINING ON SITE AND NOT IN USE AT THE END OF WORK.
5. REFER TO DRAWINGS 5C–180.00, 5C–181.00, 5C–182.00, 183.00 AND 5C–188 FOR PROTECTIVE FENCE STAKEOUT DATA.
6. SITE LAYOUT SHOWN IS BASED ON ANTICIPATED CONSTRUCTION REQUIREMENTS FOR THE SHAFT CONSTRUCTION PHASE OF PROJECT 1. REFER TO DRAWINGS 5C–140 TO 5C–145 FOR ANTICIPATED SITE LAYOUTS THROUGHOUT ALL PHASES OF CONSTRUCTION.
7. LAYOUTS WILL BE SUBJECT TO ACTUAL CHANGE TO SUIT CONTRACTOR'S MEANS AND METHODS.



STAKE–OUT DATA TABLE

TAG REF.	STRUCTURE	LOCATION	NORTHING	EASTING
1	MAIN ROAD CL	END CL	1,000,340.02	631,989.52
2	MAIN ROAD CL	PC CL	1,000,354.17	631,938.74
3	MAIN ROAD CL	PT CL	1,000,355.75	631,930.42
4	MAIN ROAD CL	PC CL	1,000,363.66	631,853.37
5	MAIN ROAD CL	PI CL	1,000,365.03	631,819.49
6	MAIN ROAD CL	PT CL	1,000,330.53	631,692.11
7	MAIN ROAD CL	PC CL	1,000,322.11	631,676.98
8	MAIN ROAD CL	PI CL	1,000,229.90	631,596.15
9	MAIN ROAD CL	PT CL	1,000,158.33	631,583.48
10	MAIN ROAD CL	PC CL	1,000,135.52	631,584.07
11	MAIN ROAD CL	PT CL	1,000,022.64	631,534.01
12	MAIN ROAD CL	PC CL	999,970.25	631,473.11
13	MAIN ROAD CL	PRC CL	999,922.79	631,308.00
14	MAIN ROAD CL	PCC CL	999,915.91	631,191.38
15	MAIN ROAD CL	PT CL	999,876.91	631,103.77
16	MAIN ROAD CL	PC CL	999,821.76	631,048.27
17	MAIN ROAD CL	PT CL	999,776.46	630,853.10
18	MAIN ROAD CL	PC CL	999,791.45	630,808.73
19	MAIN ROAD CL	PT CL	1,000,033.81	630,716.58
20	MAIN ROAD CL	PI CL	1,000,275.43	630,854.33
21	MAIN ROAD CL	PC CL	1,000,443.21	630,949.99
22	MAIN ROAD CL	PT CL	1,000,574.22	631,110.42
23	MAIN ROAD CL	PC CL	1,000,616.60	631,239.62
24	MAIN ROAD CL	PT CL	1,000,520.54	631,370.78
25	MAIN ROAD CL	PC CL	1,000,278.69	631,368.25
26	MAIN ROAD CL	PT CL	1,000,227.49	631,353.52
27	MAIN ROAD CL	PC CL	1,000,167.65	631,316.86
28	MAIN ROAD CL	PT CL	1,000,118.19	631,110.48
29	REJECT ROAD CL	PC CL	1,000,286.75	631,795.31
30	REJECT ROAD CL	PT CL	1,000,212.23	631,657.13
31	15KV SERVICE SUBSTATION	NE CORNER	1,000,425.69	630,908.43
32	15KV SERVICE SUBSTATION	SE CORNER	1,000,495.19	630,948.05
33	SHAFT 5B	CENTER	1,000,559.46	631,272.94
34	BASIN	NW	1,000,313.38	631,856.65
35	BASIN	NE	1,000,262.24	631,916.48
36	BASIN	S	1,000,002.18	631,769.72
37	WATER STORAGE TANK	CENTER	1,000,156.92	630,885.58

1"=60' 0 60 120 FT.

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: A.S.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

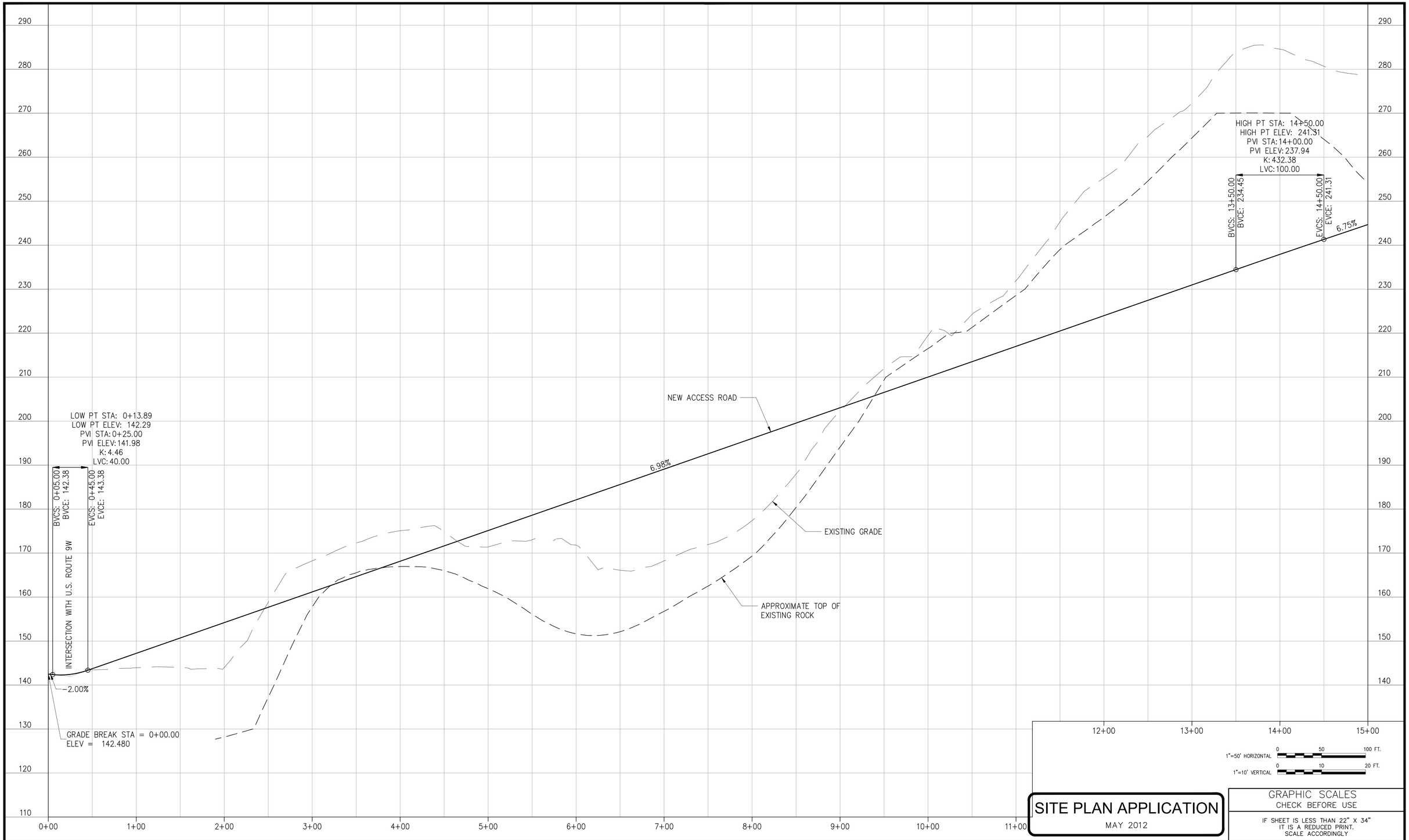
NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
HORIZONTAL CONTROL AND PAVING PLAN

DATE: 05/31/2012
SCALE: 1"=60'
SHEET NO: 40 OF 77
DRAWING NO. **5C–210.00**



1"=50' HORIZONTAL 0 50 100 FT.

1"=10' VERTICAL 0 10 20 FT.

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES
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SCALE ACCORDINGLY

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REVISIONS

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DESIGN LEAD: MICHAEL WOODEN, P.E.

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
ROAD PROFILES
SHEET 1

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 41 OF 77
DRAWING NO. **5C–220.00**

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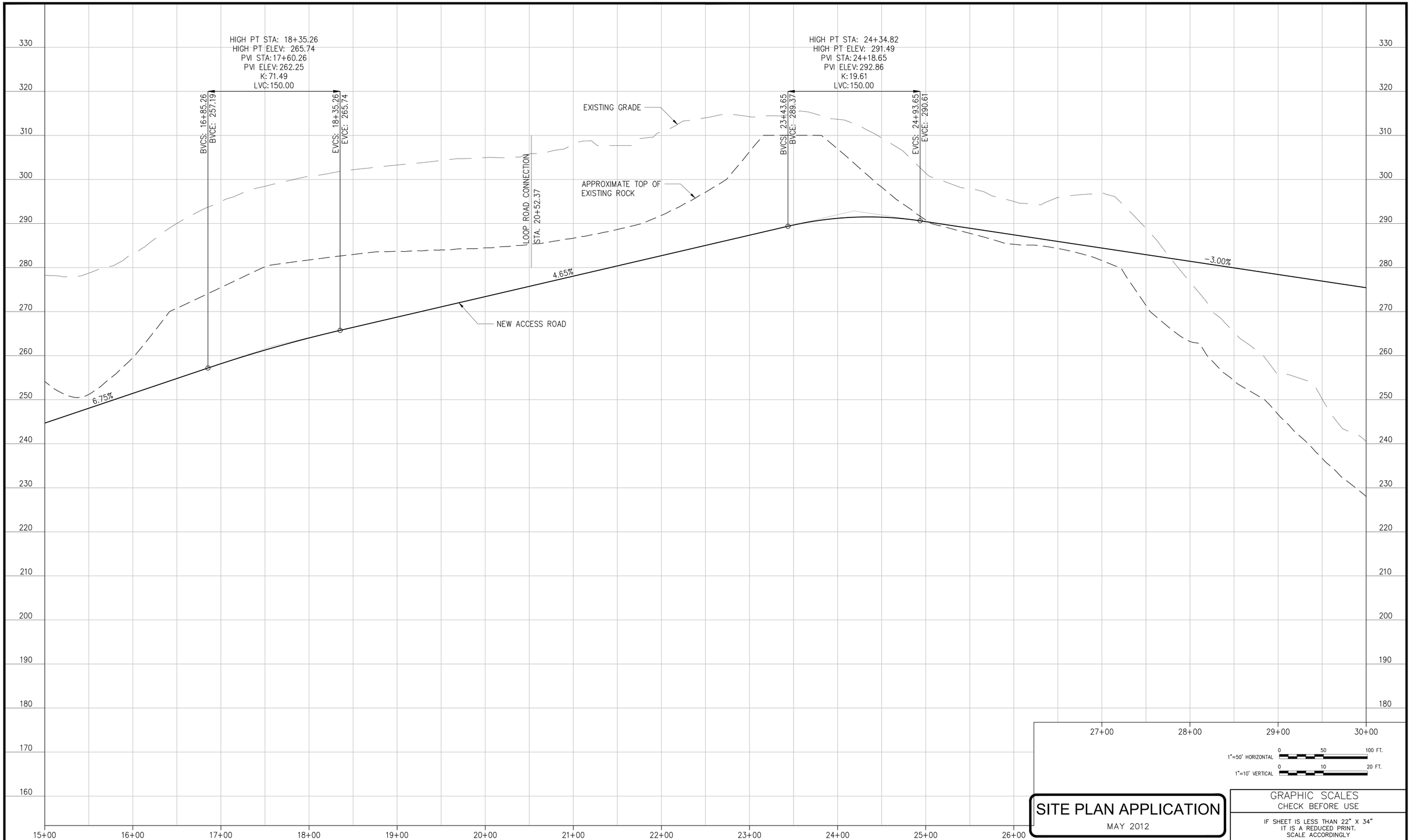
Date Plotted: 5/25/2012 3:56 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c220-00.dwg



SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

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SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: R.B.T.
DRAWN BY: A.S.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM a joint venture PIRNIE in association with AKRF

CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

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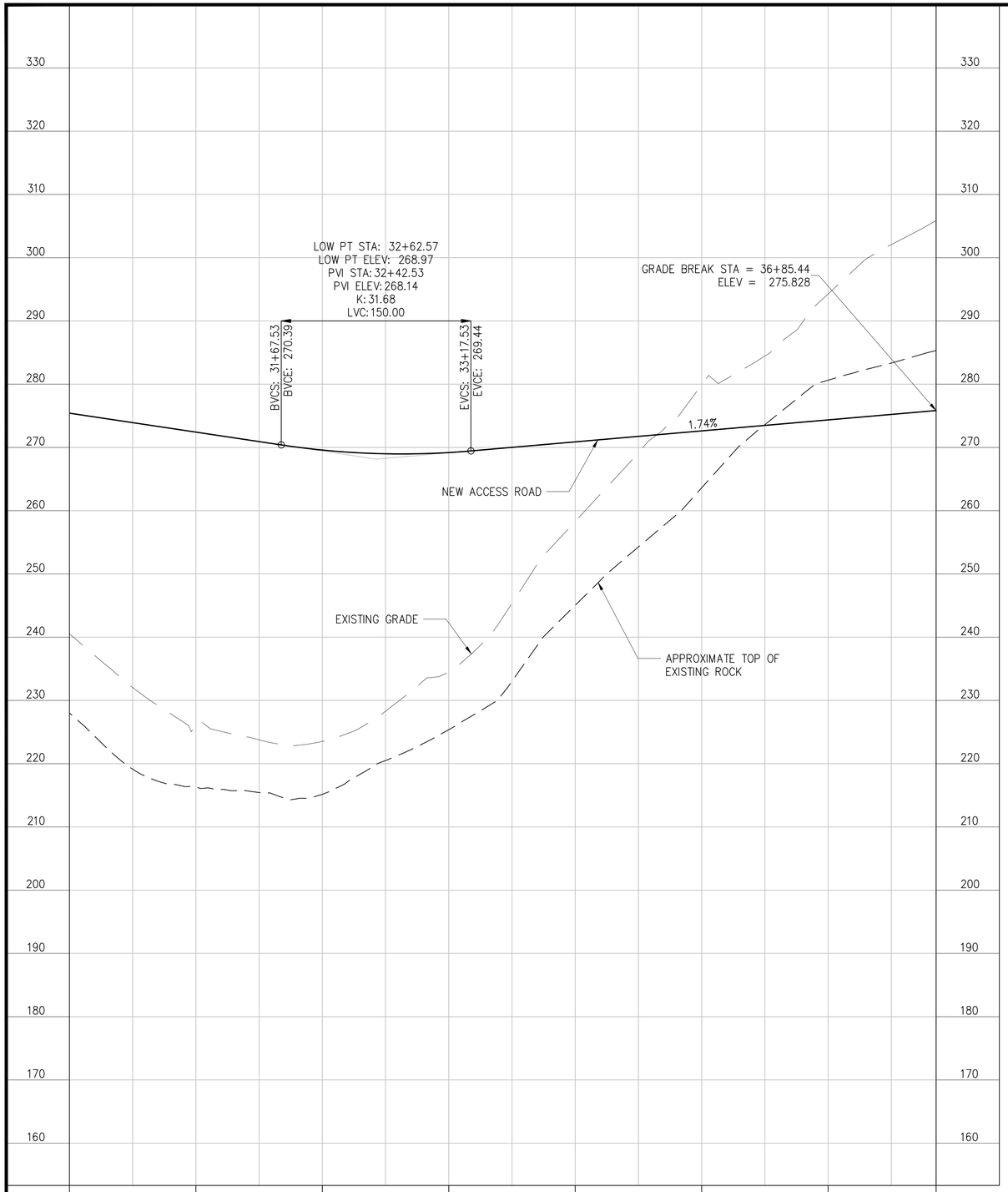
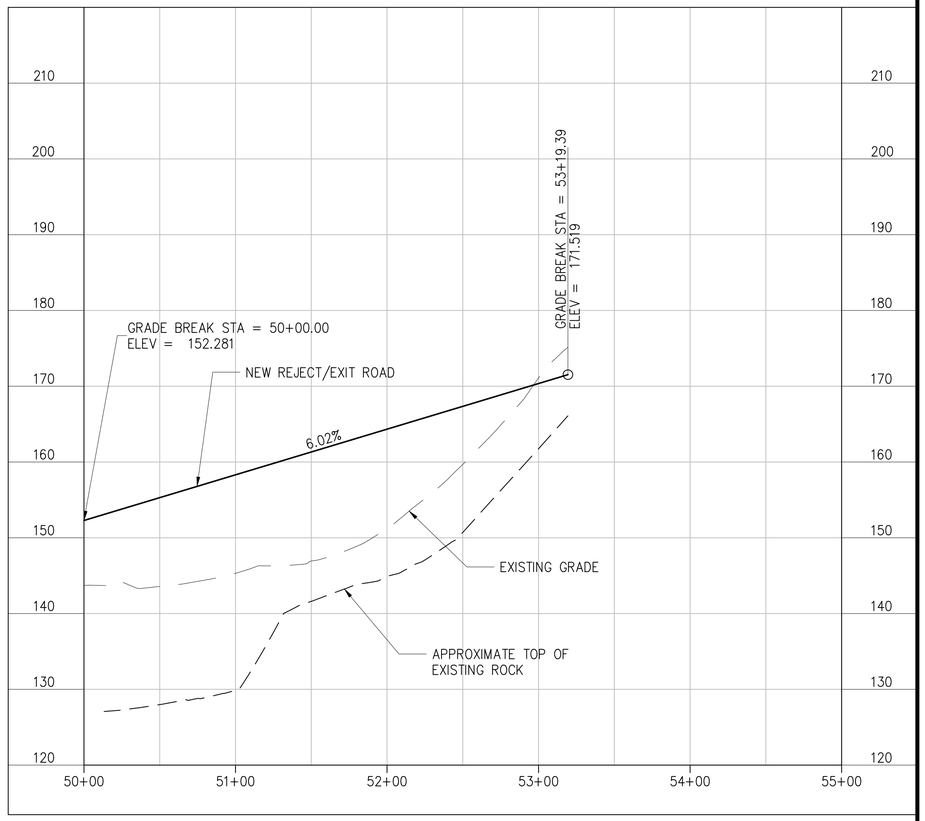
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
ROAD PROFILES
SHEET 2

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 42 OF 77
DRAWING NO. **5C–221.00**

Last Save By Date and Time:shrestha\5/4/2012 11:27 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:56 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c221-00.dwg





1"=50' HORIZONTAL 0 50 100 FT.

1"=10' VERTICAL 0 10 20 FT.

SITE PLAN APPLICATION

MAY 2012

GRAPHIC SCALES
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DRAWN BY: A.S.
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NYC Environmental Protection

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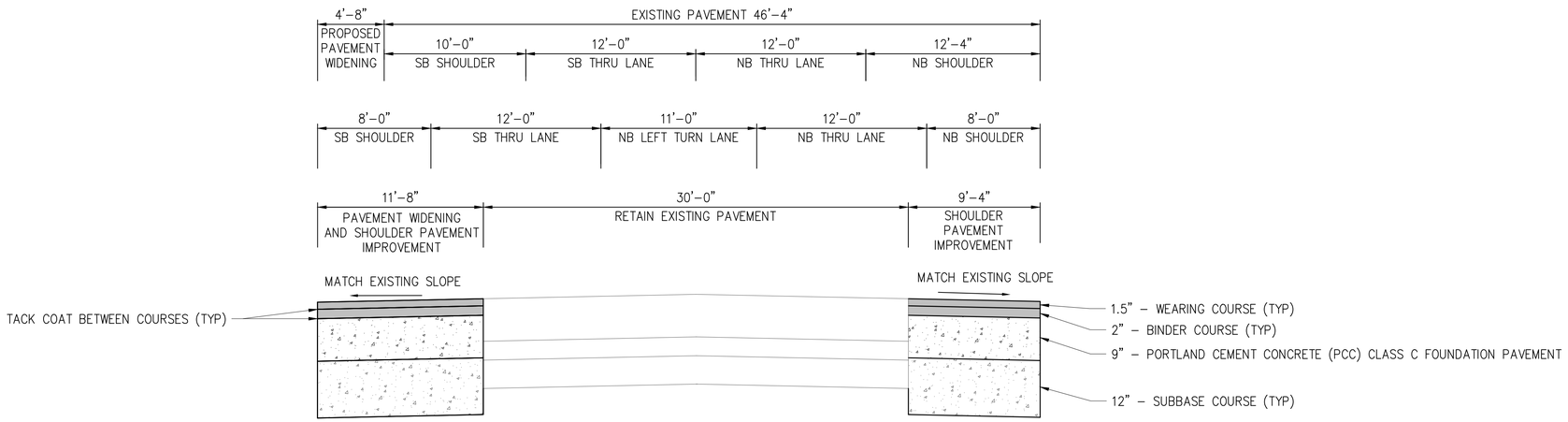
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

"WARNING–IT IS A VIOLATION, OF THE NEW YORK STATE EDUCATION LAW, SECTION, 7209.2, FOR ANY PERSON, UNLESS (S)HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION, LAW, SECTION, 7209.2."

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
ROAD PROFILES
SHEET 3

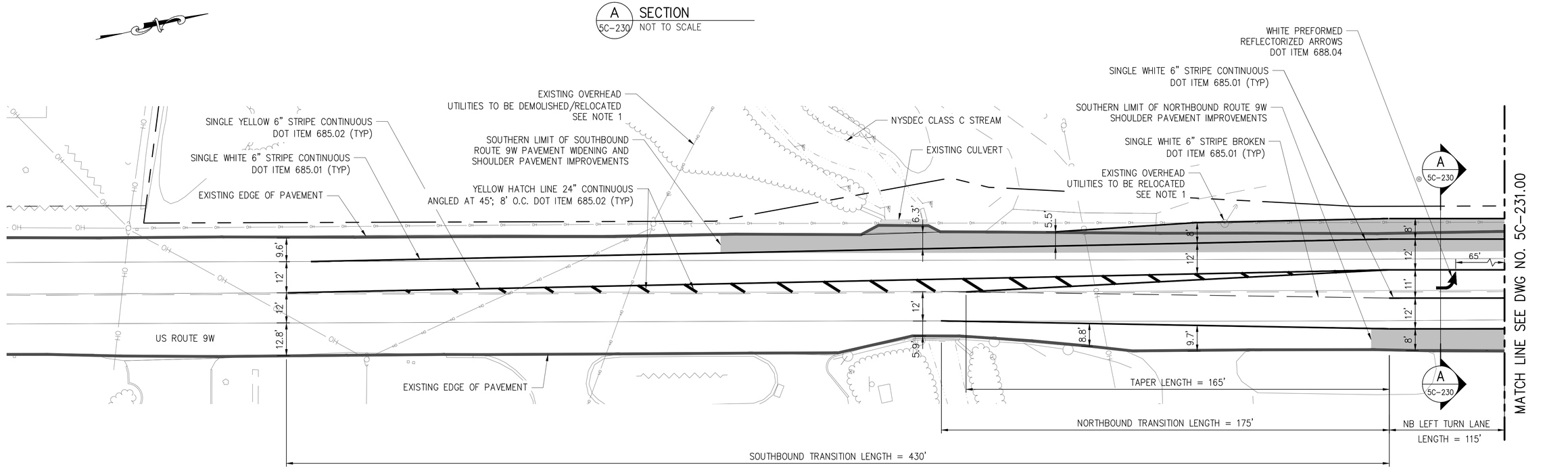
DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 43 OF 77
DRAWING NO. **5C–222.00**



A 5C-230 SECTION
NOT TO SCALE

NOTES:

1. COORDINATE RELOCATION OF OVERHEAD UTILITY LINES WITH RESPECTIVE OWNERS INCLUDING, BUT NOT LIMITED TO, ELECTRIC AND TELEPHONE. REFER TO DRAWINGS 5C-170.00 TO 5C-173.00 FOR SITE DEMOLITION & CLEARING PLANS.
2. NOT USED.
3. NOT USED.
4. SIGNAL AHEAD SIGN (W3-3) W3-3 SHALL BE PLACED ±830' IN ADVANCE OF THE ACTUAL SIGNAL IN BOTH DIRECTIONS.
5. ALL EXISTING PAVEMENT MARKINGS TO BE REMOVED AS SPECIFIED IN DOT ITEM 619.0801-REMOVE EXISTING PAVEMENT MARKING STRIPES.



PLAN
SCALE: 1"=20'

1"=20' 0 20 40 FT.

Hirani Group

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE
IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.
		REVISIONS	

DESIGNED BY: P.P./J.P.
DRAWN BY: S.P.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM a joint venture PIRNIE in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

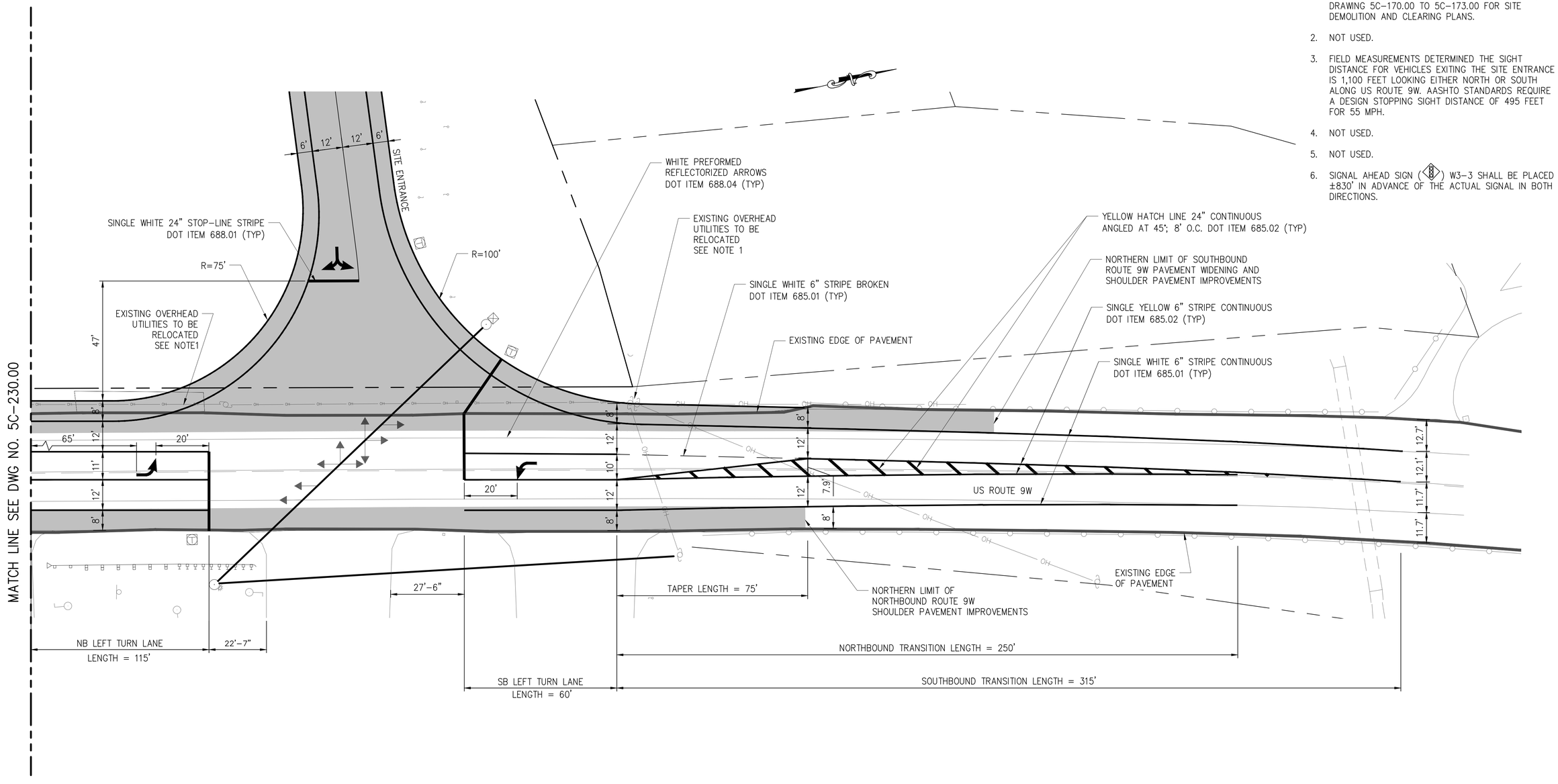
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
SITE ENTRANCE IMPROVEMENTS
SHEET 1

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 44 OF 77
DRAWING NO. **5C-230.00**

Last Save By Date and Time:shrestha\5/4/2012 11:30 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:56 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c230-00.dwg

NOTES:

1. COORDINATE RELOCATION OF OVERHEAD UTILITY LINES WITH RESPECTIVE OWNERS INCLUDING, BUT NOT LIMITED TO, ELECTRIC AND TELEPHONE. REFER TO DRAWING 5C-170.00 TO 5C-173.00 FOR SITE DEMOLITION AND CLEARING PLANS.
2. NOT USED.
3. FIELD MEASUREMENTS DETERMINED THE SIGHT DISTANCE FOR VEHICLES EXITING THE SITE ENTRANCE IS 1,100 FEET LOOKING EITHER NORTH OR SOUTH ALONG US ROUTE 9W. AASHTO STANDARDS REQUIRE A DESIGN STOPPING SIGHT DISTANCE OF 495 FEET FOR 55 MPH.
4. NOT USED.
5. NOT USED.
6. SIGNAL AHEAD SIGN (W3-3) SHALL BE PLACED ±830' IN ADVANCE OF THE ACTUAL SIGNAL IN BOTH DIRECTIONS.



1"=20' 0 20 40 FT.

Hirani Group

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE

IF SHEET IS LESS THAN 22" X 34"
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SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

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DRAWN BY: S.P.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

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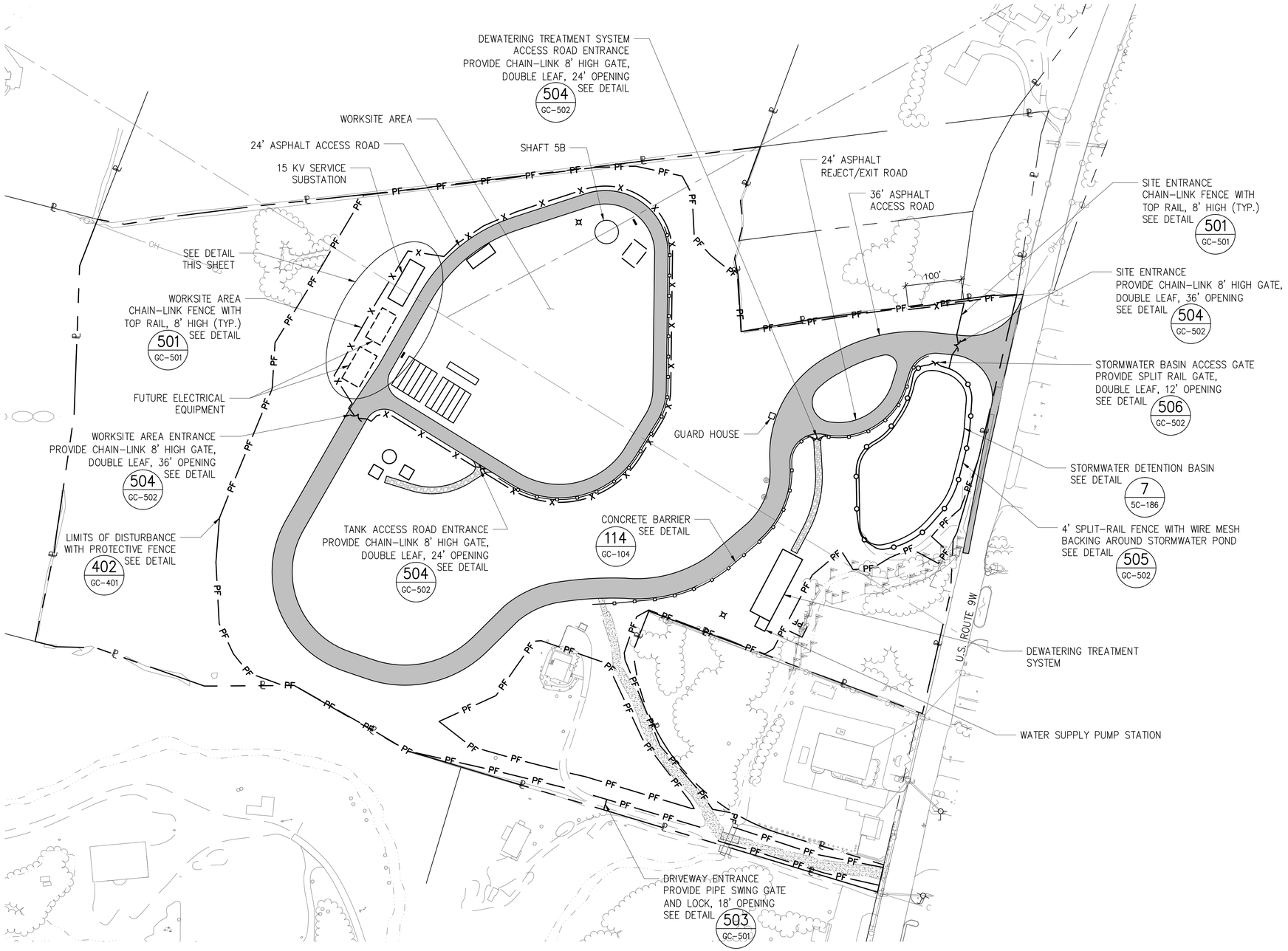
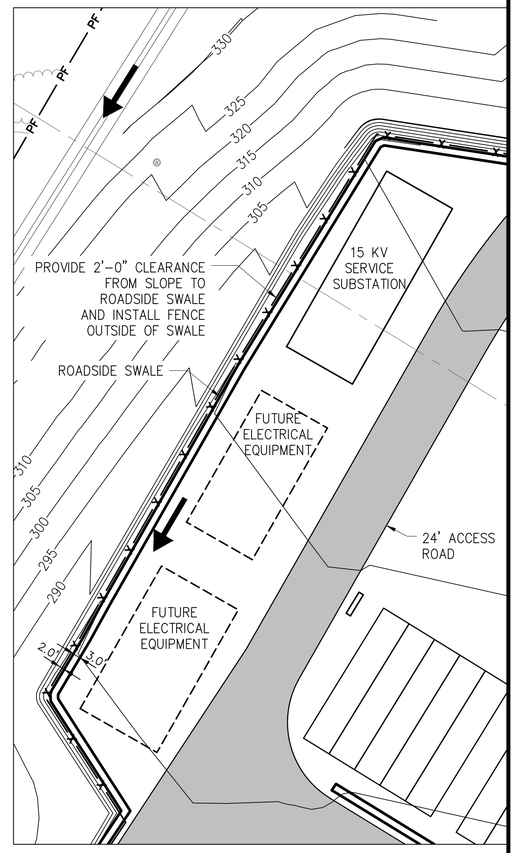
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
SITE ENTRANCE IMPROVEMENTS
SHEET 2

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 45 OF 77
DRAWING NO. **5C-231.00**





NOTES:

1. THE FINAL LOCATION OF THE GUARD HOUSE IS SUBJECT TO FIELD APPROVAL.
2. REFER TO STANDARD FENCE DETAIL DRAWINGS GC-501 AND GC-502 FOR ALL FENCING NOTES AND DETAILS.
3. SITE LAYOUT SHOWN IS BASED ON ANTICIPATED CONSTRUCTION REQUIREMENTS FOR THE SHAFT CONSTRUCTION PHASE OF PROJECT 1. REFER TO DRAWINGS 5C-140 TO 5C-145 FOR ANTICIPATED SITE LAYOUTS THROUGHOUT ALL PHASES OF CONSTRUCTION.
4. LAYOUTS WILL BE SUBJECT TO ACTUAL CHANGE TO SUIT CONTRACTOR'S MEANS AND METHODS.

1"=100' 0 100 200 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE
IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: P.J.P.
DRAWN BY: S.P.
CHECKED BY: S.H.H.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

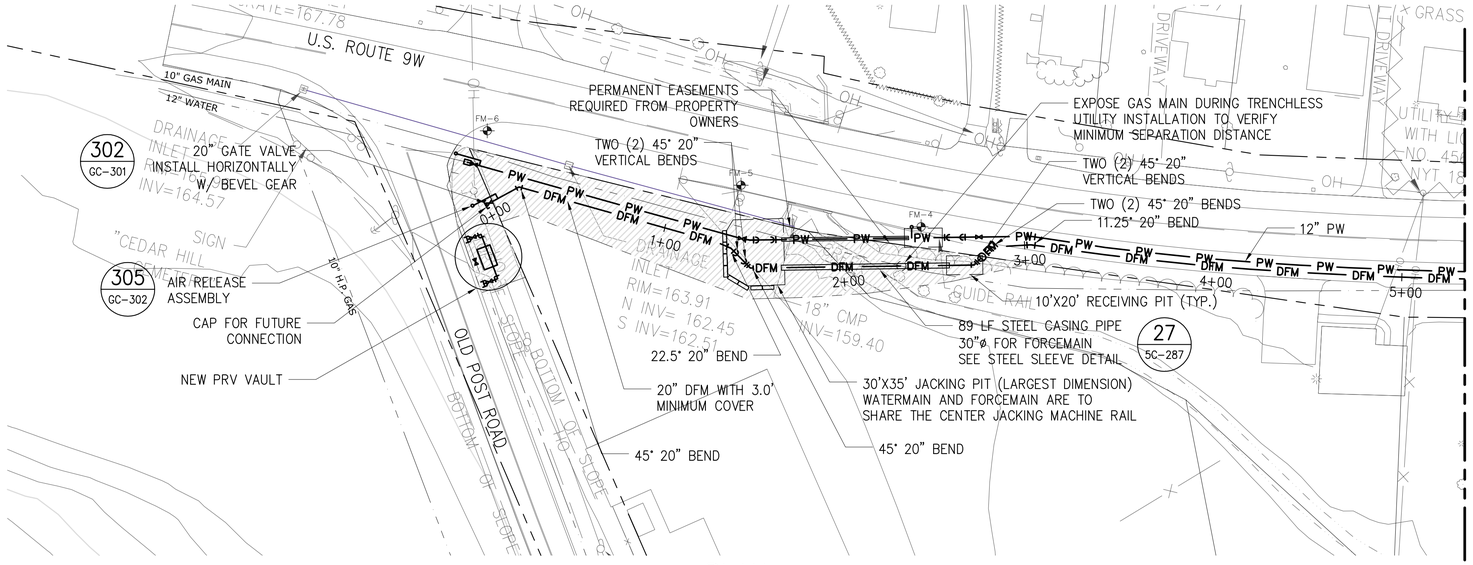
PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
CONSTRUCTION SITE FENCING AND ACCESS CONTROL PLAN

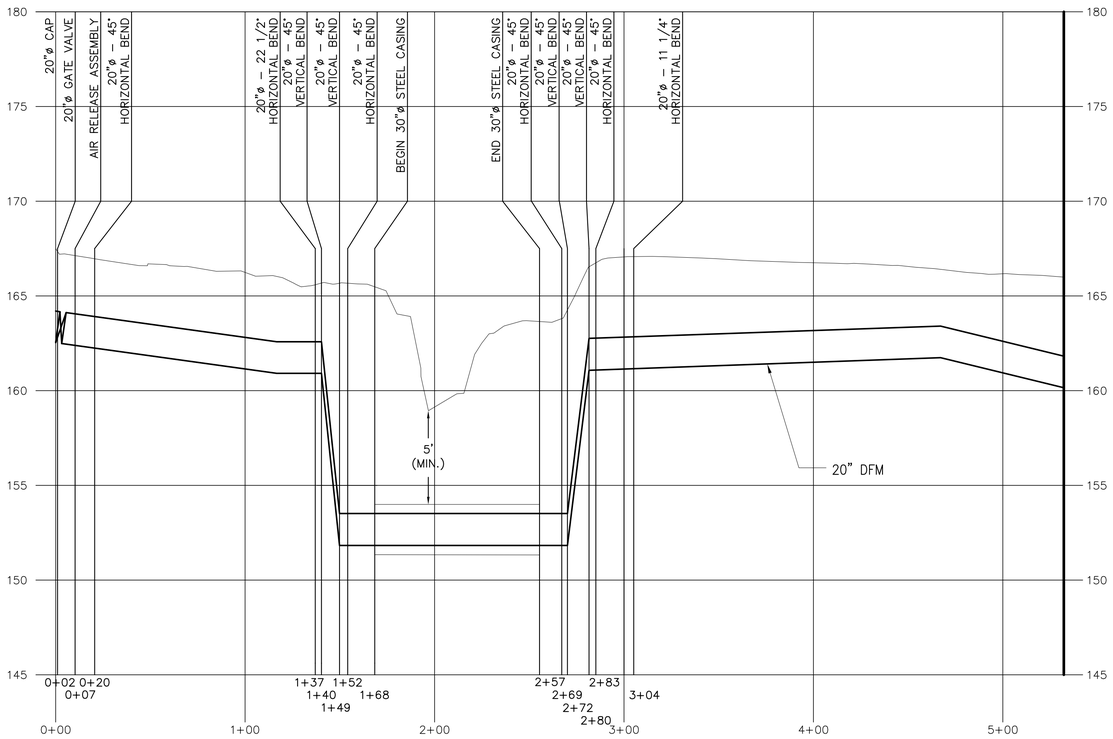
DATE: 05/31/2012
SCALE: 1"=100'
SHEET NO: 46 OF 77
DRAWING NO. **5C-250.00**

Last Save By Date and Time: shrestha\5/4/2012 10:50 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:57 PM\Author: shrestha\File Location: i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\civil\bt-1-5c250-00.dwg



MATCH LINE SEE DWG NO. 5C-281.00

PLAN



PROFILE

NOTES:

1. PLANIMETRIC FEATURES ARE FROM TOPOGRAPHIC SURVEYS OF THE VALENZA, MOREHEAD AND THEODORE PROPERTIES BY MUNOZ ENGINEERING & LAND SURVEYING, P.C., DATED AUGUST 2011 REVISED 10–19–11.
2. HORIZONTAL DATUM IS NAD–83–96, NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3101 (NEW YORK EAST).
3. VERTICAL DATUM IS NGVD 29.
4. NOT USED.
5. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE GAS COMPANY PRIOR TO CROSSING THE GAS MAIN. A REPRESENTATIVE OF THE GAS COMPANY SHALL BE PRESENT TO WITNESS THE COMPLETE UTILITY CROSSING.
6. PIPING SHALL BE HYDROSTATICALLY TESTED IN ACCORDANCE WITH THE DETAILED SPECIFICATIONS PRIOR TO FINAL APPROVAL.
7. POTABLE WATERMAIN AND DEWATERING FORCEMAIN MAY BE INSTALLED WITHIN THE SAME TRENCH. REFER TO DETAILED SPECIFICATIONS FOR MINIMUM SEPARATION DISTANCE.
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PROFILE
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1"=4' 0 4 8 FT.
HORIZONTAL
1"=40' 0 40 80 FT.

SITE PLAN APPLICATION
MAY 2012

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SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: AJT
DRAWN BY: IR/MD
CHECKED BY: PJP
DESIGN LEAD: MICHAEL WOODEN, P.E.

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
FORCEMAIN - PLAN AND PROFILE
SHEET 1

DATE: 05/31/2012
SCALE: 1"=40'
SHEET NO: 47 OF 77
DRAWING NO. **5C–280.00**

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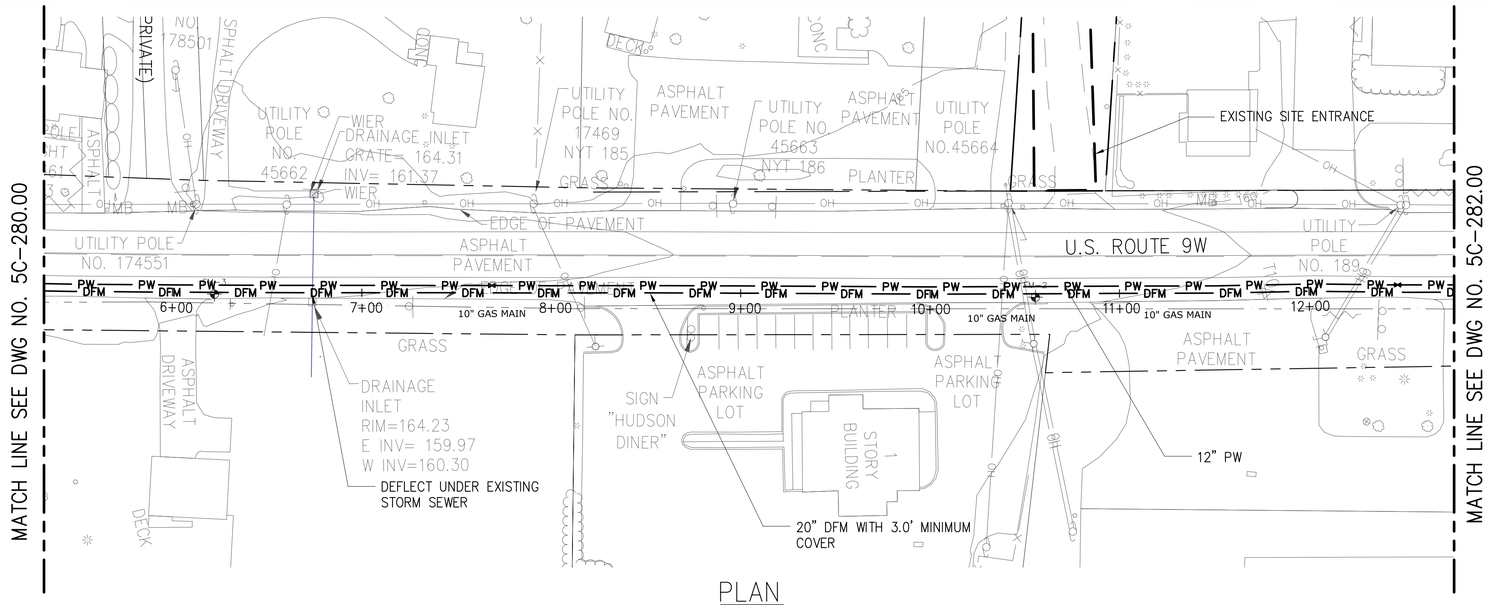
Date Plotted: 5/29/2012 11:37 AM\Author:tom44705\File Location:p:\266019\dwg\site plan application\civil\bt–1–5c280–00.dwg



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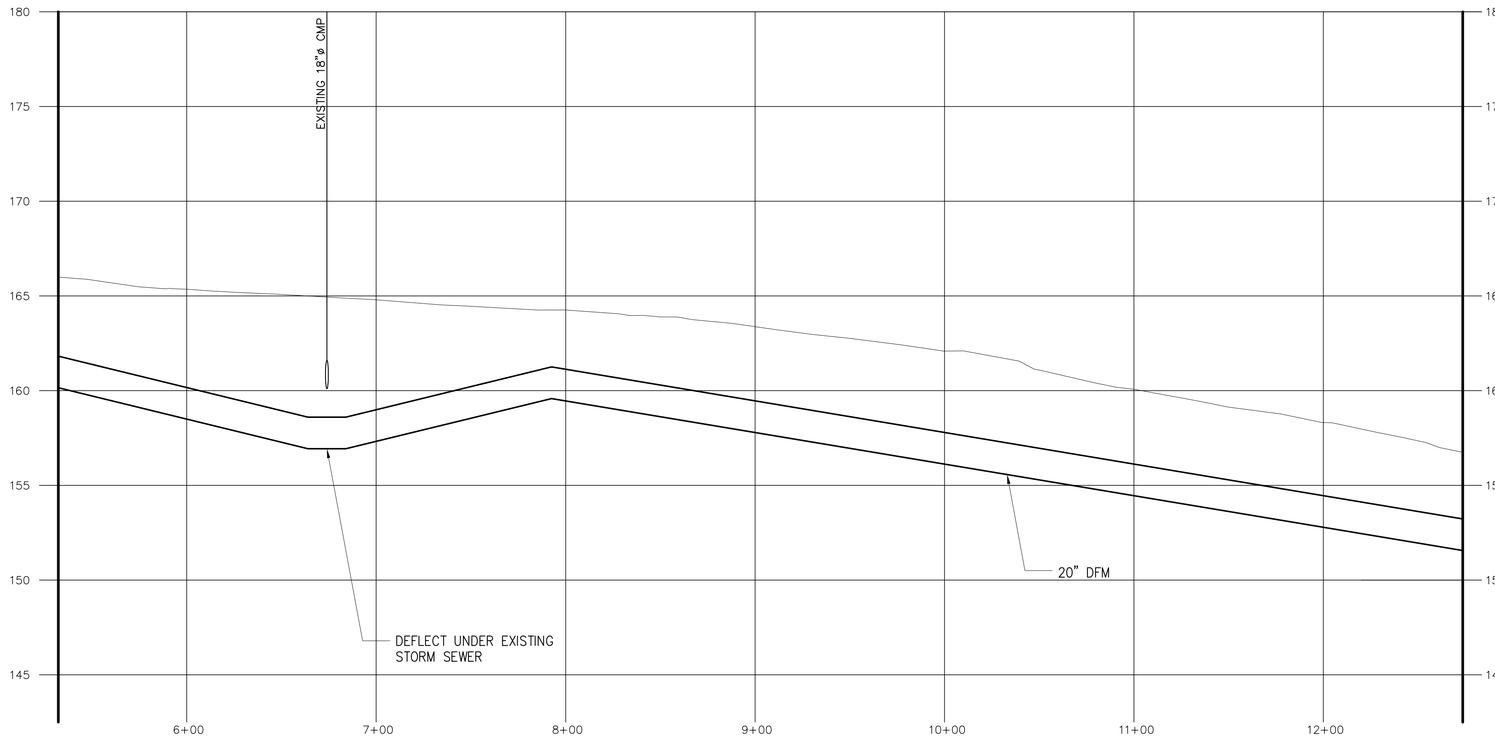

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FORCEMAIN - PLAN AND PROFILE
SHEET 2

DATE: 05/31/2012
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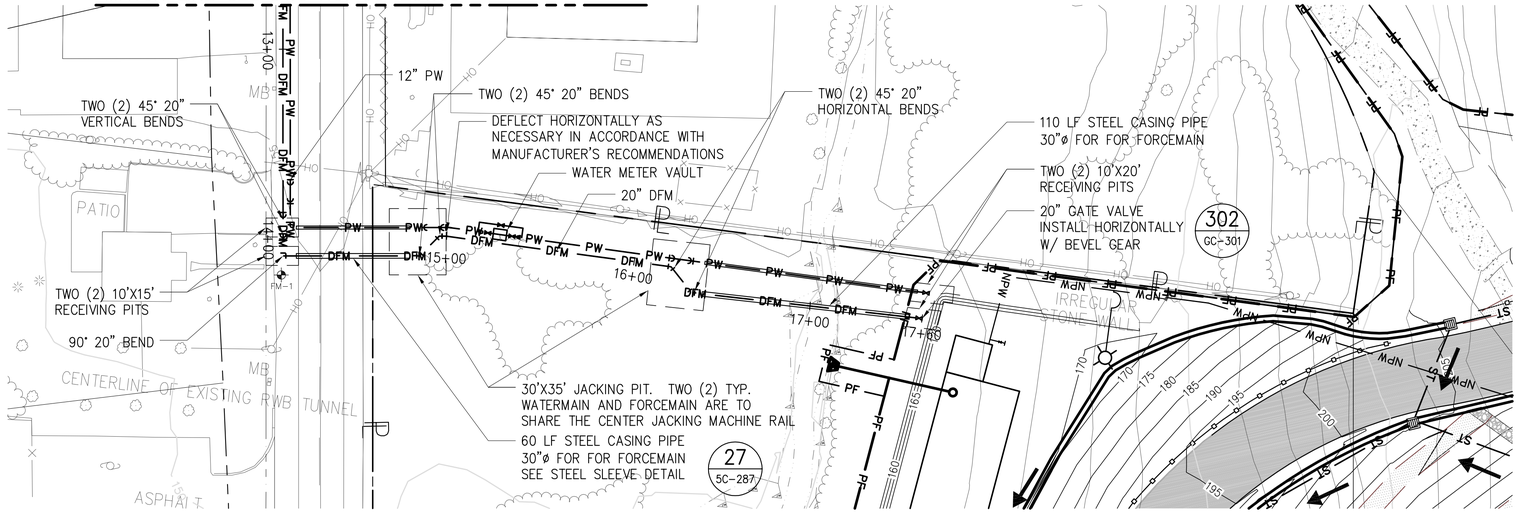

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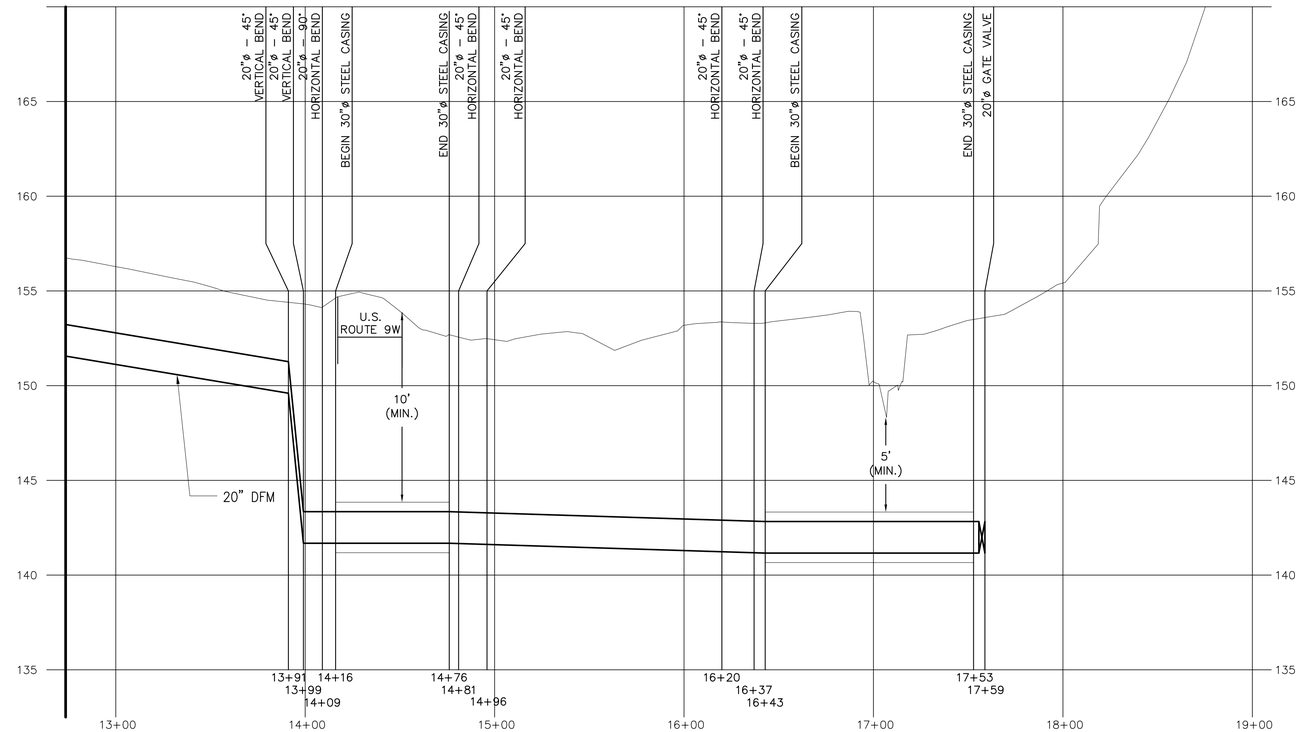

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RWB BYPASS TUNNEL
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SHAFT 5B
FORCEMAIN - PLAN AND PROFILE
SHEET 3

DATE: 05/31/2012
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SHEET NO: 49 OF 77
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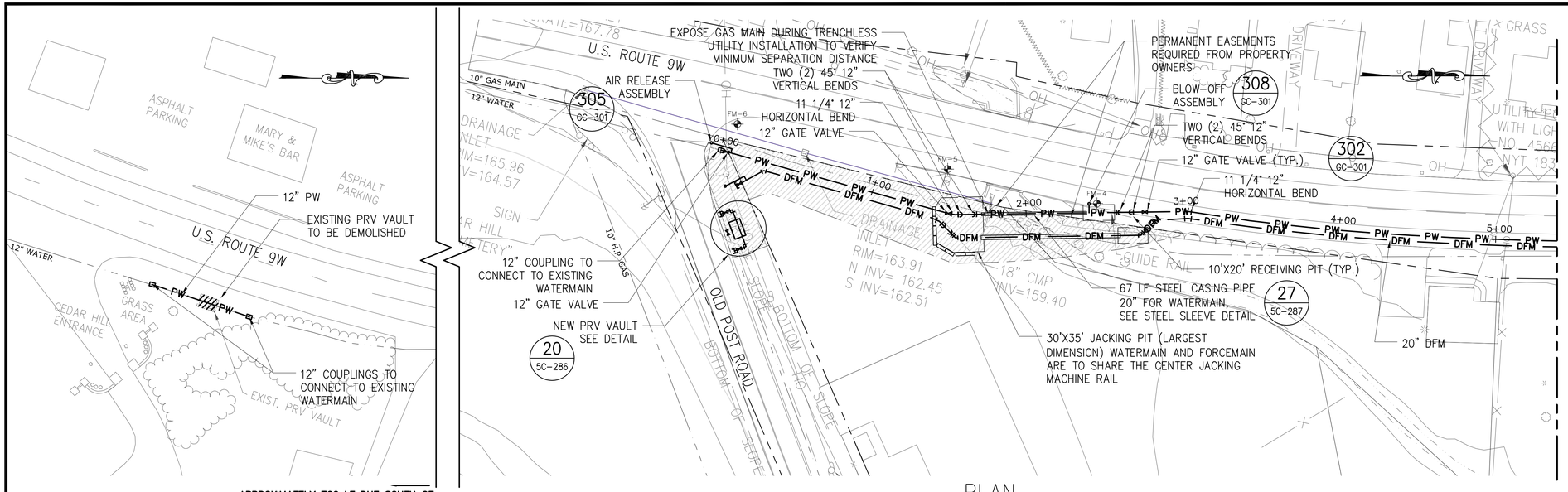

MATCH LINE SEE DWG NO. 5C-284.00

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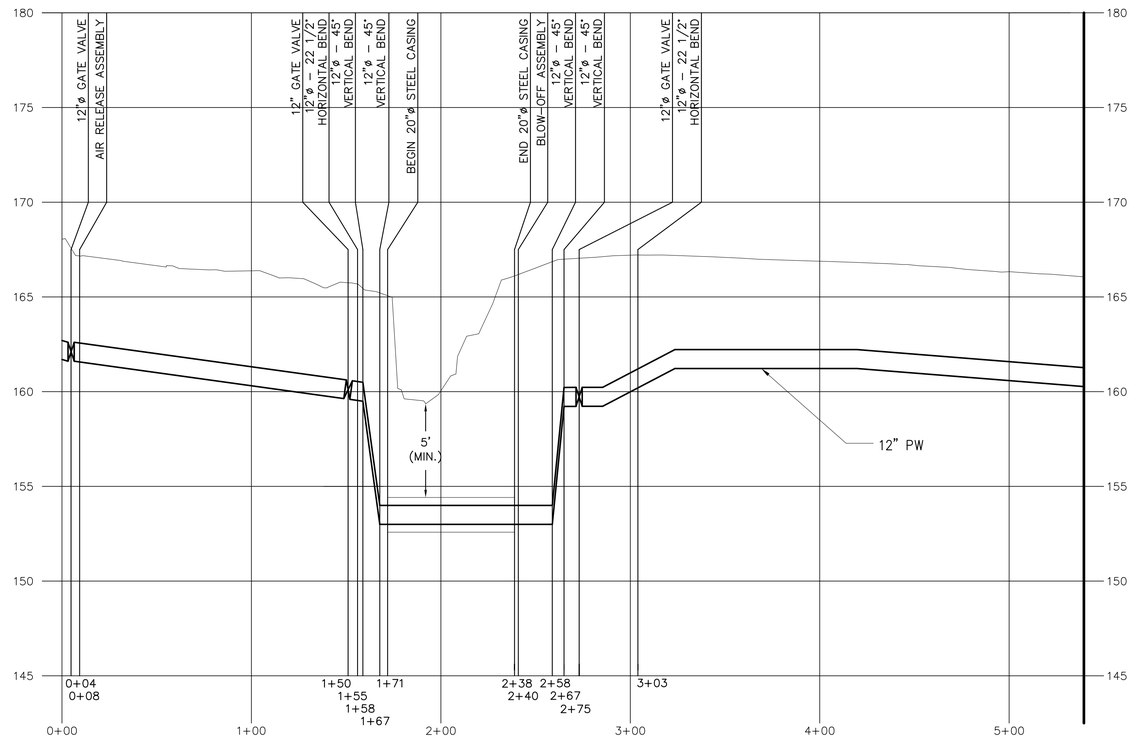

PROFILE

NOTES:

PRV VAULT DEMOLITION

1. THE EXISTING PRV VAULT IS TO BE DEMOLISHED AND REMOVED. 12" PW SHALL BE INSTALLED TO CONNECT THE EXISTING 12" WATER MAIN.

2. THE CONTRACTOR SHALL PROVIDE A TEMPORARY BYPASS PIPING SYSTEM DURING THE DEMOLITION OF THE EXISTING PRV VAULT AND INSTALLATION OF THE CONNECTION PIPING TO ENSURE THAT WATER SERVICE IS NOT DISRUPTED. THE CONTRACTOR SHALL COORDINATE WITH THE TOWN OF NEWBURGH TO DETERMINE:

   a. FIRE HYDRANTS WITH CORRECT VALVING TO CONNECT SURFACE BY-PASS PIPING
   b. ADEQUATE SIZE FOR BY-PASS PIPING
   c. SCHEDULE AND PHASING FOR THE DEMOLITION OF THE EXISTING PRV VAULT

3. THE NEW PRV VAULT MUST BE INSTALLED, TESTED, AND IN SERVICE PRIOR TO THE COMMENCEMENT OF THE DEMOLITION OF THE EXISTING PRV VAULT.

4. THE SITE PLAN FOR THE EXISTING PRV VAULT IS BASED ON THE BEST AVAILABLE INFORMATION BUT IS SCHEMATIC IN NATURE. THE CONTRACTOR SHALL DIG TEST PITS TO DETERMINE THE LOCATION AND EXTENT OF EXISTING PIPING, UTILITIES AND OTHER FACILITIES NECESSARY TO PERFORM THE WORK.

5. EXISTING UTILITIES MAY OR MAY NOT BE PRESENT NEAR THE EXISTING PRV VAULT. THE CONTRACTOR SHALL COORDINATE WITH UTILITY COMPANIES TO DETERMINE THE LOCATION OF EXISTING UTILITIES.

6. REFER TO THE DETAILED SPECIFICATIONS, ITEM 34, FOR ADDITIONAL REQUIREMENTS FOR DEMOLITION OF THE EXISTING PRV VAULT.

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5. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING THE GAS COMPANY PRIOR TO CROSSING THE GAS MAIN. A REPRESENTATIVE OF THE GAS COMPANY SHALL BE PRESENT TO WITNESS THE COMPLETE UTILITY CROSSING.
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SITE PLAN APPLICATION
MAY 2012

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REVISIONS

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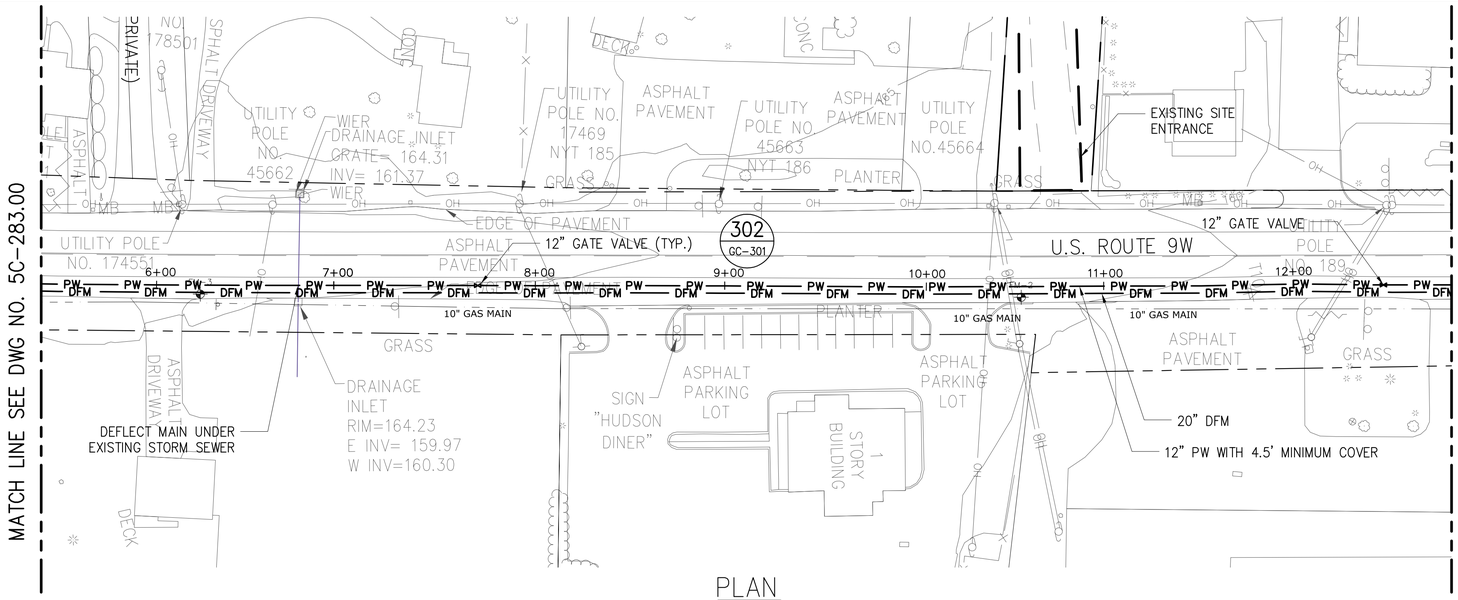
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
WATERMAIN - PLAN AND PROFILE
SHEET 1

DATE: 05/31/2012
SCALE: 1"=40'
SHEET NO: 50 OF 77
DRAWING NO. **5C-283.00**



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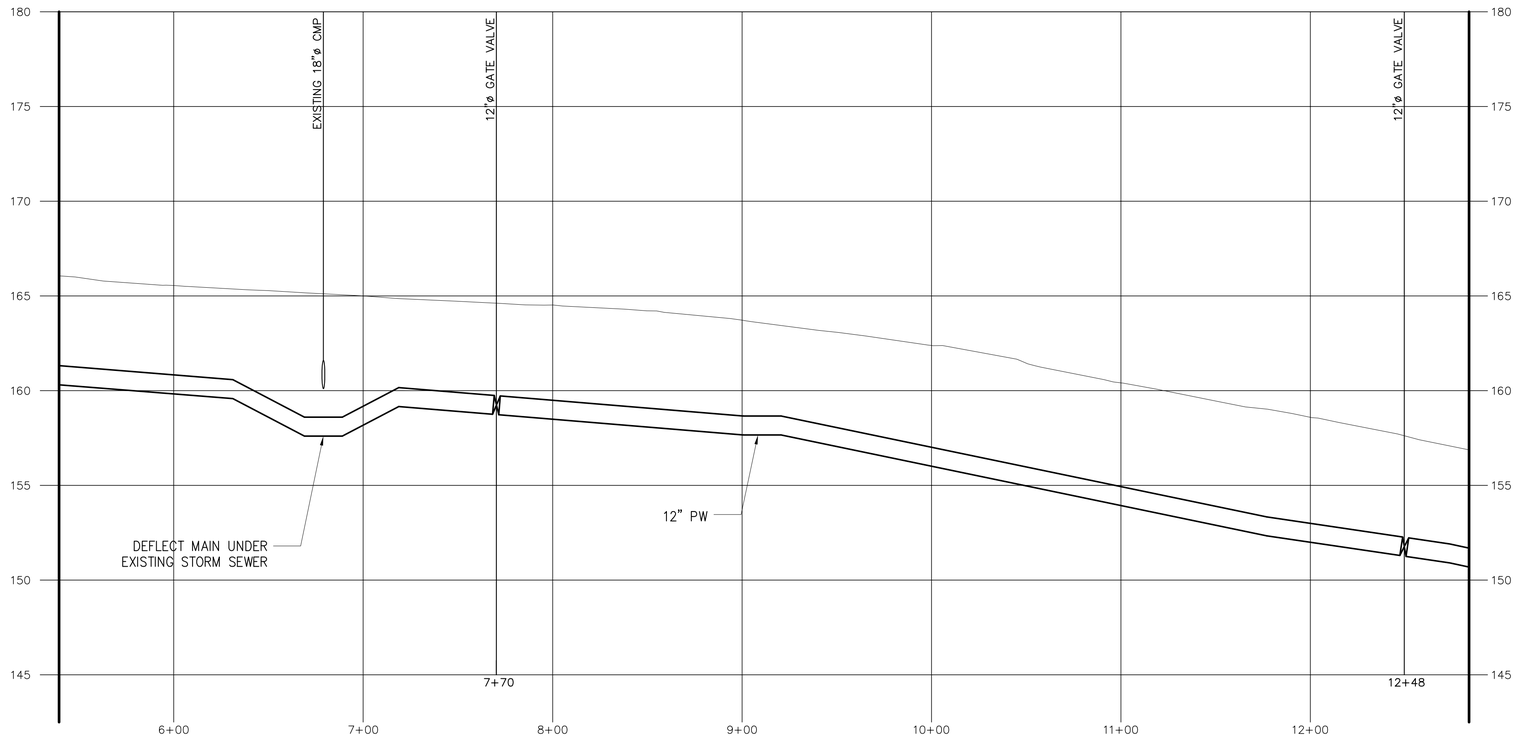

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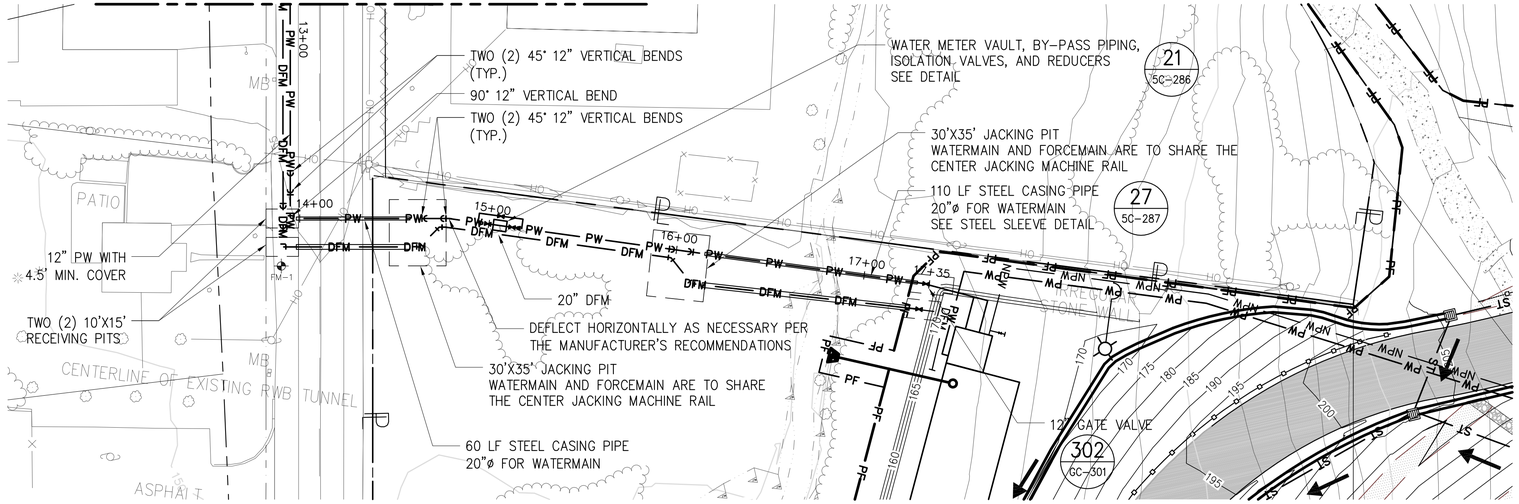

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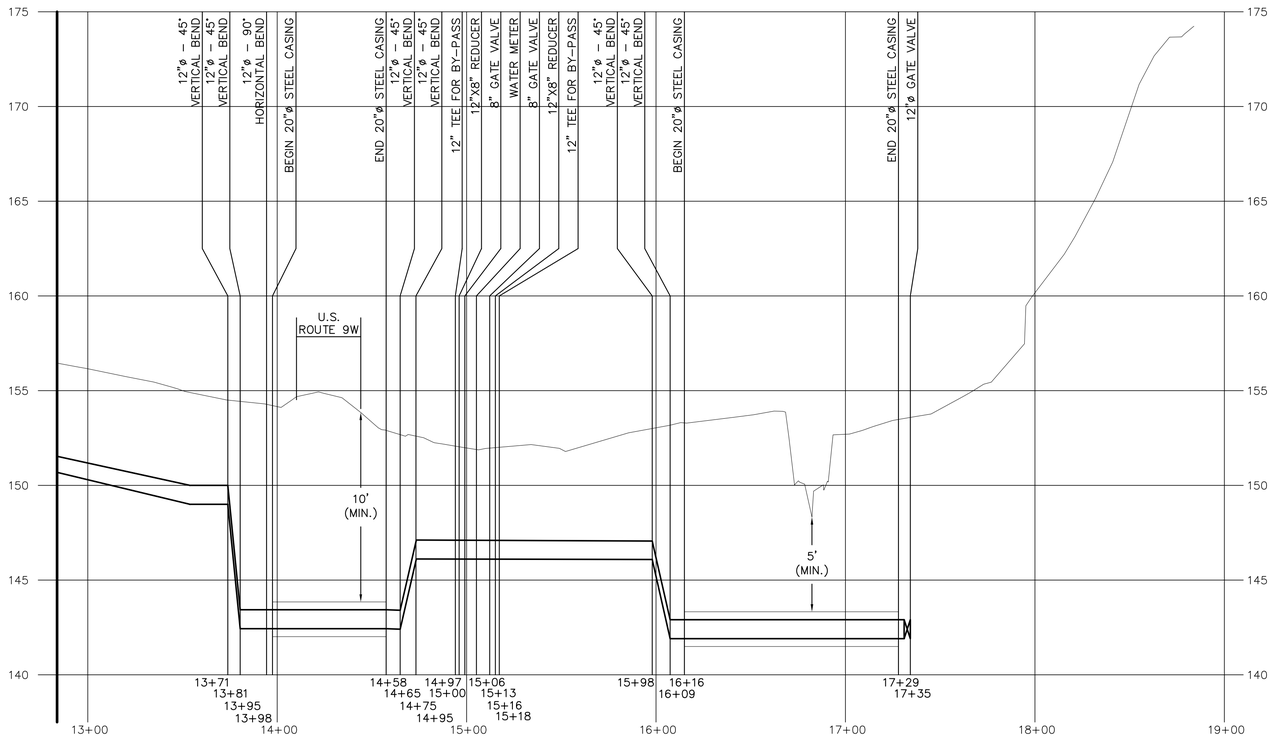

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SCALE: 1"=40'
SHEET NO: 52 OF 77
DRAWING NO. **5C–285.00**

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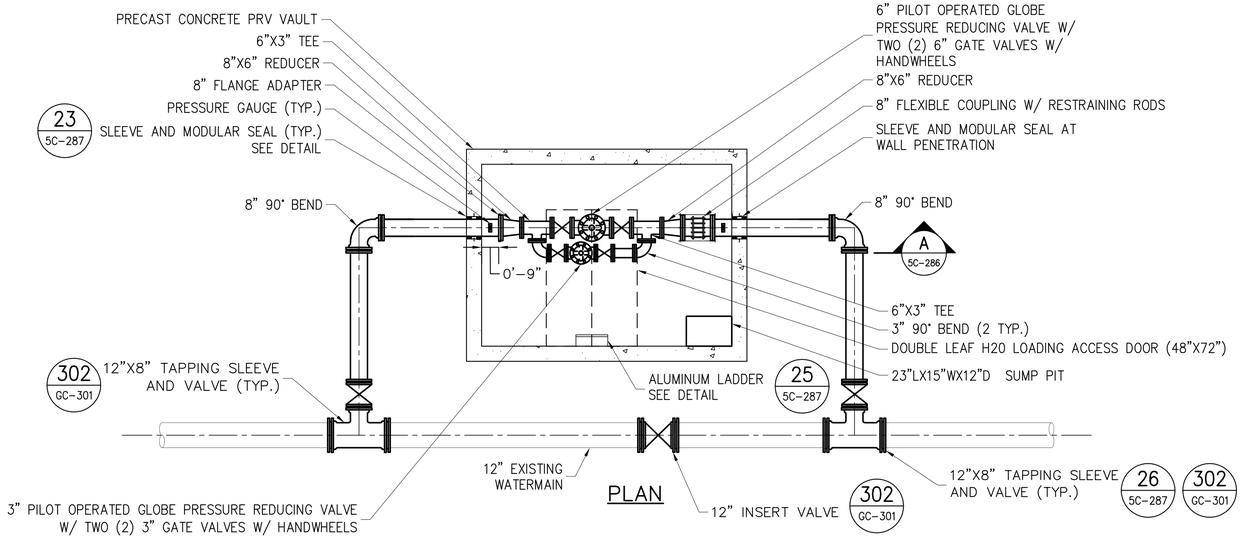
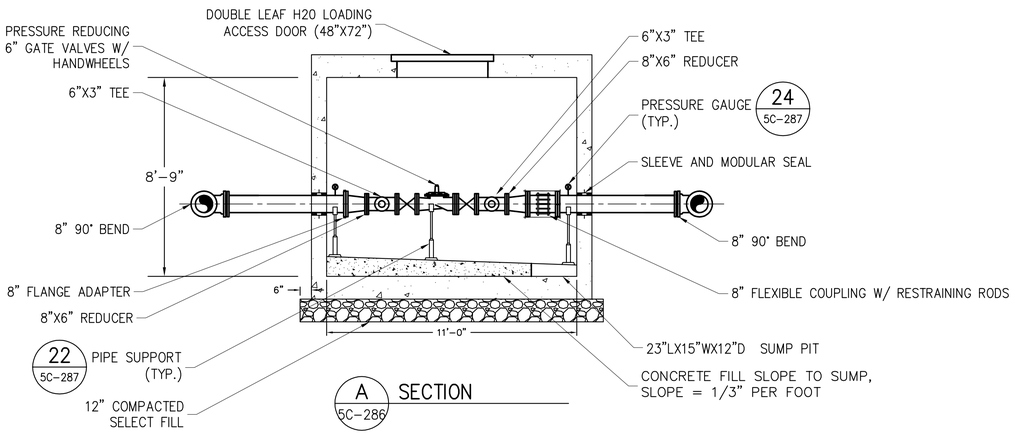




20 – PRESSURE REDUCING VALVE VAULT DETAIL

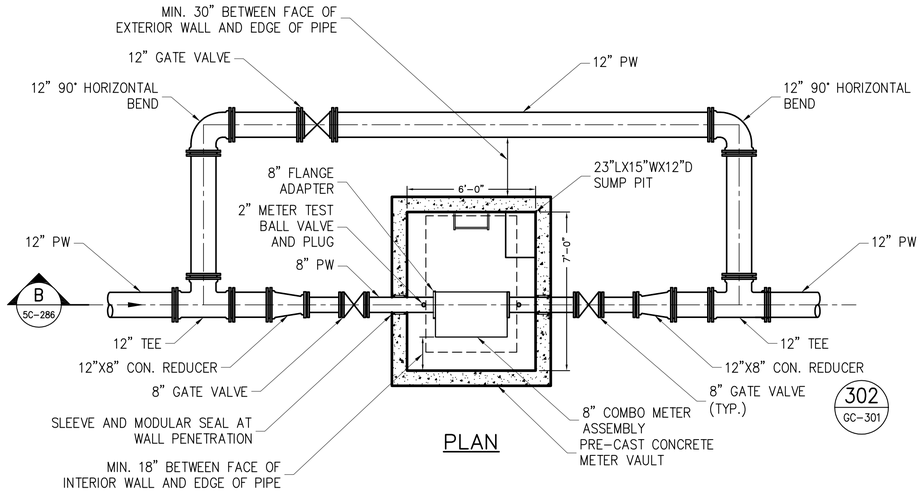
SCALE: NTS

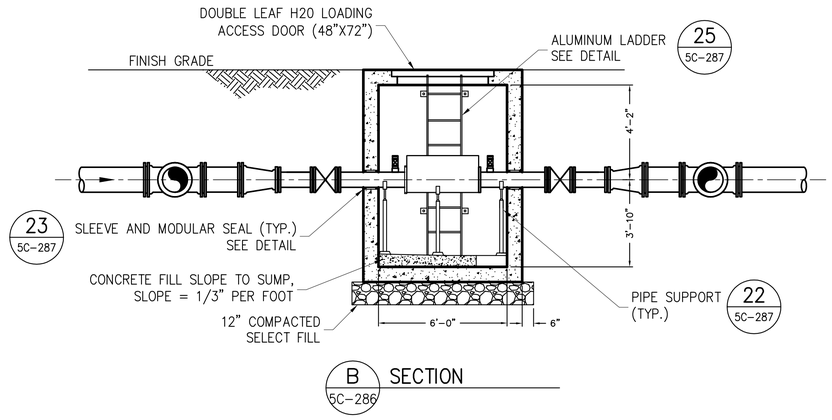
GENERAL NOTES:

1. ALL MATERIAL AND CONSTRUCTION METHODS EMPLOYED SHALL CONFORM TO THE LATEST APPLICABLE CONSTRUCTION STANDARDS.
2. PRESSURE TESTING AND DISINFECTION SHALL BE PERFORMED IN ACCORDANCE WITH THE SPECIFICATIONS.

PRESSURE REDUCING VALVE VAULT NOTES:

1. THE CONTRACTOR SHALL SUBMIT A DETAILED SCHEDULE AND SEQUENCE OF CONSTRUCTION TO BE APPROVED BY THE TOWN OF NEWBURGH AND THE ENGINEER. APPROVAL WILL BE REQUIRED PRIOR TO CONSTRUCTION WORK.
2. THE NEW PRV VAULT MUST BE INSTALLED, TESTED, AND IN SERVICE PRIOR TO THE COMMENCEMENT OF THE DEMOLITION OF THE EXISTING PRV VAULT.
3. EXISTING UTILITIES MAY OR MAY NOT BE PRESENT NEAR THE PROPOSED PRV VAULT. CONTRACTOR SHALL BE RESPONSIBLE TO COORDINATE WITH UTILITY COMPANIES TO DETERMINE THE LOCATION OF EXISTING UTILITIES.





21 – WATER METER VAULT DETAIL

SCALE: NTS

WATER METER VAULT NOTES:

1. WATER METER VAULT SHALL BE LOCATED ON THE PROPOSED SITE FOR SHAFT 5B WITHIN THE UNPAVED AREA AS SHOWN ON THE SITE PLANS.
2. THE CONTRACTOR SHALL SUBMIT A DETAILED SUBMITTAL FOR THE WATER METER VAULT CONSTRUCTION TO BE APPROVED BY THE TOWN OF NEWBURGH AND THE ENGINEER. APPROVAL WILL BE REQUIRED PRIOR TO CONSTRUCTION WORK.
3. INSTALLATION OF WATER METER SHALL BE IN ACCORDANCE WITH THE RECOMMENDATIONS AND REQUIREMENTS OF THE MANUFACTURER.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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DESIGNED BY: AJT
DRAWN BY: MP/MD
CHECKED BY: PJP
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

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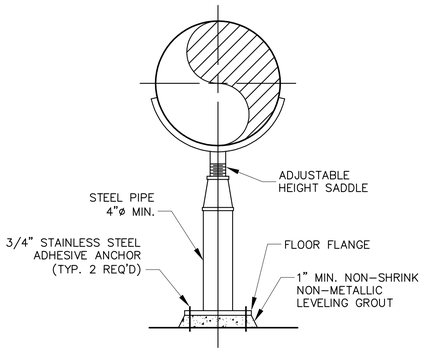
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

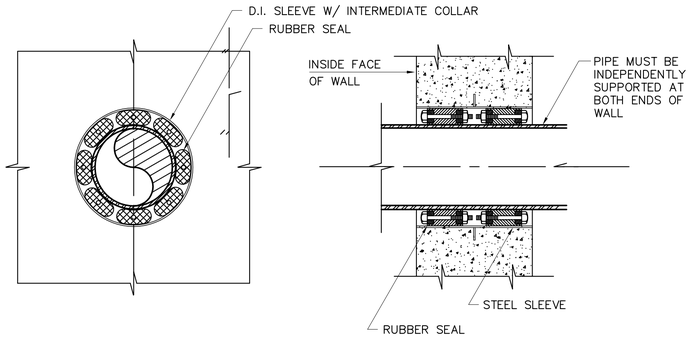
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
CIVIL
SHAFT 5B
FORCEMAIN/WATERMAIN
DETAILS - SHEET 1

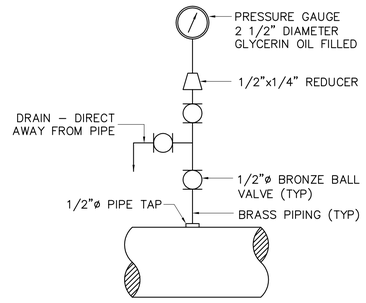
DATE: 05/31/2012
SCALE: N.T.S.
SHEET NO: 53 OF 77
DRAWING NO. **5C-286.00**



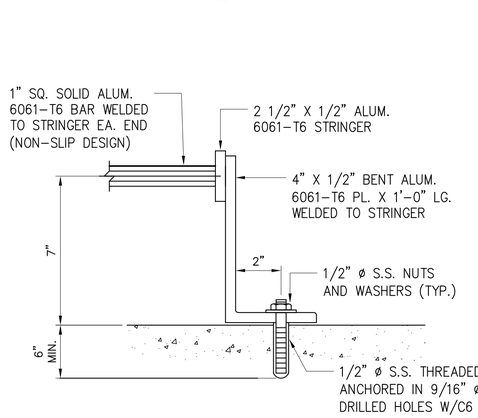
22 – SADDLE TYPE PIPE SUPPORT DETAIL
SCALE: NTS



23 – SLEEVE AND MODULAR SEAL DETAIL
SCALE: NTS



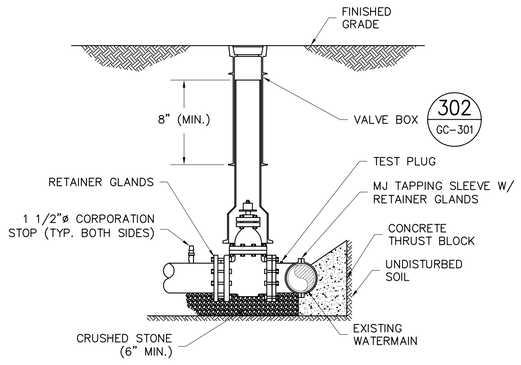
24 – PRESSURE GAUGE DETAIL
SCALE: NTS



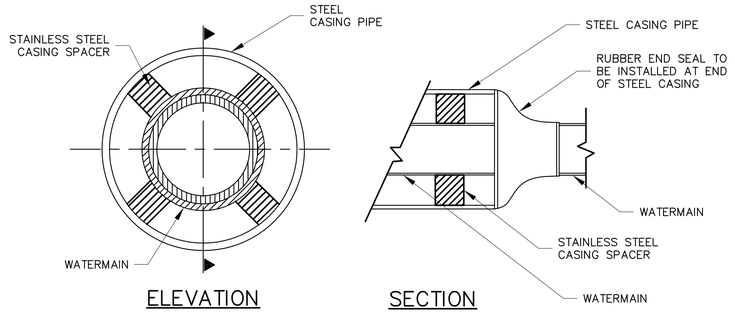
NOTE:

LADDERS THAT REQUIRE A SAFETY POST, SHALL BE BILCO LADDERUP OR EQUAL.

25 – ALUMINUM LADDER DETAILS
SCALE: NTS



26 – TAPPING SLEEVE AND VALVE DETAIL
SCALE: NTS



27 – STEEL CASING SLEEVE DETAIS
SCALE: NTS

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MAY 2012

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SITE PLAN APPLICATION
CIVIL
SHAFT 5B
FORCEMAIN/WATERMAIN
DETAILS - SHEET 2

DATE: 05/31/2012
SCALE: N.T.S.
SHEET NO: 54 OF 77
DRAWING NO. **5C-287.00**

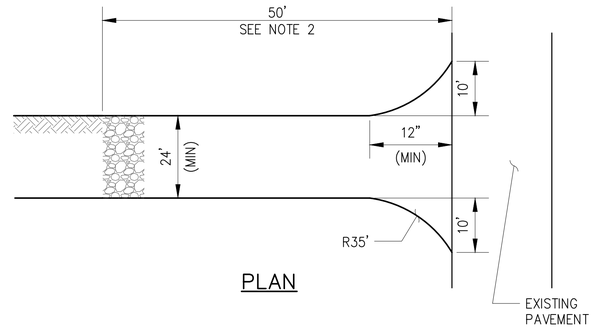
REFER TO DETAIL SPECIFICATION 02317

112 – GRAVEL SURFACE CONTRACTOR AREA

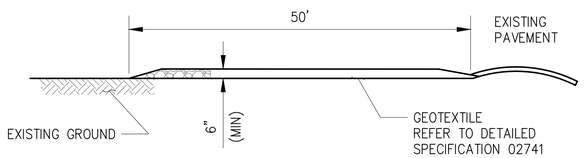
SCALE: NTS

CONSTRUCTION ENTRANCE NOTES:

1. STONE SIZE: #2 CRUSHED STONE.
2. LENGTH–AS REQUIRED, BUT NOT LESS THAN 50'.
3. STONE LAYER THICKNESS–NOT LESS THAN 6".
4. GEOTEXTILE FABRIC WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE. GEOTEXTILE FABRIC WILL BE OF A STRENGTH THAT MEETS OR EXCEEDS THE STANDARDS SET FORTH FOR HEAVY DUTY HAUL ROADS BY THE NYSDEC STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL, 2005. REFER TO DETAILED SPECIFICATION 02741.
5. MAINTENANCE–THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
6. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.



PLAN



PROFILE

113 – STABILIZED CONSTRUCTION ENTRANCE

SCALE: NTS

SITE PLAN APPLICATION
MAY 2012

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CHECKED BY: MIGUEL RODRIGUEZ
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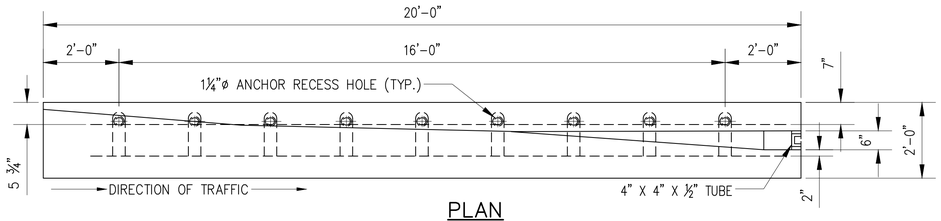
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
PAVING AND ROADWAY DETAILS
SHEET 3

DATE: 05/31/2012
SCALE: AS NOTED
SHEET NO: 55 OF 77
DRAWING NO. GC–103.00



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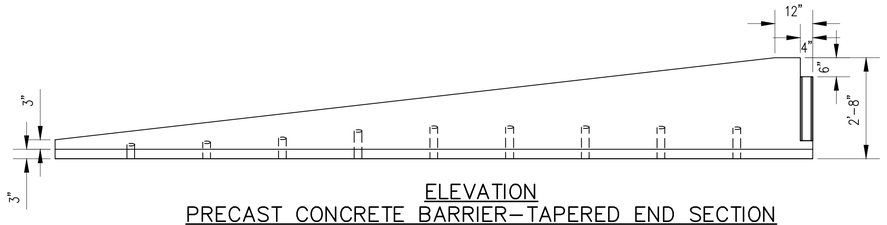
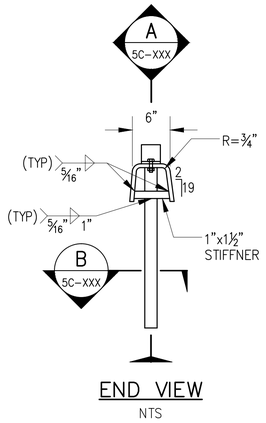


ELEVATION
PRECAST CONCRETE BARRIER–TAPERED END SECTION

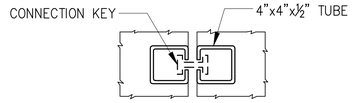
NTS



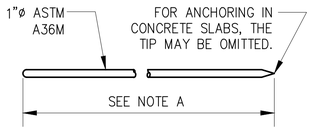
END VIEW

NTS

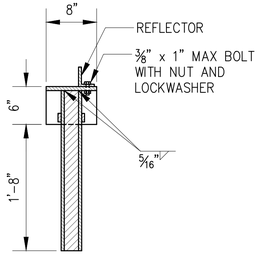
1/2" ℄ NOTE:
THIS COVER PLATE SHALL BE INSTALLED SO IT IS FLUSH WITH THE TOP OF THE BARRIER



KEY IN PLACE



ANCHOR PIN



A–A SECTION
SCALE: NTS

CONNECTION KEY

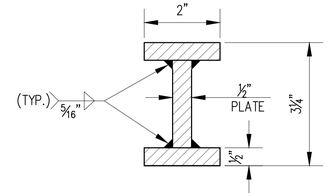
NOTE A:
THE LENGTH OF THE ANCHOR PINS SHALL BE SUCH THAT THE FOLLOWING MINIMUM EMBEDMENT LENGTHS ARE OBTAINED:

(a) INTO PORTLAND CEMENT CONCRETE PAVEMENT 0'–5".

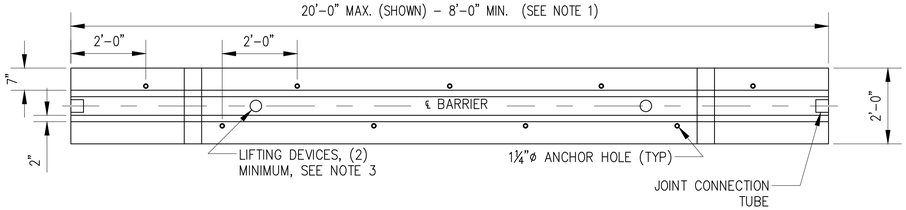
(b) INTO FLEXIBLE PAVEMENT 1'–6"

(c) INTO UNPAVED AREA 2'–6"

WHEN ANCHOR PINS ARE IN PLACE, THEY SHALL NOT PROJECT ABOVE THE PLANE OF THE CONCRETE SURFACE OF THE BARRIER. "DIAMETER MAXIMUM AND MADE WITH A CORE DRILL OR HOLES IN BRIDGE DECKS SHALL BE 1 ANY OTHER APPROVED ROTARY DRILLING DEVICE THAT DOES NOT IMPART AN IMPACT FORCE.

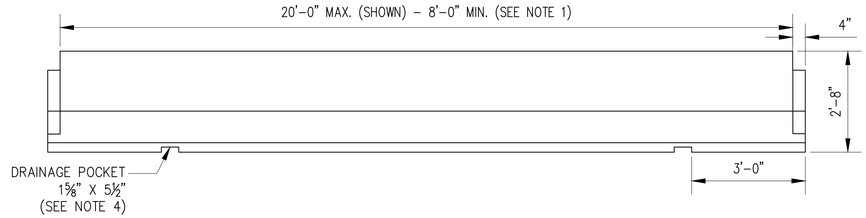


B–B SECTION
SCALE: NTS



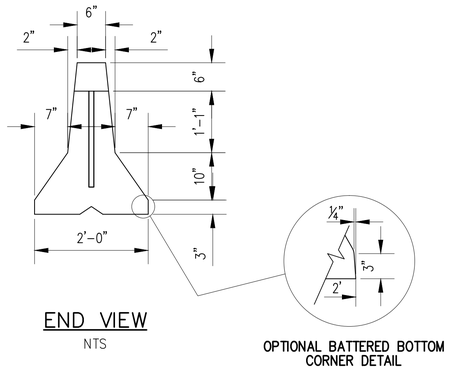
PLAN

NTS



ELEVATION
PRECAST CONCRETE BARRIER–FULL SECTION

NTS



END VIEW

NTS

OPTIONAL BATTERED BOTTOM CORNER DETAIL

GENERAL NOTES:

1. TEMPORARY CONCRETE BARRIER SHALL BE PRECAST UNITS OF ONE OF THE FOLLOWING NOMINAL LENGTHS 8', 10', 12', 14', 16', 18', 20'. BASED ON SEGMENT LENGTH AND MAXIMUM JOINT ROTATION, TEMPORARY CONCRETE BARRIER CAN ONLY BE INSTALLED TO THE FOLLOWING MINIMUM RADII: 8' – 92', 10' – 115', 12' – 138',14' – 161', 16' – 184', 18' – 207', 20' – 230'.
2. THE PLACEMENT AND SIZE OF REINFORCING STEEL AND JOINT CONNECTION TUBES IN THE BARRIER UNITS SHALL BE AS SHOWN AND REQUIRED ON THE CURRENT NYSDOT STANDARD SHEET NO 619–01.
3. A MINIMUM OF (2) TWO RECESSED LIFTING DEVICES, EACH WITH THE CAPACITY TO LIFT A MASS OF 6 TONS (MINIMUM), SHALL BE INSTALLED ON EACH SEGMENT. SEGMENT MASS IS APPROXIMATELY 400 LBS/FT.
4. ONE DRAINAGE POCKET SHALL BE INCLUDED IN THE CENTER OF 8'–0" AND 10'–0" SEGMENTS, TWO DRAINAGE POCKETS IN ALL OTHER SEGMENTS.
5. JOINT AND ANCHORAGE TREATMENTS: CONNECTION KEY EVERY JOINT. CONNECTION KEY COVER PLATE SHALL BE INSTALLED FLUSH WITH THE BARRIER TOP. PIN EVERY ANCHOR POCKET HOLE IN EVERY UNIT.
6. BASED ON SEGMENT LENGTH AND MAXIMUM JOINT ROTATION, TEMPORARY CONCRETE BARRIER CAN ONLY BE INSTALLED TO THE FOLLOWING MINIMUM RADII: 8' – 92', 10' – 115', 12' – 138',14' – 161', 16' – 184', 18' – 207', 20' – 230'.
7. THE DETAILS SHOWN FOR THE END SECTIONS ON THIS SHEET ARE FOR APPROACH ENDS WHICH ARE TO BE LOCATED TO THE LEFT OF THE TRAFFIC FLOW ON ONE–WAY OPERATIONS OR BETWEEN OPPOSING FLOWS OF TRAFFIC ON TWO–WAY OPERATIONS. WHEN AN APPROACH IS TO BE LOCATED TO THE RIGHT OF THE TRAFFIC FLOW, THE END SEGMENT SHALL BE CONSTRUCTED SO THAT IT IS OPPOSTIE–HAND (REVERSED IN ALL CONFIGURATIONS, ANCHOR HOLE LOCATIONS AND REINFORCEMENTS).
8. ALL CORNERS ON THE TOP OF THE END SECTION SHALL BE ROUNDED TO A 1" RADIUS. THE SEGMENT SHALL HAVE A SMOOTH TRANSITION TO A 6" END–OF–SECTION HEIGHT. ALL END SECTIONS SHALL BE PINNED UNLESS OTHERWISE NOTED.

114 – CONCRETE BARRIER/JERSEY BARRIER
SCALE: NTS

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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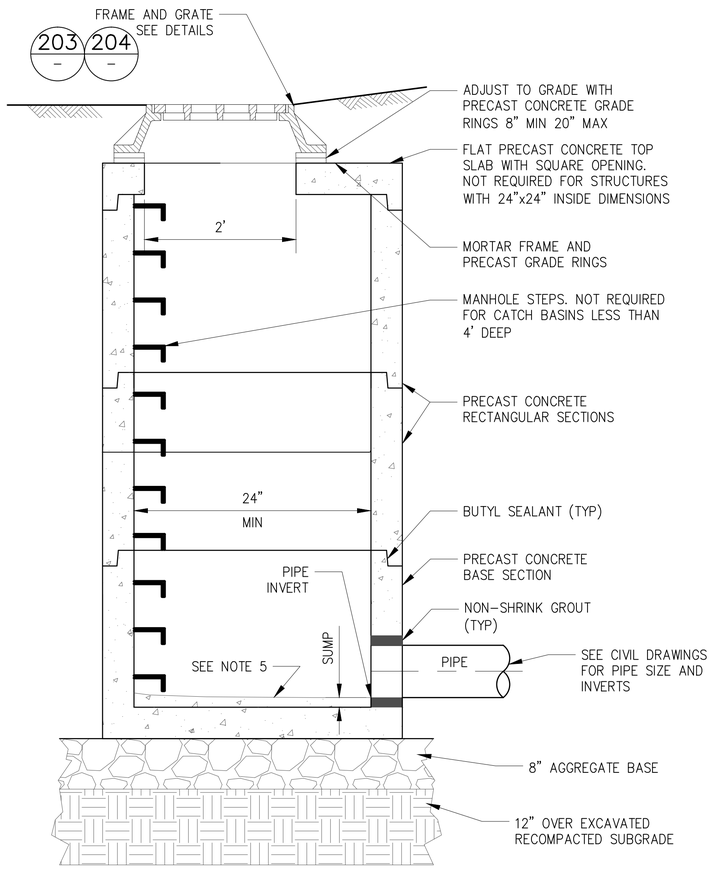
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
PAVING AND ROADWAY DETAIL
SHEET 4

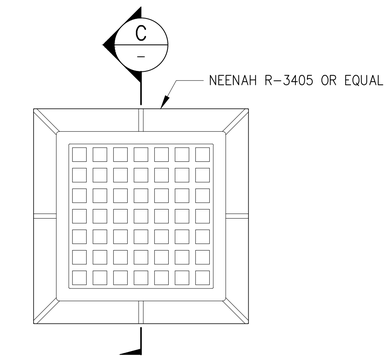
DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 56 OF 77
DRAWING NO. GC–104.00



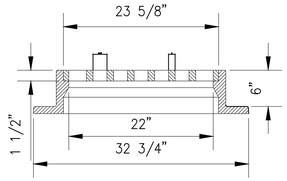
202 STORM CATCH BASIN/INLET DETAIL
GC-006 SCALE: NTS

NOTES:

1. CATCH BASIN BY NEENAH (OR EQUAL) TO BE SELECTED TO PROVIDE ADEQUATE SPACE FOR INCOMING AND OUTGOING PIPES NOTED ON PLANS AND PROFILES.
2. MINIMUM CATCH BASIN INTERIOR HORIZONTAL DIMENSIONS SHALL BE 24"x24". LARGER DIMENSIONS MAY BE REQUIRED FOR PIPES AT ANGLES OR LARGER THAN 24" OD.
3. CATCH BASIN SELECTIONS SHALL BE APPROVED BY ENGINEER.
4. FOR CATCH BASINS LARGER THAN 24"x24", ALIGN COVER OVER STEPS.
5. FOR SHAFT 5B CATCH BASINS (DS-8 AND DS-9) AND ALL SHAFT 6B CATCH BASINS, PROVIDE A 12-INCH SUMP. CONTRACTOR TO FILL SUMP WITH CONCRETE AND PROVIDE A CHANNEL INTO OUTLET PIPE.
6. CONTRACTOR SHALL COORDINATE REINFORCEMENT DESIGN WITH SELECTED MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

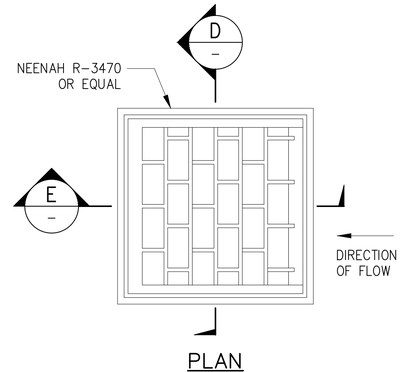


PLAN



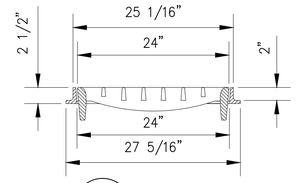
C SECTION
SCALE: NTS

CATCH BASIN FRAME AND GRATE TYPE 1
SCALE : NTS



PLAN

COMBINATION INLET FRAME, GRATES, CURB BOX TABLE			
CAT. NO.	GRATE TYPE	SQ. FT. OPEN	WIER PERIM. LIN. FT.
R-3405	H	1.5	7.9
R-3470	L	2.2	8.4



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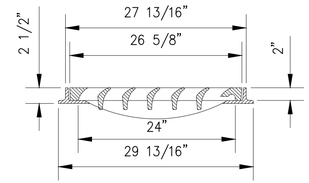

E SECTION
SCALE: NTS

CATCH BASIN FRAME AND GRATE TYPE 2

204 CATCH BASIN WITHOUT CURB
SCALE: NTS

SITE PLAN APPLICATION
MAY 2012

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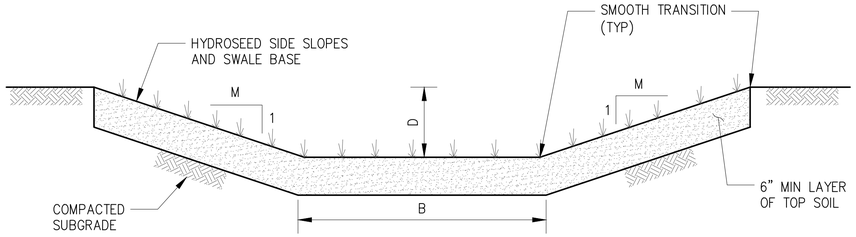
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
DRAINAGE DETAILS
SHEET 2

DATE: 05/31/2012
SCALE: AS NOTED
SHEET NO: 57 OF 77
DRAWING NO. **GC-202.00**

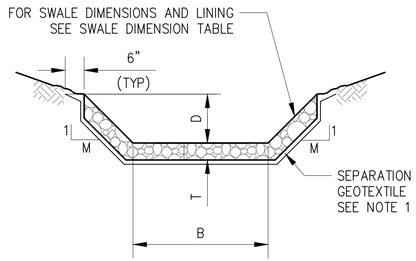


GRASS SWALE DIMENSIONS TABLE					
SWALE NO.	SIDE SLOPES (M:1)	BOTTOM (B) (FT)	DEPTH (D) (FT)	LENGTH (FT)	MAXIUM SLOPE (FT/FT)
5B–ROADSIDE SWALE LEFT: STA 5+50 TO 8+00	2:1	2	1	340	0.01

206 – GRASSED SWALE
SCALE: NTS

DIVERSION CHANNEL NOTES:

1. DIVERSION CHANNELS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DEC NEW YORK STATE STANDARDS AND SPECIFICATIONS FOR EROSION & SEDIMENT CONTROL, DIVERSIONS AND LINED WATERWAYS STANDARDS.
2. THE RIDGE AND CHANNEL SHALL BE STABILIZED IMMEDIATELY AFTER INSTALLATION.
3. ALL TREES, BRUSH, STUMPS, OBSTRUCTIONS AND OTHER OBJECTIONABLE MATERIAL SHALL BE REMOVED AND DISPOSED OF SO AS NOT TO INTERFERE WITH THE PROPER FUNCTIONING OF THE DIVERSION.
4. THE DIVERSION SHALL BE EXCAVATED OR SHAPED TO LINE, GRADE AND CROSS–SECTION AS REQUIRED TO MEET THE CRITERIA SPECIFIED HEREIN, FREE OF IRREGULARITIES WHICH WILL IMPEDE FLOW.
5. FILLS SHALL BE COMPACTED AS NEEDED TO PREVENT UNEQUAL SETTLEMENT THAT WOULD CAUSE DAMAGE IN THE COMPLETED DIVERSION. FILL SHALL BE COMPOSED OF SOIL WHICH IS FREE FROM EXCESSIVE ORGANIC DEBRIS, ROCKS OR OTHER OBJECTIONABLE MATERIALS.
6. ALL EARTH REMOVED AND NOT NEEDED IN CONSTRUCTION SHALL BE SPREAD OR DISPOSED OF SO THAT IT WILL NOT INTERFERE WITH THE FUNCTIONING OF THE DIVERSION.
7. PERMANENT STABILIZATION OF DISTURBED AREAS SHALL BE DONE IN ACCORDANCE WITH THE APPLICABLE STANDARDS AND SPECIFICATIONS.
8. SEPARATION GEOTEXTILE SHALL BE LISTED AS STABILIZATION TYPE GEOTEXTILE ON THE NYSDOT "TECHNICAL SERVICES – MATERIALS – APPROVED LIST FOR GEOSYNTHETICS FOR HIGHWAY CONSTRUCTION."



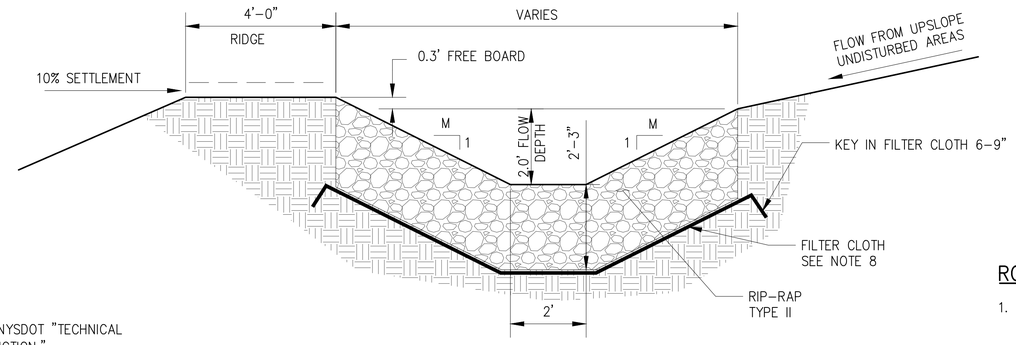
RIP–RAP AND STONE FILLING SECTION

207 – SWALE LINING
SCALE: NTS

SWALE LINING NOTES:

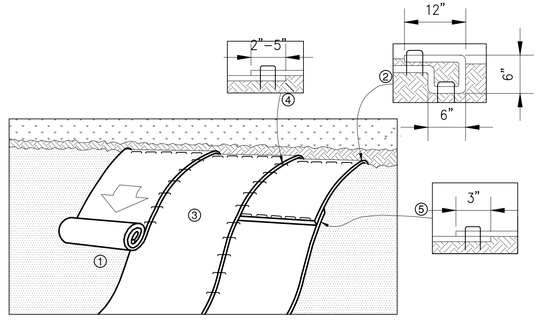
1. SEPARATION GEOTEXTILE SHALL BE LISTED AS STABILIZATION TYPE GEOTEXTILE ON THE NYSDOT "TECHNICAL SERVICES – MATERIALS – APPROVED LIST FOR GEOSYNTHETICS FOR HIGHWAY CONSTRUCTION."
2. THICKNESS OF STONE FILLING (T) SHALL BE 1.5 TIMES THE MEDIAN STONE SIZE (d50).
3. GRADATION REQUIREMENTS FOR STONE FILLING AND RIP–RAP PER SPEC 02372.
4. FOR OVERFLOW CHANNEL INITIAL DEPTH AT BENCH = 0.5'. TRANSITION TO 1.0' DEPTH 5' DOWNSLOPE.

RIP–RAP SWALE DIMENSIONS TABLE									
SWALE NO.	STA. START	STA. END	SIDE SLOPES (M:1)	BOTTOM (B) (FT)	DEPTH (D) (FT)	LENGTH (FT)	MAXIMUM SLOPE (FT/FT)	SWALE LINING	SEPARATION GEOTEXTILE
5B–ROADSIDE SWALE LEFT	8+00	9+50	1:1	1	1	190	0.33	TYPE II RIP–RAP	SEE NOTE 2
5B–ROADSIDE SWALE LEFT	9+50	20+25	1:1	1	1	1080	0.0675	TYPE II RIP–RAP	NONE
5B–ROADSIDE SWALE LEFT	20+25	23+50	1:1	1	1	370	0.04	BEDROCK	NONE
5B–ROADSIDE SWALE RIGHT	9+50	20_25	1:1	1	1	1080	0.0675	TYPE II RIP–RAP	NONE
5B–BENCH OVERFLOW CHANNEL	DS–8	DS–9	2:1	2	SEE NOTE 4	50	0.42	TYPE II RIP–RAP	SEE NOTE 2
5B–BENCH OVERFLOW CHANNEL	DS–9	DS–11	2:1	2	SEE NOTE 4	65	0.37	TYPE II RIP–RAP	SEE NOTE 2
5B–BENCH OVERFLOW CHANNEL	BENCH TO BENCH @ ROAD STA. 15+40		2:1	2	SEE NOTE 4	45	0.42	TYPE II RIP–RAP	SEE NOTE 2



208 – DIVERSION CHANNEL DETAIL
SCALE: NTS

DIVERSION CHANNEL DIMENSIONS TABLE				
DIVERSION	STA. START	STA. END	SIDE SLOPES (M:1)	DIVERSION LINING
NORTH	0+00	2+15	2:1	TYPE II RIP–RAP
NORTH	2+25	4+25	1.5:1	TYPE II RIP–RAP
NORTH	4+25	13+20	2:1	TYPE II RIP–RAP
SOUTH	0+00	8+88	2:1	TYPE II RIP–RAP
SOUTH	8+88	9+00	1.5:1	TYPE II RIP–RAP
SOUTH	11+50	12+30	1:1	BEDROCK
SOUTH	13+00	14+72	2:1	TYPE II RIP–RAP
SOUTH	14+96	17+37	2:1	TYPE II RIP–RAP
SOUTH	9+00	11+50	–	PIPE



209 – ROLLED EROSION CONTROL MATTING SLOPE INSTALLATION
SCALE: NTS

ROLLED EROSION CONTROL MATTING NOTES:

1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL MATTING (RECM), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECM IN A 6" DEEP X 6" WIDE TRENCH WITH APPROXIMATELY 12" OF RECM EXTENDED BEYOND THE UP–SLOPE PORTION OF THE TRENCH. ANCHOR THE RECM WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" PORTION OF RECM BACK OVER SEED AND COMPACTED SOIL. SECURE RECM OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" APART ACROSS THE WIDTH OF THE RECM.
3. ROLL THE RECM DOWN THE SLOPE. RECM WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECM MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS PER MANUFACTURER INSTRUCTIONS.
4. THE EDGES OF PARALLEL RECM MUST BE STAPLED WITH APPROXIMATELY 2"–5" OVERLAP DEPENDING ON RECM TYPE.
5. CONSECUTIVE RECM SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" APART ACROSS ENTIRE RECM WIDTH.

NOTE: *IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" MAY BE NECESSARY TO PROPERLY SECURE THE RECM.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: DEP
DRAWN BY: CURTIS CUMBERBATCH
CHECKED BY: MIGUEL RODRIGUEZ
DESIGN LEAD: MICHAEL WOODEN, P.E.

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RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
DRAINAGE DETAILS
SHEET 3

DATE: 05/31/2012
SCALE: AS NOTED
SHEET NO: 58 OF 77
DRAWING NO. **GC–203.00**

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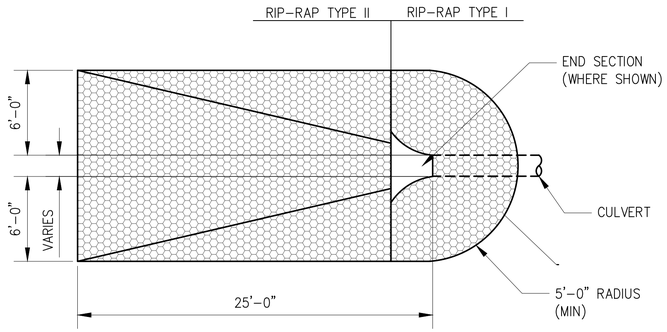
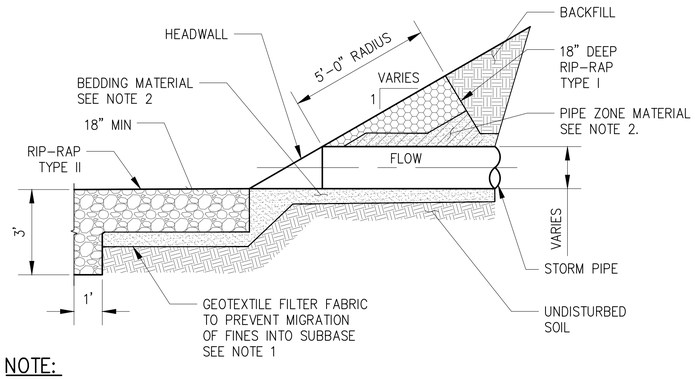


PLAN
NTS

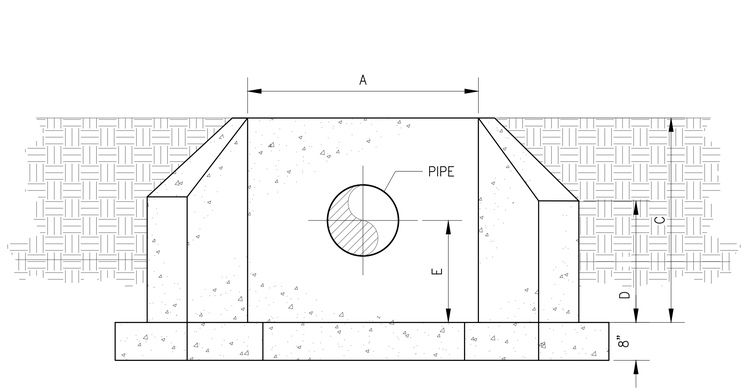


NOTE:

1. SEPARATION GEOTEXTILE SHALL BE LISTED AS STABILIZATION TYPE GEOTEXTILE ON THE NYSDOT "TECHNICAL SERVICES – MATERIALS – APPROVED LIST FOR GEOSYNTHETICS FOR HIGHWAY CONSTRUCTION."

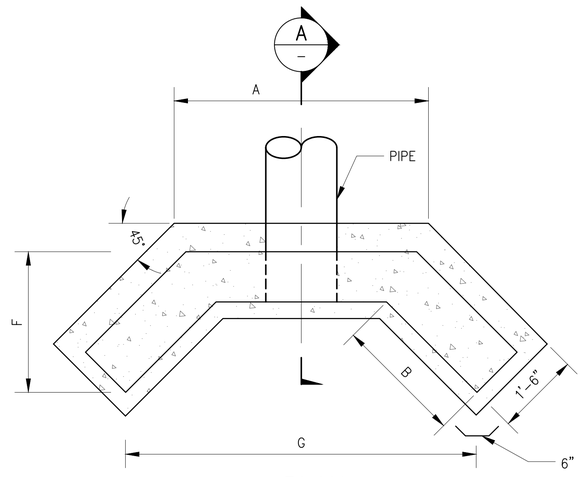
2. BEDDING BENEATH PIPE AND PIPE ZONE MATERIAL SHALL BE PER DETAIL 311 ON DWG. GC–303.

211 / – PIPE END WITH RIP–RAP (SHAFT SITE 5B)
SCALE: NTS



ELEVATION
NTS

DIMENSION SCHEDULE								
PIPE DIA.	A	B	C	D	E	F	G	APPROX. WEIGHT
12"	36"	30"	54"	40"	36"	22"	78"	5445 LBS.
15"	48"	30"	60"	45"	37.5"	22"	92"	6400 LBS.
18"	48"	30"	60"	45"	39"	22"	92"	6400 LBS.
24"	60"	36"	64"	48"	42"	26"	112"	7250 LBS.
30"	72"	36"	72"	54"	45"	26"	124"	9276 LBS.
36"	78"	48"	78"	60"	48"	35"	144"	11623 LBS.
48"	84"	48"	90"	66"	54"	35"	150"	12402 LBS.



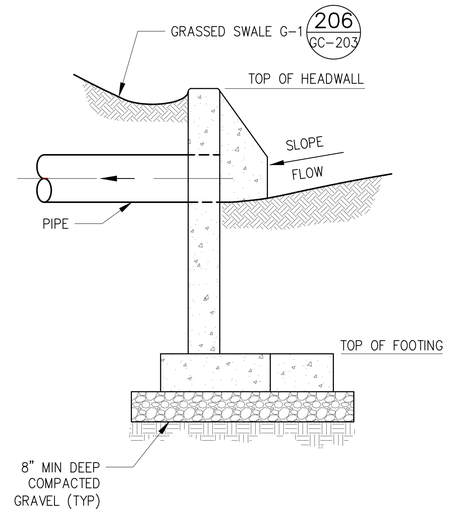
PLAN
NTS

NOTES:

1. ALL EXPOSED EDGES TO HAVE 1" BEVELED CORNERS

2. CONTRACTOR SHALL COORDINATE REINFORCEMENT DESIGN WITH SELECTED MANUFACTURER AND SUBMIT TO ENGINEER FOR REVIEW PRIOR TO INSTALLATION.

212 / – PRECAST CONCRETE HEADWALL
SCALE: NTS



A / – SECTION
SCALE: NTS

SITE PLAN APPLICATION
MAY 2012

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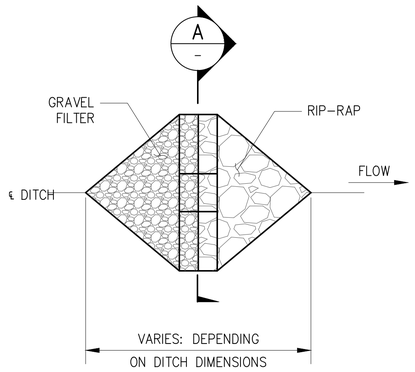
SHAFT 5B
GENERAL CIVIL
DRAINAGE DETAILS
SHEET 4

DATE: 05/31/2012
SCALE: N.T.S.
SHEET NO: 59 OF 77
DRAWING NO. GC–204.00



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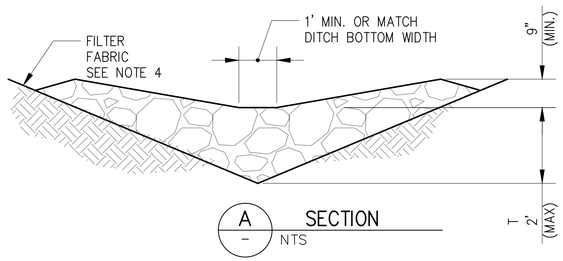
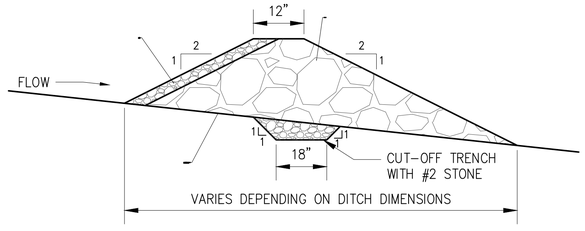
NTS

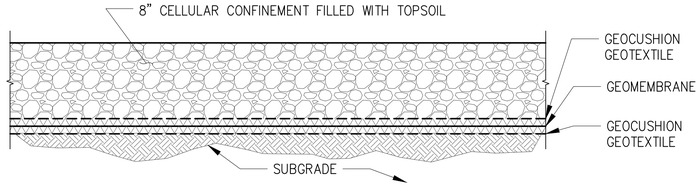




CHECK DAM NOTES:

1. EXTEND THE STONE A MINIMUM OF 1.5 FEET BEYOND DITCH BANKS.
2. STONE TO BE PLACED ON A FILTER FABRIC FOUNDATION.
3. EACH CHECK DAM TO HAVE A CUTOFF TRENCH THAT IS 18 INCHES WIDE AND 6 INCHES DEEP.
4. CHECK DAMS SHALL BE SPACED SO THAT THE CREST OF THE DOWNSTREAM DAM IS LEVEL WITH THE TOE OF THE UPSTREAM DAM.
5. THICKNESS OF STONE FILLING (T) SHALL BE 1.5 TIMES THE MEDIAN STONE SIZE (d50).

215 – CHECK DAM DETAIL
SCALE: NTS



216 – POND LINER DETAIL
SCALE: NTS

NOTES:

1. GEOCUSHION FABRIC SHALL BE NEEDLE PUNCHED, NON–WOVEN POLYPROPYLENE SUCHAS GEOTEX 1701 BY PROPEX OREGUAL.
2. CELLUAR CONFINEMENT SHALL BE MADE OF HDPE SUCHAS ENVIROGRID, MODEL EGA 208P–29 BY GEO PRODUCTS OR EQUAL.
3. GEOMEMBRANE SHALL BE TEXTURED 60 MIL HDPE BY POLYFLEX, OREGUAL.
4. GEOMEMBRANE CONSTRUCTION SHALL BE PER THE GEOSYNTHETIC RESEARCH INSTITUTE STANDARD GM–13.

SITE PLAN APPLICATION
MAY 2012

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SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
DRAINAGE DETAILS
SHEET 5

DATE: 05/31/2012
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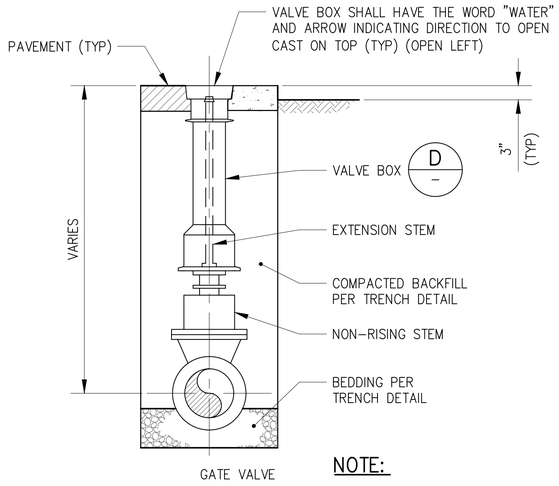
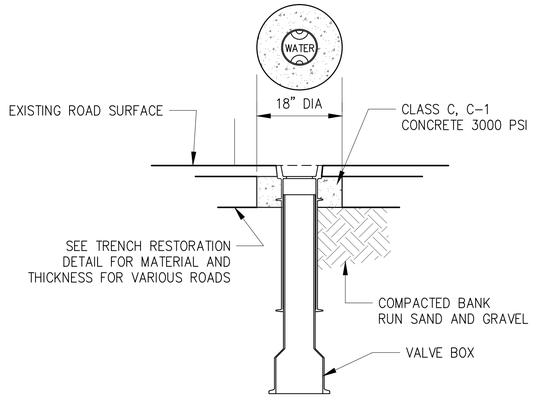
DRAWING NO. GC–205.00



NOTE:

EXTENSION STEMS REQUIRED ONLY FOR DEEP VALVES AS NOTED IN THE SPECIFICATIONS.



D – VALVE BOX DETAIL
SCALE: NTS

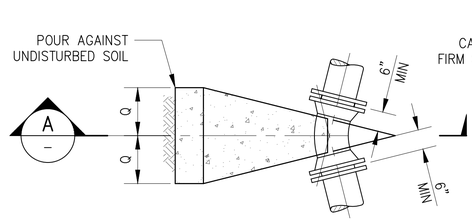
302 – BURIED VALVE INSTALLATION
SCALE: NTS

ANCHOR SCHEDULE FOR VERTICAL DOWNWARD BENDS	
SIZE	STRAP SIZE
6"ø	#4 BAR
8"ø	#5 BAR
12"ø	#7 BAR
16"ø	5" x 1/2" FLAT
24"ø	5" x 1/2" FLAT

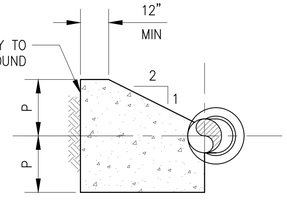
		THRUST BLOCKS FOR TEES, HORIZ. & VERTICAL BENDS AND PLUGS THRUST BLOCKS DESIGNED FOR 150 LB. PER SQ. IN. TEST PRESSURE AND 2000 LB. PER SQ. FT. SOIL PRESSURE			
DESC.	DIM.	6"ø	8"ø	12"ø	20"ø
HORIZ. & VERT. UPWARD	TEES N	1'-0"	1'-3"	1'-6"	3'-0"
	TEES O	1'-4"	1'-10"	3'-3"	3'-6"
	90° P	1'-0"	1'-3"	1'-6"	3'-6"
	90° Q	1'-4"	1'-10"	3'-3"	4'-3"
	45° P	0'-9"	1'-0"	1'-3"	2'-7"
	45° Q	1'-0"	1'-3"	2'-2"	3'-3"
	22-1/2° P	0'-6"	0'-9"	1'-0"	1'-8"
	22-1/2° Q	0'-9"	0'-11"	1'-4"	2'-3"
	11-1/4° P	0'-5"	0'-6"	0'-8"	1'-4"
	11-1/4° Q	0'-6"	0'-8"	1'-1"	1'-7"
VERTICAL DOWNWARD	45° *	1.4 CY	2.5 CY	5.2 CY	14.4 CY
	22-1/2° *	0.7 CY	1.3 CY	2.7 CY	7.8 CY
	11-1/4° *	0.4 CY	0.7 CY	1.4 CY	3.9 CY
	PLUGS R	2'-0"	2'-6"	3'-0"	6'-0"
	PLUGS S	2'-8"	3'-8"	6'-6"	7'-0"

* MINIMUM CONCRETE ANCHORAGE WITHOUT BACKFILL AND NO GROUND WATER CONDITION.

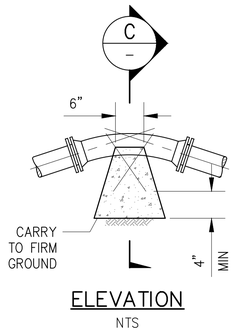
THRUST BLOCK SCHEDULE
NTS



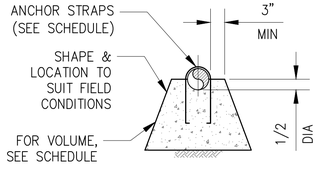
PLAN
NTS



A – SECTION
SCALE: NTS



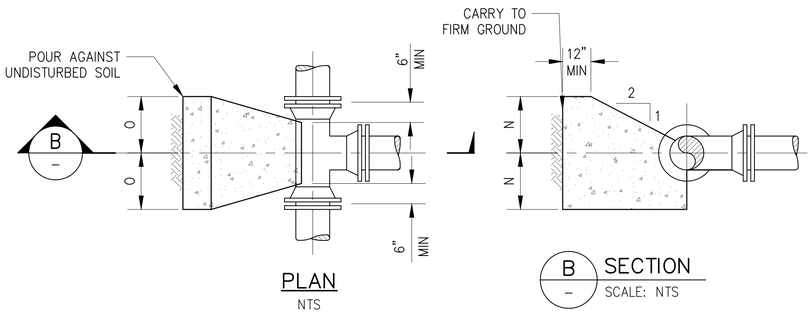
ELEVATION
NTS



C – SECTION
SCALE: NTS

HORIZONTAL AND UPWARD VERTICAL BENDS
NTS

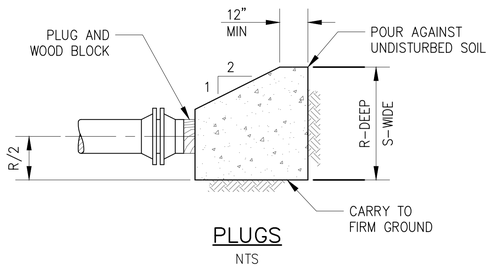
VERTICAL DOWNWARD BENDS
NTS



PLAN
NTS

B – SECTION
SCALE: NTS

TEES
NTS



PLUGS
NTS

303 – CONCRETE THRUST BLOCKS
SCALE: NTS

MINIMUM LENGTH OF RESTRAINED JOINTS ON EACH SIDE OF FITTINGS						
FITTING	150 PSI TEST PRESSURE					225 PSI TEST PRESSURE
	4"ø D.I.P.	6"ø D.I.P.	8"ø D.I.P.	12"ø D.I.P.	20"ø D.I.P.	12"ø D.I.P.
90° BEND, VALVES, CAPS, PLUGS	42'	54'	65'	89'	189'	113'
TEES (BRANCH)	42'	54'	65'	89'	189'	113'
45° BENDS	16'	2'	25'	34'	72'	51'
22 1/2° BENDS	8'	10'	13'	17'	37'	26'
11 1/4° BENDS	4'	5'	6'	9'	18'	13'
5 5/8° BENDS	2'	2'	3'	4'	8'	6'

NOTE:

CONTRACTOR SHALL USE THE ABOVE SCHEDULE AND THE CONTRACT PLAN SHEETS TO DETERMINE ACTUAL RESTRAINED LENGTHS REQUIRED. FITTINGS IN CLOSE PROXIMITY TO ONE ANOTHER MAY REQUIRE ADDITIONAL RESTRAINT. FOR EXAMPLE, TWO (2) 22 1/2° BENDS LOCATED WITHIN SEVERAL FEET OF EACH OTHER WILL HAVE THE SAME REACTION AS A 45° BEND AND, AS SUCH, WILL REQUIRE THE LENGTHS OF RESTRAINT SHOWN FOR A 45° BEND.

RESTRAINING LENGTH SCHEDULE
NTS

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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DESIGNED BY: DEP
DRAWN BY: CURTIS CUMBERBATCH
CHECKED BY: MIGUEL RODRIGUEZ
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM a joint venture PIRNIE in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

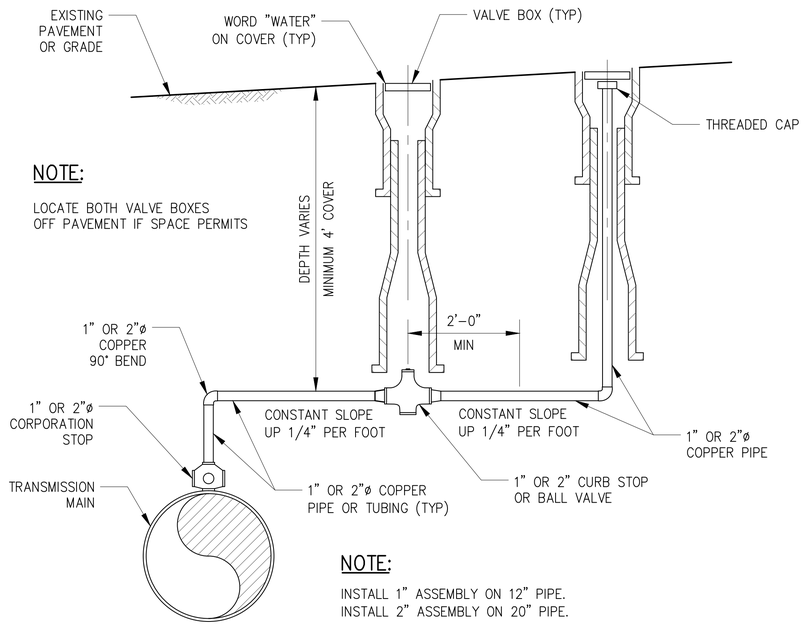
NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

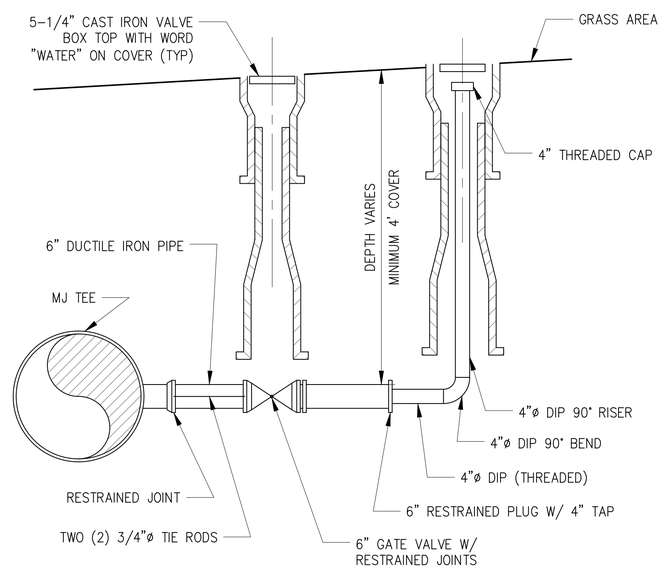
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
PIPING DETAILS
SHEET 1

DATE: 05/31/2012
SCALE: AS NOTED
SHEET NO: 61 OF 77
DRAWING NO. GC-301.00



305 – AIR RELEASE ASSEMBLY DETAIL
SCALE: NTS



308 – BLOW-OFF ASSEMBLY DETAIL
SCALE: NTS

SITE PLAN APPLICATION
MAY 2012

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NEW YORK CITY ENVIRONMENTAL PROTECTION
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RWB BYPASS TUNNEL
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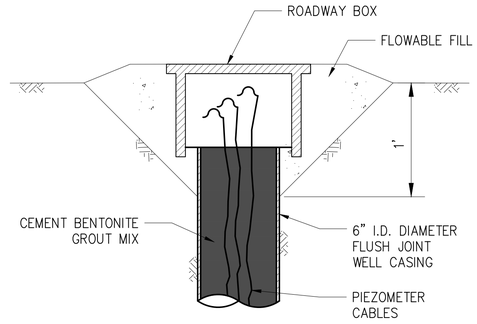
SHAFT 5B
GENERAL CIVIL
PIPING DETAILS
SHEET 2

DATE: 05/31/2012
SCALE: AS NOTED
SHEET NO: 62 OF 77
DRAWING NO. **GC-302.00**



314 / – PIEZOMETER DETAIL

SCALE: NTS

NOTES:

1. PIEZOMETERS SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION.
2. CASINGS SHALL BE CUT OR EXTENDED AND ROADWAY BOXES SHALL BE RESET OR REPLACED AS NECESSARY DURING GRADING.
3. CASING SHALL BE EXTENDED WITH SIX INCH INTERNAL DIAMETER, FLUSH MOUNTED, STEEL CASING WITH CENTRALIZERS SPACED AT A MAXIMUM INTERVALS. THE CASING SHALL BE ASTM A53 TYPE E GRADE B SCHEDULE 40 PIPE WITH A WEIGHT OF 18.99 LB/FOOT.
4. CEMENT BENTONITE GROUT SHALL BE PUMPED TO FILL THE CASING TO THE SURFACE. THE CEMENT BENTONITE GROUT WILL HAVE A WATER TO CEMENT TO BENTONITE RATIO OF 1.0:1.0:0.1 BY WEIGHT. THE PROPORTION OF THE MIX SHALL BE ONE BAG (94 LB) OF TYPE II PORTLAND CEMENT MIXED WITH 11.3 GALLONS OF WATER AND 10 LBS OF BENTONITE

SITE PLAN APPLICATION
MAY 2012

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SHAFT 5B
GENERAL CIVIL
PIPING DETAILS
SHEET 4

DATE: 05/31/2012
SCALE: AS NOTED
SHEET NO: 63 OF 77
DRAWING NO. **GC-304.00**

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Date Plotted: 5/29/2012 12:57 PM\Author: shrestha\File Location: i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\general\gc-304.00.dwg

EROSION AND SEDIMENT CONTROL NOTES

1. SEE GC-001.00 FOR EROSION AND SEDIMENT CONTROL SYMBOLS. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE NYSDEC STANDARDS AND SPECIFICATIONS FOR EROSION AND SEDIMENT CONTROL CURRENT EDITION. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE STORMWATER PERMITS, INCLUDING THE NYSDEC SPDES GENERAL PERMIT FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES. SOIL AND WATER CONSERVATION SOCIETY. P.O. BOX 7172, SYRACUSE. NY 13621-7172, AND THE NYSDEC WATER DEPARTMENT "NEW YORK STATE STORMWATER MANAGEMENT DESIGN MANUAL".

2. ALL SOIL EROSION AND SEDIMENT CONTROL PRACTICES SHALL BE INSTALLED PRIOR TO ANY MAJOR SOIL DISTURBANCE, AND MAINTAINED UNTIL PERMANENT PROTECTION IS ESTABLISHED. AREAS OUTSIDE OF THE PERIMETER SEDIMENT CONTROL SYSTEM SHALL NOT BE DISTURBED. SOIL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSPECTED AND MAINTAINED ON A REGULAR BASIS IN ACCORDANCE WITH NYSDEC STANDARDS, INCLUDING AFTER EVERY STORM EVENT.

3. ANY DISTURBED AREA AND STOCK PILED MATERIALS THAT WILL BE LEFT EXPOSED FOR MORE THAN FOURTEEN (14) DAYS AND NOT SUBJECT TO CONSTRUCTION TRAFFIC SHALL IMMEDIATELY RECEIVE A TEMPORARY SEEDING AND MULCHING. IF THE SEASON PROHIBITS TEMPORARY SEEDING, THE DISTURBED AREA SHALL BE MULCHED WITH SALT HAY OR EQUIVALENT AND BOUND IN ACCORDANCE WITH NYSDEC STANDARDS. (i.e. PEG AND TWINE, MULCH NETTING, OR LIQUID MULCH BINDER). IF SOIL EROSION CONTINUES, THE AREA SHALL BE STABILIZED WITH EROSION CONTROL MATTING IN ACCORDANCE WITH NYSDEC STANDARDS.

4. IMMEDIATELY FOLLOWING INITIAL DISTURBANCE OR ROUGH GRADING, ALL CRITICAL AREAS SUBJECT TO EROSION SHALL RECEIVE A TEMPORARY SEEDING IN COMBINATION WITH STRAW MULCH OR A SUITABLE EQUIVALENT, AT A RATE OF 2 TONS PER ACRE.

5. STABILIZE ALL AREAS NOT TO BE DISTURBED WITHIN 10 DAYS WITH TEMPORARY SEEDING PER THE CONTRACT SPECIFICATIONS.

6. THE SITE SHALL AT ALL TIMES BE GRADED AND MAINTAINED SUCH THAT ALL STORMWATER RUNOFF IS DIVERTED TO SOIL EROSION AND SEDIMENT CONTROL FACILITIES.

7. STOCKPILES ARE NOT TO BE LOCATED WITHIN 50' OF A FLOOD PLAIN, SLOPE, ROADWAY OR DRAINAGE FACILITY. THE BASE OF ALL STOCKPILES SHALL BE CONTAINED BY A SILT FENCE.

8. MAXIMUM SIDE SLOPES SHALL NOT EXCEED (H:V) 2:1 FOR EARTH SURFACES OR FOR ROCK SURFACES, UNLESS OTHERWISE SHOWN/NOTED ON DRAWINGS OR SPECIFIED IN CONTRACT DOCUMENTS. ANY SIDE SLOPE REVISION MUST BE APPROVED BY THE ENGINEER.

9. ALL POINTS OF CONSTRUCTION INGRESS AND EGRESS SHALL BE PROTECTED TO PREVENT THE DEPOSITION OF MATERIALS ONTO TRAVERSED PUBLIC THOROUGHFARE(S) EITHER BY INSTALLING AND MAINTAINING A STABILIZED CONSTRUCTION ENTRANCE, OR BY WASHING ALL VEHICLE WHEELS IN A SAFE DISPOSAL AREA. ALL MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) SHALL BE REMOVED IMMEDIATELY. PROPER PRECAUTIONS SHALL BE TAKEN TO ENSURE THAT MATERIALS DEPOSITED ONTO PUBLIC THOROUGHFARE(S) ARE REMOVED SO THAT THEY DO NOT ENTER DRAINAGE SWALES, CATCH BASINS, STORM SEWERS, OR COMBINED SEWERS.

10. STORM DRAINAGE OUTLETS IF ENCOUNTERED, WILL BE PROTECTED, AS REQUIRED, BEFORE THE DISCHARGE POINTS BECOME OPERATIONAL.

11. DUST SHALL BE CONTROLLED VIA THE APPLICATION OF UNCONTAMINATED WATER OR OTHER APPROVED METHOD IN ACCORDANCE WITH NYSDEC STANDARDS.

12. TREES INSIDE LIMITS OF DISTURBANCE TO REMAIN AFTER CONSTRUCTION ARE TO BE PROTECTED WITH A SUITABLE FENCE INSTALLED 5 FEET BEYOND THE DRIP LINE IN ACCORDANCE WITH NYSDEC STANDARDS. TREE PROTECTION FENCING SHALL BE INSTALLED WHERE SHOWN ON PLANS.

13. A STABILIZED CONSTRUCTION ENTRANCE SHALL BE INSTALLED AT ALL POINTS OF ACCESS WHERE A DISTURBED AREA MEETS AN IMPERVIOUS SURFACE.

14. ANY REVISION TO THE CERTIFIED SWPPP MUST BE SUBMITTED TO THE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO IMPLEMENTATION IN THE FIELD. UPON APPROVAL, ALL REVISIONS INCLUDING DOCUMENTATION AND CALCULATIONS MUST BE ADDED TO THE SWPPP PRIOR TO IMPLEMENTATION.

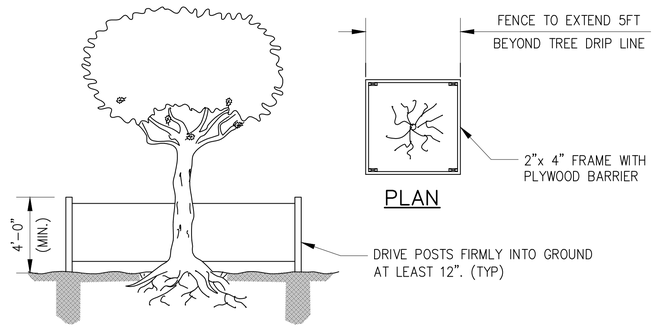
15. CONTRACTOR SHALL DETERMINE THE OVERALL EXTENT OF MEASURES REQUIRED IN THE SWPPP, EROSION CONTROL MEASURES AND NOISE ABATEMENT MEASURES, BASED ON ITS PLANNED OPERATIONS. A COPY OF THE CERTIFIED STORMWATER POLLUTION PREVENTION PLAN ALONG WITH ALL ASSOCIATED DOCUMENTATION MUST BE AVAILABLE AT THE PROJECT SITE THROUGHOUT CONSTRUCTION.

16. THE LOCATION AND EXTENT OF EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MODIFIED AT EACH PHASE OF CONSTRUCTION THAT RESULTS IN A CHANGE OF EITHER THE QUANTITY OR DIRECTION OF SURFACE RUNOFF FROM THE CONSTRUCTION AREAS. CONTRACTOR SHALL OBTAIN PRIOR APPROVAL FROM THE ENGINEER FOR DEVIATIONS FROM THE APPROVED EROSION AND SEDIMENT CONTROL PLAN.

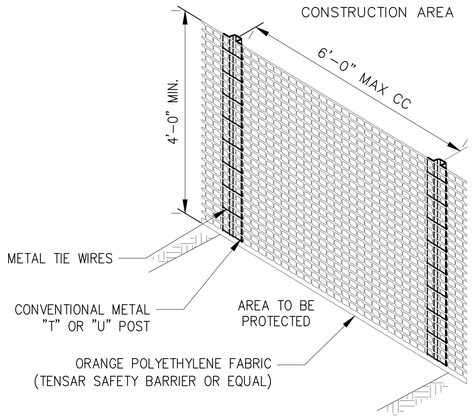
17. CLEARING SHALL BE LIMITED TO AREAS REQUIRED FOR IMMEDIATE CONSTRUCTION ACTIVITIES. MASS CLEARING AND GRADING OF SITES SHALL BE AVOIDED.

18. ALL EROSION CONTROL MEASURES SHALL BE INSPECTED FOLLOWING EVERY RUNOFF-PRODUCING RAINFALL BUT IN NO CASE LESS THAN ONCE EVERY WEEK. MEASURES SHALL BE REPAIRED OR REPLACED IMMEDIATELY AS REQUIRED TO MAINTAIN PERFORMANCE.

19. REMOVED SEDIMENT SHALL BE DISPOSED OF IN SUCH MANNER AS TO INSURE FURTHER SEDIMENT TRANSPORT DOES NOT OCCUR.



401 – TEMPORARY TREE PROTECTION
SCALE: NTS



402 – PF – PROTECTIVE FENCE
SCALE: NTS

PROTECTIVE FENCE NOTES:

1. LOCATE PROTECTIVE FENCE AS SHOWN ON THE DRAWINGS AND/OR AS DIRECTED BY THE ENGINEER. AT A MINIMUM, THE PROTECTIVE FENCING AROUND EXISTING TREES SHOULD BE LOCATED OUTSIDE OF THE DRIP LINE OF ANY TREE TO BE RETAINED AND, IN NO CASE, CLOSER THAN FIVE (5) FEET TO THE TRUNK OF ANY TREE. NO CLEANING OR GRUBBING ACTIVITIES ARE PERMITTED WITHIN THIS RADIUS.

2. FENCING TO BE USED SHALL BE 48-INCH-HIGH "INTERNATIONAL ORANGE" PLASTIC (POLYETHYLENE) WEB FENCING SECURED TO CONVENTIONAL METAL "T" OR "U" POSTS DRIVEN TO A MINIMUM DEPTH OF 18 INCHES ON SIX-FOOT-MAXIMUM CENTERS.

3. THE FENCE SHALL HAVE THE FOLLOWING PROPERTIES:

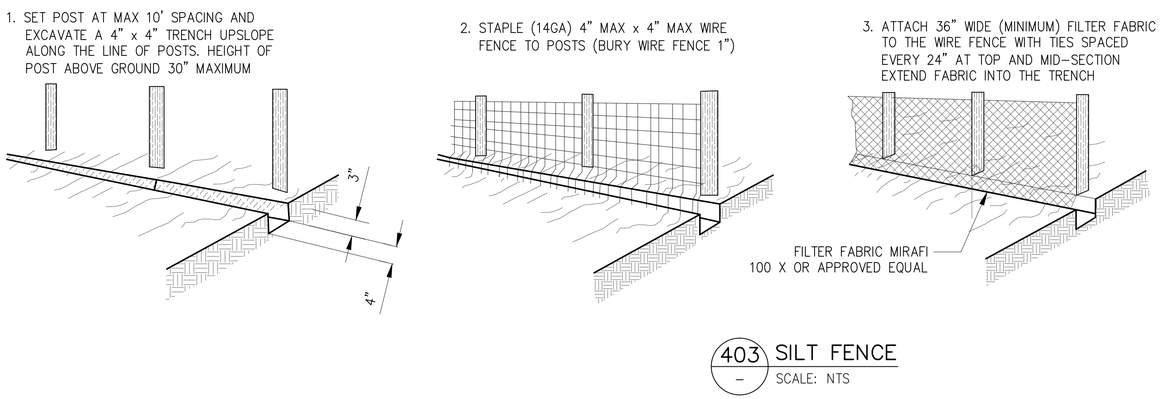
   TENSILE YIELD:
   AVG. 2,000 LBS PER 4-FOOT WIDTH

   ULTIMATE TENSILE YIELD:
   AVG. 2,900 LBS PER 4-FOOT WIDTH
   ELONGATION AT BREAK (%): GREATER THAN 1,000%

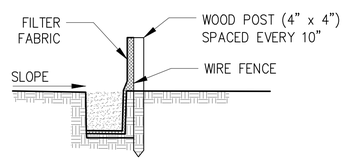
   CHEMICAL RESISTANCE:
   INERT TO MOST CHEMICALS AND ACIDS UV STABILIZED

4. PROTECTIVE FENCING SHALL BE IN PLACE BEFORE ANY GRADING ACTIVITIES BEGIN AND IS TO BE KEPT IN GOOD REPAIR FOR THE DURATION OF THE CONSTRUCTION ACTIVITIES.

5. REMOVE FENCING MATERIALS ONLY AFTER FINAL CONSTRUCTION ACTIVITY HAS CEASED ON THE SITE, SUBJECT TO APPROVAL BY ENGINEER.



403 – SILT FENCE
SCALE: NTS



A – SECTION
SCALE: NTS

SITE PLAN APPLICATION
MAY 2012

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"WARNING-IT IS A VIOLATION, OF THE NEW YORK STATE EDUCATION LAW, SECTION, 7209.2, FOR ANY PERSON, UNLESS (S)HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION, LAW, SECTION, 7209.2."

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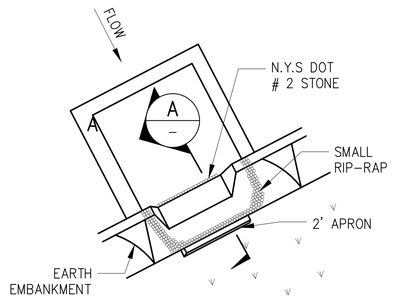
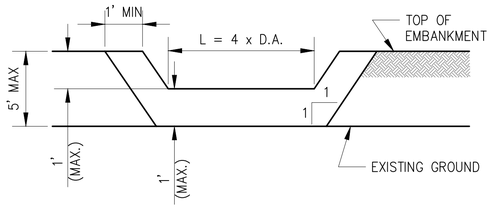
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
EROSION AND SEDIMENT CONTROL NOTES AND DETAILS - SHEET 1

DATE: 05/31/2012
SCALE: NOT TO SCALE
SHEET NO: 64 OF 77
DRAWING NO. **GC-401.00**



PLAN
NTS



PROFILE
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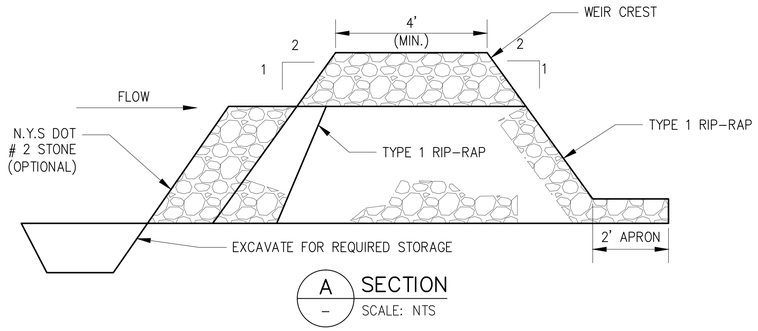
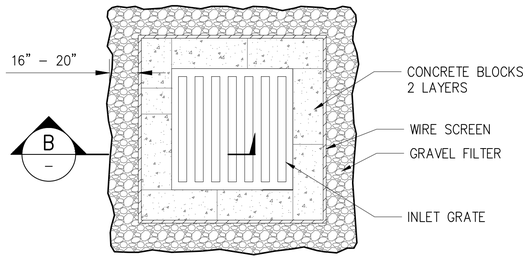


A – SECTION
SCALE: NTS

406 – STONE OUTLET SEDIMENT TRAP DETAIL
SCALE: NTS

STONE OUTLET SEDIMENT TRAP NOTES:

1. THE FILL MATERIAL FOR THE EMBANKMENT SHALL BE FREE OF ROOTS OR OTHER WOODY VEGETATION AS WELL AS OVER-SIZED STONES, ROCKS, ORGANIC MATERIAL OR OTHER OBJECTIONABLE MATERIAL. THE EMBANKMENT SHALL BE COMPACTED BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED.
2. ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
3. THE STONE USED IN THE OUTLET SHALL BE RIPRAP 4"-8" ALONG WITH A 1' THICKNESS OF 2" AGGREGATE PLACED ON THE UP-GRADE SIDE ON THE SMALL RIPRAP OR EMBEDDED FILTER CLOTH IN THE RIPRAP. A ONE FOOT LAYER OF N.Y.S. DOT #2 STONE MAY BE PLACED ON THE UPSTREAM SIDE OF THE RIPRAP IN PLACE OF THE EMBEDDED FILTER CLOTH.
4. SEDIMENT SHALL BE REMOVED AND TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2" DESIGN DEPTH OF THE TRAP. IT SHALL BE PLACED ON SITE AND STABILIZED.
5. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
6. THE STRUCTURE SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.



PLAN
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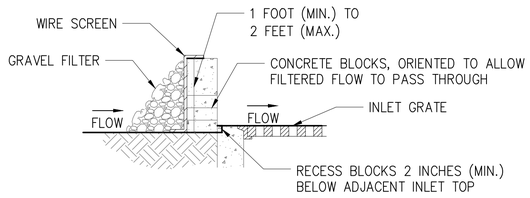
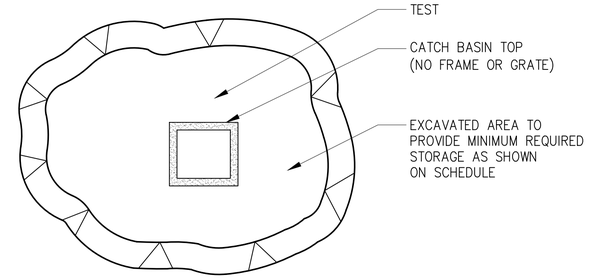
NOTE:

1. GRADE APPROACH TO THE INLET UNIFORMLY AROUND THE BASIN.

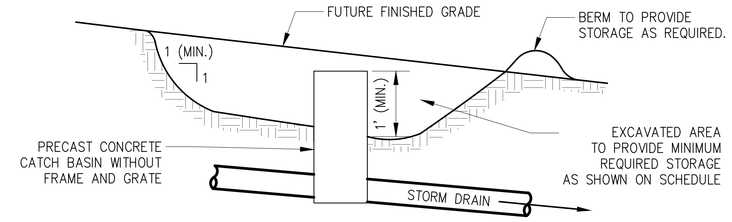


B – DETAIL
SCALE: NTS

407 – INLET SILT PROTECTION DETAIL
SCALE: NTS



PLAN VIEW
NTS



PLAN VIEW
NTS

405 – CATCH BASIN SEDIMENT TRAP DETAIL
SCALE: NTS

NOTES FOR DRAWINGS

1. SEDIMENT SHALL BE REMOVED AND THE TRAP RESTORED TO ITS ORIGINAL DIMENSIONS WHEN THE SEDIMENT HAS ACCUMULATED TO 1/2 THE DESIGN DEPTH OF THE TRAP. REMOVED SEDIMENT SHALL BE DEPOSITED IN A SUITABLE AREA AND STABILIZED.
2. THE STRUCTURE SHALL BE INSPECTED AFTER EACH RAIN AND REPAIRS MADE AS NEEDED.
3. THE SEDIMENT TRAP SHALL BE REMOVED AND THE AREA STABILIZED WHEN THE CONTRIBUTORY DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.
4. ALL CUT SLOPES SHALL BE 1:1 OR FLATTER.

SEDIMENT TRAP SCHEDULE			
@ INLET	TRAP #	DRAINAGE AREA (AC)	REQUIRED STORAGE (CUBIC FEET)
DS-5	1	1.34	4824
DS-4	2	0.24	864
DS-3	3	0.81	2916
DS-2	4	0.34	1224
DS-8	5	0.88	3168
DS-6	6	2.02	7272
DS-17	7	0.36	1296
DS-20	8	1.08	3888
DS-12	9	0.52	1872

SITE PLAN APPLICATION
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EROSION AND SEDIMENT CONTROL
DETAILS - SHEET 2

DATE: 05/31/2012
SCALE: AS NOTED
SHEET NO: 65 OF 77
DRAWING NO. GC-402.00

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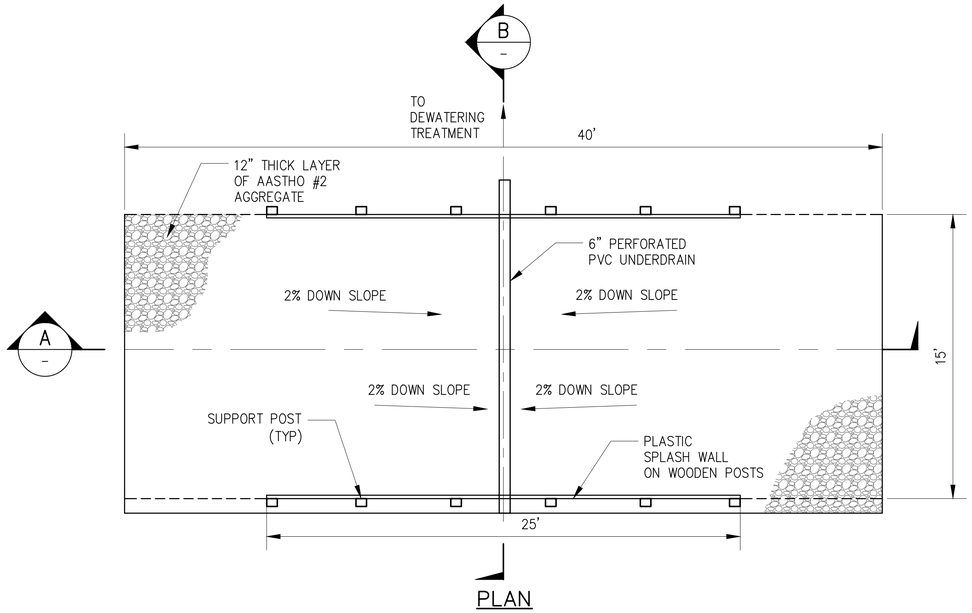
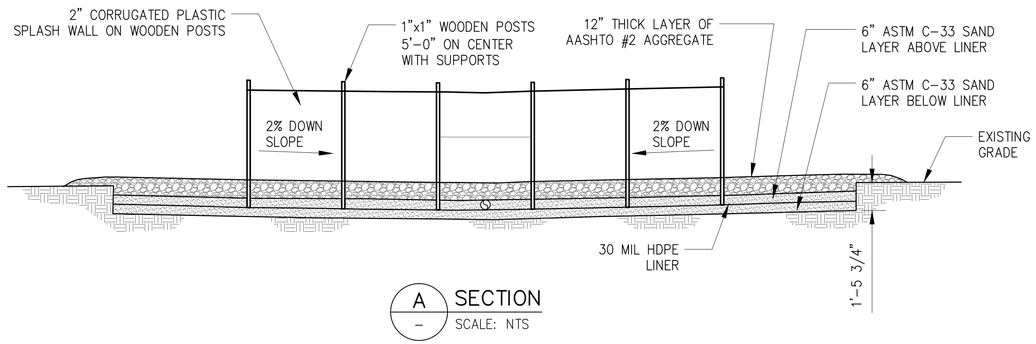
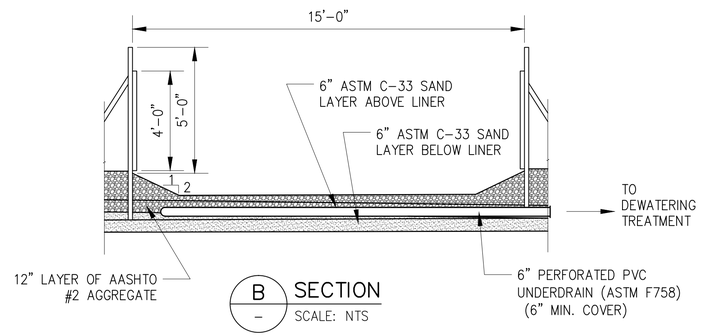


PLAN



A SECTION
SCALE: NTS



B SECTION
SCALE: NTS

408 TRUCK WASH FACILITY (SHAFT SITE 5B)
SCALE: NTS

TEMPORARY TRUCK WASH NOTES:

1. INSTALL A TEMPORARY TRUCK WASH FACILITY TO REMOVE SOIL OR OTHER MATERIAL FROM ALL VEHICLES AND EQUIPMENT LEAVING THE SITE.
2. PROVIDE AT A MINIMUM THE FOLLOWING EQUIPMENT. HIGH PRESSURE WASH SYSTEM, HOSING, WATER, AND WATER STORAGE.
3. ALLOW NO WASH WATER TO ESCAPE ONTO THE SURROUNDING GROUND SURFACE.
4. DISPOSE OF DRAINAGE FROM TRUCK WASH TO DEWATERING TREATMENT SYSTEM. DISPOSE OF ALL OTHER MATERIAL OFF-SITE IN A LAWFUL MANNER.
5. PROVIDE GRAVEL AREAS FOR TRUCK INGRESS AND EGRESS TO/FROM TRUCK WASH FACILITY FOR SITE 5B ONLY.
6. GRADE AREA AS REQUIRED FOR TRUCK WASH FACILITY.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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REVISIONS

DESIGNED BY: DEP
DRAWN BY: CURTIS CUMBERBATCH
CHECKED BY: MIGUEL RODRIGUEZ
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM a joint venture PIRNIE in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

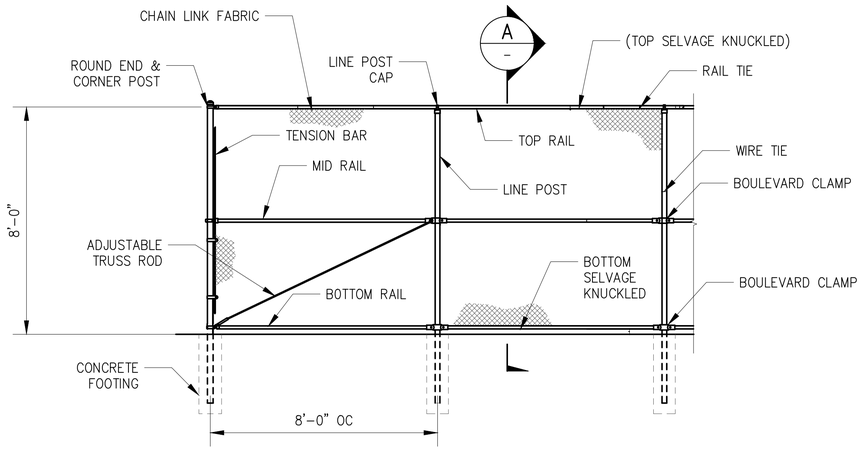
NYC Environmental Protection

PORTFOLIO MANAGER: LOUIS HUANG, P.E.
PROJECT MANAGER: TED DOWEY, P.E.
DIRECTOR, IN HOUSE DESIGN: PATRICK O'CONNOR, P.E.

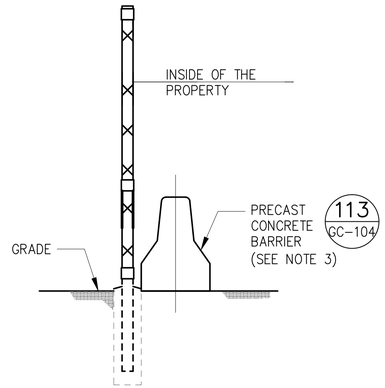
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
EROSION AND SEDIMENT CONTROL
DETAILS - SHEET 3

DATE: 05/31/2012
SCALE: N.T.S.
SHEET NO: 66 OF 77
DRAWING NO. GC-403.00



501 – CHAIN LINK FENCE
SCALE: NTS



A – SECTION
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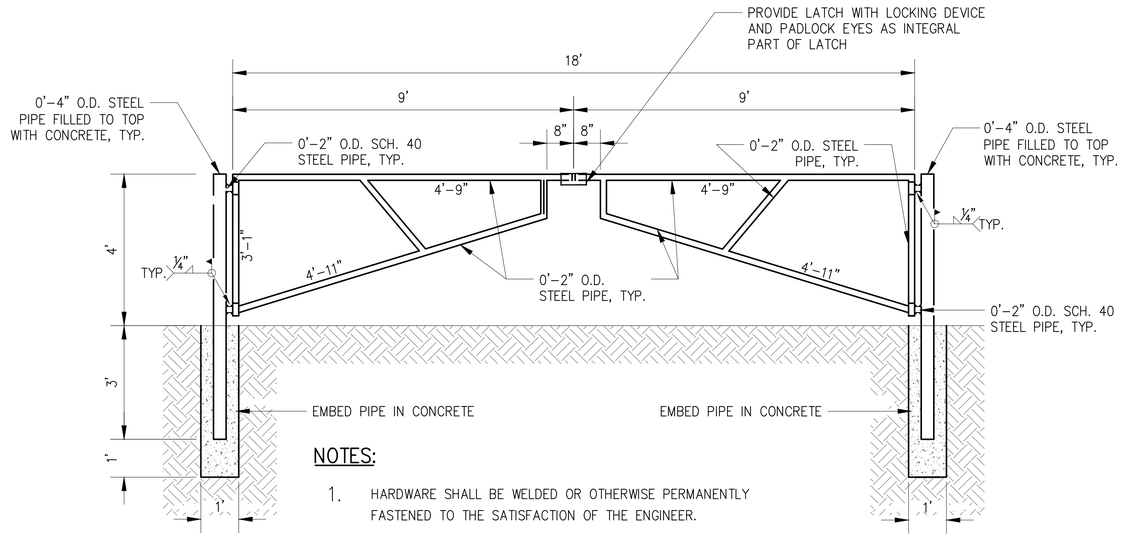

NOTES:

1. HARDWARE SHALL BE WELDED OR OTHERWISE PERMANENTLY FASTENED TO THE SATISFACTION OF THE ENGINEER.
2. GATE SHALL BE HOT DIPPED GALVANIZE AFTER FABRICATION.

503 – PIPE GATE DETAIL
SCALE: NTS

NOTES:

1. FOR FENCE AND GATE LOCATIONS AND HEIGHTS, SEE CIVIL DRAWINGS.
2. METAL FENCING AND GATES SHALL BE IN ACCORDANCE WITH DETAILED SPECIFICATION 02821.
3. PRECAST CONCRETE BARRIERS SHALL BE LOCATED WHERE SHOWN ON PLANS.
4. A CONCRETE MOWING STRIP 4"DX12"W SHALL BE PROVIDED WITH THE METAL FENCING, WHERE SHOWN ON DRAWINGS.
5. A DOUBLE LATCH WITH PADLOCK SHALL BE PROVIDED FOR ALL GATES. LOCKS AND LATCHES SHALL BE IN ACCORDANCE WITH DETAILED SPECIFICATION 02821.

SITE PLAN APPLICATION
MAY 2012

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"WARNING–IT IS A VIOLATION, OF THE NEW YORK STATE EDUCATION LAW, SECTION, 7209.2, FOR ANY PERSON, UNLESS (S)HE IS ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT IN ANY WAY. IF ALTERED, THE ALTERING PERSON SHALL COMPLY WITH THE REQUIREMENTS OF NEW YORK EDUCATION, LAW, SECTION, 7209.2."

NEW YORK CITY ENVIRONMENTAL PROTECTION
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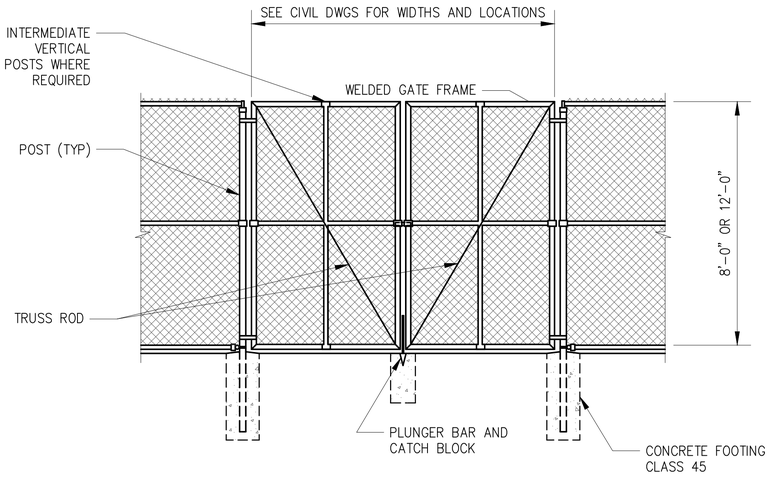
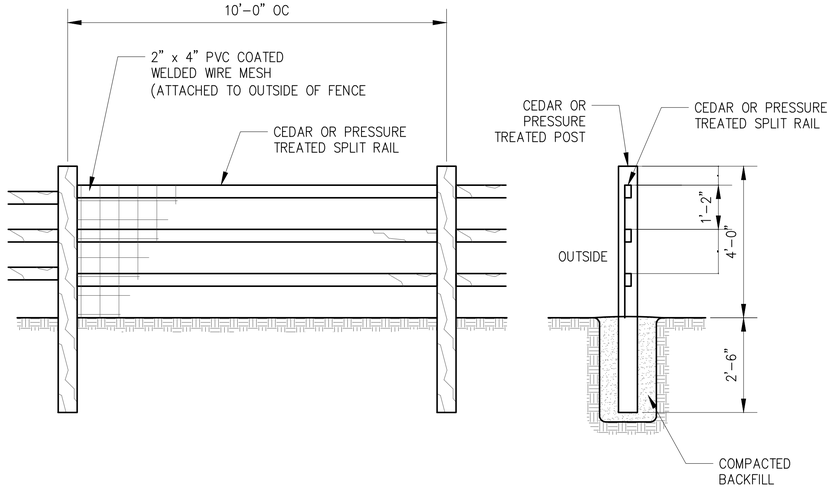
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
FENCING, SECURITY, AND
ACCESS DETAILS - SHEET 1

DATE: 05/31/2012
SCALE: AS NOTED
SHEET NO: 67 OF 77
DRAWING NO. **GC-501.00**



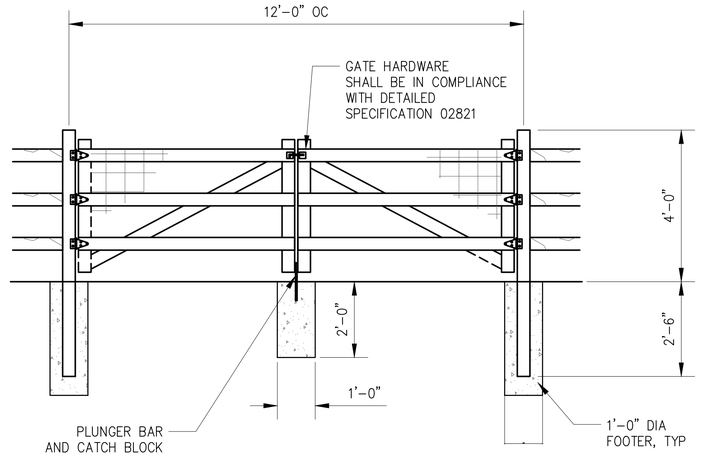
504 – DOUBLE LEAF CHAIN LINK GATE

SCALE: NTS



505 – SPLIT RAIL FENCE WITH WIRE MESH BACKING DETAIL

SCALE: NTS



506 – DOUBLE LEAF SPLIT RAIL GATE DETAIL

SCALE: NTS

SITE PLAN APPLICATION

MAY 2012

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RWB BYPASS TUNNEL
SITE PLAN APPLICATION
SHAFT 5B
GENERAL CIVIL
FENCING, SECURITY AND ACCESS DETAILS - SHEET 2

DATE: 05/31/2012
SCALE: AS SHOWN
SHEET NO: 68 OF 77
DRAWING NO. **GC–502.00**

GENERAL LANDSCAPE NOTES:

1. THE LANDSCAPE PLAN SHEETS SHALL BE USED FOR LANDSCAPE PLANTING PURPOSES ONLY. EXAMINE ALL DRAWINGS AND FIELD CONDITIONS FOR SPECIFIC LOCATIONS OF UTILITIES, STRUCTURES, ETC. AND NOTIFY THE ENGINEER IN REFERENCE TO ANY DISCREPANCIES OR LOCATION CONFLICTS PRIOR TO PLANTING INSTALLATION.
2. ALL PLANT MATERIAL SHALL CONFORM TO THE AMERICAN STANDARD FOR NURSERY STOCK, ANSI Z60.1 CURRENT EDITION. THE PLANT MATERIAL SHALL BE TRUE TO SPECIES, VARIETY, SIZE AND BE CERTIFIED DISEASE AND INSECT FREE. THE ENGINEER RESERVES THE RIGHT TO REJECT PLANT MATERIAL WHEN DELIVERED TO THE SITE AND UP TO THE TIME OF FINAL ACCEPTANCE.
3. NO PLANT SUBSTITUTIONS SHALL BE PERMITTED WITH REGARDS TO SIZE, SPECIES, VARIETY, ETC. WITHOUT WRITTEN PERMISSION OF THE ENGINEER. WRITTEN PROOF OF PLANT MATERIAL UNAVAILABILITY MUST BE PROVIDED.
4. LOCATION AND SPACING OF PROPOSED VEGETATION IS AS SHOWN ON THE LANDSCAPE PLAN SHEETS. FINAL ADJUSTMENTS TO BE MADE IN THE FIELD AND AS DIRECTED BY THE ENGINEER TO REFLECT EXISTING SITE CONDITIONS.
5. THE PLANTING PLAN SHALL TAKE PRECEDENCE OVER THE PLANT SCHEDULE SHOULD ANY PLANT QUANTITY DISCREPANCIES OCCUR.
6. ALL PLANT MATERIAL SHALL BE PLANTED IN CONFORMANCE WITH THE TYPICAL PLANTING DETAILS SHOWN AND ACCEPTED HORTICULTURAL PRACTICES. INSTALL ALL PLANT MATERIAL ON UNDISTURBED/COMPACTED GRADE. CUT AND REMOVE BURLAP FROM THE TOP ONE-THIRD OF THE ROOT BALL. NO SYNTHETIC MATERIAL IS TO REMAIN IN PLANTING HOLE. SEE PLANTING DETAILS.
7. ENGINEER SHALL PROVIDE FINAL APPROVAL OF ALL PLANT MATERIAL.
8. PROVIDE PLANTING PITS AS INDICATED ON PLANTING DETAILS.
9. PLANT ROOT FLAIR SHALL BE EXPOSED AT TIME OF PLANTING. PLANTS SHALL BE INSTALLED AT SAME GRADE AS GROWN IN NURSERY.
10. NEWLY INSTALLED PLANT MATERIAL SHALL BE THOROUGHLY WATERED AT THE TIME OF INSTALLATION BY THE CONTRACTOR. CONTRACTOR IS RESPONSIBLE FOR THE REGULAR WATERING OF PLANT MATERIAL DURING THE CONTRACT MAINTENANCE PERIOD.
11. ALL PLANT MATERIAL SHALL BE GUARANTEED BY THE CONTRACTOR FOR 24 MONTHS AFTER THE DATE OF SUBSTANTIAL COMPLETION.
12. ALL DISTURBED AREAS SHALL RECEIVE TEMPORARY AND PERMANENT STABILIZATION DEPENDING UPON STAGE OF WORK AND TIME OF YEAR. SEE SHEET GC-401 FOR STABILIZATION REQUIREMENTS.
13. WIRE BASKETS ARE TO BE CUT AND FOLDED TO BOTTOM OF PLANTING HOLE AWAY FROM SIDES OF ROOT BALL.
14. PROVIDE SUSTAINED RELEASE 5-10-5 FERTILIZER FOR ALL PLANT MATERIAL IN QUANTITIES AS PER MANUFACTURER'S RECOMMENDATIONS. THOROUGHLY MIX IN TOP 12" OF ALL PLANTING AREAS.
15. ALL PLANTS ARE SHOWN SEMI-MATURE SIZE ON PLANS. SIZES INDICATED IN PLANT LIST ARE SIZES AT TIME OF INSTALLATION.
16. PLANTING PITS ARE TO BE 3X ROOT BALL DIAMETER.
17. TREES TO BE HANDLED BY ROOT BALL ONLY. HANDLING OF TREES BY THE TRUNK OR THE PLACING OF STRAPS AROUND THE TRUNK WILL BE CAUSE FOR IMMEDIATE REJECTION OF PLANT MATERIAL.
18. ALL DISTURBED AREAS TO BE RESTORED TO THE SATISFACTION OF THE RE.
19. TREES TO BE INSTALLED WITH SAME ORIENTATION AS AT PLACE GROWN. NORTH SIDE OF TREE TO BE IDENTIFIED PRIOR TO DIGGING.
20. CONTRACTOR IS RESPONSIBLE FOR THE INITIAL PRUNING OF TREES. PRUNING TO BE LIMITED TO CROSSOVER LIMBS, CO-DOMINANT LEADERS, AND BROKEN OR DEAD BRANCHES. SOME INTERIOR TWIGS AND LATERAL BRANCHES MAY BE PRUNED; HOWEVER, DO NOT REMOVE THE TERMINAL BUDS OF BRANCHES THAT EXTEND TO THE EDGE OF THE CROWN.
21. CONTRACTOR IS RESPONSIBLE FOR THE TRAINING OF VINES PLANTED AS PART OF THIS PROJECT, TO GROW UP THE FENCES VINES ARE PLANTED AGAINST FOR THE DURATION OF THE GUARANTEE PERIOD. TRAINING OF VINES IS TO BE PERFORMED ACCORDING TO ACCEPTED HORTICULTURAL PRACTICES.

WILDFLOWER SEED MIX:

	DESCRIPTION	RATE (LBS PER ACRE)
1.	LITTLE BLUESTEM, 'CAMPER'	6
2.	BIG BLUESTEM, 'NIAGARA'	3
3.	SWITCHGRASS, 'BLACKWELL'	2
4.	INDIANGRASS, 'HOLT'	3
5.	PURPLE LOVEGRASS	6
6.	SIDEOATS GRAMA, 'BUTTE'	1
7.	CANADA WILDRYE	1
8.	ANNUAL RYEGRASS	10
9.	EASTERN COLUMBINE	0.0625
10.	PURPLE CONEFLOWER	0.1250
11.	BUTTERFLY MILKWEED	0.0625
12.	PARTRIDGE PEA	0.2500
13.	OXEYE SUNFLOWER	0.1250
14.	ROUNDHEAD LESPEDEZA, ALBANY PINE BUSH	0.0625
15.	BLACKEYED SUSAN	0.1880
16.	CANADA GOLDENROD	0.0625
17.	SMOOTH BLUE ASTER	0.0625

PLANTING SCHEDULE (BT-1 Contract, Planting During Construction)

QTY	SYMBOL	ABR.	BOTANICAL NAME	COMMON NAME	SIZE AT PLANTING HT	SIZE AT PLANTING CAL	REMARKS
TREES/CONIFERS							
2		AA	AMELANCHIER ARBOREA	DOWNY SERVICEBERRY	7-8'		B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
7		AC	AMELANCHIER CANADENSIS	SHADBLOW SERVICEBERRY	7-8'		B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
13		AR	ACER RUBRUM	RED MAPLE		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
16		AS	ACER SACCHARUM	SUGAR MAPLE		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
13		CF	CORNUS FLORIDA	FLOWERING DOGWOOD	7-8'		B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
85		JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	8-10'		B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
3		LT	LIRIODENDRON TULIPIFERA	TULIPTREE		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
13		QB	QUERCUS BICOLOR	SWAMP WHITE OAK		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
6		QR	QUERCUS RUBRA	RED OAK		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
10		PS	PINUS STROBUS	EASTERN WHITE PINE	8-10'		B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
SHRUBS/GRASSES							
462		CP	COMPTONIA PEREGRINA	SWEET FERN	12-18"		#2 CONTAINER. TO BE SPACED AT 2 - 2.5' O.C.
61		CS	CORNUS SERICEA	REDOSIER DOGWOOD	18-24"		#5 CONTAINER. TO BE SPACED AT 2.5- 3' O.C.
137		HV	HAMAMELIS VIRGINIANA	AMERICAN WITCHHAZEL	24-30"		#5 CONTAINER AT PLANTING. TO BE SPACED AT 5-5.5' O.C.
38		IG	ILEX GLABRA	INKBERRY HOLY	18-24"		#3 CONTAINER. TO BE SPACED AT 2.5 - 3' O.C.
57		PV	PANICUM VIRGATUM	SWITCHGRASS	18-24"		#3 CONTAINER. TO BE SPACED AT 3 - 3.5' O.C.
160		RA	RHUS AROMATICA	FRAGRANT SUMAC	12-18"		#2 CONTAINER. TO BE SPACED AT 3 - 4' O.C.
107		RT	RHUS TYPHINA	STAGHORN SUMAC	12-18"		#2 CONTAINER. TO BE SPACED AT 4.5 - 5' O.C.
17		VP	VIBURNUM PRUNIFOLIUM	BLACKHAW VIBURNUM	2-3'		B&B AT PLANTING. TO BE SPACED AT 5 - 6' O.C.
151		LS	LONICERA SEMPERVIRENS	TRUMPET HONEYSUCKLE	12-18"		#2 CONTAINER (STAKED). TO BE SPACED AT 2-2.5' O.C.
PLUGS							
346		IV	IRIS VERSICOLOR	BLUE FLAG IRIS			2" PLUG. TO BE SPACED AT 18" O.C.
971		LC	LOBELIA CARDINALIS	CARDINAL FLOWER			2" PLUG. TO BE SPACED AT 12-15" O.C.

INDIVIDUAL WILDFLOWER SEED SPECIES

SJ SOLIDAGO JUNCEA (APPROXIMATELY 3,000 SF) SEEDING RATE: 1 LB PER ACRE OR AS SPECIFIED BY MANUFACTURER

SNA SYMPHOTRICHUM NOVAE-ANGLIAE (APPROXIMATELY 4,000 SF) SEEDING RATE: 1 LB PER ACRE OR AS SPECIFIED BY MANUFACTURER

NOTE: UNLESS OTHERWISE INDICATED ALL DISTURBED AREAS OF SITE ARE TO BE STABILIZED AND SEEDED WITH WILDFLOWER SEED MIX, SEE MIX THIS SHEET.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

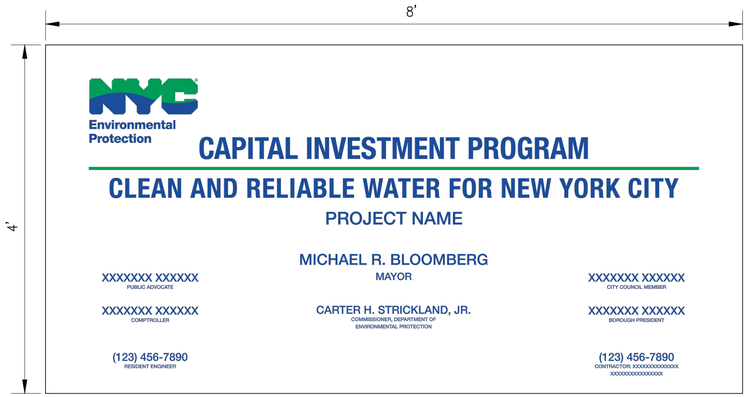
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
LANDSCAPE
SHAFT 5B
LANDSCAPING SYMBOLS ABBREVIATIONS & GENERAL NOTES

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 69 OF 77
DRAWING NO. 5L-100.00

PLANTING SCHEDULE (BT-2 CONTRACT, PLANTING POST CONSTRUCTION)							
QTY	SYMBOL	ABR.	BOTANICAL NAME	COMMON NAME	SIZE AT PLANTING		REMARKS
					HT	CAL	
TREES/CONIFERS							
6		AA	AMELANCHIER ARBOREA	DOWNY SERVICEBERRY	7-8'		B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
1		AR	ACER RUBRUM	RED MAPLE		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
4		AS	ACER SACCHANUM	SUGER MAPLE		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
15		CO	CARYA OVATA	SHAGBARK HICKORY		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
1		CF	CORNUS FLORIDA	FLOWERING DOGWOOD	7-8'		B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
13		JV	JUNIPERUS VIRGINIANA	EASTERN RED CEDAR	8-10'		B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
1		LT	LIRIODENDRON TULIPIFERA	TULIPTREE		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
5		QB	QUERCUS BICOLOR	SWAMP WHITE OAK		2.5-3"	B&B AT PLANTING. SPACING AS SHOWN ON PLANS.
3		PS	PINUS STROBUS	EASTERN WHITE PINE	8-10'		B&B AT PLANTING. SPACING AS SHOWN ON PLANS.

NOTE: SEE SHEET 5L–100.00 FOR DURING CONSTRUCTION PLANTING SCHEDULE

REFORESTATION SCHEDULE (BT-2 CONTRACT, PLANTING POST CONSTRUCTION)					
9' x 9' SPACING		ACER RUBRUM ACER SACCHARUM CARYA OVATA QUERCUS ALBA QUERCUS RUBRA QUERCUS PALUSTRUS	RED MAPLE SUGER MAPLE SHAGBARK HICKORY SHITE OAK RED OAK PIN OAK	15-24" SEEDINGS	EQUAL PER CONTRACT OF EACH SPECIES TO BE USED



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SITE PLAN APPLICATION
MAY 2012

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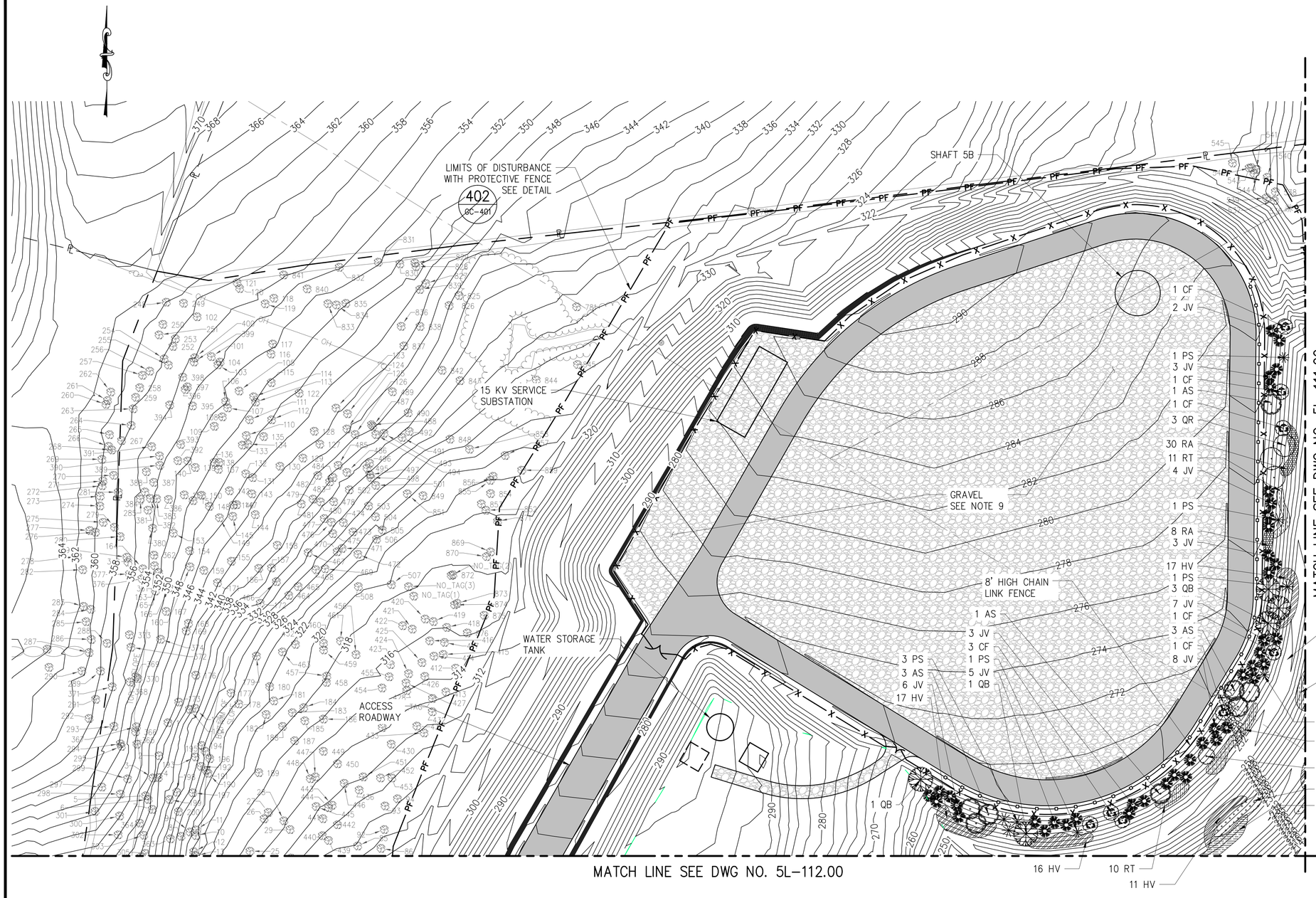
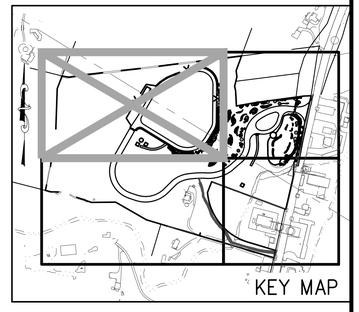


NOTES:

1. CONTRACTOR SHALL PROVIDE REQUIRED LANDSCAPING IN ACCORDANCE WITH DETAILED PLANTING SPECIFICATIONS. ALL ADDITIONAL REQUIRED LANDSCAPING ITEMS OR MATERIAL SHALL BE AS APPROVED AND/OR DIRECTED BY ENGINEER.
2. PLANTING ALONG NY ROUTE 9W SHALL COMMENCE AS SOON AS GRADING FOR SITE ENTRANCE AND STORMWATER POND IS COMPLETED. REMAINING PLANTING ON SITE SHALL COMMENCE BY FALL 2013 AND BE COMPLETED PRIOR TO SHAFT CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR WATERING AND MAINTENANCE OF PLANTINGS TO ESTABLISH PLANT GROWTH. ANY PLANTINGS THAT DO NOT SURVIVE THE DURATION OF THE GUARANTEE PERIOD SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
4. CONTRACTOR TO USE 6" OF TOPSOIL FOR FILL SECTIONS AND FOR CUTS IN EARTH. CONTRACTOR TO USE 12" OF TOPSOIL FOR CUT SECTIONS ON ROCK. UNLESS OTHERWISE INDICATED ALL DISTURBED AREAS TO BE SEEDED WITH WILDFLOWER SEED MIX.
5. FOR GENERAL LANDSCAPE NOTES, REFER TO DRAWING 5L-100.00.
6. FOR PLANT SCHEDULE TABLE, REFER TO DRAWING 5L-100.00
7. FOR TREE PLANTING DETAILS, REFER TO DRAWING 5L-120.00
8. STREET TREES ALONG ROUTE 9W SHALL BE SPACED AT 40 FEET ON CENTER. FOR ALL OTHER PLANTING INFO REFER TO PLANTING SCHEDULE ON DRAWING 5L-100.00.
9. REQUIRED MINIMUM THICKNESS VARIES. SEE DETAIL ON DRAWING GC-103.00.



0 50 100 FT.
1"=50'

SITE PLAN APPLICATION
MAY 2012

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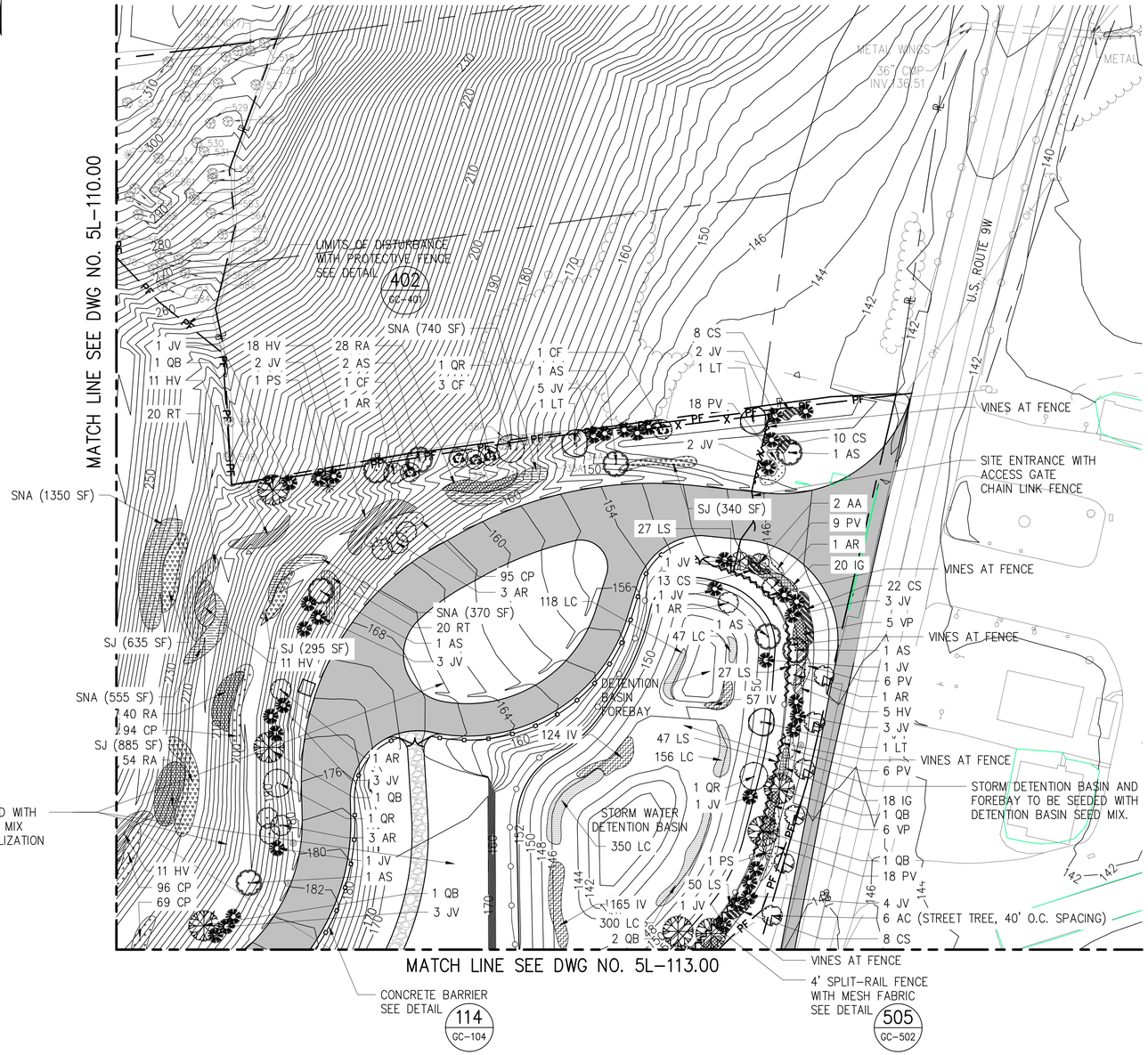
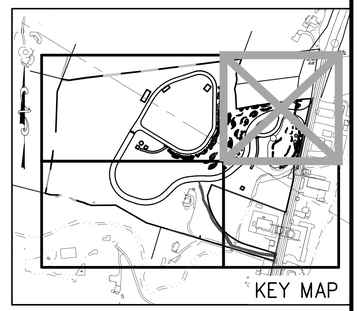
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
LANDSCAPE
SHAFT 5B
SITE LANDSCAPING
PLAN - SHEET 1

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 71 OF 77
DRAWING NO. **5L-110.00**



NOTES:

1. CONTRACTOR SHALL PROVIDE REQUIRED LANDSCAPING IN ACCORDANCE WITH DETAILED PLANTING SPECIFICATIONS. ALL ADDITIONAL REQUIRED LANDSCAPING ITEMS OR MATERIAL SHALL BE AS APPROVED AND/OR DIRECTED BY ENGINEER.
2. PLANTING ALONG NY ROUTE 9W SHALL COMMENCE AS SOON AS GRADING FOR SITE ENTRANCE AND STORMWATER POND IS COMPLETED. REMAINING PLANTING ON SITE SHALL COMMENCE BY FALL 2013 AND BE COMPLETED PRIOR TO SHAFT CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR WATERING AND MAINTENANCE OF PLANTINGS TO ESTABLISH PLANT GROWTH. ANY PLANTINGS THAT DO NOT SURVIVE THE DURATION OF THE GUARANTEE PERIOD SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
4. CONTRACTOR TO USE 6" OF TOPSOIL FOR FILL SECTIONS AND FOR CUTS IN EARTH. CONTRACTOR TO USE 12" OF TOPSOIL FOR CUT SECTIONS ON ROCK. UNLESS OTHERWISE INDICATED ALL DISTURBED AREAS TO BE SEEDED WITH WILDFLOWER SEED MIX.
5. FOR GENERAL LANDSCAPE NOTES, REFER TO DRAWING 5L-100.00.
6. FOR PLANT SCHEDULE TABLE, REFER TO DRAWING 5L-100.00
7. FOR TREE PLANTING DETAILS, REFER TO DRAWING 5L-120.00
8. STREET TREES ALONG ROUTE 9W SHALL BE SPACED AT 40 FEET ON CENTER. FOR ALL OTHER PLANTING INFO REFER TO PLANTING SCHEDULE ON DRAWING 5L-100.00.



1"=50' 0 50 100 FT.

SITE PLAN APPLICATION
MAY 2012

GRAPHIC SCALES
CHECK BEFORE USE
IF SHEET IS LESS THAN 22" X 34" IT IS A REDUCED PRINT. SCALE ACCORDINGLY

NO.	DATE	DESCRIPTION	APPR'D.

REVISIONS

DESIGNED BY: J.R.H.
DRAWN BY: A.S.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

HMM PIRNIE a joint venture in association with AKRF
CHIEF TUNNEL MANAGER: BURJOR KHARIVALA, P.E.

NYC Environmental Protection

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NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
LANDSCAPE
SHAFT 5B
SITE LANDSCAPING
PLAN - SHEET 2

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 72 OF 77
DRAWING NO. **5L-111.00**

Last Save By Date and Time:shrestha\5/4/2012 11:49 AM\Plotstyle Table: dep-bedc - 11x17 reduced drawings.ctb
Date Plotted: 5/25/2012 3:59 PM\Author:shrestha\File Location:i:\dep-bedc\bt-1\design\1.1 drawings\00 site plan application\landscape\bt-1-51111-00.dwg

MATCH LINE SEE DWG NO. 5L-110.00

TOPSOIL AND SEED WITH WILDFLOWER SEED MIX FOR SLOPE STABILIZATION SEE NOTE 4

SEE DWG 5L-110.00

20 HV SJ (850 SF)

CONCRETE BARRIER SEE DETAIL 114 GC-104

LIMITS OF DISTURBANCE WITH PROTECTIVE FENCE SEE DETAIL 402 GC-401

TOP OF SLOPE

BOTTOM OF SLOPE

PRIVATE ROAD

NYSDEC CLASS-C STREAM

MATCH LINE SEE DWG NO. 5L-113.00

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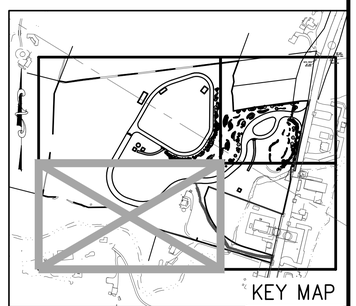

1"=50' 0 50 100 FT.

SITE PLAN APPLICATION

MAY 2012

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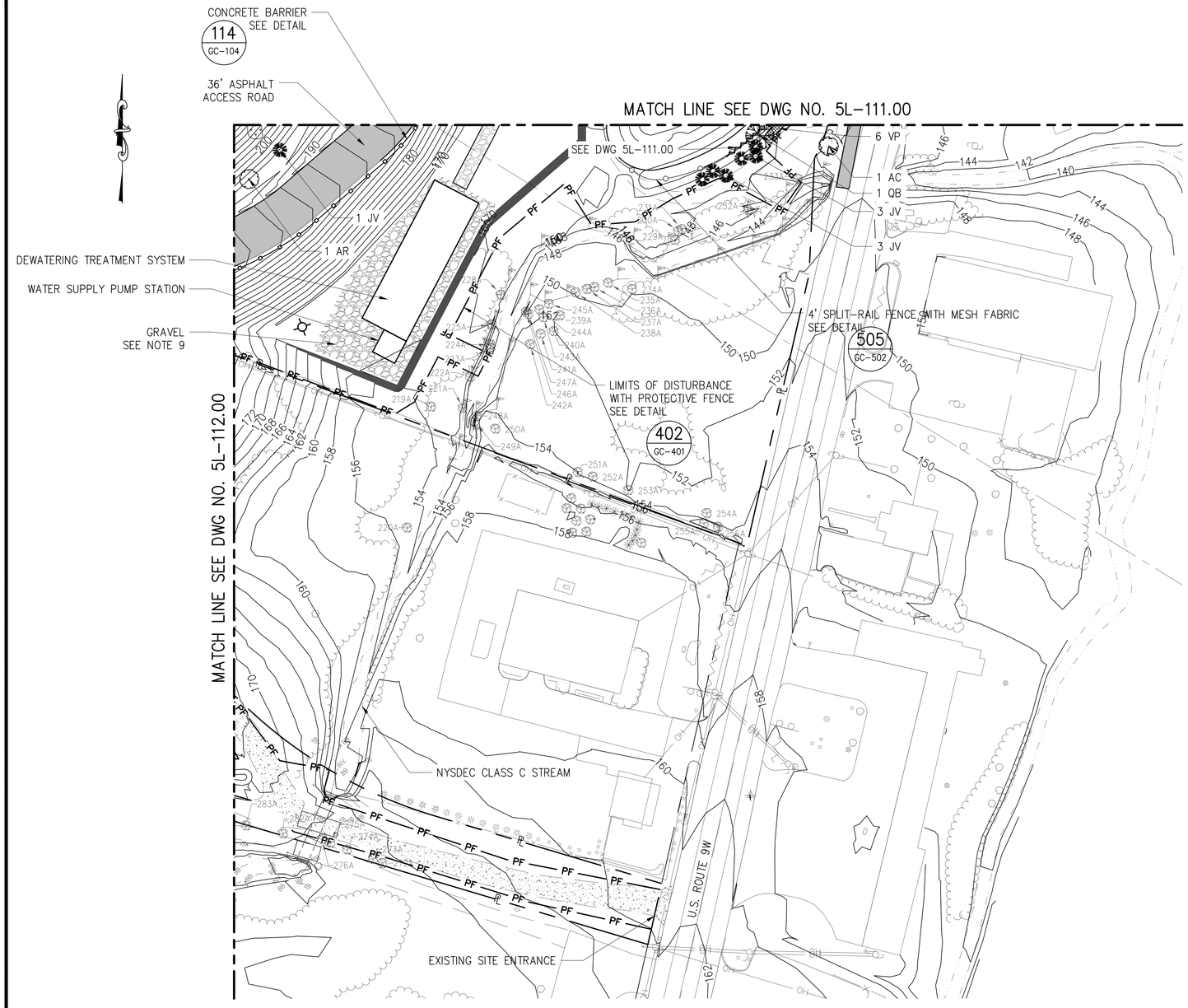
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION
LANDSCAPE
SHAFT 5B
SITE LANDSCAPING
PLAN - SHEET 3

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 73 OF 77
DRAWING NO. **5L-112.00**



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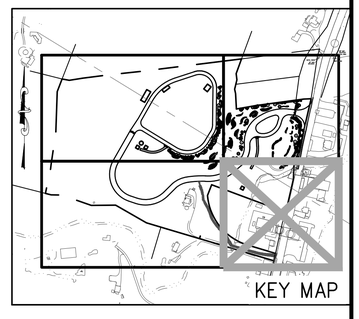
9. REQUIRED MINIMUM THICKNESS VARIES. SEE DETAIL ON DRAWING GC-103.00.



1"=50' 0 50 100 FT.

SITE PLAN APPLICATION
MAY 2012

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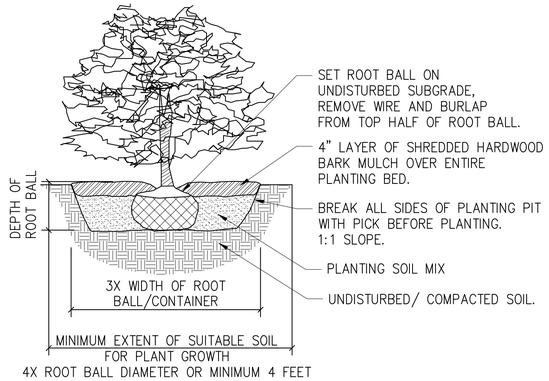
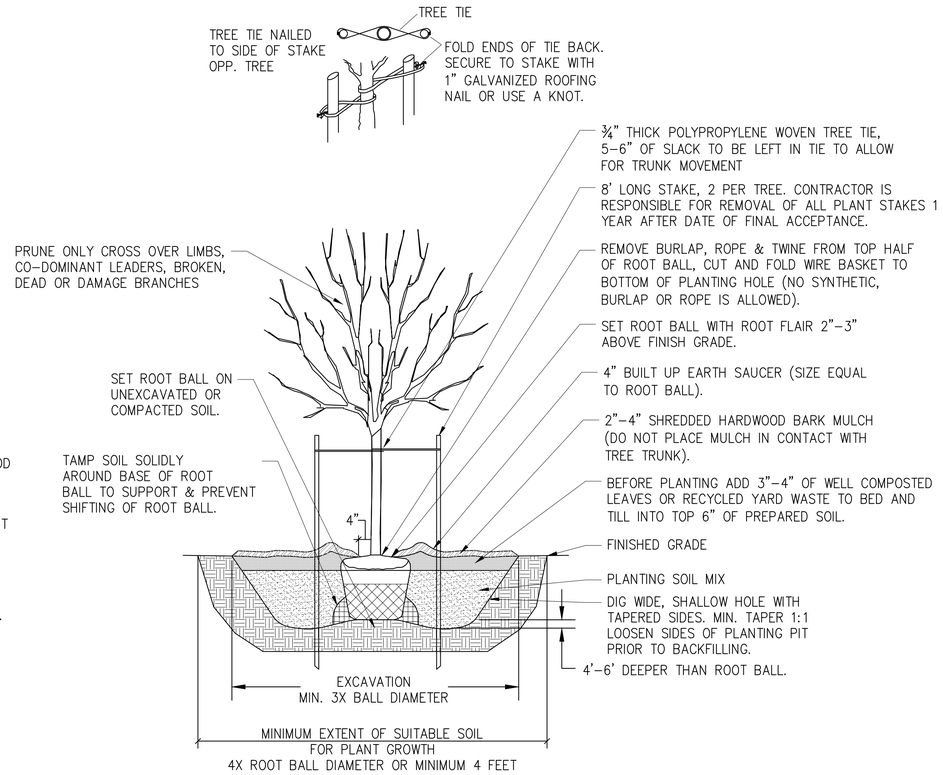
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
LANDSCAPE
SHAFT 5B
SITE LANDSCAPING
PLAN - SHEET 4

DATE: 05/31/2012
SCALE: 1"=50'
SHEET NO: 74 OF 77
DRAWING NO. **5L-113.00**



NOTE:
NO MULCH OR PLANTING SOIL IS TO BE IN CONTACT WITH THE STEM OF SHRUB. NO SYNTHETIC BURLAP OR ROPE IS TO REMAIN IN PLANTING HOLE.

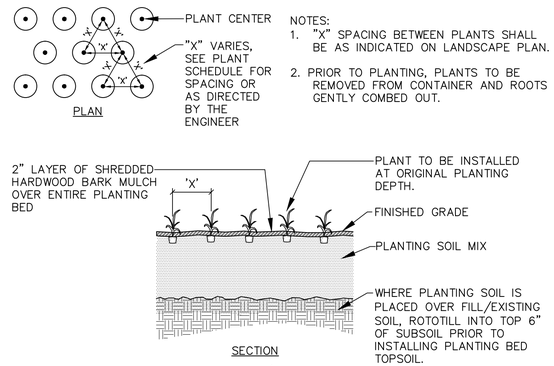
120 – SHRUB PLANTING DETAIL
SCALE : NTS



121 – DECIDUOUS/ EVERGREEN TREE PLANTING DETAIL
SCALE : NTS

NOTES:

1. FOR CONTAINER GROWN PLANT MATERIAL, USE FINGERS OR SMALL HAND TOOLS TO PULL THE ROOTS OUT OF THE OUTER LAYER OF POTTING SOIL, THEN CUT OR PULL APART ANY ROOTS CIRCLING THE PERIMETER OF THE CONTAINER.
2. INCORPORATE COMMERCIALLY PREPARED MYCORRHIZA SPORES IN THE SOIL IMMEDIATELY AROUND THE ROOTBALL AT RATES RECOMMENDED BY THE MANUFACTURER.
3. THOROUGHLY SOAK THE ROOTBALL AND ADJACENT PREPARED SOIL SEVERAL TIMES DURING THE FIRST MONTH AFTER PLANTING.
4. THE PLANTING PROCESS IS SIMILAR FOR DECIDUOUS AND EVERGREEN TREES.
5. NORTH SIDE OF TREE TO BE IDENTIFIED ON TREE TRUNK WITH SEMI–PERMANANT MARKING POINT PRIOR TO DIGGING. NORTH ORIENTATION OF TREE TO BE MAINTAINED. ANY TREE WITHOUT NORTH ORIENTATION MARK WILL BE REJECTED BY ENGINEER.
6. ROOT FLAIR/ COLLAR IS TO BE EXPOSED AT TIME OF PLANTING. CONTRACTOR TO REMOVE EXCESS SOIL FROM TOP OF ROOTBALL TO EXPOSE ROOT FLAIR/ COLLAR. ROOT FLAIR/ COLLAR TO BE VISIBLE AFTER PLANTING.



122 – HERBACEOUS/PLUG PLANTING DETAIL
SCALE : NTS

SITE PLAN APPLICATION
MAY 2012

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DRAWN BY: A.S.
CHECKED BY: M.H.W.
DESIGN LEAD: MICHAEL WOODEN, P.E.

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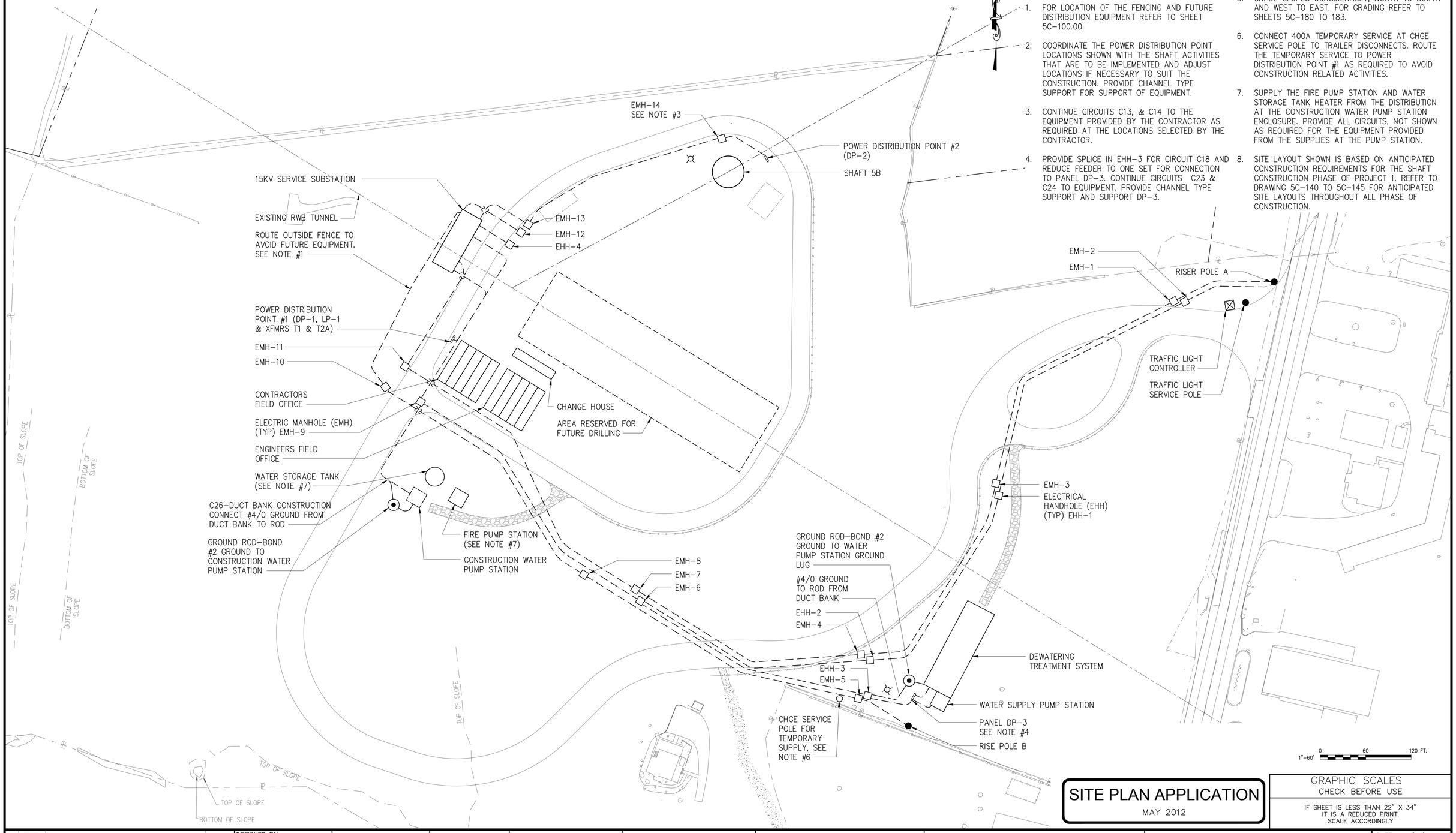
RWB BYPASS TUNNEL
SITE PLAN APPLICATION
LANDSCAPE
SHAFT 5B
SITE LANDSCAPING DETAILS

DATE: 05/31/2012
SCALE: N.T.S.
SHEET NO: 75 OF 77
DRAWING NO. **5L–120.00**



NOTES:

1. FOR LOCATION OF THE FENCING AND FUTURE DISTRIBUTION EQUIPMENT REFER TO SHEET 5C-100.00.
2. COORDINATE THE POWER DISTRIBUTION POINT LOCATIONS SHOWN WITH THE SHAFT ACTIVITIES THAT ARE TO BE IMPLEMENTED AND ADJUST LOCATIONS IF NECESSARY TO SUIT THE CONSTRUCTION. PROVIDE CHANNEL TYPE SUPPORT FOR SUPPORT OF EQUIPMENT.
3. CONTINUE CIRCUITS C13, & C14 TO THE EQUIPMENT PROVIDED BY THE CONTRACTOR AS REQUIRED AT THE LOCATIONS SELECTED BY THE CONTRACTOR.
4. PROVIDE SPLICE IN EHH-3 FOR CIRCUIT C18 AND REDUCE FEEDER TO ONE SET FOR CONNECTION TO PANEL DP-3. CONTINUE CIRCUITS C23 & C24 TO EQUIPMENT. PROVIDE CHANNEL TYPE SUPPORT AND SUPPORT DP-3.
5. GRADE SLOPES CONSIDERABLY, NORTH TO SOUTH AND WEST TO EAST. FOR GRADING REFER TO SHEETS 5C-180 TO 183.
6. CONNECT 400A TEMPORARY SERVICE AT CHGE SERVICE POLE TO TRAILER DISCONNECTS. ROUTE THE TEMPORARY SERVICE TO POWER DISTRIBUTION POINT #1 AS REQUIRED TO AVOID CONSTRUCTION RELATED ACTIVITIES.
7. SUPPLY THE FIRE PUMP STATION AND WATER STORAGE TANK HEATER FROM THE DISTRIBUTION AT THE CONSTRUCTION WATER PUMP STATION ENCLOSURE. PROVIDE ALL CIRCUITS, NOT SHOWN AS REQUIRED FOR THE EQUIPMENT PROVIDED FROM THE SUPPLIES AT THE PUMP STATION.
8. SITE LAYOUT SHOWN IS BASED ON ANTICIPATED CONSTRUCTION REQUIREMENTS FOR THE SHAFT CONSTRUCTION PHASE OF PROJECT 1. REFER TO DRAWING 5C-140 TO 5C-145 FOR ANTICIPATED SITE LAYOUTS THROUGHOUT ALL PHASE OF CONSTRUCTION.

SITE PLAN APPLICATION
MAY 2012

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REVISIONS

DESIGNED BY: FAS
DRAWN BY: ATP
CHECKED BY: FAS
DESIGN LEAD: MICHAEL WOODEN, P.E.

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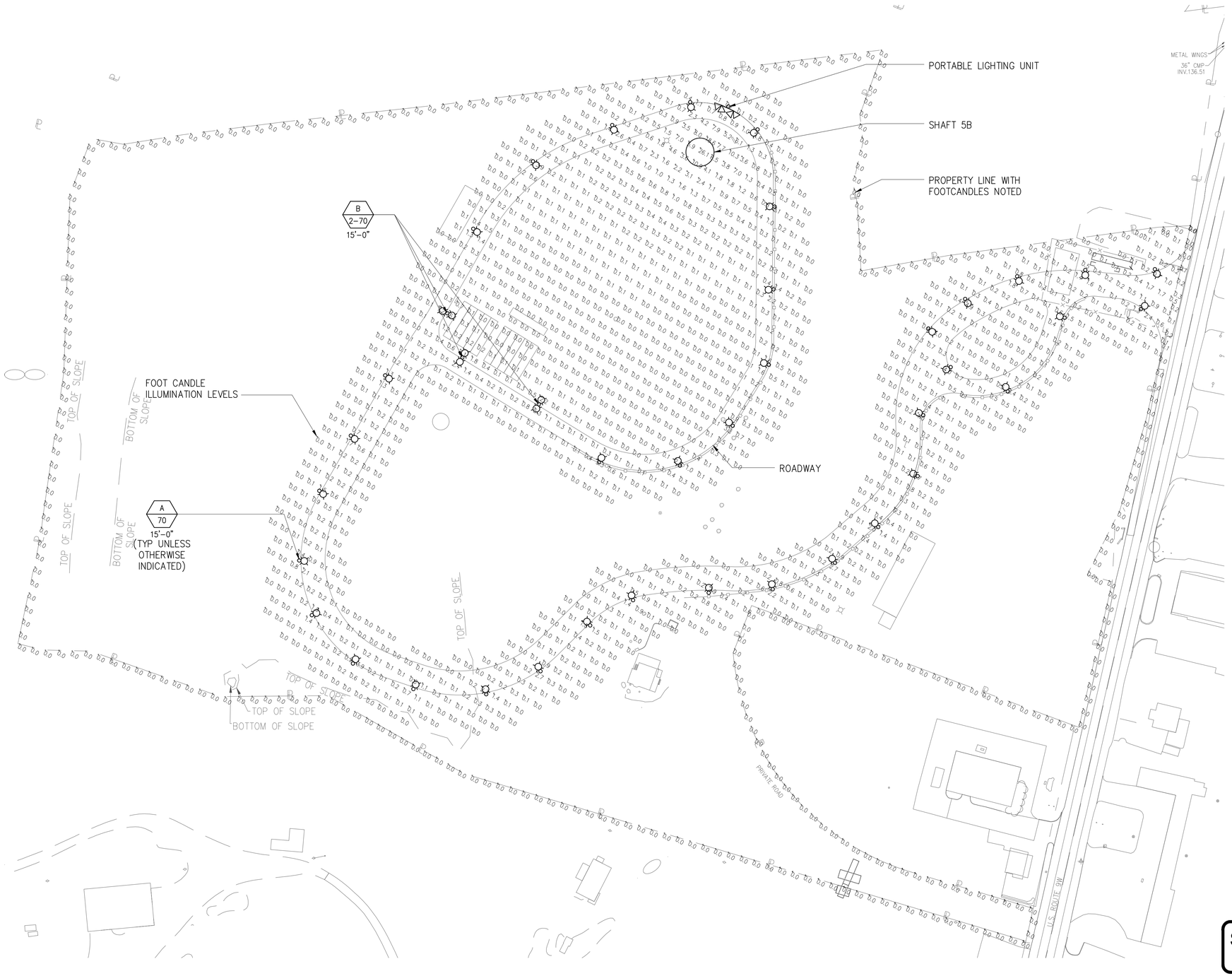
NEW YORK CITY ENVIRONMENTAL PROTECTION
BUREAU OF ENGINEERING DESIGN & CONSTRUCTION

RWB BYPASS TUNNEL
SITE PLAN APPLICATION

ELECTRICAL
SHAFT 5B
ELECTRICAL SITE PLAN

DATE: 05/31/2012
SCALE: 1" = 60'-0"
SHEET NO: 76 OF 77
DRAWING NO. 5E-120.00



STATISTICS				
CALC ZONE	AVG (fc)	MIN (fc)	MAX (fc)	AVG MIN (fc)
ROADWAY	0.5	0.1	4.8	5.0:1
PROPERTY LINE	0.0	0.0	0.3	N/A
WORK AREA	5.9	0.7	31.6	8.4:1

FIXTURE SCHEDULE		
FIXTURE TYPE	DESCRIPTION	MANUFACTUER
A	HIGH PRESSURE SODIUM ROADWAY LIGHT FIXTURES, 70 WATT, 277 VOLT OPERATED. FIXTURE SHALL BE PROVIDED WITH A SINGLE UNIT, POLE CLOSE MOUNT AND SHALL BE ENCLOSED AND GASKETED AND SUITABLE FOR WET LOCATIONS. FIXTURE SHALL BE FULL CUT–OFF STYLE. WITH TYPE III REFLECTOR.	HOLOPHANE SOMERSET US ARCHITECTURAL LIGHTING, VERSALUX OR EQUAL
B	HIGH PRESSURE SODIUM ROADWAY LIGHT FIXTURES, 70 WATT, 277 VOLT OPERATED. FIXTURE SHALL BE PROVIDED WITH A TWIN UNIT, POLE CLOSE MOUNT AND SHALL BE ENCLOSED AND GASKETED AND SUITABLE FOR WET LOCATIONS. FIXTURE SHALL BE FULL CUT–OFF STYLE.	HOLOPHANE SOMERSET US ARCHITECTURAL LIGHTING, VERSALUX OR EQUAL

SYMBOLS AND LEGEND

A
70
15'–0" AFF

FIXTURE DESIGNATION SYMBOL. SEE LIGHTING FIXTURE SCHEDULE FOR DESCRIPTION AND TYPE. ALL FIXTURES SHOWN WITH THIS SYMBOL SHALL BE OF TYPE INDICATED BY LETTER; NUMBER IN SYMBOL INDICATES LAMP WATTAGE AND NUMBER OF LAMP HEADS WHERE MORE THAN ONE (UNLESS OTHERWISE NOTED). NUMBER BELOW SYMBOL INDICATES MOUNTING HEIGHT ABOVE FINISHED FLOOR OR AS NOTED.

1"=80' 0 80 160 FT.

SITE PLAN APPLICATION
MAY 2012

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RWB BYPASS TUNNEL
SITE PLAN APPLICATION
ELECTRICAL
SHAFT 5B
LIGHTING DETAILS

DATE: 05/31/2012
SCALE: 1" = 80'–0 "
SHEET NO: 77 OF 77
DRAWING NO. **5E–210.00**