

HARBOR BROOK CSO 018 CONSTRUCTED WETLANDS PILOT TREATMENT SYSTEM

CITY OF SYRACUSE, ONONDAGA COUNTY
NEW YORK

CONTRACT NO. 1
GENERAL CONSTRUCTION

CONTRACT NO. 2
ELECTRICAL



OWNER:

OCDWEP
650 HIAWATHA BLOULEVARD WEST
SYRACUSE, NY 13204

JULY 22, 2011

FOR REGULATORY AGENCY REVIEW

CH2MHILL

CHA

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CH2MILL Project No. 381098

CHA Project No. 19217



LEGEND

GENERAL NOTES

INDEX OF DRAWINGS

EXISTING		PROPOSED	
	FENCE		
	STORM SEWER		
	PERFORATED PIPE		
	SANITARY SEWER		
	FORCE MAIN		
	WATER LINE		
	GAS LINE		
	UNDERGROUND ELECTRIC		
	UNDERGROUND TELEPHONE		
	OVERHEAD TELEPHONE		
	OVERHEAD ELECTRIC		
	5' OR 10' CONTOUR LINE		
	1' OR 2' CONTOUR LINE		
	SPOT ELEVATION		
	DITCH OR SWALE		
	STREAM OR RIVER		
	LAKE OR POND		
	PRIMARY PROPERTY OR R.O.W.		
	PROPERTY LINE		
	EASEMENT		
	CATCH BASIN		
	MANHOLE		
	HYDRANT		
	WATER VALVE		
	UTILITY POLE		
	LIGHT POLE, LAMP POST		
	SIGN		
	TELEPHONE PEDESTAL		
	IRON ROD, PIN, OR PIPE		
	CONCRETE MONUMENT		
	RIGHT-OF-WAY MONUMENT		
	DIVERSION BOX		
	CURB		
	ASPHALT PAVEMENT		
	TEST PIT		
	SOIL BORING		
	BUILDING		
	TREES, SHRUBS, BUSHES		
	MATCH LINE		

MATCH LINE SEE DRAWING 2

	VIEW MARKER
	DETAIL IDENTIFICATION
	SHEET NO. WHERE DETAIL IS SHOWN
	TITLE
	SCALE: N.T.S.

- UNDERGROUND UTILITIES ARE SHOWN BASED ON PHYSICAL EVIDENCE LOCATED AT THE GROUND SURFACE.
- THE PLANS SHOW KNOWN SUBSURFACE STRUCTURES, ABOVE GROUND STRUCTURES AND/OR UTILITIES BELIEVED TO EXIST IN THE WORKING AREA, CONTRACTOR IS WARNED THAT THE EXACT OR EVEN APPROXIMATE LOCATION OF SUCH MAY BE DIFFERENT FROM THAT SHOWN OR MAY NOT BE SHOWN, AND IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO PROCEED WITH GREAT CARE IN EXECUTING ANY WORK. CONTRACTOR SHALL COMPLY WITH THE STATE OF NEW YORK DEPARTMENT OF PUBLIC SERVICE, 16NYCRR PART 753, EFFECTIVE FEBRUARY 5, 1997. CALL BEFORE YOU DIG @ 1-800-962-7962.
- THE ENGINEER SHALL BE NOTIFIED IN WRITING OF ANY CONDITIONS THAT VARY FROM THOSE SHOWN ON THE PLANS. THE CONTRACTOR'S WORK SHALL NOT VARY FROM THE PLANS WITHOUT THE EXPRESSED APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL RESTORE LAWNS, DRIVEWAYS, CULVERTS, SIGNS AND OTHER PUBLIC OR PRIVATE PROPERTY DAMAGED OR REMOVED TO AT LEAST AS GOOD A CONDITION AS BEFORE BEING DISTURBED AS DETERMINED BY THE ENGINEER. ANY DAMAGED TREES, SHRUBS, AND/OR HEDGES SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL COMPLY WITH ALL REQUIRED PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING AND INCURRING THE COST OF ALL REQUIRED PERMITS, INSPECTIONS, CERTIFICATES, ETC.
- THE CONTRACTOR SHALL PROTECT EXISTING PROPERTY LINE MONUMENTATION. ANY MONUMENTATION DISTURBED OR DESTROYED, AS JUDGED BY THE ENGINEER OR OWNER, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE UNDER THE SUPERVISION OF A NEW YORK STATE LICENSED LAND SURVEYOR.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO CONDUCT EXPLORATORY TEST PITS AS REQUIRED TO DETERMINE UNDERGROUND CONDITIONS. RECOMMENDED LOCATIONS ARE DESIGNATED BY ON THE DRAWINGS. THE CONTRACTOR SHALL CONDUCT ADDITIONAL PITS AS REQUIRED FOR PERFORMANCE OF WORK AT HIS EXPENSE.
- ALL TRENCH EXCAVATION AND ANY REQUIRED SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH THE LATEST REVISIONS OF NEW YORK STATE CODE RULE 23 AND OSHA REGULATIONS FOR CONSTRUCTION.
- CONTRACTOR SHALL BE RESPONSIBLE FOR DEWATERING AND THE MAINTENANCE OF SURFACE DRAINAGE DURING THE COURSE OF WORK.
- MAINTAIN FLOW FOR ALL EXISTING UTILITIES, CULVERTS, AND DITCHES.
- ALL MANHOLES, CASTINGS, ETC. AND VALVE BOXES WITHIN PAVED AREAS SHALL HAVE THE TOPS SET FLUSH WITH THE EXISTING PAVEMENT GRADE. IN LANDSCAPED AREAS, ALL FRAMES SHALL BE 0.1' ABOVE GRADE.
- BEFORE CONSTRUCTING LINES TO CONNECT TO EXISTING UTILITIES OR UTILITIES INSTALLED UNDER OTHER CONTRACTS, VERIFY EXISTING UTILITY INVERTS AND NOTIFY ENGINEER IF ANY VARIATION FROM THE PLANS IS REQUIRED.
- CONTRACTOR TO GRADE ALL AREAS ON THE SITE TO PROVIDE POSITIVE DRAINAGE.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL FIELD LAYOUT. THE CONTRACTOR SHALL TAKE TIES TO ALL UTILITY CONNECTIONS AND PROVIDE MARKED-UP AS-BUILT PLANS FOR ALL UTILITIES SHOWING TIES TO CONNECTIONS, BENDS, VALVES, LENGTHS OF LINES AND INVERTS. AS-BUILT PLANS SHALL BE REVIEWED BY THE OWNER AND HIS REPRESENTATIVES, AND THE CONTRACTOR SHALL PROVIDE ANY CORRECTION OR ADMISSIONS TO THE SATISFACTION OF THE OWNER AND HIS REPRESENTATIVES BEFORE UTILITIES WILL BE ACCEPTED.
- THE CONTRACTOR SHALL EXERCISE CAUTION WHEN OPERATING CONSTRUCTION EQUIPMENT OVER NEW UTILITY TRENCHES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING A MINIMUM OF TWO FEET OR MORE, IF REQUIRED, OVER ANY UTILITY LINE SUBJECT TO CONSTRUCTION TRAFFIC.
- CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL WORK, LANE CLOSURES AND DISRUPTIONS WITH GOVERNING AGENCIES.
- PRIOR TO BIDDING PROJECT, THE CONTRACTOR SHALL VISIT THE SITE TO VERIFY EXISTING CONDITIONS.
- ALL PHYSICAL FEATURES, INDIVIDUAL TREES, LANDSCAPING OR UTILITY LOCATIONS COULD NOT BE POSSIBLY SHOWN ON THE CONTRACT DRAWINGS. EACH BIDDER IS ENCOURAGED TO PERSONALLY INSPECT ALL AREAS OF PROPOSED WORK, IN ORDER TO ENSURE THAT THEY ARE FAMILIAR WITH THE PHYSICAL LAYOUT OF THE AREA AND THE REQUIREMENTS OF THE WORK.
- PROPERTY LINES ARE APPROXIMATE AS INTERPOLATED FROM EXISTING MAPPING AND ARE SHOWN FOR REFERENCE ONLY.
- UPON COMPLETION OF THE WORK, ALL DISTURBED AREAS SHALL BE RESTORED TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO CONSTRUCTION.
- DISTURBED AREAS SHALL BE RESTORED AS WORK PROGRESSES AS DEEMED APPROPRIATE BY THE ENGINEER.
- TRENCHES SHALL NOT BE LEFT OPEN OVERNIGHT WITHOUT PROPER PROTECTION.
- ALL CONSTRUCTION STAKE OUT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. LOCATION OF MANHOLES, ARE TO BE INDIVIDUALLY STAKED OUT. UTILITY LINES TO BE STAKED OUT AT 100 FOOT STATIONS.
- CONTRACTOR SHALL INSTALL 3 FOOT HIGH CONSTRUCTION FENCE AT LIMITS OF WETLANDS ADJACENT TO ALL WORK AREAS PRIOR TO COMMENCEMENT OF WORK.

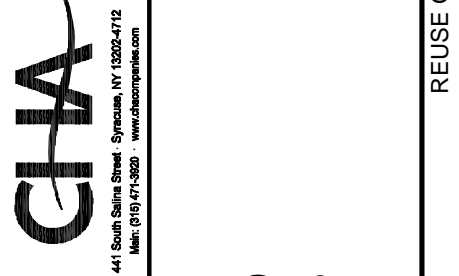
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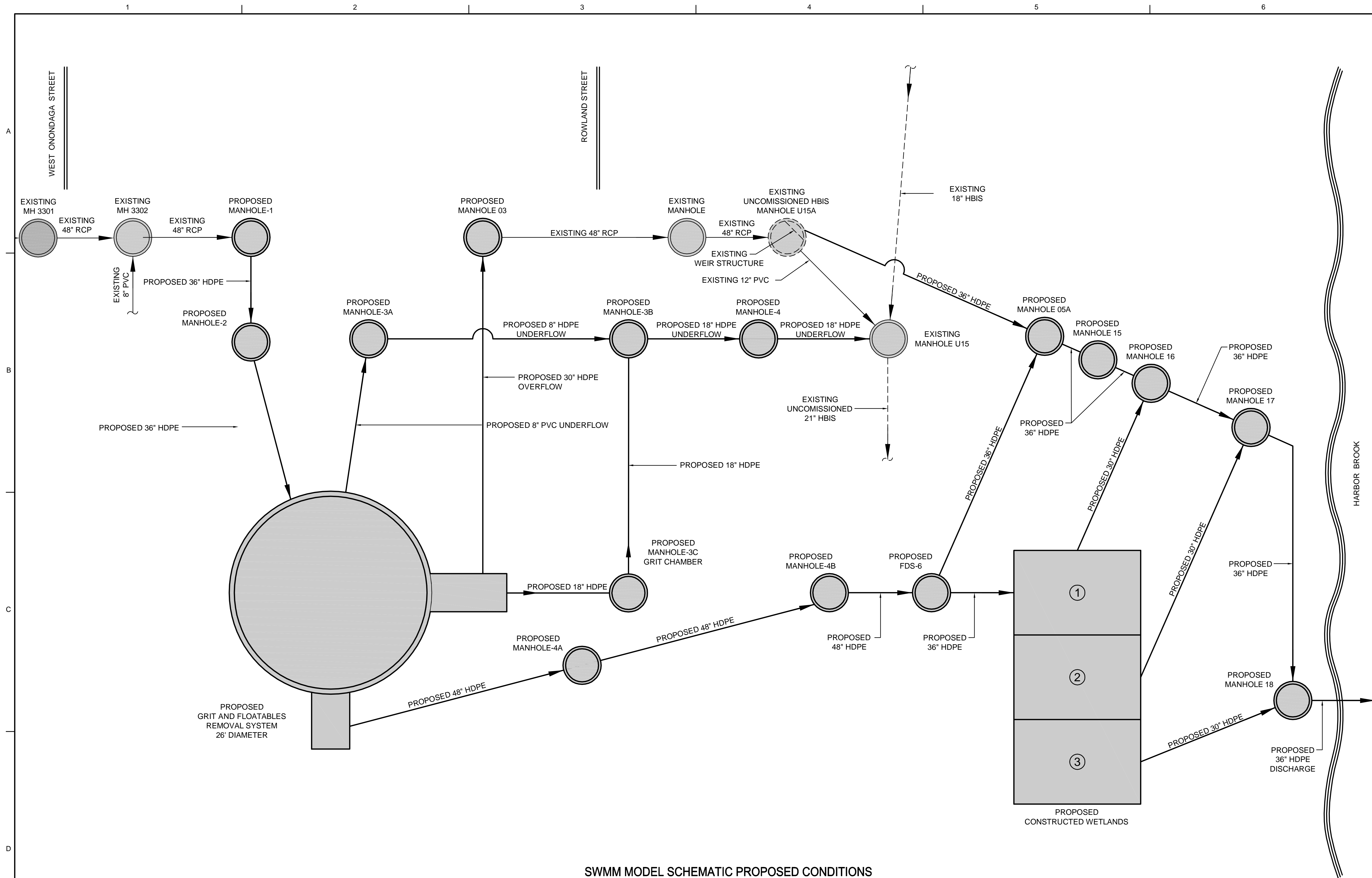
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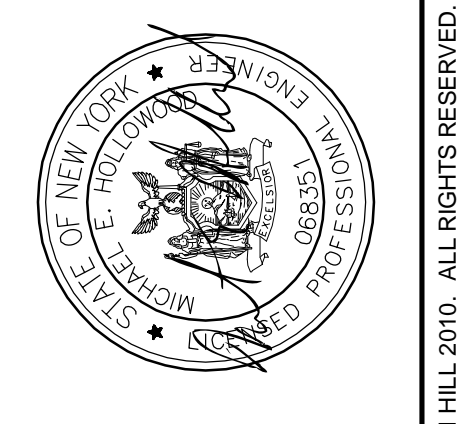
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SWMM MODEL SCHEMATIC PROPOSED CONDITIONS
NTS



MEH	BY	APVD	RND	MEH
MEH	BY	APVD	CHK	MEH
MEH	BY	APVD	DR	MEH
MEH	BY	APVD	KLH	MEH
MEH	BY	APVD	GJM	MEH
MEH	BY	APVD	JRH	MEH
MEH	BY	APVD	KH	MEH
MEH	BY	APVD	MEH	MEH

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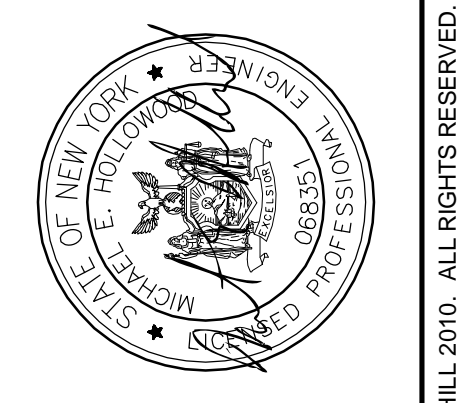
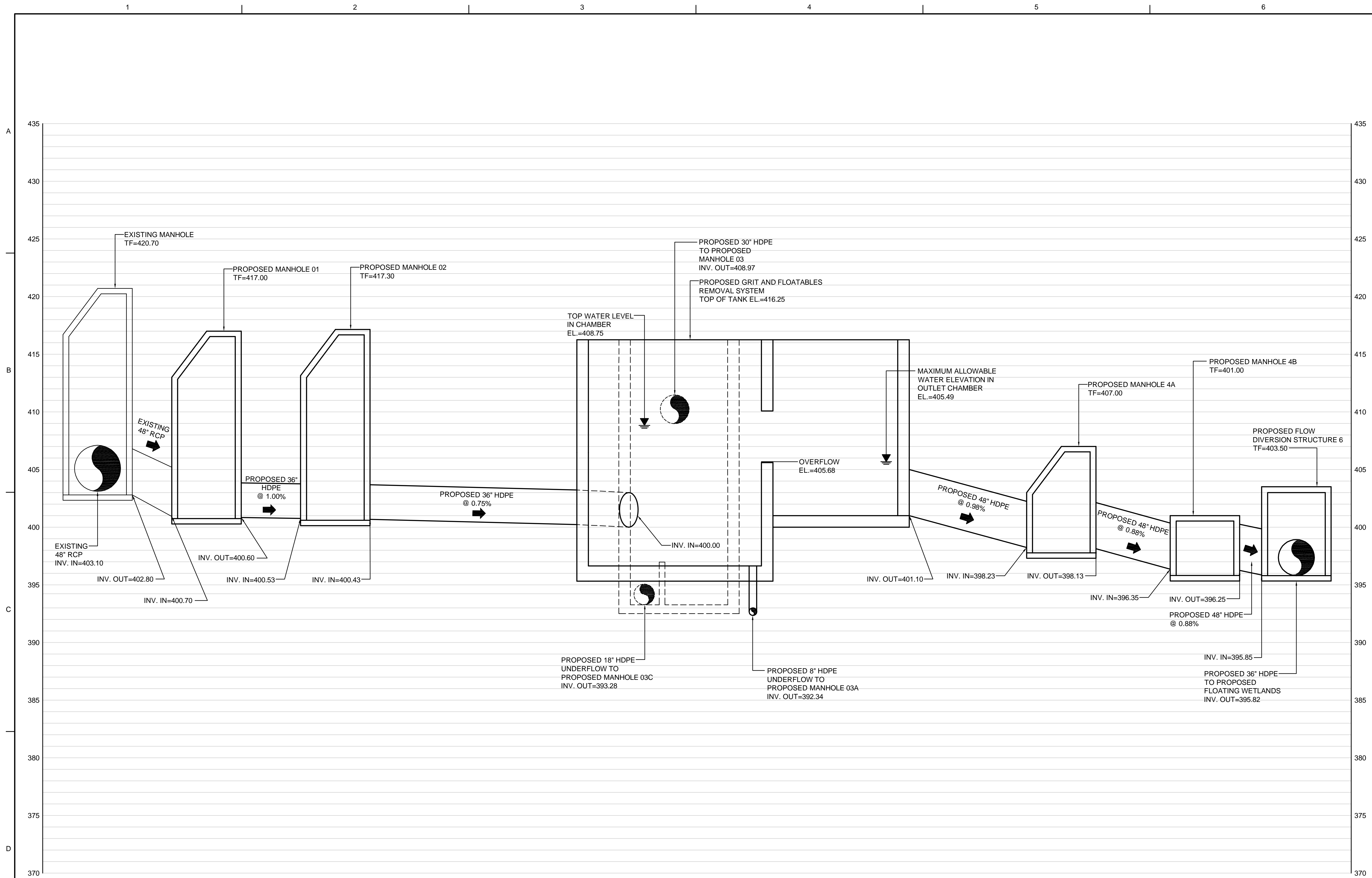
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PROCESS FLOW DIAGRAM

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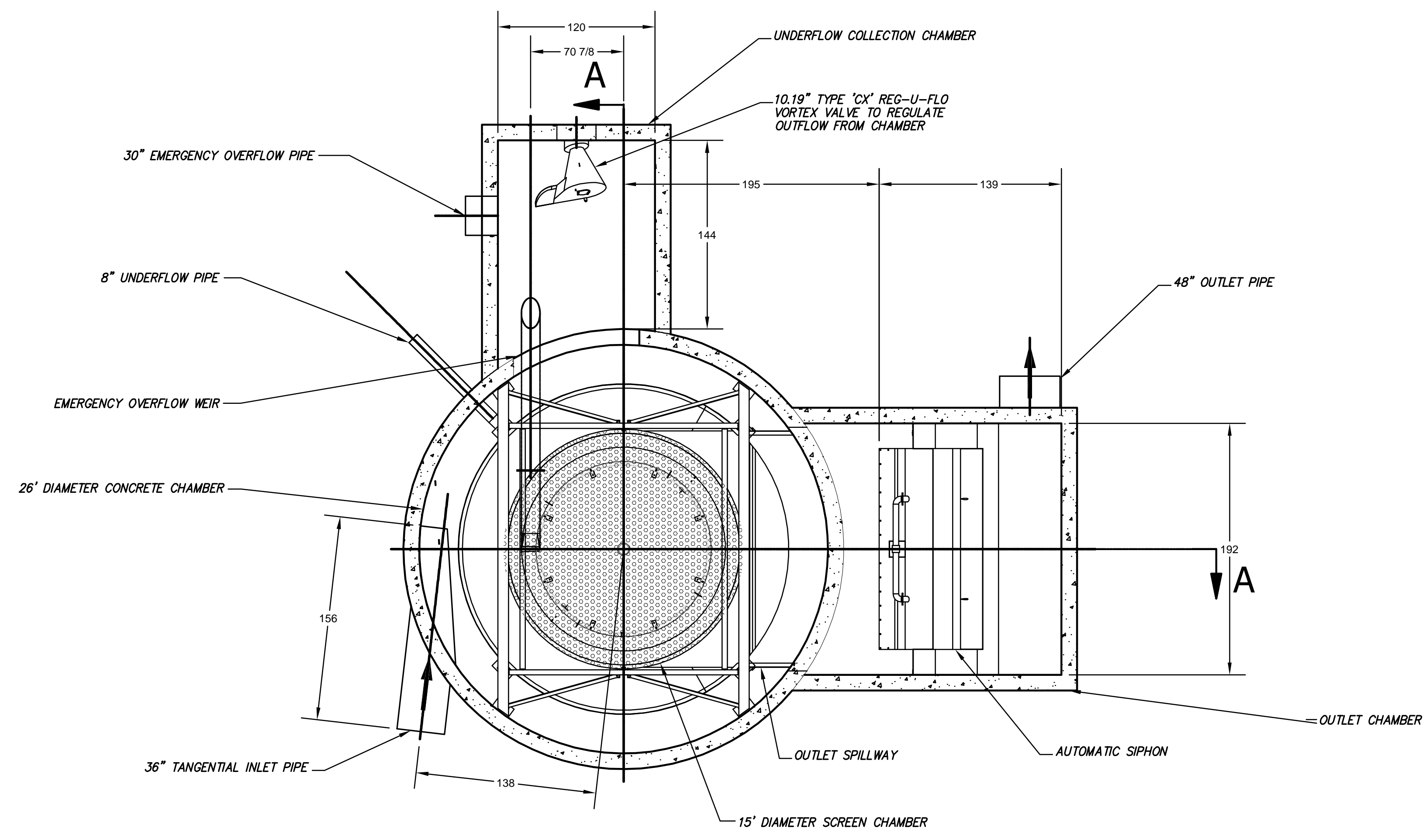
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HYDRAULIC PROFILE - SANITARY

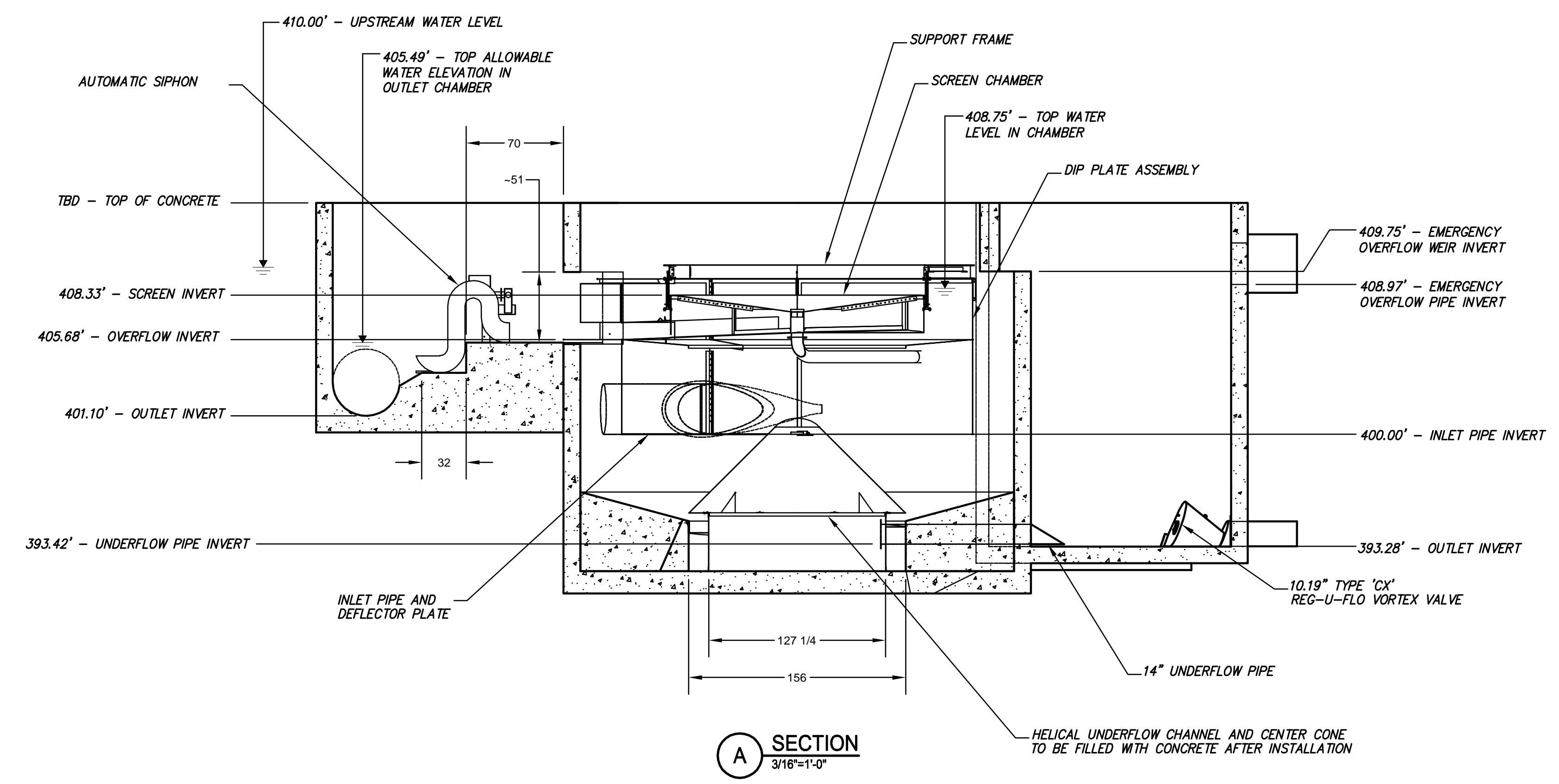
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HYDRAULIC PROFILE - SANITARY
 VERT. 1"=4'
 HORIZ. NTS

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1 PLAN - GRIT AND FLOATABLES STRUCTURE
3/16"=1'-0"



A SECTION
3/16"=1'-0"



MEH	BY	APVD	MEH
MEH	KH	MEH	MEH
MEH	JRH	MEH	MEH
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GRIT AND FLOATABLES
PLAN AND SECTION

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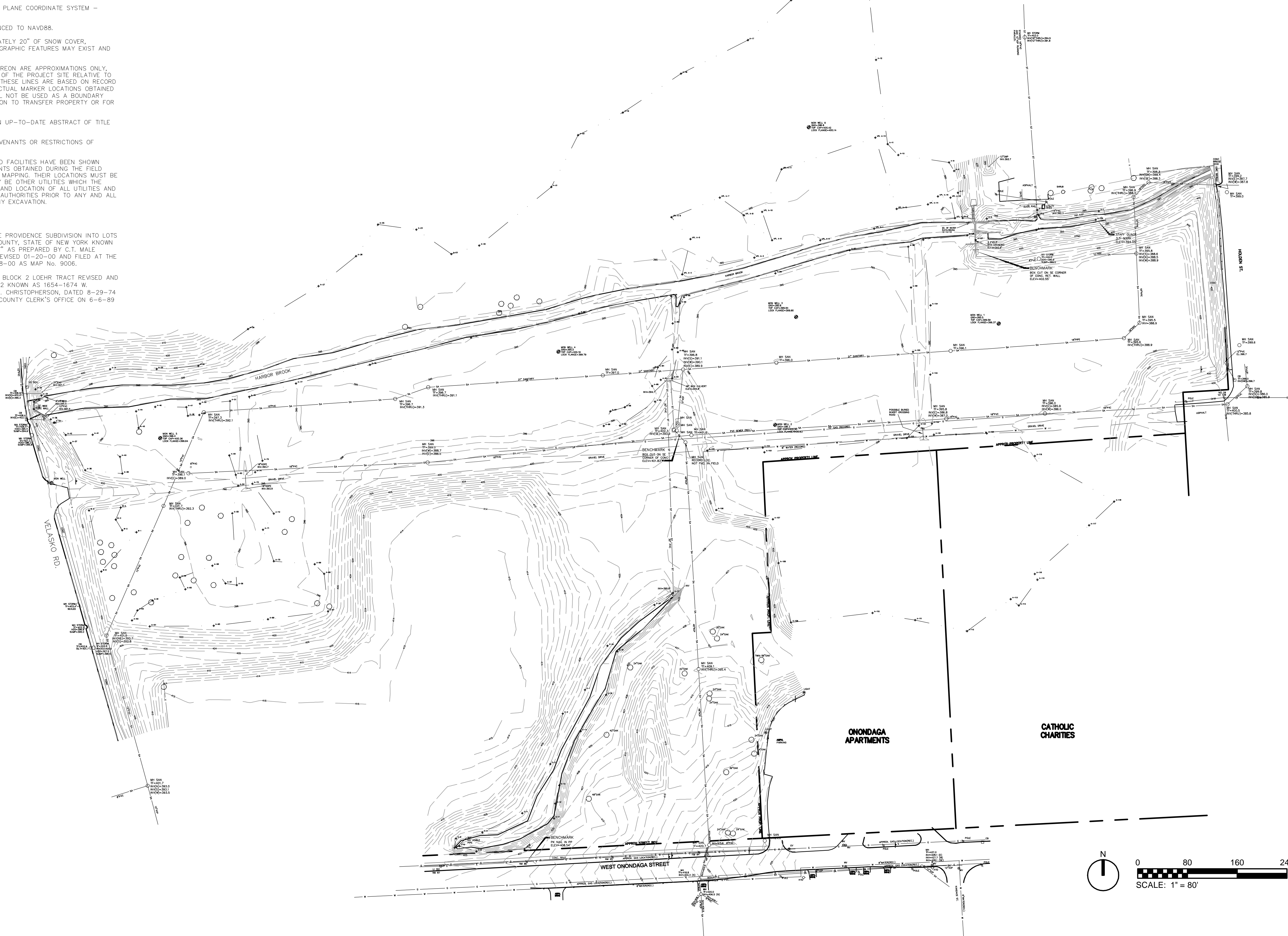
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NOTES:

1. BASE MAPPING PREPARED BY CHA FROM A FIELD SURVEY COMPLETED BETWEEN DECEMBER 7 & DECEMBER 10, 2010 AND ON MARCH 23, 2011.
2. NORTH ORIENTATION IS TRUE NORTH BASED ON GPS OBSERVATIONS TAKEN AT THE TIME OF THE FIELD SURVEY.
3. MAPPING PREPARED ON NAD83 NY STATE PLANE COORDINATE SYSTEM - CENTRAL ZONE.
4. ELEVATIONS AND CONTOURS ARE REFERENCED TO NAVD88.
5. SURVEY WAS COMPLETED WITH APPROXIMATELY 20" OF SNOW COVER, THEREFORE CERTAIN PLANIMETRIC AND TOPOGRAPHIC FEATURES MAY EXIST AND MAY NOT BE SHOWN.
6. PARCEL BOUNDARY LOCATIONS SHOWN HEREON ARE APPROXIMATIONS ONLY, SERVING TO DEPICT THE GENERAL LOCATION OF THE PROJECT SITE RELATIVE TO ADJOINING PROPERTY LINES. PLACEMENT OF THESE LINES ARE BASED ON RECORD INFORMATION (REFERENCES), BEST-FIT TO ACTUAL MARKER LOCATIONS OBTAINED DURING THE FIELD SURVEY. THIS PLAN SHALL NOT BE USED AS A BOUNDARY SURVEY MAP AND SHALL NOT BE RELIED UPON TO TRANSFER PROPERTY OR FOR PURPOSES OF SITE DESIGN.
7. SUBJECT TO ANY STATEMENT OF FACT AN UP-TO-DATE ABSTRACT OF TITLE WOULD DISCLOSE.
8. SUBJECT TO ALL RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS OF RECORD.
9. UNDERGROUND UTILITIES, STRUCTURES AND FACILITIES HAVE BEEN SHOWN FROM SURFACE LOCATIONS AND MEASUREMENTS OBTAINED DURING THE FIELD SURVEY, COMBINED WITH AVAILABLE RECORD MAPPING. THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY; THERE MAY BE OTHER UTILITIES WHICH THE EXISTENCE OF ARE NOT KNOWN. SIZE, TYPE AND LOCATION OF ALL UTILITIES AND STRUCTURES MUST BE VERIFIED BY PROPER AUTHORITIES PRIOR TO ANY AND ALL CONSTRUCTION. CALL DIG SAFE PRIOR TO ANY EXCAVATION.

MAP REFERENCES:

1. "MAP OF RESUBDIVISION OF LOT 2 OF THE PROVIDENCE SUBDIVISION INTO LOTS 2A & 2B, CITY OF SYRACUSE, ONONDAGA COUNTY, STATE OF NEW YORK KNOWN AS 1654 AND 1722 WEST ONONDAGA STREET" AS PREPARED BY C.T. MALE ASSOCIATES, P.C., DATED 11-18-97, LAST REVISED 01-20-00 AND FILED AT THE ONONDAGA COUNTY CLERK'S OFFICE ON 5-18-00 AS MAP No. 9006.
2. "PROVIDENCE SUBDIVISION LOTS 1, 2 & 3 BLOCK 2 LOHR TRACT REVISED AND PART OF LOT 181 (GEDDES) INTO LOTS 1 & 2 KNOWN AS 1654-1674 W. ONONDAGA ST", AS PREPARED BY AUGUST L. CHRISTOPHERSON, DATED 8-29-74 & 5-20-88 AND FILED AT THE ONONDAGA COUNTY CLERK'S OFFICE ON 6-6-89 AS MAP No. 7078.



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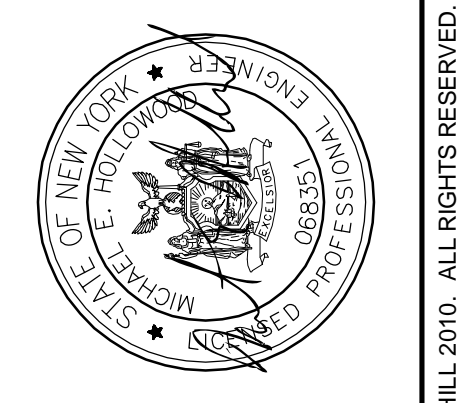
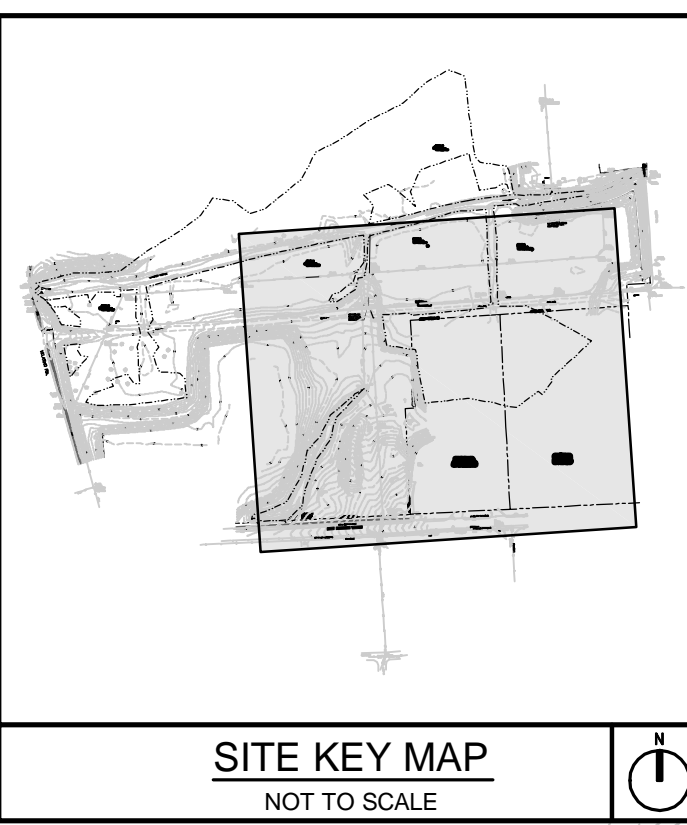
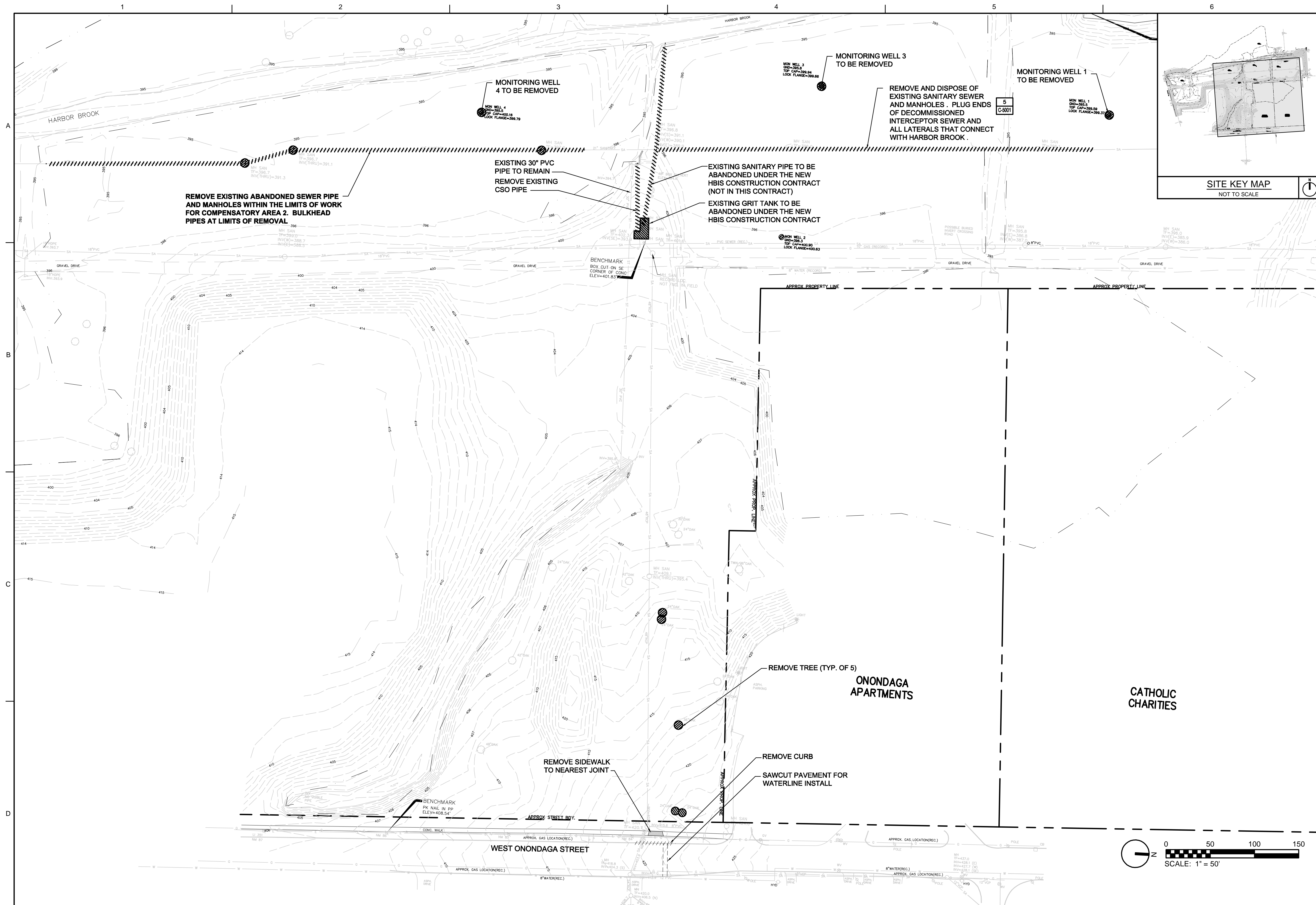
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EXISTING CONDITIONS PLAN

HARBOR BROOK CSO 018
 CONSTRUCTED WETLANDS
 CITY OF SYRACUSE
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1" = 80'
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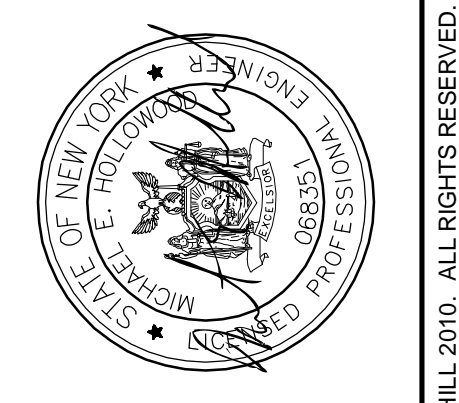
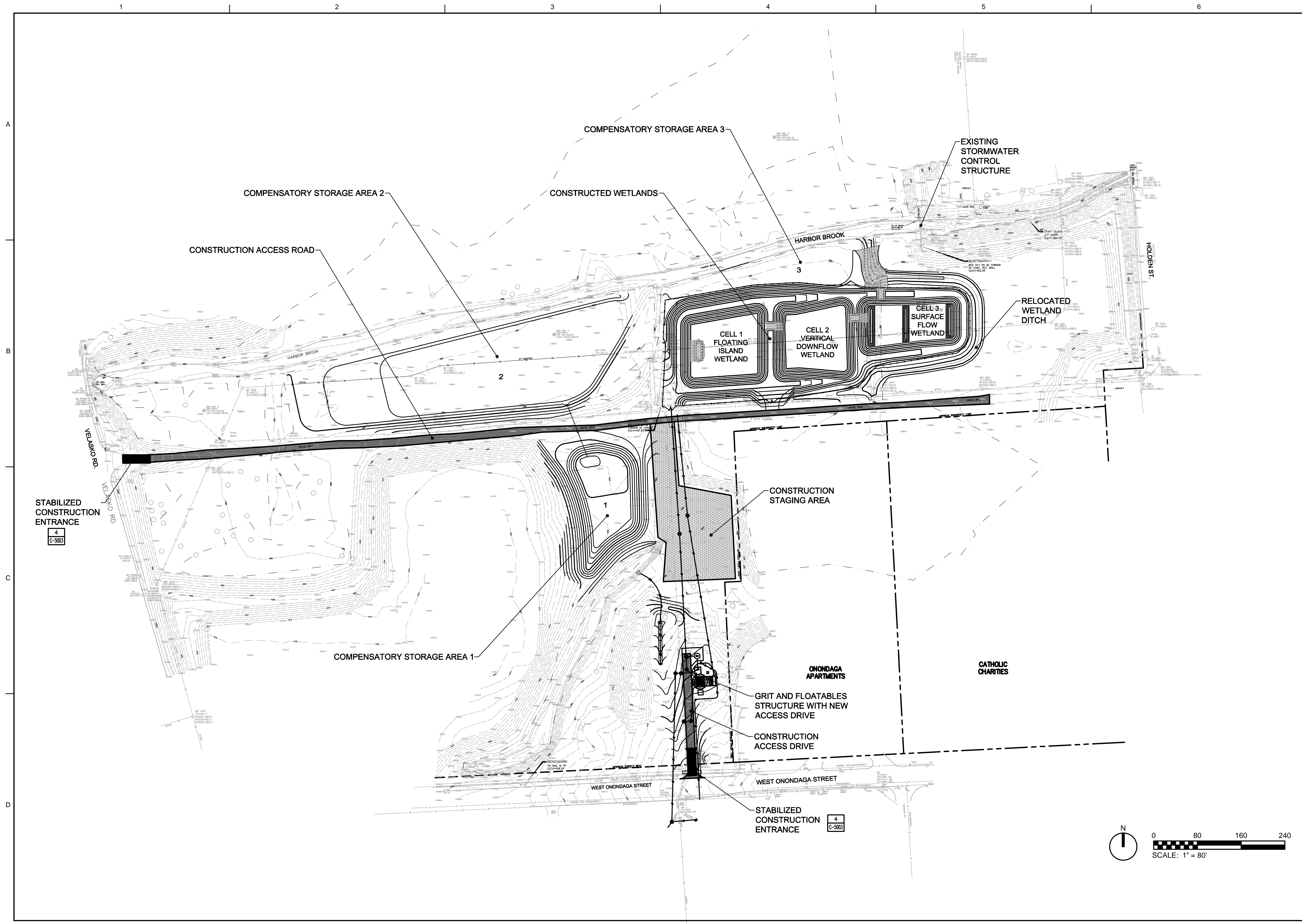


DEMOLITION PLAN

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EXISTING CONDITIONS AND DEMOLITION PLAN
 1"=50'

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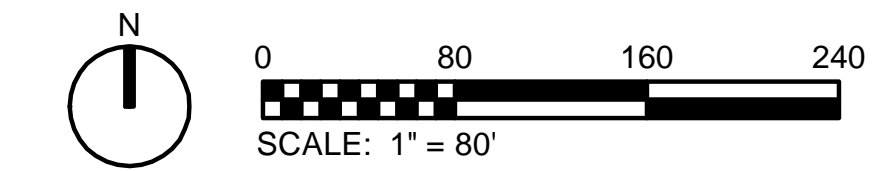


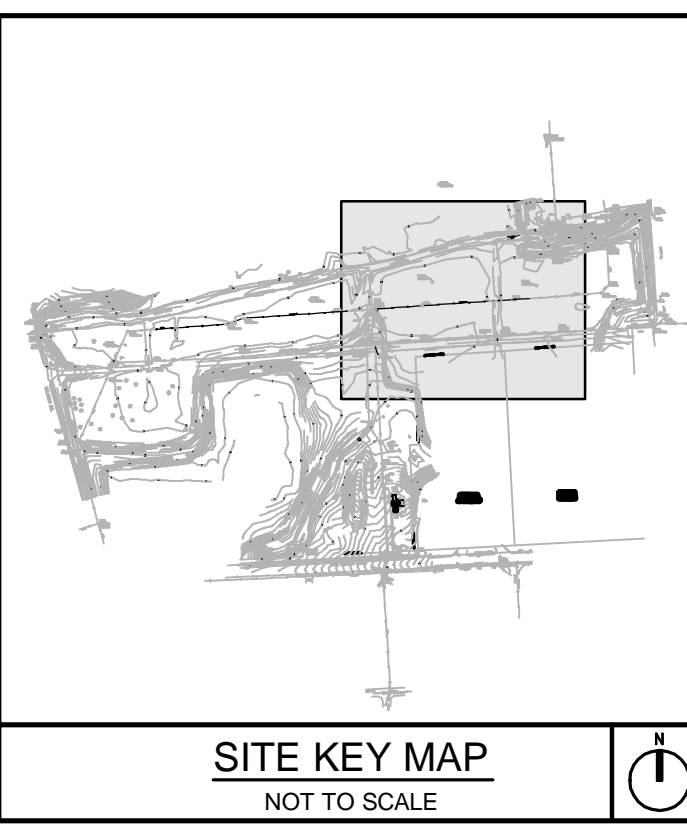
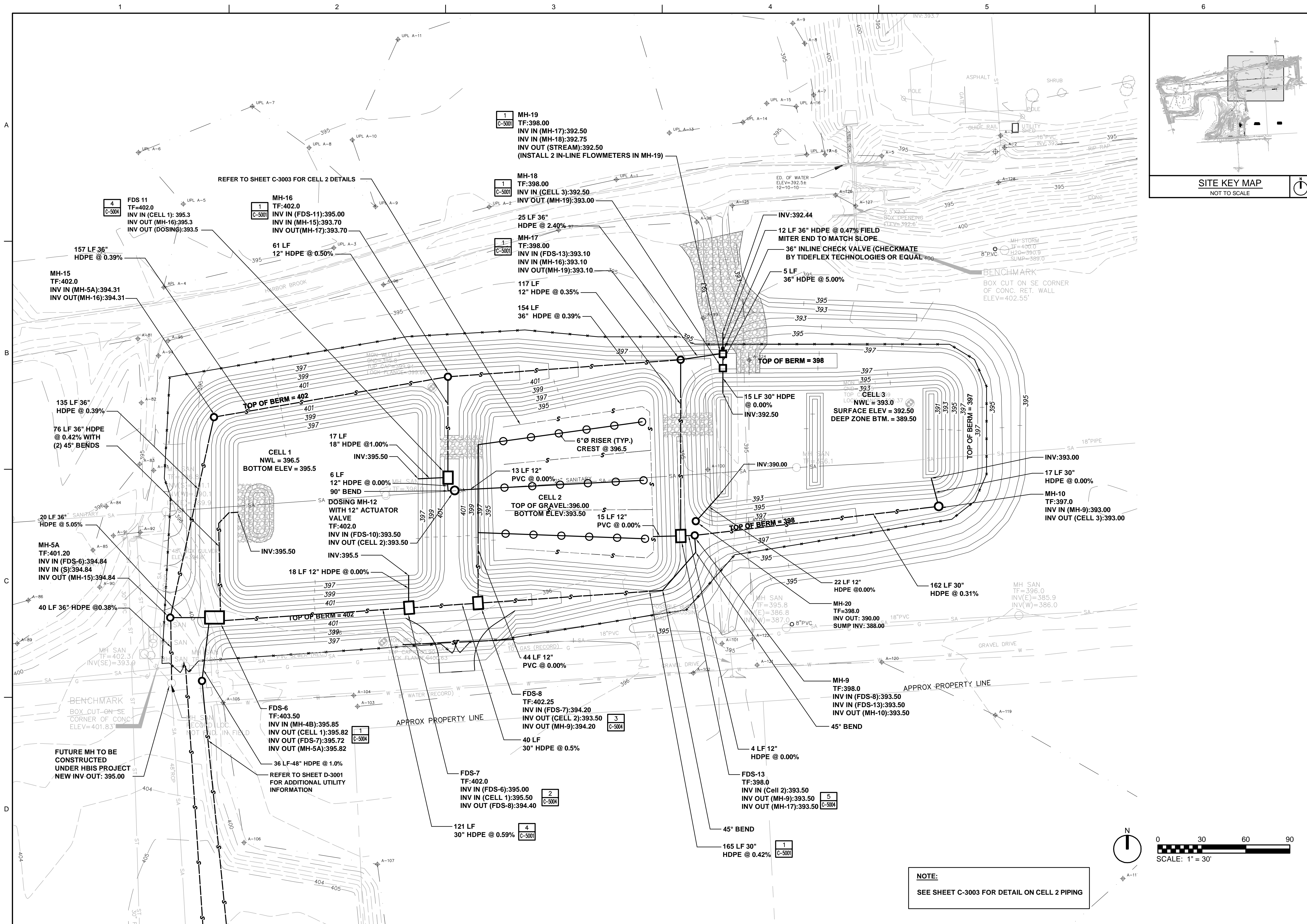
**OVERALL PROJECT PLAN
 AND CONSTRUCTION ACCESS
 AND STAGING PLAN**

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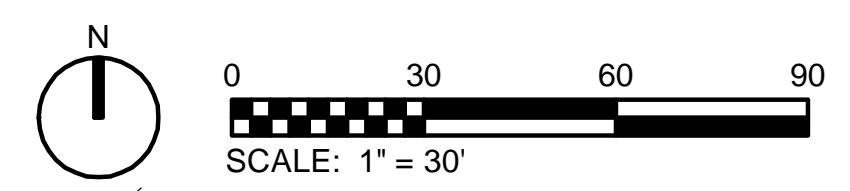
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UTILITY SITE PLAN
 WETLAND FACILITY

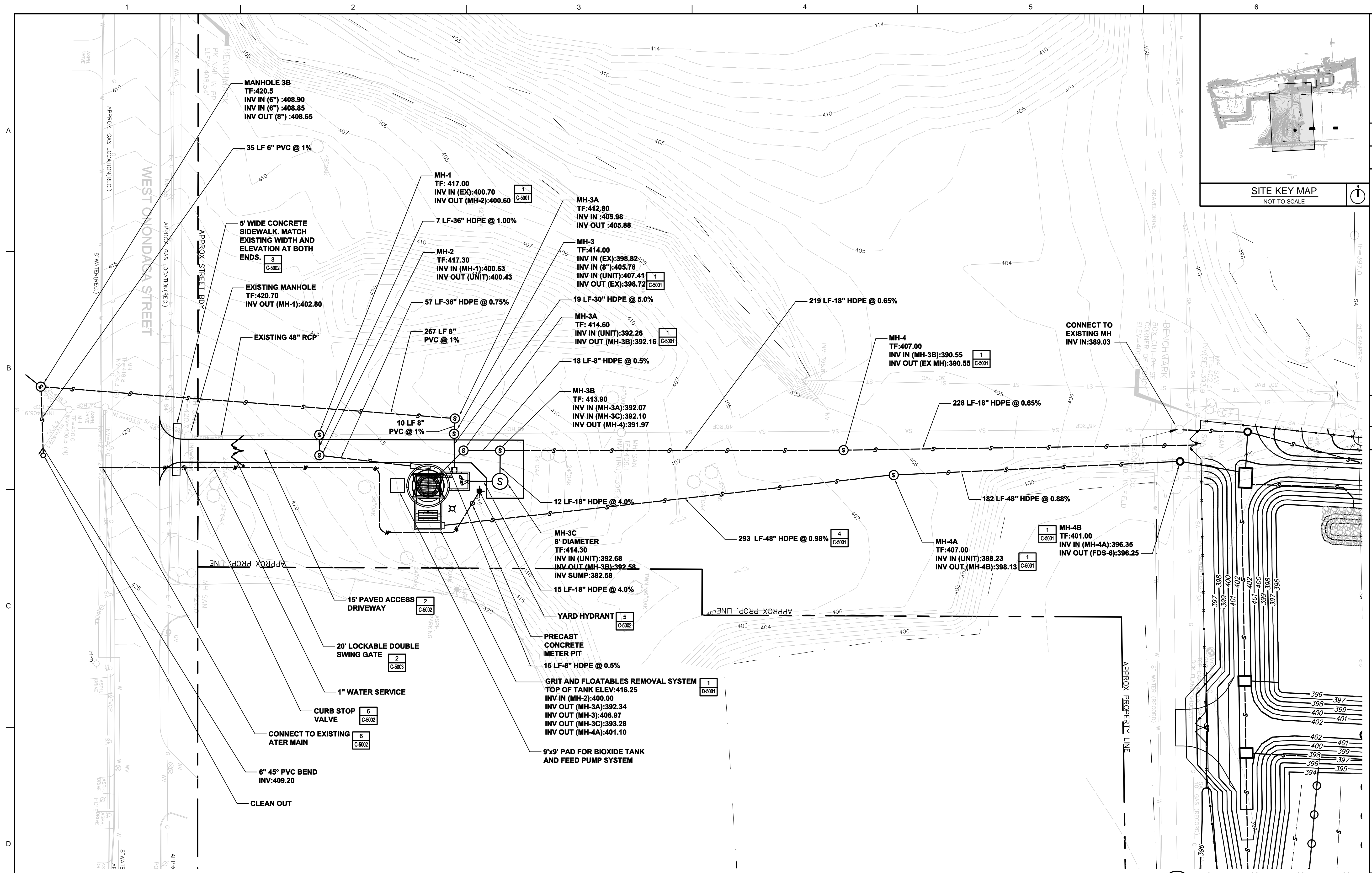
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VERIFY SCALE
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 DATE: JULY 11, 2011
 PROJ: 19217
 DWG: C-2001
 SHEET: 005-C-2001-19217

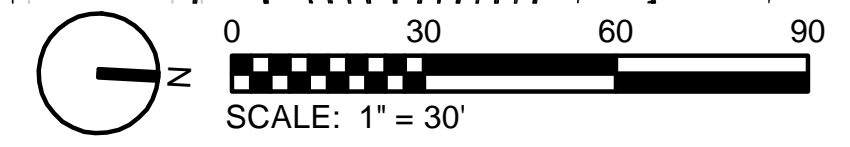


NOTE:
 SEE SHEET C-3003 FOR DETAIL ON CELL 2 PIPING

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PROPOSED SITE PLAN
1"=30'



SITE KEY MAP
NOT TO SCALE

NO.	DATE	REVISION	CHK	APVD	MEH
2	07/22/2011	REGULATORY AGENCY REVIEW	JRH	MEH	
1	05/02/2011	50% SUBMISSION	KH	MEH	
			BY	APVD	
			DR	APVD	
			KLH	GJM	RND

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EB 0000072 AA 001992

HARBOR BROOK CSO 018
CONSTRUCTED WETLANDS
CITY OF SYRACUSE
ONONDAGA COUNTY, NEW YORK

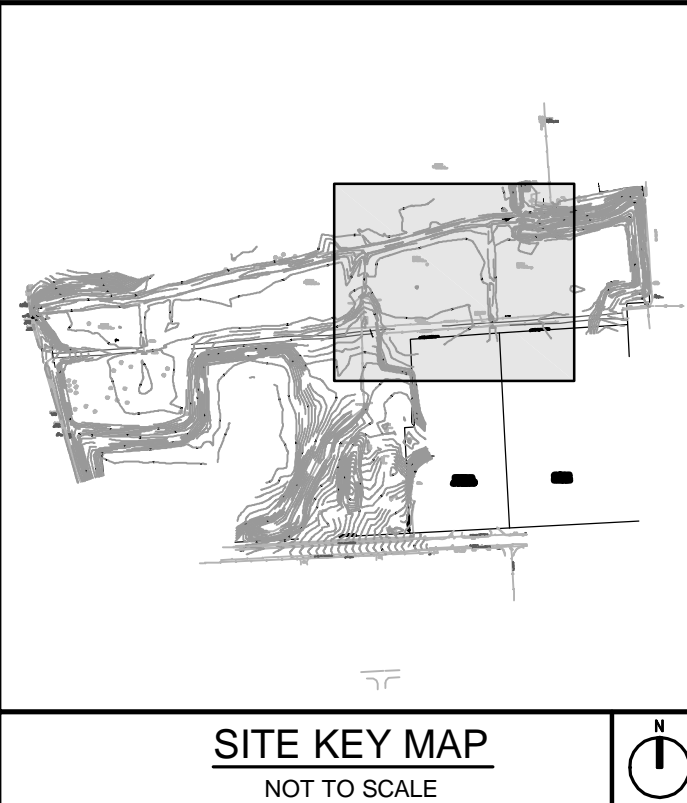
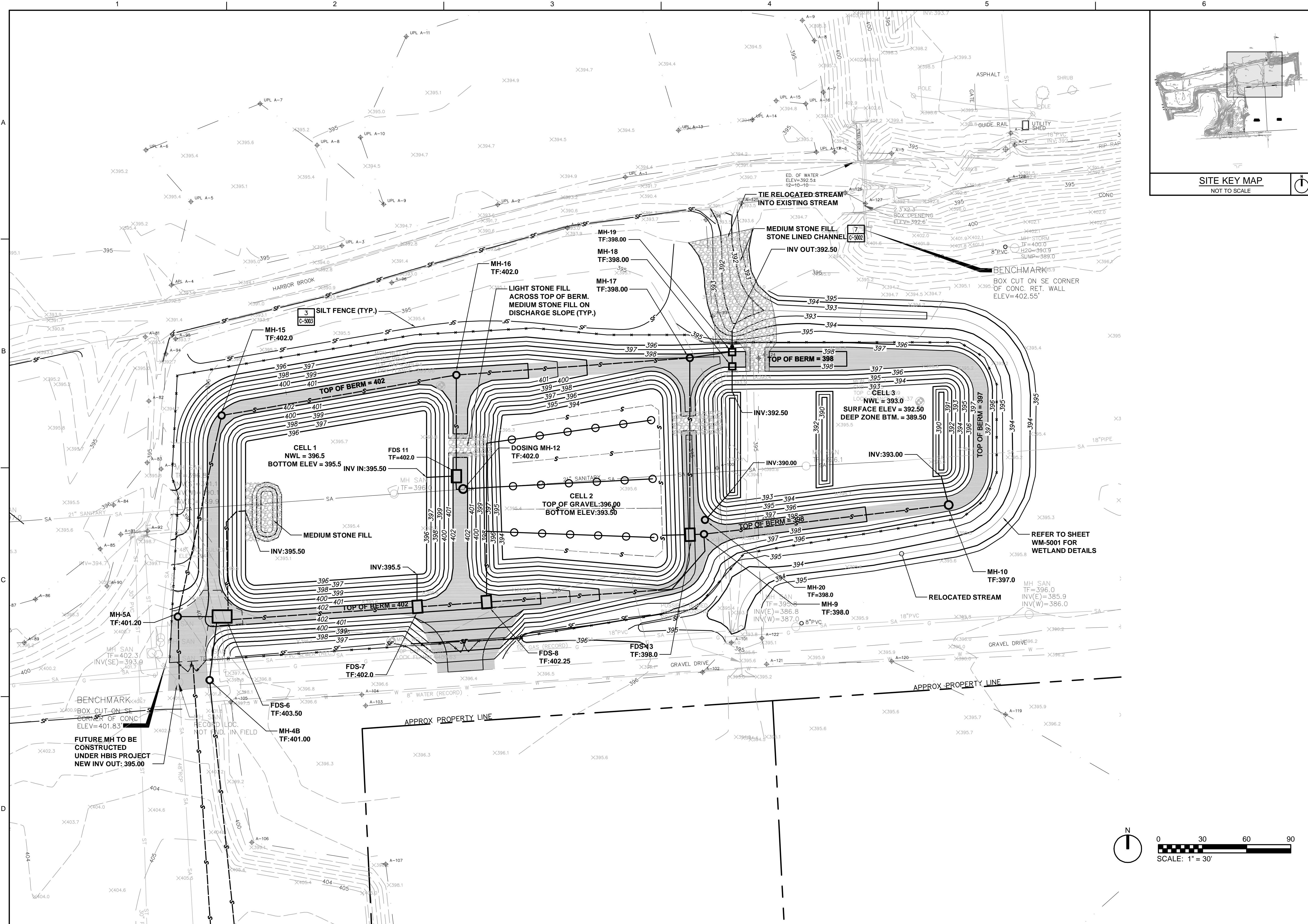
CH2MHILL **CIA**

UTILITY SITE PLAN
GRIT AND FLOATABLES SYSTEM

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 11, 2011
PROJ	19217
DWG	C-2002
SHEET	005-C-2002-19217



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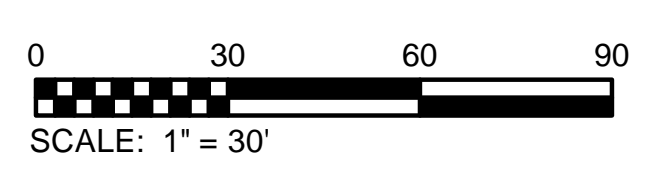
REGULATORY AGENCY REVIEW	MEH
50% SUBMISSION	MEH
REVISION	BY
DR	APVD
SKB	RND
CHK	MEH
JRH	MEH
APVD	MEH

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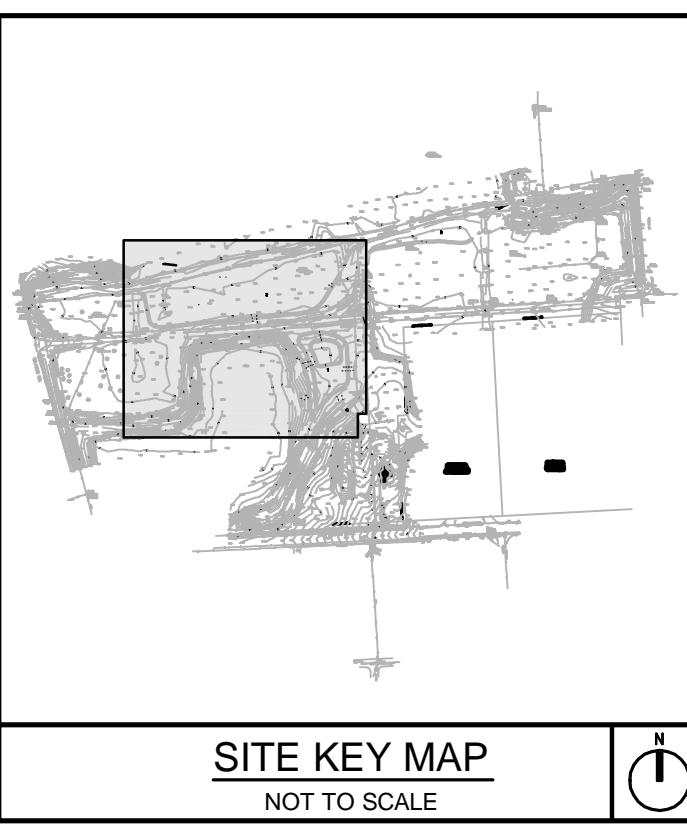
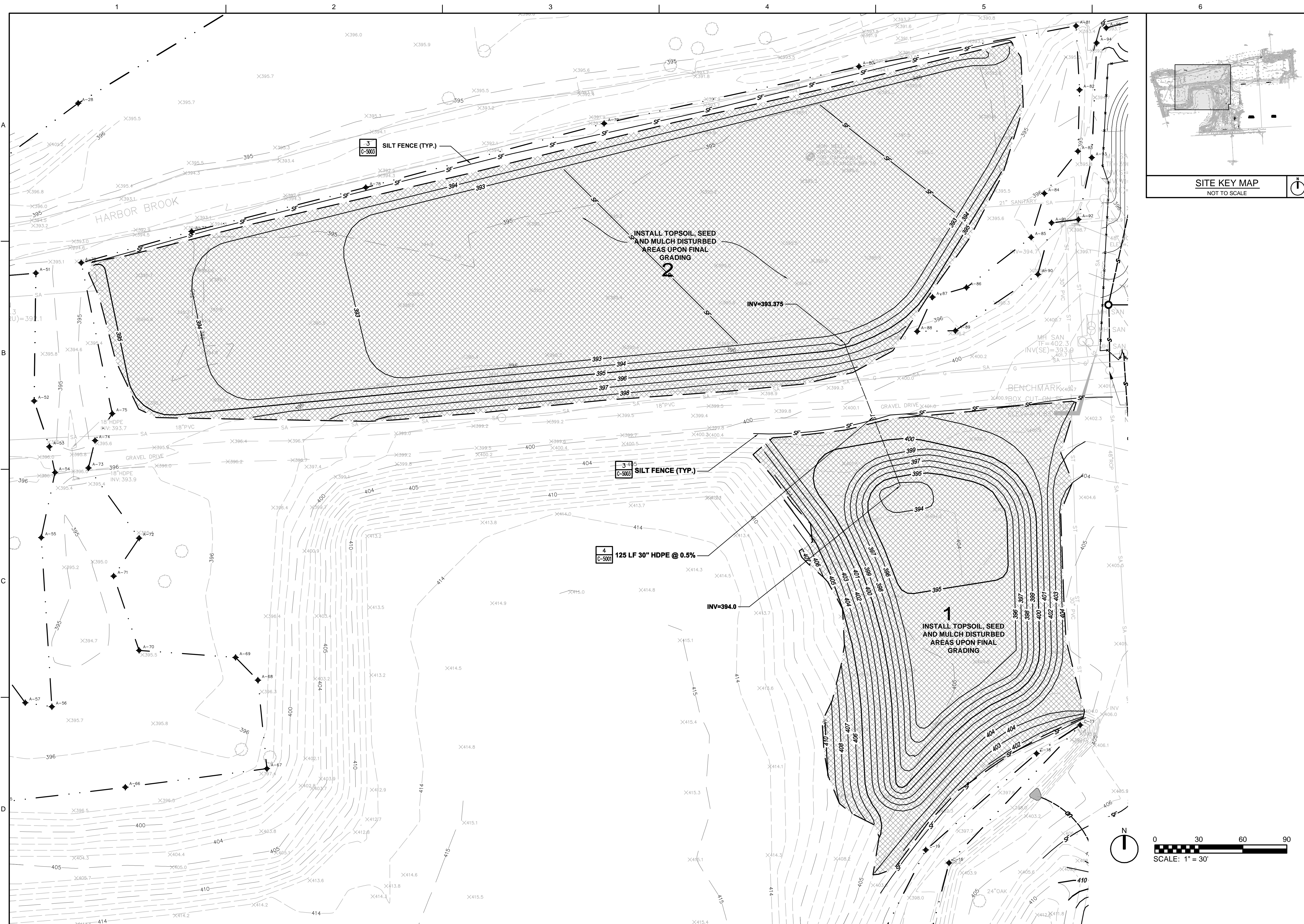
HARBOR BROOK CSO 018
CONSTRUCTED WETLANDS
CITY OF SYRACUSE
ONONDAGA COUNTY, NEW YORK

CH2MHILL **CIA**

VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 11, 2011
PROJ	19217
DWG	C-2003
SHEET	005-C-2003-19217



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NO.	DATE	REVISION	CHK	JRH	DR	SKB	RND	MEH
2	07/22/2011	REGULATORY AGENCY REVIEW						
1	05/02/2011	50% SUBMISSION						

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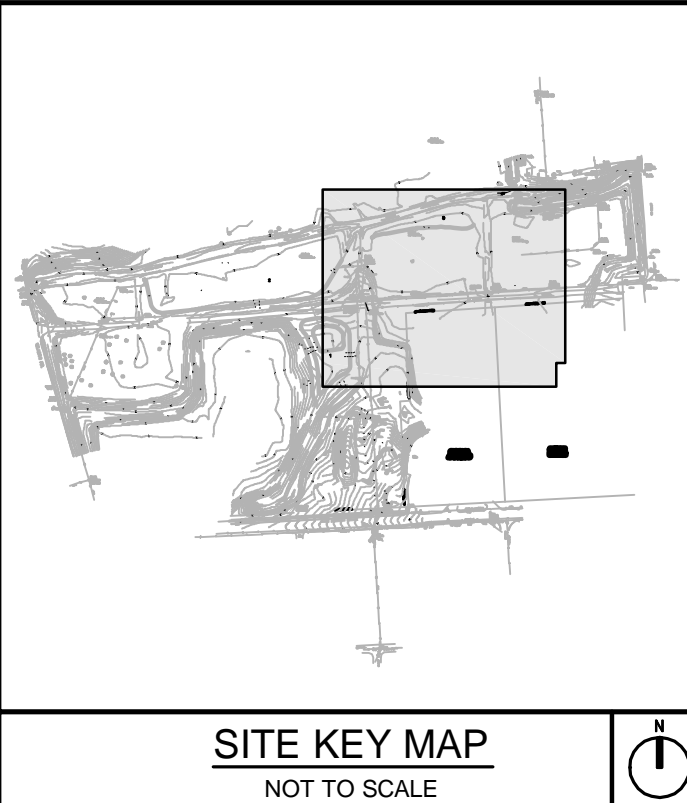
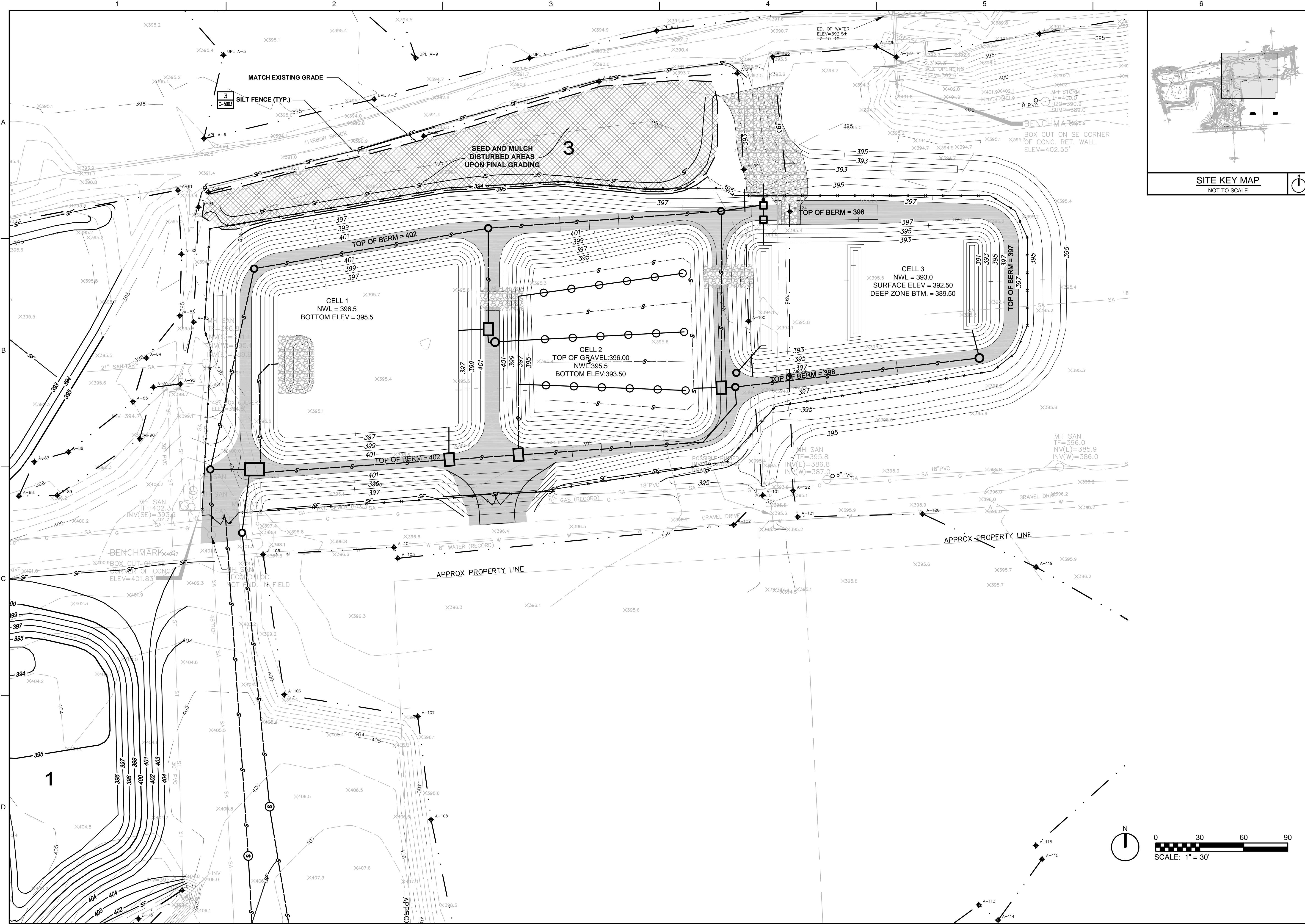
CH2MHILL **CIA**

GRADING PLAN
COMPENSATORY STORAGE AREAS 1 AND 2

DATE	JULY 11, 2011
PROJ	19217
DWG	C-2004
SHEET	005-C-2004-19217



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MEH	APVD	BY	MEH
CHK	APVD	BY	MEH
DR	APVD	BY	MEH
SKB	APVD	BY	MEH
JRH	APVD	BY	MEH
CHK	APVD	BY	MEH
JRH	APVD	BY	MEH
REGULATORY AGENCY REVIEW	50% SUBMISSION	REVISION	NO. DATE
2	07/22/2011		
1	05/02/2011		

430 E. GENESEE STREET, SUITE 400
 SYRACUSE, NY 13202
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 EB 0000072 AA 001992

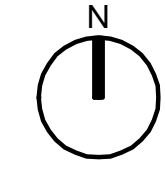
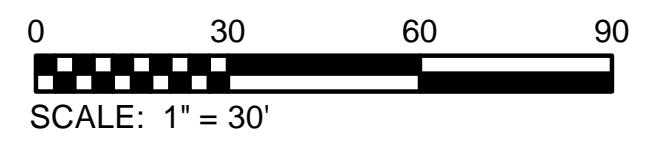
HARBOR BROOK CSO 018
 CONSTRUCTED WETLANDS
 CITY OF SYRACUSE
 ONONDAGA COUNTY, NEW YORK

CH2MHILL **CIA**

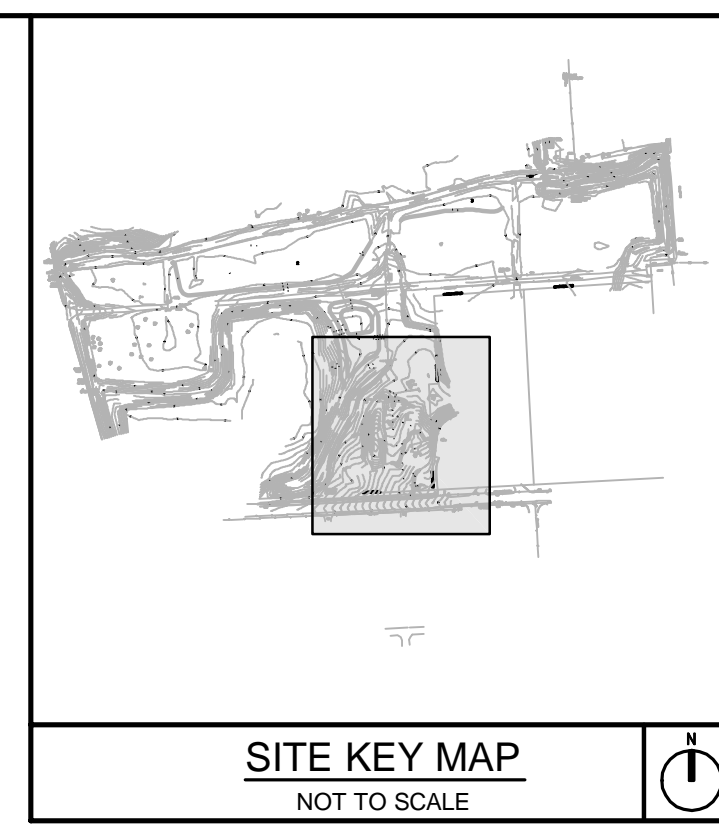
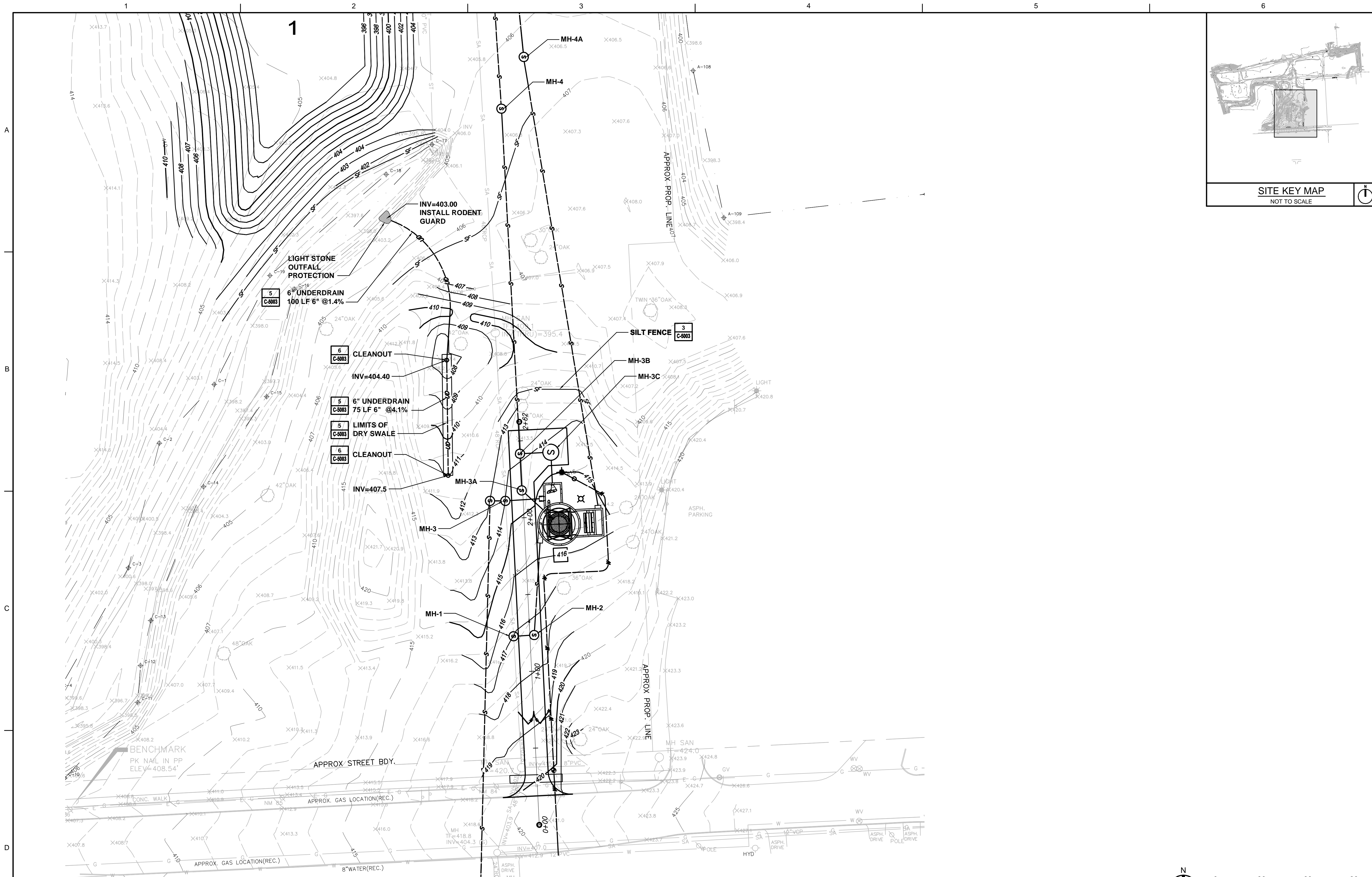
**PROPOSED GRADING PLAN
 COMPENSATORY STORAGE AREA 3**

VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.
 0 1" 1"

DATE JULY 11, 2011
 PROJ 19217
 DWG C-2005
 SHEET 005-C-2005-19217



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MEH	XXX	DR	XXX	CHK	APVD	MEH
BY	APVD	REVISION	NO.	DATE	DGSN	REGULATORY AGENCY REVIEW
BY	APVD	50% SUBMISSION	1	05/02/2011		JRH MEH
BY	APVD	50% SUBMISSION	2	07/22/2011		KH MEH

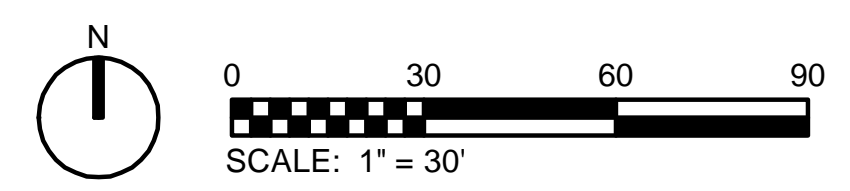
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 EB 0000072 AA 001992

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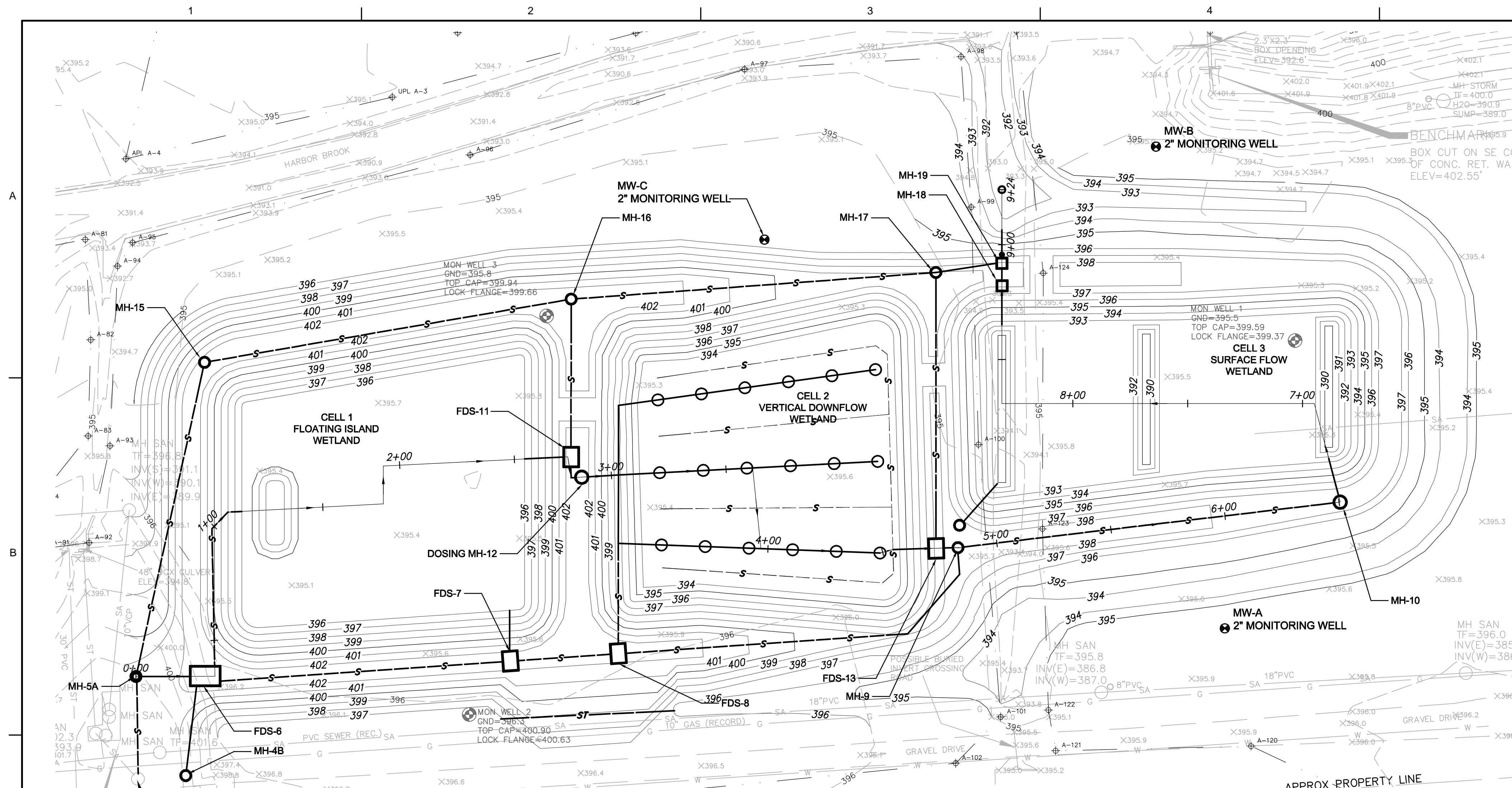


CH2MHILL **CIA**

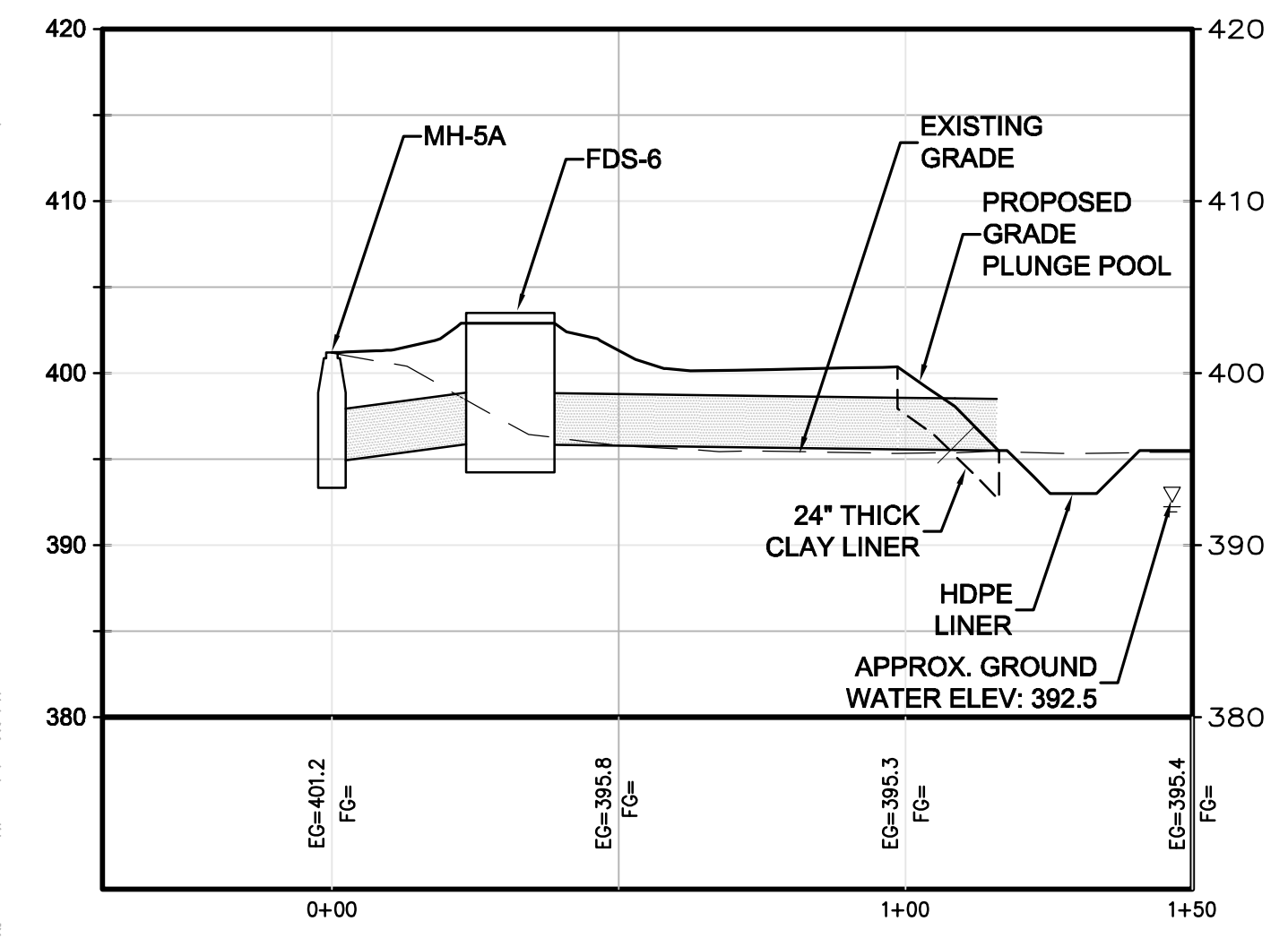
GRADING PLAN
 GRIT AND FLOATABLES FACILITY



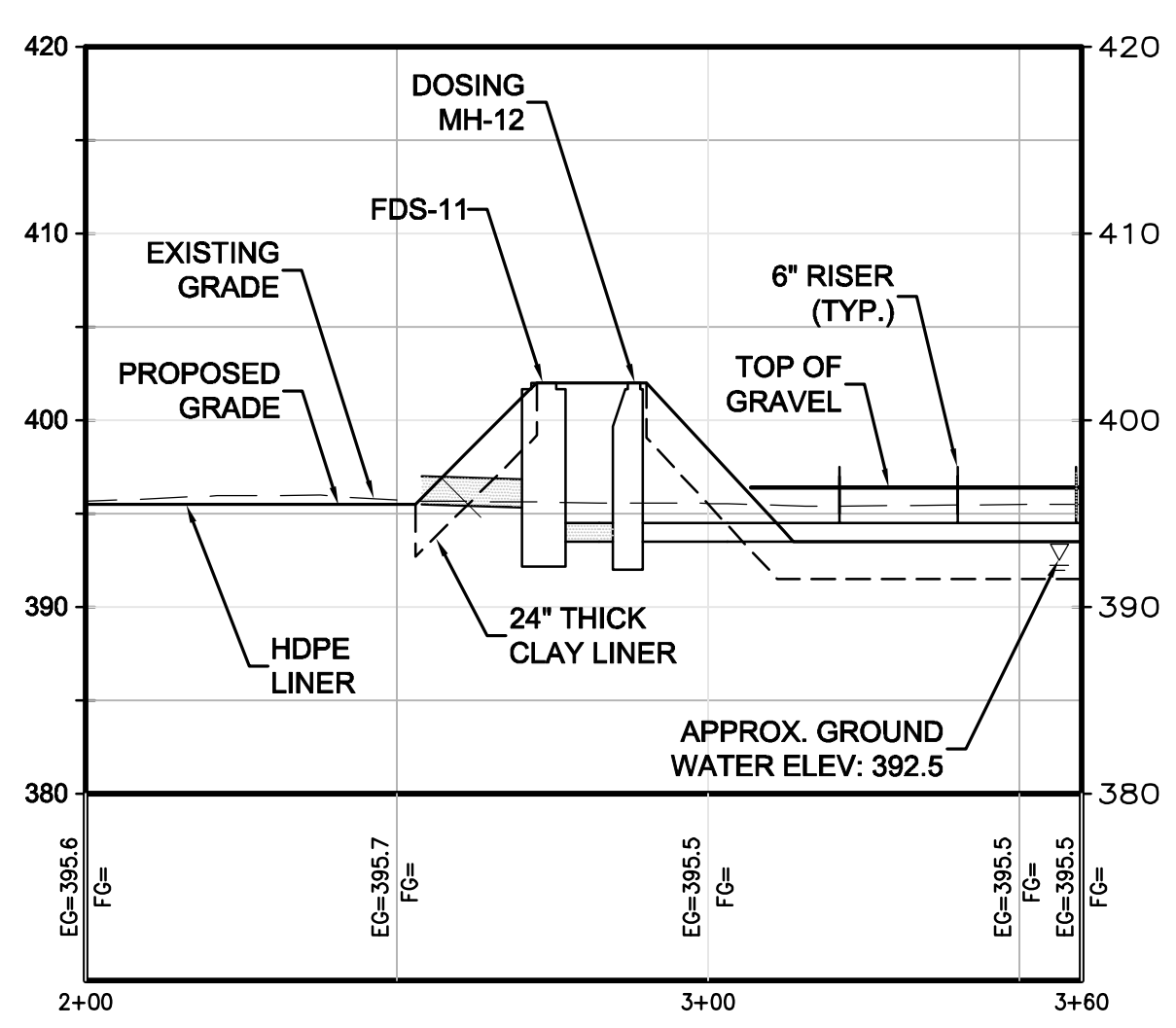
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 11, 2011
PROJ	19217
DWG	C-2006
SHEET	005-C-2006-19217



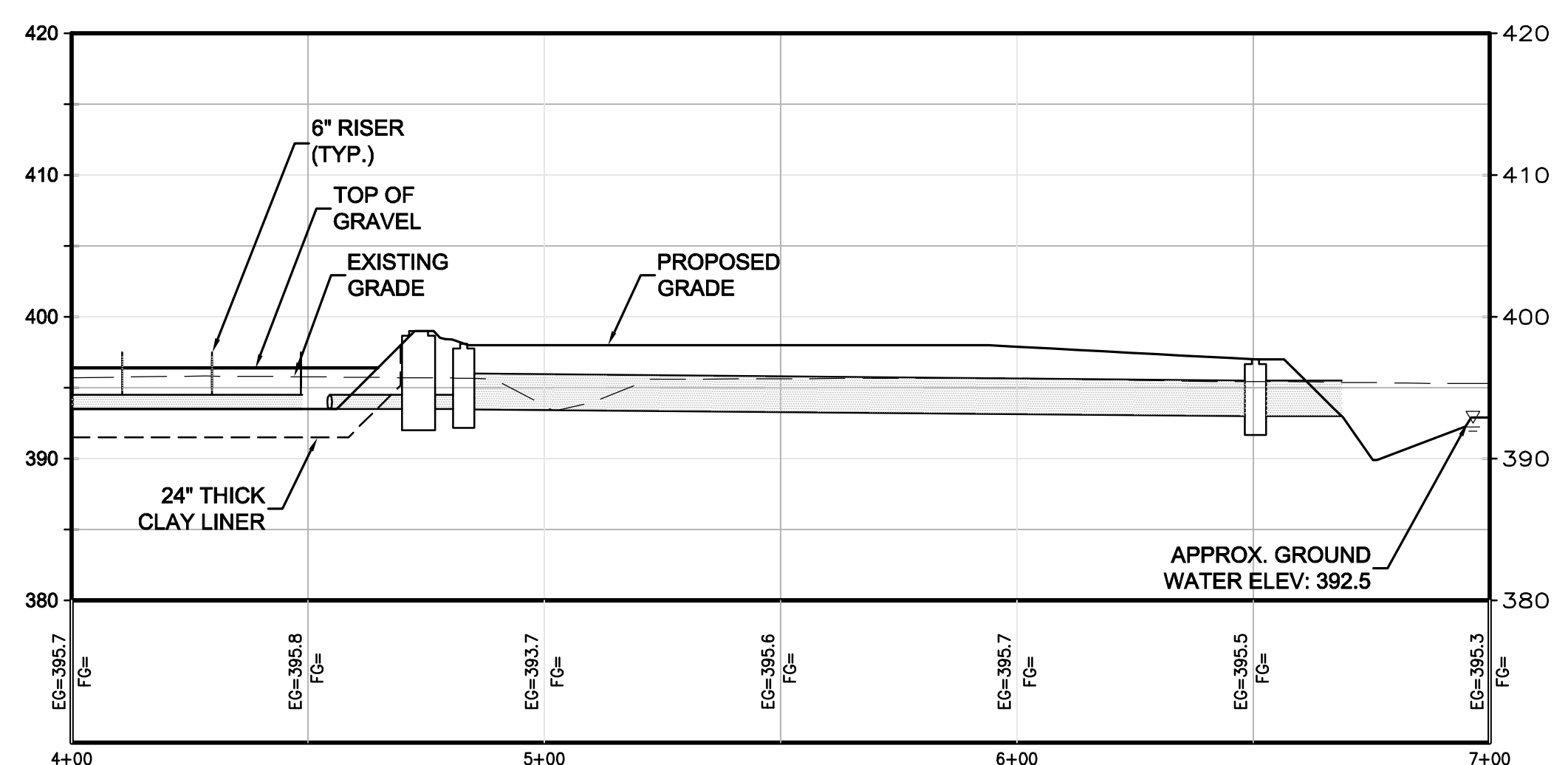
PLAN
SCALE: 1"=30'



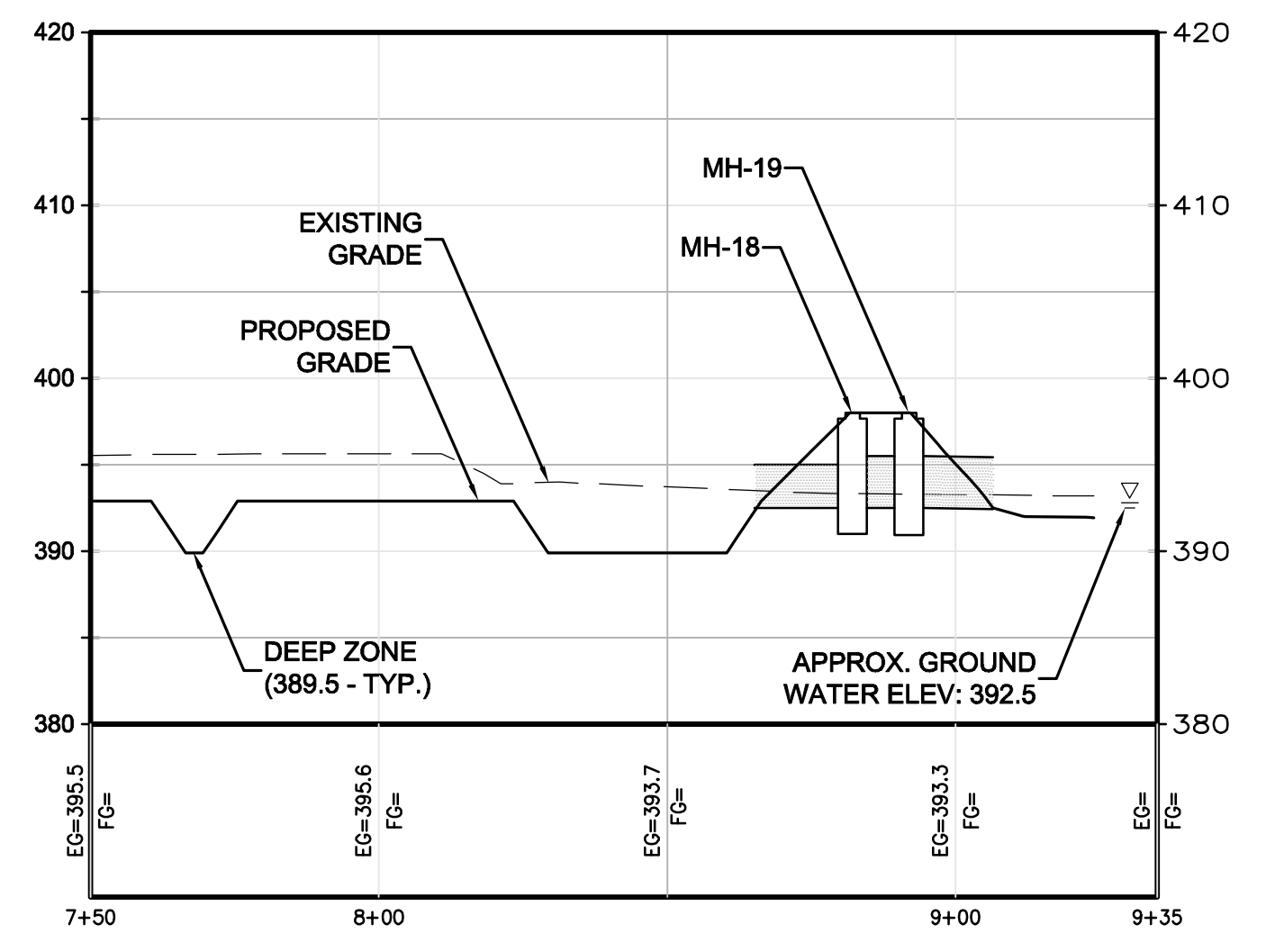
A PROFILE STA 0+00 TO 1+50
SCALE: 1"=30'



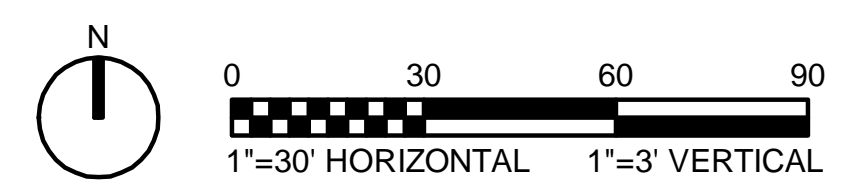
B PROFILE STA 2+00 TO 3+60
SCALE: 1"=30'



C PROFILE STA 4+00 TO 7+00
SCALE: 1"=30'



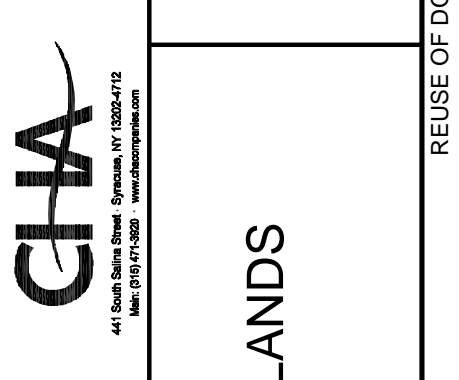
D PROFILE STA 7+50 TO 9+35
SCALE: 1"=30'



REGULATORY AGENCY REVIEW	MEH
50% SUBMISSION	MEH
REVISION	BY
CHK	APVD
DR	RND
SKB	MEH

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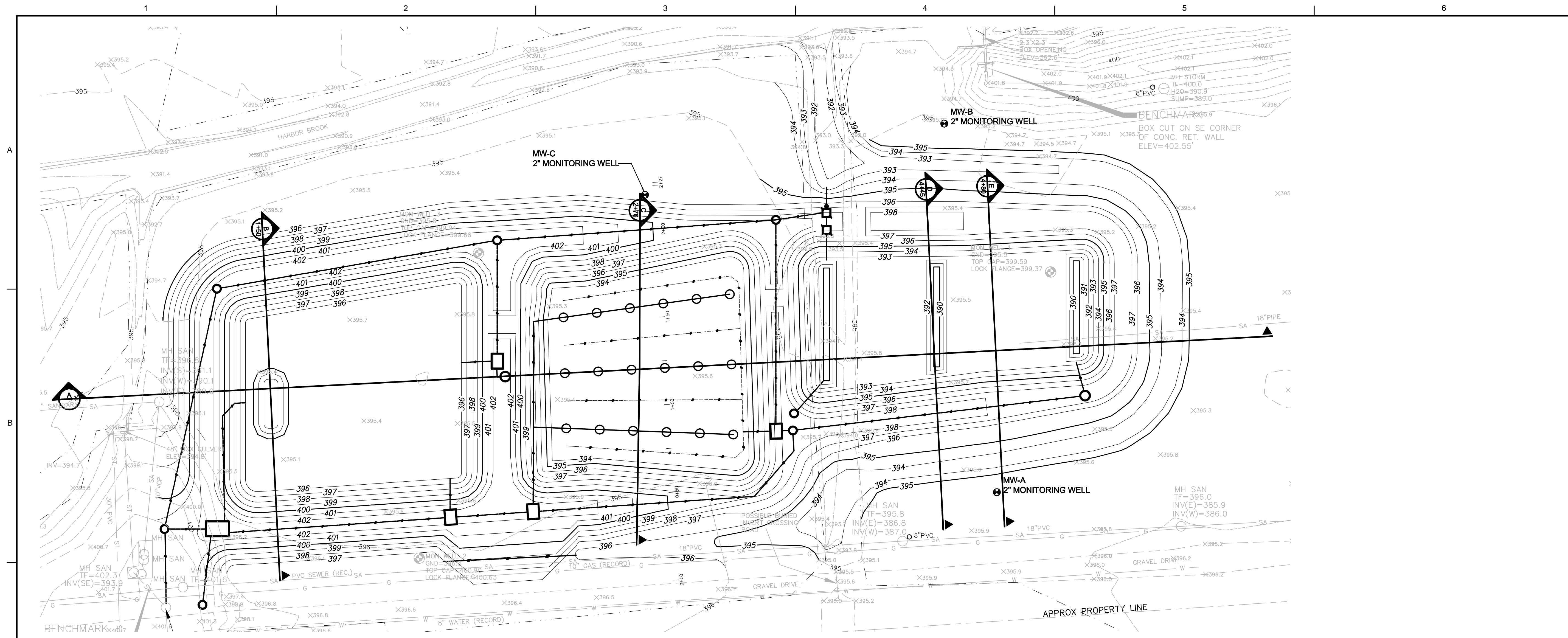
HARBOR BROOK CSO 018
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CITY OF SYRACUSE
ONONDAGA COUNTY, NEW YORK



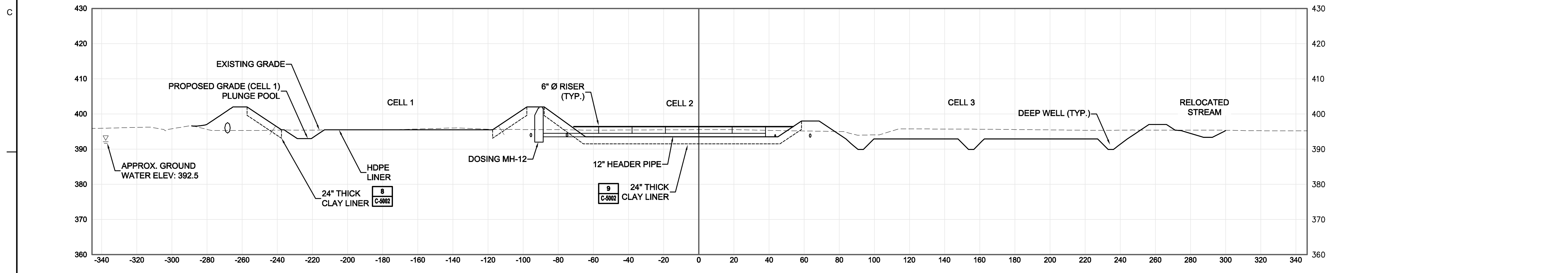
**CONSTRUCTED WETLANDS
PROFILES**

DATE	JULY 11, 2011
PROJ	19217
DWG	C-3001
SHEET	005-C-3001-19217

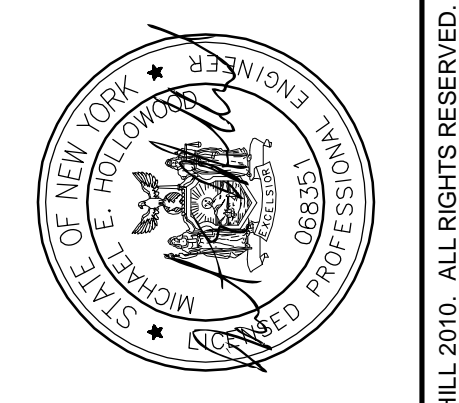
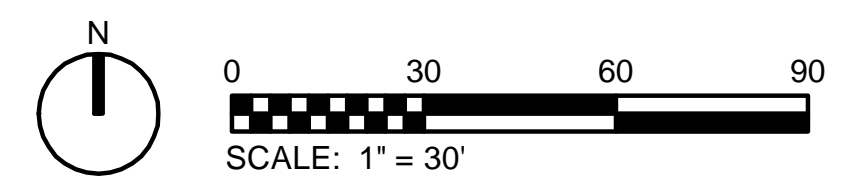
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NOTE: SEE SHEET C-3003 FOR SECTIONS B, C, D AND E



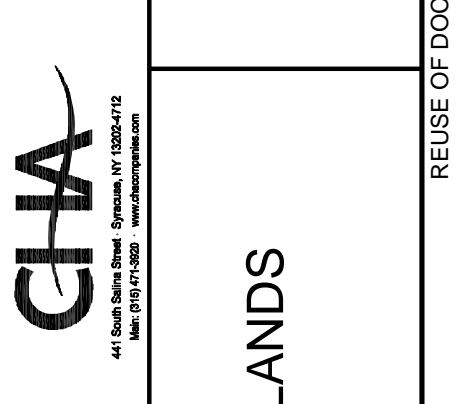
A CELL 1 - STA. 0+65
SCALE: NOT TO SCALE



MEH	APVD	BY	MEH
APVD	CHK	DR	SKB
REGULATORY AGENCY REVIEW	50% SUBMISSION	REVISION	
JRH	MEH	KH	MEH
NO.	DATE	DSGN	
2	07/22/2011		
1	05/02/2011		

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CITY OF SYRACUSE
ONONDAGA COUNTY, NEW YORK

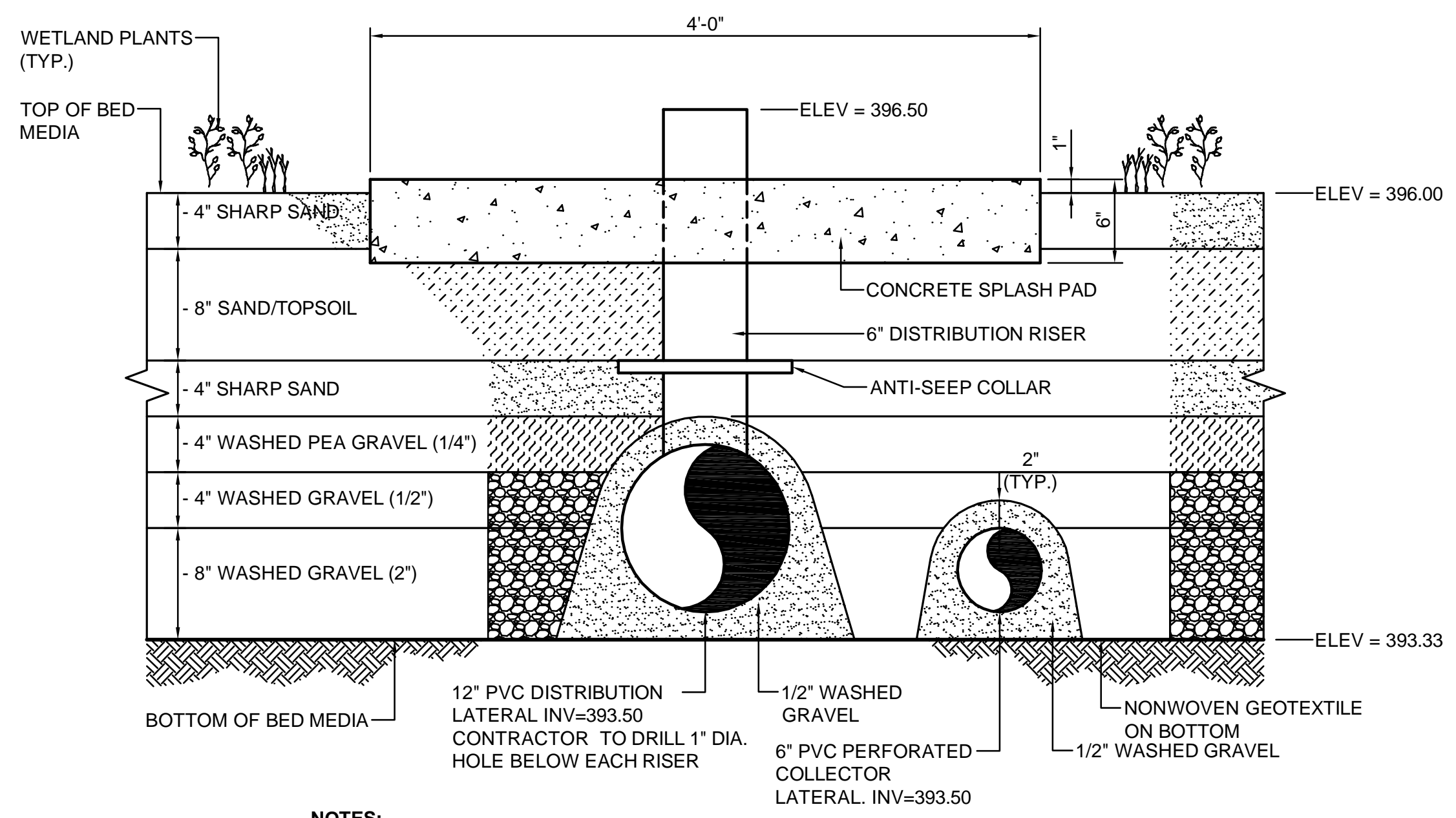


CONSTRUCTED WETLANDS
SECTIONS

1" = 30'
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

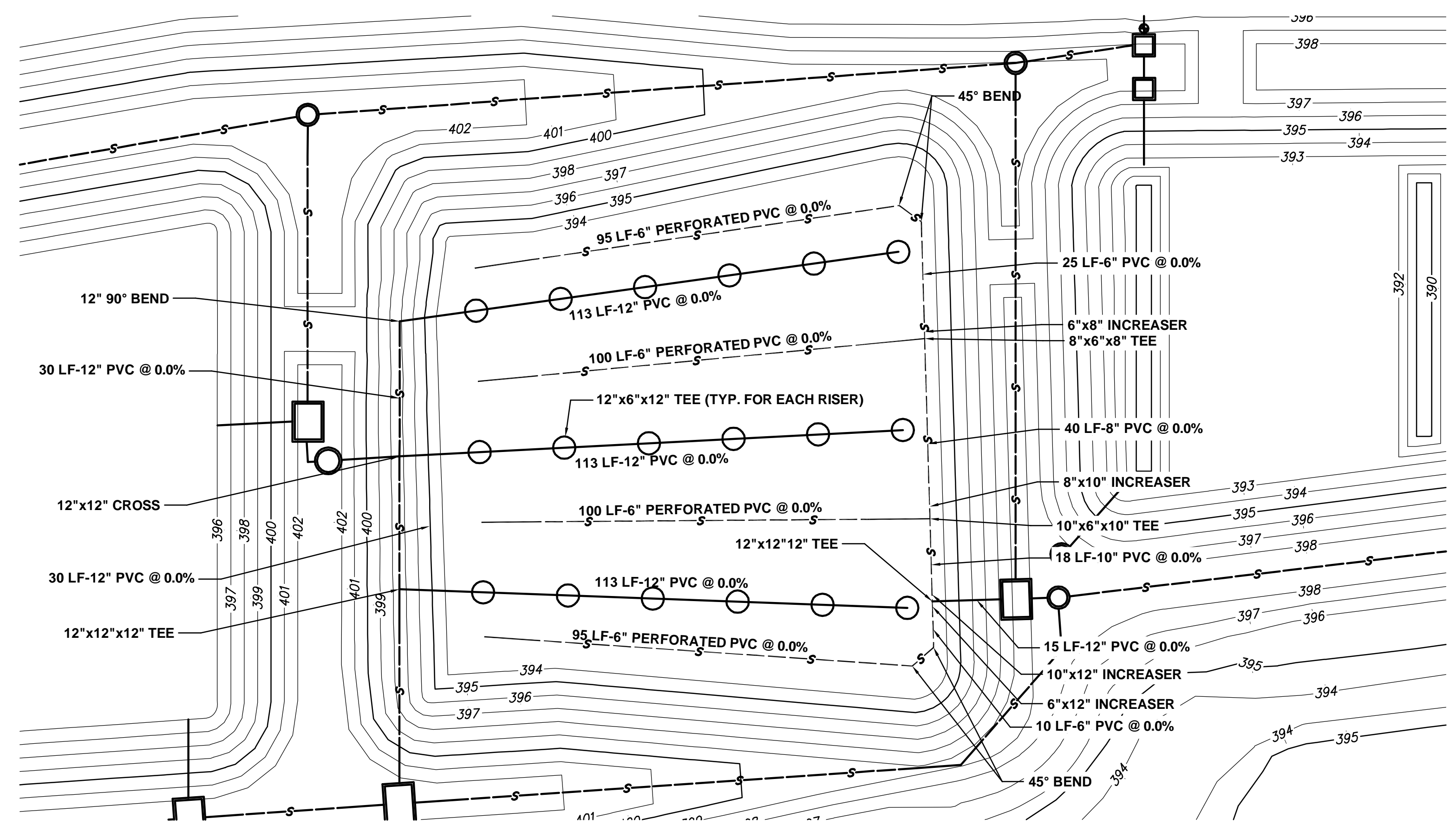
DATE	JULY 11, 2011
PROJ	19217
DWG	C-3002
SHEET	005-C-3002-19217

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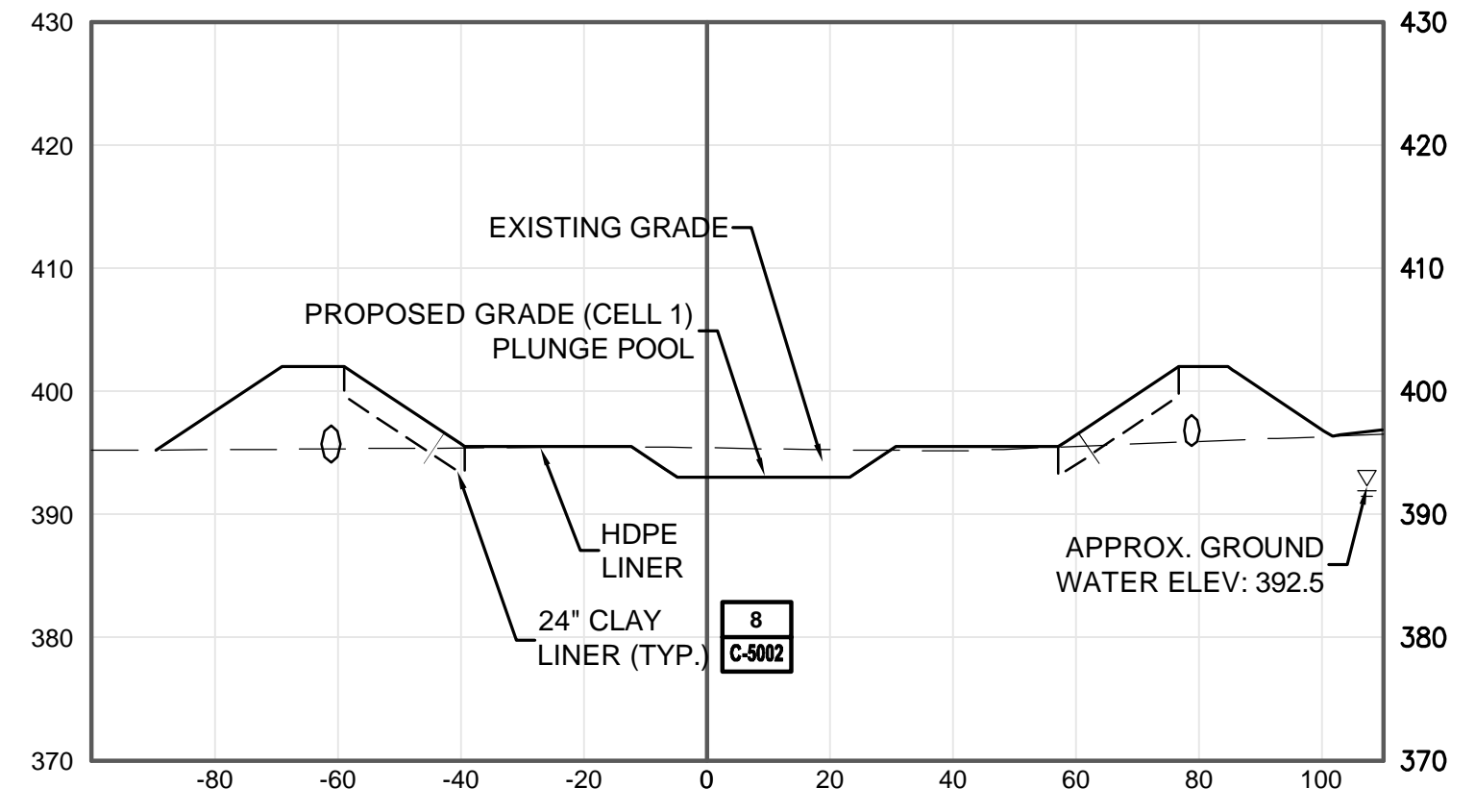


- NOTES:**
1. ALL PIPES INSIDE VDF WETLAND SHALL BE BEDDED AND COVERED WITH 1/2" GRAVEL. MINIMUM 2" COVER AROUND PIPES.
 2. CONTRACTOR SHALL INSTALL A 6" WASHED GRAVEL LAYER TO USE AS WORKING SURFACE FOR PIPE INSTALLATION. ANY GRAVEL THAT BECOMES CONTAMINATED SHALL BE REMOVED AND REPLACED PRIOR TO INSTALLING ADDITIONAL MATERIALS.

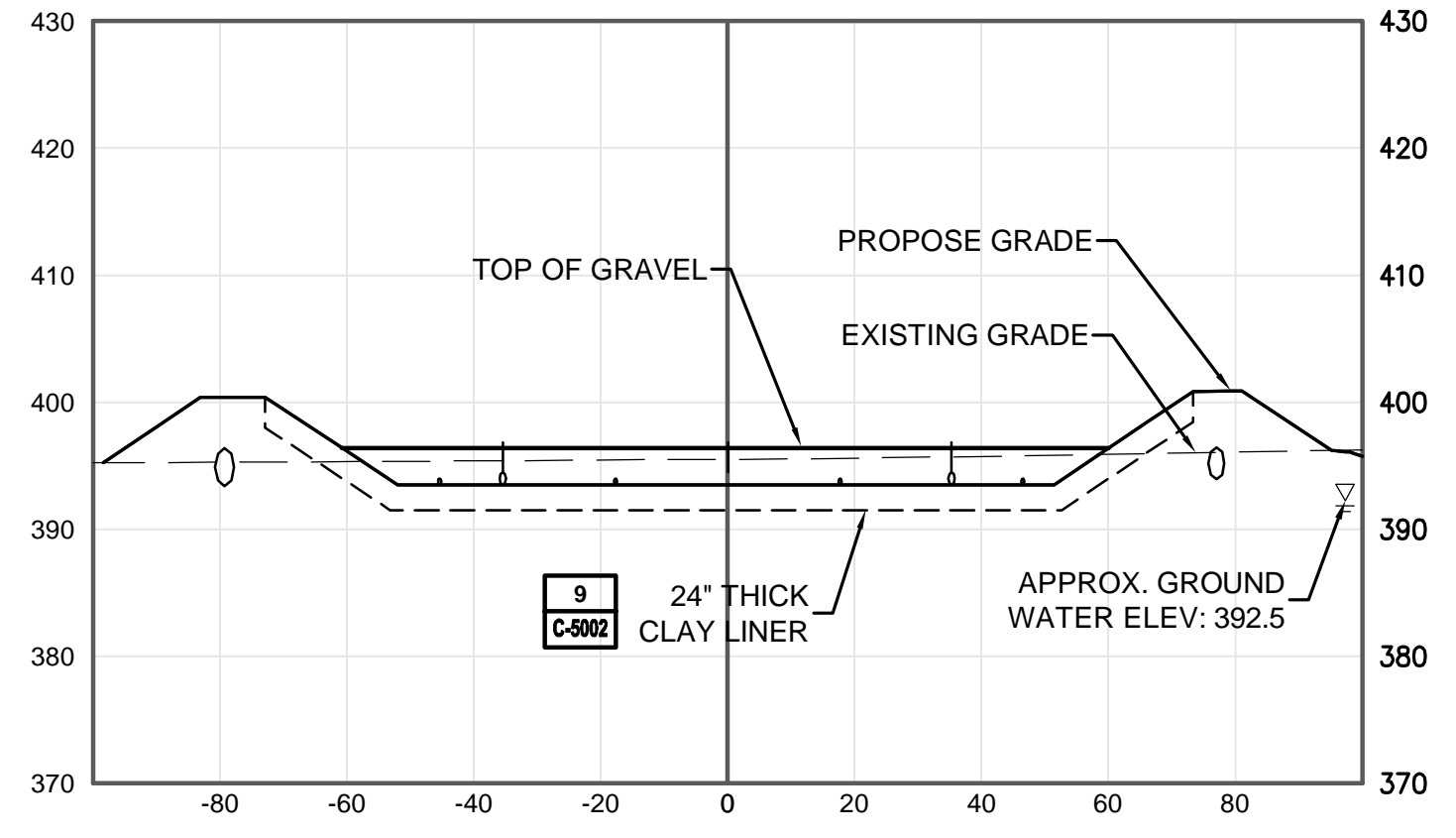
VERTICAL DOWNFLOW WETLAND (VDF) DISTRIBUTION RISER DETAIL
NTS



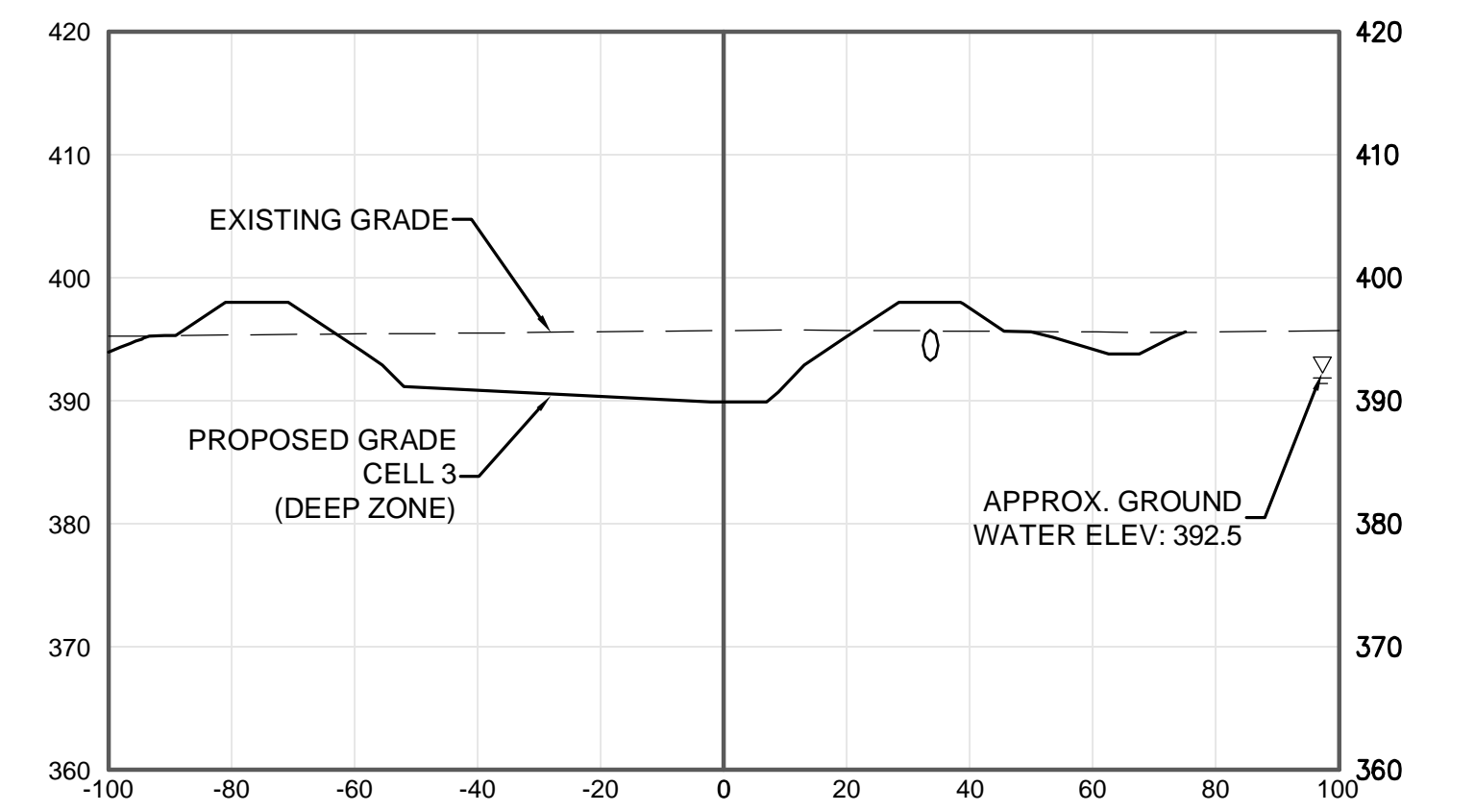
CELL 2 PIPING PLAN
1"=20'-0"



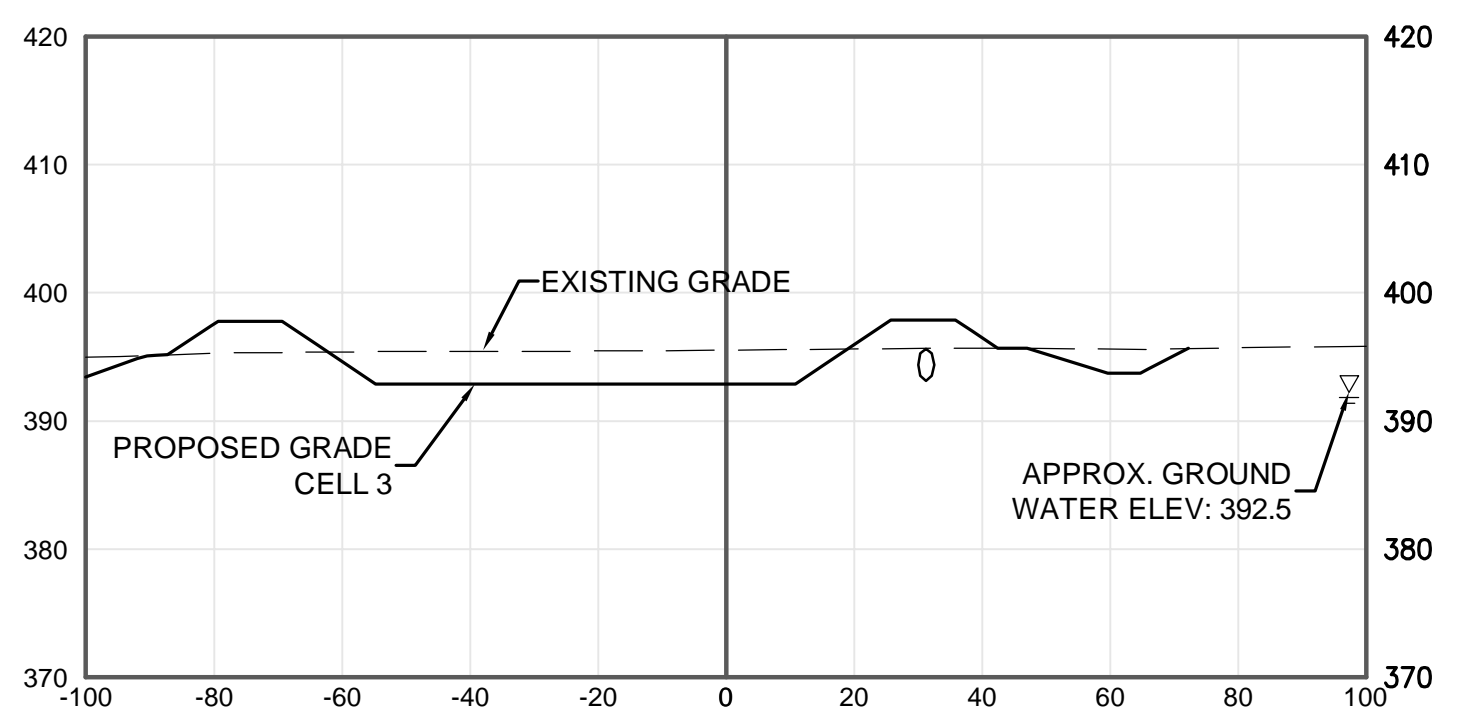
CELL 1 - STA. 0+65
SCALE: NOT TO SCALE



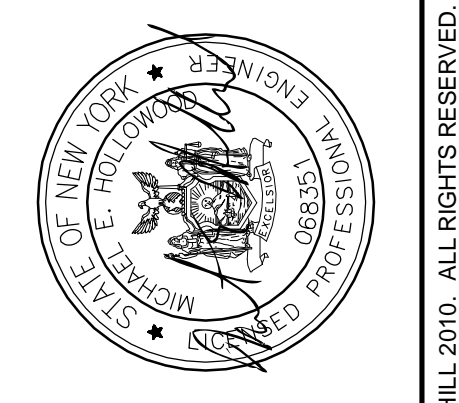
CELL 2 - STA. 2+76
SCALE: NOT TO SCALE



CELL 3 - STA. 4+45
SCALE: NOT TO SCALE



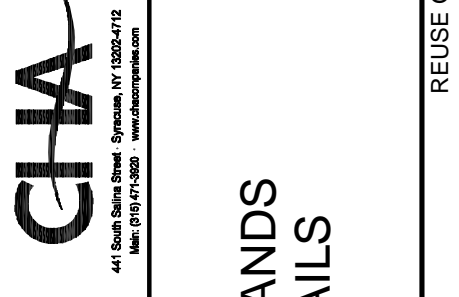
CELL 3 - STA. 4+80
SCALE: NOT TO SCALE



REGULATORY AGENCY REVIEW	JRH	MEH	MEH	MEH	APVD	MEH
50% SUBMISSION	KH	MEH	MEH	MEH	APVD	MEH
REVISION	BY	APVD	CHK	RND	APVD	MEH
NO.	DATE	DR	GJM	KLH	DR	MEH
2	07/22/2011					
1	05/02/2011					

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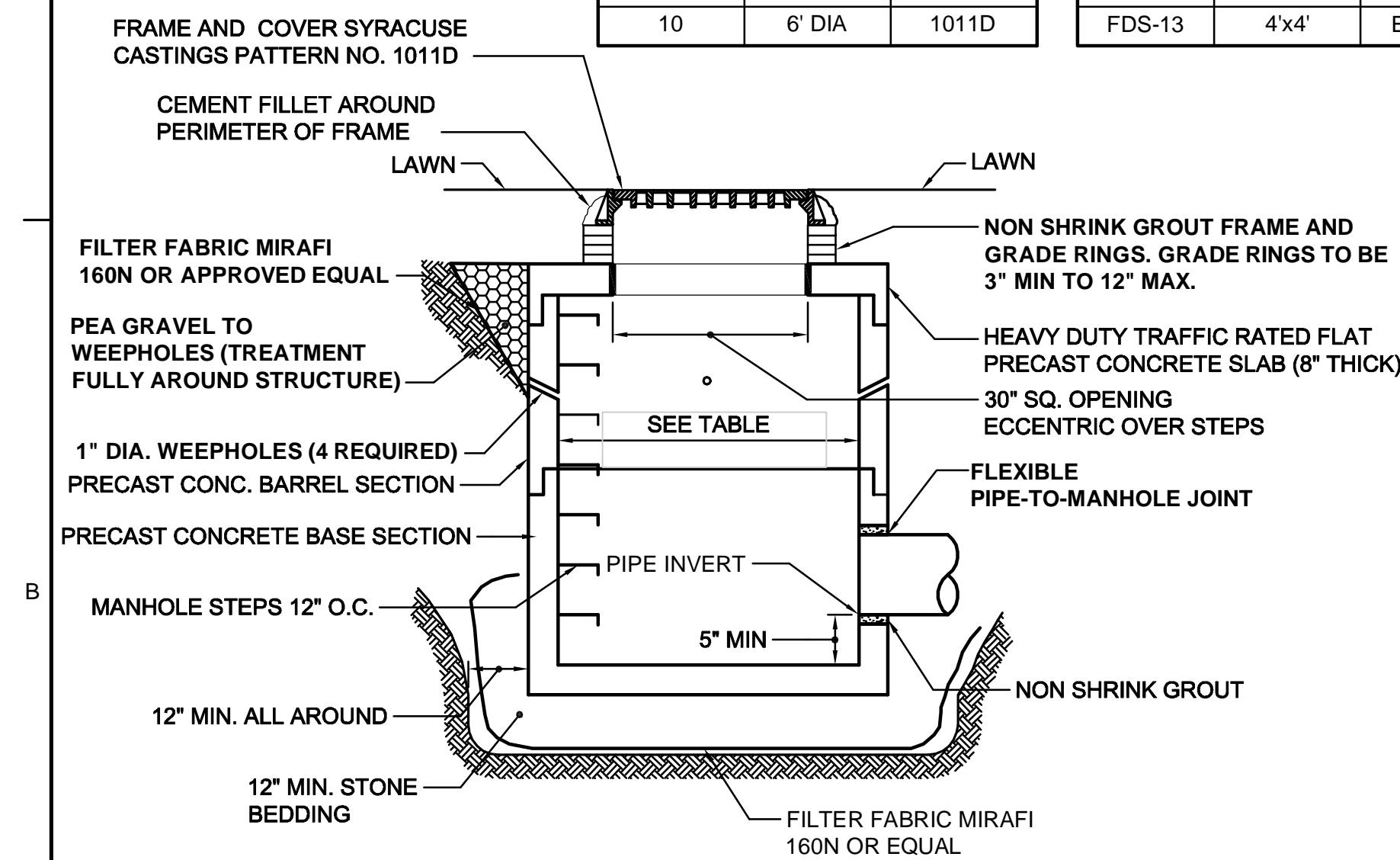
CONSTRUCTED WETLANDS
SECTIONS AND DETAILS

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
1"

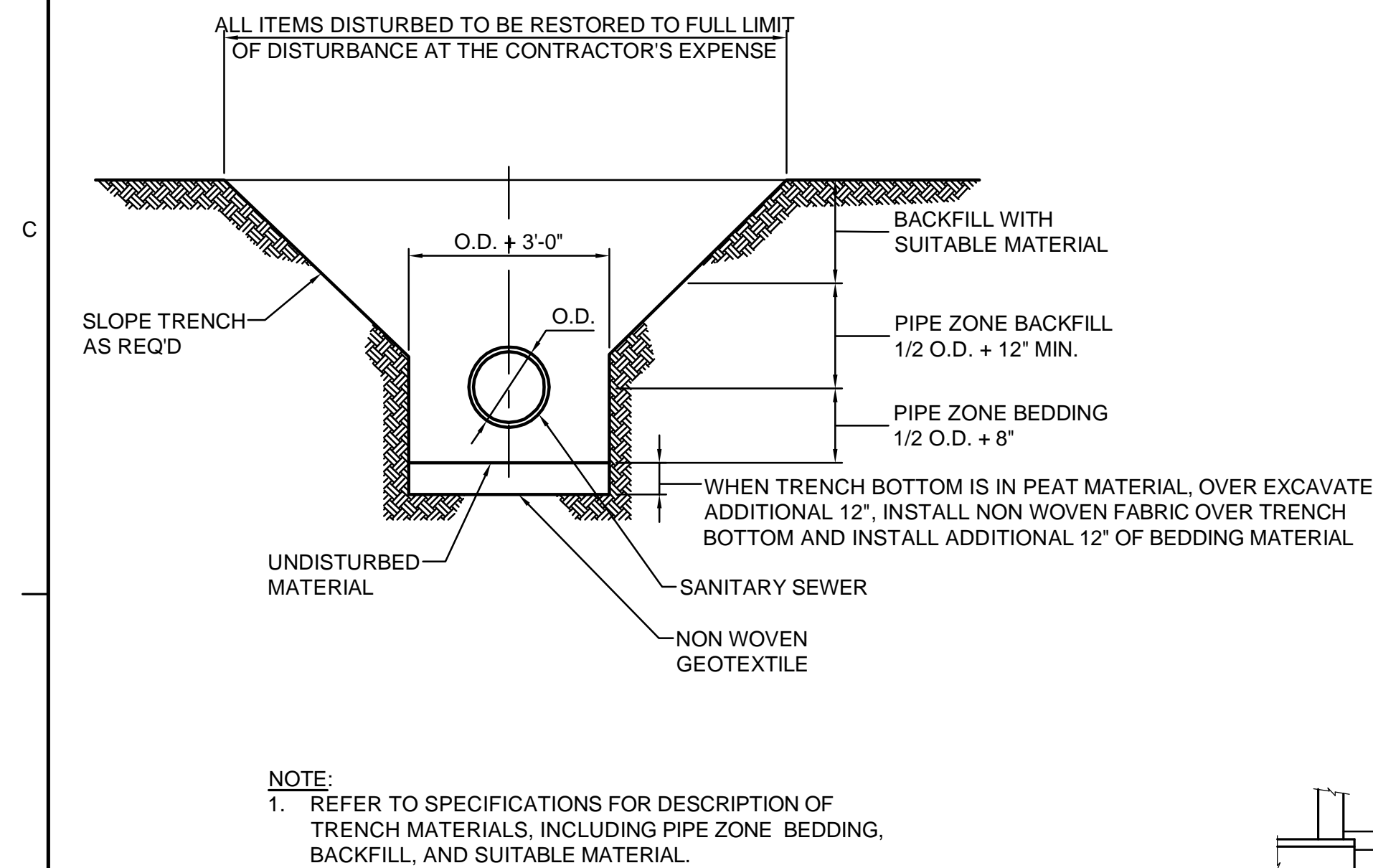
DATE	JULY 11, 2011
PROJ	19217
DWG	C-3003
SHEET	005-C-3003-19217

MANHOLE STRUCTURE SIZE TABLE		
MH #	SIZE	COVER
1	6' DIA	1011D
2	6' DIA	1011D
3	6' DIA	1011D
3A	4' DIA	1011D
3B	4' DIA	1011D
3C	8' DIA	1011D
4	4' DIA	1011D
4A	6' DIA	1011D
4B	6' DIA	1011D
5A	6' DIA	1011D
9	6' DIA	1011D
10	6' DIA	1011D

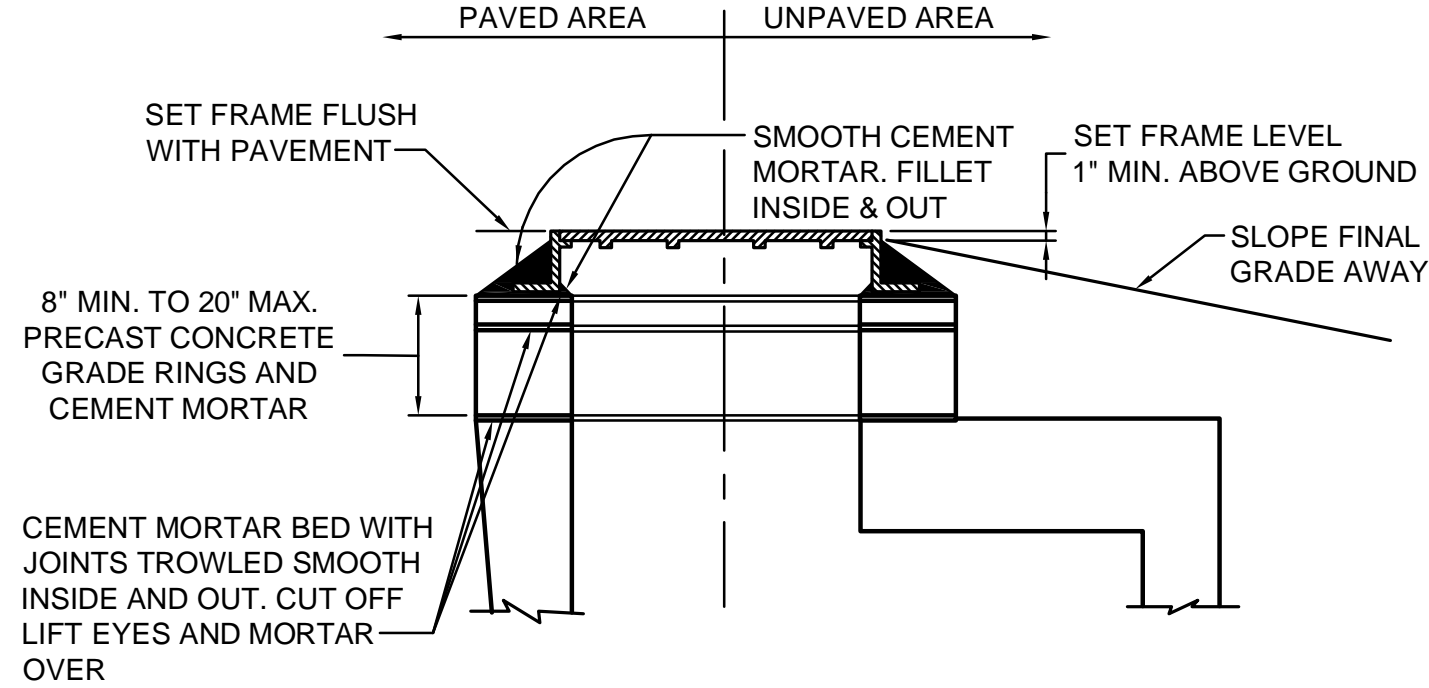
MANHOLE STRUCTURE SIZE TABLE		
MH #	SIZE	COVER
12	5' DIA	1011D
15	6' DIA	1011D
16	6' DIA	1011D
17	6' DIA	1011D
18	5'x5'	1011D
19	6'x6'	1011D
20	4' DIA	1011D
FDS-6	8'x12'	1011D, EC-4HD
FDS-7	6'x6'	EC-1HD
FDS-8	6'x8'	EC-1HD
FDS-11	6'x6'	EC-1HD
FDS-13	4'x4'	EC-4HD



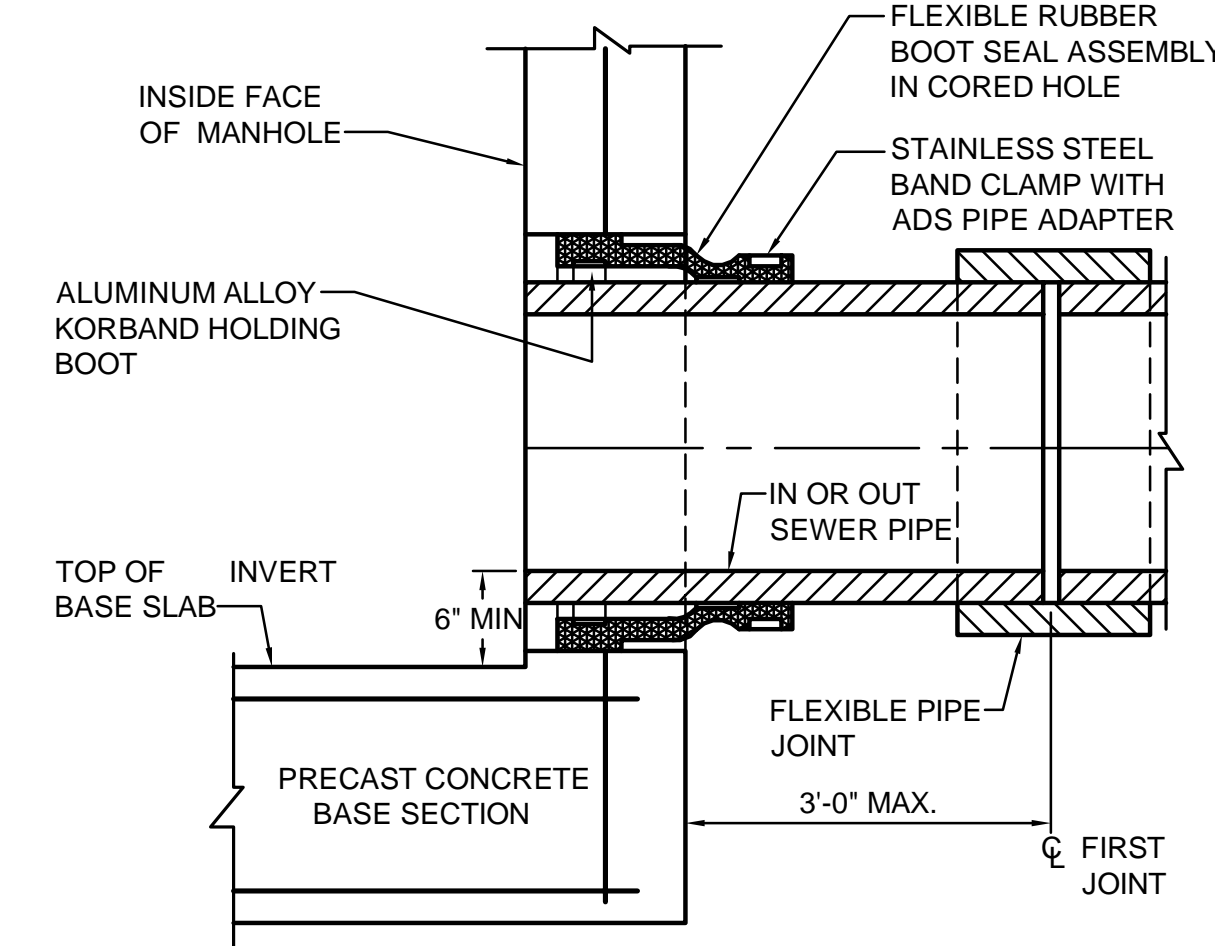
1 PRECAST CONCRETE MANHOLE DETAIL
NOT TO SCALE



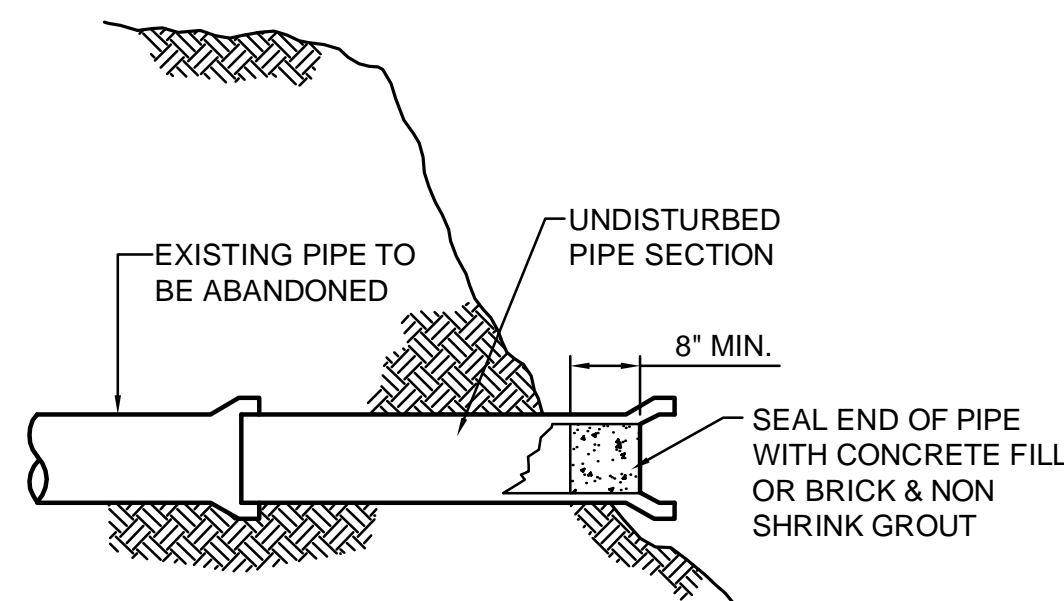
4 TYPICAL TRENCH DETAIL
NOT TO SCALE



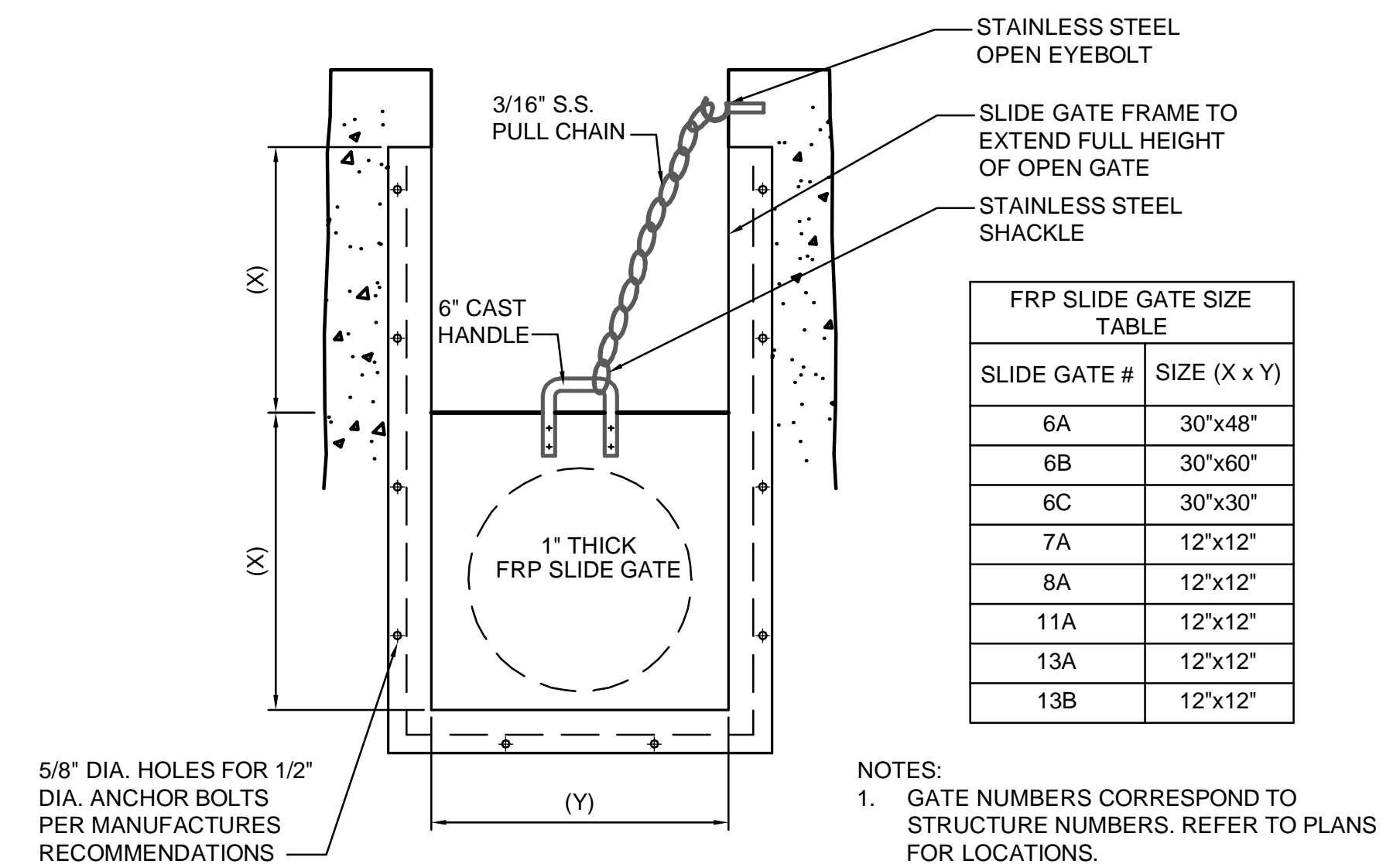
2 MANHOLE COVER INSTALLATION DETAIL
NOT TO SCALE



3 FLEXIBLE PIPE-TO-MANHOLE JOINT DETAIL
NOT TO SCALE



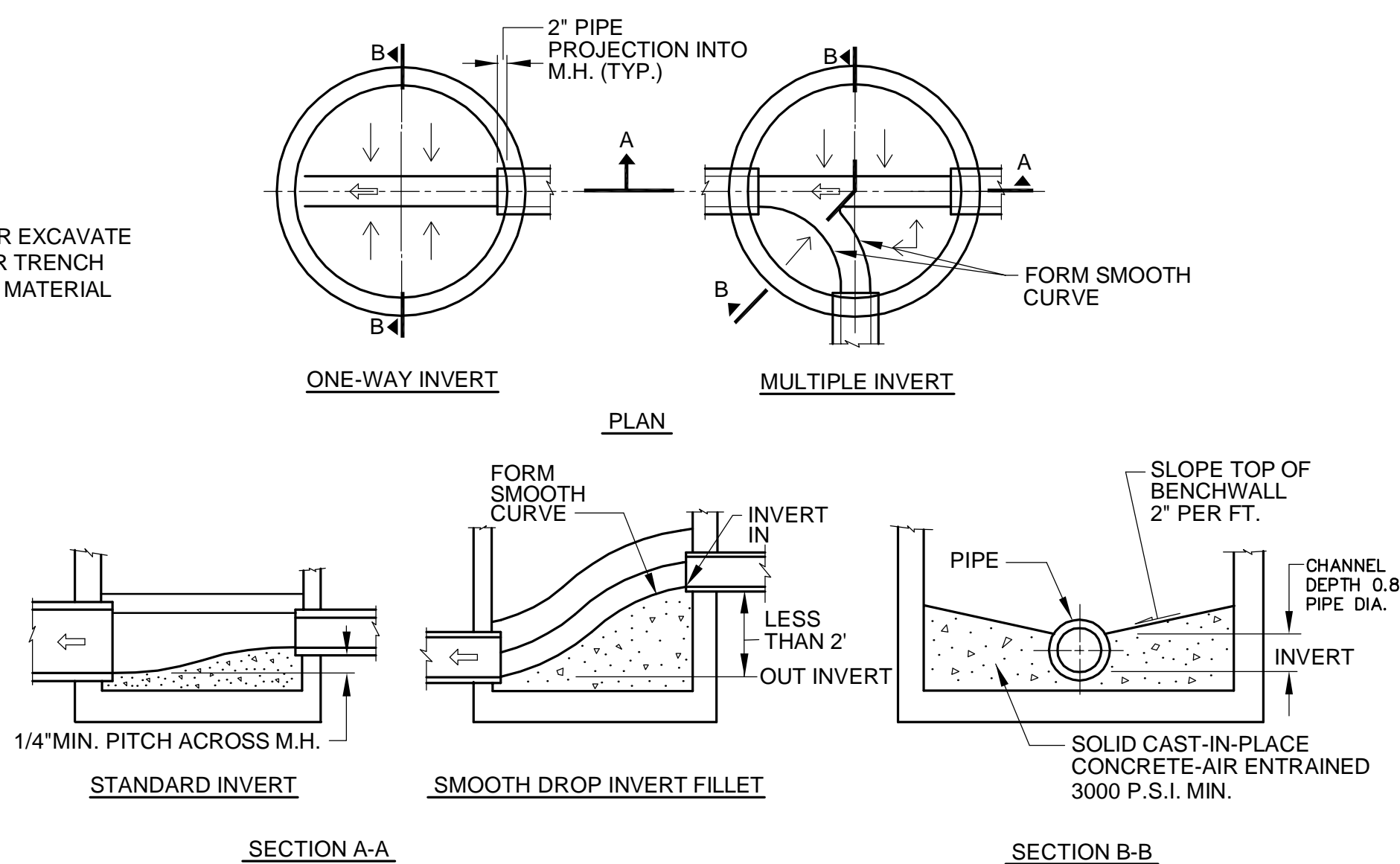
5 PLUG EXISTING PIPE DETAIL
NOT TO SCALE



6 FRP SLIDE GATE WITH SURFACE MOUNTED GUIDE FRAME
NOT TO SCALE

FRP SLIDE GATE SIZE TABLE	
SLIDE GATE #	SIZE (X x Y)
6A	30"x48"
6B	30"x60"
6C	30"x30"
7A	12"x12"
8A	12"x12"
11A	12"x12"
13A	12"x12"
13B	12"x12"

- NOTES:
- GATE NUMBERS CORRESPOND TO STRUCTURE NUMBERS. REFER TO PLANS FOR LOCATIONS.
 - GATES 6A AND 6B WILL BE OPERATED WITH A MECHANICAL ASSIST. NO CHAIN AND ACCESSORIES REQUIRED.



7 SANITARY MANHOLE INVERT, CHANNEL AND BENCHWALL DETAILS
NOT TO SCALE



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PH (315) 345-1400 * FAX (315) 451-7270
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CH2MHILL **CIA**

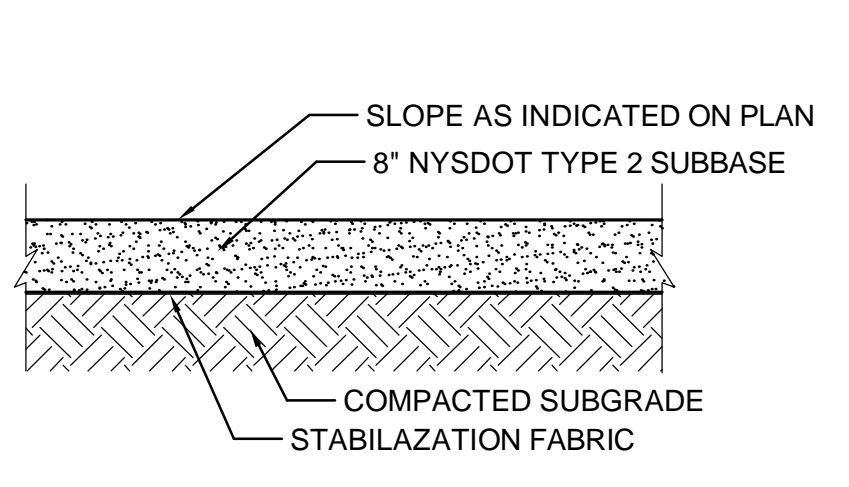
CIVIL DETAILS

DATE	JULY 11, 2011
PROJ	19217
DWG	C-5001
SHEET	005-C-5001-19217

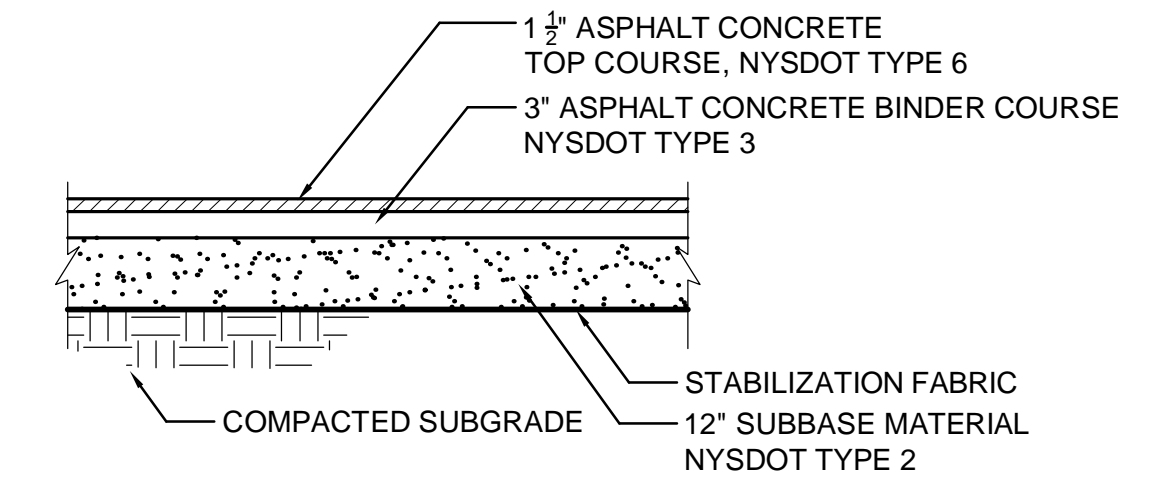
VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.
0 1"

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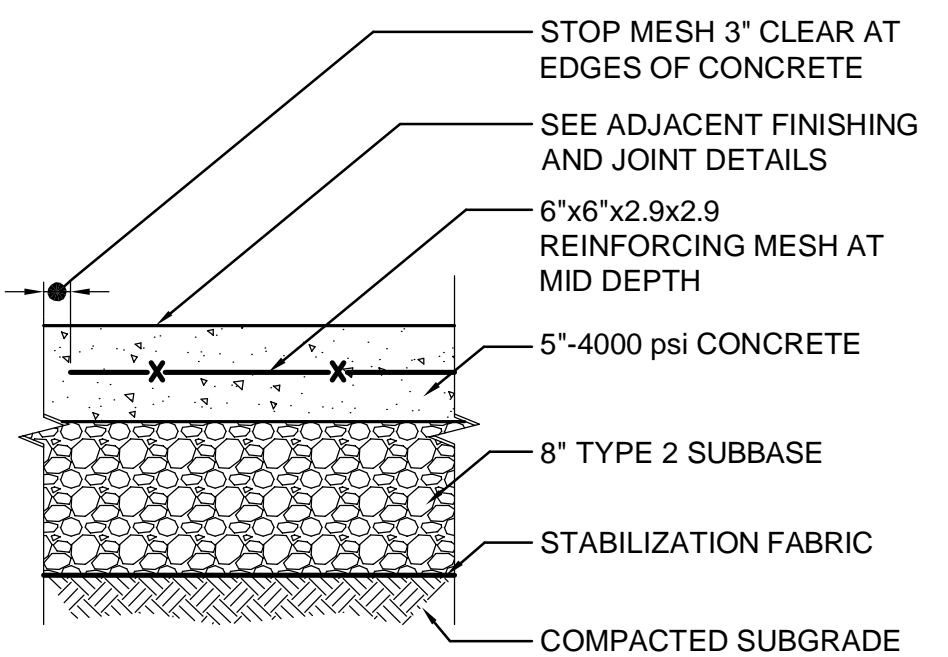
7/22/2011 12:07 PM



1 GRAVEL PAVEMENT
N.T.S.



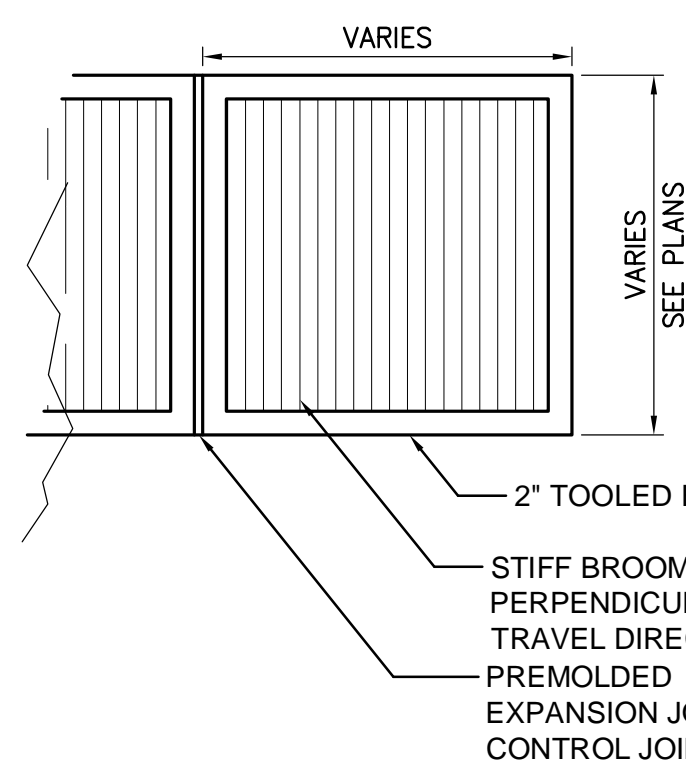
2 ASPHALT CONCRETE PAVEMENT DETAIL
N.T.S.



NOTES:

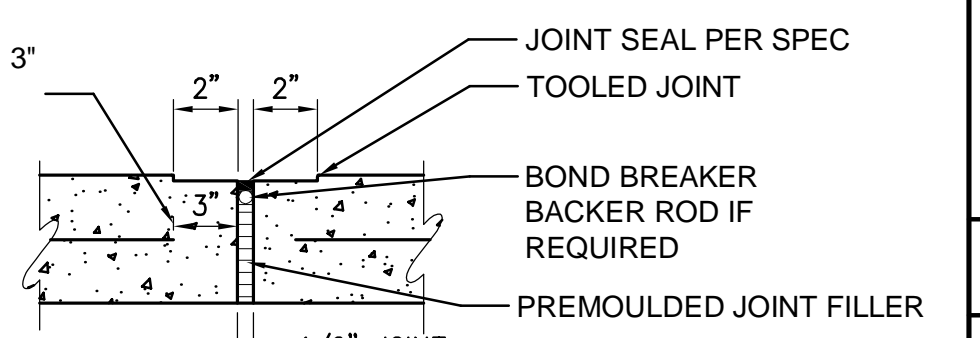
- 1. EXPANSION JOINTS TO BE PLACED BETWEEN ADJACENT SLABS, AT BUILDING LINE, AT CURBS, OR AT PENETRATING STRUCTURES. MAX. 20'-0" O.C. (SEE ADJACENT DETAIL)
- 2. LOCATE CONTROL JOINTS AS SHOWN ON PLAN OR MAX. 5'-0" O.C. ADJUST TIGHT AREAS TO EQUAL SPACING.

3 CONCRETE SIDEWALK
N.T.S.

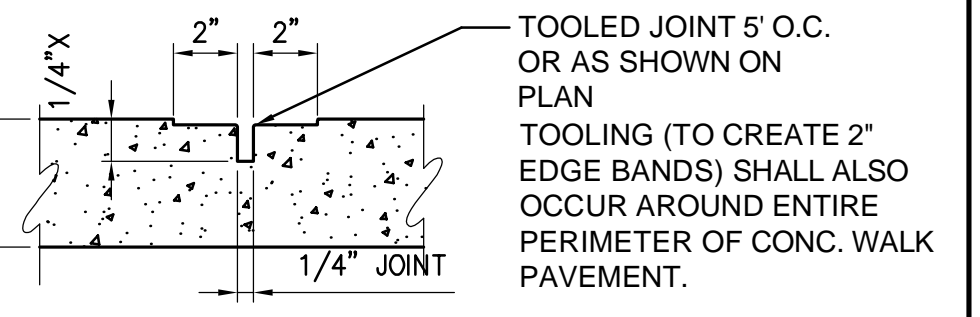


4 CONCRETE SIDEWALK FINISHING AND JOINTS
N.T.S.

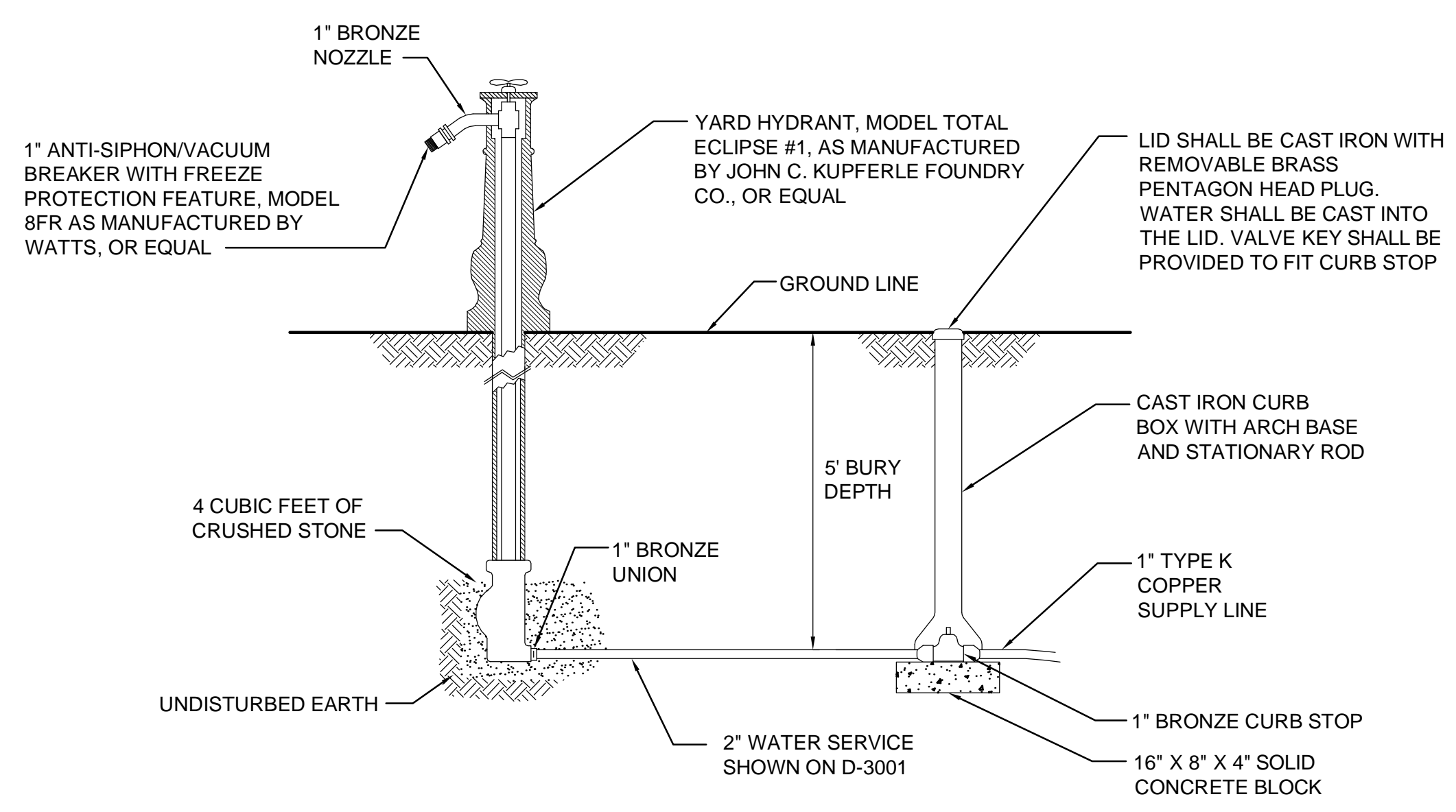
EXPANSION JOINTS TO OCCUR 20' O.C. MAX & AT ALL CURBS, WALLS, & VERT. ELEMENTS, AND AS SHOWN ON PLANS



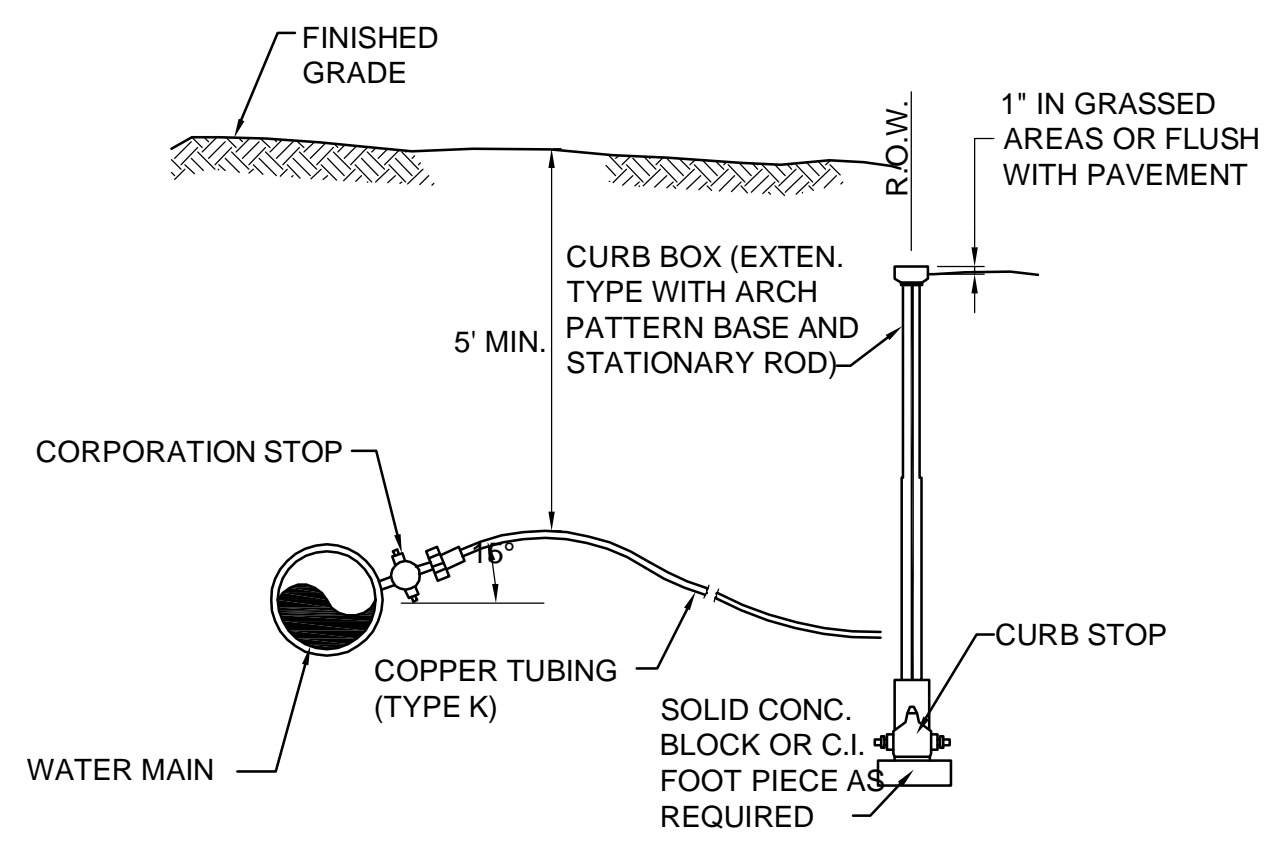
EXPANSION JOINT



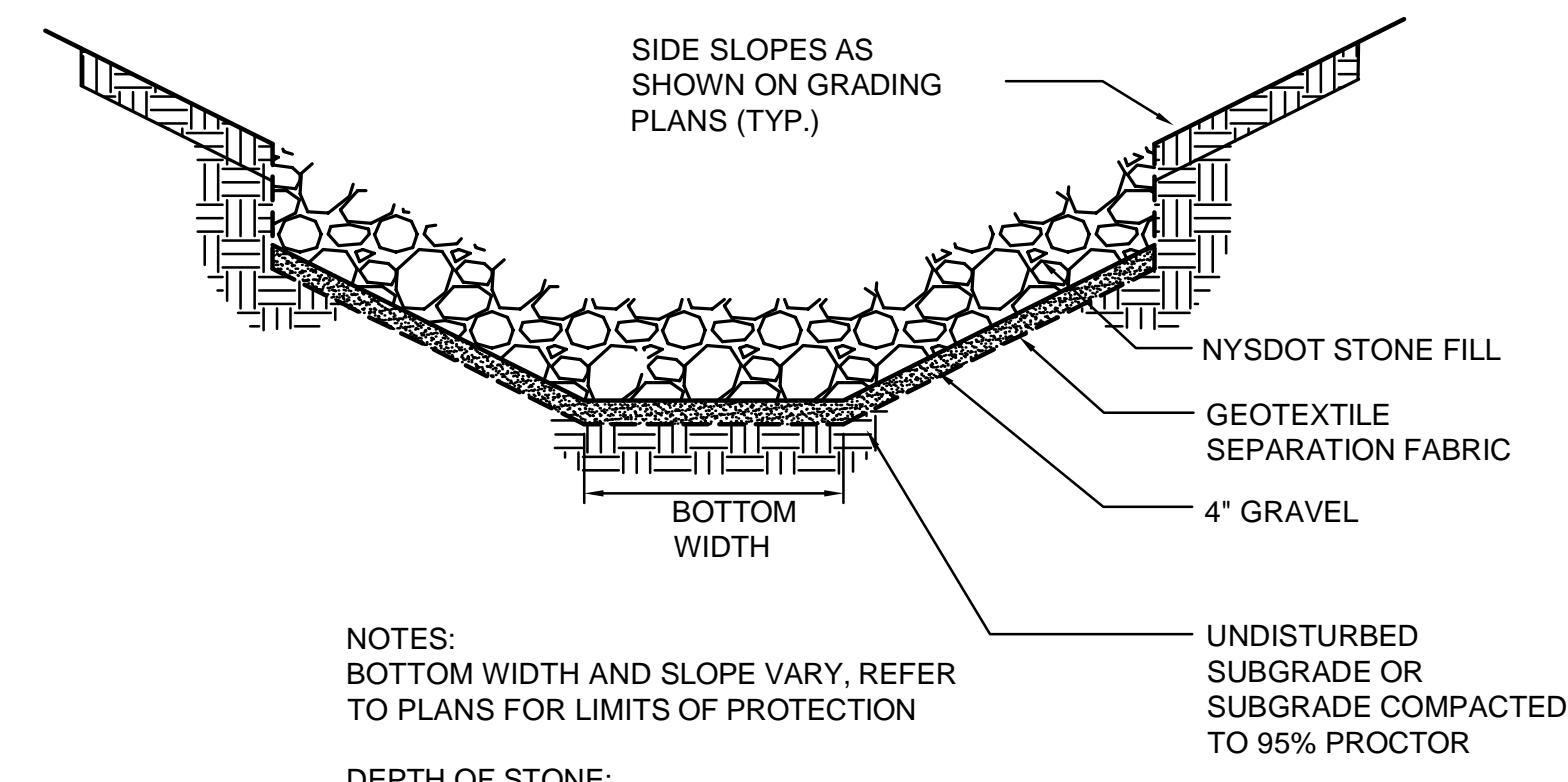
SCORE/CONTROL JOINT



5 YARD HYDRANT DETAIL
N.T.S.



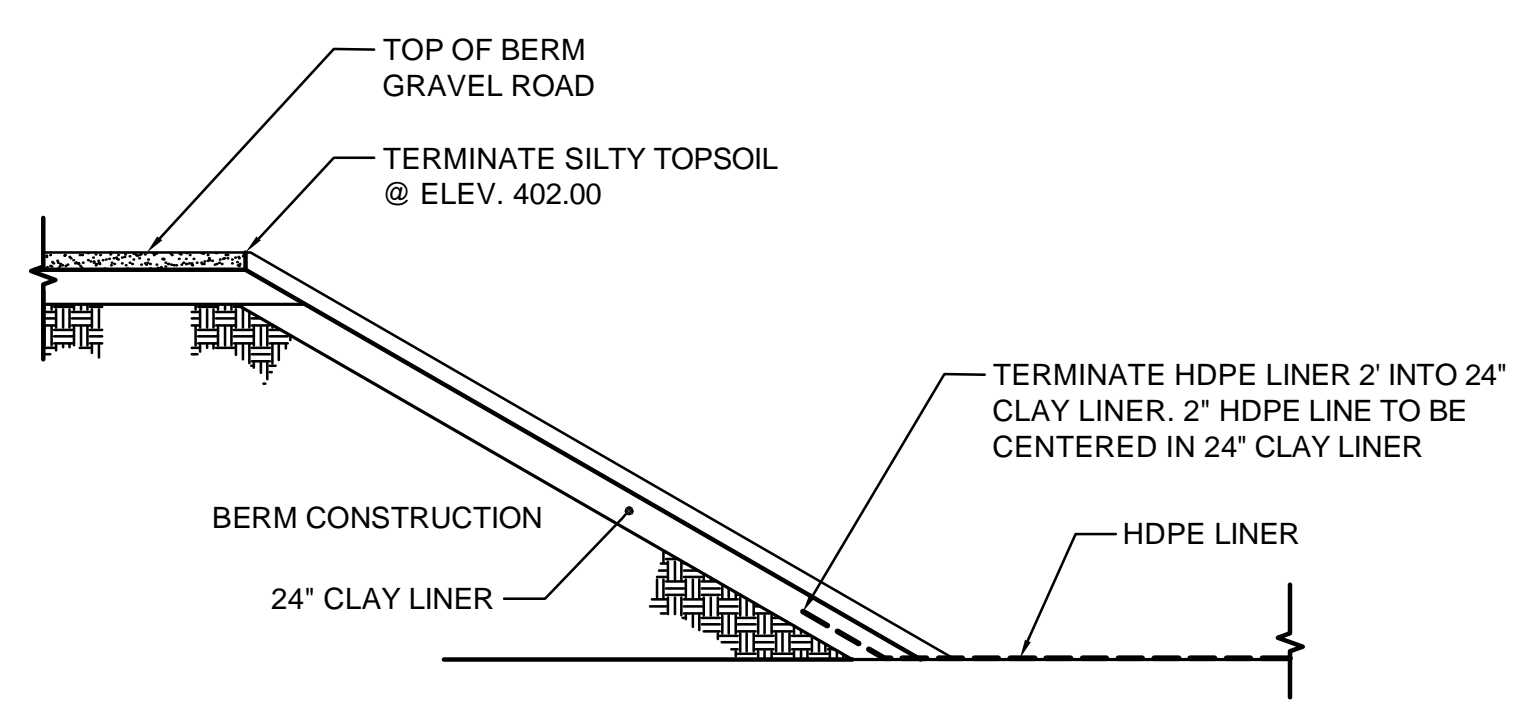
6 WATER SERVICE PIPE CONNECTION DETAIL
N.T.S.



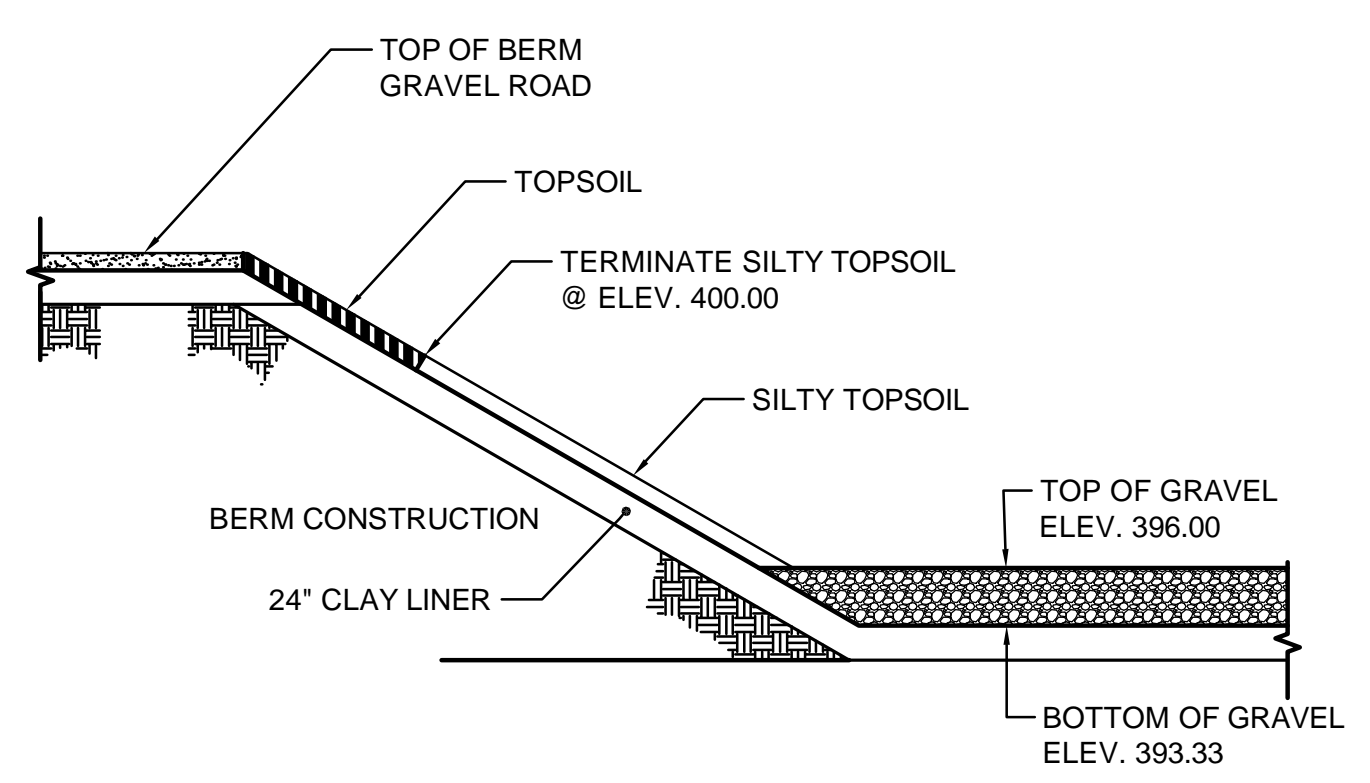
NOTES:
BOTTOM WIDTH AND SLOPE VARY, REFER TO PLANS FOR LIMITS OF PROTECTION

DEPTH OF STONE:
LIGHT STONE - 12"
MEDIUM STONE - 18"

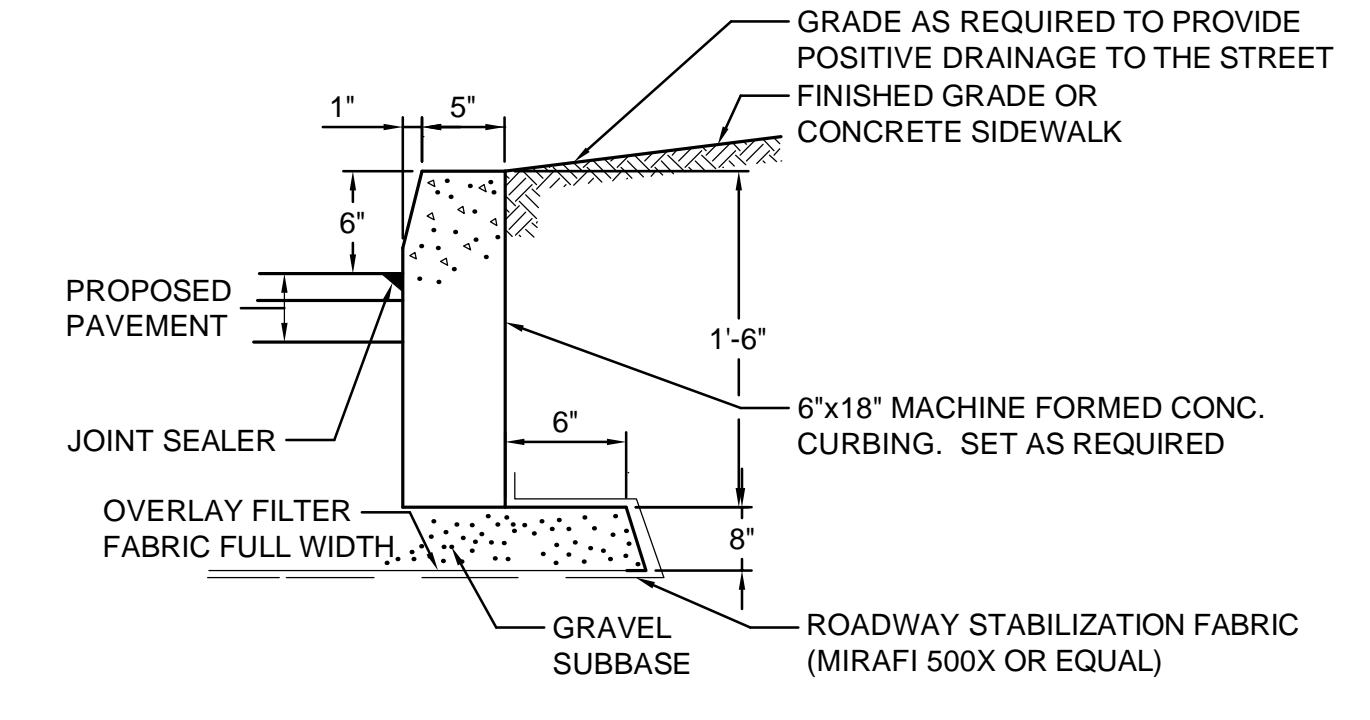
7 STONE-LINED DRAINAGE CHANNEL
N.T.S.



8 CELL #1 CLAY LINER DETAIL
N.T.S.



9 CELL #2 CLAY LINER DETAIL
N.T.S.



X CAST IN PLACE CONCRETE CURBING DETAIL
N.T.S.



MEH	APVD	MEH	APVD	MEH	APVD
KH	MEH	KH	MEH	KH	MEH
JRH	MEH	JRH	MEH	JRH	MEH
REGULATORY AGENCY REVIEW			50% SUBMISSION		
NO.	DATE	CHK	APVD	RND	APVD
2	07/22/2011				
1	05/02/2011				

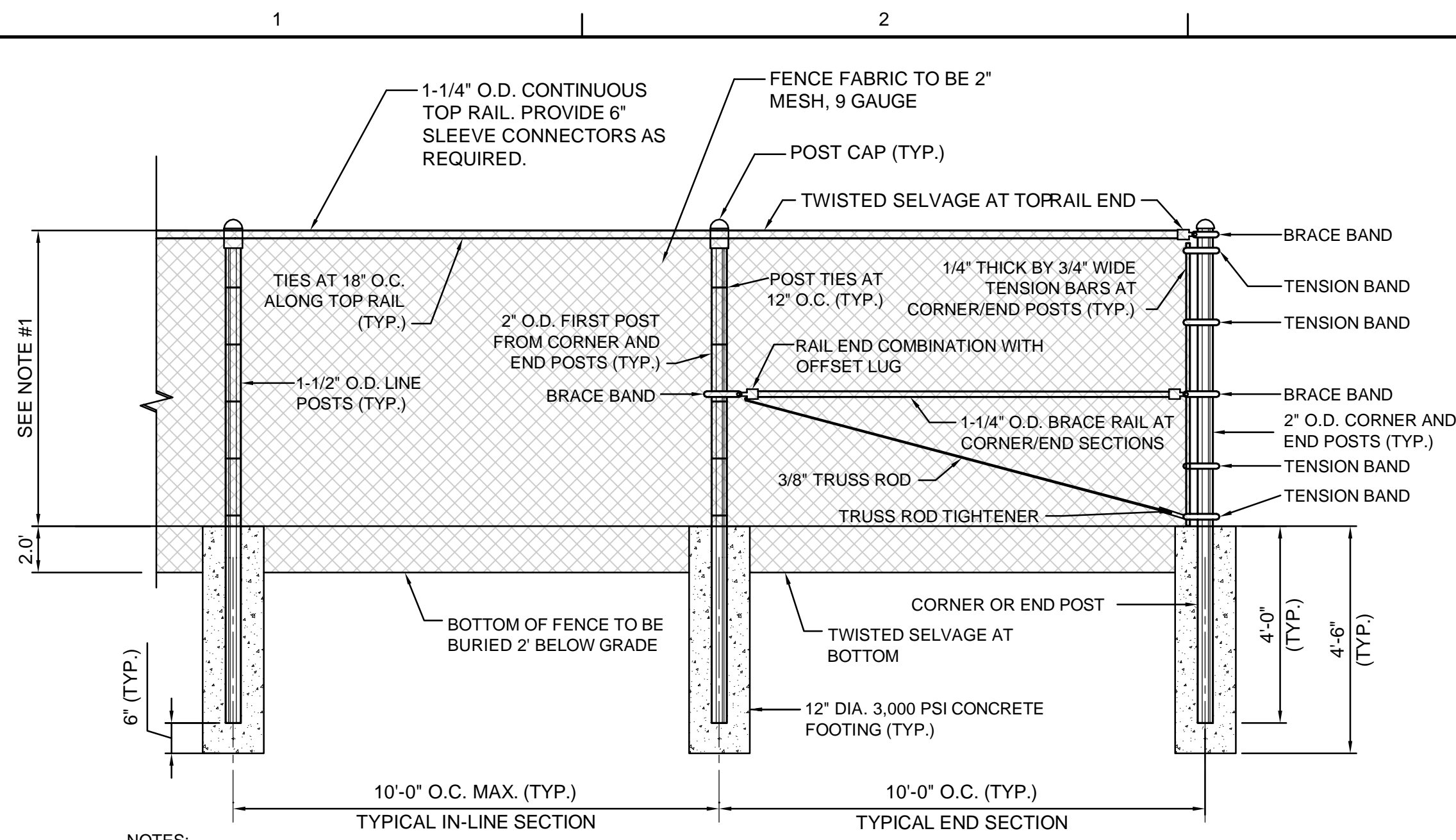
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CITY OF SYRACUSE
ONONDAGA COUNTY, NEW YORK

CH2M HILL

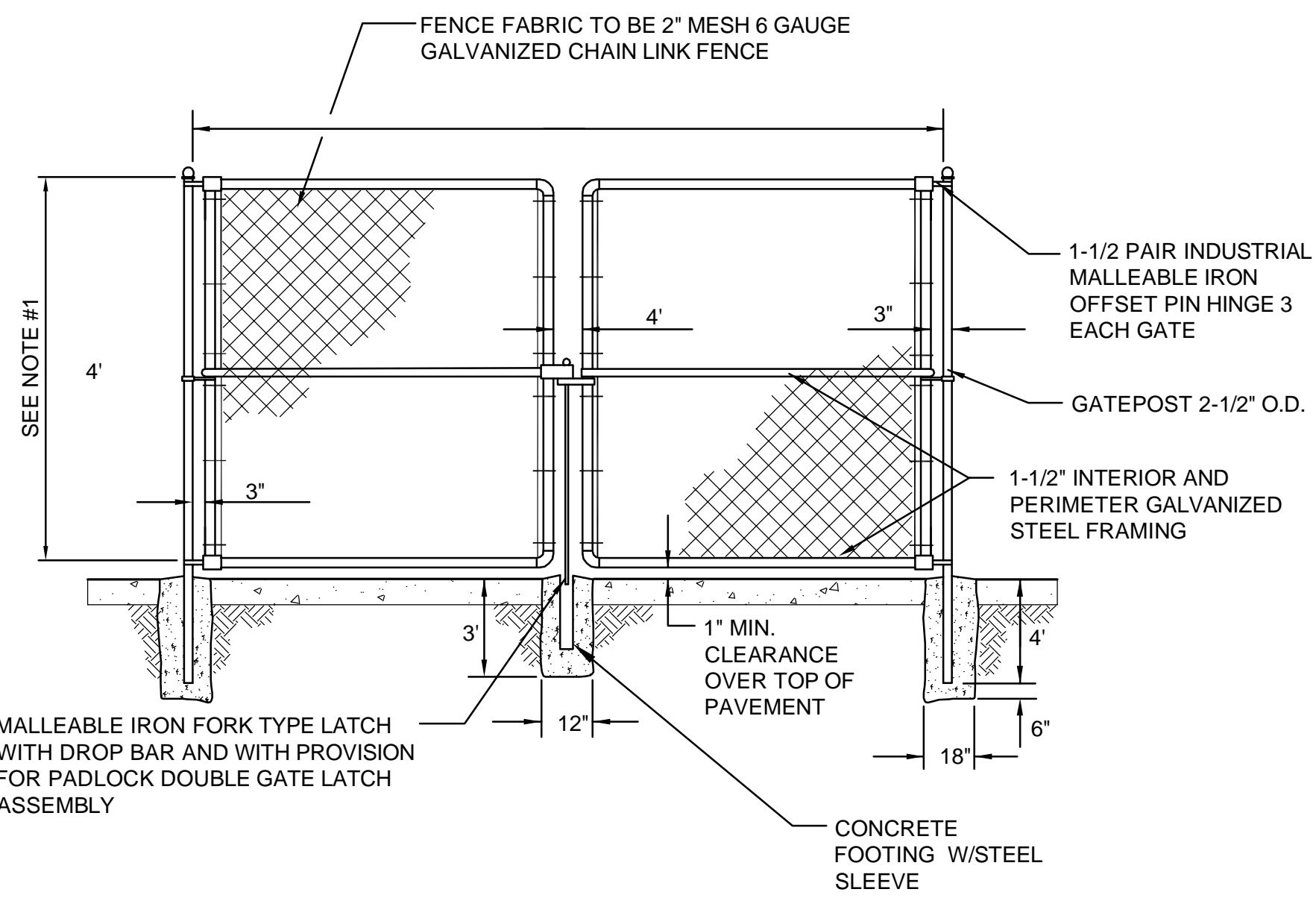
CIVIL DETAILS

VERIFY SCALE	
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DATE	JULY 11, 2011
PROJ	19217
DWG	C-5002
SHEET	005-C-5002-19217



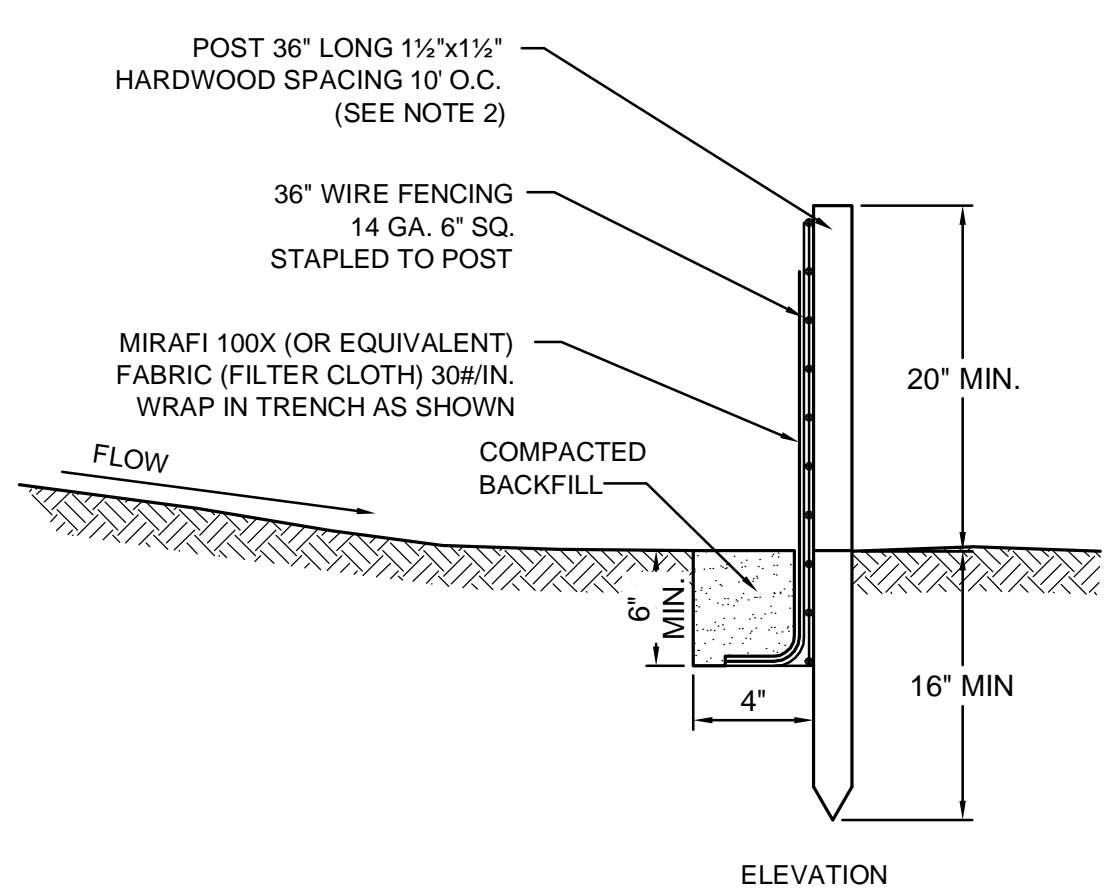
- NOTES:**
- FENCE HEIGHT TO BE 6' AT GRIT AND FLOATABLES FACILITY AND 4' AT WETLAND SITE.
 - ALL POSTS, RAILS, HARDWARE, AND COMPONENTS TO BE GALVANIZED STEEL.
 - ALL TIES TO BE 9 GAUGE.
 - INSTALL BRACE RAIL ASSEMBLIES IN EACH DIRECTION FROM CORNER POSTS, AND AT ALL END POSTS
 - BRACE/TENSION BANDS TO BE 1/8\"X1\" AND FASTENED WITH 3/8\"X1-1/2\" CARRIAGE BOLTS.

1 4' CHAIN LINK FENCE
N.T.S.



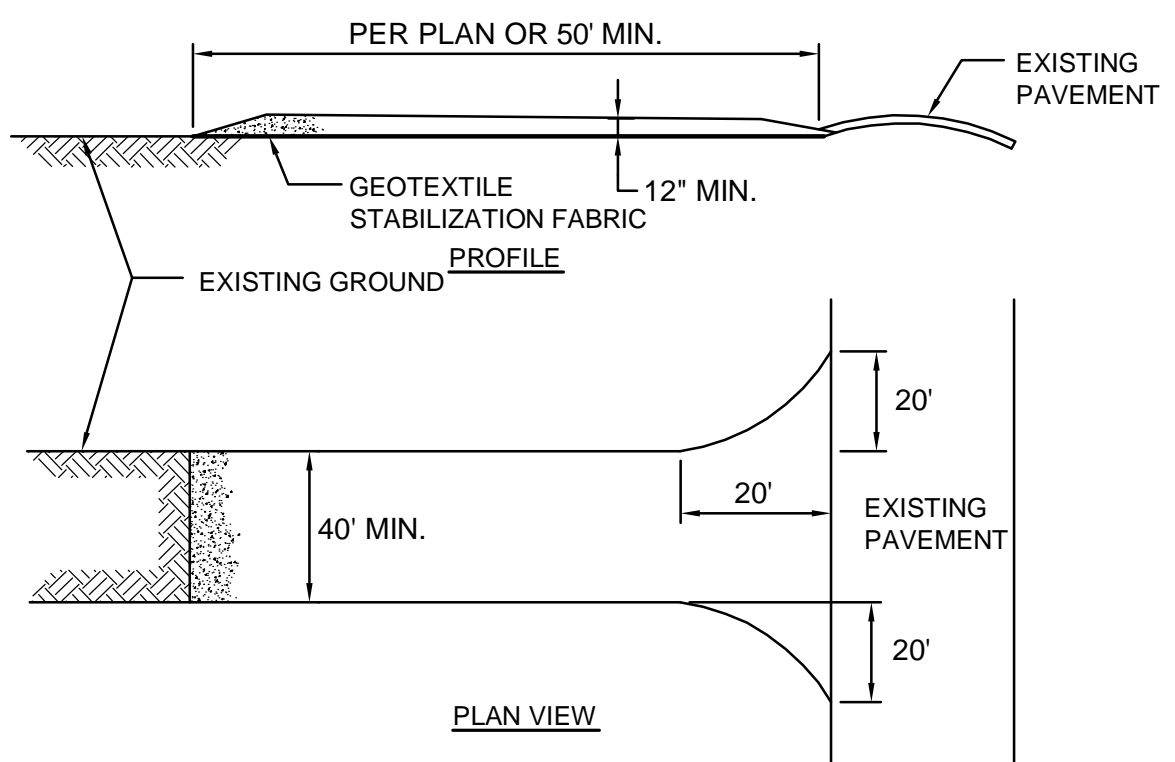
- NOTES:**
- GATE HEIGHT TO BE 6' AT GRIT AND FLOATABLES FACILITY AND 4' AT WETLAND SITE.

2 DOUBLE SWING GATE
N.T.S.



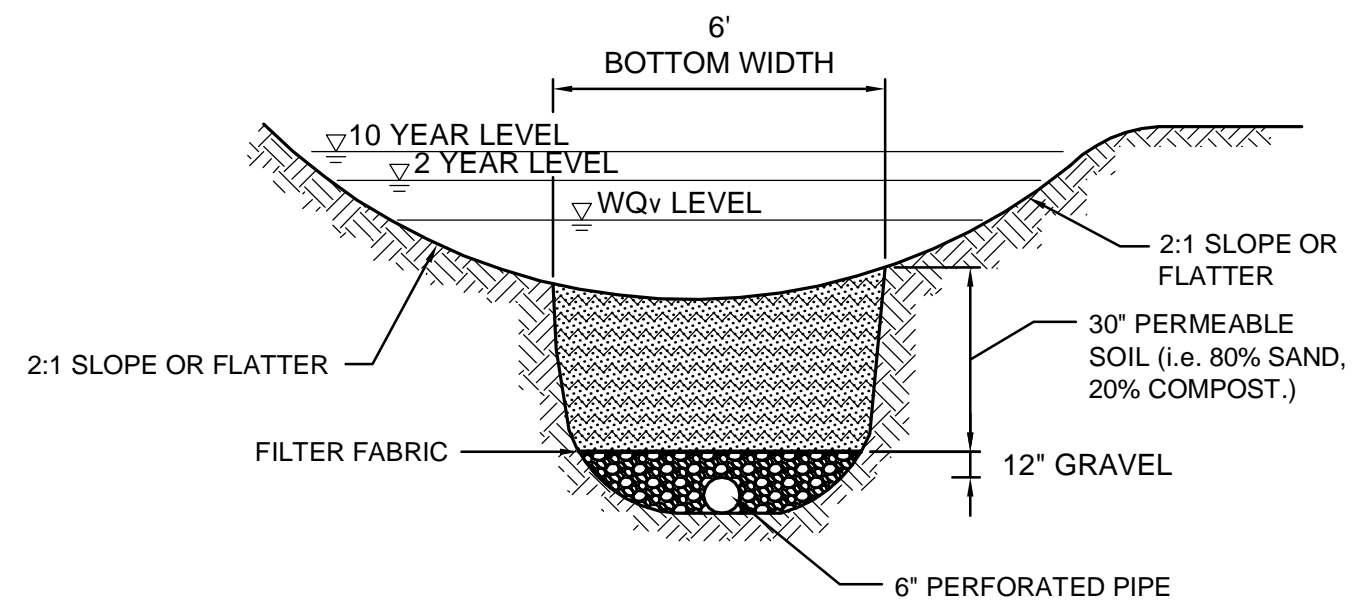
- NOTES:**
- TIE FABRIC TO WIRE FENCE IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
 - IF EXTRA STRENGTH FABRIC (GREATER THAN 50#/INCH) IS USED, WIRE CAN BE DELETED IF POST SPACING IS REDUCED TO 6' O.C.
 - AT THE ENDS OF THE FENCING THE FIRST 20' SHALL BE TURNED UP THE SLOPE 2'.
 - POSTS SHOULD BE INCLINED TOWARD THE DIRECTION FLOW CAME FROM.
 - OVERLAP FABRIC A MINIMUM OF 6\" AND FOLDED AT JOINTS. ATTACH FILTER FABRICS TO STAKES ALLOWING EXTENSION INTO TRENCH AS SHOWN; SECURE TO STAKES AS NOTED.
 - THE MAXIMUM AREA OF RUNOFF PER 100LF. OF FENCE SHALL NOT EXCEED 0.25 ACRES.
 - MAINTENANCE SHALL BE PERFORMED AS NECESSARY. THE FENCING SHALL BE CHECKED AFTER EVERY STORM TO ENSURE THEIR PROPER FUNCTIONING.
 - WHEN FENCE IS NO LONGER NEEDED, THE ACCUMULATED SILT, THE POSTS AND FABRIC SHALL BE REMOVED AND TRENCH BACK FILLED WITH TOPSOIL AND SEEDS.
 - FENCING SHOULD BE PLACED AS SHOWN ON THE DRAWING OR IF NOT SHOWN, 10' BEYOND THE TOE OF THE OF THE SLOPE AND AT A SPACING IN ACCORDANCE WITH THE TABLE.
 - EXCAVATE TRENCH AS PER DETAIL AND SET POSTS AT 10' O.C.
 - BACKFILL WITH COMPACTED, EXCAVATED SOIL FROM TRENCH.

3 SILT FENCE
N.T.S.

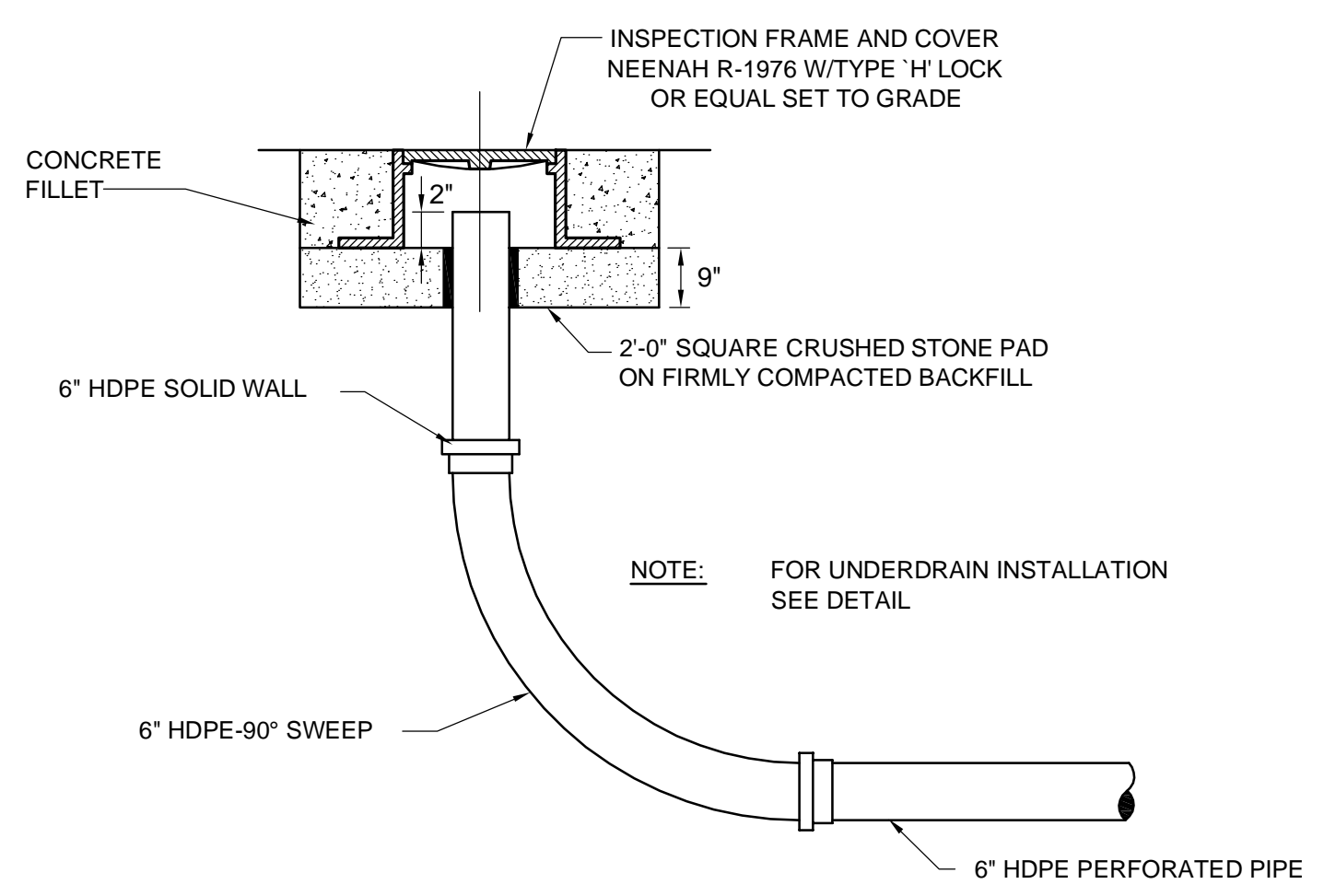


- STONE SIZE-USE 2\" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
- THICKNESS-NOT LESS THAN 12\".
- WOVEN GEOTEXTILE FABRIC WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
- EXISTING ROAD SIDE DRAINAGE SHALL BE MAINTAINED.
- MAINTENANCE-THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION 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 OR STONE SPILLED, DROPPED, WASHED, OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
- PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

4 STABILIZED CONSTRUCTION ENTRANCE
N.T.S.



5 DRY SWALE
N.T.S.



6 UNDERDRAIN CLEANOUT DETAIL
N.T.S.



REGULATORY AGENCY REVIEW	JRH MEH	MEH
50% SUBMISSION	KH MEH	MEH
REVISION	BY	APVD
	CHK	APVD
	GJM	RND
	DR	KLH

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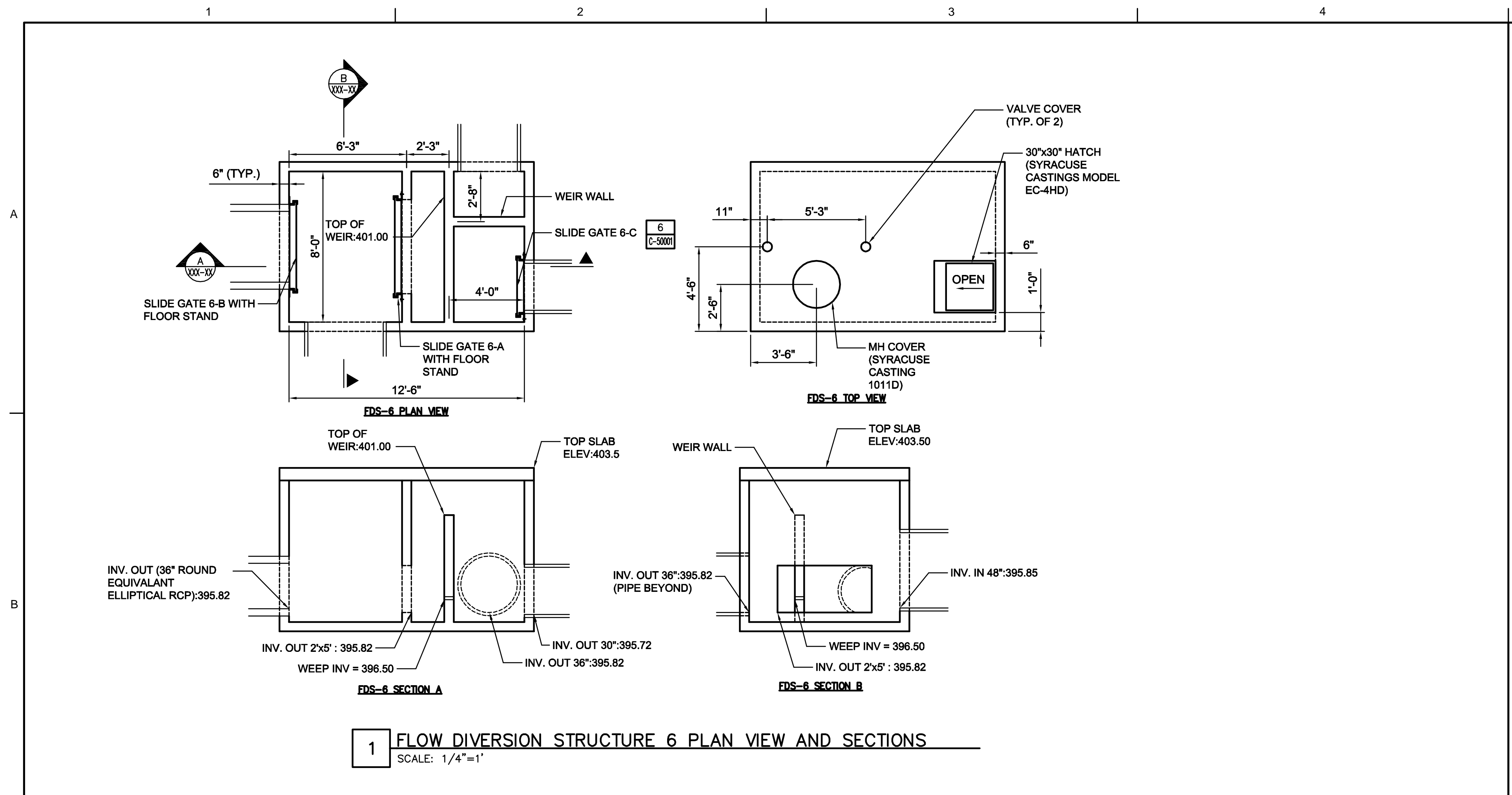
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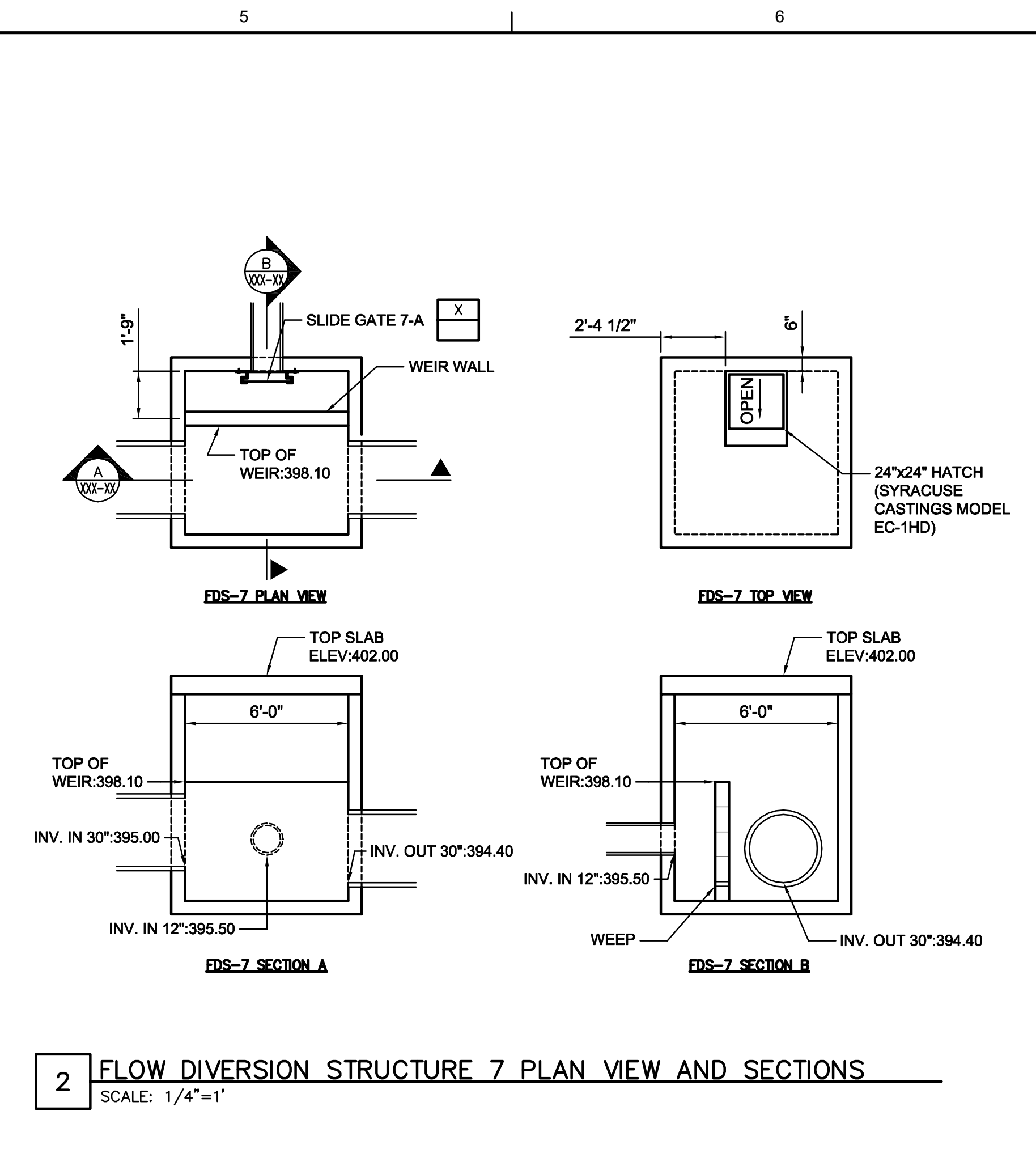
CIVIL DETAILS

VERIFY SCALE
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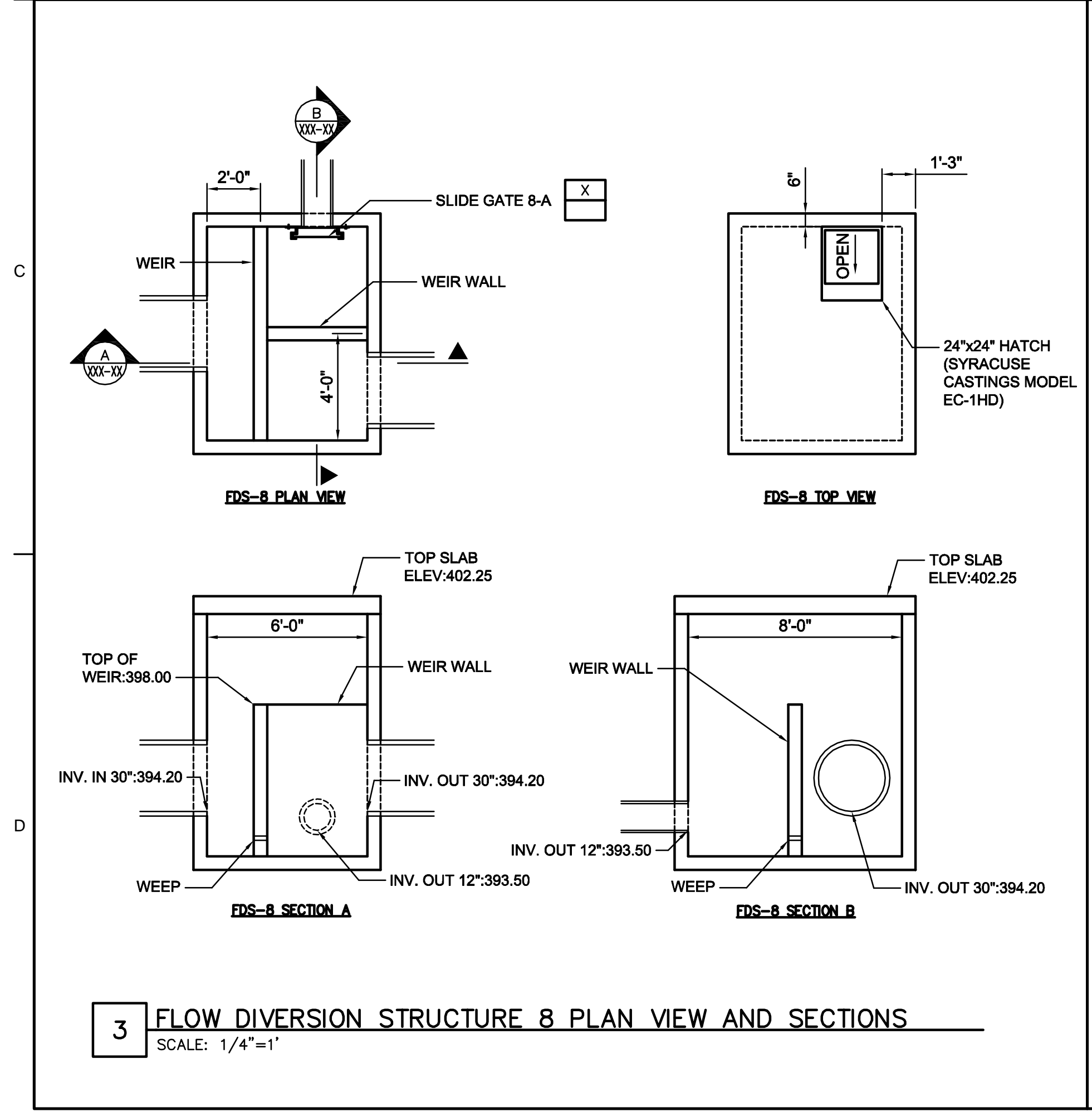
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DWG	C-5003
SHEET	005-C-5003-19217



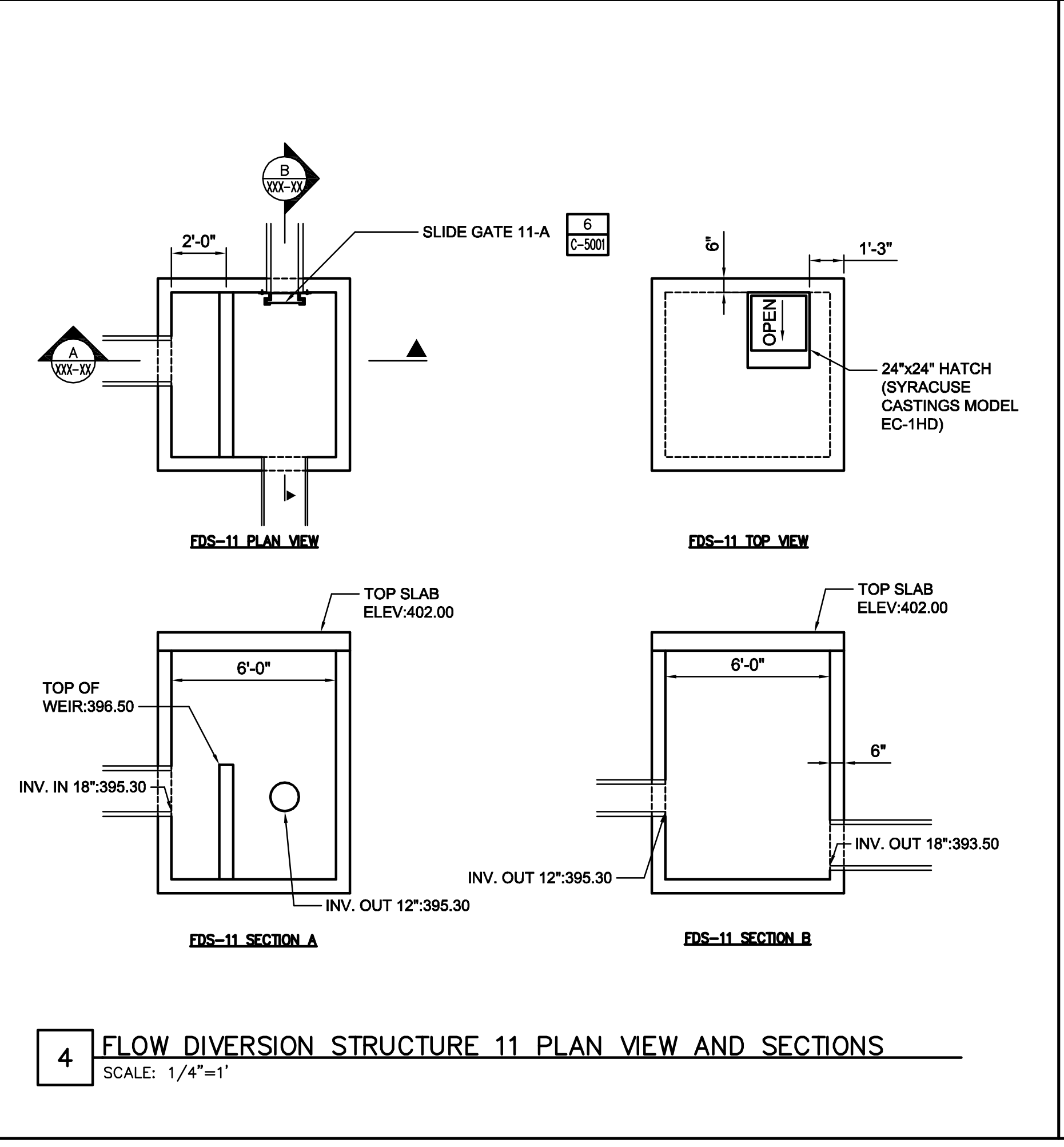
1 FLOW DIVERSION STRUCTURE 6 PLAN VIEW AND SECTIONS
SCALE: 1/4"=1'



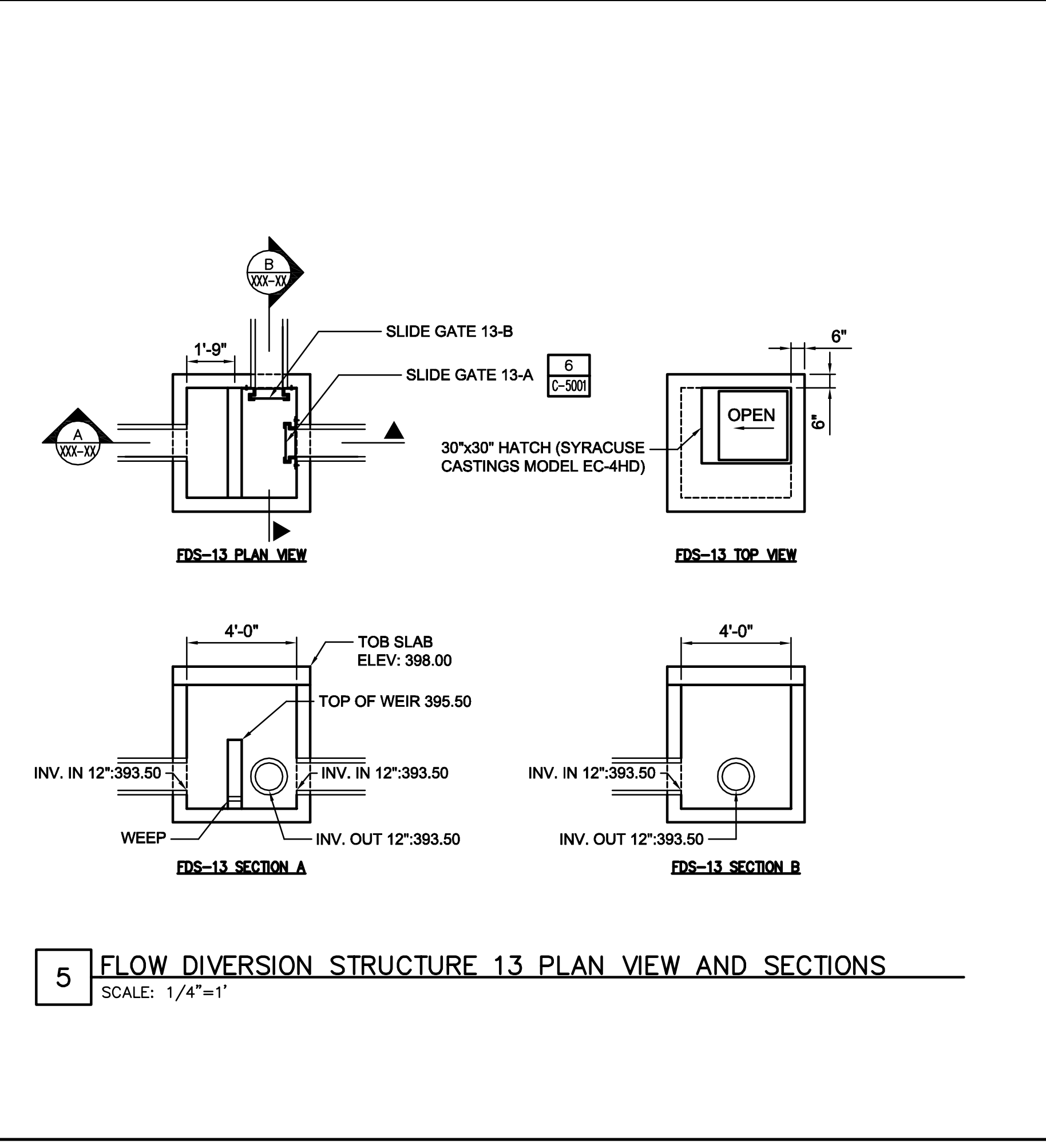
2 FLOW DIVERSION STRUCTURE 7 PLAN VIEW AND SECTIONS
SCALE: 1/4"=1'



3 FLOW DIVERSION STRUCTURE 8 PLAN VIEW AND SECTIONS
SCALE: 1/4"=1'



4 FLOW DIVERSION STRUCTURE 11 PLAN VIEW AND SECTIONS
SCALE: 1/4"=1'



5 FLOW DIVERSION STRUCTURE 13 PLAN VIEW AND SECTIONS
SCALE: 1/4"=1'



APPROVED BY	APVD
CHECKED BY	CHK
DRAWN BY	DR
ENGINEER	ENGR
DESIGN	DSGN
NO.	DATE
1	05/02/2011
2	07/22/2011
REGULATORY AGENCY REVIEW	50% SUBMISSION
JRH MEH	KH MEH
BY	APVD

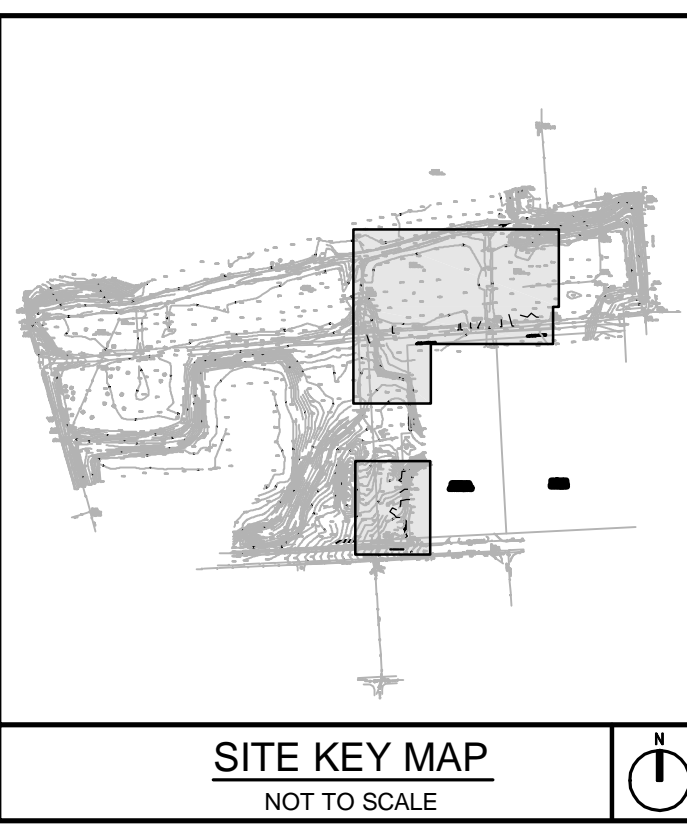
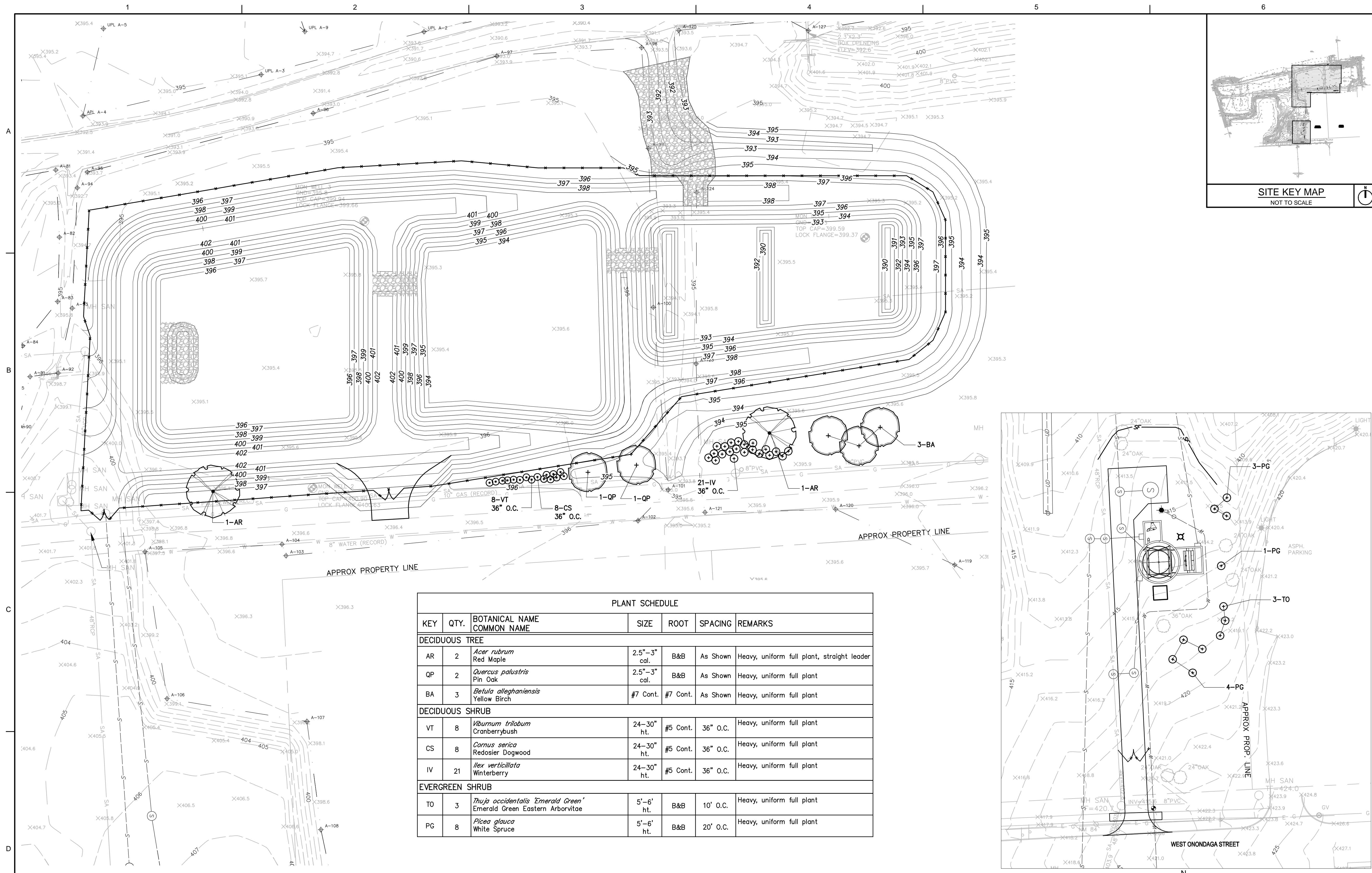
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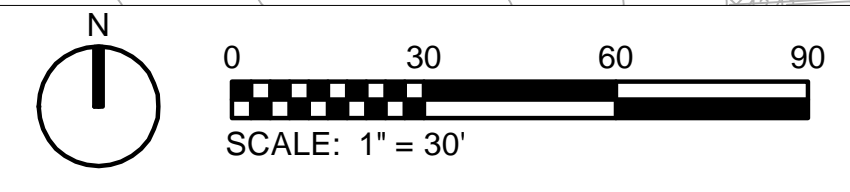
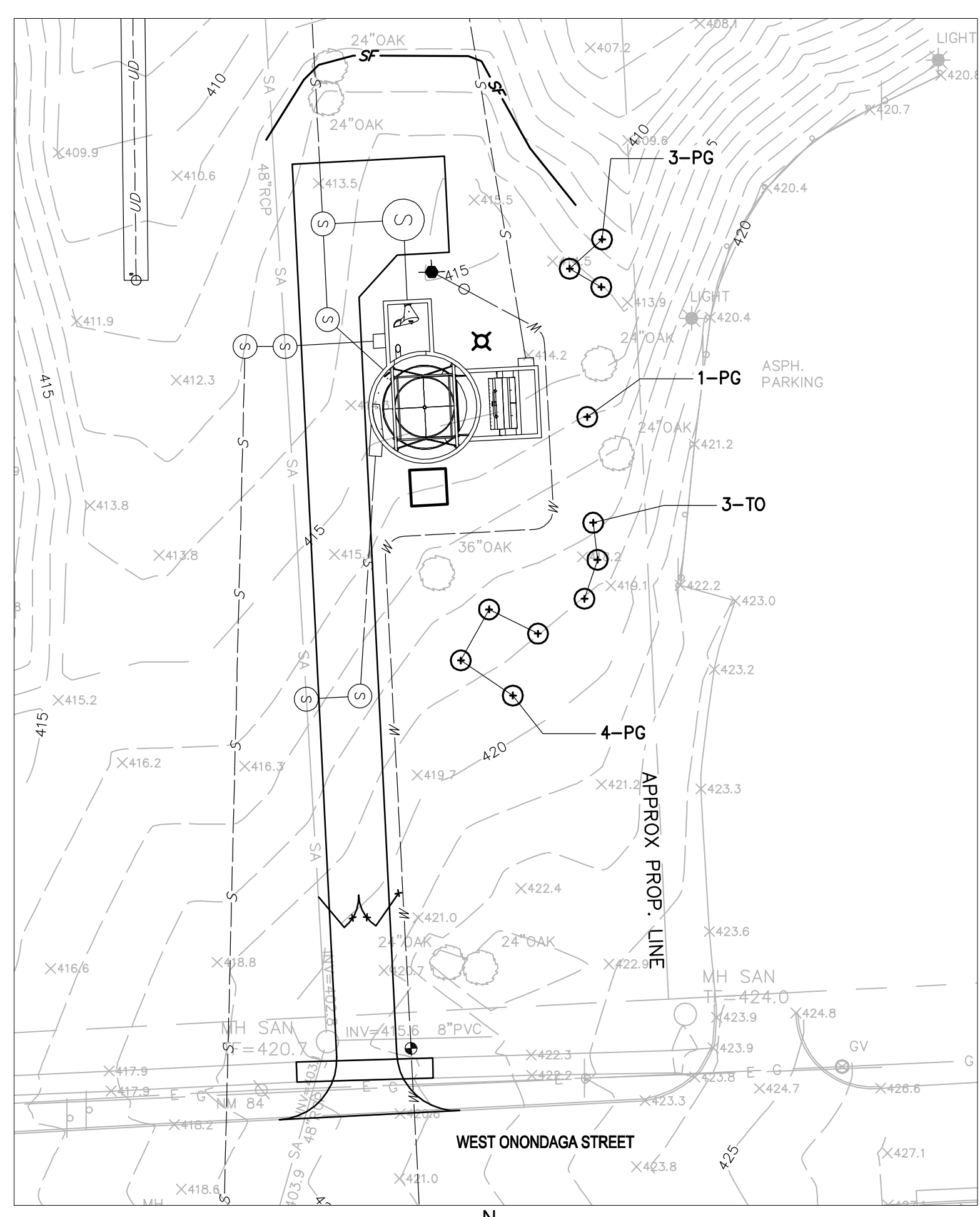
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FLOW DIVERSION STRUCTURE DETAILS

VERIFY SCALE	
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DATE	JULY 11, 2011
PROJ	19217
DWG	C-5004
SHEET	005-C-5004-19217



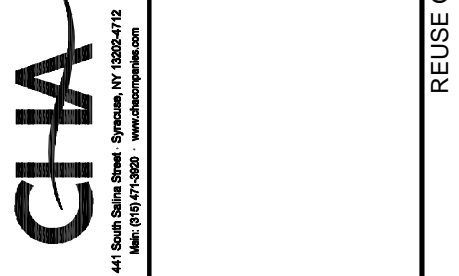
PLANT SCHEDULE						
KEY	QTY.	BOTANICAL NAME COMMON NAME	SIZE	ROOT	SPACING	REMARKS
DECIDUOUS TREE						
AR	2	<i>Acer rubrum</i> Red Maple	2.5" - 3" cal.	B&B	As Shown	Heavy, uniform full plant, straight leader
QP	2	<i>Quercus palustris</i> Pin Oak	2.5" - 3" cal.	B&B	As Shown	Heavy, uniform full plant
BA	3	<i>Betula alleghaniensis</i> Yellow Birch	#7 Cont.	#7 Cont.	As Shown	Heavy, uniform full plant
DECIDUOUS SHRUB						
VT	8	<i>Viburnum trilobum</i> Cranberrybush	24-30" ht.	#5 Cont.	36" O.C.	Heavy, uniform full plant
CS	8	<i>Cornus serica</i> Redosier Dogwood	24-30" ht.	#5 Cont.	36" O.C.	Heavy, uniform full plant
IV	21	<i>Ilex verticillata</i> Winterberry	24-30" ht.	#5 Cont.	36" O.C.	Heavy, uniform full plant
EVERGREEN SHRUB						
TO	3	<i>Thuja occidentalis</i> 'Emerald Green' Emerald Green Eastern Arborvitae	5'-6" ht.	B&B	10' O.C.	Heavy, uniform full plant
PG	8	<i>Picea glauca</i> White Spruce	5'-6" ht.	B&B	20' O.C.	Heavy, uniform full plant



APPROVED BY	MEH
CHECKED BY	KH
DRAWN BY	BY
ENGINEER	DR
REGULATORY AGENCY REVIEW	50% SUBMISSION
NO.	DATE
2	07/22/2011
1	05/02/2011

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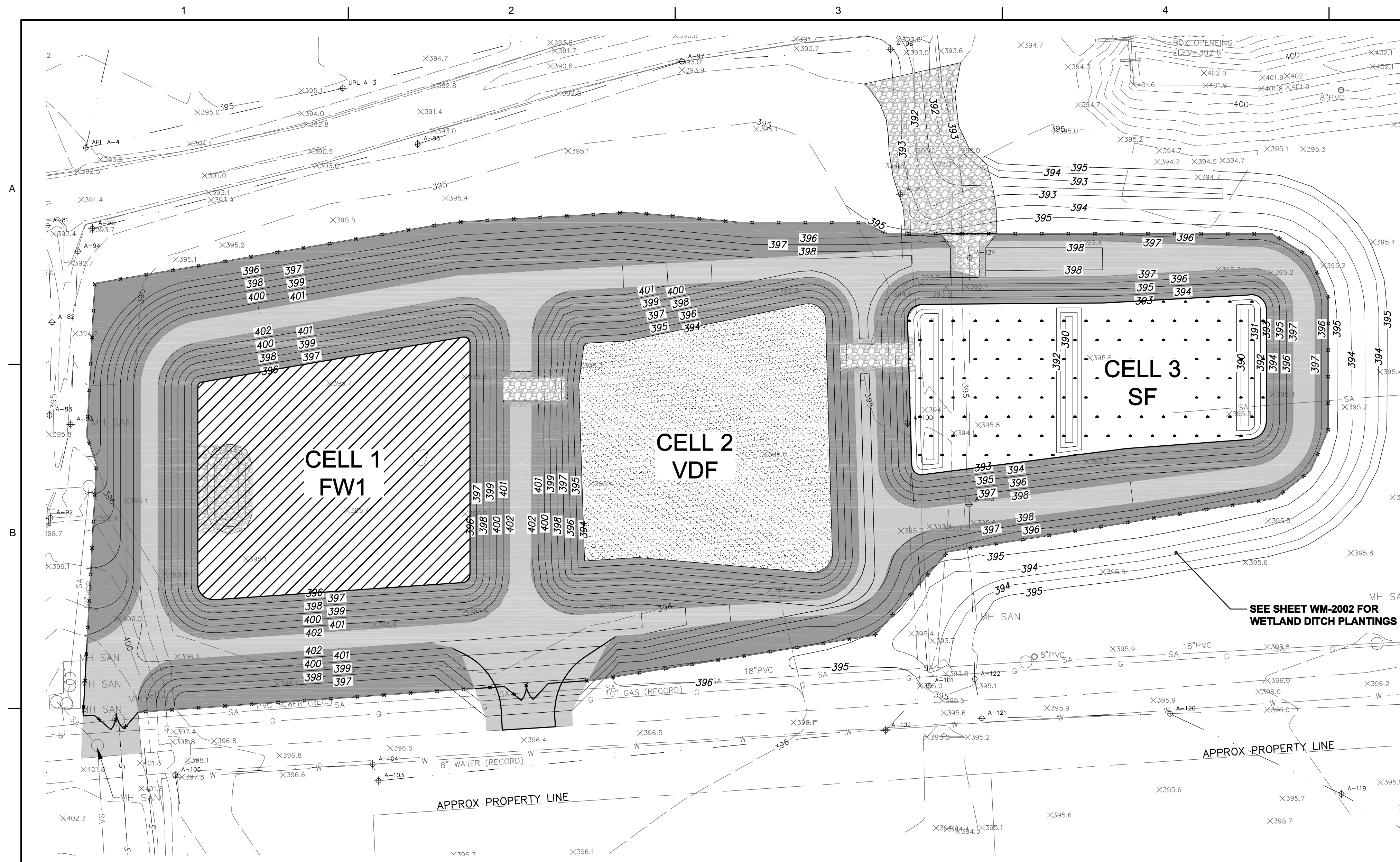


LANDSCAPE PLAN

1" = 30'
 VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.

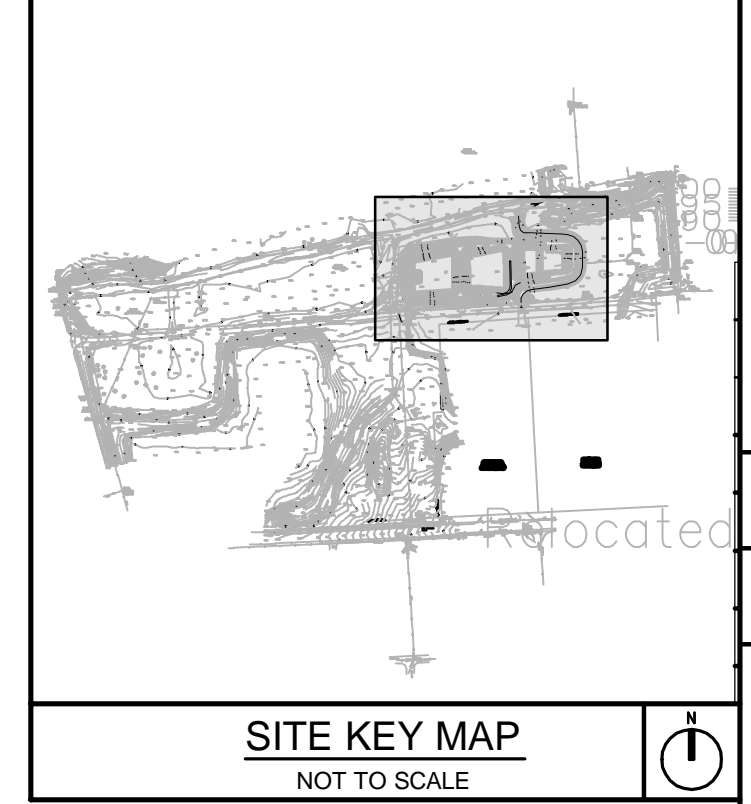
DATE JULY 11, 2011
 PROJ 19217
 DWG L-1001
 SHEET 005-L-1001-19217

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LEGEND

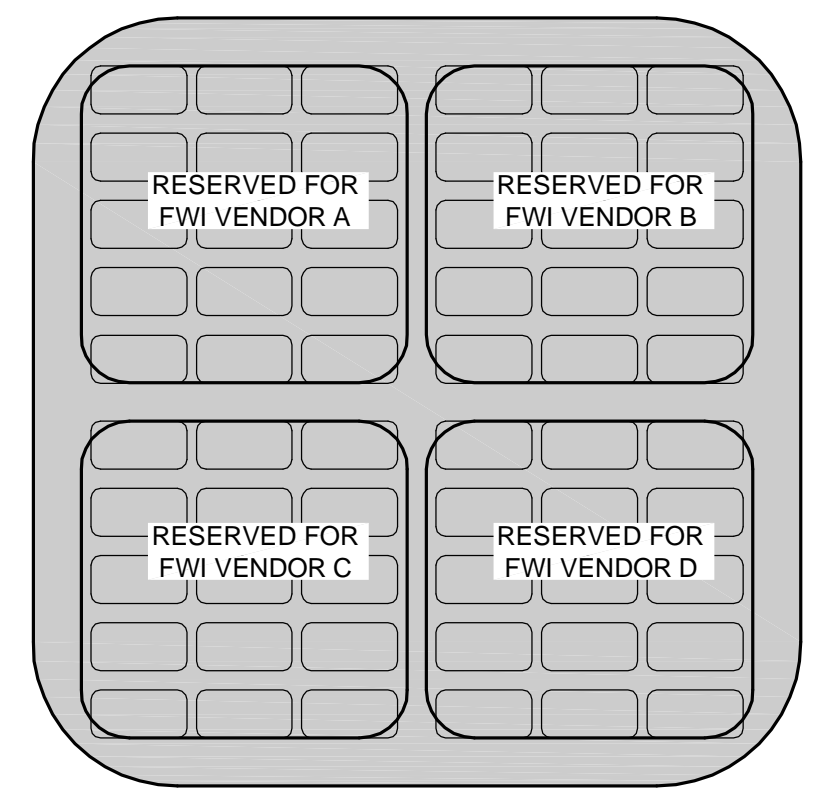
- [Hatched Box] FLOTABLE WETLAND ISLANDS
- [Dotted Box] VERTICAL DOWN FLOW
- [Dashed Box] SURFACE FLOW WETLANDS
- [Solid Grey Box] UPLANDS (BERMS SLOPES ETC)
- [Light Grey Box] GRAVEL ACCESS DRIVE
- [Stippled Box] RIP RAP



PLANTING AREA	SPECIES	COMMON	WETLAND INDICATOR STATUS	
Surface Flow Wetland (SF)	Graminoids			
	Carex comosa	Bristly Sedge	OBL Hummock	PLUG
	Carex crinita	Fringed Sedge	OBL Hummock	PLUG
	Carex lurida	Shallow Sedge	OBL Hummock	PLUG
	Carex stricta	Tussock Sedge	OBL Hummock	PLUG
	Carex vulpinoidea	Fox Sedge	OBL Hummock	PLUG
	Scirpus validus	Softstem Bulrush	OBL Emergent	PLUG
	Scirpus americanus	Common Three Square	OBL Emergent	PLUG
	Typha latifolia	Broad Leaf Cattail	OBL Emergent	BAREROOT
	Vertical Down Flow (VDF)	Herbaceous (Forbs)		
Sparganium americanum		American Bur-reed	OBL Emergent	PLUG
Sagittaria latifolia		Arrowhead	OBL Emergent	PLUG
Saururus cernuus		Lizard's Tail	OBL Emergent	PLUG
Peltandra virginica		Arrow Arum	OBL Emergent	PLUG
Pontederia cordata		Pickeral Weed	OBL Emergent	PLUG
Asclepias incarnata		Swamp Milk-Weed	OBL Broad Leaf	PLUG
Hibiscus moscheutos		Rose Mallow	OBL Broad Leaf	PLUG
Mimulus ringens		Monkey-Flower	OBL Broad Leaf	PLUG
Decodon verticillatus		Hairy-Swamp Loosestrife	OBL Broad Leaf	PLUG
Floating Wetland Islands (FWI)	Graminoids			
	Spartina pectinata	Prairie Cordgrass	OBL Grass	PLUG
	Hierochloa odorata	Sweet Grass	FACW Grass	PLUG
	Panicum virgatum	Switchgrass	FAC Grass	PLUG
	Panicum dandestinum	Deertongue	FAC Grass	PLUG
	Herbaceous (Forbs)			
	Aster novae-angliae	New England Aster	FACW Broad Leaf	PLUG
	Asclepias syriaca	Common Milk Weed	OBL Broad Leaf	PLUG
	Monarda fistulosa	Wild Bergamot	UPL	PLUG
	Solidago canadensis	Canada Goldenrod	FACU Upland	PLUG
Upland (Berms, slopes etc)	GRAMINOIDS			
	Scirpus validus	Softstem Bulrush	OBL Emergent	PLUG
	Scirpus americanus	Common Three Square	OBL Emergent	PLUG
	Carex lasiocarpa	Woollyfruit Sedge	OBL Emergent	PLUG
	Carex aquatilis	Water Sedge	OBL Emergent	PLUG
	Glyceria grandis	Reed Meadowgrass	OBL Grass	PLUG
	Leersia Oryzoides	Rice Cut Grass	OBL Grass/Float Stem	PLUG
	Herbaceous (Forbs)			
	Alisma plantago-aquatica	Water Plantain	OBL Emergent	PLUG
	Sparganium americanum	American Bur-reed	OBL Emergent	PLUG
Sagittaria latifolia	Arrowhead	OBL Emergent	PLUG	
Saururus cernuus	Lizard's Tail	OBL Emergent	PLUG	
Peltandra virginica	Arrow Arum	OBL Emergent	PLUG	
Pontederia cordata	Pickeral Weed	OBL Emergent	PLUG	
GRAMINOIDS				
Panicum virgatum	Switchgrass	FAC Grass	PLUG	
Panicum dandestinum	Deertongue	FAC Grass	PLUG	
Herbaceous (Forbs)				
Aster novae-angliae	New England Aster	FACW Broad Leaf	PLUG	
Asclepias syriaca	Common Milk Weed	OBL Broad Leaf	PLUG	
Monarda fistulosa	Wild Bergamot	UPL	PLUG	
Solidago canadensis	Canada Goldenrod	FACU Upland	PLUG	
Vernonia noveboracensis	New York Iron Weed	FACW+ Broad Leaf	PLUG	
BERM SEEDING	Virginia Wildrye, Riverbank Wildrye and ERNMX-181			
Seeds**			Seeding Rate	
Elymus virginicus	Virginia Wildrye	FACW- Grass	10-20 lbs/acre	
Elymus riparius	Riverbank Wildrye	FACW Grass	10-20 lbs/acre	
BERM SEEDING	ERNMX-181	N/A	1 lb/1000 sq. ft.	

Notes to the Contractor and Prospective Vendor:

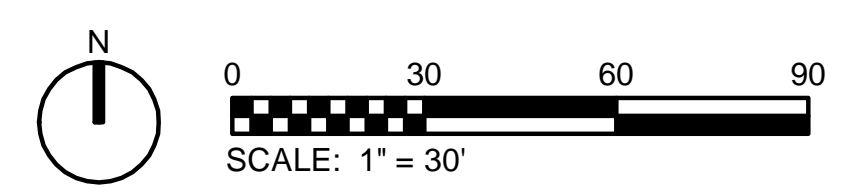
- Up to four brands of floating wetland islands (FWI) will be installed by qualified vendors in Cell 1 in the reserved areas as shown.
- The FWIs produced by different vendors are expected to differ in method and materials. The side by side demonstration of these systems is a specific objective of this project. Some variation from these specifications may be necessary to achieve these objectives but will be subject to the review and approval of the Owner's representative.
- General minimum requirements for FWIs are described in the Specifications and are generally described as follows:
 - FWI must be constructed of a durable buoyant material capable of growing wetland plants.
 - FWI must be tethered or anchored to prevent wind and flow related movement. Lateral movement of FWI at lower water depth is allowable but must not contact other FWIs.
 - FWI must be able to float on water without binding or impediment as depths vary in response to the water level fluctuation anticipated within Cell 1.
 - FWI must be planted with wetland vegetation native to the geographic locale.
 - FWI must be installed within time frame specified by Contractor.
- Each vendor shall be responsible for coordinating with the general contractor, the OWNER, and the Engineer or their representative on all aspects of the construction and installation of each FWI system.
- Each vendor will be solely responsible for installation of their respective FWI.
- Each vendor will install their FWI in a manner to avoid interfering with the installation or operation of the adjacent islands.
- Each vendor will be responsible for implementing an anchoring system designed to function in all seasons and under all conditions of flow and depth.
- Each vendor will construct and install the FWI within available construction areas as specified by the Contractor.
- Each vendor will be responsible for the construction and operation of their FWI for a period of one year following construction.



CELL 1

Native Steep Slope Mix with Annual Ryegrass - ERNMX-181

Botanical Name	Common Name
26.00 % <i>Sorghastrum nutans</i> , 'Southlow'-MI Ecotype	Indiangrass, 'Southlow'-MI Ecotype
20.00 % <i>Lolium multiflorum</i> (L. perenne var. <i>italicum</i>)	Annual Ryegrass
15.00 % <i>Schizachyrium scoparium</i> , 'Camper'	Little Bluestem, 'Camper'
12.00 % <i>Elymus canadensis</i>	Canada Wildrye
8.00 % <i>Elymus virginicus</i> , PA Ecotype	Virginia Wildrye, PA Ecotype
4.00 % <i>Panicum virgatum</i> , 'Cave-In-Rock'	Switchgrass, 'Cave-In-Rock'
3.00 % <i>Tridens flavus</i>	Purpletop
2.00 % <i>Agrostis perennans</i> , Albany Pine Bush-NY Ecotype	Autumn Bentgrass, Albany Pine Bush-NY Ecotype
2.00 % <i>Agrostis scabra</i> , PA Ecotype	Ticklegrass (Rough Bentgrass), PA Ecotype
2.00 % <i>Chamaecrista fasciculata</i> (Cassia f.), PA Ecotype	Partridge Pea, PA Ecotype
1.00 % <i>Carex lasiocarpa</i> , Coastal Plain NC Ecotype	Woollyfruit Sedge, Coastal Plain NC Ecotype
1.00 % <i>Echinacea purpurea</i>	Purple Coneflower
1.00 % <i>Liatris spicata</i> , PA Ecotype	Marsh (Dense) Blazing Star (Spiked Gayfeather), PA Ecotype
1.00 % <i>Monarda fistulosa</i>	Wild Bergamot
1.00 % <i>Penstemon digitalis</i> , PA Ecotype	Tall White Beardtongue, PA Ecotype
1.00 % <i>Rudbeckia hirta</i>	Blackeyed Susan



Notes:
 *PLANTINGS FOR UPLAND, VDF, AND SF WETLAND PLUGS WILL BE AT A DENSITY OF 9/SQ. YD
 *PLANTINGS FOR FWI WETLAND PLUGS WILL BE AT A DENSITY OF 13/SQ. YD

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 SYRACUSE, NY 13202
 PH (315) 345-1400 FAX (315) 451-7270
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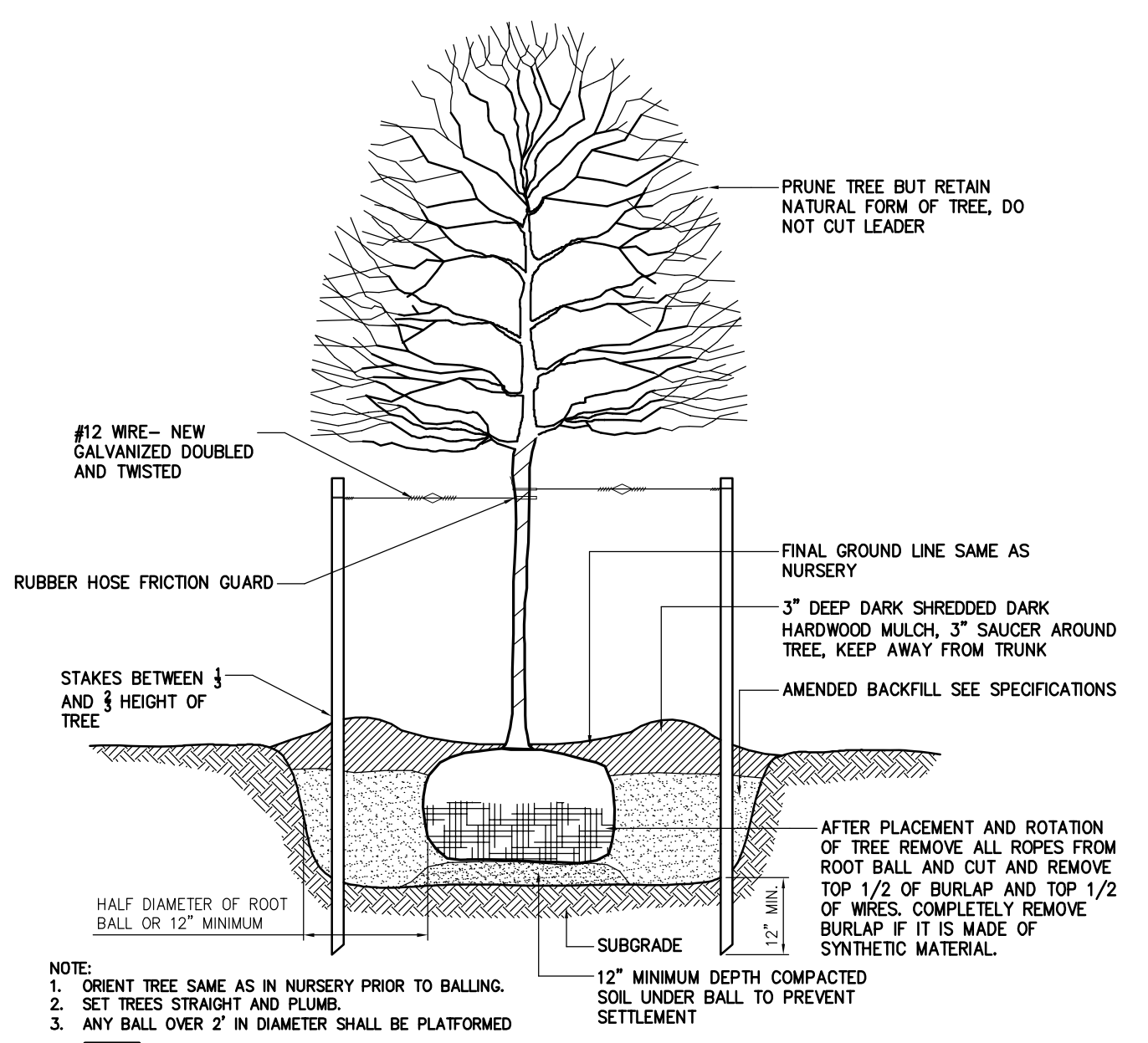
CONSTRUCTED WETLAND PLANTING PLAN

1" = 30'
 VERIFY SCALE
 BAR IS ONE INCH ON ORIGINAL DRAWING.

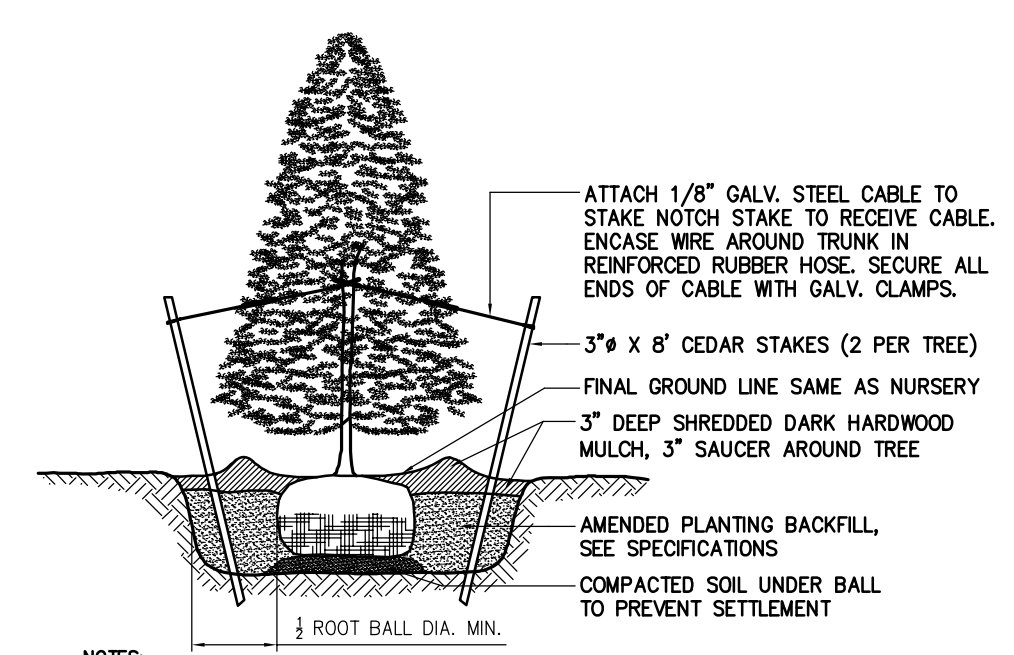
DATE: JULY 11, 2011
 PROJ: 19217
 DWG: L-1002
 SHEET: 005-L-1002-19217

APPROVED BY: [Signature]
 CHECKED BY: [Signature]
 DRAWN BY: [Signature]
 ENGINEER: [Signature]
 DSGN: [Signature]
 NO. DATE: 2 07/22/2011
 REGULARITY AGENCY REVIEW: 50% SUBMISSION
 REVISION: [Table with columns for revision number, date, and description]

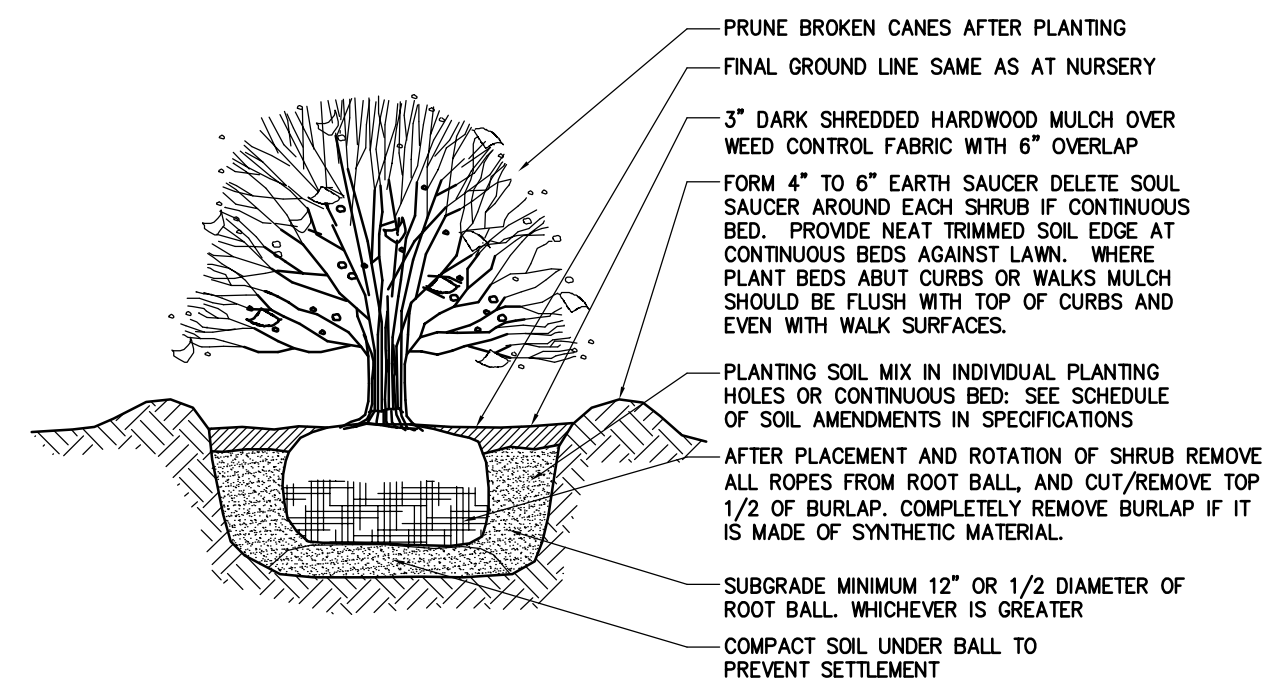
A
B
C
D



1 TYPICAL DECIDUOUS TREE PLANTING DETAIL
SCALE: N.T.S.



2 TYPICAL EVERGREEN TREE PLANTING DETAIL
SCALE: N.T.S.



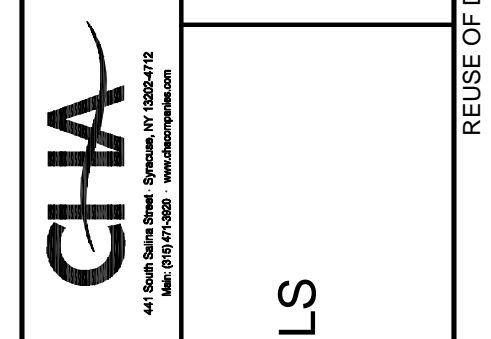
3 TYPICAL SHRUB PLANTING DETAIL
SCALE: N.T.S.



APPROVED-BY	APVD	BY	APVD
CHECKED-BY	CHK	BY	APVD
DRAWN-BY	DR	BY	APVD
ENGINEER	ENGR	BY	APVD
REGULATORY AGENCY REVIEW	JRH MEH	BY	APVD
50% SUBMISSION	KH MEH	BY	APVD
NO. DATE	1 05/02/2011	NO. DATE	1 05/02/2011
DSGN	2 07/22/2011	DSGN	2 07/22/2011

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PH (315) 345-1400 FAX (315) 451-7270
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LANDSCAPE DETAILS

DATE	JULY 11, 2011
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GENERAL NOTES:

- 1. REFER TO THE PROJECT MANUAL FOR GOVERNING JOB REQUIREMENTS AND MATERIAL SPECIFICATIONS. THE FOLLOWING NOTES ARE SUPPLEMENTAL TO THE ABOVE REQUIREMENTS.
2. DO NOT CHANGE THE SIZE NOR SPACING OF STRUCTURAL ELEMENTS WITHOUT THE APPROVAL OF THE ENGINEER.
3. DETAILS AND SECTIONS SHOWN ARE TYPICAL AND APPLY TO SIMILAR CONDITIONS UNLESS NOTED OTHERWISE.
4. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY.
5. BRACE STRUCTURE AS REQUIRED FOR CONSTRUCTION AND WIND LOADS UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED.
6. THE DESIGN IS BASED ON ACI 350 "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES AND COMMENTARY" AND THE BUILDING CODE OF NEW YORK STATE (2010 EDITION).
7. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES BEFORE COMMENCING WORK. HE AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE AND PRESERVE UNDERGROUND UTILITIES.
8. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MIS-FITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE ENGINEER'S APPROVAL.
9. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
10. VERIFY SIZE AND LOCATION OF OPENINGS PRIOR TO BEGINNING WORK. FOR DIMENSIONS NOT SHOWN, SEE CIVIL, MECHANICAL AND ELECTRICAL DRAWINGS.

FOUNDATION AND SOIL PREPARATION NOTES:

- 1. THE CONTRACTOR SHALL REVIEW THE GEOTECHNICAL REPORT AND BORING LOGS DURING THE BIDDING PHASE OF THE PROJECT.
2. PROVIDE POSITIVE DRAINAGE FOR ALL TRENCHES DURING CONSTRUCTION. DO NOT ALLOW ANY PONDING OF WATER DURING CONSTRUCTION.
3. DO NOT PLACE FOUNDATIONS IN WATER OR ON FROZEN GROUND. DO NOT ALLOW GROUND BENEATH FOUNDATIONS TO FREEZE.
4. BEAR ALL FOUNDATIONS ON COMPACTED STRUCTURAL FILL AS APPROVED BY THE GEOTECHNICAL ENGINEER. SOIL BEARING SURFACES, PREVIOUSLY ACCEPTED BY OWNER'S REPRESENTATIVE, WHICH ARE ALLOWED TO BECOME SATURATED, FROZEN OR DISTURBED SHALL BE REWORKED TO SATISFACTION OF OWNER'S REPRESENTATIVE.
5. THE SOIL BENEATH THE STRUCTURE AND A MINIMUM OF 13 FEET AROUND THE PERIMETER SHALL BE TREATED AS FOLLOWS:
A. STRIP THE AREA OF ALL VEGETATION AND REMOVE ALL ORGANICS.
B. EXCAVATE ALL MATERIAL TO THE BOTTOM OF THE PEAT LAYER AT ELEVATION 384.0' +/- .
C. PROOF ROLL THE SITE USING A SMOOTH DRUM ROLLER WITH A GROSS WEIGHT OF AT LEAST 10 TONS. THE ROLLER SHOULD OPERATE IN ITS VIBRATORY MODE AND COMPLETE AT LEAST SIX PASSES OVER THE SUBGRADE AT A SPEED NOT EXCEEDING 3 FEET PER SECOND. ANY AREAS WHICH PUMP OR WEAVE DURING PROOF ROLLING SHOULD BE UNDERCUT BY A MINIMUM OF 12 INCHES AND STABILIZED. IF THE VIBRATORY ROLLER TENDS TO "BRING UP" MOISTURE, THE SUBGRADE SHOULD BE PROOF ROLLED WITH THE ROLLER OPERATION IN THE STATIC MODE. A SMALLER ROLLER OR HAND-OPERATED COMPACTION EQUIPMENT SHALL BE USED IN SMALLER, TIGHT ACCESS AREAS AS REQUIRED.
D. EXCAVATIONS SHOULD BE BROUGHT TO PROPOSED BEARING GRADES USING COMPACTED NYS DOT NO. 2 CRUSHED STONE OR STRUCTURAL FILL.
E. STRUCTURAL FILL SHOULD BE USED FOR BACKFILLING ALL EXCAVATIONS AND UNDERCUTS.
F. STRUCTURAL FILL SHALL CONSIST OF SOUND, DURABLE, SAND AND GRAVEL, FREE OF STUMPS, ROOTS, OTHER ORGANICS AND ANY FROZEN OR DELETERIOUS MATERIAL CONFORMING TO THE FOLLOWING GRADATION:

Table with 2 columns: SIEVE SIZE, % PASSING BY WEIGHT. Rows include 4 INCH, NO. 40, NO. 200.

NOTE: BASED ON VISUAL CLASSIFICATION OF THE SOILS ENCOUNTERED IN THE BORINGS, THE ON-SITE SOILS DO NOT MEET THE REQUIREMENTS FOR STRUCTURAL FILL.

- G. STRUCTURAL FILL SHOULD BE PLACED IN LOOSE LIFTS NOT EXCEEDING 8 INCHES IN THICKNESS AND SHOULD BE COMPACTED TO AT LEAST 95 PERCENT OF THE MAXIMUM LABORATORY DRY DENSITY AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D-1557). ACTUAL LIFT THICKNESS SHALL DEPEND UPON THE TYPE OF COMPACTION EQUIPMENT USED DURING CONSTRUCTION.
H. EACH LIFT SHALL BE TESTED FOR MOISTURE CONTENT AND IN PLACE DENSITY AT A RATE OF ONE TEST PER 1,000 SQUARE FEET (MIN OF THREE PER LIFT).
I. REFER TO THE SPECIFICATIONS FOR ADDITIONAL SOIL PREPARATION NOTES.

CAST-IN-PLACE CONCRETE NOTES:

- 1. ALL CONCRETE SHALL HAVE A 28 DAY DESIGN COMPRESSIVE STRENGTH OF 4,500 PSI, A MINIMUM OF 564 POUNDS OF PORTLAND CEMENT PER CUBIC YARD, AIR CONTENT OF 6% +/- 1.5% USING AIR ENTRAINING AGENT AS REQUIRED, 3" +/- 1" INCH SLUMP. 20% OF CEMENT CONTENT SHALL BE SUBSTITUTED WITH CLASS F FLYASH.
2. ALL CONCRETE SHALL HAVE A MAXIMUM WATER TO CEMENT RATIO OF 0.42.
3. THE AMOUNT OF MID OR HIGH RANGE WATER REDUCER SHALL BE AS RECOMMENDED BY THE ADMIXTURE SUPPLIER TO INCREASE THE SLUMP OF THE CONCRETE BY 50 PERCENT OVER THE SLUMP WITHOUT THE ADMIXTURE. THE SLUMP GIVEN IN THE CONCRETE NOTES ARE AT THE POINT OF DISCHARGE FOR MIXES WITHOUT WATER REDUCERS. THIS AMOUNT OF MIDRANGE IS APPROXIMATELY 8-10 OZ PER 100 POUNDS OF CEMENT. HIGH RANGE WATER REDUCER MAY ALSO BE USED WITH THE DOSAGE ADJUSTED FOR THE ABOVE RESULTS.
4. FOUR 4X8 CONCRETE CYLINDERS SHALL BE MADE FOR EVERY 50 CUBIC YARDS OR EACH DAYS POUR, TO BE TESTED AT 7, 28, 28 AND ONE TO HOLD. THE CONCRETE SLUMP, TEMPERATURE, AND AIR CONTENT SHALL BE MEASURED EVERY TIME A SET OF FOUR CYLINDERS IS MADE.
5. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AMERICAN CONCRETE INSTITUTE STANDARDS "CODE REQUIREMENTS FOR ENVIRONMENTAL ENGINEERING CONCRETE STRUCTURES AND COMMENTARY" (ACI 350). SPLICES IN REINFORCEMENT SHALL MEET CLASS B TENSION LAP REQUIREMENTS UNLESS NOTED OTHERWISE.
6. COVER FOR ALL REINFORCEMENT SHALL MEET THE COVERAGE REQUIREMENTS AS SHOWN IN THE LATEST ACI 350, AS NOTED BELOW OR AS SHOWN ON THE DETAILS. COVER DIMENSIONS SHOWN ON THE DETAILS CONTROL OVER THE ACI 350 OR THOSE NOTED BELOW.
A. AGAINST FORMED SURFACES: 2"
B. AGAINST EARTH: 3"
C. BETWEEN REBAR: 1 1/2"
D. TOP OF SLAB ON GRADE: 1 1/2"

- 7. ANY CONCRETE TO BE PLACED FURTHER THAN 16 FEET FROM THE END OF A CONCRETE TRUCK SHALL BE PUMPED WITH A COMMERCIAL CONCRETE PUMPING TRUCK OR OTHER PLACEMENT METHOD APPROVED BY THE ENGINEER.
8. REINFORCING STEEL SHALL BE NEW DOMESTIC DEFORMED BILLET STEEL CONFORMING TO ASTM A-615 GRADE 60. REINFORCING STEEL SHALL BE SHOP FABRICATED.
9. DOWEL CONCRETE WALLS INTO FOUNDATIONS WITH DOWELS THE SAME SIZE AND SPACING AS VERTICAL REINFORCEMENT. EXTEND DOWELS TO WITHIN 3" OF BOTTOM OF FOUNDATION, TERMINATED WITH ACI STD. 90 DEGREE HOOK, UNLESS NOTED OTHERWISE.
10. PROVIDE A ROUGH CONCRETE SURFACE (1/4" MINIMUM AMPLITUDE) AT THE INTERSECTION OF CONCRETE WALLS WITH THE TOP OF FOUNDATIONS. DO NOT PROVIDE A KEYWAY UNLESS SHOWN OR NOTED ON THE DRAWINGS
11. PROVIDE 3/4" x 3/4" CHAMFER AT ALL EXPOSED CORNERS UNLESS NOTED OTHERWISE.
12. NO HOLES OR OPENINGS ARE PERMITTED THROUGH CONCRETE SLABS OR WALLS EXCEPT AS FOLLOWS:
A. WHERE SHOWN AND AS DETAILED ON DRAWINGS.
B. MISCELLANEOUS HOLES THROUGH SLABS OR WALLS WHICH DO NOT DISPLACE MORE THAN ONE BAR. THESE DO NOT REQUIRE ADDITIONAL REINFORCEMENT.
13. LOCATE ADDITIONAL CONSTRUCTION JOINTS REQUIRED TO FACILITATE CONSTRUCTION AS ACCEPTABLE TO ENGINEER. PLACE REINFORCEMENT CONTINUOUSLY THROUGH JOINT. DETAIL JOINT AND SHOW ON SHOP DRAWINGS.
14. CAST CONCRETE ON SLOPED SURFACES BEGINNING AT LOWEST ELEVATION AND CONTINUING MONOLITHICALLY TOWARD HIGHER ELEVATIONS UNTIL INTENDED POUR IS COMPLETED.
15. REINFORCING BARS, BAR SUPPORTS, AND SPACERS SHALL BE DETAILED AND PROVIDED IN ACCORDANCE WITH THE LATEST ACI DETAILING MANUAL. USE WIRE-BAR SUPPORTS COMPLYING WITH CRSI SPECIFICATIONS. SUPPORTS SHALL NOT BE PLACED FURTHER THAN 4 FEET APART. FOR EXPOSED TO VIEW CONCRETE SURFACES WHERE LEGS OF SUPPORTS ARE IN CONTACT WITH THE FORMS, PROVIDE SUPPORTS WITH LEGS THAT ARE PLASTIC PROTECTED (CRSI, CLASS 1) OR STAINLESS STEEL PROTECTED (CRSI, CLASS 2).
16. ADHESIVE ANCHORS WITH REBAR OR THREADED RODS, SHALL BE AS NOTED BELOW. INSTALL ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS, WHICH INCLUDES CLEANING THE HOLE WITH AIR AND USING A MANUFACTURER APPROVED DISPENSING TOOL WITH MIXING NOZZLE.
A. INTO CONCRETE: HILTI HIT 150 MAX OR SIMPSON SET HIGH STRENGTH EPOXY-TIE ANCHORING ADHESIVE
17. NO PIPING OR CONDUITS SHALL BE INSTALLED IN ANY CONCRETE WITHOUT THE APPROVAL OF THE ENGINEER. IN GENERAL, IF APPROVED BY THE ENGINEER, ANY PIPING OR CONDUITS MUST BE LOCATED IN THE MIDDLE OF THE SLAB AND NOT BE OVER ONE INCH IN DIAMETER. REFER TO THE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR PENETRATIONS.
18. ALL WATERSTOPS SHALL BE CONTINUOUS 6" PVC, CENTER BULB TYPE.
19. ALL DOWELS, ANCHOR BOLTS, EMBEDDED STEEL, ELECTRICAL CONDUITS, PIPE SLEEVES, PIPING, WATERSTOPS, INSERTS, GROUNDS, AND ALL OTHER EMBEDDED ITEMS AND FORMED DETAILS SHALL BE IN PLACE BEFORE START OF CONCRETE PLACEMENT. FOR EMBEDDED ITEMS AND REQUIRED DETAILS, SEE MECHANICAL, ELECTRICAL, AND CIVIL DRAWINGS. VERIFY SIZE AND LOCATION OF ALL OPENINGS.

DESIGN LOADS:

THE FOLLOWING DESIGN LOADS USED FOR THIS STRUCTURE ARE BASED ON ACI 350 AND THE BUILDING CODE OF NEW YORK STATE (2010 EDITION):

STRUCTURE CATEGORY: III

TANK COVER LIVE LOAD: 50 PSF

SNOW LOAD
GROUND SNOW LOAD = 50 PSF

WIND DESIGN DATA:
BASIC WIND SPEED (3 SECOND GUST): 90 MPH
WIND IMPORTANCE FACTOR: 1.15
WIND EXPOSURE CATEGORY: B

EARTHQUAKE DESIGN DATA:
SEISMIC IMPORTANCE FACTOR: 1.25
MAPPED SPECTRAL RESPONSE ACCELERATIONS: SS=0.15 S1=0.058
SITE CLASS: D
SEISMIC DESIGN CATEGORY: B
BASIC SEISMIC-FORCE-RESISTING SYSTEM:
ORDINARY REINFORCED CONCRETE SHEAR WALLS
DESIGN BASE SHEAR: XX
SEISMIC RESPONSE COEFFICIENT: Cs=0.05
RESPONSE MODIFICATION FACTOR: R=4.0
ANALYSIS PROCEDURE USED: EQUIVALENT LATERAL FORCE METHOD

SOIL PRESSURE:
A. MAXIMUM DESIGN ALLOWABLE SOIL BEARING PRESSURE IS 1,800 PSF ON COMPACTED STRUCTURAL FILL.
B. SUBGRADE SHALL BE INSPECTED AND ALLOWABLE BEARING PRESSURE SHALL BE CONFIRMED IN WRITING BY GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTING FORMS OR PLACING FOUNDATION REINFORCING.
C. FOUNDATION DESIGNS ARE BASED ON RECOMMENDATIONS INCLUDED IN "APPENDIX A "GEOTECHNICAL INVESTIGATION" IN "BASIS OF DESIGN REPORT, HARBOR BROOK CSO 018, CONSTRUCTED WETLANDS PILOT TREATMENT SYSTEM." REPORT

BY: CH2M HILL AND CHA
FOR: HARBOR BROOK CSO 018, CONSTRUCTED WETLANDS PILOT TREATMENT SYSTEM
PREPARED FOR: ONONDAGA COUNTY DEPARTMENT OF WATER ENVIRONMENT PROTECTION, ONONDAGA COUNTY, NEW YORK
DATE: MAY, 2011

FLOOD HAZARD INFORMATION:
100 YEAR FLOOD ELEVATION = 406.40'



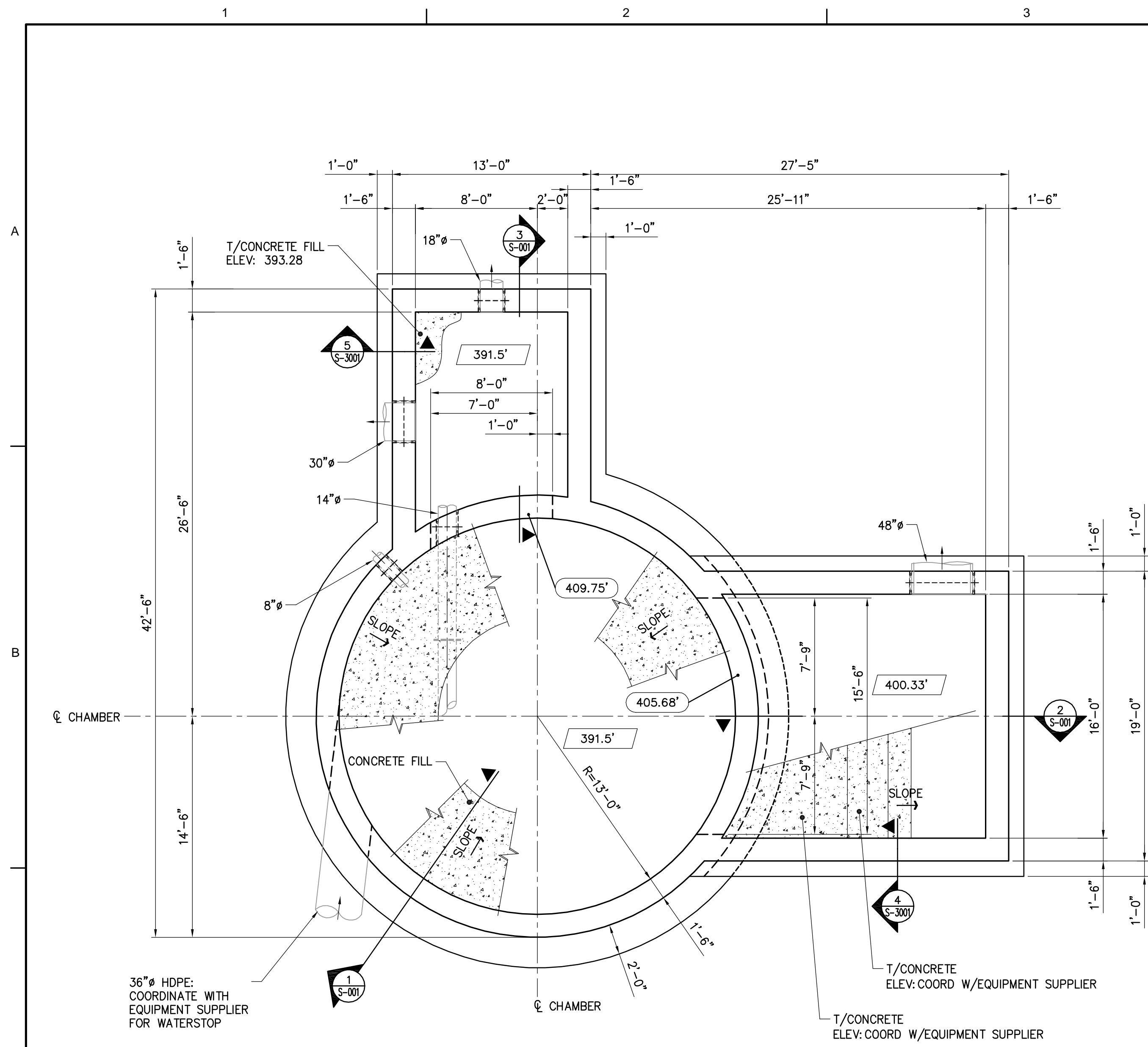
Table with columns for REGULARITY AGENCY REVIEW, 50% SUBMISSION, REVISION, CHECK, DRAWN BY, ENGINEER, DR, CHECKED BY, APV'D, APPROVED BY.

430 E. GENESEE STREET, SUITE 400
SYRACUSE, NY 13202-4517-7270
PH (315) 345-1400 FAX (315) 451-7270
EB 0000072 AA 001992
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CH2MHILL
STRUCTURAL GENERAL NOTES
AND DESIGN CRITERIA

Table with columns for VERIFY SCALE, DATE, PROJ, DWG, S-0001.

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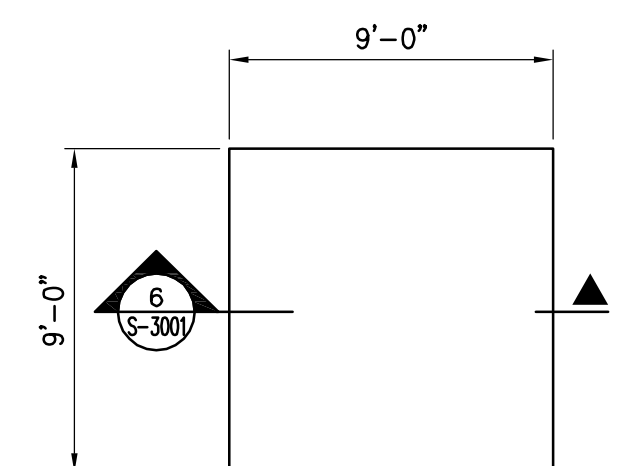


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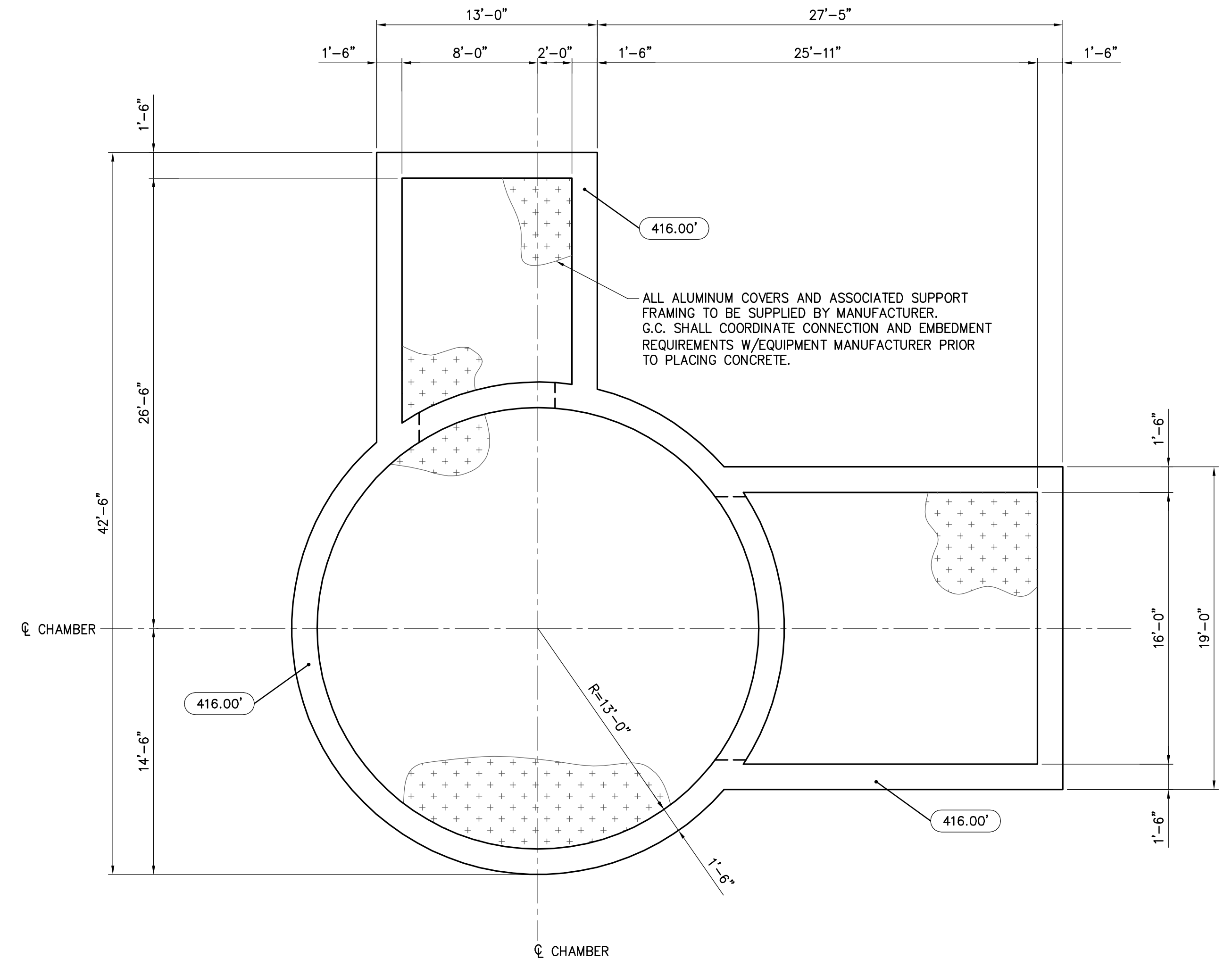
1. XXX.XX' = TOP OF WALL ELEVATION
2. xxx.xx' = TOP OF SLAB ELEVATION
3. BOTTOM OF ALL MAT FOUNDATIONS SHALL BEAR ON APPROVED COMPACTED STRUCTURAL FILL
4. CREDENCE CIVIL DRAWINGS FOR LOCATIONS OF ALL EMBEDMENTS, PIPING AND INVERT ELEVATIONS
5. PROVIDE RAKED FINISH ON ALL SLABS RECEIVING CONCRETE FILL
6. REFERENCE CIVIL DRAWINGS FOR CONCRETE FILL REQUIREMENTS AND ELEVATION. COORDINATE FINAL DIMENSIONS AND ELEVATIONS WITH EQUIPMENT SUPPLIER.



FOUNDATION PLAN
SCALE: 3/16"=1'-0"



BIOXIDE TANK AND PUMP FEED SLAB PLAN
SCALE: 3/16"=1'-0"



NOTE:

1. XXX.XX' = TOP OF WALL ELEVATION
2. ALL ALUMINUM EMBEDDED OR IN CONTACT WITH CONCRETE SHALL BE BACKPAINTED WITH BITUMINOUS PAINT.



PLAN AT ELEV: 416'-0"
SCALE: 3/16"=1'-0"



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ENGINEER	DR
DRAWN-BY	BY
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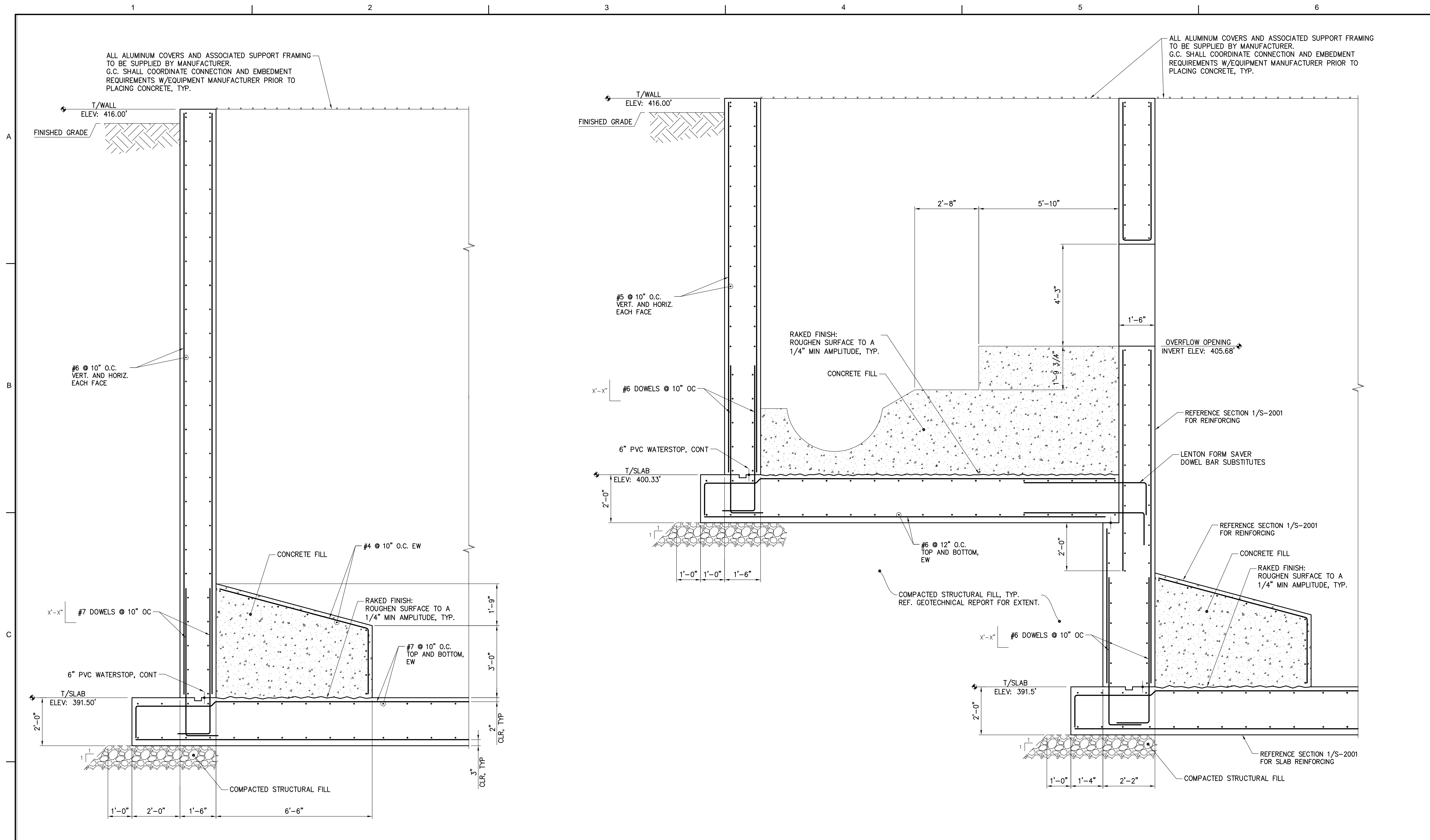
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**GRIT AND FLOATABLES
FOUNDATION PLAN**

AS NOTED
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ALL ALUMINUM COVERS AND ASSOCIATED SUPPORT FRAMING TO BE SUPPLIED BY MANUFACTURER. G.C. SHALL COORDINATE CONNECTION AND EMBEDMENT REQUIREMENTS W/EQUIPMENT MANUFACTURER PRIOR TO PLACING CONCRETE, TYP.

ALL ALUMINUM COVERS AND ASSOCIATED SUPPORT FRAMING TO BE SUPPLIED BY MANUFACTURER. G.C. SHALL COORDINATE CONNECTION AND EMBEDMENT REQUIREMENTS W/EQUIPMENT MANUFACTURER PRIOR TO PLACING CONCRETE, TYP.

- NOTE:
1. REINFORCING STEEL SHALL BE LAPPED PER SCHEDULE ON S-5003
 2. PROVIDE RAKED FINISH ON ALL SLABS TO RECEIVE CONCRETE FILL.

- NOTE:
1. REINFORCING STEEL SHALL BE LAPPED PER SCHEDULE ON S-5003
 2. PROVIDE RAKED FINISH ON ALL SLABS TO RECEIVE CONCRETE FILL.

1 SECTION
SCALE: 1/2"=1'-0"

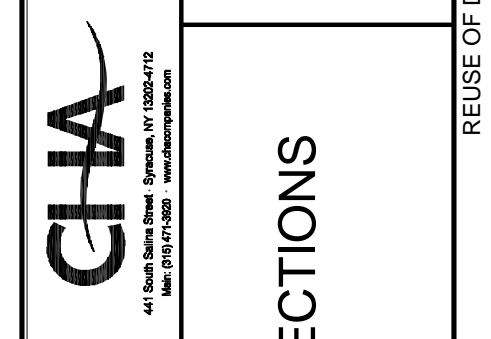
2 SECTION
SCALE: 1/2"=1'-0"



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ENGINEER	DR
DESIGN	DSGN
NO.	DATE
1	05/02/2011
2	07/22/2011
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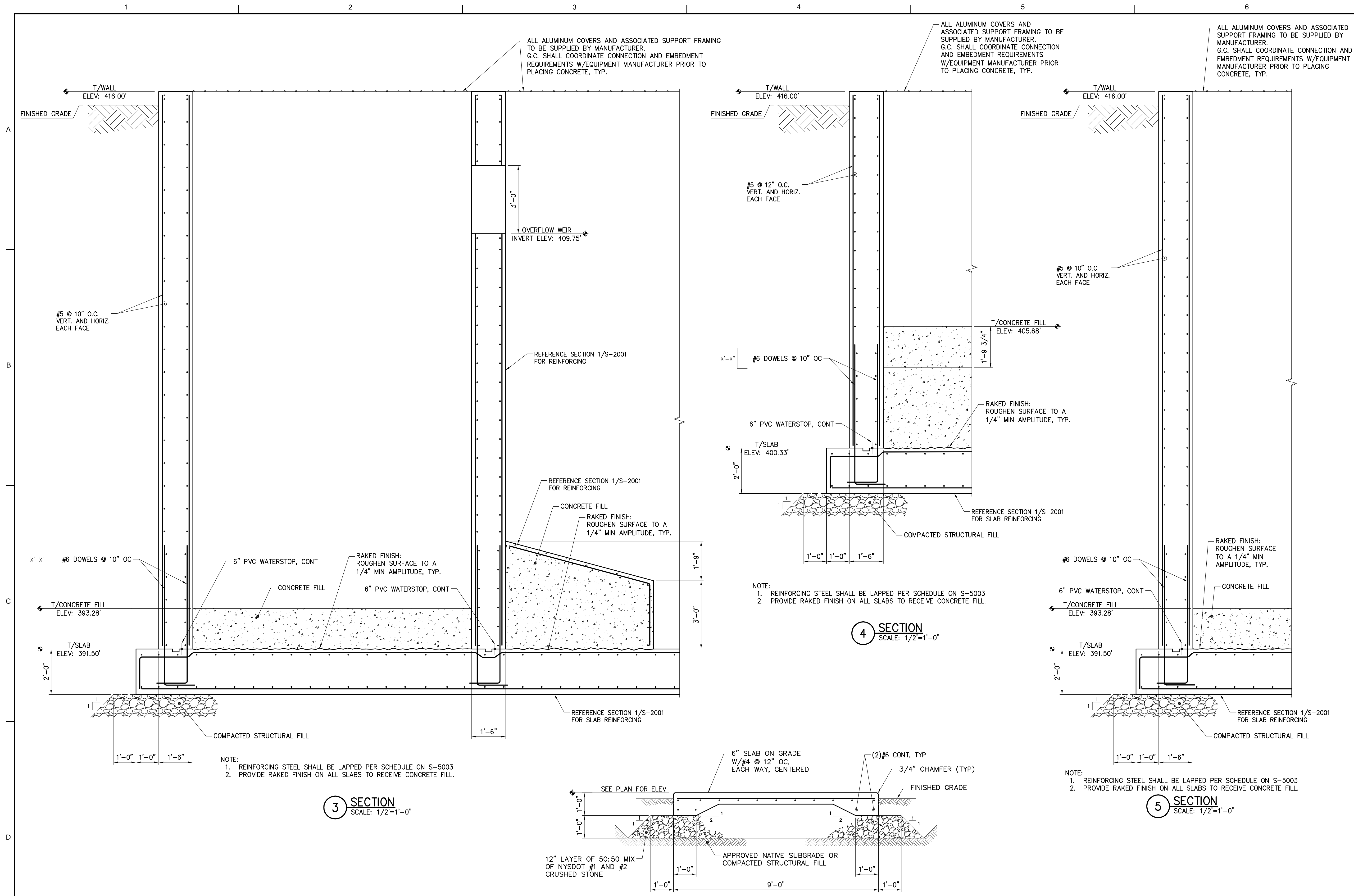


GRIT AND FLOTABLES SECTIONS

AS NOTED
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CHECKED-BY	CHK
ENGINEER	DR
DESIGN	NO.
DATE	DATE
REVISION	REVISION
50% SUBMISSION	NO.
REGULATORY AGENCY REVIEW	NO.
MEH	MEH
KH	KH
BY	BY

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GRIT AND FLOTABLES SECTIONS

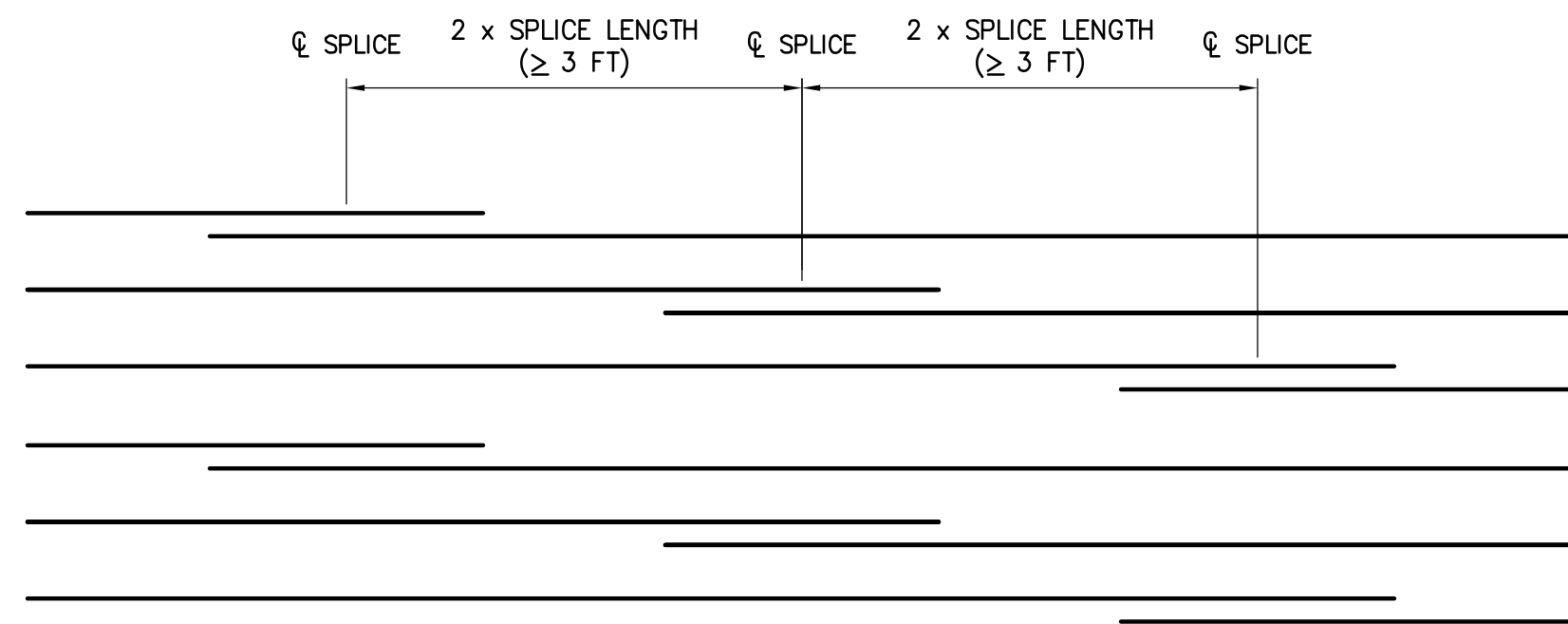
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0 1"

DATE	JULY 11, 2011
PROJ	19217
DWG	S-3002
SHEET	009-S-3002_19217

REINFORCING LAP LENGTH			
BAR SIZE	LAP CLASS	VERT.	HORIZ.
#3	B	18	24
#4	B	25	32
#5	B	31	40
#6	B	37	48
#7	B	54	70
#8	B	62	80
#9	B	69	90
#10	B	77	100

NOTES:
1. TABLE TO BE INCLUDED ON ALL REINFORCING SHOP DRAWINGS.

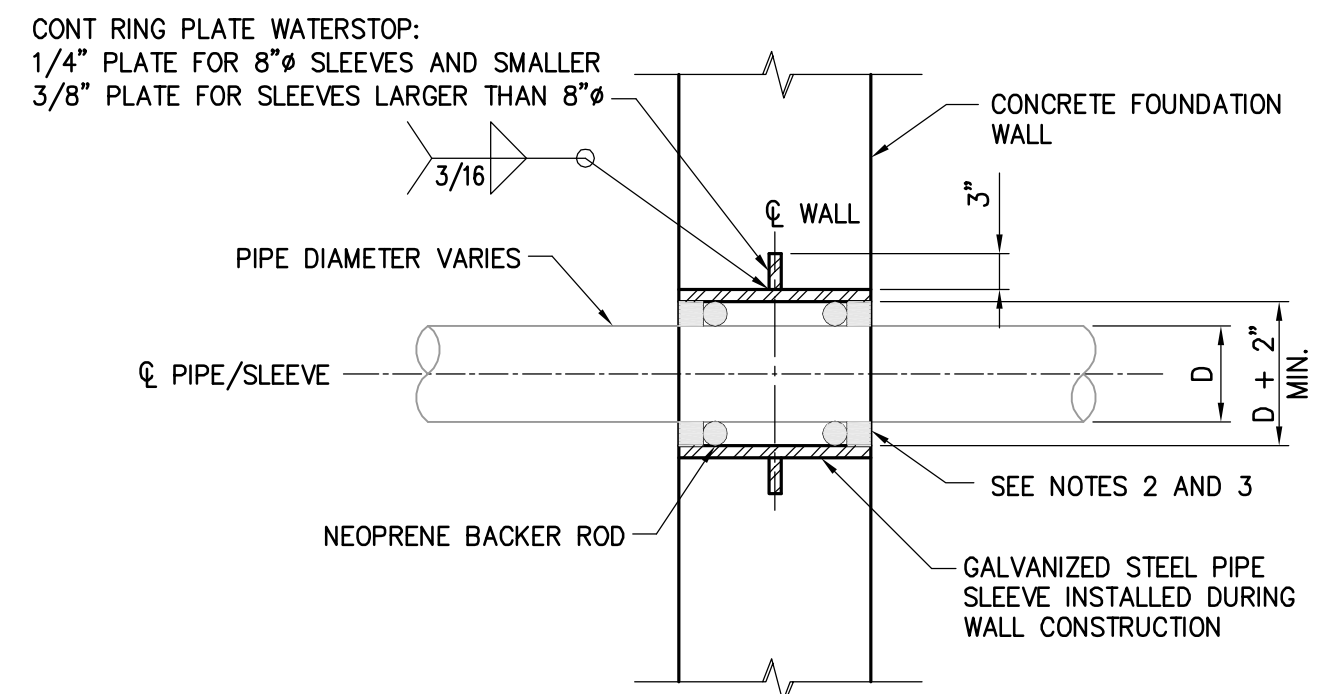
TYP. REINFORCING LAP LENGTH SCHEDULE



REFERENCE REINFORCING LAP LENGTH SCHEDULE ON S002 FOR SPLICE LENGTH.

CIRCULAR TANK - HORIZONTAL REINFORCEMENT SPLICING LAYOUT

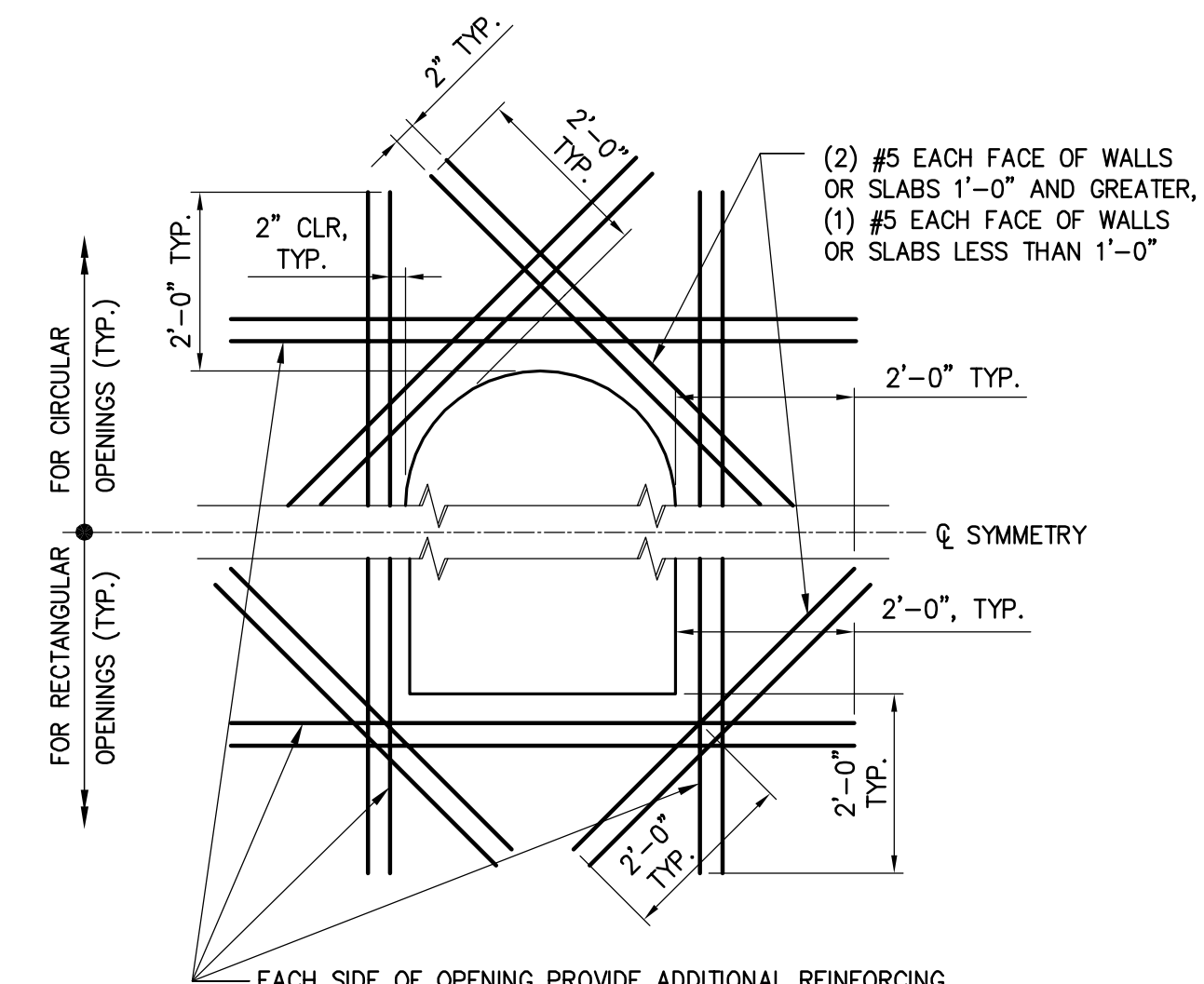
SCALE: N.T.S.



NOTE:
1. D = NOMINAL PIPE SIZE DIAMETER
2. SEAL GAP BETWEEN PIPE AND PIPE SLEEVE WATER TIGHT WITH MASTIC OR BITUMINOUS COATINGS AT FOUNDATIONS OF NON-LIQUID CONTAINMENT STRUCTURES.
3. SEAL GAP BETWEEN PIPE AND CONCRETE WALL WATER TIGHT WITH BACKER ROD AND SEALANT.
4. REFERENCE CIVIL AND MECHANICAL DRAWINGS FOR QUANTITIES AND LOCATIONS.

TYP. PIPE SLEEVE THROUGH NEW FOUNDATION WALL

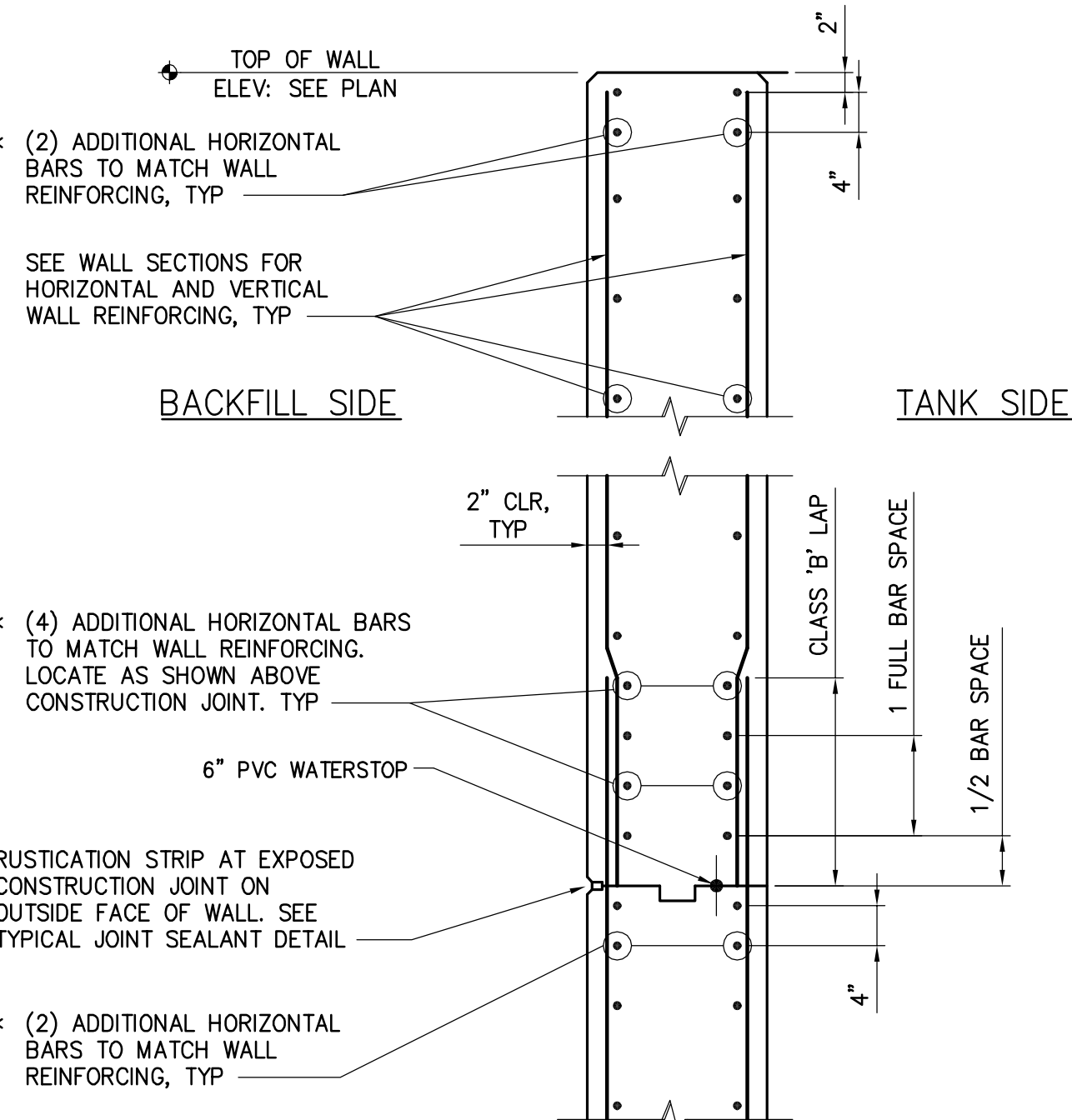
SCALE: 3/4" = 1'-0"



NOTE:
USE ABOVE REINFORCING AROUND ALL OPENINGS 1'-0" AND LARGER UNLESS NOTED OTHERWISE ON DRAWINGS. FOR OPENINGS LESS THAN 1'-0", NO ADDITIONAL REINFORCING IS REQUIRED. UNLESS NOTED OTHERWISE ON DRAWINGS.

TYP. REINFORCING AT RECTANGULAR AND CIRCULAR OPENINGS IN SLABS AND WALLS

SCALE: 3/4" = 1'-0"



* (2) ADDITIONAL HORIZONTAL BARS TO MATCH WALL REINFORCING, TYP

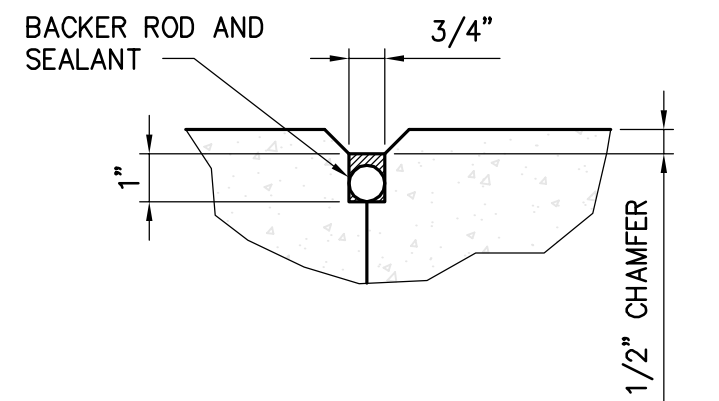
* (4) ADDITIONAL HORIZONTAL BARS TO MATCH WALL REINFORCING. LOCATE AS SHOWN ABOVE CONSTRUCTION JOINT. TYP

* (6) ADDITIONAL HORIZONTAL BARS TO MATCH WALL REINFORCING. LOCATE AS SHOWN AT 1/2 SPACING, TYP

NOTE:
1. * - INTERRUPT 100% OF ADDITIONAL HORIZONTAL BARS AT CONSTRUCTION AND CONTROL JOINTS.
2. REINFORCING STEEL SHALL BE LAPPED PER SCHEDULE ON S-XXX
3. SEE SECTIONS FOR WALL AND BASE SLAB THICKNESS AND REINFORCING REQUIREMENTS.

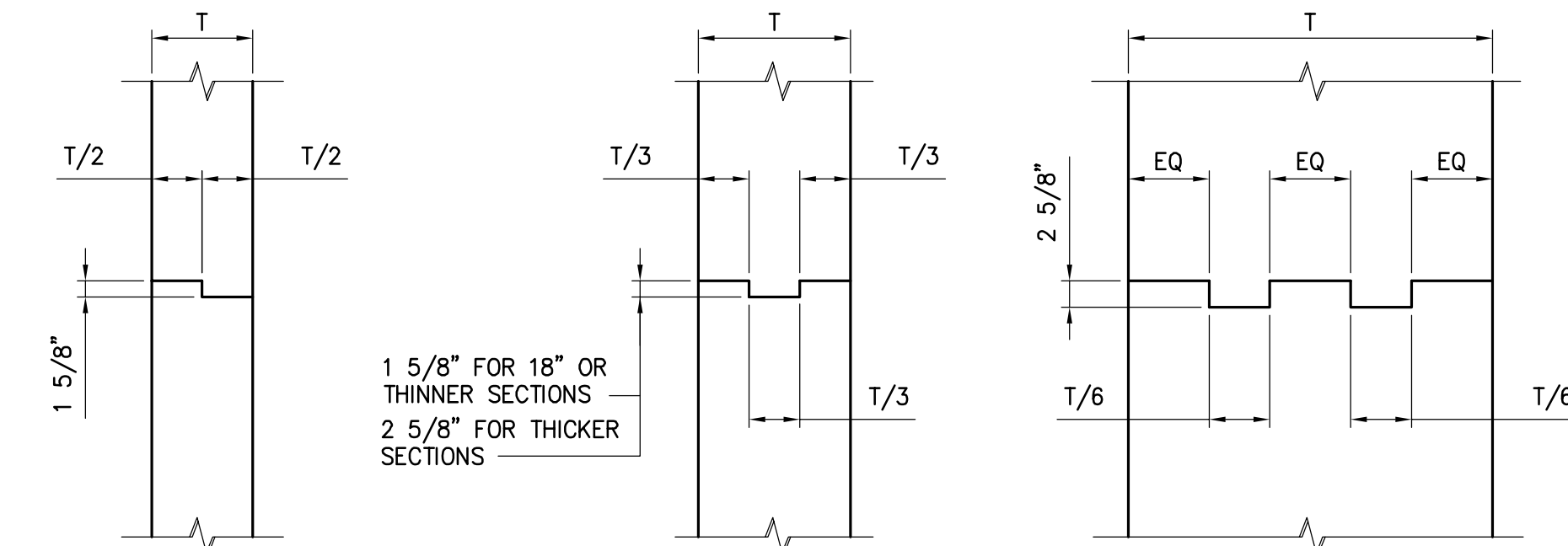
TYP TANK WALL HORIZONTAL REINFORCING DETAILS - SECTION VIEW

SCALE: 3/4" = 1'-0"



TYP JOINT SEALANT DETAIL

SCALE: NTS



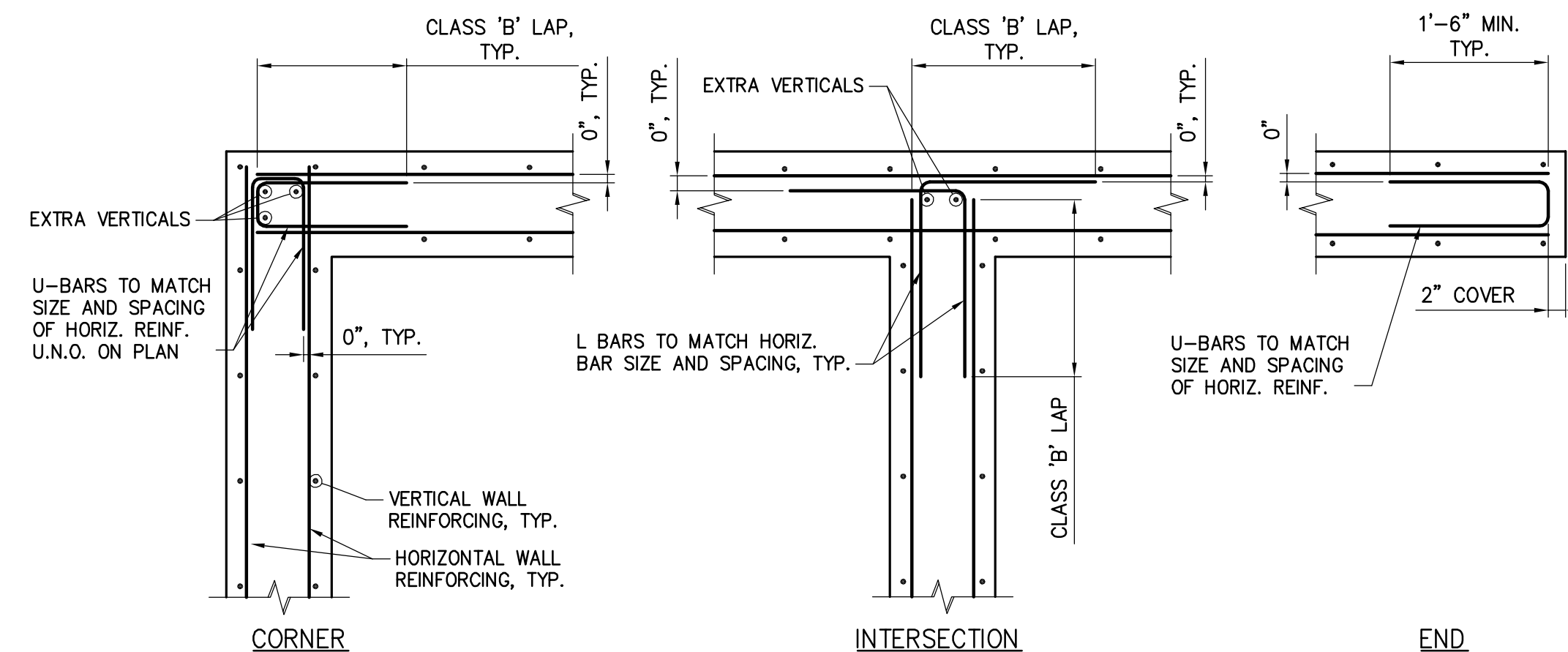
FOR WALLS < 10" THICK
FOR SLABS < 10" THICK

FOR WALLS 10" THRU 36"
FOR SLABS 10" THRU 36"

FOR WALLS > 36" THICK
FOR SLABS > 36" THICK

TYP. CONCRETE KEYS

SCALE: 3/4" = 1'-0"

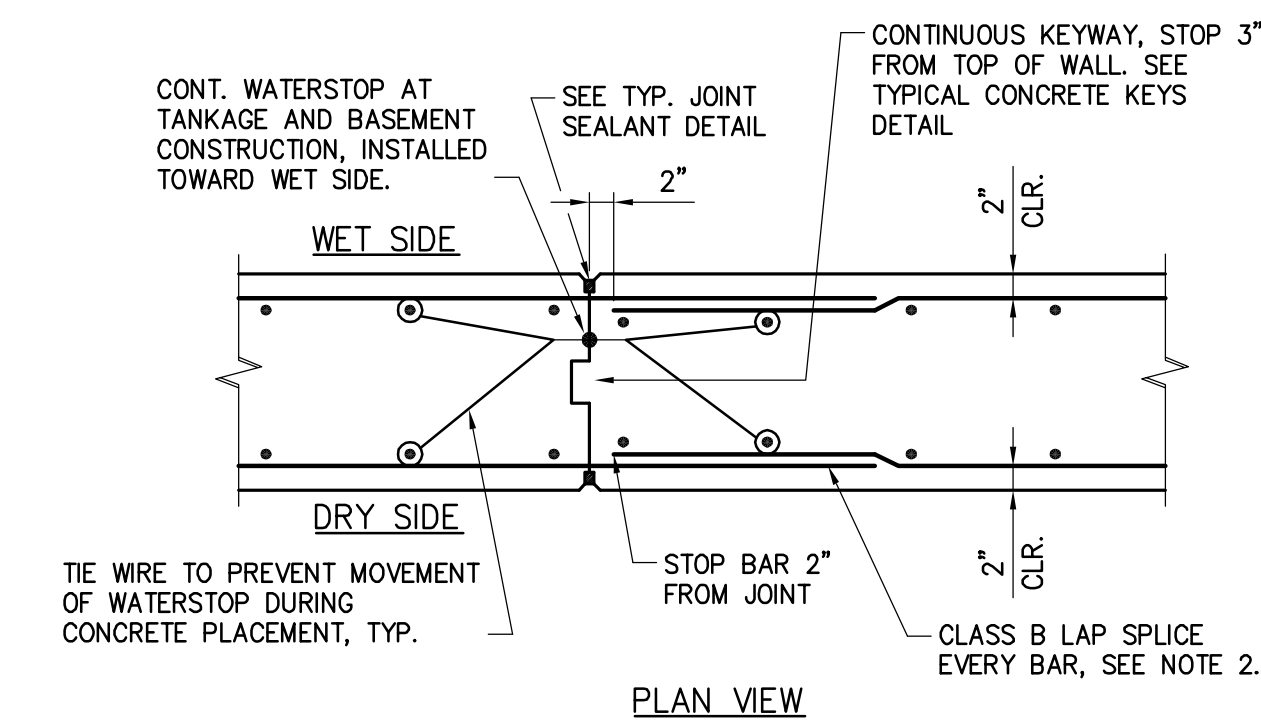


NOTE:
1. POSITION OF HORIZONTAL BARS SHOWN IS SCHEMATIC. BARS ARE IN ONE PLANE, UNLESS NOTED OTHERWISE IN PLAN OR SECTION.

(FOR WALLS 10" OR GREATER)

TYP. WALL REINFORCING AT BUILDINGS AND TANKS (PLAN)

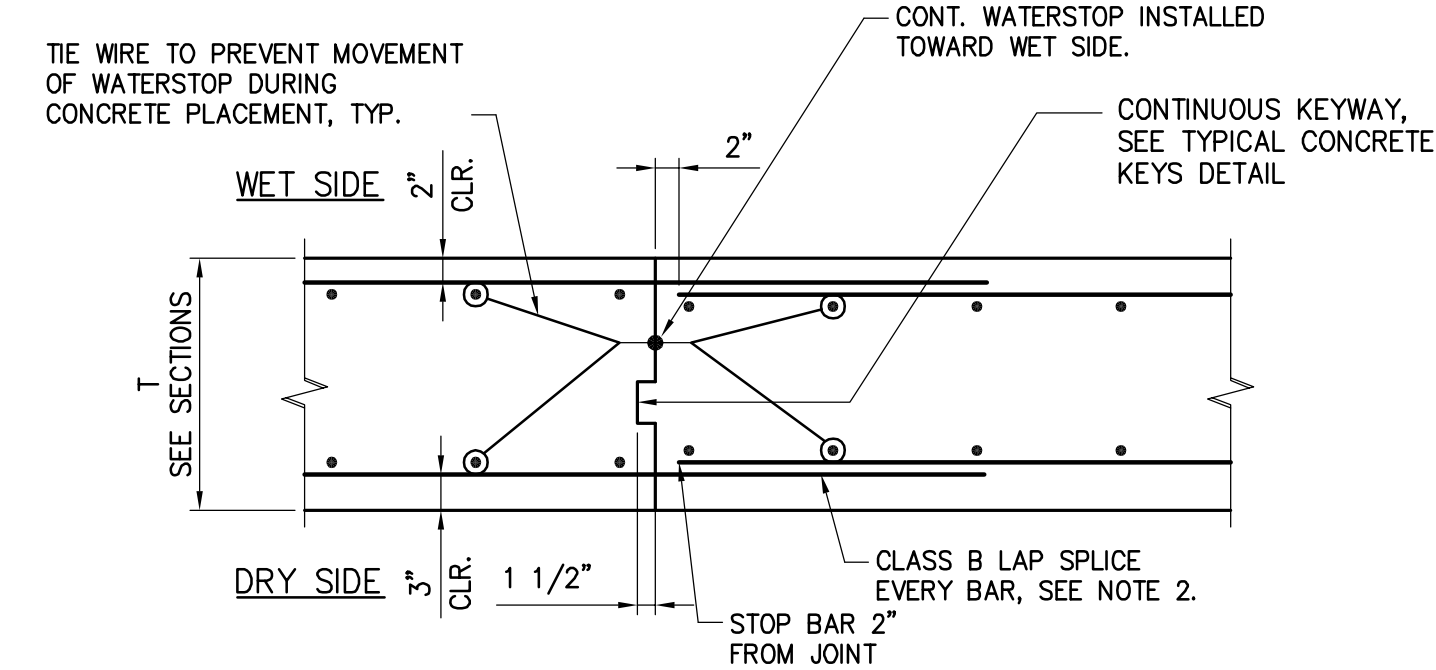
SCALE: 3/4" = 1'-0"



NOTE:
1. SEE PLAN FOR REQUIRED CONSTRUCTION JOINT LOCATIONS.
2. REINFORCING STEEL SHALL BE LAPPED PER SCHEDULE ON S-XXX
3. SEE SECTIONS FOR SLAB SIZE AND REINFORCING.
4. PROVIDE 48 HOURS BETWEEN ADJACENT POURS AT CONSTRUCTION JOINTS, TYP

TYP TANK WALL CONSTRUCTION JOINT DETAIL

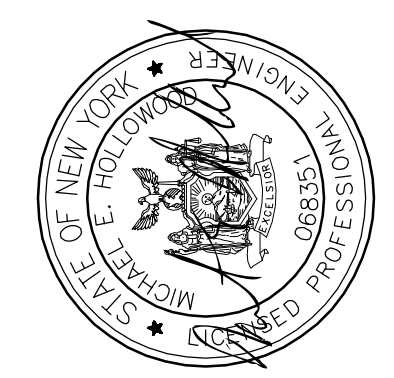
SCALE: 3/4" = 1'-0"



NOTE:
1. SEE PLAN FOR REQUIRED CONSTRUCTION JOINT LOCATIONS.
2. REINFORCING STEEL SHALL BE LAPPED PER SCHEDULE ON S-XXX
3. SEE SECTIONS FOR SLAB SIZE AND REINFORCING.
4. PROVIDE 48 HOURS BETWEEN ADJACENT POURS AT CONSTRUCTION JOINTS, TYP

TYP TANK BASE SLAB CONSTRUCTION JOINT DETAIL

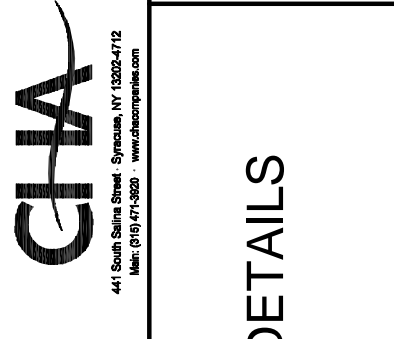
SCALE: 3/4" = 1'-0"



APPROVED-BY	APVD
CHECKED-BY	CHK
ENGINEER	DR
DESIGN	DSGN
NO.	DATE
1	05/02/2011
2	07/22/2011
REGULATORY AGENCY REVIEW	JRH MEH
50% SUBMISSION	KH MEH
REVISION	BY
APVD	APVD

430 E. GENESEE STREET, SUITE 400
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CITY OF SYRACUSE
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GRIT AND FLOTABLE DETAILS

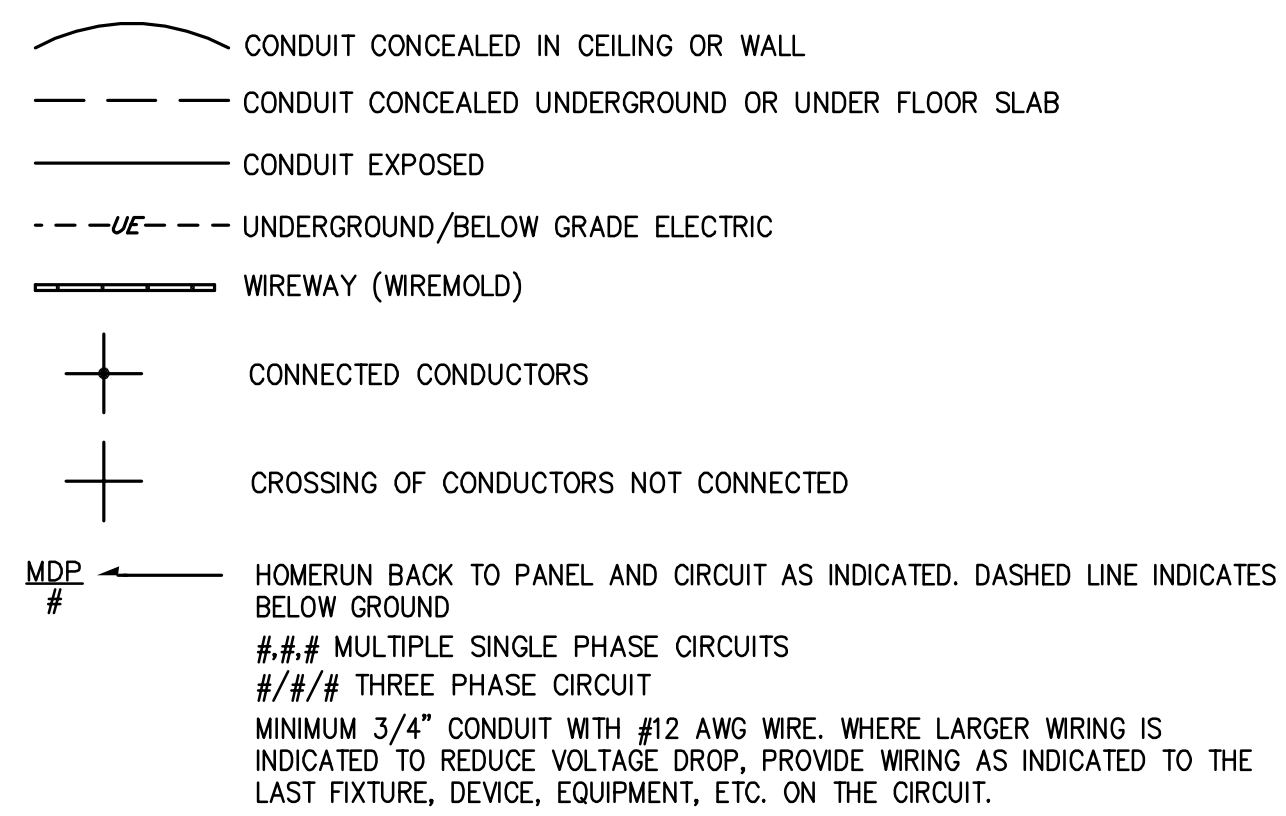
AS NOTED	
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 11, 2011
PROJ	19217
DWG	S-5003
SHEET	009-S-5003-19217

ELECTRICAL LEGEND

Table with columns: ABBREVIATION, DESCRIPTION. Contains abbreviations like A, AC, AF, etc. and their descriptions.

Table with columns: ABBREVIATION, DESCRIPTION. Contains abbreviations like JB, KCM, KVA, etc. and their descriptions.

RACEWAYS



DISTRIBUTION

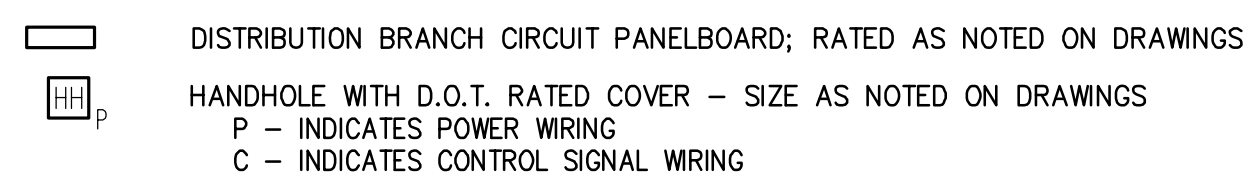
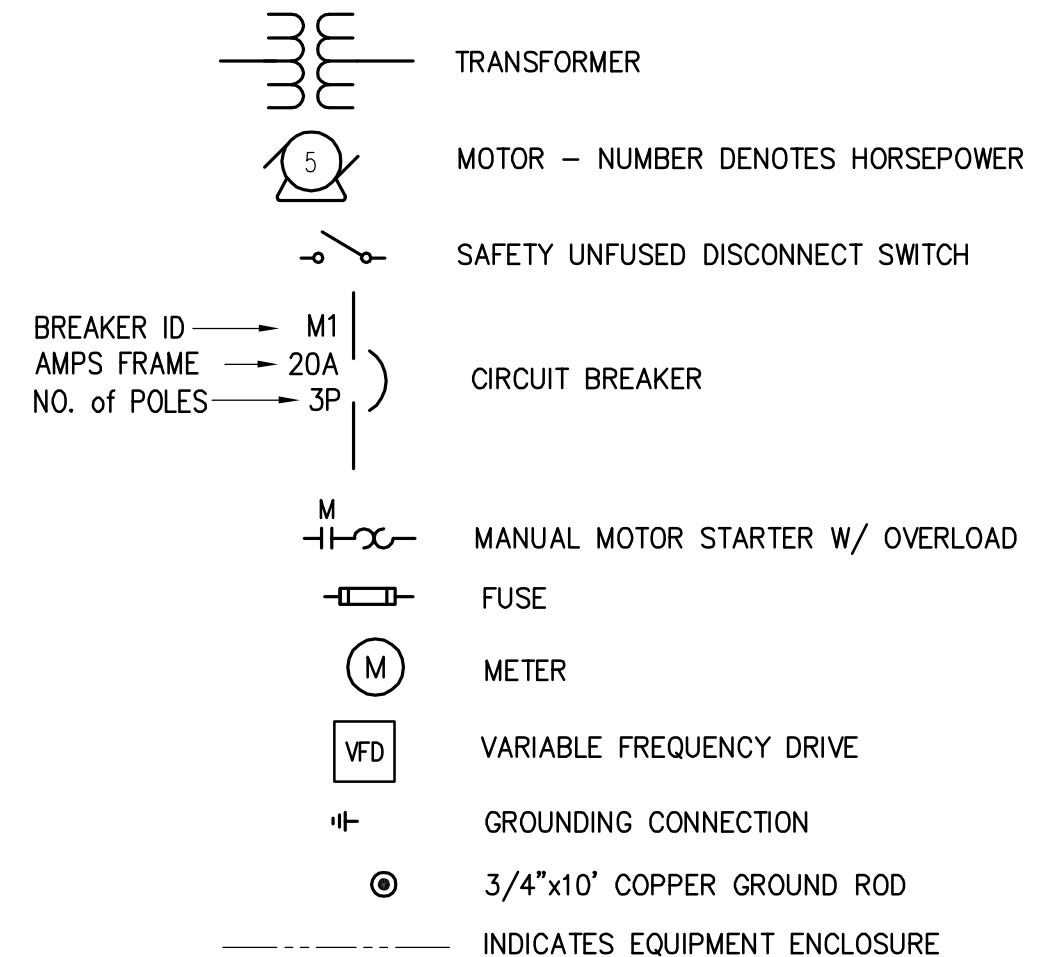
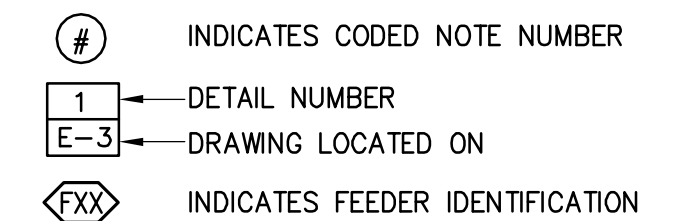


Table titled 'CONVENTIONAL P&ID DRAWING SYMBOLS' with columns for location (Front of panel, Rear of panel, Field mounted) and instrument types (Discrete instruments, Distributed control/shared display).

POWER & INSTRUMENTS



GENERAL

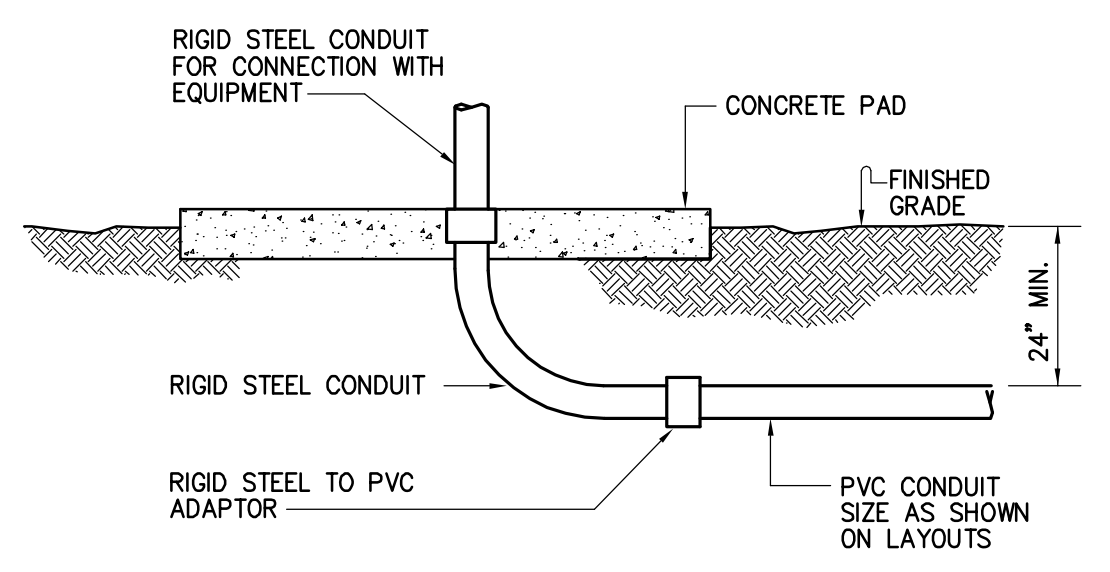


GENERAL NOTES

- List of 9 general notes regarding drawing standards, coordination with other trades, and equipment specifications.

NOTES TO ELECTRICAL SYMBOLS

- Notes explaining symbols for equipment locations and symbol usage.



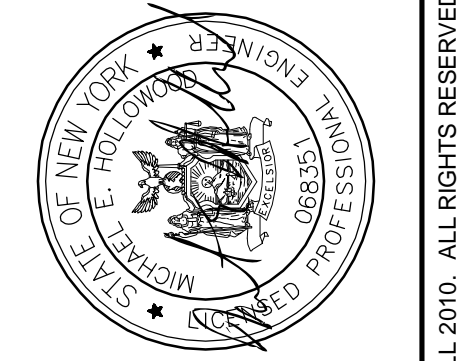
1 UNDERGROUND CONDUIT STUB-UP
E-0001 NOT TO SCALE

NOTE:
1. ALL ABBREVIATIONS SHOWN ARE NOT NECESSARILY USED ON THIS PROJECT.

Panel information box containing location, mounting, source, panel ID (PP), and electrical specifications (volts, phase, wire, mains, short circuit rating).

I-O LIST FIELD WIRED DEVICES table with columns: DEVICE/INSTRUMENT TAG, DESCRIPTION, I/O SIGNAL TYPE, CONTROLLER INTERFACE, CONTROL WIRING, EXTERNAL POWER SOURCE, POWER WIRING, REMARKS.

FUNCTION IDENTITY table with columns: LETTER, FIRST LETTER, SECOND LETTER, MEASURED OR INITIATING VARIABLE, MODIFIER, READOUT OR PASSIVE FUNCTION, OUTPUT FUNCTION, MODIFIER (TO OUTPUT FUNCTION).

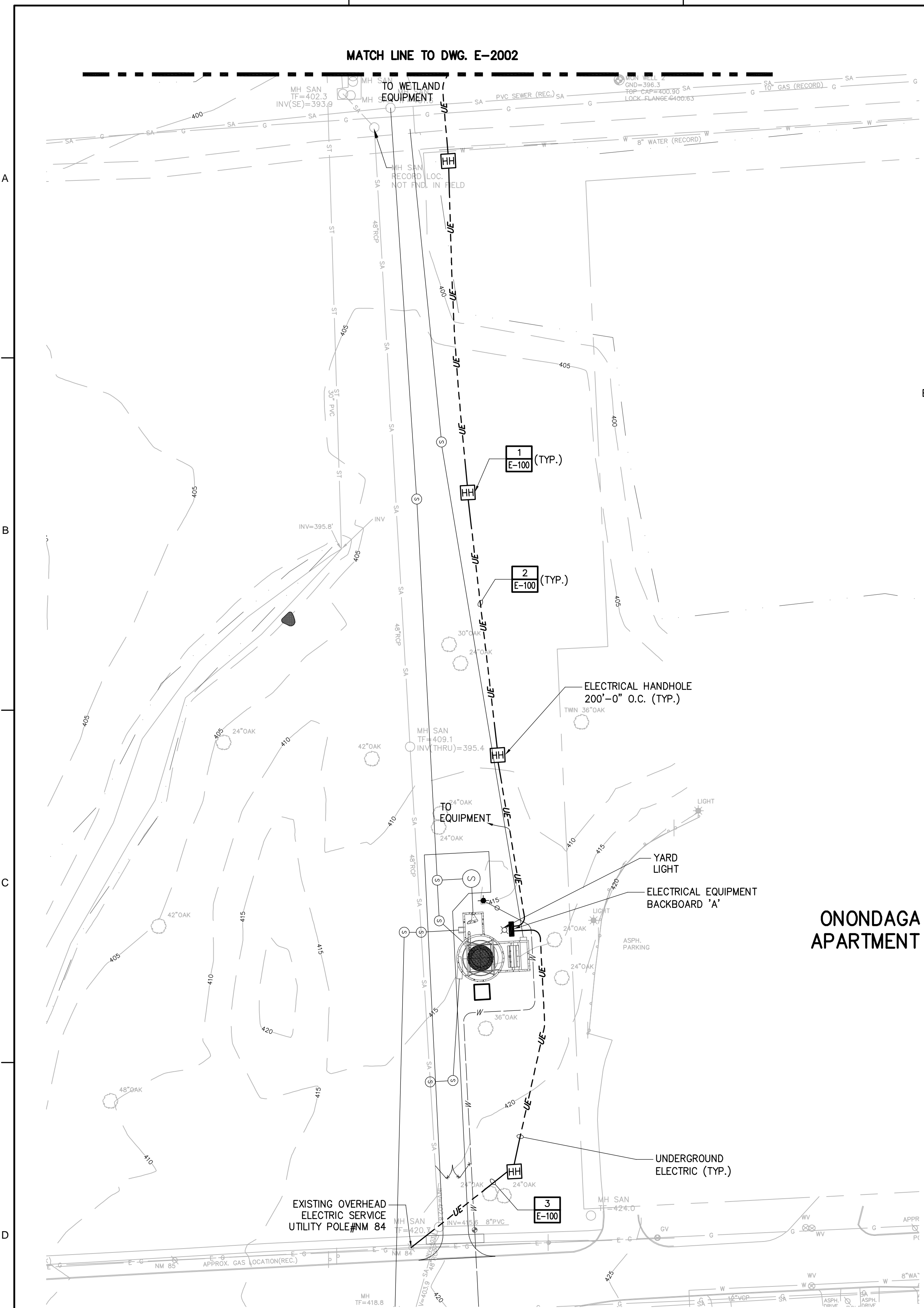


Revision table with columns for date, description, and initials.

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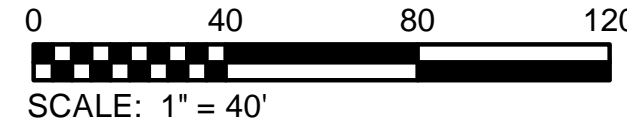
CH2MHILL logo and project information: HARBOR BROOK CSO 018 CONSTRUCTED WETLANDS CITY OF SYRACUSE ONONDAGA COUNTY, NEW YORK.

VERIFY SCALE: BAR IS ONE INCH ON ORIGINAL DRAWING.
DATE: JULY 11, 2011
PROJ: 19217
DWG: E-0001
SHEET: 006-E-0001-19217



ELECTRICAL SITE PLAN

1"=40'

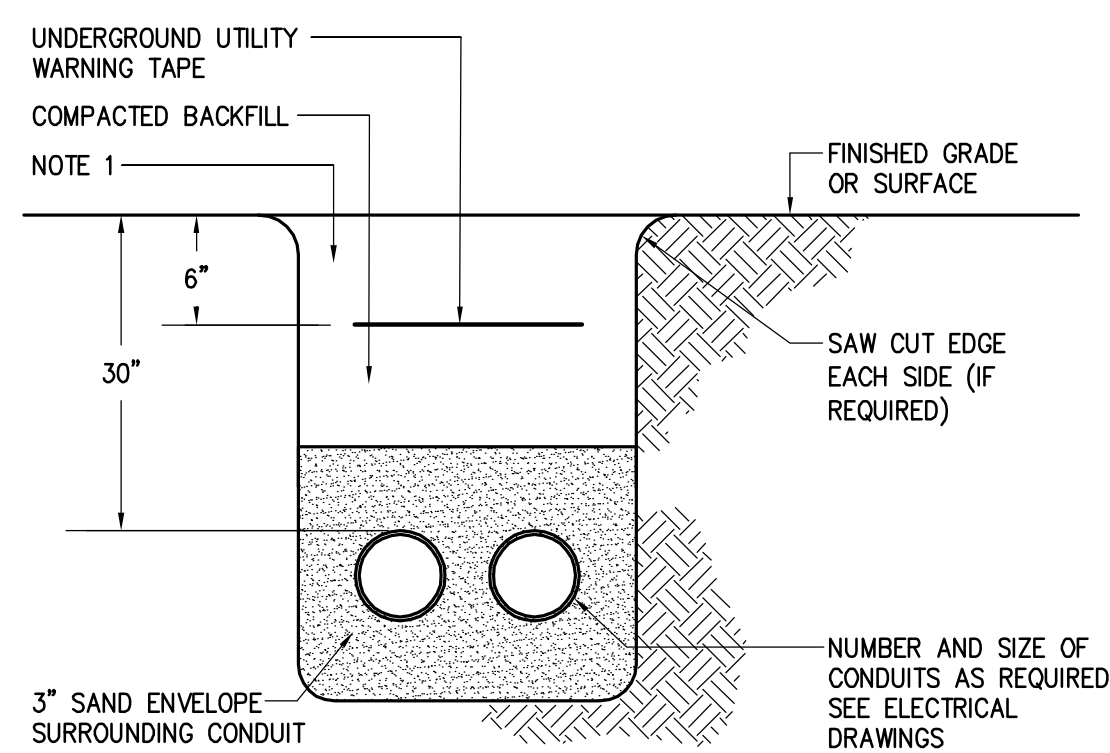


GENERAL NOTES

- ① NEMA 3R LOADCENTER, 100A M.L.O. 12 POLE SPACING. SEE PANEL SCHEDULE.
- ② NEMA 4X CONTROL PANEL, REFER TO CONTROL PANEL DESCRIPTION FOR ADDITIONAL INFORMATION.
- ③ WEATHERPROOF LIGHTSWITCH FOR POLE MOUNT FIXTURE. LABEL AS SUCH.
- ④ 25 FOOT WOOD UTILITY POLE WITH LIGHTING FIXTURE. LIGHTING FIXTURE MANUFACTURER ??? CATALOG # ???
- ⑤ WEATHERPROOF GFI CONVENIENCE RECEPTACLE.

ONE LINE POWER DISTRIBUTION DIAGRAM

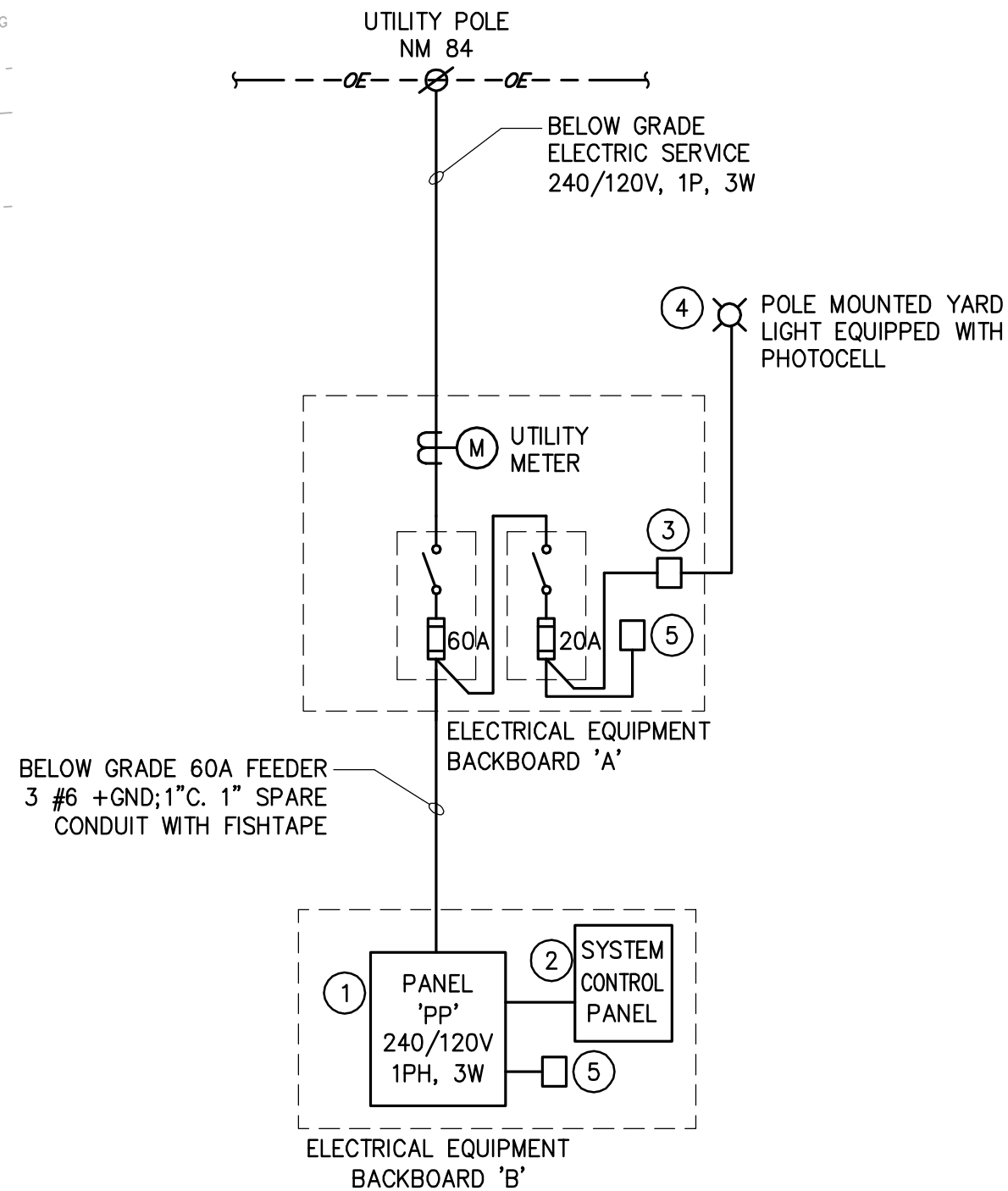
NOT TO SCALE



- NOTE**
1. REPLACE EXISTING SURFACE CONDITIONS IN KIND TO INCLUDE, BUT NOT LIMITED TO: CONCRETE, CRUSHED STONE, TOPSOIL AND GRASS.

2 UNDERGROUND CONDUIT(S)

E-2001 NOT TO SCALE

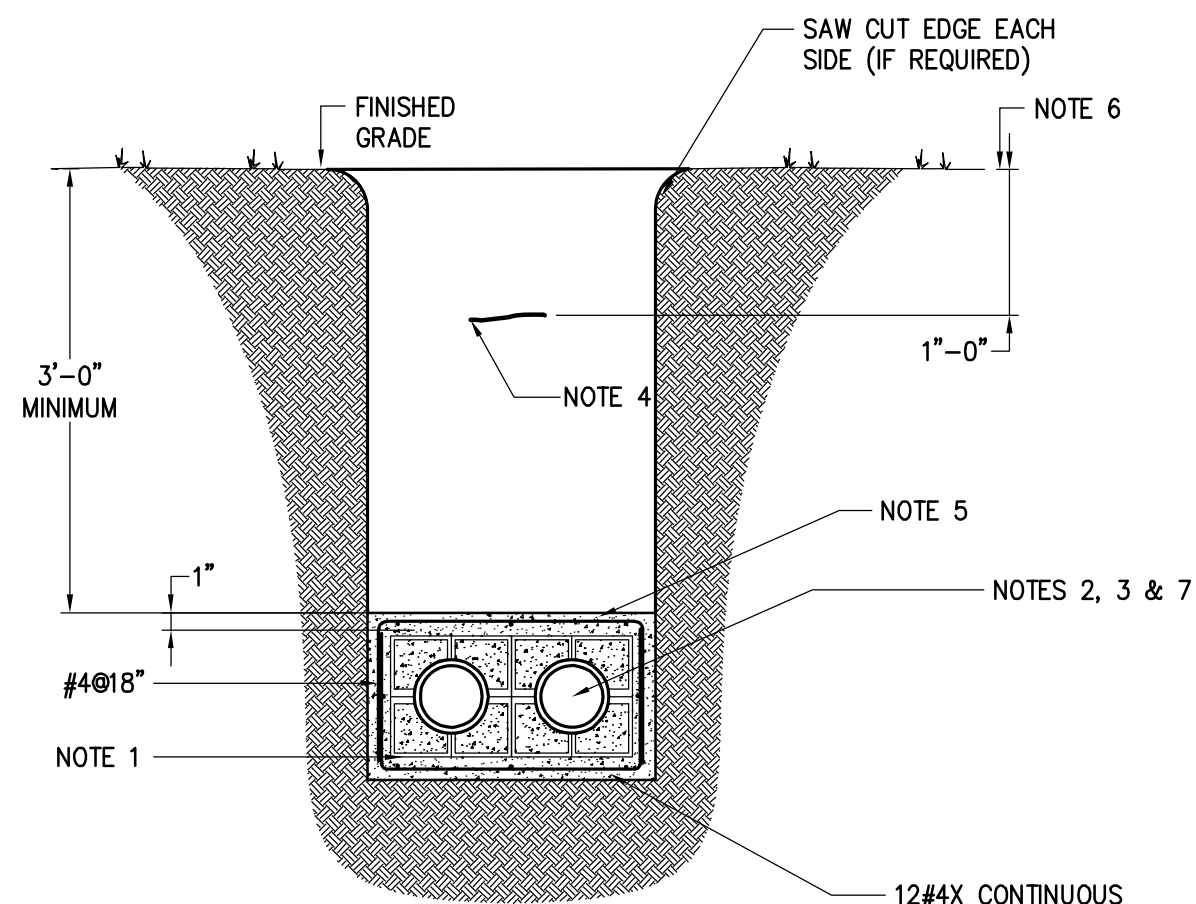


NOTES

1. SIZE HANDHOLE AT EACH LOCATION PER NEC. MINIMUM SIZE SHALL BE 18" x 18" x 24".
2. ALL CONDUITS SHALL BE PROVIDED WITH A PULL ROPE.
3. REPLACE EXISTING SURFACE CONDITIONS IN KIND TO INCLUDE, BUT NOT LIMITED TO: CONCRETE, CRUSHED STONE, SELECT GRAVEL, ASPHALT CONCRETE, TOPSOIL AND GRASS.

1 HANDHOLE -- DETAIL

E-2001 NOT TO SCALE

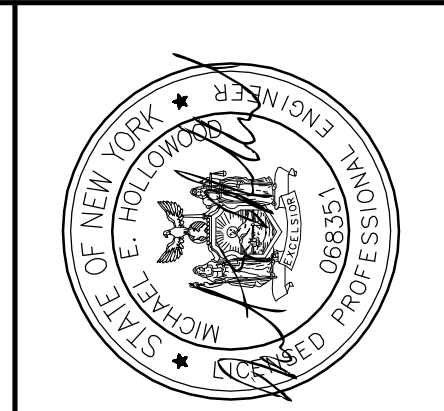
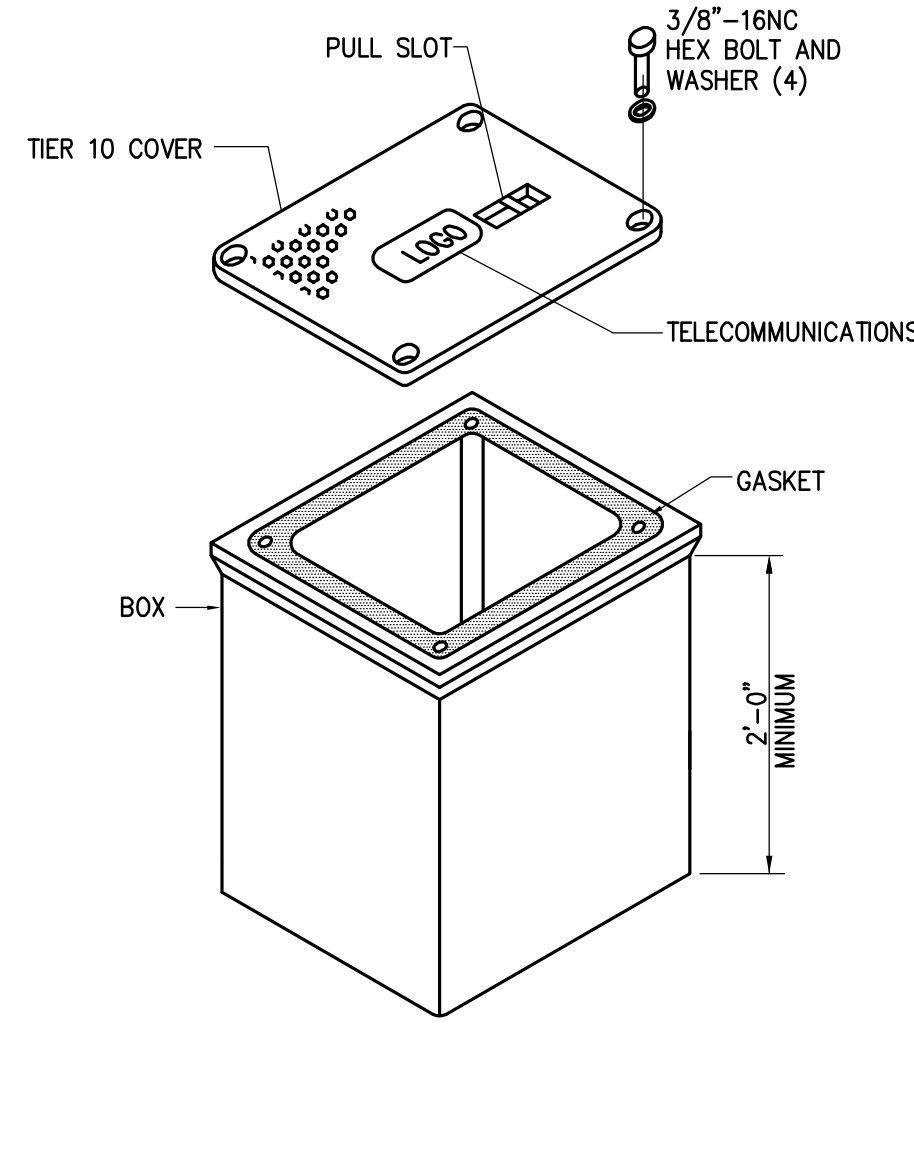


CONCRETE ENCASED DUCTBANK NOTES

1. PROVIDE BASE SPACERS AND INTERMEDIATE SPACERS AT 5'-0" ON CENTER.
2. PROVIDE WIRING IN CONDUITS AS INDICATED ON PLANS AND/OR ON FEEDER SCHEDULE AND PROVIDE PULL WIRE IN EACH SPARE CONDUIT.
3. MINIMUM 48" RADIUS FOR CONDUIT BENDS.
4. PROVIDE RED 6" WIDE CONDUCTIVE MARKING TAPE LABELED: 'DANGER-BURIED HIGH VOLTAGE CABLE', AND BLUE MARKING TAPE LABELED: 'COMMUNICATION CONDUITS' (INSTALL ABOVE THE ENTIRE LENGTH OF THE DUCTBANK).
5. ENCASE CONDUITS WITH 3" COVER, ALL SIDES 4000 PSI CONCRETE. THE SLOPE OF DUCTBANK SHALL BE LIMITED TO 5% MAXIMUM. DUCTBANK SHALL BE SLOPED TOWARDS MANHOLE FOR DRAINAGE.
6. REPLACE EXISTING SURFACE CONDITIONS IN KIND TO INCLUDE, BUT NOT LIMITED TO: CONCRETE, CRUSHED STONE, SELECT GRAVEL, ASPHALT, TOPSOIL, GRASS, ETC. REPLACE SELECT BACKFILL IN 6" LIFTS, COMPACT EACH PLACEMENT.
7. CONDUIT SIZE AND QUANTITY AS INDICATED ON PLAN(S) AND/OR ON SCHEDULES.

CONCRETE ENCASED DUCTBACK ASPHALT/GRAVEL DRIVE AREAS

E-2001 NOT TO SCALE



DATE	JULY 11, 2011
PROJ	19217
DWG	E-2001
SHEET	E-100-19217

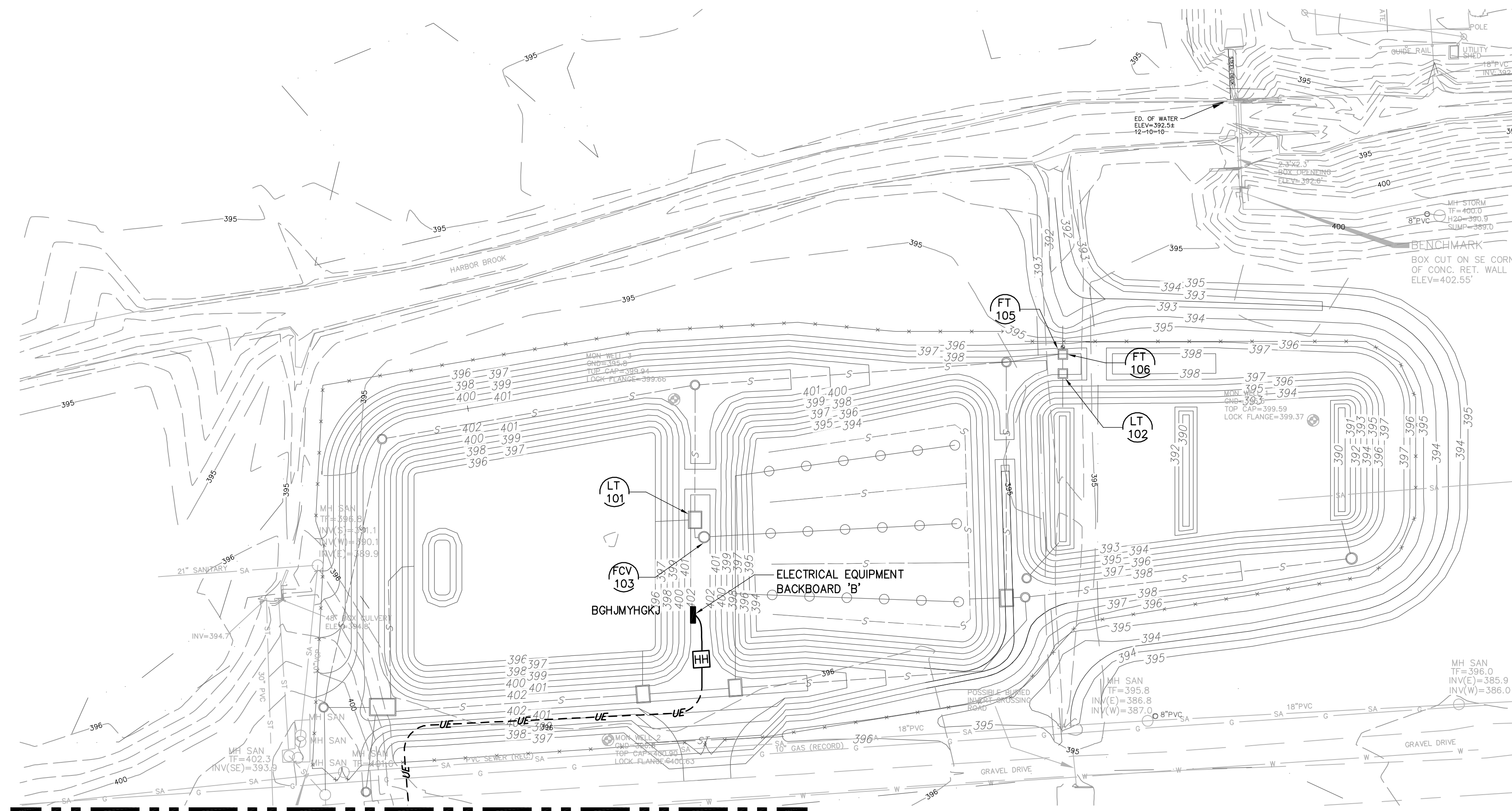
REGULATORY AGENCY REVIEW	MEH
50% SUBMISSION	KH MEH
REVISION	BY APVD
CHK	XXX
DR	XXX
APVD	XXX
MEH	MEH

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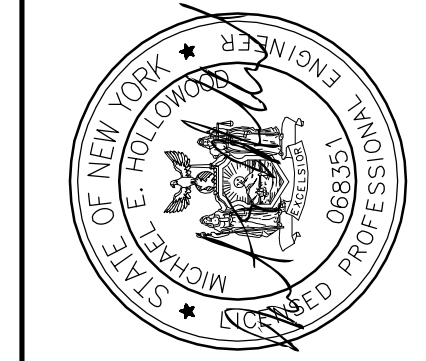
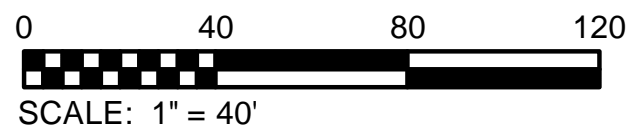
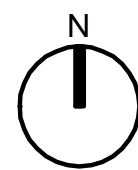


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DATE	JULY 11, 2011
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DWG	E-2001
SHEET	E-100-19217



MATCH LINE TO DWG. E-2001

ELECTRICAL SITE PLAN (CONTINUATION)
1" = 40'



REGULATORY AGENCY REVIEW	JRH	MEH	MEH	MEH		
50% SUBMISSION	KH	MEH	MEH	MEH		
REVISION						
DSGN	NO.	DATE	CHK	DR	APVD	MEH
	1	05/02/2011	XXX	XXX	XXX	XXX

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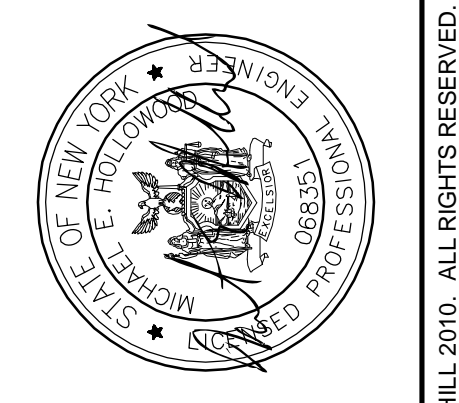
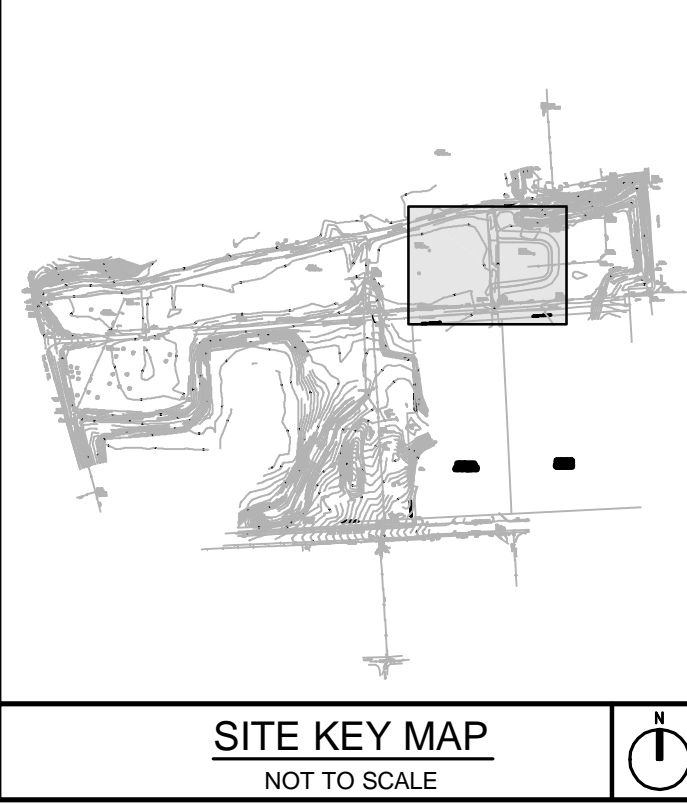
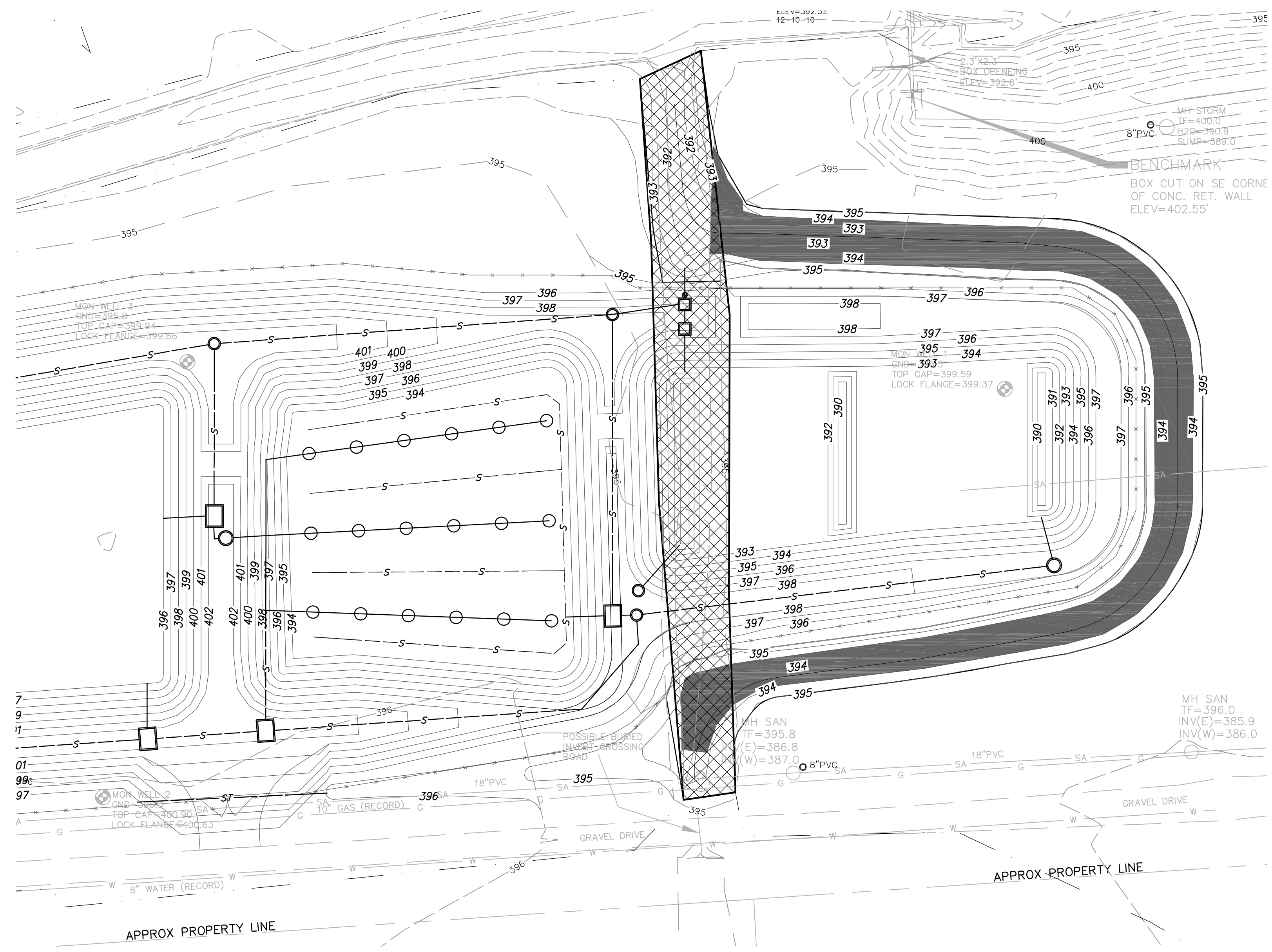
CIA

ELECTRICAL SITE PLAN (CONTINUATION)

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING.

DATE	JULY 11, 2011
PROJ	19217
DWG	E-2002
SHEET	006-E-2002-19217

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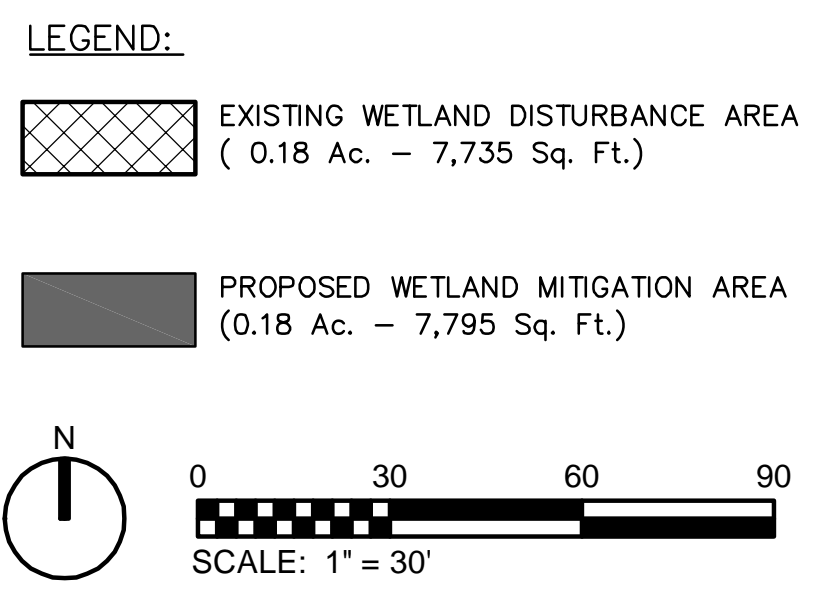
MEH	APVD	CHK	JRH	DR	CRE	RND
MEH	APVD	CHK	JRH	DR	CRE	RND
MEH	APVD	CHK	JRH	DR	CRE	RND
MEH	APVD	CHK	JRH	DR	CRE	RND
MEH	APVD	CHK	JRH	DR	CRE	RND
MEH	APVD	CHK	JRH	DR	CRE	RND

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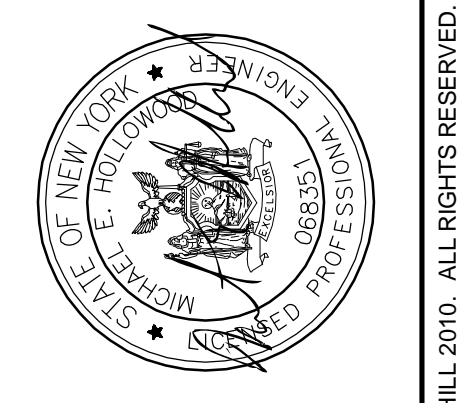
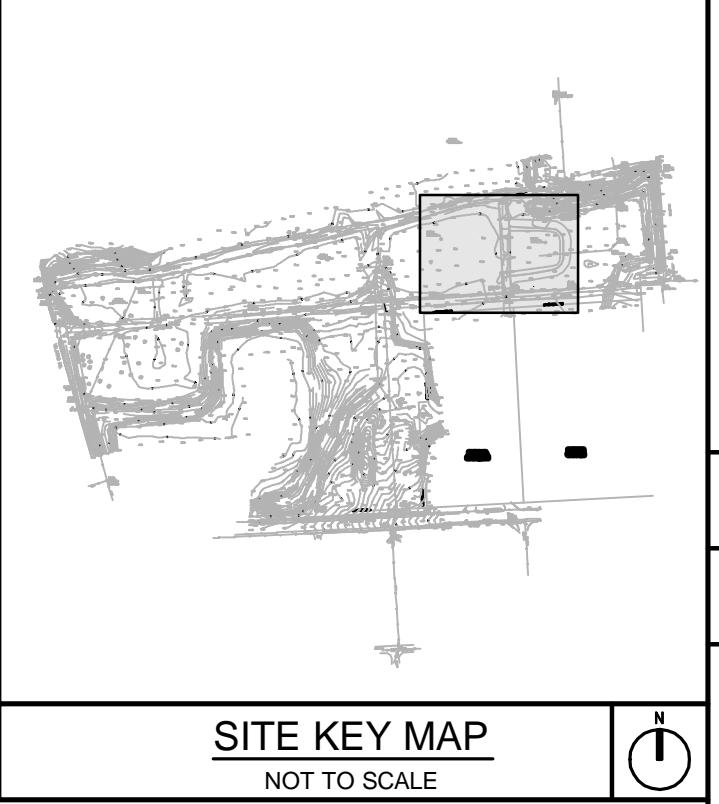
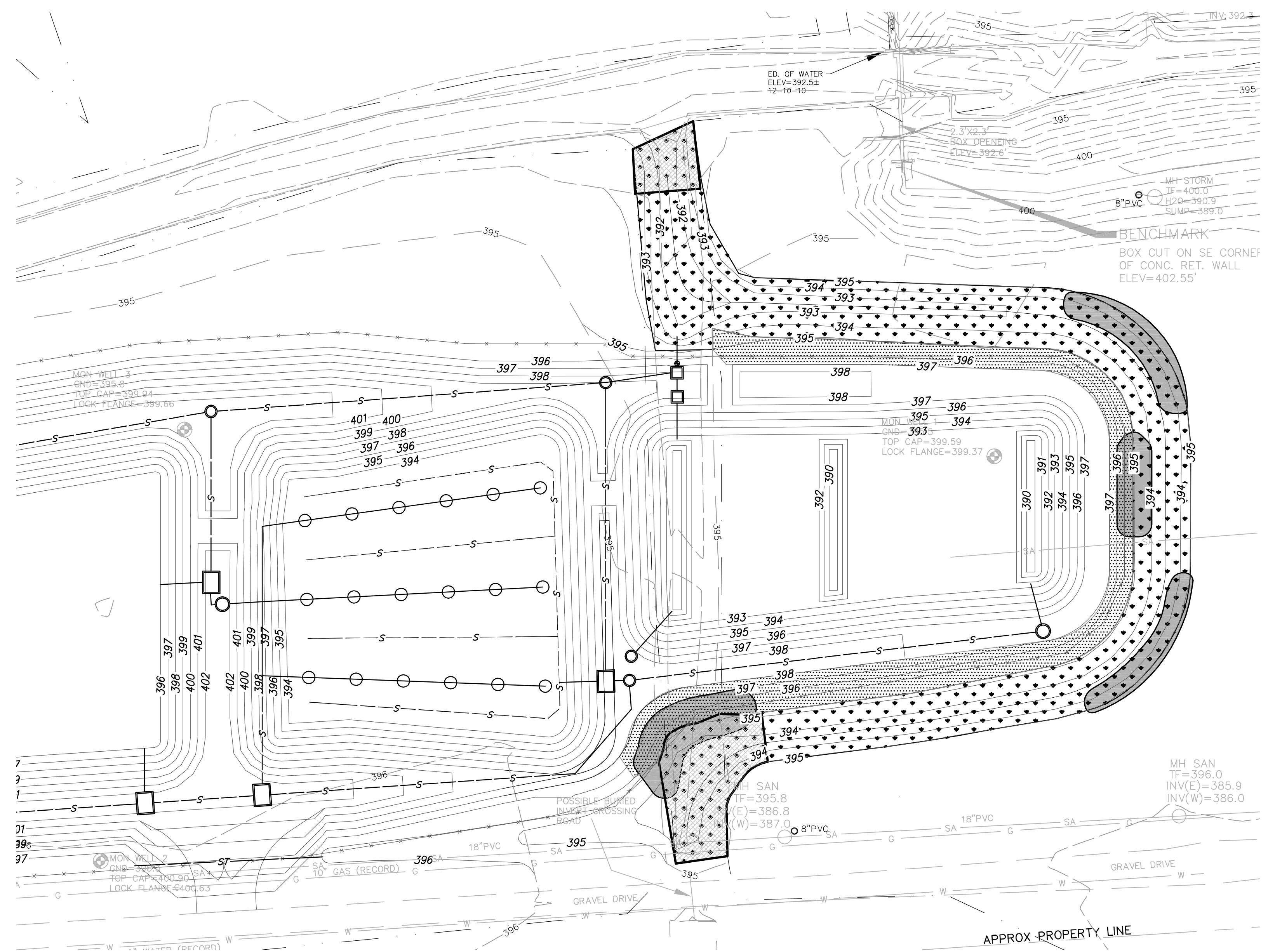
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 ONONDAGA COUNTY, NEW YORK

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WETLAND IMPACT MAP	
VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 11, 2011
PROJ	19217
DWG	WM-2001
SHEET	WM1-2001-19217



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MEH	XXX	APVD	MEH
BY	CHK	APVD	MEH
NO.	DATE	DR	XXX
1	05/02/2011	DR	XXX
2	07/22/2011	DR	XXX
REGULATORY AGENCY REVIEW		50% SUBMISSION	
JRH	MEH		
KH	MEH		

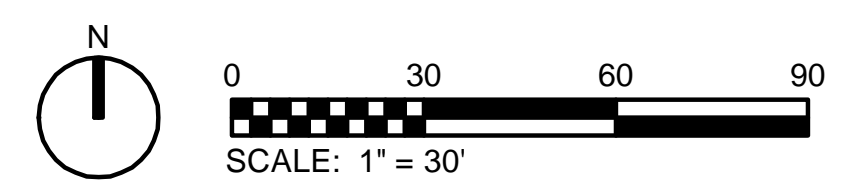
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WETLAND DITCH RELOCATION PLAN

- LEGEND:**
- LIVE STAKE PLANTINGS
 - UPLAND SEED MIX
(SEE MITIGATION NOTE 19 - SHEET WM-5001)
 - WETLAND SEED MIX
(SEE MITIGATION NOTE 20 - SHEET WM-5001)



VERIFY SCALE	
BAR IS ONE INCH ON ORIGINAL DRAWING.	
DATE	JULY 11, 2011
PROJ	19217
DWG	WM-2002
SHEET	WM1-2002-19217

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