BENCHMARK #1: 16 CUT NAIL 1' UP WEST SIDE TELEPHONE POLE 42/7 WEST SIDE ALLENFORD DRIVE @ STA. 13+17.04, 14.9' RIGHT\S.R. 7 BENCHMARK #2:

I FGFND

MONITORING WELL

		LEGEND		
0	EX. MONUMENT BOX		-G-	GAS LINE
59	PROP. MONUMENT BOX		©	GAS LINE MARKER
o .	EX. MONUMENT (FOUND)]	©	EX. GAS METER
• .	1/2" BAR W/ H&A CAP (SET)		&	EX. GAS VALVE
0	BENCHMARK (AS NOTED)		©	EX. GAS TANK
Ð	BOUNDARY LINE	, ,		EX. GAS WELL
Ę	CENTER LINE		-S-	SANITARY SEWER LINE
4_	LOT LINE		<u>\$</u>	SANITARY SEWER LINE MARKER
P	PROPERTY LINE	.'	0	EX. SANITARY M.H./ C.O.
R/W	RIGHT OF WAY			PROP. SANITARY M.H./ C.O.
()	RECORD BEARINGS & DIST.		. м.н.	MANHOLE
E.O.P.	EDGE OF PAVEMENT		C.O.	CLEAN OUT
F.F.	FINISH FLOOR		-ST-	STORM SEWER LINE
	EX. CONTOUR LINE		6 D	STORM SEWER LINE MARKER
	PROP. CONTOUR LINE		D	EX. STORM CATCH BASIN
-980-	CONTOUR LABEL			PROP. STORM CATCH BASIN
©	BOLLARD			EX. STORM CURB INLET
- 	FENCE (AS NOTED)			PROP. STORM CURB INLET
	GUARDRAIL		0	EX. STORM MANHOLE
9	MAILBOX			PROP. STORM MANHOLE
+++++	RAIL ROAD		0	EX. STORM DOWNSPOUT
	EX. SIGN			PROP. STORM DOWNSPOUT
•	PROP. SIGN	,	—	EX. STORM HEADWALL
£3	EX. DECIDUOUS TREE (AS NOTED)	,		PROP. STORM HEADWALL
∻	EX. EVERGREEN TREE (AS NOTED)		C.B.	CATCH BASIN
©	EX. BUSH (AS NOTED)		C:I.	CURB INLET
+	SOIL BORING		. T/G	TOP OF GRATE
Ţ	POLE ANCHOR		T/C	TOP OF COVER
Ф	GUY POLE	*	T/CU	TOP OF CURB
ø	GENERAL POLE		E.	FLOWLINE
Ø	FLAG POLE		Y.D.	YARD DRAIN
Ø	LIGHT POLE		D.S.	DOWN SPOUT
Ø	LIGHT & POWER POLE		-OT-	OVERHEAD TELEPHONE LINE
\$ \$	LIGHT, POWER, TELE POLE		-UT-	UNDERGROUND TELEPHONE LINE
$ ot\!\!\!/ \!$	LIGHT, POWER, TELE, TV POLE	,	₾	TELEPHONE LINE MARKER
ø	POWER POLE	·	, 0	EX. TELEPHONE BOX
Ø	TELEPHONE POLE		. ①	EX. TELEPHONE MANHOLE
Ø	TELEPHONE, LIGHT POLE		-OTV-	OVERHEAD TV LINE
Ø	TELEPHONE, POWER POLE	, `	-UTV-	UNDERGROUND TV LINE
8	EX. PULL BOX	,	⊕	TV LINE MARKER
Ø	EX. TRAFFIC CONTROL BOX		Ŧ	EX. TV/CABLE BOX
- ⊙ '	EX. POLE W/ PED. SIGNAL	4	ூ	EX. TV/CABLE MANHOLE
<u> </u>	EX. POLE W/ TRAFFIC SIGNAL	. '	· -W-	WATER LINE
-OE-	OVERHEAD ELECTRIC LINE		₩	WATER LINE MARKER
-UE-	UNDERGROUND ELECTRIC LINE		⊗	EX. WATER MANHOLE
€	ELECTRIC LINE MARKER		W	EX. WATER METER
E	EX. ELECTRIC BOX		×	EX. WATER VALVE
© .	EX. ELECTRIC MANHOLE		-	EX. WATER SPRINKLER
© '	EX. ELECTRIC METER		Ø	EX. FIRE HYDRANT
-FO-	FIBER OPTIC LINE		¥	PROP. FIRE HYDRANT
/A	FIDED ADTIC LINE MADVED			140147001140

FIBER OPTIC LINE MARKER

ELEV. = 1014.12

ELEV. =1011.52

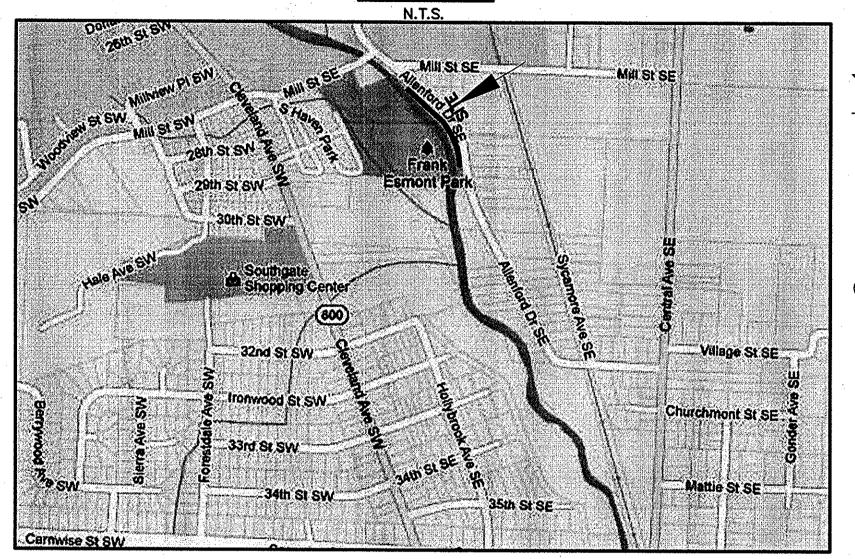
60d NAIL 1' UP WEST SIDE TELEPHONE POLE STA. 20+16.41,

22.81' RT.\ALLENFORD DRIVE

ALLENFORD DRIVE, S.E. STREAM BANK RESTORATION AND SEWER REPAIR **GP.1114**

LOCATED IN THE CANTON TOWNSHIP, STARK COUNTY, OHIO

DECEMBER 2014 **MCINITY MAP**



SITE ADDRESS- ALLENFORD DRIVE, SE, CANTON, OH

ENGINEER/SURVEYOR

HAMMONTREE & ASSOCIATES, LIMITED 5233 STONEHAM ROAD NORTH CANTON, OHIO 44720

ATTN.- THOMAS R. POWELL, P.E. KARL J. OPRISCH, P.E. (330) 499-8817 (330) 499-0149 PHN.-FAX-

OWNER

CITY OF CANTON 2436 30TH STREET N.E. CANTON, OH 44705

ATTN .- DANIEL J. MOEGLIN, PE PHN.- (330) 491-3100

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CROSS SECTIONS STA. 22+75 TO 23+00	20		

APPROVALS

CITY OF CANTON ENGINEER

OEPA GENERAL STORM WATER PERMIT NO: 3GC06259*AG

U.S. ARMY CORPS OF ENGINEERS
NATIONAL PERMIT NO.12-JANUARY 5, 2014

PILES AND ANCHORS

SLOPE STABILITY IMPROVEMENTS AND PILING SHALL CONSIST OF HELICAL ANCHORS AND PIERS OR OTHER INDUSTRY ACCEPTED TECHNIQUES DESIGNED AND INSTALLED BY THE CONTRACTOR. WHILE THE PLANS REFER TO HELICAL ANCHORS AND PILES, THE OWNER RECOGNIZES THAT BASED ON THE CONTRACTORS APPROVED SYSTEM THE TERM HELICAL MAY OR MAY NOT APPLY.

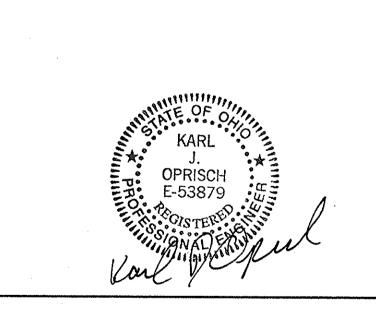
SHEETS ATTACHED TO THIS PLAN SET FOR HELICAL ANCHORS AND HELICAL PILES ARE INCLUDED AS A REPRESENTATIVE DESIGN. CONTRACTORS ARE TO BID THE PROJECT IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND WILL BE REQUIRED TO FOLLOW DESIGN AND SUBMITTAL REQUIREMENTS, REGARDLESS OF THE TYPE AND MANUFACTURE OF THE ANCHORS AND PILES.

UNDERGROUND UTILITIES CONTACT BOTH SERVICES CALL TWO WORKING DAYS 1-800-362-2764 (TOLL FREE) OHIO UTILITIES PROTECTION SERVICE NON-MEMBERS MUST BE CALLED DIRECTLY

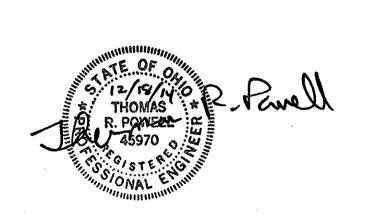
OIL & GAS PRODUCERS UNDERGROUND PROTECTION SERVICE CALL:1-800-925-0988

BEFORE YOU DIG

THE CONTRACTOR IS TO VERIFY THE LOCATION OF ALL UTILITIES PRIOR TO CONSTRUCTION.



18 152 2014



DATE <u>De cember 18,2014</u>

1 26

SCALES HORIZ: VERT: CONTOUR INT:

TREAM BANK EWER REPAIR

I. PRECONSTRUCTION INCIDENTALS

(A) PROJECT SPECIFICATIONS/REQUIREMENTS:

ALL WORK REQUIRED TO COMPLETE THIS IMPROVEMENT SHALL BE PERFORMED IN ACCORDANCE WITH SPECIFICATIONS/REQUIREMENTS OF THE CITY OF CANTON AND THE LATEST EDITION OF THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, EXCEPT AS HEREIN AMENDED. IN THE CASE OF A CONFLICT BETWEEN THE CITY OF CANTON AND THE OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS/REQUIREMENTS, THE CITY OF CANTON REQUIREMENTS WILL TAKE PRECEDENCE, UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.

THE DEVELOPER/CONTRACTOR SHALL COMPLY WITH THE CITY OF CANTON SUPPLEMENTAL SPECIFICATION 01-00 PROJECT DOCUMENTATION AND SUBMITTAL REQUIREMENTS.

(B) ADMINISTRATIVE REQUIREMENTS:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY COMPLYING WITH ALL THE ADMINISTRATIVE DUTIES HEREIN CONTAINED.

THE DEVELOPER/CONTRACTOR SHALL DESIGNATE TO THE CITY AN EMPLOYEE RESPONSIBLE FOR CORRESPONDENCE, NOTIFICATIONS, AND SUBMITTALS PERTINENT TO THE PROJECT.

(C) PRECONSTRUCTION MEETING:

A PRECONSTRUCTION MEETING WITH THE DEVELOPER, CONTRACTOR, REPRESENTATIVES OF ALL UTILITY COMPANIES, THE CITY OF CANTON ENGINEERING DEPARTMENT AND THE CITY OF CANTON WATER DEPARTMENT IS REQUIRED FOR THIS PROJECT PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY.

FOR SUBDIVISION DEVELOPMENTS, THE DEVELOPER SHALL CONTACT THE CITY ENGINEER'S OFFICE TO ARRANGE A MEETING DATE. THE DEVELOPER WILL CONTACT THE ABOVE AGENCIES TO CONFIRM THE MEETING DATE.

FOR CITY GENERAL PROJECTS, THE CITY ENGINEER WILL CONTACT THE CONTRACTOR TO ARRANGE A MEETING DATE. THE CITY ENGINEER WILL CONTACT THE ABOVE AGENCIES TO CONFIRM THE MEETING DATE.

IF THE PROPOSED PROJECT LAND—DISTURBANCE AREA IS ONE (1) OR MORE ACRES, A SEPARATE PRE—CONSTRUCTION MEETING IS ALSO REQUIRED. THIS MEETING SHALL OCCUR ON—SITE BETWEEN THE CONTRACTOR AND THE STARK SOIL & WATER CONSERVATION DISTRICT (SWCD). THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING THIS MEETING. NO LAND—DISTURBANCE ACTIVITIES SHALL START UNTIL SAID MEETING HAS OCCURRED AND APPROVAL HAS BEEN GRANTED BY STARK SWCD.

(D) PROJECT SAFETY:

THE CONTRACTOR SHALL MAINTAIN A SAFE WORKING ENVIRONMENT AT THE PROJECT SITE AT ALL TIMES. THE CONTRACTOR SHALL PROPERLY SUPPORT AND/OR MAINTAIN ALL EXCAVATIONS PER APPLICABLE SAFETY REQUIREMENTS AND COMPLY WITH ALL O.S.H.A. REGULATIONS. APPROPRIATE BARRICADES, WARNING LIGHTS, SIGNS, FENCING, ETC. SHALL BE ERECTED AROUND THE CONSTRUCTION AREA DURING ALL NON-WORKING HOURS TO ALERT PERSONS OF THE POTENTIAL DANGER ASSOCIATED WITH THE AREA UNDER CONSTRUCTION AS WELL AS TO PREVENT ACCESS BY UNAUTHORIZED PERSONNEL TO THE CONSTRUCTION SITE/AREA. THE CONTRACTOR IS RESPONSIBLE FOR ENSURING THE SAFETY OF THE GENERAL PUBLIC AS WELL AS ALL CONSTRUCTION PERSONNEL. PUBLIC STREETS SHALL BE KEPT CLEAN AND FREE OF DEBRIS (MUD, STONE, ETC.) AT ALL TIMES. THE CONTRACTOR SHALL ALERT ALL LOCAL EMERGENCY AGENCIES (FIRE, POLICE, AMBULANCE, ETC.) OF THE NATURE OF THE PROPOSED PROJECT PRIOR TO BEGINNING AND CONSTRUCTION ACTIVITY. ACCESS FOR EMERGENCY VEHICLES SHALL BE MAINTAINED AT ALL TIMES.

(E) UNDERGROUND UTILITIES:

THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ON THE PLANS WERE OBTAINED BY FIELD OBSERVATIONS, FROM EXISTING RECORDS, AND/OR FROM THE OWNERS OF THE RESPECTIVE UTILITIES. THE INFORMATION AS SHOWN IS BELIEVED TO BE CORRECT; HOWEVER, THE COMPLETENESS AND ACCURACY OF THIS INFORMATION CANNOT BE GUARANTEED. THE CONTRACTOR SHALL BE RESPONSIBLE TO CONTACT ALL THE VARIOUS UTILITY COMPANIES (PUBLIC AND PRIVATE) TO VERIFY THE EXISTENCE, LIMITS AND/OR LOCATION OF ANY UTILITIES WHICH MAY BE ALONG THE ROUTE OR WITHIN THE VICINITY OF

(F) UTILITY NOTIFICATION:

AT LEAST TWO WORKING DAYS PRIOR TO COMMENCING OPERATIONS ON THIS PROJECT, THE CONTRACTOR SHALL NOTIFY THE CITY ENGINEER, THE REGISTERED UTILITY PROTECTION AGENCY/SERVICE, AND THE OWNERS OF ANY OTHER UTILITIES (PUBLIC AND/OR PRIVATE) THAT MAY HAVE UTILITY LINES OR FACILITIES WITHIN THE VICINITY OF THIS PROJECT BUT WHO ARE NOT MEMBERS OF THE REGISTERED UTILITY PROTECTION SERVICE. THE OWNERS OF ANY UNDERGROUND UTILITY FACILITY SHALL, WITHIN 48 HOURS AFTER NOTICE IS RECEIVED, EXCLUDING SATURDAYS, SUNDAYS AND OTHER LEGAL HOLIDAYS; STAKE, MARK OR OTHERWISE DESIGNATE THE EXISTENCE AND/OR LOCATION OF THE UNDERGROUND UTILITY FACILITIES IN THE CONSTRUCTION AREA IN SUCH A MANNER AS TO INDICATE THEIR COURSE TOGETHER WITH THE APPROXIMATE DEPTH AT WHICH THEY WERE INSTALLED. THE MARKING AND/OR LOCATING SHALL BE COORDINATED TO STAY APPROXIMATELY TWO WORKING DAYS AHEAD OF THE PLANNED CONSTRUCTION.

OHIO UTILITIES PROTECTION SERVICE: 1-800-362-2764 (CONTACT NON-MEMBERS DIRECTLY).

THE PRIMARY UTILITIES WITHIN THE CITY OF CANTON AREA:

NATURAL GAS DIST./TRANS
DOMINION EAST OHIO GAS
320 SPRINGSIDE DR.
AKRON, OHIO 44333
330-664-2409
ATTN: MARY LONG
RELOCATION@DOM.COM
EMERGENCY NO.
1-800-521-4400

COMMUNICATIONS CABLE TIME WARNER CABLE 5520 WHIPPLE AVE N.W. NORTH CANTON, OHIO 44720 330-494-9200 ext. 330-555-3003 ATTN: RON FERDINAND

SANITARY SEWER
CITY ENGINEER'S OFFICE
2436-30TH ST. N.E.
CANTON, OHIO 44705
330-489-3381
ATTN: DAN MOEGLIN

TRAFFIC INTERCONNECT CITY ENGINEER'S OFFICE 2436-30TH ST. N.E. CANTON, OHIO 44705 330-489-3381 ATTN: NICK LOUKAS

CANTON TOWNSHIP TOWNSHIP OFFICE 4711 CENTRAL AVE. S.E. CANTON, OHIO 44707 330–484–2501 ATTN: CHRIS NICHOLS TELEPHONE
AT&T
50 WEST BOWER STREET
AKRON, OHIO 44308
330–384–8057
ATTN: JIM BUETEL

EMERGENCY NO. - 24 HRS. 1-800-572-4545 OPTION#4

ELECTRIC
AMERICAN ELECTRIC POWER
301 CLEVELAND AVE. S.W.
P.O. BOX 24400
CANTON, OHIO 44701-4400
330-438-7762
ATTN: KEN HUOT
EMERGENCY No.
1-800-672-2017

WATER
WATER DEPARTMENT
2664 HARRISBURG RD. N.E.
CANTON, OHIO 44708
330-489-3310
ATTN: LEWI MILLER

STARK COUNTY ENGINEER
COUNTY ENGINEER'S OFFICE
5165 SOUTHWAY ST. S.W.
CANTON, OHIO 44706
330-477-6781
ATTN: KEITH BENNETT

THE CITY ENGINEER'S OFFICE IS TO BE CONTACTED DIRECTLY FOR SANITARY AND STORM SEWER AND TRAFFIC INTERCONNECT FACILITIES LOCATION: 330-489-3381.

(G) PROPOSED PUBLIC UTILITY LOCATION IN PROPOSED SUBDIVISIONS:

THE DEVELOPER/CONTRACTOR AND REPRESENTATIVES OF THE CITY OF CANTON SHALL MEET WITH REPRESENTATIVES OF THE VARIOUS PUBLIC SUILITY COMPANIES (EAST OFFICE) TO DETERMINE THE APPROPRIATE LOCATION FOR THESE UTILITIES WITHIN THE PROJECT SITE. ONCE AN AGREEMENT HAS BEEN REACHED, IT SHALL BE THE RESEONSIBILITY OF THE UTILITY OWNERS TO INSPECT THE INSTALLATION OF THE VARIOUS PUBLIC UTILITY LINES WITHIN THE ROAD RIGHT—OF—WAY TO ENSURE THAT CONFLICTS ARE AVOIDED AND ADEQUATE CLEARANCE AND OFFSETS WITH OTHER UTILITIES ARE MAINTAINED. UTILITY COMPANIES SHALL SUBMIT RLANS INDICATING THEIR PROPOSED IMPROVEMENTS AND FACILITIES TO THE CITY OF CANTON FOR APPROVAL. THE SITE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE INSTALLATION OF THE OTHER UTILITIES NOT OWNED BY THE CITY.

(H) EXPLORATORY BORINGS:

EXPLORATORY SOIL BORING INFORMATION IS NOT THE RESPONSIBILITY OF THE CITY OF CANTON. IT IS THE DEVELOPER/CONTRACTOR RESPONSIBILITY TO REVIEW ANY AND ALL INFORMATION AVAILABLE. IF DEVELOPER/CONTRACTOR REQUESTS TO DRILL AND OR EXCAVATE WITHIN THE PROJECT LIMITS, THE DEVELOPER/CONTRACTOR SHALL NOTITY THE CITY ENGINEER AT LEAST 3 WORKING DAYS PRIOR TO THIS WORK. THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UTILITY NOTIFICATION, AS SPECIFIED, ALL TRAFFIC CONTROL, PREMIUM BACKFILL, AND COMPACTION AND RESTORATION, AS NECESSARY. SOIL BORING SHALL BE INCLUDED IN THE BID BOOK.

(I) CONTINGENCY QUANTITIES:

WHEN SPECIFIED ON PLANS OR SPECIFICATIONS, CONTINGENCY QUANTITIES ARE TO BE PERFORMED ONLY UNDER DIRECTION OF THE CITY ENGINEER. THE DEVELOPER/CONTRACTOR SHALL NOT ORDER ANY CONTINGENCY MATERIAL OR PERFORM ANY WORK UNTIL DIRECTED BY THE ENGINEER. THE ACTUAL WORK LOCATION AND QUANTITIES FOR SUCH ITEMS SHALL BE DOCUMENTED BY THE DEVELOPER/CONTRACTOR AND THE FINGINFER.

II. CONSTRUCTION INCIDENTALS

(A) PLAN DISCREPANCIES:

ANY DISCREPANCIES FROM THE PLAN INFORMATION SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER SO THAT THE APPROPRIATE ADJUSTMENTS IN ALIGNMENT AND/OR GRADE MAY BE MADE PRIOR TO THE START OF CONSTRUCTION OR THE CONTINUATION OF THE SAME.

FAILURE BY THE DEVELOPER/CONTRACTOR TO VERIFY AND/OR DETERMINE EXISTING INFORMATION AS INDICATED WILL RESULT IN THE CONTRACTOR BEING RESPONSIBLE FOR ANY CHANGES NECESSARY TO COMPLETE THE WORK SPECIFIED WITHOUT ADDITIONAL COMPENSATION.

(B) VERIFICATION OF UNDERGROUND UTILITIES:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE EXISTENCE AS WELL AS THE ACTUAL LOCATION, ALIGNMENT, AND ELEVATIONS OF ALL EXISTING UTILITIES/FACILITIES WITHIN AND/OR ADJACENT TO THE GENERAL LIMITS OF THESE IMPROVEMENTS INCLUDING WATERLINES, SANITARY AND STORM SEWERS, GAS LINES, COMMUNICATION LINES/BANKS, ELECTRIC LINES, ETC. THIS MAY REQUIRE EXPLORATORY EXCAVATIONS TO BE PERFORMED BY THE CONTRACTOR FOR WHICH HE WILL NOT BE REIMBURSED. THE CONTRACTOR SHALL NOT ASSUME THAT EXISTING UTILITIES/CONDUITS WERE INSTALLED AT TYPICAL/STANDARD DEPTHS OR AT UNIFORM SLOPES/GRADES/DEPTHS BETWEEN ACCESS POINTS (CATCH BASINS, MANHOLES, JUNCTION CHAMBERS, ETC.)

WHERE PLANS PROVIDE FOR A PROPOSED CONDUIT TO BE CONNECTED TO, OR CROSS OVER OR UNDER AN EXISTING SEWER OR UNDERGROUND UTILITY, THE CONTRACTOR SHALL LOCATE THE EXISTING PIPES OR UTILITIES BOTH AS TO LINE AND GRADE BEFORE STARTING TO INSTALL THE PROPOSED CONDUIT.

(C) PROTECTION OF UTILITIES:

THE DEVELOPER/CONTRACTOR SHALL TAKE ALL PRECAUTIONS NECESSARY TO PROTECT AND SUPPORT EXISTING UTILITIES ENCOUNTERED DURING THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS AS APPROVED BY THE OWNERS OF THE UTILITY AND THE CITY ENGINEER.

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO CLOSELY COORDINATE THEIR WORK WITH ALL UTILITY COMPANIES; ANY POTENTIAL DELAYS WILL NOT BE THE RESPONSIBILITY OF THE CITY.

THE CONTRACTOR SHOULD EXPECT AT A MINIMUM ONE SANITARY SEWER LATERAL, ONE ROOF DRAIN, ONE WATER SERVICE, AND ONE GAS SERVICE FOR EACH LOT. ANY OF THE ABOVE UTILITIES DAMAGED DUE TO THE CONTRACTOR'S WORK SHALL BE RESTORED TO THE UTILITY OWNER'S SATISFACTION AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS.

(D) MAINTENANCE OF UTILITY SERVICES:

THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN UTILITY SERVICES AT ALL TIMES.

WATER SERVICE MAY BE INTERRUPTED FOR LIMITED PERIODS (4 HOURS MAXIMUM) DURING CONNECTION BETWEEN EXISTING WATER LINES AND RELOCATED/NEW WATER MAINS WHICH CANNOT BE COMPLETED OTHERWISE. NO SHUT DOWN SHALL OCCUR WITHOUT WRITTEN PERMISSION OF THE CITY OF CANTON WATER DEPARTMENT. PROPERTY OWNERS AFFECTED BY APPROVED INTERRUPTED SERVICE SHALL BE NOTIFIED 48 HOURS IN ADVANCE BY THE CONTRACTOR.

STORM SEWER AND SANITARY SEWER SERVICES SHALL BE MAINTAINED WITHOUT INTERRUPTION, UNLESS APPROVED BY THE CITY ENGINEER.

IN THE EVENT THAT CONSTRUCTION DISRUPTS THE FLOW OF A SANITARY SEWER, THE CONTRACTOR SHALL IMMEDIATELY RECTIFY THE DISRUPTED SEWER BY EITHER TEMPORARILY FLUMING WITH MATERIALS ACCEPTABLE TO THE ENGINEER OR BYPASSING WITH PUMPS. COST OF MAINTAINING AND REPAIR OF SANITARY SEWERS DISTURBED BY CONSTRUCTION SHALL BE AT THE CONTRACTOR'S EXPENSE, UNLESS OTHERWISE NOTED IN THE PLANS OR SPECIFICATIONS.

(F) OPEN TRENCH CONSTRUCTION:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EXCAVATION/TRENCHING PRACTICES FOR THE PROPOSED IMPROVEMENT, OR AS FURTHER SHOWN ON THE PLANS AND SPECIFICATIONS.

THE DEVELOPER/CONTRACTOR SHALL FOLLOW ALL APPLICABLE LOCAL AND STATE SAFETY REGULATIONS, INCLUDING CODE OF FEDERAL REGULATIONS, PART 1926 (SAFETY AND HEALTH REGULATIONS FOR CONSTRUCTION), SUBPART P (EXCAVATIONS), FOR ALL APPLICABLE REQUIREMENTS AND RESPONSIBILITIES.

PRIOR TO COMMENCING CONSTRUCTION, THE DEVELOPER/CONTRACTOR SHALL NOTIFY THE CITY ENGINEER OF THE PROJECT'S ASSIGNED "COMPETENT PERSON" IN OSHA EXCAVATION STANDARDS.

(G) TRENCH CLOSING AND TEMPORARY TOPPING:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE TO DETERMINE THE NECESSARY LEVELS OF PROTECTION AND SAFEGUARDING OF ALL OPEN TRENCHES, WHEN WORK IS EITHER COMPLETED AT THE END OF THE DAY OR SUSPENDED FOR ANY OTHER REASON.

FOR TRENCH SURFACE REQUIREMENTS, REFER TO NOTE 4 ON CITY STANDARD DRAWING NO. 19.

(H) DUST CONTROL:

THE DEVELOPER/CONTRACTOR SHALL FURNISH AND APPLY WATER AND CALCIUM CHLORIDE FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. SUFFICIENT QUANTITIES OF CALCIUM CHLORIDE SHALL BE STORED ON THE JOB SITE AT ALL TIMES TO BE USED FOR DUST CONTROL.

(I) TESTING OF UTILITIES:

ALL NEWLY CONSTRUCTED WATERLINES AND SANITARY SEWERS (INCLUDING LATERALS) MUST BE INSTALLED AND TESTED IN ACCORDANCE WITH APPLICABLE STANDARDS (AWWA, ETC.) PER THE OHIO ENVIRONMENTAL PROTECTION AGENCY, AND PER THE REQUIREMENTS OF THE CITY OF CANTON WATER AND ENGINEERING DEPARTMENTS.

SANITARY SEWERS SHALL BE TESTED AND TELEVISED BY DEVELOPER/CONTRACTOR IN ACCORDANCE WITH THE CITY OF CANTON'S SUPPLEMENTAL SPECIFICATIONS:

02-00 TESTING FOR EXCESSIVE DEFLECTION FOR NON-PRESSURE THERMOPLASTIC SEWER PIPE.

03-00 TESTING PRACTICES FOR LOW-PRESSURE AIR TESTING
OF INSTALLED, NON-PRESURE, THERMOPLASTIC SEWER
PIPE.

04-01 STANDARD TEST METHOD FOR CONCRETE SEWER MANHOLES BY THE NEGATIVE AIR PRESSURE TEST.

SANITARY AND STORM SEWERS CONSTRUCTED WITH THIS PROJECT SHALL BE TELEVISED BY THE DEVELOPER/CONTRACTOR ONLY WHEN A PAY ITEM IS PROVIDED IN ACCORDANCE WITH CITY OF CANTON'S SUPPLEMENTAL SPECIFICATION:

05-01 SEWER TELEVISION INSPECTION AND DOCUMENTATION PROCEDURE.

© HAMMONTREE & ASSOC ENGINEERS, PLANNERS, 90 PLANNERS, 90

BY: DATE: DESC::

FLD BK: 578
BK PG: 44
CRW CHF: MIZ
CPYRGHT: 2012
TAB: NOTES

REV. REV. REV. REV.

DESN BY: IR
DRWN BY: CL
CHKD BY: IR
RVWD BY: IR
DATE: 07/03/

SCALES HORIZ: VERT: CONTOUR INT:

NOTES
ALLENFORD DRIVE STREAM BANK
RESTORATION AND SEWER REPAIR
FOR:CITY OF CANTON
LOCATED IN CANTON TOWNSHIP
STARK COUNTY, OHIO



II. CONSTRUCTION INCIDENTALS (continued)

(J) PRESERVATION AND RESTORATION OF DISTURBED FEATURES:

EXISTING DRIVES, BERMS, LAWNS, PAVEMENTS, CURBS, SIDEWALKS, SIGNS, MAILBOXES, FENCES, RETAINING WALLS, LANDSCAPING ITEMS, OR OTHER APPURTENANCES DISTURBED DURING CONSTRUCTION BUT NOT SPECIFICALLY DESIGNATED FOR REMOVAL/REPLACEMENT SHALL BE RESTORED BY THE DEVELOPER/CONTRACTOR AT HIS EXPENSE TO A CONDITION EQUAL TO OR BETTER THAN THAT WHICH EXISTED PRIOR TO DISTURBANCE AND TO THE COMPLETE SATISFACTION OF THE CITY FNGINFFR.

RESTORATION OF EXISTING ROADWAYS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY, TOWNSHIP, COUNTY, AND/OR OTHER AGENCIES HAVING AUTHORITY. COST FOR THE RESTORATION OF THESE ITEMS SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR, UNLESS OTHERWISE SPECIFIED IN THE PLANS OR SPECIFICATIONS. NO PUBLIC ROADWAY SHALL BE DISTURBED WITHOUT PRIOR WRITTEN APPROVAL FROM THE GOVERNING AGENCY AND ACQUISITION OF NECESSARY PERMITS.

(K) SALVAGED CASTINGS:

WHEN DIRECTED BY THE CITY ENGINEER, ALL METAL CASTINGS SHALL BE CAREFULLY REMOVED AND STORED ON SITE OR DELIVERED TO A LOCATION DESIGNATED BY THE CITY ENGINEER.

(L) PLUG EXISTING CONDUIT:

THIS ITEM SHALL CONSIST OF THE CONSTRUCTION OF BULKHEADS IN AN EXISTING CONDUIT TO BE ABANDONED

BULKHEADS SHALL CONSIST OF BRICK AND/OR CONCRETE MASONRY WITH A MINIMUM THICKNESS OF 12 INCHES.

PAYMENT FOR PLUGGING OF EXISTING CONDUIT FOR ABANDONMENT SHALL BE INCLUDED IN THE UNIT BID OF THE VARIOUS ITEMS OF THE PROJECT.

(M) CONSTRUCTION LAYOUT:

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION LAYOUT UTILIZING PERTINENT PLAN DATA. THE CITY ENGINEER WILL NOT BE RESPONSIBLE FOR STAKING HORIZONTAL OR VERTICAL CONTROL. CONSTRUCTION LAYOUT SHALL BE IN ACCORDANCE WITH ODOT 623 CONSTRUCTION LAYOUT STAKES.

AT THE CITY ENGINEER'S REQUEST, THE CONTRACTOR SHALL MAKE AVAILABLE ALL SURVEY FIELD NOTES FOR REVIEW.

(N) EXISTING MONUMENTATION:

THE CONTRACTOR SHALL PRESERVE ALL CORNERSTONES, IRON PINS, CONCRETE MONUMENTS AND/OR ANY TYPE OF LAND MONUMENT. THE CONTRACTOR SHALL HAVE ALL MONUMENTS IN THE PROXIMITY OF THE WORK REFERENCED. THE CONTRACTOR SHALL REPLACE/RESET ANY DISTURBED OR DAMAGED MONUMENTS AND SHALL FURNISH A CERTIFICATION BY A REGISTERED SURVEYOR THAT THE MONUMENTS HAVE BEEN RESTORED.

(O) ELEVATION DATUM:

ALL ELEVATIONS ARE BASED ON THE NAVD 1988 DATUM.

(P) DEWATERING OPERATIONS:

WHEN DEEMED NECESSARY, THE DEVELOPER/CONTRACTOR MAY INSTALL DEWATERING EQUIPMENT PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.

THE PROPOSED LOCATION OF WELL POINTS, HEADER PIPE, ELECTRICAL DISTRIBUTION, GENERATORS AND DISCHARGE PIPES, ETC. SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR.

THE DEVELOPER/CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS FOR THE INSTALLATION AND SUBSEQUENT REMOVAL OF DEWATERING EQUIPMENT AS WELL AS PROPER WATER DISCHARGE PROCEDURES AS MAY BE REQUIRED PER STATE AND LOCAL GOVERNING AGENCIES.

INSTALLATION OF ALL ELECTRICAL EQUIPMENT, INCLUDING GROUNDING AND PROTECTION SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR.

DEVELOPER/CONTRACTOR SHALL PROVIDE ALL COMBUSTIBLE ENGINE DRIVEN GENERATORS WITH "HOSPITAL GRADE" MUFFLERS. MUFFLERS SHALL BE RATED, AT A MAXIMUM OF 67 dB AT 23 FEET AWAY RUNNING FULL LOAD.

(Q) INSPECTION:

FOLLOWING THE PRE—CONSTRUCTION MEETING(S) AND ESTABLISHMENT OF AN APPROVED SCHEDULE, THE CONTRACTOR SHALL GIVE A MINIMUM 48 HOUR NOTICE BEFORE STARTING ANY WORK ON THIS PROJECT AND SHALL KEEP THE CITY INFORMED OF HIS/HER CONSTRUCTION SCHEDULE. ALL WORK REQUIRED FOR THIS IMPROVEMENT SHALL BE SUBJECT TO INSPECTION BY THE CITY OF CANTON OR THEIR DESIGNATED REPRESENTATIVE. NO WORK SHALL BE PERFORMED WITHOUT AN AUTHORIZED INSPECTOR PRESENT, UNLESS OTHERWISE APPROVED.

R) FIELD OFFICE.

IF A PAY ITEM IS PROVIDED, THE DEVELOPER/CONTRACTOR SHALL PROVIDE A FIELD OFFICE IN ACCORDANCE WITH ODOT 619. THE FIELD OFFICE SHALL BE TYPE 'A', UNLESS OTHERWISE SPECIFIED.

III. EARTHWORK / SITE WORK

(A) EASEMENTS AND RIGHT-OF WAY:

THE DEVELOPER/CONTRACTOR SHALL STAY WITHIN THE DESIGNATED PROPERTIES, EASEMENTS, AND/OR RIGHT—OF—WAY PROVIDED FOR THE PROJECT AT ALL TIMES. NO MATERIAL SHALL BE STORED NOR ANY WORK PERFORMED ON PRIVATE PROPERTY UNLESS OTHERWISE APPROVED. DISTURBANCE OF EXISTING FEATURES AND/OR IMPROVEMENTS SHALL BE KEPT TO AN ABSOLUTE MINIMUM AND AS APPROVED BY THE CITY ENGINEER/PROPERTY OWNER.

(B) SUITABILITY OF SITE:

THE CITY OF CANTON SHALL NOT BE RESPONSIBLE FOR THE TYPE AND/OR SUITABILITY OF THE MATERIAL UNDERLYING THE PROJECT SITE. THE DEVELOPER/CONTRACTOR MUST APPRAISE THEMSELVES OF ANY EXISTING SITE CONDITIONS WHICH MAY AFFECT THEIR BID OR THE PERFORMANCE OF THE REQUIRED WORK. THE DEVELOPER/CONTRACTOR SHALL PERFORM ANY INVESTIGATIONS AND/OR TESTING NECESSARY TO ADEQUATELY DETERMINE/ESTIMATE TO THEIR SATISFACTION ALL SITE CONDITIONS WHICH COULD AFFECT THE PERFORMANCE OF THE PROPOSED IMPROVEMENTS. THIS COULD INCLUDE, BUT NOT BE LIMITED TO, UNSUITABLE AND/OR UNSTABLE SOIL/SUBSURFACE CONDITIONS, ROCK, WATER (PERCHED OR FREE), SPRINGS, ETC.

REFER TO CITY STANDARD DRAWING NO. 19 FOR ADDITIONAL DETAILS.

(C) REMOVAL/REPLACEMENT OF UNSUITABLE MATERIAL:

THE DEVELOPER/CONTRACTOR SHALL UNDERCUT AND REPLACE UNSUITABLE MATERIAL ENCOUNTERED DURING INSTALLATION OF THE PROPOSED UTILITIES AND ROADWAY IN ACCORDANCE WITH CITY STANDARD DRAWING NO. 19.

IV. ROADWAY / DRIVE APPROACHES / WALK / CURB

(A) PAVEMENT STANDARDS:

PAVEMENTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE CITY STANDARD DRAWINGS AND SPECIFICATIONS (LISTED BELOW) AND ODOT SPECIFICATIONS, UNLESS SPECIFIED OTHERWISE ON THE PLANS.

CITY STANDARD DRAWING NO.:

DRIVEWAYS, CURBS, AND PAVEMENT

27 "DRIVE APPROACH WITH LAWNSTRIP BETWEEN SIDEWALK & CURB"

- 28 "DRIVE APPROACH WITH SIDEWALK AGAINST CURB"
- 29 "COMBINED CURB & WALK"
- 30 "CONCRETE CURB AND COMBINED CURB & GUTTER"
- 31 "BRICK PAVEMENT REPAIR & REPLACEMENT OVER TRENCHES/ALONG CURB"
- 32 "TYPICAL SECTION LOCAL STREET"
 33 "WHEEL CHAIR RAMP"
- 34 "PAVEMENT TRANSITION, BRICK-ASPHALT"

CITY STREETSCAPE

- 40 "TYPICAL STREETSCAPE CORRIDOR"
- 41 "ROADWAY BRICK & CROSSWALK PAVEMENT DETAILS"
 42 "STREETSCAPE CONCRETE WALK PAVEMENT DETAILS"
- 44 "CONCRETE WALK OVER VAULT CONSTRUCTION DETAILS"
- 45 "BRICK WALK OVER VAULT CONSTRUCTION DETAILS"

CITY SPECIFICATIONS:

"CITY OF CANTON SPECIFICATIONS FOR THE CONSTRUCTION, REPAIR, AND REPLACEMENT OF SIDEWALKS, CURBS, AND DRIVEWAYS"

(B) RESTRICTED WORK SCHEDULE:

NO CONCRETE FINISH WORK OR PERMANENT ASPHALT SHALL BE PLACED FROM NOVEMBER 15TH TO APRIL 15TH UNLESS WRITTEN APPROVAL IS GRANTED BY THE CITY ENGINEER.

(C) ASPHALT/CONCRETE:

IT SHALL BE THE RESPONSIBILITY OF THE DEVELOPER/CONTRACTOR TO NOTIFY THE ENGINEER 48 HOURS IN ADVANCE OF BEGINNING WORK WHICH REQUIRES COMPACTION TESTING AND/OR PRE-POUR INSPECTION PRIOR TO PLACEMENT OF ASPHALT OR CONCRETE. WORK SHALL NOT PROCEED UNTIL TESTING AND/OR INSPECTION HAS BEEN COMPLETED AND APPROVED BY THE CITY ENGINEER.

V. SANITARY SEWERS / STORM SEWERS

(A) SEWER STANDARDS:

ALL SANITARY/STORM SEWER CONDUITS AND APPURTENANCES SHALL BE CONSTRUCTED ACCORDING TO APPLICABLE CITY STANDARD DRAWINGS AND SPECIFICATIONS (LISTED BELOW) AND ODOT SPECIFICATIONS EFFECTIVE AT THE TIME OF CONSTRUCTION. UNLESS SPECIFIED OTHERWISE ON THE PLANS.

CITY STANDARD DRAWING NO.:

CATCH BASINS

- 1 "CURB INLET CATCH BASIN"
- 2 "CURB INLET WATER QUALITY CATCH BASIN"
- 3 "HILLSIDE CURB INLET CATCH BASIN"
- 4 "SQUARE-TOP CATCH BASIN"
- 5 "SQUARE-TOP WATER QUALITY CATCH BASIN"

MANHOLES

- 10 "PRECAST STORM OR SANITARY MANHOLE"
- 11 "OUTSIDE DROP CONNECTION FOR SANITARY MANHOLE"
 12 "MANHOLE COVER"
- 12 "MANHOLE COVER"
- CONDUITS AND TRENCHES
- 18 "HOUSE CONNECTION STACK"
 19 "UTILITY TRENCH REQUIREMENTS"
- 20 "SANITARY SEWERS AND LATERALS"
- 21 "CONCRETE ENCASEMENT DETAIL"
- 22 "DOWNSPOUT OUTLET (NON-CURBED STREET)
- 23 "DOWNSPOUT OUTLET (CURBED STREET)
 24 "GROUNDWATER DRAIN LINE CONNECTION"
- DRIVEWAYS, CURBS, AND PAVEMENT

VI. STORM WATER POLLUTION PREVENTION:

(A) FOR PROJECTS ONE (1) ACRE OR MORE OF TOTAL LAND-DISTURBANCE:

THE OWNER/DEVELOPER SHALL APPLY FOR AND OBTAIN AN OHIO EPA NPDES PERMIT FOR STORM WATER DISCHARGES ASSOCIATED WITH CONSTRUCTION ACTIVITY. SAID PERMIT REQUIRES THE PREPARATION AND IMPLEMENTATION OF A STORM WATER POLLUTION PREVENTION PLAN (SWP3) TO ADDRESS CONSTRUCTION SITE STORM WATER RUNOFF AS WELL AS POST—CONSTRUCTION STORM WATER MANAGEMENT. THE SWP3 MUST BE REVIEWED AND APPROVED BY THE STARK COUNTY SOIL & WATER CONSERVATION DISTRICT (SWCD).

THE OWNER/DEVELOPER AND HIS REPRESENTATIVES SHALL COMPLY WITH ALL APPLICABLE REQUIREMENTS OF THE PERMIT AS WELL AS THE SWP3. ALL ACTIVITIES AND PRACTICES SHALL ALSO COMPLY WITH THE CURRENT EDITIONS OF THE CITY OF CANTON STORM WATER MANAGEMENT MANUAL AND THE OHIO DEPARTMENT OF NATURAL RESOURCES' RAINWATER AND LAND DEVELOPMENT MANUAL, AS APPLICABLE. SUCH PROJECTS ARE ALSO SUBJECT TO INSPECTION BY THE CITY OF CANTON AND/OR ITS AUTHORIZED REPRESENTATIVES (I.E. STARK SWCD) TO ENSURE COMPLIANCE WITH PERMIT AND SWP3 REQUIREMENTS AND LOCAL STORM WATER QUALITY REGULATIONS.

A PRE-CONSTRUCTION MEETING INITIATED BY THE DEVELOPER/CONTRACTOR IS REQUIRED ON-SITE WITH THE STARK SWCD PRIOR TO ANY LAND-DISTURBING ACTIVITIES. THE DEVELOPER/CONTRACTOR SHALL ABIDE BY ALL ORDERS ISSUED BY THE CITY AND/OR STARK SWCD PURSUANT TO INSPECTION OF THE PROJECT SITE.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUBMIT CO-PERMITTEE APPLICATION TO OHIO EPA PRIOR TO BEGINNING WORK ON THE PROJECT. AS APPLICABLE, THE CONTRACTOR SHALL OBTAIN A COPY OF THE SWP3 AND FAMILIARIZE HIMSELF WITH IT, IMPLEMENTING ALL ITEMS AND ABIDING BY ALL PERMIT REQUIREMENTS AND REGULATIONS.

(B) FOR PROJECTS LESS THAN ONE (1) ACRE OF TOTAL I AND-DISTURBANCE:

AN EPA NPDES CONSTRUCTION STORM WATER PERMIT AND SWP3 IS NOT REQUIRED. HOWEVER, THE DEVELOPER/CONTRACTOR SHALL STILL ENSURE THAT APPROPRIATE PRACTICES ARE IN PLACE TO PROVIDE CONSTRUCTION RUNOFF AND EROSION AND SEDIMENT CONTROLS WITHIN THE PROJECT LIMITS. SUCH PRACTICES MAY INCLUDE THE USE OF SILT FENCE, STORM DRAIN INLET PROTECTION, JUTE MATTING, TEMPORARY SEEDING, MULCHING, CHECK DAMS, CONSTRUCTION ENTRANCES, CONCRETE WASHOUT AREAS, ETC. ALL PRACTICES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE CURRENT EDITION OF THE OHIO DEPARTMENT OF NATURAL RESOURCES' RAINWATER AND LAND DEVELOPMENT MANUAL, AS APPLICABLE.

EROSION AND SEDIMENT CONTROL PRACTICES MUST BE INSTALLED PRIOR TO BEGINNING CONSTRUCTION ACTIVITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTINUED INSPECTION AND MAINTENANCE OF ALL PRACTICES AND WILL BE HELD RESPONSIBLE FOR ADDRESSING ANY ON— OR OFF—SITE EROSION/SEDIMENT ISSUES RELATED TO THE PROJECT. THE OWNER/DEVELOPER/CONTRACTOR SHALL ABIDE BY ALL ORDERS ISSUED BY THE CITY PURSUANT TO INSPECTION OF THE PROJECT SITE.

VII. TRAFFIC:

(A) MAINTAINING TRAFFIC:

THE CONTRACTOR SHALL MAINTAIN TRAFFIC ADJACENT TO AND THROUGH THE PROJECT AS DESCRIBED BELOW AND IN ACCORDANCE WITH THE REQUIREMENTS OF THE OHIO DEPARTMENT OF TRANSPORTATION MANUAL OF CONSTRUCTION AND MATERIALS SPECIFICATIONS ITEM 614 MAINTAINING TRAFFIC. THE CONTRACTOR SHALL FURNISH, MAINTAIN, AND REMOVE ALL SIGNS, FLAGS, FLAGMEN, WATCHMEN, BARRICADES, SIGN SUPPORTS, CONES, BARRELS, AND INCIDENTALS IN CONFORMANCE WITH THE MOST RECENT REVISIONS OF THE CURRENT EDITION OF THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS. INTERFERENCE WITH VEHICULAR TRAFFIC SHALL BE KEPT TO A MINIMUM AT ALL TIMES. ALL OPEN TRENCHES AND EXCAVATIONS SHALL BE PROTECTED WITH DRUMS, BARRICADES, OR BARRIERS. ACCESS SHALL BE MAINTAINED AT ALL TIMES FOR EMERGENCY AND FIRE DEPARTMENT VEHICLES.

ANY TEMPORARY ROADWAY CLOSING MUST BE APPROVED IN WRITING BY THE CITY TRAFFIC ENGINEER AND ANY OTHER PUBLIC AGENCY HAVING JURISDICICTION. THE CONTRACTOR SHALL NOTIFY THE TRAFFIC ENGINEER AT LEAST 72 HOURS IN ADVANCE OF ANY SUCH CLOSINGS FOR PUBLICATION AND EMERGENCY AGENCY NOTIFICATION.

(B) RESIDENTIAL AND BUSINESS AREAS:

THE CONTRACTOR SHALL MAINTAIN ACCESS TO LOCAL RESIDENCES AND BUSINESSES DURING CONSTRUCTION. IN THE EVENT A DRIVE ACCESS NEEDS TO BE CLOSED, THE CONTRACTOR SHALL GIVE NOTICE OF CLOSURE AND DURATION TO THE PROPERTY OWNER 24 HOURS IN ADVANCE. CONTRACTOR SHALL ARRANGE FOR ALTERNATE PARKING AND REASONABLE ACCESS FOR THOSE PROPERTY OWNERS AFFECTED BY DRIVE CLOSURES.

(C) EXISTING STREET NAME AND TRAFFIC CONTROL SIGNS:

WHERE WORK REQUIRES THE MOVEMENT OF EXISTING SIGNS (STOP SIGNS, SPEED LIMIT SIGNS, NO PARKING SIGNS, ETC.). THE CONTRACTOR IS REQUIRED TO MAINTAIN THE FUNCTION OF ALL TRAFFIC CONTROL SIGNS. ALL SIGNS REMOVED BY THE CONTRACTOR SHALL BE STORED ON SITE AND REINSTALLED BY THE CONTRACTOR.

(D) NEW STREET NAME & TRAFFIC CONTROL SIGNS:

ALL STREET NAME AND TRAFFIC CONTROL SIGNS SHALL COME COMPLETE AND BE MADE IN ACCORDANCE WITH THE CITY OF CANTON SIGN AND PAINT DEPARTMENT SPECIFICATIONS. GENERALLY, ALL SIGNS SHALL HAVE HI—INTENSITY SHEETING AND BE MADE WITH .080 50/52 ALUMINUM. STREET NAME SIGNS SHALL BE MADE WITH WHITE UPPER AND LOWER CASE LETTERING ON GREEN BACKGROUND USING 9" BLANKS, BE DOUBLED SIDED W/RADIUS CORNERS AND HAVE 6" NAME AND 3" SUFFIXES. ALL SIGN RELATED HARDWARE IS TO BE INCLUDED, SUCH AS 6" HEAVY DUTY U—SHANNEL CAPS AND STREET NAME CROSSES.

FOR SUBBINISION DEVELOPMENTS, ALL PERMANENT STREET NAME SIGNS AND TRAFFIC CONTROL SIGNS SHALL BE FURNISHED AND INSTALLED BY THE DEVELOPER/CONTRACTOR

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5233 STONEHAM ROAD 1 CANTON: (350)499–8817 TOLL FREE: 1–800–3947

| REV. BY: DATE: DESC: | DESC: | |

DESN BY: TRP FLD BK:
DRWN BY: CLG BK PG:
CHKD BY: TRP CRW CHF:
RVWD BY: TRP CPYRCHT::
DATE: 07/03/12 TAB: N

SCALES HORIZ: VERT: CONTOUR INT

NOTES
ALLENFORD DRIVE STREAM BANK
RESTORATION AND SEWER REPAIR
LOCATED IN CANTON TOWNSHIP
STARK COUNTY, OHIO



VII. TRAFFIC (continued)

(E) EXISTING TRAFFIC SIGNALS:

WHERE WORK REQUIRES INTERFERENCE WITH EXISTING SIGNALIZATION IN THE INTERSECTIONS, ALL WORK SHALL BE COORDINATED THROUGH THE CITY ENGINEER. THE CONTRACTOR SHALL NOT ALTER ANY SIGNALIZATION WITHOUT THE CITY ENGINEFR'S AUTHORIZATION.

(F) NEW TRAFFIC SIGNALIZATION:

ALL NEW OR MODIFIED TRAFFIC SIGNALIZATION AT INTERSECTIONS SHALL BE IN ACCORDANCE WITH CITY TRAFFIC ENGINEERING TRAFFIC CONTROL GENERAL NOTES AND ODOT SPECIFICATIONS, WITH SPECIAL EMPHASIS ON ODOL ITEMS 625, 632, 633, 732, AND 733 WHICH DEALS WITH TRAFFIC CONTROL.

(G) TRAFFIC CONTROL PLAN:

THE DEVELOPER/CONTRACTOR SHALL SUBMIT TO THE CITY ENGINEER A TRAFFIC CONTROL PLAN IN ACCORDANCE WITH CITY SUPPLEMENTAL SPECIFICATION 01—00. DETOURS, IF NECESSARY, SHALL BE APPROVED BY THE CITY ENGINEER PRIOR TO PLAN SUBMISSION.

VIII. WATER MAIN / SERVICES:

(A) WATER MAINS/SERVICES:

ALL WATER MAINS, SERVICES AND APPURTENANCES SHALL BE DESIGNED AND CONSTRUCTED ACCORDING TO THE CITY OF CANTON WATER DEPARTMENT REQUIREMENTS AND SPECIFICATIONS IN EFFECT AT THE TIME OF CONSTRUCTION. ANY DEVIATION FROM THE PLANS AFFECTING THE WATER SYSTEM MUST BE APPROVED BY THE CANTON WATER DEPARTMENT.

FOR NEW DEVELOPMENTS INSIDE THE CITY, ALL WATER MAIN PIPE MATERIAL FITTINGS, BENDS, VALVES, VALVE BOXES, MEGALUGS, GASKETS AND HYDRANTS WILL BE SUPPLIED BY THE CITY OF CANTON. THE CONTRACTOR WILL BE RESPONSIBLE FOR TRANSRORTING MATERIALS TO THE PROJECT SITE. BACKFILL, BEDDING. THRUST BLOCKING, ETC. AND ASSOCIATED LABOR IS THE RESPONSIBILITY OF THE CONTRACTOR.

WATER MAINS SHALL BE CLASS 53 (12" AND UNDER) OR CLASS 54 (OVER 12") DUCTILE IRON MEETING AWWA C-151 WITH PUSH JOINTS. THE MINIMUM COVER OVER WATER MAINS SHALL BE 4'-6" AROM GROUND SURFACE TO THE BARREL OF THE PIPE. THE OUTSIDE SURFACE OF ALL DUCTILE IRON PIPE, FITTINGS, AND APPURTENANCES SHALL BE SHOP COATED WITH EITHER A COAL TAR OR ASPHALT BASE BITUMINOUS MATERIAL. IF THE COATING MATERIAL IS FOUND TO BE DAMAGED PRIOR TO THE PIPE TRENCH BEING BACKFILLED, THE CONTRACTOR SHALL PROVIDE AN ADDITIONAL APPROVED MATERIAL AS REQUIRED TO REPAIR THE DAMAGES. THE CONTRACTOR SHALL HAVE SUFFICIENT COATING MATERIAL AVAILABLE AT THE JOB SITE PRIOR TO LAYING THE PIPE. THE INTERIOR OF ALL PIPES AND FITTINGS SHALL BE LINED WITH DOUBLE CEMENT MORTAR AND SEAL COATED IN COMPLETE CONFORMANCE WITH AWWA C-104, OR THE LATEST REVISION. FIXTINGS SHALL BE RATED FOR 250 PSI WORKING PRESSURE IN ACCORDANCE WITH AWWA C-153. PIPE LENGTHS MAY BE DEFLECTED AT THE JOINT IF REQUIRED, AT ONE-HALF THE DEGREE RECOMMENDED BY THE MANUFACTURER. WATER SERVICES WILL BE INSTALLED BY THE CITY OF CANTON AND PAID FOR BY THE OWNER/DEVELOPER. DISINFECTION OF WATER MAINS SHALL BE IN ACCORDANCE WITH AWWA C-651. ALL WATER LINE PRESSURE TESTING SHALL CONFORM TO AWWA C-600.

WATER MAINS SHALL BE INSTALLED AND BACKFILLED PER O.D.O.T. ITEM 638. WATERLINES LOCATED WITHIN THE LIMITS OF OR WITHIN A 1/2 TO 1 SLOPE OF EXISTING AND/OR PROPOSED ROADWAYS, PARKING AREAS, BULDINGS, BUILDINGS, SIDEWALKS, AND/OR DRIVES SHALL BE INSTALLED AS TYPE B CONDUITS. ALL/OTHER WATER MAINS MAY BE INSTALLED AS TYPE C CONDUITS. BEDDING SHALL BE AS SPECIFIED, EXCEPT THAT SLAG WILL NOT BE PERMITTED.

ALL BENDS, FITTINGS, TEES, VALVES, DEAD ENDS ETC. SHALL BE SECURED EQUAL. POURED—IN—PLACED CONCRETE THRUST BLOCKS SHALL ALSO BE PROVIDED AT/FOR EACH BEND, FITTINGS, TEE, DEAD END, ETC. THIS BLOCKING SHALL BE CAREFULLY PLACED TO ENSURE IT IS POSITIONED PROPERLY TO WITHSTAND THE RESULTANT FORCES AT EACH BEND, FITTING, ETC. AND SHALL BEAR ON STABLE UNDISTURBED GROUND CAPABLE OF WITHSTANDING THE POTENTIAL LOADING.

IN ADDITION TO THE RESTRAINT OF ALL BENDS, FITTINGS, VALVES, DEAD END, ETC. THE CONTRACTOR SHALL ALSO SECURE/RESTRAIN ALL JOINTS FOR AT LEAST THREE (3) PIPE JOINTS (50) LF MIN.) ON BOTH SIDES OF EACH DEAD END, BEND, FITTING, VALVE, TEE, ETC. UTILIZING MEGALUGS, FIELD LOK GASKETS. OR APPROVED EQUAL.

THE CONTRACTOR SHALL PROVIDE 18" VERTICAL CLEARANCE BETWEEN PROPOSED WATERLINES AND ANY SANITARY SEWERS. WHEN 18" CLEARANCE BETWEEN A WATERLINE AND SANITARY SEWER CANNOT BE OBTAINED THE CONTRACTOR SHALL PROVIDE CONCRETE ENCASEMENT AS DIRECTED BY THE ENGINEER, THE CONTRACTOR SHALL PROVIDE 12" MINIMUM CLEARANCE BETWEEN WATERLINE AND STORM SEWER. THE CONTRACTOR SHALL MAINTAIN TEN (10) FOOT HORIZONTAL CLEARANCE BETWEEN WATERLINES/SERVICES AND SANITARY SEWERS AND FOUR (4) FOOT HORIZONTAL CLEARANCE BETWEEN WATERLINES/SERVICES AND STORM SEWERS.

THE FIRE HYDRANT SETTING SHALL INCLUDE THE HYDRANT, ANCHOR TEE, VALVE, VALVE BOX, 6 INCH PIPING AND ALL FITTINGS NEEDED FOR PROPER INSTALLATION. FIRE HYDRANTS SHALL BE MUELLER A423 MEETING THE CITY OF CANTON WATER DEPARTMENT STANDARDS AND REQUIREMENTS. ALL COSTS FOR THE 6" PIPING ASSOCIATED WITH THE INSTALLATION OF FIRE HYDRANTS SHALL BE INCLUDED WITH THE FIRE HYDRANT PAY ITEM. ALL HYDRANTS WILL BE INSTALLED WITH THE PUMPER NOZZLE FACING THE STREET.

ALL WATER SERVICES MUST BE INSTALLED BEFORE ANY PAVEMENT FOR THE PROPOSED ROADWAYS HAS BEEN PLACED. CONTRACTOR IS NOT TO MAKE ANY SERVICE TAPS ON THE WATER MAIN. THE CANTON WATER DEPARTMENT WILL MAKE ALL SERVICE TAPS.

THE PROPOSED FACILITIES WILL MAINTAIN A MINIMUM 35 PSI PRESSURE DELIVERED TO THE CURB STOP DURING NORMAL OPERATING CONDITIONS.

BOOSTER PUMPS ARE NOT PERMITTED ON SERVICE CONNECTIONS.

ALL DUCTILE IRON PIPE, INCLUDING FITTINGS AND APPURTENANCES BURIED UNDERGROUND, SHALL BE ENCASED WITH 8 MIL POLYETHYLENE FILM CONFORMING TO AWWA C105.

POLYETHYLENE WATER MAIN AND SERVICE TUBING 2" AND UNDER SHALL BE COPPER TUBE SIZE AND MEET STANDARDS ASTM-02737 PE3408 AND AWWA C906. THE ONLY ACCEPTED TUBING IS CP CHEM PERFORMANCE PIPE DRISCOPLEX 5100-ULTRA-LINE.

THE CONTRACTOR SHALL TAKE ANY AND ALL NECESSARY PRECAUTIONS TO PROTECT AND MAINTAIN IN SERVICE, ANY EXISTING WATER MAINS EXPOSED DURING CONSTRUCTION.

ANY WATER SERVICE LINE THAT IS BROKEN, CUT OR OTHERWISE DAMAGED, SHALL BE REPLACED FROM THE CORPORATION STOP TO THE CURB STOP WITH A SINGLE PIECE OF PLASTIC SERVICE LINE (DRISCOPLEX). NO SPLICING OF THE SERVICE LINE WILL BE PERMITTED.

SERVICE BRANCHES WILL BE INSTALLED AS PER O.D.O.T ITEM 638.16 WITH THE FOLLOWING EXCERTIONS:

1. WHEN A SERVICE BRANCH IS DISTURBED FOR I OWERING RAISING EXTENDING OR SHORTENING ON THE

LOWERING, RAISING EXTENDING OR SHORTENING ON THE PROPERTY SIDE ON THE SERVICE STOP, IT SHALL BE REPLACED WITH NEW MATERIALS FROM THE CORPORATION STOP TO THE SERVICE STOP.

IN A STREET IMPROVEMENT, NO EXISTING WATER CURB BOX WILL BE LEFT IN THE PAVEMENT, CURB AND GUTTER OR SIDEWALK THE CURB BOX WILL BE MOVED TO A SUITABLE LOCATION DETERMINED BY THE CANTON WATER DEPTARTMENT. WHEN THE CURB BOX IS MOVED ALL NEW, MATERIAL WILL BE USED FROM THE CORPORATION STOP TO THE THE CURB STOP WHICH IS A SINGLE PIECE OF PLASTIC SERVICE LINE (DRISCOPLEX). NO SPLICING OF THE SERVICE LINE WILL BE PERMITTED. A NEW TAP (CORPORATION STOP) AND CURB STOP AND BOX MAY ALSO BE REQUIRED. THE DETERMINATION WILL BE MADE BY THE CANTON WATER DEPARTMENT.

ALL WATER MAINS WILL BE INSTALLED UNDER THE PAVEMENT WITH A MINIMUM OF 3 FEET FROM THE EDGE OF PAVEMENT OR THE CURB AND/OR GUTTER. IN EXISTING STREETS, A SAW CUT WILL BE MADE TO ENSURE A CLEAN EDGE.

WHEN AN EXISTING WATER MAIN MUST BE SHUT DOWN TO PERFORM REQUIRED WORK, THE PROPERTIES TO BE EFFECTED SHALL BE GIVEN A MINIMUM 24 HOUR NOTICE OF SAID SHUT DOWN. THE WORK WILL BE SCHEDULED AND COORDINATED TO MINIMIZE THE TIME THE MAIN IS OUT OF SERVICE.

THE CONTRACTOR SHALL NOTIFY THE CITY 48 HOURS\IN
ADVANCE OF ANY SHUT DOWN OF AN EXISTING WATER MAIN.
THE CONTRACTOR WILL NOT OPERATE ANY VALVES. VALVES
WILL BE OPERATED BY CANTON WATER DEPARTMENT PERSONNEL
ONLY. VALVES DAMAGED BY THE CONTRACTOR'S OPERATION
WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

AL VALVE BOXES WILL BE ADJUSTED TO FINAL GRADE OF THE PAVEMENT WHEN THE PROJECT IS COMPLETED.

ANY COMMERCIAL OR INDUSTRIAL WATER SERVICE MUST HAVE SITE AND PLUMBING PLANS SUBMITTED TO THE CANTON WATER DEPARTMENT ENGINEERING OFFICE FOR APPROVAL. THE CANTON WATER DEPARTMENT WHE REVIEW THE PLANS AND MAKE COMMENTS. CORRECTIONS MUST BE MADE AND RESUBMITTED. PRICE ESTIMATES WILL NOT BE ISSUED AND SERVICE TAPS WILL NOT BE MADE UNTIL THE PLANS HAVE BEEN APPROVED BY THE CANTON WATER DEPARTMENT.

IX. POST CONSTRUCTION INCIDENTALS

(A) AS-BUILT DRAWINGS:

AS-BUILT REPRODUCIBLE MYLARS SHALL BE PROVIDED TO THE CITY OF CANTON BY THE DESIGN ENGINEER AT THE COMPLETION OF THE PROJECT. AS BUILT INFORMATION CONSISTS OF POST-CONSTRUCTION FIELD SURVEY BATA OF THE LOCATION, FLOWLINE ELEVATIONS, AND TOP OF-GRATE/RIM ELEVATIONS FOR ALL STORM AND SANITARY STRUCTURES CONSTRUCTED AND/OR IMPACTED BY THE PROJECT.

FOR PRIVATE PROJECTS, THE CONSTRUCTION BOND WILL NOT BE RELEASED UNTIL THE AS—BUILT DRAWINGS HAVE BEEN ACCEPTED.

(B) PROPOSED MONUMENTATION:

THE DEVELOPER'S/CONTRACTOR'S SURVEYOR SHALL NOTIFY THE CITY ENGINEER IN WRITING UPON THE COMPLETION OF MONUMENTS BEING SET AS PER PLAN OR RECORD PLAT.

(C) RELEASE OF RETAINER/BONDS:

PRIOR TO THE RELEASE OF RETAINER/CONSTRUCTION BOND BY THE CITY OF CANTON, THE CONTRACTOR SHALL HAVE COMPLETED THE ENGINEER'S PROJECT PUNCHLIST AND SUBMIT FINAL WAIVER OF LIEN. IN ACCORDANCE WITH CITY SS 01-00.

EXTRA CONSTRUCTION NOTES:

SHOP DRAWINGS — THE CITY WILL PERFORM REVIEW OF A CONTRACTOR'S SHOP DRAWING SUBMITTAL WITHIN 10 WORKING

HAMMONTREE & ASSOCIATES, ENGINEERS, PLANNERS, SURVEYOF OH-PA-WY
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500 ANTON: (330)499-8817 AKRON.(330)499-701 AKRON.(330)499-70

FLD BK: 578 REV.
BK PG: 44 REV.
CRW CHF: MIZ REV.
CPYRGHT: 2012 REV.
TAB: NOTES REV.

DESN BY:
CHKD BY:
RVWD BY:
OATE:
OAT

HORIZ: VERT: CONTOUR INT:

NOTES
ALLENFORD DRIVE STREAM BANK
RESTORATION AND SEWER REPAIR
FOR:CITY OF CANTON
LOCATED IN CANTON TOWNSHIP
STARK COUNTY, OHIO



	DEMOLITION							
ITEM								
201	1	LUMP	CLEARING & GRUBBING					
202	197	FT	PIPE REMOVED, 72"					
202	100	FT	PIPE REMOVED, OVER 24" - CONTIGENCY AS DIRECTED					
202	100	FT	PIPE REMOVED, 24 AND UNDER"-CONTIGENCY AS DIRECTED					
	1							
	1							
	+							

CONTRACTOR RESPONSIBLE FOR VERIFYING QUANTITIES.

ITEM NUMBERS FOR EARTHWORK, ROADS, DRAINAGE, & EROSION CONTROL REFER TO STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION & MATERIAL SPECIFICATIONS, JANUARY 1, 2010.

	EARTHWORK						
ITEM							
203	3087	CU. YD.	EXCAVATION				
203	681	CU. YD.	EMBANKMENT				
601	5803	CU. YD.	ROCK CHANNEL PROTECTION, TYPE C WITH FILTER FABRIC, 601.09				
659	166	CU. YD.	TOPSOIL				
659	1	LUMP	EDING AND MULCHING				
659	0.20	TON	COMMERCIAL FERTILIZER				
659	0.31	ACRE	LIME				
659	9	M GAL	WATER				
690	1	LUMP	SPECIAL - MISC.: SLOPE STABILIZATION USING HELICAL ANCHORS				
503	1	LUMP	COFFERDAMS AND EXCAVATION BRACING				
690	1	LUMP	SPECIAL - LOAD TESTING OF ANCHORS				

CONTRACTOR RESPONSIBLE FOR VERIFYING QUANTITIES.

ITEM NUMBERS FOR EARTHWORK, ROADS, DRAINAGE, & EROSION CONTROL REFER TO STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION & MATERIAL SPECIFICATIONS, JANUARY 1, 2010.

			MISCELLANEOUS
ITEM	QUANTITY	UNIT	DESCRIPTION
614	1	LUMP	MAINTAINING TRAFFIC
623	1	LUMP	CONSTRUCTION LAYOUT STAKES
624	1	LUMP	MOBILIZATION
690	1	LUMP	PRECONSTRUCTION VIDEO TAPING
	1		
	+		
	+	-	
	+		

CONTRACTOR RESPONSIBLE FOR VERIFYING QUANTITIES.

ITEM NUMBERS FOR EARTHWORK, ROADS, DRAINAGE, & EROSION CONTROL REFER TO STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION & MATERIAL SPECIFICATIONS, JANUARY 1, 2010.

SANITARY							
ITEM							
511	20	CU. YD.	CLASS C CONCRETE, PIER CAP				
530	1	LUMP	SPECIAL-STRUCTURE,MISC.: HELICAL PIERS				
603	190	FT	72" CONDUIT, TYPE C - CLASS IV, 706.02				
604	1	EACH	MANHOLE, MISC.: SPECIAL MANHOLE, NO. 1				
604	1	EACH	MANHOLE, MISC.: SPECIAL MANHOLE, NO. 2				
518	190	FT					
518	35	FT 6" NON-PERFORATED CORRUGATED PLASTIC PIPE					
690	1	LUMP	INTERNAL INSPECTION OF SANITARY SEWER				
690	1	LUMP	BYPASS PUMPING, AS PER PLAN				
530	1	LUMP	SPECIAL - LOAD TESTING OF PIERS				

CONTRACTOR RESPONSIBLE FOR VERIFYING QUANTITIES.

ITEM NUMBERS FOR EARTHWORK, ROADS, DRAINAGE, & EROSION CONTROL REFER TO STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION & MATERIAL SPECIFICATIONS, JANUARY 1, 2010.

	EROSION & SEDIMENT CONTROL							
ITEM	QUANTITY UNIT DESCRIPTION							
832	1	LUMP	STORM WATER POLLUTION PREVENTION PLAN					
832	1	LUMP	EROSION CONTROL					

CONTRACTOR RESPONSIBLE FOR <u>VERIFYING QUANTITIES</u>.

ITEM NUMBERS FOR EARTHWORK, ROADS, DRAINAGE, & EROSION CONTROL REFER TO STATE OF OHIO, DEPARTMENT OF TRANSPORTATION, CONSTRUCTION & MATERIAL SPECIFICATIONS, JANUARY 1, 2010.

NOTE

SLAG MATERIALS AND MATERIALS CONTAINING SLAG WILL NOT BE PERMITTED FOR USE IN EMBANKMENT AND BACKFILL

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TOLL FREE: 1-800–394–8817 FAX: (330)499–0149
www.hammontree-engineers.com 87: 87: 87: REV. I

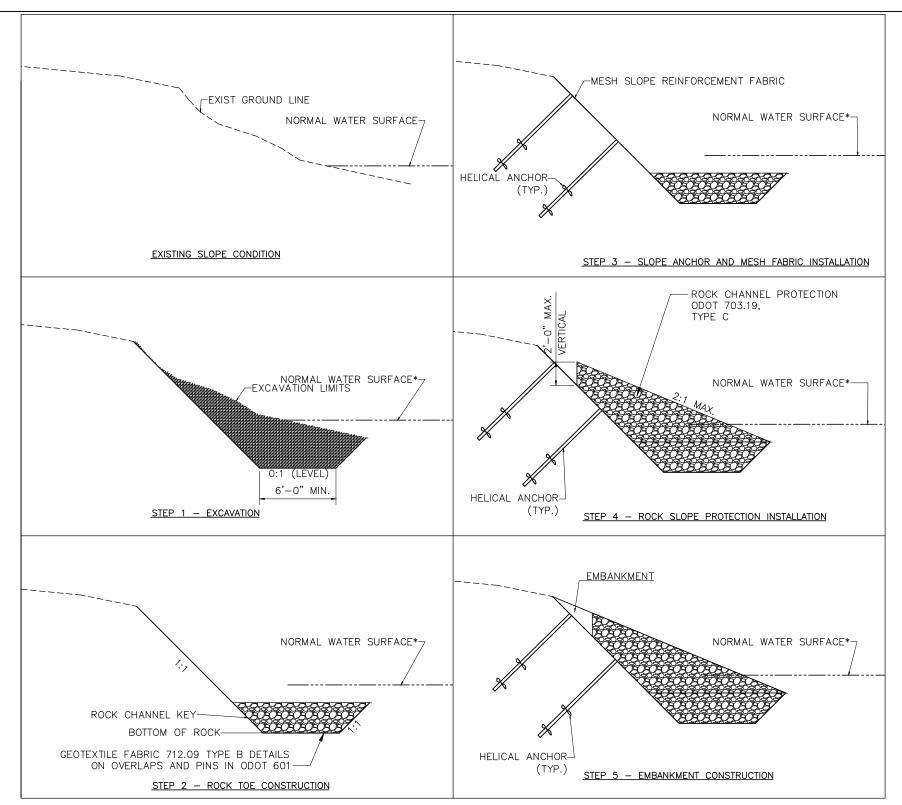
FLD BK: 578 R BK PG: 44 R CRW CHF: MTZ R

DESN BY: IRP INTERPORM BY: CLG OHKD BY: IRP RVWD BY: IRP DATE: 09/09/14

SCALES HORIZ: VERT: CONTOUR INT:

QUANTITIES
ALLENFORD DRIVE STREAM BANK
RESTORATION AND SEWER REPAIR
FOR: CITY OF CANTON
LOCATED IN CANTON TOWNSHIP
STARK COUNTY, OHIO





SUGGESTED SLOPE REINFORCEMENT WORK SEQUENCE

NOTES:

* NORMAL WATER SURFACE: THIS IS THE NORMAL WATER SURFACE +1 FOOT OR 1 FOOT ABOVE THE

CURRENT WATER SURFACE, WHICHEVER IS HIGHER

- 1. THE EXISTING VEGETATION SHALL BE REMOVED PRIOR TO PLACEMENT OF THE FABRIC.
- 2. EXCAVATION LIMITS SHALL NOT ENCROACH CLOSER THAN 10' FROM THE EXISTING FOAM BLOCKS.
- 3. A NATIONWIDE PERMIT (NWP) NO. 12 HAS BEEN ISSUED BY THE US ARMY CORPS OF ENGINEERS FOR THIS PROJECT.
- 4. HELICAL ANCHORS SHALL BE USED FROM STATION 21+25 TO STATION 22+75 TO INCREASE THE GLOBAL STABILITY FACTOR OF THE SLOPE ABOVE 1.5. THE CONTRACTOR SHALL SUBMIT HIS DESIGN FOR THE HELICAL ANCHORS IN ACCORDANCE WITH THE PLAN NOTES. PLAN SHEETS INCLUDED IN THIS SET OF DRAWINGS FROM MAGNUM GEO—SOLUTIONS, LLC DEPICT ONE DESIGN ACHIEVING THE STATED GOAL AND ARE INCLUDED FOR INFORMATION ONLY.

CONTRACTOR WORK PLAN: CONTRACTOR SHALL SUBMIT WORK PLAN TO THE CITY FOR APPROVAL PRIOR TO BEGINNING WORK AT THE SITE. THE PLAN MUST BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OHIO. THE PLAN MUST SHOW THE FOLLOWING.

- 1. TEMPORARY ACCESS ROAD DETAILS, INCLUDING LOCATION, CONSTRUCTION AND RESTORATION METHODS.
- MANNER OF PROTECTION FOR THE 72" SANITARY SEWER DURING CONSTRUCTION. DAMAGE CAUSED TO THE 72" SANITARY SEWER THAT IS TO REMAIN BY THE CONTRACTORS OPERATIONS SHALL BE REPAIRED OR REPLACED AT THE CITY'S DETERMINATION AT NO COST TO THE PROJECT.
- 3. SHEETING AND SHORING DETAILS.

THE CONTRACTOR MUST FOLLOW THE APPROVED WORK PLAN. THE CONTRACTOR MAY REQUEST AND WILL BE PERMITTED A DEVIATION FROM THE PLAN ONLY IF THE CONTRACTOR PROVIDES A DETAILED WRITTEN DESCRIPTION OF THE DEVIATION AND WRITTEN STATEMENT OF CONCURRENCE WITH THE DEVIATION BY THE PE WHO PREPARED AND STAMPED THE PLAN.

SUGGESTED WORK SEQUENCE

- 1. SET UP BYPASS.
- 2. CONSTRUCT TEMPORARY ACCESS ROAD.
- 3. EXCAVATE A 20' SECTION OF CHANNEL FOR ROCK CHANNEL PROTECTION PLACEMENT.
- 4. SLOPE STABILITY IMPROVEMENTS FROM STATION 21+25 TO 22+75 SHALL CONSIST OF HELICAL ANCHORS OR OTHER INDUSTRY ACCEPTED STABILIZATION TECHNIQUES DESIGNED AND INSTALLED BY THE CONTRACTOR TO PROVIDE A MINIMUM FACTOR OF 1.5 FOR GLOBAL STABILITY. THE CONTRACTOR SHALL SUBMIT THE DESIGN OF HIS STABILIZATION TECHNIQUE TO THE CITY FOR APPROVAL. THE DESIGN MUST BE SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF OHIO. AT A MINIMUM, THE DESIGN SUBMITTAL SHALL ADDRESS;

DESIGN STANDARDS
MATERIAL SPECIFICATONS
QUALIFICATIONS OF DESIGNER
QUALIFICATIONS OF MANUFACTURER
QUALIFICATIONS OF INSTALLER
ANCHOR/PILE LAYOUT AND INSTALLATION PROCEDURE
LOAD TESTING PROCEDURE
ACCEPTANCE CRITERIA
QUALITY CONTROL/ASSURANCE PLAN
DOCUMENTATION PROCEDURE

- 5. CONTRACTOR SHALL BASE HIS DESIGN OF THE ANCHORS ON EXISTING SOIL BORINGS OR OBTAIN HIS OWN AS A PART OF THE COST FOR THE HELICAL ANCHORS.
- 6. PLACE HELICAL ANCHORS AND REINFORCEMENT THROUGH EXCAVATED SLOPE. REGARDLESS OF THE SYSTEM USED, 20% OF THE INSTALLED ANCHORS SHALL BE LOAD TESTED PER INDUSTRY STANDARD METHODS.
- 7. PLACE GEOTEXTILE FABRIC AND ROCK CHANNEL PROTECTION IN TOE OF SLOPE. METHOD OF ROCK PLACEMENT SHALL NOT COMPROMISE THE SLOPE REINFORCEMENT OR HELICAL ANCHORS.
- 8. STARTING FROM STATION 23+00 AND MOVING UPSTREAM, PERFORM STEPS 1, 2, AND 3 IN 20' INCREMENTS.
- . WORK DOWNSTREAM PLACING ROCK CHANNEL PROTECTION TO FINAL SLOPE CONFIGURATION. METHOD OF ROCK PLACEMENT SHALL NOT COMPROMISE THE SLOPE REINFORCEMENT OR HELICAL ANCHORS.
- 10. REMOVE PORTION OF 72" PIPE.
- 11. INSTALL HELICAL PIERS AND SUPPORTS UNDER NEW PIPE AND MANHOLES. REGARDLESS OF THE SYSTEM USED, 20% OF THE INSTALLED PIERS SHALL BE LOAD TESTED PER INDUSTRY STANDARD METHODS.
- 12. INSTALL NEW MANHOLES AND SEWER.

B HAMMONTREE & ASSOC ENGINEERS, PLANNERS, 9 OH-PA-WV 5233 STONEHAM ROAD NORTH CANTON (330)499-8817 AXKRON; (7OLL PREE: 1-800-334-8817 FAX: (7)

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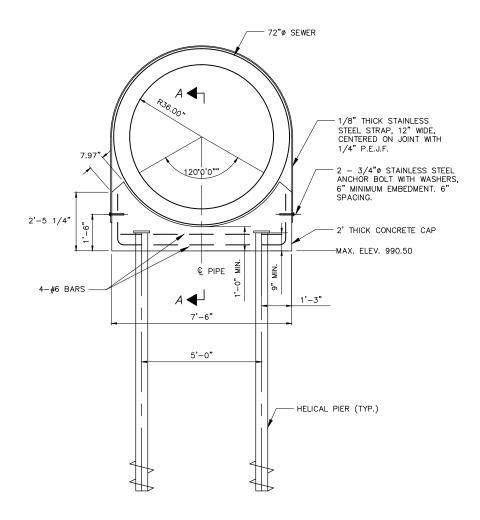
BK PG: 44 RE CRW CHF: MIZ RE CPYRGHT: 2012 RE

DESN BY: MCC
DRWN BY: MCC
CHKD BY: KJO
RVWD BY: IRP
OATE: 07/03/12

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ALLENFORD DRIVE STREAM BANK RESTORATION AND SEWER REPAIR LOCATED IN CANTON OND STARK COUNTY, OHIO

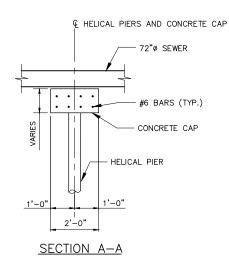




PIPE SUPPORT DETAIL (SECTION VIEW)

(FOR NEW PIPE SECTION BETWEEN NEW MANHOLES)

N.T.S.



LEGEND:

P.E.J.F. - PREFORMED EXPANSION JOINT FILLER

NOTES:

- 1. THE DESIGN LOAD ON EACH HELICAL PIER SHALL BE 50 KIPS.
- 2. HELICAL PIERS, CAPS AND SANITARY SEWER WORK WILL BE DONE AFTER THE SLOPE REINFORCEMENT WORK IS COMPLETE.
- 3. CONCRETE CAPS SHALL BE PLACED 8'-0" ON CENTERS UNDER PIPE JOINTS.
- 4. CONTRACTOR SHALL SUBMIT HIS DESIGN FOR SHORING THE EXCAVATION REQUIRED FOR SEWER AND HELICAL PIER INSTALLATION, SEALED BY A PROFESSIONAL ENGINEER IN THE STATE OF OHIO, TO THE CITY FOR APPROVAL. EXCAVATION SHALL BE LIMITED TO APPROXIMATELY 20 AT ANY ONE TIME
- 5. GROUT SHALL BE PLACED BETWEEN PIPE AND CONCRETE CAP TO ENSURE COMPLETE BEARING.
- 6. HELICAL PIERS SHALL ALSO BE PLACED TO SUPPORT THE PROPOSED PRECAST CONCRETE
- 7. CONTRACTOR SHALL BASE HIS DESIGN OF THE PIERS ON EXISTING SOIL BORINGS OR OBTAIN HIS OWN AS A PART OF THE COST FOR THE HELICAL PIERS.
- 8. ALL MATERIALS AND LABOR NECESSARY TO ATTACH THE PIPE TO THE CONCRETE CAP, INCLUDING STRAPS AND HARDWARE TO BE INCLUDED WITH ITEM 511, CLASS C CONCRETE, PIER CAP FOR PAYMENT.
- SEE SECTION 31 66 13 OF THE TECHNICAL SPECIFICATIONS FOR INFORMATION ON THE HELICAL PIERS.

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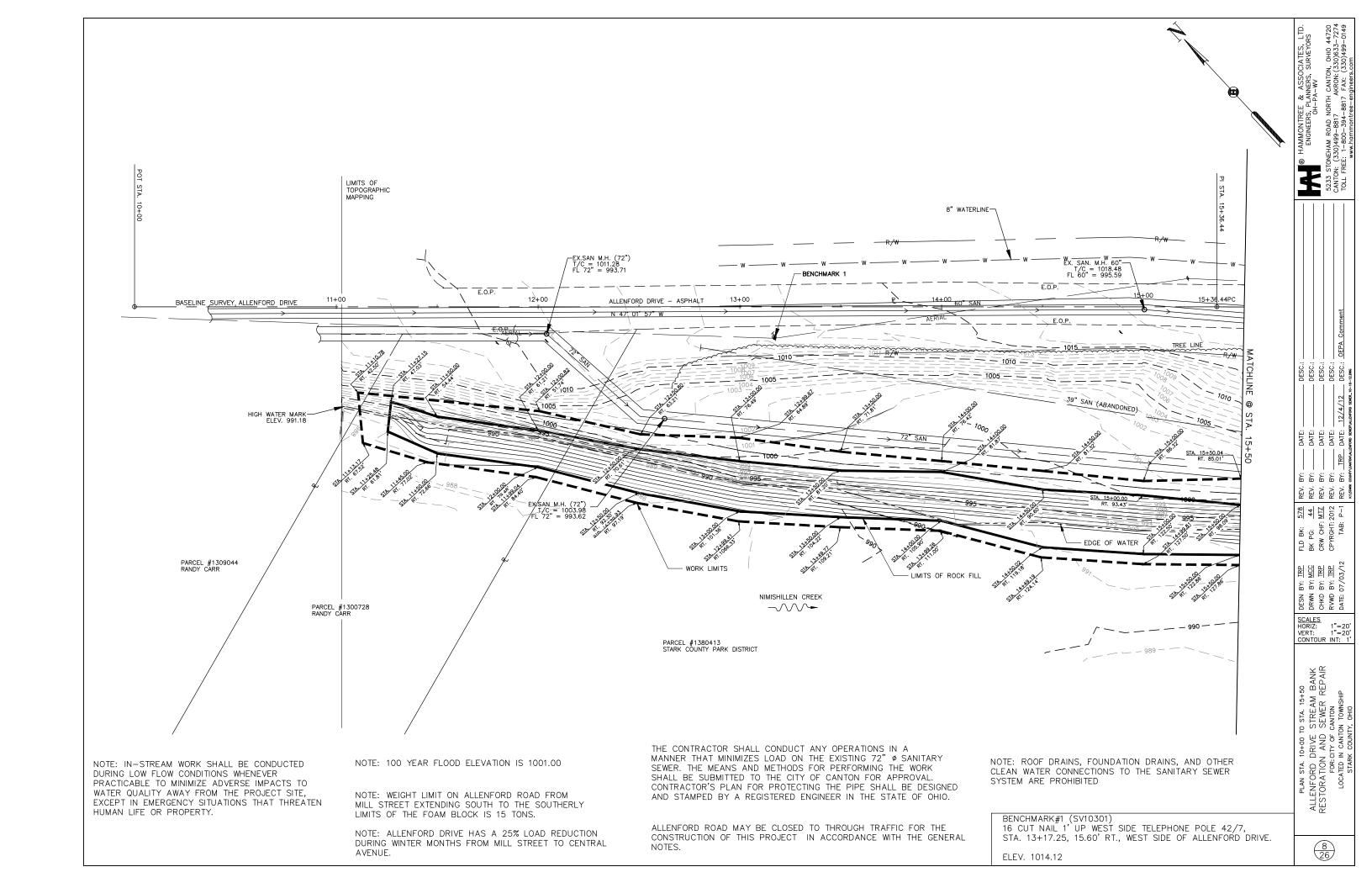
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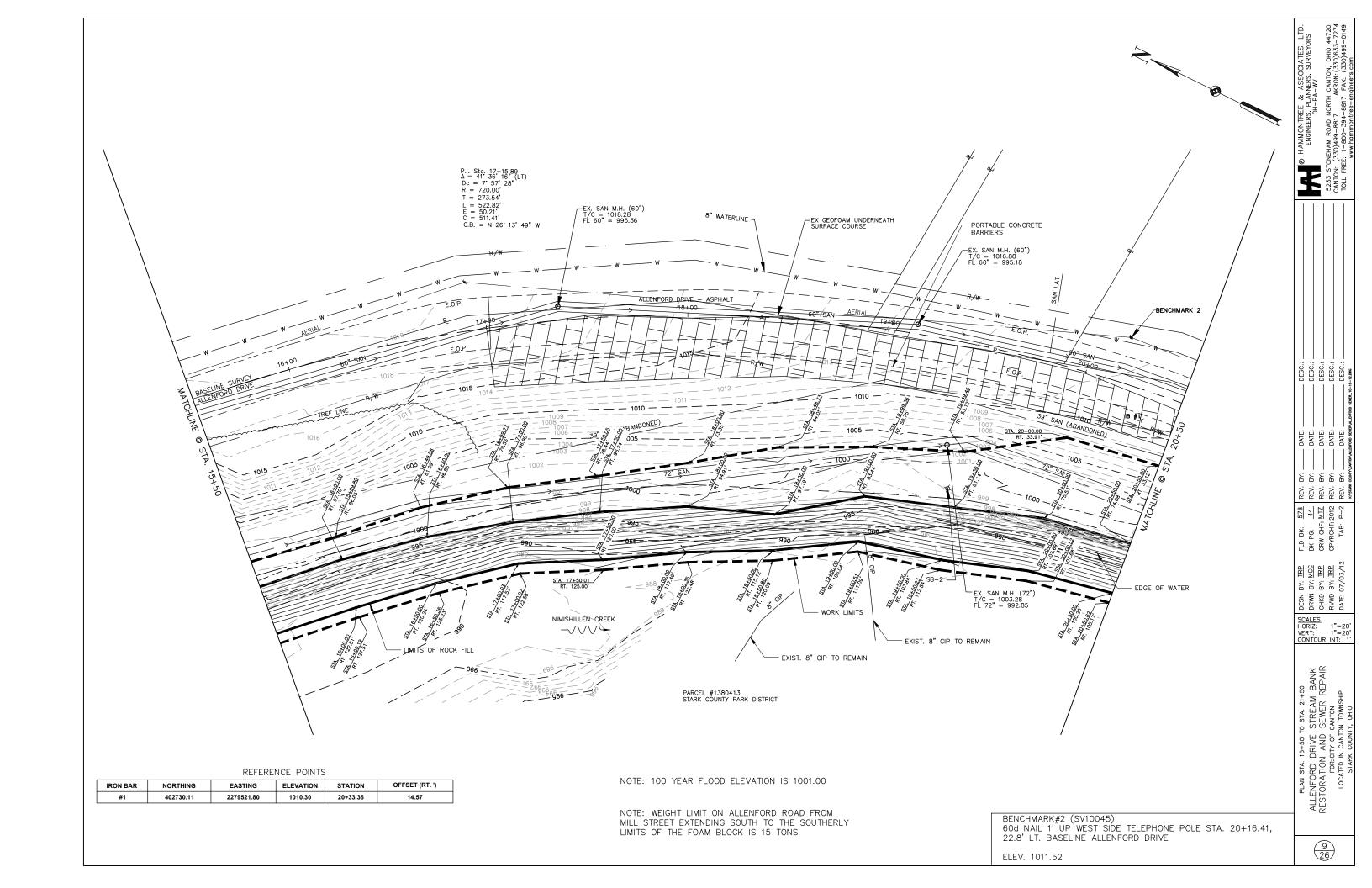
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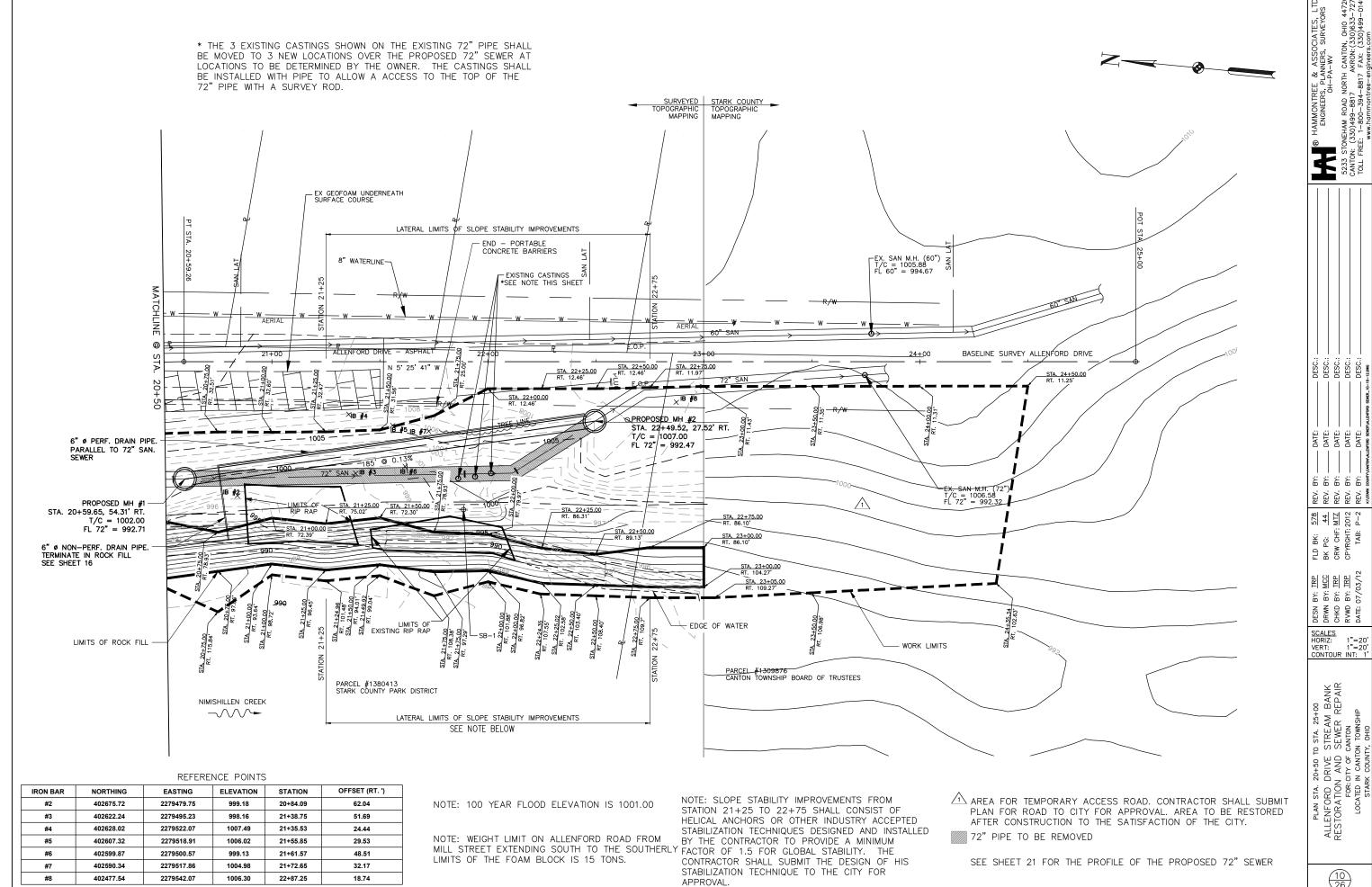
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PIPE SUPPORT DETAILS
ALLENFORD DRIVE STREAM BANK
RESTORATION AND SEWER REPAIR
FOR: CITY OF CANTON
LOCATED IN CANTON TOWNSHIP
STARK COUNTY, OHIO

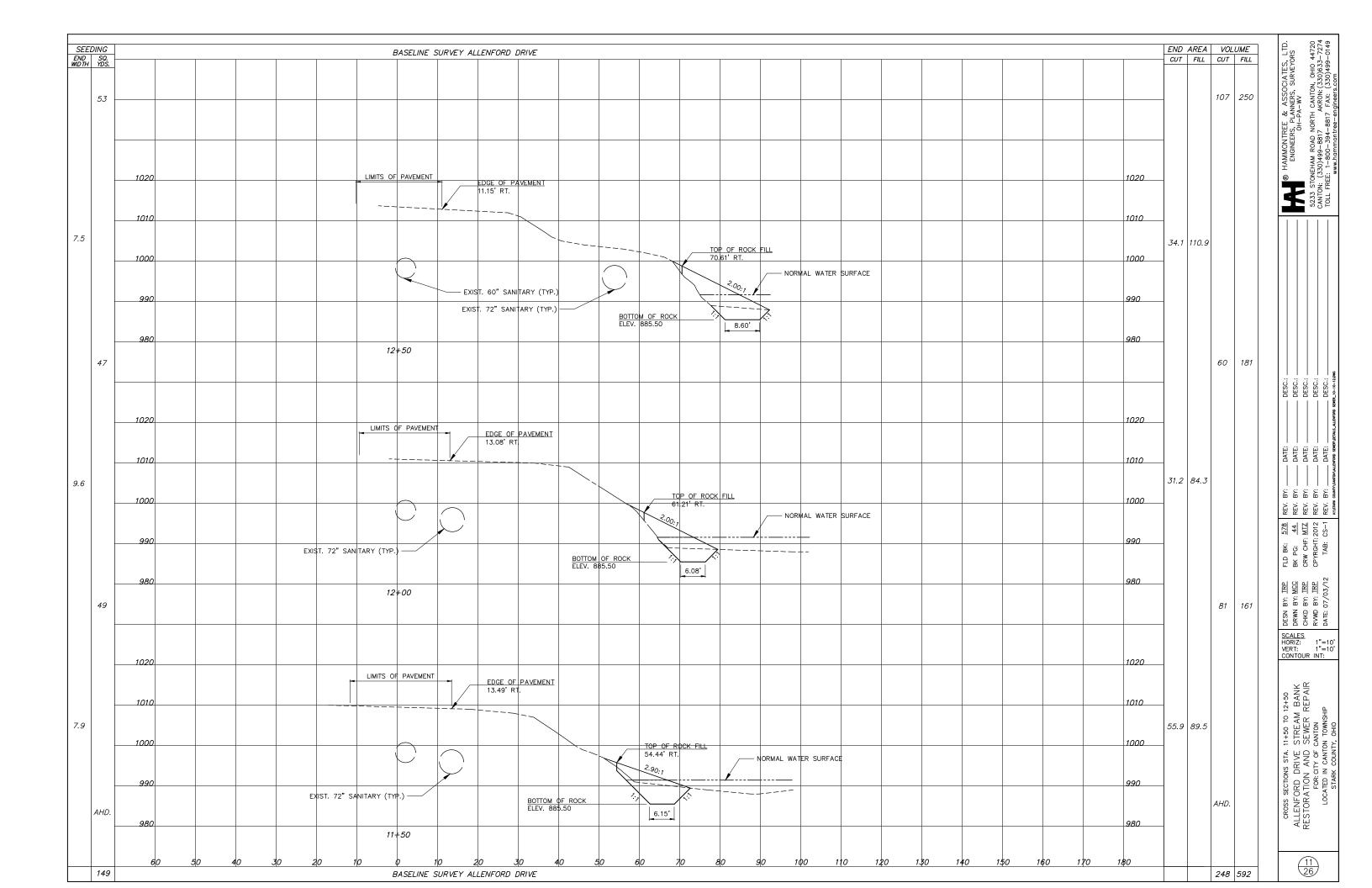


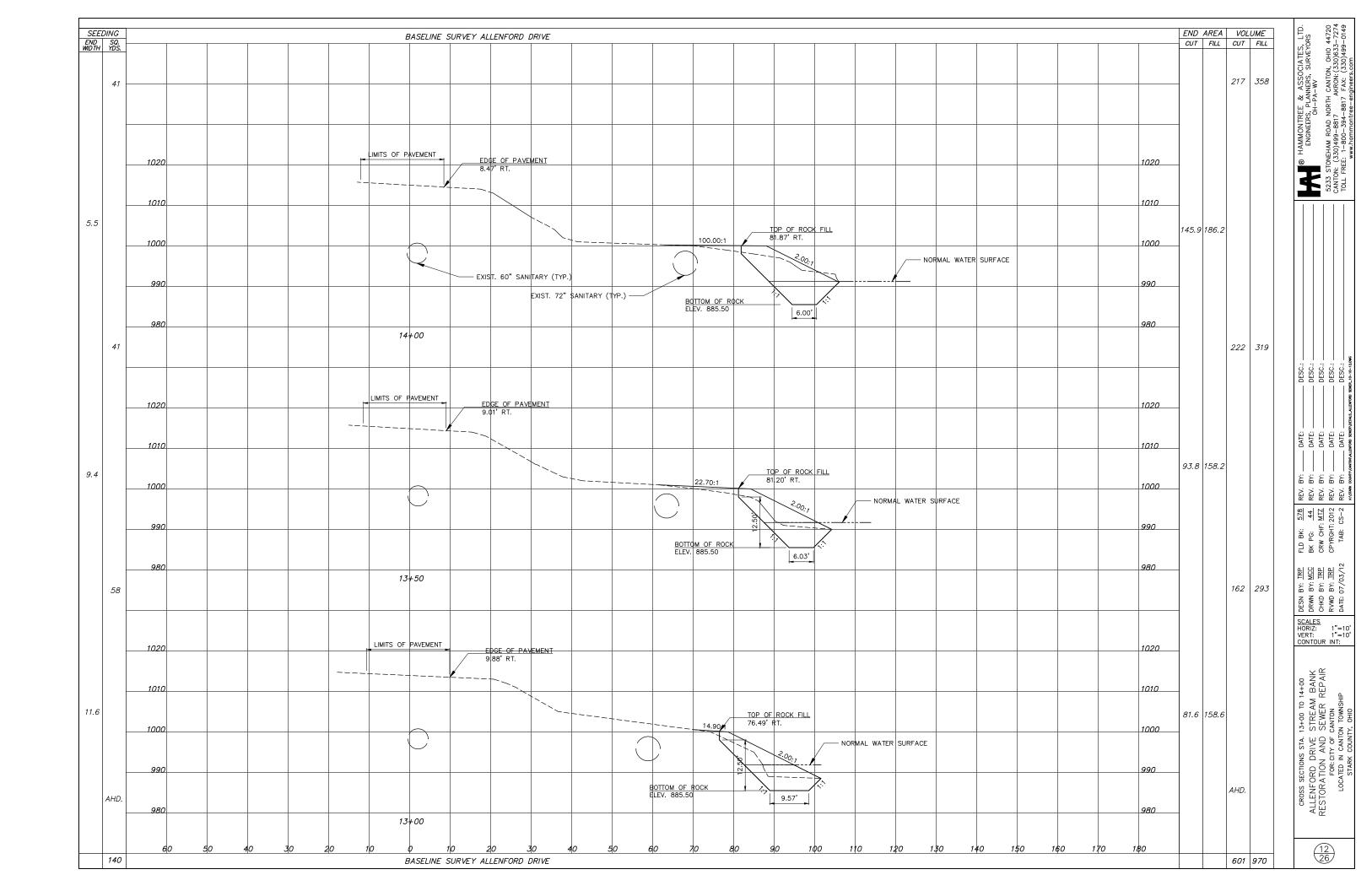


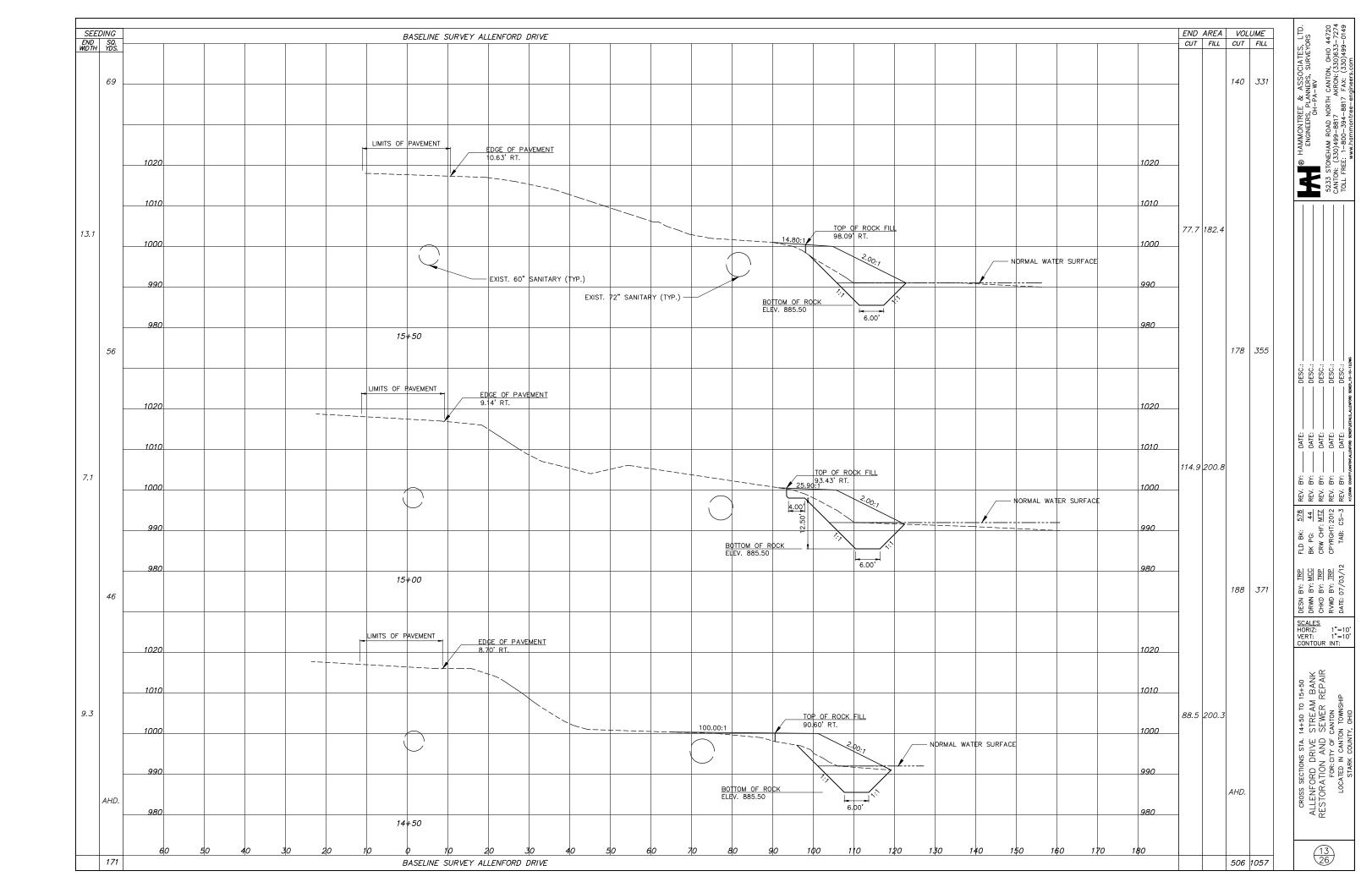


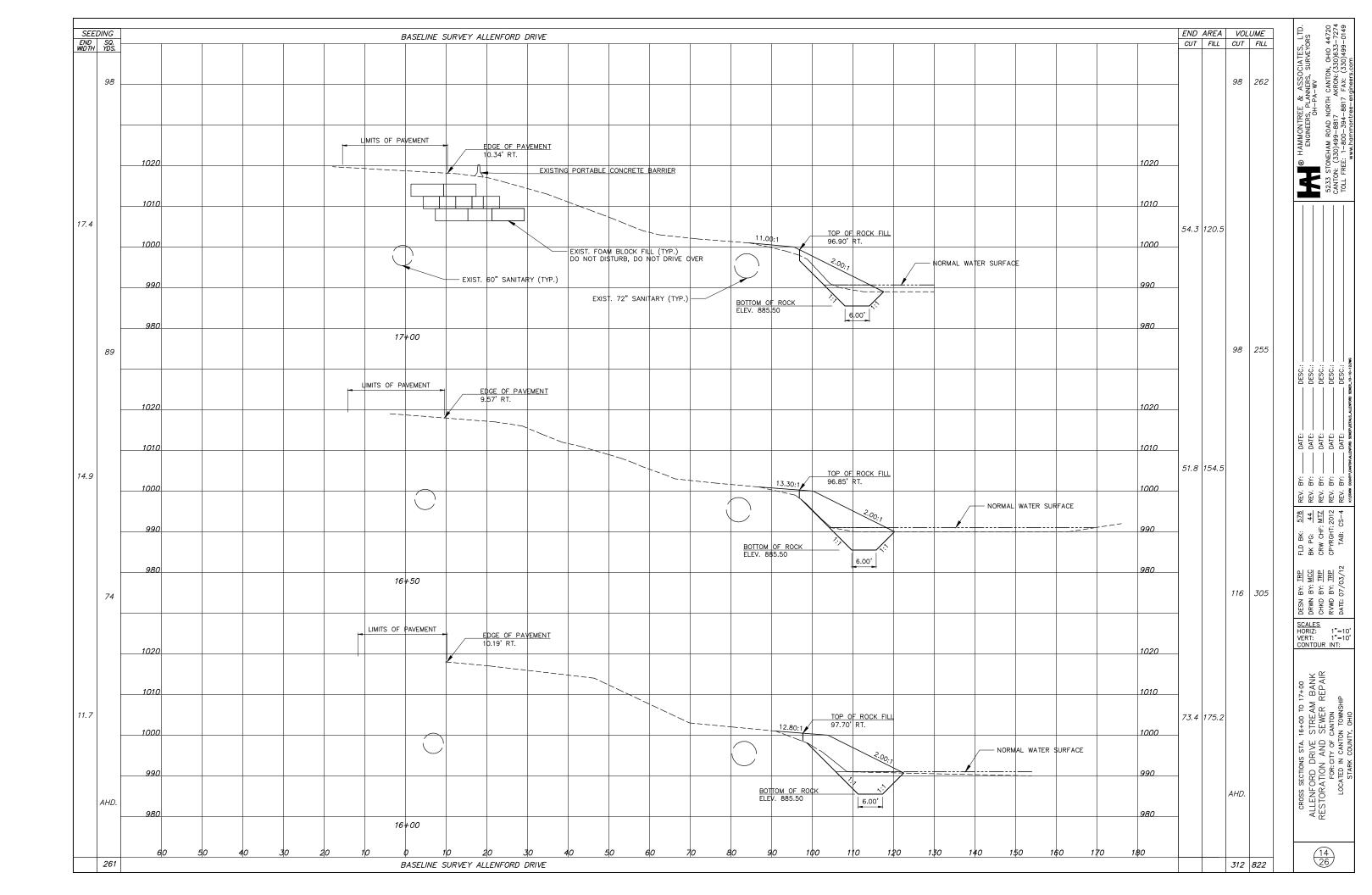


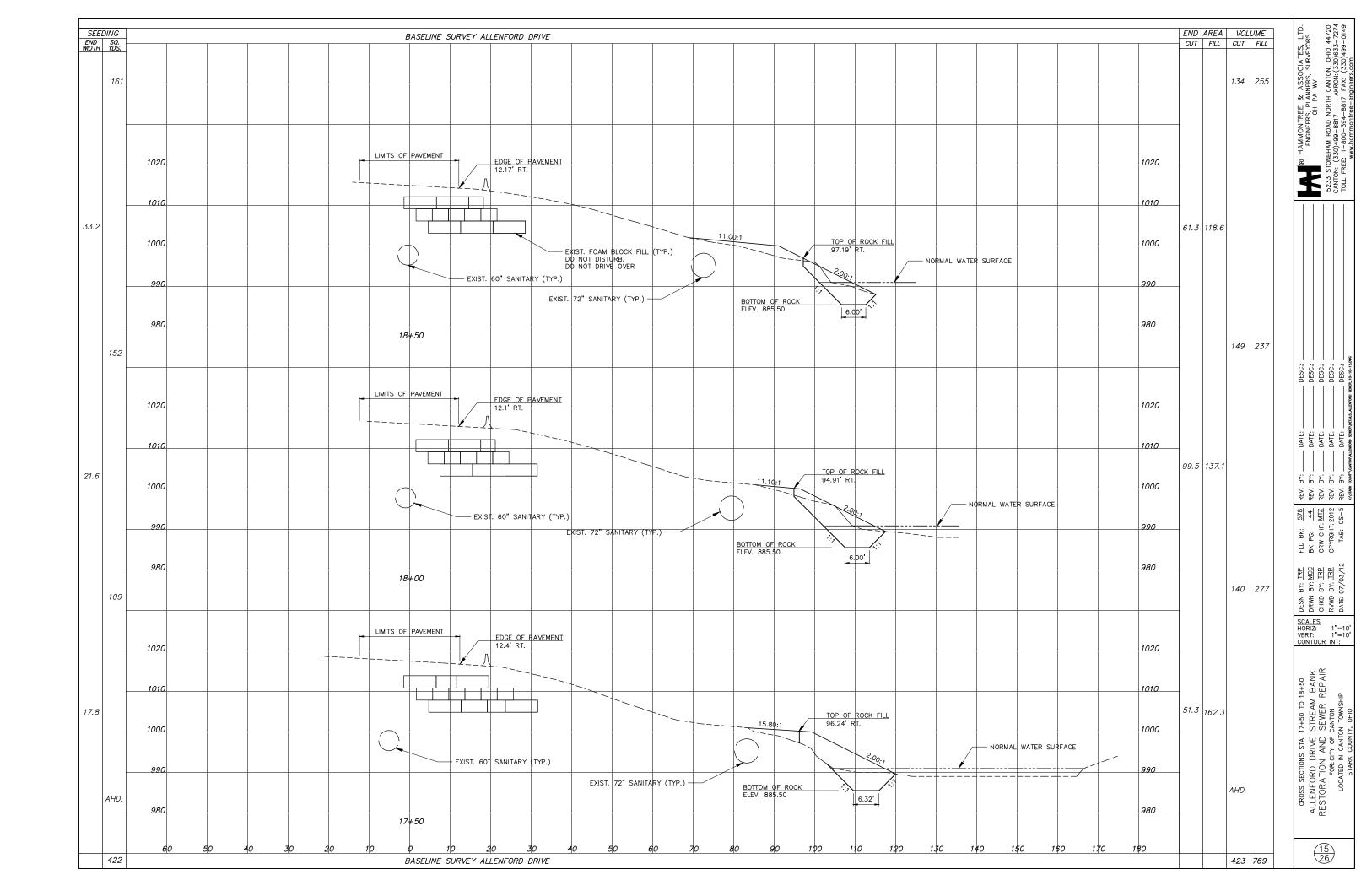
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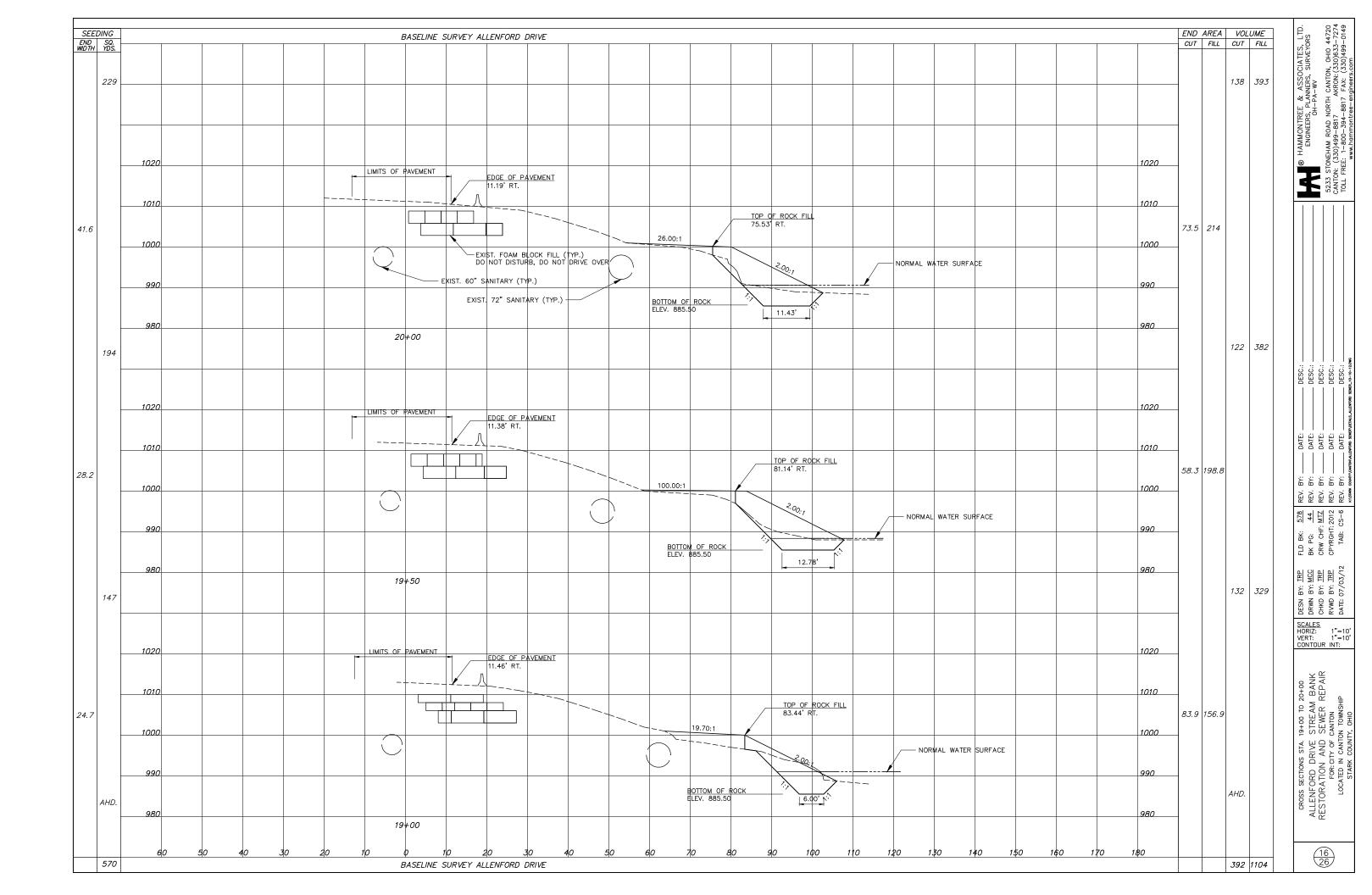


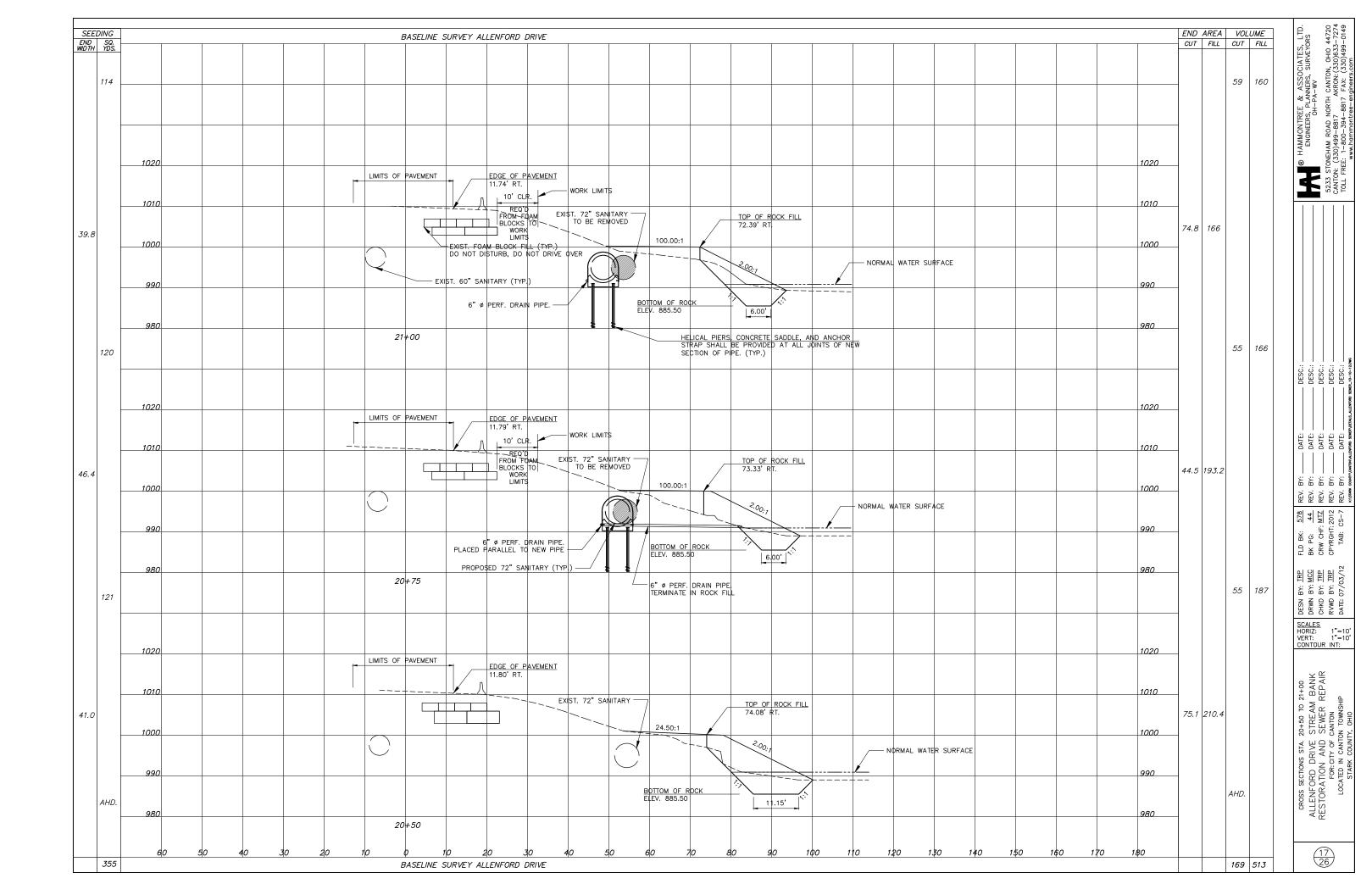


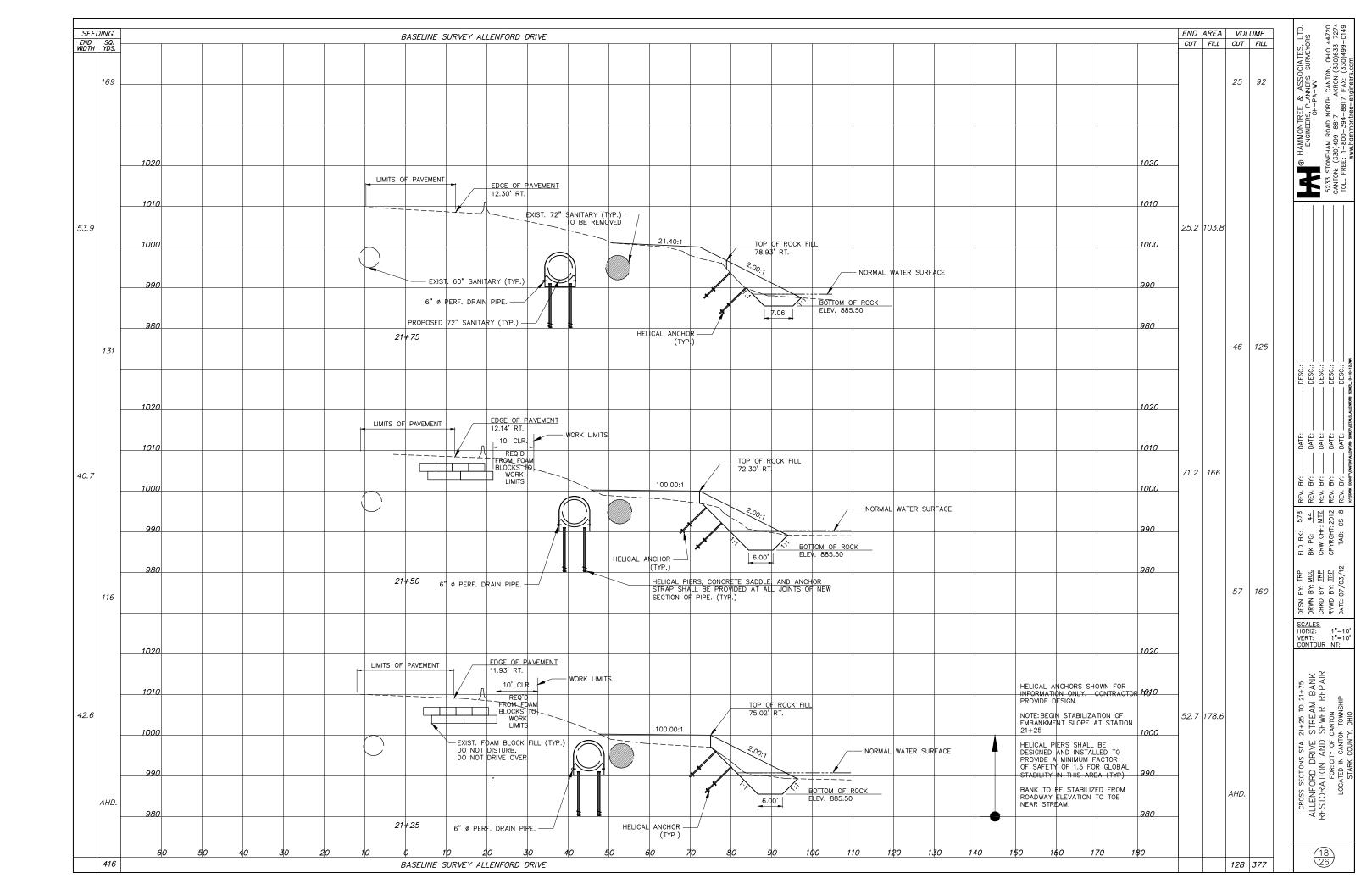


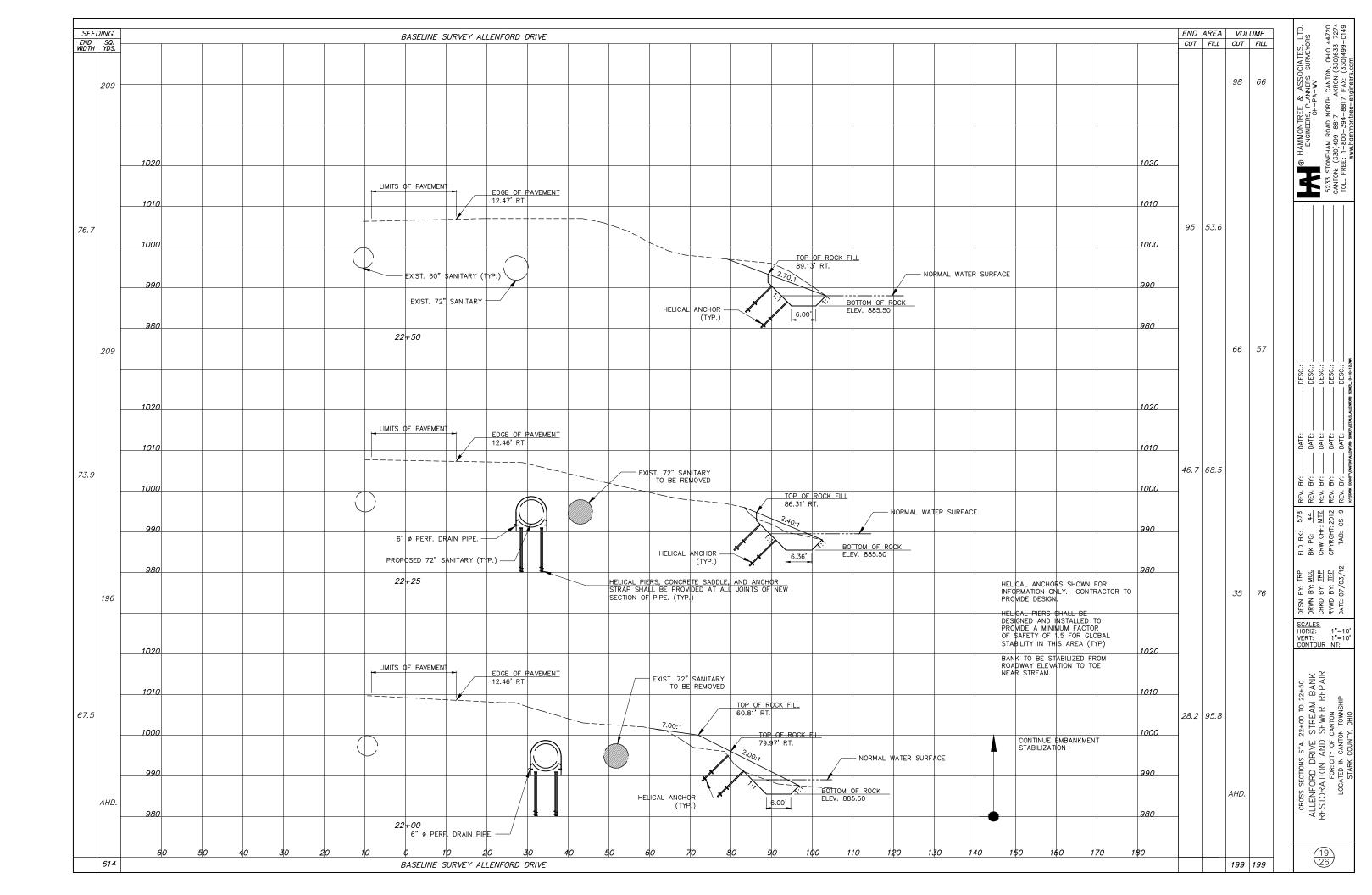


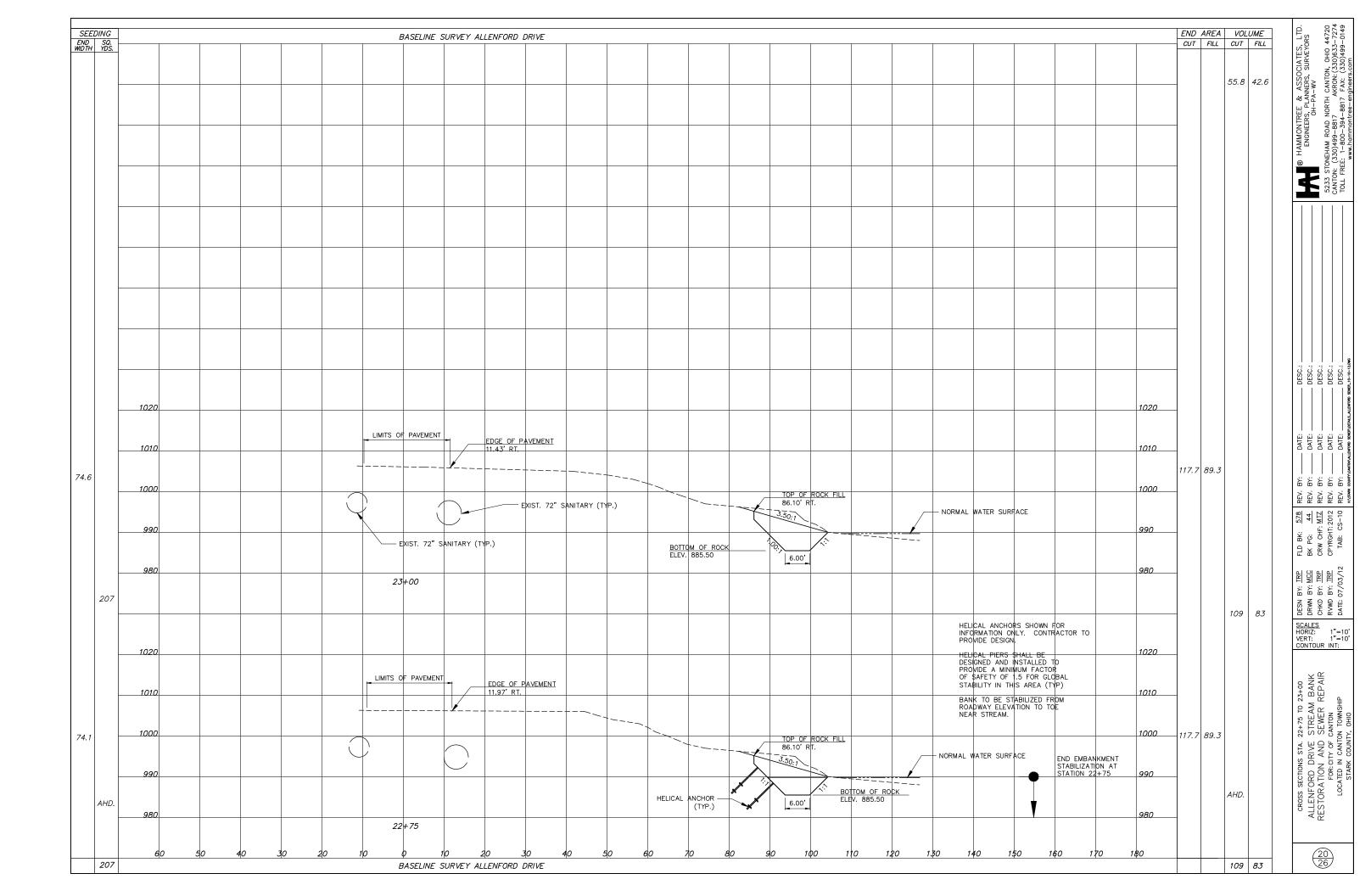




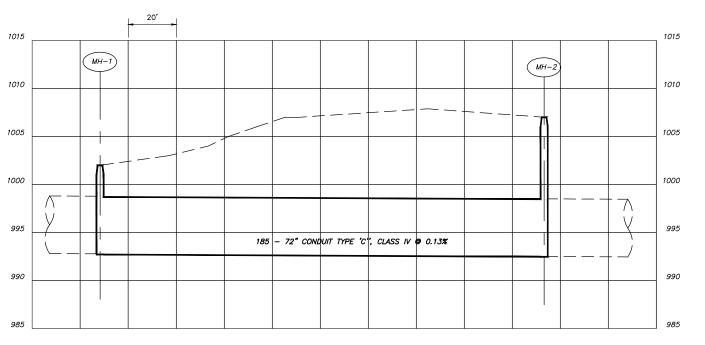








PROPOSED 72" SANITARY SEWER PROFILE



PROPOSED MH-1 ITEM 604- MANHOLE, TYPE 3 STA. 20+59.65, 54.31' RT. T/C ELEVATION: 1002.00 72" INV. (S): 992.71 EX. 72" INV. (N): 992.71±

PROPOSED MH-2 ITEM 604- MANHOLE, TYPE 3 STA. 22+49-52, 27.52' RT. T/C ELEVATION: 1007.00 72" INV. (N): 992.47 EX. 72" INV. (S): 992.47±

PIPE MATERIAL TESTING NOTES:

1. RCP SEWER PIPE, CLASS IV; ASTM C-76

2. JOINTS (SEWER AND MANHOLES); ASTM C-443; JOINT TESTING (SEWER): ASTM C-1103

3. LEAKAGE TEST (SEWER); ASTM C-969 4. BEDDING: ASTM C-12

CONTRACTOR SHALL EXPOSE BOTH LOCATIONS OF NEW PIPE TIE INS TO VERFY THE ELEVATIONS PRIOR TO INSTALLING NEW PIPE

SEE SHEET 10 FOR THE PLAN OF THE PROPOSED 72" SEWER

SEE SHEETS 22 AND 22A FOR MANHOLE DETAILS

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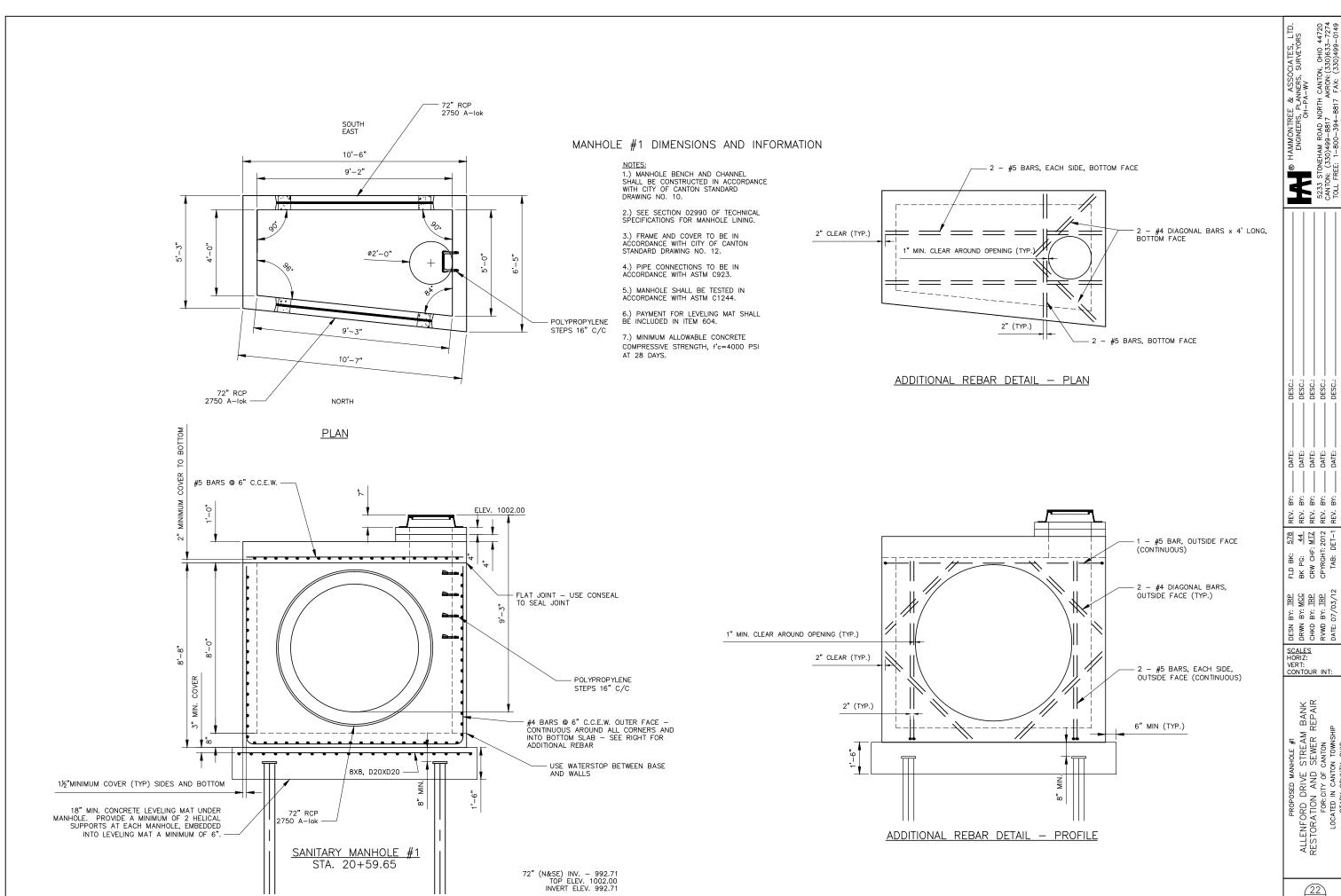
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TAB: P-2

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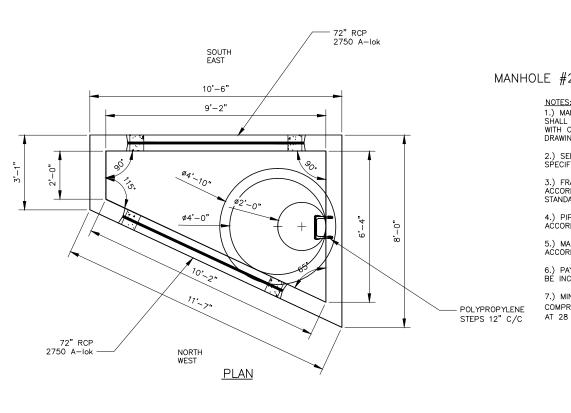
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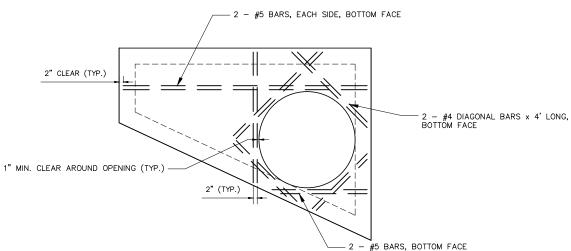
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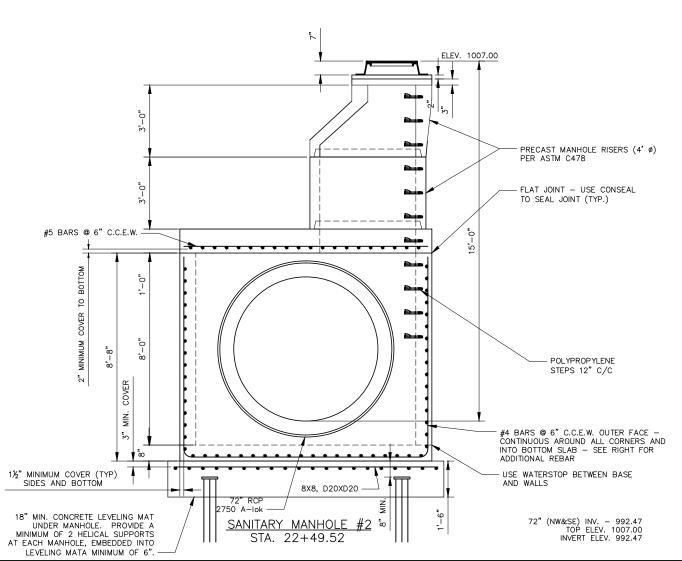


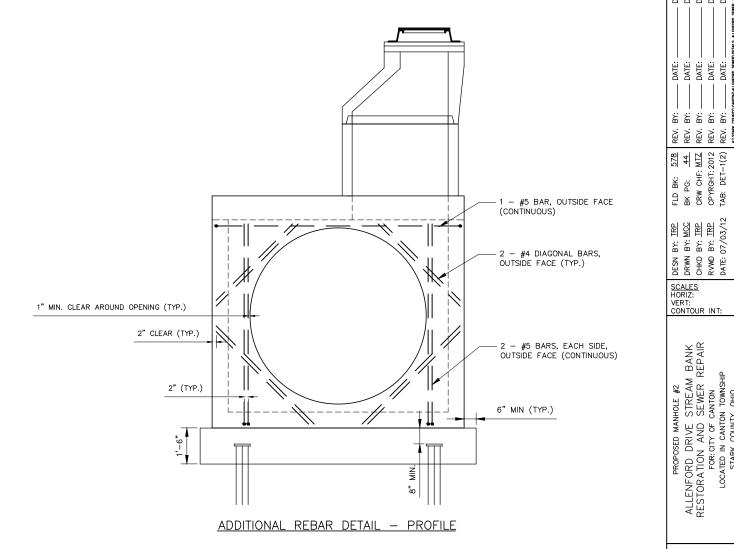
MANHOLE #2 DIMENSIONS AND INFORMATION

- 1.) MANHOLE BENCH AND CHANNEL SHALL BE CONSTRUCTED IN ACCORDANCE WITH CITY OF CANTON STANDARD DRAWING NO. 10.
- 2.) SEE SECTION 02990 OF TECHNICAL SPECIFICATIONS FOR MANHOLE LINING.
- 3.) FRAME AND COVER TO BE IN ACCORDANCE WITH CITY OF CANTON STANDARD DRAWING NO. 12.
- 4.) PIPE CONNECTIONS TO BE IN ACCORDANCE WITH ASTM C923.
- 5.) MANHOLE SHALL BE TESTED IN ACCORDANCE WITH ASTM C1244.
- 6.) PAYMENT FOR LEVELING MAT SHALL BE INCLUDED IN ITEM 604.
- 7.) MINIMUM ALLOWABLE CONCRETE COMPRESSIVE STRENGTH, f'c=4000 PSI AT 28 DAYS.



ADDITIONAL REBAR DETAIL - PLAN





PROPOSED MANHOLE #2
ALLENFORD DRIVE STREAM E
RESTORATION AND SEWER RE
FOR: CITY OF CANTON
LOCATED IN CANTON TOWNSHIP
STARK COUNTY, OHIO

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EROSION CONTROL NOTES

- ALL PROPERTIES ADJACENT TO THE SITE OF SOIL-DISTURBING ACTIVITY SHALL BE PROTECTED TO THE MAXIMUM EXTENT PRACTICABLE, FROM SOIL EROSION AND SEDIMENT RUNOFF AND DRAINAGE, INCLUDING, BUT NOT LIMITED TO PRIVATE PROPERTIES, NATURAL AND ARTIFICIAL WATERWAYS, WETLANDS, STORM SEWERS AND PUBLIC LANDS.
- CONSTRUCTION SITE FROSION AND SEDIMENT CONTROL PRACTICES LISED TO SATISFY THIS REQUIREMENT SHALL CONFORM, AS A MINIMUM, TO STATE OF OHIO STANDARDS AS SET FORTH IN THE MOST—CURRENT EDITION OF THE RAINWATER AND LAND DEVELOPMENT MANUAL, DEFINED BY THE OHIO DEPARTMENT OF NATURAL RESOURCES DIVISION OF SOIL AND WATER CONSERVATION AND NATURAL RESOURCE CONSERVATION SERVICE AND SHALL CONFORM TO THE MOST CURRENT OHIO ENVIRONMENTAL PROTECTION AGENCY, OHIO REVISED CODE CHAPTER 6111
- EROSION AND SEDIMENT CONTROL PLAN APPROVALS ISSUED IN ACCORDANCE WITH THESE RULES DO NOT RELIEVE THE OWNER OF RESPONSIBILITY FOR OBTAINING ALL OTHER NECESSARY PERMITS AND OR APPROVALS FROM FEDERAL STATE, AND/OR COUNTY AGENCIES, IF REQUIREMENTS VARY, THE MOST STRINGENT REQUIREMENTS SHALL
- EROSION AND SEDIMENT CONTROL PRACTICES AT THE SITE, AND AS IDENTIFIED IN THE ESC PLAN SHALL COMPLY WITH THE FOLLOWING:
- A. AN APPROVED EROSION AND SEDIMENT CONTROL PLAN OR APPROVAL LETTER FROM THE LOCAL SWCD SHALL BE
- B. LIMITS TO CLEARING AND GRADING SHALL BE SHOWN ON ESC PLANS. LIMITS TO CLEARING AND GRADING SHALL BE CLEARLY MARKED ON SITE WITH SIGNAGE, FLAGGING, AND/OR FENCING ETC.
- C. INSTALL FROSION AND SEDIMENT PERIMETER CONTROLS AS A FIRST ACTION OF CONSTRUCTION AS SPECIFIED BY CONSTRUCTION SEQUENCE. THIS SHALL INCLUDE AND IS NOT LIMITED TO PROTECTIVE BMP'S FOR STREAM CORRIDORS AND CROSSINGS, WETLANDS, SITE ENTRANCE, SEDIMENT TRAPS & BASINS, BARRIERS, AND DIVERSION
- D. CONCENTRATED STORM WATER RUNOFF SHALL PASS THROUGH A SEDIMENT CONTROL DEVICE BEFORE EXITING THE SITE BOUNDARIES. CONCENTRATED RUNOFF FROM BARE SOIL AREAS SHALL BE DIVERTED INTO A SETTLING POND OR SEDIMENT CONTROL STRUCTURE, OR OTHER APPROVED SEDIMENT BARRIER BEFORE LEAVING THE SITE.
- F FARTHEN STRUCTURES SUCH AS DAMS, BASINS, STREAM MODIFICATIONS AND WATER DIVERSIONS SHALL BE SEEDED AND MULCHED WITH IN SEVEN (7) DAYS OF THE COMPLETION OF INSTALLATION. DAMS SHALL CONFORM TO THE OHIO DAM LAWS (ORC 1521.06).
- STABILIZATION OF CRITICAL AREAS WITHIN 50 FEET OF ANY STREAM OR WETLAND SHALL BE TEMPORARIL'S STABILIZED WITHIN TWO (2) DAYS OF DISTURBANCE IF AREA WILL REMAIN INACTIVE FOR SEVEN (7) DAYS OR LONGER CONSTRUCTION VEHICLES SHALL AVOID STREAMS AND THE 50 FOOT BUFFER AREAS, IF AN ACTIVE DRAINAGE WAY MUST BE CROSSED BY CONSTRUCTION VEHICLES REPEATEDLY DURING CONSTRUCTION, A TEMPORARY STREAM CROSSING SHALL BE CONSTRUCTED ACCORDING TO THE SPECIFICATIONS IN THE RAINWATER & LAND DEVELOPMENT MANUAL. CONSTRUCTION OF BRIDGES, CULVERTS OR SEDIMENT CONTROL STRUCTURES SHALL NOT PLACE SOIL, DEBRIS AND OTHER FINE PARTICULATE MATERIAL INTO OR CLOSE TO THE WATER RESOURCE IN SUCH A MANNER THAT IT MAY SLOUGH, SLIP OR ERODE.
- G. STORM SEWER INLETS SHALL BE PROTECTED SO THAT SEDIMENT-LADEN RUNOFF WILL NOT ENTER THE STORM SEWER SYSTEM WITHOUT FIRST BEING FILTERED AND/OR TREATED. SANITARY SEWER MANHOLES SHALL BE PROTECTED SO THAT NO STORM RUNOFF WILL ENTER THE SANITARY SEWER SYSTEM.
- H. RE-VEGETATE SOIL. TEMPORARY SOIL STABILIZATION SHALL OCCUR WITHIN SEVEN (7) DAYS AFTER ROUGH GRADING IF THE AREA WILL REMAIN IDLE LONGER THAN FOURTEEN (14) DAYS. PERMANENT SOIL STABILIZATION SHALL BE INSTALLED WITHIN SEVEN (7) DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. PERMANENT VEGETATION IS A GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE AND MATURE ENOUGH TO SURVIVE WINTER WEATHER CONDITION.
- I SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED TO PREVENT SOIL LOSS STABILIZATION SHALL BE REQUIRED IF STOCKPILES ARE LOCATED WITHIN CRITICAL AREAS NEAR STREAMS OR WETLANDS, OR IF DETERMINED BY THE LOCAL SWCD THAT SEDIMENT FROM STOCKPILES WILL LEAVE THE SITE.
- J. UNSTABLE SOILS PRONE TO SLIPPING OR SLOUGHING SHALL NOT BE CLEARED, GRADED, EXCAVATED, FILLED OR HAVE LOADS IMPOSED UPON THEM UNLESS THE WORK IS PLANNED BY A QUALIFIED PROFESSIONAL ENGINEER AND INSTALLED IN ACCORDANCE WITH THE ESC PLAN. CUT AND FILL SLOPES SHOULD BE DESIGNED TO MINIMIZE EROSION PROBLEMS.
- ADEQUATE SLOPE DESIGN INCLUDES USE OF ROUGH SOIL SURFACE ALONG THE FACE OF THE SLOPE; WATER DIVERSION ALONG THE TOP OF THE SLOPE AWAY FROM THE FACE; TERRACES TO REDUCE SLOPE LENGTH; DELIVERY OF CONCENTRATED STORM WATER FLOWS TO THE BASE OF THE SLOPE VIA ADEQUATE CHANNEL OR PIPE: AND DRAINAGE FOR WATER SEEPS IN THE SLOPE THAT ENDANGER SLOPE STABILITY.
- K. SOIL SHALL BE REMOVED FROM PAVED SURFACES AND/OR PUBLIC ROADS AT THE END OF EACH DAY IN SUCH A MANNER THAT DOES NOT CREATE OFF-SITE SEDIMENTATION IN ORDER TO ENSURE SAFETY AND ABATE OFF-SITI COLLECTED SEDIMENTS SHALL BE PLACED IN A STABLE LOCATION ON SITE OR TAKEN OFF-SITE TO
- L. STABILIZE DISTURBED OR MODIFIED DRAINAGE WAYS. REDUCE EROSION EFFECTS OF STORM WATER BY USING AND/OR MAINTAINING GRASSED SWALES, INFILTRATION STRUCTURES, OR WATER DIVERSIONS.
- M. SEDIMENT AND EROSION CONTROLS SHALL BE INSPECTED ONCE EVERY SEVEN (7) DAYS AND WITHIN 24 HOURS OF A 0.5" OR GREATER RAINFALL EVENT. A WRITTEN LOG OF THESE INSPECTIONS AND IMPROVEMENTS TO CONTROLS SHALL BE KEPT ON SITE. THE INSPECTIONS SHALL INCLUDE THE DATE OF INSPECTION, NAME OF INSPECTOR, WEATHER CONDITIONS, OBSERVATIONS, ACTIONS TAKEN TO CORRECT ANY PROBLEMS AND THE DATE CORRECTIVE ACTIONS WERE TAKEN
- TRENCHES FOR UNDERGROUND UTILITY LINES AND PIPES SHALL BE TEMPORARILY STABILIZED WITHIN SEVEN (7) DAYS IF THEY ARE TO REMAIN INACTIVE FOR THIRTY (30) DAYS. TRENCH DEWATERING DEVICES SHALL DISCHARGE IN A MANNER THAT FILTERS SOIL—LADEN WATER BEFORE DISCHARGING IT TO A RECEIVING DRAINAGE DITCH OR POND. IF SEEDING, MULCHING, OR OTHER EROSION AND SEDIMENT CONTROL MEASURES WERE PREVIOUSLY INSTALLED, THESE PROTECTIVE MEASURES SHALL BE REINSTALLED.
- O. DISTURBED AREAS WHICH WILL REMAIN UNWORKED FOR A PERIOD OF 14 DAYS OR MORE SHALL BE STABILIZED WITH SEEDING AND MUICHING OR OTHER APPROPRIATE MEANS WITHIN 7 DAYS.
- SOLID, SANITARY AND TOXIC WASTE MUST BE DISPOSED OF IN A PROPER MANNER IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS. IT IS PROHIBITED TO BURN, BURY OR POUR OUT ONTO THE GROUND OR INTO THE STORM SEWERS ANY SOLVENTS, PAINTS, STAINS, GASOLINE, DIESEL FUEL, USED MOTOR OIL, HYDRAULIC FLUID, ANTIFREZEF, CEMENT CURING COMPOUNDS AND OTHER SUCH TOXIC OR HAZARDOUS WASTES. STORAGE TANKS SHOULD BE LOCATED IN DIKED AREAS AWAY FROM ANY DRAINAGE CHANNELS. THE DIKED AREA SHOULD HOLD A VOLUME 110% OF THE LARGEST TANK.
- Q. OFF-SITE VEHICLE TRACKING SEDIMENT SHALL BE MINIMIZED. CONSTRUCTION VEHICLES ARE LIMITED TO THE CONSTRUCTION ACCESS ROAD(S) NOTED ON THE PLAN. OFFSITE SEDIMENT TRACKING SHALL BE CONTROLLED BY REGULARLY SCHEDULED SWEEPING OF OFFSITE ACCESS ROADS AND MAINTENANCE OF ROCK CONSTRUCTION
- R. ALL EROSION AND SEDIMENT CONTROL PRACTICES MUST MEET THE STANDARDS AND SPECIFICATIONS OF THE OHIO RAINWATER AND LAND DEVELOPMENT HANDBOOK (2006).
- S. OTHER EROSION AND SEDIMENT CONTROL ITEMS MAY BE NECESSARY DUE TO ENVIRONMENTAL CONDITIONS.
- T. WINTERIZATION ANY DISTURBED AREA THAT IS NOT GOING TO BE WORKED FOR 14 DAYS OR MORE MUST BE SEEDED AND MULCHED BY NOVEMBER 1 OR MUST HAVE A DORMANT SEEDING OR MULCH COVER APPLIED BETWEEN NOVEMBER 1 AND MARCH 1.
- U. CONCRETE CEMENT IS TO BE TAKEN BACK TO PLANT FOR WASHOUT AND RECYCLING OR DESIGNATED AREAS ON SITE FOR CONCRETE WASHOUT ARE TO BE USED.

ADDITIONAL CONSTRUCTION SITE POLLUTION CONTROLS

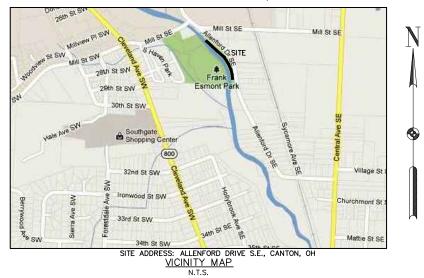
- CONSTRUCTION PERSONNEL. INCLUDING SUBCONTRACTORS WHO MAY USE OR HANDLE HAZARDOUS OR TOXIC MATERIALS, SHALL BE MADE AWARE OF THE FOLLOWING GENERAL GUIDELINES REGARDING DISPOSAL AND HANDLING OF HAZARDOUS AND CONSTRUCTION WASTES:
 - PREVENT SPILLS
 - FOLLOW LABEL DIRECTIONS FOR DISPOSAL
 - •REMOVE LIDS FROM EMPTY BOTTLES AND CANS WHEN DISPOSING IN TRASH
 - RECYCLE WASTES WHENEVER POSSIBLE
 - DON'T POUR INTO WATERWAYS, STORM DRAINS OR ONTO THE GROUND
 - DON'T BURY CHEMICALS OR CONTAINERS
 - DON'T POUR DOWN THE SINK, FLOOR DRAIN OR SEPTIC TANKS
 - . DON'T BURN CHEMICALS OR CONTAINERS
- 2. CONTAINERS SHALL BE PROVIDED FOR THE PROPER COLLECTION OF ALL WASTE MATERIAL INCLUDING CONSTRUCTION DEBRIS, TRASH, PETROLEUM PRODUCTS AND ANY HAZARDOUS MATERIALS USED ON-SITE. CONTAINERS SHALL BE COVERED AND NOT LEAKING. ALL WASTE MATERIAL SHALL BE DISPOSED OF AT FACILITIES APPROVED FOR THAT MATERIAL, CONSTRUCTION DEMOLITION AND DEBRIS (CD&D) WASTE MUST BE DISPOSED OF AT AN OHIO EPA
- 3 NO CONSTRUCTION RELATED WASTE MATERIALS ARE TO BE BURIED ON-SITE BY EXCEPTION CLEAN FILL (BRICKS HARDENED CONCRETE, SOIL) MAY BE UTILIZED IN A WAY WHICH DOES NOT ENCROACH UPON NATURAL WETLANDS, STREAMS OR FLOODPLAINS OR RESULT IN THE CONTAMINATION OF WATERS OF THE STATE.
- HANDLING CONSTRUCTION CHEMICALS. MIXING, PUMPING, TRANSFERRING OR OTHER HANDLING OF CONSTRUCTION CHEMICALS SUCH AS FERTILIZER, LIME, ASPHALT, CONCRETE DRYING COMPOUNDS, AND ALL OTHER POTENTIALLY HAZARDOUS MATERIALS SHALL BE PERFORMED IN AN AREA AWAY FROM ANY WATERCOURSE, DITCH OR STORM
- EQUIPMENT FUELING AND MAINTENANCE, OIL CHANGING, ETC., SHALL BE PERFORMED AWAY FROM WATERCOURSES, DITCHES OR STORM DRAINS, IN AN AREA DESIGNATED FOR THAT PURPOSE. THE DESIGNATED AREA SHALL BE EQUIPPED FOR RECYCLING OIL AND CATCHING SPILLS. SECONDARY CONTAINMENT SHALL BE PROVIDED FOR ALL FUEL OIL STORAGE TANKS. THESE AREAS MUST BE INSPECTED EVERY SEVEN DAYS AND WITHIN 24 HRS. OF A 0.5 INCH OR GREATER RAIN EVENT TO ENSURE THERE ARE NO EXPOSED MATERIALS WHICH WOULD CONTAMINATE STORM WATER, SITE OPERATORS MUST BE AWARE THAT SPILL PREVENTION CONTROL AND COUNTERMEASURES (SPCC)
 REQUIREMENTS MAY APPLY. AN SPCC PLAN IS REQUIRED FOR SITES WITH ONE SINGLE ABOVE GROUND TANK OF 660
 GALLONS OR MORE, ACCUMULATIVE ABOVE GROUND STORAGE OF 1330 GALLONS OR MORE, OR 42,000 GALLONS OF UNDERGROUND STORAGE. CONTAMINATED SOILS MUST BE DISPOSED OF IN ACCORDANCE WITH ITEM 8
- CONCRETE WASH WATER SHALL NOT BE ALLOWED TO FLOW TO STREAMS, DITCHES, STORM DRAINS, OR ANY OTHER WATER CONVEYANCE. A SUMP OR PIT WITH NO POTENTIAL FOR DISCHARGE SHALL BE CONSTRUCTED IF NEEDED TO CONTAIN CONCRETE WASH WATER. FIELD TILE OR OTHER SUBSURFACE DRAINAGE STRUCTURES WITHIN 10 FT. OF THE SUMP SHALL BE CUT AND PLUGGED. FOR SMALL PROJECTS, TRUCK CHUTES MAY BE RINSED AWAY FROM ANY WATER
- SPILL REPORTING REQUIREMENTS: SPILLS ON PAVEMENT SHALL BE ABSORBED WITH SAWDUST OR KITTY LITTER AND DISPOSED OF WITH THE TRASH AT A LICENSED SANITARY LANDFILL. HAZARDOUS OR INDUSTRIAL WASTES SUCH AS MOST SOLVENTS, GASOLINE, OIL-BASED PAINTS, AND CEMENT CURING COMPOUNDS REQUIRE SPECIAL HANDLING PRINTS SHALL BE REPORTED TO OHIO EPA, THE LOCAL FIRE DEPARTMENT, AND THE LOCAL EMERGENCY PLANNING COMMITTEE WITHIN 30 MIN. OF THE DISCOVERY OF THE RELEASE. ALL SPILLS WHICH CONTACT WATERS OF
- CONTAMINATED SOILS, IF SUBSTANCES SUCH AS OIL, DIESEL FUEL, HYDRAULIC FLUID, ANTIFREEZE, FTC. ARE SPILLED. LEAKED, OR RELEASED ONTO THE SOIL, THE SOIL SHOULD BE DUG UP AND DISPOSED OF AT LICENSED SANITARY LANDFILL OR OTHER APPROVED PETROLEUM CONTAMINATED SOIL REMEDIATION FACILITY. (NOT A CONSTRUCTION/ DEMOLITION DERRIS LANDELL) NOTE THAT STORM WATER RUN OFF ASSOCIATED WITH CONTAMINATED SOILS ARE NOT
- 9. OPEN BURNING, NO MATERIALS CONTAINING RUBBER, GREASE, ASPHALT, OR PETROLEUM PRODUCTS, SUCH AS TIRES. AUTOPARTS, PLASTICS OR PLASTIC COATED WIRE MAY BE BURNED (OAC 3745-19). OPEN BURNING IS NOT IN RESTRICTED AREAS, WHICH ARE DEFINED AS: 1) WITHIN CORPORATION LIMITS; 2) WITHIN 1000 FEET OUTSIDE A MUNICIPAL CORPORATION HAVING A POPULATION OF 1000 TO 10,000; AND 3) A ONE MILE ZONE OUTSIDE OF A CORPORATION OF 10,000 OR MORE, OUTSIDE OF RESTRICTED AREAS, NO OPEN BURNING IS ALLOWED WITHIN A 1000 FEET OF AN INHABITED BUILDING ON ANOTHER PROPERTY. OPEN BURNING IS PERMISSIBLE IN A RESTRICTED AREA FOR: HEATING TAR, WELDING, SMUDGE POTS AND SIMILAR OCCUPATIONAL NEEDS, AND HEATING FOR WARMTH OR OUTDOOR BARBEQUES. OUTSIDE OF RESTRICTED AREAS, OPEN BURNING IS PERMISSIBLE FOR LANDSCAPE OR LAND-CLEARING WASTES (PLANT MATERIAL, WITH PRIOR WRITTEN PERMISSION FROM OHIO EPA). AND AGRICULTURAL
- 10 DUST CONTROL OR DUST SUPPRESSANTS SHALL BE USED TO PREVENT NUISANCE CONDITIONS IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATIONS AND IN A MANNER, WHICH PREVENT A DISCHARGE TO WATERS OF THE STATE. SUFFICIENT DISTANCE MUST BE PROVIDED BETWEEN APPLICATIONS AND NEARBY BRIDGES, CATCH BASINS, AND OTHER WATERWAYS. APPLICATION (EXCLUDING WATER) MAY NOT OCCUR WHEN RAIN IS IMMINENT AS NOTED IN THE SHORT
- 11. OTHER AIR PERMITTING REQUIREMENTS: CERTAIN ACTIVITIES ASSOCIATED WITH CONSTRUCTION WILL REQUIRE AIR PERMITS INCLUDING BUT NOT LIMITED TO: MOBILE CONCRETE BATCH PLANTS, MOBILE ASPHALT PLANTS, CONCRETE CRUSHERS, LARGE GENERATORS, ETC. THESE ACTIVITIES WILL REQUIRE SPECIFIC OHIO EPA AIR PERMITS FOR INSTALLATION AND OPERATION. OPERATORS MUST SEEK AUTHORIZATION FROM THE CORRESPONDING DISTRICT OF OHIO EPA, FOR DEMOLITION OF ALL COMMERCIAL SITES, A NOTIFICATION FOR RESTORATION AND DEMOLITION MUST BE
- 12. PROCESS WASTE WATER/LEACHATE MANAGEMENT, OHIO EPA'S CONSTRUCTION GENERAL PERMIT ONLY ALLOWS THE DISCHARGE OF STORM WATER AND DOES NOT INCLUDE OTHER WASTE STREAMS/DISCHARGES SUCH AS VEHICLE AND/OR EQUIPMENT WASHING, ON—SITE SEPTIC LEACHATE CONCRETE WASH OUTS, WHICH ARE CONSIDERED PROCESS WASTEWATERS. ALL PROCESS WASTEWATERS MUST BE COLLECTED AND PROPERLY DISPOSED AT AN APPROVED DISPOSAL FACILITY. IN THE EVENT, LEACHATE OR SEPTAGE IS DISCHARGED; IT MUST BE ISOLATED FOR COLLECTION AND PROPER DISPOSAL AND CORRECTIVE ACTIONS TAKEN TO ELIMINATE THE SOURCE OF WASTE WATER.
- 13. A PERMIT TO INSTALL (PTI) IS REQUIRED PRIOR TO THE CONSTRUCTION OF ALL CENTRALIZED SANITARY SYSTEMS, INCLUDING SEWER EXTENSIONS, AND SEWERAGE SYSTEMS (EXCEPT THOSE SERVING ONE, TWO, AND THREE FAMILY DWELLINGS) AND POTABLE WATER LINES. PLANS MUST BE SUBMITTED AND APPROVED BY OHIO EPA. ISSUANCE OF AN OHIO EPA CONSTRUCTION GENERAL STORM WATER PERMIT DOES NOT AUTHORIZE THE INSTALLATION OF ANY SEWERAGE SYSTEM WHERE OHIO EPA HAS NOT APPROVED A PTI.

THE UNDERSIGNED, CERTIFY THAT I UNDERSTAND AND WILL ADHERE TO THE REQUIREMENTS, TERMS, AND CONDITIONS OF THE STORM WATER POLLUTION PREVENTION PLAN REVIEWED AND APPROVED BY THE STARK SOIL AND WATER CONSERVATION DISTRICT FOR COMPLIANCE WITH THE STARK COUNTY WATER QUALITY REGULATIONS FOR THE ABO REFERENCED PROJECT.

OWNER - CITY OF CANTON DANIEL MOEGLIN, P.E., S.I., CITY ENGINEER DATE

STORMWATER POLLUTION PREVENTION PLAN

SWPPP PREPARATION DATE: NOVEMBER 19, 2013



CONSTRUCTION SEQUENCE

- CALL FOR PRE-CONSTRUCTION MEETING WITH STARK SOIL & WATER CONSERVATION DISTRICT.
- 2. INSTALL SILT FENCE AND CONSTRUCTION ENTRANCE AS SHOWN ON PLANS. (CONTRACTOR SHALL DESIGNATE THE AREA UTILIZED FOR CONSTRUCTION ENTRANCE.)
- 3. CLEAR TREES, BRUSH AND STUMPS AS NECESSARY.
- 4. ALL PERIMETER BARRIERS TO BE CONSTRUCTED WITHIN 7 DAYS OF FIRST GRUBBING.
- 5. INSTALL TEMPORARY SEEDING TO ALL STRUCTURAL EROSION INSTALLATIONS PRIOR TO MASS GRADING OF SITE
- 6. STRIP/STOCKPILE TOPSOIL. STOCKPILES THAT ARE INACTIVE FOR 21 DAYS OR LONGER SHALL BE SEEDED/STABILIZED
- 7. INSTALL BANK STABILIZATION INCLUDING HELICAL PILES ACCORDING TO PLANS.
- 8. INSTALL REPLACEMENT SEWER, INCLUDING HELICAL PILES, ACCORDING TO PLANS.
- 9. FINISH GRADE, SEED AND MULCH ALL DISTRIBUTED AREAS AND MAINTAIN TEMPORARY EROSION CONTROLS AS
- 10. UPON COMPLETION AND SITE STABILIZATION, REMOVE SOIL AND EROSION CONTROLS, EXCEPT FOR SILT FENCING. SILT FENCE TO BE REMOVED AFTER 80% OF SITE HAS BEEN STABILIZED.

ADDITIONAL PROVISIONS:
1. INSTALLATION OF SILT FENCING SHALL NOT OCCUR PRIOR TO THE INITIAL CITY PRE-CONSTRUCTION MEETING.

- 2. CONTINUOUSLY SWEEP DRIVES AND STREET AND MAINTAIN CONSTRUCTION ENTRANCE
- ALL AREAS AT FINAL GRADE OR WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR 14 DAYS OR LONGER SHALL BE
- ADHERE TO US ARMY CORPS OF ENGINEERS SEDIMENT CONTROL PROVISIONS IN NATIONWIDE PERMIT 12 (SEE SHEET

SITE INFO

SITE DESCRIPTION

FXISTING - CRFFK BANK

PROPOSED - CREEK BANK

REPLACING APPROXIMATELY 190 FEET OF 72" CONCRETE PIPE (WITH HELICAL PILES) ALONG BANK. STABILIZING APPROXIMATELY 1,150 FEET OF CREEK BANK, INCLUDING WORKING IN CREEK. INSTALLING HELICAL PILES ALONG

APPROXIMATELY 150 FEET OF CREEK BANK TOTAL AREA OF SITE AREA OF SITE TO UNDER GO EXCAVATION 1.0 AC.

PRE-CONSTRUCTION RUNOFF COEFFICIENT - 0.3 POST-CONSTRUCTION RUNOFF COEFFICIENT - 0.3

SCHEDULE OF MAJOR CONSTRUCTION

COMMENCEMENT - JANUARY 2014 COMPLETION - MARCH 2014

RECEIVING STREAM & SURFACE WATER NIMISHILLEN CREEK

SOILS

CuB-CHIL-URBAN LAND COMPLEX, UNDULATING SLOAN SILT LOAM

OWNER/DEVELOPER

2436 30TH STREET N.E CANTON, OHIO 44705

ATTN: DANIEL J. MOEGLIN, P.E., S.I. PHONE: (330) 491-3100

ENGINEER / SURVEYOR

HAMMONTREE & ASSOCIATES, LIMITED 5233 STONEHAM ROAD NORTH CANTON, OHIO 44720

THOMAS R. POWELL P.F. ATTN-KARL J. OPRISCH, P.E. PHONE-330-489-3381

tpowell@hammontree-engineers.com . koprisch@hammontree-engineers.com

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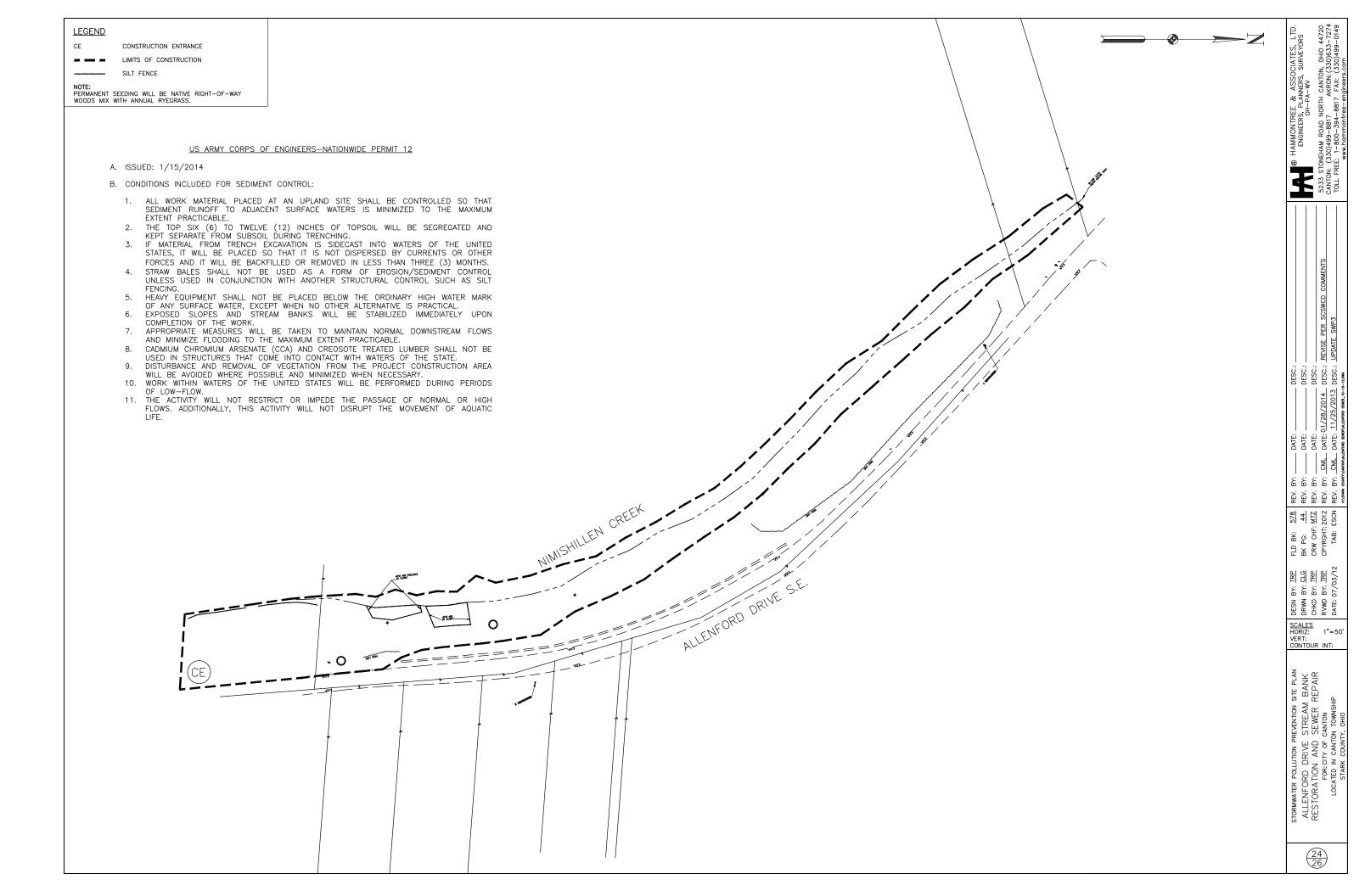
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CONTOUR INT

REVENTION COVER SHEET

STREAM BANK

SEWER REPAIR
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TON TOWNSHIP
NTY, CHIO TORMWATER POLLUTION PREY ALLENFORD DRIVE S
RESTORATION AND S
FOR: CITY OF C
LOCATED IN CANTON
STARK COUNTY



- 2. THE CONSTRUCTION ENTRANCE SHALL BE AS LONG AS REQUIRED TO STABILIZE HIGH TRAFFIC AREAS BUT NOT LESS THAN 70 FT. (EXCEPTION: APPLY 30 FT. MINIMUM TO SINGLE RESIDUAL LOTS).
- THE STONE LAYER SHALL BE AT LEAST 18 INCHES THICK FOR LIGHT OR HEAVY DUTY USE.
- 4. THE ENTRANCE SHALL BE AT LEAST 20 FEET WIDE, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS
- 5. GEOTEXTILE: A GEOTEXTILE SHALL BE LAID OVER THE ENTIRE AREA PRIOR TO PLACING STONE. IT SHALL BE COMPOSED OF STRONG ROT-PROOF POLYMERIC FIBERS AND MEET THE FOLLOWING SPECIFICATIONS:

GEOTEXTILE SPECIFICATION FOR CONSTRUCTION ENTRANCE

MINIMUM TENSILE STRENGTH 200 LBS. MINIMUM PUNCTURE STRENGTH 80 PSI MINIMUM TEAR STRENGTH
MINIMUM ELONGATION 50 LBS. 20% MINIMUM BURST STRENGTH EQUIVALENT OPENING SIZE

1X10-3 CM/SEC. PERMITIVITY

- 6. TIMING: THE CONSTRUCTION ENTRANCE SHALL BE INSTALLED AS SOON AS IS PRACTICABLE BEFORE MAJOR GRADING ACTIVITIES.
- CULVERT: A PIPE OR CULVERT SHALL BE CONSTRUCTED UNDER THE ENTRANCE IF NEEDED TO PREVENT SURFACE WATER FROM FLOWING ACROSS THE ENTRANCE OR TO PREVENT RUNOFF FROM BEING DIRECTED OUT ONTO PAVED SURFACES.
- 8. WATER BAR: A WATER BAR SHALL BE CONSTRUCTED AS PART OF THE CONSTRUCTION ENTRANCE IF NEEDED TO PREVENT SURFACE RUNOFF FROM FLOWING THE LENGTH OF THE CONSTRUCTION ENTRANCE AND OUT ONTO PAVED SURFACES.
- 9. MAINTENANCE: TOP DRESSING OF ADDITIONAL STONE SHALL BE APPLIED AS CONDITIONS DEMAND. MUD SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADS, OR ANY SURFACE WHERE RUNOFF IS NOT CHECKED BY SEDIMENT CONTROLS, SHALL BE REMOVED IMMEDIATELY. REMOVAL SHALL BE ACCOMPLISHED BY SCRAPING OR SWEEPING.
- 10. CONSTRUCTION ENTRANCES SHALL NOT BE RELIED UPON TO REMOVE MUD FROM VEHICLES AND PREVENT OFF-SITE TRACKING. VEHICLES THAT ENTER AND LEAVE THE CONSTRUCTION-SITE SHALL BE RESTRICTED FROM MUDDY AREAS.
- 11. REMOVAL: THE ENTRANCE SHALL REMAIN IN PLACE UNTIL THE DISTURBED AREA IS STABILIZED OR REPLACED WITH A PERMANENT ROADWAY OR ENTRANCE.

GRADE TREATMENT

CUT SLOPES-GREATER THAN 3:1 SLOPES

- 1. STAIR—STEP GRADING MAY BE CARRIED OUT ON ANY MATERIAL SOFT ENOUGH TO BE RIPPED WITH A BULLDOZER. THE RATIO OF THE HORIZONTAL DISTANCE TO THE VERTICAL CUT DISTANCE SHALL BE FLATTER THAN 1:1 AND THE HORIZONTAL PORTION OF THE "STEP" SHALL SLOPE TOWARD THE VERTICAL WALL INDIVIDUAL VERTICAL CUTS SHALL NOT BE MORE THAN 24 INCHES ON SOFT SOIL MATERIALS AND NOT MORE THAN 36
- 2. GROOVING MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION. SUGGESTED IMPLEMENTS INCLUDE DISCS, TILLERS, SPRING HARROWS, AND THE TEETH ON A FRONT-END LOADER BUCKET. SUCH GROOVES SHALL NOT BE LESS THAN 3 INCHES DEEP NOR FURTHER THAN 15 INCHES APART.

FILL SLOPES STEEPER THAN 3:1 SHALL BE GROOVED OR ALLOWED TO REMAIN ROUGH AS THEY ARE CONSTRUCTED UTILIZING METHOD

- 1. GROOVING MAY BE MADE WITH ANY APPROPRIATE IMPLEMENT WHICH CAN BE SAFELY OPERATED ON THE SLOPE AND WHICH WILL NOT CAUSE UNDUE COMPACTION SUCH AS DISCS, TILLERS, SPRING HARROWS, AND THE TEETH ON A FRONT-END LOADER BUCKET. GROOVES LEFT SHALL NOT BE LESS THAN 3 INCHES DEEP NOR FURTHER THAN 15 INCHES APART.
- 2. AS LIFTS OF THE FILL ARE CONSTRUCTED, SOIL AND ROCK MATERIALS MAY BE ALLOWED TO FALL NATURALLY ONTO THE SLOPE SURFACE. AT NO TIME SHALL SLOPES BE BLADED OR SCRAPED TO PRODUCE A SMOOTH, HARD SURFACE.

CUTS, FILLS, AND GRADED AREAS WHICH WILL BE MOWED

- MOWED SLOPES SHOULD NOT BE STEEPER THAN 3:1 AND SHALL AVOID EXCESSIVE ROUGHNESS. THESE AREAS MAY BE ROUGHENED WITH SHALLOW GROOVES SUCH AS THOSE, WHICH REMAIN AFTER TILLING, DISCING, HARROWING, RAKING, OR USE OF A CULTIPACKER-SEEDER. THE FINAL PASS OF ANY SUCH TILLAGE IMPLEMENT SHALL BE ON THE CONTOUR (PERPENDICULAR TO THE SLOPE).
- 2. GROOVES FORMED BY IMPLEMENTS SHALL BE NOT LESS THAN 1 INCH DEEP AND NOT FURTHER THAN 12 INCHES APART. FILL SLOPES THAT ARE LEFT ROUGH DURING CONSTRUCTION MAY BE SMOOTHED WITH A CHAIN HARROW OR SIMILAR IMPLEMENT TO FACILITATE MOWING.

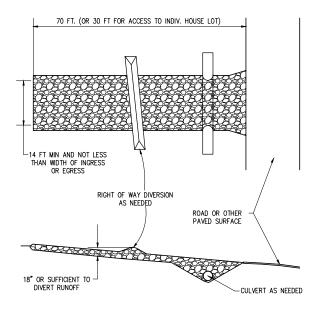
TOPSOILING

SALVAGING AND STOCKPILING

- 1. DETERMINE THE DEPTH AND SUITABILITY OF TOPSOIL AT THE SITE. (FOR HELP, CONTACT YOUR LOCAL SWCD OFFICE TO OBTAIN A COUNTY SOIL
- 2. PRIOR TO STRIPPING TOPSOIL, INSTALL APPROPRIATE DOWNSLOPE EROSION AND SEDIMENTATION CONTROLS SUCH AS SEDIMENT TRAPS AND
- 3. REMOVE THE SOIL MATERIAL NO DEEPER THAN WHAT THE COUNTY SOIL SURVEY DESCRIBES AS "SURFACE SOIL" (IE. A OR AP HORIZON)
- 4. CONSTRUCT STOCKPILES IN ACCESSIBLE LOCATIONS THAT DO NOT INTERFERE WITH NATURAL DRAINAGE. INSTALL APPROPRIATE SEDIMENT CONTROLS TO TRAP SEDIMENT SUCH AS SILT FENCE IMMEDIATELY ADJACENT TO THE STOCKPILE OR SEDIMENT TRAPS OR BASINS DOWNSTREAM OF THE STOCKPILE. STOCKPILE SIDE SLOPES SHALL NOT EXCEED A RATIO OF 2:1.
- 5. IF TOPSOIL IS STORED FOR MORE THAN 21DAYS, IT SHOULD BE TEMPORARY SEEDED, OR COVERED WITH A TARP.

SPREADING THE TOPSOIL

- 1. PRIOR TO APPLYING TOPSOIL, THE TOPSOIL SHOULD BE PULVERIZED.
- 2. TO ENSURE BONDING, GRADE THE SUBSOIL AND ROUGHEN THE TOP 3-4 IN. BY DISKING
- 3. DO NOT APPLY WHEN SITE IS WET, MUDDY, OR FROZEN, BECAUSE IT MAKES SPREADING DIFFICULT, CAUSES COMPACTION PROBLEMS, AND INHIBITS
- 4. APPLY TOPSOIL EVENLY TO A DEPTH OF AT LEAST 4 INCHES AND COMPACT SLIGHTLY TO IMPROVE CONTACT WITH SUBSOIL.
- 5. AFTER SPREADING, GRADE AND STABILIZE WITH SEEDING OR APPROPRIATE VEGETATION



SILT FENCE N.T.S.

- SILT FENCE SHALL BE CONSTRUCTED BEFORE UPSLOPE LAND DISTURBANCE BEGINS
- ALL SILT FENCE SHALL BE PLACED AS CLOSE TO THE CONTOUR AS POSSIBLE SO THAT WATER WILL NOT CONCENTRATE AT LOW POINTS IN THE FENCE AND SO THAT SMALL SWALES OR DEPRESSIONS THAT MAY CARRY SMALL CONCENTRATED FLOWS TO THE SILT FENCE ARE DISSIPATED ALONG ITS LENGTH.
- 3. ENDS OF THE SILT FENCES SHALL BE BROUGHT UPSLOPE SLIGHTLY SO THAT WATER PONDED BY THE SILT FENCE WILL BE PREVENTED FROM FLOWING AROUND THE ENDS.
- 4. SILT FENCE SHALL BE PLACED ON THE FLATTEST AREA AVAILABLE
- 5. WHERE POSSIBLE, VEGETATION SHALL BE PRESERVED FOR 5 FEET (OR AS MUCH AS POSSIBLE) UPSLOPE FROM THE SILT FENCE. IF VEGETATION IS REMOVED, IT SHALL BE REESTABLISHED WITHIN 7 DAYS FROM THE INSTALLATION OF THE SILT FENCE.
- THE HEIGHT OF THE SILT FENCE SHALL BE A MINIMUM OF 16 INCHES ABOVE THE ORIGINAL GROUND SURFACE
- THE SILT FENCE SHALL BE PLACED IN AN EXCAVATED OR SLICED TRENCH CUT A MINIMUM OF 6 INCHES DEEP. THE TRENCH SHALL BE MADE WITH A TRENCHER, CABLE LAYING MACHINE, SLICING MACHINE, OR OTHER SUITABLE DEVICE THAT WILL ENSURE AN ADEQUATELY UNIFORM TRENCH
- THE SILT FENCE SHALL BE PLACED WITH THE STAKES ON THE DOWNSLOPE SIDE OF THE GEOTEXTILE. A MINIMUM OF 8 INCHES OF GEOTEXTILE MUST BE BELOW THE GROUND SURFACE. EXCESS MATERIAL SHALL LAY ON THE BOTTOM OF THE 6-INCH DEEP TRENCH. THE TRENCH SHALL BE BACKFILLED AND COMPACTED ON BOTH SIDES OF THE FABRIC.
- SEAMS BETWEEN SECTIONS OF SILT FENCE SHALL BE SPLICED TOGETHER ONLY AT A SUPPORT POST WITH A MINIMUM 6-IN. OVERLAP PRIOR TO DRIVING INTO THE GROUND, (SEE DETAILS).
- 10. MAINTENANCE -- SILT FENCE SHALL ALLOW RUNOFF TO PASS ONLY AS DIFFUSE FLOW THROUGH THE GEOTEXTILE. IF RUNOFF OVER\FS20 TOPS THE SILT FENCE, FLOWS UNDER THE FABRIC OR AROUND THE FENCE ENDS, OR IN ANY OTHER WAY ALLOWS A CONCENTRATED FLOW DISCHARGE, ONE OF THE FOLLOWING SHALL BE PERFORMED, AS APPROPRIATE: 1) THE LAYOUT OF THE SILT FENCE SHALL BE CHANGED, 2) ACCUMULATED SEDIMENT SHALL BE REMOVED, OR 3) OTHER PRACTICES SHALL BE INSTALLED

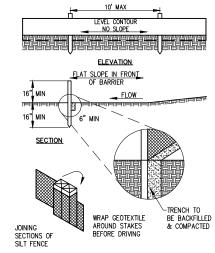
SEDIMENT DEPOSITS SHALL BE ROUTINELY REMOVED WHEN THE DEPOSIT REACHES APPROXIMATELY ONE-HALF OF THE HEIGHT OF THE SILT FENCE.

SILT FENCES SHALL BE INSPECTED AFTER EACH RAINFALL AND AT LEAST DAILY DURING A PROLONGED RAINFALL. THE LOCATION OF EXISTING SILT FENCE SHALL BE REVIEWED DAILY TO ENSURE ITS PROPER LOCATION AND EFFECTIVENESS. IF DAMAGED, THE SILT FENCE SHALL BE REPAIRED

CRITERIA FOR SILT FENCE MATERIALS

- FENCE POST THE LENGTH SHALL BE A MINIMUM OF 32 INCHES. WOOD POSTS WILL BE 2-BY-2-IN. NOMINAL DIMENSIONED HARDWOOD OF SOUND PUSIS WILL BE Z=87-Z=IN. NOMINAL DIMENSIONED HARDWOOD OF SOUND UNALITY. HEY SHALL BE FREE OF KNOTS, SPUTIS AND OTHER VISIBLE IMPERFECTIONS, THAT WILL WEAKEN THE POSTS. THE MAXIMUM SPACING BETWEEN POSTS SHALL BE 10 TF. POSTS SHALL BE DIVEN A MINIMUM INCHES INTO THE GROUND, WHERE POSSIBLE. IF NOT POSSIBLE, THE POSTS SHALL BE ADEQUATELY SECURED TO PREVENT OVERTURNING OF THE FENCE DUE TO SEDIMENT/WATER LOADING.
- 2. SILT FENCE FABRIC SEE CHART BELOW.

FABRIC PROPERTIES	<u>s</u>	VALUES	TEST	ME	THOD
LULU TELIOU E OTDE	IOTII	400 100		_	4070
MIN TENSILE STREM		120 LBS			4632
MAX. ELONGATION	AT 60 LBS	50%	ASTM	D	4632
MIN. PUNCTURE ST	RENGTH	50 LBS	ASTM	D	4833
MIN. TEAR STRENG	TH	40 LBS	ASTM	D	4533
APPARENT OPENING	G SIZE	0.84 MM	ASTM	D	4751
MIN. PERMITIVITY		1X10-2SEC1	ASTM	D	4491
UV FXPOSURE STR	FNGTH	70%	ASTM	G	4355

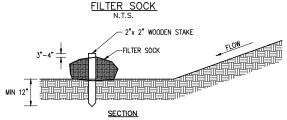


TEMPORARY SEEDING

SEEDING DATES	SPECIES	LB./1000 FT2	LB/ACRE
MARCH 1 TO			
AUGUST 15	OATS	3	128
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	1	40
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	55
	PERENNIAL RYEGRASS	3.25	142
	CREEPING RED FESCUE	0.40	17
	KENTUCKY BLUEGRASS	0.40	17
	OATS	3	128
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
AUGUST 16TH			
TO NOVEMBER	RYE	3	112
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	WHEAT	3	120
	TALL FESCUE	1	40
	ANNUAL RYEGRASS	1	40
	PERENNIAL RYE	1	40
	TALL FESCUE	1 1	40
	ANNUAL RYEGRASS	1	40
	ANNUAL RYEGRASS	1.25	40
	PERENNIAL RYEGRASS	3.25	40
	CREEPING RED FESCUE	0.40	40
	KENTUCKY BLUEGRASS	0.40	
NOVEMBER 1			
TO FEB. 29	USE MULCH ONLY OR DORN	IAN I SEEDING	

NOTE: OTHER APPROVED SPECIES MAY BE SUBSTITUTED

- STRUCTURAL EROSION AND SEDIMENT CONTROL PRACTICES SUCH AS DIVERSIONS AND SEDIMENT TRAPS SHALL BE INSTALLED AND STABILIZED WITH TEMPORARY SEEDING PRIOR TO GRADING THE REST OF THE CONSTRUCTION SITE.
- TEMPORARY SEED SHALL BE APPLIED BETWEEN CONSTRUCTION OPERATIONS ON SOIL THAT WILL NOT BE GRADED OR REWORKED FOR 21 DAYS OR GREATER. THESE IDLE AREAS SHALL BE SEEDED WITHIN 7 DAYS AFTER GRADING.
- THE SEEDBED SHOULD BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION. TEMPORARY SEEDING SHOULD NOT BE POSTPONED IF IDEAL SEEDBED PREPARATION IS NOT POSSIBLE.
- SOIL AMENDMENTS: TEMPORARY VEGETATION SEEDING RATES SHALL ESTABLISH ADEQUATE STANDS OF VEGETATION, WHICH MAY REQUIRE THE USE OF SOIL AMENDMENTS. BASE RATES FOR LIME AND FERTILIZER SHALL BE USED.
- SEEDING METHOD: SEED SHALL BE APPLIED UNIFORMLY WITH A CYCLONE SPREADER, DRILL, CULTIPACKER SEEDER, OR HYDROSEEDER. WHEN FEASIBLE, SEED THAT HAS BEEN BROADCAST SHALL BE COVERED BY RAKING OR DRAGGING AND THEN LIGHTLY TAMPED INTO PLACE USING A ROLLER OR CULTIPACKER. IF HYDROSEEDING IS USED, THE SEED AND FERTILIZER WILL BE MIXED ON—SITE AND THE SEEDING SHALL BE DONE IMMEDIATELY AND WITHOUT INTERRUPTION.



- MATERIALS: COMPOST USED FOR FILTER SOCKS SHALL BE WEED, PATHOGEN AND INSECT FREE AND FREE OF ANY REFUSE, CONTAMINANTS OR OTHER MATERIALS TOXIC TO PLANT GROWTH. THEY SHALL BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER AND CONSIST OF A PARTICLES RANGING FROM 3/8" TO 2".
- 2. FILTER SOCKS SHALL BE 3 OR 5 MIL CONTINUOUS, TUBULAR, HDPE 3/8" KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST PASSING THE
- 3. FILTER SOCKS WILL BE PLACED ON A LEVEL LINE ACROSS SLOPES, GENERALLY PARALLEL TO THE BASE OF THE SLOPE OR OTHER AFFECTED AREA. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND AS NEEDED MID-SLOPE.
- 4. FILTER SOCKS INTENDED TO BE LEFT AS A PERMANENT FILTER OR PART OF THE NATURAL LANDSCAPE, SHALL BE SEEDED AT THE TIME OF INSTALLATION FOR ESTABLISHMENT OF PERMANENT VEGETATION.
- FILTER SOCKS ARE NOT TO BE USED IN CONCENTRATED FLOW SITUATIONS OR IN RUNOFF CHANNELS
- ROUTINELY INSPECT FILTER SOCKS AFTER EACH SIGNIFICANT RAIN, MAINTAINING FILTER SOCKS IN A FUNCTIONAL CONDITION AT ALL TIMES.
- REMOVE SEDIMENTS COLLECTED AT THE BASE OF THE FILTER SOCKS WHEN THEY REACH 1/3 OF THE EXPOSED HEIGHT OF THE PRACTICE.
- WHERE THE FILTER SOCK DETERIORATES OR FAILS, IT WILL BE REPAIRED OR REPLACED WITH A MORE EFFECTIVE ALTERNATIVE
- 9. REMOVAL: FILTER SOCKS WILL BE DISPERSED ON SITE WHEN NO LONGER REQUIRED IN SUCH AS WAY AS TO FACILITATE AND NOT OBSTRUCT

BY: BY: BY: C

SCALES HORIZ: CONTOUR INT

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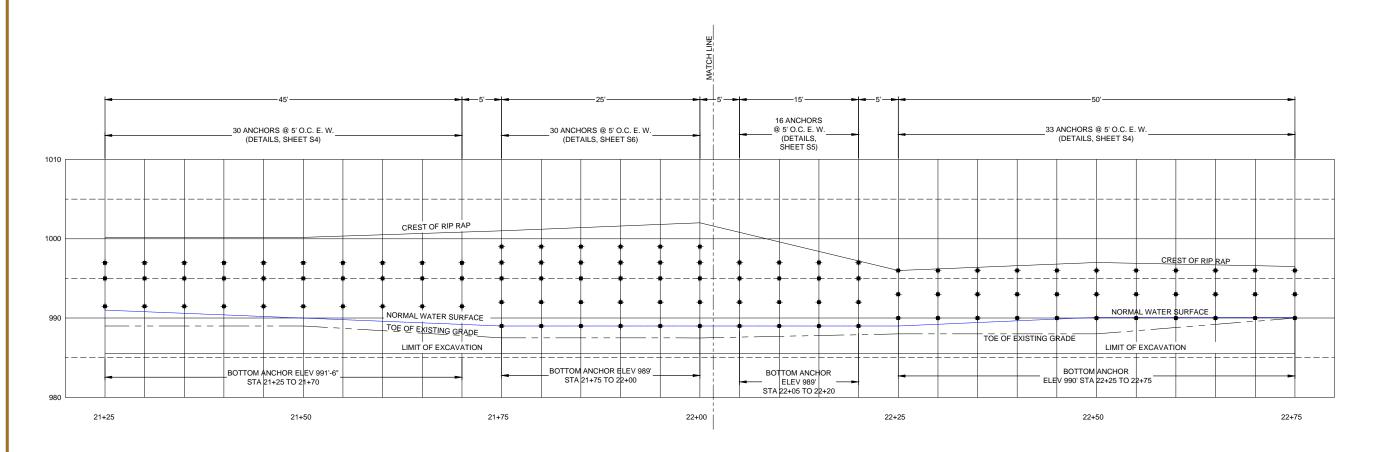
 HAMMONTREE & ASSOCIATES, LTD.
 ENGINEERS, PLANNERS, SURVEYORS
 OH-PA-WV THE FOLLOWING SHEETS REPRESENT A CONCEPTUAL DESIGN FOR PROVIDING HELICAL ANCHORS FOR SLOPE STABILIZATION AND HELICAL PIERS FOR SANITARY SEWER SUPPORT. WHILE THE PLANS REFER TO PILE AND ANCHOR SYSTEM AS "HELICAL" THE OWNER RECOGNIZES THAT BASED ON THE CONTRACTORS APPROVED ANCHOR/PILE SYSTEM THE TERM "HELICAL" MAY OR MAY NOT APPLY. SLOPE STABILITY IMPROVEMENTS REV. I REV. I REV. I REV. I FROM STATION 21+25 TO 22+75 SHALL CONSIST OF HELICAL ANCHORS OR OTHER INDUSTRY ACCEPTED STABILIZATION TECHNIQUES DESIGNED AND INSTALLED BY THE CONTRACTOR TO PROVIDE A FACTOR OF SAFETY OF 1.5 FOR GLOBAL STABILITY. PILE PIPE SUPPORT DESIGN MUST ALSO ACHIEVE A FACTOR OF SAFETY OF 1.5. THE CONTRACTOR SHALL SUBMIT ITS DESIGN OF ITS STABILIZATION TECHNIQUE TO THE CITY FOR APPROVAL.

BY: BY: BY: DESN B DRWN CHKD RVWD

SCALES HORIZ: VERT: CONTOUR INT:

DIWDER SHEET
ALLENFORD DRIVE STREAM BANK
RESTORATION AND SEWER REPAIR
FOR: CITY OF CANTON
LOCATED IN CANTON TOWNSHIP
STARK COUNTY, OHIO





NOTES: CLEAR ALL SITE UTILITIES PRIOR TO EXCAVATION OR SOIL NAIL INSTALLATION.

TOP ANCHOR IN EACH ROW SHOULD BE GREATER THAN OR EQUAL TO 2 FT FROM THE CREST OF THE STABILIZED SLOPE.

NAILS SHALL BE SPACED APPROXIMATELY 5 FT ON CENTER, EACH DIRECTION. DISTANCE SHALL BE MEASURED PARALLEL TO THE SLOPE FACE.

USE TECCO SPIKE PLATES TO SECURE MESH TO CAPS PER MANUFACTURER RECOMMENDATIONS.

INSTALL NAILS AFTER EXCAVATION AND FILL.

RIP RAP AND/OR TECCO MESH CAN BE USED AS EMBANKMENT ARMOR ON THE FACE OF THE SLOPE. VERIFY EMBANKMENT ARMOR REQUIREMENTS WITH THE ENGINEER OF RECORD.

THESE PLANS WERE BASED ON MAGNUM PIERING PRODUCTS AND MAGNUM CERTIFIED INSTALLERS. SUBSTITUTION OF EQUAL PRODUCTS SHALL BE APPROVED BY ENGINEER.

HELICAL SOIL NAIL WALL ELEVATION STA 21+25 TO STA 22+75 NTS

	HELICAL SOIL NAIL WALL SCHEDULE									
MAGNUM HELICAL SOIL NAIL	NUMBER OF HELICAL SOIL NAILS	HELICES	MAGNUM TIE-BACK CAP	MINIMUM DEPTH (FT)	WORKING LOAD COMPRESSION (KIP)	WORKING LOAD TENSION (KIP)	WORKING LOAD LATERAL (KIP)	ANGLE	MIN INSTALLATION TORQUE (FT-LBS)	
MH313BG	109	8D8D8D8D8D	MHC1080-386BG	21	N.S.	4	N.S.	45-55	1,000	

NOTES: B=BOLTED CONNECTIONS, BR=BOLTED REINFORCED CONNECTIONS, EP=EPOXY COATED, G=GALVANIZED, NG=NON-GALVANIZED, P=PAINTED, N.S.=NOT SPECIFIED, S=SINGLE CUTTING HELIX, D=DUAL CUTTING HELIX (NUMBER PRECEDING D OR S INDICATES HELIX DIAMETER IN INCHES)

PROJECT NAME:

ALLENFORD SEWER

CANTON TOWNSHIP, STARK COUNTY, OHIO

CLIENT:

CITY OF CANTON 2436 30th Street, N.E. Canton, Ohio 44705



MAGNUM GEO-SOLUTIONS, LLC

2629 REDWING ROAD, SUITE 298 FORT COLLINS, CO 80526 513-275-2442 800-822-7437

WWW.MAGNUMPIERING.COM

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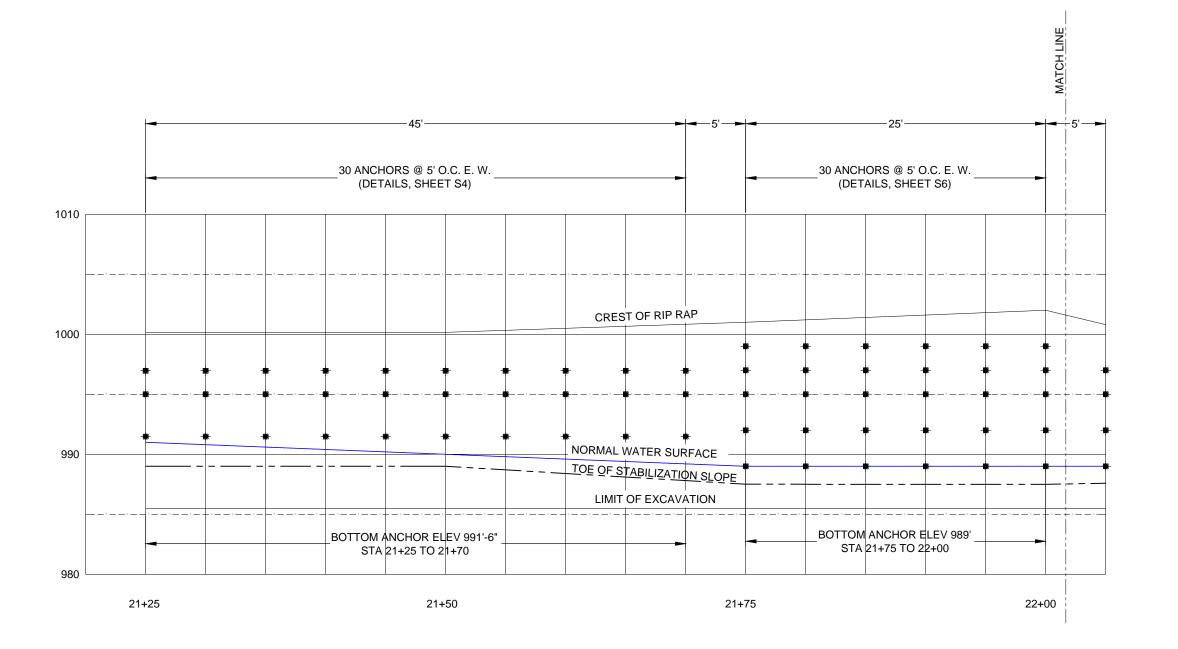
HELICAL SOIL NAIL LAYOUT

NO. DATE REVISIONISSUE

1 08/26/2014 PILE LAYOUT WITH ADDITIONAL DETAILS
2 08/08/2014 PROVIDED ADDITIONAL INFORMATION
3 09/11/2014 REVISED LOCATION OF SOIL NAILS

DESIGNED BY: MMB DRAWN BY: JGS CHECKED BY: MMB DATE: 03/12/13 SCALE: AS SHOWN

PROJECT No: 206-ALLENFORD



ELEVATION VIEW STA 21+25 TO STA 22+20 SCALE = 1/8" - 1'

PROJECT NAME:

ALLENFORD SEWER

CANTON TOWNSHIP, STARK COUNTY, OHIO

CLIENT:

CITY OF CANTON 2436 30th Street, N.E. Canton, Ohio 44705



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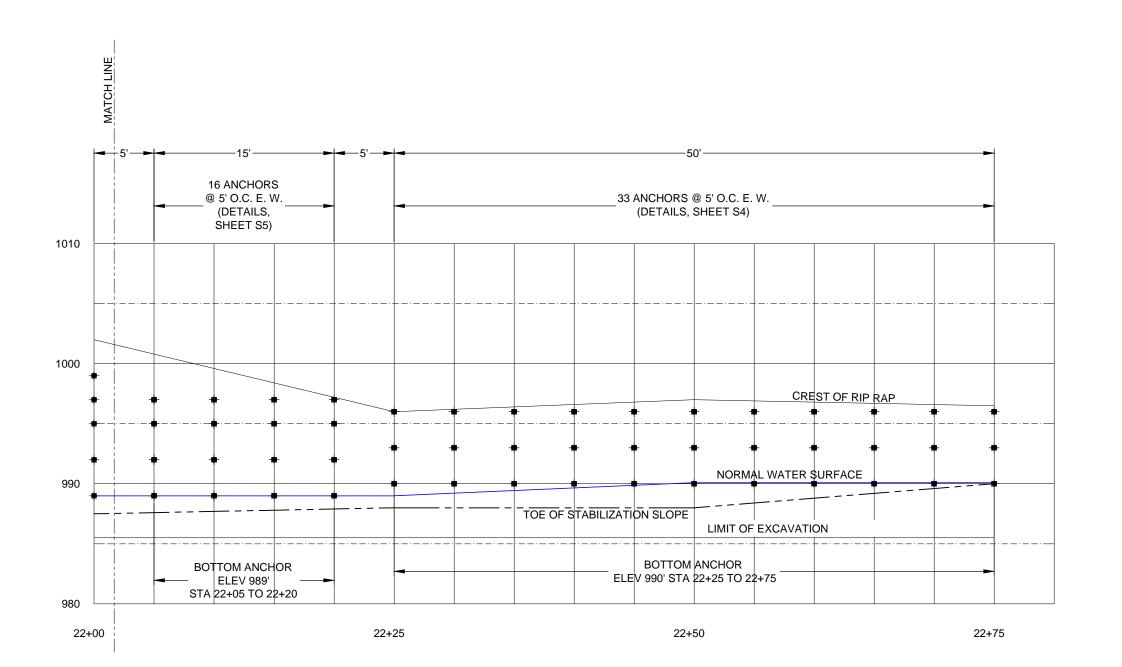


PLAN NOT VALID WITHOUT ORIGINAL WET STAMP

HELICAL SOIL NAIL LAYOUT

DESIGNED BY: MMB DRAWN BY: JGS CHECKED BY: MMB
PROJECT No: 206-ALLENFORD

DATE: 03/12/13 SCALE: AS SHOWN



ELEVATION VIEW STA 22+10 TO STA 22+75

SCALE = 1/8" - 1'

PROJECT NAME:

ALLENFORD SEWER

CANTON TOWNSHIP, STARK COUNTY, OHIO

CLIENT:

CITY OF CANTON 2436 30th Street, N.E. Canton, Ohio 44705



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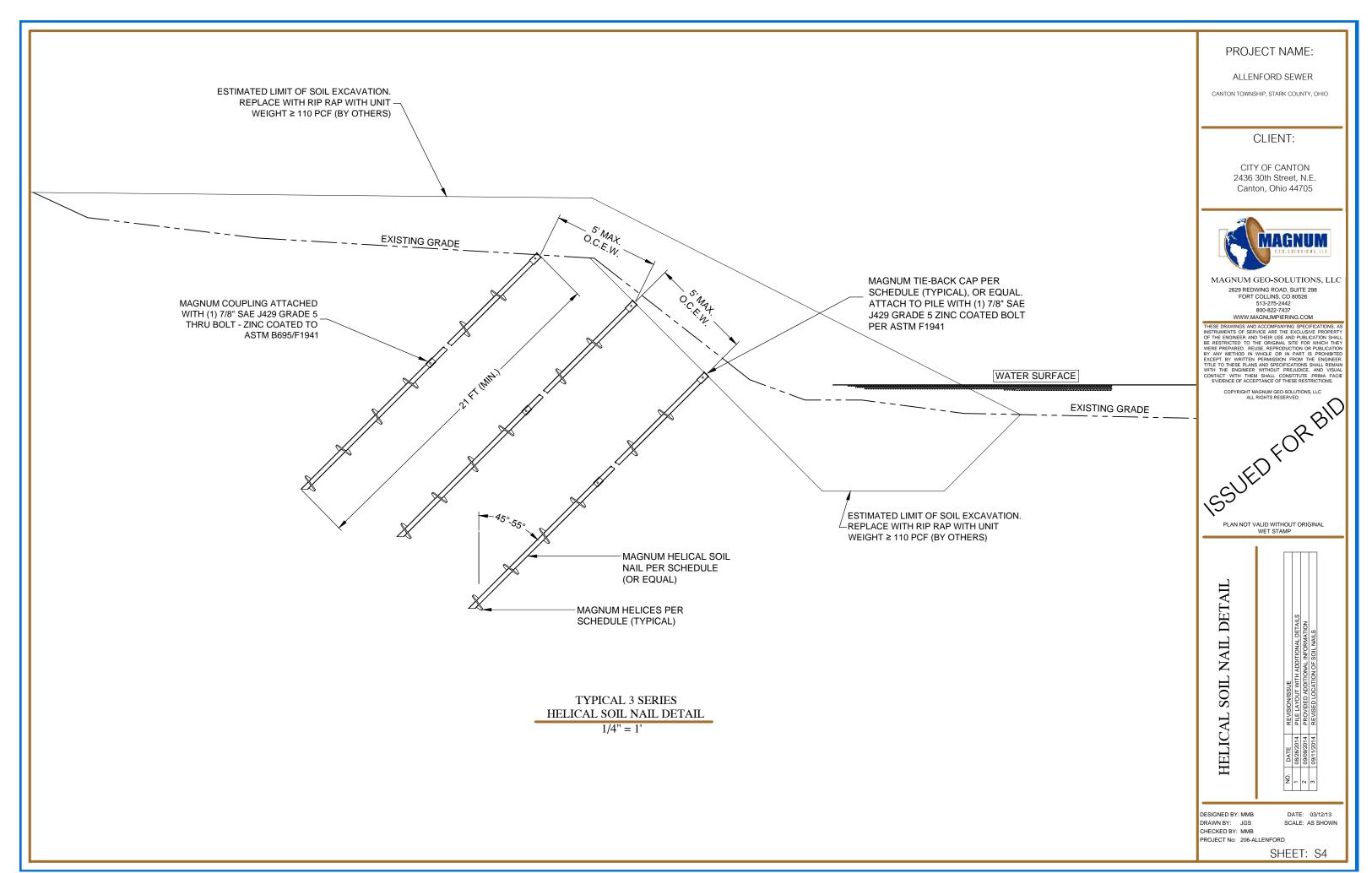


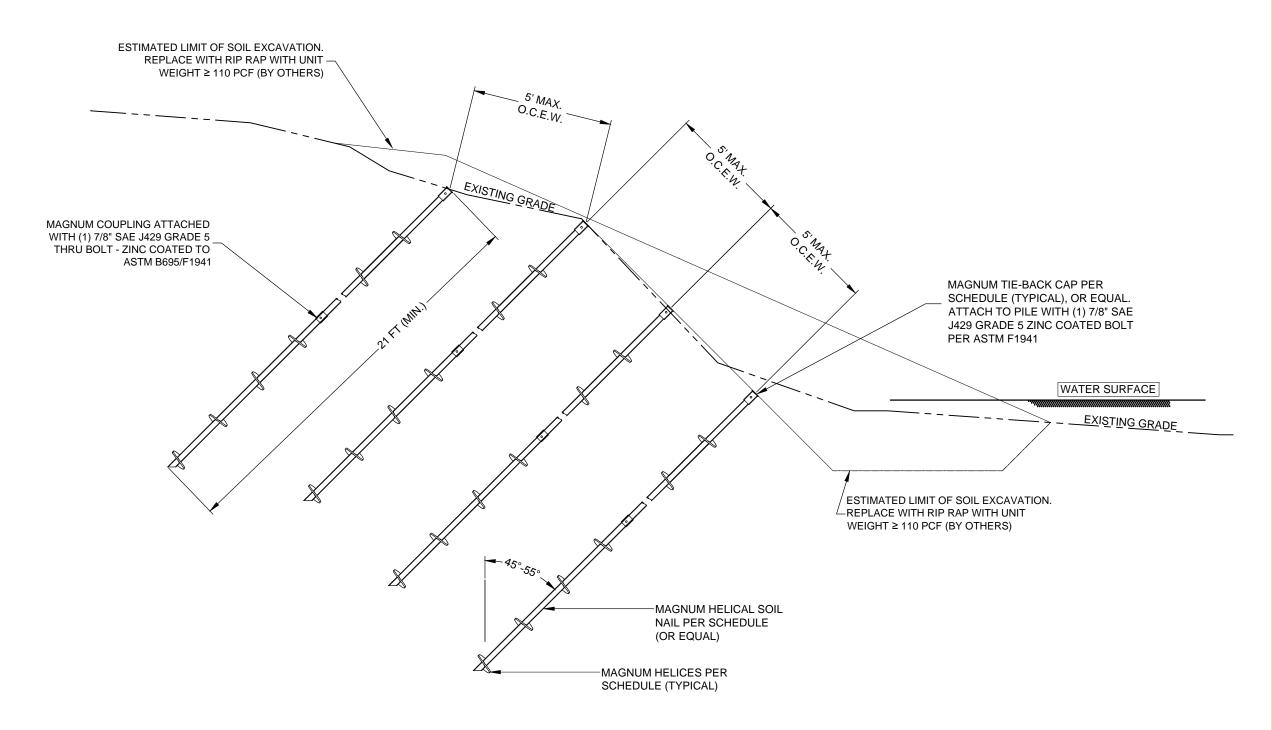
PLAN NOT VALID WITHOUT ORIGINAL WET STAMP

HELICAL SOIL NAIL LAYOUT

DESIGNED BY: MMB DRAWN BY: JGS CHECKED BY: MMB
PROJECT No: 206-ALLENFORD

DATE: 03/12/13 SCALE: AS SHOWN





TYPICAL 4 SERIES HELICAL SOIL NAIL DETAIL 1/4" = 1'

PROJECT NAME:

ALLENFORD SEWER

CANTON TOWNSHIP, STARK COUNTY, OHIO

CLIENT:

CITY OF CANTON 2436 30th Street, N.E. Canton, Ohio 44705



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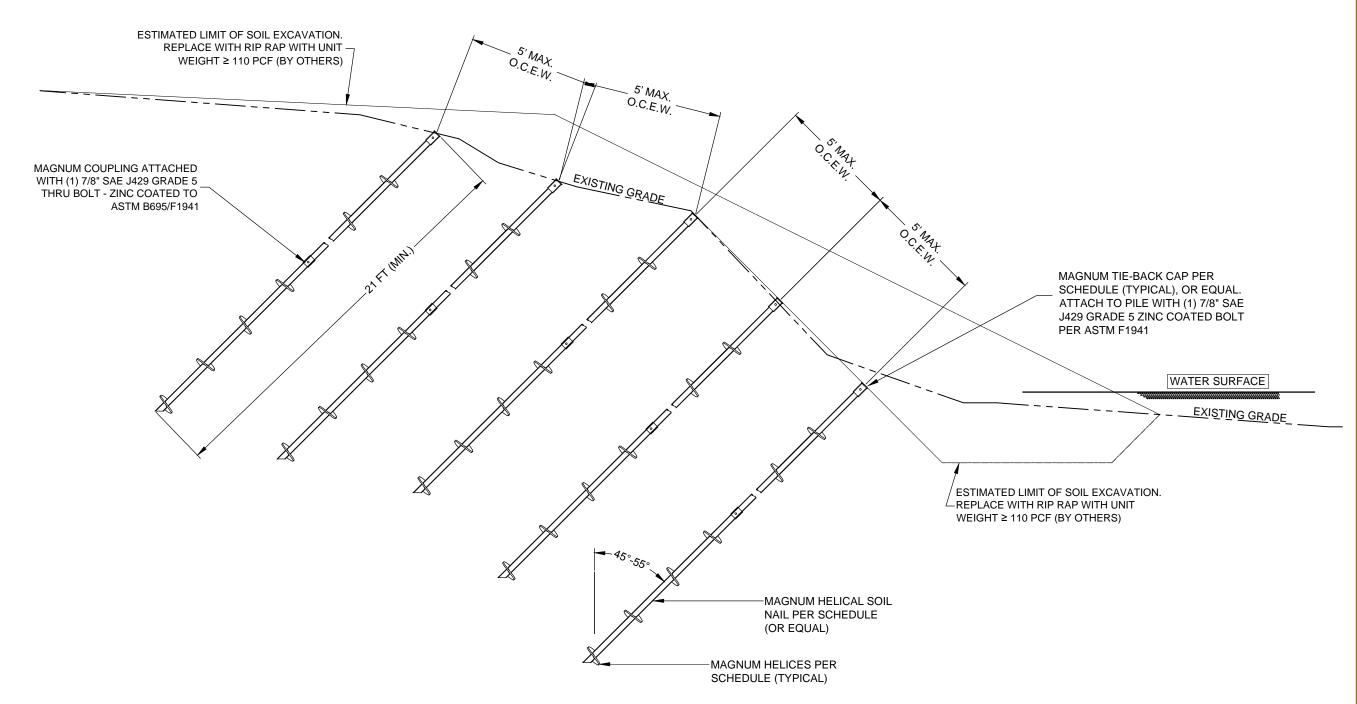
HELICAL SOIL NAIL DETAIL

DESIGNED BY: MMB DRAWN BY: JGS CHECKED BY: MMB PROJECT No: 206-ALLENFORD

SCALE: AS SHOWN

SHEET: S5

DATE: 03/12/13



TYPICAL 5 SERIES HELICAL SOIL NAIL DETAIL 1/4" = 1'

PROJECT NAME:

ALLENFORD SEWER

CANTON TOWNSHIP, STARK COUNTY, OHIO

CLIENT:

CITY OF CANTON 2436 30th Street, N.E. Canton, Ohio 44705



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HELICAL SOIL NAIL DETAIL

DESIGNED BY: MMB DRAWN BY: JGS CHECKED BY: MMB PROJECT No: 206-ALLENFORD

DATE: 03/12/13 SCALE: AS SHOWN

Helical Foundation Notes

1.Codes

This plan was prepared based on the 2010 Ohio Building Code, ACI 318, AISC 14th Edition, and ICC-ES AC358.

2. Loads

Project specific pile design loads were specified by Tetratech Soil Nail Wall Modeling Report, dated 02/25/13. See Helical Soil Nail Wall Schedule for pile design loads.

3. Subsurface Conditions

Soils are assumed to be per the geotechnical investigation prepared by PSI, Inc. Report No. 0102342, dated 04/25/12.

4. Materials

This plan is based upon the following material properties (not all materials may be used in this plan). If there is a conflict between these specifications and plans by others, the more stringent criteria should be followed.

<u>Helical Soil Nails:</u> All helical soil nails and end caps shall be manufactured and supplied by Magnum Piering Inc, unless the EOR determines a suitable replacement.

5. Installation

Helical piles shall be furnished and installed at the locations, inclinations, and orientations shown on the plans and in accord with this procedure. Standard tolerance for positioning is ± 3 ", for elevation is $\pm .125$ ", and for angle is ± 3 deg. Connect the lead section to the Torque Motor using the Drive Tool and Drive Pins. Position and align the lead section at the location and to the inclination shown on the drawings and crowd the pilot point into the soil. Advance the lead section and continue to add extension sections to achieve the Termination Criteria. All sections shall be advanced into the soil in a smooth, continuous manner at a rate of rotation between 10 and 40 revolutions per minute. Constant axial force (crowd) shall be applied while rotating the helical piles/anchors into the ground. The crowd applied shall be sufficient to ensure that the helical pile/anchor advances into the ground a distance equal to at least 80% of the blade pitch per revolution during normal advancement. The torsional strength rating of the helical pile/anchor shall not be exceeded during installation. Log installation depth and torque at 3-foot intervals during installation and record final depth and torque. Submit installation logs to MAGNUM for review prior to completion of the project.

6. Termination Criteria:

Helical piles/anchors shall be advanced until all of the following criteria are satisfied.

- 1. Final installation torque is achieved. Final installation torque is shown on the summary table or pile schedule.
- 2. Minimum depth is obtained. The minimum depth shall be as shown on the drawings, that which corresponds to the planned bearing stratum, or the depth at which the final installation torque is measured, whichever is greater.

If maximum torque has been reached or augering occurs prior to achieving the minimum depth, Contractor shall have the following options:

- 1. Reverse the direction of torque, back-out the helical pile/anchor a distance of 1 to 2 feet and attempt to reinstall by decreasing crowd and augering through the obstruction.
- 2. Terminate the installation at the depth obtained subject to the review and acceptance of the Engineer. Remove the helical pile/anchor and install a new one with fewer and/or smaller diameter helical bearing plates. The new helical configuration shall be subject to review and acceptance of the Engineer.
- 3. Remove the helical pile/anchor and pre-drill a 4-inch diameter pilot hole in the same location and reinstall the anchor/pile.
- 4. If the obstruction is shallow, remove the helical pile/anchor and remove the obstruction by surface excavation. Backfill and compact the resulting excavation and reinstall the pile/anchor.
- 5. Remove the helical pile/anchor and sever the uppermost helical bearing plate from the lead section if more than one helical bearing plate is in use, or reshape the helical bearing plates to create the patented Magnum dual cutting edge shape by cutting with a band saw. Reinstall the pile/anchor.

If the final installation torque is not achieved at the contract length, the Contractor shall have the following options:

- 1. Until the maximum depth is achieved, if any, install the helical pile/anchor deeper using additional extension sections.
- 2. Remove the helical pile/anchor and install a new one with additional and/or larger diameter helical bearing plates.
- 3. Decrease the rated load capacity of the helical pile/anchor and install additional helical piles/anchors. The rated capacity and additional unit location shall be subject to the review and acceptance of the Engineer.

7. Limitations:

This plan is based on loads, layout, and soil information by others. It is the general contractors responsibility to verify and coordinate all dimensions prior to construction. Any discrepancies or changes should be brought to the attention of the Engineer. Unknowns could exist regarding the construction of the structure and subsurface properties that could affect pile/anchor performance. This plan was prepared to the level of skill and care ordinarily practiced by other engineers in this area at this time. No warrantee is made by Engineer, express or implied.

This plan is based on products manufactured by Magnum Piering, Inc. and methods of installation practiced by Magnum Authorized Installers.

PROJECT NAME:

ALLENFORD SEWER

CANTON TOWNSHIP, STARK COUNTY, OHIO

CLIENT:

CITY OF CANTON 2436 30th Street, N.E. Canton, Ohio 44705



MAGNUM GEO-SOLUTIONS, LLC

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HELICAL SOIL NAIL NOTES

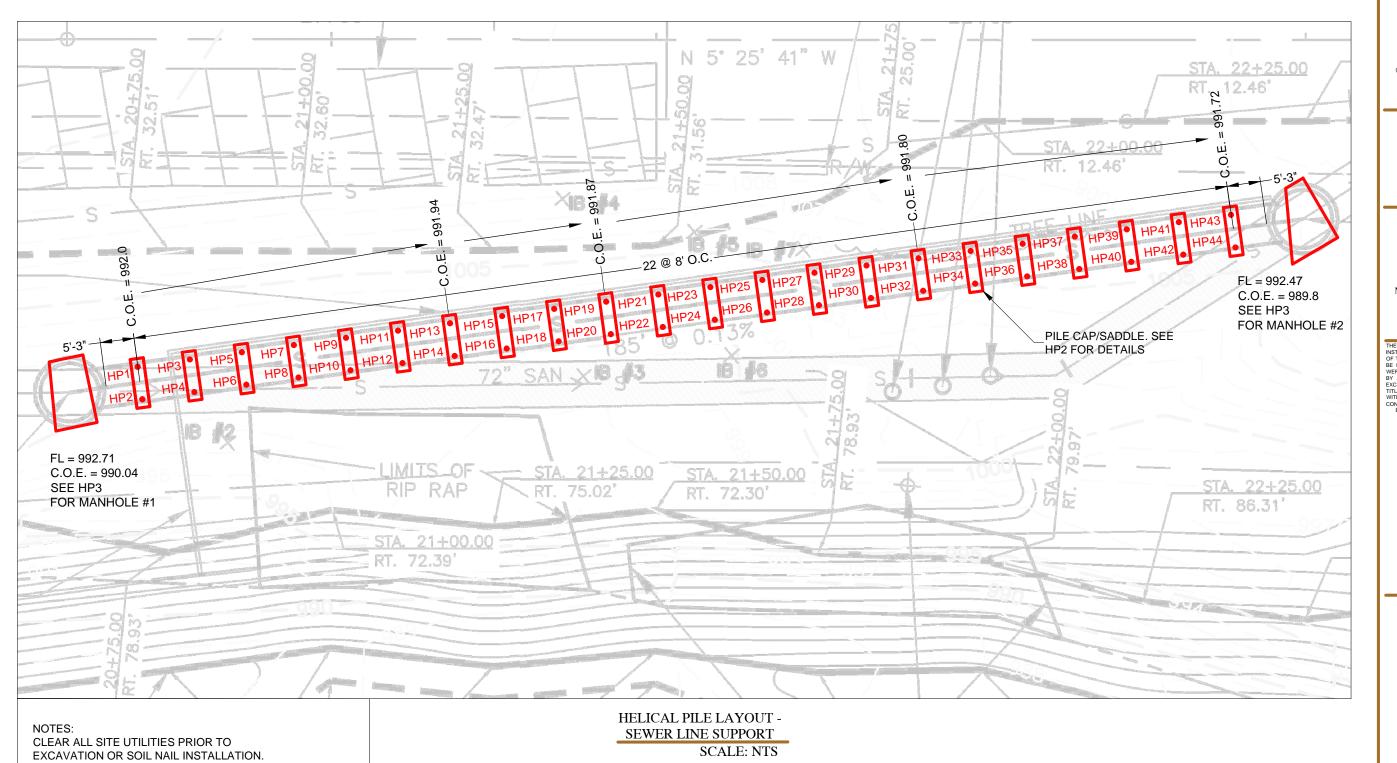
NO. DATE REVISIONISSUE

1 08/28/2014 PILE LAYOUT WITH ADDITIONAL DETAILS
2 08/09/2014 PROLUE ADDITIONAL INFORMATION
3 09/17/2014 REVISED LOCATION OF SOIL MILES

DESIGNED BY: MMB
DRAWN BY: JGS
CHECKED BY: MMB
PROJECT No: 206-ALLENFORD

SCALE: AS SHOWN

DATE: 03/12/13



MANHOLE AND PILE CAP/SADDLE LAYOUT AND ORIENTATION BASED ON DRAWINGS BY OTHERS. VERIFY LOCATIONS AND ORIENTATIONS PRIOR TO CONSTRUCTION.

C.O.E = CUT OFF ELEVATION

IF C.O.E NOT PROVIDED, PILES SHOULD BE CUT OFF SUCH THAT A MINIMUM OF 9 INCHES IS EMBEDDED IN THE CONCRETE CAP/SADDLE

PROJECT NAME:

ALLENFORD SEWER

CANTON TOWNSHIP, STARK COUNTY, OHIO

CLIENT:

CITY OF CANTON 2436 30th Street, N.E. Canton, Ohio 44705



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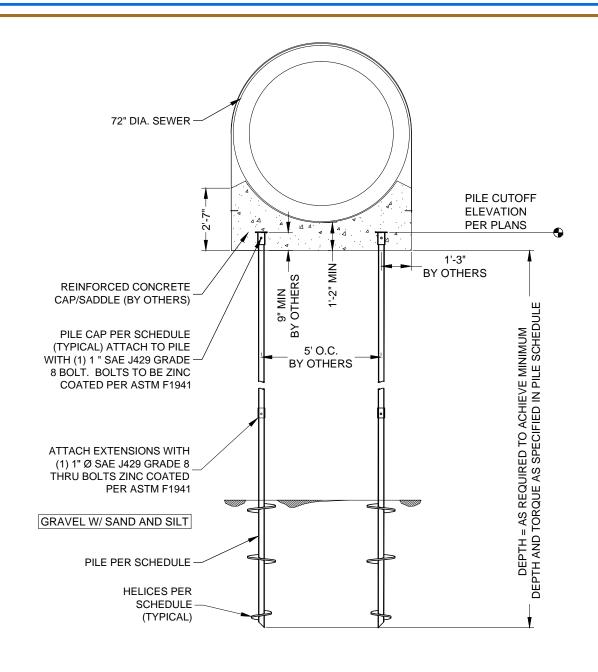
PILE LAYOUT

REVISION/ISSUE	REVISED PLANS BASED ON REDLINES FROM HAMMONTREE	CORRECTED GENERAL NOTES	
DATE	9/10/14	9/17/14	
Q	1	2	

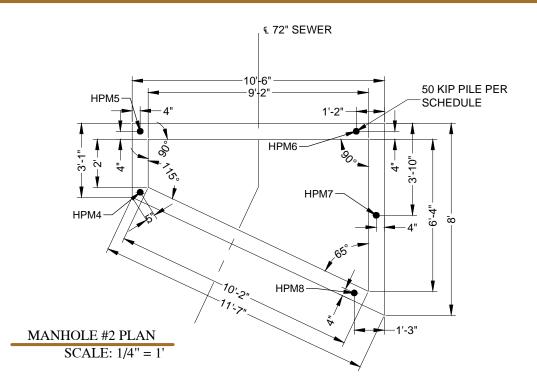
DESIGNED BY: MMB DRAWN BY: JGS CHECKED BY: MMB PROJECT No: 206-ALLENFORD

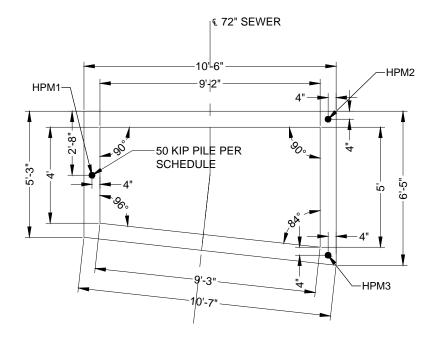
DATE: 03/12/13 SCALE: AS SHOWN

SHEET: HP1 of 3



TYPICAL PILE DETAIL SCALE: 1/4" = 1'





MANHOLE #1 PLAN SCALE: 1/4" = 1'

	HELICAL PILE SCHEDULE										
DESCRIPTION	MAGNUM PILE SHAFT (OR EQUAL)	NUMBER OF PILES		PILE CAP	BID LENGTH (FT)	WORKING LOAD COMPRESSION (KIP)	WORKING LOAD TENSION (KIP)	WORKING LOAD LATERAL (KIP)	MINIMUM INSTALLATION TORQUE (ft-lb)		
SADDLES	MH325BRG	44	12S14S14S	MHC1300-3K66BR1	40	50	N.S.	N.S.	12,500		
MANHOLES	MH325BRG	8	12S14S14S	MHC1300-3K66BR1	36	50	N.S.	N.S.	12,500		

NOTE: B=BOLTED R CONNECTIONS, G=GALVANIZED, S=SINGLE CUTTING HELIX (NUMBER PRECEDING S INDICATES HELIX DIAMETER IN INCHES), N.S.=NOT SPECIFIED

PROJECT NAME:

ALLENFORD SEWER

CANTON TOWNSHIP, STARK COUNTY, OHIO

CLIENT:

CITY OF CANTON 2436 30th Street, N.E. Canton, Ohio 44705



MAGNUM GEO-SOLUTIONS, LLC

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PLAN NOT VALID WITHOUT ORIGINAL WET STAMP

HELICAL PILE DETAIL

DESIGNED BY: MMB DATE: 03/12/13 DRAWN BY: JGS SCALE: AS SHOWN CHECKED BY: MMB PROJECT No: 206-ALLENFORD

SHEET: HP2 of 3

Helical Foundation Notes

1.Codes

This plan was prepared based on the 2010 Ohio Building Code, ACI 318, AISC 14th Edition, and ICC-ES AC358.

2. Loads

Project specific pile design loads were specified by Hammontree & Associates Sheet $\frac{7}{26}$, dated 07/03/12. See Helical Pile Schedule for pile design loads.

3. Subsurface Conditions

Soils are assumed to be per the geotechnical investigation prepared by PSI, Inc. Report No. 0102342, dated 04/25/12.

4. Materials

This plan is based upon the following material properties (Not all materials may be used in this plan). If there is a conflict between these specifications and plans by others, the more stringent criteria should be followed.

<u>Helical Piles:</u> All helical piles and end caps shall be manufactured and supplied by Magnum Piering Inc (or equal). Foundation Concrete: Reincforced concrete with minimum f'c = 4,000 psi.

Installation

Helical piles shall be furnished and installed at the locations, inclinations, and orientations shown on the plans and in accord with this procedure. Standard tolerance for positioning is ± 3 ", for elevation is $\pm .125$ ", and for angle is ± 3 deg. Connect the lead section to the Torque Motor using the Drive Tool and Drive Pins. Position and align the lead section at the location and to the inclination shown on the drawings and crowd the pilot point into the soil. Advance the lead section and continue to add extension sections to achieve the Termination Criteria. All sections shall be advanced into the soil in a smooth, continuous manner at a rate of rotation between 10 and 40 revolutions per minute. Constant axial force (crowd) shall be applied while rotating the helical piles/anchors into the ground. The crowd applied shall be sufficient to ensure that the helical pile/anchor advances into the ground a distance equal to at least 80% of the blade pitch per revolution during normal advancement. The torsional strength rating of the helical pile/anchor shall not be exceeded during installation. Log installation depth and torque at 3-foot intervals during installation and record final depth and torque. Submit installation logs to MAGNUM for review prior to completion of the project.

6. Termination Criteria:

Helical piles/anchors shall be advanced until all of the following criteria are satisfied.

- 1. Final installation torque is achieved. Final installation torque is shown on the summary table or pile schedule.
- 2. Minimum depth is obtained. The minimum depth shall be as shown on the drawings, that which corresponds to the planned bearing stratum, or the depth at which the final installation torque is measured, whichever is greater.

If maximum torque has been reached or augering occurs prior to achieving the minimum depth, Contractor shall have the following options:

- 1. Reverse the direction of torque, back-out the helical pile/anchor a distance of 1 to 2 feet and attempt to reinstall by decreasing crowd and augering through the obstruction.
- 2. Terminate the installation at the depth obtained subject to the review and acceptance of the Engineer. Remove the helical pile/anchor and install a new one with fewer and/or smaller diameter helical bearing plates. The new helical configuration shall be subject to review and acceptance of the Engineer.
- 3. Remove the helical pile/anchor and pre-drill a 4-inch diameter pilot hole in the same location and reinstall the anchor/pile.
- 4. If the obstruction is shallow, remove the helical pile/anchor and remove the obstruction by surface excavation. Backfill and compact the resulting excavation and reinstall the pile/anchor.
- 5. Remove the helical pile/anchor and sever the uppermost helical bearing plate from the lead section if more than one helical bearing plate is in use, or reshape the helical bearing plates to create the patented Magnum dual cutting edge shape by cutting with a band saw. Reinstall the pile/anchor.

If the final installation torque is not achieved at the contract length, the Contractor shall have the following options:

- 1. Until the maximum depth is achieved, if any, install the helical pile/anchor deeper using additional extension sections.
- 2. Remove the helical pile/anchor and install a new one with additional and/or larger diameter helical bearing plates.
- 3. Decrease the rated load capacity of the helical pile/anchor and install additional helical piles/anchors. The rated capacity and additional unit location shall be subject to the review and acceptance of the Engineer.

7. Limitations:

This Plan is only a helical pile shop drawing. This plan is based on loads, layout, and soil information by others. It is the general contractors responsibility to verify and coordinate all dimensions prior to construction. Any discrepancies or changes should be brought to the attention of the Engineer. Unknowns could exist regarding the construction of the structure and subsurface properties that could affect pile/anchor performance. This plan was prepared to the level of skill and care ordinarily practiced by other engineers in this area at this time. No warrantee is made by Engineer, express or implied.

This plan is based on products manufactured by Magnum Piering, Inc. and methods of installation practiced by Magnum Authorized Installers.

PROJECT NAME:

ALLENFORD SEWER

CANTON TOWNSHIP, STARK COUNTY, OHIO

CLIENT:

CITY OF CANTON 2436 30th Street, N.E. Canton, Ohio 44705



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PLAN NOT VALID WITHOUT ORIGINAL WET STAMP

HELICAL PILE NOTES

NO. DATE REVISION/ISSUE
1 9/10/14 REVISED PLANS BASED ON REDLINES FROM HAMMONTREE
2 9/17/14 CORRECTED GENERAL NOTES

DESIGNED BY: MMB DRAWN BY: JGS CHECKED BY: MMB DATE: 03/12/13 SCALE: AS SHOWN

CHECKED BY: MMB PROJECT No: 206-ALLENFORD

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