

GAEWOOD STORM SEWER IMPROVEMENTS

WATER POLLUTION CONTROL DIVISION WASTEWATER COLLECTION AND TREATMENT SYSTEM IMPROVEMENTS GAEWOOD SEWER IMPROVEMENTS

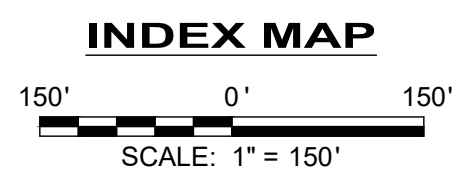
WATER POLLUTION CONTROL DIVISION
CITY OF WHEELING, WV

JULY 2024



UTILITY COMPANIES		
NOTE: UNDERGROUND UTILITIES SHOWN ON THIS PLAN ARE BASED ON FIELD MARKINGS (BY OTHERS) AND AVAILABLE RECORDS, AND AS SUCH, SHOULD BE FIELD VERIFIED PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ACTIVITY - CALL BEFORE YOU DIG!		
SEWERS: WATER POLLUTION CONTROL DIVISION 2516 MAIN STREET WHEELING, WV 26003 (304) 234-3874 BOB WEISNER	WATER: WHEELING WATER DEPT. 9 ARMORY DRIVE WHEELING, WV 26003 (304) 234-3849 CHRIS BEISWANGER	ELECTRIC: AEP 1-800-852-6942 CHRISTINA HARPER (304) 234-3106
STREETLIGHTS: APPALACHIAN POWER (304) 234-3106	GAS: MOUNTAINEER GAS 19TH AND WOOD STREET WHEELING, WV 26003 1-888-420-4427 x 85202 RON TROWBRIDGE (304) 276-2520	GAS: TC ENERGY CLAYTON COSS (724) 809-3239
TELECOMMUNICATIONS: FRONTIER 995 MT DECHANTAL ROAD WHEELING, WV 26003 (304) 234-6392 KEITH WESTLAKE (304) 559-9020	TELECOMMUNICATIONS: COMCAST CABLE COMMUNICATIONS INC. GENE HELMS (412) 439-3886	

STANDARD CONSTRUCTION DRAWINGS	
THE CURRENT STANDARD CONSTRUCTION DRAWINGS FOR EACH MUNICIPALITY OR UTILITY LISTED BELOW SHALL BE CONSIDERED AS PART OF THIS SET THEREOF.	
WVDOH	CITY OF WHEELING
DR-2 (SHEETS 1-4) DR-6A DR-6B	TYPE A TRENCH TYPE D TRENCH



LIST OF DRAWINGS	
1	TITLE SHEET
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OWNER
WATER POLLUTION CONTROL DIVISION 2516 MAIN STREET WHEELING, WV 26003 PHONE: (304) 234-3874

ENGINEER
CT CONSULTANTS 2001 MAIN STREET, SUITE 202 WHEELING, WV 26003 PHONE: (304) 232-2784



DESIGN ENGINEER:

DAN BARR, WV P.E. NO. 254451
7/25/2024
DATE

BID

your trusted advisor
engineers
architects
planners
consultants

DATE	REVISION	NO	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:
			AS SHOWN	7/24/2024		LAS	LAS	DAB

**WATER POLLUTION CONTROL DIVISION
WASTEWATER COLLECTION AND TREATMENT
SYSTEM IMPROVEMENTS
GAEWOOD STORM SEWER IMPROVEMENTS**

TITLE SHEET

PROJECT NO.	220991-1C
DISCIPLINE	CIVIL
SHEET NAME	TS
SHEET	OF
1	13



GENERAL

- ALL ITEMS FOR THIS PROJECT SHALL CONFORM TO THE 2023 EDITION OF THE WEST VIRGINIA DEPARTMENT OF TRANSPORTATION DIVISION OF HIGHWAYS (WV DOH) STANDARD SPECIFICATIONS FOR ROADS AND BRIDGES SHALL GOVERN THIS IMPROVEMENT, EXCEPT WHERE NOTED. ALL REFERENCES TO SECTION NUMBERS IN THE FOLLOWING ITEMS REFER TO THE AFOREMENTIONED STANDARD SPECIFICATIONS.
- PRIOR TO BEGINNING CONSTRUCTION, THE CONTRACTOR SHALL MAKE ALL ARRANGEMENTS NECESSARY TO COORDINATE FULL-TIME INSPECTION SERVICE FOR THE PROPOSED WORK.
- THE CONTRACTOR SHALL PROVIDE WRITTEN NOTIFICATION TO ENGINEER AT LEAST SEVEN (7) DAYS PRIOR TO ANY CONSTRUCTION.
- TWENTY-FOUR (24) HOUR ADVANCE NOTIFICATION IS REQUIRED FOR ALL WORK REQUIRING INSPECTION, TESTING, OR APPROVAL BY THE ENGINEER.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VISIT THE SITE AND VERIFY THE EXTENT OF THE WORK TO BE PERFORMED PRIOR TO MAKING HIS BID, INCLUDING BUT NOT LIMITED TO THE REMOVAL OF ANY AND ALL ITEMS.
- THE CONTRACTOR AND SUBCONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR COMPLYING WITH ALL FEDERAL, STATE, AND LOCAL SAFETY REQUIREMENTS, TOGETHER WITH EXERCISING PRECAUTIONS AT ALL TIMES FOR PROTECTION OF PERSONS (INCLUDING EMPLOYEES) AND PROPERTY. IT IS ALSO THE SOLE RESPONSIBILITY OF THE CONTRACTOR OR SUBCONTRACTOR TO INITIATE, MAINTAIN, AND SUPERVISE ALL SAFETY REQUIREMENTS, PRECAUTIONS, AND PROGRAMS IN CONNECTION WITH THE WORK. THE CONTRACTOR AND SUBCONTRACTOR SHALL ALSO ABIDE BY ALL CITY ORDINANCES AND STATE/FEDERAL LAWS. THE CONTRACTORS AND ALL SUBCONTRACTORS SHALL SUBMIT THEIR SAFETY PLANS PRIOR TO CONSTRUCTION. A COMPLETE SET OF PLANS, SPECIFICATIONS AND SAFETY PLAN MUST BE ON THE JOB SITE AT ALL TIMES AND AVAILABLE FOR VIEWING.
- IF THE CONTRACTOR ENCOUNTERS CONTAMINATED SOILS OR NOXIOUS FUMES, OPERATIONS SHOULD BE CEASED IMMEDIATELY.

EXISTING UTILITIES

- THE CONTRACTOR IS RESPONSIBLE FOR THE INVESTIGATION, LOCATION, SUPPORT, PROTECTION, AND RESTORATION OF ALL EXISTING UTILITIES AND APPURTENANCES WHETHER SHOWN ON THESE PLANS OR NOT. THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL CLEARANCES EXIST PER THE APPROVED PLANS. THE CONTRACTOR SHALL CALL, TOLL FREE, THE WEST VIRGINIA 811OR 1-800-245-4848 (WEB SITE: WWW.VV811.COM) FORTY-EIGHT (48) HOURS PRIOR TO CONSTRUCTION AND SHALL NOTIFY ALL UTILITY COMPANIES AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO WORK IN THE VICINITY OF THEIR UNDERGROUND LINES.
- THE CONTRACTOR IS SPECIFICALLY CAUTIONED THAT THE LOCATION AND/OR ELEVATION OF EXISTING UTILITIES AS SHOWN ON THESE PLANS IS BASED ON THE RECORDS OF THE VARIOUS UTILITY COMPANIES AND, WHERE POSSIBLE, MEASUREMENTS IN THE FIELD. THE INFORMATION IS NOT TO BE RELIED ON AS BEING EXACT OR COMPLETE. THE CITY AND/OR ENGINEER OF RECORD (EOR) ASSUME NO RESPONSIBILITY AS TO THE ACCURACY OF THE LOCATIONS OR DEPTHS OF THE UNDERGROUND FACILITIES AS SHOWN ON THE PLANS. CONTRACTOR MUST GIVE ADEQUATE NOTICE TO THE APPROPRIATE UTILITY COMPANY BEFORE ANY EXCAVATION NEAR A KNOWN UTILITY PER STATE LAW. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO RELOCATE ALL EXISTING UTILITIES WHICH CONFLICT WITH THE PROPOSED IMPROVEMENTS.
- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE RELOCATION OF ANY UTILITIES AS REQUIRED BY THE PLAN WITH THE OWNER OF THE AFFECTED UTILITY.
- THE CONTRACTOR SHALL LOCATE (MARK) ALL EX. UTILITIES PRIOR TO CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE EXCAVATION/INSTALLATION OF THE PROPOSED SEWER
- WHERE POTENTIAL CONFLICTS MIGHT OCCUR WITH EXISTING UTILITIES, THE CONTRACTOR WILL BE REQUIRED TO UNCOVER SUCH UTILITIES SUFFICIENTLY IN ADVANCE OF LAYING PIPE OR DUCT FOR THE EOR TO DETERMINE THE EXACT ELEVATION AND MAKE ANY NECESSARY ADJUSTMENTS. COST OF THE ABOVE SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS IN THE CONTRACT.
- THE CONTRACTOR SHALL REPAIR OR REPLACE ANY AND ALL EXISTING WORK DAMAGED DURING OR DUE TO THE EXECUTION OF THIS CONTRACT TO EQUAL OR BETTER CONDITION PRIOR TO THE DAMAGE, AT THE CONTRACTOR'S OWN EXPENSE. ALL SAID WORK TO BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER. ANY DAMAGE TO OTHER UTILITIES CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE APPROPRIATE UTILITY COMPANY AT THE CONTRACTOR'S EXPENSE.
- ANY EXISTING UTILITY (GAS, ELECTRIC, CABLE TELEVISION, TELEPHONE, WATER LINE, STORM OR SANITARY APPURTENANCE, ETC.) IN OR OUTSIDE THE CONSTRUCTION LIMITS DAMAGED DURING THE CONSTRUCTION OF THE PROPOSED PROJECT, WILL BE REPLACED AT THE CONTRACTOR'S EXPENSE AND TO THE SATISFACTION OF THE UTILITY.
- TEMPORARY RELOCATION OF ELECTRICAL UTILITIES, INCLUDING RESTRAINT OF POLES, RELOCATION OF POLES, AND RUBBER COVERING OF ENERGIZED CONDUCTORS MAY BE REQUIRED. THE COORDINATION AND COST OF THESE SERVICES IS THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR MA RESTRAIN POLES IF THE METHOD OF SUPPORT HAS BEEN SUBMITTED TO AND APPROVED BY THE UTILITY COMPANY.
- THE UTILITY WILL ONLY LOCATE AND MARK MAIN LINE SEWERS. THE CONTRACTOR IS RESPONSIBLE FOR LOCATIONS ALL SERVICE LATERALS WHETHER SHOWN ON PLANS OR NOT.

EXISTING CONDITIONS

- THE CONTRACTOR SHALL CAREFULLY PRESERVE BENCH MARKS, PROPERTY CORNERS, REFERENCE POINTS AND STAKES AND IN CASE OF WILLFUL OR CARELESS DESTRUCTION, HE SHALL BE CHARGED WITH THE RESULTING EXPENSE OF REPLACEMENT AND SHALL BE RESPONSIBLE FOR ANY MISTAKES THAT MAY BE CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE. ANY EXISTING PROPERTY CORNER PINS OR MONUMENTS DAMAGED OR DESTROYED BY CONSTRUCTION SHALL BE RESET BY THE CONTRACTOR AT THE CONTRACTOR'S EXPENSE UPON COMPLETION OF THE PROJECT PRIOR TO FINAL PAYMENT. A CERTIFICATION SHALL BE FURNISHED BY A WV REGISTERED SURVEYOR, STATING THAT SAID DAMAGES HAVE BEEN RESTORED. THE CONTRACTOR SHALL PROVIDE SITE EROSION CONTROL TO PREVENT RUNOFF WATER FROM THE SITE FROM CARRYING SAND, SILT, DIRT, ETC. ONTO PRIVATE PROPERTY, OR INTO ANY STORM SEWER OR DRAINAGE CHANNEL. EROSION CONTROL SHALL CONFORM WITH THE REQUIREMENTS OF SPECIFICATIONS AND DRAWINGS.
- CARE SHALL BE EXERCISED WHEN WORKING THE AREA AROUND EXISTING TREES AND SHRUBS. ANY TREES OR SHRUBS NOT MARKED FOR REMOVAL THAT ARE DAMAGED BY THE CONTRACTOR WILL HAVE TO BE REPLACED BY THE CONTRACTOR, AT HIS EXPENSE AND TO THE SATISFACTION OF THE OWNER.
- THE CONTRACTOR SHALL PROVIDE PROPER TRENCHING SUPPORT AT ALL TIMES. ANY DAMAGE TO ADJACENT STRUCTURES, PAVEMENT, SIDEWALKS, OR UTILITIES SHALL BE REPLACED AT THE CONTRACTORS EXPENSE. ALL SAID WORK SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE ENGINEER.
- EXISTING SANITARY FLOWS SHALL BE MAINTAINED AND PROPERLY BYPASSED ACCORDING TO PROJECT SPECIFICATIONS.

DISPOSAL OF MATERIALS

- THE CONTRACTOR IS RESPONSIBLE FOR PROPER DISPOSAL OF ALL CONSTRUCTION DEBRIS INCLUDING BUT NOT LIMITED TO EXCESS SOIL, ROCK, OR ANY OTHER TYPE MATERIALS. THE CONTRACTOR SHALL NOT FILL ANY WETLANDS, FLOOD PLAINS, OR DRAINAGEWAYS WITH SAID DEBRIS WITHOUT OBTAINING PROPER APPROVALS, PERMITS, LICENSES, ETC. FROM LOCAL, STATE, OR FEDERAL AGENCIES.
- THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF MATERIALS TAKEN FROM EXCAVATIONS.
- THE OPEN BURNING OF SITE CLEARING DEBRIS, TRASH, ETC. IS PROHIBITED IN THE CITY.

RESTORATION

- ALL MAIL BOXES AND TRAFFIC CONTROL SIGNS ENCOUNTERED DURING CONSTRUCTION SHALL BE REPLACED IMMEDIATELY AFTER THE SEWER HAS BEEN INSTALLED AND BACKFILLED. PROVIDE TEMPORARY MAIL BOXES FOR DISRUPTIONS GREATER THAN 24 HOURS.
- RESTORATION IN MOST CASES SHALL BE PERFORMED ACCORDING TO THE CITY OF WHEELING TRENCH DETAILS AS SHOWN ON THE DETAIL SHEET. ANY EXCEPTIONS TO THIS RESTORATION METHOD ARE PRESENTED IN THE PLAN SHEETS ON A CASE BY CASE BASIS.

ADDITIONAL CLARIFYING NOTES

- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING WITH PROPERTY OWNERS.

TREE CLEARING

- NO CLEARING SHALL TAKE PLACE OUTSIDE OF THE DESIGNATED WORK LIMITS.

CONSTRUCTION LAYOUT STAKES

- ITEM SHALL CONFORM TO SECTION 639 OF THE WVDOT SPECIFICATION MANUAL. ITEM SHALL BE PAID ON A LUMP SUM (LS) BASIS.

PAVEMENT/SIDEWALK SECTION

- ITEM 408002 TACK COAT SHALL CONFORM TO SECTION 408 OF THE WVDOT SPECIFICATION MANUAL. THE UNIT OF MEASURE SHALL BE GALLONS

- ITEM 501001- 8" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT. THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL THIS ITEM TO CONFORM TO SECTION 501 OF THE WVDOT SPECIFICATIONS MANUAL. THIS ITEM SHALL INCLUDE SAW CUTTING PAVEMENT FULL DEPTH PRIOR TO EXCAVATION. THE PAY LIMIT WIDTH OF REPLACEMENT IS ESTABLISHED IN THE STANDARD DETAIL DRAWING FOR THE VARIOUS SIZE PIPES. MAXIMUM WIDTH IS PAVED AREA DISTURBED. THE UNIT OF MEASURE SHALL BE SQUARE YARDS (SY) INSTALLED AS SHOWN ON THE STANDARD DETAIL DRAWINGS, MEASURED IN PLACE.
- ITEM 307001- 6" CLASS 1 AGGREGATE BASE COURSE. THIS ITEM SHALL CONFORM TO SECTION 307 OF THE WVDOT SPECIFICATION MANUAL. ALL WORK, LABOR, MATERIAL, DISPOSAL, EQUIPMENT, AGGREGATE, AND EXCAVATION NECESSARY TO COMPLETE WORK SHALL BE INCLUDED IN THIS ITEM. THIS ITEM SHALL BE PAID FOR BY THE CUBIC YARD PLACED (CY).
- ITEM 401002- 2" WEARING COURSE TYPE 4. THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL WEARING COURSE. THIS ITEM SHALL INCLUDE PLACEMENT OF WEARING COURSE TYPE 4 AS SHOWN ON THE STANDARD DETAIL DRAWINGS AND PER THE CONTRACT DOCUMENTS. THE PAY LIMIT WIDTH OF REPLACEMENT IS ESTABLISHED IN THE STANDARD DETAIL DRAWING FOR THE VARIOUS SIZE PIPES. MAXIMUM WIDTH IS PAVED AREA DISTURBED. ALL WORK NECESSARY TO COMPLETE THE ITEM IN ACCORDANCE WITH THE WVDOT SPECIFICATIONS (TABLE 401.4.2A) AND THE NOTES OUTLINED IN THESE PLANS. THE UNIT OF MEASURE SHALL BE TONS (TON) INSTALLED AS SHOWN ON THE STANDARD DETAIL DRAWINGS, MEASURED IN PLACE.
- ITEM 609002- BED COURSE MATERIAL. THIS ITEM SHALL CONFORM TO SECTION 609 OF THE WVDOT SPECIFICATION MANUAL. ALL WORK, LABOR, MATERIAL, DISPOSAL, AGGREGATE, EQUIPMENT, AND EXCAVATION NECESSARY TO COMPLETE ITEM SHALL BE INCLUDED. THIS ITEM SHALL BE PAID FOR BY CUBIC YARD (CY).

MOBILIZATION

- ITEM SHALL CONFORM TO SECTION 204 OF THE WVDOT SPECIFICATION MANUAL. THIS ITEM SHALL INCLUDE PERFORMANCE OF CONSTRUCTION PREPARATORY OPERATIONS, INCLUDING THE MOVEMENT OF PERSONNEL AND EQUIPMENT TO THE PROJECT SITE, PERMITS, BONDING AND INSURANCE. MAXIMUM PAYMENT FOR THIS ITEM WILL BE 50% ON FIRST PAY REQUEST AND BALANCE WILL BE PAID ON FINAL PAY REQUEST. ITEM SHALL BE PAID IN LUMP SUM (LS) BASIS.

MAINTENANCE OF TRAFFIC

- ITEM SHALL CONFORM TO SECTION 636 OF WVDOT SPECIFICATION MANUAL AND DETAILS ON THE CONSTRUCTION PLAN SET. ITEM SHALL BE LUMP SUM (LS) BASIS. ANY IMPACTS TO ACCESS MUST BE COORDINATED WITH PROPERTY OWNERS A MINIMUM OF 24-HOUR IN ADVANCE. THE CONTRACTORS SHALL PROVIDE UPDATES TO THE CITY WITH TRAFFIC IMPACTS SEVEN DAYS PRIOR TO MAKING CHANGES. CHANGES TO THE MAINTENANCE OF TRAFFIC PLAN, CLOSURES, AND WEEKLY UPDATES SHALL BE SENT TO THE ENGINEER AND OWNER. TRAFFIC CONTROL SHALL BE COORDINATED WITH THE CITY OF WHEELING POLICE. PARKING CHANGES MUST BE POSTED ALONG THE STREET IMPACTED A MINIMUM OF 24-HOURS IN ADVANCE.
- ROADWAYS SHALL ONLY BE CLOSED ONE LANE AT A TIME. PROVIDE A SIGNED PEDESTRIAN DETOUR, ROADWAY CLOSED AHEAD SIGNS, AND PEDESTRIAN BARRICADES.
- THE CONTRACTOR SHALL COORDINATE INDIVIDUALLY WITH BUSINESS OWNERS ALONG THE ALIGNMENT TO ENSURE THAT TRUCK AND SHIFT TRAFFIC WILL NOT BE IMPEDED BY CONSTRUCTION. A SCHEDULE SHALL BE DEVELOPED THAT IS AGREED UPON BETWEEN THE BUSINESS OWNER AND CONTRACTOR.
- TEMPORARY LIGHTING MAY BE USED IN LIEU OF FLAGMEN. IN ACCORDANCE WITH THE WVDOT MANUAL ON TEMPORARY TRAFFIC CONTROL FOR STREETS AND HIGHWAYS, 2006 EDITION, SPECIFICALLY DESCRIBED IN SECTION F.75 THROUGH F.80 OF THE MANUAL. IN ALL CASES THE MAINTENANCE OF TRAFFIC PLAN SHALL BE APPLIED AND ADHERED TO.

SANITARY SEWER

- 8" SANITARY SEWER PIPE SHALL BE PVC SDR 35 (ASTM D3034). POLYVINYL CHLORIDE PIPE SHALL CONFORM TO SECTION 604 AND SUBSECTION 714.22 OF THE WVDOT SPECIFICATION MANUAL. ITEM SHALL BE PAID ON A LINEAR FOOT (LF) BASIS AND SHALL INCLUDE THE PIPE MATERIAL, BEDDING MATERIAL, INSTALLATION, AND SUITABLE MATERIAL TO BE REUSED FOR TRENCH PLACEMENT.
- COST OF ALL LABOR, MATERIALS, AND EQUIPMENT TO COMPLETE TRENCH WORK TO THE SURFACE OF THE EXISTING GROUND OR BOTTOM OF THE AGGREGATE BASE COURSE IN ACCORDANCE OF THE DETAILS IN THE PLANS SHALL BE INCLUDED IN THE UNIT PRICE OF THE PIPE

STORM SEWER

- ITEM 219001- CLSM TYPE B CONTRACTOR TO FILL EXISTING STORM SEWER PIPE WITH CLSM TYPE B. CLSM SHALL CONFORM TO SECTION 219 OF THE WVDOT SPECIFICATION MANUAL. ITEM SHALL BE PAID ON A CUBIC YARD (CY) BASIS.
- ITEM 604052- PLASTIC SEWER PIPE SHALL CONFORM TO SECTION 604 AND SUBSECTION 714.19 OF THE WVDOT SPECIFICATION MANUAL. ITEM SHALL BE PAID ON A LINEAR FOOT (LF) BASIS AND SHALL INCLUDE THE FITTINGS, PIPE MATERIAL, INSTALLATION, AND SUITABLE MATERIAL TO BE REUSED FOR TRENCH PLACEMENT.
- ITEM 605001 ALL MANHOLES SHALL BE WVDOT TYPE A MANHOLES ACCORDING TO DETAILS. THIS ITEM SHALL CONFORM TO SECTION 605 OF THE WVDOT SPECIFICATION MANUAL. ITEM SHALL BE PAID ON AN EACH (EA) BASIS AND IS TO INCLUDE ALL EQUIPMENT, MATERIAL INCLUDING GRATE AND CORRESPONDING FRAME, INSTALLATION, AND LABOR.
- ITEM 605004 ALL INLETS SHALL BE WVDOT TYPE B INLETS ACCORDING TO DETAILS (UNLESS OTHERWISE NOTED), THIS ITEM SHALL CONFORM TO SECTION 605 OF THE WVDOT SPECIFICATION MANUAL. ITEM SHALL BE PAID ON AN EACH (EA) BASIS AND IS TO INCLUDE ALL EQUIPMENT, MATERIAL INCLUDING GRATE AND CORRESPONDING FRAME, INSTALLATION, AND LABOR.
- COST OF ALL LABOR, MATERIALS, AND EQUIPMENT TO COMPLETE TRENCH WORK TO THE SURFACE OF THE EXISTING PAVEMENT IN ACCORDANCE OF THE DETAILS IN THE PLANS SHALL BE INCLUDED IN THE UNIT PRICE OF THE PIPE.
- ALL MANHOLES LIDS SHALL BE INSTALLED FLUSH WITH GROUND
- FOR PIPE SIZES 12"-30" THE PROPOSED STORM SEWER PIPE SHALL BE HDPE N-12 SMOOTH INTERIOR, CORRUGATED EXTERIOR PER ASTM F-2648, GASKETS PER ASTM F-477, BELL AND SPIGOT JOINTS TO ASTM D-3212; FITTINGS TO ASTM F-2306; AND INSTALLATION AND BEDDING PER ASTM D-2321
- ALL MANHOLES SHALL BE CONSTRUCTED WITHOUT STEPS. MANHOLE FRAMES AND LIDS SHALL BE EAST JORDAN (NO ALTERNATIVES).
MH FRAME: 1450Z
MH CASTING: DENOTED ON PROFILE
INLET: GRATE DENOTED ON PROFILE

SANITARY SEWER

- ITEM 675007- 8" PLASTIC SEWER PIPE (SDR35) PLASTIC SEWER PIPE SHALL CONFORM TO SECTION 675 AND SUBSECTION 714.22 OF THE WVDOT SPECIFICATION MANUAL. ITEM SHALL BE PAID ON A LINEAR FOOT (LF) BASIS AND SHALL INCLUDE THE FITTINGS, PIPE MATERIAL, INSTALLATION, AND SUITABLE MATERIAL TO BE REUSED FOR TRENCH PLACEMENT

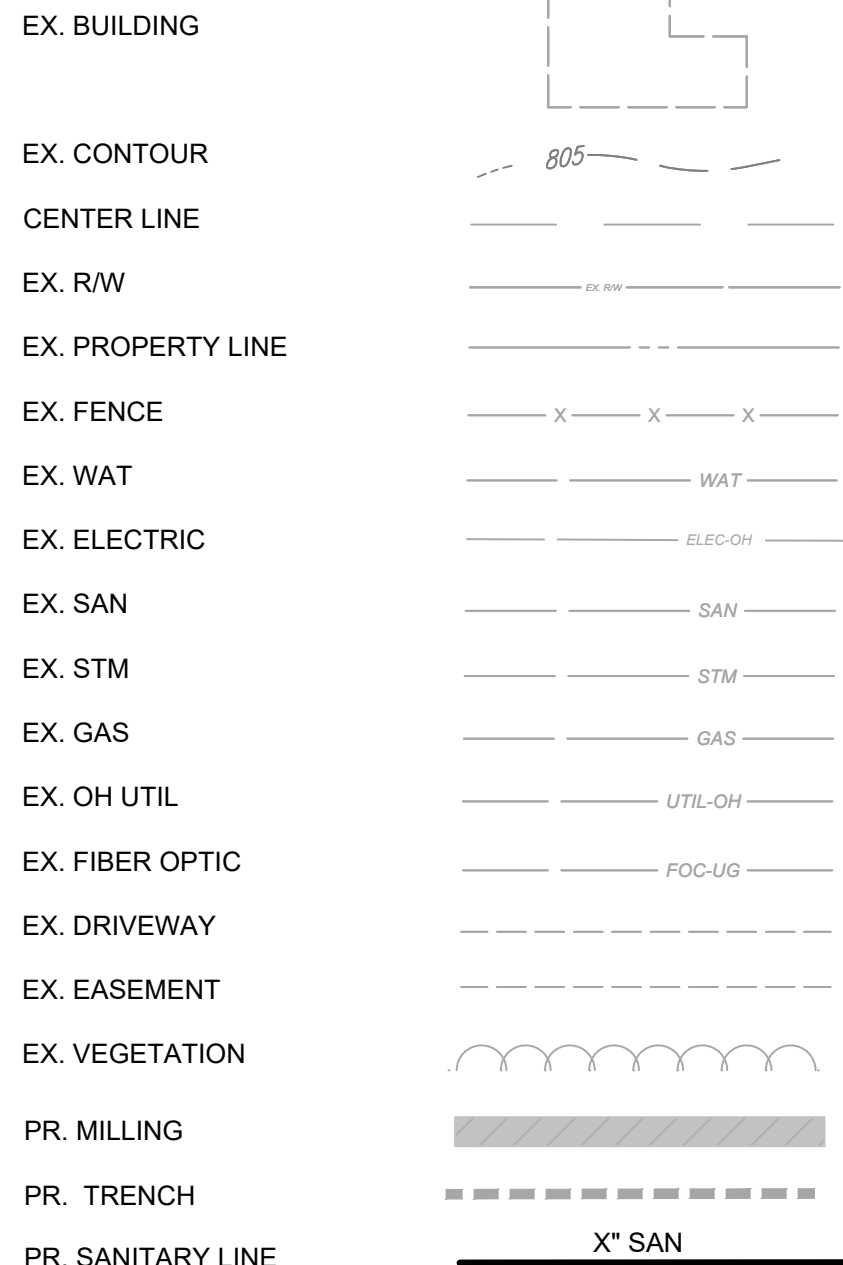
SPECIAL ITEMS

- ITEM SPECIAL - HEADWALL 1 (18" PIPE) ITEM SHALL CONFORM TO WVDOT SECTION 601 CLASS B CONCRETE. ALL WORK, LABOR, EXCAVATION AND MATERIAL SHALL BE INCLUDED IN THIS ITEM. WORK SHALL BE PAID FOR ON AN EACH (EA) BASIS. ITEM SHALL CONFORM TO WVDOT STANDARD DETAIL DR2 (SHEETS 1-4).
- ITEM SPECIAL - DEBRIS RACK THE CONTRACTOR SHALL REPLACE EXISTING DEBRIS RACK DETAIL AND MAY BE PREFABRICATED OR FABRICATED ON SITE. ALL WORK, LABOR, EXCAVATION, AND MATERIAL SHALL BE INCLUDED IN THIS PAY ITEM. WORK SHALL BE PAID FOR ON AN (EA) BASIS.
- ITEM SPECIAL - INSERTA-TEE ITEM SHALL CONFORM TO WVDOT SUBSECTION 714.19. ALL WORK, LABOR, AND MATERIAL SHALL BE INCLUDED IN THIS PAY ITEM. ITEM SHALL BE PAID FOR ON AN EACH (EA) BASIS
- ITEM SPECIAL - UNSUITABLE BACKFILL CONTINGENCY THE CONTRACTOR SHALL PROVIDE SUITABLE BACKFILL MATERIAL IN THE CASE THAT THE EXISTING MATERIAL IS UNSUITABLE FOR CONSTRUCTION. SUITABILITY FOR CONSTRUCTION SHALL BE AS DESCRIBED IN SECTIONS 207 AND 716 OF THE WVDOT SPECIFICATIONS MANUAL. HOWEVER, THE ENGINEER RESERVES THE RIGHT TO DETERMINE THE SUITABILITY OF BACKFILL MATERIAL. AN ESTIMATE FOR THE REQUIRED AMOUNT OF SUITABLE BACKFILL MATERIAL HAS BEEN INCLUDED IN THE TABLE OF ESTIMATED QUANTITIES, AND SHALL BE PAID ON A CUBIC YARD (CY) BASIS.
- ITEM SPECIAL - DRIVEWAY REPLACEMENT THE CONTRACTOR SHALL REPLACE EXISTING DRIVEWAY REMOVED DURING CONSTRUCTION OF THE STORM SEWER IN ACCORDANCE WITH THE STANDARD DETAIL AND SATISFACTION OF ENGINEER. CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIALS, AND EQUIPMENT NECESSARY. THE ITEM SHALL BE PAID FOR ON A SQUARE YARD (SY) BASIS.
- ITEM SPECIAL - BULKHEAD FOR SEWER THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIALS, AND EQUIPMENT NECESSARY TO CONSTRUCT A SEWER ADJUSTMENT AS SHOWN ON THE CONSTRUCTION DRAWINGS AS DETAILS. THE CONTRACTOR SHALL BE

- RESPONSIBLE FOR REPAIRING ANY DAMAGE AT HIS OWN EXPENSE THAT OCCURS TO THE ADJACENT MANHOLE AS A RESULT OF THE BULKHEAD CONSTRUCTION. ITEM SHALL BE PAID ON AN EACH (EA) BASIS.
- ITEM SPECIAL - ABANDON STORM STRUCTURE CONTRACTOR TO FILL EXISTING STORM MANHOLE WITH #57 STONE, CAP WITH 6" OF CONCRETE, AND REMOVE COVER AND CASTING. CASTING AND LID SHALL BE RETURNED TO CITY. ALL WORK, LABOR, MATERIAL, EQUIPMENT, AND EXCAVATION TO ABANDON THE MANHOLE SHALL BE INCLUDED WITH THIS PAY ITEM. ITEM SHALL BE PAID ON AN EACH (EA) BASIS.
- ITEM SPECIAL - SEWER PIPE REMOVAL ALL WORK, LABOR, MATERIAL, EQUIPMENT, AND EXCAVATION REQUIRED TO SEAL THE EXISTING CONVEYER SHALL BE INCLUDED WITH THIS PAY ITEM. STORM PIPE REMOVAL SHALL BE PAID ON A LINEAR FOOT (LF) BASIS.
- ITEM SPECIAL - STORM STRUCTURE REMOVED WORK IS TO BE PAID FOR ON AN EACH (EA) BASIS. ALL WORK, LABOR, MATERIAL, BACKFILL, EQUIPMENT, DISPOSAL AND EXCAVATION SHALL BE INCLUDED WITH THIS PAY ITEM. CASTING AND GRATE/COVER SHALL BE RETURNED TO CITY.
- ITEM SPECIAL - EROSION CONTROL THE CONTRACTOR SHALL PROVIDE EROSION CONTROL MEASURES IN ACCORDANCE WITH E&S CONTROL SHEET AND THE WDEP EROSION AND SEDIMENT CONTROL BEST MANAGEMENT PRACTICE MANUAL WITH LAST REVISION DATE OF AUGUST 29, 2016. DAMAGE TO PROPERTY AS A RESULT OF INADEQUATE EROSION CONTROL MEASURES SHALL BE SOLELY THE RESPONSIBILITY OF THE CONTRACTOR. ITEM SHALL BE PAID ON A LUMP SUM (LS) BASIS.
- ITEM SPECIAL- GRADING, SEEDING, AND MULCHING (WHEELING) THE CONTRACTOR SHALL FURNISH ALL LABOR, TOOLS, MATERIAL AND EQUIPMENT NECESSARY TO FURNISH AND INSTALL SURFACE COVERING. THIS ITEM SHALL INCLUDE ALL NECESSARY GRADING, TOPSOIL, FERTILIZER, WATER, SEED AND MULCH TO REPLACE THE DISTURBED OR DAMAGED AREA, COMPLETE AND IN ACCORDANCE WITH THE DRAWINGS AND SPECIFICATIONS. THE ITEM SHALL INCLUDE ALL WORK NECESSARY TO COMPLETE THE ITEM IN ACCORDANCE WITH WVDOT SPECIFICATIONS AND THE NOTES OUTLINED IN THESE PLANS. THE UNIT OF MEASURE SHALL BE SQUARE YARDS (SY) COMPUTED BY MULTIPLYING THE LENGTH OF THE DISTURBED AREA AS MEASURED ALONG THE CENTERLINE OF THE PIPE, TIMES THE WIDTH OF THE DISTURBED AREA, BUT IN NO CASE SHALL THE LIMITS OF PAYMENT ON EITHER SIDE OF THE PIPE BE MORE THAN THE WORK LIMITS SHOWN ON THE DRAWINGS. DAMAGED AREAS OUTSIDE OF THE LIMITS WILL BE SEEDED AND MULCHED AT THE CONTRACTOR'S EXPENSE.
- ITEM SPECIAL - SUPPORT UTILITY POLE CONTRACTOR TO SUPPORT UTILITY POLE DURING CONSTRUCTION OF STORM SEWER. SUPPORT OF UTILITY POLE SHALL BE AT THE SATISFACTION OF THE ENGINEER AND UTILITY COMPANY. ITEM SHALL BE PAID FOR ON AN EACH (EA) BASIS.
- ITEM SPECIAL - SUPPORT CAR PORT CONTRACTOR SHALL SUPPORT CAR PORT DURING CONSTRUCTION OF STORM SEWER. SUPPORT OF CAR PORT SHALL BE AT THE SATISFACTION OF THE ENGINEER. ANY SUBSEQUENT DAMAGE TO HOUSE OR CAR PORT SHALL BE AT THE CONTRACTORS EXPENSE. ITEM TO BE PAID FOR ON A LUMP SUM (LS) BASIS.
- UTILITY SERVICE RELOCATION CONTINGENCY IF UTILITY SERVICES ARE ENCOUNTERED THAT CONFLICT WITH THE PROPOSED STORM SEWER INSTALLATION, CONTRACTOR SHALL RELOCATE SERVICE ACCORDINGLY AND IN ACCORDANCE WITH UTILITY COMPANY. CONTRACTOR SHALL FURNISH ALL WORK, LABOR, AND MATERIAL NECESSARY TO FACILITATE THE RELOCATION OF THE RESPECTIVE SERVICE. ITEM SHALL NOT EXCEED \$20,000 OVER DURATION OF PROJECT.
- ITEM SPECIAL- DOCUMENTATION OF SITE THE CONTRACTOR SHALL VIDEO RECORD THE PROJECT SITE PRIOR TO START OF ACTIVITIES IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND THE NOTES OUTLINED IN THESE PLANS. THE CONTRACTOR SHALL PROVIDE ONE COPY OF VIDEO TO ENGINEER AND OWNER IN ELECTRONIC FORM ON USB MEMORY DEVICE. ITEM SHALL BE PAID ON A LUMP SUM (LS) BASIS.

REF#	ITEM	DESCRIPTION	UNIT	QUANTITY
1	639001	CONSTRUCTION LAYOUT AND STAKES	LS	1
2	204001	MOBILIZATION	LS	1
3	636001	MAINTENANCE OF TRAFFIC	LS	1
4	408002	TACK COAT	GAL	173
5	501001	8" REINFORCED PORTLAND CEMENT CONCRETE PAVEMENT	SY	1156
6	401002	2" WEARING COURSE TYPE 4	TON	128
7	307001	6" CLASS 1 AGGREGATE COURSE BASE	TON	1816
8	219001	CLSM TYPE B	CY	33
9	604052	24" PLASTIC SEWER PIPE (TYPE A-1 TRENCH)	LF	1816
10	604052	24" PLASTIC SEWER PIPE (TYPE D TRENCH)	LF	23
11	604052	18" PLASTIC SEWER PIPE (TYPE A-1 TRENCH)	LF	59
12	604052	18" PLASTIC SEWER PIPE (TYPE D TRENCH)	LF	225
13	604052	12" PLASTIC SEWER PIPE (TYPE A-1 TRENCH INSTALLATION ONLY)	LF	27
14	604052	12" PLASTIC SEWER PIPE (TYPE D TRENCH INSTALLATION ONLY)	LF	147
15	675007	8" PLASTIC SEWER PIPE (SDR35)	LF	60
16	604052	MANHOLE TYPE A (48" DIAMETER BASE)	EA	2
17	605001	MANHOLE TYPE A (60" DIAMETER BASE)	EA	1
18	605004	TYPE A INLET	EA	1
19	605004	TYPE B INLET	EA	17
20	SPEC	WINGWALL (18" PIPE)	EA	1
21	SPEC	DEBRIS RACK	EA	2
22	SPEC	8" x 24" INSERTA-TEE	EA	1
23	SPEC	12" x 24" INSERTA-TEE	EA	1
24	SPEC	18" x 24" INSERTA-TEE	EA	1
25	SPEC	UNSUITABLE BACKFILL CONTINGENCY	CY	250
26	SPEC	BULKHEAD FOR SEWER	EA	14
27	SPEC	SEWER FLOW CONTROL	LS	1
28	SPEC	MARKER TAPE AND LOCATOR WIRE	LF	2357
29	SPEC	ABANDON STORM STRUCTURE	EA	1
30	SPEC	REMOVE SEWER PIPE	LF	705
31	SPEC	STORM STRUCTURE REMOVED	EA	18
32	SPEC	GRADING, SEEDING, AND MULCHING	SY	2275
33	SPEC	EROSION CONTROL	LS	1
34	SPEC	TREE CLEARING AND GRUBBING	LS	1
35	SPEC	REMOVE AND REPLACE FENCE IN KIND	LF	115
36	SPEC	DRIVEWAY REPLACEMENT IN KIND	SY	66
37	SPEC	SUPPORT UTILITY POLE	EA	2
38	SPEC	SUPPORT CAR PORT	LS	1
39	SPEC	UTILITY RELOCATION CONTINGENCY	\$\$	20000
40	SPEC	DOCUMENTATION OF SITE	LS	1

LEGEND



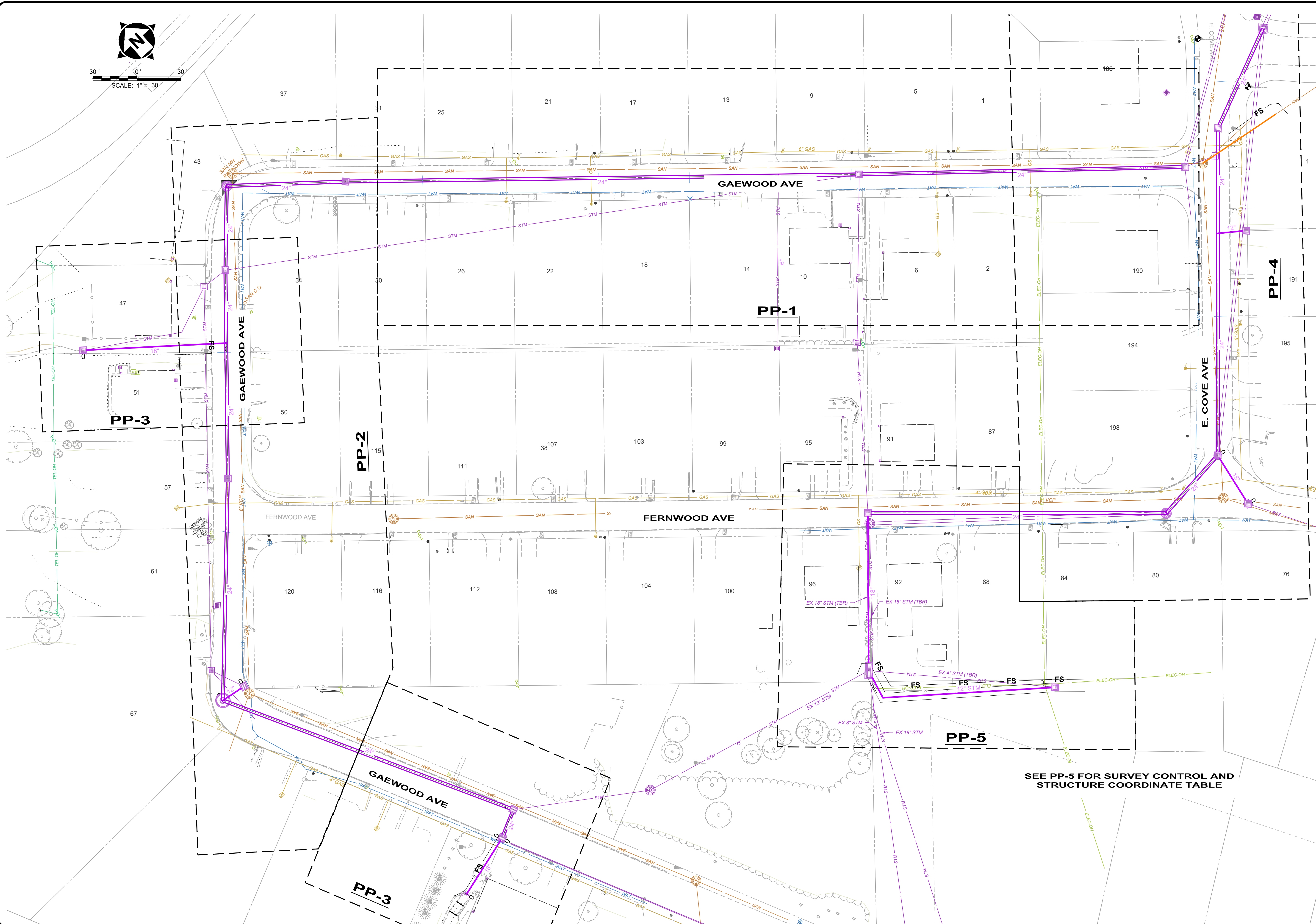
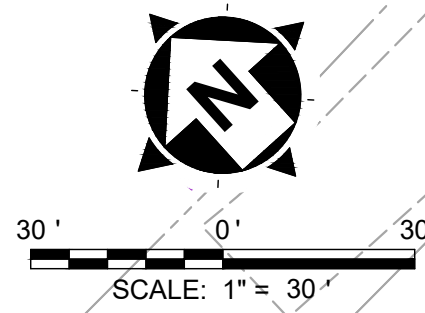
your trusted advisor
engineers
architects
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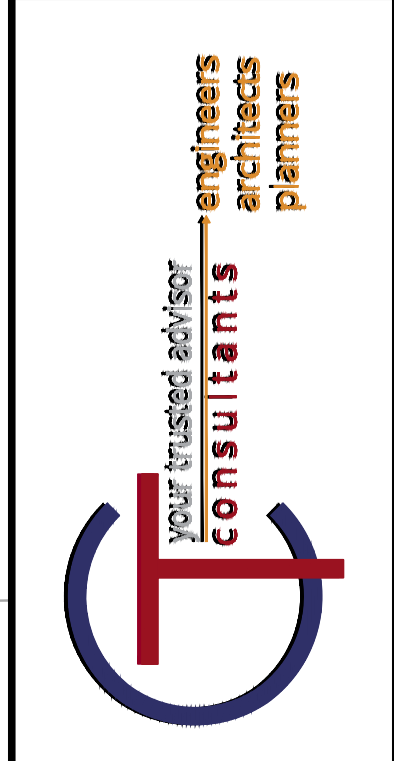
WATER POLLUTION CONTROL DIVISION
WASTEWATER COLLECTION AND TREATMENT
GAWOOD SEWER PROJECT

GENERAL NOTES, LEGEND, AND QUANTITIES

PROJECT NO.	
220991-1B	
DISCIPLINE	
CIVIL	
SHEET NAME	
GN1	
SHEET	OF
2	13



SEE PP-5 FOR SURVEY CONTROL AND
STRUCTURE COORDINATE TABLE

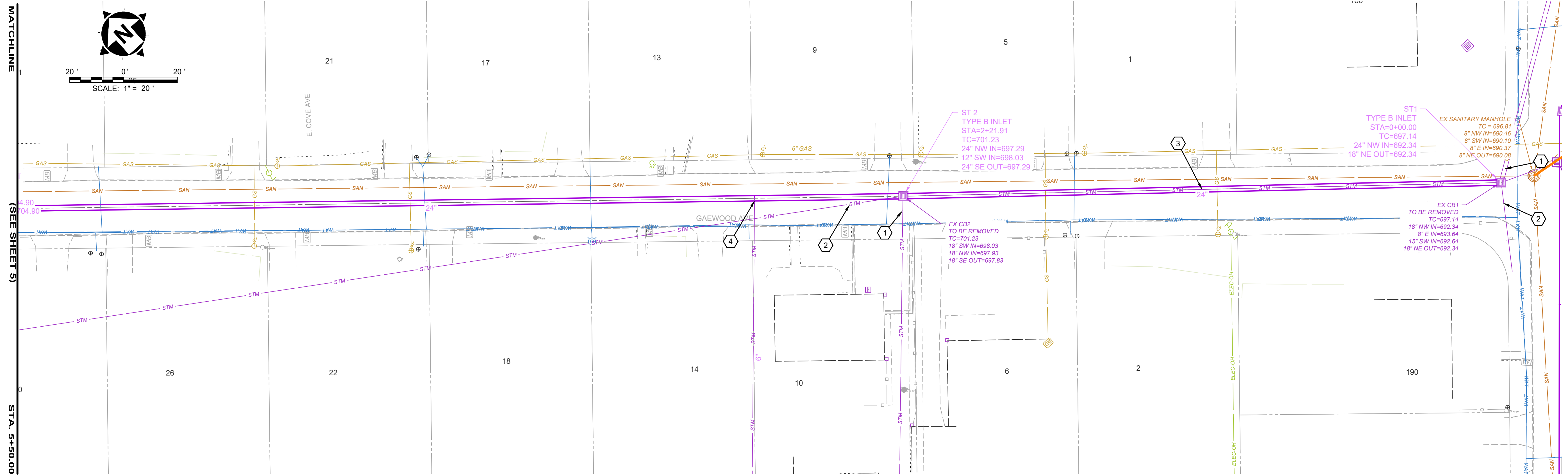


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**WATER POLLUTION CONTROL DIVISION
WASTEWATER COLLECTION AND TREATMENT
GAEWOOD SEWER PROJECT**

PROJECT NO.	220991-1B
DISCIPLINE	CIVIL
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3	13

INDEX SHEET



CODED NOTES

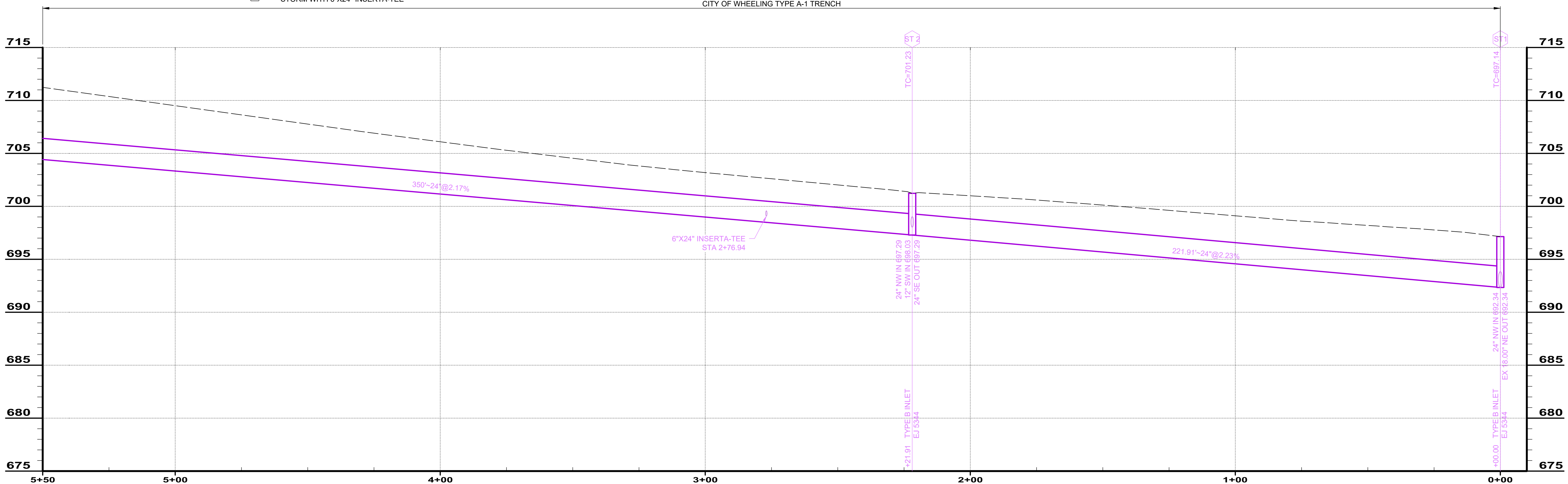
- ① CONNECT EXISTING STORM SEWER TO PROPOSED STRUCTURE
- ② BULKHEAD EX STORM SEWER
- ③ REMOVE EXISTING STORM LINE BETWEEN EX CB1 AND EX CB2
- ④ FIELD LOCATE AND CONNECT 6" STORM WITH 6"X24" INSERTA-TEE

**GAEWOOD STORM ST1 TO ST9A
STA 0+00 - STA 5+50**

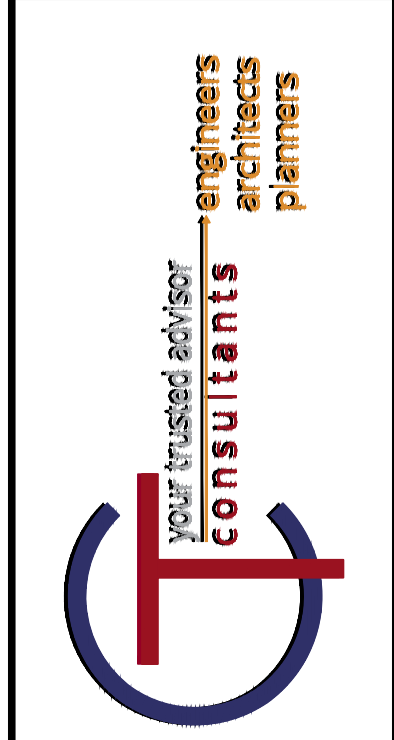
NOTES

EXISTING SANITARY AND STORM SEWER LATERAL EXACT LOCATIONS AND DEPTHS ARE UNKNOWN.

CONNECT ANY EXISTING STORM LATERALS TO PROPOSED SYSTEM. ITEM TO BE INCLUDED IN COST OF VARIOUS STORM PIPES.

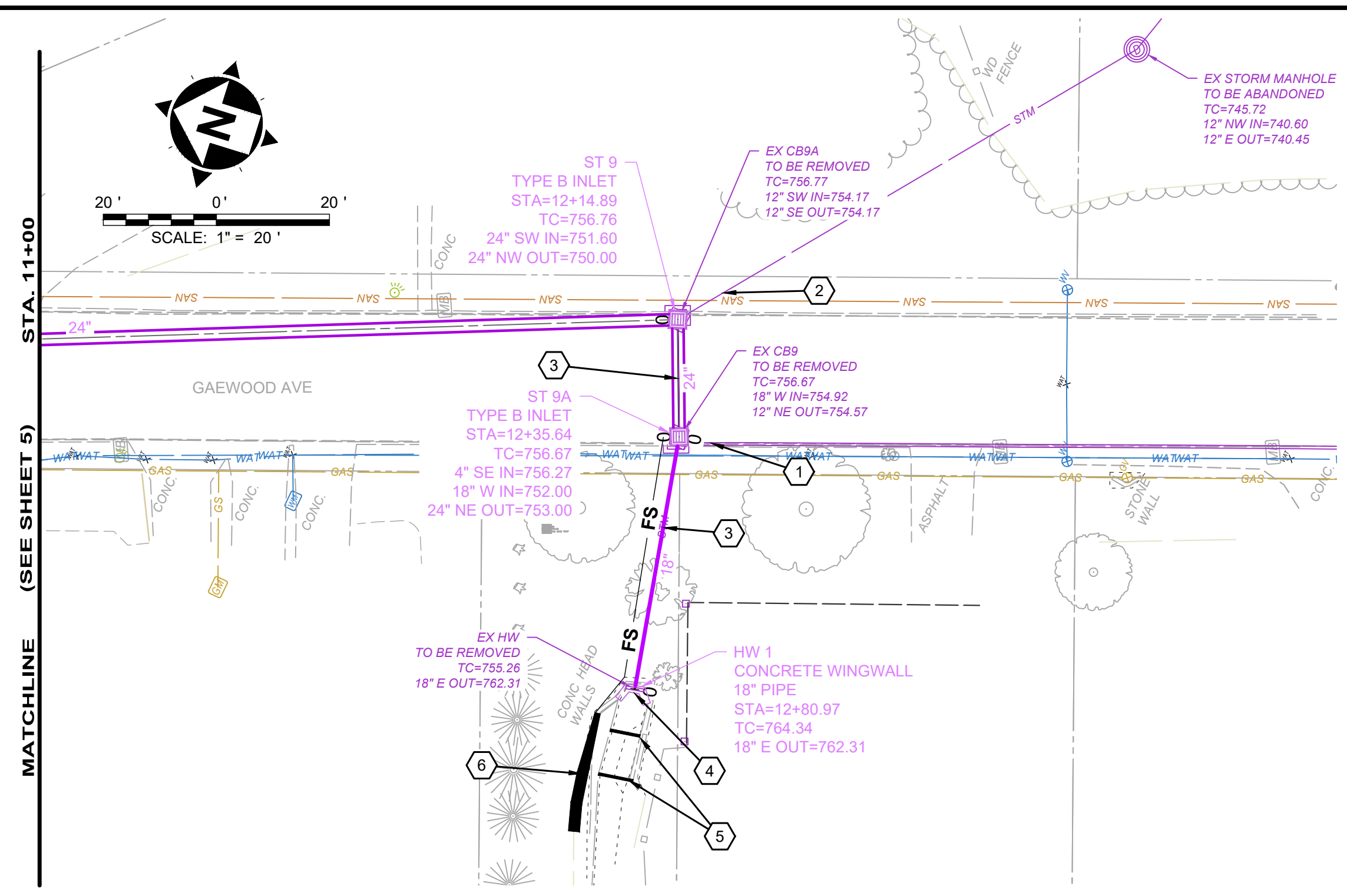


GAEWOOD STORM STA 0+00 TO STA 5+50

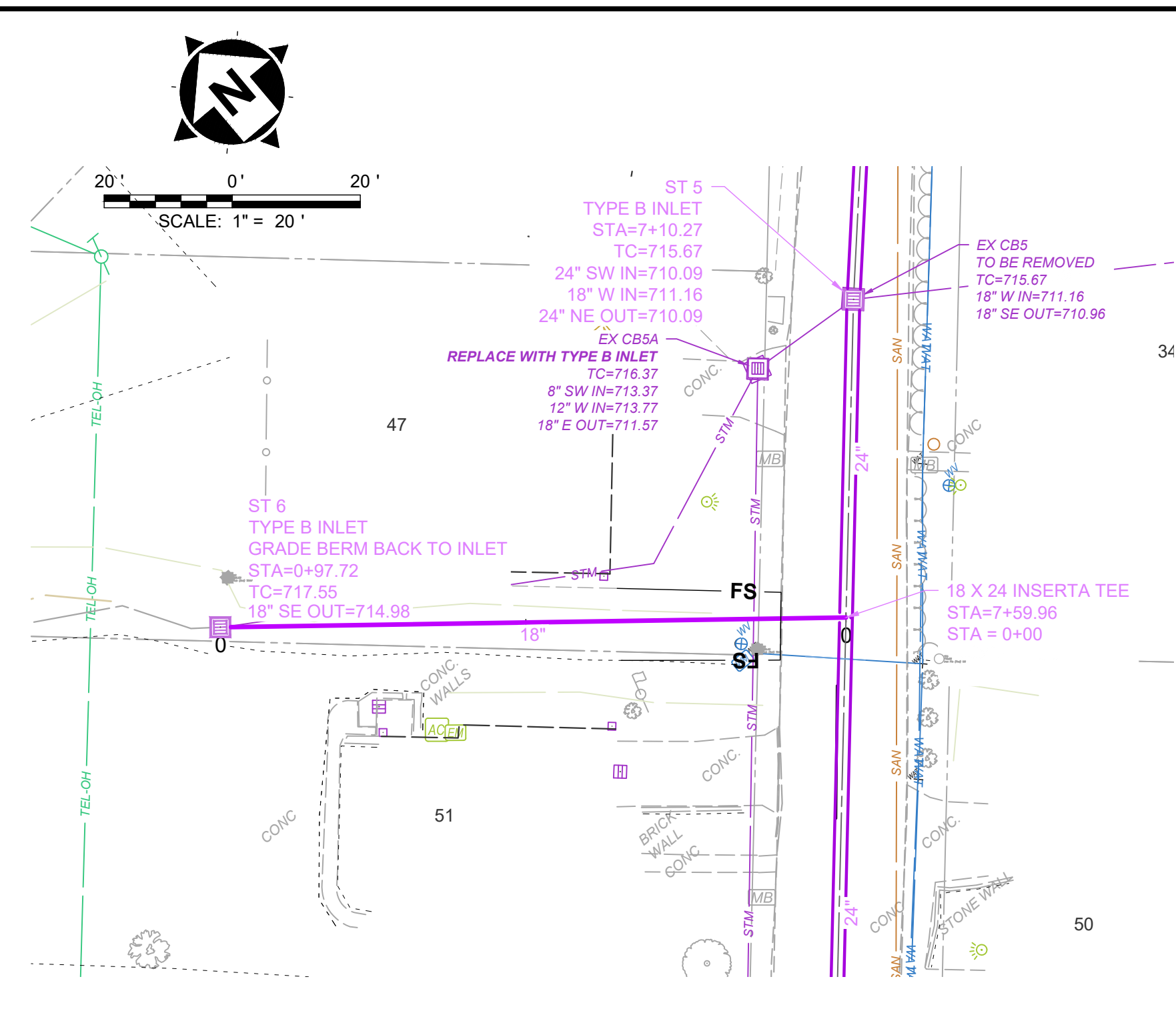


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WATER POLLUTION CONTROL DIVISION WASTEWATER COLLECTION AND TREATMENT GAEWOOD SEWER PROJECT	
STORM SEWER PLAN & PROFILE	
PROJECT NO.	220991-1B
DISCIPLINE	CIVIL
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SHEET	OF
4	13



GAEWOOD STORM STA 11+00 - STA 12+80.97

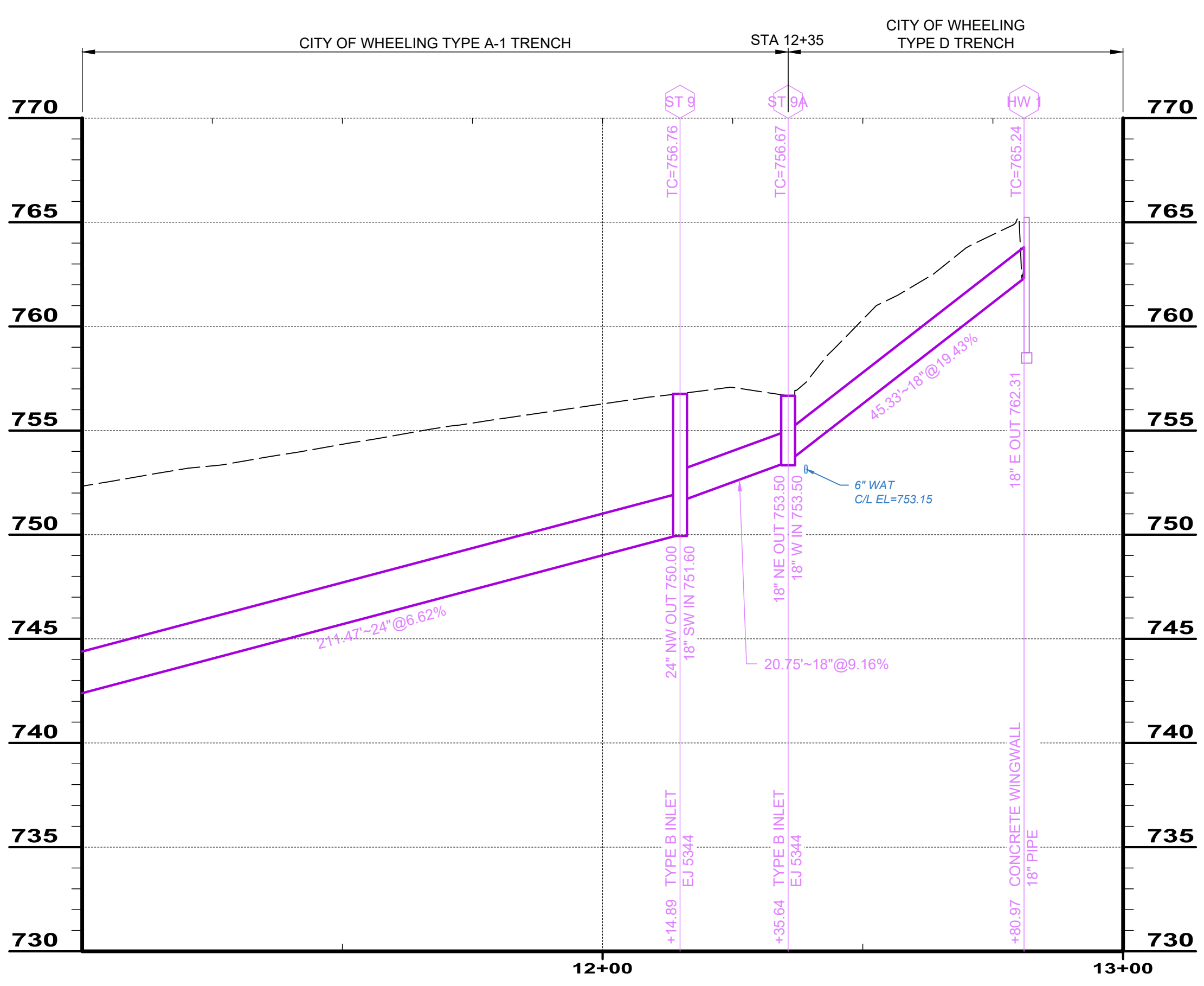


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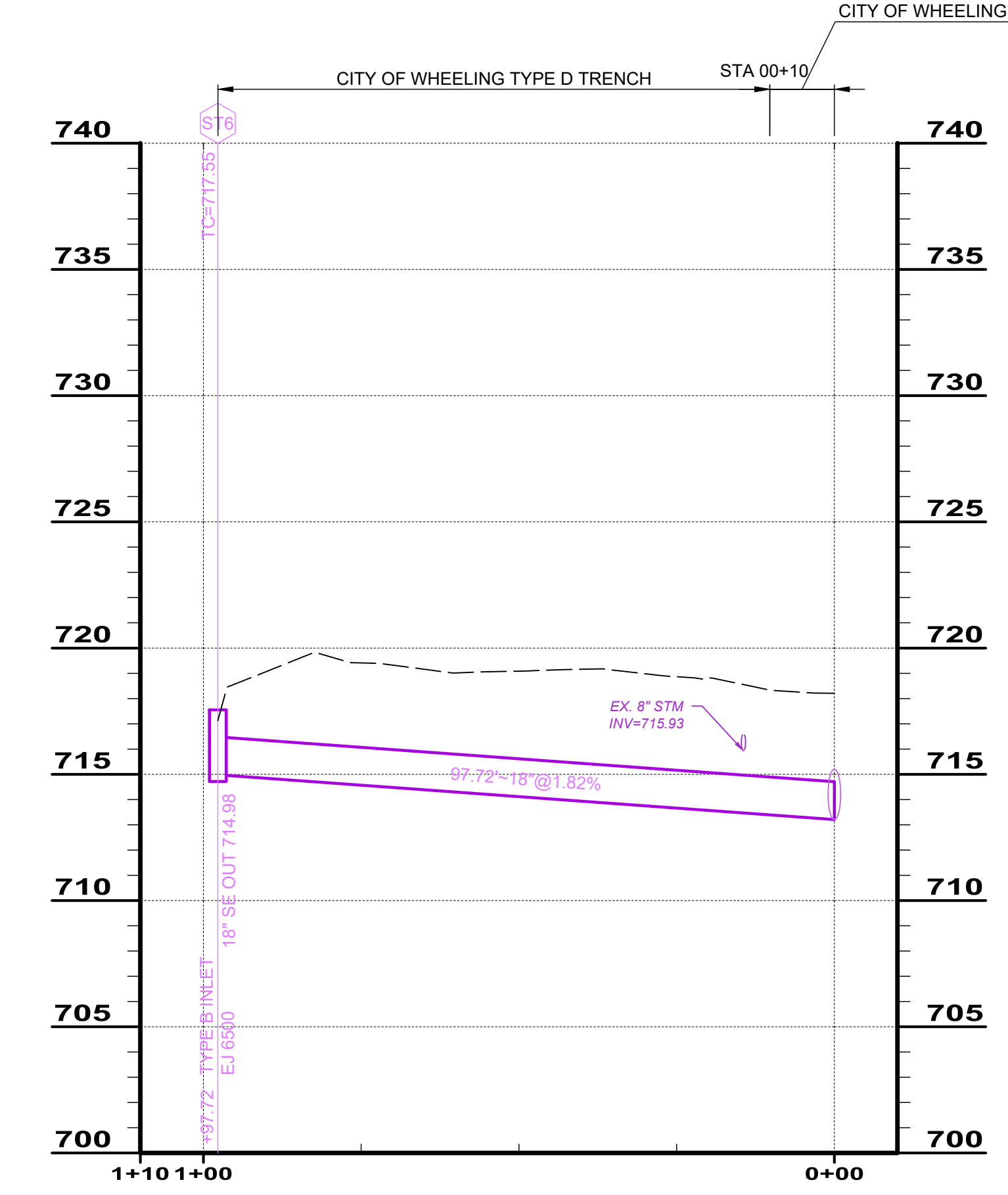
- 1 CONNECT EXISTING STORM SEWER TO PROPOSED STRUCTURE
- 2 BULKHEAD EX STORM SEWER
- 3 REMOVE EX STORM LINE BETWEEN EXISTING HEADWALL AND EX CB9A
- 4 TIE IN HEADWALL TO EXISTING CONCRETE CHANNEL
- 5 INSTALL METAL DEBRIS RACKS 8 FT FROM HEADWALL (SMALL OPENINGS) AND 16 FT FROM HEADWALL (LARGE OPENINGS), AND CLEAN CHANNEL. SEE DETAIL.
- 6 GRADE 18" TALL X 2' WIDE BERM TIE INTO EXISTING GRADE AND CONCRETE ELEVATIONS

NOTES

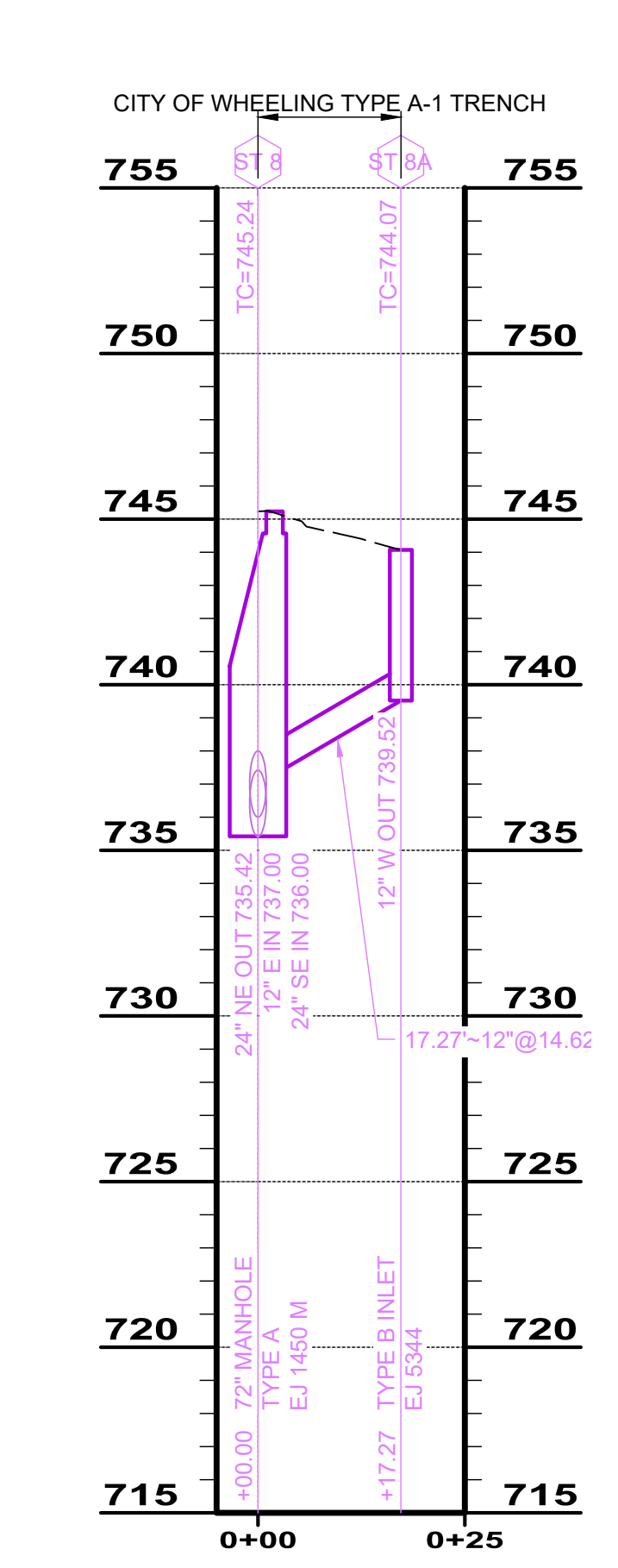
EXISTING SANITARY AND STORM SEWER LATERAL EXACT LOCATIONS AND DEPTHS ARE UNKNOWN.
 CONNECT ANY EXISTING STORM LATERALS TO PROPOSED SYSTEM. ITEM TO BE INCLUDED IN COST OF VARIOUS STORM PIPES.



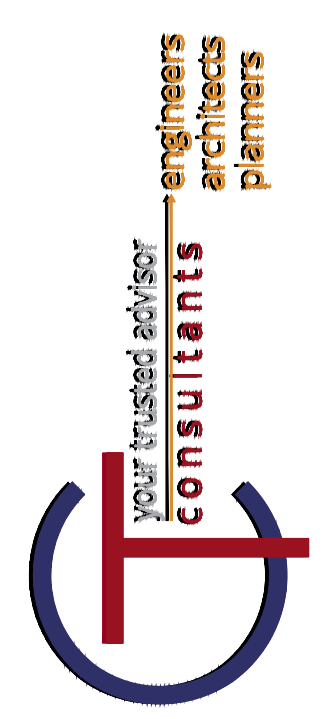
GAEWOOD STORM STA 11+00 TO STA 12+02.46



ST10 TO ST 10A (6)



ST8 TO ST8A



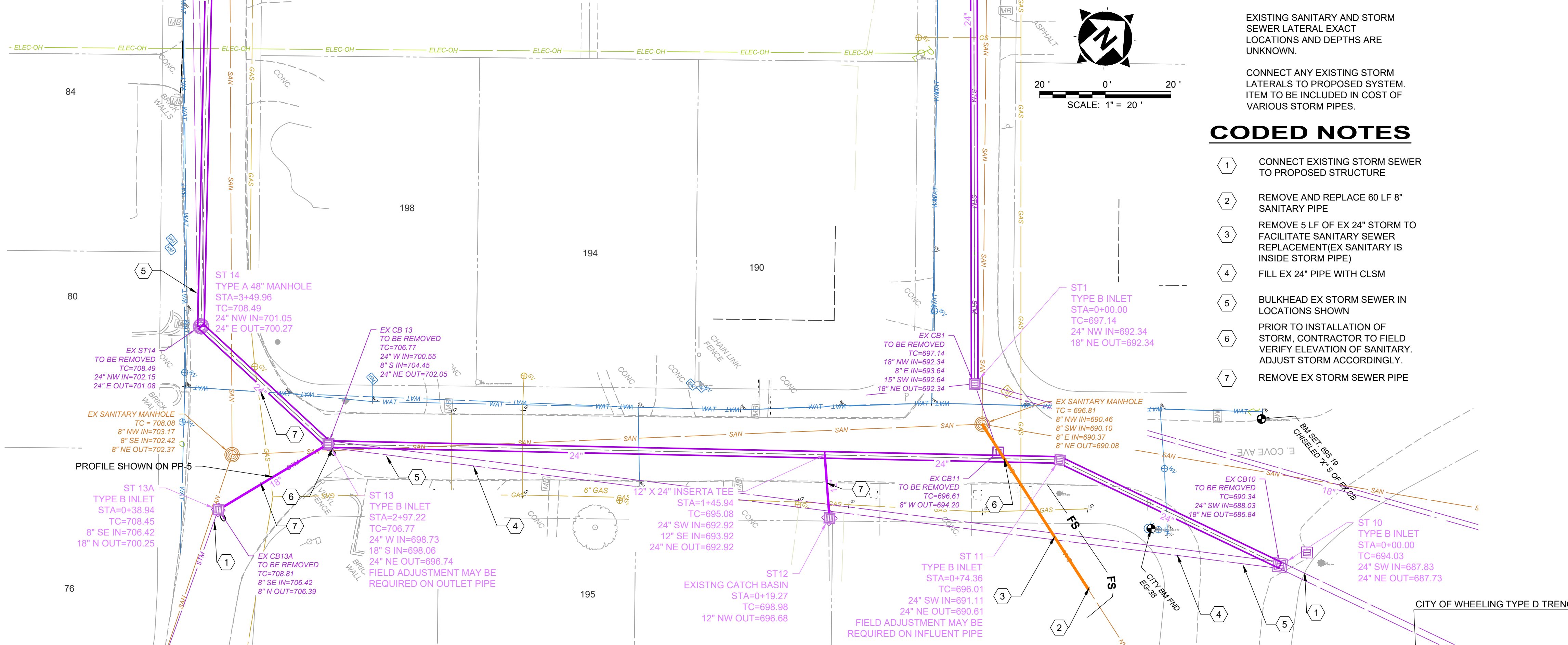
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WATER POLLUTION CONTROL DIVISION
WASTEWATER COLLECTION AND TREATMENT
GAEWOOD SEWER PROJECT

STORM SEWER PLAN & PROFILE

PROJECT NO.	
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MATCHLINE (SEE SHEET PP-4) STA 4+50

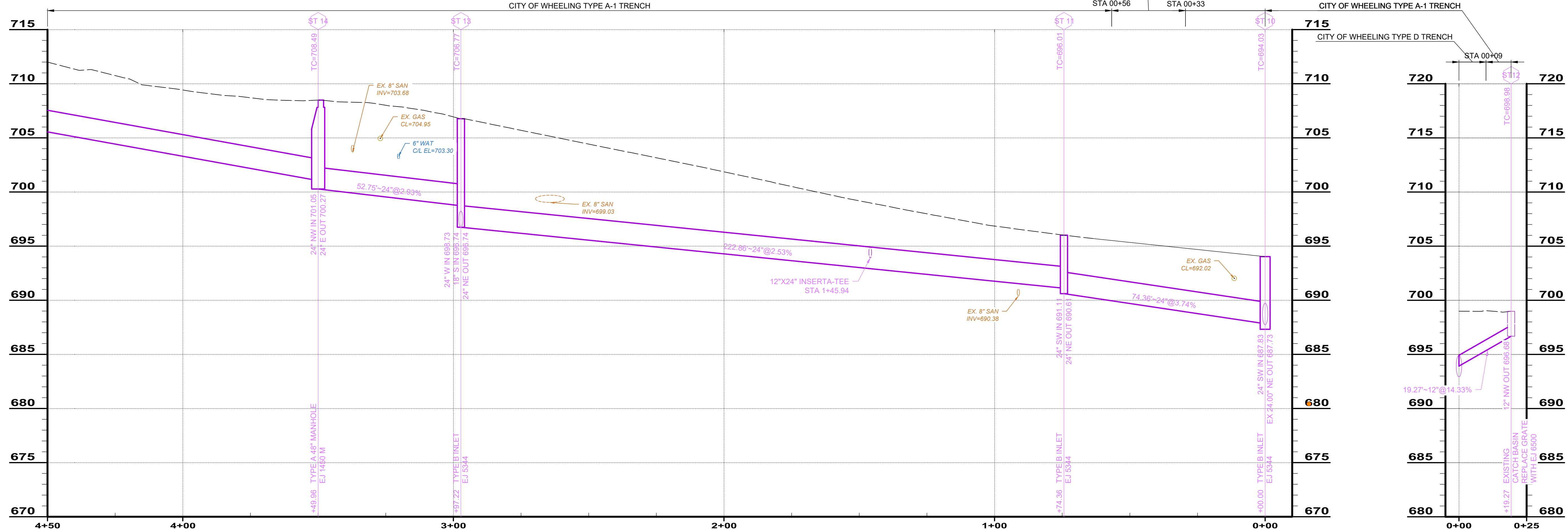
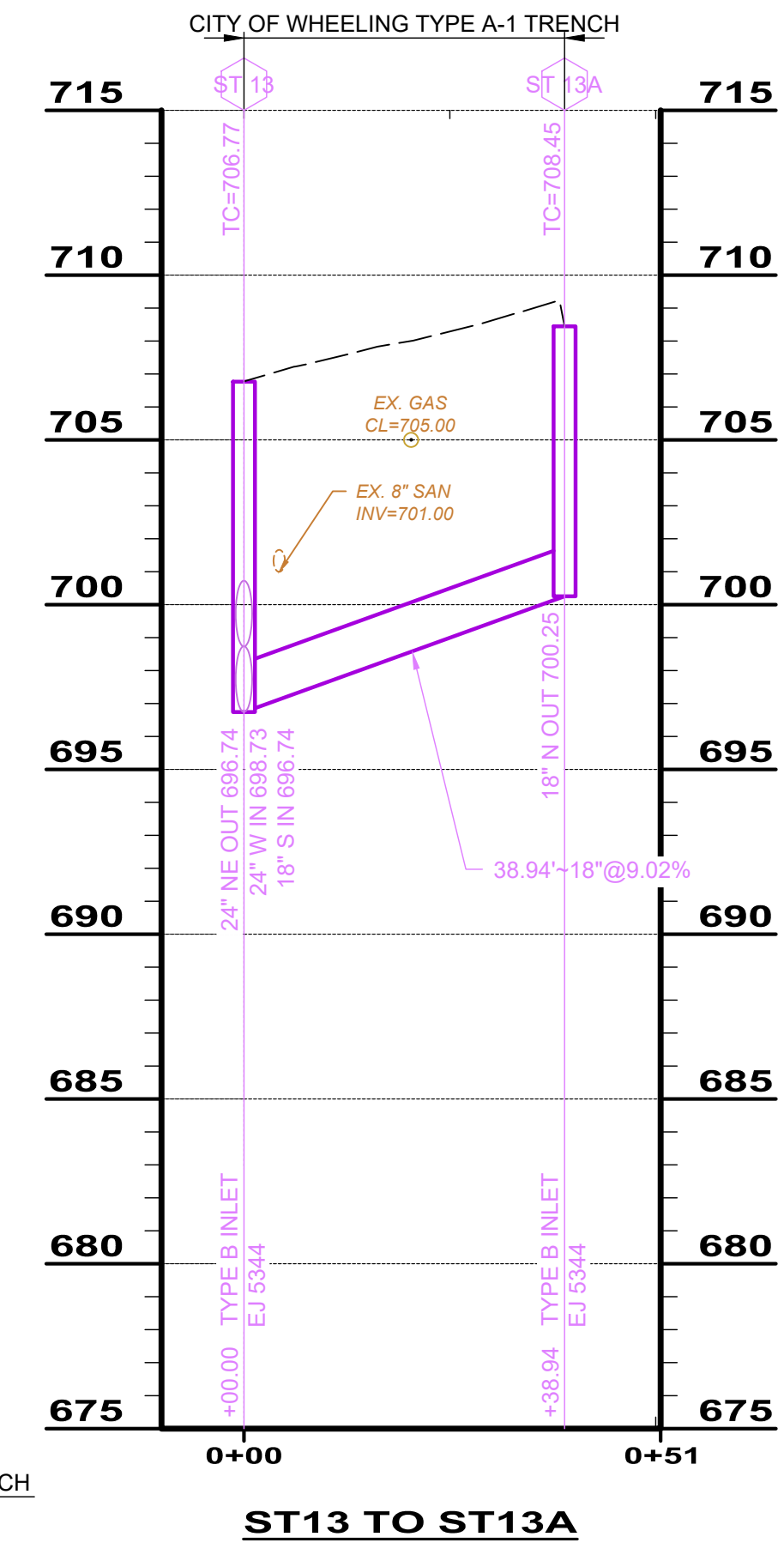


NOTES

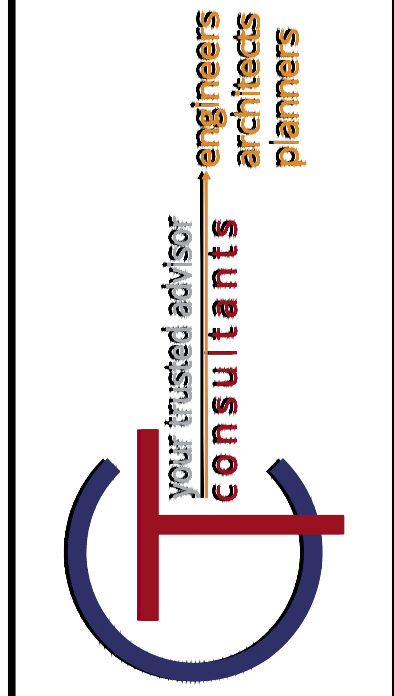
EXISTING SANITARY AND STORM SEWER LATERAL EXACT LOCATIONS AND DEPTHS ARE UNKNOWN.
 CONNECT ANY EXISTING STORM LATERALS TO PROPOSED SYSTEM. ITEM TO BE INCLUDED IN COST OF VARIOUS STORM PIPES.

CODED NOTES

- 1 CONNECT EXISTING STORM SEWER TO PROPOSED STRUCTURE
- 2 REMOVE AND REPLACE 60 LF 8" SANITARY PIPE
- 3 REMOVE 5 LF OF EX 24" STORM TO FACILITATE SANITARY SEWER REPLACEMENT (EX SANITARY IS INSIDE STORM PIPE)
- 4 FILL EX 24" PIPE WITH CLSM
- 5 BULKHEAD EX STORM SEWER IN LOCATIONS SHOWN
- 6 PRIOR TO INSTALLATION OF STORM, CONTRACTOR TO FIELD VERIFY ELEVATION OF SANITARY. ADJUST STORM ACCORDINGLY.
- 7 REMOVE EX STORM SEWER PIPE



E COVE AVE STM STA 0+00 TO STA 4+50

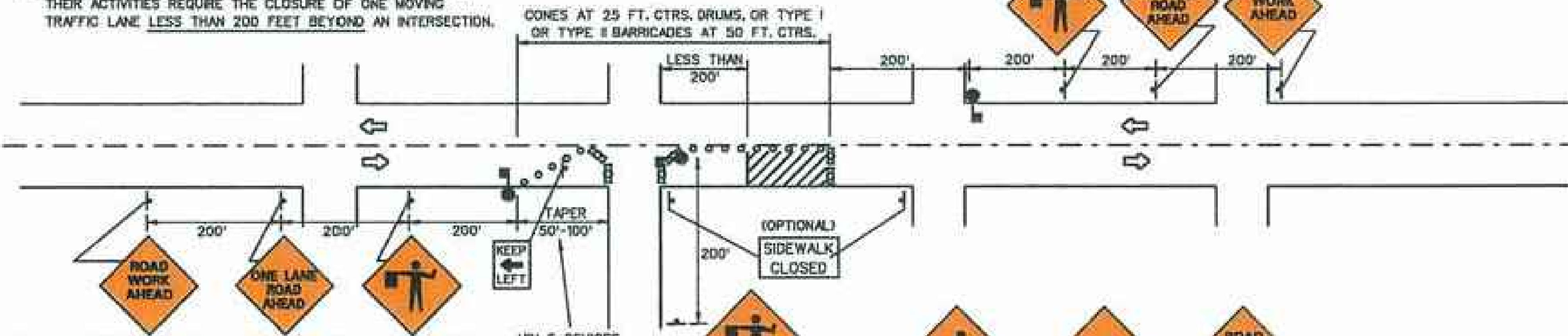


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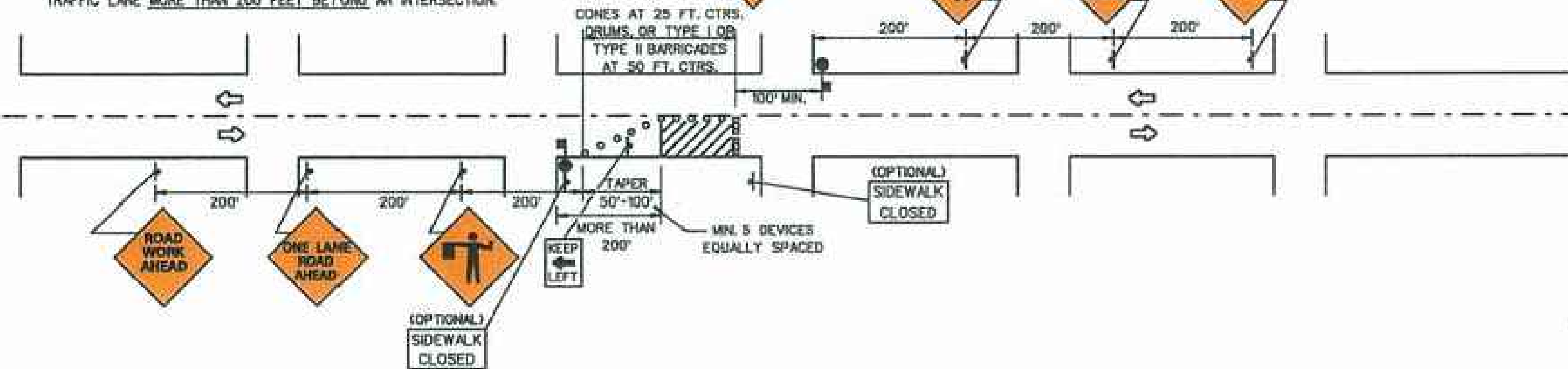
WATER POLLUTION CONTROL DIVISION
 WASTEWATER COLLECTION AND TREATMENT
 GAWOOD SEWER PROJECT
 STORM SEWER PLAN & PROFILE

PROJECT NO.	220991-1B
DISCIPLINE	CIVIL
SHEET NAME	PP-4
SHEET	7
OF	13

A. WHERE, AT ANY TIME, ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES REQUIRE THE CLOSURE OF ONE MOVING TRAFFIC LANE LESS THAN 200 FEET BEYOND AN INTERSECTION.



B. WHERE, AT ANY TIME, ANY VEHICLE, EQUIPMENT, WORKERS OR THEIR ACTIVITIES REQUIRE THE CLOSURE OF ONE MOVING TRAFFIC LANE MORE THAN 200 FEET BEYOND AN INTERSECTION.



GENERAL NOTES

1. DRUMS OR TYPE II BARRICADES SHALL BE USED IN LIEU OF CONES FOR NIGHT OPERATIONS.
2. IF THE WORK OPERATION PERFORMED DOES NOT EXCEED 15 MINUTES, SIGNING SHALL BE IN CONFORMANCE WITH CASE A6.
3. WHERE THE WORK AREA EXTENDS THROUGH THE INTERSECTION, BARRICADES AND/OR ADEQUATE WARNING SIGNS SHALL BE ERECTED ON THE CROSS STREET.
4. IF THE WORK AREA IS IN THE PARKING LANE A ROAD WORK AHEAD SIGN SHALL BE INSTALLED 200 FT. IN ADVANCE OF THE WORK AREA AND THE WORK AREA PROTECTED WITH CONES, DRUMS OR BARRICADES.
5. CONSTRUCTION OPERATIONS SHALL BE CONFINED TO ONE TRAFFIC LANE, LEAVING THE OPPOSITE LANE OPEN TO TRAFFIC. AT LEAST 500 FT. OF BOTH TRAFFIC LANES SHALL BE AVAILABLE FOR TRAFFIC MOVEMENT AT INTERVALS NOT GREATER THAN 1,000 FT.
6. THE FLAGGERS SHALL BE IN SIGHT OF EACH OTHER OR IN DIRECT COMMUNICATION AT ALL TIMES.
7. ALL SIGNS SHALL BE POST MOUNTED IF THE CLOSURE TIME EXCEEDS THREE DAYS.
8. FLASHING WARNING LIGHTS AND/OR FLAGS MAY BE USED TO CALL ATTENTION TO THE ABOVE WARNING SIGNS, AS NEEDED ON THE PLANS, AND/OR AS DIRECTED BY THE ENGINEER.
9. ALL VEHICLES, EQUIPMENT, WORKERS (EXCEPT FLAGGERS) AND THEIR ACTIVITIES ARE RESTRICTED AT ALL TIMES TO ONE SIDE OF THE PAVEMENT UNLESS OTHERWISE AUTHORIZED BY THE ENGINEER.

SYMBOLS

- TYPE I OR TYPE II BARRICADES WITH FLASHING LIGHT (TYPE "A").
- WORK AREA.
- SIGN.
- CONES OR DRUMS (TYPE II BARRICADES OPTIONAL).
- SIGN ON PORTABLE OR PERMANENT SUPPORT.
- FLAGGER WITH PADDLE.

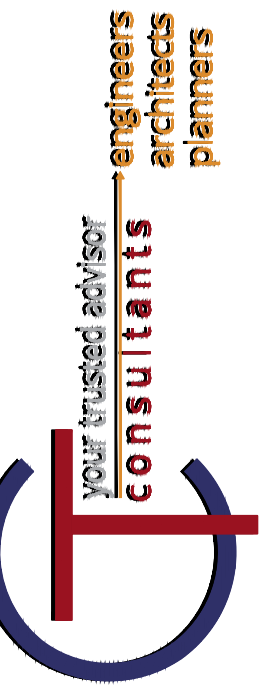
CASE B1

TWO-LANE, TWO-WAY TRAFFIC
UNDIVIDED, URBAN, LOW-VOLUME, LOW-SPEED
DAY OR NIGHT OPERATIONS

WHERE, AT ANY TIME, ANY VEHICLE,
EQUIPMENT, WORKERS OR THEIR ACTIVITIES
ENCROACH ON THE PAVEMENT REQUIRING
THE CLOSURE OF ONE TRAFFIC LANE.

NOTES:

1. DURING DAYTIME OPERATION, CONTRACTOR SHALL MAINTAIN TWO-WAY TRAFFIC.
3. ROADWAYS SHALL ONLY BE CLOSED ONE LANE AT A TIME. PROVIDE A SIGNED PEDESTRIAN DETOUR, ROADWAY CLOSED AHEAD SIGNS, AND PEDESTRIAN BARRICADES.
4. AT NO TIME SHALL THE ROADWAY BE CLOSED DURING DAYTIME OPERATION.

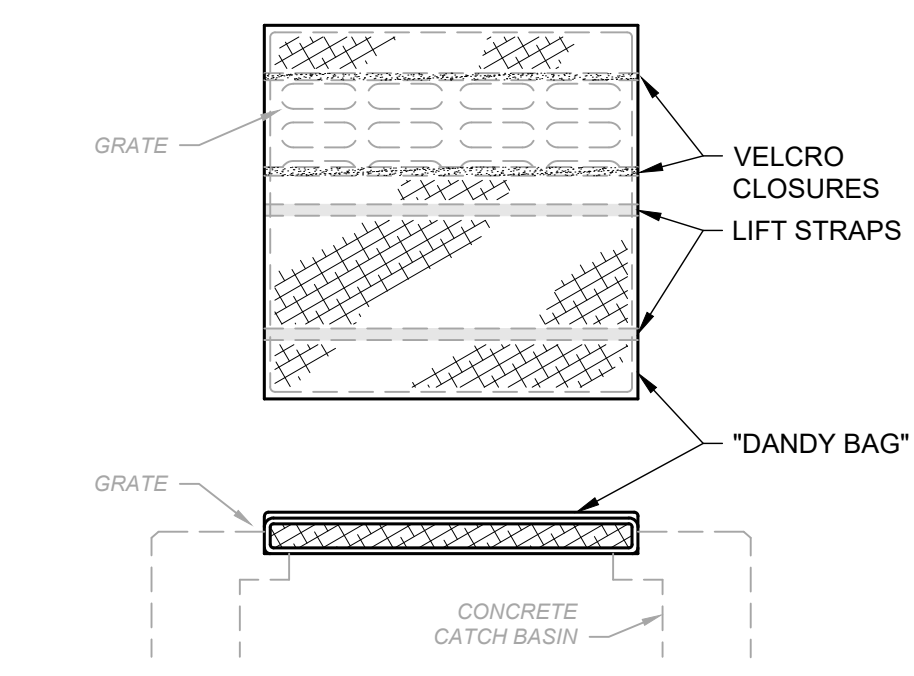
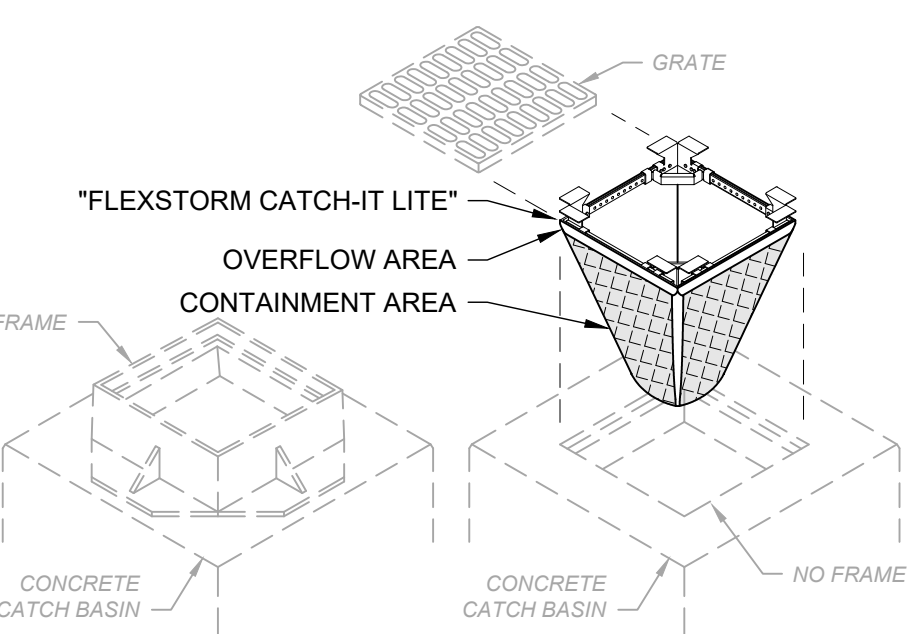
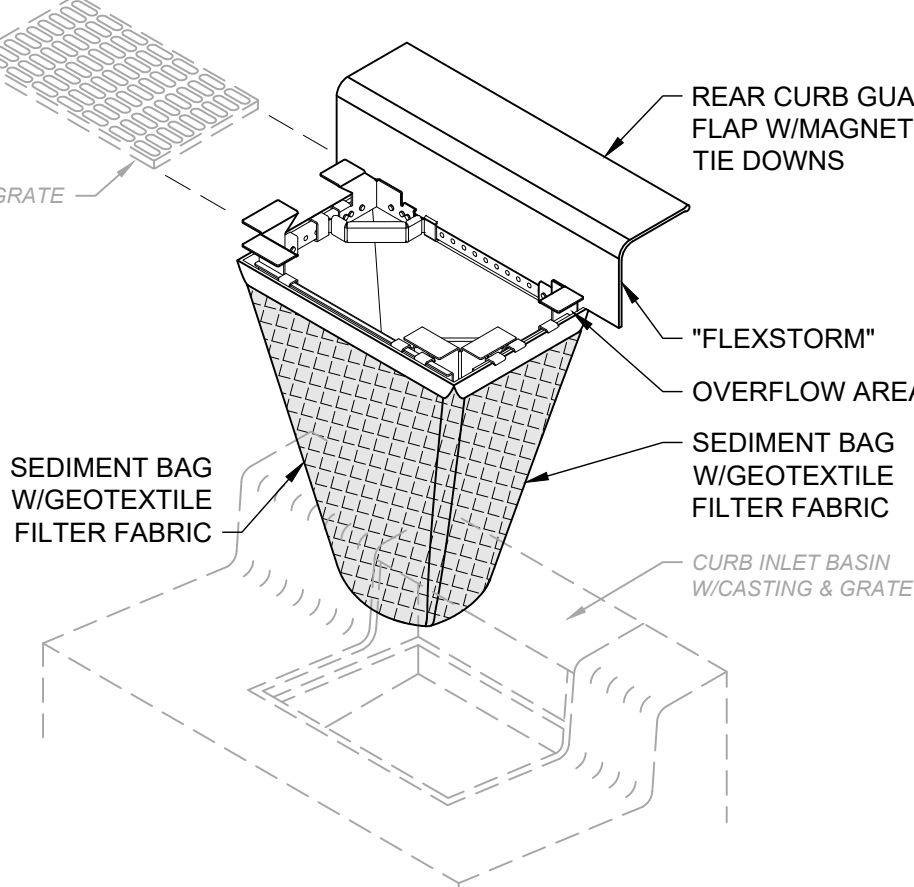
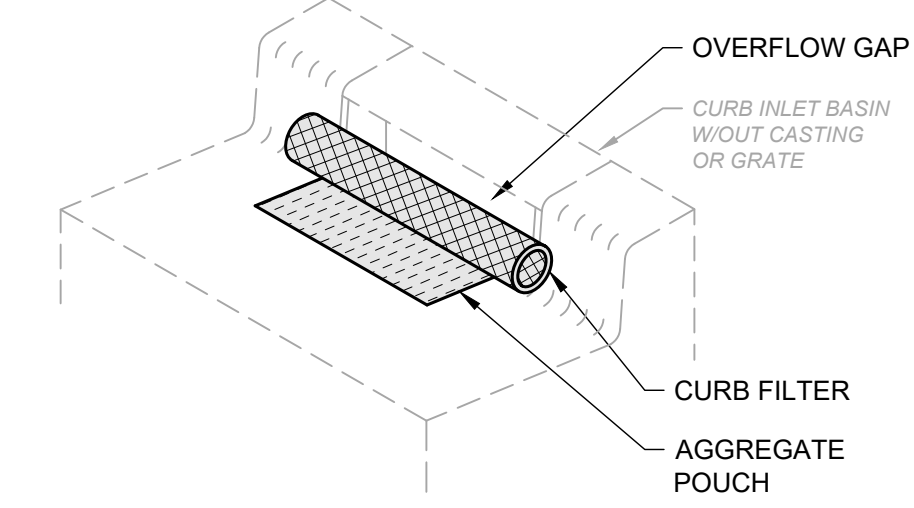
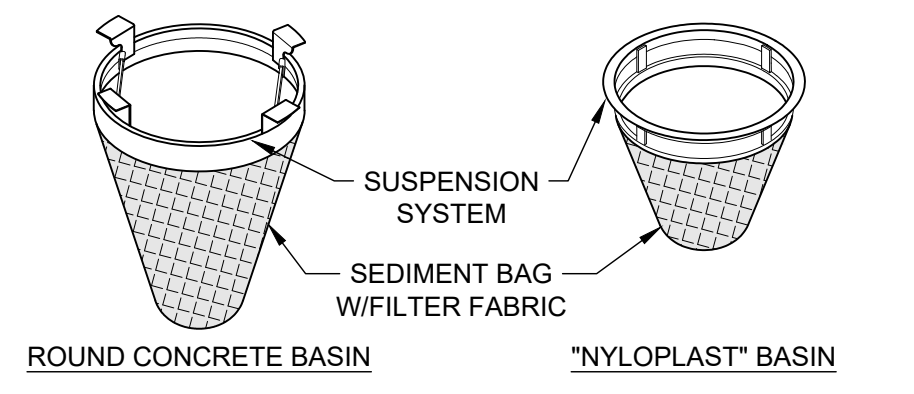


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WATER POLLUTION CONTROL DIVISION
WASTEWATER COLLECTION AND TREATMENT
GAWOOD SEWER PROJECT

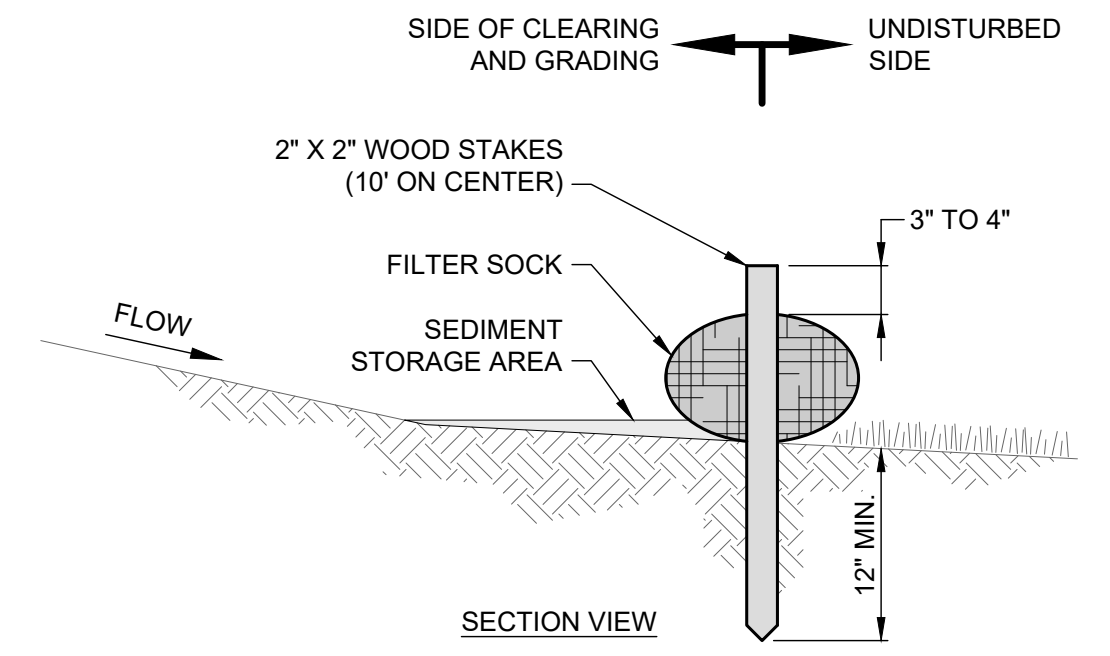
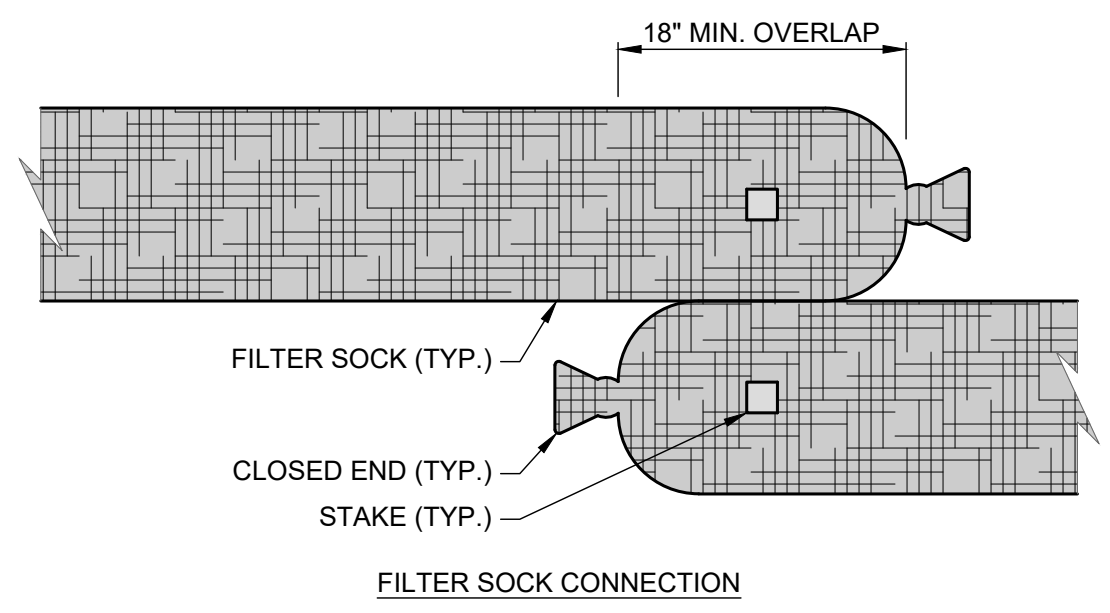
MAINTENANCE OF TRAFFIC

PROJECT NO.	220991-1B
DISCIPLINE	CIVIL
SHEET NAME	MOT
SHEET	OF
12	13



- NOTES:
- ALL NEW AND EXISTING STORM INLET BASINS WITHIN THE WORK LIMITS SHALL HAVE INLET PROTECTION INSTALLED.
 - INLET PROTECTION SHALL BE INSTALLED AS EACH STORM INLET IS CONSTRUCTED.
 - NOT ALL ITEMS SHOWN MAY APPLY OR DIFFERENT TYPES OR CONFIGURATIONS MAY BE REQUIRED. THE CONTRACTOR SHALL MEASURE EACH INLET TO CONFIGURE AND ASSEMBLE CUSTOMIZED INLET FILTERS.

INLET PROTECTION DETAIL
SCALE: NONE



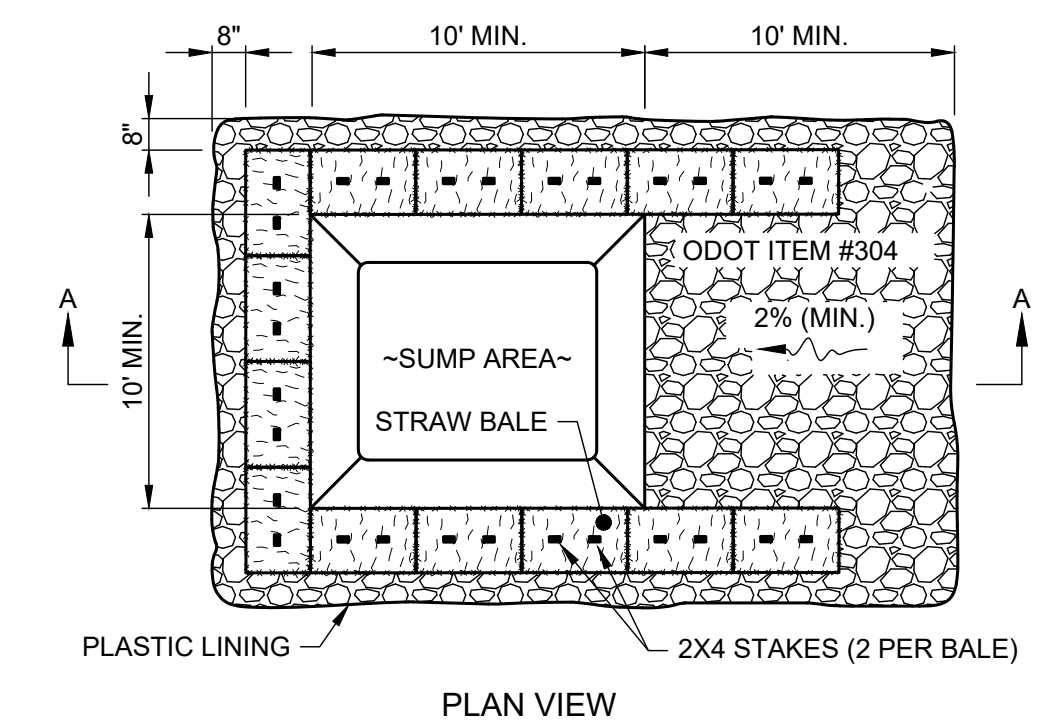
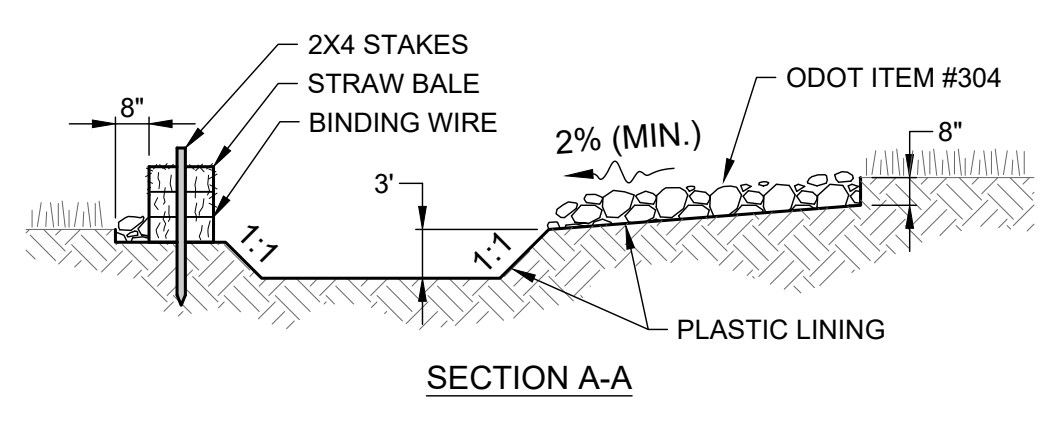
- NOTES:
- FILTER SOCKS SHALL BE CONTINUOUS, TUBULAR, HDPE KNITTED MESH NETTING MATERIAL, FILLED WITH COMPOST.
 - COMPOST SHALL BE WEED, PATHOGEN AND INSECT FREE, FREE OF REFUSE, CONTAMINANTS OR MATERIALS TOXIC TO PLANT GROWTH, BE DERIVED FROM A WELL-DECOMPOSED SOURCE OF ORGANIC MATTER, AND CONSIST OF PARTICLES RANGING FROM 3/8" TO 2".
 - FILTER SOCKS SHALL BE PLACED ON A LEVEL LINE ACROSS SLOPES PARALLEL TO THE BASE OF THE SLOPE. ON SLOPES APPROACHING 2:1, ADDITIONAL SOCKS SHALL BE PROVIDED AT THE TOP AND MID-SLOPE.
 - THE FLAT DIMENSION OF THE SOCK SHALL BE AT LEAST 1.5 TIMES THE NOMINAL DIAMETER.
 - FILTER SOCKS SHALL BE PLACED AT LEAST 5' FROM THE TOE OF SLOPE FOR SEDIMENT DEPOSIT.
 - TRAFFIC SHALL NOT BE PERMITTED TO CROSS FILTER SOCKS.
 - BUILT UP SEDIMENT SHALL BE REMOVED WHEN IT HAS REACHED 1/3 THE FILTER SOCK HEIGHT.
 - BIODEGRADABLE FILTER SOCKS SHALL BE REPLACED AFTER 6 MONTHS; PHOTODEGRADABLE SOCKS AFTER 1 YEAR. POLYPROPYLENE SOCKS SHALL BE REPLACED ACCORDING TO MANUFACTURER'S RECOMMENDATIONS.
 - WHEN A FILTER SOCK IS NO LONGER REQUIRED, IT SHALL BE DISPERSED ON-SITE.
 - THE MAXIMUM DRAINAGE AREA PER 100 FEET OF FILTER SOCK IS 1/2 ACRE AND IS DEPENDENT ON THE SLOPE PER THE CHARTS BELOW:

MAX. DRAINAGE AREA (AC.) PER 100-FT OF FILTER SOCK (*)	RANGE OF SLOPE PER INDIVIDUAL DRAINAGE AREA
0.50 AC.	<2% (50H:1V)
0.25 AC.	≥2% (50H:1V) BUT <20% (5H:1V)
0.125 AC.	≥20% (5H:1V) BUT <50% (2H:1V)

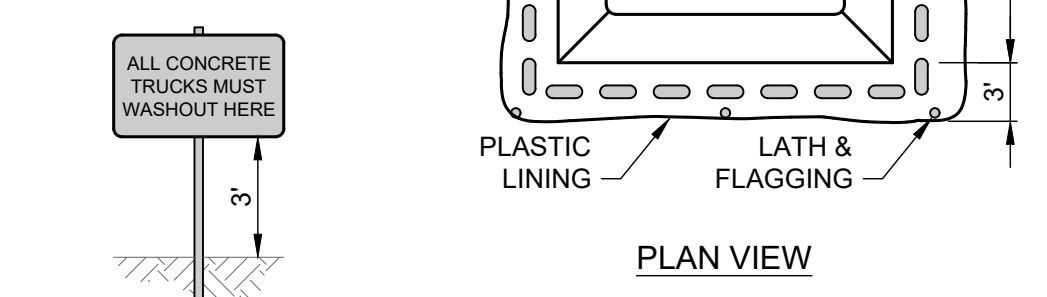
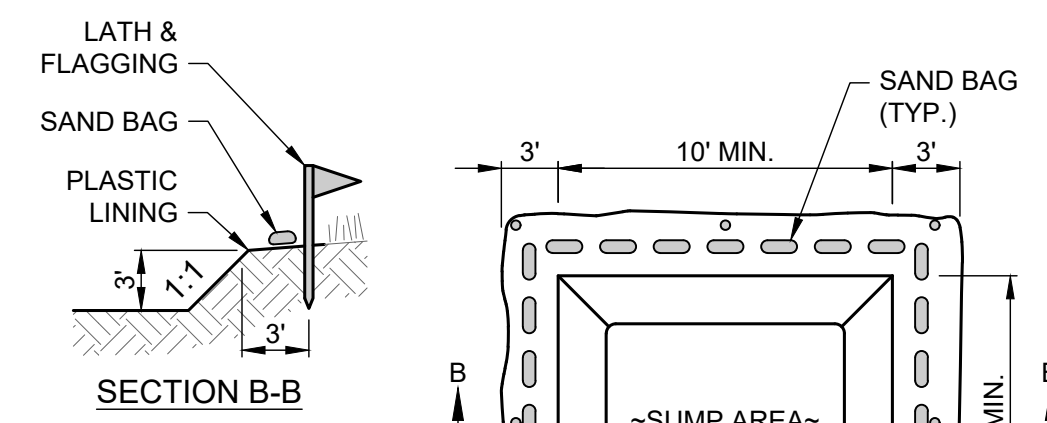
(*) FILTER SOCK CANNOT BE USED FOR SLOPES ≥50% (2H:1V).

SLOPE (%)	RATIO (H:V)	MAX. SLOPE LENGTH ABOVE FILTER SOCK		
		12"	18"	24"
0% TO <2%	0 TO <50:1	250'	300'	350'
≥2% TO <10%	≥50:1 TO <10:1	125'	200'	25'
≥10% TO <20%	≥10:1 TO <5:1	100'	150'	200'
≥20% TO <50%	≥5:1 TO ≥2:1	50'	75'	100'

FILTER SOCK DETAIL
SCALE: NONE



SINGLE LOCATION FOR SMALL PROJECT



TEMPORARY LOCATION FOR MULTIPLE PHASE OR LARGE PROJECT

- NOTES:
- CONCRETE WASHOUT AREA SHALL BE LOCATED A MINIMUM OF 100' FROM STORM SEWER INLETS, STREAMS, WETLANDS OR ANY OTHER SURFACE WATERS OF THE STATE.
 - IF CONCRETE WASHOUT AREA IS LOCATED AWAY FROM A PAVED SURFACE, CONSTRUCT A GRAVEL ACCESS ROUTE EQUAL IN COMPOSITION TO A CONSTRUCTION ENTRANCE.
 - CONCRETE WASHOUT AREA SHALL BE SUFFICIENT SIZE TO CONTAIN CONCRETE WASTE GENERATED. LARGE SITES MAY REQUIRE MULTIPLE CONCRETE WASHOUT AREAS.
 - PLASTIC LINING SHALL BE DOUBLE-LINED, CONTINUOUS 10-ML POLYETHYLENE SHEETING FREE OF HOLES, TEARS OR OTHER DEFECTS INSTALLED ON A SMOOTH, LEVEL SURFACE, FREE OF LARGE ROCKS AND DEBRIS.
 - CONCRETE WASHOUT SIGNAGE SHALL BE CLEARLY VISIBLE AND LOCATED WITHIN 30 FEET OF EACH WASHOUT AREA.
 - CONCRETE WASHOUT AREA SHALL BE COVERED DURING INCLEMENT WEATHER TO PREVENT OVERFLOW.
 - PREFABRICATED, PORTABLE AND RE-USABLE CONCRETE WASHOUT CONTAINERS ARE ACCEPTABLE.
 - CONCRETE WASHOUT AREA SHALL BE INSPECTED DAILY TO CHECK FOR DAMAGE AND DETERMINE IF IT NEEDS CLEANED OR REPLACED. ANY DAMAGE TO THE SIDEWALLS OR PLASTIC LINING SHALL BE REPAIRED IMMEDIATELY. REPLACE THE ENTIRE CONCRETE WASHOUT AREA WHEN IT IS 75% FULL.

CONCRETE WASHOUT DETAIL
SCALE: NONE

- THE SEED BED SHALL BE PULVERIZED AND LOOSE TO ENSURE THE SUCCESS OF ESTABLISHING VEGETATION.
- SOIL AMENDMENTS MAY BE REQUIRED TO ESTABLISH VEGETATION. PERFORM SOIL TESTS TO PREDICT THE NEED FOR LIME OR FERTILIZER. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS
- APPLY SEED UNIFORMLY. COVER BROADCASTED SEED BY RAKING OR DRAGGING, AND LIGHTLY TAMPING INTO PLACE.
- MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
- INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.

TEMPORARY SEEDING SPECIES SELECTION			
DATES	SPECIES	LB/1,000 SF	LB/AC.
MARCH 1 - AUGUST 15	OATS	3	128
	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
AUGUST 16 - OCTOBER 31	PERENNIAL RYEGRASS	2	40
	TALL FESCUE	1	40
	RYE	3	112
NOVEMBER 1 - FEBRUARY 28	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	2	40
	TALL FESCUE	1	40
	WHEAT	3	120
	TALL FESCUE	1	40
	PERENNIAL RYEGRASS	1	40
	PERENNIAL RYEGRASS	1	40
	TALL FESCUE	1	40
	TALL FESCUE	1	40
	ONLY MULCH OR DORMANT SEEDING.		

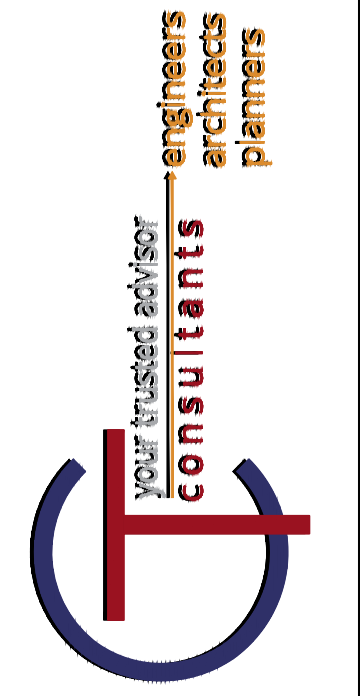
TEMPORARY SEEDING NOTES

- SUBSOILING SHALL OCCUR WHEN SOIL MOISTURE IS LOW ENOUGH TO ALLOW THE SOIL TO CRACK OR FRACTURE. SUBSOILING IS NOT PERMITTED ON SLIP-PRONE AREAS.
- THE SEED BED SHALL BE PREPARED BY APPLYING AGRICULTURAL GROUND LIME OR FERTILIZER AS RECOMMENDED BY A SOIL TEST. IN LIEU OF A SOIL TEST, APPLY LIME AT 2 TONS/AC. OR FERTILIZER AT 500 LB/AC. OF 10-10-10 OR 12-12-12 ANALYSIS. LIME AND FERTILIZER SHALL BE WORKED INTO THE SOIL TO A DEPTH OF 3".
- APPLY SEED UNIFORMLY ON FIRM, MOIST SEED BED BETWEEN MARCH 1 AND MAY 31 OR AUGUST 1 AND SEPTEMBER 30. TILLAGE FOR SEEDBED PREPARATION SHALL OCCUR WHEN THE SOIL IS DRY ENOUGH TO CRUMBLE AND NOT FORM RIBBONS WHEN COMPRESSED BY HAND. SEEDING SHOULD NOT BE APPLIED BETWEEN OCTOBER 1 AND NOVEMBER 20 BECAUSE SEEDS MAY GERMINATE, BUT WILL NOT SURVIVE THE WINTER. IF SEEDING MUST OCCUR, INCREASE THE SEEDING RATE BY 50% AND ANCHOR. APPLY ADDITIONAL MULCH AND IRRIGATION AS REQUIRED TO ENSURE GERMINATION.
- MULCH SHALL BE APPLIED IMMEDIATELY AFTER SEEDING.
- SEEDING SHALL INCLUDE IRRIGATION TO ESTABLISH VEGETATION DURING DRY OR HOT WEATHER OR ON ADVERSE SITE CONDITIONS.
- SEEDING SHALL NOT BE CONSIDERED ESTABLISHED FOR AT LEAST 1 FULL YEAR FROM THE TIME OF SEEDING. DURING THIS PERIOD INSPECT FOR SOIL EROSION OR VEGETATION LOSS AND REPAIR BARE OR SPARSE AREAS, FILL GULLIES, RE-FERTILIZE, RE-SEED AND RE-MULCH AS NEEDED.
- ADEQUATE PERMANENT VEGETATION SHALL BE GROUND COVER DENSE ENOUGH TO COVER 80% OF THE SOIL SURFACE BASED ON VISUAL INSPECTION.

PERMANENT SEEDING FERTILIZATION AND MOWING CHART				
MIXTURE	FORMULA	LB/AC.	TIME	MOW
CREeping RED FESCUE	10-10-10	500	FALL, YEARLY,	≥3"
DOMESTIC RYEGRASS			OR AS NEEDED	
KENTUCKY BLUEGRASS				
TALL FESCUE	10-10-10	500		≥4"
TURF-TYPE FESCUE	10-10-10	500		
CROWN VETCH FESCUE	0-20-20	400	SPRING, AND YEARLY AFTER ESTABLISHED	DO NOT MOW
FLAT PEA FESCUE	0-20-20	400		

PERMANENT SEEDING SPECIES SELECTION		
SEED MIX	SEED RATE LB/AC.	NOTES:
GENERAL USE		
CREeping RED FESCUE	20 - 40	FOR CLOSE MOWING AND WATERWAYS WITH <2.0 FT./SEC. VELOCITY
DOMESTIC RYEGRASS	10 - 20	
KENTUCKY BLUEGRASS	20 - 40	
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE	90	
STEEP BANKS OR CUT SLOPES		
TALL FESCUE	40 - 50	
CROWN VETCH	10 - 20	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	20 - 30	
FLAT PEA	20 - 25	DO NOT SEED LATER THAN AUGUST
TALL FESCUE	20 - 30	
ROAD DITCHES AND SWALES		
TALL FESCUE	40 - 50	
TURF-TYPE FESCUE	90	
KENTUCKY BLUEGRASS	5	
LAWN		
KENTUCKY BLUEGRASS	100 - 120	
PERENNIAL RYEGRASS	100 - 120	
KENTUCKY BLUEGRASS	100 - 120	FOR SHADED AREAS
CREeping RED FESCUE	100 - 120	

PERMANENT SEEDING NOTES



DATE	REVISION	NO	ISSUED FOR:	ISSUE DATE:	SCALE:	DESIGNED BY:	DRAWN BY:	CHECKED BY:

WATER POLLUTION CONTROL DIVISION
WASTEWATER COLLECTION AND TREATMENT
GAWOOD SEWER PROJECT

SWPPP DETAILS AND NOTES

PROJECT NO.	220991-1B
DISCIPLINE	CIVIL
SHEET NAME	SWPPP DET
SHEET	OF
13	13