EAST FOREST STREET IMPROVEMENTS PHASE I

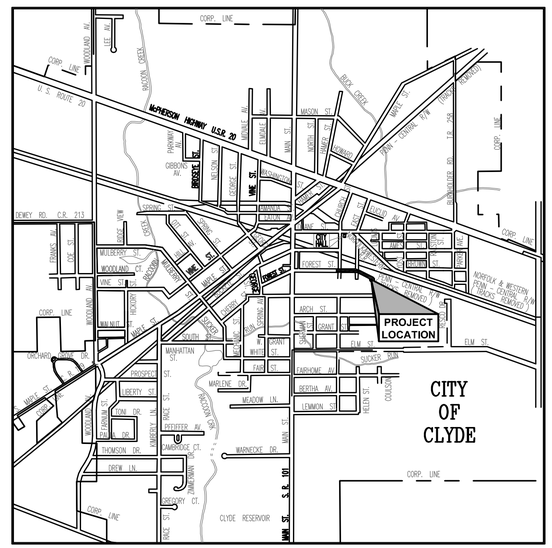
PROJECT 12-015

CITY OF CLYDE

SANDUSKY COUNTY, OHIO

JULY 2013

SHEET INDEX



LOCATION MAP

CITY OF CLYDE OFFICIALS

HONORABLE MAYOR . . . . . SCOTT BLACK
CITY MANAGER . . . . . PAUL H. FISER
FINANCE DIRECTOR . . . . . CRAIG R. DAVIS
SUPERINTENDENT OF WATER TREATMENT . . . . . PHIL FARRAR
SUPERINTENDENT OF WASTEWATER . . . . . THOMAS BAUER
SUPERINTENDENT OF LIGHT & POWER . . . . . KEVIN WRIGHT
SUPERINTENDENT OF SERVICE DEPT. . . . . BILL HAMILTON
SUPERINTENDENT OF ENVIRONMENTAL SERVICES . . . . DON BALL

MEMBERS OF CLYDE COUNCIL

VICE MAYOR . . . . . CAROLYN FARRAR
CLERK OF COUNCIL . . . . . JANET DICKMAN
COUNCIL MEMBER . . . . . GARY BEAMER
COUNCIL MEMBER . . . . . KENNETH DICK
COUNCIL MEMBER . . . . . STEVE KEEGAN
CITY SOLICTOR . . . . . BARRY BOVA

APPROVALS

_____ DATE _____
PAUL H. FISER – CITY MANAGER

_____ DATE _____
JOHN M. SABO, PE# E-69811

STATE OF OHIO
JOHN M. SABO
E-69811
REGISTERED PROFESSIONAL ENGINEER

UNDERGROUND UTILITIES

CONTACT BOTH SERVICES
CALL TWO WORKING DAYS
BEFORE YOU DIG

CALL
1-800-362-2764
(TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

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

REV. NO.	DESCRIPTION	DATE

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GAI consultants
3800 Corporate Pkwy., Ste. 2
Perrysburg, OH 43551
Ph: 419.351.4927
Fax: 419.351.4935
www.gaiconsultants.com

EAST FOREST STREET IMPROVEMENTS PHASE I

CITY OF CLYDE

GENERAL

CONSTRUCTION OF THIS PROJECT SHALL BE IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS AND CONSTRUCTION DRAWINGS, LATEST O.D.O.T. STANDARD SPECIFICATIONS INCLUDING ALL CURRENT SUPPLEMENTAL SPECIFICATIONS AND STANDARD DRAWINGS.

THE STANDARD SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION, LATEST EDITION, INCLUDING ALL SUPPLEMENTAL SPECIFICATIONS AND STANDARD DRAWINGS, SHALL GOVERN THIS PROJECT. FOR THE PURPOSE OF THIS PLAN, REFERENCES TO DIRECTOR OR ENGINEER SHALL BE CONSTRUED TO MEAN THE DESIGN ENGINEER AND/OR HIS REPRESENTATIVE.

THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON ALL DRAWINGS PRIOR TO PROCEEDING WITH CONSTRUCTION. (FIGURED DIMENSIONS ONLY SHALL BE USED). ANY DISCREPANCY BETWEEN ACTUAL AND GRAPHIC CONDITIONS SHALL BE REPORTED TO THE ENGINEER PRIOR TO PROCEEDING WITH ANY CONSTRUCTION.

ALL WORK CONTEMPLATED SHALL BE GOVERNED BY THE RULES, REGULATIONS AND SPECIFICATIONS OF THE CITY, AND AT ALL TIMES SHALL BE SUBJECT TO THEIR DIRECT SUPERVISION AND INSPECTION.

THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS BEFORE INSTALLING ANY PROPOSED PIPE, OR MANHOLES. ANY ADJUSTMENTS SHALL BE APPROVED BY THE ENGINEER.

ANY EXISTING PROPERTY, STRUCTURES OR UTILITY LINES DAMAGED IN OR OUTSIDE OF THE CONSTRUCTION LIMITS DURING THE CONSTRUCTION OF THIS PROJECT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

ANY EXISTING SIGNS, MAILBOXES, PAPER BOXES, LANDSCAPE ITEMS OR FENCES DAMAGED DURING CONSTRUCTION OF THIS PROJECT, SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

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

ALL WORK PERFORMED UNDER THIS CONTRACT SHALL COMPLY WITH THE U.S. DEPARTMENT OF LABOR OCCUPATIONAL SAFETY AND HEALTH ACT.

ALL STATIONING SHOWN IS ALONG THE CENTERLINE OF THE RIGHT OF WAY, UNLESS OTHERWISE NOTED ON THE PLANS.

THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO SUBMITTING A BID TO PERSONALLY ASCERTAIN THE CONDITIONS OF THE WORK.

UPON COMPLETION OF CONSTRUCTION, THE WORK AREA SHALL BE RETURNED AS NEAR AS POSSIBLE TO ITS ORIGINAL CONDITION.

THE CONTRACTOR SHALL WORK WITHIN DESIGNATED STREET RIGHT-OF-WAYS WHILE CONSTRUCTING THIS PROJECT UNLESS OTHERWISE DIRECTED BY THE ENGINEER.

IMMEDIATELY UPON COMPLETION OF THE WORK, ALL TRAFFIC CONTROL DEVICES SHALL BE REMOVED BY THE CONTRACTOR AND UNLESS OTHERWISE SPECIFIED WILL REMAIN THE CONTRACTOR'S PROPERTY.

THE CITY RESERVES THE RIGHT TO KEEP IN THEIR POSSESSION ANY ITEM BEING DEMOLISHED OR REMOVED AS PART OF THIS CONTRACT. THE CONTRACTOR IS RESPONSIBLE FOR DISPOSAL OF ALL MATERIALS THAT ARE REMOVED OR DEMOLISHED AS PART OF THIS CONTRACT.

THE CITY OF CLYDE WILL PAY FOR INSPECTION OF THE PROPOSED WORK.

A PRE-CONSTRUCTION CONFERENCE SCHEDULED BY THE ENGINEER SHALL BE HELD PRIOR TO ANY WORK STARTING. IN ADDITION, THE CONTRACTOR SHALL PROVIDE 48 HOUR NOTICE PRIOR TO BEGINNING WORK TO ARRANGE FOR INSPECTION.

PRIOR TO SUBSURFACE INVESTIGATION OR ON-SITE EXAMINATION OF THE PROJECT, ALL BIDDERS OBTAIN APPROVAL FROM THE CITY AND/OR THE PROPERTY OWNERS.

SUBSURFACE CONDITIONS

IT IS THE OBLIGATION AND RESPONSIBILITY OF THE BIDDER TO MAKE HIS OWN INVESTIGATIONS OF SUBSURFACE CONDITIONS PRIOR TO SUBMITTING HIS PROPOSAL. THE BIDDER MAY EXAMINE THE RECORDS OF ALL BORINGS, TEST EXCAVATIONS AND OTHER SUBSURFACE INVESTIGATIONS, IF ANY, MADE SOLELY FOR DESIGN PURPOSES FOR THE OWNER. SAID BORINGS, TEST EXCAVATIONS AND OTHER SUBSURFACE INVESTIGATIONS ARE NOT WARRANTED TO SHOW THE ACTUAL SUBSURFACE CONDITIONS. THE CONTRACTOR AGREES THAT HE WILL MAKE NO CLAIM AGAINST THE OWNER OR ENGINEER IF, IN CARRYING OUT THE WORK, HE FINDS THAT THE ACTUAL SUBSURFACE CONDITIONS ENCOUNTERED DO NOT CONFORM TO THOSE INDICATED BY SAID BORINGS, OR SHOWN ON THE PLAN, TEST EXCAVATIONS, AND OTHER SUBSURFACE INVESTIGATIONS.

MEASUREMENTS

POLES, TREES, BUILDINGS, MANHOLES, AND OTHERS INDICATED ON THE PLANS ARE TO THE CENTER OF THE INDICATED OBJECT AND BEING AT RIGHT ANGLES FROM BASELINE STATIONING.

BENCHMARKS

BENCHMARKS WHICH ARE GIVEN HEREON ARE BASED AS NOTED ON PLANS AND ARE THE BASIS OF THE PROPOSED CONSTRUCTION ELEVATIONS.

ACCESSIBILITY TO PRIVATE PROPERTY

ACCESS TO ALL DRIVEWAYS AND PARKING AREAS WITHIN THE PROJECT WORK LIMITS SHALL BE MAINTAINED AT ALL TIMES.

THE CONTRACTOR SHALL NOTIFY ALL EMERGENCY AND PUBLIC SERVICES (FIRE DEPT., POLICE DEPT., SHERIFF DEPT., AMBULATORY, SCHOOLS AND THE POST OFFICE) ONE WEEK PRIOR TO ANY ROAD CLOSING OR DETOURS IN CONSIDERATION WITH THE CONSTRUCTION OF THIS CONTRACT. NOTIFICATION SHALL BE BY CERTIFIED LETTER WITH A COPY AND RETURN RECEIPT SUBMITTED TO THE ENGINEER.

SOIL EROSION

THE CONTRACTOR SHALL IMPLEMENT SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AT HIS OWN EXPENSE IN ACCORDANCE WITH THE SOIL EROSION AND SEDIMENTATION REGULATIONS OF THE OHIO DEPARTMENT OF ENVIRONMENTAL AND NATURAL RESOURCES, AND AS STATED IN THE PROJECT SPECIFICATION.

RIGHTS-OF-WAY

IN ADDITION TO DIRECT REQUIREMENTS OF THE CONTRACT SPECIFICATIONS, THE CONTRACTOR SHALL OBSERVE AND CONFORM TO THE SPECIFIC REQUIREMENTS OF ALL RIGHT-OF-WAY, INCLUDING, BUT NOT LIMITED TO, EASEMENTS, COURT ENTRIES, RIGHT-OF-ENTRY, OR ACTION FILED IN COURT, IN ACCORDANCE WITH THE CODE OF THE APPLICABLE GOVERNING AGENCY. THE COST OF THE OPERATIONS NECESSARY TO FULFILL SUCH REQUIREMENTS SHALL BE INCLUDED IN THE PRICE BID FOR THE VARIOUS ITEMS OF THE CONTRACT.

ACCESS

ACCESS TO ALL ADJOINING PROPERTIES SHALL BE MAINTAINED AT ALL TIMES.

MAIL SERVICE

THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING MAIL SERVICE IN THE CONSTRUCTION AREA. PRIOR TO DISTURBING ANY MAIL BOXES, THE CONTRACTOR SHALL CONTACT THE POSTAL AUTHORITIES AND SHALL TEMPORARILY RELOCATE MAIL BOXES IN ACCORDANCE WITH THE REQUIREMENTS THEREOF THE CONTRACTOR SHALL RESTORE MAIL BOXES TO THEIR ORIGINAL CONDITION AND LOCATION.

PROTECTION OF TREES & SHRUBS

IT IS THE CONTRACTOR'S RESPONSIBILITY TO EXERCISE SPECIAL CARE TO TREES, SHRUBS AND THEIR ROOT SYSTEM. MACHINE EXCAVATION SHALL NOT BE USED WHEN, IN THE OPINION OF THE ENGINEER, IT WOULD ENDANGER TREE ROOTS. IN GENERAL, WHERE THE LINE OF TRENCH FALLS WITHIN THE LIMITS OF THE LIMB SPREAD, THE LEAVING OF HEADERS ACROSS THE PROTECT ROOTS WILL BE REQUIRED. THE OPERATION OF ALL EQUIPMENT, PARTICULARLY WHEN EMPLOYING BOOMS, THE STORAGE OF MATERIALS, AND THE DEPOSITION OF EXCAVATION, SHALL BE CONDUCTED IN A MANNER WHICH WILL NOT INJURE TREES, SHRUBS, TRUNKS, BRANCHES, OR THEIR TREE ROOTS UNLESS SUCH TREES & SHRUBS ARE DESIGNATED BY THE ENGINEER FOR REMOVAL.

UTILITY CROSSINGS

AT ALL UTILITY CROSSINGS, THE BACKFILL SHALL CONSIST OF COMPACTED GRANULAR MATERIAL BETWEEN THE DEEPER AND SHALLOWER PIPE. WHERE PROPOSED UTILITIES OR SERVICES CROSS PROPOSED OR EXISTING PAVEMENT AREAS, BACKFILL SHALL BE COMPACTED GRANULAR MATERIAL IN ACCORDANCE WITH THE SPECIFICATIONS.

DRIVEWAY CULVERTS & PIPING

ALL CULVERTS AND ASSOCIATED STORM PIPING THAT IS DISTURBED DURING CONSTRUCTION SHALL BE REMOVED. ALL CONNECTIONS TO THE EXISTING STORM SYSTEM SHALL BE RECONNECTED TO THE NEW STORM SEWER.

PAVEMENT & APRON REPLACEMENT

PARKING AREAS AND DRIVEWAYS SHALL BE REPLACED IN ACCORDANCE WITH THE SPECIFICATIONS. PAYMENT WILL BE MADE UNDER THE APPROPRIATE PAVEMENT REPLACEMENT ITEMS.

CATCH BASINS & INLETS, REMOVED OR ABANDONED

THE CASTINGS SHALL BE CAREFULLY REMOVED AND STORED WITHIN THE RIGHTS-OF-WAY FOR SALVAGE BY CITY FORCES FOR ALL MANHOLES CATCH BASINS AND INLETS REMOVED OR ABANDONED.

CONSTRUCTION NOISE

IN ORDER TO MINIMIZE ADVERSE CONSTRUCTION NOISE IMPACTS, NO POWER-OPERATED CONSTRUCTION TYPE DEVICE SHALL BE OPERATED BETWEEN THE HOURS OF 10:00 P.M. TO 6:00 A.M. IN ADDITION, NO POWER-OPERATED CONSTRUCTION TYPE DEVICE SHALL BE OPERATED IN SUCH A MANNER THAT THE NOISE CREATED SUBSTANTIALLY EXCEEDS THE NOISE CUSTOMARILY AND NECESSARILY ATTENDANT TO THE REASONABLE AND EFFICIENT PERFORMANCE OF SUCH EQUIPMENT.

DUST CONTROL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTROLLING DUST, DIRT AND MUD DUE TO CONSTRUCTION IN THE PROJECT AREA DURING THE LIFE OF THE PROJECT. DUST CONTROL OPERATIONS SHALL BE PERFORMED BY THE CONTRACTOR IN ACCORDANCE WITH ITEM 616 OF THE OHIO DEPARTMENT OF TRANSPORTATION (O.D.O.T.), CONSTRUCTION AND MATERIALS SPECIFICATIONS. PAYMENT FOR DUST CONTROL SHALL BE INCLUDED IN THE UNIT BID PRICE FOR THE VARIOUS SIZES OF SEWER LINE.

PROPERTY PINS

ALL PROPERTY PINS OR MONUMENTS WHICH ARE REMOVED OR DISTURBED DURING CONSTRUCTION SHALL BE REPLACED IN THE SAME LOCATION THEY OCCUPIED PRIOR TO CONSTRUCTION. THE COST OF REPLACING PROPERTY PINS SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR CONSTRUCTION STAKING. THIS WORK SHALL BE COMPLETED BY A PROFESSIONAL SURVEYOR REGISTERED IN THE STATE OF OHIO.

SCHEDULE

THE CONTRACTOR SHALL SUBMIT A TENTATIVE SCHEDULE OF THE VARIOUS PHASES OF WORK TO THE ENGINEER AND THE CITY BEFORE STARTING CONSTRUCTION. SAID SCHEDULE SHALL BE BROUGHT UP TO DATE WEEKLY.

DEWATERING

IF IT IS NECESSARY FOR ANY EXCAVATION TO BE DEWATERED, IT WILL BE THE CONTRACTOR'S RESPONSIBILITY TO DEWATER SAID EXCAVATION AT NO ADDITIONAL COST TO THE CITY. THE METHOD OF DEWATERING SHALL BE APPROVED BY THE ENGINEER PRIOR TO DEWATERING. ALSO ANY REQUIRED TEMPORARY PLUMBING OF SEWAGE FLOW REQUIRED TO CONSTRUCT THIS PROJECT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT NO ADDITIONAL COST TO THE CITY. SEWER FLOW SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. UNDER NO CIRCUMSTANCES SHALL SANITARY SEWER FLOWS BE DISCHARGED ONTO THE GROUND OR STREET SURFACE, OR INTO ANY CATCH BASIN.

CONSTRUCTION STAKING

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL CONSTRUCTION STAKES REQUIRED.

MATERIAL SPECIFICATIONS

MATERIAL SPECIFICATIONS CALLED FOR ON THE PLANS REPRESENT THE MINIMUM REQUIRED FOR EACH APPLICATION. THE OWNER MAY REQUEST OR THE CONTRACTOR MAY DESIRE TO SUBSTITUTE ALTERNATE MATERIALS. ANY SUCH SUBSTITUTIONS MUST BE EQUIVALENT IN QUALITY TO THE MATERIAL CALLED FOR AND MUST BE APPROVED IN WRITING BY THE APPROVING AGENCIES AND THE CONSULTING ENGINEER.

CONTRACTOR SHALL INCLUDE COST OF GRANULAR BACKFILL UNDER ALL EXISTING AND PROPOSED PAVEMENTS IN PRICE BID PER LINEAR FOOT OF PIPE.

STANDARD CONSTRUCTION DRAWINGS

WHEREVER IN THE CONTRACT DOCUMENTS REFERENCE IS MADE TO CONSTRUCTION AND MATERIAL SPECIFICATIONS OF THE OHIO DEPARTMENT OF TRANSPORTATION (O.D.O.T.) CURRENT EDITION, THE PROVISIONS OF THE REFERENCED ITEM SHALL HAVE THE FULL FORCE AND EFFECT AS OF REPRODUCED HEREIN IN THEIR ENTIRETY. HOWEVER, THE METHOD OF MEASUREMENTS, BASIS OF PAVEMENTS AND PAY ITEMS SHALL BE DIRECTED IN THE MATERIAL SPECIFICATIONS OR BID PROPOSAL FORMS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING HIS OWN COPY OF THE O.D.O.T. CONSTRUCTION AND MATERIAL SPECIFICATION.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESETTING ANY BENCH MARKS WHICH MAY BE DISTURBED DURING CONSTRUCTION.

MATERIAL TESTING AND PERMITS

THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF ALL MATERIAL TESTING AND ALL PERMITS REQUIRED FOR THIS PROJECT.

UTILITIES

THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREE TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE INCURRED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

THE CONTRACTOR SHALL EXPOSE ALL UTILITIES OR STRUCTURES PRIOR TO CONSTRUCTION TO VERIFY THE VERTICAL AND HORIZONTAL LOCATION OF THE UTILITY OR STRUCTURE AND ITS EFFECT ON THE PROPOSED CONSTRUCTION. THE CONTRACTOR SHALL COORDINATE HIS WORK WITH THE UTILITY COMPANIES.

GAS LINES, WATER LINES, ELECTRIC, TELEPHONE, AND CABLE LINES MAY NEED TO BE LOWERED DUE TO THE STORM SEWER WORK ON THIS PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR SCHEDULING THESE POTENTIAL UTILITY RELOCATIONS BEFORE WORK BEGINS. ALL COSTS AND DELAYS ASSOCIATED WITH THIS WORK ARE THE RESPONSIBILITY OF THE CONTRACTOR.

THE CONTRACTOR SHALL NOTIFY AT LEAST TWO WORKING DAYS BEFORE BREAKING GROUND ALL PUBLIC SERVICE CORPORATION, REGISTERED UNDERGROUND UTILITY PROTECTION SERVICE MEMBERS AND/OR NON-MEMBER OWNERS HAVING WIRE, POLES, PIPES, CONDUITS, OR OTHER STRUCTURES THAT MAY BE AFFECTED BY THIS OPERATION.

THE CONTRACTOR SHALL CALL OHIO UTILITIES PROTECTION SERVICE 1-800-362-2764 BEFORE DIGGING.

UTILITIES WITHIN THE LIMITS OF THIS PROJECT

CLYDE LIGHT & POWER
WATERTOWER DRIVE
CLYDE, OHIO 43410
(419) 547-7742
KEVIN WRIGHT (KWRIGHT@CLYDEOHIO.ORG)

CITY OF CLYDE ENVIRONMENTAL SERVICES
(WATER DISTRIBUTION & SANITARY COLLECTION)
(419) 547-8090
DON BALL (DBALL@CLYDEOHIO.ORG)

CITY OF CLYDE SERVICE DEPARTMENT
(STREETS & STORM COLLECTION)
(419) 547-7419
BILL HAMILTON (BHAMILTON@CLYDEOHIO.ORG)

CITY OF CLYDE WATER TREATMENT PLANT
SOUTH MAIN ST.
CLYDE, OHIO 43410
(419) 547-9805
PHILLIP FARRAR (PFARRAR@CLYDEOHIO.ORG)

CITY OF CLYDE WATER POLLUTION CONTROL PLANT
1749 W. McPHERSON HWY.
CLYDE, OHIO 43410
(419) 547-9407
TOM BAUER (TBAUER@CLYDEOHIO.ORG)

TOLEDO EDISON COMPANY
6099 ANGOLA RD.
HOLLAND, OHIO 43528
MAIL STOP A-HLOC 2332
(419) 249-5924
RANDY SWOPE (RRSWOPE@FIRSTENERGYCORP.COM)

COLUMBIA GAS OF OHIO
1800 BROAD AVE.
FINDLAY, OHIO 45840
(419) 957-8946
DEAN FAWAZ (DEFAWAZ@NISOURCE.COM)

FRONTIER PHONE CO.
3126 N. MCCORD RD.
TOLEDO, OHIO 43617
(419) 841-7281
AMY ROTH (AMY.L.ROTH@FTR.COM)

TIME WARNER
205 CRYSTAL AVENUE
FINDLAY, OHIO 45840
(419) 429-7431
JOE SHRIDER (JSHRIDER@TWCWOH.COM)

JAMES R. MOYER
SANDUSKY COUNTY ENGINEER
2500 WEST STATE STREET
FREMONT, OHIO 43420
(419) 334-9731

OPEN TRENCHES

THE CONTRACTOR SHALL MAINTAIN TYPE 11 BARRICADES OR STANDARD TRAFFIC BARRELS AT 50-FOOT INTERVALS ALONG UNPROTECTED TRENCHES. ALL AREAS SHALL BE RETURNED TO NORMAL TRAFFIC CONDITIONS AT THE END OF EACH WORK DAY. FENCES MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER TO PROTECT PEDESTRIAN TRAFFIC.

WATER MAINS

ALL WATER ITEMS ON THIS PROJECT SHALL BE IN ACCORDANCE WITH THE STANDARDS OF THE CITY OF CLYDE.

PIPE MATERIAL FOR WATER MAINS SHALL BE PVC C900, AWWA C900 AND CLASS 52 D.I.P., AWWA C151, AWWA C104 (REFER TO PLAN).

SANITARY SEWERS

PIPE MATERIAL FOR SANITARY SEWERS SHALL BE PVC SDR 26 GRAVITY SEWER PIPE, ASTM D-3034, D-3212 AND CLASS 52 D.I.P., AWWA C151, AWWA C104, CERAMIC EPOXY LINING, PROTECTO 401 OR APPROVED EQUAL (REFER TO PLAN).

ALL SANITARY SEWERS MUST HAVE PREMIUM JOINTS AND THE ENTIRE SYSTEM MUST PASS BOTH AN EXFILTRATION AND AN INFILTRATION TEST AFTER CONSTRUCTION HAS BEEN COMPLETED. THE MAXIMUM ALLOWABLE RATE OF INFILTRATION AND EXFILTRATION SHALL BE 100 GAL. PER INCH DIAMETER OF SEWER PIPE PER MILE PER DAY.

NO SANITARY MANHOLES AND PREFERABLY NO SANITARY CONNECTIONS ARE TO BE CONSTRUCTED IN SIDEWALKS AND/OR DRIVEWAYS.

DEFLECTION TESTING, VIDEO TAPING AND AIR TESTING IN ACCORDANCE WITH ASTM F-1417 AND ASTM C-1244 SHALL BE REQUIRED.

CLEAN WATER CONNECTIONS TO THE SANITARY SEWER WILL NOT BE PERMITTED.

STORM SEWERS

PIPE MATERIAL FOR STORM SEWERS SHALL BE THE FOLLOWING TYPES:

12" RCP - 'B' WALL, CLASS 5 (O.D.O.T. 706.02)
15" RCP - 'B' WALL, CLASS 5 (O.D.O.T. 706.02)
18" RCP - 'B' WALL, CLASS 3 (O.D.O.T. 706.02)
24" RCP - 'B' WALL, CLASS 3 (O.D.O.T. 706.02)

ALL FIELD TILE ENCOUNTERED SHALL BE TIED INTO STORM SEWER. ANY FIELD TILE INTERCEPTED BY OTHER EXCAVATIONS SHALL BE RECONNECTED.

CONNECTIONS TO EXISTING PIPE

WHERE THE PLANS PROVIDE FOR PROPOSED CONDUIT TO BE CONNECTED TO OR TO CROSS EITHER OVER OR UNDER AN EXISTING PIPE, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE EXISTING PIPE BOTH AS TO LINE AND GRADE BEFORE HE STARTS TO LAY THE PROPOSED CONDUIT.

ALL OPEN END EXISTING STORM SEWER PIPE ABANDONED IN PLACE SHALL BE PLUGGED. THE COST OF SUCH PIPE PLUGGING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE VARIOUS ITEMS UNDER THIS CONTRACT AND NO SEPARATE PAYMENT WILL BE MADE.

LOCATION OF SEWER LATERALS, DOWNSPOUT LINES AND WATER SERVICE LINES ARE APPROXIMATE. IT WILL BE THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THE EXACT LOCATION AND NUMBER IN THE FIELD AND ASSURE THAT ALL UTILITY LINES ARE RECONNECTED. THE COST OF LOCATING LINES SHALL BE INCLUDED WITH THE UNIT PRICE BID FOR THE VARIOUS TYPES AND SIZES OF PIPE.

HOUSE CONNECTIONS

EXISTING ROOF DRAINS, FOOTER DRAINS OR YARD DRAINS, DISTURBED BY THE PROPOSED WORK SHALL BE PROVIDED WITH UNOBSTRUCTED OUTLETS BY CONNECTING TO A STORM SEWER, DRAINAGE DITCH, MANHOLE OR CATCH BASIN.

ROOF DRAINS, FOUNDATION DRAINS AND OTHER CLEAN WATER CONNECTIONS TO THE SANITARY SEWER SYSTEM ARE PROHIBITED.

THE LOCATION, TYPE, SIZE AND GRADE OF REQUIRED REPLACEMENTS WILL BE DETERMINED BY THE ENGINEER DURING CONSTRUCTION. ALL KNOWN DRAINS ARE SHOWN ON THE PLAN SHEETS.

REVIEW OF DRAINAGE FACILITIES

BEFORE ANY WORK IS STARTED ON THE PROJECT, AND AGAIN BEFORE FINAL ACCEPTANCE BY THE CITY, REPRESENTATIVES OF THE CITY AND THE CONTRACTOR SHALL MAKE AN INSPECTION OF THE EXISTING CONDUITS AND THEIR APPURTENANCES SHALL BE DETERMINED FROM FIELD OBSERVATIONS. RECORDS OF THE INSPECTIONS SHALL BE KEPT IN WRITING BY THE CITY.

ALL NEW CONDUITS, INLETS, CATCH BASINS AND MANHOLES CONSTRUCTED AS A PART OF THE PROJECT SHALL BE FREE OF ALL FOREIGN MATTER AND IN A CLEAN CONDITION BEFORE THE PROJECT WILL BE ACCEPTED BY THE CITY.

ALL EXISTING SEWERS INSPECTED INITIALLY BY THE ABOVE-MENTIONED PARTIES SHALL BE MAINTAINED AND LEFT IN A CONDITION REASONABLY COMPARABLE TO THAT DETERMINED BY THE ORIGINAL INSPECTION. ANY CHANGE IN THE CONDITION RESULTING FROM THE CONTRACTOR'S OPERATIONS SHALL BE CORRECTED BY THE CONTRACTOR TO THE SATISFACTION OF THE ENGINEER.

PAVEMENT NOTES

ALL PAVEMENT DETAILS, MATERIALS, AND WORKMANSHIP SHALL CONFORM TO THE LATEST STATE OF OHIO DEPARTMENT OF TRANSPORTATION "CONSTRUCTION AND MATERIALS SPECIFICATIONS", OR AS MODIFIED BY THE CONTRACT DRAWINGS OR THE SPECIFICATIONS. IN THE EVENT OF A DISCREPANCY, THE CONTRACT DRAWINGS SHALL SUPERSEDE THE O.D.O.T. SPECIFICATIONS.

TRAFFIC SHALL NOT BE EXPOSED TO LONGITUDINAL VERTICAL FACES DURING NON- WORKING HOURS.

TRANSVERSE VERTICAL FACES SHALL BE TEMPORARILY RAMPED A MINIMUM OF 10 FOOT IN LENGTH.

ALL CASTINGS SHALL BE ADJUSTED TO GRADE PRIOR TO THE PLACEMENT OF THE PAVEMENT.

ALL WATER METER MANHOLES AND VALVES SHALL BE ADJUSTED TO GRADE BY THE USE OF ADJUSTING RINGS.

MAINTAINING TRAFFIC

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY SAFEGUARDS SUCH AS BARRICADES, SATISFACTORY BARRIERS, LIGHTING, FLAG MEN, TEMPORARY GUARDRAIL, AND SUCH OTHER TRAFFIC CONTROL DEVICES AS PROVIDED IN OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS SO AS TO AVOID DAMAGE AND/OR INJURY TO VEHICLES AND PERSONS USING THE ROADWAY DURING CONSTRUCTION.

PAYMENT FOR LABOR AND EQUIPMENT REQUIRED FOR THE CONSTRICTION, MAINTENANCE AND SUBSEQUENT REMOVAL OF APPROACHES, CROSSOVERS, DRIVEWAYS, BARRICADES, LIGHTS, SIGNS, AND SIGN SUPPORTS, SHALL BE INCLUDED IN THE PRICE BID PER SQUARE YARD OF PAVEMENT PLANING.

ALL TRAFFIC CONTROL DEVICES SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES. A MINIMUM OF ALTERNATING ONE WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL UTILIZE FLAGGERS DURING LANE CLOSURES. TRAFFIC SHALL BE MAINTAINED, AS SHOWN IN O.D.O.T. STANDARD CONSTRUCTION DRAWINGS.

ALL CITY STREETS SHALL HAVE A MINIMUM OF ONE 11' LANE MAINTAINED AT ALL TIMES. DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES TO ALLOW ACCESS BY LOCAL TRAFFIC.

SAWED JOINTS

IN REMOVING FLEXIBLE OR RIGID PAVEMENT, DRIVES, SIDEWALK AND PARKING LOTS, ETC., A NEAT JOINT WITH A MINIMUM DEPTH OF FOUR (4) INCHES SHALL BE CUT WITH AN APPROVED POWER SAW. THE COST OF THIS OPERATION SHALL BE INCLUDED IN THE UNIT PRICE BID FOR THE PERTINENT ITEM.

CONCRETE

LIMESTONE AGGREGATE SHALL BE USED IN THE PORTLAND CEMENT CONCRETE FOR PAVEMENT, CURBS AND SIDEWALKS.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION SIGNING AND TRAFFIC CONTROL AS DIRECTED BY THE PLANS AND THE ENGINEER. ALL WORK, SIGN LAYOUTS, AND MATERIALS USED SHALL CONFORM TO THE SPECIFICATIONS SET FORTH IN THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR TRAFFIC MAINTENANCE AND SAFETY CONTROL DEVICES DURING ALL CONSTRUCTION WORK AS PER THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES.

STOP SIGNS, TRAFFIC CONTROL SIGNS, AND STREET IDENTIFICATION SIGNS SHALL BE INSTALLED BEFORE OPENING THE ROAD TO TRAFFIC AND THE FINAL INSPECTION OF THE PROJECT.

SEEDING & MULCHING

ALL SEEDING, FERTILIZING AND MULCHING SHALL BE PERFORMED IN ACCORDANCE WITH THE REQUIREMENTS OF O.D.O.T. ITEM 659, CLASS 1 AND/OR AS DIRECTED BY THE ENGINEER.

SEDIMENT CONTROL SHALL BE ACCOMPLISHED BY SEEDING, FERTILIZING AND MULCHING IMMEDIATELY UPON COMPLETION OF EXCAVATION OR FILL AND FINISHED GRADING IN ACCORDANCE WITH ITEM 659, OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS AND/OR AS DIRECTED BY THE ENGINEER.

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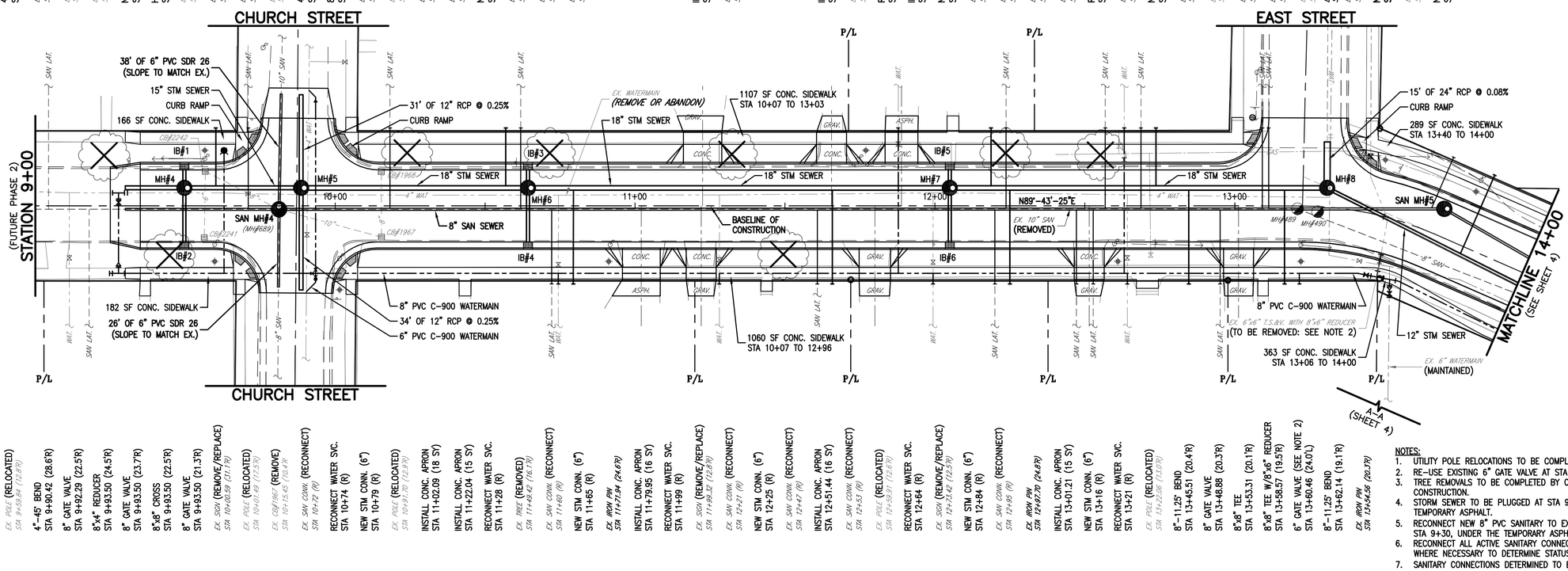
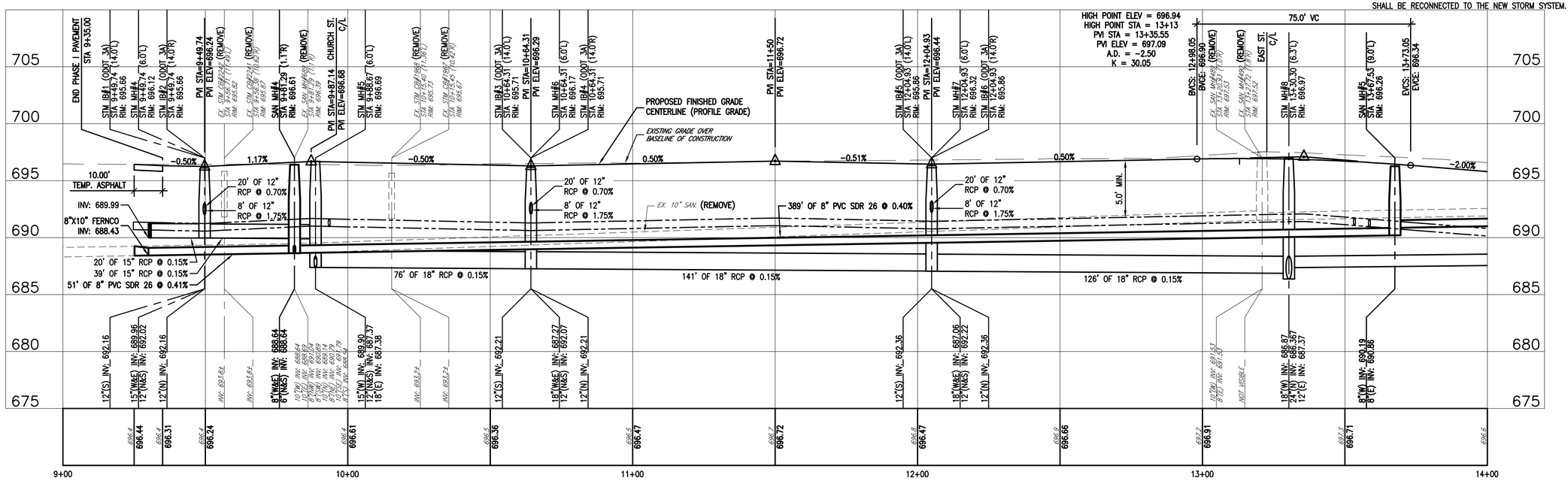
EAST FOREST STREET IMPROVEMENTS PHASE I
GENERAL NOTES

CITY OF CLYDE

SITE BENCHMARK #1
HYDRANT ARROW: STA 9+63.33 (18.83'L), ELEV: 698.54

SITE BENCHMARK #2 (OFF SHEET)
HYDRANT NORTH BON. BOLT: STA 5+25.09 (17.26'L), ELEV: 699.69





NOTES:
1. UTILITY POLE RELOCATIONS TO BE COMPLETED BY OTHERS.
2. RE-USE EXISTING 6" GATE VALVE AT STA 13+60.46 (24.0'L).
3. TREE REMOVALS TO BE COMPLETED BY OTHERS PRIOR TO CONSTRUCTION.
4. STORM SEWER TO BE PLUGGED AT STA 9+30, UNDER THE TEMPORARY ASPHALT.
5. RECONNECT NEW 8" PVC SANITARY TO EXISTING SANITARY AT STA 9+30, UNDER THE TEMPORARY ASPHALT.
6. RECONNECT ALL ACTIVE SANITARY CONNECTIONS, DYE TEST WHERE NECESSARY TO DETERMINE STATUS.
7. SANITARY CONNECTIONS DETERMINED TO BE "STORM ONLY" SHALL BE RECONNECTED TO THE NEW STORM SYSTEM.

HORIZONTAL SCALE 1" = 5'
VERTICAL: 1" = 5'

CALCULATED TM
CHECKED JS

REV. NO.	DATE

GGI Gelder Group, Inc. Building engineers
3000 Gelder Blvd. Ph: 440.243.4300
Clyde, Ohio 43410 Fax: 440.243.4306
www.gelderinc.com

EAST FOREST STREET IMPROVEMENTS PHASE I
PLAN & PROFILE

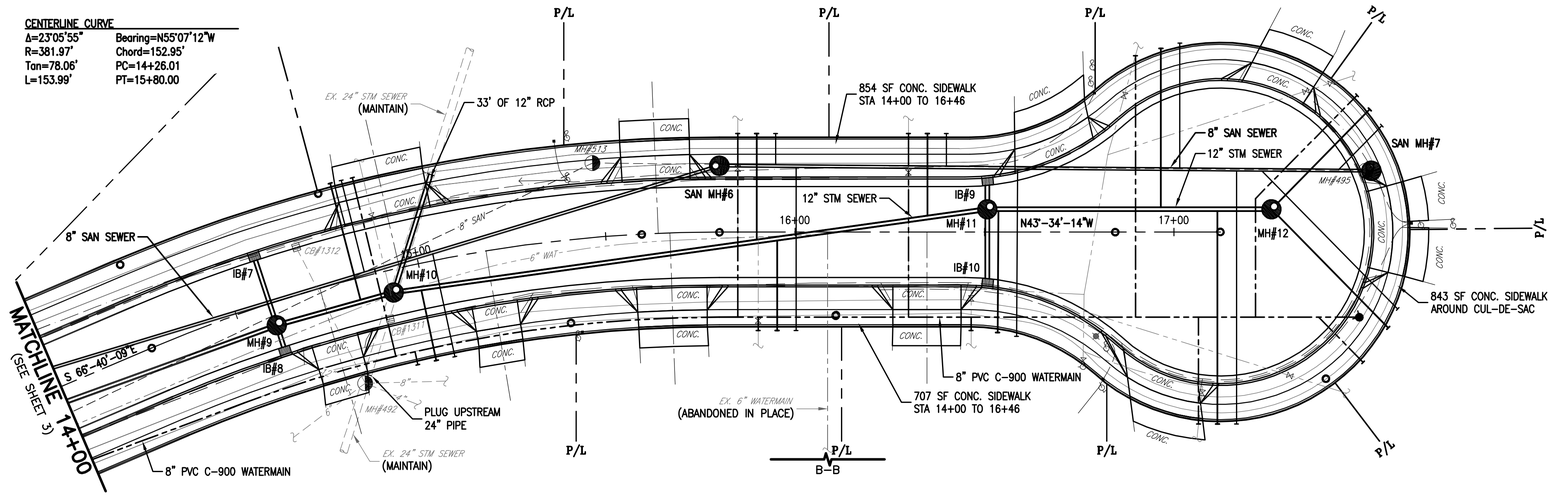
CITY OF CLYDE

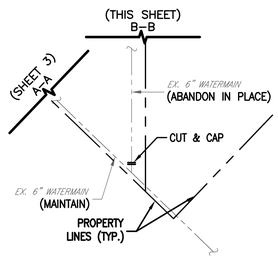
SITE BENCHMARK #3
HYDRANT ARROW: STA 16+75.32 (35.78'R), ELEV: 699.23

SITE BENCHMARK #4
RAILROAD SPIKE IN POLE: STA 17+72.77 (1.99'L), ELEV: 698.46

EX. IRON PIN STA 14+26.96 (23.5'L)
NEW STM CONN. (6") STA 14+63 (L)
RECONNECT SAN CONN. STA 14+85 (L)
RECONNECT WATER SVC. STA 14+88 (L)
EX. IRON PIN STA 14+29.27 (24.2'L)
INSTALL CONC. APRON STA 14+94.83 (30 SY)
EX. CBP1312 (REMOVE) STA 14+70.26 (12.1'L)
EX. UTIL. BOX STA 15+34.41 (26.3'L)
EX. POLE STA 15+41.42 (15.7'L)
EX. POLE STA 15+42.37 (26.6'L)
INSTALL CONC. APRON STA 15+63.89 (24 SY)
RECONNECT WATER SVC. STA 15+84 (L)
NEW STM CONN. (6") STA 15+90 (L)
RECONNECT SAN CONN. STA 15+94 (L)
RECONNECT SAN CONN. STA 16+30 (L)
NEW STM CONN. (6") STA 16+35 (L)
RECONNECT WATER SVC. STA 16+40 (L)
INSTALL CONC. APRON STA 16+68± (26 SY)
EX. POLE STA 16+70.08 (39.2'L)
EX. POLE STA 16+70.50 (43.5'L)
EX. UTIL. BOX STA 16+70.39 (36.7'L)
RECONNECT SAN CONN. STA 16+90 (L)
NEW STM CONN. (6") STA 16+96 (L)
RECONNECT WATER SVC. STA 17+01 (L)
INSTALL CONC. APRON STA 17+26± (21 SY)
RECONNECT SAN CONN. STA 17+21 (L)
NEW STM CONN. (6") IN MH#12
RECONNECT WATER SVC. STA 17+44 (L)
INSTALL CONC. APRON STA 17+53± (26 SY)
EX. UTIL. BOX STA 17+64.05 (2.3'L)
EX. LIGHT POLE STA 17+65.19 (1.8'L)
EX. POLE STA 17+73.68 (1.7'L)

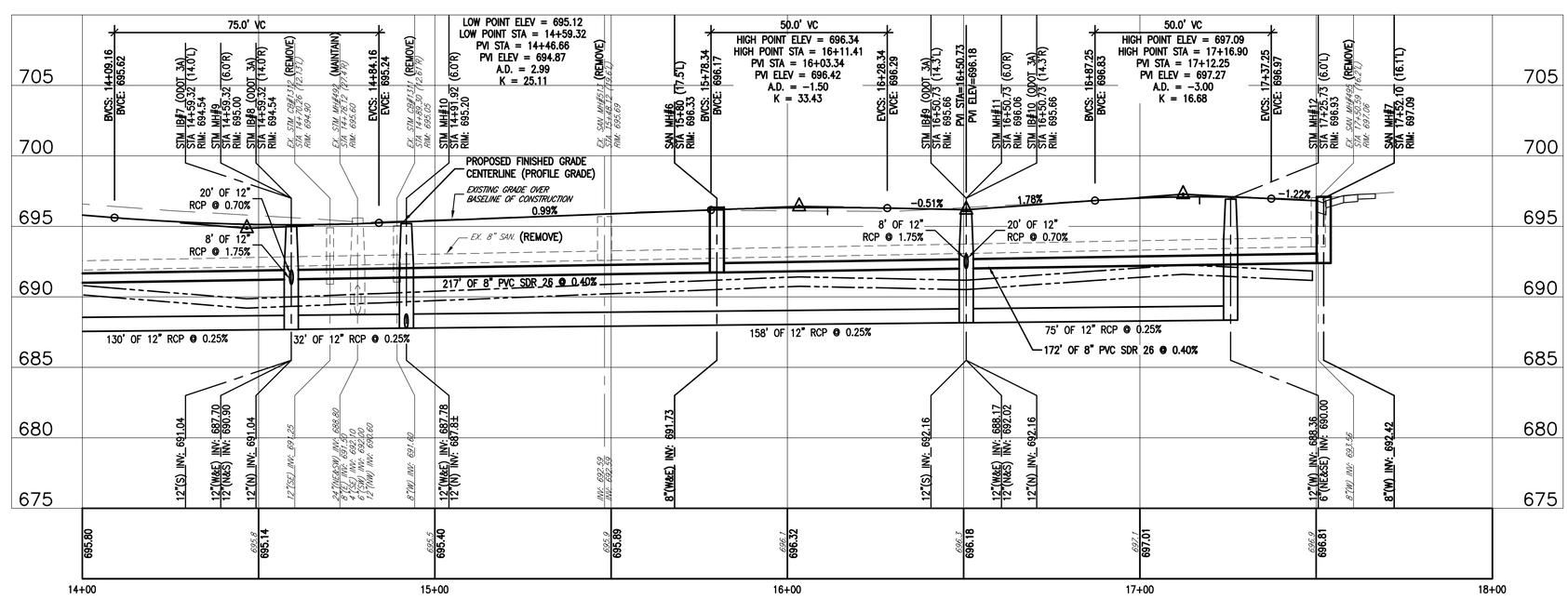
CENTERLINE CURVE
Δ=23°05'55" Bearing=N55°07'12"W
R=381.97' Chord=152.95'
Tan=78.06' PC=14+26.01
L=153.99' PT=15+80.00





EX. IRON PIN STA 14+26.07 (0.7'R)
INSTALL CONC. APRON STA 14+73.16 (18 SY)
EX. CBP1907 (REMOVE) STA 14+80.30 (12.6'R)
RECONNECT WATER SVC. STA 14+93 (R)
NEW STM CONN. (6") STA 14+99 (R)
RECONNECT SAN CONN. STA 15+04 (R)
INSTALL CONC. APRON STA 15+18.14 (17 SY)
EX. IRON PIN STA 15+38.40 (21.9'R)
EX. POLE STA 15+38.96 (26.0'R)
EX. IRON PIN STA 15+53.32 (0.1'R)
INSTALL CONC. APRON STA 15+66.95 (25 SY)
EX. IRON PIN STA 15+80.04 (0.1'R)
RECONNECT WATER SVC. STA 15+90 (R)
NEW STM CONN. (6") STA 15+95 (R)
RECONNECT SAN CONN. STA 16+00 (R)
EX. IRON PIN STA 16+12.70 (22.1'R)
INSTALL CONC. APRON STA 16+34.82 (24 SY)
RECONNECT WATER SVC. STA 16+46 (R)
NEW STM CONN. (6") STA 16+53 (R)
RECONNECT SAN CONN. STA 16+58 (R)
EX. HYDRANT (REMOVE) STA 16+75.99 (35.6'R)
EX. LIGHT POLE STA 16+80.34 (41.1'R)
EX. UTIL. BOX STA 16+81.66 (39.9'R)
EX. POLE (RELOCATED) STA 16+82.15 (30.6'R)
EX. IRON PIN STA 16+84.49 (0.1'R)
INSTALL CONC. APRON STA 16+97± (25 SY)
RECONNECT WATER SVC. STA 17+06 (R)
NEW STM CONN. (6") STA 17+11 (R)
RECONNECT SAN CONN. STA 17+16 (R)
EX. IRON PIN STA 17+12.25 (0.7'R)
RECONNECT WATER SVC. STA 17+38 (R)
NEW STM CONN. (6") IN MH#12
RECONNECT SAN CONN. STA 17+23 (R)
HYDRANT ASSEMBLY STA 17+48.90 (22.5'R)
EX. IRON PIN STA 17+40.10 (38.7'R)

NOTES:
1. UTILITY POLE RELOCATIONS TO BE COMPLETED BY OTHERS.
2. RE-USE EXISTING 6" GATE VALVE AT STA 13+60.46 (24.0'L).
3. TREE REMOVALS TO BE COMPLETED BY OTHERS PRIOR TO CONSTRUCTION.
4. STORM SEWER TO BE PLUGGED AT STA 9+30, UNDER THE TEMPORARY ASPHALT.
5. RECONNECT NEW 8" PVC SANITARY TO EXISTING SANITARY AT STA 9+30, UNDER THE TEMPORARY ASPHALT.
6. RECONNECT ALL ACTIVE SANITARY CONNECTIONS, DYE TEST WHERE NECESSARY TO DETERMINE STATUS.
7. SANITARY CONNECTIONS DETERMINED TO BE "STORM ONLY" SHALL BE RECONNECTED TO THE NEW STORM SYSTEM.



SITE BENCHMARK #3
SITE BENCHMARK #4

HORIZONTAL SCALE 1" = 20'
VERTICAL: 1" = 5'

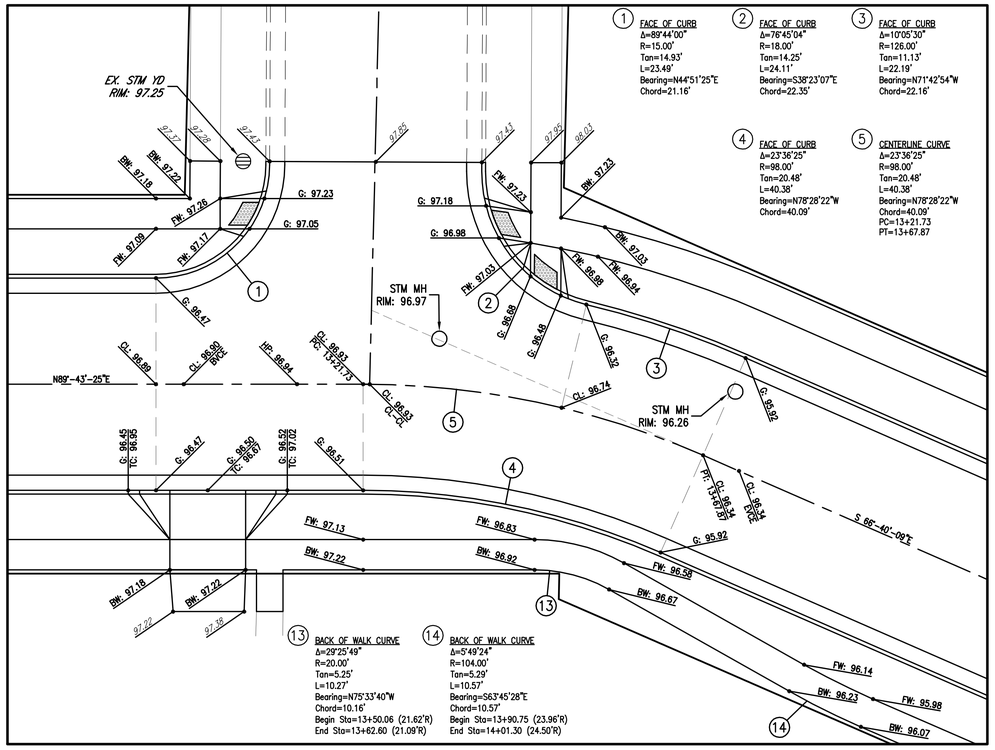
CALCULATED TM
CHECKED JS

REV. NO.	DATE

GOBLE Consulting engineers
3000 Corte Ejido, Ste. 2
Ph: 442.251.0287
Fax: 442.251.0280
www.goblecompanies.com

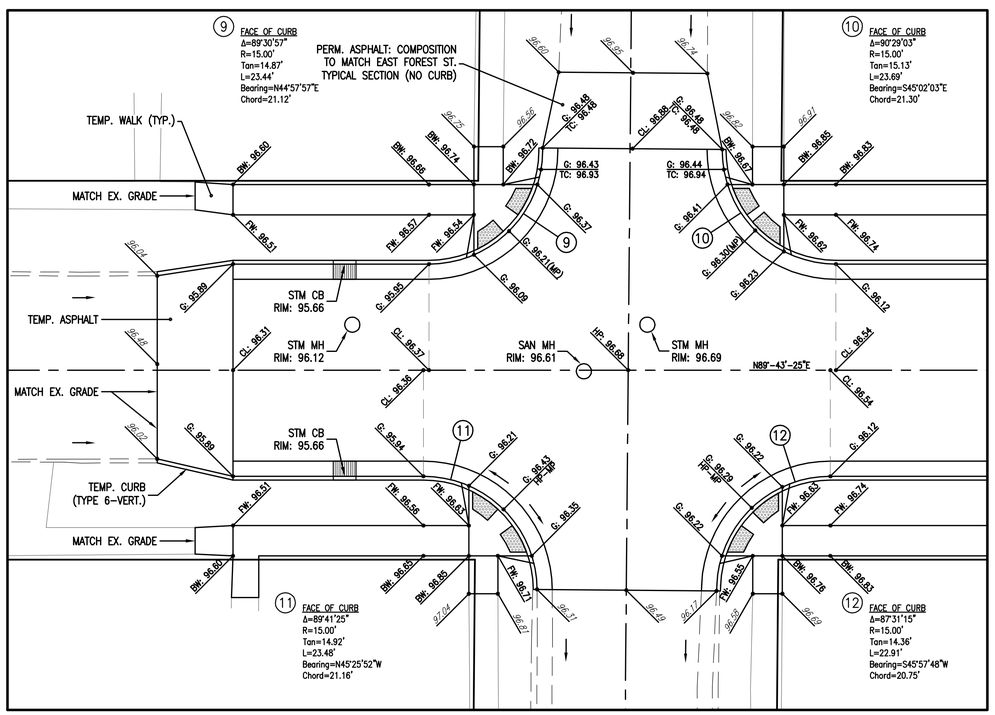
EAST FOREST STREET IMPROVEMENTS PHASE I
PLAN & PROFILE

CITY OF CLYDE



INTERSECTION DETAIL - EAST FOREST ST. & EAST ST.

HORIZONTAL SCALE: 1" = 10'



INTERSECTION DETAIL - EAST FOREST ST. & CHURCH ST.

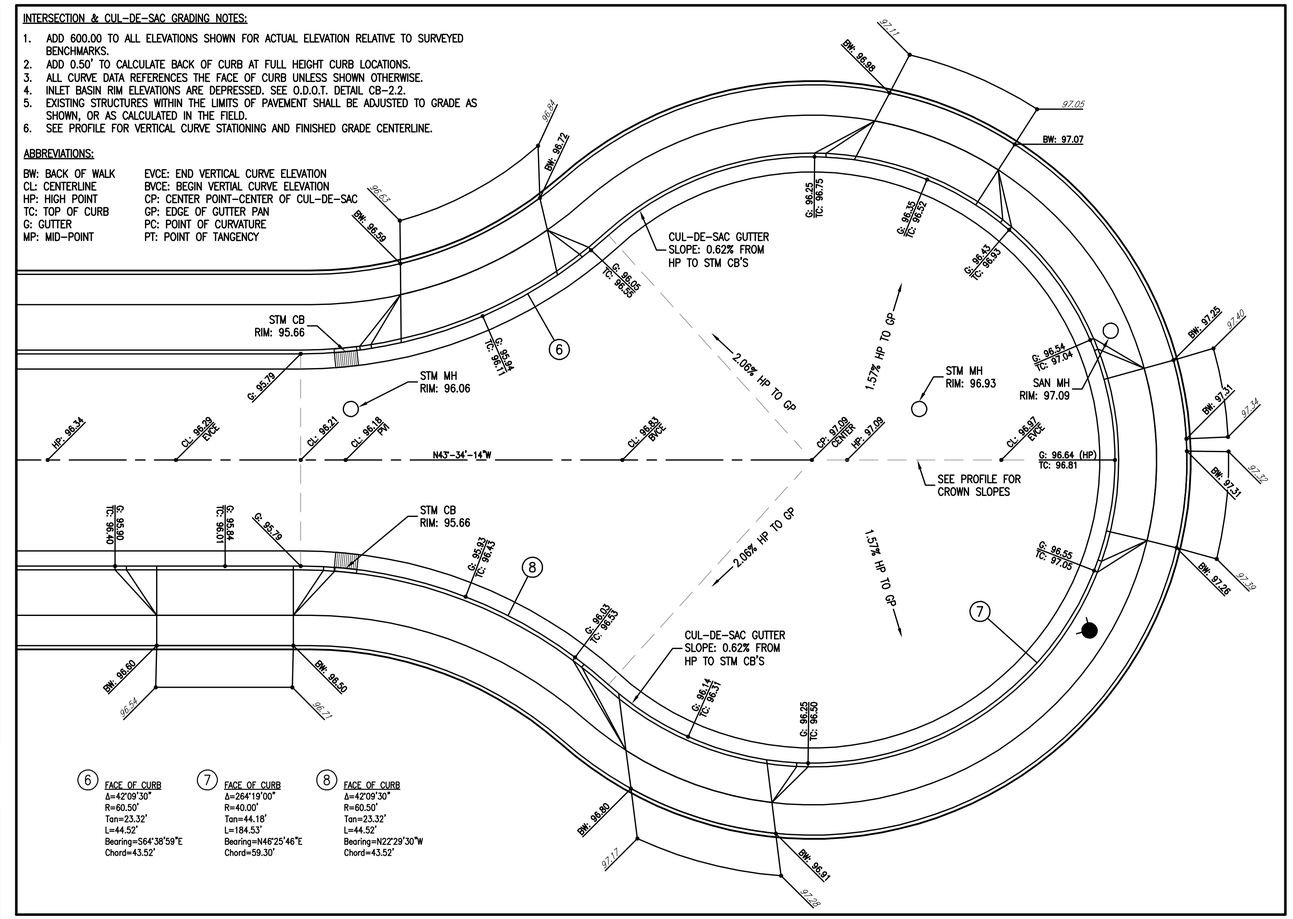
HORIZONTAL SCALE: 1" = 10'

INTERSECTION & CUL-DE-SAC GRADING NOTES:

1. ADD 600.00 TO ALL ELEVATIONS SHOWN FOR ACTUAL ELEVATION RELATIVE TO SURVEYED BENCHMARKS.
2. ADD 0.50' TO CALCULATE BACK OF CURB AT FULL HEIGHT CURB LOCATIONS.
3. ALL CURVE DATA REFERENCES THE FACE OF CURB UNLESS SHOWN OTHERWISE.
4. INLET BASIN RIM ELEVATIONS ARE DEPRESSED. SEE O.D.O.T. DETAIL CB-2.2.
5. EXISTING STRUCTURES WITHIN THE LIMITS OF PAVEMENT SHALL BE ADJUSTED TO GRADE AS SHOWN, OR AS CALCULATED IN THE FIELD.
6. SEE PROFILE FOR VERTICAL CURVE STATIONING AND FINISHED GRADE CENTERLINE.

ABBREVIATIONS:

BW: BACK OF WALK
CL: CENTERLINE
HP: HIGH POINT
TC: TOP OF CURB
G: GUTTER
MP: MID-POINT
EVCE: END VERTICAL CURVE ELEVATION
BVCE: BEGIN VERTIAL CURVE ELEVATION
CP: CENTER POINT-CENTER OF CUL-DE-SAC
GP: EDGE OF GUTTER PAN
PC: POINT OF CURVATURE
PT: POINT OF TANGENCY

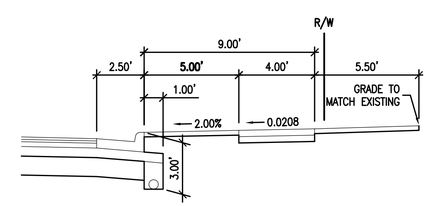


CUL-DE-SAC DETAIL - EAST FOREST ST.

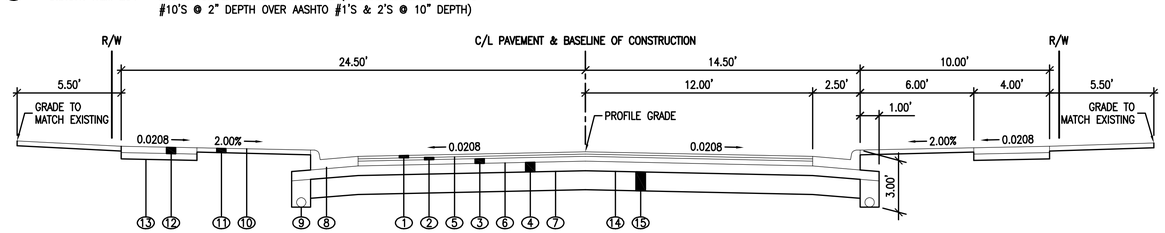
HORIZONTAL SCALE: 1" = 10'

LEGEND

1. O.D.O.T. ITEM 448 – 1.5" ASPHALT CONCRETE SURFACE COURSE
2. O.D.O.T. ITEM 448 – 1.5" ASPHALT CONCRETE INTERMEDIATE COURSE
3. O.D.O.T. ITEM 301 – 3" BITUMINOUS AGGREGATE BASE
4. O.D.O.T. ITEM 304 – 6" AGGREGATE BASE
5. O.D.O.T. ITEM 407 – TACK COAT (0.05 GAL./S.Y.)
6. O.D.O.T. ITEM 408 – PRIME COAT (0.35 GAL./S.Y.)
7. O.D.O.T. ITEM 204 – SUBGRADE COMPACTION
8. O.D.O.T. ITEM 609 – TYPE 2 CURB & GUTTER (THICKNESS=6")
9. O.D.O.T. ITEM 605 – 6" UNDERDRAIN (O.D.O.T. 707.31) W/#57 WASHED GRANULAR MAT'L.
10. O.D.O.T. ITEM 659 – SEEDING & MULCHING
11. O.D.O.T. ITEM 653 – 3" TOPSOIL, FURNISHED & PLACED
12. O.D.O.T. ITEM 608 – 4" CONCRETE SIDEWALK
13. O.D.O.T. ITEM 304 – 4" AGGREGATE BASE
14. O.D.O.T. ITEM 861 – GEOGRID, (SPECIAL MATERIAL: TENSAR BX 1300 OR APPROVED EQUAL)
15. O.D.O.T. ITEM 204 – EXCAVATION & GRANULAR MATERIAL (SPECIAL MATERIAL: AASHTO #10'S @ 2" DEPTH OVER AASHTO #1'S & 2'S @ 10" DEPTH)



CUL-DE-SAC DETAIL



EAST FOREST STREET TYPICAL SECTION

STA. 9+35 TO STA. 16+44.80

(CUL-DE-SAC, INTERSECTIONS & TEMP. PAVEMENT NOT INCLUDED)

NOTES:
GEOGRID, EXCAVATION & GRANULAR MATERIAL TO BE USED BASED UPON SOIL CONDITIONS AT THE TIME OF EXCAVATION. QUANITITIES SHOWN IN PLAN ARE FOR THE COMPLETE ROADWAY, EXISTING CONDITIONS MAY WARRANT LESS.

REV. NO.	DATE	CALCULATED TM	CHECKED JS

GAI consultants, inc. engineers
3385 Orbis Park
Orlando, FL 32826-3203
Ph: 407.723.7450
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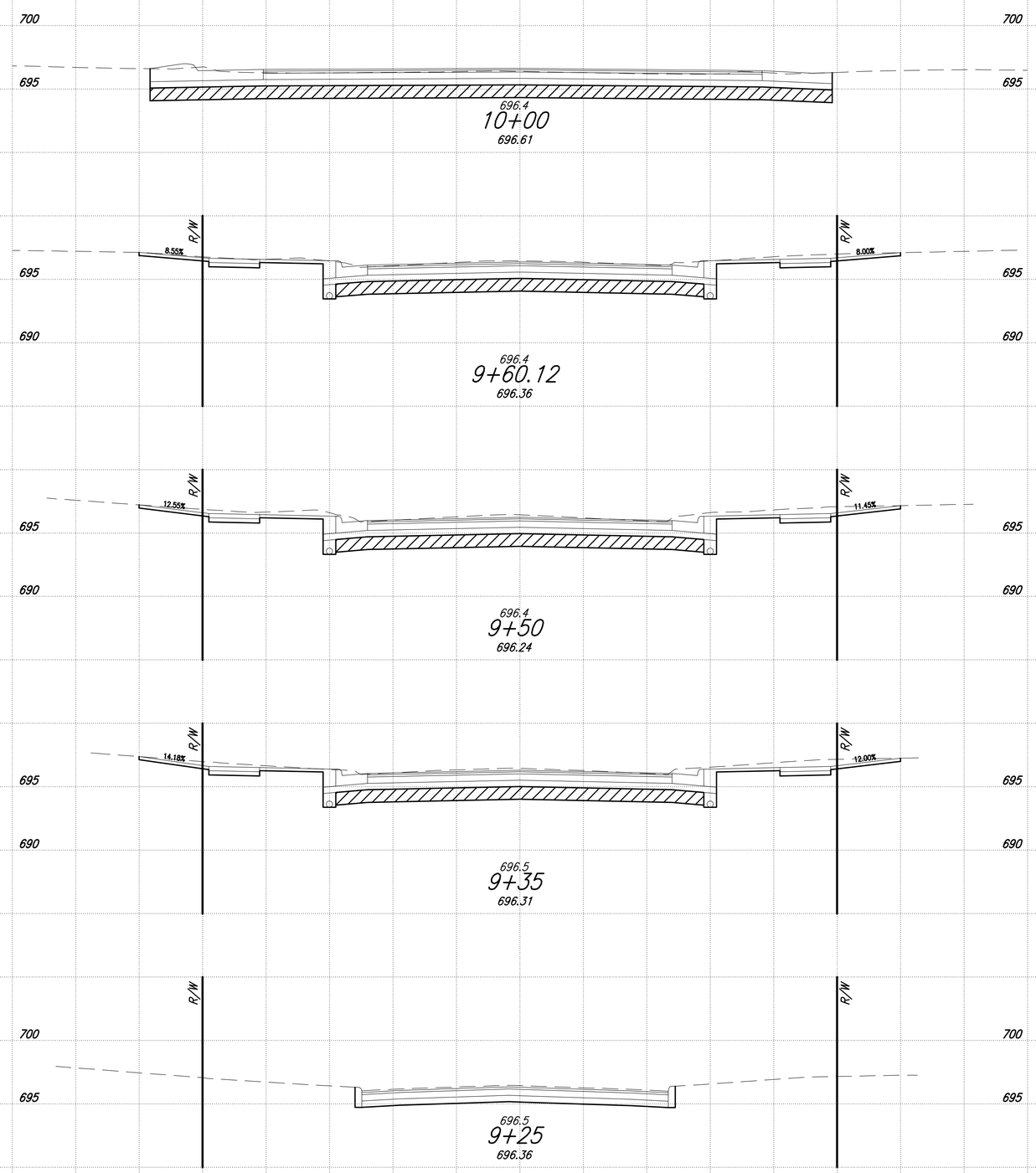
www.gaiconsultants.com

EAST FOREST STREET IMPROVEMENTS PHASE I
TYPICAL SECTION & INTERSECTION DETAILS

CITY OF CLYDE



ITEM 203								
END AREA		VOLUME						
CUT	FILL	CUT	FILL					
59	0							
		87	0					
59	0							
		23	0					
66	0							
		36	0					
65	0							
59	0							
		17	0					
33	0							
SHEET TOTAL		163	0					

CALCULATED TM
CHECKED JS

REV. NO.	DATE

GGI consulting engineers
3060 Orchard Drive
Ph: 403.251.0287
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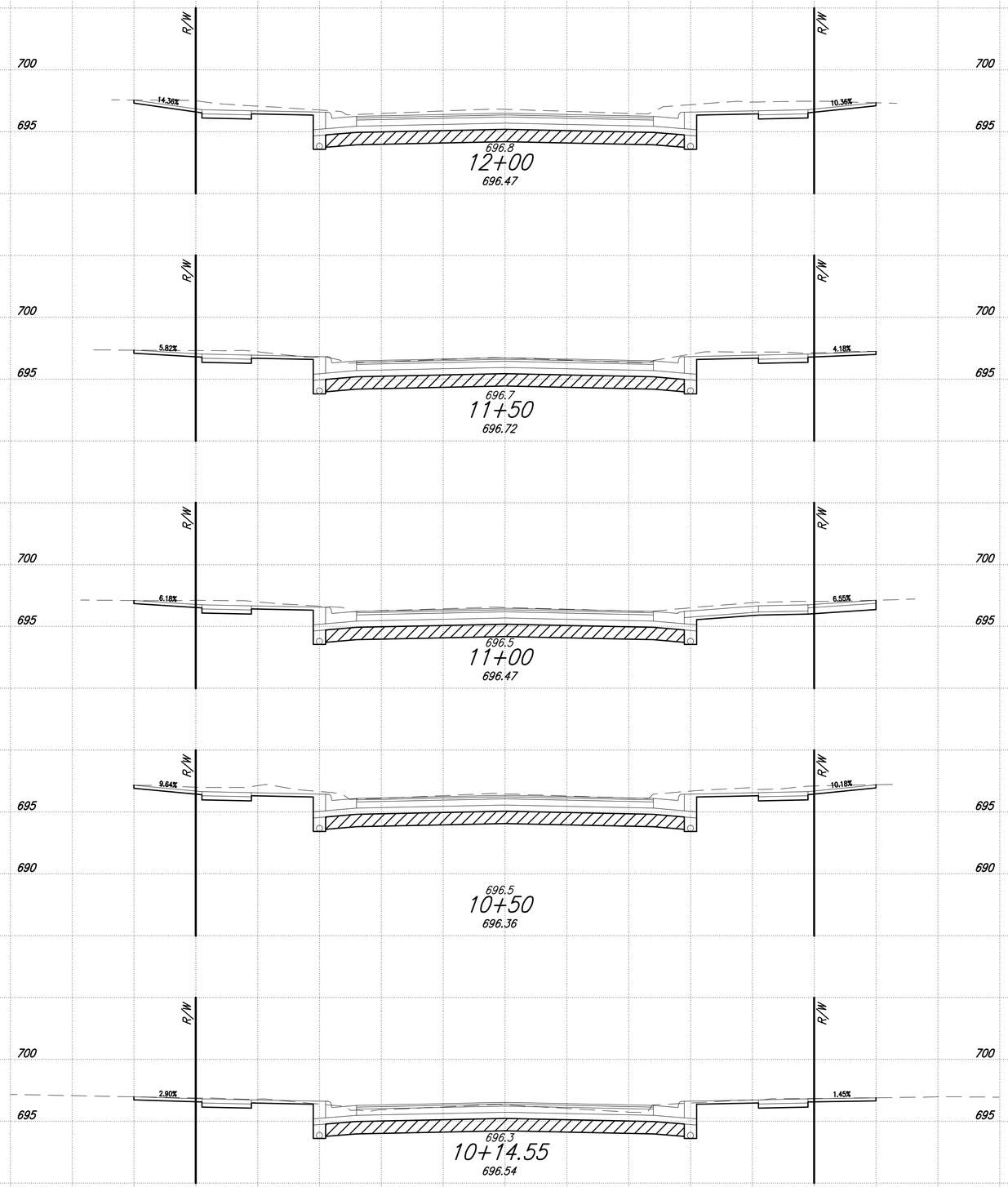
E-mail: ggi@ggiengineers.com
www.ggiengineers.com

EAST FOREST STREET IMPROVEMENTS PHASE I
CROSS SECTIONS

CITY OF CLYDE



ITEM 203				
END AREA		VOLUME		
CUT	FILL	CUT	FILL	
78	0			
		127	0	
59	0			
		119	0	
69	0			
		126	0	
67	0			
		74	0	
46	0			
		28	0	
SHEET TOTAL		474	0	

CALCULATED TM

CHECKED JS

REV. NO.	DATE

GGI consulting engineers
3060 Orchard Drive
Ph: 440.835.0901
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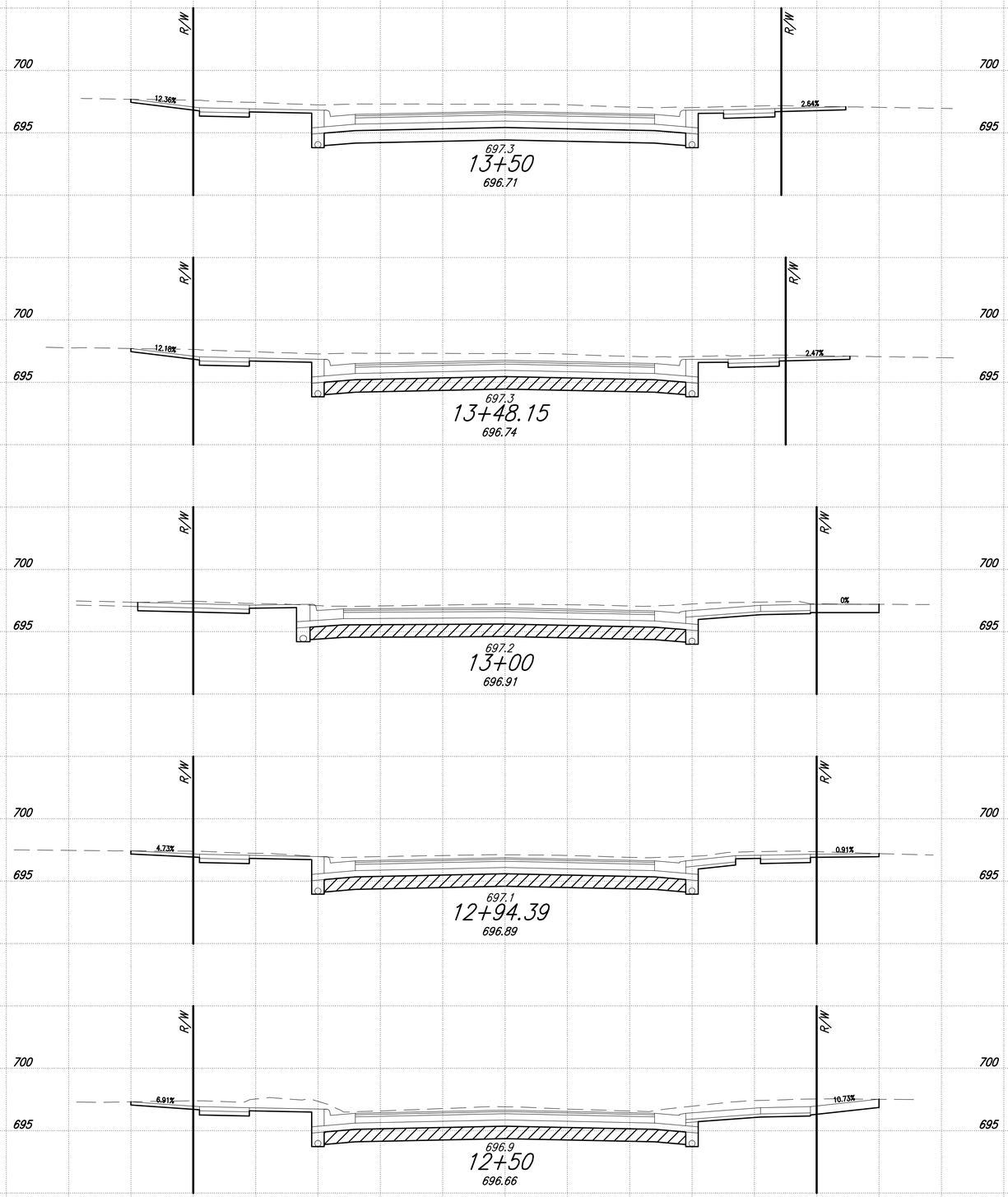
www.ggiengineers.com
email@ggiengineers.com

EAST FOREST STREET IMPROVEMENTS PHASE I
CROSS SECTIONS

CITY OF CLYDE



ITEM 203				
END AREA		VOLUME		
CUT	FILL	CUT	FILL	
82	0			
		6	0	
82	0			
		169	0	
107	0			
		18	0	
69	0			
		123	0	
81	0			
		147	0	
SHEET TOTAL		463	0	

SHEET TOTAL

CALCULATED TM

CHECKED JS

DATE

REV. NO.

GGI consulting engineers
3080 Orchard Drive N.E.
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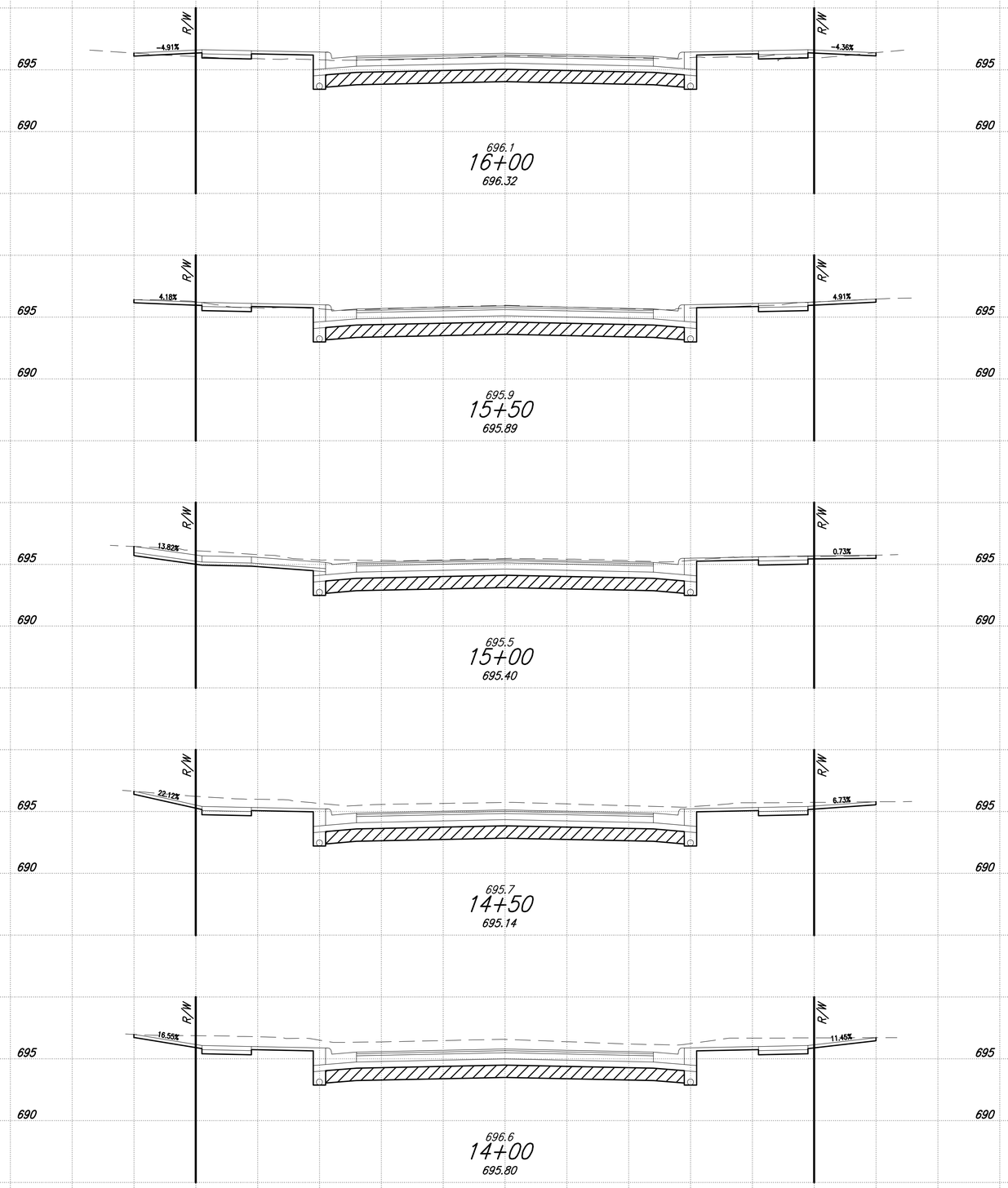
Fax: 403.291.1289
E-MAIL: ggi@shaw.ca
www.ggiengineers.com

EAST FOREST STREET IMPROVEMENTS PHASE I
CROSS SECTIONS

CITY OF CLYDE



ITEM 203				
END AREA		VOLUME		
CUT	FILL	CUT	FILL	
37	4			16+00
		81	4	
51	0			15+50
		108	0	
66	0			15+00
		139	0	
84	0			14+50
		164	0	
93	0			14+00
		162	0	
SHEET TOTAL		654	4	SHEET TOTAL

CALCULATED TM
CHECKED JS

REV. NO.	DATE

GGI consulting engineers
3060 Orchard Drive
San Antonio, TX 78232
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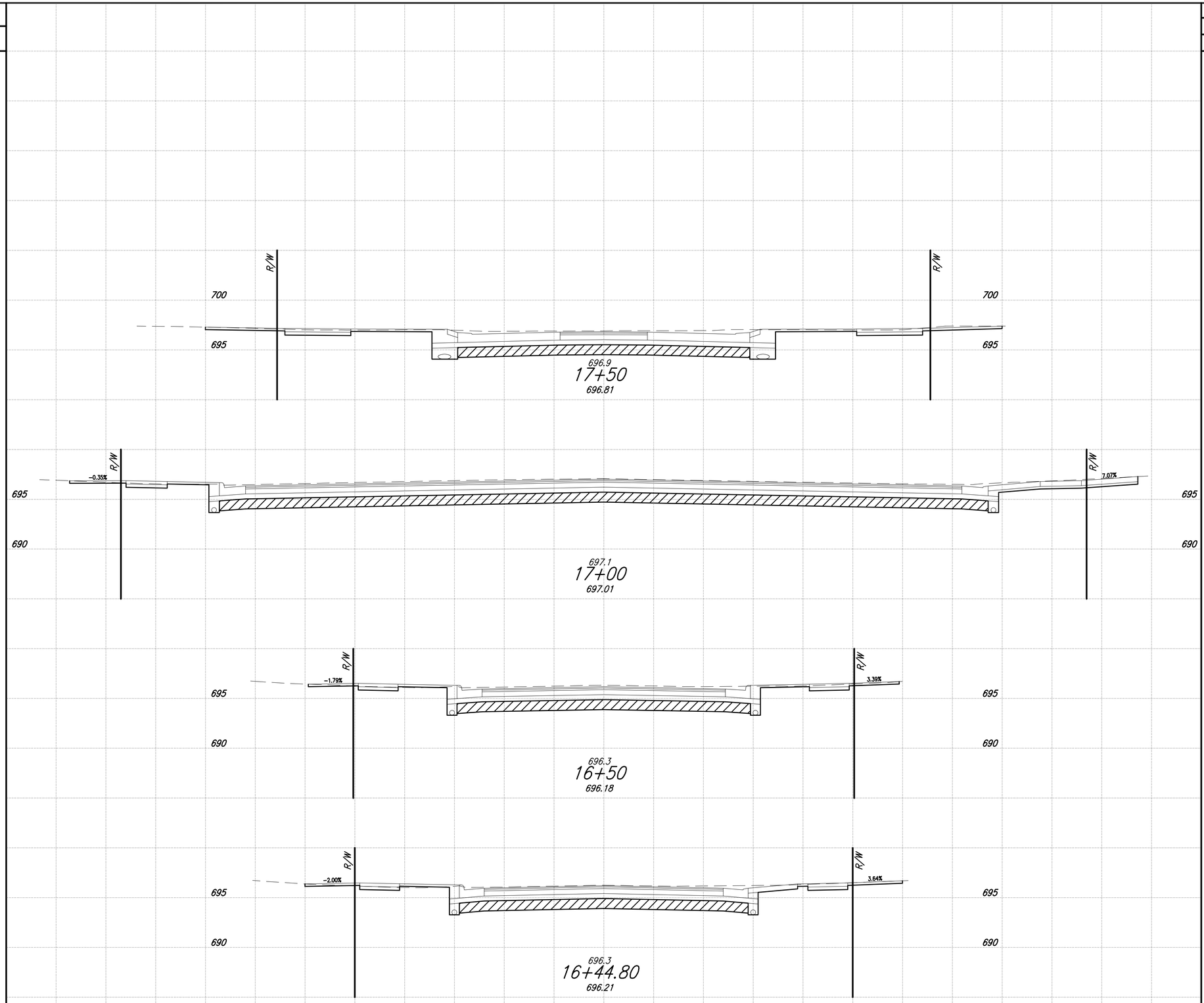
ggi@ggiengineers.com

EAST FOREST STREET IMPROVEMENTS PHASE I
CROSS SECTIONS

CITY OF CLYDE



ITEM 203				
END AREA		VOLUME		
CUT	FILL	CUT	FILL	
0	0			
		69	0	
74	0			
		188	0	
129	0			
		170	0	
55	0			
		11	0	
55	0			
		76	3	
SHEET TOTAL		514	3	
GRAND TOTAL		2268	7	

SHEET TOTAL 50 40 30 20 10 0 10 20 30 40 50

CALCULATED TM
CHECKED JS

REV. NO.	DATE

GGI consulting engineers
3060 Orchard Drive
San Luis Obispo, CA 93401
Ph.: 805.781.1587
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email@ggiconsultingengineers.com

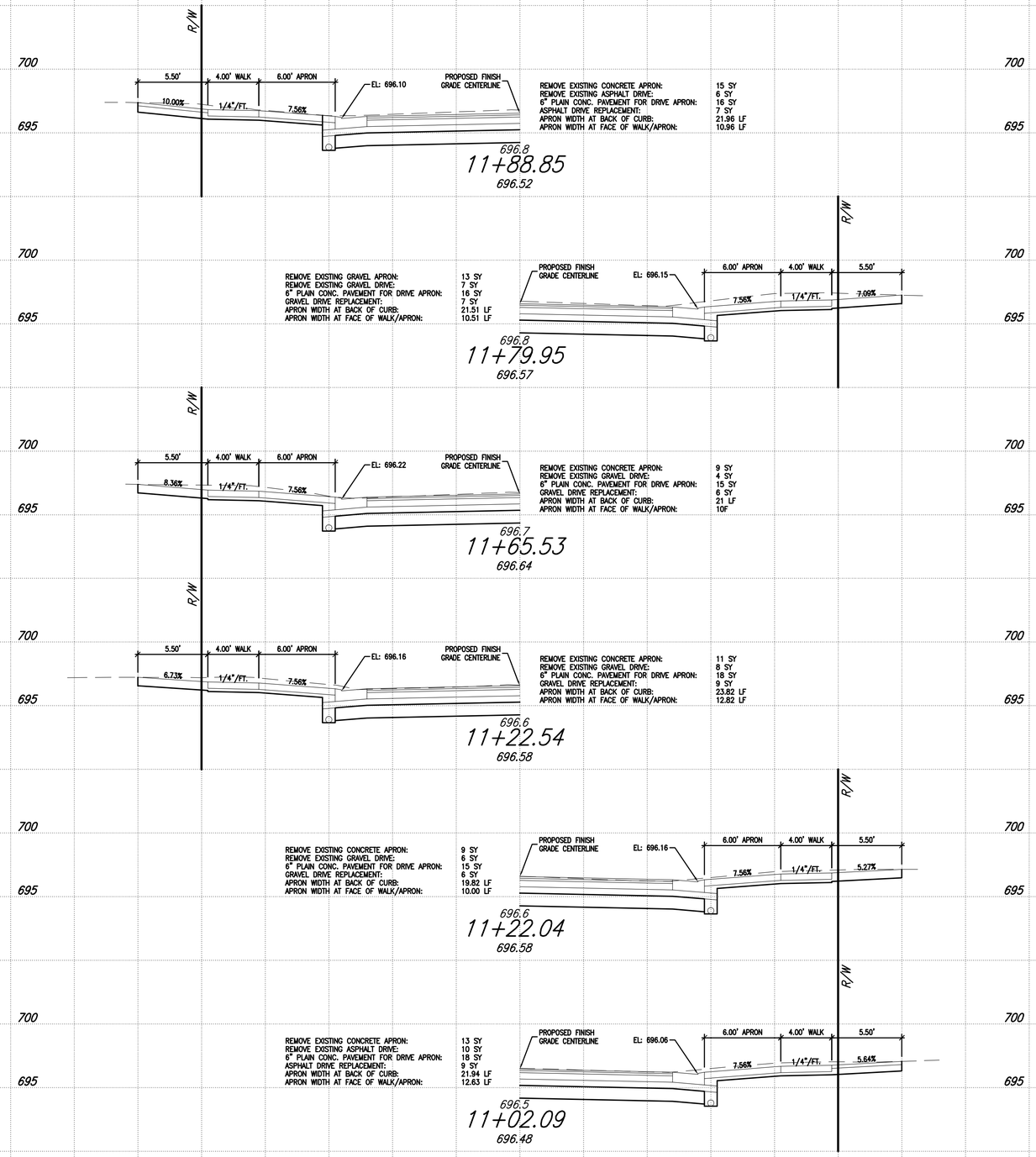
EAST FOREST STREET IMPROVEMENTS PHASE I
CROSS SECTIONS

CITY OF CLYDE

10
15

SEEDING		GEOGRID	
END WIDTH	SQ. YDS.	END WIDTH	SQ. YDS.

ITEM 203				ITEM 204			
END AREA		VOLUME		END AREA		VOLUME	
CUT	FILL	CUT	FILL	CUT	FILL	CUT	FILL



SHEET TOTAL

SHEET TOTAL

CALCULATED TM

CHECKED JS

REV. NO.	DATE

GGI consulting engineers
3060 Orchard Drive
San Luis Obispo, CA 93401
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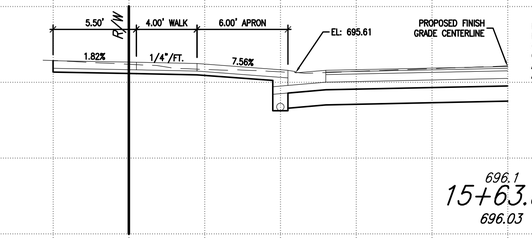
Fax: 805.781.0360
www.ggiconsultingengineers.com

EAST FOREST STREET IMPROVEMENTS PHASE I
CROSS SECTIONS

CITY OF CLYDE

SEEDING		GEOGRID	
END WIDTH	SQ. YDS.	END WIDTH	SQ. YDS.

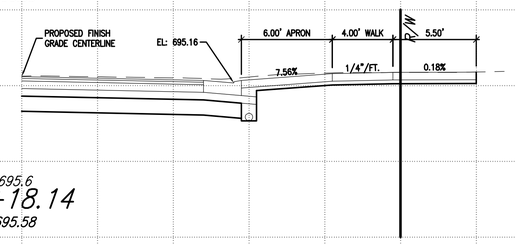
ITEM 203				ITEM 204			
END AREA		VOLUME		END AREA		VOLUME	
CUT	FILL	CUT	FILL	CUT	FILL	CUT	FILL



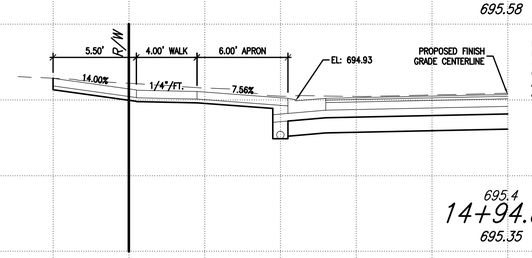
REMOVE EXISTING CONCRETE APRON:	9 SY
REMOVE EXISTING CONCRETE DRIVE:	17 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON:	24 SY
CONCRETE DRIVE REPLACEMENT:	12 SY
APRON WIDTH AT BACK OF CURB:	28.95 LF
APRON WIDTH AT FACE OF WALK/APRON:	18.20 LF

696.1
15+63.89
696.03

REMOVE EXISTING CONCRETE APRON:	7 SY
REMOVE EXISTING CONCRETE DRIVE:	11 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON:	17 SY
CONCRETE DRIVE REPLACEMENT:	8 SY
APRON WIDTH AT BACK OF CURB:	23.06 LF
APRON WIDTH AT FACE OF WALK/APRON:	11.88 LF



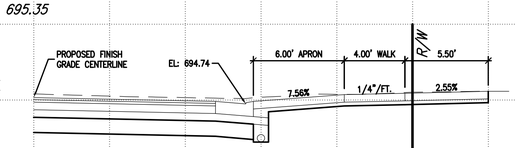
695.6
15+18.14
695.58



REMOVE EXISTING CONCRETE APRON:	13 SY
REMOVE EXISTING CONCRETE DRIVE:	20 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON:	30 SY
CONCRETE DRIVE REPLACEMENT:	15 SY
APRON WIDTH AT BACK OF CURB:	34.00 LF
APRON WIDTH AT FACE OF WALK/APRON:	23.34 LF

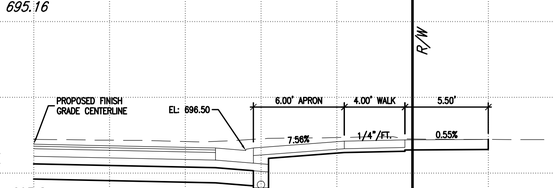
695.4
14+94.83
695.35

REMOVE EXISTING CONCRETE APRON:	8 SY
REMOVE EXISTING CONCRETE DRIVE:	11 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON:	18 SY
CONCRETE DRIVE REPLACEMENT:	8 SY
APRON WIDTH AT BACK OF CURB:	23.46 LF
APRON WIDTH AT FACE OF WALK/APRON:	12.27 LF



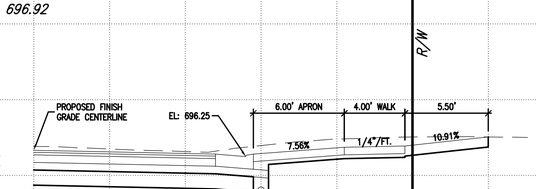
695.4
14+73.16
695.16

REMOVE EXISTING GRAVEL APRON:	11 SY
REMOVE EXISTING GRAVEL DRIVE:	7 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON:	15 SY
GRAVEL DRIVE REPLACEMENT:	6 SY
APRON WIDTH AT BACK OF CURB:	21.00 LF
APRON WIDTH AT FACE OF WALK/APRON:	10.00 LF



697.2
13+01.21
696.92

REMOVE EXISTING CONCRETE APRON:	9 SY
REMOVE EXISTING GRAVEL DRIVE:	6 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON:	15 SY
GRAVEL DRIVE REPLACEMENT:	6 SY
APRON WIDTH AT BACK OF CURB:	21.00 LF
APRON WIDTH AT FACE OF WALK/APRON:	10.00 LF



696.9
12+51.44
696.67

SHEET TOTAL 50 40 30 20 10 0 10 20 30 40 50 SHEET TOTAL

CALCULATED TM
CHECKED JS

REV. NO.	DATE

GGI consulting engineers
3260 Corte Malpaso
Camarillo, CA 93012
Ph: 805.987.1287
Fax: 805.987.0360
www.ggiengineers.com

EAST FOREST STREET IMPROVEMENTS PHASE I
CROSS SECTIONS

CITY OF CLYDE

SEEDING		GEOGRID	
END WIDTH	SQ. YDS.	END WIDTH	SQ. YDS.

ITEM 203				ITEM 204			
END AREA		VOLUME		END AREA		VOLUME	
CUT	FILL	CUT	FILL	CUT	FILL	CUT	FILL

REMOVE EXISTING CONCRETE APRON: 12 SY
REMOVE EXISTING CONCRETE DRIVE: 19 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON: 26 SY
CONCRETE DRIVE REPLACEMENT: 15 SY
APRON WIDTH AT BACK OF CURB: 31.61 LF
APRON WIDTH AT FACE OF WALK/APRON: 23.00 LF

17+52.25 (CUL-DE-SAC)

REMOVE EXISTING CONCRETE APRON: 8 SY
REMOVE EXISTING CONCRETE DRIVE: 14 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON: 21 SY
CONCRETE DRIVE REPLACEMENT: 11 SY
APRON WIDTH AT BACK OF CURB: 28.36 LF
APRON WIDTH AT FACE OF WALK/APRON: 17.64 LF

17+27.46 (CUL-DE-SAC)

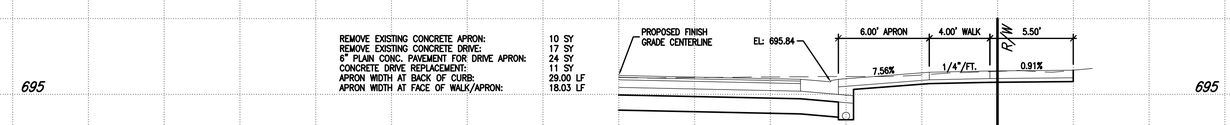
REMOVE EXISTING CONCRETE APRON: 10 SY
REMOVE EXISTING CONCRETE DRIVE: 16 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON: 25 SY
CONCRETE DRIVE REPLACEMENT: 12 SY
APRON WIDTH AT BACK OF CURB: 34.94 LF
APRON WIDTH AT FACE OF WALK/APRON: 20.64 LF

16+95.91 (CUL-DE-SAC)

REMOVE EXISTING CONCRETE APRON: 10 SY
REMOVE EXISTING CONCRETE DRIVE: 16 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON: 26 SY
CONCRETE DRIVE REPLACEMENT: 13 SY
APRON WIDTH AT BACK OF CURB: 33.61 LF
APRON WIDTH AT FACE OF WALK/APRON: 21.27 LF

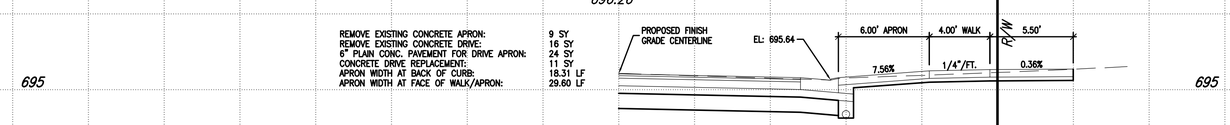
16+68.81 (CUL-DE-SAC)

REMOVE EXISTING CONCRETE APRON: 10 SY
REMOVE EXISTING CONCRETE DRIVE: 17 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON: 24 SY
CONCRETE DRIVE REPLACEMENT: 11 SY
APRON WIDTH AT BACK OF CURB: 29.00 LF
APRON WIDTH AT FACE OF WALK/APRON: 18.03 LF



696.1
16+34.82
696.26

REMOVE EXISTING CONCRETE APRON: 9 SY
REMOVE EXISTING CONCRETE DRIVE: 16 SY
6" PLAIN CONC. PAVEMENT FOR DRIVE APRON: 24 SY
CONCRETE DRIVE REPLACEMENT: 11 SY
APRON WIDTH AT BACK OF CURB: 18.31 LF
APRON WIDTH AT FACE OF WALK/APRON: 29.60 LF



696.1
15+66.95
696.06

SHEET TOTAL 50 40 30 20 10 0 10 20 30 40 50 SHEET TOTAL

CALCULATED TM
CHECKED JS

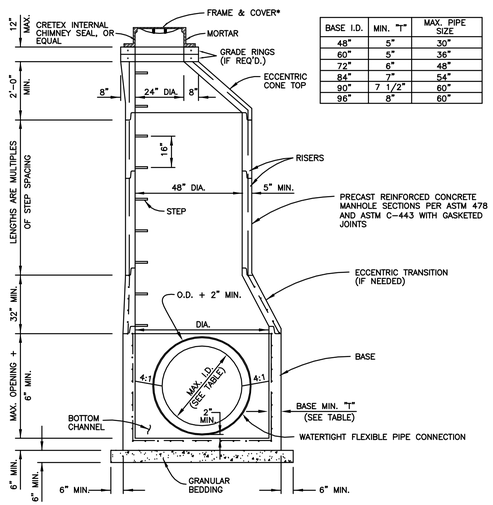
REV. NO.	DATE

GGI
Geotechnical Consulting engineers
3060 Corte Ave. Ste. A
Ph: 440.821.0287 Fax: 440.821.0380
Email: ggi@ggiengineers.com www.ggiengineers.com

EAST FOREST STREET IMPROVEMENTS PHASE I
CROSS SECTIONS

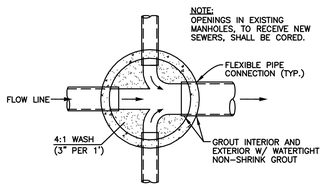
CITY OF CLYDE

*FRAME & GRATE NOTE:
STD. FRAME & GRATE: EAST JORDAN #1045 FRAME, TYPE A, NON-VENTED LID ("SANITARY" LETTERING) CITY OF CLYDE STANDARD, OR EQUAL
GRADE RINGS WILL BE PRECAST CONCRETE, 4"MIN. TO 12"MAX. THICKNESS



BASE I.D.	MIN. "T"	MAX. PIPE SIZE
48"	5"	30"
60"	5"	36"
72"	6"	48"
84"	7"	54"
90"	7 1/2"	60"
96"	8"	60"

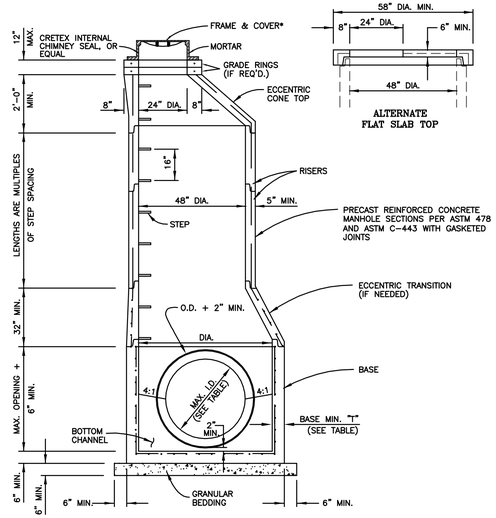
NOTE:
OPENINGS IN EXISTING MANHOLES, TO RECEIVE NEW SEWERS, SHALL BE CORED.



CHANNEL DETAIL

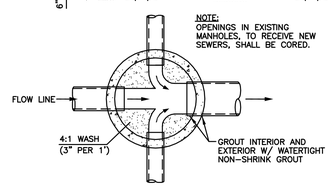
SANITARY MANHOLE
NOT TO SCALE

*FRAME & GRATE NOTE:
STD. FRAME & GRATE: EAST JORDAN #1045 FRAME, TYPE B, VENTED LID ("STORM" LETTERING) CITY OF CLYDE STANDARD, OR EQUAL
GRADE RINGS WILL BE PRECAST CONCRETE, 4"MIN. TO 12"MAX. THICKNESS



ALTERNATE FLAT SLAB TOP

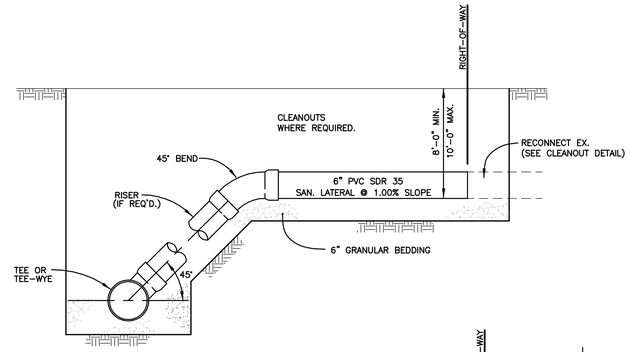
NOTE:
OPENINGS IN EXISTING MANHOLES, TO RECEIVE NEW SEWERS, SHALL BE CORED.



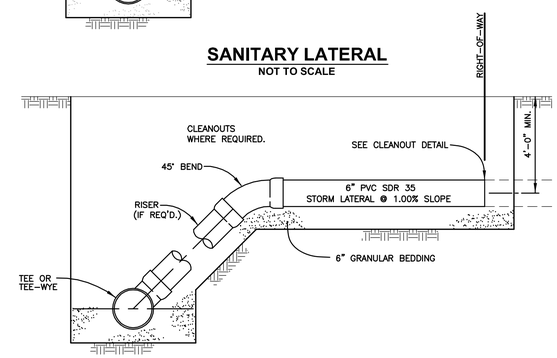
CHANNEL DETAIL

BASE I.D.	MIN. "T"	MAX. PIPE SIZE
48"	5"	30"
60"	5"	36"
72"	6"	48"
84"	7"	54"
90"	7 1/2"	60"
96"	8"	60"

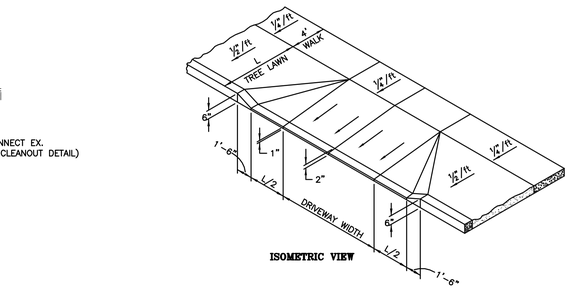
STORM MANHOLE
NOT TO SCALE



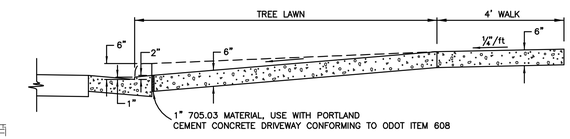
SANITARY LATERAL
NOT TO SCALE



STORM LATERALS
NOT TO SCALE

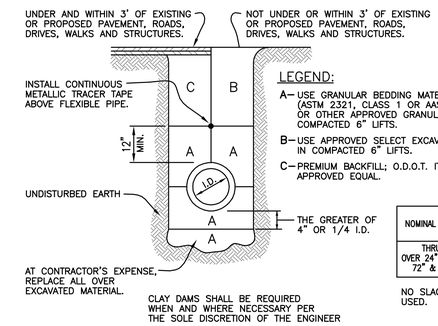


ISOMETRIC VIEW



DRIVEWAY PROFILE

DRIVEWAY APRONS
NOT TO SCALE



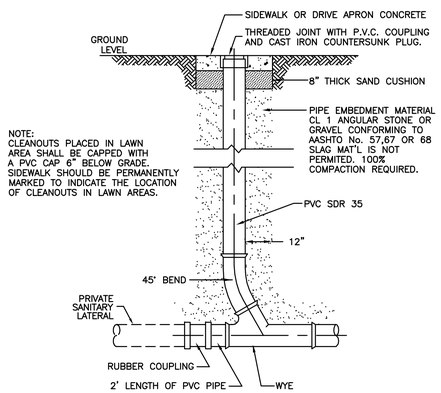
LEGEND:
A– USE GRANULAR BEDDING MATERIAL TYP. (ASTM 2321, CLASS 1 OR AASHTO 56,57,68) OR OTHER APPROVED GRANULAR MATERIAL IN COMPACTED 6" LIFTS.
B– USE APPROVED SELECT EXCAVATED MATERIAL, IN COMPACTED 6" LIFTS.
C– PREMIUM BACKFILL; O.D.O.T. ITEM 304 OR APPROVED EQUAL.

NOMINAL PIPE DIA.	MAX. TRENCH WIDTH AT TOP OF PIPE
THRU 24"	O.D. + 24"
OVER 24" THRU 66"	O.D. + 30"
72" & LARGER	O.D. + 48"

NO SLAG BEDDING SHALL BE USED.

TRENCH & BEDDING DETAILS
NOT TO SCALE

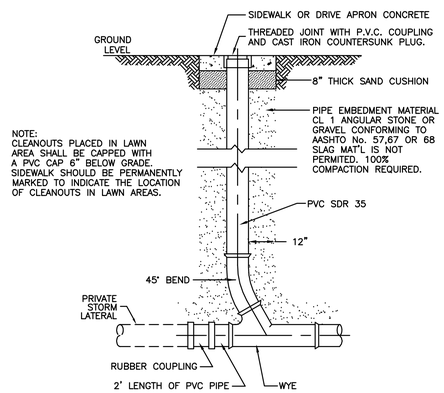
NOTE:
THE CLEANOUT DIAMETER SHALL BE EQUAL TO SEWER DIAMETER.



NOTE:
CLEANOUTS PLACED IN LAWN AREA SHALL BE CAPPED WITH A PVC CAP 6" BELOW GRADE. SIDEWALK SHOULD BE PERMANENTLY MARKED TO INDICATE THE LOCATION OF CLEANOUTS IN LAWN AREAS.

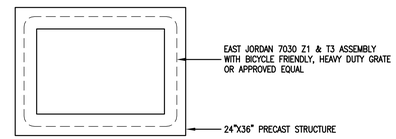
SANITARY CLEANOUT
NOT TO SCALE

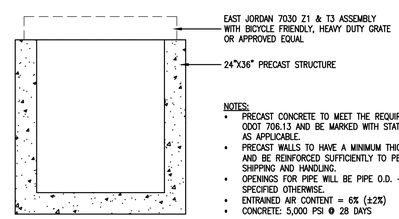
NOTE:
THE CLEANOUT DIAMETER SHALL BE EQUAL TO SEWER DIAMETER.



NOTE:
CLEANOUTS PLACED IN LAWN AREA SHALL BE CAPPED WITH A PVC CAP 6" BELOW GRADE. SIDEWALK SHOULD BE PERMANENTLY MARKED TO INDICATE THE LOCATION OF CLEANOUTS IN LAWN AREAS.

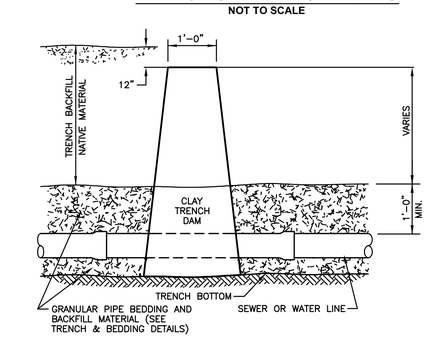
STORM CLEANOUT
NOT TO SCALE





NOTES:
- PRECAST CONCRETE TO MEET THE REQUIREMENTS OF ODOT 706.13 AND BE MARKED WITH STATION NUMBER AS APPLICABLE.
- PRECAST WALLS TO HAVE A MINIMUM THICKNESS OF 6" AND BE REINFORCED SUFFICIENTLY TO PERMIT SHIPPING AND HANDLING.
- OPENINGS FOR PIPE WILL BE PIPE O.D. + 2" UNLESS SPECIFIED OTHERWISE.
- ENTRAINED AIR CONTENT = 6% (±2%)
- CONCRETE: 5,000 PSI @ 28 DAYS

INLET BASIN
NOT TO SCALE



NOTE:
1. COST PER EACH CLAY DAM TO BE INCLUDED PER LINEAR FOOT OF PIPE INSTALLED.
2. CONTRACTOR TO ESTIMATE A MAXIMUM OF 2 CLAY DAMS PER WATER, SANITARY SEWER AND STORM SEWER INSTALLED.
3. LOCATIONS TO BE FIELD DETERMINED, AS NEEDED.

TRENCH DAM DETAIL
NOT TO SCALE

STANDARD CONSTRUCTION DRAWINGS
OHIO DEPT. OF TRANSPORTATION

NAME	REV. DATE	TITLE
BP-5.1	7-28-00	CONCRETE CURBS & COMBINED CURB & GUTTERS
BP-7.1	10-15-10	NEW CURB RAMPS WITH DETECTABLE WARNINGS

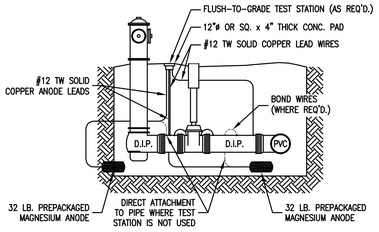
CALCULATED	CHECKED
TM	JS

REV. NO.	DATE

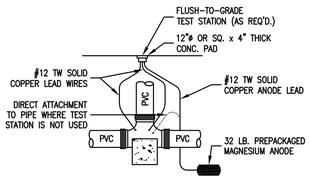
GPI geotechnical & building engineers
3966 Orth Place North
Fx: 440.835.0280
www.gpiengineers.com

EAST FOREST STREET IMPROVEMENTS PHASE I
STANDARD DETAILS

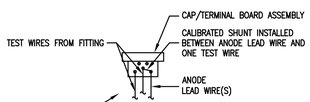
CITY OF CLYDE

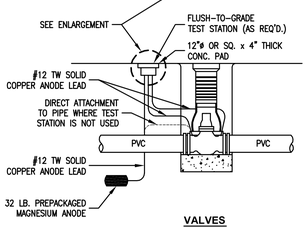


HYDRANT



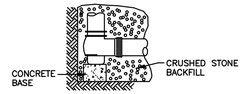
FITTINGS & BENDS





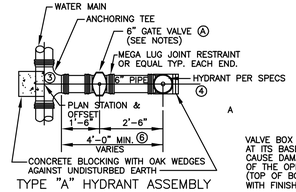
VALVES

CATHODIC PROTECTION
NOT TO SCALE



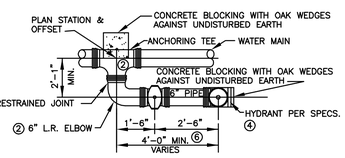
HYDRANT BLOCKING

1. RESTRAINED JOINTS TO BE A MEGA LUG OR ANCHOR TYPE M.J. COUPLINGS.
2. HYDRANT TEE (CLOW NO. F-1224 OR APPROVED EQUAL) ON DUCTILE IRON OR C900 PVC PIPE FOR MAIN SIZES 6" THRU 12" DIA. STD. M.J. TEE W/6" BRANCH ON DUCTILE IRON OR C900 PVC PIPE FOR MAIN SIZES 16" AND LARGER OR 6" C.I. M.J. OUTLET FOR ALL PRESTRESSED CONCRETE CYLINDER PIPE ALONG W/6" C.I. M.J. 90° ANCHORING ELBOW.
3. STD. M.J. TEE W/6" BRANCH FOR ALL SIZES OF DUCTILE IRON OR C900 PVC PIPE OR 6" C.I. M.J. OUTLET FOR ALL PRESTRESSED CONCRETE CYLINDER PIPE – ONLY.
4. HYDRANT TO BE IN ACCORDANCE WITH SPECIFICATIONS.
5. THE STD. HYD. BURY IS 6'-0"; HOWEVER, TO MEET THE SPECIFIED AND ILLUSTRATED MAIN COVER AND HYD. SETTINGS RESPECTIVE TO EACH HYDRANT LOCATION, IT WILL BE NECESSARY TO INSTALL A HYD. BURY THAT IS COMMENSURATE WITH THE LOCAL DEPTH REQUIREMENTS. IN EACH SUCH CASE, THE CONTRACTOR SHALL PROVIDE, AS A PART OF HYD. ITEM INVOLVED, A LENGTHENED OR SHORTENED HYD. BURY, AS NECESSARY TO ACHIEVE PROPER ASSEMBLY.
6. ADDITIONAL LENGTH IF REQUIRED AND APPROVED BY THE ENGINEER, TO BE PAID UNDER ITEM FOR CAST PIPE AND FITTINGS.

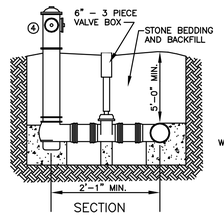


TYPE "A" HYDRANT ASSEMBLY

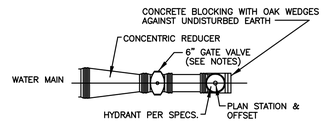
VALVE BOX TO BE SUPPORTED AT ITS BASE SO AS TO NOT CAUSE DAMAGE TO ANY PART OF THE OPERATING MECHANISM (TOP OF BOX TO BE FLUSH WITH FINISH GRADE.)



TYPE "B" HYDRANT ASSEMBLY

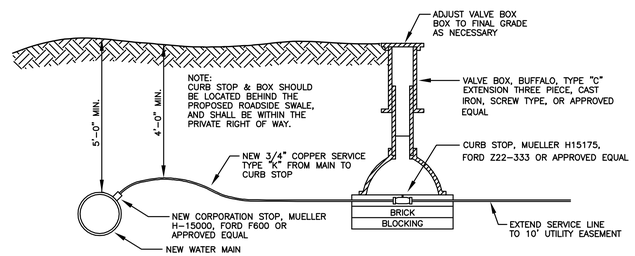


SECTION

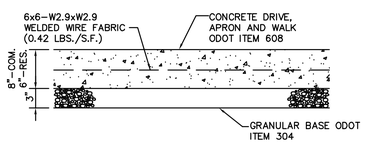


TYPE "C" HYDRANT ASSEMBLY

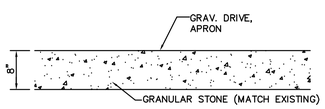
CITY OF CLYDE WATER DEPT. HYDRANT ASSEMBLY DETAIL
NOT TO SCALE



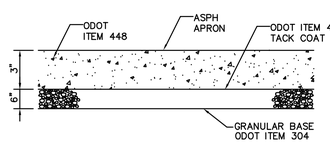
CITY OF CLYDE WATER DEPT. SERVICE CONNECTION
NOT TO SCALE



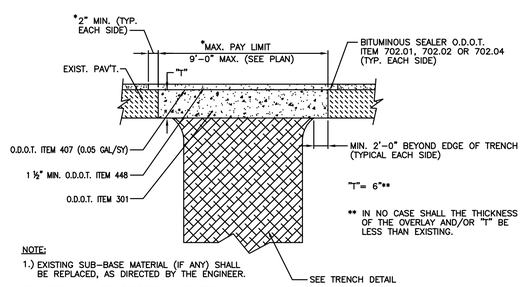
CONC. DRIVE SECTION
NOT TO SCALE



GRAV. DRIVE SECTION
NOT TO SCALE

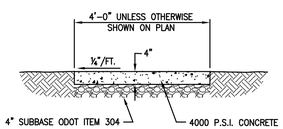


ASPH. DRIVE SECTION
NOT TO SCALE



NOTE:
1.) EXISTING SUB-BASE MATERIAL (IF ANY) SHALL BE REPLACED, AS DIRECTED BY THE ENGINEER.
2.) LIMITS SHALL BE DECREASED WHEN TRENCH IS ADJACENT TO EXISTING CURB. IN WHICH CASE THE PAY LIMITS SHALL NOT ENCROACH CLOSER THAN 1'-0" TO THE FACE OF CURB OR THE EDGE OF ANY INTEGRAL CURB AND GUTTER.

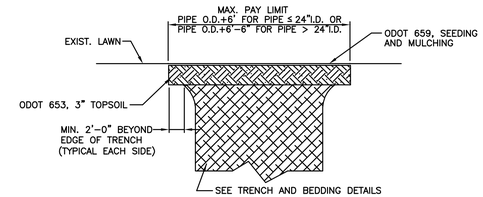
TYPE 'C' PAVEMENT RESTORATION
NOT TO SCALE



APPLY (2) COATS OF ANTI-SPALLING COMPOUND 3 WEEKS AFTER CONCRETE IS POURED. ALLOW DRYING TIME BETWEEN COATS.

NOTE:
WALK TO BE DIVIDED INTO SPACED BLOCKS AT APPROXIMATELY 5' INTERVALS. EXPANSION JOINT FILLER 1" THICK SHALL BE INSTALLED BETWEEN WALK AND ANY FIXED STRUCTURE, EXTENDING FOR THE FULL DEPTH OF THE SIDEWALK. THE EXPANSION JOINT FILLER SHALL BE 1" THICK WHERE WALK IS INSTALLED AGAINST BACK OF CURB.

TYPICAL SIDEWALK DETAIL
NOT TO SCALE



LAWN RESTORATION DETAIL
NOT TO SCALE

BACTERIOLOGICAL TESTING PROCEDURE FOR WATERLINE

BACTERIOLOGICAL TESTING AND STERILIZATION. THE CONTRACTOR SHALL SUPPLY ALL EQUIPMENT, MATERIALS AND LABOR NECESSARY TO STERILIZE THE PROPOSED WATER MAINS AND APPURTENANCES FOR SAMPLE COLLECTION IN ACCORDANCE WITH THE WATER MAIN CONSTRUCTION AND MATERIAL SPECIFICATIONS AND AWWA STANDARD C651-92 SECTION 7.1 THROUGH 7.3. BACTERIOLOGICAL SAMPLES SHALL BE COLLECTED BY THE CITY OF CLYDE WATER DEPARTMENT IN AN APPROVED CONTAINER.

LOCATION OF SAMPLING TAPS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. SAMPLING STATIONS THAT ARE INDICATED ON THE PLANS ARE TO BE PERMANENT AND INSTALLED AT THE LOCATIONS SHOWN.

WATER IN THE MAIN TO BE DISINFECTED SHOULD HAVE A TURBIDITY ACCEPTABLE TO THE CITY OF CLYDE DEPARTMENT OF UTILITIES. ALL TESTS TO BE PERFORMED BY THE CITY OF CLYDE LABORATORY OR A CITY OF CLYDE DEPARTMENT OF UTILITIES – APPROVED LABORATORY.

THE PROCEDURES FOR BACTERIOLOGICAL TESTING ARE AS FOLLOWS:

1. BACTERIOLOGICAL TESTING TO BE PERFORMED BY CITY OF CLYDE PERSONNEL ONLY AFTER PRESSURE TEST AND ALL OTHER TEST REQUIREMENTS ARE COMPLETED SATISFACTORILY.
2. DISINFECTION OF WATER MAINS PER CITY OF CLYDE "RULES AND REGULATIONS" IS FIFTY PARTS PER MILLION (50 P.P.M.) CHLORINE FOR 24 HOURS.
3. CONTRACTOR SHALL SCHEDULE WITH CITY OF CLYDE TO FLUSH MAIN UNTIL THE SYSTEM WATER AND SYSTEM CHLORINE RESIDUAL ARE PRESENT AT THE CHECK POINT TO THE SATISFACTION OF THE DEPARTMENT OF UTILITIES. THE RESIDUAL SHOULD BE 0.2 MG/L CHLORINE OR HIGHER.
4. CONTRACTOR SHALL SCHEDULE WITH CITY OF CLYDE LABORATORY AFTER STEP 3 AND THEN LET THE WATER STAND IN THE MAIN UNDISTURBED FOR 24 HOURS WITH NO ACTIVITY ON THE MAIN.
5. AFTER 24 HOURS, CITY OF CLYDE PERSONNEL CHECK CHLORINE RESIDUAL.
6. IF CHLORINE RESIDUAL IS STILL SATISFACTORY, THEN CITY OF CLYDE PERSONNEL WILL TAKE THE FIRST (OF TWO) BACTERIOLOGICAL SAMPLES AND FORWARD TO CITY OF CLYDE LABORATORY FOR ACCEPTABILITY.
7. CHECK WITH CITY OF CLYDE LABORATORY AFTER THIS TIME PERIOD (24 HOURS) FOR THE FIRST SAMPLE ACCEPTABILITY, AND IF APPROVED, PROCEED WITH STEP #8. (CONTACT CITY OF CLYDE DEPARTMENT OF UTILITIES FOR REMEDIAL PROCEDURE IF DISAPPROVED).
8. CITY OF CLYDE PERSONNEL WILL CHECK WATER MAIN AGAIN TO SEE IF CHLORINE RESIDUAL IS STILL PRESENT.
9. IF CHLORINE RESIDUAL IS STILL PRESENT, PROCEED WITH STEP #10.
10. CITY OF CLYDE PERSONNEL WILL TAKE SECOND BACTERIOLOGICAL SAMPLE AND FORWARD TO CITY OF CLYDE LABORATORY.
11. WAIT ANOTHER 24 HOURS AND CHECK WITH CITY OF CLYDE LABORATORY FOR SECOND SAMPLE ACCEPTABILITY. (CONTACT CITY OF CLYDE DEPARTMENT OF UTILITIES FOR REMEDIAL PROCEDURE IF DISAPPROVED).
12. IF SECOND SAMPLE IS APPROVED BY CITY OF CLYDE LABORATORY, PROCEED WITH STEP #13.
13. CITY OF CLYDE LABORATORY WILL ISSUE A WRITTEN REPORT THAT WATER MAIN IS SAFE AND ACCEPTABLE FOR SERVICE.
14. NEW WATER MAIN WILL BE MADE OPERATIONAL ONLY BY CITY OF CLYDE DEPARTMENT OF UTILITIES PERSONNEL.

WATER DISTRIBUTION MATERIAL SPECIFICATIONS

FIRE HYDRANTS: FIRE HYDRANTS SHALL BE MANUFACTURED BY THE MEULLER COMPANY AND REFERRED TO AS THE "CENTURION A 423". THE HYDRANTS SHALL HAVE A 6 INCH MECHANICAL JOINT INLET CONNECTION, A 5 1/4 INCH MAIN VALVE OPENING, TWO 2-1/2 INCH N.S.T. HOSE NOZZLES AND ONE 5 INCH STORZ PUMPER NOZZLE. ALL OUTLET NOZZLES SHALL HAVE MALE THREADS OF BRONZE AND SHALL BE NATIONAL (AMERICAN) STANDARD THREADS. HYDRANTS SHALL BE FURNISHED SHALL BE FURNISHED FOR CORRECT TRENCH DEPTH. FIRE HYDRANTS SHALL BE RATED A MINIMUM OF 200 PSI WORKING PRESSURE AND 400 PSI TEST PRESSURE. HYDRANTS SHALL BE PAINTED (CITY STANDARD RED).

GATE VALVES: GATE VALVES SHALL BE MANUFACTURED BY MUELLER COMPANY AND REFERRED TO AS THE "A-2360-20 RESILIENT SEAT WEDGE GATE VALVE". THE VALVES SHALL OPEN TURNING COUNTERCLOCKWISE. ALL VALVES SHALL HAVE OPENINGS THROUGH THE BODY OF THE SAME CIRCULAR AREA AS THAT OF THE PIPE TO WHICH THEY ARE ATTACHED. VALVES SHALL HAVE MECHANICAL JOINT ENDS.

TAPPING VALVES: TAPPING VALVES SHALL BE MANUFACTURED BY THE MUELLER COMPANY AND REFERRED TO AS "RESILIENT SEAT WEDGE GATE VALVE". THE VALVES SHALL ALSO OPEN COUNTERCLOCKWISE.

PIPE AND FITTINGS: PIPE MATERIAL SHALL BE POLYVINYL CHLORIDE AWWA C-900 CLASS 150, DR-18 OR EQUIVALENT DUCTILE IRON. FITTINGS SHALL BE DUCTILE IRON CLASS 350, CEMENT LINED, WITH MECHANICAL JOINTS FURNISHED WITH GASKETS AND BOLTS LESS GLANDS AND SECURED WITH MEGA LUG RETAINING GLANDS. ALL PIPE SHALL HAVE INSTALLED LOCATE WIRE AND WATER LINE BELOW RIBBON. WIRE SHALL BE PLACED OR ATTACHED TO THE MIDDLE OF THE PIPE.

TAPPING SADDLE: TAPPING SADDLES SHALL BE IRON BODY MEULLER OR FAST STYLE. FAST STYLE SLEEVES SHALL BE MADE OF STAINLESS STEEL WITH A STAINLESS STEEL OR CARBON STEEL FLANGE WITH SUFFICIENT O.D. RANGE TO BE INSTALLED ON AC PIPE.

VALVE BOXES: ALL TWO PIECE SCREW TYPE VALVE BOXES SHALL BE 5 1/4 INCH AND OF SUCH LENGTH NECESSARY TO EXTEND VALVES TO FINISH GRADE. ALL THREE PIECE SCREW TYPE VALVE BOXES SHALL BE 5 1/4 INCH AND OF SUCH LENGTH TO EXTEND A 12 INCH VALVE TO FINISH GRADE. ALL VALVE BOX COVERS SHALL BE MARKED "WATER".

RESIDENTIAL SERVICE LINES

TAPPING SADDLES: SHALL BE STRAPPED OR TWO PIECE AND MADE OF BRASS. FORD STYLE S70, S90 OR 202B WILL BE USED FOR TAPS 3/4 INCH OR LARGER. ANY SADDLE SHALL MEET ASTM B-62 AND AWWA C800 STANDARDS.

CORPORATION STOPS: PACK JOINT WITH AWWA/CC TAPER THREADS FORD F1000 OR EQUIVALENT MUELLER.

CURB STOPS: PACK JOINT BALL VALVE FORD B44-333 OR MUELLER EQUIVALENT.

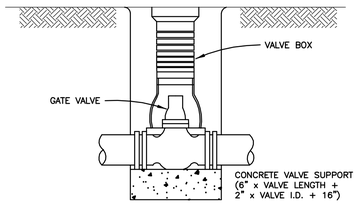
SERVICE LINES: K COPPER ONLY AS OUTLINED IN CLYDE CODE OF ORDINANCES 1982-34.

CURB BOXES: ARCH PATTERN WITH ONE INCH UPPER SECTION, TYPE HS WITH TWO HOLE LID FURNISHED WITH ROD AND BROUGHT TO GRADE.

WATERLINE THRUST RESTRAINT REQUIREMENTS
(MEG-A-LUG OR EQUAL)

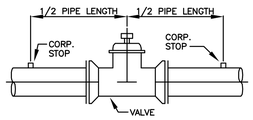
TEES				BENDS			REDUCERS			DEAD ENDS	
Run Size	Branch Size	Length to Be Restrained			Run Size	Length to Be Restrained	Run Size	Run Size	Length To Be Restrained	Run Size	Length To Be Restrained
Dia. in.	Dia. in.	Branch	Run	Degrees	Dia. in.	ft	Large End	Small End	Large Side	Dia. in.	ft
6	6	15	8	11.25	6	2	Dia. in.	Dia. in.	ft	6	44
8	6	6	8	11.25	8	3	8	4	42	8	58
8	8	22	10	11.25	10	3	8	6	24	10	69
10	6	9	6	11.25	12	4	12	8	43	12	82
10	6	1	8	11.25	16	5	12	10	40	16	106
10	8	22	8	22.5	6	4	16	12	45		
10	8	13	10	22.5	8	5	45 Deg VERTICAL OFFSETS				
10	10	33	10	22.5	10	6	Run Size	Length To Be Restrained			
12	6	2	6	22.5	12	7	Dia. in.	Upper	Lower		
12	8	15	8	22.5	16	10	16	44	16		
12	8	4	10	45	6	8	12	34	12		
12	10	27	10	45	8	11	10	29	10		
12	12	46	10	45	10	13	8	24	8		
16	6	4	10	45	12	16	6	18	6		
16	8	15	6	45	16	20	4	13	4		
16	10	12	10	90	6	20					
16	12	34	10	90	8	26					
16	16	70	10	90	10	32					
				90	12	37					
				90	16	49					

Basis:
12" PVC with D.I. Fittings; Soil Type – CL with Granular Fill; Trench Type 3; Test Pressure 150 psi; 1.5 Safety Factor; 4 ft. Depth of Bury (These Basis Data are Intended to Equal or Exceed Actual Installation Conditions.)



VALVE SETTING
NOT TO SCALE

NOTE:
CORPORATION STOPS TO BE PLUGGED AFTER STERILIZATION AND TESTING.



1"ø CORPORATION STOPS ON ALL LINES 12"ø & LESS

STERILIZATION & TESTING CONNECTIONS AT VALVES
NOT TO SCALE

CALCULATED TM | CHECKED JS

REV. NO.	DATE	

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EAST FOREST STREET IMPROVEMENTS PHASE I
STANDARD DETAILS

CITY OF CLYDE