

TYPICAL LEGEND

	ELECTRIC BOX		BUS STOP
	UTILITY POLE		GUTTER INLET
	HYDRANT		VALVE
	WATER METER		MONUMENT BOX
	CENTER LINE		POST
	GUYWIRE		SIGN
	MANHOLE		TREE
	ELECTRIC MANHOLE		SHRUB
	TELEPHONE MANHOLE		STUMP
	INLET		POLE
	GAS VALVE		PAVEMENT CORE AND SOIL BORINGS
	PARKING METER		PROPERTY LINE
	PROP. CATCH BASIN		RIGHT OF WAY LINE
	PROP. MANHOLE		EX. STORM
	MANHOLE ADJUSTED/ RECONSTRUCTED TO GRADE		EX. SANITARY
	PROP. MON. BOX		EX. WATER LINE
			EX. GAS LINE
			EX. TELEPHONE CONDUIT
			EX. ELEC. CONDUIT
			EX. FENCE

DESIGN DESIGNATIONS

CURRENT ADT	WOODLAND AVE. 19,150	KINSMAN AVE. 19,350
DESIGN SPEED	40 MPH	40 MPH
POSTED SPEED	35 MPH	35 MPH
FUNCTIONAL CLASS	PRINCIPAL ARTERIAL	PRINCIPAL ARTERIAL

PROJECT DESCRIPTION

Rehabilitation of Woodland/Kinsman from East 34th to East 93rd Street. Work includes the grinding and replacement of the existing asphalt overlay replacement of existing sidewalks, driveways and curbs where needed, installation of traffic signals, waterline cleaning and lining, and ADA compliant curb ramps throughout the project length.

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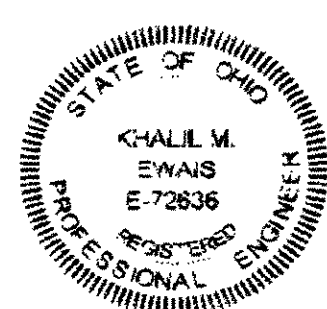
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UNDERGROUND UTILITIES

TWO WORKING DAYS
BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS
MUST BE CALLED DIRECTLY

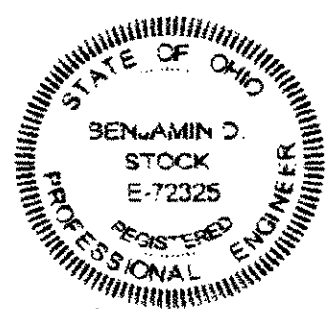
PROJECT No. _____
CONTRACT No. _____
DATE OF LETTING _____
DATE OF COMPLETION _____
CONSTRUCTED BY _____

ENGINEERS SEAL:
FOR ENTIRE PLAN
EXCEPT STRUCTURE PLANS



Signed: *Khalil M. Ewan*
Date: *7/8/08*

ENGINEERS SEAL:
STRUCTURE PLANS



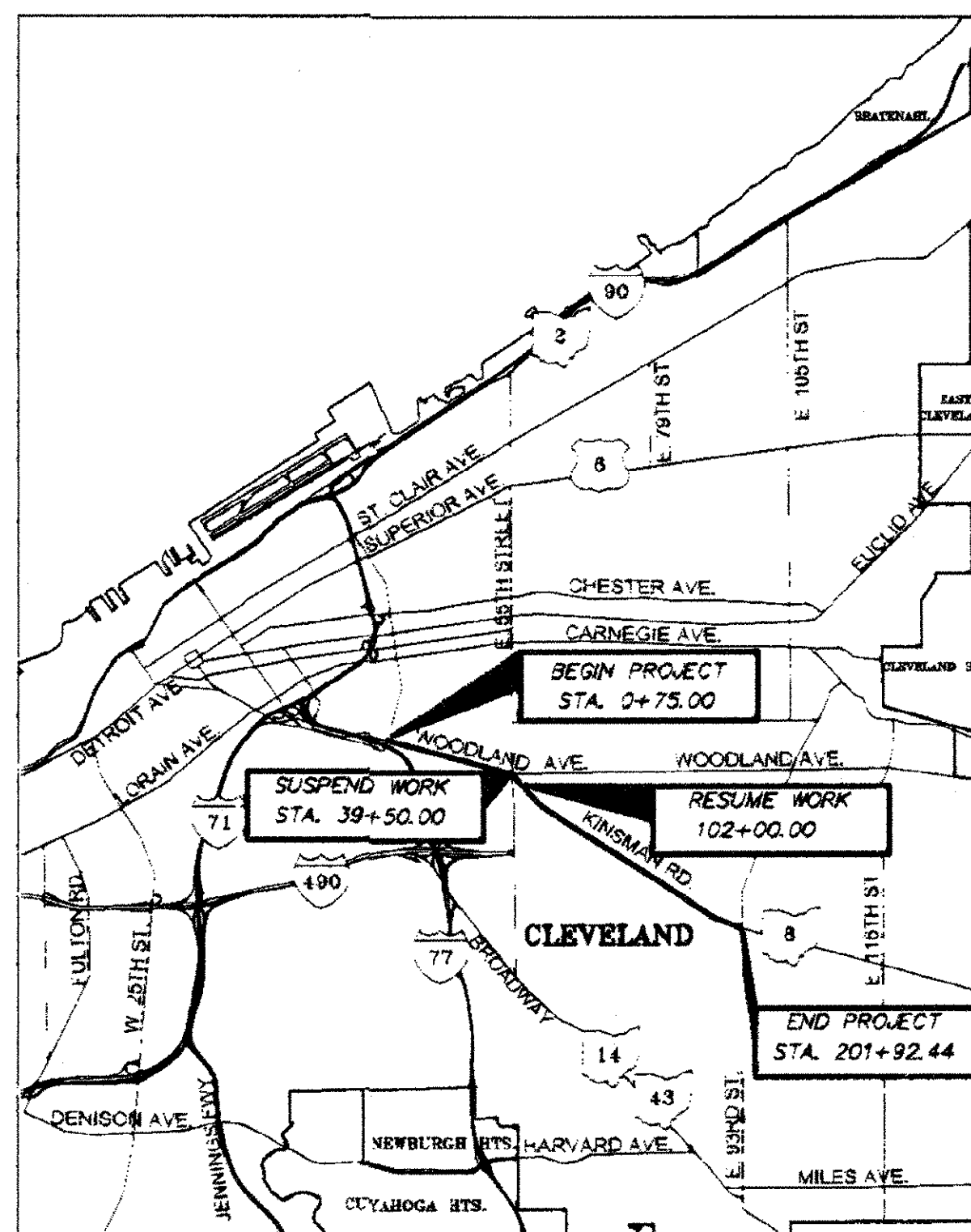
Signed: *Benjamin D. Stock*
Date: *6-25-2008*

CITY OF CLEVELAND

DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

CUY US 422 - 01.68 RESURFACING PROJECT

FROM E. 34th STREET TO E. 93rd STREET



LOCATION MAP

SCALE: 0' 5280' 10560'



STANDARD CONSTRUCTION DRAWINGS

73M	08/28/07	BP-1.1	07/28/00	WT-101.80	09/20/06	TC-52.20	01/19/07
944M	08/28/07	BP-2.1	07/19/04	WT-105.10	10/19/02	TC-71.10	01/19/07
446M	08/28/07	BP-2.2	07/19/04	WT-105.11	10/19/02	TC-73.10	01/19/07
527M	08/28/07	BP-3.1	10/19/07	WT-110.20	10/19/02	TC-81.20	01/19/07
175ME	08/28/07	BP-5.1	07/29/00			TC-82.10	04/19/02
244ME	08/28/07	BP-7.2	01/19/07	TC-21.20	01/19/07	TC-83.10	01/19/07
A-37	08/28/07			TC-22.10	01/19/07	TC-83.20	01/19/07
A-503	08/28/07	DM-1.1	4/21/06	TC-22.20	01/19/07	TC-84.20	01/19/07
A-605	08/28/07	DM-4.3	07/19/02	TC-41.20	01/19/07	TC-84.21	01/19/07
A-895	08/28/07	DM-4.4	07/19/02	TC-41.40	07/19/04	TC-85.10	04/19/02
CB-1	08/28/07			TC-41.41	01/19/07	TC-85.20	05/01/00
CB-2	08/28/07	WT-35.10	04/20/01	TC-41.50	01/19/07		
CD-1	08/28/07	WT-97.10	09/05/06	TC-42.10	01/19/07	HL-10.12	01/19/07
MB-1C	08/28/07	MT-97.11	09/05/06	TC-42.20	07/16/04	HL-30.11	01/21/05
VPF-1-90	07/19/02			TC-52.10	01/19/07	HL-30.22	01/21/05

FRANK G. JACKSON
MAYOR
MARTIN J. SWEENEY
President of Council
KENNETH L. JOHNSON
Councilman of Ward 4
PHYLLIS CLEVELAND
Councilwoman of Ward 5
JOMARIE WASIK
Director of Public Service
BARRY A. WITHERS
Interim Director of Public Utilities

Approved: *[Signature]* 6/25/08
Date: *6/25/08* RANDALL E. DEVAUL, P.E., Commissioner
DIVISION OF ENGINEERING AND CONSTRUCTION

Approved: *[Signature]* 06-25-08
Date: _____ ROBERT MAVEC, Commissioner
DIVISION OF TRAFFIC ENGINEERING

Approved: *[Signature]*
Date: *6/30/08* J. CHRISTOPHER NIELSON, P.E. Commissioner
DIVISION OF WATER

Approved: *[Signature]*
Date: *7/2/08* OLLIE SHAW, Commissioner
DIVISION OF WATER POLLUTION CONTROL

Approved: *[Signature]*
Date: *6/25/08* GREG ESBER, P.S., Chief Surveyor
DIVISION OF ENGINEERING AND CONSTRUCTION

Approved: *[Signature]*
Date: *6/25/08* RICK COLOMBO, Chief Construction Inspector
DIVISION OF ENGINEERING AND CONSTRUCTION

Approved: *[Signature]*
Date: *6/25/08* THOMAS BOYER, P.E., Chief Design Engineer
DIVISION OF ENGINEERING AND CONSTRUCTION

Approved: *[Signature]*
Date: *7-7-08* M. EGAN, Chief
BUREAU OF STREET LIGHTING

O.D.O.T.
SUPPLEMENTAL
SPECIFICATION

800-2008	04/19/08
802	04/15/08
843	04/18/03

RECEIVED
JUL 08 2008
PRODUCTION DEPT.

FEDERAL PROJECT NO.

PID NO.

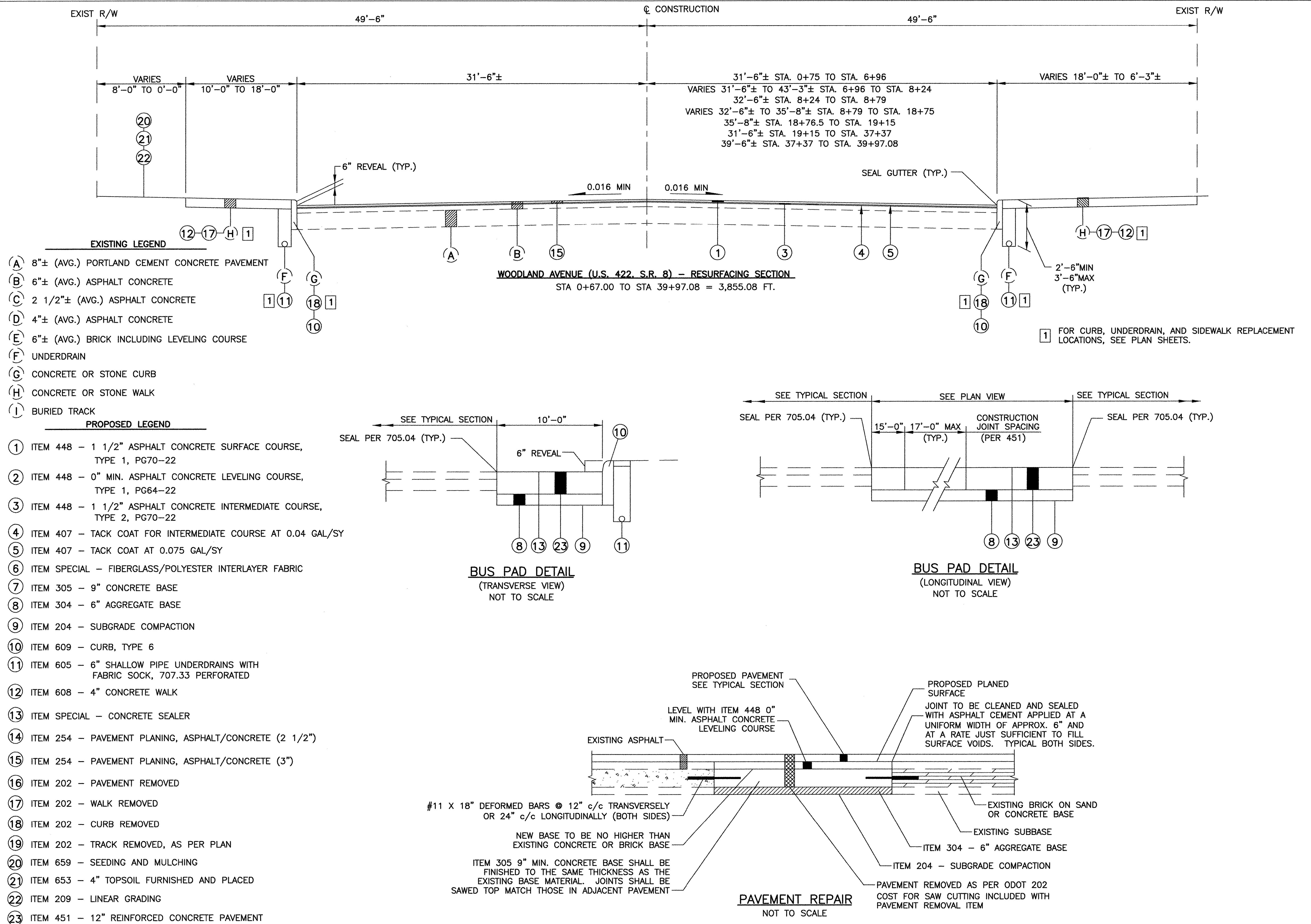
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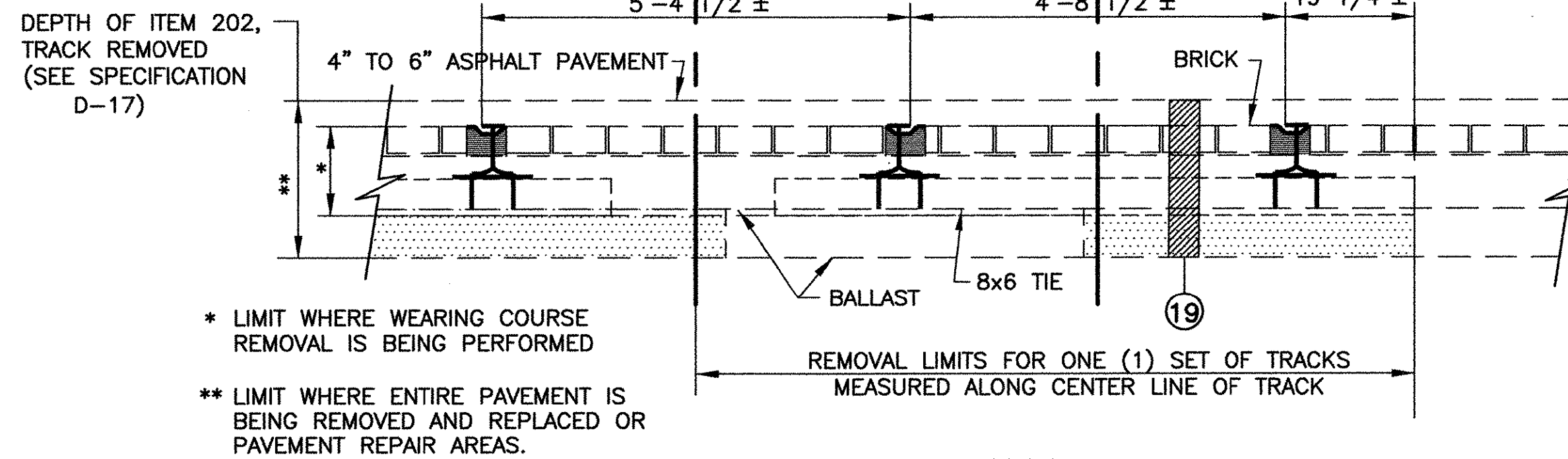
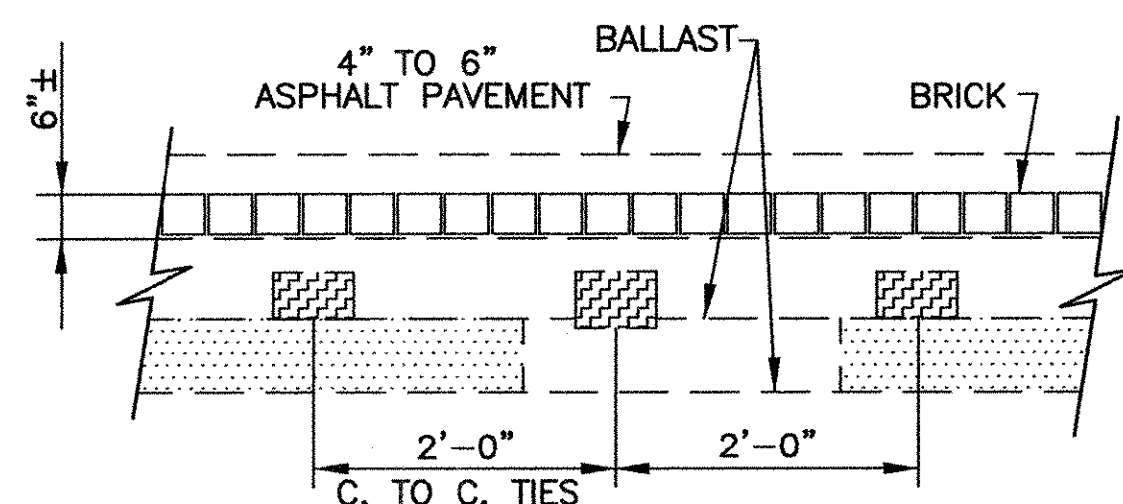
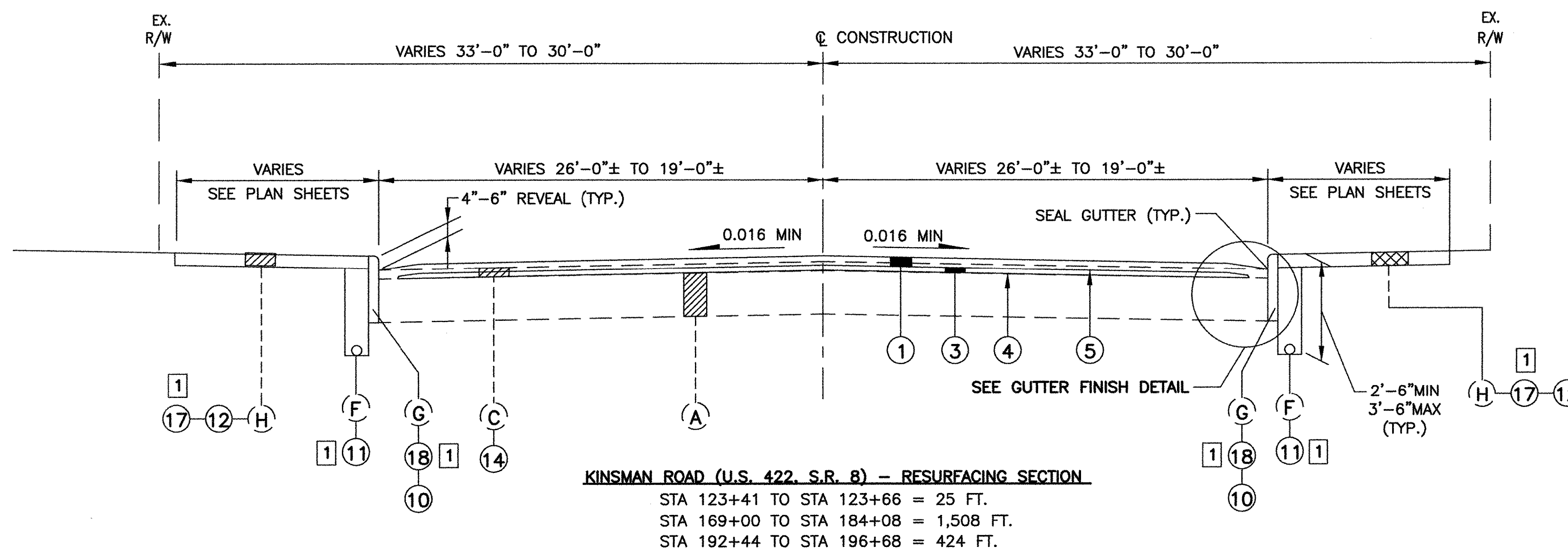
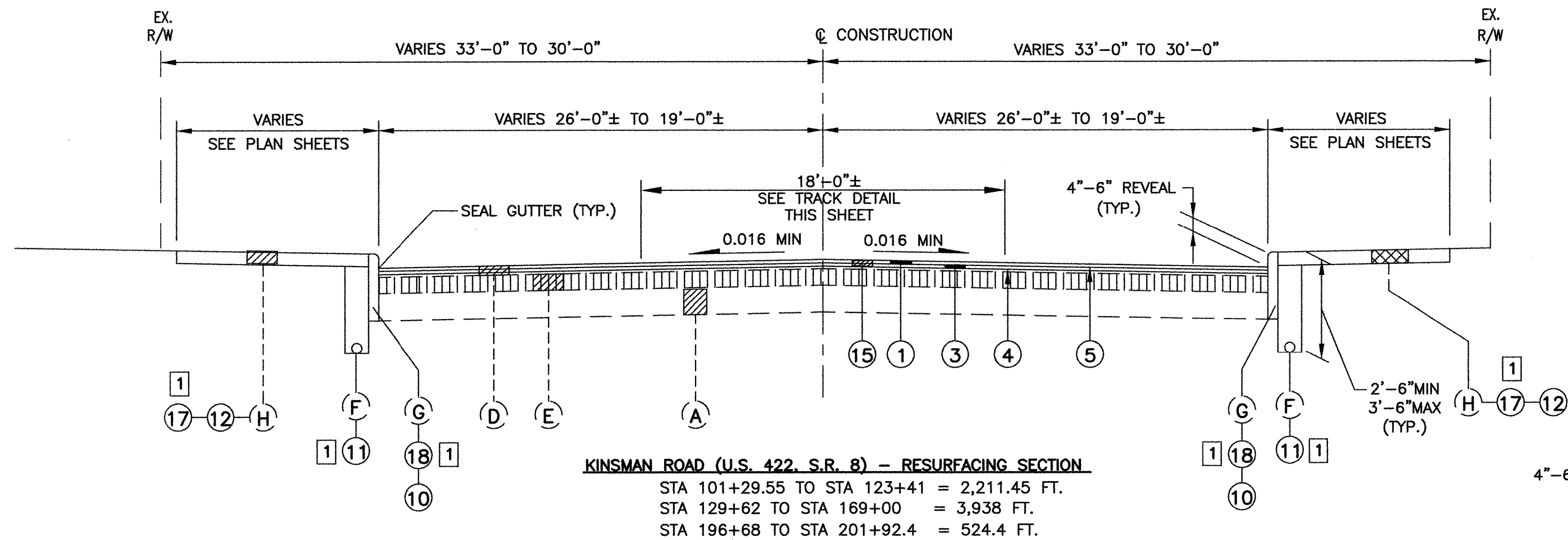
CITY PROJECT NO.

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

56

[\\G:\PROJ\0622\1009\00\ROADWAY\SHETS\TYPICALS\G01.DWG - FEB 09, 2007 - 11:31:32 - PLOT: 1=1]

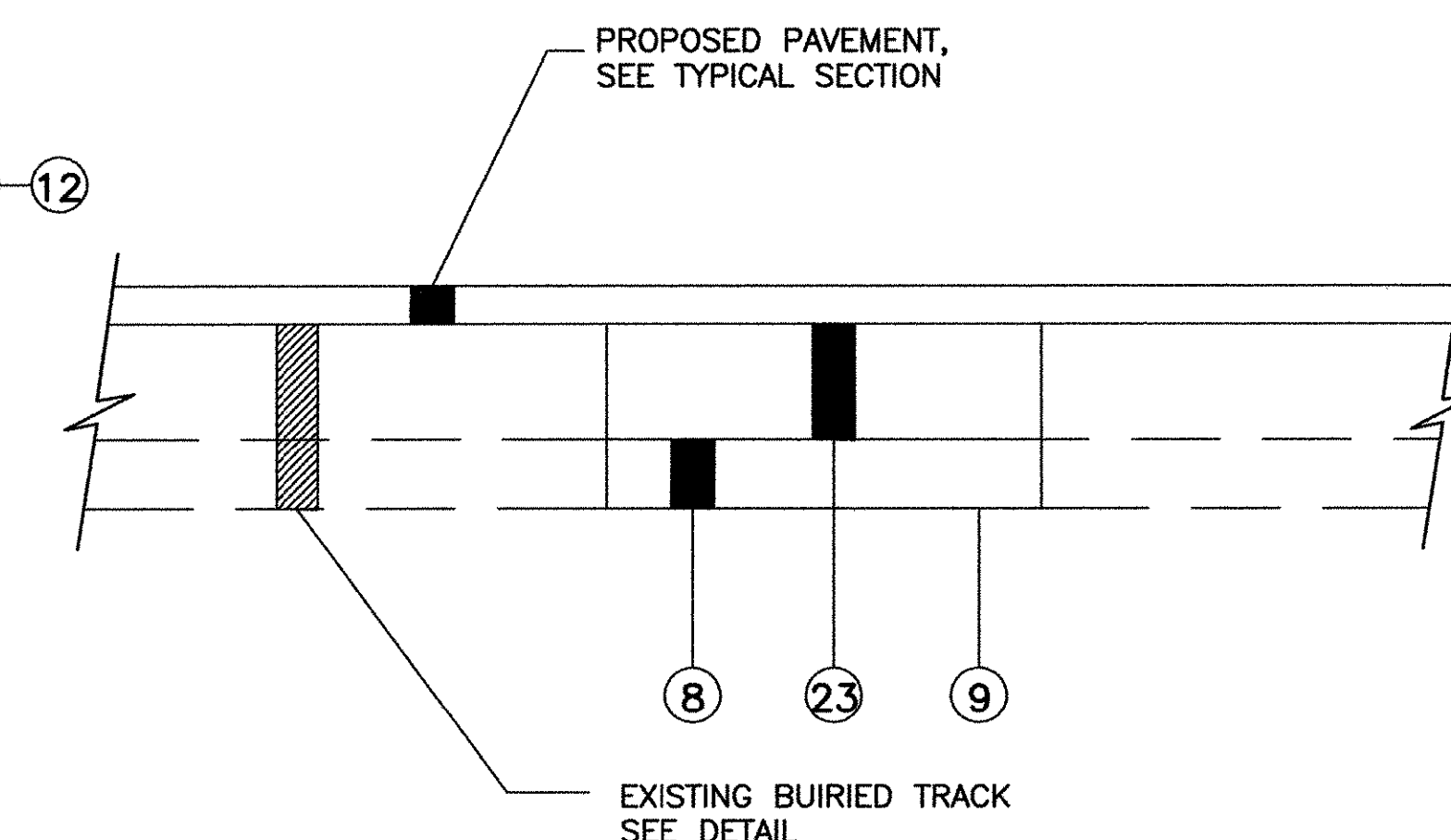
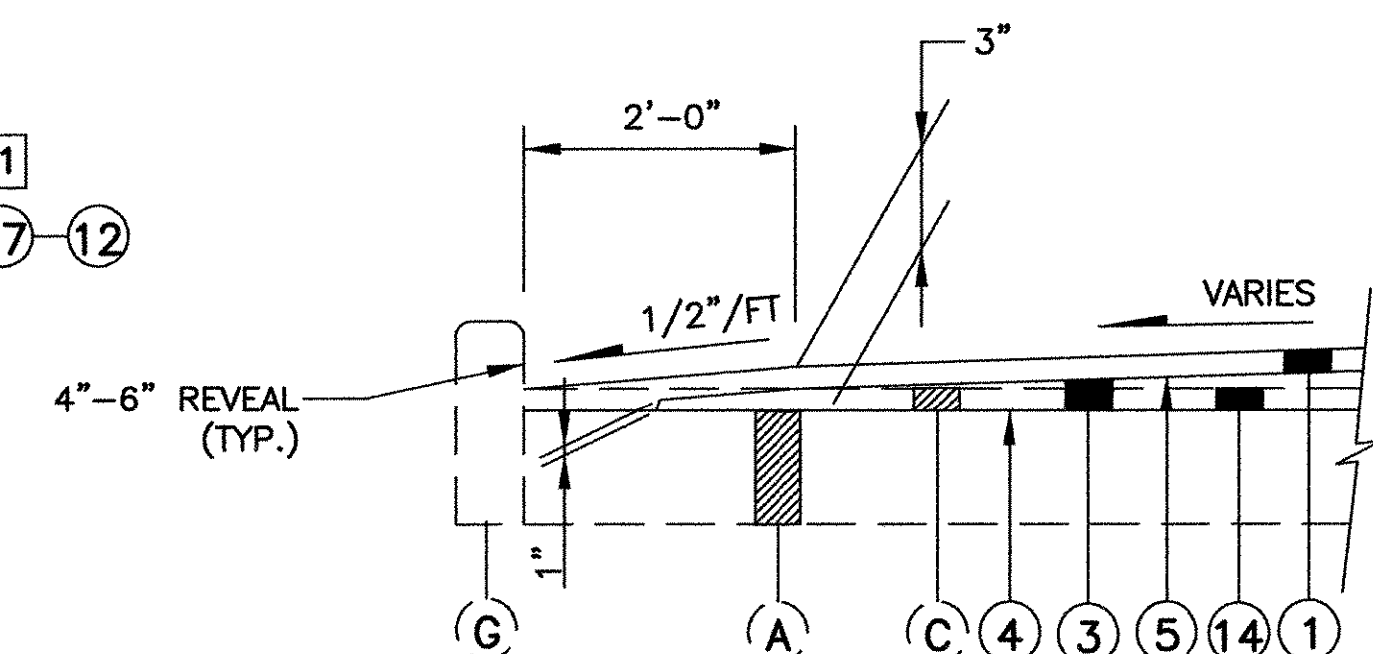




EXISTING BURIED TRACK DETAIL
 NO SCALE

1 FOR CURB, UNDERDRAIN, AND SIDEWALK REPLACEMENT LOCATIONS, SEE PLAN SHEETS.

FOR PROPOSED AND EXISTING LEGEND, SEE SHEET NO. 3.



NOTES:

1. TRENCH WIDTH, COMPOSITION AND THICKNESS ARE FROM RECORD DRAWINGS AND PAVEMENT CORINGS AND ARE APPROXIMATE ONLY.
2. TRACK INFORMATION SHOWN IS TAKEN FROM AVAILABLE RECORDS IN THE VICINITY OF THE PROJECT. THE DIMENSIONS SHOWN ARE FROM RECORD DRAWINGS AND ARE APPROXIMATE ONLY. THE ACCURACY OF THIS INFORMATION IS NOT GUARANTEED.

UTILITIES

LISTED BELOW ARE ALL THE UTILITIES LOCATED WITHIN THE PROJECT CONSTRUCTION LIMITS TOGETHER WITH THEIR RESPECTIVE OWNERS:

THE ILLUMINATING COMPANY/FIRST ENERGY
6896 MILLER ROAD, SUITE 101
BRECKSVILLE, OHIO 44141-3299
PAT PLETKA
(440) 550-9143

DOMINION EAST OHIO GAS COMPANY
1201 E. 55TH STREET
CLEVELAND, OHIO 44103
MIKE ANTONIUS
(216) 736-6675

A.T.&T. OHIO
13630 LORAIN AVENUE, ROOM 350
CLEVELAND, OHIO 44111-3436
ERIC WESTERBURG
(216) 476-6142

TIME WARNER CABLE
3300 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
SCOTT DOMPIER
(216) 575-8016 EXT. 3337

CITY OF CLEVELAND, DIVISION OF WATER
1201 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
GUY SINGER
(216) 664-2444 EXT. 5555

CITY OF CLEVELAND, DIVISION OF WATER POLLUTION CONTROL
12302 KIRBY AVENUE
CLEVELAND, OHIO 44108
ELIE RAMY
(216) 664-2756

CITY OF CLEVELAND, CLEVELAND PUBLIC POWER (CPP)
1300 LAKESIDE AVENUE
CLEVELAND, OHIO 44114
DALE TURKOVICH
(216) 664-3922

NORTHEAST OHIO REGIONAL SEWER DISTRICT
3900 EUCLID AVENUE
CLEVELAND, OHIO 44115
RICHARD SWITALSKI
(216) 881-6600

THE CONTRACTOR IS CAUTIONED THAT NOT ALL OF THE UNDERGROUND UTILITIES ARE SHOWN IN THE PLANS. THE CONTRACTOR SHALL NOTIFY THE OHIO UTILITIES PROTECTION SERVICE (O.U.P.S.) 1-800-362-2764 AT LEAST SEVENT-TWO (72) HOURS BEFORE WORK BEGINS, (NON-MEMBERS MUST BE CALLED DIRECTLY). THE CONTRACTOR SHALL FURNISH TO THE ENGINEER THE REFERENCE NUMBER.

STATIONING AND LOCATIONS

STATIONING AND LOCATIONS INDICATED ON THESE PLANS ARE APPROXIMATE. ALL LOCATIONS AND ITEMS CALLED OUT BY STATION ARE SUBJECT TO ADJUSTMENT IN THE FIELD "AS DIRECTED BY THE ENGINEER" AT NO ADDITIONAL COST.

EXISTING TYPICAL SECTIONS

EXISTING TYPICAL SECTIONS HAVE BEEN DEVELOPED FROM PAVEMENT CORES AND RECORD PLANS AND ARE BELIEVED TO REPRESENT THE WIDTH, DEPTH, AND COMPOSITION OF THE EXISTING PAVEMENT, BUT THE CITY OF CLEVELAND DOES NOT GUARANTEE THE ACCURACY OF THE SAME.

ELEVATION DATUM

ALL ELEVATIONS ARE BASED ON CLEVELAND REGIONAL GEODETIC SURVEY DATUM

WORK LIMITS

THE WORK LIMITS SHOWN ON THESE PLANS ARE FOR PHYSICAL CONSTRUCTION ONLY. PROVIDE THE INSTALLATION AND OPERATION OF ALL WORK ZONE TRAFFIC CONTROL AND WORK ZONE TRAFFIC CONTROL DEVICES REQUIRED BY THESE PLANS WHETHER INSIDE OR OUTSIDE THESE WORK LIMITS.

CLEARING AND GRUBBING

ALTHOUGH THERE ARE NO TREES OR STUMPS SPECIFICALLY MARKED FOR REMOVAL WITHIN THE LIMITS OF THE PROJECT, A LUMP SUM QUANTITY IS INCLUDED FOR ITEM 201, CLEARING AND GRUBBING. ALL PROVISIONS AS SET FORTH IN THE SPECIFICATIONS UNDER THIS ITEM ARE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 201, CLEARING AND GRUBBING.

CELLULAR COMMUNICATIONS

SUPPLEMENT DETAILED SPECIFICATIONS "D-45" BY ADDING THE FOLLOWING: THE CONTRACTOR SHALL FURNISH A NEXTEL CELLULAR COMMUNICATION DEVICE WITH INTEGRATED TWO-WAY RADIO AND TWO-WAY MESSAGING CAPABILITIES FOR THE USE OF THE CITY'S INSPECTOR FOR THE DURATION OF THE PROJECT. PAYMENT SHALL BE MADE UNDER ITEM 619 - ADDITIONAL NEXTEL WALKIE TALKIE FOR CITY INSPECTOR.

ITEM 202 - REMOVAL ITEMS

THE COST OF REMOVING AND DISPOSING OF ITEMS PURSUANT TO ITEM 202.05 INCLUDING BUT NOT LIMITED TO PAVEMENT/BASE COURSE/WERAING COARSE REMOVALS, SHALL INCLUDE THE COST FOR SAW CUTTING.

FENCE LENGTHS

THE LENGTHS OF FENCE SHOWN IN THE PLANS ARE HORIZONTAL DIMENSIONS. MEASUREMENTS OF THE FINAL QUANTITIES WILL BE IN ACCORDANCE WITH ITEM 607.

CONTINGENCY QUANTITIES

THE CONTRACTOR SHALL NOT ORDER MATERIALS OR PERFORM WORK LISTED IN THE GENERAL SUMMARY FOR ITEMS DESIGNATED BY THE PLAN NOTE TO BE USED "AS DIRECTED BY THE ENGINEER" UNLESS AUTHORIZED BY THE ENGINEER. THE ACTUAL WORK LOCATIONS AND QUANTITIES USED AT THE ENGINEER'S DISCRETION SHALL BE MADE A MATTER OF RECORD BY INCORPORATION INTO THE FINAL CHANGE ORDER GOVERNING COMPLETION OF THIS PROJECT.

SPECIFICATION REFERENCE

THE STANDARD SPECIFICATIONS OF THE CITY OF CLEVELAND AND THE OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS, JANUARY 1, 2008 EDITION SHALL GOVERN THIS PROJECT. THIS SHALL INCLUDE ANY CHANGES OR SUPPLEMENTAL SPECIFICATIONS. SHOULD A CONFLICT ARISE BETWEEN THESE OR OTHER PROJECT SPECIFICATIONS, THE CITY OF CLEVELAND STANDARDS SHALL TAKE PRECEDENCE.

PROFILE AND ALIGNMENT

PLACE THE PROPOSED PAVEMENT TO FOLLOW THE ALIGNMENT AND PROFILE OF THE EXISING PAVEMENT. PLACE THE PROPOSED ASPHALT CONCRETE OVERLAY AS SHOWN ON THE TYPICAL SECTIONS. IN NO CASE SHALL THE OVERLAY BE LESS THAN THREE INCHES. CONTRACTOR TO PROVIDE A MINIMUM TRANSVERSE CROSS SLOPE OF 1.6%. CONTRACTOR TO ALSO PROVIDE A MINIMUM OF FOUR-INCH (SIX-INCH PREFERRED) CURB REVEAL. THE CONTRACTOR SHALL ENSURE POSITIVE DRAINAGE AT GUTTER LINE. TO ACHIEVE THE ABOVE TYPICAL SECTION CORRECTIONS, THE FOLLOWING QUANTITY IS PROVIDED TO BE USED "AS DIRECTED BY THE ENGINEER":

ITEM 448 - 0" MIN. ASPHALT CONCRETE LEVELING COURSE, TYPE 1,
PG-64-22 300 CU.YD.

PAVEMENT RESTORATION

THE COST FOR PAVEMENT RESTORATION FOR PIPE/CONDUIT, OR ANY OTHER ITEM, UNLESS SPECIFICALLY ITEMIZED, SHALL BE INCLUDED WITH THE PERTINENT ITEM. NO SEPERATE PAYMENT WILL BE MADE.

SEEDING AND MULCHING

THE FOLLOWING QUANTITIES ARE PROVIDED TO PROMOTE GROWTH AND CARE OF THE PERMANENT SEEDER AREAS:

659, SOIL ANALYSIS TEST	1	EACH
659, TOPSOIL	220	CU.YD.
659, SEEDING AND MULCHING	2,000	SQ. YD.
659, INTERSEEDING	100	SQ. YD.
659, COMMERCIAL FERTILIZER	1	TON
659, LIME	0.5	ACRES
659, WATER	16	M. GAL.

CROSSINGS AND CONNECTIONS TO EXISTING PIPE AND UTILITIES

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

IF IT IS DETERMINED THAT THE ELEVATION OF THE EXISTING CONDUIT, OR EXISTING APPURTENANCE TO BE CONNECTED, DIFFERS FROM THE PLAN ELEVATION OR RESULTS IN A CHANGE IN THE PLAN CONDUIT SLOPE, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WILL BE AFFECTED BY THE VARIANCE IN THE EXISTING ELEVATIONS.

IF IT IS DETERMINED THAT THE PROPOSED CONDUIT WILL INTERSECT AN EXISTING SEWER OR UNDERGROUND UTILITY IF CONSTRUCTED AS SHOWN ON THE PLAN, THE ENGINEER SHALL BE NOTIFIED BEFORE STARTING CONSTRUCTION OF ANY PORTION OF THE PROPOSED CONDUIT WHICH WOULD BE AFFECTED BY THE INTERFERENCE WITH AN EXISTING FACILITY.

PAYMENT FOR ALL THE OPERATIONS DESCRIBED ABOVE SHALL BE INCLUDED IN THE CONTRACT PRICE FOR THE PERTINENT 603 CONDUIT ITEM.

CATCH BASIN INSTALLATIONS

PLANS CALL FOR EXISTING CATCH BASINS TO BE REMOVED AND REPLACED WITH THE CITY OF CLEVELAND STANDARD CB-1. CONTRACTOR SHALL BE RESPONSIBLE TO OBTAIN INVERTS OF EXISTING LATERALS. CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR SETTING CATCH BASIN GRATE ELEVATIONS.

IN INSTANCES WHERE A CB-1 BASIN WILL NOT FIT DUE TO CONFLICTS WITH OTHER UTILITIES, CITY OF CLEVELAND STANDARD CB-2 SHALL BE INSTALLED.

CONTRACTOR SHALL VERIFY TYPE OF CATCH BASIN REQUIRED PRIOR TO ORDERING.

THE FOLLOWING IS CARRIED TO THE BID TAB FOR INSTANCES WHERE A CB-2 BASIN IS REQUIRED, THIS WILL BE IN ADDITION TO THE COST OF THE CB-1 BASIN:

ITEM 604 - SURCHARGE FOR CITY OF CLEVELAND CATCH BASIN NO. 2,
AS PER D-34 1 EACH

GENERAL NOTES

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

ITEM 204 - PROOF ROLLING

AN ESTIMATED QUANTITY OF 8 HOURS HAS BEEN PROVIDED IN THE SCHEDULE OF ITEMS FOR USE AS DIRECTED BY THE ENGINEER.

SUPPLEMENT TO D-16 ITEM - SPECIAL UNDERCUTTING SUBGRADE AND SUBBASE

REVISE CITY OF CLEVELAND SPECIFICATION D-16 BY ADDING THE FOLLOWING:

THE UNDERCUT SUBGRADE SHALL BE REPLACED WITH NO. 1'S & NO. 2'S BLENDED WITH ITEM 304, PLACED AND COMPACTED IN ACCORDANCE WITH ITEM 304.

GEOTEXTILE FABRIC 712.09, TYPE D SHALL BE REQUIRED AT THE UNDERCUT DEPTHS BEFORE PLACING THE ABOVE STONE. PAYMENT FOR GEOTEXTILE FABRIC, 712.09, TYPE D SHALL BE PER SQ. YD. AND SHALL BE ITEMIZED SEPARATELY.

CONTINGENCY QUANTITIES TO BE USED AS DIRECTED BY THE ENGINEER

THE FOLLOWING CONTINGENCY QUANTITIES ARE TO BE USED FOR AREAS DETERMINED, AFTER PROOF ROLLING AND FIELD TESTS, AS NOT ACHIEVING THE PROPER COMPACTION REQUIREMENTS.

ITEM SPECIAL - UNDERCUTTING SUBGRADE AND SUBBASE 500 CU. YD.
ITEM 204 - GEOTEXTILE FABRIC, 712.09, TYPE D 1350 SQ. YD.

CONTRACTOR SHALL NOT ORDER MATERIAL OR PERFORM WORK WITHOUT THE WRITTEN APPROVAL OF THE ENGINEER.

ITEM SPECIAL - FILL EXISTING ABANDONED TRAFFIC VAULTS

THE FOLLOWING TRAFFIC VAULTS SHALL BE ABANDONED:

STA. 170+70 RT.
STA. 171+50 RT.
STA. 171+60 LT.
STA. 175+25 LT.
STA. 179+20 LT.
STA. 196+30 RT.
STA. 198+05 RT.

THE CONTRACTOR SHALL COORDINATE THE ABANDONMENT OF THESE VAULTS WITH THE CITY OF CLEVELAND, DIVISION OF TRAFFIC ENGINEERING. CONTRACTOR SHALL GET WRITTEN APPROVAL FROM THE COMMISSIONER OF TRAFFIC ENGINEERING CONFIRMING THAT THERE ARE NO LIVE WIRES IN THE VAULT AND THE VAULT IS READY TO BE ABANDONED. UPON RECEIPT OF LETTER, THE CONTRACTOR MAY BEGIN OPERATIONS AS FOLLOWS:

- 1) REMOVE VAULT TO A MINIMIUM OF 12" BELOW TOP OF WALK ELEVATION BY NEATLY SAWCUTTING THE CONCRETE.
- 2) BACKFILL THE VAULT WITH CITY OF CLEVELAND LSM AS PER D-31 TO TOP OF VAULT
- 3) POUR A CONCRETE SLAB WITH A MINIMUM OF 12" THICKNESS OVER THE VAULT.

PAYMENT FOR ALL MATERIAL, LABOR AND INCIDENTALS TO COMPLETE THE ABOVE WORK SHALL BE PAID FOR AS:

ITEM SPECIAL - FILL EXISTING ABANDONED TRAFFIC VAULTS 7 EACH

CALCULATED
CHECKED

GENERAL NOTES

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

ITEM 614 - MAINTAINING TRAFFIC

THE MAKING OF THIS IMPROVEMENT REQUIRES THAT KINSMAN ROAD (E. 55TH TO E. 79TH) BE CLOSED TO THROUGH TRAFFIC AND ONE WAY TRAFFIC (WESTBOUND) BE MAINTAINED IN CONSTRUCTION PHASE IIA. DETOURS SHALL BE AS SHOWN IN THE PROJECT PLANS. A MINIMUM OF TWO WAY TRAFFIC SHALL BE MAINTAINED IN ALL OTHER CONSTRUCTION PHASES.

EXCEPT AS DIRECTED BY THE ENGINEER, LOCAL ACCESS FOR ABUTTING PROPERTIES AND ADJACENT STREETS SHALL BE MAINTAINED AT ALL TIMES. THE CONTRACTOR SHALL MAINTAIN SAFE AND SATISFACTORY ACCESS TO ABUTTING PROPERTY.

THE CONTRACTOR SHALL SUBMIT COMPLETE MAINTENANCE OF TRAFFIC PLANS TO THE CITY FOR APPROVAL. THESE PLANS SHALL BE AT A MINIMUM SCALE OF 1"=40' AND SHALL ACCOMMODATE THE PROJECT PARAMETERS ESTABLISHED IN THE PLANS. PLANS SHALL SHOW HOW TRAFFIC IS PROPOSED TO BE MAINTAINED WITH THE USE OF PLASTIC DRUMS, TRAFFIC SIGNS, AND PAVEMENT MARKINGS, AND/OR FLAGGERS.

ALL CONSTRUCTION TRAFFIC CONTROL DEVICES USED FOR THIS PROJECT SHALL CONFORM TO THE OHIO MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (OMUTCD) FOR STREETS AND HIGHWAYS, AND SHALL BE FURNISHED, ERECTED, MAINTAINED, AND REMOVED BY THE CONTRACTOR, EXCEPT AS NOTED BELOW.

THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY SAFEGUARDS, SUCH AS TYPE III BARRICADES, LIGHTING, FLAGGERS, AND OTHER TRAFFIC CONTROL DEVICES AS PROVIDED IN ITEM 614, MAINTAINING TRAFFIC, SO AS TO AVOID DAMAGE AND/OR INJURY TO VEHICLES AND PERSONS USING THE ROADWAY DURING CONSTRUCTION.

EXISTING TRAFFIC CONTROL DEVICES LOCATED WITHIN THE WORK AREA, WHICH ARE REQUIRED FOR INTERIM OR PERMANENT TRAFFIC CONTROL, SHALL BE RELOCATED TO POINTS APPROVED BY THE ENGINEER. APPROPRIATE TRAFFIC CONTROL DEVICES SHALL BE MAINTAINED, IN COMPLIANCE WITH THE OMUTCD, AT ALL TIMES WHILE TRAFFIC IS MAINTAINED. THE COST OF RELOCATION, IF REQUIRED, SHALL BE INCLUDED IN THE LUMP SUM PRICE BID FOR ITEM 614 – MAINTAINING TRAFFIC.

THE LENGTH AND DURATION OF LANE CLOSURES AND/OR TRAFFIC RESTRICTIONS SHALL BE AT THE APPROVAL OF THE ENGINEER. THE INTENT IS TO MINIMIZE THE IMPACT TO THE TRAVELING PUBLIC. LANE CLOSURES OR RESTRICTIONS OVER SEGMENTS OF THE PROJECT IN WHICH NO WORK IS ANTICIPATED WITHIN A REASONABLE TIME FRAME, AS DETERMINED BY THE ENGINEER, SHALL NOT BE PERMITTED. THE LEVEL OF UTILIZATION OF MAINTENANCE OF TRAFFIC DEVICES SHALL BE COMMENSURATE WITH THE WORK IN PROGRESS.

ADVANCE TRAFFIC SIGNING AND SUPPORTS, INCLUDING DETOUR SIGNING, CONSTRUCTION WORK ZONE APPROACH SIGNING, BARRICADES AND SIGNS ON BARRICADES SHOWN ON THE PLANS BEYOND THE WORK LIMITS SHALL BE FURNISHED, ERECTED, MAINTAINED, AND SUBSEQUENTLY REMOVED BY THE CONTRACTOR.

ALL WORK AND TRAFFIC CONTROL DEVICES SHALL BE IN ACCORDANCE WITH 614 AND OTHER APPLICABLE PORTIONS OF THE SPECIFICATIONS, AS WELL AS THE OMUTCD. PAYMENT FOR ALL LABOR, EQUIPMENT, AND MATERIALS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR 614 – MAINTAINING TRAFFIC, UNLESS SEPARATELY ITEMIZED IN THE PLAN.

INSTALLATION OF PAVEMENT MARKINGS

ALL WORK ZONE PAVEMENT MARKINGS AND SIGNS REQUIRED FOR A PARTICULAR LANE CLOSURE OR TRAFFIC PATTERN SHALL BE INSTALLED ON A SINGLE WORK DAY, AND THE CORRESPONDING TRAFFIC PATTERN SHALL BE IMPLEMENTED IMMEDIATELY. IN ADDITION, THE REQUIREMENTS OF 614.11(G) SHALL APPLY. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE SCHEDULE OF ITEMS:

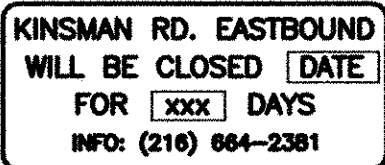
ITEM 614 – WORK ZONE CENTER LINE, CLASS I	3.80 MILE
ITEM 614 – WORK ZONE EDGE LINE, CLASS I	7.90 MILE
ITEM 614 – WORK ZONE EDGE LINE, CLASS I, 740.06, TYPE I	2.20 MILE
ITEM 614 – WORK ZONE STOP LINE, CLASS I	500 LIN. FT.

LAYOUT OF WORK ZONE PAVEMENT MARKINGS

THE CONTRACTOR SHALL BE RESPONSIBLE, WITH THE ASSISTANCE OF THE ENGINEER, AND RECORDS OF THE DIVISION OF TRAFFIC ENGINEERING, FOR THE ENTIRE LAYOUT AND LOCATIONS OF THE REQUIRED PAVEMENT MARKINGS.

NOTICE OF CLOSURE

NOTICE OF CLOSURE SIGNS (W20) SHALL BE ERECTED BY THE CONTRACTOR AT LEAST ONE WEEK IN ADVANCE OF THE SCHEDULED ROAD CLOSURE. THE SIGNS SHALL BE ERECTED ON THE RIGHT HAND SIDE OF THE ROAD AT THE POINT OF CLOSURE FACING TRAFFIC. THEY SHALL BE PLACED SO AS NOT TO INTERFERE WITH THE VISIBILITY OF ANY OTHER TRAFFIC CONTROL SIGNS. THE CONTRACTOR SHALL INSERT THE DATE OF CLOSURE AND DURATION (NUMBER OF DAYS FROM THE CLOSURE TO THE PROJECT COMPLETION DATE OR SCHEDULED DATE OF OPENING) AND INFORMATION PHONE NUMBER ON THE SIGN IN THE PROPER POSITIONS.



W20-H13-60

NOTIFICATION

THE CONTRACTOR SHALL NOTIFY IN WRITING THE FOLLOWING AGENCIES AT LEAST ONE WEEK PRIOR TO THE START OF CONSTRUCTION, AND AT LEAST 72 HOURS BEFORE IMPLEMENTING ANY SUBSTANTIAL CHANGE IN TRAFFIC PATTERN OR CLOSING ANY STREET TO TRAFFIC:

- CITY OF CLEVELAND:
- | | |
|--|----------------|
| DIVISION OF ENGINEERING AND CONSTRUCTION | (216) 664-2381 |
| DIVISION OF STREETS | (216) 664-2150 |
| DIVISION OF TRAFFIC ENGINEERING | (216) 664-3194 |
- CITY OF CLEVELAND DEPARTMENT OF PUBLIC SAFETY:
- | | |
|---|----------------|
| DIVISION OF EMERGENCY MEDICAL SERVICE (EMS) | (216) 664-2066 |
| DIVISION OF FIRE | (216) 664-6813 |
| DIVISION OF POLICE | (216) 664-1234 |
- CLEVELAND MUNICIPAL SCHOOL DISTRICT (216) 574-8000
- CUYAHOGA COUNTY BOARD OF MENTAL RETARDATION (216) 241-8230
- GREATER CLEVELAND REGIONAL TRANSIT AUTHORITY (RTA) (216) 566-5100

OHIO DEPARTMENT OF TRANSPORTATION PUBLIC INFORMATION OFFICE:
FAX: (216) 584-3524, EMAIL: d12.publicinformation@dot.state.oh.us

CUYAHOGA COUNTY MANAGER: (216) 584-2262

IN ADDITION, THE CONTRACTOR SHALL NOTIFY AND COORDINATE WITH ANY PRIVATE SCHOOLS. THE CONTRACTOR SHALL COORDINATE THE LOCATION OF ANY TEMPORARY BUS STOPS WITH THE RTA.

TEMPORARY RAMPING OF VERTICAL SURFACES

IN ORDER TO PROVIDE FOR LOCAL ACCESS, LONGITUDINAL VERTICAL FACES ABUTTING DRIVES SHALL BE TEMPORARILY RAMPED. TRANSVERSE VERTICAL FACES SHALL BE TEMPORARILY RAMPED A MINIMUM OF TEN (10) FEET IN LENGTH AND TRAFFIC SHALL BE WARNED WITH W8-1 "BUMP" SIGNS IN ADVANCE OF THE RAMPED AREAS.

ALL CASTINGS ENCOUNTERED SHALL BE SET TO GRADE AND PAID FOR UNDER VARIOUS ITEMS DESCRIBED ELSEWHERE IN THE GENERAL NOTES OR SPECIFICATIONS. THE CASTING ELEVATION DIFFERENTIAL SHALL NOT BE GREATER THAN ONE (1) INCH WHEN EXPOSED TO TRAFFIC.

ALL TEMPORARY RAMPING SHALL BE INSTALLED, AT THE DIRECTION OF THE ENGINEER, USING ITEM 614 – ASPHALT CONCRETE FOR MAINTAINING TRAFFIC.

OVERNIGHT TRENCH CLOSING

THE BASE WIDENING SHALL BE COMPLETED TO A DEPTH OF NO MORE THAN 12 INCHES BELOW THE EXISTING PAVEMENT BY THE END OF EACH WORK DAY. NO TRENCH SHALL BE LEFT OPEN OVERNIGHT EXCEPT FOR A SHORT LENGTH (25 FEET OR LESS) OF A WORK SECTION AT THE END OF THE TRENCH. IN CASE WORK MUST BE SUSPENDED BECAUSE OF INCLEMENT WEATHER OR OTHER REASONS, THE TRENCH FOR THE UNCOMPLETED BASE WIDENING SHALL BE BACKFILLED AT THE DIRECTION OF THE ENGINEER.

CONSTRUCTION SEQUENCE

PRIOR TO ESTABLISHING THE CONSTRUCTION PHASES LISTED BELOW, THE CONTRACTOR SHALL CONSTRUCT THE PROPOSED WATERLINE IMPROVEMENTS AS FOLLOWS: INSTALL 12" CROSS CONNECTION ON WOODLAND AVENUE AT STATION 27+18 AND PERFORM CLEANING AND LINING OPERATIONS OF THE EXISTING 8" WATERMAIN ON KINSMAN ROAD FROM STATION 155+82 TO STATION 170+66. TWO WAY TRAFFIC SHALL BE MAINTAINED BY THE USE OF THE EXISTING PAVEMENT, DRUMS AND MESSAGE BOARDS.

THE REHABILITATION OF WOODLAND AVE./KINSMAN RD. WITHIN THE LIMITS OF THIS PROJECT SHALL BE ACCOMPLISHED IN THREE CONSTRUCTION PHASES, AS OUTLINED BELOW:

- PHASE I – WOODLAND AVE. FROM E. 34TH TO E. 55TH
PHASE II – KINSMAN RD. FROM E. 55TH TO E. 79TH
PHASE III – KINSMAN RD. FROM E. 79TH TO E. 93RD

THE CONTRACTOR SHALL COMPLETE ALL WORK, EXCEPT FINAL PAVEMENT MARKING AND SIGNING IN THE TRANSITION ZONE BETWEEN SECTIONS, IN A GIVEN CONSTRUCTION PHASE BEFORE BEGINNING ANY WORK IN A SUBSEQUENT SECTION, SUBJECT TO THE APPROVAL OF THE ENGINEER.

UNLESS OTHERWISE SHOWN IN THE PLANS, NORMAL VEHICULAR TRAFFIC SHALL BE MAINTAINED AT ALL TIMES BEYOND THE WORK LIMITS OF THE SECTION CURRENTLY UNDER CONSTRUCTION.

THE CONTRACTOR SHALL BEGIN WORK IN PHASE I, FOLLOWED IN TURN BY PHASE II, THEN PHASE III.

CONSTRUCTION PHASING

WITHIN EACH SECTION WORK SHALL BE PERFORMED IN TWO PHASES.

PHASE A SHALL CONSIST OF ALL WORK ON ONE HALF OF THE ROAD WHILE A MINIMUM OF TWO WAY TRAFFIC IS MAINTAINED ON THE EXISTING PAVEMENT ON THE OTHER SIDE OF THE ROAD OR AS NOTED OTHERWISE.

PHASE B SHALL CONSIST OF ALL WORK ON THE OTHER HALF OF THE ROAD WHILE A MINIMUM OF TWO WAY TRAFFIC IS MAINTAINED ON THE COMPLETED PAVEMENT ON THE OTHER SIDE OF THE ROAD OR AS OTHERWISE NOTED.

THE EXCEPTION TO THE ABOVE IS AT THE E. 55TH/WOODLAND/KINSMAN INTERSECTION WHERE ADDITIONAL PHASES WILL BE REQUIRED TO MAINTAIN ADEQUATE MOVEMENTS THROUGH THIS INTERSECTION. CONTRACTOR SHALL ALSO SUBMIT TO THE CITY FOR APPROVAL MAINTENANCE OF TRAFFIC PLANS AND CONSTRUCTION PHASING DETAILS AT THIS LOCATION. CONSTRUCTION PHASE I AND II WILL BE IMPACTED.

PHASED CONSTRUCTION

WHERE CONCRETE SURFACE IS BEING INSTALLED, ALL WORK IN A GIVEN PHASE, INCLUDING SUCH ITEMS AS BASE REPAIR, CONCRETE PAVEMENT, ADJUSTMENT OF CASTINGS, SIDEWALKS, DRIVEWAY REPAIRS, GUARDRAIL, AND TRAFFIC SIGNS AND SIGNALS SHALL BE COMPLETED PRIOR TO BEGINNING THE NEXT PHASE, WITH THE EXCEPTION OF THE FINAL PAVEMENT MARKINGS, AND ANY SIGNS OR SIGNALS WHICH CONFLICT WITH THE MAINTENANCE OF TRAFFIC PLANS.

AT THE END OF THE LAST PHASE (IN ANY CONSTRUCTION SECTION), THE LANDSCAPING, FINAL PAVEMENT MARKINGS, AND THE BALANCE OF THE SIGNS AND SIGNALS SHALL BE INSTALLED. DURING THIS PHASE, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MT-95.31, MT-95.32, MT-97.10, OR MT-97.11, AS APPROPRIATE.

WHERE AN ASPHALT OVERLAY IS BEING INSTALLED, ALL WORK IN A GIVEN PHASE, INCLUDING SUCH ITEMS AS BASE REPAIR, ASPHALT CONCRETE COURSES, ADJUSTMENT OF CASTINGS, SIDEWALKS, DRIVEWAY REPAIRS, GUARDRAIL, AND TRAFFIC SIGNS AND SIGNALS SHALL BE COMPLETED PRIOR TO BEGINNING THE NEXT PHASE, WITH THE EXCEPTION OF THE ITEM 448 SURFACE COURSE, FINAL PAVEMENT MARKINGS, AND ANY SIGNS OR SIGNALS WHICH CONFLICT WITH THE MAINTENANCE OF TRAFFIC PLANS.

AT THE END OF THE LAST PHASE (IN ANY CONSTRUCTION SECTION), THE 407 TACK COAT FOR INTERMEDIATE COURSE AND THE 448 SURFACE COURSE SHALL BE INSTALLED ACROSS THE ENTIRE PAVEMENT WIDTH, AND LANDSCAPING, FINAL PAVEMENT MARKINGS, AND THE BALANCE OF THE SIGNS AND SIGNALS SHALL BE INSTALLED. DURING THIS PHASE, TRAFFIC SHALL BE MAINTAINED IN ACCORDANCE WITH STANDARD CONSTRUCTION DRAWING MT-95.31, MT-95.32, MT-97.10, OR MT-97.11, AS APPROPRIATE.

CALCULATED
CHECKED

GENERAL NOTES
MAINTENANCE OF TRAFFIC

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

ITEM 614 - LAW ENFORCEMENT OFFICER, AND
ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR

IN ADDITION TO THE REQUIREMENTS OF 614 AND THE LATEST EDITION OF THE OMUTCD, A UNIFORMED LAW ENFORCEMENT OFFICER, OR A UNIFORMED LAW ENFORCEMENT OFFICER AND OFFICIAL PATROL CAR WITH WORKING TOP MOUNTED EMERGENCY FLASHING LIGHTS, SHALL BE PROVIDED FOR CONTROLLING TRAFFIC FOR THE FOLLOWING TASKS:

- 1) FOR LANE CLOSURES: DURING INITIAL SET-UP PERIODS, TEAR DOWN PERIODS, SUBSTANTIAL SHIFTS OF A CLOSURE POINT, OR WHERE NEW LANE CLOSURES ARE INITIATED. (MAINTENANCE OF TRAFFIC PHASES A AND B)
- 2) DURING THE ENTIRE ADVANCE PREPARATION AND CLOSURE SEQUENCE, WHERE COMPLETE BLOCKAGE OF TRAFFIC IS REQUIRED. (MAINTENANCE OF TRAFFIC PHASES A AND B)
- 3) WHENEVER LANE BLOCKAGE IS REQUIRED FOR THE ERECTION OF SIGNAL EQUIPMENT OR SIGNAL SHUTDOWN IS REQUIRED.

THE LAW ENFORCEMENT OFFICERS (LEOS) ARE CONSIDERED TO BE EMPLOYED BY THE CONTRACTOR AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THEIR ACTIONS. ALTHOUGH THEY ARE EMPLOYED BY THE CONTRACTOR, THE PROJECT ENGINEER SHALL HAVE CONTROL OVER THEIR PLACEMENT. ANY PATROL CAR UTILIZED SHALL BE A PUBLIC SAFETY VEHICLE AS REQUIRED BY THE OHIO REVISED CODE.

THE HOURS PAID SHALL INCLUDE MINIMUM SHOW-UP TIME REQUIRED BY THE LAW ENFORCEMENT AGENCY INVOLVED. THE CONTRACTOR SHALL MAKE ARRANGEMENTS FOR THESE SERVICES WITH THE CITY OF CLEVELAND POLICE DEPARTMENT, 1300 ONTARIO STREET 216-623-5000.

LAW ENFORCEMENT OFFICERS REQUIRED BY THE TRAFFIC MAINTENANCE TASKS ABOVE SHALL BE PAID FOR ON A UNIT PRICE (HOURLY) BASIS UNDER ITEM 614 - LAW ENFORCEMENT OFFICER AND/OR ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR. THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN CARRIED TO THE GENERAL SUMMARY:

ITEM 614 - LAW ENFORCEMENT OFFICER WITH PATROL CAR	150 HOURS
ITEM 614 - LAW ENFORCEMENT OFFICER	80 HOURS

LEOS SHOULD NOT BE USED WHERE THE OMUTCD INTENDS THAT FLAGGERS BE USED. HOWEVER, IF THE CONTRACTOR WISHES TO UTILIZE LEOS FOR FLAGGING AND TRAFFIC CONTROL OTHER THAN FOR THAT REQUIRED IN THESE PLANS, HE MAY DO SO AT HIS OWN EXPENSE. PAYMENT FOR UTILIZING LEOS IN THIS MANNER WILL BE INCLUDED UNDER ITEM 614 - MAINTAINING TRAFFIC.

ESTIMATED QUANTITIES FOR MAINTAINING TRAFFIC

THE FOLLOWING ESTIMATED QUANTITIES HAVE BEEN INCLUDED IN THE GENERAL SUMMARY FOR USE AS DIRECTED BY THE ENGINEER FOR THE MAINTENANCE OF TRAFFIC.

ITEM 304 6" MIN. AGGREGATE BASE FOR DRIVEWAYS	200 CU. YD.
ITEM 410 TRAFFIC COMPACTED SURFACE, TYPE B	200 CU. YD.
ITEM 614 ASPHALT CONCRETE FOR MAINTAINING TRAFFIC	100 CU. YD.
ITEM 615 PAVEMENT FOR MAINTAINING TRAFFIC, TYPE A	300 SQ. YD.
ITEM 616 WATER	50 M GAL
ITEM 616 CALCIUM CHLORIDE	5 TON

DUST CONTROL

THE CONTRACTOR SHALL FURNISH AND APPLY WATER FOR DUST CONTROL AS DIRECTED BY THE ENGINEER. THE FOLLOWING CONTINGENCY QUANTITY HAS BEEN INCLUDED FOR DUST CONTROL PURPOSES:

ITEM 616 - WATER	50 M. GAL.
ITEM 616 - CALCIUM CHLORIDE	5 TON

SIDE STREET CLOSURE LIMITATION

SIDE STREETS SHALL ONLY BE CLOSED ONE SIDE AT A TIME, AND ONLY BETWEEN THE HOURS OF 10:00 P.M. AND 6:00 A.M. ONE LANE SHALL BE MAINTAINED WITH THE USE OF A FLAGGER AT ALL TIMES FOR BI-DIRECTIONAL TRAFFIC. THE CONTRACTOR IS REQUIRED TO HAVE ALL LANES OF THE SIDEROAD OPEN AND AVAILABLE TO TRAFFIC BY 6:00 A.M. EACH MORNING AFETR A SCHEDULED NIGHTTIME CLOSURE.

PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION AND THE DIVISION OF TRAFFIC ENGINEERING WITH A PRECISE SCHEDULE OF THE DATE AND DURATION OF ALL PROPOSED STREET CLOSURES. ANY CHANGES IN THIS SCHEDULE DURING CONSTRUCTION SHALL BE SUBMITTED, IN WRITING, FAX WITH HARD COPY TO FOLLOW, TO THE DIVISION OF ENGINEERING AND CONSTRUCTION AND THE DIVISION OF TRAFFIC ENGINEERING A MINIMUM OF SEVEN (7) DAYS PRIOR TO THE REQUESTED CHANGE FOR THEIR REVIEW, COMMENT, AND APPROVAL. NO CHANGE IN SCHEDULE CAN BE MADE WITHOUT THE WRITTEN APPROVAL OF BOTH DIVISIONS.

LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH SECTION 108.07 FOR EACH CALENDAR DAY THAT ANY INTERSECTING STREET REMAINS CLOSED TO TRAFFIC BEYOND THE SPECIFIED LIMIT. ALL CLOSED STREETS SHALL BE BARRICADED AT THE WORK LIMITS WITH GATES AND BARRICADES PER MT-101.60 AND SIGNED WITH A "ROAD CLOSED" R11-2 SIGN MOUNTED ON THE BARRICADES. IN ADDITION, A "ROAD CLOSED AHEAD" (OW-120) SIGN SHALL BE INSTALLED AT THE FIRST INTERSECTION BEYOND THE WORK, AND/OR WHERE SHOWN ON THE PLANS. THE CONTRACTOR SHALL FURNISH, ERECT, MAINTAIN AND REMOVE ALL SIGNS AND BARRICADES REQUIRED FOR THIS PURPOSE.

CONSTRUCTION ADJACENT TO DRIVES

ACCESS TO COMMERCIAL AND HANDICAP PROPERTY SHALL BE MAINTAINED AT ALL TIMES. IN ADDITION, THE CONTRACTOR SHALL MAKE REASONABLE PROVISIONS TO ALLOW RESIDENTIAL ACCESS AT ALL TIMES OR OTHERWISE ALLOW RESIDENTS TO PARK SAFELY WITHIN THE PROJECT WORK LIMITS WHEN ACCESS IS NOT POSSIBLE; ALL AT THE APPROVAL/DIRECTION OF THE ENGINEER. THE MAXIMUM OUT OF SERVICE TIME FOR ANY RESIDENTIAL DRIVE SHALL BE TEN (10) DAYS. THE PAYMENT FOR ALL LABOR, EQUIPMENT AND MATERIALS REQUIRED TO MAINTAIN COMMERCIAL, HANDICAP AND RESIDENTIAL ACCESS AND/OR SAFE PARKING AREAS FOR RESIDENTS SHALL BE INCLUDED IN THE LUMP SUM CONTRACT PRICE FOR "ITEM 614 - MAINTAINING TRAFFIC"; EXCEPT FOR THE SEPARATELY ESTIMATED ITEMS/QUANTITIES ADDITIONALLY PROVIDED IN THE PLANS FOR MAINTAINING TRAFFIC.

THE CONTRACTOR SHALL PLAN/STAGE ALL WORK TO MAINTAIN SAFE ACCESS TO COMMERCIAL AND HANDICAP PROPERTY AT ALL TIMES AND TO MAINTAIN SAFE ACCESS TO RESIDENTIAL PROPERTY OR PROVIDE SAFE PARKING WITHIN REASONABLE PROXIMITY TO RESIDENTIAL PROPERTY WHEN ACCESS IS UNAVAILABLE. PRIOR TO THE START OF CONSTRUCTION, THE CONTRACTOR SHALL SUBMIT A PLAN FOR THE APPROVAL OF THE ENGINEER WHICH OUTLINES HIS/HER STRATEGY FOR THE MAINTENANCE OF SAFE ACCESS TO COMMERCIAL, HANDICAP AND RESIDENTIAL PROPERTY AND/OR FOR ALLOWING RESIDENTS TO PARK SAFELY WITHIN THE PROJECT LIMITS WHEN ACCESS IS NOT POSSIBLE. EXCEPT AS NOTED ABOVE, ALL ASSOCIATED COSTS SHALL BE INCLUDED UNDER "ITEM 614 - MAINTAINING TRAFFIC".

TEMPORARY MAINTENANCE OF EXISTING TRAFFIC SIGNALS

INCIDENTAL TO THE REQUIREMENTS FOR MAINTAINING TRAFFIC IN ACCORDANCE WITH 614.03, EXISTING TRAFFIC SIGNALS AT THE FOLLOWING INTERSECTION(S) SHALL BE TEMPORARILY MAINTAINED UNTIL THE NEW TRAFFIC SIGNAL INSTALLATION IS IN OPERATION, OR UNTIL THE PROJECT IS COMPLETE AND THE EXISTING OPERATION CAN BE RESTORED:

EAST 34 STREET, EAST 37 STREET, EAST 40 STREET, EAST 55 STREET, GRAND AVENUE, EAST 71 STREET, EAST 75 STREET, EAST 79 STREET AND EAST 93 STREET

THE EXISTING SIGNAL HEADS (OR ADDITIONAL TRAFFIC SIGNAL HEADS SUPPLIED BY THE CONTRACTOR) SHALL BE POSITIONED SO AS TO PROVIDE A MINIMUM OF TWO TRAFFIC SIGNAL HEADS OVER THE PORTION OF THE ROADWAY USED BY EACH DIRECTION OF TRAFFIC, AS SHOWN ON THE PLANS, AND THE OPERATION SHALL BE MODIFIED AS SHOWN IN THE PLANS. THE NUMBER, LOCATION, VISIBILITY, AND HEIGHT OF ALL TRAFFIC SIGNALS SHALL BE IN ACCORDANCE WITH THE PROVISIONS OF THE OMUTCD.

ANY COSTS FOR THE TEMPORARY MAINTENANCE OF EXISTING TRAFFIC SIGNALS SHALL BE INCLUDED IN THE LUMP SUM COST BID FOR ITEM 614 - MAINTAINING TRAFFIC.

WINTER TRAFFIC LIMITATION

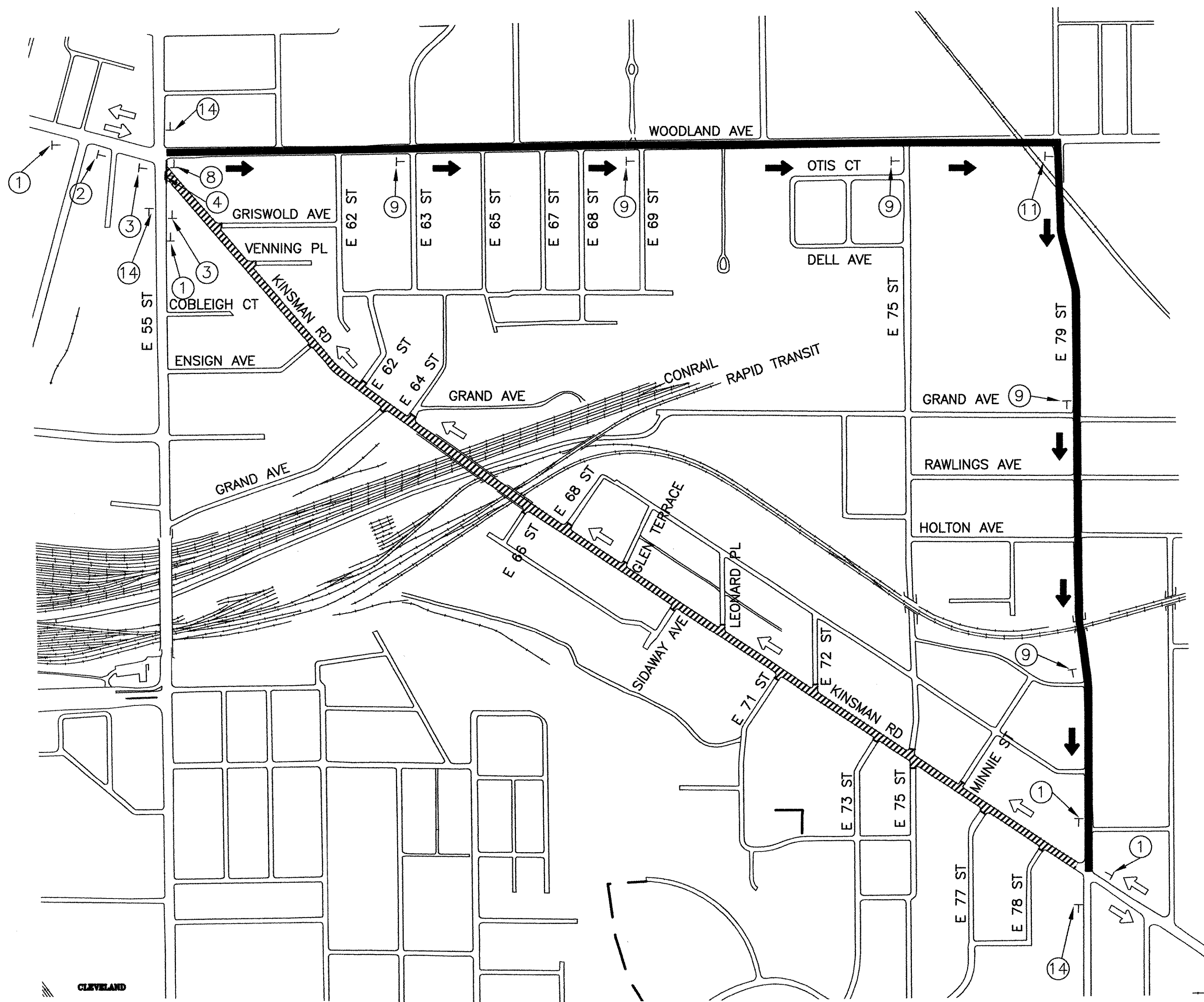
ALL EXISTING LANES SHALL BE OPEN TO TRAFFIC BETWEEN NOVEMBER 15 AND MARCH 15. NOVEMBER 15 SHALL BE CONSIDERED TO CONSTITUTE AN INTERIM COMPLETION DATE AND LIQUIDATED DAMAGES SHALL BE ASSESSED IN ACCORDANCE WITH SECTION C-25 FOR EACH CALENDAR DAY BEYOND NOVEMBER 15 OR PRIOR TO MARCH 15 THAT ALL LANES ARE NOT OPEN AND AVAILABLE TO TRAFFIC.

PAVEMENT CONSTRUCTION

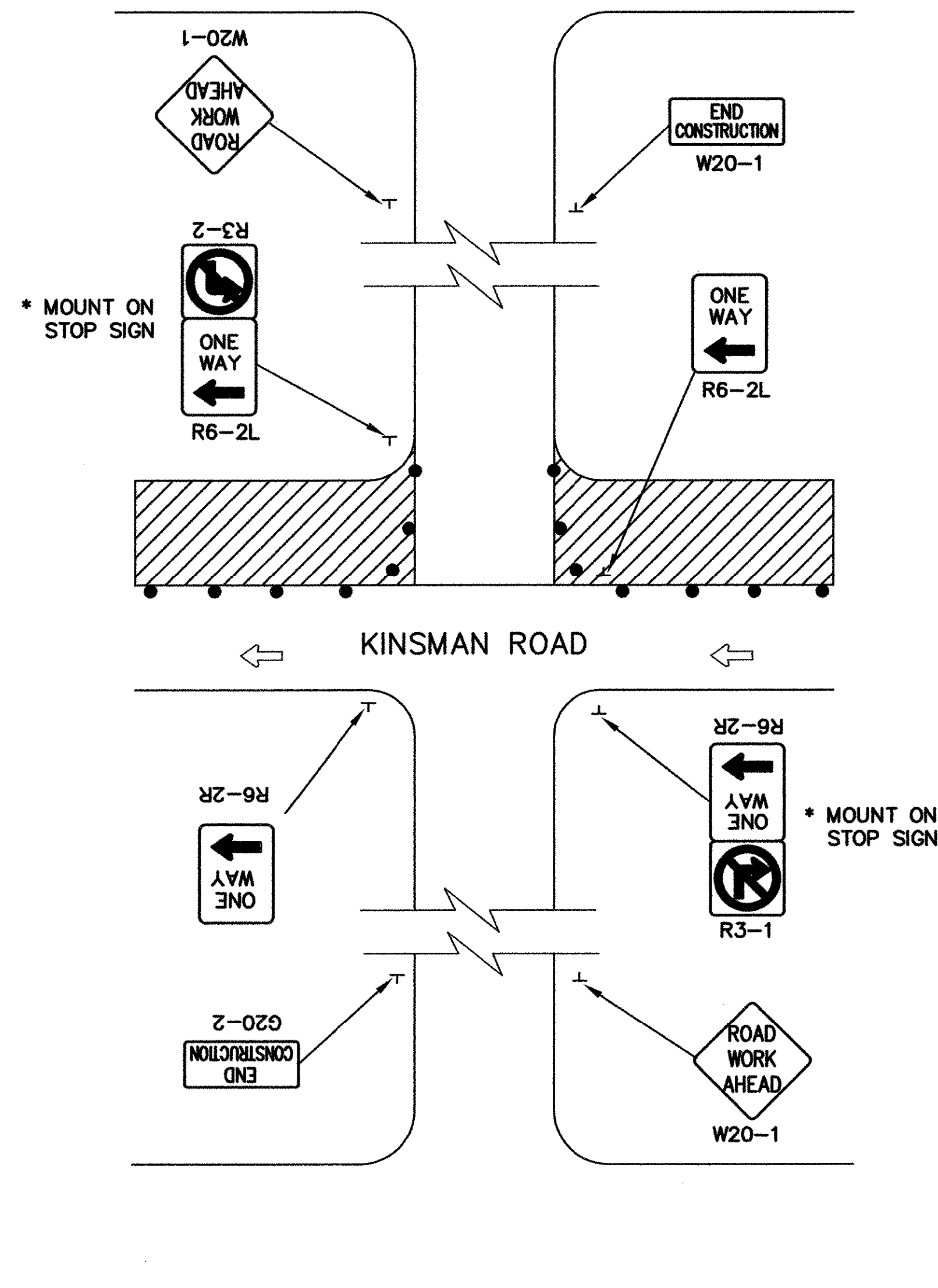
TRENCH EXCAVATION AND PAVEMENT CONSTRUCTION SHALL BE PERFORMED ON ONE PORTION OF THE PAVEMENT AT A TIME. ANY OPEN TRENCH SHALL BE ADEQUATELY MAINTAINED AND PROTECTED WITH DRUMS OR BARRICADES AT ALL TIMES. THE LENGTH OF TOTAL OPEN TRENCH SHALL NOT EXCEED 1000 LINEAR FEET AT ONE TIME WITHIN EACH PHASE. PLACEMENT OF THE PROPOSED PAVEMENT SHALL BE DONE AS SOON AS POSSIBLE AFTER THE EXCAVATION AND PREPARATION OF THE SUBGRADE.

UTILITY WORK, STORM SEWER, AND UNDERDRAIN CONSTRUCTION

ALL WATER WORK, STORM SEWER, AND UNDERDRAIN CONSTRUCTION NOT REQUIRING CUTTING OF PAVEMENT SHALL BE COMPLETED WHILE MAINTAINING TRAFFIC ON THE EXISTING ROADWAY AND INTERSECTING STREETS AND DRIVEWAY PAVEMENT. ALL UNDERGROUND WORK REQUIRING CUTTING OF THE EXISTING PAVEMENT SHALL BE DONE BEFORE THE PORTIONS OF THE EXISTING PAVEMENT ARE REMOVED. STEEL PLATES EXCEPT IN THE IMMEDIATE AREA OF CONSTRUCTION SHALL COVER ALL TRENCHES. AFTER THE TRENCHES ARE BACKFILLED, TEMPORARY PAVEMENT SHALL BE USED TO RESURFACE THE TRENCH UNTIL THE PERMANENT PAVEMENT IS CONSTRUCTED. TWO WAY TRAFFIC SHALL BE MAINTAINED AT ALL TIMES DURING THE CONSTRUCTION OF THE CROSS TRENCHES BY THE USE OF EXISTING AND TEMPORARY PAVEMENT.



PHASE II



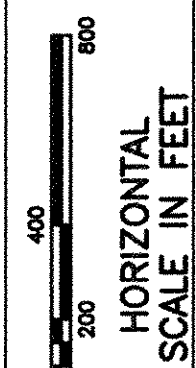
TYPICAL SIGNING DETAIL
SIDE STREETS

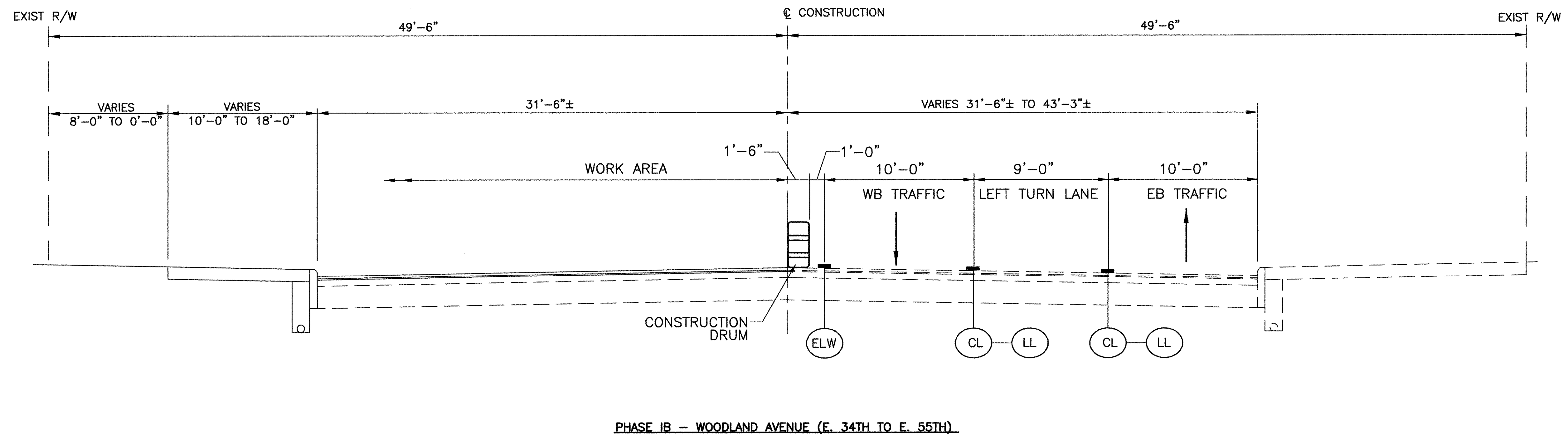
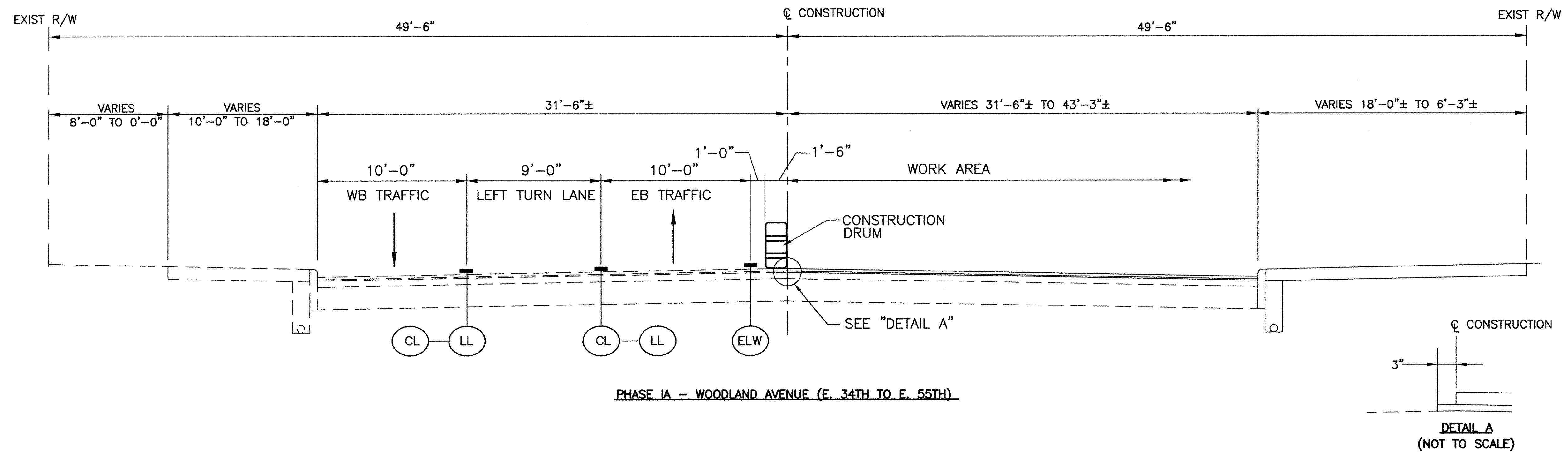
NOT TO SCALE

LEGEND

- DIRECTION OF DETOUR TRAFFIC
- DIRECTION OF MAINTAINED TRAFFIC
- WORK AREA

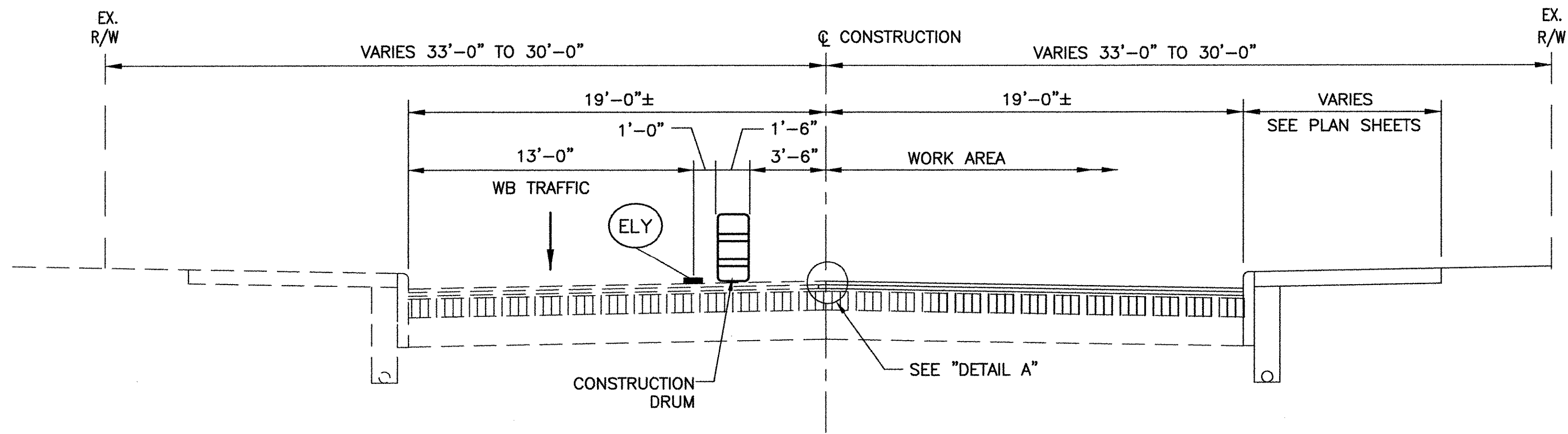
SIGN ①	SIGN ②	SIGN ③	SIGN ④	SIGN ⑤	SIGN ⑥	SIGN ⑦	SIGN ⑧	SIGN ⑨	SIGN ⑩	SIGN ⑪	SIGN ⑫	SIGN ⑬	SIGN ⑭



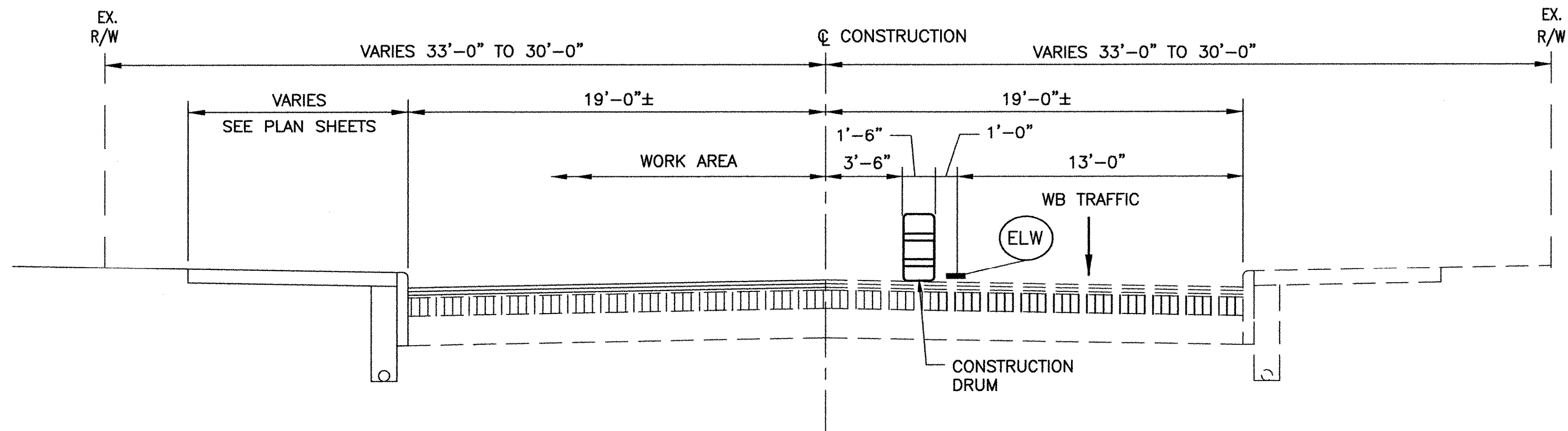
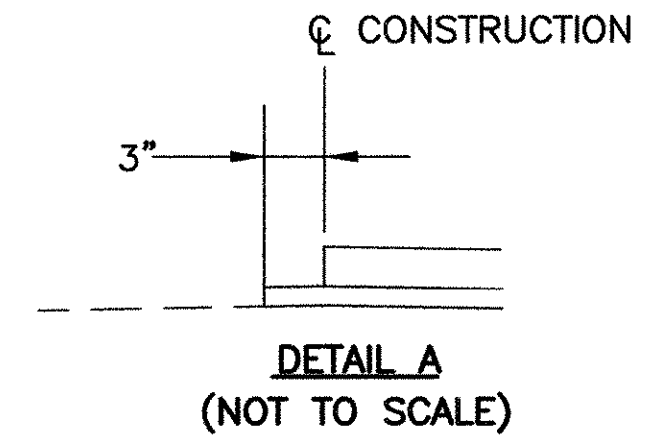


LEGEND

- (ELW) WORK ZONE EDGE LINE, WHITE
- (ELY) WORK ZONE EDGE LINE, YELLOW
- (CL) WORK ZONE CENTER LINE
- (LL) WORK ZONE LANE LINE



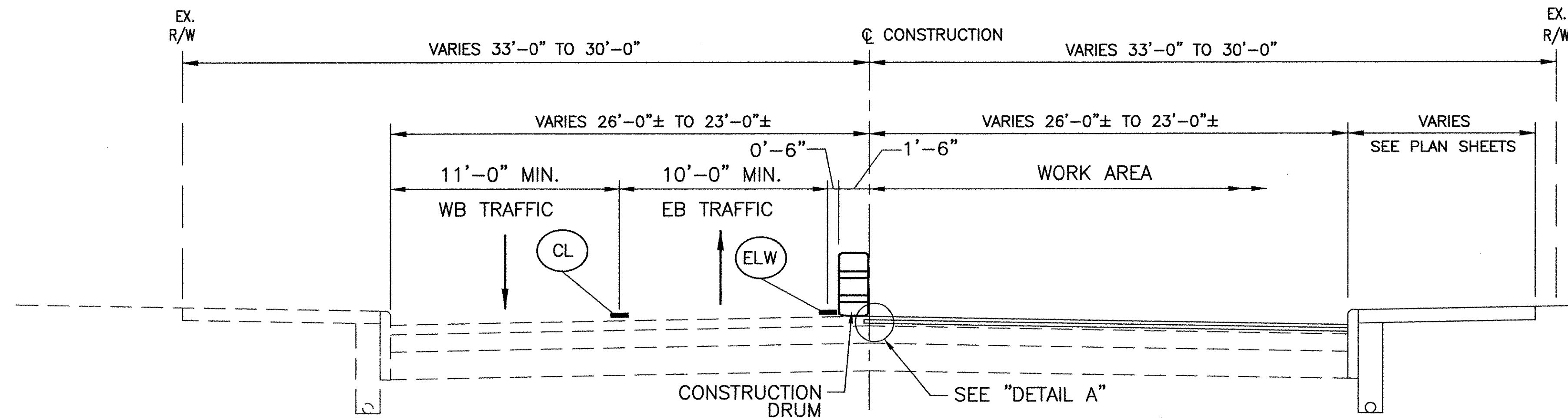
PHASE IIA – KINSMAN ROAD (E. 55TH TO E. 79TH)
DETOUR EB TRAFFIC (SEE DETOUR PLAN)



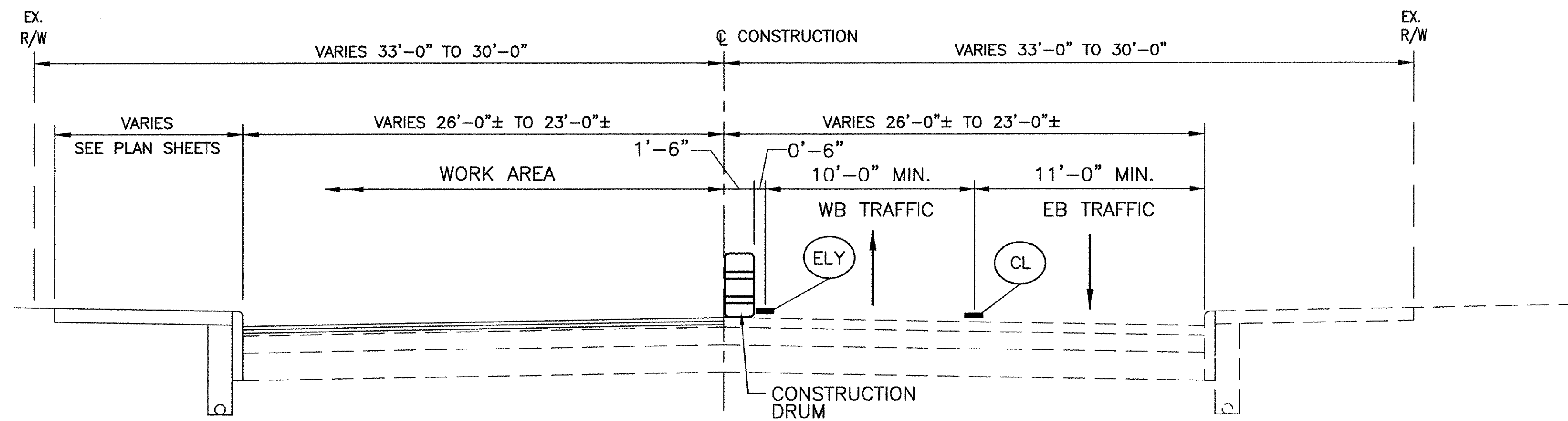
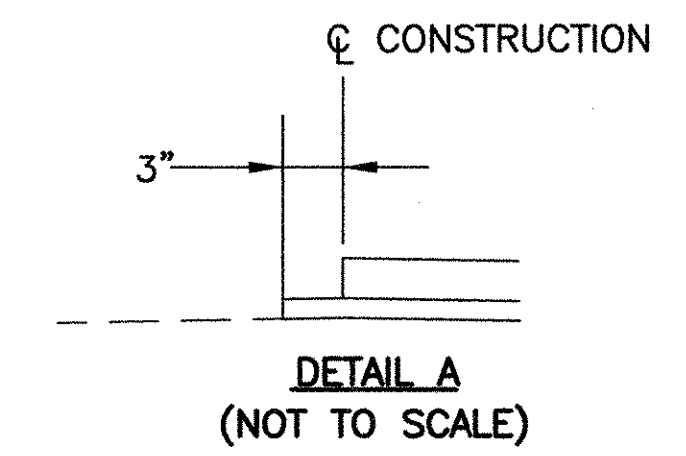
PHASE IIB – KINSMAN ROAD (E. 55TH TO E. 79TH)
DETOUR EB TRAFFIC (SEE DETOUR PLAN)

LEGEND

- (ELW) WORK ZONE EDGE LINE, WHITE
- (ELY) WORK ZONE EDGE LINE, YELLOW
- (CL) WORK ZONE CENTER LINE
- (LL) WORK ZONE LANE LINE



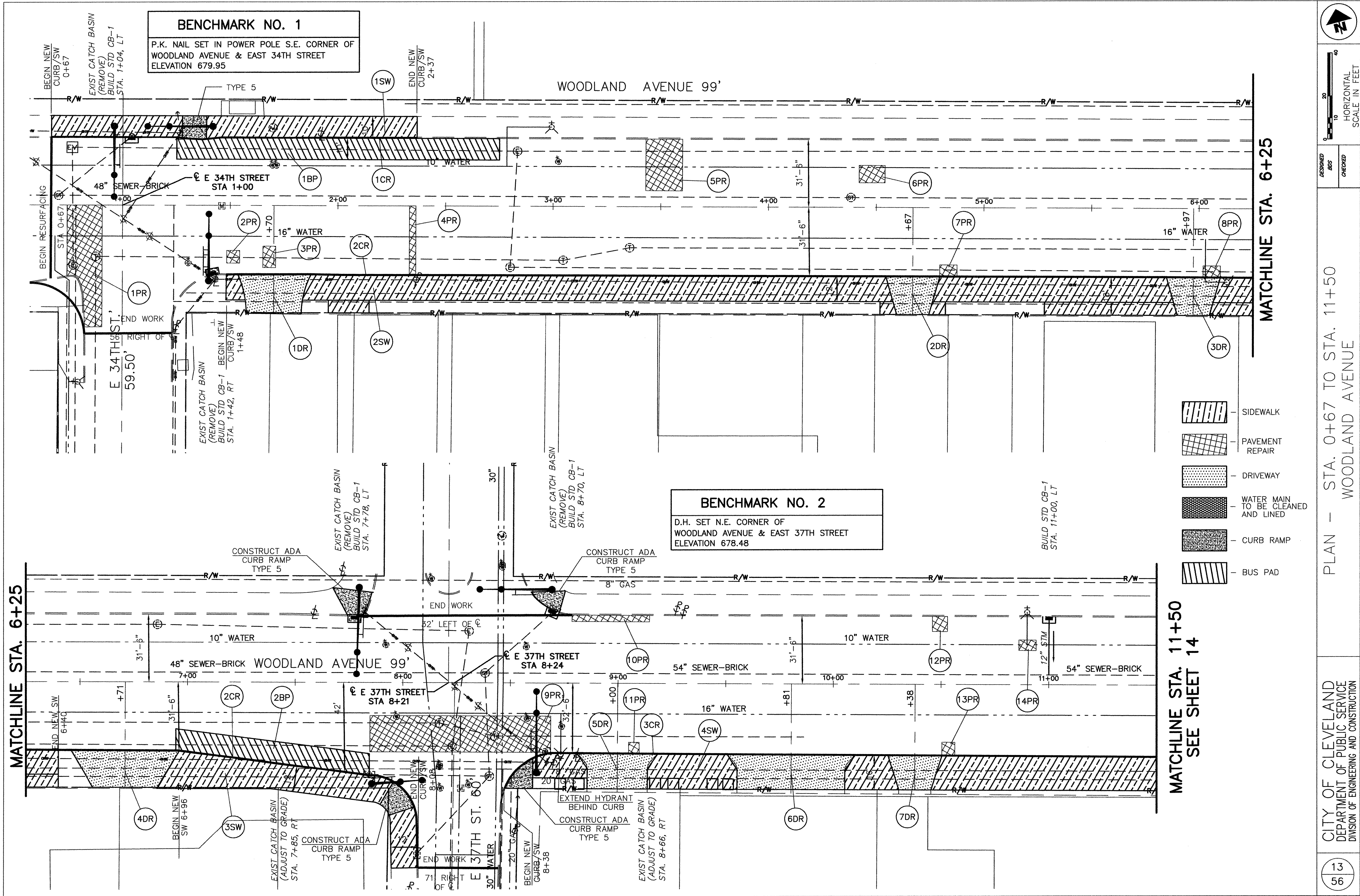
PHASE IIIA - KINSMAN ROAD (E. 79TH TO E. 93RD)

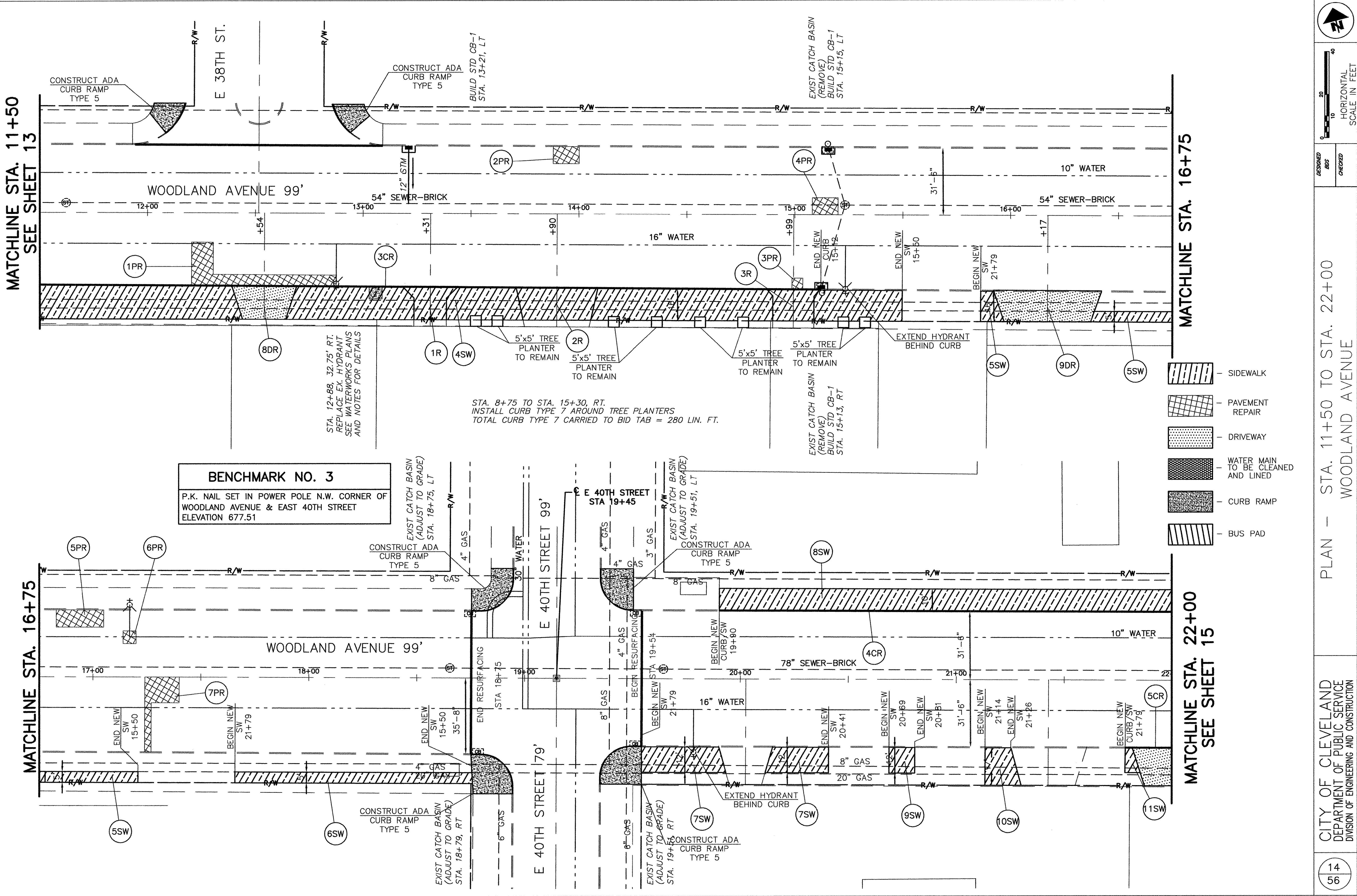


PHASE IIIB - KINSMAN ROAD (E. 79TH TO E. 93RD)

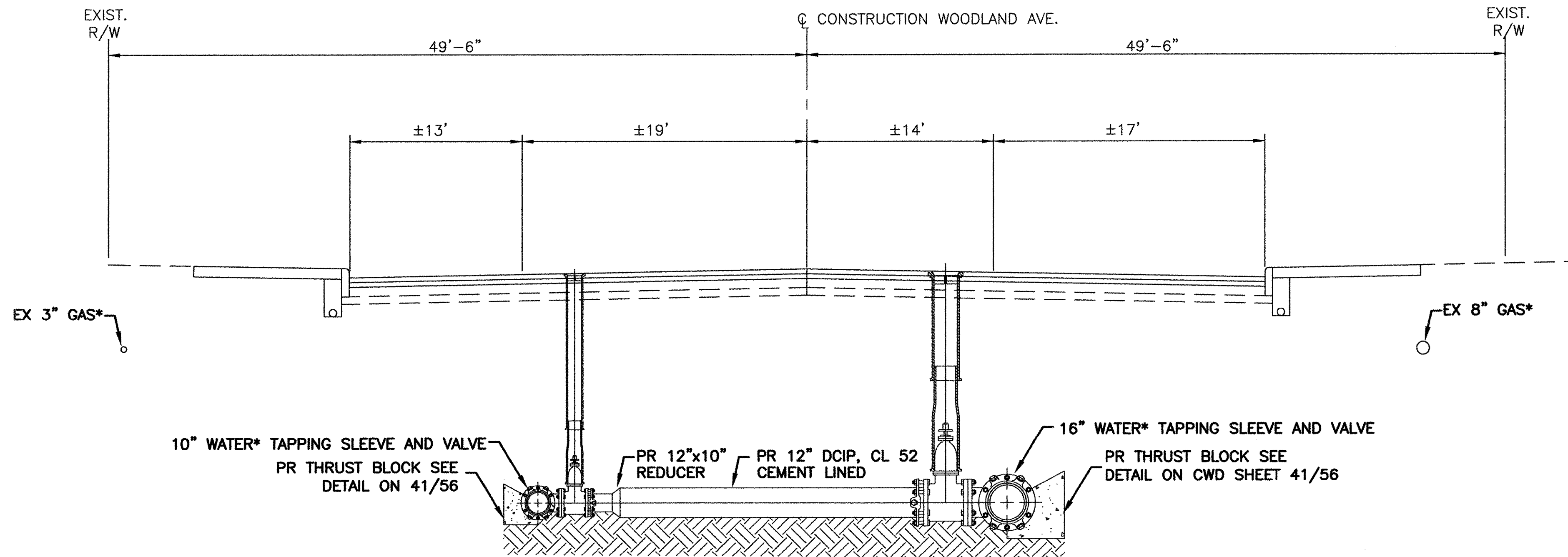
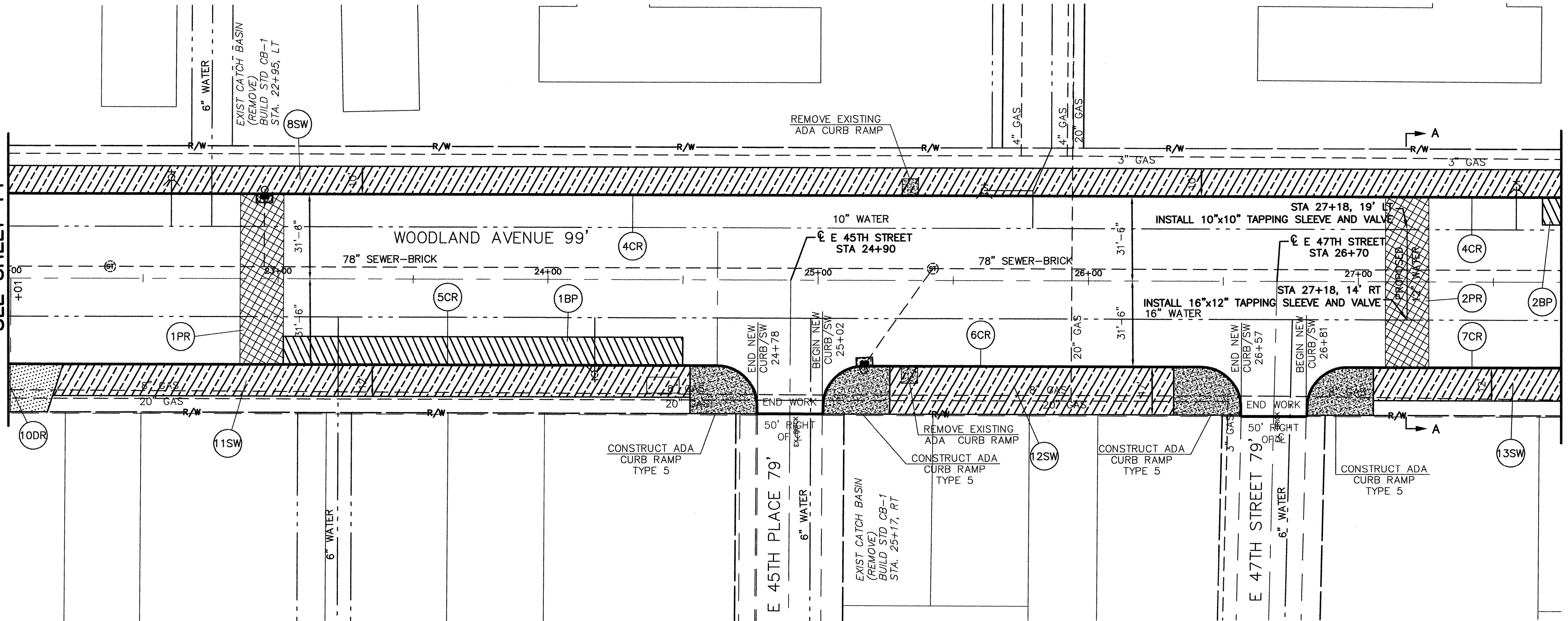
LEGEND

- (ELW) WORK ZONE EDGE LINE, WHITE
- (ELY) WORK ZONE EDGE LINE, YELLOW
- (CL) WORK ZONE CENTER LINE
- (LL) WORK ZONE LANE LINE





MATCHLINE STA. 22+00
SEE SHEET 14



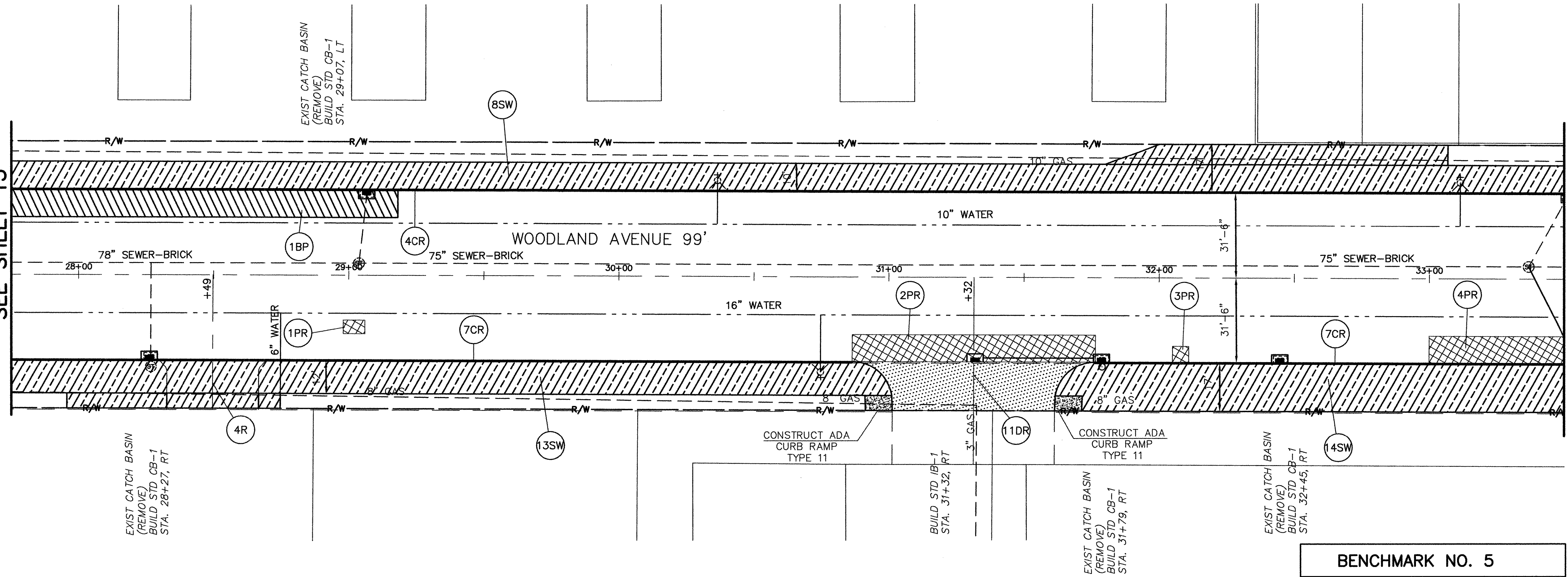
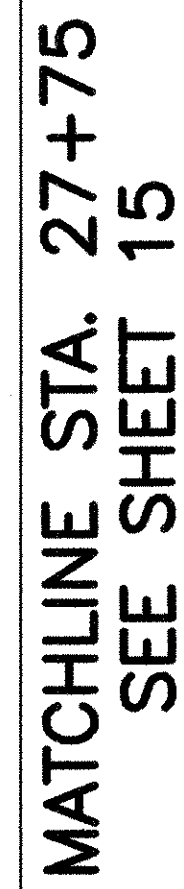
*EXISTING UTILITIES ARE SHOWN FOR GENERAL REFERENCE ONLY.
CONTRACTOR SHALL POT HOLE EXISTING AREA TO LOCATE UTILITIES.

BENCHMARK NO. 4
TOP OF HYDRANT @
4615 WOODLAND AVENUE
ELEVATION 681.59

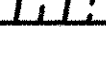
- SIDEWALK
- PAVEMENT REPAIR
- DRIVEWAY
- WATER MAIN TO BE CLEANED AND LINED
- CURB RAMP
- BUS PAD

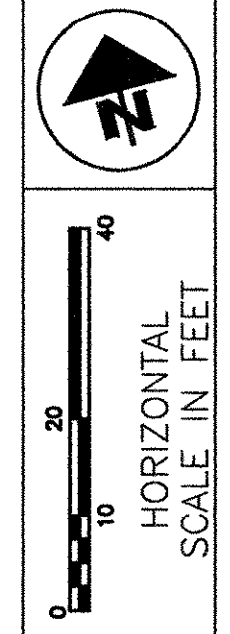
PLAN - STA. 22+00 TO STA. 27+75
WOODLAND AVENUE

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION



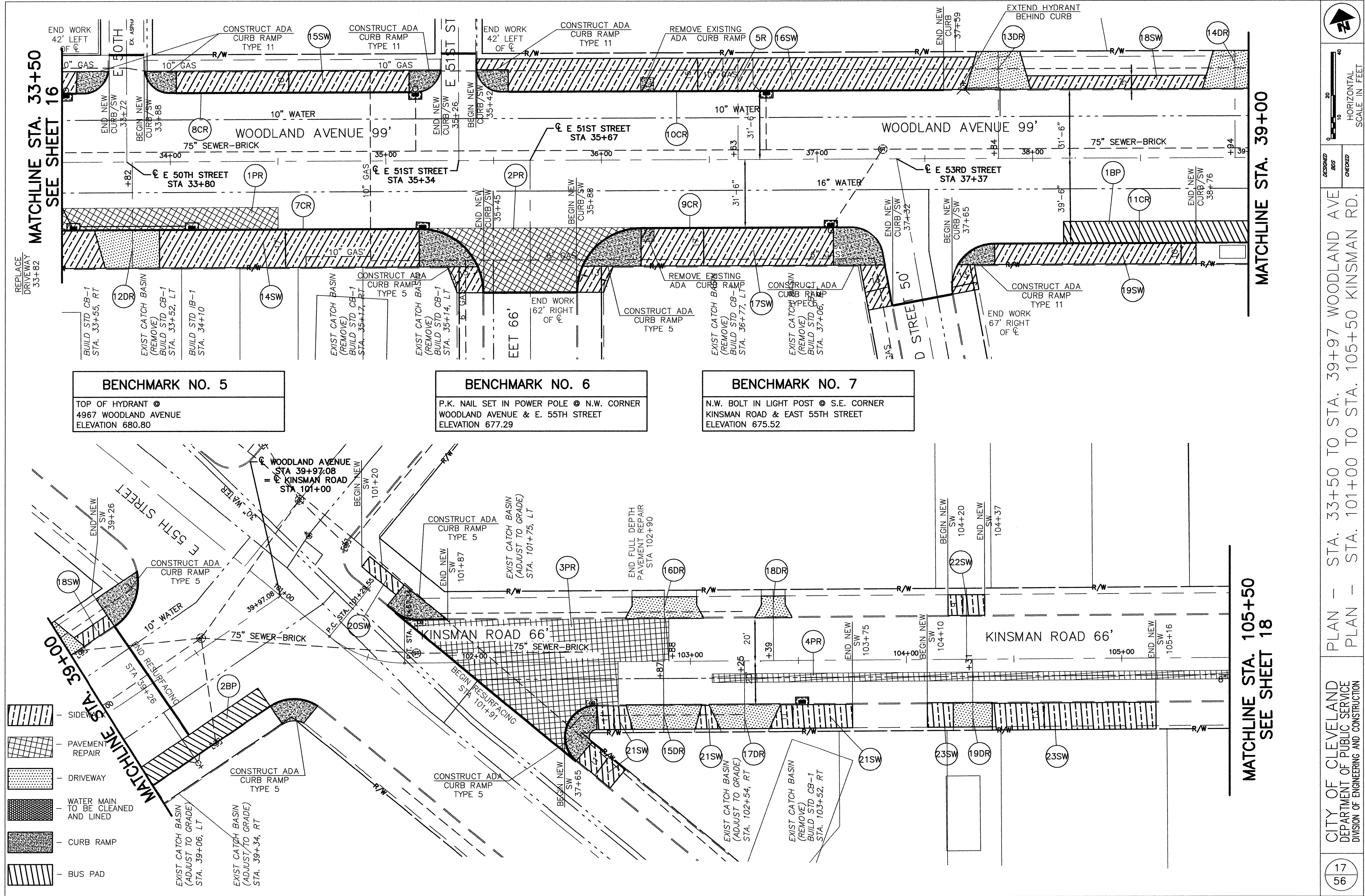
BENCHMARK NO. 5
TOP OF HYDRANT @ 4967 WOODLAND AVENUE ELEVATION 680.80

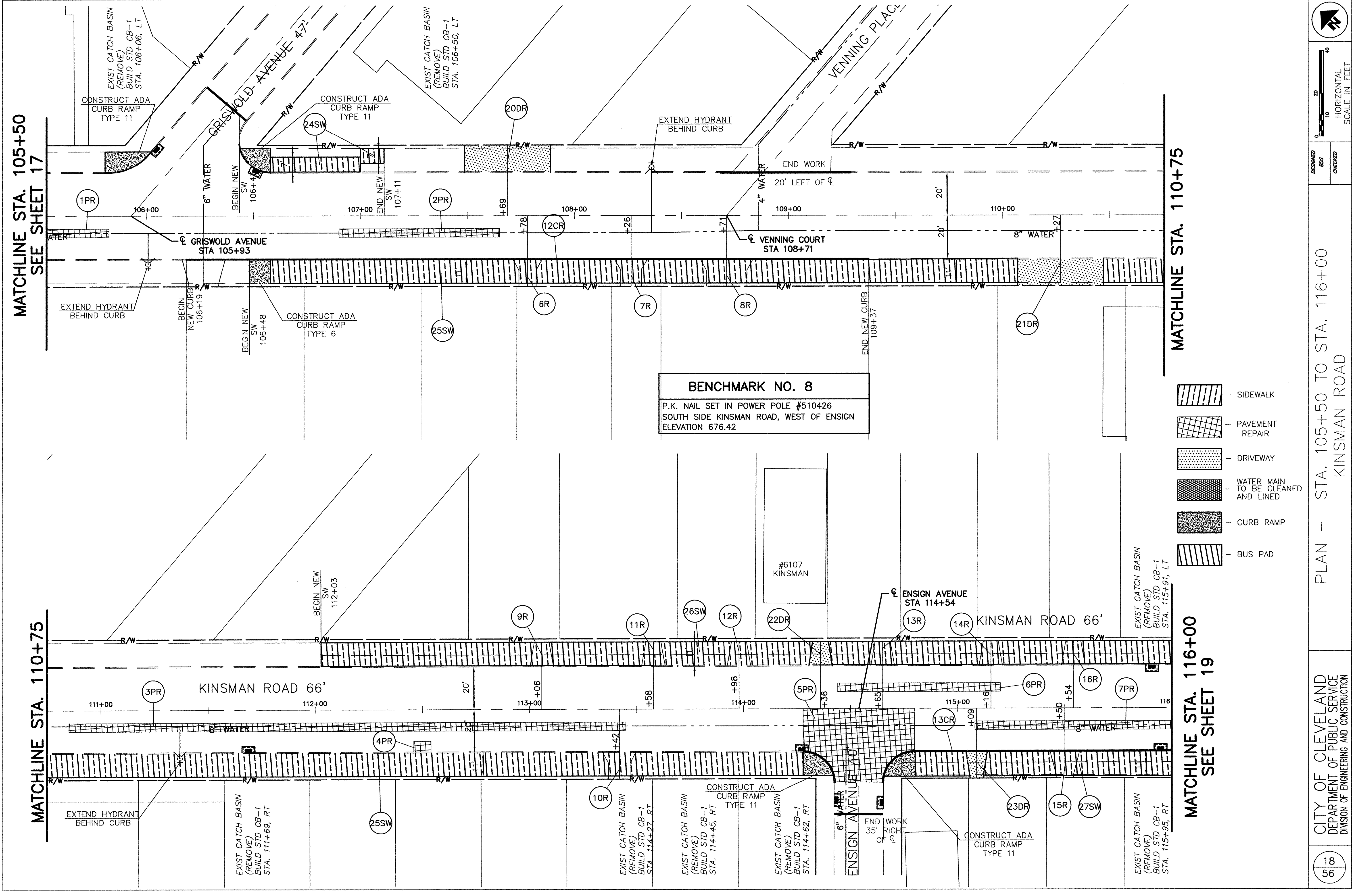
-  — SIDEWALK
-  — PAVEMENT REPAIR
-  — DRIVEWAY
-  — WATER MAIN TO BE CLEANED AND LINED
-  — CURB RAMP
-  — BUS PAD



PLAN - STA. 27+75 TO STA. 33+50
WOODLAND AVENUE

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION



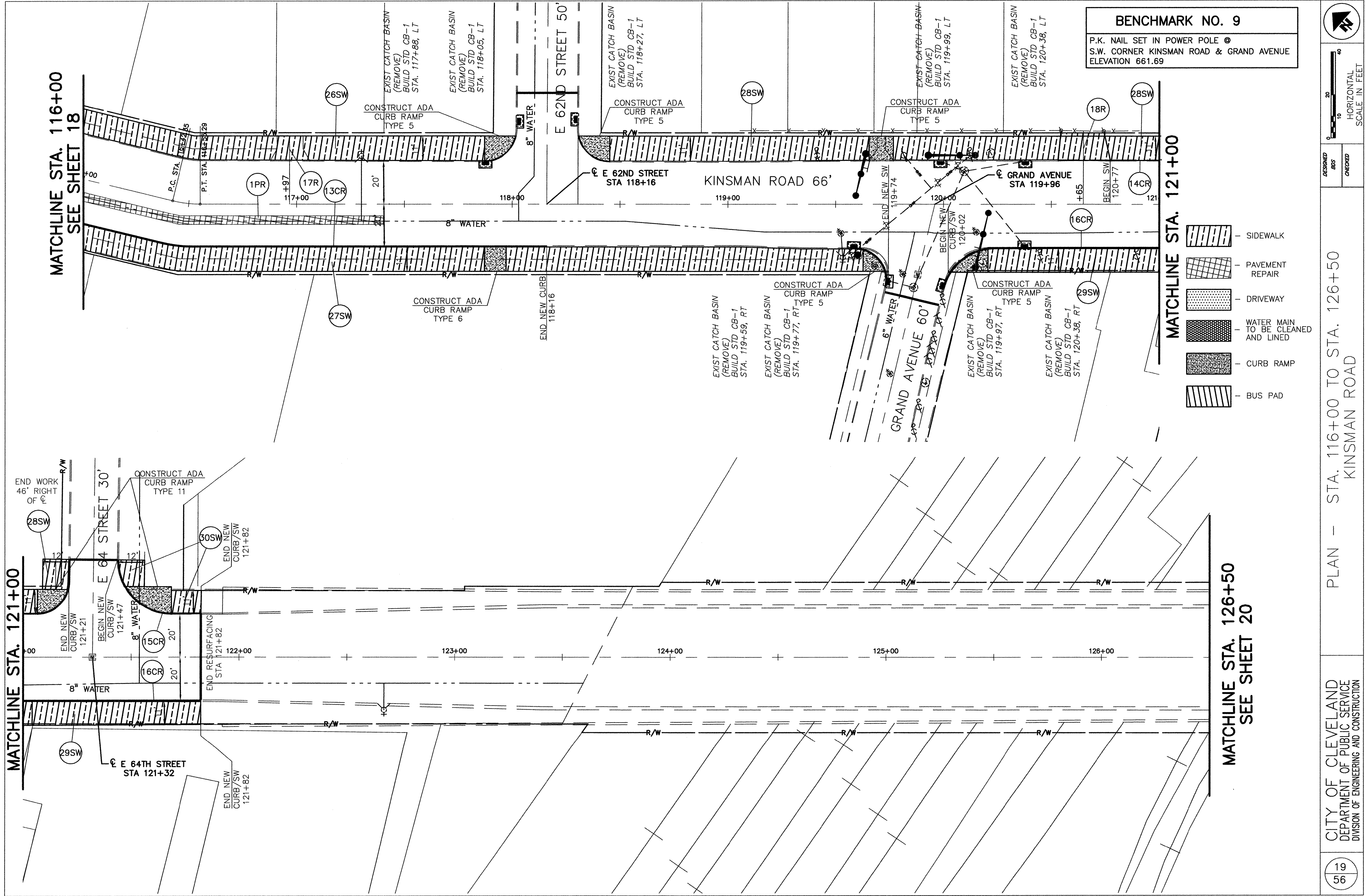


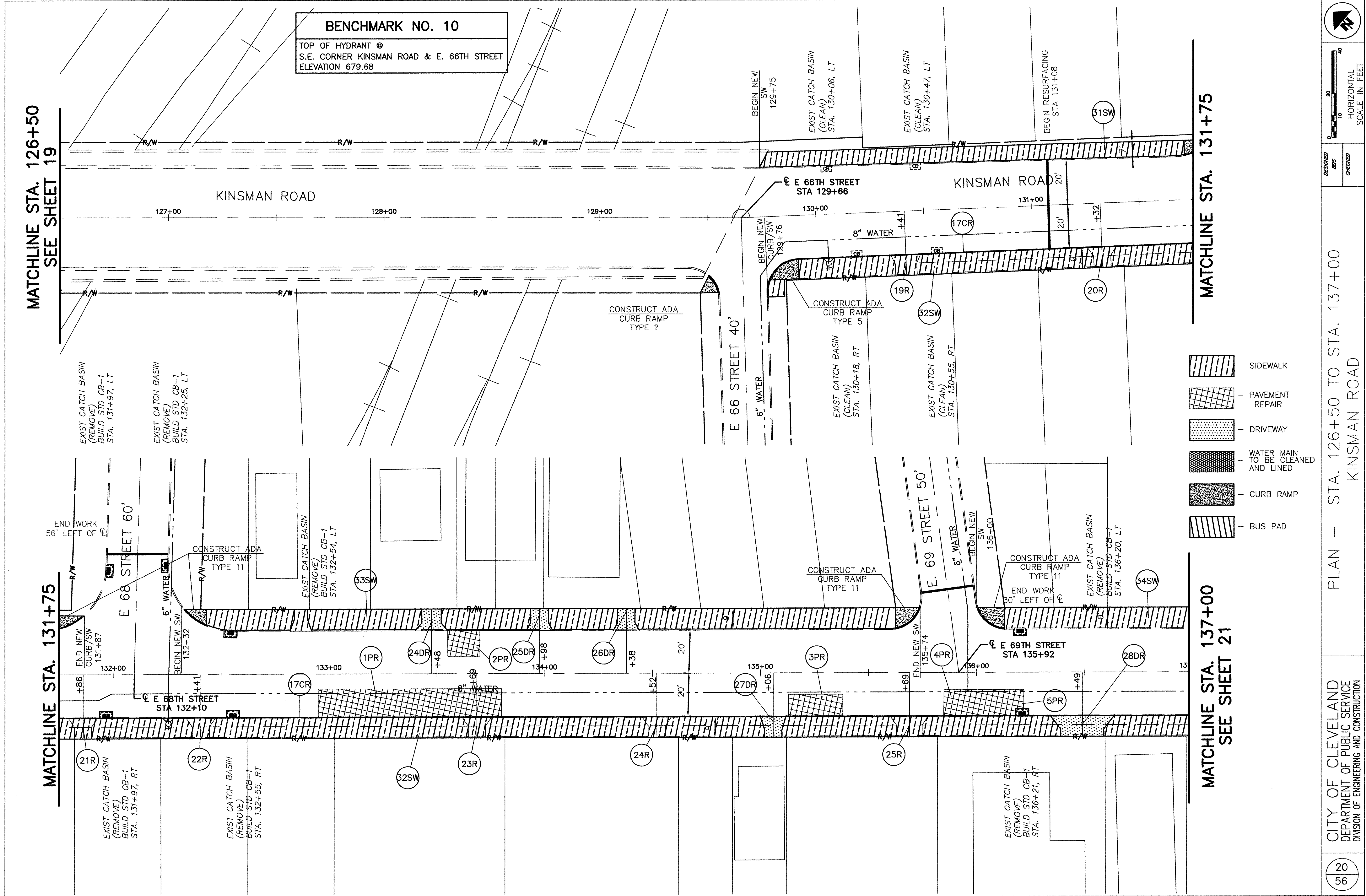
MATCHLINE STA. 105+50
SEE SHEET 17

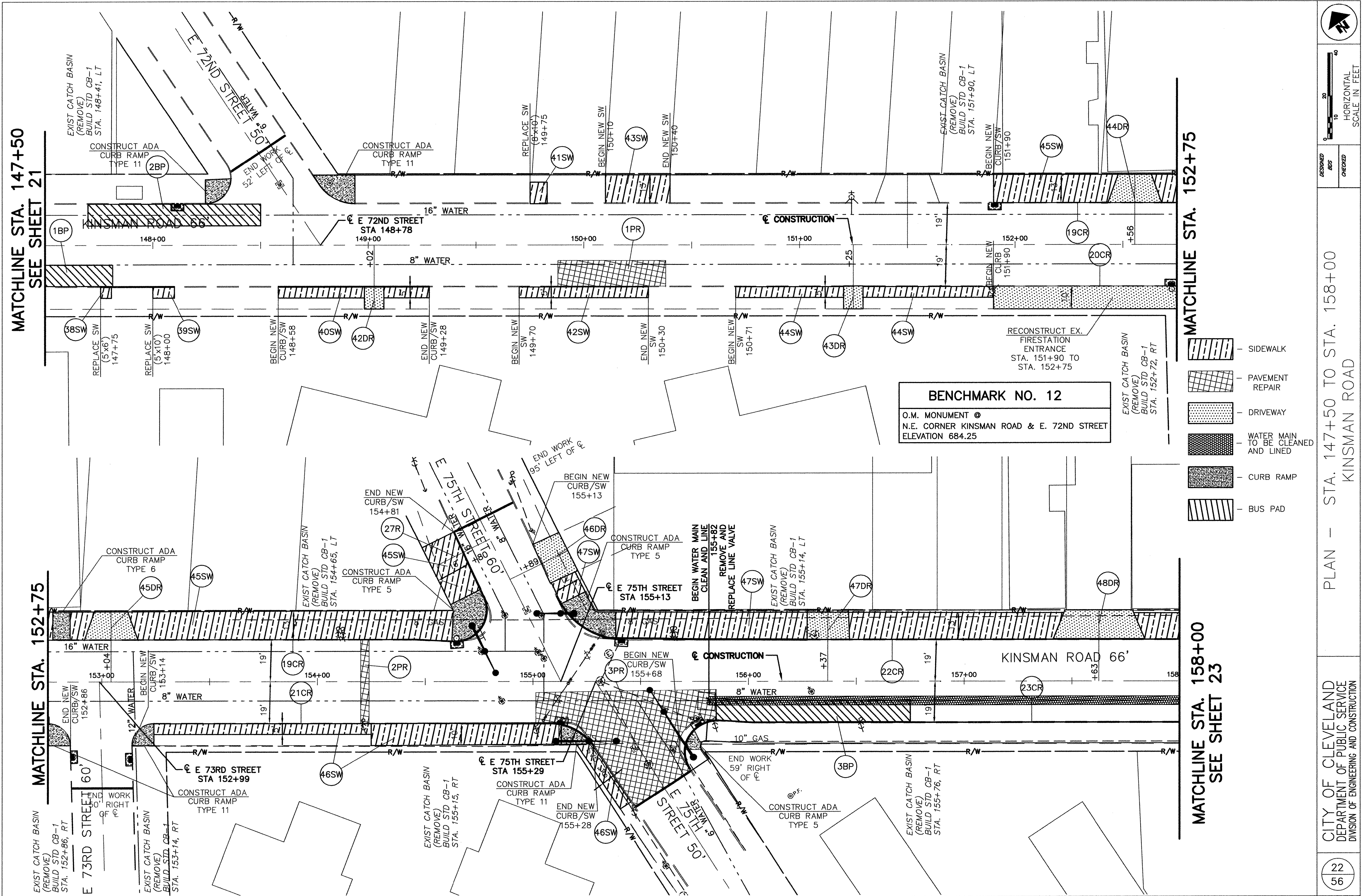
MATCHLINE STA. 110+75

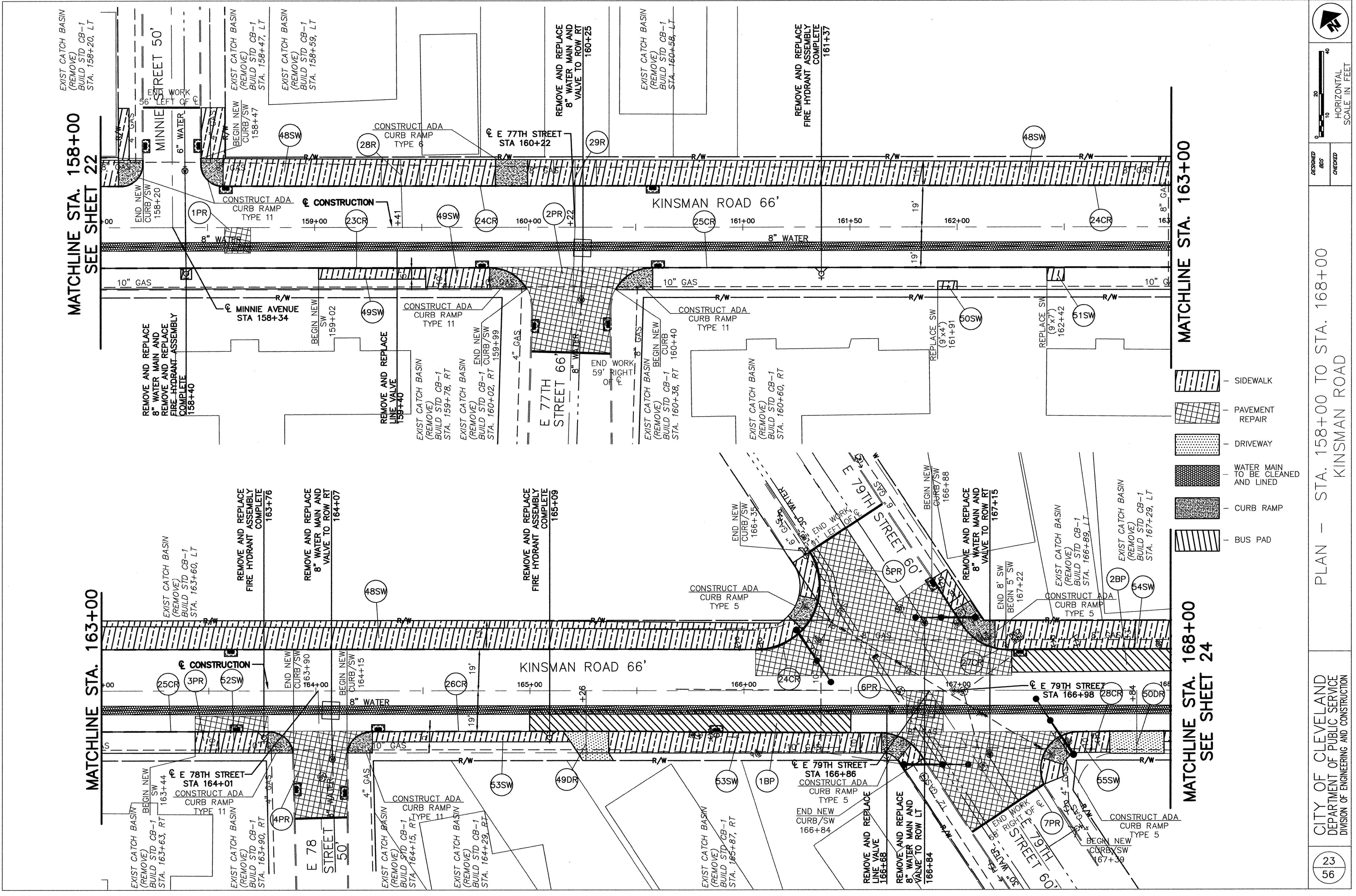
MATCHLINE STA. 110+75

MATCHLINE STA. 116+00
SEE SHEET 19







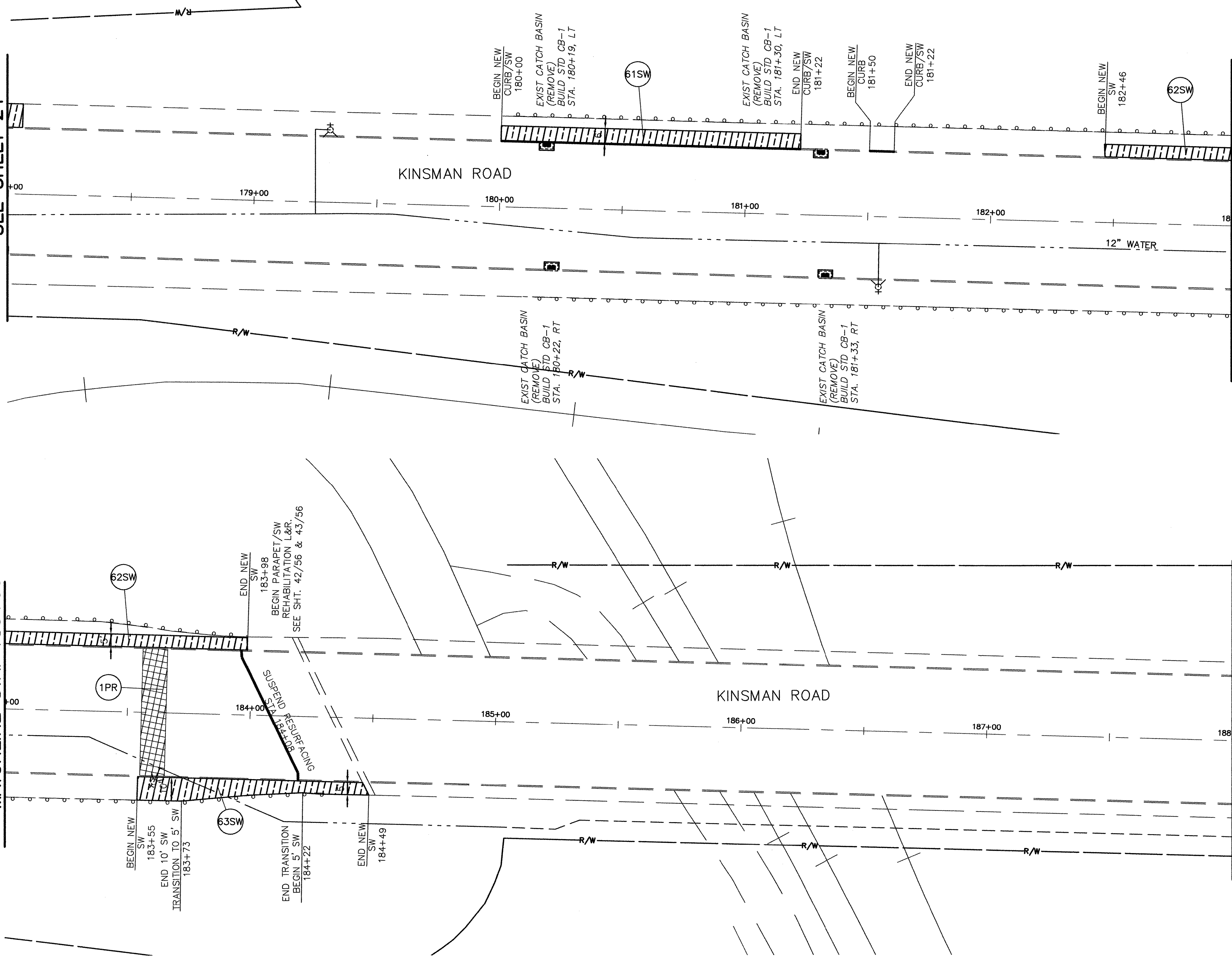


MATCHLINE STA. 178+00
SEE SHEET 24

MATCHLINE STA. 183+00

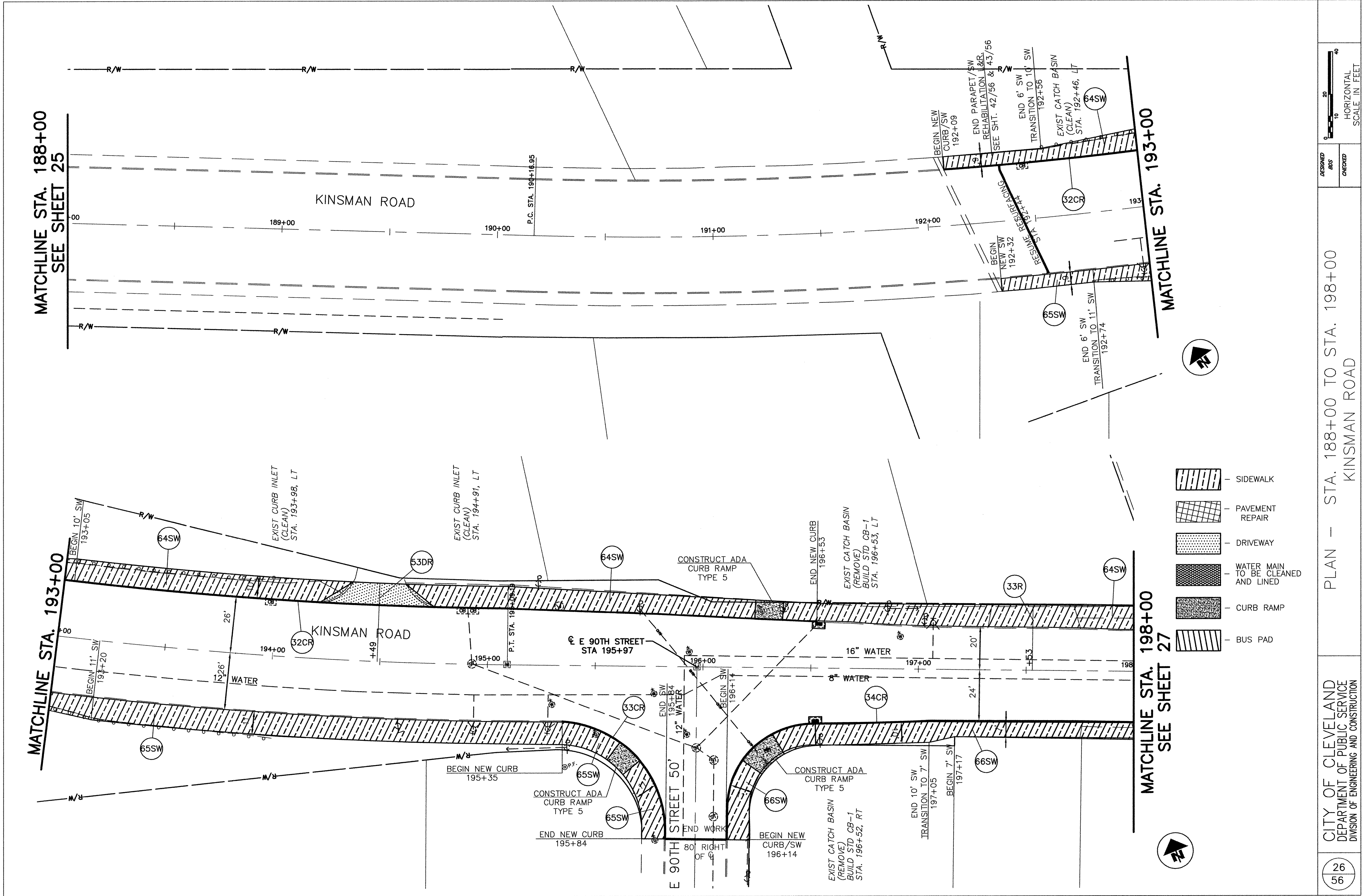
MATCHLINE STA. 183+00

MATCHLINE STA. 188+00
SEE SHEET 26

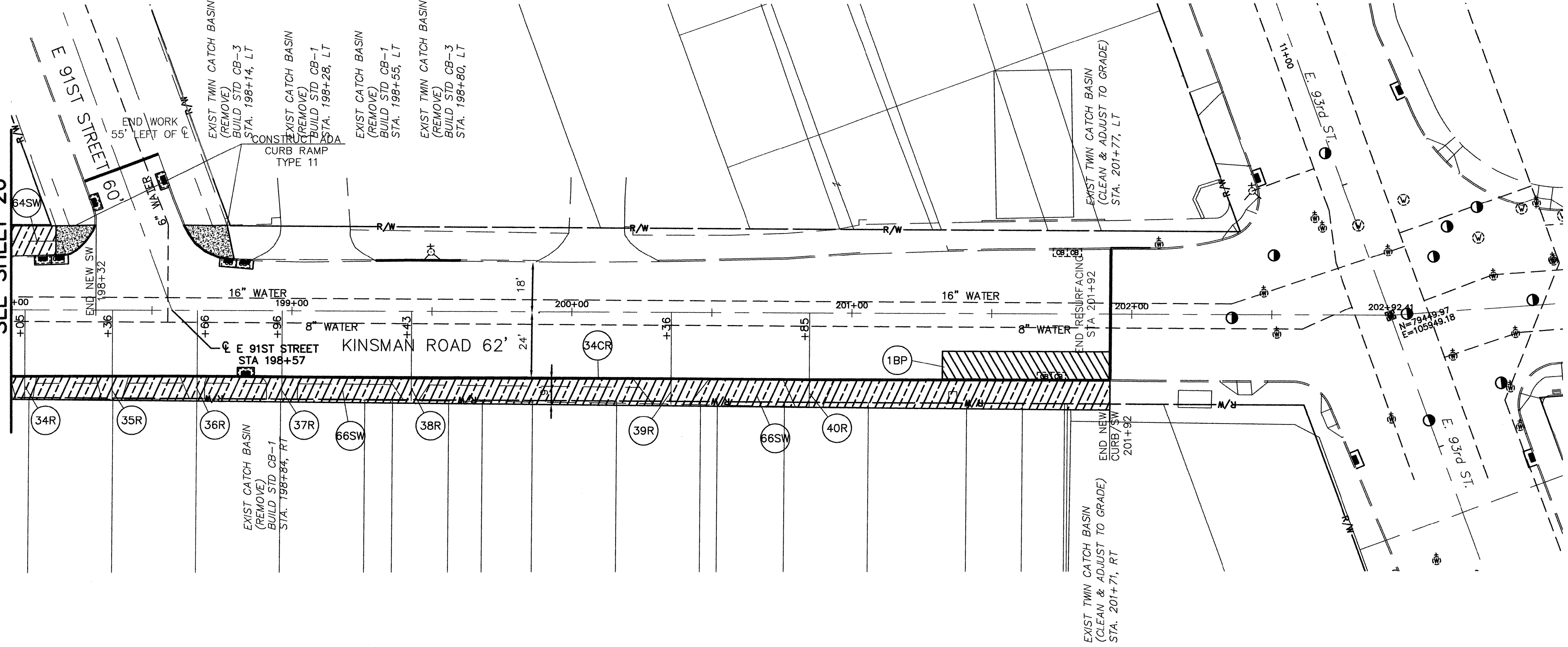


- SIDEWALK
- PAVEMENT REPAIR
- DRIVEWAY
- WATER MAIN TO BE CLEANED AND LINED
- CURB RAMP
- BUS PAD

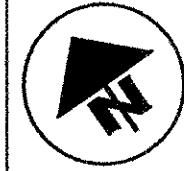




MATCHLINE STA. 198+00
SEE SHEET 26



- SIDEWALK
- PAVEMENT REPAIR
- DRIVEWAY
- WATER MAIN TO BE CLEANED AND LINED
- CURB RAMP
- BUS PAD



TRAFFIC CONTROL WORK SCOPE

THE TRAFFIC CONTROL PORTION OF THIS PROJECT REQUIRES THE MODIFICATION OF NEW SIGNAL INSTALLATIONS AT SIX (6) INTERSECTIONS, AS WELL AS NEW SIGNS AND PAVEMENT MARKINGS. THIS PROJECT ALSO INCLUDES INTERCONNECTING THE SIGNALS INCLUDED IN THIS PROJECT TO FORM A CLOSED LOOP SYSTEM CONNECTED TO THE CLOSED LOOP SYSTEM ON E. 55TH STREET.

THE TRAFFIC SIGNAL INSTALLATION SHALL INCLUDE MAST ARMS, CONTROLLER, SIGNAL HEADS, PEDESTRIAN SIGNAL HEADS, PUSHBUTTONS, WIRING, VEHICULAR DETECTORS, AND ALL OTHER INCIDENTALS NECESSARY FOR A COMPLETE TRAFFIC CONTROL SIGNAL.

THESE NOTES AND SPECIFICATIONS SUPPLEMENT THE STATE OF OHIO DEPARTMENT OF TRANSPORTATION CONSTRUCTION AND MATERIAL SPECIFICATIONS. THE WORK TO BE PERFORMED BY THE CONTRACTOR IN CONNECTION WITH FURNISHING LABOR, SUPPLIES, EQUIPMENT, MATERIALS, AND PERFORMING ALL OPERATIONS NECESSARY FOR THE ACCEPTABLE INSTALLATION OF THE TRAFFIC CONTROL DEVICES SHALL BE IN STRICT ACCORDANCE WITH THESE PLANS, NOTES, AND SPECIFICATIONS. THESE NOTES, DETAILS, AND DRAWINGS ARE INTENDED TO PROVIDE FOR ALL MATERIAL AND LABOR REQUIRED TO FURNISH AND INSTALL A COMPLETE TRAFFIC CONTROL SYSTEM INSTALLATION.

REMOVAL OF EXISTING SIGNS AND STORAGE

ALL SIGNS REMOVED SHALL BE DELIVERED BY THE CONTRACTOR TO THE CITY OF CLEVELAND SIGN SHOP 4150 EAST 49th STREET, BUILDING #4 (216) 420-8282. TWO WEEKS IN ADVANCE, NOTICE MUST BE GIVEN TO THE CITY SIGN SHOP OF DELIVERY AND WHEN PAVEMENT-MARKING OPERATIONS WILL BE COMPLETED.

ITEM 625 – TRENCH

TRENCHING SHALL CONFORM TO SECTIONS 625.13 AND 625.20 OF THE OHIO DEPARTMENT OF TRANSPORTATION’S CONSTRUCTION AND MATERIAL SPECIFICATION. THE MATERIALS, EQUIPMENT AND LABOR NECESSARY TO REMOVE AND REPLACE PAVED SURFACES IN AREAS OUTSIDE OF PROPOSED WORK SHALL BE INCLUDED IN THE BID QUANTITY FOR TRENCH IN PAVED AREAS, TYPE A OR TYPE B AS DEFINED IN OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATION 625.20.

ITEM 625 – PULL BOX. 13” X 24” X 18”

BOX SIZE: 13” X 24” X 18” DEEP (NOMINAL)
BOX TO TAPER OUTWARD FROM TOP TO THE OPEN BOTTOM
INSIDE BOTTOM DIMENSIONS 20” W X 29 1/2” L MINIMUM.

COVER SIZE: 13 3/4” X 23 1/4” X 2” OVERALL WEIGHT 50 LBS.

LOAD CAPACITY: 15,000 LBS., ON A 10” X 10” AREA TESTED IN ACCORDANCE WITH WESTERN UNDERGROUND COMMITTEE GUIDE 3.6. COVER DEFLECTION TO BE LESS THAN 1/2” AT DESIGN LOAD AND SHOW NO SIGNS OF DAMAGE AFTER 10 CYCLES AT DESIGN LOAD.

MATERIAL AND CONSTRUCTION:

BOX: THE BODY SHALL BE MADE WITH FIBERGLASS REINFORCED POLYMER (FRP) WITH ISOPHTHALIT POLYESTER USING THE SPRAY-UP AND ROLL CONSTRUCTIONS METHOD. THE MATERIAL MUST HAVE STABILIZERS TO RESIST UV DEGRADATION IN ACCORDANCE WITH ASTM D-790 AND ASTM D-1501-71 SECTION 6, PROCEDURE B. THE TOP RING OF THE BOX WILL BE MADE OF POLYMER CONCRETE USING A POLYESTER BINDER WITH AGGREGATE FILLERS AND CHOPPED FIBERGLASS WITH A MINIMUM TENSILE STRENGTH OF 1900 PSI. THE RING MUST HAVE THE SAME UV RESISTANCE AS THE FRP MATERIAL. THE THREADED INSERTS (2) FOR THE COVER BOLTS MUST BE STAINLESS STEEL.

COVER: THE COVER SHALL BE MADE WITH A THICK MOLDING COMPOUND (TMC) USING THE COMPRESSION MOLDING METHOD. THE TMC SHALL CONSIST OF A MINIMUM 10% FIBERGLASS IN A CALCIUM CARBONATE AND POLYESTER RESIGN MATRIX. THE COVER MUST BE MARKED "TRAFFIC" HAVE A NON-SKID SURFACE AND THE SAME UV RESISTANCE AS THE FRP MATERIAL. TWO RECESSED HEX HEAD STAINLESS STEEL BOLTS AND WASHERS WILL BE USED TO SECURE THE COVER TO THE BOX.

ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, AND INCIDENTALS NECESSARY TO PERFORM THE REQUIRED WORK SHALL BE INCLUDED IN THE CONTRACT PRICE BID PER EACH FOR ITEM 625 – PULL BOX, 13” X 24” X 18”.

UNDERGROUND CONDUIT INSTALLATION

THE PROJECT INCLUDES CONSTRUCTION OF UNDERGROUND CONDUIT IN LOCATIONS THAT CONTAIN NUMEROUS EXISTING UNDERGROUND UTILITIES. IF A UTILITY CONFLICT IS IDENTIFIED THE CONTRACTOR SHALL REPOSITION THE CONDUIT TO AVOID SAID CONFLICT WITH THE APPROVAL OF THE ENGINEER. NO ADDITIONAL COMPENSATION SHALL BE AWARDED FOR ADDITIONAL WORK REQUIRED TO AVOID UTILITIES.

ITEM 632 – VEHICULAR SIGNAL HEAD. 3 AND 5 SECTION. 12” LENS. 1 WAY

SECTION 732.01 OF THE OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS IS MODIFIED FOR THIS PROJECT AS FOLLOWS:

- A) SIGNAL HEADS AND VISORS SHALL BE CONSTRUCTED OF INJECTION MOLDED, UV STABILIZED, POLYCARBONATE PLASTIC AND MEET ITE SPECIFICATIONS.
- B.) PLASTIC LENSES SHALL BE USED.
- C.) PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM.
- D.) PROPER EXTERIOR COLORS SHALL BE OBTAINED BY USE OF COLORED PLASTIC MATERIAL RATHER THAN PAINTING.
- E.) TRAFFIC SIGNALS SHALL BE RIGID MOUNTED WITH CENTERLINE OF MAST ARM MATCHING CENTERLINE OF RED LENS. ASTROBRACS TYPE MOUNTING SHALL BE USED.
- F.) GREEN AND RED SIGNAL HEAD SECTIONS SHALL BE LED TYPE BULBS, GELCORE OR DIALYTE.

ITEM 632 – PEDESTRIAN SIGNAL HEAD. TYPE D2

SECTION 732.05 OF THE OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS IS MODIFIED FOR THIS PROJECT AS FOLLOWS:

- A.) SIGNAL HEADS AND VISORS MAY BE CONSTRUCTED OF POLYCARBONATE PLASTIC AND SHALL MEET ITE SPECIFICATIONS IF THEY ARE SO CONSTRUCTED.
- B.) PLASTIC LENSES AND LED TYPE BULBS, GELCORE OR DIALYTE, SHALL BE USED.
- C.) PIPE, SPACERS AND FITTINGS CONSTRUCTED OF POLYCARBONATE PLASTIC MAY BE USED IN LIEU OF GALVANIZED STEEL OR ALUMINUM IF PLASTIC SIGNAL HEADS ARE FURNISHED.
- D.) INSTALLATION SHALL BE PER ODOT STANDARD CONSTRUCTION DRAWING TC-85.10 WITH THE EXCEPTION THAT "CLAM SHELLS" SHALL NOT BE USED.
- E.) THE INTERNATIONAL PALM AND PEDESTRIAN SYMBOLS SHALL BE USED.
- F.) STAINLESS STEEL BANDS AND POLE HUB PLATES SHALL BE USED TO MOUNT SIGNALS ON POLES.

ITEM 632 – SIGNALIZATION. MISC.: PERMANENT REMOVAL OF EXISTING TRAFFIC SIGNAL INSTALLATION

THREE EXISTING TRAFFIC SIGNAL INSTALLATIONS WILL BE PERMANENTLY REMOVED DURING THIS PROJECT. THE THREE INTERSECTIONS ARE KINSMAN ROAD AND SIDAWAY AVENUE, KINSMAN ROAD AND E. 80TH/81ST STREET, AND KINSMAN ROAD AND E. 90TH STREET. THE REMOVED ITEMS SHALL BE DELIVERED TO THE CITY AS STATED IN "D-62 REMOVAL OF TRAFFIC SIGNAL INSTALLATION (ITEM 632)". IN ADDITION, THE FOLLOWING STEPS SHALL BE TAKEN:

- 1) INFORM THE LOCAL MEDIA, SCHOOLS AND LOCAL EMERGENCY/SAFETY FORCES OF THE IMPENDING REMOVAL, PRIOR TO REMOVAL, AS DIRECTED BY THE ENGINEER.
- 2) INSTALL SIGN STATING "TRAFFIC SIGNAL REMOVAL SCHEDULED FOR (date), CITY OF CLEVELAND TRAFFIC ENGINEERING DIVISION" ON ALL APPROACHES AT LEAST 60 DAYS PRIOR TO REMOVAL OF SIGNAL.
- 3) CHECK THE CONTROLLER CABINET WIRING TO ENSURE FLASHING MODE COORDINATES WITH PROPOSED TRAFFIC CONTROL DEVICES (FLASH RED FOR SIDAWAY AVENUE, E. 80TH/81ST STREET, AND E. 90TH STREET, YELLOW FOR KINSMAN ROAD). INSTALL NEW TRAFFIC CONTROL ITEMS (STOP SIGNS FOR SIDAWAY AVENUE, E. 80TH/81ST STREET, AND E. 90TH STREET), BUT LEAVE ALL STOP BARS IN PLACE, AND PLACE THE SIGNAL IN FLASHING MODE FOR AT LEAST 60 DAYS. (THIS MAY BE DONE IN CONJUNCTION WITH 2).
- 4) AFTER THE 60-DAY TRIAL PERIOD, THE REMOVAL OF THE TRAFFIC SIGNAL INSTALLATION SHALL PROCEED AS DIRECTED BY THE ENGINEER. AN ADDITIONAL 60 DAY TRIAL PERIOD MAY BE NECESSARY IF ACCIDENTS HAVE INCREASED AT THE INTERSECTION.

PAYMENT FOR "ITEM 632 – SIGNALIZATION MISC.: PERMANENT REMOVAL OF EXISTING TRAFFIC SIGNAL INSTALLATION" WILL BE AT THE CONTRACT UNIT PRICE BID FOR EACH AND SHALL INCLUDE ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS NECESSARY TO COMPLETE THE TASK ACCORDING TO PLAN SPECIFICATIONS. THE FOLLOWING QUANTITY HAS BEEN CARRIED TO THE TRAFFIC CONTROL GENERAL SUMMARY:

ITEM 632 3 EACH SIGNALIZATION, MISC.: PERMANENT REMOVAL OF EXISTING TRAFFIC SIGNAL INSTALLATION

CERTIFICATION AND APPROVAL OF TRAFFIC CONTROL ITEMS

SUBMISSIONS BY THE CONTRACTOR TO THE ENGINEER FOR PPROVAL SHALL CONFORM WITH 632.04 AND 633.04 AS APPROPRIATE.

ITEM 632 – POWER SERVICE

ELECTRIC POWER SHALL BE OBTAINED FROM CLEVELAND PUBLIC POWER COMPANY (CPP) OR FIRST ENERGY AT THE LOCATIONS INDICATED ON THE PLANS. POWER SUPPLIED SHALL BE 120 VOLTS. ALL POWER CABLES SHALL BE RATED FOR 600 VOLTS AND SHALL CONSIST OF No. 6 AWG COPPER. ALL CONNECTIONS OF POWER CABLE TO EQUIPMENT SHALL BE BY MEANS OF APPROVED SOLDERLESS TYPE CONNECTORS. THE SOLDERLESS CONNECTIONS ARE TO BE TAPED. POWER SERVICE SHALL ALSO INCLUDE 2” CONDUIT RISERS WHERE NECESSARY.

THE CONTRACTOR SHALL MEET ON SITE WITH A REPRESENTATIVE FROM BOTH CPP AND FIRST ENERGY THREE DAYS PRIOR TO CONSTRUCTION. CONTACT INFORMATION TO MAKE ARRANGEMENTS FOR THE SITE MEETING IS, FOR CPP, DALE TURKOVICH (216) 664-4245 EXT. 115, AND FOR FIRST ENERGY, PAT PLETKA (440) 546-8748.

ITEM 632 – LOOP DETECTOR UNITS. DELAY AND EXTENSION TYPE

IN ADDITION TO THE REQUIREMENTS OF 632.10 AND 732.07 OR 732.08, LOOP DETECTOR UNITS SHALL HAVE THE FOLLOWING REQUIREMENTS OR FEATURES:

THE OUTPUT DEVICE SHALL BE A RELAY AND ALL CONTACTS SHALL BE INCLUDED IN THE WIRING HARNESS.

THE UNIT SHALL BE SELF TUNING.

THE UNIT’S ELECTRICAL CONNECTION PLUGS OR WIRING HARNESS SHALL ALLOW READY REPLACEMENT WITH A SINGLE CHANNEL AMPLIFIER AS DESCRIBED IN 732.07 OF THE OHIO DEPARTMENT OF TRANSPORTATION’S CONSTRUCTION AND MATERIALS SPECIFICATIONS.

UNITS SHALL HAVE A DUAL OUTPUT FOR SYSTEM PURPOSES: A PRIMARY OUTPUT FOR PHASE CALLING AND A SECONDARY OUTPUT FOR TRAFFIC VOLUME COUNT PURPOSES.

ITEM 632 – DETECTOR LOOP. AS PER PLAN

IN THE COURSE OF COMPLETING PAVEMENT RECONSTRUCTION AND/OR RESURFACING FOR THIS PROJECT, THE CONTRACTOR MAY IMPACT EXISTING DETECTOR LOOPS AT THE FOLLOWING INTERSECTIONS:

- E. 40TH STREET AND WOODLAND AVENUE
- E. 55TH STREET AND WOODLAND AVENUE
- E. 55TH STREET AND KINSMAN ROAD
- E. 93RD STREET AND KINSMAN ROAD

THE DETECTOR LOOPS AT THESE EXISTING SIGNALIZED INTERSECTIONS TO REMAIN SHALL BE TESTED BY THE CONTRACTOR TO VERIFY THEY ARE FUNCTIONAL DURING AND UPON COMPLETION OF CONSTRUCTION. THIS TESTING SHALL BE INCLUDED IN ITEM 614 – MAINTAINING TRAFFIC. IF THE CONTRACTOR FINDS ANY DETECTOR LOOP IN AN INTERSECTION DESIGNATED AS EXISTING TO REMAIN IS DAMAGED, HE SHALL IMMEDIATELY NOTIFY THE PROJECT ENGINEER. THE FOLLOWING QUANTITY IS ESTIMATED FOR USE AT THE DIRECTION OF THE PROJECT ENGINEER TO REPLACE EXISTING TO REMAIN LOOPS DAMAGED DURING CONSTRUCTION:

ITEM 632 16 EACHDETECTOR LOOP, AS PER PLAN

ITEM 632 – PEDESTAL. 9’

IN ADDITION TO THE REQUIREMENTS OF SECTION 632.03, PEDESTAL SHALL BE COATED WITH RUST RESISTANT PAINT RECOMMENDED BY THE MANUFACTURER. THE COLOR SHALL BE "CLEVELAND LIGHT POLE BROWN".

ITEM 632 – INTERCONNECT CABLE. 6 PAIR. NO. 19 AWG SOLID REA (PE-38)

SPICES SHALL OCCUR ONLY AT THE TERMINAL ENDS OF THE HARDWIRE INTERCONNECT PANEL. NO OTHER SPLICE LOCATIONS SHALL BE PERMITTED. PAYMENT FOR ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND OTHER INCIDENTALS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR "ITEM 632 INTERCONNECT CABLE, 6 PAIR, NO. 19 AWG, SOLID REA PE 38". MEASUREMENT WILL BE BASED UPON THE NUMBER OF LINEAR FEET IN PLACE.

THE INTERCONNECT CABLE WILL BE INSTALLED AERIAL ON EXISTING CPP POLES WHENEVER POSSIBLE AND UNDERGROUND IN CONCRETE ENCASED CONDUIT ONLY, WHERE DEEMED NECESSARY. 2-2” CONCRETE ENCASED CONDUITS SHALL BE INSTALLED WHENEVER INTERCONNECT CABLE IS INSTALLED UNDER EARTH OR WALK, AND 2-3” CONCRETE ENCASED CONDUITS SHALL BE INSTALLED WHERE UNDER PAVEMENT.

ITEM 632 – VEHICULAR SIGNAL HEAD. BY SIZE. AS PER PLAN
ITEM 632 – SIGNAL SUPPORT. BY TYPE AND DESIGN. AS PER PLAN
ITEM 632 – PEDESTAL. BY SIZE. AS PER PLAN
ITEM 632 – PEDESTRIAN SIGNAL HEAD. BY TYPE. AS PER PLAN
ITEM 632 – PEDESTRIAN PUSHBUTTON. AS PER PLAN

THE CONTRACTOR SHALL PROVIDE THE MATERIALS ONLY FOR THE FOLLOWING ITEMS:

- 1. VEHICULAR SIGNAL HEAD, BY SIZE
- 2. SIGNAL SUPPORT, BY TYPE AND DESIGN
- 3. PEDESTAL, BY SIZE
- 4. PEDESTRIAN SIGNAL HEAD, BY TYPE
- 5. PEDESTRIAN PUSHBUTTON

THE CONTRACTOR SHALL PERFORM ALL UNDERGROUND WORK – INCLUDING FOUNDATIONS, LOOPS, LEAD-IN CABLES, INTERCONNECT, ETC. AND PULL ALL WIRING TO EACH MAST ARM POLE AND SIGNAL CONTROL BOX.

THE CITY OF CLEVELAND TRAFFIC SIGNAL DEPARTMENT WILL INSTALL THE VEHICULAR AND PEDESTRIAN SIGNAL HEADS, THE SIGNAL SUPPORTS, THE PEDESTALS, AND THE PEDESTRIAN PUSHBUTTONS AT THE INTERSECTIONS.

GUARANTEE

THE CONTRACTOR SHALL GUARANTEE THAT THE TRAFFIC CONTROL EQUIPMENT INSTALLED AS PART OF THIS CONTRACT SHALL OPERATE SATISFACTORILY FOR A PERIOD OF 120 DAYS FOLLOWING COMPLETION OF THE 10-DAY PERFORMANCE TEST. IN THE EVENT OF UNSATISFACTORY OPERATION, THE CONTRACTOR SHALL CORRECT FAULTY INSTALLATIONS, MAKE REPAIRS AND REPLACE DEFECTIVE PARTS WITH NEW PARTS OF EQUAL OR BETTER QUALITY. EQUIPMENT, MATERIAL AND LABOR COSTS INCURRED IN CORRECTING AN UNSATISFACTORY OPERATION SHALL BE BORNE BY THE CONTRACTOR.

THE GUARANTEE SHALL COVER THE FOLLOWING ITEMS OF THE TRAFFIC CONTROL INSTALLATION: CONTROLLERS AND ASSOCIATED EQUIPMENT, SIGNAL HEADS, PUSHBUTTONS, DETECTOR LOOPS, DETECTOR UNITS, INTERCONNECTION ITEMS, AND MASTER CONTROL EQUIPMENT. CUSTOMARY MANUFACTURERS GUARANTEES FOR THE FOREGOING ITEMS SHALL BE TURNED OVER TO THE CITY OF CLEVELAND FOLLOWING ACCEPTANCE OF THE EQUIPMENT.

THE COST OF GUARANTEEING THE TRAFFIC CONTROL SYSTEM WILL BE INCIDENTAL TO AND INCLUDED IN THE CONTRACT UNIT PRICE OF THE VARIOUS ITEMS MAKING UP THE SYSTEM.

ITEM 633 – CONTROLLER, ACTUATED, 8 PHASE SOLID STATE DIGITAL MICROPROCESSOR, AS PER PLAN

IN ADDITION TO THE REQUIREMENTS SET FORTH IN THE CITY OF CLEVELAND SPECIFICATION, "D-60 CONTROLLER ACTUATED, 8 PHASE SOLID STATE DIGITAL MICROPROCESSOR (ITEM 633)", THE CONTROLLERS USED IN THIS PROJECT MUST MATCH THE EAGLE EPAC 300.

ITEM 633 – CONTROLLER, MASTER, TRAFFIC RESPONSIVE, AS PER PLAN

THIS ITEM OF WORK SHALL CONSIST OF FURNISHING AND INSTALLING A SOLID STATE DIGITAL MICROPROCESSOR TYPE TRAFFIC RESPONSIVE MASTER CONTROLLER WITH MENU DRIVEN PROMPTS, INTERNAL TIME BASE COORDINATOR, TELEMETRY UNIT, AND ALL OTHER ACCESSORIES THAT ARE NECESSARY TO MAKE THE MASTER COMPLETELY FUNCTIONAL AND OPERATIONAL AS SHOWN IN THE PLANS, IN THE LOCAL CONTROLLER CABINET. THIS ITEM SHALL ALSO INCLUDE THE EXTRA CABINET SPACE NECESSARY TO BE LOCATED IN THE LOCAL CONTROLLER CABINET WHERE INDICATED ON THE PLANS.

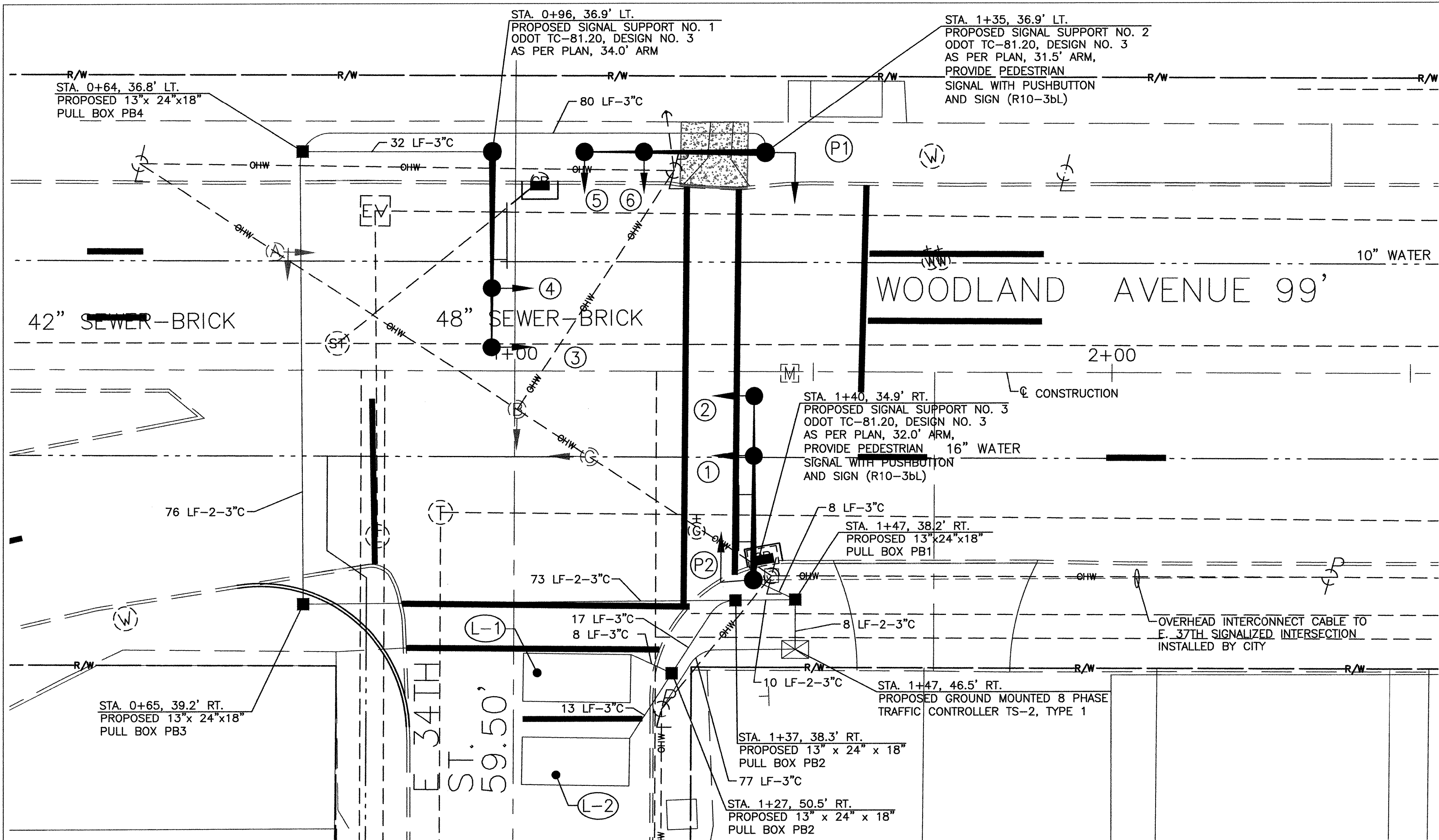
THE TELEPHONE MODEM AT THE INTERSECTION SHALL BE COMPLETELY WIRED TO REPORT CABINET FAILURES, DETECTOR FAILURES AND TRAFFIC COUNTS. THE CONTROLLER SHALL BE COMPLETELY COMPATIBLE WITH ONE OF THE CITY OF CLEVELAND'S CLOSED LOOP SYSTEMS AND WITH THE CLOSED LOOP SYSTEM SOFTWARE TO BE FURNISHED IN THIS CONTRACT.

THE MASTER CONTROLLER LOCATION IS TO BE DETERMINED BY THE CITY OF CLEVELAND TRAFFIC ENGINEERING DIVISION. THE MASTER CONTROLLER SHALL BE LIMITED TO THE FOLLOWING MANUFACTURER AND SYSTEM ON THE ARTERIAL: EAGLE "EPAC 300". PAYMENT FOR "ITEM 633 – CONTROLLER, MASTER, TRAFFIC RESPONSIVE, AS PER PLAN" WILL BE MADE AT THE CONTRACT UNIT PRICE BID FOR EACH CONTROLLER IN PLACE, COMPLETELY INSTALLED WITH THE LOCAL CONTROLLER SHOWN IN THE PLANS, WIRED, TESTED AND ACCEPTED.

CONTINGENCY ITEMS FOR TRAFFIC SIGNS

THE FOLLOWING CONTINGENCY QUANTITIES ARE PROVIDED FOR USE AS DIRECTED BY THE ENGINEER FOR SIGN AND POST INSTALLATIONS. UNIT PRICES BID SHALL INCLUDED ALL MATERIAL, LABOR AND INCIDENTALS FOR A COMPLETE INSTALLATION AT LOCATIONS DIRECTED BY THE ENGINEER:

ITEM 630 – GROUND MOUNTED SUPPORT, NO. 2 POST	240 LIN. FT.
ITEM 630 – STREET NAME SIGN SUPPORT, NO. 2 POST	4 EACH
ITEM 630 – SIGN FLAT SHEET, TYPE G	200 SQ. FT.



PROPOSED SIGNAL HEAD ARRANGEMENT

ALL 12" LENS

SIGNALS 1, 2, 3, 4, 5, & 6

TYPE D2 SIGNALS P1 & P2

R10-3bR-9

R10-3bL-9

LEGEND FOR SIGNALS AND SUPPORT

MAST ARM SUPPORT

SIGN ON SPAN WIRE SUPPORT

SIGNAL HEAD, STD.-1-WAY

CONDUIT

PULLBOX

CONTROLLER

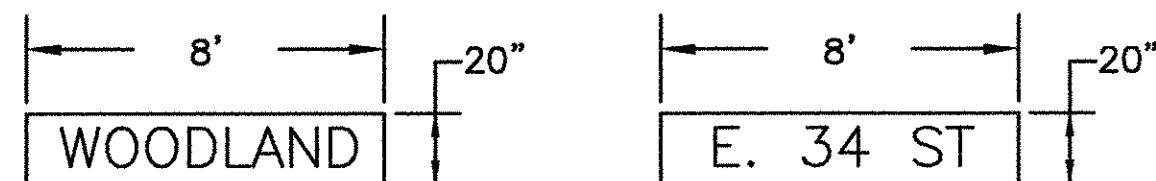
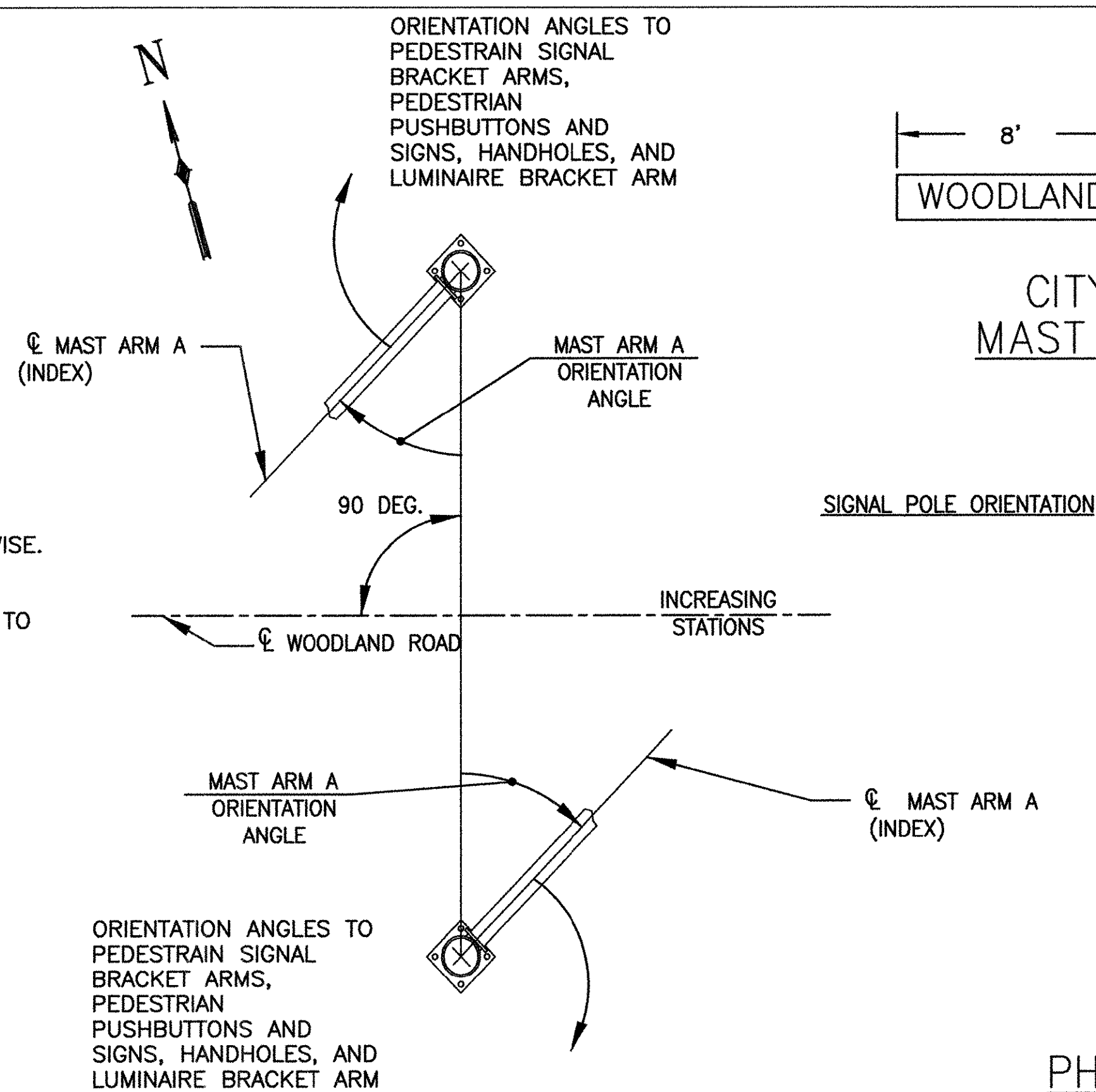
LOOP DETECTORS

ADA CURB RAMP

LOOP DESIGNATOR	LOCATION		SIZE (FT)	NO. OF TURNS	SHAPE	MODE	DELAY (SEC)	CONNECT TO DETECTOR UNIT NO.	ASSOCIATED CONTROLLER PHASE
	FROM	TO							
L-2	1+02, 47.3' RT.	1+20, 47.3' RT.	8 X 18	3	RECTANGLE	PRESENCE	5	1	8
L-2	1+02, 67.3' RT.	1+20, 61.3' RT.	8 X 18	3	RECTANGLE	PRESENCE	5	1	8

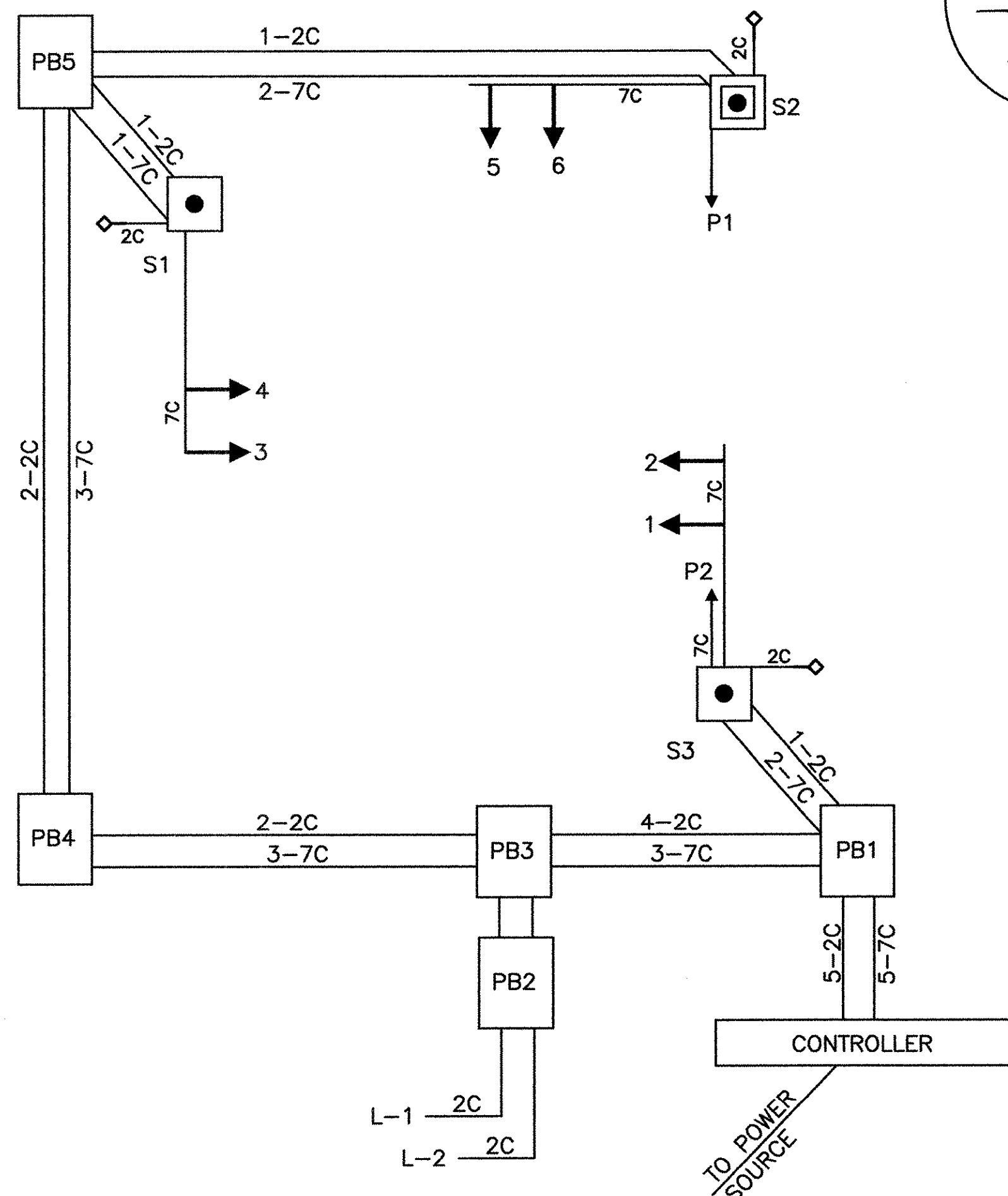
TRAFFIC CONTROL QUANTITIES			
ITEM	QTY.	UNITS	DESCRIPTION
625	570	FT	CONDUIT, 3", 725.05, AS PER D-51
625	145	FT	TRENCH, TYPE A
625	270	FT	TRENCH, TYPE B
625	5	EACH	PULL BOX, AS PER PLAN
625	3	EACH	GROUND ROD, AS PER D-58
625	415	FT	SPECIAL - PLASTIC CAUTION TAPE (D-61)
630	3	EACH	SIGN HANGAR ASSEMBLY, MAST ARM, AS PER D-63
630	40	SF	CITY OF CLEVELAND TYPE D4 STREET NAME SIGN, MAST ARM
632	6	EACH	VEHICULAR SIGNAL HEAD (LED), 3 SECTION, 12' LENS, 1-WAY, POLYCARBONATE, AS PER PLAN
632	2	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D-2, AS PER PLAN
632	2	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN
632	6	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	2	EACH	DETECTOR LOOP, AS PER PLAN
632	660	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG, AS PER PLAN
632	3	EACH	SIGNAL SUPPORT FOUNDATION, AS PER D-48
632	80	FT	LOOP DETECTOR LEAD-IN CABLE
632	565	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
632	275	FT	POWER CABLE MISC. PUSHBUTTON CABLE (D-57)
632	1	EACH	POWER SERVICE, AS PER D-50
632	2	EACH	CONDUIT RISER, 3" DIAMETER
632	3	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 3, AS PER PLAN
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER D-62
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER D-60
633	1	EACH	CABINET FOUNDATION

- NOTES:
1. ALL ANGLES MEASURED CLOCKWISE.
 2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A.

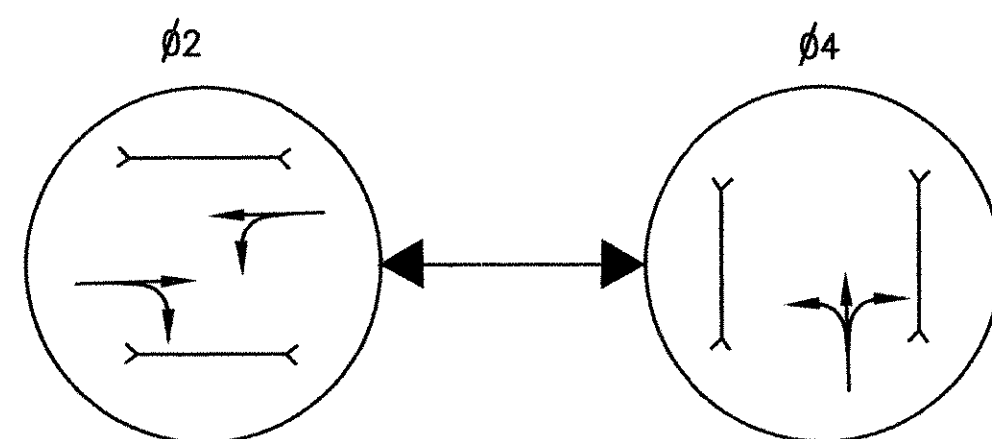


CITY OF CLEVELAND
MAST ARM STREET NAME

WIRING DIAGRAM-E. 34TH STREET



PHASING DIAGRAM



SIGNAL DISPLAY CHART

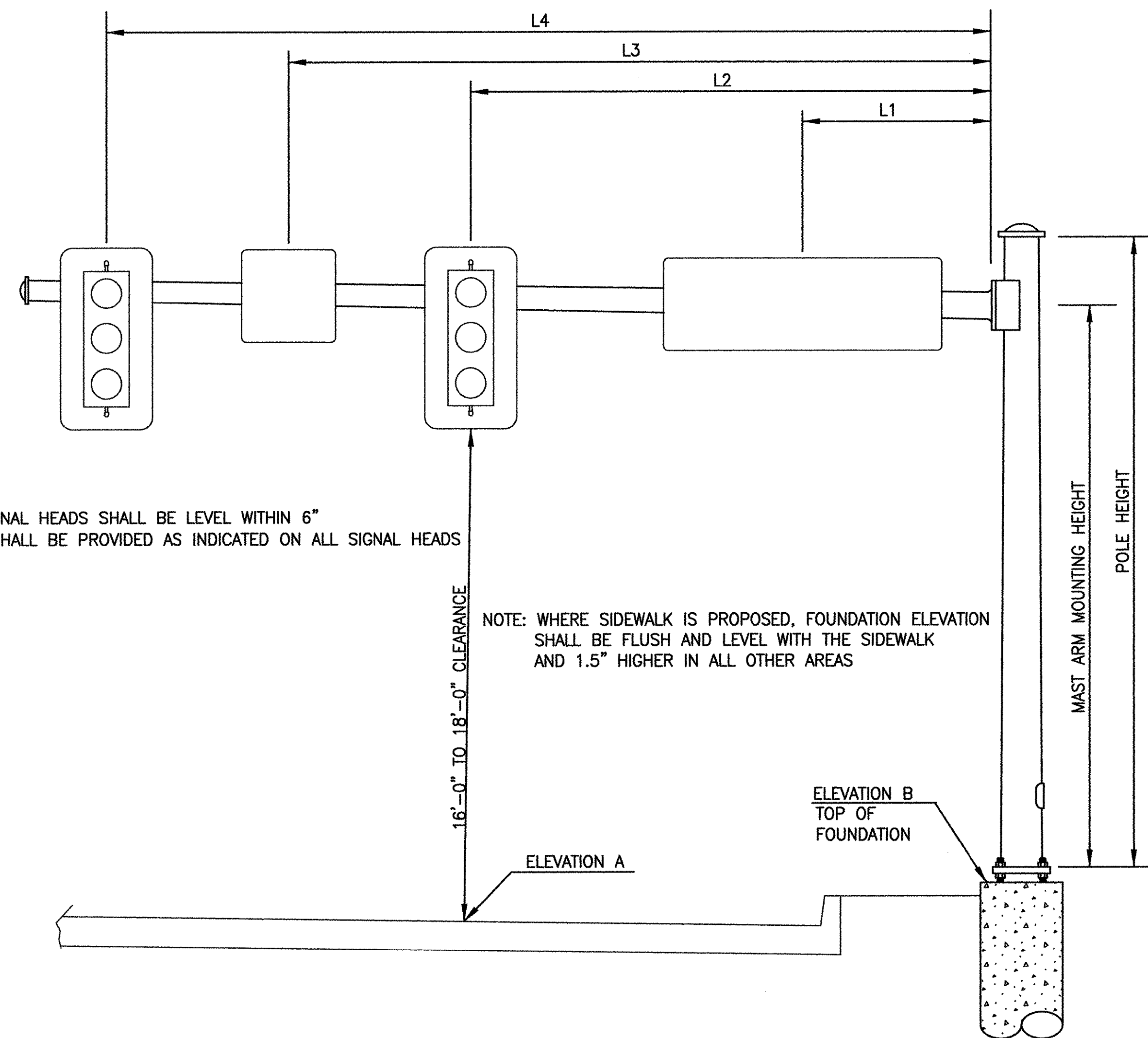
SIGNAL HEAD	Ø2		Ø4		FLASH
	R/W	CLEAR	R/W	CLEAR	
1					
2					
3					
4					
5					
6					
W-W					
X-X					
Y-Y					

TIMING CHART

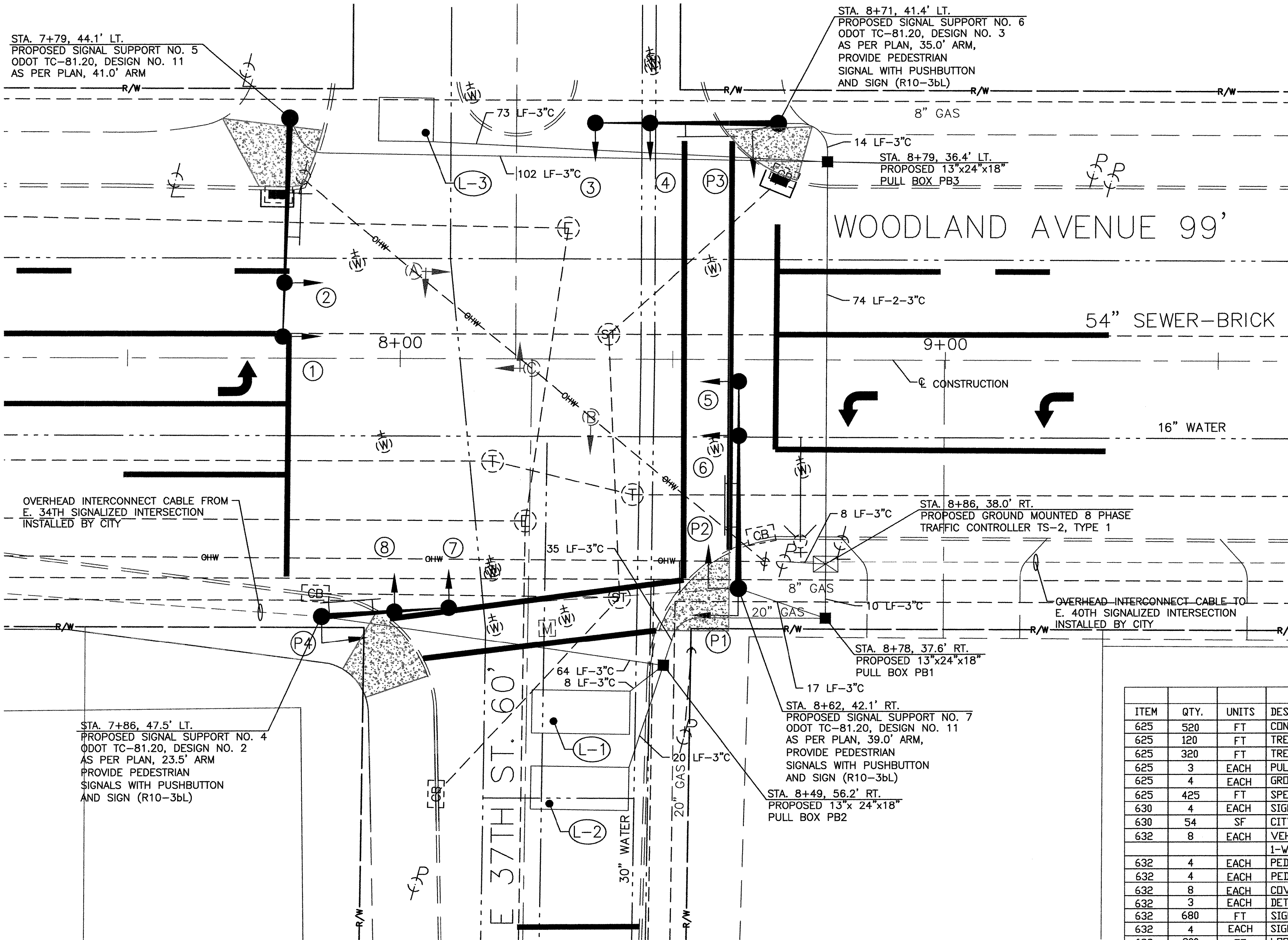
INTERVAL	Ø2	Ø4
MINIMUM INITIAL		
MAX 1		
YELLOW TIME		
ALL RED		
VEHICULAR EXTENSION		
WALK		
FLASHING DON'T WALK		
MEMORY		
RECALL		

COORDINATION TIMING

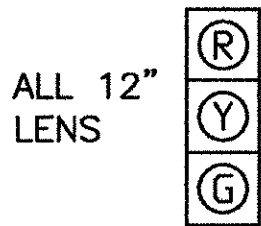
PHASE	CYCLE LENGTH-SPLIT (SEC)		



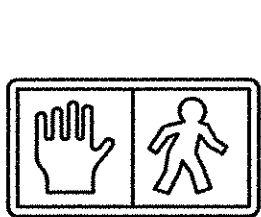
SIGNAL SUPPORT TYPE TC-81.20									ELEVATION		MAST ARM ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM			
SIGNAL SUPPORT	DESIGN NO.	POLE HEIGHT, FT.	MAST ARM MOUNTING HEIGHT, FT.	L1, FT.	L2, FT.	L3, FT.	L4, FT.	ARM LENGTH (L-) FT.	A	B		PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	HANDHOLE
1	3	21.0	20.0	14.0	23.0	-	33.0	34.0	679.5 +/-	680.6 +/-	0	N/A	N/A	N/A	90
2	3	21.0	20.0	8.5	20.5	-	30.5	31.5	679.5 +/-	680.6 +/-	90	0	270	N/A	180
3	3	21.0	20.0	10.5	21.0	-	31.0	32.0	679.5 +/-	680.6 +/-	0	270	180	N/A	90



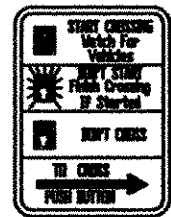
PROPOSED SIGNAL HEAD ARRANGEMENT



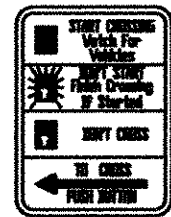
SIGNALS 1, 2, 3, 4,
5, 6, 7, & 8



TYPE D2
SIGNALS P1, P2,
P3, & P4



R10-3bR-9



R10-3bL-9

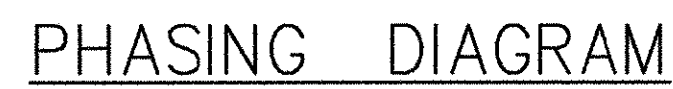
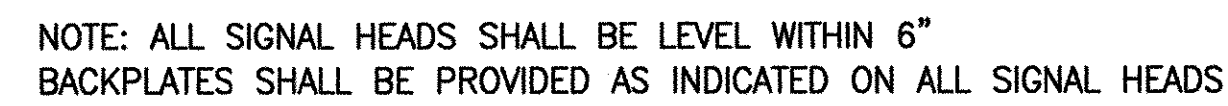
LEGEND FOR SIGNALS AND SUPPORT

- MAST ARM SUPPORT
- SIGN ON SPAN WIRE SUPPORT
- SIGNAL HEAD, STD.-1-WAY
- SIGNAL HEAD WITH ARROW
- CONDUIT
- PULLBOX
- CONTROLLER
- LOOP DETECTORS
- ADA CURB RAMP

TRAFFIC CONTROL QUANTITIES			
ITEM	QTY.	UNITS	DESCRIPTION
625	520	FT	CONDUIT, 3", 725.05, AS PER D-51
625	120	FT	TRENCH, TYPE A
625	320	FT	TRENCH, TYPE B
625	3	EACH	PULL BOX, AS PER PLAN
625	4	EACH	GROUND ROD, AS PER D-58
625	425	FT	SPECIAL - PLASTIC CAUTION TAPE (D-61)
630	4	EACH	SIGN HANGAR ASSEMBLY, MAST ARM, AS PER D-63
630	54	SF	CITY OF CLEVELAND TYPE D4 STREET NAME SIGN, MAST ARM
632	8	EACH	VEHICULAR SIGNAL HEAD (LED), 3 SECTION. 12 LENS, 1-WAY, POLYCARBONATE, AS PER PLAN
632	4	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D-2, AS PER PLAN
632	4	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN
632	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	3	EACH	DETECTOR LOOP, AS PER PLAN
632	680	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG, AS PER PLAN
632	4	EACH	SIGNAL SUPPORT FOUNDATION, AS PER D-48
632	300	FT	LOOP DETECTOR LEAD-IN CABLE
632	475	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
632	240	FT	POWER CABLE MISC. PUSHBUTTON CABLE (D-57)
632	1	EACH	POWER SERVICE, AS PER D-50
632	1	EACH	CONDUIT RISER, 3" DIAMETER
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 2, AS PER PLAN
632	2	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 3, AS PER PLAN
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 11, AS PER PLAN
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER D-62
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER D-60
633	1	EACH	CABINET FOUNDATION

LOOP DETECTOR CHART

LOOP DESIGNATOR	LOCATION		SIZE (FT)	NO. OF TURNS	SHAPE	MODE	DELAY (SEC)	CONNECT TO DETECTOR UNIT NO.	ASSOCIATED CONTROLLER PHASE
	FROM	TO							
L-1	8+24, 60.8' RT.	8+43, 61.0' RT.	8 X 18	3	RECTANGLE	PRESENCE	5	1	7
L-2	8+24, 74.8' RT.	8+42, 75.0' RT.	8 X 18	3	RECTANGLE	PRESENCE	5	2	7
L-3	7+96, 39.9' LT.	8+06, 39.8' LT.	8 X 10	3	RECTANGLE	PRESENCE	5	3	8



SIGNAL HEAD	ø2				ø4				FLASH
	R/W		CLEAR	R/W		CLEAR			
1									
2									
3									
4									
5									
6									
7									
8									
W-W									
X-X									
Y-Y									
Z-Z									

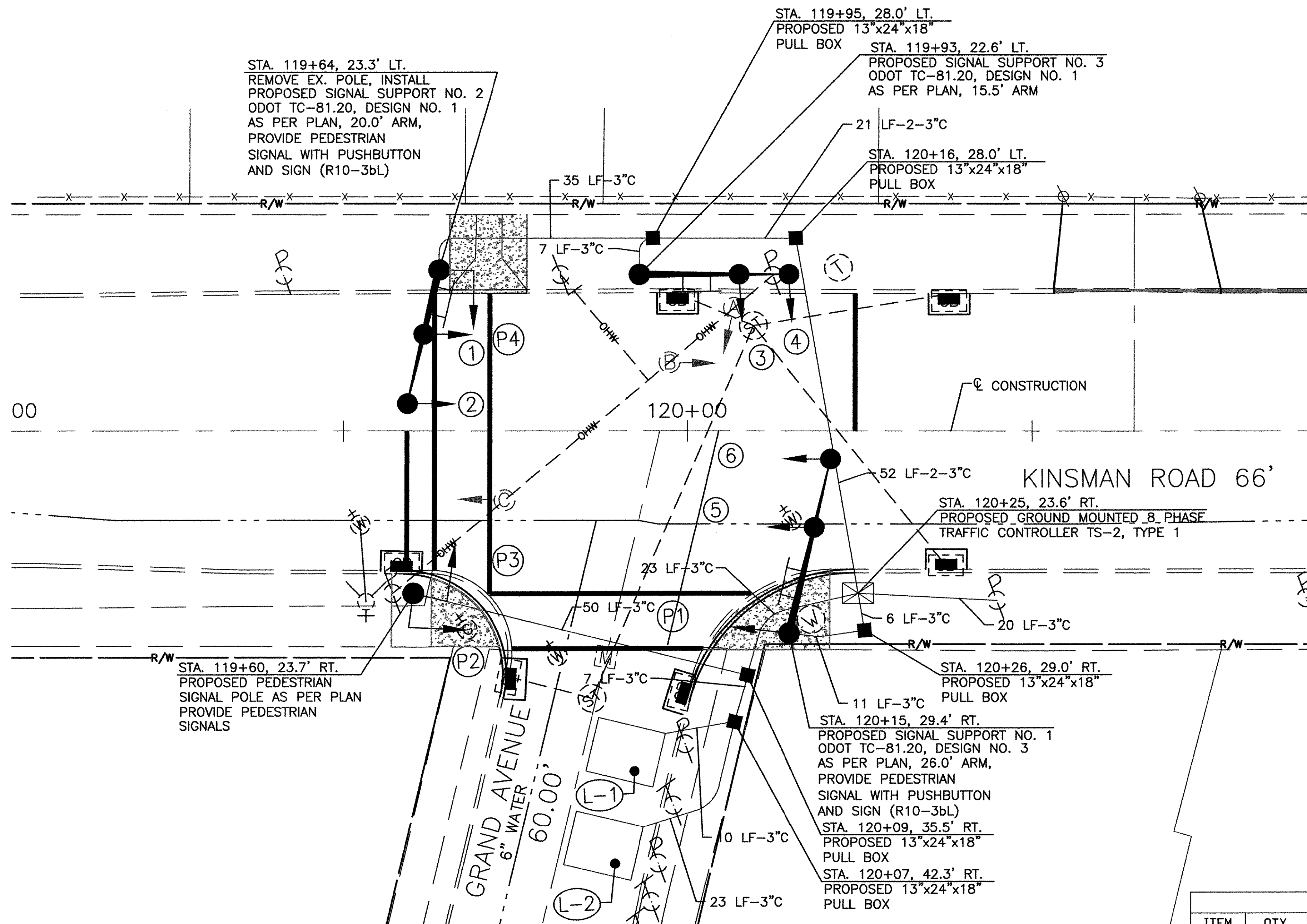
TIMING CHART

INTERVAL	$\phi 2$	$\phi 4$
MINIMUM INITIAL		
MAX 1		
YELLOW TIME		
ALL RED		
VEHICULAR EXTENSION		
WALK		
FLASHING DON'T WALK		
MEMORY		
RECALL		

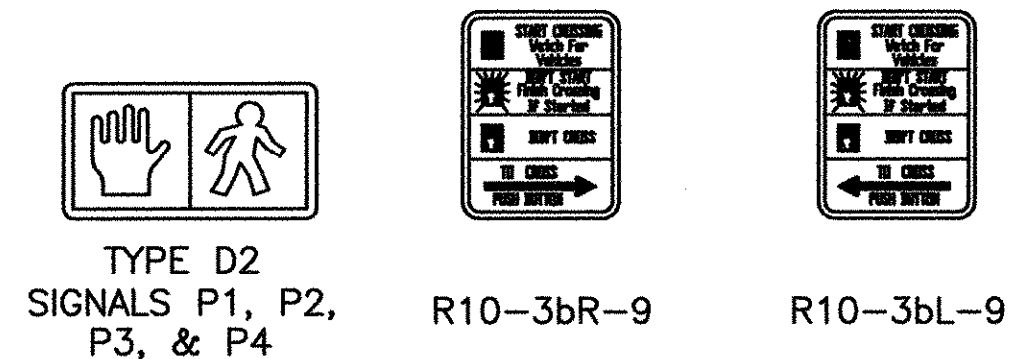
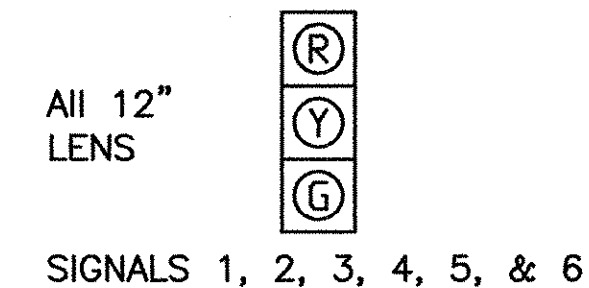
COORDINATION TIMING

PHASE	CYCLE LENGTH—SPLIT (SEC)		

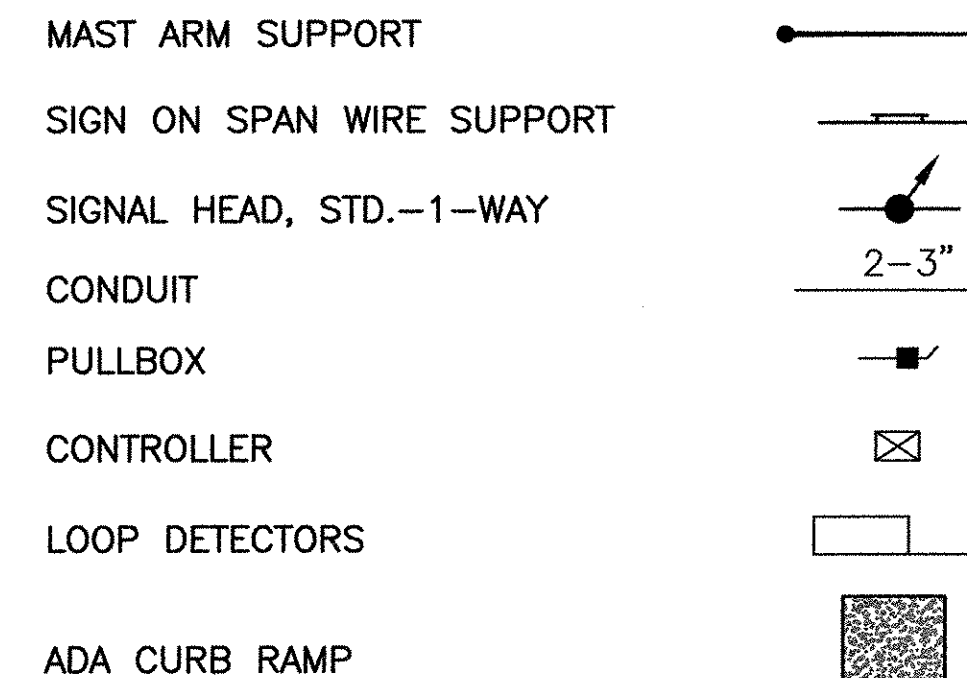
SIGNAL SUPPORT TYPE TC-81.20									ELEVATION		MAST ARM ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM A			
SIGNAL SUPPORT	DESIGN NO.	POLE HEIGHT, FT.	MAST ARM MOUNTING HEIGHT, FT.	L1. FT.	L2. FT.	L3. FT.	L4. FT.	ARM LENGTH (L) FT.	A	B		PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	HANDHOLE
4	2	21.0	20.0	5.5	13.5	—	22.5	23.5	678.0 +/—	679.2 +/—	90	180	270	N/A	90
5	11	21.0	20.0	15.0	30.0	—	40.0	41.0	678.0 +/—	679.2 +/—	0	N/A	N/A	N/A	270
6	3	21.0	20.0	13.0	26.0	—	34.0	35.0	678.0 +/—	679.2 +/—	90	0	180	N/A	270
7	11	21.0	20.0	15.0	28.0	—	38.0	39.0	678.0 +/—	679.2 +/—	0	270/0	180	N/A	90



PROPOSED SIGNAL HEAD ARRANGEMENT

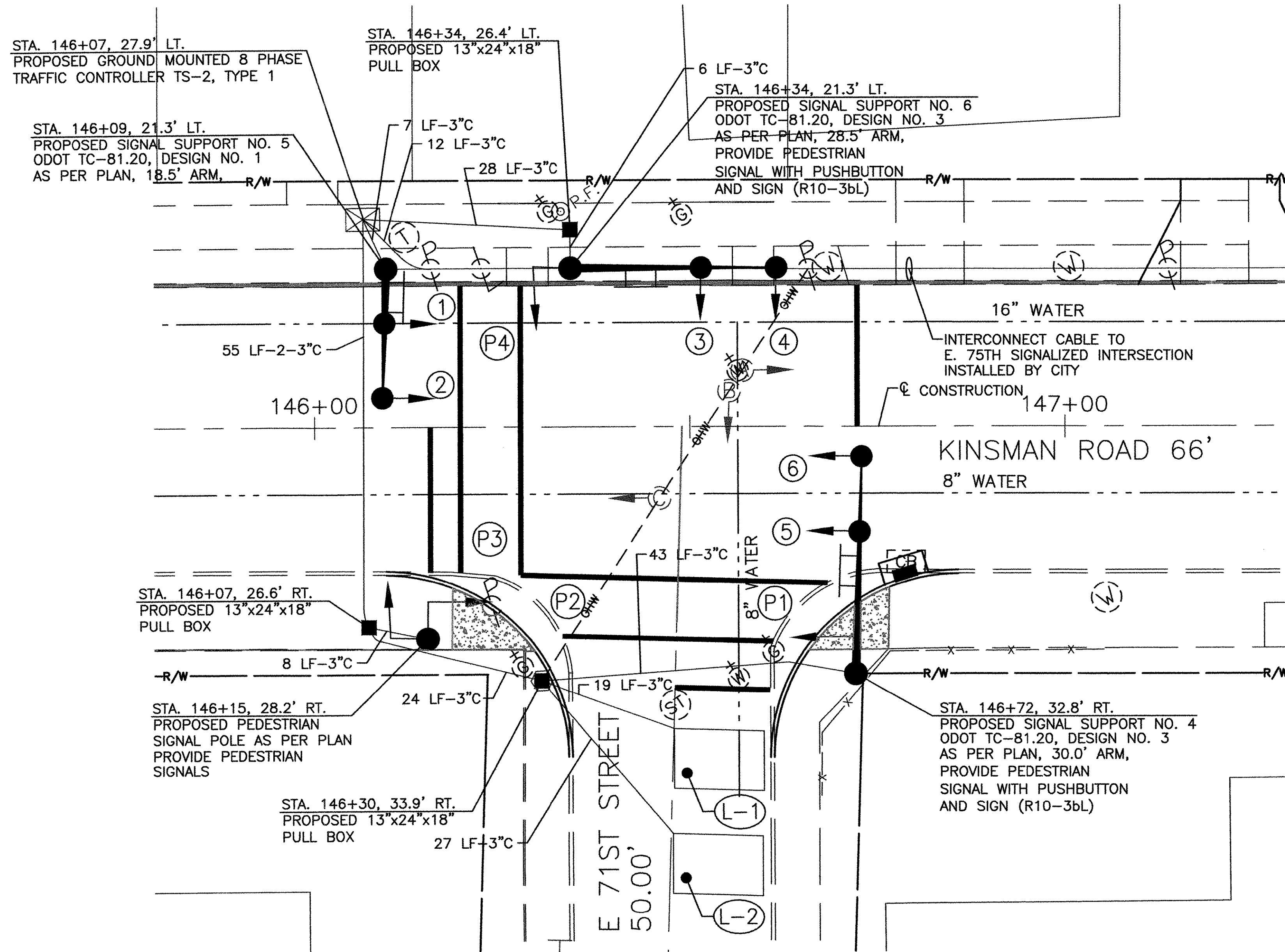


LEGEND FOR SIGNALS AND SUPPORT

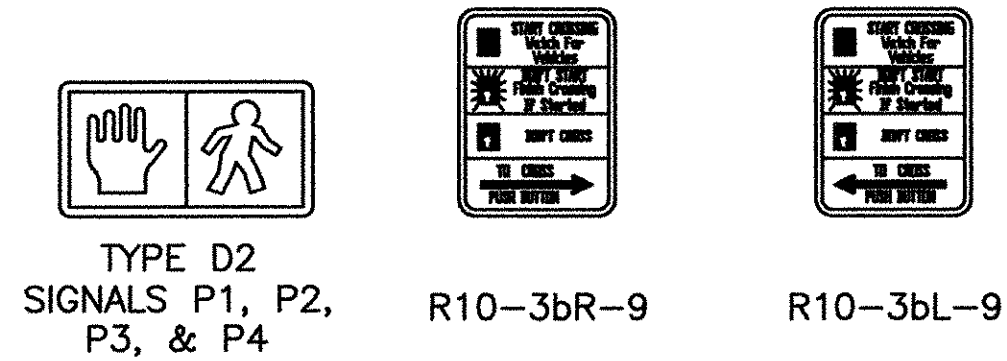
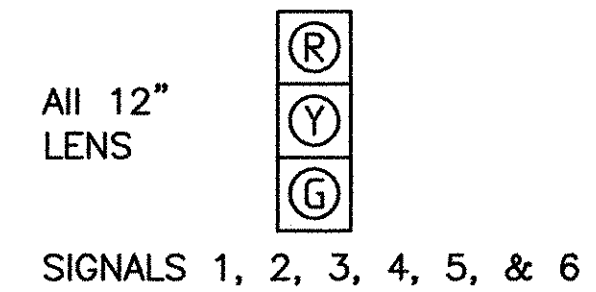


LOOP DETECTOR CHART									
LOOP DESIGNATOR	LOCATION		SIZE (FT)	NO. OF TURNS	SHAPE	MODE	DELAY (SEC)	CONNECT TO DETECTOR UNIT NO.	ASSOCIATED CONTROLLER PHASE
	FROM	TO							
L-1	119+87, 41.7' RT.	119+97, 44.0' RT.	8 X 10	3	RECTANGLE	PRESENCE	5	1	8
L-2	119+84, 55.3' RT.	119+94, 57.6' RT.	8 X 10	3	RECTANGLE	PRESENCE	5	2	8

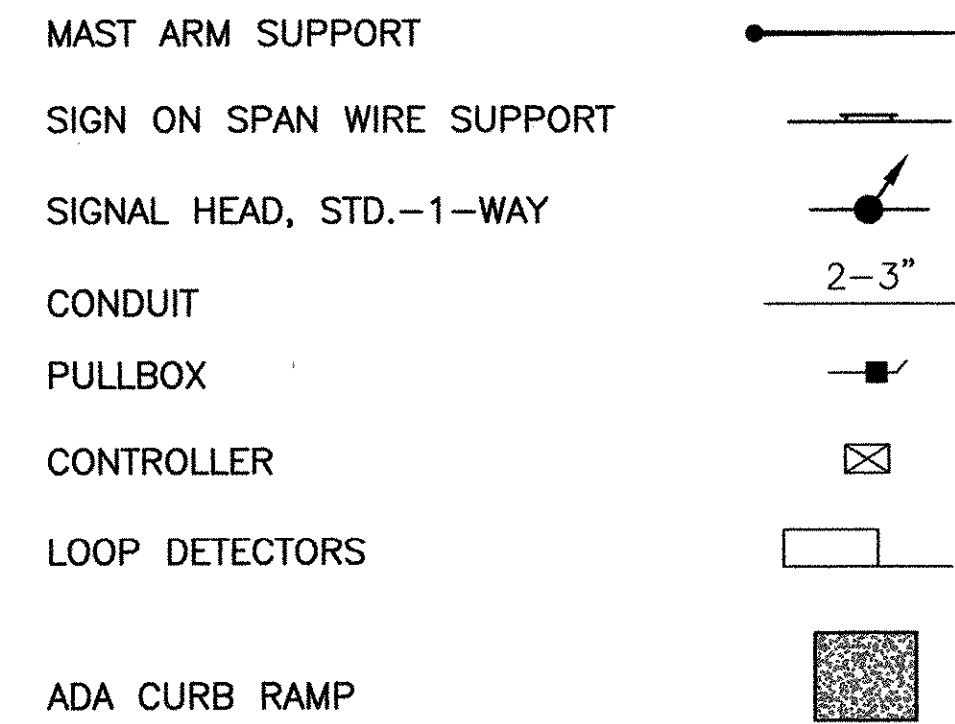
TRAFFIC CONTROL QUANTITIES			
ITEM	QTY.	UNITS	DESCRIPTION
625	375	FT	CONDUIT, 3", 725.05, AS PER D-51
625	155	FT	TRENCH, TYPE A
625	175	FT	TRENCH, TYPE B
625	5	EACH	PULL BOX, AS PER PLAN
625	4	EACH	GROUND ROD, AS PER D-58
625	305	FT	SPECIAL - PLASTIC CAUTION TAPE (D-61)
630	3	EACH	SIGN HANGAR ASSEMBLY, MAST ARM, AS PER D-63
630	40	SF	CITY OF CLEVELAND TYPE D4 STREET NAME, MAST ARM
632	6	EACH	VEHICULAR SIGNAL HEAD (LED), 3 SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN
632	4	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D-2, AS PER PLAN
632	4	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN
632	6	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	2	EACH	DETECTOR LOOP, AS PER PLAN
632	475	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG, AS PER PLAN
632	4	EACH	SIGNAL SUPPORT FOUNDATION, AS PER D-48
632	215	FT	LOOP DETECTOR LEAD-IN CABLE
632	365	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
632	250	FT	POWER CABLE MISC. PUSHBUTTON CABLE (D-57)
632	1	EACH	POWER SERVICE, AS PER D-50
632	1	EACH	CONDUIT RISER, 3" DIAMETER
632	2	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 1, AS PER PLAN
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 3, AS PER PLAN
632	1	EACH	SIGNAL SUPPORT, TYPE TC-85.10, AS PER PLAN
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER D-62
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER D-60
633	1	EACH	CABINET FOUNDATION



PROPOSED SIGNAL HEAD ARRANGEMENT



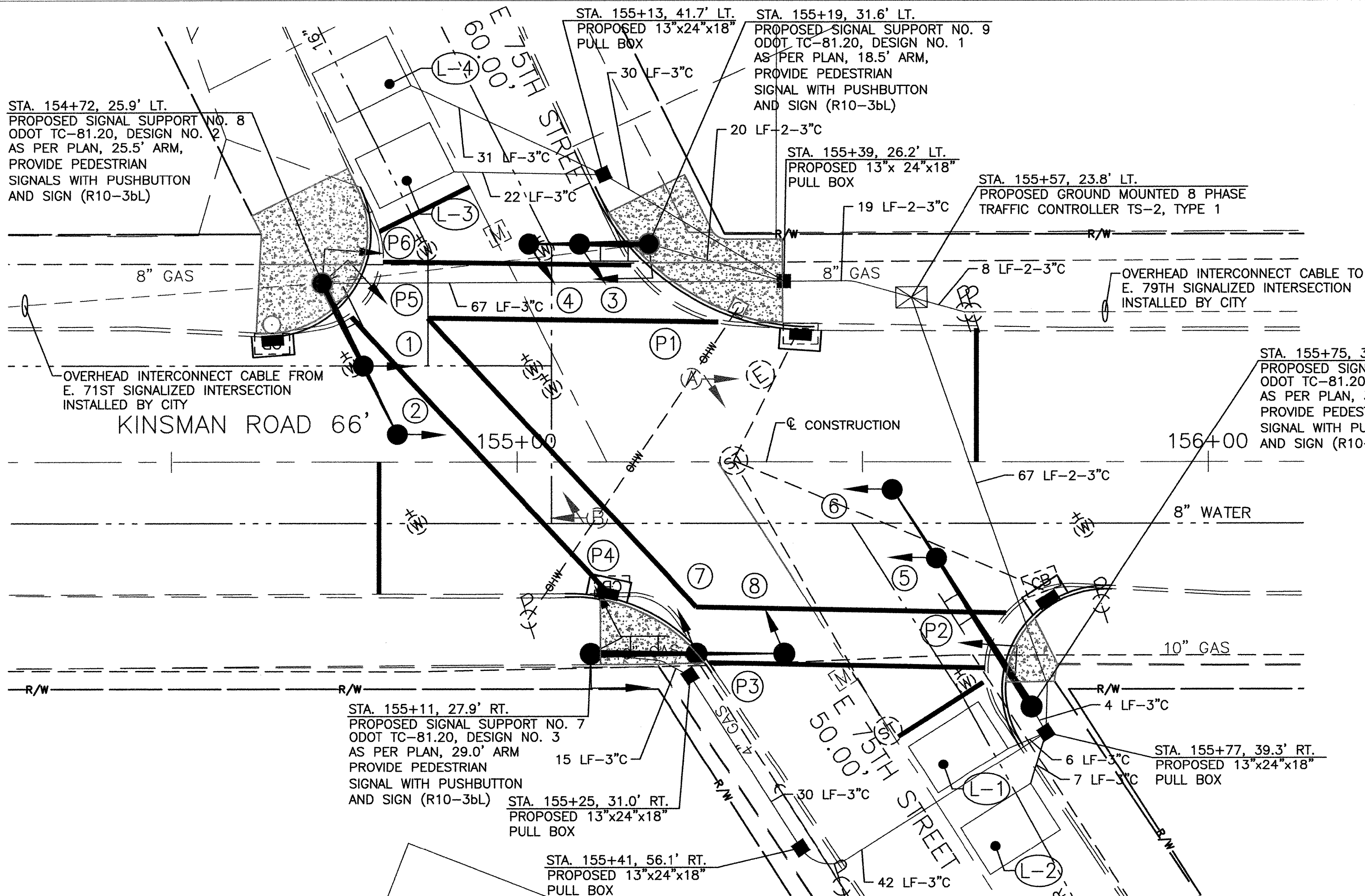
LEGEND FOR SIGNALS AND SUPPORT



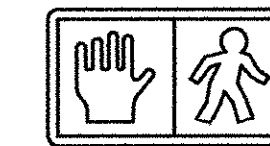
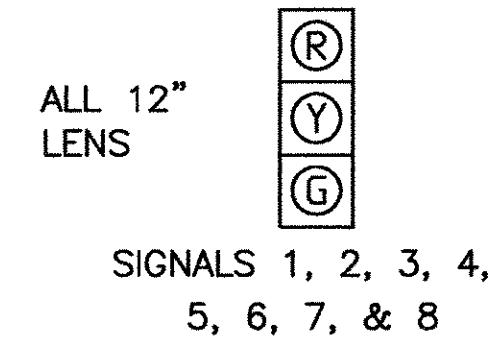
LOOP DETECTOR CHART									
LOOP DESIGNATOR	LOCATION		SIZE (FT)	NO. OF TURNS	SHAPE	MODE	DELAY (SEC)	CONNECT TO DETECTOR UNIT NO.	ASSOCIATED CONTROLLER PHASE
	FROM	TO							
L-1	146+48, 40.3' RT.	146+60, 40.6' RT.	8 X 12	3	RECTANGLE	PRESENCE	5	1	8
L-2	146+48, 54.3' RT.	146+60, 54.6' RT.	8 X 12	3	RECTANGLE	PRESENCE	5	2	8

TRAFFIC CONTROL QUANTITIES			
ITEM	QTY.	UNITS	DESCRIPTION
625	270	FT	CONDUIT, 3", 725.05, AS PER D-51
625	90	FT	TRENCH, TYPE A
625	125	FT	TRENCH, TYPE B
625	3	EACH	PULL BOX, AS PER PLAN
625	4	EACH	GROUND ROD, AS PER D-58
625	215	FT	SPECIAL - PLASTIC CAUTION TAPE (D-61)
630	3	EACH	SIGN HANGAR ASSEMBLY, MAST ARM, AS PER D-63
630	40	SF	CITY OF CLEVELAND TYPE D4 STREET NAME, MAST ARM
632	6	EACH	VEHICULAR SIGNAL HEAD (LED), 3 SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN
632	4	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D-2, AS PER PLAN
632	4	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN
632	6	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	1	EACH	DETECTOR LOOP, AS PER PLAN
632	385	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG, AS PER PLAN
632	4	EACH	SIGNAL SUPPORT FOUNDATION, AS PER D-48
632	240	FT	LOOP DETECTOR LEAD-IN CABLE
632	250	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
632	230	FT	POWER CABLE MISC. PUSHBUTTON CABLE (D-57)
632	1	EACH	POWER SERVICE, AS PER D-50
632	1	EACH	CONDUIT RISER, 3" DIAMETER
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 1, AS PER PLAN
632	2	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 3, AS PER PLAN
632	1	EACH	SIGNAL SUPPORT, TYPE TC-85.10, AS PER PLAN
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER D-62
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER D-60
633	1	EACH	CABINET FOUNDATION

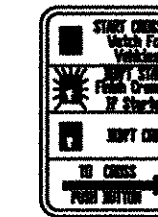
$\frac{7}{6}$



PROPOSED SIGNAL HEAD ARRANGEMENT



TYPE D2
SIGNALS P1, P2
P3, P4, P5 & P6

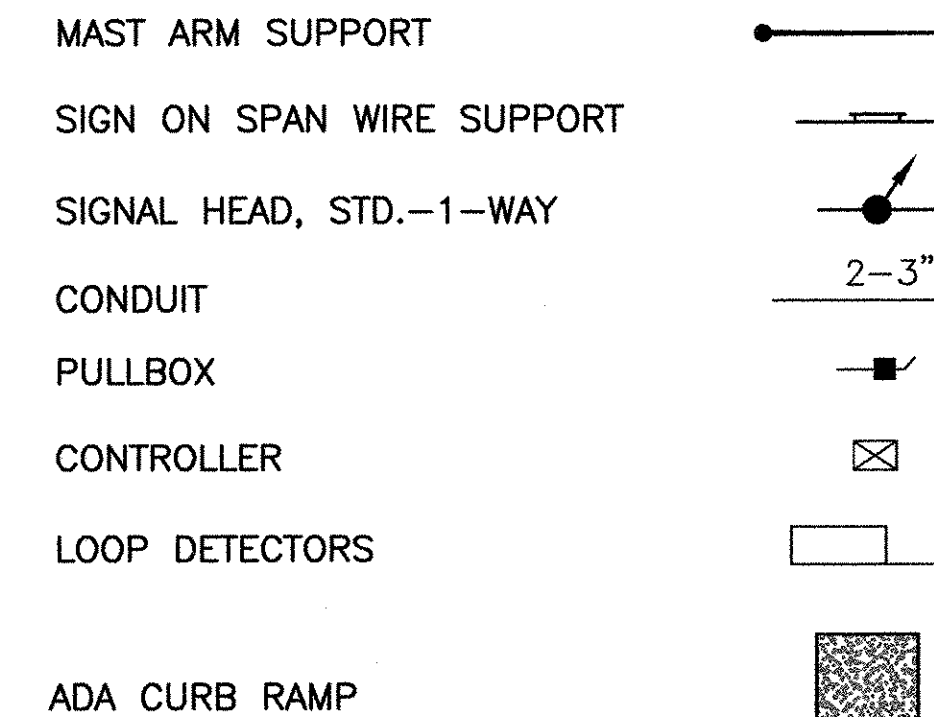


R10-3bR-9



R10-3bL-9

LEGEND FOR SIGNALS AND SUPPORT

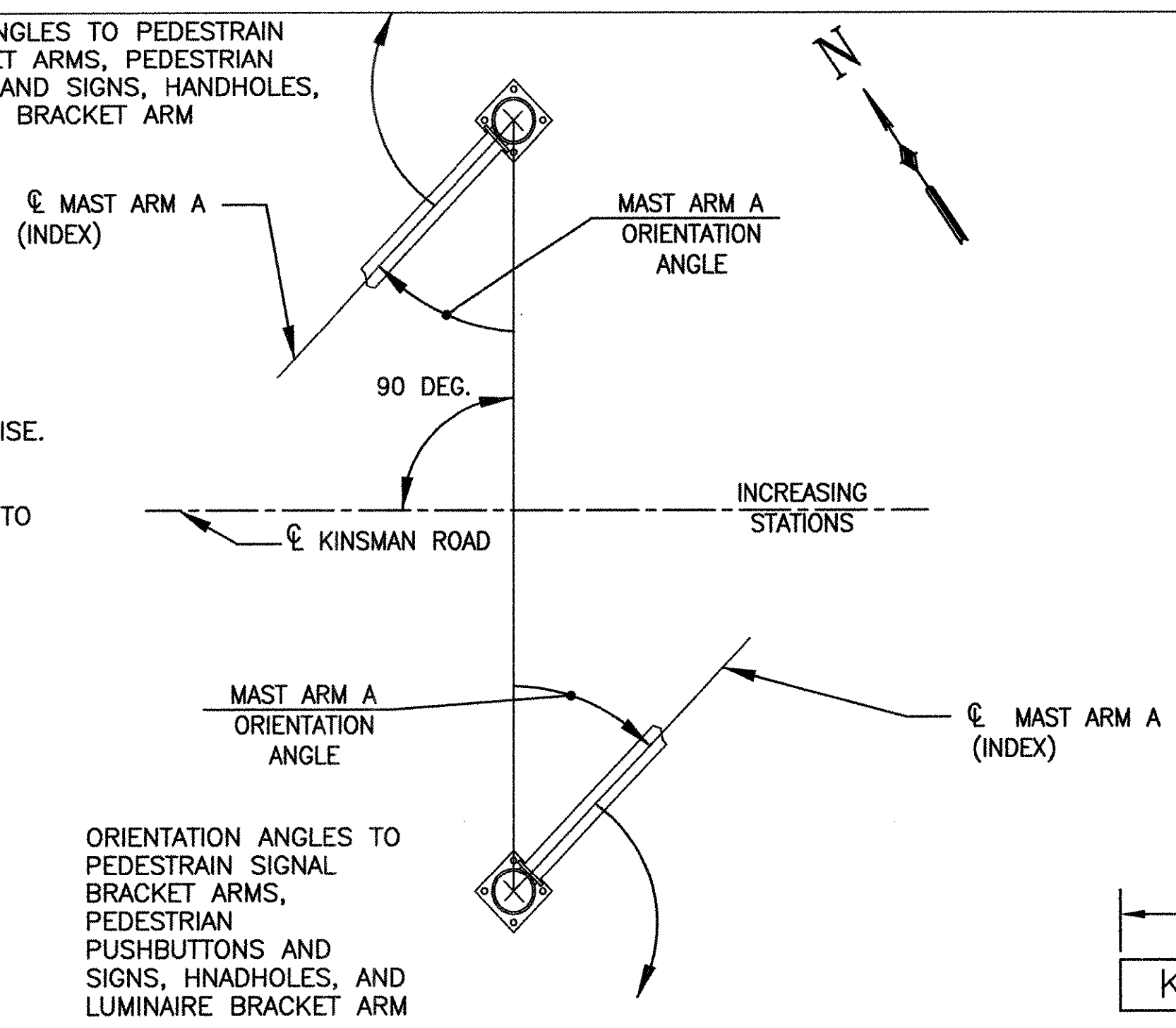


LOOP DESIGNATOR	LOCATION		SIZE (FT)	NO. OF TURNS	SHAPE	MODE	DELAY (SEC)	CONNECT TO DETECTOR UNIT NO.	ASSOCIATED CONTROLLER PHASE
	FROM	TO							
L-1	155+57, 41.3' RT.	155+67, 34.9' RT.	8 X 12	3	RECTANGLE	PRESENCE	8	1	3
L-2	155+64, 53.2' RT.	155+74, 46.7' RT.	8 X 12	3	RECTANGLE	PRESENCE	8	2	3
L-3	154+80, 36.7' LT.	154+91, 42.1' LT.	8 X 12	3	RECTANGLE	PRESENCE	8	3	4
L-4	154+74, 49.2' LT.	154+85, 54.6' LT.	8 X 12	3	RECTANGLE	PRESENCE	8	4	4

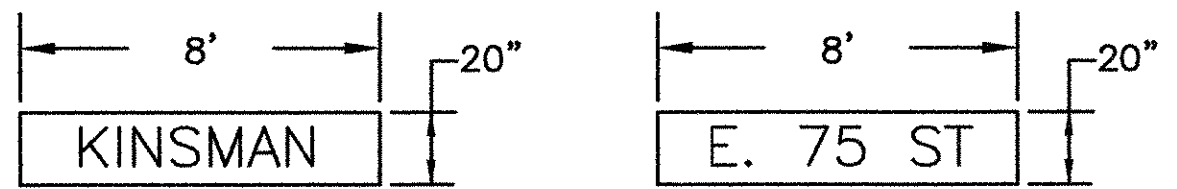
TRAFFIC CONTROL QUANTITIES			
ITEM	QTY.	UNITS	DESCRIPTION
625	535	FT	CONDUIT, 3", 725.05, AS PER D-51
625	110	FT	TRENCH, TYPE A
625	340	FT	TRENCH, TYPE B
625	5	EACH	PULL BOX, AS PER PLAN
625	4	EACH	GROUND ROD, AS PER D-58
625	350	FT	SPECIAL - PLASTIC CAUTION TAPE (D-61)
630	4	EACH	SIGN HANGAR ASSEMBLY, MAST ARM, AS PER D-63
630	54	SF	CITY OF CLEVELAND TYPE D4 STREET NAME, MAST ARM
632	8	EACH	VEHICULAR SIGNAL HEAD (LED), 3 SECTION, 12' LENS, 1-WAY, POLYCARBONATE, AS PER PLAN
632	6	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D-2, AS PER PLAN
632	6	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN
632	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	4	EACH	DETECTOR LOOP, AS PER PLAN
632	510	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG, AS PER PLAN
632	4	EACH	SIGNAL SUPPORT FOUNDATION, AS PER D-48
632	200	FT	LOOP DETECTOR LEAD-IN CABLE
632	385	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
632	380	FT	POWER CABLE MISC.; PUSHBUTTON CABLE (D-57)
632	1	EACH	POWER SERVICE, AS PER D-50
632	1	EACH	CONDUIT RISER, 3" DIAMETER
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 1, AS PER PLAN
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 2, AS PER PLAN
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 3, AS PER PLAN
632	1	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 11, AS PER PLAN
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER D-62
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER D-60
633	1	EACH	CABINET FOUNDATION

ORIENTATION ANGLES TO PEDESTRAIN
SIGNAL BRACKET ARMS, PEDESTRIAN
PUSHBUTTONS AND SIGNS, HANDHOLES,
AND LUMINAIRE BRACKET ARM

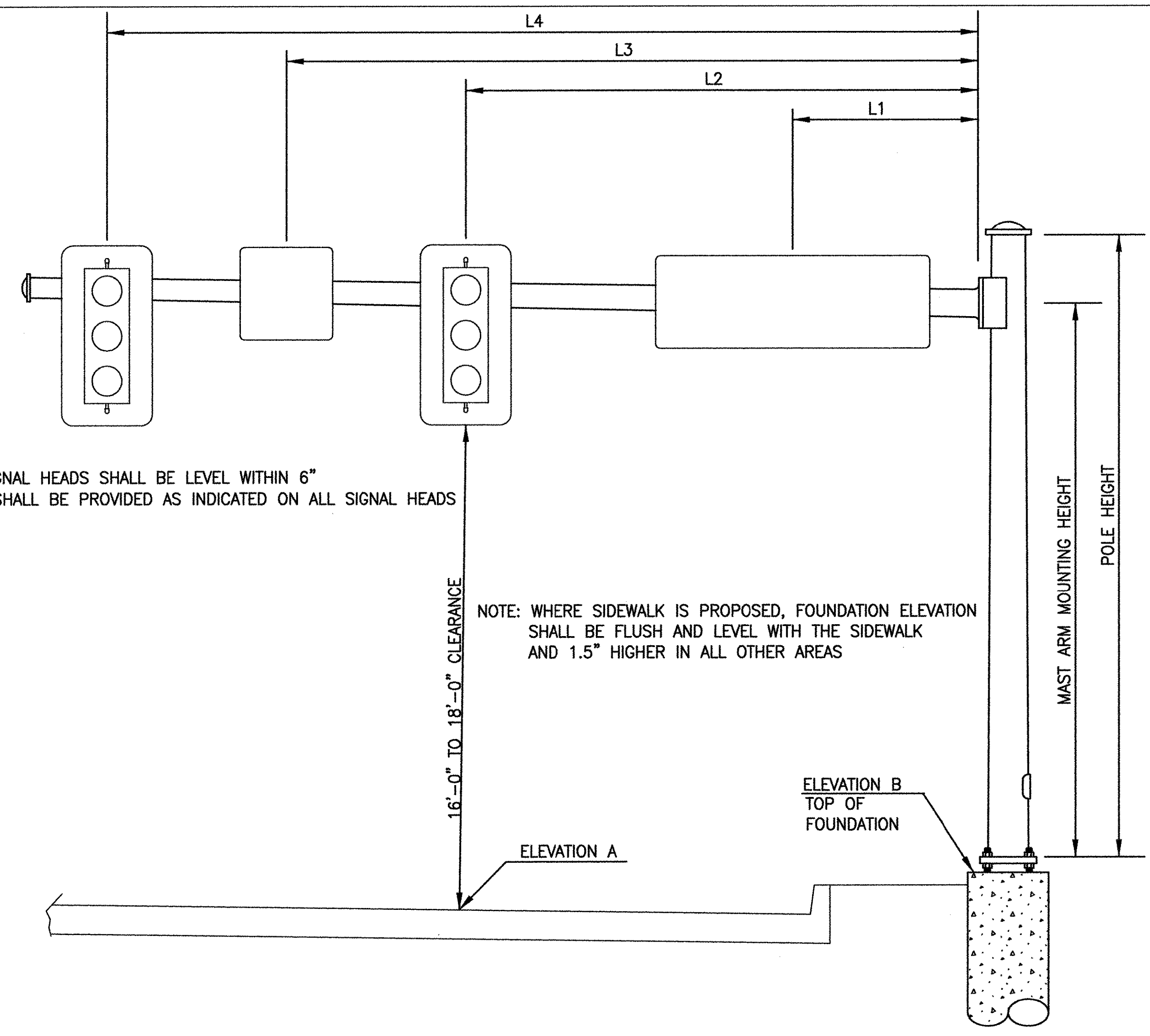
- NOTES:
- 1. ALL ANGLES
MEASURED CLOCKWISE.
 - 2. BASE PLATE IS
ORIENTED SQUARE TO
MAST ARM A.



SIGNAL POLE ORIENTATION

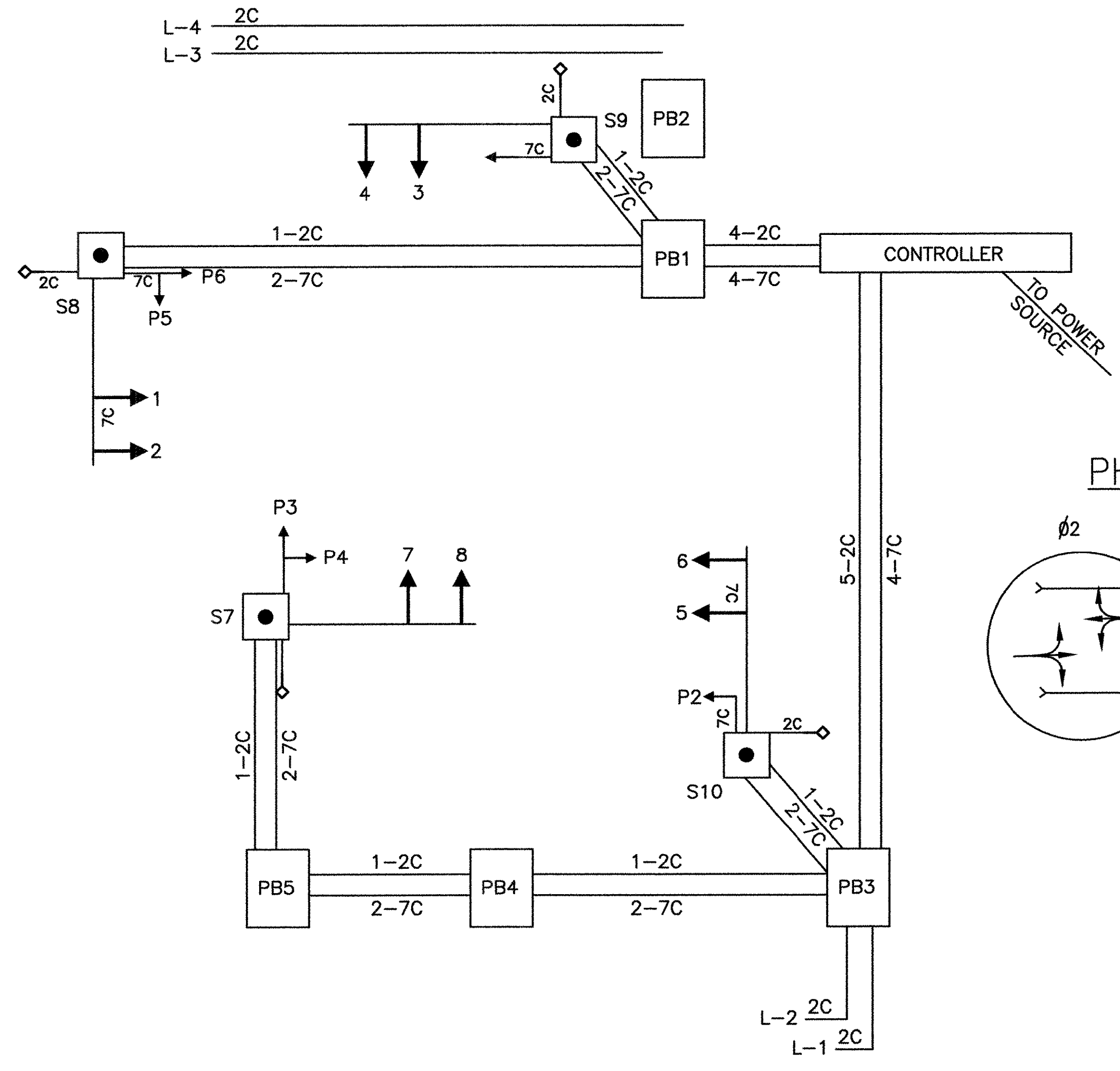


CITY OF CLEVELAND
MAST ARM STREET NAME

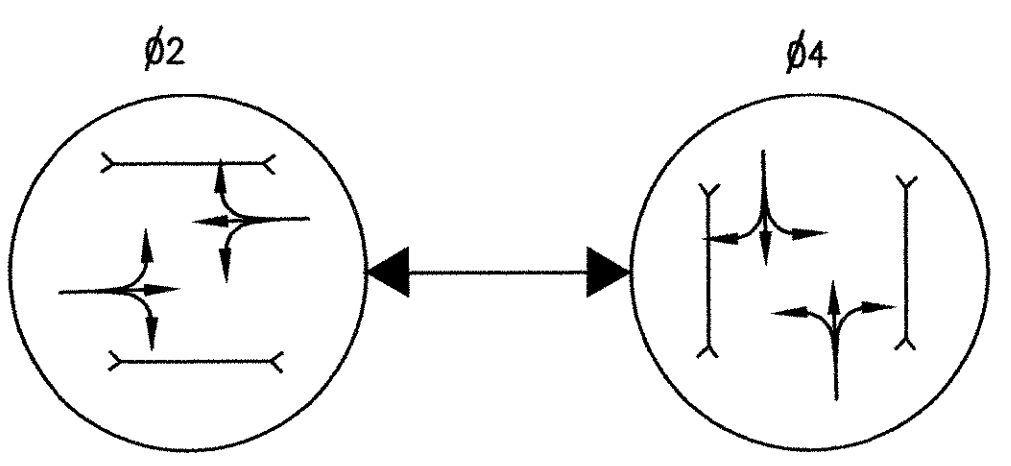


SIGNAL SUPPORT TYPE TC-81.20									ELEVATION		MAST ARM ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM A			
SIGNAL SUPPORT	DESIGN NO.	POLE HEIGHT, FT.	MAST ARM MOUNTING HEIGHT, FT.	L1, FT.	L2, FT.	L3, FT.	L4, FT.	ARM LENGTH (L) FT.	A	B		PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	HANDHOLE
7	3	21.0	20.0	6.0	15.5	-	28.0	29.0	682.0 +/-	682.9 +/-	90	N/A	N/A	N/A	180
8	2	21.0	20.0	6.5	13.5	-	24.5	25.5	681.0 +/-	681.9 +/-	334	270/334	180	N/A	270
9	1	21.0	20.0	3.0	11.0	-	17.5	18.5	681.0 +/-	681.9 +/-	90	0	270	N/A	270
10	11	21.0	20.0	15.5	25.5	-	37.5	38.5	682.0 +/-	682.9 +/-	327	270	180	N/A	180

WIRING DIAGRAM-E.75TH STREET



PHASING DIAGRAM



SIGNAL DISPLAY CHART

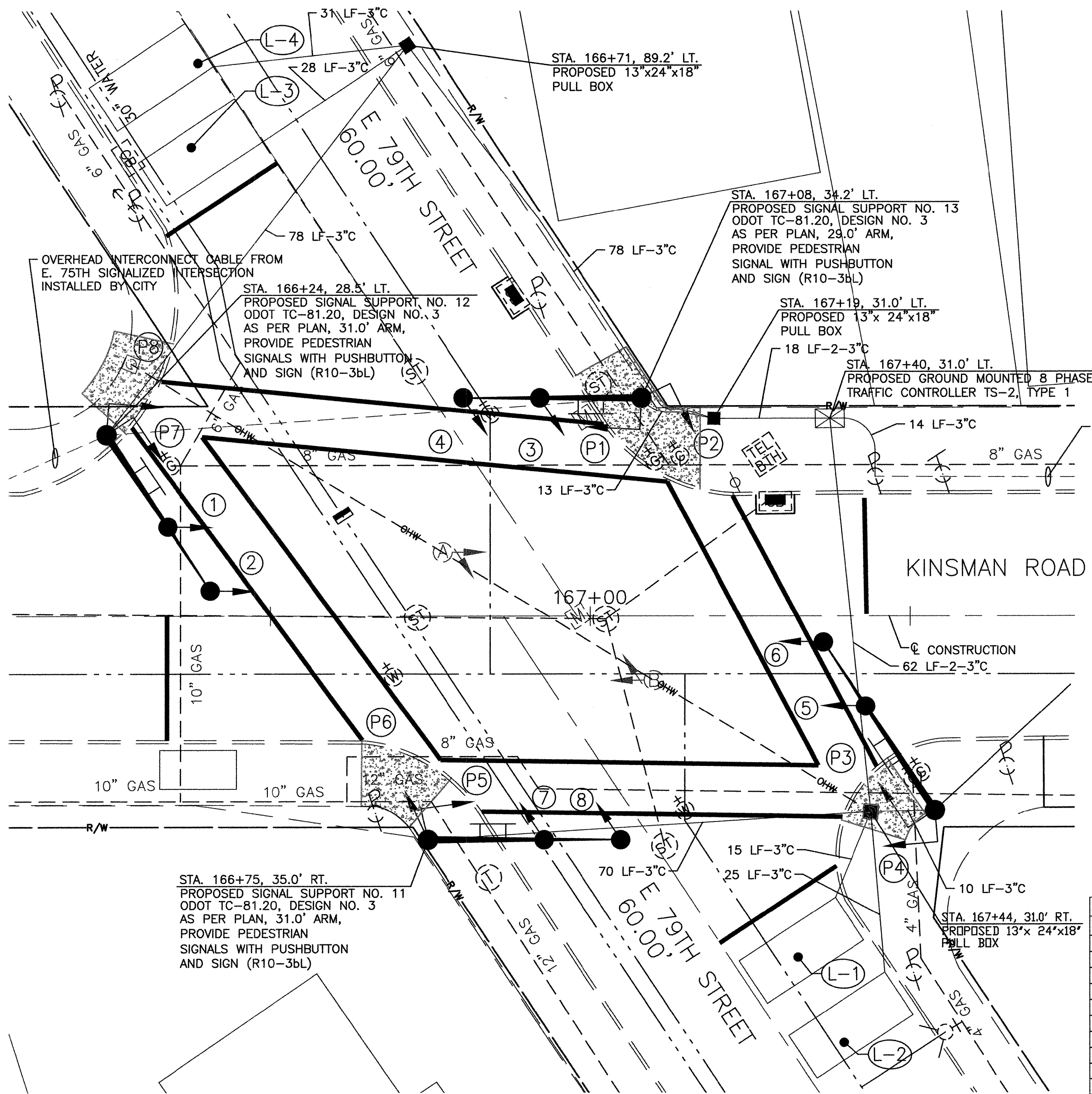
SIGNAL HEAD	ø2		ø4		FLASH
	R/W	CLEAR	R/W	CLEAR	
1					
2					
3					
4					
5					
6					
7					
8					
W-W					
X-X					
Y-Y					
Z-Z					

TIMING CHART

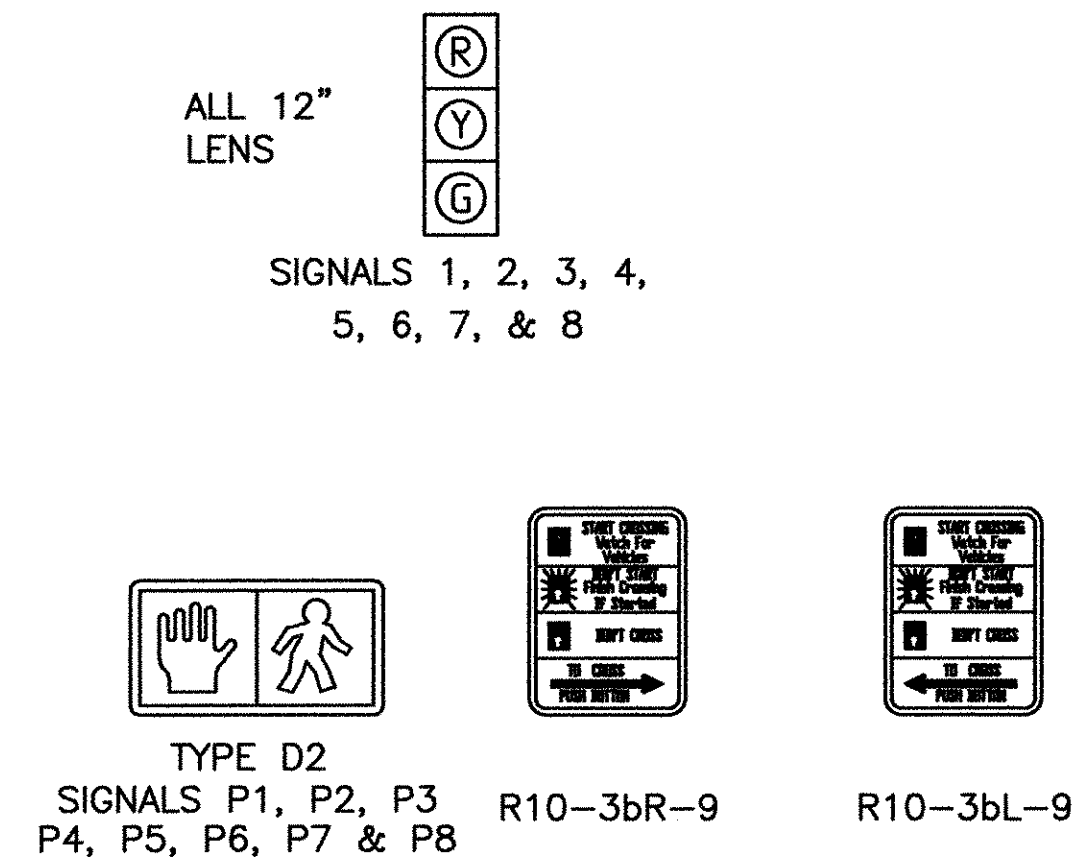
INTERVAL	ø2	ø4
MINIMUM INITIAL		
MAX 1		
YELLOW TIME		
ALL RED		
VEHICULAR EXTENSION		
WALK		
FLASHING DON'T WALK		
MEMORY		
RECALL		

COORDINATION TIMING

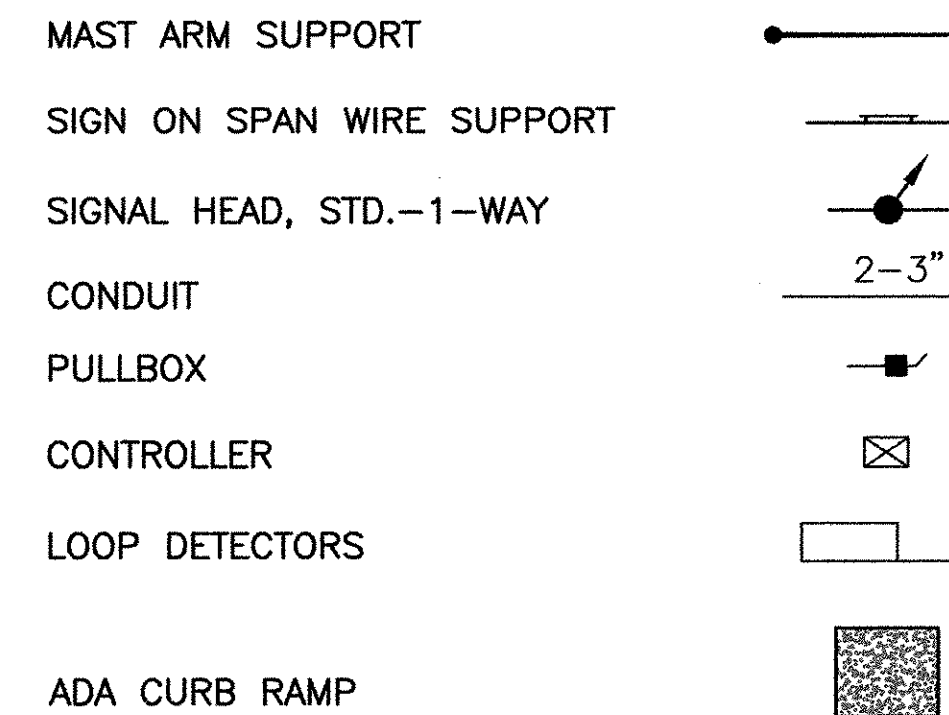
PHASE	CYCLE LENGTH-SPLIT (SEC)		



PROPOSED SIGNAL HEAD ARRANGEMENT



LEGEND FOR SIGNALS AND SUPPORT

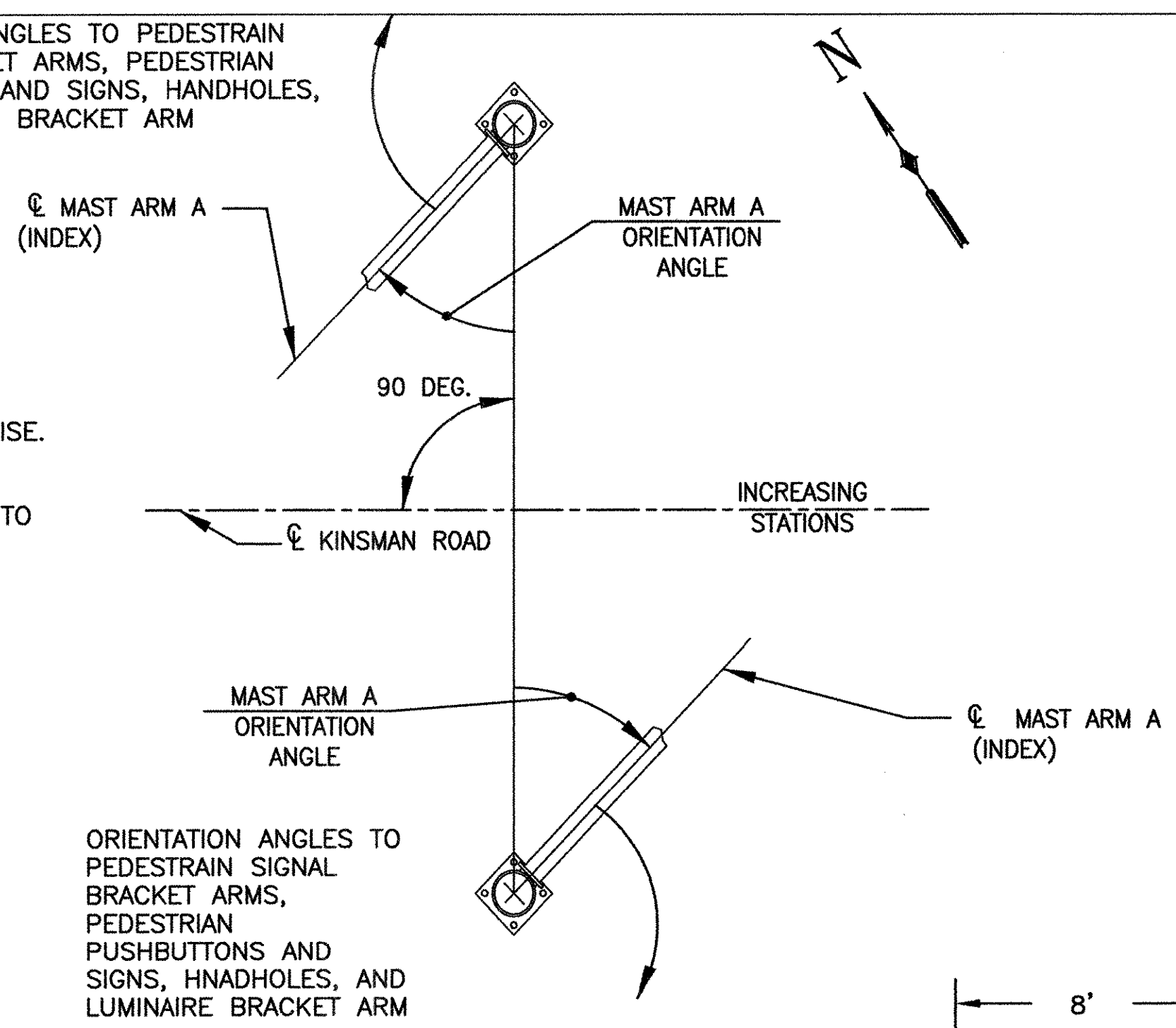


LOOP DETECTOR CHART									
LOOP DESIGNATOR	LOCATION		SIZE (FT)	NO. OF TURNS	SHAPE	MODE	DELAY (SEC)	CONNECT TO DETECTOR UNIT NO.	ASSOCIATED CONTROLLER PHASE
	FROM	TO							
L-1	167+23, 53.9' RT.	167+38, 44.0' RT.	8 X 18	3	RECTANGLE	PRESENCE	8	1	3
L-2	167+31, 65.6' RT.	167+46, 55.7' RT.	8 X 18	3	RECTANGLE	PRESENCE	8	2	3
L-3	166+30, 68.9' LT.	166+45, 78.9' LT.	8 X 18	3	RECTANGLE	PRESENCE	8	3	4
L-4	166+26, 76.0' LT.	166+41, 86.0' LT.	8 X 18	3	RECTANGLE	PRESENCE	8	4	4

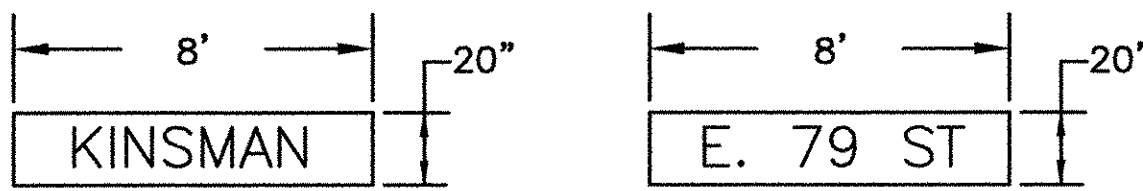
TRAFFIC CONTROL QUANTITIES			
ITEM	QTY.	UNITS	DESCRIPTION
625	550	FT	CONDUIT, 3", 725.05, AS PER D-51
625	140	FT	TRENCH, TYPE A
625	340	FT	TRENCH, TYPE B
625	3	EACH	PULL BOX, AS PER PLAN
625	4	EACH	GROUND ROD, AS PER D-58
625	405	FT	SPECIAL - PLASTIC CAUTION TAPE (D-61)
630	4	EACH	SIGN HANGAR ASSEMBLY, MAST ARM, AS PER D-63
630	54	SF	CITY OF CLEVELAND TYPE D4 STREET NAME, MAST ARM
632	8	EACH	VEHICULAR SIGNAL HEAD (LED), 3 SECTION, 12" LENS, 1-WAY, POLYCARBONATE, AS PER PLAN
632	8	EACH	PEDESTRIAN SIGNAL HEAD (LED), TYPE D-2, AS PER PLAN
632	8	EACH	PEDESTRIAN PUSHBUTTON, AS PER PLAN
632	8	EACH	COVERING OF VEHICULAR SIGNAL HEAD
632	4	EACH	DETECTOR LOOP, AS PER PLAN
632	485	FT	SIGNAL CABLE, 7 CONDUCTOR, NO. 14 AWG, AS PER PLAN
632	4	EACH	SIGNAL SUPPORT FOUNDATION, AS PER D-48
632	450	FT	LOOP DETECTOR LEAD-IN CABLE
632	445	FT	POWER CABLE, 2 CONDUCTOR, NO. 6 AWG
632	430	FT	POWER CABLE MISC., PUSHBUTTON CABLE (D-57)
632	1	EACH	POWER SERVICE, AS PER D-50
632	1	EACH	CONDUIT RISER, 3" DIAMETER
632	4	EACH	SIGNAL SUPPORT, TYPE TC-81.20, DESIGN 3, AS PER PLAN
632	1	EACH	REMOVAL OF TRAFFIC SIGNAL INSTALLATION, AS PER D-62
633	1	EACH	CONTROLLER, ACTUATED, 8 PHASE, SOLID STATE DIGITAL MICROPROCESSOR, AS PER D-60
633	1	EACH	CABINET FOUNDATION

ORIENTATION ANGLES TO PEDESTRAIN
SIGNAL BRACKET ARMS, PEDESTRIAN
PUSHBUTTONS AND SIGNS, HANDHOLES,
AND LUMINAIRE BRACKET ARM

- NOTES:
- 1. ALL ANGLES MEASURED CLOCKWISE.
 - 2. BASE PLATE IS ORIENTED SQUARE TO MAST ARM A.

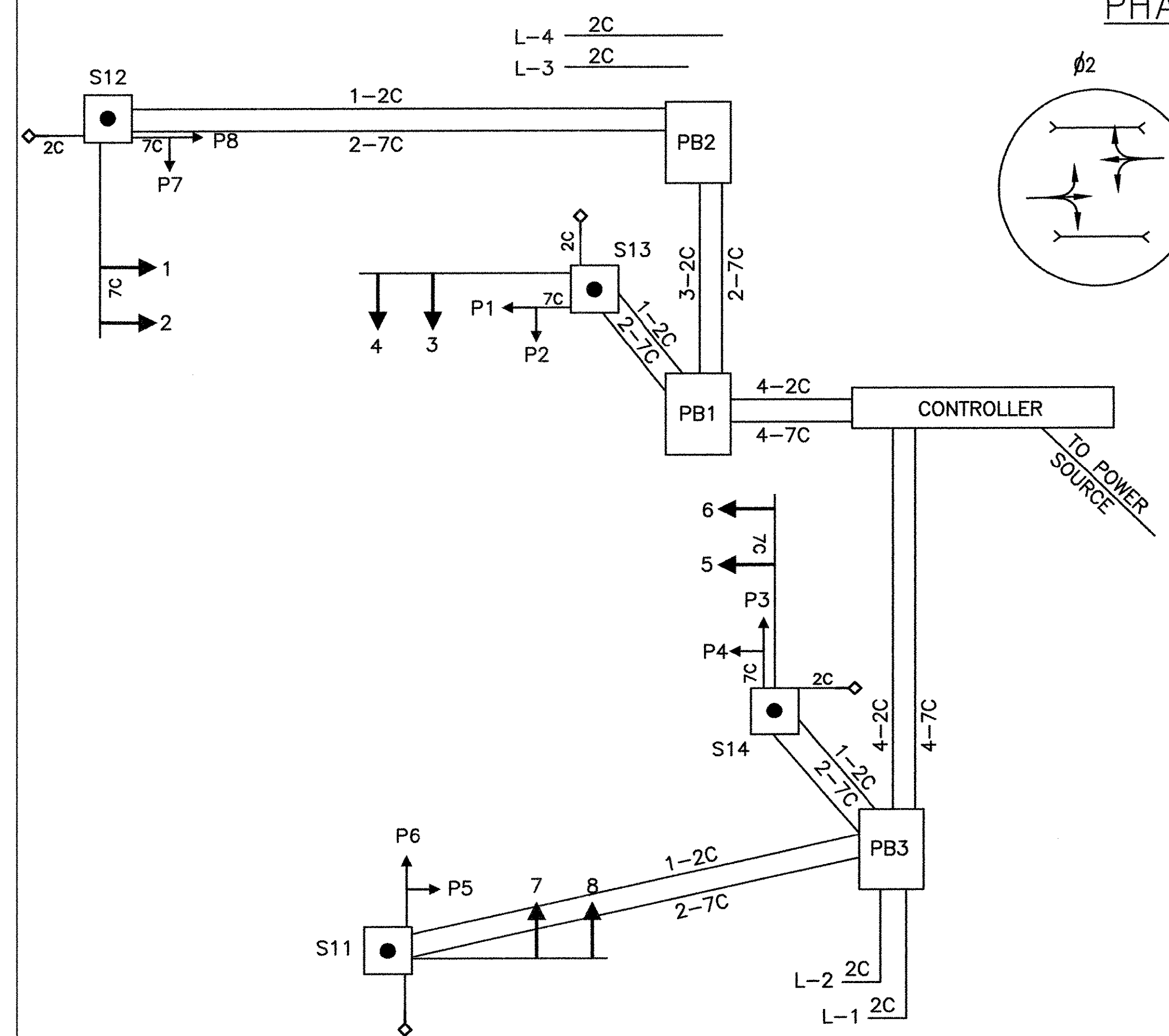


SIGNAL POLE ORIENTATION

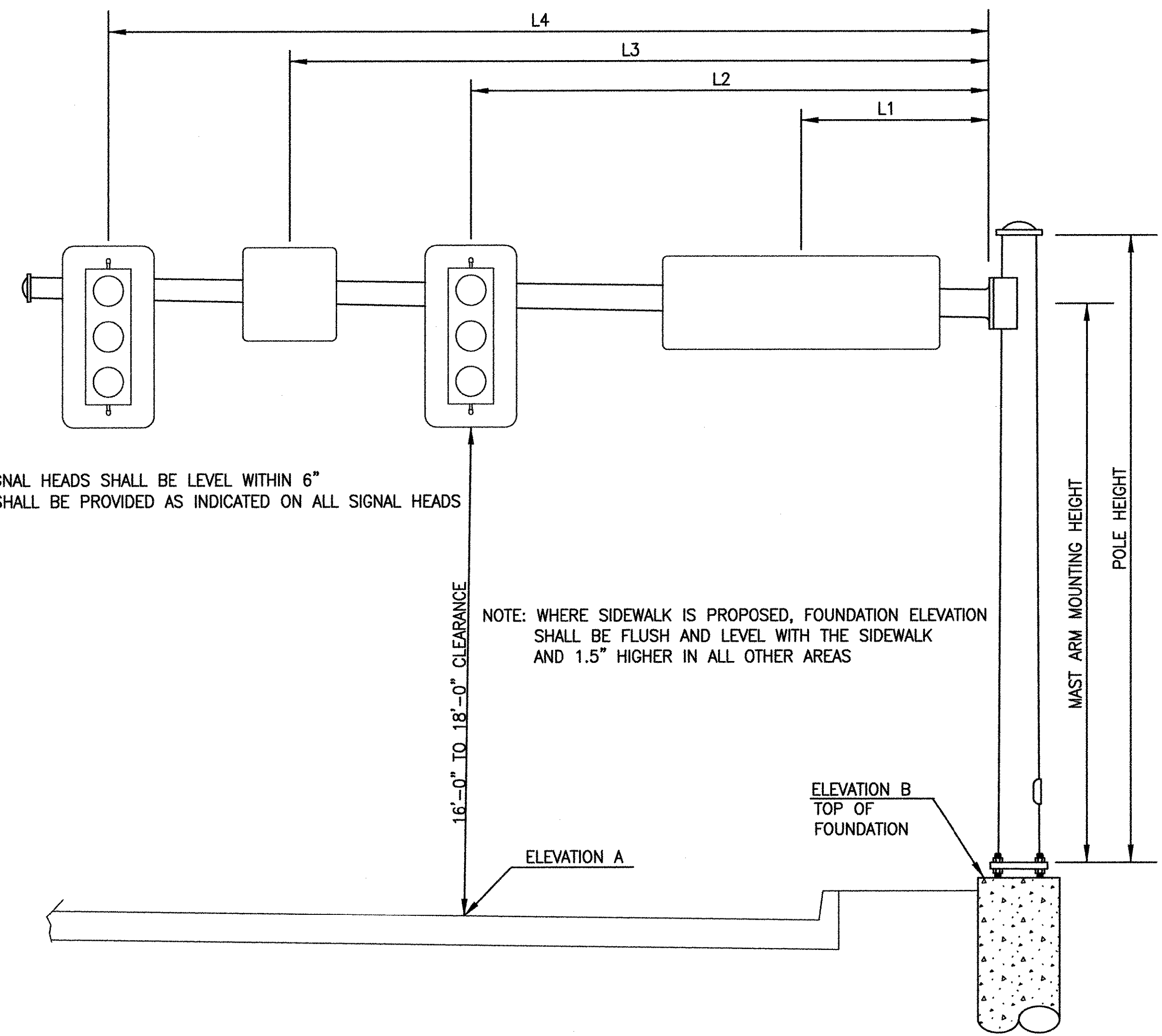
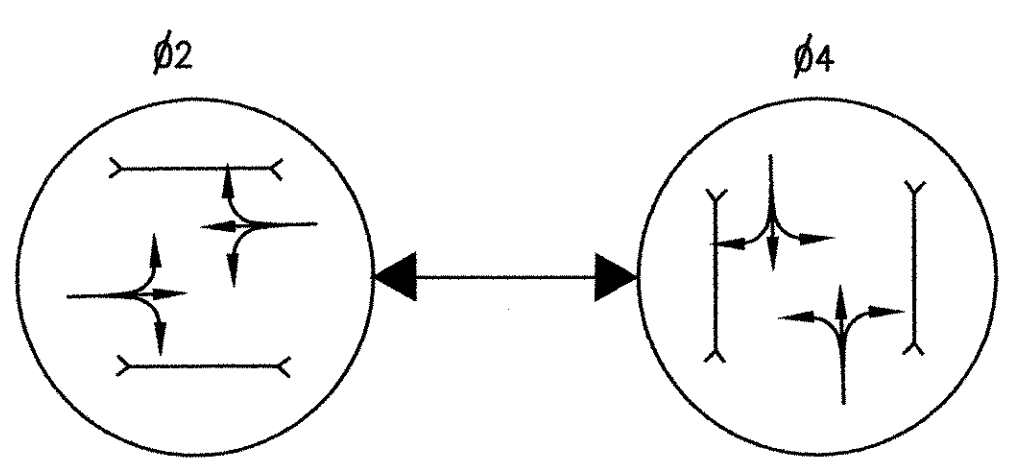


CITY OF CLEVELAND
MAST ARM STREET NAME

WIRING DIAGRAM-E.79TH STREET



PHASING DIAGRAM



NOTE: ALL SIGNAL HEADS SHALL BE LEVEL WITHIN 6"
BACKPLATES SHALL BE PROVIDED AS INDICATED ON ALL SIGNAL HEADS

NOTE: WHERE SIDEWALK IS PROPOSED, FOUNDATION ELEVATION
SHALL BE FLUSH AND LEVEL WITH THE SIDEWALK
AND 1.5" HIGHER IN ALL OTHER AREAS

SIGNAL SUPPORT TYPE TC-81.20									ELEVATION		MAST ARM ANGLE (DEG.)	ORIENTATION ANGLES (DEG.) FROM MAST ARM A			
SIGNAL SUPPORT	DESIGN NO.	POLE HEIGHT, FT.	MAST ARM MOUNTING HEIGHT, FT.	L1. FT.	L2. FT.	L3. FT.	L4. FT.	ARM LENGTH (L) FT.	A	B		PEDESTRIAN SIGNAL	PEDESTRIAN BUTTON	POWER SERVICE	HANDHOLE
11	3	21.0	20.0	10.0	18.0	-	31.0	32.0	688.0 +/-	689.0 +/-	90	90/327	270	N/A	180
12	3	21.0	20.0	8.0	17.5	-	31.0	32.0	688.0 +/-	688.9 +/-	327	270/327	180	N/A	180
13	3	21.0	20.0	8.0	16.0	-	28.0	29.0	688.0 +/-	689.0 +/-	90	90/327	270	N/A	270
14	3	21.0	20.0	11.0	19.5	-	31.5	32.5	688.0 +/-	689.0 +/-	327	180/327	180	N/A	270

SIGNAL DISPLAY CHART

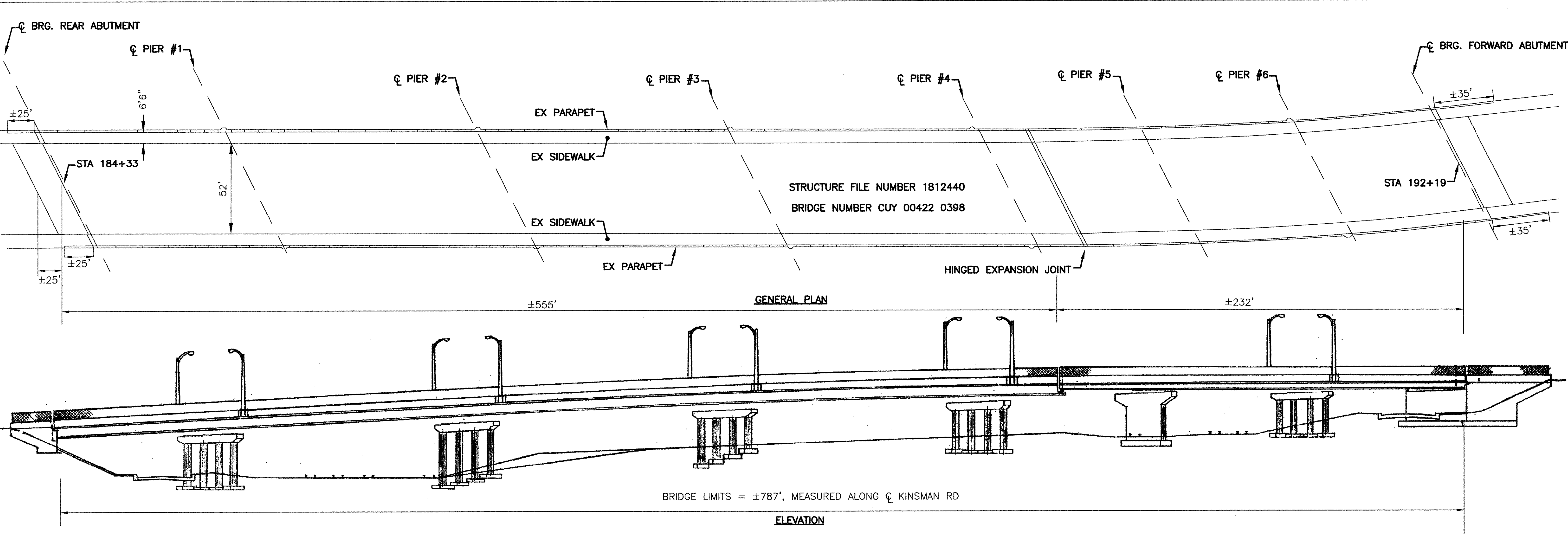
SIGNAL HEAD	ø2		ø4		FLASH
	R/W	CLEAR	R/W	CLEAR	
1					
2					
3					
4					
5					
6					
7					
8					
W-W					
X-X					
Y-Y					
Z-Z					

TIMING CHART

INTERVAL	ø2	ø4
MINIMUM INITIAL		
MAX 1		
YELLOW TIME		
ALL RED		
VEHICULAR EXTENSION		
WALK		
FLASHING DON'T WALK		
MEMORY		
RECALL		

COORDINATION TIMING

PHASE	CYCLE LENGTH-SPLIT (SEC)		



STANDARD DRAWINGS AND SUPPLEMENTAL SPECIFICATIONS
REFERENCE SHALL BE MADE TO THE FOLLOWING:
ODOT STANDARD DRAWINGS
VPF-1-90
ODOT SUPPLEMENTAL SPECIFICATIONS
843 (DATED 4-18-03)

PORTIONS OF STRUCTURES REMOVED, AS PER PLAN
REMOVAL OF THE EXISTING KINSMAN ROAD BRIDGE INCLUDES THE DEMOLITION, REMOVAL AND DISPOSAL OF ENTIRE VANDAL PROTECTION FENCE AND POSTS.

REMOVAL
1. THE CONTRACTOR SHALL REMOVE THE DESIGNATED PORTIONS OF THE EXISTING BRIDGE TO THE LIMITS SHOWN ON THE PLANS. PARTS DESIGNATED BY THE PLANS FOR REMOVAL MAY BE REMOVED BY METHODS OF THE CONTRACTOR'S SELECTION. NO PART OF DEBRIS SHALL BE PERMITTED TO BE DROPPED ON THE GROUND OR ON THE RAILROAD. THE PLANS OF THE EXISTING BRIDGE ARE AVAILABLE FOR PERUSAL AT ROOM 518, CITY HALL, CLEVELAND, OHIO.
2. THE CONTRACTOR SHALL BE AWARE OF THE CONSTRUCTION CLEARANCE REQUIREMENTS. THE CONTRACTOR SHALL OBTAIN APPROVAL OF THE ENGINEER FOR THE REMOVAL AND METHOD BEFORE THE ACTUAL DEMOLITION WORK IS STARTED.
COST OF THE REMOVAL SHALL BE PAID FOR WITH THE UNIT ITEM 517

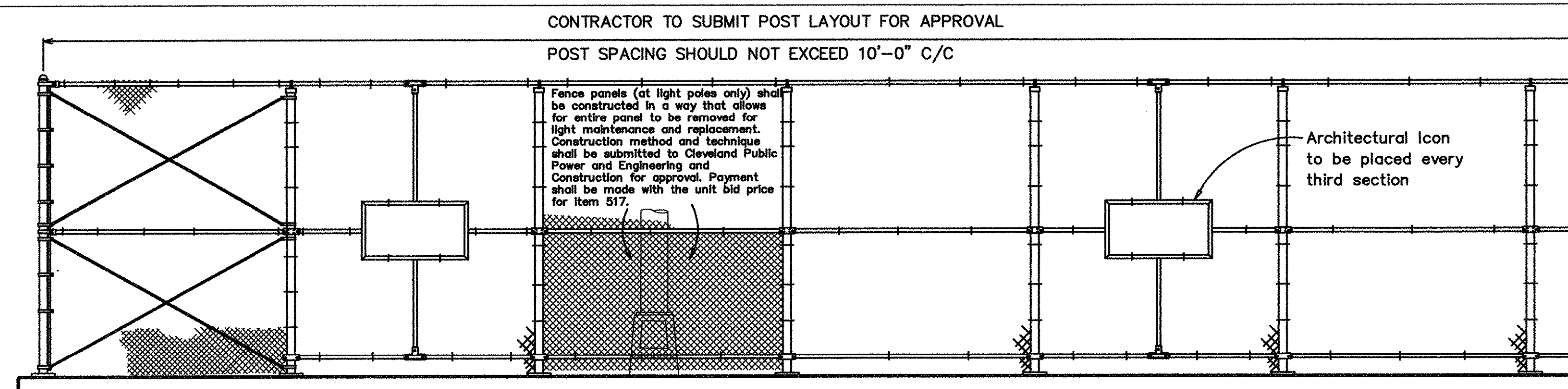
EXISTING STRUCTURE VERIFICATION
DETAILS AND DIMENSIONS SHOWN ON THESE PLANS PERTAINING TO THE EXISTING STRUCTURE HAVE BEEN OBTAINED FROM PLANS OF THE EXISTING STRUCTURE AND/OR FROM FIELD OBSERVATIONS AND MEASUREMENTS. CONSEQUENTLY, THEY ARE INDICATIVE OF THE EXISTING STRUCTURE AND THE PROPOSED WORK BUT THEY SHALL BE CONSIDERED TENTATIVE AND APPROXIMATE. THE CONTRACTOR IS REFERRED TO CMS SECTIONS 102.05 AND 105.02.
CONTRACT BID PRICES SHALL BE BASED UPON A RECOGNITION OF THE UNCERTAINTIES DESCRIBED ABOVE AND UPON A PREBID EXAMINATION OF THE EXISTING STRUCTURE BY THE CONTRACTOR. HOWEVER, ALL PROJECT WORK SHALL BE BASED UPON ACTUAL DETAILS AND DIMENSIONS WHICH HAVE BEEN VERIFIED BY THE CONTRACTOR IN THE FIELD.
PLANS OF THE EXISTING STRUCTURE ARE AVAILABLE AT THE CITY OF CLEVELAND, DIVISION OF ENGINEERING AND CONSTRUCTION. IT IS RECOMMENDED THAT THE CONTRACTOR REVIEW THESE PLANS PRIOR TO SUBMITTING HIS BID.

DESCRIPTION OF DETERIORATION
DETERIORATION TO BE REPAIRED UNDER THIS CONTRACT SHALL BE DEFINED AS THOSE AREAS OF ORIGINAL CONCRETE SURFACE MARKED BY THE ENGINEER.

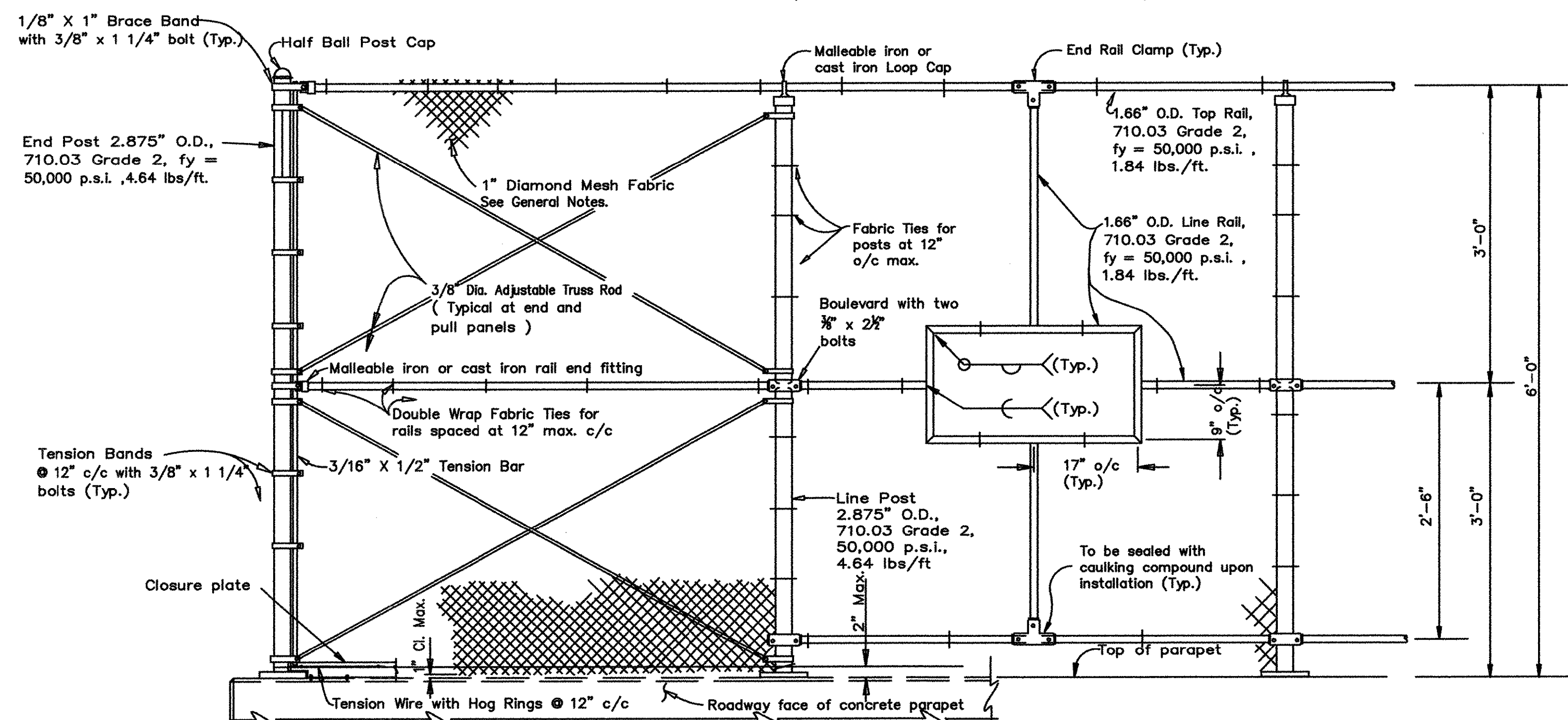
ITEM 512 - CONCRETE REPAIR BY EPOXY INJECTION
ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)
ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY URETHANE)
ALL PROVISIONS OF ITEM 512 SHALL APPLY EXCEPT AS NOTED BELOW.
ITEM 512 - SEALING OF CONCRETE SURFACES (NON-EPOXY)
THE INTENT OF THIS ITEM IS TO ASSURE THAT A SEALER FOR THE SIDEWALK TO BE PROVIDED, WILL NOT ADVERSELY AFFECT THE COLOR OF THE CONCRETE, AND WILL PROVIDE THE PROTECTION DESIRED. A TEST PANEL SHALL BE PREPARED EXHIBITING THE FINAL PRODUCT FOR APPROVAL.
SELECTION OF THE SEALER AND APPROVAL OF THE COLOR SHALL BE MADE BY THE MANUFACTURER'S AGENT AND THE CITY ENGINEER.
COST OF THE CONCRETE SEALER SHALL BE PAID FOR:
ITEM 512 - SEALING OF CONCRETE SURFACES (NON EPOXY)
ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY URETHANE)
THE INTENT OF THIS ITEM IS TO PROVIDE A PIGMENTED SEALER FOR THE PATCHED PARAPET SURFACES WHICH WILL BE COMPATIBLE WITH THE CONCRETE AND WILL PROVIDE THE PROTECTION DESIRED. A TEST PANEL SHALL BE PREPARED EXHIBITING THE FINAL PRODUCT FOR APPROVAL.
SELECTION OF THE SEALER AND APPROVAL OF THE COLOR SHALL BE MADE BY THE MANUFACTURER'S AGENT AND THE CITY ENGINEER.
COST OF THE CONCRETE SEALER SHALL BE PAID FOR:
ITEM 512 - SEALING OF CONCRETE SURFACES (EPOXY URETHANE)
ITEM 519 - PATCHING CONCRETE STRUCTURES
PRIOR TO THE SURFACE CLEANING SPECIFIED IN 519.04 AND WITHIN 24 HOURS OF PLACING MATERIAL, BLAST CLEAN ALL SURFACES TO BE PATCHED INCLUDING THE EXPOSED REINFORCING STEEL ACCEPTABLE METHODS INCLUDE HIGH-PRESSURE WATER BLASTING WITH OR WITHOUT ABRASIVES IN THE WATER, ABRASIVE BLASTING WITH CONTAINMENT, OR VACUUM ABRASIVE BLASTING.
ITEM 517 - RAILING (VANDAL PROTECTION FENCE)
ALL PROVISIONS OF ITEM 517 SHALL APPLY EXCEPT AS NOTED BELOW.
FOR FENCE DETAILS NOT SHOWN, SEE ODOT DRAWING VPF-1-90. FENCE SHALL BE VINYL COATED. THE COATING FOR THE FENCE FABRIC, POSTS AND ALL OTHER VISIBLE COMPONENTS SHALL BE BLACK IN COLOR, CLOSELY MATCHING FEDERAL STANDARD NO. 595B-17038.
PAYMENT FOR ALTERNATE 1 SHALL BE MADE WITH THE UNIT PRICE BID FOR ITEM 517 - RAILING (VANDAL PROTECTION FENCE). THIS PRICE SHALL INCLUDE ALL FENCE MATERIAL, FENCE POST ANCHOR PLATES, AND ANCHORS AND ALL LABOR EQUIPMENT, REMOVAL AND INCIDENTALS NECESSARY TO COMPLETE THE FENCING, PAYMENT LENGTH WILL BE THE OVERALL LENGTH OF FENCE.

ITEM 517 - RAILING (ORNAMENTAL FENCE)
THIS ITEM SHALL CONFORM TO THE REQUIREMENTS AND SPECIFICATIONS FOR ORNAMENTAL FENCE AS MANUFACTURED BY THE CHOICE OF THE CONTRACTOR AND APPROVED BY THE CITY ENGINEER. THE FENCE HEIGHT SHALL BE 6 FEET TO TOP OF THE TOP RAIL IN ADDITION THE FOLLOWING REQUIREMENTS WILL BE MET:
1. PANELS, POSTS, AND ALL HARDWARE WILL BE MADE OF GALVANIZED MATERIAL AND WILL BE POWDER COATED FEDERAL COLOR NO. 595B-17038 BLACK.
2. PANELS WILL HAVE A FRAMED WIRE MESH COVER MOUNTED BY WELDING ON THE OUTSIDE OF THE FENCE. THE WIRE MESH SHALL BE 10 GAUGE GALVANIZED WOVEN MATERIAL WITH 1 INCH SQUARE OPENINGS BLACK IN COLOR.
PAYMENT FOR ALTERNATE 2 SHALL BE MADE WITH THE UNIT PRICE BID FOR THE ITEM 517 - RAILING (ORNAMENTAL). THIS PRICE SHALL INCLUDE ALL FENCE MATERIAL FENCE POST ANCHOR PLATES, AND ANCHORS AND ALL LABOR, EQUIPMENT, REMOVAL AND INCIDENTALS NECESSARY TO COMPLETE THE FENCING. PAYMENT LENGTH WILL BE THE OVERALL LENGTH OF FENCE.
NOTE:
ANCHOR SUPPORT SHALL BE HIT-RE 500 + HAS SUPER A 193 B7-1/2 (MANUFACTURED BY HILTI) OR APPROVED EQUAL.
CONTRACTOR SHALL PRICE BOTH THE VANDAL PROTECTION AND ORNAMENTAL FENCE PER PLAN.
REFERENCES:
1. For general notes, see this sht.
2. For estimated quantities see this sht.
3. For maintenance of traffic & stage constructions see shts. 7/56
4. For parapet and fence details see sht. 43/56
PROPOSED WORK:
1. Staged removal of existing fence.
2. Modification of existing parpet, sidewalk and curb.
3. New fence.

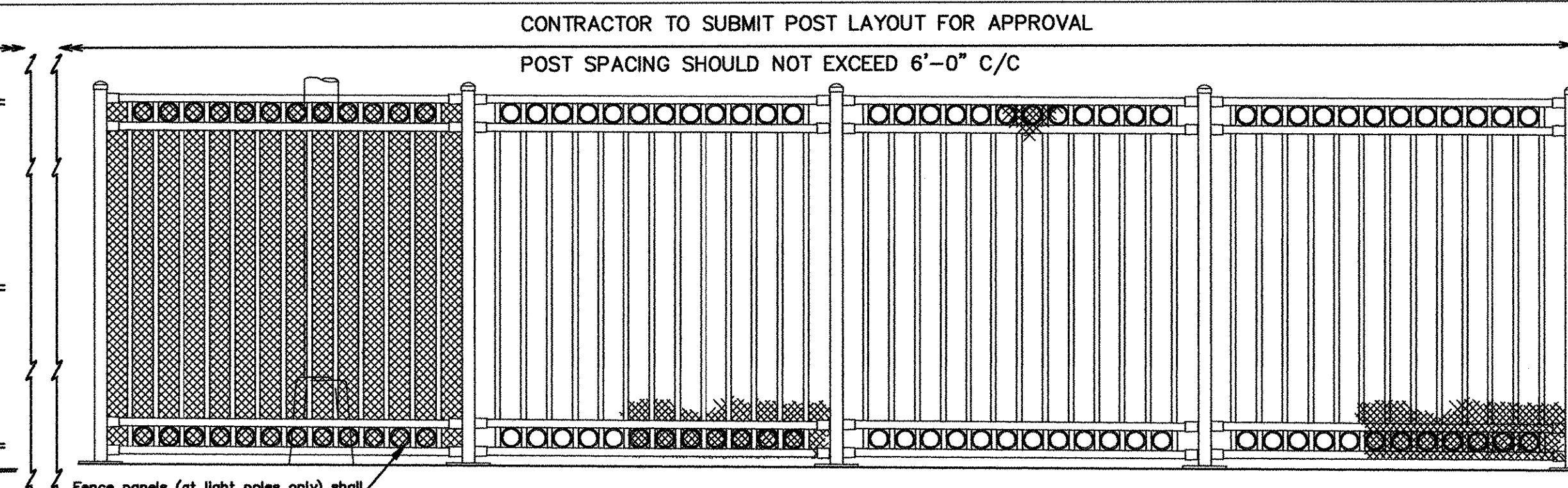
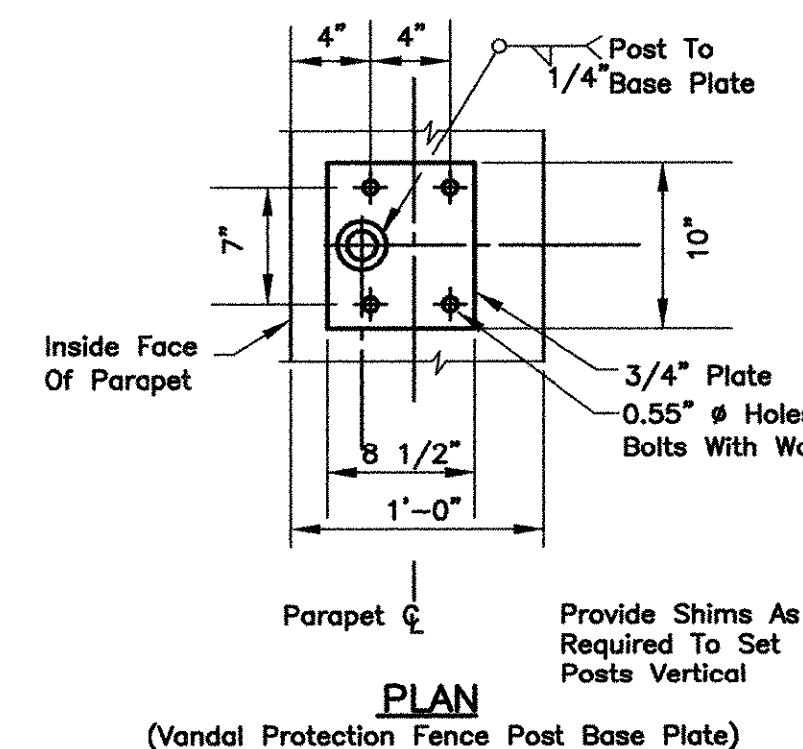
BRIDGE SUMMARY								
STATION TO STATION	SIDE	CLEANING OF SURFACE (SEE ODOT 519.04)	PATCHING CONCRETE STRUCTURES	CONCRETE REPAIR BY EPOXY INJECTION	SEALING OF CONCRETE SURFACES (NON-EPOXY)	SEALING OF CONCRETE SURFACES (EPOXY URETHANE)	RAILING (VANDAL PROTECTION FENCE)	RAILING (ORNAMENTAL FENCE)
		SPEC	519	512	512	512	517	517
		SQ. YD.	SQ. FT.	LIN. FT.	SQ. YD.	SQ. YD.	LIN. FT.	LIN. FT.
184+00 to 185+00	LT./RT.		46	28	141	72.5		
185+00 to 186+00	LT./RT.		41	28	141	72.5		
186+00 to 187+00	LT./RT.		41	28	141	72.5		
187+00 to 188+00	LT./RT.		41	28	141	72.5		
188+00 to 189+00	LT./RT.		41	28	141	72.5		
189+00 to 190+00	LT./RT.		47	28	141	72.5		
190+00 to 191+00	LT./RT.		41	28	141	72.5		
191+00 to 192+50	LT./RT.		41	28	141	72.5		
SUBTOTAL		1750	339	224	1128	580	1700	1700
TOTALS CARRIED TO SPEC BOOK		1750	339	224	1128	580	*	*



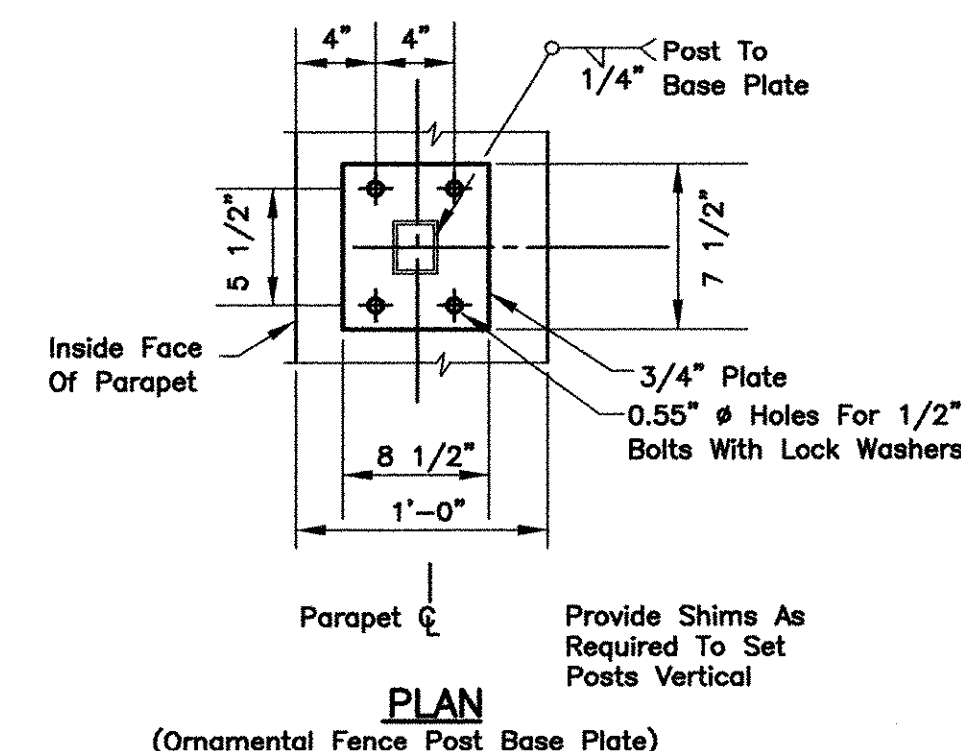
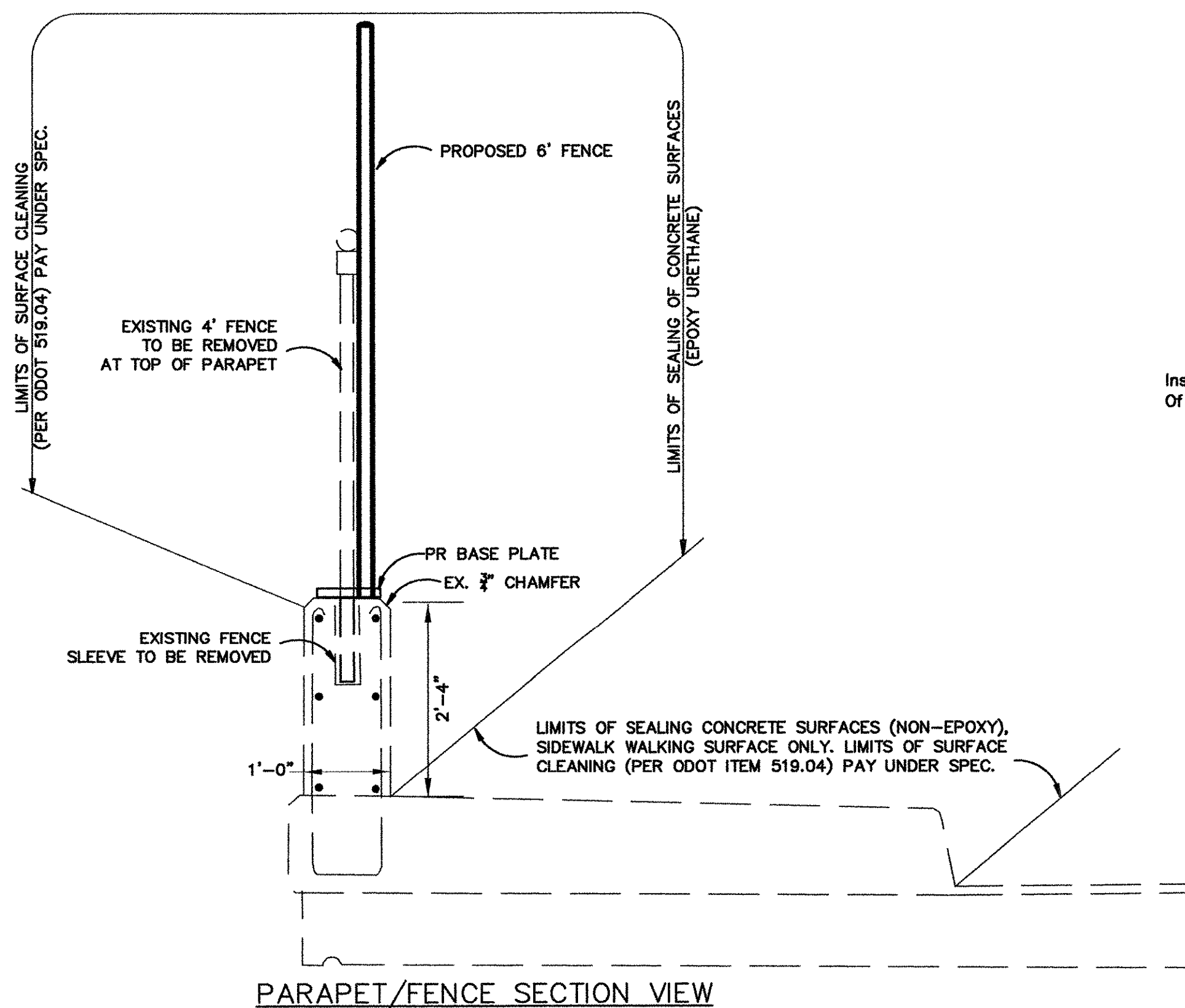
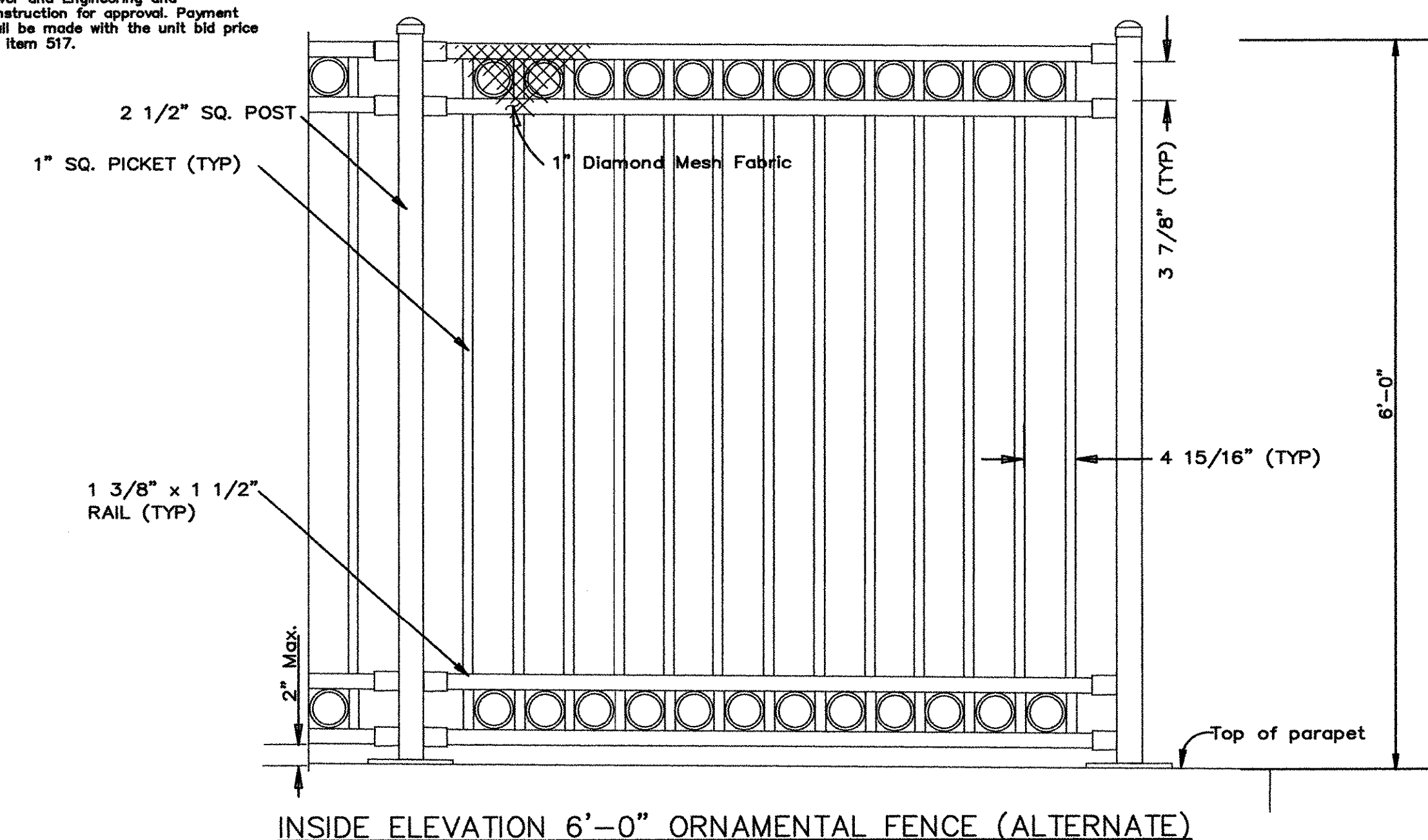
GENERAL ELEVATION VIEW (VANDAL PROTECTION FENCE)



INSIDE ELEVATION 6'-0" STRAIGHT VANDAL PROTECTION FENCE



GENERAL ELEVATION VIEW (ORNAMENTAL FENCE)



PROPOSED PARAPET & FENCE DETAILS

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

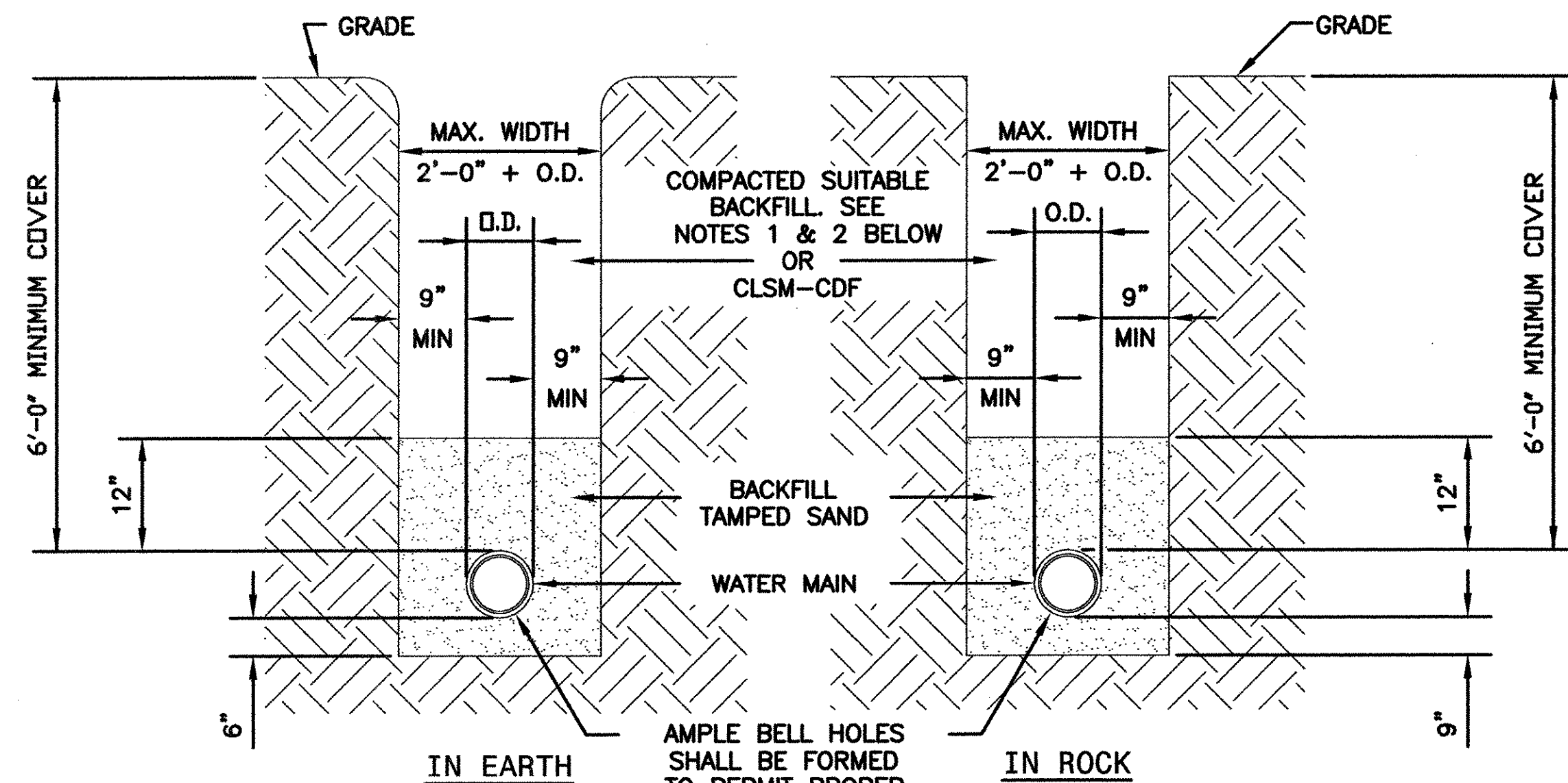
A. THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, EQUIPMENT (INCLUDING AIR COMPRESSOR) AND INCIDENTALS, INCLUDING ALL BRANCH TAPPING SLEEVES, TAPPING SADDLES, TAPPING VALVE FLANGES, AND TAPPING VALVES OF THE SIZES AND TYPES INDICATED ON THE CONTRACT DRAWINGS OR THE SCHEDULE OF BID ITEMS. THE CONTRACTOR SHALL PERFORM ALL THE NECESSARY EXCAVATION, BACKFILLING, SEEDING OR SODDING, SIDEWALK REPLACEMENT, CURB REPLACEMENT, UNDERDRAINS, ETC. AND REPAVING (BOTH TEMPORARY AND PERMANENT) AS REQUIRED THEREFORE.

- ### CONSTRUCTION SEQUENCE AND DISRUPTIONS TO EXISTING SERVICE

- ### BACKFILL UNDER OR NEAR PAVEMENTS

- A. ALL BACKFILL BENEATH PAVEMENTS OR WITHIN 3-FT OF THE PAVEMENT EDGE SHALL BE CONTROLLED LOW-STRENGTH MATERIAL-CONTROLLED DENSITY FILL (CLS-CDF), PER CITY OF CLEVELAND DIVISION OF ENGINEERING AND CONSTRUCTION SPECIFICATION D-31. THIS INCLUDES BACKFILL FOR WATER MAIN TRENCHES, VAULTS, VALVE BOXES, MANHOLES, OTHER EXCAVATIONS.

REFERENCE SHEET		CLEAN AND CEMENT MORTAR LINING 8" WATER MAIN	REMOVE AND REPLACE EXISTING VALVE WITH NEW 8" DIAMETER	PROVIDE TEMPORARY WATER MAINS AND SERVICE CONNECTIONS FOR WATER WORKS	REPLACE FIRE HYDRANT	SUPPLEMENTAL TAPPING SLEEVE (10" & 16" MANS) INCLUDING REDUCERS	FIRE HYDRANT REMOVED AND DISPOSED OF	8" DUCTILE IRON CLASS 52 CEMENT-LINED WATER MAIN WITH PUSH-ON JOINTS AND DUCTILE IRON CLASS 350 CEMENT-LINED RETAINED MECHANICAL JOINT FTGS.	12" DUCTILE IRON CLASS 52 CEMENT-LINED WATER MAIN WITH PUSH-ON JOINTS AND DUCTILE IRON CLASS 350 CEMENT-LINED RETAINED MECHANICAL JOINT FTGS.	MISCELLANEOUS METALS	ADJUST EXISTING VALVE BOX TO GRADE	ADJUST EXISTING VAULT/MANHOLE FRAME AND COVER TO GRADE	PLUG ABANDONED SERVICE CONNECTION	EXTEND EXISTING HYDRANT BEHIND CURB
		CLD-15 LIN. FT.	CLD-24 EACH	CLD-8 EACH	SPECIAL EACH	SPECIAL EACH	SPECIAL EACH	CLD-35 LIN. FT.	CLD-35 LIN. FT.	SPECIAL POUNDS	SPECIAL EACH	SPECIAL EACH	SPECIAL EACH	SPECIAL EACH
GENERAL NOTES														
PLAN SHEET 15/56						2			33					
PLAN SHEET 22/56		218	1											
PLAN SHEET 23/56		1000	7		4		4	136						
PLAN SHEET 24/56		266			1		1							
SUBTOTAL		1482	8	1	5	1	5	136	33	20000	22	20	33	8
TOTALS CARRIED TO SPEC BOOK		1482	8	1	5	1	5	136	33	20000	22	20	33	8

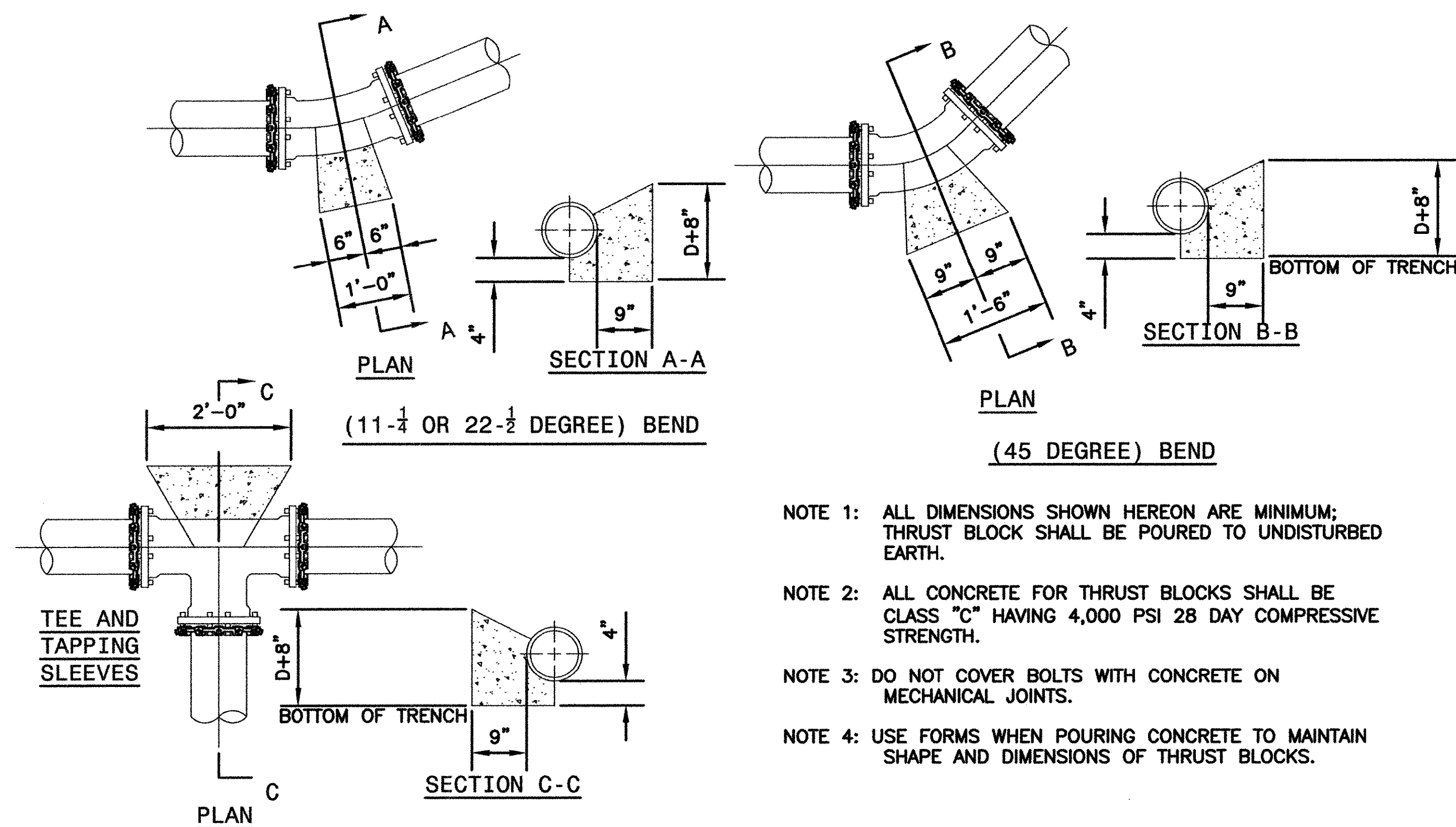


NOTES:

- 1) PREMIUM BACKFILL REQUIRED UNDER EXISTING OR FUTURE PAVEMENTS, SIDEWALKS, AND/OR DRIVES OR WHEN REQUIRED BY LOCAL MUNICIPALITY.
- 2) PREMIUM BACKFILL SHALL BE LIMESTONE SCREENINGS GRADED PER ODOT 304.02 OR ODOT 411. NO SLAG IS PERMITTED.*
- 3) CONTRACTOR SHALL USE SPECIAL CARE IN PLACING THE SAND BEDDING BACKFILL, SO AS TO AVOID SCRAPING OF THE EXTERIOR COATING, INJURING THE PIPE, DISTORTING OR MOVING THE PIPE WHEN COMPACTING THE SAME. THE SAND BEDDING BACKFILL SHALL BE TAMPED IN SIX (6) INCH LAYERS, SIMULTANEOUSLY ON EACH SIDE OF THE PIPE, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE PIPE.
- 4) MINIMUM COMPACTION FOR ALL SAND BEDDING BACKFILL, BACKFILL AND PREMIUM BACKFILL SHALL BE 95% STANDARD PROCTOR.
- 5) PAVEMENT, SIDEWALK OR DRIVES TO BE INSTALLED IN ACCORDANCE WITH LOCAL MUNICIPALITY'S SPECIFICATIONS.

WATER MAIN TRENCH DETAILS

— NOT TO SCALE —



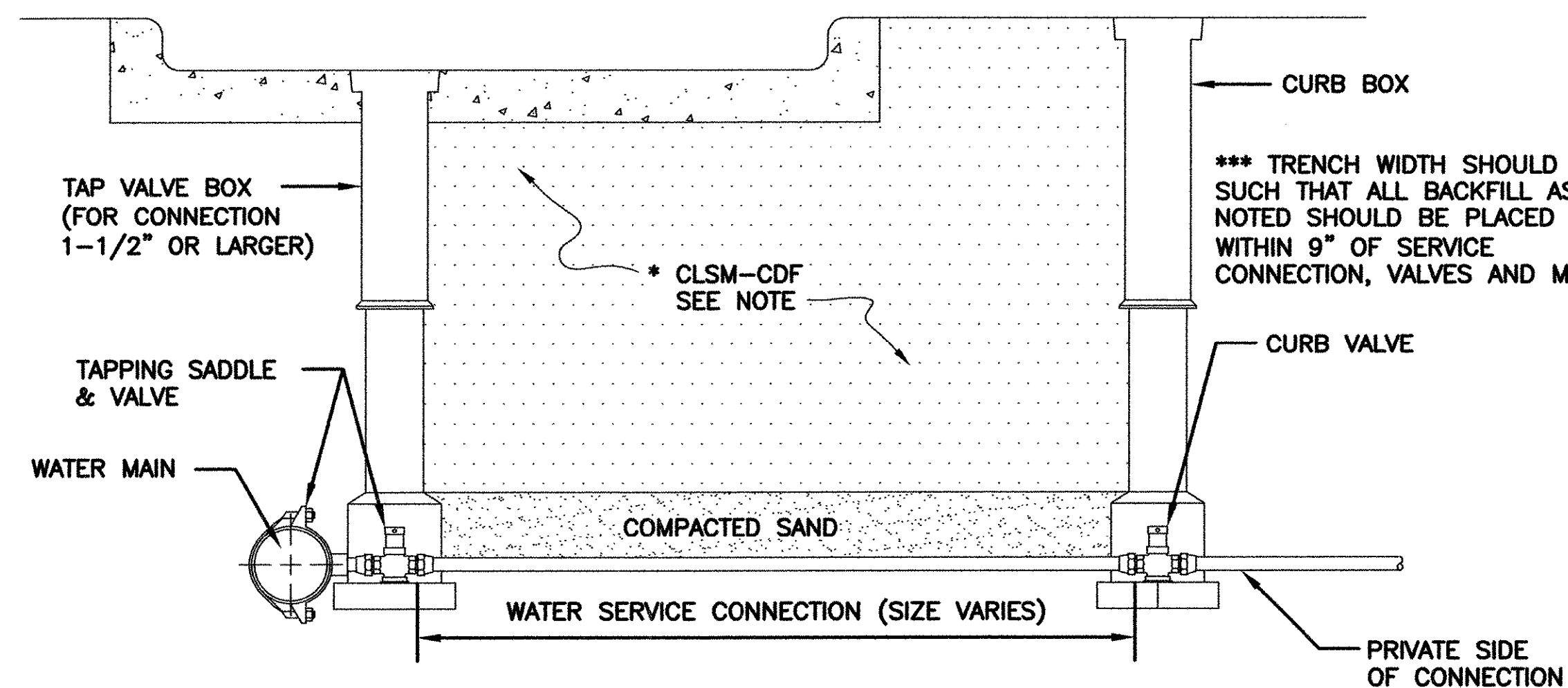
- NOTE 1: ALL DIMENSIONS SHOWN HEREON ARE MINIMUM; THRUST BLOCK SHALL BE POURED TO UNDISTURBED EARTH.
- NOTE 2: ALL CONCRETE FOR THRUST BLOCKS SHALL BE CLASS "C" HAVING 4,000 PSI 28 DAY COMPRESSIVE STRENGTH.
- NOTE 3: DO NOT COVER BOLTS WITH CONCRETE ON MECHANICAL JOINTS.
- NOTE 4: USE FORMS WHEN POURING CONCRETE TO MAINTAIN SHAPE AND DIMENSIONS OF THRUST BLOCKS.

TYPICAL THRUST BLOCK DETAIL FOR HORIZONTAL DEFLECTION FOR PIPE UP TO 16" DIAMETER

— NOT TO SCALE —
D = PIPE DIAMETER

** CLEVELAND REQUIRED MIX DESIGN —
CEMENT — 50 LBS. PER CUBIC YARD
SAND — 2850 LBS. PER CUBIC YARD
WATER — 50 GALLONS PER CUBIC YARD
RHEOCELL 30MB — 3 OZ. PER CUBIC YARD

* CONTROLLED LOW STRENGTH MATERIAL—
CONTROLLED DENSITY FILL (CLSM—CDF)
"FLOWABLE FILL" IS REQUIRED WITH THE
CITY OF CLEVELAND CORPORATION LIMITS
AND PERMITTED IN ALL COMMUNITIES
SERVED BY CWD. CHECK LOCAL REQUIREMENTS.

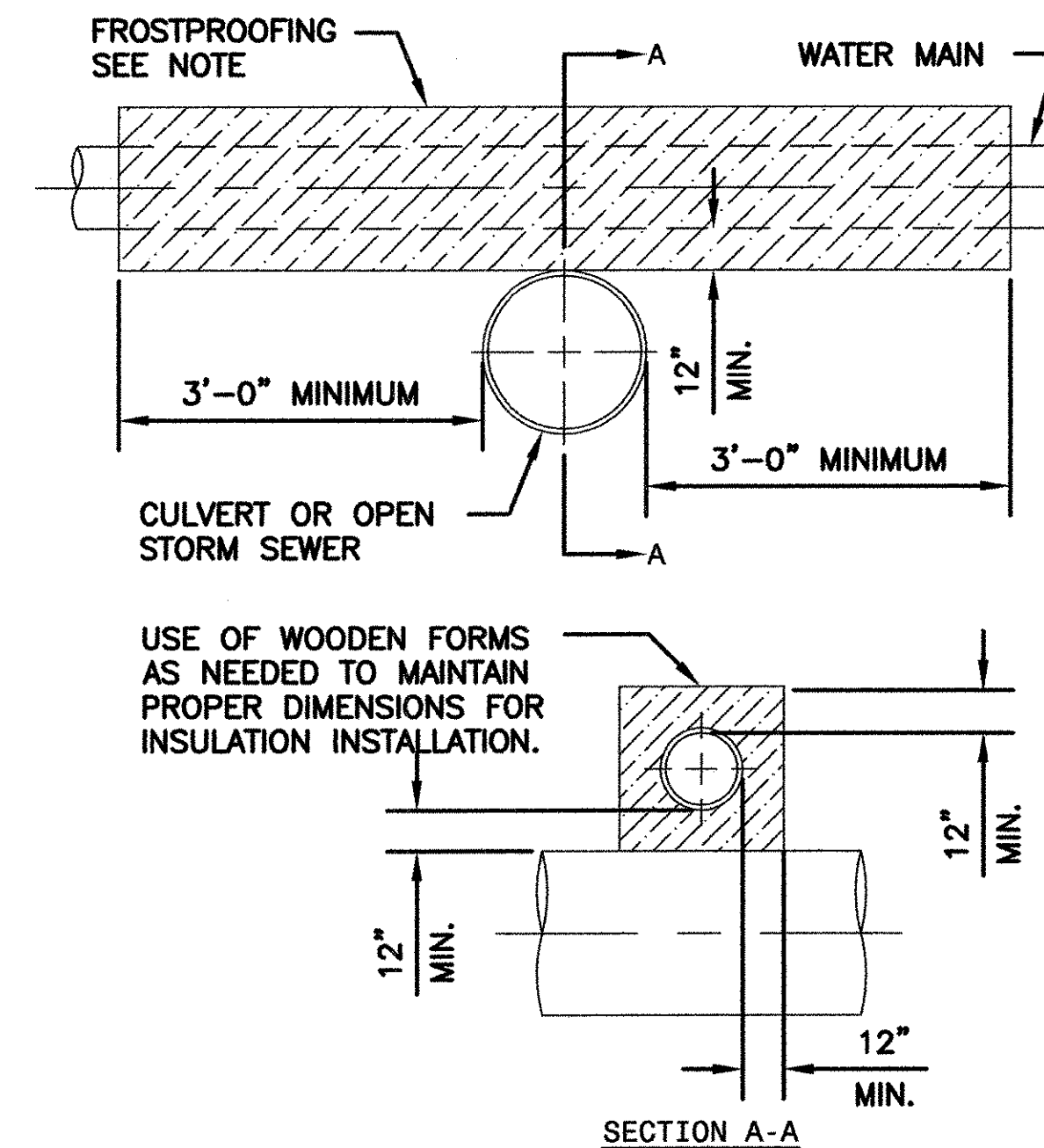


SERVICE CONNECTION BACKFILL DETAIL

— NOT TO SCALE —

NOTES:

- 1) CONTRACTOR SHALL USE SPECIAL CARE IN PLACING THE SAND BEDDING BACKFILL, SO AS TO AVOID SCRAPING OF THE EXTERIOR COATING, INJURING THE PIPE, DISTORTING OR MOVING THE PIPE WHEN COMPACTING THE SAME. THE SAND BEDDING BACKFILL SHALL BE TAMPED IN SIX (6) INCH LAYERS, SIMULTANEOUSLY ON EACH SIDE OF THE PIPE, AND THOROUGHLY COMPACTED SO AS TO PROVIDE A SOLID BACKING AGAINST THE EXTERNAL SURFACE OF THE PIPE.
- 2) MINIMUM COMPACTION FOR ALL SAND BEDDING BACKFILL, BACKFILL AND PREMIUM BACKFILL SHALL BE 95% STANDARD PROCTOR.



MINIMUM ONE (1) FOOT FROSTPROOFING INSULATION ENVELOPE REQUIRED WITH WATER MAIN LAID WITH LESS THAN FIVE (5) FT. COVER; CROSSING OVER STORM SEWERS 24" AND LARGER; OR CROSSING UNDER OPEN END CULVERTS, OR OTHERWISE DIRECTED BY C.W.D.

IN NO CASE SHALL THE MAINS BE LAID WITH LESS THAN 3'-6" OF COVER IN UNPAVED AREAS & 3'-0" TO BOTTOM OF SLAB IN PAVED AREAS.

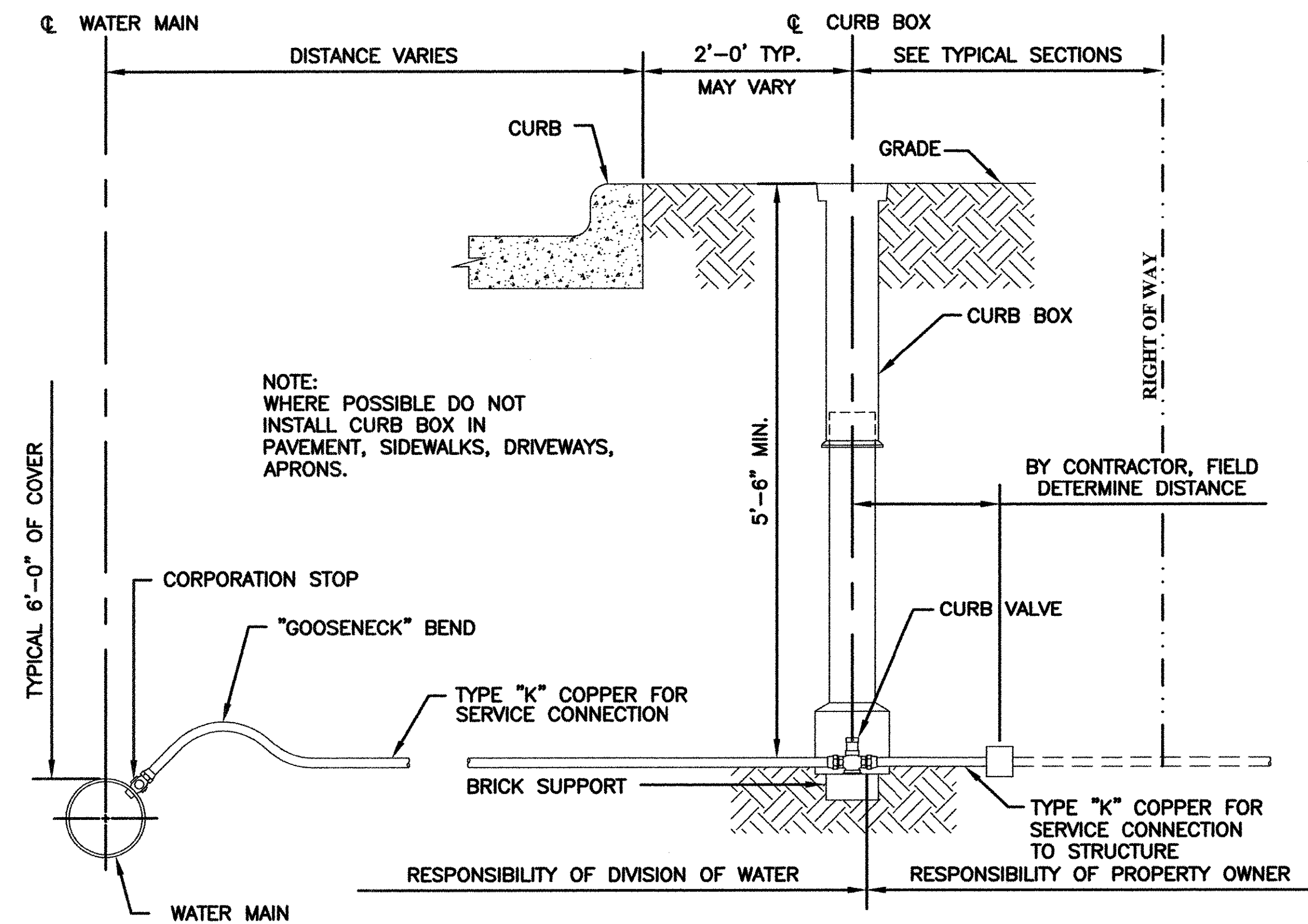
NOTE:
COMPACTED "WITCOLITE" INSULATION AS MANUFACTURED BY PIONEER PRODUCTS, DIVISION OF WITCO CHEMICAL COMPANY, INC. OR "GILSULATE 500 XR" AS MANUFACTURED BY AMERICAN THERMAL PRODUCTS, INC.

TYPICAL FROSTPROOFING DETAIL

— NOT TO SCALE —

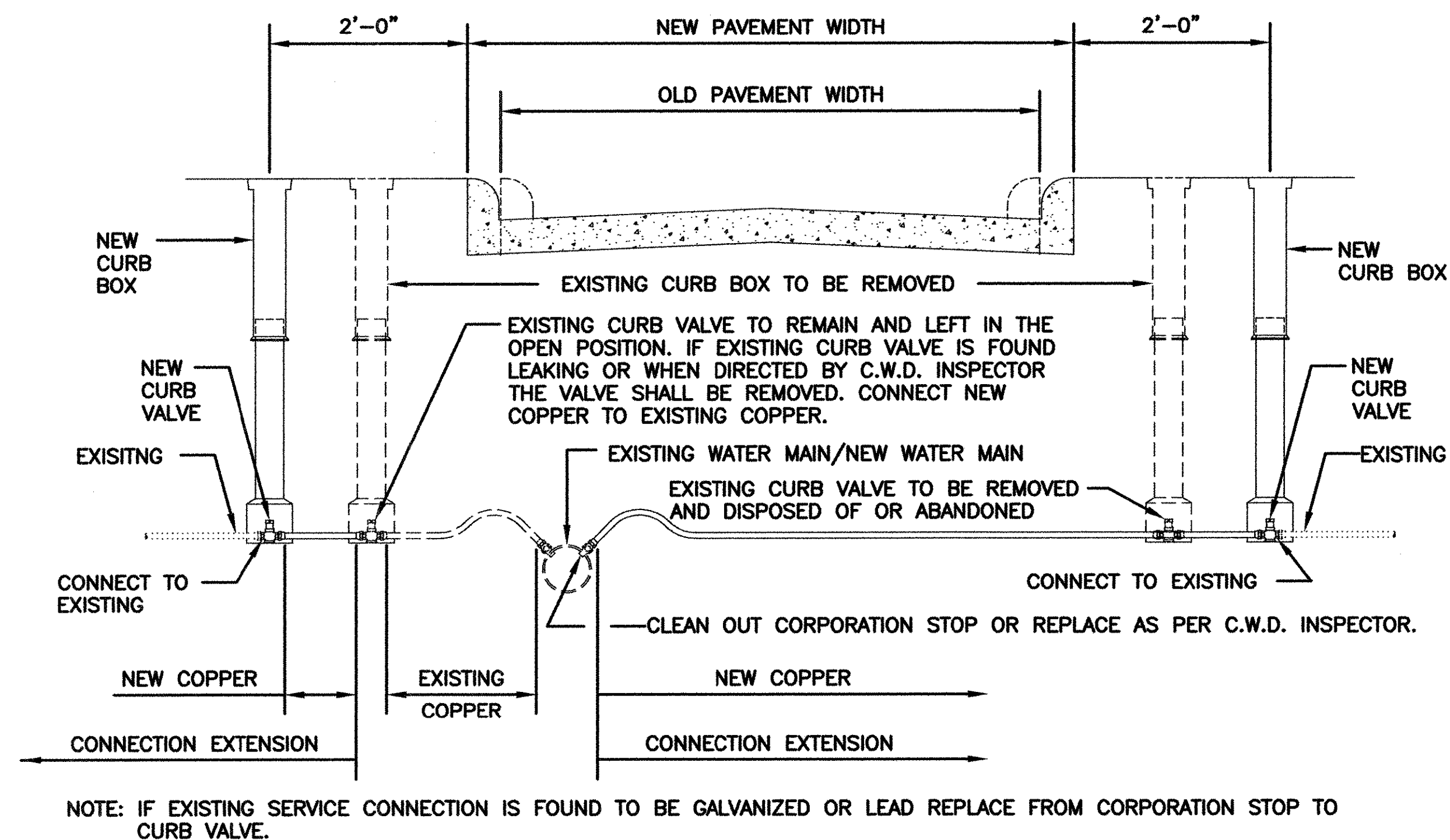
WATER PLAN
STANDARD DETAILS

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION



NEW 1" SERVICE CONNECTION DETAIL IN PUBLIC RIGHT OF WAY

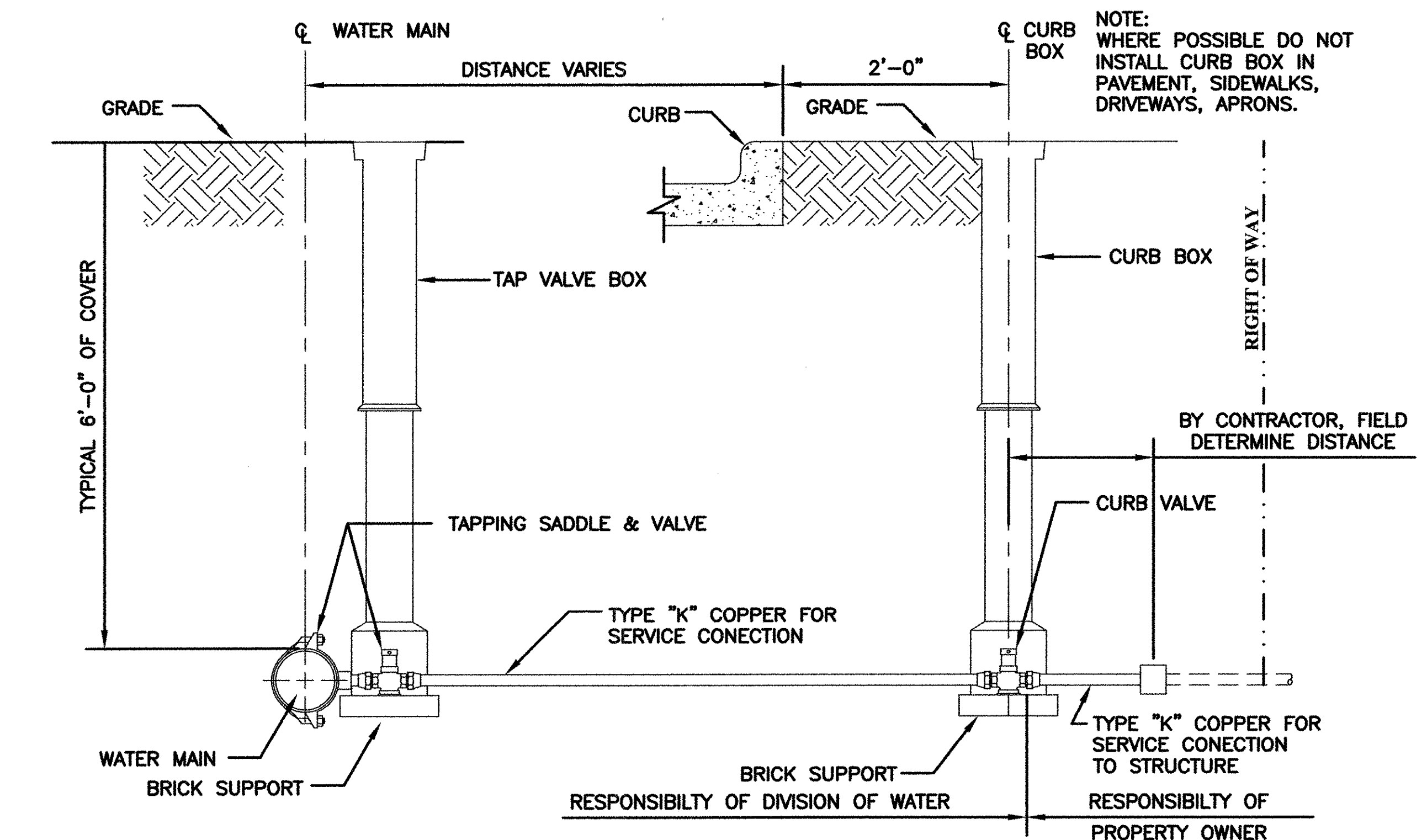
- NOT TO SCALE -



NOTE: IF EXISTING SERVICE CONNECTION IS FOUND TO BE GALVANIZED OR LEAD REPLACE FROM CORPORATION STOP TO CURB VALVE.

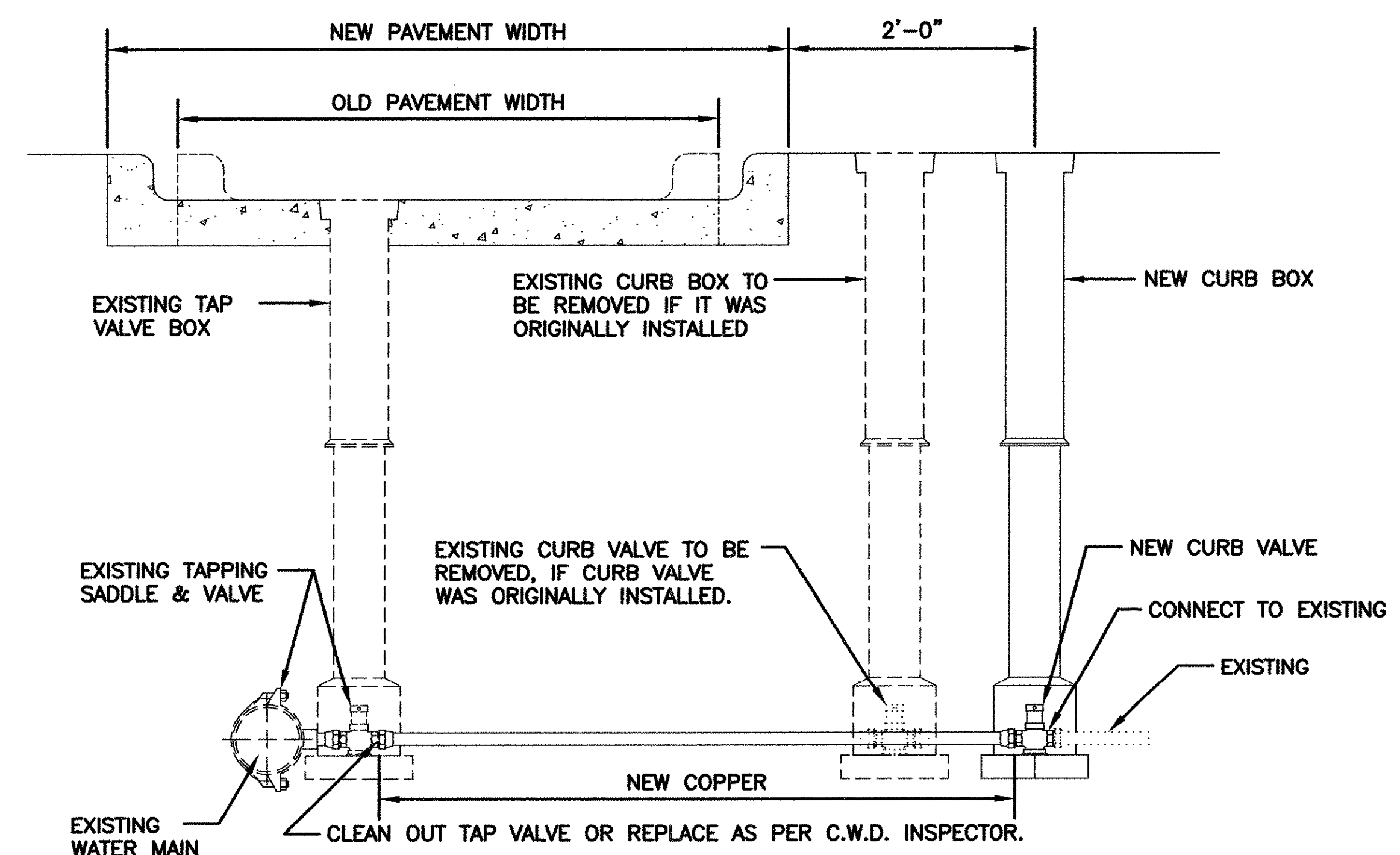
WATER SERVICE CONNECTION EXTENSION OR REPLACEMENT FOR 1" & SMALLER

- NOT TO SCALE -



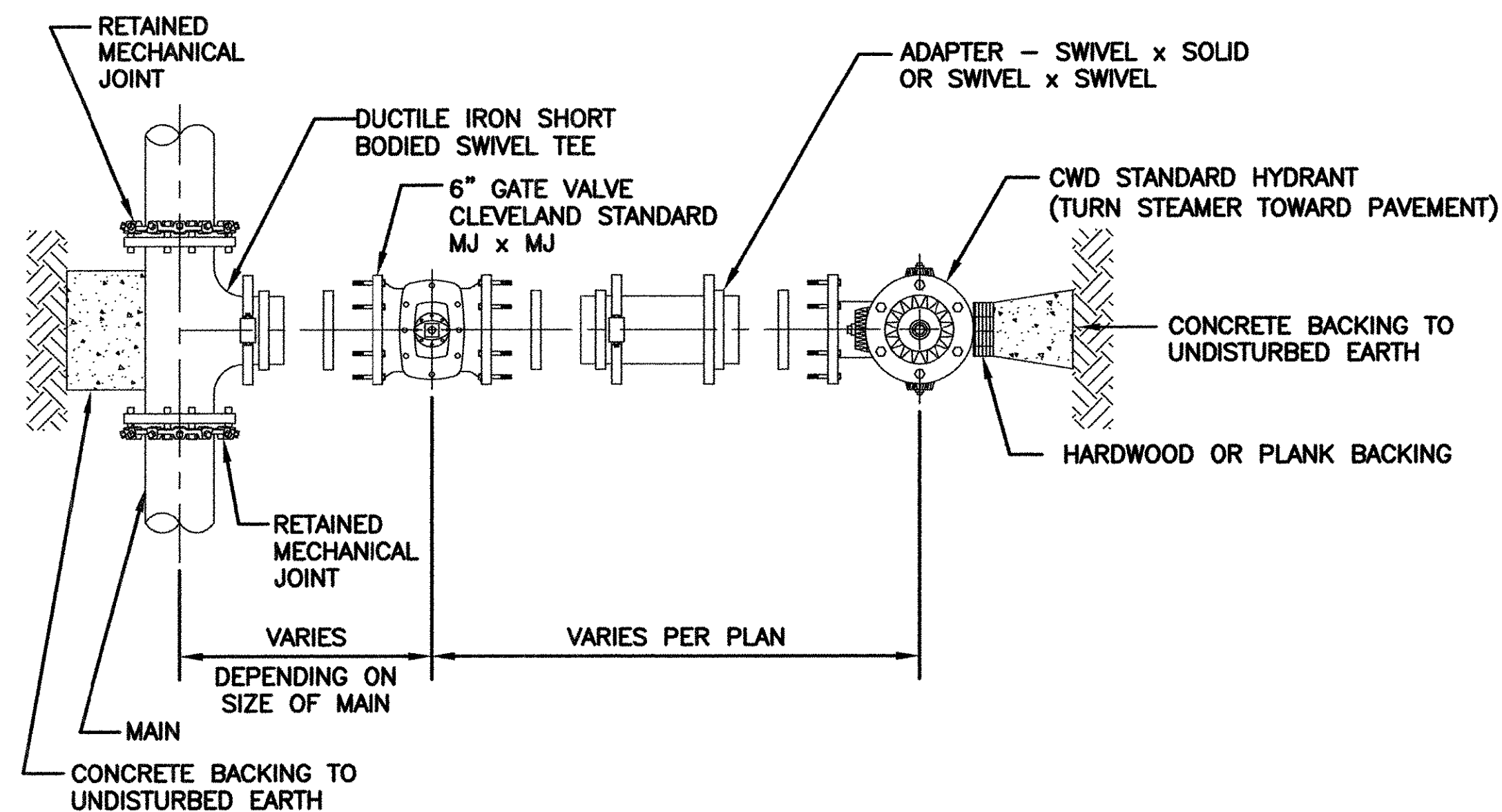
NEW WATER SERVICE CONNECTION FOR 1 1/2" & 2"

- NOT TO SCALE -



WATER SERVICE CONNECTION REPLACEMENT FOR 1 1/2" & 2"

- NOT TO SCALE -



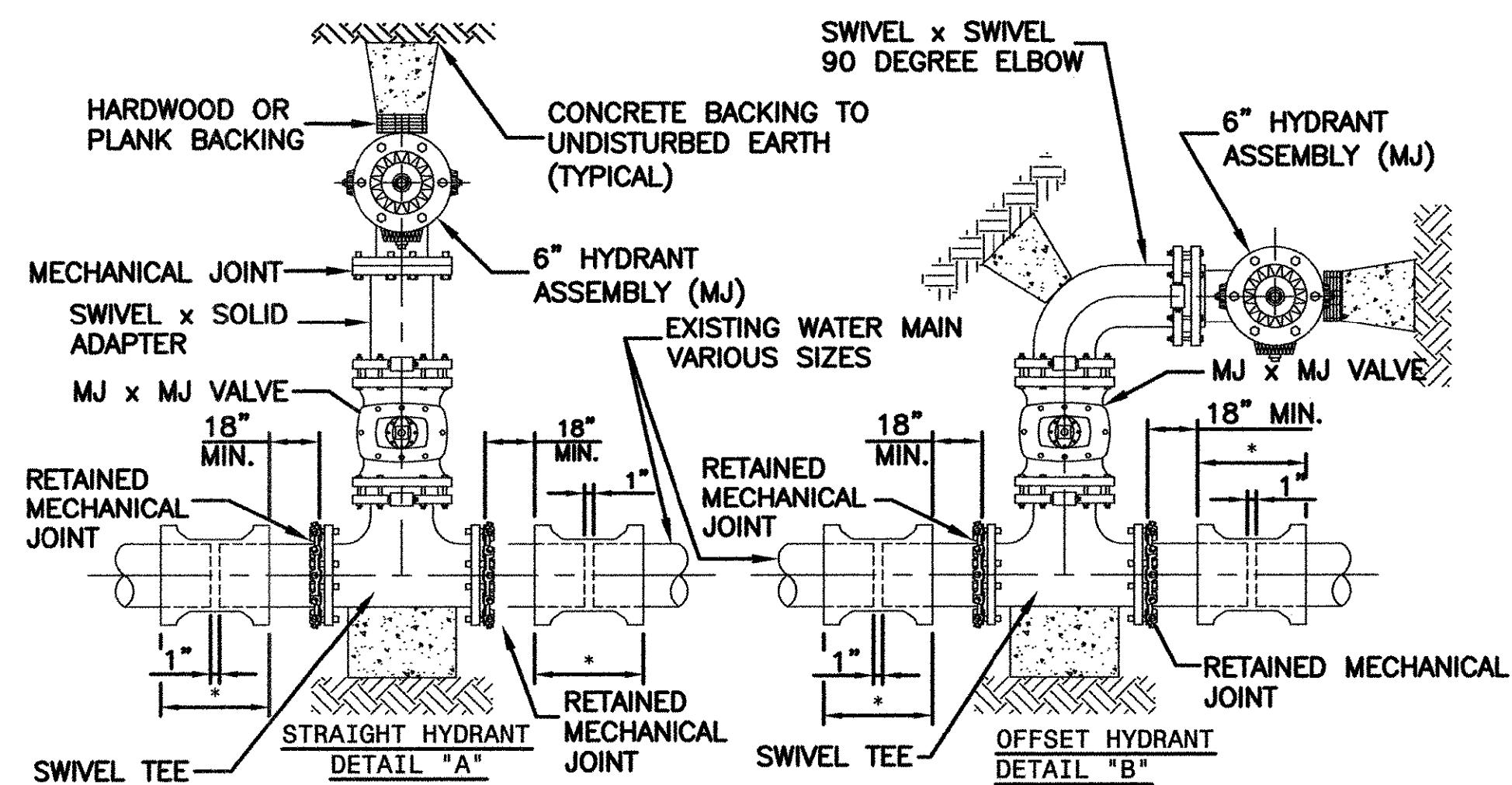
NOTE: IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-1-5/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

TYPICAL NEW HYDRANT INSTALLATION DETAIL "A"

- NOT TO SCALE -

*CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS. COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS. MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536). THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS. ROD AND CLAMP COMPRESSION COUPLING AS DIRECTED BY C.W.D. INSPECTOR. ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".



CUT-IN TEE FOR NEW HYDRANT INSTALLATION ON EXISTING WATER MAIN

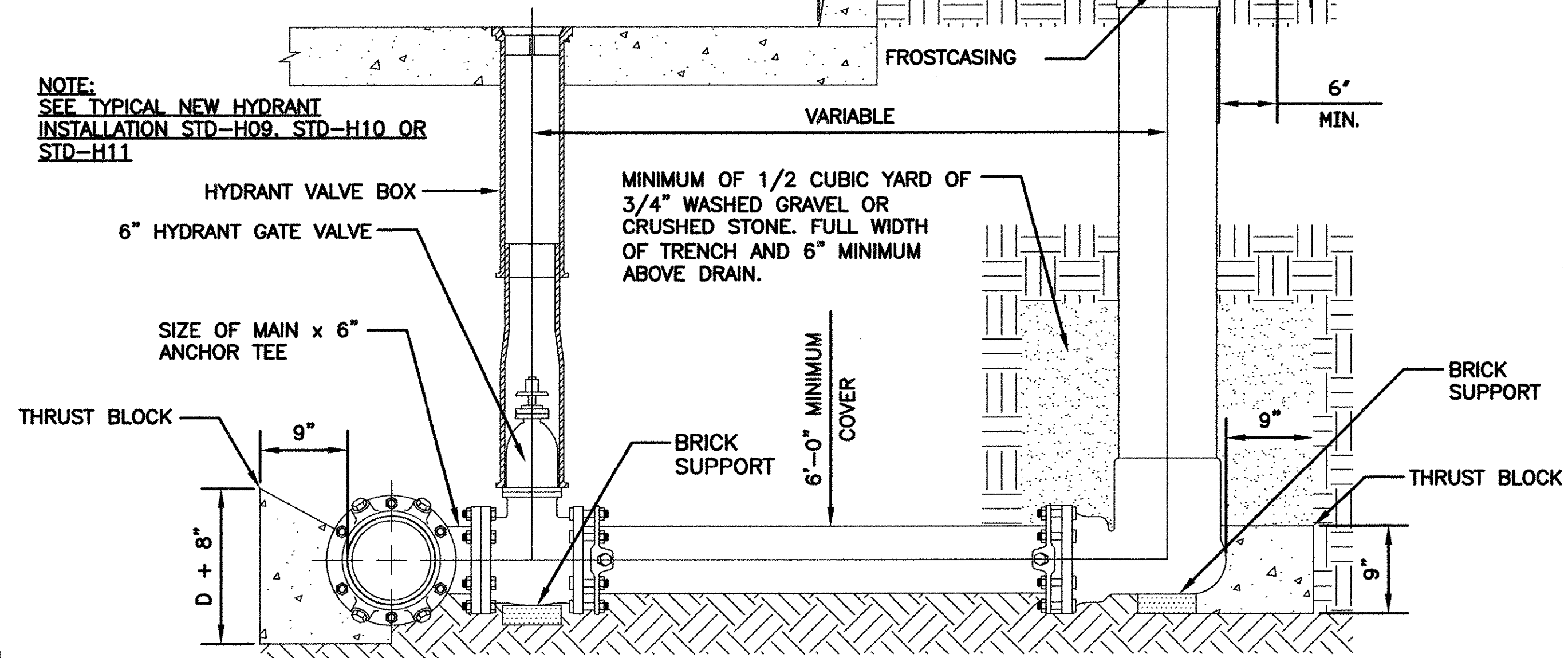
- NOT TO SCALE -

NOTE: IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-1-5/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

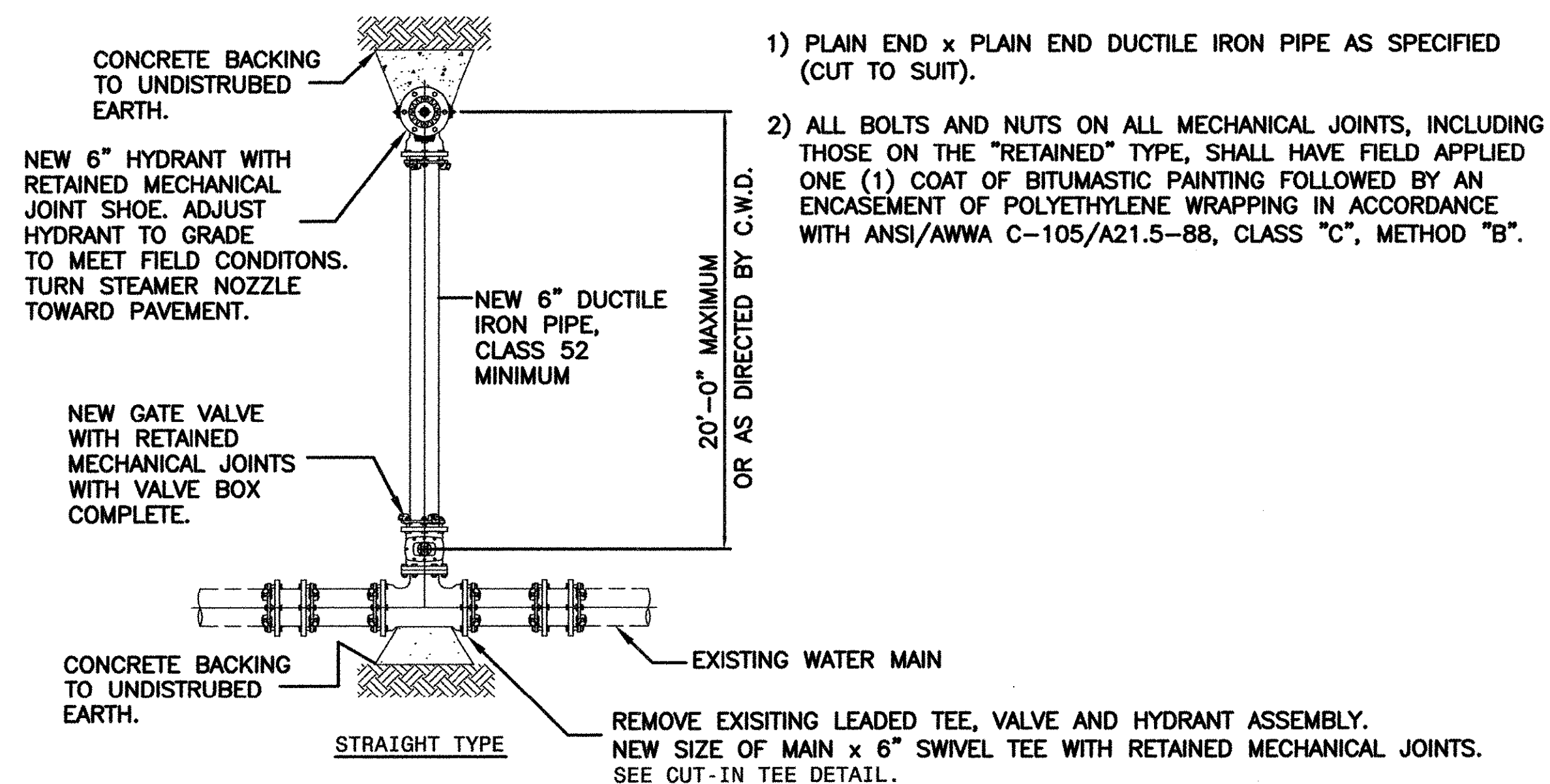
ALL FIRE HYDRANTS AND VALVE BOXES SHALL BE SECURELY BRACED WHEN SET AND BACKFILLED. ALL FIRE HYDRANTS, VALVES, VALVE BOXES AND FITTINGS SHALL MEET THE LATEST STANDARD SPECIFICATIONS FOR CONSTRUCTING WATER MAINS AND APPURTENANCES OF THE CLEVELAND WATER DEPARTMENT.

IF AN INTERMEDIATE PIPE JOINT IS REQUIRED BETWEEN THE HYDRANT AND THE GATE VALVE, THAT JOINT SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II



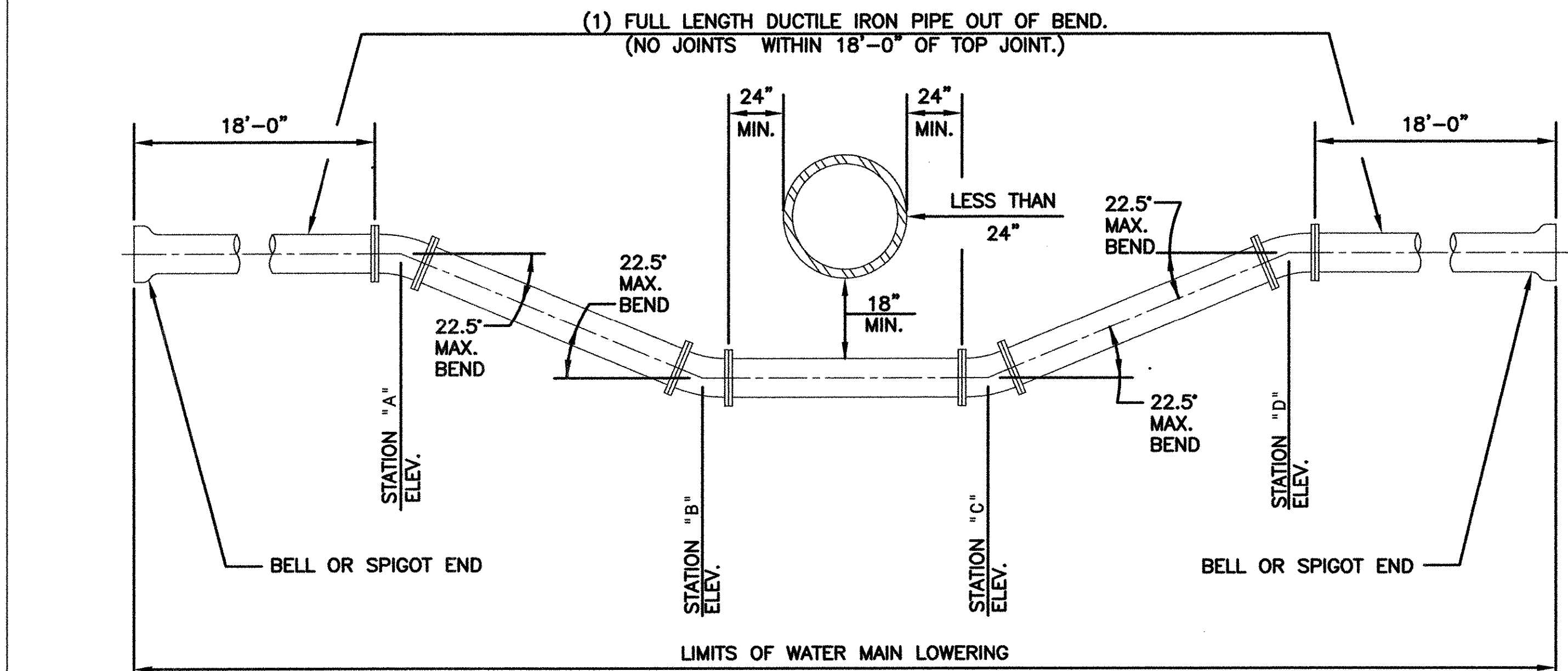
6" HYDRANT ELEVATION

-NOT TO SCALE-



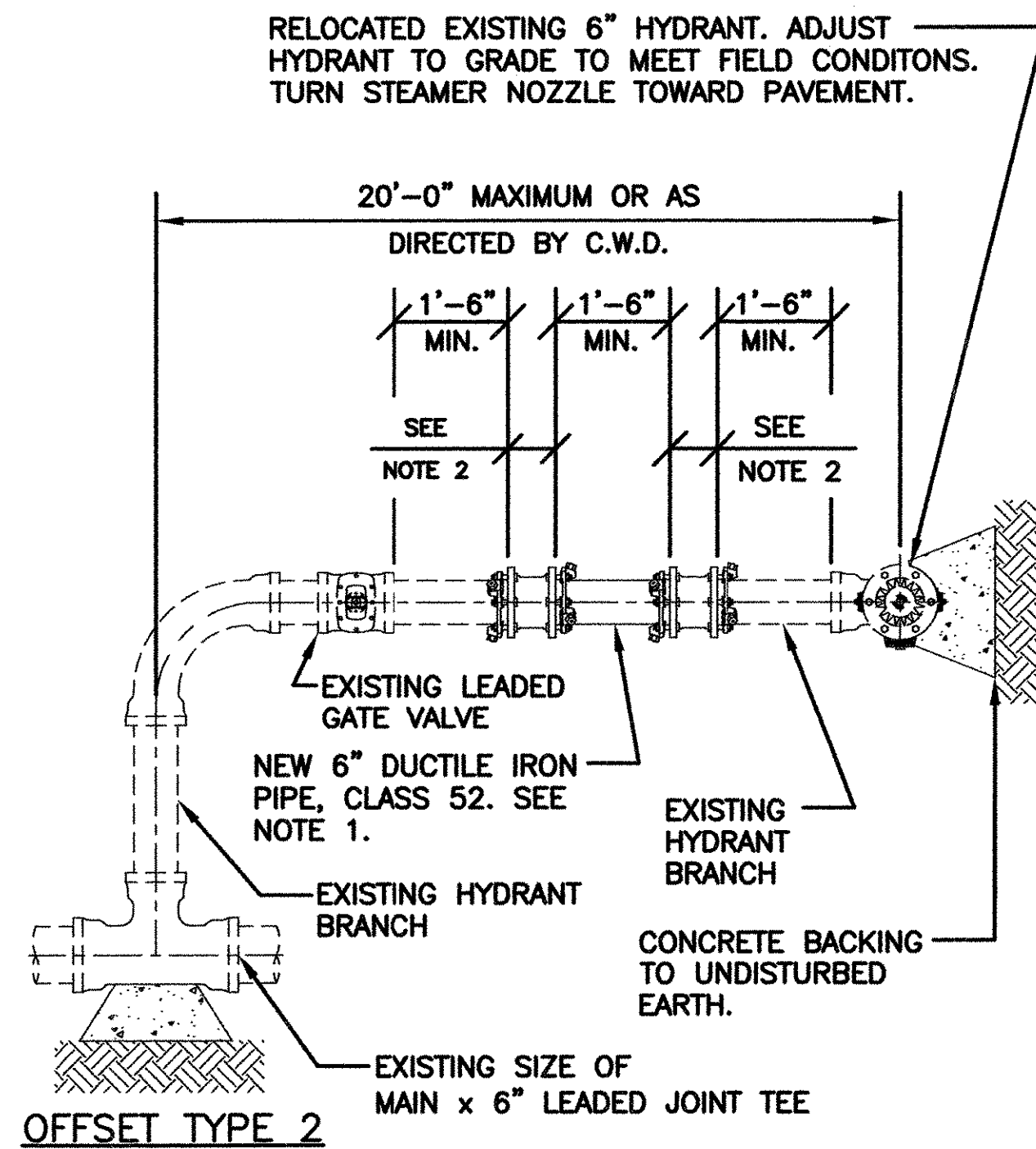
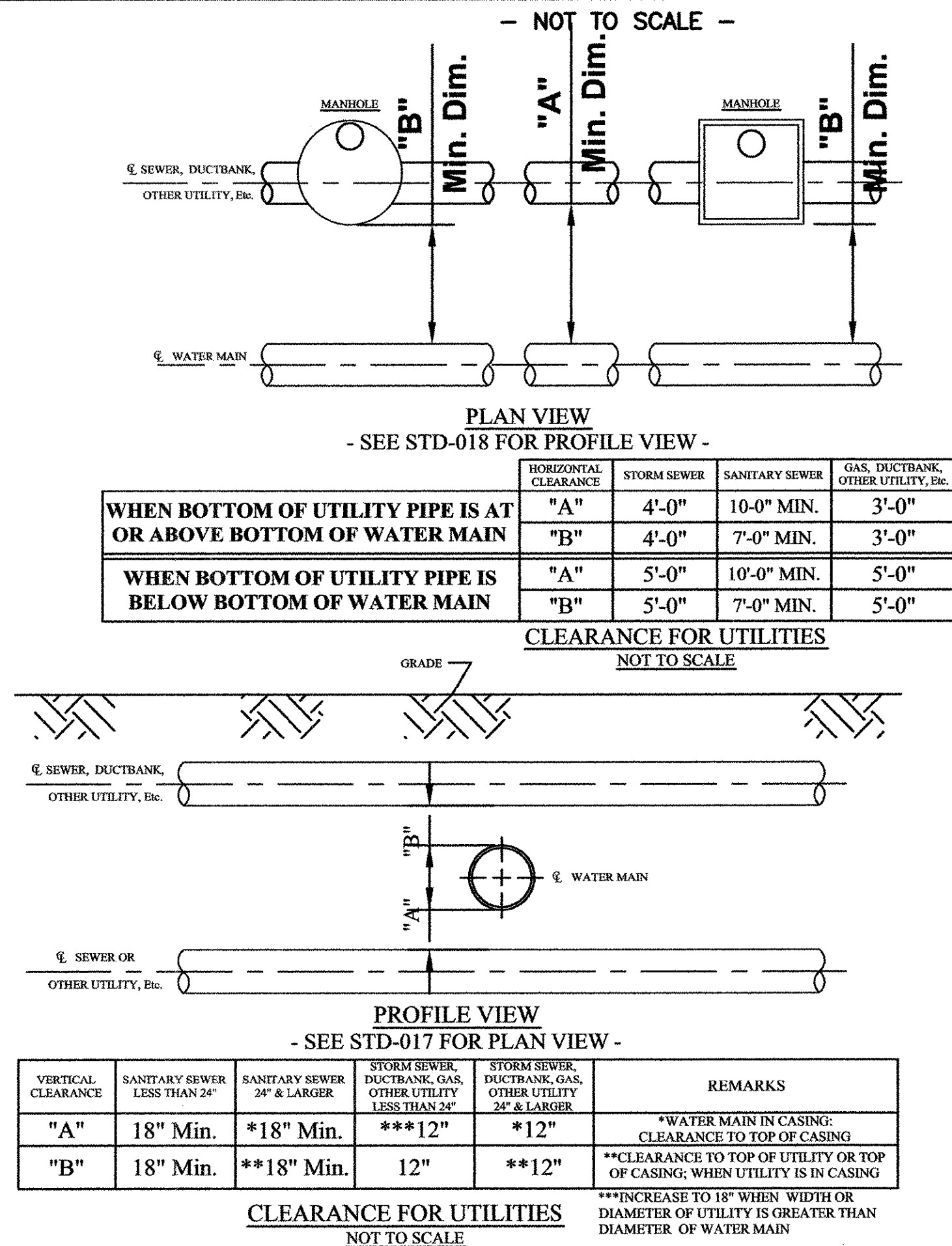
REPLACING EXISTING LEADED 6" & 4" HYDRANT WITH NEW 6" HYDRANT ASSEMBLY

- NOT TO SCALE -



- NOTE:**
- 1) WATER MAIN SHALL BE DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PUSH-ON JOINT PIPE WITH RETAINED MECHANICAL JOINT DUCTILE IRON CLASS 350, CEMENT LINED RETAINED MECHANICAL JOINT FITTINGS.
 - 2) WHERE DEPTH OF LOWERING REQUIRES AN INTERMEDIATE JOINT BETWEEN STATIONS "A" & "B" AND/OR "C" & "D" THE ENTIRE LOWERING SHALL BE MADE WITH DUCTILE IRON, MINIMUM CLASS 52, CEMENT LINED PIPE AND DUCTILE IRON CLASS 350, CEMENT LINED FITTINGS ALL HAVING BOLTLESS RESTRAINED PUSH-ON JOINTS, TYPE I.
 - 3) WHERE LENGTH OF LOWERING UNDER OBSTRUCTION(S) REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN STATIONS "B" & "C", AND PIPE JOINTS ARE AS INDICATED IN NOTE "1" ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE II.
 - 4) WHERE LENGTH OF LOWERING UNDER OBSTRUCTION(S) REQUIRES AN INTERMEDIATE JOINT ONLY BETWEEN "B" AND "C" AND PIPE JOINTS ARE AS INDICATED IN NOTE "2" ABOVE, THAT INTERMEDIATE JOINT(S) SHALL BE MADE WITH A BOLTLESS RESTRAINED PUSH-ON JOINT, TYPE I.

DETAIL FOR WATER MAIN LOWERING UNDER OBSTRUCTIONS LESS THAN 24" IN DIAMETER OR WIDTH FOR "NEW CONSTRUCTION"

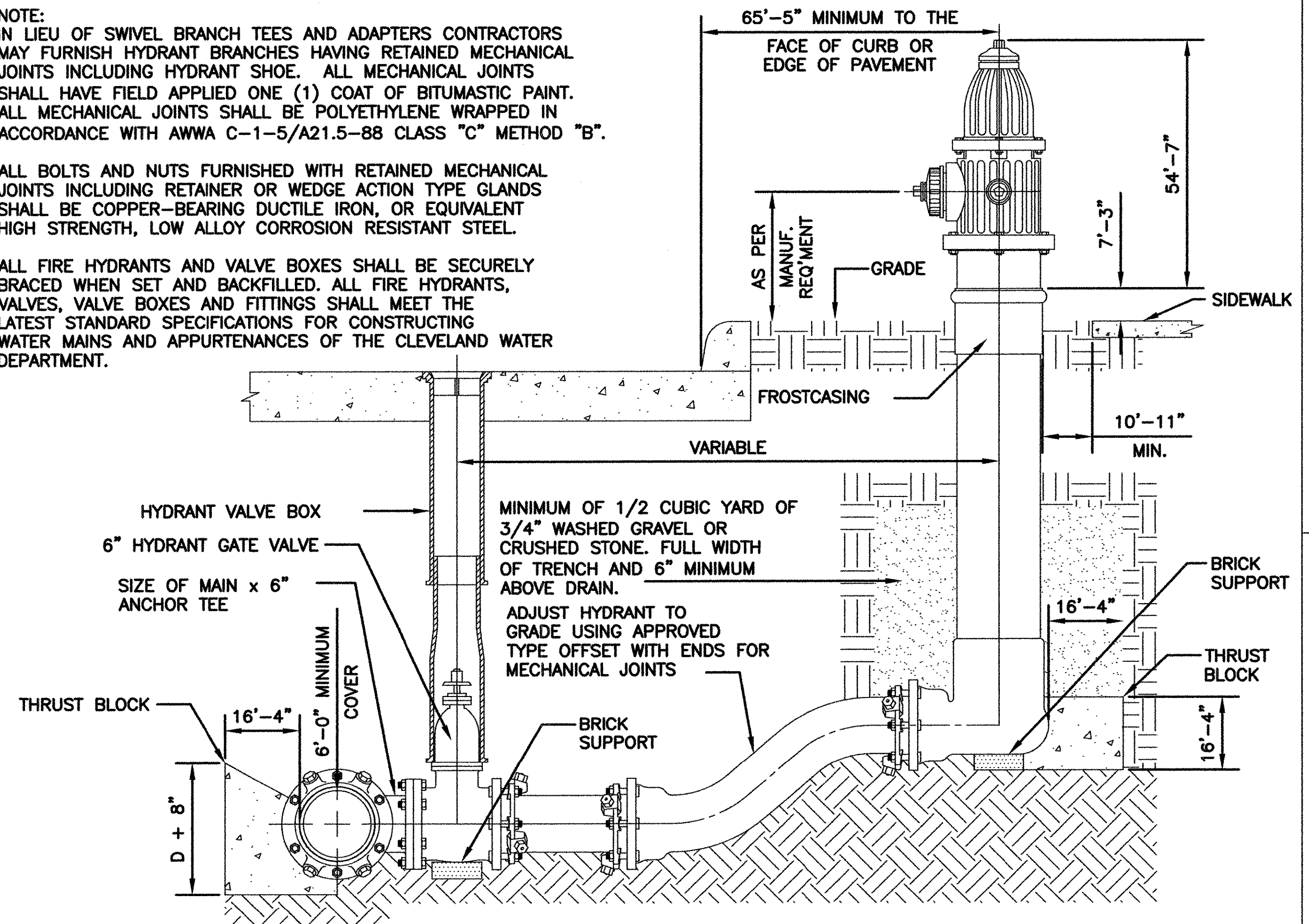


EXTEND, SHORTEN AND ADJUST EXISTING 6" HYDRANT TO GRADE - NOT TO SCALE -

NOTE:
IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-1-5/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

ALL FIRE HYDRANTS AND VALVE BOXES SHALL BE SECURELY BRACED WHEN SET AND BACKFILLED. ALL FIRE HYDRANTS, VALVES, VALVE BOXES AND FITTINGS SHALL MEET THE LATEST STANDARD SPECIFICATIONS FOR CONSTRUCTING WATER MAINS AND APPURTENANCES OF THE CLEVELAND WATER DEPARTMENT.



- 1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).
- 2) CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS WITH ROD AND CLAMPS AS DIRECTED BY C.W.D. INSPECTOR.

COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

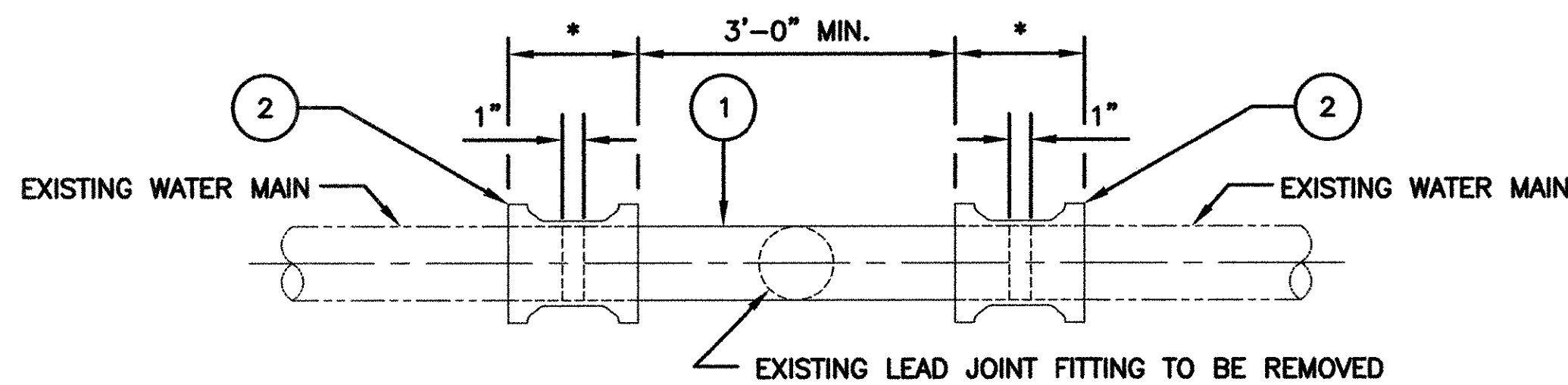
MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

IF THE BRANCH IS TO BE SHORTENED USE ONLY (1) SLEEVE OR COUPLING WITH NO NEW PIPE REQUIRED.
- 3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".
- 4) IF EXISTING HYDRANT IS DAMAGED, INSTALL NEW MECHANICAL JOINT HYDRANT.

WATER PLAN
STANDARD DETAILS

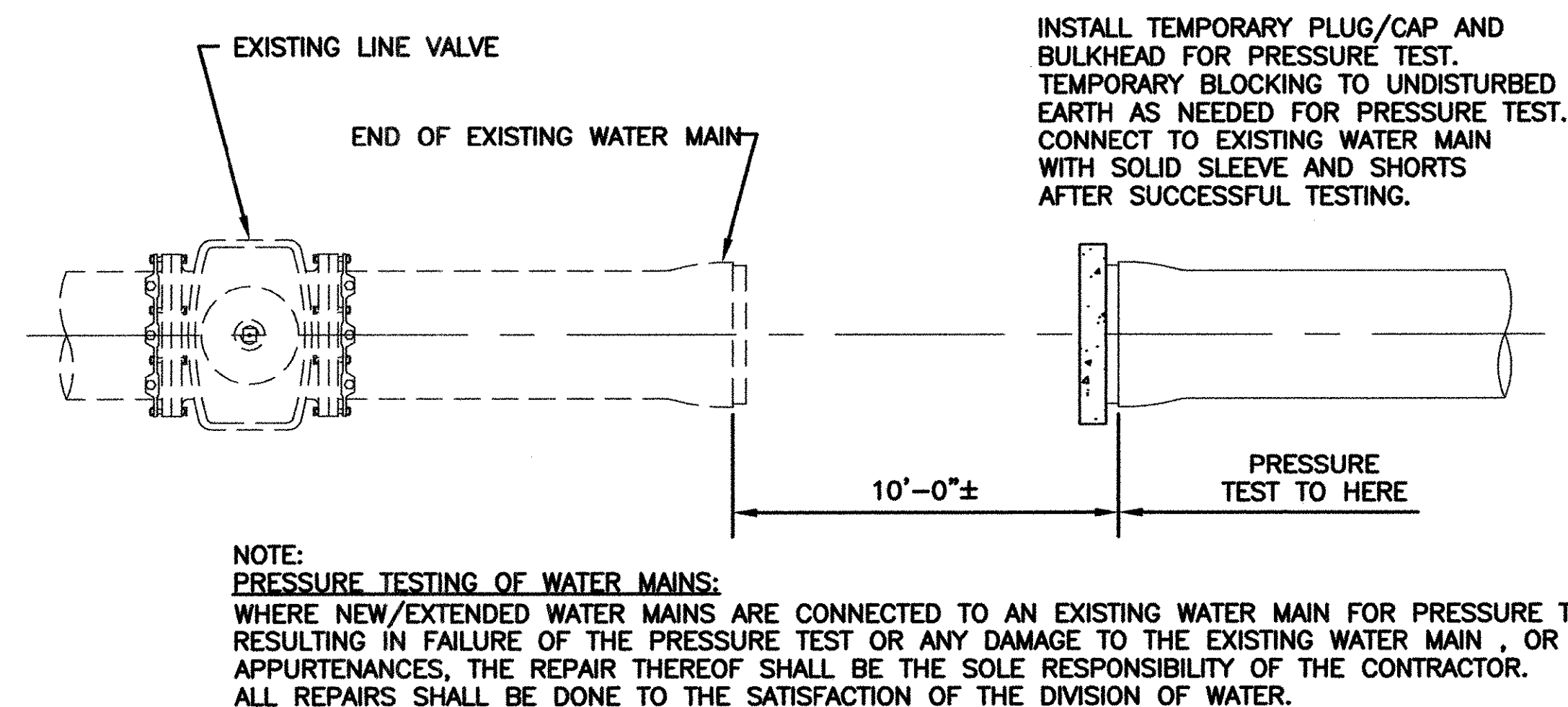
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION



- 1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).
 - 2) *CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.
- COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.
- MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).
- THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.
- 3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

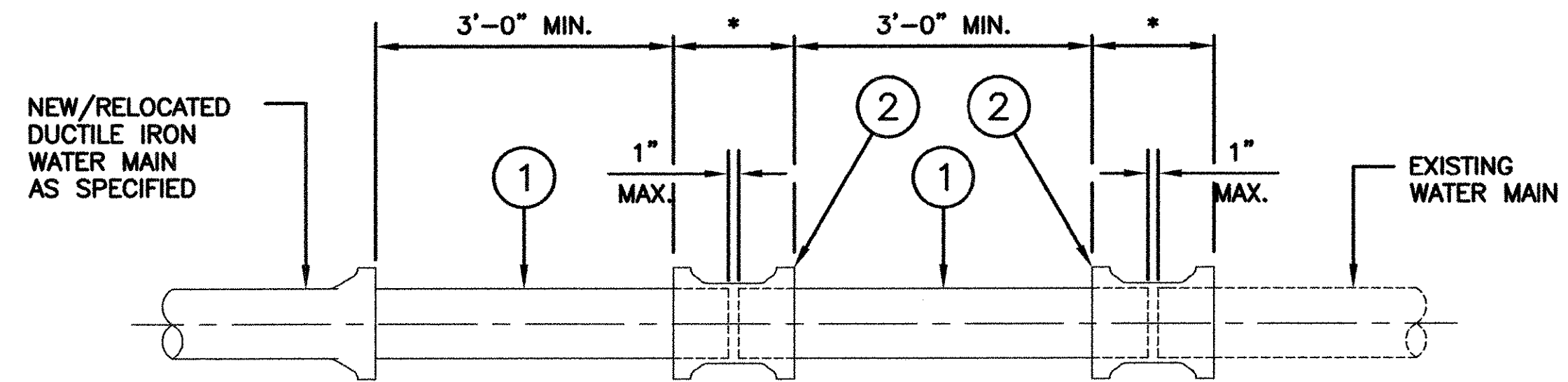
SPOOL PIECE INSTALLATION DETAIL

- NOT TO SCALE -



ALTERNATE PRESSURE TESTING DETAIL

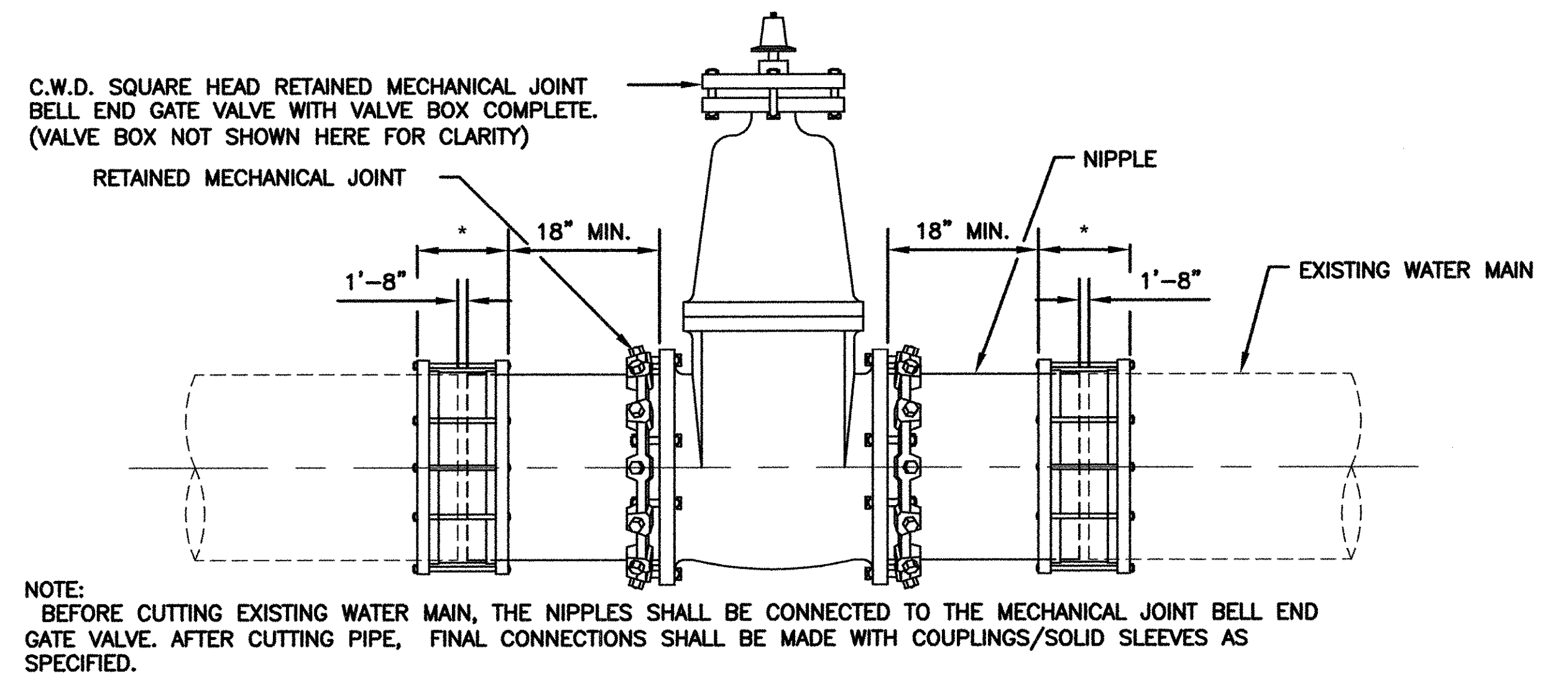
- NOT TO SCALE -



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 - 2) *CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.
- COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.
- MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).
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- 3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

SLEEVE-IN INSTALLATION DETAIL

- NOT TO SCALE -



- *CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.
- COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.
- MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).
- THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.
- ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".
- THE DIVISION OF WATER WILL DETERMINE THE FIELD LOCATION OF THE CUT-IN-VALVE ASSEMBLY. THE DIVISION OF WATER WILL ALSO SET THE TIME OF INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY.
- THE CONTRACTOR SHALL DO ALL PIPE CUTTING AND INSTALLATION. HOWEVER, THE INSTALLATION OF THE CUT-IN-VALVE ASSEMBLY SHALL BE DONE UNDER THE SUPERVISION OF THE DIVISION OF WATER.

CUT-IN-VALVE DETAIL

- NOT TO SCALE -

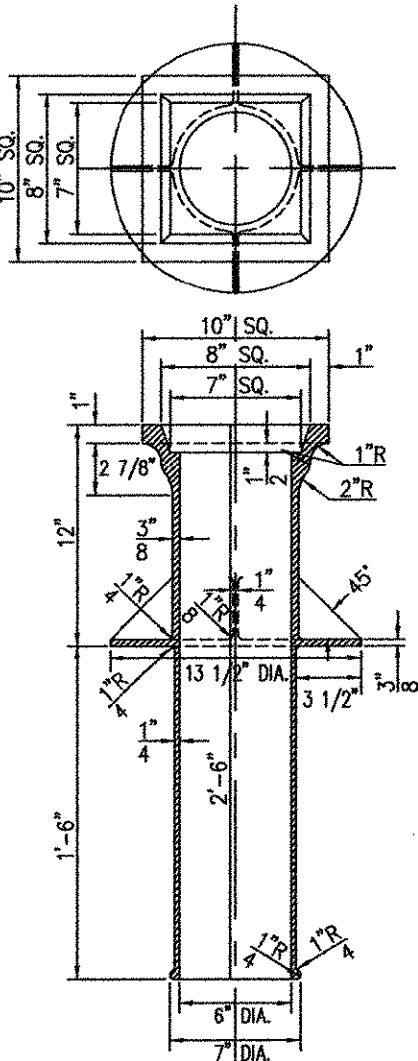
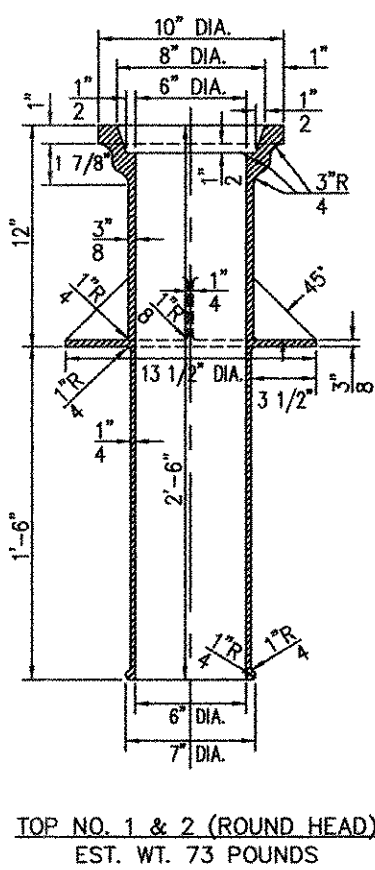
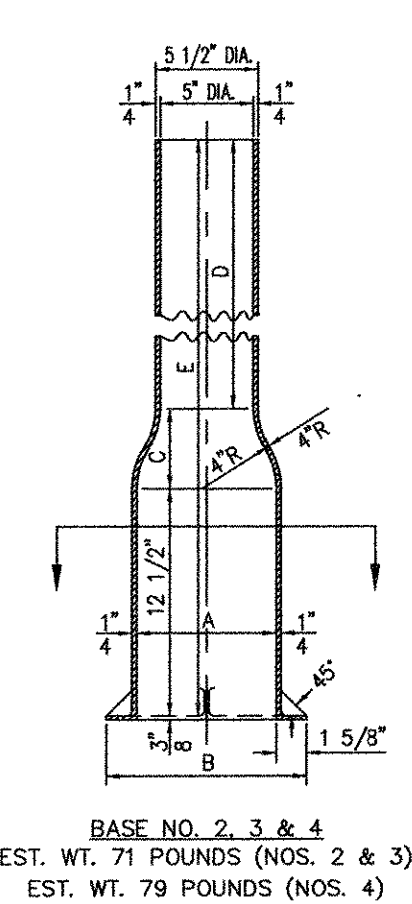
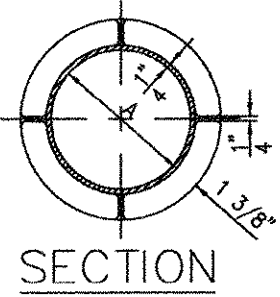


CALCULATED
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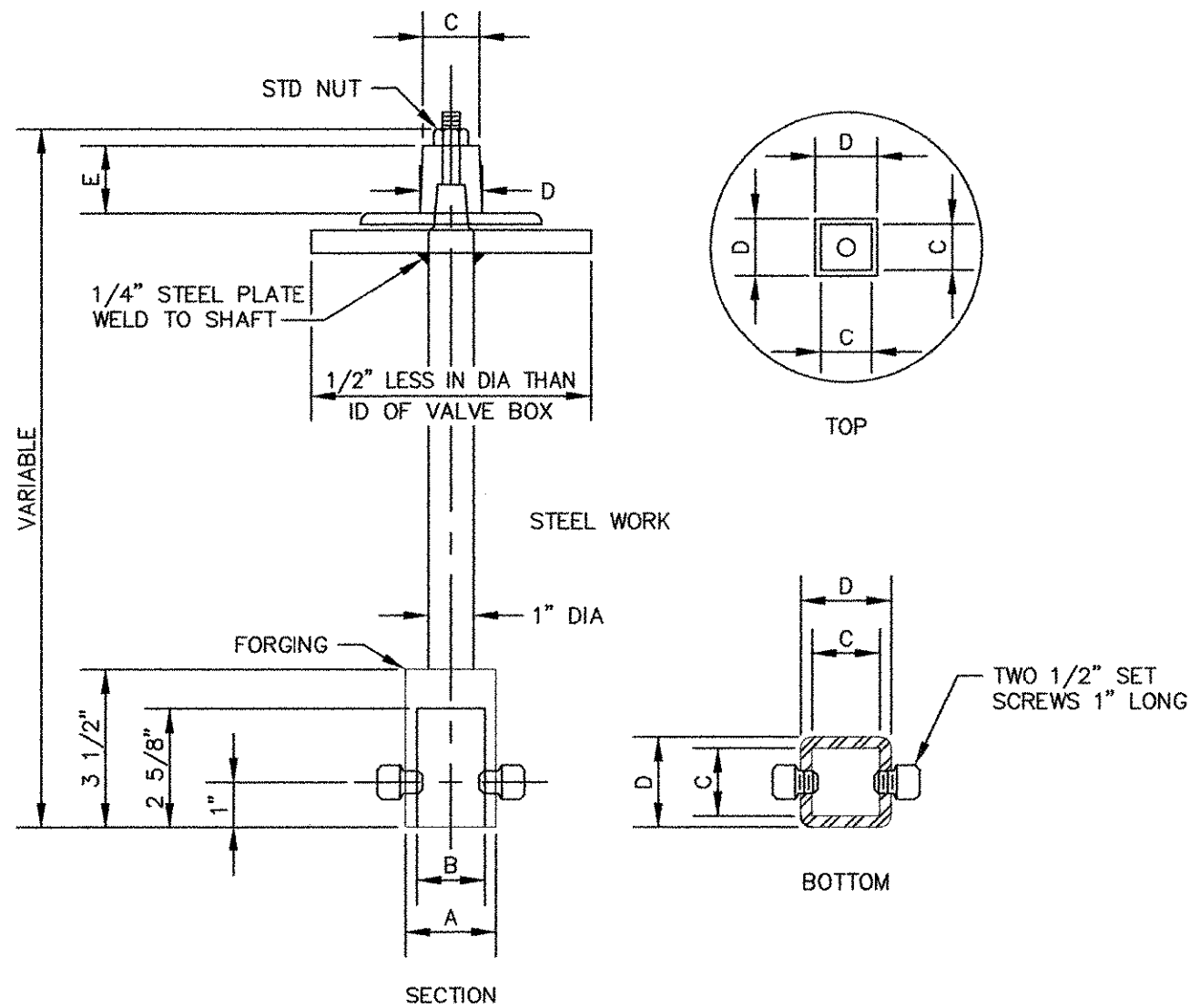
WATER PLAN
STANDARD DETAILS

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

BASE NO.	VALVE SIZE	A	B	C	D	E
2 & 3	3", 4", 6" & 8"	7 1/2"	10 3/4"	4 1/4"	3'-1 1/4"	4'-6"
4	10", 12" & 16"	11"	14 1/4"	6 1/4"	2'-5 1/4"	4'-0"



TOP NO. 3 & 4 (SQUARE HEAD)
EST. WT. 73 POUNDS



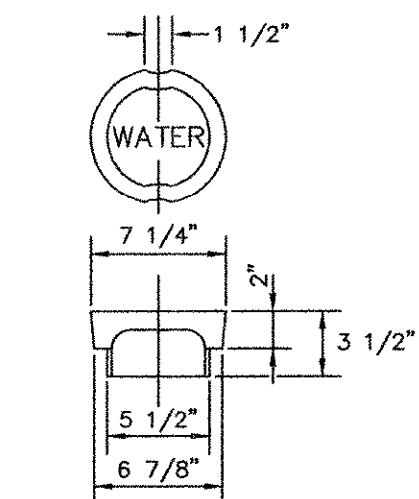
NOTE: VALVE NUTS TO BE CONTERSUNK
1/8" TO RECEIVE SET SCREWS

VALVE SIZE	A	B	C	D	E
3" AND SMALLER	2"	1 1/2"	1 1/4"	1 3/8"	1 1/2"
4" TO 20"	2 1/2"	2"	1 3/4"	1 7/8"	1 3/4"
24" AND LARGER	2 5/8"	2 1/8"	* 2"	* 2"	2"

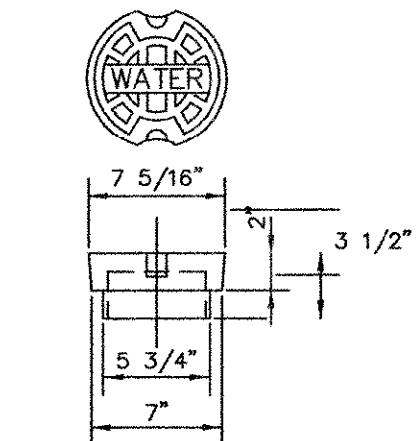
*-NOT TAPERED

VALVE EXTENSION STEM DETAIL

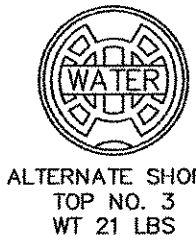
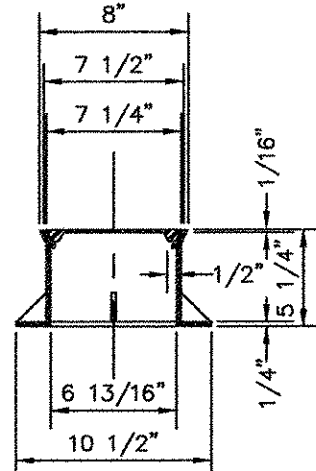
SCALE: 1/4" = 1'-0"
NOTE: EXTENSION STEM REQUIRED WHENEVER DEPTH TO TOP OF
VALVE OPERATING NUT EXCEEDS 4'-0"



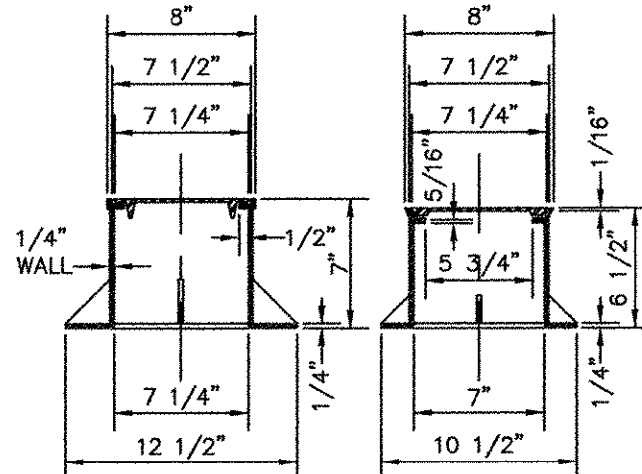
ALTERNATE COVER NO. 1



ALTERNATE COVER NO. 2
WEIGHT 13 POUNDS



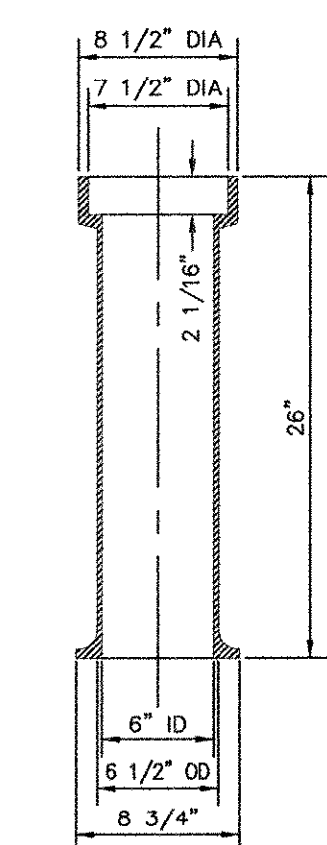
ALTERNATE SHORT
TOP NO. 3
WT 21 LBS



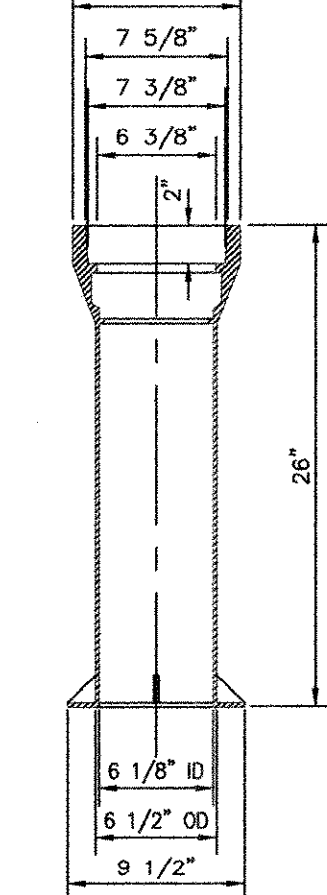
ALTERNATE SHORT
TOP NO. 1
WT 36 LBS



ALTERNATE SHORT
TOP NO. 2
WT 29 LBS



WEIGHT 55.5 POUNDS



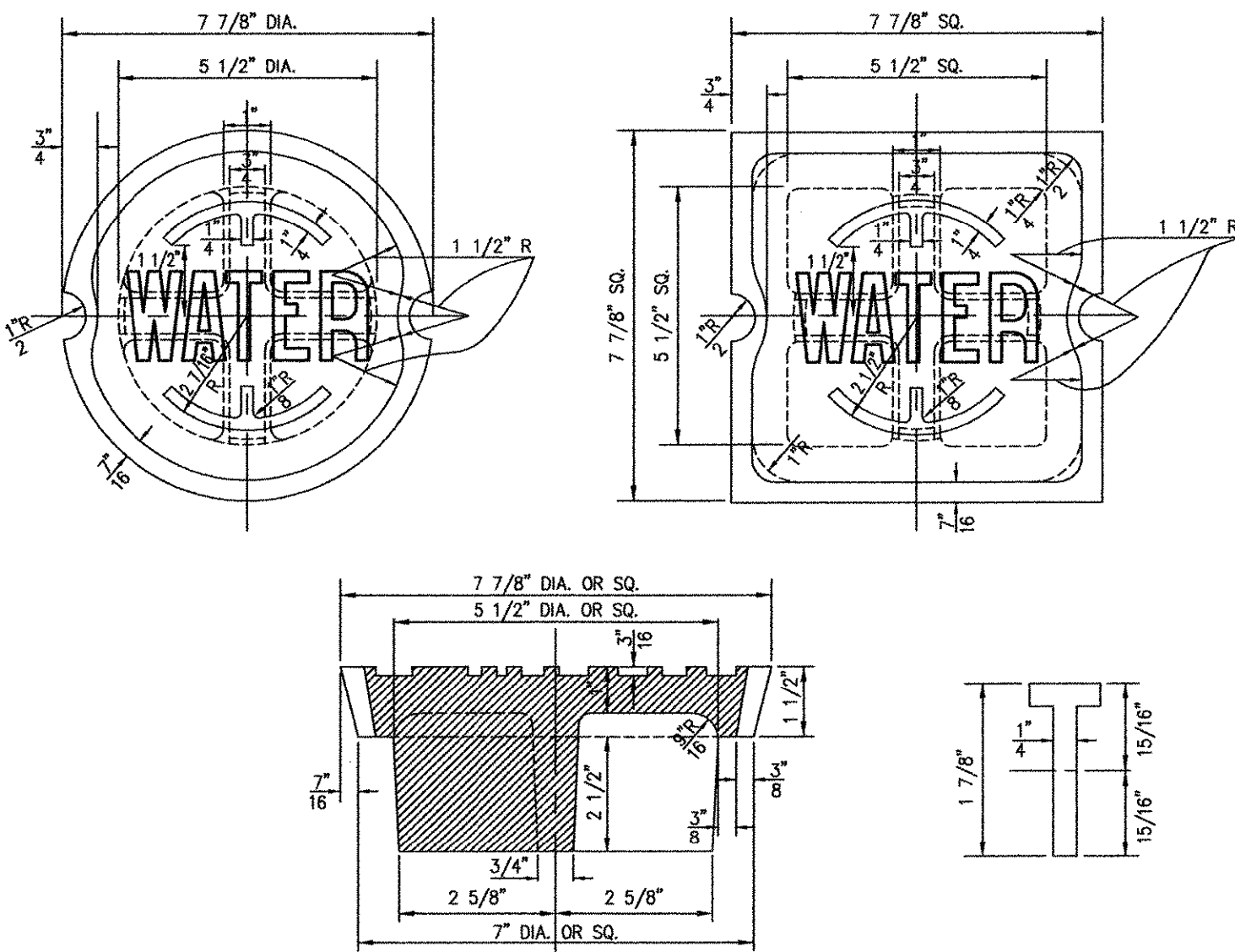
ALTERNATE LONG TOP NO. 2
WEIGHT 65 POUNDS

LONG STYLE VALVE BOX ROUND TOP AND COVER DETAIL

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

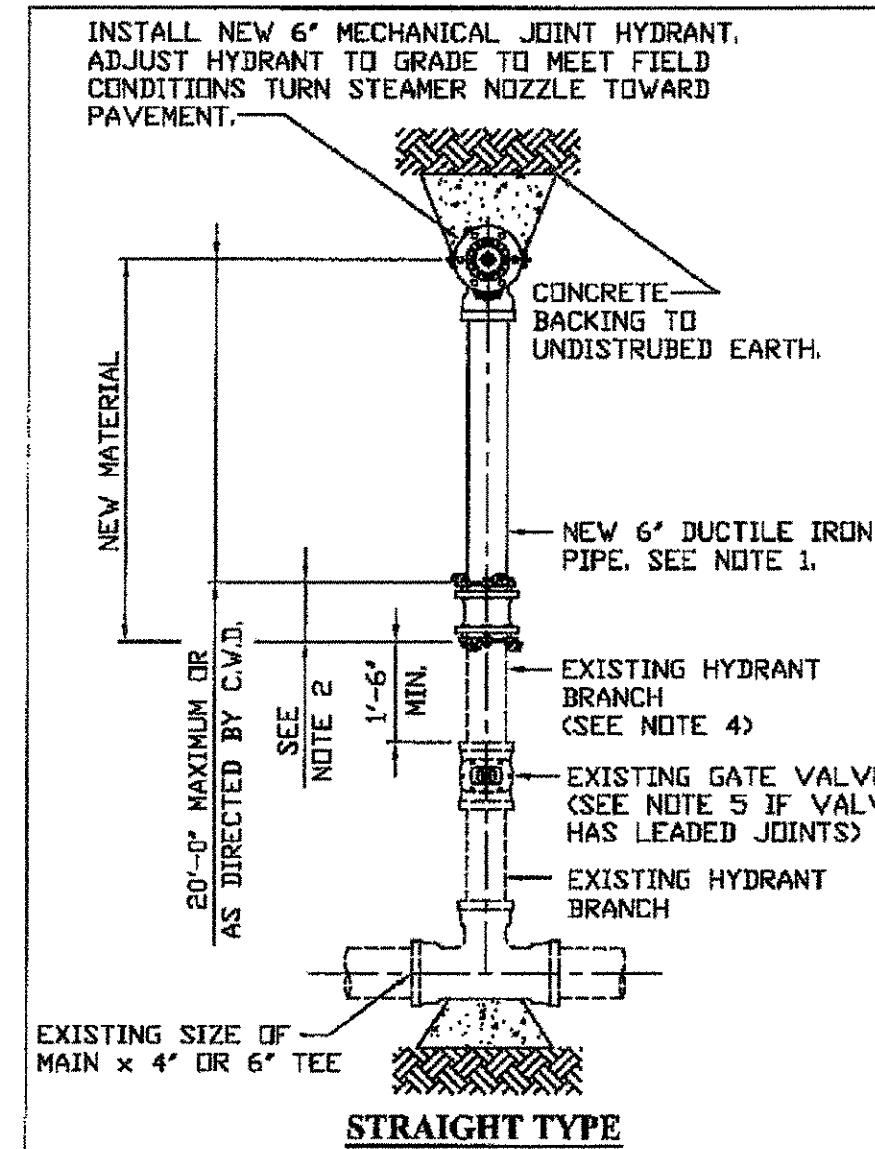
SHORT STYLE VALVE BOX ROUND TOP AND COVER DETAIL

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



VALVE BOX COVER DETAIL

N T S



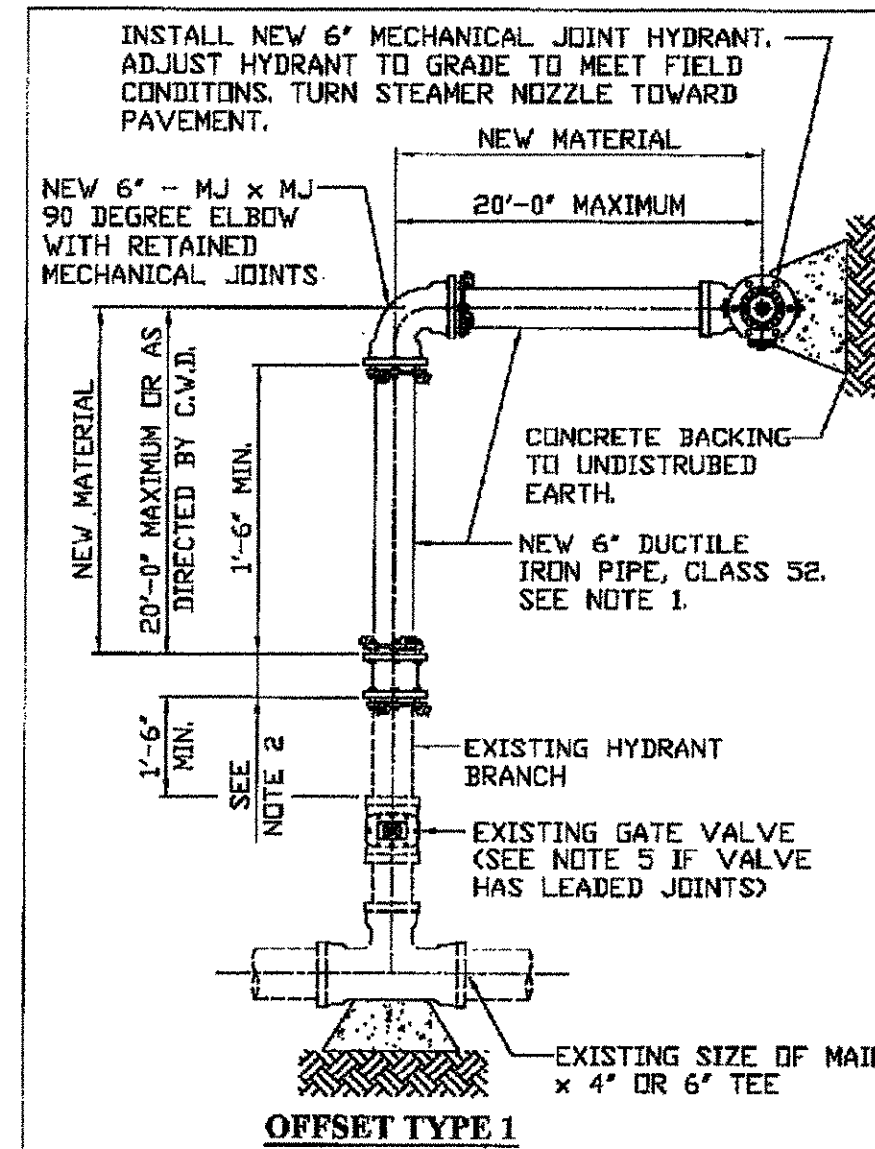
EXTEND, SHORTEN AND ADJUST HYDRANT TO GRADE, STRAIGHT TYPE

STD-H02

- NOT TO SCALE -

DATE: 5-4-2006 BY: RSK

- 1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).
- 2) CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250, RETAINED MECHANICAL JOINT REDUCERS WHERE EXISTING PIPE IS 4" IN DIAMETER, OR COMPRESSION COUPLINGS WITH ROD AND CLAMPS AS DIRECTED BY C.W.D. INSPECTOR.
- 3) ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".
- 4) IF EXISTING PIPING IS 4" USE 4" TO 6" REDUCING MJ REDUCER OR REDUCING TRANSITION COUPLING WITH ROD & CLAMP IF APPROVED BY C.W.D.
- 5) IN HIGH PRESSURE AREAS THE EXISTING VALVE MAY NEED TO BE RESTRAINED TO EXISTING TEE OR FITTING USING ROD & CLAMP AS DIRECTED BY C.W.D.



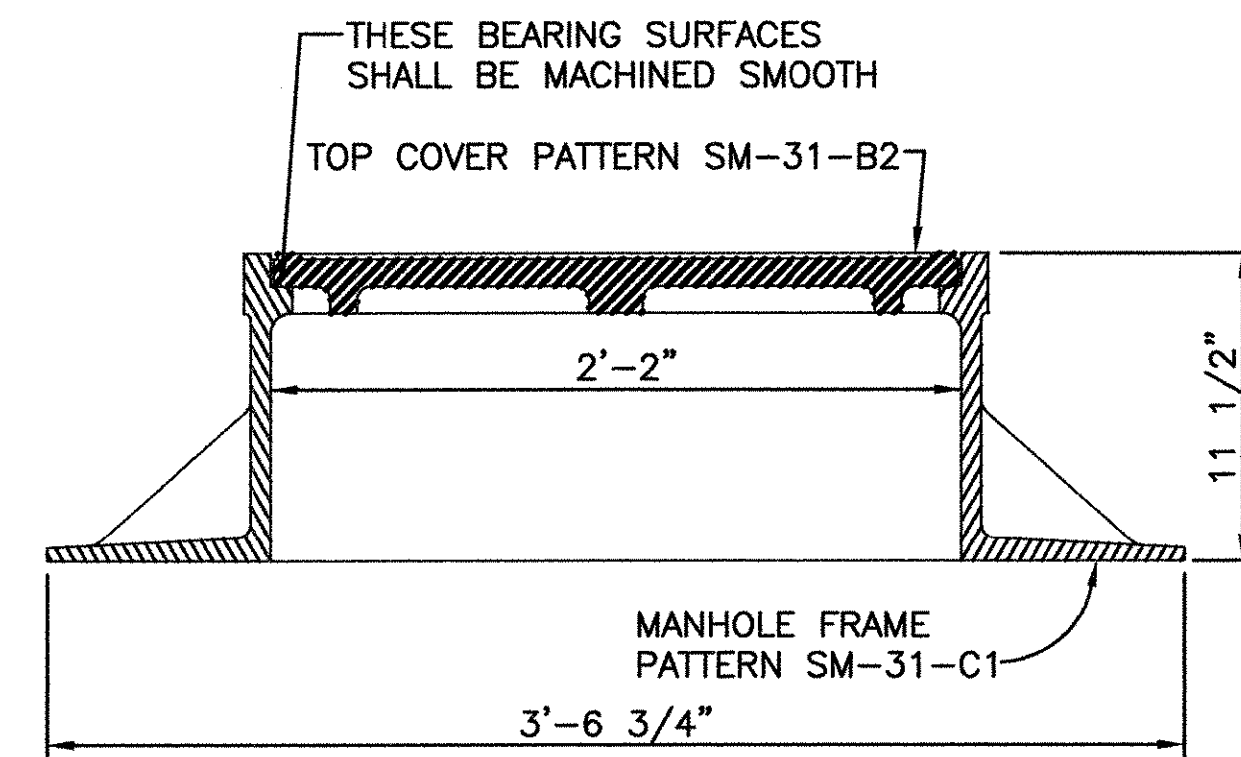
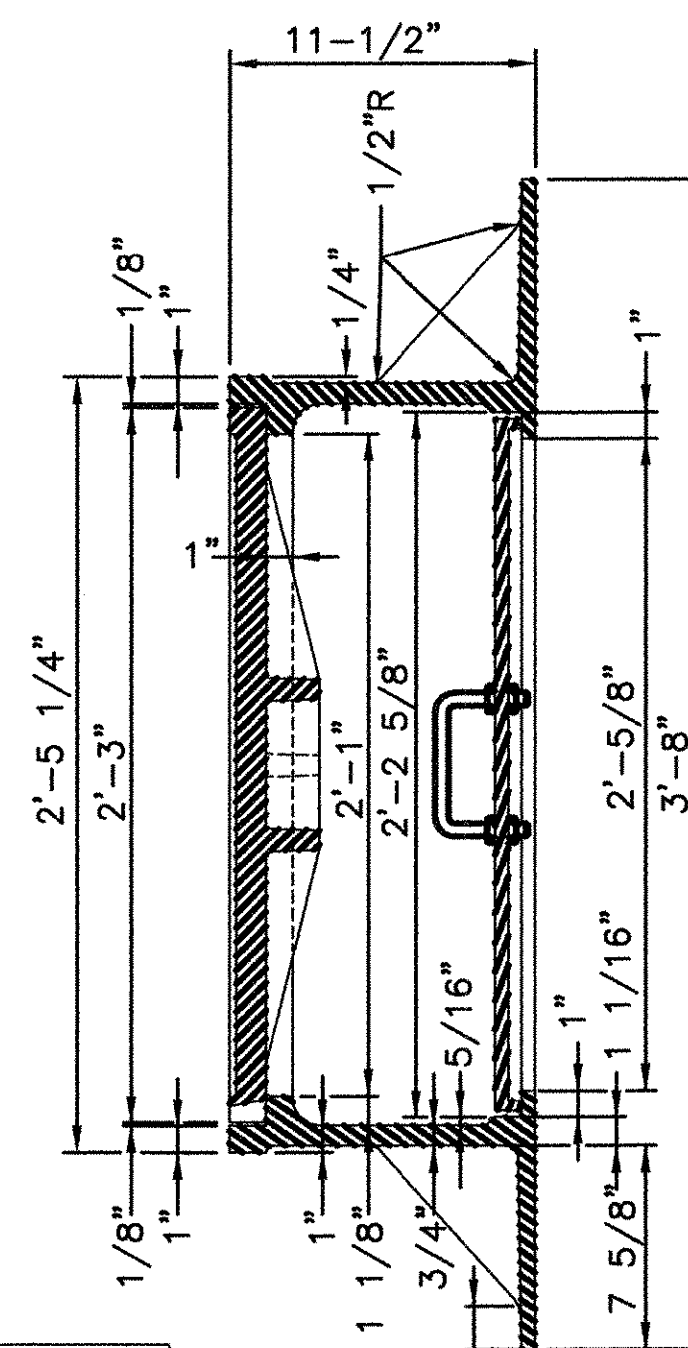
EXTEND, SHORTEN AND ADJUST HYDRANT TO GRADE, OFFSET TYPE 1

STD-H03

- NOT TO SCALE -

DATE: 5-4-2006 BY: RSK

- 1) PLAIN END x PLAIN END DUCTILE IRON PIPE AS SPECIFIED (CUT TO SUIT).
- 2) CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250, RETAINED MECHANICAL JOINT REDUCERS WHERE EXISTING PIPE IS 4" IN DIAMETER, OR COMPRESSION COUPLINGS WITH ROD AND CLAMPS AS DIRECTED BY C.W.D. INSPECTOR.
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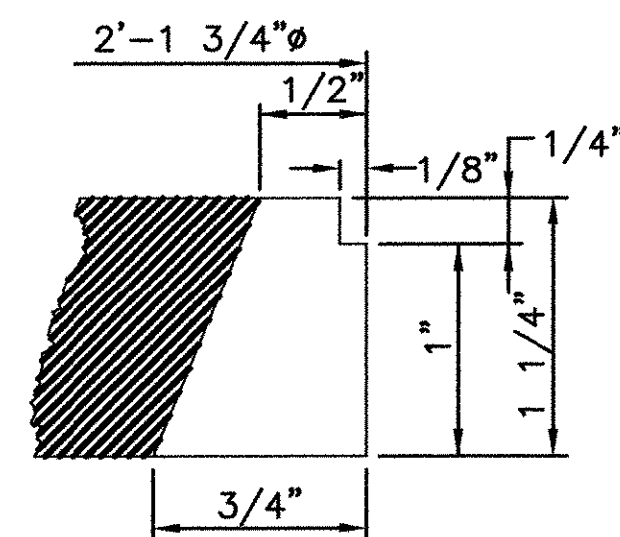


SCALE: 1 1/2" = 1'-0"

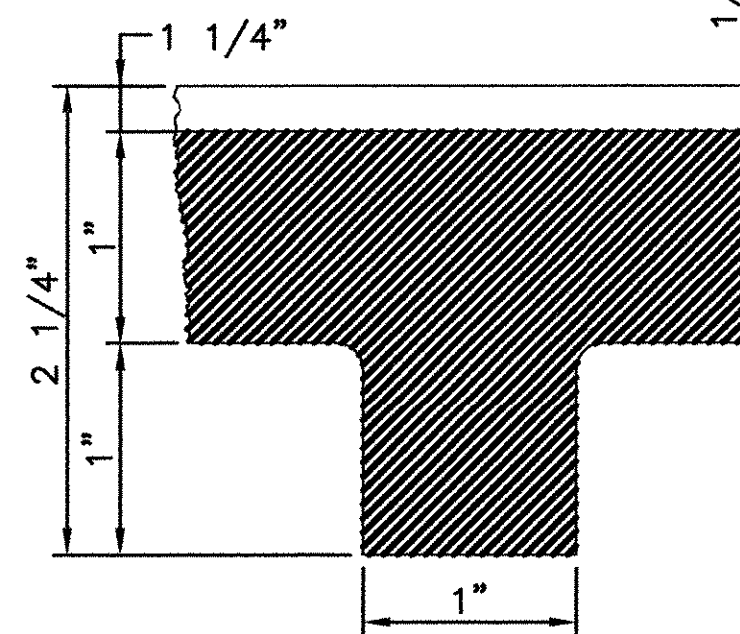
CONSISTING OF {C.I. MANHOLE FRAME PATTERN SM-31-C1
{C.I. TOP COVER PATTERN SM-31-B2

(DIMENSIONS NOT GIVEN ARE THE SAME AS THOSE
(SHOWN FOR MANHOLE FRAME PATTERN MARK SM-31-B1

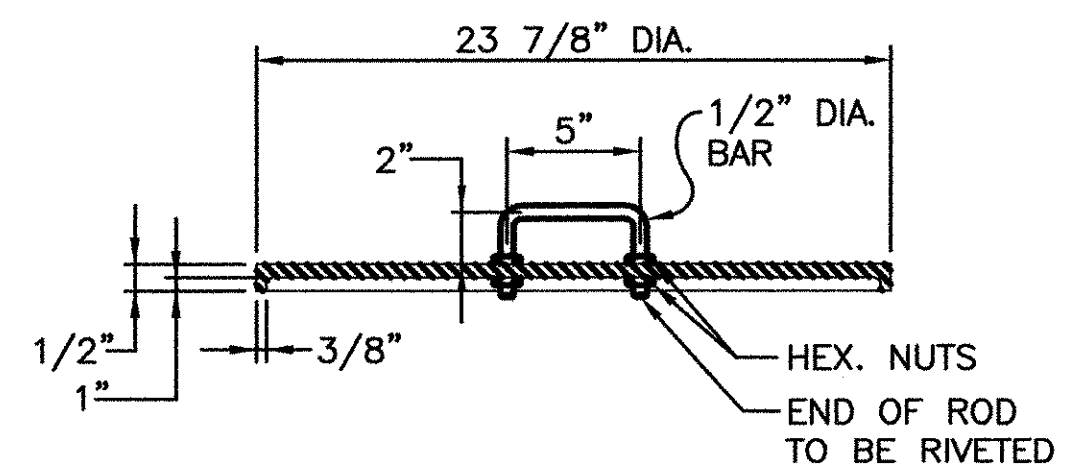
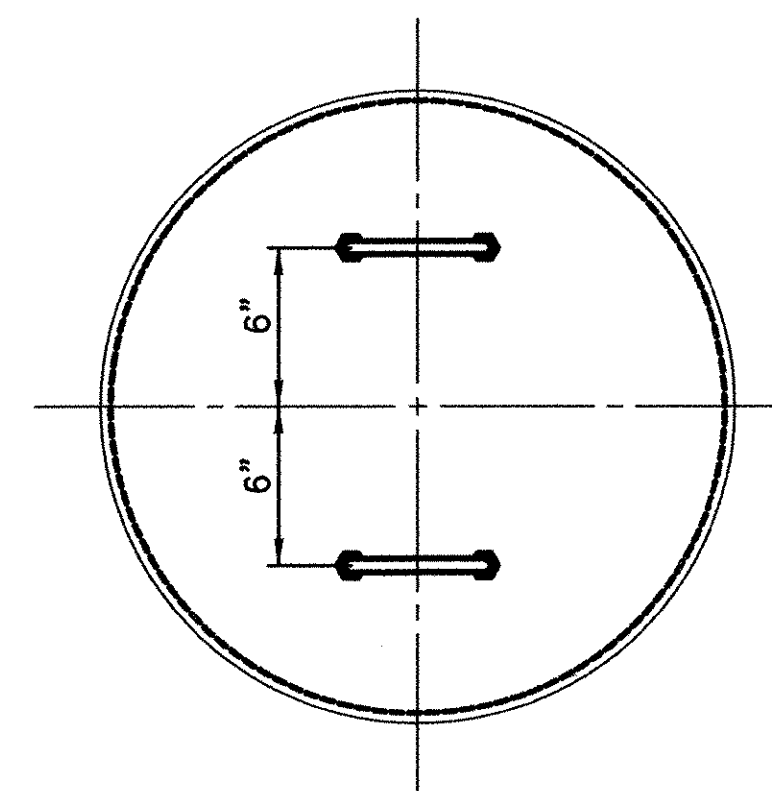
EST WT. 602#



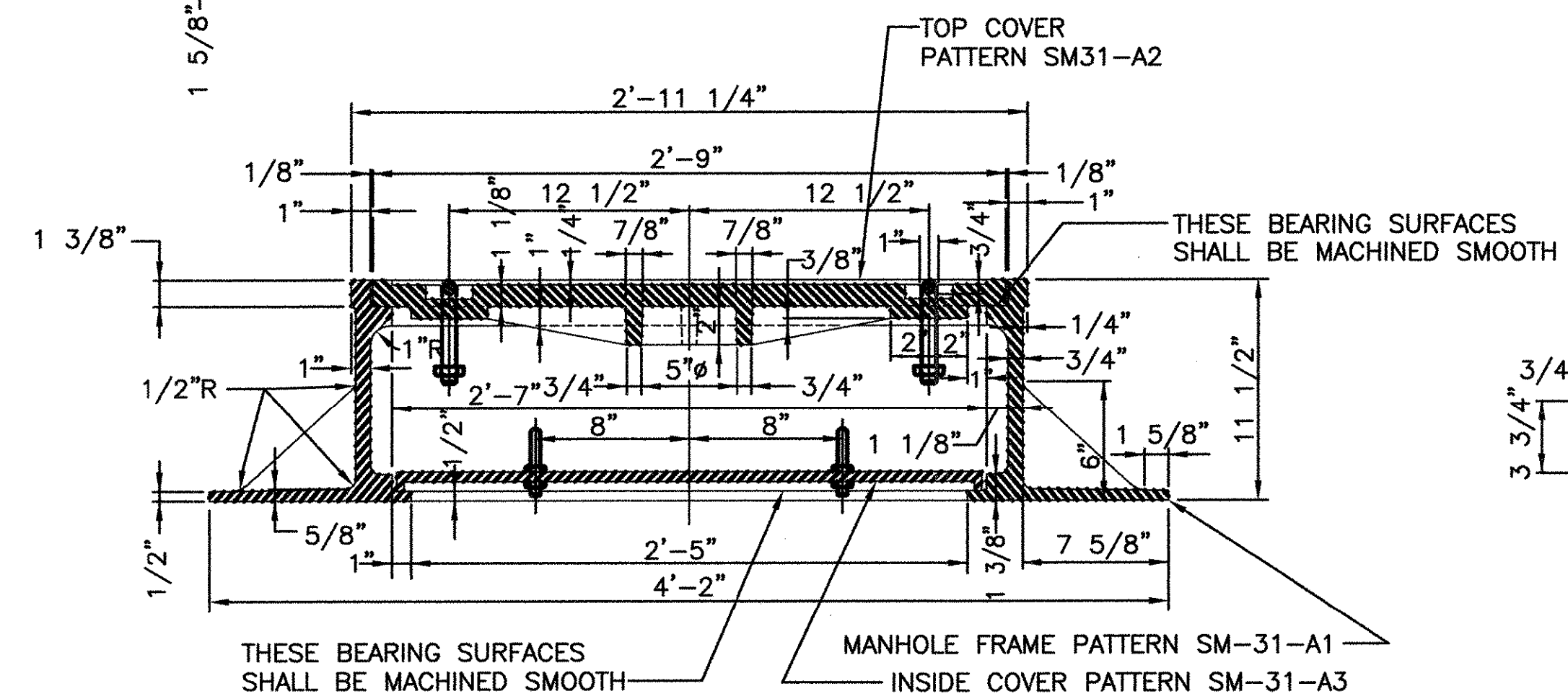
- FULL SIZE SECTION AT SLOT



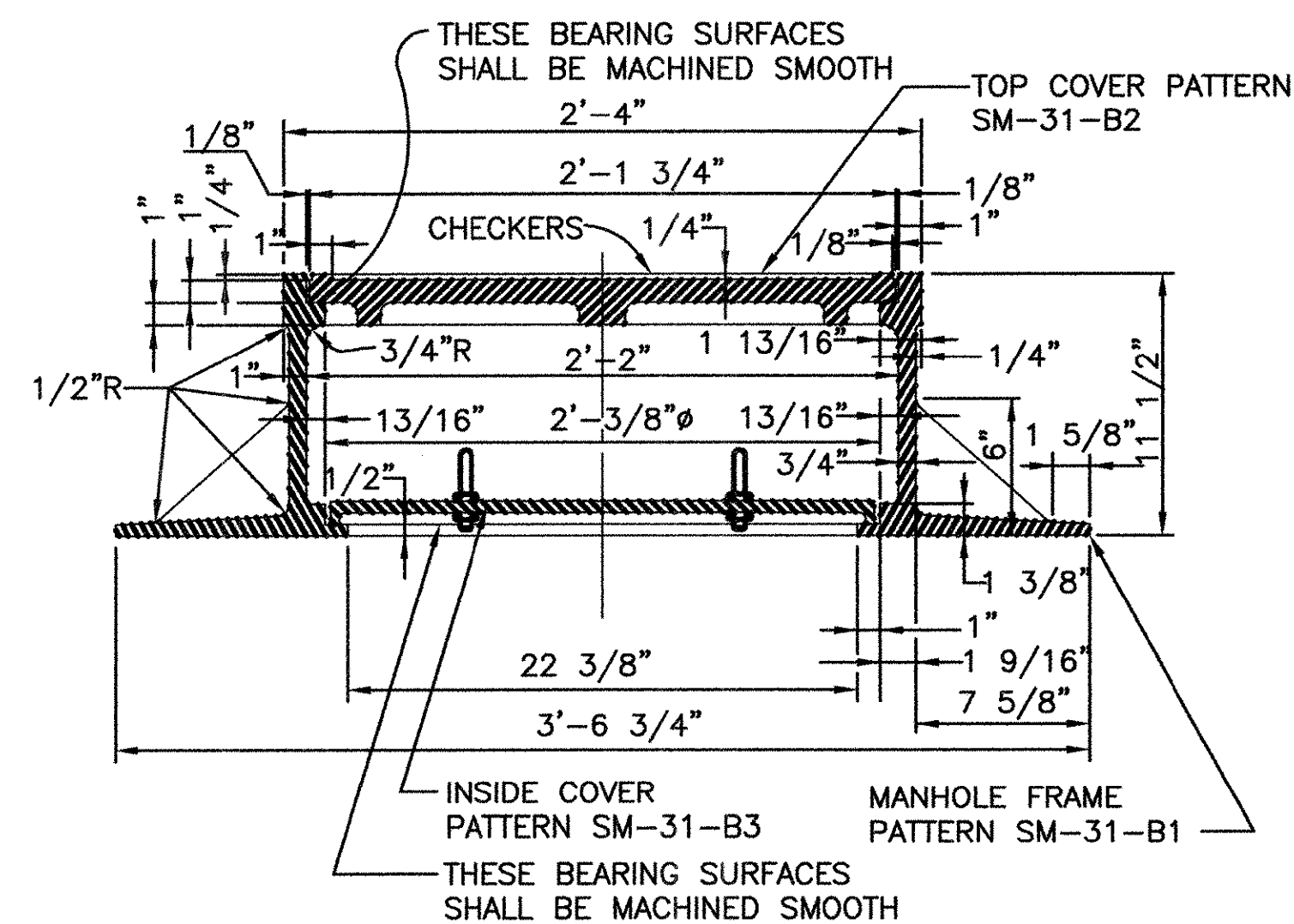
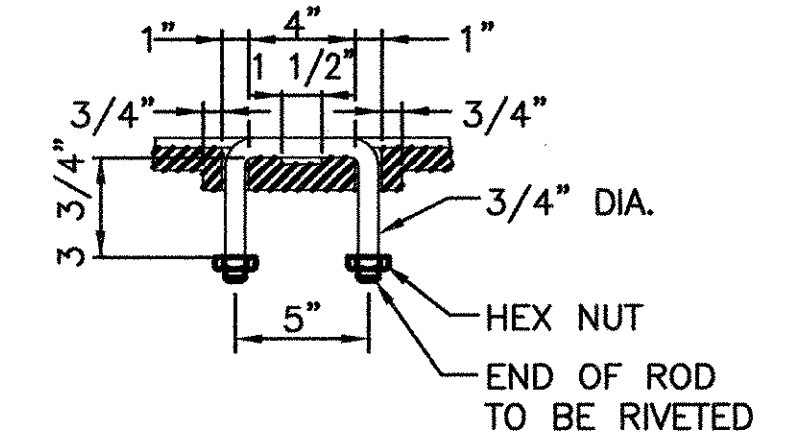
FULL SIZE SECTION AT B-B



INSIDE COVER (C.I.) PATTERN SM-31-B3

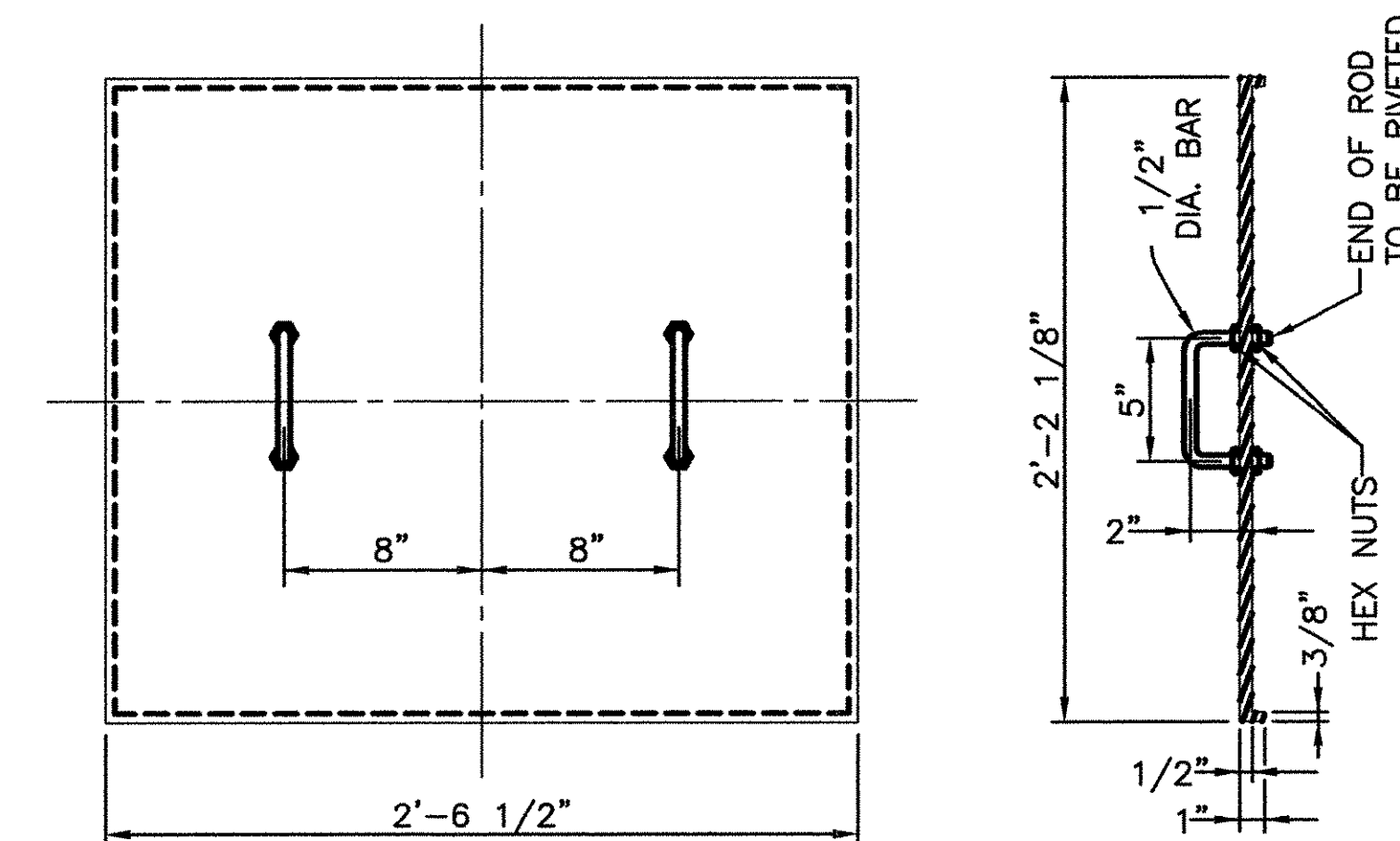


SECTION A-A



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

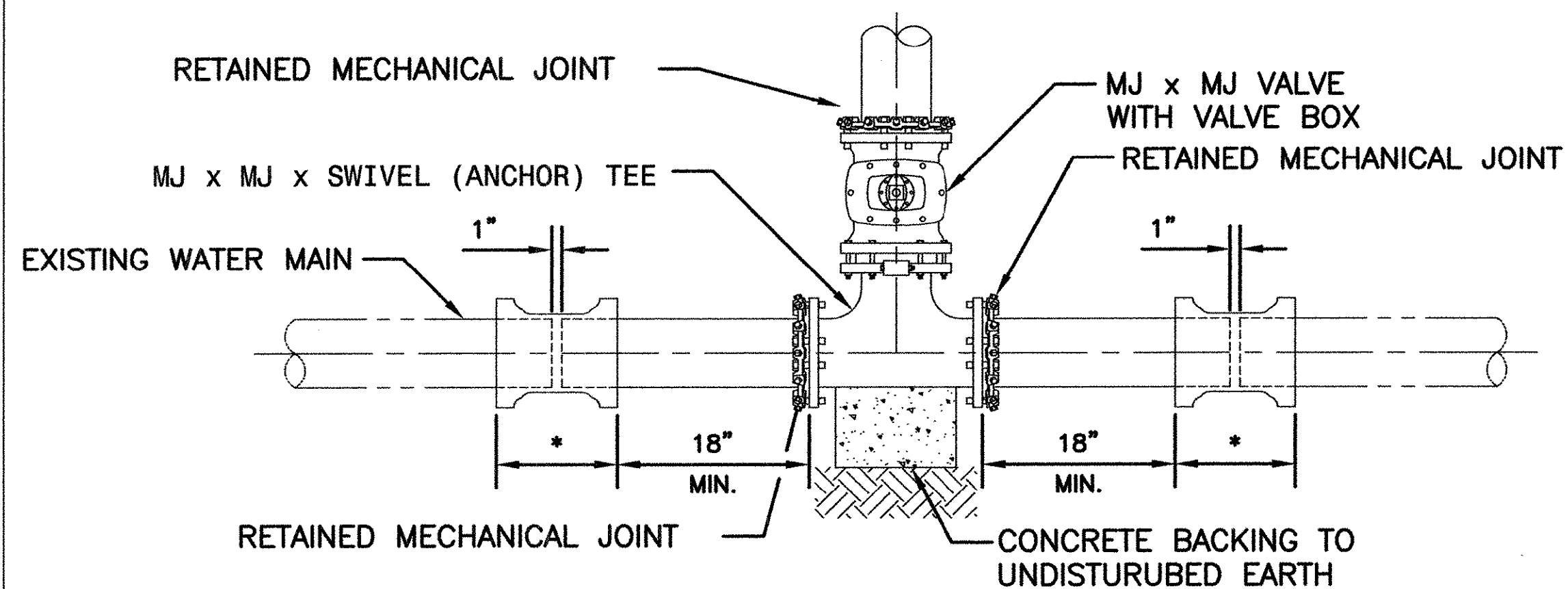
CONSISTING OF { C.I. MANHOLE FRAME PATTERN SM-31-B1
C.I. TOP COVER PATTERN SM-31-B2
C.I. INSIDE COVER PATTERN SM-31-B3
EST. WT. 756#



INSIDE COVER (C.I.) PATTERN SM-31-A3

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

CONSISTING OF {C.I. MANHOLE FRAME PATTERN SM-31-A1
C.I. TOP COVER PATTERN SM-31-A2
C.I. INSIDE COVER PATTERN SM-31-A3



* CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

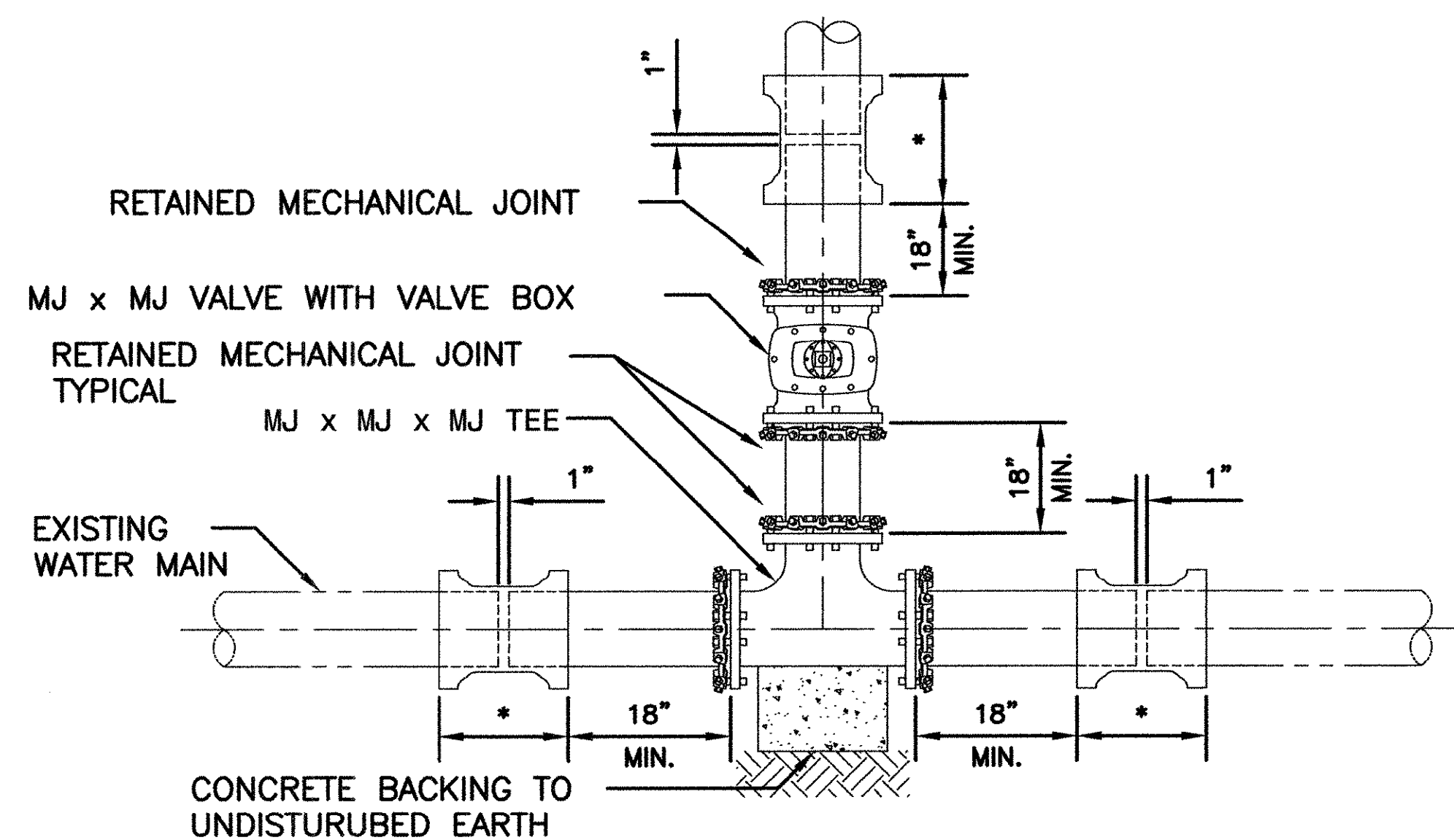
COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/A194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

CUT-IN TEE DETAIL METHOD No. 1
NOT TO SCALE



* CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

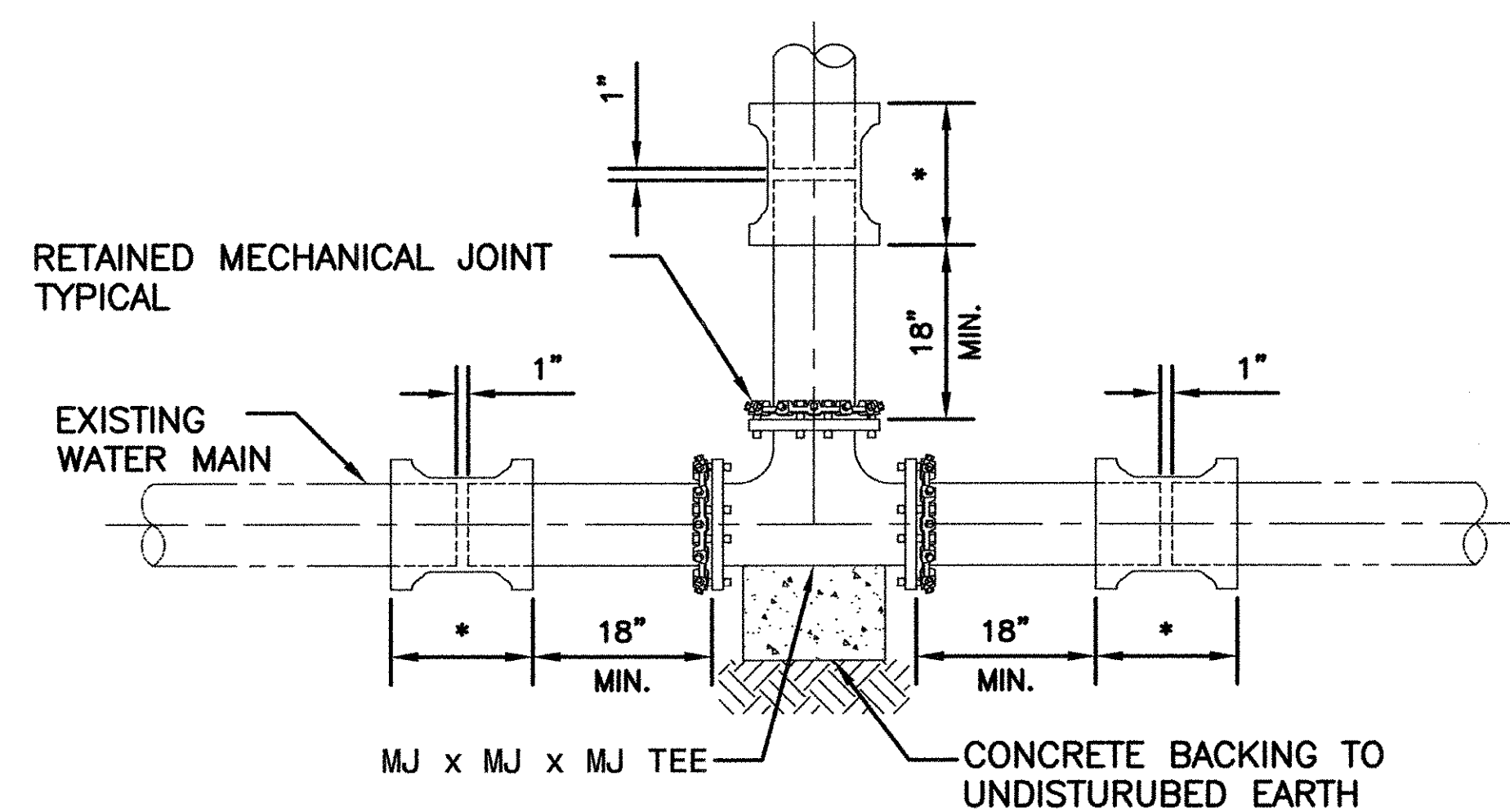
COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

CUT-IN TEE DETAIL METHOD No. 2
NOT TO SCALE



* CONNECTION SHALL BE MADE WITH RETAINED MECHANICAL JOINT SOLID SLEEVES (SHORT OR LONG PATTERN) DUCTILE IRON CLASS 350 OR CAST IRON CLASS 250 OR COMPRESSION COUPLINGS.

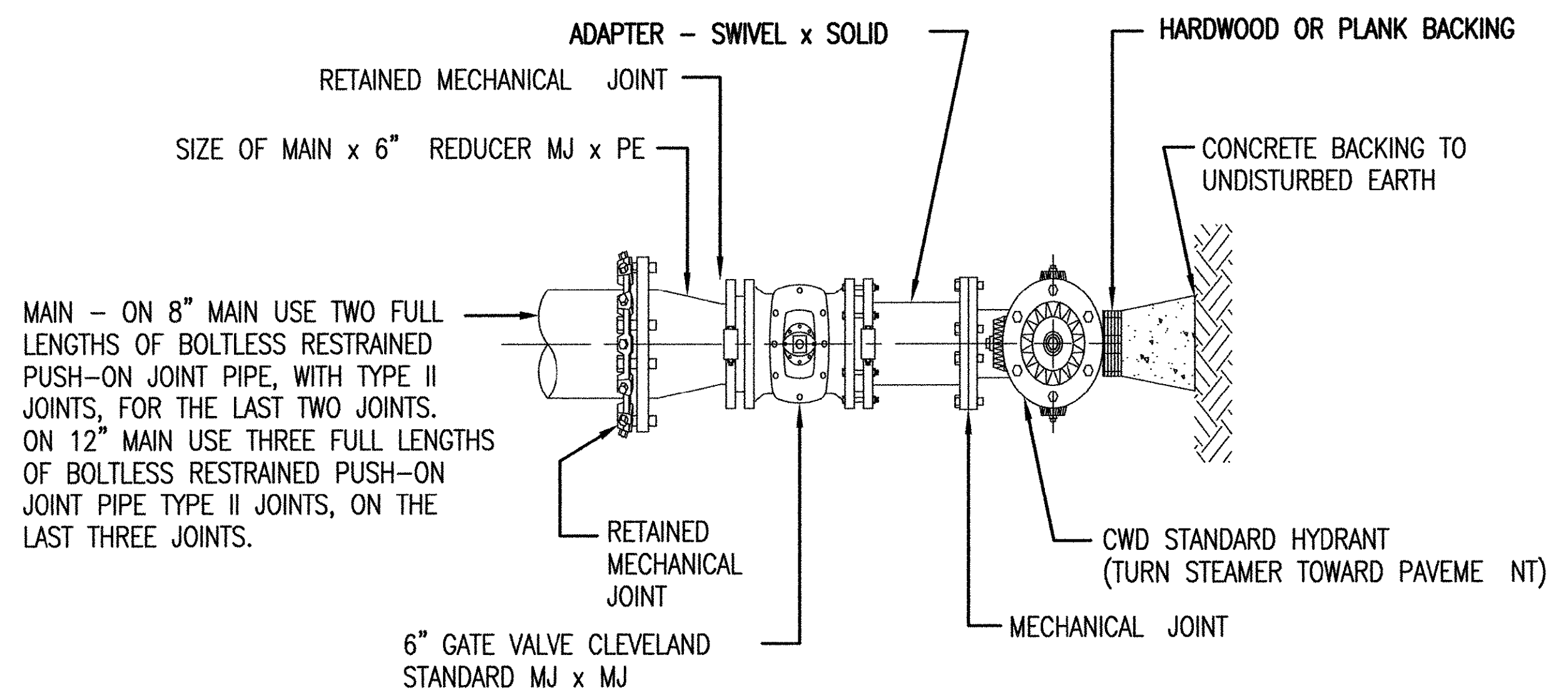
COMPRESSION COUPLINGS SHALL BE OF A GASKETED, SLEEVE TYPE WITH DIAMETERS TO PROPERLY FIT PLAIN END IRON PIPE. EACH COUPLING SHALL CONSIST OF ONE (1) MIDDLE RING, WITHOUT STOPS; TWO (2) FOLLOWER GLANDS; TWO (2) RUBBER-COMPOUND BUNA-N BLEND, WEDGE SECTION GASKETS; AND SUFFICIENT TRACKHEAD STAINLESS STEEL BOLTS AND NUTS (ASTM A276/A193/194, TYPE 304, EXTRA HEAVY HEX) TO PROPERLY COMPRESS THE GASKETS.

MIDDLE RING AND FOLLOWER GLANDS SHALL BE OF EITHER STEEL OR DUCTILE IRON (ASTM-A536).

THE COMPRESSION COUPLING SHALL BE WITHOUT STOPS AND BE RATED FOR A MINIMUM WORKING PRESSURE OF 250 PSI AND SHALL BE EQUAL TO THE DRESSER STYLE No's 38, 138 OR 162 (TRANSITION TYPE), OR SMITH-BLAIR 441 STRAIGHT AND TRANSITION COUPLINGS.

ALL BOLTS AND NUTS ON ALL MECHANICAL JOINTS, INCLUDING THOSE ON THE "RETAINED" TYPE, SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINTING FOLLOWED BY AN ENCASEMENT OF POLYETHYLENE WRAPPING IN ACCORDANCE WITH ANSI/AWWA C-105/A21.5-88, CLASS "C", METHOD "B".

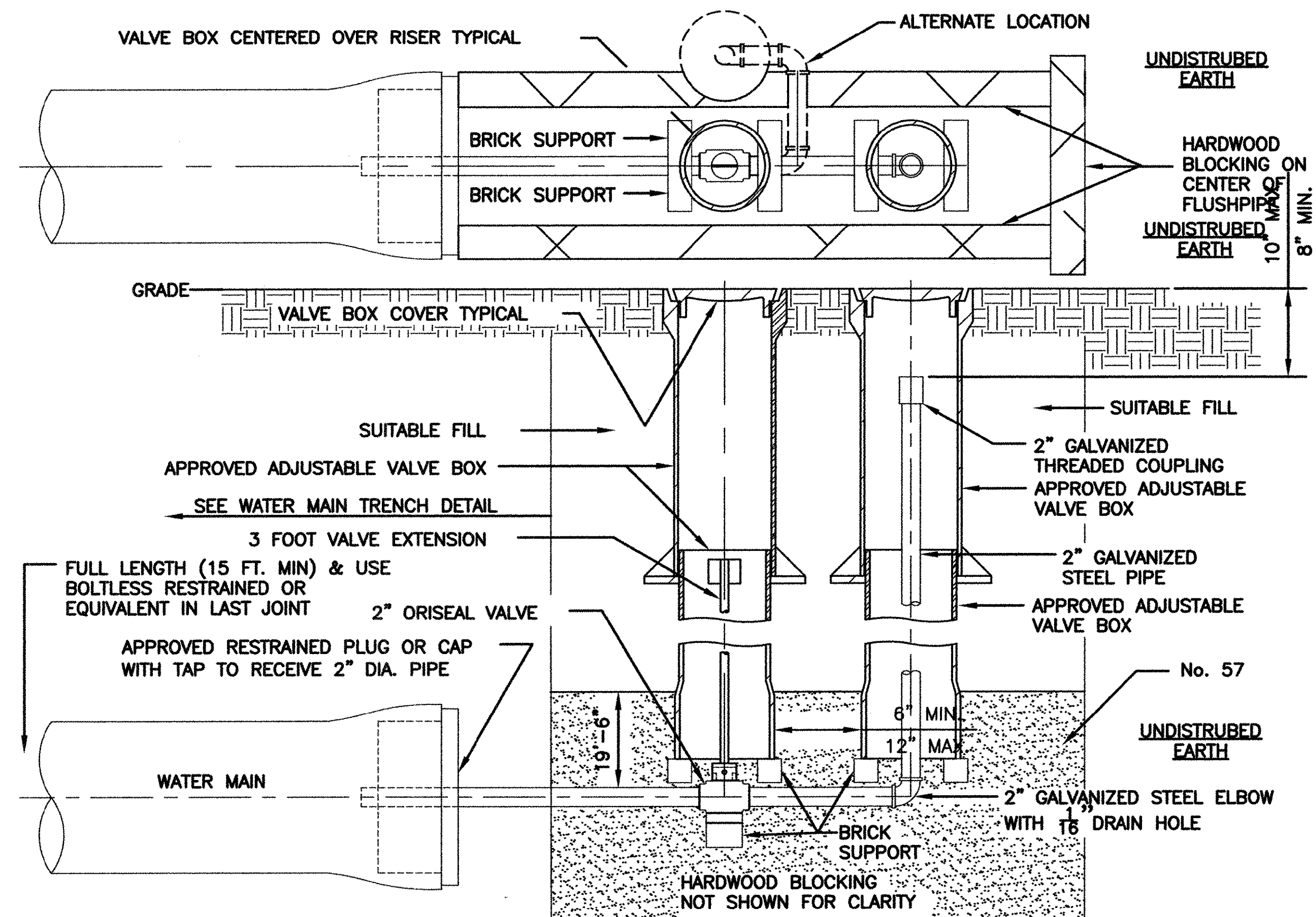
CUT-IN TEE DETAIL METHOD No. 3
-NOT TO SCALE-



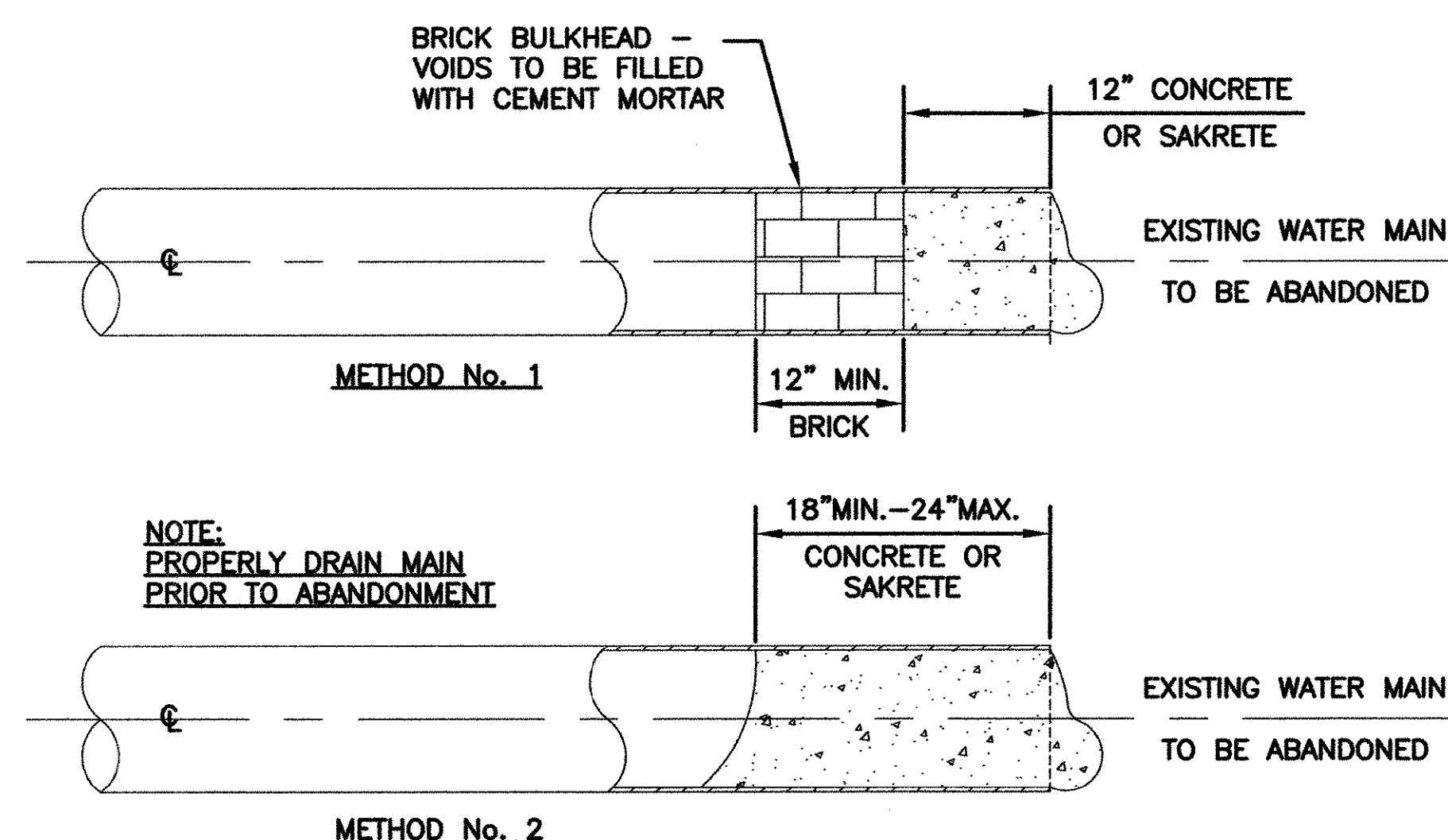
NOTE: IN LIEU OF SWIVEL BRANCH TEES AND ADAPTERS CONTRACTORS MAY FURNISH HYDRANT BRANCHES HAVING RETAINED MECHANICAL JOINTS INCLUDING HYDRANT SHOE. ALL MECHANICAL JOINTS SHALL HAVE FIELD APPLIED ONE (1) COAT OF BITUMASTIC PAINT. ALL MECHANICAL JOINTS SHALL BE POLYETHYLENE WRAPPED IN ACCORDANCE WITH AWWA C-1-5/A21.5-88 CLASS "C" METHOD "B".

ALL BOLTS AND NUTS FURNISHED WITH RETAINED MECHANICAL JOINTS INCLUDING RETAINER OR WEDGE ACTION TYPE GLANDS SHALL BE COPPER-BEARING DUCTILE IRON, OR EQUIVALENT HIGH STRENGTH, LOW ALLOY CORROSION RESISTANT STEEL.

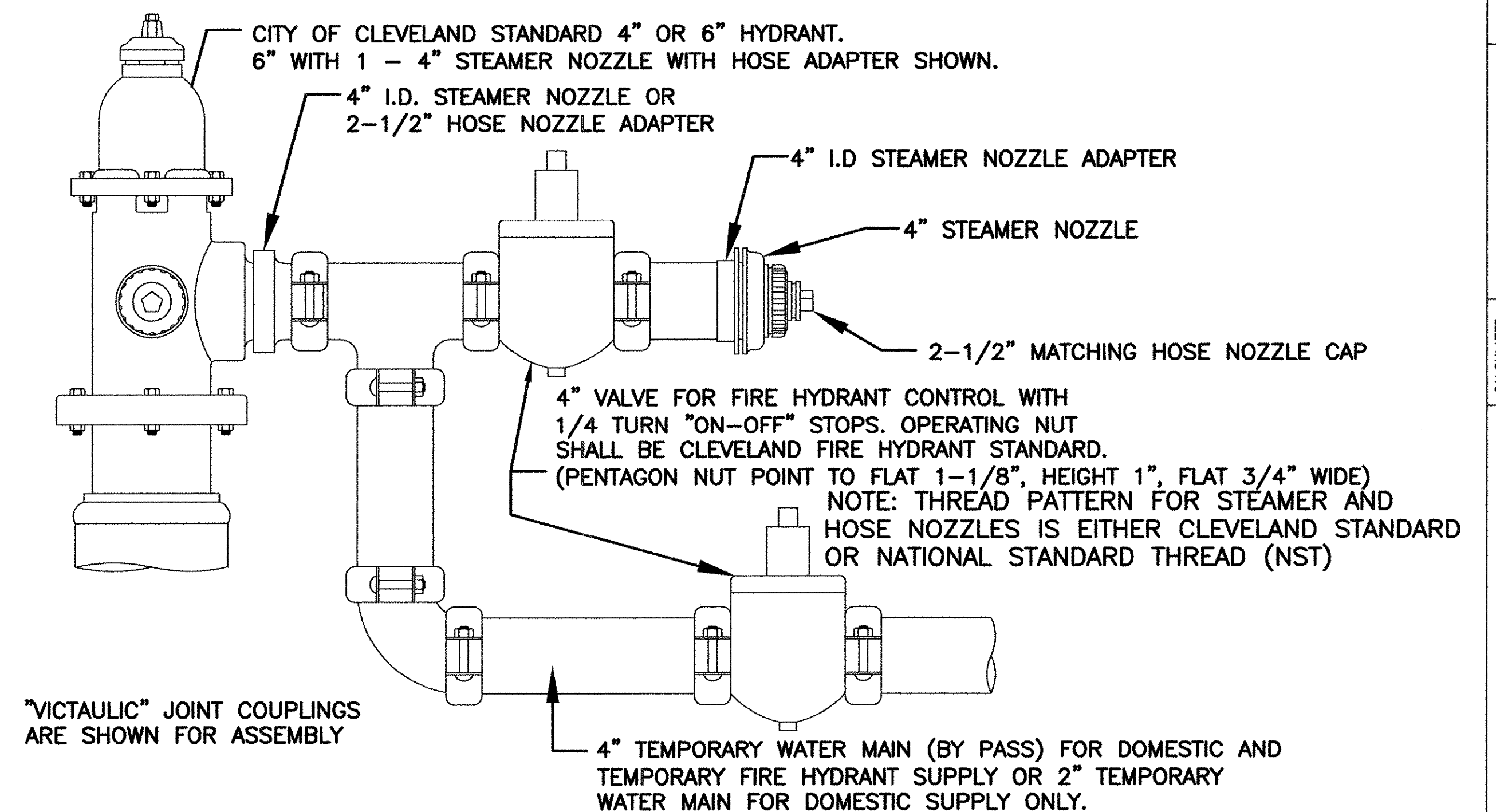
TYPICAL NEW HYDRANT INSTALLATION DETAIL "C"
NOT TO SCALE



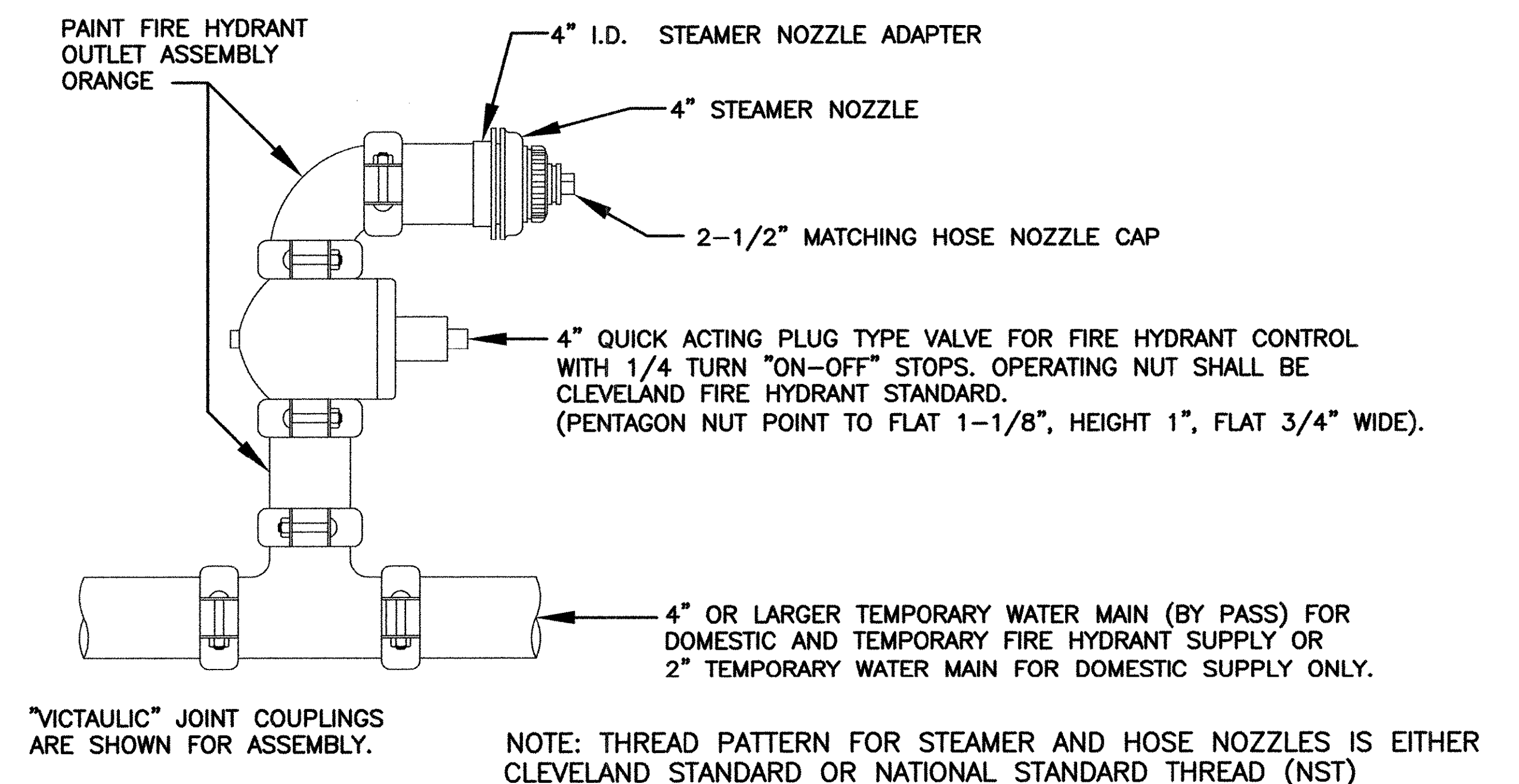
TYPICAL FLUSHING ASSEMBLY
- NOT TO SCALE -



PLUGGING ABANDONED WATER MAIN ENDS
- NOT TO SCALE -



TEMPORARY WATER MAIN & HYDRANT CONNECTION ASSEMBLY-A
TO PROVIDE SIMULTANEOUS SERVICE IN EXISTING HYDRANT AND TEMPORARY BYPASS MAIN
- NOT TO SCALE -



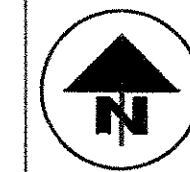
TEMPORARY WATER MAIN & HYDRANT CONNECTION ASSEMBLY-C
OUTLET END
- NOT TO SCALE -



CALCULATED
XX
CHECKED
XX

WATER PLAN
STANDARD DETAILS

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

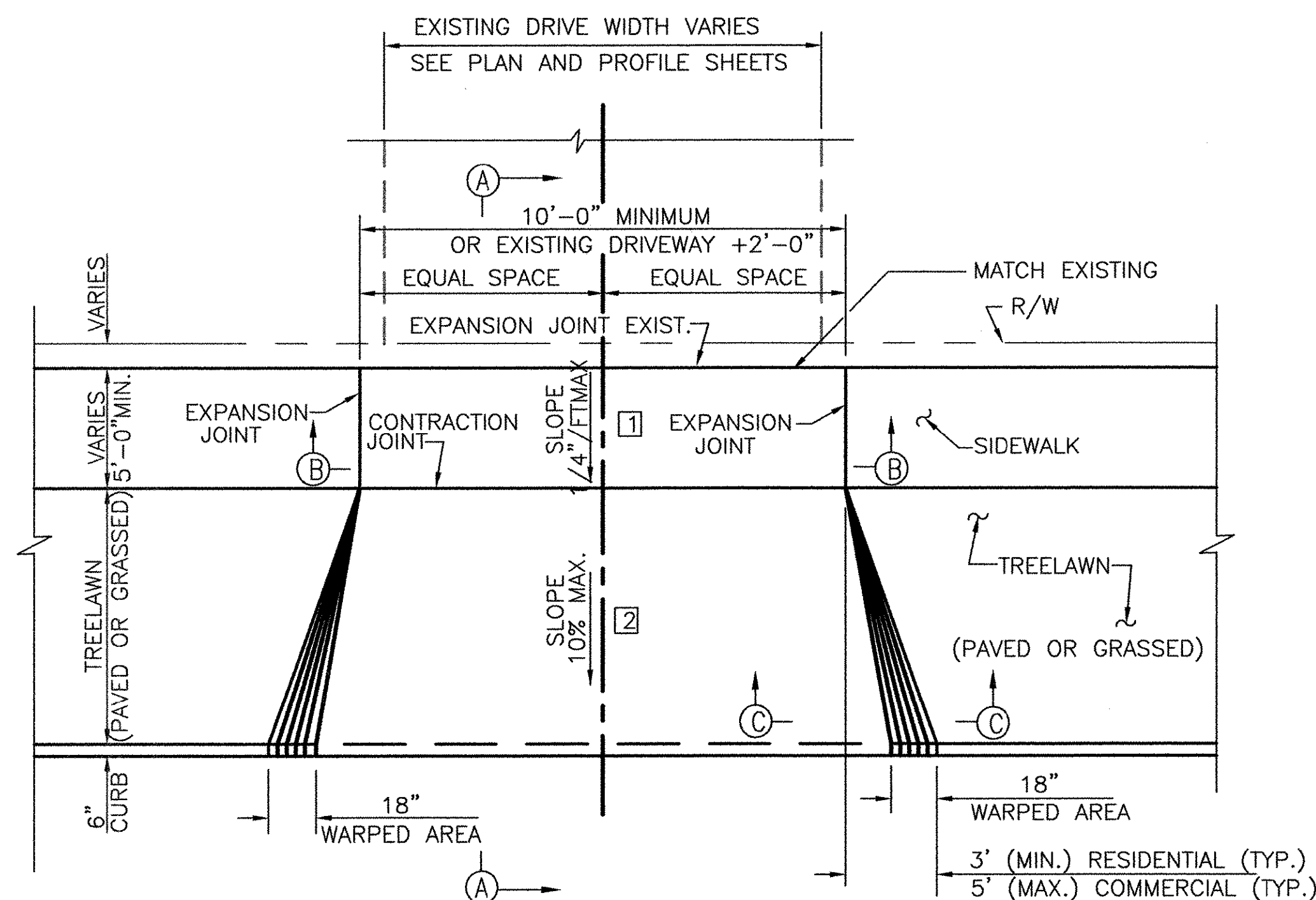


CALCULATED
CHECKED

DRIVE DETAIL A

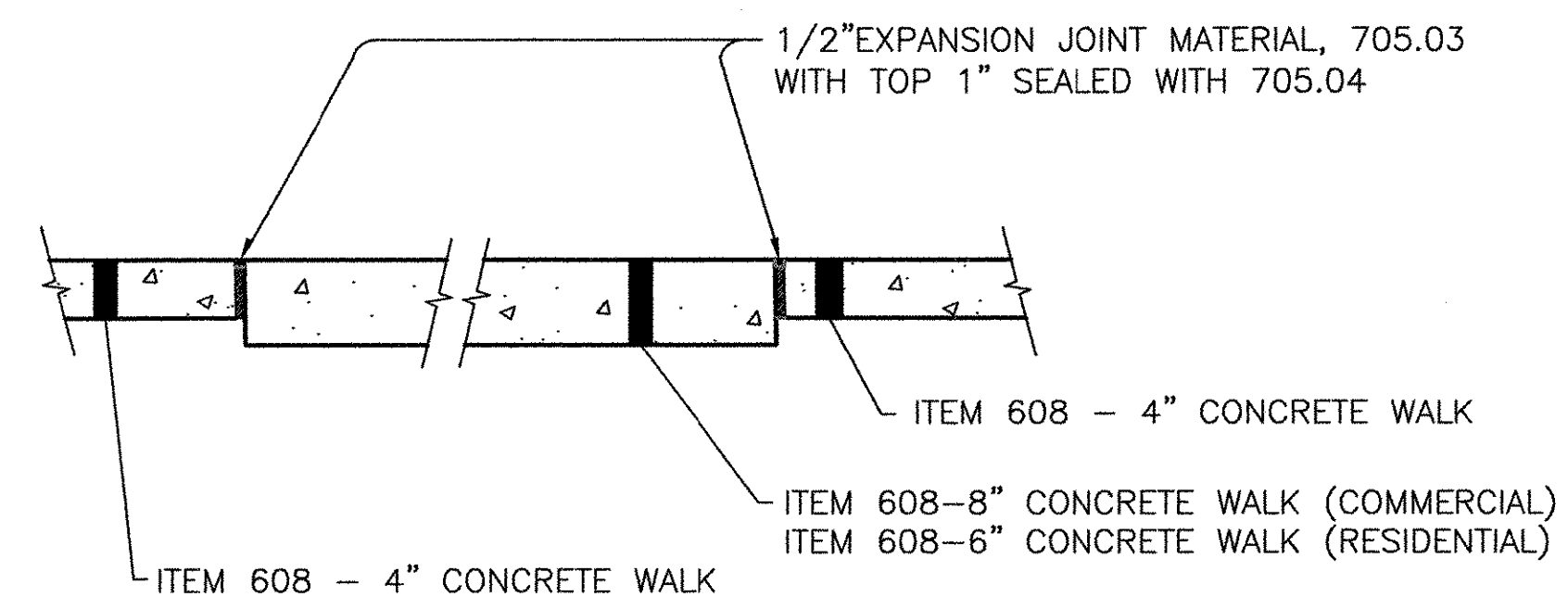
CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION

54
56

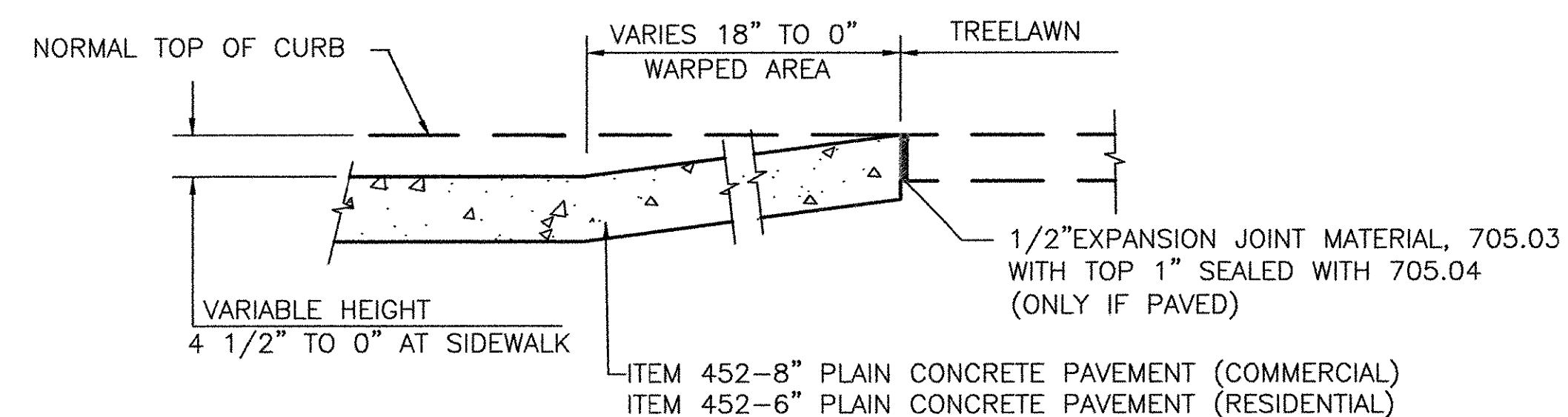


SIDEWALK IN THE DRIVEWAY AREA SHALL BE EXTENDED TO THE R/W LINE IF THERE IS AN EXISTING JOINT AT THE R/W LINE.

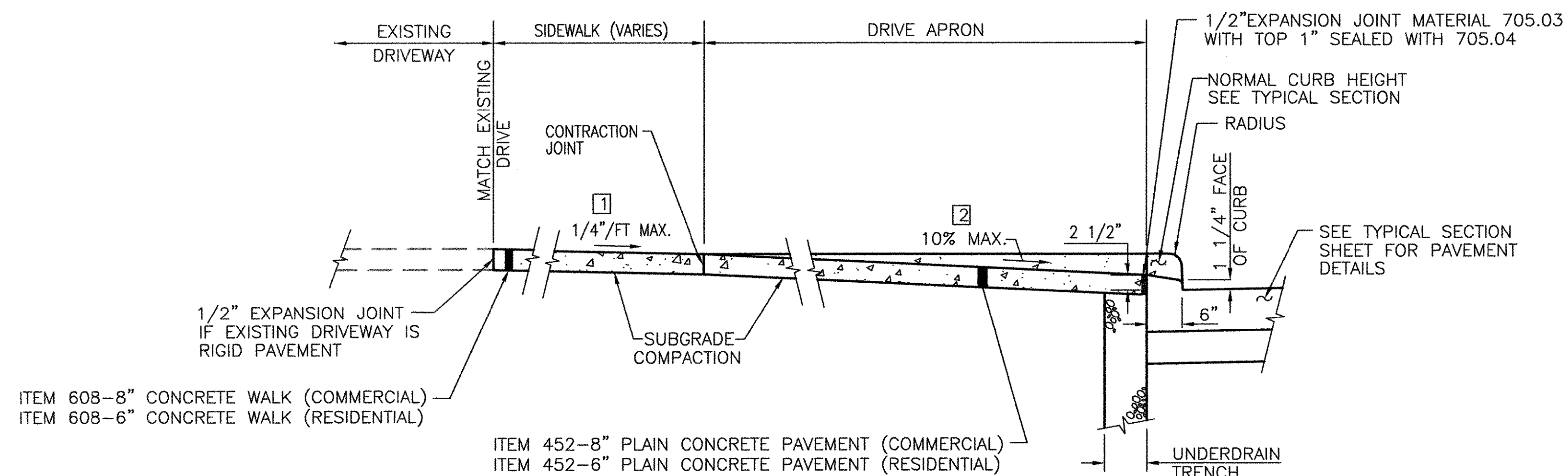
DRIVE DETAIL A
NOT TO SCALE



SECTION B - B
NOT TO SCALE



SECTION C - C
NOT TO SCALE



SECTION A - A
NOT TO SCALE

JOINTING: CONCRETE PAVEMENT		
1. UNTIED - NONREINFORCED P.C. CONCRETE PAVEMENT (SLABS)		
2. SPACING FOR SAWED OR IMPRESSED CONTRACTION AND/OR CONSTRUCTION JOINTS		
CONCRETE THICKNESS	RECOMMENDED SLAB SIZE	MAXIMUM SLAB SIZE
4"	5' x 5'	6' x 6'
6"	8' x 8'	9' x 9'
8"	10' x 10'	12' x 12'
JOINTS SHALL BE 1/4 THE DEPTH OF THE SLAB		

NOTES:

- SIDEWALKS AT DRIVE APRONS SLOPE AT 1/8" PER FOOT MINIMUM TO 1/4"/FT MAXIMUM
- DRIVEWAY APRONS SLOPE AT 1% MINIMUM TO 10% MAXIMUM FROM BACK OF CURB TO FACE OF SIDEWALK.

SIDEWALK, DRIVEWAY AND APRON SHALL BE PLACED ON COMPACTED 2" THICK BASE OF SAND OR GRAVEL. COST IS INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE ITEMS.

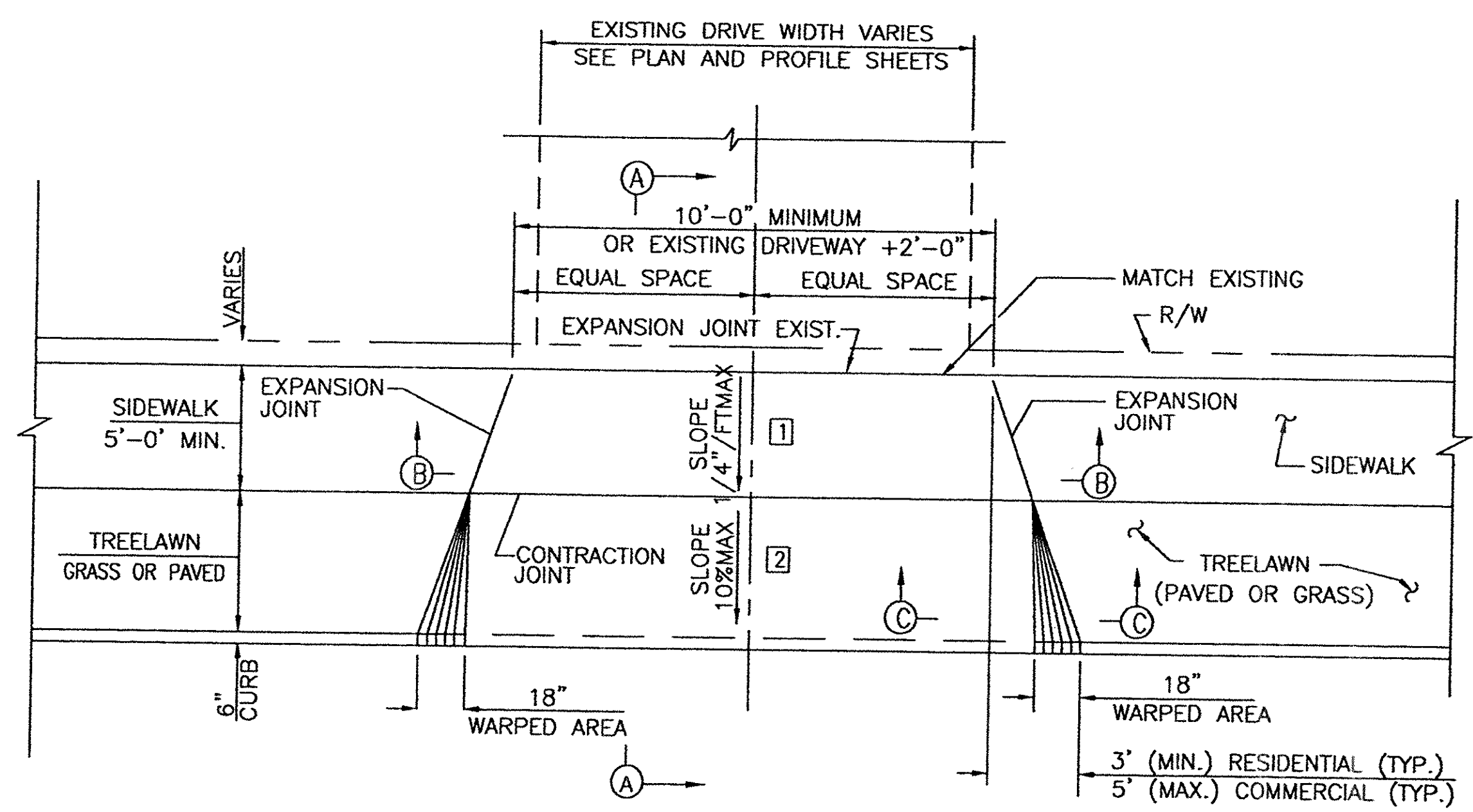
FOR PLAN SEE SHEETS 13-27



CALCULATED
CHECKED

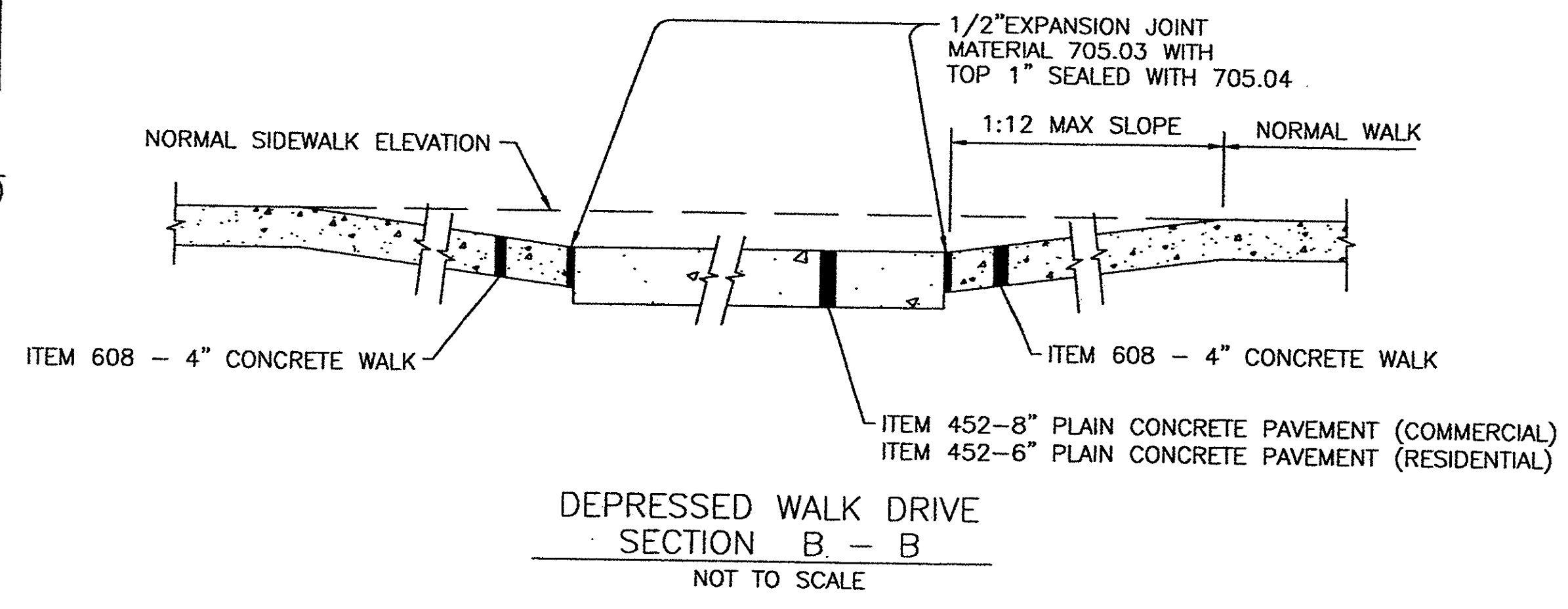
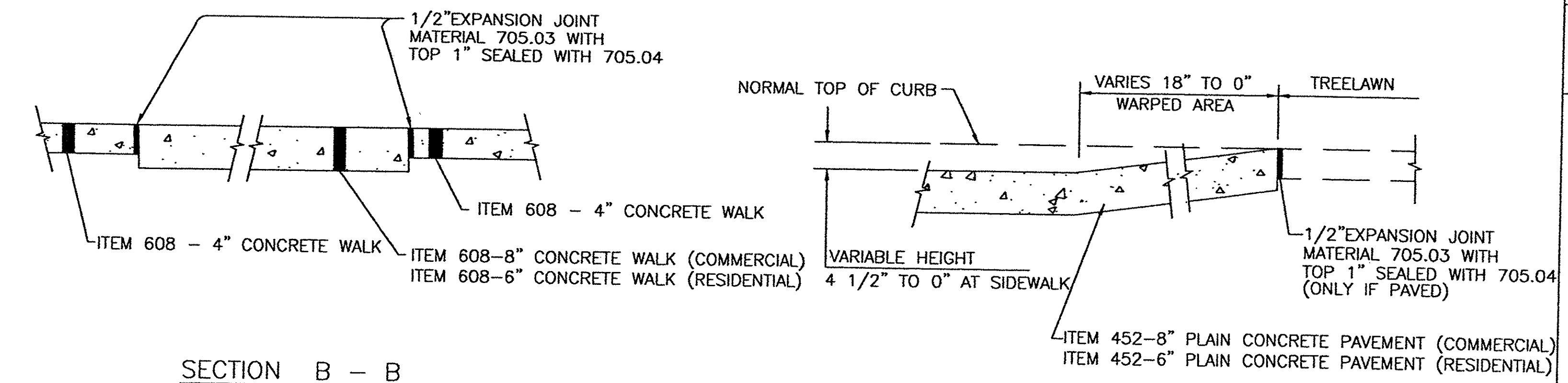
DRIVE DETAIL B

CITY OF CLEVELAND
DEPARTMENT OF PUBLIC SERVICE
DIVISION OF ENGINEERING AND CONSTRUCTION



DRIVEWAY SHALL BE EXTENDED TO THE R/W LINE IF THERE IS AN EXISTING JOINT AT THE R/W LINE.

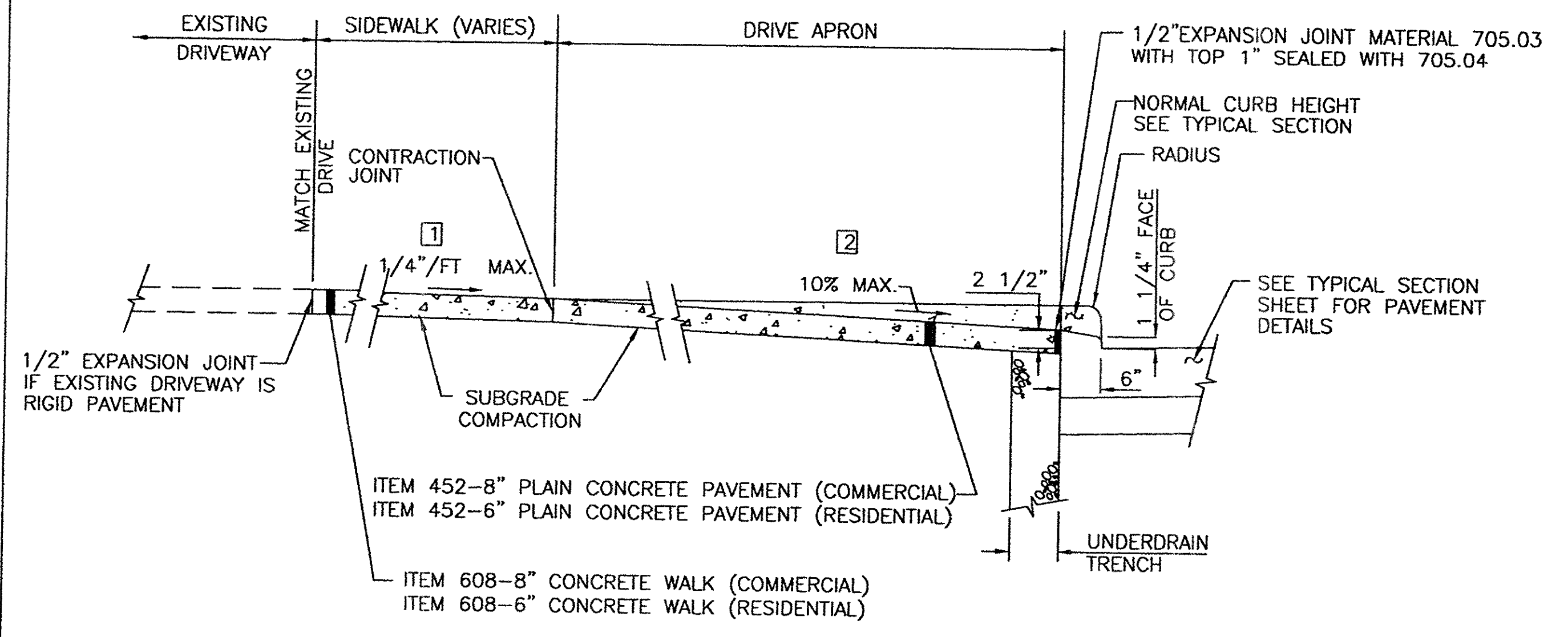
DRIVE DETAIL B
NOT TO SCALE



NOTES:

- 1 SIDEWALKS AT DRIVE APRONS SLOPE AT 1/8" PER FOOT MINIMUM TO 1/4" / FT MAXIMUM
- 2 DRIVEWAY APRONS SLOPE AT 1% MINIMUM TO 10% MAXIMUM FROM BACK OF CURB TO FACE OF SIDEWALK.

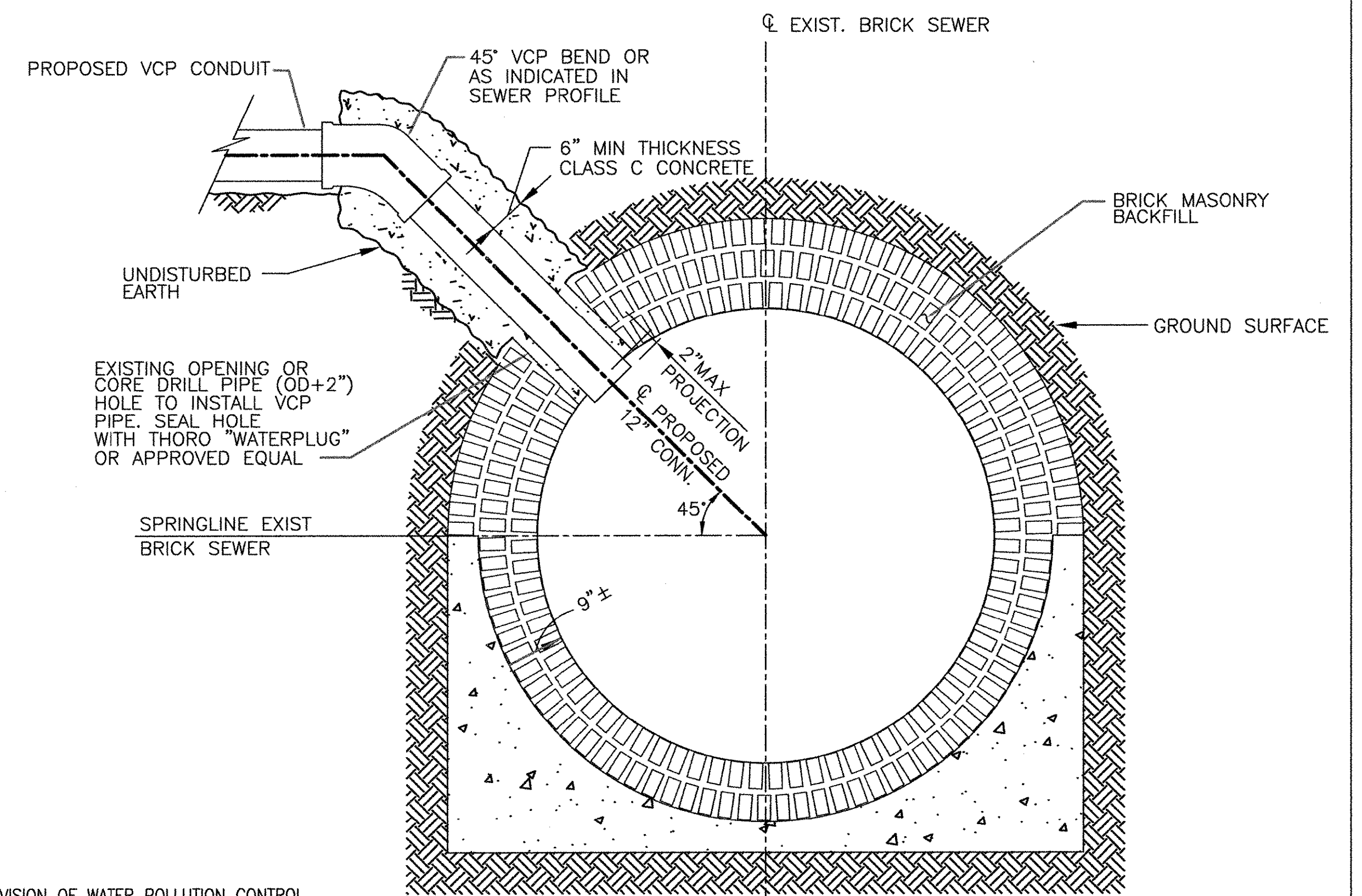
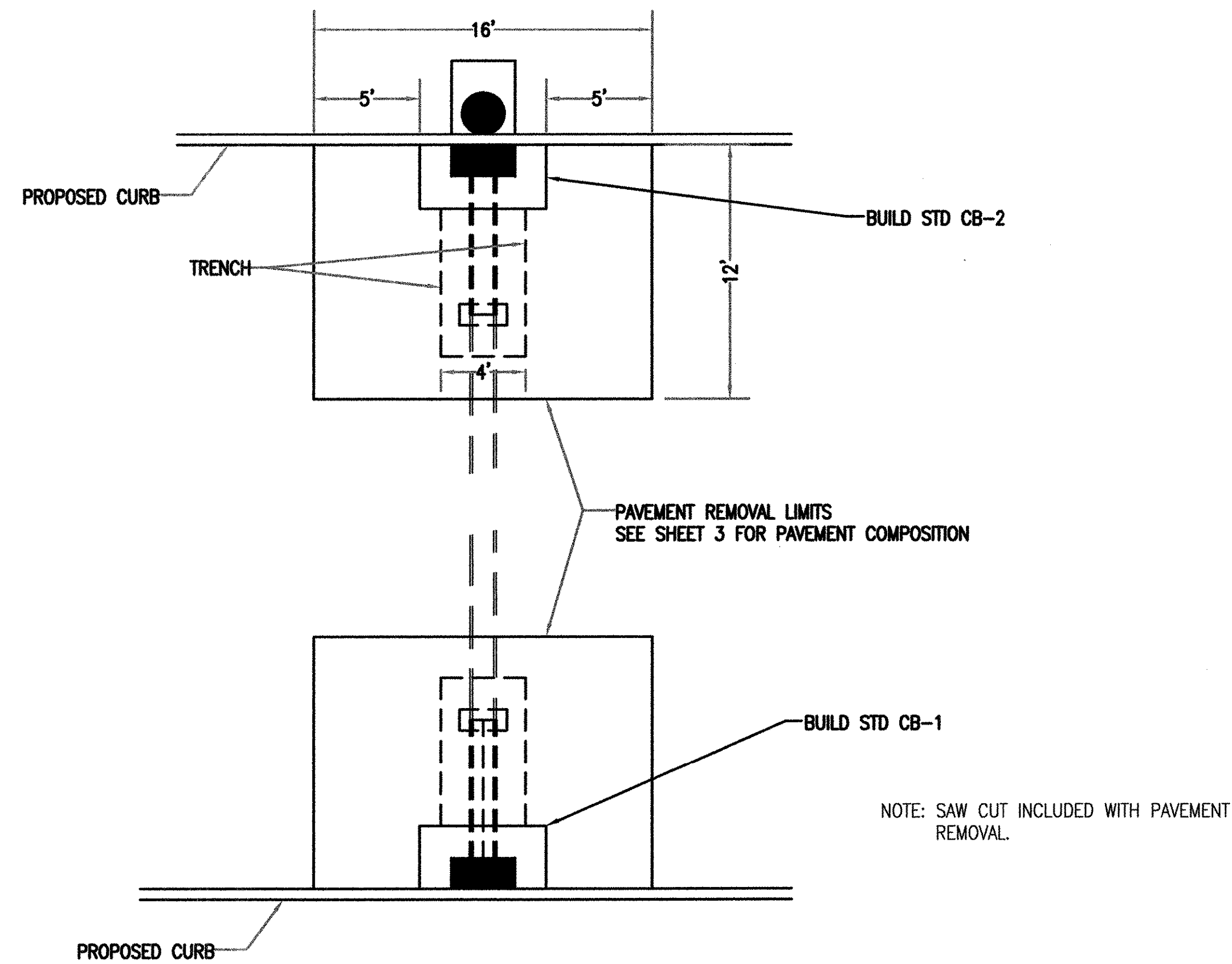
SIDEWALK, DRIVEWAY AND APRON SHALL BE PLACED ON COMPACTED 2" THICK BASE OF SAND OR GRAVEL. COST IS INCLUDED IN THE UNIT PRICE BID FOR THE RESPECTIVE ITEMS.



SECTION A - A
NOT TO SCALE

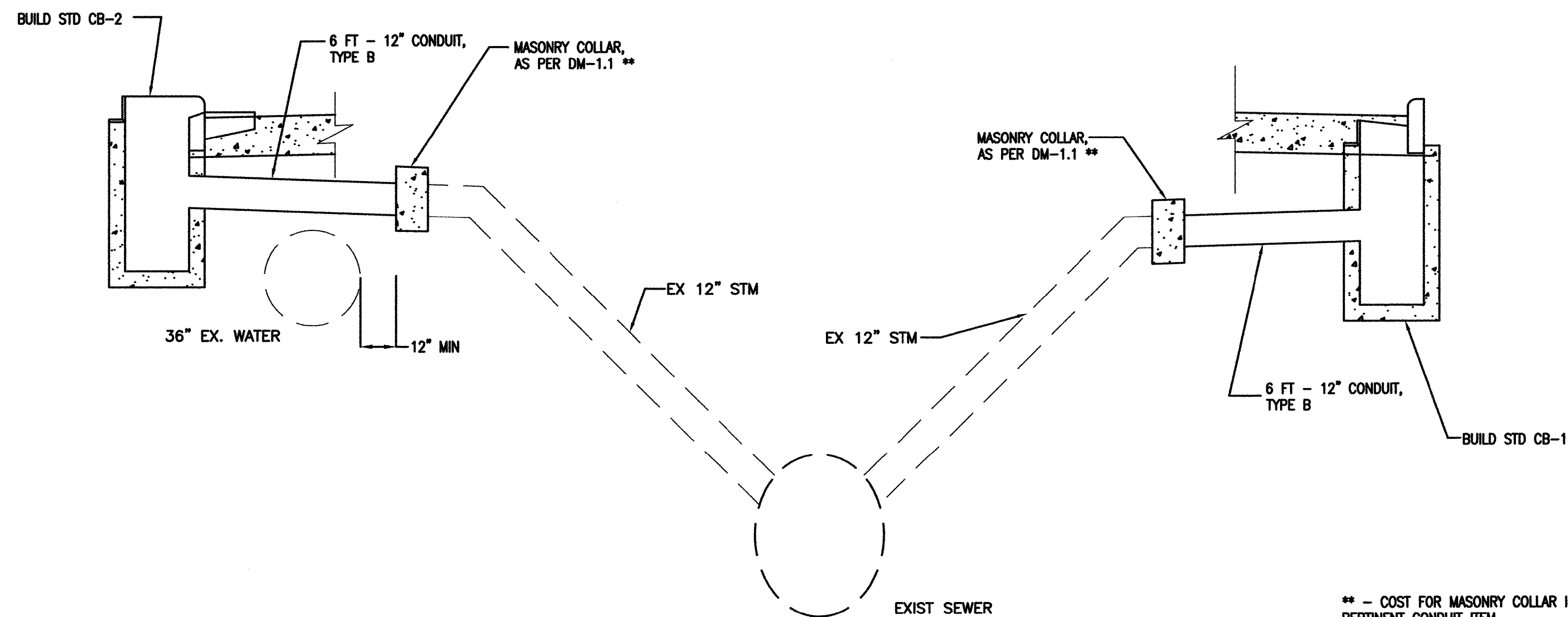
JOINTING: CONCRETE PAVEMENT		
1. UNTIED - NONREINFORCED P.C. CONCRETE PAVEMENT (SLABS)		
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JOINTS SHALL BE 1/4 THE DEPTH OF THE SLAB		

FOR PLAN SEE SHEETS 13-27



NOTE:

PER THE DIVISION OF WATER POLLUTION CONTROL STANDARDS, A VCP WYE BRANCH IS USED WHENEVER A SEWER CONNECTION IS TIED TO A VCP MAIN SEWER LINE AND A SADDLE IS USED WHEN THE SEWER MAIN IS RCP OR BRICK.



** - COST FOR MASONRY COLLAR INCLUDED WITH THE COST OF THE PERTINENT CONDUIT ITEM.