

2015 CALTRANS STANDARD PLANS LIST

■	INDICATES APPLICABLE PLAN
■ A20A	PAVEMENT MARKERS AND TRAFFIC LINES TYPICAL DETAILS
■ A20B	PAVEMENT MARKERS AND TRAFFIC LINES TYPICAL DETAILS
■ A20C	PAVEMENT MARKERS AND TRAFFIC LINES TYPICAL DETAILS
■ A20D	PAVEMENT MARKERS AND TRAFFIC LINES TYPICAL DETAILS
■ A24A	PAVEMENT MARKINGS ARROWS
□ A24B	PAVEMENT MARKINGS ARROWS AND SYMBOLS
□ A24C	PAVEMENT MARKINGS SYMBOLS AND NUMERALS
■ A24D	PAVEMENT MARKINGS WORDS
■ A24E	PAVEMENT MARKINGS WORDS, LIMIT AND YIELD LINES
□ A24F	PAVEMENT MARKINGS CROSSWALKS
□ A62A	EXCAVATION AND BACKFILL MISCELLANEOUS DETAILS
□ A62B	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE SURCHARGE AND WALL
□ A62C	LIMITS OF PAYMENT FOR EXCAVATION AND BACKFILL BRIDGE
□ A62D	EXCAVATION AND BACKFILL CONCRETE PIPE CULVERTS
□ A62DA	EXCAVATION AND BACKFILL CONCRETE PIPE CULVERTS INDIRECT DESIGN METHOD
□ A62E	EXCAVATION AND BACKFILL CAST-IN-PLACE REINFORCED CONCRETE BOX AND ARCH CULVERTS
□ A62F	EXCAVATION AND BACKFILL METAL AND PLASTIC CULVERTS
□ A62G	EXCAVATION AND BACKFILL PRECAST REINFORCED CONCRETE BOX CULVERTS
□ A73A	OBJECT MARKERS
□ A73B	MARKERS
□ A73C	DELINEATORS, CHANNELIZERS, AND BARRICADES
■ A74	SURVEY MONUMENTS
□ A78A	THREE BEAM BARRIER STANDARD RAILING SECTION (WOOD POST WITH WOOD BLOCK)
□ A78C1	THREE BEAM BARRIER STANDARD HARDWARE DETAILS
□ A78C2	THREE BEAM BARRIER POST AND BLOCK DETAILS
□ A78E1	SINGLE THREE BEAM BARRIER END ANCHOR ASSEMBLY AND TERMINAL SYSTEM END TREATMENT
□ A81C	CRASH CUSHION, SAND FILLED (BIDIRECTIONAL)
□ A85	CHAIN LINK FENCE
□ A86	BARBED WIRE AND WIRE MESH FENCES
□ A87A	CURBS AND DRIVEWAYS
■ A87B	HOT MIX ASPHALT DIKES
□ A88A	CURB RAMP DETAILS
□ B3-3A	RETAINING WALL TYPE 1A - (CASE 1)
□ B3-6	RETAINING WALL DETAILS No. 2
■ D73	DRAINAGE INLETS
□ D74A	DRAINAGE INLETS
□ D74B	DRAINAGE INLETS
□ D74C	DRAINAGE INLET DETAILS
□ D75A	STEEL PIPE INLETS
□ D75B	CONCRETE PIPE INLETS
□ D75C	PIPE INLETS LADDER AND TRASH RACK DETAILS
□ D77A	GRATE DETAILS No. 1
□ D77B	GRATE DETAILS No. 2
□ P74	PAVEMENT EDGE TREATMENTS
□ P75	PAVEMENT EDGE TREATMENTS - OVERLAYS
■ P76	PAVEMENT EDGE TREATMENTS - NEW CONSTRUCTION
■ RS1	ROADSIDE SIGNS - TYPICAL INSTALLATION DETAILS NO. 1
□ T1A	TEMPORARY CRASH CUSHION, SAND FILLED (UNIDIRECTIONAL)
□ T1B	TEMPORARY CRASH CUSHION, SAND FILLED (BIDIRECTIONAL)
□ T2	TEMPORARY CRASH CUSHION, SAND FILLED (SHOULDER INSTALLATIONS)
□ T3	TEMPORARY RAILING (TYPE K)

GENERAL LEGEND

ABBREVIATIONS

AADS	AMERICAN AVE DISPOSAL SITE	DI	DRAINAGE INLET	LP	LIMIT OF PAYMENT	RTE	ROUTE
AB	AGGREGATE BASE	DIA	DIAMETER	LT	LEFT	RW	RIGHT OF WAY
AC	ASPHALT CONCRETE	DIR	DIRECTION	MAX	MAXIMUM	RW-P	PROPOSED RIGHT OF WAY
AHD	AHEAD	DIP	DUCTILE IRON PIPE	MB	METAL BEAM	S	SLOPE
ALIGN	ALIGNMENT	DIR	DIRECTION	MBGR	METAL BEAM GUARD RAILING	SBL	SOUTH BOUND LANE
ALY	ALLEY	DWY	DRIVEWAY	MH	MANHOLE	SEC	SECTION
AP	ANGLE POINT	EA	EACH	MI	MILE (S)	SDWK	SIDEWALK
APCH	APPROACH	EASE	EASEMENT	MIN	MINIMUM	SH	STATE HIGHWAY
APPROX	APPROXIMATE ± ()	EB	END OF BRIDGE	MISC	MISCELLANEOUS	SHT	SHEET
AS	AGGREGATE SUBBASE	E/B	EAST BOUND	MOD	MODIFY (IED)	SHDR	SHOULDER
ASSY	ASSEMBLY	EC	END HORIZONTAL CURVE	MON	MONUMENT	SIL	SECTION LINE
AV	AIR RELEASE VALVE	ECR	END CURB RETURN	MP	MILE POST	SP	STANDPIPE
AVE	AVENUE	ED	END DIKE	MTL	MATERIAL	SQ	SQUARE
BB	BEGINNING OF BRIDGE	ELEV	ELEVATION	N/A	NOT APPLICABLE	SQ FT	SQUARE FOOT (FEET)
BC	BEGIN HORIZONTAL CURVE	(ELEV)	EXISTING ELEVATION	NBL	NORTH BOUND LANE	SQ IN	SQUARE INCH
BCM	BRASS CAP MONUMENT	EMB	EMBANKMENT	NO (#)	NUMBER	ST	STREET
BCR	BEGIN CURB RETURN	EP	EDGE OF PAVEMENT	NS	NATIVE SOIL	STD	STANDARD
BEG	BEGIN(ING)	EQ	EQUAL	OC	ON CENTER	STRUC	STRUCTURAL
BKF	BACKFILL	ES	EDGE OF SHOULDER	OD	OUTSIDE DIAMETER	SURF	SURFACING
BLDG	BUILDING	ETL	EDGE OF TRAVEL LANE	OG	ORIGINAL GROUND	STP	STEEL PIPE
BLVD	BOULEVARD	EVC	END VERTICAL CURVE	O/S	OFFSET	SWR	SEWER
BM	BENCH MARK	EW	ENDWALL	PB	PULL BOX	TAN OFF	TANGENT OFFSET
BR	BRIDGE	EXC	EXCAVATION	PE	POLYETHYLENE	TBM	TEMPORARY BM
BVC	BEGIN VERTICAL CURVE	EXIST / (E)	EXISTING	PCC	PORTLAND CEMENT CONCRETE	TBR	TIMBER
BW	BARBED WIRE	EXP JT	EXPANSION JOINT	PERM	PERMEABLE	TCP	TEMPORARY CONST PERMIT
CC	CENTER TO CENTER	FCBCM	FRESNO COUNTY BCM	PG	PROFILE GRADE	TFC	TOP FACE OF CURB
CF	CUBIC FOOT (FEET)	FG	FINISHED GRADE	PI	POINT OF INTERSECTION	TOP	TOP OF PAVEMENT
CFS	CUBIC FEET PER SECOND	FH	FIRE HYDRANT	PL	PLATE	TOT	TOTAL
C & G	CURB AND GUTTER	FL	FLOW LINE	P/L	PROPERTY LINE	TP	TELEPHONE POLE
CHNL	CHANNEL	FO	FIBER OPTIC	PM	POST MILE	TCB	TRAFFIC CONTROL BOX
CI	CITY	FT	FOOT (FEET)	POC	POINT ON CURVE	TRANS	TRANSVERSE
CIDH	CAST-IN DRILLED HOLE	GAL	GALLON (S)	POT	POINT ON TANGENT	TS	TRAFFIC SIGNAL
CIP	CAST IRON PIPE	GV	GAS VALVE	PP	POWER POLE	TYP	TYPICAL
CIPCP	CAST-IN-PLACE CONCRETE PIPE	GB	GRADE BREAK	PRC	POINT OF REVERSE CURVATURE	TYP SEC	TYPICAL SECTION
C/L (Q)	CENTER LINE	GP	GRADING PLANE	PROT	PROTECT	UC	UNDERCROSSING
CL	CHAIN LINK	GRUB	GRUBBING	PSI	POUNDS PER SQUARE INCH /		
CLR	CLEAR (ING), CLEARANCE	GW	GUY WIRE	PT	PEDESTAL TELEPHONE	UG	UNDERGROUND
CMP	CORRUGATED METAL PIPE	HORIZ	HORIZONTAL	PNT	POINT	UD	UNDERDRAIN
CNL	CUT NEAT LINE	HP	HINGE POINT	PULV	PULVERIZED	UDR	UNDERDRAIN RISER
CNS	COMPACTED NATIVE SOIL	HS	HIGH STRENGTH	PVC	POLYVINYL CHLORIDE	UP	UNDERPASS
CO	COUNTY	HW	HEAD WALL	PVMT	PAVEMENT	VAR	VARIABLE (ABLE)
COMM	COMMERCIAL	HWM	HIGH WATER MARK	R	RADIUS	VC	VERTICAL CURVE
CONC	CONCRETE	HWY	HIGHWAY	RCB	REINFORCED CONCRETE BOX	VCP	VITRIFIED CLAY PIPE
CONC	CONCRETE	IB	IMPORTED BORROW	RCP	REINFORCED CONCRETE PIPE	VERT	VERTICAL
CONST	CONSTRUCT (ION)	ID	INSIDE DIAMETER	RD	ROAD	VG	VALLEY GUTTER
CONT	CONTINUOUS	IP	IRON PIPE	R & D	REMOVE AND DISPOSE	VP	VENT PIPE
CP	CONCRETE PIPE	IRR	IRRIGATION	REINF	REINFORCED (MENT) (ING)	W/B	WEST BOUND
CR	CURB RAMP	IV	IRRIGATION VALVE	REL	RELOCATE	WM	WATER METER
CS	COTTON SPINDLE	JP	JOINT POLE	REM	REMOVE	WP	WEAKENED PLANE
CSP	CORRUGATED STEEL PIPE	JT	JOINT	RET	RETAINING	WR	WHEELCHAIR RAMP
CSPA	CORRUGATED STEEL PIPE ARCH	L LINE	LAYOUT LINE	RG	RUBBER GASKET	WW	WATER VALVE
CA TV	CABLE TELEVISION	LBS	POUNDS	RLG	ROCK LINED GUTTER	WW	WATER VALVE
CULV	CULVERT	LF	LINEAR FOOT	RR	RAILROAD	WW	WATER VALVE
CY (CU YD)	CUBIC YARD(S)	LOC	LOCATION	RT	RIGHT	WW	WINGWALL

CONSTRUCTION SYMBOLS

	TYPE "A" CURB		SURVEY MONUMENT
	TYPE "B3" CURB		CONCRETE COLLAR
	TYPE "FA" CURB		GRADE MATCH
	FA CURB EXTENSION		SAW CUT
	CUT NEAT LINE		OVERSIDE DRAIN
	RESIDENTIAL SIDEWALK		MISC TRAFFIC SIGN
	ADJACENT RES SIDEWALK		STOP SIGN
	CONCRETE HOUSEWALK		DENOTES LENGTH IN FEET
	VALLEY GUTTER		PLACE AC, MISC AREA
	MAIL BOX		DIRECTION OF FLOW
	CONCRETE DRIVEWAY		GRADE TO FLOW
	5" AC DRIVEWAY		CHAIN LINK FENCE
	5" DIRT DRIVEWAY		WIRE FENCE
	MODIFY CONC DRIVEWAY		DAYLIGHT LIMIT
"W"	DENOTES WIDTH		GP AND LP ROADWAY EXC
"D"	DENOTES MATCH DISTANCE		REFERENCE TO STATE STANDARD PLAN DETAIL
"S"	DENOTES SKEW ANGLE		REFERENCE TO DETAIL ON DWG. OR DETAIL TITLE
	DRAINAGE INLET		SECTION CUT
	DRAINAGE OUTLET		EXISTING RIGHT-OF-WAY
	INSTALL MANHOLE		PROPOSED RIGHT-OF-WAY
	INSTALL WATER VALVE		DEMO ROADWAY
	ADJUST MANHOLE		CONCRETE
	ADJUST WATER VALVE		NEW HMA
	RADIUS		EXIST OG
"R"	DENOTES RADIUS IN FEET		COMPACTED EARTH
	GRIND PAVEMENT		AGGREGATE BASE
	OVERLAY PAVEMENT		

GENERAL NOTES

- THE DIMENSIONS SHOWN ARE SUBJECT TO THE TOLERANCES SPECIFIED IN THE CALTRANS STANDARD SPECIFICATIONS AND SPECIAL PROVISIONS THERETO.
- PROJECT WILL BE CONSTRUCTED IN ACCORDANCE WITH CALTRANS STANDARD SPECIFICATIONS - 2015 EDITION
- SAW-CUT AND DEMOLITION AREAS ARE TO BE VERIFIED BY THE ENGINEER PRIOR TO DEMOLITION. ANY ADDITIONAL DEMOLITION SHALL BE APPROVED BY THE ENGINEER.
- THE CONTRACTOR SHALL COORDINATE WITH ANY UTILITY COMPANIES THAT REQUIRE THEIR FACILITIES TO BE ADJUSTED TO GRADE. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING THE SITE AND IDENTIFYING ANY UTILITIES THAT MAY REQUIRE ADJUSTMENT. ANY UNFORESEEN DELAY SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY IN WRITING.
- THE CONTRACTOR SHALL RECONSTRUCT EACH SITE WITHIN 7 WORKING DAYS AFTER DEMOLITION.
- APPLY TACK COAT TO EXISTING AC PRIOR TO PAVING, INCLUDING VERTICAL JOINTS.
- ALL STORM DRAINAGE FACILITIES ARE TO BE COMPLETED PRIOR TO START OF STREET WORK AND IN ACCORDANCE WITH FRESNO METROPOLITAN FLOOD CONTROL DISTRICT STANDARD SPECIFICATIONS AND STANDARD PLANS, APRIL 1, 2011 EDITION, AND REVISIONS THEREOF.
- CONTRACTOR WILL NOTIFY F.M.F.C.D. CONSTRUCTION MANAGER, AT (559) 456-3292, 48 HOURS PRIOR TO CONSTRUCTION RELATING TO OR CONNECTING ANY STORM DRAIN FACILITY.
- BASIS OF VERTICAL CONTROL: CITY OF FRESNO BENCHMARK 646, A BRASS CAP MONUMENT ON A CONCRETE IRRIGATION STRUCTURE, IN THE SOUTHWEST QUADRANT OF OLIVE AVENUE AND FOWLER AVENUE, HAS AN NGVD29 ELEVATION OF 335.069 FEET PER CITY OF FRESNO BENCHMARK RECORDS.
- BASIS OF BEARINGS: THE WEST LINE OF THE SOUTHWEST QUARTER OF SECTION 34, TOWNSHIP 13 SOUTH, RANGE 21 EAST, MOUNT DIABLO BASE AND MERIDIAN, IS ASSUMED TO BEAR N00°23'17"W.
- ORIGINAL SURVEY WAS PERFORMED IN JULY 2019 AND UPDATED DECEMBER 2020.

EXISTING IMPROVEMENTS

	TYPE "A" CURB		RES SIDEWALK		WIRE FENCE
	TYPE "B3" CURB		VALLEY GUTTER		CHAIN LINK FENCE
	TYPE "FA" CURB		SURVEY MON		METAL FENCE
	COMM SIDEWALK		MAIL BOX		WOOD FENCE
					PVC FENCE
					MISC LANDSCAPING

UTILITY NOTES

- LOCATIONS OF EXISTING UNDERGROUND FACILITIES ARE APPROXIMATE. EXACT LOCATIONS AND DEPTHS ARE UNKNOWN. FIELD LOCATE PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING WATER MAIN VALVES (CAP & LID) WILL BE ADJUSTED TO GRADE BY CITY OF FRESNO FOR COORDINATION WITH WATER DIVISION. CALL 559-621-6360 (A MINIMUM OF 2 WEEKS ADVANCE NOTICE IS NECESSARY).

ALL SEWER MANHOLES AFFECTED BY THIS PROJECT WILL BE ADJUSTED TO FINISH GRADE AS NECESSARY BY CITY OF FRESNO. CONTRACTOR SHALL COORDINATE WITH CITY OF FRESNO'S WASTEWATER MANAGEMENT DIVISION AT 559-621-1270 (A MINIMUM OF 2 WEEKS ADVANCE NOTICE IS NECESSARY).

CALL UNDERGROUND SERVICE ALERT (USA) 811

UTILITY SYMBOLS

PROPOSED	EXISTING		
	NEW MH-STORM DRAIN		STREET LIGHT POLE
	FMFCD TYPE "D" INLET		EXISTING SIGNAL POLE
	FMFCD DOUBLE TYPE "D" INLET		STORM DRAIN DROP INLET
	UG STORM DRAIN LINE		STORM DRAIN GRATE
	TEMPORARY "E" INLET		DOWN DRAIN
	STAND PIPE		UG WATER LINE
	IRR UG PIPE FLOW		OVERHEAD ELEC LINE
	IRR UG PIPE CAPPED		JOINT POLE
	IRR VALVE SCREW GATE		JOINT TRANSFORMER POLE
	IRR TOP GATE VALVE		TRANSFORMER POLE
	IRR PIPE 12" VERTICAL		GUY POLE
	VENT PIPE		GUY WIRE
	IRR VALVE - BUBBLER		UG TREATED WATER LINE
	IRR VALVE, DRIP SYSTEM		UG STORM DRAIN LINE
	IRR PIPE 4" VERT OUTLET		UG ELECTRIC LINE
	WATER WELL		UG IRRIGATION LINE
	WATER WELL PUMP		UG GAS LINE
	WATER STORAGE TANK		UG SANITARY SEWER
	FIRE HYDRANT		UG TELEPHONE LINE
	IRR 2"-4" PIPE RISER		
	MH-ELECTRICAL		
	MH-FO/CABLE		
	MH-GAS		
	MH-SANITARY SWR		
	MH-TELEPHONE		
	MH-WATER		
	ELEC METER		
	ELECTRIC VAULT		
	CHRISTY BOX		
	TELEPHONE VAULT		
	GAS METER		
	GAS VALVE		
	WATER METER		
	WATER VALVE		
	HOSE BIB		

DESIGNED: D. KWAN	DATE: 1/2/24	RESIDENT ENGINEER	DATE
DRAWN: E. CARMONA	DATE: 1/2/24		
CHECKED: S. ARTAL	DATE: 1/2/24		

SCALE: NOT TO SCALE

SUPERVISING ENGINEER

No. C76724
Exp. 12/31/24
CIVIL ENGINEER
STATE OF CALIFORNIA

PROJECT

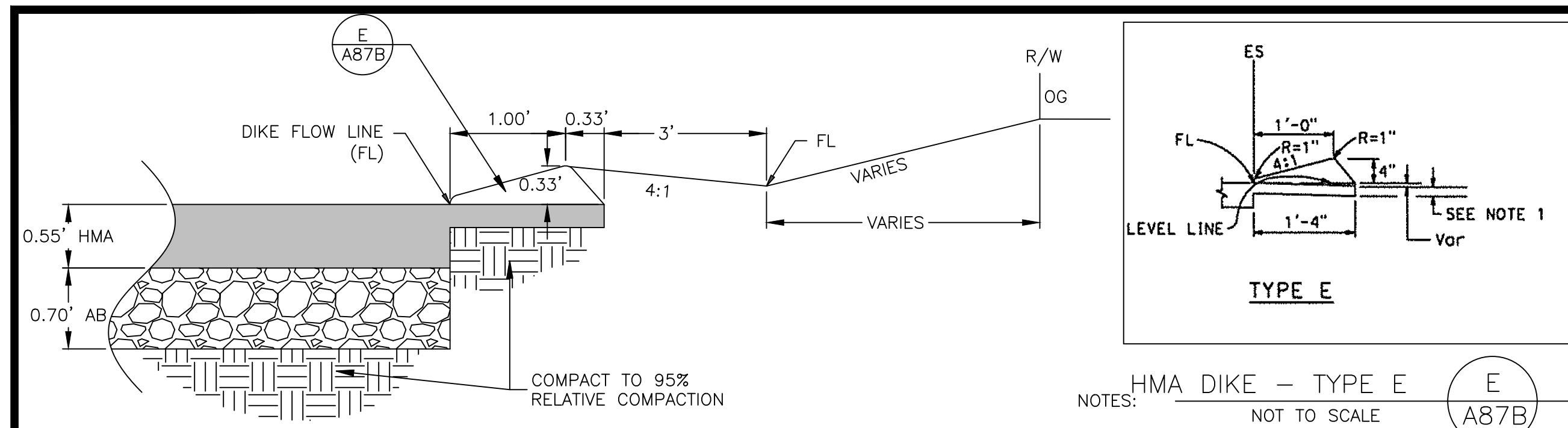
FOWLER AVE & OLIVE AVE
INTERSECTION IMPROVEMENTS

ROAD NO. D0600 BRIDGE NO. N/A

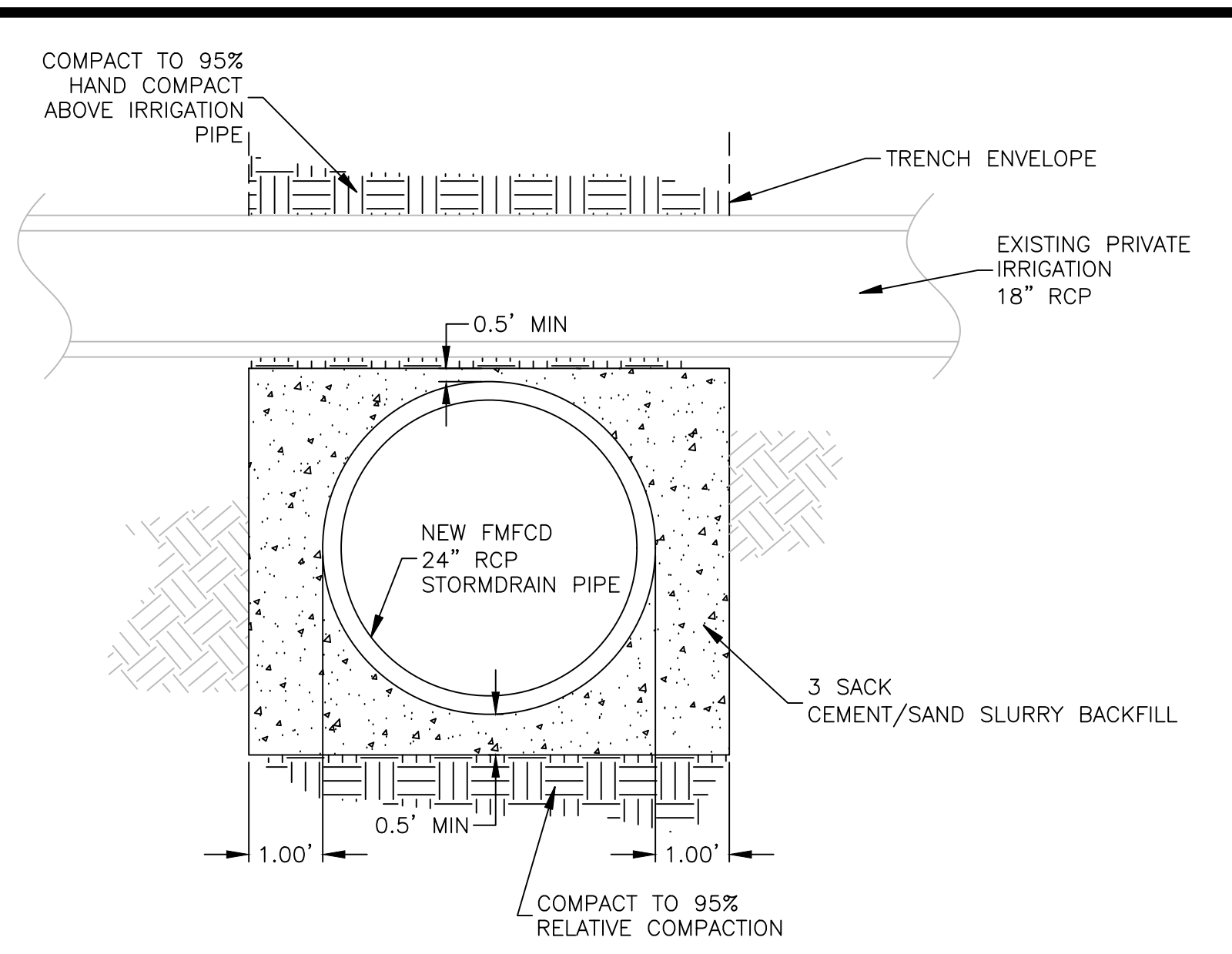
DEPARTMENT OF PUBLIC WORKS AND PLANNING

LEGEND

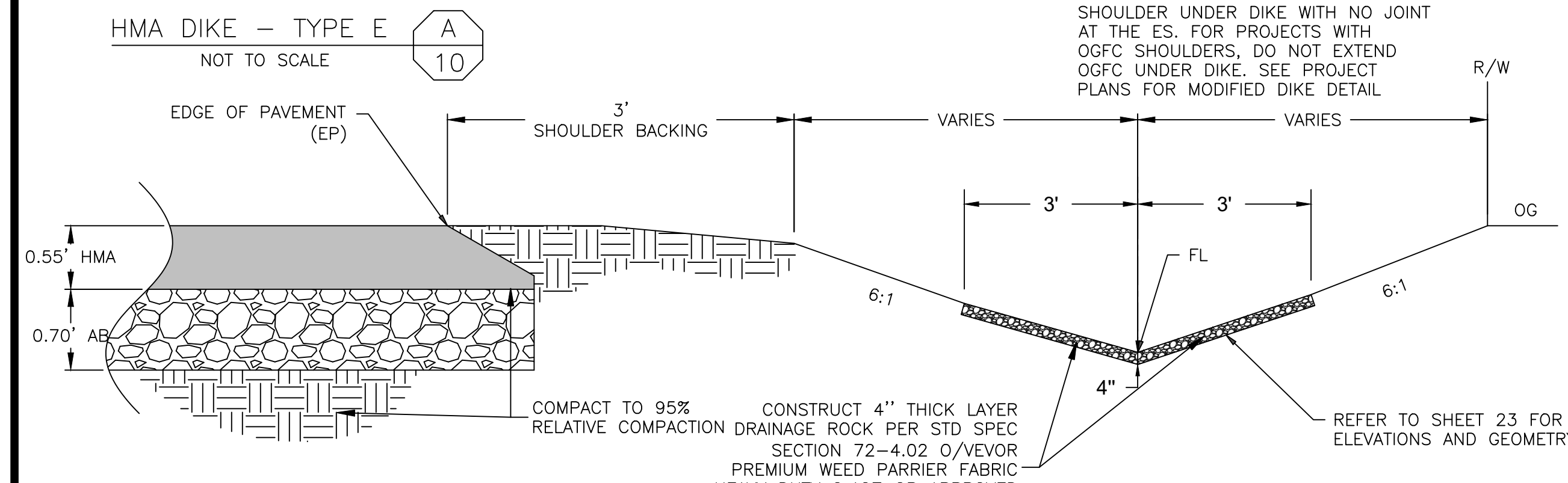
DRAWING NO. 11302 SHEET NO. 2A TOTAL 32



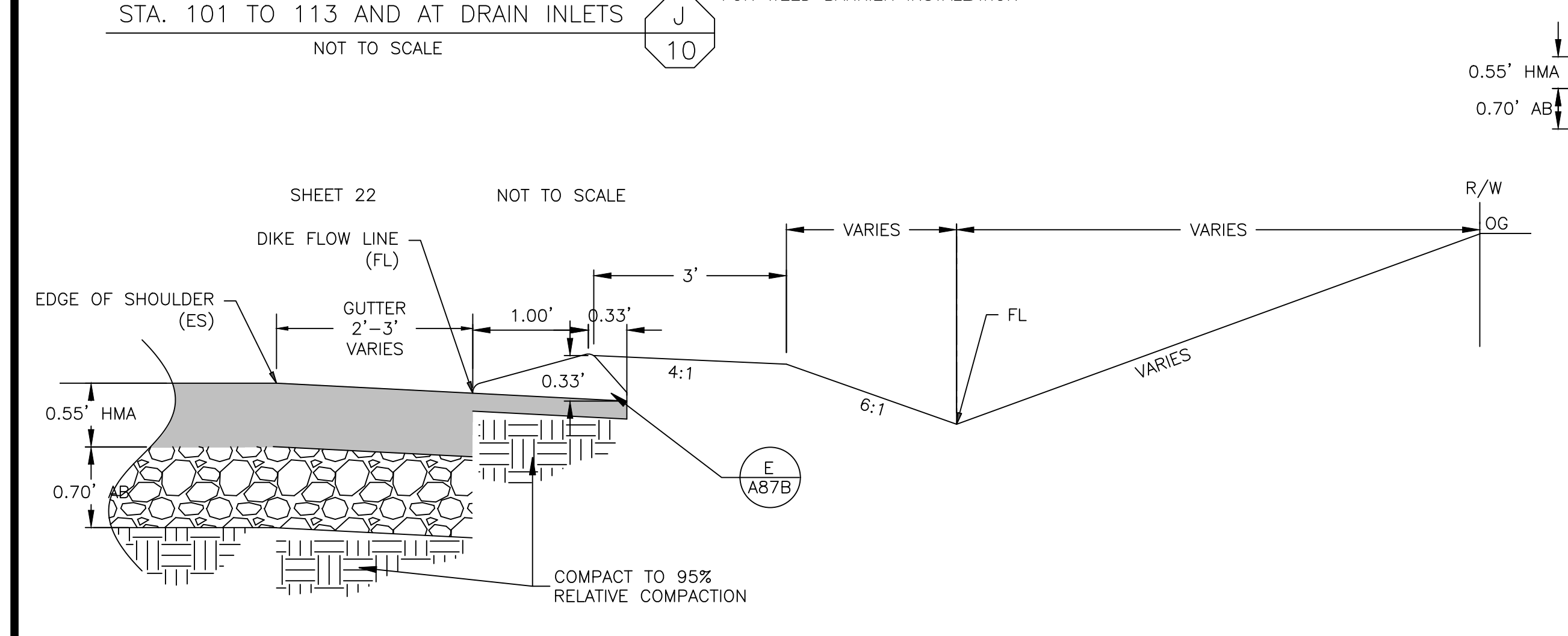
HMA DIKE - TYPE E
 NOTES:
 NOT TO SCALE
 1. FOR HMA SHOULDERS ONLY, EXTEND TOP LAYER OF HMA PLACED ON THE SHOULDER UNDER DIKE WITH NO JOINT AT THE ES. FOR PROJECTS WITH OGFC SHOULDERS, DO NOT EXTEND OGFC UNDER DIKE. SEE PROJECT PLANS FOR MODIFIED DIKE DETAIL



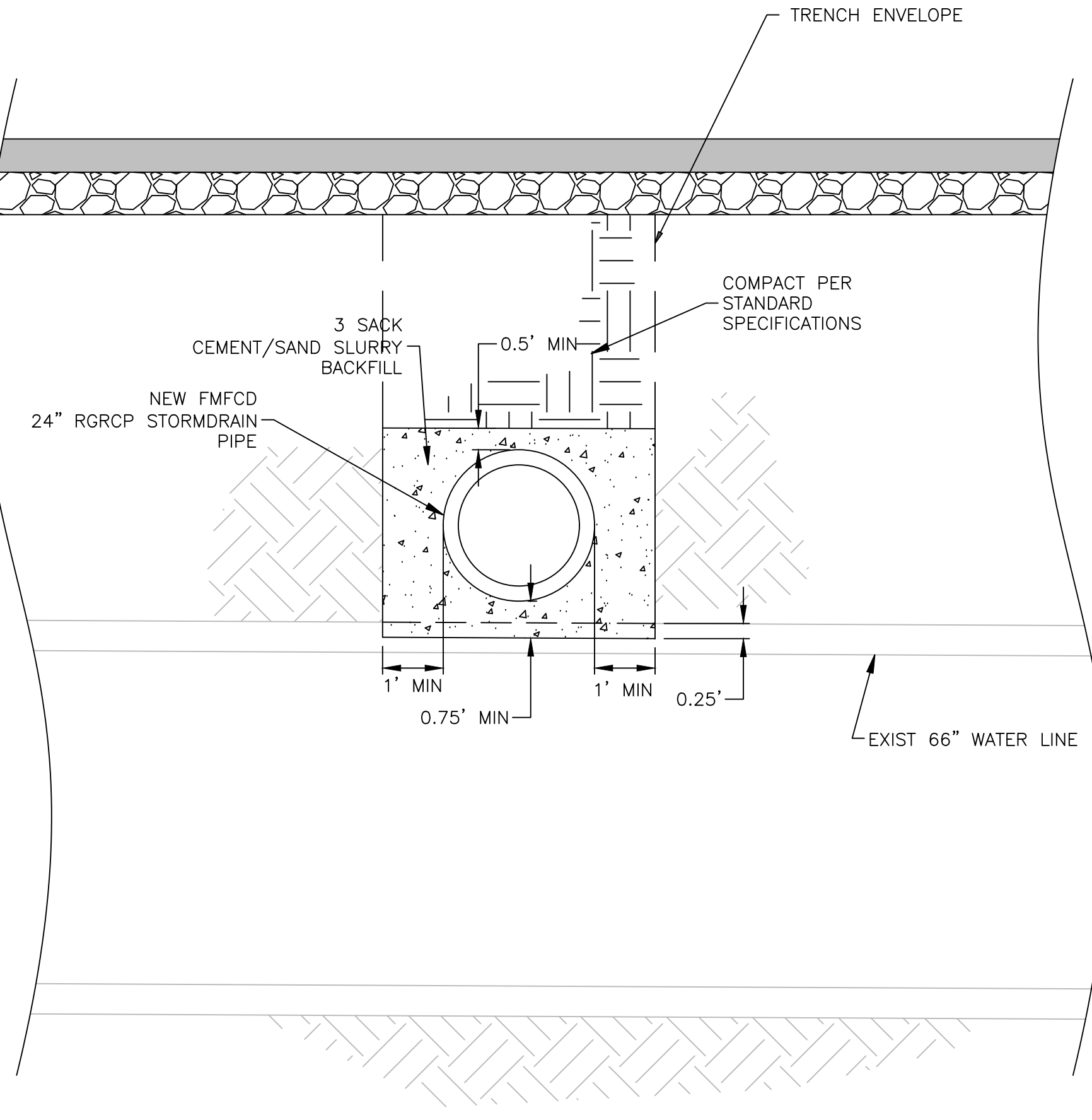
NEW RCP & IRRIGATION CROSSING DETAIL
 SHEET 19
 SHEET 24
 NOT TO SCALE



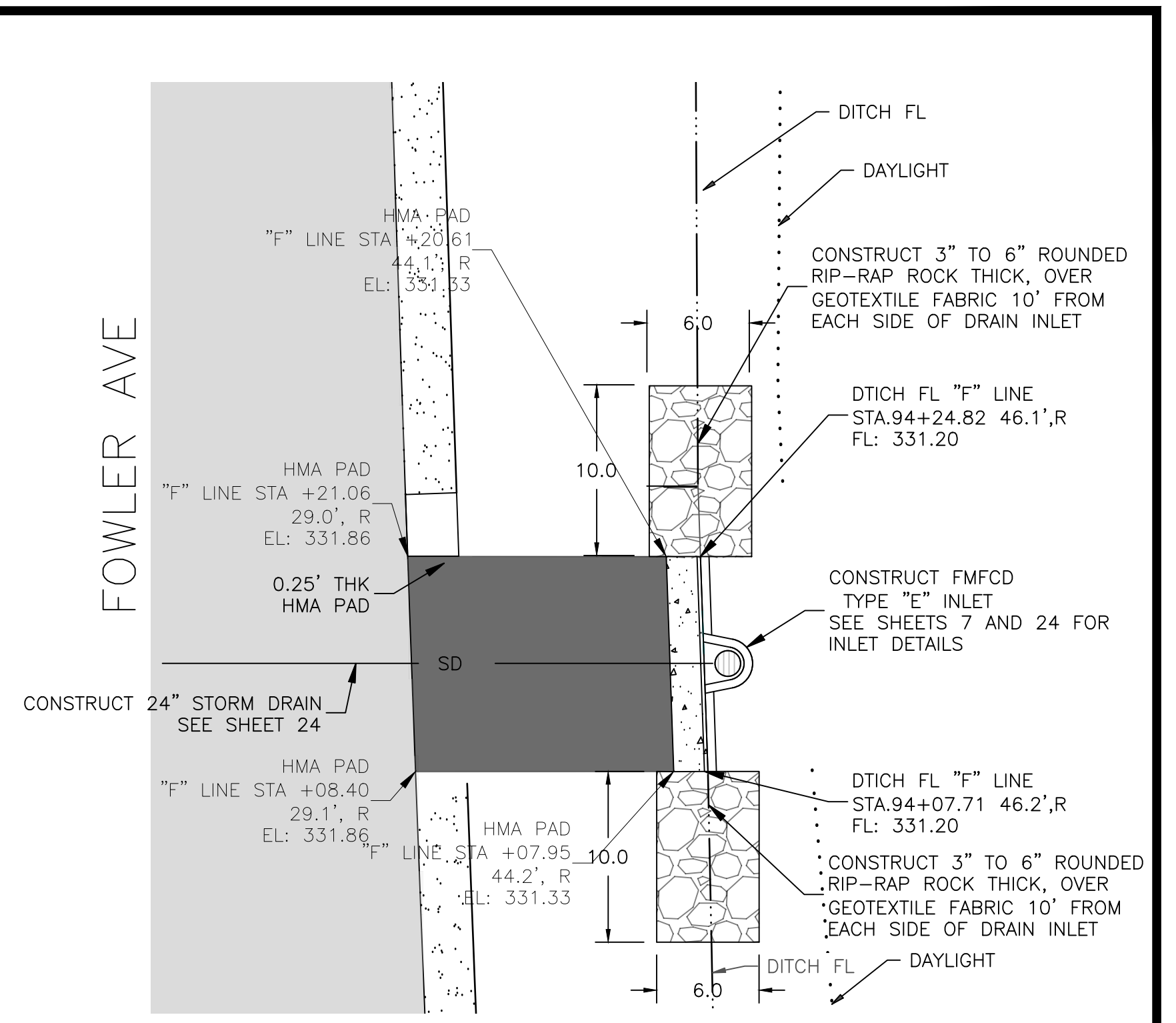
TYPICAL DITCH DETAIL FOWLER EAST SIDE
 STA. 101 TO 113 AND AT DRAIN INLETS
 NOT TO SCALE



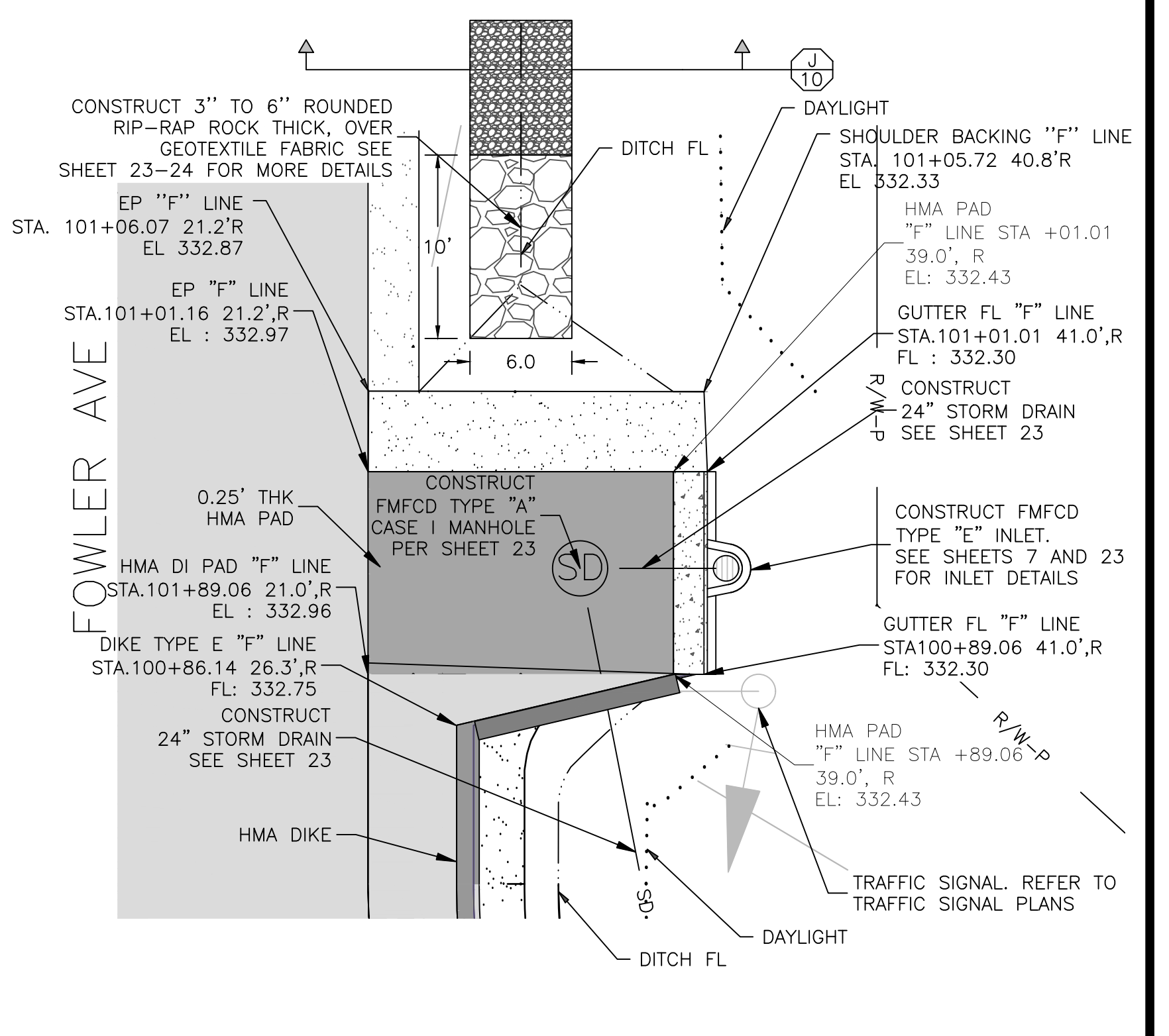
TYPICAL DITCH DETAIL INTERSECTION CURVES
 SHEET 22
 NOT TO SCALE



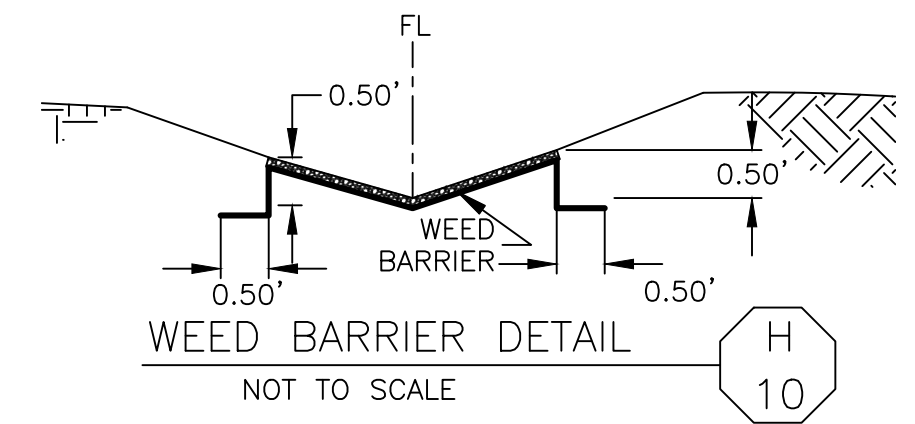
NEW RCP & WATER CROSSING DETAIL
 SHEET 23
 NOT TO SCALE



FMFCD TYPE "E" INLET PAD DETAIL
 SHEET 24
 NOT TO SCALE





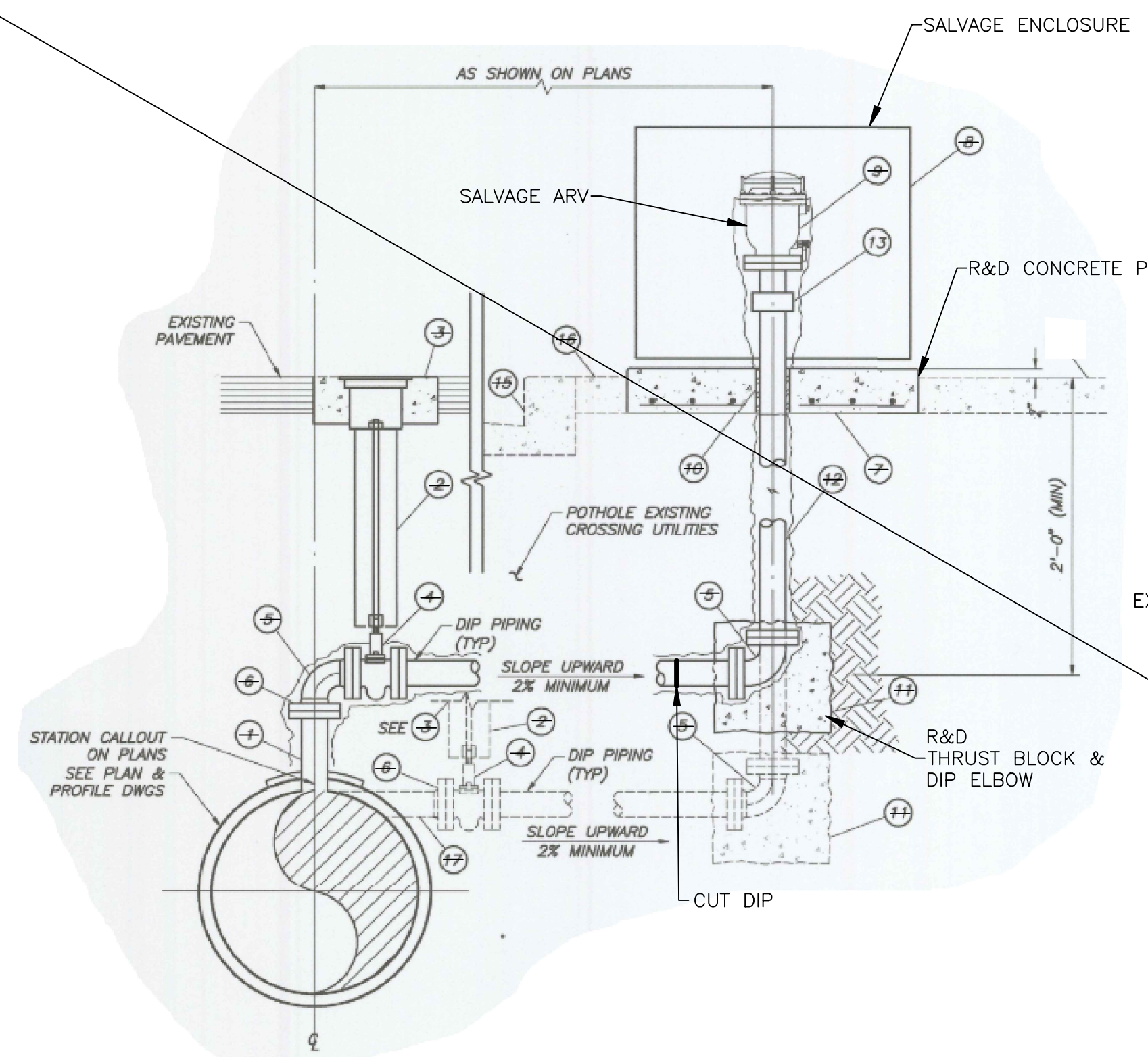
FMFCD TYPE "E" INLET PAD DETAIL
 SHEET 23
 NOT TO SCALE



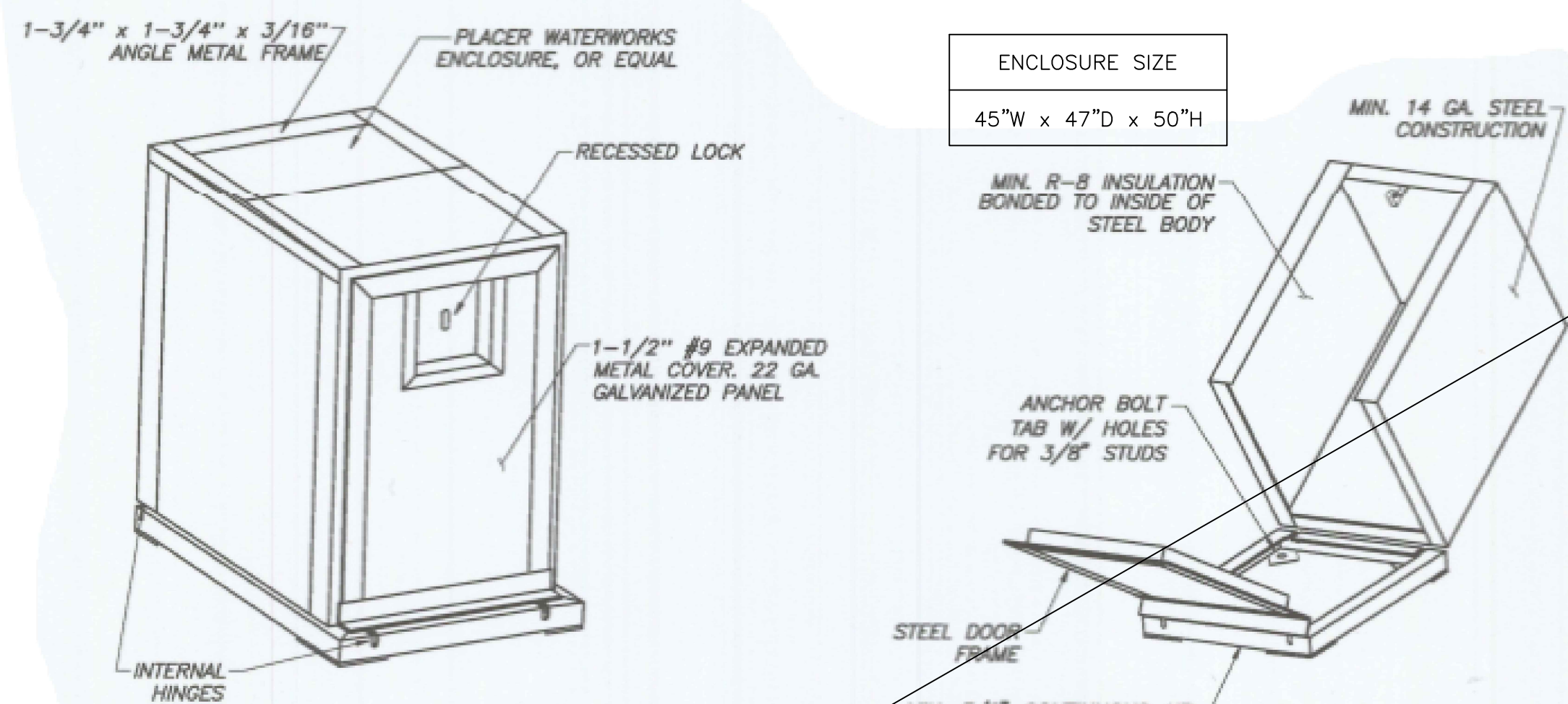
WEED BARRIER DETAIL
 NOT TO SCALE

FMFCD CONTRACT BQ-20-2

DESIGNED: D. KWAN		DATE: 1/2/24	RECORD DRAWING		SCALE		 SUPERVISING ENGINEER	PROJECT			DEPARTMENT OF PUBLIC WORKS AND PLANNING			
DRAWN: E. CARMONA		DATE: 1/2/24	RESIDENT ENGINEER		NOT TO SCALE			FOWLER AVE & OLIVE AVE INTERSECTION IMPROVEMENTS			DRAINAGE DETAILS			
CHECKED: S. ARTAL		DATE: 1/2/24	DATE					ROAD NO. D0600			BRIDGE NO. N/A		DRAWING NO. 11302	
													SHEET NO. 10A	
FOR RIGHT OF WAY DATA AND ACCURATE ACCESS DETERMINATION, SEE DOCUMENTS IN THE DEPARTMENT OF PUBLIC WORKS AND PLANNING.												TOTAL 32		



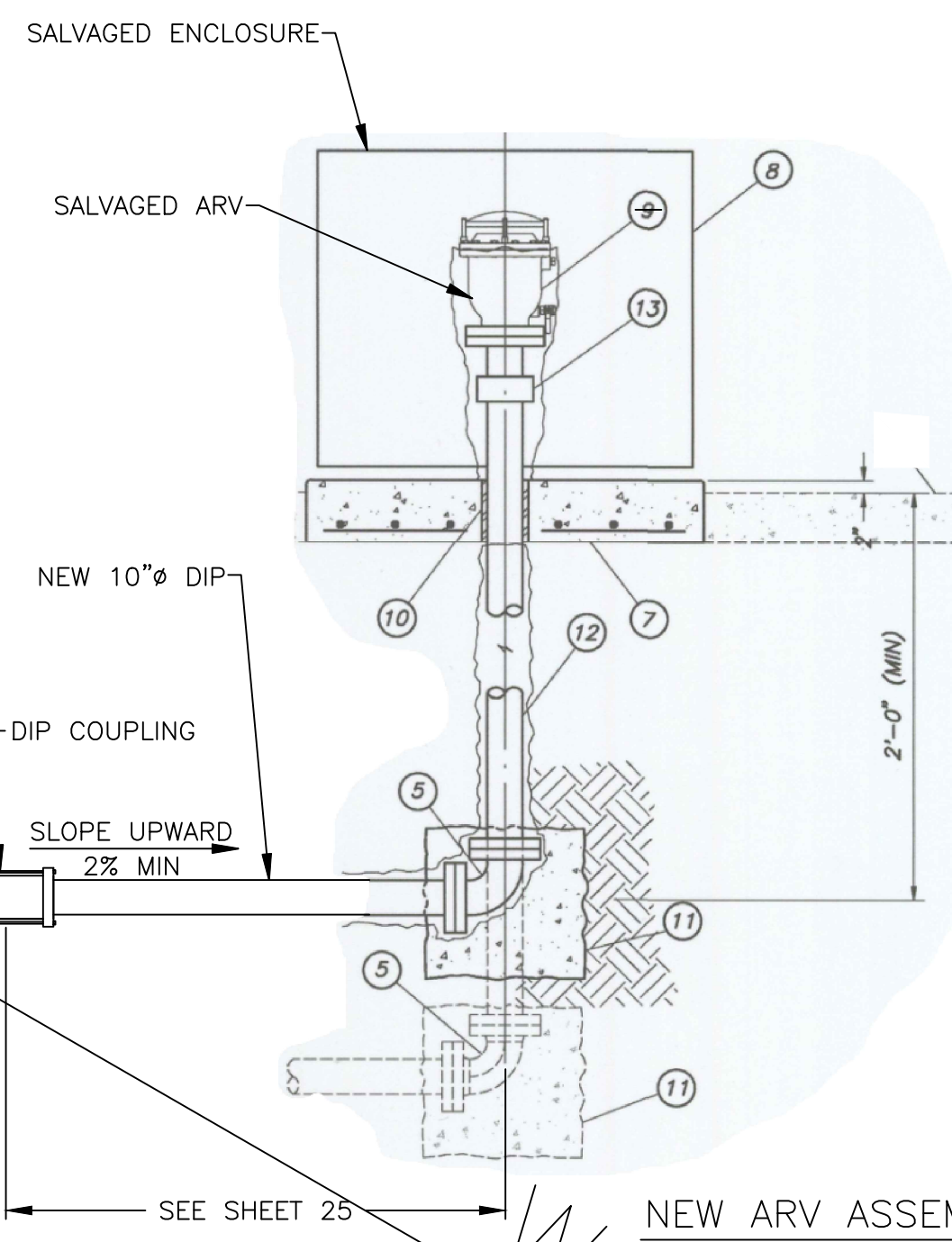
ARV ASSEMBLY RELOCATION (NEAR STA. 98+50) **H 11**



NOTES:

- CLOSURE SHALL NOT ENCRDACH ON TO PRIVATE PROPERTY, ADA PATH OF TRAVEL, OR VEHICLE TRAFFIC WHEN OPEN.
- PROVIDE 4' MINIMUM SIDEWALK CLEARANCE ADJACENT TO AR/VB FOR ADA ACCESSIBILITY REQUIREMENTS.
- ALL SURFACES SHALL BE ABRASIVE BLASTED (SSPC SP-5 WHITE METAL BLAST) AND POWDER COATED WITH 2-3 MILS ZINC RICH PRIMER WITH 4-5 MILS ANTI-GRAFFITI CHEMISTRY TOP COAT (DFT 6-8 MILS).
- VALVE ASSEMBLY AND METAL HOUSING SHALL BE LOCATED IN MEDIAN ISLANDS, LANDSCAPE AREAS, OR OUTSIDE OF SIDEWALK AREA WHERE POSSIBLE. VALVE ASSEMBLY MUST BE IN PUBLIC RIGHT-OF-WAY OR PUBLIC UTILITY EASEMENT.
- ENCLOSURE SHALL INCLUDE PROVISIONS FOR A RECESSED LOCK.
- ENCLOSURE SHALL MOUNT SECURELY TO CONCRETE PAD USING INTEGRAL BOLT TABS. ONE ANCHOR IN EACH CORNER (4 TOTAL)

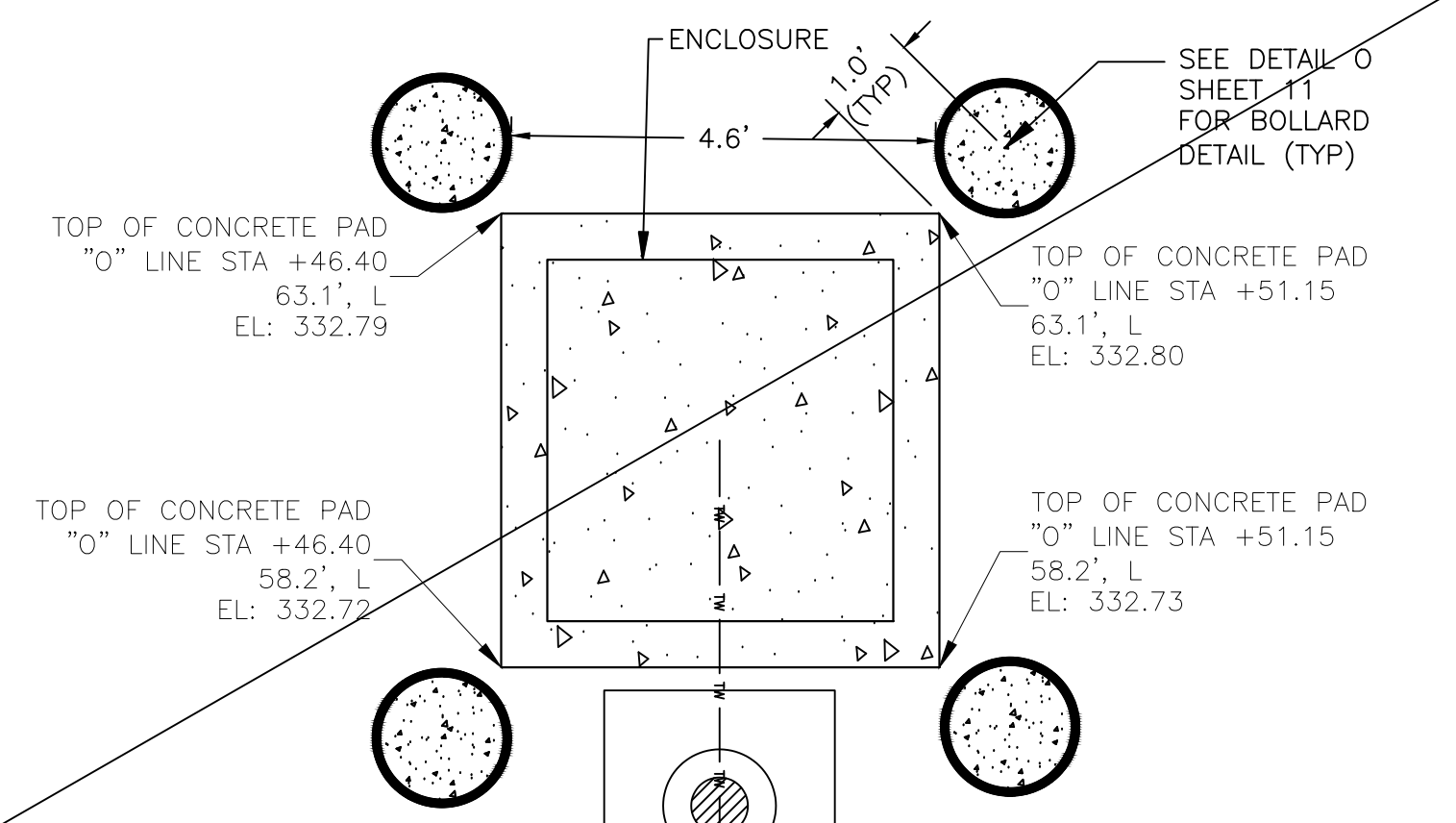
ENCLOSURE DETAIL **L 11**



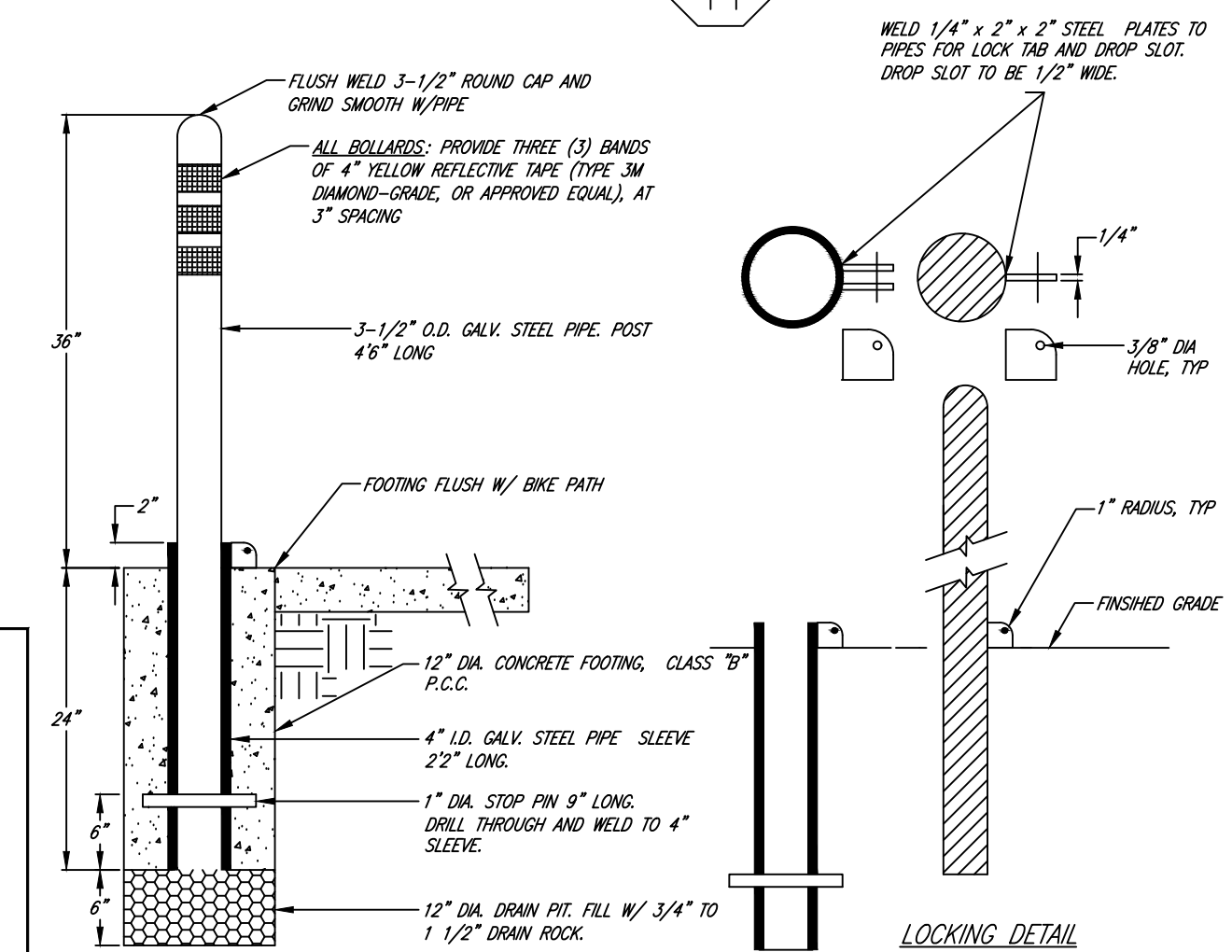
NEW ARV ASSEMBLY **J 11**

LEGEND:

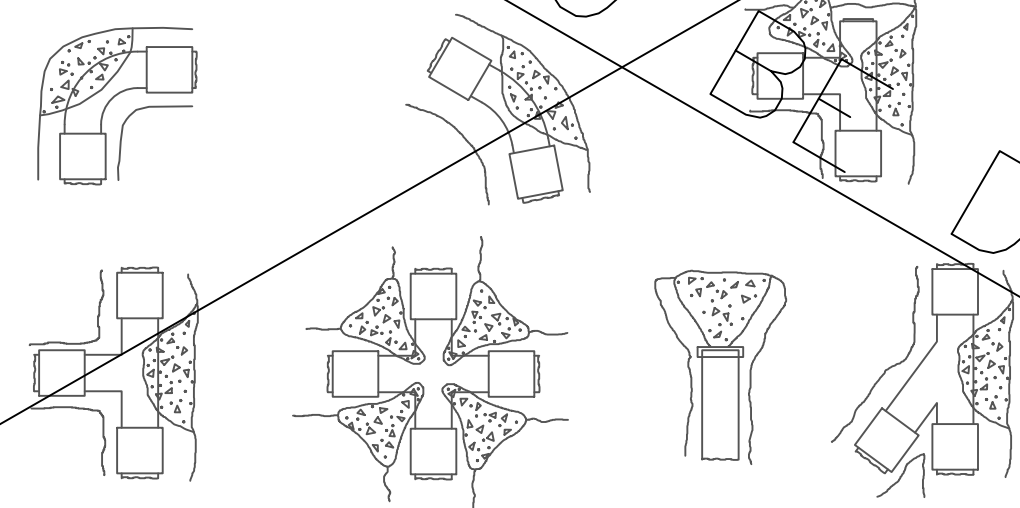
- FLANGED OUTLET, HEIGHT AS REQUIRED TO CLEAR EXISTING UTILITIES LOCATED BETWEEN WATER MAIN AND THE ABOVE GRADE AIR VALVE, SEE NOTE 4.
- VALVE BOX INSTALLATION FOR BURIED VALVE, PER DETAIL **E 44**
- INSTALL CONCRETE COLLAR IN NON-TRAFFIC AREAS
- FLANGED OR FLG x MJ GATE VALVE
- 90° FLANGED OR RESTRAINED MJ ELBOW WHERE VENT PIPING CROSSES EXISTING UTILITIES, OUTLET ELEVATION MAY REQUIRE ADJUSTMENT BASED ON UTILITY POTHOLING
- INSULATING FLANGE KIT **3 50**
- 3'-4" x 3'-4" x 6" THICK CONCRETE PAD W/ #4 @ 12" EACH WAY, SEE NOTE 2 & 3
- AIR VALVE ENCLOSURE FOR ARV ASSEMBLY PER DETAIL **L 11**
- COMBINATION AIR RELEASE VACUUM BREAKER (ARV) VALVE. SEE SIZING TABLE
- FLOOR AND SLAB PENETRATION, EXTEND COATING FOR BURIED SURFACE ABOVE GRADE, PIPE O.D. + 1". FILL ANNULUS WITH SAND
- CONCRETE ANCHOR BLOCK, 24" SQ. MIN BEARING AREA
- DIP WITH RESTRAINED JOINTS AND CEMENT MORTAR LINING W/ POLYETHYLENE ENCASEMENT
- RIGID GROOVED COUPLING
- REMOVE AND REPLACE EXISTING SIDEWALK
- EXISTING FACE OF CURB
- EXISTING SIDEWALK OR PLANTER



ARV ENCLOSURE PAD **K 11**



BOLLARD DETAIL **O 11**



AREA OF CONCRETE BEARING AGAINST UNDISTURBED SOIL SQUARE FEET

PIPE SIZE	DEAD END OR TEE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
6	1.8	2.5	1.4	0.7	0.3
8	3.1	4.4	2.4	1.2	0.6
10	4.9	6.9	3.8	1.9	1.0
12	7.0	10.0	5.4	2.8	1.4
14	9.5	13.6	7.4	3.8	1.9
16	12	17.2	9.4	4.8	2.4

BASED ON 2000 P.S.F. SOIL BEARING CAPACITY AND 125 P.S.I. STATIC PRESSURE - SPECIAL DESIGN REQUIRED FOR SOIL LESS THAN 2000 P.S.F. CONCRETE TO HAVE ULTIMATE STRENGTH OF 2500 P.S.I. @ 28 DAYS.

TABLE MUST BE RECALCULATED FOR EACH PROJECT BASED ON ASAE STANDARD S376-1

THRUST BLOCKS

DUCTILE IRON TEE RESTRAINTS

REV. & REV. MAR. 2006

CITY OF FRESNO

W-34

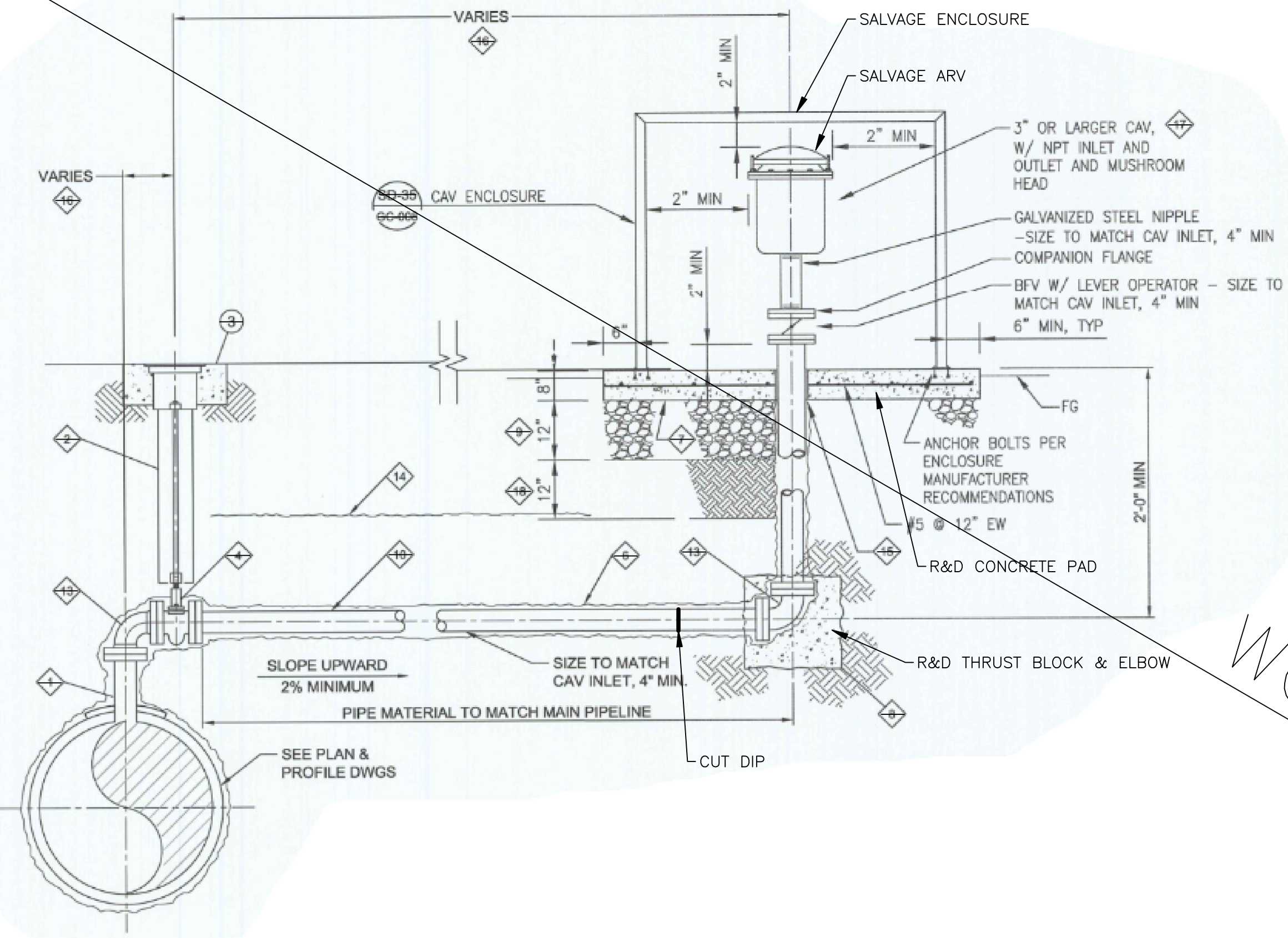
BRANCH SIZE	RUN SIZE									
	4	6	8	10	12	14	16	18	20	24
4	*	*	*	*	*	*	*	*	*	*
6	*	*	*	*	*	*	*	*	*	*
8	*	*	*	*	*	*	*	*	*	*
10	*	*	*	*	*	*	*	*	*	*
12	*	*	*	*	1.3	*	*	*	*	*
14	*	*	*	*	*	2.4	1.3	*	*	*
16	*	*	*	*	*	*	3.6	2.5	1.4	*
18	*	*	*	*	*	*	*	4.7	3.7	1.6
20	*	*	*	*	*	*	*	*	5.8	3.9
24	*	*	*	*	*	*	*	*	*	7.9

* FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

RESTRAINED LENGTHS, "L" (IN FEET)

SPECIFICATIONS:

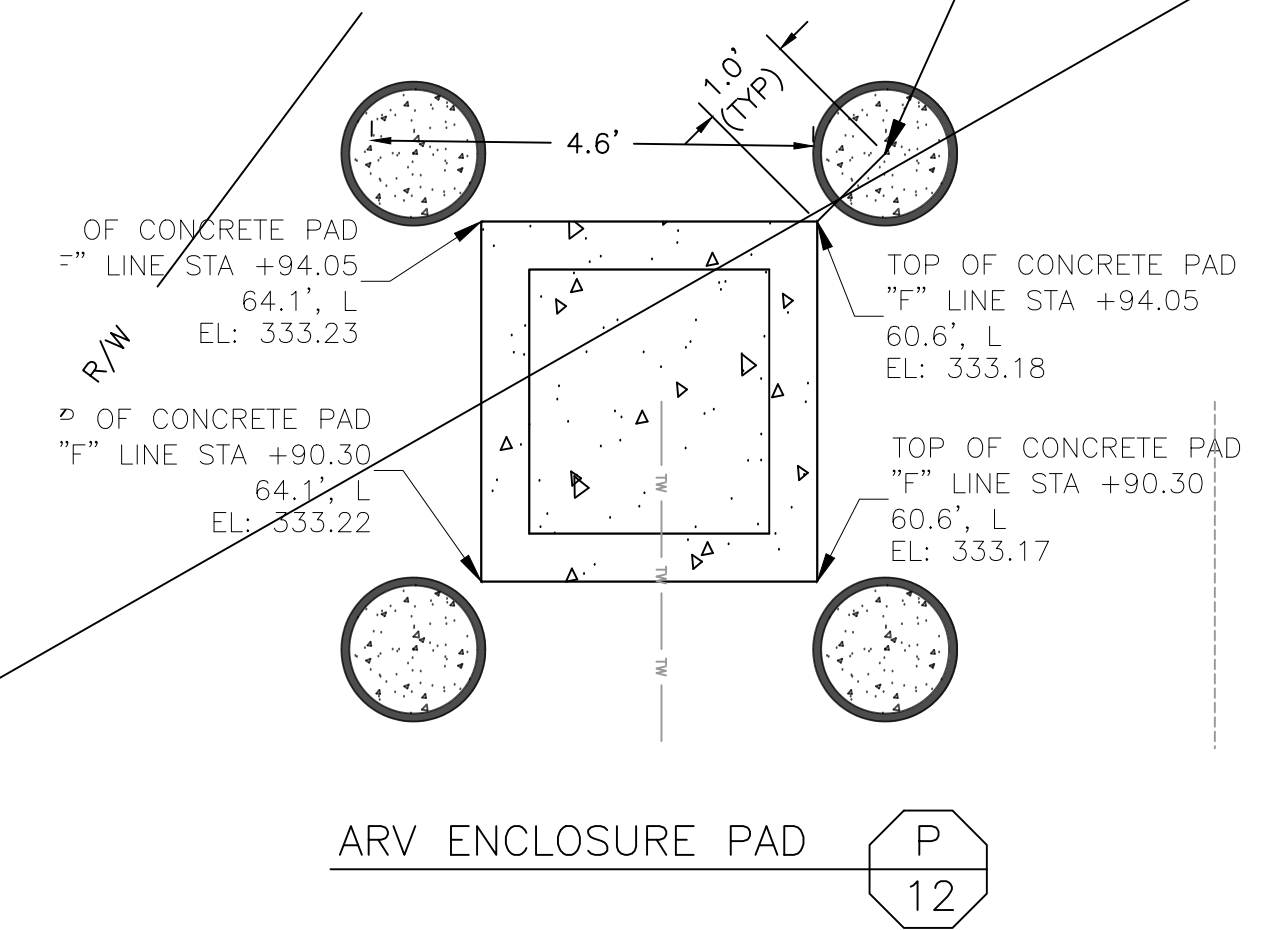
- RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE WHEN LESS THAN A FULL 18' LENGTH OF PIPE IS INSTALLED ON EACH SIDE OF THE RUN.
- ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER CITY SPECIFICATION.
- FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION 22 OF GENERAL CONDITIONS.



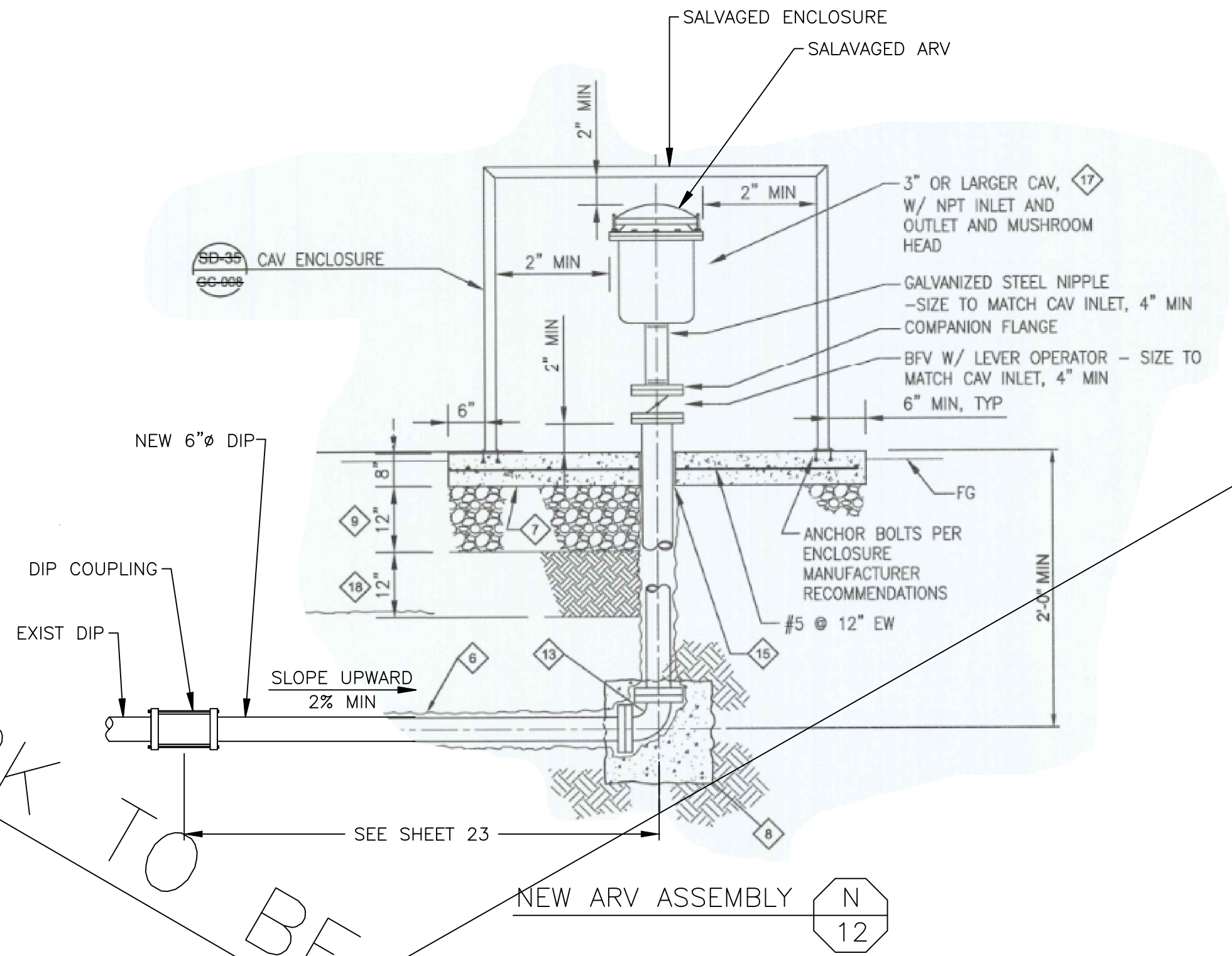
EAST ARV ASSEMBLY (NEAR STA. 99+) M 12

- KEY NOTES:**
- 1 FLG OUTLET
 - 2 VALVE BOX INSTALLATION FOR BURIED VALVE.
 - 3 VALVE LID AND PAVING RING PER CITY STD DWG W-7
 - 4 FLANGED RESILIENT WEDGE GATE VALVE.
 - 5 30° FLANGED ELBOW.
 - 6 COATING AROUND PIPE, VALVES AND FLANGES. MATCH MAIN.
 - 7 FLOOR AND SLAB PENETRATION. EXTEND COATING FOR BURIED SERVICE ABOVE GRADE
 - 8 CONCRETE ANCHOR BLOCK, 24" CUBED.
 - 9 DRAIN ROCK.
 - 10 DIP WITH RESTRAINED JOINTS AND POLYETHYLENE ENCASUREMENT OR WSP WITH LINING AND COATING PER SECTION 09970. MATCH MAIN PIPE MATERIAL. SIZE PER PLANS, 4" MIN
 - 11 36" DIA TRAFFIC RATED MH COVER W/ FLAT TOP MH RISER PER
 - 12 4"x2" REDUCING FLANGE AND 2" Ø GALVANIZED STEEL NIPPLE
 - 13 90° FLANGED ELBOW.
 - 14 WARNING TAPE.
 - 15 SLEEVE THROUGH CONC PAD, PIPE OD +1" MIN, FILL ANNULUS WITH SAND.
 - 16 STATION LOCATIONS SHOWN ON DRAWINGS ARE APPROX. INSTALL AT HIGH POINT AND COORDINATE POINT NEAREST TO THE STATION SHOWN.
 - 17 CONTRACTOR MAY OPT TO INCREASE SIZE OF CAV'S FOR UNIFORMITY.
 - 18 NATIVE MATERIAL COMPACTED TO 95% RELATIVE COMPACTION.

- KEY NOTES:**
- 1 ALL SURFACES SHALL BE ABRASIVE BLASTED (SSPC SP-5 WHITE METAL BLAST) AND POWDER COATED WITH 2-3 MILS ZINC RICH PRIMER WITH 4-5 MILS ANTI-GRAVITY CHEMISTRY TOP COAT (DFT 6-8 MILS).
 - 2 ENCLOSURE SHALL MOUNT SECURELY TO CONCRETE PAD USING INTEGRAL BOLT TABS.
 - 3 ENCLOSURE SHALL INCLUDE A RECESSED LOCK.
 - 4 SIZE BOX APPROPRIATELY PER TABLE.
 - 5 PETROLEUM OR WAX TAPE COATING AS SPECIFIED IN SECTION 09970.

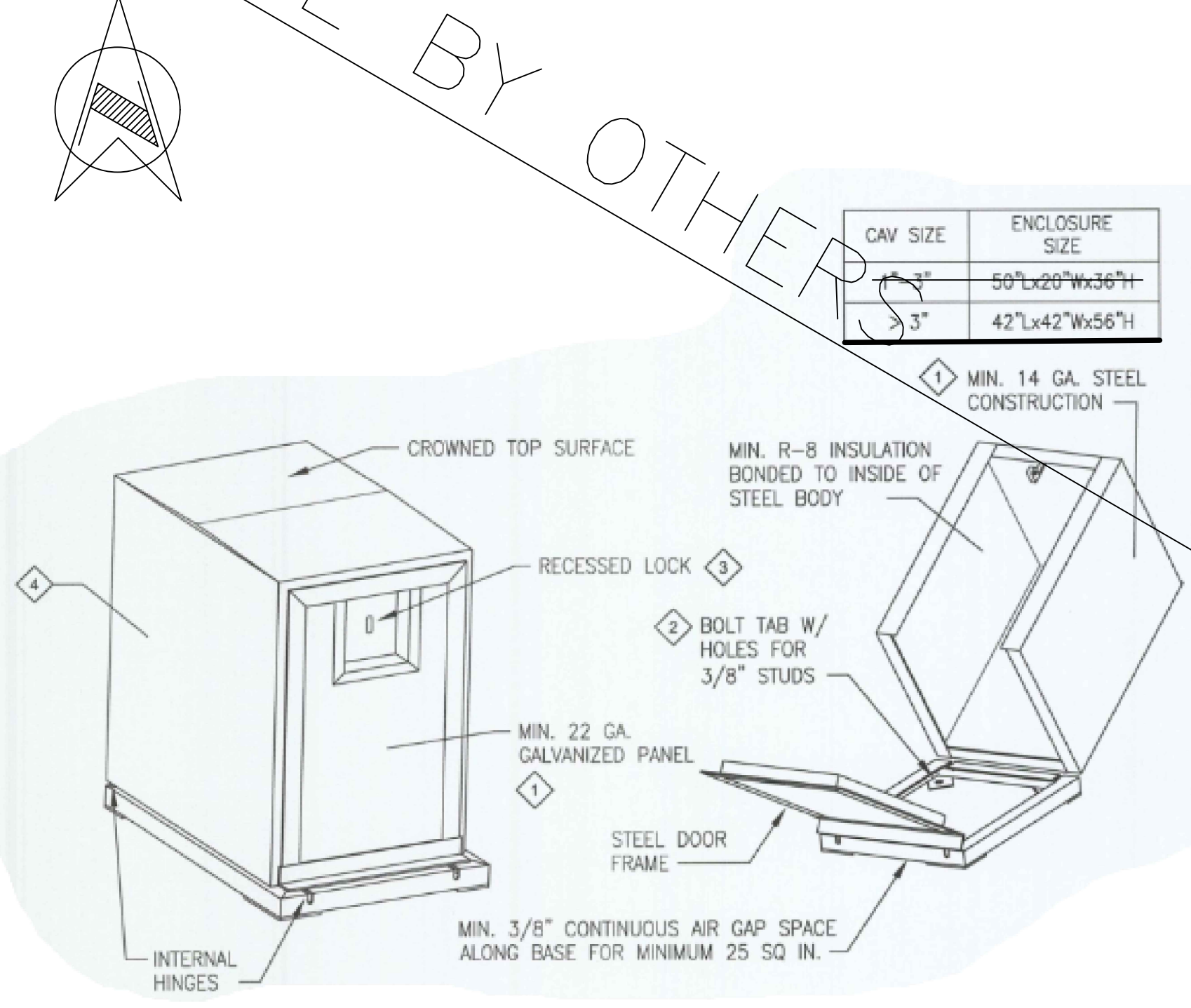


ARV ENCLOSURE PAD P 12

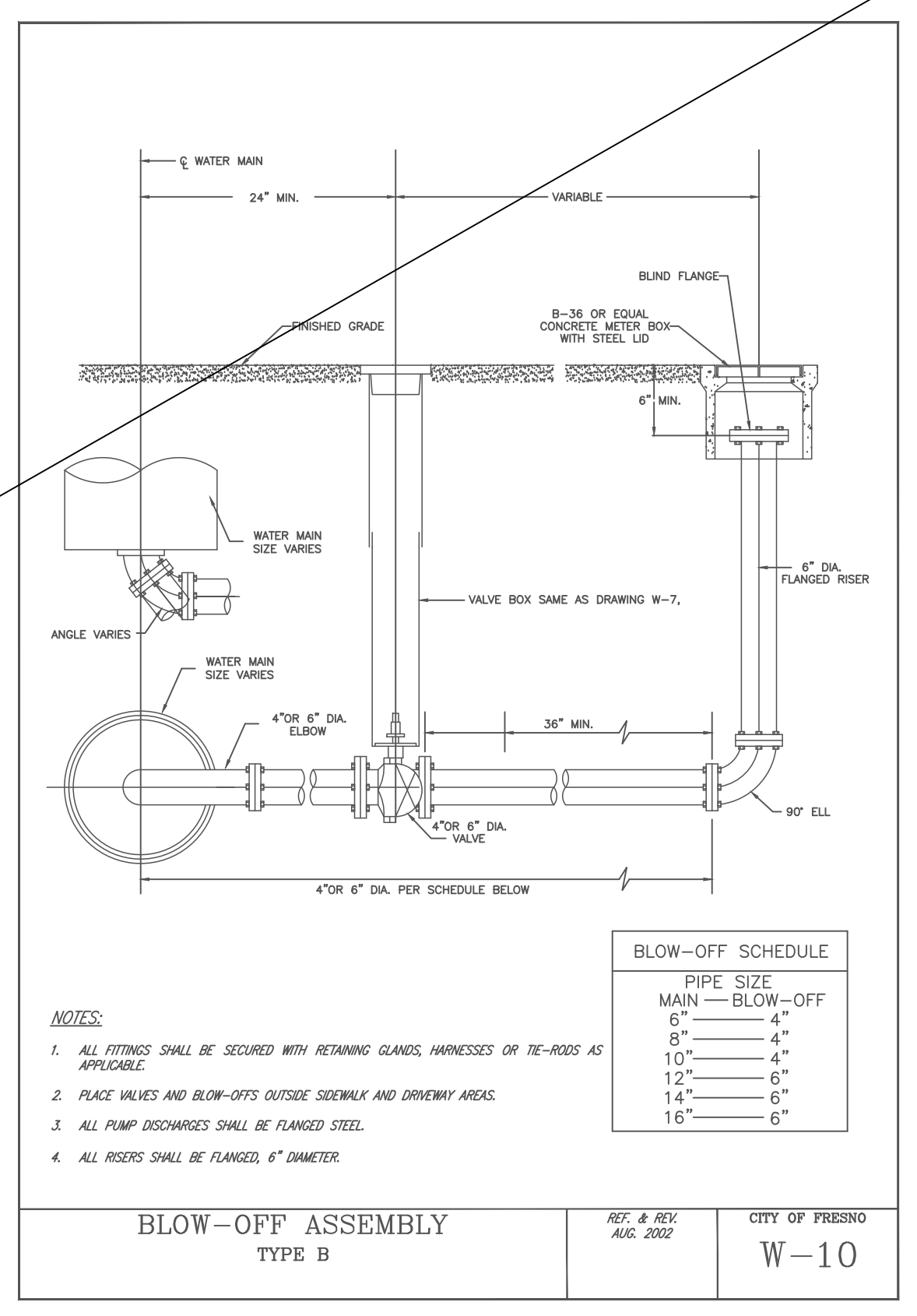


NEW ARV ASSEMBLY N 12

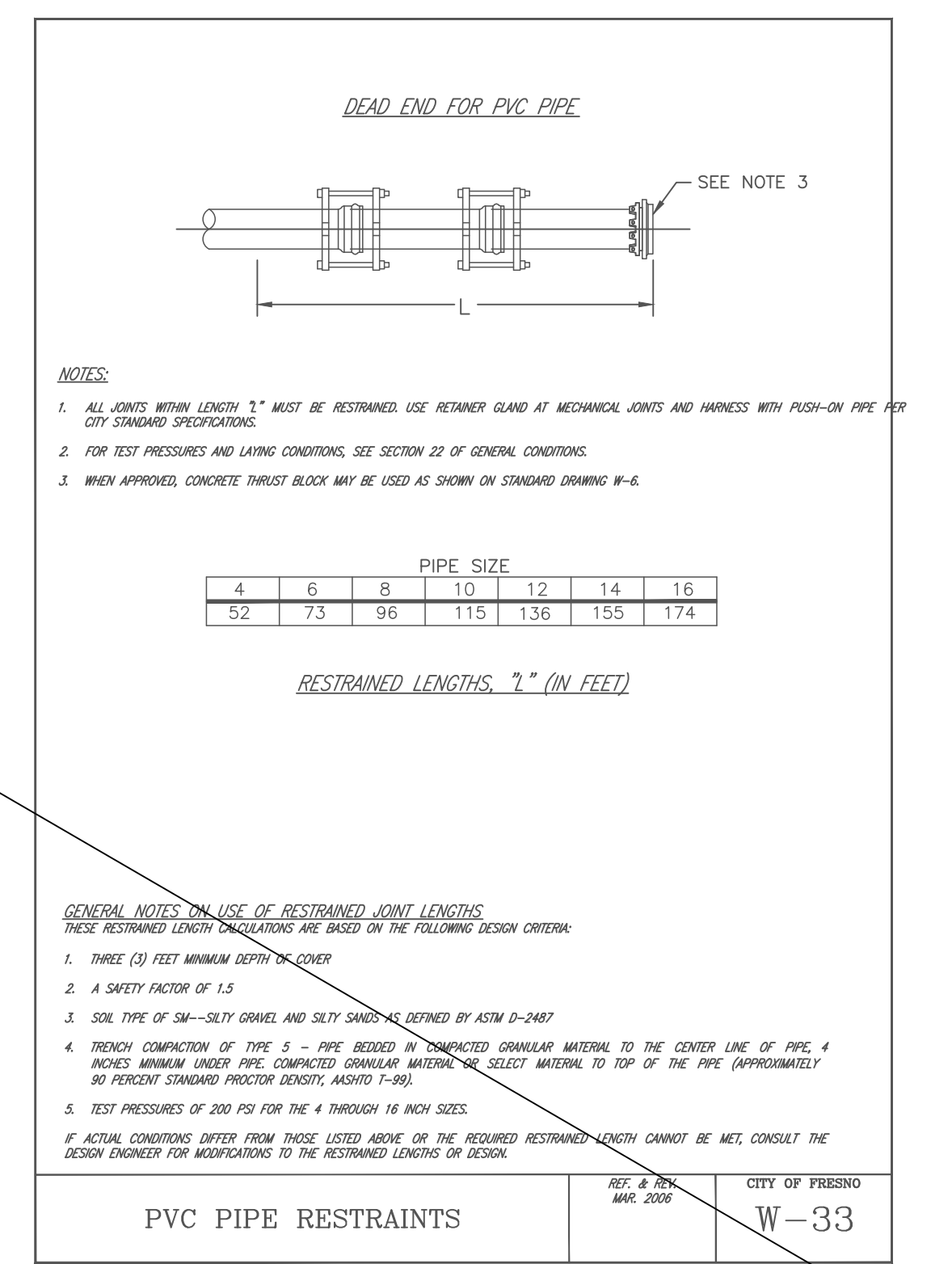
WORK TO BE DONE BY OTHERS



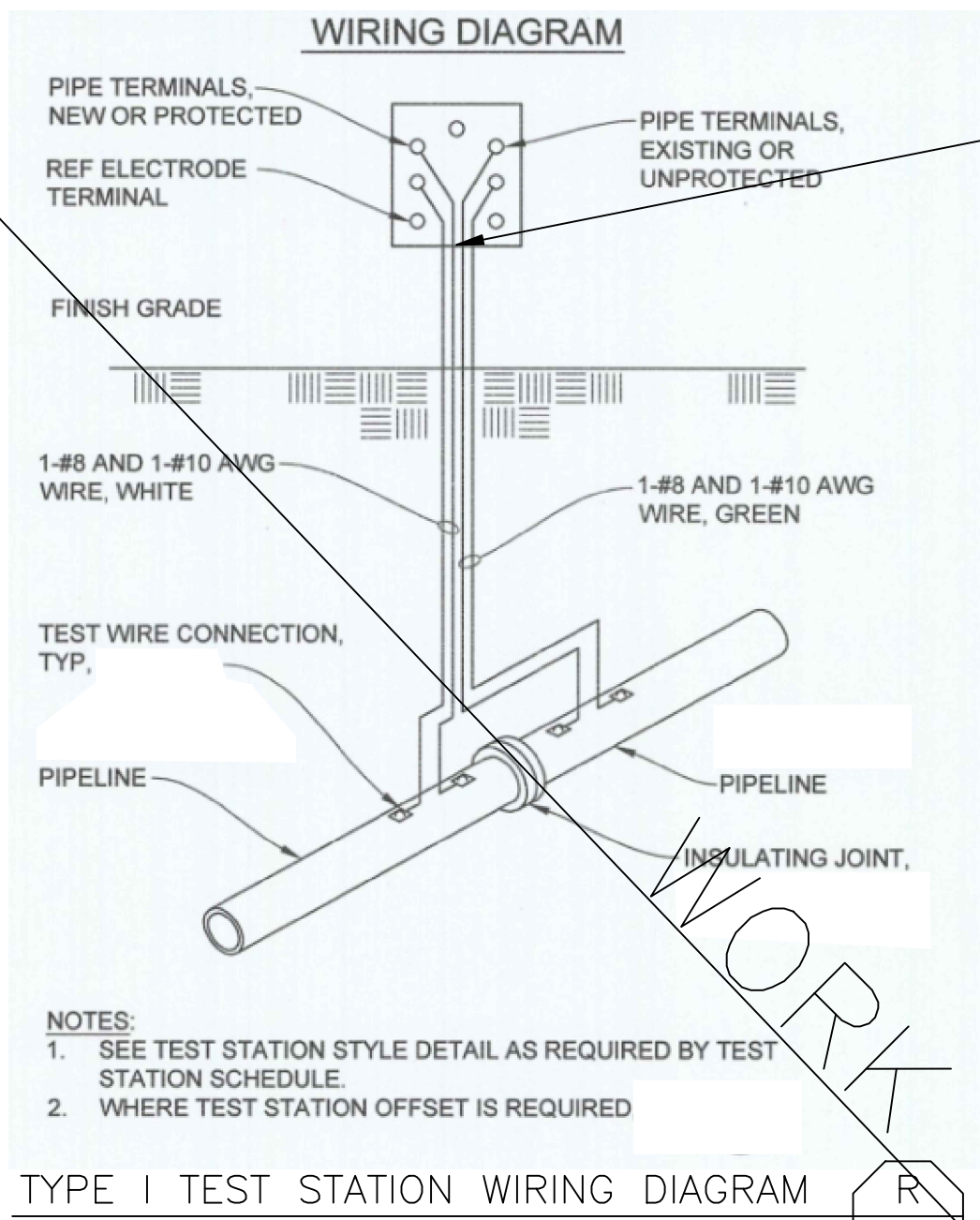
ENCLOSURE DETAIL Q 12



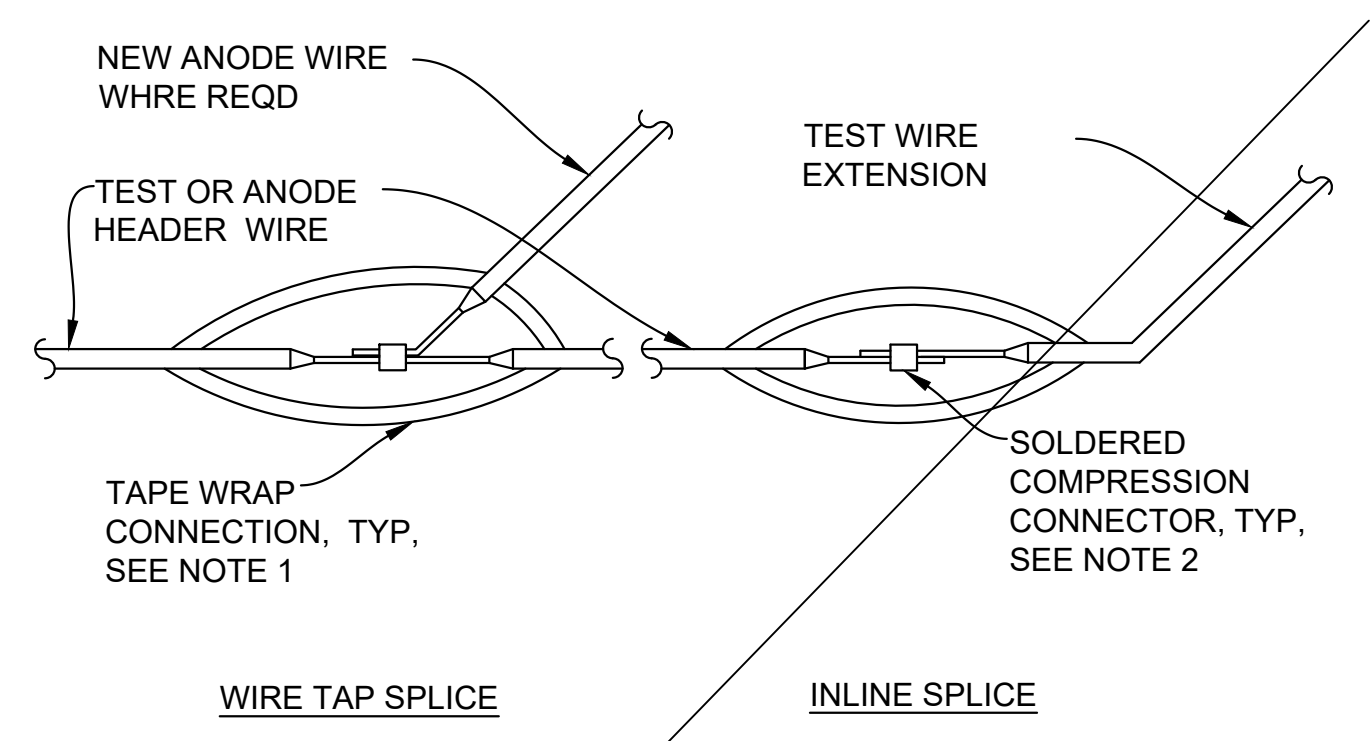
BLOW-OFF ASSEMBLY TYPE B W-10



PVC PIPE RESTRAINTS W-33



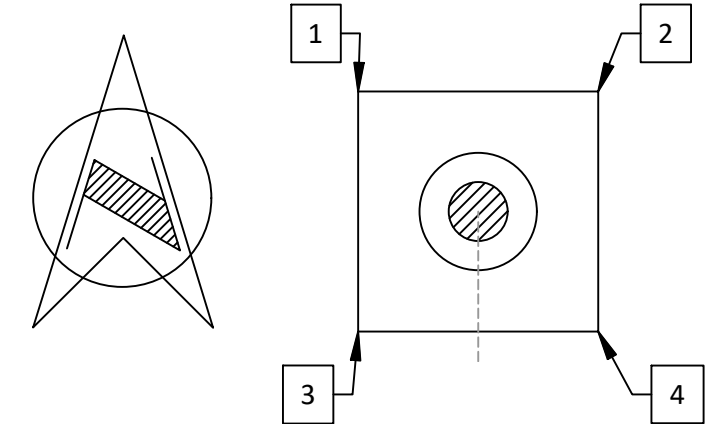
TYPE I TEST STATION WIRING DIAGRAM



- NOTES:**
- FILL VOIDS AND IRREGULARITIES WITH INSULATING PUTTY, WRAP CONNECTION WITH TWO LAYERS OF SCOTCH 130C SELF VULCANIZING RUBBER TAPE AND TWO LAYERS OF SCOTCH 88 VINYL ELECTRICAL TAPE SPlice WIRES BY MECHANICALLY SECURING AND SOLDERING WITH ROSIN PASTE FLUX. COMPRESSION CONNECTORS WITHOUT SOLDERED WIRE CONNECTIONS SHALL NOT BE ALLOWED.
 - CONTRACTOR TO PRESERVE PIPE IDENTIFICATION ASSOCIATED WITH EACH ORIGINAL WIRE AND MATCH WIRE COLOR CODE. APPLY PIPE IDENTIFICATION TO NEW WIRE EXTENSION WITHIN TEST STATION AT NEW LOCATION.

GALVANIC ANODE AND TEST STATION WIRE SPLICES

SCALE: NTS

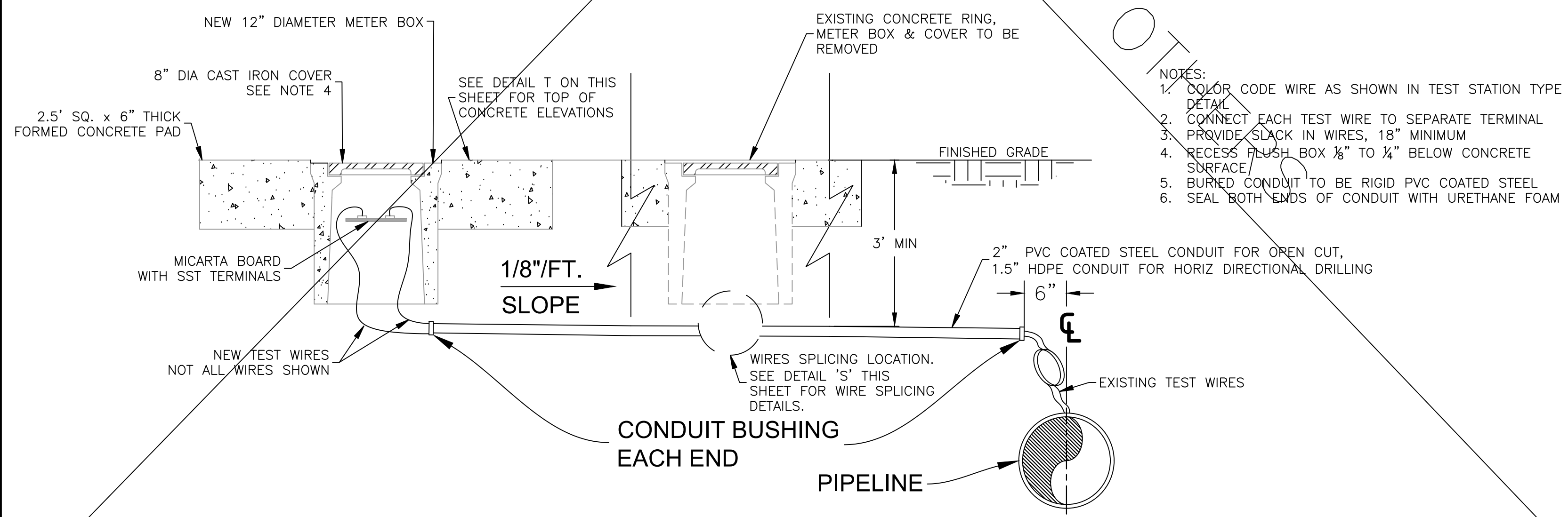


TEST STATION TOP OF CONCRETE ELEVATIONS

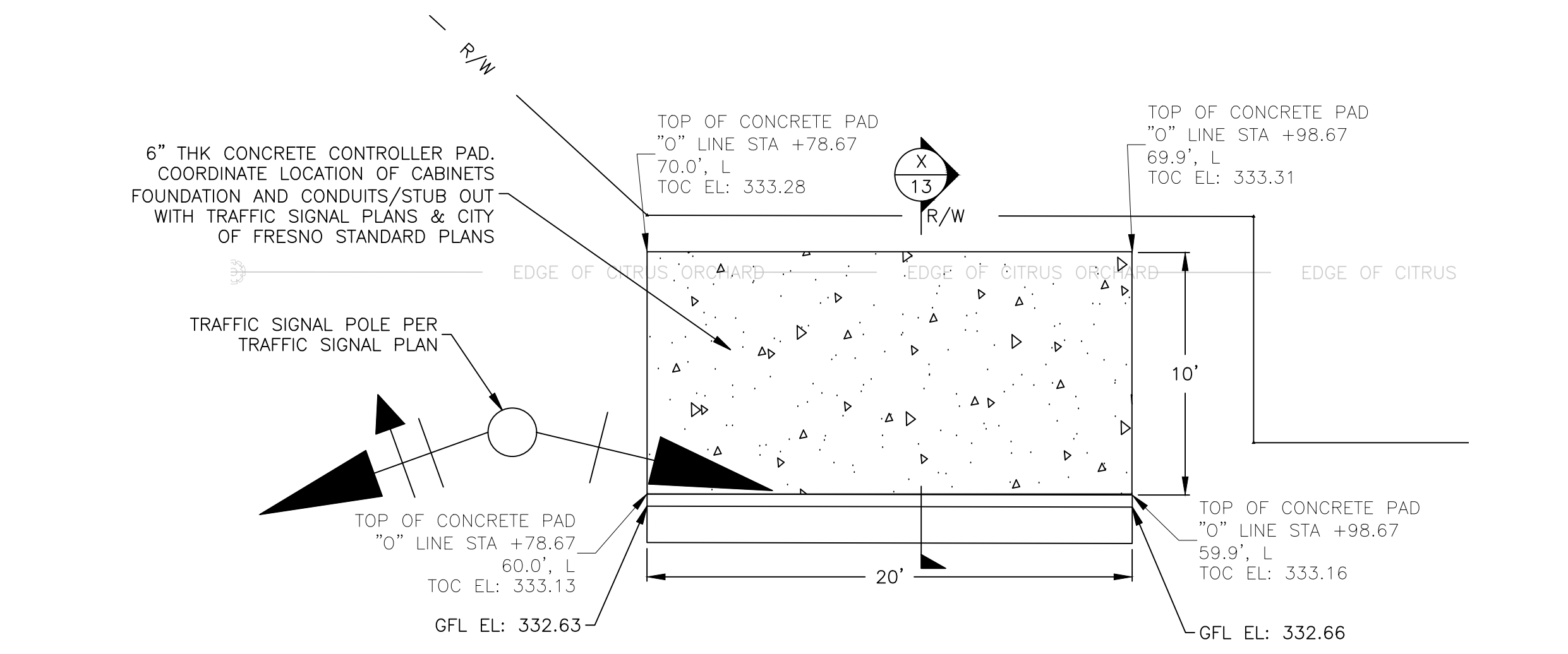
STATION	1	2	3	4
"O" LINE STA 98+48.76	332.73	332.73	332.70	332.70
"O" LINE STA 98+84.57	332.78	332.78	332.75	332.75
"F" LINE STA 100+92.17	333.13	333.10	333.12	333.09

NOTE: SEE SHEET 25

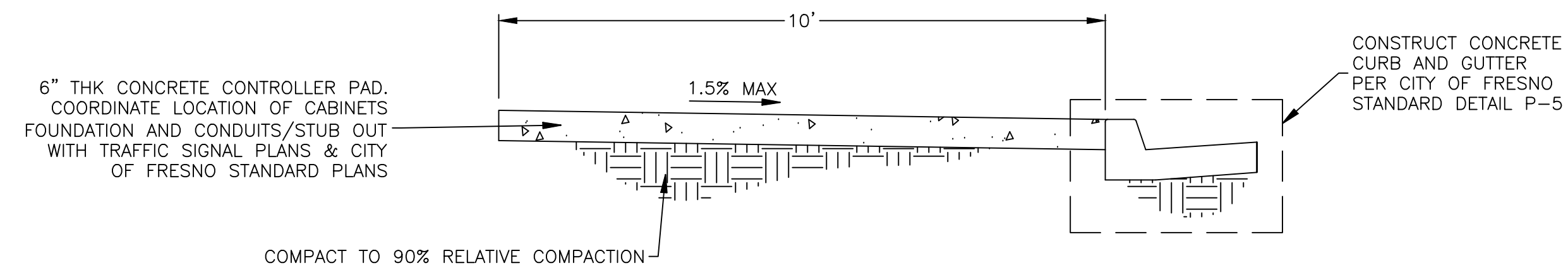
TYPE I TEST STATION CONCRETE ELEVATIONS



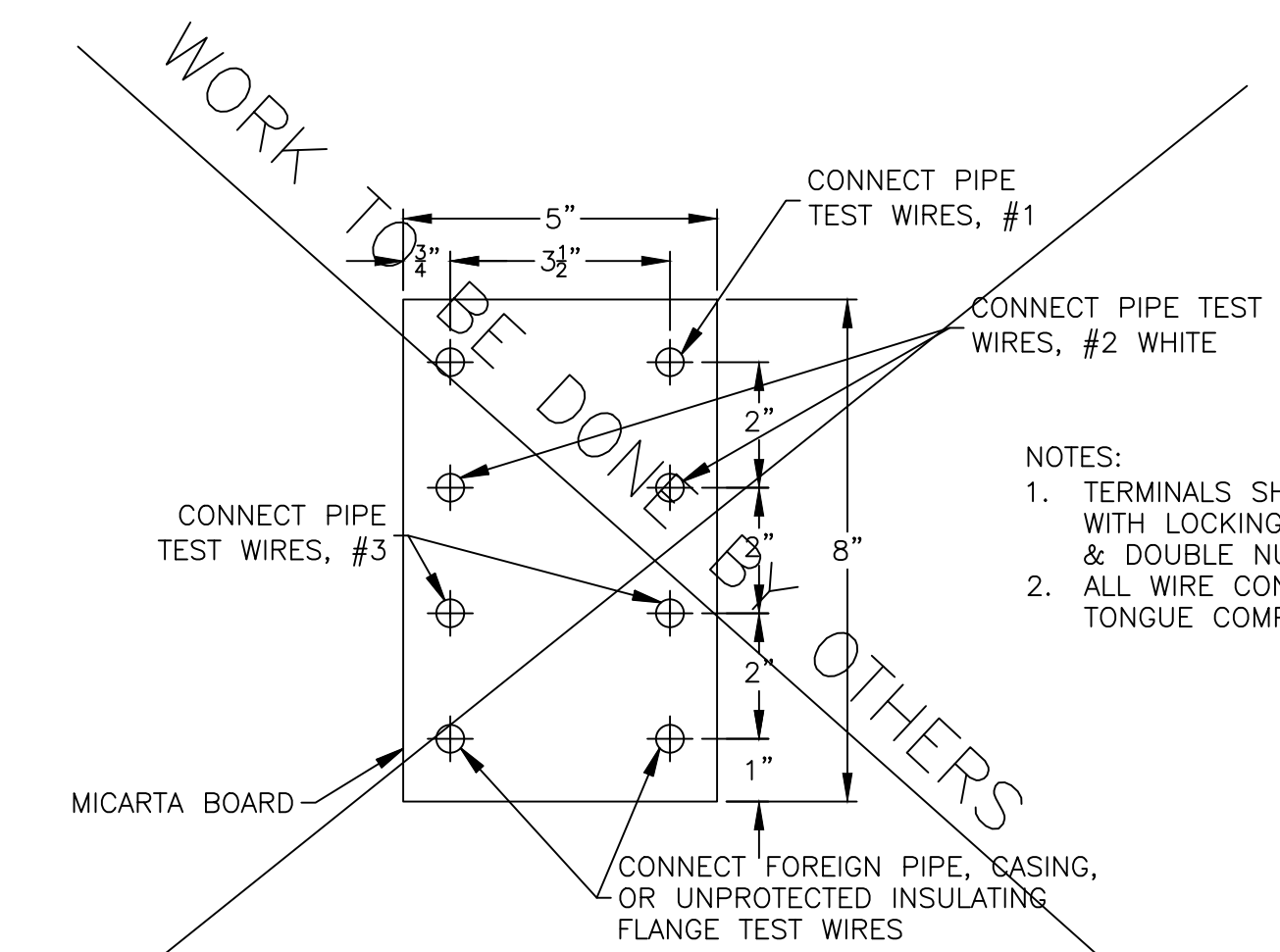
FLUSH STYLE TEST BOX STATION



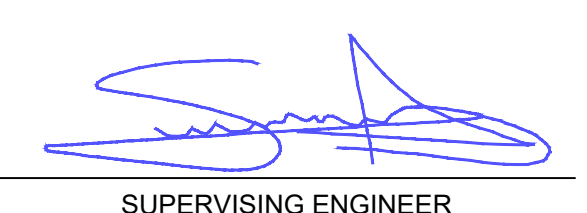

CONCRETE ELECTRICAL PAD

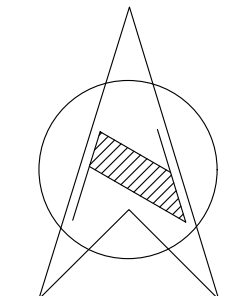


CONCRETE ELECTRICAL PAD SECTION

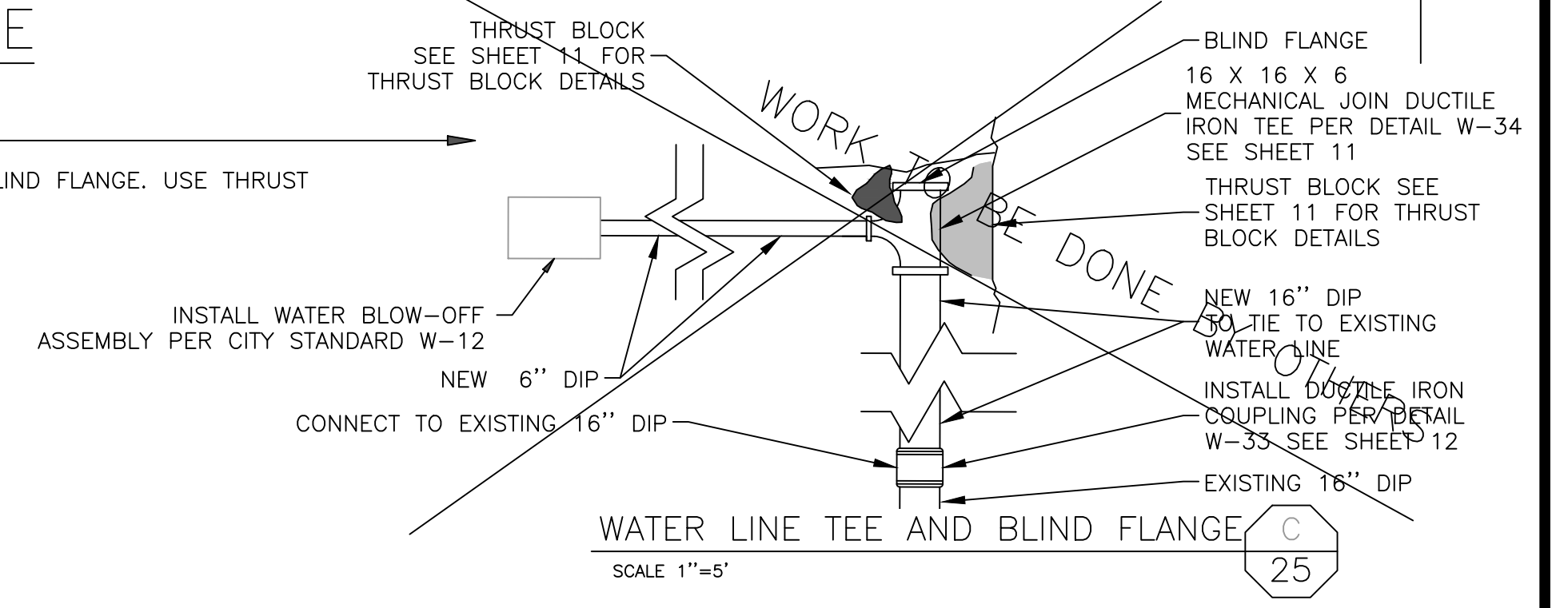
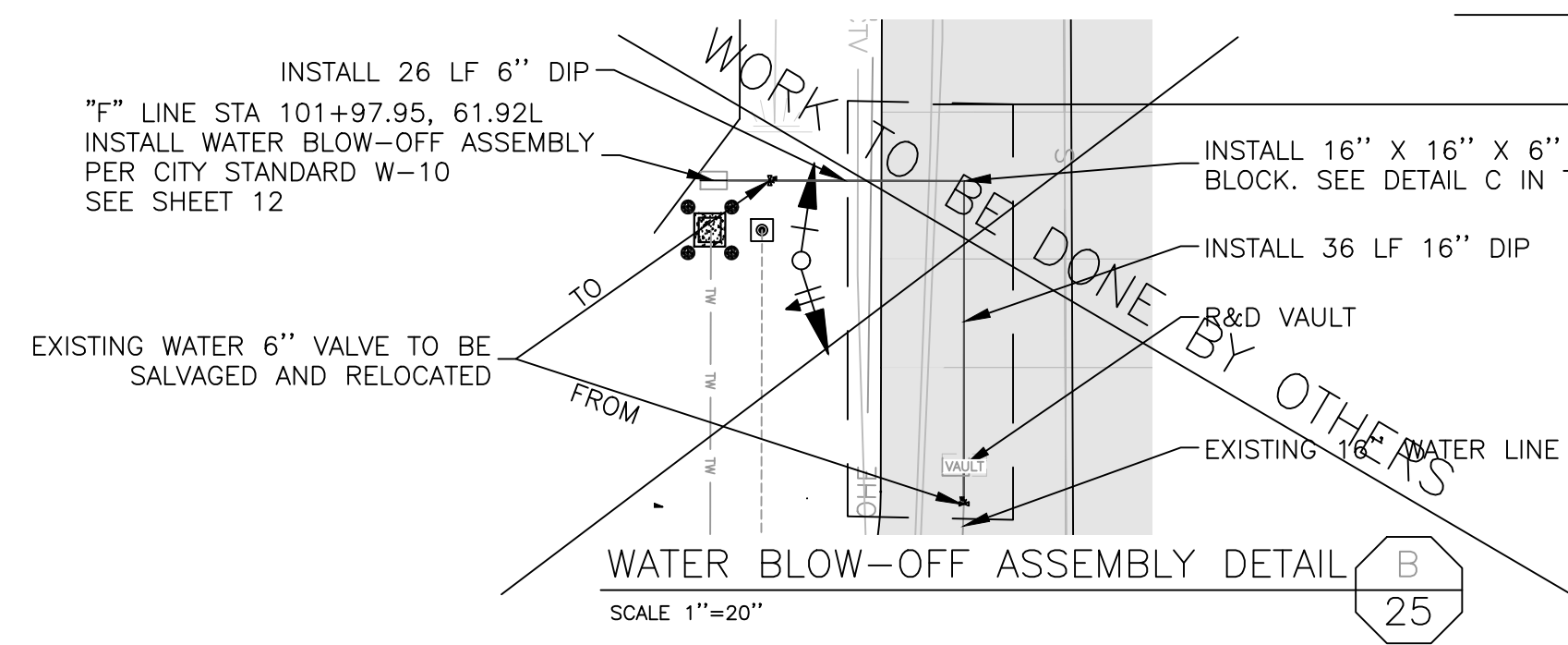
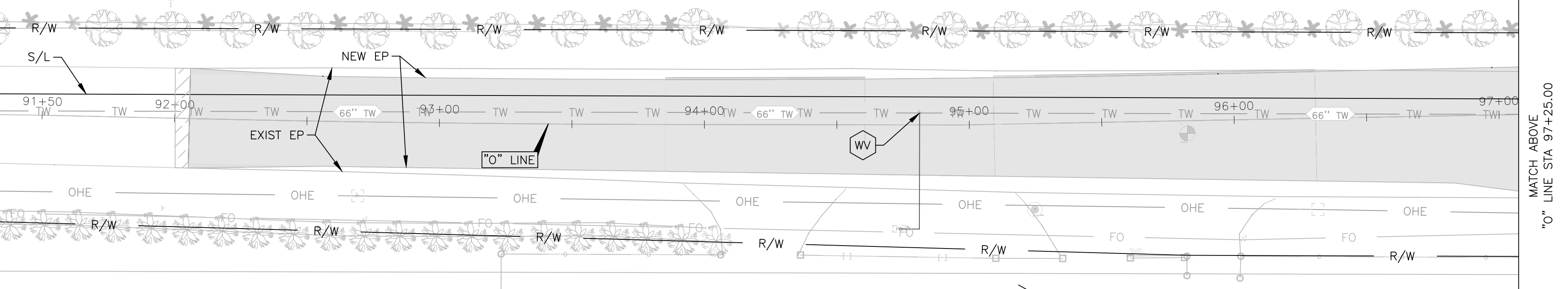
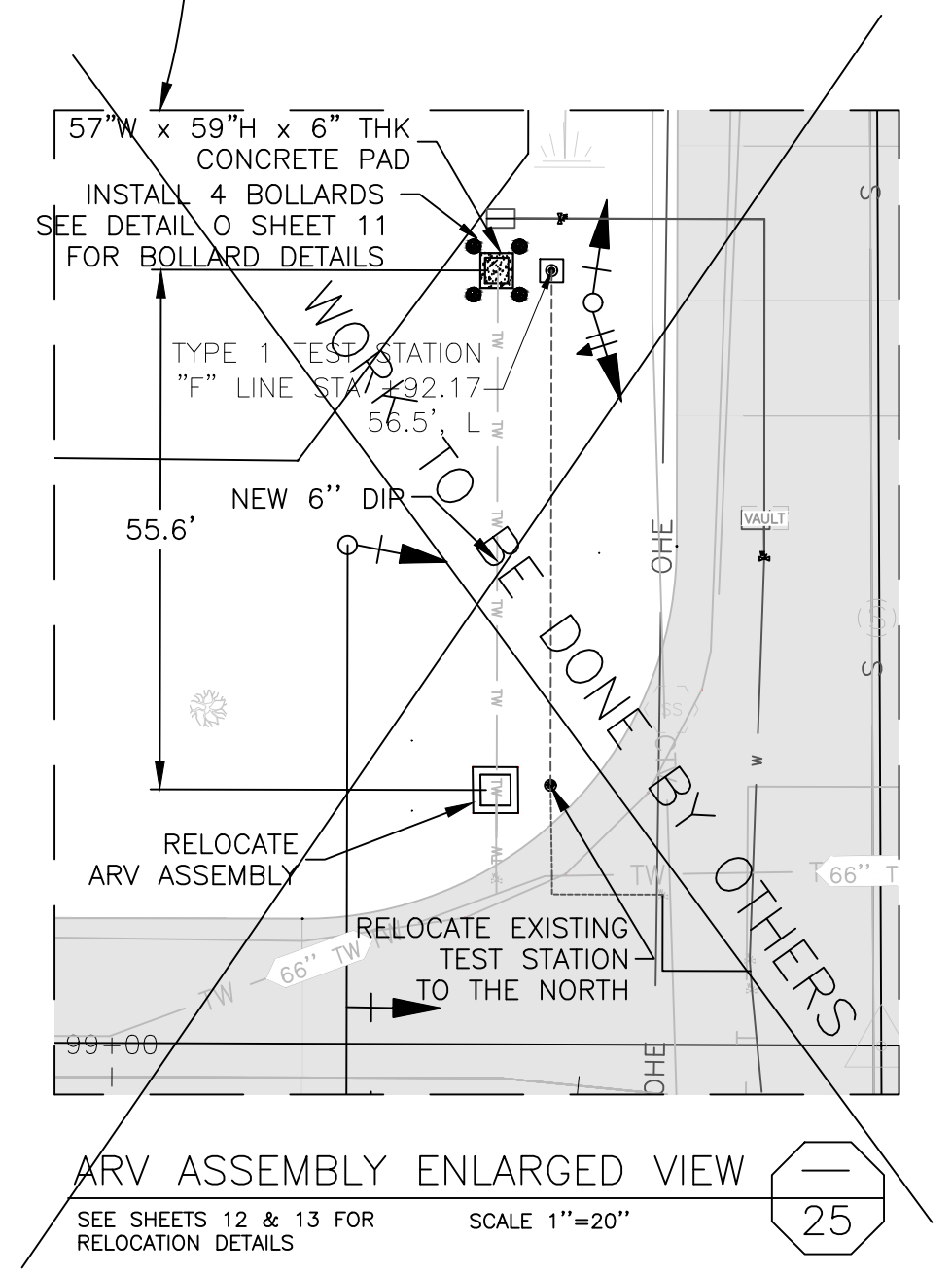
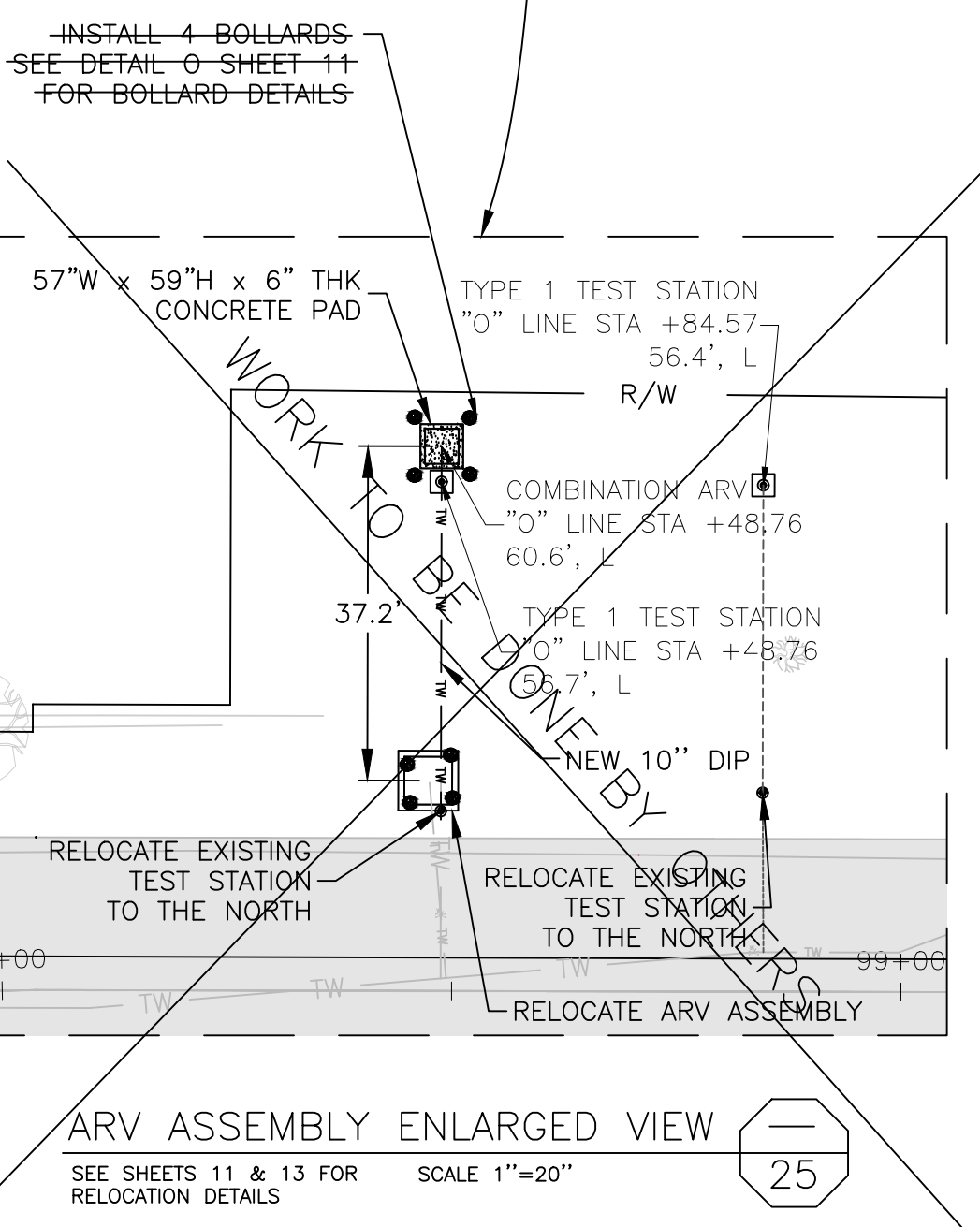
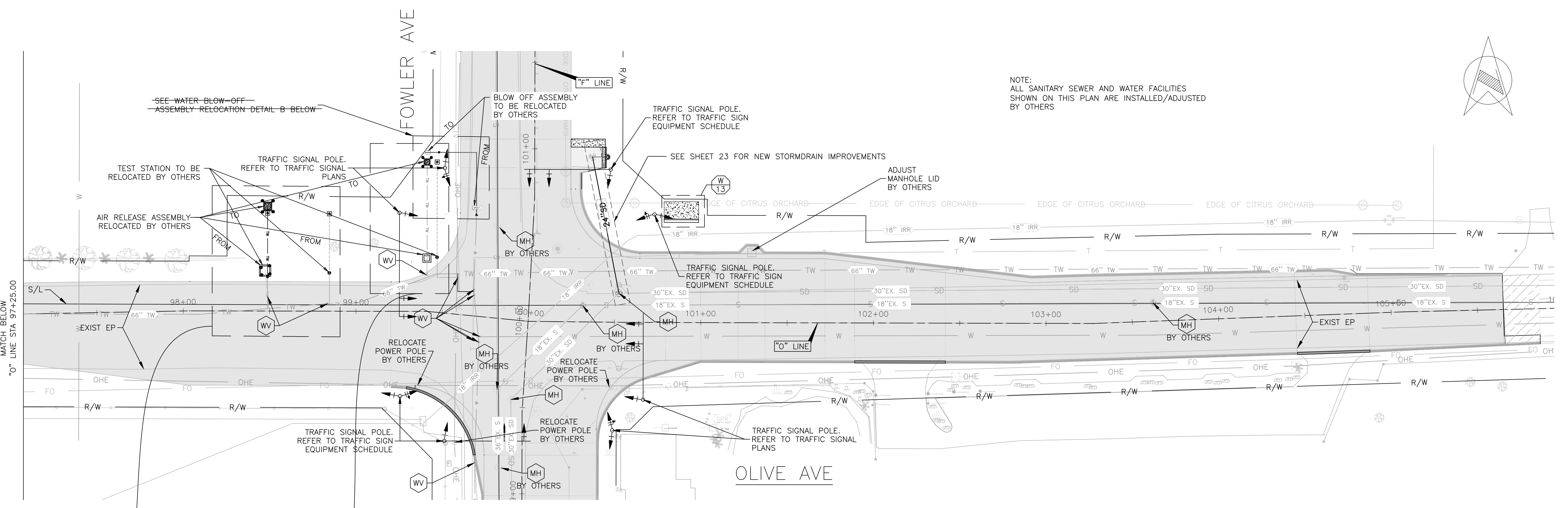


FLUSH STYLE TERMINAL BOARD

DESIGNED: D. KWAN	DATE: 1/2/24	RECORD DRAWING	SCALE	 SUPERVISING ENGINEER	PROJECT FOWLER AVE & OLIVE AVE INTERSECTION IMPROVEMENTS	 DEPARTMENT OF PUBLIC WORKS AND PLANNING
DRAWN: E. CARMONA	DATE: 1/2/24	RESIDENT ENGINEER	NOT TO SCALE			
CHECKED: S. ARTAL	DATE: 1/2/24					
FOR RIGHT OF WAY DATA AND ACCURATE ACCESS DETERMINATION, SEE DOCUMENTS IN THE DEPARTMENT OF PUBLIC WORKS AND PLANNING.						
ROAD NO. D0600		BRIDGE NO. N/A		DRAWING NO. 11302		SHEET NO. 13A
						TOTAL 32



NOTE:
ALL SANITARY SEWER AND WATER FACILITIES
SHOWN ON THIS PLAN ARE INSTALLED/ADJUSTED
BY OTHERS



DESIGNED: D. KWAN		DATE: 1/2/24	RECORD DRAWING		SCALE			PROJECT			DEPARTMENT OF PUBLIC WORKS AND PLANNING	
DRAWN: E. CARMONA		DATE: 1/2/24	RESIDENT ENGINEER		HORIZ 0 30' 60'			FOWLER AVE & OLIVE AVE INTERSECTION IMPROVEMENTS			UTILITIES PLAN	
CHECKED: S. ARTAL		DATE: 1/2/24						ROAD NO. D0600 BRIDGE NO. N/A			DRAWING NO. 11302 SHEET NO. 25A TOTAL 32	
					SUPERVISING ENGINEER							

FOR RIGHT OF WAY DATA AND ACCURATE ACCESS DETERMINATION, SEE DOCUMENTS IN THE DEPARTMENT OF PUBLIC WORKS AND PLANNING.