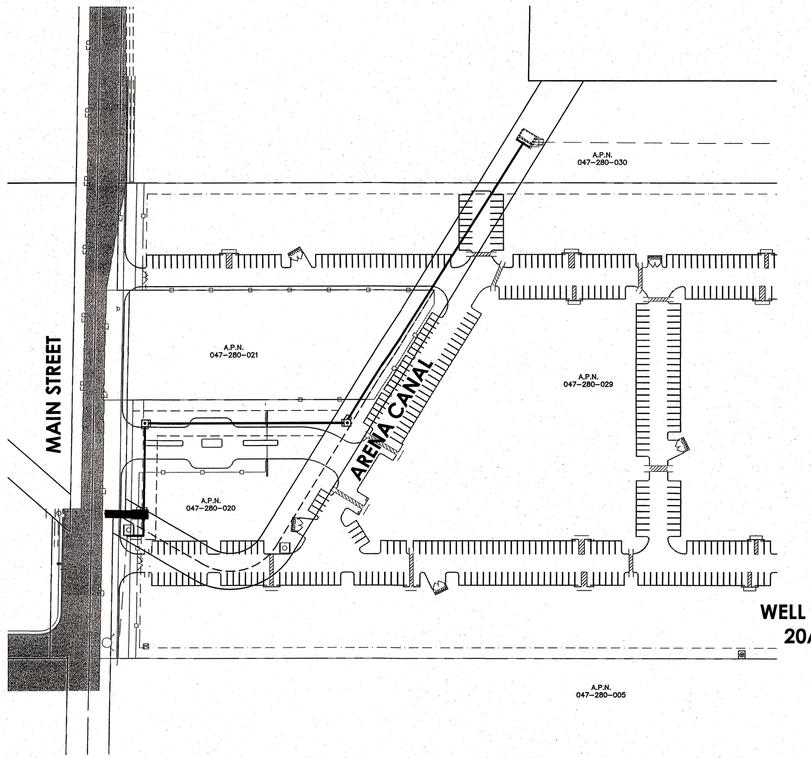
THE VILLAGES AT MAIN

ARENA CANAL / WELL SITE 20A IMPROVEMENT PLANS

LIVINGSTON, CA. MERCED COUNTY



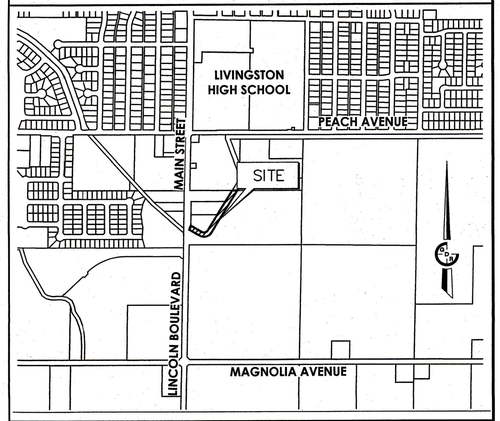
SITE MAP

80 0 40 80 160 320

SCALE: 1" = 80'

VICINITY MAP

NOT TO SCALE



LEGEND

EXISTING	DESCRIPTION	PROPOSED
W	WATER LINE	
IRR	IRRIGATION LINE	IRR
	PROPERTY LINE	
	RIGHT OF WAY	
	CENTER LINE	
EP EP	EDGE OF PAVEMENT	
OH	OVERHEAD	
PP	POWER POLE	
	FIRE HYDRANT	
	WATER VALVE	
	MANHOLE	
	CURB, GUTTER & SIDEWALK	
	IRRIGATION VALVE	
	IRRIGATION BOX	
STP	STANDPIPE	
SP	SERVICE POLE	
	PRESSURE BOX	
W	WELL	
	CONTROL POINT	
	MONUMENT	
	TRANSITION STRUCTURE	
	AIR RELEASE VALVE	ARV

ABBREVIATIONS

AC	ASPHALTIC CONCRETE	NO	NUMBER
APN	ASSESSORS PARCEL NUMBER	NTS	NOT TO SCALE
C	CONCRETE	(NW)	NORTHWEST
CL	CENTER LINE	PIP	PLASTIC IRRIGATION PIPE
DWG	DRAWING	PL	PROPERTY LINE
(E)	EAST	PMH	PRESSURE MANHOLE
EG	EXISTING GROUND	PP	POWER POLE
EP	EDGE OF PAVEMENT	PSI	POUND PER SQUARE INCH
ELEV	ELEVATION	R=	RADIUS
ETC	ETCETERA	R & D	REMOVE AND DISPOSE
EX, EXIST	EXISTING	R & R	REMOVE AND REPLACE
F & I	FURNISH AND INSTALL	R/W	RIGHT OF WAY
FH	FIRE HYDRANT	S=	SLOPE EQUALS
FT	FEET	(S)	SOUTH
ICB	IRRIGATION CONTROL BOX	(SE)	SOUTHEAST
IRR	IRRIGATION	SF	SQUARE FEET
IN	INCHES	SP	SERVICE POLE
INC	INCORPORATED	STA	STATION
INV	INVERT	STP	STANDPIPE
L, LT	LEFT	(SW)	SOUTHWEST
L=	LENGTH EQUALS	SW	SIDEWALK
LF	LINEAR FEET	TEL	TELEPHONE
MH	MANHOLE	(W)	WEST
MIN	MINIMUM	W	WATER
(N)	NORTH		
(NE)	NORTHEAST		

SHEET INDEX

PROPERTY OWNER / APPLICANT

PROPERTY OWNER(S): HARVINDER S. & SALINDER K. BHANGU/SUKHINDER S. & KULVINDER SANGHERA

CONTACT: SAKE SANGHERA

ADDRESS: 6473 E. HATCH ROAD

CITY/STATE/ZIP: HUGHSON, CA 95326

PROJECT ADDRESS: MAIN STREET

CITY/STATE/ZIP: LIVINGSTON, CA 95334

REGISTERED PROFESSIONAL ENGINEER
JASON K. CHAPMAN
No. 66134
CIVIL
STATE OF CALIFORNIA

8/24/2023
DATE SIGNED:

CALL BEFORE YOU DIG U S A 800-227-2600

UNDERGROUND FACILITIES SHOWN WERE LOCATED BASED ON INFORMATION PROVIDED BY UTILITY COMPANIES AND BY MEASURING SURFACE FEATURES. NO ATTEMPT WAS MADE TO LOCATE OTHER UNDERGROUND FACILITIES THAT WERE NOT READILY APPARENT FROM A VISUAL INSPECTION OF SURFACE FEATURES.

CONTRACTOR SHALL VERIFY ACTUAL DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION....CALL "UNDERGROUND SERVICE ALERT" (U.S.A.)(TOLL FREE (800) 227-2600 PRIOR TO TRENCHING, GRADING, EXCAVATION, DRILLING, PIPE PUSHING, PLANTING TREES, DIGGING POST HOLES FOR FENCES, ETC.(U.S.A.) WILL SUPPLY INFORMATION OR LOCATE AND MARK ANY UNDERGROUND FACILITIES.

THE CONTRACTOR SHALL POSSESS THE CLASS (OR CLASSES) OF LICENSE AS SPECIFIED IN THE "NOTICE TO CONTRACTORS"

1. THIS SET OF IMPROVEMENT PLANS IS VALID FOR CONSTRUCTION PURPOSES ONLY AFTER THEY HAVE BEEN SIGNED BY THE CITY ENGINEER.
2. ALL CONTRACTORS INVOLVED IN THE CONSTRUCTION OF THIS PROJECT SHALL ATTEND A PRE–CONSTRUCTION CONFERENCE ARRANGED BY THE CITY AT THE ENGINEERING SERVICES DEPARTMENT FOR CONSTRUCTION AND INSPECTION COORDINATION.
3. THE MERCED IRRIGATION DISTRICT STANDARD SPECIFICATIONS ARE MADE A PART OF THESE PLANS. CURRENT STANDARDS AND SPECIFICATIONS SHALL BE KEPT ON SITE DURING CONSTRUCTION.

MERCED IRRIGATION DISTRICT

APPROVED BY THE MERCED IRRIGATION DISTRICT FOR IMPROVEMENTS IMPACTING MERCED IRRIGATION DISTRICT FACILITIES ONLY.

Bryan Kelly DATE: 9-1-23

BRYAN KELLY, DGM WATER RESOURCES

CAUTION:
UNAUTHORIZED CHANGES AND USES

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS AND THE CITY ENGINEER.

DESCRIPTION	DATE	BY

GDR ENGINEERING, INC.
ENGINEERING/SURVEYING/PLANNING
3525 MITCHELL ROAD, SUITE G CERES, CA 95307
TELEPHONE: (209) 538–3360 FAX: (209) 538–7370
E–MAIL: GDRENGINEERING@GDRENGR.COM

THE VILLAGES AT MAIN
MID PIPELINE IMPROVEMENT PLANS
COVER SHEET

SCALE: AS NOTED DATE: 08/24/2023

DWG NO. 18075 MID PIPELINE.dwg LAYOUT 1–CVR SHEET: 1 OF 8

DRAWN: GP

CHECKED: FILE NO. 18075

Z:\Production\Projects\18075 Sanghera – Livingston Apartments\ENGINEERING FILES AND DRAWINGS\DRAWINGS\18075 MID PIPELINE.dwg PLOT Aug 24, 2023 AT 11:39AM

GENERAL

1. ALL IMPROVEMENTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THESE APPROVED PLANS AND SPECIFICATIONS AND THE FOLLOWING:

   MERCED IRRIGATION DISTRICT STANDARD SPECIFICATIONS

   CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (CALTRANS STANDARD SPECIFICATIONS) LATEST EDITION, AS REFERENCED IN THE PLANS AND CITY STANDARDS.

   CONTRACT CHANGE ORDERS ISSUED BY THE DEVELOPER

2. IN ABSENCE OF MORE DETAILED REQUIREMENTS PROVIDED IN PROJECT PLANS AND SPECIFICATIONS AND LOCAL AGENCY STANDARDS, IT IS INTENDED THAT CONSTRUCTION AND INSTALLATION OF MATERIALS SHALL BE DONE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS

3. THIS SET OF IMPROVEMENT PLANS IS VALID FOR CONSTRUCTION PURPOSES ONLY AFTER BEING SIGNED BY MERCED IRRIGATION DISTRICT.

4. ALL WORK SHALL BE INSPECTED BY MERCED IRRIGATION DISTRICT AND CONTRACTOR SHALL REQUEST INSPECTIONS AND TESTING IN ACCORDANCE WITH MERCED IRRIGATION DISTRICT STANDARD SPECIFICATIONS AND OTHER DOCUMENTS THAT MAY BE IDENTIFIED BY CITY AND/OR OWNER REGARDING INSPECTION AND TESTING REQUIREMENTS.

5. NO WORK SHALL BE STARTED IN THE PUBLIC RIGHT OF WAY UNTIL AN ENCROACHMENT AND GRADING PERMIT IS OBTAINED BY THE OWNER. COSTS OF OBTAINING PERMIT AND COMPLYING WITH CONDITIONS OF PERMIT SHALL BE INCLUDED IN THE BID PRICE FOR THE VARIOUS ITEMS OF WORK INVOLVED.

6. UNDERGROUND FACILITIES SHOWN ON THE PLANS WERE LOCATED USING INFORMATION PROVIDED BY UTILITY COMPANIES AND BY MEASURING SURFACE FEATURES. NO ATTEMPT WAS MADE TO LOCATE ANY OTHER UNDERGROUND FACILITIES THAT WERE NOT SHOWN ON UTILITY COMPANY PLANS OR WERE NOT READILY APPARENT FROM INSPECTION OF SURFACE FEATURES. THE ENGINEER DOES NOT GUARANTEE THESE LOCATIONS TO BE EITHER TRUE OR EXACT.

   PRIOR TO COMMENCING ANY WORK, IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO HAVE EACH UTILITY COMPANY LOCATE, IN THE FIELD, THEIR MAIN AND SERVICE LINES. THE CONTRACTOR SHALL NOTIFY MEMBERS OF THE UNDERGROUND SERVICE ALERT (U.S.A.) 48 HOURS IN ADVANCE OF PERFORMING ANY EXCAVATION WORK BY CALLING THE TOLL-FREE NUMBER (800) 227-2600. THE CONTRACTOR SHALL RECORD THE U.S.A. ORDER NUMBER AND HAVE THE ORDER NUMBER AVAILABLE TO OWNER AND ENGINEER PRIOR TO ANY EXCAVATION.

   THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY TO PROTECT ALL EXISTING UTILITIES SO THAT NO DAMAGE RESULTS TO THEM DURING THE PERFORMANCE OF THIS CONTRACT. ANY REPAIRS NECESSARY TO DAMAGED UTILITIES SHALL BE PAID FOR BY THE CONTRACTOR. THE CONTRACTOR SHALL BE REQUIRED TO COORDINATE AND COOPERATE WITH OTHER CONTRACTORS AND UTILITY COMPANIES INSTALLING NEW STRUCTURES, UTILITIES AND SERVICE TO THE PROJECT.

   PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL HAVE SOLE RESPONSIBILITY TO FIELD VERIFY ALL EXISTING IMPROVEMENTS, BOTH HORIZONTALLY AND VERTICALLY, AND TO EXPOSE ALL EXISTING UNDERGROUND UTILITIES RELATED TO THE PROJECT, INCLUDING BUT NOT LIMITED TO, SEWER, STORM DRAIN, WATER, IRRIGATION, GAS, ELECTRICAL, ETC. AND SHALL NOTIFY THE ENGINEER IN WRITING FORTY-EIGHT (48) HOURS IN ADVANCE OF EXPOSING THE UTILITIES, SO THAT THE LOCATION AND ELEVATION CAN BE VERIFIED AND DOCUMENTED. THIS WORK SHALL BE INCLUDED IN THE BID PRICE FOR THE VARIOUS ITEMS OF WORK INVOLVED. IF LOCATION AND/OR ELEVATION DIFFERS FROM THAT SHOWN ON THE DESIGN PLANS, PROVISIONS TO ACCOMMODATE NEW LOCATION/ELEVATION MUST BE MADE, IN WRITING BY THE ENGINEER, PRIOR TO START OF CONSTRUCTION.

7. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER, ENGINEER AND MID HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.

   THE CONTRACTOR SHALL CONFORM TO ALL APPLICABLE OCCUPATIONAL SAFETY AND HEALTH STANDARDS, RULES, REGULATIONS AND ORDERS ESTABLISHED BY THE STATE OF CALIFORNIA AND LOCAL AGENCIES. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, BARRICADES, SIGNS, FLAGMEN OR OTHER DEVICES NECESSARY FOR PUBLIC CONVENIENCE AND PUBLIC SAFETY IN ACCORDANCE WITH THE PROVISIONS IN SECTIONS 7-1.03 AND 7-1.04 OF THE CALTRANS STANDARD SPECIFICATIONS. COSTS FOR COMPLYING WITH THESE PROVISIONS SHALL BE INCLUDED IN THE BID PRICE FOR THE VARIOUS ITEMS OF WORK INVOLVED.

   THE CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, SLOPING OR OTHER PROVISIONS NECESSARY TO PROTECT WORKMEN FOR ALL AREAS TO BE EXCAVATED TO A DEPTH OF 5' OR MORE. EXCAVATIONS OF 5 FEET OR MORE IN DEPTH WILL REQUIRE AN EXCAVATIONS PERMIT FROM THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL SAFETY. FOR TRENCHES 5 FEET OR MORE IN DEPTH, THE CONTRACTOR SHALL COMPLY WITH SECTION 7-1.02K(6) OF THE CALTRANS STANDARD SPECIFICATIONS.

   ALL CONTRACTORS AND UTILITY COMPANIES INVOLVED IN THE CONSTRUCTION OF THIS PROJECT SHALL ATTEND A PRE-JOB CONFERENCE ARRANGED BY THE DEVELOPER AND/OR ENGINEER. THE MEETING WILL BE HELD AT MID FOR THE PURPOSE OF HELPING TO COORDINATE CONSTRUCTION AND INSPECTION OF THE PROJECT.

8. CONTRACTOR AS-BUILTS AND CAD AS-BUILTS SHALL BE SUBMITTED TO THE CITY AFTER COMPLETION OF THE PROJECT.

CONSTRUCTION GENERAL

1. THE INTENT OF THE PLANS AND SPECIFICATIONS IS TO PRESCRIBE THE DETAILS FOR THE CONSTRUCTION AND COMPLETION OF THE WORK WHICH THE CONTRACTOR HAS UNDERTAKEN TO PERFORM IN ACCORDANCE WITH PLANS, SPECIFICATIONS AND APPLICABLE STANDARDS. WHERE THE PLANS AND SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS, BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.

   THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY REGARDING ANY DISCREPANCIES OR AMBIGUITIES THAT MAY EXIST IN THE PLANS OR SPECIFICATIONS.

   UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIAL, TOOLS, EQUIPMENT AND INCIDENTALS, AND DO ALL WORK INVOLVED IN EXECUTING THE WORK IN A SATISFACTORY AND WORKMANLIKE MANNER.

2. THE BIDDER SHALL EXAMINE CAREFULLY THE SITE OF THE WORK CONTEMPLATED, THE PLANS, SPECIFICATIONS AND THE PROPOSAL OR BID FORMS THEREFOR. THE SUBMISSION OF A BID SHALL BE CONCLUSIVE EVIDENCE THAT THE BIDDER HAS INVESTIGATED AND IS SATISFIED AS TO THE CONDITIONS TO BE ENCOUNTERED, AS TO THE CHARACTER, QUALITY AND SCOPE OF WORK TO BE PERFORMED, THE QUANTITIES OF MATERIALS TO BE FURNISHED AND AS TO THE REQUIREMENTS OF THE PLANS AND SPECIFICATIONS.

   IF, DURING THE COURSE OF THEIR EXAMINATION, A BIDDER FINDS FACTS OR CONDITIONS WHICH APPEAR TO THEM TO BE IN CONFLICT WITH THE INTENT OF THE PROJECT PLANS AND SPECIFICATIONS, THEY SHALL CONTACT THE ENGINEER FOR ADDITIONAL INFORMATION AND EXPLANATION BEFORE SUBMITTING THEIR BID.

3. THE CONTRACTOR SHALL MAINTAIN A SET OF FULL-SIZED AS-BUILT RECORD DRAWINGS SHOWING THE FINAL LOCATION AND LAYOUT OF ALL WATER, SEWER AND STORM DRAINAGE PIPING, ELECTRICAL AND MECHANICAL EQUIPMENT, CONDUITS, STRUCTURES AND OTHER FACILITIES. THE AS-BUILT PLANS OF THE ELECTRICAL SYSTEM SHALL INCLUDE THE STREET LIGHT LAYOUT PLAN SHOWING LOCATION OF LIGHTS, CONDUITS, CONDUCTORS, POINTS OF CONNECTIONS TO SERVICES, PULL BOXES AND WIRE SIZES. AS-BUILT RECORD DRAWINGS SHALL REFLECT CHANGE ORDERS, ACCOMMODATIONS, AND ADJUSTMENTS TO ALL IMPROVEMENTS CONSTRUCTED. WHERE NECESSARY, SUPPLEMENTAL DRAWINGS SHALL BE PREPARED AND SUBMITTED BY THE CONTRACTOR.

4. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IN WRITING AT LEAST 48 HOURS PRIOR TO BACKFILLING OF ANY PIPE WHICH STUBS TO A FUTURE PHASE OF CONSTRUCTION FOR INVERT VERIFICATION.

5. APPROPRIATE DUST CONTROL SHALL BE PROVIDED FOR ALLEVIATION OR PREVENTION OF DUST NUISANCE AT THE CONTRACTOR'S EXPENSE. CONTRACTOR SHALL MAINTAIN DUST CONTROL DURING CONSTRUCTION AND OTHER TIMES IN ACCORDANCE WITH THE REQUIREMENTS OF CITY OF PATTERSON AND THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT.

   THE CONTRACTOR SHALL USE ALL REASONABLE EFFORTS TO OBTAIN NON-POTABLE WATER FOR CONSTRUCTION OR DUST CONTROL PURPOSES. SEE ITEM 3 UNDER MISCELLANEOUS ALSO.

6. IF EXISTING IMPROVEMENTS NEED TO BE DISTURBED, RELOCATED AND/OR REMOVED FOR THE PROPER PLACEMENT OF IMPROVEMENTS TO BE CONSTRUCTED BY THESE PLANS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING IMPROVEMENTS FROM DAMAGE. THE COST OF RELOCATING, REMOVING AND/OR REPLACING EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR RELATED ITEMS OF WORK.

7. THE CONTRACTOR SHALL EXERCISE EXTREME CARE IN CONSTRUCTION AND REMOVAL OPERATIONS TO PROTECT EXISTING IMPROVEMENTS AND UTILITIES, ADJACENT PROPERTY, INCLUDING LAWN, SHRUBBERY, TREES, IRRIGATION FACILITIES, ETC., SO AS NOT TO REMOVE, BREAK, OR DAMAGE ANY IMPROVEMENT OR FACILITY. ANY IMPROVEMENT OR FACILITY THAT IS REMOVED, BROKEN OR DAMAGED BY ACTION OF THE CONTRACTOR EITHER THROUGH HIS NEGLIGENCE OR OPERATIONS SHALL BE REPLACED BY THE CONTRACTOR AT HIS OWN EXPENSE.

8. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR COSTS RESULTING FROM ANY FIELD CHANGES MADE WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE OWNER AND ENGINEER.

9. PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION ON THESE IMPROVEMENTS, IT IS ADVISED THAT ALL INVOLVED PARTIES REVIEW SECTION 8771 AND SECTION 8725 OF THE BUSINESS AND PROFESSIONS CODE AND SECTION 605 OF THE CALIFORNIA STATE PENAL CODE TO ENSURE THAT MONUMENT CONSERVATION HAS BEEN PROPERLY ADDRESSED.

10. THESE PLANS HAVE BEEN PREPARED WITH THE INTENT THAT GDR ENGINEERING, INC. WILL BE PERFORMING THE CONSTRUCTION STAKING FOR THE PROJECT. IF GDR ENGINEERING, INC. DOES NOT PERFORM SUCH STAKING, THEN NOTICE IS HEREBY GIVEN THAT GDR ENGINEERING, INC. WILL NOT ASSUME RESPONSIBILITY FOR ERRORS AND OMISSIONS, IF ANY, WHICH COULD HAVE BEEN AVOIDED, CORRECTED OR OTHERWISE RESOLVED HAD GDR ENGINEERING, INC. PERFORMED THE CONSTRUCTION STAKING FOR THE PROJECT.

CALL BEFORE YOU DIG — USA — 800-227-2600

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MERCED IRRIGATION DISTRICT (MID STD. 501)

GENERAL NOTES:

THESE NOTES SHALL APPLY UNLESS INDICATED OTHERWISE ON THE DRAWINGS OR IN THE SPECIFICATIONS.

1. REFERENCE IN THESE NOTES AND PLAN SHEETS TO DISTRICT OR ENGINEER APPLIES TO MERCED IRRIGATION DISTRICT AND ITS PERSONNEL.
2. ALL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE UNIFORM BUILDING CODE, LATEST EDITION, AND/OR PREVAILING LOCAL CODES.
3. THE OWNER SHALL PROCURE ALL PERMITS AND LICENSES, PAY ALL CHARGES AND FEES, AND GIVE ALL NOTICES NECESSARY AND INCIDENTAL TO THE DUE AND LAWFUL PROSECUTION OF THE WORK.
4. STATIONING IS APPROXIMATE AND IS FOR REFERENCE ONLY. ACTUAL DIMENSIONS SHALL TAKE PRECEDENCE OVER STATIONING. ACTUAL STATIONING MAY VARY FROM THE STATIONING SHOWN.
5. VERIFY ALL DIMENSIONS BEFORE STARTING THE WORK.
6. WORK IS TO OCCUR WITHIN DISTRICT RIGHT-OF-WAYS AND EASEMENTS AS INDICATED ON DRAWINGS. CONTRACTOR SHALL STAY ON ESTABLISHED ROADWAYS AND LIMIT DISTURBANCE OF SURROUNDING NATIVE GROUND.
7. ALL CONSTRUCTION PERFORMED IN OTHER JURISDICTION'S RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE APPROVED DRAWINGS, JURISDICTION'S STANDARDS, AND THE CURRENT EDITION OF MID STANDARDS AND CALTRANS STANDARD SPECIFICATIONS, AS APPLICABLE.
8. CONTRACTOR SHALL PROVIDE TEMPORARY ACCESS AT EXISTING ACCESS/CROSSING LOCATIONS DURING CONSTRUCTION. CONTRACTOR TO NOTIFY AFFECTED PARTIES OF INTENTION TO PROVIDE TEMPORARY ACCESS 48-HOURS PRIOR TO IMPACTING ACCESS/CROSSING LOCATION.
9. INFORMATION ON EXISTING UTILITIES WAS TAKEN FROM THE DATA AVAILABLE. THE ENGINEER AND THE DISTRICT ASSUME NO LIABILITY FOR THE ACCURACY OR COMPLETENESS OF SUCH RECORD DATA. THERE MAY BE EXISTING UTILITIES WHICH ARE NOT SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL KNOWN OR SUSPECTED UTILITY LOCATIONS IN THE FIELD BEFORE EXCAVATING TRENCHES. CONTRACTOR SHALL NOTIFY" UNDERGROUND SERVICES ALERT" FOR LOCATIONS OF UNDERGROUND UTILITIES TWO WORKING DAYS PRIOR TO EXCAVATING (CALL TOLL FREE 1-800-642-2444).
10. CONTRACTOR SHALL CAREFULLY EXPOSE BY HAND EXCAVATION ANY INTERFERING EXISTING UTILITIES AND SHALL PROVIDE PROTECTION FOR THESE UTILITIES DURING NEW CONSTRUCTION. CONTRACTOR SHALL BE RESPONSIBLE FOR ARRANGING THE REPAIR OF DAMAGED UTILITIES TO THE SATISFACTION OF THE APPLICABLE UTILITY COMPANY, AT HIS SOLE EXPENSE.
11. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE REMOVAL OR RELOCATION OF ALL EXISTING UTILITIES WITH THE RESPECTIVE UTILITY COMPANY. COST OF THIS COORDINATION IS TO BE INCLUDED IN THE PRICES BID FOR THE VARIOUS IMPROVEMENTS TO COMPLETE THE PROJECT.
12. DUST CONTROL: APPROPRIATE DUST CONTROL TO BE PROVIDED, FOR THE ALLEVIATION OR PREVENTION OF DUST NUISANCE, AT THE CONTRACTOR'S EXPENSE AND SHALL BE THE CONTRACTOR'S RESPONSIBILITY.
13. A TRENCHING PERMIT WILL BE REQUIRED PER CALIFORNIA LABOR CODE, SECTION 6500 & 6501, FOR ANY TRENCHING DEEPER THAN 5 FEET.
14. CAL-OSHA SAFETY REQUIREMENTS SHALL BE IN EFFECT DURING ALL CONSTRUCTION. SPECIAL SAFETY PRECAUTIONS SHALL BE TAKEN WHEN WORKING IN THE VICINITY OF GAS, OIL, OR ELECTRICAL LINES.
15. ALL WORK SHALL BE IN COMPLIANCE WITH CAL-OSHA CODES WITH ATTENTION DIRECTED TOWARDS SECTION 1541 DEALING WITH SLOPING AND SHORING TRENCH WALLS.
16. CONSTRUCTION AREAS SHALL BE RESTORED TO THEIR ORIGINAL CONDITION, (E.C., REPLACE PAVEMENT, RESEED GRASS AREAS, REPAIR DRIVEWAYS AND FENCES, REESTABLISH DRAINAGE DITCHES AND DRAINAGE PATTERNS, REINSTATE OR REPLACE CULVERT & SIGNS, REPAIR LANDSCAPING, SPRINKLER, ETC.)

MID NOTES:

1. ALL REQUIRED AGREEMENTS SHALL BE EXECUTED PRIOR TO COMMENCEMENT OF WORK.
2. THE SIGNATURE OF THE MERCED IRRIGATION DISTRICT (MID) ON DRAWINGS CONSTITUTES MID'S APPROVAL OF THE SAME AS TO THE IMPROVEMENT ASPECTS THEREOF ONLY AND DOES NOT AUTHORIZE, EXPRESSLY OR IMPLICITLY THE CONSTRUCTION OF ANY ASPECT HEREOF OR THE INTERFERENCE WITH ANY PROPERTY, EQUIPMENT, OR INTEREST OF THE MID. NO SUCH CONSTRUCTION OR INTERFERENCE SHALL OCCUR UNTIL THE MID HAS OBTAINED, BE SEPARATE AGREEMENT SUCH AGREEMENTS AS MID DEEMS NECESSARY FOR THE PROTECTION OF ITS FACILITIES.
3. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB-SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY: THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE DISTRICT HARMLESS FROM AND DISTRICT ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DISTRICT AND ENGINEER.
4. THE MID WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE OBTAINED IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THE PLANS.
5. WHERE THE PLANS OR SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS, BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL, AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.
6. ALL CONSTRUCTION WITHIN THE MID RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE APPROVED DRAWINGS AND THE CURRENT EDITION OF MID STANDARDS AND CALTRANS STANDARD SPECIFICATIONS, AS APPLICABLE.
7. MID STANDARD DETAILS MAY REQUIRE MODIFICATIONS BASED ON FOUND FIELD CONDITIONS SUCH MODIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE MID ENGINEER.
8. ALL MATERIALS SPECIFICATIONS, SHOP DRAWINGS, AND/OR CUT SHEETS SHALL BE SUPPLIED TO THE MID ENGINEER FOR APPROVAL PRIOR TO ORDERING.
9. A SET OF APPROVED PLANS SHALL BE ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
10. EARTH FILL & SUBGRADES SHALL BE COMPACTED TO A MINIMUM 901 RELATIVE COMPACTION IN ACCORDANCE WITH ASTM D-1557 WITHIN THE MID RIGHT-OF-WAY UNLESS OTHERWISE SHOWN ON THE PROJECT PLANS OR APPROVED BY THE MID ENGINEER.
11. ANY DAMAGES TO MID FACILITIES DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED IN A MANNER APPROVED BY THE MID ENGINEER AT THE SOLE COST OF THE CONTRACTOR.
12. THE OWNER SHALL PAY FOR ALL COMPACTION TESTING AND RETESTING. THE OWNER SHALL ALSO PAY THE COST INCURRED BY THE MID ENGINEER FOR INSPECTING REPAIRS, INSPECTING AND OBSERVING RETESTING, ETC., AND INSPECTING ALL OTHER WORK WHICH PREVIOUSLY FAILED TO CONFORM TO THE PROJECT PLANS. ENGINEERING TIME AT $65.00/HR. AND TECHNICIAN TIME AT $55.00/HR.
13. THE OWNER SHALL HIRE AN INDEPENDENT TESTING AGENCY TO PERFORM CONCRETE TESTING AND PROVIDE RESULTS TO THE MID AND OWNER. TESTS PERFORMED SHALL INCLUDE: CONCRETE STRENGTH, SLUMP, AIR CONTENT, TEMPERATURE, AND IN--PLACE (IF REQUIRED). TO FACILITATE TESTING AND INSPECTION, CONTRACTOR TO PROVIDE ANY NECESSARY LABOR TO ASSIST TESTING AGENCY IN OBTAINING OR HANDLING SAMPLES AT SITE, PROVIDE AND MAINTAIN FOR SOLE USE OF TESTING AGENCY ADEQUATE FACILITIES FOR SAFE STORAGE AND PROPER CURING OF TEST SPECIMENS ON SITE FOR FIRST 24 HOURS AS REQUIRED BY ASTM C31, AND TAKE SAMPLES AT THE POINT OF PLACEMENT INTO CONCRETE MEMBER.
14. CONSTRUCTION WITHIN THE MID RIGHT-OF-WAY WILL NOT BE ALLOWED DURING THE IRRIGATION SEASON (MARCH 1 TO OCTOBER 31), UNLESS OTHERWISE AUTHORIZE BY THE MID ENGINEER.
15. CONTRACTOR SHALL PROVIDE AN ALTERNATE STORM WATER AND/OR IRRIGATION WATER REROUTE DURING CONSTRUCTION UNLESS DETERMINED OTHERWISE BY THE MID ENGINEER.
16. CONTRACTOR SHALL BE REQUIRED TO HAVE A PRE-CONSTRUCTION CONFERENCE WITH THE MID ENGINEER PRIOR TO STARTING ANY WORK WITHIN THE MID RIGHT-OF-WAY.
17. CONTRACTORS SHALL GIVE 48 HOURS ADVANCE NOTIFICATION TO DISTRICT FOR INSPECTIONS UNLESS OTHER ARRANGEMENTS HAVE BEEN MADE. CONTACT MID ENGINEERING AT (209) 722-5761.
18. CONTACT THE MERCED IRRIGATION DISTRICT ENGINEERING DEPARTMENT AT LEAST TWO WORKING DAYS PRIOR TO ANY CONSTRUCTION. WORK WITHIN THE MID RIGHT-OF-WAY SHALL PROCEED IN A CONTINUOUS MANNER ONCE STARTED. THE MID ENGINEER SHALL BE NOTIFIED OF ANY WORK STOPPAGES. WHENEVER WORK IS TO RESTART, THE MID ENGINEER SHALL REQUIRE AN ADDITIONAL TWO WORKING DAYS NOTICE. THE MID ENGINEER SHALL ALSO BE CONTACTED A MINIMUM OF TWO WORKING DAYS PRIOR TO ALL CONSTRUCTION SCHEDULED ON A HOLIDAY OR WEEKEND. PHONE: 209-722-5761.
19. ANY WORK WITHIN THE MID RIGHT-OF-WAY SHALL NOT BE DEEMED COMPLETE UNTIL THE MID-ENGINEERING DEPARTMENT HAS BEEN PROVIDED WITH A SET OF AS-BUILT PLANS IN AUTO CAD AND HARD COPY FORMATS.
20. THE OWNER SHALL PROVIDE ALL STAKING.
21. IF MID ENGINEERING DEPARTMENT DETERMINES MONUMENT PRESERVATION IS REQUIRED, OWNER WILL BE REQUIRED TO DESIGNATE, AT OWNERS EXPENSE, A LICENSED LAND SURVEYOR, OR A PROFESSIONAL ENGINEER AUTHORIZED TO PERFORM LAND SURVEYING IN THE STATE OF CALIFORNIA, AS BEING RESPONSIBLE FOR ALL MONUMENT PRESERVATION EFFORTS AND SHALL COMPLETE THE FORM ENTITLED "MONUMENT PRESERVATION SURVEY-PRIOR TO CONSTRUCTION " PRIOR TO THE COMMENCEMENT OF ANY LAND DISTURBING ACTIVITIES (INCLUDING DEMOLITION). PRIOR TO FINAL ACCEPTANCE/APPROVAL THE FORM ENTITLED "MONUMENT PRESERVATION SURVEY-FOLLOWING CONSTRUCTION" SHALL BE COMPLETED. AFOREMENTIONED FORMS ARE AVAILABLE THROUGH MID ENGINEERING DEPARTMENT: 209-722-5761.

CONCRETE SPECIFICATIONS (MID STD. 551)

ALL CONCRETE SHALL CONFORM TO CALTRANS STANDARD SPECIFICATIONS LATEST EDITION UNLESS OTHERWISE OUTLINED ON DRAWINGS OR MID STANDARD DETAILS.

UNLESS OTHERWISE NOTED ON PLANS OR IN THE STANDARD SPECIFICATIONS CONCRETE WORK SHALL COMPLY WITH ACI 318 LATEST EDITION.

MINIMUM BAR COVER IS CLEAR DISTANCE BETWEEN SURFACE OF BAR AND FACE OF CONCRETE AND SHALL BE 2 INCHES MINIMUM FOR FORMED SURFACES AND 3 INCHES MINIMUM FOR SURFACES CAST ON EARTH.

PLANS SHALL HAVE A NOTE WITH THE FOLLOWING INFORMATION ON THEM: UNLESS SHOWN OTHERWISE, ALL BAR SPLICES TO BE LAPPED A MINIMUM OF 39 DIAMETERS OF THE REBAR SIZE CALLED OUT ON DRAWINGS. VERTICAL BARS SHALL EXTEND ABOVE THE FLOOR FOR WALL TIE- IN A MINIMUM OF 39 DIAMETERS OF THE REBAR SIZE CALLED OUT ON DRAWINGS.

CONTRACTOR SHALL SUBMIT A MIX DESIGN FOR REVIEW AND APPROVAL BY THE MID ENGINEER PRIOR TO DETERMINING THE CONCRETE PLACEMENT DAY.

MATERIALS:

CONCRETE 28-DAY COMPRESSIVE STRENGTH TO BE MINIMUM 4,000 PSI. CEMENT SHALL BE ASTM C-150 TYPE II PORTLAND CEMENT AND BE FREE OF LUMPS AND PARTIALLY SET MASSES AND PROPORTIONED TO INCLUDE NOT MORE THAN 7 GALLONS OF WATER PER SACK OF CEMENT AND NO LESS THAN 6 SACKS OF CEMENT PER CUBIC YARD OF CONCRETE. WATER SHALL BE FREE FROM ACID, ALKALI, OILS AND ORGANIC MATTER. AGGREGATE SHALL BE CLEAN, HARD, STRONG AND DURABLE AND FREE FROM DIRT AND OTHER SUBSTANCES DELETERIOUS TO CONCRETE. THE FINE AND COARSE AGGREGATES SHALL BE A WELL GRADED MIX APPROVED BY THE MID ENGINEER. THE MAXIMUM SIZE OF THE AGGREGATE SHALL NOT EXCEED 1 INCH AND CONFORM TO THE REQUIREMENTS OF ASTM C-33. REINFORCING STEEL SHALL BE DEFORMED BARS CONFORMING TO THE REQUIREMENTS OF THE CURRENT ASTM A-615 AND SHALL CONFORM TO THE SIZES AND SHAPES SHOWN ON THE DRAWINGS. CONSISTENCY OF THE CONCRETE SHALL ALLOW IT TO BE WORKED INTO PLACE WITHOUT SEGREGATION. SLUMP SHALL BE A MINIMUM OF 2 INCHES AND A MAXIMUM OF 4 INCHES.

USE OF CURING ACCELERATORS AND RETARDANTS SHALL BE APPROVED BY THE MID ENGINEER.

FORMS:

FORMS SHALL BE BRACED AND/OR TIED TOGETHER SO AS TO MAINTAIN POSITION, SHAPE, AND BE SUFFICIENTLY TIGHT TO PREVENT LEAKAGE OF MORTAR. FORMS SHALL BE THOROUGHLY OILED OR WETTED AND CLEANED OF DEBRIS PRIOR TO PLACEMENT OF CONCRETE. FORM OILS MUST BE APPROVED BY THE MID ENGINEER. FORMS SHALL NOT BE REMOVED UNTIL APPROVED BY THE MID ENGINEER.

NO CONCRETE TO BE PLACED WITHOUT THE MID ENGINEER PRESENT.

THE CONTRACTOR WILL PROVIDE INSPECTION HOLES IN THE FORMS AS DETERMINED BY THE MID ENGINEER FOR CLEAN OUT AND INSPECTION.

THE CONTRACTOR IS TO COMPLETE ALL WORK INCLUDING FORMS, BRACING, REBAR, EMBEDS, CHAMFER STRIPS, AND WATER STOP PRIOR TO REQUESTING FINAL INSPECTION FROM THE MID ENGINEER. THE SCHEDULE OF CONCRETE PLACEMENT SHALL FOLLOW APPROVAL FINAL INSPECTION.

PLACEMENT:

ALL WATER MUST BE ADDED AT THE CONCRETE BATCH PLANT. NO WATER IS ALLOWED TO BE ADDED ONSITE. PLASTICIZER IS ALLOWED TO BE ADDED ONSITE AT THE DISCRETION OF THE MID ENGINEER. PLASTICIZER IS TO BE APPROVED 2- DAYS PRIOR TO CONCRETE PLACEMENT.

NO CONCRETE SHALL BE PLACED UNTIL THE SUBGRADE, FORMS AND REINFORCING STEEL HAVE BEEN INSPECTED BY THE MID ENGINEER. ITEMS TO BE EMBEDDED IN THE CONCRETE SHALL BE POSITIONED ACCURATELY AND FIRMLY ANCHORED TO PREVENT DISPLACEMENT DURING THE PLACEMENT OF CONCRETE. ALL REINFORCEMENT AT THE TIME OF PLACEMENT SHALL BE FREE FROM RUST, OIL, GREASE, CONCRETE LAITANCE AND MILL SCALE.

HORIZONTAL CONCRETE SURFACES SHALL BE POURED AGAINST UNDISTURBED EARTH. ALL VERTICAL CONCRETE SHALL BE CONTAINED IN FORMWORKS.

CONCRETE SHALL NOT BE DROPPED MORE THAN FIVE FEET VERTICALLY. SUITABLE EQUIPMENT SHALL BE USED TO PREVENT SEGREGATION. CONSOLIDATION OF ALL CONCRETE SHALL BE ACCOMPLISHED BY MEANS OF INTERNAL MECHANICAL VIBRATORS OR MID PRE-APPROVED EQUIVALENT METHOD.

THE MID ENGINEER SHALL DETERMINE CONCRETE SUITABILITY PRIOR AND/OR DURING PLACEMENT OPERATION.

CONSTRUCTION JOINTS:

CONSTRUCTION JOINTS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS PRE-APPROVED BY THE MID ENGINEER. JOINTS SHALL BE THOROUGHLY CLEANED AND LAITANCE REMOVED BEFORE A NEW POUR IS MADE. THE MID ENGINEER SHALL INSPECT CONSTRUCTION JOINT PRIOR TO CLOSING FORMS AND SCHEDULING OF CONCRETE PLACEMENT. EACH JOINT SHALL BE WETTED IMMEDIATELY BEFORE THE PLACING OF NEW CONCRETE. SEE MID STANDARD DETAIL 557, CONSTRUCTION JOINT DETAIL.

PROTECTION AND CURING:

CONCRETE SHALL BE PREVENTED FROM DRYING FOR A CURING PERIOD OF AT LEAST SEVEN DAYS AFTER IT IS PLACED. EXPOSED SURFACES SHALL BE KEPT CONTINUOUSLY MOIST FOR THE ENTIRE SEVEN-DAY PERIOD. MOISTURE SHALL BE MAINTAINED BY SPRINKLING, FLOODING OR FOG SPRAYING OR BY COVERING WITH CONTINUOUSLY MOISTENED CANVAS, CLOTH MATS, STRAW EARTH PER THE MID ENGINEER APPROVAL. FOR FORMED SURFACES, THE PROTECTION MAY BE ACCOMPLISHED BY LEAVING THE FORMS IN PLACE AND KEEPING THEM WET FOR THE ENTIRE CURING PERIOD. IN LIEU OF WATER CURING, THE CONCRETE SHALL BE PROTECTED BY SPRAYING WITH AN APPROVED CURING COMPOUND. THE CURING COMPOUNDS SHALL BE APPLIED IN AN APPROVED MANNER IMMEDIATELY AFTER THE CONCRETE IS FINISHED. ALL SURFACES SHALL BE KEPT MOIST UNTIL THE COMPOUND IS APPLIED. THE CURING COMPOUND SHALL BE APPLIED AT THE MANUFACTURER'S SPECIFIED RATE. THE METHOD OF CONCRETE CURING SHALL BE DETERMINED BY THE MID ENGINEER.

CONCRETING IN HOT WEATHER:

WHEN CLIMATIC OR OTHER CONDITIONS ARE SUCH THAT THE TEMPERATURE OF THE CONCRETE MAY REASONABLE BE EXPECTED TO EXCEED 90°F AT THE TIME OF PLACEMENT, OR DURING THE FIRST 24 HOURS AFTER THE PLACEMENT, THE FOLLOWING PROVISIONS ALSO SHALL APPLY: THE TEMPERATURE OF THE CONCRETE SHALL BE MAINTAINED BELOW 90°F DURING MIXING, CONVEYING, AND PLACING. THE MID ENGINEER SHALL EXCEPT OR REJECT. METHODS USED SHALL CONFORM TO "RECOMMENDED PRACTICE FOR HOT WEATHER CONCRETING", ACI STANDARD 305. IF MOIST CURING IS DISCONTINUED BEFORE THE END OF THE CURING PERIOD, CURING COMPOUND SHALL BE APPLIED IMMEDIATELY.

CONCRETING IN COLD WEATHER:

PLACE CONCRETE ONLY WHEN NIGHTTIME TEMPERATURES ARE ABOVE 35°F, UNLESS IT IS PROTECTED FROM FREEZING. AFTER PLACEMENT IN FORMS, MAINTAIN CONCRETE AT A TEMPERATURE OF 50°F FOR A PERIOD OF 72 HOURS, AND AT A TEMPERATURE ABOVE 32°F FOR AN ADDITIONAL PERIOD OF 3 DAYS.

STRUCTURAL BACKFILL:

NO FILL SHALL BE PLACED UNTIL THE CONCRETE HAS ACHIEVED 80% OF ITS COMPRESSIVE DESIGN STRENGTH AND PER APPROVAL OF THE MID ENGINEER.

THE FILL SHALL BE PLACED IN A MANNER TO PREVENT DAMAGE TO THE STRUCTURE AND ALLOW THE STRUCTURE TO GRADUALLY AND UNIFORMLY ASSUME THE BACKFILL LOADS. BACKFILL SHALL MEET 90% MAXIMUM DENSITY ACCORDING TO ASTM D--1557. THE FILL SHALL BE PLACED IN NOT MORE THAN 12-INCH LAYERS. COMPACTION SHALL BE ACCOMPLISHED BY HAND OPERATED TAMPERS OR OTHER ACCEPTABLE MEANS. HEAVY EQUIPMENT SHALL NOT BE OPERATED WITHIN TWO FEET OF ANY STRUCTURE. AFTER COMPLETION OF THE BACKFILL OPERATIONS, THE SURFACE AREA ADJACENT TO AND AROUND THE STRUCTURES SHALL BE GRADED TO CONVEY SURFACE RUNOFF AWAY FROM THE STRUCTURE.

TESTING:

CONCRETE TESTING SHALL INCLUDE CONCRETE SLUMP (ASTM C-143) AND CONCRETE COMPRESSIVE STRENGTH (ASTM C-31 AND C-39). LANDOWNER/DEVELOPER/CONTRACTOR SHALL PAY FOR THE CURING AND BREAKING COST ASSOCIATED WITH THE REQUIRED CONCRETE CYLINDER SPECIMENS AS DETERMINED BY THE MID ENGINEER.

FINISH:

ALL EXPOSED CONCRETE EDGES AND CORNERS TO BE CHAMFERED 3/4 INCH. FLOORS OF HYDRAULIC STRUCTURES TO BE LIGHT BROOM FINISH.

REINFORCED CONCRETE PIPE SPECIFICATIONS (MID STD. 593)

1. MATERIALS

A. REINFORCED CONCRETE PIPE:
- PIPE AND FITTINGS SHALL CONFORM TO ASTM 361, B-25.
- PIPE TYPE - REINFORCED CONCRETE LOW-HEAD PRESSURE PIPE CONFORMING TO ASTM C361-16, B-25 WITH A MINIMUM WALL THICKNESS OF 5.5".
- CONCRETE PIPE FITTINGS AND SPECIALS - SHOP FABRICATE AS SHOWN AND DESIGN FOR SAME INTERNAL AND EXTERNAL PRESSURES AS ADJOINING PIPE.
- MARKING: EACH PIPE SECTION SHALL BE MARKED IN ACCORDANCE WITH REQUIREMENTS OF ASTM C361.
- SUBMIT FABRICATION PLANS AND CALCULATIONS FOR PIPE, FITTINGS, AND JOINT DETAILS. INCLUDE CONCRETE MIX DESIGN, REINFORCEMENT DIMENSIONS, CONCRETE COVER, SPACING, AND PLACEMENT TOLERANCES TO BE USED.
- SUBMIT MANUFACTURER'S CERTIFICATE OF COMPLIANCE THAT PRODUCTS FURNISHED MEET REQUIREMENTS OF THIS SECTION.
- SUBMIT CERTIFIED STATEMENT FROM MANUFACTURER OF CASKETS, SETTING FORTH THAT BASIC POLYMER USED IN GASKETS AND TEST RESULTS OF PHYSICAL PROPERTIES OF COMPOUND ARE IN ACCORDANCE WITH ASTM C361.

B. CIRCUMFERENTIAL REINFORCING: IN NO CASE SHALL AREAS OF REINFORCEMENT IN EACH CAGE BE LESS THAN THAT REQUIRED BY STANDARD DESIGNS GIVEN IN ASTM C361 NOR SHALL PLACEMENT TOLERANCES PERMIT LESS THAN 3/4 INCH OF PROTECTIVE CONCRETE COVER OVER REINFORCEMENT. SINGLE ELLIPTICAL REINFORCING NOT ALLOWED.

C. JOINTS:
- USE RUBBER-GASKET TYPE UTILIZING A SPIGOT GROOVE DESIGN IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM C361.
- JOINTS AND CASKETS SHALL CONFORM TO ASTM C361.
- SHALL FORM WATERTIGHT SEAL, CAPABLE OF RESISTING INTERNAL WATER HEAD AS SPECIFIED

2. PREPARATION: TRENCH BOTTOM SHALL FORM CONTINUOUS AND UNIFORM BEARING AND SUPPORT FOR PIPE BETWEEN BELL HOLES. CHECK PIPE BEDDING FOR UNIFORMITY OF SUPPORT PRIOR TO PLACING EACH SECTION OF PIPE. CORRECT FEATURES THAT WOULD CAUSE NON-UNIFORM SUPPORT PRIOR TO PIPE PLACEMENT. SHAPE BEDDING FOR UNIFORM SUPPORT AND PROVIDE BELL HOLES OF SUFFICIENT SIZE AT EACH JOINT TO ALLOW INSPECTION OF JOINT.

3. INSTALLATION

A. INSTALL PIPE SECTIONS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DO NOT DROP OR DUMP PIPE MATERIALS INTO TRENCH. WASH ENDS OF SECTION CLEAN WITH WET BRUSH PRIOR TO JOINING SECTIONS OF PIPE.

B. LAY PIPE UPGRADE WITH BELL ENDS POINTING IN DIRECTION OF LAYING, UNLESS OTHERWISE APPROVED BY MID ENGINEER. PLACE PIPE TO SPECIFIED LINE AND GRADE TO FORM SMOOTH FLOW LINE. APPLY SUFFICIENT FORCE TO MAKE JOINT" HOME", AS DEFINED IN INSTALLATION INSTRUCTIONS PROVIDED BY PIPE MANUFACTURER. ENSURE THAT BOTTOM OF PIPE IS IN CONTACT WITH BOTTOM OF TRENCH FOR FULL LENGTH OF EACH SECTION.

C. PIPE TRENCHING AND BACKFILL SHALL BE PER MID STANDARD DETAIL 591.

4. TESTS AND INSPECTIONS

A. CONDUCT HYDROSTATIC TESTS ON PIPELINE AFTER TRENCH HAS BEEN BACKFILLED.
B. SUBMIT TESTING PROCEDURE TO MID ENGINEER FOR REVIEW AND APPROVAL.

C. MAXIMUM FILLING VELOCITY SHALL NOT EXCEED 0.25 FEET PER SECOND, CALCULATED BASED ON FULL AREA OF PIPE. EXPEL AIR FROM PIPING SYSTEM DURING FILLING. MAINTAIN HYDROSTATIC TEST PRESSURE CONTINUOUSLY FOR 2 HOURS MINIMUM, ADDING ADDITIONAL MAKE-UP WATER ONLY AS NECESSARY TO RESTORE TEST PRESSURE. DETERMINE ACTUAL LEAKAGE BY MEASURING QUANTITY OF WATER NECESSARY TO MAINTAIN SPECIFIED TEST PRESSURE FOR DURATION OF TEST.

D. TEST PRESSURE SHALL BE 11 PSI.

E. ALLOWABLE LEAKAGE: MEASURED LEAKAGE SHALL NOT EXCEED 100 GALLONS PER INCH OF DIAMETER PER MILE OF PIPE PER 24 HOURS.

F. JOINT TESTING MAY BE PERFORMED IN LIEU OF HYDROSTATIC TESTING WITH APPROVAL OF MID. JOINT TEST DEVICE: PROVIDE DEVICE SPECIFICALLY DESIGNED FOR TESTING OF PIPE JOINTS. PROVIDE PIPE MANUFACTURER'S RECOMMENDED PROCEDURE FOR JOINT TESTING FOR REVIEW AND APPROVAL BY MID.

UTILITY CROSSING BORING NOTES

1. WHENEVER ANY PROPOSED UTILITY IS TO CROSS EXISTING MID FACILITIES (PIPELINE, UNLINED DITCH OR LINED CANAL) LYING WITHIN MID PROPERTY OR MID EASEMENTS, IT SHALL BE ACCOMPLISHED BY HORIZONTAL AUGER BORING OF A STEEL CASING PIPE RUNNING CONTINUOUSLY THE FULL WIDTH OF THE PROPERTY OR EASEMENT AS SPECIFIED IN MID STANDARD DETAIL 511-A, UTILITY CROSSING BORING DETAIL (OPEN CHANNEL) OR 511-B, UTILITY CROSSING BORING DETAIL (PIPELINE). WHENEVER ANY PROPOSED UTILITY IS TO CROSS EXISTING MID FACILITIES AS STATED ABOVE, LYING WITHIN A NON-EXCLUSIVE EASEMENT OR RIGHT-OF-WAY IT SHALL BE ACCOMPLISHED AS STATED ABOVE, EXCEPT THAT THE MINIMUM LENGTH OF THE CASING PIPE SHALL BE AS SHOWN ON MID STANDARD DETAIL 512, UTILITY CROSSING BORING DETAIL (WITHIN PUBLIC ROADS).
2. JACKING OF CASING PIPES WILL BE PERMITTED ONLY BY SPECIAL PERMISSION FROM THE MID ENGINEER.
3. SLURRY BORING, TUNNELING AND WATER AUGER BORING WILL NOT BE PERMITTED.
4. BORING PITS AND RECEIVING PITS SHALL ONLY BE PLACED OUTSIDE OF MID PROPERTY OR EASEMENTS. BORE PITS SHALL COMPLY WITH CAL-OSHA CONSTRUCTION SAFETY ORDERS. BORE PITS AND RECEIVING PITS SHALL BE SECURELY FENCED DURING NON-WORKING HOURS.
5. ONCE THE BORING OPERATION HAS COMMENCED, IT SHALL BE CONTINUED, UN -INTERRUPTED, AROUND THE CLOCK, UNTIL THE CASING PIPE HAS BEEN INSTALLED TO THE SPECIFIED LIMITS.
6. THE INSIDE DIAMETER OF THE CASING PIPES SHALL BE AS LARGE AS NECESSARY FOR THE INSTALLATION OF THE CARRIER PIPE AND SKIDS. IN NO CASE SHALL IT BE LESS THAN 2" LARGER THAN THE LARGEST OUTSIDE DIAMETER OF THE CARRIER PIPE. CASING PIPES SHALL CONFORM TO THE TABLE BELOW AND SHALL BE SEAMLESS OR WELDED SEAM PIPE AND IT SHALL BE COATED INSIDE WITH A BITUMINOUS COATING. IF A BITUMINOUS COATING CANNOT BE USED ON THE INSIDE OF THE CASING PIPE, THE CASING PIPE MINIMUM THICKNESS SHALL BE INCREASED 1/16 OF AN INCH.

   CASING THICKNESS:

CASING I.D.	MINIMUM THICKNESS
4"-10"	1/4"
12"-36"	3/8"
42"-48"	1/2"
LARGER	TO BE DETERMINED BY THE M.I.D. ENGINEER

7. CARRIER PIPES SHALL BE SUITABLE FOR TRANSPORTING THE PRODUCT INTENDED AND SHALL HAVE COMPRESSION SEALING JOINTS.
8. CASING PIPES FOR CARRIER PIPES TRANSPORTING PRODUCTS UNDER PRESSURE SHALL BE SEALED (PLUGGED) AT EACH END AND A VENT PIPE SHALL BE INSTALLED IF REQUIRED BY THE MID ENGINEER. CASING PIPES FOR GRAVITY FLOW CARRIER PIPES NEED ONLY TO BE SEALED (PLUGGED) AT EACH END. CASING PIPES CARRYING ELECTRICAL CONDUCTORS SHALL BE GROUNDED WITH A GROUNDING ROD IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE.
9. BORING SHALL NOT BE PERFORMED DURING THE IRRIGATION SEASON (MARCH 1ST TO OCTOBER 30TH) OR IN SATURATED GROUND WITHOUT SPECIFIC WRITTEN PERMISSION FROM THE MID ENGINEER.
10. THE DIAMETER OF THE BORED HOLE SHALL NOT BE MORE THAN 0.1 FOOT GREATER THAN THE CASING PIPE OUTSIDE DIAMETER. A SHIELD OR BAND MAY BE USED ON THE FIRST SECTION OF PIPE. VOIDS RESULTING FROM CAVING OR EXCAVATING OUTSIDE OF THE ABOVE LIMITS SHALL BE BACKFILLED WITH SAND OR GROUT BY AN APPROPRIATE METHOD WHICH WILL FILL THE VOIDS.
11. WHERE THE DEPTH OF A MID PIPELINE IS UNKNOWN, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO LOCATE THE PIPELINE. ONLY HAND AUGURING SHALL BE PERMITTED. ALLOW ADEQUATE DEPTH OF CASING PIPE TO INSURE THE SPECIFIED MINIMUM CLEARANCE.
12. MARKERS SHALL BE PLACED AS SHOWN ON MID STANDARD DETAIL 592, UTILITY CROSSING MARKER DETAIL. EMERGENCY NOTIFICATION TELEPHONE NUMBER 911 IS NOT ACCEPTABLE.

REGISTERED PROFESSIONAL ENGINEER — JASON K. CHAPMAN — No. 66134 — CIVIL — STATE OF CALIFORNIA

8/24/2023
DATE SIGNED:

CAUTION:
UNAUTHORIZED CHANGES AND USES

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS AND THE CITY ENGINEER.

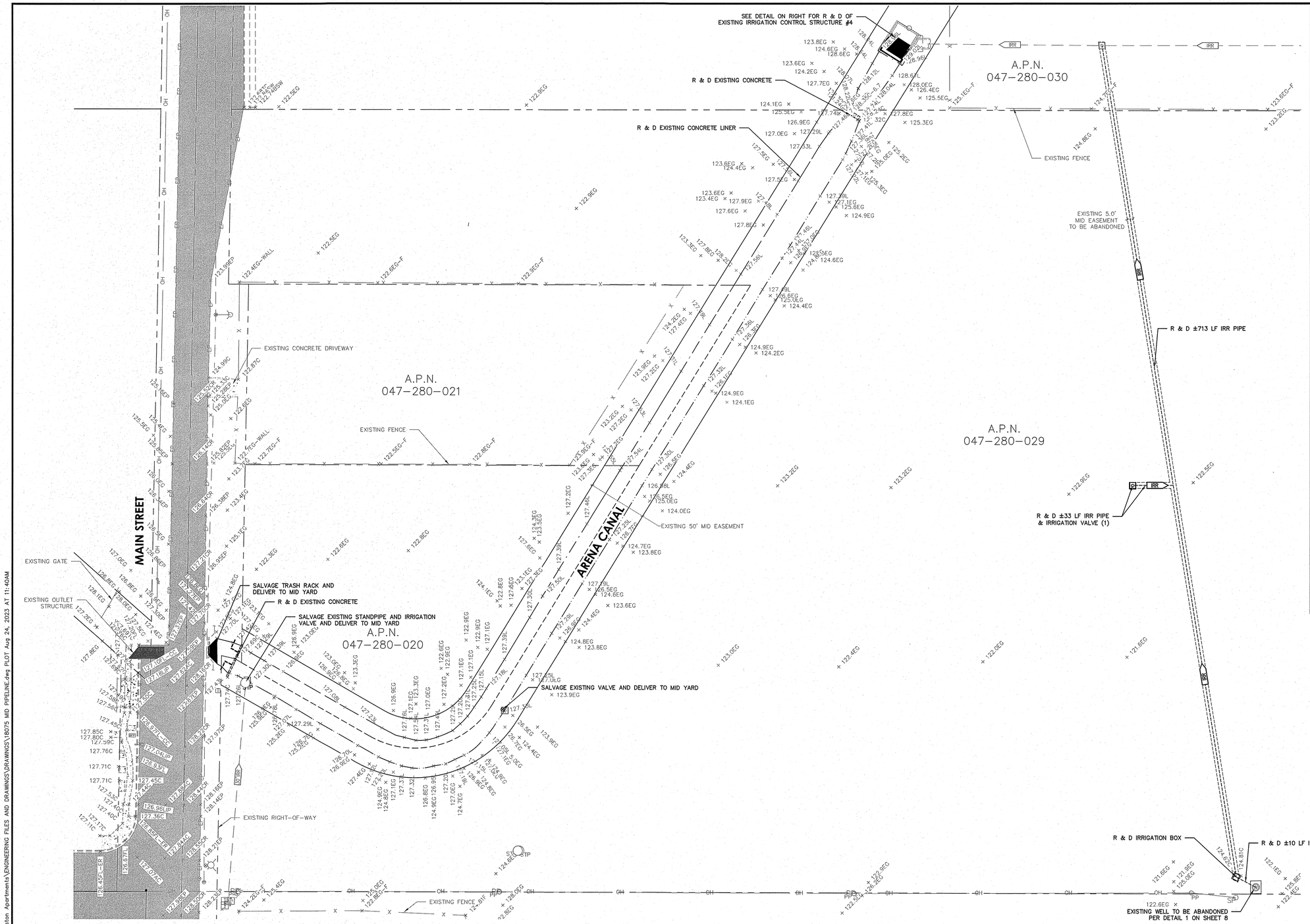
DESCRIPTION	DATE	BY

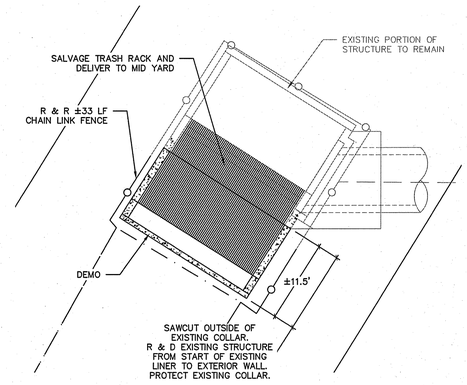
GDR ENGINEERING, INC.
ENGINEERING/SURVEYING/PLANNING
3525 MITCHELL ROAD, SUITE G CERES, CA 95307
TELEPHONE: (209) 538-3360 FAX: (209) 538-7370
E-MAIL: GDRENGINEERING@GDRENGR.COM

THE VILLAGES AT MAIN
MID PIPELINE IMPROVEMENT PLANS
NOTES SHEET

SCALE: AS NOTED DATE: 08/24/2023
DWG NO. 18075 MID PIPELINE.dwg LAYOUT 2-NOTES
DRAWN: GP
CHECKED:
SHEET: 2 OF 8
FILE NO. 18075

Z:\Production\Projects\18075 Sanghera - Livingston Apartments\ENGINEERING FILES AND DRAWINGS\DRAWINGS\18075 MID PIPELINE.dwg PLOT Aug 24, 2023 AT 11:40AM





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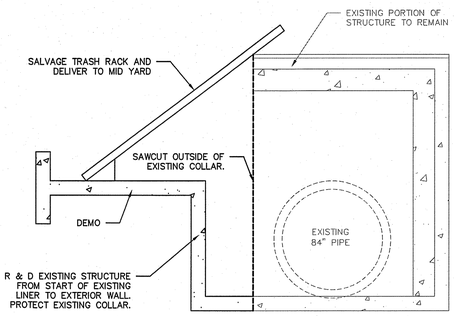
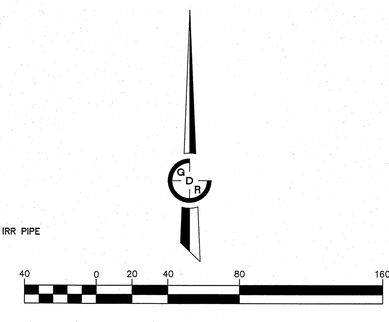


PROFILE VIEW: 1"=5'

DEMO OF EX. IRRIGATION CONTROL STRUCTURE #4 | 1



JASON K. CHAPMAN No. 66134 CIVIL STATE OF CALIFORNIA
REGISTERED PROFESSIONAL ENGINEER

8/24/2023
DATE SIGNED:

UNDERGROUND FACILITIES SHOWN WERE LOCATED BASED ON INFORMATION PROVIDED BY UTILITY COMPANIES AND BY MEASURING SURFACE FEATURES. NO ATTEMPT WAS MADE TO LOCATE OTHER UNDERGROUND FACILITIES THAT WERE NOT READILY APPARENT FROM A VISUAL INSPECTION OF SURFACE FEATURES.

CONTRACTOR SHALL VERIFY ACTUAL DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION....CALL "UNDERGROUND SERVICE ALERT" (U.S.A.),(TOLL FREE (800) 227-2600 PRIOR TO TRENCHING, GRADING, EXCAVATION, DRILLING, PIPE PUSHING, PLANTING TREES, DIGGING POST HOLES FOR FENCES, ETC.(U.S.A.) WILL SUPPLY INFORMATION OR LOCATE AND MARK ANY UNDERGROUND FACILITIES.

NOTES

THIS TOPOGRAPHIC SURVEY PERFORMED DECEMBER 31, 2019 IS BASED ON AN OBSERVATION OF SURFACE FEATURES AND INFORMATION PROVIDED BY LOCAL UTILITY COMPANIES, AND RECORD DRAWINGS. NO ATTEMPT WAS MADE TO LOCATE UNDERGROUND FACILITIES THAT WERE NOT READILY APPARENT FROM SURFACE OBSERVATION. THIS SURVEY NOT VALID FOR BOUNDARY PROPOSES.

THE ACTUAL LOCATION OF ALL UNDERGROUND FACILITIES MUST BE VERIFIED PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION.

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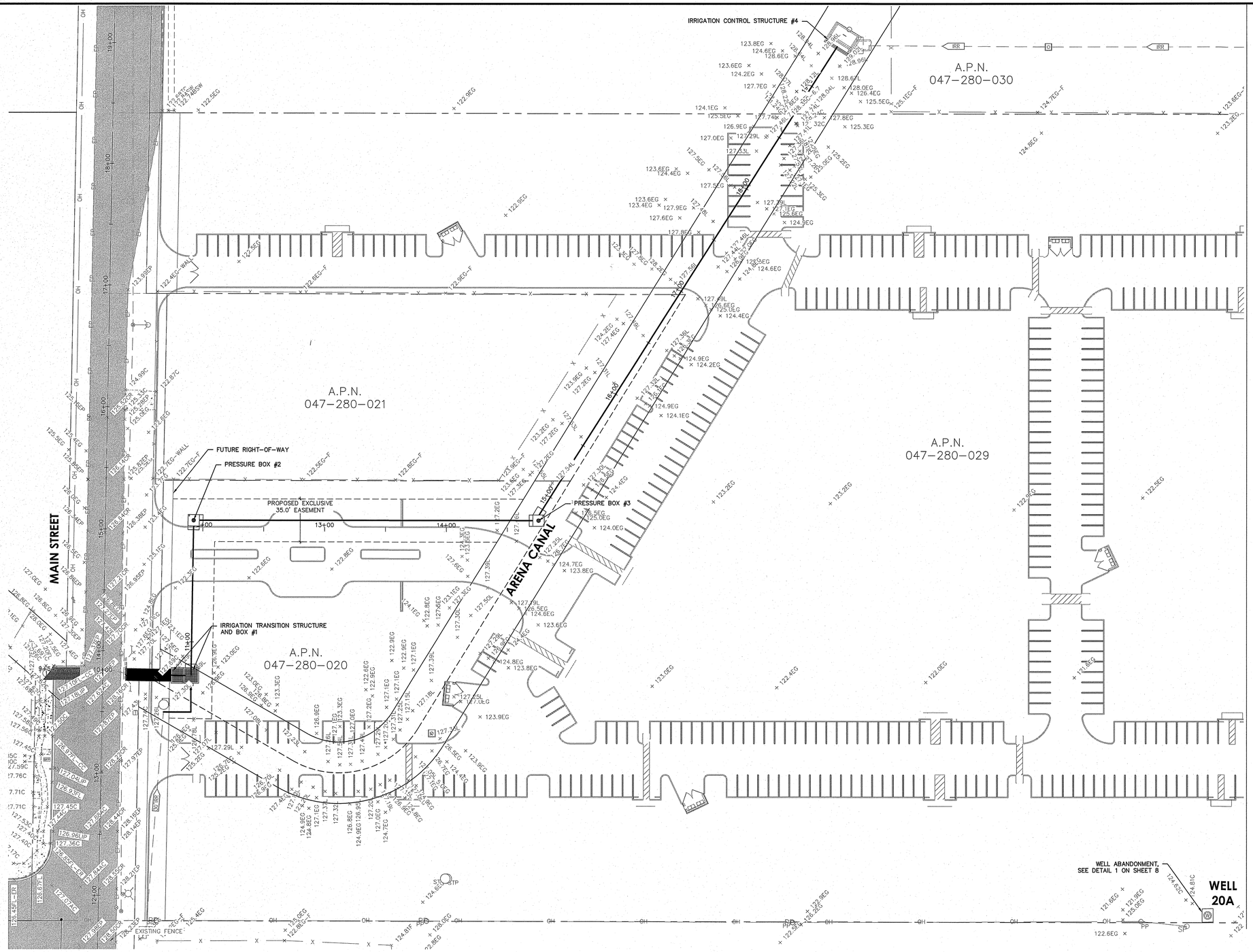
E-MAIL: GDRENGINEERING@GDRENGR.COM

THE VILLAGES AT MAIN
MID PIPELINE IMPROVEMENT PLANS
TOPOGRAPHY & DEMOLITION PLAN

SCALE: AS NOTED DATE: 08/24/2023
DWG NO. 18075 MID PIPELINE.dwg LAYOUT: 3-T&D SHEET: 3 OF 8
DRAWN: GP
CHECKED:
FILE NO. 18075



CALL BEFORE YOU DIG
U S A
800-227-2600

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REGISTERED PROFESSIONAL ENGINEER
JASON K. CHAPMAN
No. 66134
CIVIL
STATE OF CALIFORNIA

8/24/2023
DATE SIGNED:

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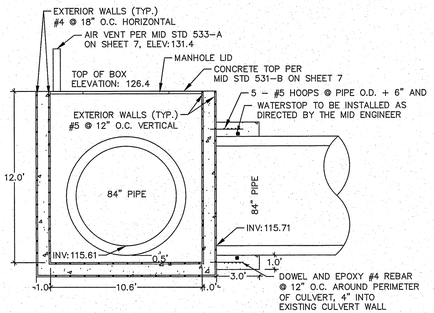
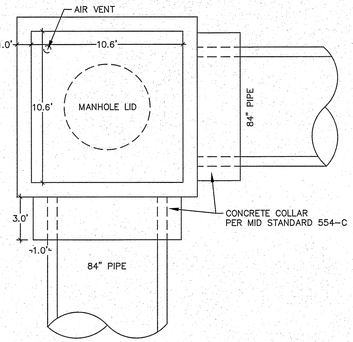
THE VILLAGES AT MAIN
MID PIPELINE IMPROVEMENT PLANS
SITE & GRADING PLAN

SCALE: AS NOTED DATE: 08/24/2023
DWG NO. 18075 MID PIPELINE.dwg LAYOUT: 4-SITE
DRAWN: GP
CHECKED:
SHEET: 4 OF 8
FILE NO. 18075

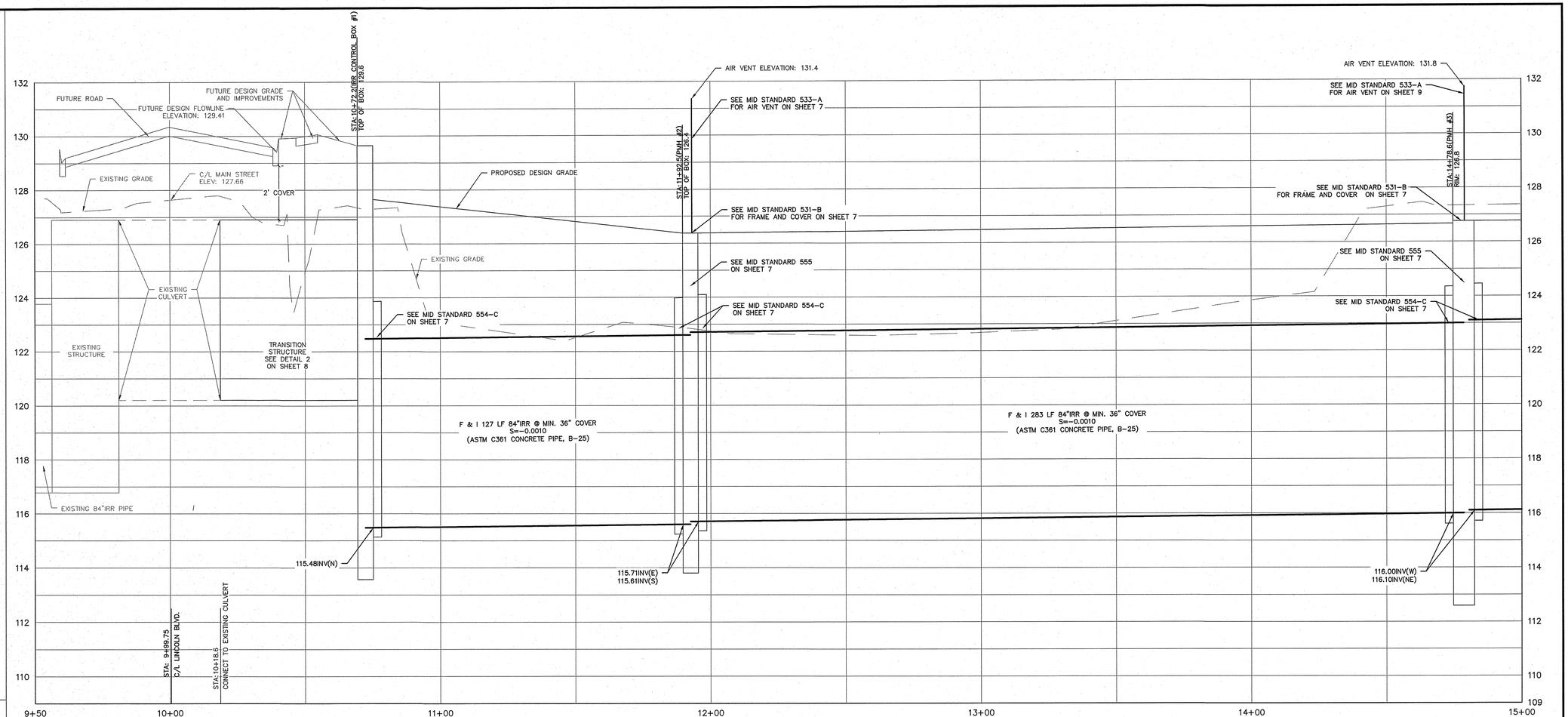
Z:\Production\Projects\18075 Sanghera - Livingston Apartments\ENGINEERING FILES AND DRAWINGS\DRAWINGS\18075 MID PIPELINE.dwg PLOT Aug 24, 2023 AT 11:40AM



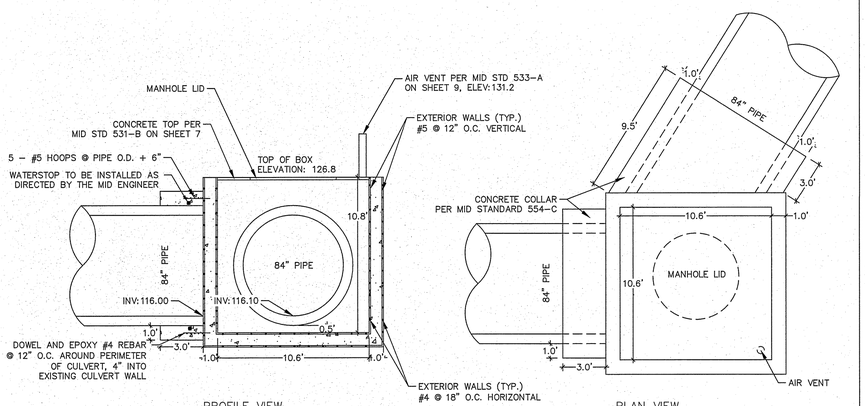
PROFILE VIEW



PLAN VIEW



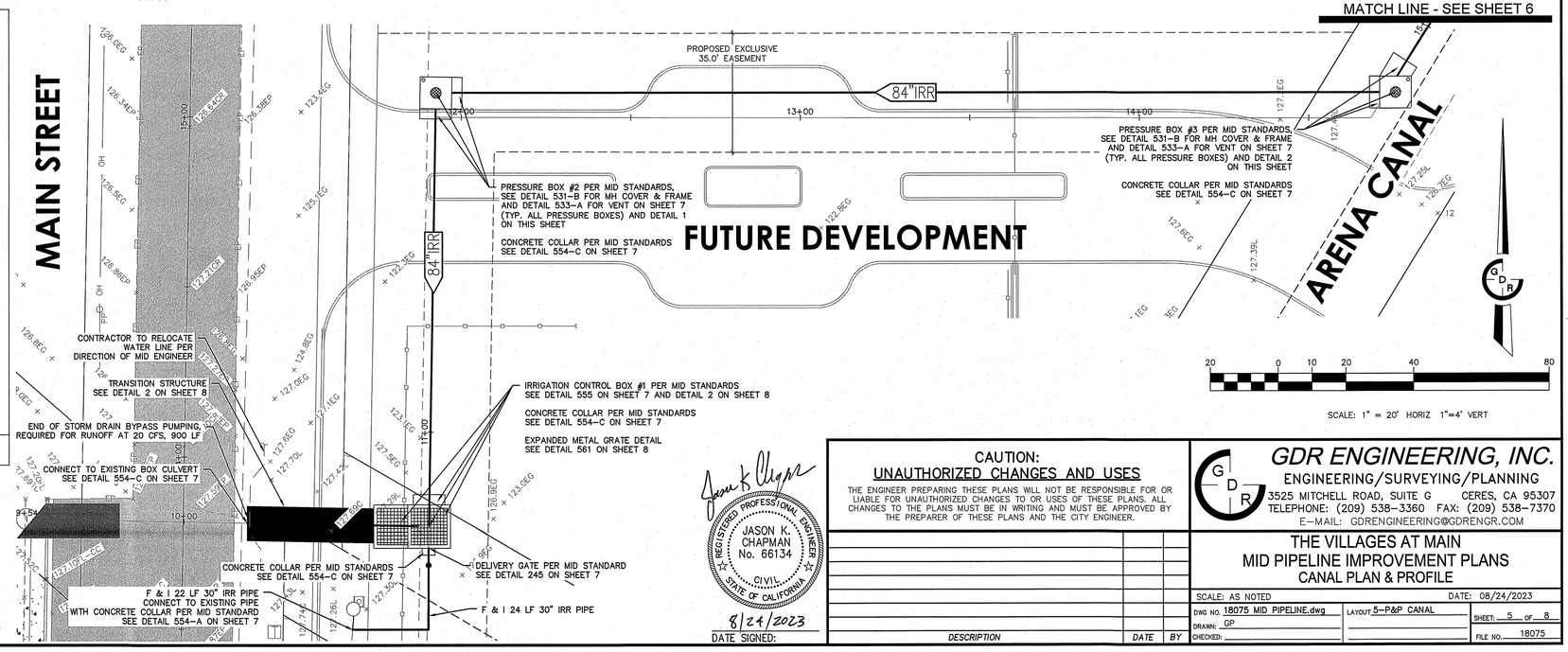
PRESSURE BOX #2 DETAIL | 1"=5' | 1



PROFILE VIEW

PLAN VIEW

PRESSURE BOX #3 DETAIL | 1"=5' | 2



CALL BEFORE YOU DIG
U S A
800-227-2600

UNDERGROUND FACILITIES SHOWN WERE LOCATED BASED ON INFORMATION PROVIDED BY UTILITY COMPANIES AND BY MEASURING SURFACE FEATURES. NO ATTEMPT WAS MADE TO LOCATE OTHER UNDERGROUND FACILITIES THAT WERE NOT READILY APPARENT FROM A VISUAL INSPECTION OF SURFACE FEATURES.

CONTRACTOR SHALL VERIFY ACTUAL DEPTH AND LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION....CALL "UNDERGROUND SERVICE ALERT" (U.S.A.),(TOLL FREE (800) 227-2600 PRIOR TO TRENCHING, GRADING, EXCAVATION, DRILLING, PIPE PUSHING, PLANTING TREES, DIGGING POST HOLES FOR FENCES, ETC.(U.S.A.) WILL SUPPLY INFORMATION OR LOCATE AND MARK ANY UNDERGROUND FACILITIES.

CONTRACTOR TO VERIFY DEPTH AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

REGISTERED PROFESSIONAL ENGINEER
JASON K. CHAPMAN
No. 66134
CIVIL
STATE OF CALIFORNIA

8/24/2023
DATE SIGNED:

CAUTION:
UNAUTHORIZED CHANGES AND USES

THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS AND THE CITY ENGINEER.

DESCRIPTION	DATE	BY

GDR ENGINEERING, INC.
ENGINEERING/SURVEYING/PLANNING
3525 MITCHELL ROAD, SUITE G CERES, CA 95307
TELEPHONE: (209) 538-3360 FAX: (209) 538-7370
E-MAIL: GDRENGINEERING@GDRENGR.COM

THE VILLAGES AT MAIN
MID PIPELINE IMPROVEMENT PLANS
CANAL PLAN & PROFILE

SCALE: AS NOTED DATE: 08/24/2023
DWG NO. 18075 MID PIPELINE.dwg LAYOUT 5-P&P CANAL
DRAWN: GP
CHECKED:
SHEET: 5 OF 8
FILE NO. 18075

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CONTRACTOR TO VERIFY DEPTH AND LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.

GENERAL STRUCTURAL NOTES

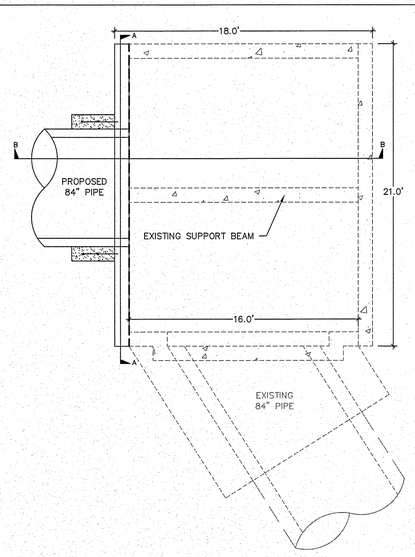
REINFORCING DETAILS

1. UNLESS OTHERWISE SHOWN, CONC WALLS AND SLABS SHALL BE REIN FORCED AS FOLLOW: #4@12" EW CENTER OF 6" SECTIONS; #5@12" EW CENTER OF 8" SECTIONS: #4@12" EACH WAY EACH FACE OF 10" SECTIONS; #5@12" EACH WAY EACH FACE OF 12" SECTIONS. SINGLE MAT REINF SHALL BE AT CENTER OF SECTIONS, UNLESS SHOWN OTHERWISE.
2. MIN CLR FOR REINF BARS, UNLESS SHOWN OTHERWISE, SHALL BE 3" WHEN PLACED ON GROUND; FOR SURFACES EXPOSED TO WATER OR WEATHER–1 ½" CLR FOR #5 BAR AND SMALLER AND 2" CLR FOR LARGER BARS; INTERIOR SLABS ¾" CLR, INTERIOR BEAMS 1 ½ CLR
3. UNLESS OTHERWISE NOTE,D ALL WALL REINF BARS SHALL BE CONT AROUND CORNERS AND THROUGH COL OR PILASTERS. REINF SHALL BE EXTENDED INTO CONNECTION WALLS AND LAPPED ON THE OPPOSITE FACE OF THE CONNECTING WALS, AS INDICATED ELSEWHERE ON THIS STREET. VERT WALL BARS SHALL BE LAPED WITH DOWELS FROM BASE SLABS AND EXTENDED INTO THE TOP FACE OF ROOF SLABS AND LAPPED WITH TOP SLAB REINF. UNLESS INDICATED OTHERWISE, CONTRACTOR MAY SPLICE CONTINUOUS SLAB OR LONGITUDINAL BEAM BARS AT LOCATIONS OF HIS CHOOSING, EXCEPT THAT TOP BAR SPLICES SHALL BE LOCATED AT MIDSPAN AND BOTTOM BAR SPLICES SHALL BE LOCATED AT SUPPORTS, STAGER ADJACENT SPLICES PER ACI 318 WITH MINIMUM OF 2'–0'. ALL REINF BENDS AND LAPS UNLESS OTHERWISE NOTED, SHALL SATISFY THE FOLLOWING MINIMUM REQUIREMENT:

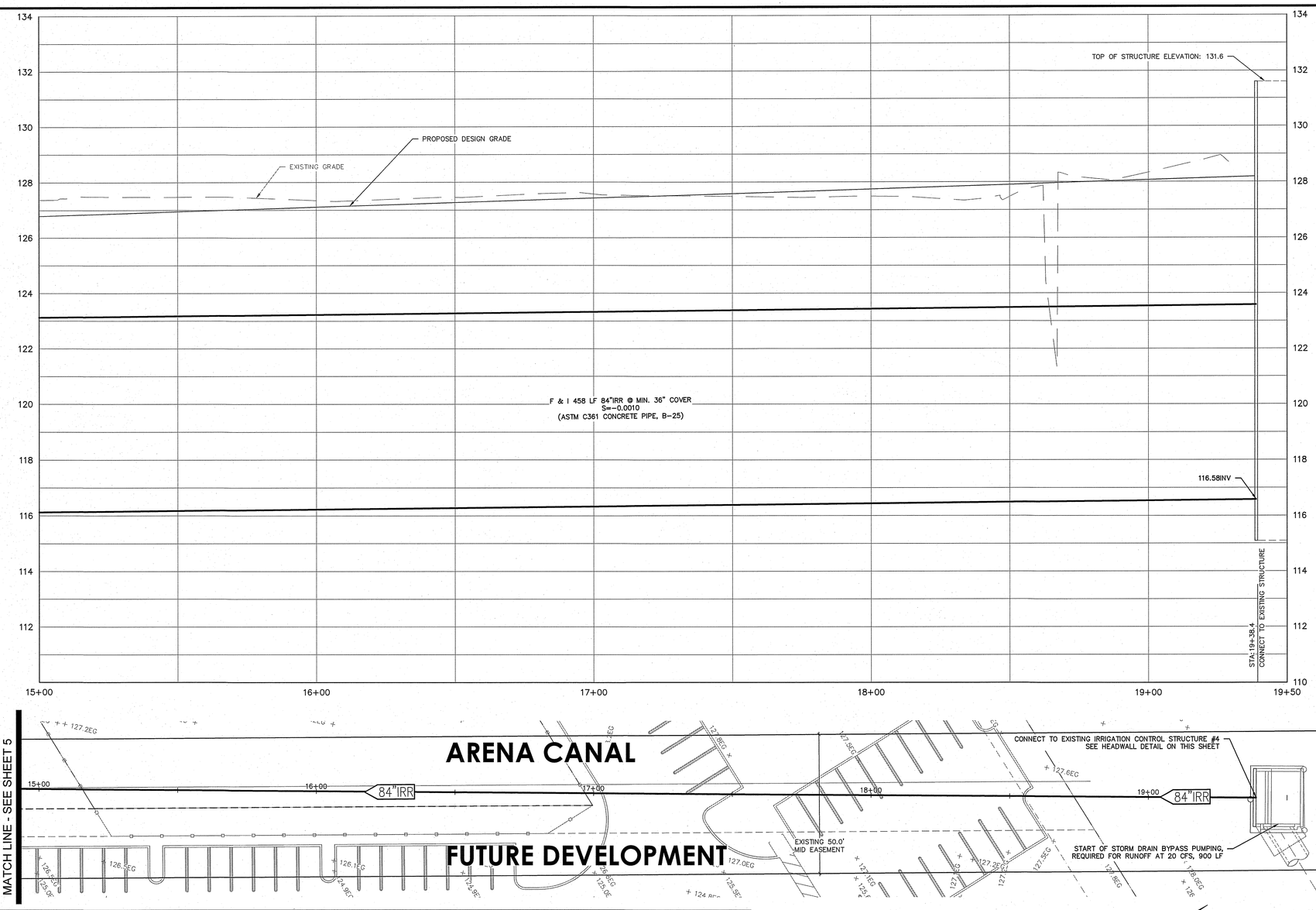
DETAILS OF REINFORCEMENT								
BAR SIZE	#8 OR SMALLER BARS		#9 BAR		#10 BAR		#11 BAR	
	BEND	LAP	BEND	LAP	BEND	LAP	BEND	LAP
TOP BAR*	28 DIA. MIN 1'–0"	42 DIA. MIN 2'–0"	3'–0"	4'–9"	3'–9"	6'–0"	4'–6"	7'–3"
OTHER BAR	20 DIA. MIN 1'–0"	30 DIA. MIN 1'–6"	2'–0"	3'–3"	2'–9"	4'–3"	3'–3"	5'–3"

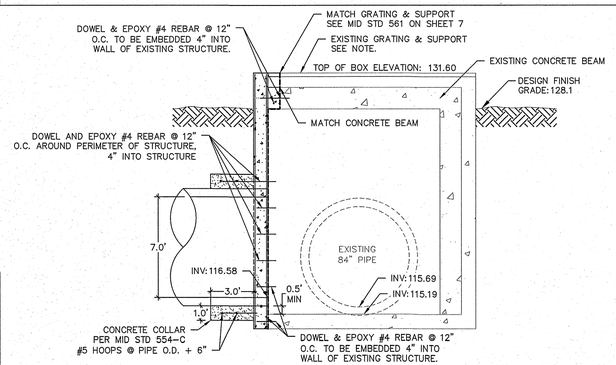
* TOP BARS SHALL BE DEFINED AS ANY HORIZONTAL BARS PLACED SUCH THAT MORE THAN 12 INCHES OF FRESH CONCRETE IS CAST IN THE MEMBER BELOW THE BAR, IN ANY SINGLE POUR. HORIZONTAL WALL BARS ARE CONSIDERED TOP BARS.

4. WHERE PLANS REQUIRE ONLY 60 GRADE REINF, DO NOT USE THE ABOVE VALUES. REFER TO ACI 318 CHAPTER 12 AND FURNISH CLASS "C" SPLICE WITH THE REDUCTION ALLOWED FOR BAR SPACING OF 6 INCHES.
5. CONT PLASTIC AS SPEC, SHALL BE INSTALLED IN ALL WALLS OF WATER HOLDING BASINS AND CHANNELS, EXCEPT WHERE INDICATED OTHERWISE.
6. ¾" CHAMFER OF ½" RADIUS ROUND REQUIRED ON ALL EXPOSED VERTICAL AND HORIZONTAL EDGES.
7. CONTRACTOR SHALL PROVIDE STAMPED STRUCTURAL CALCULATIONS FROM SUPPLIER.



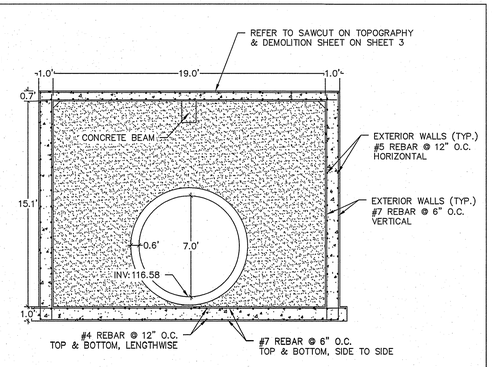
CONTROL STRUCTURE #4
PLAN VIEW



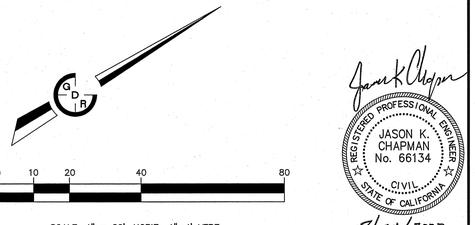


SECTION B–B

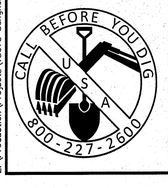
NOTE:
GRATING MODEL GW 1 ¾" X ¾" HD GALVANIZED STEEL AS MANUFACTURED BY MCNICHOLS CO. OR APPROVED EQUAL. PANEL SECTIONS REMOVABLE.



SECTION A–A



8/24/2023
DATE SIGNED:



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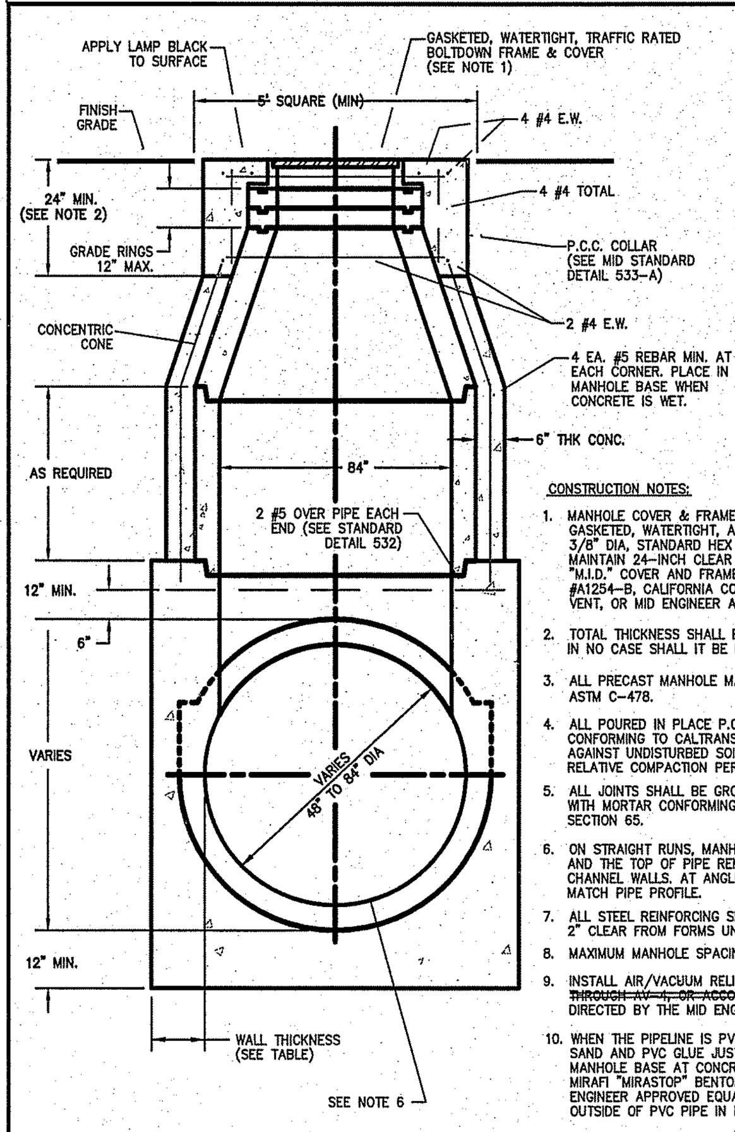
DESCRIPTION	DATE	BY

THE VILLAGES AT MAIN
MID PIPELINE IMPROVEMENT PLANS
CANAL PLAN & PROFILE

SCALE: AS NOTED DATE: 08/24/2023
DWG NO. 18075 MID PIPELINE.dwg LAYOUT 6–P&P CANAL
DRAWN: GP SHEET: 6 OF 8
CHECKED: FILE NO. 18075

PROPOSED HEADWALL CONNECTING TO EXISTING STRUCTURE #4 | 1"=5' | 1

Z:\Production\Projects\18075 Songhero – Livingston Apartments\ENGINEERING FILES AND DRAWINGS\DRAWINGS\18075 MID PIPELINE.dwg PLOT Aug 24, 2023 AT 11:41AM



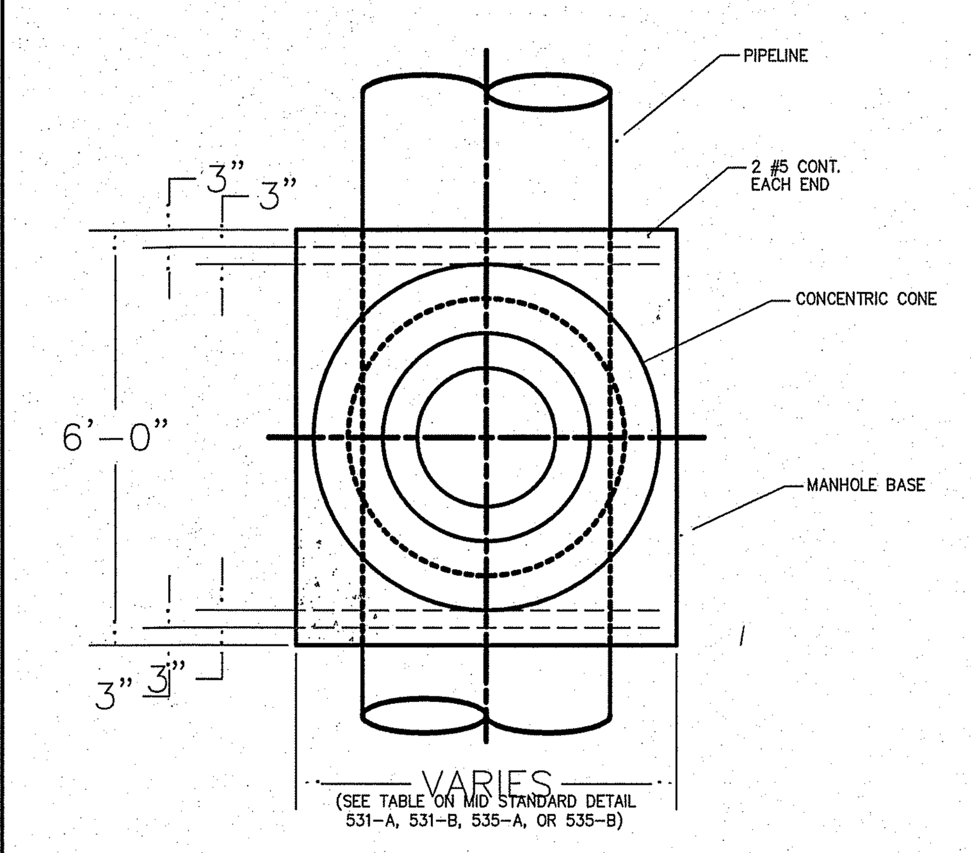
PIPE DIA	MIN. WALL	MAX. WALL
48"	12"	15"
54"	12"	15"
60"	13"	18"
66"	13"	18"
72"	14"	18"
78"	14"	18"
84"	14"	18"

CONSTRUCTION NOTES:

1. MANHOLE COVER & FRAME SHALL BE TRAFFIC RATED, GASKETED, WATERTIGHT, AND BOLTED DOWN. BOLTS SHALL BE 3/8" DIA, STANDARD HEX HEAD, STAINLESS STEEL, 6 IN QUANTITY. MAINTAIN 24-INCH CLEAR OPENING. COVER SHALL BE LETTERED "M.I.D." COVER AND FRAME SHALL BE ALHAMBRA FOUNDARY #A1254-B, CALIFORNIA CONCRETE PIPE A-624 BOLTDOWN W/OUT VENT, OR MID ENGINEER APPROVED EQUIVALENT.
2. TOTAL THICKNESS SHALL BE DETERMINED FOR EACH LOCATION. IN NO CASE SHALL IT BE LESS THAN 24".
3. ALL PRECAST MANHOLE MATERIAL SHALL CONFORM TO ASTM C-478.
4. ALL POURED IN PLACE P.C.C. SHALL BE CLASS "A," CONFORMING TO CALTRANS STANDARDS, SECTION 90, PLACED AGAINST UNDISTURBED SOIL OR SOIL COMPACTED TO 90% RELATIVE COMPACTION PER ASTM D-1557.
5. ALL JOINTS SHALL BE GROUTED WATER TIGHT INSIDE AND OUT WITH MORTAR CONFORMING TO CALTRANS STANDARDS, SECTION 65.
6. ON STRAIGHT RUNS, MANHOLE MAY BE INSTALLED OVER PIPE AND THE TOP OF PIPE REMOVED AT SPRING LINE TO FORM CHANNEL WALLS. AT ANGLE POINTS, FORM P.C.C. CHANNEL TO MATCH PIPE PROFILE.
7. ALL STEEL REINFORCING SHALL BE 3" CLEAR FROM EARTH AND 2" CLEAR FROM FORMS UNLESS OTHERWISE SPECIFIED HEREIN.
8. MAXIMUM MANHOLE SPACING 400 FEET.
9. INSTALL AIR/VACUUM RELIEF. SEE MID STANDARD DETAILS ~~AV-1 THROUGH AV-4, OR ACCORDING TO~~ 533-A OR 533-B AS DIRECTED BY THE MID ENGINEER.
10. WHEN THE PIPELINE IS PVC, RUB OUTSIDE OF PVC PIPE WITH SAND AND PVC GLUE JUST PRIOR TO CONCRETE POUR FOR MANHOLE BASE AT CONCRETE TO PVC INTERFACE. ALSO ATTACH MIRAFI "MIRASTOP" BENTONITE CLAY WATERSTOP, OR MID ENGINEER APPROVED EQUAL IN CONTINUOUS LOOP AROUND OUTSIDE OF PVC PIPE IN MANHOLE BASE WALL.

C:\DWG\NEW_STDS\STA531-B.DWG — REVISION AND REPLACEMENT OF MID STANDARD DETAIL MH-2A

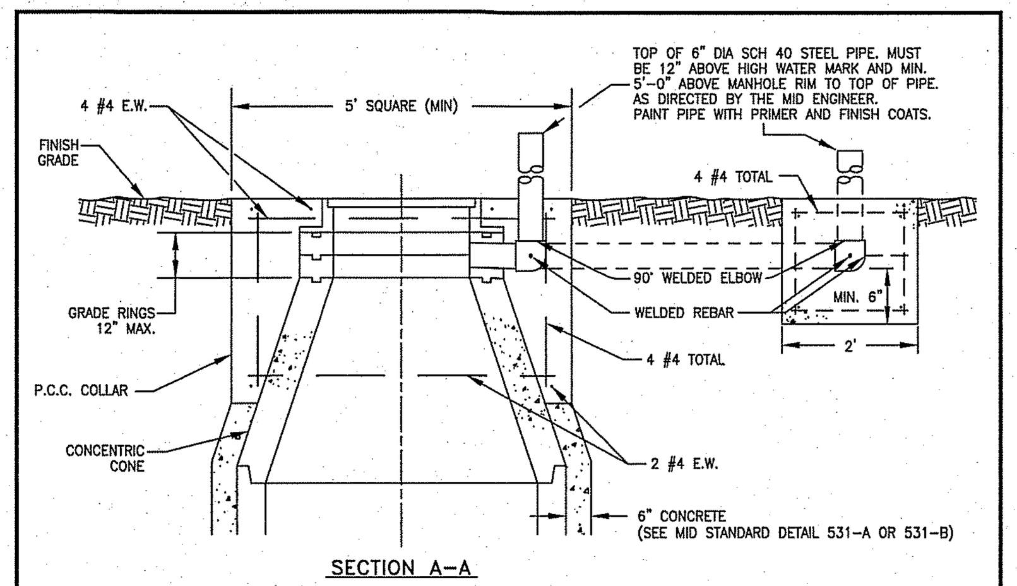
PRESSURE MANHOLE (48" THROUGH 84" PIPE) | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | -DRAFT- MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: FD/ES/EAA | SCALE: N.T.S. | DRAWN: BRB | DATE: 10-12-99 | STANDARD DETAIL 531-B | SHEET 1 OF 1



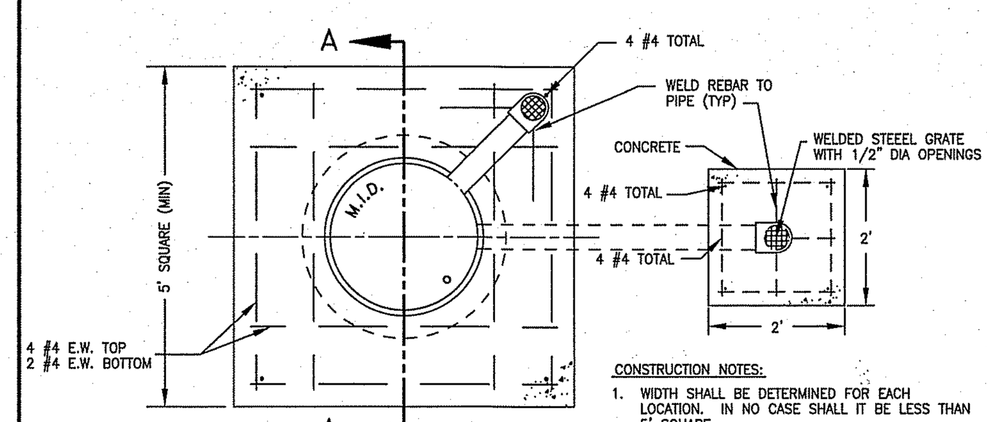
MANHOLE BASE
(PLAN VIEW)

C:\DWG\NEW_STDS\STD532.DWG — REVISION AND REPLACEMENT OF MID STANDARD DETAIL MH-5

PRESSURE/STANDARD MANHOLE DETAIL: BASE | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED BY MID BOARD ACTION: 11.20.90 | FLOYD DAVIS, RCE 32951, DISTRICT ENGINEER, 11-20-90 DATE | DESIGNED: FD/EAA | SCALE: N.T.S. | DRAWN: BRB | DATE: 10-12-99 | STANDARD DETAIL 532 | SHEET 1 OF 1



SECTION A-A
MANHOLE COLLAR – UNIMPROVED AREA



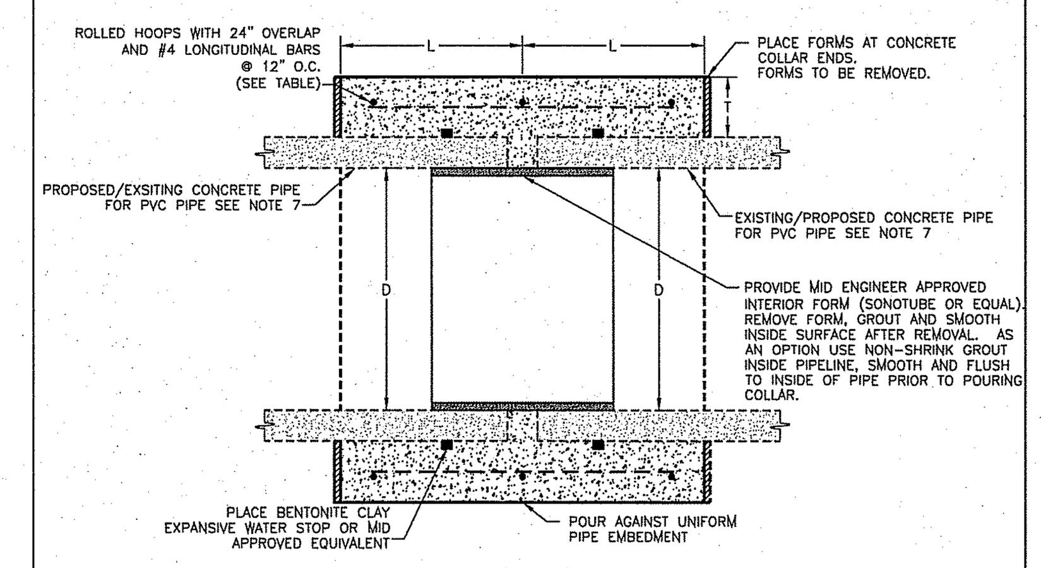
PLAN VIEW
MANHOLE COLLAR

CONSTRUCTION NOTES:

1. WIDTH SHALL BE DETERMINED FOR EACH LOCATION. IN NO CASE SHALL IT BE LESS THAN 5' SQUARE.
2. PIPE TO BE INSTALLED AS CLOSE TO GRADE RINGS AS POSSIBLE TO PREVENT AIR POCKETS.
3. AIR VENT LOCATION AS SHOWN ON THE PROJECT PLANS OR IN A LOCATION SPECIFIED BY THE MID ENGINEER.

STD533-A.dwg

PRESSURE MANHOLE DETAIL: COLLAR WITH PIPE VENT | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | -DRAFT- MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: FD/ES/EAA | SCALE: N.T.S. | DRAWN: JF | DATE: 7-20-17 | STANDARD DETAIL 533-A | SHEET 1 OF 1



CONSTRUCTION NOTES:

1. THIS STANDARD APPLIES TO CONCRETE PIPES (OR PVC PIPES IF SPECIFICALLY APPROVED) BEING CONNECTED WITH A CONCRETE COLLAR AND ONLY PIPES LEVEL OR AT THE SAME SLOPE. IT SHALL NOT APPLY TO PIPES WITH DEFLECTIONS AT THE CONNECTION POINT.
2. IF REMOVAL OF AN EXISTING STRUCTURE OR PIPE IS SPECIFIED, REMOVAL SHALL BE BY SAWCUTTING, OR OTHER APPROVED METHOD, WITH THE MID ENGINEER ON SITE DURING SAWCUTTING.
3. PREPARE SURFACE OF EXISTING PIPES BY WIRE BRUSHING, WATER BLASTING, OR SAND BLASTING AS REQUIRED BY THE MID ENGINEER.
4. VIBRATE CONCRETE IN PLACE.
5. PROVIDE WATER TIGHT JOINT.
6. CONCRETE SHALL BE 3000 PSI @ 28 DAYS OR BETTER AND CONFORM TO MID STANDARD DETAIL 551.
7. CONCRETE PIPE: SHALL BE CLEANED AND TREATED WITH AN APPROVED CONCRETE BONDING AGENT PRIOR TO CONCRETE PLACEMENT AS REQUIRED BY MID ENGINEER.

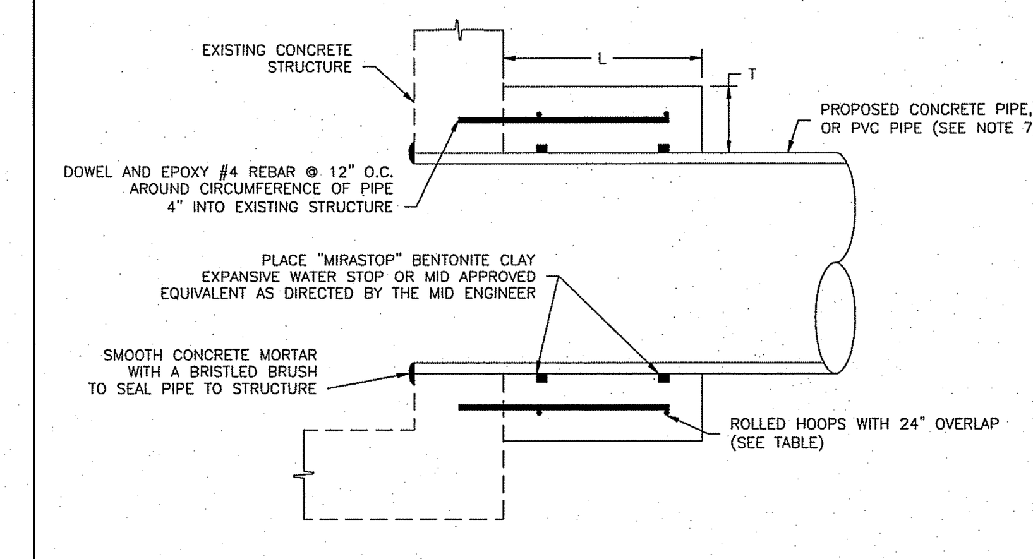
PVC PIPE: SHALL BE RUBBED AROUND THE OUTSIDE WITH PVC SOLVENT CEMENT AND SANDED TO ROUGHEN SURFACE PRIOR TO CONCRETE PLACEMENT.

8. FOR COLLAR WITH DIFFERENT PIPELINE DIAMETERS (D) THAT EXCEED 3 INCHES A MANHOLE OR OTHER APPROVED TRANSITION STRUCTURE IS REQUIRED.

PIPE DIAMETER	L	T	MIN. NO. HOOPS
LESS THAN OR EQUAL TO 24"	18"	6"	3
LESS THAN OR EQUAL TO 48"	24"	8"	4
LESS THAN OR EQUAL TO 72"	30"	12"	5
GREATER THAN 72"	BY DESIGN	BY DESIGN	BY DESIGN

STD ***.dwg

REINFORCED CONCRETE COLLAR PIPE TO PIPE | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: ** | SCALE: NTS | DRAWN: EMP | DATE: 4/3/2018 | STANDARD DETAIL 554-A | SHEET 1 OF 1



CONSTRUCTION NOTES:

1. THIS STANDARD APPLIES TO CONCRETE PIPES, RCP OR PVC PIPES BEING CONNECTED TO AN EXISTING REINFORCED CONCRETE STRUCTURE WITH A CONCRETE COLLAR.
2. IF REMOVAL OF AN EXISTING STRUCTURE OR PIPE IS SPECIFIED, REMOVAL SHALL BE BY SAWCUTTING WITH THE MID ENGINEER ON SITE DURING SAWCUTTING.
3. PREPARE SURFACE OF EXISTING STRUCTURES BY WIRE BRUSHING, WATER BLASTING, OR SAND BLASTING AS REQUIRED BY THE MID ENGINEER.
4. VIBRATE CONCRETE IN PLACE.
5. PROVIDE WATER TIGHT JOINT.
6. CONCRETE SHALL BE 3000 PSI @ 28 DAYS OR BETTER AND CONFORM TO MID STANDARD DETAIL 551.
7. CONCRETE PIPE: SHALL BE CLEANED AND TREATED WITH AN APPROVED CONCRETE BONDING AGENT PRIOR TO CONCRETE PLACEMENT AS REQUIRED BY MID ENGINEER.

PVC PIPE: SHALL BE RUBBED AROUND THE OUTSIDE WITH PVC SOLVENT CEMENT AND SANDED TO ROUGHEN SURFACE PRIOR TO CONCRETE PLACEMENT.

PIPE DIAMETER	L	T	MIN. NO. HOOPS
LESS THAN OR EQUAL TO 24"	18"	6"	2
LESS THAN OR EQUAL TO 48"	24"	8"	3
LESS THAN OR EQUAL TO 72"	30"	12"	4
GREATER THAN 72"	36"	12"	5

STD554-C.dwg

REINFORCED CONCRETE COLLAR (PIPE TO EXISTING CONCRETE STRUCTURE) | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED -DRAFT- MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: HT | SCALE: N.T.S. | DRAWN: MRS | DATE: 10/06/03 | STANDARD DETAIL 554-C | SHEET 1 OF 1

MID NOTES:

1. THE SIGNATURE OF THE MERCED IRRIGATION DISTRICT (MID) ON DRAWINGS CONSTITUTES MID'S APPROVAL OF THE SAME AS TO THE ENGINEERING ASPECTS THEREOF ONLY AND DOES NOT AUTHORIZE, EXPRESSLY OR IMPLICITLY THE CONSTRUCTION OF ANY ASPECT HEREOF OR THE INTERFERENCE WITH ANY PROPERTY, EQUIPMENT, OR INTEREST OF THE MID. NO SUCH CONSTRUCTION OR INTERFERENCE SHALL OCCUR UNTIL THE MID HAS OBTAINED, BY SEPARATE AGREEMENT SUCH AGREEMENTS AS MID DEEMS NECESSARY FOR THE PROTECTION OF ITS FACILITIES.
2. ALL CONSTRUCTION WITHIN THE MID RIGHT-OF-WAY SHALL BE DONE IN ACCORDANCE WITH THE APPROVED DRAWINGS AND THE CURRENT EDITION OF MID STANDARDS AND CALTRANS STANDARD SPECIFICATIONS, AS APPLICABLE.
3. CONSTRUCTION WITHIN THE MID RIGHT-OF-WAY WILL NOT BE ALLOWED DURING THE IRRIGATION SEASON (MARCH 1 TO OCTOBER 31).
4. CONTRACTOR SHALL PROVIDE AN ALTERNATE STORM WATER REROUTE DURING CONSTRUCTION UNLESS DETERMINED OTHERWISE BY THE MID ENGINEER.
5. WHERE THE PLANS OR SPECIFICATIONS DESCRIBE PORTIONS OF THE WORK IN GENERAL TERMS BUT NOT IN COMPLETE DETAIL, IT IS UNDERSTOOD THAT ONLY THE BEST GENERAL PRACTICE IS TO PREVAIL AND THAT ONLY MATERIALS AND WORKMANSHIP OF THE FIRST QUALITY ARE TO BE USED.
6. MID STANDARD DETAILS MAY REQUIRE MODIFICATIONS BASED ON FOUND FIELD CONDITIONS SUCH MODIFICATIONS SHALL BE REVIEWED AND APPROVED BY THE MID ENGINEER.
7. CONTRACTOR AGREES TO ASSUME SOLE RESPONSIBILITY FOR THE JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
8. CAL-OSHA SAFETY REQUIREMENTS SHALL BE IN EFFECT DURING ALL CONSTRUCTION. SPECIAL SAFETY PRECAUTIONS SHALL BE TAKEN WHEN WORKING IN THE VICINITY OF GAS, OIL, OR ELECTRICAL LINES.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY WITH CALIFORNIA GOVERNMENT CODE 4216, AS APPLICABLE. TO OBTAIN A DIG ALERT IDENTIFICATION NUMBER, CALL 800-227-2600 AT LEAST TWO WORKING DAYS BEFORE DIGGING UNDERGROUND.
10. THE MID WILL NOT BE RESPONSIBLE FOR, OR LIABLE FOR, UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE OBTAINED IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THE PLANS.
11. CONTRACTOR SHALL BE REQUIRED TO HAVE A PRE-CONSTRUCTION CONFERENCE WITH THE MID ENGINEER, PRIOR TO STARTING ANY WORK WITHIN THE MID RIGHT-OF-WAY.
12. EARTHFILL AND SUBGRADES SHALL BE COMPACTED TO A MINIMUM 90% RELATIVE COMPACTION (ASTM D-1557) WITHIN THE MID RIGHT-OF-WAY, UNLESS DETERMINED OTHERWISE BY THE MID ENGINEER.
13. A SET OF APPROVED PLANS SHALL BE ON THE JOB SITE AT ALL TIMES DURING CONSTRUCTION.
14. ANY DAMAGES TO MID FACILITIES DURING CONSTRUCTION SHALL BE REPAIRED OR REPLACED IN A MANNER APPROVED BY THE MID ENGINEER AT THE SOLE COST OF THE CONTRACTOR.
15. ANY WORK WITHIN THE MID RIGHT-OF-WAY SHALL NOT BE DEEMED COMPLETE UNTIL THE MID ENGINEERING DEPARTMENT HAS BEEN PROVIDED WITH A SET OF AS-BUILT PLANS IN AUTO CAD R12 AND HARD COPY FORMATS.
16. CONTACT THE MERCED IRRIGATION DISTRICT ENGINEERING DEPARTMENT AT LEAST TWO WORKING DAYS PRIOR TO ANY CONSTRUCTION AND/OR NECESSARY INSPECTIONS. WORK WITHIN THE MID RIGHT-OF-WAY SHALL PROCEED IN A CONTINUOUS MANNER ONCE STARTED. THE MID ENGINEER SHALL BE NOTIFIED OF ANY WORK STOPPAGES. WHENEVER WORK IS TO RESTART, THE MID ENGINEER SHALL REQUIRE AN ADDITIONAL TWO WORKING DAYS NOTICE. THE MID ENGINEER SHALL ALSO BE CONTACTED A MINIMUM OF TWO WORKING DAYS PRIOR TO ALL CONSTRUCTION SCHEDULED ON A HOLIDAY OR WEEKEND. PHONE: 209-722-5761.

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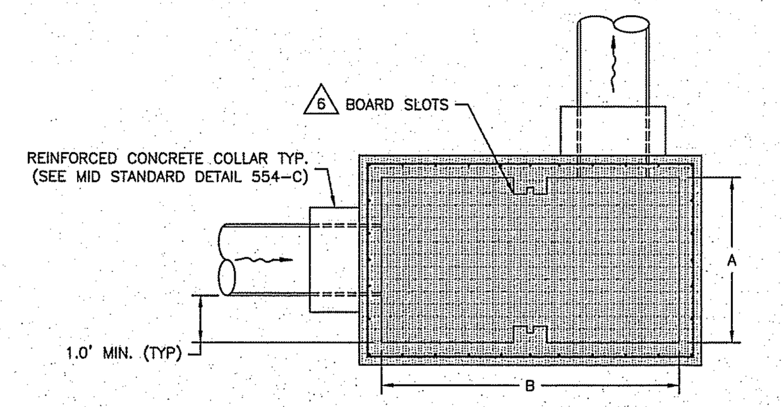
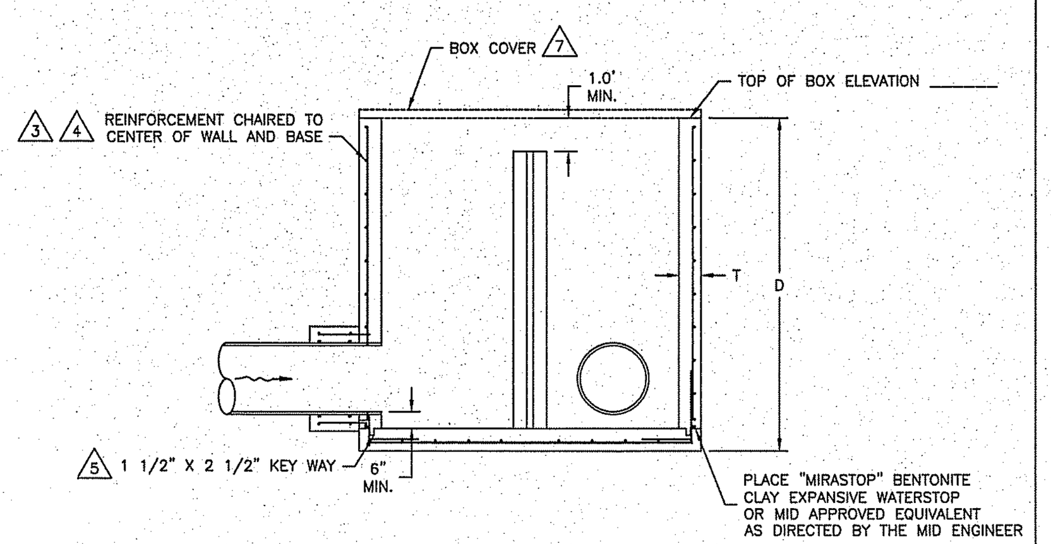
GENERAL NOTES | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED Hicham ElTal 11-17-03 MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: HT | SCALE: N.T.S. | DRAWN: MRS | DATE: 10/13/03 | STANDARD DETAIL 501 | SHEET 1 OF 1



BOX DIMENSIONS (A X B)
UP TO 27" ID PIPE – 4.0' X 4.0'
UP TO 36" ID PIPE – 5.0' X 5.0'
UP TO 48" ID PIPE – 6.0' X 6.0'

BOX WITH BOARD SLOT DIMENSIONS (A X B)
UP TO 27" ID PIPE – 4.0' X 9.0'
UP TO 36" ID PIPE – 5.0' X 9.0'
UP TO 48" ID PIPE – 6.0' X 9.0'

PLAN VIEW



SECTION VIEW

NOTE:
SEE SHEET 2 FOR CONSTRUCTION NOTES AND TABLE "A"

STD555.dwg

REINFORCED CONCRETE BOX STRUCTURE | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: JW | SCALE: N.T.S. | DRAWN: JF | DATE: 03/10/2017 | STANDARD DETAIL 555 | SHEET 1 OF 2

CONSTRUCTION NOTES:

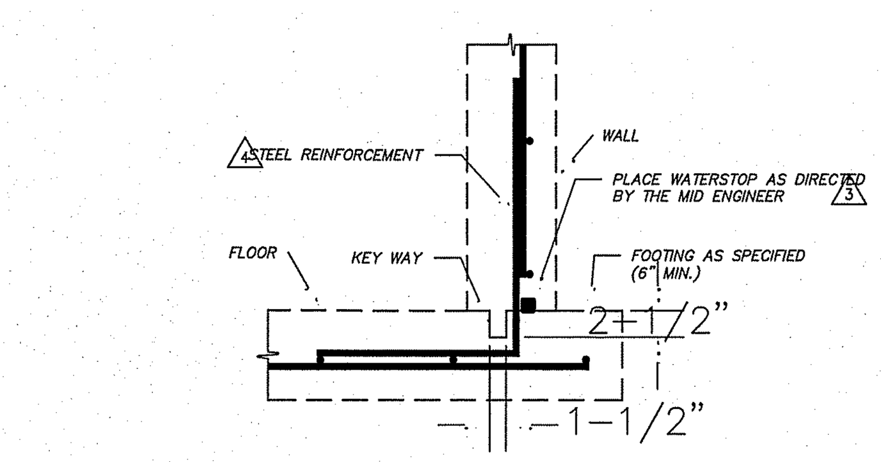
1. ELEVATIONS AND MAXIMUM PIPE SIZE SHALL BE DETERMINED BY THE MID ENGINEER.
2. ALL STRUCTURE SUBGRADES TO BE INSPECTED BY THE MID ENGINEER PRIOR TO CONCRETE POUR OR BACKFILL.
3. BOX TO BE CAST IN PLACE. CONCRETE 28 DAY COMPRESSIVE STRENGTH TO BE PER TABLE "A", SLUMP SHALL BE A MAXIMUM OF 4 INCHES. SEE MID STANDARD DETAIL 551, CONCRETE SPECIFICATION.
4. REINFORCING STEEL SHALL BE DEFORMED BARS, CONFORMING TO ASTM A-615, GRADE 40 OR 60. ALL BAR SPLICES TO BE LAPPED A MINIMUM OF 39 BAR DIAMETERS. MINIMUM BAR COVERAGE IS CLEAR DISTANCE BETWEEN SURFACE OF BAR AND FACE OF CONCRETE AND SHALL BE 3 INCHES MINIMUM. UNLESS OTHERWISE SHOWN BAR SHALL BE PLACED IN CENTER OF CONCRETE SECTION.
5. PROVIDE A CONSTRUCTION JOINT CONFORMING TO MID STANDARD DETAIL 557, CONSTRUCTION JOINT DETAIL.
6. IF REQUIRED, BOARD SLOTS SHALL BE 2 1/2" X 2 1/2" SLOTS FORMED IN CONCRETE AND CONFORM TO MID STANDARD DETAIL 556, BOARD SLOT DETAIL.
7. BOX SHALL BE COVERED ACCORDING TO MID STANDARD DETAIL 561-A, GRATE COVER FOR REINFORCED CONCRETE BOX, OR MID ENGINEER APPROVED EQUIVALENT.
8. PREFABRICATED BOXES SHALL BE DESIGNED BY A LICENSED ENGINEER FOR THE SPECIFIC SITE.

TABLE "A"

D	T	REINFORCEMENT	COMPRESSIVE STRENGTH
≤6.0'	8"	#4 REBAR @ 12" O.C. EACH WAY	3000 PSI MIN.
≤8.0'	8"	#4 REBAR @ 12" O.C. EACH WAY	3000 PSI MIN.
≤10.0'	8"	#5 REBAR @ 12" O.C. EACH WAY	4000 PSI MIN.
≤12.0'	10"	#5 REBAR @ 12" O.C. EACH WAY	4000 PSI MIN.
>12.0'	BY DESIGN	BY DESIGN	BY DESIGN

STD555.dwg

REINFORCED CONCRETE BOX STRUCTURE | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: JW | SCALE: N.T.S. | DRAWN: JF | DATE: 03/10/2017 | STANDARD DETAIL 555 | SHEET 2 OF 2



CONSTRUCTION NOTES:

1. ALL JOINTS BETWEEN CONCRETE POURS SHALL BE APPROVED CONSTRUCTION JOINTS. ALL CONSTRUCTION JOINTS SHALL CONFORM TO THIS STANDARD AND MID STANDARD DETAIL 551, CONCRETE SPECIFICATION.

2. CONSTRUCTION JOINTS SHALL BE PLACED AS SHOWN ON THE PLANS OR AS PRE-APPROVED BY THE MID ENGINEER. JOINTS SHALL BE THOROUGHLY CLEANED AND LAITANCE REMOVED BEFORE A NEW POUR IS MADE. EACH JOINT SHALL BE WETTED IMMEDIATELY BEFORE THE PLACING OF NEW CONCRETE.

3. WATERSTOP SHALL BE "MIRASTOP" BENTONITE CLAY EXPANSIVE WATERSTOP OR EQUIVALENT AS APPROVED BY THE MID ENGINEER.

4. REINFORCING STEEL SHALL JOIN THE CONCRETE BETWEEN POURS WITH A MINIMUM OVERLAP CONFORMING TO MID STANDARD DETAIL 551, CONCRETE SPECIFICATION.

5. THIS DETAIL DOES NOT SPECIFY CONCRETE THICKNESS OR REINFORCEMENT SIZE WHICH SHOULD BE DESIGNED SEPARATELY.

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CONSTRUCTION JOINT DETAIL WALL TO FLOOR | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: HT | SCALE: N.T.S. | DRAWN: MRS | DATE: 10/13/03 | STANDARD DETAIL 557 | SHEET 1 OF 1

DELIVERY GATE REQUIREMENTS:

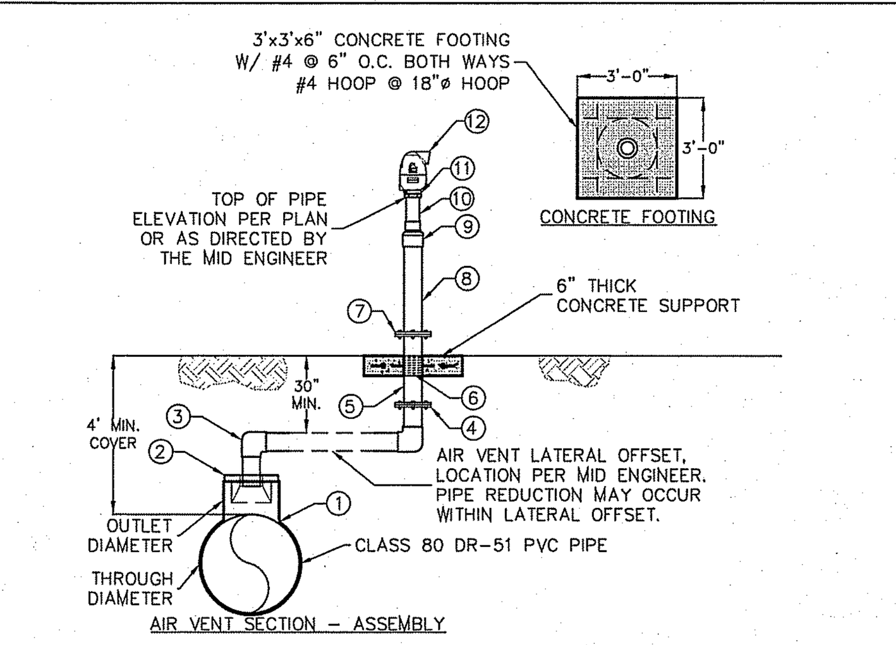
1. GATES MUST HAVE RIGHT HAND THREADS.
2. GATES MUST BE CONSTRUCTED OF CAST IRON.
3. GATES WITH RISING STEM MUST HAVE A STOP NUT.
4. GATES WITH RAILS SHALL BE CARBON STEEL WITH PAINTED FINISH.
5. GATE FRAME TO BE SECURELY BOLTED TO STRUCTURE AS REQUIRED TO MAINTAIN GATE STABILITY.
6. FLAT BACK GATES SHALL BE SUPPLIED WITH A SETTING COLLAR OR A PVC ADAPTER AS REQUIRED.

DELIVERY GATE TYPES:

1. FLAT BACK CANAL SLIDE GATE (FRESNO VALVES AND CASTINGS, INC. MODEL 101-C OR APPROVED EQUIVALENT).
2. FLAT BACK CANAL SLIDE GATE WITH BACK PRESSURE BRACE (FRESNO VALVES AND CASTINGS, INC. MODEL 20-10C OR APPROVED EQUIVALENT).
3. FLAT BACK PRESSURE GATE (NON-RISING STEM) WITH BACK PRESSURE BRACE (FRESNO VALVES AND CASTINGS, INC. SERIES NO. 4200 OR APPROVED EQUIVALENT).

STD245.dwg

DELIVERY GATE SPECIFICATIONS | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: HT | SCALE: N.T.S. | DRAWN: MRS | DATE: 10/06/03 | STANDARD DETAIL 245 | SHEET 1 OF 1



AIR VENT SECTION – ASSEMBLY

1. PVC TEE FITTING OR PVC SADDLE, AS APPROVED BY MID ENGINEER
2. PVC REDUCING COUPLER TO 6"
3. 6" SCH. 40 PVC 90° PIPE FITTINGS
4. 6" AWWA PVC & CLASS D METAL FLANGES, ANSI 150 PATTERN, SS BOLTS
5. 6" SCH. 40 STEEL RISER PIPE (2 COATS, 2 PART EPOXY)
6. ½" THIICK FOAM EXPANSION MATERIAL, SILICONE CAULKING AT GRADE.
7. 6" AWWA CLASS D METAL FLANGES, ANSI 150 PATTERN, SS BOLTS
8. 6" SCH. 40 STEEL PIPE RISER (2 COATS, 2 PART EPOXY)
9. 6"x4" GALVANIZED STEEL PIPE THREADED BELL REDUCER
10. 4" SCH. 40 STEEL PIPE RISER (2 COATS, 2 PART EPOXY)
11. GALVANIZED 4"x2" HEX BUSHING (BUSHING TO BE SAME SIZE AS A.V.)
12. CONTINUOUS ACTING A.V. AS APPROVED BY THE MID ENGINEER

NOTES:

1. A SADDLE TEE FITTING MAY REPLACE THE PVC TEE AS APPROVED BY THE MID ENGINEER.
2. TEE OUTLET SHALL BE ONE-HALF SIZE OF THROUGH DIAMETER.
3. STEEL PIPE SHALL BE COATED WITH 2 COATS, 2 PART YELLOW EPOXY PAINT AND ALLOWED TO DRY BEFORE BACKFILL. OR GALVANIZED PIPE AS APPROVED BY THE MID ENGINEER.
4. ALL JOINTS SHALL BE WATER TIGHT.

STD 263.dwg

PVC SADDLE TO STEEL STANDPIPE | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: ** | SCALE: NTS | DRAWN: EP | DATE: 10/1/2018 | STANDARD DETAIL 263 | SHEET 1 OF 1

EXHIBIT "B"

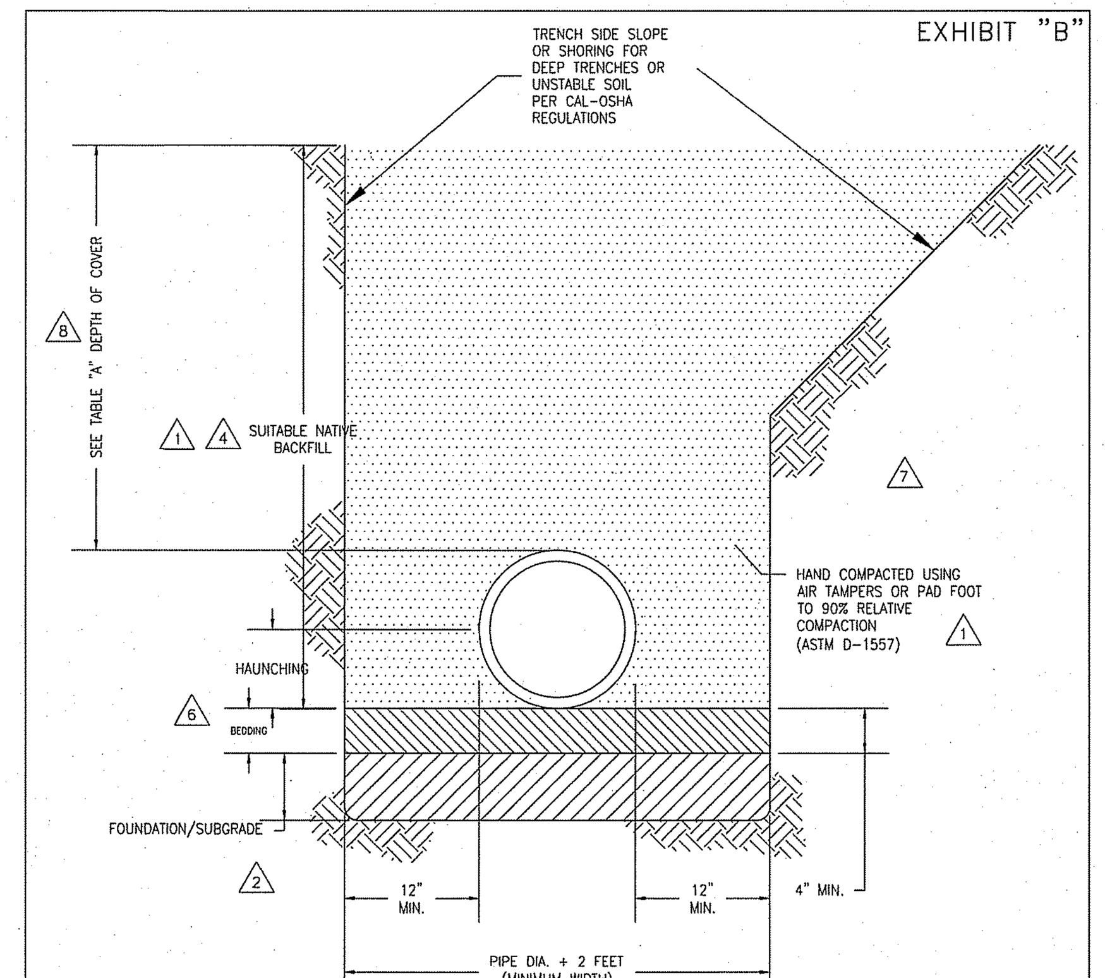


TABLE "A"

PIPELINE TYPE	MINIMUM COVERAGE
CONCRETE	3.0'
PLASTIC	4.0'

NOTE:
SEE SHEET 2 FOR CONSTRUCTION NOTES

STD591.dwg

PIPELINE TRENCH DETAIL | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: JW | SCALE: N.T.S. | DRAWN: MM | DATE: 2/6/18 | STANDARD DETAIL 591 | SHEET 1 OF 2

EXHIBIT "B"

CONSTRUCTION NOTES:

1. SUITABLE NATIVE BACKFILL SHALL MEET 90% MAXIMUM DENSITY (ASTM D-1557) AND BE ACCOMPLISHED BY MANUALLY DIRECTED HAND COMPACTORS TO A MINIMUM DEPTH OF 12 INCHES OVER TOP OF PIPE. THE MAXIMUM LAYER THICKNESS SHALL BE 12 INCHES BEFORE COMPACTION. SUITABLE NATIVE BACKFILL SHALL CONTAIN NO MATERIALS OVER 3 INCHES IN DIAMETER OR LENGTH, AND BE COMPACTED AGAINST UNDISTURBED EARTH. FILL MATERIALS SHALL CONTAIN NO SOD, BRUSH, ROOTS, OR OTHER ORGANIC OR UNSUITABLE MATERIAL. ALL BACKFILL SHALL BE A MINIMUM 90% RELATIVE COMPACTION (ASTM D-1557), UNLESS OTHER LOCAL AGENCY STANDARDS DICTATE HIGHER COMPACTION.
2. ALL STRUCTURE SUBGRADES TO BE INSPECTED BY THE MID ENGINEER PRIOR TO BACKFILL. SUBGRADES SHALL MEET 90% MAXIMUM DENSITY (ASTM D-1557).
3. MID REQUIRED COMPACTION TESTS SHALL BE AT THE LANDOWNER OR DEVELOPER EXPENSE. ANY RETESTS SHALL BE PAID BY THE CONTRACTOR. FREQUENCY AND LOCATION OF THE TESTS TO BE DETERMINED BY THE MID ENGINEER.
4. DEWATERING DUE TO HIGH GROUNDWATER OR CANAL SEEPAGE MAY BE REQUIRED. DEWATERING METHODS SHALL BE APPROVED BY THE MID ENGINEER PRIOR TO COMMENCEMENT OF DEWATERING.
5. TRENCH WIDTHS SHALL BE AS SHOWN UNLESS THE PIPELINE SIZE IS 4 INCHES OR SMALLER, WHERE THE TRENCH SHALL HAVE A 12 INCH MINIMUM WIDTH.
6. BEDDING, IF REQUIRED SHALL BE MINIMUM 4 INCHES AS SPECIFIED BY THE MID ENGINEER. BEDDING SHALL CONFORM TO THE SPECIFICATIONS BELOW. BACKFILL SHALL BE PLACED IN 12 INCH LIFTS. SOIL TYPES SHALL BE AS DETERMINED BY THE MID ENGINEER.

   A) SUITABLE SUBGRADE:
   NATIVE MATERIAL, OR SAND AS APPROVED BY THE MID ENGINEER

   B) UNSUITABLE SUBGRADE:
   SAND OR MID APPROVED MATERIAL
7. BOTH SUITABLE AND UNSUITABLE SUBGRADE AND BACKFILL MATERIAL TO BE AT THE DISCRETION OF THE MID ENGINEER.
8. PIPELINE SHALL BE INSTALLED ACCORDING TO MANUFACTURER INSTRUCTIONS AND SPECIFICATIONS. MINIMUM DEPTH OF COVER SHALL BE PER TABLE "A" UNLESS SPECIFIED OTHERWISE BY THE MID ENGINEER.

STD591.dwg

PIPELINE TRENCH DETAIL | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: JW | SCALE: N.T.S. | DRAWN: MM | DATE: 2/6/18 | STANDARD DETAIL 591 | SHEET 2 OF 2

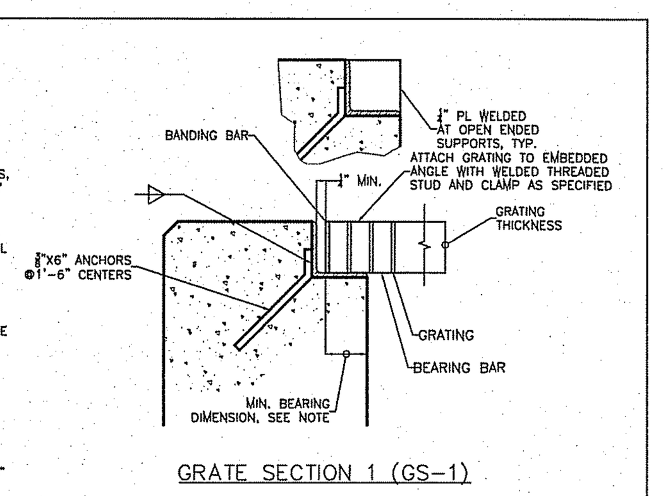
GENERAL NOTES:

1. GRATING SHALL BE LIGHT DUTY GRATING UNLESS OTHERWISE NOTED ON DRAWINGS.
2. INDIVIDUAL GRATING SECTIONS SHALL NOT EXCEED 3'-0" IN WIDTH OR WEIGH MORE THAN 150 POUNDS, UNLESS INDICATED OTHERWISE, FOR TYPES 'A' & 'B' GRATING. TYPE 'C' GRATING SHALL HAVE MINIMUM WIDTH OF 2'-0" REGARDLESS OF WEIGHT.
3. SHOP DRAWINGS BASED ON FIELD DIMENSIONS SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO FABRICATION.
4. MATERIAL FOR SUPPORTS OF STEEL AND ALUMINUM GRATING TO BE SAME AS GRATING, EXCEPT METAL SUPPORTS THAT ARE TO BE EMBEDDED IN CONCRETE SHALL BE TYPE 316 STAINLESS STEEL.
5. UNLESS NOTED OTHERWISE ON PLANS, GRATING THICKNESSES SHALL BE AS TABULATED IN "GRATING THICKNESS TABLE" FOR APPLICABLE GRATING TYPE.
6. FOR SERRATED BEARING BARS, INCREASE GRATING THICKNESSES SHOWN IN TABLES BY 1/4".
7. BEARING BAR THICKNESS FOR GRATING TO BE 3/16" MINIMUM. SEE SPECIFICATIONS FOR SPACING OF BEARING AND CROSS BARS.
8. BAND ALL EDGES. MATCH DEPTH OF BEARING BAR.
9. TYPE OF MATERIAL USED SHALL BE AS SHOWN ON PLANS OR AS SPECIFIED. THIS STANDARD DETAIL INCLUDES 2 TYPES, ALTHOUGH BOTH MAY NOT BE INCLUDED IN PROJECT.
10. THE HORIZONTAL CLEARANCE BETWEEN THE GRATING AND GRATING SUPPORTS SHALL NOT BE LESS THAN 1/4" NOR GREATER THAN 1/2" AND AS SPECIFIED.
11. MINIMUM BEARING HORIZONTAL DIMENSION=1" FOR GRATING DEPTH 2 1/4" OR LESS, MINIMUM BEARING HORIZONTAL DIMENSION=2" FOR GRATING DEPTH GREATER THAN 2 1/4".

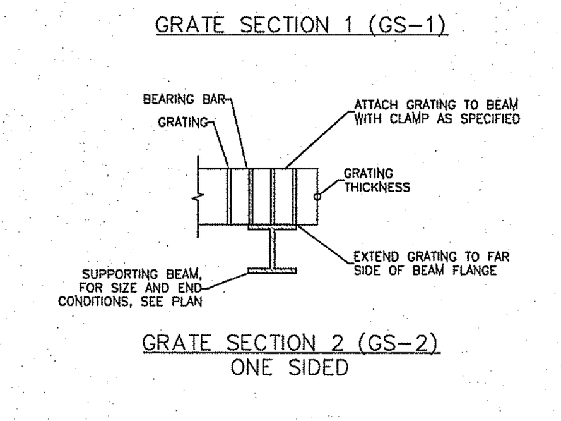
LIGHT DUTY GRATING
TYPE 'A'
(100 PSF)

GRATING THICKNESS TABLE

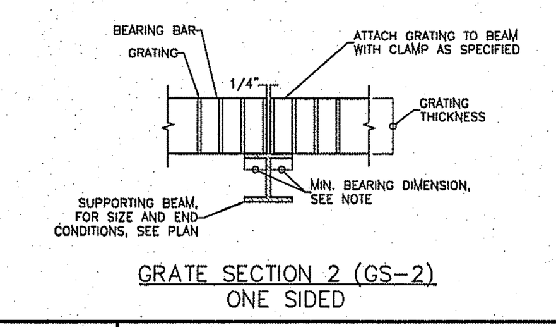
MAXIMUM SPAN	STEEL	ALUMINUM
3'-6"	1"	1 1/4"
4'-0"	1"	1 1/2"
4'-6"	1"	1 3/4"
5'-0"	1 1/4"	1 3/4"
5'-6"	1 1/4"	2"
6'-0"	1 1/2"	2 1/4"
6'-6"	1 1/2"	2 1/4"
7'-0"	1 3/4"	2 1/2"



GRATE SECTION 1 (GS-1)



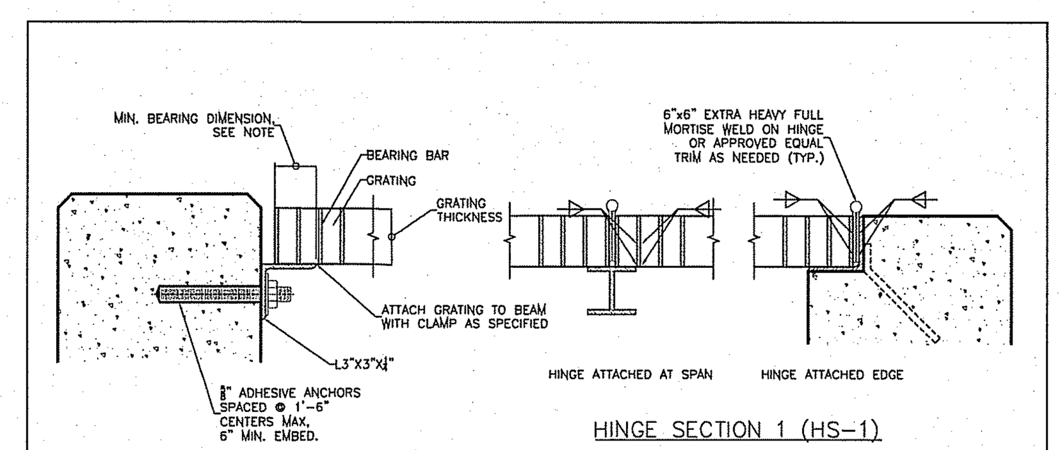
GRATE SECTION 2 (GS-2)
ONE SIDED



GRATE SECTION 2 (GS-2)
ONE SIDED

STD 561.dwg

EXPANDED METAL COVER BOX STRUCTURES | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: ** | SCALE: NTS | DRAWN: EP | DATE: 10/1/2018 | STANDARD DETAIL 561 | SHEET 1 OF 2

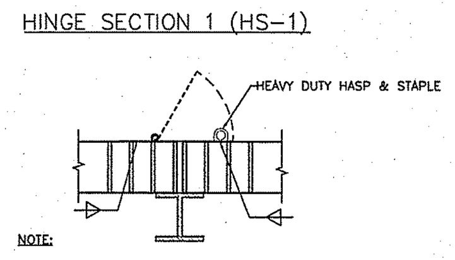


HINGE SECTION 1 (HS-1)

NOTES:

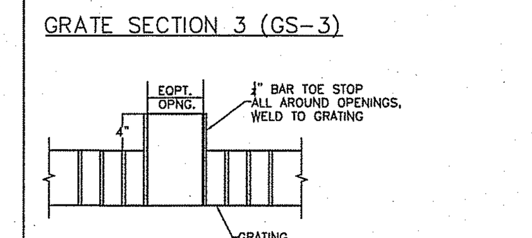
1. USE GS-3 ONLY FOR LIGHT DUTY GRATING, TYPE "A".
2. INSTALL ANCHORS MAXIMUM 4" FROM EACH END.
3. WHEN ANCHOR IS WITHIN 4" OF CONCRETE EDGE, UTILIZE MANUFACTURER'S LOW-TORQUE INSTALLATION PROCEDURES.

GRATE SECTION 3 (GS-3)

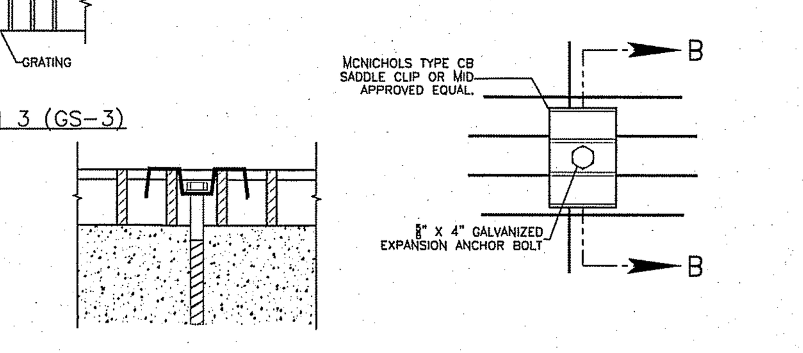


NOTE:
TACK WELD AT BEARING BARS BOTH SIDES

HASP SECTION 1 (H-1)



GRATE SECTION 3 (GS-3)



SECTION B-B

STD 561.dwg

EXPANDED METAL COVER BOX STRUCTURES | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: ** | SCALE: NTS | DRAWN: EP | DATE: 10/1/2018 | STANDARD DETAIL 561 | SHEET 2 OF 2

STEEL FRAME AND GRATE COVER FOR REINFORCED CONCRETE BOX:

GRATE MATERIAL:
McNICHOLS QUALITY ELECTROFORGED BAR GRATING, GALVANIZED HOT DIPPED, GW 100 SMOOTH, WELDED CONSTRUCTION, 1" x 3/16" BEARING BARS, 1-3/16" O.C., REGULAR CROSS BARS 4" O.C.

1. MAXIMUM ALLOWED SPAN IS 6 FEET. FOR SPANS GREATER THAN 6 FEET, CONTACT MID ENGINEERING.
2. BAND AROUND EACH SECTION WITH 1" x 3/16" FLAT BAR.
3. BEARING BARS SHALL BE PERPENDICULAR TO THE SHORTER OF THE TWO SIDES OF THE BOX.
4. HINGES SHALL BE 6" LONG HEAVY DUTY FULL MORTISE HINGES. PIN DIA. SHALL BE ⅜". LEAF THICKNESS SHALL BE MIN. 1/4". RANGE OF MOTION SHALL BE MIN. 265°.
5. HASPS SHALL BE 2" WIDE, MIN. 3/16" THICK, AND HAVE A MIN. PIN DIA. OF ⅜".
6. ALL GRATE SECTIONS SHALL BE BLACK IRON AND TEST FIT IN FIELD W/ MID ENGINEER PRESENT PRIOR TO BEING FULLY HOT DIPPED GALVANIZED.
7. ALL ANCHOR BOLTS SHALL BE GALVANIZED. BOLT THREADS TO BE CUT FLUSH WITH THE TOP OF THE NUT.
8. NO WELDS AFTER GALVANIZING.
9. ALL BAR GRATE PANELS SHALL BE REMOVABLE (BOLTED IN PLACE).
10. PROVIDE ANCHORS/CLIPS AT CORNERS OF NON-HINGED PANELS.
11. LOCK ASSEMBLY SHALL BE CENTERED ON HINGED GRATE.
12. ANCHOR PER MFR. SPECIFICATIONS. REQUIRES MID ENGINEER APPROVAL PRIOR TO CONSTRUCTION.
13. 4" EMBED ON ALL ANCHOR BOLTS.

SLIDE GATE NOTES:

1. GATE SHALL BE IN ACCORDANCE WITH MID STANDARD DETAIL 245.
2. CONTRACTOR SHALL INSTALL GATE AS PER MANUFACTURER'S RECOMMENDATIONS.
3. GATE HAND WHEEL SHALL BE A MINIMUM OF 6" ABOVE TOP OF HEADWALL.
4. TOP OF GATE FRAME SHALL BE 1' BELOW GRATING.
5. CUT GRATING AS NECESSARY TO ALLOW FOR STEM MOVEMENT.

STD 561.dwg

EXPANDED METAL COVER BOX STRUCTURES | MERCED IRRIGATION DISTRICT, ENGINEERING DEPARTMENT | APPROVED | MGR OF ENGINEERING, WATER RESOURCES, DATE | DESIGNED: ** | SCALE: NTS | DRAWN: EP | DATE: 10/1/2018 | STANDARD DETAIL 561 | SHEET 2 OF 2

NOTE TO CONTRACTOR:
CITY, COUNTY AND MANUFACTURER'S STANDARD PLANS SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL OBTAIN THE MOST CURRENT STANDARD DRAWINGS PRIOR TO CONSTRUCTION.

CAUTION:
UNAUTHORIZED CHANGES AND USES
THE ENGINEER PREPARING THESE PLANS WILL NOT BE RESPONSIBLE FOR OR LIABLE FOR UNAUTHORIZED CHANGES TO OR USES OF THESE PLANS. ALL CHANGES TO THE PLANS MUST BE IN WRITING AND MUST BE APPROVED BY THE PREPARER OF THESE PLANS AND THE CITY ENGINEER.

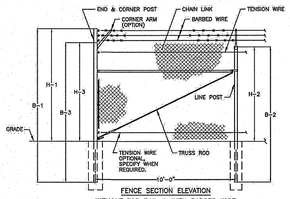
DESCRIPTION	DATE	BY

GDR ENGINEERING, INC.
ENGINEERING/SURVEYING/PLANNING
3525 MITCHELL ROAD, SUITE G CERES, CA 95307
TELEPHONE: (209) 538-3360 FAX: (209) 538-7370
E-MAIL: GDRENGINEERING@GDRENGR.COM

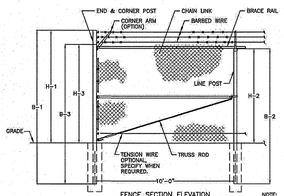
THE VILLAGES AT MAIN
MID PIPELINE IMPROVEMENT PLANS
MID STANDARD DETAILS

SCALE: NOT TO SCALE — DATE: 08/24/2023
DWG NO. 18075 MID PIPELINE.dwg — LAYOUT 7-DET — SHEET: 7 OF 8
DRAWN: GP
CHECKED:
FILE NO. 18075

Z:\Production\Projects\18075 Sanghera – Livingston Apartments\ENGINEERING FILES AND DRAWINGS\DRAWINGS\18075 MID PIPELINE.dwg PLOT Aug 24, 2023 AT 11:41AM



FENCE SECTION ELEVATION
WITHOUT TOP RAIL & WITH BARBED WIRE

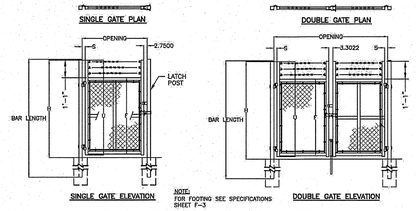


FENCE SECTION ELEVATION
WITH TOP RAIL & WITH BARBED WIRE

NOTE:
FOR FOOTING SEE SPECIFICATIONS SHEET F-3

FENCE HEIGHT	UPRIGHT END & CORNER POSTS		LINE POSTS		CORNER POSTS WITH CORNER ARM	
NOM HT INCLUDING BARBED WIRE	B-1 BAR LENGTH	H-1 HEIGHT ABOVE GRADE	B-2 BAR LENGTH	H-2 HEIGHT ABOVE GRADE	B-3 BAR LENGTH	H-3 HEIGHT ABOVE GRADE
7'-0"	10'-0"	7'-0 5/8"	8'-6"	6'-8 7/8"	9'-0"	6'-8 5/8"
8'-0"	11'-0"	8'-0 5/8"	9'-6"	7'-8 7/8"	10'-0"	7'-8 5/8"
9'-0"	12'-0"	9'-0 5/8"	10'-6"	8'-8 7/8"	11'-0"	8'-8 5/8"
10'-0"	13'-0"	10'-0 5/8"	11'-6"	9'-8 7/8"	12'-0"	9'-8 5/8"
11'-0"	14'-0"	11'-0 5/8"	12'-6"	10'-8 7/8"	13'-0"	10'-8 5/8"
12'-0"	15'-0"	12'-0 5/8"	13'-6"	11'-8 7/8"	14'-0"	11'-8 5/8"

CHAIN LINK FENCE	NTS	4



SINGLE GATE ELEVATION

NOTE:
FOR FOOTING SEE SPECIFICATIONS SHEET F-3

DOUBLE GATE ELEVATION

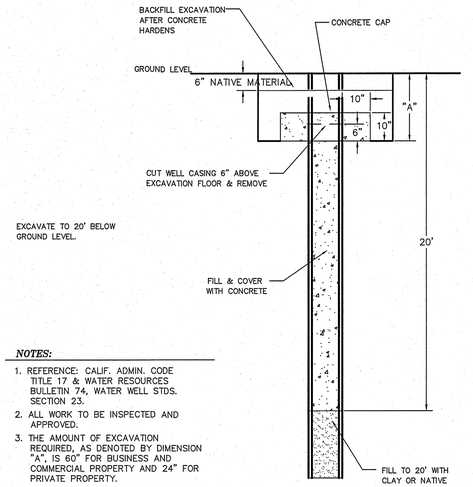
SINGLE OR DOUBLE LEAF GATES		
NOM HEIGHT (H)	UPRIGHT HT. (U)	FRAME HT (F)
NOM HT INCLUDING BARBED WIRE	ACTUAL DIM	ACTUAL DIM
7'-0"	6'-10"	6'-8 1/2"
8'-0"	7'-10"	6'-8 1/2"
9'-0"	8'-10"	7'-8 1/2"
10'-0"	9'-10"	8'-8 1/2"
11'-0"	10'-10"	9'-8 1/2"
12'-0"	11'-10"	10'-8 1/2"
13'-0"	12'-10"	11'-8 1/2"

SINGLE LEAF GATES		
OPENING	GATE POSTS	HINGE SPACE (S)
FACE TO FACE	SQ & RND SIZES	POST TO UPRIGHT
3'-0" THROUGH 6'-0"	2 1/2" SQ OR 2.875" OD	FOR SQUARE & ROUND GATE POSTS: 2 1/4"
7'-0" THROUGH 10'-0"	3" SQ OR 4" OD	FOR SQUARE & ROUND GATE POSTS: 2 1/4"
11'-0" THROUGH 12'-0"	4" SQ OR 4" OD	FOR SQUARE & ROUND GATE POSTS: 2 1/4"
13'-0" THROUGH 18'-0"	6" SQ OR 6.625" OD	FOR GATE POSTS: SQ-2 1/4" RND-3 1/2"
19'-0" THROUGH 20'-0"	8" SQ OR 8.625" OD	FOR GATE POSTS: SQ-2 1/4" RND-3 1/2"

DOUBLE LEAF GATES		
OPENING	GATE POSTS	HINGE SPACE (S)
FACE TO FACE	SQ & RND SIZES	POST TO UPRIGHT
8'-0" THROUGH 12'-0"	2 1/2" SQ OR 2.875" OD	FOR SQUARE & ROUND GATE POSTS: 2 1/4"
14'-0" THROUGH 24'-0"	3" SQ OR 4" OD	FOR SQUARE & ROUND GATE POSTS: 2 1/4"
25'-0" THROUGH 36'-0"	6" SQ OR 6.625" OD	FOR GATE POSTS: SQ-2 1/4" RND-3 1/2"
38'-0" THROUGH 40'-0"	8" SQ OR 8.625" OD	FOR GATE POSTS: SQ-2 1/4" RND-3 1/2"

NOTE:
CENTER UPRIGHT REQUIRED ON GATE LEAVES 8'-0" & WIDER. CENTER RAIL REQUIRED ON GATE LEAVES 10'-0" & HIGHER.

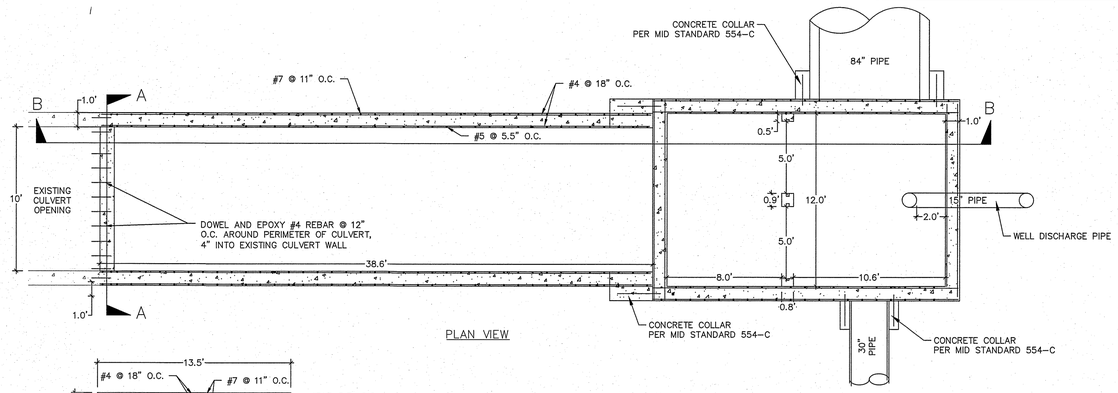
VEHICLE ACCESS GATE	NTS	3



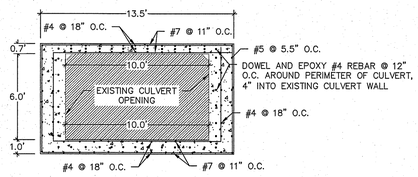
NOTES:

1. REFERENCE: CALIF. ADMIN. CODE TITLE 17 & WATER RESOURCES BULLETIN 74, WATER WELL STDS. SECTION 23.
2. ALL WORK TO BE INSPECTED AND APPROVED.
3. THE AMOUNT OF EXCAVATION REQUIRED, AS DENOTED BY DIMENSION "A", IS 60" FOR BUSINESS AND COMMERCIAL PROPERTY AND 24" FOR PRIVATE PROPERTY.
4. WELL DESTRUCTION SHALL CONFORM TO THE MERCED COUNTY, CALIFORNIA COUNTY CODE SECTION 9.28.060 WATER WELL STANDARDS.

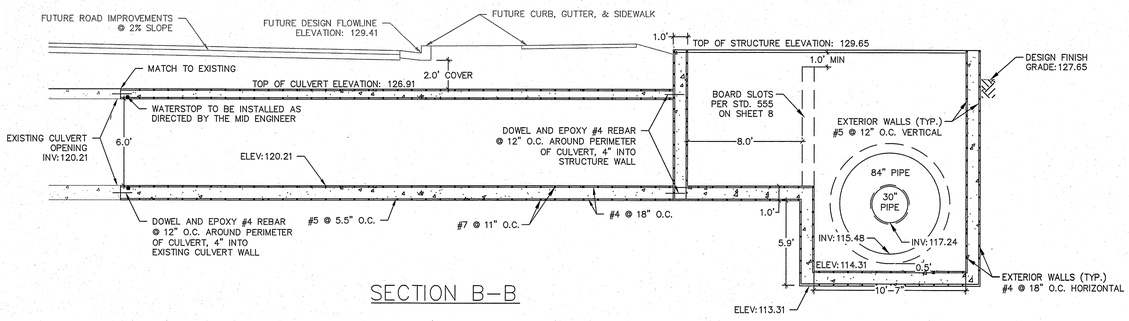
WELL ABANDONMENT DETAIL	NTS	1



PLAN VIEW



SECTION A-A



SECTION B-B

TRANSITION STRUCTURE FROM EXISTING CULVERT TO PROPOSED BOX	1"=5'	2

DESCRIPTION	DATE	BY

JASON K. CHAPMAN No. 66134 REGISTERED PROFESSIONAL ENGINEER CIVIL STATE OF CALIFORNIA

8/24/2023
DATE SIGNED:

GDR ENGINEERING, INC.
ENGINEERING/SURVEYING/PLANNING
3525 MITCHELL ROAD, SUITE G CERES, CA 95307
TELEPHONE: (209) 538-3360 FAX: (209) 538-7370
E-MAIL: GDRENGINEERING@GDRENGR.COM

THE VILLAGES AT MAIN
MID PIPELINE IMPROVEMENT PLANS
CONSTRUCTION DETAILS

SCALE: NOT TO SCALE DATE: 08/24/2023
DWG NO. 18075 MID PIPELINE.dwg LAYOUT: 8-DET
DRAWN: GP
CHECKED:
SHEET: 8 OF 8
FILE NO. 18075

Z:\Production\Projects\18075 Sanghera - Livingston Apartments\ENGINEERING FILES AND DRAWINGS\DRAWINGS\18075 MID PIPELINE.dwg PLOT Aug 24, 2023 AT 11:44AM