IMPROVEMENT PLANS FOR:

CENTERPOINT INTERMODAL CENTER

PHASE I ON-SITE IMPROVEMENTS

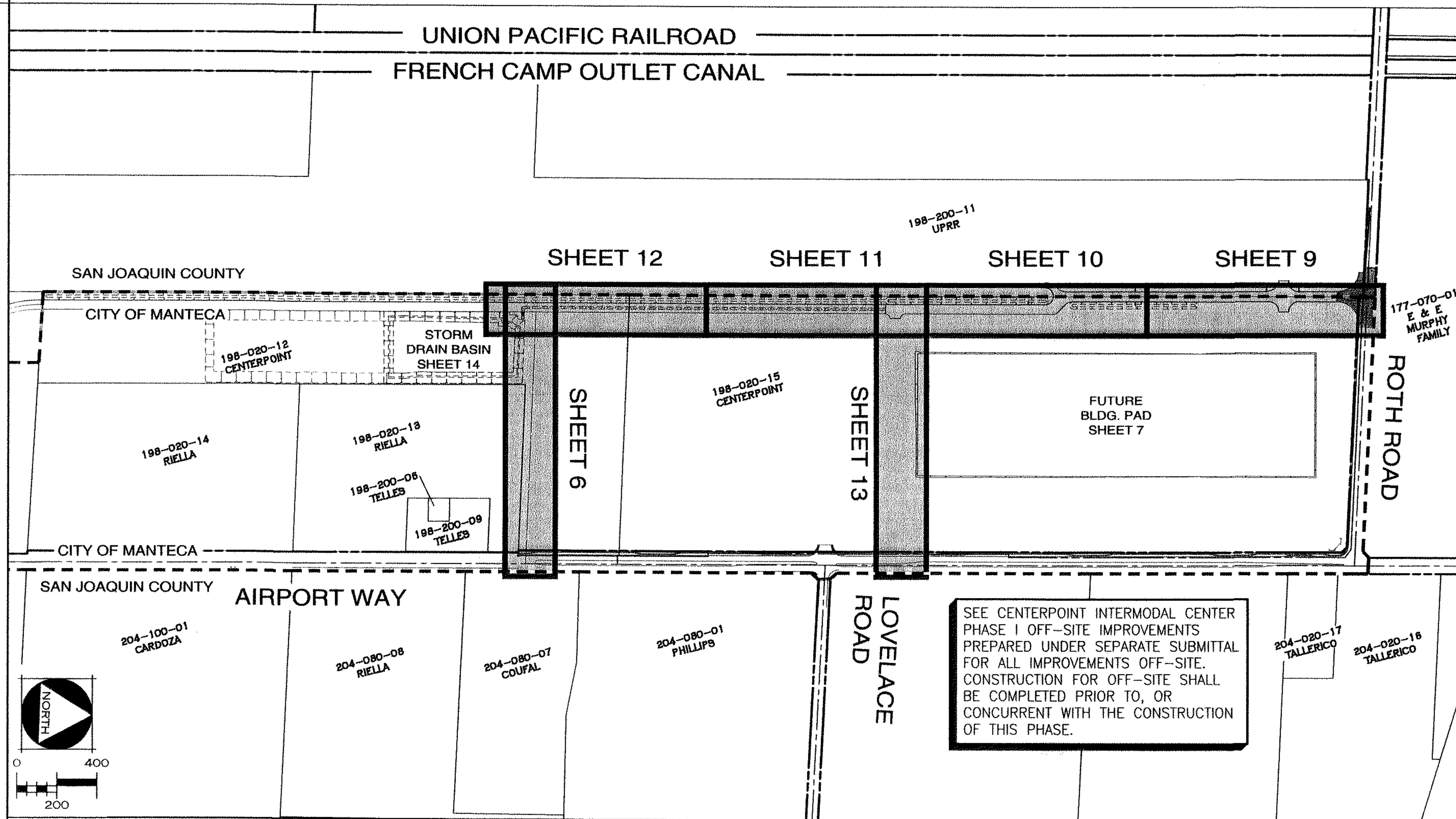
CITY OF MANTECA, SAN JOAQUIN COUNTY, CALIFORNIA

LEGEND

ITEM	EXISTING	PROPOSED
WATER VALVE		
WATER HOSE BIB		
AIR RELEASE VALVE		
BLOWOFF		
FIRE HYDRANT		
WATER METER	W	W
IRRIGATION BOX	IR	IR
SEWER MANHOLE	S	S
STORM MANHOLE		
DRAIN INLET		
CURB INLET		
CLEANOUT		
WATER LINE	EX W	8"W
SANITARY SEWER	EX S	8"SS
STORM DRAIN	EX SD	12"SD
TYPICAL ELECTROLIER		
TYPICAL LUMINAIRE		
ELECTRICAL VAULT	E	E
SURVEY MONUMENT		
UTILITY POLE		
SIGNAGE		
ELEVATION	203.50TC 203.00P	203.50TC 203.00P
DIRECTION OF FLOW	2.00%	2.00%
ORIGINAL GROUND	+ 203.59	N/A
CONTOUR (0.5' INTERVAL)	40.50	N/A
BARBED WIRE FENCE		
WOOD FENCE		
RETAINING WALL		
MASONRY WALL		
CURB, GUTTER & SIDEWALK		
TYPICAL RETURN WITH HANDICAP RAMP		
TREE		N/A
PAVEMENT		

THE WATER AND SEWER IMPROVEMENTS ON THESE PLANS THAT ARE WITHIN THE PUBLIC RIGHT-OF-WAY SHALL NOT COMMENCE UNTIL A LICENSE AGREEMENT IS APPROVED BETWEEN THE CITY AND THE DEVELOPER.

SITE PLAN



ABBREVIATION LIST

@	AT
AB	AGGREGATE BASE
AC	ASPHALT CONCRETE
ADA	AMERICAN DISABILITIES ACT
BC	BEGINNING OF CURVE
BDRY	BOUNDARY
BSL	BUILDING SET BACKLINE
BVC	BEGIN VERTICAL CURVE
C & G	CURB AND GUTTER
CIPP	CAST IN PLACE PIPE
CI	CURB INLET
℄	CENTER LINE
CO	CLEAN OUT
CONC	CONCRETE
CR	CURB RETURN
DIA	DIAMETER
DIP	DUCTILE IRON PIPE
DW	DRIVEWAY
D OR SD	DRAIN OR STORM DRAIN
EC	END OF CURVE
ELEV	ELEVATION
EP	EDGE OF PAVEMENT
ESMT	EASEMENT
EVC	END OF VERTICAL CURVE
E, EX, OR EXIST	EXISTING
FH	FIRE HYDRANT
FL	FLOW LINE
G	GROUND
GB	GRADE BREAK
HP	HIGH POINT
HGL	HYDRAULIC GRADE LINE
HPS	HIGH PRESSURE SODIUM
INV	INVERT
IRR	IRRIGATION
LF	LINEAL FEET OR LINEAR FEET
LP	LOW POINT
MAX	MAXIMUM
MH	MAINTENANCE HOLE
MIN	MINIMUM
NTS	NOT TO SCALE
OG	ORIGINAL GROUND / GRADE
P	PROPOSED
PP	POWER POLE
PL	PROPERTY LINE
PRC	POINT OF REVERSE CURVATURE
PT	POINT
PUE	PUBLIC UTILITY EASEMENT
PVC	POLYVINYL CHLORIDE PIPE
RCP	REINFORCED CONCRETE PIPE
RGRCP	RUBBER GASKET REINFORCED CONCRETE PIPE
RET	RETURN
R	RADIUS
SD	STORM DRAIN
SHT	SHEET
SNS	STREET NAME SIGN
STA	STATION
STD	STANDARD
S/W	SIDEWALK
SS	SANITARY SEWER
S	SLOPE
SSJID	SOUTH SAN JOAQUIN IRRIGATION DISTRICT
TC	TOP OF CURB
TEMP	TEMPORARY
THRU	THROUGH
TI	TRAFFIC INDEX
TPE	TREE PLANTING EASEMENT
TYP.	TYPICAL
WS	WATER SERVICE
W	WATER
±	PLUS OR MINUS (NOT EXACT)
U.N.O.	UNLESS NOTED OTHERWISE

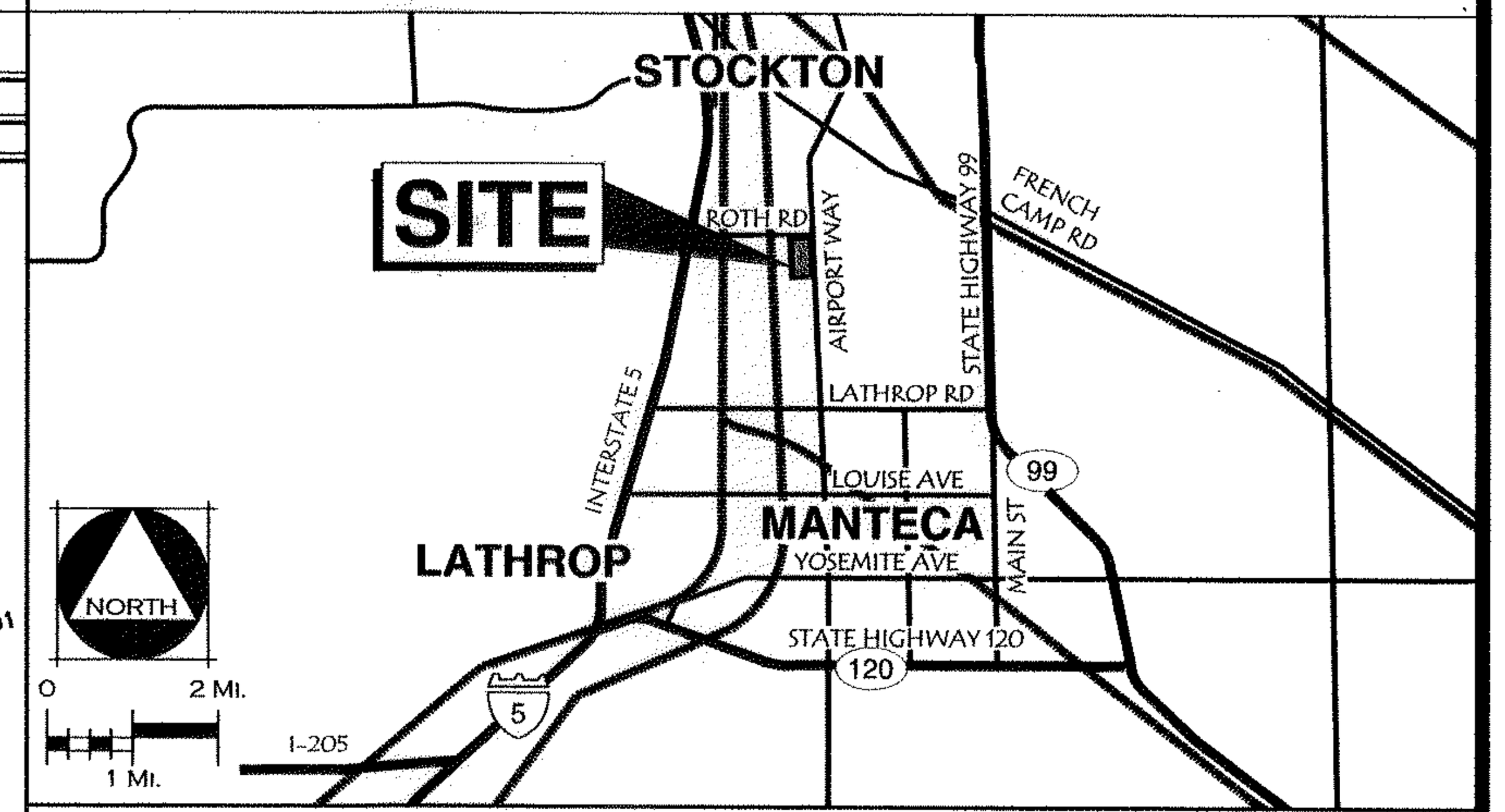
RECORD DRAWING

BY: [signature] DATE: 9-24-13

S.S.J.I.D., its employees and agents are not responsible for verification of the elevations and dimensions indicated on plans nor any errors or omissions that may be present. Approval is subject to the data shown which appears to be in conformity with S.S.J.I.D. requirements for protection of District Facilities.
So Conditionally Approved

[signature] DATE 12/24/12

VICINITY MAP



SHEET INDEX

"SITE GRADING WORK SHALL NOT COMMENCE UNTIL THE DEVELOPER HAS OBTAINED AN APPROVED AIR IMPACT ASSESSMENT (AIA) FROM THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT. CONTRACTOR SHALL COMPLY WITH ALL PROVISIONS IN THE MONITORING AND REPORTING SCHEDULE OF THE AIA."

811
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APPROVED SUBJECT TO THE DATA SHOWN. CITY OF MANTECA AND THE UNDERSIGNED ARE NOT RESPONSIBLE FOR ERRORS AND/OR OMISSIONS THAT MAY BE PRESENT ON THESE PLANS.

[signature] 1/14/13
CITY ENGINEER, CITY OF MANTECA DATE

COVER SHEET

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

REVISIONS			
NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING
www.mcreng.com

MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL: (209) 239 - 6229
FAX: (209) 239 - 8839

JOB NO. 10-063
DATE 12/17/2012 09:60
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\imp-phase 1\01_Cover.dwg

REGISTERED PROFESSIONAL ENGINEER
TONY B. MARSHALL
No. C51015
EXP. 9-30-13
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER 1 OF 20

GENERAL NOTES:

1. ALL IMPROVEMENTS SHALL BE CONSTRUCTED IN STRICT ACCORDANCE WITH THE FOLLOWING: CITY OF MANTECA STANDARD SPECIFICATIONS, AND ALL AMENDMENTS TO DATE, CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS (CALTRANS) (LATEST EDITION), WHERE APPLICABLE. ALL WORK SHALL BE UNDER THE INSPECTION OF THE RESPECTIVE ENTITY.

2. IT IS INTENDED THAT THESE PLANS AND SPECIFICATIONS REQUIRE ALL LABOR AND MATERIALS NECESSARY AND PROPER FOR THE WORK CONTEMPLATED AND THAT THE WORK BE COMPLETED IN ACCORDANCE WITH THEIR TRUE INTENT AND PURPOSE. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY REGARDING ANY DISCREPANCIES AND AMBIGUITIES WHICH MAY EXIST IN THE PLANS AND SPECIFICATIONS. IF 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.

3. CONSTRUCTION STAKING FOR GRADING, CURB, GUTTER, SIDEWALK, SANITARY SEWER, STORM DRAIN AND WATER SHALL BE DONE UNDER THE DIRECTION OF M.C.R. ENGINEERING. THE CONTRACTOR SHALL NOTIFY THE ENGINEER SEVENTY-TWO (72) HOURS IN ADVANCE OF THIS NEED FOR STAKING. ANY STAKING REQUESTED BY THE CONTRACTOR OR HIS SUBCONTRACTORS THAT IS ABOVE AND BEYOND NORMAL STANDARD SUBDIVISION STAKING NEEDS, WILL BE SUBJECT TO AN EXTRA BACK CHARGE TO THE CONTRACTOR.

4. THE CONTRACTOR SHALL EXERCISE DUE CAUTION AND SHALL CAREFULLY PRESERVE BENCH MARKS, REFERENCE POINTS AND ALL SURVEY STAKES, AND SHALL BEAR ALL EXPENSE FOR REPLACEMENT AND/OR ERRORS CAUSED BY THEIR UNNECESSARY LOSS OR DISTURBANCE.

5. 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 THE CITY HARMLESS FROM ANY AND 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 OWNER OR THE ENGINEER.

6. UNLESS OTHERWISE STATED, ALL STATIONS INDICATED ON THE IMPROVEMENT PLANS ARE REFERENCED TO THE CENTERLINE OF THE STREET. ALL STATIONS OFF CENTER ARE PERPENDICULAR TO OR RADIALLY OPPOSITE CENTERLINE STATIONS, UNLESS OTHERWISE NOTED.

7. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY FIELD CHANGES MADE WITHOUT WRITTEN AUTHORIZATION FROM THE CITY ENGINEER.

8. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAG MAN OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY IN ACCORDANCE WITH THE CURRENT ISSUE OF "MANUAL OF TRAFFIC CONTROLS, WARNING SIGNS, LIGHTS AND DEVICES FOR USE IN PERFORMANCE OF WORK UPON HIGHWAY" PUBLISHED BY THE STATE OF CALIFORNIA BUSINESS AND TRANSPORTATION AGENCY.

9. THE OFFICE OF THE CITY ENGINEER SHALL BE NOTIFIED AT LEAST 24 HOURS IN ADVANCE OF ANY WORK.

10. P. G. & E., TELEPHONE AND CABLE TV UNDERGROUND WORK SHALL BE COMPLETED PRIOR TO CONSTRUCTION OF THE CURB, GUTTER, SIDEWALK AND PAVING.

11. THE CITY OF MANTECA AND ASSOCIATED UTILITY COMPANY AND RESIDENCES TO BE AFFECTED SHALL BE NOTIFIED IMMEDIATELY UPON ANY UTILITY SERVICE DISRUPTION OTHER THAN SPECIFIED ON THESE IMPROVEMENT PLANS AND A 24 HOUR NOTICE SHALL BE GIVEN FOR ANY PLANNED DISRUPTION.

12. THE CONTRACTOR SHALL OBTAIN AN ENCROACHMENT PERMIT FROM THE CITY OF MANTECA, DEPARTMENT OF PUBLIC WORKS OR ANY OTHER APPLICABLE AGENCIES PRIOR TO COMMENCEMENT OF WORK WITHIN EXISTING CITY RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS AND LICENSES REQUIRED FOR THE CONSTRUCTION AND COMPLETION OF THE PROJECT.

13. STREET SIGNS, TRAFFIC CONTROL SIGNS, AND PAVEMENT MARKINGS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR AT LOCATIONS ESTABLISHED BY THE ENGINEER.

14. ASPHALT CONCRETE SHALL BE PLACED ONLY WHEN THE ATMOSPHERIC TEMPERATURE IS ABOVE 50°F.

15. CONTRACTOR IS RESPONSIBLE FOR COORDINATION OF THE REMOVAL OR RELOCATION OF ALL EXISTING UTILITIES WITH RESPECTIVE UTILITY COMPANIES.

16. DRIVEWAYS ON STREETS TO BE LOCATED IN THE FIELD BY THE ENGINEER AT THE TIME OF CONSTRUCTION. DRIVEWAYS SHALL NOT COINCIDE WITH WHEELCHAIR RAMPS.

17. DRAWING NUMBERS SHOWN ON THE PLANS REFER TO DRAWINGS CONTAINED IN THE CITY OF MANTECA STANDARD SPECIFICATIONS, THUS: (I.E. DWG. ST-18).

18. 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) 642-2444. THE CONTRACTOR SHALL RECORD THE U.S.A. ORDER NUMBER AND FURNISH ORDER NUMBER TO OWNER PRIOR TO ANY EXCAVATION. IT SHALL BE THE CONTRACTOR'S 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 COOPERATE WITH OTHER CONTRACTORS AND UTILITY COMPANIES INSTALLING NEW STRUCTURES, UTILITIES AND SERVICE TO THE DEVELOPMENT.

19. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING IMPROVEMENTS FROM DAMAGE. COST OF REPLACING EXISTING IMPROVEMENTS SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEMS REQUIRING REMOVAL AND REPLACEMENT OF EXISTING IMPROVEMENTS.

20. WHENEVER PAVEMENT IS BROKEN OR CUT IN THE INSTALLATION OF THE WORK COVERED BY THESE SPECIFICATIONS, THE PAVEMENT SHALL BE REPLACED, AFTER PROPER BACKFILLING, WITH PAVEMENT MATERIALS EQUAL TO OR BETTER THAN THE MATERIALS USED IN THE ORIGINAL PAVING. THE FINISHED PAVEMENT SHALL BE SUBJECT TO THE APPROVAL OF THE CITY ENGINEER, OR CALTRANS, WHERE APPLICABLE.

21. PAYMENT FOR PAVEMENT WILL BE MADE ONLY FOR AREAS SHOWN ON THE PLANS REPLACEMENT OF PAVEMENT WHICH IS BROKEN OR CUT DURING THE INSTALLATION OF THE WORK COVERED BY THESE SPECIFICATIONS, AND WHICH LIES OUTSIDE OF SAID AREAS, SHALL BE INDICATED IN THE CONTRACTOR'S UNIT PRICE FOR PAVEMENT, AND NO ADDITIONAL PAYMENT SHALL BE MADE FOR SUCH WORK.

22. EXCAVATIONS OF 5 FEET OR MORE IN DEPTH WILL REQUIRE AN EXCAVATION PERMIT FROM THE STATE OF CALIFORNIA DEPARTMENT OF INDUSTRIAL SAFETY. FOR TRENCHES 5 FEET OF MORE IN DEPTH, THE CONTRACTOR SHALL COMPLY WITH SECTION 5-1.02A OF THE CALTRANS STANDARDS, CHAPTER 9 OF THE STATE OF CALIFORNIA LABOR CODE, AND ANY LOCAL CODES OR ORDINANCES.

23. WE CALL YOUR ATTENTION TO TITLE 8 CALIFORNIA ADMINISTRATION CODE SECTION 1540 (A) (1) OF THE CONSTRUCTION SAFETY ORDERS ISSUED BY THE OCCUPATIONAL SAFETY AND HEALTH STANDARDS BOARD PURSUANT TO THE CALIFORNIA OCCUPATIONS SAFETY AND HEALTH ACT OF 1973 AS AMENDED WHICH STATES: (1) PRIOR TO OPENING AN EXCAVATION EFFORT SHALL BE MADE TO DETERMINE WHETHER UNDERGROUND INSTALLATIONS; I.E. SEWER, WATER, FUEL, ELECTRICAL LINES, ETC., WILL BE ENCOUNTERED AND IF SO, WHERE SUCH UNDERGROUND INSTALLATIONS ARE LOCATED. WHEN THE EXCAVATION APPROACHES THE APPROXIMATE LOCATION OF SUCH INSTALLATION, THE EXACT LOCATION SHALL BE DETERMINED BY CAREFUL PROBING OR HAND DIGGING; AND, WHEN IT IS UNCOVERED, ADEQUATE PROTECTION SHALL BE PROVIDED FOR THE EXISTING INSTALLATION. ALL KNOWN OWNERS OF UNDERGROUND FACILITIES IN THE AREA CONCERNED SHALL BE ADVISED OF PROPOSED WORK AT LEAST 48 HOURS PRIOR TO THE START OF ACTUAL EXCAVATION.

24. ALL TRENCHES ON MAJOR AND COLLECTOR STREETS AND CROSS TRENCHES ON ALL STREETS SHALL BE PAVED WITH TEMPORARY PAVING THE SAME DAY THE PAVEMENT CUT IS MADE.

25. APPROPRIATE DUST CONTROL SHALL BE PROVIDED, AT THE CONTRACTOR'S EXPENSE TO MINIMIZE ANY DUST NUISANCE AND SHALL BE IN ACCORDANCE WITH SECTION 10 OF CALTRANS STANDARD SPECIFICATIONS AND THE REQUIREMENTS OF THE CITY OF MANTECA.

26. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER, PRIOR TO FINAL ACCEPTANCE, AS-BUILT DRAWINGS OF ALL IMPROVEMENTS REPRESENTED BY THE PROJECT PLANS AND SPECIFICATIONS.

27. AFTER CONSTRUCTION OF ALL IMPROVEMENTS, THE ENGINEER SHALL SUBMIT ONE SET OF REPRODUCIBLE PLANS. FINAL INVERT ELEVATIONS FOR SEWER AND STORM DRAIN LINES THAT ARE TO BE EXTENDED FOR FUTURE CONSTRUCTION SHALL ALSO BE SHOWN ON THE "AS-BUILT" PLANS ALL AS PROVIDED TO THE ENGINEER BY THE CONTRACTOR.

28. THE CONTRACTOR SHALL NOTIFY M.C.R. ENGINEERING AT LEAST 48 HOURS PRIOR TO BACKFILLNG OF ANY PIPE WHICH STUBS TO A FUTURE PHASE OF CONSTRUCTION FOR INVERT VERIFICATION. TOLERANCE SHALL BE IN ACCORDANCE WITH THE CITY OF MANTECA STANDARD SPECIFICATIONS.

29. CONTRACTOR SHALL PROVIDE CITY WITH A CERTIFICATE SIGNED BY A REGISTERED CIVIL ENGINEER STATING THAT ALL BUILDING PAD ELEVATIONS ARE IN ACCORDANCE WITH THE APPROVED GRADING PLAN.

30. TO COMPLY WITH THE STATE OF CALIFORNIA'S STATE WIDE GENERAL NPDES PERMIT, REGULATING DISCHARGES OF STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY FROM SOIL DISTURBANCES OF ONE (1) ACRE OR MORE, A NOTICE OF INTENT (NOI) TO COMPLY WITH THE TERMS OF THE GENERAL PERMIT TO DISCHARGE STORM WATER ASSOCIATED WITH CONSTRUCTION ACTIVITY UST BE FILED AND APPROPRIATE FEE PAID PRIOR TO COMMENCEMENT OF CONSTRUCTION IN ADDITION, AT THE CONCLUSION OF THE PROJECT A NOTICE OF TERMINATION MUST ALSO BE FILED, SUBMIT THE FEE, A NOTICE OF INTENT, AND NOTICE OF TERMINATION TO THE STATE RESOURCES CONTROL BOARD AT THE FOLLOWING ADDRESS.

STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER QUALITY
PO BOX 1977
SACRAMENTO, CA 95812-1977
ATTN: STORM WATER PERMITTING SECTION

IF YOU HAVE ANY QUESTIONS CALL WATER QUALITY CONTROL ENGINEER, CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD AT (916) 255-3028.

31. THE CONTRACTOR SHALL COMPLY WITH THE REQUIREMENTS OF THE STATE WATER RESOURCES CONTROL BOARD (SWRCB) ORDER NO. 2009-0009-DWQ. THE CONTRACTOR SHALL IMPLEMENT AND MONITOR A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) IN ACCORDANCE WITH THE SWRCB REGULATIONS. CONTRACTOR SHALL IMPLEMENT AND MONITOR THE SWPPP AND AMEND AS NECESSARY.

32. BENCHMARK: CITY OF MANTECA BENCHMARK NUMBER 2

ELEVATION: 26.146

DESCRIPTION: COUNTY BENCHMARK S-33. BRASS CAP ON 4X4 CONCRETE POST SW CORNER OF LATHROP ROAD AND AIRPORT WAY.

STORM DRAIN NOTES:

1. ALL STORM DRAIN CONSTRUCTION AND MATERIALS, SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MANTECA PUBLIC WORKS DEPARTMENT STANDARD PLANS AND SPECIFICATIONS.

2. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAG MEN OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY.

3. THE CONTRACTOR SHALL PROVIDE ALL SHORING, BRACING, SLOPING OR OTHER PROVISIONS NECESSARY TO PROTECT WORKMAN FOR ALL AREAS TO BE EXCAVATED TO A DEPTH OF 5 FEET OR MORE. SAID PROTECTION TO BE DONE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MANTECA DEPARTMENT OF PUBLIC WORKS, AND STATE REGULATIONS.

4. ALL MANHOLE RIMS TO BE ADJUSTED TO FINISH GRADE AFTER STREET PAVING, UNLESS OTHERWISE NOTED. COST FOR RAISING FACILITIES TO BE INCLUDED IN UNIT PRICES FOR MANHOLES.

5. THE CONTRACTOR SHALL EXPOSE ALL EXISTING STORM DRAIN PIPES, WHERE A CONNECTION IS TO BE MADE, AND NOTIFY THE ENGINEER IF THERE IS A DISCREPANCY BETWEEN THE SIGNED PLANS AND THE EXISTING FIELD CONDITION PRIOR TO THE START OF CONSTRUCTION.

6. CONTRACTOR TO BE RESPONSIBLE FOR ALL TESTING OF STORM DRAIN FACILITIES IN ACCORDANCE WITH THE CITY OF MANTECA'S STANDARD SPECIFICATION AND PLANS.

7. ALL STORM DRAIN LINES SHALL BE CLEANED OF ALL SAND AND DEBRIS PRIOR TO ACCEPTANCE BY THE CITY OF MANTECA.

8. INSTALLATION AND CONSTRUCTION RELATIVE TO S.S.J.I.D. FACILITIES SHALL BE IN ACCORDANCE WITH S.S.J.I.D. STANDARDS AND SPECIFICATIONS.

9. CONTRACTOR SHALL INSTALL A "TRACE WIRE" ON ALL FORCE MAINS. REFER TO CITY STD. W-2 NOTE 15 FOR DETAILS.

SANITARY SEWER NOTES:

1. ALL SANITARY SEWER CONSTRUCTION, MATERIALS, AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MANTECA STANDARD SPECIFICATIONS AND PLANS.

2. 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. SAID PROTECTION TO BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MANTECA DEPARTMENT OF PUBLIC WORKS, AND STATE REGULATIONS.

3. THE CONTRACTOR SHALL EXPOSE ALL EXISTING SANITARY SEWER PIPES WHERE CONNECTION IS TO BE MADE, SO THAT THE ENGINEER CAN VERIFY EXISTING FLOW LINES AND LOCATIONS BEFORE START OF CONSTRUCTION.

4. THE CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAG MEN, OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY MARKING INSTALLED LOCATION OF SERVICE LATERALS. THE CONTRACTOR SHALL STAMP AN "S" AT THE BACK OF SIDEWALK DIRECTLY OVER THE SERVICE.

6. ALL SANITARY SEWER LATERALS SHALL BE EXTENDED TO 3' PAST THE PROPERTY LINE (AS DIMENSIONED ON "LOT UTILITY LAYOUT" DETAIL) AND PLUGGED (SEE STD. DWG. S-12).

7. ALL TESTING REQUIRED BY THE CITY SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, INCLUDING THE TELEVISING OF ALL SEWER LINES.

8. MANHOLE CASTINGS AND COVERS SHALL BE ADJUSTED TO FINISH GRADES BY THE PAVING CONTRACTOR AFTER STREET IMPROVEMENTS ARE COMPLETED COST FOR ADJUSTING FACILITIES TO BE INCLUDED IN THE UNIT PRICE FOR MANHOLES AND CLEANOUTS.

9. CONTRACTOR SHALL INSTALL A "TRACE WIRE" ON ALL FORCE MAINS. REFER TO CITY STD. W-2 NOTE 15 FOR DETAILS.

WATER NOTES:

1. ALL WATER CONSTRUCTION, MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MANTECA STANDARD SPECIFICATIONS AND PLANS.

2. ALL HOUSE SERVICES SHALL BE 1" DIAMETER, UNLESS OTHERWISE NOTES. ALL SERVICE LATERALS SHALL BE EXTENDED PAST THE PROPERTY LINE AND CAPPED.

3. CONTRACTOR SHALL EXPOSE EXISTING WATER LINES TO VERIFY EXISTING ELEVATION AND LOCATION PRIOR TO START OF CONSTRUCTION.

4. ALL WATER LINES SHALL BE TESTED AND DISINFECTED IN CONFORMANCE WITH THE REQUIREMENTS OF THE CITY OF MANTECA AND THE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS, SECTION C-651.
WATER LINE TESTING SHALL INCLUDE:
HYDROSTATIC PRESSURE TESTING PER CITY OF MANTECA STANDARD SPECIFICATION 99-1.14
BACTERIOLOGICAL TESTING PER CITY OF MANTECA STANDARD SPECIFICATION 99-1.15 AND AWWA C651
AFTER FINAL FLUSHING AND BEFORE THE NEW WATER MAIN IS CONNECTED TO THE DISTRIBUTION SYSTEM, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES, TAKEN 24 HOURS APART, SHALL BE COLLECTED FROM THE NEW MAIN. SAMPLES SHALL BE COLLECTED AT SITES AS DIRECTED BY CITY. (AT LEAST ONE SET OF SAMPLES SHALL BE COLLECTED EVERY 1200 FEET OF THE NEW WATER MAIN, PLUS ONE SET FROM EACH END OF THE LINE AND AT LEAST ONE SET FROM EACH BRANCH). ALL SAMPLES SHALL BE TESTED FOR BACTERIOLOGICAL QUALITY, AND SHALL SHOW THE ABSENCE OF COLOFORM ORGANISMS. A STANDARD HETEROTROPHIC PLATE COUNT MAY BE REQUIRED AT THE OPTION OF THE CITY ENGINEER.
SAMPLES SHALL BE TAKEN FROM WATER THAT HAS STOOD IN THE NEW MAIN FOR AT LEAST 16 HOURS AFTER FINAL FLUSHING HAS BEEN COMPLETED.
IF THE INITIAL DISINFECTION FAILS TO PRODUCE SATISFACTORY BACTERIOLOGICAL SAMPLES, THE MAIN SHALL BE REFLUSHED AND RESAMPLED DAILY FROM THE SAME POINT(S) UNTIL TWO CONSECUTIVE SAMPLES ARE NEGATIVE FOR COLOFORM ORGANISMS.
THE CITY OF MANTECA SHALL PAY FOR THE INITIAL BACTERIOLOGICAL TESTS. THE CONTRACTOR SHALL PAY FOR ALL TESTING NECESSITATED BY FAILURE OF THE INITIAL TEST(S).
IF TRENCH WATER HAS ENTERED THE NEW MAIN DURING CONSTRUCTION OR, IF IN THE OPINION OF THE CITY OF MANTECA, EXCESSIVE QUANTITIES OF DIRT OR DEBRIS HAVE ENTERED THE NEW MAIN, BACTERIOLOGICAL SAMPLES SHALL BE TAKEN AT INTERVALS OF APPROXIMATELY 200 FEET AND SHALL BE IDENTIFIED BY LOCATION. THE CONTRACTOR SHALL INSTALL ADDITIONAL WATER SERVICE TAPS AND SAMPLING STATIONS AS REQUIRED. THE CONTRACTOR SHALL ALSO REMOVE SAMPLING STATIONS AND SERVICES UPON SATISFACTORY COMPLETION OF TESTING. THE CONTRACTOR SHALL PAY FOR TESTING OF THE CONTAMINATED AREAS.
CONTRACT PRICE SHALL INCLUDE FULL COMPENSATION FOR FURNISHING ALL LABOR, MATERIALS, TOOLS, EQUIPMENT, AND INCIDENTALS, AND FOR DOING ALL OF THE WORK INVOLVED IN TESTING AND DISINFECT ION OF THE WATER MAINS.

5. CONTRACTOR SHALL PROVIDE ALL LIGHTS, SIGNS, BARRICADES, FLAG MEN, OR OTHER DEVICES NECESSARY FOR PUBLIC SAFETY.

6. CONTRACTOR SHALL BE RESPONSIBLE FOR ADEQUATELY MARKING THE INSTALLED LOCATION OF SERVICE LATERALS. THE CONTRACTOR SHALL STAMP A "W" AT THE BACK OF SIDEWALK DIRECTLY OVER THE SERVICE.

7. WATER LINES SHALL BE A MINIMUM OF 10 FEET OUTSIDE OF PIPE TO OUTSIDE OF PIPE FROM SEWER AND STORM DRAIN MAINS. CROSSINGS SHALL MEET STATE HEALTH STANDARDS.

8. ALL VALVE BOXES TO BE ADJUSTED TO FINISH GRADE AFTER STREET PAVING. COST FOR RAISING FACILITIES TO BE INCLUDED IN UNIT PRICES FOR VALVES.

9. FOR EXCAVATIONS OF FIVE FEET OR MORE, TRENCHES SHALL BE MADE IN CONFORMANCE WITH APPROPRIATE SHORING SYSTEM STANDARDS.

10. ALL CONNECTIONS TO EXISTING CITY FACILITIES SHALL BE MADE IN THE PRESENCE OF THE CITY ENGINEER, OR HIS APPOINTED REPRESENTATIVE.

GRADING NOTES:

1. EARTHWORK SHALL BE PERFORMED IN ACCORDANCE WITH THE CITY OF MANTECA STANDARDS, F.H.A. STANDARDS, AND THE SOILS REPORT BY NEIL O. ANDERSON AND ASSOCIATES DATED 09-15-2009. ALL FILL AREAS SHALL BE TESTED AS REQUIRED BY THE CITY OF MANTECA AND F.H.A., AND SHALL BE PAID FOR BY THE CONTRACTOR.

2. THE CITY SHALL BE RESPONSIBLE FOR COST OF INITIAL TEST FOR MOISTURE DENSITY CURVE. IF THE FIRST TEST FAILS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR COST OF ALL SUBSEQUENT CURVES AND TESTS.

3. EXCESS EARTH GENERATED FROM UNDERGROUND INSTALLATION AND ROADWAY GRADING SHALL BE PLACED AS DIRECTED BY M.C.R. ENGINEERING.

4. THE CONTRACTOR SHALL REVIEW SITE PRIOR TO BIDDING. ALL VEGETATION AND DELETERIOUS MATERIALS SHALL BE REMOVED FROM THE SITE AT THE EXPENSE OF THE CONTRACTOR AND SHALL BE INCLUDED IN THE LUMP SUM CLEARING COST.

5. THE CONTRACTOR SHALL PRESERVE ALL STAKES AND POINTS SET FOR LINES, GRADES OR MEASUREMENT OF THE WORK IN THEIR PROPER PLACES UNTIL AUTHORIZED TO REMOVE THEM BY THE ENGINEER. ALL EXPENSES INCURRED IN REPLACING STAKES THAT HAVE BEEN REMOVED WITHOUT PROPER AUTHORITY SHALL BE PAID FOR BY THE GENERAL CONTRACTOR.

6. ALL EXISTING WELLS AND SEPTIC TANKS SHALL BE REMOVED AND/OR ABANDONED PER THE REQUIREMENTS OF THE SAN JOAQUIN LOCAL HEALTH DISTRICT AND THE CITY OF MANTECA. THIS WORK SHALL BE INCLUDED IN THE LUMP SUM CLEARING COST.

ELECTROLIER NOTES:

1. ALL ELECT AND CONDUIT INSTALLATION SHALL BE IN ACCORDANCE WITH THE CITY OF MANTECA STANDARD SPECIFICATIONS AND THE SERVICING UTILITIES' STANDARDS.

2. ALL STREET LIGHTING SHALL BE CONSTRUCTED BY AND AT A COST TO THE DEVELOPER SUCH THAT OWNERSHIP OF THE STREET LIGHTS ARE TO BE PROVIDED TO THE CITY OF MANTECA.

3. ALL POLES AND ARMS SHALL BE CONTINUOUSLY TAPERED, ROUND IN CROSS SECTION HAVING DIAMETERS AS SHOWN ON THE STANDARD DRAWINGS.

4. ALL DIMENSIONS SHOWN ON THE STANDARD DRAWINGS ARE MINIMUMS AND SHALL BE MAINTAINED.

5. POLES SHALL BE GALVANIZED STEEL TAPERED TUBE AND/OR ALUMINUM EQUAL.

6. TOP OF PULL BOXES AND FOUNDATIONS FOR STANDARDS SHALL BE LEVEL WITH THE BACK OF WALK IN SIDEWALK AREA OR SURROUNDING GRADE IN OTHER AREAS.

7. ALL CONDUIT TO BE USED SHALL BE RIGID METAL OR SCHEDULE 40 P.V.C. AND SHALL BE BURIED TO THE FOLLOWING DEPTH:

   A. WITHIN SIDEWALK OR PARKWAY AREA: 2'-0" MINIMUM
   B. WITHIN ROADWAY AREA: 3'-0" MINIMUM

8. THE CONTRACTOR SHALL SIZE CONDUCTOR AND CONDUIT ACCORDING TO THE SERVICE REQUIREMENTS; HOWEVER, NO. 8 A.W.G. CONDUCTOR AND 1 1/2" CONDUIT SHALL BE A MINIMUM.

9. THE UNDERGROUND CONDUIT AND ALL METAL PARTS SHALL BE CONTINUOUSLY BONDED AND GROUNDED.

10. MINIMUM RADIUS OF BENDS TO BE 18". ALL BENDS AND/OR OFFSETS SHALL BE MADE WITH FACTORY SECTIONS.

11. ALL SPLICES TO BE APPROVED SOLDERLESS WATER PROOF CONNECTIONS FOR PROPER SIZE.

12. ALL EMPTY CONDUITS SHALL BE CAPPED AND A 1/4" NYLON PULL ROPE PROVIDED INSIDE.

13. UNLESS OTHERWISE APPROVED BY THE CITY ENGINEER, A NO. 3 1/2 PULL BOX (STATE STANDARD ES-8) SHALL BE INSTALLED AT ALL STREET LIGHT STANDARDS. PULL BOXES SHALL BE NOT MORE THAN 250 FEET APART ON LONG RUNS. COVERS TO BE INSCRIBED "STREET LIGHTING".

14. STREET LIGHT CIRCUIT PLAN WILL BE REQUIRED ON "AS BUILT" PLANS.

DEWATERING NOTES:

1. THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE AND MAINTAIN ALL MACHINERY APPLIANCES, AND EQUIPMENT TO MAINTAIN ALL EXCAVATIONS FREE FROM WATER DURING CONSTRUCTION. THE CONTRACTOR SHALL DISPOSE OF THE WATER SO AS NOT TO CAUSE DAMAGE TO PUBLIC OR PRIVATE PROPERTY, OR TO CAUSE A NUISANCE OR MENACE TO THE PUBLIC OR VIOLATE THE LAW. THE DEWATERING SYSTEM SHALL BE INSTALLED AND OPERATED SO THAT THE GROUNDWATER LEVEL OUTSIDE THE EXCAVATION IS NOT REDUCED TO THE EXTENT WHICH WOULD CAUSE DAMAGE OR ENDANGERED ADJACENT STRUCTURES OR PROPERTY. ALL COST FOR DEWATERING SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ALL PIPE CONSTRUCTION. THE STATIC WATER LEVEL SHALL BE DRAWN DOWN A MINIMUM OF 1 FOOT BELOW THE BOTTOM TO EXCAVATIONS TO MAINTAIN THE UNDISTURBED STATE OF NATURAL SOILS AND ALLOW THE PLACEMENT OF ANY FILL TO THE SPECIFIED DENSITY. THE CONTRACTOR SHALL HAVE ON HAND, PUMPING EQUIPMENT AND MACHINERY IN GOOD WORKING CONDITION FOR EMERGENCIES AND SHALL HAVE WORKMEN AVAILABLE FOR IT'S OPERATION. DEWATERING SYSTEMS SHALL OPERATE CONTINUOUSLY UNTIL BACKFILL HAS BEEN COMPLETED TO 1 FOOT ABOVE THE NORMAL STATIC GROUNDWATER LEVEL.

2. THE CONTRACTOR SHALL CONTROL SURFACE WATER TO PREVENT ENTRY INTO EXCAVATIONS. AT EACH EXCAVATION, A SUFFICIENT NUMBER OF TEMPORARY OBSERVATION WELLS TO CONTINUOUSLY CHECK THE GROUNDWATER LEVEL SHALL BE PROVIDED.

3. SUMPS SHALL BE NO DEEPER THAN 5 FEET AND SHALL BE AT THE LOW POINT OF EXCAVATION. EXCAVATION SHALL BE GRADED TO DRAIN TO THE SUMPS.

4. THE CONTROL OF GROUNDWATER SHALL BE SUCH THAT SOFTENING OF THE BOTTOM OF EXCAVATIONS, OR FORMATION OF "QUICK" CONDITIONS OR "BOILS", DOES NOT OCCUR. DEWATERING SYSTEMS SHALL BE DESIGNED AND OPERATED SO AS TO PREVENT REMOVAL OF THE NATURAL SOILS. THE RELEASE OF GROUNDWATER AT ITS STATIC LEVEL SHALL BE PERFORMED IN SUCH A MANNER AS TO MAINTAIN THE UNDISTURBED STATE OF THE NATURAL FOUNDATIONS SOILS, PREVENT DISTURBANCE OF COMPACTED BACKFILL, AND PREVENT FLOTATION OR MOVEMENT OF STRUCTURES, PIPELINES AND SEWERS. IF AN NPDES (NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM) PERMIT IS REQUIRED FOR DISPOSAL OF WATER FROM CONSTRUCTION DEWATERING ACTIVITIES, IT SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO ANY DEWATERING ACTIVITIES.

5. ONE HUNDRED PERCENT STANDBY PUMPING CAPACITY SHALL BE AVAILABLE ON SITE AT ALL TIMES AND SHALL BE CONNECTED TO THE DEWATERING SYSTEM PIPING TO PERMIT IMMEDIATE USE. IN ADDITION, STANDBY AUXILIARY EQUIPMENT AND APPLIANCES FOR ALL ORDINARY EMERGENCIES, AND COMPETENT WORKMEN FOR OPERATION AND MAINTENANCE OF ALL DEWATERING EQUIPMENT SHALL BE ON SITE AT ALL TIMES. STANDBY EQUIPMENT SHALL INCLUDE EMERGENCY POWER GENERATION AND AUTOMATIC SWITCH OVER TO THE EMERGENCY GENERATOR WHEN NORMAL POWER FAILS. DEWATERING SYSTEMS SHALL NOT BE SHUT DOWN BETWEEN SHIFTS, ON HOLIDAYS, ON WEEKENDS, OR DURING WORK STOPPAGES.

6. CONTRACTOR SHALL COMPLY WITH SWRCB REQUIREMENTS FOR DISCHARGING WATER FROM ANY DEWATERING OPERATION, INCLUDING OBTAINING ALL NECESSARY PERMITS.

AIR QUALITY/GREENHOUSE GAS EMISSIONS:

PRIOR TO ISSUANCE OF GRADING PERMIT, THE PROJECT APPLICANT SHALL PROVIDE INFORMATION TO THE CITY OF MANTECA DESCRIBING THE METHODS BY WHICH THE FOLLOWING MEASURES WILL BE COMPLIED WITH:

1. CONSTRUCTION EQUIPMENT SHALL BE PROPERLY MAINTAINED AT AN OFFSITE LOCATION; MAINTENANCE SHALL INCLUDE PROPER TUNING AND TIMING OF ENGINES. EQUIPMENT MAINTENANCE RECORDS AND DATA SHEETS OF EQUIPMENT DESIGN SPECIFICATIONS SHALL BE KEPT ON-SITE DURING CONSTRUCTION.

2. ONSITE CONSTRUCTION EQUIPMENT SHALL NOT IDLE FOR MORE THAN 5 MINUTES IN ANY ONE HOUR.

3. DURING THE BUILDING PHASE, ONSITE ELECTRICAL HOOK UPS SHALL BE PROVIDED FOR ELECTRIC CONSTRUCTION TOOLS INCLUDING SAWS, DRILLS AND COMPRESSORS, TO ELIMINATE THE NEED FOR DIESEL POWERED ELECTRIC GENERATORS.

4. CONSTRUCTION WORKERS SHALL BE ENCOURAGED TO CARPOOL TO AND FROM THE THE CONSTRUCTION SITE TO THE GREATEST EXTENT PRACTICAL. WORKERS SHALL BE INFORMED IN WRITING AND A LETTER SHALL BE PLACED ON FILE IN THE CITY OFFICE DOCUMENTING EFFORTS TO CARPOOL.

NOISE:

DURING CONSTRUCTION ACTIVITIES FOR ALL MASTER PLAN USES, THE APPLICANT SHALL REQUIRE ITS CONSTRUCTION CONTRACTORS TO ADHERE TO THE FOLLOWING NOISE ATTENUATION REQUIREMENTS:

1. CONSTRUCTION ACTIVITIES SHALL BE LIMITED TO THE HOURS BETWEEN 7 A.M. TO 8 P.M. DAILY. THE CITY OF MANTECA DIRECTOR OF PUBLIC WORKS SHALL HAVE THE DISCRETION TO PERMIT CONSTRUCTION ACTIVITIES TO OCCUR OUTSIDE OF ALLOWABLE HOURS IF COMPELLING CIRCUMSTANCES WARRANT SUCH AN EXCEPTION (E.G., WEATHER CONDITIONS NECESSARY TO POUR CONCRETE).

2. ALL CONSTRUCTION EQUIPMENT SHALL USE NOISE-REDUCTION FEATURES (E.G., MUFFLERS AND ENGINE SHROUDS) THAT ARE NO LESS EFFECTIVE THAN THOSE ORIGINALLY INSTALLED BY THE MANUFACTURER. IF NO NOISE-REDUCTION FEATURES WERE INSTALLED BY THE MANUFACTURER, THEN THE CONTRACTOR SHALL REQUIRE THAT AT LEAST A MUFFLER BE INSTALLED ON THE EQUIPMENT.

3. CONSTRUCTION STAGING AND HEAVY EQUIPMENT MAINTENANCE ACTIVITIES SHALL BE PERFORMED A MINIMUM DISTANCE OF 300 FEET FROM THE NEAREST RESIDENCE, UNLESS SAFETY OR TECHNICAL FACTORS TAKE PRECEDENCE (E.G., AN EQUIPMENT BREAKDOWN).

4. A 10-FOOT-HIGH CONSTRUCTION NOISE BARRIER SHALL BE INSTALLED ALONG THE EDGE OF THE MASTER PLAN AREA WITHIN 300 FEET OF ANY OFFSITE RESIDENCE PRIOR TO START OF GRADING ACTIVITIES. THE NOISE BARRIER SHALL EITHER BE CONSTRUCTED OF A MINIMUM 0.5 INCH PLYWOOD OR UTILIZE ACOUSTICAL BLANKETS WITH A MINIMUM SOUND TRANSMISSION CLASS OF 12. THE BARRIER SHALL REMAIN IN PLACE UNTIL NOISE INTENSIVE ASPECTS OF CONSTRUCTION ARE COMPLETED.

RECORD DRAWING
BY: DATE: 9.24-13

CULTURAL RESOURCES:

1. IF POTENTIALLY SIGNIFICANT HISTORIC RESOURCES ARE ENCOUNTERED DURING SUBSURFACE EXCAVATION ACTIVITIES FOR ANY AREA ASSOCIATED WITH THESE PLANS, ALL CONSTRUCTION ACTIVITIES WITHIN A 100-FOOT RADIUS OF THE RESOURCE SHALL CEASE UNTIL A QUALIFIED ARCHAEOLOGIST DETERMINES WHETHER THE RESOURCE REQUIRES FURTHER STUDY.

2. IF POTENTIALLY SIGNIFICANT ARCHAEOLOGICAL RESOURCES ARE ENCOUNTERED DURING SUBSURFACE EXCAVATION ACTIVITIES, ALL CONSTRUCTION ACTIVITIES WITHIN A 100-FOOT RADIUS OF THE RESOURCE SHALL CEASE UNTIL A QUALIFIED ARCHAEOLOGIST DETERMINES WHETHER THE RESOURCE REQUIRES FURTHER STUDY.

3. IN THE EVENT THAT PLANT OR ANIMAL FOSSILS ARE DISCOVERED DURING SUBSURFACE EXCAVATION ACTIVITIES FOR THE PROPOSED PROJECT, ALL EXCAVATION WITHIN 50 FEET OF THE FOSSIL SHALL CEASE UNTIL A QUALIFIED PALEONTOLOGIST HAS DETERMINED TEH SIGNIFICANCE OF THE AND PROVIDES RECOMMENDATIONS IN ACCORDANCE WITH SOCIETY OF VERTEBRATE PALEONTOLOGY STANDARDS.

4. IF PREVIOUSLY UNKNOWN HUMAN REMAINS ARE ENCOUNTERED DURING CONSTRUCTION ACTIVITIES, SECTION 7050.5 OF TEH CALIFORNIA HEALTH AND SAFETY CODE APPLIES.

5. IN THE EVENT OF AN ACCIDENTAL DISCOVERY OF RECOGNITION OF ANY HUMAN REMAINS, PUBLIC RESOURCE CODE SECTION 5097.98 MUST BE FOLLOWED. ONCE PROJECT-RELATED GROUND DISTURBANCE BEGINS AND IF THERE IS ACCIDENTAL DISCOVERY OF HUMAN REMAINS, THE FOLLOWING STEPS SHALL BE TAKEN:

THERE SHALL BE NO FURTHER EXCAVATION OF DISTURBANCE OF THE SITE OR ANY NEARBY AREA REASONABLY SUSPECTED TO OVERLIE ADJACENT HUMAN REMAINS UNTIL THE SAN JOAQUIN COUNTY CORONERS OFFICE IS CONTACTED TO DETERMINE IF THE REMAINS ARE NATIVE AMERICAN AND IF AN INVESTIGATION INTO CAUSE OF DEATH IS REQUIRED. IF THE CORONER DETERMINES THE REMAINS ARE NATIVE AMERICAN, THE CORONER SHALL CONTACT THE NAHC WITHIN 24 HOURS, AND THE NAHC SHALL IDENTIFY THE PERSON OR PERSONS IT BELIEVES TO BE THE "MOST LIKELY DESCENDANT" OF THE DECEASED NATIVE AMERICAN. THE MOST LIKELY DESCENDANT MAY MAKE RECOMMENDATIONS TO THE LANDOWNER OR THE PERSON RESPONSIBLE FOR THE EXCAVATION WORK, FOR MEANS OF TREATING OR DISPOSING OF, WITH APPROPRIATE DIGNITY, THE HUMAN REMAINS AND ANY ASSOCIATED GRAVE GOODS AS PROVIDED IN PUBLIC RESOURCES CODE SECTION 5097.98.

SOUTH SAN JOAQUIN IRRIGATION DISTRICT CONSTRUCTION NOTES

The following apply to work within South San Joaquin Irrigation District right-of-way or easements and all work on South San Joaquin Irrigation District irrigation pipelines and canals:

1. South San Joaquin Irrigation District shall be contacted at least 48 hours prior to commencement of work on or near irrigation lines. Construction on or near irrigation lines must be accomplished between October 15 and February 15 of any year. Between the dates of February 15 and October 15 irrigation lines will be used for irrigation purposes only and as such, unless special arrangements are made with the District, construction will not be allowed. For all construction work involving piplines used to convoy stormwater, the contractor shall complete the contractor shall complete all such construction in a timely and diligent manner without restricting the normal flow of water within the line.

2. Used materials, rejects, misfits, or seconds, etc. are not acceptable for use on District facilities.

3. South San Joaquin Irrigation District shall inspect all work phases on irrigation facilities for conformance to District specifications. Reinforcing shall not be encased in concrete without prior District inspection. Likewise, concrete shall not be covered with earth prior to District inspection.

4. District shall be provided with name, address, and phone number of contractors, subcontractors, etc. responsible for work being performed on District facilities. Also, provide name and number of contact person responsible for overseeing all phases of construction.

5. The contractor hereby agrees to make, at his own expense, all repairs or replacements necessitated by defects in materials or workmanship, supplied for District facilities, and pay for any damage to other works resulting from such defects which become evident within 1 year after the date of final acceptance of work. The contractor further agrees to hold the District harmless from liability of any kind arising from damage due to said defects. The contractor shall make all repairs and replacements promptly upon written order from the District.

6. The contractor will be responsible for the repairs of all pipeline cracks, which develop during construction of improvements affecting the pipeline.

7. The contractor shall not leave District pipeline projects incomplete for more than two weeks. When conditions require, contractor shall provide a temporary diversion ditch to provide for irrigation water delivery or stormwater removal.

8. USE OF PUBLIC UTILITY EASEMENTS: South San Joaquin Irrigation District has been granted an exclusive easement for its use and disposition. The Public Utility Easement (PUE) may be permitted to overlap the South San Joaquin Irrigation District easement either above of below ground where written permission of South San Joaquin irrigation District is obtained prior to construction and after written application. Furthermore, transformers, panel boxes, meter installations, pull boxes, and other utility company facilities of the PUE or any other which, in anyway, are perceived by South San Joaquin Irrigation District as obstruction to its easy access and/or making its easements or systems maintainability, repair, and replacement more complex and costly are prohibited.

9. TIME LIMITS FOR DEVELOMENT PLANS: South San Joaquin Irrigation District has adopted " Time Limits " limiting the period of its approval should the Landowner/Developer fail to substantially complete his development project in a timely manner and as per Approved Development Plans. These " Time Limits " adopted by South San Joaquin Irrigation District are in most cases equal to those utilized by the governmental agency or institution responsible for development approvals. Should the " Time Limit " be exceeded, South San Joaquin Irrigation District reserves the right to then apply any of its current development standards and requirements.

10. Contractor shall pump South San Joaquin Irrigation District pipeline dry prior to excavation underneath it.

11. Provide a minimum vertical clearance of 2 feet between any non-reinforced box, pipe, or structure and any utility crossing or city installation. Likewise provide a minimum horizontal clearance of 5 feet between any S.S.J.I.D. box or structure and any utility. Contractors shall pothole or locate outside edge of pipe to verify clearance if requested to do so by District Inspector, at to cost to District. A minimum 30" cover shall be provided over all District pipelines, unless otherwise approved by District Engineer.

12. Construction of driveways over non-reinforced pipelines with inadequate cover will not be permitted, unless the pipeline is replaced with R.G.R.C.P. or a reinforced concrete bridging is placed over pipeline per S.S.J.I.D. specifications. Driveways placed over non-reinforced pipelines with adequate cover shall be constructed in sections to allow for easy removal with minimal damage in the event that repairs to the pipeline will be necessary in the future.

13. No heavy equipment will travel over the S.S.J.I.D. pipeline without approved bridging, said bridging to be approved between S.S.J.I.D. and the contractor.

14. All landscaping/fencing plans within District right-of-way shall be approved by the District. No deep rooted trees shall be planted in S.S.J.I.D. easement.

15. S.S.J.I.D. will be notified 48 hours in advance of any grading of excavation work within District Easement.

16. Contractor shall adhere to all applicable standards specified within the latest revision of the District's standard plans and specifications, which can be obtained from the Engineering Department at S.S.J.I.D. located at 11011 E. Hwy. 120, Manteca, CA 95336. Contractor shall immediately contact the District's Engineering Department to verify any perceived discrepancies between these plans and District specifications.

17. S.S.J.I.D. has GPS monuments on many of its existing structures. Prior to demolition of any box or structure, Contractor shall obtain survey coordinates for all existing GPS survey monuments. Upon installation of the new pipeline, new monuments shall be set at each new manhole. The new coordinate data shall then be provided to the S.S.J.I.D. with the As-Built Drawings.

18. As-Built (record drawings) must be submitted to S.S.J.I.D. in mylar and electronic format prior to acceptance of work shown on plans.

19. Prior to the start of construction on District facilities, District shall be provided with all required bonds and insurance certificates in accordance with the provisions of the Developer's Agreement and Construction Permit issued by District. Additional contractors shall obtain a Construction Permit as required prior to start of construction.

20. Contractor shall install #14 solid and coated (TW, THHN, THWN OR MTW) wire on top of main pipe and to appurtenances per SSJID detail on sheet 15.

S.S.J.I.D., its employees and agents are not responsible for verification of the elevations and dimensions indicated on plans nor any errors or omissions that may be present. Approval is subject to the data shown which appears to be in conformity with S.S.J.I.D. requirements for protection of District Facilities.
So Conditionally Approved

Sam F Bologna DATE 1/17/13

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GENERAL NOTES & SPECIFICATIONS

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

REVISIONS

NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING
www.mcreng.com
MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL: (209) 239 - 6229
FAX: (209) 239 - 8839

JOB NO. 10-063
DATE 01/17/2013 08:43
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CK. BY JDE
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NY B. MARSHALL
No. C51015
EXP. 9-30-13
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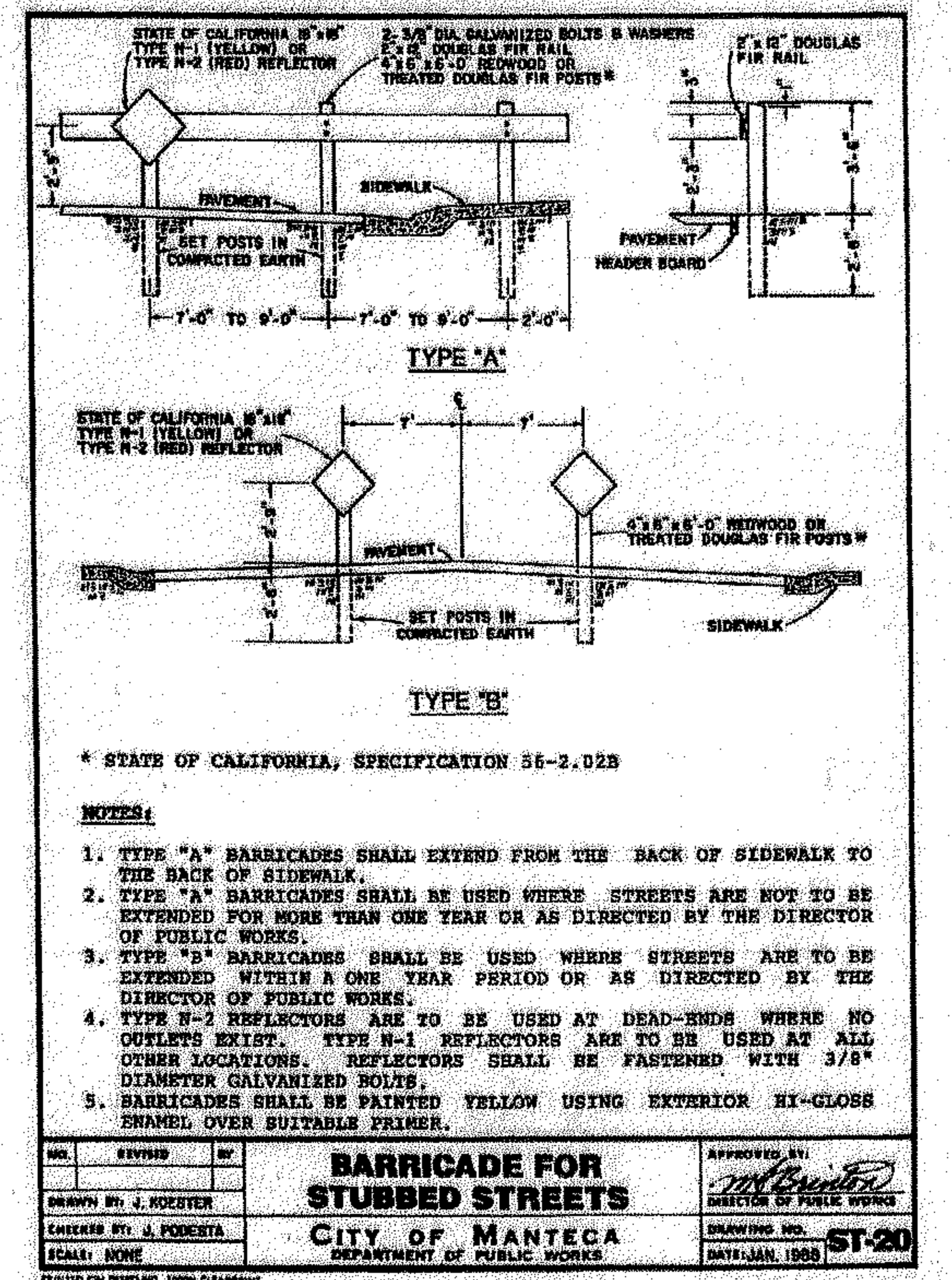
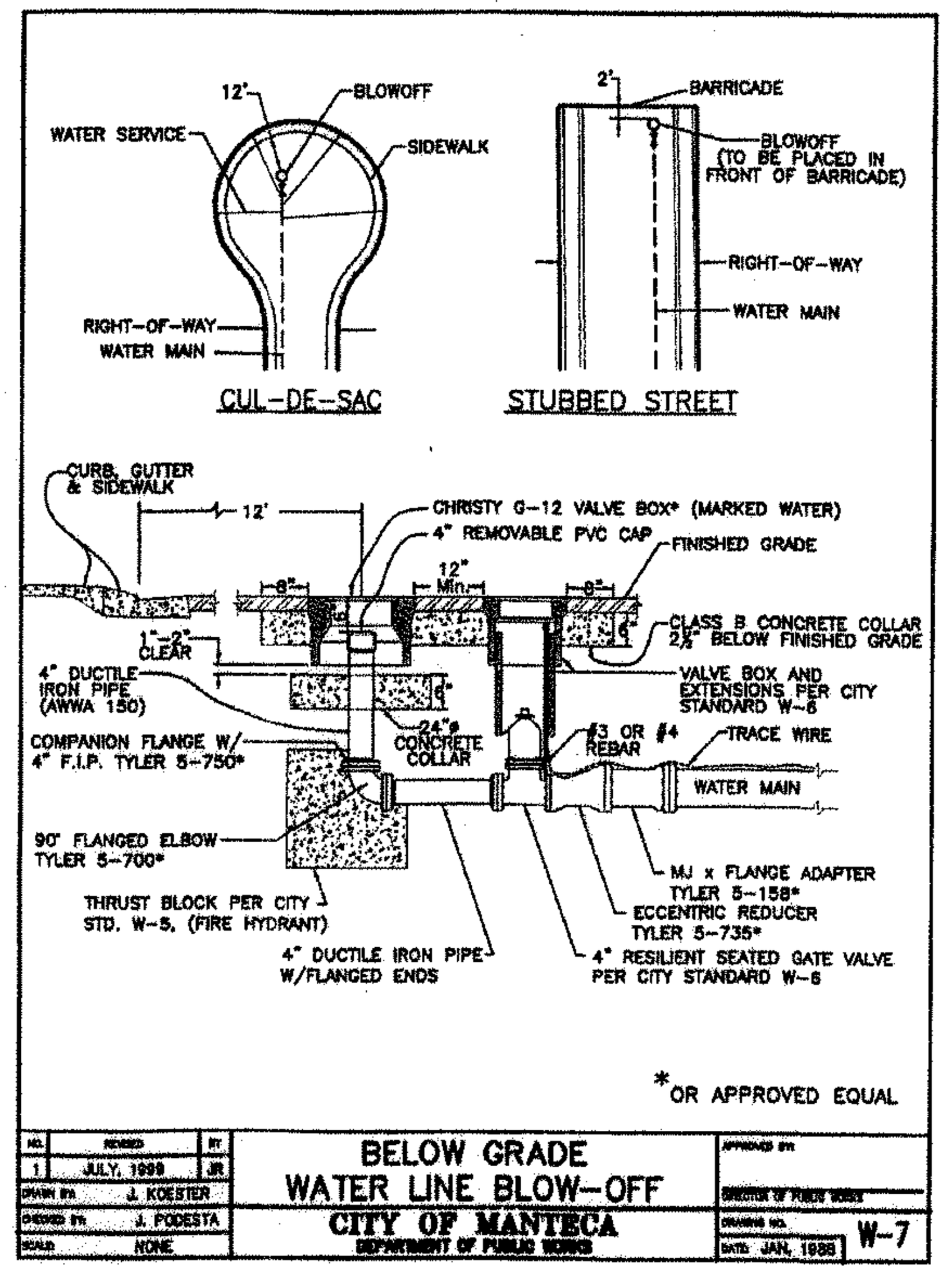
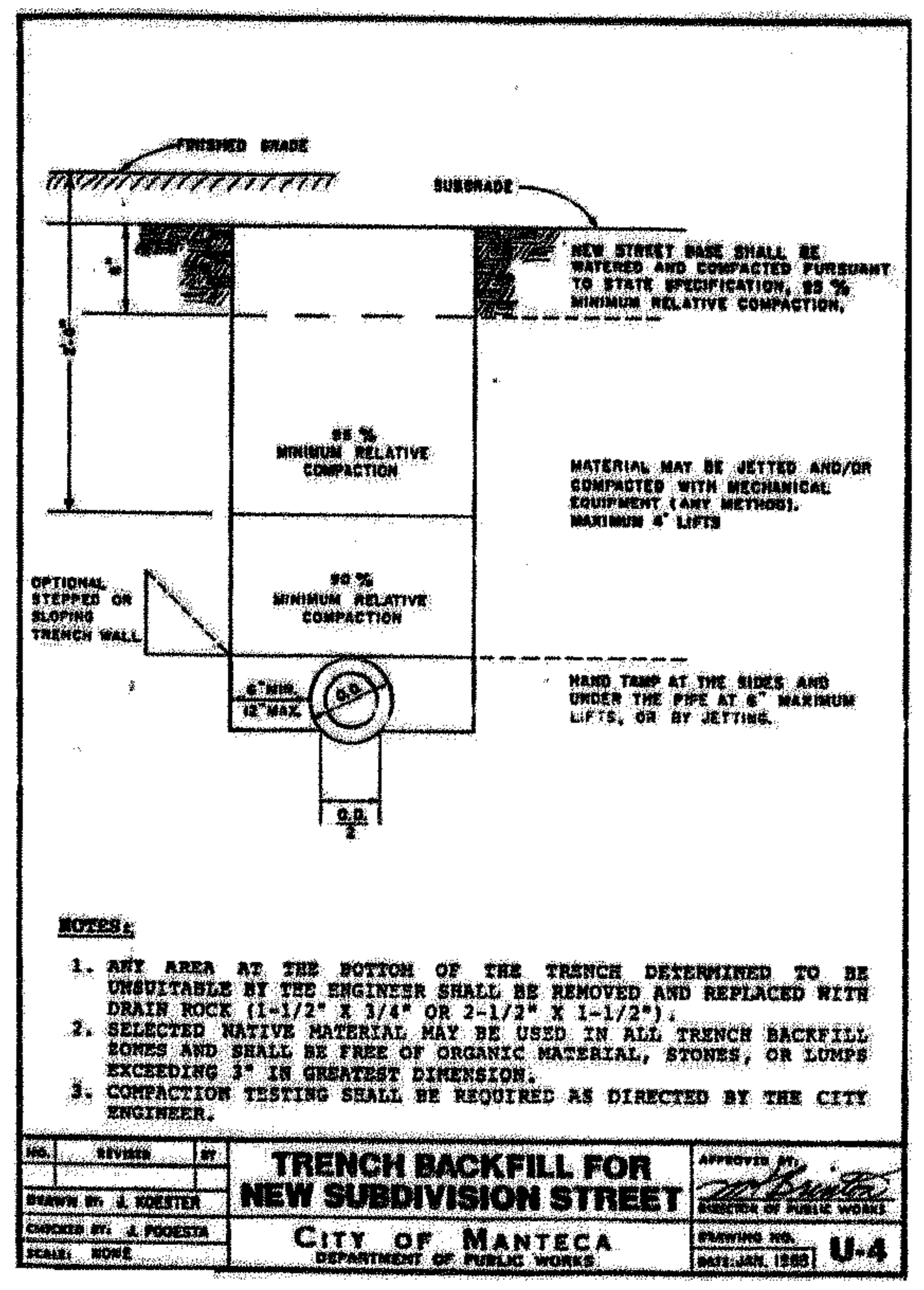
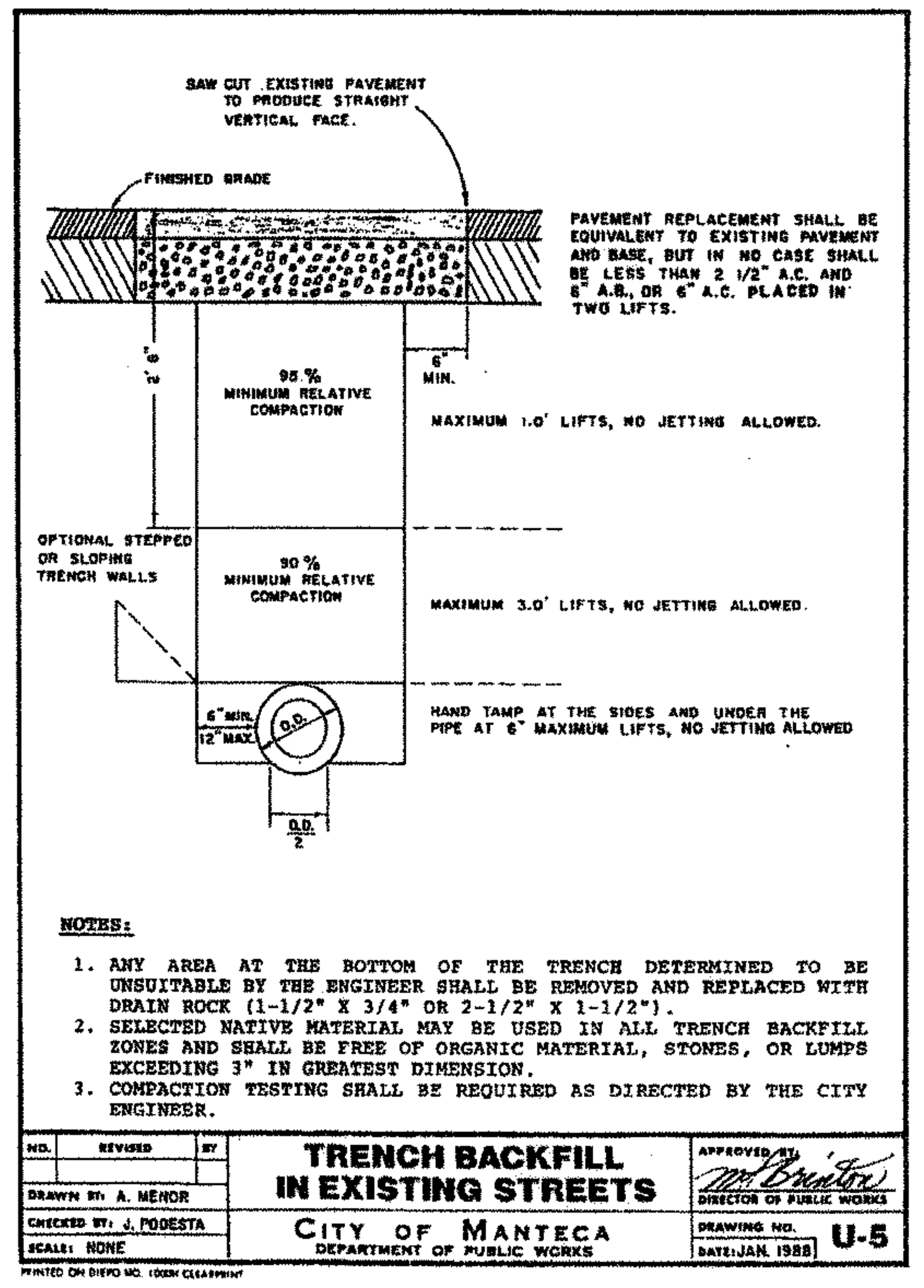
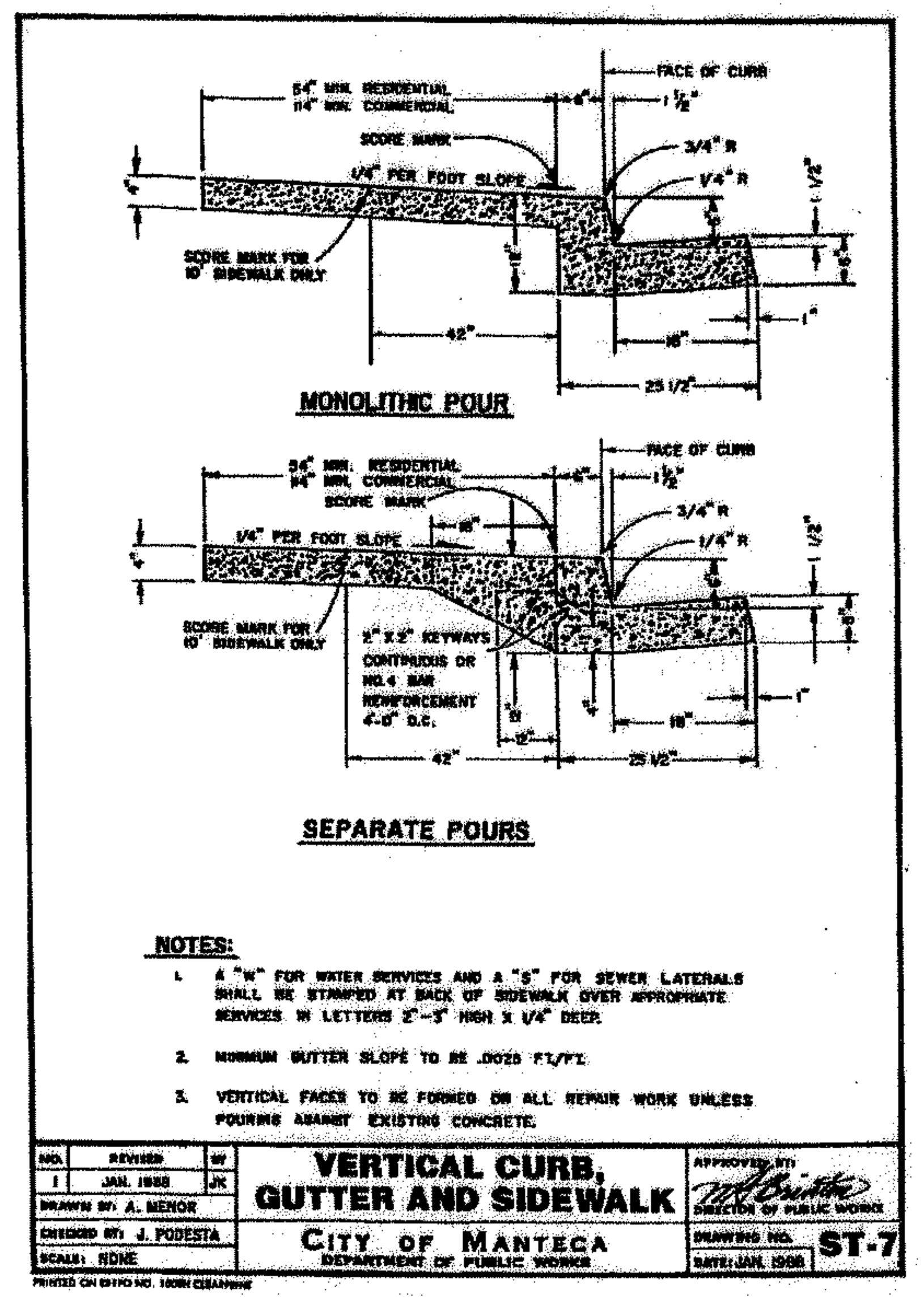
OF 20

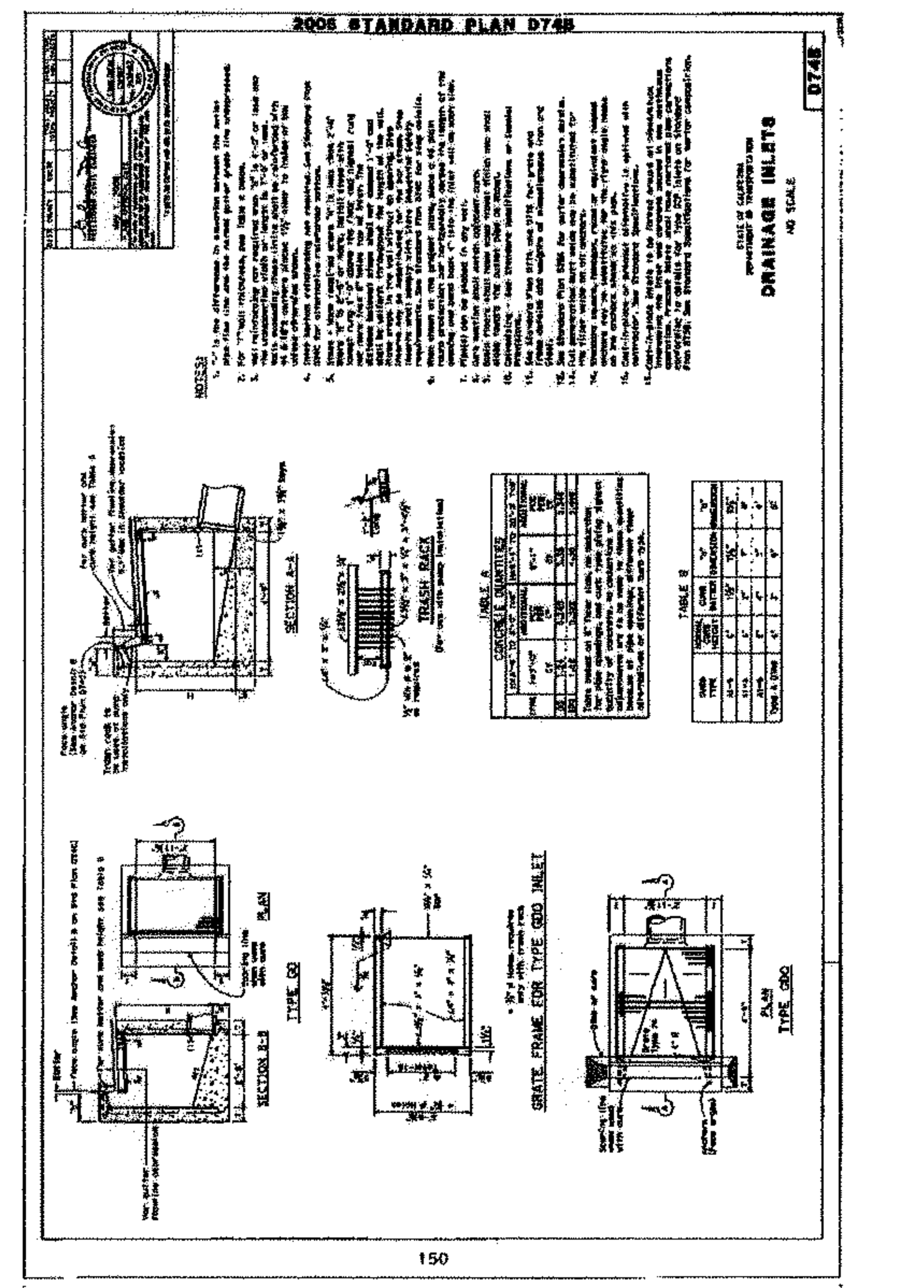


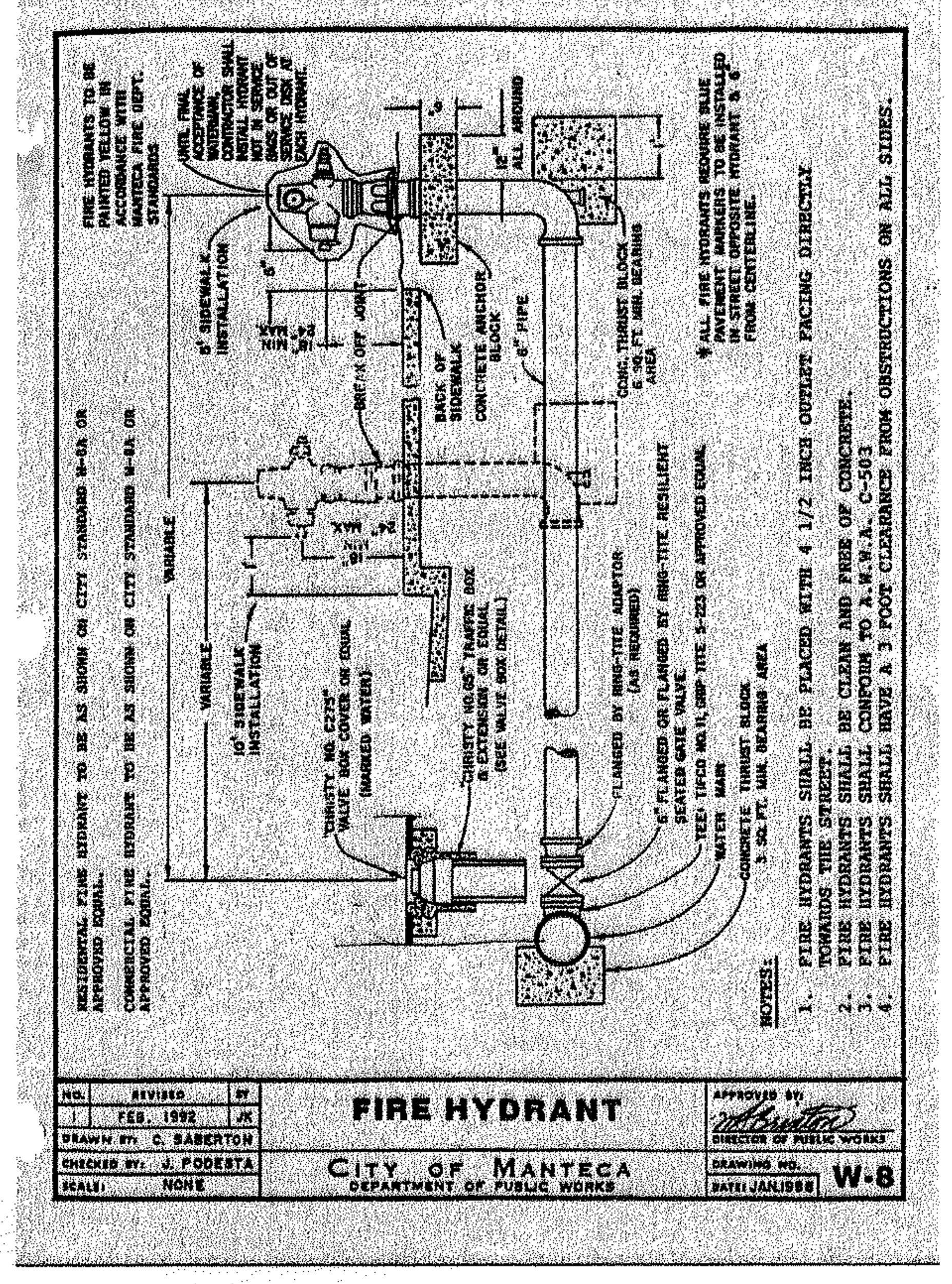


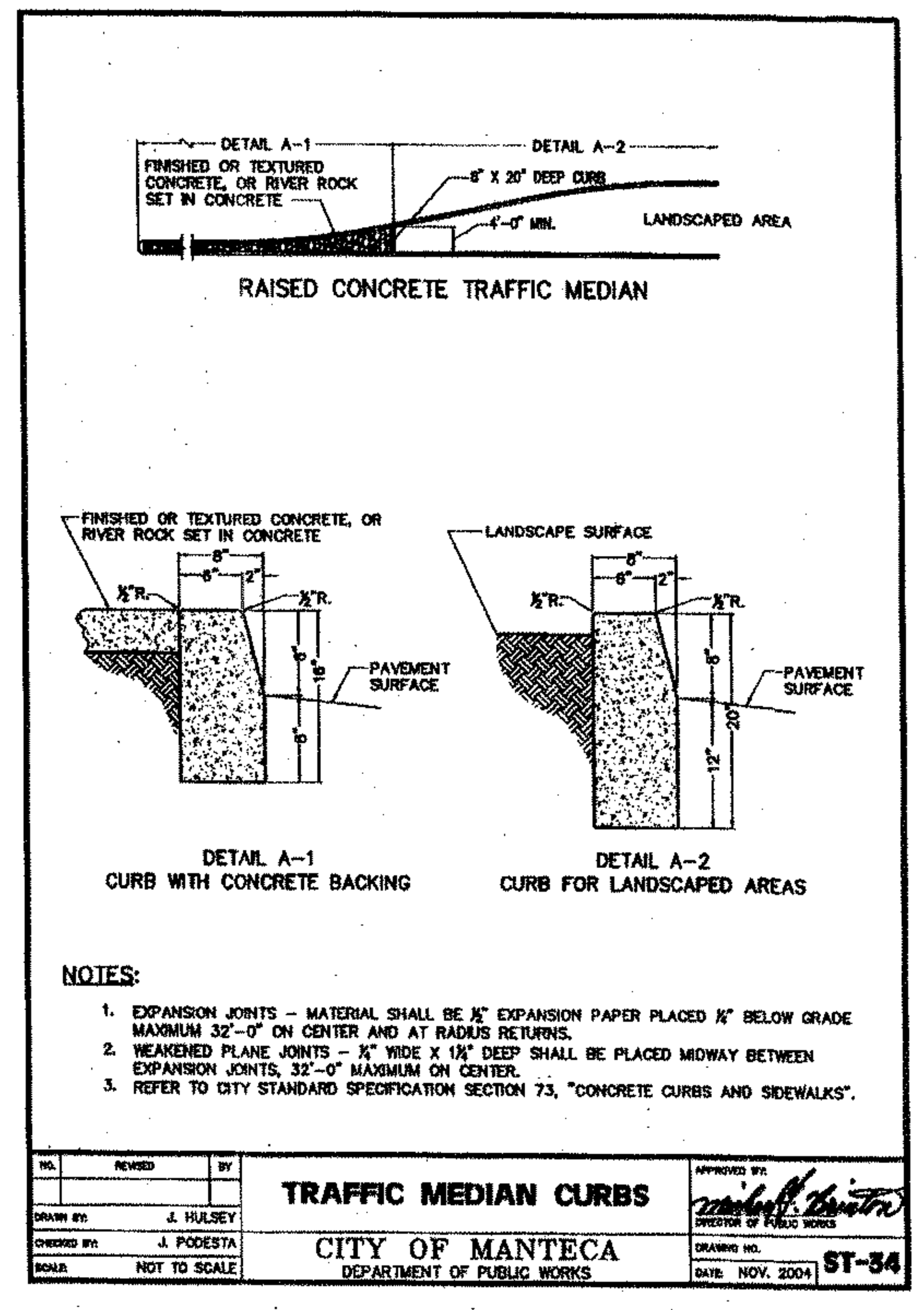


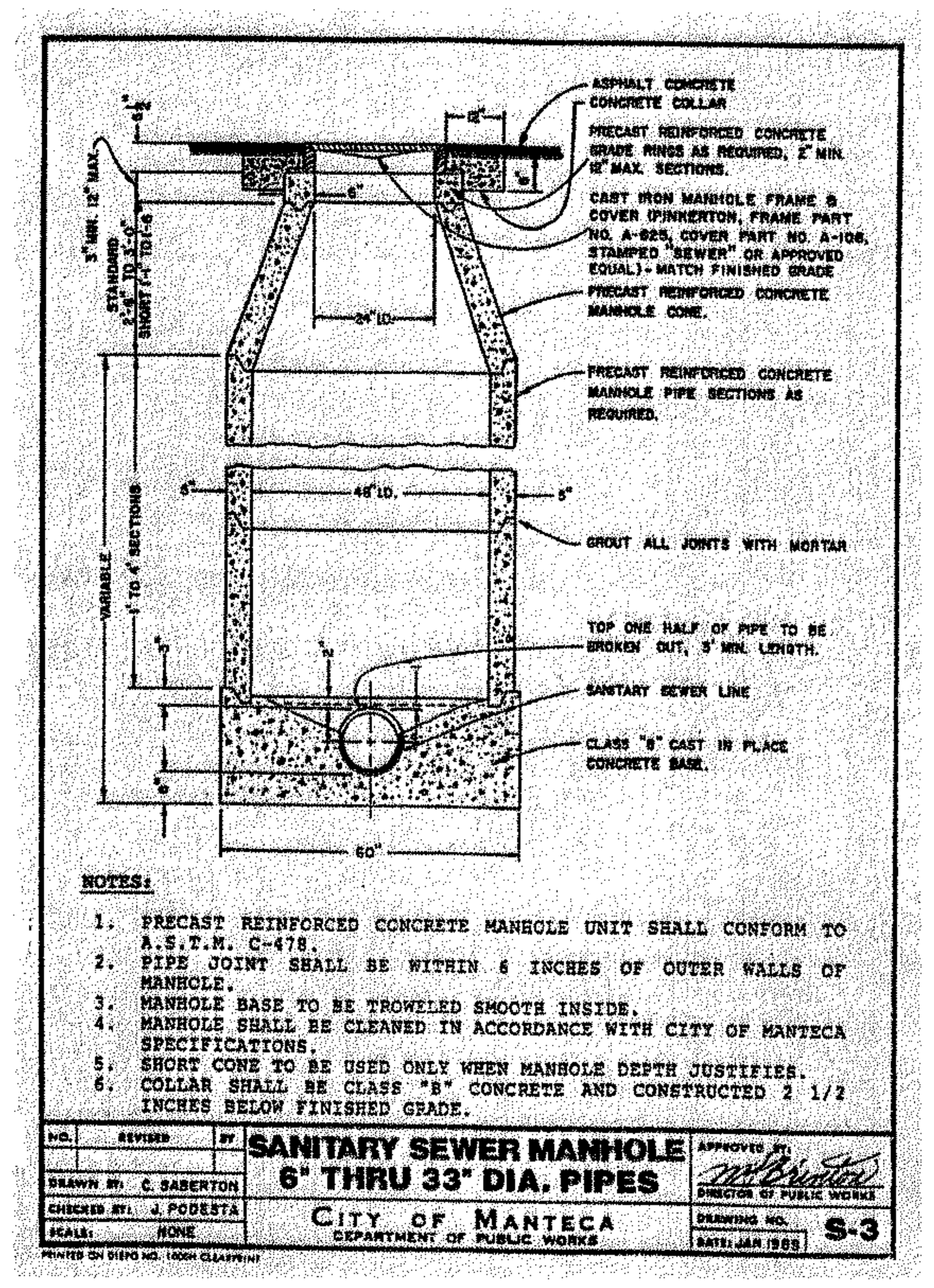


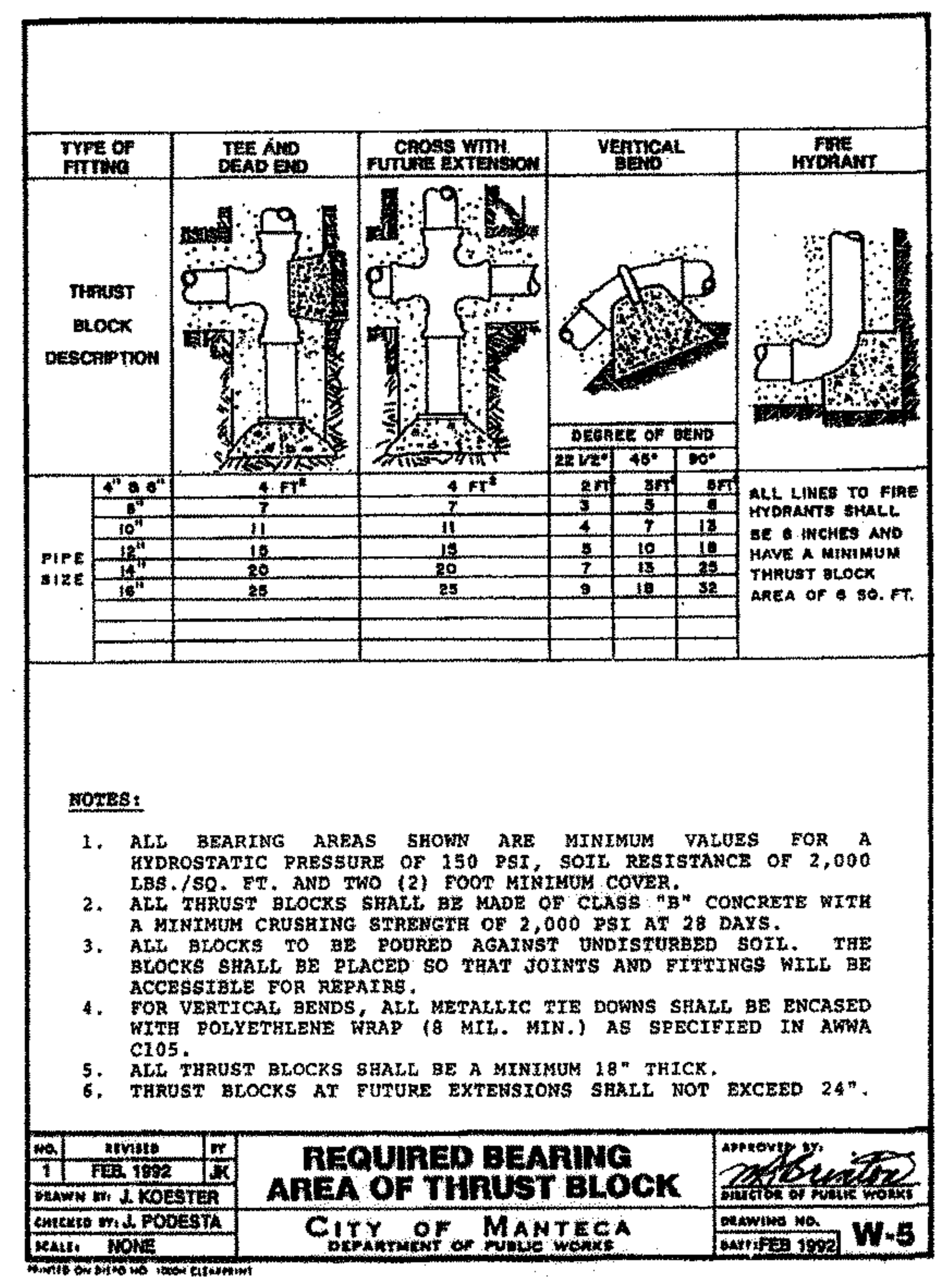


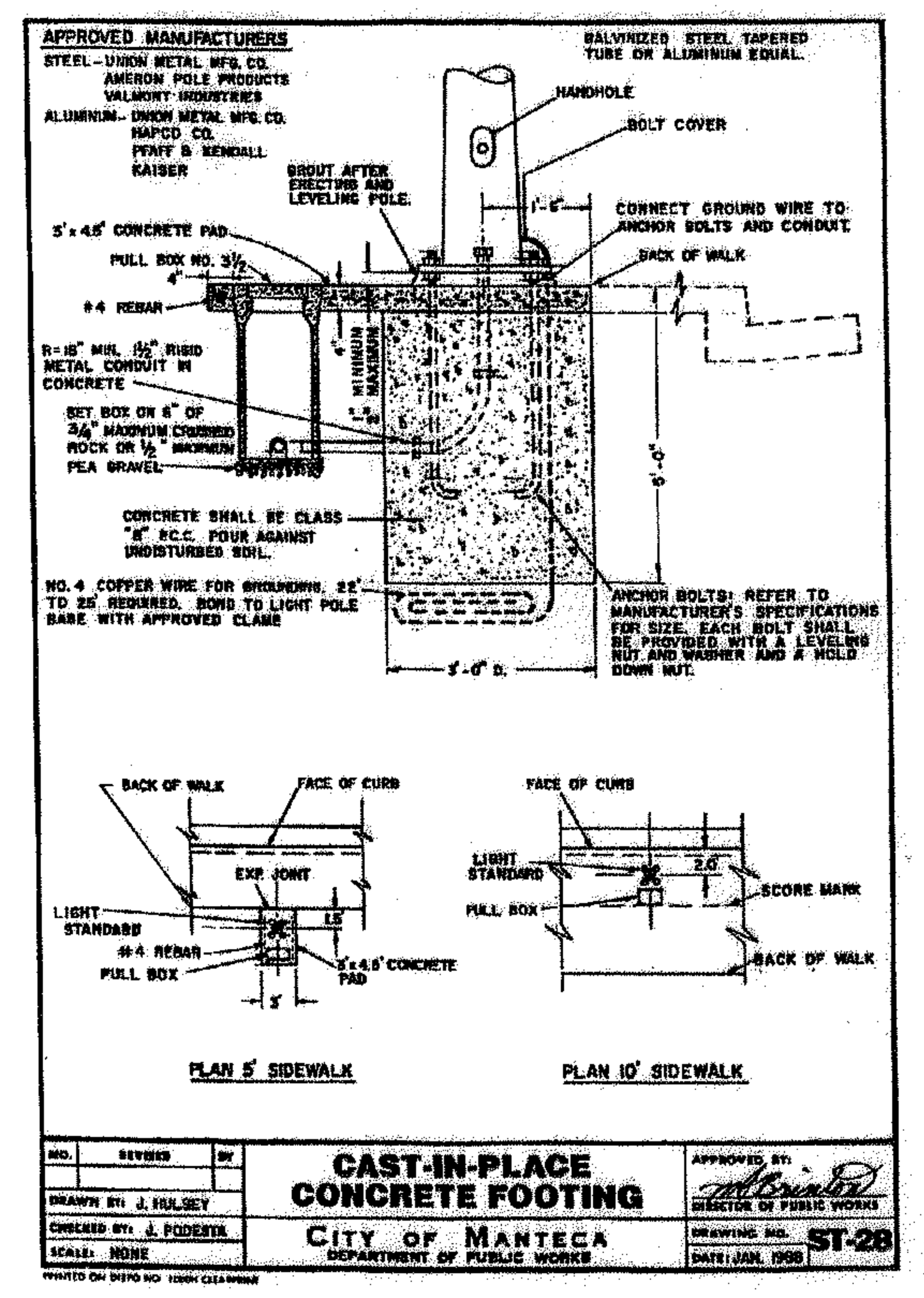


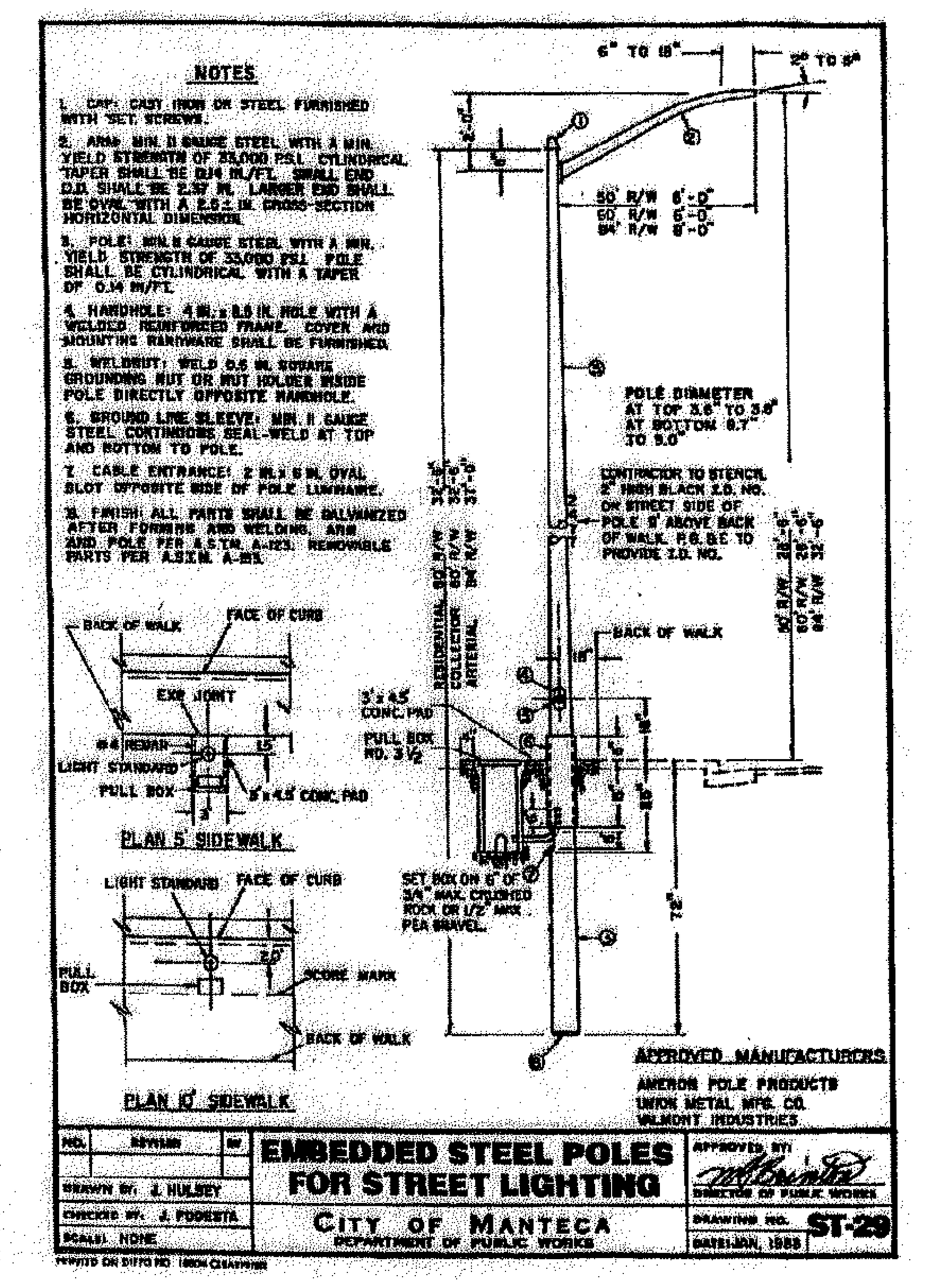












AIR QUALITY MEASURES:

PRIOR TO ISSUANCE OF BUILDING PERMITS FOR PROJECT, APPLICANT/CONTRACTOR SHALL DEMONSTRATE COMPLIANCE WITH ALL APPLICABLE REQUIREMENTS OF SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT (SJVAPCD) REGULATION VIII & MUST OBTAIN AN APPROVED DUST CONTROL PLAN.

1. VISIBLE DUST EMISSIONS (VDE): VISIBLE DUST EMISSIONS MAY NOT EXCEED 20 PERCENT OPACITY DURING PERIODS WHEN SOIL OR OTHER DUST-PRODUCING MATERIALS ARE BEING DISTURBED BY VEHICLES, EQUIPMENT, OR THE FORCES OF WIND.
2. SOIL STABILIZATION IS REQUIRED AT REGULATED CONSTRUCTION SITES AFTER NORMAL WORKING HOURS AND ON WEEKENDS OR HOLIDAYS. APPLYING WATER TO FORM A VISIBLE CRUST ON THE SOIL AND RESTRICTING VEHICLE ACCESS ARE OFTEN EFFECTED FOR SHORT TERM STABILIZATION.
3. CARRYOUT AND TRACKOUT OCCUR WHEN MATERIALS FROM EMPTIED OR LOADED VEHICLES FALLS ONTO A PAVED SURFACE OR SHOULDER OF A PUBLIC ROAD OR WHEN MATERIALS ADHERE TO THE VEHICLE TIRES AND ARE DEPOSITED ONTO A PAVED SURFACE OR SHOULD OF A PUBLIC ROAD. THE MATERIAL MUST BE CLEANED UP AT LEAST DAILY, AND IMMEDIATELY IF IT EXTENDS MORE THAN 50 FEET FROM THE EXIT POINT ONTO A PAVED ROAD.
4. STABILIZED SURFACE: A STABILIZED SURFACE IS A TREATED SURFACE THAT IS RESISTANT TO WIND EFFECTS. THIS REQUIREMENT APPLIES TO VACANT OPEN AREAS THAT HAVE PREVIOUSLY BEEN DISTURBED, UNPAVED ROADS AND TRAFFIC AREAS, AND OUTDOOR BULK STORAGE PILES.
5. PRIOR TO CONSTRUCTION: PRE-WATER SITE SUFFICIENT TO LIMIT VDE TO 20% OPACITY AND PHASE WORK TO REDUCE THE AMOUNT OF DISTURBED SURFACE AREA AT ONE TIME.
6. DURING ACTIVE OPERATIONS: APPLY WATER OR CHEMICAL/ORGANIC STABILIZERS/SUPPRESSANTS SUFFICIENT TO LIMIT VDE TO 20% OPACITY OR CONSTRUCT AND MAINTAIN WIND BARRIERS SUFFICIENT TO LIMIT VDE TO 20% OPACITY. IF UTILIZING WIND BARRIERS, CONTROL MEASURE MENTIONED ABOVE SHALL BE IMPLEMENTED. APPLY WATER OR CHEMICAL/ORGANIC STABILIZERS/SUPPRESSANTS TO UNPAVED HAUL/ACCESS ROADS AND UNPAVED VEHICLE/EQUIPMENT TRAFFIC AREAS SUFFICIENT TO LIMIT VDE TO 20% OPACITY AND MEET THE CONDITIONS OF A STABILIZED UNPAVED ROAD SURFACE.
7. TEMPORARY STABILIZATION DURING PERIODS OF INACTIVITY: RESTRICT VEHICULAR ACCESS TO AREA; AND APPLY WATER OR CHEMICAL/ORGANIC STABILIZERS/SUPPRESSANTS, SUFFICIENT TO COMPLY THE CONDITIONS OF A STABILIZED SURFACE.
8. LIMIT THE SPEED OF VEHICLES TRAVELING ON UNCONTROLLED UNPAVED ACCESS/HAUL ROADS WITHIN CONSTRUCTION SITE TO A MAX. OF 15 MPH WITH SPEED LIMITS SIGNS POSTED AT LEAST EVERY 500 FEET, READABLE IN BOTH DIRECTIONS.
9. OWNER/OPERATOR SHALL SUBMIT A DUST CONTROL PLAN TO THE APCO PRIOR TO THE START OF ANY CONSTRUCTION ACTIVITY ON ANY SITE THAT WILL INCLUDE 5 ACRES OR MORE OF DISTURBED SURFACE. DUST CONTROL PLAN SHALL DESCRIBE ALL FUGITIVE DUST CONTROL MEASURES TO BE IMPLEMENTED BEFORE, DURING, AND AFTER ANY DUST GENERATING ACTIVITY.
10. STORAGE PILES AND BULK MATERIALS HAVE HANDLING, STORAGE, AND TRANSPORTATION REQUIREMENTS THAT INCLUDE APPLYING WATER WHEN HANDLING MATERIALS, WETTING OR COVERING STORED MATERIALS, AND INSTALLING WIND BARRIERS TO LIMIT VDE.
11. DEMOLITION ACTIVITIES REQUIRE THE APPLICATION OF WATER TO THE EXTERIOR OF THE BUILDINGS AND TO UNPAVED SURFACES WHERE MATERIAL MAY FALL.

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STANDARD DETAILS

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

REVISIONS

NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL: (209) 239-6229
FAX: (209) 239-8839
www.mcreng.com

JOB NO. 10-063
DATE 01/18/2013 09:23
SCALE AS SHOWN
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CK. BY JDE
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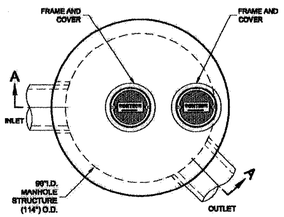
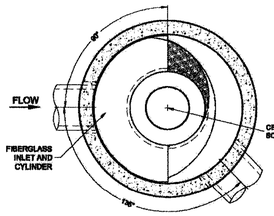
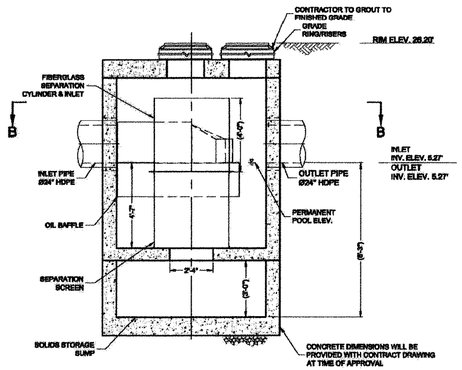


PLAN VIEW



SECTION B-B



SECTION A-A

MATERIALS LIST - PROVIDED BY CONTECH

COUNT	DESCRIPTION	INSTALLED BY
1	FIBERGLASS INLET & CYLINDER	CONTECH
1	4709 MICRON SEP. SCREEN	CONTECH
1	SEALANT FOR JOINTS	CONTRACTOR
1	GRADE RINGS/ RISERS	CONTRACTOR
2	Ø24" FRAME AND COVER	CONTRACTOR

SITE DESIGN DATA

WATER QUALITY FLOW RATE	6 CFS
PEAK FLOW RATE	XX CFS
RETURN PERIOD OF PEAK FLOW	XX YRS

GENERAL NOTES
1. CONTECH TO PROVIDE ALL MATERIALS UNLESS NOTED OTHERWISE.
2. DIMENSIONS MARKED WITH ( ) ARE REFERENCE DIMENSIONS. ACTUAL DIMENSIONS MAY VARY.
3. FOR SITE SPECIFIC DRAWINGS WITH DETAILED DIMENSIONS AND WEIGHTS, PLEASE CONTACT YOUR CONTECH ENGINEERED SOLUTIONS LLC REPRESENTATIVE. www.contechES.com
4. CDS WATER QUALITY STRUCTURE SHALL BE IN ACCORDANCE WITH ALL DESIGN DATA AND INFORMATION CONTAINED IN THIS DRAWING.
5. STRUCTURE SHALL MEET AASHTO H20 AND CASTINGS SHALL MEET AASHTO M306 LOAD RATING, ASSUMING GROUNDWATER ELEVATION AT, OR BELOW, THE OUTLET PIPE INVERT ELEVATION. ENGINEER OF RECORD TO CONFIRM ACTUAL GROUNDWATER ELEVATION
6. PVC HYDRAULIC SHEAR PLATE IS PLACED ON SHELF AT BOTTOM OF SCREEN CYLINDER. REMOVE AND REPLACE AS NECESSARY DURING MAINTENANCE CLEANING.

INSTALLATION NOTES
A. ANY SUB-BASE, BACKFILL DEPTH, AND/OR ANTI-FLOTATION PROVISIONS ARE SITE-SPECIFIC DESIGN CONSIDERATIONS AND SHALL BE SPECIFIED BY ENGINEER OF RECORD.
B. CONTRACTOR TO PROVIDE EQUIPMENT WITH SUFFICIENT LIFTING AND REACH CAPACITY TO LIFT AND SET THE CDS MANHOLE STRUCTURE (LIFTING CLUTCHES PROVIDED).
C. CONTRACTOR TO ADD JOINT SEALANT BETWEEN ALL STRUCTURE SECTIONS, AND ASSEMBLE STRUCTURE.
D. CONTRACTOR TO PROVIDE, INSTALL, AND GROUT PIPES. MATCH PIPE INVERTS WITH ELEVATIONS SHOWN.
E. CONTRACTOR TO TAKE APPROPRIATE MEASURES TO ASSURE UNIT IS WATER TIGHT, HOLDING WATER TO FLOWLINE INVERT MINIMUM. IT IS SUGGESTED THAT ALL JOINTS BELOW PIPE INVERTS ARE GROUTED.

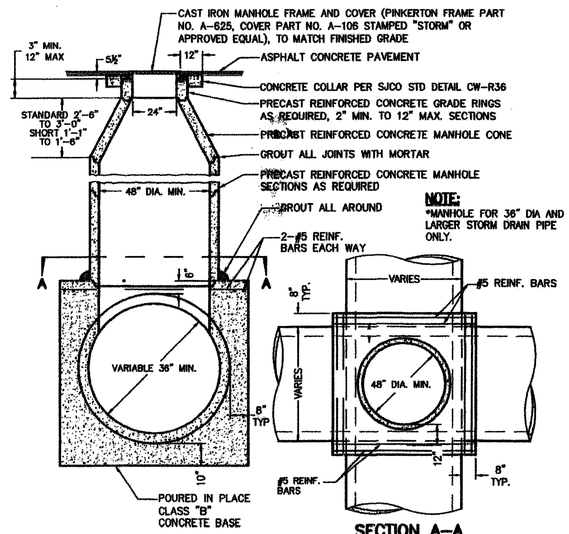
STRUCTURE WEIGHT
APPROXIMATE HEAVIEST PICK = APPX. 35,000 LBS.

CONTECH PROPOSAL DRAWING

CDS4040-8-C - 470864-01
CENTERPOINT
MANTECA, CA
SITE DESIGNATION: XXX

CONTECH ENGINEERED SOLUTIONS LLC

DATE: 9/18/15
DESIGNED: JML
DRAWN: MA
CHECKED:
APPROVED: N/A
PROJECT No.: 470864
REQUISITION No.: 01
SHEET: 1 OF #



SECTION A-A

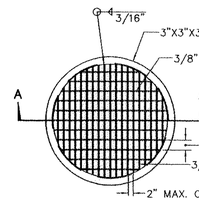
NOTES:

1. PRECAST REINFORCED CONCRETE MANHOLE UNITS SHALL CONFORM TO A.S.T.M. C-478.
2. PIPE JOINTS SHALL BE LOCATED AT LEAST 6 INCHES OUTSIDE OF THE WALLS OF THE MANHOLE BASE, EXCEPT FOR PIPE SIZE DIFFERENTIAL.
3. MANHOLE BASE TO BE TROWELED SMOOTH INSIDE.
4. MANHOLE SHALL BE CLEANED IN ACCORDANCE WITH CITY OF MANTECA SPECIFICATIONS.
5. SHORT CONE TO BE USED ONLY WHEN MANHOLE DEPTH JUSTIFIES.
6. COLLAR SHALL BE CLASS "B" CONCRETE AND CONSTRUCTED 2½" BELOW FINISHED GRADE.

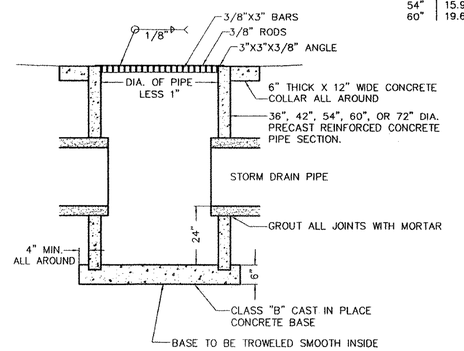
(T) STORM DRAIN SADDLE MANHOLE

NOTE: GRATE SHALL BE GALVANIZED AFTER FABRICATION.

STAND PIPE SIZE	GRATE OPEN AREA
36"	4.89 SF
48"	8.91 SF
60"	14.13 SF
72"	20.53 SF



PIPE SIZE	PIPE AREA
12"	0.78 SF
15"	1.23 SF
18"	1.77 SF
21"	2.40 SF
24"	3.14 SF
27"	3.98 SF
30"	4.91 SF
33"	5.94 SF
36"	7.07 SF
39"	8.30 SF
42"	9.62 SF
48"	12.57 SF
54"	15.90 SF
60"	19.63 SF



SECTION A-A

NO.	REVISED	BY

DRAWN BY: J.E. HULSEY
CHECKED BY: -
SCALE: NOT TO SCALE

STORM DRAIN BASIN
INLET/OUTLET STRUCTURE
CITY OF MANTECA
DEPARTMENT OF PUBLIC WORKS

APPROVED BY:
DIRECTOR OF PUBLIC WORKS
DRAWING NO. —
DATE: JULY, 2005

Know what's below.
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STANDARD DETAILS

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

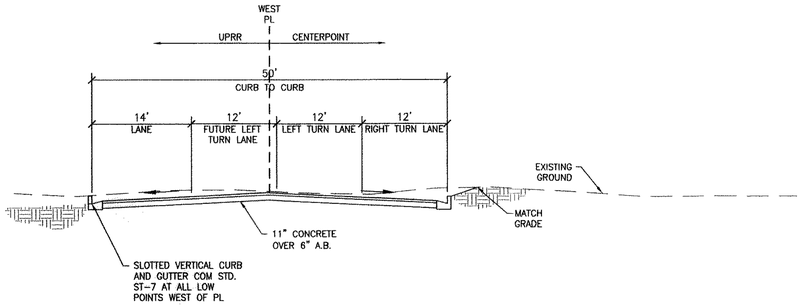
REVISIONS			
NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING
www.mcreng.com
MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL: (209) 239 - 6229
FAX: (209) 239 - 8839

JOB NO. 10-063
DATE 12/15/2012 10:30
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\imp-phase 1\03-04_Detail.dwg

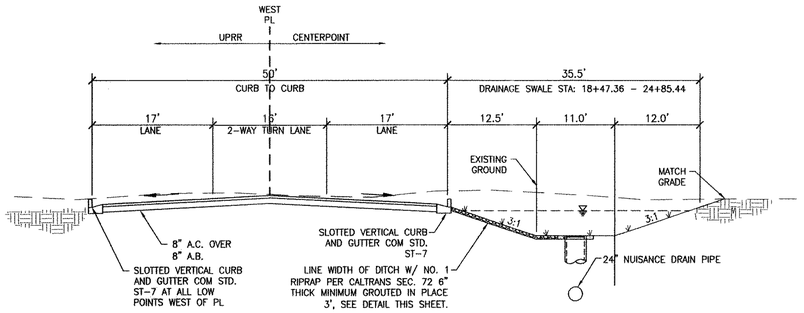
REGISTERED PROFESSIONAL ENGINEER
JAMES B. MARSHALL
No. 51015
EXP. 9-30-13
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER 4 OF 20



TYPICAL PRIVATE ROADWAY SECTION

STA: 10+00.00 – 11+51.27 SCALE: 1" = 10'



TYPICAL PRIVATE ROADWAY SECTION

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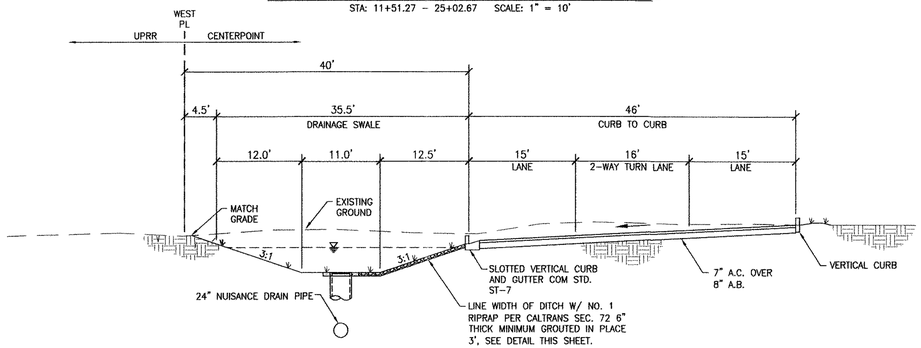


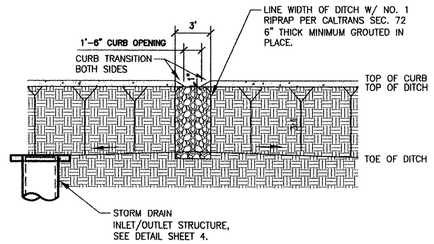
TYPICAL PRIVATE ROADWAY SECTION

STA: 25+02.67 – 76+16.10 SCALE: 1" = 10'

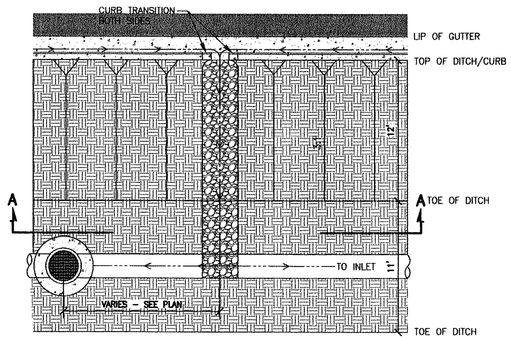
STREET SECTION CHART

STREET NAME	STATION	R/W	CURB	WALK	WIDTH	T.I.	TRUE R.V.	DESIGN R.V.	ALT. #1 CONC.	ALT. #1 A.C.	ALT. #1 A.B.
PRIVATE ROADWAY	25+02.67 – 76+16.10	N/A	VERTICAL	N/A	44.5'	11.0	53	53	–	7.0	8.0
PRIVATE ROADWAY	11+51.27 – 25+02.67	N/A	VERTICAL	N/A	47'	12.0	53	53	–	8.0	8.0
PRIVATE ROADWAY	10+00.00 – 11+51.27	N/A	VERTICAL	N/A	47'	12.0	53	53	11.0	–	6.0

* REFER TO GEOTECHNICAL REPORT FOR LIFTS.

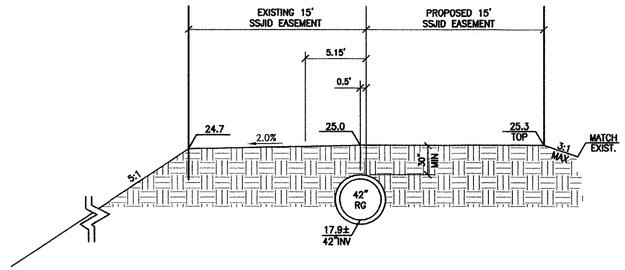


A CROSS SECTION



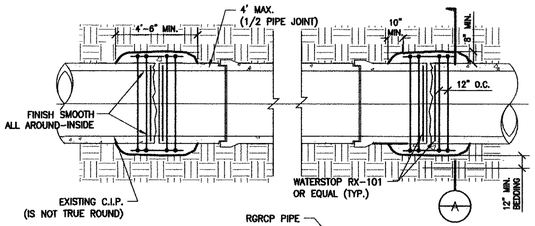
2 DRAINAGE SWALE AT CURB OPENING

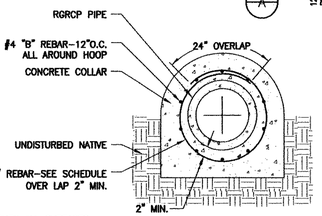
SCALE: 1" = 6'



3 PIPELINE CROSS SECTION

STA: 224+50.00 SCALE: N.T.S.





SECTION A

NOTES:
UNLESS OTHERWISE SPECIFIED:
1. PRESSURE WASH AND ROUGHEN ALL SURFACES PRIOR TO PLACEMENT OF CONCRETE.
2. MIN. 5-1/2 SACK PER CU/YD. FORHOOK-UPS.
3. MAXIMUM GAP BETWEEN EXISTING PIPE AND NEW PIPE IS 12".
4. PROVIDE 24" OVERLAP MIN. ON HOOPS.

REINFORCING BAR SCHEDULE

BAR	SIZE	DESCRIPTION				
		30" PIPE	36" PIPE	42" PIPE	48" PIPE	60" PIPE
"A"	#4	43" DIA.	50" DIA.	57" DIA.	63" DIA.	77" DIA.
"B"	#4	11 EA.	12 EA.	14 EA.	16 EA.	20 EA.

NOTE:
ALL "B" BARS TO BE EVENLY SPACED OVER HOOPS

1 CONCRETE COLLAR FOR LARGE DIAMETER PIPE

STA: SEE PLAN SCALE: N.T.S.

RECORD DRAWING
BY: DATE: 9.24.13

S.S.J.I.D., its employees and agents are not responsible for verification of the elevations and dimensions indicated on plans nor any errors or omissions that may be present. Approval is subject to the data shown which appears to be in conformity with S.S.J.I.D. requirements for protection of District Facilities.
So Conditionally Approved
Sam Belgio DATE 12/24/12

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STANDARD STREET SECTIONS & DETAILS

CENTERPOINT INTERMODAL CENTER PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

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NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING
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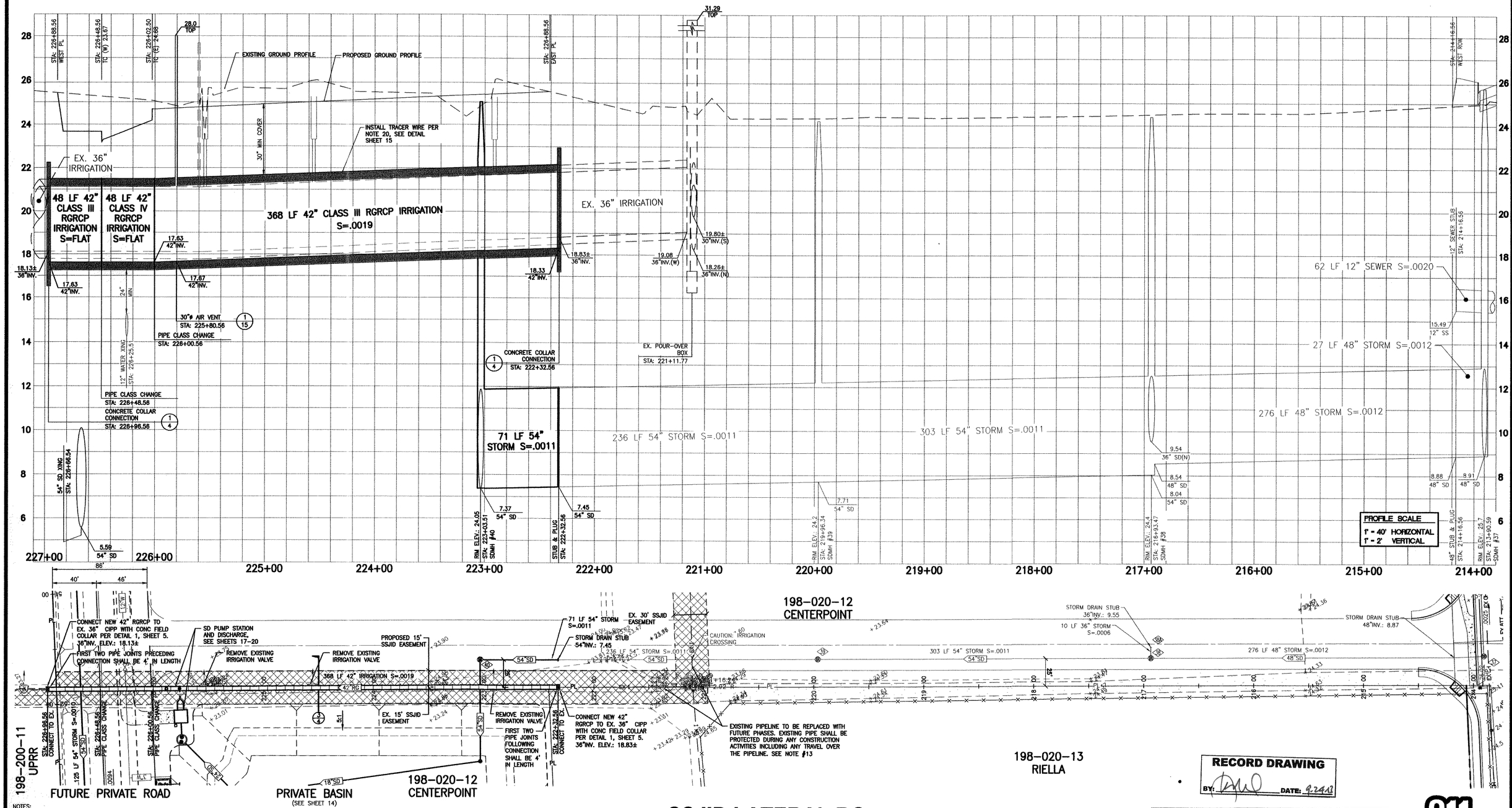
MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL: (209) 239-6229
FAX: (209) 239-8839

JOB NO. 10-063
DATE 12/15/2012 10:32
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\imp-phase 1\05_Detail.dwg

REGISTERED PROFESSIONAL ENGINEER JEFFREY B. MARSHALL No. C51015 EXP. 10-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 5 OF 20



NOTES:

1. ALL EXISTING UTILITIES WERE PLOTTED FROM RECORD INFORMATION AND FIELD TOPOGRAPHY. ACTUAL LOCATIONS MAY VARY AND ADDITIONAL CROSSINGS MAY EXIST IN THE FIELD. IT IS IMPERATIVE THAT "U.S.A." LOCATING SERVICES, LOCATE AND MARK UTILITIES PRIOR TO THE START OF EXCAVATION.
2. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXPOSING EXISTING UTILITY CROSSINGS AND SERVICES.
3. ANY DAMAGE TO EXISTING UTILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

SSJID LATERAL RG

NORTH

0 20 40 80

RECORD DRAWING
BY: DMC DATE: 9.24.13

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So Conditionally Approved
DATE 12/24/12

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SSJID LATERAL RG PLAN & PROFILE

CENTERPOINT INTERMODAL CENTER PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

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JOB NO. 10-063
DATE 12/15/2012 10:47
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
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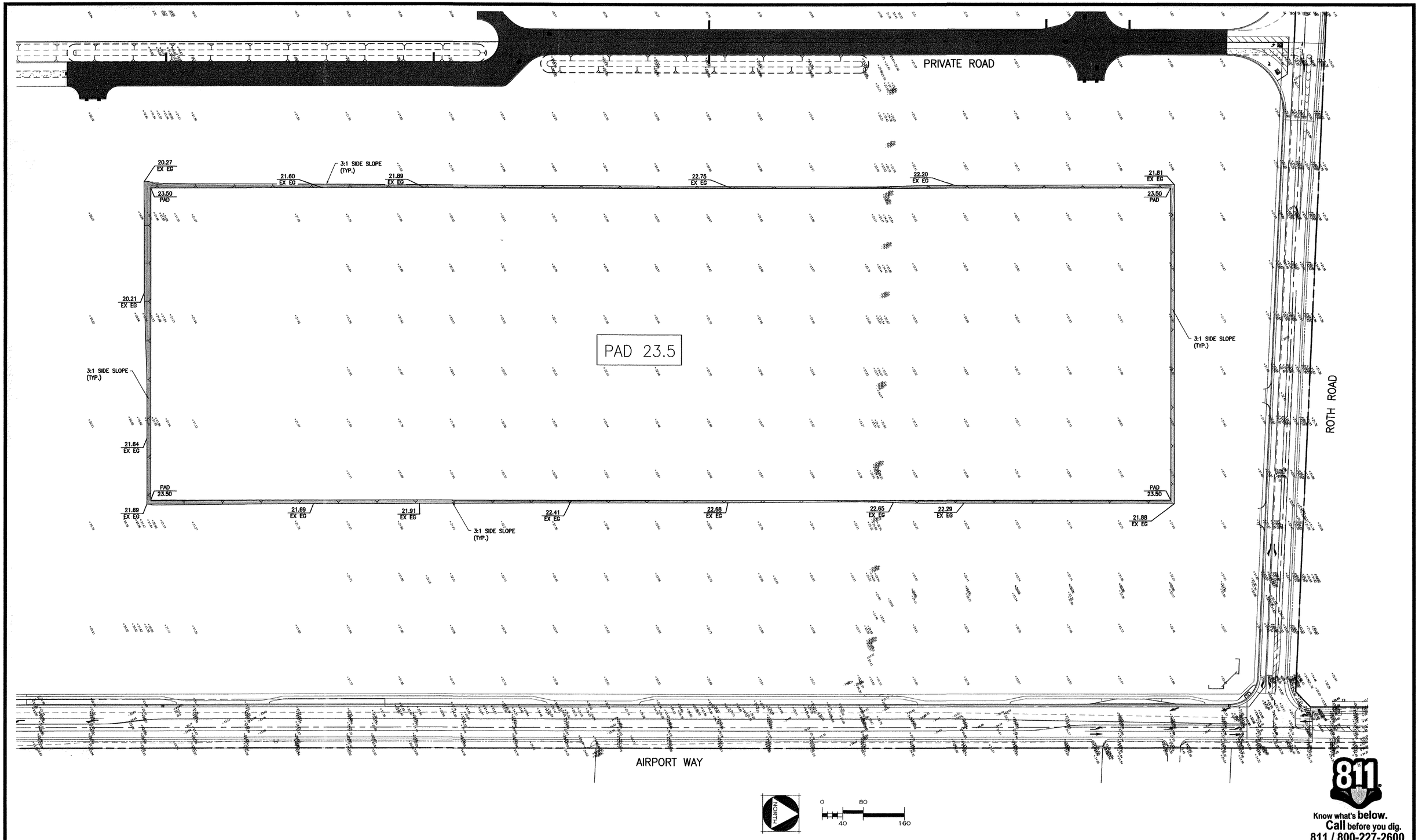
REGISTERED PROFESSIONAL ENGINEER JOHN B. MARSH No. C61015 EXP. 9-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 6 OF 20



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PAD GRADING PLAN

CENTERPOINT INTERMODAL CENTER
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JOB NO. 10-063
DATE 12/17/2012 09:51
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
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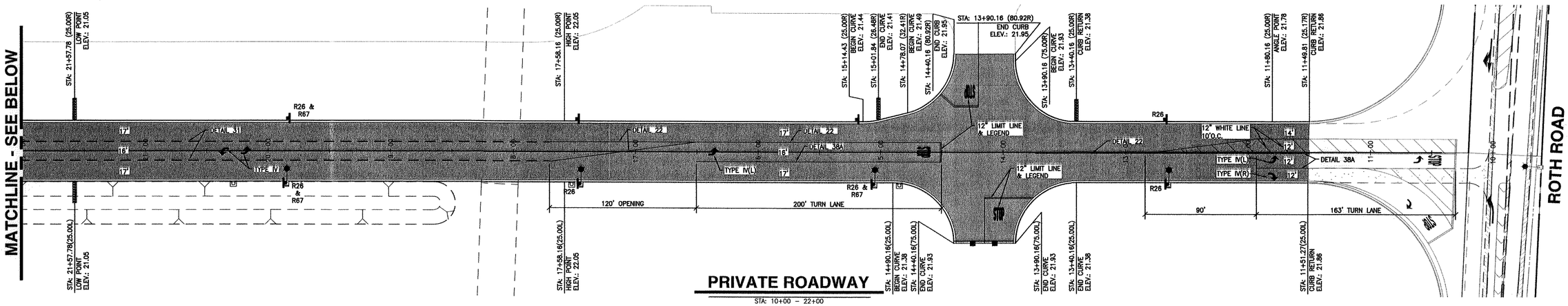
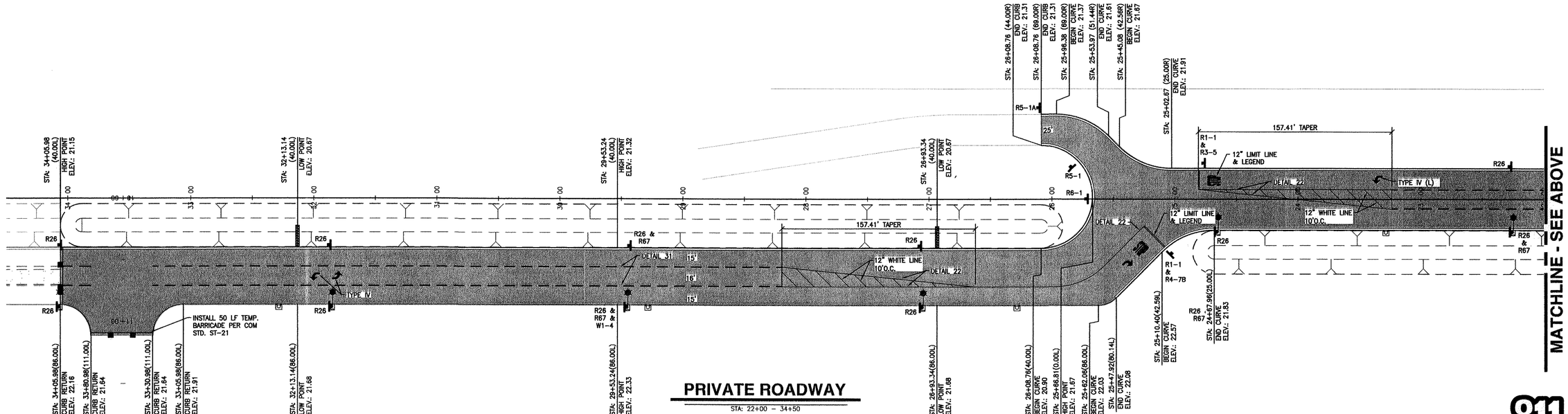
REGISTERED PROFESSIONAL ENGINEER
JOHN D. MARSH
No. 61015
EXP. 9-30-13
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER **7** OF **20**





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LAYOUT PLAN & STRIPING PLAN

CENTERPOINT INTERMODAL CENTER PHASE 1 ON-SITE IMPROVEMENTS

MANTECA, CALIFORNIA

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NO.	DESCRIPTIONS	DATE	APPROVED

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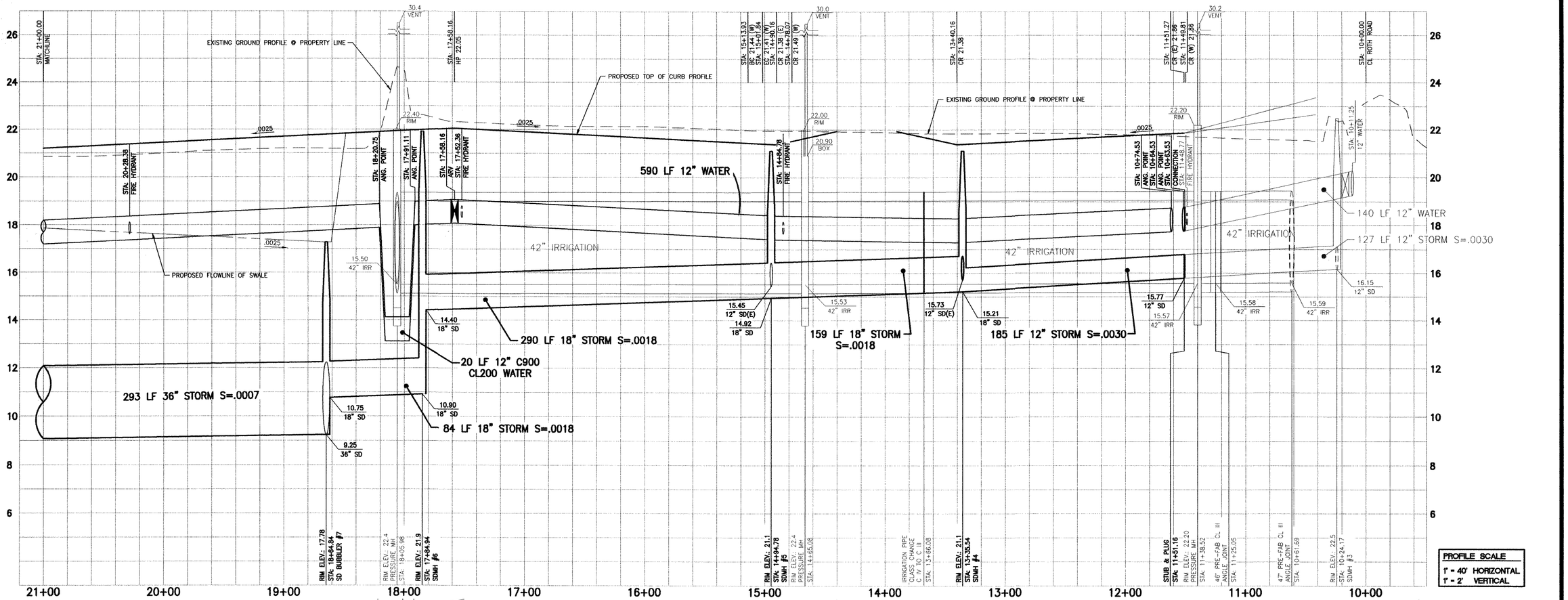
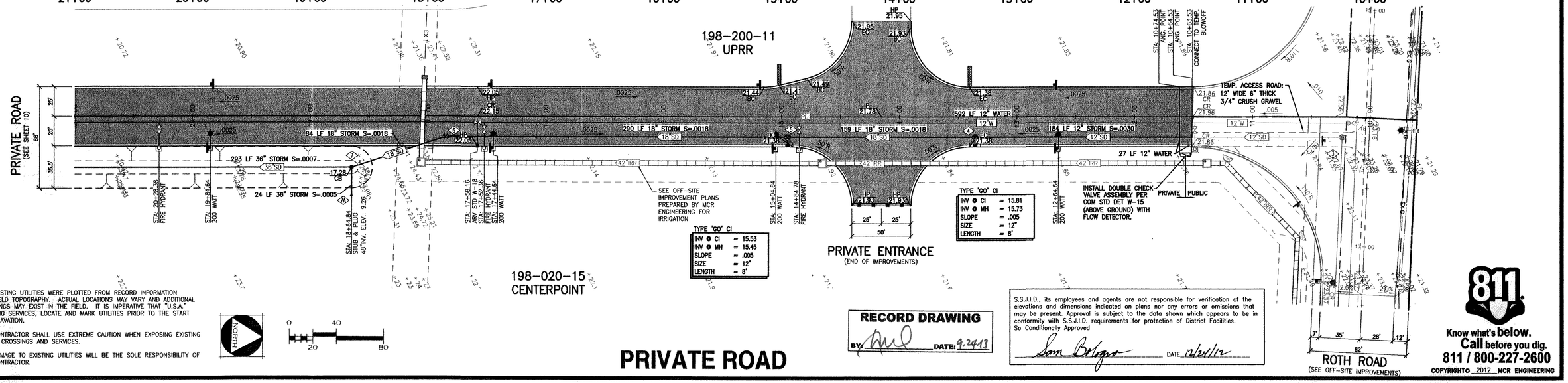
JOB NO. 10-063
DATE 12/15/2012 11:08
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\imp-phase 1\08_Layout.dwg

REGISTERED PROFESSIONAL ENGINEER JOHN D. MARSHALL No. C51015 EXP. 9-30-15 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 8 OF 20





NOTES:

1. ALL EXISTING UTILITIES WERE PLOTTED FROM RECORD INFORMATION AND FIELD TOPOGRAPHY. ACTUAL LOCATIONS MAY VARY AND ADDITIONAL CROSSINGS MAY EXIST IN THE FIELD. IT IS IMPERATIVE THAT "U.S.A." LOCATING SERVICES, LOCATE AND MARK UTILITIES PRIOR TO THE START OF EXCAVATION.
2. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXPOSING EXISTING UTILITY CROSSINGS AND SERVICES.
3. ANY DAMAGE TO EXISTING UTILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

NORTH

0 20 40 80

PRIVATE ROAD

RECORD DRAWING
BY: _____ DATE: 9.24.13

S.S.J.I.D., its employees and agents are not responsible for verification of the elevations and dimensions indicated on plans nor any errors or omissions that may be present. Approval is subject to the data shown which appears to be in conformity with S.S.J.I.D. requirements for protection of District Facilities.
So Conditionally Approved
Sam Bologna DATE 12/24/12

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PRIVATE ROAD
STA: 21+00 - 10+00

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NO.	DESCRIPTIONS	DATE	APPROVED

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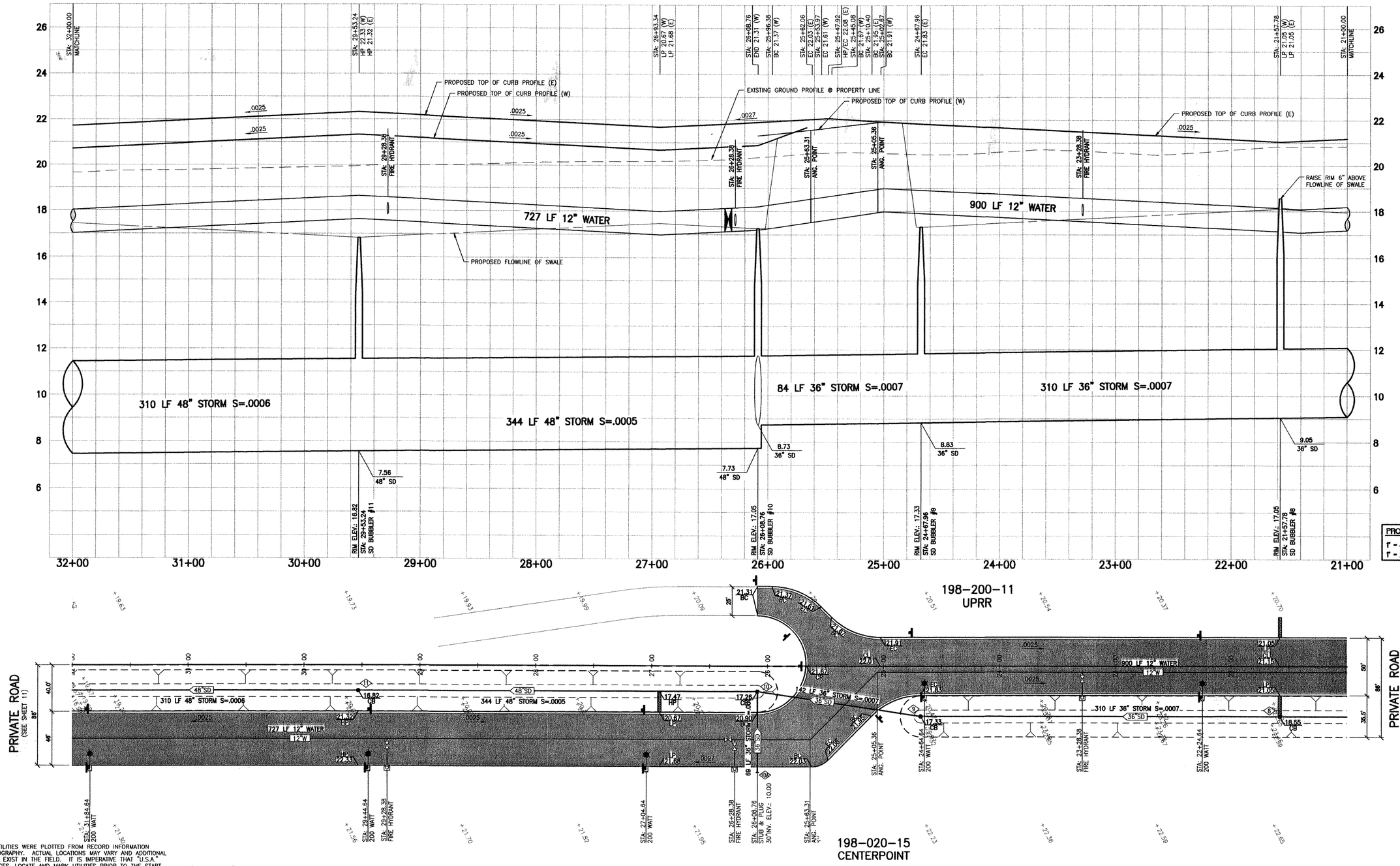
JOB NO. 10-063
DATE 12/15/2012 11:23
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\img-phase 1\08_PP Pvt Rd.dwg

REGISTERED PROFESSIONAL ENGINEER JOHN D. MARSH No. 51013 EXP. 9-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 9 OF 20



NOTES:

1. ALL EXISTING UTILITIES WERE PLOTTED FROM RECORD INFORMATION AND FIELD TOPOGRAPHY. ACTUAL LOCATIONS MAY VARY AND ADDITIONAL CROSSINGS MAY EXIST IN THE FIELD. IT IS IMPERATIVE THAT "U.S.A." LOCATING SERVICES, LOCATE AND MARK UTILITIES PRIOR TO THE START OF EXCAVATION.
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PRIVATE ROAD

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PRIVATE ROAD
STA: 32+00 - 21+00

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

REVISIONS			
NO.	DESCRIPTIONS	DATE	APPROVED

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MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
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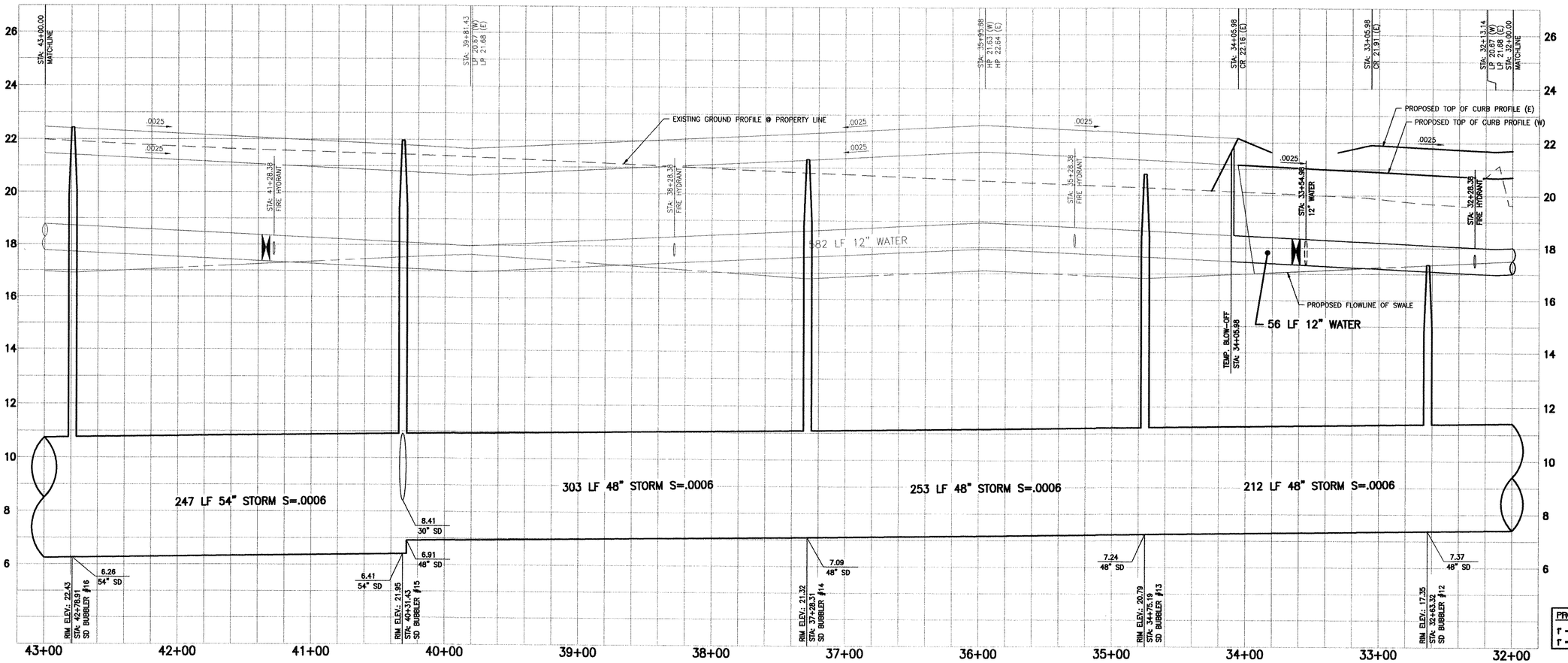
DATE 12/15/2012 11:29
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\imp- phase 1\10_PP Pvt Rd.dwg

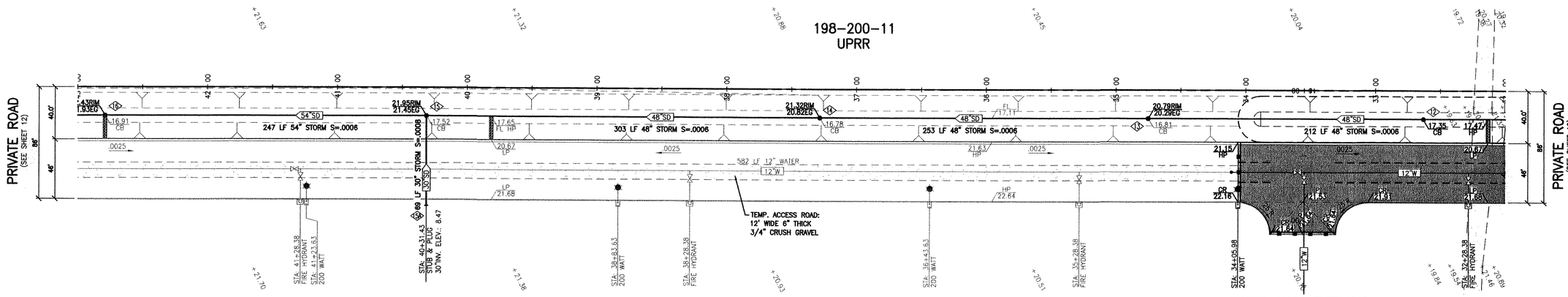
REGISTERED PROFESSIONAL ENGINEER JOHN D. MARSHALL No. C51015 EXP. 9-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 10 OF 20



PROFILE SCALE
1" = 40' HORIZONTAL
1" = 2' VERTICAL

198-200-11
UPRR



198-020-15
CENTERPOINT

WATER MAIN EXTENSION
(SEE SHEET 13)

NOTES:

1. ALL EXISTING UTILITIES WERE PLOTTED FROM RECORD INFORMATION AND FIELD TOPOGRAPHY. ACTUAL LOCATIONS MAY VARY AND ADDITIONAL CROSSINGS MAY EXIST IN THE FIELD. IT IS IMPERATIVE THAT "U.S.A." LOCATING SERVICES, LOCATE AND MARK UTILITIES PRIOR TO THE START OF EXCAVATION.
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NORTH

0 20 40 80

PRIVATE ROAD

811 Know what's below. Call before you dig. 811 / 800-227-2600

PRIVATE ROAD
STA: 43+00 - 32+00

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

REVISIONS			
NO.	DESCRIPTIONS	DATE	APPROVED

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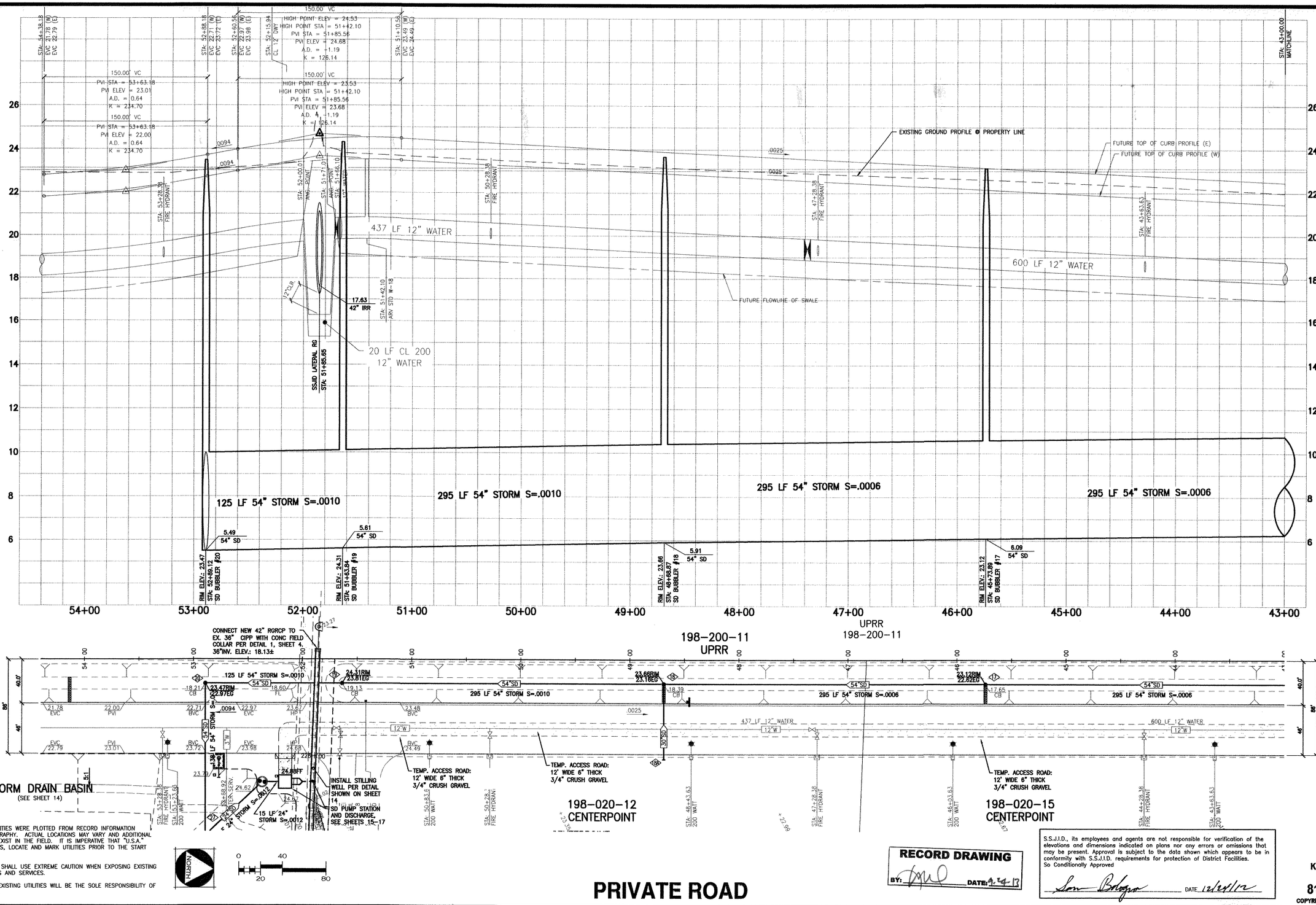
MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL: (209) 239 - 6229
FAX: (209) 239 - 8839

JOB NO. 10-063
DATE 12/15/2012 12:04
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\imp-phase 1\11_PP Pvt Rd.dwg

REGISTERED PROFESSIONAL ENGINEER JOHN E. MARSHALL No. C61015 EXP. 9-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 11 OF 20



NOTES:

1. ALL EXISTING UTILITIES WERE PLOTTED FROM RECORD INFORMATION AND FIELD TOPOGRAPHY. ACTUAL LOCATIONS MAY VARY AND ADDITIONAL CROSSINGS MAY EXIST IN THE FIELD. IT IS IMPERATIVE THAT "U.S.A." LOCATING SERVICES, LOCATE AND MARK UTILITIES PRIOR TO THE START OF EXCAVATION.
2. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXPOSING EXISTING UTILITY CROSSINGS AND SERVICES.
3. ANY DAMAGE TO EXISTING UTILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

RECORD DRAWING
BY: _____ DATE: 4-24-13

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_____ DATE 12/24/12

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PRIVATE ROAD

PRIVATE ROAD
STA: 54+40 - 43+00

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

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NO.	DESCRIPTIONS	DATE	APPROVED

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FAX: (209) 239-8839
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JOB NO. 10-063
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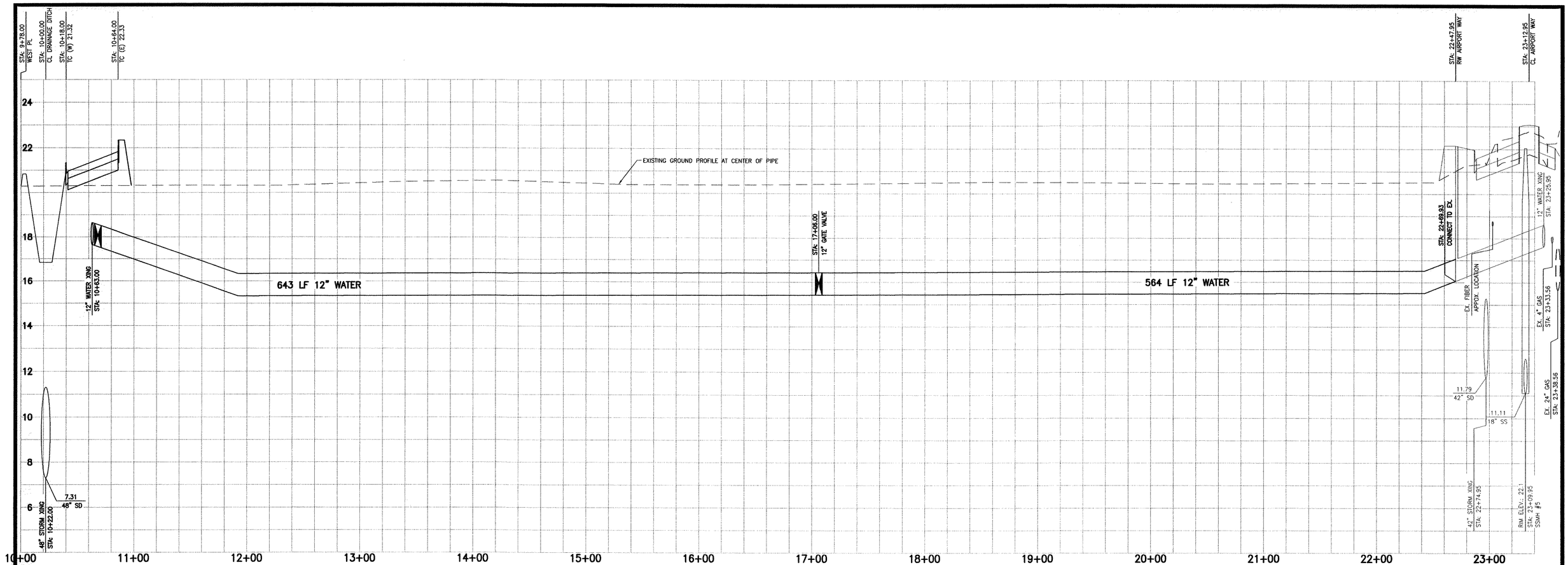
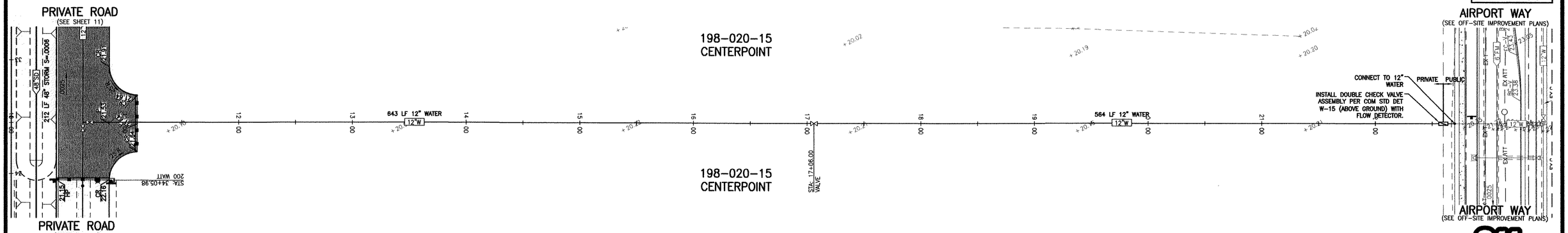
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\imp-phase 1\12_PP Pvt Rddwg

REGISTERED PROFESSIONAL ENGINEER JOHN B. MARSHALL No. C 51015 EXP. 9-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 12 OF 20





NOTES:

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2. THE CONTRACTOR SHALL USE EXTREME CAUTION WHEN EXPOSING EXISTING UTILITY CROSSINGS AND SERVICES.
3. ANY DAMAGE TO EXISTING UTILITIES WILL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

NORTH

0 20 40 80

WATER LINE

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WATER LINE
STA: 10+00 - 22+80

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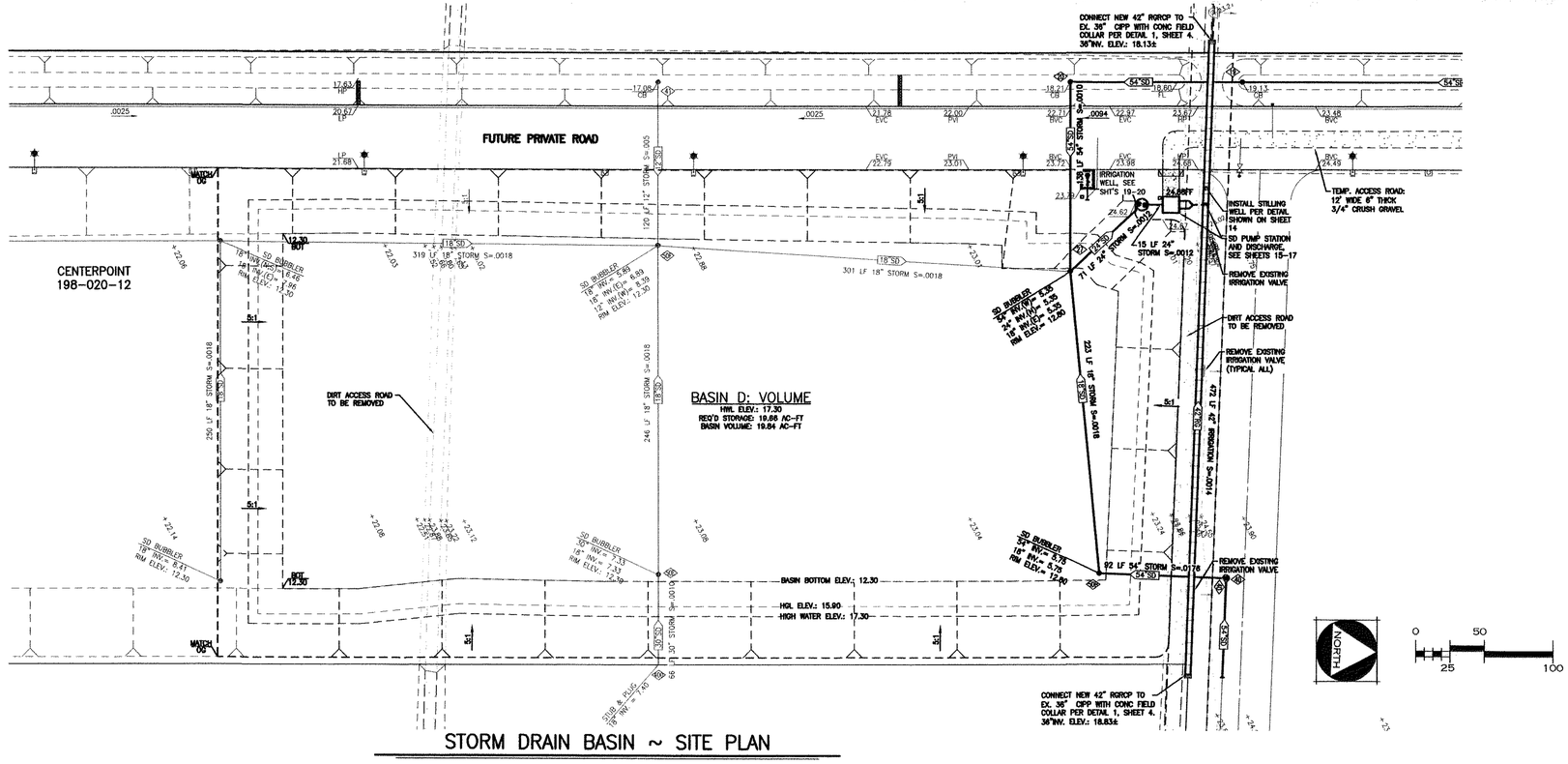
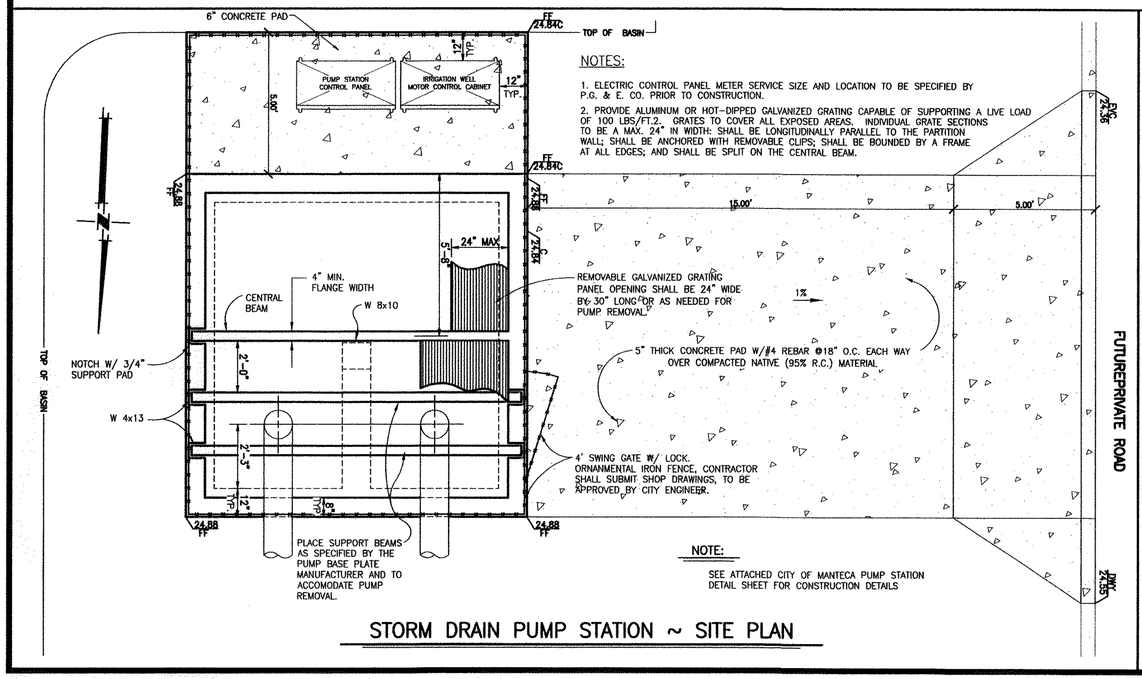
REGISTERED PROFESSIONAL ENGINEER
JOHN D. MARSH
No. C51611
EXP. 9-30-13
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER 13 OF 20



STORM DRAIN BASIN ~ SITE PLAN

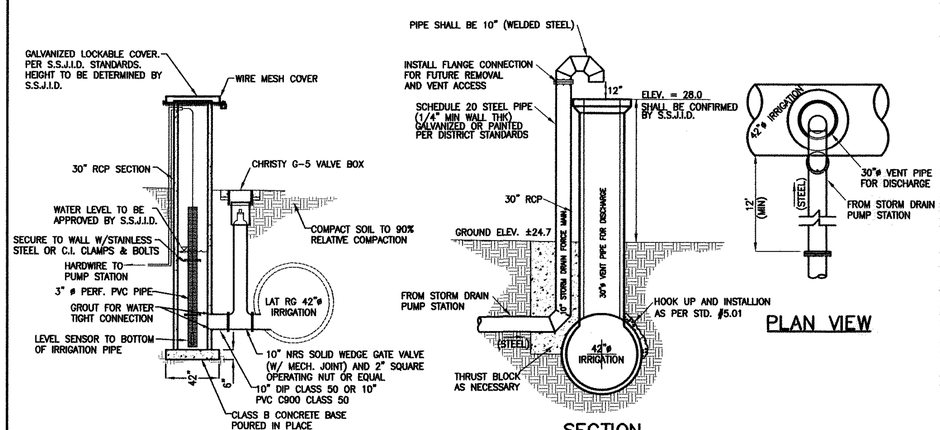


NOTES:

1. ELECTRIC CONTROL PANEL METER SERVICE SIZE AND LOCATION TO BE SPECIFIED BY P.G. & E. CO. PRIOR TO CONSTRUCTION.
2. PROVIDE ALUMINUM OR HOT-DIPPED GALVANIZED GRATING CAPABLE OF SUPPORTING A LIVE LOAD OF 100 LBS./FT.2. GRATES TO COVER ALL EXPOSED AREAS. INDIVIDUAL GRATE SECTIONS TO BE A MAX. 24" IN WIDTH: SHALL BE LONGITUDINALLY PARALLEL TO THE PARTITION WALL; SHALL BE ANCHORED WITH REMOVABLE CLIPS; SHALL BE BOUNDED BY A FRAME AT ALL EDGES; AND SHALL BE SPLIT ON THE CENTRAL BEAM.

NOTE:
SEE ATTACHED CITY OF MANTECA PUMP STATION DETAIL SHEET FOR CONSTRUCTION DETAILS

STORM DRAIN PUMP STATION ~ SITE PLAN



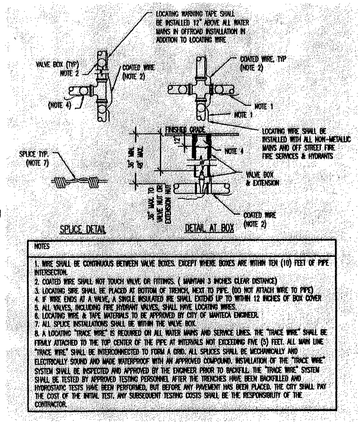
NOTE: HARD WIRE LEVEL SENSOR FROM CONNECTION TO NEW PUMP. DIRECT BURIAL WIRE PER MANUFACTURES RECOMMENDATION.

STILLING WELL CONNECTION
LATERAL RG LOCATION
NOT TO SCALE

PLAN VIEW

SECTION

(1) S.S.J.I.D. OUTFALL CONNECTION
STA: 225+80.56 SCALE: N.T.S.



NOTES

1. WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES. EXCEPT WHERE BOXES ARE WITHIN TEN (10) FEET OF PIPE INTERSECTION.
2. COATED WIRE SHALL NOT TOUCH VALVE OR FITTINGS. (MINIMUM 3 INCHES CLEAR DISTANCE)
3. LOCKING WIRE SHALL BE PLACED AT BOTTOM OF TRENCH, (NOT TO PIPE, DO NOT ATTACH WIRE TO PIPE)
4. IF WIRE ENDS AT A VALVE, A SINGLE INSULATED WIRE SHALL EXTEND UP TO WITHIN 12 INCHES OF BOX COVER
5. ALL VALVES, INCLUDING FIRE HYDRANT VALVES, SHALL HAVE LOCATING WIRES.
6. LOCKING WIRE & TAPE MATERIALS TO BE APPROVED BY CITY OF MANTECA ENGINEER.
7. ALL SPLICE INSTALLATIONS SHALL BE WITHIN THE VALVE BOX.
8. A LOCATING "FENCE WIRE" IS REQUIRED ON ALL WATER MAINS AND SERVICE LINES. THE "FENCE WIRE" SHALL BE FIRMLY ATTACHED TO THE TOP CENTER OF THE PIPE AT INTERVALS NOT EXCEEDING FIVE (5) FEET. ALL MAIN LINE "FENCE WIRE" SHALL BE INTERCONNECTED TO FORM A LOOP. ALL SPLICES SHALL BE MECHANICALLY AND ELECTRICALLY SOUND AND MADE WATERPROOF WITH AN APPROVED COUPLING. INSTALLATION OF THE "FENCE WIRE" SYSTEM SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILL. THE "FENCE WIRE" SYSTEM SHALL BE TESTED BY APPROVED TESTING PERSONNEL AFTER THE TRENCHES HAVE BEEN BACKFILLED AND HYDROSTATIC TESTS HAVE BEEN PERFORMED, BUT BEFORE ANY PAVEMENT HAS BEEN PLACED. THE CITY SHALL PAY THE COST OF THE INITIAL TEST. ANY SUBSEQUENT TESTING COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

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STORM DRAIN PUMP STATION & OUTFALL

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MANTECA, CALIFORNIA

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REGISTERED PROFESSIONAL ENGINEER JOHN B. MARSHALL EXP. 6-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 14 OF 20

sensor in this vicinity.

1" PVC routed through (E) 42" pipe

Existing Pump Control Panel

Install new 1" between (E) pullbox and SSJID discharge vent pipe.

PRIVATE ROAD

Spare Road

STORM DRAIN BASIN ~ SITE PLAN

NORTH

0 50 25 100

BASIN BOTTOM ELEV.: 12.30
HGL ELEV.: 15.90
HIGH WATER ELEV.: 17.30

PLUG EXISTING 15" CMP @ PL.

DIRT ACCESS ROAD TO BE REMOVED

INSTALL STILLING WELL PER DETAIL SHOWN ON THIS SHEET

SD PUMP STATION AND DISCHARGE, SEE SHEETS 18-20

REMOVE EXISTING IRRIGATION VALVE

REMOVE EXISTING IRRIGATION VALVE (TYPICAL ALL)

CONNECT NEW 42" RGRCP TO EX. 36" CIPP WITH CONC FIELD COLLAR PER DETAIL 1, SHEET 4. 36"INV. ELEV.: 18.13±

WP JBox mounted on 30" vent pipe. GRS conduit for above grade only.

Rosemount Mag Meter

PIPE SHALL BE 10" (WELDED STEEL)

LT Flex to JBox

INSTALL FLANGE CONNECTION FOR FUTURE REMOVAL AND VENT ACCESS

SCHEDULE 20 STEEL PIPE (1/4" MIN WALL THK) GALVANIZED OR PAINTED PER DISTRICT STANDARDS.

ELEV. = 28.0 SHALL BE CONFIRMED BY S.S.J.I.D.

GALVANIZED LOCKABLE COVER. PER S.S.J.I.D. STANDARDS. HEIGHT TO BE DETERMINED BY S.S.J.I.D.

30" RCP SECTION

CHRISTY G-5 VALVE BOX

WATER LEVEL TO BE APPROVED BY S.S.J.I.D.

SECURE TO WALL W/STAINLESS STEEL OR C.I. CLAMPS & BOLTS

HARDWIRE TO PUMP STATION

3" ϕ PERF. PVC PIPE

GROUT FOR WATER TIGHT CONNECTION

LEVEL SENSOR TO BOTTOM OF IRRIGATION PIPE

COMPACT SOIL TO 90% RELATIVE COMPACTION

LAT RG 42"ϕ IRRIGATION

10" NRS SOLID WEDGE GATE VALVE (W/ MECH. JOINT) AND 2" SQUARE OPERATING NUT OR EQUAL

10" DIP CLASS 50 OR 10" PVC C900 CLASS 50

CLASS B CONCRETE BASE POURED IN PLACE

NOTE: HARD WIRE LEVEL SENSOR FROM CONNECTION TO NEW PUMP. DIRECT BURIAL WIRE PER MANUFACTURES RECOMMENDATION.

STILLING WELL CONNECTION LATERAL RG LOCATION

NOT TO SCALE

1" To (E) pullbox

GROUND ELEV. ±24.7

FROM STORM DRAIN PUMP STATION

30"ϕ VENT PIPE FOR DISCHARGE

HOOK UP AND INSTALLION AS PER STD. #5.01

THRUST BLOCK AS NECESSARY

42"ϕ IRRIGATION

SECTION

1" PVC through 42" to flow sensor. Conduit anchored at 3' intervals to pipe wall.

42"ϕ IRRIGATION

30"ϕ VENT PIPE FOR DISCHARGE FROM STORM DRAIN PUMP STATION

10" (MIN)

(STEEL)

PLAN VIEW

1 S.S.J.I.D. OUTFALL CONNECTION

STA: 225+80.56 SCALE: N.T.S.

6" CONCRETE PAD

TOP OF BASIN

NOTES:

1. ELECTRIC CONTROL PANEL METER SERVICE SIZE AND LOCATION TO BE SPECIFIED BY P.G. & E. CO. PRIOR TO CONSTRUCTION.
2. PROVIDE ALUMINUM OR HOT-DIPPED GALVANIZED GRATING CAPABLE OF SUPPORTING A LIVE LOAD OF 100 LBS/FT.2. GRATES TO COVER ALL EXPOSED AREAS. INDIVIDUAL GRATE SECTIONS TO BE A MAX. 24" IN WIDTH; SHALL BE LONGITUDINALLY PARALLEL TO THE PARTITION WALL; SHALL BE ANCHORED WITH REMOVABLE CLIPS; SHALL BE BOUNDED BY A FRAME AT ALL EDGES; AND SHALL BE SPLIT ON THE CENTRAL BEAM.

PUMP STATION CONTROL PANEL

IRRIGATION WELL MOTOR CONTROL CABINET

Spare 2" from (E) Control Panel to (E) N9 pullbox.

REMOVABLE GALVANIZED GRATING PANEL OPENING SHALL BE 24" WIDE BY 30" LONG OR AS NEEDED FOR PUMP REMOVAL

5" THICK CONCRETE PAD W/#4 REBAR @18" O.C. EACH WAY OVER COMPACTED NATIVE (95% R.C.) MATERIAL

4" SWING GATE W/ LOCK. ORNAMENTAL IRON FENCE, CONTRACTOR SHALL SUBMIT SHOP DRAWINGS, TO BE APPROVED BY CITY ENGINEER.

CENTRAL BEAM

4" MIN. FLANGE WIDTH

W 8x10

W 4x13

NOTCH W/ 3/4" SUPPORT PAD

PLACE SUPPORT BEAMS AS SPECIFIED BY THE PUMP BASE PLATE MANUFACTURER AND TO ACCOMODATE PUMP REMOVAL.

Existing (E) pullboxes Power / Control

New 1" Sch 40 PVC to SSJID outfall vent pipe.

NOTE:

SEE ATTACHED CITY OF MANTECA PUMP STATION DETAIL SHEET FOR CONSTRUCTION DETAILS

STORM DRAIN PUMP STATION ~ SITE PLAN

PRIVATE ROAD

SPLICE DETAIL

DETAIL AT BOX

NOTES

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2. COATED WIRE SHALL BE TOUCH VALVE OR FITTINGS. (MINIMUM 3 INCHES CLEAR DISTANCE)
3. LOCATING WIRE SHALL BE PLACED AT BOTTOM OF TRENCH, NEXT TO PIPE. (DO NOT ATTACH WIRE TO PIPE)
4. 4" RISE STUBS AT A VALVE, A STUBS ATTACHED TO WIRE EXTEND UP TO WITHIN 12 INCHES OF BOX COVER
5. ALL VALVES, INCLUDING FIRE HYDRANT VALVES, SHALL HAVE LOCATING WIRES.
6. LOCATING WIRE & TAPE MATERIALS TO BE APPROVED BY CITY OF MANTECA ENGINEER.
7. ALL SPLICE REPAIRS/CUTS SHALL BE WITHIN THE VALVE BOX.
8. A LOCATING "TRACE WIRE" IS REQUIRED ON ALL WATER MAINS AND SERVICE LINES. THE "TRACE WIRE" SHALL BE FIRMLY ATTACHED TO THE TOP CENTER OF THE PIPE AT INTERVALS NOT EXCEEDING FIVE (5) FEET. ALL WIRE SHALL BE CONTINUOUS BETWEEN VALVE BOXES, EXCEPT WHERE BENDS ARE WITHIN TEN (10) FEET OF PIPE INTERSECTION. "E" SHALL BE INTERCONNECTED TO FORM A LOOP. ALL SPLICES SHALL BE MECHANICALLY AND ELECTRICALLY SOUND AND MADE WATERTIGHT WITH AN APPROVED WATERPROOF CONNECTOR. INSTALLATION OF THE "TRACE WIRE" SYSTEM SHALL BE INSPECTED AND APPROVED BY THE ENGINEER PRIOR TO BACKFILL. THE "TRACE WIRE" SYSTEM SHALL BE REPAIRED AS NECESSARY UNTIL APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL PERFORM TESTS ON THE "TRACE WIRE" SYSTEM USING EQUIPMENT APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL PERFORM TESTS ON THE "TRACE WIRE" SYSTEM IN THE PRESENCE OF THE ENGINEER AND SHALL REPAIR ANY DEFECTS IN THE SYSTEM REVEALED BY APPROVED TESTING PERFORMED AFTER THE TRENCHES HAVE BEEN BACKFILLED AND COMPACTED. TESTS HAVE BEEN PERFORMED, BUT BEFORE ANY PAYMENT HAS BEEN PLACED, THE CITY SHALL PAY FOR THE FINAL TEST. ANY "SUBSEQUENT" TESTING COSTS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

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STORM DRAIN PUMP STATION & OUTFALL

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CK. BY JDE
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REGISTERED PROFESSIONAL ENGINEER TONY B. MARSHALL No. C51015 EXP. 9-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 17 OF 23

STORM DRAIN PUMP STATION SPECIFICATIONS

NOTES:

1. CONTRACTOR SHALL VERIFY ALL DEPENDENT DIMENSIONS PRIOR TO THE FABRICATION OF MATERIALS.
2. ALL METALS SHALL BE HOT DIPPED GALVANIZED PER ASTM A1233 AFTER FABRICATION. (U.N.O.)
3. FASTEN HINGE ASSEMBLIES TO CONCRETE WALLS WITH AN EPOXY ADHESIVE ANCHOR AS SPECIFIED UNLESS OTHERWISE DIRECTED BY THE CITY ENGINEER.
4. RACK IS TO BE INSTALLED SUCH THAT THE INDIVIDUAL GRATES CAN BE OPENED AND REMOVED FOR MAINTENANCE PURPOSES.
5. CONTRACTOR MAY USE PRE-MANUFACTURED GRATING PROVIDED THAT GRATING HAS SAME OPENING SPECS AS THAT SHOWN ON THESE PLANS AND THAT TOTAL WEIGHT OF GRATE INCLUDING FRAME IS ACCEPTABLE TO THE CITY ENGINEER.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE HINGE DETAIL IF SUBSTITUTED GRATE EXCEEDS THAT AS SHOWN ON THESE PLANS.
7. ALL SHOP DRAWINGS MUST BE APPROVED BY THE CITY OF MANTECA PUBLIC WORKS DEPARTMENT. CONTRACTOR SHALL BE RESPONSIBLE TO SUBMIT SUFFICIENT COPIES FOR REVIEW BY THE CITY. THE PUBLIC WORKS DEPARTMENT SHALL KEEP TWO COPIES OF ALL SHOP DRAWINGS FOR RECORD FILES.
8. THE CONTRACTOR SHALL FURNISH THE CITY OF MANTECA PUBLIC WORKS DEPARTMENT WITH A COMPLETE SET OF MANUFACTURER'S OPERATION, MAINTENANCE, AND PARTS MANUALS FOR ALL EQUIPMENT INSTALLED. THE CONTRACTOR SHALL PROVIDE THE NAME, ADDRESSES AND TELEPHONE NUMBER OF THE NEAREST DISTRIBUTOR FOR ALL PARTS.
9. THE CONTRACTOR SHALL SUPPLY A COMPLETE WIRING DIAGRAM FOR ALL ELECTRICAL SYSTEMS, AND AS-BUILT ELECTRICAL PLAN, DETAILS AND SPECIFICATIONS FOR ALL ELECTRICAL WORK TO BE FURNISHED AND PLACED FOR COMPLETION AND OPERATION OF THE LIFT STATION.

GENERAL

THE CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO CONSTRUCT A FULLY OPERATIONAL STORM DRAINAGE LIFT STATION AS SHOWN ON THESE PLANS. ALL WORK SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF MANTECA DEPARTMENT OF PUBLIC WORKS, AND THE STATE OF CALIFORNIA DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS. WHENEVER A MANUFACTURER'S OR TRADE NAME IS USED TO SPECIFY MATERIAL OR EQUIPMENT, IT SHALL BE UNDERSTOOD THAT SUCH TRADE NAME IS USED TO ESTABLISH A STANDARD OF QUALITY OR PERFORMANCE AND IS NOT INTENDED TO BE RESTRICTIVE. THE CONTRACTOR SHALL NOT, HOWEVER, FURNISH OR INSTALL ANY SUBSTITUTE MATERIALS OR ANY EQUIPMENT EXCEPT UPON WRITTEN APPROVAL OF THE ENGINEER. ANY COST INVOLVED, OR STRUCTURAL CHANGES REQUIRED TO ALLOW THE USE OF SUCH SUBSTITUTE MATERIAL OR EQUIPMENT SHALL BE MADE AND COST THEREOF BORNE BY CONTRACTOR, AND SHALL NOT BE THE BASIS FOR ANY CLAIM OR CLAIMS FOR EXTRA WORK OR COMPENSATION.

CONCRETE STRUCTURES

PORTLAND CEMENT CONCRETE SHALL CONFORM TO SECTION 90, "PORTLAND CEMENT CONCRETE", OF THE STANDARD SPECIFICATIONS. CLASS "A" CONCRETE SHALL BE USED FOR ALL STRUCTURES. IT SHALL HAVE COMPRESSIVE STRENGTH OF 3,000 POUNDS PER SQUARE INCH IN 28 DAYS.

REINFORCEMENT SHALL CONFORM TO THE PROVISIONS OF SECTION 52, "REINFORCEMENT", OF THE STATE STANDARD SPECIFICATIONS.

CONCRETE FORMS SHALL CONFORM TO THE PROVISIONS OF SECTION 51-1,05, "FORMS", OF THE STATE STANDARD SPECIFICATIONS.

EXPOSED CONCRETE FINISH WORK SHALL COMPLY WITH THE PROVISIONS OF SECTION 51-1.18B, "CLASS 1 SURFACE FINISH", OF THE UNDERGROUND STRUCTURES SHALL COMPLY WITH THE PROVISIONS OF SECTION 51-1.18A, "ORDINARY SURFACE FINISH", OF THE STANDARD SPECIFICATIONS.

GUARANTEE OF MATERIALS OR WORKMANSHIP

THE CONTRACTOR SHALL GUARANTEE ALL MATERIAL, EQUIPMENT AND WORKMANSHIP OF THE INSTALLATION FOR A PERIOD OF ONE (1) YEAR FROM THE DATE OF CITY OF MANTECA ACCEPTANCE. SHOULD ANDY MATERIAL OR APPLIANCE OR ANY WORK DEVELOP ANY DEFECT OR WEAKNESS, DUE, IN THE OPINION OF THE ENGINEER, TO THE USE OF IMPERFECT MATERIALS, EQUIPMENT OR WORKMANSHIP, THE CONTRACTOR SHALL BE NOTIFIED AT ONCE AND HE SHALL IMMEDIATELY, AT HIS OWN EXPENSE, MAKE THE DEFECTIVE ITEM OR ITEMS SUITABLE AND SATISFACTORY.

CONTROLS

PROVIDE A DUPLEX PUMP PANEL FOR TWO (2) 42 H.P., 3 PHASE, 460 VOLT, 60 HERTZ MOTORS.
PANEL BOARD SHALL CONTAIN PANEL WITH METER SOCKET, MAIN DISCONNECT SWITCH, 30 AMP FUSED DISCONNECT SWITCH FOR 110 VOLT SERVICE, AND DUPLEX PUMP PANEL WITH LEVEL SENSOR. DUPLEX PUMP PANEL SHALL CONTAIN DISCONNECT SWITCHES, H-O-A SWITCHES, RESET BUTTON, MAGNETIC CONTACTORS, AND OVERLOAD CONTROLS FOR EACH PUMP. IT SHALL ALSO CONTAIN AN AUTOMATIC PUMP ALTERATION. THE PANEL ENCLOSURE SHALL BE N.E.M.A. 3R. CONTROL WIRING SHALL BE 110 VOLT UNLESS P.G. & E. SPECIFIES 230 VOLT SERVICE.

CONTRACTOR SHALL VERIFY ELECTRICAL SERVICE SIZE W/ PG&E PRIOR TO CONSTRUCTION.

THE LIQUID LEVEL CONTROLS SHALL BE A LEVEL TRANSDUCER AS SPECIFIED HEREIN. CONTROL SETTINGS TO BE SPECIFIED BY THE CITY OF MANTECA.

INSTALLATION:

THE INSTALLATION OF THE PUMPING EQUIPMENT SHALL BE IN ACCORDANCE WITH THE DRAWINGS AND MANUFACTURER'S INSTRUCTIONS. ALL EQUIPMENT SHALL BE SUPPORTED AND SECURELY ANCHORED, MAKING SURE ALL CONNECTIONS ARE PLUMB AND TIGHT. ALL CONSTRUCTION DEBRIS SHALL BE REMOVED FROM THE SYSTEM AND WET WELL PRIOR TO OPERATION OF THE PUMPING EQUIPMENT.

START-UP AND FIELD TESTING:

OPERATIONAL FIELD TEST SHALL BE CONDUCTED BY THE PUMP MANUFACTURER'S FACTORY TRAINED REPRESENTATIVE. THE START-UP AND OPERATIONAL TEST SHALL BE CONDUCTED IN THE PRESENCE OF THE ENGINEER, OWNER-OPERATOR PERSONNEL, AND THE CONTRACTOR. FINAL SITE-SPECIFIC LEVEL CONTROL ADJUSTMENTS SHALL BE MADE TO ENSURE PROPER FUNCTIONING OF THE SYSTEM.

REQUIREMENTS:

FURNISH AND INSTALL TWO SUBMERSIBLE NON-CLOG WASTEWATER PUMPS. EACH PUMP SHALL BE EQUIPPED WITH AN 45 HP SUBMERSIBLE ELECTRIC MOTOR, CONNECTED FOR OPERATION O N 460 VOLTS, 3 PHASE, 60 HERTZ, 4 WIRE SERVICE, WITH 50 FEET OF SUBMERSIBLE CABLE (SUBCAB) SUITABLE FOR SUBMERSIBLE PUMP APPLICATIONS. THE POWER CABLE SHALL BE SIZED ACCORDING TO NEC AND ICEA STANDARDS AND ALSO MEET WITH P-MSHA APPROVAL.

PUMP CONFIGURATION (WET PIT INSTALLATION)

THE PUMP SHALL BE SUPPLIED WITH A MATING CAST IRON 8 INCH DISCHARGE CONNECTION AND BE CAPABLE OF DELIVERING 2978 GPM AT 40 FT. TDH. THE PUMPS SHALL BE AUTOMATICALLY AND FIRMLY CONNECTED TO THE DISCHARGE CONNECTION, GUIDED BY NO LESS THAN TWO GUIDE BARS EXTENDING FROM THE TOP OF THE STATION TO THE DISCHARGE CONNECTION. THERE SHALL BE NO NEED FOR PERSONNEL TO ENTER THE WET-WELL. SEALING OF THE PUMPING UNIT TO THE DISCHARGE CONNECTION SHALL BE ACCOMPLISHED BY A MACHINED METAL TO METAL WATERTIGHT CONTACT. SEALING OF THE DISCHARGE INTERFACE WITH A DIAPHRAGM, O-RING OR PROFILE GASKET WILL NOT BE ACCEPTABLE. NO PORTION OF THE PUMP SHALL BEAR DIRECTLY ON THE SUMP FLOOR. EACH PUMP SHALL BE FITTED WITH 25 FEET OF 3/8" STAINLESS STEEL LIFTING CHAIN.

PUMP CONSTRUCTION

MAJOR PUMP COMPONENTS SHALL BE OF GREY CAST IRON, ASTM A-48, CLASS 35B, WITH SMOOTH SURFACES DEVOID OF BLOW HOLES OR OTHER IRREGULARITIES. THE LIFTING HANDLE SHALL BE OF STAINLESS STEEL. ALL EXPOSED NUTS OR BOLTS SHALL BE OF STAINLESS STEEL CONSTRUCTION. ALL METAL SURFACES COMING INTO CONTACT WITH THE PUMPAGE, OTHER THAN STAINLESS STEEL OR BRASS, SHALL BE PROTECTED BY A FACTORY APPLIED SPRAY COATING OF ACRYLIC DISPERSION ZINC PHOSPHATE PRIMER WITH A POLYESTER RESIN PAINT FINISH ON THE EXTERIOR OF THE PUMP.

SEALING DESIGN SHALL INCORPORATE METAL-TO-METAL CONTACT BETWEEN MACHINED SURFACES. CRITICAL MATING SURFACES WHERE WATERTIGHT SEALING IS REQUIRED SHALL BE MACHINED AND FITTED WITH NITRILE RUBBER O-RINGS. FITTINGS WILL BE THE RESULT OF CONTROLLED COMPRESSION OF RUBBER O-RINGS IN TWO PLANES AND O-RING CONTACT OF FOUR SIDES WITHOUT THE REQUIREMENT OF A SPECIFIC TORQUE LIMIT.

RECTANGULAR CROSS SECTIONED GASKETS REQUIRING SPECIFIC TORQUE LIMITS TO ACHIEVE COMPRESSION SHALL NOT BE CONSIDERED AS ADEQUATE OR EQUAL. NO SECONDARY SEALING COMPOUNDS, ELLIPTICAL O-RINGS, GREASE OR OTHER DEVICES SHALL BE USED.

COOLING SYSTEM

(COOLIING JACKET EQUIPPED)
EACH UNIT SHALL BE PROVIDED WITH AN INTEGRAL MOTOR COOLING SYSTEM. A STAINLESS STEEL MOTOR COOLING JACKET SHALL ENCIRCLE THE STATOR HOUSING, PROVIDING FOR DISSIPATION OF MOTOR HEAT REGARDLESS OF THE TYPE OF PUMP INSTALLATION. AN IMPELLER, INTEGRAL TO THE COOLING SYSTEM AND DRIVEN BY THE PUMP SHAFT, SHALL PROVIDE THE NECESSARY CIRCULATION OF THE COOLING LIQUID THROUGH THE JACKET. THE COOLING LIQUID SHALL PASS ABOUT THE STATOR HOUSING IN THE CLOSED LOOP SYSTEM IN TURBULENT FLOW PROVIDING FOR SUPERIOR HEAT TRANSFER. THE COOLING SYSTEM SHALL HAVE ONE FILL PORT AND ONE DRAIN PORT INTEGRAL TO THE COOLING JACKET. THE COOLING SYSTEM SHALL PROVIDE FOR CONTINUOUS PUMP OPERATION IN LIQUID OR AMBIENT TEMPERATURES OF UP TO 104°F (40°C). OPERATIONAL RESTRICTIONS AT TEMPERATURES BELOW 104°F ARE NOT ACCEPTABLE. FANS, BLOWERS OR AUXILIARY COOLING SYSTEMS THAT ARE MOUNTED EXTERNAL TO THE PUMP MOTOR ARE NOT ACCEPTABLE.

CABLE ENTRY SEAL

THE CABLE ENTRY SEAL DESIGN SHALL PRECLUDE SPECIFIC TORQUE REQUIREMENTS TO INSURE A WATERTIGHT AND SUBMERSIBLE SEAL. THE CABLE ENTRY SHALL CONSIST OF DUAL CYLINDRICAL ELASTOMER GROMMETS, FLANKED BY WASHERS, ALL HAVING A CLOSE TOLERANCE FIT AGAINST THE CABLE OUTSIDE DIAMETER AND THE ENTRY INSIDE DIAMETER. THE GROMMETS SHALL BE COMPRESSED BY THE CABLE ENTRY UNIT, THUS PROVIDING A STRAIN RELIEF FUNCTION. THE ASSEMBLY SHALL PROVIDE EASE OF CHANGING THE CABLE WHEN NECESSARY USING THE SAME ENTRY SEAL. THE CABLE ENTRY JUNCTION CHAMBER AND MOTOR SHALL BE SEALED FROM EACH OTHER, WHICH SHALL ISOLATE THE STATOR HOUSING FROM FOREIGN MATERIAL GAINING ACCESS THROUGH THE PUMP TOP. EPOXIES, SILICONES, OR OTHER SECONDARY SEALING SYSTEMS SHALL NOT BE CONSIDERED EQUAL.

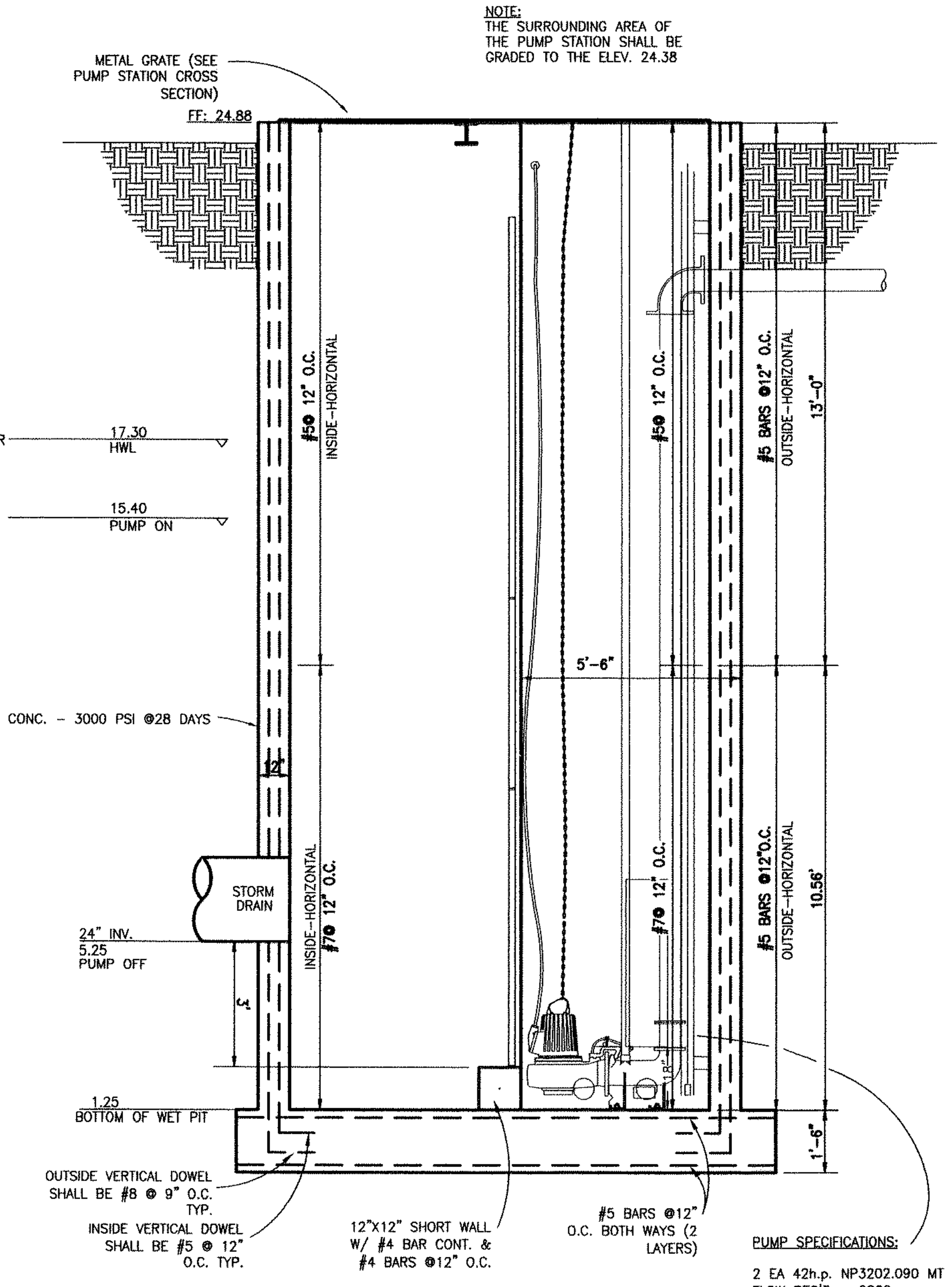
MOTOR

THE PUMP MOTOR SHALL BE A NEMA B DESIGN, INDUCTION TYPE WITH A SQUIRREL CAGE ROTOR, SHELL TYPE DESIGN, HOUSED IN AN AIR FILLED, WATERTIGHT CHAMBER. THE STATOR WINDINGS SHALL BE INSULATED WITH MOISTURE RESISTANT CLASS H INSULATION RATED FOR 180°C (356°F). THE STATOR SHALL BE INSULATED BY THE TRICKLE IMPREGNATION METHOD USING CLASS H MONOMER-FREE POLYESTER RESIN RESULTING IN A WINDING FILL FACTOR OF AT LEAST 95%. THE MOTOR SHALL BE INVERTER DUTY RATED IN ACCORDANCE WITH NEMA MG1, PART 31.THE STATOR SHALL BE HEAT-SHRINK FITTED INTO THE CAST IRON STATOR HOUSING. THE USE OF MULTIPLE STEP DIP AND BAKE-TYPE STATOR INSULATION PROCESS IS NOT ACCEPTABLE. THE USE OF PINS, BOLTS, SCREWS OR OTHER FASTENING DEVICES USED TO LOCATE OR HOLD THE STATOR AND THAT PENETRATE THE STATOR HOUSING ARE NOT ACCEPTABLE. THE MOTOR SHALL BE DESIGNED FOR CONTINUOUS DUTY WHILE HANDLING PUMPED MEDIA OF UP TO 104°F. THE MOTOR SHALL BE CAPABLE OF NO LESS THAN 15 EVENLY SPACED STARTS PER HOUR. THE ROTOR BARS AND SHORT CIRCUIT RINGS SHALL BE MADE OF ALUMINUM. THREE THERMAL SWITCHES SHALL BE EMBEDDED IN THE STATOR END COILS, ONE PER PHASE WINDING, TO MONITOR THE STATOR TEMPERATURE. THESE THERMAL SWITCHES SHALL BE USED IN CONJUNCTION WITH AND SUPPLEMENTAL TO EXTERNAL MOTOR OVERLOAD PROTECTION AND SHALL BE CONNECTED TO THE MOTOR CONTROL PANEL.

THE JUNCTION CHAMBER SHALL BE SEALED OFF FROM THE STATOR HOUSING AND SHALL CONTAIN A TERMINAL BOARD FOR CONNECTION OF POWER AND PILOT SENSOR CABLES USING THREADED COMPRESSION TYPE TERMINALS. THE USE OF WIRE NUTS OR CRIMP-TYPE CONNECTORS IS NOT ACCEPTABLE. THE MOTOR AND THE PUMP SHALL BE PRODUCED BY THE SAME MANUFACTURER.

THE MOTOR SERVICE FACTOR (COMBINED EFFECT OF VOLTAGE, FREQUENCY AND SPECIFIC GRAVITY) SHALL BE 1.15. THE MOTOR SHALL HAVE A VOLTAGE TOLERANCE OF +/- 10%. THE MOTOR SHALL BE DESIGNED FOR CONTINUOUS OPERATION IN UP TO A 40°C AMBIENT AND SHALL HAVE A NEMA CLASS B MAXIMUM OPERATING TEMPERATURE RISE OF 80°C. A MOTOR PERFORMANCE CHART SHALL BE PROVIDED UPON REQUEST EXHIBITING CURVES FOR MOTOR TORQUE, CURRENT, POWER FACTOR, INPUT/OUTPUT KW AND EFFICIENCY. THE CHART SHALL ALSO INCLUDE DATA ON MOTOR STARTING AND NO-LOAD CHARACTERISTICS.

MOTOR HORSEPOWER SHALL BE SUFFICIENT SO THAT THE PUMP IS NON-OVERLOADING THROUGHOUT ITS ENTIRE PERFORMANCE CURVE, FROM SHUT-OFF TO RUN-OUT. THE MOTOR AND CABLE SHALL BE CAPABLE OF CONTINUOUS SUBMERGENCE UNDERWATER WITHOUT LOSS OF WATERTIGHT INTEGRITY TO A DEPTH OF 65 FEET OR GREATER.

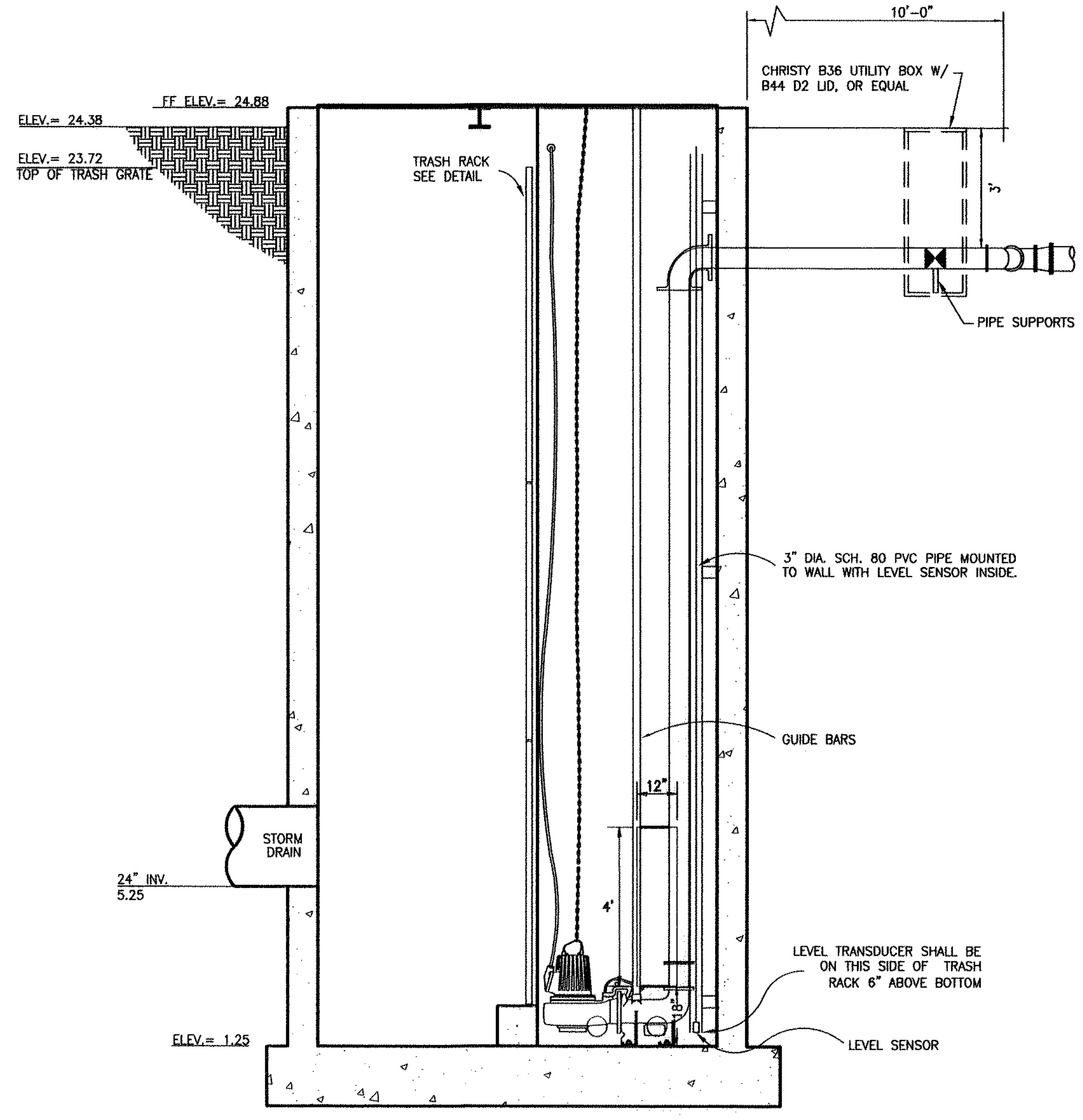


PUMP STATION SECTION

PUMP SPECIFICATIONS:

2 EA 42h.p. NP3202.090 MT PUMPS.
FLOW REQ'D = 2860 g.p.m.
TDH = 40.0 FT
260 VOLT 3 PHASE 1170 RPM
(OR APPROVED EQUAL)

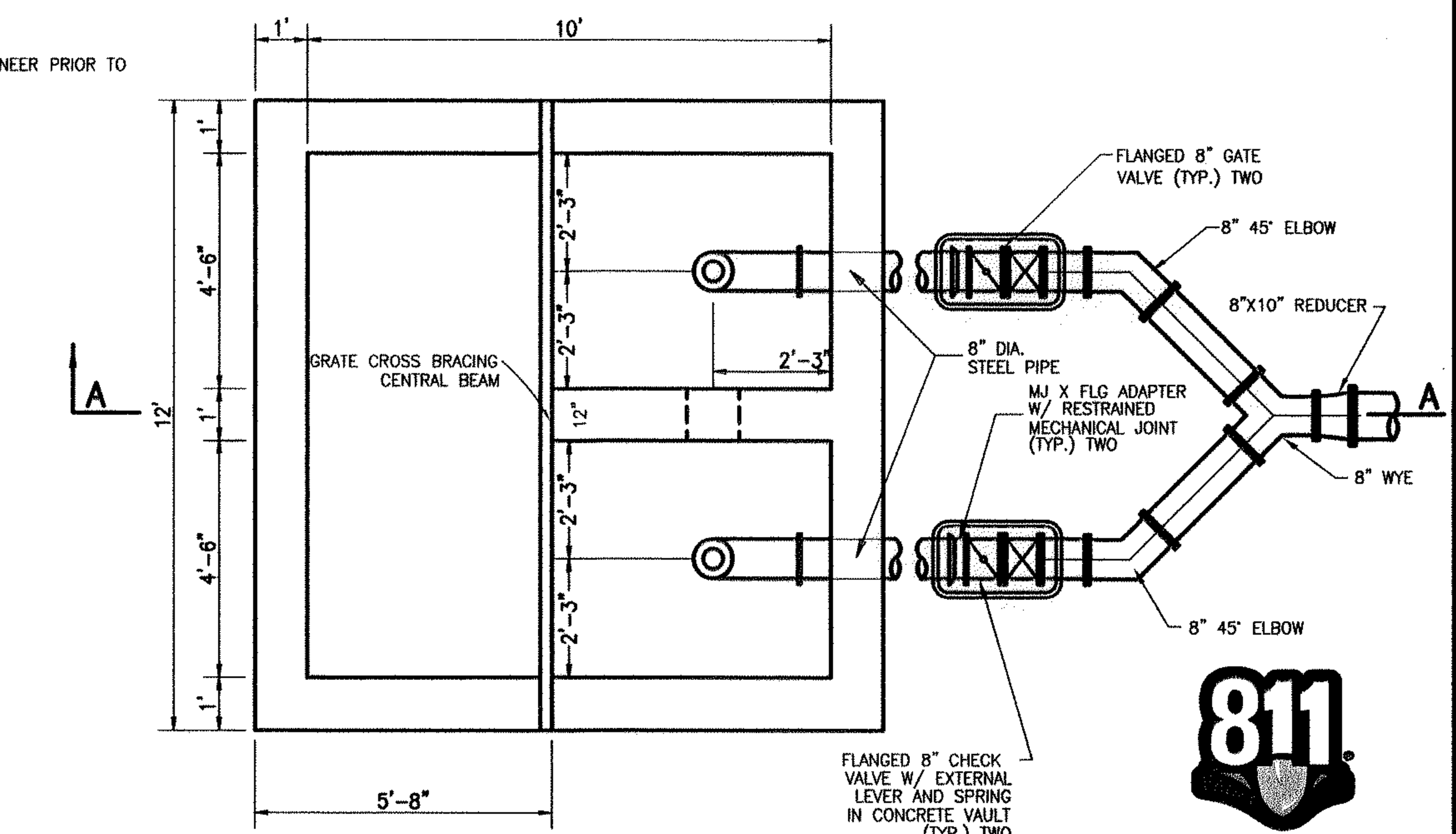
NOTE:
PUMPS SHALL BE APPROVED BY ENGINEER PRIOR TO CONSTRUCTION.



PUMP STATION SECTION
SECTION A-A

NOTE:

PERMANENT GALVANIZED ACCESS LADDER TO BE INSTALLED INTO PUMP STATION. CITY OF MANTECA TO APPROVE LADDER DETAIL, ATTACHMENT DETAILS AND LOCATION PRIOR TO FABRICATION. SUBSTITUTION OF LADDER TO BE PER CITY OF MANTECA'S DIRECTION.



PUMP STATION

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STORM DRAIN
PUMP STATION

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

REVISIONS

NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING
www.mcreng.com
MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
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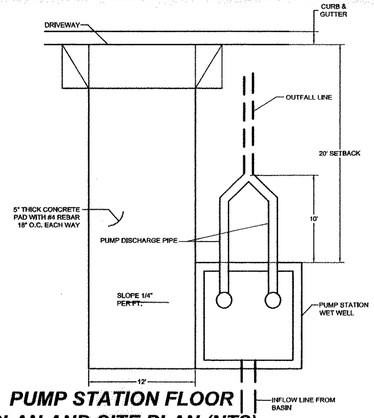
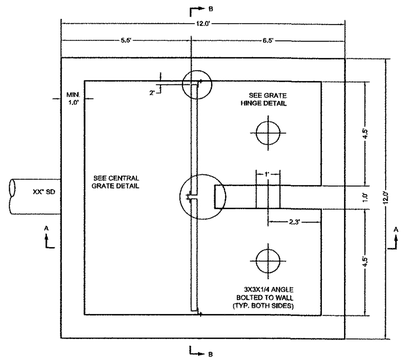
FAX: (209) 239 - 8839

JOB NO. 10-063
DATE 12/15/2012 12:22
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\imp-phase 1\15_SDPUMP.dwg

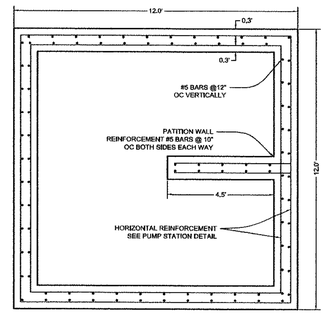
REGISTERED PROFESSIONAL ENGINEER B. MARSH NO. 31015 EXP. 3-30-13 CIVIL STATE OF CALIFORNIA



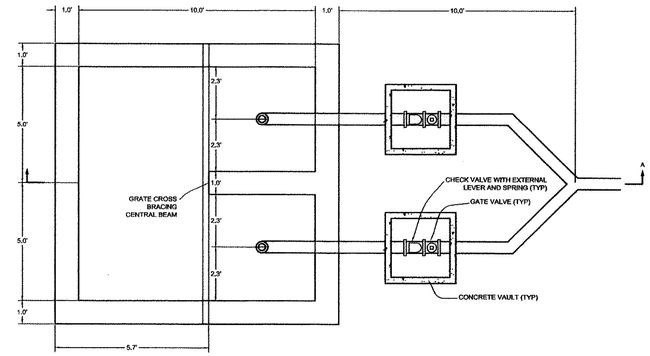
PUMP STATION FLOOR PLAN AND SITE PLAN (NTS) OPTION A



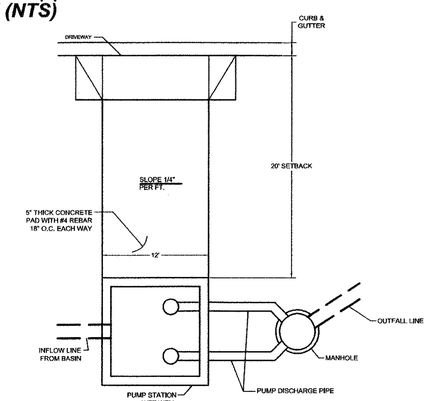
PUMP STATION PLAN VIEW (NTS



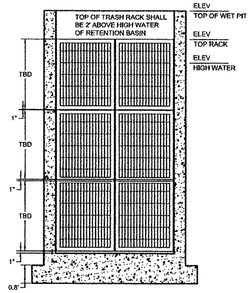
PUMP STATION FOUNDATION VIEW (NTS)



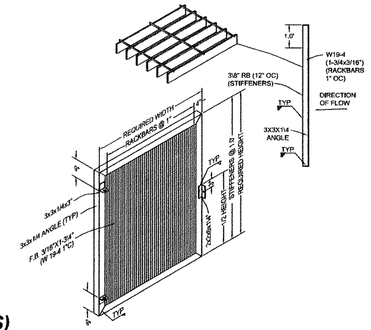
PUMP STATION (NTS)



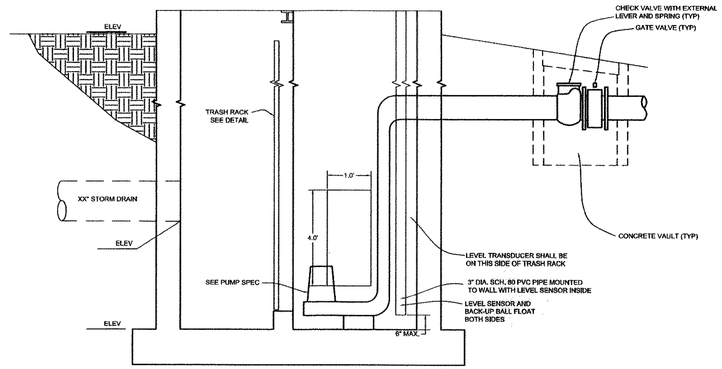
PUMP STATION FLOOR PLAN AND SITE PLAN (NTS) OPTION B



GRATE LOCATIONS (NTS) SECTION B-B



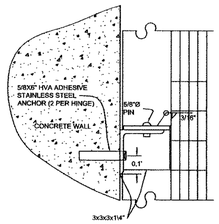
TYPICAL TRASH RACK DETAIL (NTS)



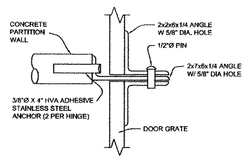
PUMP STATION WET WELL (NTS) SECTION A-A

NOTES:

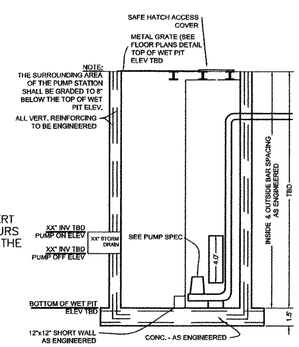
1. ELECTRIC CONTROL PANEL METER SERVICE SIZE AND LOCATION TO BE SPECIFIED BY PG&E CO PRIOR TO CONSTRUCTION.
2. PROVIDE ALUMINUM OR HOT-DIPPED GALVANIZED GRATING CAPABLE OF SUPPORTING A LIVE LOAD OF 100 LBS/FT. GRATES TO COVER ALL EXPOSED AREAS. INDIVIDUAL GRATE SECTIONS TO BE MAX 24" IN WIDTH: SHALL BE LONGITUDINALLY PARALLEL TO THE PARTITION WALL; SHALL BE ANCHORED WITH REMOVABLE CLIPS; SHALL BE BOUNDED BY A FRAME AT ALL EDGES; AND SHALL BE SPLIT ON THE CENTRAL BEAM.



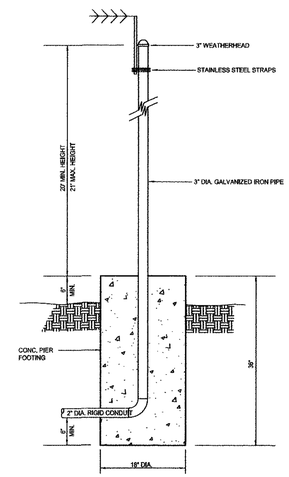
GRATE HINGE DETAIL (NTS)



CENTER GRATE DETAIL (NTS)



PUMP STATION SECTION (NTS)



PUMP STATION ANTENNA (NTS)

THE CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT AND THE CITY PUBLIC WORKS DEPARTMENT AT LEAST 48 HOURS (2 WORKING DAYS) PRIOR TO BEGINNING ANY EXCAVATION IN THE VICINITY OF UNDERGROUND FACILITIES.

THE INFORMATION SHOWN ON THESE PLANS IS BASED ON A FIELD SURVEY OF THE EXISTING CONDITIONS. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR VERIFYING ALL QUANTITIES, LOCATIONS AND LIMITS OF ALL WORK AND SERVICES SHOWN.

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STORM DRAIN PUMP STATION STANDARD PLANS

CENTERPOINT INTERMODAL CENTER PHASE 1 ON-SITE IMPROVEMENTS

MANTECA, CALIFORNIA

REVISIONS			
NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING
www.mcreng.com
MCR ENGINEERING, INC.
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FAX : (209) 239 - 8839

JOB NO. 10-063
DATE 12/15/2012 12:23
SCALE AS SHOWN
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CK. BY JDE
FILE: J:\2010\10-063\dwg\amp- phase 1\16_COM SD PUMP.dwg

REGISTERED PROFESSIONAL ENGINEER JOHN D. MARSH C31015 EXP. 9-30-15 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 16 OF 20

PROGRAMMABLE LOGIC CONTROLLER AND TELEMETRY REQUIREMENTS

PART 1 - NOT USED

PART 2 - PRODUCTS

2.01 PROGRAMMABLE LOGIC CONTROLLER AND PROGRAMMING SOFTWARE – WASTEWATER AND STORMWATER

A. General: Furnish, install, test, and place the PLCs into satisfactory operation. Program server & laptop with new site.

B. Hardware: Provide each PLC with the following hardware:

1. Central Processing Unit: The Central Processing Unit (CPU) shall be powered by 115 Vac, 60 Hertz, and shall have the standard instruction set which shall include analog signal processing and PID functions:
a. Battery backup for at least 72 hours shall be provided for the memory together with a discrete output corresponding to a low voltage alarm condition.
b. Provide spare memory over and above that required for realizing the control program. Minimum spare memory is 25% of total used or 1 K words, whichever is greater.
c. Provide a watchdog timer which monitors CPU activity, and a relay output for watchdog timer alarm.

2. Communications protocol for communicating among Remote Units shall be Modbus.

3. Inputs and Outputs:

a. Analog inputs shall meet the following requirements:
1) 4 to 20 mAdc inputs, 250 ohm impedance maximum.
2) Accuracy of +/–0.1% of span.
3) Resolution of +/–0.05% of span.
4) Common Mode Rejection of 90 dB at 60 Hz, minimum.
5) Normal Mode Rejection of 45 dB at 60 Hz, minimum.
6) Isolation shall meet or exceed surge–withstand test, IEEE–472.
7) Drift shall not exceed 0.25% within a 30–day period.

b. Discrete inputs shall meet the following requirements:
1) Unpowered contact inputs.
2) Input isolation shall meet or exceed IEEE–472. Relay isolation is unacceptable.
3) Provide filtering on a per unit point basis to provide contact bounce protection.
4) Discrete inputs shall be powered by the PLC at a minimum of 24 volts, but less than 125 volts. Power supply shall be current limited to conform with NEC Class 2 remote control and signal wiring circuits.
5) Discrete output motor modules shall be capable of interfacing Size 5 magnetic starters. Relay isolation is acceptable.
6) Analog outputs shall meet the following requirements.
a) Output: 4–20 mAdc into a 0 to 500 ohm load.
b) Isolation: From the multiplexer ground.
c) Resolution: +/–0.1% of electric span, 10 bits.
d) Accuracy: +/–0.25% of span.
e) Drift: Shall not exceed 0.25% in a 30–day period.
7) For each PLC, Provide the following minimum spare, installed, inputs and outputs: 2 discrete inputs, 2 discrete outputs, and 1 analog input. Provide spare space in all PLCs for a 50% increase in the number of input/output modules.

4. Power Line Voltage Regulation Transformer: Provide a UL recognized power line voltage regulation transformer to provide 115 Vac power for the PLC, in addition to any isolation transformer(s) required for UL labeling of the PLC enclosure.

5. Operator Interface Panel: Provide an operator interface panel consisting of a 4"x4" minimum display and keypad to allow operator interface with PLC. Panel shall allow monitoring of process variables and registers in engineering units and allows displays of messages in English language format. Operator interface panel shall be Panelmate, Spectrum, KEP, or equal.

C. PLC Programming Software:

1. Provide software which compiles programs generated from ladder–logic CRT displays directly to PLC object code. Provide software which permits on–screen text editing for purposes of documenting the ladder–logic diagrams on standard 81/2 inch wide printer paper with:
a. Contact and coil numbers.
b. Contact and coil functional descriptions.
c. Rung number cross references.
d. Functional descriptions to the right of the coils.

2. Software shall permit entering the control program from a keyboard with function pushbuttons corresponding to the commonly used relay ladder diagram symbols:

3. Provide the following real–time functions:
a. Monitor and display power flow through the logic
b. Monitor and display register contents.
c. The ability to force outputs high or low regardless of the state corresponding to the solved relay–ladder–diagram expression.

4. Software shall be Modsoft. The City will not accept any substitutions.

D. Spare Parts: Provide the following spare parts:

1. One input/output module for each type provided.
2. PLC processor card including memory.
3. Power supply.

E. Manufacturer: Modicon Momentum. The City will not accept any substitutions.

2.02 RADIO EQUIPMENT AND SOFTWARE – WASTEWATER AND STORMWATER

A. General: The radio equipment shall be suitable for a 450 MHz multiple access system operating at 4800 baud in a 12.5 kHz channel. The system shall operate on 458.0875 MHz, the existing licensed frequencies utilized by the Owner.

B. Transmitters and receivers shall meet the following specifications:

Transmitter Specifications

Output power (at the antenna port)	4 watts (+36 dBm); adjustable from +20 to +36 dBm
Transmitter attack time	Less than 1 msec for 90% power within 1 kHz of operating frequency
Duty Cycle	100 % continuous at 5 watts, –30°C to +60°C
Output Frequency	450/470 MHz bands; frequency programmable in 6.25 kHz increments to any channel in the radio operating subband.
Frequency Stability	±0.00015%, –30°C to +60°C
Modulation Type	FM, ±2.5 kHz (12.5 kHz channels)
Spurious/Harmonic Emissions	–60 dBm
Output Impedance	50 Ohms

Receiver Specifications

Type	Dual conversion, superhetrodyne
Frequency stability	±0.00015%, –30°C to +60°C
Sensitivity/bit error rate at 4800 bps digital interface	–110 dBm for 1x10–6 BER
Input RF range	450/470 MHz bands; frequency programmable in 6.25 kHz increments to any channel in the radio operating subband
Spurious and image rejection	–85 dB
Selectivity	–100 dB, adjacent channel
RF input impedance	50 Ohms
Intermodulation (EIA)	–75 dB
Desensitization (EIA)	–65 dB, 12.5 kHz channels

C. Remote Station Radios: Unit shall operate in half–duplex mode with the transmitter keying provided by the associated PLC. Units shall be powered at 12 Vdc. Unit shall be fully synthesized and programmable to all frequencies via a personal computer or hand held terminal. Remote station radios shall be compatible with the existing remote station radios and shall be MDS 4710 to match the existing; substitutions are not acceptable.

D. Modems: The system shall use digital type modems operating at 4800 baud. Request to send/clear to send turnaround time shall not exceed 10 milliseconds. Unit shall work on a 12.5 kHz channel.

E. Antennas:

1. Remote station antennas shall be directional type and comply with the following:

Frequency range	390 to 470 MHz
Gain	10 dB, minimum
Maximum power input	150 watts
Lightning protection	Direct ground connection
Front–to–back ratio	20 dB minimum
Connector	Type N, female
Mounting Hardware	Weatherproof clamp suitable for direct mount to a 3–inch, hot dip galvanized steel pipe.
Manufacturer	Decibel Products; or equal.

2. The antenna system shall include all masts, lightning suppressers, and other appurtenances for a complete and operable system.

F. Transmission Lines:

1. Cable connecting the radio antenna port with the antenna shall be low–loss foam–dielectric type, 0.5 inch in diameter, weatherproof, Andrew Corporation LDF4–50A, or equal.
2. Provide a 3– to 6–foot section of "superflexible" transmission cable at the radio antenna port. Make this section pass through the enclosing panel. Provide standard Type N connectors for connection to a continuous piece of cable extending to the antenna.
3. Enclose transmission lines in conduit to protect against vandalism. Use "O" ring seals on connectors.

2.03 INSTRUMENTS

A. Level Transmitter, General Purpose:

1. General: Electronic indicating–type pressure transmitters shall convert a gauge or absolute pressure measurement to a 4–20 mAdc linear electrical output signal capable of transmission into at least a 600 ohm maximum load at at 24 Vdc or less. Signal and power transmission shall be provided on a single pair of wires. Operating ambient temperature limits shall be at least –40° to +82°C.
2. Range shall be as indicated in the Input/Output List. Over–range protection shall be at least 1–1/2 times span without degradation of accuracy. Reference accuracy shall be ±1/2% or better.
3. Construction: The transmitter enclosure shall be NEMA 4X rated. The process connection for clean liquid service shall be 1/4–inch NPT. Enclosure and wetted surface material shall be corrosion resistant and suitable for water.
4. Manufacturers: KPSI, Series 2005; Druck; or equal.

2.04

A. Program SCADA server at the City of Manteca, WQCF for the new site with City existing software. (Intellution software IFix).

B. Program auto dialer at the City of Manteca. WQCF for power failure and high water alarm with the city existing software. (Fluid Solutions SCADA Alarm)

2.05 BATTERY BACKUP

A. Battery Backup: Provide battery and charger. Size battery for 24–hour backup for PLC, radio, and level transmitters.

PART 3 - EXECUTION

3.01 EQUIPMENT

A. Radio Equipment:
1. Install the antennas and masts at the elevations shown on the Drawings. Adjust radios as required for compliance with FCC requirements and operational needs.

B. Instruments:
1. Indicated Units: Provide indicators scaled in actual engineering units, i.e., gallons per minute, feet, psi, etc., rather than 0 to 100%.
2. Calibration:
a. Each field instrument shall be calibrated at 0%, 25%, 50%, 75% and 100% of span using test instruments to simulate inputs and read outputs that are rated to an accuracy of at least 5 times greater than the specified accuracy of the instrument being calibrated. Such test instruments have accuracies traceable to the National Institute of Standards and Technology (NIST).
b. Submit a written report to the Engineer on each instrument. This report shall include a laboratory calibration sheet or the manufacturer's standards calibration sheet on each instrument and calibration reading as finally adjusted within tolerances.

3.02 APPLICATIONS PROGRAMMING

A. PLC and RTU Programs:
1. Provide diskettes containing a copy of the program software, including modifications made through final acceptance testing. Clearly document all versions with a "read me" file to explain all changes.

PART 4 - I/O LISTS AND CONTROL STRATEGIES

4.01 INPUT/OUTPUT LIST

A. General: The tables below summarize the inputs and outputs for the Wastewater and Stormwater Systems.

B. Typical wastewater pump station input/output list

Description	Type	Remarks
Pump #1 Run	DI	
Pump #2 Run	DI	
Pump #1 Overload	DI	
Pump #2 Overload	DI	
High Tank/Low Sump Float Switch	DI	
Pump #1	DO	
Pump #2	DO	
Purge	DO	
High/Low Level Alarm	DO	
Tank/Sump Level	AI	
Remote Command: Pump #1 Start	DO	Override Start
Remote Command: Pump #1 Stop	DO	Override Stop
Remote Command: Pump #2 Start	DO	Override Start
Remote Command: Pump #2 Stop	DO	Override Stop

C. Typical stormwater pump station input/output list

Description	Type	Remarks
Pump #1 Run	DI	
Pump #2 Run	DI	
Pump #1 Overload	DI	
Pump #2 Overload	DI	
Pump #1 Switch Status: Hand	DI	
Pump #1 Switch Status: Auto	DI	
Pump #2 Switch Status: Hand	DI	
Pump #2 Switch Status: Auto	DI	
Power Failure Alarm	DI	
Downstream High Level Float	DI	Future Device; provide software and jumper to I/O point.
Wet Well Level	AI	Install level transmitter.
Remote Command: Pump #1 Start	DO	Override Start
Remote Command: Pump #1 Stop	DO	Override Stop
Remote Command: Pump #2 Start	DO	Override Start
Remote Command: Pump #2 Stop	DO	Override Stop

D. Float system to start and stop both pumps if the PLC System should fail.

4.02 CONTROL STRATEGIES

A. General: Provide software for a complete and fully functioning telemetry system for operating and monitoring the Stormwater and Wastewater System. The table below summarizes the major control strategies required.

Remote Unit	Required RTU/PLC Operator Interface and HMI Digital Displays	Required Controls
Sewer Pump Station (typical)	* Tank/sump level indicator * Pump run time indicator * Motor overload alarm * High level alarm * Low level alarm	* Pump start/stop locally or remotely. * Level setpoint adjustments for turning pumps on and off * Pump automatic alternation * Level setpoint adjustments for alarms * Downstream high level lockout
Stormwater Pump Station (typical)	* Wet well level indicator * Pump run time indicator * Pump HOA switch status * Motor overload alarm * High level alarm * Low level alarm * Power failure alarm	* Pump start/stop locally or remotely. * Level setpoint adjustments for turning pumps on and off * Pump automatic alternation * Level setpoint adjustments for alarms * Downstream high level lockout

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P.L.C. & TELEMETRY REQUIREMENTS

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

REVISIONS

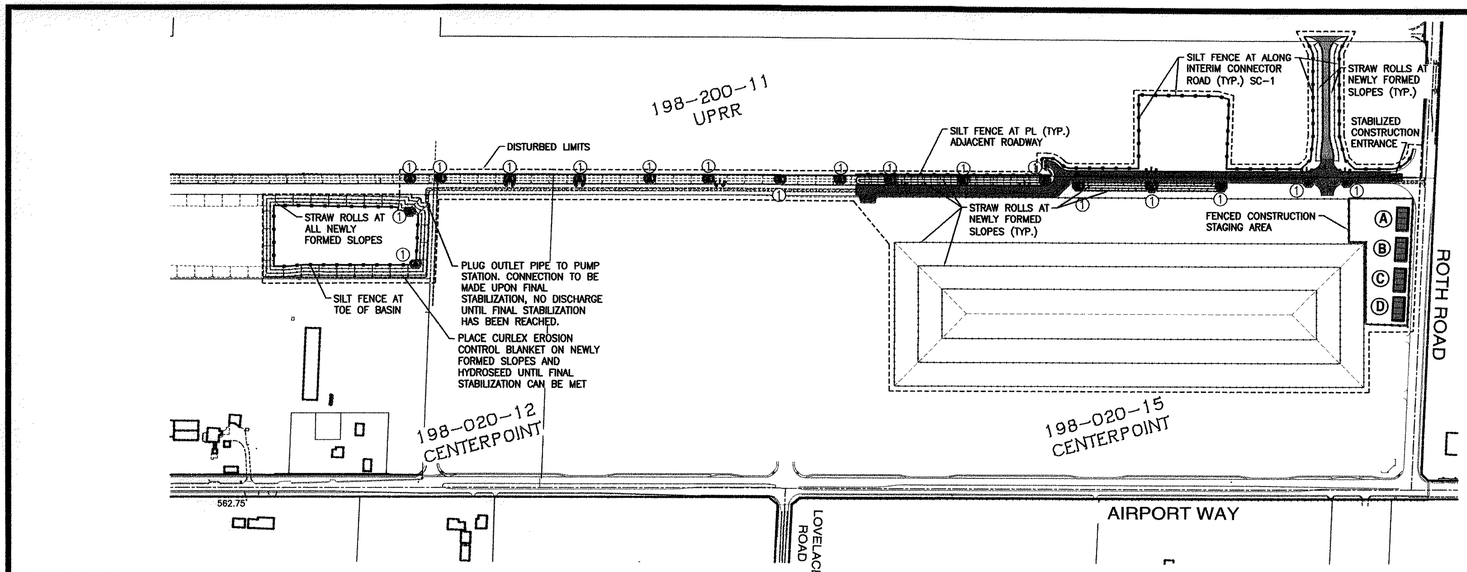
NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING
www.mcreng.com
MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL: (209) 239 - 6229
FAX: (209) 239 - 8839

JOB NO. 10–063
DATE 12/15/2012 12:24
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10–063\dwg\imp–phase 1\17_pumpspecs.dwg

REGISTERED PROFESSIONAL ENGINEER
[illegible] B. MARSH[illegible]
No. C51016
EXP 9-30-13
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER
17
OF 20

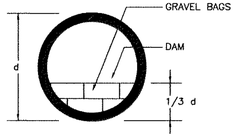


LEGEND

- PAVED ROAD
- STABILIZED CONSTRUCTION ENTRANCE
- OR CATCH BASIN
- ① CURB INLET SEDIMENT PROTECTION
- GRAVEL BAGS
- STRAW ROLLS
- A DESIGNATED CONSTRUCTION DEBRIS AREA UTILIZE WATER-TIGHT DUMPSTERS FOR SOLID
- B DESIGNATED MAINTENCE AREA
- C DESIGNATED AGGREGATE AND CONCRETE RINSE AREA
- D DESIGNATED WASH DOWN AREA
- SILT FENCE
- CONSTRUCTION FENCE

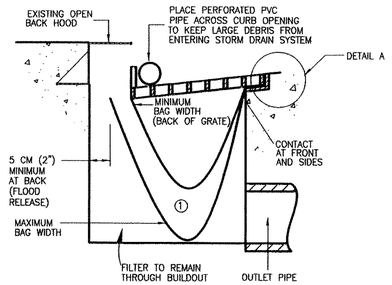
NORTH

0 175 350 700

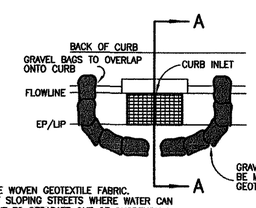


PIPE DAM

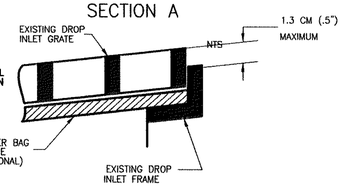
NTS



SECTION A



1. GRAVEL BAGS SHALL BE WOVEN GEOTEXTILE FABRIC.
2. CONSTRUCT ON GENTLY SLOPING STREETS WHERE WATER CAN POND AND ALLOW SEDIMENT TO SEPARATE OUT OF SUSPENSION.
3. LEAVE A GAP OF ONE BAG IN THE MIDDLE OF THE TOP ROW OF BAGS TO SERVE AS THE SPILLWAY. SPILLWAY HEIGHT SHALL BE LOWER THAN CURB HEIGHT & SUFFICIENT IN SIZE TO PASS FLOWS FROM SEVERE STORM EVENT.
4. PLACE 2 LAYERS OF GRAVEL BAGS OVER LAPPING BAGS AND PACK THEM TIGHTLY TOGETHER TO MINIMIZE THE SPACE BETWEEN BAGS. FILL BAG WITH 1/4" PEA GRAVEL.
5. INSPECT & REPAIR FILTERS AFTER EA. STORM EVENT. REMOVE SEDIMENT WHEN 1/2 OF THE FILTER DEPTH HAS BEEN FILLED. REMOVED SEDIMENT SHALL BE DEPOSITED IN AN AREA TRIBUTARY TO A SEDIMENT BASIN OR OTHER FILTERING MEASURE.
6. SEDIMENT & GRAVEL SHALL BE IMMEDIATELY REMOVED FROM TRAVELED WAY OF ROAD.
7. GRAVEL BAG INLET PROTECTION ON ROADS OPEN TO PUBLIC WILL REQUIRE DELINEATION DEVICES TO ALERT MOTORISTS, BICYCLISTS AND PEDESTRIANS. THE USE OF SUCH DEVICES SHALL BE SUBJECT TO THE RESIDENT ENGINEERS APPROVAL.



DETAIL A

STORM DRAIN INLET FILTER BAG DETAIL

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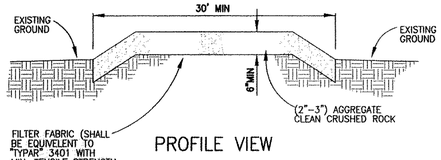
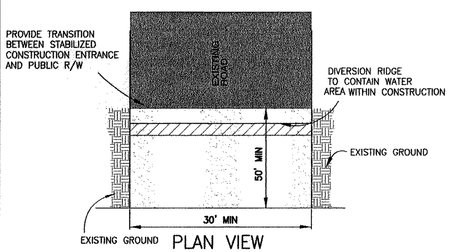


PROFILE VIEW



PLAN VIEW

STABILIZED CONSTRUCTION ENTRANCE

TEMPORARY STABILIZED CONSTRUCTION ENTRANCE NOTES

1. THE MATERIAL FOR CONSTRUCTION OF THE STABILIZED CONSTRUCTION ENTRANCE SHALL BE 2 TO 3 INCH STONE.
2. THE THICKNESS OF THE PAD SHALL NOT BE LESS THAN 6 INCHES.
3. THE WIDTH OF THE PAD SHALL NOT BE LESS THAN THE FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS, OR 30' MIN.
4. THE LENGTH OF THE PAD SHALL BE AS REQUIRED, BUT NOT LESS THAN 50 FEET.
5. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEAN OUT ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAY SHALL BE REMOVED IMMEDIATELY.
6. WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP, OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE THROUGH USE OF SANDBAGS, GRAVEL, BOARDS, OR OTHER APPROVED METHODS.
7. CONTRACTOR TO REMOVE AND DISPOSE OF STABILIZED CONSTRUCTION ENTRANCE UPON COMPLETION OF CONSTRUCTION.

GENERAL NOTES

1. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE EFFECTIVE FOR THE DURATION OF THE CONSTRUCTION ACTIVITY.
2. NO STORM RUNOFF WATER SHALL BE ALLOWED TO DRAIN DIRECTLY INTO THE EXISTING UNDERGROUND STORM SYSTEM BEFORE THE ON-SITE STORM DRAIN SYSTEM, LANDSCAPE, AND PAVING IS INSTALLED AND COMPLETED.
3. AS SOON AS IS PRACTICAL AFTER THE NEW ON-SITE STORM DRAIN SYSTEM IS INSTALLED, THE CATCH BASINS SHALL BE INSTALLED AND GRAVEL BAGS AND SCREENS SHALL BE PLACED AROUND THE CATCH BASINS, AS SHOWN. THE CONTRACTOR SHALL HAVE AN OPTION TO INSTALL PREFABRICATED STEEL FRAMES WITH FILTER SCREEN OF FILTER FABRIC ATTACHED TO THE FRONT OF THE DRAIN INLET AND EXTEND 12 INCHES (12") ON EACH SIDE OF THE DRAIN INLET OPENING. FRAME SHALL BE APPROVED BY THE CITY ENGINEER AND SHALL FIT THE OPENING WITH LESS THAN ONE-QUARTER INCH (1/4") GAP AT ANY ONE POINT.
4. THE NAME, ADDRESS AND 24-HOUR TELEPHONE NUMBER OF THE PERSON RESPONSIBLE FOR IMPLEMENTATION OF THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE PROVIDED.
5. A MINIMUM OF 50' OF DRAIN ROCK, 1-1/2" DIAMETER OR LARGER, AT A MINIMUM DEPTH OF 6", SHALL BE INSTALLED AT EACH DRIVEWAY ENTRANCE TO THE SITE. THIS DOES NOT NEED TO BE DONE AT DRIVEWAYS, WHICH WILL BE CLOSED BY IMMOVABLE BARRICADES DURING CONSTRUCTION.
6. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE MAINTAINED UNTIL DISTURBED AREAS ARE STABILIZED. CHANGES TO THE EROSION AND SEDIMENTATION CONTROL PLAN SHALL BE MADE TO MEET FIELD CONDITIONS, BUT ONLY WITH THE APPROVAL OF OR AT THE DIRECTION OF THE CITY ENGINEER.
7. DURING THE RAINY SEASON ALL SIDEWALK AND PAVED AREAS SHALL BE KEPT CLEAR OF EARTH MATERIAL AND DEBRIS. THE SITE SHALL BE MAINTAINED SO AS TO MINIMIZE SEDIMENT LADEN RUNOFF FROM ENTERING ANY STORM DRAINAGE SYSTEM.
8. THE EROSION AND SEDIMENTATION CONTROL PLAN COVERS ONLY THE FIRST WINTER DURING WHICH CONSTRUCTION IS TO TAKE PLACE. PLANS ARE TO BE RESUBMITTED PRIOR TO SEPTEMBER 1 OF EACH SUBSEQUENT YEAR UNTIL THE CITY ACCEPTS THE SITE IMPROVEMENTS.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO INSPECT AND REPAIR ALL EROSION CONTROL FACILITIES AT THE END OF EACH WORK DAY DURING THE RAINY SEASON.
10. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CLEAN OUT SEDIMENT BASINS WHENEVER THE LEVEL OF SEDIMENT REACHES THE SEDIMENT CLEAN OUT LEVEL INDICATED ON THE PLANS.
11. IT IS THE RESPONSIBILITIES OF THE CONTRACTOR TO PROTECT TEMPORARY BORROW AREAS AND/OR STOCKPILES WITH APPROPRIATE EROSION CONTROL MEASURES SATISFACTORY TO THE CITY ENGINEER.
12. THE CLEANING OF PAVED STREETS, DURING AND AT THE COMPLETION OF CONSTRUCTION, SHALL BE PERFORMED WITH MECHANICAL SWEEPERS. THE USE OF WATER TRUCKS TO "WASH DOWN" THE STREET IS PROHIBITED.
13. SEAL OR SKIRT BETWEEN TRAILER & GRADING TO PREVENT EXPOSURE TO DRAIN.
14. THE FOLLOWING PLANS ARE ACCURATE FOR EROSION CONTROL PURPOSES ONLY.
15. THE INFORMATION ON THIS PLAN IS INTENDED TO BE USED AS A GUIDELINE FOR THE CONTRACTOR AND SUBCONTRACTORS TO COMPLY WITH THE REQUIREMENTS OF THE STATE WATER RESOURCES CONTROL BOARD. FIELD CONDITIONS MAY NECESSITATE MODIFICATIONS TO THIS PLAN.
16. ON-SITE FUELING SHALL TAKE PLACE IN DESIGNATED FUELING AREAS THAT ARE CONTAINED AND COMPLY WITH THE GENERAL PERMIT.

CONCRETE WASTE MANAGEMENT NOTES

CONCRETE SLURRY WASTES

1. PCC AND AC WASTE SHALL NOT BE ALLOWED TO ENTER STORM DRAINS OR WATERCOURSES.
2. PCC AND AC WASTE SHALL BE COLLECTED AND DISPOSED OF IN A TEMPORARY CONCRETE WASHOUT FACILITY.
3. A SIGN SHALL BE INSTALLED ADJACENT TO EACH TEMPORARY CONCRETE WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.
4. DO NOT ALLOW SLURRY RESIDUE FROM WET CORING OR SAW-CUTTING AC OR PCC TO ENTER STORM DRAINS OR RECEIVING WATERS.
5. VACUUM SLURRY RESIDUE AND DISPOSE IN A TEMPORARY PIT AND ALLOW SLURRY TO DRY. DISPOSE OF DRY SLURRY RESIDUE IN ACCORDANCE WITH BMP WM-5.
6. COLLECT RESIDUE FROM GROOVING AND GRINDING OPERATIONS IN ACCORDANCE WITH STANDARD SPECIFICATIONS SECTION 42-1.02 AND 42-2.02, "CONSTRUCTION."

ON-SITE TEMPORARY CONCRETE WASHOUT FACILITY, TRANSIT TRUCK WASHOUT PROCEDURES

1. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE LOCATED A MINIMUM OF 15 M (50 FT.) FROM STORM DRAIN INLETS, OPEN DRAINAGE FACILITIES, AND WATERCOURSES, UNLESS DETERMINED UNFEASIBLE BY THE ENGINEER. EACH FACILITY SHALL BE LOCATED AWAY FROM CONSTRUCTION TRAFFIC OR ACCESS AREAS TO PREVENT DISTURBANCE OR TRACKING.
2. A SIGN SHALL BE INSTALLED ADJACENT TO EACH WASHOUT FACILITY TO INFORM CONCRETE EQUIPMENT OPERATORS TO UTILIZE THE PROPER FACILITIES.
3. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED ABOVE GRADE. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE CONSTRUCTED AND MAINTAINED IN SUFFICIENT QUANTITY AND SIZE TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.
4. TEMPORARY WASHOUT FACILITIES SHALL HAVE A TEMPORARY PIT OR BERMED AREAS OF SUFFICIENT VOLUME TO COMPLETELY CONTAIN ALL LIQUID AND WASTE CONCRETE MATERIALS GENERATED DURING WASHOUT PROCEDURES.
5. PERFORM WASHOUT OF CONCRETE TRUCKS IN DESIGNATED AREAS ONLY.
6. ONCE CONCRETE WASTES ARE WASHED INTO THE DESIGNATED AREA AND ALLOWED TO HARDEN, THE CONCRETE SHALL BE BROKEN UP, REMOVED, AND DISPOSED. DISPOSE OF HARDENED CONCRETE ON A REGULAR BASIS.

TEMPORARY CONCRETE WASHOUT FACILITY (TYPE ABOVE GRADE)

1. TEMPORARY CONCRETE WASHOUT FACILITY (TYPE ABOVE GRADE) SHALL BE CONSTRUCTED AS SHOWN ON THE PLANS, WITH A RECOMMENDED MINIMUM LENGTH AND MINIMUM WIDTH OF 3 M (10 FEET), BUT WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS. THE LENGTH AND WIDTH OF A FACILITY MAY BE INCREASED, AT THE CONTRACTOR'S EXPENSE, UPON APPROVAL OF THE ENGINEER.
2. PLASTIC LINING MATERIAL SHALL BE A MINIMUM OF 60 ML POLYETHYLENE SHEETING AND SHALL BE FREE OF HOLES, TEARS OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

REMOVAL OF TEMPORARY CONCRETE WASHOUT FACILITIES

1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, AS DETERMINED BY THE ENGINEER, THE HARDENED CONCRETE SHALL BE REMOVED AND DISPOSED OF. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BECOME THE PROPERTY OF THE CONTRACTOR, SHALL BE REMOVED FROM THE SITE OF THE WORK, AND SHALL BE DISPOSED OF.
2. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCE CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE BACKFILLED AND REPAIRED IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS.
3. THE CONTRACTOR'S WASTE POLLUTION CONTROL MANAGER (WPCM) SHALL MONITOR ON SITE CONCRETE WASTE STORAGE AND DISPOSAL PROCEDURES AT LEAST WEEKLY.
4. THE WPCM SHALL MONITOR CONCRETE WORKING TASKS, SUCH AS SAW CUTTING, CORING, GRINDING AND GROOVING AT LEAST WEEKLY TO ENSURE PROPER METHODS ARE EMPLOYED.
5. TEMPORARY CONCRETE WASHOUT FACILITIES SHALL BE MAINTAINED TO PROVIDE ADEQUATE HOLDING CAPACITY WITH A MINIMUM FREEBOARD OF 4" FOR ABOVE GRADE FACILITIES AND 12" FOR BELOW GRADE FACILITIES. MAINTAINING TEMPORARY CONCRETE WASHOUT FACILITIES SHALL INCLUDE REMOVING AND DISPOSING OF HARDENED CONCRETE AND RETURNING THE FACILITIES TO A FUNCTIONAL CONDITION. HARDENED CONCRETE MATERIALS SHALL BE REMOVED AND DISPOSED OF IN CONFORMANCE WITH THE PROVISIONS IN SECTION 15-3.02, "REMOVAL METHODS", OF THE STANDARD SPECIFICATIONS.
6. EXISTING FACILITIES MUST BE CLEANED, OR NEW FACILITIES MUST BE CONSTRUCTED AND READY FOR USE ONCE THE WASHOUT IS 75% FULL.

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EROSION CONTROL PLAN

CENTERPOINT INTERMODAL CENTER PHASE 1 ON-SITE IMPROVEMENTS

MANTECA, CALIFORNIA

REVISIONS			
NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING
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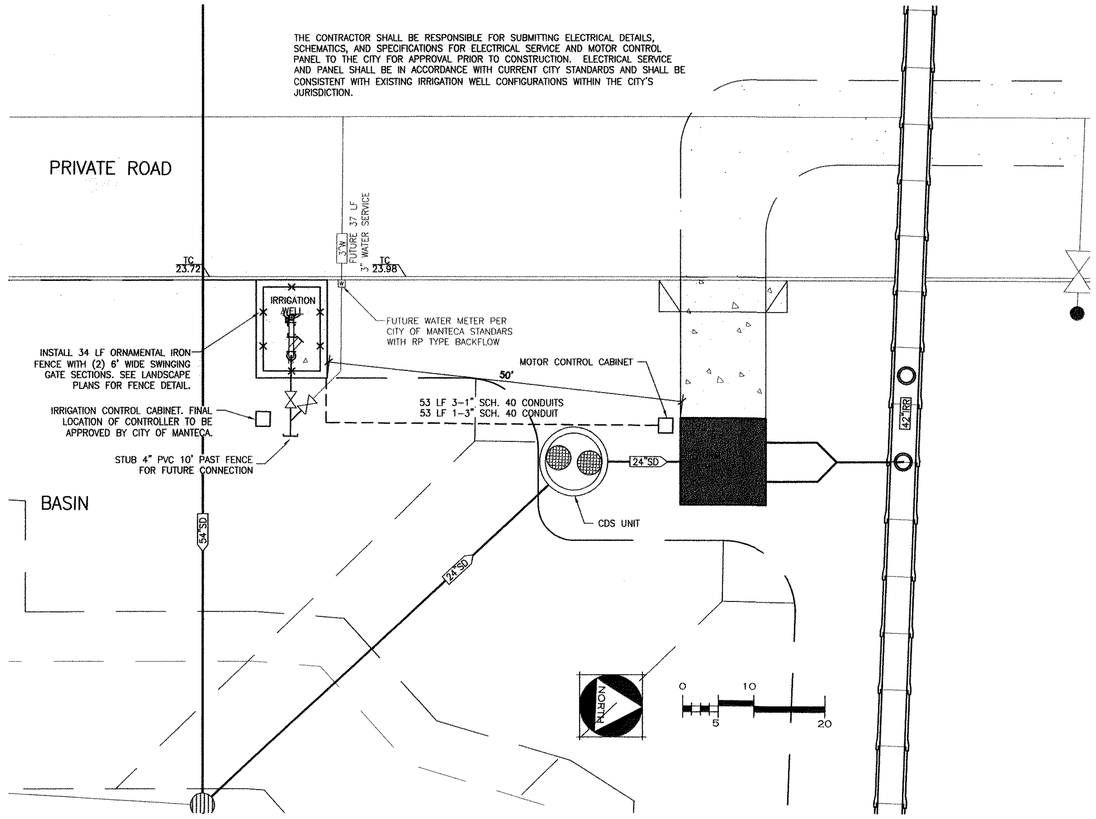
REGISTERED PROFESSIONAL ENGINEER JOHN B. MARSH No. C61015 EXP 9-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 18 OF 20

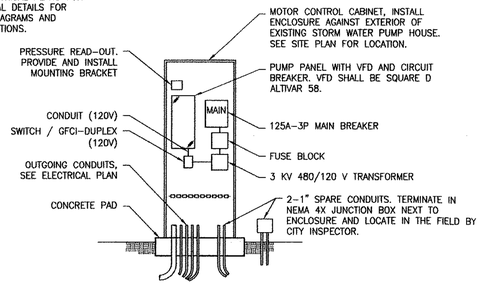
THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING ELECTRICAL DETAILS, SCHEMATICS, AND SPECIFICATIONS FOR ELECTRICAL SERVICE AND MOTOR CONTROL PANEL TO THE CITY FOR APPROVAL PRIOR TO CONSTRUCTION. ELECTRICAL SERVICE AND PANEL SHALL BE IN ACCORDANCE WITH CURRENT CITY STANDARDS AND SHALL BE CONSISTENT WITH EXISTING IRRIGATION WELL CONFIGURATIONS WITHIN THE CITY'S JURISDICTION.



SITE PLAN

SCALE: 1" = 10'

NOTE:
SEE ELECTRICAL PLANS FOR ELECTRICAL DETAILS FOR WIRING DIAGRAMS AND SPECIFICATIONS.



MOTOR CONTROL CABINET

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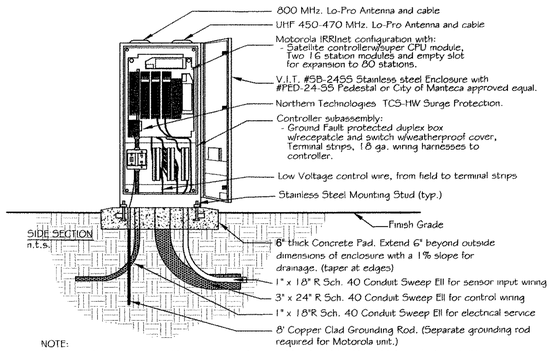
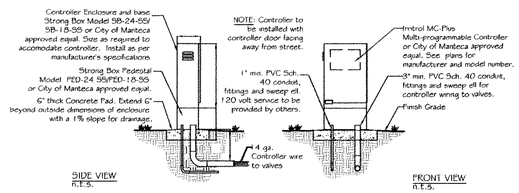


NOTE:
Specific unit selection, signal transmission options and Master Valve / Flow Meter selection shall be coordinated with the City and Central Control Systems (503-682-6841)
A keypad shall be included for programming of Irrinet unit.
For non-potable irrigation systems an identification tag shall be placed in a visible location inside the controller. Christy 3"x4" Maxi-Tags or City approved equal. Tag# ID-MAX-P1-NP011 with # 021 Spanish translation on back.

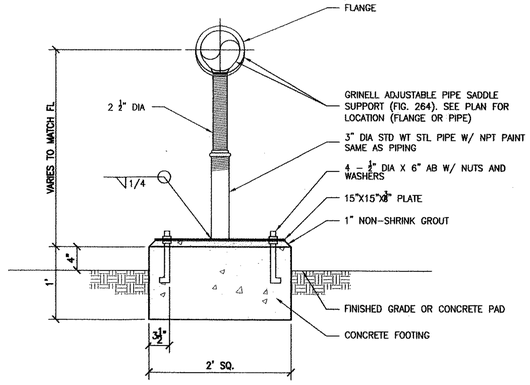
MOTOROLA MIR5000-I, IRRInet CONTROLLER
IN V.I.T.SB-24SS ENCLOSURE



NOTES:

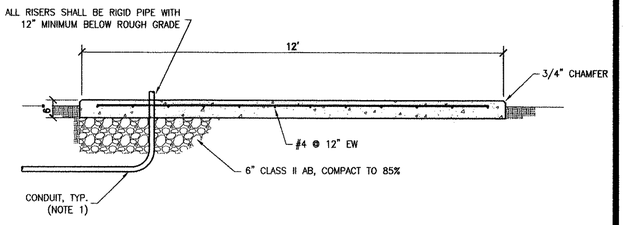
1. Enclosure shall be of a vandal and weather resistant nature manufactured entirely of 304 grade stainless steel.
2. The main housing shall be louvered upper and lower body for cross ventilation.
3. Filter screens shall cover all louvers to deflect against water spray, insects and dust.
4. A stainless steel back board shall be provided for the purpose of mounting electronic and various other types of equipment.
5. The backboard shall be mounted on four stainless steel bolts that will allow for the removal of the backboard.
6. The inside door area shall provide adequate storage for plans, operating instructions, and scheduling information.
7. The enclosure door shall have a continuous stainless steel piano hinge, carriage bolted on one side, and a 3-point locking mechanism on the other side.
8. The handle controlling the locking mechanism shall be located at the base of the door and be concealed within the surface of the door.
9. A stainless steel cam style lock shall be mounted in the door and a provision for a padlock shall be included with the locking mechanism.
10. The enclosure shall be manufactured with a continuous drainage channel which mates with a teardrop shaped, hollow center, water-tight thermoplastic door seal.
11. The above described product shall be a NEMA 3R Rainproof Enclosure as listed by Underwriter Laboratories, Inc.
12. The controller sub-assembly (CSA) shall include GFI and terminal strips with placards.
13. For non-potable irrigation systems an identification tag shall be placed in a visible location inside the controller. Christy 3"x4" Maxi-Tag or City approved equal. Tag # ID-MAX-P1-NP011 with # 021 Spanish translation on back.

IRRITROL CONTROLLER
IN STAINLESS STEEL ENCLOSURE



PIPE SUPPORT DETAIL

N.T.S.



NOTES:

1. PRIOR TO CONDUIT STUB UPS, COORDINATE WITH ELECTRICIAN FOR ACTUAL LOCATIONS OF ALL ELECTRICAL EQUIPMENT LOCATIONS.

GENERAL PAD DETAIL

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IRRIGATION WELL
SITE PLAN AND DETAILS

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

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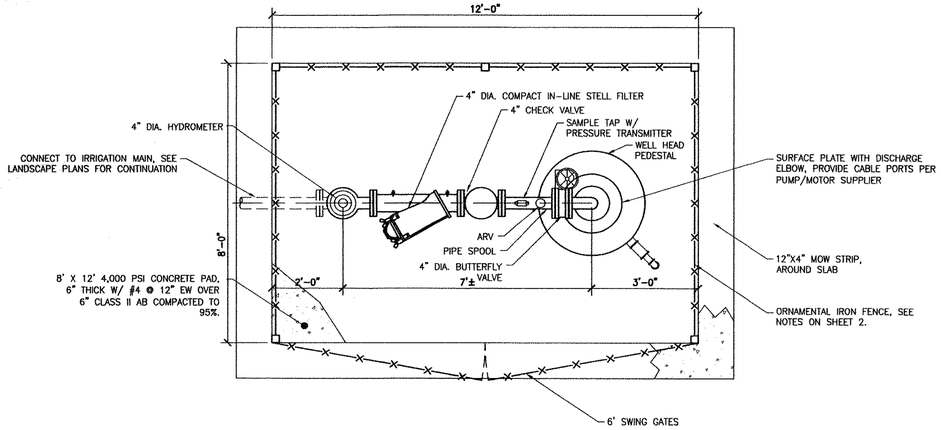
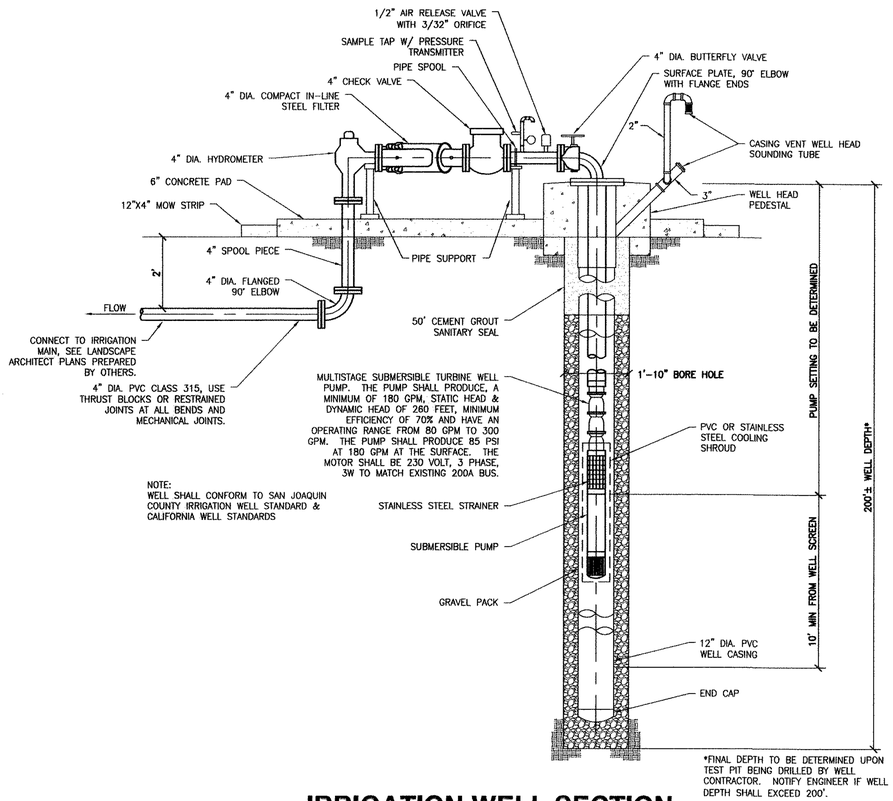
REGISTERED PROFESSIONAL ENGINEER
DANIEL B. MARSHALL
No. C31015
EXP. 9-30-13
CIVIL
STATE OF CALIFORNIA

SHEET NUMBER 19 OF 20



IRRIGATION WELL PLAN

N.T.S.



IRRIGATION WELL SECTION

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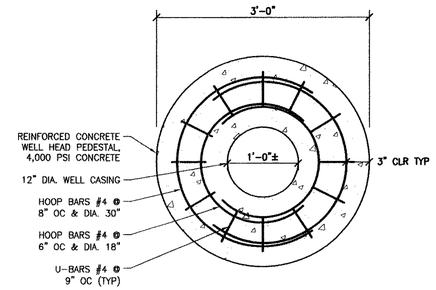
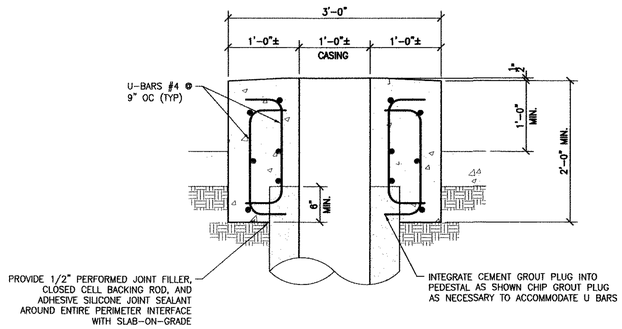


PLAN



SECTION

WELL HEAD PEDESTAL

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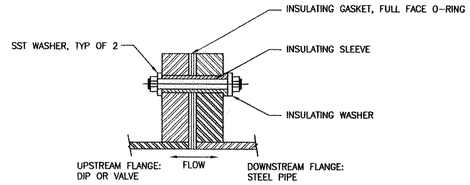
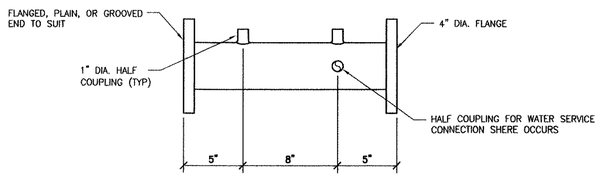


NOTES:

1. DO NOT APPLY METALLIC OR OTHER NON-INSULATING PAINTS TO INSULATING PARTS OR FLANGES
2. INSULATING SLEEVE TO BE $\frac{1}{8}$" SHORTER THAN DISTANCE BETWEEN STEEL WASHERS WHEN BOLT IS FULLY TIGHTENED.
3. INSULATING KIT TO BE PSI COMPANY TYPE "E" OR EQUAL. STEEL WASHERS HEN BOLT IS FULLY TIGHTENED.
4. COAT W/ COLD APPLIED COD TAR MASTIC AFTER ASSEMBLING JOINT AND WARP W/ BUTYL RUBBER ADHESIVE, POLYETHYLENE BACKED TAPE.

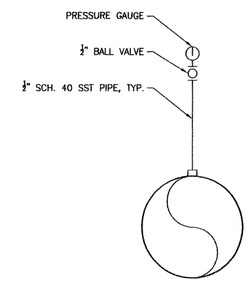
INSULATED FLANGE JOINT DETAIL

N.T.S.



INSULATED FLANGE JOINT DETAIL

N.T.S.



PRESSURE GAUGE MOUNTING

N.T.S.

811 Know what's below. Call before you dig. 811 / 800-227-2600

IRRIGATION WELL PLAN AND DETAILS

CENTERPOINT INTERMODAL CENTER
PHASE 1 ON-SITE IMPROVEMENTS
MANTECA, CALIFORNIA

REVISIONS			
NO.	DESCRIPTIONS	DATE	APPROVED

MCR ENGINEERING
www.mcreng.com
MCR ENGINEERING, INC.
1242 DUPONT COURT
MANTECA, CA 95336
TEL : (209) 239 - 6229
FAX : (209) 239 - 8839

JOB NO. 10-063
DATE 12/15/2012 12:52
SCALE AS SHOWN
DR. BY SLS
CK. BY JDE
FILE: J:\2010\10-063\dwg\irrp-phase 1\10-20_Jr Well.dwg

REGISTERED PROFESSIONAL ENGINEER JOHN B. MARSHALL EXP.9-30-13 CIVIL STATE OF CALIFORNIA

SHEET NUMBER 20 OF 20