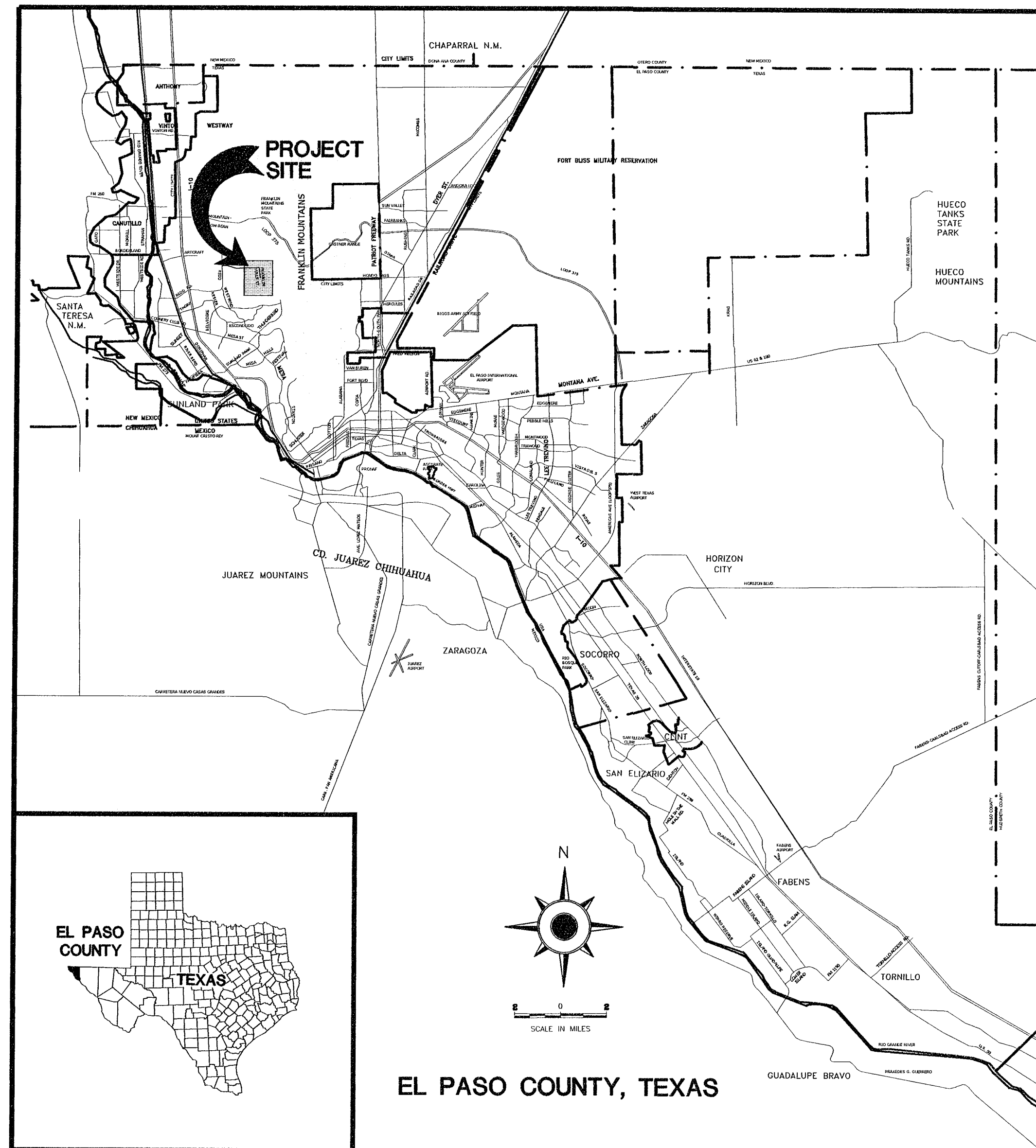


# FRANKLIN HILLS UNIT EIGHT

## SUBDIVISION IMPROVEMENT PLANS

**FRANKLIN HILLS, LLC**  
 EL PASO COUNTY, TEXAS  
 MAY 2012

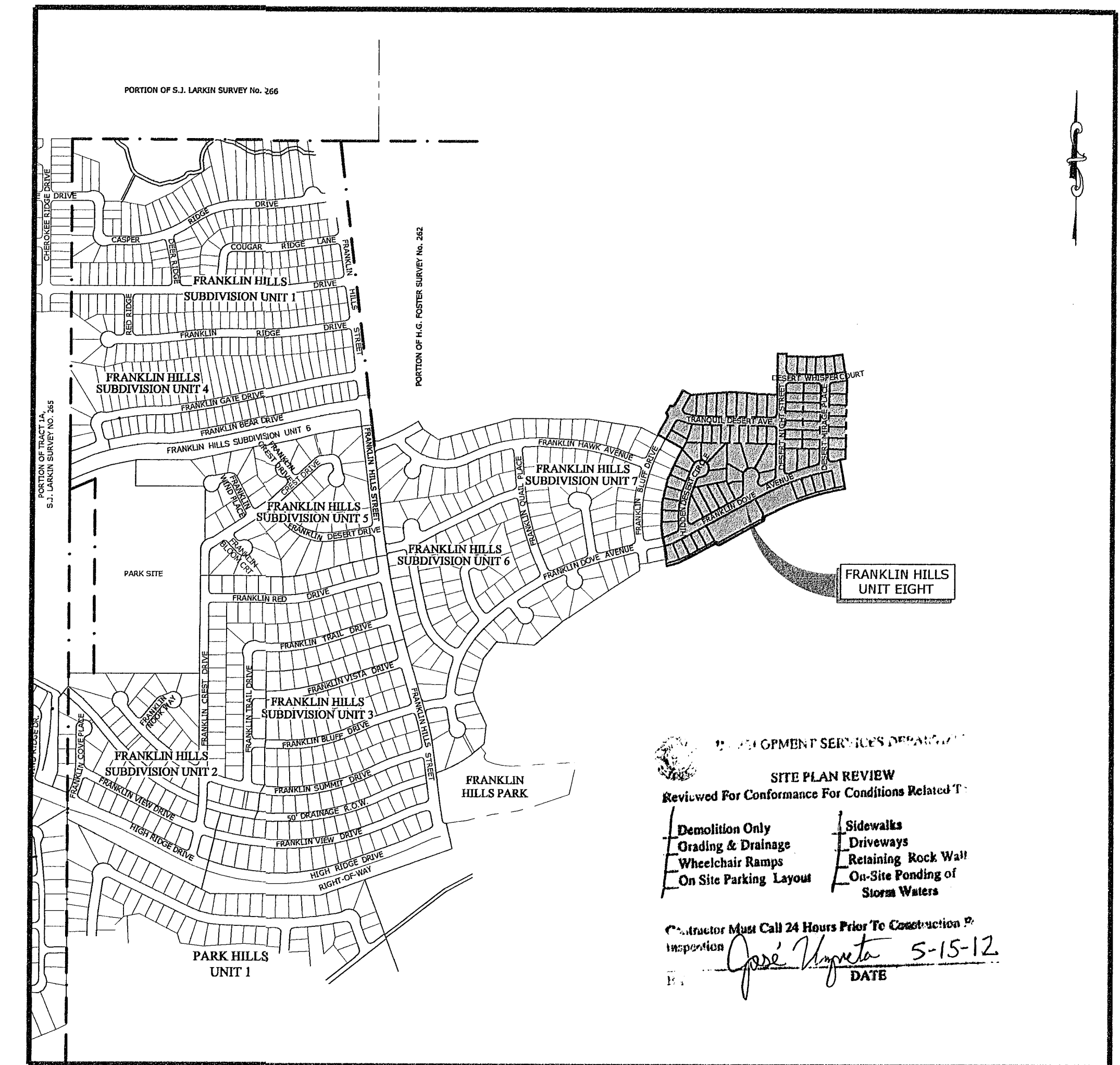
**VICINITY MAP**



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**LOCATION MAP**



**QUANTUM**  
 engineering  
 consultants  
 incorporated  
 Texas Registered Engineering Firm F-005146

414 Executive Center Blvd  
 Ste 200 El Paso TX 79902  
 P 915.532.7272  
 F 915.532.7373



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103223



**WARNING! BEFORE YOU DIG**

**COORDINATION WITH UTILITIES**  
 CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

**SOUTHERN UTILITY GAS CO.**  
 4700 POLLARD STREET  
 EL PASO, TEXAS 79907  
 ARMANDO REZA, 682-7243

**EL PASO ELECTRIC CO.**  
 1329 PARKING DRIVE  
 EL PASO, TEXAS 79907  
 MR. BILL ROGERS, (915) 543-4108  
 MURPHY, (915) 539-7794

**EL PASO COUNTY WATER AUTHORITY**  
 1329 PARKING DRIVE  
 EL PASO, TEXAS 79907  
 MR. ROBERT DIAZ DE LEON  
 (915) 802-3877

**SOUTHWESTERN BELL TELEPHONE**  
 11200 PELICANO DRIVE  
 EL PASO, TEXAS 79925  
 JOE GRANADOS  
 (915) 995-6146

**THE TURNER COMMUNICATIONS**  
 725 CONCORD STREET  
 EL PASO, TEXAS 79907  
 CONSTRUCTION, (915) 775-7414

**TEXAS REGISTRATION SAFETY SYSTEM**  
 ANYWHERE IN TEXAS  
 1-800-344-8377

**FLOOD ZONE INFORMATION:**

THE REFERENCED PARCEL LIES WITHIN FLOOD ZONES "A2" AND "C" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 480214 0022D, DATED AUGUST 5, 1991.

**NOTE:**  
 SUBMITTAL OF C.L.O.M.R. ACCEPTED BY FEMA ON AUGUST 8, 2002, CASE NUMBER 02-06-479 R. COMMUNITY NO. 480214

**ROCK RETAINING WALL NOTE:**

A ROCK RETAINING WALL SHALL BE REQUIRED WHEN THERE IS A DIFFERENCE OF 2' OR MORE BETWEEN LOT FINISHED GRADES OR BETWEEN SIDEWALK AND LOTS.

**MAINTENANCE OF DRAINAGE STRUCTURES OUTSIDE SUBDIVISION BOUNDARIES SHALL BE THE RESPONSIBILITY OF DEVELOPER UNTIL THEY ARE PLATTED, DEDICATED, AND ACCEPTED FOR MAINTENANCE BY THE CITY OF EL PASO WITH FUTURE SUBDIVISION PLATS**

**LEGEND:**

- PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING AND IRRIGATION PLANS.
- PROPOSED TEMPORARY DIVERSION BERM. REFER TO DETAIL SHEET C-49.
- PROPOSED MORTARED ROCK RIP-RAP DESILTING BASIN. REFER TO DETAIL SHEET C-39.
- 3" COMPACTED SCREENING SURFACE.
- PROPOSED WIRE WRAPPED ROCK RIP-RAP. REFER TO DETAIL SHEET C-39.
- PROPOSED MORTARED ROCK RIP-RAP. REFER TO DETAIL SHEET C-40.
- PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING AND IRRIGATION PLANS.
- SUBDIVISION BOUNDARY LINE
- ROW LINE
- PROPERTY LINE
- STREET CENTERLINE
- EASEMENT LINE
- EXISTING GROUND CONTOUR ELEVATION (INDEX)
- EXISTING GROUND CONTOUR ELEVATION (INTERMEDIATE)
- FINAL CONTOUR ELEVATION
- HIGH POINT
- LOW POINT
- DRAINAGE FLOW DIRECTION
- BLOCK NUMBER
- LOT NUMBER
- 2'-3" RETAINING ROCKWALL BY BUYER
- 3' AND GREATER RETAINING ROCKWALL BY DEVELOPER
- HORIZONTAL:VERTICAL SLOPE RATIO
- EXISTING CITY MONUMENT
- PROPOSED CITY MONUMENT
- STANDARD DETAIL NUMBER
- SHEET NUMBER WHERE STANDARD DETAIL IS DRAWN
- PROPOSED LOT FINISHED GROUND ELEVATION
- TC 15.52
- PV 89.83
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED TOP OF PAVEMENT ELEVATION
- PROPOSED HANDICAP RAMP. REFER TO DETAIL ON SHEET C-43. (WHEEL CHAIR RAMPS WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)

- GENERAL NOTES:**
- THE CONTRACTOR SHALL VISIT AND FAMILIARIZE HIMSELF WITH THE PROJECT SITE PRIOR TO SUBMITTING HIS BID.
  - THE CONTRACTOR SHALL SCHEDULE AND PERFORM HIS WORK SO AS TO INSURE THE SAFE AND SUFFICIENT PASSAGE OF STORMWATER RUNOFF DURING THE COURSE OF HIS OPERATIONS. ALL REQUIRED LABOR, TOOLS, EQUIPMENT, AND SUPERVISION SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND SHALL BE PROVIDED AT NO ADDITIONAL COST TO OWNER.
  - THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH THE OWNER, ALL AFFECTED UTILITY COMPANIES, AND ALL OTHER ENTITIES HAVING JURISDICTION OVER THE PROJECT.
  - THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES PRIOR TO COMMENCING WITH THE WORK. ANY DISCREPANCIES NOTED SHALL BE REPORTED IMMEDIATELY TO THE PROJECT ARCHITECT AND CIVIL ENGINEER, RESPECTIVELY.
  - ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN STRICT CONFORMANCE WITH ALL CURRENT SAFETY CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO, OSHA REQUIREMENTS.
  - THE EXISTING TOPOGRAPHIC/BOUNDARY INFORMATION ON THIS DRAWING WAS OBTAINED FROM A PROFESSIONAL LAND SURVEYOR. PROJECT CIVIL ENGINEER DOES NOT WARRANT THE ACCURACY OF THIS INFORMATION.
  - WARNING! BEFORE EXCAVATING, CONTRACTOR SHALL LOCATE AND PROTECT ALL UNDERGROUND UTILITY LINES. CONTRACTOR SHALL REPLACE ANY UTILITIES DAMAGED DURING CONSTRUCTION, AT NO ADDITIONAL COST TO OWNER.
  - CONTRACTOR SHALL WATER CONSTRUCTION SITE AREA A MINIMUM OF TWICE A DAY TO KEEP DUST TO A MINIMUM - ONCE IN THE MORNING AND ONCE IN THE AFTERNOON.
  - THIS GRADING PLAN SHALL BE COORDINATED WITH THE ENTIRE SET OF CONSTRUCTION DRAWINGS FOR SITE IMPROVEMENT DETAILS, DIMENSIONS, AND LAYOUT AT TIME OF BUILDING PERMIT ISSUANCE.
  - FILL MATERIAL FOR SITE GRADING AND BACKFILL MAY CONSIST OF ON SITE AND/OR IMPORTED MATERIALS IN COMPLIANCE WITH THE GEOTECHNICAL INVESTIGATION.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING IMPROVEMENTS IN THE PROJECT AREA AND ITS VICINITY. ANY DAMAGES RESULTING FROM CONTRACTOR'S WORK SHALL BE REPAIRED TO ITS ORIGINAL CONDITION BY CONTRACTOR, AT NO COST TO THE OWNER.
  - CONTRACTOR SHALL INSURE THE FOLLOWING: ALL ACCESSIBLE ROUTES SHALL NOT EXCEED A RUNNING SLOPE GREATER THAN 1:20. NO WHERE SHALL THE GROSS SLOPE OF AN ACCESSIBLE ROUTE EXCEED 1:50. MAXIMUM SLOPES OF ADJOINING QUIETERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB/RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 IN ALL DIRECTIONS. NEW WHEELCHAIR RAMPS SHALL NOT EXCEED A SLOPE OF 1:11
  - GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL REVIEW AND COORDINATE THE ENTIRE SET OF DRAWINGS AND PROJECT MANUAL TO ESTABLISH PROJECT COST.
  - CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS DURING CONSTRUCTION ACTIVITY.
  - CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL ENVIRONMENTAL FINES RESULTING FROM HIS/HER WORK AND SHALL HOLD THE OWNER HARMLESS IN SUCH CASES.
  - ALL EXISTING VEGETATION WITHIN THE GRADING LIMITS SHALL BE REMOVED AND PROPERLY DISPOSED UNLESS OTHERWISE INDICATED.
  - THE CONTRACTOR SHALL EXERCISE CARE TO PRESERVE THE NATURAL LANDSCAPE AT THE AREAS MARKED AS "TO REMAIN UNDISTURBED," AND SHALL CONDUCT HIS CONSTRUCTION OPERATION SO AS TO PREVENT ANY DAMAGE TO EXISTING FEATURES. EXCEPT WHERE CLEARING IS REQUIRED FOR PERMANENT WORK AND FOR EXCAVATION OPERATIONS, EXISTING NATIVE SHRUBBERY, AND VEGETATION SHALL BE PROTECTED FROM DAMAGE WHICH MAY BE CAUSED BY THE CONTRACTOR'S CONSTRUCTION OPERATIONS AND EQUIPMENT.
  - COORDINATE FINAL GRADING OF SWALES AND BERMS WITH OTHER LANDSCAPE FEATURES AS REQUIRED.
  - A MINIMUM WALL HEIGHT OF 6 FEET SHALL BE PROVIDED BETWEEN EXISTING OR FUTURE RESIDENTIAL ZONES/DEVELOPMENTS AND COMMERCIAL ZONES.

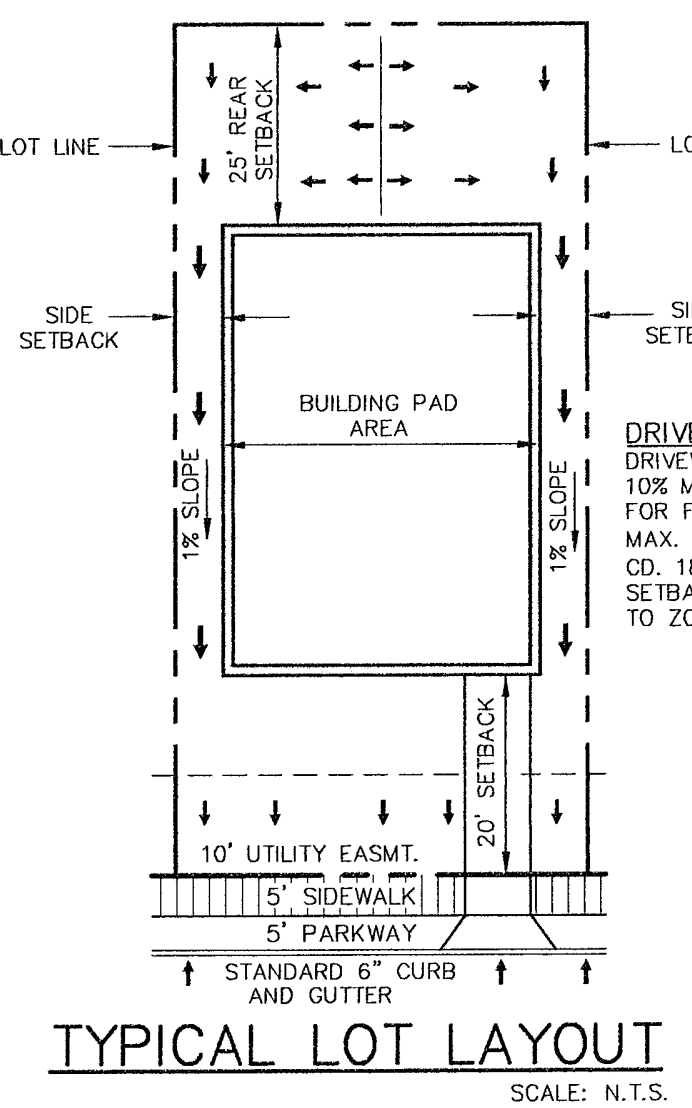
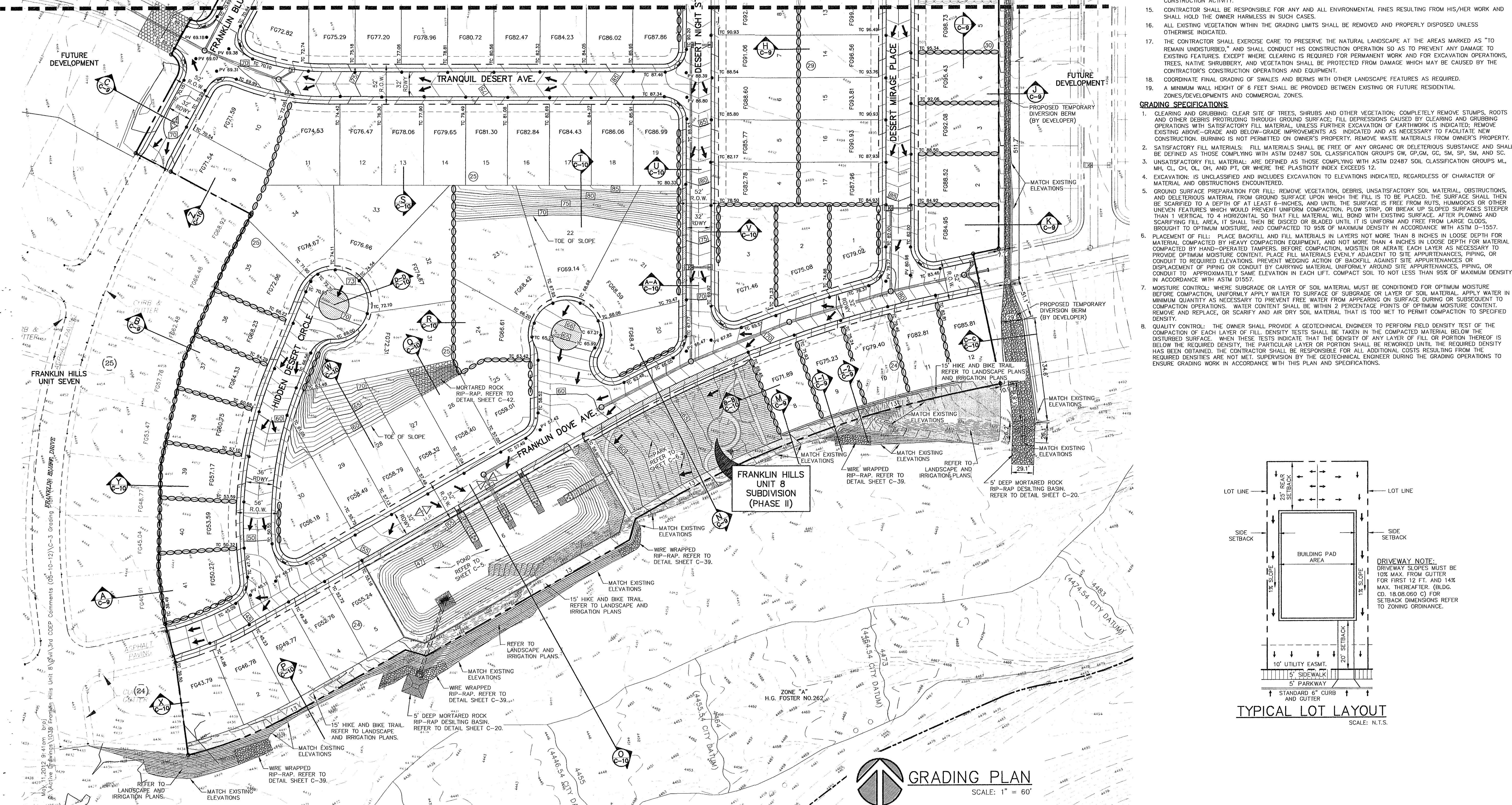
**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE FRANKLIN HILLS INTERSECTION OF HIGH ROCE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM)  
 CONTOUR INTERVAL: ONE (1) FOOT

DATE	REVISION	BY

414 Executive Center Blvd  
 Ste 200 El Paso TX 79902  
 Engineering P 915 532 2272  
 Incorporated P 915 532 2373

Texas Registered Engineering Firm F-005146



**PROJECT TITLE**  
 FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS  
 EL PASO COUNTY, TEXAS

**SCALE:**  
 HORIZONTAL: 1" = 60'  
 VERTICAL: 1" = 10'

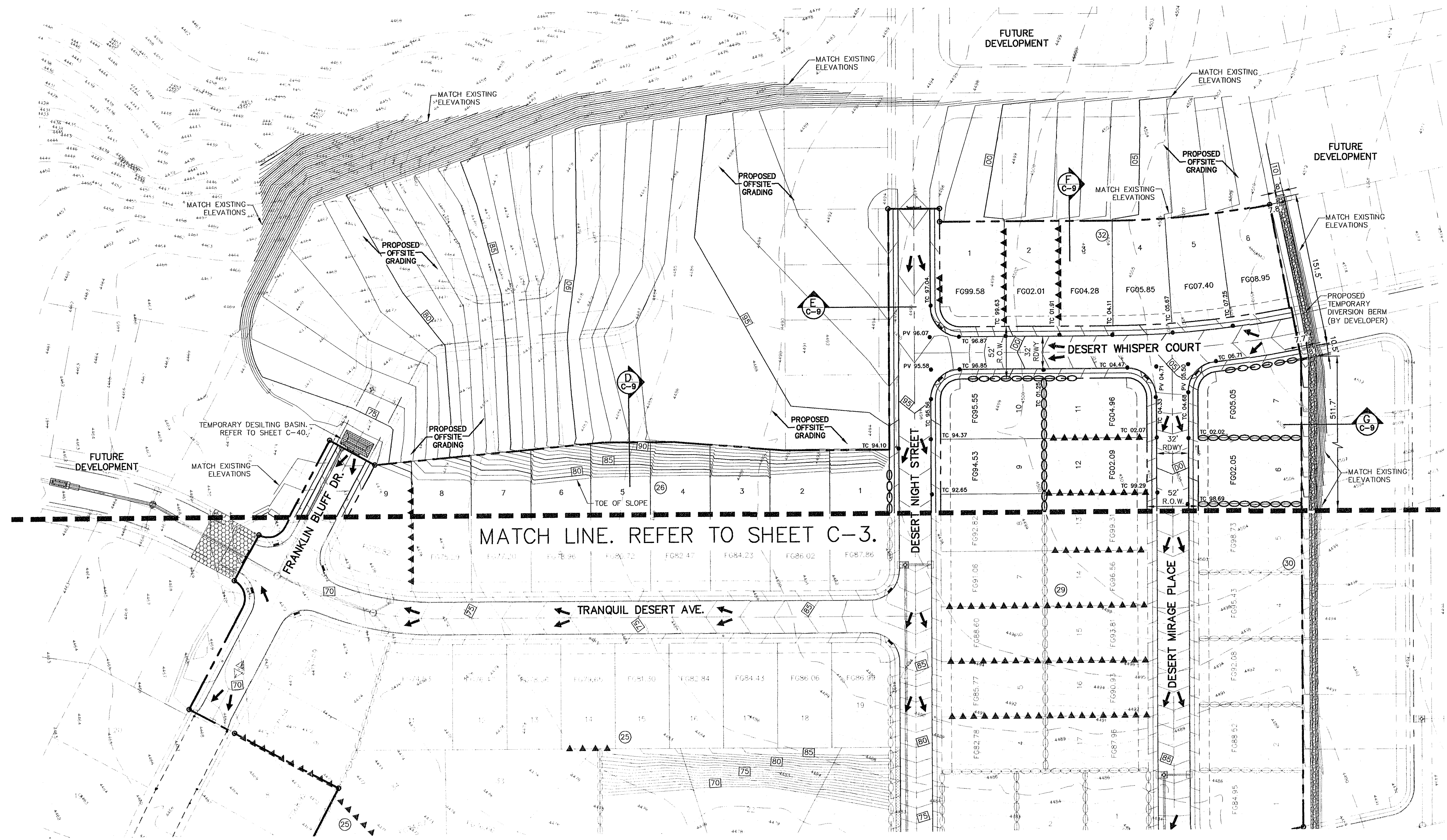
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ROBERT A. GONZALES  
 PROFESSIONAL ENGINEER  
 No. 16970  
 State of Texas

DATE: 05-10-2012  
 DESIGN BY: M.A.G.  
 DRAWN BY: C.A.D.  
 CHD BY: R.A.G.  
 APPVD BY: R.A.G.  
 JOB NO.: 1038

**GRADING PLAN**  
 SCALE: 1" = 60'

NORTH



MATCH LINE. REFER TO SHEET C-3.

- GENERAL NOTES:**
1. THE CONTRACTOR SHALL VISIT AND FAMILIARIZE HIMSELF WITH THE PROJECT SITE PRIOR TO SUBMITTING HIS BID.
  2. THE CONTRACTOR SHALL SCHEDULE AND PERFORM HIS WORK SO AS TO INSURE THE SAFE AND SUFFICIENT PASSAGE OF STORMWATER RUNOFF DURING THE COURSE OF HIS OPERATIONS. ALL REQUIRED LABOR, TOOLS, EQUIPMENT, AND SUPERVISION SHALL BE CONSIDERED INCIDENTAL TO THE WORK AND SHALL BE PROVIDED AT NO ADDITIONAL COST TO OWNER.
  3. THE CONTRACTOR SHALL COORDINATE THE CONSTRUCTION SCHEDULE WITH THE OWNER, ALL AFFECTED UTILITY COMPANIES, AND ALL OTHER ENTITIES HAVING JURISDICTION OVER THE PROJECT.
  4. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND GRADES PRIOR TO COMMENCING WITH THE WORK. ANY DISCREPANCIES NOTED SHALL BE REPORTED IMMEDIATELY TO THE PROJECT ARCHITECT AND CIVIL ENGINEER, RESPECTIVELY.
  5. ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN STRICT CONFORMANCE WITH ALL CURRENT SAFETY CODES AND STANDARDS, INCLUDING BUT NOT LIMITED TO, OSHA REQUIREMENTS.
  6. THE EXISTING TOPOGRAPHIC/BOUNDARY INFORMATION ON THIS DRAWING WAS OBTAINED FROM A PROFESSIONAL LAND SURVEYOR. PROJECT CIVIL ENGINEER DOES NOT WARRANT THE ACCURACY OF THIS INFORMATION.
  7. WARNING! BEFORE EXCAVATING, CONTRACTOR SHALL LOCATE AND PROTECT ALL UNDERGROUND UTILITY LINES. CONTRACTOR SHALL REPLACE ANY UTILITIES DAMAGED DURING CONSTRUCTION, AT NO ADDITIONAL COST TO OWNER.
  8. CONTRACTOR SHALL WATER CONSTRUCTION SITE AREA A MINIMUM OF TWICE A DAY TO KEEP DUST TO A MINIMUM - ONCE IN THE MORNING AND ONCE IN THE AFTERNOON.
  9. THIS GRADING PLAN SHALL BE COORDINATED WITH THE ENTIRE SET OF CONSTRUCTION DRAWINGS FOR SITE IMPROVEMENT DETAILS, DIMENSIONS AND LAYOUT AT TIME OF BUILDING PERMIT ISSUANCE.
  10. FILL MATERIAL FOR SITE GRADING AND BACKFILL MAY CONSIST OF ON SITE AND/OR IMPORTED MATERIALS IN COMPLIANCE WITH THE GEOTECHNICAL INVESTIGATION.
  11. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING IMPROVEMENTS IN THE PROJECT AREA AND ITS VICINITY. ANY DAMAGES RESULTING FROM CONTRACTOR'S WORK SHALL BE REPAIRED TO ITS ORIGINAL CONDITION BY CONTRACTOR, AT NO COST TO THE OWNER.
  12. CONTRACTOR SHALL INSURE THE FOLLOWING: ALL ACCESSIBLE ROUTES SHALL NOT EXCEED A RUNNING SLOPE GREATER THAN 1:20. NO WHERE SHALL THE CROSS SLOPE OF AN ACCESSIBLE ROUTE EXCEED 1:50. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20. PARKING SPACES AND ACCESS AISLES SHALL BE LEVEL WITH SURFACE SLOPES NOT EXCEEDING 1:50 IN ALL DIRECTIONS. NEW WHEELCHAIR RAMPS SHALL NOT EXCEED A SLOPE OF 1:1.
  13. GENERAL CONTRACTOR AND ALL SUBCONTRACTORS SHALL REVIEW AND COORDINATE THE ENTIRE SET OF DRAWINGS AND PROJECT MANUAL TO ESTABLISH PROJECT COST.
  14. CONTRACTOR SHALL COMPLY WITH ALL FEDERAL, STATE AND LOCAL ENVIRONMENTAL REGULATIONS DURING CONSTRUCTION ACTIVITY.
  15. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY AND ALL ENVIRONMENTAL FINES RESULTING FROM HIS/HER WORK AND SHALL HOLD THE OWNER HARMLESS IN SUCH CASES.
  16. ALL EXISTING VEGETATION WITHIN THE GRADING LIMITS SHALL BE REMOVED AND PROPERLY DISPOSED UNLESS OTHERWISE INDICATED.
  17. THE CONTRACTOR SHALL EXERCISE CARE TO PRESERVE THE NATURAL LANDSCAPE AT THE AREAS MARKED AS "TO REMAIN UNDISTURBED" AND SHALL CONDUCT HIS CONSTRUCTION OPERATION SO AS TO PREVENT ANY DAMAGE TO EXISTING FEATURES. EXCEPT WHERE CLEARING IS REQUIRED FOR PERMANENT WORK AND FOR EXCAVATION OPERATIONS, TREES, NATIVE SHRUBBERY, AND VEGETATION SHALL BE PROTECTED FROM DAMAGE WHICH MAY BE CAUSED BY THE CONTRACTOR'S CONSTRUCTION OPERATIONS AND EQUIPMENT.
  18. COORDINATE FINAL GRADING OF SWALES AND BERMS WITH OTHER LANDSCAPE FEATURES AS REQUIRED.
  19. A MINIMUM WALL HEIGHT OF 6 FEET SHALL BE PROVIDED BETWEEN EXISTING OR FUTURE RESIDENTIAL ZONES/DEVELOPMENTS AND COMMERCIAL ZONES.



**OFFSITE GRADING PLAN**  
SCALE: 1" = 60'

**GRADING SPECIFICATIONS**

1. CLEARING AND GRUBBING: CLEAR SITE OF TREES, SHRUBS AND OTHER VEGETATION; COMPLETELY REMOVE STUMPS, ROOTS AND OTHER DEBRIS PROTRUDING THROUGH GROUND SURFACE; FILL DEPRESSIONS CAUSED BY CLEARING AND GRUBBING OPERATIONS WITH SATISFACTORY FILL MATERIAL UNLESS FURTHER EXCAVATION OF EARTHWORK IS INDICATED; REMOVE EXISTING ABOVE-GRADE AND BELOW-GRADE IMPROVEMENTS AS INDICATED AND AS NECESSARY TO FACILITATE NEW CONSTRUCTION. BURNING IS NOT PERMITTED ON OWNER'S PROPERTY. REMOVE WASTE MATERIALS FROM OWNER'S PROPERTY.
2. SATISFACTORY FILL MATERIALS: FILL MATERIALS SHALL BE FREE OF ANY ORGANIC OR DELETERIOUS SUBSTANCE AND SHALL BE DEFINED AS THOSE COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS GW, GP, SM, GC, SA, SP, SA, AND SC.
3. UNSATISFACTORY FILL MATERIAL: ARE DEFINED AS THOSE COMPLYING WITH ASTM D2487 SOIL CLASSIFICATION GROUPS ML, MH, CL, CH, OL, OH, AND PT, OR WHERE THE PLASTICITY INDEX EXCEEDS 12.
4. EXCAVATION: IS UNCLASSIFIED AND INCLUDES EXCAVATION TO ELEVATIONS INDICATED, REGARDLESS OF CHARACTER OF MATERIAL AND OBSTRUCTIONS ENCOUNTERED.
5. GROUND SURFACE PREPARATION FOR FILL: REMOVE VEGETATION, DEBRIS, UNSATISFACTORY SOIL MATERIAL, OBSTRUCTIONS, AND DELETERIOUS MATERIAL FROM GROUND SURFACE UPON WHICH THE FILL IS TO BE PLACED. THE SURFACE SHALL THEN BE SCARIFIED TO A DEPTH OF AT LEAST 6-INCHES, AND UNTIL THE SURFACE IS FREE FROM RUTS, HUMMOCKS OR OTHER UNEVEN FEATURES WHICH WOULD PREVENT UNIFORM COMPACTION. PLOW STRIP, OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SO THAT FILL MATERIAL WILL BOND WITH EXISTING SURFACE. AFTER PLOWING AND SCARIFYING FILL AREA, IT SHALL THEN BE DISCED OR BLADED UNTIL IT IS UNIFORM AND FREE FROM LARGE CLODS, BROUGHT TO OPTIMUM MOISTURE, AND COMPACTED TO 95% OF MAXIMUM DENSITY IN ACCORDANCE WITH ASTM D-1557.
6. PLACEMENT OF FILL: PLACE BACKFILL, AND FILL MATERIALS IN LAYERS NOT MORE THAN 8 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HEAVY COMPACTION EQUIPMENT, AND NOT MORE THAN 4 INCHES IN LOOSE DEPTH FOR MATERIAL COMPACTED BY HAND-OPERATED TAMPERS. BEFORE COMPACTION, MOISTEN OR AERATE EACH LAYER AS NECESSARY TO PROVIDE OPTIMUM MOISTURE CONTENT. PLACE FILL MATERIALS EVENLY ADJACENT TO SITE APPURTENANCES, PIPING, OR CONDUIT TO REQUIRED ELEVATIONS. PREVENT WEDGING ACTION OF BACKFILL AGAINST SITE APPURTENANCES OR DISPLACEMENT OF PIPING OR CONDUIT BY CARRYING MATERIAL UNIFORMLY AROUND SITE APPURTENANCES, PIPING, OR CONDUIT TO APPROXIMATELY SAME ELEVATION IN EACH LIFT. COMPACT SOIL TO NOT LESS THAN 95% OF MAXIMUM DENSITY, IN ACCORDANCE WITH ASTM D1557.
7. MOISTURE CONTROL: WHERE SUBGRADE OR LAYER OF SOIL MATERIAL MUST BE CONDITIONED FOR OPTIMUM MOISTURE BEFORE COMPACTION, UNIFORMLY APPLY WATER TO SURFACE OR SUBGRADE OR LAYER OF SOIL MATERIAL. APPLY WATER IN MINIMUM QUANTITY AS NECESSARY TO PREVENT FREE WATER FROM APPEARING ON SURFACE DURING OR SUBSEQUENT TO COMPACTION OPERATIONS. WATER CONTENT SHALL BE WITHIN 2 PERCENTAGE POINTS OF OPTIMUM MOISTURE CONTENT. REMOVE AND REPLACE, OR SCARIFY AND AIR DRY SOIL MATERIAL THAT IS TOO WET TO PERMIT COMPACTION TO SPECIFIED DENSITY.
8. QUALITY CONTROL: THE OWNER SHALL PROVIDE A GEOTECHNICAL ENGINEER TO PERFORM FIELD DENSITY TEST OF THE COMPACTION OF EACH LAYER OF FILL. DENSITY TESTS SHALL BE TAKEN IN THE COMPACTED MATERIAL BELOW THE DISTURBED SURFACE. WHEN THESE TESTS INDICATE THAT THE DENSITY OF ANY LAYER OF FILL OR PORTION THEREOF IS BELOW THE REQUIRED DENSITY, THE PARTICULAR LAYER OR PORTION SHALL BE REWORKED UNTIL THE REQUIRED DENSITY HAS BEEN OBTAINED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ADDITIONAL COSTS RESULTING FROM THE REQUIRED DENSITIES ARE NOT MET. SUPERVISION BY THE GEOTECHNICAL ENGINEER DURING THE GRADING OPERATIONS TO ENSURE GRADING WORK IN ACCORDANCE WITH THIS PLAN AND SPECIFICATIONS.

**WARNING! BEFORE YOU DIG**

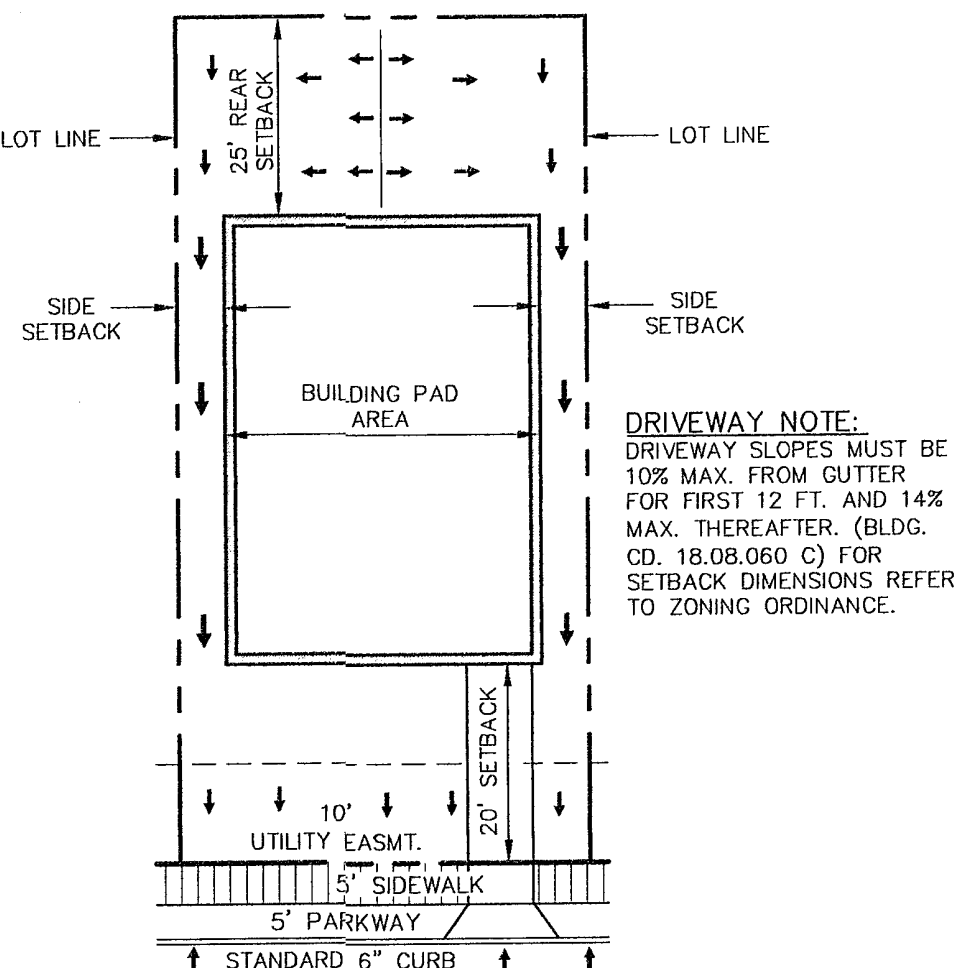
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<b>SOUTHERN UNION GAS CO.</b> 4700 PELLAS STREET EL PASO, TEXAS 79905 ARMAHIO TEXAS 480-7243	<b>EL PASO ELECTRIC CO.</b> 501 WEST 54th AVENUE STREET EL PASO, TEXAS 79905 MR. BILL EVELLS, (915) 543-4108 MOBILE, (915) 539-7184	<b>EL PASO COUNTY WATER AUTHORITY</b> 1235 PARKING DRIVE EL PASO, TEXAS 79902 MR. ROBERT DICKIE DE LEON (915) 852-3917
<b>SOUTHWESTERN BELL TELEPHONE</b> 11202 BELLIANDI DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 565-5140	<b>THE WATER COMMUNICATIONS</b> 805 CONCORD STREET EL PASO, TEXAS 79906 CONSTRUCTION, (915) 775-7414	<b>TEXAS SCARIFICATION SAFETY SYSTEM</b> ANYWHERE IN TEXAS 1-800-344-8377

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**NOTE:**  
SUBMITTAL OF C.L.O.M.R. ACCEPTED BY FEMA ON AUGUST 8, 2002, CASE NUMBER 02-06-479 R. COMMUNITY NO. 480214

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A ROCK RETAINING WALL SHALL BE REQUIRED WHEN THERE IS A DIFFERENCE OF 2' OR MORE BETWEEN LOT FINISHED GRADES OR BETWEEN SIDEWALK AND LOTS.



**TYPICAL LOT LAYOUT**  
SCALE: N.T.S.

**LEGEND:**

- PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING AND IRRIGATION PLANS.
- PROPOSED MORTARED ROCK RIP-RAP TEMPORARY DIVERSION BERM. REFER TO DETAIL SHEET C-X.
- PROPOSED MORTARED ROCK RIP-RAP TEMPORARY DIVERSION BERM. REFER TO DETAIL SHEET C-39.
- 3" COMPACTED SCREENING SURFACE.
- PROPOSED WIRE WRAPPED ROCK RIP-RAP. REFER TO DETAIL SHEET C-39.
- PROPOSED MORTARED ROCK RIP-RAP. REFER TO DETAIL SHEET C-40.
- PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING PLANS.
- SUBDIVISION BOUNDARY LINE
- ROW LINE
- PROPERTY LINE
- STREET CENTERLINE
- EASEMENT LINE
- EXISTING GROUND CONTOUR ELEVATION (INDEX).
- EXISTING GROUND CONTOUR ELEVATION (INTERMEDIATE).
- FINAL CONTOUR ELEVATION
- HIGH POINT
- LOW POINT
- DRAINAGE FLOW DIRECTION
- BLOCK NUMBER
- LOT NUMBER
- 2'-3" RETAINING ROCKWALL BY BUILDER
- 3" AND GREATER RETAINING ROCKWALL BY DEVELOPER
- HORIZONTAL:VERTICAL SLOPE RATIO
- EXISTING CITY MONUMENT
- PROPOSED CITY MONUMENT
- STANDARD DETAIL NUMBER
- SHEET NUMBER WHERE STANDARD DETAIL IS DRAWN
- PROPOSED LOT FINISHED GROUND ELEVATION
- PROPOSED TOP OF CURB ELEVATION
- PROPOSED TOP OF PAVEMENT ELEVATION
- PROPOSED HANDICAP RAMP. REFER TO DETAIL ON SHEET C-43. (WHEEL CHAIR RAMPS WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
**OFFSITE GRADING PLAN**

**SHEET NO.**  
**C-4**  
4 OF 58 SHEETS

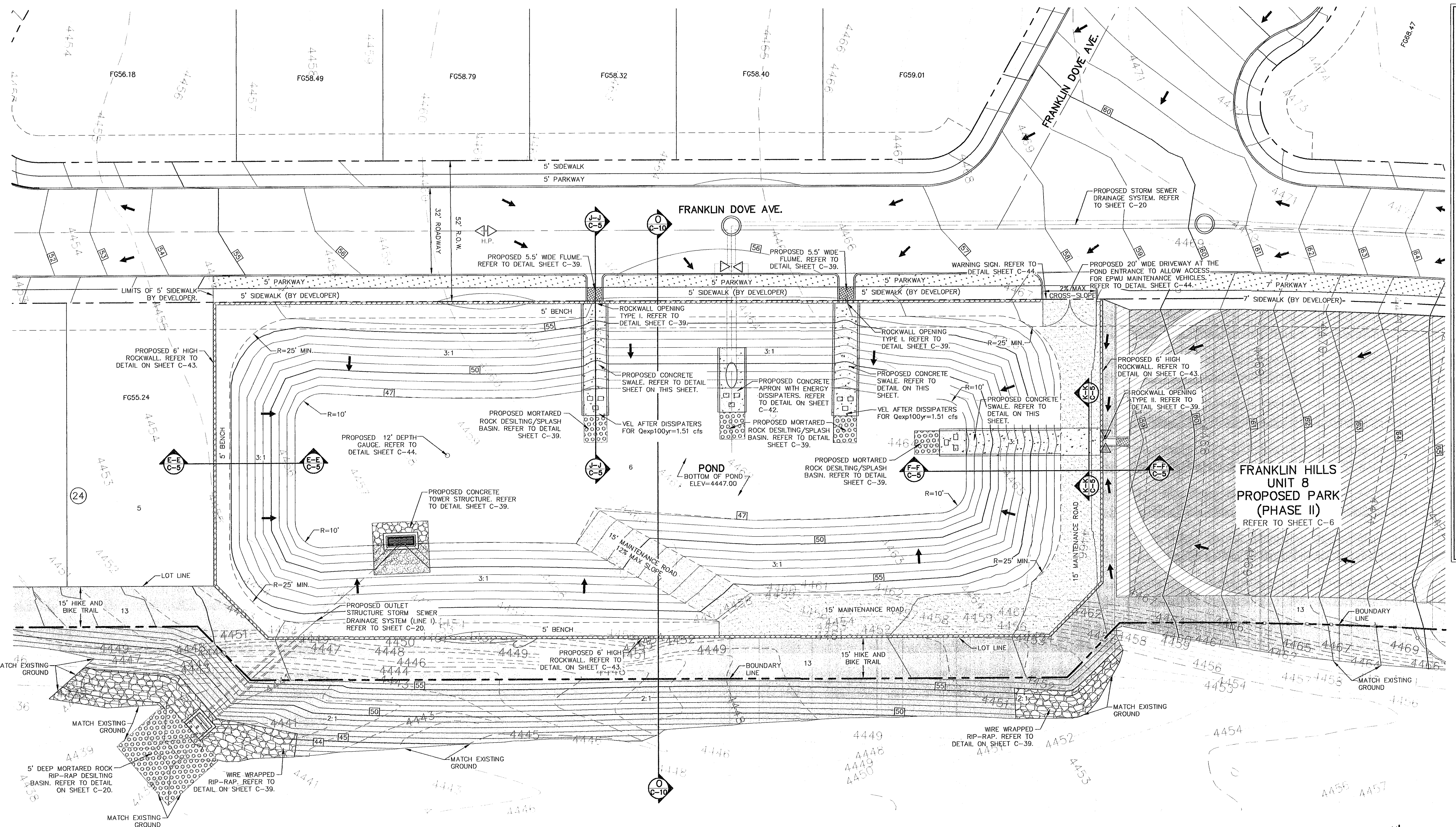
**REFERENCES - BENCHMARK**  
CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. CONTOUR INTERVAL: ONE (1) FOOT

**QUANTUM**  
engineers  
consultants  
incorporated  
Texas Registered Engineering Firm F-005146  
414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373

**THE SEAL APPEARING ON THIS DRAWING IS THE PROPERTY OF ROBERT A. GONZALES. ALTERATION OF A SEALED DRAWING WITHOUT THE SIGNATURE OF THE SEALING ENGINEER IS AN OFFENSE UNDER THE PRACTICE ACT.**

**SCALE:**  
HORIZONTAL: 1" = 60'  
VERTICAL: N/A  
CONTOUR INTERVAL: 1' 0"

**DATE:** 05-10-2012  
**DESIGN BY:** M.A.G.  
**DRAWN BY:** C.A.D.  
**CHKD BY:** R.A.G.  
**APP'D BY:** R.A.G.  
**JOB NO.:** 1038



**LEGEND:**

- PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING AND IRRIGATION PLANS.
- PROPOSED TEMPORARY DIVERSION BERM. REFER TO DETAIL SHEET C-49.
- PROPOSED MORTARED ROCK RIP-RAP DESILTING BASIN. REFER TO DETAIL SHEET C-39.
- 3" COMPACTED SCREENING SURFACE.
- PROPOSED WIRE WRAPPED ROCK RIP-RAP. REFER TO DETAIL SHEET C-39.
- PROPOSED MORTARED ROCK RIP-RAP. REFER TO DETAIL SHEET C-40.
- PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING AND IRRIGATION PLANS.
- SUBDIVISION BOUNDARY LINE
- ROW LINE
- PROPERTY LINE
- STREET CENTERLINE
- EASEMENT LINE
- EXISTING GROUND CONTOUR ELEVATION (INDEX).
- EXISTING GROUND CONTOUR ELEVATION (INTERMEDIATE).
- FINAL CONTOUR ELEVATION
- HIGH POINT
- LOW POINT
- DRAINAGE FLOW DIRECTION
- BLOCK NUMBER
- LOT NUMBER
- 2'-3" ROCKWALL BY BUILDER
- 3' AND GREATER RETAINING ROCKWALL BY DEVELOPER
- HORIZONTAL:VERTICAL SLOPE RATIO
- EXISTING CITY MONUMENT
- PROPOSED CITY MONUMENT
- STANDARD DETAIL NUMBER
- SHEET NUMBER WHERE STANDARD DETAIL IS DRAWN
- FG=71.80 PROPOSED LOT FINISHED GROUND ELEVATION.
- TC 15.52 PROPOSED TOP OF CURB ELEVATION
- PV 89.83 PROPOSED TOP OF PAVEMENT ELEVATION

**NOTE:**  
RESULTS OF THE RETENTION BASIN BORING AND PERCOLATION TESTS PERFORMED AT THE TIME OF EXCAVATION IN ACCORDANCE TO CDEP DESIGN STANDARDS FOR CONSTRUCTION ARE REQUIRED BEFORE ACCEPTANCE OF ANY STORMWATER MANAGEMENT FACILITIES.

**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET  
ELEVATION = 4362.20 (CITY DATUM)  
CONTOUR INTERVAL: ONE (1) FOOT

**QUANTUM**  
engineering  
INCORPORATED  
Texas Registered Engineering Firm F-005146

414 Executive Center Blvd  
Ste 200 Bl Paso TX 79902  
P 915.532.7372  
F 915.532.7373

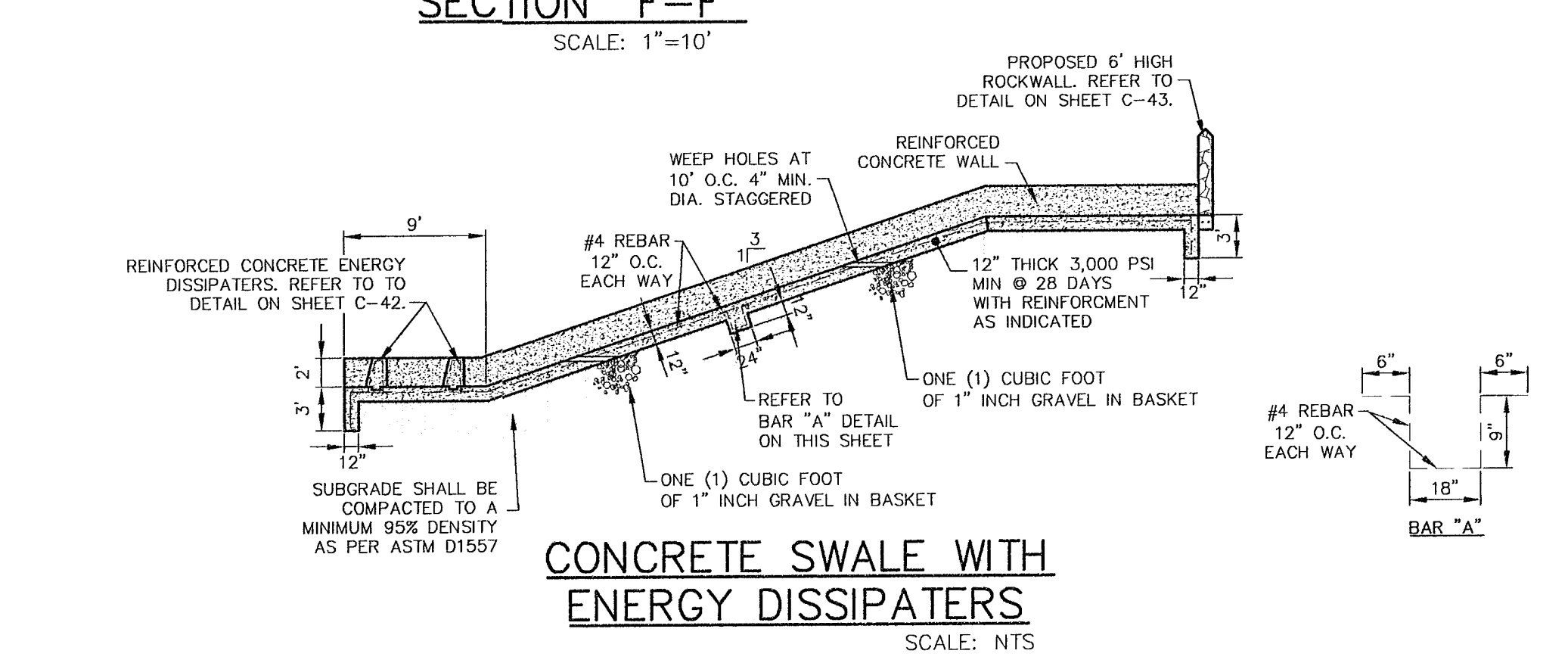
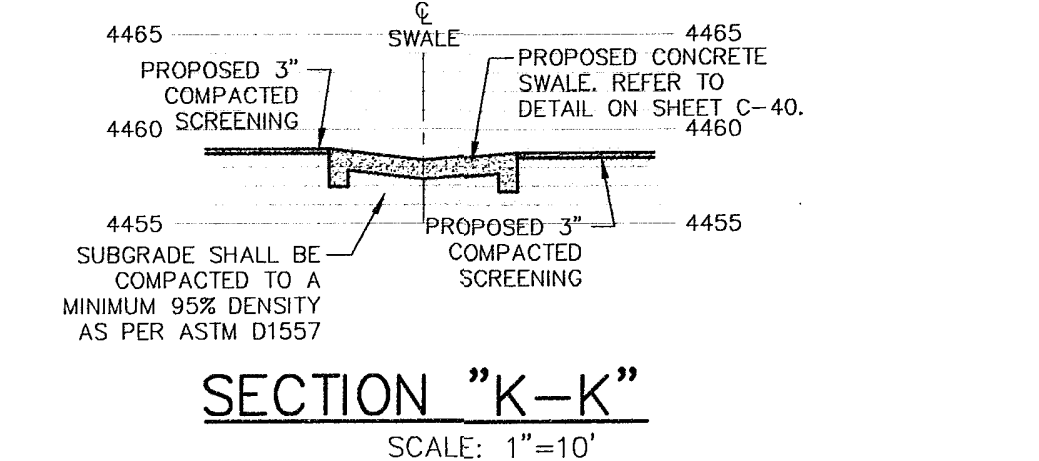
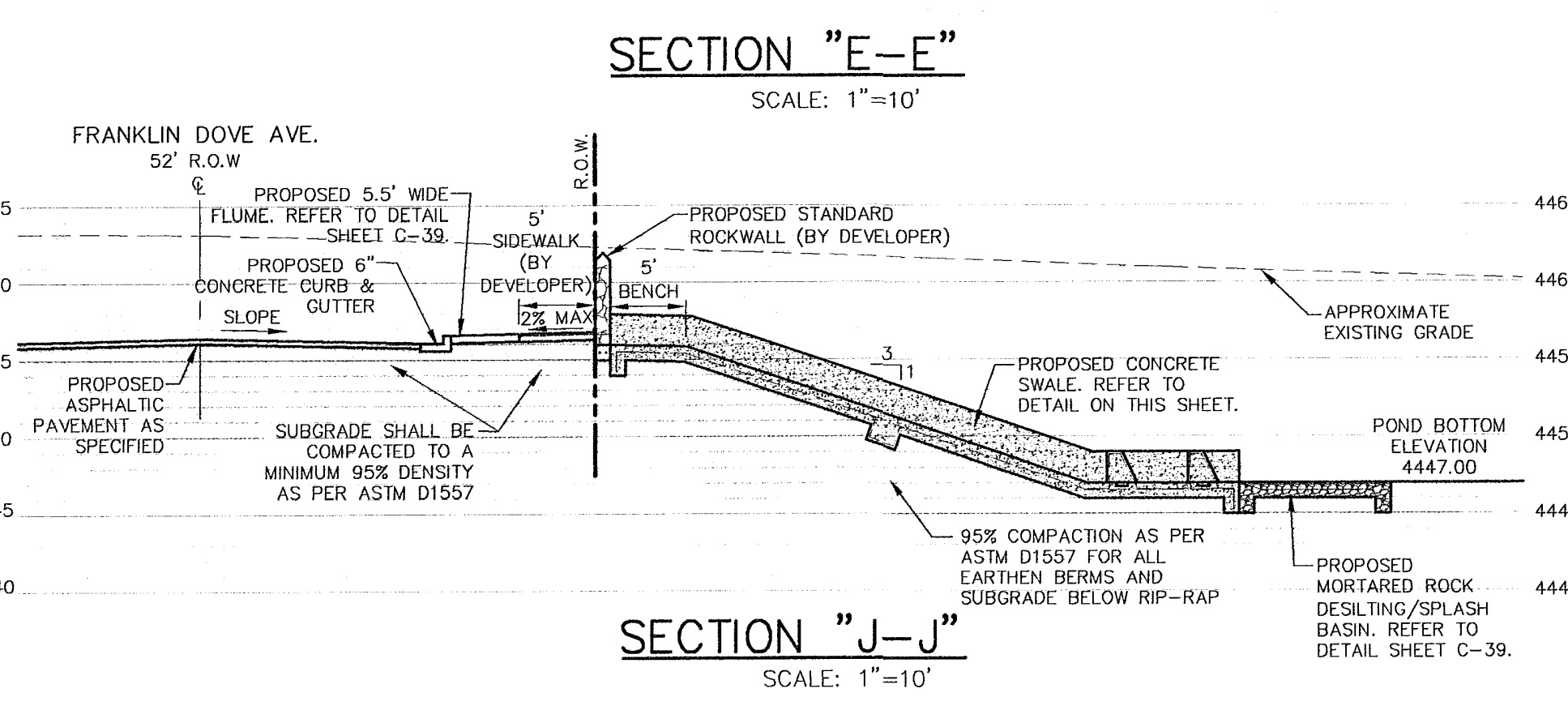
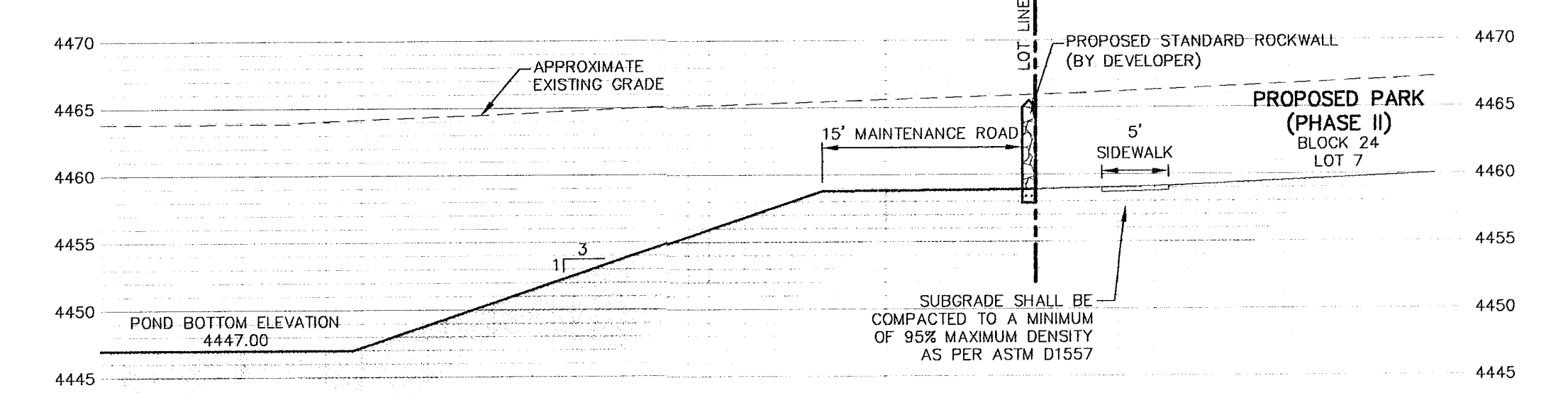
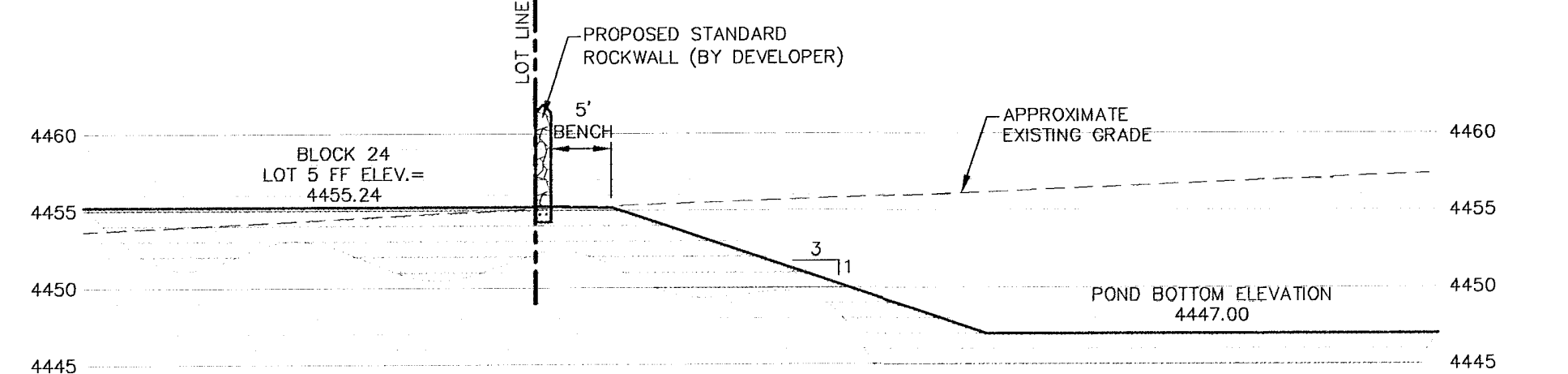
**PROJECT TITLE**  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
POND GRADING PLAN

**SHEET NO.**  
C-5

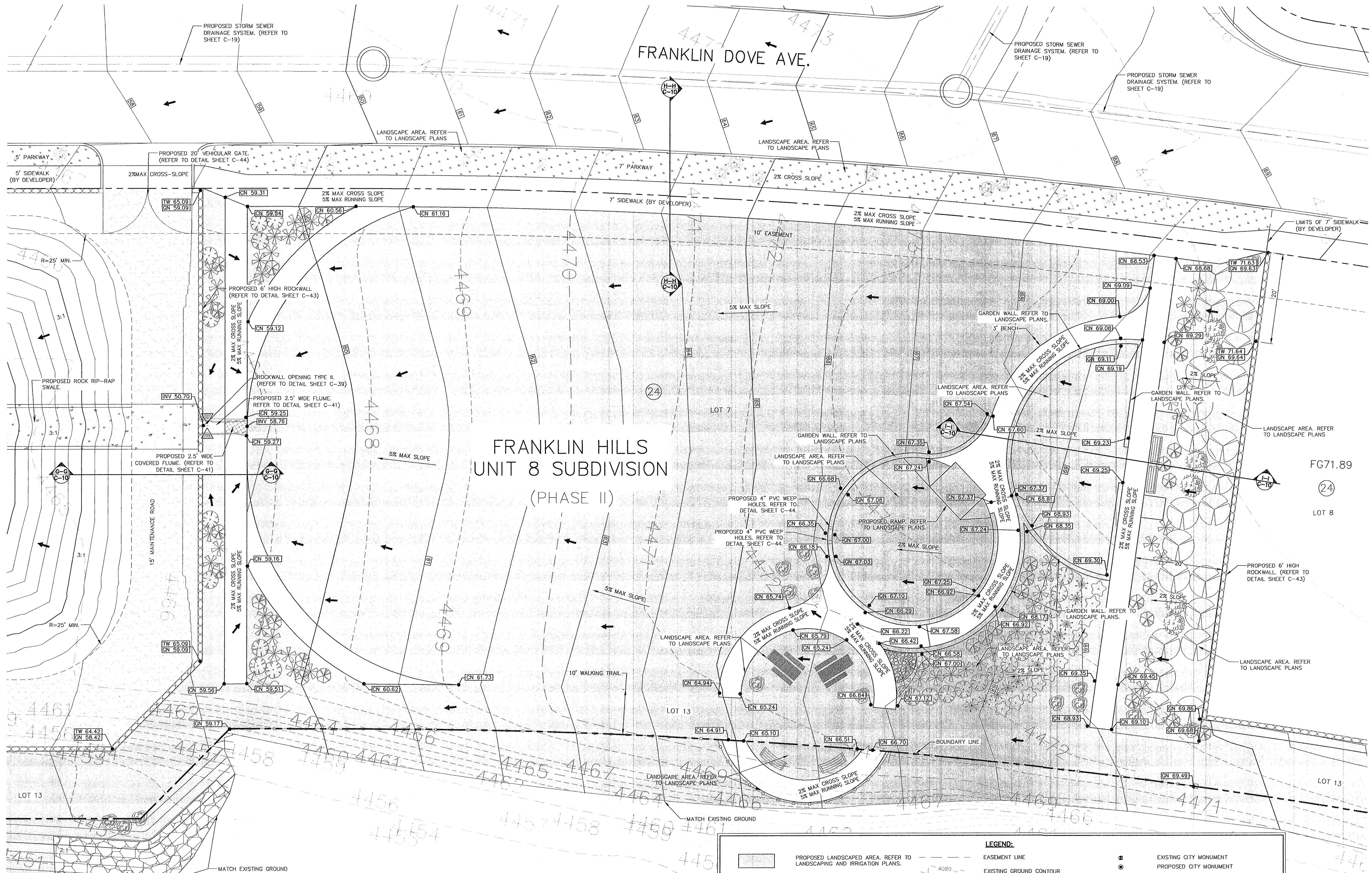
5 OF 58 SHEETS

**POND GRADING PLAN**  
SCALE: 1" = 20'



May 11, 2012 8:50am b.roj  
O:\Active Drawings\1038 Franklin Hills Unit 8\10-12\C-5 Pond Grading.DWG

May 11, 2012, 9:56am, brg  
 C:\Active Drawings\1035 Franklin Hills Unit 8\Civil\3d COEP Comments (05-10-12)\C-6 Park Grading.dwg



**FRANKLIN HILLS  
 UNIT 8 SUBDIVISION  
 (PHASE II)**

**PARK GRADING PLAN  
 (PHASE II)** SCALE: 1" = 10'



**LEGEND:**

	PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING AND IRRIGATION PLANS.		EASEMENT LINE		EXISTING CITY MONUMENT
	PROPOSED TEMPORARY DIVERSION BERM. REFER TO DETAIL SHEET C-49.		EXISTING GROUND CONTOUR ELEVATION (INDEX).		STANDARD DETAIL NUMBER
	PROPOSED MORTARED ROCK RIP-RAP DESILTING BASIN. REFER TO DETAIL SHEET C-39.		EXISTING GROUND CONTOUR ELEVATION (INTERMEDIATE).		SHEET NUMBER WHERE STANDARD DETAIL IS DRAWN
	3" COMPACTED SCREENING SURFACE.		FINAL CONTOUR ELEVATION		PROPOSED LOT FINISHED GROUND ELEVATION.
	PROPOSED WIRE WRAPPED ROCK RIP-RAP. REFER TO DETAIL SHEET C-39.		HIGH POINT		PROPOSED TOP OF CURB ELEVATION
	PROPOSED MORTARED ROCK RIP-RAP. REFER TO DETAIL SHEET C-40.		LOW POINT		PROPOSED TOP OF PAVEMENT ELEVATION
	PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING AND IRRIGATION PLANS.		DRAINAGE FLOW DIRECTION		PROPOSED HANDICAP RAMP. REFER TO DETAIL ON SHEET C-43. (WHEEL CHAIR RAMP WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)
	SUBDIVISION BOUNDARY LINE		BLOCK NUMBER		
	ROW LINE		LOT NUMBER		
	PROPERTY LINE		2'-3" RETAINING ROCKWALL BY BUILDER		
	STREET CENTERLINE		3' AND GREATER RETAINING ROCKWALL BY DEVELOPER		
			1.5:1 SLOPE		
			HORIZONTAL:VERTICAL SLOPE RATIO		

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
 EL PASO COUNTY, TEXAS

**SHEET TITLE**  
 PARK GRADING PLAN (PHASE II)

**SHEET NO.**  
 C-6

6 OF 58 SHEETS

**REFERENCES - BENCHMARK**  
 CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM)  
 CONTOUR INTERVAL: ONE (1) FOOT

**BY**  
 DATE

**REVISION**

414 Executive Center Blvd  
 Ste 200 El Paso TX 79902  
 P 915.532.7272  
 F 915.532.7373

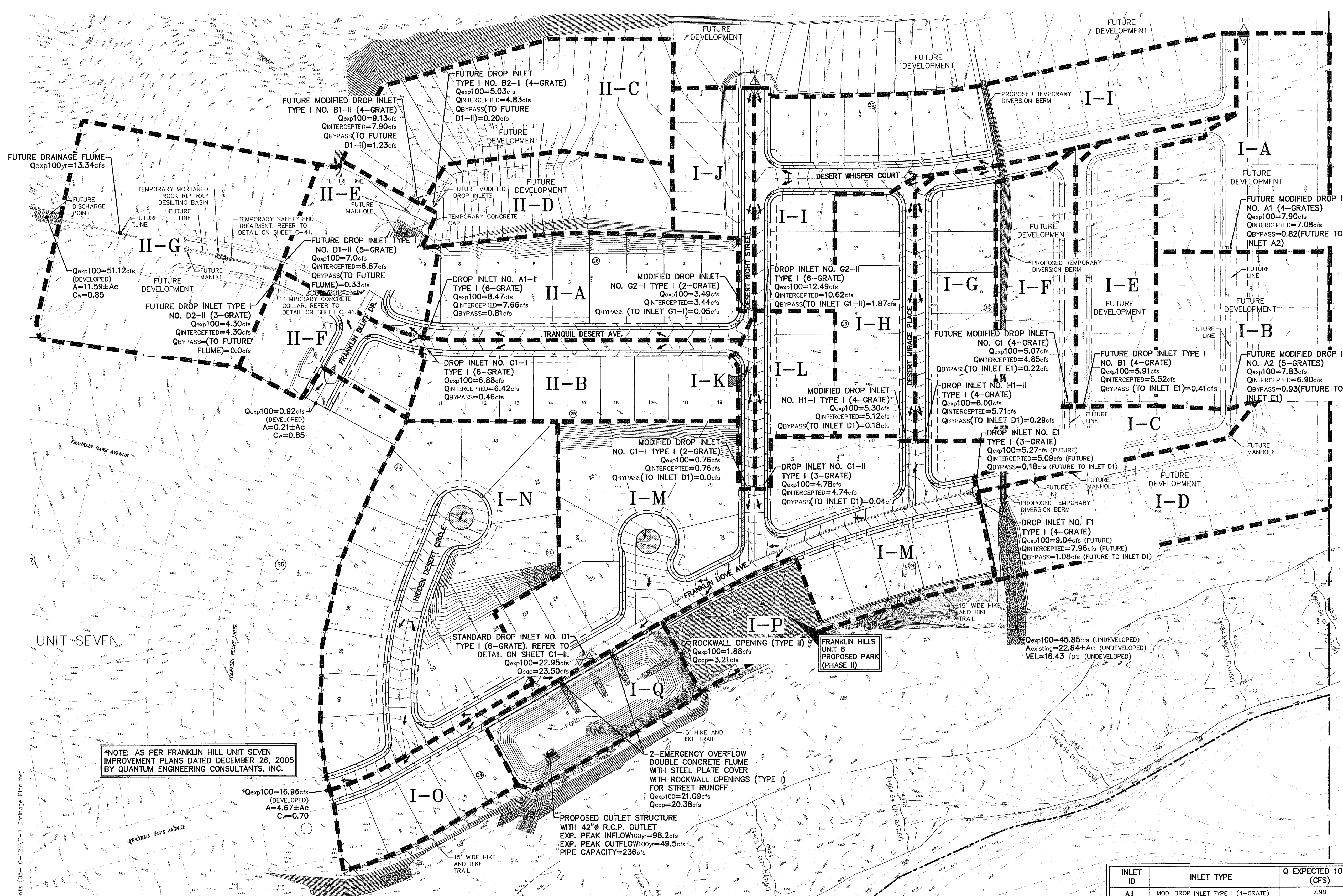
**QUANTUM**  
 ENGINEERING CONSULTANTS INCORPORATED  
 Texas Registered Engineering Firm F-005146

ROBERT A. GONZALES  
 69270

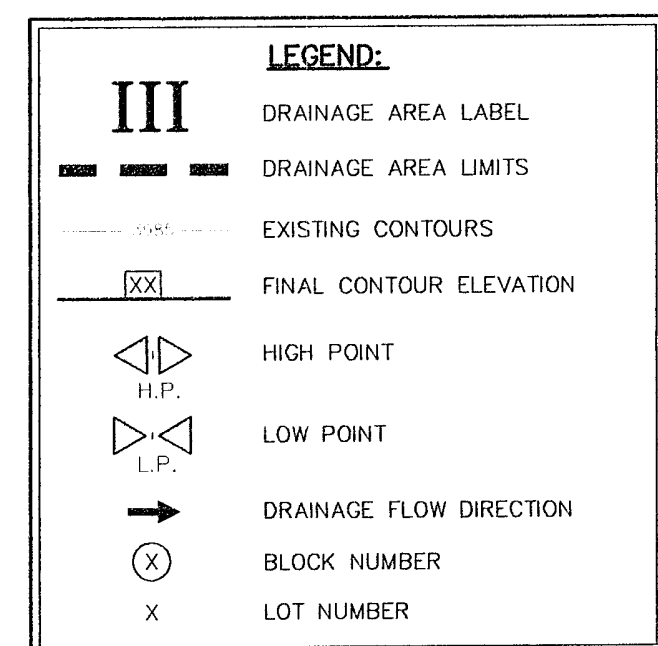
THE SEAL, APPROVING THIS DESIGN AS A SEALING OF THE DESIGN IS THE INDICATION TO THE PUBLIC THAT THE DESIGNER IS A LICENSED PROFESSIONAL ENGINEER UNDER THE PRACTICE ACT.

SCALE: HORIZONTAL: 1" = 20'  
 VERTICAL: 1" = 4'  
 CONTOUR INTERVAL: N/A

DATE: 05-10-2012  
 DESIGN BY: M.A.G.  
 DRAWN BY: CAD  
 CHKD BY: R.A.G.  
 APPROV. BY: R.A.G.  
 JOB NO.: 1035



DRAINAGE CALCULATIONS (DEVELOPED)					
STORM DRAINAGE CALCULATIONS BASED ON A 100 YEAR STORM FREQUENCY.					
WATERSHED AREA (1)	AREA (AC) (2)	OW (5)	tc (3) (min)	f100 (4) (in/hr)	Q100 (CFS) (6)
I-A	1.79	0.85	10	5.19	7.90
I-B	1.59	0.85	10	5.19	7.01
I-C	0.83	0.85	10	5.19	3.71
I-D	2.04	0.85	10	5.19	9.04
I-E	1.34	0.85	10	5.19	5.91
I-F	1.15	0.85	10	5.19	5.07
I-G	1.36	0.85	10	5.19	6.00
I-H	1.20	0.85	10	5.19	5.30
I-I	3.10	0.85	14	4.71	12.49
I-J	0.79	0.85	10	5.19	3.49
I-K	0.16	0.85	10	5.19	0.71
I-L	0.66	0.85	10	5.19	2.91
I-M	4.76	0.85	10	5.19	21.09
I-N	3.75	0.70	10	5.19	13.62
I-O	0.92	0.70	10	5.19	3.34
I-P	0.68	0.60	15	4.61	1.88
I-Q	1.01	0.50	10	5.19	2.62
II-A	1.92	0.85	10	5.19	8.47
II-B	1.56	0.85	10	5.19	6.88
II-C	2.07	0.85	10	5.19	9.13
II-D	1.14	0.85	10	5.19	5.03
II-E	1.08	0.85	10	5.19	4.76
II-F	0.87	0.85	10	5.19	3.84
II-G	2.95	0.85	10	5.19	13.01



**FLOOD ZONE INFORMATION:**  
THE REFERENCED PARCEL LIES WITHIN FLOOD ZONES "X2" AND "X3" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL NO. 480214 0022D, DATED AUGUST 5, 1991.

**NOTE:**  
SUBMITTAL OF C.L.O.M.R. ACCEPTED BY FEMA ON AUGUST 8, 2002, CASE NUMBER 02-06-479 R. COMMUNITY NO. 480214

**WARNING! BEFORE YOU DIG**  
COORDINATION WITH UTILITIES

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELIEF OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

SOUTHERN UNION GAS CO. 4702 POLLARD STREET EL PASO, TEXAS 79902 ARMANDO MEDA, 680-7245	EL PASO ELECTRIC CO. 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79902 MR. BILL ENGLISH, (915) 545-4108 MOBILE, (915) 538-7434	EL PASO COUNTY WATER AUTHORITY 1539 PARKING DRIVE EL PASO, TEXAS 79927 HEBERT DALE DE LEW (915) 822-3917
SOUTHWESTERN BELL TELEPHONE 11300 BELLGARD DRIVE EL PASO, TEXAS 79935 26 GRANADOS (915) 595-9140	TIME WARNER COMMUNICATIONS 802 GARDNER STREET EL PASO, TEXAS 79905 CONSTRUCTION, (915) 770-7414	TEXAS EXCAVATION SAFETY SYSTEM ANNARBURG W. TEXAS 1-800-344-8377

EXISTING (HISTORICAL) RUNOFF CALCULATIONS					
RUNOFF CALCULATIONS BASED ON A 100 YEAR STORM FREQUENCY.					
WATERSHED AREA (1)	AREA (AC) (2)	RAINFALL (IN) (4)	OW <sub>i</sub> (5)	ESTIMATED RUNOFF (AC-FT) (6)	
I	20.00	4.18	0.69	4.80	
II	15.14	4.18	0.69	3.64	

DEVELOPED RUNOFF CALCULATIONS						
RUNOFF CALCULATIONS BASED ON A 100 YEAR STORM FREQUENCY.						
WATERSHED AREA (1)	AREA (AC) (2)	RAINFALL (IN) (4)	OW <sub>i</sub> (5)	ESTIMATED RUNOFF (AC-FT) (6)	REQUIRED CAPACITY (AC-FT) (7)	TOTAL POND CAPACITY (AC-FT)
I	22.45	4.18	0.85	6.64	1.84	3.77
II	11.59	4.18	0.85	3.43	-0.21*	N/A*

REFERENCE: CITY OF EL PASO SUBDIVISION STANDARDS

- WATERSHED AREA IDENTIFICATION
- AREA FROM DRAINAGE PLAN
- TIME OF CONCENTRATION: TC = T (OVERLAND) + T (GUTTER) (MINIMUM = 10 MIN.)
- RAINFALL INTENSITY, 100 YEAR STORM = CENTRAL DRAINAGE REGION TABLE 4-1: CENTRAL INTENSITY EQUATIONS.
- RUNOFF COEFFICIENT

WEIGHTED C =  $\sum C_i A_i$   
 C<sub>i</sub> = WEIGHTED RUNOFF COEFFICIENT  
 A<sub>i</sub> = SUB-AREA  
 C = RUNOFF COEFFICIENT FOR THE nth SUB-AREA (TABLE 4-5 DRAINAGE DESIGN MANUAL)  
 A<sub>n</sub> = nth SUB-AREA SIZE, IN ACRES

(6) Q DESIGN STORM = C x A x I (DESIGN STORM)

(7) REQUIRED POND CAPACITY IS:  
 Q<sub>DESIGN STORM</sub> - Q<sub>INTERCEPTED</sub> Required Capacity  
 DEVELOPED AREA = 24.00ac  
 HISTORICAL AREA = 35.14ac  
 OBTAIN THE REQUIRED CAPACITY TO AN ELEVATION OF 4451.70.  
 RETAINED STORMWATER WITH POND WILL BE DISCHARGED TO THE EXISTING ARROYO WITH THE PROPOSED OUTLET STRUCTURE.

REQUIRED POND CAPACITY IS:  
 Q<sub>DESIGN STORM</sub> - Q<sub>INTERCEPTED</sub> Required Capacity  
 DEVELOPED AREA = 15.59ac  
 HISTORICAL AREA = 15.14ac  
 WITH DEVELOPED RUNOFF CALCULATIONS LESS THAN HISTORICAL (UNDEVELOPED) CALCULATIONS, ALLOWED TO DISCHARGE DEVELOPED FLOWS.



POND CAPACITY TABLE			
ELEVATION (FEET)	CONTOUR AREA (FT <sup>2</sup> )	CONTOUR AREA (AC)	CONTOUR VOLUME (AC-FT)
4447	12,535	0.288	0
4448	14,391	0.330	0.309
4449	16,319	0.374	0.662
4450	18,318	0.420	1.059
4451	20,370	0.467	1.503
4451.7	21,858	0.502	1.843**
4452	22,495	0.542	1.995
4452.5	23,594	0.542	2.260
4453	24,692	0.566	2.537
4453.5	26,303	0.603	2.830***
4454	26,994	0.619	3.135
4455	29,378	0.674	3.783

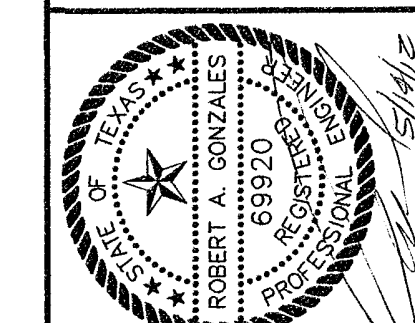
INLET ID	INLET TYPE	Q EXPECTED 100YR (CFS)	Q INTERCEPTED (CFS)	Q BYPASS (CFS)
A1	MOD. DROP INLET TYPE I (4-GRATE)	7.90	7.08	0.82 (FUTURE TO A2)
A1	MOD. DROP INLET TYPE I (5-GRATE)	7.83	6.90	0.93 (FUTURE TO E1)
B1	DROP INLET TYPE I (4-GRATE)	5.91	5.52	0.41 (FUTURE TO E1)
C1	MOD. DROP INLET TYPE I (4-GRATE)	5.07	4.85	0.22 (FUTURE TO E1)
D1	DROP INLET TYPE I (6-GRATE)	22.95	23.50	EMERGENCY OVERFLOW FLUMES
E1	DROP INLET TYPE I (3-GRATE)	5.27	5.09	0.18 (FUTURE TO D1)
F1	DROP INLET TYPE I (4-GRATE)	9.04	7.96	1.08 (FUTURE TO D1)
G2-I	MOD. DROP INLET TYPE I (2-GRATE)	3.49	3.44	0.05 (TO INLET G1-1)
G2-II	DROP INLET TYPE I (6-GRATE)	12.49	10.62	1.87 (TO INLET G1-2)
G1-I	MOD. DROP INLET TYPE I (2-GRATE)	0.76	0.76	0.0 (TO INLET D1)
G1-II	DROP INLET TYPE I (3-GRATE)	4.78	4.74	0.04 (TO INLET D1)
H1-I	MOD. DROP TYPE I (4-GRATE)	5.30	5.12	0.18 (TO INLET D1)
H1-II	DROP INLET TYPE I (4-GRATE)	6.00	5.71	0.29 (TO INLET D1)
A1-II	DROP INLET TYPE I (6-GRATE)	8.47	7.66	0.81 (FUTURE TO INLET D1-11)
C1-II	DROP INLET TYPE I (6-GRATE)	6.88	6.42	0.46 (FUTURE TO D2-II)
B1-II	MOD. DROP INLET TYPE I (4-GRATE)	9.13	7.90	1.23 (FUTURE TO D1-II)
B2-II	DROP INLET TYPE I (4-GRATE)	5.03	4.83	0.20 (FUTURE TO D1-II)
D1-I	DROP INLET TYPE I (5-GRATE)	7.00	6.67	0.33 (FUTURE TO FLUME)
D2-II	DROP INLET TYPE I (3-GRATE)	4.30	4.30	0.00 (FUTURE TO FLUME)

May 11, 2012, 9:52am brcj  
 C:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3rd CDEP Comments (05-10-12)\C-7 Drainage Plan.dwg

DATE	REVISION	BY

**QUANTUM**  
 ENGINEERING  
 INCORPORATED  
 Texas Registered Engineering Firm F-005146

414 Executive Center Blvd  
 Ste 200 El Paso TX 79902  
 P 915.532.7272  
 F 915.532.7373

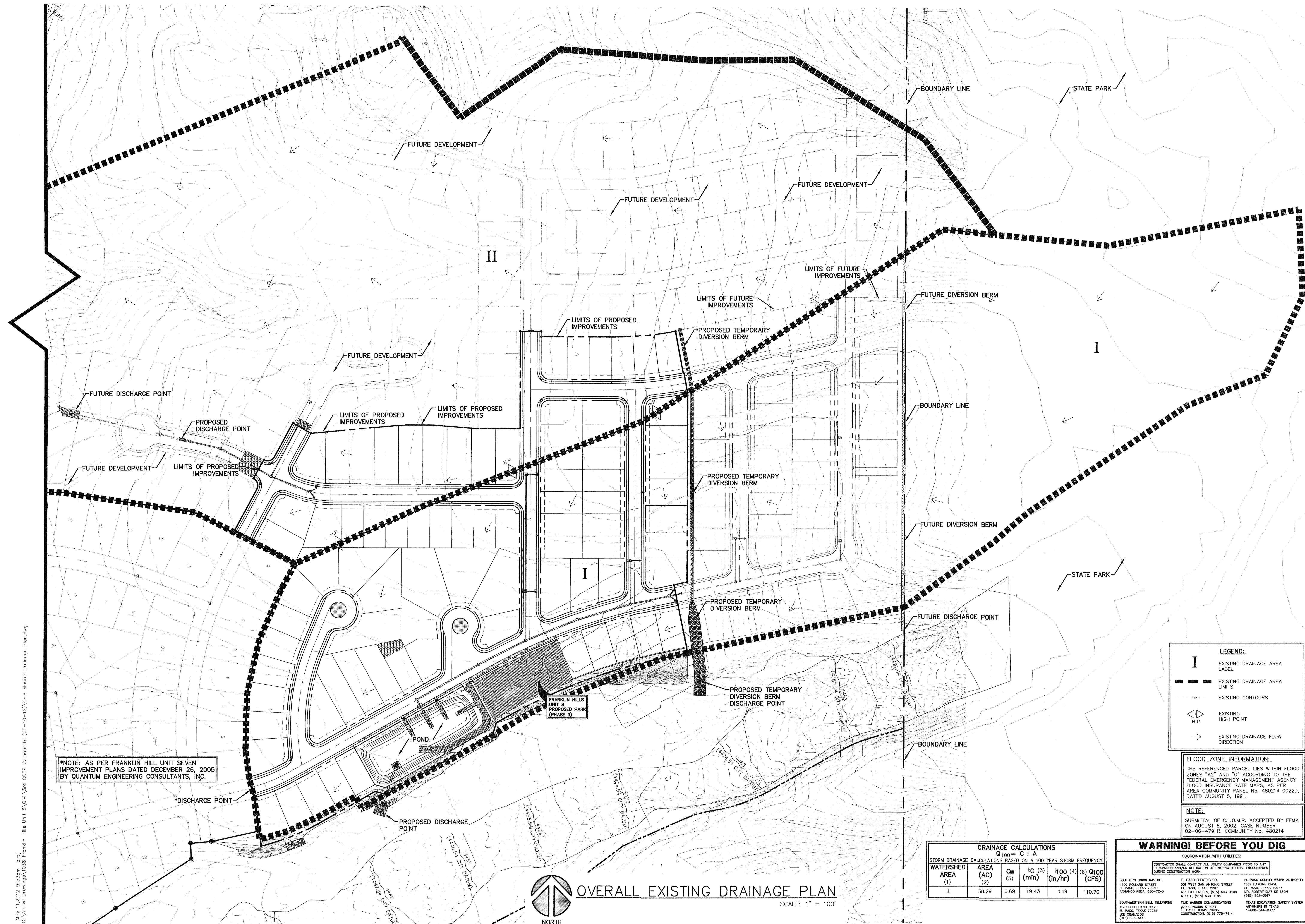


SCALE: HORIZONTAL: 1" = 80' VERTICAL: 1" = 10'  
 CONTOUR INTERVAL: N/A  
 DATE: 05-10-2012  
 DESIGN BY: M.A.G. CAD: C.A.G.  
 CHECKED BY: R.A.G. R.A.S.  
 APPVD BY: J.10338

**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
 EL PASO COUNTY, TEXAS

SHEET TITLE  
 DRAINAGE PLAN

May 11, 2012 9:53am brcj  
 C:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3rd COEP Comments (05-10-12)\C-8 Master Drainage Plan.dwg



\*NOTE: AS PER FRANKLIN HILL UNIT SEVEN IMPROVEMENT PLANS DATED DECEMBER 26, 2005 BY QUANTUM ENGINEERING CONSULTANTS, INC.

**LEGEND:**

- I EXISTING DRAINAGE AREA LABEL
- EXISTING DRAINAGE AREA LIMITS
- EXISTING CONTOURS
- H.P. EXISTING HIGH POINT
- EXISTING DRAINAGE FLOW DIRECTION

**FLOOD ZONE INFORMATION:**  
 THE REFERENCED PARCEL LIES WITHIN FLOOD ZONES "A2" AND "C" ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT AGENCY FLOOD INSURANCE RATE MAPS, AS PER AREA COMMUNITY PANEL No. 480214 0022D, DATED AUGUST 5, 1991.

**NOTE:**  
 SUBMITTAL OF C.L.O.M.R. ACCEPTED BY FEMA ON AUGUST 8, 2002, CASE NUMBER 02-06-479 R. COMMUNITY No. 480214

**DRAINAGE CALCULATIONS**  
 $Q_{100} = C I A$

STORM DRAINAGE CALCULATIONS BASED ON A 100 YEAR STORM FREQUENCY.

WATERSHED AREA (1)	AREA (AC) (2)	OW (5)	tc (min) (3)	1100 (in/hr) (4)	(6) Q100 (CFS)
I	38.29	0.69	19.43	4.19	110.70

**WARNING! BEFORE YOU DIG**

**COORDINATION WITH UTILITIES:**  
 CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES (ENCOURAGED) DURING CONSTRUCTION WORK.

SOUTHERN UNION GAS CO. 4700 POLARIS STREET EL PASO, TEXAS 79906 FRANKLIN RECA, 489-7243	EL PASO ELECTRIC CO. 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. BILL DOWLES, (915) 543-4108 MORILE, (915) 538-7194	EL PASO COUNTY WATER AUTHORITY 1508 PARKING DRIVE EL PASO, TEXAS 79927 MR. ROBERT GAZAR, LEON (915) 852-3977
SOUTHWESTERN BELL TELEPHONE 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 DE GRAMADOS (915) 585-5140	THE WARNER COMMUNICATIONS 820 CONCORD STREET EL PASO, TEXAS 79966 CONSTRUCTION, (915) 775-7414	TEXAS EXCAVATION SAFETY SYSTEM ANYWHERE IN TEXAS 1-800-344-8377

**OVERALL EXISTING DRAINAGE PLAN**  
 SCALE: 1" = 100'

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
 EL PASO COUNTY, TEXAS

**SHEET TITLE**  
 OVERALL EXISTING DRAINAGE PLAN

**SHEET NO.**  
 C-8

8 OF 58 SHEETS

**REFERENCES - BENCHMARK**  
 CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM)  
 CONTOUR INTERVAL ONE (1) FOOT

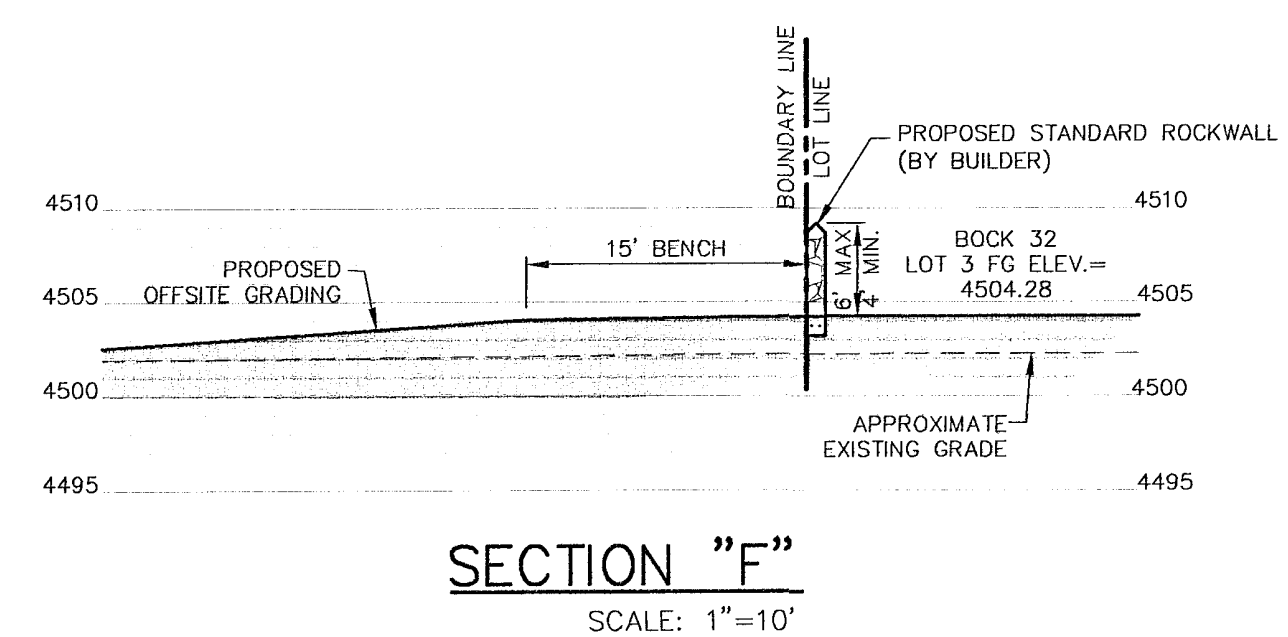
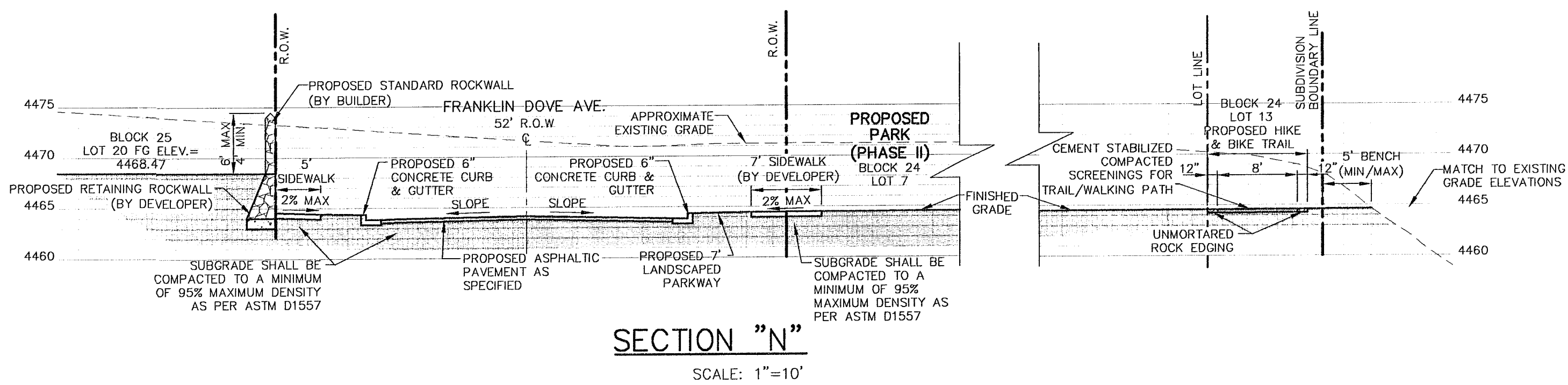
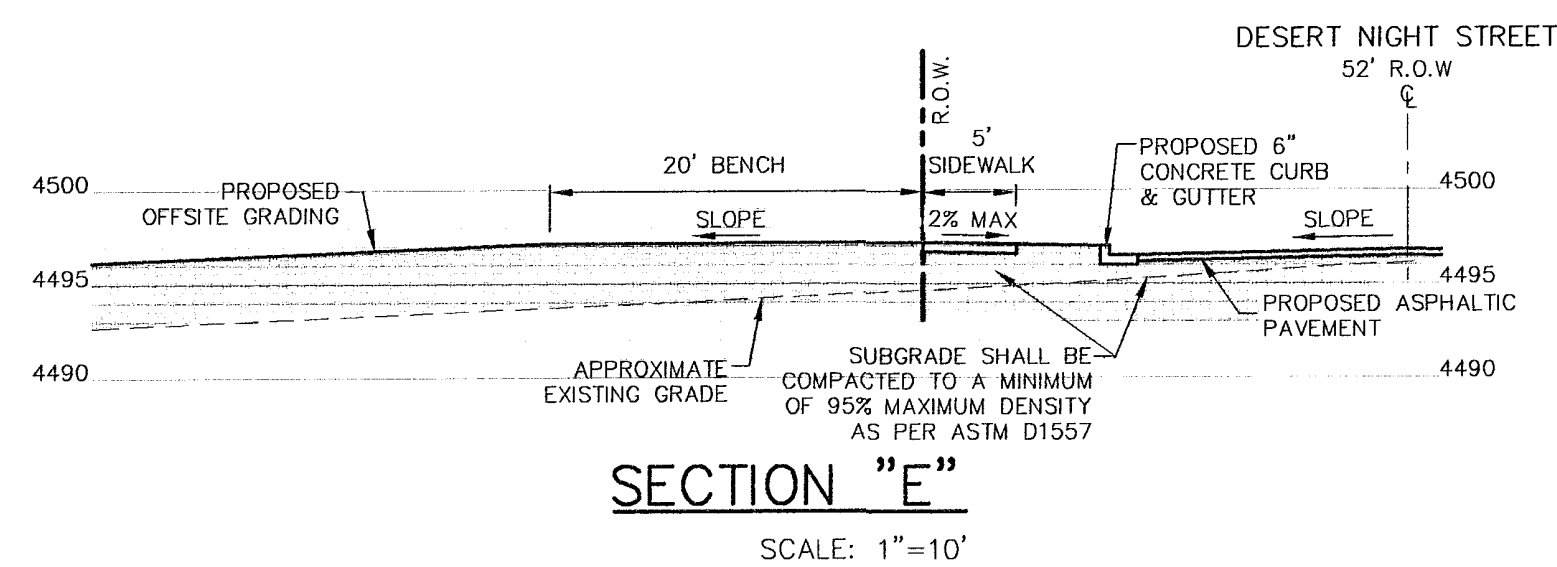
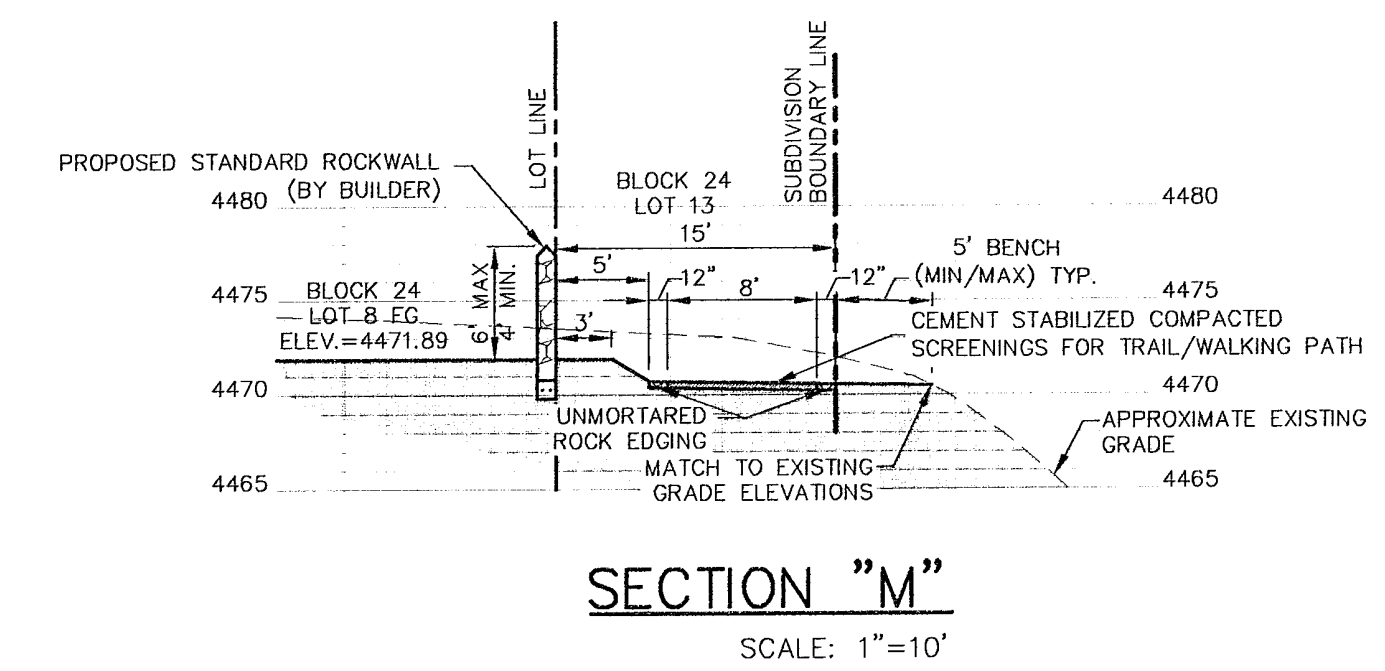
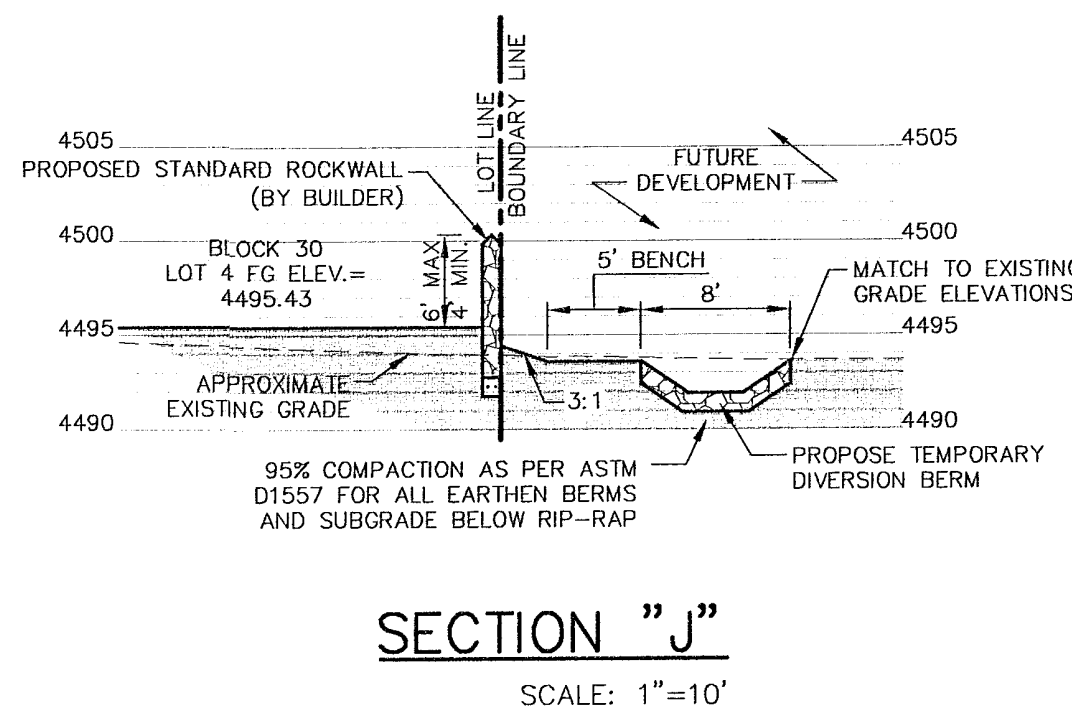
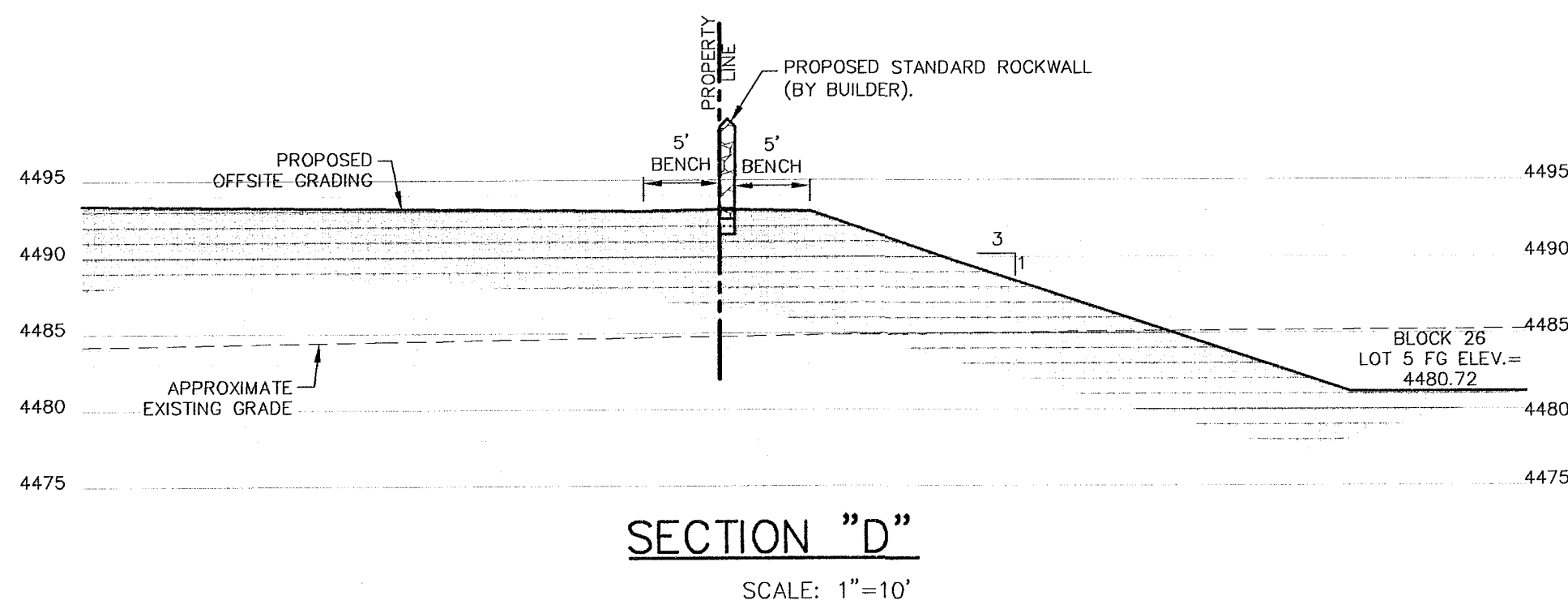
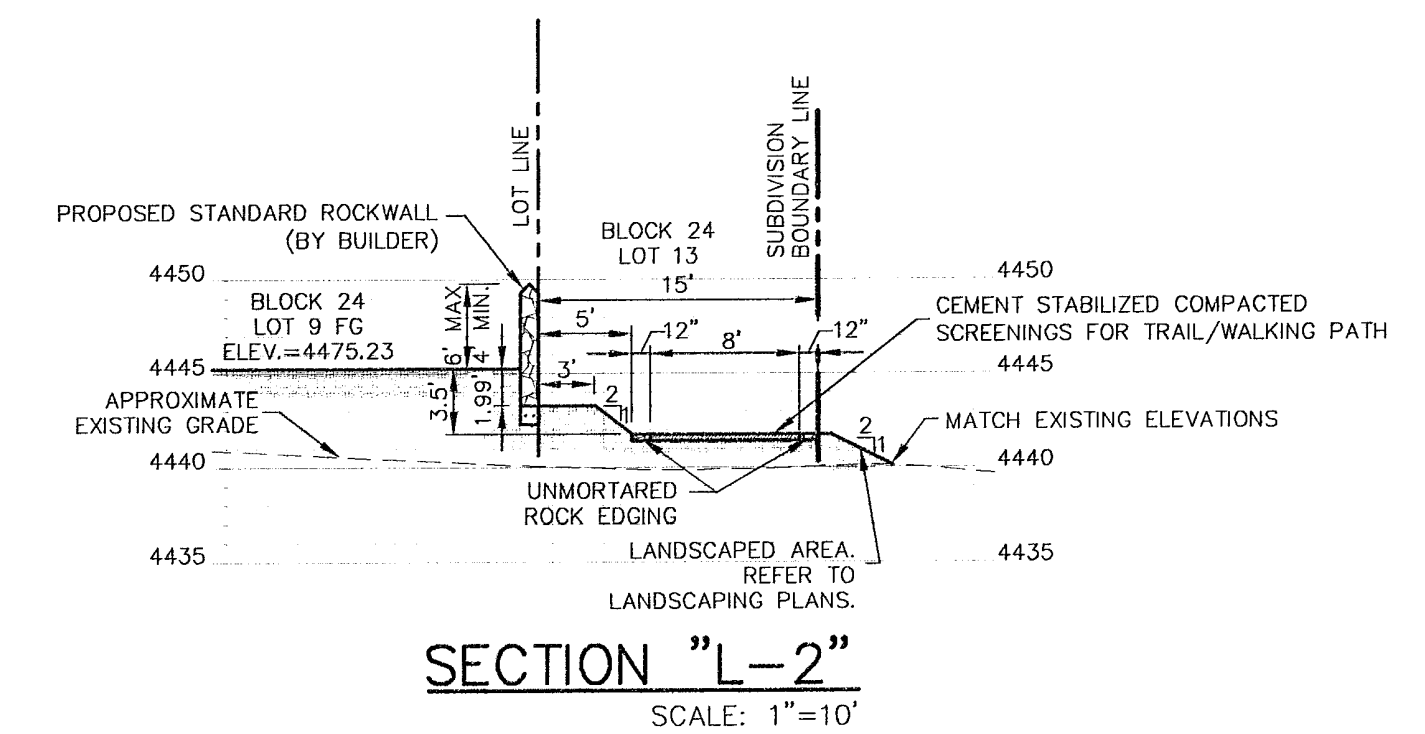
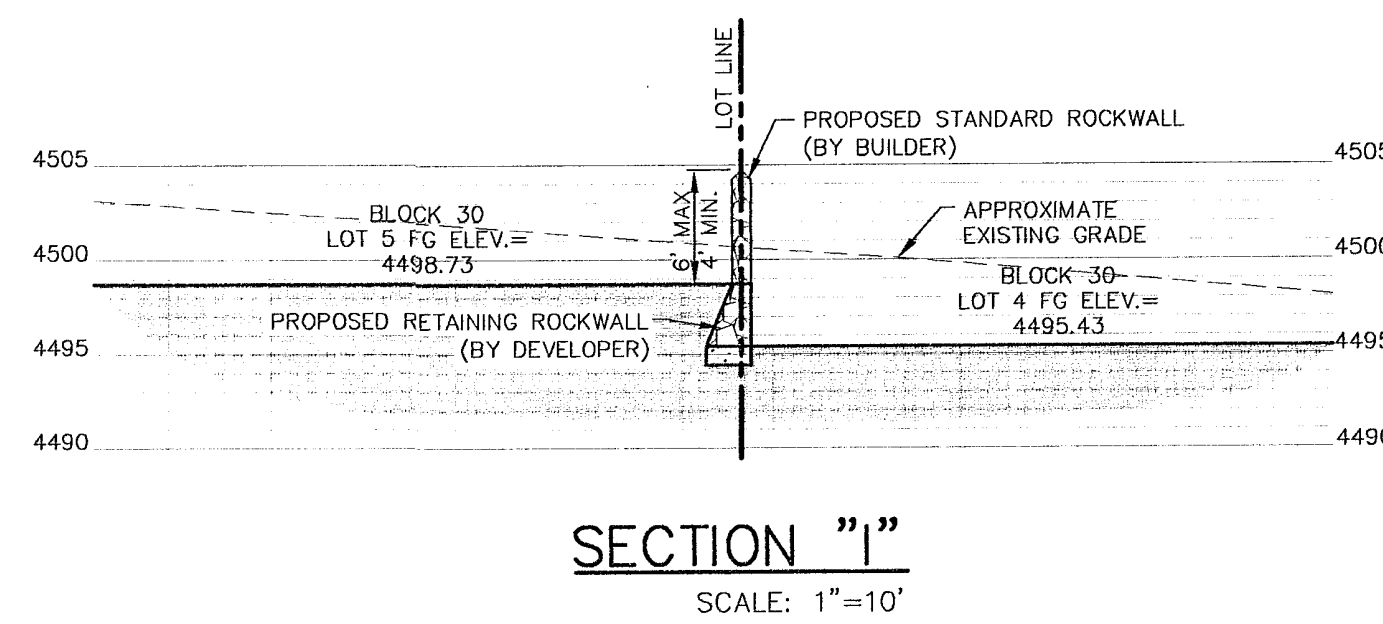
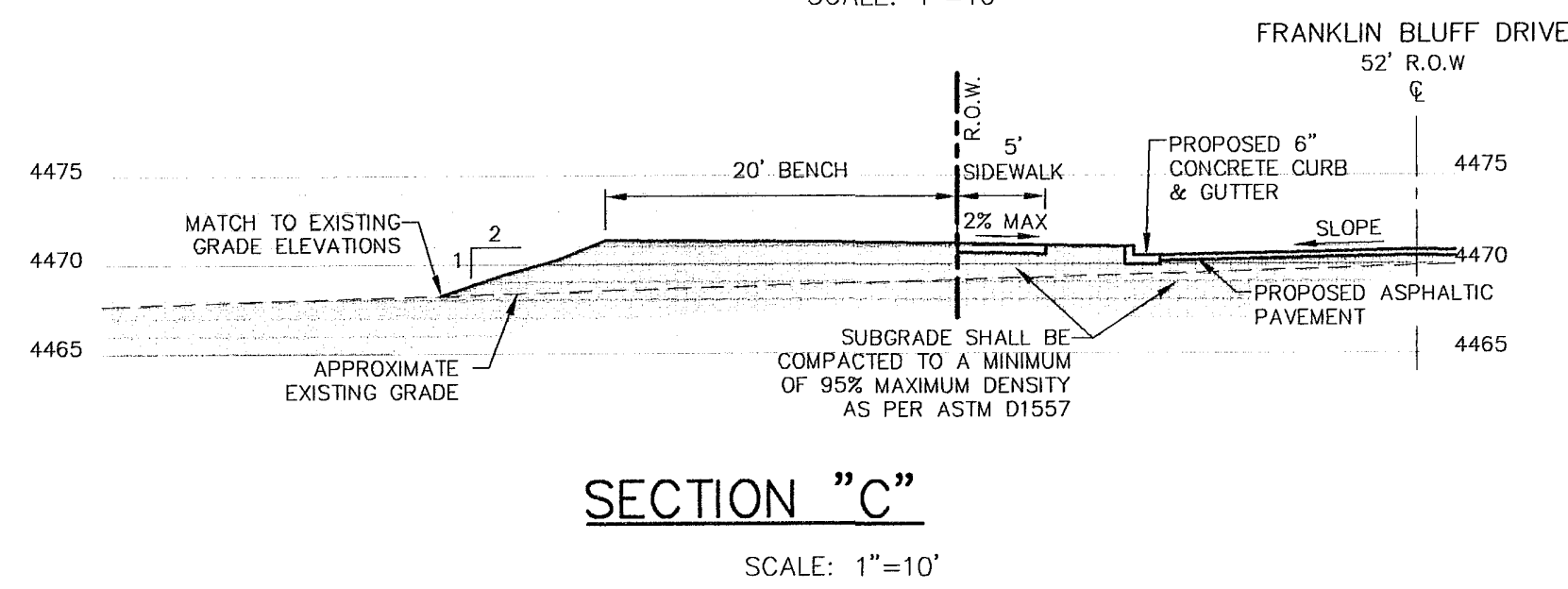
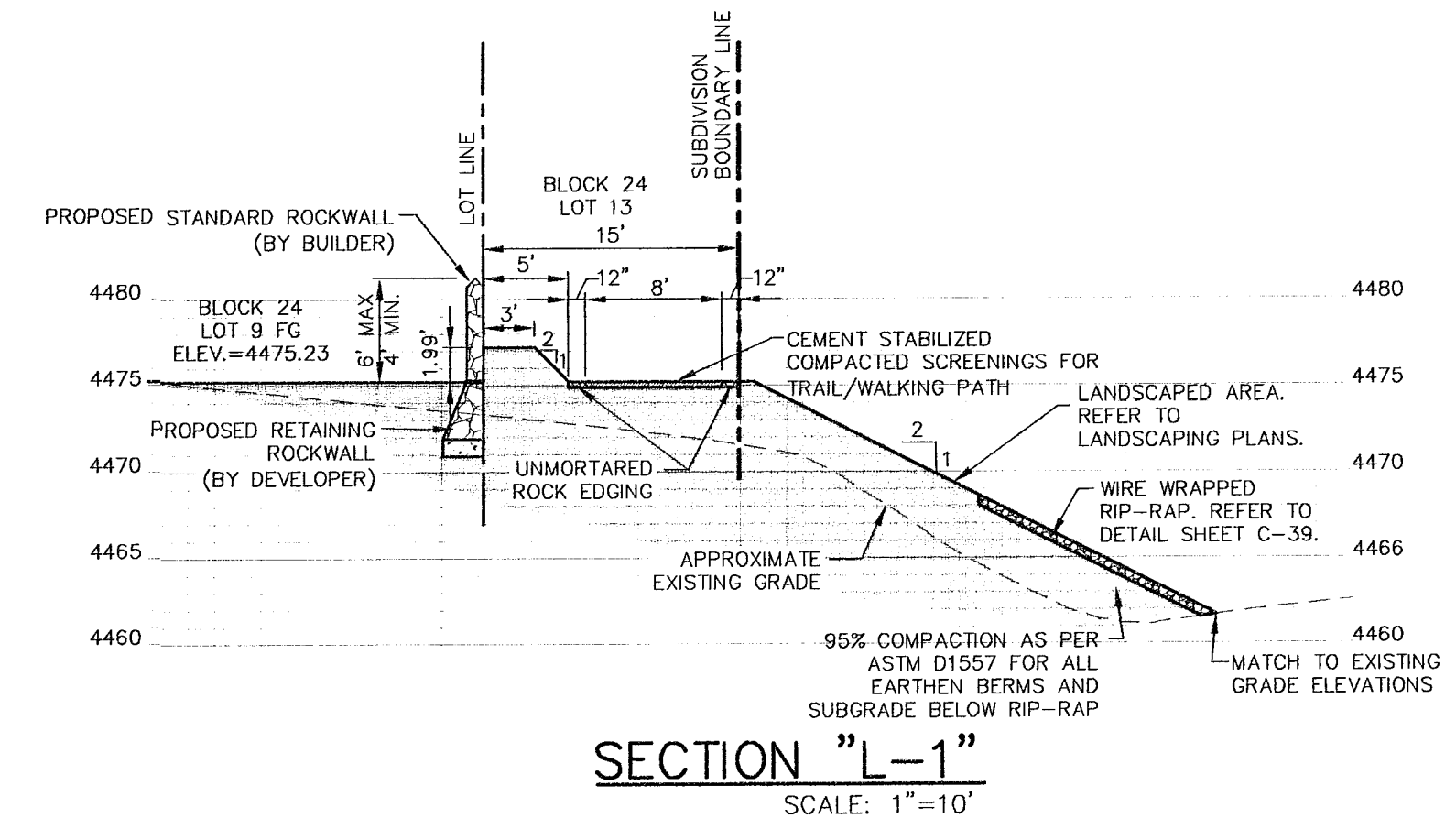
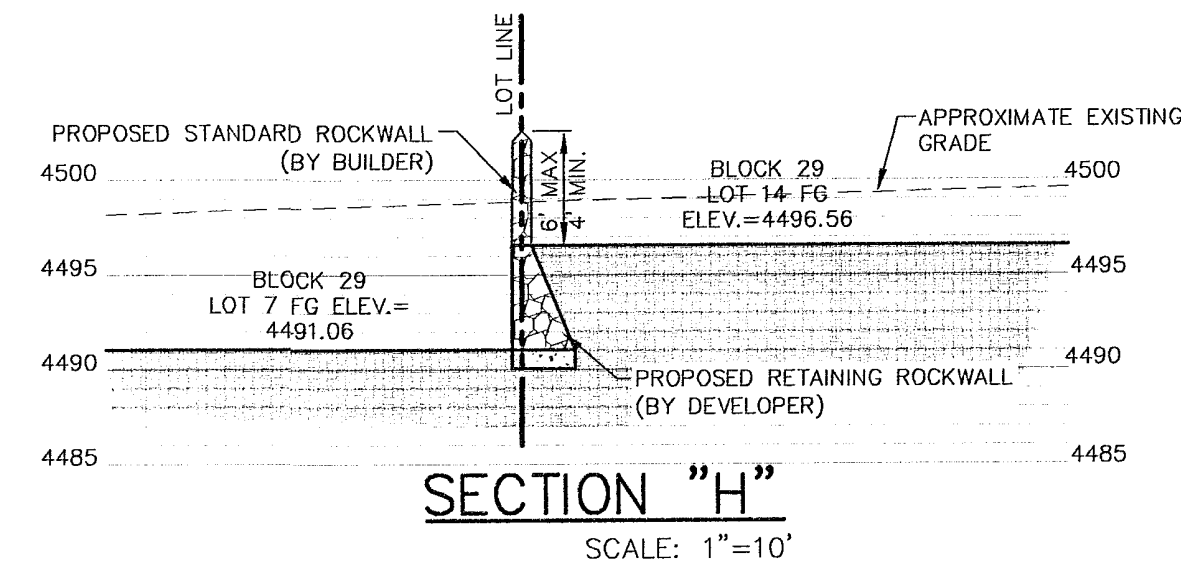
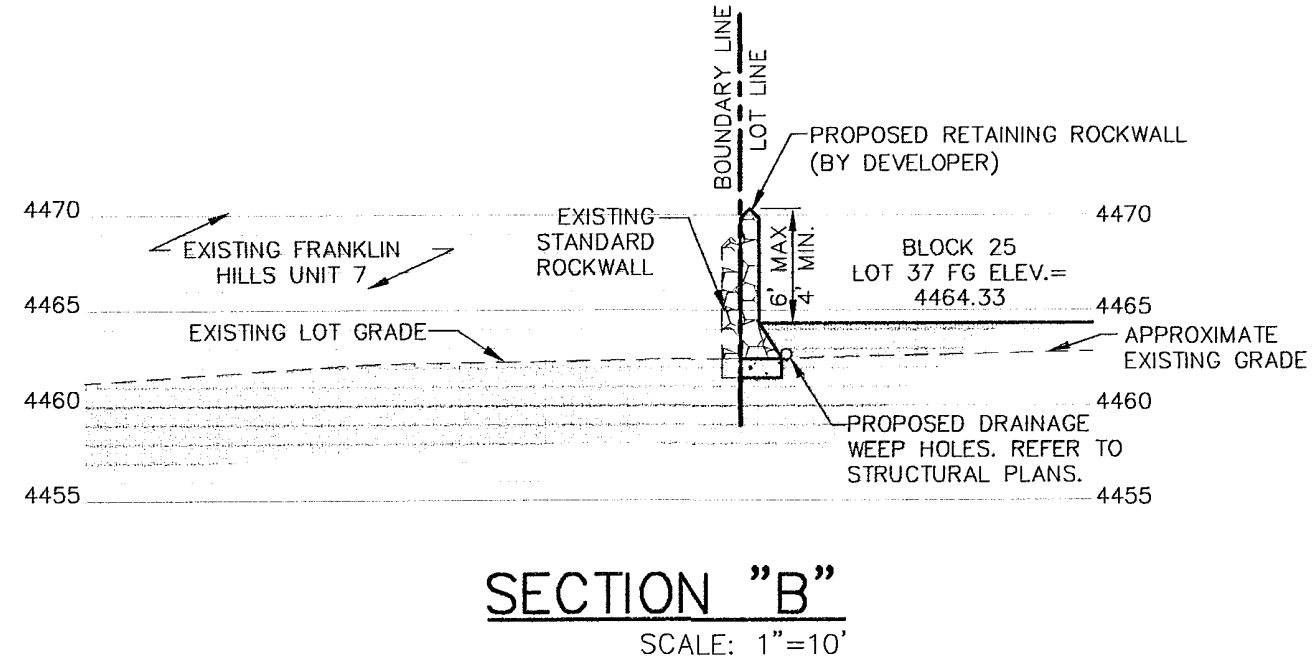
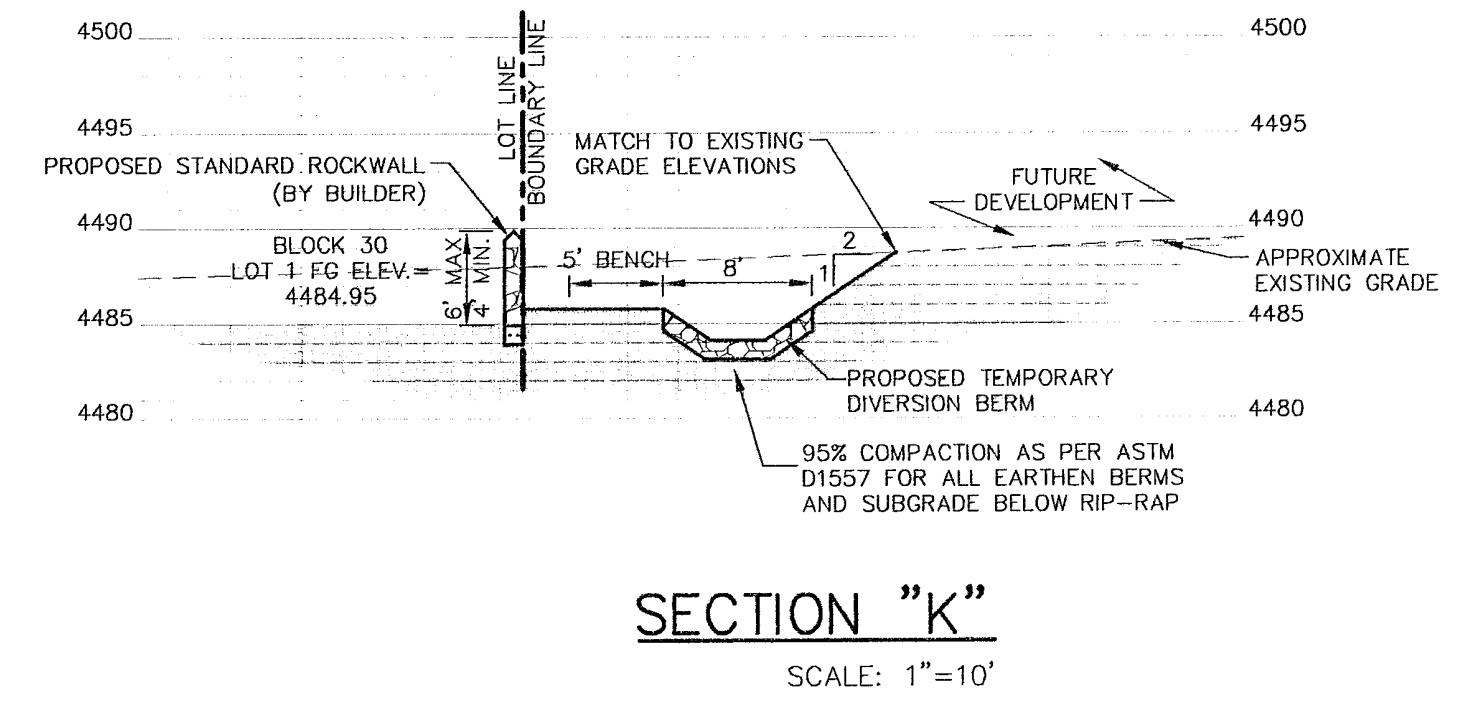
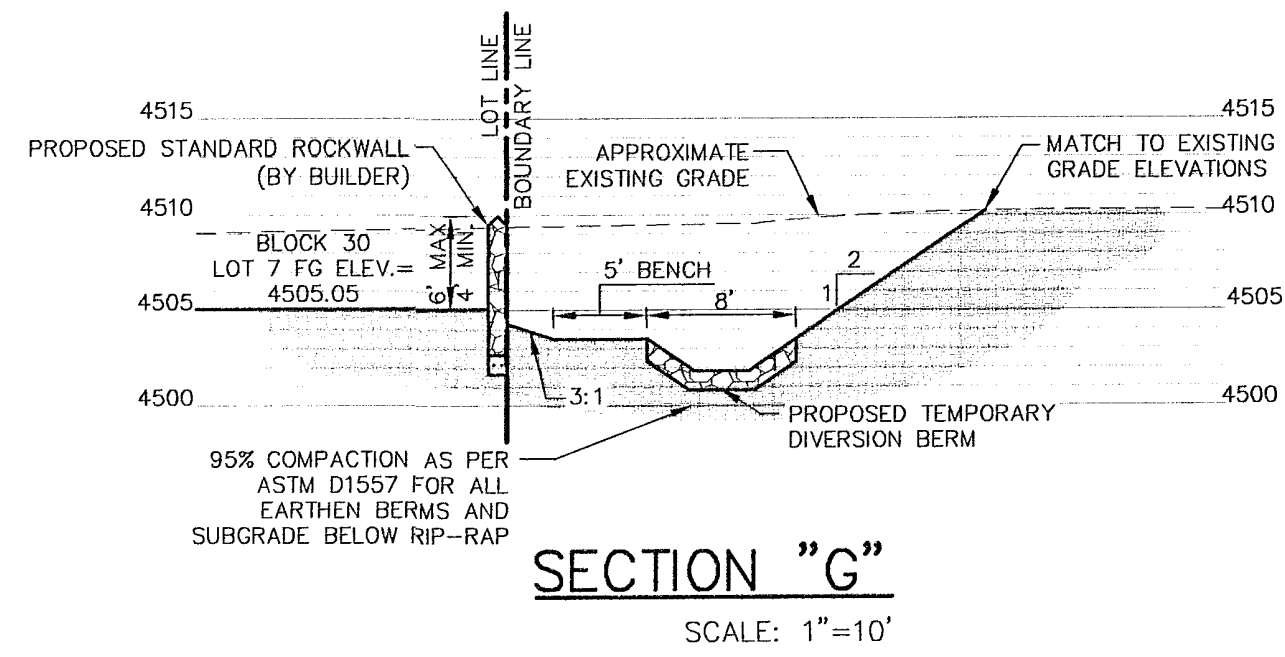
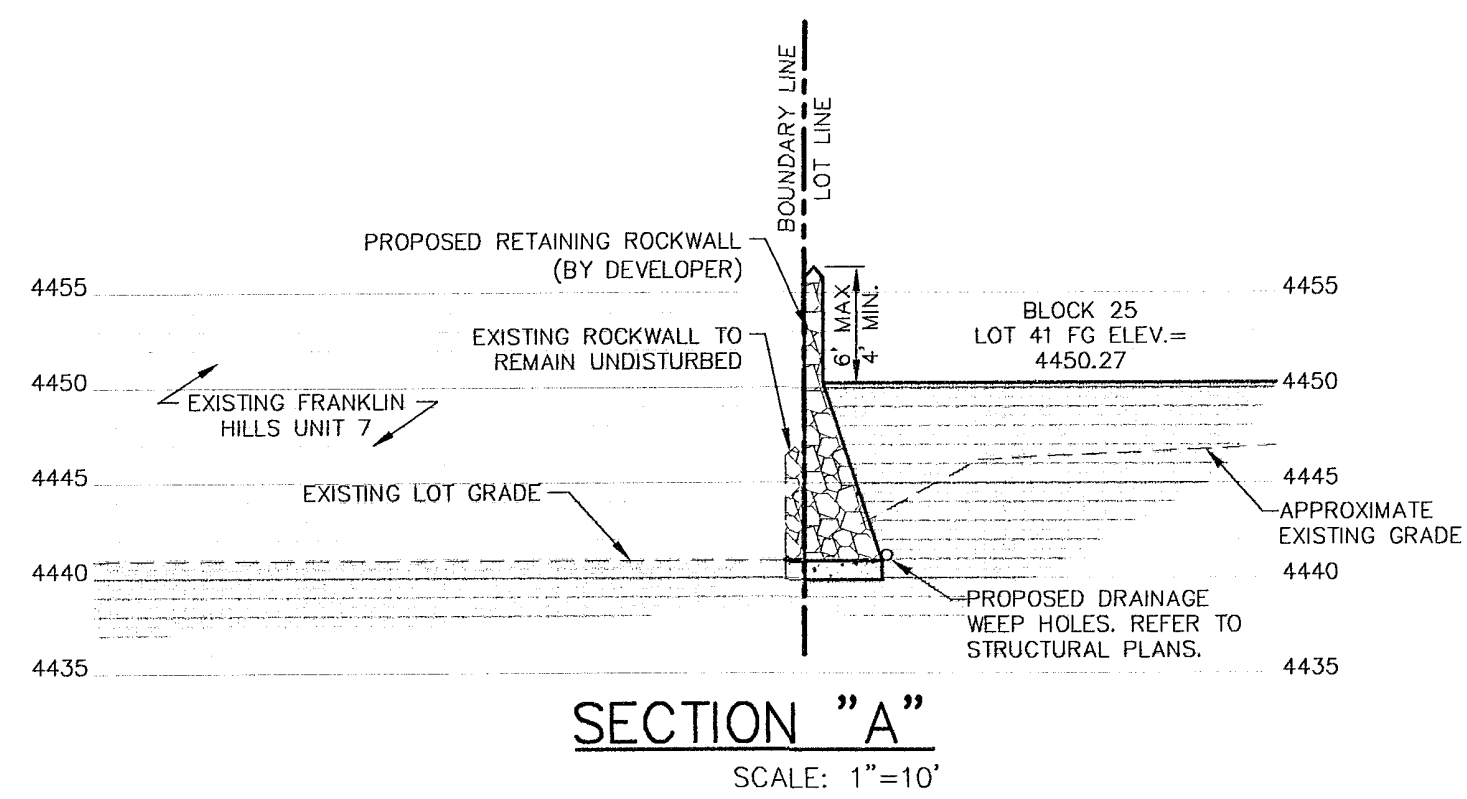
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**DATE:** 05-10-2012  
**DESIGN BY:** M.A.S. CAD  
**DRAWN BY:** C.A.D.  
**CHKD BY:** R.A.G.  
**APPVD BY:** R.A.G.  
**JOB NO.:** 1038

**QUANTUM ENGINEERING CONSULTANTS INCORPORATED**  
 414 Executive Center Blvd  
 Ste 200 El Paso TX 79902  
 P 915.532.2272  
 F 915.532.2973  
 Texas Registered Engineering Firm F-005146

**REGISTERED PROFESSIONAL ENGINEER**  
 ROBERT A. GONZALES  
 6970  
 5/18/12



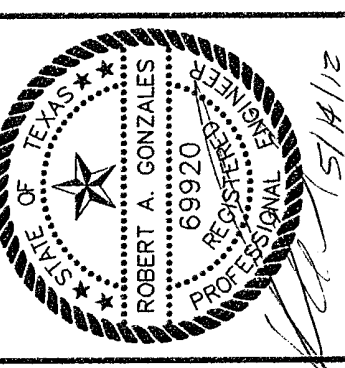


REVISION	DATE	BY

REFERENCES - BENCHMARK  
CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4822.0 (CITY DATUM) CONTOUR INTERVAL ONE (1) FOOT

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373

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CORPORATION  
Texas Registered Engineering Firm F-005146



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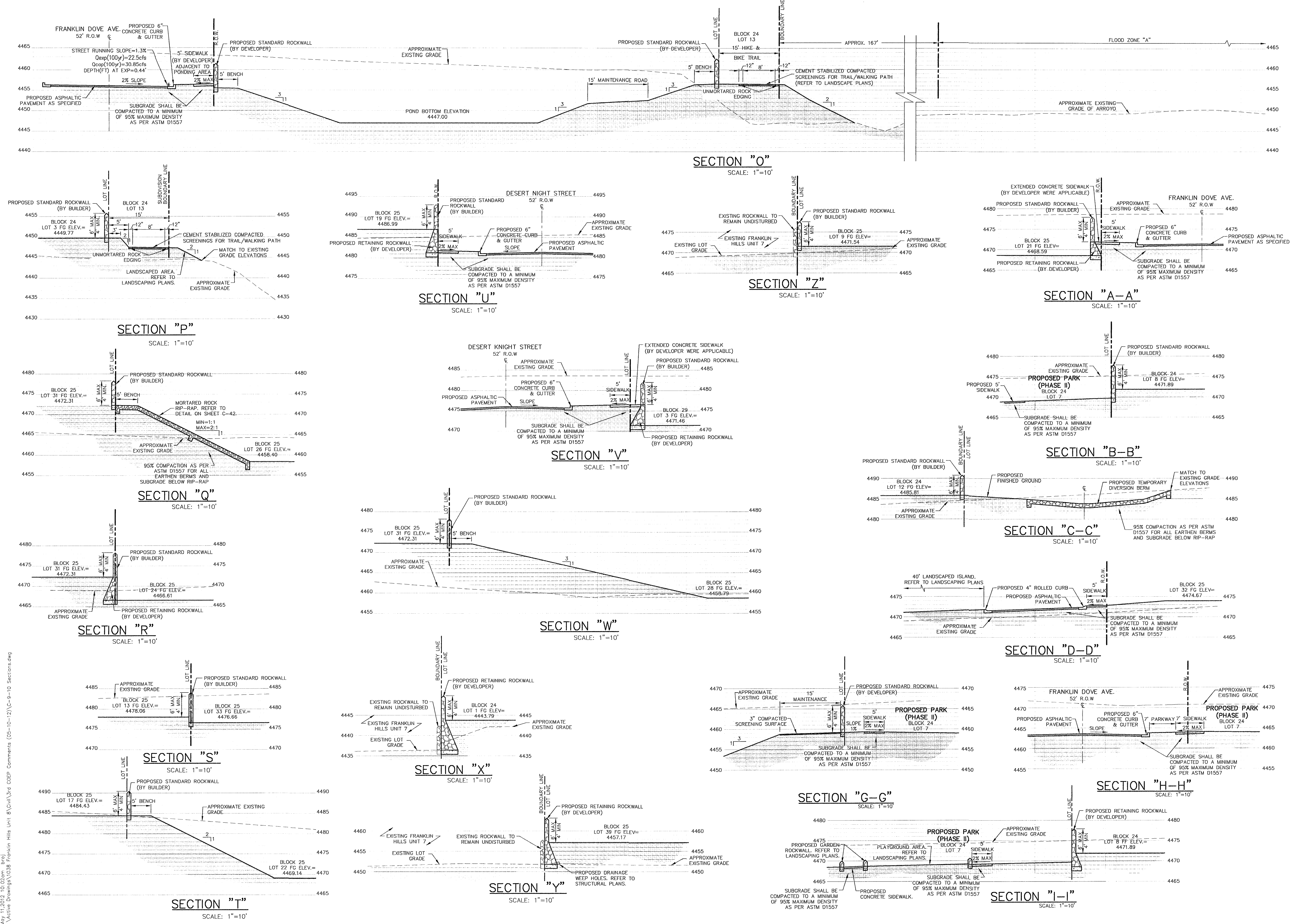
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DRAWN BY: CAD  
CHECKED BY: R.A.S.  
APPROVED BY: R.A.S.  
JOB NO.: 10335

PROJECT TITLE  
**FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

SHEET TITLE  
TYPICAL SECTIONS  
(1 OF 2)

SHEET NO.  
**C-9**  
9 OF 58 SHEETS

May 11, 2012, 10:02am, broj  
G:\Active Drawings\10335 Franklin Hills Unit 8\Civil\3rd CDEP Comments (05-10-12)\C-9-10 Sections.dwg



REFERENCES - BENCHMARK	
CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM). CONTOUR INTERVAL: ONE (1) FOOT.	
DATE	REVISION
BY	
414 Executive Center Blvd Ste 200 B Paso TX 79902 P 915.532.7272 F 915.532.7373 <b>QUANTUM</b> ENGINEERING CONSULTANTS INCORPORATED Texas Registered Engineering Firm F-005146	
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HORIZONTAL SCALE: 1"=10' VERTICAL SCALE: 1"=10' CONTOUR INTERVAL: N/A	DATE: 05-10-2012 DESIGN BY: M.A.G. DRAWN BY: C.A.D. CHECKED BY: R.A.G. APPROVED BY: J.O.B. JOB NO.: 1038
<b>FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS</b> EL PASO COUNTY, TEXAS	
PROJECT TITLE	
SHEET TITLE	
TYPICAL SECTIONS (2 OF 2)	
SHEET NO.	
<b>C-10</b> 10 OF 58 SHEETS	

May 11, 2012 10:02am bjo  
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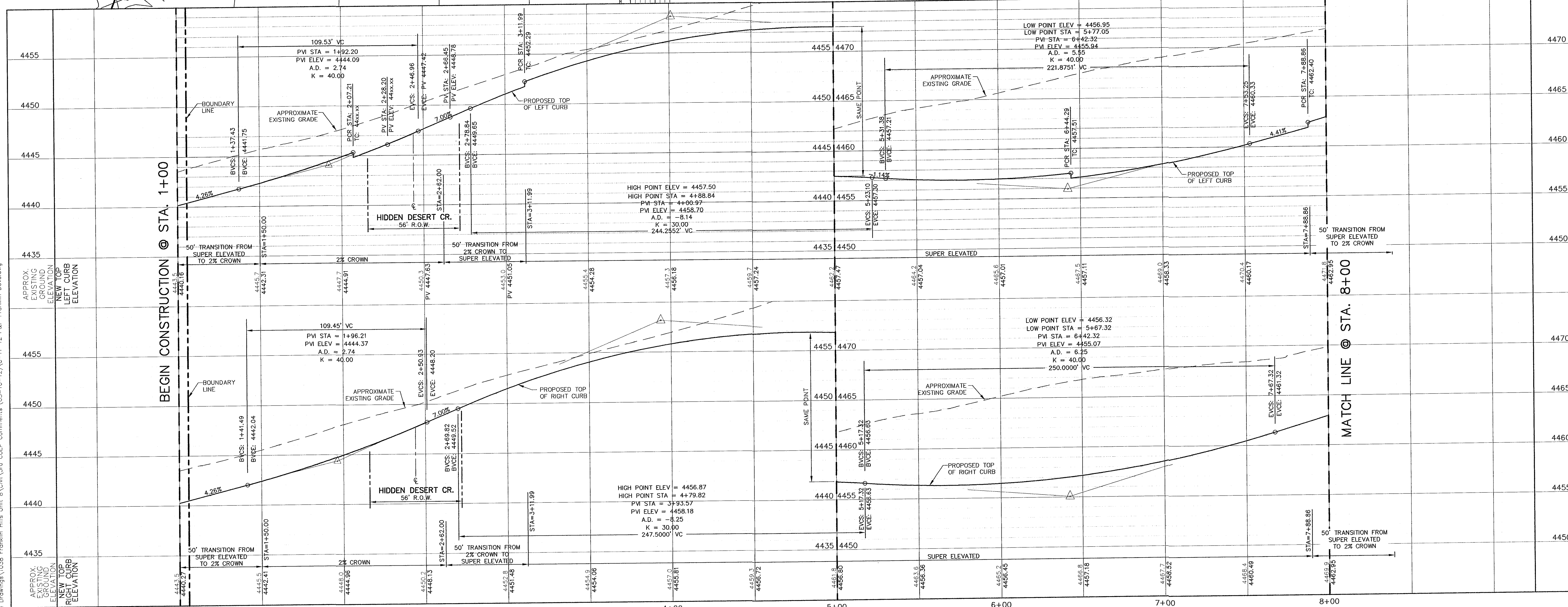
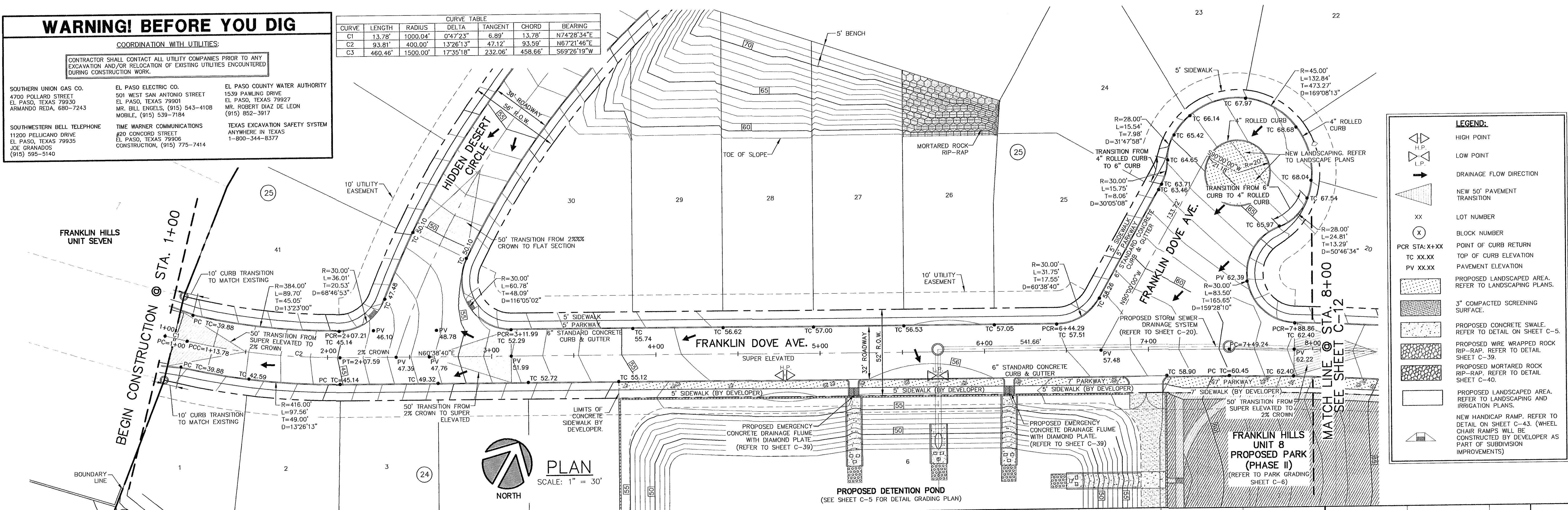
# WARNING! BEFORE YOU DIG

## COORDINATION WITH UTILITIES:

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

<b>SOUTHERN UNION GAS CO.</b> 4700 POLLARD STREET EL PASO, TEXAS 79930 ARMANDO REDA, 680-7243	<b>EL PASO ELECTRIC CO.</b> 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79927 MR. BILL ENGELS, (915) 543-4108 MOBILE, (915) 539-7104	<b>EL PASO COUNTY WATER AUTHORITY</b> 1539 PAWLING DRIVE EL PASO, TEXAS 79927 MR. ROBERT DIAZ DE LEON (915) 852-3917
<b>SOUTHWESTERN BELL TELEPHONE</b> 11200 PELICANO DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 595-5140	<b>TIME WARNER COMMUNICATIONS</b> 820 CONCORD STREET EL PASO, TEXAS 79906 CONSTRUCTION, (915) 775-7414	<b>TEXAS EXCAVATION SAFETY SYSTEM</b> ANYWHERE IN TEXAS 1-800-344-8377

CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD	BEARING
C1	13.78'	1000.04'	0°47'23"	6.89'	13.78'	N74°28'34"E
C2	93.81'	400.00'	13°26'13"	47.12'	93.59'	N67°21'46"E
C3	460.46'	1500.00'	17°35'18"	232.06'	458.66'	S69°26'19"W



**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM). CONTOUR INTERVAL: ONE (1) FOOT.

DATE	REVISION	BY

**QUANTUM**  
414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
Engineering  
P 915 532 7372  
F 915 532 7373  
Texas Registered Engineering Firm F-005146

**THE SEAL, SIGNATURE ON THIS DOCUMENT WAS AUTHORIZED BY:**  
Name: **Robert Diaz de Leon**  
Title: **Professional Engineer**  
The Responsible Engineer  
The Texas Engineering Board  
No. **89920**  
Exp. **08/31/18**

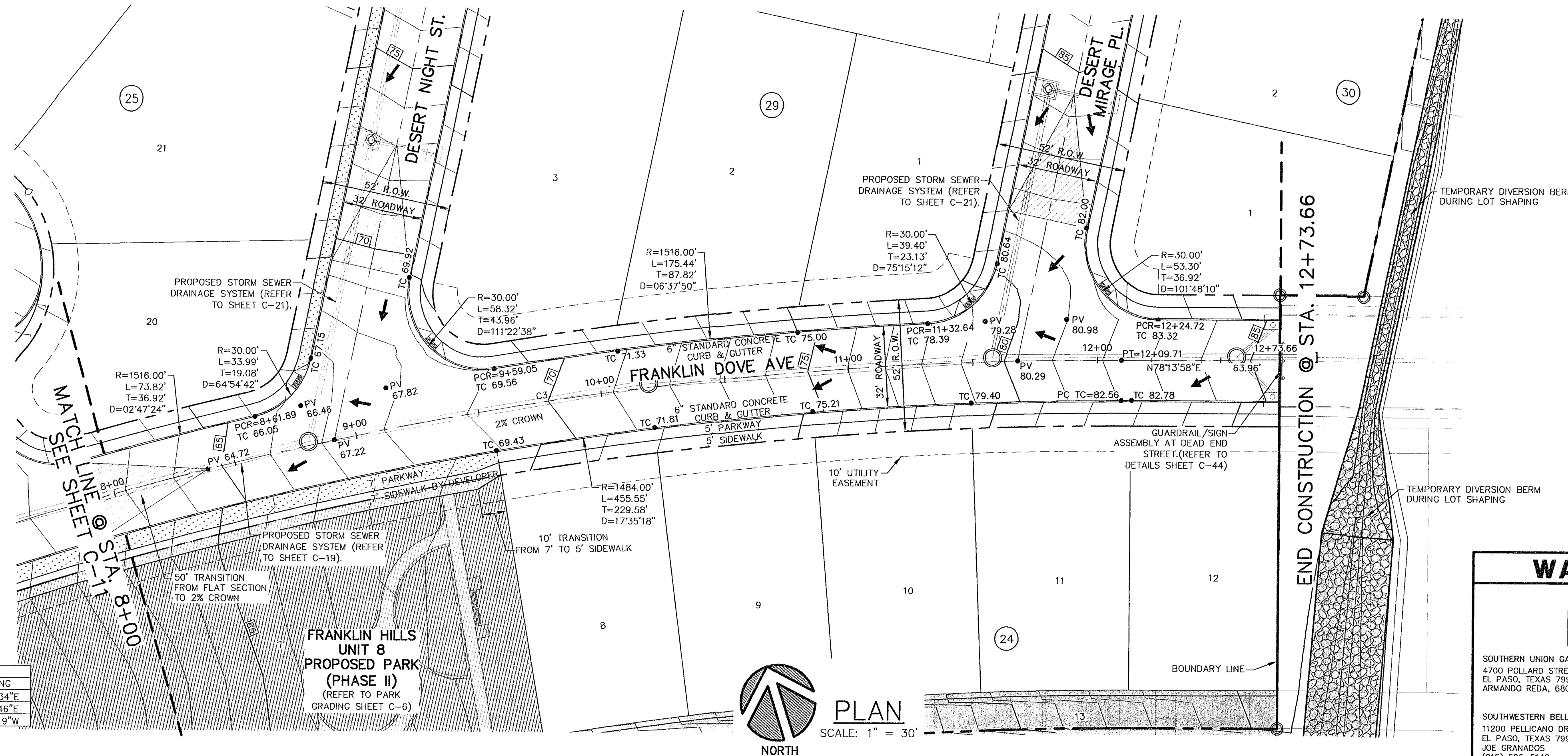
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**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
PLAN & PROFILE  
FRANKLIN DOVE AVE.  
STA. 1+00 TO STA. 8+00

**SHEET NO.**  
**C-11**  
11 OF 58 SHEETS

May 14, 2012 8:37am: brj  
O:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3rd CDEP Comments (05-10-12)\C-11-12 P&P Franklin Dove.dwg



**LEGEND:**

- H.P. HIGH POINT
- L.P. LOW POINT
- DRAINAGE FLOW DIRECTION
- NEW 50' PAVEMENT TRANSITION
- LOT NUMBER
- BLOCK NUMBER
- POINT OF CURB RETURN
- TOP OF CURB ELEVATION
- PAVEMENT ELEVATION
- PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING PLANS.
- PROPOSED LANDSCAPED AREA. REFER TO LANDSCAPING AND IRRIGATION PLANS.
- PROPOSED TEMPORARY DIVERSION BERM. REFER TO DETAIL SHEET C-49.
- PROPOSED HANDICAP RAMP. REFER TO DETAIL ON SHEET C-43. (WHEEL CHAIR RAMPS WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)

**WARNING! BEFORE YOU DIG**

**COORDINATION WITH UTILITIES:**

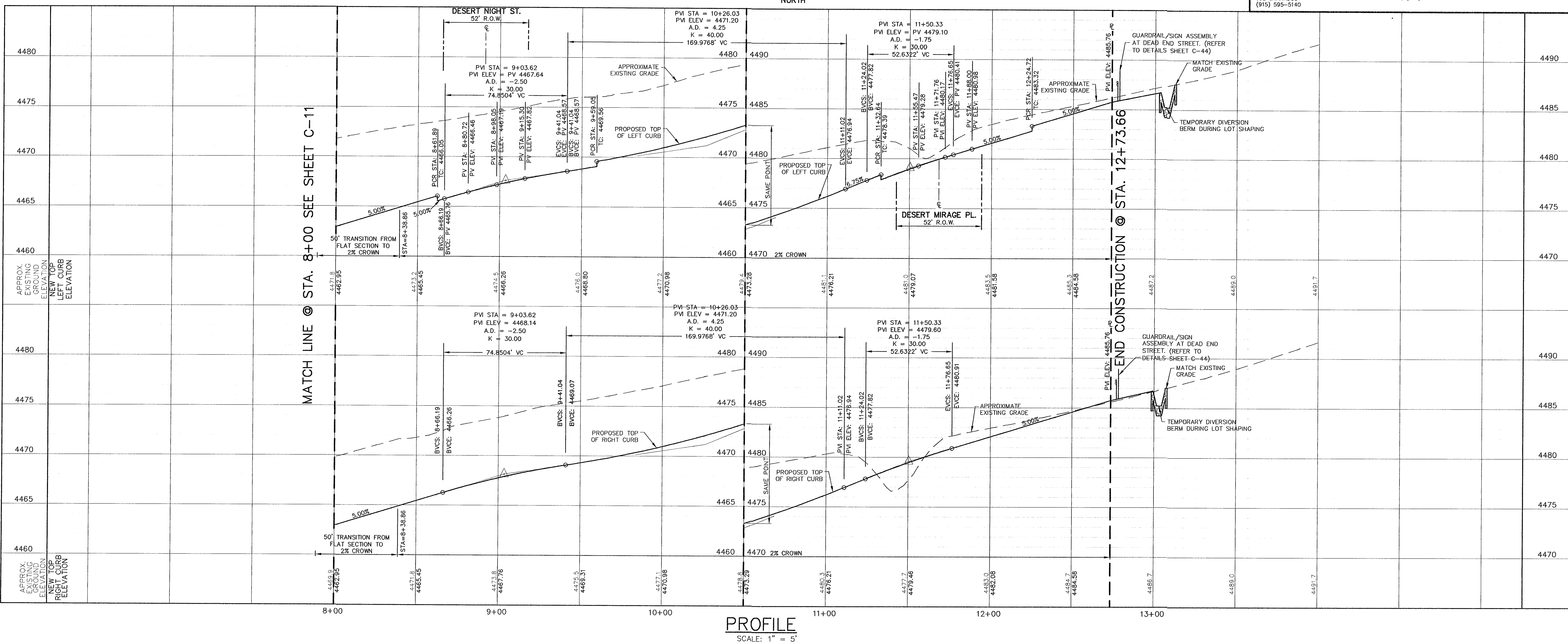
CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

SOUTHERN UNION GAS CO. 4700 POLLARD STREET EL PASO, TEXAS 79903 ARMANDO REDA, 680-7243	EL PASO ELECTRIC CO. 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. BILL ENCELS, (915) 543-4108 MOBILE, (915) 539-7184	EL PASO COUNTY WATER AUTHORITY 1539 PAWLING DRIVE EL PASO, TEXAS 79927 MR. ROBERT DIAZ DE LEON (915) 852-3917
SOUTHWESTERN BELL TELEPHONE 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 595-5140	MOBILE WARNER COMMUNICATIONS #20 CONCORD STREET EL PASO, TEXAS 79906 CONSTRUCTION, (915) 775-7414	TEXAS EXCAVATION SAFETY SYSTEM ANYWHERE IN TEXAS 1-800-344-6377

**CURVE TABLE**

CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD	BEARING
C1	13.28'	1000.04'	0°47'23"	6.89'	13.78'	N74°28'34"E
C2	93.81'	400.00'	13°26'13"	47.12'	93.59'	N67°21'46"E
C3	460.46'	1500.00'	17°35'18"	232.06'	458.66'	S69°26'19"W

**PLAN**  
SCALE: 1" = 30'



**PROFILE**  
SCALE: 1" = 5'

**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET  
ELEVATION = 4382.20 (CITY DATUM)  
CONTOUR INTERVAL: ONE (1) FOOT

DATE	REVISION	BY

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373

**QUANTUM**  
ENGINEERING  
CONSULTANTS  
INCORPORATED  
Texas Registered Engineering Firm F-005146

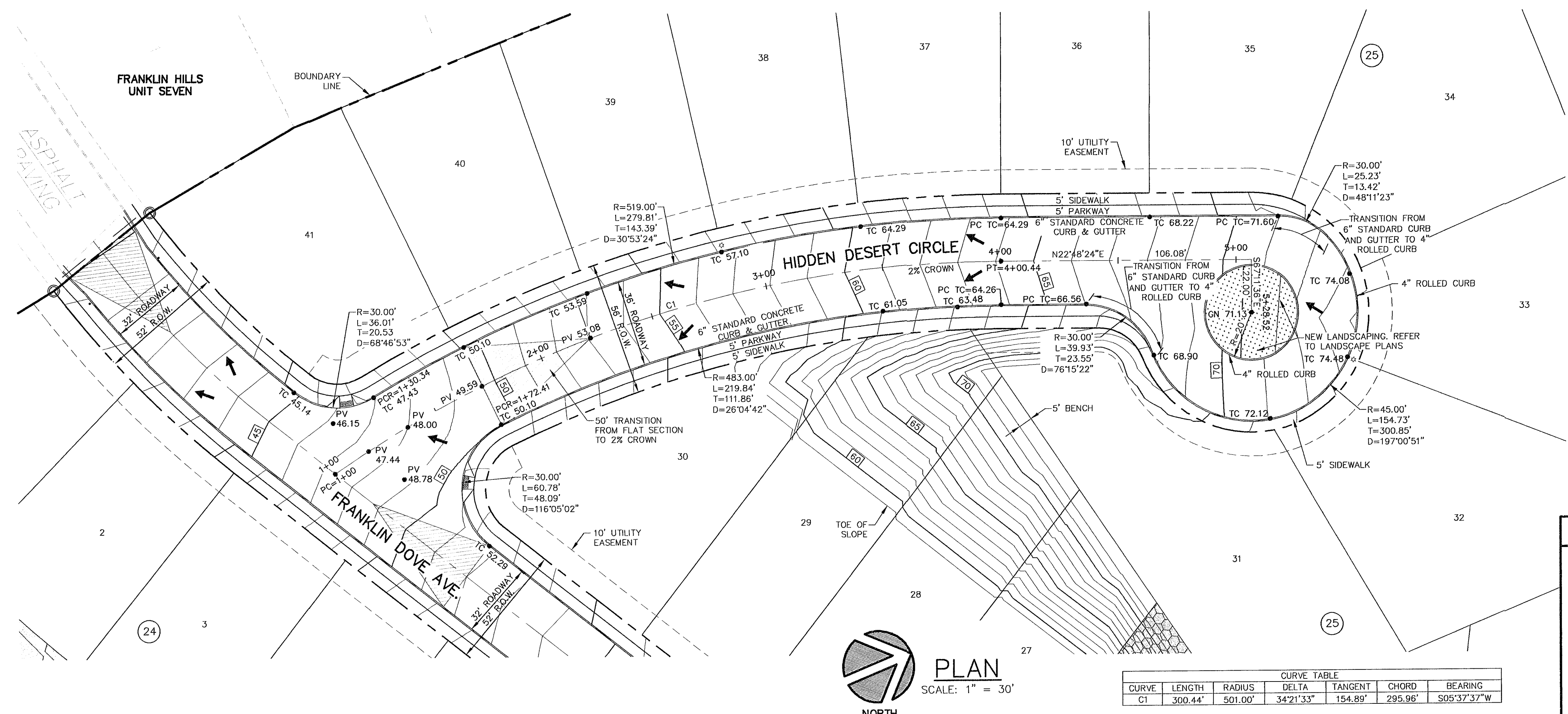
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VERTICAL: CONTOUR INTERVAL: 5'-10'-2012  
DATE: 05-10-2012  
DESIGN BY: M.A.G.  
DRAWN BY: C.A.D.  
CHKD BY: R.A.G.  
APPRO. BY: J.A.G.  
JOB NO.: 1038

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
PLAN & PROFILE  
FRANKLIN DOVE AVE.  
STA. 8+00 TO  
STA. 12+73.66

**SHEET NO.**  
**C-12**  
12 OF 58 SHEETS

MAY 11, 2012 10:46am broj  
C:\Active Drawings\1038 Franklin Hills Unit 8\1038.dwg Comments (05-10-12)\C-11-12 P&P Franklin Dove.dwg



**PLAN**  
SCALE: 1" = 30'  
NORTH

CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD	BEARING
C1	300.44'	501.00'	34°21'33"	154.89'	295.96'	S05°37'37"W

**LEGEND:**

- H.P. HIGH POINT
- L.P. LOW POINT
- DRAINAGE FLOW DIRECTION
- NEW 50' PAVEMENT TRANSITION
- XX LOT NUMBER
- (X) BLOCK NUMBER
- PCR STA: X+XX POINT OF CURB RETURN
- TC XX.XX TOP OF CURB ELEVATION
- PV XX.XX PAVEMENT ELEVATION
- NEW LANDSCAPE, REFER TO LANDSCAPE PLANS
- NEW HANDICAP RAMP, REFER TO DETAIL ON SHEET C-42. (WHEEL CHAIR RAMP WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)

**WARNING! BEFORE YOU DIG**

**COORDINATION WITH UTILITIES:**

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

SOUTHERN UNION GAS CO. 4700 POLLARD STREET EL PASO, TEXAS 79930 ARMANDO REDA, 680-7243	EL PASO ELECTRIC CO. 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. BILL ENGLIS, (915) 543-4108 MOBILE, (915) 539-7184	EL PASO COUNTY WATER AUTHORITY 1539 PAWLING DRIVE EL PASO, TEXAS 79927 MR. ROBERT DIAZ DE LEON (915) 852-3917
SOUTHWESTERN BELL TELEPHONE 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 595-5140	TIME WARNER COMMUNICATIONS #20 CONCORD STREET EL PASO, TEXAS 79906 CONSTRUCTION, (915) 775-7414	TEXAS EXCAVATION SAFETY SYSTEM ANYWHERE IN TEXAS 1-800-344-8377

**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM)  
CONTOUR INTERVAL: ONE (1) FOOT

REVISION	DATE	BY

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7372  
F 915.532.7373

**QUANTUM**  
engineering  
incorporated  
Texas Registered Engineering Firm F-005146

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SCALE: 1" = 30'  
HORIZONTAL: 1" = 30'  
VERTICAL: 1" = 5'  
CONTOUR INTERVAL: 1'

DATE: 05-10-2013  
DESIGN BY: M.A.S.  
CHECKED BY: CAD  
APPROVED BY: R.A.G.  
JOB NO.: 1038

**PROJECT TITLE**

**FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS**

EL PASO COUNTY, TEXAS

**SHEET TITLE**

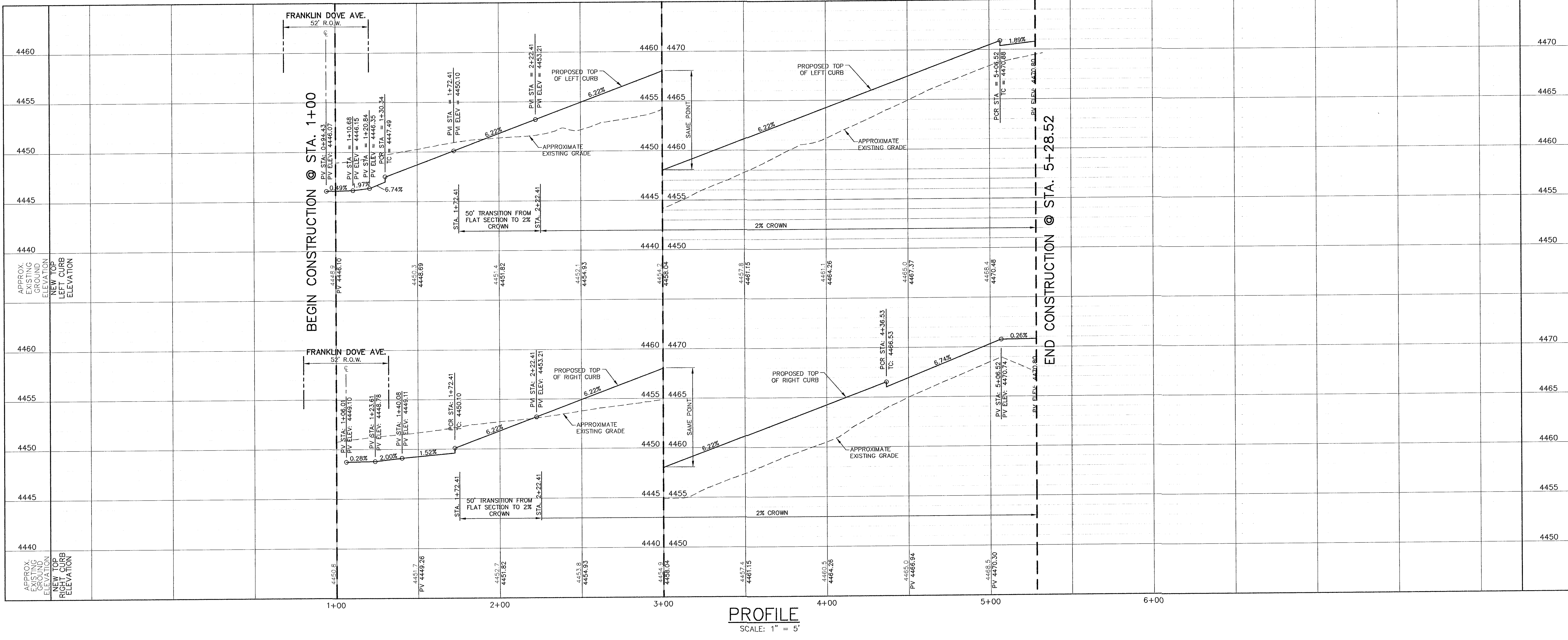
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HIDDEN DESERT  
CIRCLE  
STA. 1+00 TO  
STA. 5+28.52**

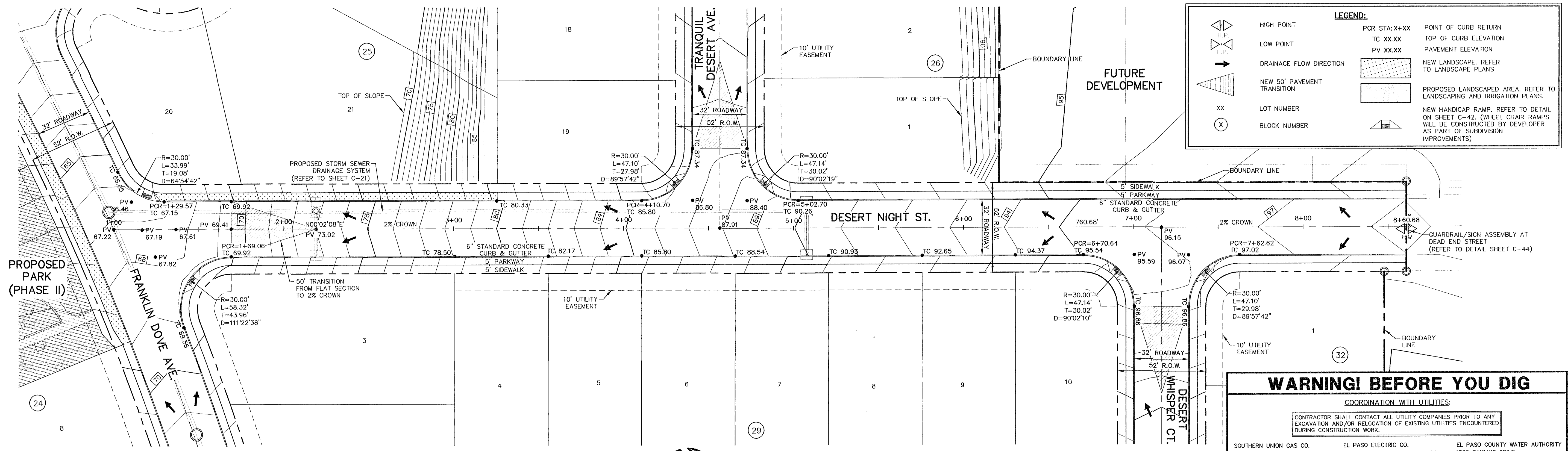
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**C-13**

13 OF 58 SHEETS

May 11, 2013 10:15am hsz  
C:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3rd CSDP Comments (05-10-12)\C-13 P&P Hidden Desert.dwg





**LEGEND:**

- High Point (H.P.)
- Low Point (L.P.)
- Drainage Flow Direction
- New 50' Pavement Transition
- Lot Number (XX)
- Block Number (X)
- Point of Curb Return (PCR STA: X+XX)
- Top of Curb Elevation (TC XX.XX)
- Pavement Elevation (PV XX.XX)
- New Landscape (Refer to Landscape Plans)
- Proposed Landscaped Area (Refer to Landscaping and Irrigation Plans)
- New Handicap Ramp (Refer to Detail on Sheet C-42)
- Wheel Chair Ramps (Will be constructed by developer as part of subdivision improvements)

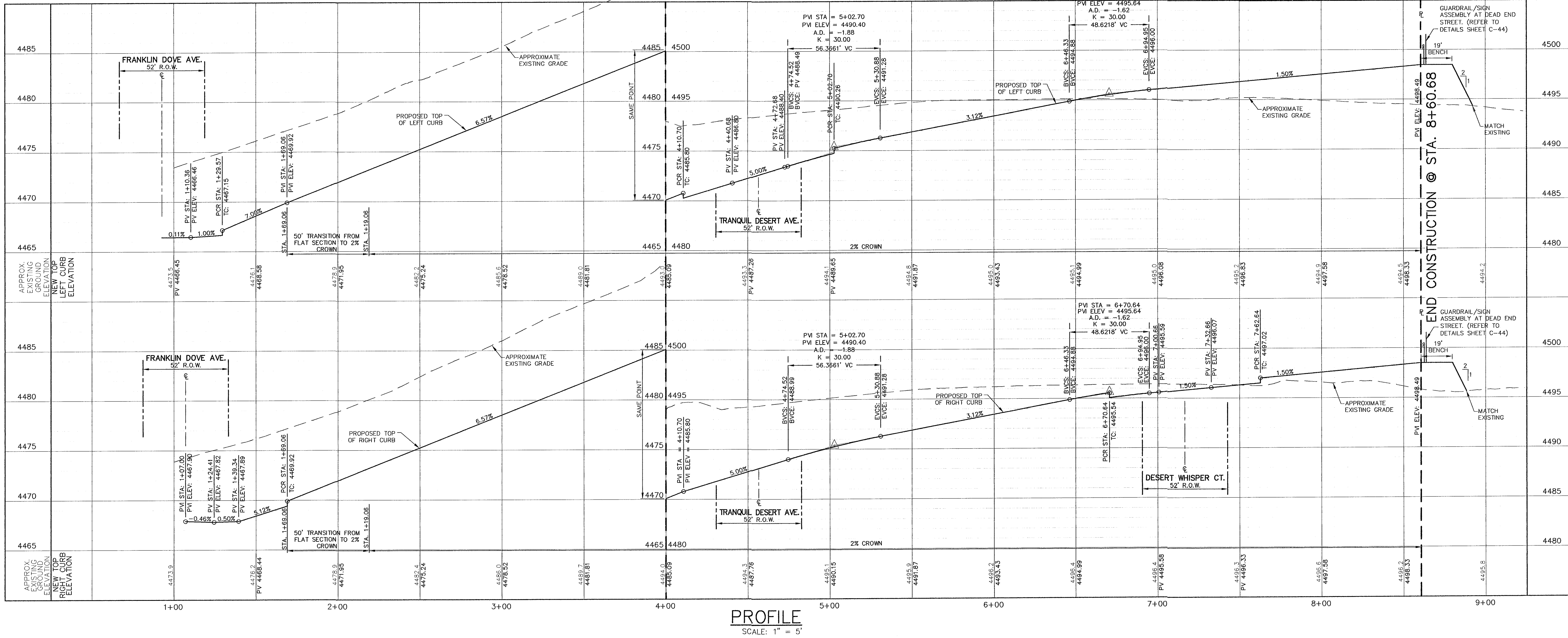
**WARNING! BEFORE YOU DIG**

**COORDINATION WITH UTILITIES:**

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

SOUTHERN UNION GAS CO. 4700 POLLARD STREET EL PASO, TEXAS 79930 ARMANDO REDA, 680-7243	EL PASO ELECTRIC CO. 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. BILL ENGELS, (915) 543-4108 MOBILE, (915) 539-7184	EL PASO COUNTY WATER AUTHORITY 1539 PAWLING DRIVE EL PASO, TEXAS 79927 MR. ROBERT DIAZ DE LEON (915) 852-3917
SOUTHWESTERN BELL TELEPHONE 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 595-5140	TIME WARNER COMMUNICATIONS 420 CONCORD STREET EL PASO, TEXAS 79906 CONSTRUCTION, (915) 775-7414	TEXAS EXCAVATION SAFETY SYSTEM ANYWHERE IN TEXAS 1-800-344-8377

**PLAN**  
SCALE: 1" = 30'  
NORTH



May 11, 2015 10:27am bspj  
 C:\Active Drawings\1038 Franklin Hills Unit 8\Civil\Desert Night.dwg

**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4862.20 (CITY DATUM)  
CONTOUR INTERVAL ONE (1') FOOT

DATE	REVISION	BY

**QUANTUM CONSULTANTS INCORPORATED**  
414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7273  
R.A.G.  
Texas Registered Engineering Firm F-005146

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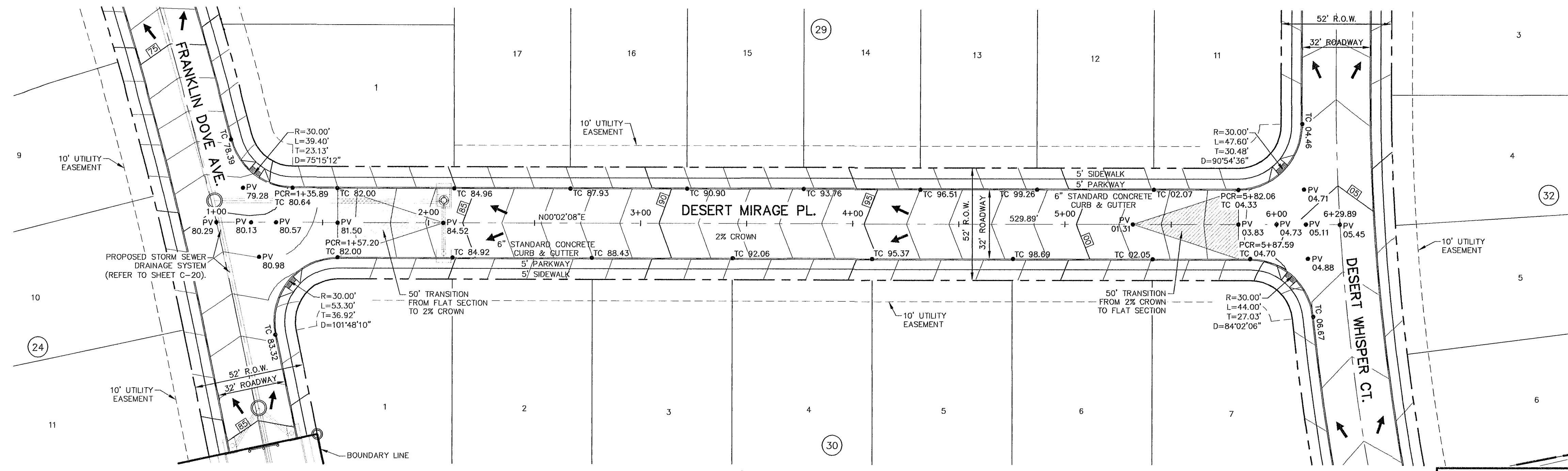
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HORIZONTAL: CONTOUR INTERVAL  
VERTICAL: 1" = 10'  
DATE: 05-10-2012  
DESIGN BY: M.A.G.  
DRAWN BY: C.A.D.  
CHKD BY: R.A.G.  
APP'D BY: R.A.G.  
JOB NO. 1038

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
PLAN & PROFILE  
DESERT NIGHT ST.  
STA. 1+00 TO  
STA. 8+60.68

**SHEET NO.**  
**C-14**

14 OF 58 SHEETS



**LEGEND:**

- H.I.P. HIGH POINT
- L.I.P. LOW POINT
- DRAINAGE FLOW DIRECTION
- NEW 50' PAVEMENT TRANSITION
- XX LOT NUMBER
- (X) BLOCK NUMBER
- PCR STA: X+XX POINT OF CURB RETURN
- TC XX.XX TOP OF CURB ELEVATION
- PV XX.XX PAVEMENT ELEVATION
- NEW LANDSCAPE. REFER TO LANDSCAPE PLANS
- NEW HANDICAP RAMP. REFER TO DETAIL ON SHEET C-42. (WHEEL CHAIR RAMPS SHALL WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)

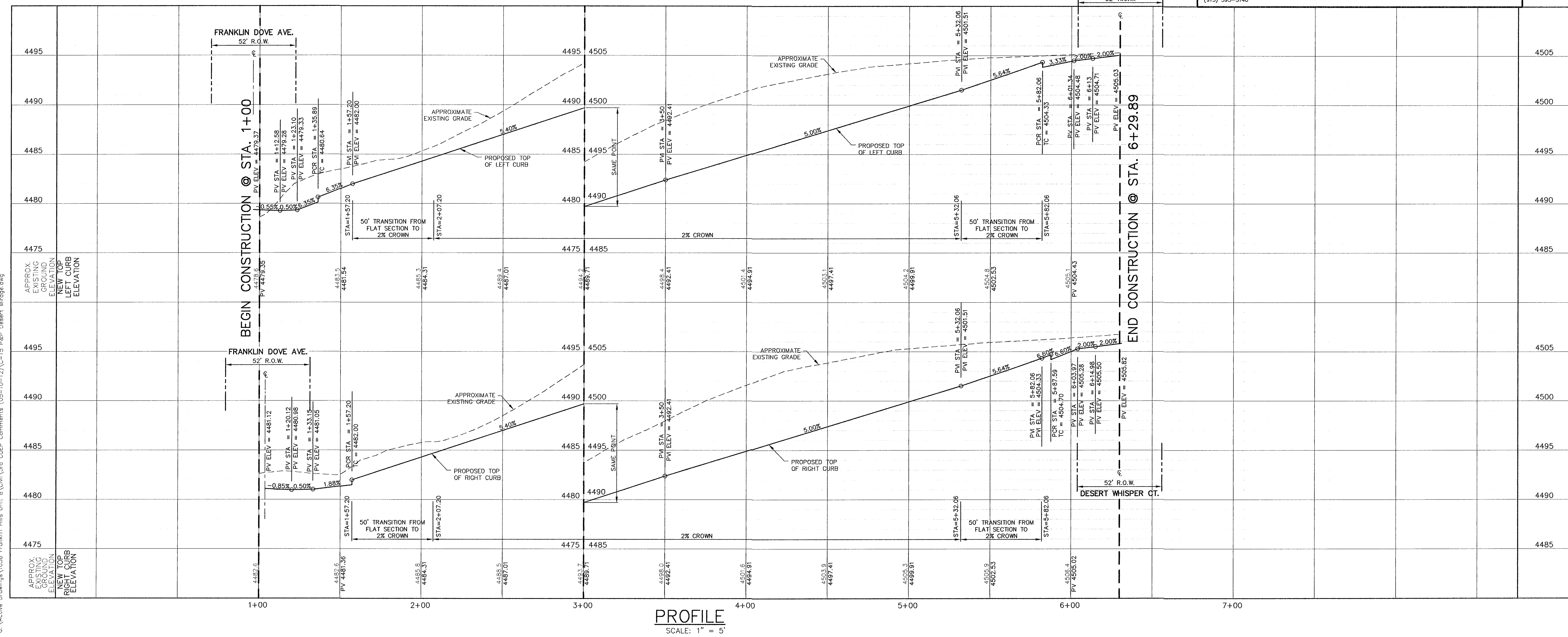
**PLAN**  
SCALE: 1" = 30'  
NORTH

**WARNING! BEFORE YOU DIG**

**COORDINATION WITH UTILITIES:**

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

SOUTHERN UNION GAS CO. 4700 POLLARD STREET EL PASO, TEXAS 79930 ARMANDO REDA, (915) 724-3	EL PASO ELECTRIC CO. 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. BILL ENGELS, (915) 543-4108 MOBILE, (915) 539-7184	EL PASO COUNTY WATER AUTHORITY 1539 PAWLING DRIVE EL PASO, TEXAS 79927 MR. ROBERT DIAZ DE LEON (915) 852-3917
SOUTHWESTERN BELL TELEPHONE 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 595-5140	TIME WARNER COMMUNICATIONS #20 CONCORD STREET EL PASO, TEXAS 79906 CONSTRUCTION, (915) 775-7414	TEXAS EXCAVATION SAFETY SYSTEM ANYWHERE IN TEXAS 1-800-344-8377



May 11, 2012 10:22am broj  
C:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3rd COEP Comments (05-10-12)\C-15 P&P Desert Mirage.dwg

**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE CORNER INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM) CONTOUR INTERVAL ONE (1) FOOT

DATE	REVISION	BY

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373

**QUANTUM**  
ENGINEERING  
INCORPORATED  
Texas Registered Engineering Firm F-005146

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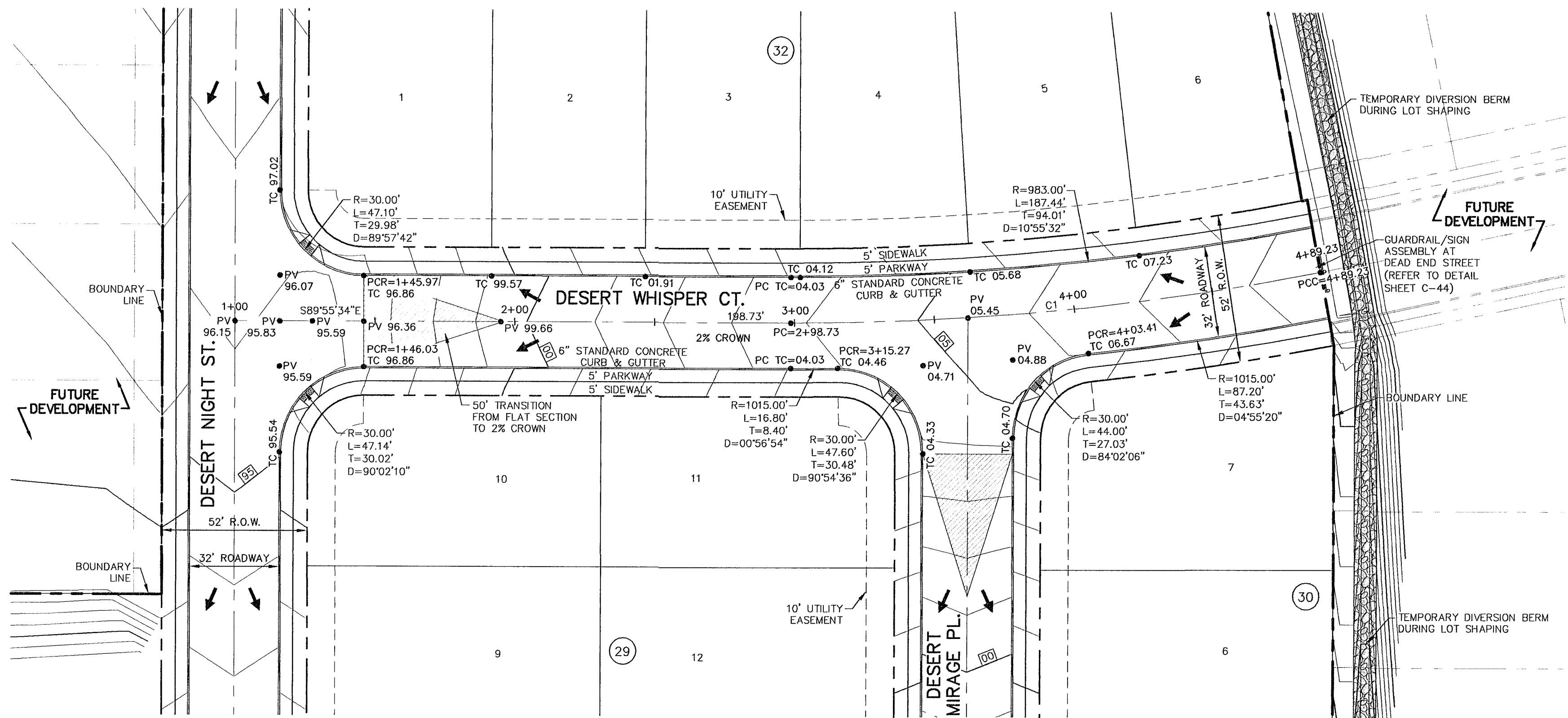
SCALE: HORIZONTAL: 1" = 30'  
VERTICAL: 1" = 5'  
CONTOUR INTERVAL: 0.5'

DATE: 05-10-2012  
DESIGN BY: M.A.G.  
DRAWN BY: CAD  
CHECKED BY: R.A.G.  
APPROVED BY: R.A.G.  
JOB NO.: 1038

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
PLAN & PROFILE  
DESERT MIRAGE PL.  
STA. 1+00 TO  
STA. 6+29.89

**SHEET NO.**  
**C-15**  
15 OF 58 SHEETS



**LEGEND:**

- HIGH POINT
- LOW POINT
- DRAINAGE FLOW DIRECTION
- NEW 50' PAVEMENT TRANSITION
- LOT NUMBER
- BLOCK NUMBER
- POINT OF CURB RETURN
- TOP OF CURB ELEVATION
- PAVEMENT ELEVATION
- NEW LANDSCAPE, REFER TO LANDSCAPE PLANS
- PROPOSED TEMPORARY DIVERSION BERM, REFER TO DETAIL SHEET C-49.
- NEW HANDICAP RAMP, REFER TO DETAIL ON SHEET C-42. (WHEEL CHAIR RAMP WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)

**WARNING! BEFORE YOU DIG**

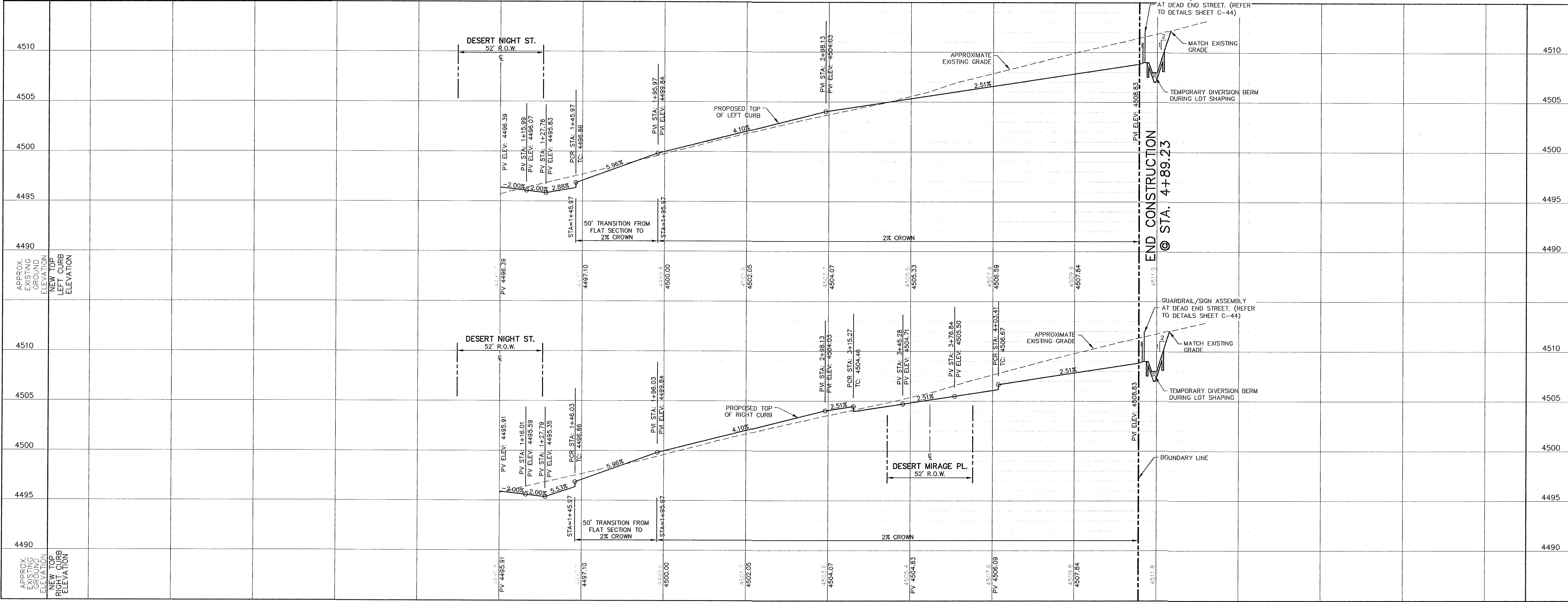
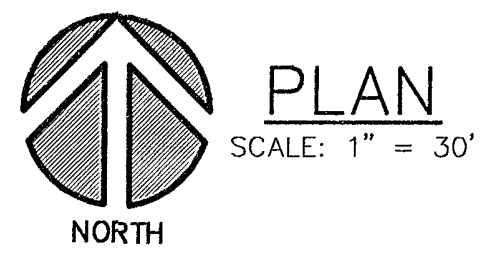
**COORDINATION WITH UTILITIES:**

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

SOUTHERN UNION GAS CO. 4700 POLLARD STREET EL PASO, TEXAS 79930 ARMANDO REZA, 699-7243	EL PASO ELECTRIC CO. 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. BILL ENGELS, (915) 543-4108 MOBILE, (915) 539-7184	EL PASO COUNTY WATER AUTHORITY 1539 PAWLING DRIVE EL PASO, TEXAS 79927 MR. ROBERT DIAZ DE LEON (915) 852-3917
SOUTHWESTERN BELL TELEPHONE 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 595-5140	TIME WARNER COMMUNICATIONS #20 CONCORD STREET EL PASO, TEXAS 79908 CONSTRUCTION, (915) 775-7414	TEXAS EXCAVATION SAFETY SYSTEM ANYWHERE IN TEXAS 1-800-344-8377

**CURVE TABLE**

CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD	BEARING
CI	190.50'	999.00'	10°55'32"	95.54'	190.21'	N84°36'40"E



**PROFILE**  
SCALE: 1" = 5'

**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4362.20 (CITY DATUM) CONTOUR INTERVAL: ONE (1) FOOT

DATE	REVISION	BY

**QUANTUM**  
engineering  
incorporated  
Texas Registered Engineering Firm F-005146

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.539.7372  
F 915.539.7373

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**SCALE:**  
HORIZONTAL: 1" = 30'  
VERTICAL: 1" = 5'  
CONTOUR INTERVAL: 5'

DATE: 05-10-2012  
DESIGN BY: M.A.G.  
DRAWN BY: C.A.D.  
CHKD BY: R.A.G.  
APPROV BY: J.O.B.  
JOB NO.: 1038

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

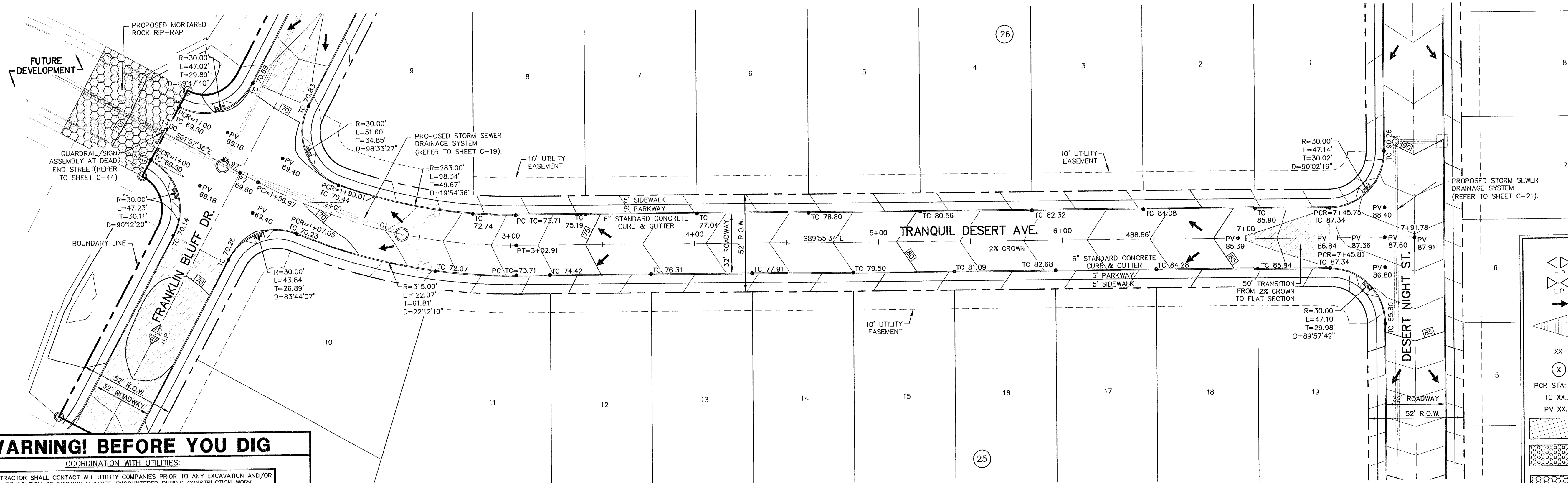
**SHEET TITLE**  
PLAN & PROFILE  
DESERT WHISPER CT.  
STA. 1+00 TO  
STA. 4+89.23

**SHEET NO.**  
**C-16**

16 OF 58 SHEETS

May 11, 2012 10:26am broj  
c:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3-d COEP Comments (08-10-12)\C-16 P&P Desert Whisper.dwg



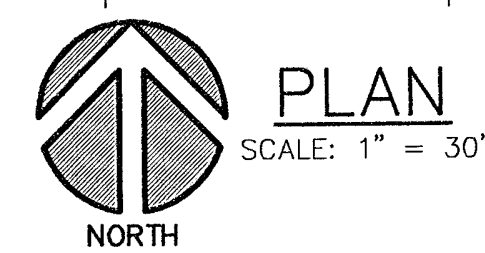


**LEGEND:**

- H.P. HIGH POINT
- L.P. LOW POINT
- DRAINAGE FLOW DIRECTION
- NEW 50' PAVEMENT TRANSITION
- XX LOT NUMBER
- (X) BLOCK NUMBER
- PCR STA: X+XX POINT OF CURB RETURN
- TC XX.XX TOP OF CURB ELEVATION
- PV XX.XX PAVEMENT ELEVATION
- NEW LANDSCAPE. REFER TO LANDSCAPE PLANS
- PROPOSED MORTARED ROCK RIP-RAP DESILTING BASIN. REFER TO DETAIL SHEET C-39.
- PROPOSED MORTARED ROCK RIP-RAP. REFER TO DETAIL SHEET C-40.
- NEW HANDICAP RAMP. REFER TO DETAIL ON SHEET C-42. (WHEEL CHAIR RAMPS WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)

**CURVE TABLE**

CURVE	LENGTH	RADIUS	DELTA	TANGENT	CHORD	BEARING
C1	145.94'	299.00'	27°57'59"	74.46'	144.50'	S75°56'35"E

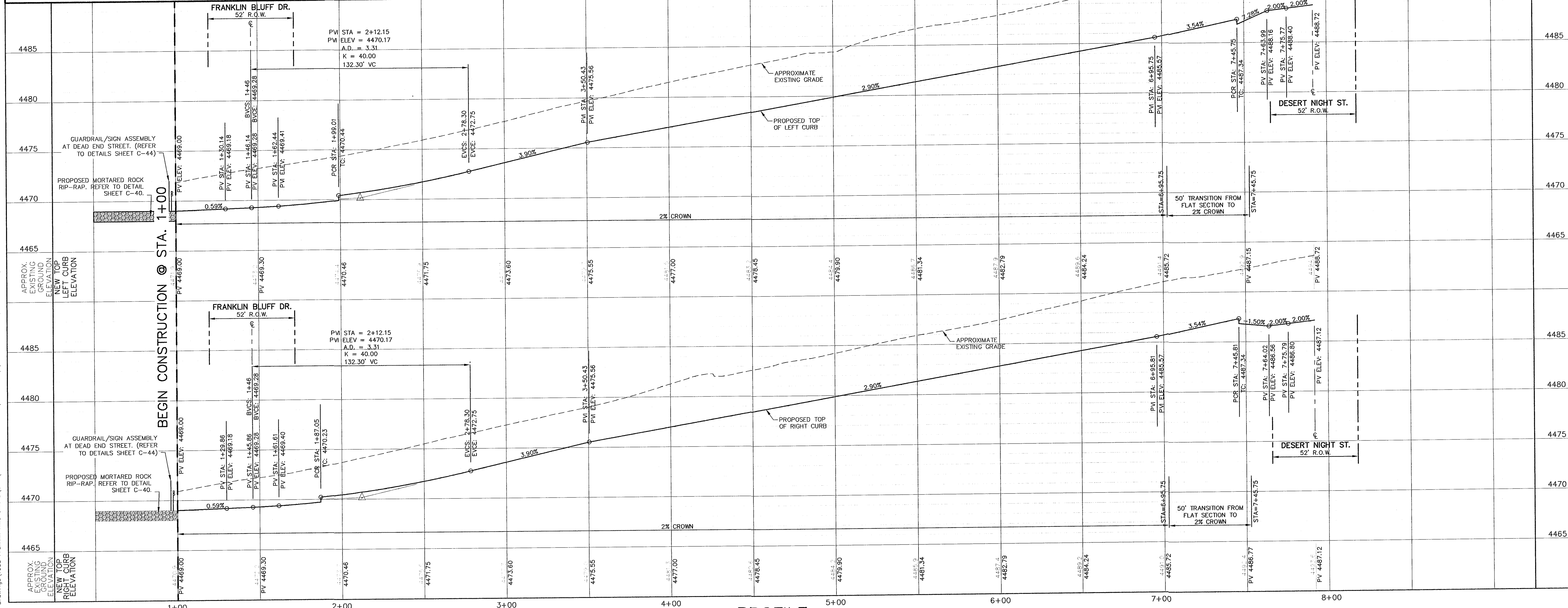


**WARNING! BEFORE YOU DIG**

**COORDINATION WITH UTILITIES:**

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

<p><b>SOUTHERN UNION GAS CO.</b> 4700 POLLARD STREET EL PASO, TEXAS 79930 ARMANDO REDA, 680-7243</p>	<p><b>EL PASO ELECTRIC CO.</b> 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. BILL ENGELS, (915) 543-4108 MOBILE: (915) 539-7184</p>	<p><b>EL PASO COUNTY WATER AUTHORITY</b> 1539 PAWLING DRIVE EL PASO, TEXAS 79927 MR. ROBERT DIAZ DE LEON (915) 852-3917</p>
<p><b>SOUTHWESTERN BELL TELEPHONE</b> 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 595-9140</p>	<p><b>TWC WARNER COMMUNICATIONS</b> 600 CONCORD STREET EL PASO, TEXAS 79906 CONSTRUCTION, (915) 775-7414</p>	<p><b>TEXAS EXCAVATION SAFETY SYSTEM</b> ANYWHERE IN TEXAS 1-800-344-8377</p>



**PROFILE**  
SCALE: 1" = 5'

**REFERENCES - BENCHMARK**

CITY UTILITY BENCH MARK  
OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET  
ELEVATION = 4362.20 (CITY DATUM)  
CONTOUR INTERVAL: ONE (1) FOOT

DATE	REVISION	BY

**QUANTUM**  
414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915-552-7272  
F 915-552-7373  
www.quantumeng.com  
Texas Registered Engineering Firm F-005146

**ROBERT A. GRANADOS**  
Professional Engineer  
No. 69920  
State of Texas  
Professional Seal

**THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY ROBERT A. GRANADOS, ENGINEER, NO. 69920, STATE OF TEXAS. THE RESPONSIBLE ENGINEER HAS REVIEWED THIS PROJECT AND IS NOT PROVIDING ANY CONTRACT ADMINISTRATION SERVICES.**

**SCALE:**  
HORIZONTAL: 1" = 30'  
VERTICAL: 1" = 5'  
CONTOUR INTERVAL: 5'

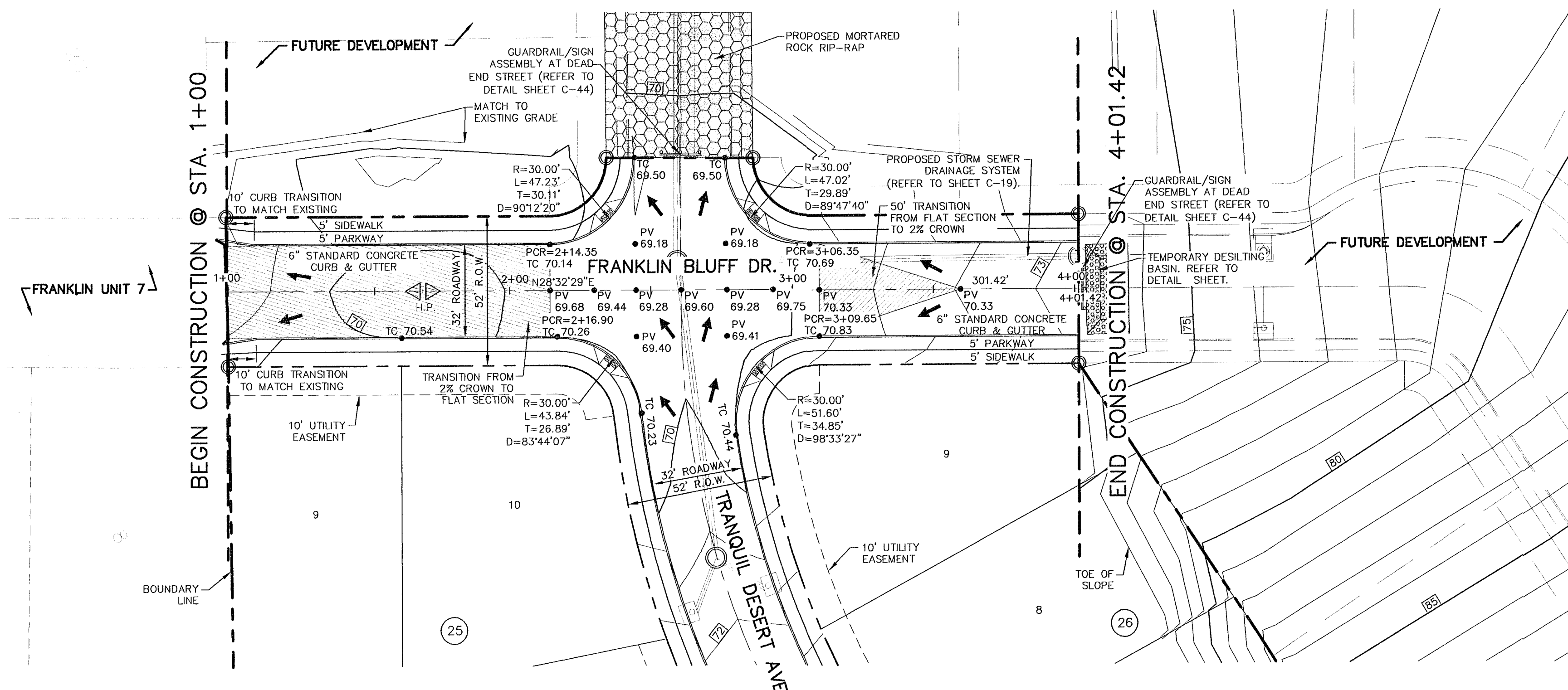
**DATE:** 05-10-2012  
**DESIGN BY:** M.A.G.  
**DRAWN BY:** SAAD  
**CHECK BY:** R.A.G.  
**APP'D BY:** R.A.G.  
**JOB NO.:** 1008

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
**PLAN & PROFILE TRANQUIL DESERT AVE. STA. 1+00 TO STA. 7+91.78**

**SHEET NO.**  
**C-17**  
17 OF 58 SHEETS

May 11, 2012 10:27am: broj  
C:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3rd CDEP Comments (05-10-12)\C-17 P&P Tranquil Desert.dwg



**PLAN**  
SCALE: 1" = 30'  
NORTH

**LEGEND:**

- H.P. HIGH POINT
- L.P. LOW POINT
- DRAINAGE FLOW DIRECTION
- NEW 50' PAVEMENT TRANSITION
- LOT NUMBER
- BLOCK NUMBER
- PCR STA: X+XX POINT OF CURB RETURN
- TC XXXX TOP OF CURB ELEVATION
- PV XXXX PAVEMENT ELEVATION
- NEW LANDSCAPE, REFER TO LANDSCAPE PLANS
- PROPOSED MORTARED ROCK RIP-RAP DESILTING BASIN, REFER TO DETAIL SHEET C-39.
- PROPOSED MORTARED ROCK RIP-RAP, REFER TO DETAIL SHEET C-40.
- NEW HANDICAP RAMP, REFER TO DETAIL ON SHEET C-42. (WHEEL CHAIR RAMP WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)

**WARNING! BEFORE YOU DIG**

**COORDINATION WITH UTILITIES:**

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

<b>SOUTHERN UNION GAS CO.</b> 4700 POLLARD STREET EL PASO, TEXAS 79930 ARMANDO REZA, 980-7243	<b>EL PASO ELECTRIC CO.</b> 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. BILL ENGELS, (915) 543-4108 MOBILE, (915) 539-7184	<b>EL PASO COUNTY WATER AUTHORITY</b> 1539 PAWLING DRIVE EL PASO, TEXAS 79927 MR. ROBERT DIAZ DE LEON (915) 852-3917
<b>SOUTHWESTERN BELL TELEPHONE</b> 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 595-5140	<b>TIME WARNER COMMUNICATIONS</b> #20 CONCORD STREET EL PASO, TEXAS 79906 CONSTRUCTION, (915) 775-7414	<b>TEXAS EXCAVATION SAFETY SYSTEM</b> ANYWHERE IN TEXAS 1-800-344-8377

**REFERENCES - BENCHMARK**

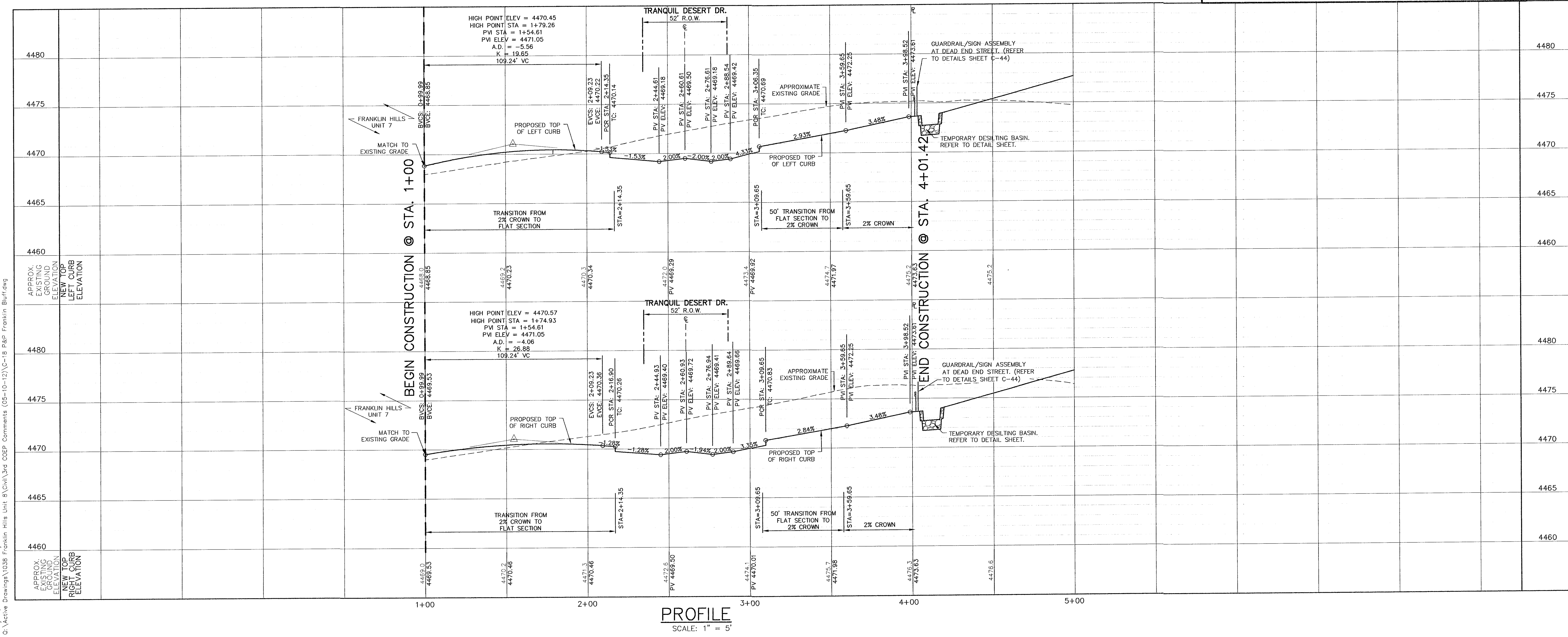
CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM)  
CONTOUR INTERVAL: ONE (1) FOOT

DATE	REVISION	BY

**QUANTUM**  
ENGINEERING  
INCORPORATED  
Texas Registered Engineering Firm F-005146

414 Executive Center Blvd  
Ste 200 B Paso TX 79902  
P 915.532.7272  
F 915.532.7373

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**PROFILE**  
SCALE: 1" = 5'

**PROJECT TITLE**

**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**

PLAN & PROFILE  
FRANKLIN BLUFF DR.  
STA. 1+00 TO  
STA. 4+01.42

**SHEET NO.**

**C-18**  
18 OF 58 SHEETS

**SCALE:**  
HORIZONTAL: 1" = 30'  
VERTICAL: 1" = 5'  
CONTOUR INTERVAL: 1' = 5'

**DATE:** 05-10-2012  
**DESIGN BY:** M.A.G.  
**DRAWN BY:** C.A.S.  
**CHKD BY:** R.A.S.  
**APPVD BY:** R.A.S.  
**JOB NO.:** 1038

May 11, 2012 10:28am Broj  
G:\Active Drawings\UGB Franklin Hills Unit 8\Civil\3rd COEP Comments (05-10-12)\C-18 P&P Franklin Bluff.dwg

# WARNING! BEFORE YOU DIG

## COORDINATION WITH UTILITIES:

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

**SOUTHERN UNION GAS CO.**  
4700 POLLARD STREET  
EL PASO, TEXAS 79930  
ARMANDO REDA, 680-7243

**EL PASO ELECTRIC CO.**  
501 WEST SAN ANTONIO STREET  
EL PASO, TEXAS 79901  
MR. BILL ENGELS, (915) 543-4108  
MOBILE, (915) 539-7184

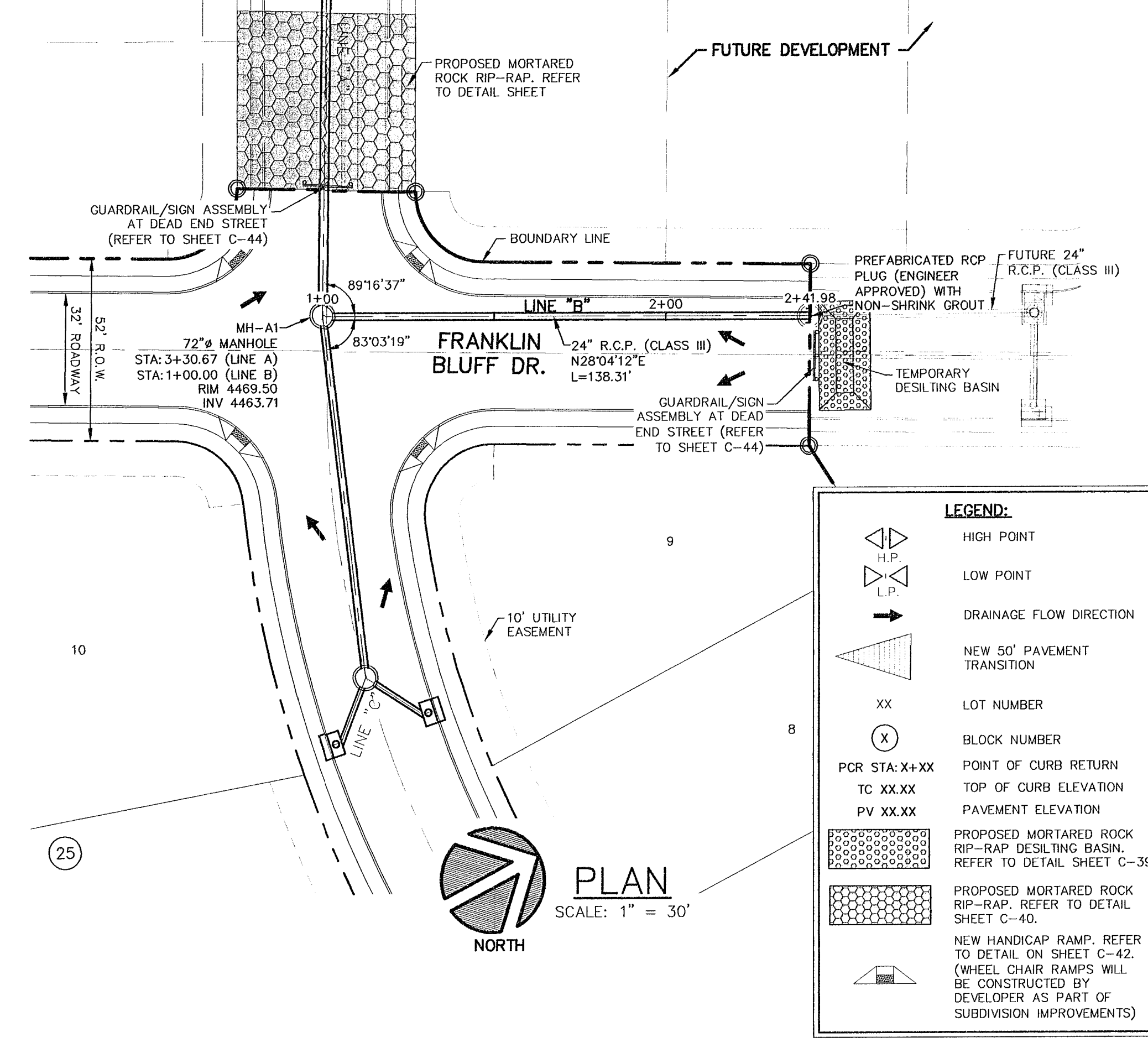
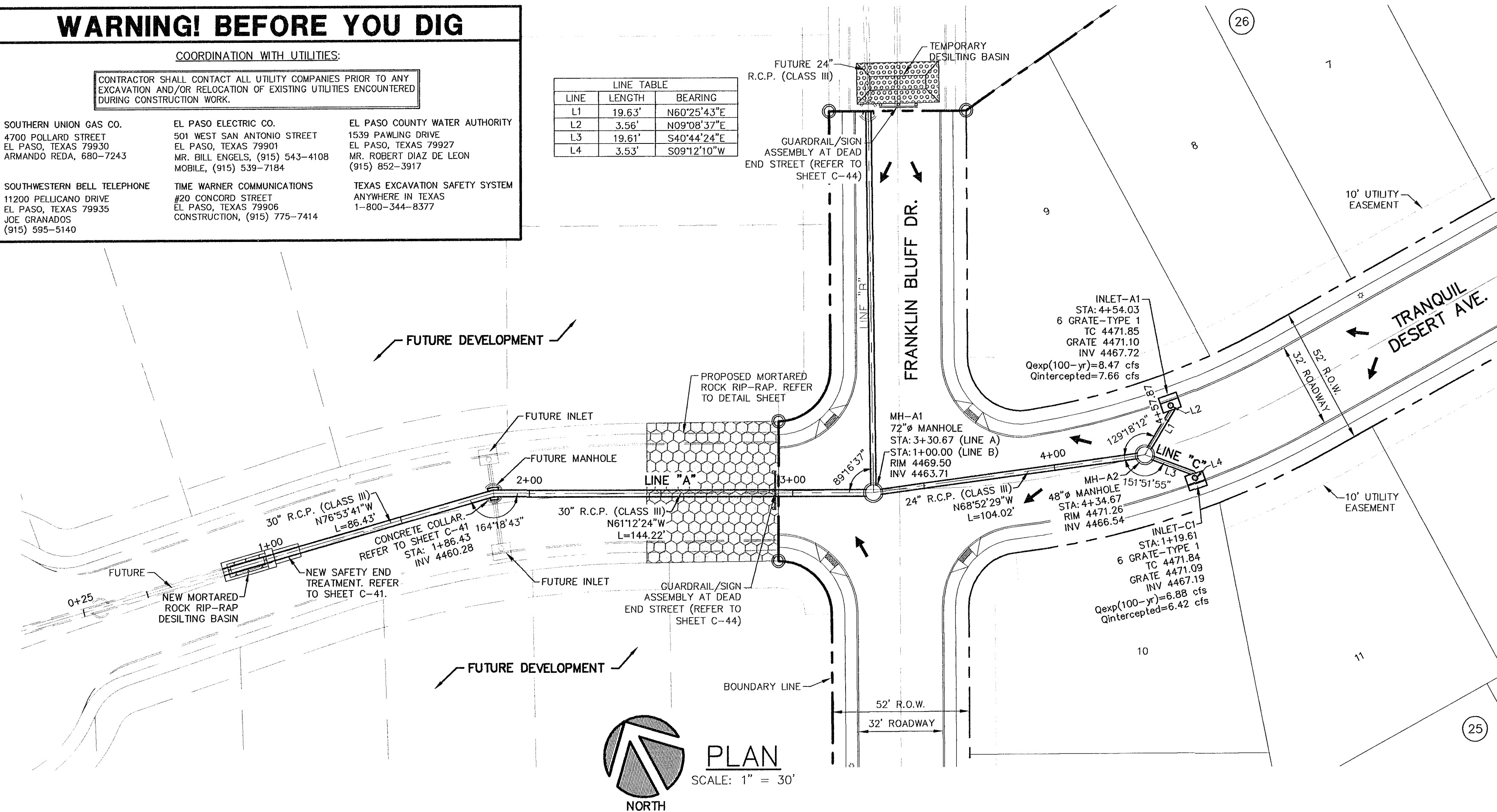
**EL PASO COUNTY WATER AUTHORITY**  
1539 PARKING DRIVE  
EL PASO, TEXAS 79927  
MR. ROBERT DIAZ DE LEON  
(915) 852-3917

**SOUTHWESTERN BELL TELEPHONE**  
11200 PELLICANO DRIVE  
EL PASO, TEXAS 79935  
JOE GRANADOS  
(915) 595-5140

**TIME WARNER COMMUNICATIONS**  
#20 CONCORD STREET  
EL PASO, TEXAS 79906  
CONSTRUCTION, (915) 775-7414

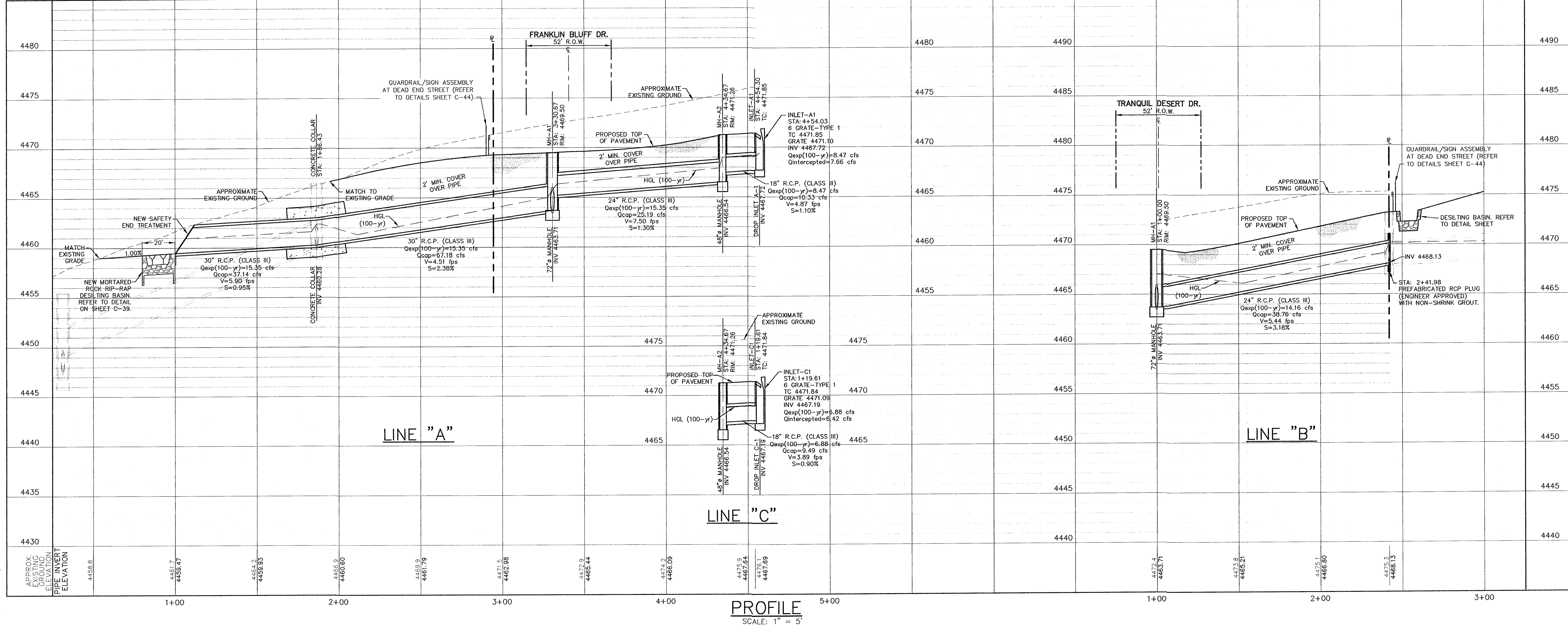
**TEXAS EXCAVATION SAFETY SYSTEM**  
ANYWHERE IN TEXAS  
1-800-544-8377

LINE	LENGTH	BEARING
L1	19.61'	N60°25'43"E
L2	3.56'	N09°08'37"E
L3	19.61'	S40°44'24"E
L4	3.53'	S09°12'10"W



**LEGEND:**

- H.P. HIGH POINT
- L.P. LOW POINT
- DRAINAGE FLOW DIRECTION
- NEW 50' PAVEMENT TRANSITION
- XX LOT NUMBER
- (X) BLOCK NUMBER
- PCR STA: X+XX POINT OF CURB RETURN
- TC XX.XX TOP OF CURB ELEVATION
- PV XX.XX PAVEMENT ELEVATION
- PROPOSED MORTARED ROCK RIP-RAP DESILTING BASIN, REFER TO DETAIL SHEET C-39.
- PROPOSED MORTARED ROCK RIP-RAP, REFER TO DETAIL SHEET C-40.
- NEW HANDICAP RAMP, REFER TO DETAIL ON SHEET C-42. (WHEEL CHAIR RAMPS WILL BE CONSTRUCTED BY DEVELOPER AS PART OF SUBDIVISION IMPROVEMENTS)



**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. CONTOUR INTERVAL ONE (1) FOOT.

**DATE** \_\_\_\_\_

**REVISION** \_\_\_\_\_

**BY** \_\_\_\_\_

**414 Executive Center Blvd**  
Ste 200 El Paso TX 79902  
915.532.7272  
F 915.532.7373

**QUANTUM**  
engineers  
incorporated  
Texas Registered Engineering Firm #005146

**ROBERT A. GONZALES**  
Professional Engineer  
No. 69920  
Professional Seal

**SCALE:**  
HORIZONTAL: 1" = 30'  
VERTICAL: 1" = 5'  
CONTOUR INTERVAL: \_\_\_\_\_

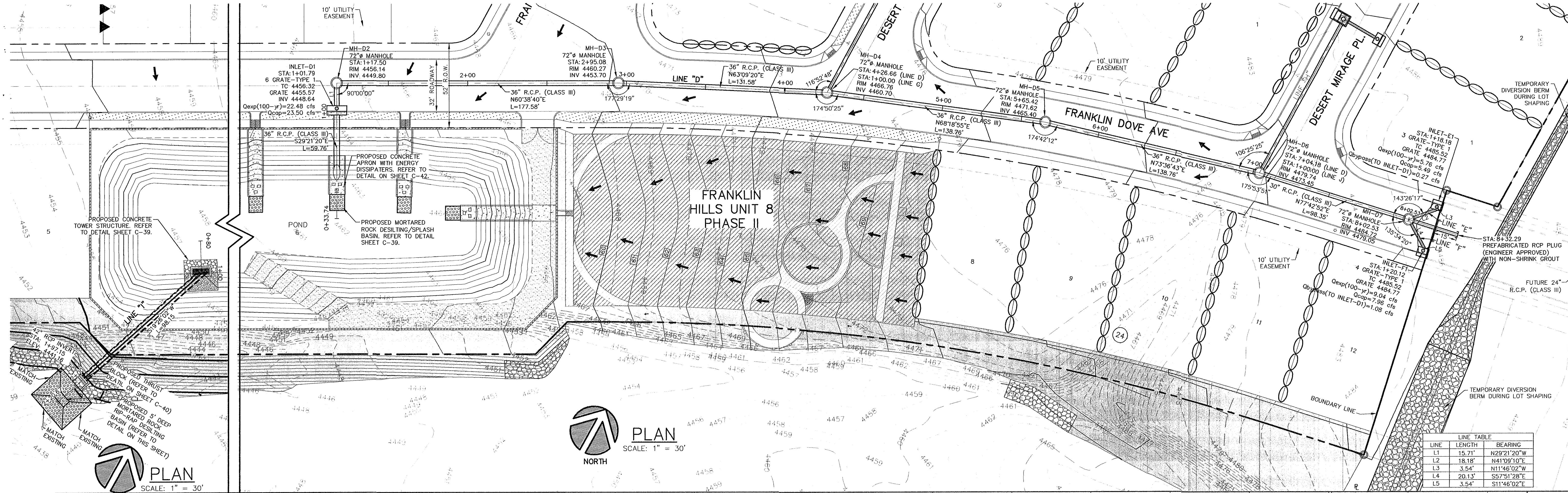
**DATE:** 05-10-2012  
DESIGN BY: M.A.G.  
DRAWN BY: CADD  
CHKD BY: R.A.G.  
APP'D BY: \_\_\_\_\_  
JOB NO. 1038

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT**  
**SUBDIVISION**  
**IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

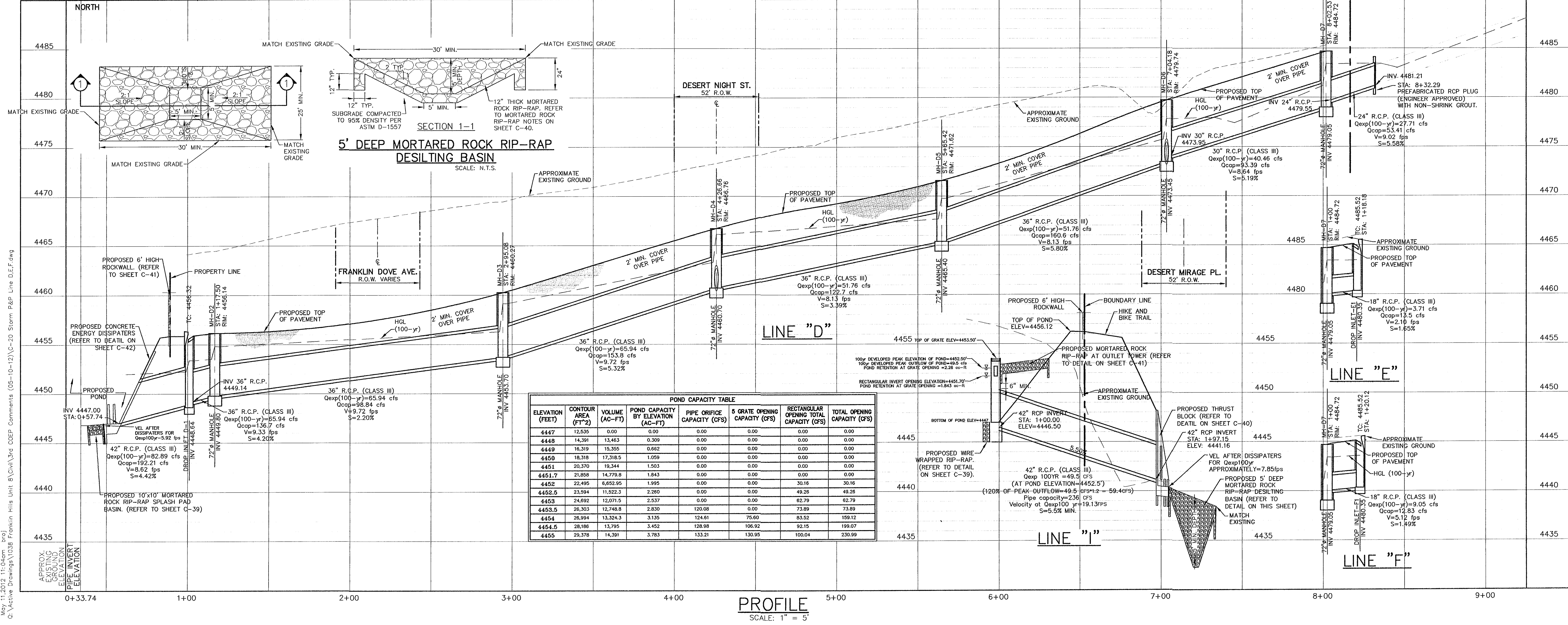
**SHEET TITLE**  
**STORM WATER**  
**PLAN AND PROFILE**  
LINE "A"  
STA: 1+00 - 4+57.87  
LINE "B"  
STA: 1+00 - 2+41.98  
LINE "C"  
STA: 1+00 - 1+19.67

**SHEET NO.**  
**C-19**  
19 OF 58 SHEETS

May 11, 2012 10:29am Broj  
G:\Active Drawings\1008 Franklin Hills Unit 8\Civil\3rd CDEP Comments (05-10-12)\C-19 Storm P&P Line A,B,C.dwg



PLAN  
SCALE: 1" = 30'



PROFILE  
SCALE: 1" = 5'

**REFERENCES - BENCHMARK**  
CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM). CONTOUR INTERVAL: ONE (1) FOOT.

**DATE** \_\_\_\_\_ **REVISION** \_\_\_\_\_ **BY** \_\_\_\_\_

414 Executive Center Blvd  
Ste 300 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373

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Texas Registered Engineering Firm F-005146

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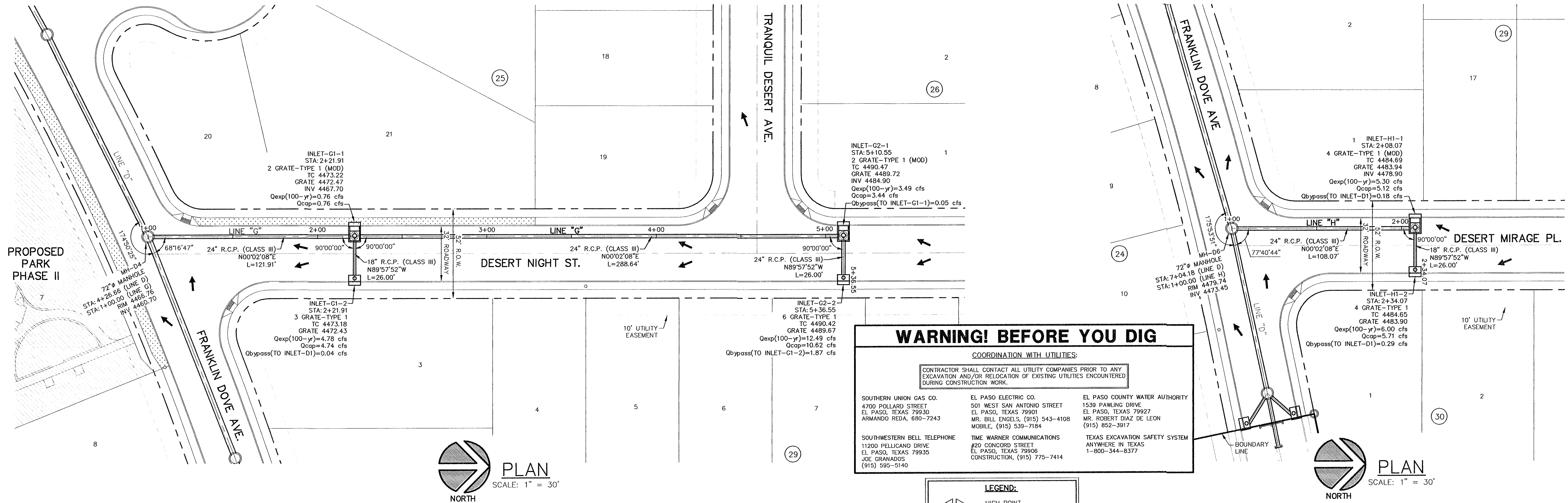
DESIGN BY: M.A.G.  
DRAWN BY: C.A.D.  
CHKD BY: R.A.G.  
APPROVED BY: J.O.S.  
JOB NO.: 1038

**SCALE:**  
HORIZONTAL: 1" = 30'  
VERTICAL: 1" = 5'  
CONTOUR INTERVAL: 1'

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
**STORM WATER PLAN AND PROFILE**  
LINE "D"  
STA: 0+57.74 - 8+02.53  
LINE "E"  
STA: 1+00 - 1+21.72  
LINE "F"  
STA: 1+00 - 1+23.67  
LINE "I"  
STA: 1+00 - 1+97.15  
**SHEET NO.**  
**C-20**

20 OF 58 SHEETS



**WARNING! BEFORE YOU DIG**

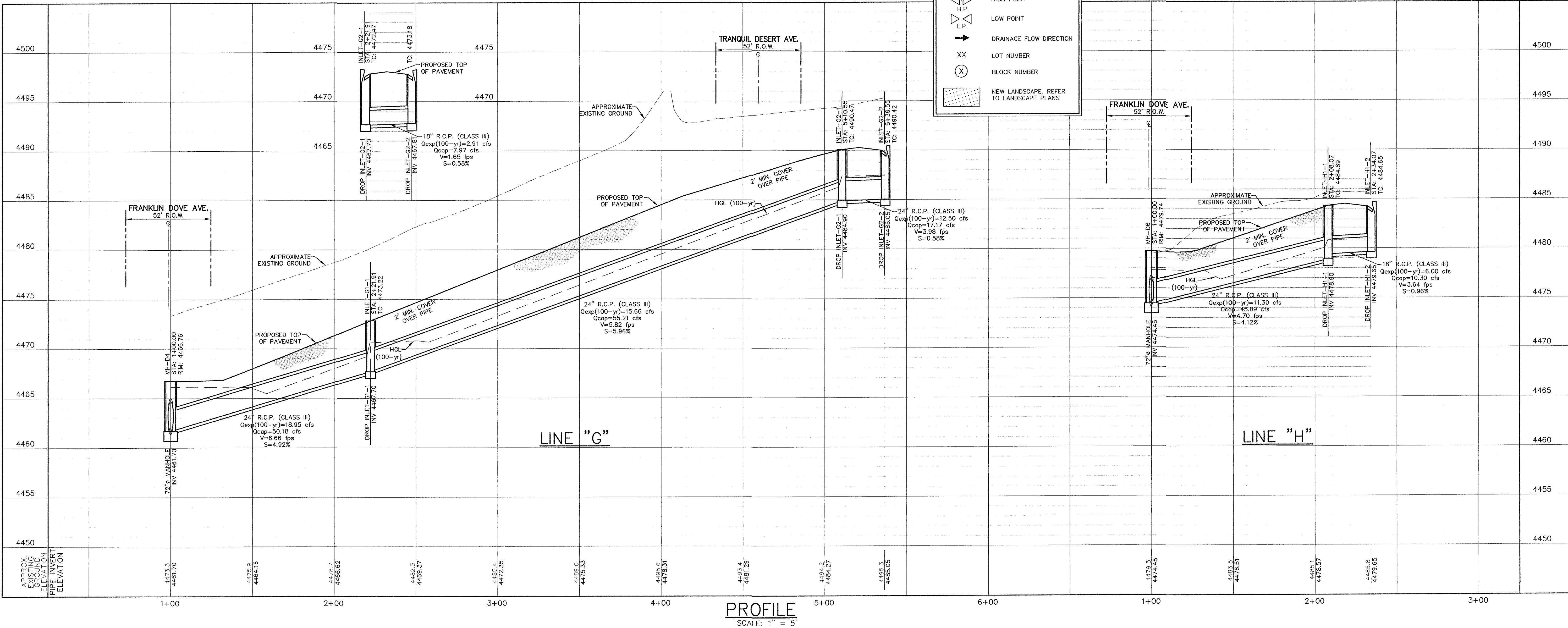
**COORDINATION WITH UTILITIES:**

CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES PRIOR TO ANY EXCAVATION AND/OR RELOCATION OF EXISTING UTILITIES ENCOUNTERED DURING CONSTRUCTION WORK.

SOUTHERN UNION GAS CO. 4700 POLLARD STREET EL PASO, TEXAS 79930 ARMANDO REDA, 680-7243	EL PASO ELECTRIC CO. 501 WEST SAN ANTONIO STREET EL PASO, TEXAS 79901 MR. BILL ENGELS, (915) 543-4108 MOBILE, (915) 539-7184	EL PASO COUNTY WATER AUTHORITY 1538 PAWLING DRIVE EL PASO, TEXAS 79927 MR. ROBERT DIAZ DE LEON (915) 852-3917
SOUTHWESTERN BELL TELEPHONE 11200 PELLICANO DRIVE EL PASO, TEXAS 79935 JOE GRANADOS (915) 505-5140	TIME WARNER COMMUNICATIONS #20 CONCORD STREET EL PASO, TEXAS 79906 CONSTRUCTION, (915) 775-7414	TEXAS EXCAVATION SAFETY SYSTEM ANYWHERE IN TEXAS 1-800-344-8377

**LEGEND:**

- H.P. HIGH POINT
- L.P. LOW POINT
- DRAINAGE FLOW DIRECTION
- XX LOT NUMBER
- (X) BLOCK NUMBER
- NEW LANDSCAPE REFER TO LANDSCAPE PLANS



**REFERENCES - BENCHMARK**

CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION: 4492.20 (CITY DATUM) CONTOUR INTERVAL: ONE (1) FOOT

DATE	REVISION	BY

414 Executive Center Blvd  
5th 200 E Paso TX 79902  
P 915.532.7272  
F 915.532.7373

**QUANTUM**  
engineers  
incorporated  
Texas Registered Engineering Firm F-005146

THE SEAL AND SIGNATURE OF THE REGISTERED PROFESSIONAL ENGINEER ARE REQUIRED FOR ALL PLANS. THE NOTIFICATION TO OWNER IS THE RESPONSIBILITY OF THE REGISTERED PROFESSIONAL ENGINEER.

ROBERT A. GONZALES  
REGISTERED PROFESSIONAL ENGINEER  
NO. 69320

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
**STORM WATER PLAN AND PROFILE**  
LINE "G"  
STA: 1+00 - 5+36.55  
LINE "H"  
STA: 1+00 - 2+34.07

**SHEET NO.**  
**C-21**  
21 OF 58 SHEETS

**SCALE:**  
HORIZONTAL: 1" = 30'  
VERTICAL: 1" = 5'  
CONTOUR INTERVAL: 1' 0"

**DATE:** 05-10-2012  
**DESIGN BY:** M.A.G.  
**DRAWN BY:** C.A.D.  
**CHKD BY:** R.A.G.  
**APPD BY:** R.A.G.  
**JOB NO.:** 1038

May 16, 2012 10:19am Broj  
C:\Active Drawings\1038 Franklin Hills Unit 8\C-21\Storm Water\Plan.dwg

**GENERAL NOTES:**

**NOTES:**

- 1) PUBLIC WATER AND SEWER UTILITY WORK SHALL NOT BE PERFORMED BY THE CONTRACTOR UNTIL A DEVELOPMENT AGREEMENT HAS BEEN EXECUTED BETWEEN THE OWNER AND EPWU-PSB.
- 2) CONTRACTOR MUST COMPLY WITH EPWU REQUIREMENTS, INCLUDING BUT NOT LIMITED TO, EPWU STANDARD SPECIFICATIONS, CONSTRUCTION, AND COMPLIANCE TESTING REQUIREMENTS. ALL FACILITIES MUST BE CONSTRUCTED TO EPWU STANDARDS AND MUST RECEIVE FINAL ACCEPTANCE BY EPWU.
- 3) WATER LINES CONSTRUCTION -- IN ADDITION TO THRUST BLOCKING, INSTALL RESTRAINED JOINTS AT ALL ELBOWS, VALVES, AND DEAD ENDS. USE RESTRAINED JOINTS ON ALL ABOVE GROUND INSTALLATIONS.
- 4) SERVICE LINES INSTALLATION BY CONTRACTOR INCLUDES THE FOLLOWING
  - A) TIE-IN TO MAIN LINES & EXTENSIONS TO PROPERTY LINES. REFER TO DETAILS FOR SERVICE LINES INSTALLATION AND TO PLANS FOR GENERAL LOCATION.
  - B) COORDINATION WITH EPWU FOR A COMPLETE SERVICE INSTALLATION PER EPWU REQUIREMENTS.
- 5) PAVEMENT CUT PERMIT MUST BE OBTAINED FROM THE CITY OF EL PASO FOR ANY WORK TO BE PERFORMED ON EXISTING CITY STREETS. CONTRACTOR MUST COMPLY WITH CITY REQUIREMENTS FOR PAVEMENT REPLACEMENT.
- 6) PIPE MATERIAL FOR WATER:

- A) ABOVE GROUND PIPING OR PIPING IN VAULTS SHALL BE DUCTILE IRON PIPE AWWA C150 (MINIMUM PRESSURE RATING 250, WITH RESTRAINED MECHANICAL JOINTS (M.J.) FITTINGS PER AAWA C153 OR C110 WITH EPOXY COATING AND LINING.
- B) PER EPWU REQUIREMENTS BURIED PIPE 4" AND LARGER SHALL BE PVC C-900 DR-14, CLASS 305, WITH DUCTILE IRON M.J. FITTINGS PER AAWA C153 OR C110 WITH EPOXY COATING AND LINING.  
COLOR:  
BLUE FOR DOMESTIC WATER
- BURIED PIPE FOR SERVICE LINES SHALL BE AS REQUIRED BY EPWU.
- C) VALVES SHALL BE RESILIENT SEAT GATE VALVES WITH NON-RISING STEM, 250 PSI PRESSURE RATING CONFORMING TO AWWA C509, WITH FUSION EPOXY INSTALLED WITH A BONNET BOX ON COVER PER DETAIL NO. 6 ON SHEET 10.
- D) FIRE HYDRANTS SEE DETAIL 280-1 ON SHEET C-U15 FOR INSTALLATION AND COORDINATION REQUIREMENTS.
- E) DISINFECT PIPE IN ACCORDANCE WITH AWWA-C651 AND EPWU REQUIREMENTS.
- F) HYDROSTATIC PRESSURE REQUIRED FOR TESTING IS 150 PSI.
- G) PIPE CURVATURE ALLOWANCE SHALL BE IN STRICT COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS AND EPWU REQUIREMENTS.
- H) PRIOR TO INSERTION SPECIAL EMPHASIS ON PVC WATER PIPE:
  1. PIPE ALIGNMENT AND INSERTION.
    - a. PER EPWU REQUIREMENTS, ALL PVC WATER PIPE SHALL HAVE BE MARKED WITH DUAL INDICATOR LINES AT THE SPIGOT END INDICATING PROPER PENETRATION WHEN THE JOINT IS ASSEMBLED.
    - b. USE OF HAND TOOLS LIKE "COME-A-LONG" OR THE BAR AND BLOCK METHOD IS RECOMMENDED AS A WORKER IS ABLE TO FEEL THE AMOUNT OF FORCE BEING USED AND WHETHER THE JOINT GOES TOGETHER SMOOTHLY. LARGER PIPE MAY REQUIRE MECHANICAL ASSISTANCE TO APPLY SUFFICIENT FORCE TO ASSEMBLE THE JOINT, SUCH FORCE MAY BE APPLIED SMOOTHLY PER MANUFACTURER RECOMMENDATIONS, AND SPECIAL CARE MUST BE TAKEN TO INSURE THAT THE SPIGOT IS NOT OVER-INSERTED. BRACE PIPE BELL WHILE INSERTING THE SPIGOT END TO PREVENT MOVEMENT AND OVER-INSERTION OF PREVIOUSLY COMPLETED IN-LINE PIPE.
    - c. SPECIAL EMPHASIS MUST BE PUT ON PROPER PIPE ALIGNMENT AND INSERTION, UP TO THE MARK ON THE SPIGOT. IF THE PIPE IS MISALIGNED, OVER-INSERTED, OR ASSEMBLED WITH EXCESSIVE FORCE, IT WILL BE GROUNDS TO REJECT THE PIPE INSTALLATION.
    - d. INSTALLED PIPE MUST REMAIN EXPOSED AT THE JOINTS UNTIL IT PASSES INSPECTION. IF OVER-INSERTION PROBLEM IS EVIDENT ON THE JOB, THEN THE CONTRACTOR AT HIS OWN COST WILL BE REQUIRED TO CORRECT ALL DEFICIENCIES AND PERFORM ANY SUBSEQUENT INSTALLATION USING MEGA-STOP TYPE FITTING AT EVERY JOINT, AS MANUFACTURED BY EBAA OR APPROVED EQUAL. THE MEGA-STOP FITTING WILL PREVENT OVER INSERTION.
    - e. PRIOR TO ASSEMBLY AND LUBRICATION, THE GASKET, THE GROOVE AREA BEHIND THE GASKETS AND THE PIPE SPIGOT ENDS SHOULD BE WIPED CLEAN. DO NOT REMOVE GASKETS FROM THE RACE, THE GASKETS ARE NOT REMOVABLE AND WILL BE DAMAGED BY ATTEMPTS TO REMOVE THEM.
    - f. LUBRICATION - USE ONLY MANUFACTURER SUPPLIED OR APPROVED LUBRICANT. APPLY TO BELL AND SPIGOT PER MANUFACTURER'S RECOMMENDATIONS. ONCE PIPE IS LUBRICATED, CARE MUST BE TAKEN AS TO NOT MAKE CONTACT BETWEEN THE LUBRICATED PIPE AND SURROUNDING SOIL OR OTHER DEBRIS PRIOR TO INSERTION.

- 7) PROVIDE FOUR FEET (4') MINIMUM COVER OVER ALL PROPOSED WATERLINES, UNLESS INDICATED OTHERWISE ON PLANS.
- 8) MAINTAIN A MINIMUM HORIZONTAL SEPARATION DISTANCE OF 10' BETWEEN ALL WATER & SEWER LINES. VARIATIONS TO THIS MINIMUM MUST BE IN STRICT ACCORDANCE WITH EPWU REQUIREMENTS, AND TCEQ REGULATIONS.
- 9) CONTACT UTILITY COMPANIES OR "ONE-CALL SERVICE" FOR EXACT LOCATION OF UNDERGROUND UTILITIES IN THIS AREA BEFORE EXCAVATION.
- 10) INSTALL A TRENCH SAFETY SYSTEM TO PROVIDE FOR THE SAFE EXCAVATION OF ALL TRENCHES EXCEEDING A DEPTH OF FIVE (5) FEET AS PER O.S.H.A. REQUIREMENTS.
- 11) FOR WATER AND SEWER CROSSINGS COMPLY WITH TCEQ AND EPWU REQUIREMENTS OUTLINED IN DETAIL 161. FOR WATER AND STORMWATER CROSSINGS, MINIMUM SEPARATION DISTANCE SHALL BE 18-INCHES AND PROVIDE CASING WHEN STORMSEWER IS LARGER THAN 30-INCHES.
- 12) INSTALL DETECTABLE WARNING TAPE 12-INCHES ABOVE THE PIPE. TAPE SHALL BE 5 MIL OVERALL THICKNESS WITH A 0.35 MIL SOLID ALUMINUM FOIL CORE, 0.8 MIL CLEAR FILM, REVERSE PRINTED WITH A REPEATING WARNING MESSAGE AND LAMINATED TO ALUMINUM FOIL WITH A 0.375 MIL CLEAR FILM BACKING. THE LETTERING ON ALL TAPES IS A MINIMUM OF 1-INCH UNLESS OTHERWISE SPECIFIED MANUFACTURERS: NORTH TOWN, PRESCO, OR EQUAL.

**TAPE WIDTH, LETTERING, AND COLOR SHALL BE AS FOLLOWS:**

FOR DOMESTIC LINE: LABEL-> CAUTION WATER LINE	WIDTH-> 6-INCH COLOR-> BLUE
FOR SEWER LINE: LABEL-> CAUTION SANITARY SEWER LINE	WIDTH-> 6-INCH COLOR-> GREEN

- 13) PIPE MATERIAL FOR SEWER:
  - A) GRAVITY SANITARY SEWER PVC PIPE SHALL BE PVC PIPE MEETING THE REQUIREMENTS OF ASTM D3034, SDR 35, COLOR GREEN. PRESSURE PVC PIPE C-900 WILL BE REQUIRED AT CROSSINGS WHERE THE MINIMUM REQUIRED CLEARANCE CANNOT BE ACCOMPLISHED.
  - B) TESTING REQUIREMENTS OF PIPE AND MANHOLES SHALL BE IN ACCORDANCE WITH AWWA AND EPWU STANDARDS.
  - C) PIPE CURVATURE ALLOWANCE SHALL BE IN STRICT COMPLIANCE WITH MANUFACTURER'S RECOMMENDATIONS AND EPWU REQUIREMENTS.
- 14) MANHOLES SHALL BE PRE-CAST CONCRETE WITH 4000 PSI COMPRESSIVE STRENGTH USING TYPE V CEMENT, AND SHALL BE MANUFACTURED IN COMPLIANCE WITH ASTM C-478. ALL MANHOLE PENETRATIONS MUST BE PREFORMED WITH KNOCK-OUT BY THE PRE-CAST MANUFACTURER OR CORE DRILLED IN THE FIELD. ALL PENETRATIONS MUST HAVE COMPRESSION TYPE FLEXIBLE PIPE TO MANHOLE CONNECTORS (ASTM-923) "KOR-N-SEAL" OR EQUAL.

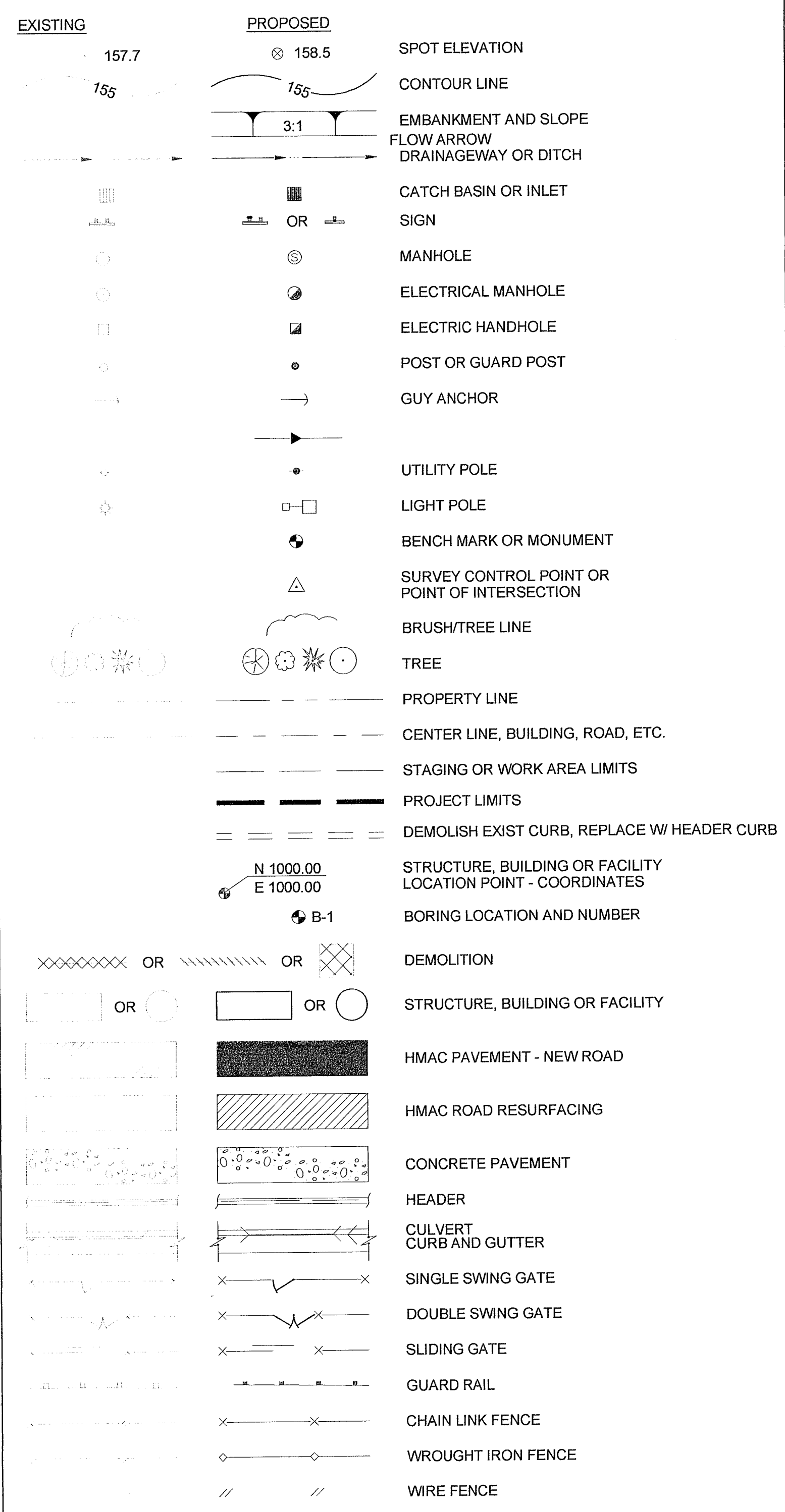
**SURVEY NOTES:**

1. SOURCE OF TOPOGRAPHY SHOWN ON THE CIVIL PLANS ARE BASE MAPS PROVIDED BY ROBERT SEIPEL ASSOCIATES INC. ADDITIONAL MAPPING HAS BEEN ADDED FROM AS-BUILT DATA. EXISTING CONDITIONS MAY VARY FROM THOSE SHOWN ON THESE PLANS. THE CONTRACTOR SHALL VERIFY EXISTING CONDITIONS AND ADJUST WORK PLAN ACCORDINGLY PRIOR TO BEGINNING CONSTRUCTION. ANY CHANGES TO THESE PLANS REQUIRE PRIOR APPROVAL BY THE ENGINEER.
2. HORIZONTAL DATUM: CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET.
3. VERTICAL DATUM: CITY OF EL PASO (ELEVATION = 4362.20).

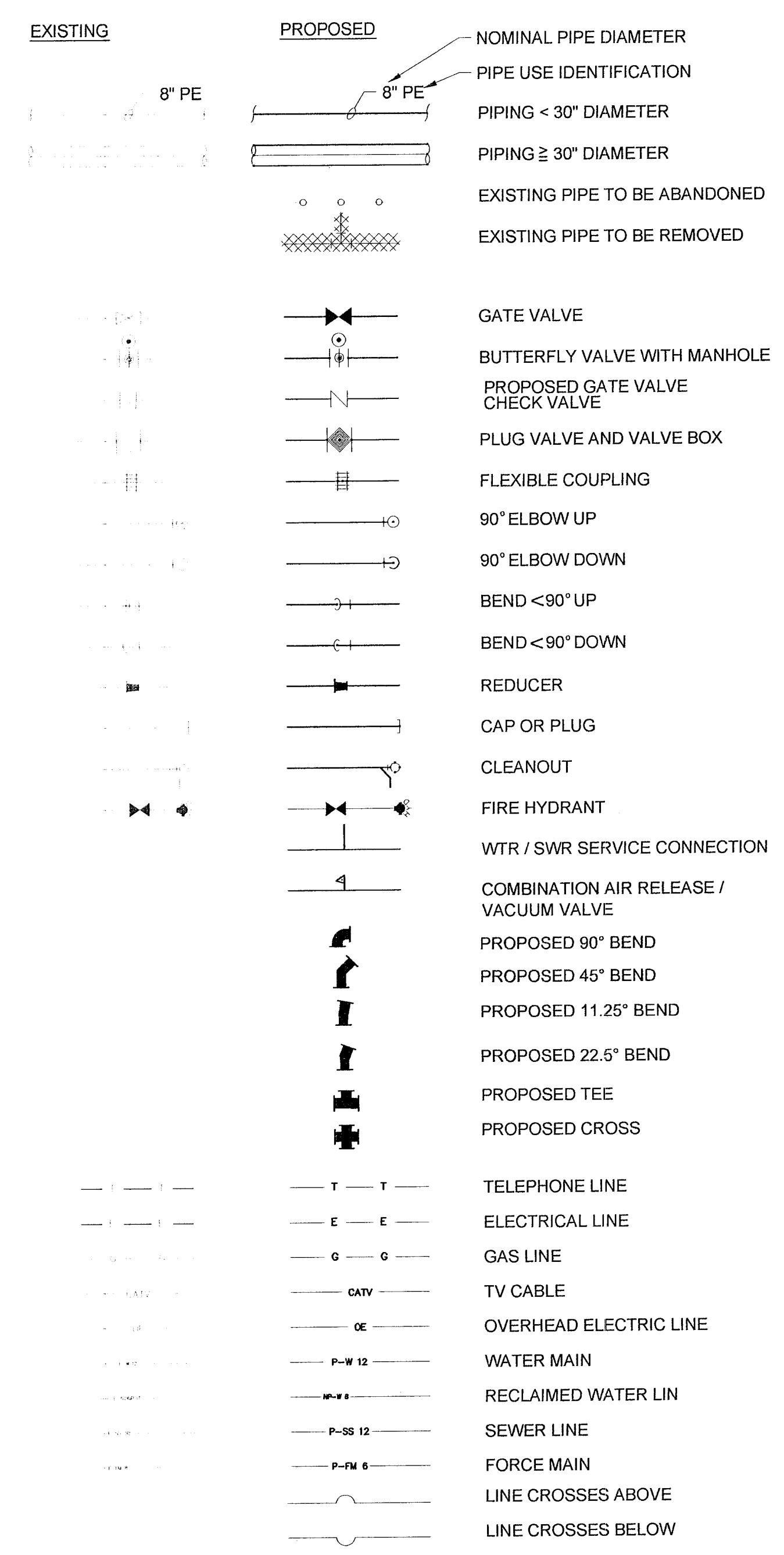
**GENERAL NOTE:**

1. THIS IS A STANDARD LEGEND SHEET. THEREFORE, NOT ALL OF THE INFORMATION SHOWN MAY BE USED ON THIS PROJECT.

**CIVIL LEGEND**



**PIPING & FITTING LEGEND**



**ABBREVIATIONS**

BM	BENCH MARCH	HP	HIGH POINT
BC	BACK OF CURB	MH	MANHOLE
COORD	COORDINATES	OC	ON CENTER
DIA	DIAMETER	PC	POINT OF CURVATURE
DIP	DUCTILE IRON PIPE	PP	POWER POLE
EL	ELEVATION	PVC	POLYVINYL CHORIDE
EPEC	EL PASO ELECTRIC COMPANY	PVMT	PAVEMENT
EPWU	EL PASO WATER UTILITIES	R.O.W.	RIGHT-OF-WAY
EP	EDGE OF PAVEMENT	RCP	REINFORCED CONCRETE PIPE
EW	EACH WAY	STL	STEEL
FC	FACE OF CURB	SCCP	STEEL CYLINDER CONCRETE PIPE
FF	FINISH FLOOR	TC	TOP OF CONCRETE
FL	FLOW LINE	TYP	TYPICAL
HMAC	HOT MIX ASPHALTIC CONCRETE		

**STREETS ABBREVIATIONS**

D.M.	DESERT MIRAGE
D.N.	DESERT NIGHT
D.W.	DESERT WHISPER
F.B.	FRANKLIN BLUFF DR.
F.D.	FRANKLIN DOVE AVE.
T.D.	TRANQUIL DESERT

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REFERENCES - BENCHMARK

BY: \_\_\_\_\_ REVISION: \_\_\_\_\_

DATE: \_\_\_\_\_

QUANTUM H<sub>2</sub>O, Inc.  
 Integrated Engineering Solutions  
 414 Executive Center Blvd.  
 Suite 200-B  
 El Paso, Texas 79902  
 Office: 915.238.4044  
 Texas Registered Engineering Firm # F-1062

**FRANKLIN HILLS UNIT EIGHT  
 SUBDIVISION  
 IMPROVEMENT PLANS  
 EL PASO COUNTY, TEXAS**

PROJECT TITLE

SHEET TITLE

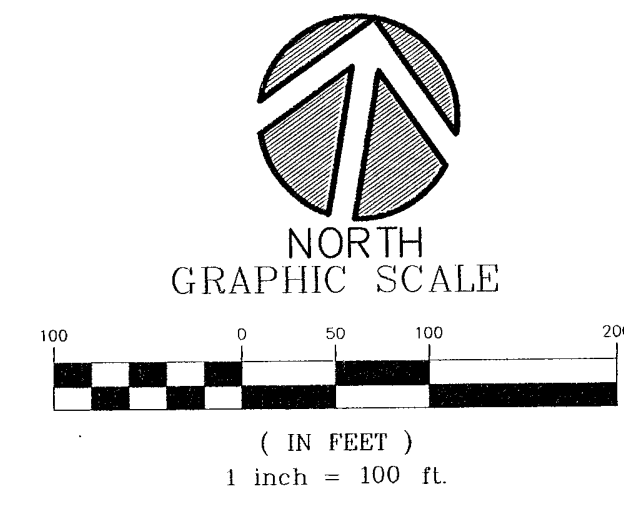
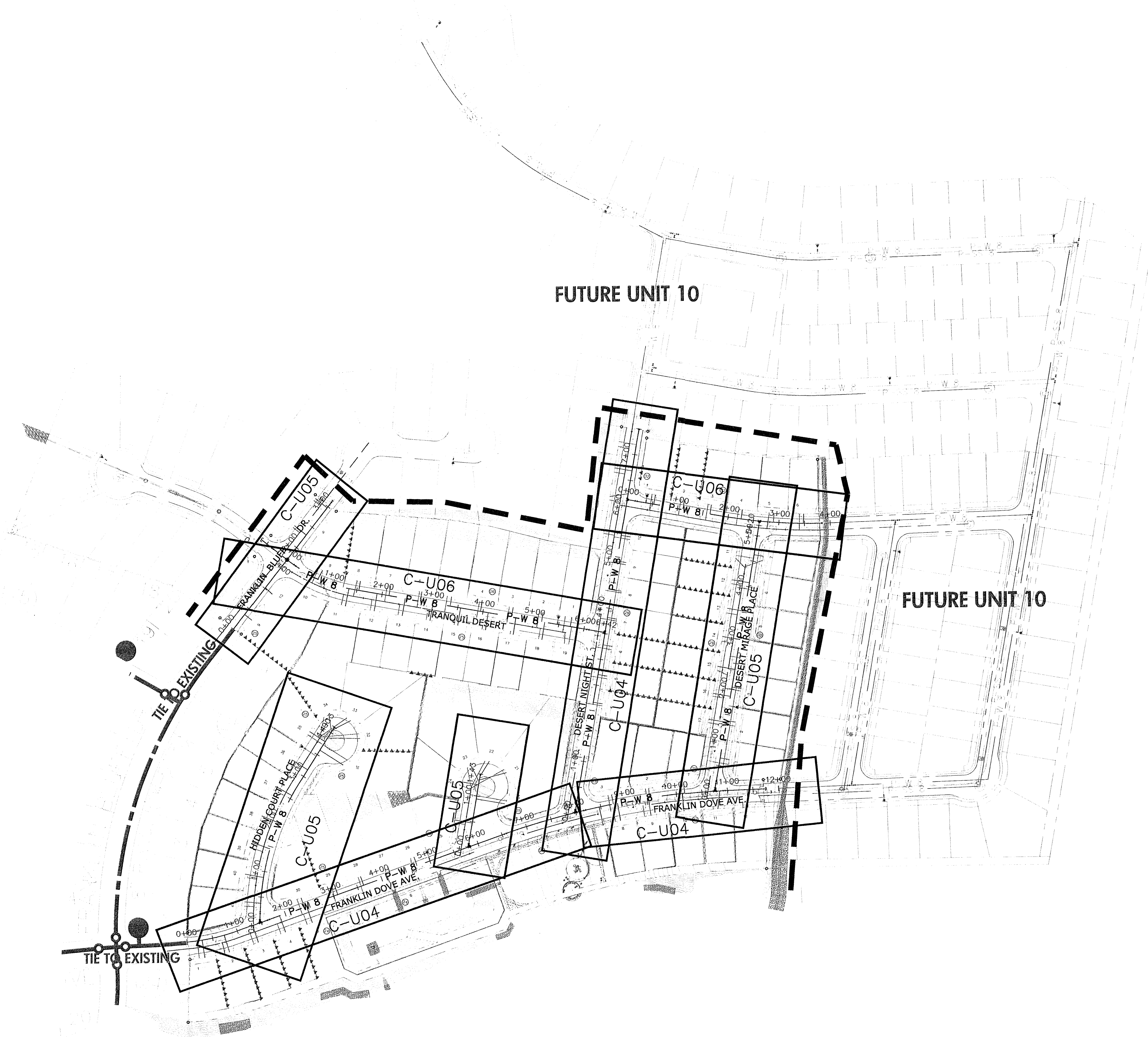
ABBREVIATIONS & SYMBOLS

SHEET NO.

**C-U01**

OF 58 SHEETS

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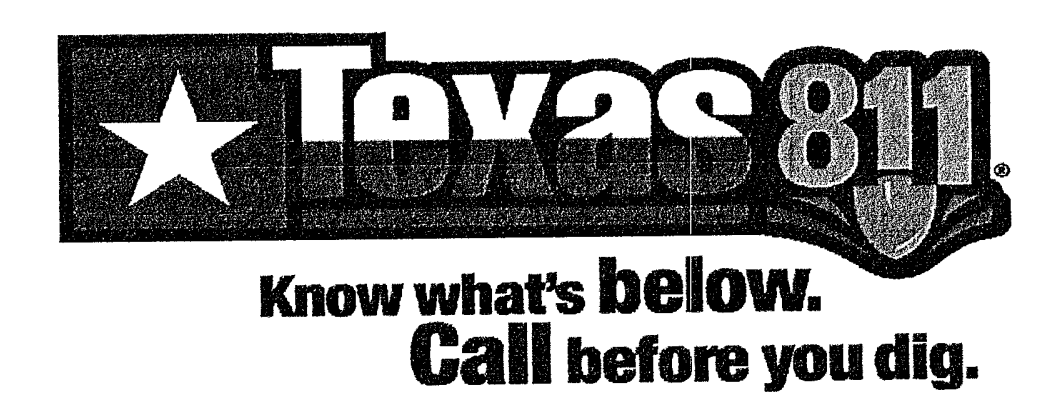


**NOTE:**  
 1. REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

**KEYED NOTES:**  
 1. WHEN WATER IS CROSSING STORMSEWER INSTALL VERTICAL OFFSET USING 45° VERTICAL BENDS. INSTALL AT LEAST 18 FEET OF WATER LINE INSIDE STEEL CASING, AND MAINTAIN A MINIMUM OF 18-INCH CLEARANCE BETWEEN THE WATER LINE AND STORMSEWER. SEE DETAIL 120 ON SHEET C-U17 FOR TYPICAL INSTALLATION.

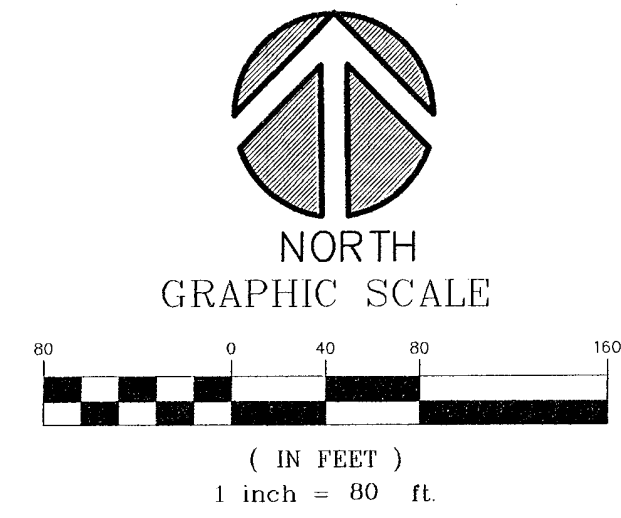
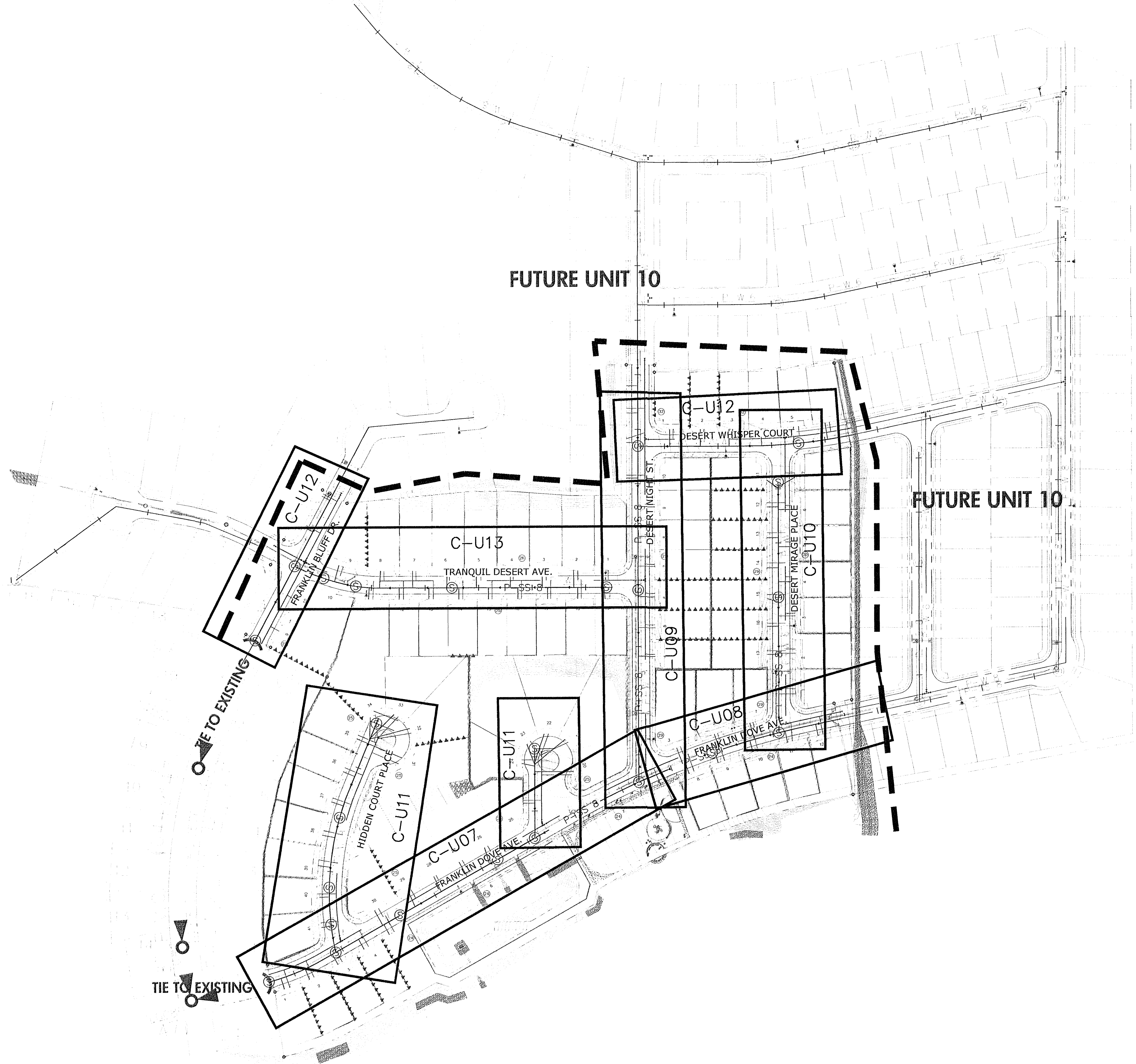
**STREETS ABBREVIATIONS**

D.M.	DESERT MIRAGE
D.N.	DESERT NIGHT
D.W.	DESERT WHISPER
F.B.	FRANKLIN BLUFF DR.
F.D.	FRANKLIN DOVE AVE.
H.C.	HIDDEN COURT
T.D.	TRANQUIL DESERT



REFERENCES - BENCHMARK					
DATE	REVISION	BY			
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<p><b>QUANTUM H<sub>2</sub>O, Inc.</b>        Integrated Engineering Solutions        414 Executive Center Blvd.        Suite 200-B        El Paso, Texas 79902        Office: 915.288.4045        Texas Registered Engineering Firm # E-10962</p>					
<p>SCALE:        HORIZONTAL: _____        VERTICAL: _____        DATE: 3-22-2012        DESIGN BY: J.L.S.        DRAWN BY: J.L.S.        CHECKED BY: J.L.S.        APPROVED BY: J.L.S.        JOB NO.: 1038</p>					
<p>PROJECT TITLE  <b>FRANKLIN HILLS UNIT EIGHT        SUBDIVISION        IMPROVEMENT PLANS</b>        EL PASO COUNTY, TEXAS</p>					
<p>SHEET TITLE  <b>WATER DISTRIBUTION        OVERALL PLAN</b></p>					
<p>SHEET NO.  <b>C-U02</b>        OF 58 SHEETS</p>					

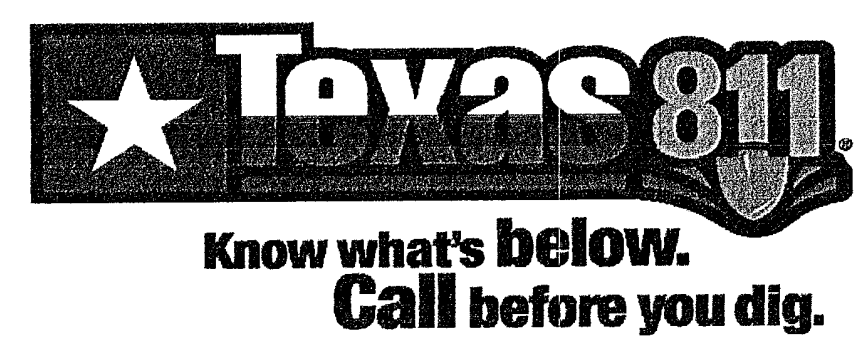
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**NOTE:**  
 1. REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

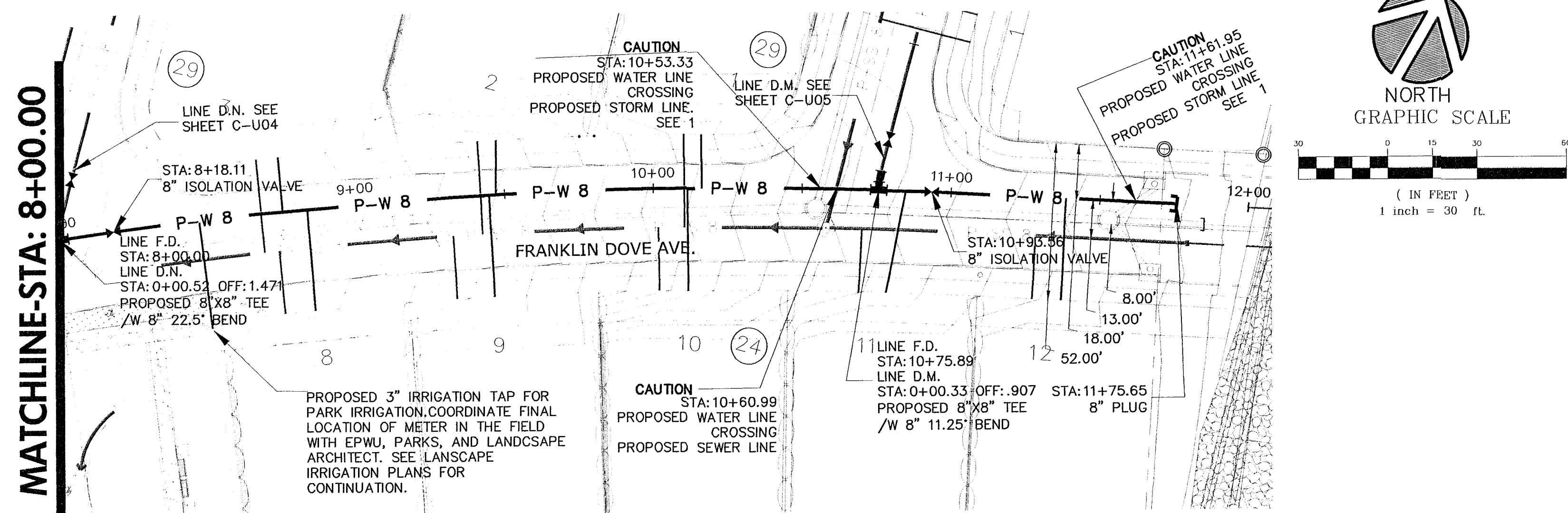
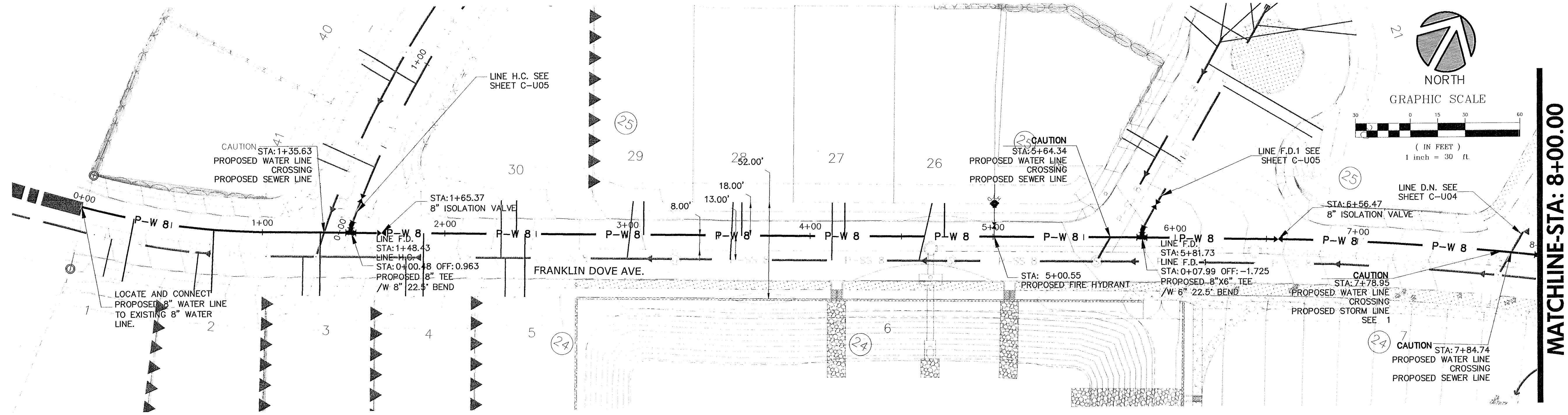
**STREETS ABBREVIATIONS**

- |      |                    |
|------|--------------------|
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| H.C. | HIDDEN COURT       |
| T.D. | TRANQUIL DESERT    |



REFERENCES - BENCHMARK					
DATE	REVISION	BY			
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<p>SCALE:        HORIZONTAL: _____        VERTICAL: _____        CONTOUR INTERVAL: 3'-22'-2012        DATE: _____ R.S.        DESIGN BY: _____ J.L.S.        DRAWN BY: _____ R.S.        CHKD BY: _____ R.S.        APPVD BY: _____ R.S.        JOB NO. 1038</p>					
<p>PROJECT TITLE  <b>FRANKLIN HILLS UNIT EIGHT        SUBDIVISION        IMPROVEMENT PLANS        EL PASO COUNTY, TEXAS</b></p>					
<p>SHEET TITLE  <b>WASTEWATER        COLLECTION        OVERALL PLAN</b></p>					
<p>SHEET NO.  <b>C-U03</b></p>					
<p>OF 58 SHEETS</p>					





# FRANKLIN DOVE AVE.

**NOTE:**

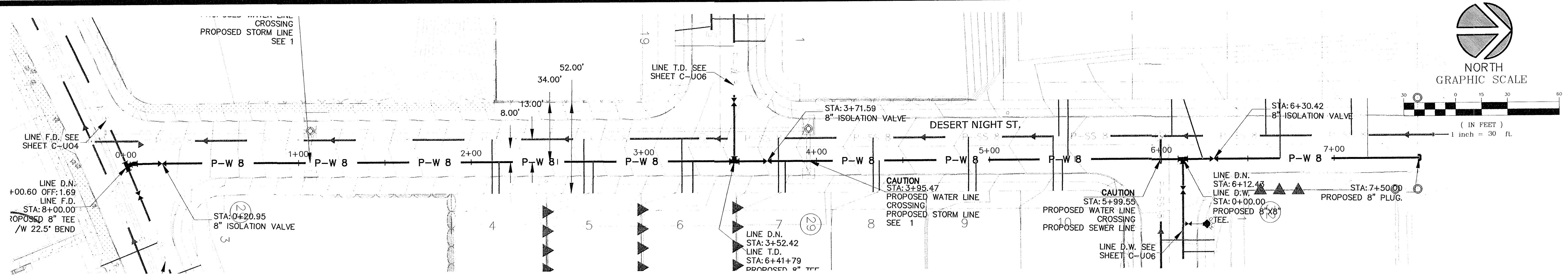
- REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

**KEYED NOTES:**

- WHEN WATER IS CROSSING STORMSEWER INSTALL VERTICAL OFFSET USING 45° VERTICAL BENDS. INSTALL AT LEAST 18 FEET OF WATER LINE INSIDE STEEL CASING, AND MAINTAIN A MINIMUM OF 18-INCH CLEARANCE BETWEEN THE WATER LINE AND STORMSEWER. SEE DETAIL 120 ON SHEET C-U17 FOR TYPICAL INSTALLATION.

**STREETS ABBREVIATIONS**

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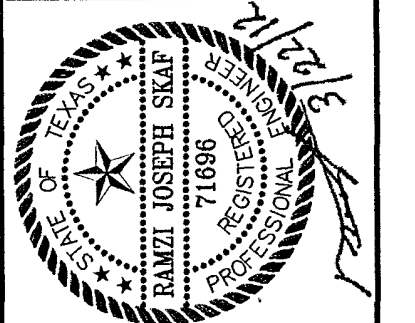
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**MATCHLINE-STA: 8+00.00**

REFERENCES - BENCHMARK	
DATE	BY

**QUANTUM H<sub>2</sub>O, Inc.**  
 Integrated Engineering Solutions  
 414 Executive Center Blvd.  
 Suite 200-B  
 El Paso, Texas 79902  
 Office: 915.238.4444  
 Texas Registered Engineering Firm # F10962



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VERTICAL:	1" = 10'
DATE:	3-22-2012
DESIGN BY:	R.S.
DRAWN BY:	J.L.S.
CHKD BY:	R.S.
APPD BY:	R.S.
JOB NO.:	1038

**PROJECT TITLE**

**FRANKLIN HILLS UNIT EIGHT  
 SUBDIVISION  
 IMPROVEMENT PLANS  
 EL PASO COUNTY, TEXAS**

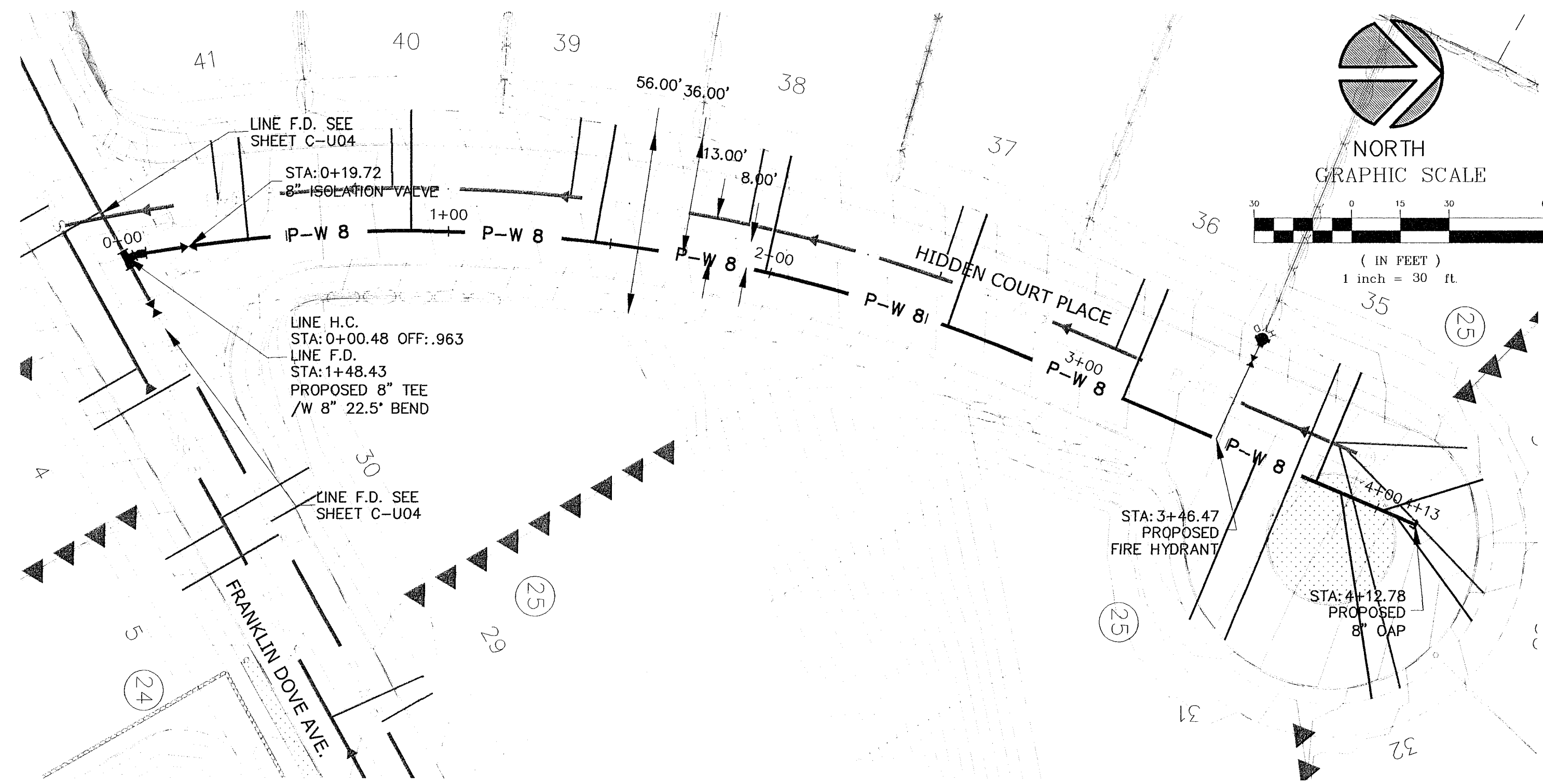
**SHEET TITLE**

**WATER DISTRIBUTION  
 SYSTEM  
 FRANKLIN DOVE AVE.  
 &  
 DESERT NIGHT ST.**

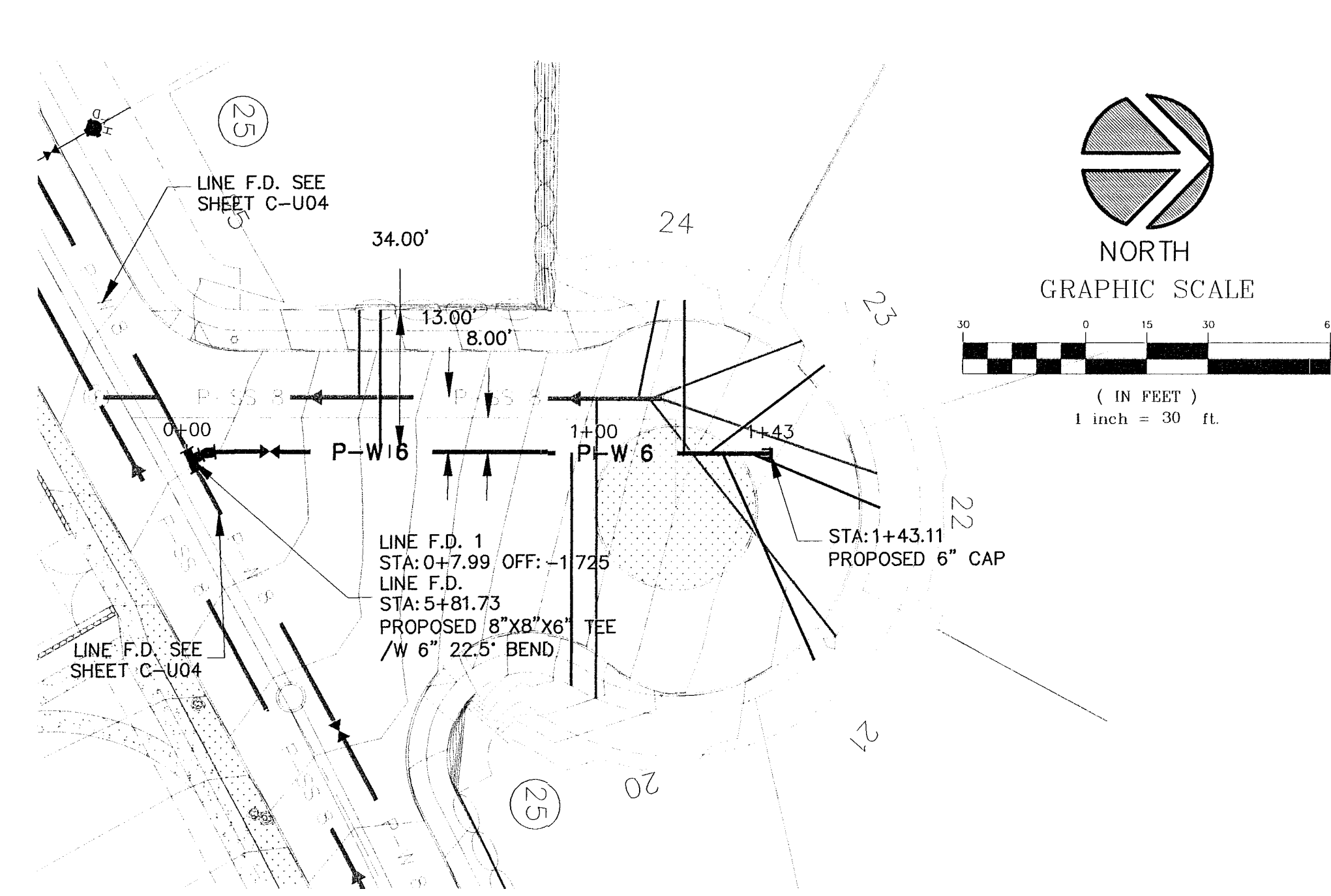
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**C-U04**

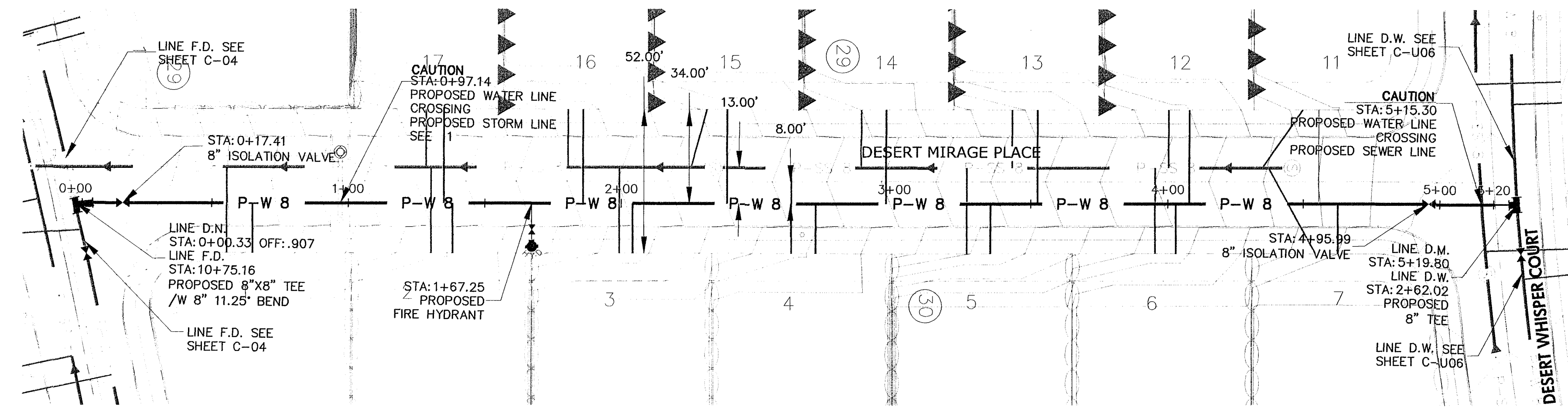
OF 58 SHEETS



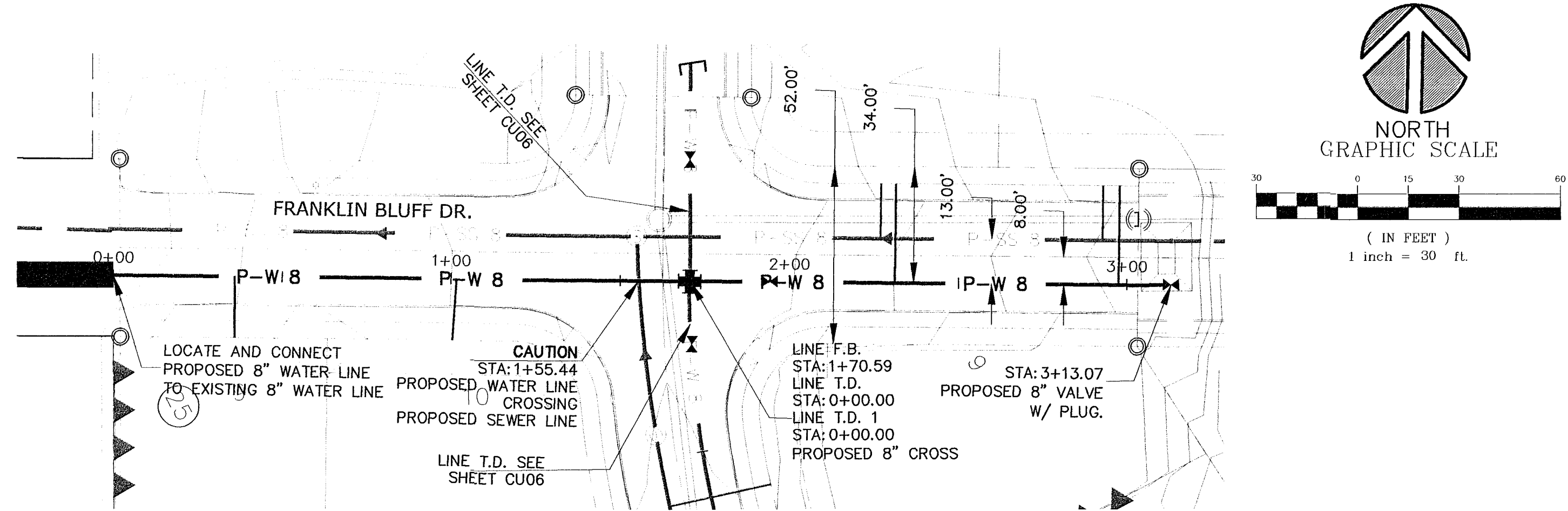
**HIDDEN COURT PLACE**



**FRANKLIN DOVE AVE.**



**DESERT MIRAGE PLACE**



**FRANKLIN BLUFF DR.**

**NOTE:**  
 1. REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

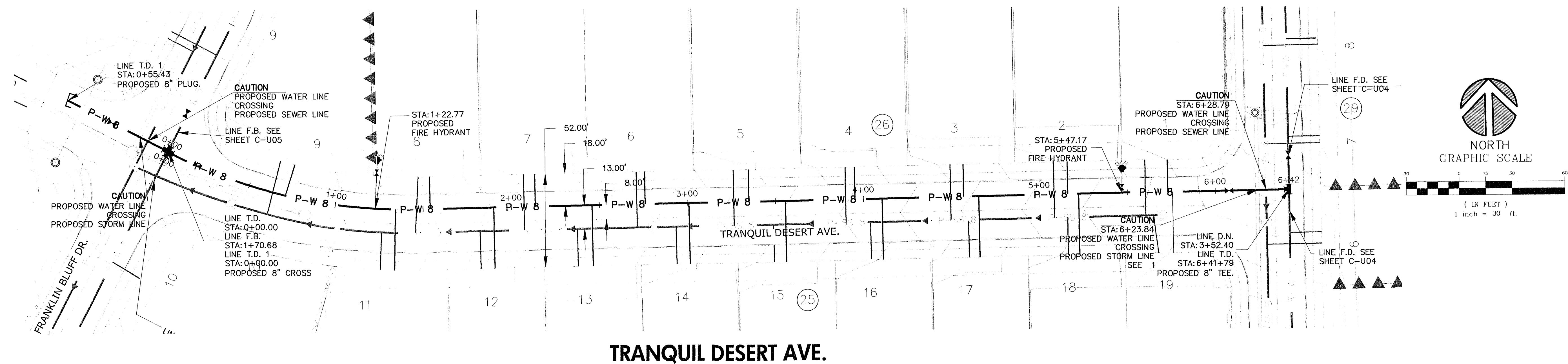
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**STREETS ABBREVIATIONS**

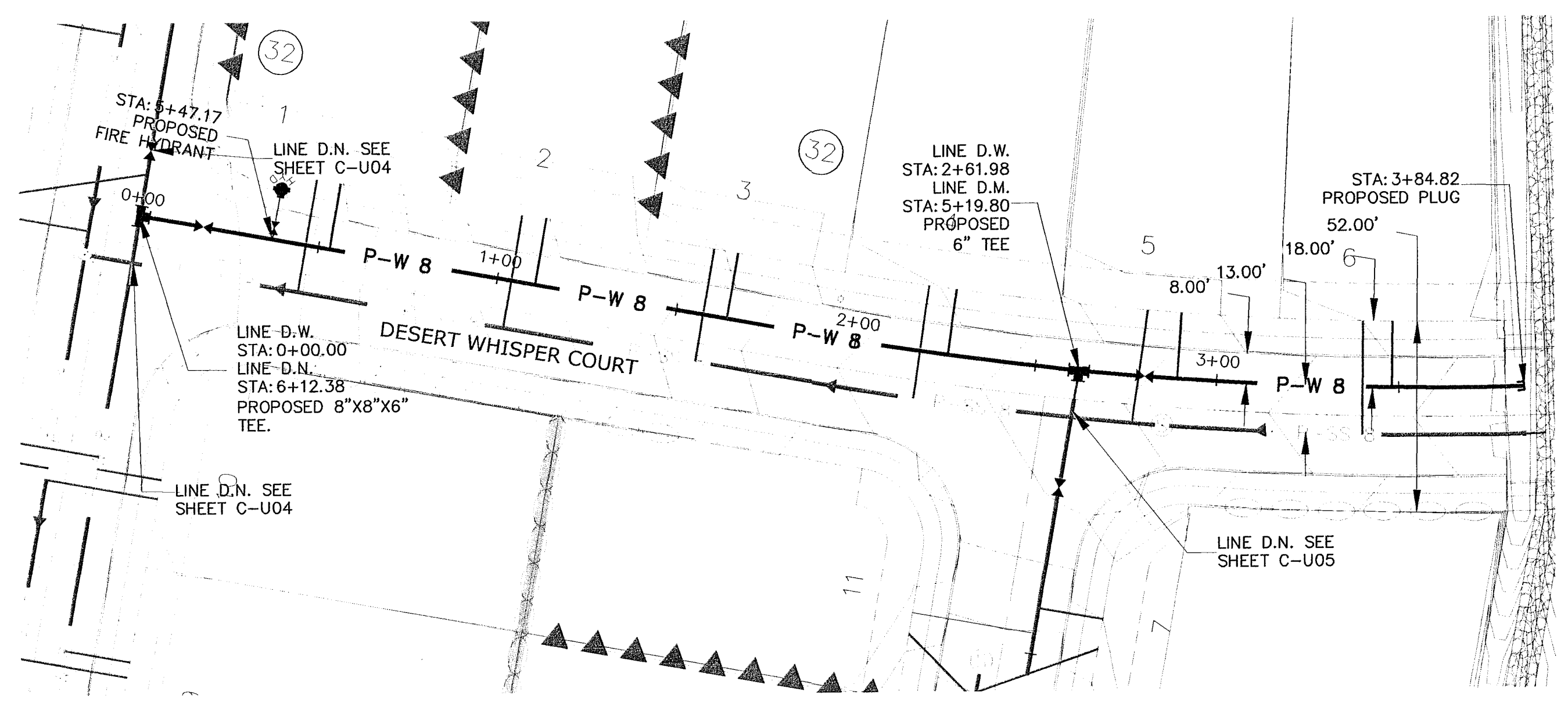
D.M.	DESERT MIRAGE
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F.D.	FRANKLIN DOVE AVE.
H.C.	HIDDEN COURT
T.D.	TRANQUIL DESERT

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<p>REFERENCES - BENCHMARK</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><td>DATE</td><td> </td></tr> <tr><td>REVISION</td><td> </td></tr> <tr><td>BY</td><td> </td></tr> </table>	DATE		REVISION		BY		<p>PROJECT TITLE</p> <p style="text-align: center;"><b>FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS EL PASO COUNTY, TEXAS</b></p> <p>SHEET TITLE</p> <p><b>WATER DISTRIBUTION SYSTEM DESERT MIRAGE PLACE HIDDEN COURT, FRANKLIN DOVE &amp; FRANKLIN BLUFF DR.</b></p> <p>SHEET NO.</p> <p style="text-align: center;"><b>C-U05</b></p> <p style="text-align: right;">OF 58 SHEETS</p>
DATE							
REVISION							
BY							
<p>QUANTUM H<sub>2</sub>O, Inc.        Integrated Engineering Solutions        414 Executive Center Blvd.        El Paso, Texas 79902        Office: 915.536.4145        Texas Registered Engineering Firm # F-10962</p>	<p>SCALE:</p> <p>HORIZONTAL: 1" = 30'</p> <p>VERTICAL: 1" = 10'</p> <p>DATE: 3-22-2012</p> <p>DESIGN BY: J.L.S.</p> <p>DRAWN BY: J.L.S.</p> <p>CHKD BY: J.L.S.</p> <p>APPRD BY: J.L.S.</p> <p>JOB NO.: 1038</p>						
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**TRANQUIL DESERT AVE.**



**DESERT WHISPER COURT**

**NOTE:**

- REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

**KEYED NOTES:**

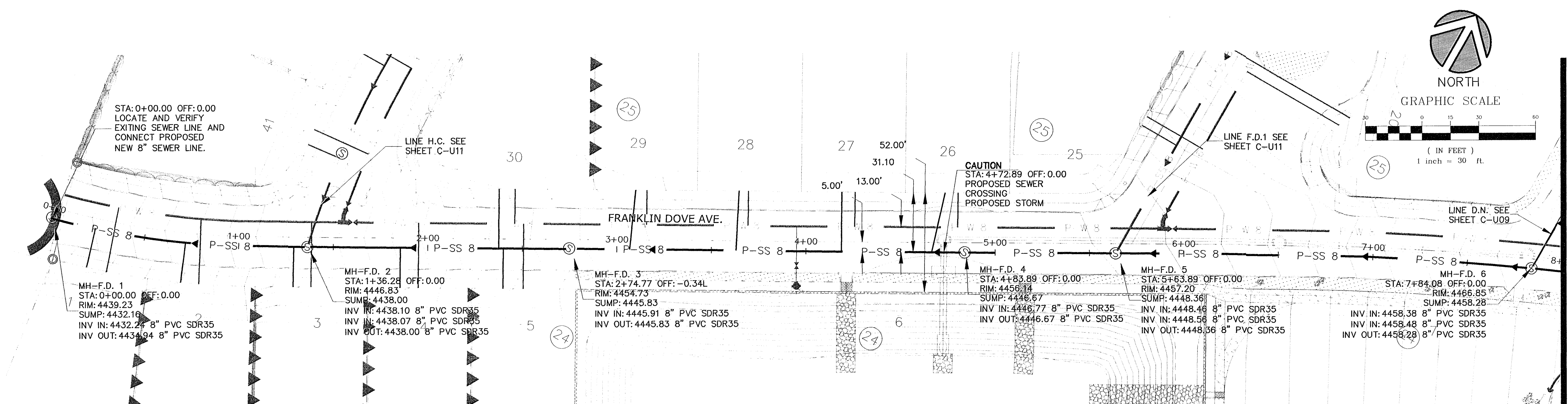
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**STREETS ABBREVIATIONS**

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H.C.	HIDDEN COURT
T.D.	TRANQUIL DESERT

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REFERENCES - BENCHMARK					
DATE	REVISION	BY			
<b>QUANTUM H<sub>2</sub>O, Inc.</b> Integrated Engineering Solutions 414 Executive Center Blvd. Suite 200-B El Paso, Texas 79902 Office: 910.206.4025 Texas Registered Engineering Firm # F-10962					
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SCALE:	PROJECT TITLE				
HORIZONTAL: _____ VERTICAL: _____ CONTOUR INTERVAL: _____	<b>FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS EL PASO COUNTY, TEXAS</b>				
DATE: 3-22-2012 DESIGN BY: J.L.S. DRAWN BY: J.L.S. CHECK BY: J.L.S. APP'D BY: J.L.S. JOB NO.: 1038					
SHEET TITLE					
<b>WATER DISTRIBUTION SYSTEM TRANQUIL DESERT AVE. &amp; DESERT WHISPER CT.</b>					
SHEET NO.					
<b>C-U06</b>					
OF 58 SHEETS					



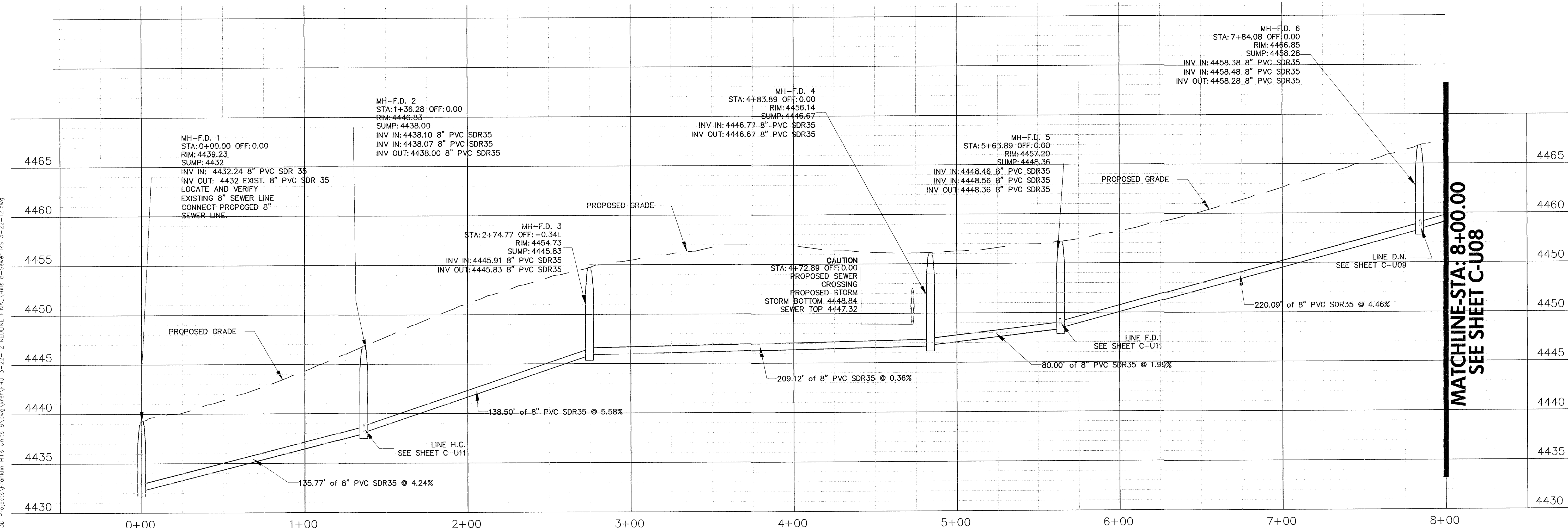
# FRANKLIN DOVE AVE.

**MATCHLINE-STA: 8+00.00  
SEE SHEET C-U08**

**NOTE:**  
1. REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

### STREETS ABBREVIATIONS

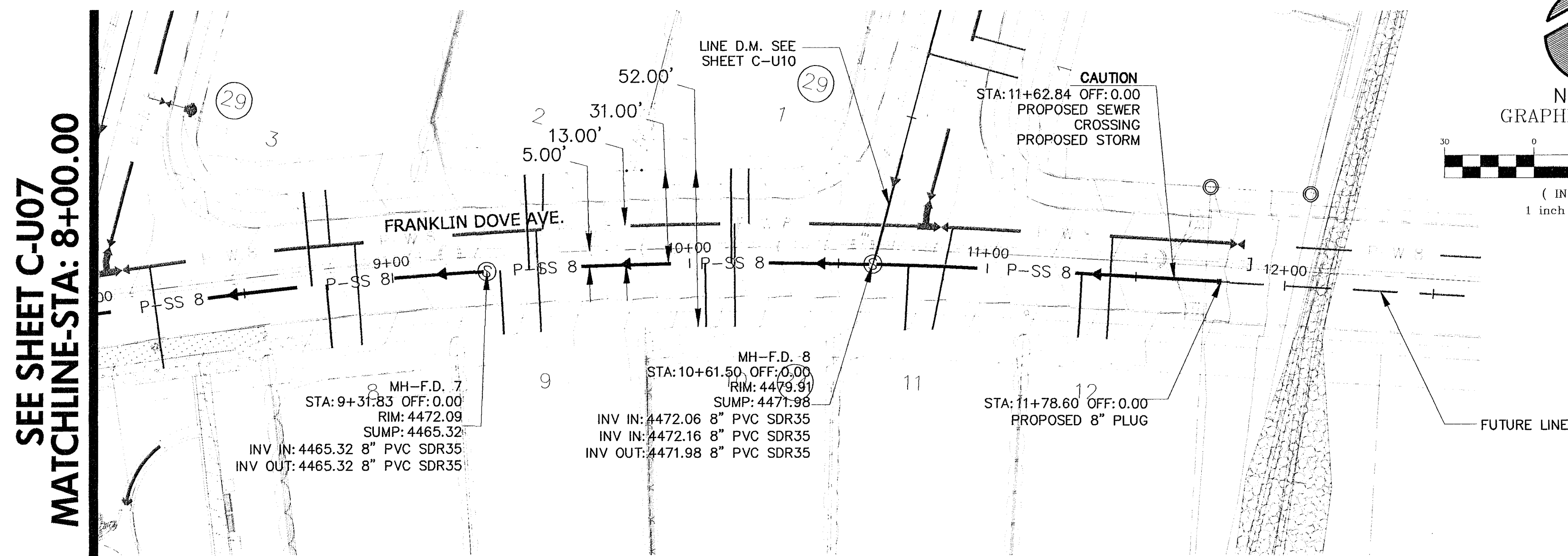
- D.M. DESERT MIRAGE
- D.N. DESERT NIGHT
- D.W. DESERT WHISPER
- F.B. FRANKLIN BLUFF DR.
- F.D. FRANKLIN DOVE AVE.
- H.C. HIDDEN COURT
- T.D. TRANQUIL DESERT



**MATCHLINE-STA: 8+00.00  
SEE SHEET C-U08**

<p>REFERENCES - BENCHMARK</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 30%;">DATE</td> <td style="width: 30%;">REVISION</td> <td style="width: 40%;">BY</td> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	DATE	REVISION	BY				<p><b>QUANTUM H<sub>2</sub>O, Inc.</b>          Integrated Engineering Solutions          414 Executive Center Blvd.          Suite 200-B          El Paso, Texas 79902          Phone: 915.296.4025          Texas Registered Engineering Firm # F-10692</p>
DATE	REVISION	BY					
<p><b>PROJECT TITLE</b> FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS EL PASO COUNTY, TEXAS</p>							
<p><b>SHEET TITLE</b> WASTEWATER COLLECTION SYSTEM FRANKLIN DOVE AVE.</p>							
<p><b>SHEET NO.</b> <b>C-U07</b> OF 58 SHEETS</p>							

Mar 26 2012 8:19pm Luis  
 C:\Cul\3D Projects\Franklin Hills 8-Sewer\Final\Hills 8-Sewer RS 3-22-12.dwg

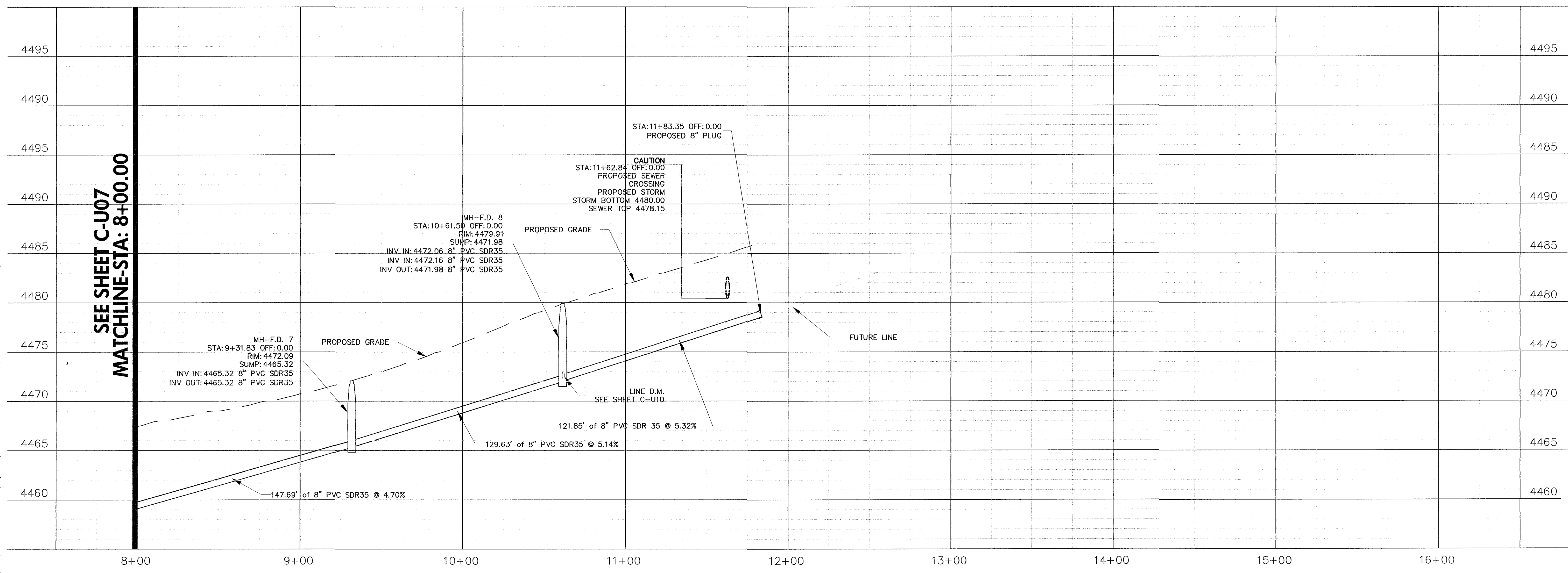


**NOTE:**  
1. REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL,  
AND OTHER INSTALLATION REQUIREMENTS

**STREETS ABBREVIATIONS**

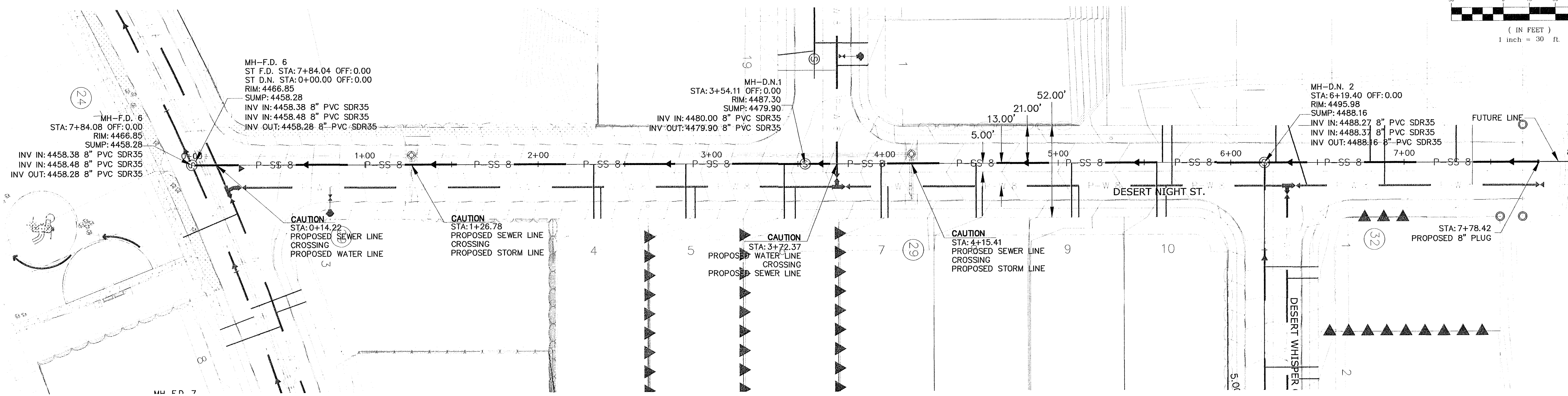
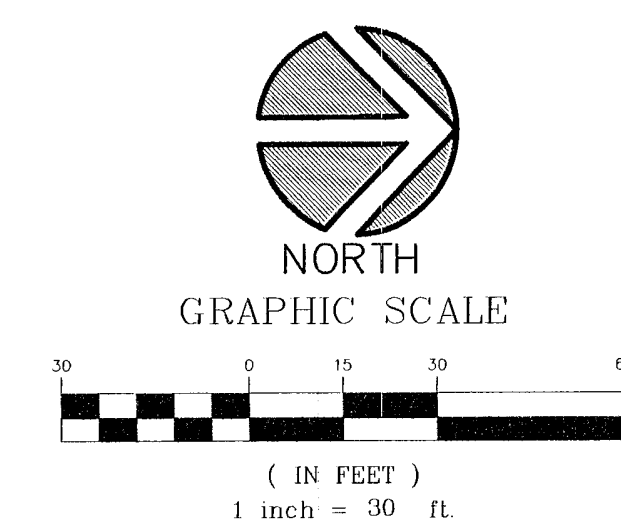
- D.M. DESERT MIRAGE
- D.N. DESERT NIGHT
- D.W. DESERT WHISPER
- F.B. FRANKLIN BLUFF DR.
- F.D. FRANKLIN DOVE AVE.
- H.C. HIDDEN COURT
- T.D. TRANQUIL DESERT

**FRANKLIN DOVE AVE.**



REFERENCES - BENCHMARK		
DATE	REVISION	BY
<p>QUANTUM H<sub>2</sub>O, Inc. 444 Excelsior, Suite 200 B El Paso, Texas 79902 Office: 915.238.4044 Texas Registered Engineering Firm # F-1062</p>		
<p>The seal appearing on this document was authorized by the State of Texas. It is the responsibility of the registered engineer to ensure that the seal is used only on work for which he or she is responsible and is not used in violation of the Texas Engineering Practice Act.</p>		
SCALE:	<p>HORIZONTAL: 1" = 30'</p> <p>VERTICAL: 1" = 10'</p> <p>DATE: 3-22-2012</p> <p>DESIGN BY: R.S.</p> <p>DRAWN BY: J.L.S.</p> <p>CHKD BY: R.S.</p> <p>APPVD BY: R.S.</p> <p>JOB NO. 1038</p>	
PROJECT TITLE	<p>FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS EL PASO COUNTY, TEXAS</p>	
SHEET TITLE	<p>WASTEWATER COLLECTION SYSTEM</p>	
<p>FRANKLIN DOVE AVE.</p>		
SHEET NO.	<p><b>C-U08</b></p>	
<p>OF 58 SHEETS</p>		

Mar 26, 2012 8:20pm Luis C:\Civil 3D Projects\Franklin Hills Units 8\eng\wv\FWU 3-22-12 REDLINE FINAL\Hills 8 - Sewer RS 3-22-12.dwg



# DESERT NIGHT ST.

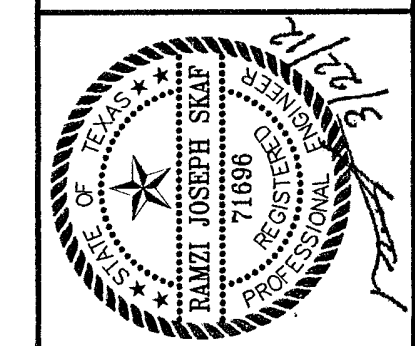
**NOTE:**  
1. REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

**STREETS ABBREVIATIONS**

- D.M. DESERT MIRAGE
- D.N. DESERT NIGHT
- D.W. DESERT WHISPER
- F.B. FRANKLIN BLUFF DR.
- F.D. FRANKLIN DOVE AVE.
- H.C. HIDDEN COURT
- T.D. TRANQUIL DESERT

REFERENCES - BENCHMARK
DATE
REVISION
BY

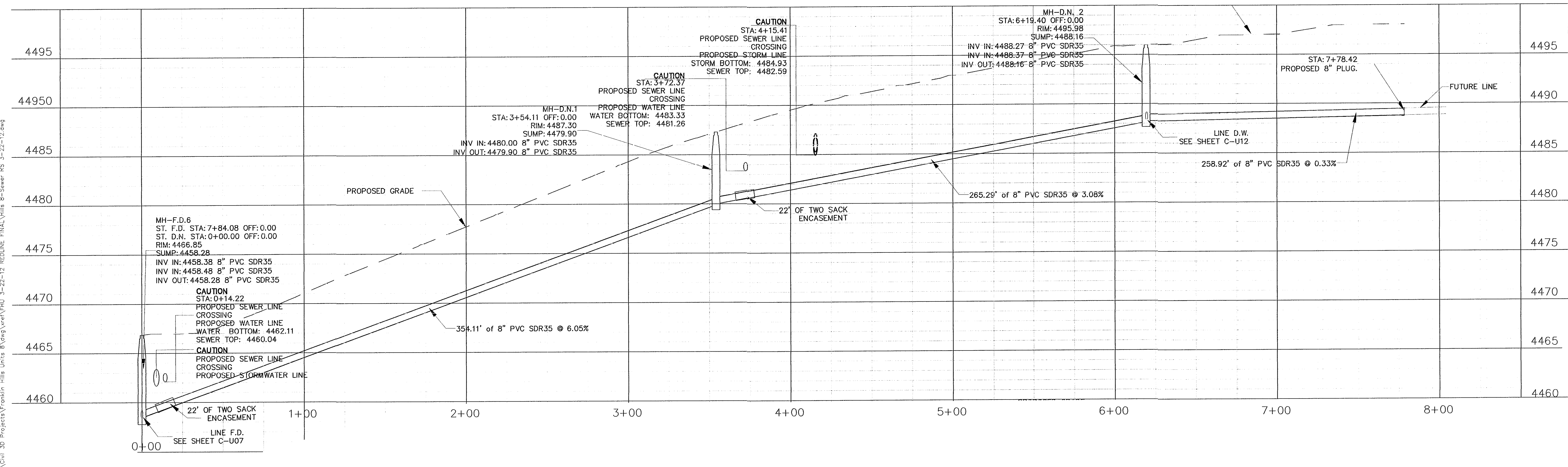
**QUANTUM H<sub>2</sub>O, Inc.**  
 Integrated Engineering Solutions  
 414 Executive Center Blvd.  
 Suite 200-B  
 El Paso, Texas 79902  
 Office: 915.236.0444  
 Texas Registered Engineering Firm # F-10963



The seal appearing on this document is the property of the State Board of Professional Engineers and Surveyors, State of Texas. It is to be used only by the engineer or surveyor whose name is on the seal. It is to be used only for the project and in the state for which it was issued. It is to be used only by the holder of the seal. It is to be used only for the purpose of certifying the work of the holder of the seal.

SCALE:

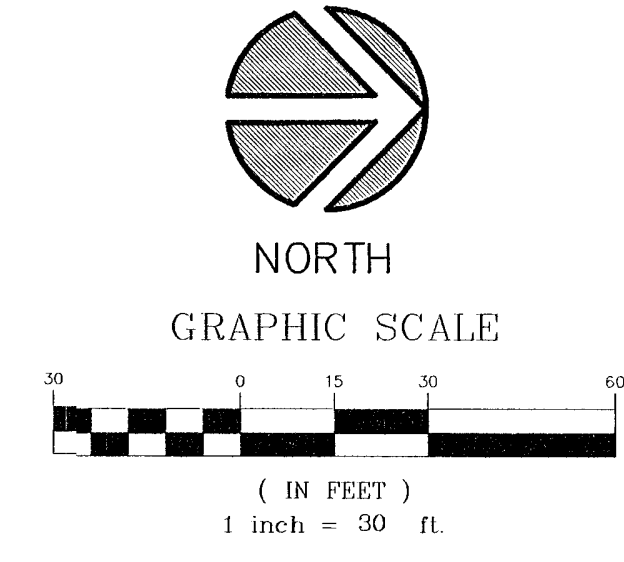
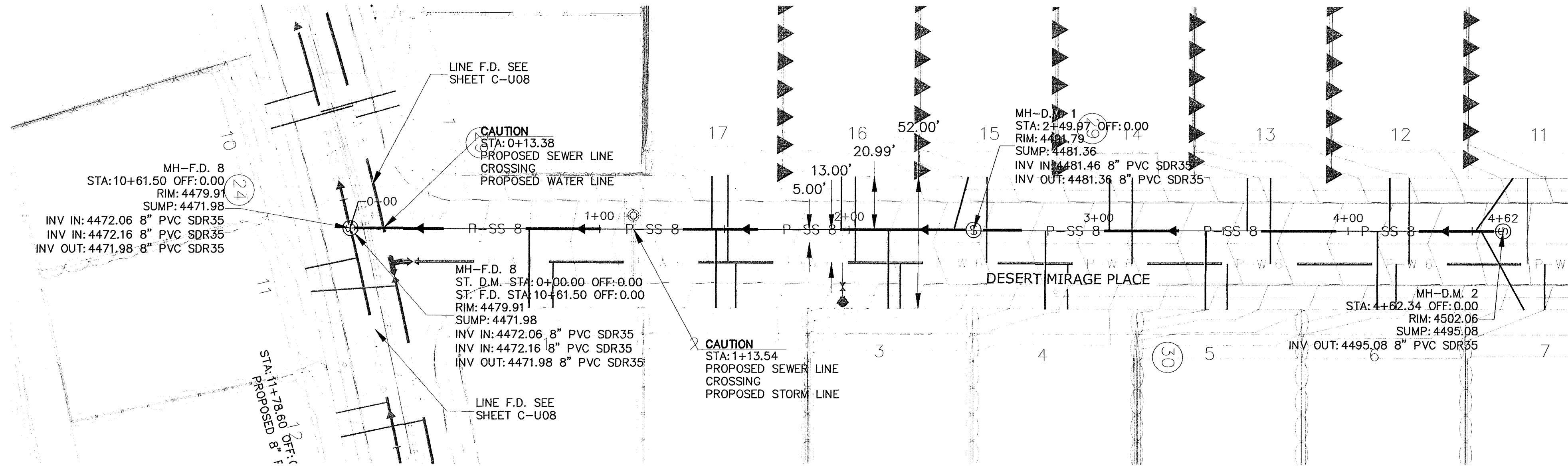
HORIZONTAL:	3" = 22'-0"
VERTICAL:	3" = 22'-0"
CONTOUR INTERVAL:	1'-0"
DATE:	3-22-2012
DESIGN BY:	R.S.
DRAWN BY:	J.L.S.
CHKD BY:	R.S.
APPVD BY:	R.S.
JOB NO.:	1038



PROJECT TITLE  
**FRANKLIN HILLS UNIT EIGHT  
 SUBDIVISION  
 IMPROVEMENT PLANS**  
 EL PASO COUNTY, TEXAS

SHEET TITLE  
**WASTEWATER  
 COLLECTION  
 SYSTEM**  
 DESERT NIGHT  
 ST.

SHEET NO.  
**C-U09**  
 OF 58 SHEETS

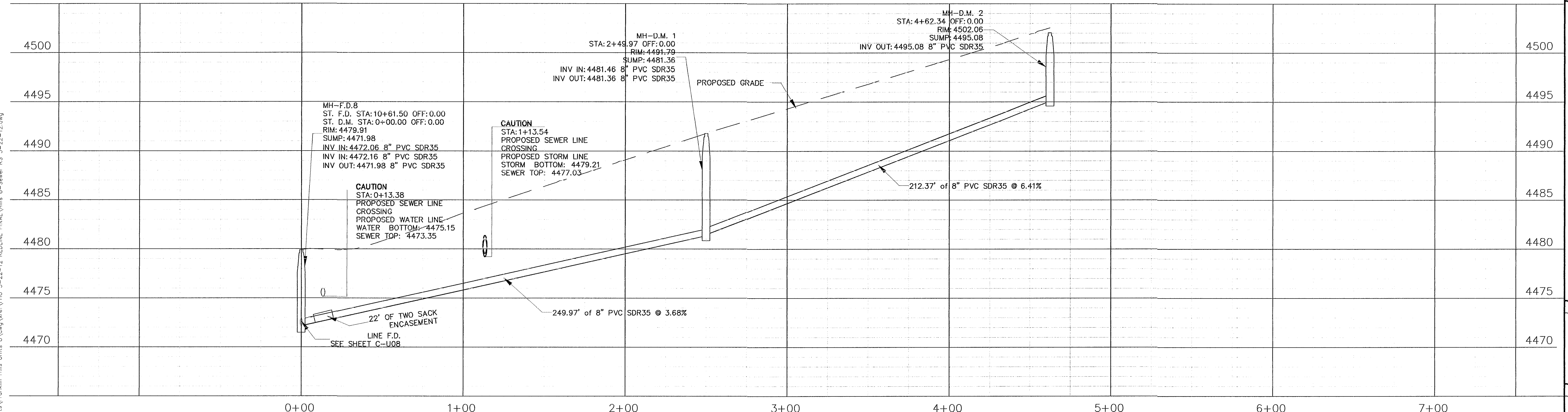


# DESERT MIRAGE PLACE

**NOTE:**  
1. REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL,  
AND OTHER INSTALLATION REQUIREMENTS

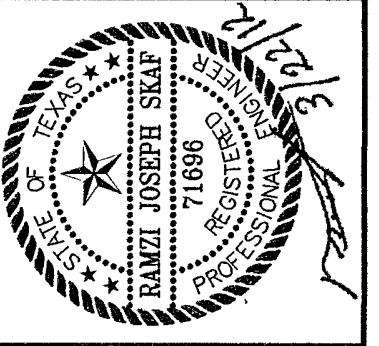
### STREETS ABBREVIATIONS

- |      |                    |
|------|--------------------|
| D.M. | DESERT MIRAGE      |
| D.N. | DESERT NIGHT       |
| D.W. | DESERT WHISPER     |
| F.B. | FRANKLIN BLUFF DR. |
| F.D. | FRANKLIN DOVE AVE. |
| H.C. | HIDDEN COURT       |
| T.D. | TRANQUIL DESERT    |



REFERENCES - BENCHMARK	
DATE	REVISION
BY	

**QUANTUM H<sub>2</sub>O, Inc.**  
Integrated Engineering Solutions  
414 Executive Center Blvd.  
Suite 200-B  
El Paso, Texas 79902  
Phone: 915.238.4025  
Fax: 915.238.4025  
Texas Registered Engineering Firm # F-10962



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SCALE:	HORIZONTAL:	VERTICAL:	CONTOUR INTERVAL:
			3'-22'-202'
DATE:	DESIGN BY:	DRAWN BY:	CHECKED BY:
3-22-2012	R.S.	J.L.S.	R.S.
			JOB NO. 1038

PROJECT TITLE  
**FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

SHEET TITLE  
**WASTEWATER  
COLLECTION  
SYSTEM**

DESERT MIRAGE  
PL

SHEET NO.

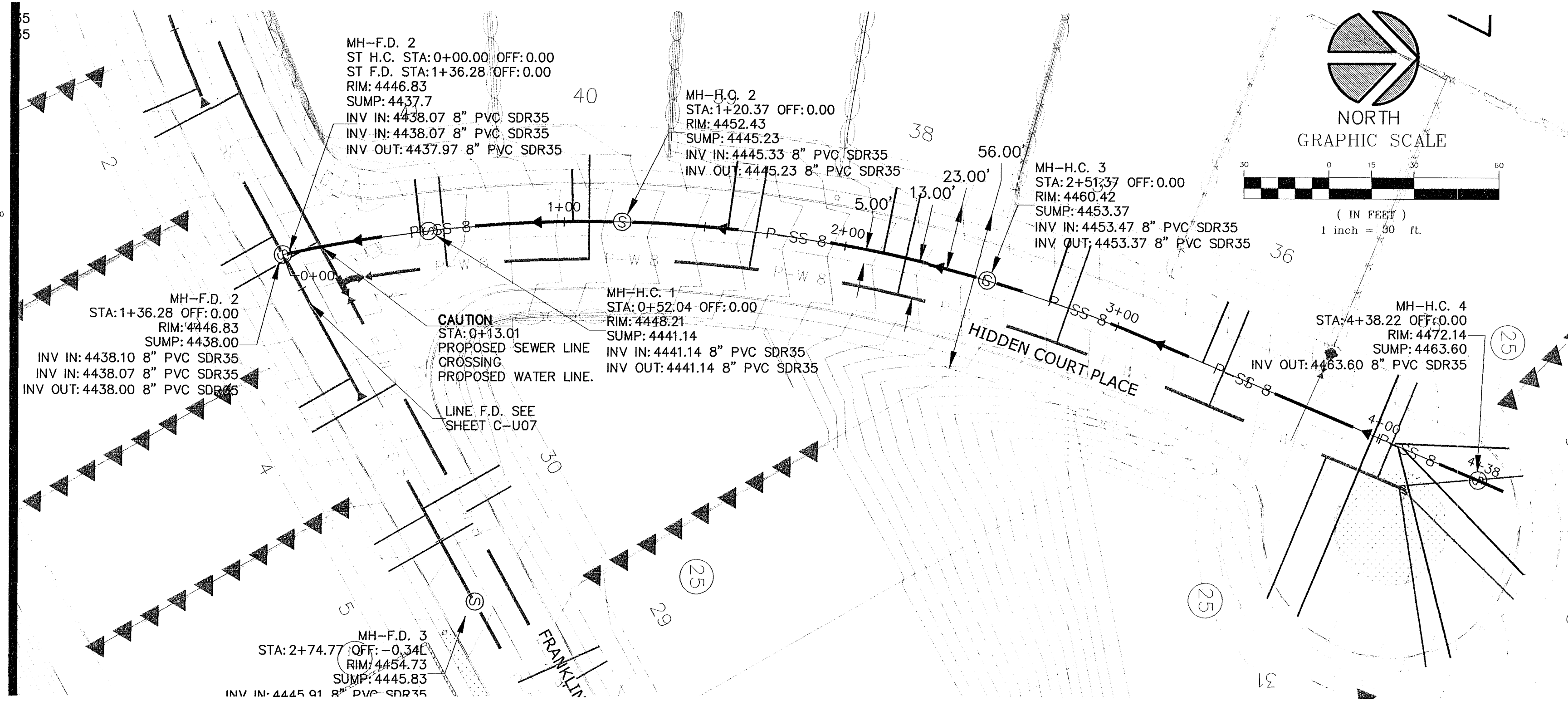
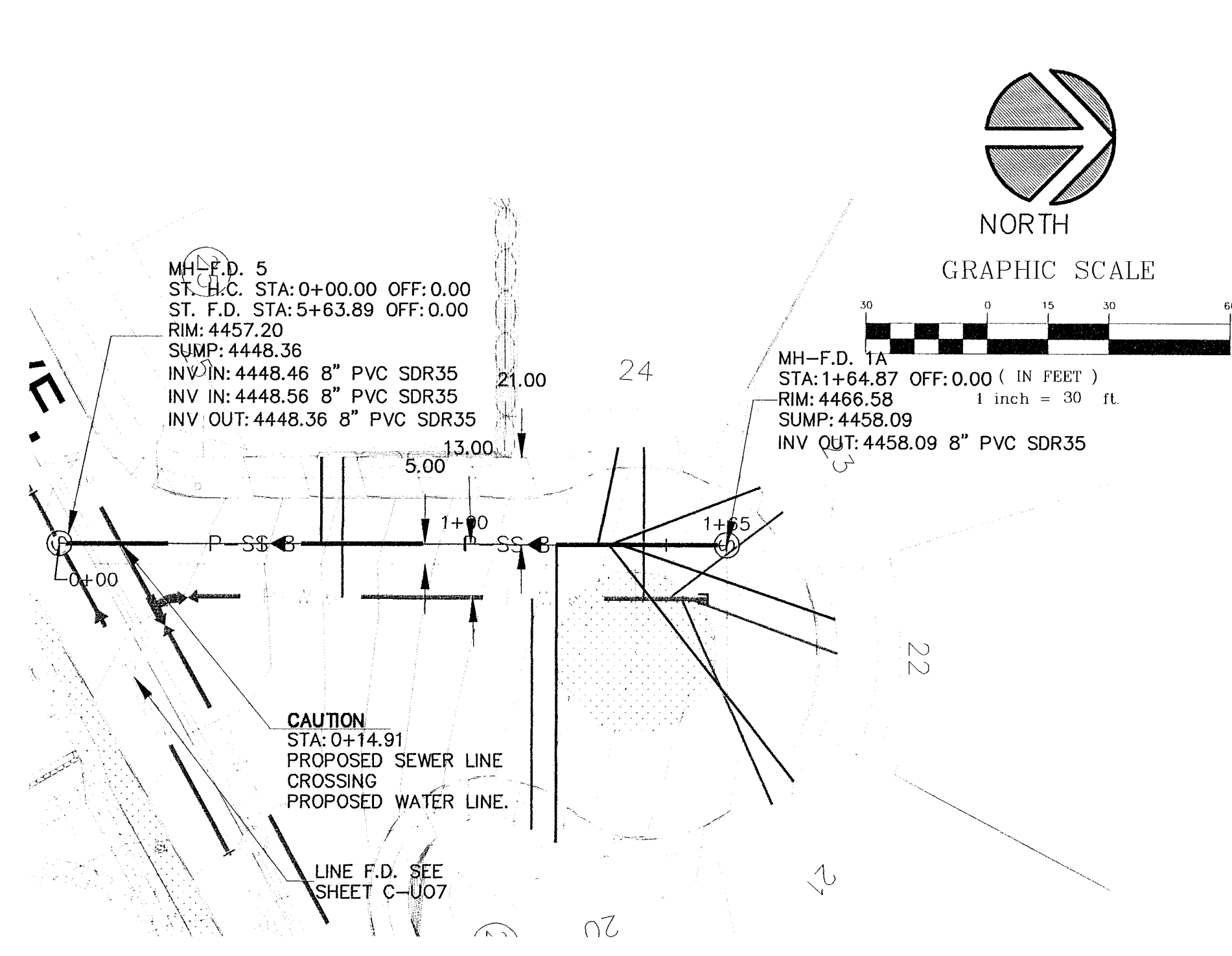
**C-U10**

OF 58 SHEETS

Mar 26, 2012 8:22pm Luis  
 C:\Civil\_3D\Projects\Franklin Hills Units B\eng\ref\FHU\_3-22-12\_REDLINE\_FINAL\Hills 8-Sewer RS 3-22-12.dwg

# FRANKLIN DOVE AVE.

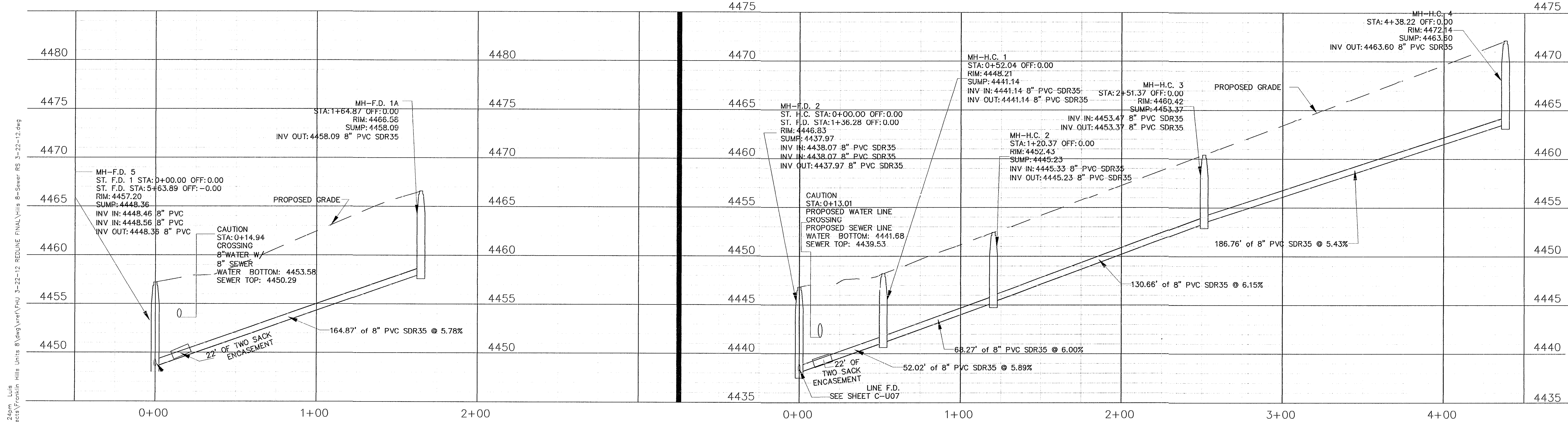
# HIDDEN COURT PLACE



**NOTE:**  
 1. REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

**STREETS ABBREVIATIONS**

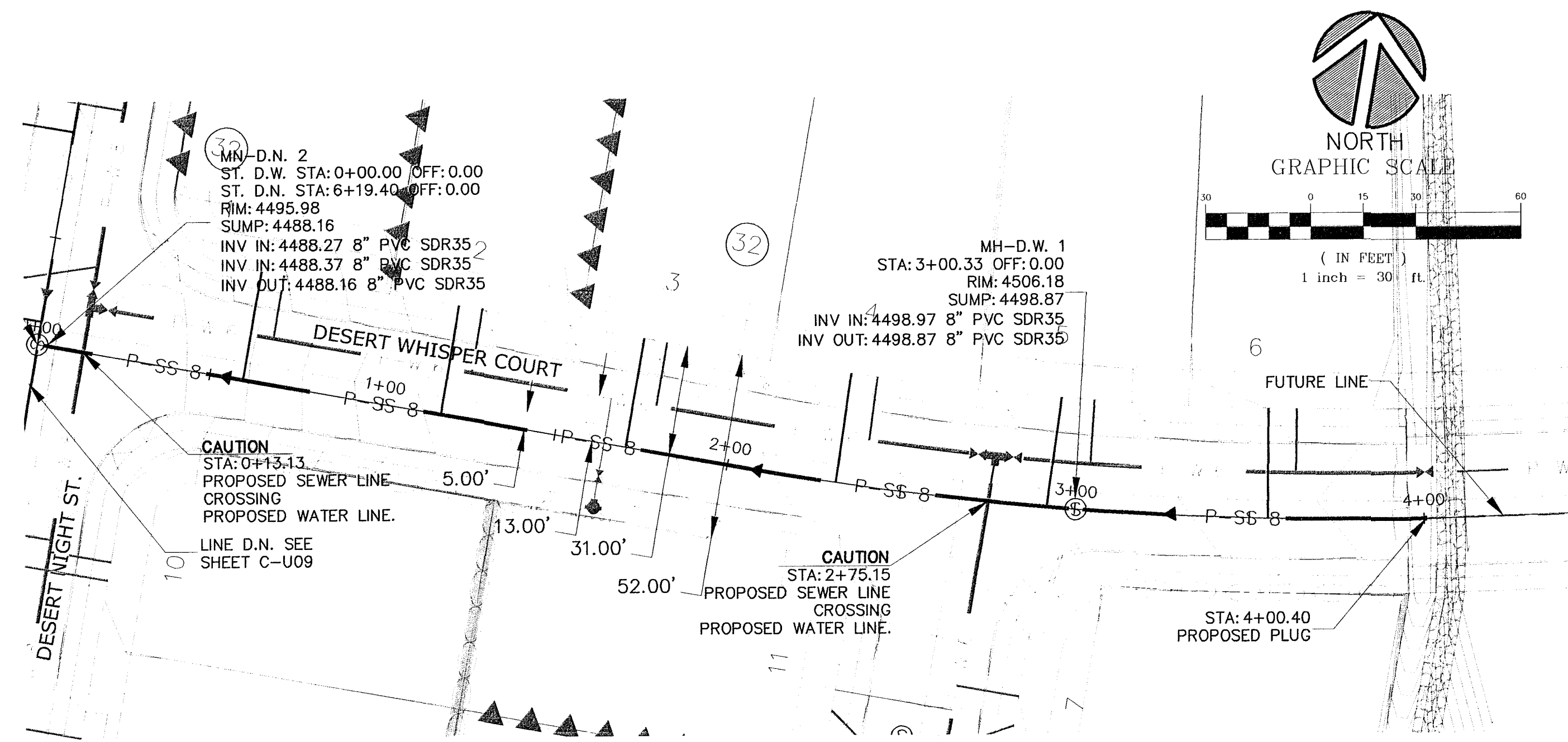
D.M.	DESERT MIRAGE
D.N.	DESERT NIGHT
D.W.	DESERT WHISPER
F.B.	FRANKLIN BLUFF DR.
F.D.	FRANKLIN DOVE AVE.
H.C.	HIDDEN COURT
T.D.	TRANQUIL DESERT



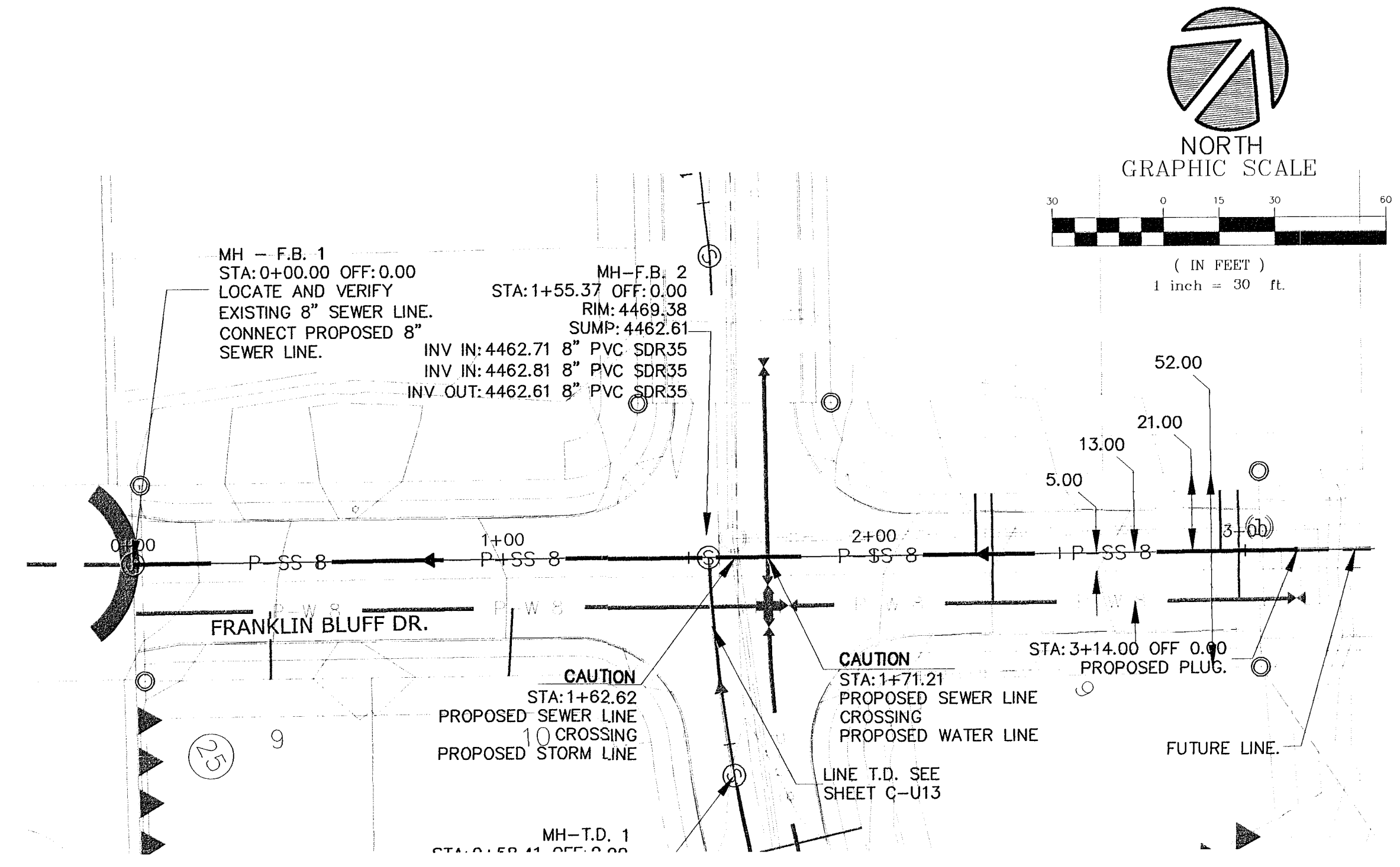
Mar 26, 2012 8:24pm Luis  
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REFERENCES - BENCHMARK	
DATE	
REVISION	
BY	
<b>QUANTUM H<sub>2</sub>O, Inc.</b> Integrated Engineering Solutions 414 Executive Center Blvd. Suite 200-B El Paso, Texas 79902 Fax: 915.238.4025 Texas Registered Engineering Firm # E-1092	
The seal appearing on this drawing is the property of Ramon Joseph Bard, P.E., No. 11889, State of Texas. It is to be used only for the project and location for which it was issued and is not to be used for any other project or location without the written consent of the Engineer.	
SCALE:	HORIZONTAL: 1" = 100' VERTICAL: 1" = 10' CONTOUR INTERVAL: 3'-22-2012
PROJECT TITLE	FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS EL PASO COUNTY, TEXAS
SHEET TITLE	WASTEWATER COLLECTION SYSTEM
SHEET NO.	FRANKLIN DOVE AVE. HIDDEN COURT PLACE <b>C-U11</b>
OF	58 SHEETS





# DESERT WHISPER COURT



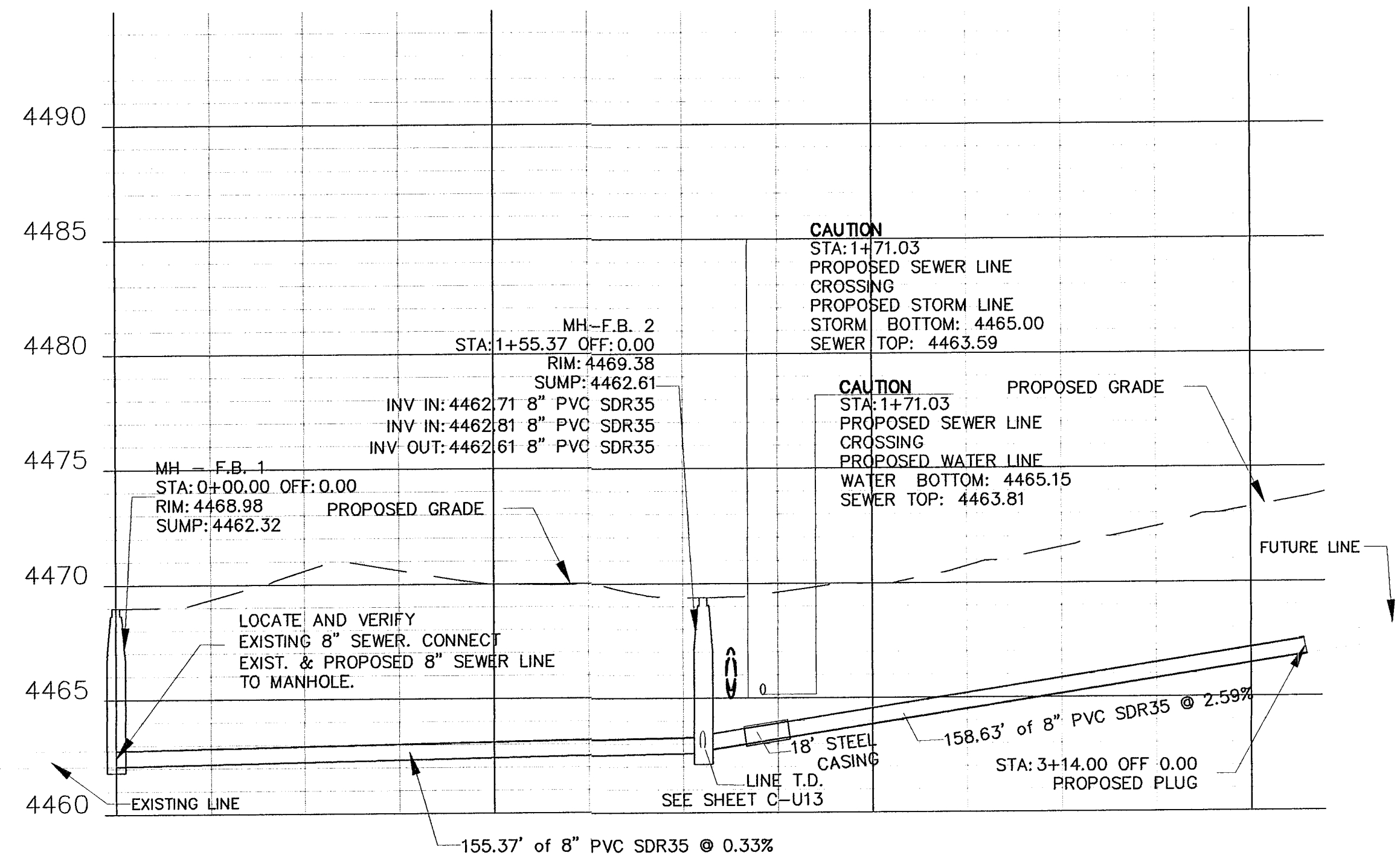
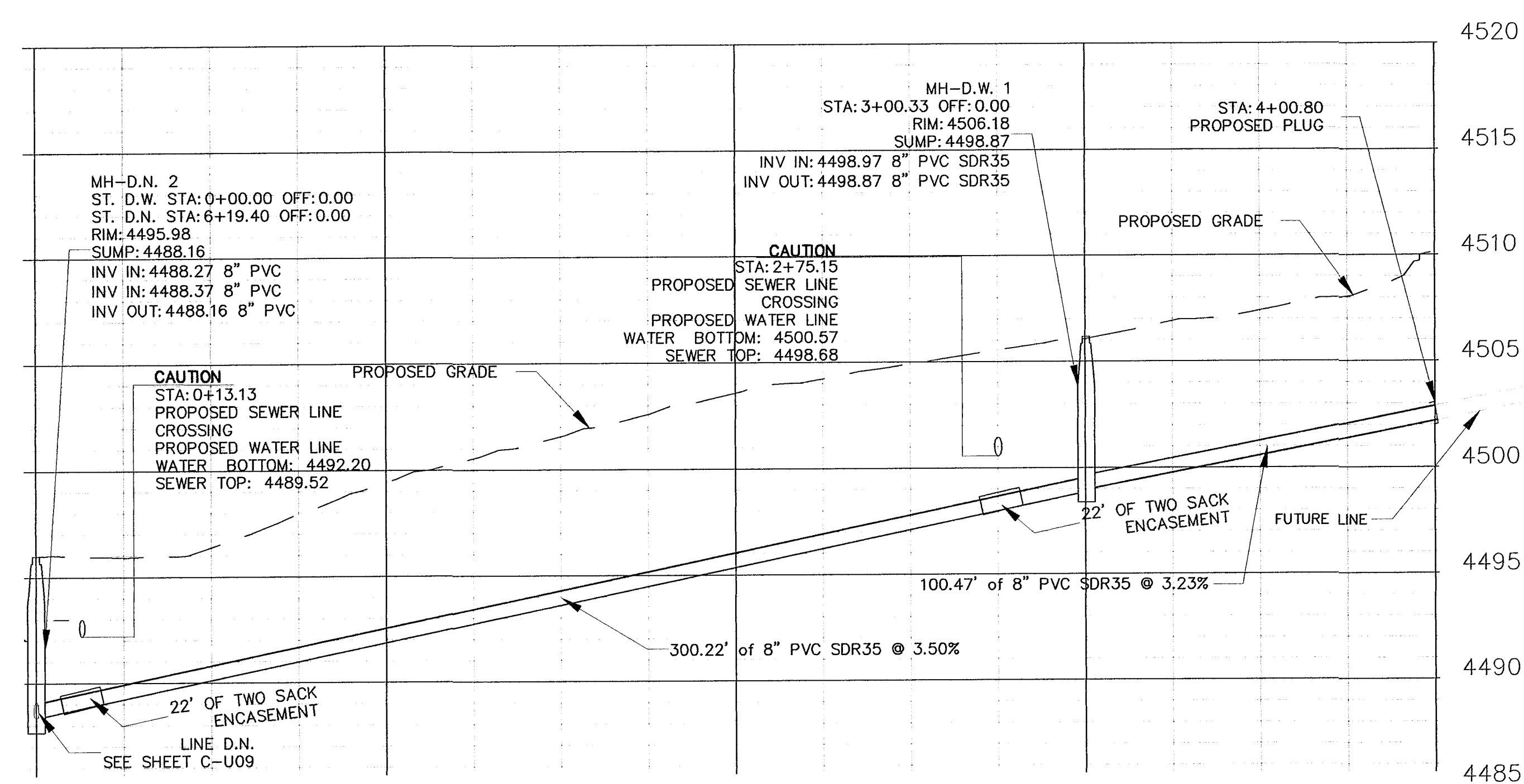
# FRANKLIN BLUFF DR.

**NOTE:**

- REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

**STREETS ABBREVIATIONS**

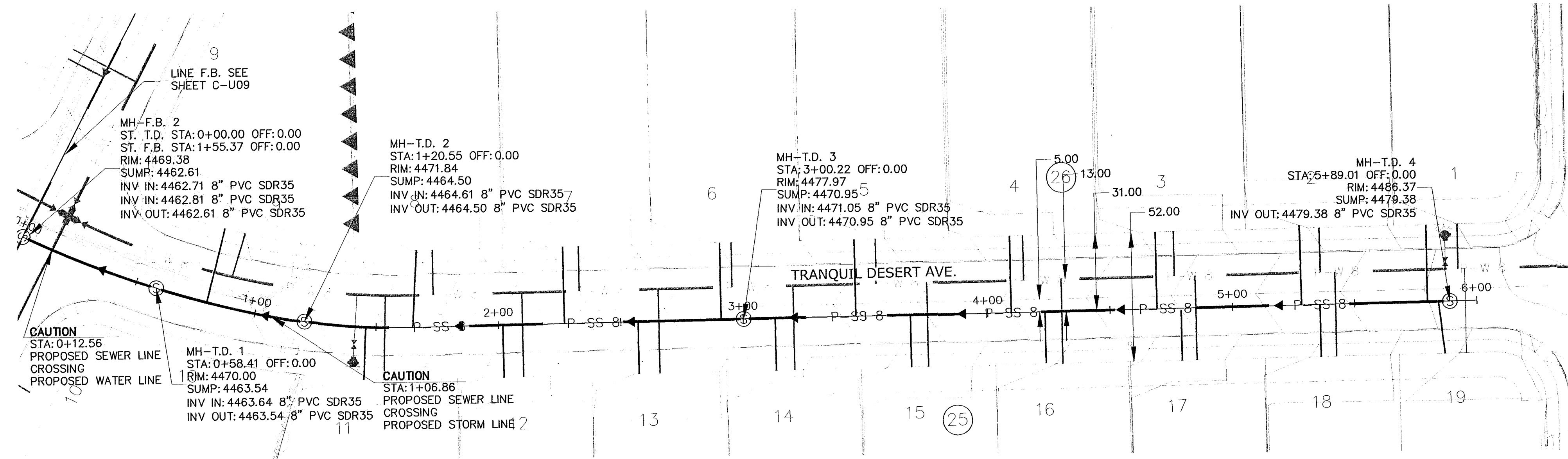
D.M.	DESERT MIRAGE
D.N.	DESERT NIGHT
D.W.	DESERT WHISPER
F.B.	FRANKLIN BLUFF DR.
F.D.	FRANKLIN DOVE AVE.
H.C.	HIDDEN COURT
T.D.	TRANQUIL DESERT



Nov. 28, 2013, 8:25am, Lu's  
 C:\Users\3D\Projects\Franklin Hills Units 8\eng\ref\FHU 3-22-12 REDLINE FINAL\Hills 8-Sewer RS 3-22-12.dwg

4485

REFERENCES - BENCHMARK									
DATE	REVISION	BY							
<b>QUANTUM H<sub>2</sub>O, Inc.</b> International Wastewater Solutions 44 Executive Center Blvd. Suite 200-B El Paso, Texas 79902 Office: 915.208.4044 Texas Registered Engineering Firm # F-10902									
SCALE: HORIZONTAL: 1" = 30' VERTICAL: 1" = 10' CONTOUR INTERVAL: 3'-22'-2012 DATE: 3-22-2012 DESIGN BY: R.S. DRAWN BY: J.L.S. CHKD BY: R.S. APP'D BY: R.S. JOB NO.: 10338									
<b>PROJECT TITLE</b> FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS EL PASO COUNTY, TEXAS									
<b>SHEET TITLE</b> WASTEWATER COLLECTION SYSTEM									
DESERT WHISPER CT. FRANKLIN BLUFF DR.									
SHEET NO. <b>C-U12</b>									
OF 58 SHEETS									



# TRANQUIL DESERT AVE.

**NOTE:**

1. REFER TO C-U01 FOR GENERAL NOTES, PIPE MATERIAL, AND OTHER INSTALLATION REQUIREMENTS

### STREETS ABBREVIATIONS

- D.M. DESERT MIRAGE
- D.N. DESERT NIGHT
- D.W. DESERT WHISPER
- F.B. FRANKLIN BLUFF DR.
- F.D. FRANKLIN DOVE AVE.
- H.C. HIDDEN COURT
- T.D. TRANQUIL DESERT

REFERENCES - BENCHMARK

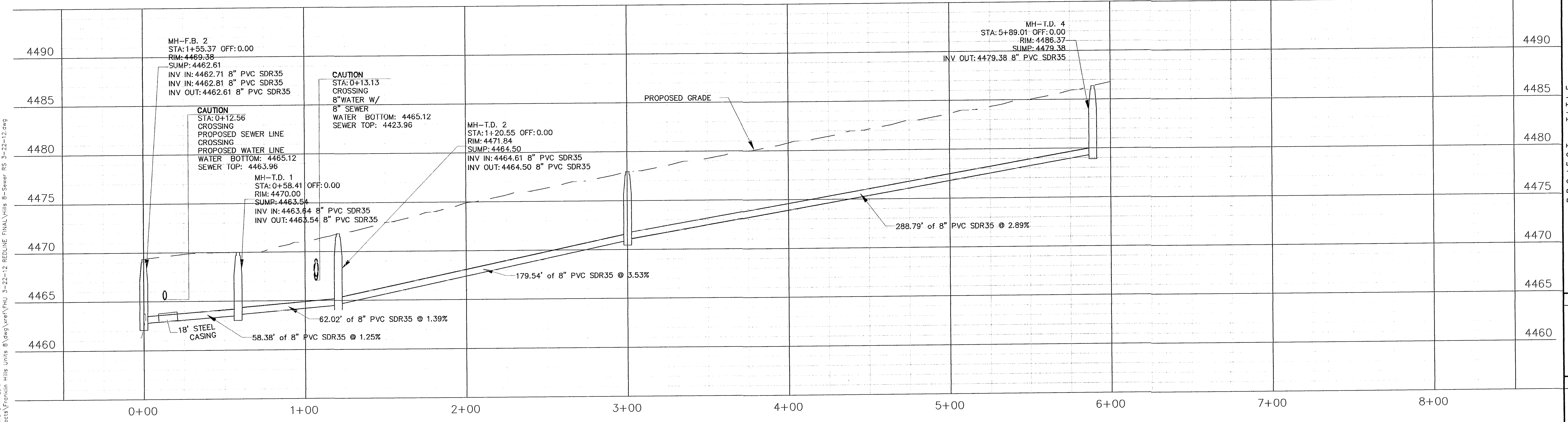
DATE	REVISION

QUANTUM H<sub>2</sub>O, Inc.  
 Integrated Engineering Solutions  
 414 Executive Center Blvd  
 Suite 200-B  
 El Paso, Texas 79902  
 Office: 913.238.4644  
 Texas Registered Engineering Firm # E-10962

RAMZI JOSEPH SLEAF  
 71886  
 PROFESSIONAL ENGINEER

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SCALE:  
 HORIZONTAL: 1" = 30'  
 VERTICAL: 1" = 10'  
 DATE: 3-22-2012  
 DESIGN BY: R.S.  
 DRAWN BY: J.L.S.  
 CHECK BY: J.L.S.  
 APPVD BY: J.L.S.  
 JOB NO.: 1038



PROJECT TITLE

**FRANKLIN HILLS UNIT EIGHT  
 SUBDIVISION  
 IMPROVEMENT PLANS**

EL PASO COUNTY, TEXAS

SHEET TITLE

**WASTEWATER  
 COLLECTION  
 SYSTEM**

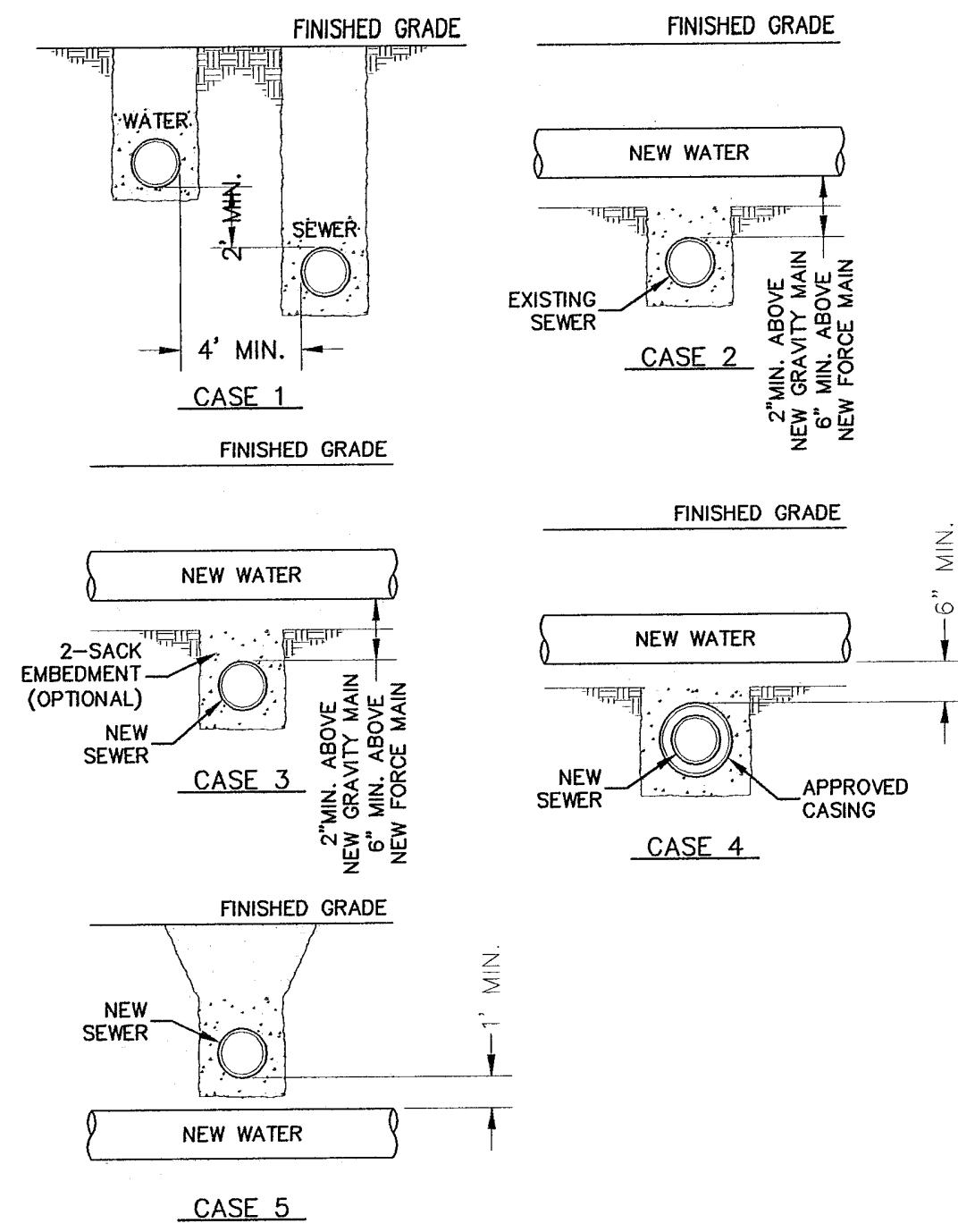
TRANQUIL DESERT  
 AVE.

SHEET NO.

**C-U13**

OF 58 SHEETS

Mar 28, 2012 10:53 am Luis  
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**GENERAL NOTES:**  
 1. NEW OR EXISTING POTABLE WATER AND SANITARY SEWER MAINS.  
 2. SEPARATION DISTANCES SHALL FOLLOW TEXAS COMMISSION ON ENVIRONMENTAL QUALITY STANDARD REQUIREMENTS.

**CONSTRUCTION KEY NOTES:**  
 WHEN STANDARD 90° (90 FOOT) SEPARATION DISTANCE CANNOT BE ACHIEVED, SEPARATION SHALL BE DETERMINED ACCORDING TO THE FOLLOWING CONDITIONS:

**CASE 1: GRAVITY SANITARY SEWER MAIN OR FORCE MAIN PARALLEL TO POTABLE WATER MAIN (PER TCEQ §290.446(A)(2)(A)).**  
 • LOCATION: WATER ABOVE SEWER OR FORCE MAIN.  
 • SEWER MATERIALS: EXISTING GRAVITY MAIN (PVC SDR35 OR CLAY) OR FORCE MAIN TO REMAIN IF NOT LEAKING IF LEAKING, MUST BE REPLACED WITH PVC (150 PSI) OR DI. NEW GRAVITY MAIN OR FORCE MAIN REQUIRES PVC (150 PSI) OR DI. SEPARATE TRENCHES SHALL BE USED.

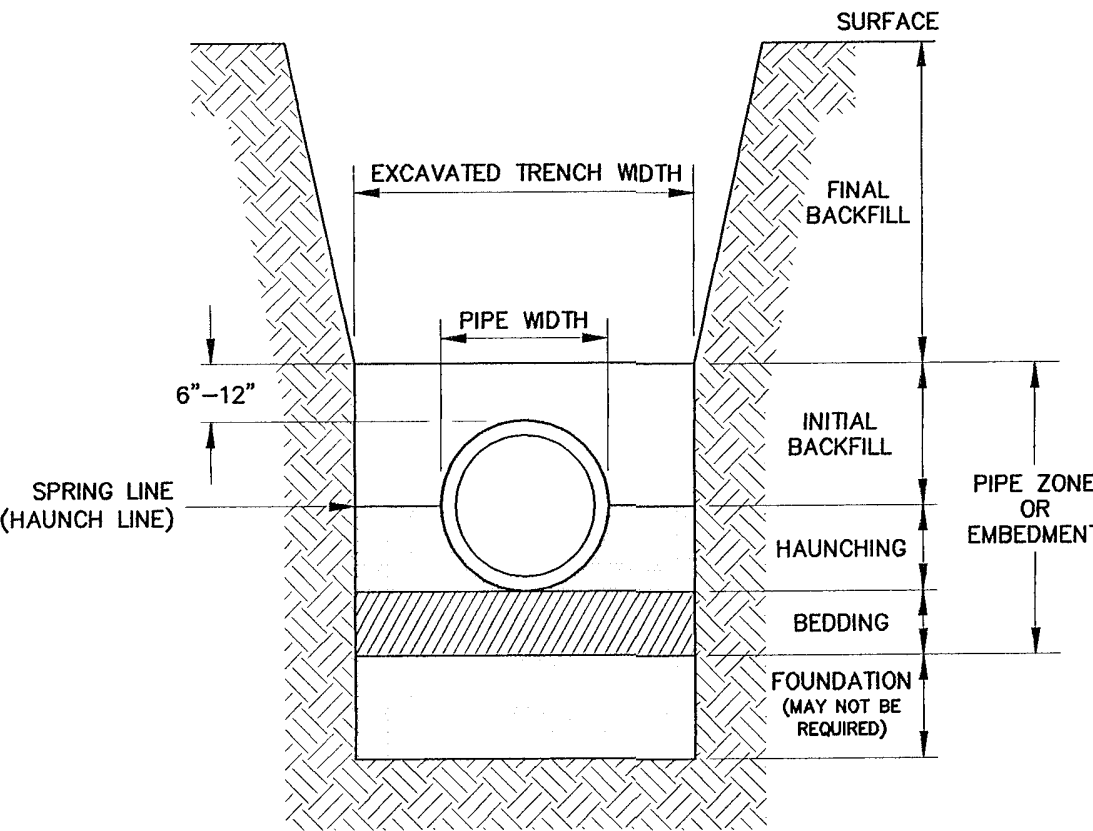
**CASE 2: NEW POTABLE WATER MAIN CROSSING EXISTING GRAVITY SANITARY SEWER MAIN OR EXISTING FORCE MAIN (PER TCEQ §290.446(A)(2)(B) AND §290.446(A)(2)(C)).**  
 • LOCATION: WATER ABOVE SEWER OR FORCE MAIN.  
 • SEWER MATERIALS: EXISTING GRAVITY MAIN (PVC SDR35 OR CLAY) OR FORCE MAIN TO REMAIN IF NOT LEAKING IF LEAKING, REPLACE ONE PIPE SEGMENT PER CASE 3 REQUIREMENTS.  
 • CENTER ONE SEGMENT OF WATER PIPE OVER SEWER MAIN OR FORCE MAIN.  
 • MINIMUM PIPE SEGMENT LENGTH FOR WATER PIPE SHALL BE 18 FEET LONG.

**CASE 3: NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.446(A)(2)(B)(I), §290.446(A)(2)(B)(II) AND §290.446(A)(2)(B)(III)).**  
 • LOCATION: WATER ABOVE SEWER OR FORCE MAIN.  
 • SEWER MATERIALS: NEW GRAVITY MAIN - PVC (150 PSI) OR DI REQUIRED, CENTER UNDER WATER MAIN. NEW FORCE MAIN - PVC (150 PSI) OR DI REQUIRED, FORCE MAIN TO BE EMBEDDED IN CEMENT STABILIZED BACKFILL THE TOTAL LENGTH OF ONE PIPE PLUS 12' BEYOND THE JOINT AT EACH END.  
 • CENTER ONE SEGMENT OF WATER PIPE OVER SEWER PIPE OR FORCE MAIN.  
 • MINIMUM PIPE SEGMENT LENGTH FOR WATER AND SEWER SHALL BE 18 FEET LONG.  
 • FOR NEW GRAVITY SEWER ONLY, IN LIEU OF PVC (150 PSI) OR DI, INSTALL ONE PIPE SEGMENT OF SDR35 SEWER MAIN MUST BE EMBEDDED IN CEMENT STABILIZED BACKFILL THE TOTAL LENGTH OF ONE PIPE PLUS 12' BEYOND THE JOINT AT EACH END.

**CASE 4: NEW POTABLE WATER MAIN CROSSING NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN (PER TCEQ §290.446(A)(2)(B)(I), §290.446(A)(2)(B)(II) AND §290.446(A)(2)(B)(III)).**  
 • LOCATION: WATER ABOVE SEWER OR FORCE MAIN.  
 • SEWER MATERIALS: NEW GRAVITY MAIN - SDR35 ACCEPTABLE, NEW FORCE MAIN TO BE EMBEDDED IN CEMENT STABILIZED BACKFILL THE TOTAL LENGTH OF ONE PIPE PLUS 12' BEYOND THE JOINT AT EACH END.  
 • CENTER ONE SEGMENT OF WATER PIPE OVER SEWER PIPE OR FORCE MAIN.  
 • MINIMUM PIPE SEGMENT LENGTH FOR WATER MAIN SHALL BE 18 FEET LONG.

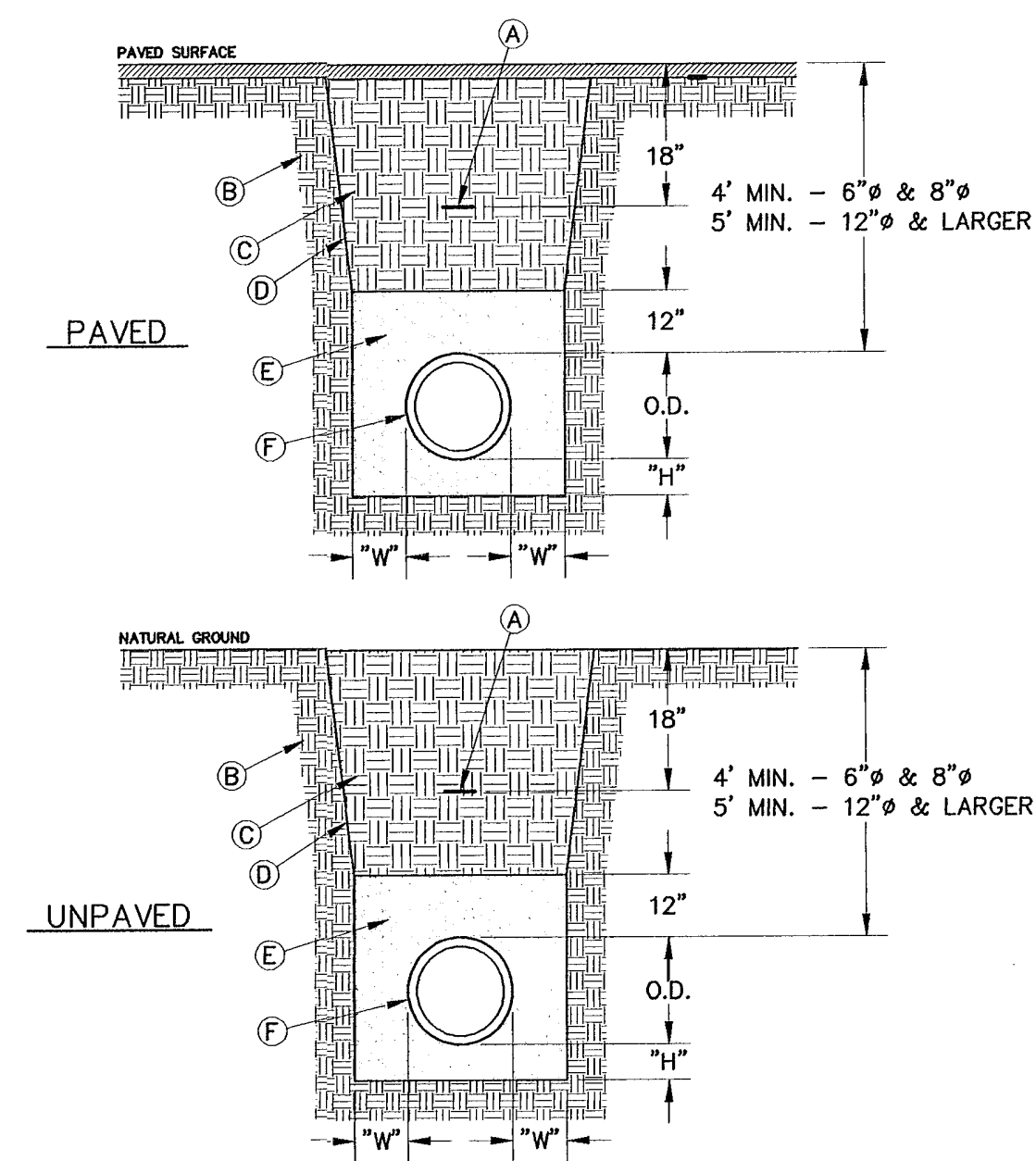
**CASE 5: NEW GRAVITY SANITARY SEWER MAIN OR NEW FORCE MAIN CROSSING NEW POTABLE WATER MAIN (PER TCEQ §290.446(A)(2)(B)(I), §290.446(A)(2)(B)(II) AND §290.446(A)(2)(B)(III)).**  
 • LOCATION: SEWER OR FORCE MAIN ABOVE WATER.  
 • NEW GRAVITY MAIN OR FORCE MAIN REQUIRES ONE PIPE SEGMENT OF PVC (150 PSI) OR DI. IN ADDITION, WATER MUST BE DI OR STEEL OR ENCASED IN DI OR STEEL, TWO THICKNESSES LARGER THAN MAIN AND AT LEAST 18 FEET LONG.  
 • CENTER ONE SEGMENT OF SEWER PIPE ON WATER MAIN.

DATE: 8/3/2006  
 REV: 8/21/2007  
 SEPARATION DISTANCE  
 SANITARY SEWER AND POTABLE WATER  
 (SPECIAL CONDITIONS) N.T.S.  
 DETAIL No. 161



**GENERAL NOTES:**  
 1. DETAIL DRAWING TERMINOLOGY IS IN ACCORDANCE WITH ASTM D-2321.  
 2. UNLESS OTHERWISE PERMITTED BY THE ENGINEER, ALL MATERIAL IN THE EMBEDMENT ZONE SHALL BE HOMOGENEOUS.

DATE: 11/1992  
 REV: 3/28/2007  
 TRENCH CROSS SECTION TERMINOLOGY N.T.S.  
 DETAIL No. 170

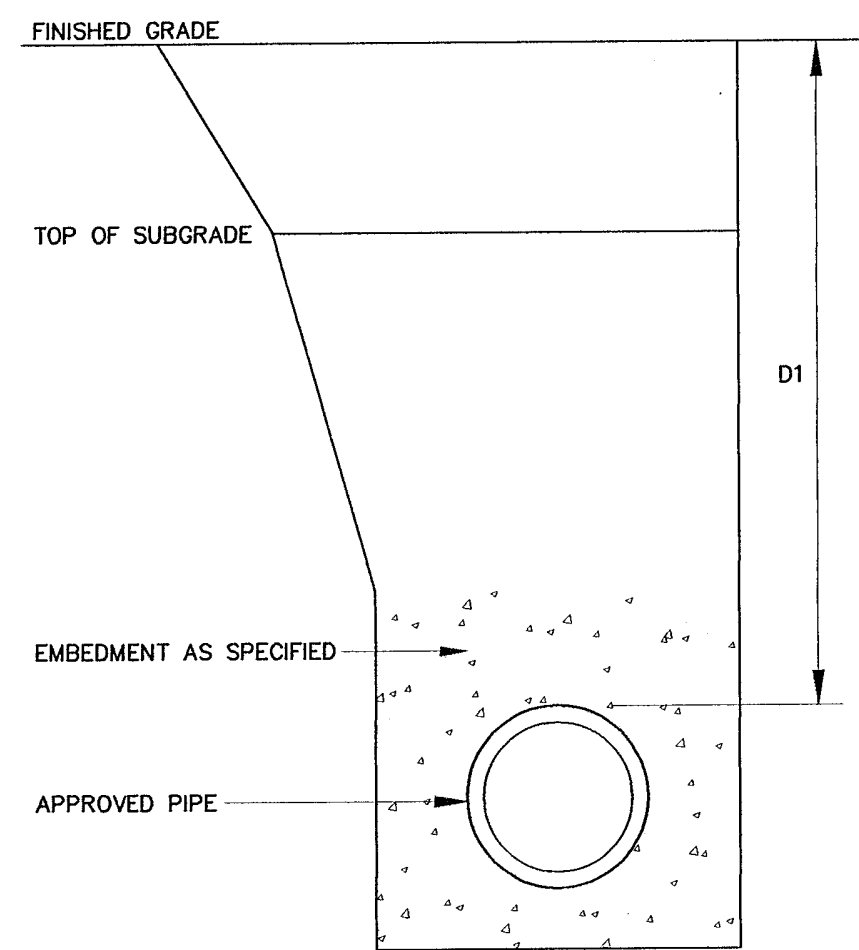


**GENERAL NOTES:**  
 1. BEDDING FOR PRESSURE AND GRAVITY PIPE IN DRY CONDITIONS.  
 2. PROVIDE TRENCH SAFETY SYSTEM FOR TRENCH DEPTHS GREATER THAN 5 FEET.  
 3. IF THE NATIVE MATERIAL EXCAVATED FROM THE TRENCH IS UNSUITABLE AS BACKFILL MATERIAL, OR THE REQUIRED COMPACTION IS UNATTAINABLE, THE CONTRACTOR SHALL, AT HIS EXPENSE, IMPORT SELECT MATERIAL TO BE MIXED WITH OR USED IN PLACE OF THE NATIVE MATERIAL. SELECT MATERIAL MUST BE APPROVED BY EPWU. SUBSTITUTE SOIL CEMENT SLURRY (1-SACK) IF REQUIRED IN SPURS.

**CONSTRUCTION KEY NOTES:**  
 A. APPROVED MARKING TAPE.  
 B. UNDISTURBED STABLE MATERIAL.  
 C. NATIVE MATERIAL BACKFILL.  
 PAVED CONDITION: COMPACT TO 90% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.  
 UNPAVED CONDITION: COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR.  
 (\*SEE NOTE #3 IF THESE PREVIOUS CONDITIONS CANNOT BE MET.)  
 D. SLOPE TRENCH IN SANDY SOIL CONDITIONS. EXCEEDING THIS REQUIREMENT MAY BE USED. COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR (OR 90% D-698 STANDARD PROCTOR).  
 E. USE CLASS II OR CLASS III SAND PER ASTM D-2487, NATIVE MATERIAL OR IMPORTED SELECT MATERIAL MEETING OR EXCEEDING THIS REQUIREMENT MAY BE USED. COMPACT TO 85% DENSITY PER ASTM D-1557 MODIFIED PROCTOR (OR 90% D-698 STANDARD PROCTOR).  
 F. APPROVED PIPE.  
 G. TRENCH DIMENSIONS AS FOLLOWS:

PIPE DIAMETER	1/4"
9"	1/4"
GREATER THAN 30"	6"
PIPE DIAMETER	1/4"
9"	1/4"
GREATER THAN 30"	12"

DATE: 4/24/2007  
 REV: 2/21/2011  
 EMBEDMENT CLASS "A" FOR  
 PRESSURE PIPE AND GRAVITY PIPE  
 DRY CONDITIONS N.T.S.  
 DETAIL No. 171



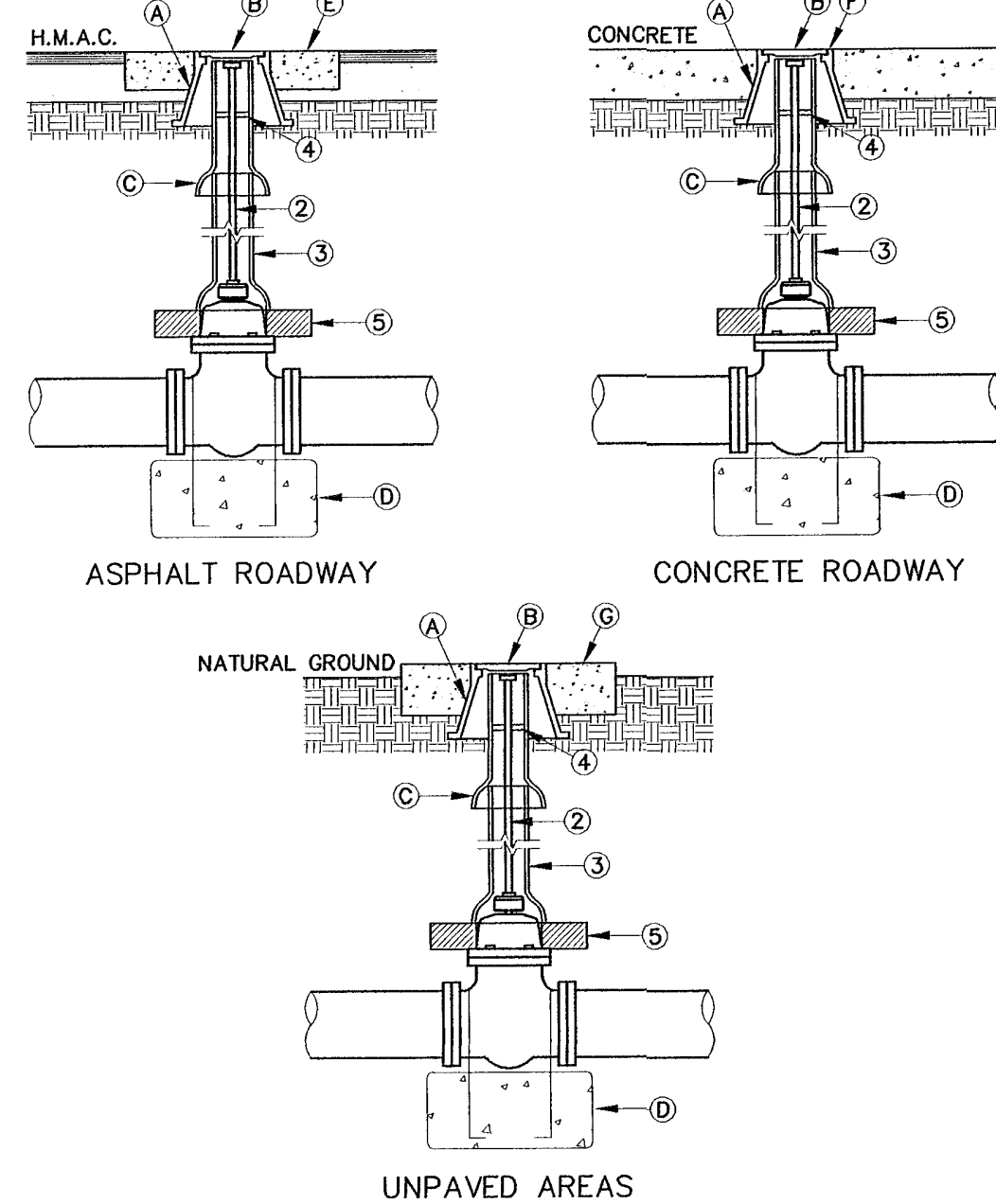
**GENERAL NOTES:**  
 1. REFER TO UTILITY DETAIL FOR PAVEMENT REPLACEMENT AND BACKFILL REQUIREMENTS.  
 2. TRENCH SAFETY SYSTEMS SHALL BE USED WHEN TRENCH DEPTH EXCEEDS 5 FEET.

**CONSTRUCTION KEY NOTES:**  
 A. COVER FOR WATER MAINS SHALL DEPEND ON THE PIPE SIZE AND THE FOLLOWING INSTALLATION CONDITIONS.

CONDITION A - NORMAL LINE INSTALLATION, STREET AND DRAINAGE PROJECTS, WATERLINE RELOCATION  
 CONDITION B - NEW SUBDIVISIONS, NON-PAVED AREA  
 AND SHALL BE AS FOLLOWS.

PIPE SIZE	CONDITION	DIMENSION
6", 8"	A	D1 = 4"
6", 8"	B	D1 = 4"
12" & LARGER	A OR B	D1 = 5"

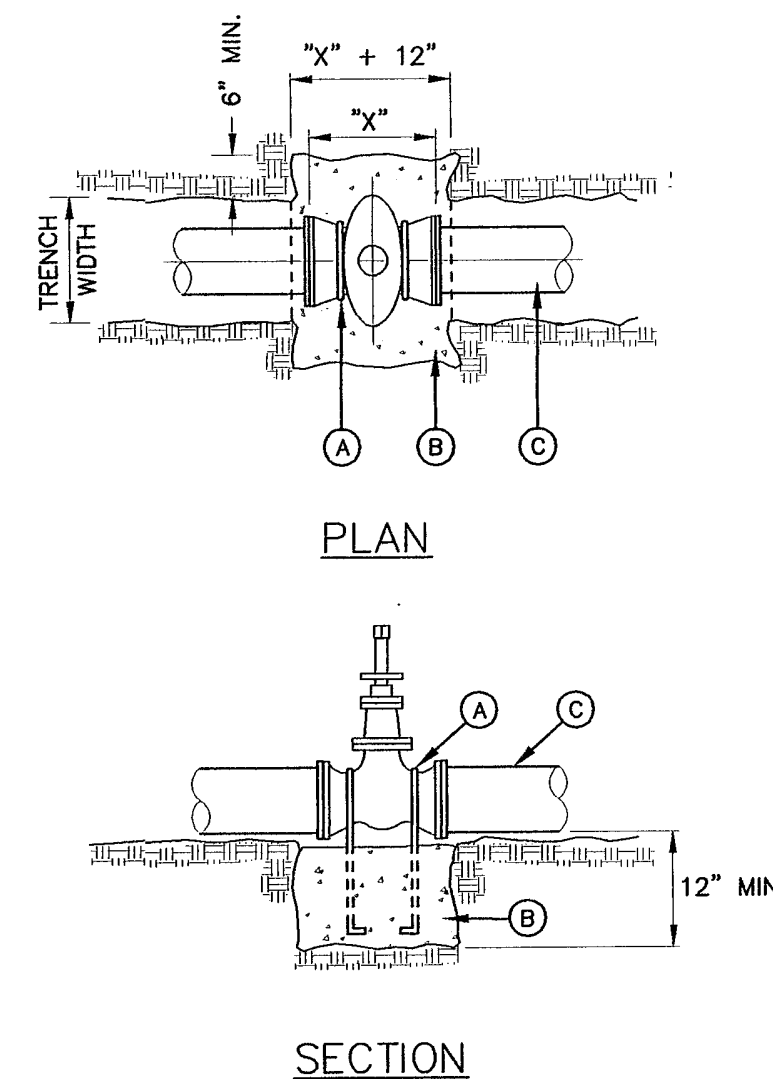
FEB. 1994  
 REV: 8/3/2006  
 COVER FOR WATER MAINS N.T.S.  
 DETAIL No. 250



**GENERAL NOTES:**  
 1. VALVE TYPE AND VALVE ENDS SHALL BE AS SHOWN ON THE PLANS.  
 2. ALL BURIED VALVES 5' AND DEEPER SHALL BE PROVIDED WITH SOLID STEEL EXTENSION STEM OPERATOR WITH 2" SQUARE AWWA NUT WITHIN 36" OF VALVE BOX COVER. NUT IS TO INDICATE DIRECTION OF ROTATION TO OPEN VALVE.  
 3. 8" DIA. MINIMUM VITRIFIED CLAY OR SDR 35 P.V.C. PIPE, PIPE SHALL NOT REST ON VALVE BODY.  
 4. 1/2" THICK STEEL TRASH RING VALVE BOX INSIDE DIAMETER MINUS 1/4".  
 5. MINIMUM 2 1/2" CONCRETE OR BRICK ALL AROUND.  
 6. CLEAN BONNET BOX OF ALL DEBRIS AND SOIL.  
 7. COAT BURIED PIPE AND BONNET BOX PER SPECIFICATIONS, VALVE SHALL BE WRAPPED IN POLYETHYLENE IN ACCORDANCE WITH SPECIFICATIONS.

**CONSTRUCTION KEY NOTES:**  
 A. BONNET BOX (SEE DETAIL 268).  
 B. BONNET BOX COVER (SEE DETAILS 269-1 & 269-2).  
 C. FINAL EXTENSION TO BONNET BOX SHALL BE WITH BELL AND SPIGOT ENDS (CLAY OR SDR 35 P.V.C. SPOOL).  
 D. CONCRETE VALVE ANCHOR (SEE DETAIL 271).  
 E. CONCRETE COLLAR (SEE DET 184-1) FLUSH WITH TOP OF H.M.A.C.  
 F. BONNET BOX FLUSH WITH TOP OF CONCRETE, CONCRETE COLLAR NOT NEEDED.  
 G. CONCRETE APRON (SEE DETAIL 184-2) FLUSH WITH BONNET BOX AND 2" ABOVE NATURAL GROUND.

DATE: 5/1994  
 REV: 6/22/2009  
 GATE VALVE INSTALLATION N.T.S.  
 DETAIL No. 260



**GENERAL NOTES:**  
 1. THE ENGINEER SHALL PROVIDE DESIGN FOR ALL VALVES GREATER THAN 12".  
 2. COMPLY WITH REQUIREMENTS OF AWWA C-550, PROTECTIVE EPOXY INTERIOR COATINGS FOR VALVES.

**CONSTRUCTION KEY NOTES:**  
 A. TWO NO. 5 REBAR HAIR PINS, PAINT UNEMBEDDED PORTION OF REBARS WITH TWO COATS OF COAL TAR EPOXY.  
 B. CONCRETE VALVE SUPPORT, 2500 PSI. CONCRETE.  
 C. APPROVED PIPE.

DATE: 2/1994  
 REV: 12/12/2011  
 VALVE ANCHOR N.T.S.  
 DETAIL No. 271

REFERENCES - BENCHMARK

QUANTUM H<sub>2</sub>O, Inc.  
 Ingot Engineering Solutions  
 414 Executive Center Blvd.  
 Suite 200-B  
 El Paso, Texas 79902  
 Tel: 915.238.4025  
 Fax: 915.238.4025  
 Texas Registered Engineering Firm # F-1092

THE STATE OF TEXAS  
 ENGINEERING EXAMINER  
 71688  
 EXPIRES 08/31/2013

The seal appearing on this drawing is the property of the State of Texas and shall be returned to the State of Texas upon the expiration of the term of the license of the engineer responsible for the design of this project.

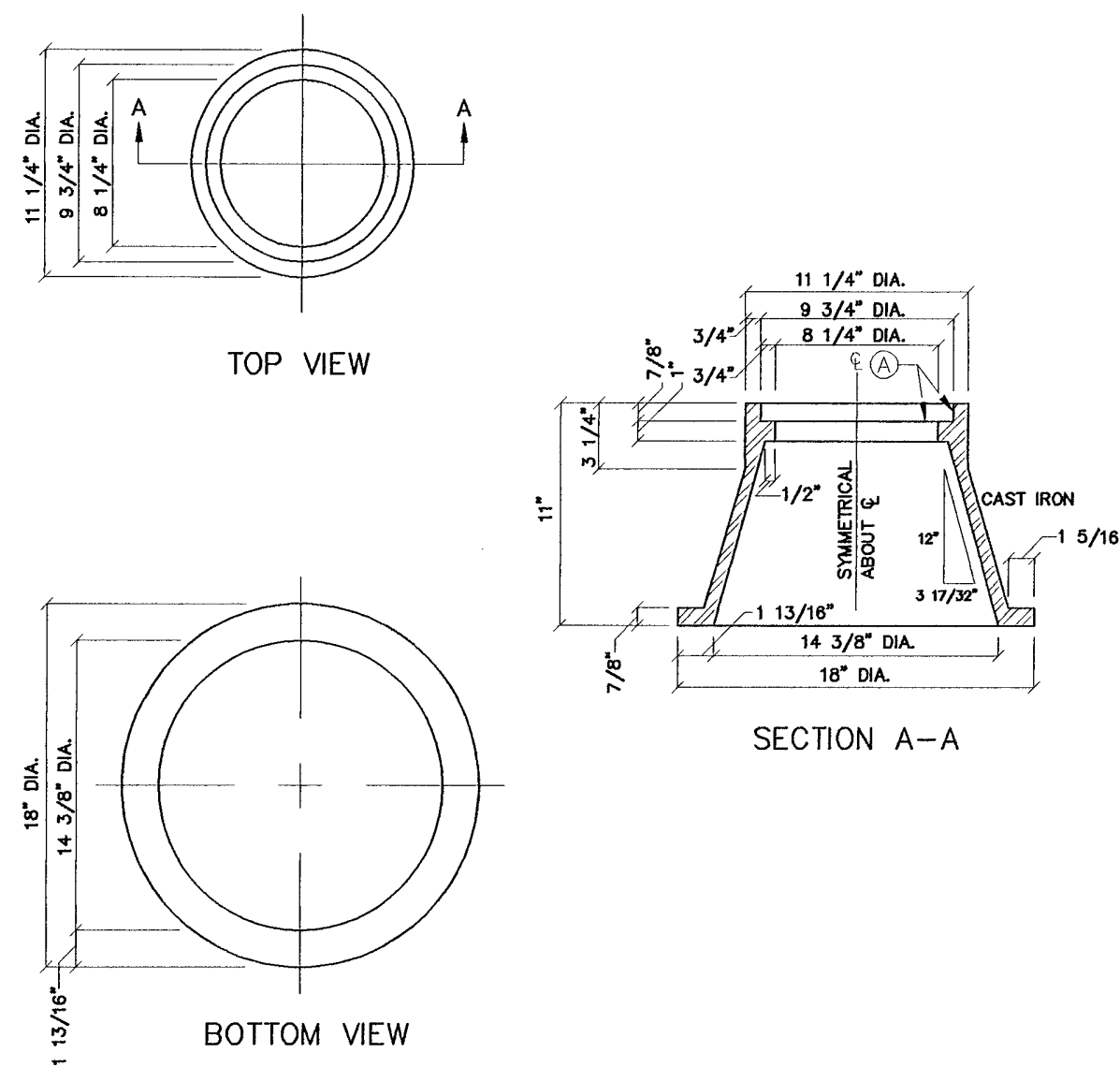
SCALE:  
 HORIZONTAL: 1" = 10'  
 VERTICAL: 1" = 10'  
 CONTOUR INTERVAL: 3'-22'-2012

DESIGN BY: R.S.  
 DRAWN BY: J.L.S.  
 CHECKED BY: R.S.  
 APPROVED BY: R.S.  
 JOB NO.: 1038

PROJECT TITLE  
 FRANKLIN HILLS UNIT EIGHT  
 SUBDIVISION  
 IMPROVEMENT PLANS  
 EL PASO COUNTY, TEXAS

SHEET TITLE  
 UTILITY DETAILS  
 SHEET 1

SHEET NO.  
 C-U14  
 OF 58 SHEETS



**GENERAL NOTES:**

- CASTING TO BE SMOOTH AND VOID OF AIR HOLES.
- WEIGHT OF BONNET BOX IS 95 POUNDS.

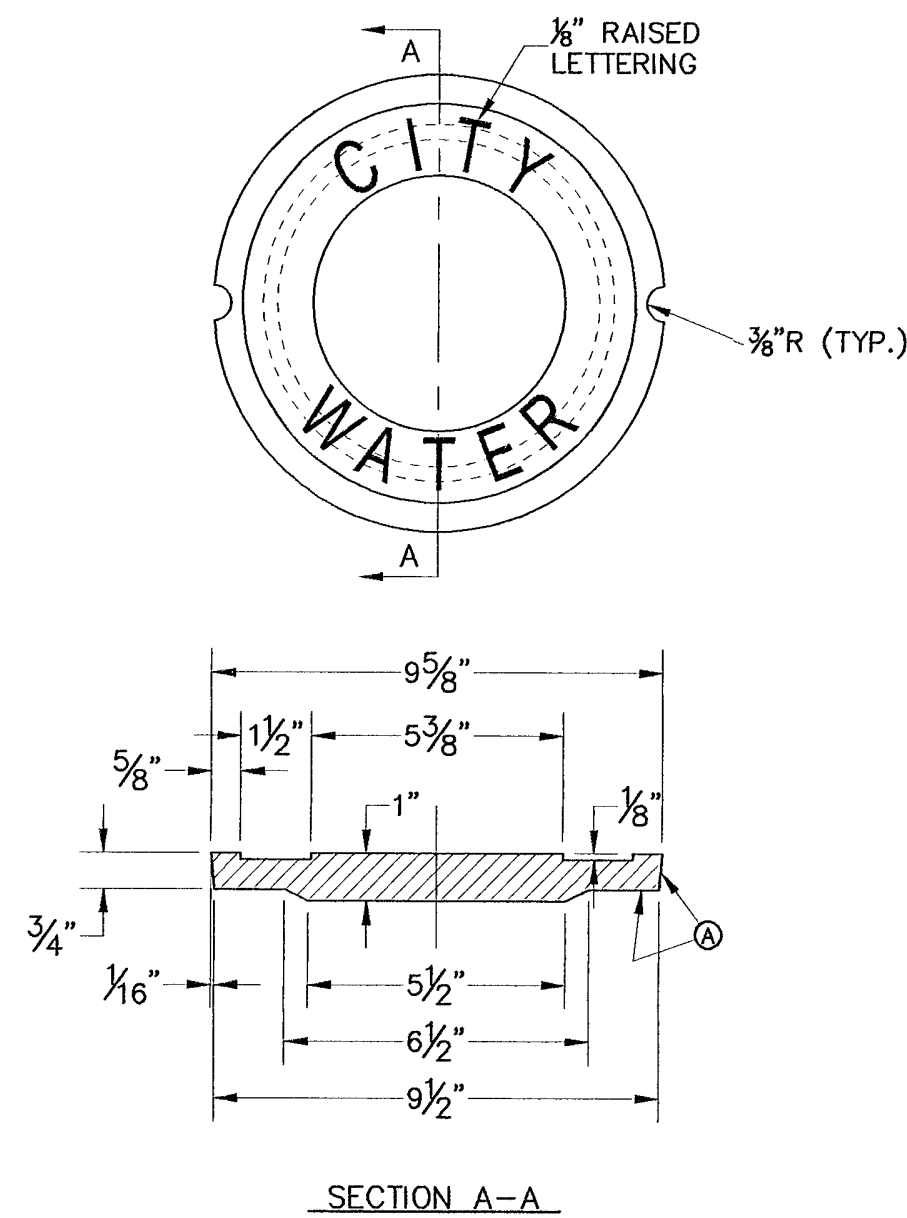
**CONSTRUCTION KEY NOTES:**

A. TO BE ROUGH GROUND OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.

DATE: FEB. 1994  
REV: N.T.S.

**BONNET BOX**  
N.T.S.

DETAIL No. 268



**GENERAL NOTES:**

- CASTINGS TO SMOOTH AND VOID OF AIR HOLES.
- WEIGHT OF COVER IS 10 POUNDS.

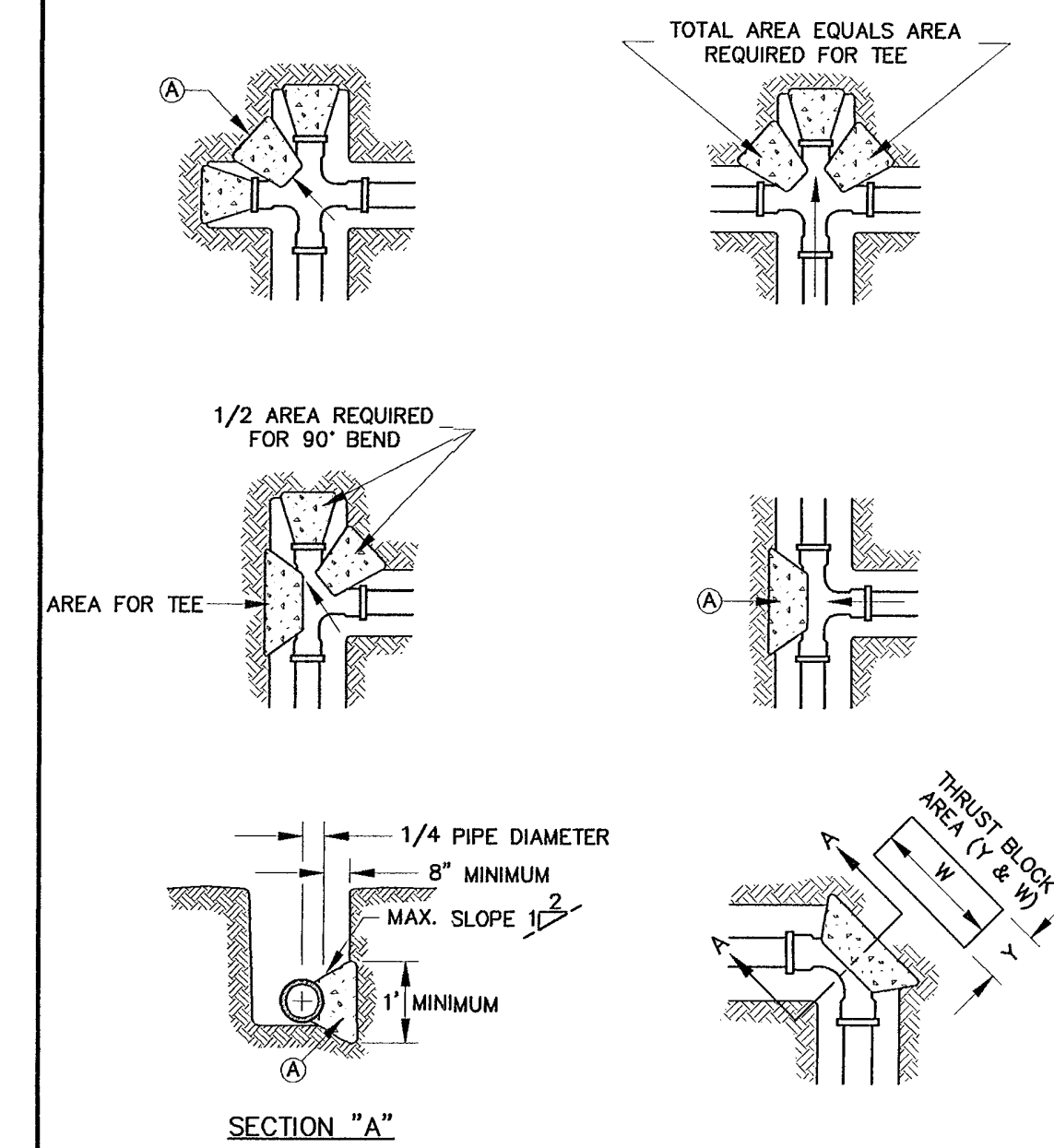
**CONSTRUCTION KEY NOTES:**

A. TO BE ROUGH GROUND OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.

DATE: 2/1994  
REV: 11/1/2007

**BONNET BOX COVER**  
N.T.S.

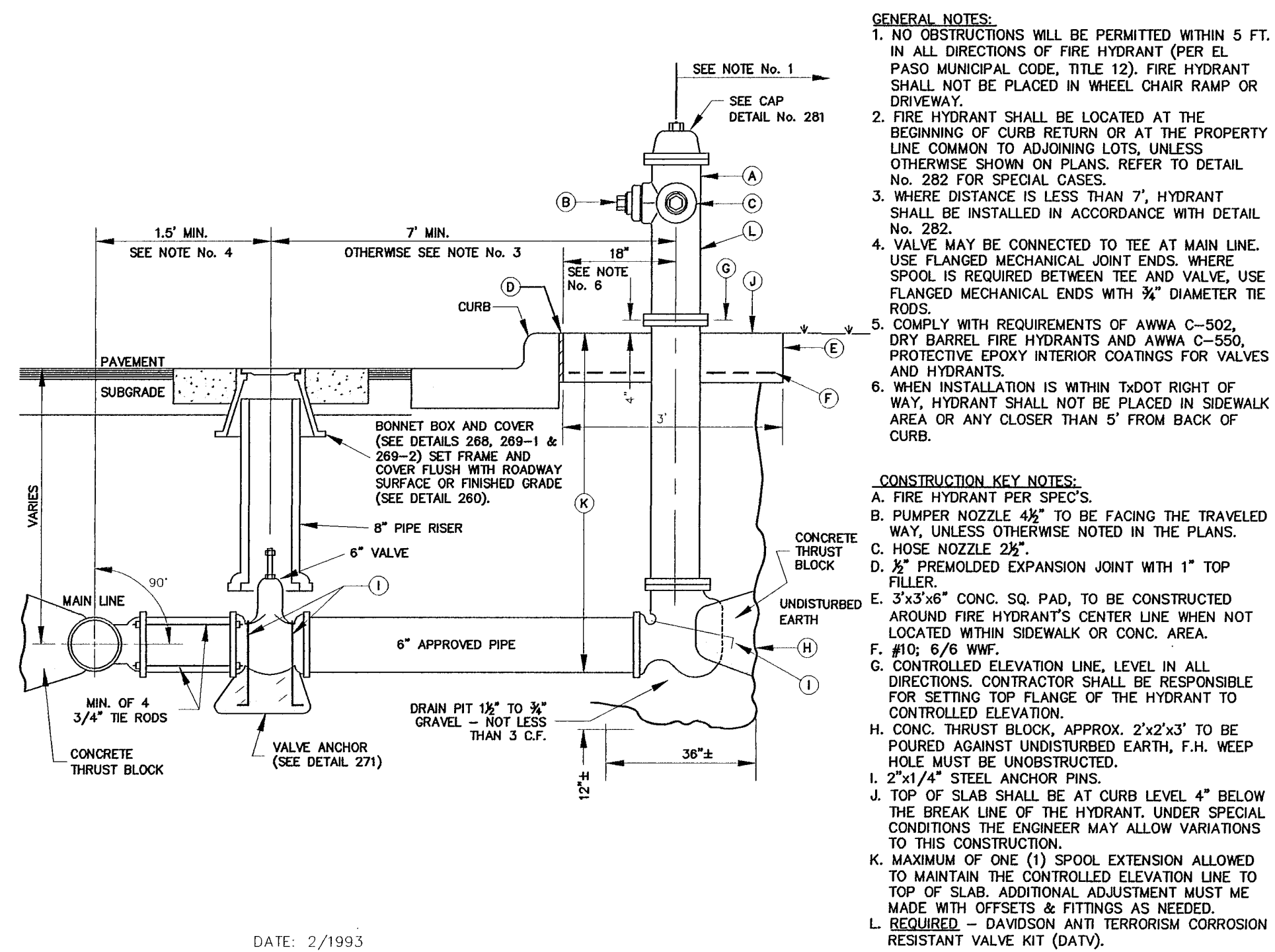
DETAIL No. 269-1



DATE: 2/1994  
REV: 8/7/2006

**CONCRETE THRUST BLOCKING**  
N.T.S.

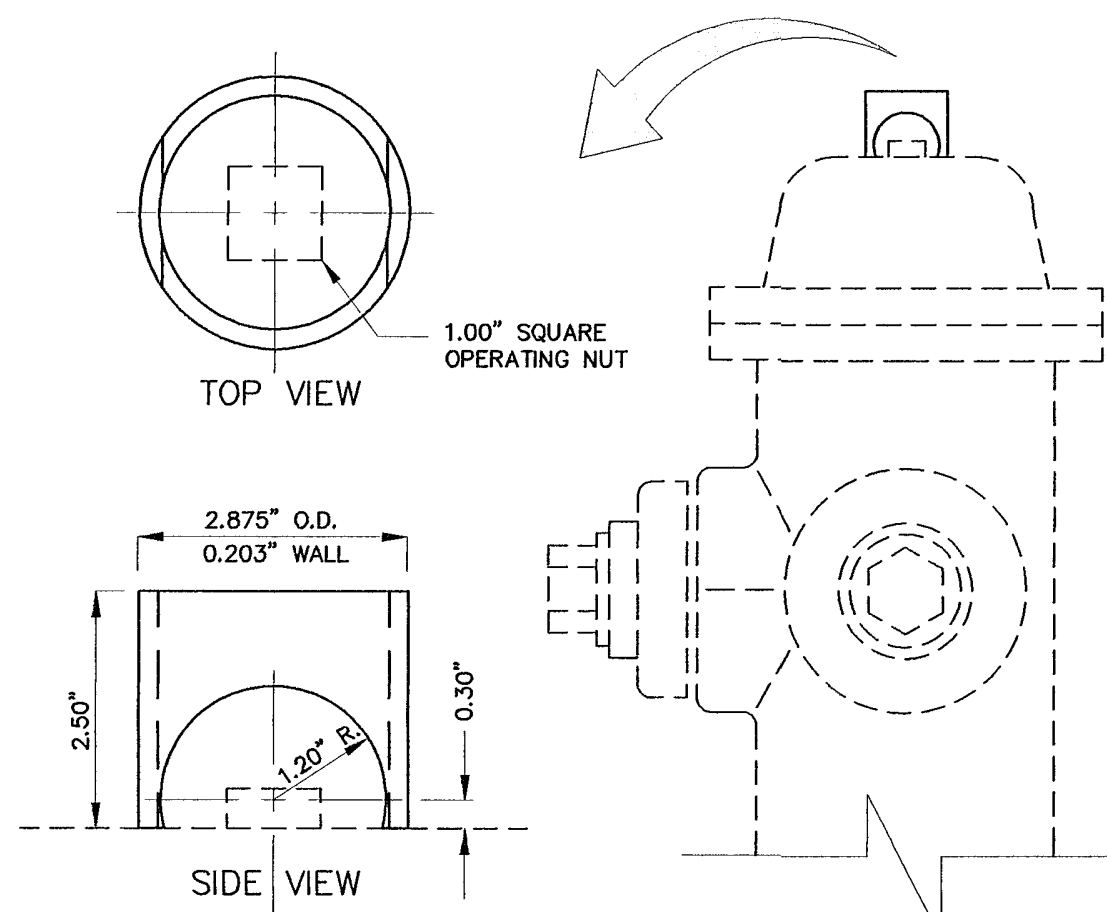
DETAIL No. 270



DATE: 2/1993  
REV: 12/1/2011

**FIRE HYDRANT INSTALLATION**  
N.T.S.

DETAIL No. 280-1



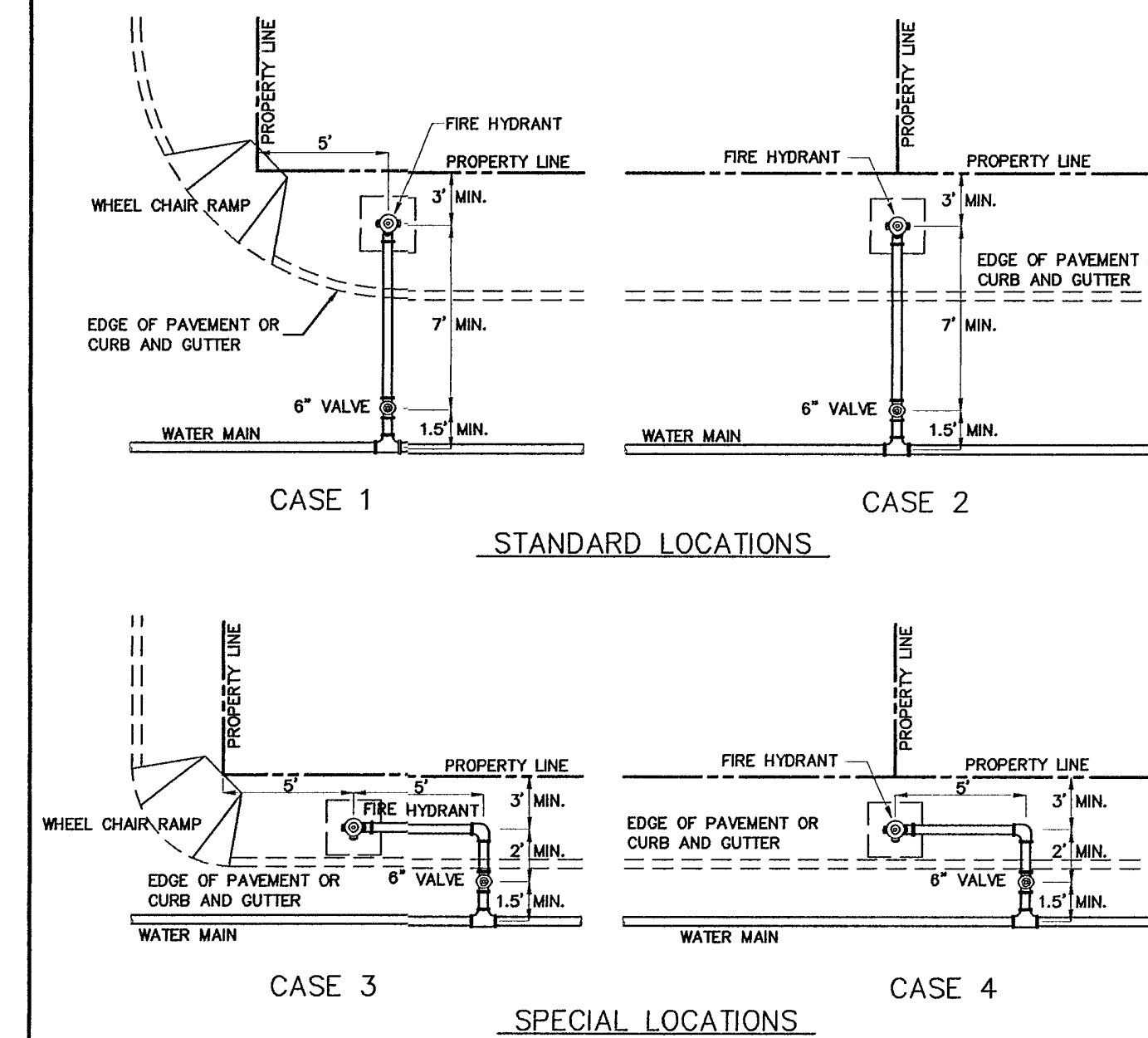
**GENERAL NOTES:**

- STEEL CAPS TO BE MACHINED FROM STEEL PIPE. NOMINAL SIZE = 2 1/2" DIA. OUTSIDE DIA. = 2.875" WALL THICKNESS = 0.203 LBS./FT. = 5.79
- CAPS ARE TO BE TACK WELDED OR BRAZED ON FIRE HYDRANT BONNET OR WEATHER CAP.
- THE CAPS OVER THE OPERATING NUT WILL PREVENT ACCESS TO THE UNAUTHORIZED USE OF HYDRANT WATER.

DATE: FEB. 1993  
REV: FEB. 1994

**FIRE HYDRANT CAP**  
N.T.S.

DETAIL No. 281



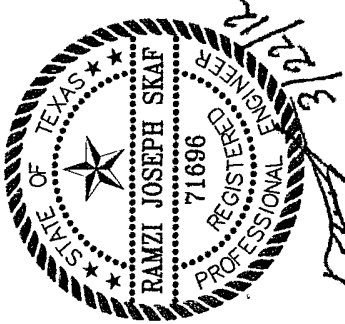
DATE: 5/1994  
REV: 6/25/2007

**FIRE HYDRANT LOCATIONS**  
N.T.S.

DETAIL No. 282

REFERENCES - BENCHMARK

**QUANTUM H<sub>2</sub>O, Inc.**  
Integrated Engineering Solutions  
414 Executive Center Blvd.  
Suite 200-B  
El Paso, Texas 79902  
Tel: 915.338.4025  
Fax: 915.338.4025  
Texas Registered Engineering Firm # 1-10962



The seal appearing on this drawing is the property of the State of Texas. It is to be used only for the project and location for which it was issued. It is to be returned to the State of Texas upon completion of the project.

SCALE:  
HORIZONTAL: 1" = 10'  
VERTICAL: 1" = 10'  
CONTOUR INTERVAL: 2'  
DATE: 3-22-2012  
DESIGN BY: R.S.  
DRAWN BY: J.L.S.  
CHECKED BY: R.S.  
DATE: 3-22-2012  
JOB NO. 017  
JOB NO. 1036

**FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

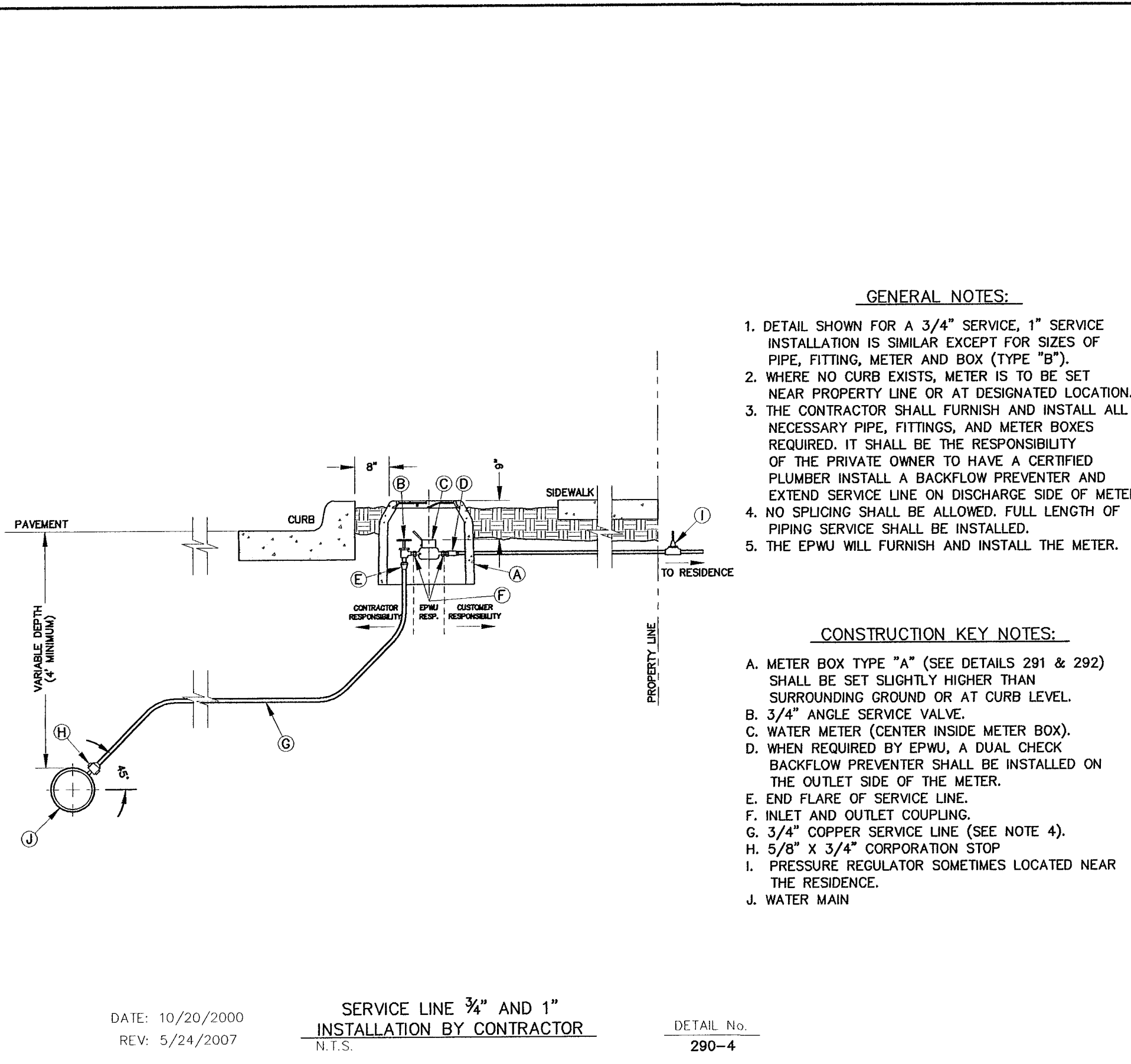
SHEET TITLE

UTILITY DETAILS  
SHEET 2

SHEET NO.

**C-U15**

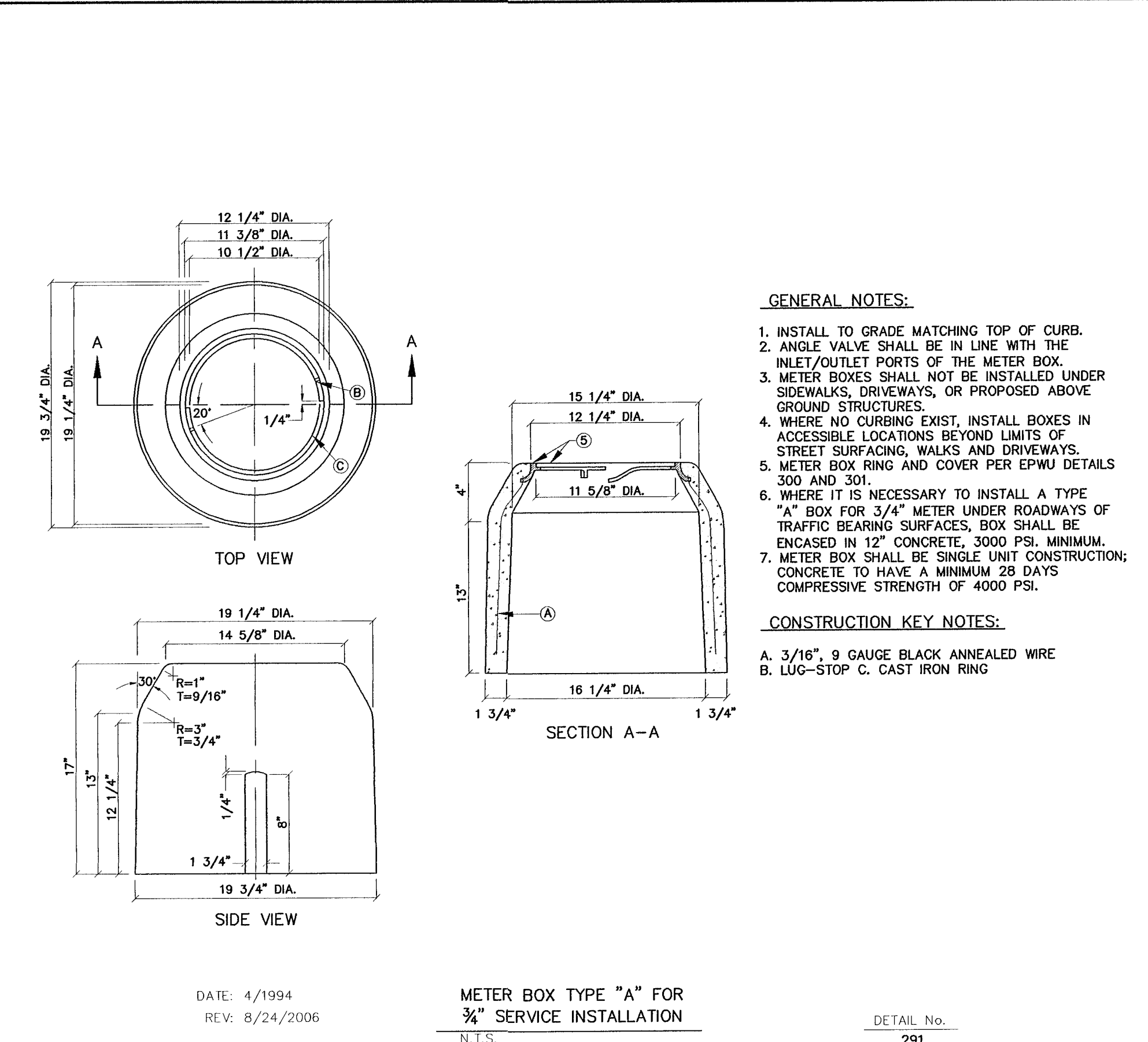
OF 58 SHEETS



- GENERAL NOTES:**
1. DETAIL SHOWN FOR A 3/4" SERVICE, 1" SERVICE INSTALLATION IS SIMILAR EXCEPT FOR SIZES OF PIPE, FITTING, METER AND BOX (TYPE "B").
  2. WHERE NO CURB EXISTS, METER IS TO BE SET NEAR PROPERTY LINE OR AT DESIGNATED LOCATION.
  3. THE CONTRACTOR SHALL FURNISH AND INSTALL ALL NECESSARY PIPE, FITTINGS, AND METER BOXES REQUIRED. IT SHALL BE THE RESPONSIBILITY OF THE PRIVATE OWNER TO HAVE A CERTIFIED PLUMBER INSTALL A BACKFLOW PREVENTER AND EXTEND SERVICE LINE ON DISCHARGE SIDE OF METER.
  4. NO SPLINGING SHALL BE ALLOWED. FULL LENGTH OF PIPING SERVICE SHALL BE INSTALLED.
  5. THE EPWU WILL FURNISH AND INSTALL THE METER.

- CONSTRUCTION KEY NOTES:**
- A. METER BOX TYPE "A" (SEE DETAILS 291 & 292) SHALL BE SET SLIGHTLY HIGHER THAN SURROUNDING GROUND OR AT CURB LEVEL.
  - B. 3/4" ANGLE SERVICE VALVE.
  - C. WATER METER (CENTER INSIDE METER BOX).
  - D. WHEN REQUIRED BY EPWU, A DUAL CHECK BACKFLOW PREVENTER SHALL BE INSTALLED ON THE OUTLET SIDE OF THE METER.
  - E. END FLARE OF SERVICE LINE.
  - F. INLET AND OUTLET COUPLING.
  - G. 3/4" COPPER SERVICE LINE (SEE NOTE 4).
  - H. 5/8" X 3/4" CORPORATION STOP.
  - I. PRESSURE REGULATOR SOMETIMES LOCATED NEAR THE RESIDENCE.
  - J. WATER MAIN.

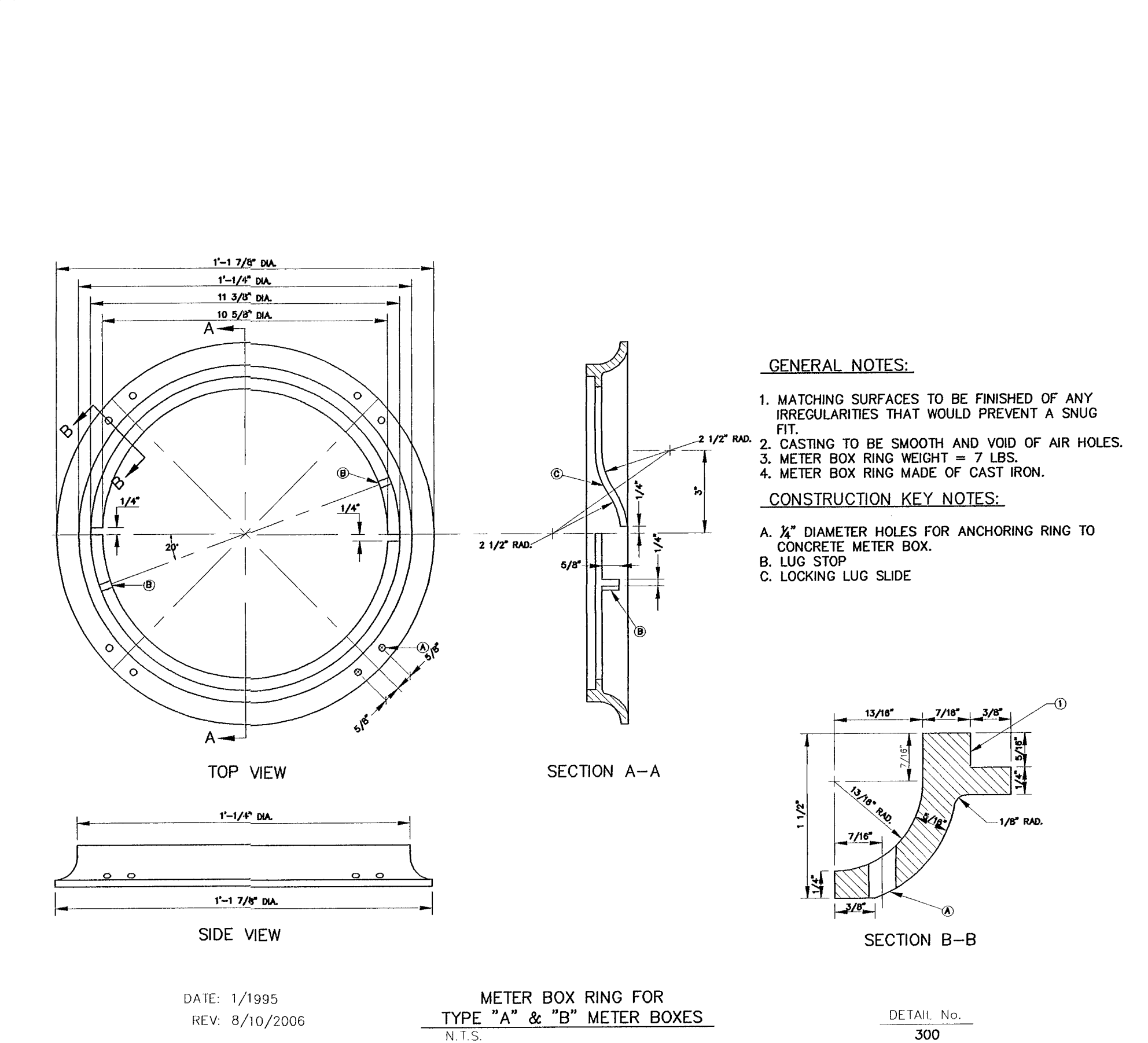
DATE: 10/20/2000  
REV: 5/24/2007  
SERVICE LINE 3/4" AND 1"  
INSTALLATION BY CONTRACTOR  
N.T.S.  
DETAIL No. 290-4



- GENERAL NOTES:**
1. INSTALL TO GRADE MATCHING TOP OF CURB.
  2. ANGLE VALVE SHALL BE IN LINE WITH THE INLET/OUTLET PORTS OF THE METER BOX.
  3. METER BOXES SHALL NOT BE INSTALLED UNDER SIDEWALKS, DRIVEWAYS, OR PROPOSED ABOVE GROUND STRUCTURES.
  4. WHERE NO CURBING EXISTS, INSTALL BOXES IN ACCESSIBLE LOCATIONS BEYOND LIMITS OF STREET SURFACING, WALKS AND DRIVEWAYS.
  5. METER BOX RING AND COVER PER EPWU DETAILS 300 AND 301.
  6. WHERE IT IS NECESSARY TO INSTALL A TYPE "A" BOX FOR 3/4" METER UNDER ROADWAYS OF TRAFFIC BEARING SURFACES, BOX SHALL BE ENCASED IN 12" CONCRETE, 3000 PSI. MINIMUM.
  7. METER BOX SHALL BE SINGLE UNIT CONSTRUCTION; CONCRETE TO HAVE A MINIMUM 28 DAYS COMPRESSIVE STRENGTH OF 4000 PSI.

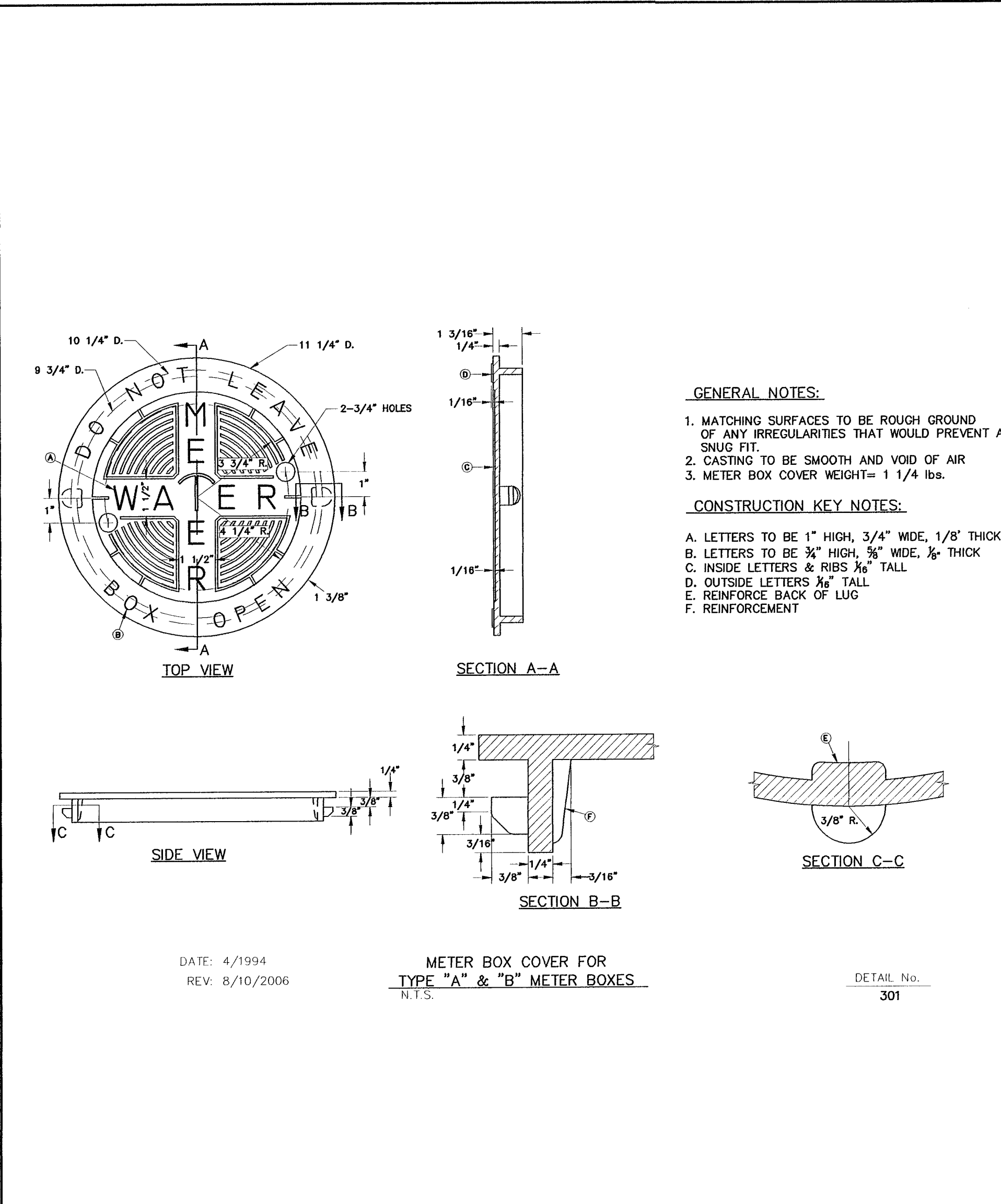
- CONSTRUCTION KEY NOTES:**
- A. 3/16", 9 GAUGE BLACK ANNEALED WIRE
  - B. LUG-STOP C. CAST IRON RING

DATE: 4/1994  
REV: 8/24/2006  
METER BOX TYPE "A" FOR  
3/4" SERVICE INSTALLATION  
N.T.S.  
DETAIL No. 291



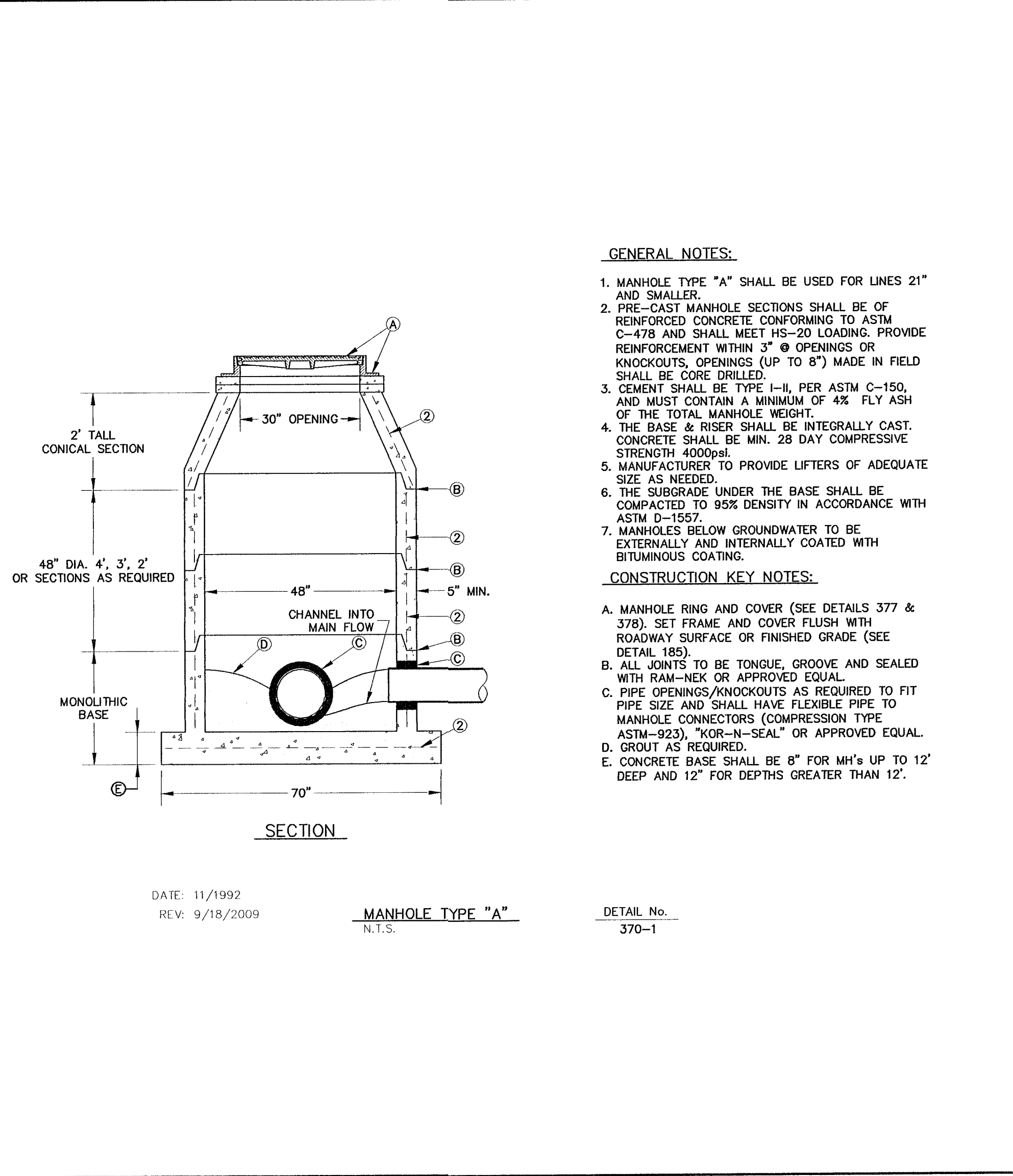
- GENERAL NOTES:**
1. MATCHING SURFACES TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
  2. CASTING TO BE SMOOTH AND VOID OF AIR HOLES.
  3. METER BOX RING WEIGHT = 7 LBS.
  4. METER BOX RING MADE OF CAST IRON.
- CONSTRUCTION KEY NOTES:**
- A. 1/2" DIAMETER HOLES FOR ANCHORING RING TO CONCRETE METER BOX.
  - B. LUG STOP
  - C. LOCKING LUG SLIDE

DATE: 1/1995  
REV: 8/10/2006  
METER BOX RING FOR  
TYPE "A" & "B" METER BOXES  
N.T.S.  
DETAIL No. 300



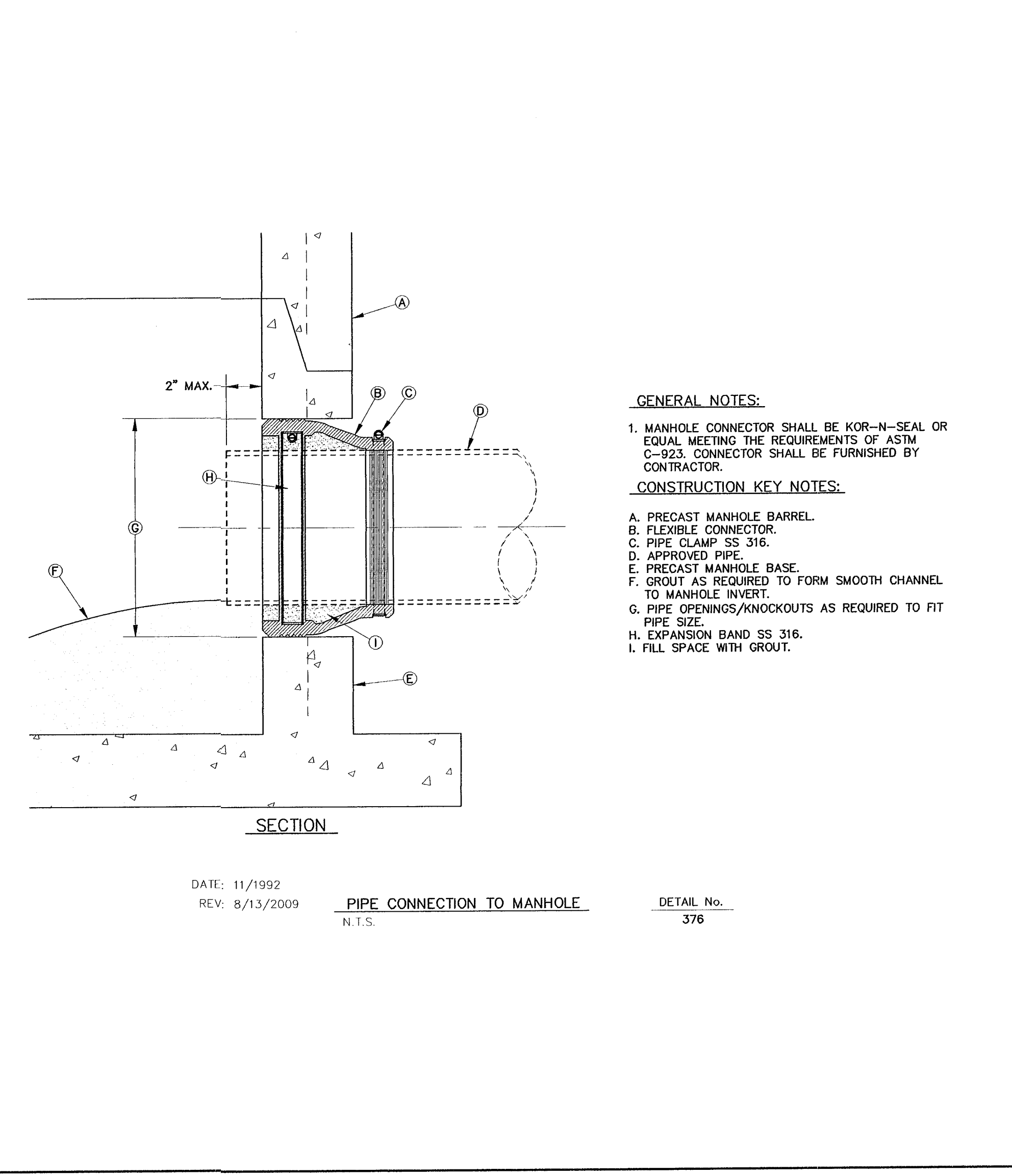
- GENERAL NOTES:**
1. MATCHING SURFACES TO BE ROUGH GROUND OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
  2. CASTING TO BE SMOOTH AND VOID OF AIR.
  3. METER BOX COVER WEIGHT = 1 1/4 LBS.
- CONSTRUCTION KEY NOTES:**
- A. LETTERS TO BE 1" HIGH, 3/4" WIDE, 1/8" THICK
  - B. LETTERS TO BE 3/4" HIGH, 3/8" WIDE, 3/8" THICK
  - C. INSIDE LETTERS & RIBS 3/8" TALL
  - D. OUTSIDE LETTERS 1/2" TALL
  - E. REINFORCE BACK OF LUG
  - F. REINFORCEMENT

DATE: 4/1994  
REV: 8/10/2006  
METER BOX COVER FOR  
TYPE "A" & "B" METER BOXES  
N.T.S.  
DETAIL No. 301



- GENERAL NOTES:**
1. MANHOLE TYPE "A" SHALL BE USED FOR LINES 21" AND SMALLER.
  2. PRE-CAST MANHOLE SECTIONS SHALL BE OF REINFORCED CONCRETE CONFORMING TO ASTM C-478 AND SHALL MEET HS-20 LOADING. PROVIDE REINFORCEMENT WITHIN 3" @ OPENINGS OR KNOCKOUTS, OPENINGS (UP TO 8") MADE IN FIELD SHALL BE CORE DRILLED.
  3. CEMENT SHALL BE TYPE I-II, PER ASTM C-150, AND MUST CONTAIN A MINIMUM OF 4% FLY ASH OF THE TOTAL MANHOLE WEIGHT.
  4. THE BASE & RISER SHALL BE INTEGRALLY CAST. CONCRETE SHALL BE MIN. 28 DAY COMPRESSIVE STRENGTH 4000psi.
  5. MANUFACTURER TO PROVIDE LIFTERS OF ADEQUATE SIZE AS NEEDED.
  6. THE SUBGRADE UNDER THE BASE SHALL BE COMPACTED TO 95% DENSITY IN ACCORDANCE WITH ASTM D-1557.
  7. MANHOLES BELOW GROUNDWATER TO BE EXTERNALLY AND INTERNALLY COATED WITH BITUMINOUS COATING.
- CONSTRUCTION KEY NOTES:**
- A. MANHOLE RING AND COVER (SEE DETAILS 377 & 378). SET FRAME AND COVER FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE (SEE DETAIL 185).
  - B. ALL JOINTS TO BE TONGUE, GROOVE AND SEALED WITH RAM-NEK OR APPROVED EQUAL.
  - C. PIPE OPENINGS/KNOCKOUTS AS REQUIRED TO FIT PIPE SIZE AND SHALL HAVE FLEXIBLE PIPE TO MANHOLE CONNECTORS (COMPRESSION TYPE ASTM-923), "KOR-N-SEAL" OR APPROVED EQUAL.
  - D. GROUT AS REQUIRED.
  - E. CONCRETE BASE SHALL BE 8" FOR MH'S UP TO 12" DEEP AND 12" FOR DEPTHS GREATER THAN 12."

DATE: 11/1992  
REV: 9/18/2009  
MANHOLE TYPE "A"  
N.T.S.  
DETAIL No. 370-1



- GENERAL NOTES:**
1. MANHOLE CONNECTOR SHALL BE KOR-N-SEAL OR EQUAL MEETING THE REQUIREMENTS OF ASTM C-923. CONNECTOR SHALL BE FURNISHED BY CONTRACTOR.
- CONSTRUCTION KEY NOTES:**
- A. PRECAST MANHOLE BARREL
  - B. FLEXIBLE CONNECTOR
  - C. PIPE CLAMP SS 316
  - D. APPROVED PIPE
  - E. PRECAST MANHOLE BASE
  - F. GROUT AS REQUIRED TO FORM SMOOTH CHANNEL TO MANHOLE INVERT.
  - G. PIPE OPENINGS/KNOCKOUTS AS REQUIRED TO FIT PIPE SIZE
  - H. EXPANSION BAND SS 316
  - I. FILL SPACE WITH GROUT.

DATE: 11/1992  
REV: 8/13/2009  
PIPE CONNECTION TO MANHOLE  
N.T.S.  
DETAIL No. 376

REFERENCES - BENCHMARK

BY	REVISION
DATE	

QUANTUM H<sub>2</sub>O, Inc.  
Integrated Engineering Solutions  
414 Executive Center Blvd.  
Suite 200-B  
El Paso, Texas 79902  
Office: 915.530.5000  
Texas Registered Engineering Firm # F-01062

STATE OF TEXAS  
Professional Seal of  
RAMZI JOSEPH SKALI  
No. 17186  
Professional Engineer  
Mechanical Engineering  
The seal appearing on this document is the property of the State of Texas. Its use without the consent of the State Board of Professional Engineers is prohibited. Alteration of a sealed document without the consent of the State Board of Professional Engineers is an offense under the Texas Engineering Practice Act.

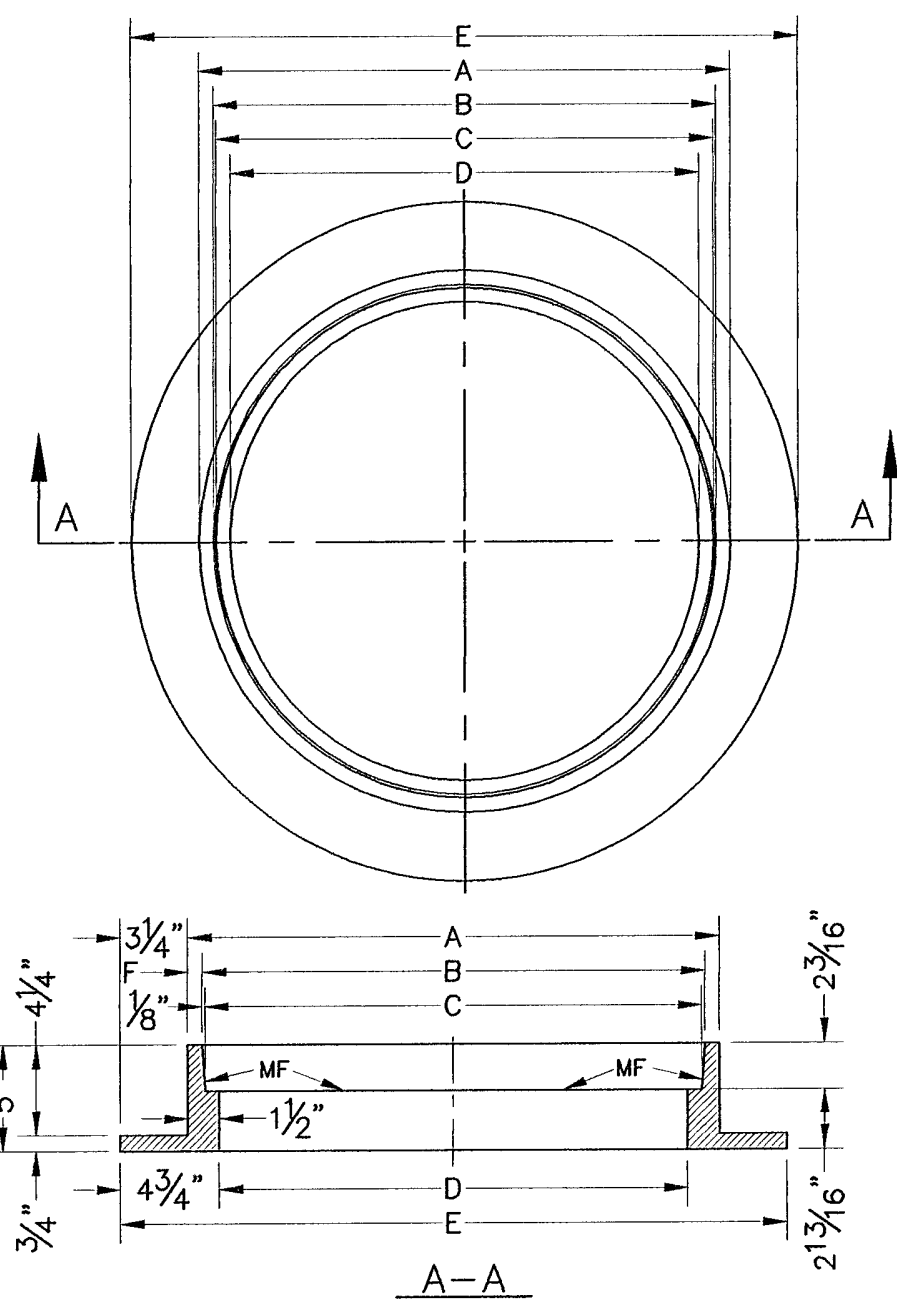
SCALE:  
HORIZONTAL: 3"-22'-2002  
VERTICAL: 1"=4'-0"

DESIGN BY: R.S.  
DRAWN BY: J.L.S.  
CHKD BY: R.S.  
APP'D BY: R.S.  
JOB NO. 1038

PROJECT TITLE  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

SHEET TITLE  
UTILITY DETAILS  
SHEET 3

SHEET NO.  
C-U16  
OF 58 SHEETS



**GENERAL NOTES:**

1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
4. AS-CAST DIMENSIONS MAY VARY  $\frac{1}{8}$ " PER FOOT (AASHTO M306-07).
5. WEIGHT MAY VARY 5%± (AASHTO M306-07).

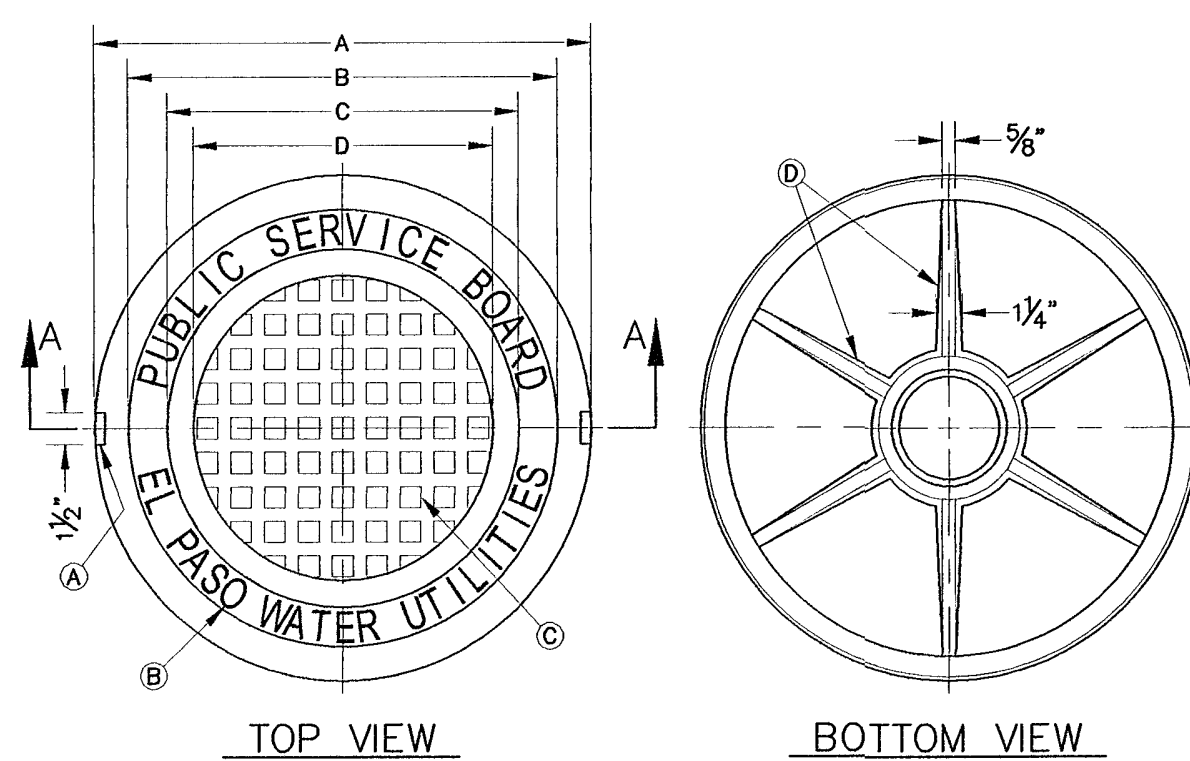
MANHOLE RING	MANHOLE - ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	33"	25½"
B	31¾"	24¾"
C	31½"	23¾"
D	30"	22½"
E	39½"	32"
F	¾"	1½"
WEIGHT	205 lbs.	170 lbs.

\*OBsolete - DO NOT USE (FOR REFERENCE ONLY)

DATE: 11/1992  
REV: 2/21/2011

SEWER MANHOLE RING  
N.T.S.

DETAIL No. 377



**GENERAL NOTES:**

1. MATCHING SURFACES MARKED "MF" TO BE FINISHED OF ANY IRREGULARITIES THAT WOULD PREVENT A SNUG FIT.
2. CASTING TO BE SMOOTH & VOID OF AIR HOLES.
3. CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
4. AS-CAST DIMENSIONS MAY VARY  $\frac{1}{8}$ " PER FOOT (AASHTO M306-07).
5. WEIGHT MAY VARY 5%± (AASHTO M306-07).

**CONSTRUCTION KEY NOTES:**

- A. LIFTING NOTCH.
- B.  $\frac{3}{8}$ " RAISED LETTERING.
- C. 1" SQUARES ( $\frac{1}{8}$ " TALL) WITH  $\frac{1}{8}$ " SPACE BETWEEN.
- D. REINFORCING RIBS.
- E. SLOT.

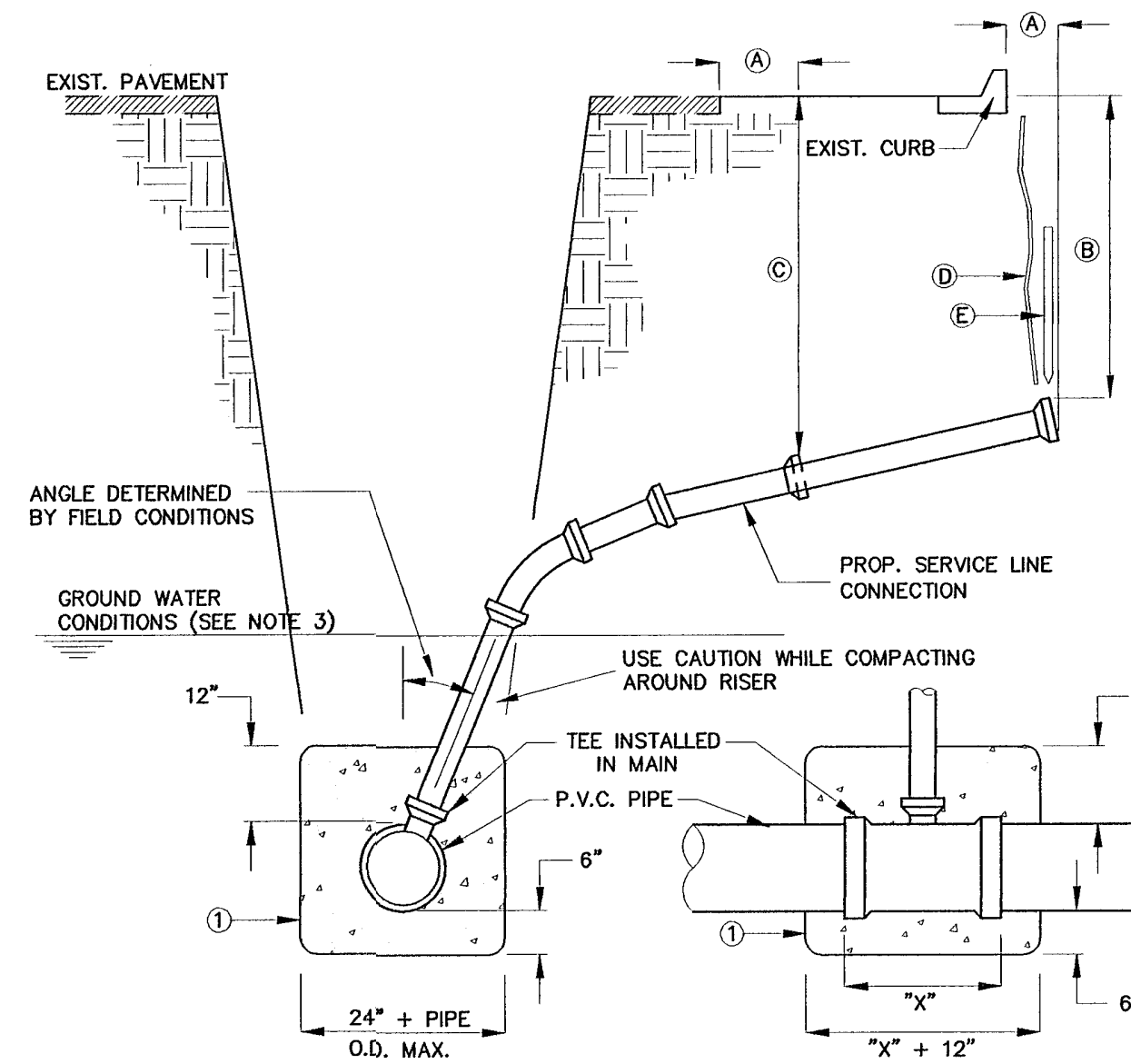
MANHOLE COVER	MANHOLE - ALL TYPES	*MANHOLE TYPE A, A1, A2 & C
A	31¾"	23¾"
B	28¾"	20¾"
C	24¾"	16¾"
D	21¾"	14¾"
WEIGHT	200 lbs.	165 lbs.

\*OBsolete - DO NOT USE (FOR REFERENCE ONLY)

DATE: 11/1992  
REV: 2/21/2011

SEWER MANHOLE COVER  
N.T.S.

DETAIL No. 378



**GENERAL NOTES:**

1. IN GROUNDWATER CONDITIONS ONLY, P.V.C. SADDLES OR TEES ARE TO BE ENCASED WITH CLASS B CONCRETE.
2. UNDER CERTAIN CONDITIONS FIELD INVESTIGATIONS WILL BE REQUIRED TO DETERMINE THE ADEQUACY OF THE DEPTH ON THE LATERAL.
3. WHEN GROUND WATER IS ENCOUNTERED SERVICE RISER SHALL BE EXTENDED ABOVE ANTICIPATED WATER TABLE LEVEL.

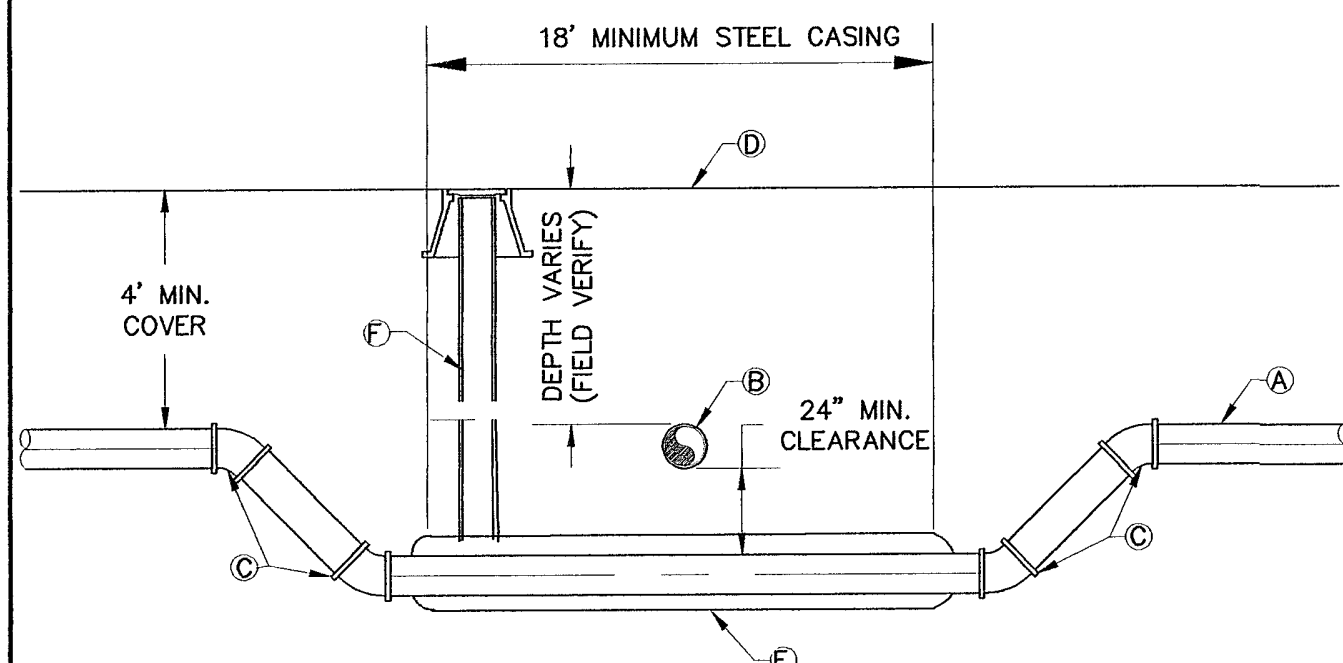
**CONSTRUCTION KEY NOTES:**

- A. CONTRACTOR TO INSTALL SEWER SERVICE LINE FROM THE MAIN TO A LOCATION 6" BEHIND THE CURB OR 18" BEYOND THE EDGE OF PAVEMENT, UNLESS CONDITIONS REQUIRE OTHERWISE.
- B. 18" FOR STANDARD SUBDIVISION, 3.5' FOR SUBDIVISIONS WITH ON-SITE PONDING OR FLAT TERRAIN.
- C. RISERS OR LATERALS EXTENDING BEYOND EXISTING PAVING SHALL BE INSTALLED TO 3.5' MINIMUM TOP OF GROUND OR PAVEMENT, UNLESS CONDITIONS REQUIRE OTHERWISE.
- D. PLASTIC METALLIC MARKING TAPE RISING TO WITHIN 6" OF GROUND SURFACE OR METALLIC DISK.
- E. WOODEN STAKE (1"x2"x36") VERTICALLY PLACED AT PLUGGED END OF PROPOSED SERVICE LINE.

DATE: 11/1992  
REV: 1/23/2009

SEWER SERVICE RISER AND SERVICE LINE CONNECTION  
N.T.S.

DETAIL No. 391

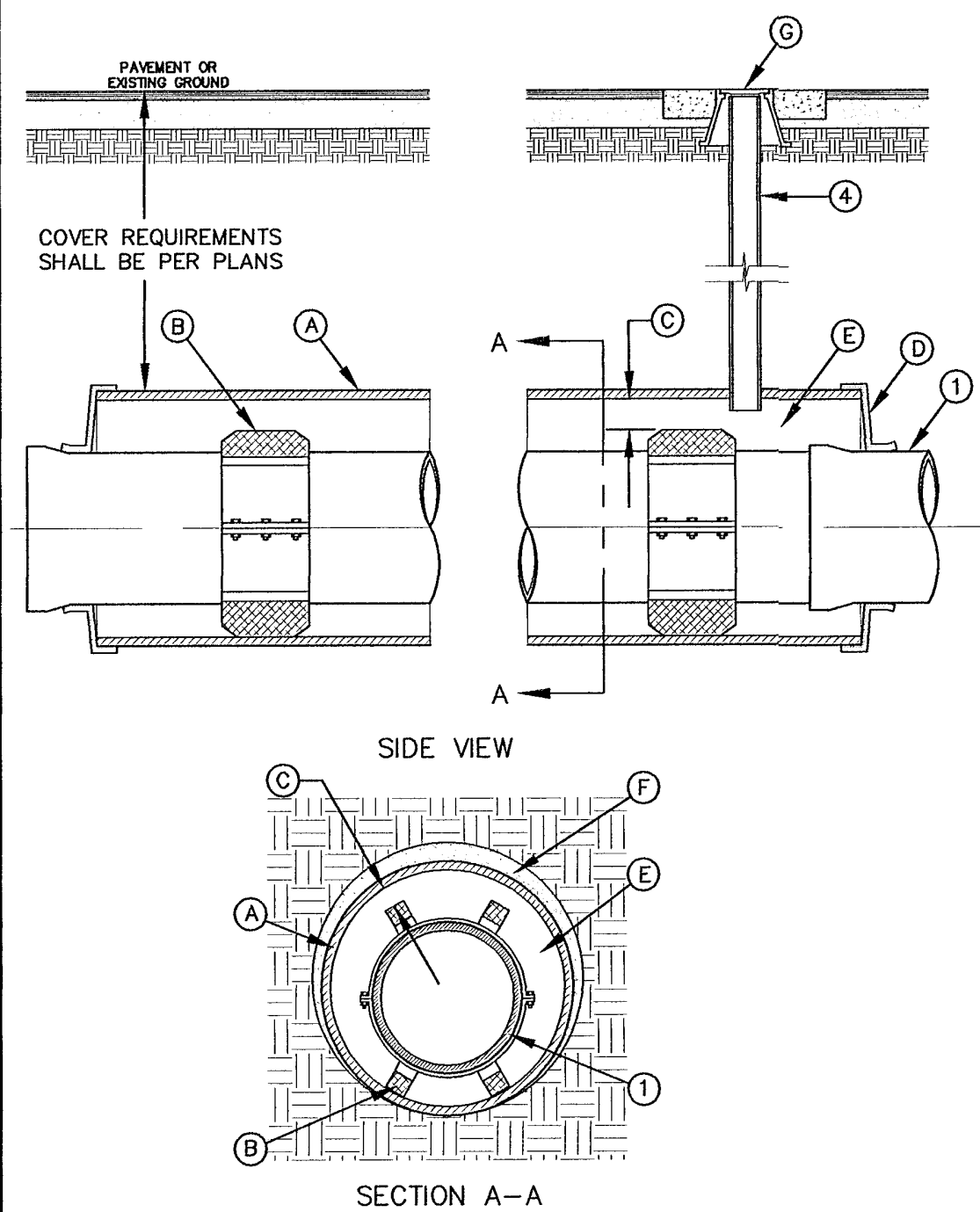


**CONSTRUCTION KEY NOTES:**

- A. PROPOSED P.V.C. WATER PIPE. USE RESTRAINED JOINTS INSIDE THE CASING, AT ELBOWS, AND USE RESTRAINED JOINTS BEFORE AND AFTER ELBOWS FOR A DISTANCE AS INDICATED IN DETAIL 240.
- B. PROPOSED STORM SEWER LINE.
- C. (4) 45° BEND.
- D. FINISHED GRADE.
- E. STEEL CASING REQUIRED WHEN STORM SEWER PIPE IS LARGER THAN 30-INCH. SEE DETAIL 180 FOR SPACERS AND OTHER REQUIREMENTS.
- F. PRECAUTIONARY OUTLET, SEE DETAIL 180.

WATER LINE CROSSING STORMSEWER LINE (TYPICAL) DETAIL  
N.T.S.

DETAIL No. 120



**GENERAL NOTES:**

1. INSTALLATION FOR APPROVED CARRIER PIPE.
2. CASING SHALL BE INSTALLED USING EITHER JACKING, BORING OR TUNNELING METHODS FROM THE END WHICH CREATES A MINIMUM OF ACCESS AND RELOCATION PROBLEMS.
3. INSULATED SPACERS SHALL BE USED WHEN SPECIFIED, TO PROVIDE CORROSION PROTECTION.
4. PRECAUTIONARY OUTLET (6") WITH BONNET BOX AND COVER SHALL BE USED WHEN REQUIRED BY OTHER GOVERNING AGENCIES.

**CONSTRUCTION KEY NOTES:**

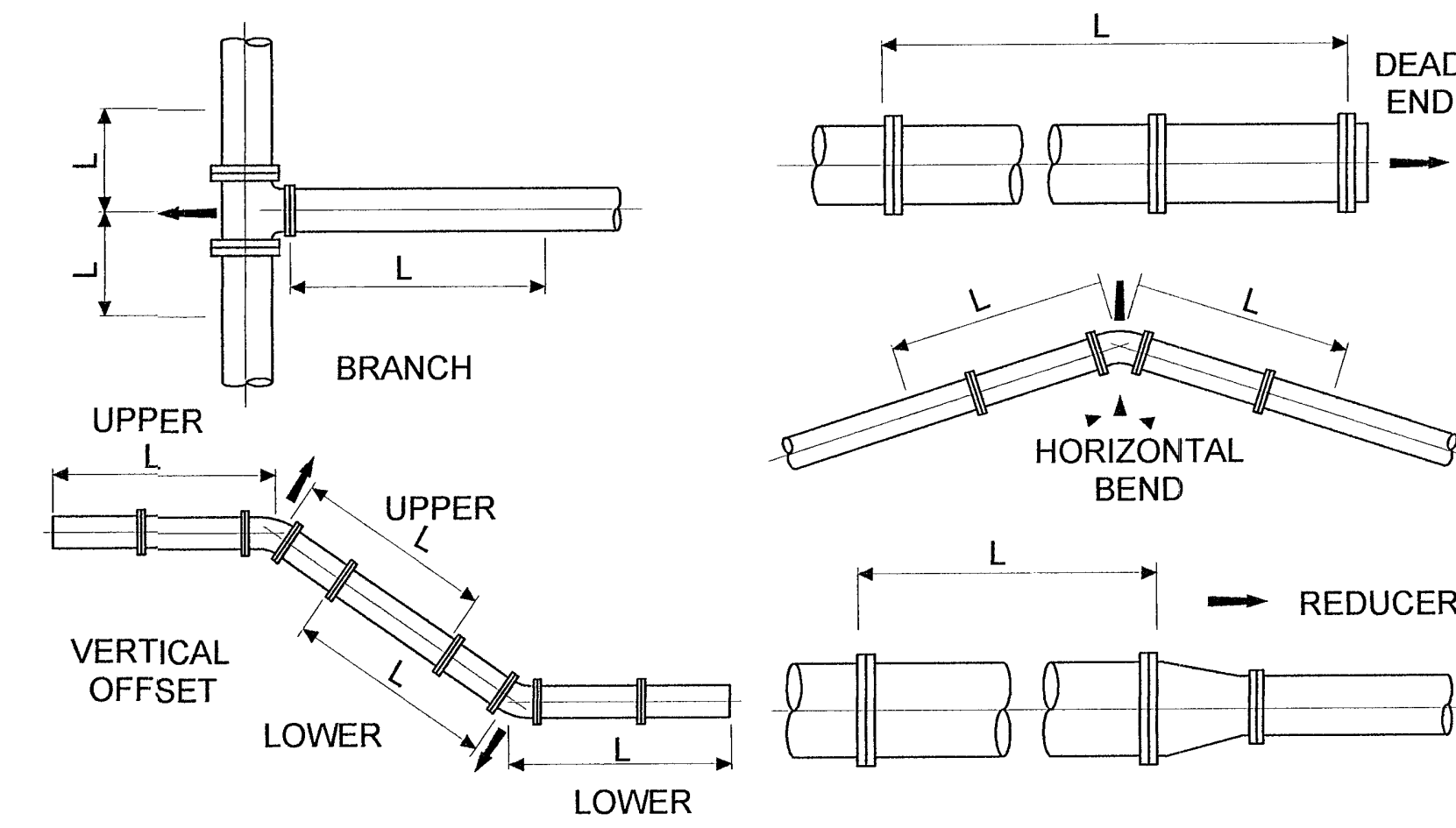
- A. STEEL CASING MINIMUM YIELD 36000 PSI, SIZE AND LENGTH AS SPECIFIED.
- B. CASING INSULATORS, SPACING AND LOCATION PER MANUFACTURER'S RECOMMENDATIONS. INSULATORS SHALL FIT SNUG OVER THE CARRIER PIPE.
- C. POSITION CARRIER PIPE APPROXIMATELY IN CENTER OF CASING. MINIMUM SPACING BETWEEN INSULATOR AND CARRIER PIPE SHALL BE 1", MAXIMUM SPACING SHALL BE 2".
- D. END SHALL BE SEALED WITH BRICK AND MORTAR, BULKHEAD AND GROUT, OR WITH SYNTHETIC RUBBER SEAL, AS SPECIFIED.
- E. ANNULAR SPACE SHALL BE LEFT OPEN FOR CATHODICALLY PROTECTED SYSTEM WHERE BOTH CASING AND CARRIER PIPE ARE METALLIC MATERIAL, OR AS OTHERWISE SPECIFIED.
- F. PRESSURE GROUT ANNULAR SPACE OUTSIDE CASING AFTER CASING IS INSTALLED.
- G. BONNET BOX AND COVER (SEE DETAILS 288, 289-1 & 289-2) SET FRAME AND COVER FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE (SEE DETAIL 260).

DATE: 3/1994  
REV: 6/24/2010

CARRIER PIPE INSTALLATION WITH CASING INSULATORS  
N.T.S.

DETAIL No. 180

Fitting Type	Bend Angle	Length to be Restraint on Either Side of Fitting
Horizontal Bend	90	26'
	45	9'
	22.5	5'
Vertical Offset	45	20/11
	22.5	10/6
	11.25	5/3
Tee		Branch Restrained Length
		39'
Reducer		Length to be Restrained on Larger Side
		20'
Dead End		Length to be Restrained from Dead End
		47'



MINIMUM RESTRAINED LENGTH REQUIRED  
N.T.S.

DETAIL No. 240

M:\06-2012-8172m-1\06-2012-8172m-12 REDLINE FINAL\FH UTIL-DETAILS 3-22-12.dwg  
 C:\Users\3D Projects\Projects\Franklin Hills Units 8\Drawings\FH UTIL-DETAILS 3-22-12.dwg

PROJECT TITLE: FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS EL PASO COUNTY, TEXAS  
 SHEET TITLE: UTILITY DETAILS SHEET 4  
 SHEET NO.: C-U17 OF 58 SHEETS  
 SCALE: HORIZONTAL: 3"-22'-0" VERTICAL: 3"-22'-0"

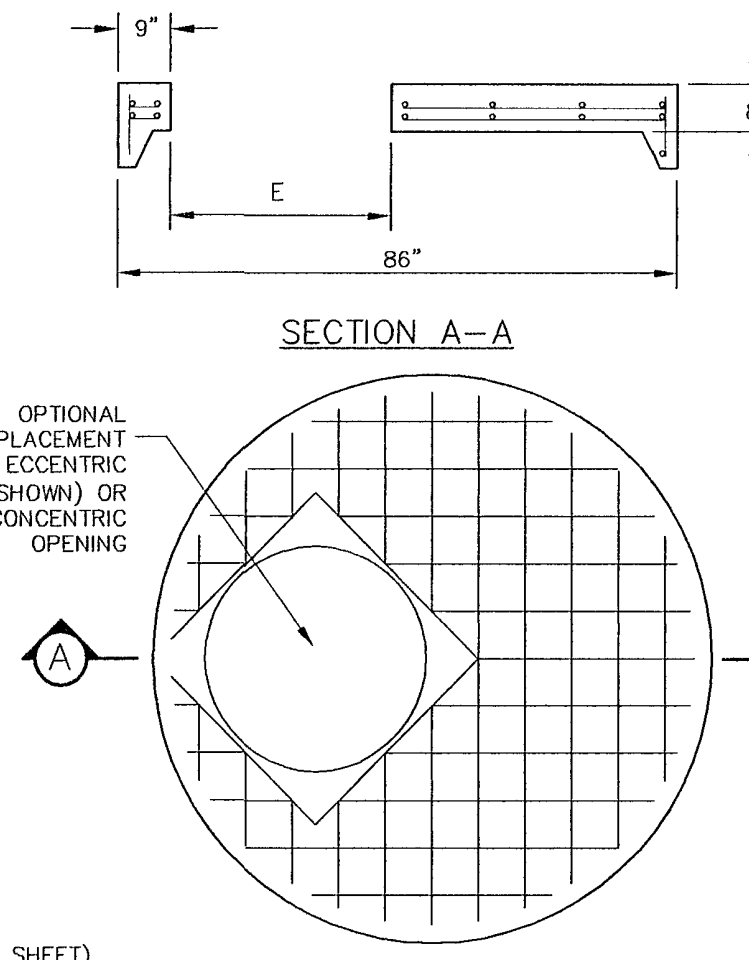
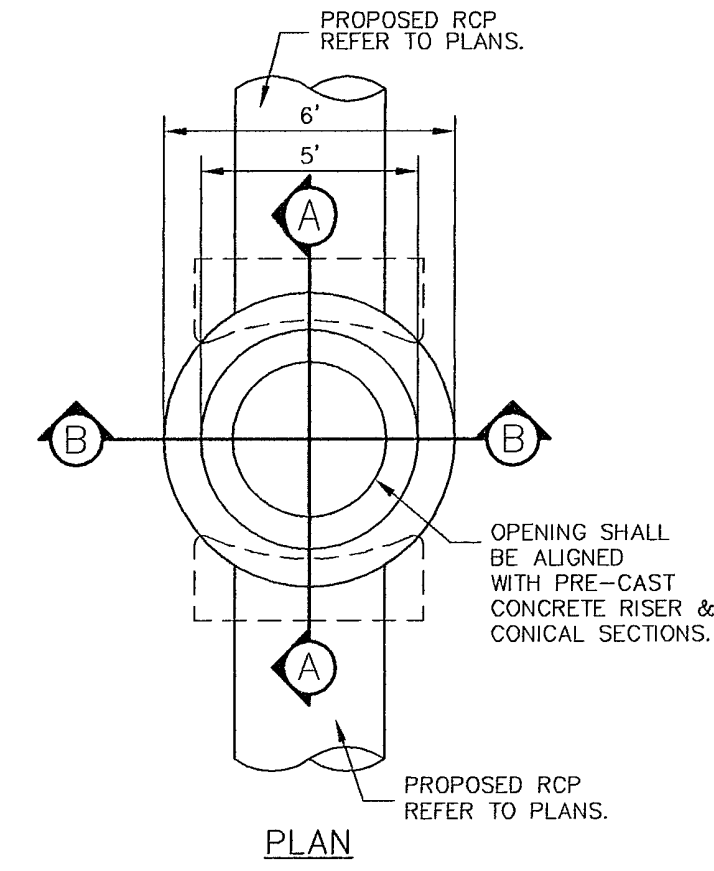
REFERENCES - BENCHMARK  
 REVISION  
 DATE  
 BY

QUANTUM H2O, Inc.  
 Integrated Engineering Solutions  
 414 Executive Center Blvd.  
 Suite 200-B  
 El Paso, Texas 79902  
 Office: 915.238.4045  
 Texas Registered Engineering Firm # E-10962

The seal appearing on this drawing is the property of the State of Texas and is not to be used on any other project without the written consent of the State of Texas.

DESIGN BY: J.L.S.  
 DRAWN BY: J.L.S.  
 CHECK BY: J.L.S.  
 APPROV. BY: J.L.S.  
 JOB NO.: 0038





**GENERAL NOTES:**

- ALL JOINTS TO BE TONGUE AND GROOVE AND SEALED WITH RAM-NEK OR EQUAL.
- MANUFACTURER TO PROVIDE LIFTERS OF ADEQUATE SIZE AS NEEDED.

**CONSTRUCTION KEY NOTES:**

- 4000 P.S.I. CONCRETE 28 DAYS.
- KEYLOCK ADDS 8" TO VERTICAL HEIGHT.
- RING & COVER OR SPECIAL LIDS TO MEET REQUIREMENTS. MAY BE CAST IN PLACE.
- REINFORCING SHALL MEET A.S.T.M. C478-87 AND TRAFFIC LOADING (HS-20).
- SIZE TO ACCOMMODATE MANHOLE RING.

**MANHOLE COVER FOR TYPE 72" MANHOLE**  
SCALE: N.T.S.

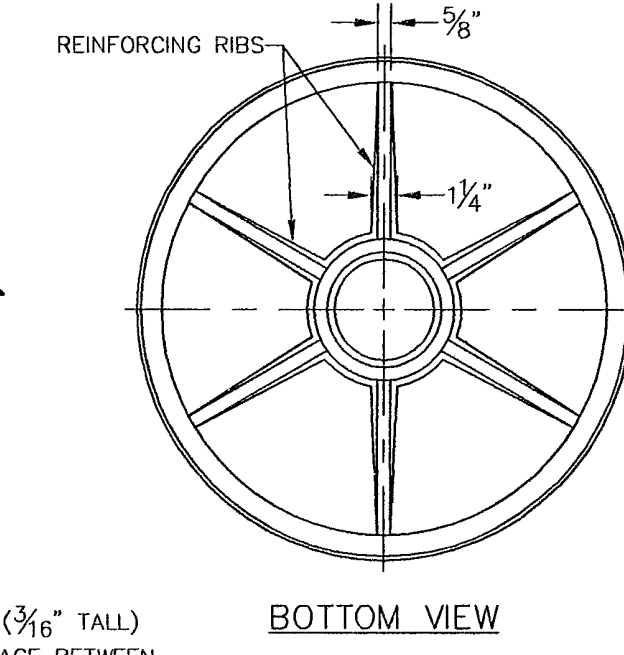
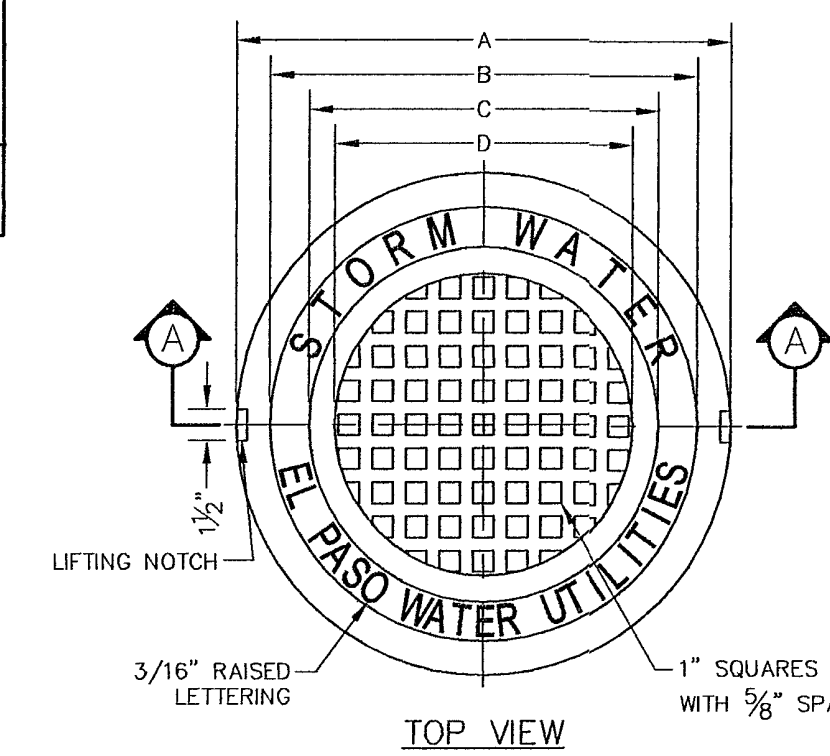
CONCRETE APRON FOR CIRCULAR PENETRATIONS IN ASPHALT PAVEMENTS				
"D" DIAMETER OF PENETRATION (INCHES)	"A" CONCRETE HORIZONTAL DIMENSION FROM PENETRATION (INCHES)	NUMBER OF NO. 3 REINFORCING STEEL BARS	"B" MINIMUM CLEARANCE FROM EDGE OF CONCRETE APRON TO CENTER OF NEAREST REBAR (INCHES)	"C" MINIMUM CLEARANCE FROM PENETRATION EDGE TO CENTER OF NEAREST REBAR (INCHES)
0 TO 6.00	6	2	1 1/2	1 1/2
6.01 TO 18.00	8	3	1 1/2	1 1/2
18.01 AND OVER	12	3	1 1/2	1 1/2

**CONSTRUCTION NOTES:**

- ANY DISTURBED SUBGRADE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 95% DENSITY ± 3% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
- ANY DISTURBED COARSE UNDER THE CONCRETE APRON SHALL BE COMPACTED TO 100% DENSITY ± 2% OPTIMUM MOISTURE CONTENT IN ACCORDANCE WITH ASTM D-1557.
- PROVIDE A MINIMUM OF 1 1/2" OF CONCRETE COVER FOR ALL REINFORCEMENT STEEL.
- REINFORCING SHALL MEET ASTM C-478 AND TRAFFIC LOADING (HS-20).
- NO. 3 REINFORCING STEEL HOOPS SHALL BE SPACED EQUALLY.

**GENERAL NOTES:**

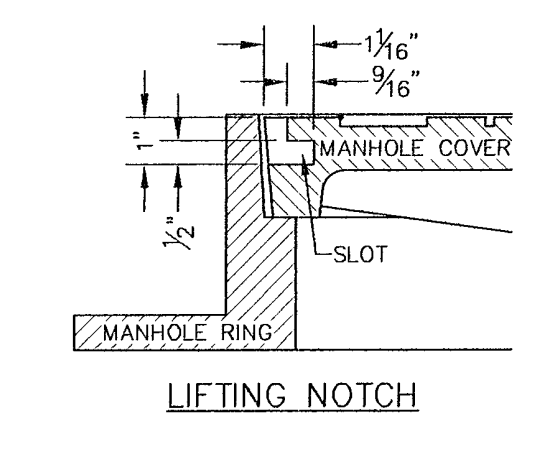
- THE PENETRATION APRON SHOULD BE CAST IN-PLACE CONCRETE. (MINIMUM 28 DAY COMPRESSIVE STRENGTH 4000 PSI. HIGH EARLY CONCRETE IS REQUIRED)
- TOPS OF PENETRATION APRON SHALL BE FLUSH WITH ROADWAY SURFACE OR FINISHED GRADE UNLESS OTHERWISE SPECIFIED BY THE ENGINEER.



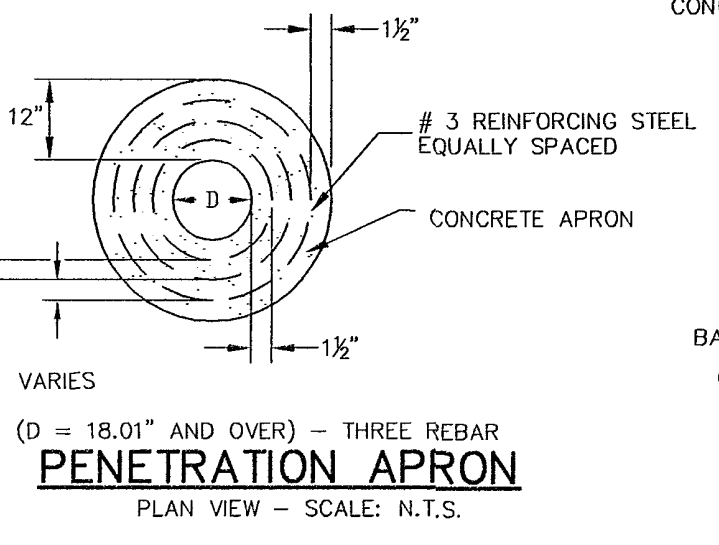
**GENERAL NOTES:**

- MATCHING SURFACES MARKED "MF" TO BE FINISHED TO ANY IRREGULARITIES THAT WOULD PREVENT A SMOOTH FIT.
- CASTING TO BE SMOOTH & VOID OF AIR HOLES.
- CASTING MUST MEET REQUIREMENTS OF AASHTO M306-07.
- AS-CAST DIMENSIONS MAY VARY 1/8" ± PER FOOT (AASHTO M306-07).
- WEIGHT MAY VARY 5% (AASHTO M306-07).

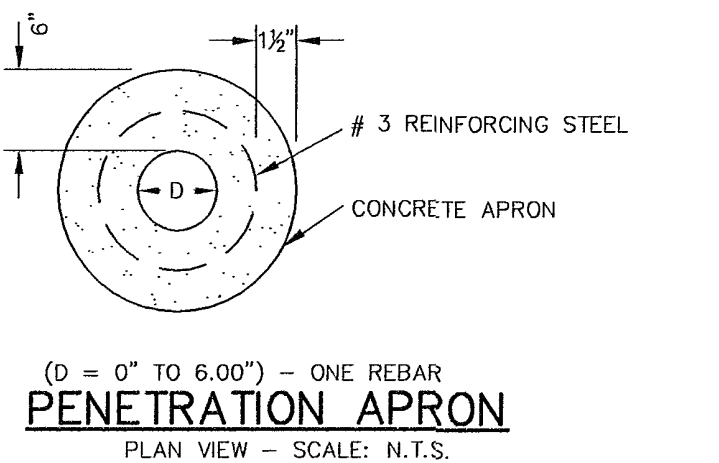
MANHOLE COVER	MANHOLE - ALL TYPES
A	31 3/4"
B	28 3/4"
C	24 3/4"
D	21 3/4"
WEIGHT	265 lbs.



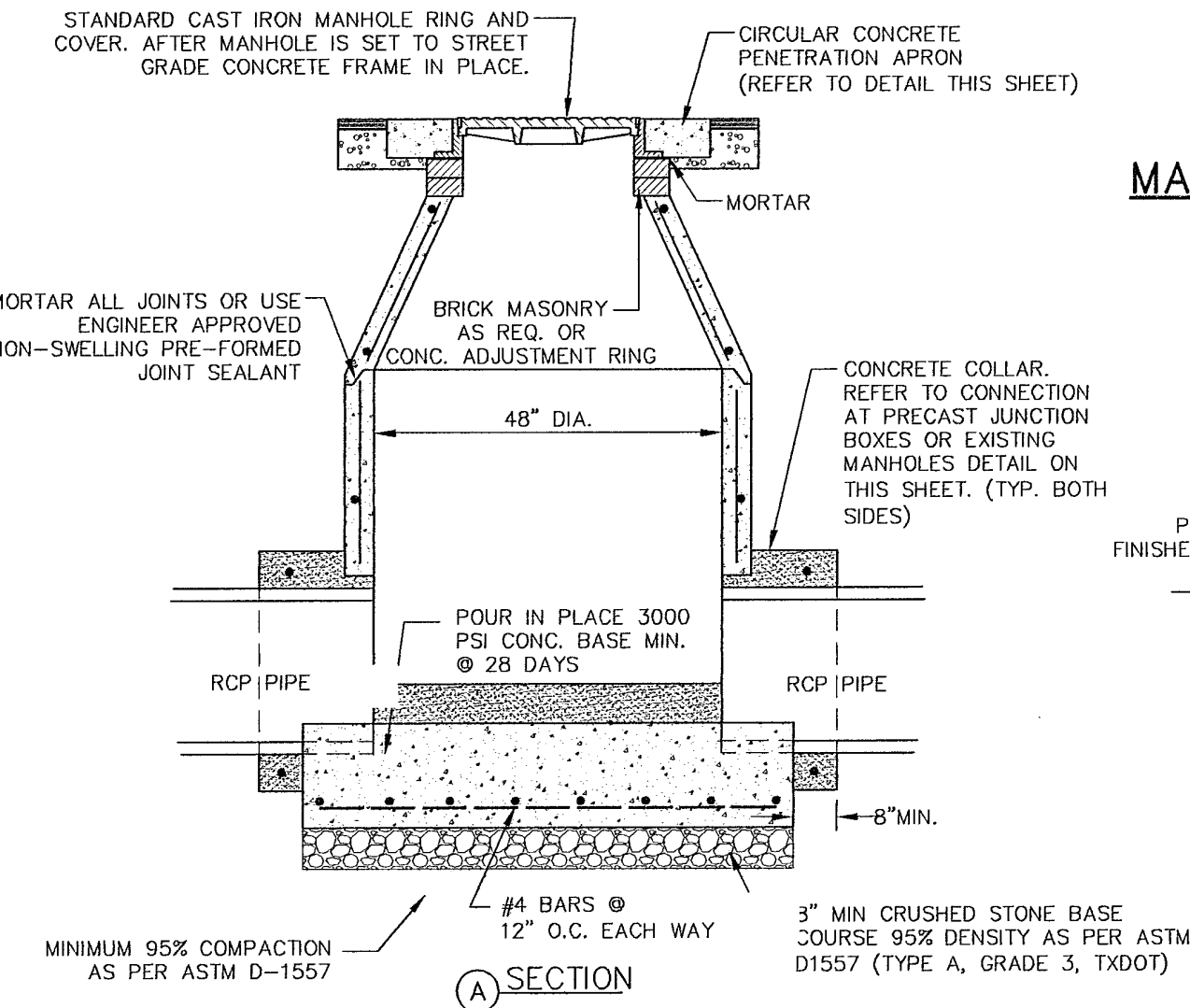
**STORMWATER MANHOLE COVER**  
SCALE: N.T.S.



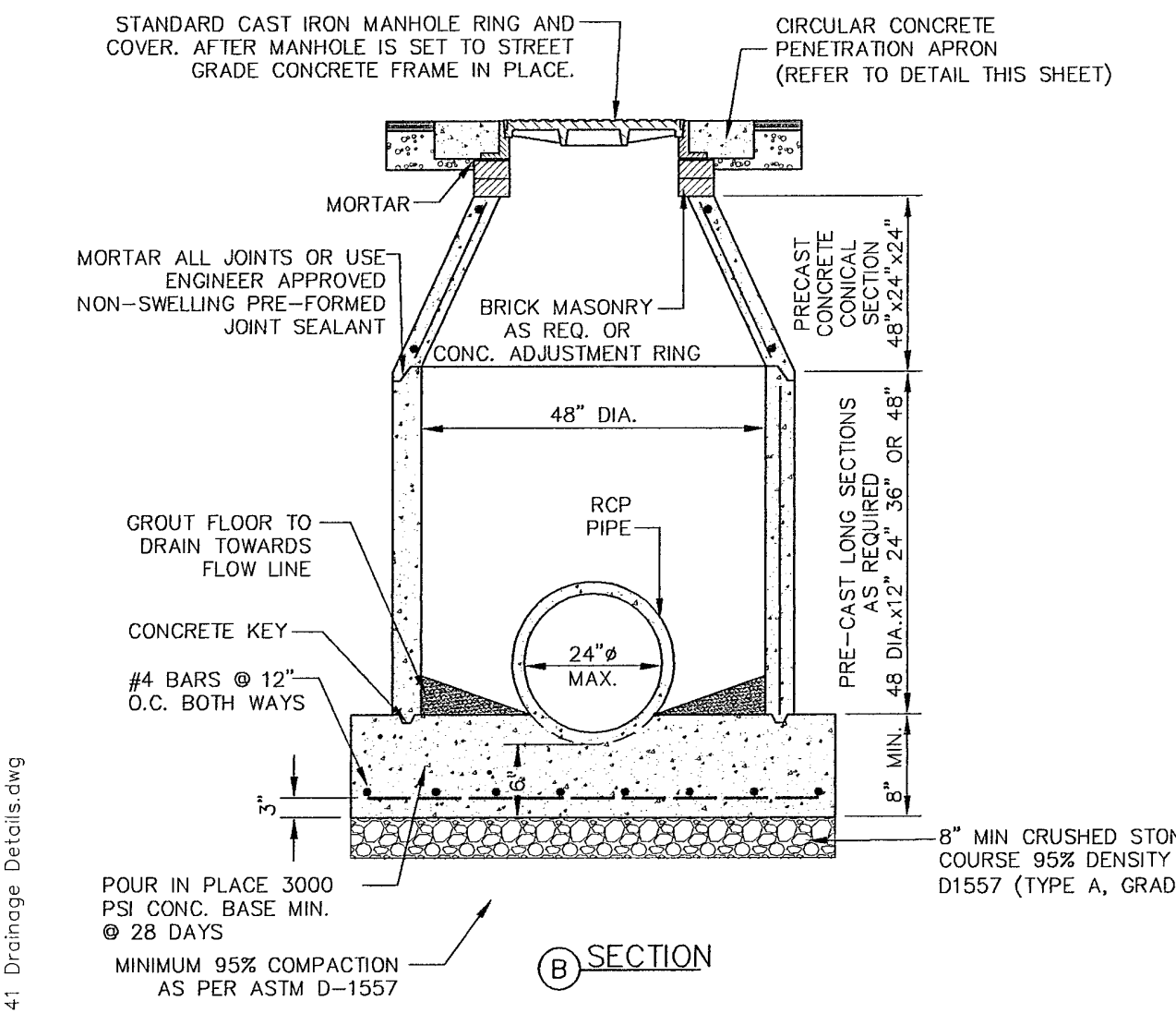
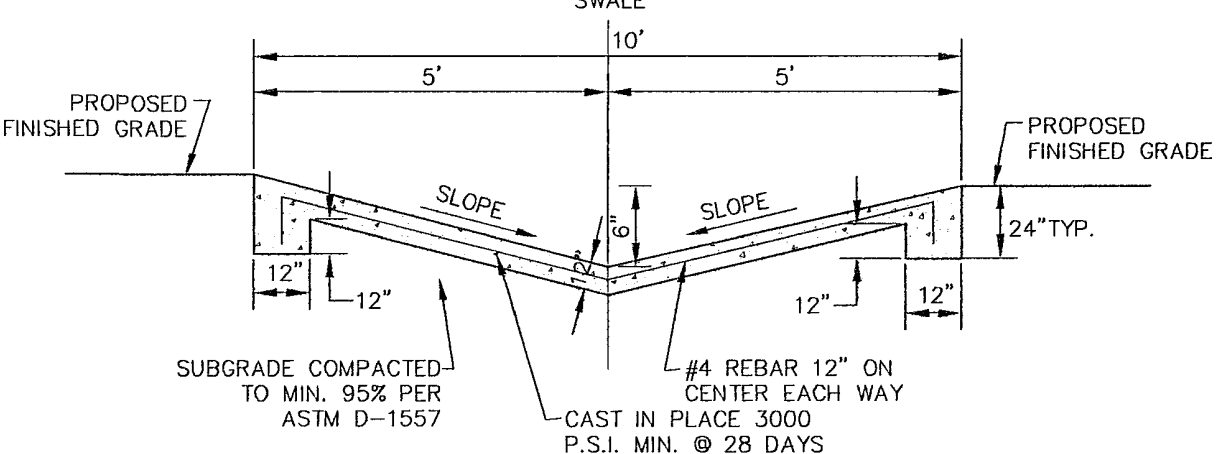
**PENETRATION APRON**  
PLAN VIEW - SCALE: N.T.S.



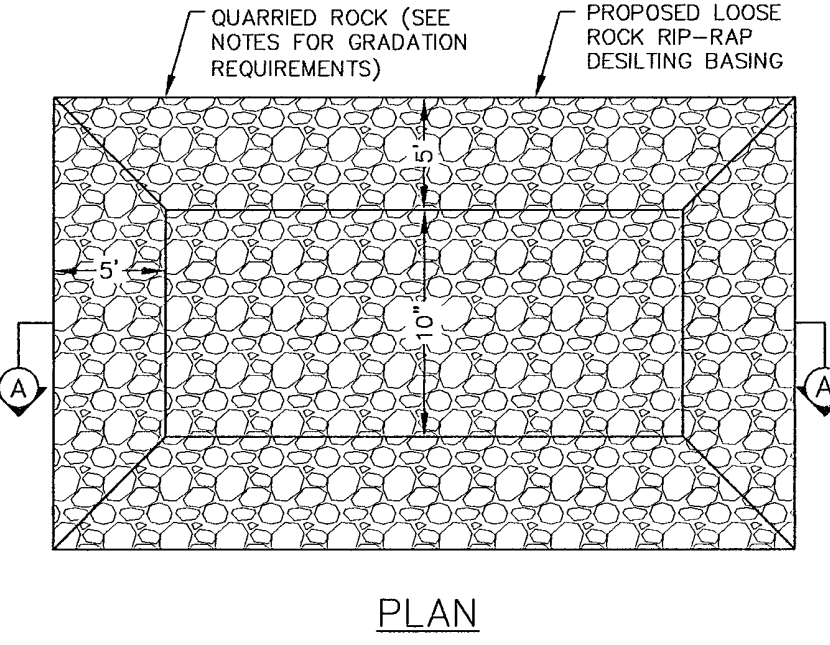
**PENETRATION APRON**  
PLAN VIEW - SCALE: N.T.S.



**CONCRETE SWALE AT POND DETAIL**  
SCALE: N.T.S.

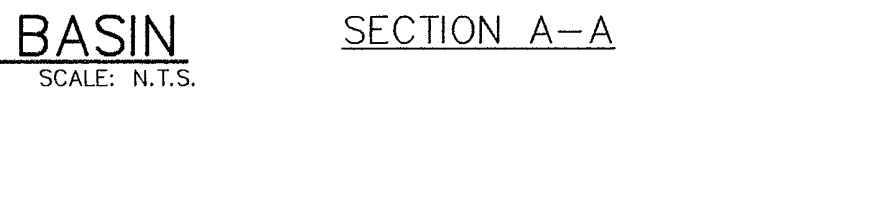


**48" STANDARD MANHOLE**  
SCALE: N.T.S.



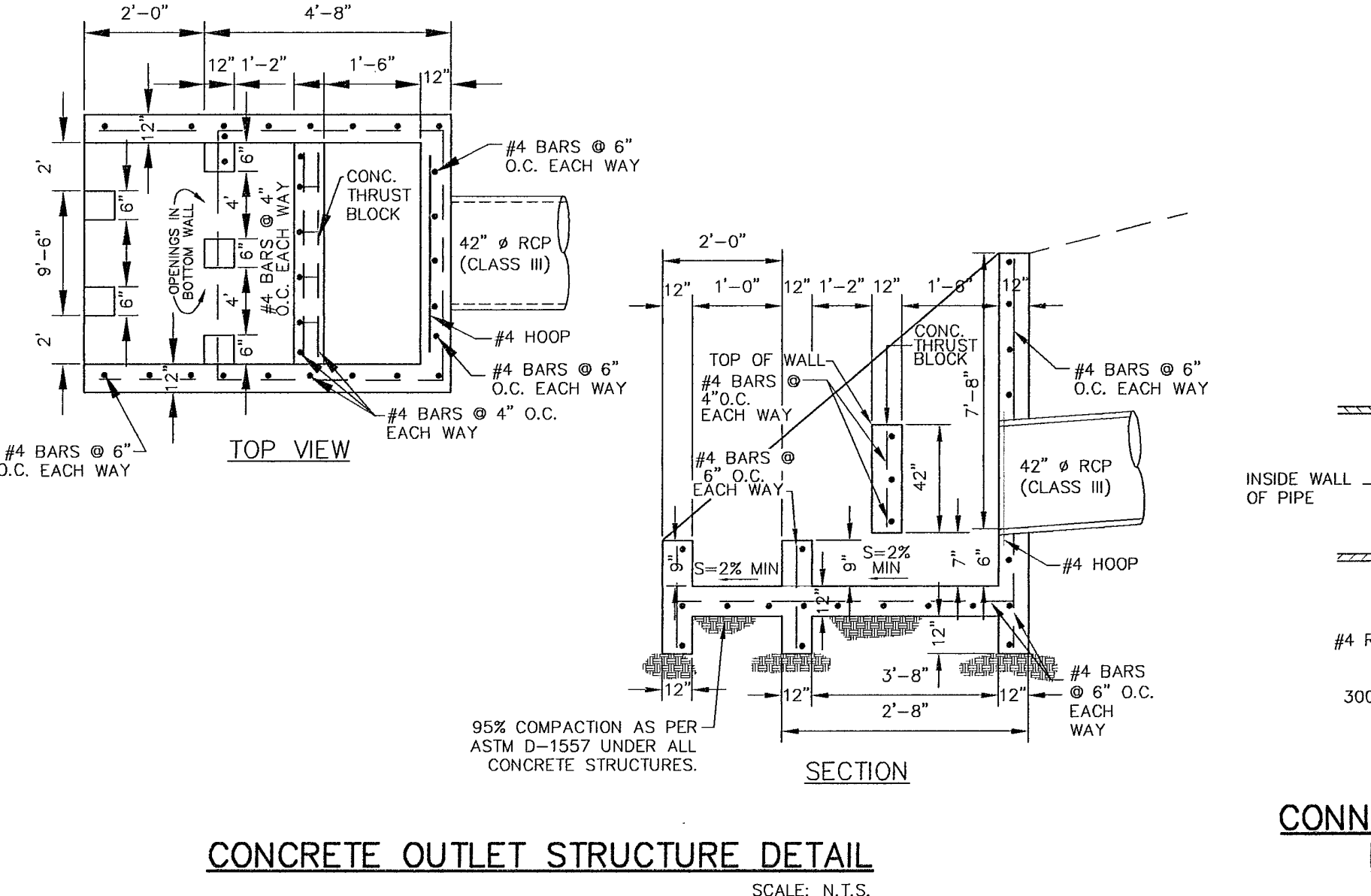
THICKNESS	MAXIMUM SIZE (LB)	90% SIZE (LB)	50% SIZE (LB)	8% SIZE MINIMUM (LB)
18 IN.	530	290-475	105-220	22

**DESILTING BASIN**  
SCALE: N.T.S.

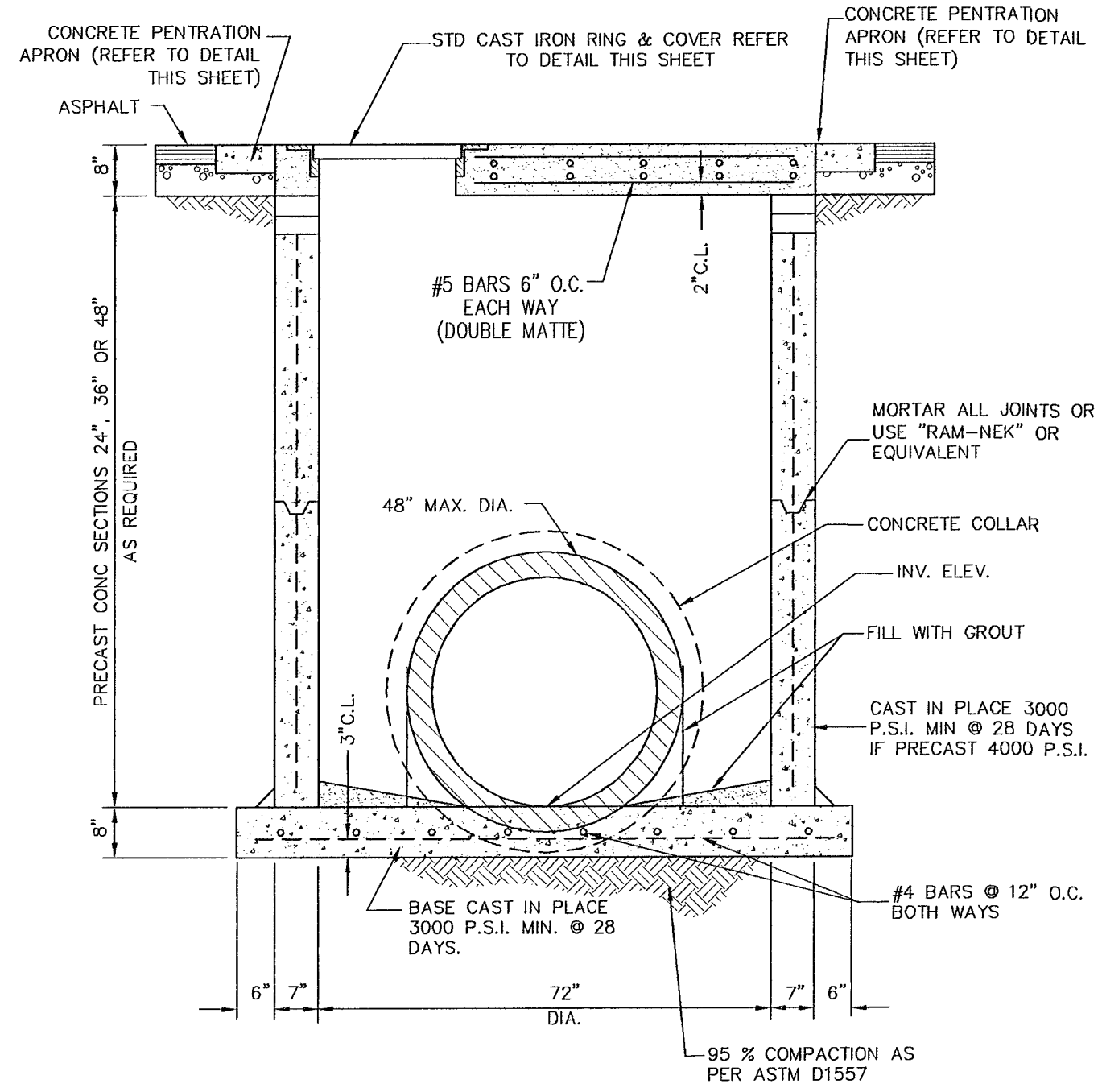


**STANDARD MANHOLE NOTES**

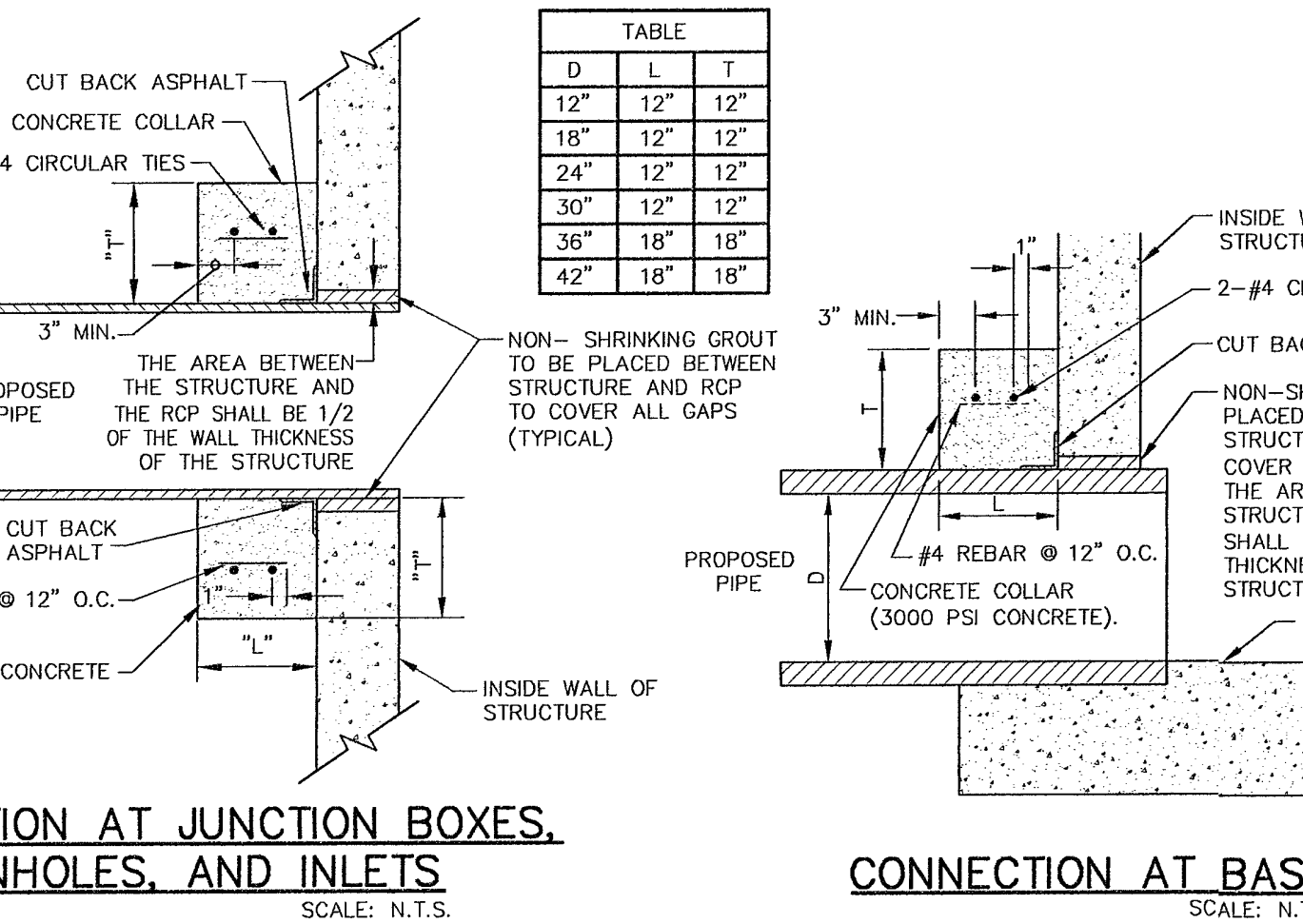
- THE PRE-CAST MANHOLE RISER AND CONICAL SECTIONS SHALL CONFORM TO ASTM SPECIFICATIONS C-478.
- THE CONICAL SECTIONS SHALL BE ECCENTRIC WHERE LADDER RUNGS ARE REQUIRED.
- NO FLAT SLAB OPENINGS SHALL BE USED FOR THIS PROJECT.
- THE CONCRETE BASE SHALL ATTAIN A MINIMUM ALLOWABLE COMPRESSIVE STRENGTH OF 3000 PSI @ 28 DAYS.
- THE PRE-CAST CONCRETE RISER AND CONICAL SECTIONS SHALL HAVE A MINIMUM ALLOWABLE COMPRESSIVE STRENGTH AT 28 DAYS OF 4000 POUNDS PER SQUARE INCH.
- THE PRE-CAST RISER SECTIONS SHALL BE REINFORCED WITH STEEL WIRE MESH 6x6, 10-10 AND THE CONICAL SECTION SHALL HAVE 6x6, 10-10 STEEL WIRE MESH REINFORCEMENT AND 3/8 ROD AT TOP AND BOTTOM. (SEE ASTM STANDARDS PART 16 - C - 478). REINFORCING STEEL SHALL COMPLY WITH ASTM A615 GRADE 60, A708 GRADE 60 OR A497 GRADE 70. BAR BENDING AND PLACEMENT SHALL COMPLY WITH THE LATEST ACI STANDARDS.
- MASONRY SHALL BE COMMON BRICK WITH ASTM TYPE "S" MORTAR ATTAINING A MINIMUM COMPRESSIVE STRENGTH OF 1800 P.S.I. AT 28 DAYS.
- CONCRETE LID (FLAT TOP) MAY BE REQUIRED IN LIEU OF THE CONICAL SECTION DUE TO HEIGHT/COVER RESTRICTIONS.
- PRECAST JOINTS ON MANHOLES SHALL BE GROUTED OR SEALED FOR A WATERTIGHT JOINT.
- MANHOLE COVER SHALL BE SET FLUSH WITH FINISHED PAVEMENT.
- SUBGRADE FOR MANHOLES SHALL BE COMPACTED TO A MINIMUM OF 95% IN ACCORDANCE WITH ASTM D1557.



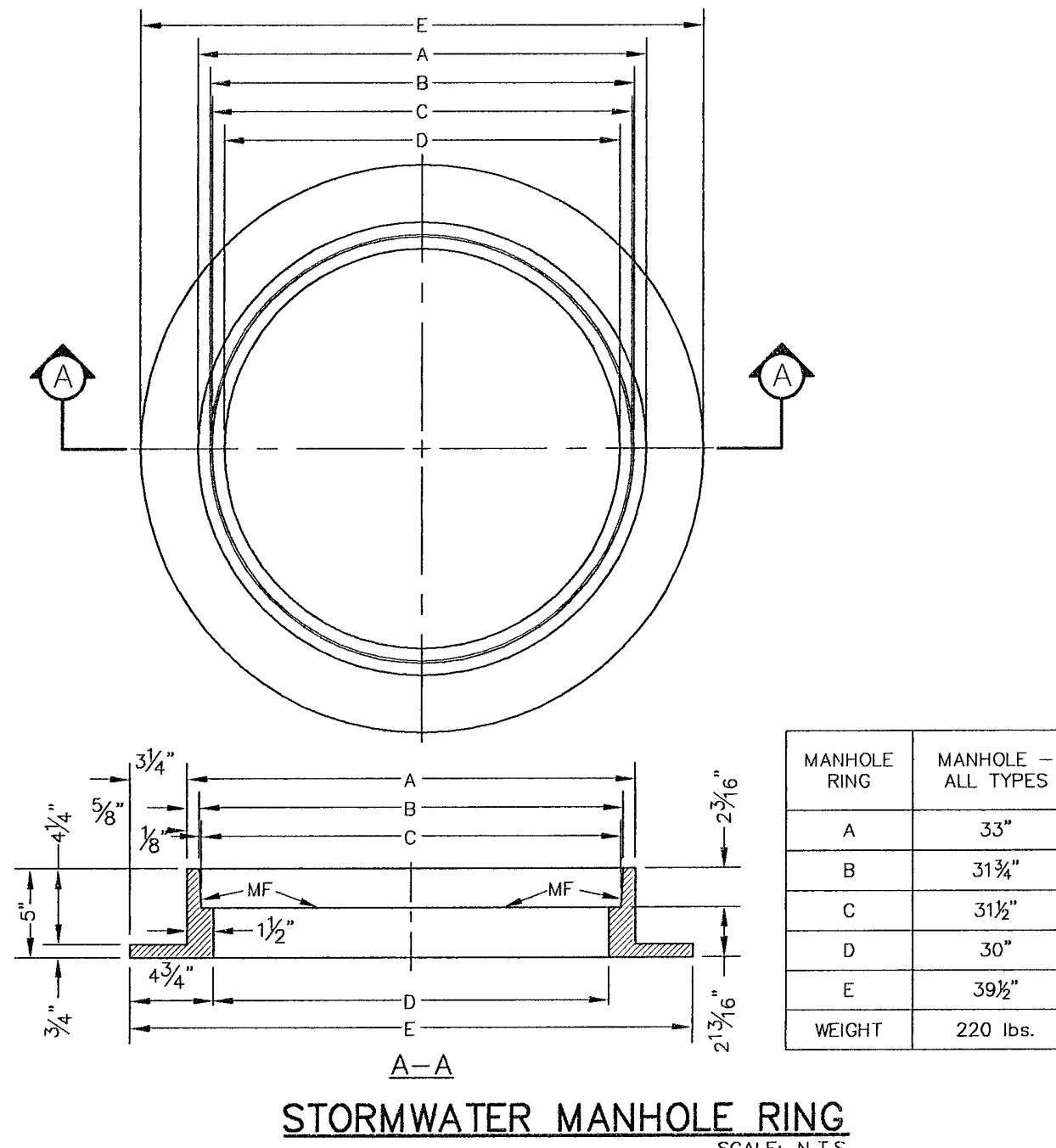
**CONCRETE OUTLET STRUCTURE DETAIL**  
SCALE: N.T.S.



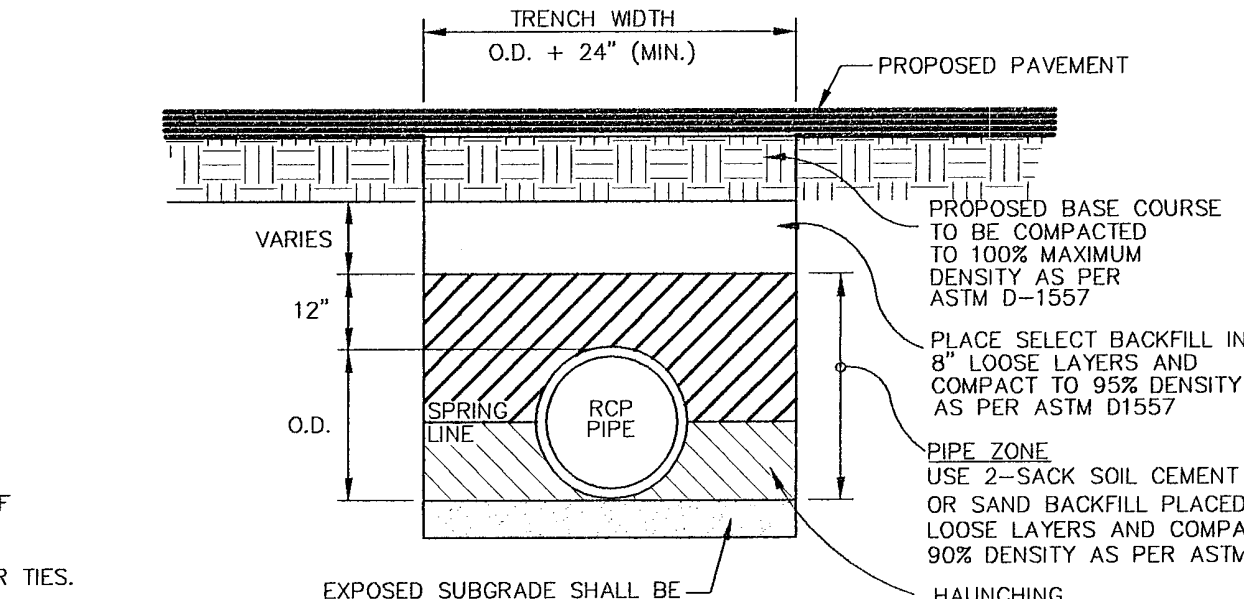
**72" DIAMETER PRECAST MANHOLE SECTIONS**  
SCALE: N.T.S.



**CONNECTION AT JUNCTION BOXES, MANHOLES, AND INLETS**  
SCALE: N.T.S.



**STORMWATER MANHOLE RING**  
SCALE: N.T.S.



**NOTES:**

- PIPE INSTALLATION AND COMPACTION SHALL BE PERFORMED IN ACCORDANCE WITH PIPE MANUFACTURER AND GEOTECHNICAL REQUIREMENTS.
- RUBBER GASKET SHALL BE USED ON ALL REINFORCED CONCRETE PIPE.
- THE DETAIL SHOWN HEREIN IS STRICTLY FOR REINFORCED CONCRETE PIPE (RCP). CONTRACTOR SHALL FOLLOW THE HIGH DENSITY POLYETHYLENE (HDPE) PIPE MANUFACTURERS INSTALLATION RECOMMENDATIONS.

**TYPICAL TRENCH BACKFILL DETAIL FOR STORM SEWER (RCP) INSTALLATION**  
SCALE: N.T.S.

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
**DRAINAGE DETAILS (2 OF 3)**

**SHEET NO.**  
**C-40**  
40 OF 58 SHEETS

**REFERENCES - BENCHMARK**  
CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4882.20 (CITY DATUM)  
CONTOUR INTERVAL: ONE (1) FOOT

**DATE**  
**REVISION**

**BY**  
**REVISION**

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373

**QUANTUM**  
engineers  
incorporated  
Texas Registered Engineering Firm F-005146

THE SEAL OPERATING STATUS OF THIS SEAL IS SUBJECT TO THE ALTERATION OF THE SEAL OR THE NOTIFICATION TO THE BOARD OF ENGINEERING EXAMINERS BY THE PRACTICE ACT

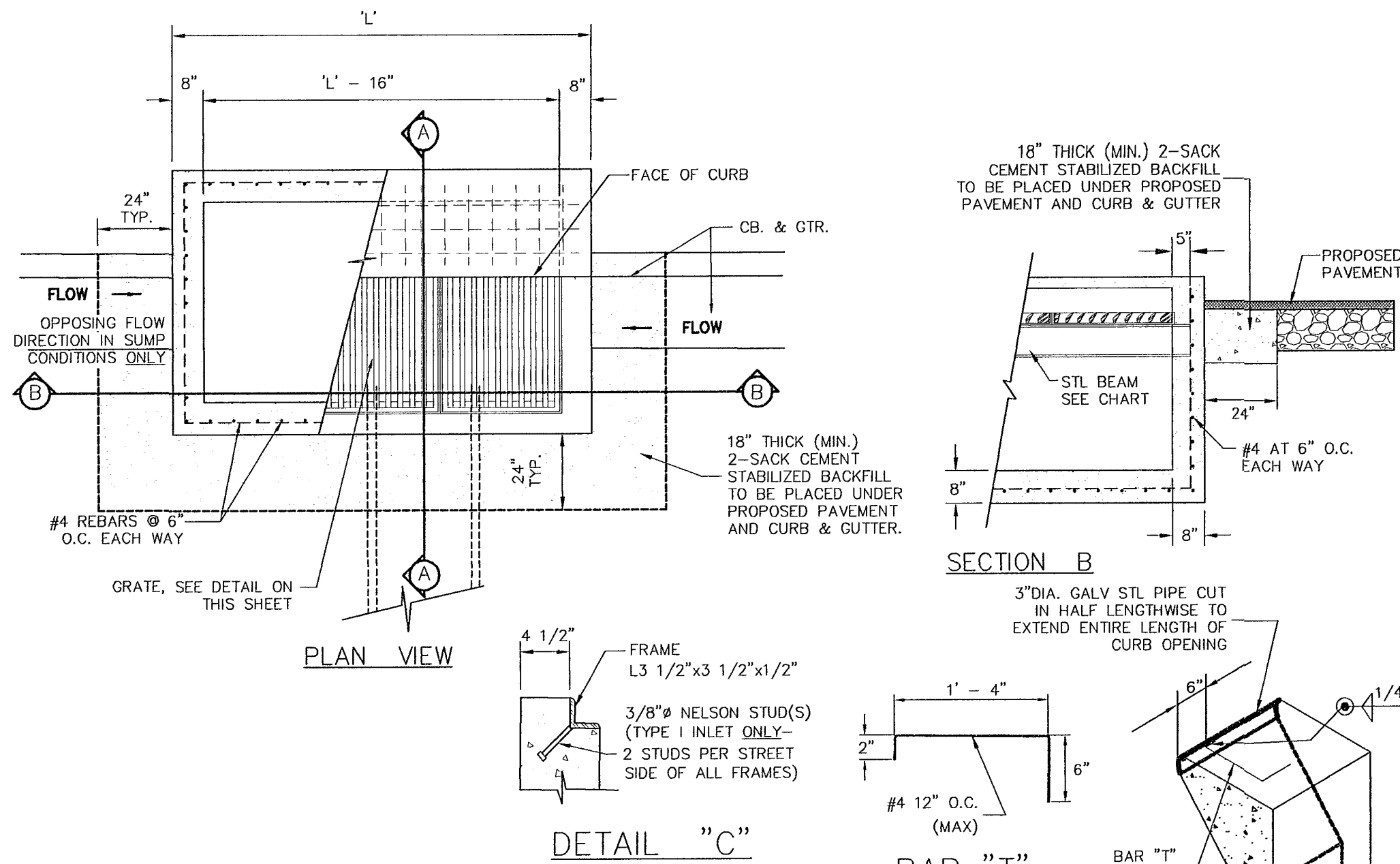
SCALE:  
HORIZONTAL: N/A  
VERTICAL: N/A  
CONTOUR INTERVAL: N/A

DATE: 05-10-2012  
DESIGN BY: M.A.G.  
DRAWN BY: CADL  
CHKD BY: R.A.G.  
APPD BY: R.A.G.  
JOB NO.: 1038



**DROP INLET GENERAL NOTES:**

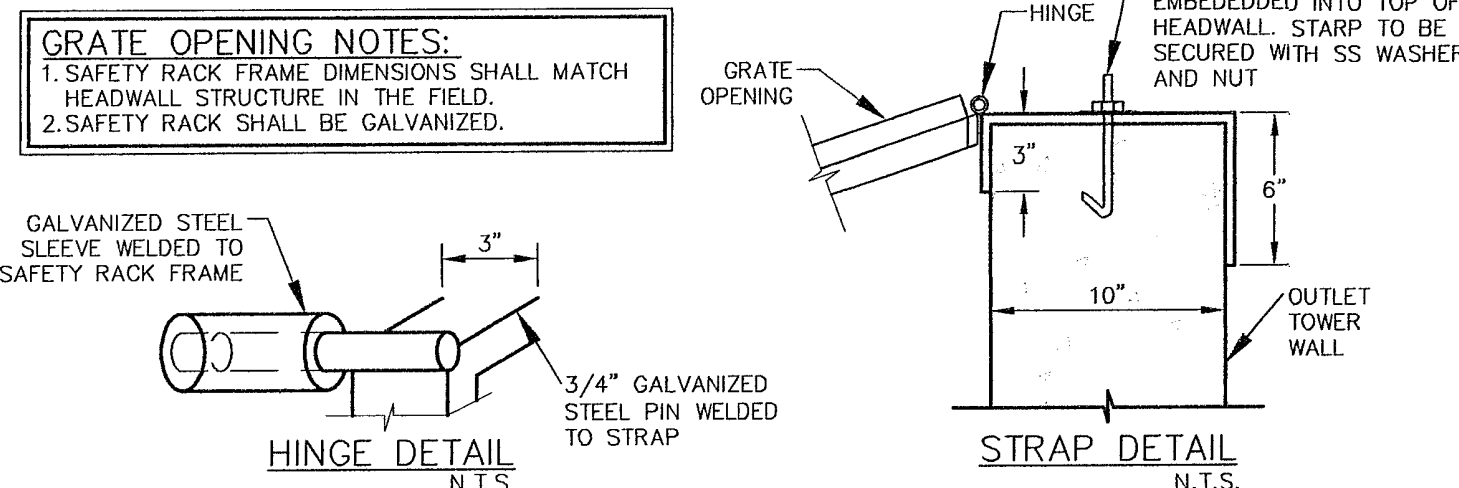
1. WELDED STEEL OR CAST GRATES AS DETAILED ARE ALL ACCEPTABLE GRATES. MIXING OF ALTERNATE TYPES OF GRATES ON THE SAME PROJECT WILL BE PERMITTED WITH THE APPROVAL OF THE CITY ENGINEER.
2. ALL CONSTRUCTION AND MATERIALS SHALL BE IN ACCORDANCE WITH THE CURRENT STANDARD SPECIFICATIONS.
3. SHARP EDGES RESULTING FROM FABRICATION SHALL BE DULLED BY AN ACCEPTABLE METHOD FOR SAFETY IN HANDLING.
4. GRATES SHALL BE INSTALLED IN FRAME WITH FLOW ARROW POINTING DOWNSTREAM OR TOWARD THE LOW POINT IN A SUMP.
5. WELDED GRATES SHALL BE STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-183 OR OF CORROSION RESISTANT STRUCTURAL STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-181 OR M-222 OR BE MADE OF OTHER APPROVED STEELS OF EQUAL QUALITY. MIXING GRADES OF STEEL ON THE SAME GRATE WILL NOT BE PERMITTED.
6. GRATES MADE OF M-183 STEEL SHALL BE GALVANIZED IN ACCORDANCE WITH AASHTO M-111 SPECIFICATIONS OR SHALL BE PAINTED WITH INORGANIC ZINC PAINTS, MEETING THE REQUIREMENTS OF CURRENT STANDARD SPECIFICATIONS.
7. ALL WELDS SHALL HAVE A MINIMUM OF 1/4" FILLET AND SHALL CONFORM TO THE SPECIFICATIONS FOR HIGHWAY CONSTRUCTION AND TO THE AWS STRUCTURAL WELDING CODE. ELECTRODES SHALL BE COMPATIBLE TO THE DIFFERENT GRADES OF STEEL THAT COMPRISE THE GRATE MEMBERS.
8. CAST GRATES SHALL BE CAST STEEL CONFORMING TO THE REQUIREMENTS OF AASHTO M-103, GRADE 65-35 OR OF DUCTILE IRON CONFORMING TO THE REQUIREMENTS OF ASTM A-536, SPECIAL GRADE 60-45, OR OF GRAY IRON CONFORMING TO THE REQUIREMENTS OF AASHTO M-105, CLASS 35B OR ASTM A-48 CLASS 35B. THE SPECIFICATIONS OF GENERAL APPLICATION FOR CAST STEEL GRATES SHALL BE AASHTO M-103 SCOPE 1.2.1, GRADE N-1.
9. FERROUS CASTINGS SHALL BE OF UNIFORM QUALITY, FREE OF BLOWHOLES, POROSITY, HARD SPOTS, SHRINKAGE DISTORTION OR OTHER DEFECTS. THEY SHALL BE SMOOTH AND WELL CLEANED BY SHOT BLASTING OR OTHER APPROVED CLEANING METHOD. AFTER CLEANING THEY SHALL BE COATED WITH ASPHALT BASE PAINT RESULTING IN A SMOOTH COATING, TOUGH AND TENACIOUS WHEN COLD, NOT TACKY OR BRITTLE.
10. ALL CASTING SHALL BE MANUFACTURED TRUE TO PATTERN. COMPONENT PARTS SHALL FIT TOGETHER IN A SATISFACTORY MANNER.
11. ALL CONCRETE TO BE 3000 PSI. CHAMFER ALL EXPOSED EDGES 3/4". ALL DIMENSIONS RELATING TO REINFORCING STEEL ARE TO CENTER OF BARS.
12. MINIMUM CONCRETE COVER SHALL BE 1 1/2" FOR STEEL REINFORCING.
13. EXPANSION MATERIAL TO BE 1/2" BITUMINOUS FIBER AND PLACED WHERE PROPOSED CONCRETE COMES IN CONTACT WITH ANY EXISTING OR PROPOSED CONCRETE OR MASONRY STRUCTURE.
14. STRUCTURAL STEEL SHALL BE SHOP PAINTED IN ACCORDANCE WITH T&DOT ITEM 446 "PAINT AND PAINTING"
15. SURFACE OF ALL EXPOSED CONCRETE SHALL CONFORM IN SLOPE AND GRADE TO EXISTING OR PROPOSED CURB AND WALK ADJACENT TO INLETS.
16. GRATES WILL BE DEPRESSED 1" BELOW PROPOSED OR EXISTING GRADE.
17. ALL REINFORCING BARS TO BE #4 BARS AT 6" O.C. GRADE 60. BEND BARS AROUND PIPE OPENINGS.
18. INLETS TO BE DESIGNATED IN PLANS BY NUMBER OF GRATES REQUIRED.
19. LOCATION OF SEWER PIPES SHOWN ELSEWHERE IN PLANS.
20. TWO 1/2"x4" LONG CONCRETE ANCHOR STUDS REQUIRED FOR EACH SIDE OF FRAME, WHERE RESTING ON CONCRETE, USE NELSON STUDS OR EQUAL.
21. THE GRATES OF ALL INLETS WITHIN THE STREET PAVEMENT MUST BE CONSTRUCTED WITH THE GRATE BARS PERPENDICULAR TO THE CURB.



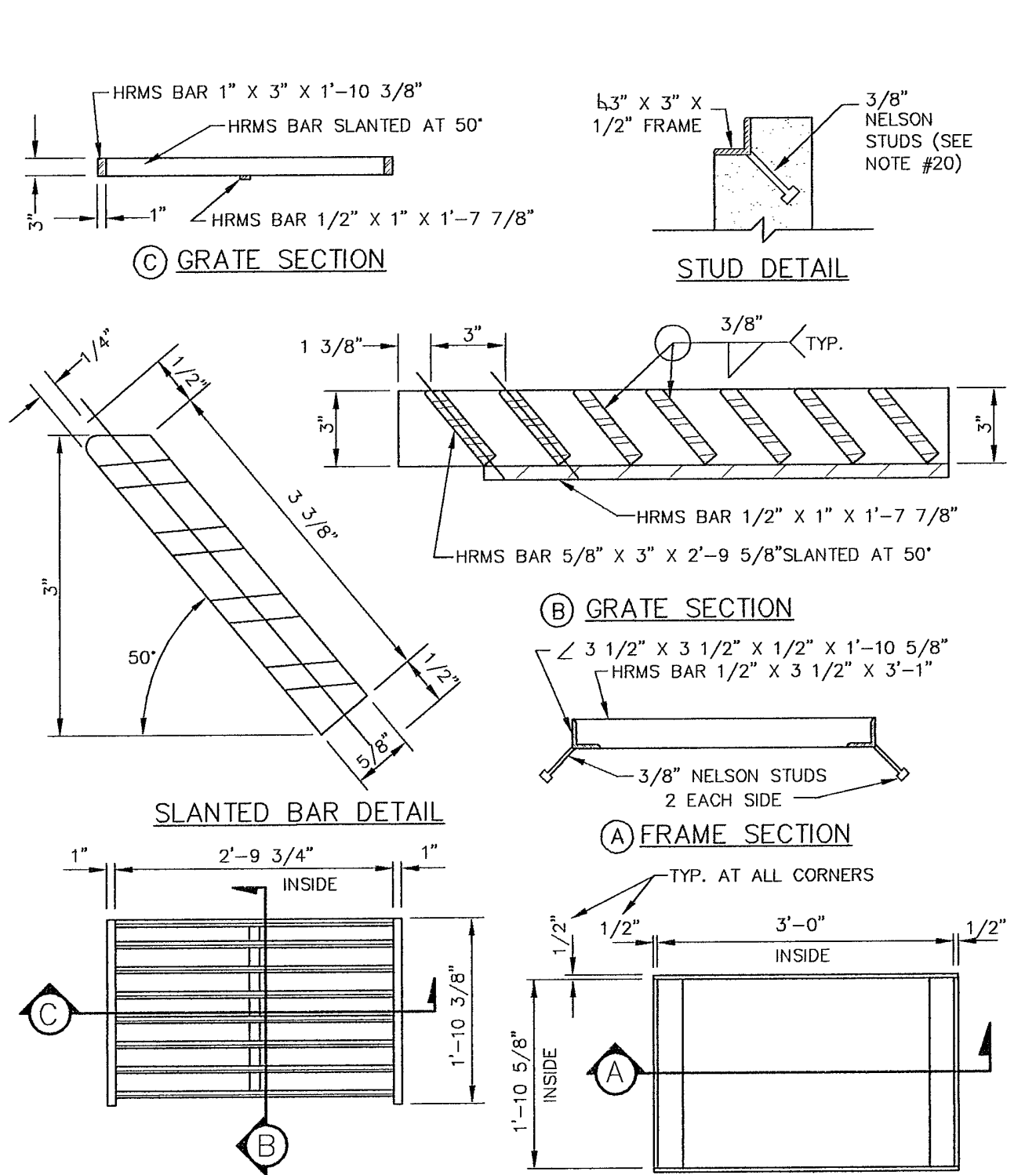
NO. OF GRATES	L'	BEAM	
		LENGTH	MINIMUM SIZES
2	5'-2 1/4"	4'-8 1/4"	WBX12, S6X12.5, MC6X15.1
3	7'-1 7/8"	6'-7 7/8"	WBX15, S7X18.4, MC7X19.1
4	9'-1 1/2"	8'-7 1/2"	W10X19, S8X18.4, MC10X22
5	11'-1 1/8"	10'-7 1/8"	W12X16, S8X23, MC10X22
6	13'-0 3/4"	12'-6 3/4"	W12X19, S8X23, MC10X25

ALL SUBSTITUTIONS OF STRUCTURAL STEEL BEAMS AND CHANNELS FOR DROP INLETS MUST BE SUBMITTED FOR REVIEW AND INCLUDE SECTION MODULUS AND DEFLECTION CALCULATIONS SIGNED AND SEALED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF TEXAS.

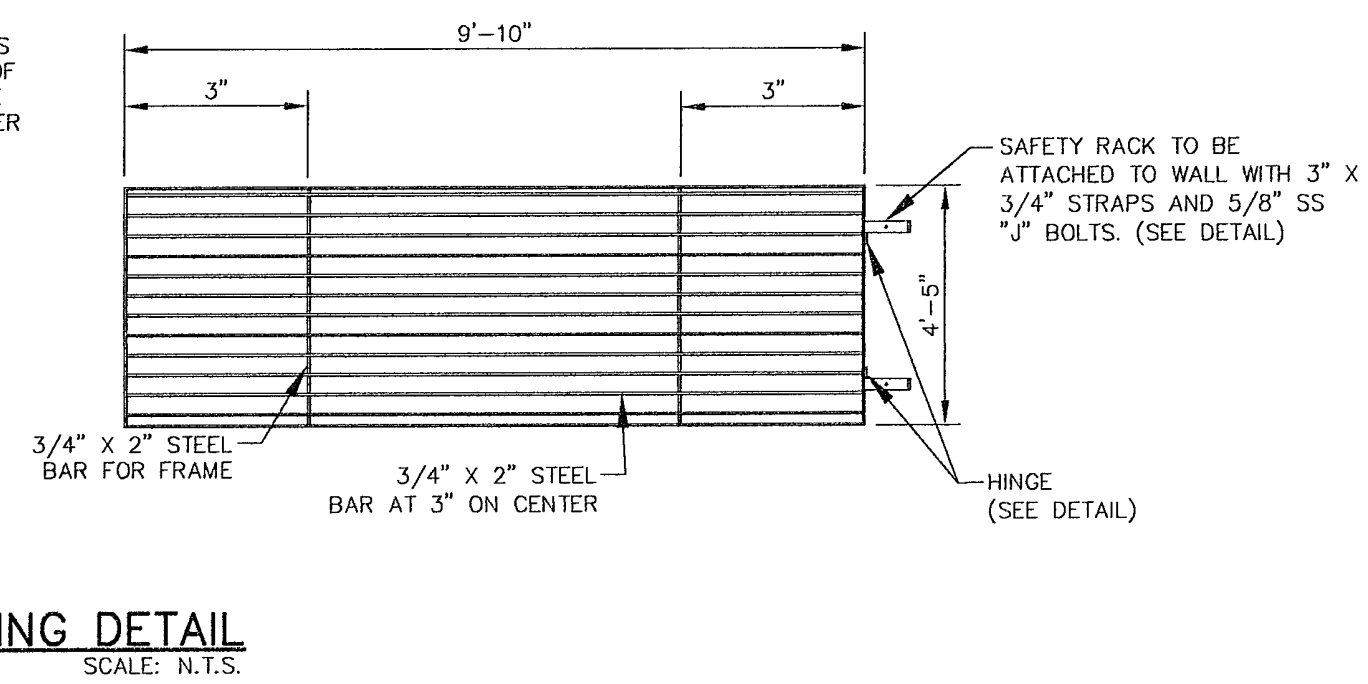
- NOTES**
1. H = 20" MAXIMUM
  2. CONCRETE TO BE 3000 PSI MIN CORE TEST @ 28 DAYS
  3. GRATE TO BE PERPENDICULAR TO TRAFFIC.



**OUTLET TOWER GRATE OPENING DETAIL**  
SCALE: N.T.S.

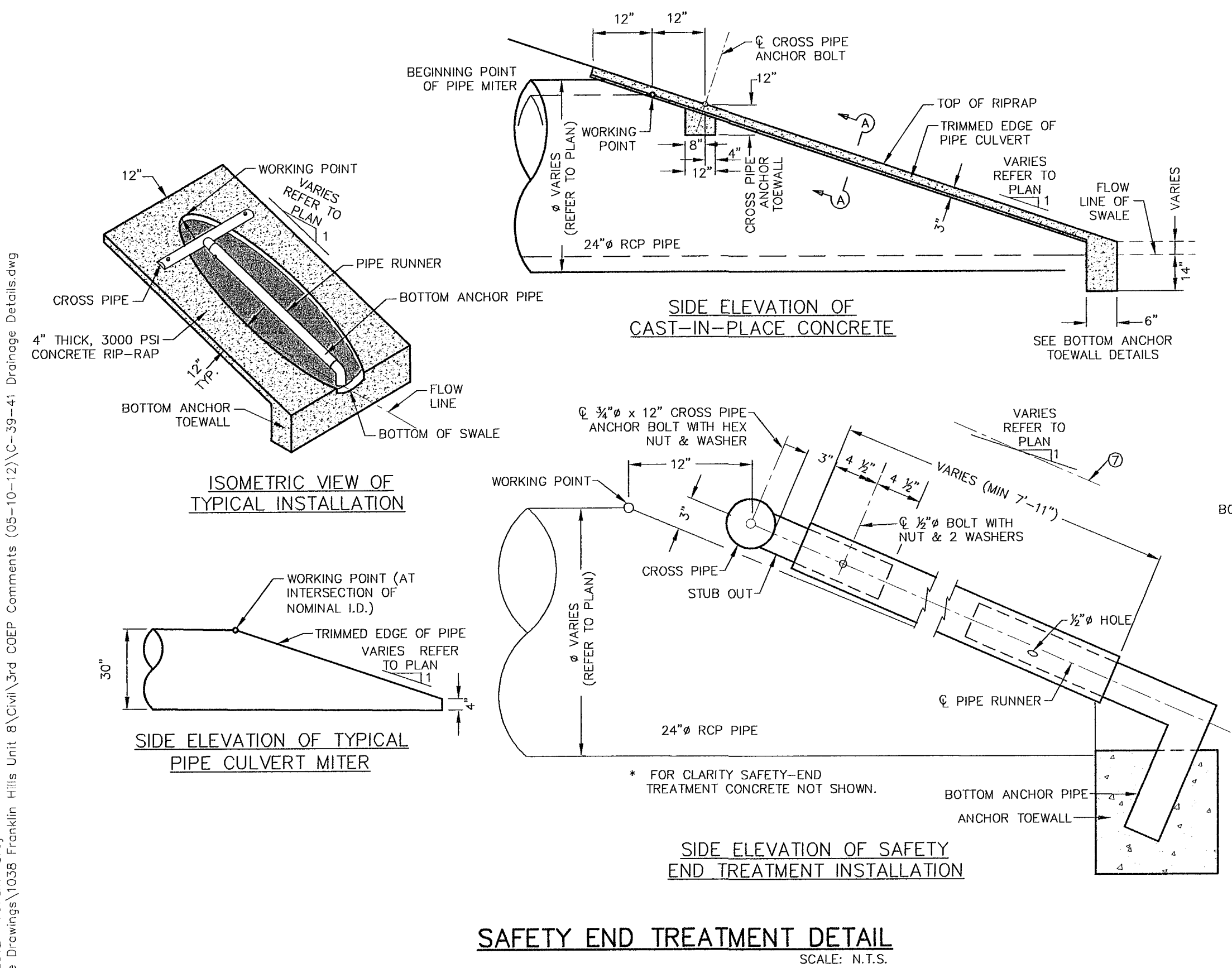


**WELDED STEEL GRATE AND FRAME DETAILS**  
SCALE: N.T.S.

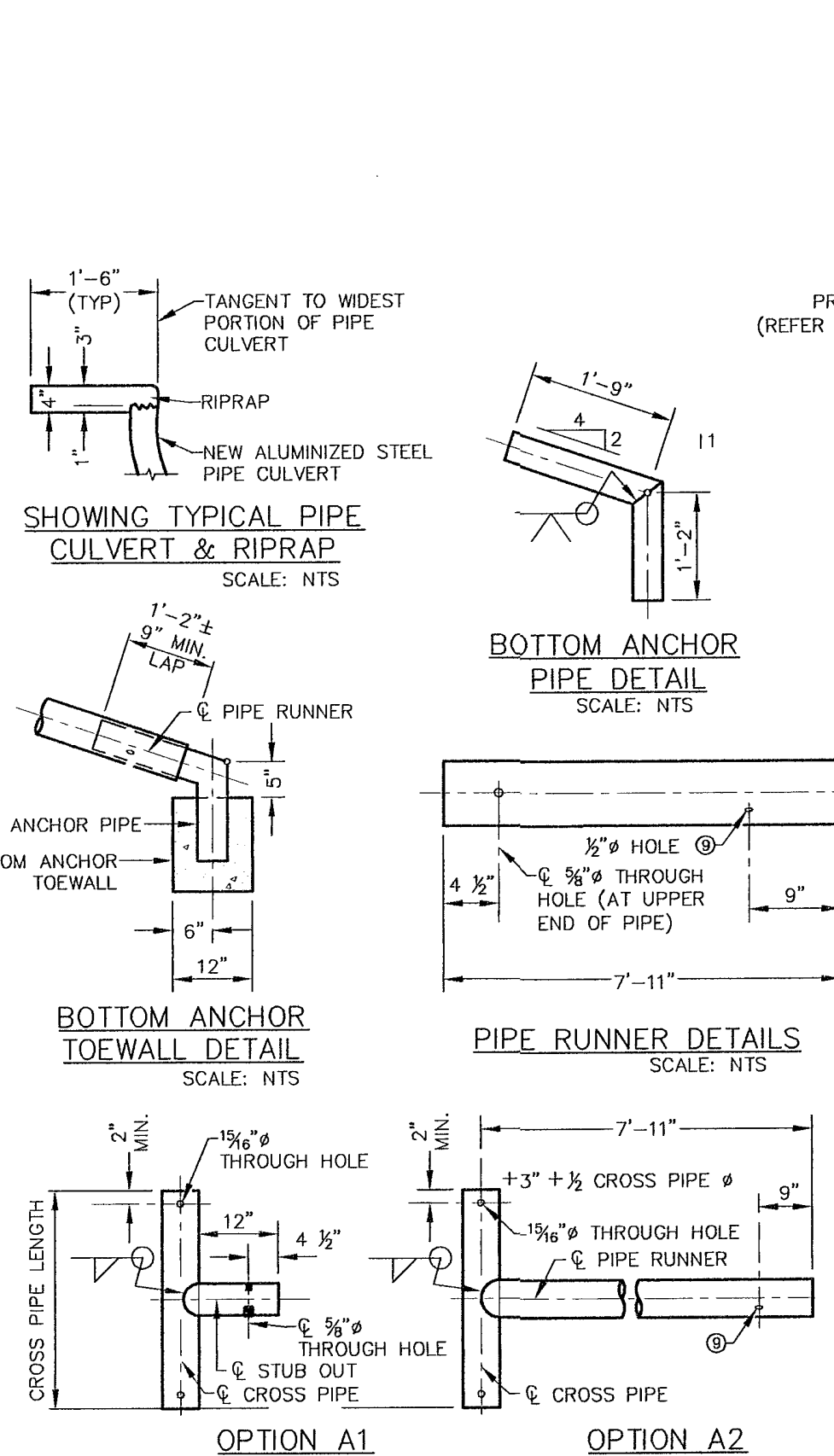


**2.5' CONCRETE FLUME WITH STEEL PLATE**  
SCALE: N.T.S.

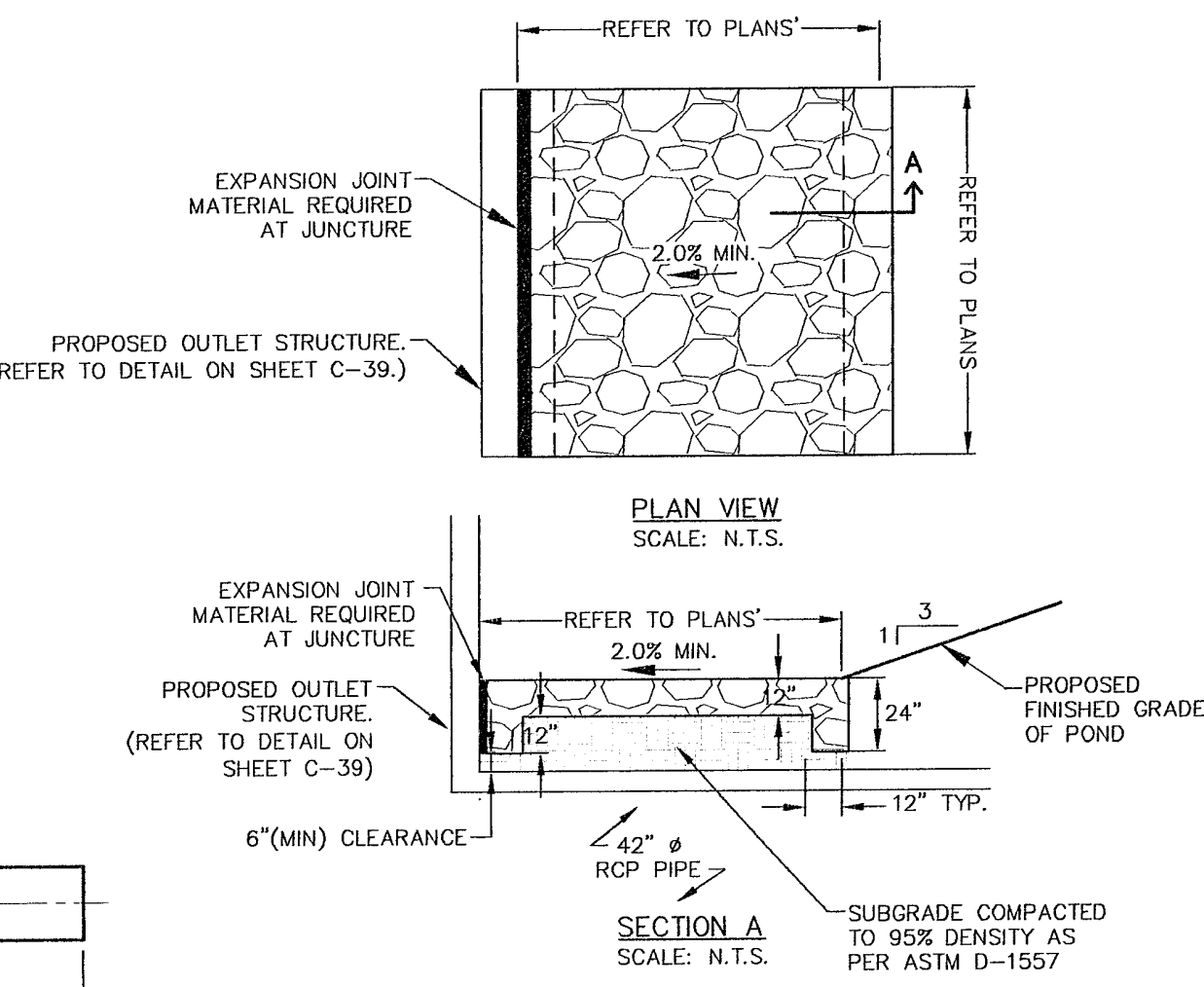
**DROP INLET (TYPE I) DETAIL**  
SCALE: N.T.S.



**SAFETY END TREATMENT DETAIL**  
SCALE: N.T.S.



**CROSS PIPE AND CONNECTIONS DETAILS FOR SAFETY END TREATMENT**  
SCALE: N.T.S.



**MORTARED ROCK RIP-RAP DETAILS**

1. ROCK RIP-RAP SHALL BE A MINIMUM OF 12" MORTARED ROCK.
2. STONE FOR ROCKWALL SHALL BE NATIVE ROCK, SOUND AND FREE FROM LOOSE OR FRAGILE INCLUSIONS. THE STONE SHALL BE DENSE AND RESISTANT TO THE ACTION OF AIR AND WATER, AND SHALL BE AS NEARLY UNIFORM IN SECTION AS IS PRACTICABLE. MAXIMUM STONE SIZE SHALL NOT EXCEED 18-INCHES.
3. MORTAR FOR ROCKWALLS SHALL BE ASTM C270, TYPE "S" (1800 PSI MIN. @ 28 DAYS) AND PROPORTIONED BY VOLUME AS FOLLOWS:  
PORTLAND CEMENT: 1  
PART LIME: 1/4 PART  
SAND: 3-1/2 PARTS
4. PROVIDE ONE (1) INCH EXPANSION JOINT AT EVERY FIFTY (50) FEET.
5. PROVIDE DUMMY JOINTS AT TEN (10) FEET O.C.

**MORTARED ROCK RIP-RAP AT OUTLET STRUCTURE DETAIL**  
SCALE: N.T.S.

D	L
12"	12"
18"	12"
24"	12"
36"	18"
42"	18"
48"	18"
54"	18"
60"	21"
66"	21"

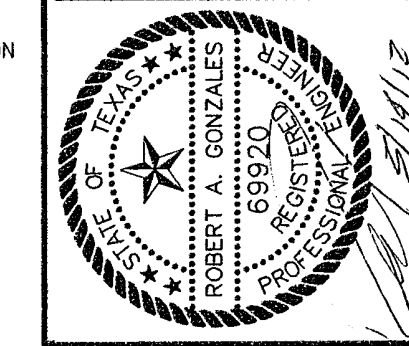
**NOTES:**

1. A CONCRETE COLLAR IS REQUIRED WHERE PIPES OF DIFFERENT DIAMETERS OR MATERIALS ARE JOINED, OR WHERE THE CHANGE IN ALIGNMENT OR GRADE EXCEEDS THAT ALLOWED FOR AN ORDINARY JOINT.
2. WHERE PIPES OF DIFFERENT DIAMETERS ARE JOINED WITH A CONCRETE COLLAR, L&T SHOULD BE THOSE OF THE LARGER PIPE, D OR D' WHICHEVER IS GREATER.
3. FOR PIPE SIZES NOT LISTED USE NEXT SIZE LARGER.
4. FOR PIPES 24" OR LESS IN DIAMETER REINFORCE WITH W.W.M.
5. THE DIAMETER OF THE CIRCULAR TIES SHALL BE D+(2xWALL THICKNESS)+8".
6. FIELD CLOSURES OF PIPE OF THE SAME DIAMETER AND WITHOUT CHANGE IN GRADE OR ALIGNMENT SHALL BE MADE WITH A CONCRETE COLLAR.

**CONCRETE PIPE COLLAR DETAIL**  
SCALE: N.T.S.

DATE	REVISION	BY

**QUANTUM**  
414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373  
Texas Registered Engineering Firm F-005146



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SCALE: N/A  
HORIZONTAL: N/A  
VERTICAL: N/A  
CONTOUR INTERVAL: N/A  
DATE: 08-10-2012  
DESIGN BY: M.A.G.  
CHECK BY: R.A.G.  
APPROVED BY: R.A.G.  
JOB NO.: 1038

**PROJECT TITLE**  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

**SHEET TITLE**

**DRAINAGE DETAILS (3 OF 3)**

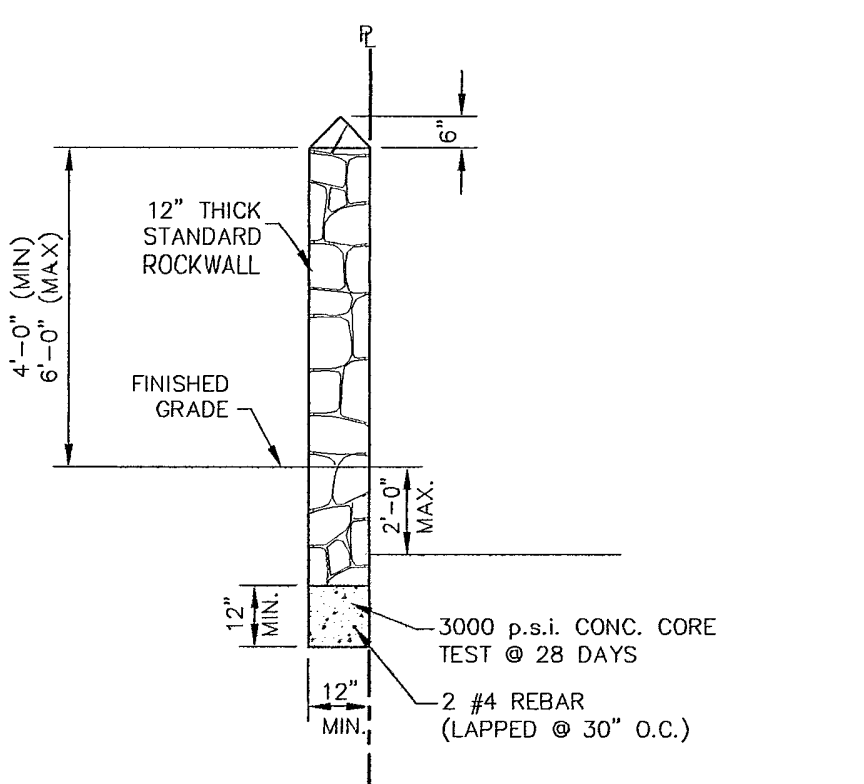
**SHEET NO.**

**C-41**

41 OF 58 SHEETS



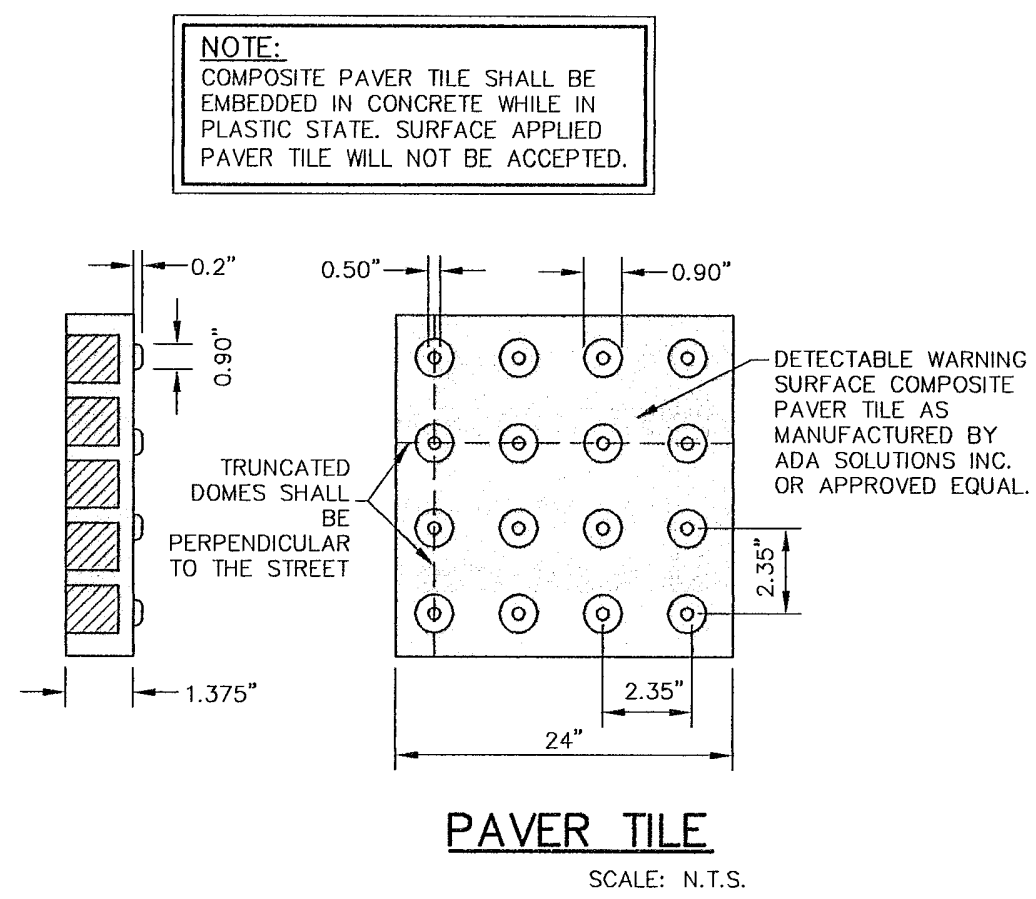
May 11, 2012 11:05am (b7c)  
G:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3rd CDEP Comments (05-10-12)\C-42-44 Typ Details.dwg



**ROCKWALL NOTES**

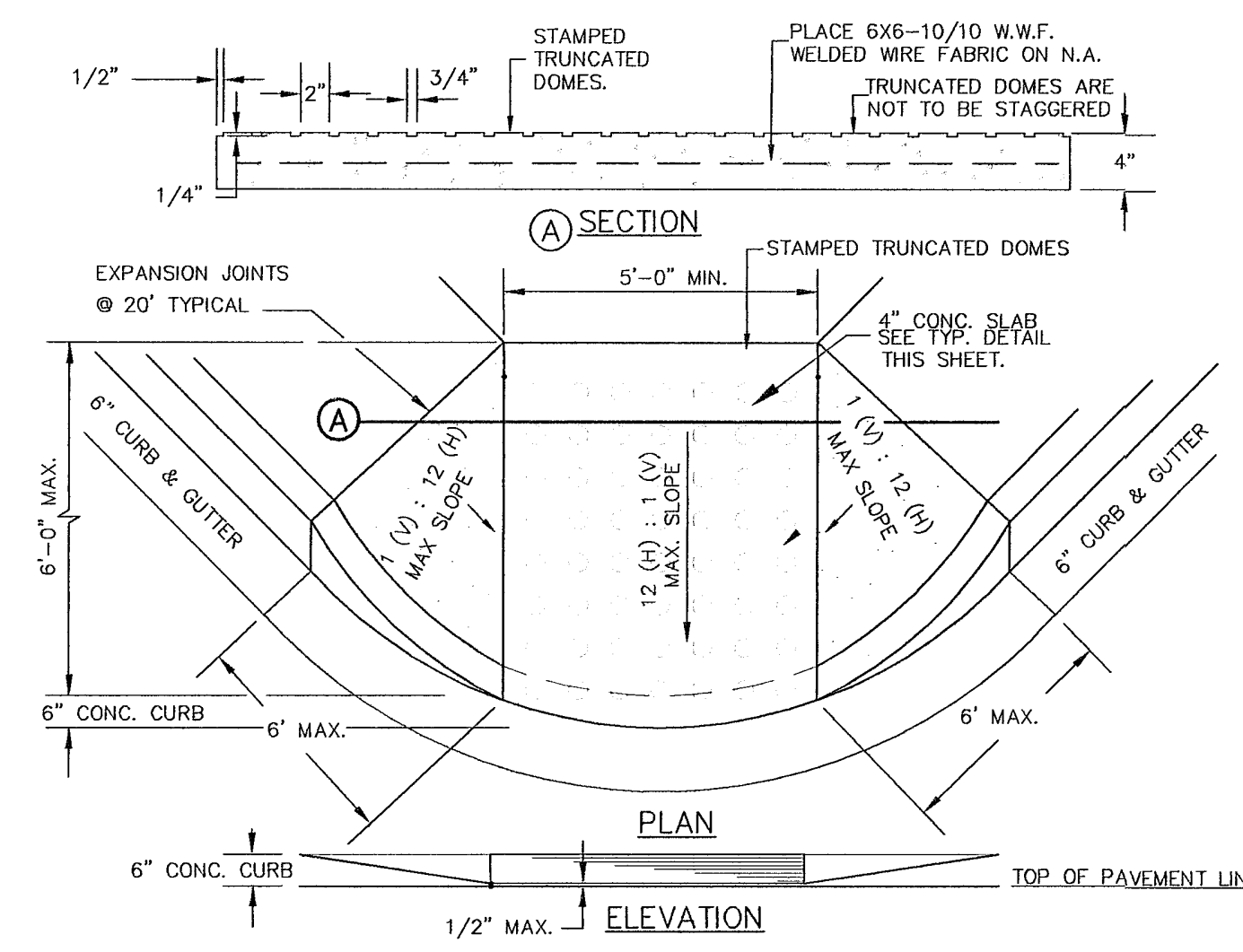
- 1. STONE FOR ROCKWALL SHALL BE NATIVE ROCK, SOUND AND FREE FROM LOOSE OR FRIBLE INCLUSIONS THE STONE SHALL BE DENSE AND RESISTANT TO THE ACTION OF AIR AND WATER, AND SHALL BE AS NEARLY UNIFORM IN SECTION AS IS PRACTICABLE. MAXIMUM STONE SIZE SHALL NOT EXCEED 18-INCHES.
- 2. MORTAR FOR ROCKWALLS SHALL BE ASTM C270, TYPE "S" (1800 PSI MIN. @ 28 DAYS) AND PROPORTIONED BY VOLUME AS FOLLOWS:  
PORTLAND CEMENT: 1  
PART LIME: 1/4 PART  
SAND: 3-1/2 PARTS
- 3. CONCRETE FOR ROCKWALL FOOTINGS SHALL HAVE A COMPRESSIVE STRENGTH OF (F'c) 3000 PSI @ 28 DAYS (MIN.); REINFORCING STEEL SHALL BE GRADE 60 (Fy 60 KSI), ASTM A615.
- 4. ROCKWALL FOOTINGS SHALL BEAR ON PREPARED SUBGRADE OR STRUCTURAL FILL COMPACTED TO 95% MAXIMUM DENSITY AS PER ASTM D1557.
- 5. REBAR SHALL HAVE A MINIMUM OF 2 INCH COVER IN CONCRETE.
- 6. OVER-EXCAVATION FOR ROCKWALL FOOTINGS SHALL BE BACKFILLED WITH LEAN CONCRETE.
- 7. ROCK SHALL BE EMBEDDED A MINIMUM OF 4-INCHES INTO FOOTING WHILE CONCRETE IS IN A PLASTIC STATE.
- 8. PROVIDE 1 INCH EXPANSION JOINTS @ EVERY 100 LINEAR FEET.
- 9. ROCKWALL MORTAR JOINTS SHALL NOT EXCEED ONE (1) INCH.
- 10. ALL STONE SHALL BE THOROUGHLY SOAKED BEFORE BEING PLACED.
- 11. ALL STONE FOR ROCKWALL SHALL BE FRACTURED QUARRIED ROCK. NO RIVER ROCK SHALL BE ALLOWED FOR ROCKWALLS.
- 12. ANY CHANGES IN WALL DIRECTION, ADDITIONAL WALL HEIGHT, OR CHANGES IN FOOTING ELEVATION SHALL REQUIRE ADDITIONAL STRUCTURAL DESIGN BY A LICENSED STRUCTURAL ENGINEER. REVISED LOADING CONDITIONS AND DESIGNS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL TO CITY OF EL PASO BUILDING SERVICES DEPARTMENT AT THE TIME BUILDING CONSTRUCTION PLANS ARE SUBMITTED.
- 13. BACKFILL MATERIAL SHALL CONSIST OF WELL-DRAINED, COARSE SOILS, OR FINE SILTY SANDS WITH NO CLAY CONTENT.
- 14. SURCHARGE LOADING CONDITIONS SHALL REQUIRE ADDITIONAL STRUCTURAL DESIGN BY A LICENSED STRUCTURAL ENGINEER. REVISED LOADING CONDITIONS AND DESIGNS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL TO CITY OF EL PASO BUILDING SERVICES DEPARTMENT AT THE TIME BUILDING CONSTRUCTION PLANS ARE SUBMITTED.

**STANDARD 6' ROCKWALL DETAIL**  
SCALE: N.T.S.

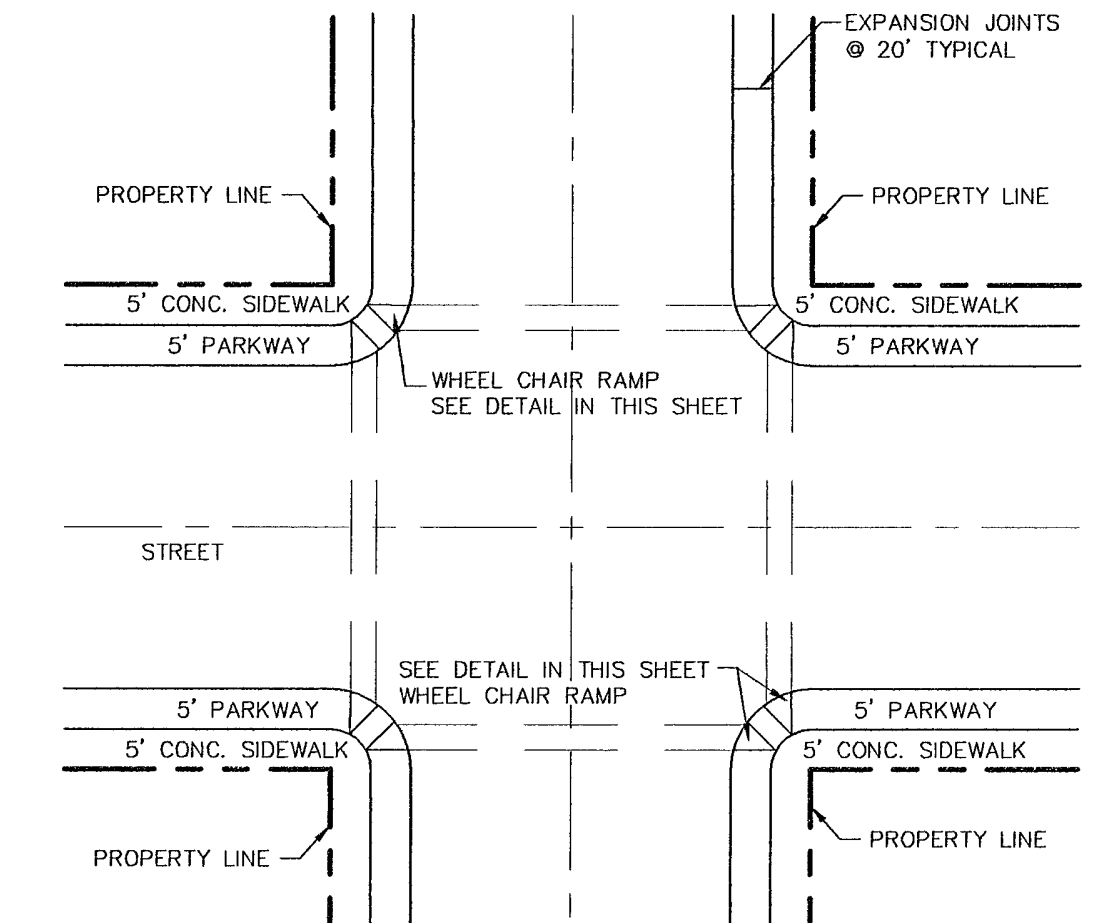


- NOTES:**
- 1. RAMP SHALL HAVE CONTRASTING COLOR TO SIDEWALK. COLOR SHALL BE BRICK RED.
  - 2. ALL NEW RAMPS SHALL COMPLY WITH T.A.S. AND A.D.A. REQUIREMENTS. ANY SECTIONS NOT CONFORMING WILL BE REMOVED AT THE CONTRACTOR'S EXPENSE.
  - 3. CONTRACTOR SHALL USE COMPOSITE PAVER TILE THROUGHOUT THE DETECTABLE WARNING SURFACE SHOWN ON PLANS AND AS SPECIFIED IN THIS DETAIL.
  - 4. **DOMES SIZE AND SPACING.** TRUNCATED DOMES SHALL HAVE A DIAMETER OF NOMINAL 0.9 INCHES AT THE BOTTOM, A DIAMETER OF 0.4 INCH AT THE TOP, A HEIGHT OF NOMINAL 0.2 INCHES, AND A CENTER-TO-CENTER SPACING OF NOMINAL 2.35 INCHES MEASURED ALONG ONE SIDE OF A SQUARE ARRANGEMENT.
  - 5. **DOMES ALIGNMENT.** DOMES SHALL BE ALIGNED ON A SQUARE GRID IN THE PREDOMINANT DIRECTION OF TRAVEL TO PERMIT WHEELS TO ROLL BETWEEN DOMES. DETECTABLE WARNING SURFACES SHALL EXTEND 24 INCHES MINIMUM IN THE DIRECTION OF TRAVEL AND THE FULL WIDTH OF THE CURB RAMP, LANDING, OR BLENDED TRANSITION.
  - 6. **CONTRAST.** THERE SHALL BE A MINIMUM OF 70 PERCENT CONTRAST IN LIGHT REFLECTANCE BETWEEN THE DETECTABLE WARNING AND AN ADJOINING SURFACE, OR THE DETECTABLE WARNING SHALL BE "RED BRICK" COLOR, UNLESS OTHERWISE DIRECTED BY THE OWNER. THE MATERIAL USED TO PROVIDE VISUAL CONTRAST SHALL BE AN INTEGRAL PART OF THE DETECTABLE WARNING SURFACE. CONTRAST SHALL BE PROVIDED BY PLACING AND MIXING TINT IN THE PLASTIC CONCRETE USED FOR THE DETECTABLE WARNING SURFACE. NO PAINTING OF SURFACE SHALL BE PERMITTED.

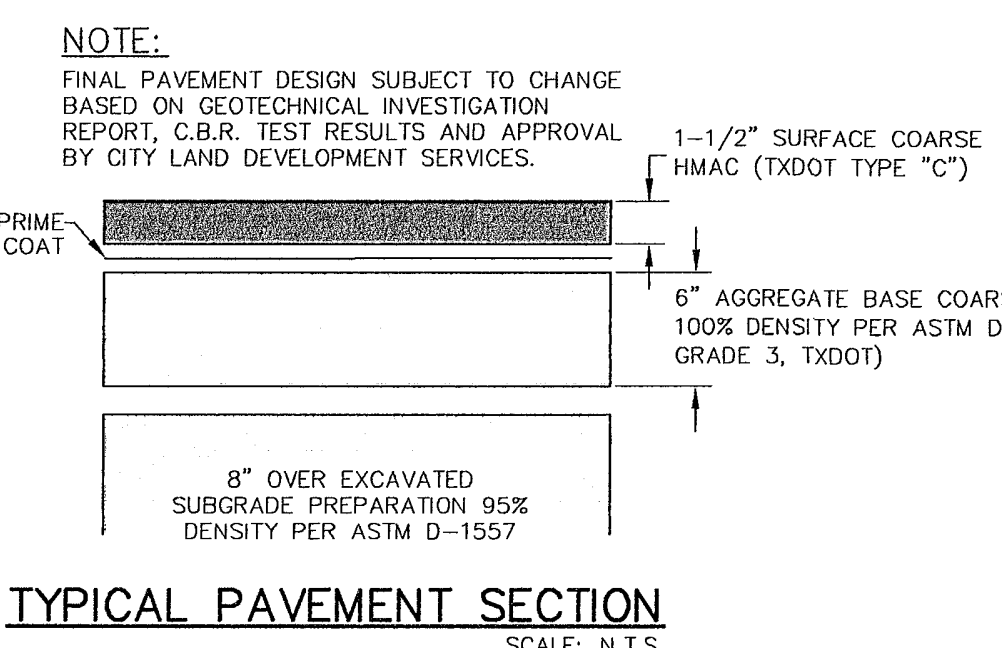
**PAVER TILE**  
SCALE: N.T.S.



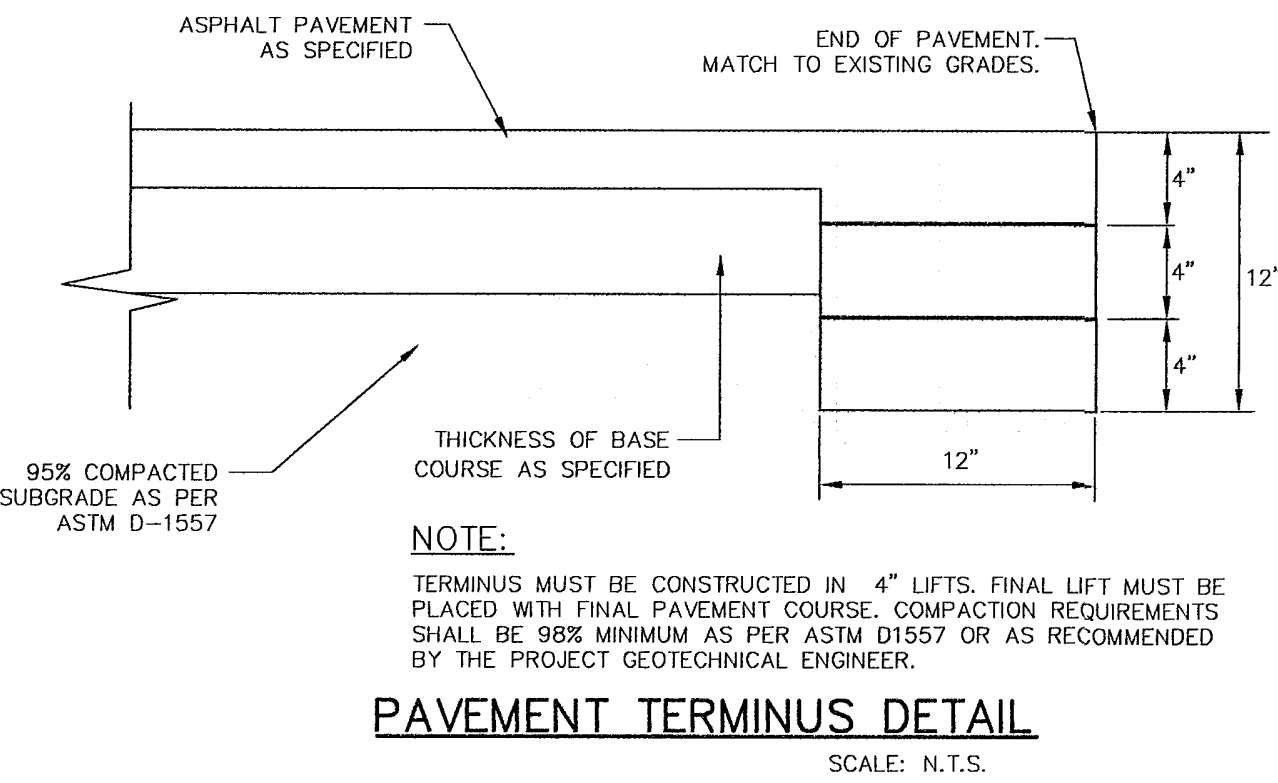
**TYPICAL WHEELCHAIR RAMP DETAIL**  
SCALE: N.T.S.



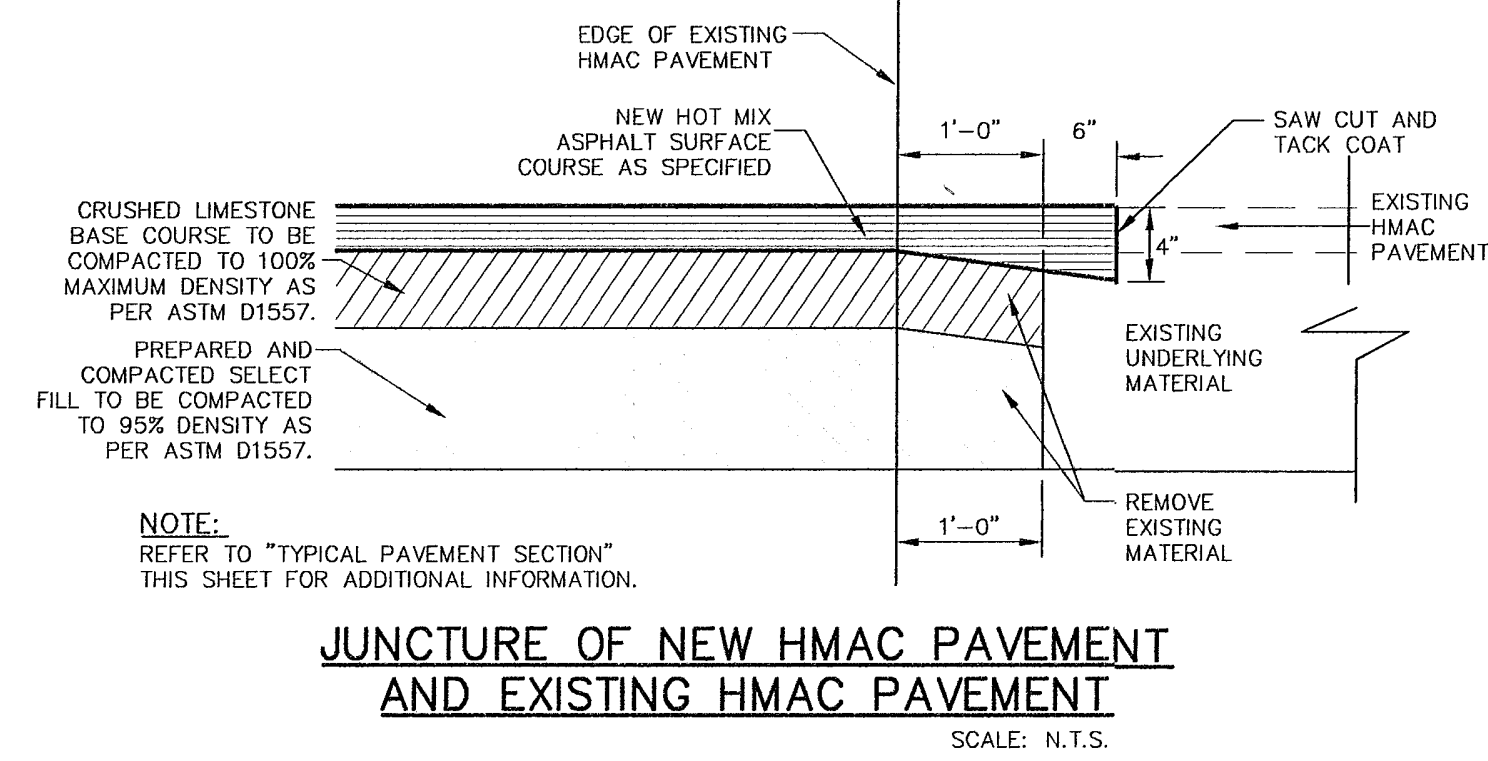
**WHEELCHAIR RAMP STREET PLAN**  
SCALE: N.T.S.



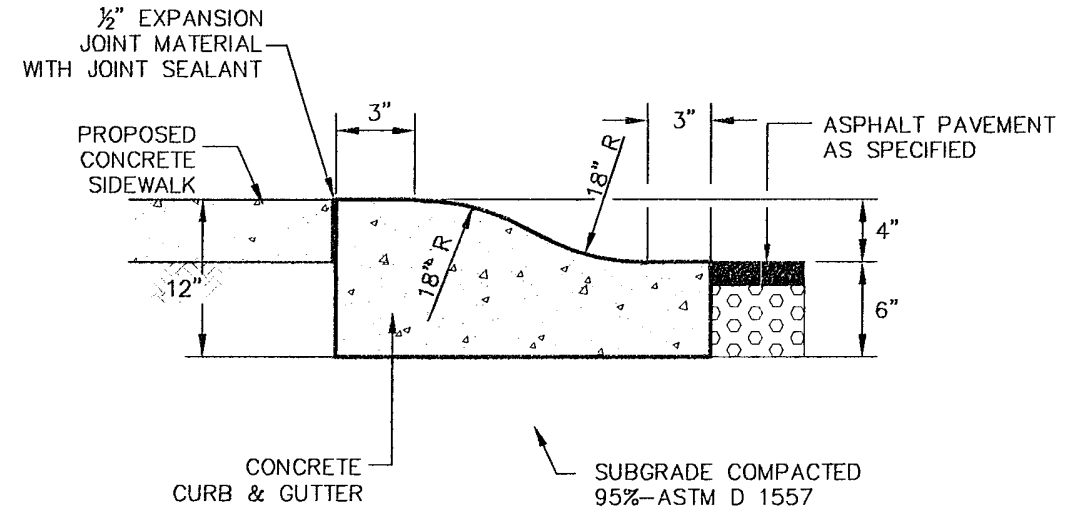
**TYPICAL PAVEMENT SECTION**  
SCALE: N.T.S.



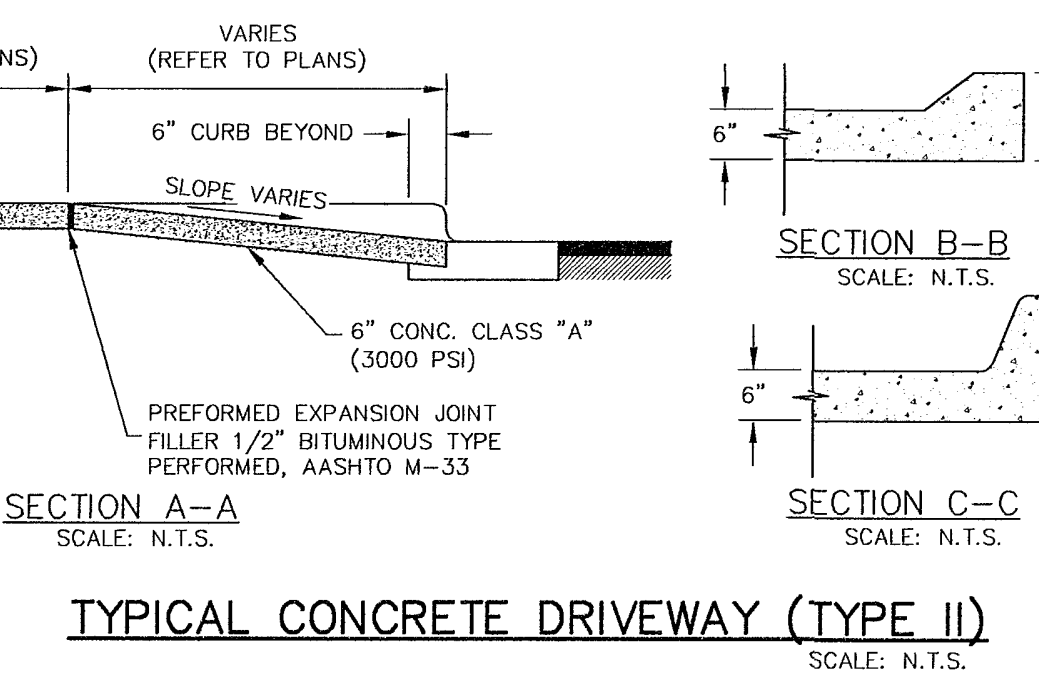
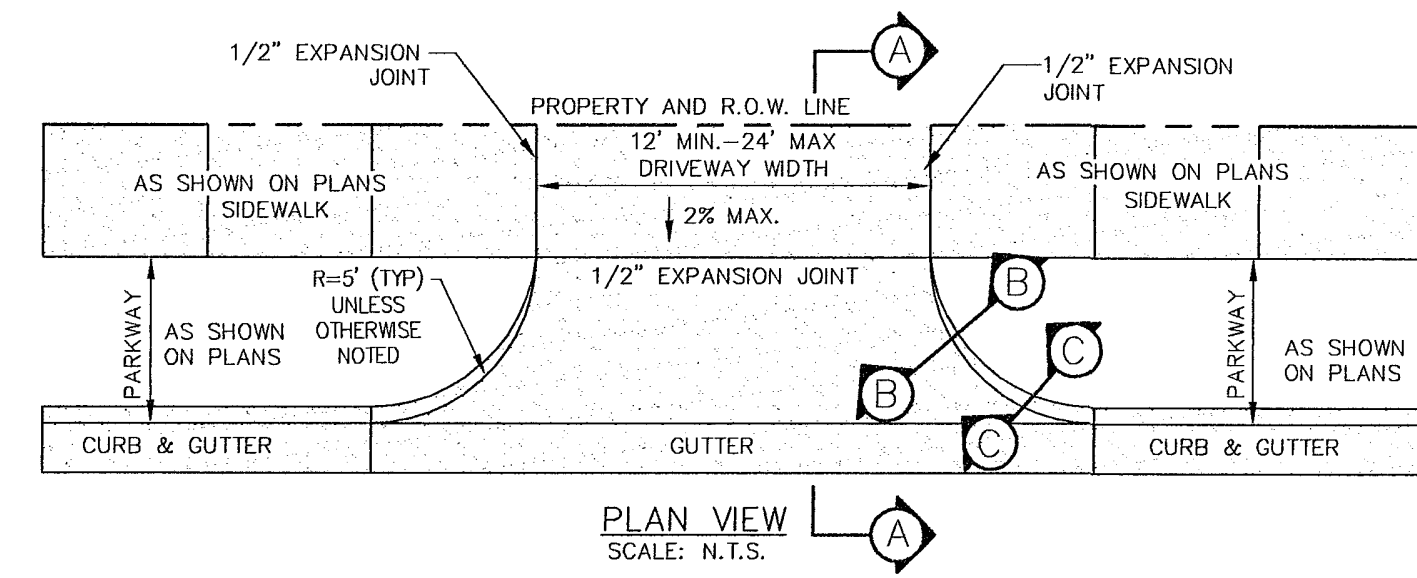
**PAVEMENT TERMINUS DETAIL**  
SCALE: N.T.S.



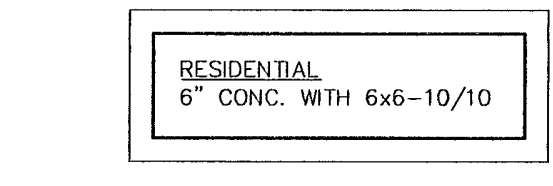
**JUNCTURE OF NEW HMAC PAVEMENT AND EXISTING HMAC PAVEMENT**  
SCALE: N.T.S.



**4" ROLLED CURB DETAIL**  
SCALE: N.T.S.

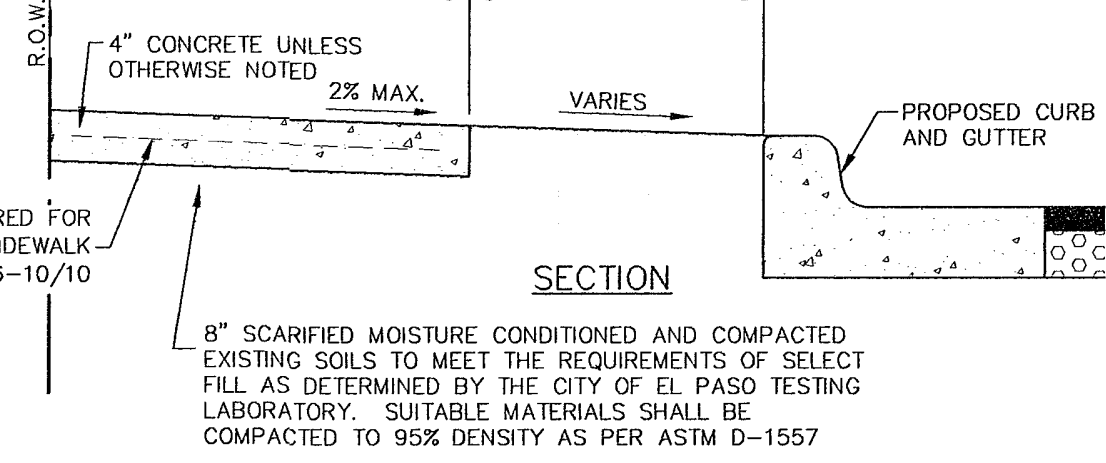
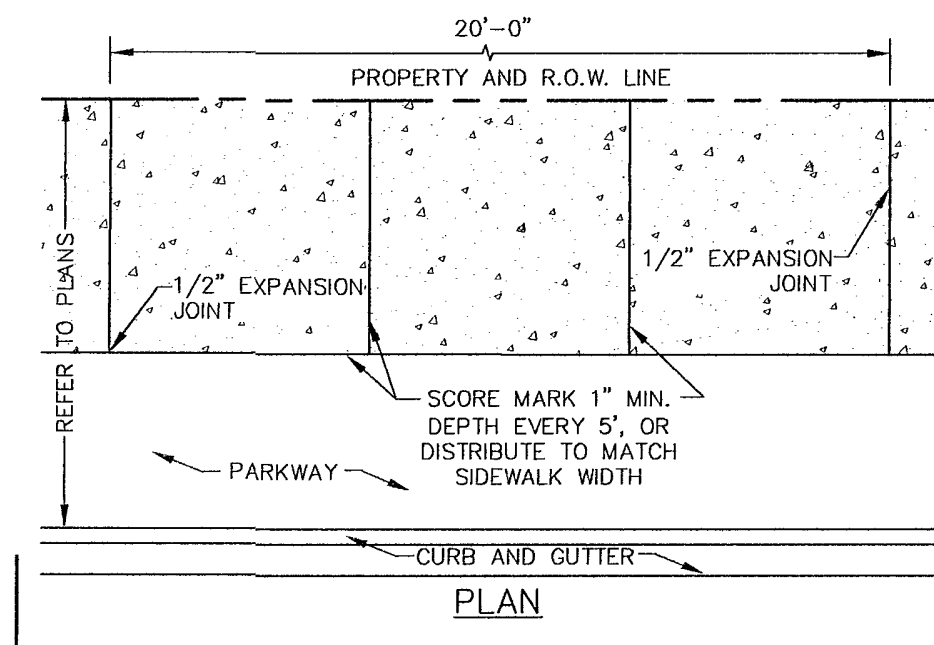


**TYPICAL CONCRETE DRIVEWAY (TYPE II)**  
SCALE: N.T.S.



DRIVEWAY WIDTH	MIN.	MAX.
RESIDENTIAL	12'	24'

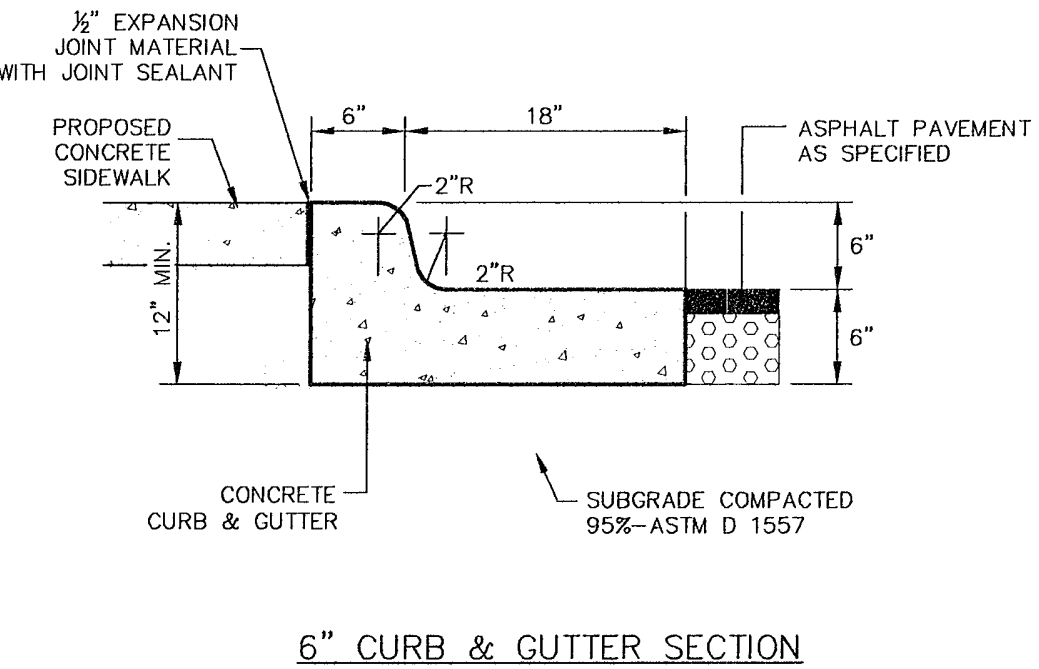
- NOTE:**
- 1. WHENEVER DRIVEWAYS AND/OR SIDEWALK ABUTS CONCRETE STRUCTURES SUCH AS CURBS, OTHER DRIVES OR BUILDINGS, EXPANSION JOINT FILLER SHALL BE PLACED IN ACCORDANCE TO STANDARD SPECIFICATIONS.



**CONCRETE SIDEWALK DETAIL**  
SCALE: N.T.S.

- SIDEWALK NOTES:**
- 1. CONCRETE SIDEWALK SHALL BE 3,000 P.S.I.
  - 2. DUMMY JOINTS REQUIRED AT 5' O.C.
  - 3. EXPANSION JOINTS SHALL BE AT 20' O.C. MAXIMUM, USE 1/2" PRE-MOLDED BITUMINOUS EXPANSION JOINTS (AASHTO M-33)
  - 4. EXPANSION JOINT FILLER SHALL BE PLACED WHEREVER SIDEWALK ABUTS ROCK OR MASONRY STRUCTURES SUCH AS CURBS OR BUILDINGS.
  - 5. SUBGRADE TO BE COMPACTED TO 95% ASTM D1557.
  - 6. JOINT SEALANT SHALL BE SIKAFLEX.

- NOTES:**
- 1. CONTRACTOR SHALL INSURE THE FOLLOWING: ALL ACCESSIBLE ROUTES SHALL NOT EXCEED A RUNNING SLOPE GREATER THAN 1:20. NOWHERE SHALL THE CROSS SLOPE OF AN ACCESSIBLE ROUTE EXCEED 1:50. MAXIMUM SLOPES OF ADJOINING GUTTERS, ROAD SURFACE IMMEDIATELY ADJACENT TO THE CURB RAMP, OR ACCESSIBLE ROUTE SHALL NOT EXCEED 1:20. NEW WHEEL CHAIR RAMPS SHALL NOT EXCEED A SLOPE OF 1:12.



**CONCRETE CURB & GUTTER DETAIL**  
SCALE: N.T.S.

- CURB NOTES:**
- 1. CONCRETE CURB, GUTTER, AND RETURNS SHALL BE 3,000 P.S.I. MIN. @ 28 DAYS.
  - 2. CONTRACTION JOINT REQUIRED AT 10' O.C.
  - 3. 1/2" PRE-MOLDED BITUMINOUS EXPANSION JOINT (AASHTO M-33) IS REQUIRED FOR ALL CURB RETURNS. TRIM BITUMINOUS MATERIAL 1/4" LESS THAN NEAT CURB & GUTTER DIMENSION.
  - 4. SUBGRADE UNDER CURB MUST BE FORMED AND COMPACTED TO 95% ASTM D1557.
  - 5. EXPANSION JOINTS REQUIRED AT 50' O.C. AND CURB RETURNS WHEN FORMING FOR CURBS.
  - 6. JOINT SEALANT SHALL BE SIKAFLEX.

**REFERENCES - BENCHMARK**  
CITY OF EL PASO, TEXAS  
THE CENTERLINE INTERSECTION OF FRANKLIN HILLS UNIT 8 WITH HILLS STREET.  
ELEVATION = 4382.20 (CITY DATUM)  
CONTOUR INTERVAL: ONE (1) FOOT

**BY**  
**REVISION**  
**DATE**

**QUANTUM**  
414 Executive Center Blvd  
Ste 200 B Paso TX 79902  
P 945.532.7372  
F 945.532.7373  
www.quantumeng.com  
Texas Registered Engineering Firm F-005146

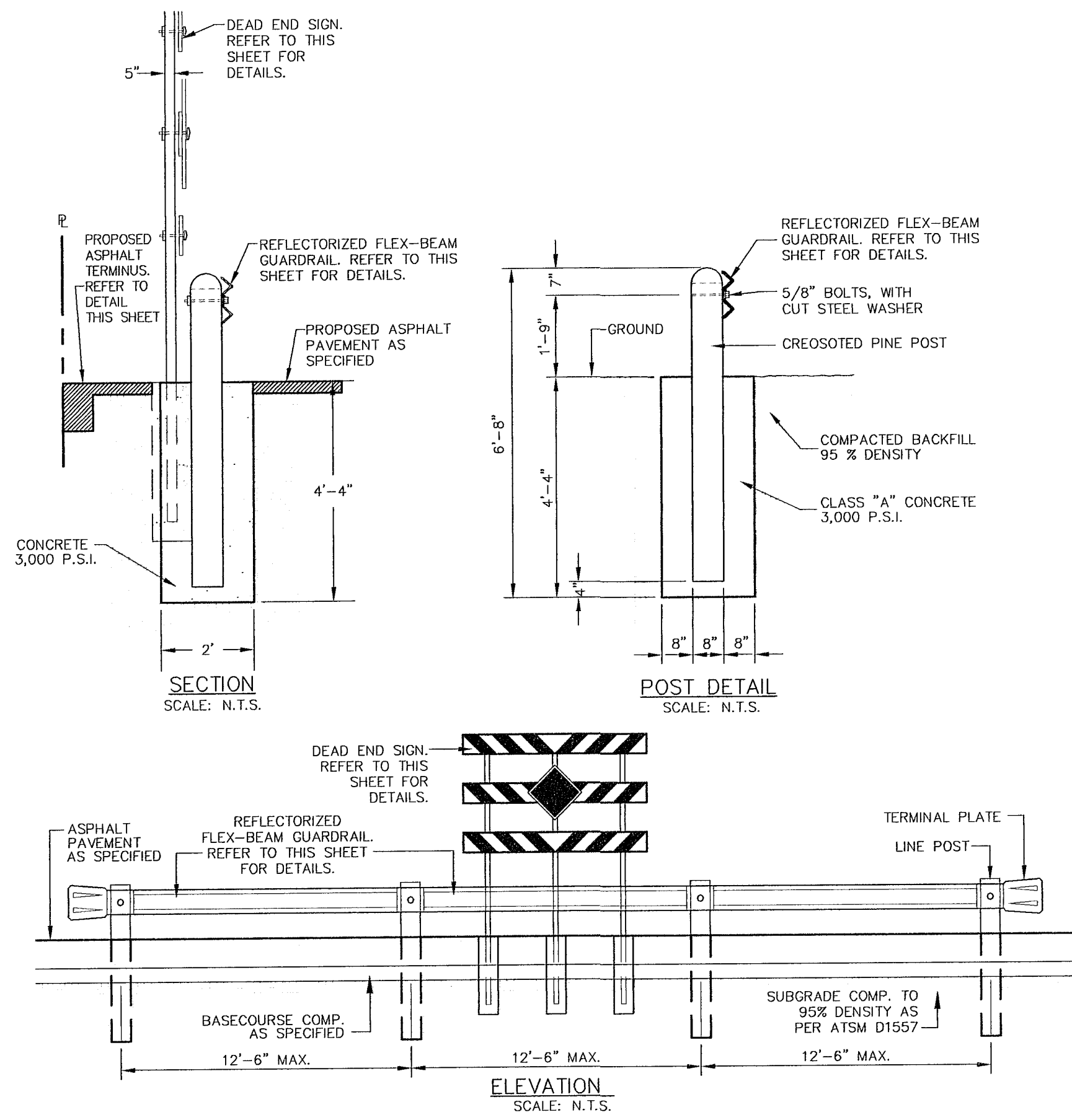
**PROFESSIONAL ENGINEER**  
No. 59920  
El Paso, Texas

**PROJECT TITLE**  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

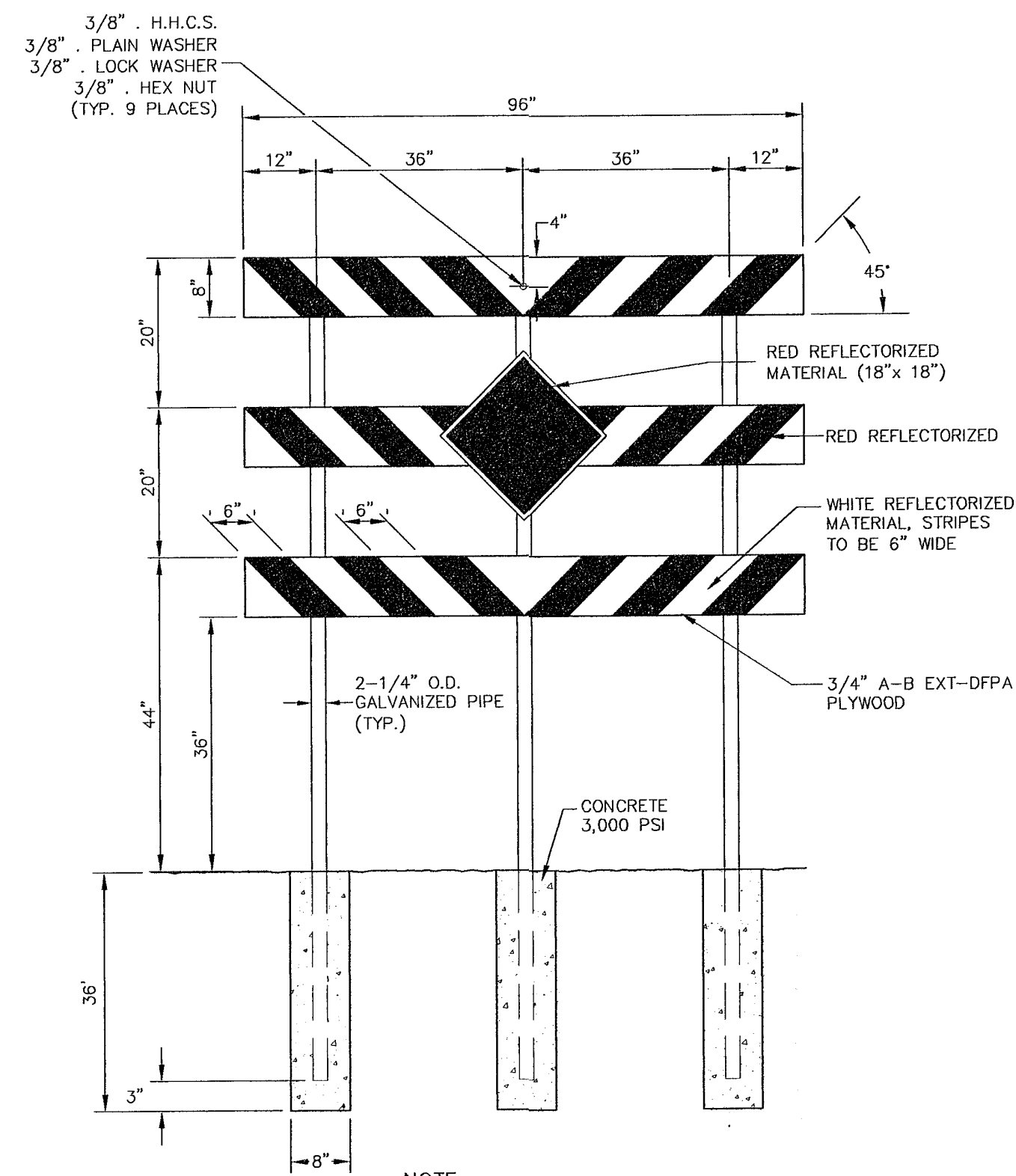
**SHEET TITLE**  
STANDARD  
DETAILS  
(2 OF 3)

**SHEET NO.**  
C-43  
43 OF 58 SHEETS

May 11, 2012 11:06am .brj  
 G:\Active Drawings\038 Franklin Hills Unit 8\Civil\3rd CDEP Comments (05-10-12)\C-44-44 Typ Details.dwg



GUARDRAIL/ SIGN ASSEMBLY/ AT DEAD END STREET DETAIL.  
 SCALE: N.T.S.

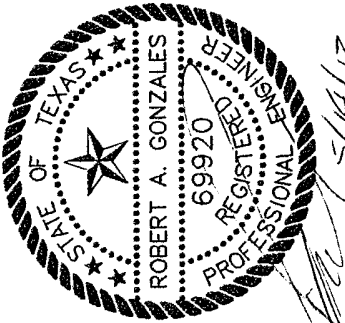


NOTE:  
 ALL STEEL FITTINGS SHALL BE GALVANIZED.

WROUGHT IRON FENCE  
 SCALE: N.T.S.

KEY NOTES

- 1) 3" x 3" x 3/16" SQUARE STEEL TUBING
- 2) 2" x 1" x 14 GA. RECTANGULAR STEEL TUBING
- 3) 1 1/2" x 1/2" x 16 GA. RECTANGULAR STEEL TUBING
- 4) 2" x 1" x 10 GA. RECTANGULAR STEEL TUBING
- 5) FLAT TOP POLYVINYL CAP
- 6) BOLT HOOK AND STRAP HINGE
- 7) 1' x 3' DEEP 3000 PSI CONCRETE POST FOOTING
- 8) DOUBLE GATE HEAVY DUTY INDUSTRIAL LATCH W/PAD LOCK
- 9) 5" x 5" x 3/8" SQUARE STEEL SLEEVE W/7"x7"x3/8" STEEL BASE PLATE
- 10) CANE BOLT LATCH W/KEEPER 5-8" x 18" LONG (2 REQUIRED)
- 11) EXPANSION JOINT MATERIAL WITH ELASTOMETRIC JOINT SEALANT (TXDOT APPROVED)
- 12) PROPOSED CONCRETE PAVEMENT AS SPECIFIED



THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY THE STATE OF TEXAS, PROFESSIONAL ENGINEERING BOARD, P.O. BOX 130888, DALLAS, TEXAS 75213-0888. THE RESPONSIBLE ENGINEER HAS REVIEWED THIS DOCUMENT AND APPROVES THE PRACTICE ACT.

HORIZONTAL SCALE:	N/A
VERTICAL SCALE:	N/A
CONTOUR INTERVAL:	05'-10"-2012
DESIGN BY:	M.A.G.
DRAWN BY:	GADD
CHECKED BY:	R.A.G.
APPROVED BY:	R.A.G.
DATE:	05-10-2012
PROJECT NO.:	038

PROJECT TITLE  
**FRANKLIN HILLS UNIT EIGHT  
 SUBDIVISION  
 IMPROVEMENT PLANS**  
 EL PASO COUNTY, TEXAS

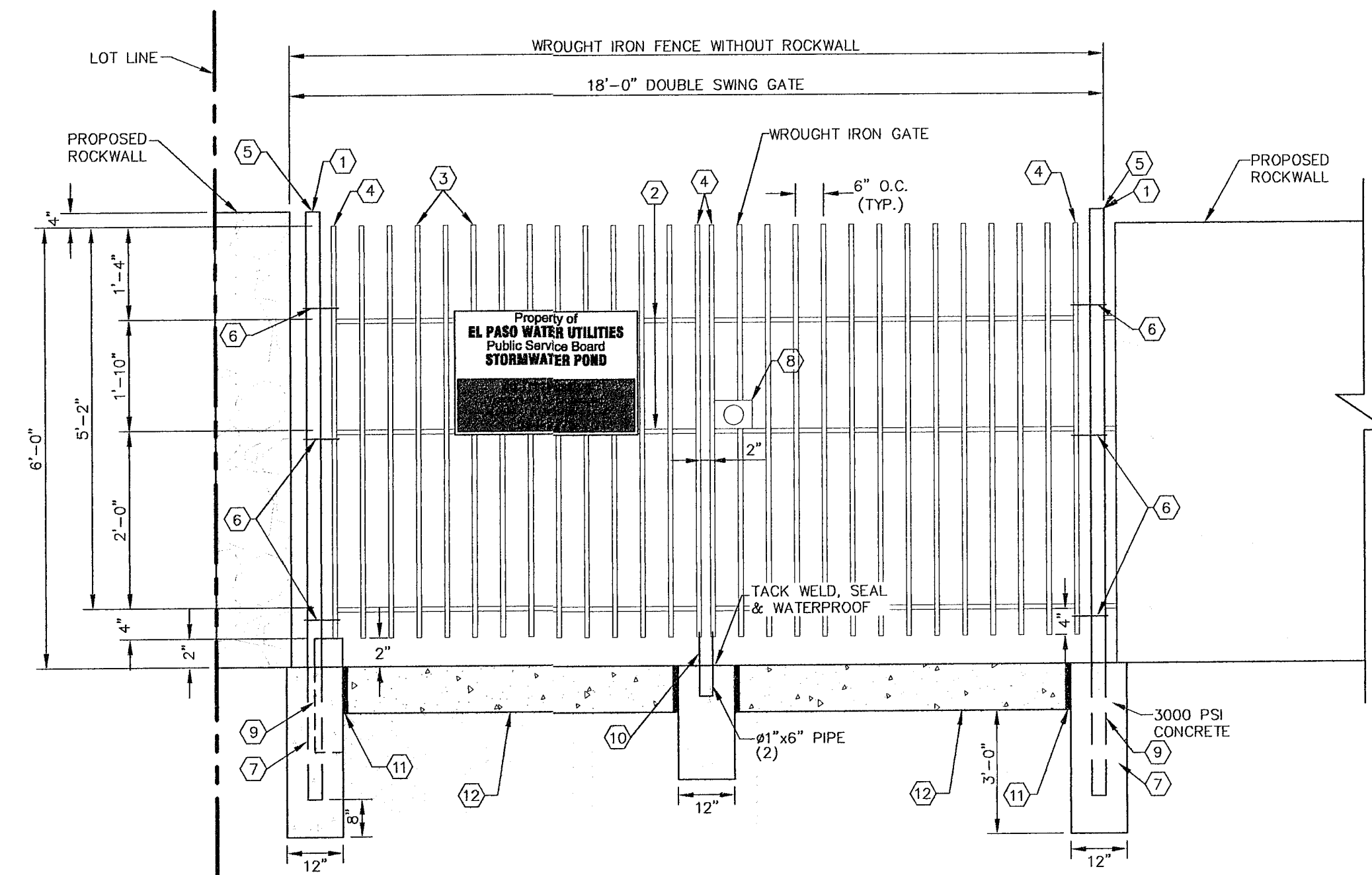
SHEET TITLE

STANDARD  
 DETAILS  
 (3 OF 3)

SHEET NO.

**C-44**

44 OF 58 SHEETS



KEY NOTES

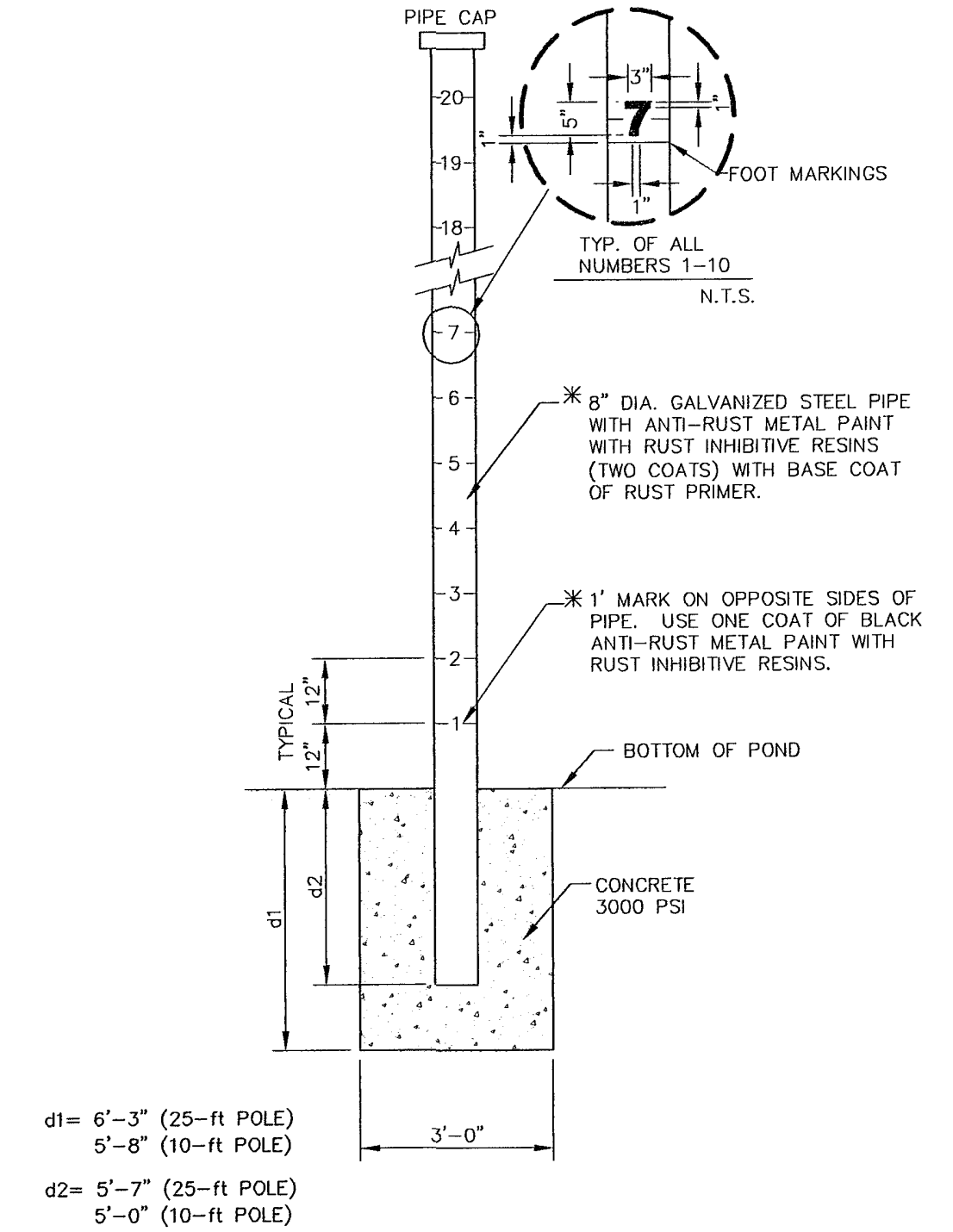
- 1) 3" x 3" x 3/16" SQUARE STEEL TUBING
- 2) 2" x 1" x 14 GA. RECTANGULAR STEEL TUBING
- 3) 1 1/2" x 1/2" x 16 GA. RECTANGULAR STEEL TUBING
- 4) 2" x 1" x 10 GA. RECTANGULAR STEEL TUBING
- 5) FLAT TOP POLYVINYL CAP
- 6) BOLT HOOK AND STRAP HINGE
- 7) 1' x 3' DEEP 3000 PSI CONCRETE POST FOOTING
- 8) DOUBLE GATE HEAVY DUTY INDUSTRIAL LATCH W/PAD LOCK
- 9) 5" x 5" x 3/8" SQUARE STEEL SLEEVE W/7"x7"x3/8" STEEL BASE PLATE
- 10) CANE BOLT LATCH W/KEEPER 5-8" x 18" LONG (2 REQUIRED)
- 11) EXPANSION JOINT MATERIAL WITH ELASTOMETRIC JOINT SEALANT (TXDOT APPROVED)
- 12) PROPOSED CONCRETE PAVEMENT AS SPECIFIED

WROUGHT IRON FENCE  
 SCALE: N.T.S.



SITE SIGN - NO TRESPASSING  
 SCALE: N.T.S.

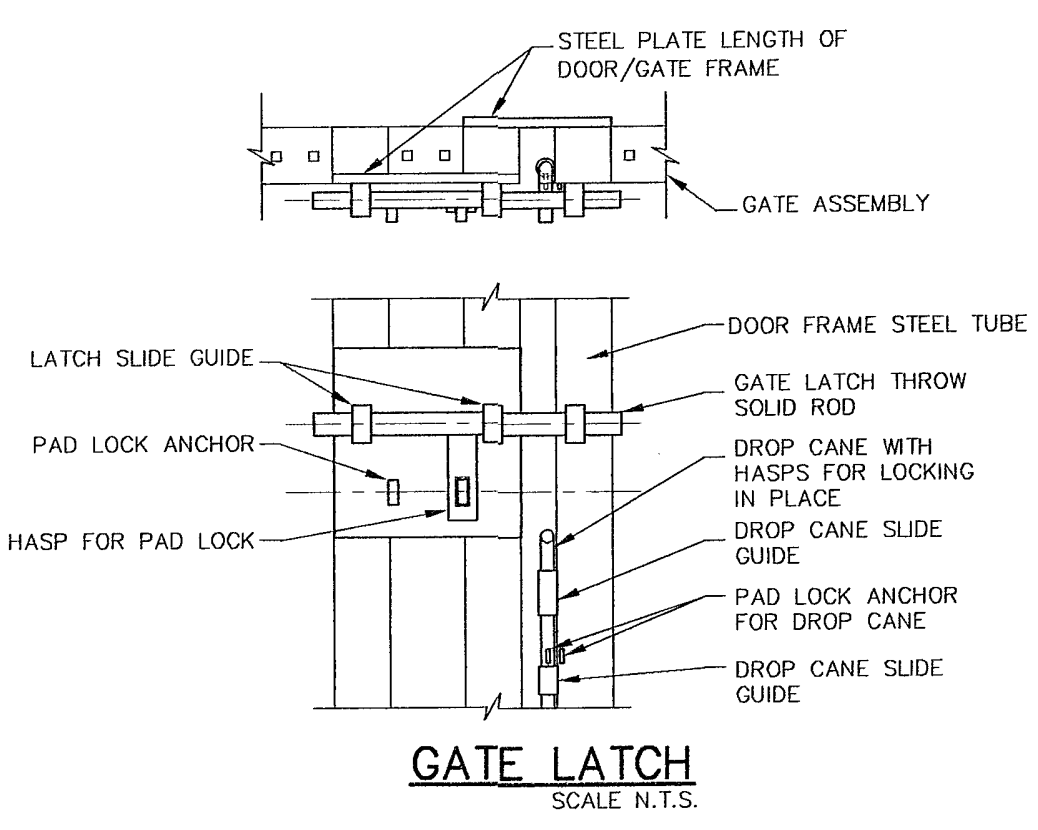
- GENERAL NOTES:
1. SIGN MATERIAL TO BE 16 GAUGE GALVANIZED SHEET METAL.
  2. TOP PART OF SIGN SHALL SHOW BLACK LETTERS ON A WHITE BACKGROUND.
  3. BOTTOM PART OF SIGN SHALL SHOW WHITE LETTERS ON A BLACK BACKGROUND.



NOTE:  
 CONSULT WITH PAINT MANUFACTURER FOR PRODUCTS THAT CAN SUSTAIN LONG PERIODS OF MOISTURE.

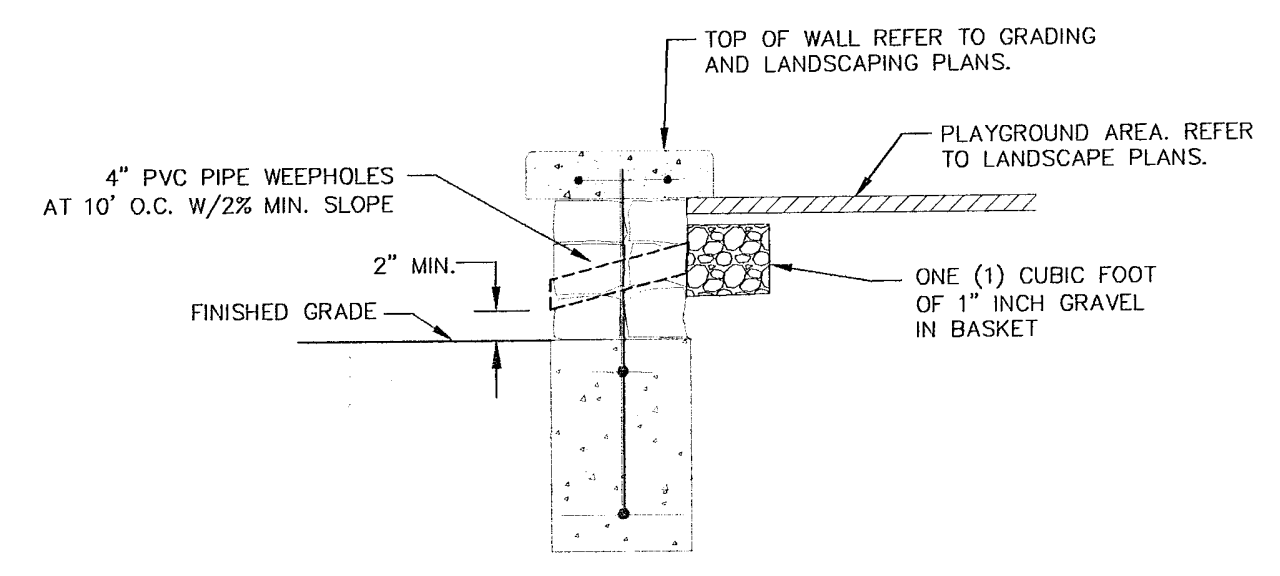
- NOTES:
1. NUMBERS TO APPEAR ON 4 SIDES OF POLE
  2. WATER DEPTH POLES SHALL BE PAINTED WHITE WITH NUMBERS AND FOOT MARKINGS PAINTED BLACK.

DEPTH GAUGE  
 SCALE: N.T.S.

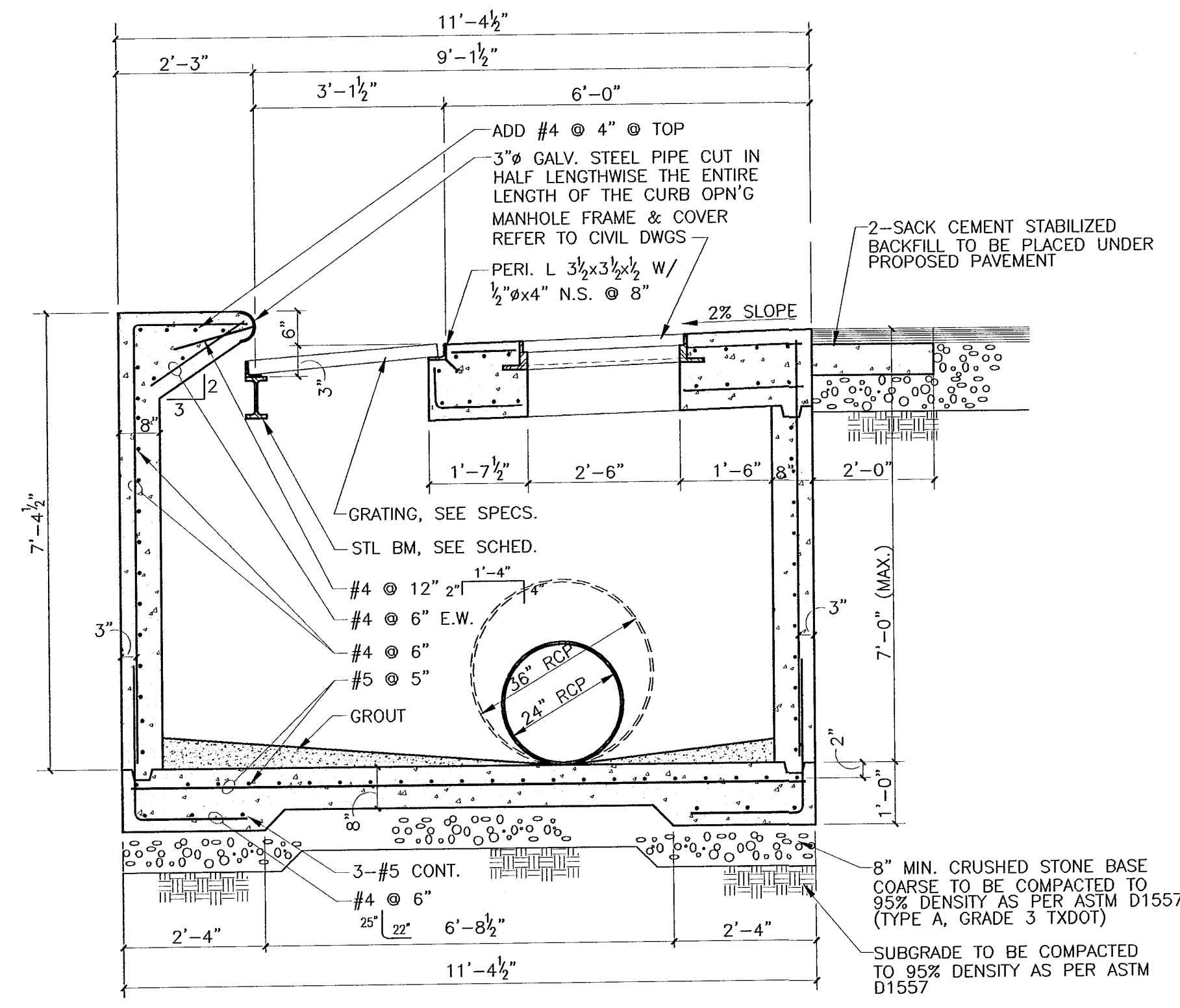


GATE LATCH  
 SCALE: N.T.S.

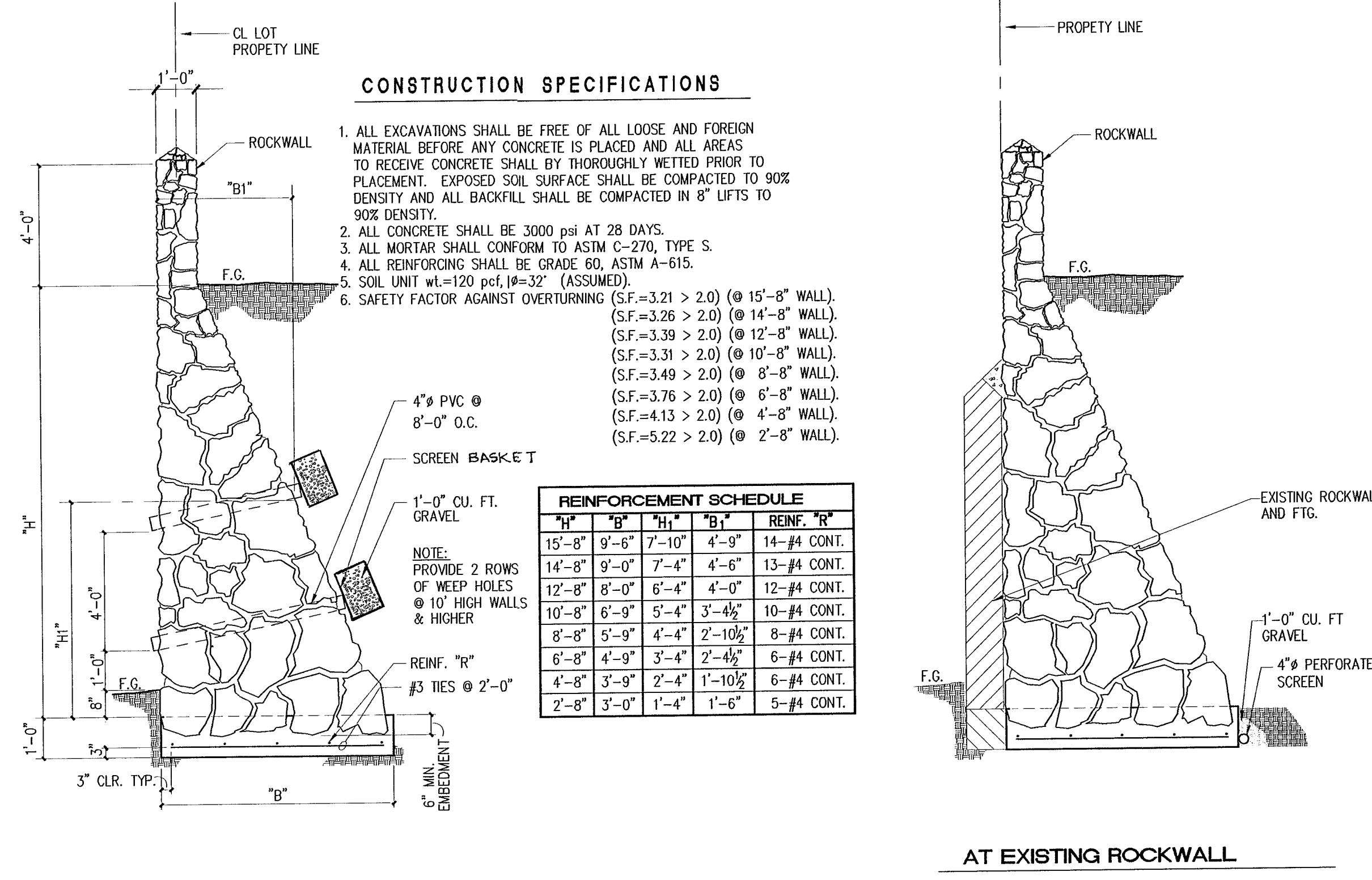
- GENERAL NOTES:
1. CONTRACTOR TO SUBMIT AN APPROVED TRENCH SAFETY PLAN AS PER OSHA STANDARDS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF EXISTING IMPROVEMENTS WITHIN THE LIMITS OF THE TRENCH SAFETY ZONE. ANY DAMAGES RESULTING FROM THE CONTRACTOR'S WORK, SHALL BE REPAIRED TO ITS ORIGINAL CONDITION BY THE CONTRACTOR, AT NO COST TO THE OWNER. AREA TO BE GRADED TO ORIGINAL CONDITIONS AND ELEVATIONS.
  2. SCREENINGS SHALL BE 3-INCH THICK, BRICK RED COLORED, AND COMPACTED TO MINIMUM 95% AS PER ASTM D-1557.



DRAINAGE WEEPHOLE DETAIL FOR SEAT WALL  
 SCALE: N.T.S.



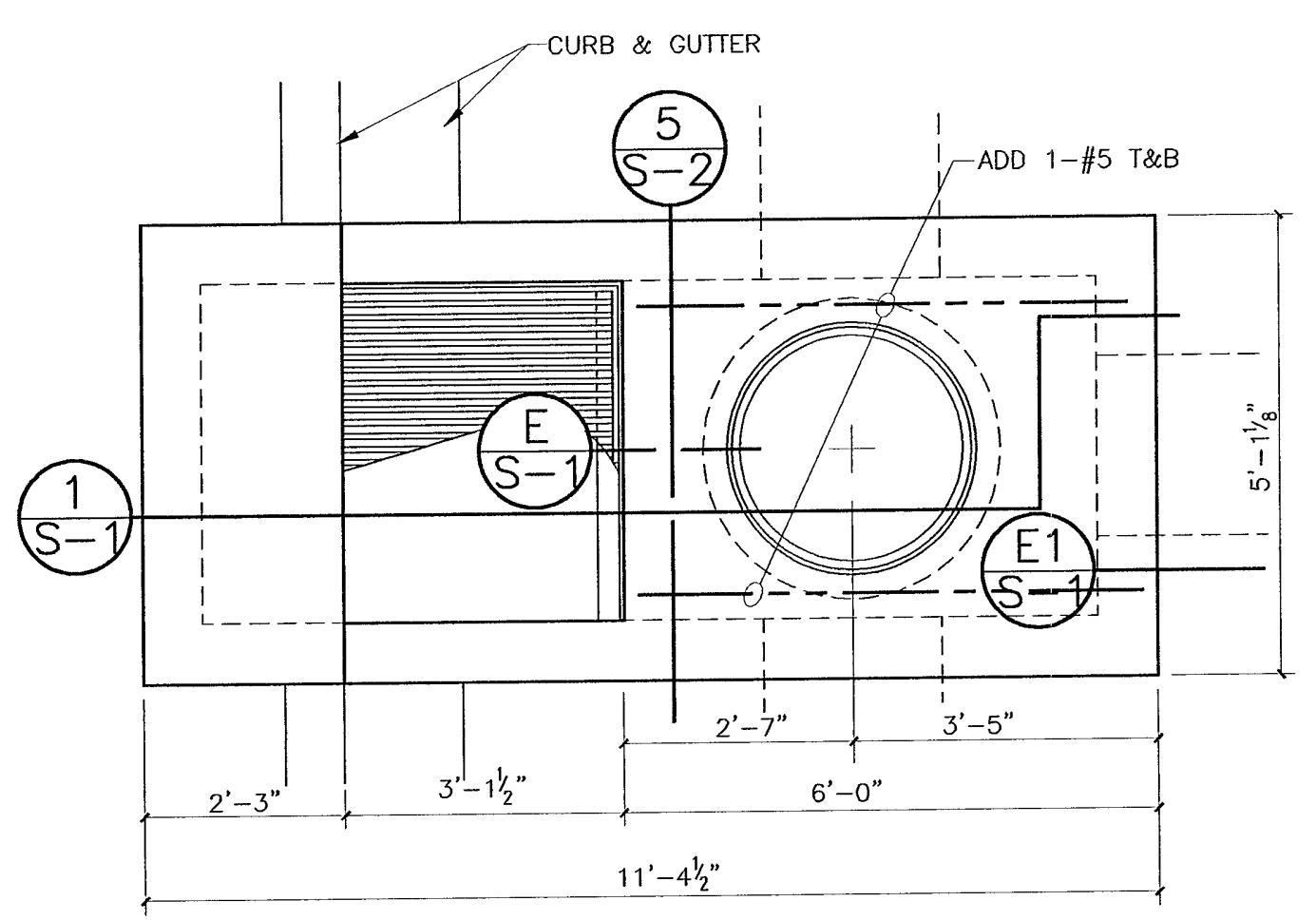
**1 SECTION**  
S-1



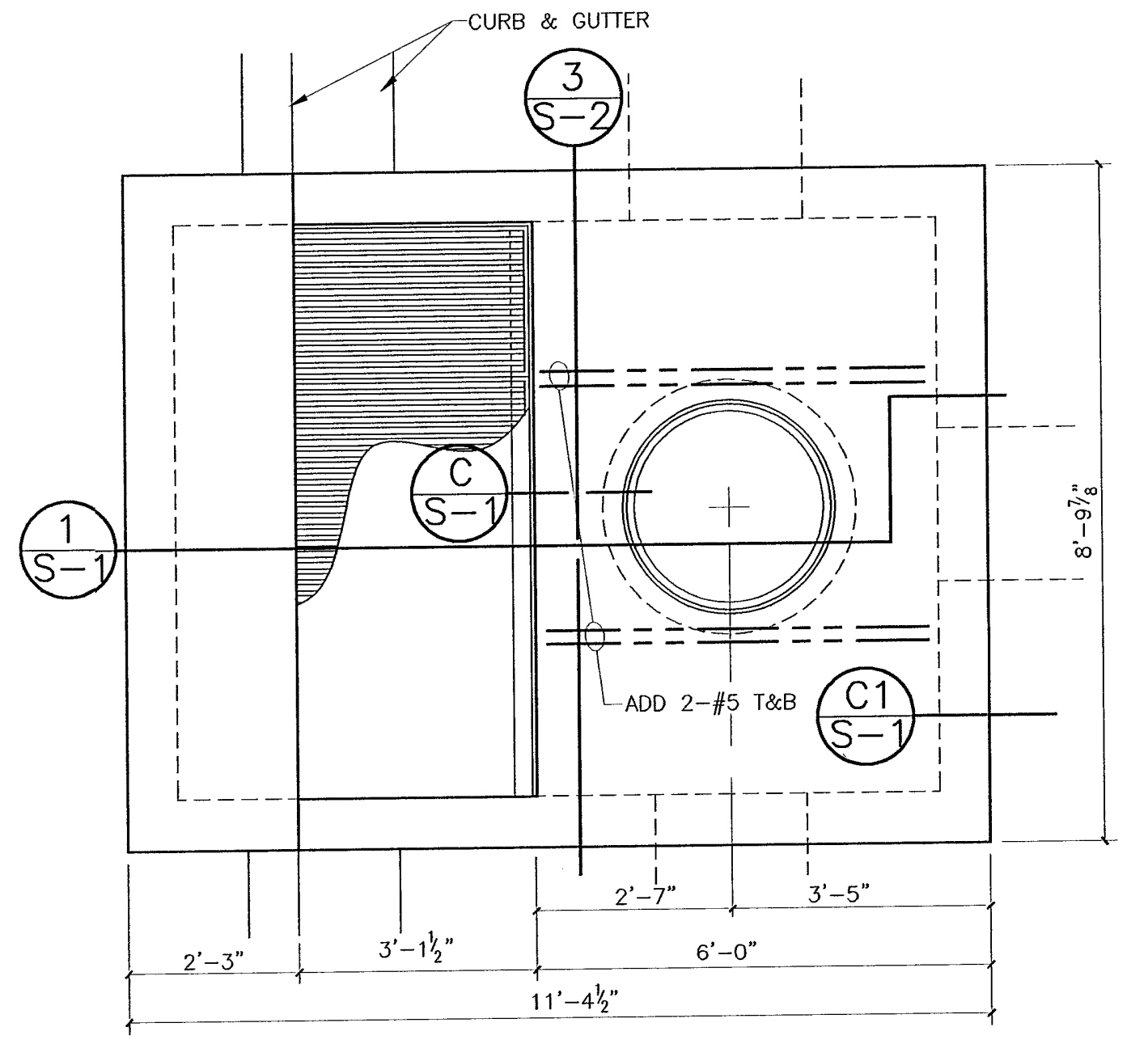
**2 SECTION**  
S-1  
TYPICAL ROCK WALL SECTION

**CAST-IN-PLACE CONCRETE BOX CULVERT NOTES**

1. CAST-IN-PLACE BOX CULVERTS SHALL BE CONSTRUCTED PER THE DIMENSIONS SHOWN OF THE TYPICAL SECTION AND REINFORCED AS SCHEDULED.
2. CONCRETE STRENGTH FOR CULVERTS SHALL BE 3000 PSI AT 28 DAY. MINIMUM 5 SACKS PER CUBIC YARD AND MAXIMUM W/C RATIO OF 0.45, WITH 3/4 INCH MAXIMUM SIZE AGGREGATE. SLUMP SHALL BE 3 1/2 INCHES ± 1" FOR SLABS AND 5 INCHES ± 1" FOR WALLS. SUBMIT CONCRETE MIX DESIGN FOR APPROVAL.
3. ALL REINFORCING STEEL SHALL BE ASTM A 615 GRADE 60, AS SPECIFIED.
4. USE OF PERMANENT METAL FORMS IS NOT PERMITTED.



**E SECTION**  
**E1 SECTION**  
2-GRATE DROP INLET



**C SECTION**  
**C1 SECTION**  
4-GRATE DROP INLET

REFERENCES - BENCHMARK

DATE	REVISION	BY

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373  
INCORPORATED

**QUANTUM**  
engineering  
incorporated

Texas Registered Engineering Firm F-005146

4-26-12

SCALE:

HORIZONTAL	
VERTICAL	
CONTOUR INTERVAL	XX'-XX'-11

DATE:  

DESIGN BY:  

DRAWN BY:  

APPROVED BY:  

JOB NO.  

PROJECT TITLE

**FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS**

EL PASO COUNTY, TEXAS

SHEET TITLE

SHEET NO.

**S-1**

OF SHEETS

**Pe** PONCE ENGINEERING, INC.  
CONSULTING STRUCTURAL ENGINEERING

2417 WYOMING AVE.  
EL PASO, TEXAS 79905  
(915) 544-2810  
(915) 544-1640 (FAX)  
E-mail: ponceeng@aol.com

BRANCH OFFICE:  
P.O. BOX 447  
SUNLAND PARK, NM 88063  
(505) 523-8812

**GENERAL NOTES**

1. THE CONTRACTOR SHALL COMPARE THE STRUCTURAL DRAWINGS WITH THE CIVIL DRAWINGS AS TO LAYOUT, DIMENSIONS AND ELEVATIONS. ALL DISCREPANCIES, IF ANY, SHALL BE REPORTED TO THE ARCHITECT/ENGINEER FOR PROPER ADJUSTMENT BEFORE PROCEEDING WITH WORK.
2. PRIOR TO BEGINNING ANY CONSTRUCTION, THE CONTRACTOR SHALL VERIFY ALL VERTICAL AND HORIZONTAL DIMENSIONS BY FIELD MEASUREMENTS AND REPORT ANY DISCREPANCIES TO THE ARCHITECT/ENGINEER. ALL CONSTRUCTION SHALL MEET THE UNIFORM BUILDING CODE.
3. IN THE EVENT THAT CERTAIN FEATURES OF THE CONSTRUCTION ARE NOT FULLY SHOWN ON THE DRAWINGS, OR CALLED FOR IN THE STRUCTURAL NOTES OR IN THE SPECIFICATIONS, THEN SUCH CONSTRUCTION SHALL BE IN THE SAME CHARACTER FOR SIMILAR CONDITIONS THAT ARE SHOWN OR CALLED FOR.

**FIELD INSPECTION AND CONTROLS**

1. THE CONTRACTOR SHALL PROVIDE TESTING AND INSPECTION SERVICE FOR ALL SOILS AND CONCRETE CONSTRUCTION INCLUDING SAMPLING AND TESTING OF ALL MATERIALS TO BE USED. THE TESTING AND INSPECTION SERVICE TO BE EMPLOYED IS SUBJECT TO PRIOR APPROVAL BY THE ARCHITECT/ENGINEER.
2. SOILS: INSPECT AND APPROVE ALL MATERIALS TO BE USED DURING CONSTRUCTION. INSPECT AND APPROVE ALL LAYERS OF SUBGRADES AND FILL BEFORE FURTHER CONSTRUCTION WORK IS PERFORMED. SOILS TESTS TO BE TAKEN SHALL BE AS FOLLOWS: NATURAL GROUND (1) TEST PER 2500 SQ. FT. ELL (1) TEST PER 2500 SQ. FT. PER LAYER; FILL UNDER CONTINUOUS FOOTINGS (1) TEST PER 100 LINEAL FEET PER LAYER; ENGLISH GRADE (1) TEST PER 2500 SQ. FT. PER LAYER.
3. CONCRETE TEST CYLINDERS: USE ASTM C-31 AND ASTM C-172. MAKE FOUR FOR ALL DELIVERED CONCRETE FOR EVERY 50 OR LESS CUBIC YARDS OF CONCRETE OR ANY OTHER TIME DEEMED NECESSARY BY ARCHITECT/ENGINEER. COMPLY WITH ASTM C-94, READY MIXED CONCRETE. TEST PER ASTM C-39, 1 AT 7 DAYS, 2 AT 28 DAYS, WITH 1 LEFT.
4. SLUMP: ASTM C-143, 1 FOR EACH TRUCK. TEST PROMPTLY AFTER ONE-HALF CUBIC YARD HAS BEEN DISCHARGED BEGINNING WITH THE FIRST LOAD OF EACH DAY.
5. AIR CONTENT: ASTM C-173, 1 FOR EACH TRUCK DELIVERING CONCRETE AND PERFORMED AT THE SAME TIME AS SLUMP TEST IS TAKEN.

**EXCAVATION AND BACKFILL**

1. ALL EXCAVATION, GRADING AND ENGINEERED BACKFILL SHALL BE COMPLETE PRIOR TO BEGINNING FOUNDATION EXCAVATION.
2. AFTER CLEARING AND GRUBBING ARE COMPLETE FOR THE BUILDING PAD, IT IS RECOMMENDED THAT THE SURFACE SOIL SHOULD THEN BE SCARIFIED A MINIMUM OF 8 INCHES AND BROUGHT TO WITHIN ±3% OPTIMUM MOISTURE CONTENT AND COMPACTED TO 95%.
3. ALL FOUNDATION DEPTHS ARE MINIMUM AND SHALL NOT BE REDUCED WITHOUT THE WRITTEN APPROVAL OF THE ARCHITECT/ENGINEER. ALL MATERIALS USED IN THE CONSTRUCTION OF THIS PROJECT MUST BE SUPPLIED FROM OUTSIDE SOURCES AND SHALL HAVE A P.I. OF LESS THAN 15 PER ASTM D-425B. NO AGGREGATE SIZE LARGER THAN 3" AND BE COMPACTED IN 8" LAYERS TO 95% DENSITY PER ASTM D-1557. ALL LIFTS SHALL BE TESTED FOR COMPLIANCE. FAILURE TO MEET THIS REQUIREMENT WILL BE CAUSE FOR REJECTION AND THE LAYER SHALL BE REMOVED AND REWORKED.
4. ALL EXCAVATIONS SHALL BE FREE OF ALL LOOSE AND FOREIGN MATERIAL BEFORE ANY CONCRETE IS PLACED AND ALL AREAS TO RECEIVE CONCRETE SHALL BE THOROUGHLY WETTED PRIOR TO PLACEMENT.

**FORMWORK**

1. PLYWOOD FORMS SHALL BE USED FOR ALL FORMED SURFACES. PLYWOOD FORMS SHALL BE MADE FROM PLYWOOD SHEETS OF ADEQUATE THICKNESS AND AS LARGE AS POSSIBLE WITH SMOOTH EVEN EDGES. PLYWOOD FORMS CAN BE MADE FROM EITHER NEW OR USED SHEETS, BUT IN GOOD CONDITION. ALL PLYWOOD SHALL CONFORM TO PS-1 OF USE.
2. EARTH FORMS MAY BE USED ONLY FOR FOOTINGS AND ONLY IF THE CUT EARTH SURFACES CAN MAINTAIN THEIR SHAPE WITHOUT DANGER OF CAVE-IN THE SIDES AND BOTTOMS SHALL BE SMOOTH, EVEN AND TRUE VERTICAL OR HORIZONTAL PLANES WITH 45 DEGREE EDGES WHERE SHOWN ON THE DRAWINGS.
3. THE SUBGRADE UNDER SLABS SHALL BE FINE GRADED AND PROPERLY COMPACTED.
4. PLYWOOD FORMS SHALL BE INSTALLED WITH CLOSED, FLUSHED JOINTS.
5. PLYWOOD SHALL BE SEALED AGAINST ABSORPTION OF MOISTURE FROM THE CONCRETE BY EITHER A FIELD APPLIED APPROVED FORM OIL SEALER OR A FACTORY APPLIED NON-ABSORPTIVE LINER. ALL SEALING OF FORMS SHALL BE DONE PRIOR TO PLACING OF REINFORCING STEEL. EXCESS SEALING MATERIAL SHALL NOT BE ALLOWED TO STAND IN PUDDLES IN THE FORMS NOR ALLOWED TO COME IN CONTACT WITH CONCRETE, WHICH FRESH CONCRETE WILL BE PLACED AGAINST OR ANY REINFORCING STEEL. SEALER OR FORM OIL SHALL BE COMPATIBLE WITH FINAL FINISH REQUIREMENTS.

**CONCRETE**

1. REVIEW BY THE ENGINEER IS REQUIRED OF ALL FOUNDATIONS, FORMS, REINFORCING STEEL PIPES, CONDUITS, SLEEVES, INSERTS AND OTHER WORK REQUIRED TO BE BUILT INTO THE CONCRETE BEFORE THE CONCRETE IS PLACED.
2. PLACING OF CONCRETE SHALL BE IN ACCORDANCE WITH THE RECOMMENDED PRACTICE OF ACI 614 AND PCA "DESIGN AND CONTROL OF CONCRETE MIXTURES". NO CONCRETE SHALL BE PLACED DURING RAIN, SLEET OR SNOW. ALL CONCRETE PLACED SHALL BE PROTECTED SUCH THAT THE TEMPERATURE AT THE SURFACE SHALL NOT DROP BELOW 55 DEGREES F. FOR 72 HOURS AFTER PLACEMENT AND PREVENTED FROM FREEZING 3 DAYS THEREAFTER. ALL CONCRETE SHALL BE PROTECTED DURING HOT WEATHER BY GIVING PROPER ATTENTION TO INGREDIENTS, PRODUCTION METHODS, HANDLING AND PLACING TO PREVENT EXCESSIVE CONCRETE TEMPERATURES AND WATER EVAPORATION.
3. ALL SLABS SHALL BE SAW CUT 1/4" OF DEPTH OF SLAB AT 15 FEET O.C. UNLESS SHOWN OTHERWISE ON THE DRAWINGS. IMMEDIATELY AFTER SAW CUTTING, THE JOINT SHALL BE CLEANED AND SEALED USING A SEALANT SLABS ON GRADE SHALL BE CURED EITHER BY USING LIQUID MEMBRANE-FORMING COMPOUNDS AND MEETING CRS-C-300 AND ASTM C-309, BY USING WATER-PROOF PLASTICS COVERING 4 MILS THICK AND MEETING ASTM C-171.
4. ALL EXPOSED CONCRETE SURFACES SHALL BE RUBBED FREE FROM ALL FORM MARKS AND HONEYCOMBS. EDGES SHALL BE CHAMFERED WITH 3/4" CHAMFER STRIPS.
5. THE FOLLOWING TABLE IS INTENDED TO IDENTIFY AND ESTABLISH THE RESPECTIVE CRITERIA FOR ALL THE CLASSES OF CONCRETE TO BE USED ON THIS PROJECT.

CLASS OF CONCRETE OR ITEM NO.	CONCRETE CLASSIFICATION TABLE			
	MINIMUM 28 DAY CORE TEST (PSI)	MINIMUM 28 DAY LAB TEST (PSI)	MINIMUM SACKS OF CEMENT/ CU. YD. (INCHES)	MAXIMUM AGGREGATE SIZE (INCHES)
EXTERIOR SLABS, WALKS & CURBS	3000	3300	5.5	3/4"
WELLS	3000	3300	5.5	1"
FOOTINGS, SLABS	3000	3300	5.5	1.5"
				4"

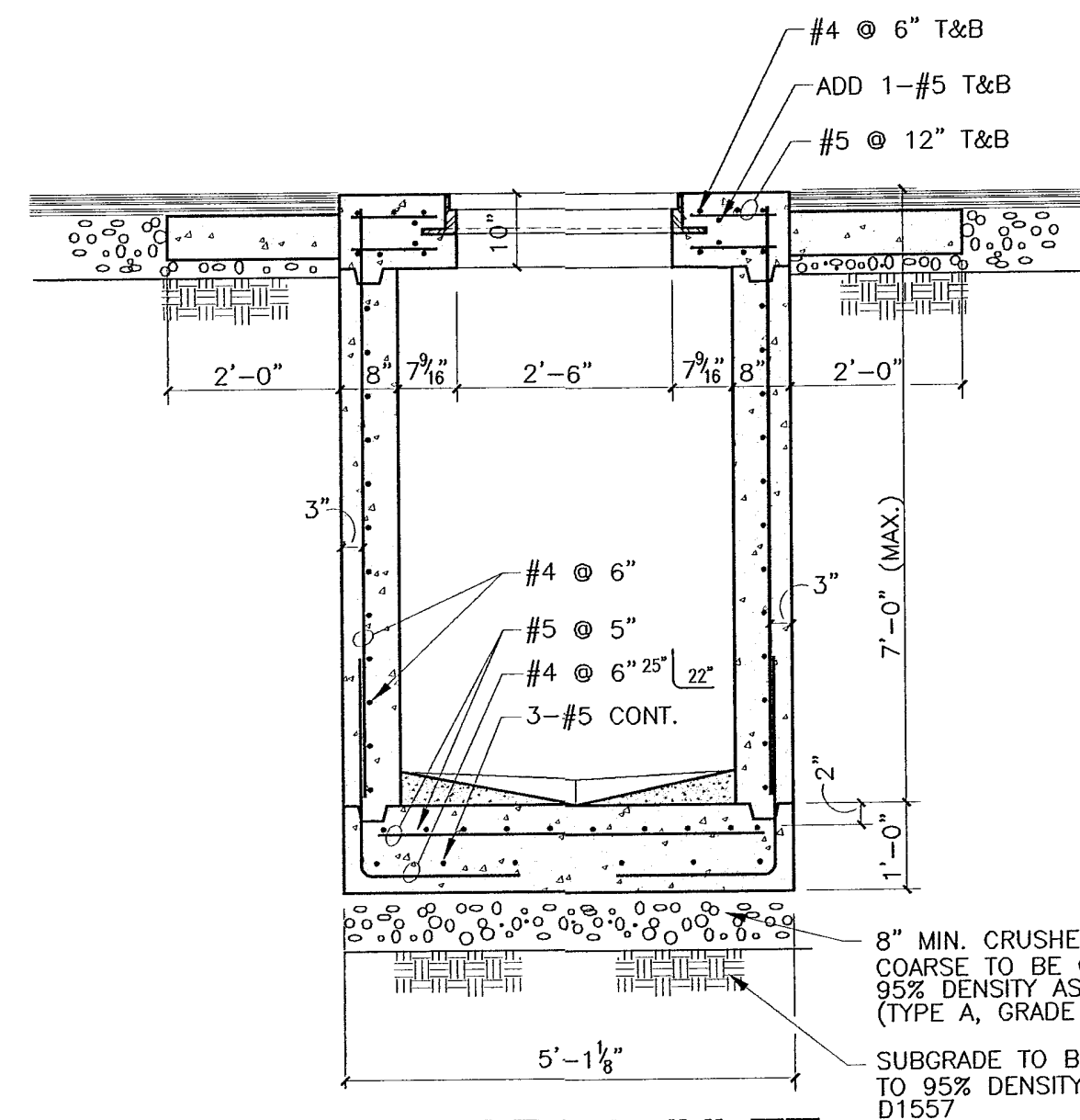
6. ALL EXPOSED CONCRETE, INCLUDING THAT UNDER THE ROOFED AREAS, SHALL BE DESIGNED WITH A MINIMUM OF 5% AIR-ENTRAINED MEETING ASTM C-260.
7. ALL CONCRETE DESIGNED WITH FLY-ASH MEETING ASTM C-618 SHALL HAVE 2 EXTRA CONCRETE CYLINDERS TAKEN FOR TESTS AT 42 AND 56 DAYS. NO CONCRETE SHALL BE DESIGNED WITH MORE THAN 15% FLY-ASH AS A SUBSTITUTE FOR CEMENT.
8. ALL DRIVES, WALKS AND RAMPS SHALL HAVE A COARSE BROOM FINISH TO MINIMIZE SKIDDING AND SLIPPING OF VEHICLES AND PEOPLE. ALL INTERIOR FLOORS SHALL HAVE A SMOOTH "HARD" TROWELED FINISH.

**CONCRETE REINFORCING**

1. ALL REINFORCING SHALL BE NEW BILLET GRADE 60, ASTM A-615.
2. ALL BAR SPICES SHALL BE 32 DIAMETERS FOR ALL LOCATIONS: IE FOOTINGS, WALLS, ETC.
3. ALL REINFORCING STEEL IN WALLS SHALL BE PLACED IN THE CENTER OF THE SLAB OR CORE AS APPLICABLE UNLESS SHOWN OTHERWISE ON THE DRAWINGS.

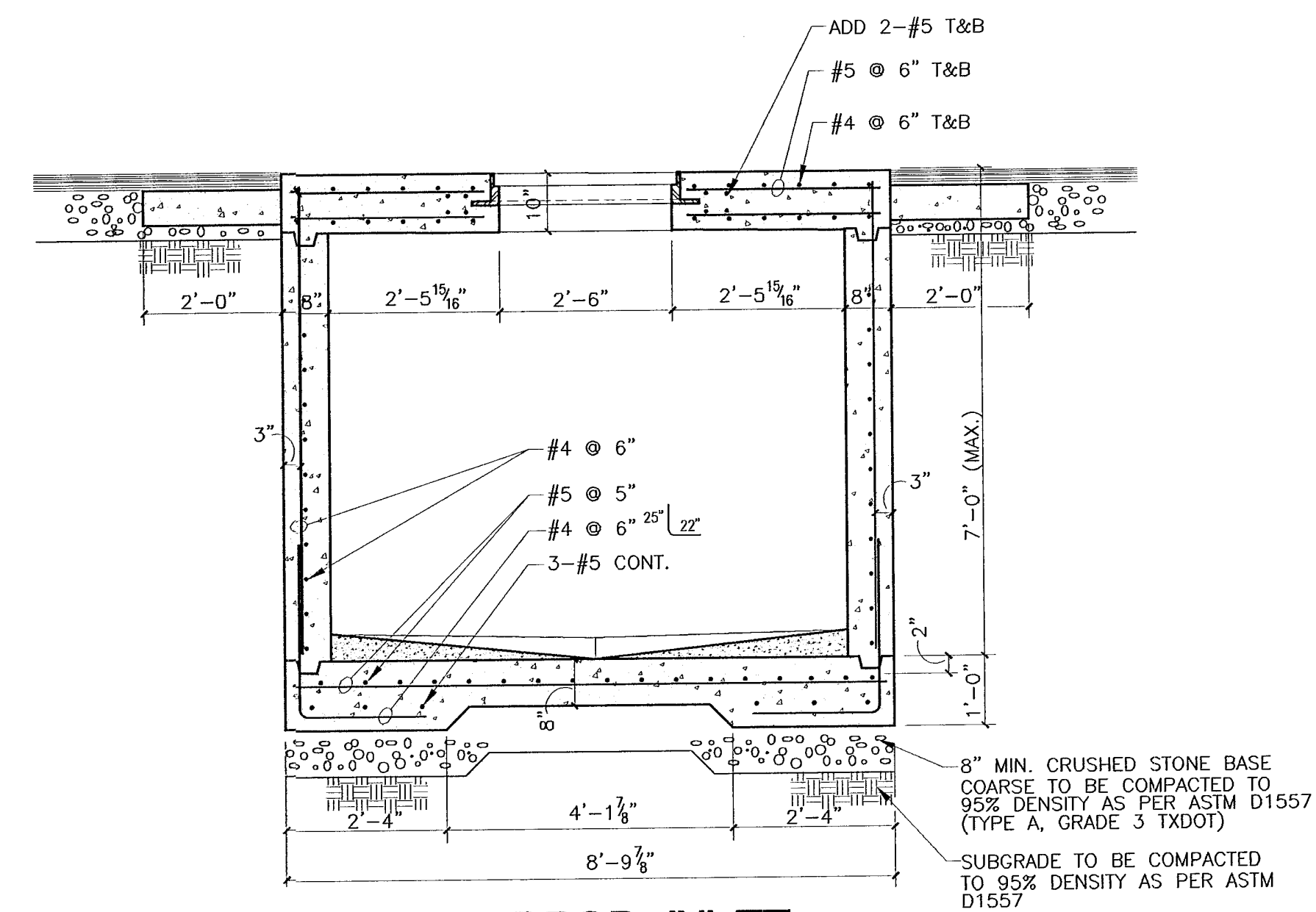
**STRUCTURAL STEEL**

1. AISC "CODE OF STANDARD PRACTICE OF STEEL BUILDINGS AND BRIDGES".
2. AISC "SPECIFICATIONS FOR THE DESIGN, FABRICATION, AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS", AND INCLUDING THE "COMMENTARY OF THE AISC SPECIFICATIONS".
3. AWS "CODE FOR WELDING IN BUILDING CONSTRUCTION", ELECTRODES, ASTM A-233, SERIES 70 FOR STRUCTURAL.
4. ALL BEAMS, PLATES AND OTHER STRUCTURAL SHAPES SHALL MEET ASTM A-992, GRADE 50.
5. ALL COLUMNS SHALL BE ASTM 508, GRADE B.
6. PRIME ALL METAL WITH PAINT MEETING FS IT-P-636, RED OXIDE.
7. SHRINKAGE-RESISTANT GROUT FOR ALL COLUMNS SHALL CONFORM TO CE (CORPS OF ENGINEERS) CRD C558, TYPE W, PREMIXED, FACTORY PACKAGED, FERROUS AGGREGATE MORTAR GROUTING.
8. STEEL ONLY.



**2-GRATE DROP INLET**

**5 SECTION**



**4-GRATE DROP INLET**

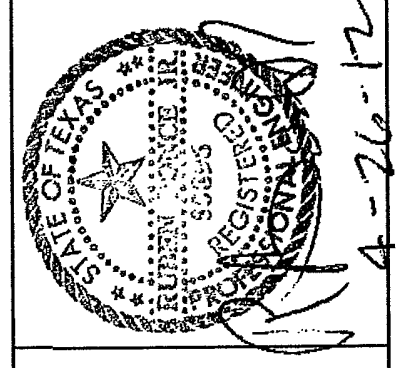
**3 SECTION**

DATE	REVISION	BY

414 Executive Center Blvd  
 Ste 200 El Paso TX 79902  
 P 915-532-7272  
 F 915-532-7373

**QUANTUM**  
 CONSULTANTS  
 INCORPORATED

Texas Registered Engineering Firm F-005146



SCALE:

HORIZONTAL:	XX-XX-1
VERTICAL:	XX-XX-1
CONTOUR INTERVAL:	XX-XX-1
DATE:	XX-XX-1
DESIGN BY:	
DRAWN BY:	
CHKD BY:	
APPVD BY:	
JOB NO.:	

PROJECT TITLE

**FRANKLIN HILLS UNIT EIGHT  
 SUBDIVISION  
 IMPROVEMENT PLANS**

EL PASO COUNTY, TEXAS

SHEET TITLE

SHEET NO.

**S-2**

OF SHEETS

**Pe** PONCE ENGINEERING, INC.  
 CONSULTING STRUCTURAL ENGINEERING

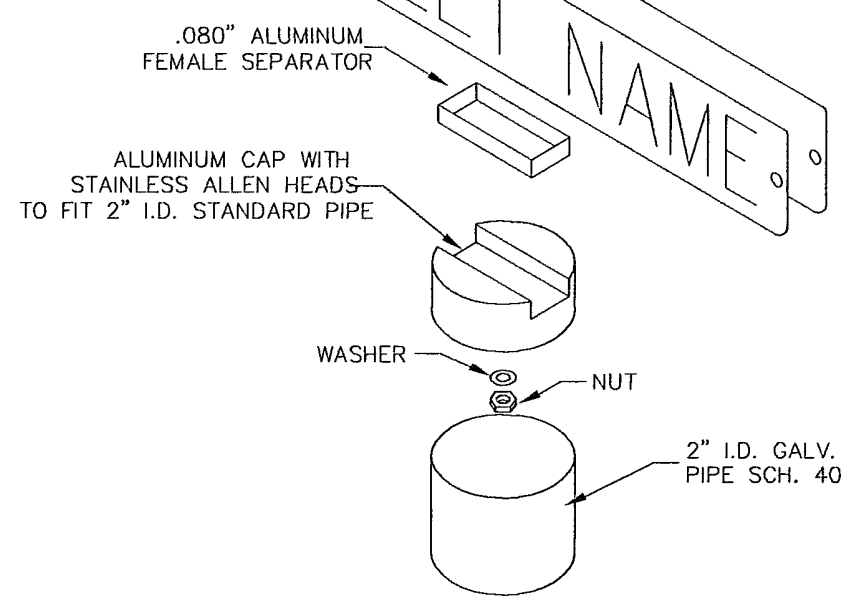
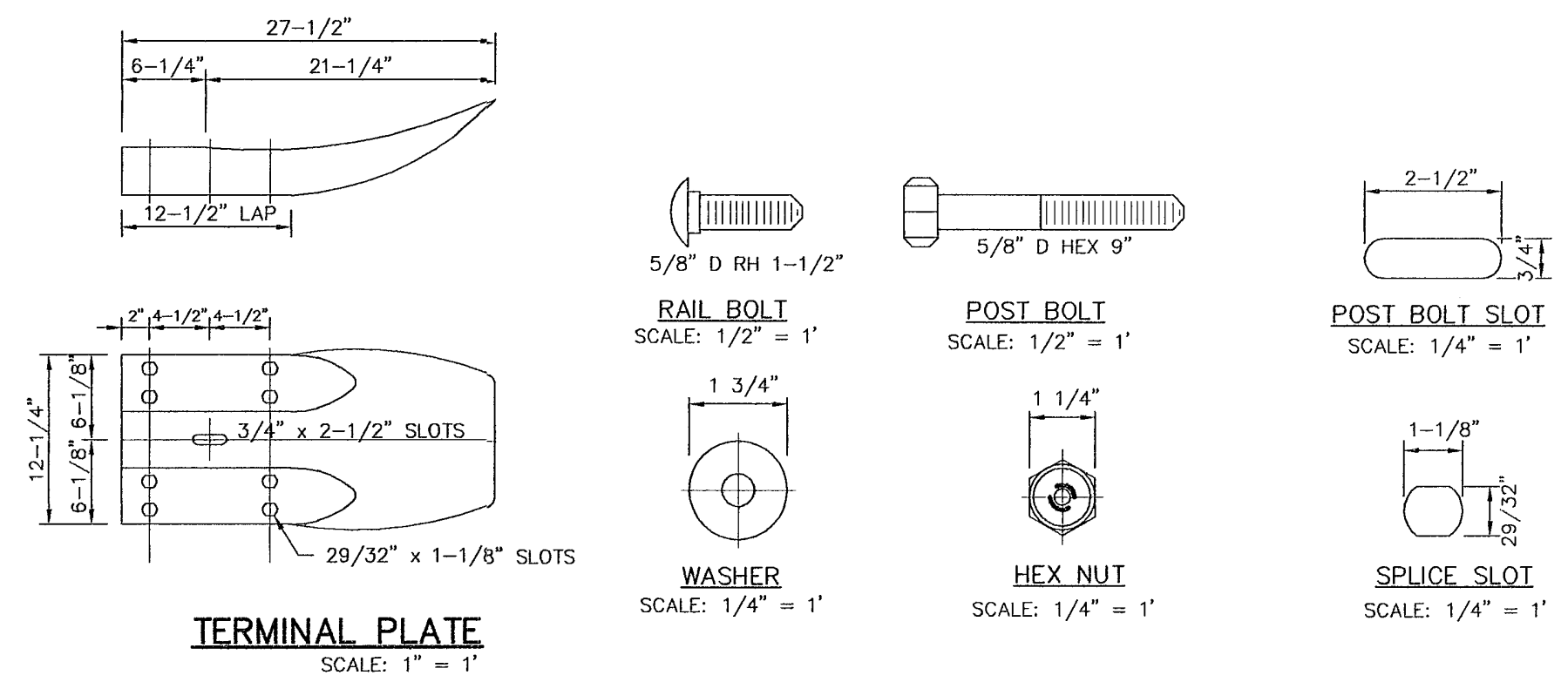
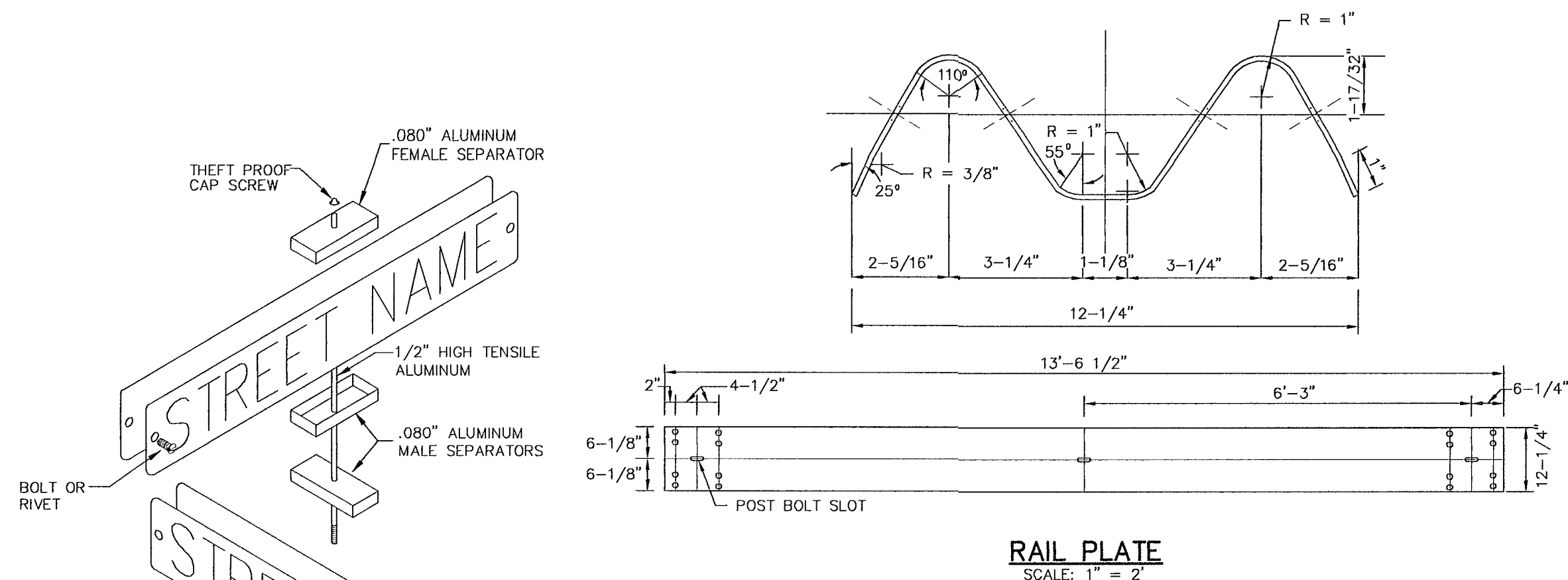
2417 WYOMING AVE.  
 EL PASO, TEXAS 79903  
 (915) 544-2610  
 (915) 544-1640 (FAX)

BRANCH OFFICE:  
 P.O. BOX 447  
 SUNLAND PARK, NM 88063  
 (505) 523-8812

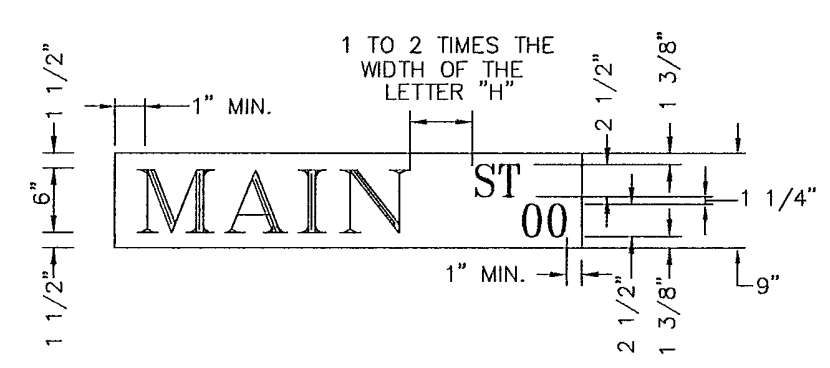
E-mail: ponceeng@aol.com

**CITY OF EL PASO  
SPECIFICATION FOR REFLECTORIZED  
STREET NAME SIGNS**

- COLOR OF SIGN:** THE FINISHED SIGN MUST HAVE A REFLECTORIZED GREEN BACKGROUND. THE GREEN MUST CONFORM WITH THE BUREAU OF PUBLIC ROADS HIGHWAY GREEN. THE LEGEND MUST BE REFLECTORIZED SILVER WHITE (GREEN REVERSE SCREENED BACKGROUND WITH SILVER COPY).
- LETTER DESIGN:** THE LETTERING OF ALL LEGENDS MUST BE UPPER CASE LETTERS IN ACCORDANCE WITH "STANDARD ALPHABETS FOR HIGHWAY SIGN" PUBLISHED BY THE FEDERAL HIGHWAY ADMINISTRATION.
- LETTER SPACING:** THE CONTROL FOR THE SPACING VALUES IN TRAFFIC LAYOUT IS THE DISTANCE RECOGNIZED AS AESTHETIC SPACING BETWEEN TWO STRAIGHT LETTERS (HN). A SPACING CONTROL OF TWO TIMES THE WIDTH OF THE STROKE OF THE LETTER SERIES TO BE USED MUST BE THE AESTHETIC CONTROL (100%). TWO AND ONE-HALF TIMES (2-1/2) THIS CONTROL MUST BE USED AS THE AESTHETIC WORD SPACE BETWEEN ELEMENTS IN THE PRIMARY LEGEND.
- LAYOUT:** THE MAXIMUM NUMBER OF LETTERS TO BE ACCOMMODATED ON A GIVEN LENGTH STREET NAME FACE MUST BE DETERMINED BY THE WIDEST LETTER SERIES POSSIBLE FOR THAT LEGEND AND THE SPACING CONTROL (100%) FOR THE SERIES USED MUST BE EXPANDED OR CONDENSED UP TO 25% IN 5% INCREMENTS.
- THE SPACING CONTROL (100%) FOR THE SERIES USED MUST BE EXPANDED OR CONDENSED UP TO 25% IN 5% INCREMENTS FOR THE END MARGIN WITH MINIMUM OF 1".
- THE WORD SPACE MUST BE EXPANDED UP TO 25% IN 5% INCREMENTS BUT NOT CONDENSED.
- SPACE BETWEEN PRIMARY AND BLOCK NUMBER AREA MUST BE 1/2 THE AESTHETIC WORD SPACE USED IN THE PRIMARY LEGEND.
- SIZE OF LEGEND:** FOR 9" STREET NAME SIGNS, THE PRIMARY LEGEND, OR STREET NAME MUST HAVE CAPITAL LETTERS SIX INCHES (6") HIGH AND ALL SECONDARY LEGENDS, INCLUDING THE SUFFIX, BLOCK NUMBERS, MUST HAVE UPPER CASE LETTERS TWO AND ONE-HALF INCHES (2 1/2") HIGH.
- SUFFIX LETTER SIZE FOR ALL LENGTH MUST BE 2 1/2" CAPITALS, C SERIES, EXCEPT THAT SERIES A OR B WHERE SUFFIX ABBREVIATION EXCEEDS TWO LETTERS, MAY BE USED.
- POSITION OF LEGEND:** EACH SIGN FACE WILL CONSIST OF THE STREET NAME, SUFFIX AND TWO ZEROS OF THE BLOCK NUMBER. THE ADDITIONAL NUMBERS OF THE BLOCK NUMBER WILL BE APPLIED BY THE CITY OF EL PASO. THE SUFFIX WILL BE LOCATED IN THE UPPER RIGHT CORNER AND THE BLOCK NUMBER IN THE LOWER RIGHT CORNER OF THE SIGN FACE AND THE STREET NAME CENTERED IN THE REMAINING SPACE.
- SIGN FABRICATION:** THE SIGN FACE MUST BE FABRICATED BY REVERSE SCREENING GREEN TRANSPARENT COLOR OVER SILVER REFLECTIVE SHEETING. TRANSPARENT COLORS MUST BE AS RECOMMENDED BY THE SHEETING MANUFACTURER. CUT-OUT OR APPLIED LEGENDS ARE NOT PERMITTED. SIGN FACE MUST BE COMPRISED OR ONE PIECE OR PANEL OF REFLECTIVE SHEETING.
- TYPE OF SHEETING:** ENGINEER GRADE REFLECTIVE SHEETING MUST BE USED IN THE FABRICATION OF THE STREET NAME SIGN FACES.



SIGN CLASS	SIGN LENGTH	PRIMARY LETTERS SIZE & SERIES	SUFFIX & BLOCK NUMBER SIZE AND SERIES
ARTERIAL	36"	6" C,D, SERIES	3" C SERIES
STREETS	42"	6" C,D, SERIES	3" C SERIES
	48"	6" A,B,C,D, SERIES	3" C SERIES



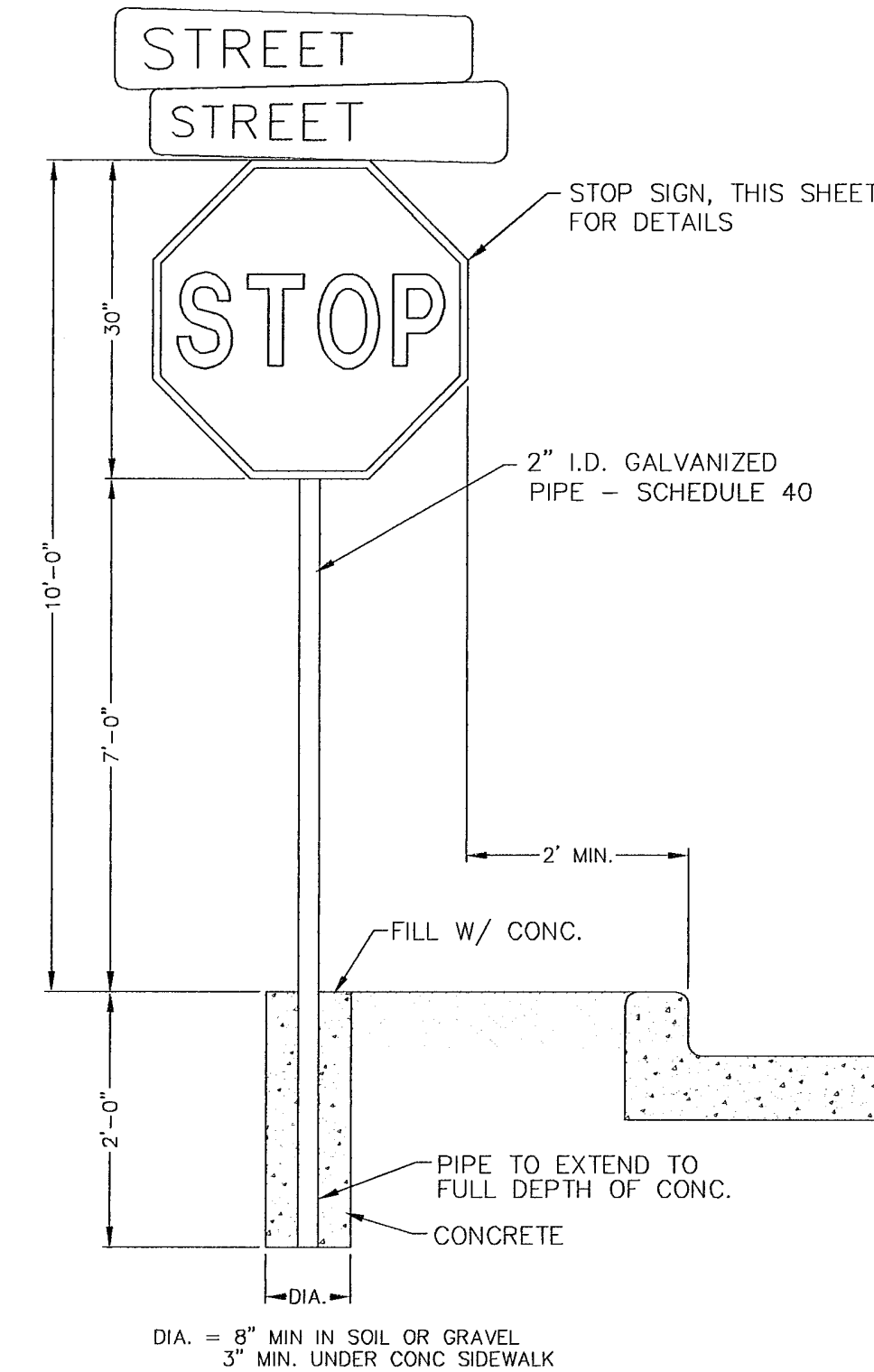
- NOTES:**
- WELD ALONG ITS LENGTH TO FORM VIRTUALLY SEAMLESS.
  - POST SHALL BE HOT-DIPPED ZINC GALVANIZED UNIFORMLY ON THE OUTSIDE WITH A NOMINAL ZINC WEIGHT OF 1.0 OUNCE PER SQUARE FOOT.
  - THE ZINC COATING IS TO BE OVER-COATED WITH A CHROMITE CONVERSION AND ACRYLIC COATING TO PROVIDE RESISTANCE TO RUSTING AND CORROSION.
  - THE INSIDE OF THE POST SHALL BE COATED WITH AN ORGANIC MATERIAL FOR PROTECTION AGAINST RUST.
  - BOTH ENDS ARE TO BE SQUARELY CUT WITHOUT FLARE.
  - POST SHALL BE FREE OF WARPS, CORROSION, OR OTHER DEFECTS.
  - RING WELDS OR SPLICES WILL NOT BE ACCEPTABLE.
  - BENDING STRENGTH AS SPECIFIED BY AASHTO FOR SCHEDULE 40 PIPE.
  - POST SHALL BE BUNDLE WITH METAL STRAPS AND SHALL NOT EXCEED 37 POST PER BUNDLE.

**SIGN POSTS SPECIFICATIONS**  
SCALE: N.T.S.

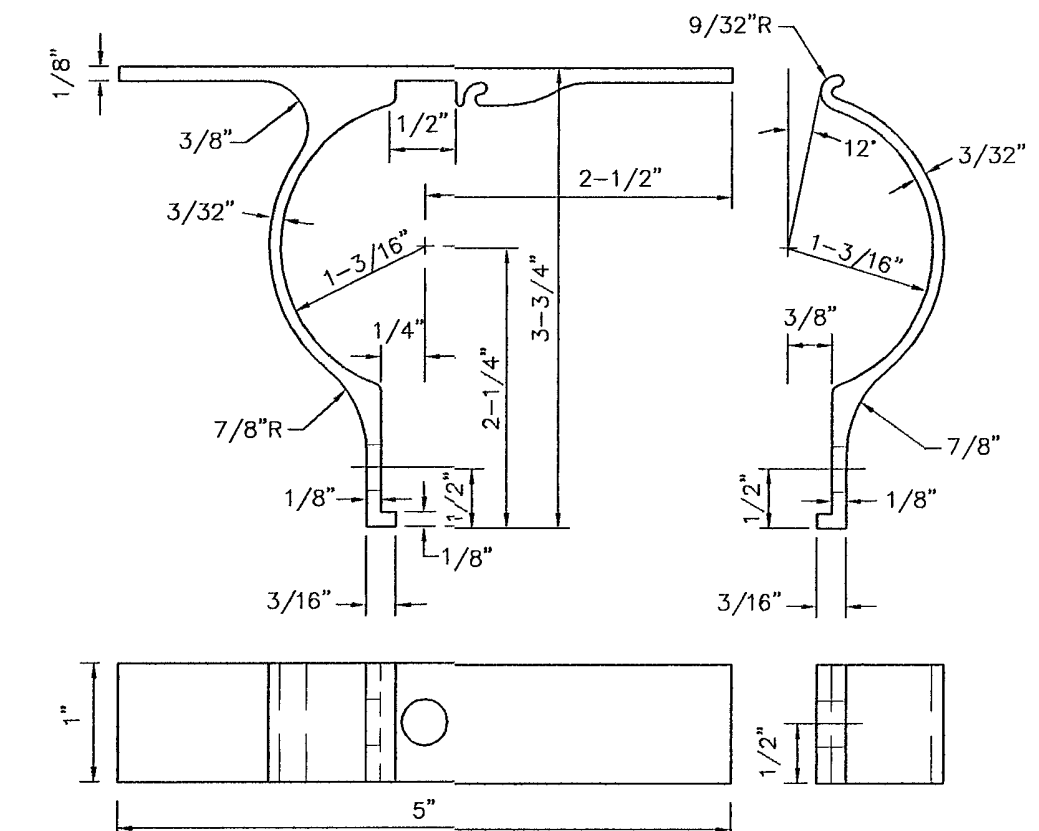
**SPECIFICATIONS FOR ALUMINUM SIGN BLANKS**

THESE SPECIFICATIONS DESCRIBE DETAILS AND MINIMUM REQUIREMENTS FOR ALUMINUM SIGN BLANKS, TO WHICH REFLECTIVE SHEETING WILL BE

- ALL MATERIALS SHALL BE NEW AND UNWEATHERED AND SHALL BE OF DOMESTIC ORIGIN, MILLED, ROLLED AND FINISHED IN DOMESTIC MILLS.
- SIGN BLANKS SHALL BE .080 GAUGE ALODIZED TREATED ALUMINUM, 5052-H38 ALLOY, FREE OF BURRS, CORROSION, WHITE RUST AND DIRT, SUITABLE FOR APPLICATION OF REFLECTIVE SHEETING APPLIED, WITHOUT FURTHER PREPARATION.
- EDGES OF BLANKS SHALL BE CUT TRUE AND SQUARE, CORNER RADIUS, HOLE DIAMETERS AND HOLE LOCATIONS SHALL BE AS DESCRIBED IN THE ALUMINUM SIGN BLANK BID D.H.T. STANDARD.
- ALL SIGN BLANKS WILL BE TREATED AS FOLLOWS:
  - DEGREASING**
    - VAPOR DEGREASING** - BY TOTAL IMMERSION OF SIGN BLANK IN A SATURATED VAPOR OF TRICHLOROETHYLENE OR PERCHLOROETHYLENE. TRADEMARK PRINTING SHALL BE REMOVE WITH LACQUER THINNER BEFORE DEGREASING.  
OR
    - ALKALINE DEGREASING** BY TOTAL IMMERSION OF THE SIGN BLANK IN A TANK CONTAINING ALKALINE SOLUTIONS, CONTROLLED AND TITRATED TO THE SOLUTION MANUFACTURER'S SPECIFICATION FOR TIME, TEMPERATURE AND CONCENTRATION. IMMERSION TIME SHALL DEPEND UPON THE AMOUNT OF SOIL PRESENT, GAUGE OF THE METAL AND SOLUTION STRENGTH, RINSE THOROUGHLY WITH RUNNING WATER.
  - ETCHING**
    - ACID ETCH** - ETCH WELL IN 6-8% PHOSPHORIC ACID SOLUTION AT 100 DEGREES F OF PROPRIETARY ACID ETCHING SOLUTION. RINSE THOROUGHLY WITH RUNNING WATER.  
OR
    - ALKALINE ETCH** - ETCH WELL THE PRE-CLEANED ALUMINUM SURFACE IN AN ALKALINE ETCHING MATERIAL THAT IS CONTROLLED BY TITRATION. USE TIME, TEMPERATURE, AND CONCENTRATION SPECIFIED BY THE SOLUTION MANUFACTURER. RINSE THOROUGHLY. REMOVE SMUT WITH AN ACIDIC CHROMIUM COMPOUND-TYPE SOLUTION AS SPECIFIED BY THE SOLUTION MANUFACTURER AND THEN RINSE THOROUGHLY.
  - CHROMATE CONVERSION COATING**  
COAT THE ALUMINUM BLANKS ACCORDING TO THE CHROMATE CONVERSION COATING MANUFACTURER'S INSTRUCTIONS. THE COATING SHALL CONFORM TO ASTM-B448067, CLASS 2, AND SHALL RANGE IN COLOR FROM SILVERY IRIDESCENT TO PALE YELLOW. THE COATING WEIGHT SHALL BE 10 TO 35 MG PER SQ. FT. WITH A MEDIAN OF 25 MG PER SQ. FT. AS THE OPTIMUM COATING WEIGHT.

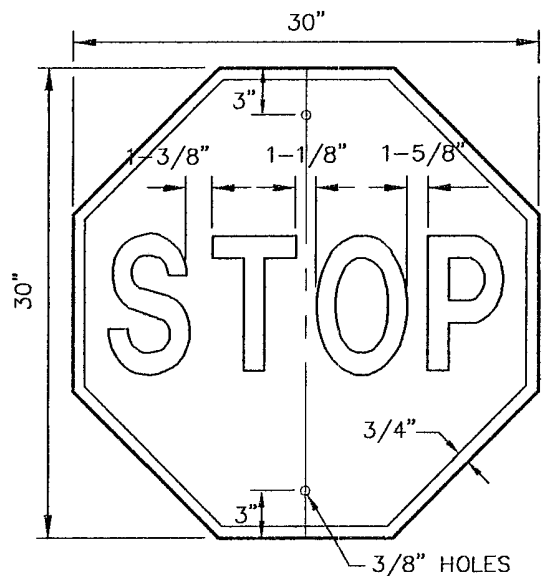


**SIGN POST INSTALLATION**  
SCALE: N.T.S.

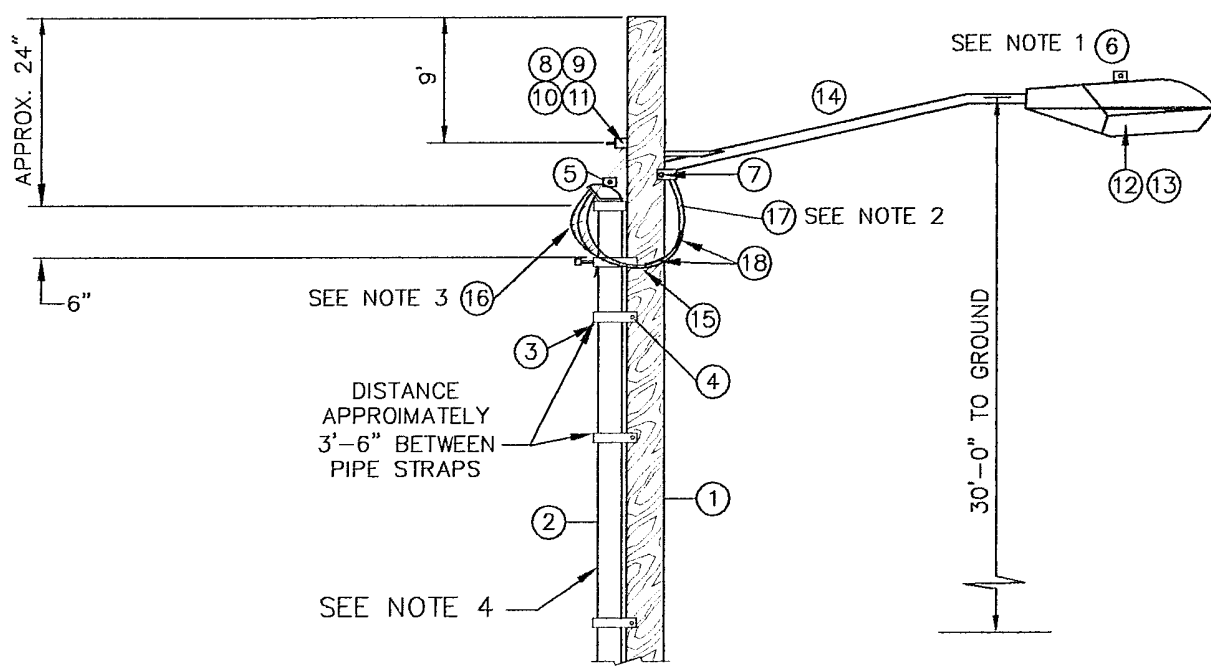


- NOTES:**
- ALL HOLES 3/8" PUNCH.
  - FILLETS & ROUNDS 1/16" = R.
  - FURNISH THE FOLLOWING HARDWARE FOR EACH BRACKET :
    - 1 - 5/16" x 3/4" BOLTS
    - 1 - 5/16" x 1 1/4" BOLT
    - 2 - 5/16" x NUTS & WASHERS
    - 2 - FLAT WASHERS
  - THE BRACKET IS TO BE MADE FROM HIGH STRENGTH ALUMINUM ALLOY. THE BRACKET IS TO EMPLOY AN EXTRUDED INTERLOCKING FEATURE OFFERING A RIGID MEANS OF ATTACHING A FLAT SIGN TO A STANDARD 2" I.D. TUBULAR POST.

**ALUMINUM SIGN CLAMP BRACKET**  
SCALE: N.T.S.



**STOP SIGN DETAIL**  
SCALE: 1" = 5"



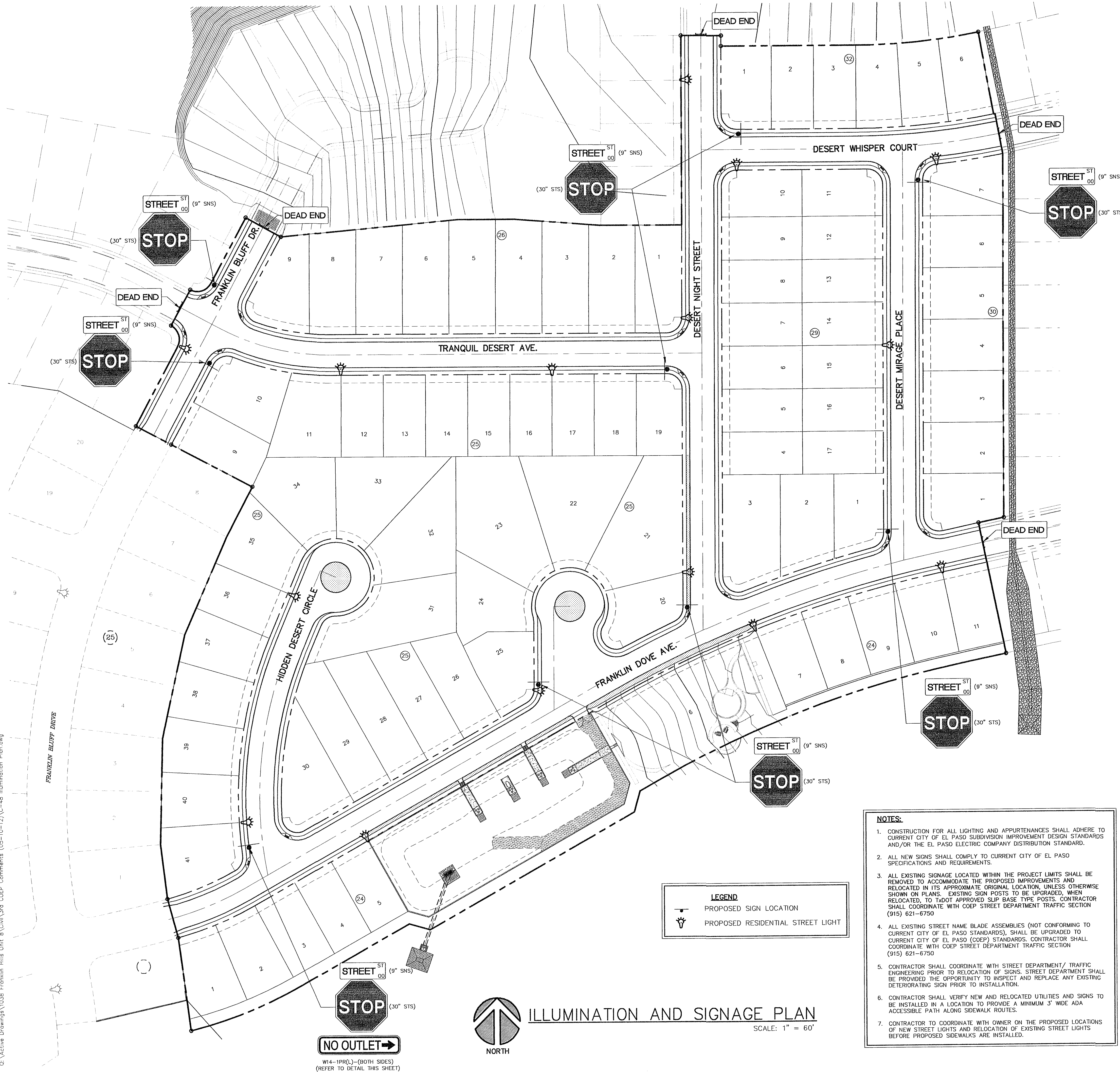
**RESIDENTIAL STREET LIGHT WOOD POLE DETAIL**  
SCALE: N.T.S.

- KEYED NOTES**
- MOUNT SO THAT PHOTO CELL IS FACING NORTH.
  - ITEM 17 SHALL NOT BE SPLICED INSIDE ITEM 14.
  - THE WIRE LEADS FROM THE WEATHER HEAD TO THE MAST ARM SHALL HAVE A MINIMUM 4" DRIP LOOP BELOW THE WEATHER HEAD.
  - THE CONDUIT RISER SHALL BE INSTALLED ON THE BACK OF THE WOOD (AWAY FROM THE STREET)
- DESIGN NOTES**
- INSTALLATION MUST COMPLY WITH ALL LOCAL CODE REQUIREMENTS.
  - FOR ANY CLARIFICATION, EXCEPTIONS OR QUESTIONS REGARDING THIS STANDARD, CALL THE EL PASO ELECTRIC COMPANY DISTRIBUTION DESIGN DEPARTMENT.

**NOTES:**  
DETAILS SHOWN ON THIS SHEET ARE FOR REFERENCE PURPOSES ONLY. REFER TO CURRENT CITY OF EL PASO SUBDIVISION IMPROVEMENT DESIGN STANDARDS FOR MORE ADDITIONAL SPECIFICATIONS.

<p><b>REFERENCES - BENCHMARK</b> CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4382.20 (CITY DATUM) CONTOUR INTERVAL: ONE (1) FOOT</p>	<p>DATE</p>	<p>REVISION</p>	<p>BY</p>
	<p>414 Executive Center Blvd Ste 200 El Paso TX 79902 P 915.532.7272 F 915.532.7373</p>		
	<p><b>QUANTUM</b> ENGINEERING INCORPORATED Texas Registered Engineering Firm F-005146</p>		
<p><b>FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS</b> EL PASO COUNTY, TEXAS</p>			
<p><b>TYPICAL SIGN DETAILS</b></p>			
<p>SHEET NO.</p>			
<p><b>C-47</b></p>			
<p>47 OF 58 SHEETS</p>			

May 11, 2012 8:53am brj  
 C:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3rd COEP Comments (05-10-12)\C-48 Illumination Plan.dwg



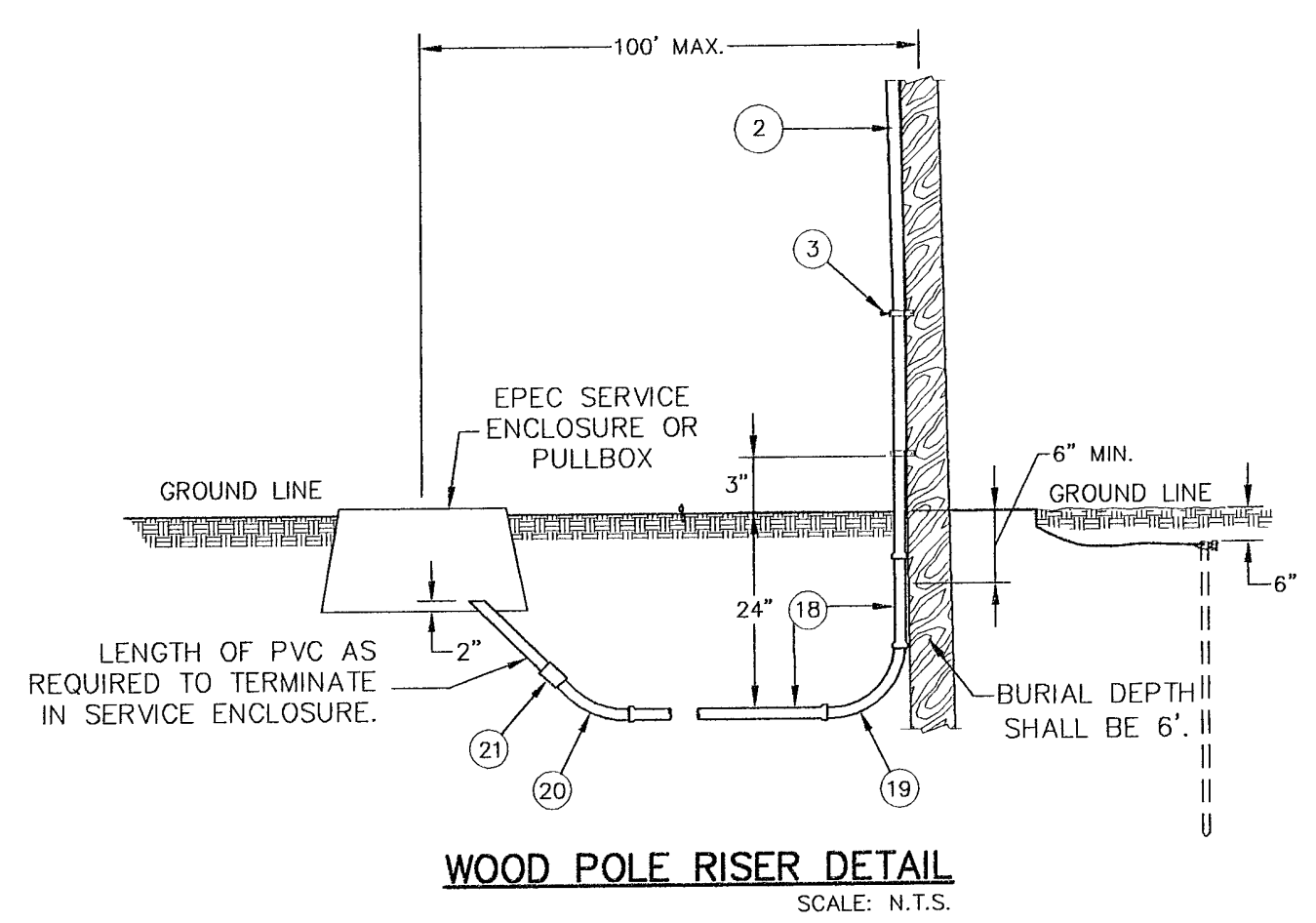
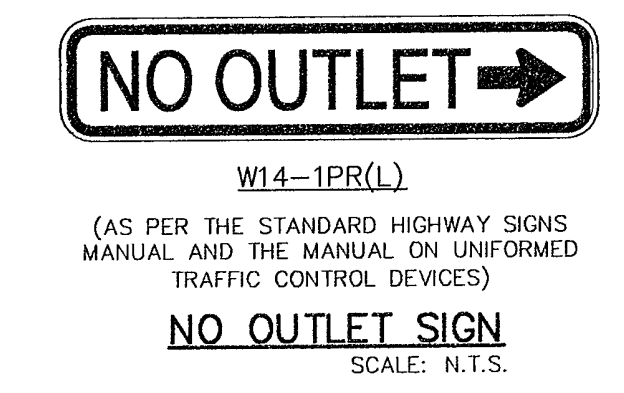
**LEGEND**  
 [Symbol] PROPOSED SIGN LOCATION  
 [Symbol] PROPOSED RESIDENTIAL STREET LIGHT

**ILLUMINATION AND SIGNAGE PLAN**  
 SCALE: 1" = 60'

- NOTES:**
- CONSTRUCTION FOR ALL LIGHTING AND APPURTENANCES SHALL ADHERE TO CURRENT CITY OF EL PASO SUBDIVISION IMPROVEMENT DESIGN STANDARDS AND/OR THE EL PASO ELECTRIC COMPANY DISTRIBUTION STANDARD.
  - ALL NEW SIGNS SHALL COMPLY TO CURRENT CITY OF EL PASO SPECIFICATIONS AND REQUIREMENTS.
  - ALL EXISTING SIGNAGE LOCATED WITHIN THE PROJECT LIMITS SHALL BE REMOVED TO ACCOMMODATE THE PROPOSED IMPROVEMENTS AND RELOCATED IN ITS APPROXIMATE ORIGINAL LOCATION, UNLESS OTHERWISE SHOWN ON PLANS. EXISTING SIGN POSTS TO BE UPGRADED, WHEN RELOCATED, TO TxDOT APPROVED SLIP BASE TYPE POSTS. CONTRACTOR SHALL COORDINATE WITH COEP STREET DEPARTMENT TRAFFIC SECTION (915) 621-6750
  - ALL EXISTING STREET NAME BLADE ASSEMBLIES (NOT CONFORMING TO CURRENT CITY OF EL PASO (COEP) STANDARDS, SHALL BE UPGRADED TO CURRENT CITY OF EL PASO (COEP) STANDARDS. CONTRACTOR SHALL COORDINATE WITH COEP STREET DEPARTMENT TRAFFIC SECTION (915) 621-6750
  - CONTRACTOR SHALL COORDINATE WITH STREET DEPARTMENT/ TRAFFIC ENGINEERING PRIOR TO RELOCATION OF SIGNS. STREET DEPARTMENT SHALL BE PROVIDED THE OPPORTUNITY TO INSPECT AND REPLACE ANY EXISTING DETERIORATING SIGN PRIOR TO INSTALLATION.
  - CONTRACTOR SHALL VERIFY NEW AND RELOCATED UTILITIES AND SIGNS TO BE INSTALLED IN A LOCATION TO PROVIDE A MINIMUM 3' WIDE ADA ACCESSIBLE PATH ALONG SIDEWALK ROUTES.
  - CONTRACTOR TO COORDINATE WITH OWNER ON THE PROPOSED LOCATIONS OF NEW STREET LIGHTS AND RELOCATION OF EXISTING STREET LIGHTS BEFORE PROPOSED SIDEWALKS ARE INSTALLED.

ITEM NO.	DESCRIPTION	STOCK/ DSO NO.	QTY. PER LIGHT
1	POLE, 35 FT.-CLASS IV	009-035	1
2	SCHEDULE 80 1" PVC CONDUIT	017-280	30'
3	PIPE STRAP FOR 1" CONDUIT, 2-HOLE	017-283	9
4	NAIL, STAINLESS STEEL SCREW 2.5"	014-427	25
5	SERVICE ENTRANCE CAP FOR 1" PVC CONDUIT	017-281	1
6	PHOTOCELL, 240V-SEE NOTE 1	021-225	1
7	LAG BOLT, 3/8" X 3"	002-343	2
8	MACHINE BOLT, 5/8" X 12"	002-470	1
9	SQUARE GALV. WASHER, 2 1/4" X 2 1/4"	002-760	1
10	COIL-SPRING WASHER, 5/8"	002-786	1
11	LOCK NUT, 5/8"	002-705	1
12	LUMINAIRE, 100W H.P.S.	021-335	1
13	HPS LAMP, 100W	021-085	1
14	MAST ARM, 6" X 1 1/4"	021-200	1
15	COPPER CABLE, #12, SOLID, 600V, BLUE	013-702	60'
16	CABLE, #10, 2 CONDUCTOR, 600V, UF	013-600	8'
17	SLEEVES, #12-10	005-140	2
18	1" PVC CONDUIT	017-299	AS REQUIRED
19	1" PVC 90° ELBOW	017-297	1
20	1" PVC 45° ELBOW	017-298	1
21	1" PVC COUPLING	017-296	1

- NOTES:**
- FOR STREET NAME SIGNAGE DETAILS, SEE SHEET C-47.
  - FOR STOP SIGNAGE DETAILS, SEE SHEET C-47.
- NOTES:**
- ALL ROADWAYS INTERSECTING EXISTING PUBLIC ROADWAYS SHALL REMAIN COMPLETELY CLOSED FOR PUBLIC USE, UNTIL ACCEPTED FOR MAINTENANCE BY THE CITY.
- NOTES:**
- ALL STREET LIGHTS SHALL BE LOCATED WITHIN THE PARKWAY, A MINIMUM OF 24" AWAY FROM BACK OF CURB.
  - DETAILS SHOWN ON THIS SHEET ARE FOR REFERENCE PURPOSES ONLY. CONSTRUCTION FOR ALL LIGHTING AND APPURTENANCES SHALL ADHERE TO CURRENT CITY OF EL PASO SUBDIVISION IMPROVEMENT DESIGN STANDARDS.



**NOTE:**  
 DETAILS SHOWN ON THIS SHEET ARE FOR REFERENCE PURPOSES ONLY. REFER TO CURRENT CITY OF EL PASO SUBDIVISION IMPROVEMENT DESIGN STANDARDS FOR ADDITIONAL SPECIFICATIONS.

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT**  
**SUBDIVISION**  
**IMPROVEMENT PLANS**  
 EL PASO COUNTY, TEXAS

**SHEET TITLE**  
 ILLUMINATION AND SIGNAGE PLAN

**SHEET NO.**  
**C-48**  
 48 OF 58 SHEETS

**REFERENCES - BENCHMARK**  
 CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET. ELEVATION = 4362.20 (CITY DATUM)  
 CONTOUR INTERVAL: ONE (1) FOOT

**QUANTUM**  
 CONSULTANTS  
 INCORPORATED  
 414 Executive Center Blvd  
 Ste 200 El Paso TX 79902  
 P 915.532.7272  
 F 915.532.7373  
 Texas Registered Engineering Firm F-005146

**SCALE:**  
 HORIZONTAL: 1" = 60'  
 VERTICAL: N/A  
 CONTOUR INTERVAL: N/A  
 DATE: 05-10-2012  
 DESIGN BY: M.A.G.  
 DRAWN BY: C.A.D.  
 CHKD BY: R.A.G.  
 APPVD BY: R.A.G.  
 JOB NO.: 1038



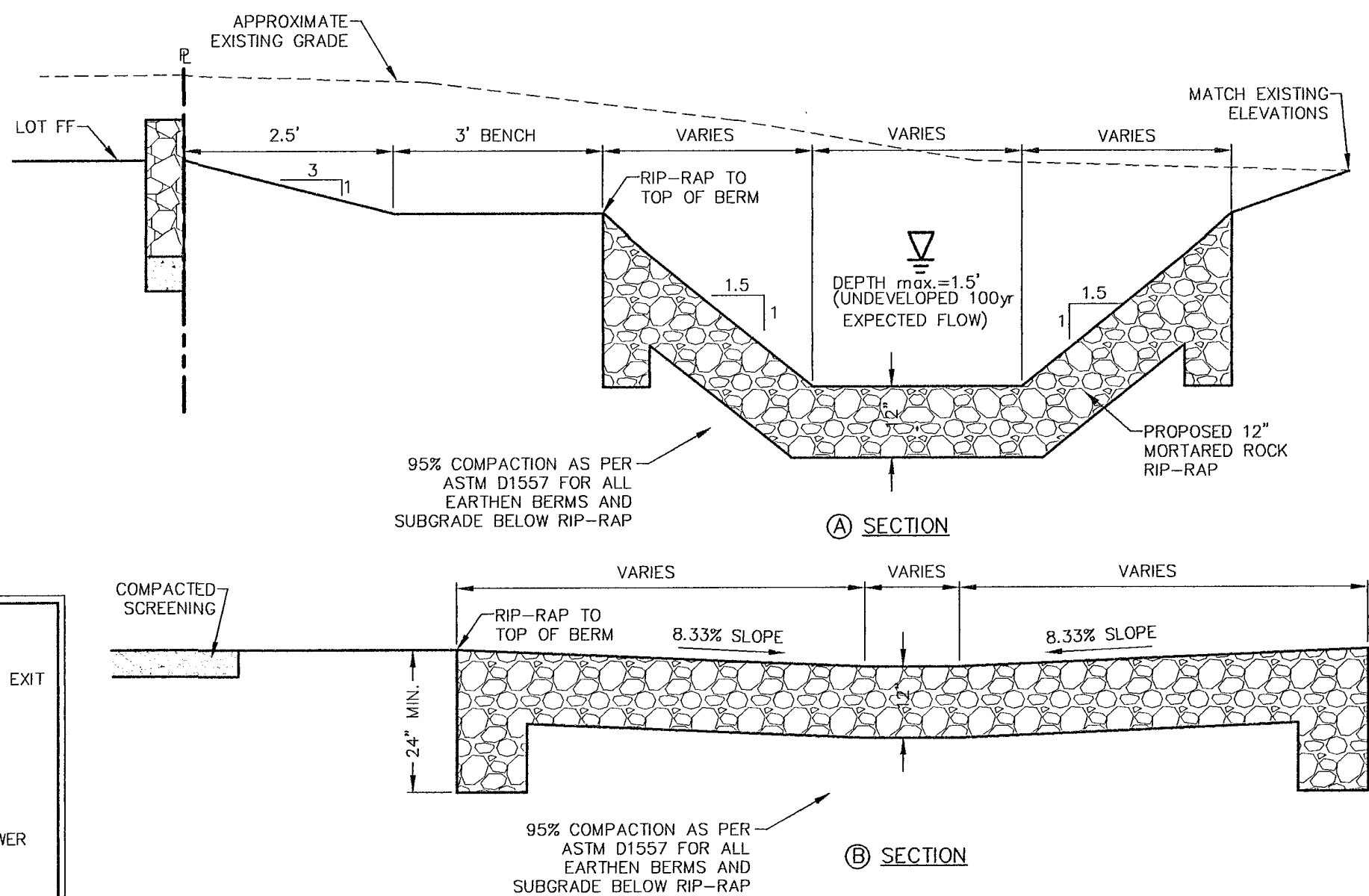
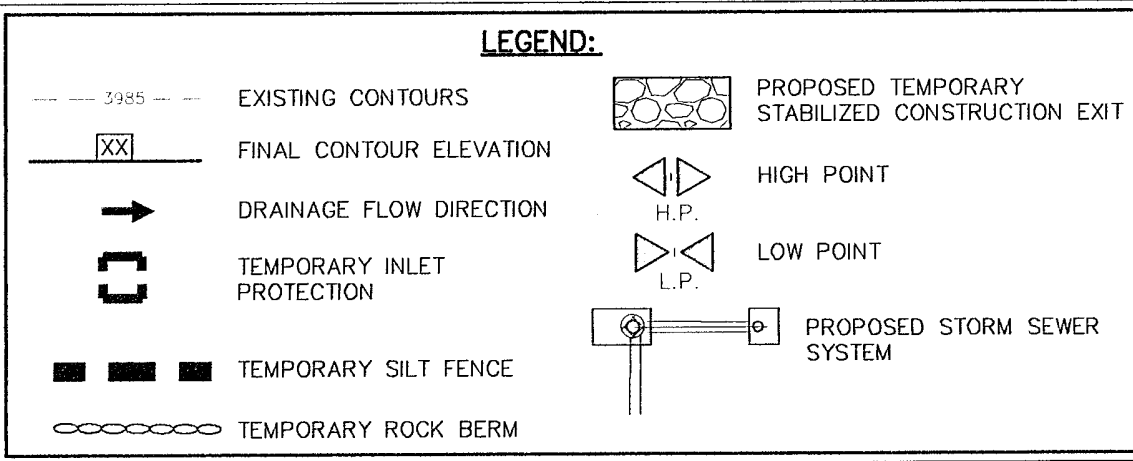
**TEMPORARY SWPPP BERM USAGE GUIDELINES:**

A TEMPORARY EARTHEN BERM MAY BE USED TO INTERCEPT RUNOFF AND DIVERT IT AROUND UNSTABILIZED AREAS OR TO DIVERT SEDIMENT LADEN RUNOFF TO AN EROSION CONTROL DEVICE (SEDIMENT BASIN OR TRAP, ROCK FILTER DAM, ETC.).

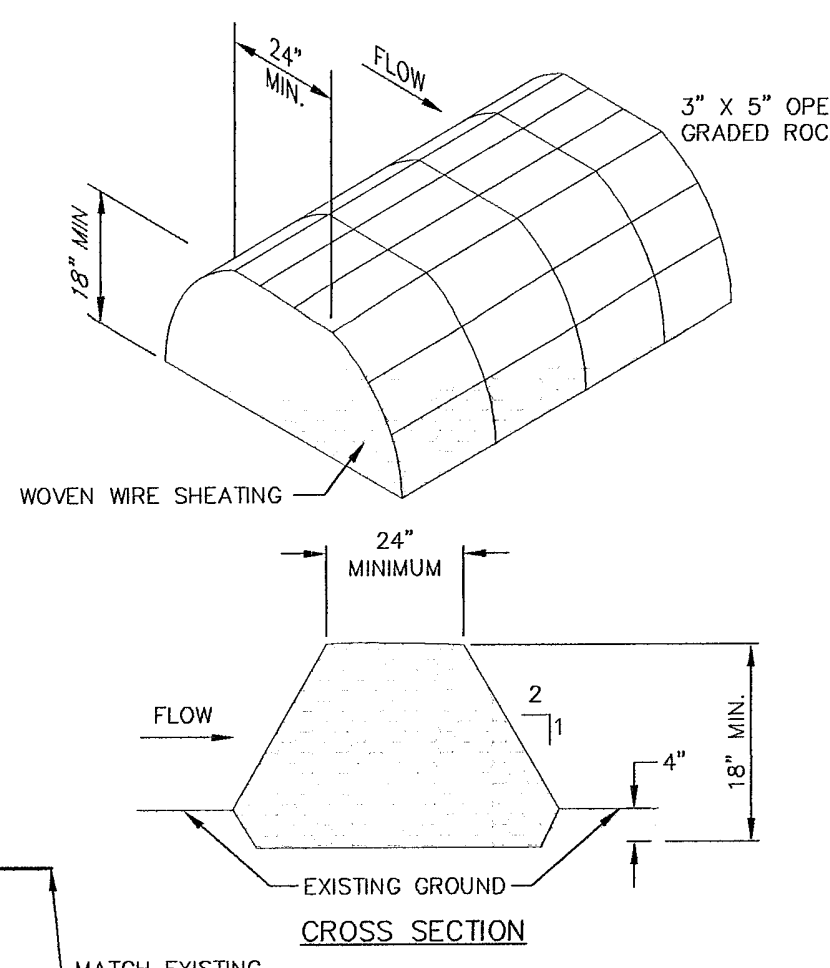
THE DRAINAGE AREA CONTRIBUTING RUNOFF TO A TEMPORARY EARTHEN BERM SHOULD NOT EXCEED 5 ACRES. THE SPACING OF EARTHEN BERMS SHOULD BE AS FOLLOWS:

AREAS ABOVE EARTHEN BERM	GREATER THAN 10%	5 - 10%	LESS THAN 5%
MAXIMUM DISTANCE BETWEEN EARTHEN BERMS	100'	200'	300'

INTERCEPTED RUNOFF FLOWING ALONG AN EARTHEN BERM SHOULD OUTLET TO A STABILIZED AREA (VEGETATION, ROCK, ETC.).

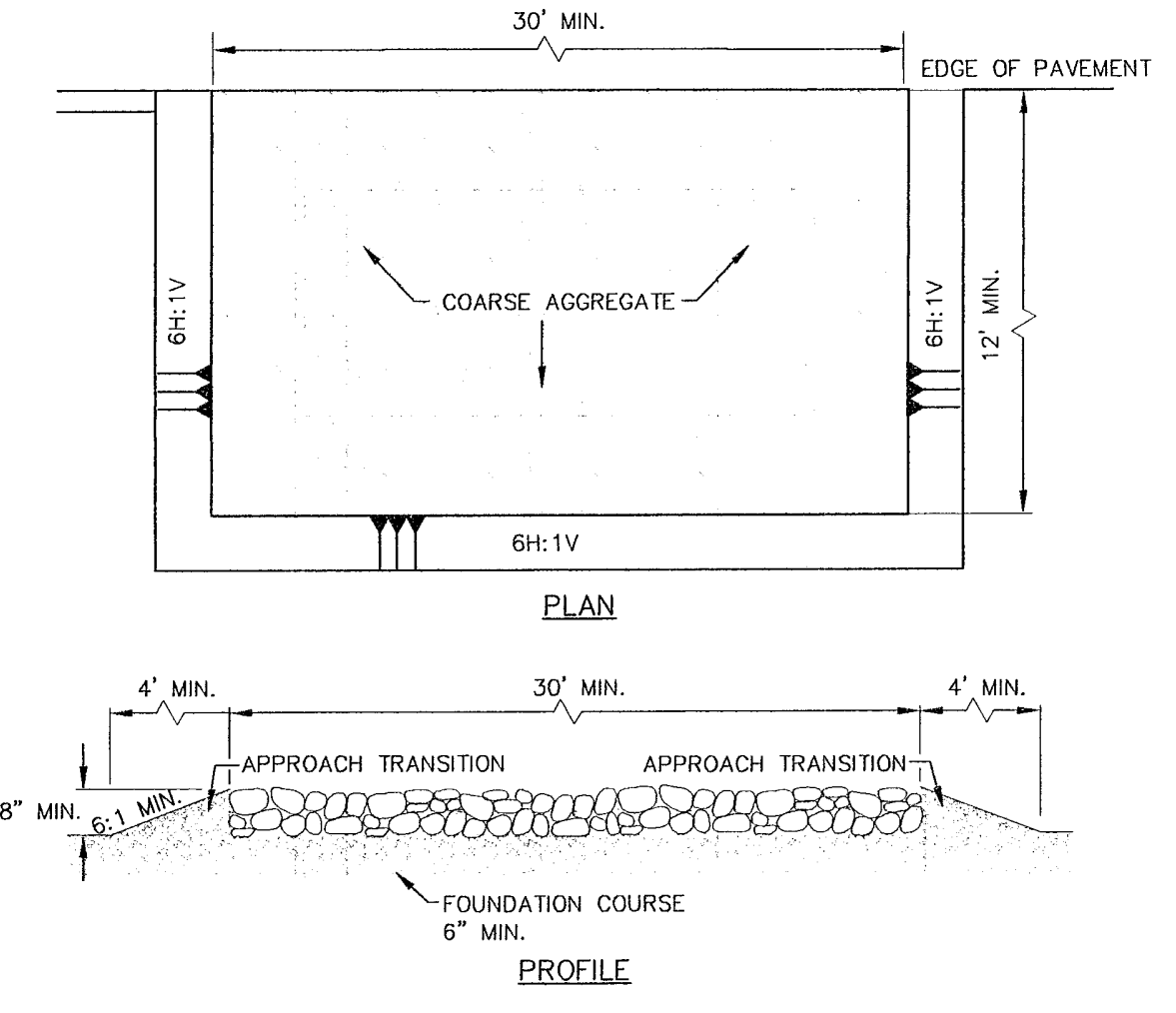


**TYPICAL TEMPORARY DIVERSION BERM AND MORTARED DRAINAGE SWALE CONSTRUCTION**  
SCALE: N.T.S.



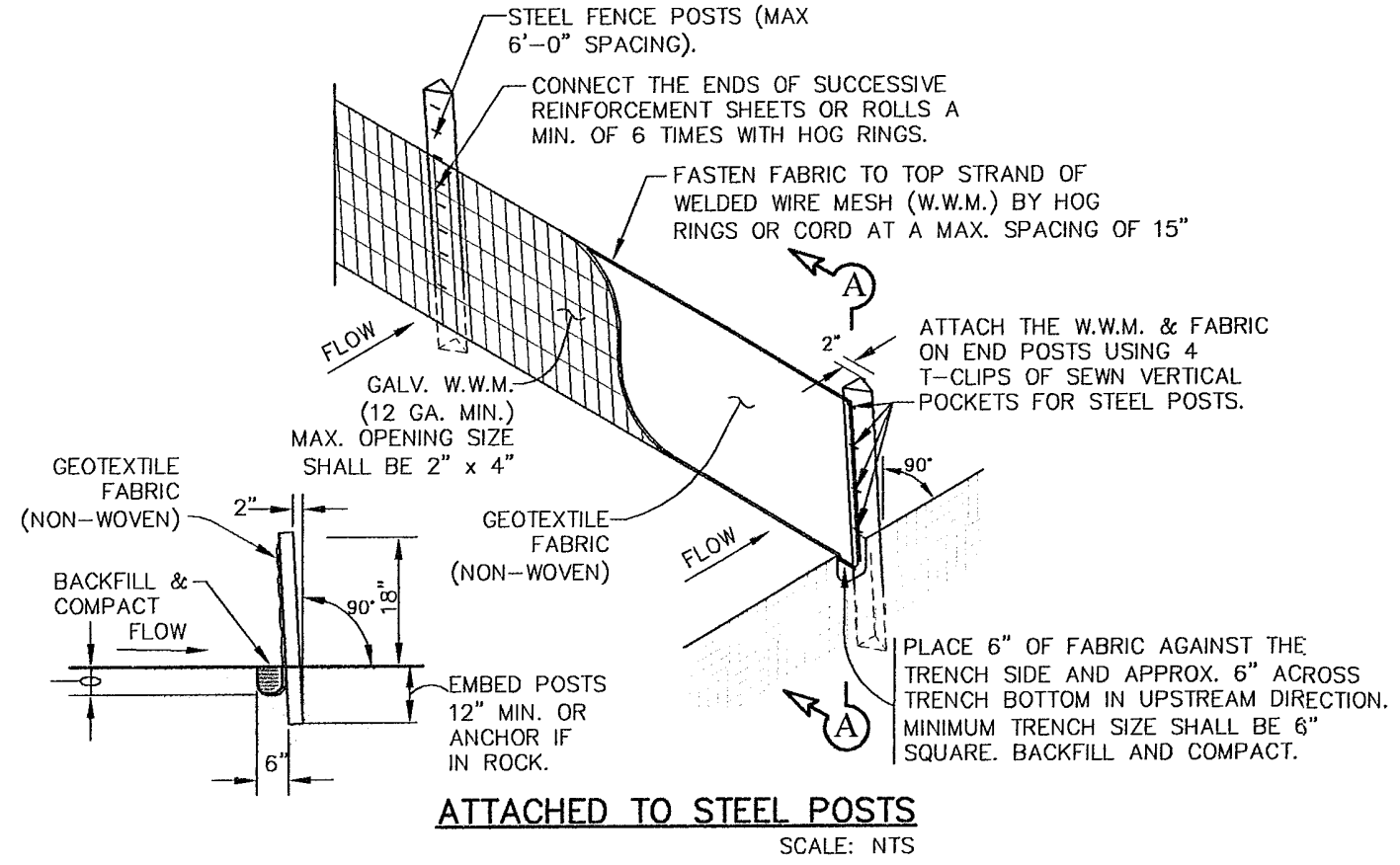
**TEMPORARY ROCK BERM DETAIL**  
SCALE: N.T.S.

- ROCK BERM NOTES:**
- USE ONLY OPEN GRADED ROCK (4" X 8") FOR STREAM FLOW CONDITIONS. USE OPEN GRADED ROCK (3" X 5") FOR OTHER CONDITIONS.
  - THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING A MAXIMUM 1" OPENING AND A MINIMUM WIRE DIAMETER OF 20GA. ROCK BERMS IN CHANNEL APPLICATIONS SHALL BE ANCHORED FIRMLY INTO THE SUBSTRATE A MINIMUM OF 6" WITH TEE POSTS OR WITH #5 OR #6 REBAR, WITH A MAXIMUM SPACING OF 48" ON CENTER.
  - THE ROCK BERM SHALL BE INSPECTED WEEKLY AND THE STONE AN/OR FABRIC CORE-WOVEN SHEATHING SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED; DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC, ETC.
  - WHEN SILT REACHES A DEPTH EQUAL TO ONE-THIRD THE HEIGHT OF THE BERM OR 6" WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF ON AN APPROVED SITE AND IN A MANNER THAT WILL NOT CREATE A SILTRATION PROBLEM.
  - DAILY INSPECTION SHALL BE MADE ON SEVERE-SERVICE ROCK BERMS; SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6".
  - WHEN THE SITE IS COMPLETELY STABILIZED, THE ROCK BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.



- GENERAL NOTES:**
- THE LENGTH OF THE TYPE 1 CONSTRUCTION EXIT SHALL BE AS INDICATED ON THE PLANS, BUT NOT LESS THAN 30'.
  - THE COARSE AGGREGATE SHOULD BE OPEN GRADED WITH A SIZE OF 4" TO 8".
  - THE APPROACH TRANSITIONS SHOULD BE NO STEEPER THAN 6:1 AND CONSTRUCTED AS DIRECTED BY THE ENGINEER.
  - THE CONSTRUCTION EXIT FOUNDATION COURSE SHALL BE FLEXIBLE BASE, BITUMINOUS CONCRETE, PORTLAND CEMENT CONCRETE, OR OTHER MATERIAL AS APPROVED BY THE ENGINEER.
  - THE CONSTRUCTION EXIT SHALL BE GRADED TO ALLOW DRAINAGE TO A SEDIMENT TRAPPING DEVICE.
  - THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY THE ENGINEER.

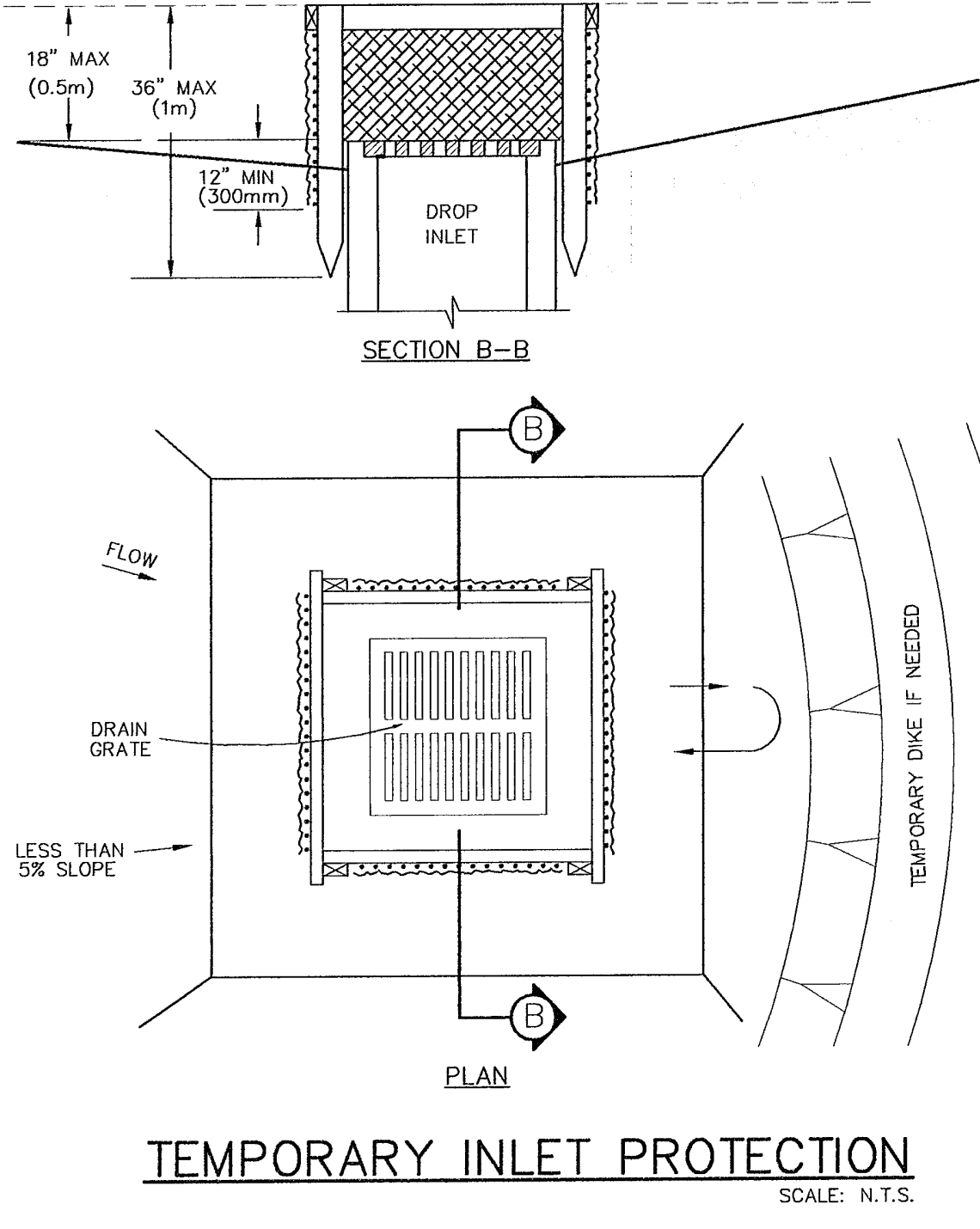
**TEMPORARY CONSTRUCTION EXIT (TYPE I)**  
SCALE: N.T.S.



- SEDIMENT CONTROL FENCE NOTES:**
- STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 12".
  - THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF THE FLOW. WHERE FENCE CAN NOT BE TRENCHED INTO THE SURFACE (E.G. PAVEMENT) THE FABRIC SHALL BE HEIGHTENED DOWN WITH ROCK OR 1" X 4" LUMBER SECURELY FASTENED TO THE SURFACE, ON THE UPSTREAM SIDE TO PREVENT FLOW UNDER THE FENCE.
  - THE TRENCH MUST BE A MINIMUM OF 6" DEEP AND 8" WIDE TO ALLOW FOR THE NON-WOVEN FILTER FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.
  - THE NON-WOVEN FILTER FABRIC SHALL BE SECURELY FASTENED TO THE WOVEN WIRE BACKING, WHICH IN TURN IS SECURELY FASTENED TO THE STEEL FENCE POST.
  - ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6". THE SILT SHALL BE DISPOSED OF ON AN APPROVED SITE AND IN SUCH A MANNER THAT WILL NOT CONTRIBUTE TO ADDITIONAL SILTRATION.
  - INSPECTION SHALL BE MADE WEEKLY AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY, IF NEEDED.
  - SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED.

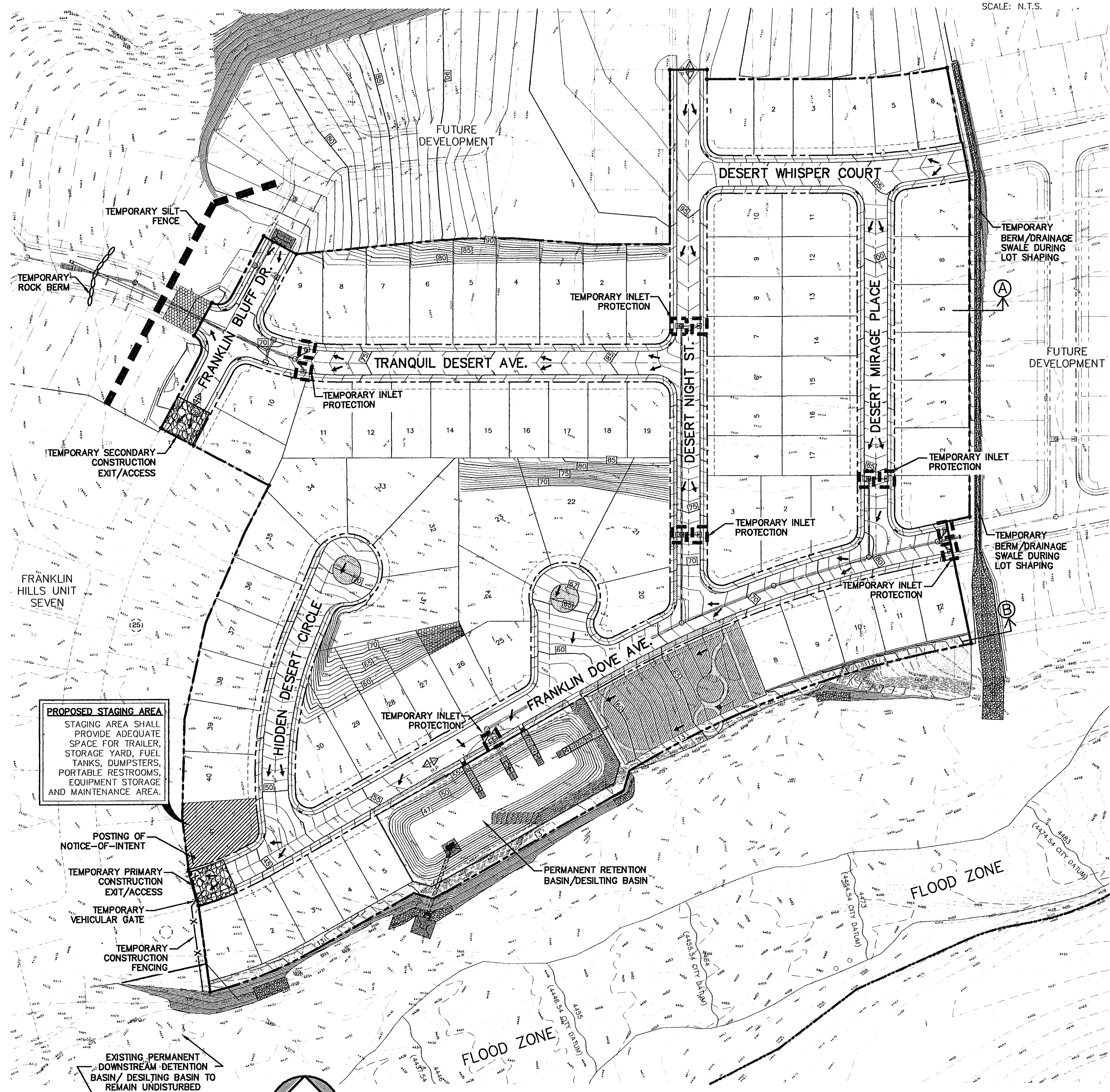
- SEDIMENT CONTROL FENCE USAGE GUIDELINES**
- A SEDIMENT CONTROL FENCE MAY BE CONSTRUCTED NEAR THE DOWNSTREAM PERIMETER OF A DISTURBED AREA ALONG A CONTOUR TO INTERCEPT SEDIMENT FROM OVERLAND RUNOFF. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE FLOW RATE TO BE FILTERED. SEDIMENT CONTROL FENCE SHOULD BE SIZED TO FILTER A MAX. FLOW THROUGH RATE OF 0.22 CFS/FT. SEDIMENT CONTROL FENCE IS NOT RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA LARGER THAN 2 ACRES. SILT FENCING AT RIGHT-OF-WAY SHALL BE PLACED SO AS NOT TO BLOCK ANY EXISTING DRIVEWAYS.

**TEMPORARY SILT FENCE**  
SCALE: N.T.S.



**TEMPORARY INLET PROTECTION**  
SCALE: N.T.S.

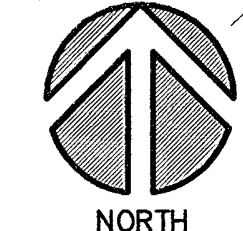
- GENERAL NOTES:**
- THE FENCE REQUIRES FREQUENT INSPECTION AND PROMPT MAINTENANCE TO MAINTAIN ITS EFFECTIVENESS.
  - INSPECT THE FENCE AFTER EACH RAINFALL.
  - CHECK FOR AREAS WHERE RUN-OFF HAS ERODED A CHANNEL BENEATH THE FENCE, OR WHERE THE FENCE WAS CAUSED TO SAG OR COLLAPSE.
  - ALL NEEDED REPAIRS SHALL BE PERFORMED IMMEDIATELY.
  - REMOVE AND PROPERLY DISPOSE OF SEDIMENT WHEN IT IS ONE-THIRD TO ONE-HALF THE HEIGHT OF THE FENCE OR AFTER EACH STORM.
  - 4" MIN. STEEL OR WOOD POSTS SPACED AT 6" O.C. SOFTWOOD POSTS SHALL HAVE A 3" MIN. DIAMETER OR NOMINAL 2"x4". HARDWOOD POSTS SHALL HAVE A MINIMUM CROSS SECTION OF 1.5"x1.5".



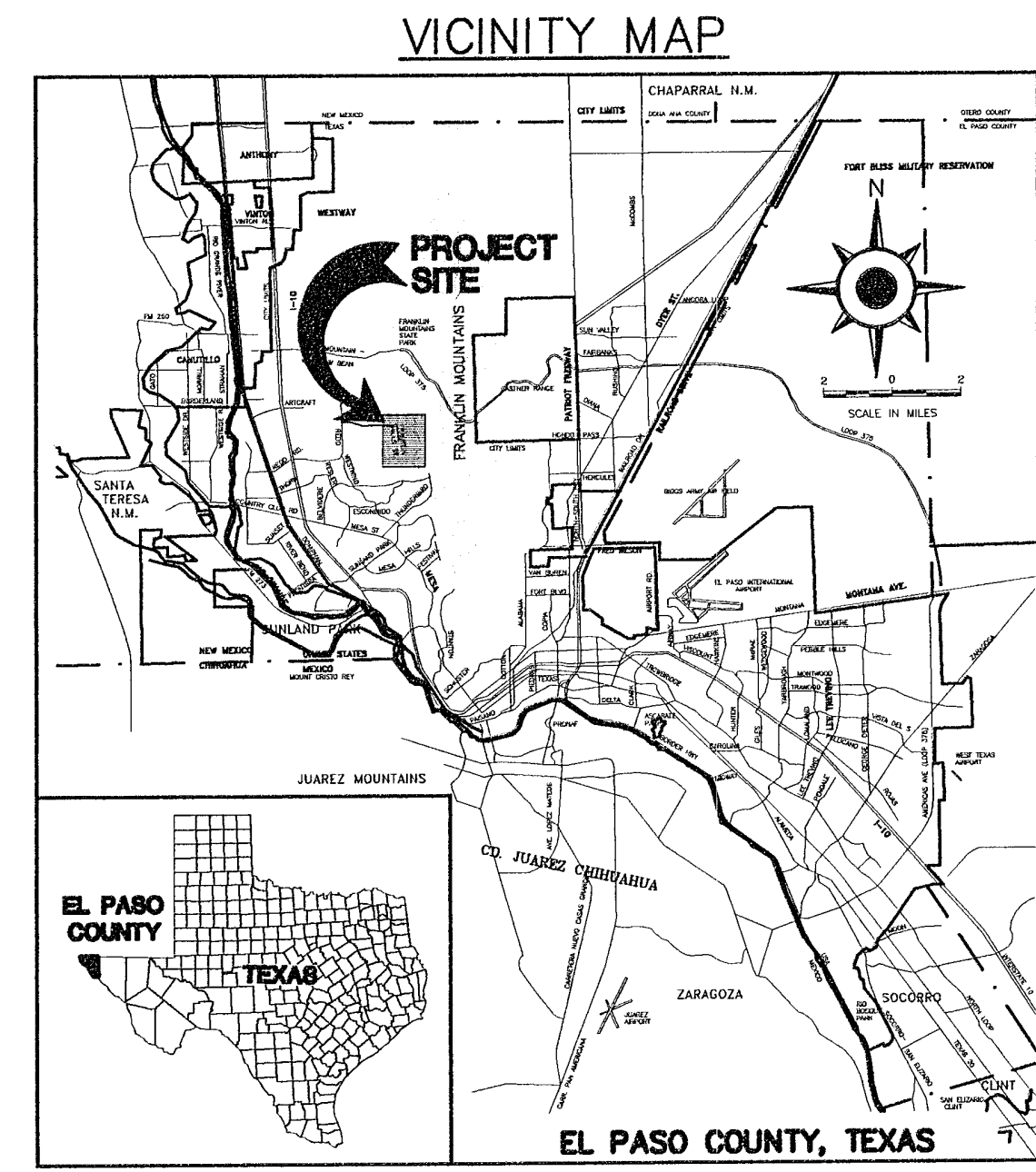
**PROPOSED STAGING AREA:**  
STAGING AREA SHALL PROVIDE ADEQUATE SPACE FOR TRAILER, STORAGE YARD, FUEL TANKS, DUMPSTERS, PORTABLE RESTROOMS, EQUIPMENT STORAGE AND MAINTENANCE AREA.

**POSTING OF NOTICE-OF-INTENT:**  
TEMPORARY PRIMARY CONSTRUCTION EXIT/ACCESS  
TEMPORARY VEHICULAR GATE  
TEMPORARY CONSTRUCTION FENCING

EXISTING PERMANENT DOWNSTREAM DETENTION BASIN/DESILTING BASIN TO REMAIN UNDISTURBED



**STORMWATER POLLUTION PREVENTION PLAN**  
SCALE: 1" = 100'



**EL PASO COUNTY, TEXAS**

**PROJECT TITLE**  
**FRANKLIN HILLS UNIT EIGHT SUBDIVISION IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
STORMWATER POLLUTION PREVENTION PLAN

**SHEET NO.**  
**C-49**  
49 OF 58 SHEETS

**REFERENCES - BENCHMARK**  
CITY OF EL PASO, TEXAS  
ELEVATION = 4382.20 (CITY DATUM)  
CONTOUR INTERVAL: ONE (1) FOOT

**DATE**  
05-10-2017

**REVISION**

**BT**

**414 Executive Center Blvd**  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373  
www.juanita.com

**JUANITA**  
engineering  
incorporated  
Texas Registered Engineering Firm F-005146

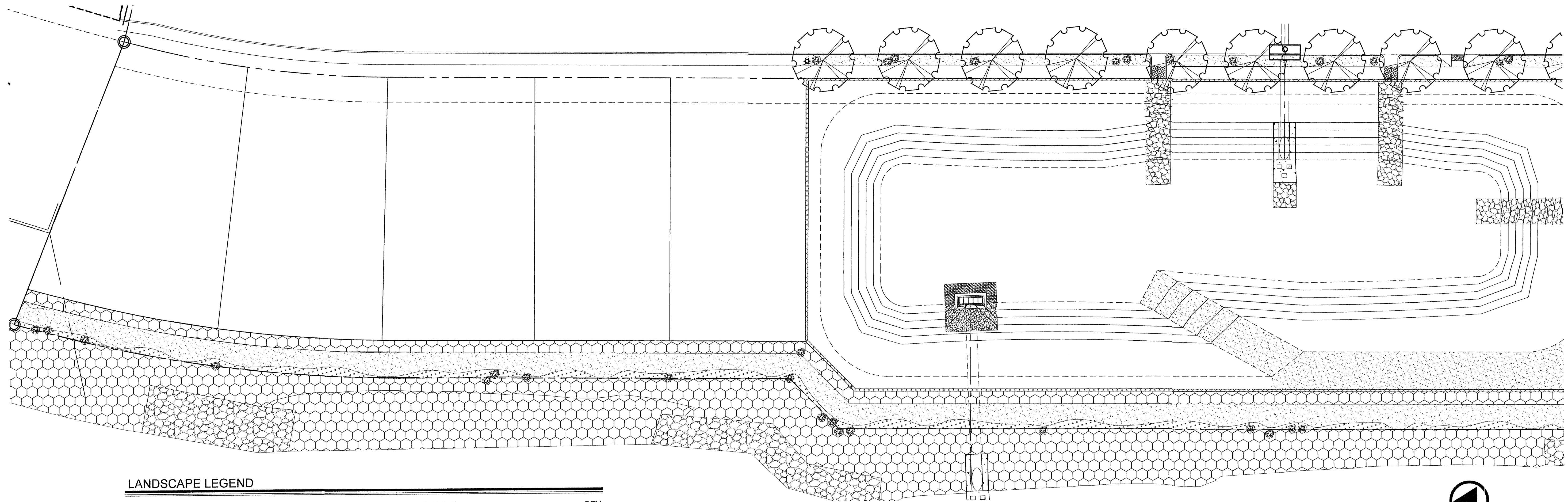
**THE SEAL APPEARING ON THIS DOCUMENT IS THE PROPERTY OF THE STATE OF TEXAS AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM.**

**SCALE:**  
HORIZONTAL: 1" = 100'  
VERTICAL: 1" = 10'  
CONTOUR INTERVAL: 10'

**DATE:** 05-10-2017  
**DESIGN BY:** M.A.G.  
**DRAWN BY:** C.D.B.  
**CHECKED BY:** R.A.G.  
**APPROVED BY:** R.A.G.  
**JOB NO.:** 1038

May 11, 2017 11:08am brcj  
Q:\Active Drawings\1038 Franklin Hills Unit 8\Civil\3rd COEP Comments (05-10-17)\C-49 SWPP.dwg





**LANDSCAPE LEGEND**

SYMBOL	COMMON NAME	BOTANICAL NAME	QTY
<b>2" CALIPER TREE - 10' HEIGHT MINIMUM</b>			

	TEXAS RED OAK	QUERCUS BUCKLEYI	17
	HONEY MESQUITE	PROSOPIS GLANDULOSA	9
	PALO VERDE	CERCIDIUM X PARKINSONIA	5
	CHINKAPIN OAK	QUERCUS MUHLENBERGIA	17

**5 GALLON SHRUB - 18" HEIGHT MINIMUM UNLESS OTHERWISE INDICATED**

	YELLOW YUCCA	HESPERALOE PARVIFLORA	46
	GREEN CLOUD SAGE	LEUCOPHYLLUM FRUT. 'GREEN CLOUD'	6
	CHAPARRAL SAGE	SALVIA CLEVELANDII	23
	BRAKELIGHT RED HESPERALOE	HESPERALOE PARVIFLORA (BRAKELIGHT)	14
	ARIZONA ROSEWOOD	VAUQUELINIA CALIFORNICA	21

**1 GALLON SHRUB - GROUND COVER**

	POWIS CASTLE	ARTEMISIA 'POWIS CASTLE'	35
	NEW GOLD LANTANA	LANTANA CAMARA 'NEW GOLD'	11

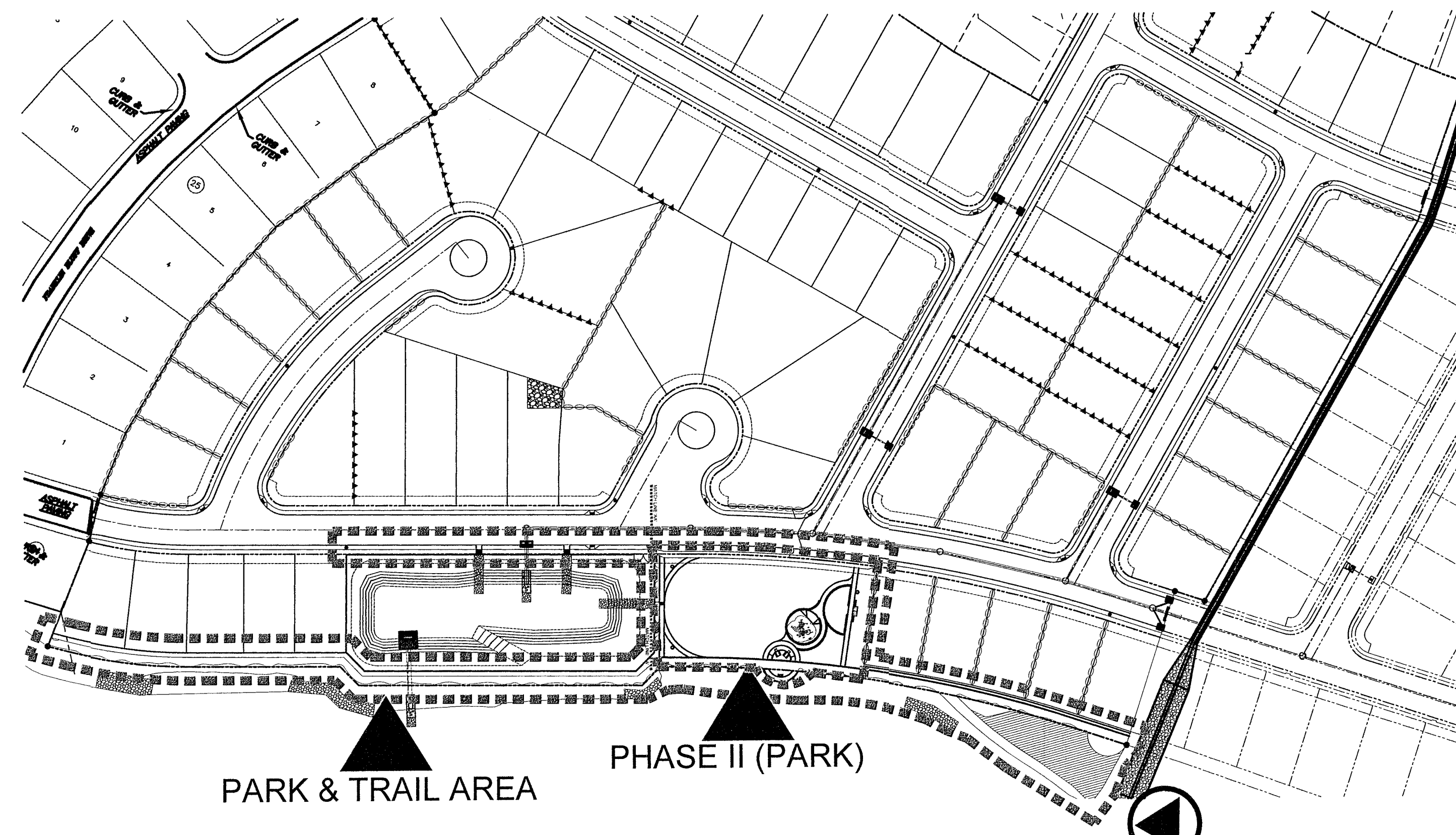
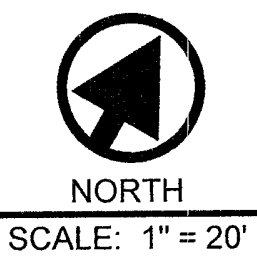
**DECORATIVE STONES & BOULDERS**

	BOULDER - FRANKLIN RED - 2X3 TO 3X4		71
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**TURF, GRAVELS, & MULCHES**

- SANTA ANA SOD, PER SPECIFICATIONS
- FRANKLIN RED ROCK - 3/8", 3" DEPTH W/ DEWITT PRO-5 WEED BARRIER (HIKE/BIKE TRAIL TO HAVE STABILIZED COMPACTED SCREENINGS)
- FRANKLIN RED 2"-6" FIELD STONE - NO WEED BARRIER. SEED WITH: RECLAMATION SEED MIX - 2 PLS/1,000SF BLUE GRAMA, 12 PLS/1,000SF CHIHUAHUAN DESERT WILDFLOWER BLEND - CURTIS AND CURTIS SEED (OR COMPARABLE)
- PLAYGROUND 'COMPACTED' ENGINEERED WOOD FIBER - 12" DEPTH - PER PARK SPECIFICATIONS
- FRANKLIN RED 2"-6" FIELD STONE - 3" DEPTH W/ DEWITT PRO-5 WEED BARRIER OR APPROVED EQUAL
- CONCRETE - SEE DETAILS
- AREAS TO MAINTAIN NATIVE - PROVIDE SILT FENCE PER SPECS DURING CONSTRUCTION
- SEE CIVIL PLANS FOR EXTENTS AND DETAILS

**LANDSCAPE PLAN**



**LOCATION MAP**

NORTH  
SCALE: 1" = 100'

**PARKS DEPARTMENT**



REFERENCES - BENCHMARK

DATE	REVISION	BY

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915 532 7272  
F 915 532 7373  
INCORPORATED  
Texas Registered Engineering Firm F-005146

SCALE: 1" = 20'

HORIZONTAL	VERTICAL	CONTOUR INTERVAL
1" = 20'	1" = 20'	N/A

DATE: 5-10-12  
DESIGN BY: JBA  
DRAWN BY: JBA/JKL  
CHECKED BY: JBA  
JOB NO.: 1038

PROJECT TITLE  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

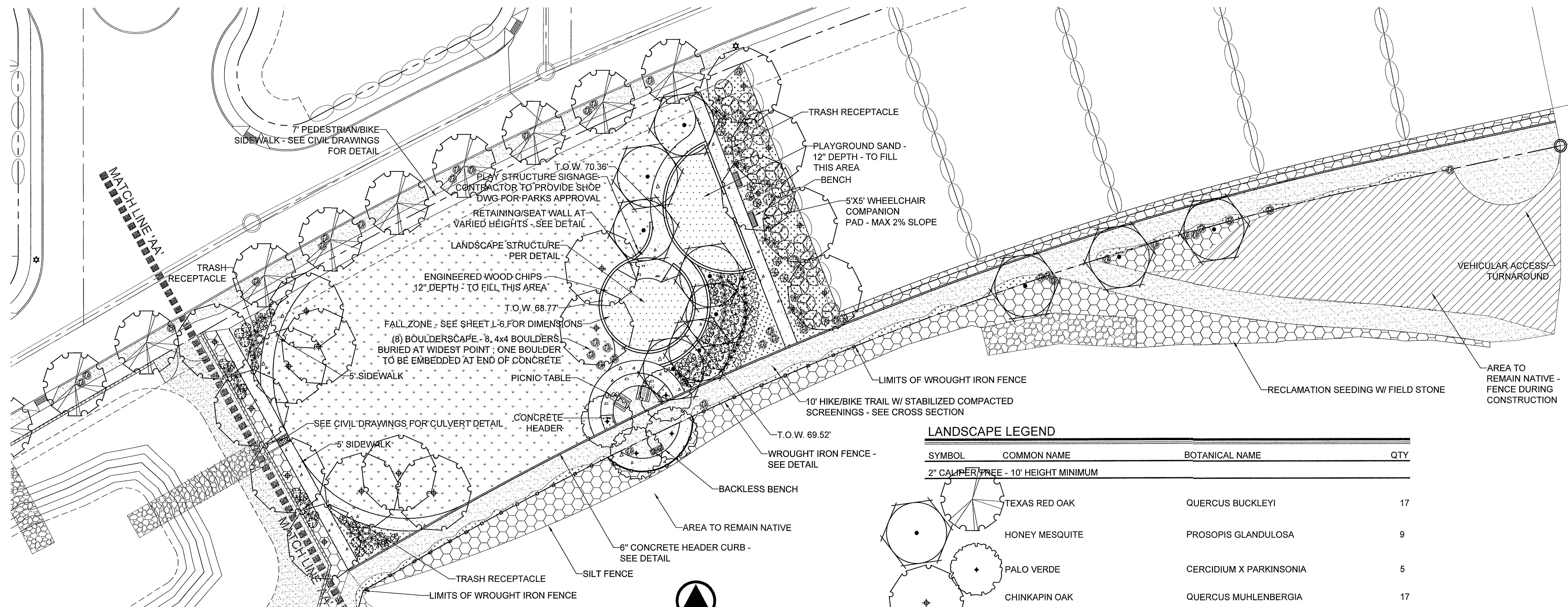
SHEET TITLE

LANDSCAPE PLAN

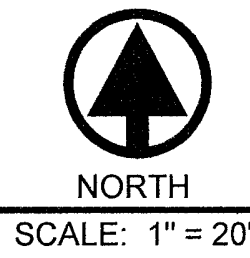
SHEET NO.

L-1  
OF 9 SHEETS

5/15/12 approved

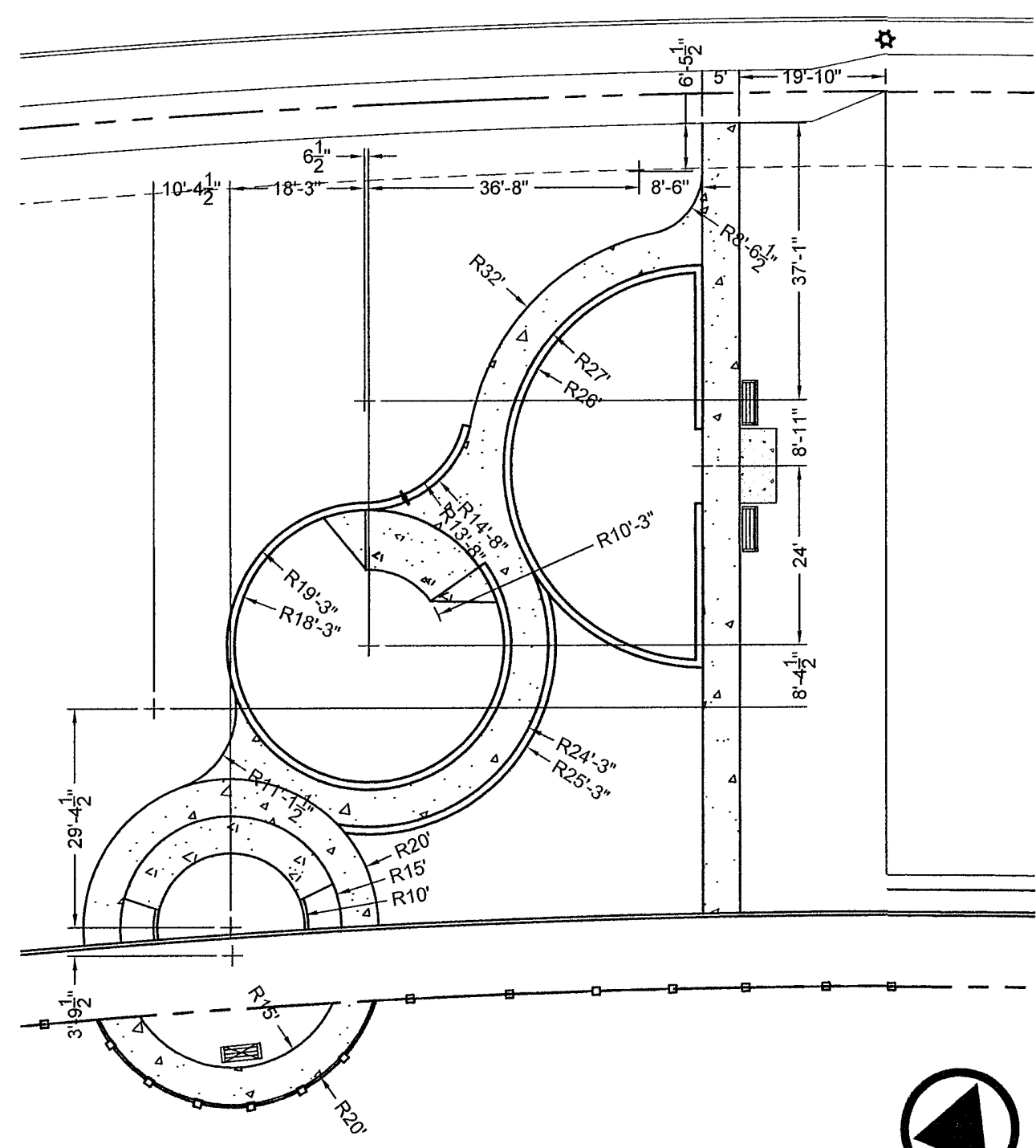


### LANDSCAPE PLAN

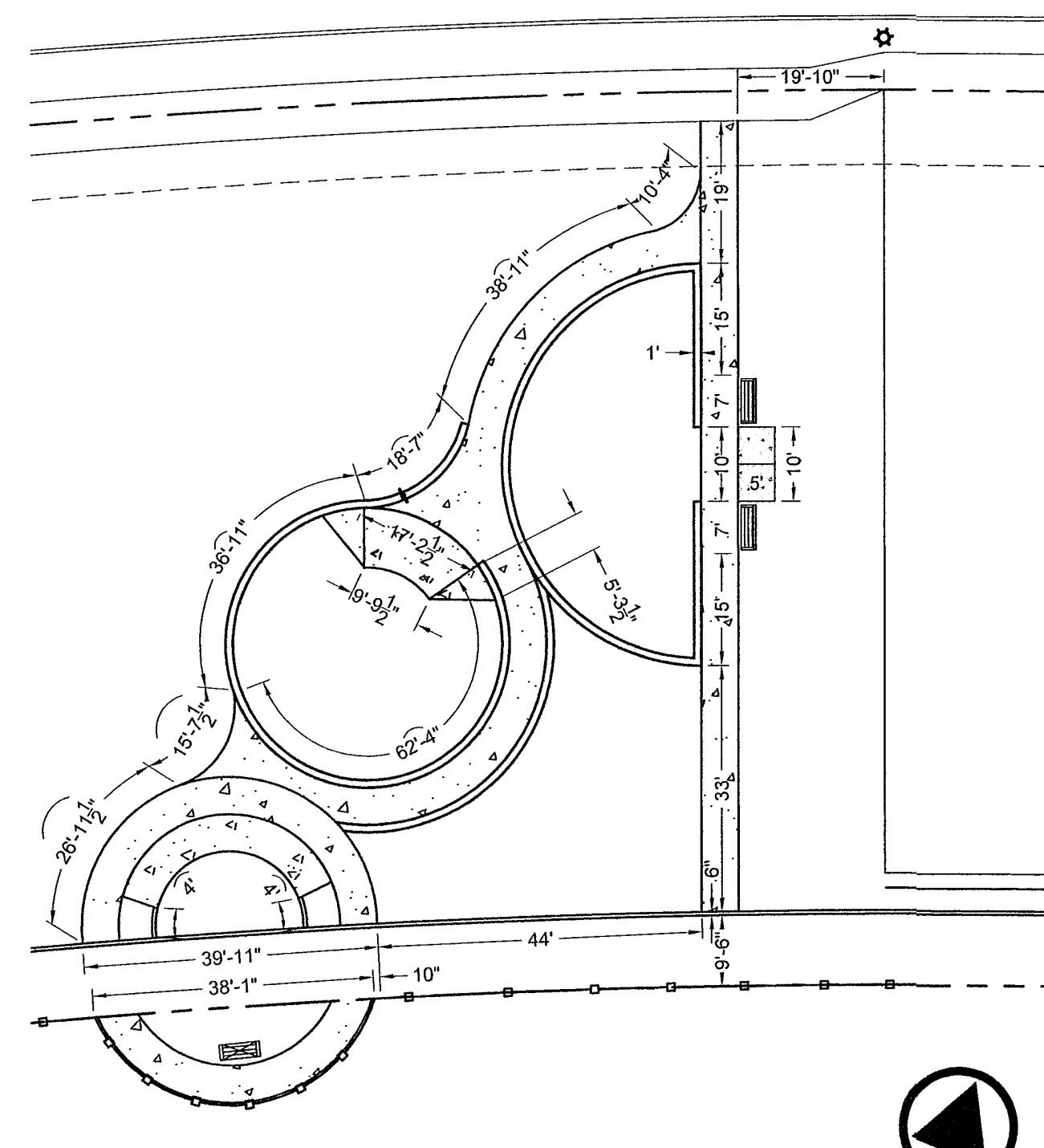


#### LANDSCAPE LEGEND

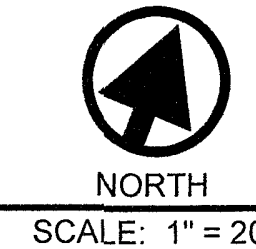
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	PLAYGROUND 'COMPACTED' ENGINEERED WOOD FIBER - 12" DEPTH - PER PARK SPECIFICATIONS		
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	CONCRETE - SEE DETAILS		
	AREAS TO MAINTAIN NATIVE - PROVIDE SILT FENCE PER SPECS DURING CONSTRUCTION		
	SEE CIVIL PLANS FOR EXTENTS AND DETAILS		
	PLAYGROUND-GRADE SAND, 12" DEPTH, TO FILL HALF CIRCLE FUTURE PLANNING AREA		
<b>SITE AMENITIES</b>			
	STEEL BENCH, MODEL 119-60 BY DUMOR, COLOR HERITAGE BROWN		PICNIC TABLE - MODEL 63-165-68-1/S-1 BY DUMOR, COLOR HERITAGE BROWN
	BACKLESS BENCH, MODEL 120-60 BY DUMOR, COLOR HERITAGE BROWN		WROUGHT IRON FENCE
	TRASH RECEPTACLE - MODEL 84-32-FTO BY DUMOR, COLOR HERITAGE BROWN		3



### PLAY & PICNIC AREAS



### PLAY & PICNIC AREAS



DATE	REVISION	BY

**QUANTUM**  
 ENGINEERING  
 INCORPORATED  
 Texas Registered Engineering Firm F-005146  
 414 Executive Center Blvd  
 Ste 200 El Paso TX 79902  
 P 915.532.7272  
 F 915.532.7373

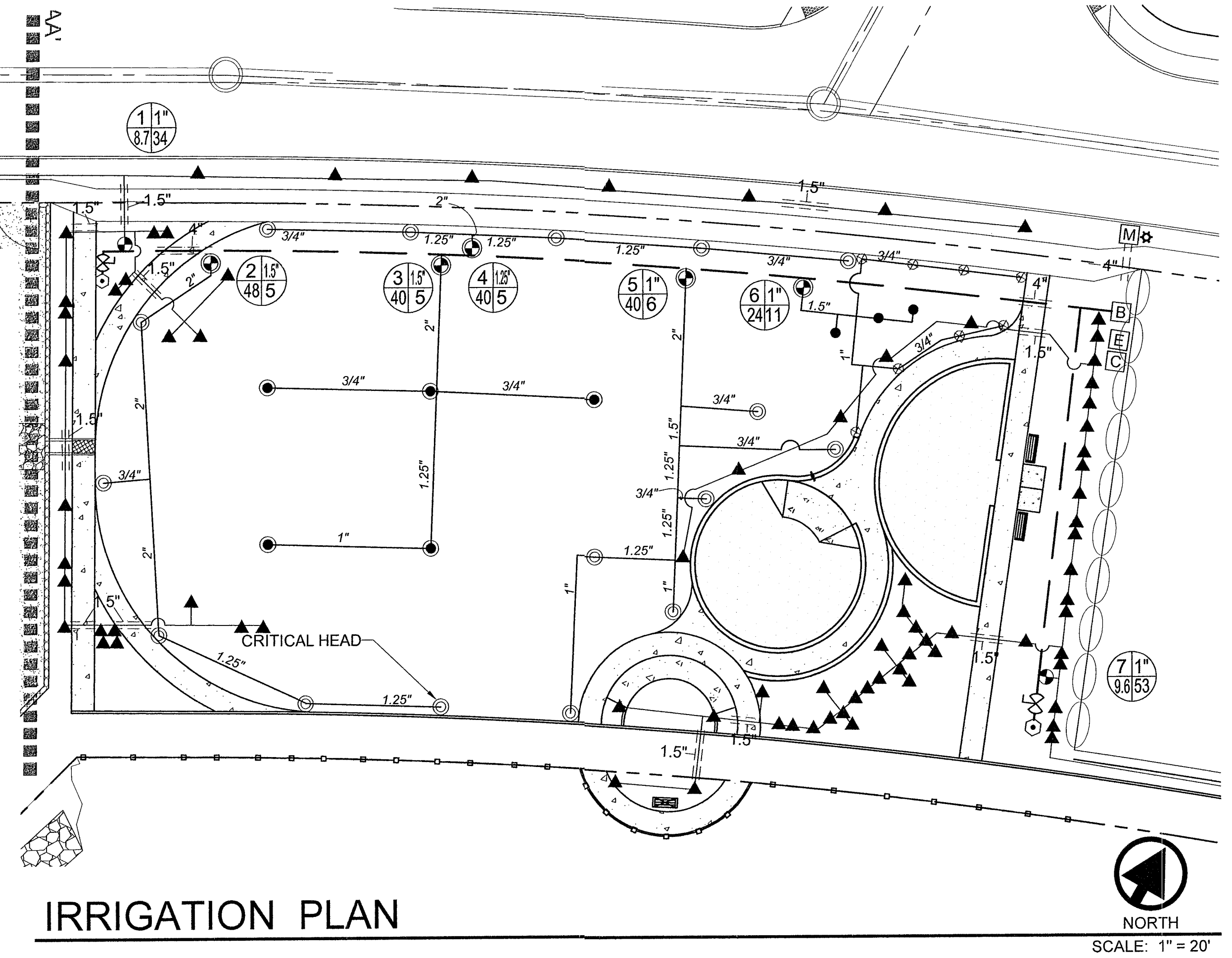
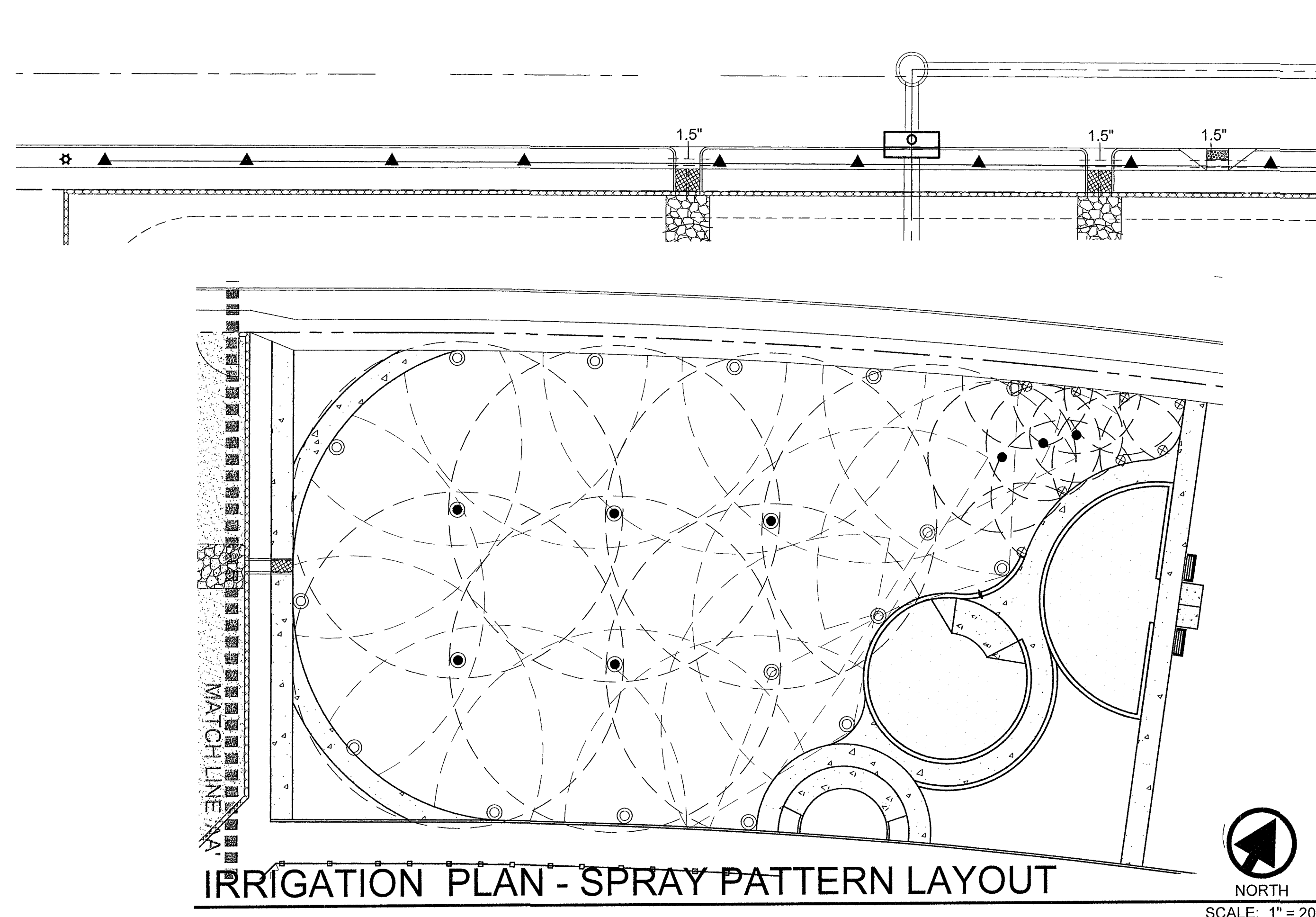
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1" = 20'	N/A	N/A	5'-10'-12'	5-10-12	JBA	JBA/CH	JBA	JBA	1038

**PROJECT TITLE**  
 FRANKLIN HILLS UNIT EIGHT  
 SUBDIVISION  
 IMPROVEMENT PLANS  
 EL PASO COUNTY, TEXAS

SHEET TITLE	LANDSCAPE PLAN
SHEET NO.	L-2
OF 9 SHEETS	

**PARKS DEPARTMENT**  
  
**desert elements**  
 LANDSCAPE DESIGN, LLC  
 1-3 arduino drive, sunset park, new mexico 88063  
 DE@deserthelements.com • phone: 575.589.9100 • fax: 575.589.9104

May 14, 2012, 2:12pm Jennifer Barr  
 P:\Quantum\FranklinHills\FranklinHills-LAND-NEW.DWG



IRRIGATION PLAN - SPRAY PATTERN LAYOUT  
NORTH  
SCALE: 1" = 20'

IRRIGATION PLAN  
NORTH  
SCALE: 1" = 20'

VALVE #	SIZE	TYPE	TOTAL GPM	# OF SPRINK./EMITTERS	PRECIP. RATES	TIME FOR 1.2" OF WATER IN MINUTES
1	1"	EMITTER	2.7	10		60
2	1"	EMITTER	6	24		60
3	1.5"	I-20-06-SS-8.0	48	6	1.2 IN./HR.	60
4	1.5"	I-20-06-SS-8.0	40	5	0.6 IN./HR.	120
5	1.25"	I-20-06-SS-8.0	40	5	1.2 IN./HR.	60
6	1"	I-20-06-SS-8.0	40	5	1.2 IN./HR.	60
7	1"	PRO-SPRAY	24	11	1.6 IN./HR.	60
8	1"	EMITTER	9.6	53		60
						540 MIN OR 9 HRS

VALVE TABLE  
SECTION # 4 Section GPM 48

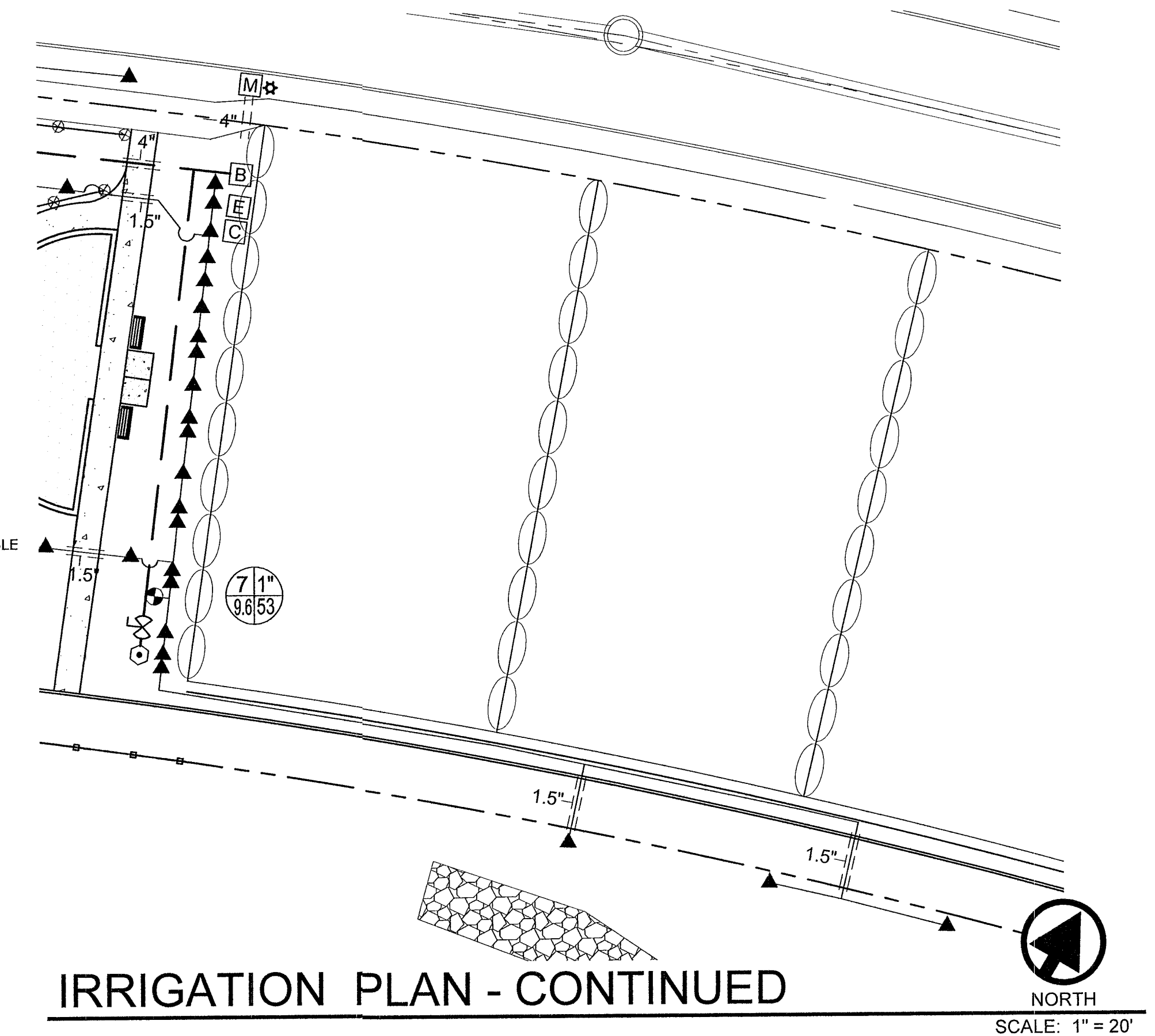
WATER SCHEDULE	
STATION #	1, 2 & 8
TOTAL GALLONS	18.3 GPM
STATION #	3
TOTAL GALLONS	48 GPM
STATION #	4
TOTAL GALLONS	40 GPM
STATION #	5
TOTAL GALLONS	40 GPM
STATION #	6
TOTAL GALLONS	40 GPM
STATION #	7
TOTAL GALLONS	24 GPM
TOTAL RUN TIME	7 HRS

PRESSURE LOSS TABLE FRANKLIN HILLS 8 - PARK						
Length of pipe	flow GPM	Size (in.)	Pipe Material	Pressure loss 100 ft	Pressure Loss this Item	Pressure Loss accumulated
16	48	2.5	Type K copper	0.83	0.13	0.13
200	48	2.5	Sch. 40 pvc	0.7	1.40	1.53
19	48	2	Class 200 pvc	1.4	0.27	1.80
34	48	2	Class 200 pvc	1.4	0.48	2.27
34	40	2	Class 200 pvc	0.95	0.32	2.60
35	24	1.25	Class 200 pvc	2.11	0.74	3.34
30	16	1.25	Class 200 pvc	0.99	0.30	3.63
0	0	0		0	0.00	3.63
0	0	0		0	0.00	3.63
0	0	0		0	0.00	3.63
0	0	0		0	0.00	3.63
0	0	0		0	0.00	3.63
Total Pipe Loss						3.63

Equipment Losses			
Item	Size (in.)	Pressure Loss this Item	Pressure Loss Accumulated
Valve	1.5	6.00	6.00
Backflow	2.5	13.00	19.00
Water Meter	2	1.70	20.70
Total Equipment Loss			20.70

Total Pressure Loss	24.33
Minimum Head Pressure	45.00
Design Pressure	69.33

- IRRIGATION LEGEND**
- | SYMBOL | ITEM   |
|--------|--|
| M      | 2" WATER METER (BY OWNER)  |
| B      | 2.5" FEBCO 825YD BACKFLOW PREVENTER W/ R-25 INSULATED STAINLESS STEEL ENC., GATE VALVE UPSTREAM AND DOWNSTREAM, COPPER PIPING FROM METER. LOCATE BACKFLOW AND ENCLOSURE PARALLEL TO WALL, AS OUT OF SITE AS POSSIBLE |
| C      | RAINBIRD ESP-LXME, 10 STATION CONTROLLER   |
| E      | PROPOSED ELECTRICAL METER LOCATION; COORDINATE WILL ELECTRICAL CONTRACTOR  |
| ⊙      | 1" WEATHERMATIC BRASS REMOTE CONTROL VALVE, 8200CR-10<br>INSTALL AMIAD Y FILTER & PRESSURE REDUCER (30 PSI) AFTER THE VALVE ON ALL DRIP ZONES  |
| ⊙      | 1" WEATHERMATIC BRASS REMOTE CONTROL VALVE TAG - 1" 8200CR-10  |
| —      | 2.5" MAINLINE - PVC SCH. 40, MANUAL DRAIN AT LOW POINT   |
| ---    | LATERAL LINE - CLASS 200 PVC (ALL UNSIZED PIPE ON DRIP LINES TO BE 3/4")   |
| ---    | PVC SLEEVE - 2 SIZES LARGER THAN LATERAL OR MAIN   |
| ⊙      | HUNTER I-20-06-SS-8.0, FULL CIRCLE - 8.0 GPM @ 45 PSI, R44   |
| ⊙      | HUNTER I-20-06-SS-8.0, PART CIRCLE - 8.0 GPM @ 45 PSI, R44   |
| ⊙      | HUNTER PRO-SPRAY W/ NOZZLE 17A FULL CIRCLE - 4.8 GPM @ 30 PSI, R 17-11"  |
| ⊙      | HUNTER PRO-SPRAY W/ NOZZLE 17A, PART CIRCLE - 2.4 GPM @ 30 PSI, R 17- 16"  |
| ▲      | PEPCO OCTABUBBLER - BLUE 2 GPH<br>RAINBIRD XB-10 DRIP EMITTERS - 2 PER SHRUB & GROUND COVER<br>RAINBIRD XB-20 DRIP EMITTERS - 8 PER TREE   |
| ⊗      | QUICK COUPLER - BUCKNER 1" DOUBLE LUG W/ PURPLE CAP IN PURPLE VALVE BOX<br>1" BRASS BALL VALVE IN PURPLE VALVE BOX (PROVIDE "NON POTABLE, NOT SAFE FOR DRINKING" WEATHER PROOF TAG)                                  |
| A/B    | A) STATION NUMBER B) SIZE OF VALVE IN INCHES   |
| C/D    | C) TOTAL GPM D) NUMBER OF HEADS  |



IRRIGATION PLAN - CONTINUED  
NORTH  
SCALE: 1" = 20'

**PARKS DEPARTMENT**

*Jennifer L. Barry*  
5/10/12  
approved

STATE OF TEXAS  
JENNIFER L. BARRY  
1989  
PROFESSIONAL ENGINEER

desert elements  
APE DESIGN, LLC

5/10/12

1-3 Williams Drive, Suite 200, Fort Worth, Texas 76103  
DE@deserthelements.com • phone: 575.589.9100 • fax: 575.589.9104

REFERENCES - BENCHMARK

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373

**QUANTUM**  
engineering  
INCORPORATED  
Texas Registered Engineering Firm F-005146

DATE \_\_\_\_\_ REVISION \_\_\_\_\_ BY \_\_\_\_\_

HORIZONTAL SCALE: 1" = 20'  
VERTICAL SCALE: N/A  
CONTROLLER INTERVAL: 5-10-12  
DATE: \_\_\_\_\_  
DESIGN BY: JLB  
DRAWN BY: JLB  
APPROVED BY: JLB  
JOB NO. 1038

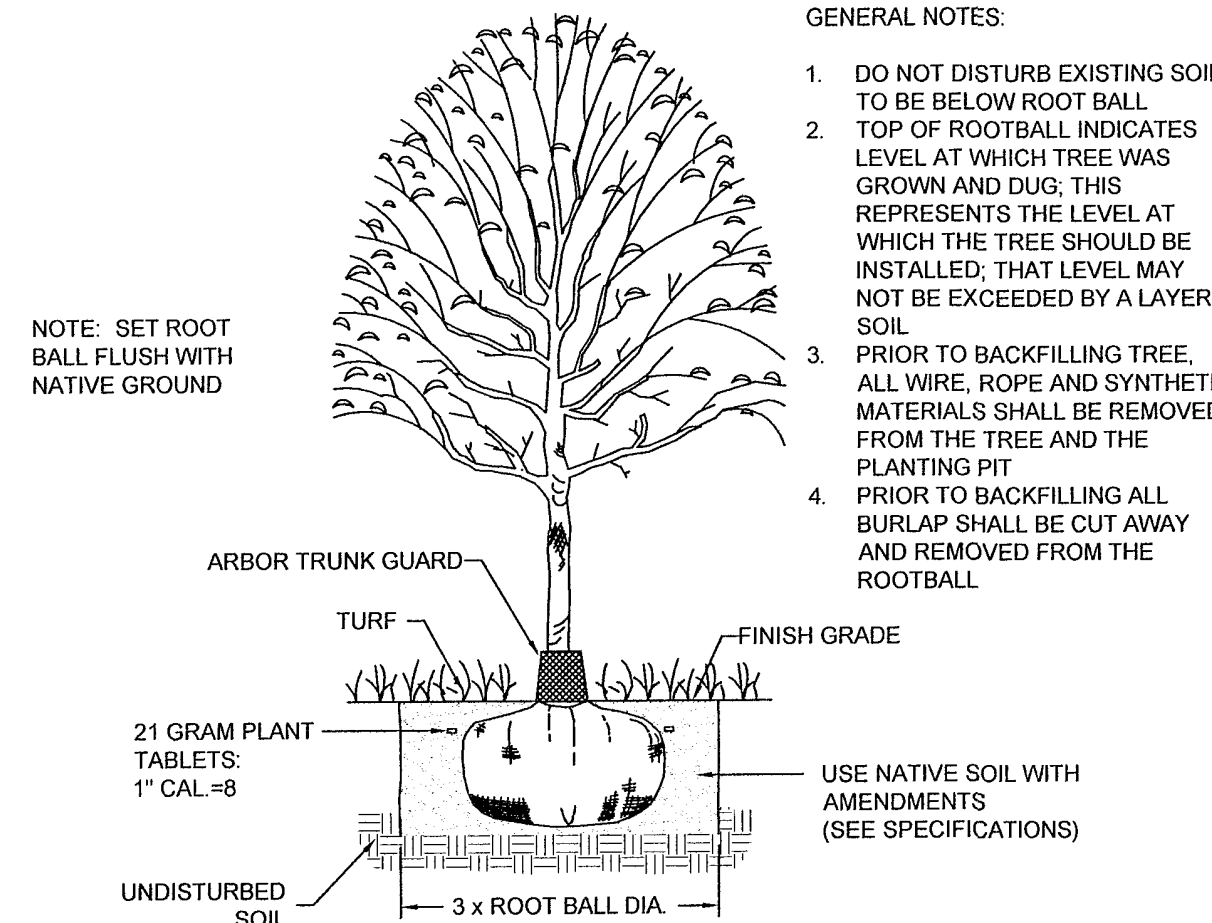
PROJECT TITLE  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

SHEET TITLE  
IRRIGATION PLAN

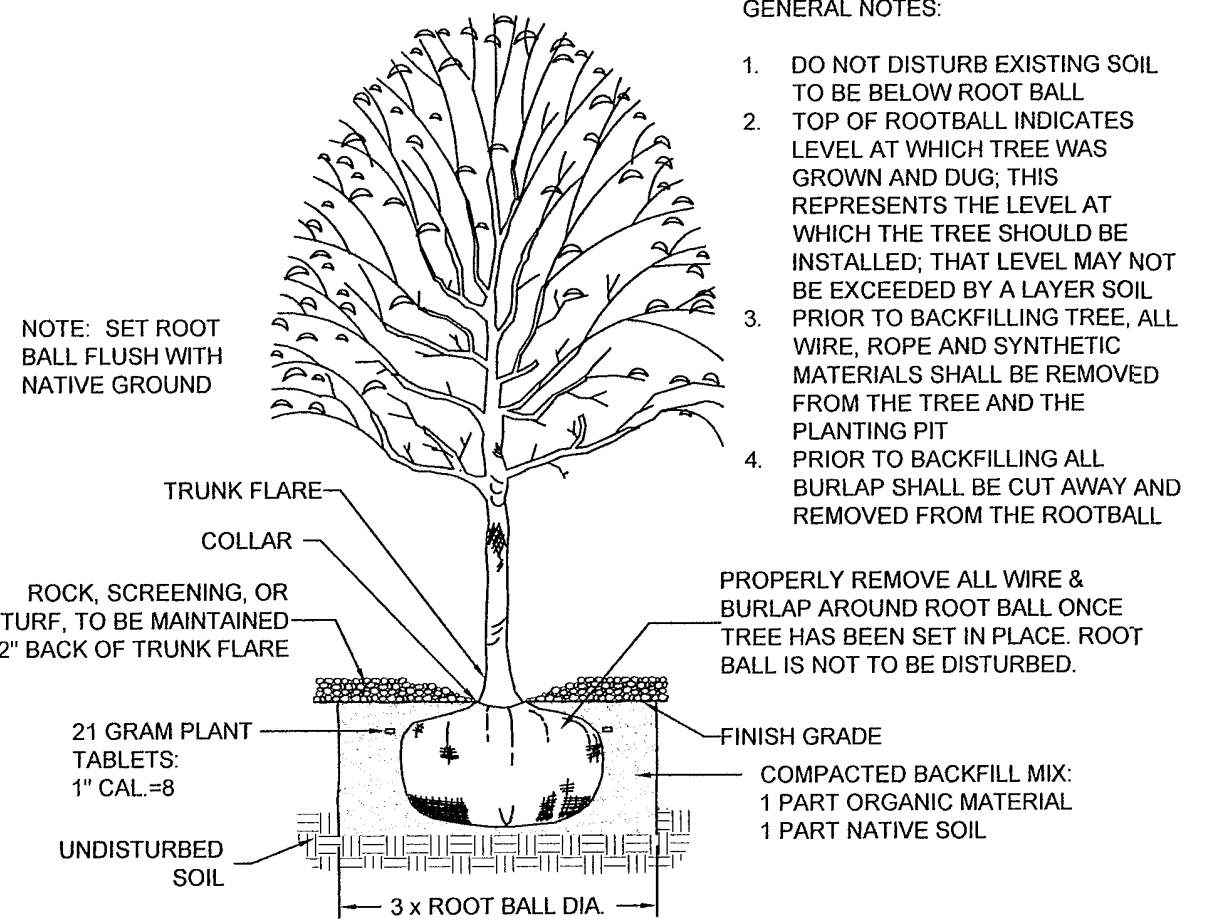
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L-3

OF 9 SHEETS

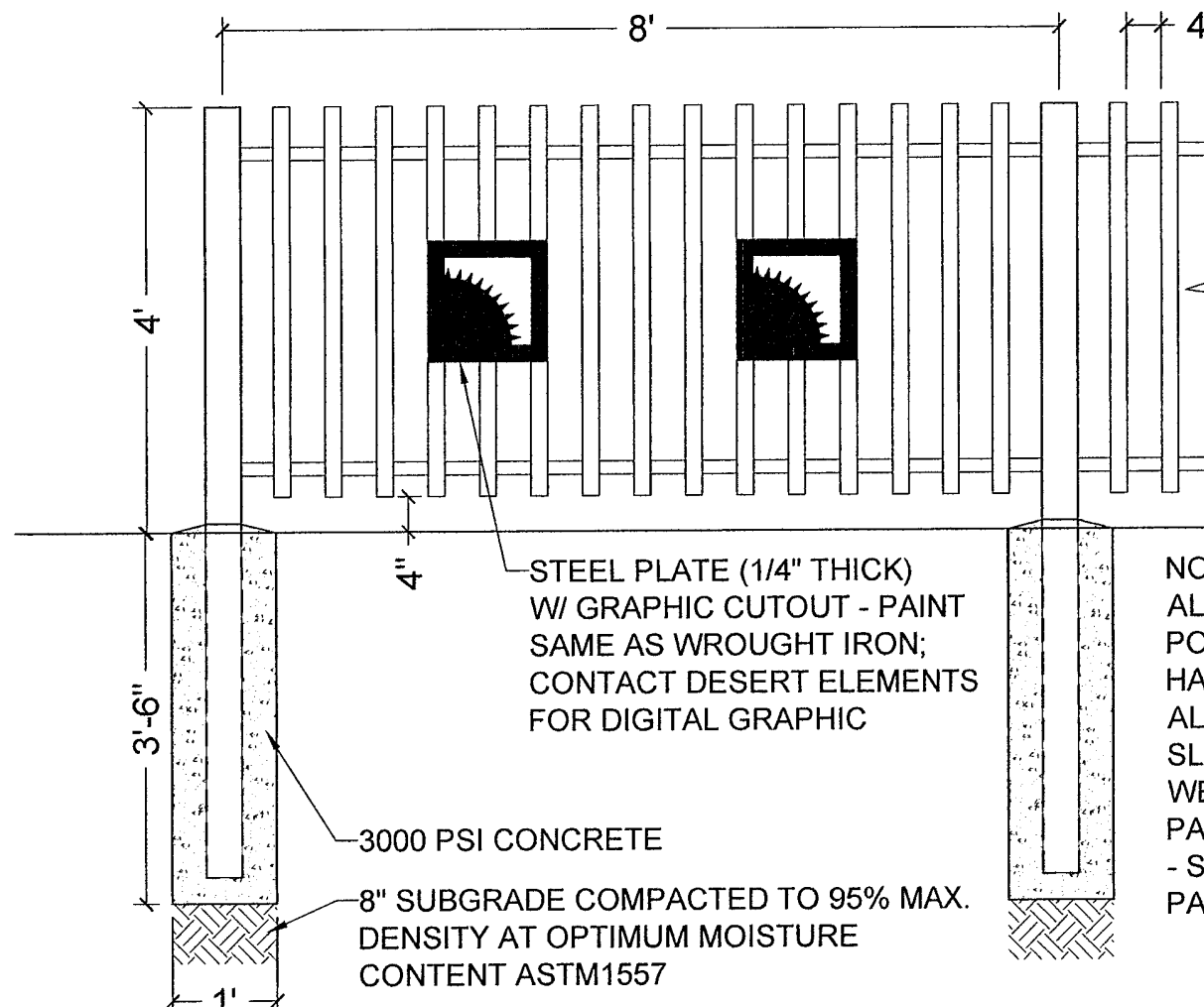
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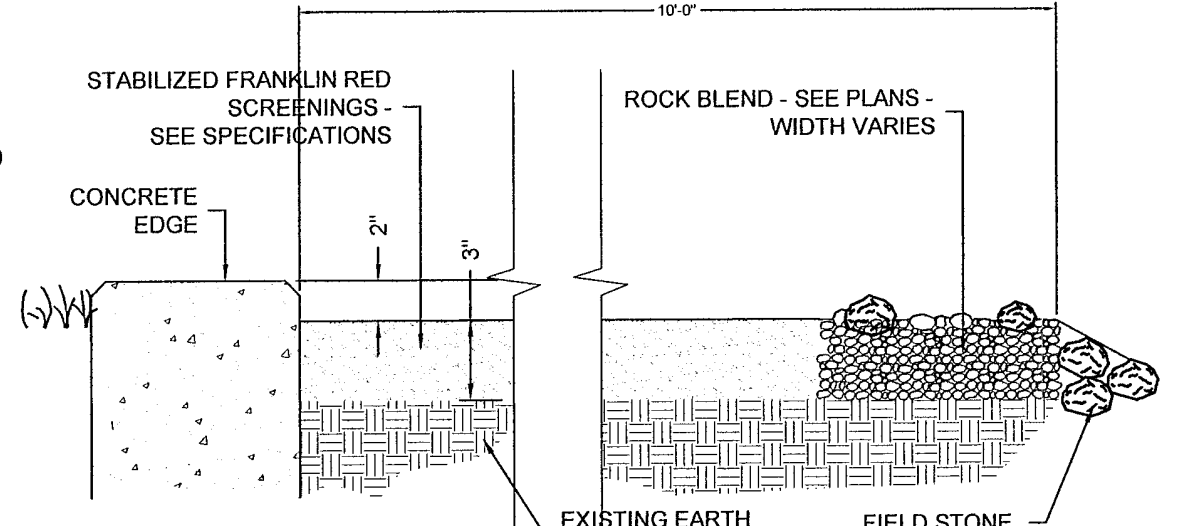
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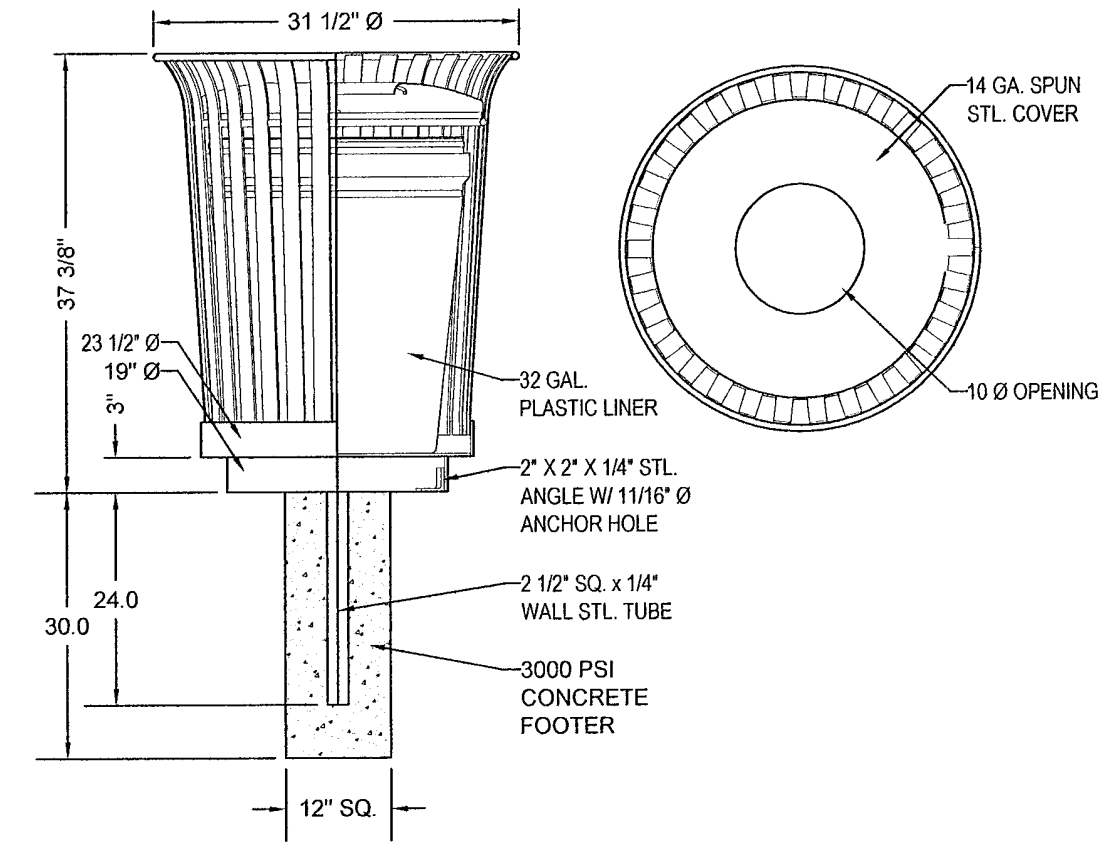
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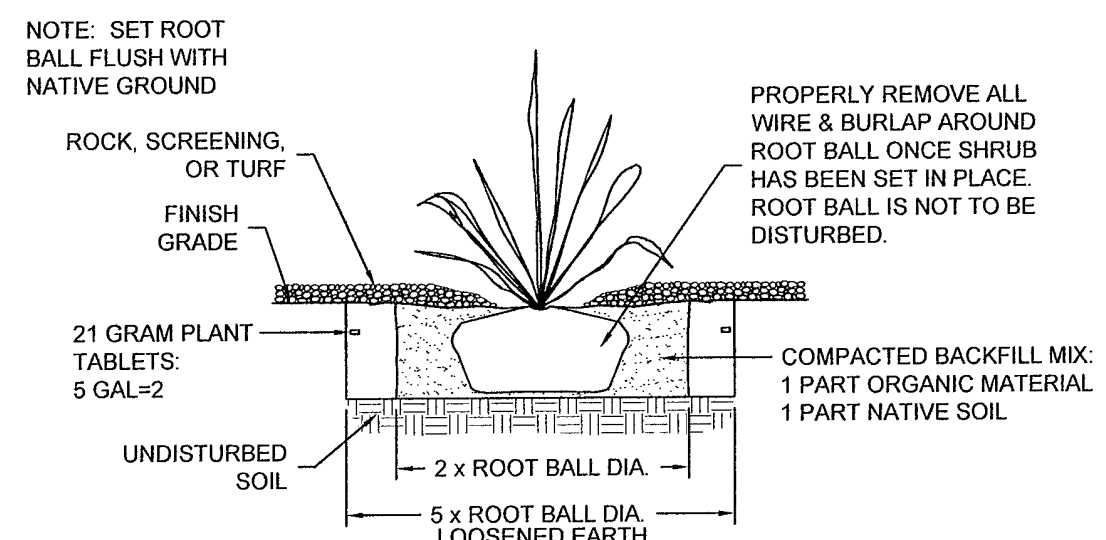
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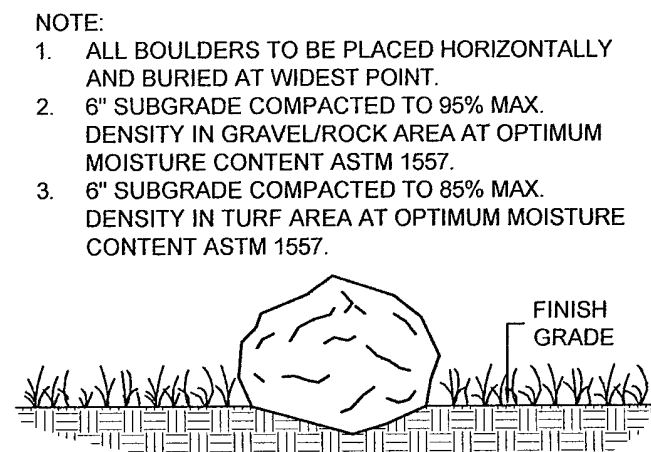
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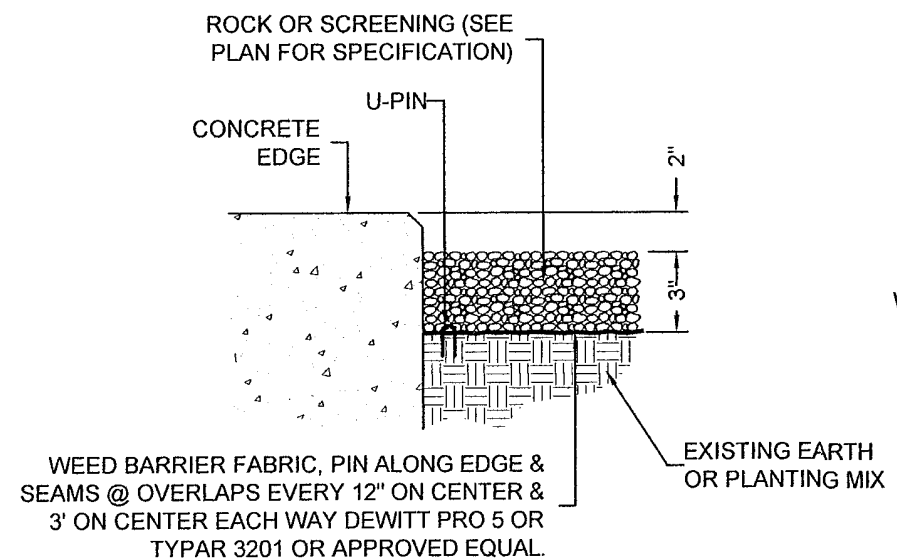
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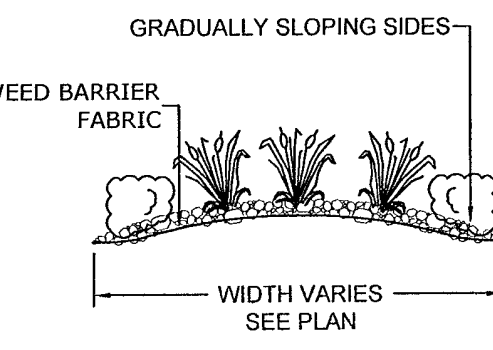
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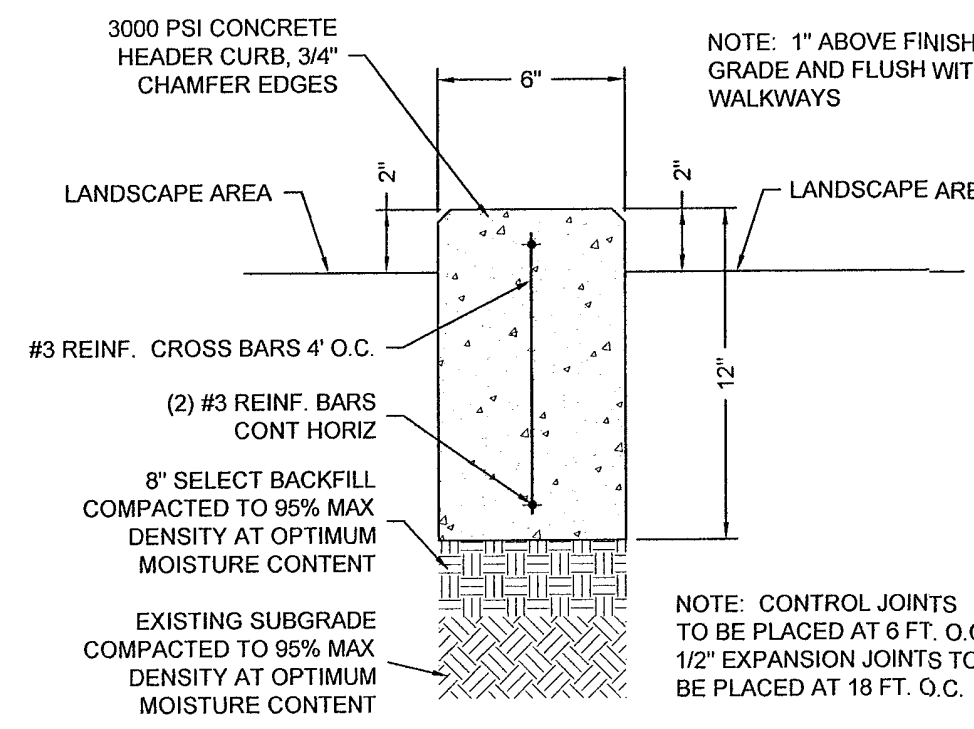
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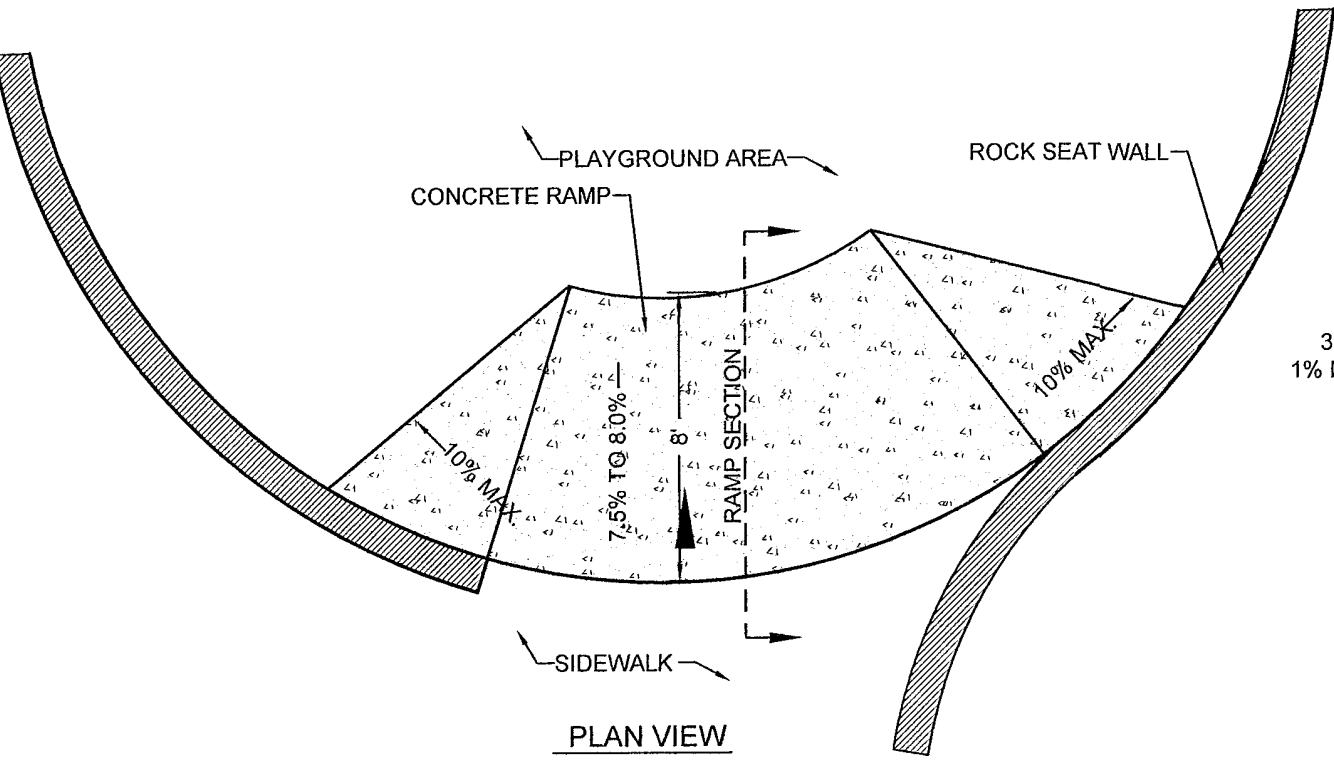
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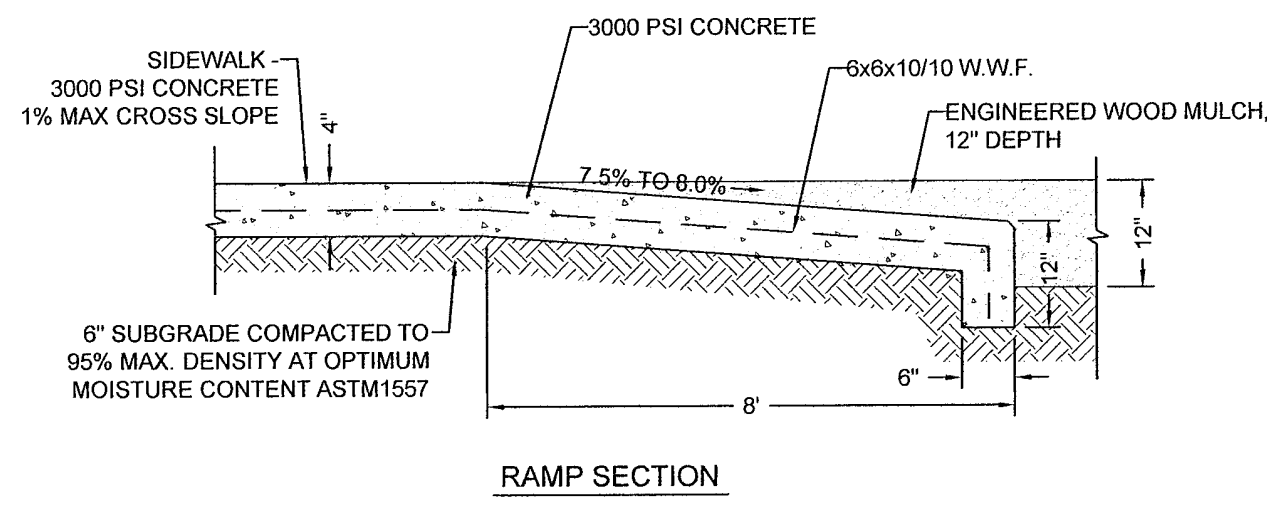
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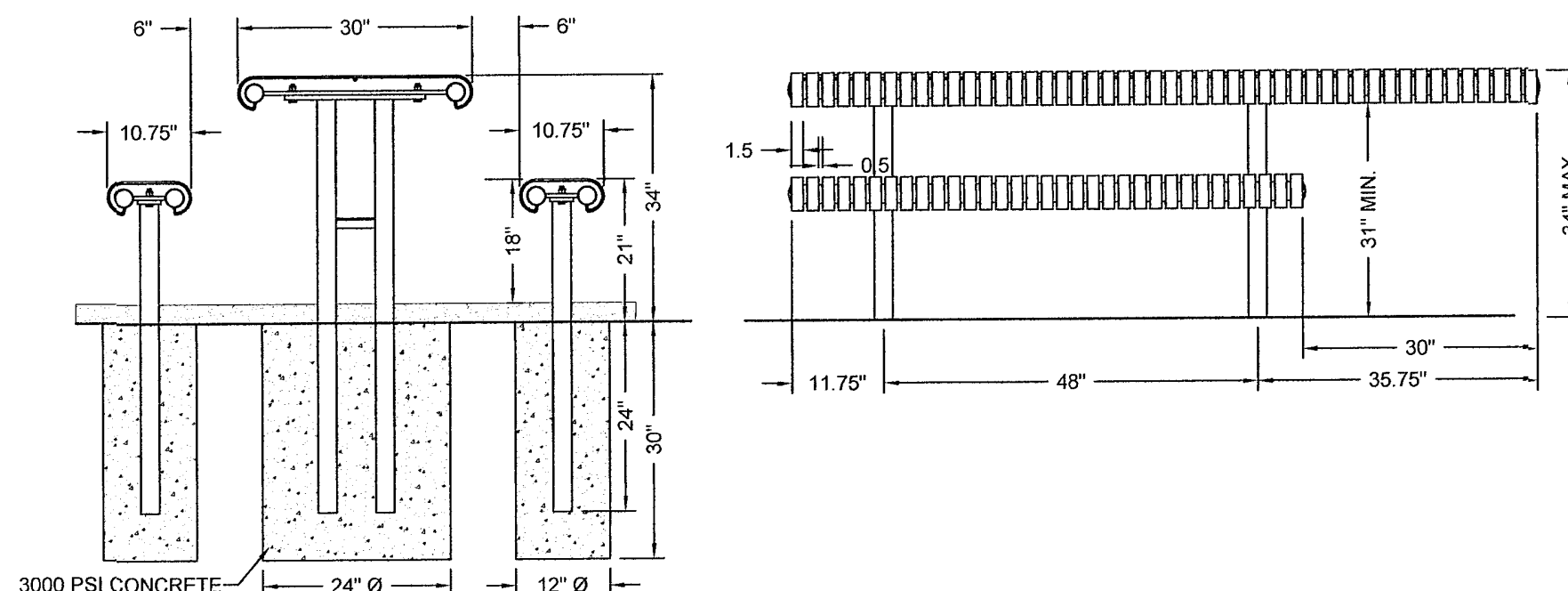
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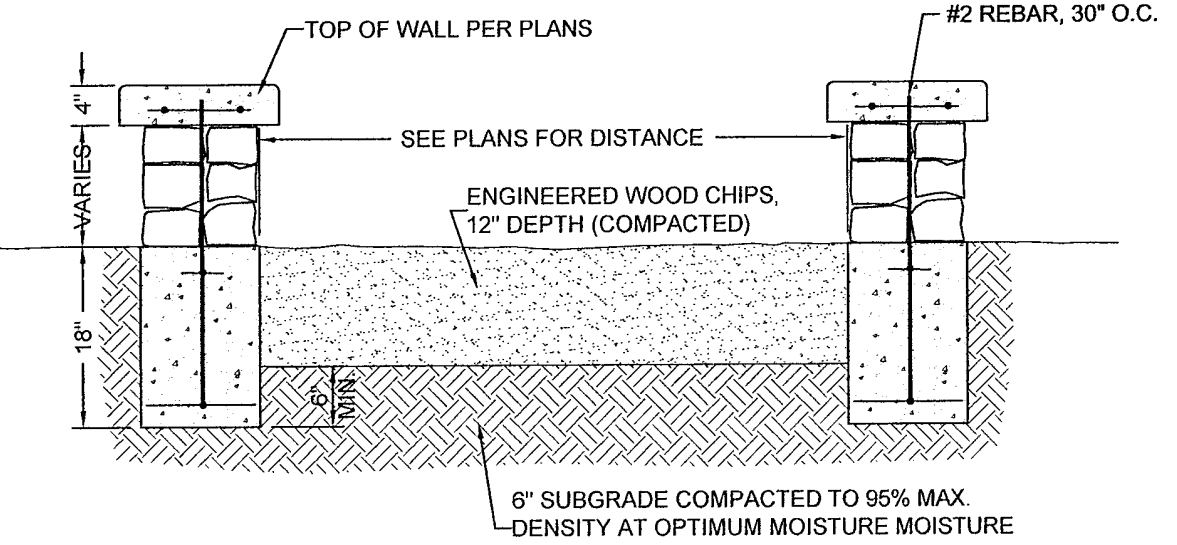
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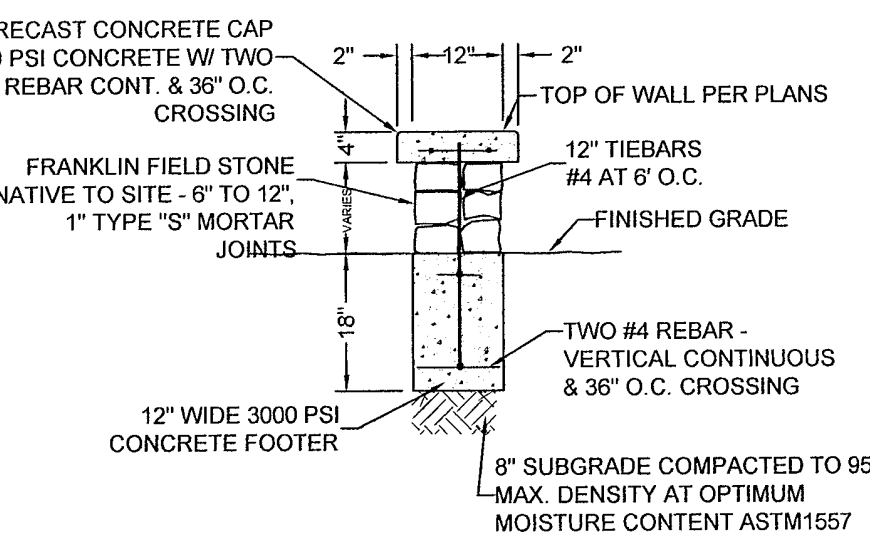
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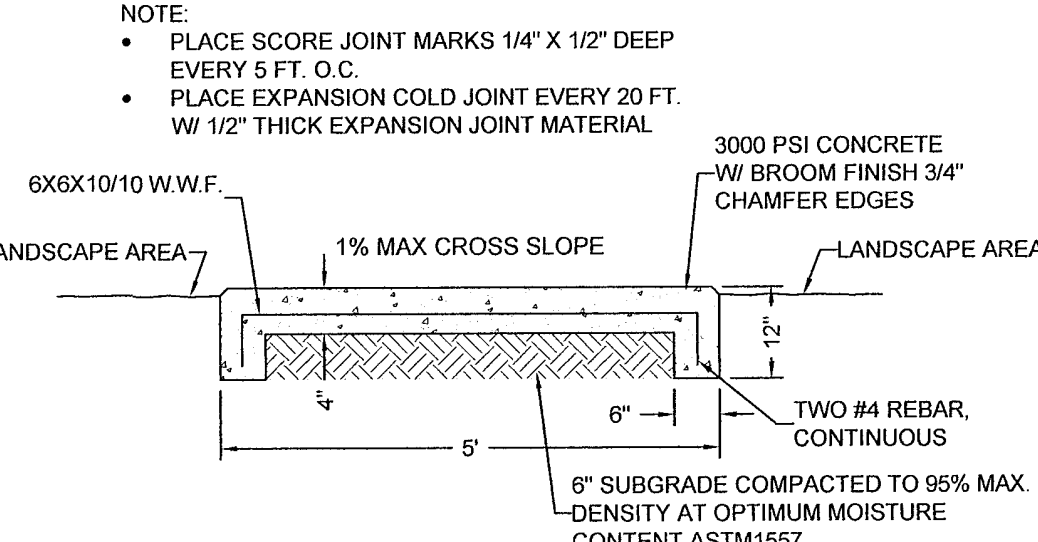
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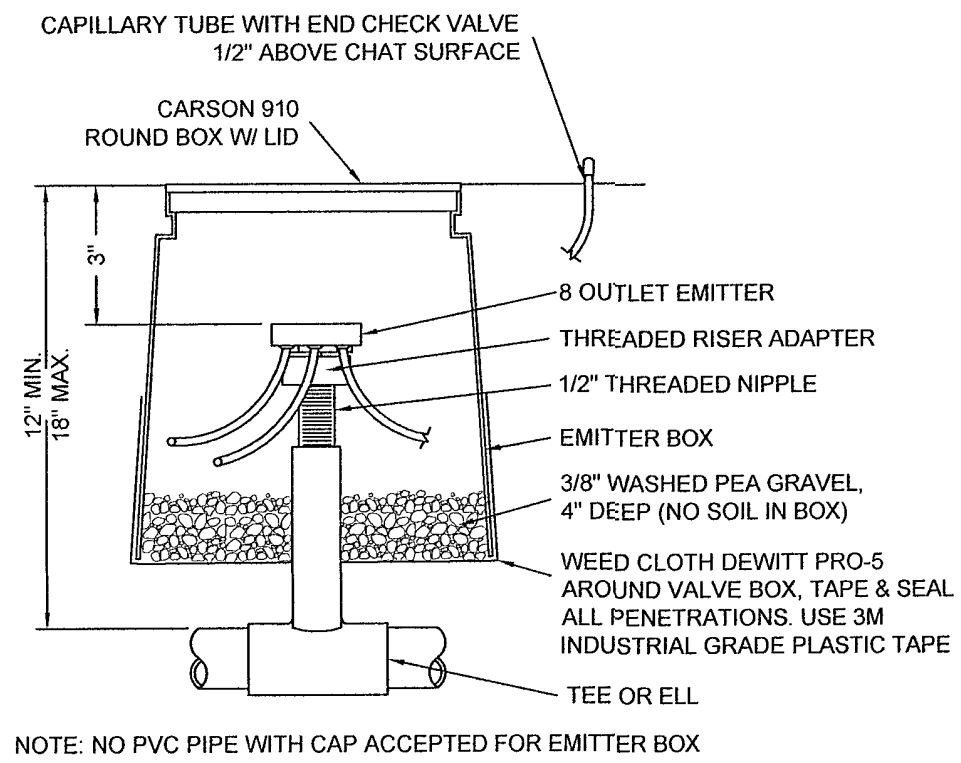
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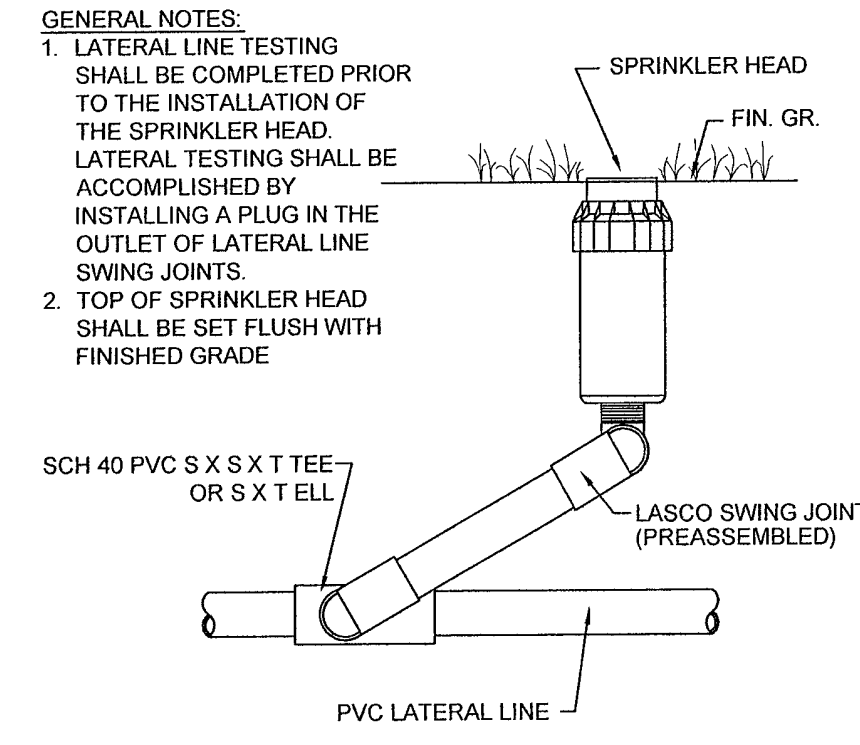
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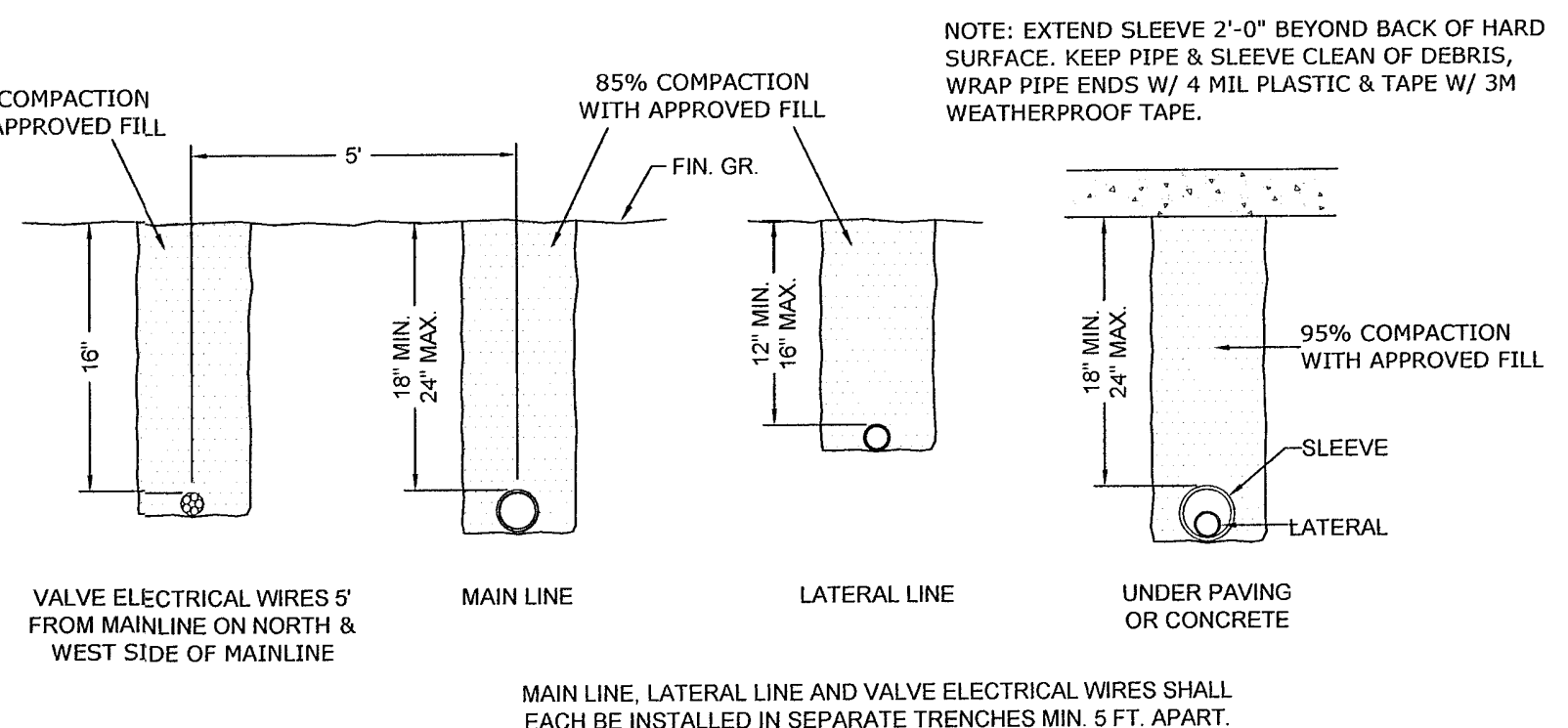
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NOT TO SCALE



**DRIP EMITTER DETAIL**  
NOT TO SCALE



**SPRINKLER HEAD DETAIL**  
NOT TO SCALE



**LINE BURIAL DEPTHS DETAIL**  
NOT TO SCALE

REFERENCES - BENCHMARK

414 Executive Center Blvd  
5626 Bldg 17, 79902  
P 945-552-7272  
F 945-552-7373  
www.quantumeng.com  
Texas Registered Engineering Firm F-005146

**QUANTUM**  
ENGINEERING CONSULTANTS CORPORATION

SCALE: 1" = 20'  
HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 4'  
CONTOUR INTERVAL: 1/2'  
DATE: 5-10-12  
DESIGN BY: JBA  
DRAWN BY: JBA  
CHKD BY: JBA  
APPRO. BY: JBA  
JOB NO.: 1038

PROJECT TITLE  
**FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS**

SHEET TITLE  
**LANDSCAPE & IRRIGATION DETAILS**

SHEET NO.  
**L-4**  
OF 9 SHEETS

**PARKS DEPARTMENT**

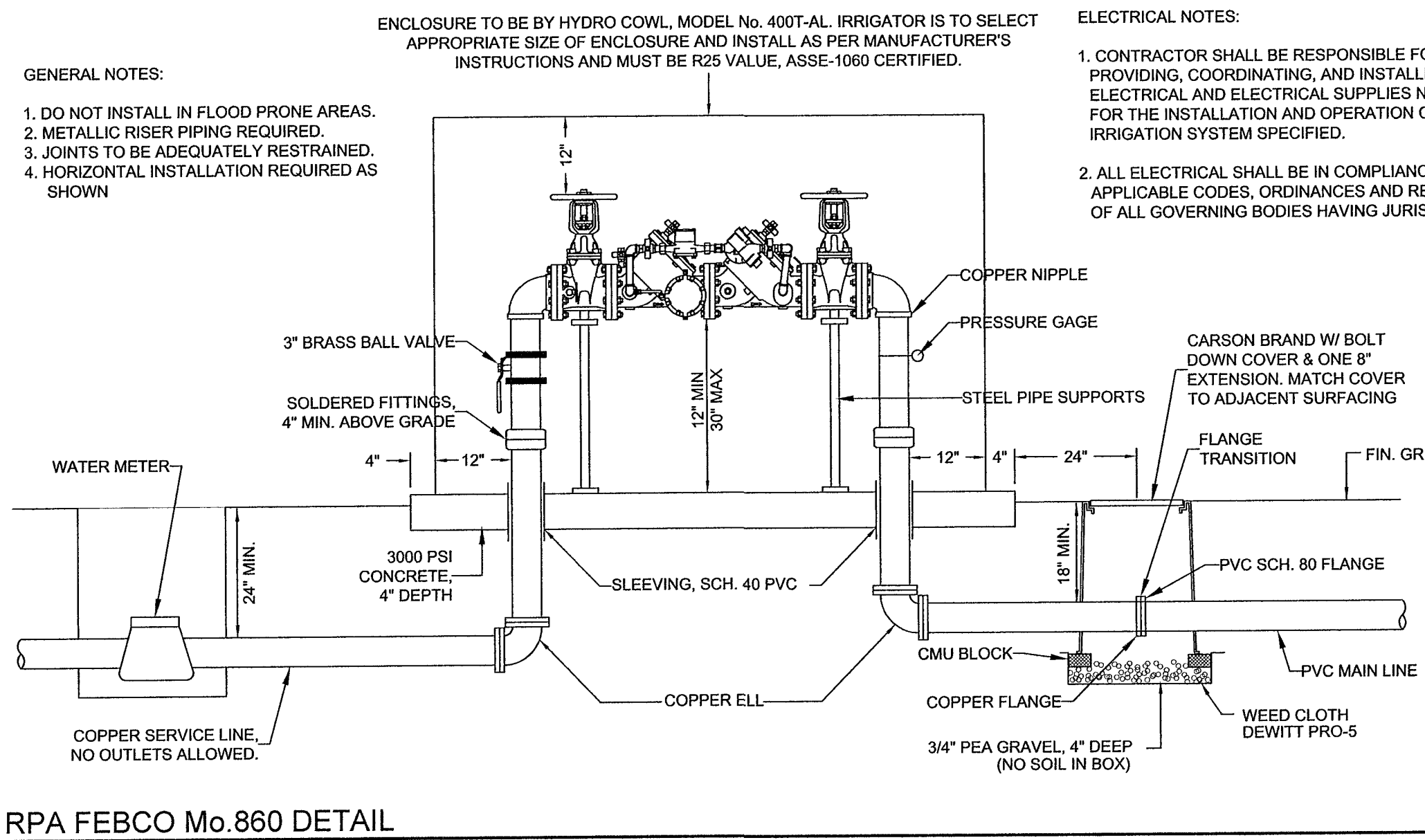
Jessie C. ...  
5/15/12  
Approved

STATE OF TEXAS  
JENNIFER L. BARR  
15999  
COUNTY CLERK

5/10/12

**desert elements**  
CAPE DESIGN, LLC  
1-3 ardeno drive, sunder park, near moxio 8003  
DE@desertelements.com • phone 575.589.9100 • fax 575.589.9104

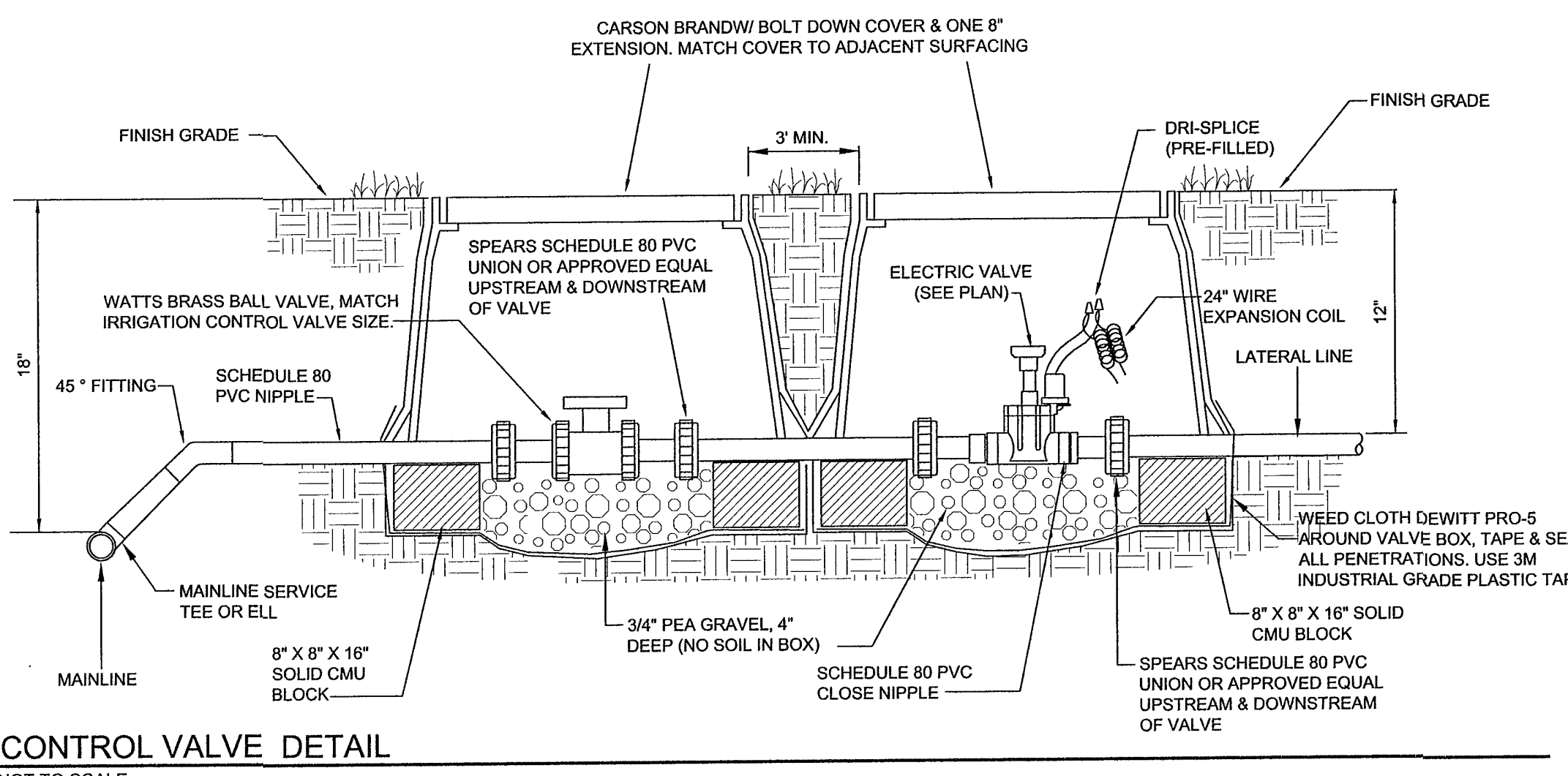
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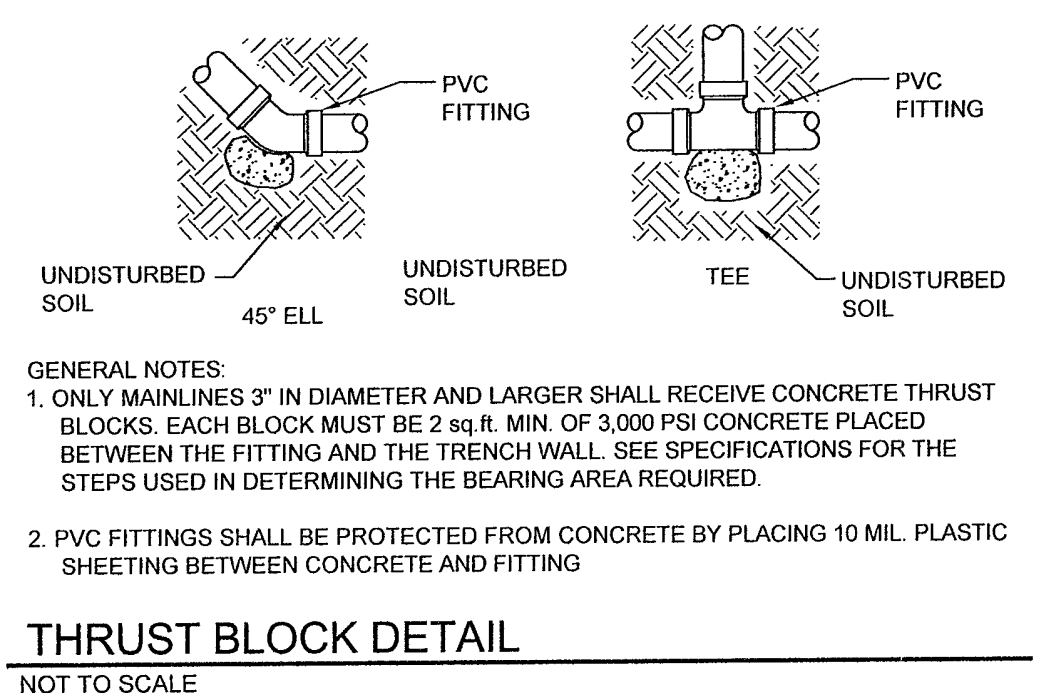
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**ELECTRICAL NOTES:**

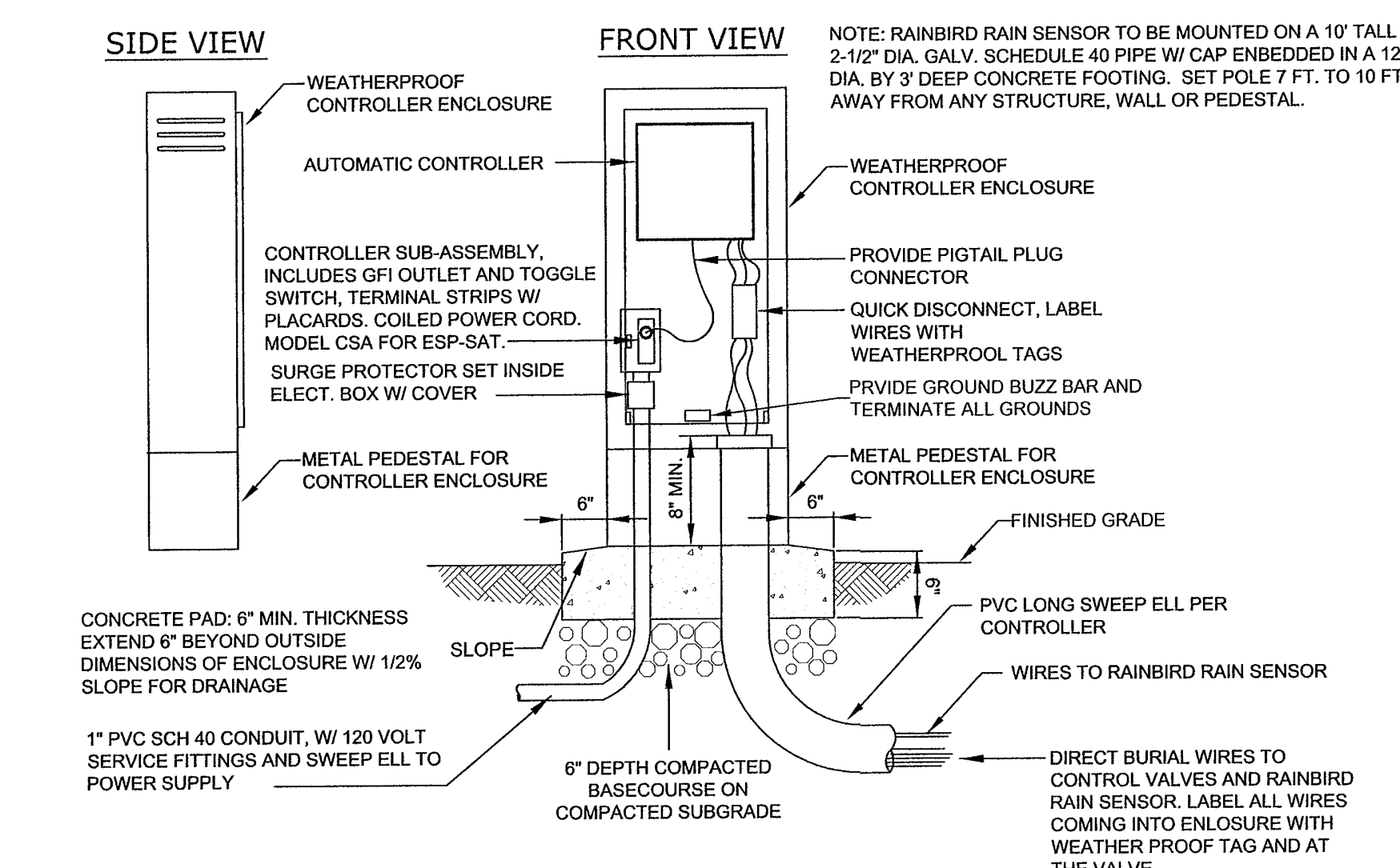
1. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING, COORDINATING, AND INSTALLING ALL ELECTRICAL AND ELECTRICAL SUPPLIES NECESSARY FOR THE INSTALLATION AND OPERATION OF THE IRRIGATION SYSTEM SPECIFIED.
2. ALL ELECTRICAL SHALL BE IN COMPLIANCE WITH ALL APPLICABLE CODES, ORDINANCES AND REQUIREMENTS OF ALL GOVERNING BODIES HAVING JURISDICTION.



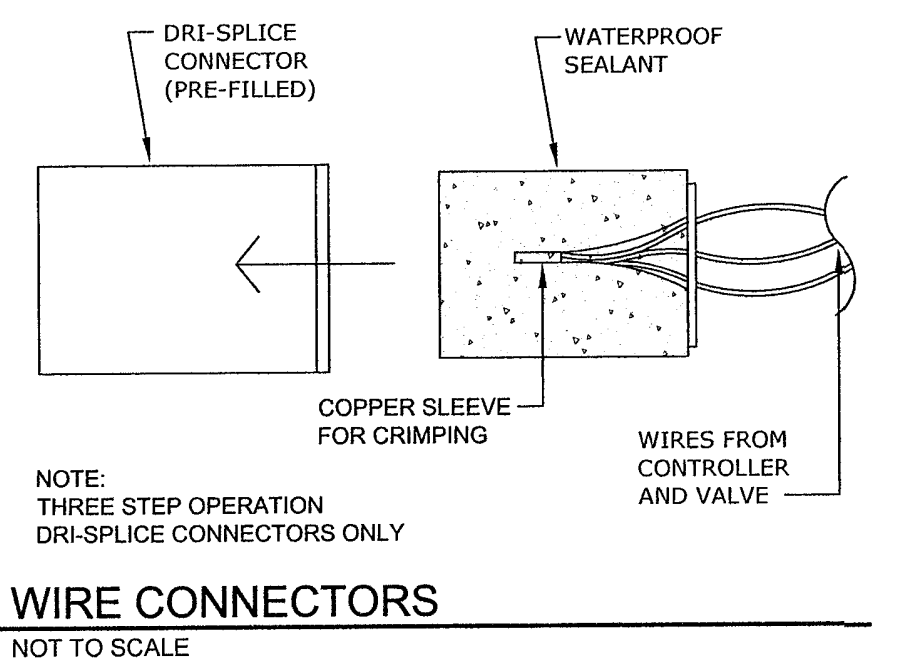
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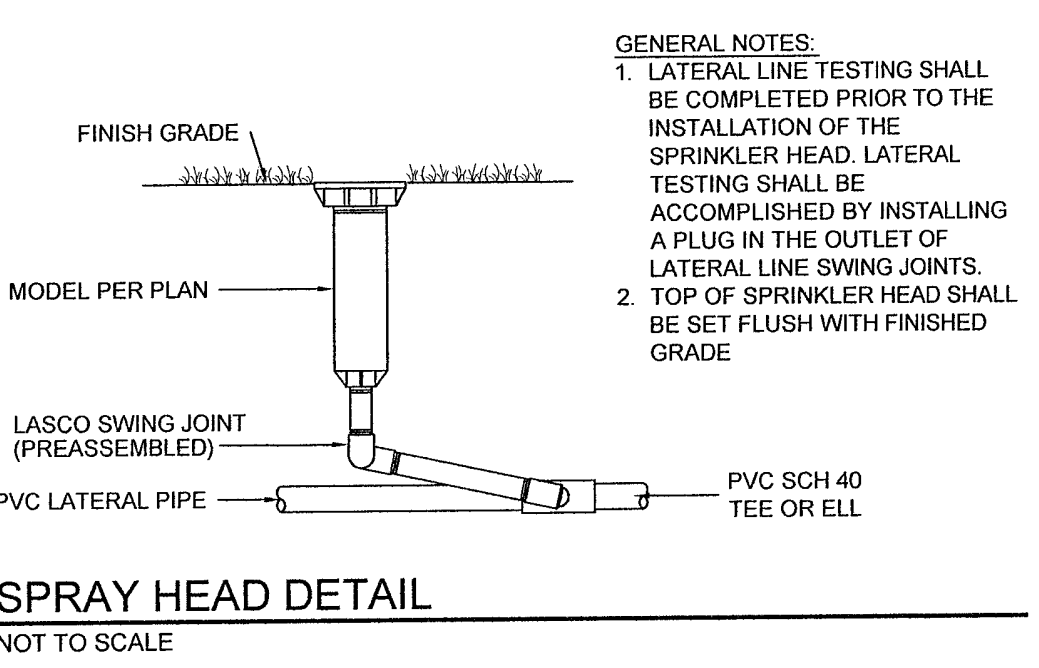
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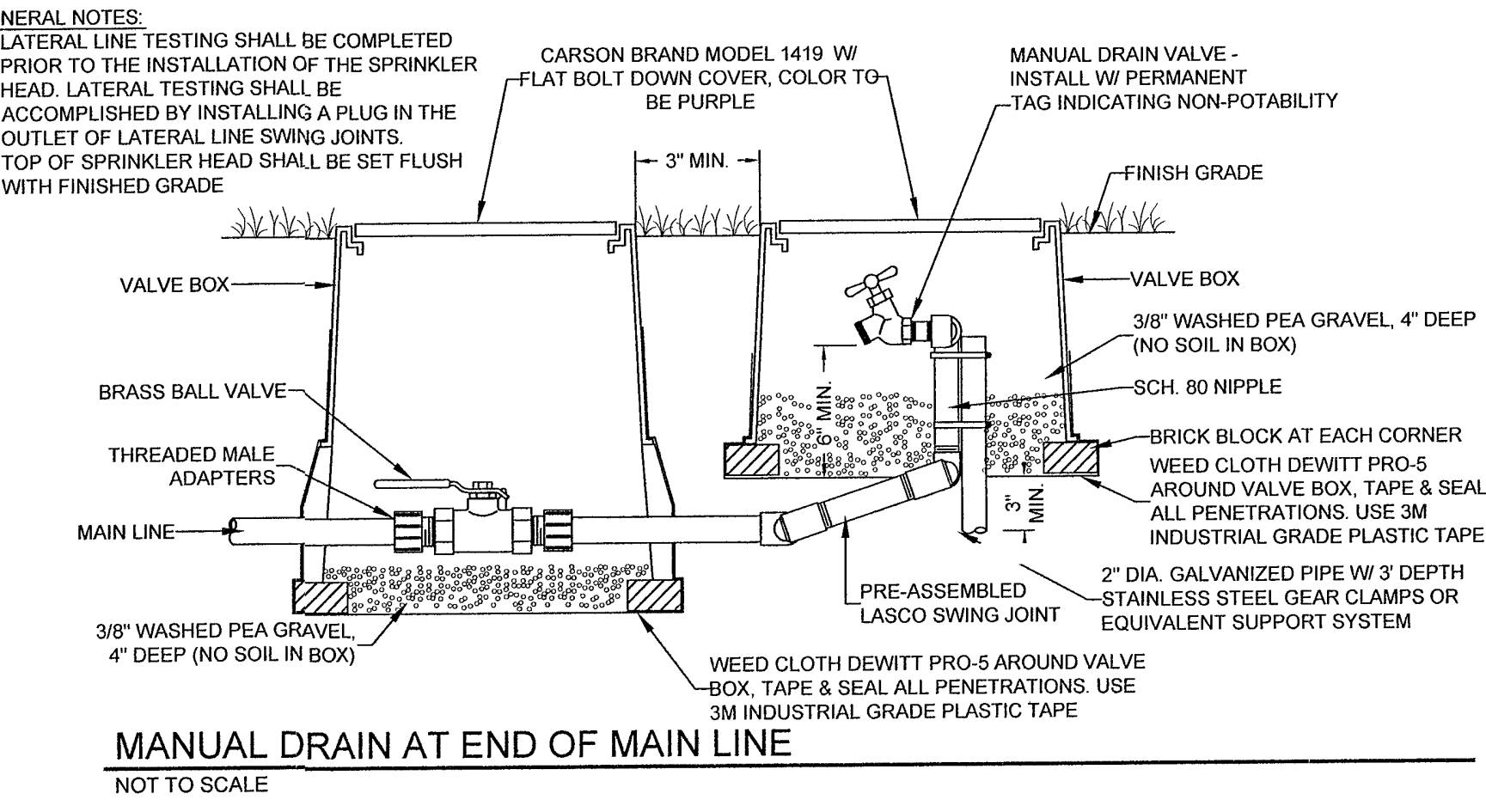
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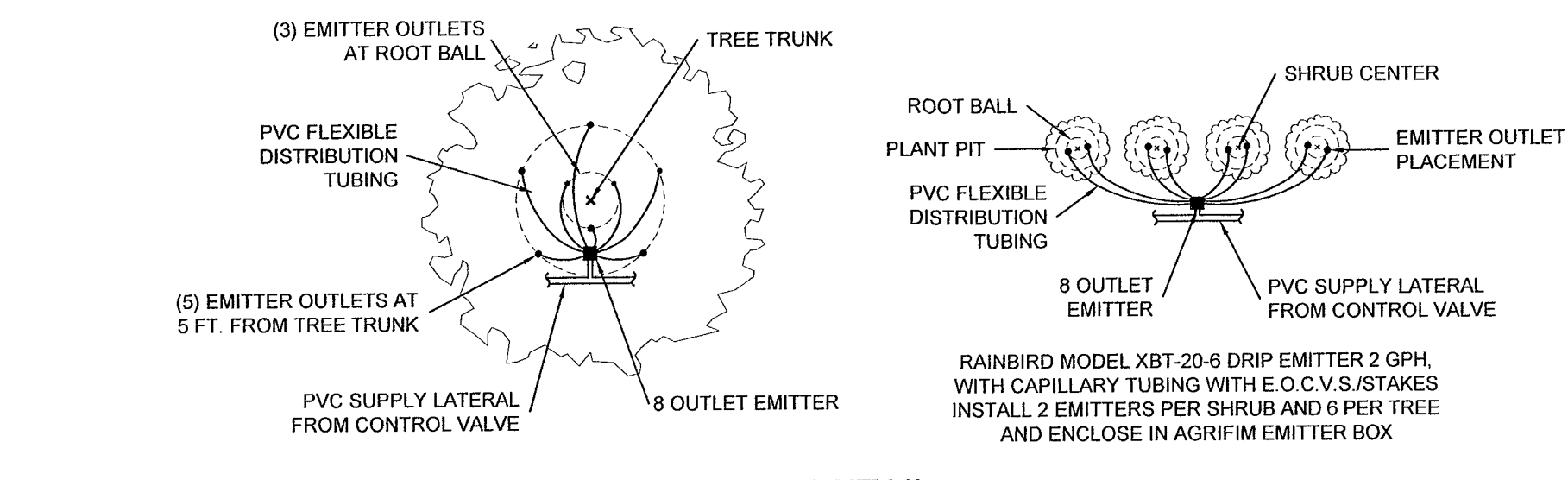
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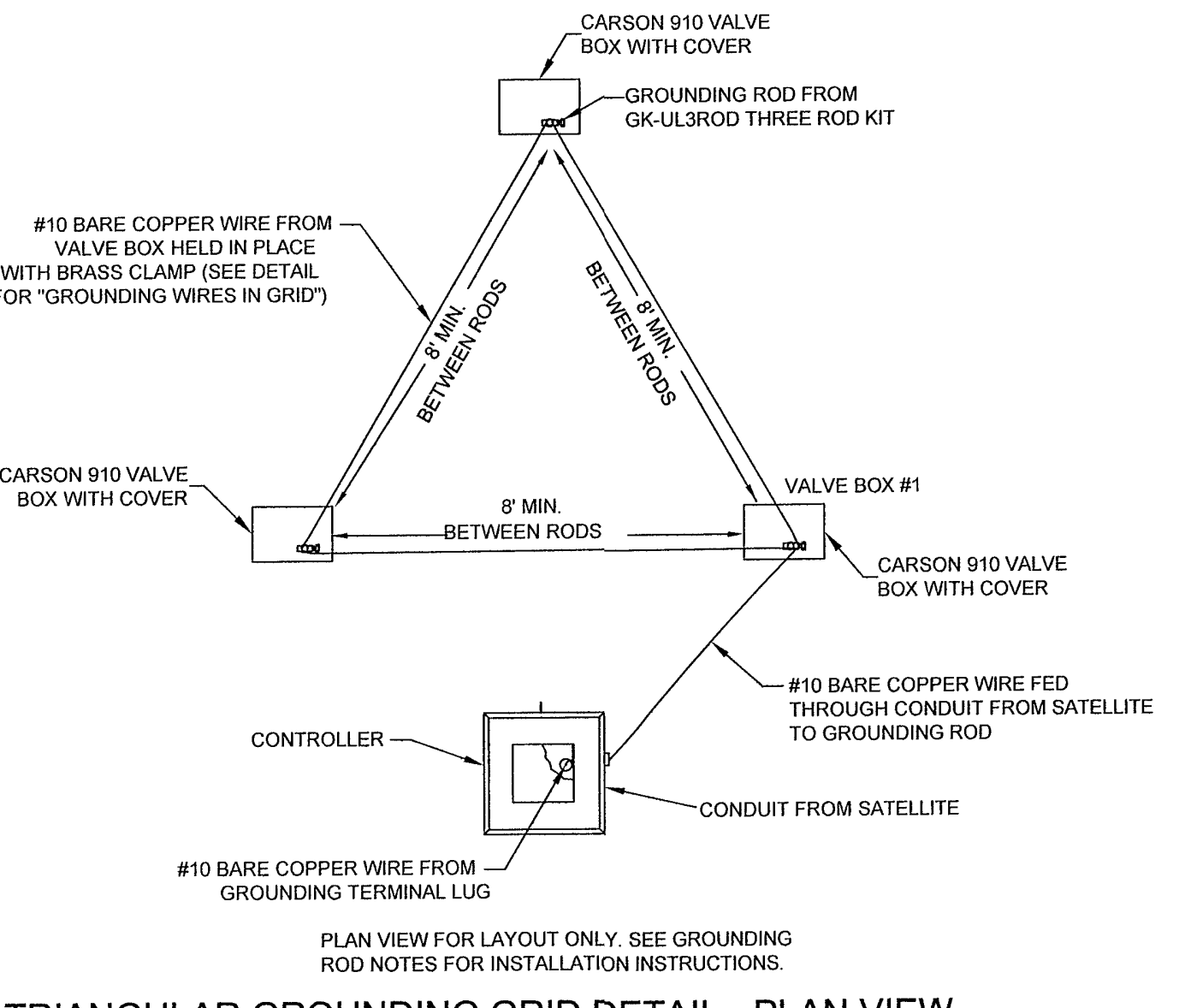
**SPRAY HEAD DETAIL**  
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**MANUAL DRAIN AT END OF MAIN LINE**  
NOT TO SCALE



**EMITTER OUTLET PLACEMENT DETAIL**  
NOT TO SCALE

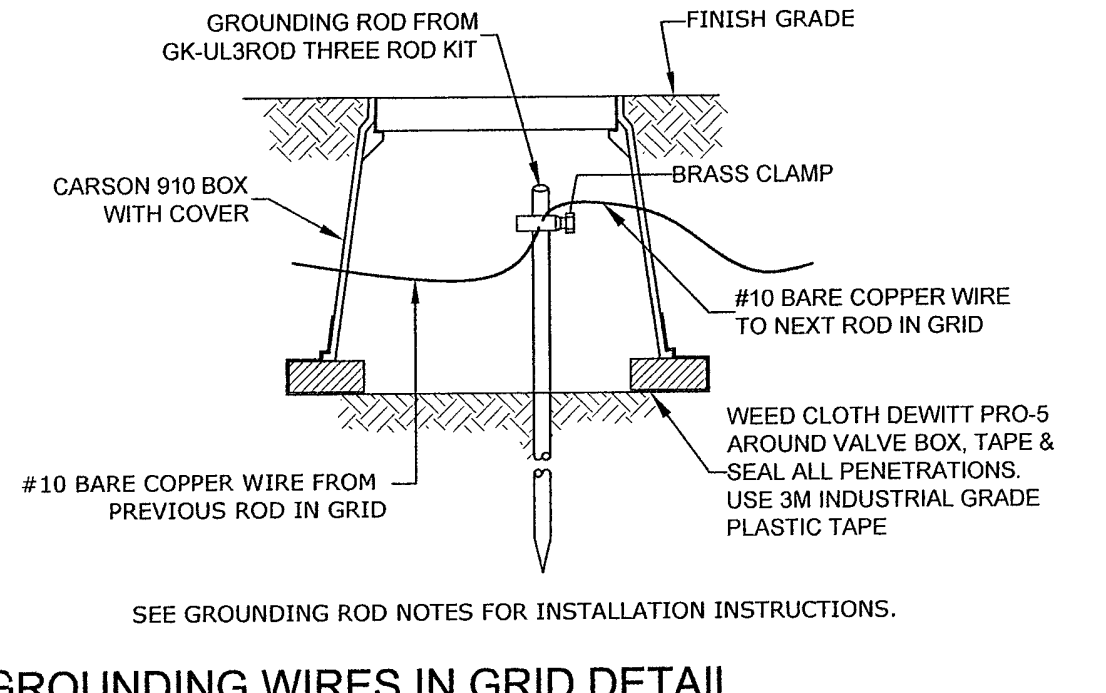


**TRIANGULAR GROUNDING GRID DETAIL - PLAN VIEW**  
NOT TO SCALE

**GROUNDING ROD NOTES**

GROUNDING RODS SERVE AS ELECTRODES FOR DEVICES TO DISSIPATE THE SURGE INTO THE EARTH. CAREFULLY READ THE FOLLOWING INSTALLATION INSTRUCTIONS:

1. ALWAYS USE A 5/8" x 8" COPPER CLAD ROD.
2. RUN A #10 OR LARGER BARE COPPER WIRE FROM THE DEVICE TO THE ROD.
3. KEEP THE GROUND WIRES AS SHORT AND STRAIGHT AS POSSIBLE FROM THE DEVICE TO THE FIRST ROD. CLAMP ALL WIRES TO THE GROUNDING ROD. DO NOT SOLDER OR TAPE THEM TO THE ROD.
4. ALWAYS USE A SEPARATE CLAMP TO ATTACH EACH WIRE TO A ROD.
5. TO INSTALL GROUNDING ROD, USE GK-TOOLS ROD DRIVING SLEEVE.
6. SPACE THREE RODS IN AN EQUILATERAL TRIANGULAR GRID AT LEAST 8' APART FROM THE OTHERS IN THE GRID. CONNECT ALL THREE RODS WITH A SOLID #10 COPPER WIRE.
7. WHEN TESTED WITH THE PROPER EQUIPMENT, GRIDS SHOULD HAVE AN EARTH RESISTANCE NO GREATER THAN 15 OHMS.
8. WHENEVER MORE THAN ONE WIRE IS ATTACHED TO A GROUNDING ROD ALWAYS USE A SEPARATE CLAMP FOR EACH WIRE. TRYING TO INSTALL MORE THAN ONE WIRE PER CLAMP COULD CAUSE A POOR CONNECTION RESULTING IN HIGH RESISTANCE LEVELS.
9. STANDARD VALVE BOX WITH COVER TO BE 910 CARSON 10 IN. TAN BOX/LID AND TO BE SECURED WITH 1-1/2" LONG SCREW.



**GROUNDING WIRES IN GRID DETAIL**  
NOT TO SCALE

REFERENCES	BENCHMARK
DATE	REVISION
BY	

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7272  
F 915.532.7373  
www.quantumeng.com

**QUANTUM**  
engineering  
consultants

Texas Registered Engineering Firm F-005146

HORIZONTAL:	1" = 20'
VERTICAL:	N/A
CONTOUR INTERVAL:	5'-10'-12'
DATE:	5-10-12
DESIGN BY:	JBA
DRAWN BY:	JBA
CHECK BY:	JBA
APPROV. BY:	JBA
JOB NO.:	1038

**FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS**  
EL PASO COUNTY, TEXAS

SHEET TITLE

IRRIGATION  
DETAILS

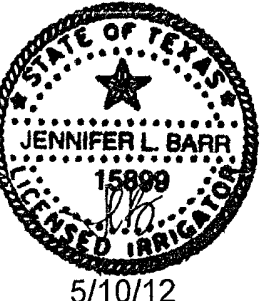
SHEET NO.

L-5

OF 9 SHEETS

May 14, 2012 5:04pm certshah@q.com  
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**PARKS  
DEPARTMENT**



**debert elements**  
CAPE DESIGN, LLC

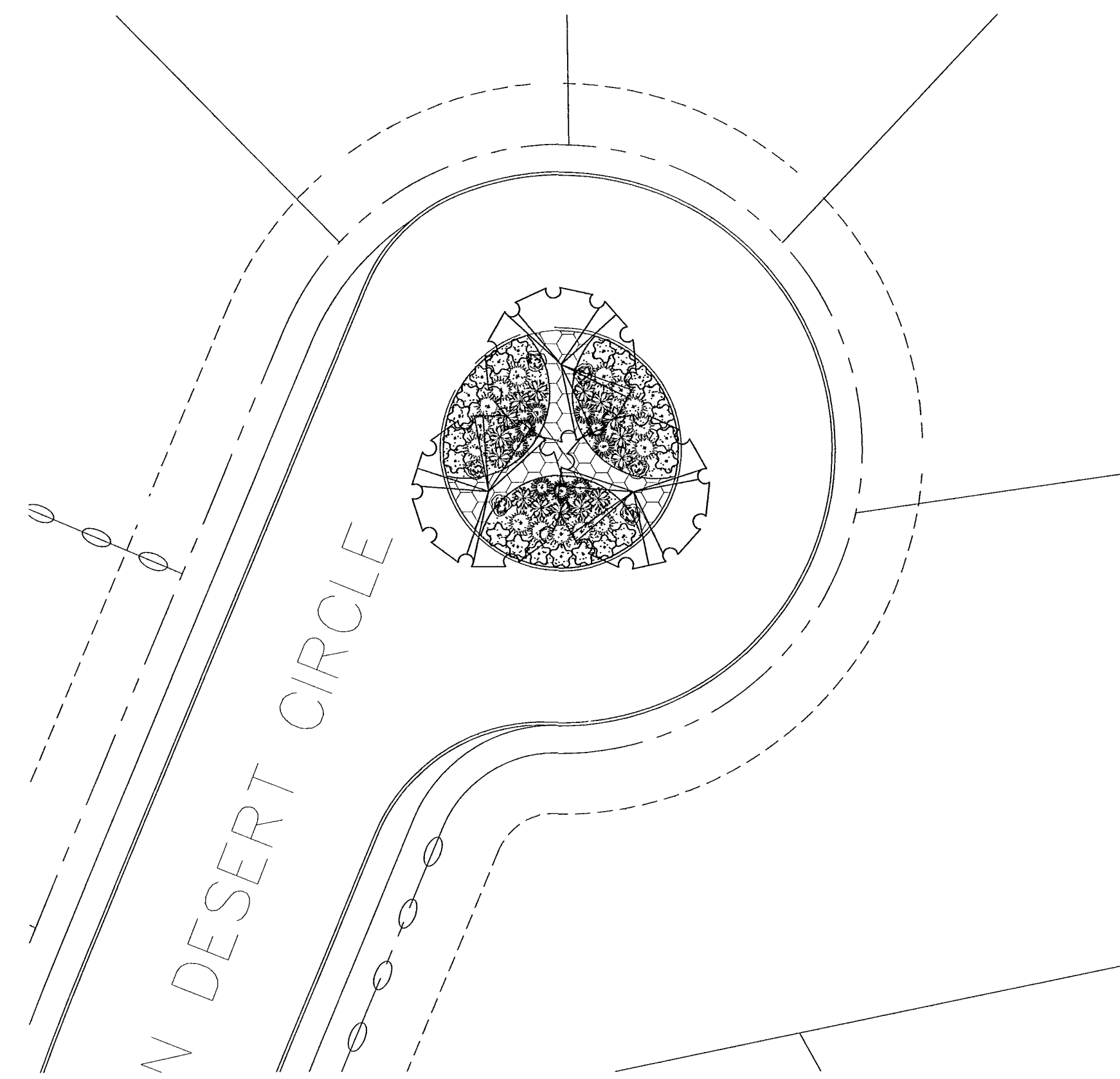
*Approved*  
5/15/12

5/10/12

13 verdugo drive, redland park, new mexico 8053  
D@debert.com • phone 575.589.9100 • fax 575.589.9104



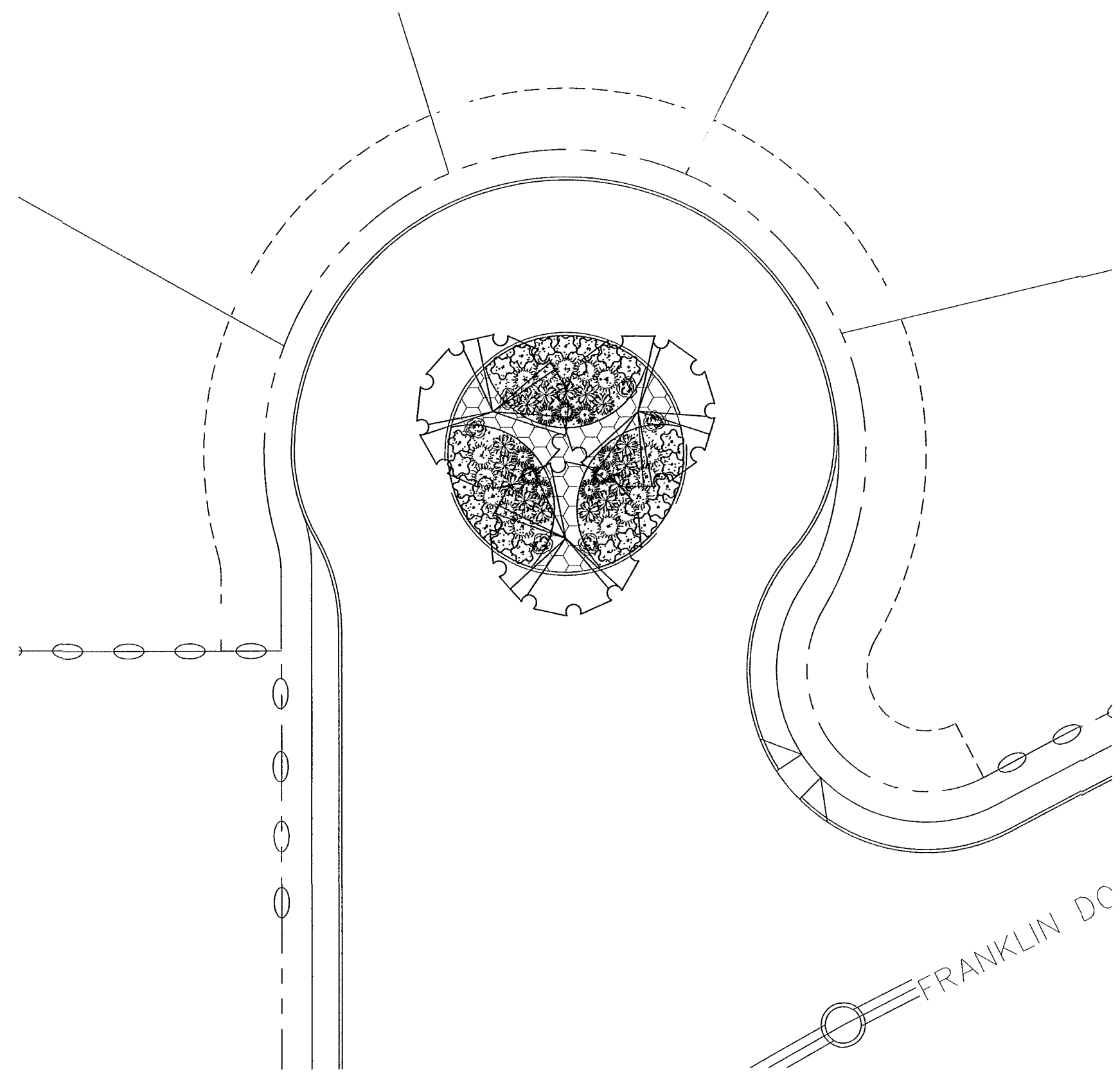




LANDSCAPE PLAN - AREA 'A'



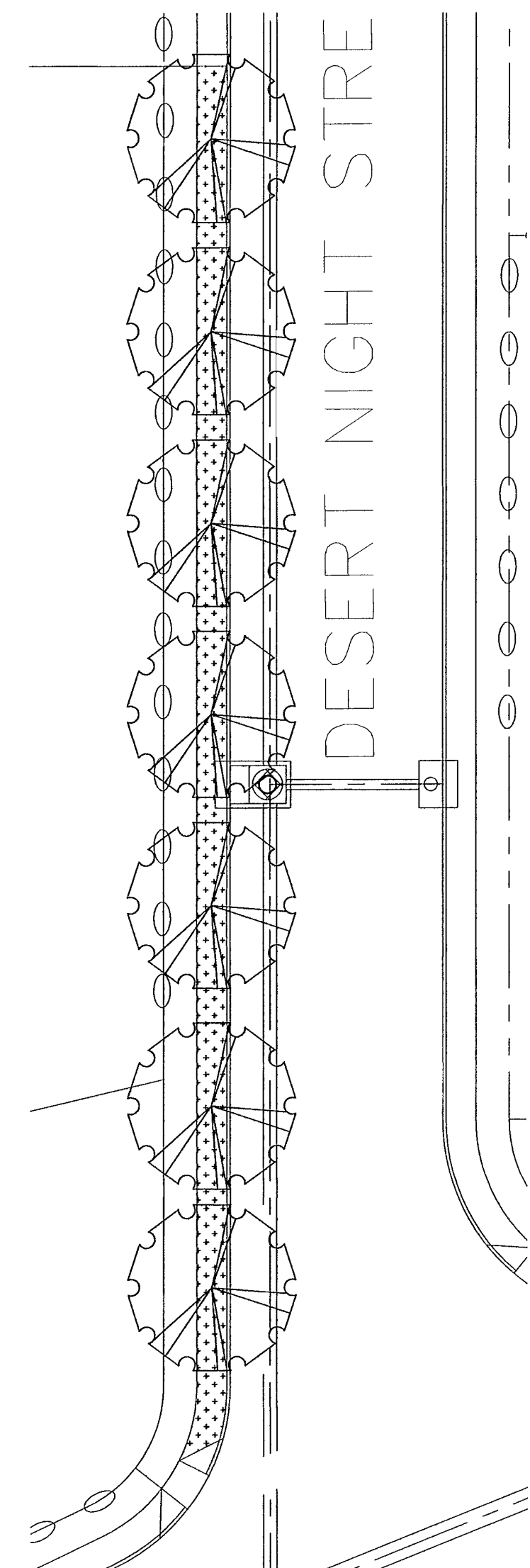
SCALE: 1" = 20'



LANDSCAPE PLAN - AREA 'B'



SCALE: 1" = 20'



LANDSCAPE PLAN PARKWAY AREA



SCALE: 1" = 20'

LANDSCAPE LEGEND

SYMBOL	COMMON NAME	BOTANICAL NAME	QUANTITY		
			AREA: 'A'	'B'	PARKWAY

2" CALIPER TREE - 10' HEIGHT MINIMUM					
	TEXAS RED OAK	QUERCUS BUCKLEYI	3	3	7
5 GALLON SHRUB - 18" HEIGHT MINIMUM UNLESS OTHERWISE INDICATED					
	VALENTINE BUSH	EREMOPHILA MACULATA	9	9	0
	PURPLE FOUNTAIN GRASS	PENNISETUM SETACEUM	15	15	0
1 GALLON SHRUB - GROUND COVER					
	BUFFALO JUNIPER	JUNIPERUS SABINA 'BUFFALO'	15	15	0
	NEW GOLD LANTANA	LANTANA CAMARA 'NEW GOLD'	21	21	0
DECORATIVE STONES & BOULDERS					
	BOULDER - FRANKLIN RED - 2X3 TO 3X4		6	6	0
TURF, GRAVELS, & MULCHES					
	PADRE CANYON ROCK, 3/8" - 3" DEPTH W/ DEWITT PRO-5 WEED BARRIER				
	COBBLE BLEND - 10% 6-12" "DINOSAUR EGGS", 60% 2-4" COBBLE, 30% PEA GRAVEL.				

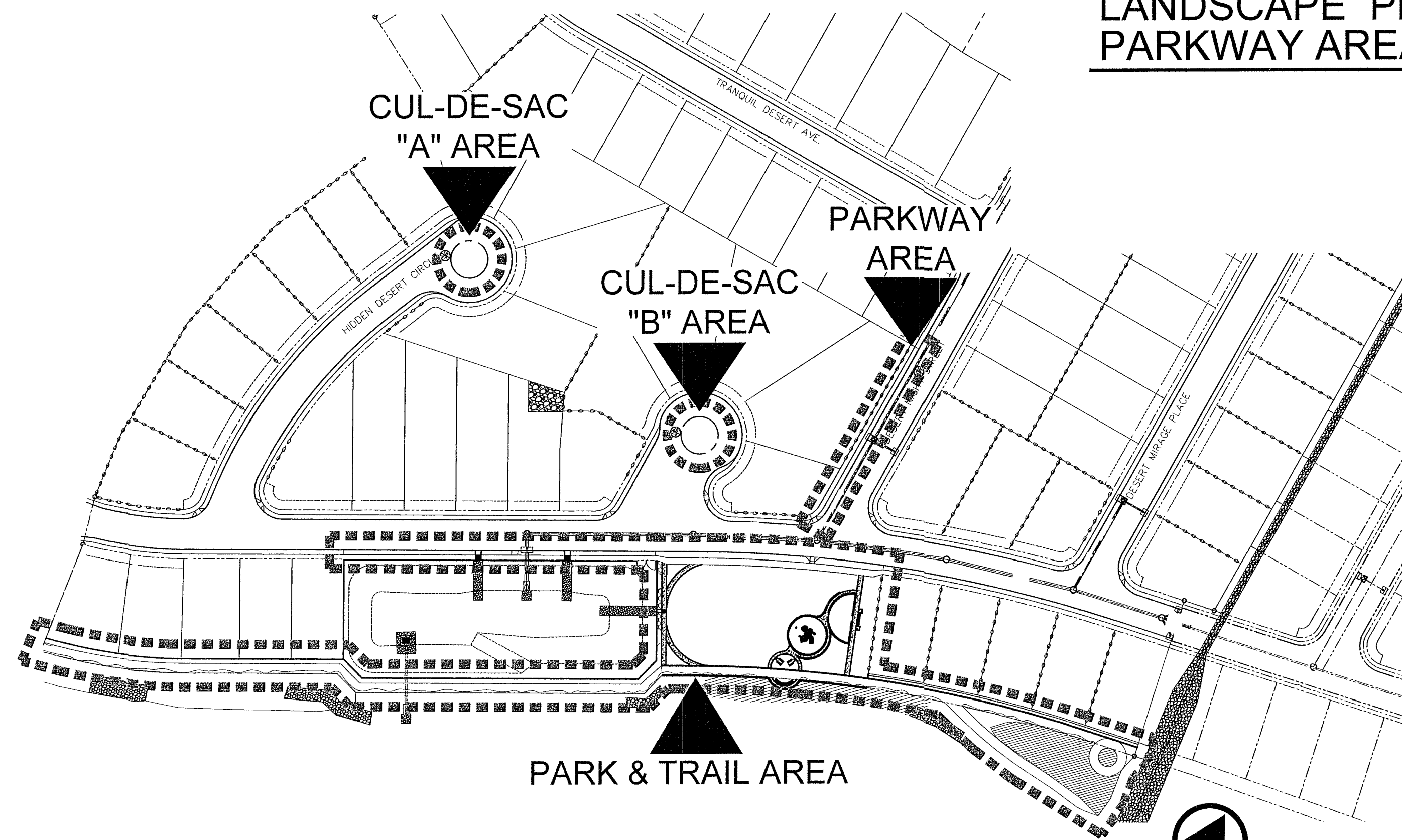
LANDSCAPE NOTES

- ALL UTILITY EASEMENTS SHALL BE MARKED PRIOR TO EXCAVATION, AND PARTICULAR ATTENTION PAID TO TREE PLACEMENT WITHIN AND THROUGHOUT SITE.
- THERE SHALL BE NO STEEL EDGING BETWEEN ROCK TYPES.
- CONTRACTOR SHALL PROVIDE ROCK SAMPLES AND OBTAIN APPROVAL FROM OWNER PRIOR TO FINAL DELIVERY OF QUARRIED MATERIALS.
- CONTRACTOR TO PAY CLOSE ATTENTION TO FINISH GRADES. SHOULD GRAVELED AREAS EXCEED 4:1 SLOPE, CONTRACTOR TO OBTAIN APPROVAL OF LANDSCAPE DESIGNER PRIOR TO MULCH INSTALLATION.
- ALL TREES SHALL BE SINGLE LEADER TRUNK, UNLESS INDICATED IN PLANS.

SITE OBSERVATION SCHEDULE

CONTRACTOR SHALL CONTACT DESERT ELEMENTS FOR INSPECTION ON THE FOLLOWING ITEMS:

- TREE REVIEW, PRIOR TO INSTALLATION (AT NURSERY OR ON SITE).
- PLANT PLACEMENT, PRIOR TO INSTALLATION OF MULCH.



LOCATION MAP



SCALE: 1" = 100'

DATE	REVISION	BY

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915-532-7272  
F 915-532-7373

**QUANTUM**  
engineerin  
consultants  
incorporated

Texas Registered Engineering Firm F-005146

SCALE:	HORIZONTAL:	VERTICAL:	CONTOUR INTERVAL:	N/A
1" = 20'	1" = 20'	1" = 20'	5'-10'-12'	

PROJECT TITLE  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

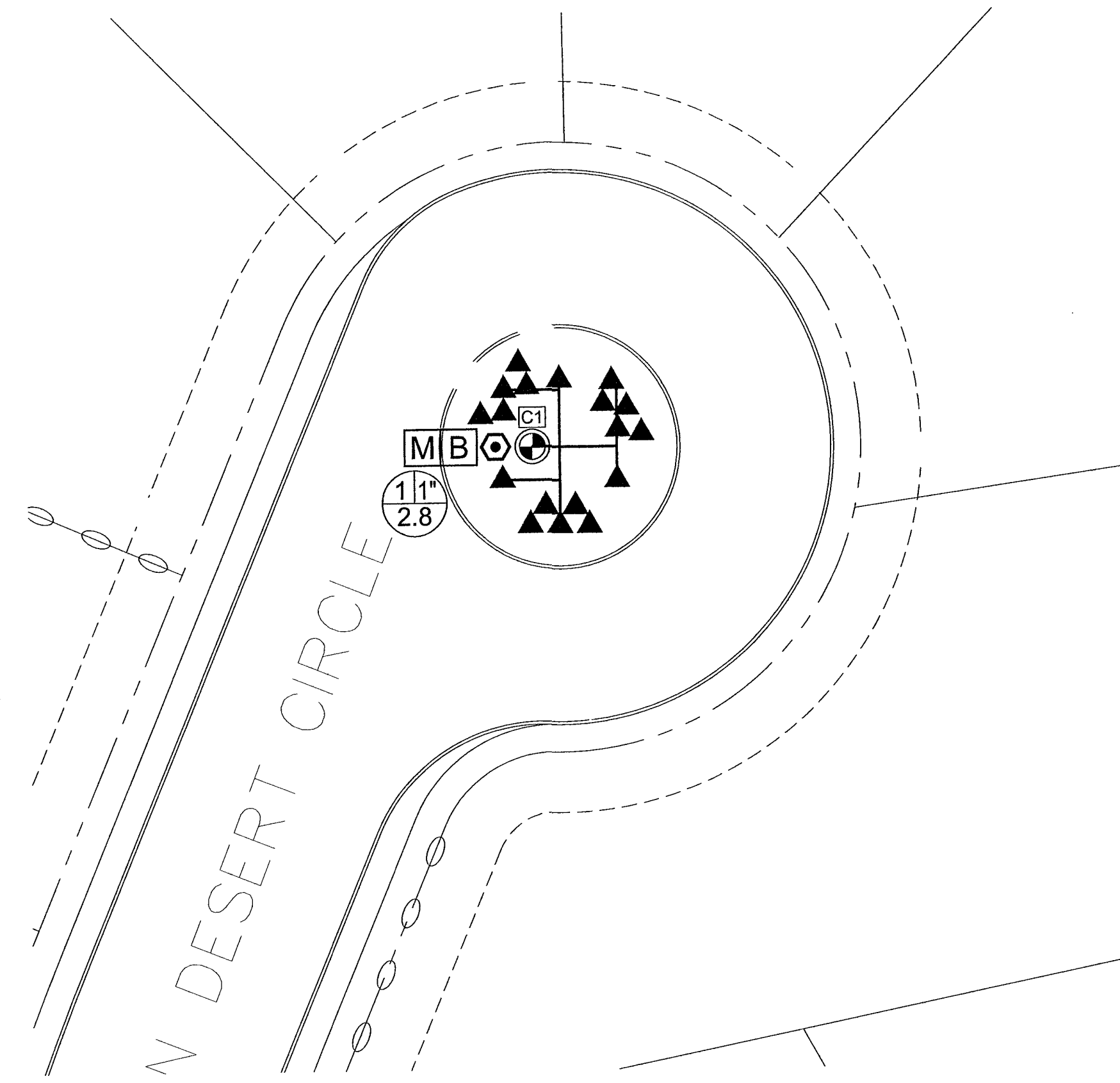
SHEET TITLE  
LANDSCAPE PLAN

SHEET NO.  
L-7

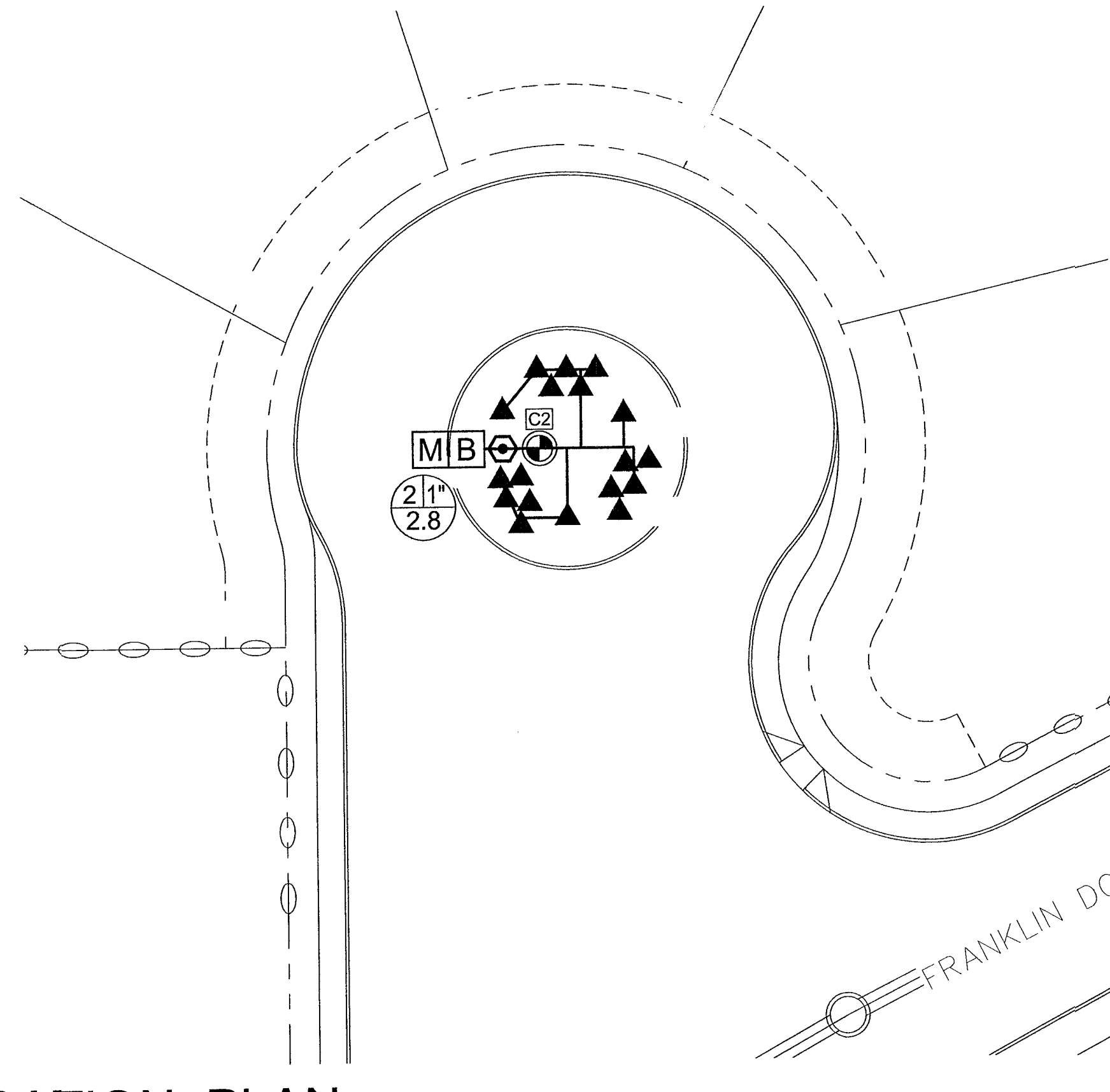
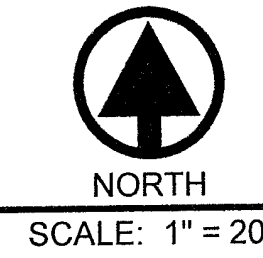
OF 9 SHEETS



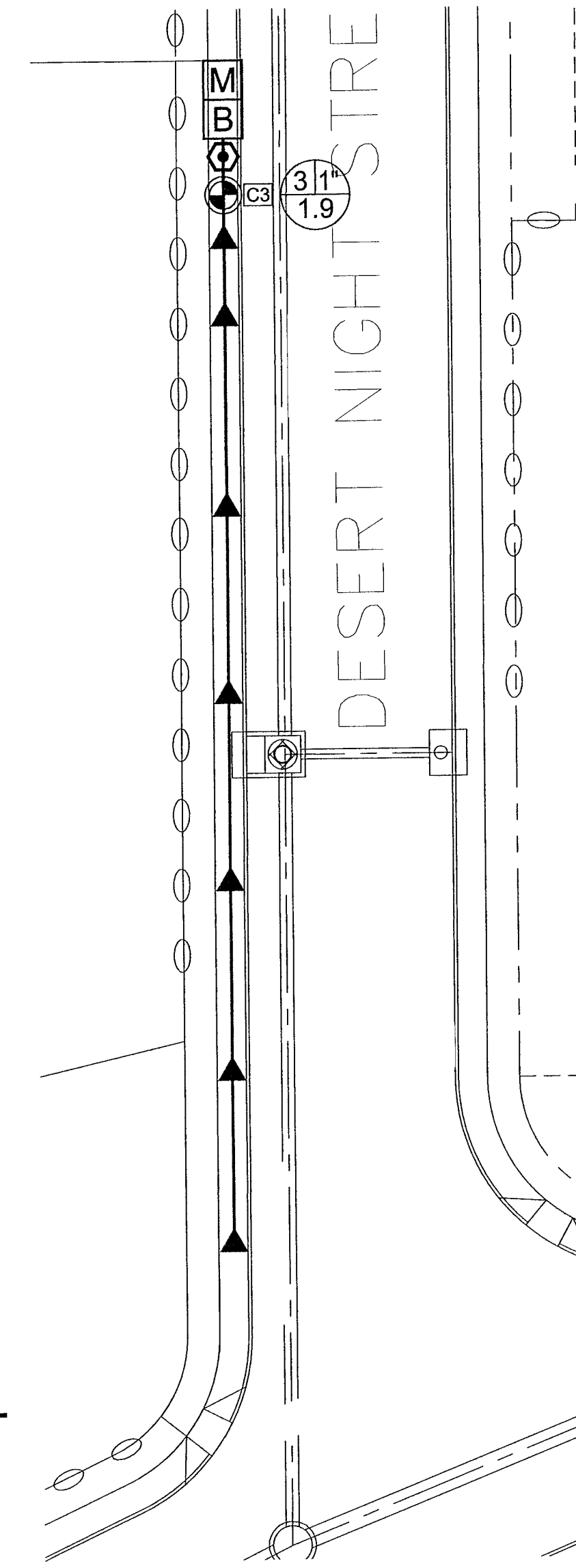
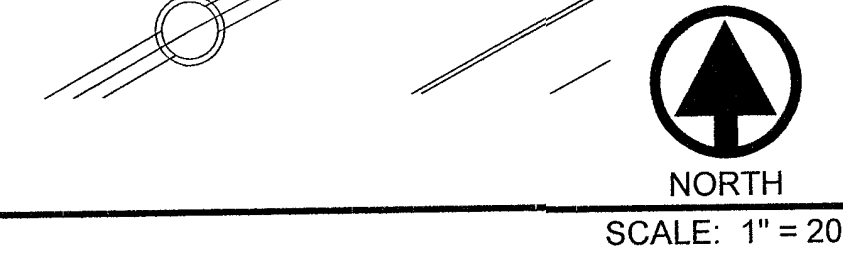
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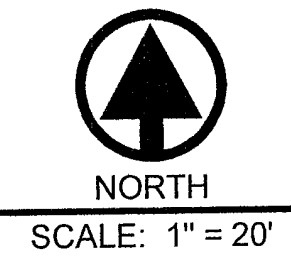
IRRIGATION PLAN



IRRIGATION PLAN



IRRIGATION PLAN



**IRRIGATION NOTES**

- IRRIGATION IN TEXAS IS REGULATED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, P.O. BOX 13067, AUSTIN, TX 78711.
- CONTRACTOR SHALL VERIFY THE EXACT LOCATION OF ALL EXISTING AND PROPOSED UTILITIES AND ALL SITE CONDITIONS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE CAUSED BY THE CONTRACTOR SHALL BE REPAIRED OR REPLACED AT NO ADDITIONAL COST TO THE OWNER.
- IRRIGATION SHALL BE INSTALLED ACCORDING TO PLANS, DETAILS, AND SPECIFICATIONS. SHOULD CHANGES BE IMPLEMENTED IN THE FIELD, A NEW SET OF PLANS IS REQUIRED TO BE SUBMITTED TO THE CITY OF EL PASO. LANDSCAPE DESIGNER IS NOT UNDER CONTRACT TO PROVIDE THESE PLANS, EXCEPT AS PROVIDED FOR IN ORIGINAL CONTRACT.
- CONTRACTOR WILL NOT WILLFULLY INSTALL THE IRRIGATION SYSTEM AS DESIGNED, WHEN IT IS OBVIOUS THAT FIELD CONDITIONS EXIST, THAT WERE NOT CONSIDERED AT TIME OF DESIGNING THE SYSTEM. ANY CONDITIONS NOTED AS SUCH, SHALL BE REPORTED TO THE ARCHITECT AND IRRIGATION DESIGNER. IF THE CONTRACTOR FAILS TO DO SO, THE CONTRACTOR ASSUMES FULL RESPONSIBILITY FOR ANY CORRECTIONS NEEDED.
- PLANS SCHEMATIC FOR READABILITY. CONTRACTOR TO ADJUST AS NECESSARY TO FIT SITE.
- CONTRACTOR SHALL VERIFY STATIC PRESSURE AT METER MEETS SYSTEM NEEDS. LICENSED IRRIGATOR TO AMEND AS NECESSARY.
- PROVIDE SHUTOFF VALVE BETWEEN METER AND BACKFLOW.
- CONTRACTOR IS RESPONSIBLE FOR CONNECTING AUTOMATIC CONTROLLER TO ELECTRICITY.
- 14 GA. SOLID COPPER WIRE (PVC INSULATED AND UL APPROVED) SHALL RUN FROM CONTROLLER TO VALVES. COMMON WIRE TO BE 12GA.
- ALL CONTROL WIRING FROM THE VALVES TO THE CONTROLLER MUST BE INSTALLED IN A 1" PVC CONDUIT PIPE IF BURIED BENEATH CONCRETE OR ASPHALT SURFACES.
- LOCATE VALVES AWAY FROM LOW SPOTS OR AREAS OF DRAINAGE FLOW.
- VALVE CAPS SHALL MATCH COLOR OF SURROUNDING MATERIAL, AS CLOSELY AS POSSIBLE.
- ALL MAINLINES SHALL BE BURIED MIN. 18", ALL LATERALS 12".
- MAINTAIN 4" MINIMUM CLEARANCE BETWEEN PIPE RUNNING IN THE SAME TRENCH. CONTROL WIRE SHALL ALWAYS BE TO THE SIDE AND BELOW THE TOP OF THE PIPE RUNNING IN THE SAME TRENCH.
- POLYETHYLENE TUBING TO BE PLACED UNDER WEED BARRIER FABRIC. MICROTUBING TO BE STAKED.
- THE CONTRACTOR SHALL PROVIDE THE OWNER WITH AS-BUILT DRAWINGS ON MYLAR PRIOR TO APPROVAL OF FINAL PAYMENT.
- ALL PIPING/WIRING RUNNING BENEATH PAVED SURFACES (DRIVES, SIDEWALKS, ETC.) SHALL BE INSTALLED IN SCH 40 PVC SLEEVES. SLEEVES SHALL BE OF THE SIZE SO THAT THE INSIDE DIAMETER OF THE SLEEVE IS 3 TIMES GREATER THAN THAT OF THE COMBINED OUTER DIAMETER OF ALL ITEMS INSTALLED IN THE SLEEVES.
- PEA GRAVEL SHALL BE INSTALLED AT THE BASE OF ALL VALVE BOXES, WITH A CLEARANCE OF MIN. 2" BETWEEN VALVE AND TOP OF GRAVEL.

**IRRIGATION LEGEND**

SYMBOL	ITEM
	3/4" METER (BY OWNER)
	3/4" FEBCO 850 DOUBLE CHECK VALVE BACKFLOW PREVENTER W/ 17"x30" REINFORCED CONCRETE BOX W/ SCREW DOWN STEEL CHECKER LID
	1" BRASS PORT VALVE
	1" REMOTE CONTROL VALVE, RAINBRD 100-PESB W/ AMIAD Y FILTER AFTER THE VALVE & RAIN BIRD TBOS4CMUS CONTROLLER/ WITH POTTED LATCHING SOLENOID & TBOSFTUS FIELD TRANSMITTER (SEE DETAIL FOR INSTALLATION)
	MAINLINE - 1" SCHED. 40 PVC
	PVC SLEEVE - 2 SIZES LARGER THAN LATERAL OR MAIN
	LATERAL LINE - SCHED. 40 PVC - 1" UNLESS OTHERWISE INDICATED
	RAINBIRD XERI-BIRD 8 MULTI-OUTLET EMISSION DEVICE RAINBIRD XB-10 DRIP EMITTERS - 2 PER SHRUB & GROUND COVER RAINBIRD XB-20 DRIP EMITTERS - 8 PER TREE
	A) STATION NUMBER    B) SIZE OF VALVE IN INCHES C) TOTAL GPM

REFERENCES - BENCHMARK

DATE	REVISION	BY

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915-552-7272  
F 915-552-7373

Quantum Engineering Consultants  
Texas Registered Engineering Firm F-005146

SCALE: 1" = 20'

HORIZONTAL:	1" = 20'
VERTICAL:	1" = 10'
CONTOUR INTERVAL:	5'-10'-12'
DATE:	5-10-12
DESIGN BY:	JBA
DRAWN BY:	JBA/JCH
CHKD BY:	JBA
APPVD BY:	JBA
JOB NO.:	1038

PROJECT TITLE  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

SHEET TITLE

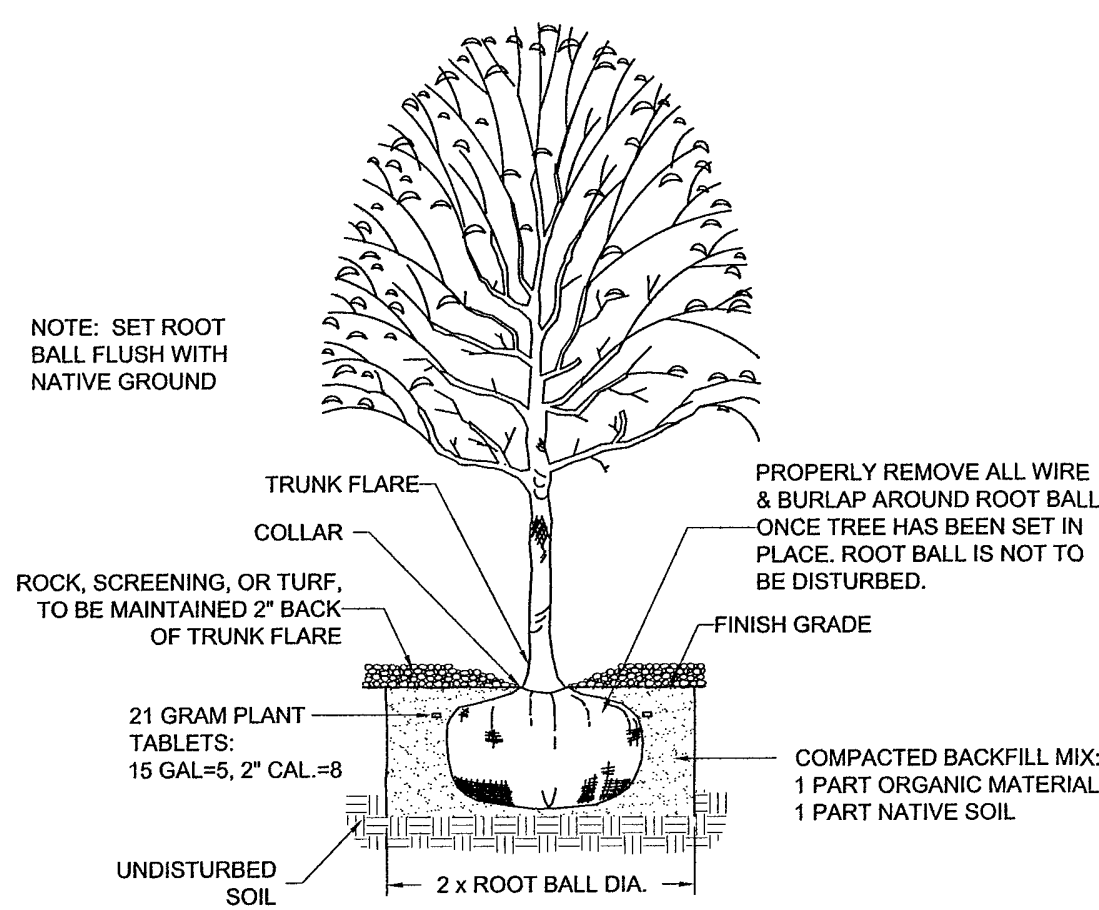
IRRIGATION PLAN

SHEET NO.

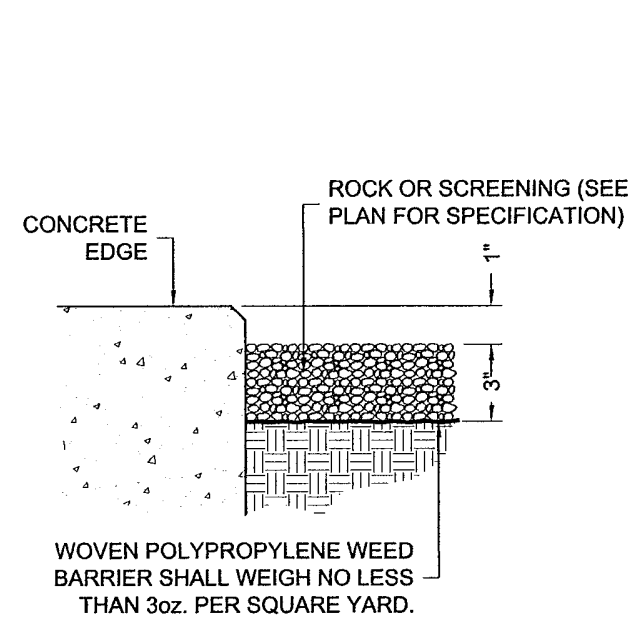
L-8  
OF 9 SHEETS

May 14, 2012 8:09am JenniferBarr  
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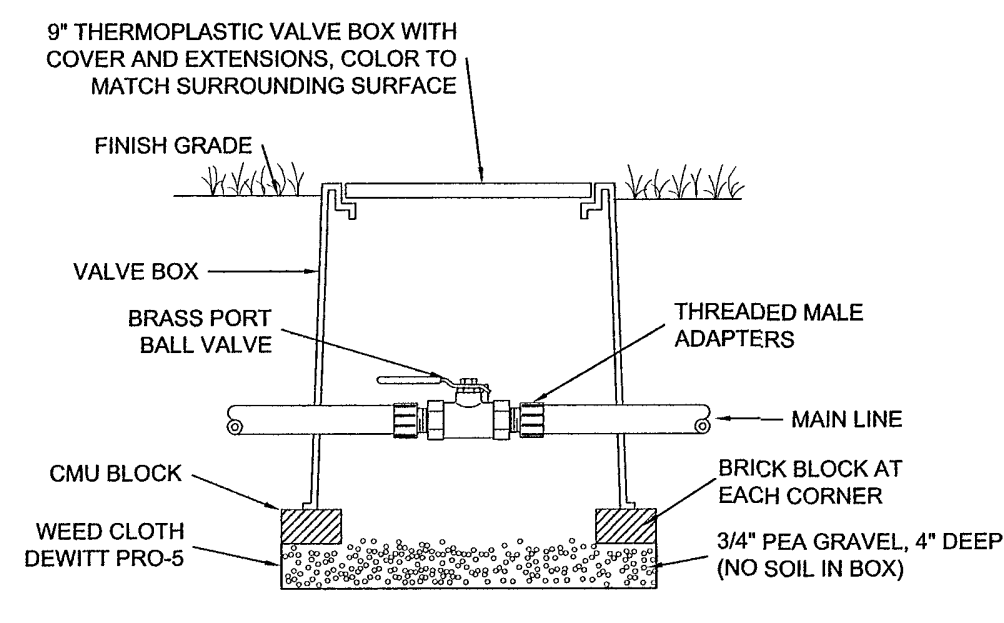




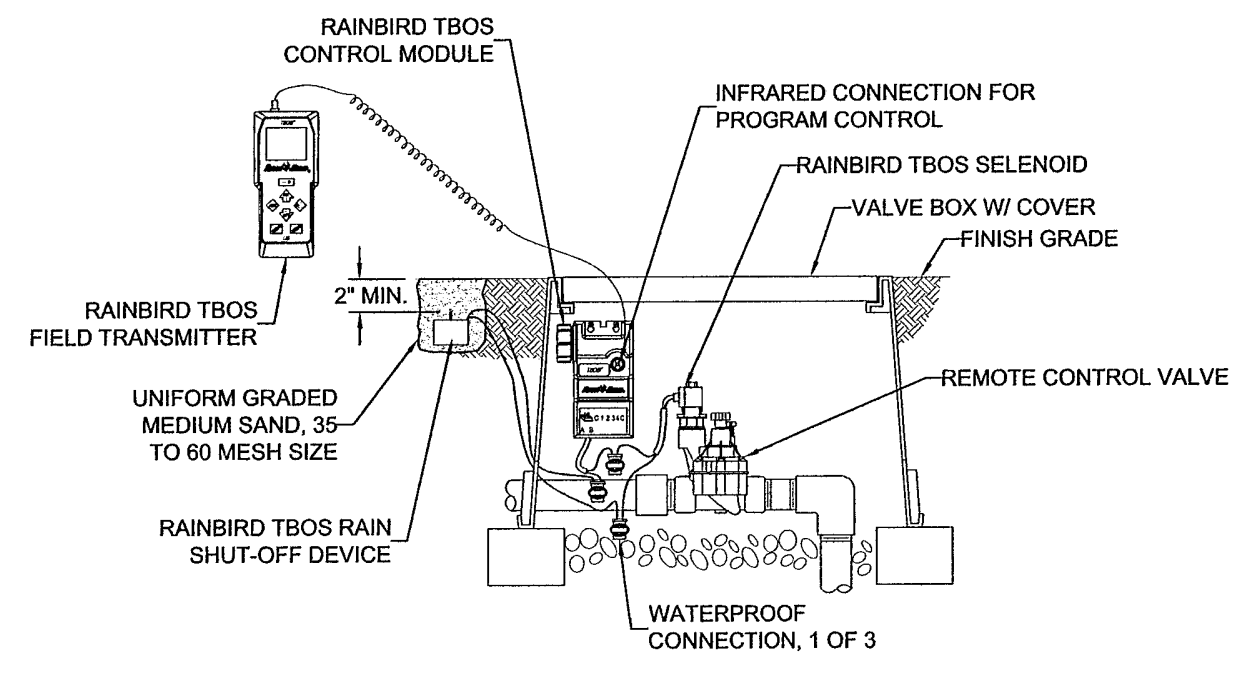
**TREE PLANTING DETAIL**  
NOT TO SCALE



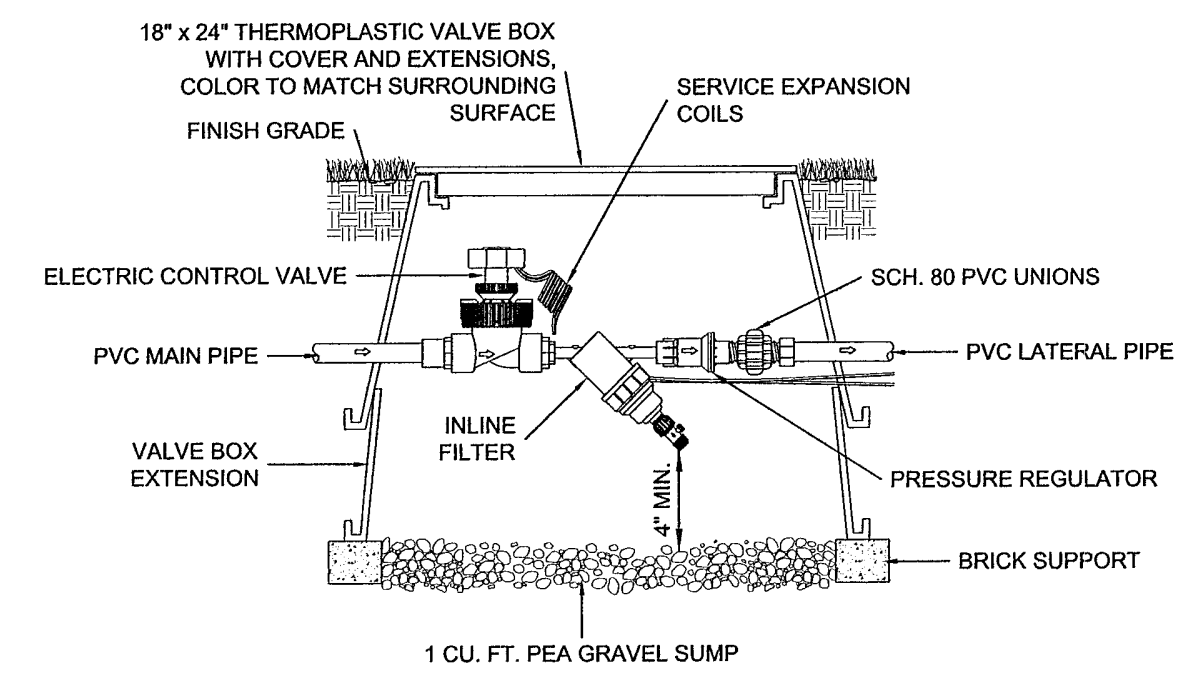
**ROCK/SCREENING DETAIL**  
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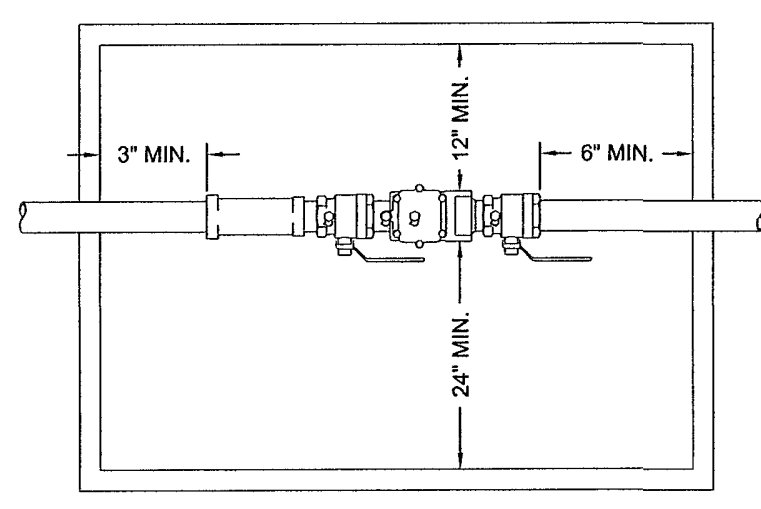
**ISOLATION VALVE DETAIL**  
NOT TO SCALE



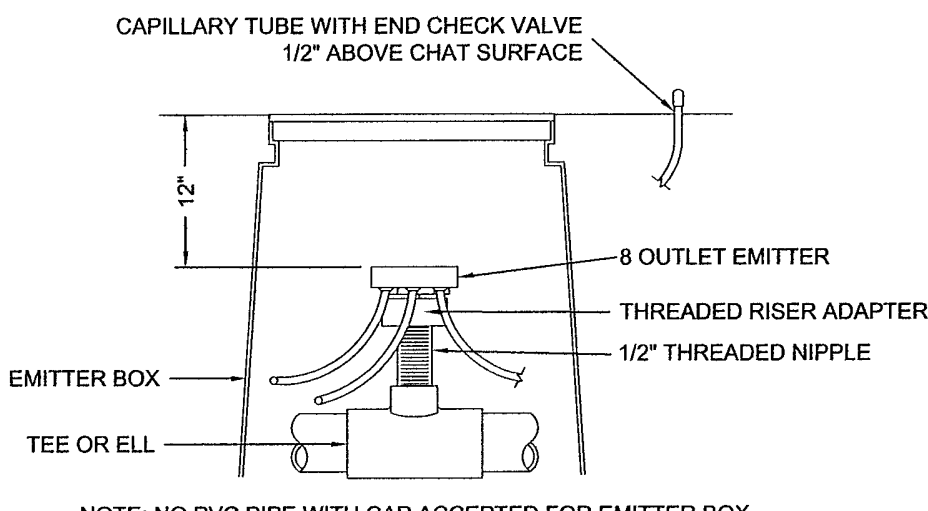
**TBOS BATTERY OPERATED CONTROLLER W/ TRANSMITTER**  
NOT TO SCALE



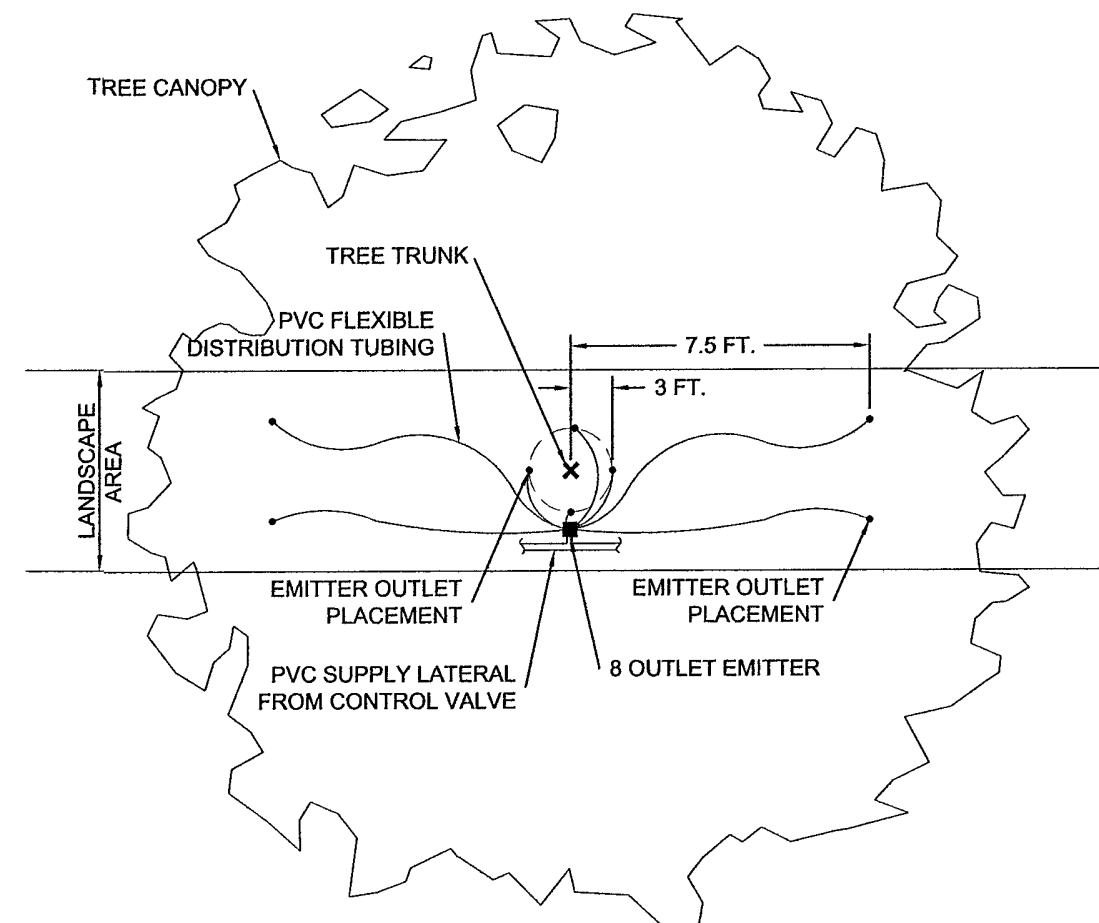
**REMOTE CONTROL VALVE, PRESSURE REGULATOR & FILTER**  
NOT TO SCALE



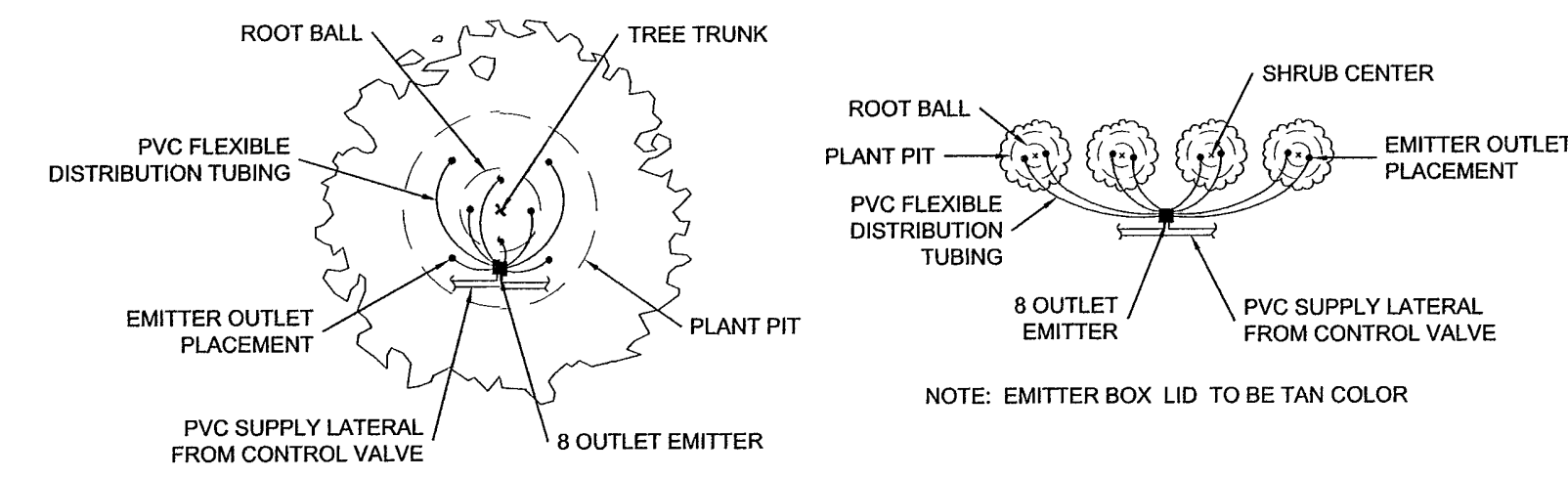
**PLAN VIEW**



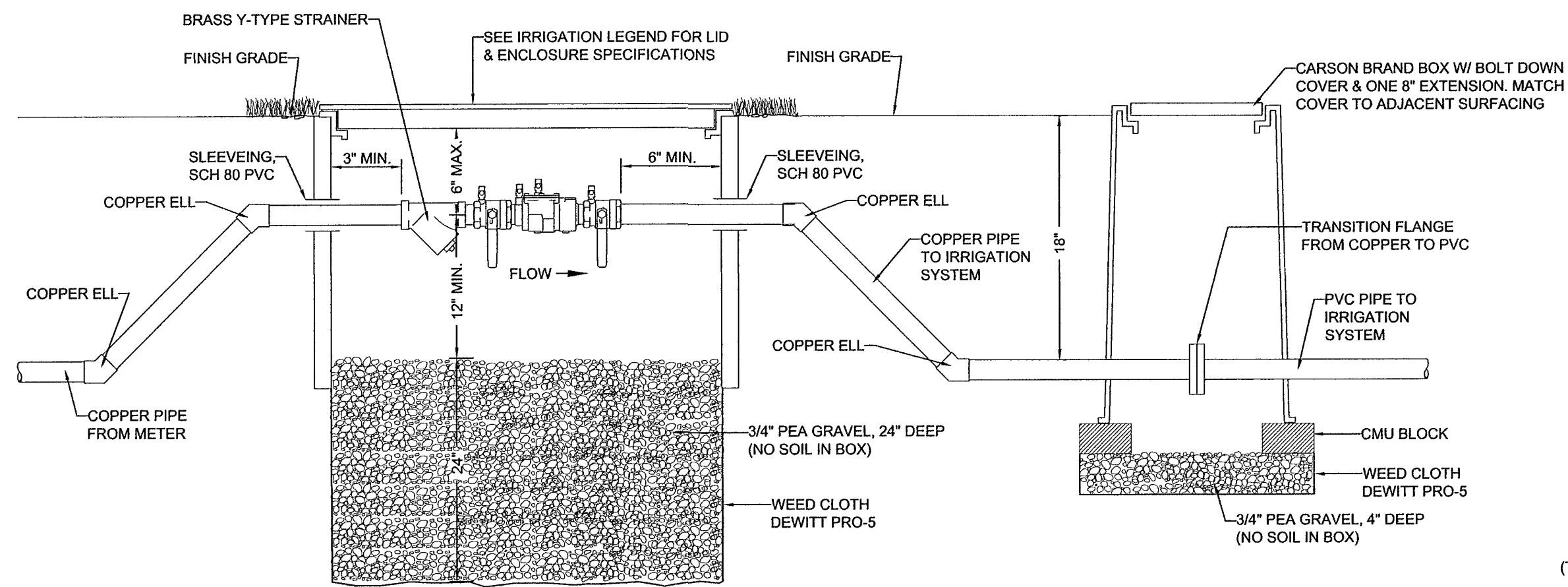
**DRIP EMITTER DETAIL**  
NOT TO SCALE



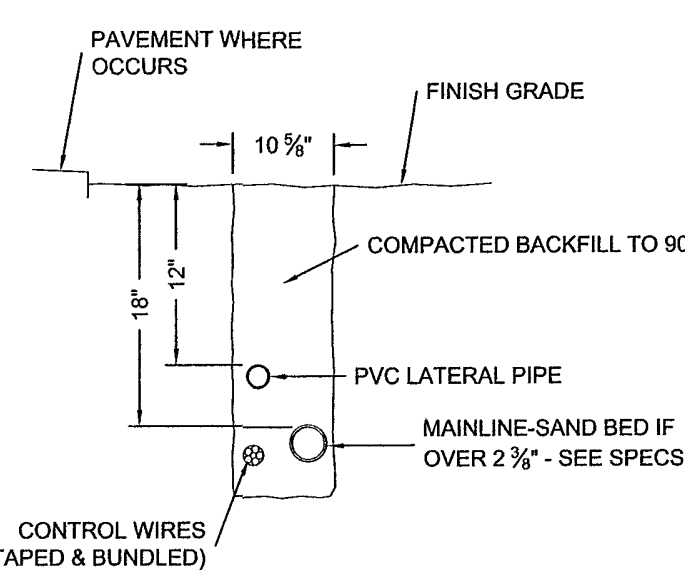
**EMITTER OUTLET PLACEMENT DETAIL AT PARKWAY**  
NOT TO SCALE



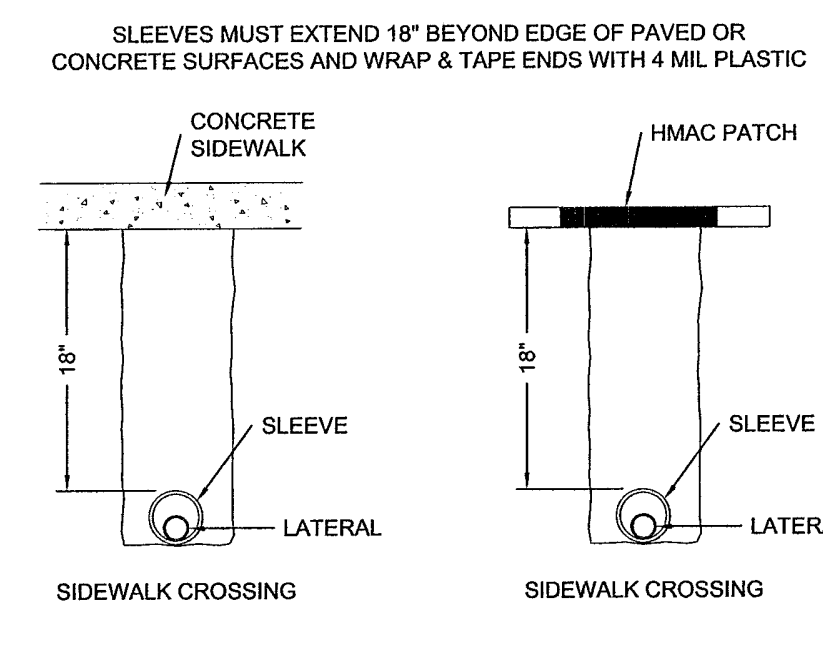
**EMITTER OUTLET PLACEMENT DETAIL AT SHRUB**  
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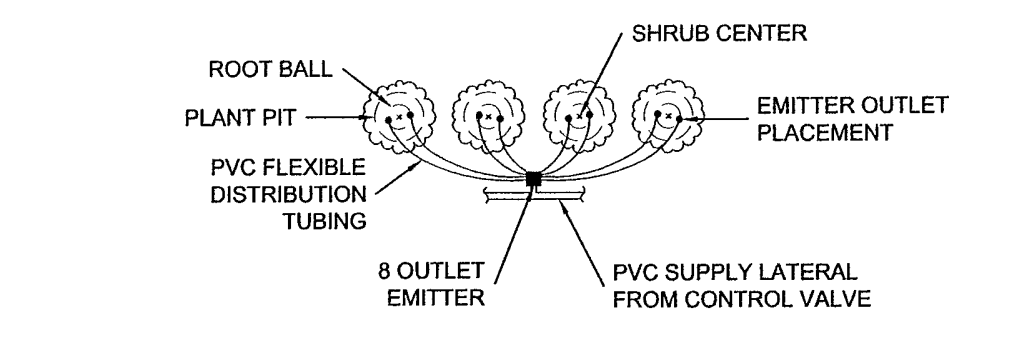
**DOUBLE CHECK ASSY. FEBCO Mo.850 & TRANSITION FLANGE**  
NOT TO SCALE



**TRENCHING DETAIL**  
NOT TO SCALE



**SLEEVING STANDARD DETAIL**  
NOT TO SCALE



**EMITTER OUTLET PLACEMENT DETAIL AT SHRUB**  
NOT TO SCALE

May 14, 2012, 8:09am JenniferBarr  
P:\Quantum\FranklinHills\FranklinHills-culdesacs-3-6-12.dwg

REFERENCES - BENCHMARK

DATE	REVISION	BY

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915.532.7372  
F 915.532.7373  
Texas Registered Engineering Firm F-005146

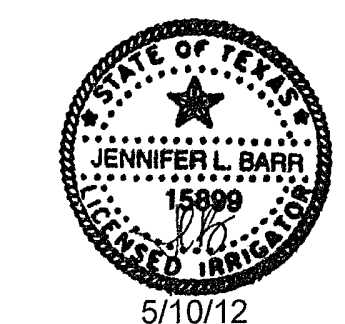
**QUANTUM**  
ENGINEERING  
CONSULTANTS  
INCORPORATED

SCALE: HORIZONTAL: 1" = 20'  
VERTICAL: 1" = 20'  
CONTOUR INTERVAL: N/A  
DATE: 5-10-12  
DESIGN BY: JBA/CHL  
DRAWN BY: JBA/CHL  
CHKD BY: JBA  
APPVD BY: JBA  
JOB NO.: 1026

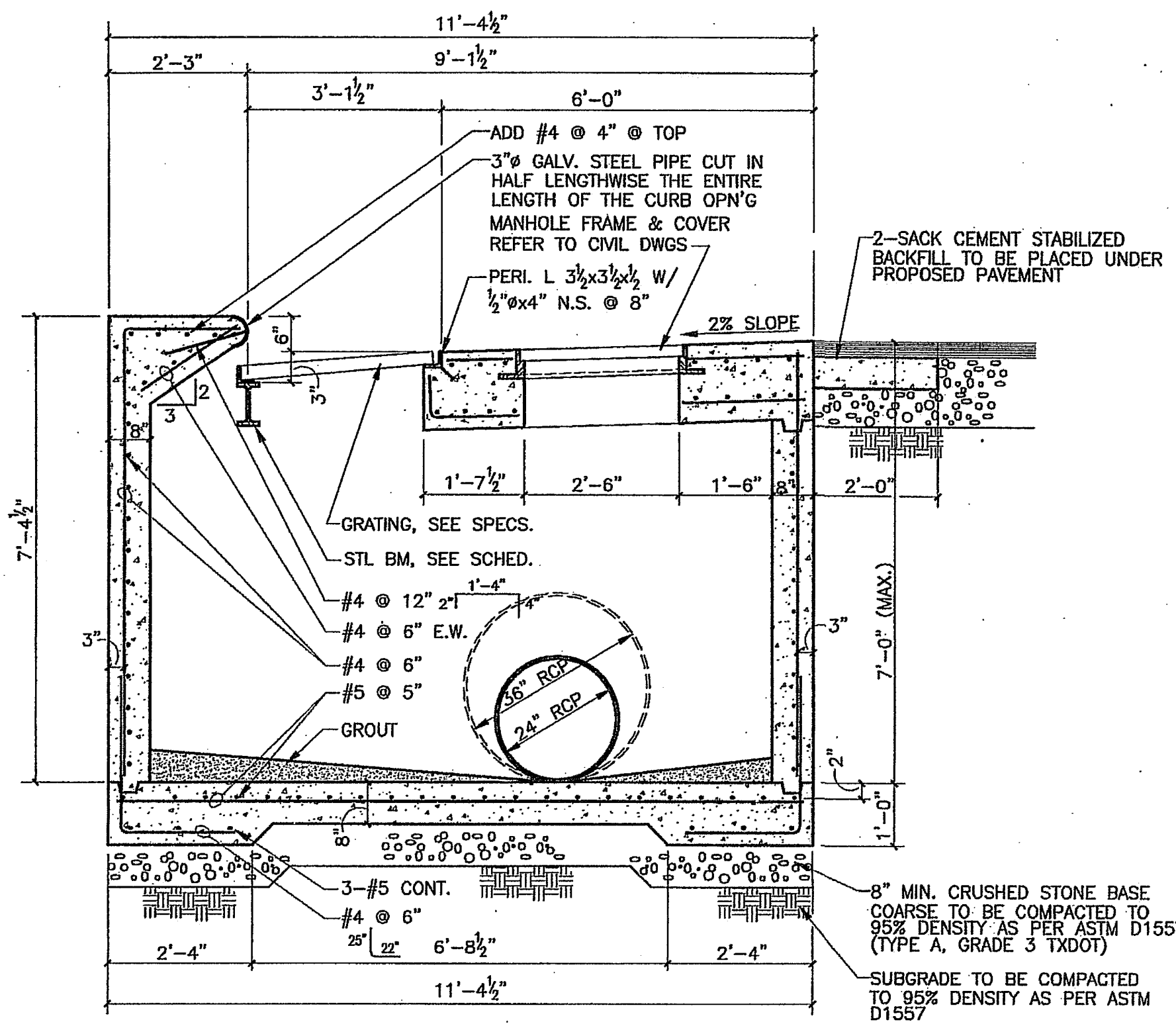
**PROJECT TITLE**  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

**SHEET TITLE**  
LANDSCAPE & IRRIGATION DETAILS

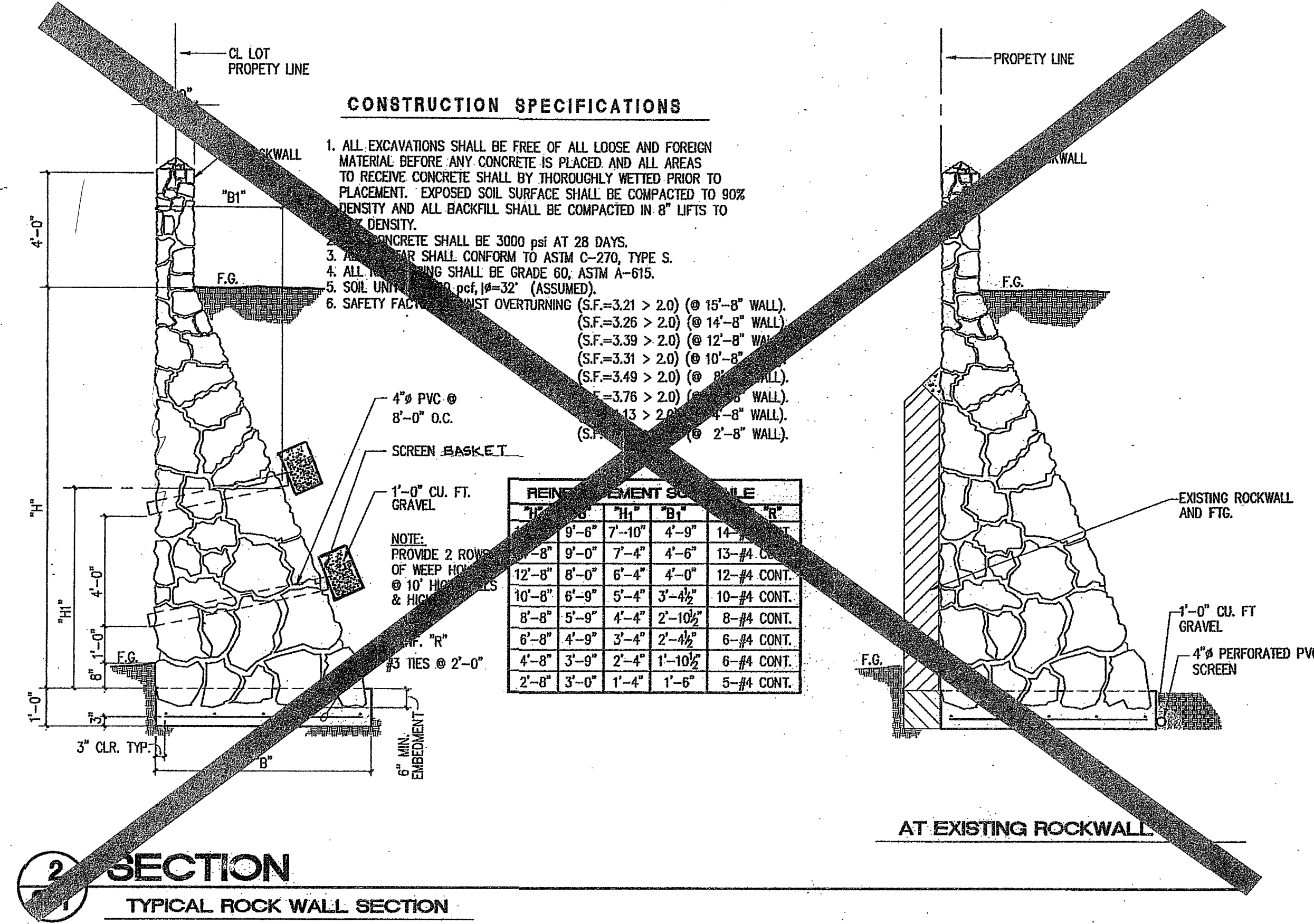
**SHEET NO.**  
L-9  
OF 9 SHEETS



5/10/12



**1 SECTION**  
S-1



**2 SECTION**  
TYPICAL ROCK WALL SECTION

**CONSTRUCTION SPECIFICATIONS**

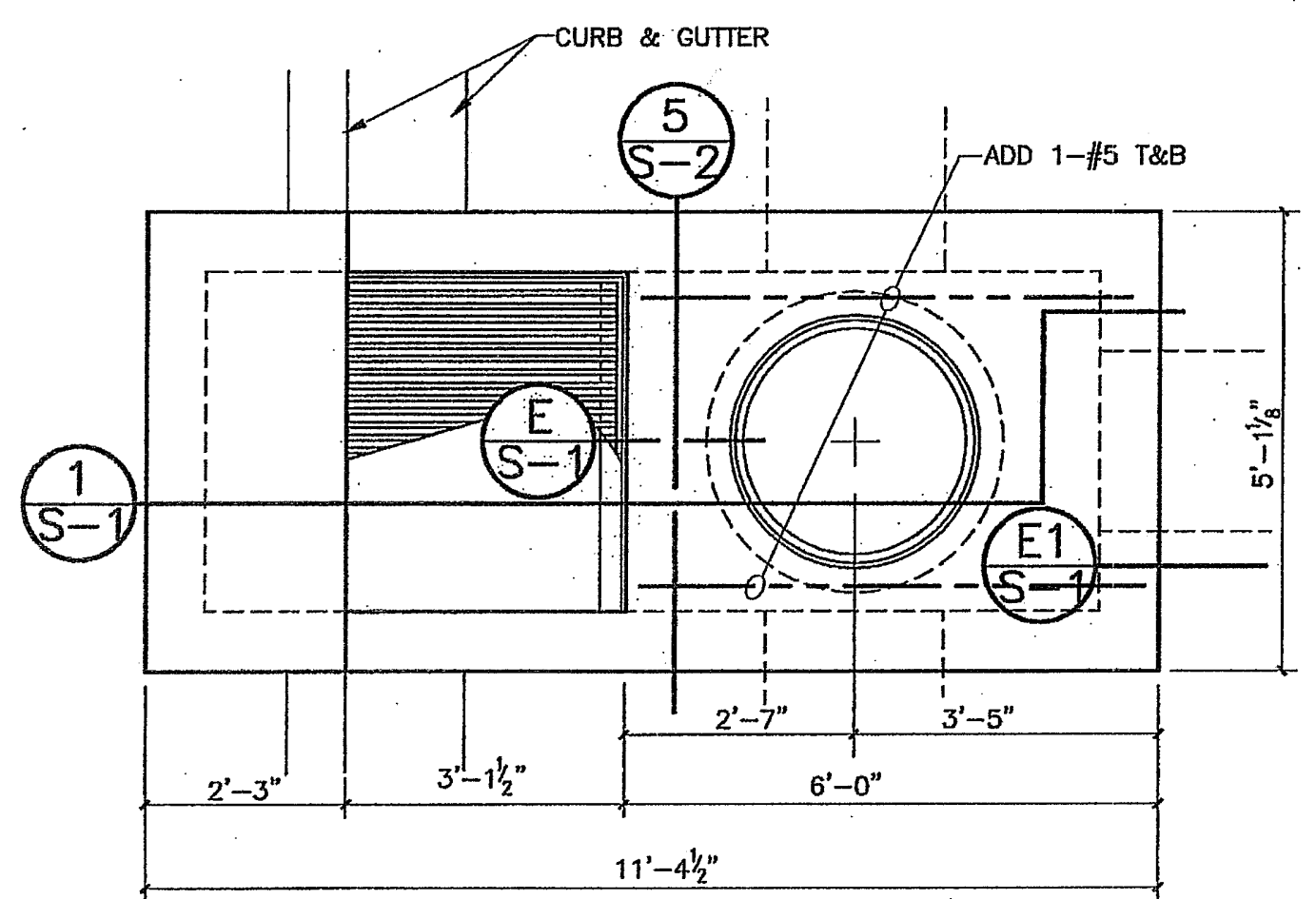
1. ALL EXCAVATIONS SHALL BE FREE OF ALL LOOSE AND FOREIGN MATERIAL BEFORE ANY CONCRETE IS PLACED AND ALL AREAS TO RECEIVE CONCRETE SHALL BE THOROUGHLY WETTED PRIOR TO PLACEMENT. EXPOSED SOIL SURFACE SHALL BE COMPACTED TO 90% DENSITY AND ALL BACKFILL SHALL BE COMPACTED IN 8" LIFTS TO 95% DENSITY.
2. CONCRETE SHALL BE 3000 PSI AT 28 DAYS.
3. REINFORCING SHALL CONFORM TO ASTM A-270, TYPE S.
4. ALL FINISHING SHALL BE GRADE 60, ASTM A-615.
5. SOIL UNIT WEIGHT  $\gamma = 120$  Pcf,  $\mu = 32^\circ$  (ASSUMED).
6. SAFETY FACTOR AGAINST OVERTURNING (S.F. =  $\frac{M_{RESISTING}}{M_{OVERTURNING}}$ )

TH	TH	B1	R
9'-6"	7'-10"	4'-9"	14'-0"
8'-0"	9'-0"	7'-4"	4'-6"
12'-8"	6'-0"	6'-4"	4'-0"
10'-8"	6'-9"	5'-4"	3'-4 1/2"
8'-8"	5'-9"	4'-4"	2'-10 1/2"
6'-8"	4'-9"	3'-4"	2'-1 1/2"
4'-8"	3'-9"	2'-4"	1'-10 1/2"
2'-8"	3'-0"	1'-4"	1'-6"

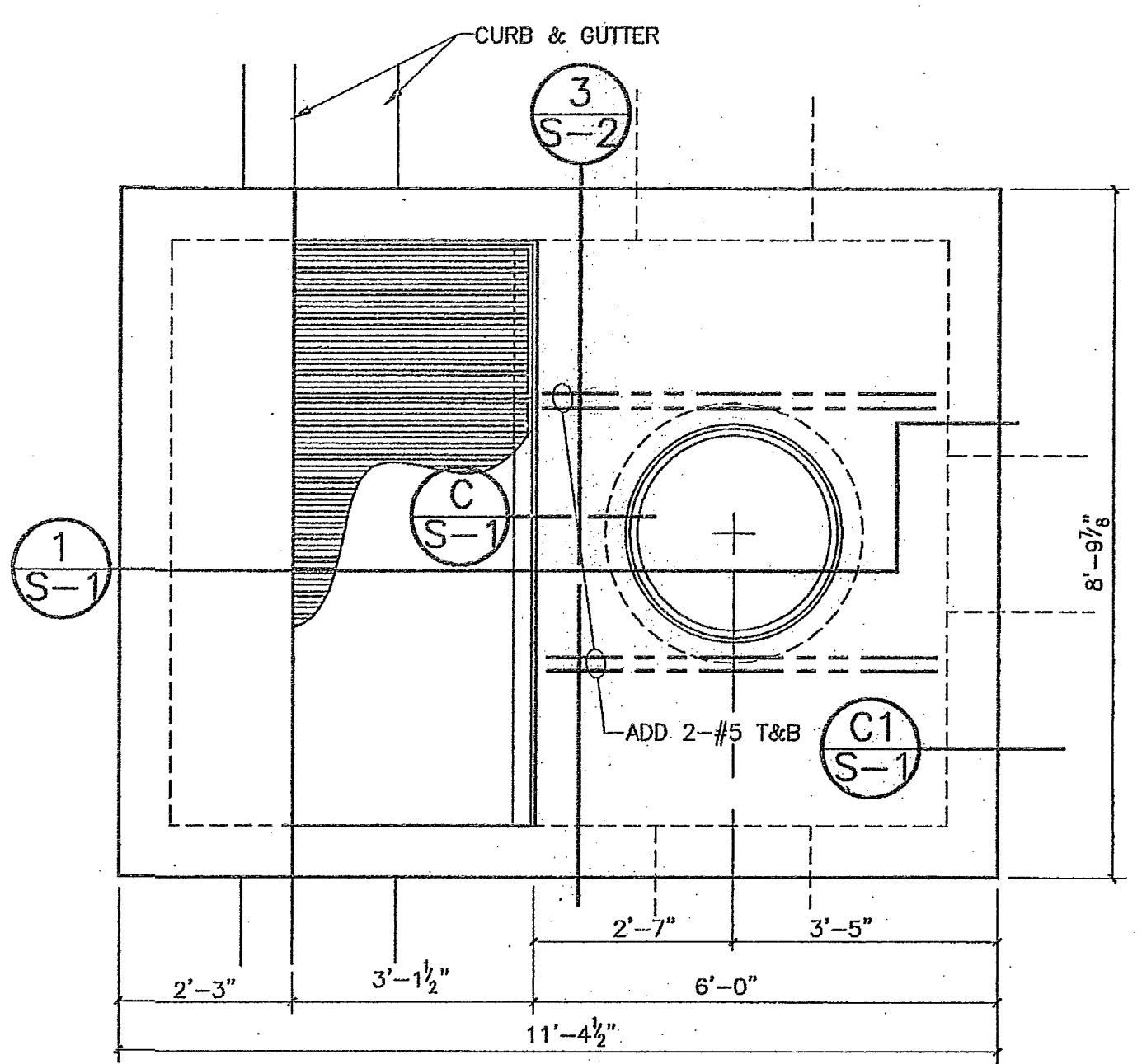
NOTE: PROVIDE 2 ROWS OF WEEP HOLES @ 10' HIGHS. & HIGH.

**CAST-IN-PLACE CONCRETE BOX CULVERT NOTES**

1. CAST-IN-PLACE BOX CULVERTS SHALL BE CONSTRUCTED PER THE DIMENSIONS SHOWN OF THE TYPICAL SECTION AND REINFORCED AS SCHEDULED.
2. CONCRETE STRENGTH FOR CULVERTS SHALL BE 3000 PSI AT 28 DAY, MINIMUM 5 SACKS PER CUBIC YARD AND MAXIMUM W/C RATIO OF 0.45, WITH 3/4 INCH MAXIMUM SIZE AGGREGATE. SLUMP SHALL BE 3/4 INCHES  $\pm$  1" FOR SLABS AND 5 INCHES  $\pm$  1" FOR WALLS. SUBMIT CONCRETE MIX DESIGN FOR APPROVAL.
3. ALL REINFORCING STEEL SHALL BE ASTM A 615 GRADE 60, AS SPECIFIED.
4. USE OF PERMANENT METAL FORMS IS NOT PERMITTED.



**E SECTION**      **E1 SECTION**  
2-GRATE DROP INLET



**C SECTION**      **C1 SECTION**  
4-GRATE DROP INLET

**WALL NOT TO BE USED (REFER TO SHEET S-1(R))**

FS

REFERENCES - BENCHMARK

REVISION	DATE

414 Executive Center Blvd  
Ste 200 El Paso TX 79902  
P 915-532-7272  
F 915-532-7373  
FAX 915-532-7373

**QUANTUM**  
Engineering  
CONSULTANTS  
INCORPORATED  
Texas Registered Engineering Firm F-005146

4-20-12

SCALE:  
HORIZONTAL: 1" = 10'-0"  
VERTICAL: 1" = 10'-0"  
DATE: 02-28-11  
DESIGN BY: [Redacted]  
DRAWN BY: [Redacted]  
CHKD BY: [Redacted]  
APPVD BY: [Redacted]  
JOB NO. [Redacted]

PROJECT TITLE  
**FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS**

SHEET TITLE

SHEET NO.  
**S-1**

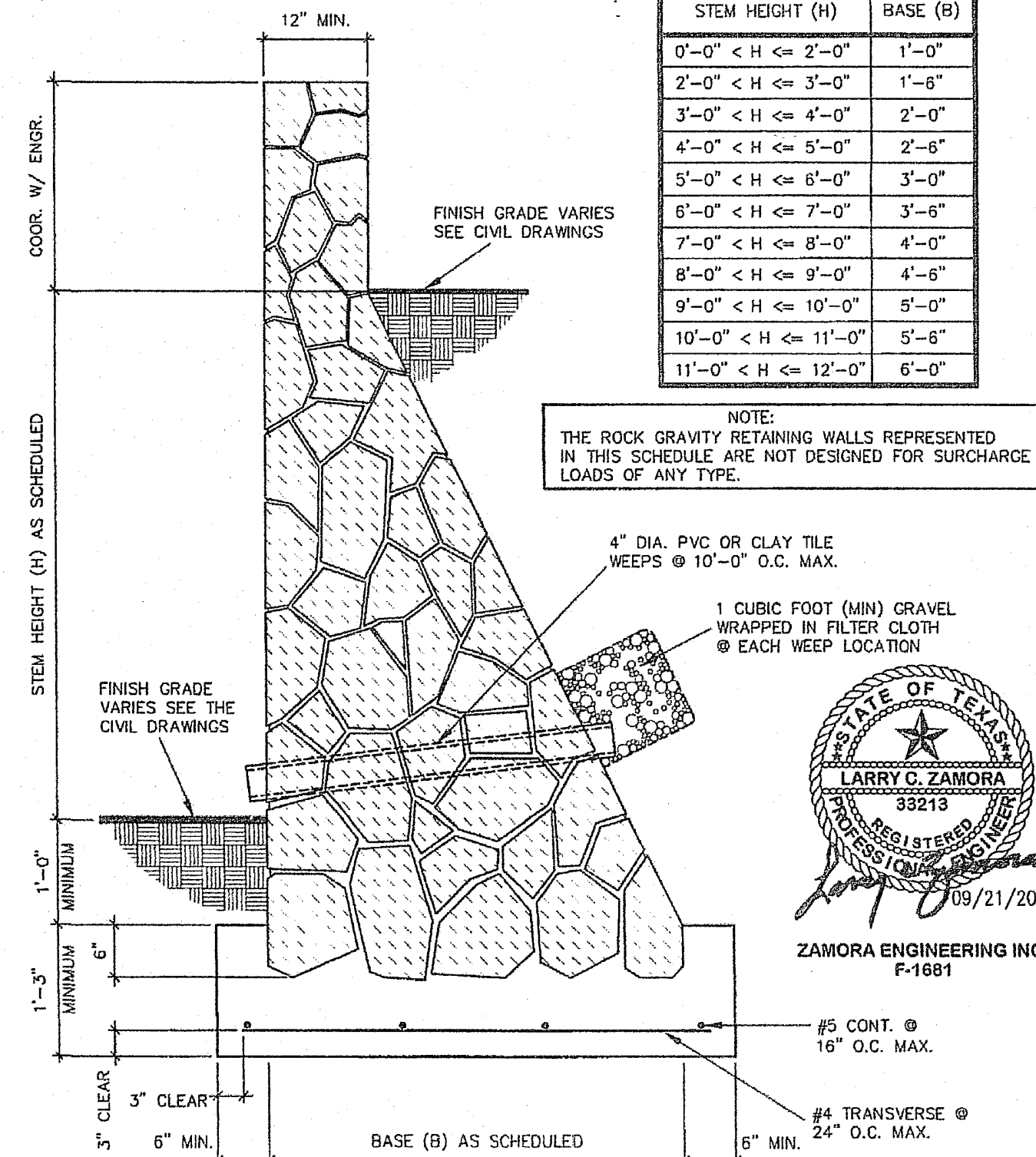
OF SHEETS

**Pe** PONCE ENGINEERING, INC.  
CONSULTING STRUCTURAL ENGINEERING  
2417 WYOMING AVE.  
EL PASO, TEXAS 79903  
(915) 544-2200  
(915) 544-1680 (FAX)  
E-mail: ponceeng@aol.com

BRANCH OFFICE:  
P.O. BOX 447  
SILVERADO PARK, ILL. 60538  
(575) 523-8812

ZAMORA ENGINEERING INC.  
STRUCTURAL ENGINEERING CONSULTANTS  
7170 WESTWIND, STE. 301 EL PASO, TX 79912  
(915) 587-9775 e-mail zamoraeng@stxglobal.net (915) 587-9785

RIGHT OF WAY/BOUNDARY ROCK  
GRAVITY RETAINING WALLS  
FRANKLIN HILLS SUBDIVISION,  
UNITS 8 AND 10

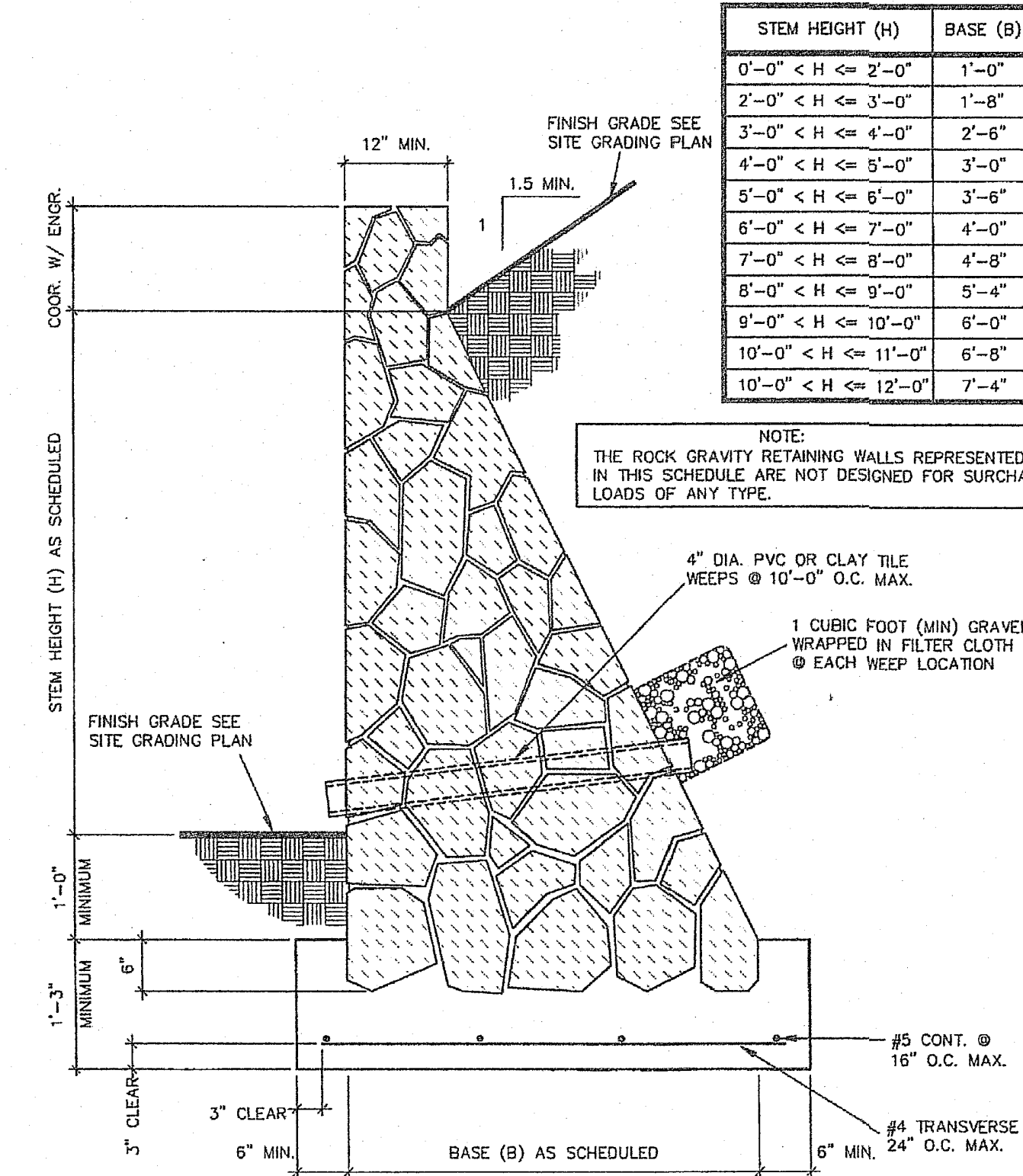


TYPICAL TYPE I  
ROCK GRAVITY RETAINING WALL SECTION  
SCALE: 3/4" = 1'-0"

1 OF 3

ZAMORA ENGINEERING INC.  
STRUCTURAL ENGINEERING CONSULTANTS  
7170 WESTWIND, STE. 301 EL PASO, TX 79912  
(915) 587-9775 e-mail zamoraeng@stxglobal.net (915) 587-9785

RIGHT OF WAY/BOUNDARY ROCK  
GRAVITY RETAINING WALLS  
FRANKLIN HILLS SUBDIVISION,  
UNITS 8 AND 10



TYPICAL TYPE II  
ROCK GRAVITY RETAINING WALL SECTION  
SCALE: 3/4" = 1'-0"

2 OF 3

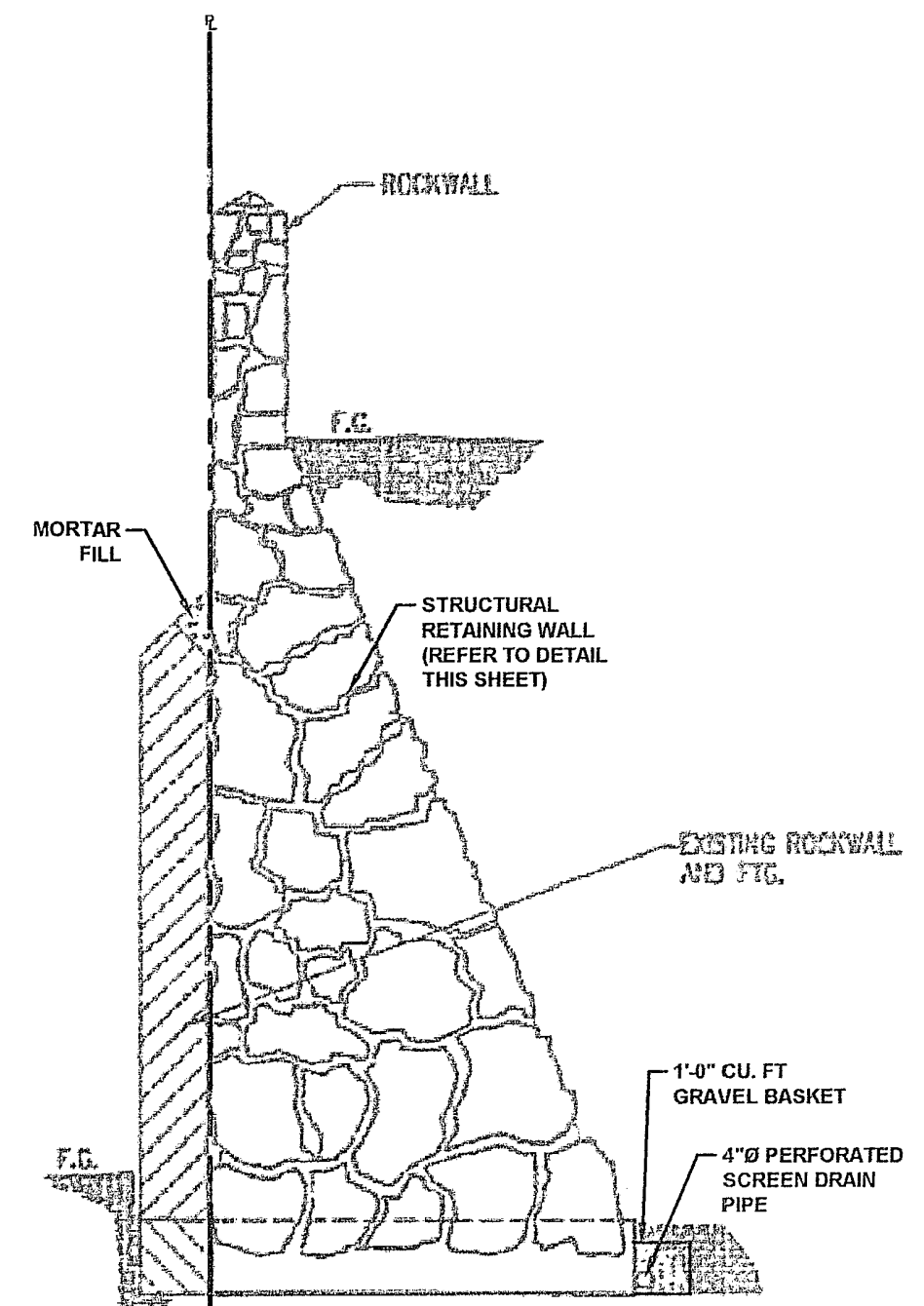
ZAMORA ENGINEERING INC.  
STRUCTURAL ENGINEERING CONSULTANTS  
7170 WESTWIND, STE. 301 EL PASO, TX 79912  
(915) 587-9775 e-mail zamoraeng@stxglobal.net (915) 587-9785

RIGHT OF WAY/BOUNDARY ROCK  
GRAVITY RETAINING WALLS  
FRANKLIN HILLS SUBDIVISION,  
UNITS 8 AND 10

GENERAL NOTES: ROCK GRAVITY RETAINING WALLS

- MATERIALS:
  - CONCRETE:
    - FOUNDATIONS:  $f_c = 2500$  psi @ 28 DAYS
    - CORE FILL:  $f_c = 1000$  psi @ 28 DAYS
  - MORTAR:
    - MINIMUM 28 DAY COMPRESSIVE STRENGTH OF 1800 psi WITH NOT MORE THAN FIFTEEN (15) POUNDS OF ASTM C207, TYPE S HYDRATED LIME PER CUBIC FOOT OF MORTAR WHEN MIXED BY VOLUME.
  - REINFORCING:
    - ASTM A615, GRADE 60
  - BACKFILL:
    - MATERIALS USED AS BACKFILL SHALL BE GRANULAR, FREE OF DELETERIOUS MATERIALS AND HAVE A LIQUID LIMIT LESS THAN 40 AND A PLASTICITY INDEX LESS THAN 12.
  - ROCK:
    - ROCK SHALL BE MT. FRANKLIN LIMESTONE, QUARRIED, IRREGULAR IN SIZE AND SECURED FROM LOCAL QUARRIES FOR WORKING AND FITTING ON THE JOB BY USE OF ORDINARY TOOLS.
- CONSTRUCTION:
  - SITE PREPARATION:
    - REMOVE VEGETATION, DEBRIS, UNSATISFACTORY MATERIALS, OBSTRUCTIONS AND DELETERIOUS MATERIALS FROM GROUND SURFACE PRIOR TO PLACEMENT OF BACKFILL MATERIAL. THE EXPOSED SUBGRADE SHOULD BE SCARIFIED JUST PRIOR TO BACKFILL PLACEMENT TO A MINIMUM DEPTH OF SIX (6) INCHES AND RECOMPACTED TO A MINIMUM OF 95% OF THE MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557 COMPACTION TEST. THE MOISTURE CONTENT OF THE SUBGRADE SHALL BE MAINTAINED SLIGHTLY ABOVE THE OPTIMUM UNTIL PERMANENTLY COVERED.
  - FOUNDATION:
    - ALL FOOTINGS SHALL BE FORMED WHENEVER THE CONCRETE CANNOT BE PLACED AGAINST SOLID EARTH EXCAVATION. ALL FOOTINGS SHALL BE EXCAVATED NEATLY AND, PRIOR TO PLACEMENT OF REINFORCEMENT AND CONCRETE, THE SUBGRADE SHALL BE COMPACTED TO AT LEAST 95% OF MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557 COMPACTION TEST.
  - ROCK WALL:
    - WALLS SHALL BE ERECTED BY MASONS SKILLED IN THE CONSTRUCTION OF NATIVE ROCK WALLS. WALL FACES INDICATED AS VERTICAL SHALL BE LAID PLUMB AND TRUE TO LINE, AND THOSE WITH SLOPED FACES SHALL HAVE CONSTANT SLOPES FROM TOP OF FOOTING TO TOP OF WALL. ROCK SHALL BE LAID UP WITH FACES FLUSH AND THE SPACE BETWEEN THE FACES FILLED WITH CORE FILL CONCRETE OR MORTAR AND ROCK EXCEPT WHERE ROCK EXTENDS FROM ONE FACE TO THE OPPOSITE FACE. ROCKS ON EXPOSED VIEW SURFACES SHALL BE SELECTED FOR CLOSE FIT WITHOUT SPECIAL CUTTING.
    - THE FIRST COURSE OF ROCKS SHALL BE BONDED TO THE FOUNDATION CONCRETE BY USING ROCKS THAT ARE TWELVE (12) INCHES OR LARGER IN DIMENSION PLACED IN THE PLASTIC CONCRETE OF THE FOUNDATION TO OBTAIN A MINIMUM OF SIX (6) INCHES PROJECTION TO BOND WITH THE ROCK CONSTRUCTION ABOVE.
  - BACKFILLING:
    - BACKFILL MATERIAL USED SHALL BE PLACED IN EIGHT (8) INCH THICK LOOSE LIFTS AND COMPACTED TO AT LEAST 95% MAXIMUM DENSITY AS DETERMINED BY ASTM D-1557 COMPACTION TEST.

3 OF 3



TYPICAL SECTION AT EXISTING ROCKWALL

ENGINEERING & CONSTRUCTION  
MANAGEMENT DEPARTMENT  
SITE PLAN REVIEW  
Reviewed For Conformance For Conditions Related To:

- Erosion Only
- Sidewalks
- Grading & Drainage
- Driveways
- Wheelchair Ramps
- Retaining Rock Walls
- On-Site Parking Layout
- On-Site Ponding of Storm Waters

Contractors Must Call 24 Hours Prior to Construction for Inspection  
By: *[Signature]* DATE: 9/27/2012  
Revised Retaining Rock Wall

DATE	REVISION	BY

REFERENCES - BENCHMARK
CITY MONUMENT AT THE CENTERLINE INTERSECTION OF HIGH RIDGE DRIVE AND FRANKLIN HILLS STREET.
ELEVATION = 4362.20 (CITY DATUM)
CONTOUR INTERVAL: ONE (1) FOOT

HORIZONTAL:	VERTICAL:	CONTOUR INTERVAL:	DATE:	DESIGN BY:	DRAWN BY:	CHKD BY:	APP'D BY:	JOB NO.:
N/A	N/A	N/A	09-26-2012	M.A.S.	C.A.D.	R.A.S.	R.A.S.	1038

PROJECT TITLE  
FRANKLIN HILLS UNIT EIGHT  
SUBDIVISION  
IMPROVEMENT PLANS  
EL PASO COUNTY, TEXAS

SHEET TITLE

SHEET NO.

S-1R  
OF SHEETS

