

# CONSTRUCTION PLANS FOR GREENLAWN STORM DRAINAGE IMPROVEMENTS

## 01 OF 19



1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF ROUND ROCK STANDARD CONSTRUCTION SPECIFICATIONS.
2. ANY EXISTING UTILITIES, PAVEMENT, CURBS, SIDEWALKS, STRUCTURES, TREES, ETC., NOT INDICATED FOR CONSTRUCTION THAT ARE DAMAGED OR REMOVED SHALL BE REPAIRED OR REPLACED BY THE CONTRACTOR AT NO COST TO THE OWNER. CONTRACTOR SHALL ARRANGE THE OPERATIONS IN SUCH A MANNER AS TO AVOID UNNECESSARY INCONVENIENCE TO THE PUBLIC. ACCESS TO SIDE STREETS AND DRIVEWAYS SHALL BE MAINTAINED AT ALL TIMES.
3. EXISTING UTILITIES SHOWN ARE FROM RECORDS AT THE TIME OF ORIGINAL SURVEY. THE CONTRACTOR SHALL FIELD VERIFY ALL DEPTHS AND LOCATIONS OF EXISTING UTILITIES PRIOR TO ANY CONSTRUCTION. ANY DISCREPANCY WITH THE CONSTRUCTION PLANS FOUND IN THE FIELD SHALL BE BROUGHT IMMEDIATELY TO THE ATTENTION OF THE ENGINEER.
4. MANHOLE FRAMES, COVERS, VALVES, CLEANOUTS, ETC. SHALL BE RAISED TO FINISHED GRADE PRIOR TO FINAL PAVING CONSTRUCTION.
5. THE CONTRACTOR SHALL PROVIDE CONSTRUCTION PHASING AND SEQUENCING TO THE CITY OF ROUND ROCK FOR APPROVAL. THE CONTRACTOR SHALL GIVE THE CITY OF ROUND ROCK 48 HOURS NOTICE BEFORE BEGINNING EACH PHASE OF CONSTRUCTION.
6. ALL AREAS DISTURBED OR EXPOSED DURING CONSTRUCTION SHALL BE REVEGETATED IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. REVEGETATION OF ALL DISTURBED OR EXPOSED AREAS SHALL CONSIST OF SODDING OR AS OTHERWISE SPECIFIED. HOWEVER, THE TYPE OF REVEGETATION MUST EQUAL OR EXCEED THE TYPE OF VEGETATION PRESENT BEFORE CONSTRUCTION UNLESS OTHERWISE REQUESTED BY THE PROPERTY OWNER. SEE REVEGETATION NOTES.
7. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL CONVENE A PRE-CONSTRUCTION CONFERENCE BETWEEN THE CITY OF ROUND ROCK, HIMSELF, THE ENGINEER, OTHER UTILITY COMPANIES, ANY AFFECTED PARTIES AND ANY OTHER ENTITY THE CITY MAY REQUIRE.
8. THE CONTRACTOR SHALL KEEP ACCURATE RECORDS OF ALL CONSTRUCTION THAT DEVIATES FROM THE PLANS. THE CONTRACTOR SHALL FURNISH THE CITY OF ROUND ROCK ACCURATE "AS-BUILT" DRAWINGS FOLLOWING COMPLETION OF ALL CONSTRUCTION. THESE "AS-BUILT" DRAWINGS SHALL MEET WITH THE SATISFACTION OF THE CITY PRIOR TO FINAL ACCEPTANCE.
9. WHEN CONSTRUCTION IS BEING CARRIED OUT WITHIN EASEMENTS, THE CONTRACTOR SHALL CONFINES HIS WORK TO WITHIN THE PERMANENT AND ANY TEMPORARY EASEMENTS. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL TRASH AND DEBRIS WITHIN THE PERMANENT AND TEMPORARY EASEMENTS. CLEAN-UP SHALL BE TO THE SATISFACTION OF THE CITY.
10. PRIOR TO ANY CONSTRUCTION, THE CONTRACTOR SHALL APPLY FOR AND SECURE ALL PROPER PERMITS FROM THE APPROPRIATE AUTHORITIES.
11. AVAILABLE BENCHMARKS ARE SHOWN AND DESCRIBED ON THE PLANS.
12. THE BIDDER (CONTRACTOR POST AWARD) SHALL IMMEDIATELY NOTIFY THE CITY PROJECT MANAGER OF ANY OBSTACLES THAT MAY IMPEDE OR PREVENT THE PROPER CONSTRUCTION OF THIS PROJECT.
13. THE CONTRACTOR SHALL ARRANGE THE OPERATION IN SUCH A MANNER AS TO AVOID UNNECESSARY INCONVENIENCE TO THE PUBLIC WITHIN LIMITS OF CONSTRUCTION.
14. LANE CLOSURES SHALL NOT BE PERMITTED DURING THE HOURS OF 7:00 A.M. TO 8:30 A.M. AND 4:30 P.M. TO 6:00 P.M. MONDAY THROUGH FRIDAY; UNLESS OTHERWISE INDICATED BY THE CITY PROJECT MANAGER.
15. CONTRACTOR TO MAINTAIN ACCESS TO PRIVATE PROPERTIES AND ROADWAYS DURING ALL WORK ACTIVITIES. CONTRACTOR TO COORDINATE PRIVATE PROPERTY ACCESS WITH OWNER REPRESENTATIVES (PROJECT MANAGER AND/OR CITY INSPECTOR) AND PRIVATE PROPERTY OWNERS PRIOR TO CONSTRUCTION.
16. CONTRACTOR TO SAWCUT EDGE OF EXISTING CONCRETE WHERE PROPOSED CONCRETE SIDEWALK, RAMPS, AND OTHER ITEMS ARE INSTALLED ABUTTING EXISTING CONCRETE.
17. CONTRACTOR TO GIVE 48 HOUR NOTICE TO PRIVATE PROPERTY OWNERS BEFORE START OF ANY DRIVEWAY CONSTRUCTION.
18. ALL DAMAGE CAUSED DIRECTLY OR INDIRECTLY TO THE STREET SURFACE OR SUBSURFACE OUTSIDE THE PAVEMENT CUT AREA SHALL BE REGARDED AS PART OF THE STREET CUT REPAIR. THIS INCLUDES ANY SCRAPES, GOGES, CUTS, DAMAGE TO TRAFFIC SIGNS AND/OR MARKINGS, AND/OR OTHER DAMAGES CAUSED BY THE CONTRACTOR'S EQUIPMENT. THESE AREAS WILL BE INCLUDED IN THE TOTAL AREA OF REPAIR. ALL REPAIRS SHALL BE AT THE CONTRACTOR'S EXPENSE AND SHALL MEET ALL CITY TESTING REQUIREMENTS.
19. CONTRACTOR WILL MINIMIZE USE OF STREET PARKING BY HIS/HER EMPLOYEES IN THE VICINITY OF THE CONSTRUCTION AREA.
20. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING AND REPLACING ANY MAILBOX THAT MAY BE IN THE WAY OF CONSTRUCTION AND TAKE MEASURES TO ASSURE THAT MAIL DELIVERY WILL NOT BE INTERRUPTED AS A RESULT OF THE CONSTRUCTION ACTIVITIES.
21. ALL PROPOSED SIDEWALK TO MAINTAIN 2% CROSS SLOPE TOWARDS STREET AND AWAY FROM PRIVATE PROPERTY. THE RUNNING SLOPE SHOULD NOT EXCEED 5% OR SHOULD BE EQUAL OR LESS THAN THE LONGITUDINAL RUNNING SLOPE OF ADJACENT STREET. HANDICAP RAMPS TO MAINTAIN 2% MAX. CROSS SLOPE.
22. CONTRACTOR TO PROTECT ALL EXISTING SIGNS, LIGHT POLES, UNDERGROUND UTILITIES, POWER POLES, FIRE HYDRANTS, ETC. UNLESS NOTED OTHERWISE.
23. CONTRACTOR MAY SUBMIT ALTERNATE TRAFFIC CONTROL PLANS TO BE REVIEWED AND APPROVED BY OWNER'S REPRESENTATIVE AND/OR ENGINEER.

1. UNLESS OTHERWISE ACCEPTED BY THE CITY ENGINEER, DEPTH OF COVER FOR ALL LINES OUT OF THE PAVEMENT SHALL BE 42" MIN., AND DEPTH OF COVER FOR ALL LINES UNDER PAVEMENT SHALL BE A MIN. OF 30" BELOW SUBGRADE EXCEPT WHERE INDICATED IN THE PLANS.
2. ALL MANHOLES SHALL BE CONCRETE WITH CAST IRON RING AND COVER. ALL MANHOLES LOCATED OUTSIDE OF THE PAVEMENT SHALL HAVE BOLTED COVERS. TAPPING OF FIBERGLASS MANHOLES SHALL NOT BE ALLOWED.
3. THE CONTRACTOR MUST OBTAIN A BULK WATER PERMIT OR PURCHASE AND INSTALL A WATER METER FOR ALL WATER USED DURING CONSTRUCTION. A COPY OF THIS PERMIT MUST BE CARRIED AT ALL TIMES BY ALL WHO USE WATER.
4. THE CONTRACTOR SHALL NOT OPEN OR CLOSE ANY VALVES UNLESS AUTHORIZED BY THE CITY OF ROUND ROCK.
5. ALL VALVE BOXES AND COVERS SHALL BE CAST IRON UNLESS OTHERWISE DIRECTED BY THE CITY OF ROUND ROCK.
6. CONTACT CITY OF ROUND ROCK FOR ASSISTANCE IN OBTAINING EXISTING WATER AND WASTEWATER LOCATIONS.
7. SAND, AS DESCRIBED IN SPECIFICATION ITEM 510 PIPE, SHALL NOT BE USED AS BEDDING FOR WATER AND WASTEWATER LINES. ACCEPTABLE BEDDING MATERIALS ARE PIPE BEDDING STONE, PEA GRAVEL, AND IN LIEU OF SAND A NATURAL OCCURRING OR MANUFACTURED STONE MATERIAL CONFORMING TO ASTM C33 FOR STONE QUALITY AND MEETING THE FOLLOWING GRADATION SPECIFICATION:

8. THE CONTRACTOR IS HEREBY NOTIFIED THAT CONNECTING TO, SHUTTING DOWN OR TERMINATING EXISTING UTILITY LINES MAY HAVE TO OCCUR AT OFF-PEAK HOURS. SUCH HOURS ARE USUALLY OUTSIDE NORMAL WORKING HOURS AND POSSIBLY BETWEEN 12 A.M. AND 6 A.M.

1. IN AREAS WHERE EXISTING CURBS AND GUTTERS ARE TO REMAIN, THE OLD PAVING AND BASE MUST BE REMOVED AND THE NEW BASE AND PAVING PLACED AND COMPACTED SO AS NOT TO DISTURB EXISTING CURBS AND GUTTERS.

2. HMAC SHALL BE ALLOWED TO CURE FOR A MINIMUM OF 24 HOURS TO ALLOW ADEQUATE COOLING AND PREVENT RUTTING UNLESS OTHERWISE APPROVED OR DIRECTED BY THE ENGINEER.

3. RECOMMENDED COMPACTED LIFT THICKNESS GUIDELINE PER TXDOT SPEC ITEM 340.

4. HMAC PLACEMENT WIDTHS SHALL BE A MAXIMUM OF 15 FEET. THE LONGITUDINAL JOINTS SHALL BE LOCATED 4 INCHES OFFSET FROM THE DRIVING LANE LINES WHENEVER POSSIBLE.

5. TRUCKS DELIVERING HMAC MATERIAL TO THE ROADWAY WILL BE OF SUFFICIENT NUMBER TO ENSURE A CONTINUOUS OPERATION.

6. FOR THE OVERLAY, AN AUTOMATIC SCREED SHALL BE USED WITH OUTRIGGERS. DENSITY TESTS SHALL BE TAKEN PRIOR TO OPENING TO TRAFFIC.

7. ALL LOOSE MATERIAL SHALL BE COMPLETELY REMOVED FROM THE ROADWAY BY MECHANICAL SWEEPER AND WHERE NECESSARY, BY MANUAL LABOR PRIOR TO OPENING TO TRAFFIC. THE ENTIRE ROADWAY AND ABUTTING SIDEWALKS SHALL BE KEPT FREE OF LOOSE MATERIAL FOR THE DURATION OF THE PROJECT. PAYMENT OF THIS WORK SHALL BE SUBSIDIARY TO BID ITEM 340 HMAC.

8. THE CONTRACTOR SHALL SHAPE THE UNDERLYING FLEXIBLE BASE OR SUBGRADE MATERIALS EXPOSED AFTER EXCAVATION AND PROOFROLL ACCORDING TO CITY OF ROUND ROCK SPEC ITEM 236 ROLLING (PROOF). ANY SOFT AREAS REVEALED BY PROOFROLLING WILL BE CORRECTED AND PROOFROLLED AGAIN UNTIL APPROVED BY THE ENGINEER. CORRECTIVE MEASURES TAKEN SHALL BE PRIOR APPROVED BY THE ENGINEER AND/OR CITY PROJECT MANAGER. PROOFROLLING AND DENSITY TEST WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO BID ITEM 110 B STREET EXCAVATION.

9. ALL RECONSTRUCTION, PREPARATION WORK, AND PAVING SHALL BE COMPLETED IN A MANNER SO AS TO PROVIDE A SMOOTH RIDING SURFACE FREE OF BUMPS, DIPS, AND RIPPLES AND A SMOOTH, UNIFORM APPEARANCE.

10. THE CONTRACTOR SHALL OBTAIN AND INSTALL BLUE REFLECTORIZED DELINEATORS ON PAVED STREETS OPPOSITE (PERPENDICULAR TO) EXISTING AND NEW FIRE HYDRANTS. THESE DELINEATORS SHALL BE PLACED AT A ONE (1) FOOT OFFSET FROM THE CENTERLINE TOWARD THE SIDE OF THE STREET WHERE THE FIRE HYDRANT IS LOCATED.

1. ALL TESTING SHALL BE DONE BY AN INDEPENDENT LABORATORY AT THE CITY OF ROUND ROCK EXPENSE. ANY RETESTING SHALL BE PAID FOR BY THE CONTRACTOR. A CITY INSPECTOR SHALL BE PRESENT DURING ALL TESTS. CITY INSPECTORS SHALL BE GIVEN A MINIMUM OF 24 HOURS NOTICE PRIOR TO ANY TESTING.  
TELEPHONE 512-801-4471 (INSPECTIONS).
2. BACKFILL BEHIND THE CURB SHALL BE COMPACTED TO OBTAIN A MINIMUM OF 95% DENSITY TO WITHIN 3" OF TOP OF CURB. MATERIAL USED SHALL BE PRIMARILY GRANULAR WITH NO ROCKS LARGER THAN 6" IN GREATEST DIMENSION. THE REMAINING 3" SHALL BE CLEAN TOPSOIL FREE FROM ALL CLODS AND ROCKS AND SUITABLE FOR SUSTAINING PLANT LIFE.
3. DEPTH OF COVER FOR ALL PROPOSED UTILITY IMPROVEMENTS (WATER, WASTEWATER, AND STORM DRAINAGE) SHALL BE A MINIMUM OF 48" UNLESS OTHERWISE INDICATED IN THE PLANS.
4. BARRICADES BUILT TO TEXAS MUTCD STANDARDS SHALL BE CONSTRUCTED AS NECESSARY TO MAINTAIN JOB AND PUBLIC SAFETY; CONTRACTOR SHALL PROTECT OR REINSTALL EXISTING SIGNS AND BARRICADES. PAYMENT SHALL BE SUBSIDIARY TO ROUND ROCK SPEC ITEM 803L, BARRICADES & TRAFFIC HANDLING.
5. ALL R.C.P. (STORM DRAINAGE INFRASTRUCTURE) SHALL BE MINIMUM CLASS III OR AS OTHERWISE INDICATED IN THE PLANS. USE PREFABRICATED BENDS, WYES ("Y") AND TRANSITIONS AT ALL CONNECTIONS OF TWO OR MORE PIPES.

ALL AREA DISTURBED BY CONSTRUCTION SHALL BE RESTORED AS NOTED BELOW (FOR SPECIFICS, REFERENCE THE CITY OF ROUND ROCK STANDARD SPECIFICATION SERIES 600.

A. A MINIMUM OF THREE INCHES OF TOPSOIL SHALL BE PLACED IN ALL DISTURBED GRASS AREAS AND BETWEEN THE CURB AND RIGHT OF WAY LINE.  
AS PER BID ITEM 604.

B. THE CONTRACTOR SHALL SOD ALL EXPOSED CUTS AND FILLS OF MANAGED TURF/LANDSCAPED AREAS UPON COMPLETION OF CONSTRUCTION, AS INDICATED IN PLANS.

C. SODDING SHALL BE ST. AUGUSTINE OR BERMUDA (MATCHING EXISTING SOD TYPE)  
AND MUST BE ALIVE AT THE TIME OF PLACING.

D. SEEDING SHALL BE PER SPECIFICATION 604.

E. MAJOR STREAMS SHALL NOT BE MODIFIED WITHOUT CONSENT OF APPLICABLE STATE AND FEDERAL AGENCIES AND AUTHORIZATION FROM THE DIRECTOR OF PUBLIC WORKS DEPARTMENT.

1. EROSION CONTROL MEASURES, SITE WORK AND RESTORATION WORK SHALL BE IN ACCORDANCE WITH THE CITY OF ROUND ROCK STANDARD SPECIFICATION SERIES 600.

2. ALL SLOPES SHALL BE SODDED OR SEEDDED WITH APPROVED GRASS, GRASS MIXTURES OR GROUND COVER AS PER EROSION CONTROL AND REVEGETATION NOTES.

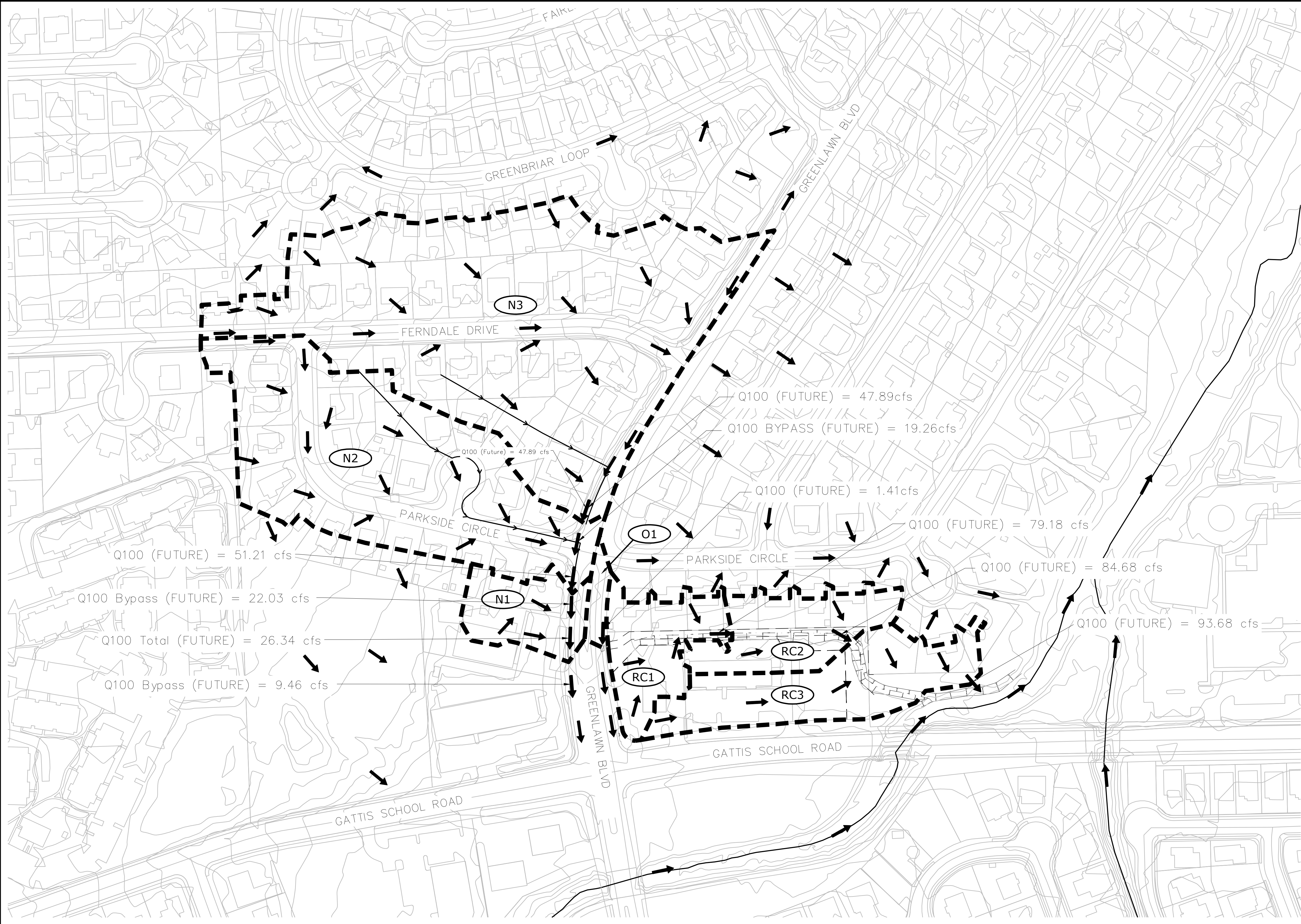
3. SILT FENCES, ROCK BERMS, SEDIMENTATION BASINS AND SIMILARLY RECOGNIZED TECHNIQUES AND MATERIALS SHALL BE EMPLOYED DURING CONSTRUCTION TO PREVENT POINT SOURCE SEDIMENTATION LOADING OF DOWNSTREAM FACILITIES. SUCH INSTALLATION SHALL BE REGULARLY INSPECTED BY THE CITY OF ROUND ROCK FOR EFFECTIVENESS. ADDITIONAL MEASURES MAY BE REQUIRED IF, IN THE OPINION OF THE CITY ENGINEER, THEY ARE WARRANTED.

4. ALL TEMPORARY EROSION CONTROL MEASURES SHALL NOT BE REMOVED UNTIL FINAL INSPECTION AND APPROVAL OF THE PROJECT BY THE CITY PROJECT MANAGER. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL TEMPORARY EROSION CONTROL STRUCTURES AND TO REMOVE EACH STRUCTURE AS APPROVED BY THE CITY PROJECT MANAGER.

[illegible]

PLOTTED: 8/3/2016  
JOB NO: 702-13





DRAINAGE AREA MAP LEGEND

DRAINAGE AREA BOUNDARY

TIME OF CONCENTRATION PATH

DRAINAGE AREA DESIGNATION

LIMITS OF CONSTRUCTION

FLOW PATTERNS

100-yr Runoff Calculations					
DA	Tc	C <sub>100</sub>	i <sub>100</sub>	Area	Q <sub>100</sub>
O-1	0.083	0.73	11.88	0.16	1.40
N-1	0.083	0.61	11.88	0.76	5.55
N-2	0.184	0.68	9.94	4.54	30.92
N-3	0.218	0.64	9.43	7.87	47.89
RC-1	0.083	0.67	11.88	0.96	7.70
RC-2	0.083	0.68	11.88	1.07	8.71
RC-3	0.083	0.68	11.88	1.75	14.25

25-yr Runoff Calculations					
DA	Tc	C <sub>25</sub>	i <sub>25</sub>	Area	Q <sub>25</sub>
O-1	0.083	0.65	9.84	0.16	1.03
N-1	0.083	0.53	9.84	0.76	3.99
N-2	0.184	0.60	8.16	4.54	22.4
N-3	0.218	0.56	7.73	7.87	34.32
RC-1	0.083	0.59	9.84	0.96	5.62
RC-2	0.083	0.60	9.84	1.07	6.37
RC-3	0.083	0.60	9.84	1.75	10.41

10-yr Runoff Calculations					
DA	Tc	C <sub>10</sub>	i <sub>10</sub>	Area	Q <sub>10</sub>
O-1	0.083	0.61	8.64	0.16	0.85
N-1	0.083	0.49	8.64	0.76	3.24
N-2	0.184	0.55	7.06	4.54	17.78
N-3	0.218	0.52	6.67	7.87	27.49
RC-1	0.083	0.54	8.64	0.96	4.52
RC-2	0.083	0.56	8.64	1.07	5.22
RC-3	0.083	0.56	8.64	1.75	8.54

2-yr Runoff Calculations					
DA	Tc	C <sub>2</sub>	i <sub>2</sub>	Area	Q <sub>2</sub>
O-1	0.083	0.54	6.48	0.16	0.56
N-1	0.083	0.43	6.48	0.76	2.13
N-2	0.184	0.48	5.19	4.54	11.41
N-3	0.218	0.45	4.87	7.87	17.38
RC-1	0.083	0.48	6.48	0.96	3.01
RC-2	0.083	0.49	6.48	1.07	3.42
RC-3	0.083	0.49	6.48	1.75	5.60

Design Point Runoff Calculations					
Inlet or STA	DA	Q2	Q10	Q25	Q100
Inlet O-1	O-1	0.76	1.02	1.16	1.40
Inlet N-1	N-1	3.03	4.04	4.60	5.55
Inlet N-2	N-2	17.11	23.27	26.88	30.92
**Inlet N-3**	N-3	27.04	37.01	42.89	47.89
STA 7+85	RC-1	4.20	5.60	6.38	7.70
STA 4+15	RC-2	4.75	6.34	7.22	8.71
STA 1+50	RC-3	7.77	10.37	11.80	14.25
**Inlet N-3** is not part of these plans; it is a possible future inlet					

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TBAE FIRM REGISTRATION NO.: 1452  
TBPE FIRM REGISTRATION NO.: F-1416  
TBPLS FIRM REGISTRATION NO.: 10065600

NO.	DATE	DESCRIPTION	BY

The bar above measures one inch on the original drawing. Adjust scales accordingly.

**DRAINAGE AREA MAP**

GREENLAWN STORM DRAINAGE IMPROVEMENTS  
GREENLAWN BOULEVARD (PARKSIDE CIR. TO GATTIS SCHOOL RD.)  
ROUND ROCK, TEXAS 78664

PLOTTED: 8/3/2016  
JOB NO: 702-13

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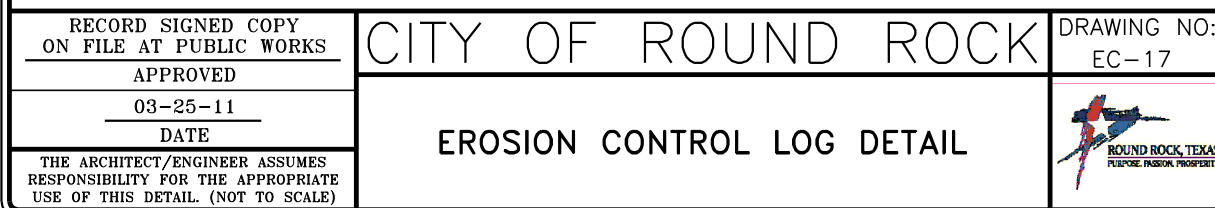
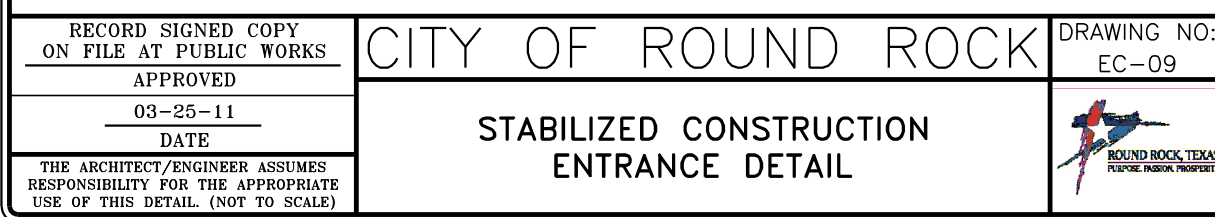
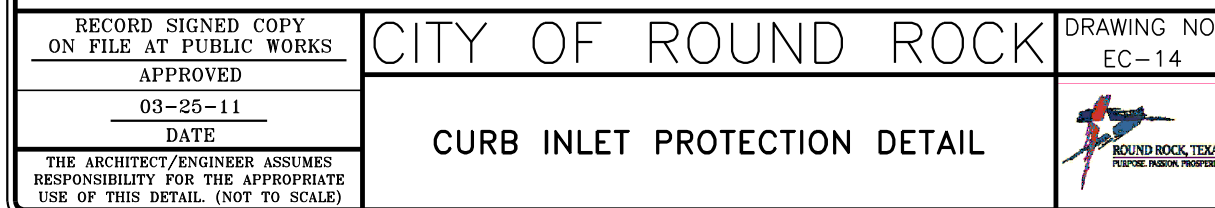
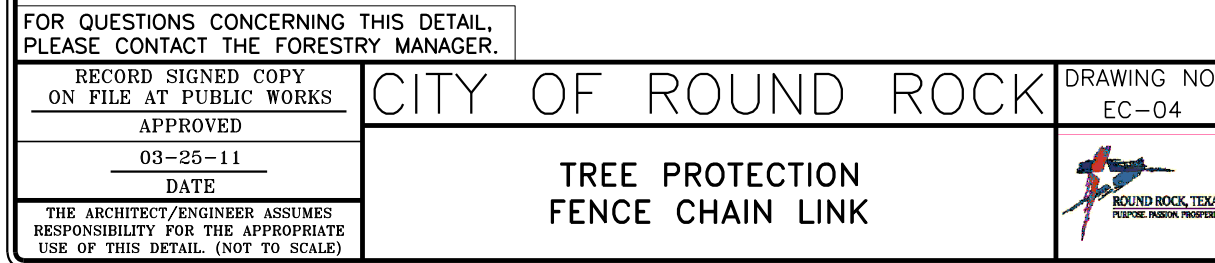
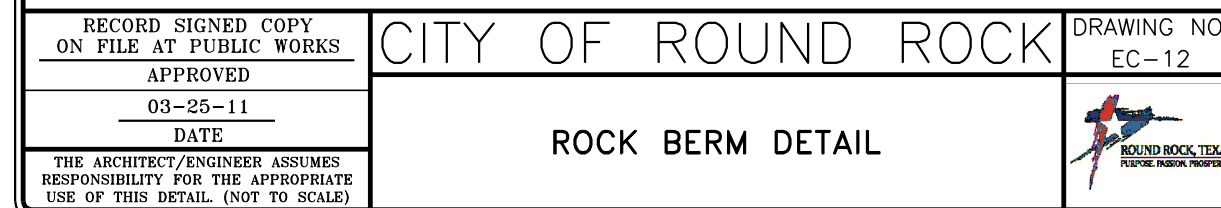
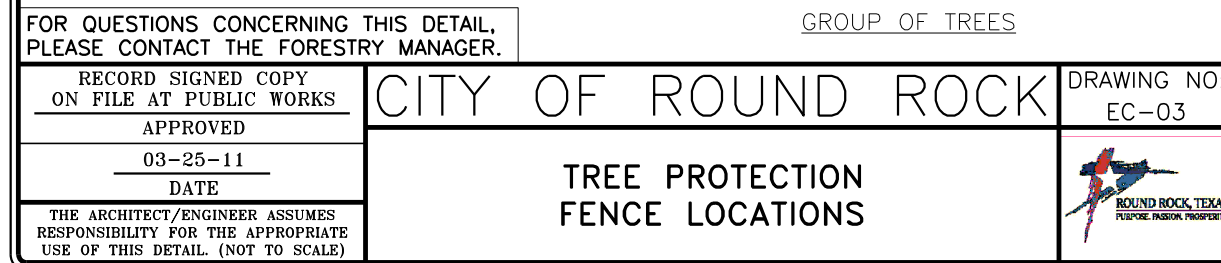
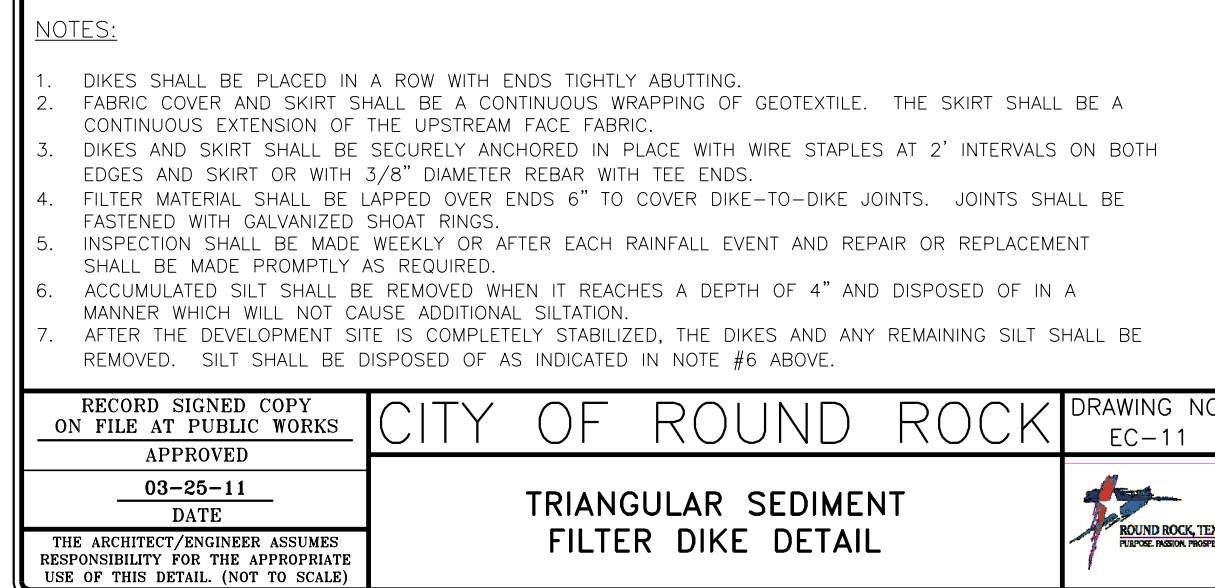
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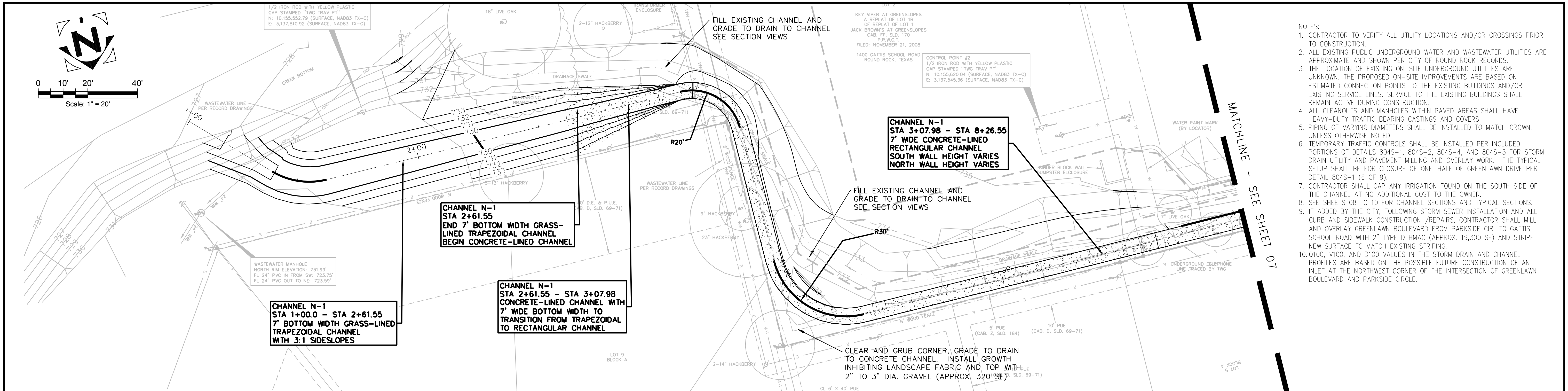




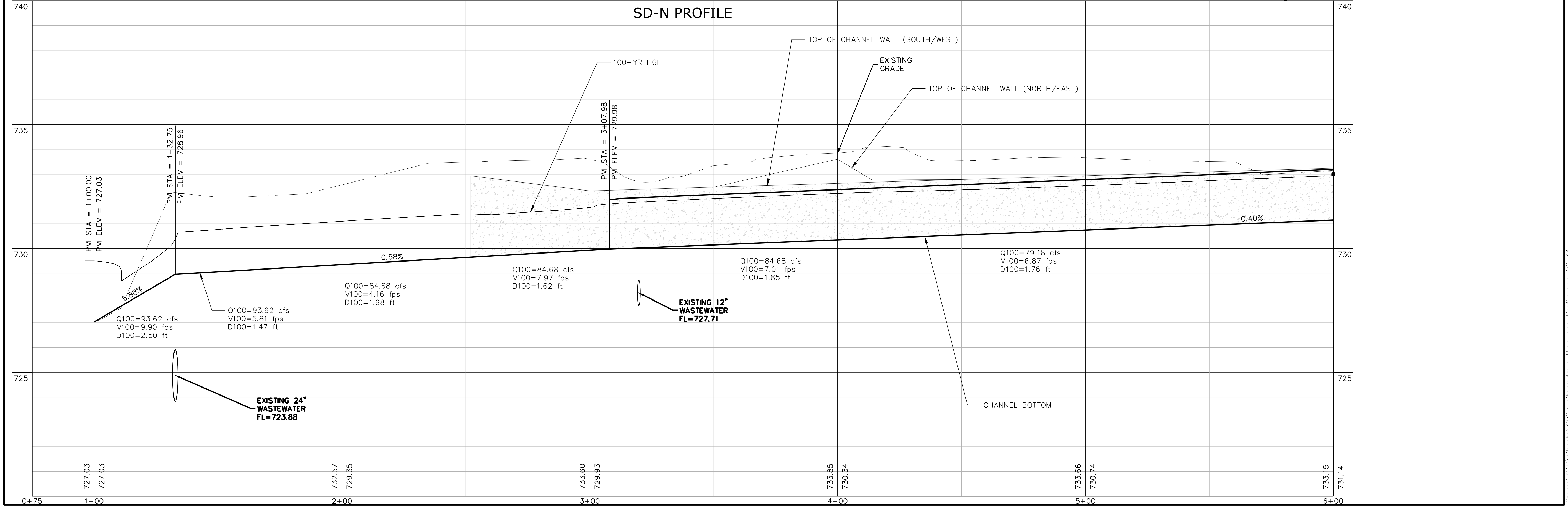
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|--|--|-----------------------|--|---|
| FOR QUESTIONS CONCERNING THIS DETAIL,<br>PLEASE CONTACT THE FORESTRY MANAGER.                              |  | CITY OF ROUND ROCK    |  | DRAWING NO.<br>EC-01  |
| RECORD SIGNED COPY<br>ON FILE AT PUBLIC WORKS  |  | TREE PROTECTION NOTES |  |  |
| APPROVED<br>03-25-11   |  |                       |  |   |
| DATE   |  |                       |  |   |
| THE ARCHITECT/ENGINEER ASSUMES<br>RESPONSIBILITY FOR THE APPROPRIATE<br>USE OF THIS DETAIL, (NOT TO SCALE) |  |                       |  |   |










- NOTES:
1. CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS AND/OR CROSSINGS PRIOR TO CONSTRUCTION.
  2. ALL EXISTING PUBLIC UNDERGROUND WATER AND WASTEWATER UTILITIES ARE APPROXIMATE AND SHOWN PER CITY OF ROUND ROCK RECORDS.
  3. THE LOCATION OF EXISTING ON-SITE UNDERGROUND UTILITIES ARE UNKNOWN. THE PROPOSED ON-SITE IMPROVEMENTS ARE BASED ON ESTIMATED CONNECTION POINTS TO THE EXISTING BUILDINGS AND/OR EXISTING SERVICE LINES. SERVICE TO THE EXISTING BUILDINGS SHALL REMAIN ACTIVE DURING CONSTRUCTION.
  4. ALL CLEANOUTS AND MANHOLES WITHIN PAVED AREAS SHALL HAVE HEAVY-DUTY TRAFFIC BEARING CASTINGS AND COVERS.
  5. PIPING OF VARYING DIAMETERS SHALL BE INSTALLED TO MATCH CROWN, UNLESS OTHERWISE NOTED.
  6. TEMPORARY TRAFFIC CONTROLS SHALL BE INSTALLED PER INCLUDED PORTIONS OF DETAILS 804S-1, 804S-2, 804S-4, AND 804S-5 FOR STORM DRAIN UTILITY AND PAVEMENT MILLING AND OVERLAY WORK. THE TYPICAL SETUP SHALL BE FOR CLOSURE OF ONE-HALF OF GREENLAWN DRIVE PER DETAIL 804S-1 (6 OF 9).
  7. CONTRACTOR SHALL CAP ANY IRRIGATION FOUND ON THE SOUTH SIDE OF THE CHANNEL AT NO ADDITIONAL COST TO THE OWNER.
  8. SEE SHEETS 08 TO 10 FOR CHANNEL SECTIONS AND TYPICAL SECTIONS.
  9. IF ADDED BY THE CITY, FOLLOWING STORM SEWER INSTALLATION AND ALL CURB AND SIDEWALK CONSTRUCTION /REPAIRS, CONTRACTOR SHALL MILL AND OVERLAY GREENLAWN BOULEVARD FROM PARKSIDE CIR. TO GATTIS SCHOOL ROAD WITH 2" TYPE D HMAC (APPROX. 19,300 SF) AND STRIPE NEW SURFACE TO MATCH EXISTING STRIPING.
  10. Q100, V100, AND D100 VALUES IN THE STORM DRAIN AND CHANNEL PROFILES ARE BASED ON THE POSSIBLE FUTURE CONSTRUCTION OF AN INLET AT THE NORTHWEST CORNER OF THE INTERSECTION OF GREENLAWN BOULEVARD AND PARKSIDE CIRCLE.

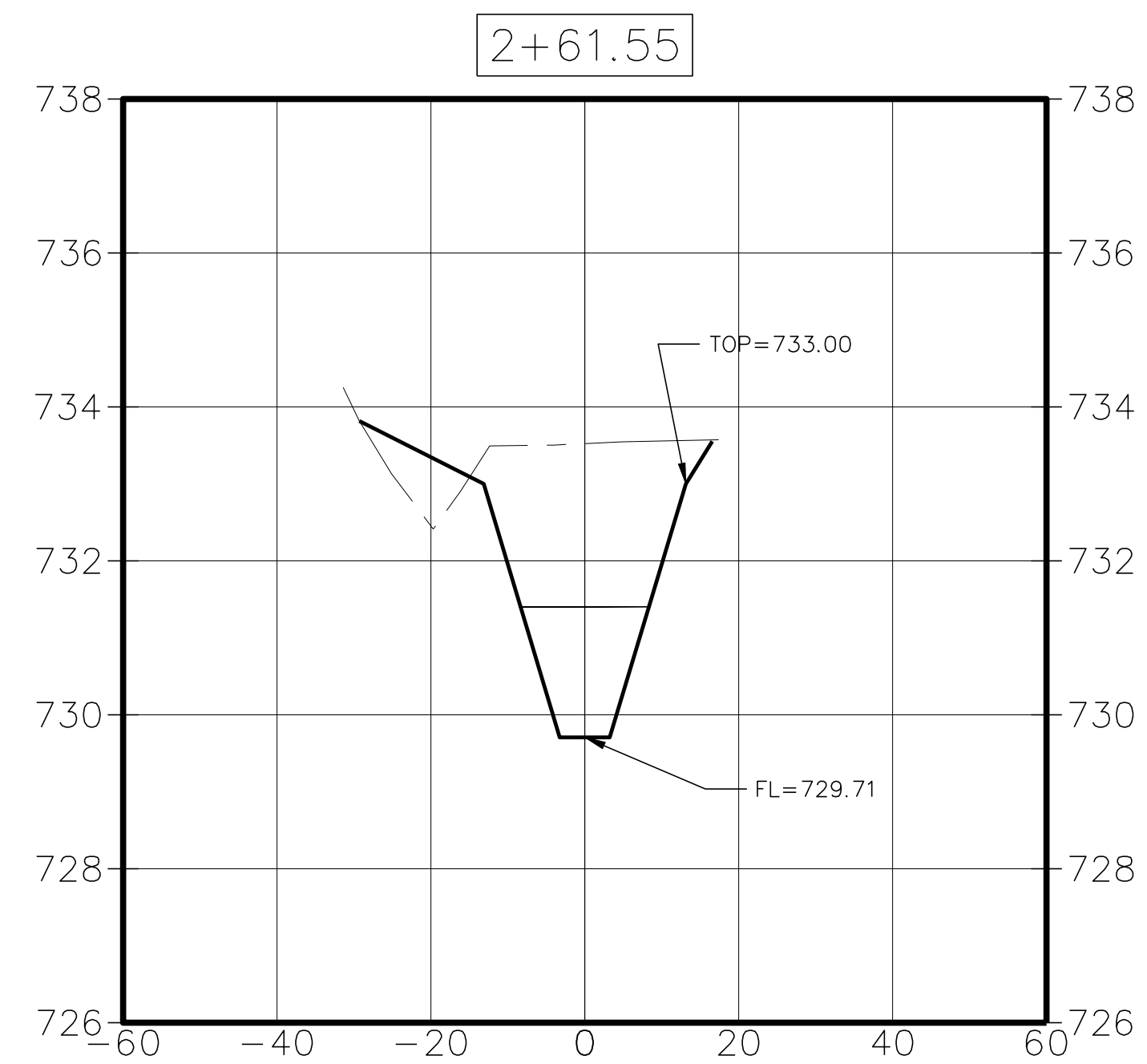
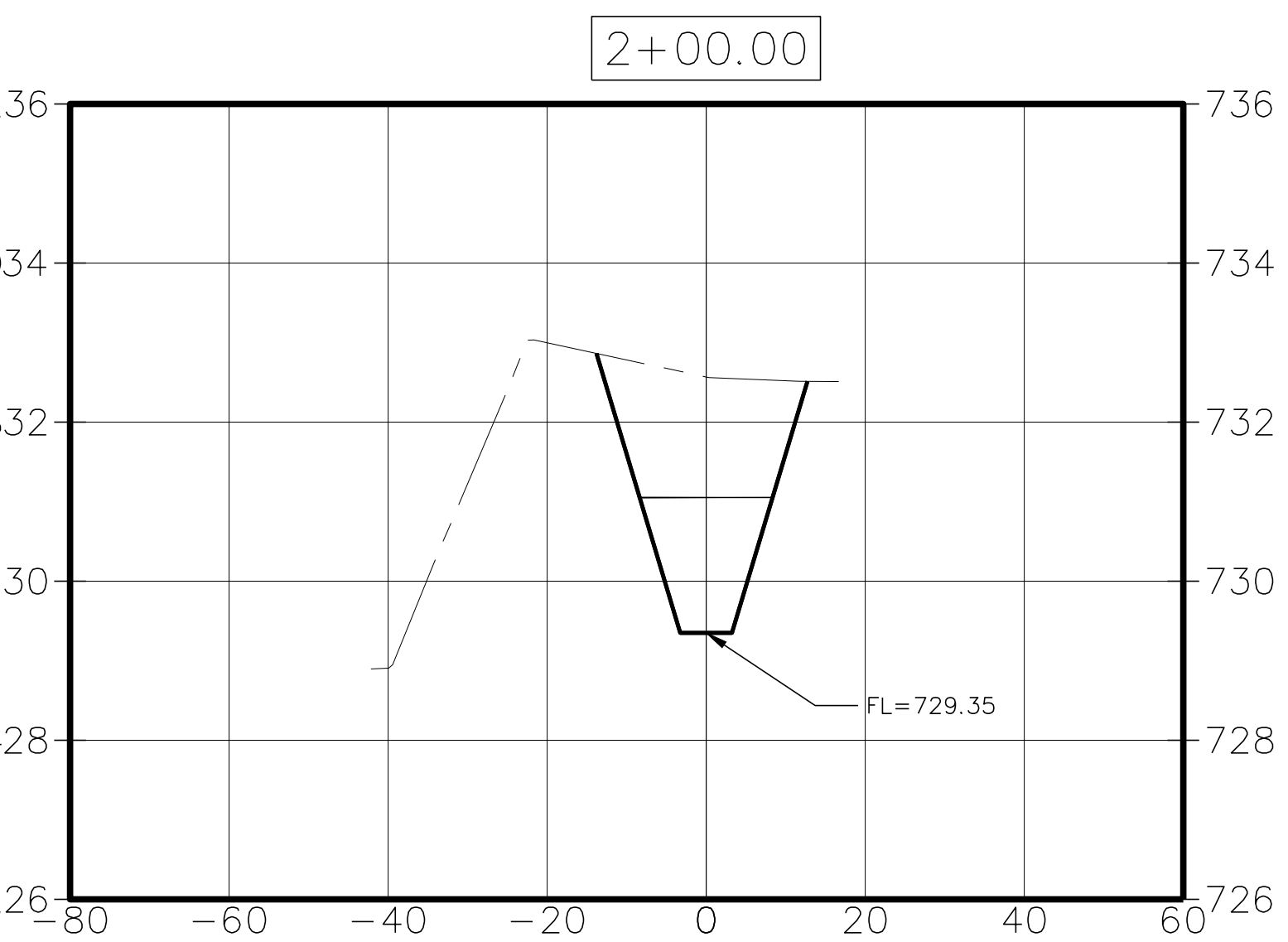
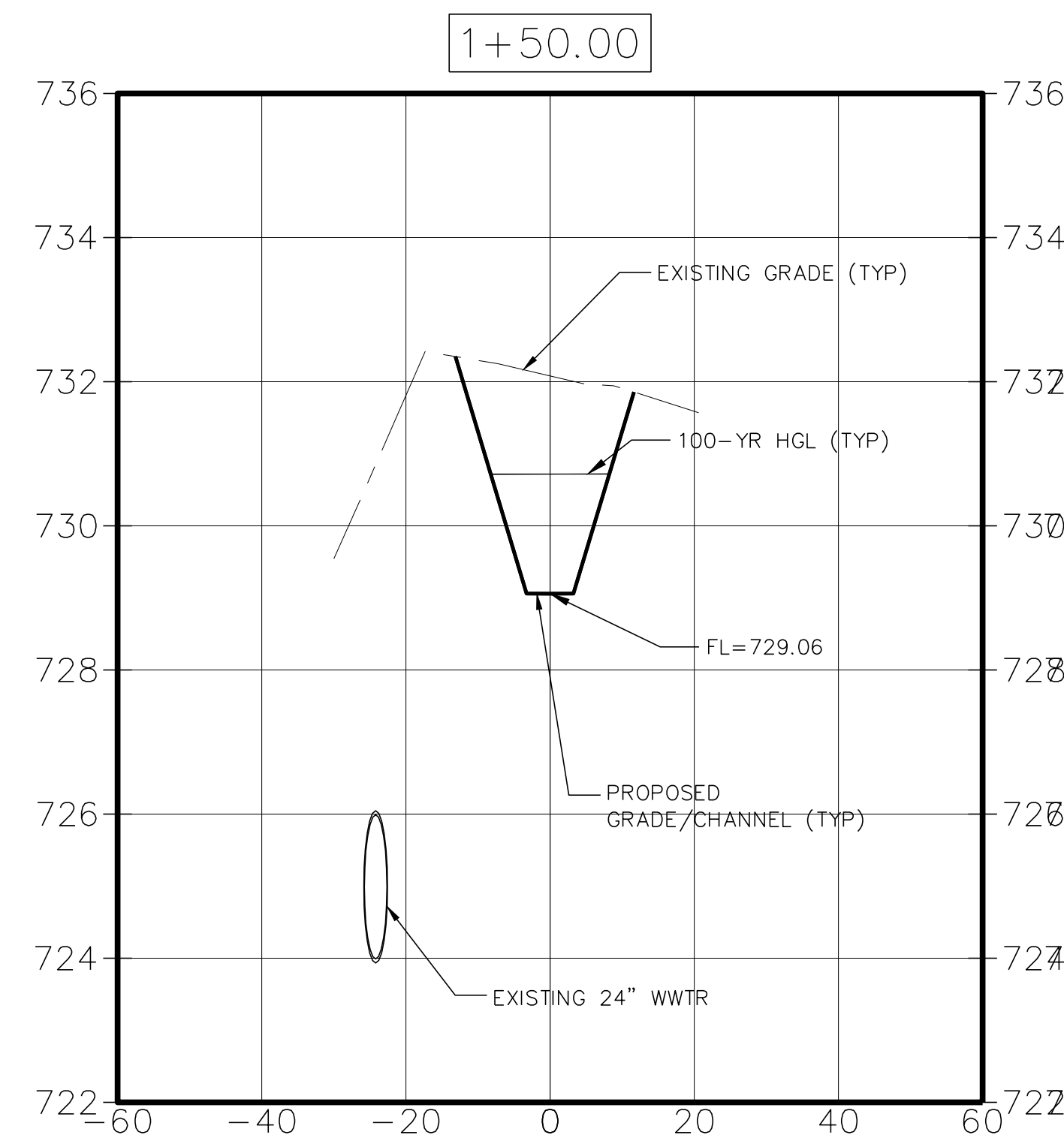


 MWM DesignGroup, Inc. F-1416	 305 East Huntland Drive Suite 200 Austin, Texas 78752 p: 512.453.0767 f: 512.453.1734 TBAE FIRM REGISTRATION NO.: 1452 TBPE FIRM REGISTRATION NO.: F-1416 TBPLS FIRM REGISTRATION NO.: 10065600	<table border="1"><thead><tr><th>NO.</th><th>DATE</th><th>DESCRIPTION</th><th>BY</th></tr></thead><tbody><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr><tr><td> </td><td> </td><td> </td><td> </td></tr></tbody></table>	NO.	DATE	DESCRIPTION	BY																																					 The bar above measures one inch on the original drawing. Adjust scales accordingly.	<b>STORM DRAIN PLAN AND PROFILE</b> <b>STA 1+00 TO 6+00</b>		PLOTTED: 8/3/2016 JOB NO: 702-13
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<b>GREENLAWN STORM DRAINAGE IMPROVEMENTS</b> <b>GREENLAWN BOULEVARD (PARKSIDE CIR. TO GATTIS SCHOOL RD.)</b> <b>ROUND ROCK, TEXAS 78664</b>		06 OF 19																																												



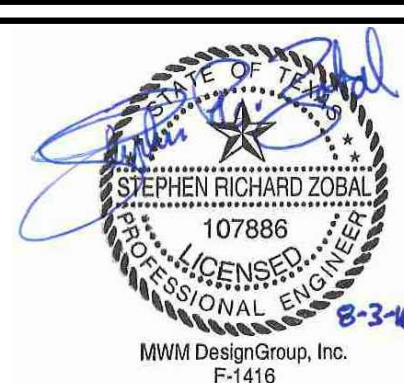
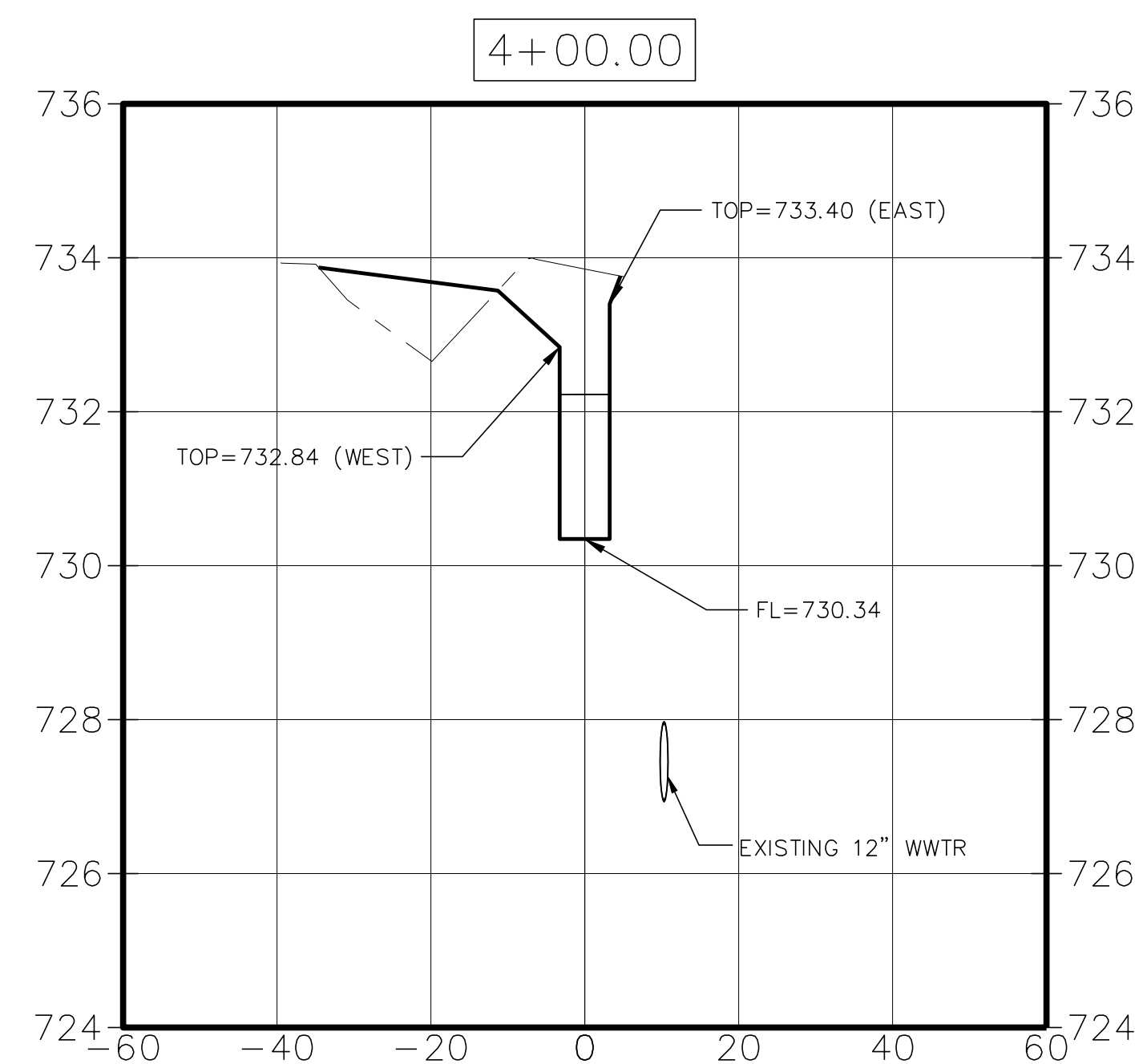
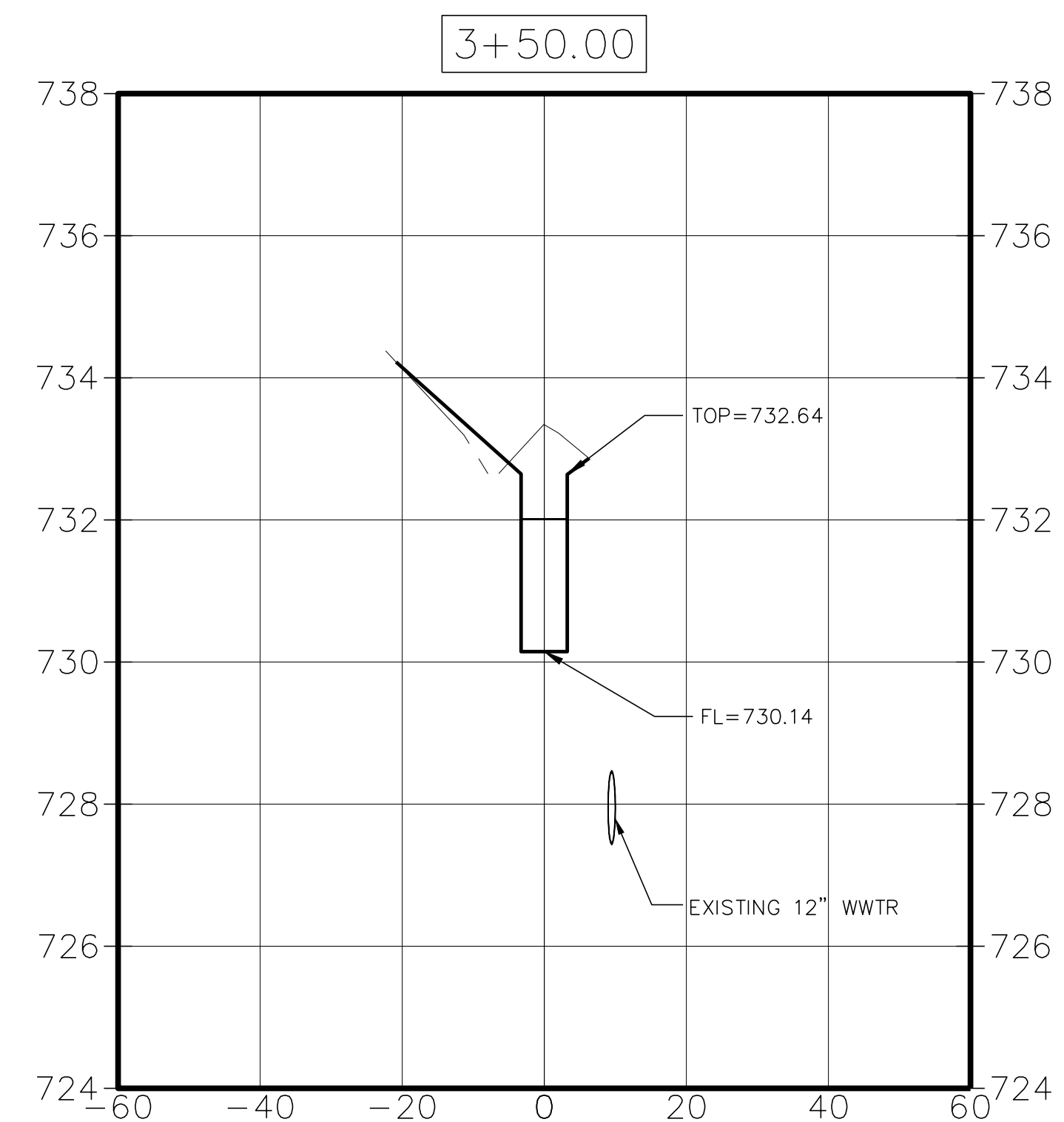
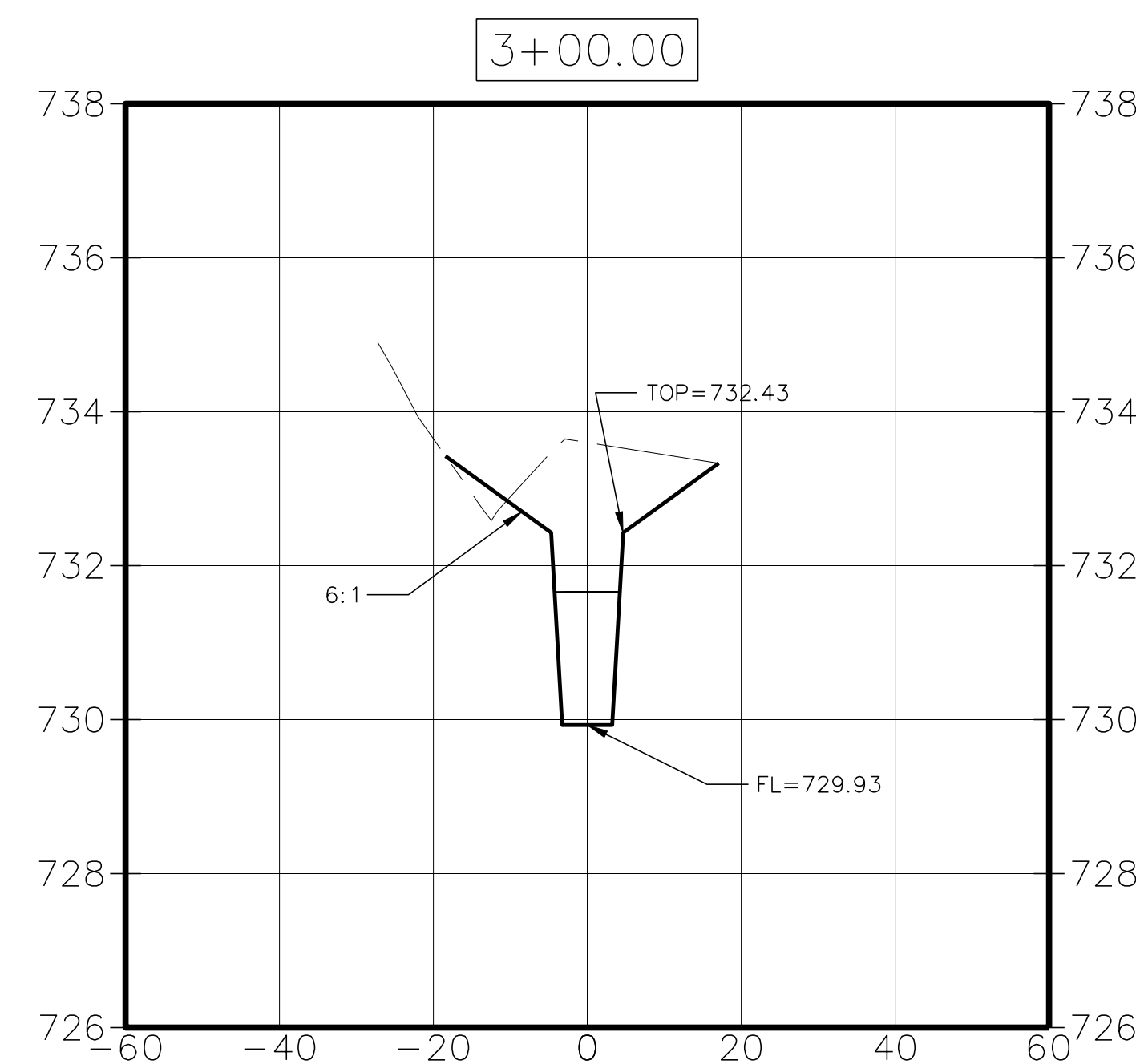






NOTE:

1. SEE SHEET 10 FOR TYPICAL CHANNEL SECTIONS
2. PROPOSED GRADE ON SECTION VIEWS SHALL TAKE PRECEDENCE OVER PLAN VIEW
3. ALL CHANNELS BOTTOMS ARE 7' WIDE



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TBPE FIRM REGISTRATION NO.: F-1416  
TBPLS FIRM REGISTRATION NO.: 10065600

[illegible]

The bar above measures one inch on the original drawing. Adjust scales accordingly.

## CHANNEL SECTION VIEWS

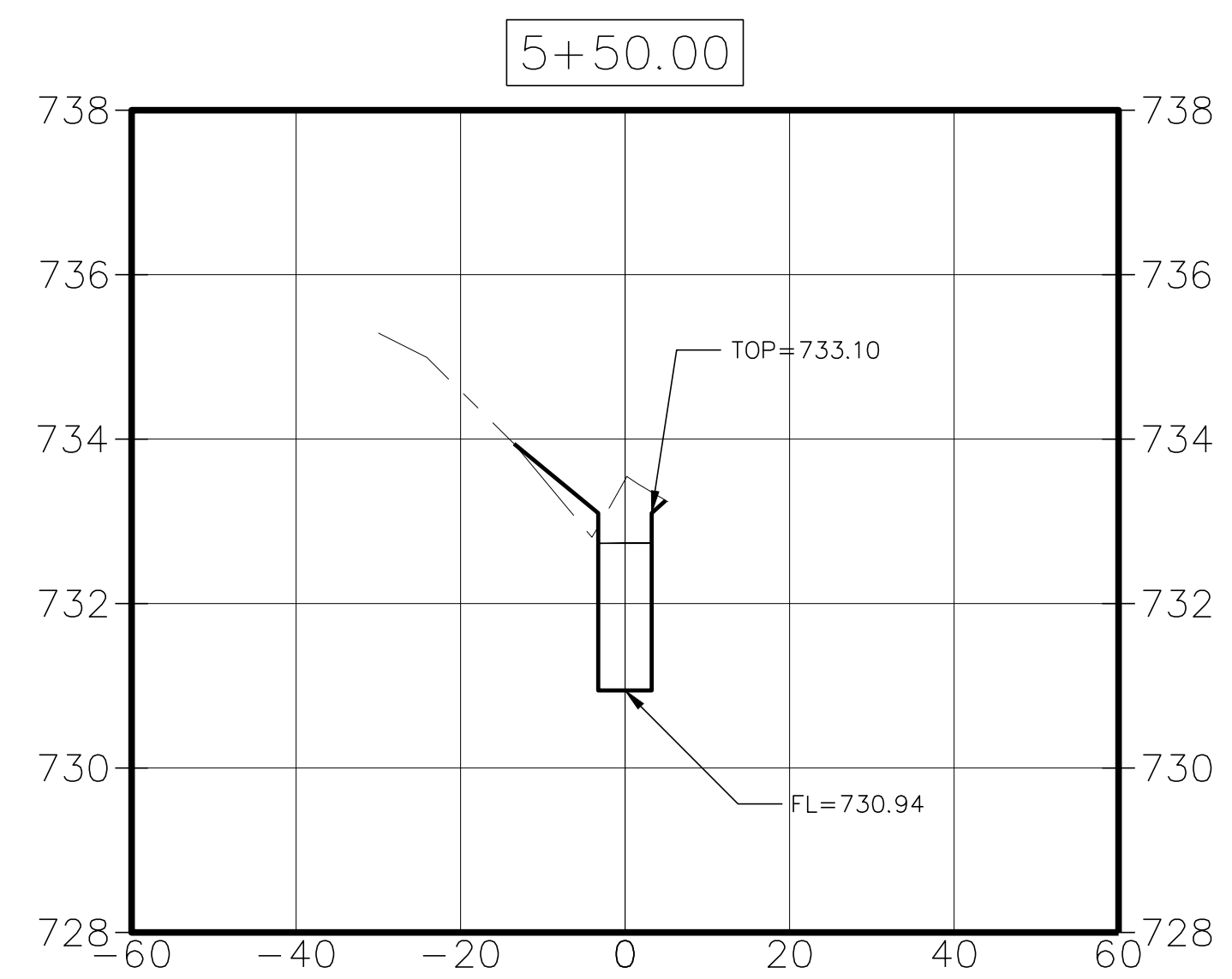
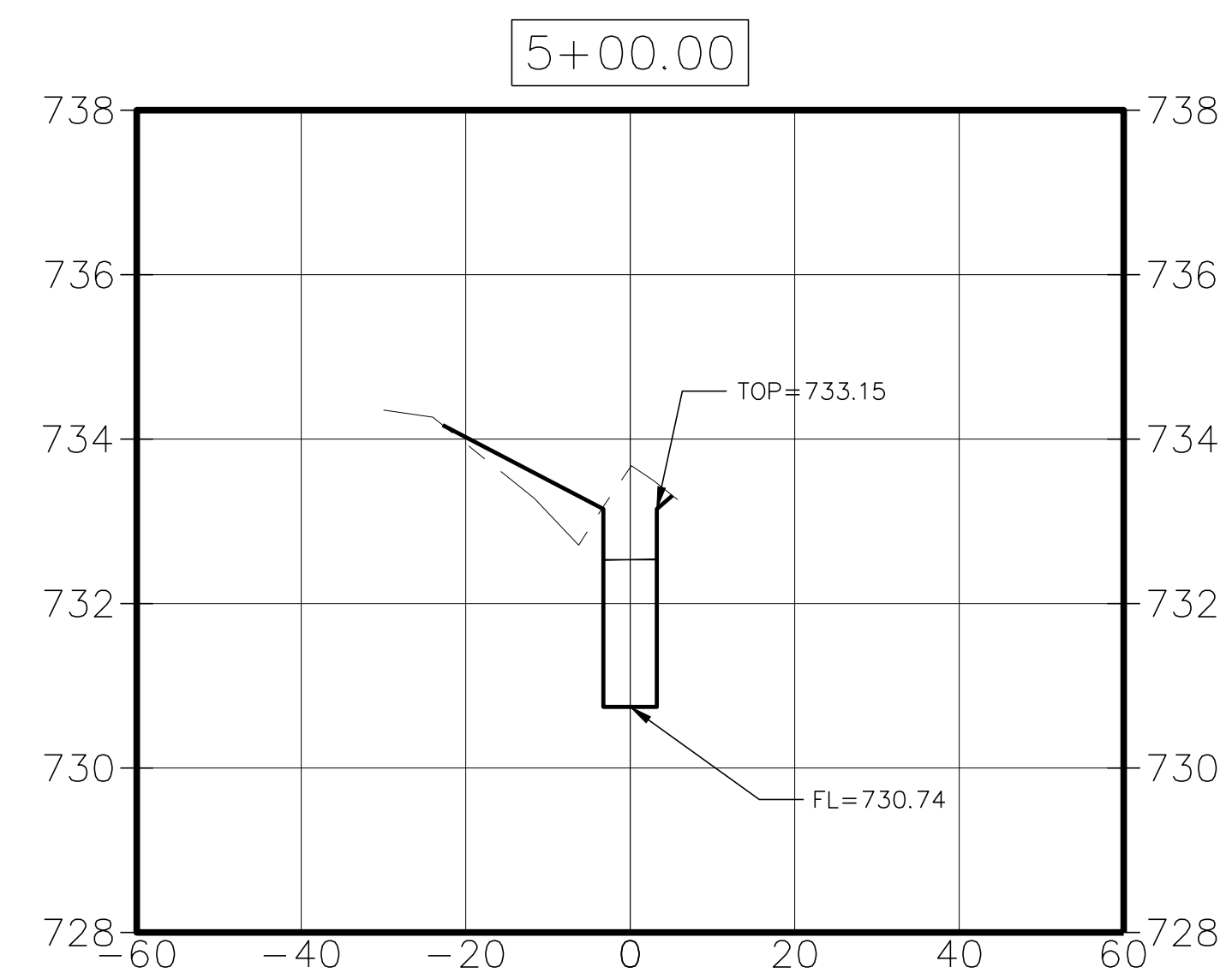
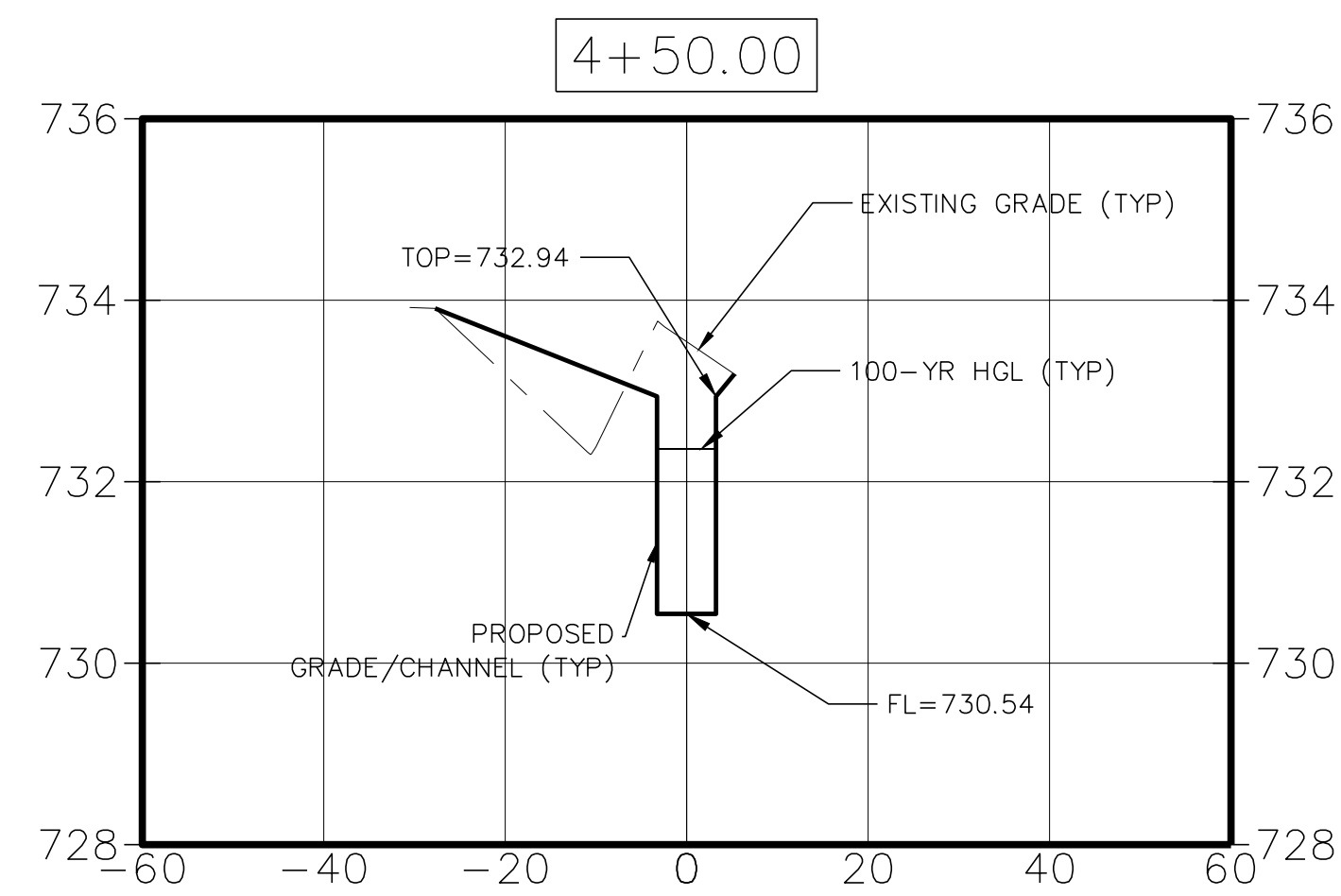
GREENLAWN STORM DRAINAGE IMPROVEMENTS  
GREENLAWN BOULEVARD (PARKSIDE CIR. TO GATTIS SCHOOL RD.)  
ROUND ROCK, TEXAS 78664

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JOB NO: 702-13

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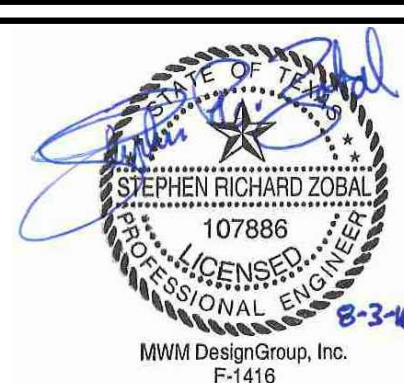
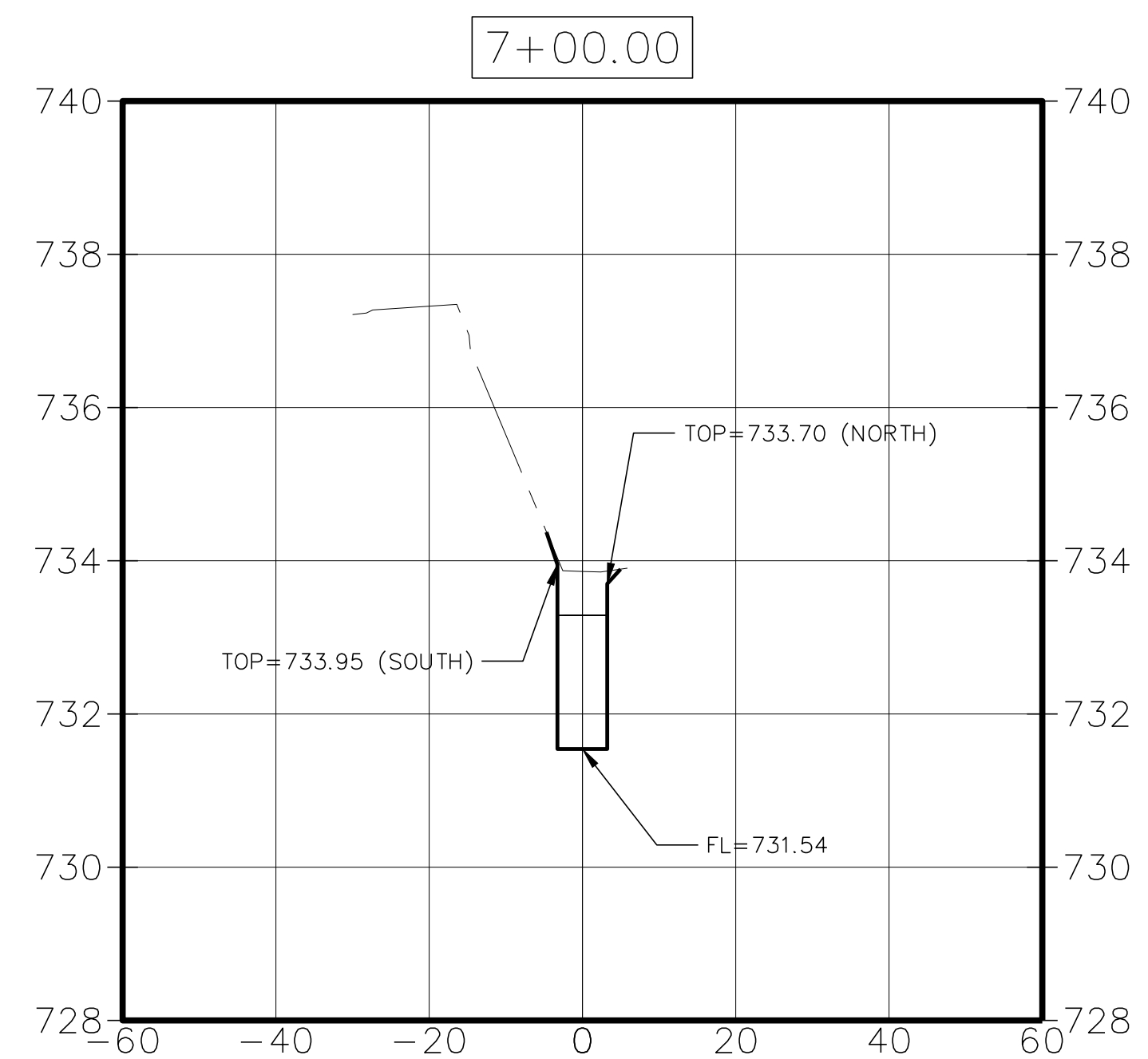
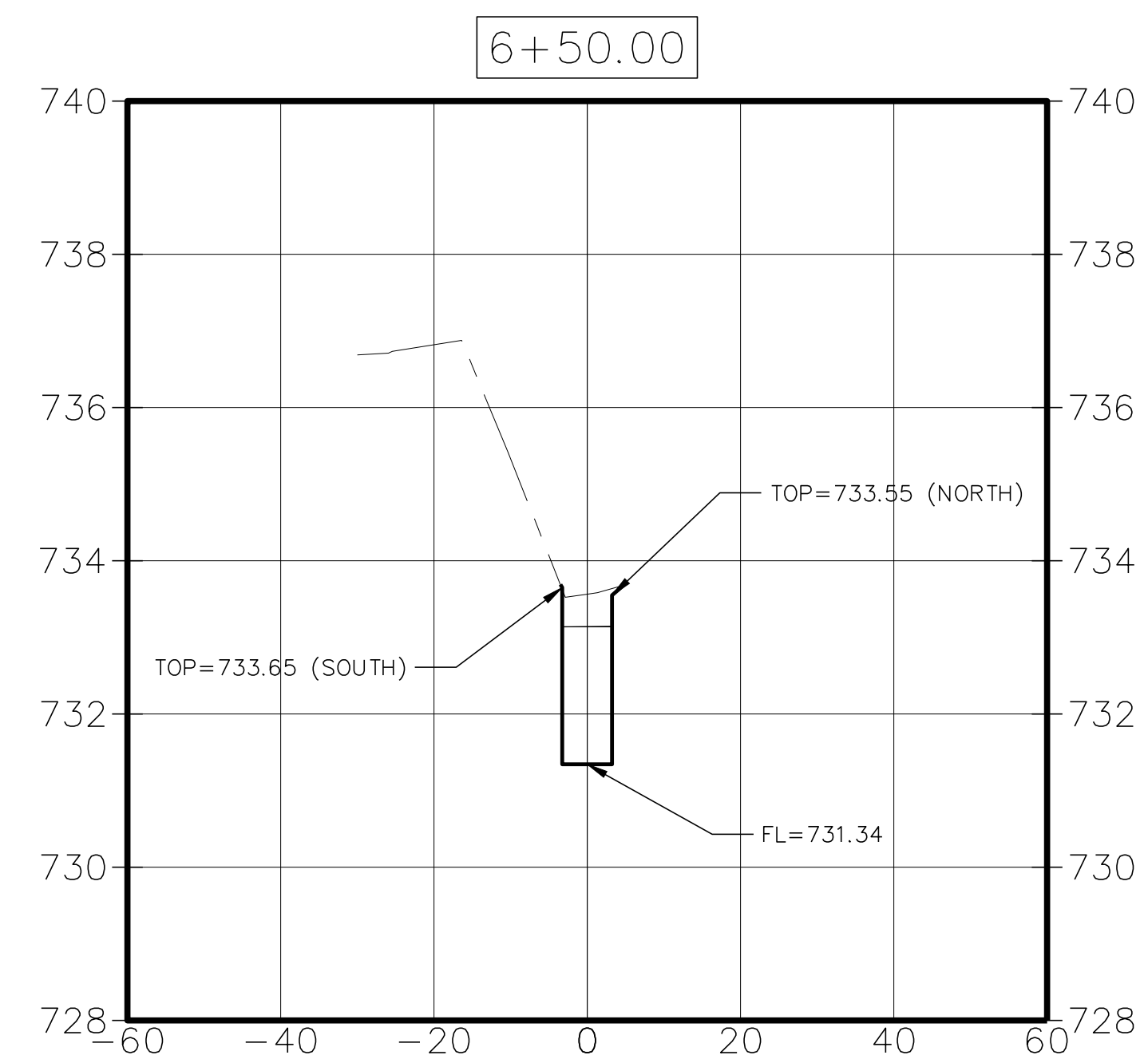
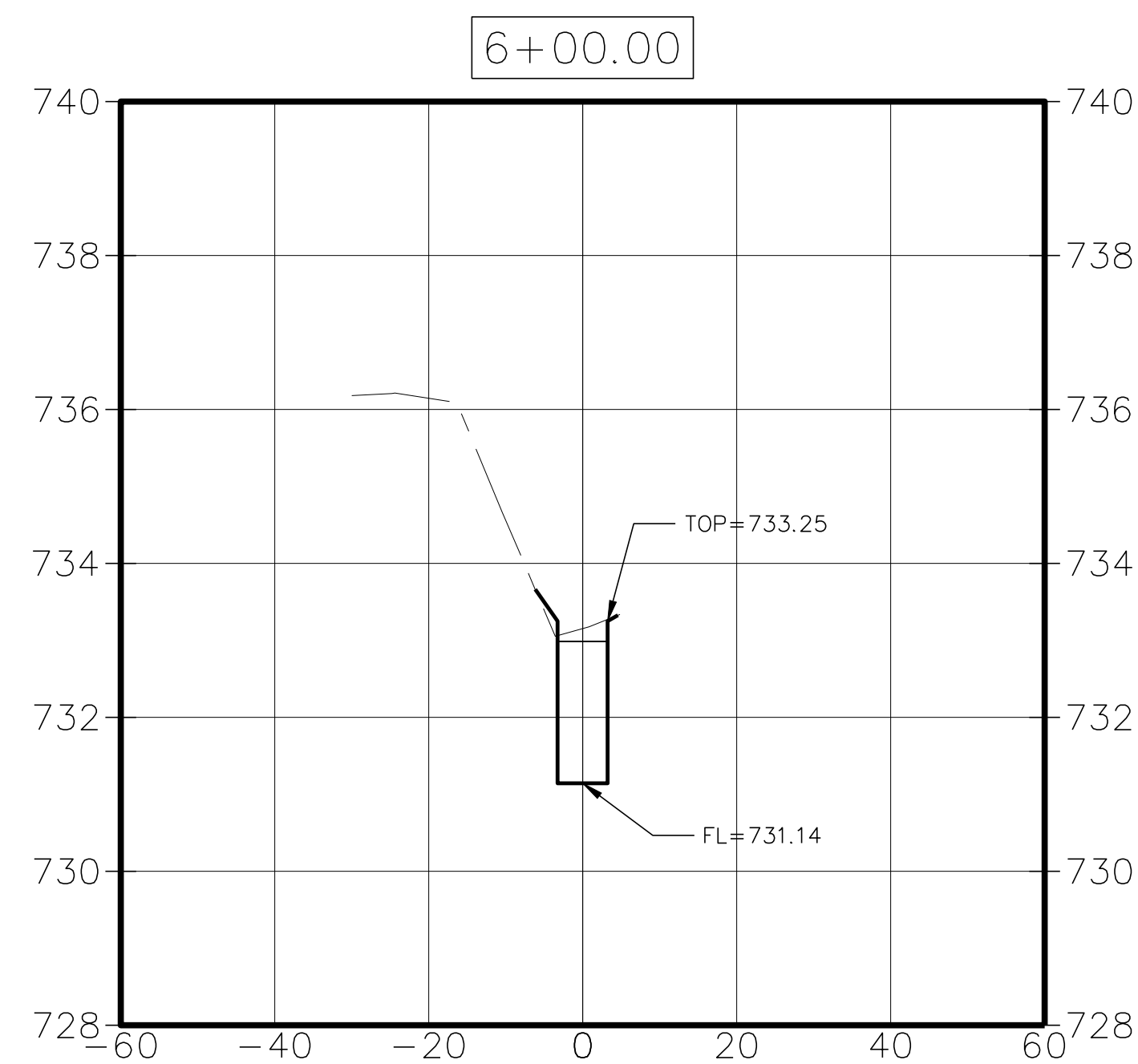
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NOTE:

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The bar above measures one inch on the original drawing. Adjust scales accordingly.

## CHANNEL SECTION VIEWS

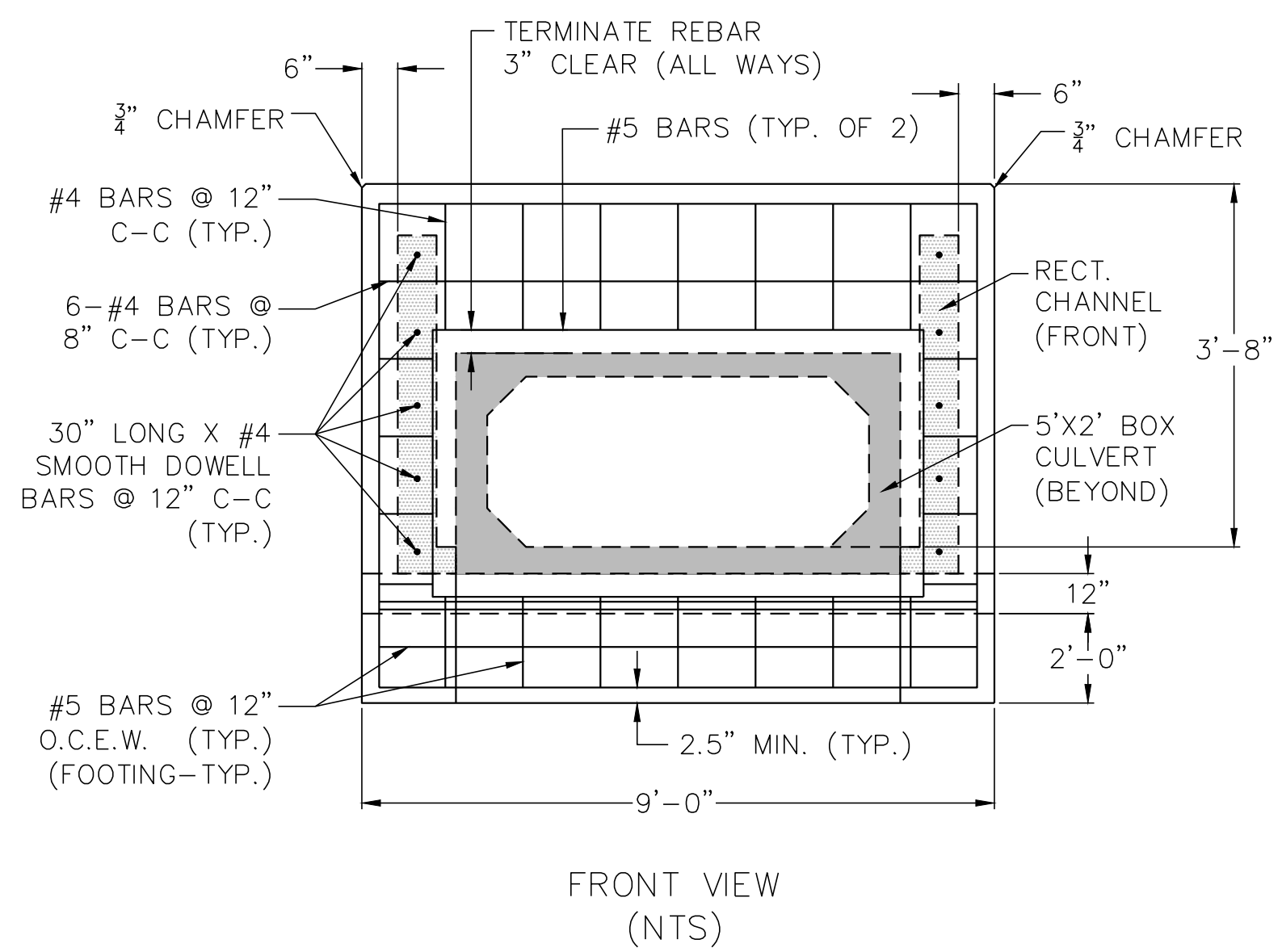
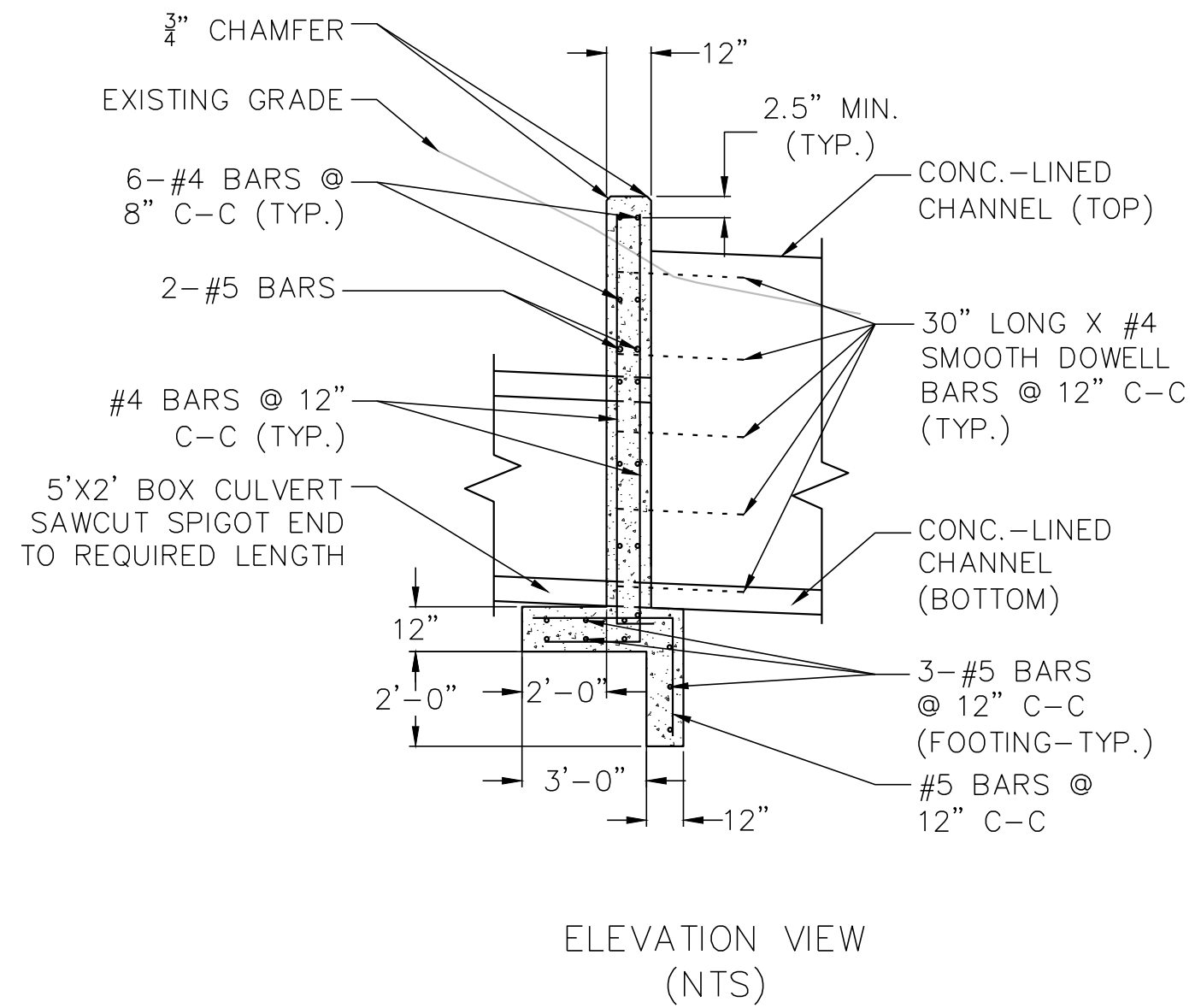
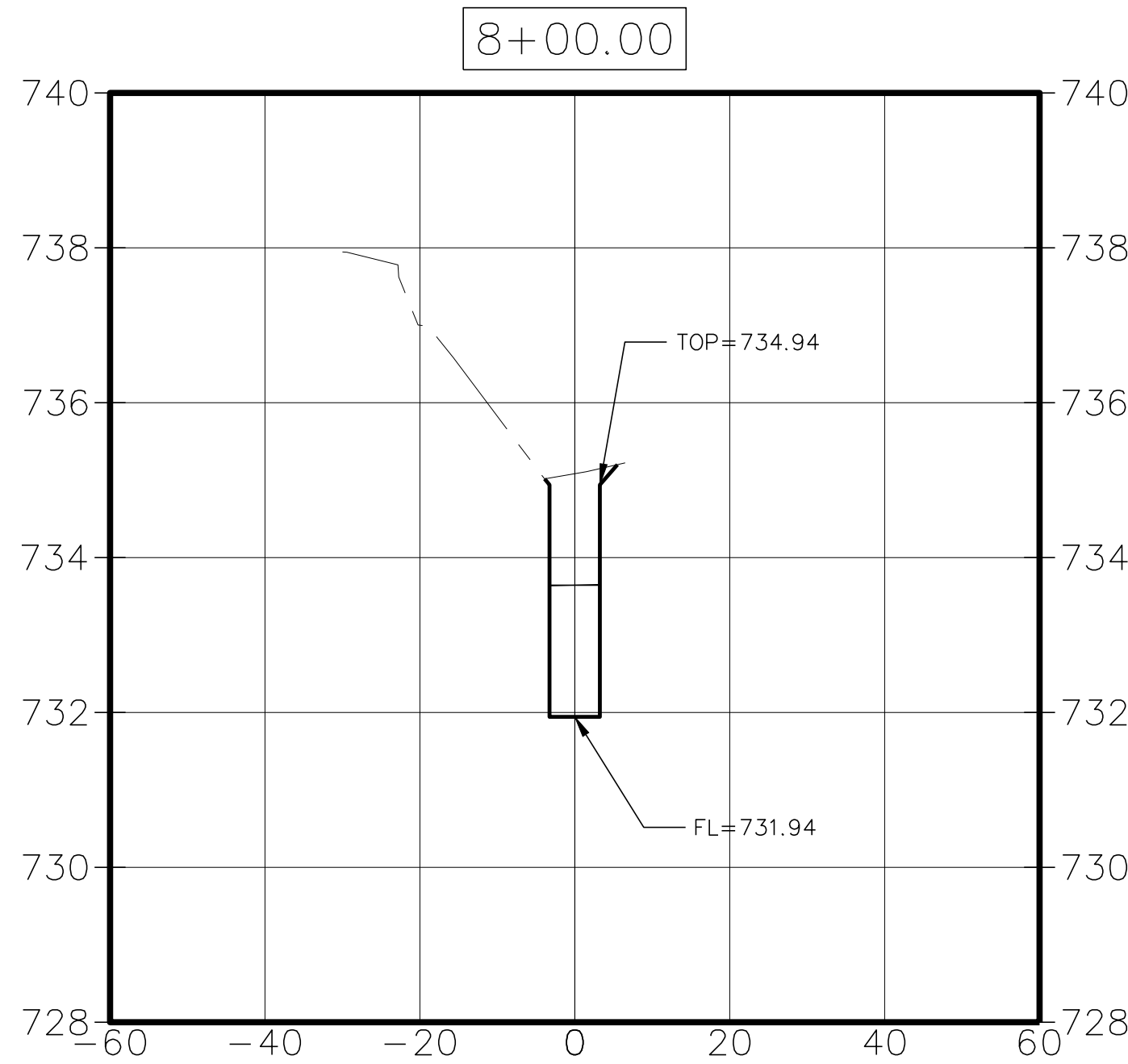
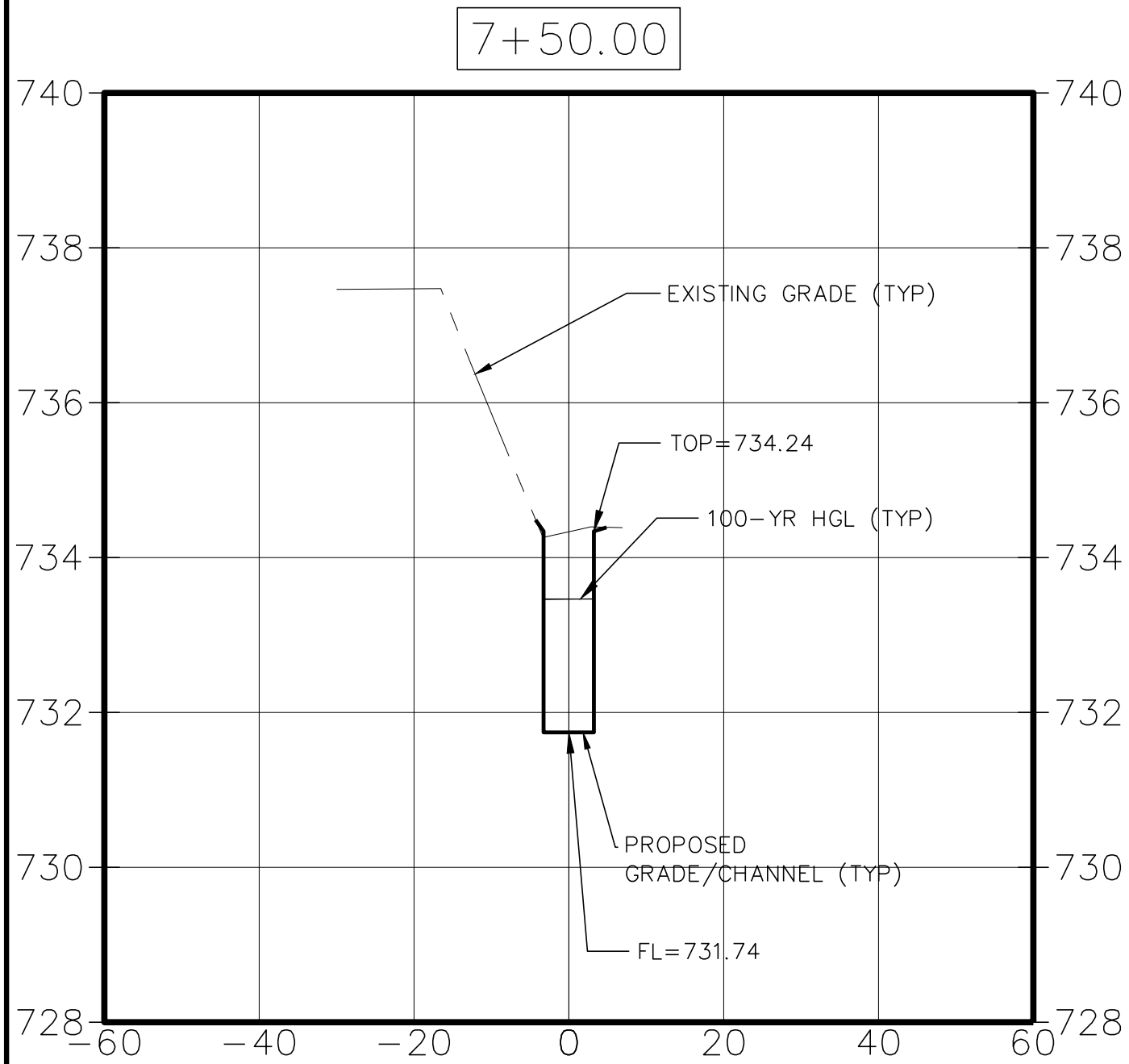
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GREENLAWN BOULEVARD (PARKSIDE CIR. TO GATTIS SCHOOL RD.)  
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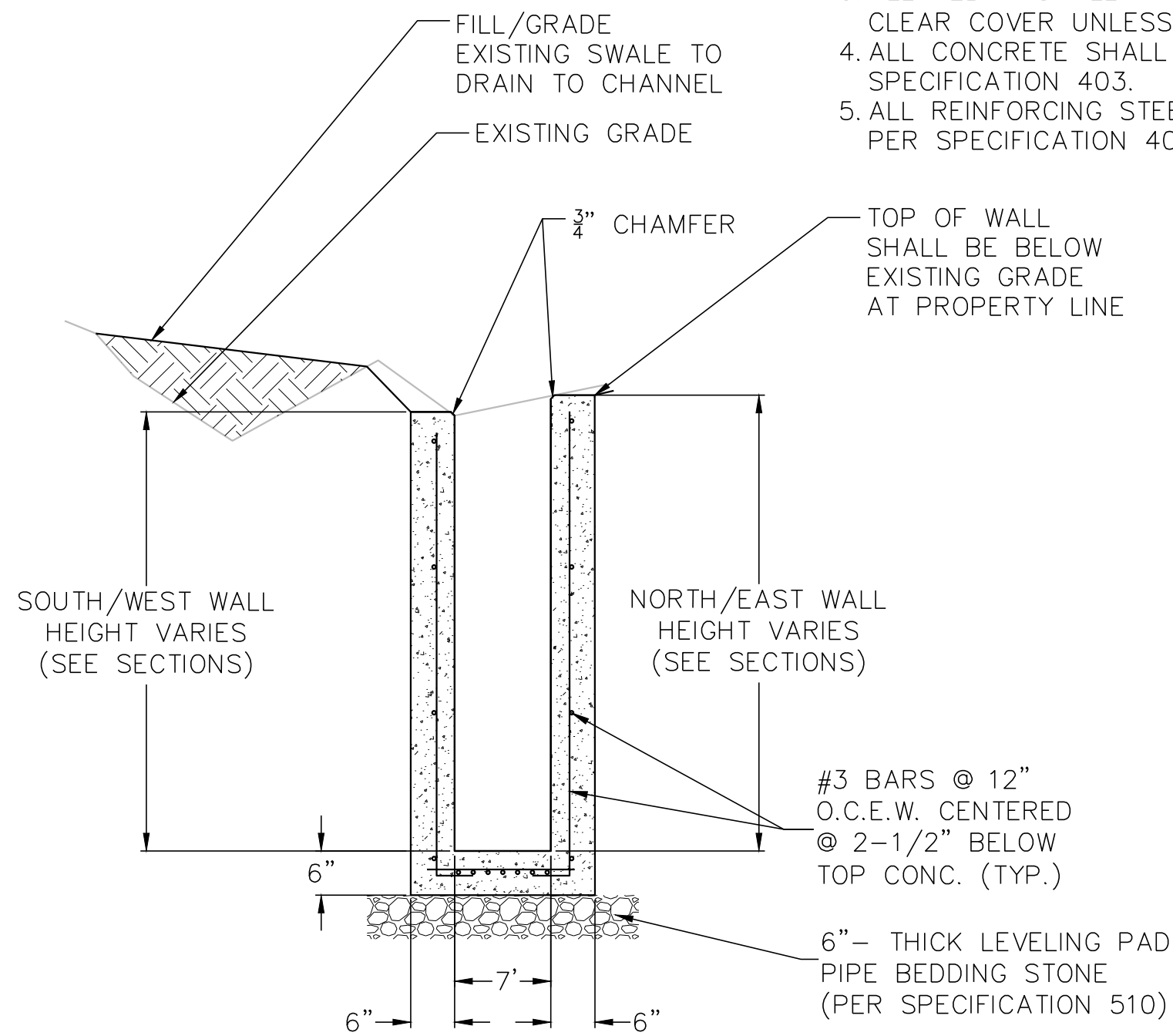




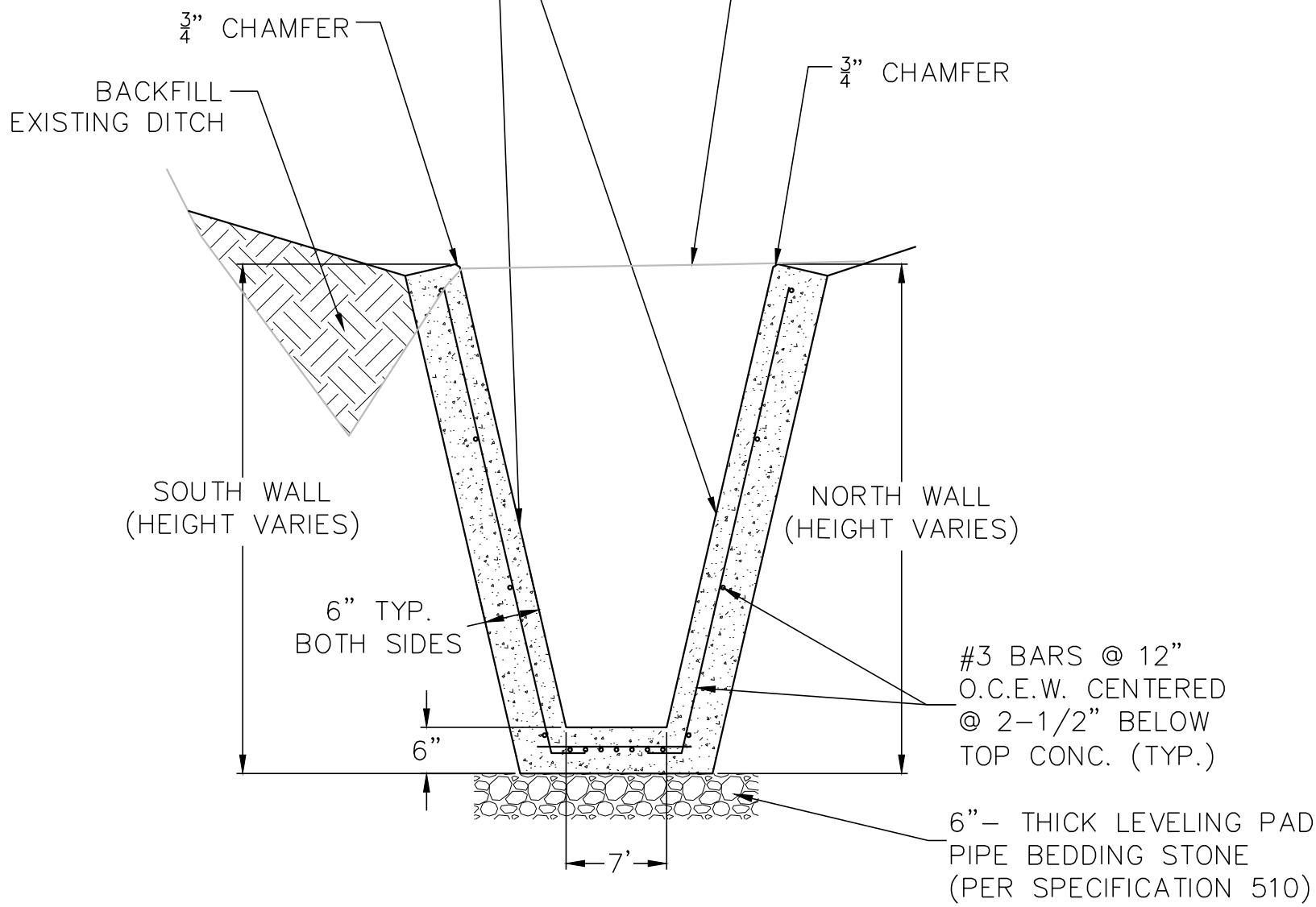
HEADWALL AT STA 8+27.61

- CONCRETE-LINED CHANNEL NOTES**
1. ALL TOP, INSIDE EDGES OF CONCRETE-LINED CHANNELS SHALL BE CHAMFERED  $\frac{3}{4}$ ".
  2. CONTROL/EXPANSION JOINTS SHALL BE EVENLY SPACED (MAXIMUM 40' APART) WITH TOOLED JOINTS AT 10-FOOT MIN. SPACING.
  3. ALL REBAR SHALL HAVE A MINIMUM OF 2" OF CLEAR COVER UNLESS OTHERWISE NOTED.
  4. ALL CONCRETE SHALL BE CLASS A PER SPECIFICATION 403.
  5. ALL REINFORCING STEEL SHALL BE GRADE 60 PER SPECIFICATION 406.

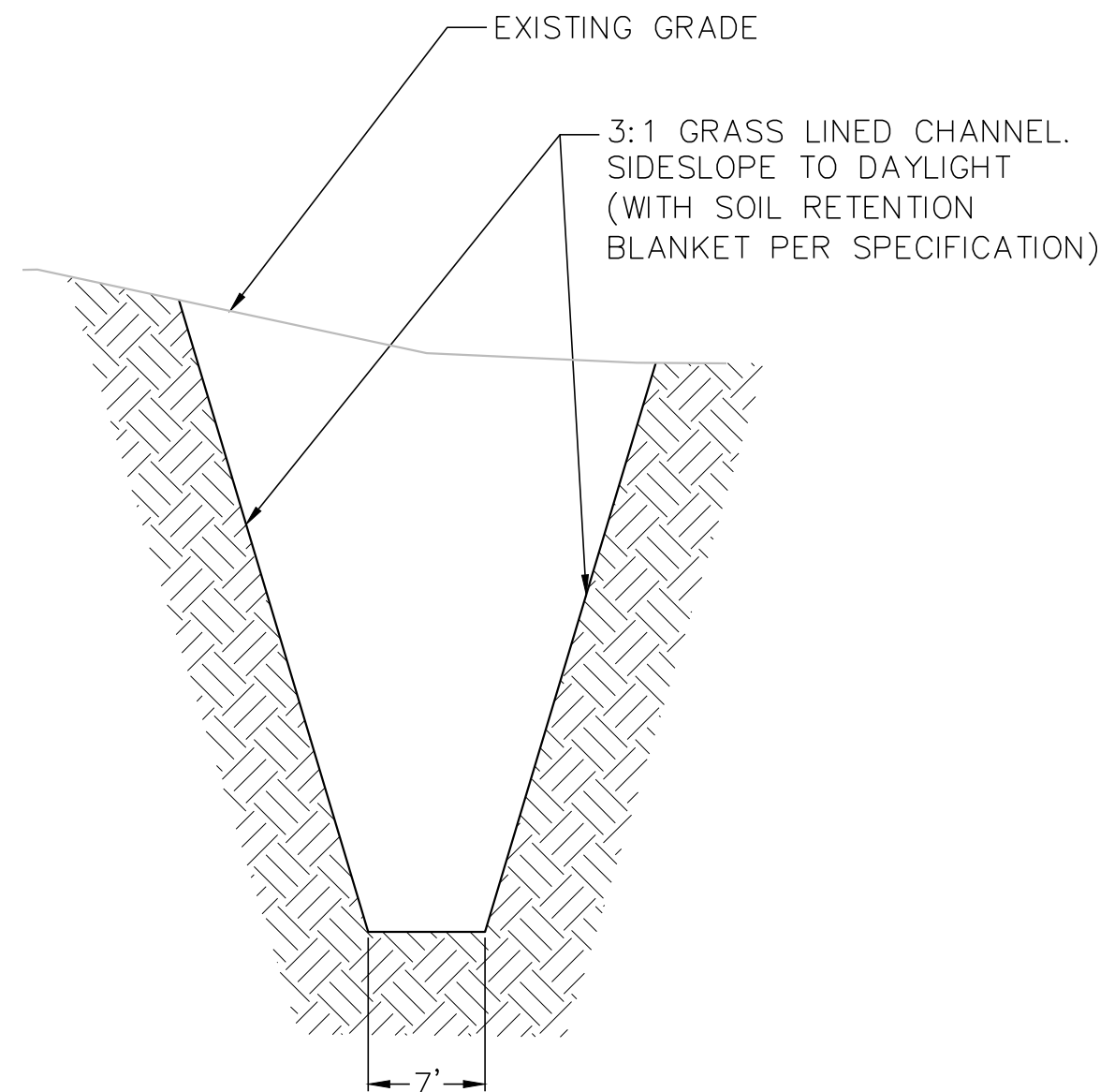
SIDE SLOPE VARIES (VERTICAL TO 3:1) PER LOCATION IN TRANSITION ZONE CONCRETE LINING TO DAYLIGHT



7' CONCRETE-LINED CHANNEL  
TYPICAL SECTION  
STA 3+07.98 - STA 8+27.61  
(NTS)



7' CONCRETE-LINED CHANNEL  
TRANSITION SECTION  
STA 2+61.55 - STA 3+07.98  
(NTS)



7' GRASS-LINED CHANNEL  
TYPICAL SECTION  
STA 1+00.00 - STA 2+61.55  
(NTS)



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TBPLS FIRM REGISTRATION NO.: 10065600

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0 1"  
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CHANNEL SECTION VIEWS

GREENLAWN STORM DRAINAGE IMPROVEMENTS  
GREENLAWN BOULEVARD (PARKSIDE CIR. TO GATTIS SCHOOL RD.)  
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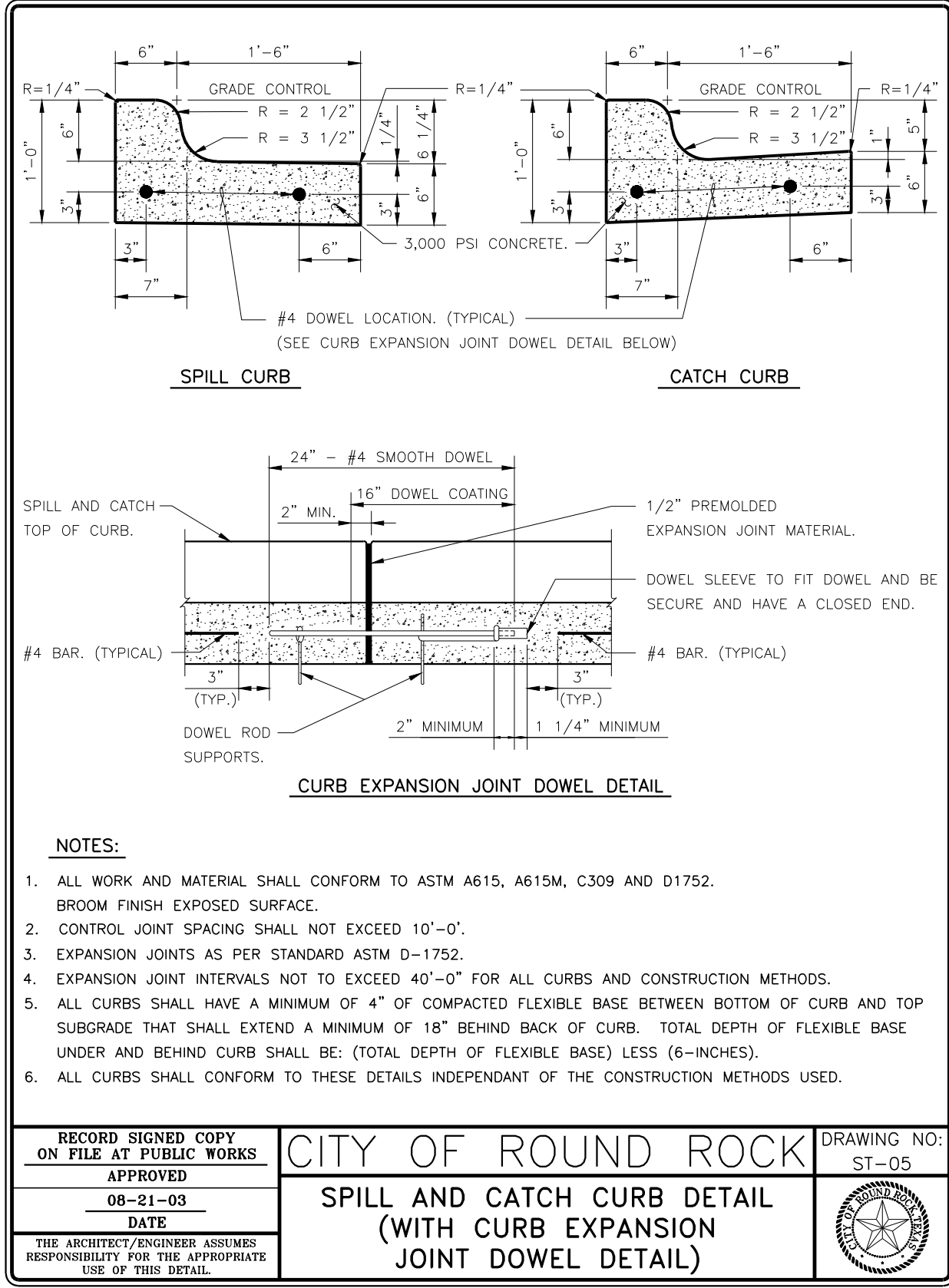
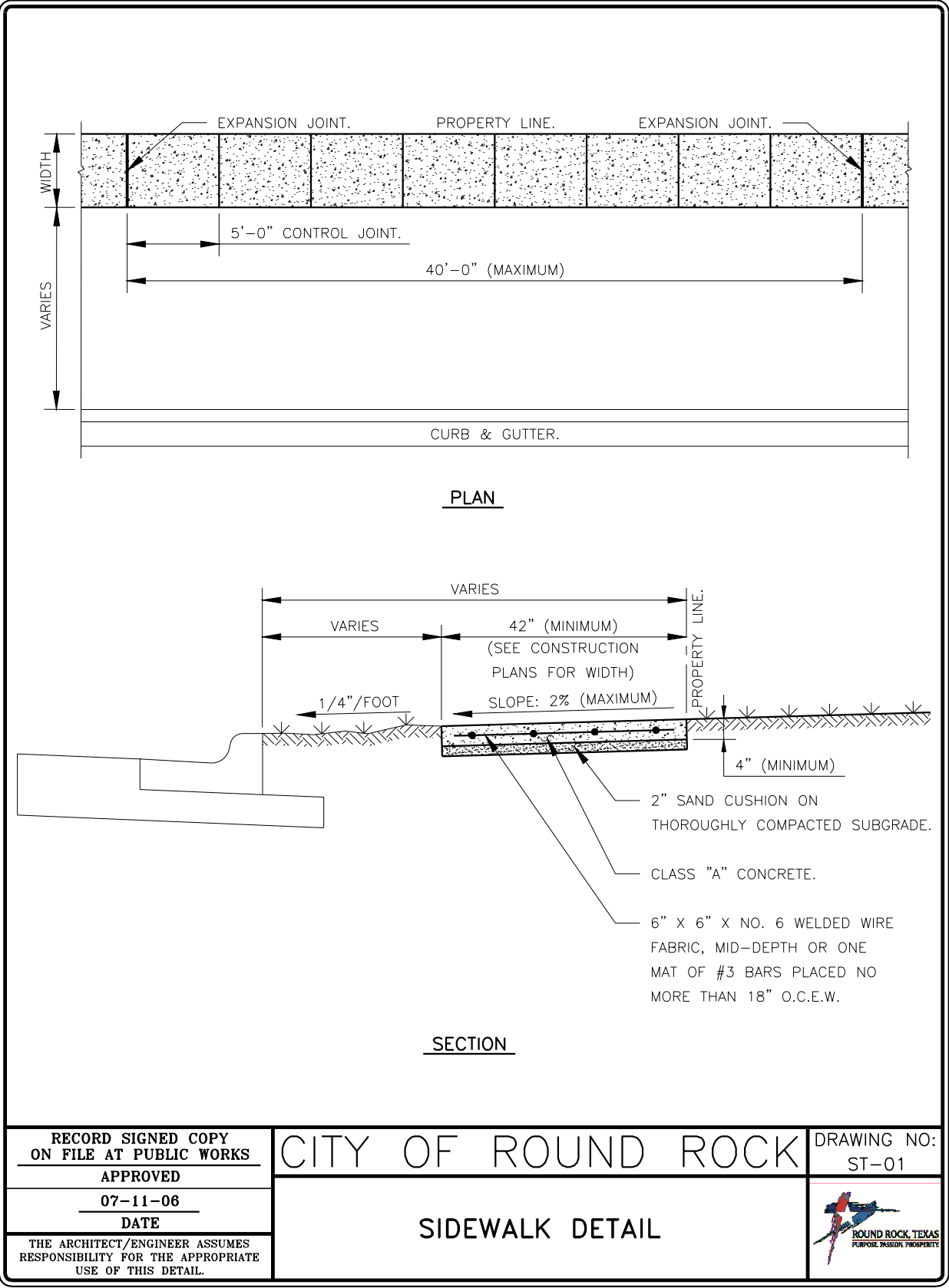
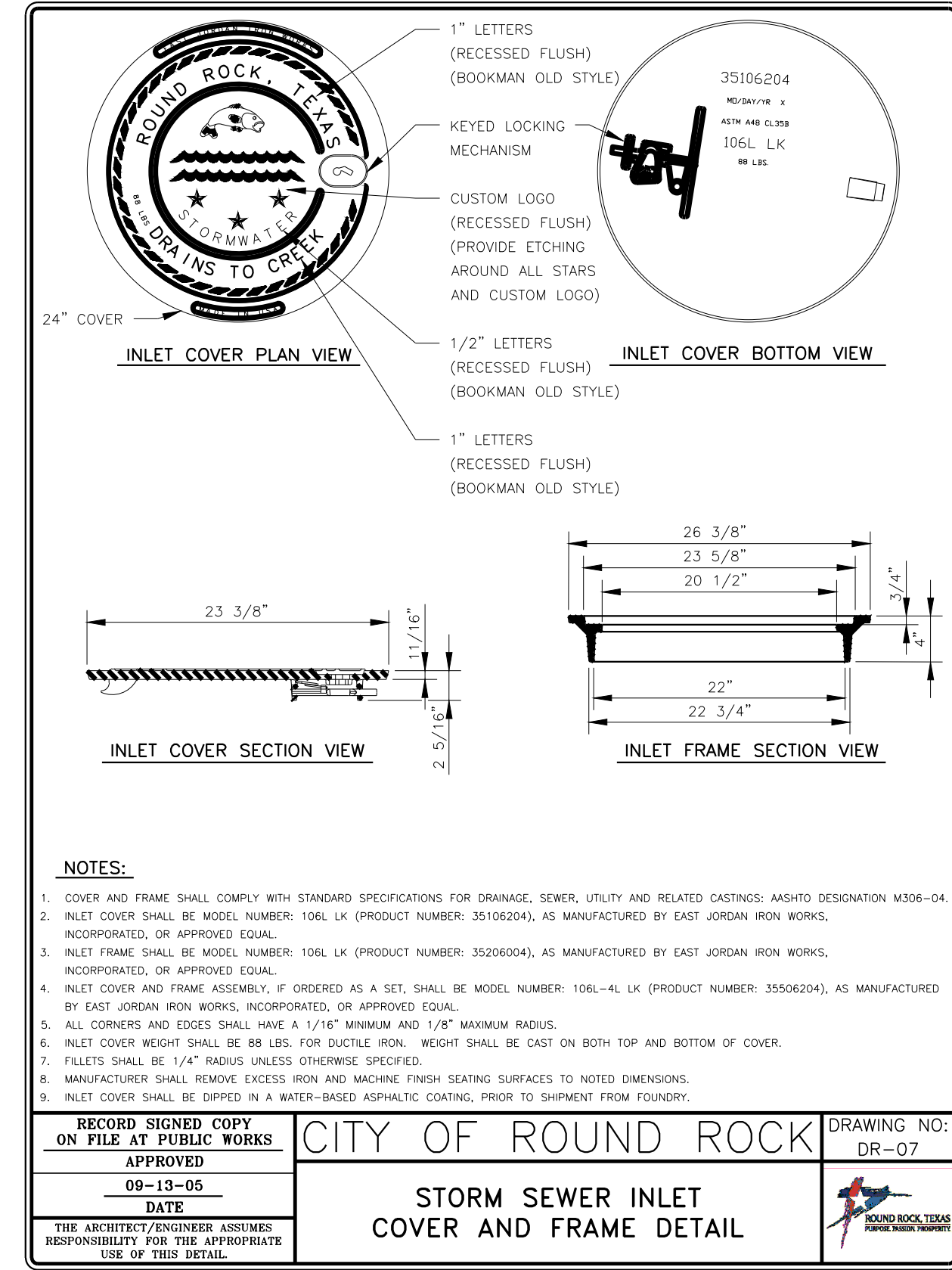
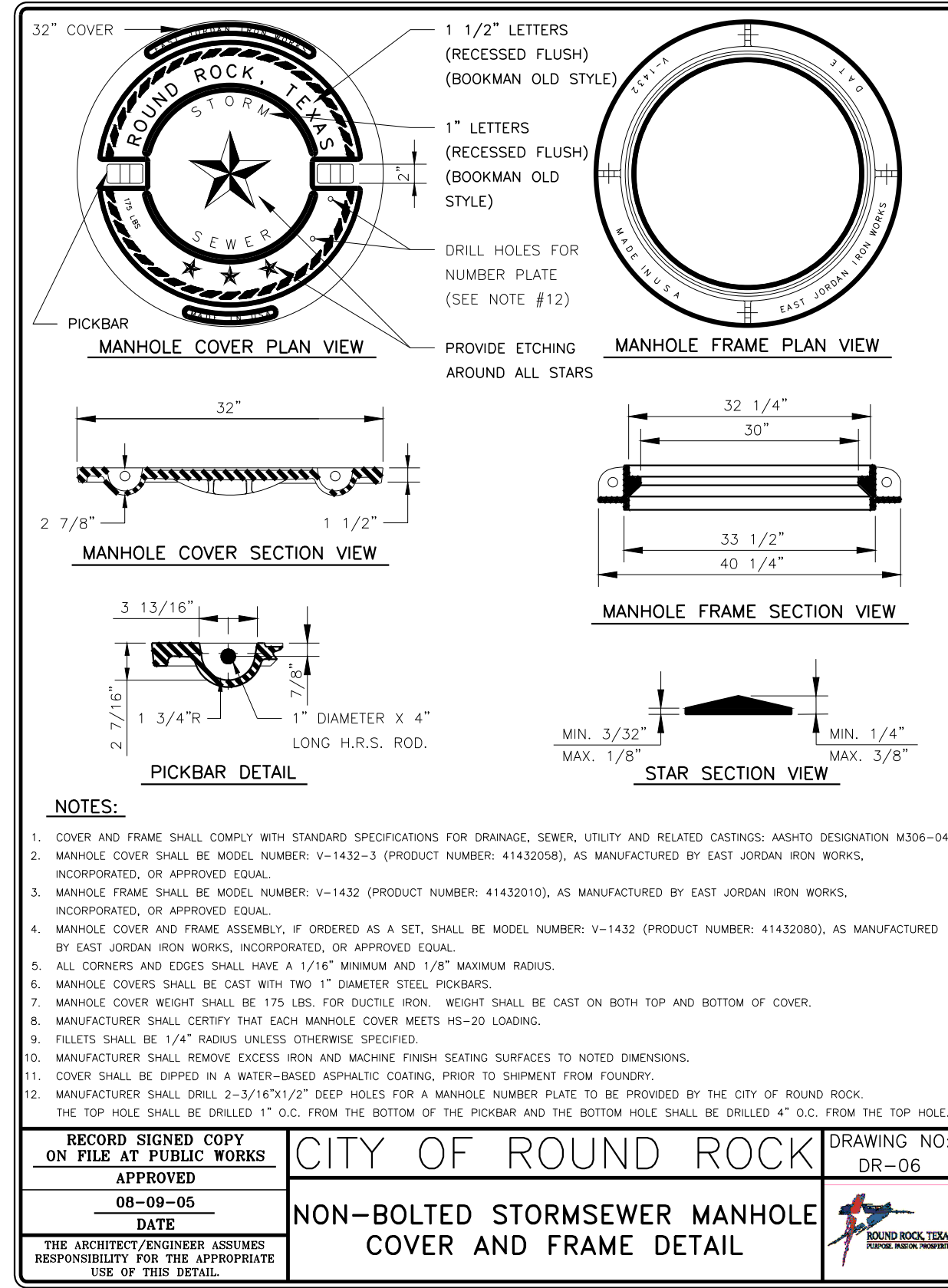
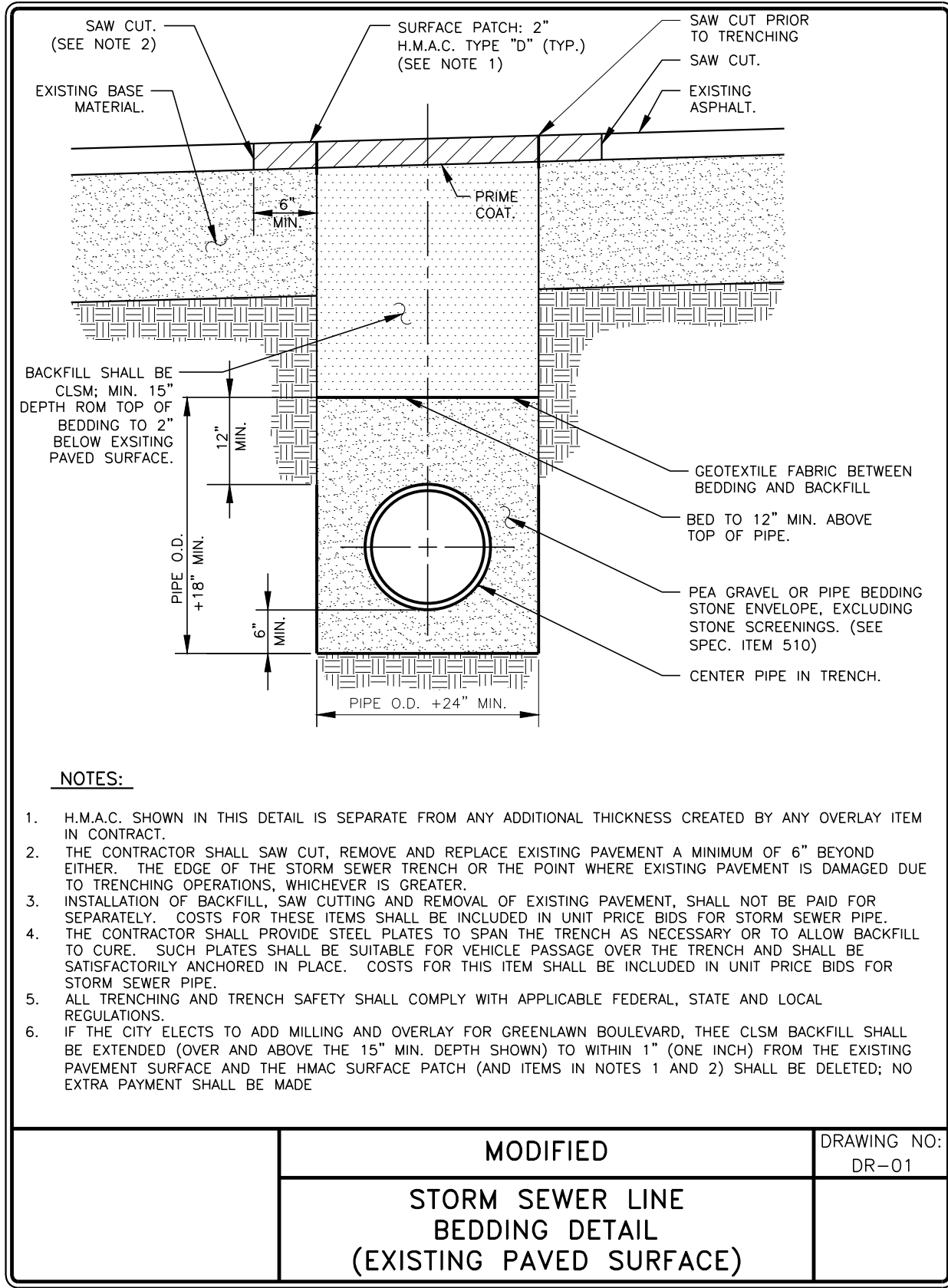
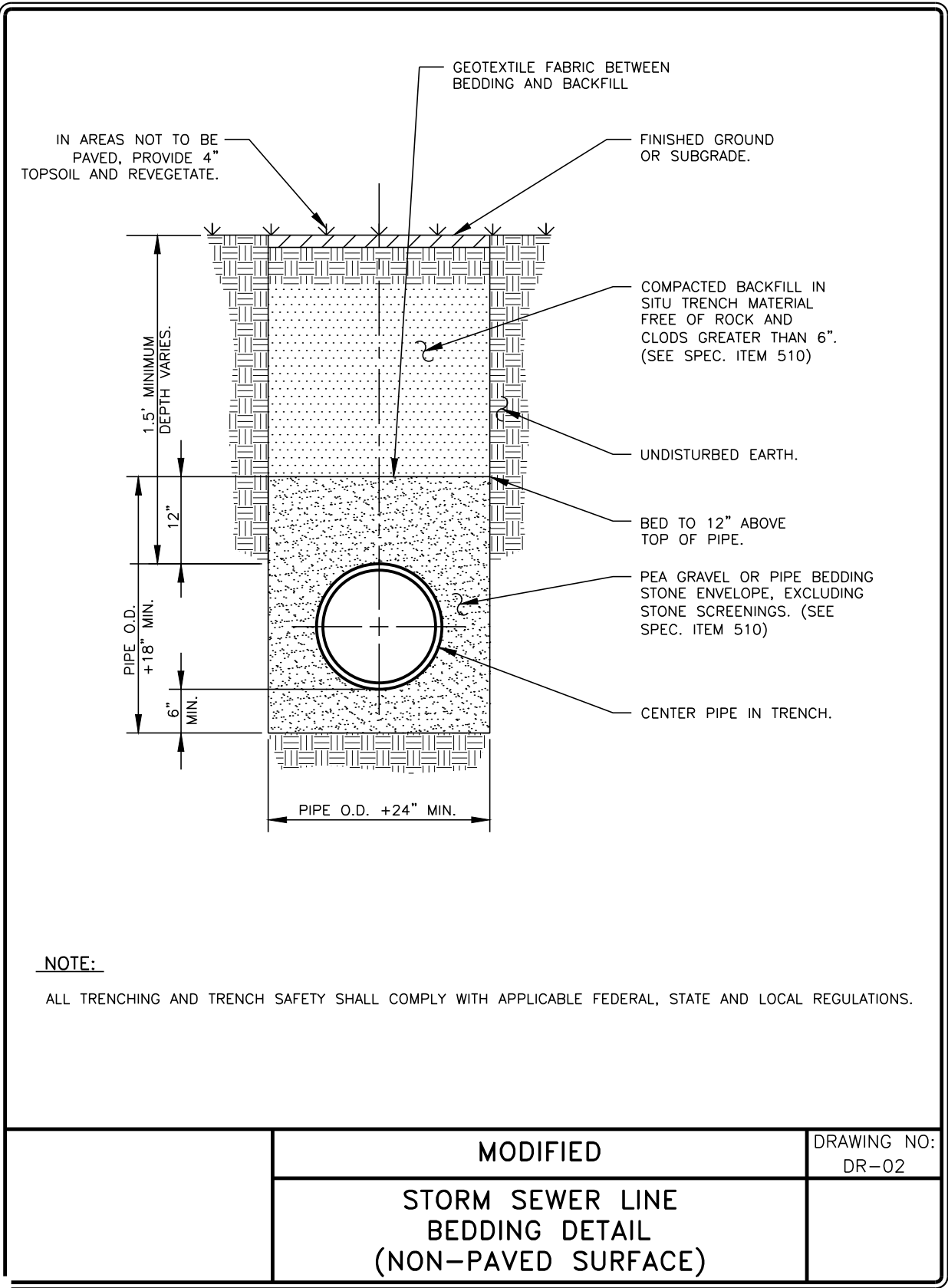












NO.	DATE	DESCRIPTION	BY

0 1"

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## DRAINAGE AND MISC. DETAILS

GREENLAWN STORM DRAINAGE IMPROVEMENTS  
GREENLAWN BOULEVARD (PARKSIDE CIR. TO GATTIS SCHOOL RD.)  
ROUND ROCK, TEXAS 78664

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**mwm**  
DesignGroup

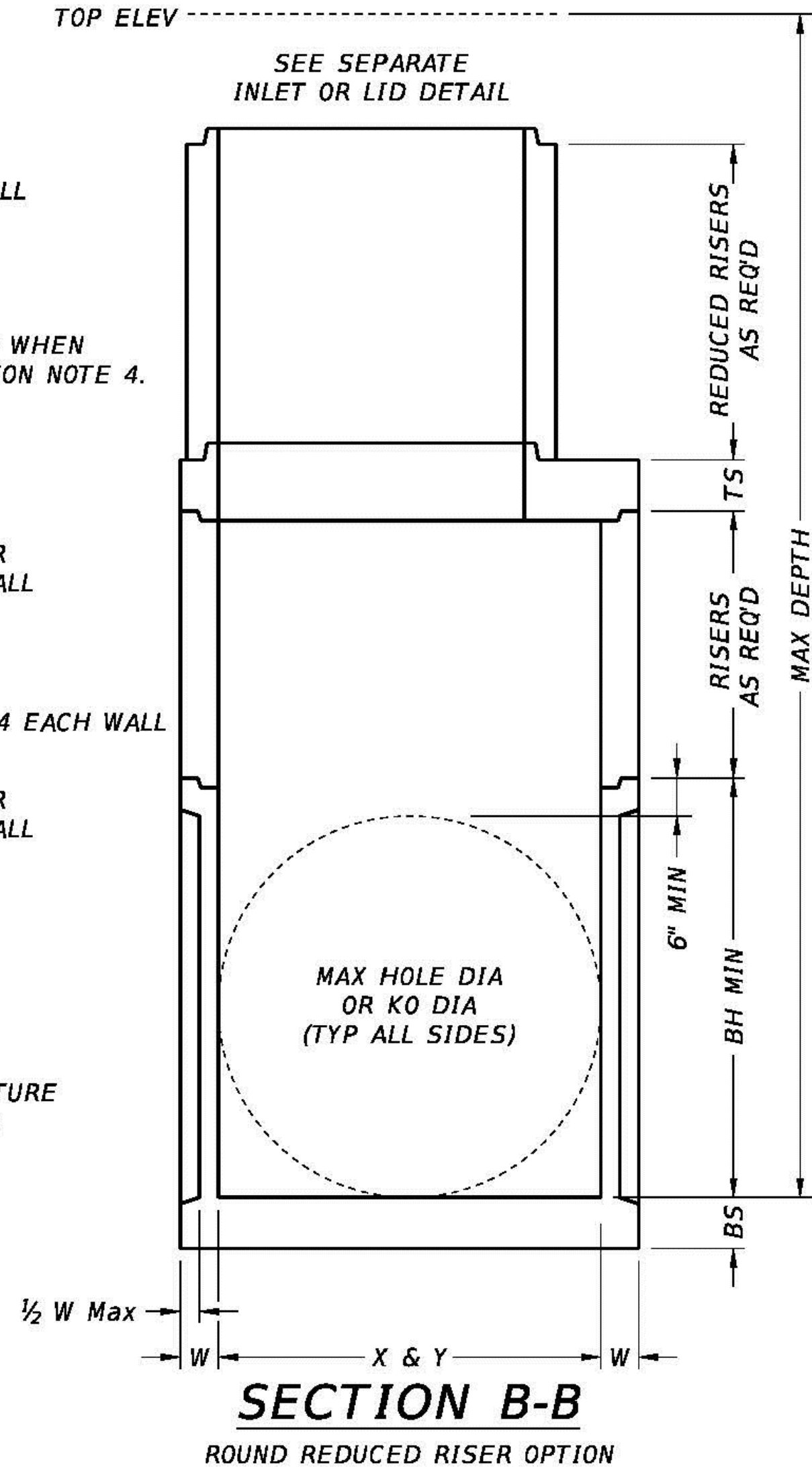
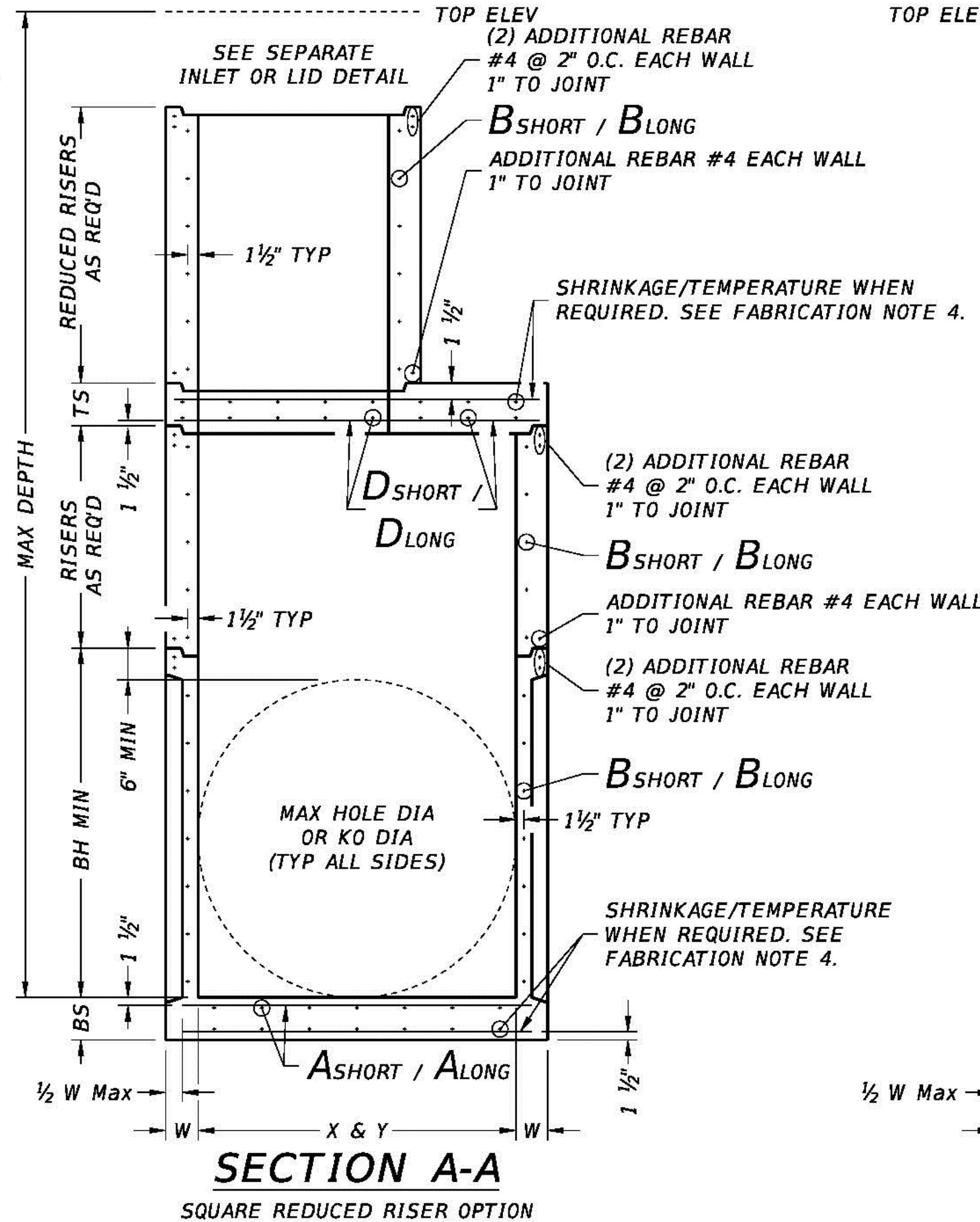
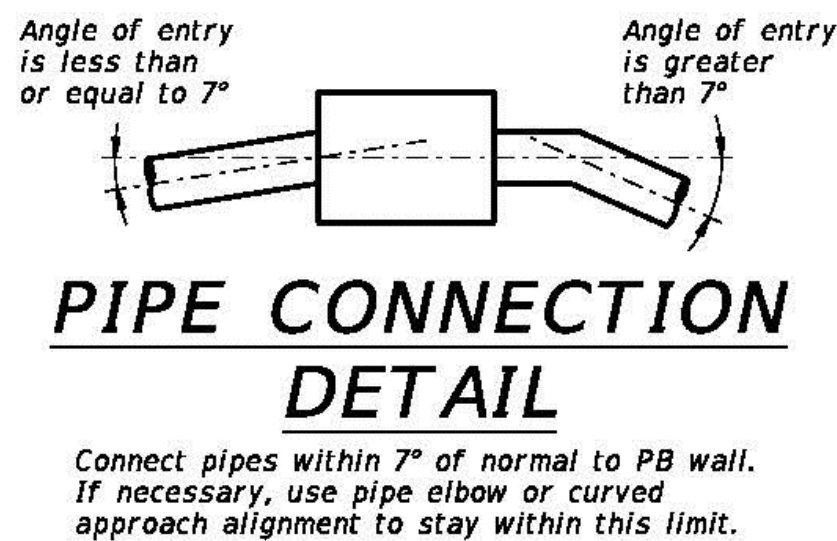
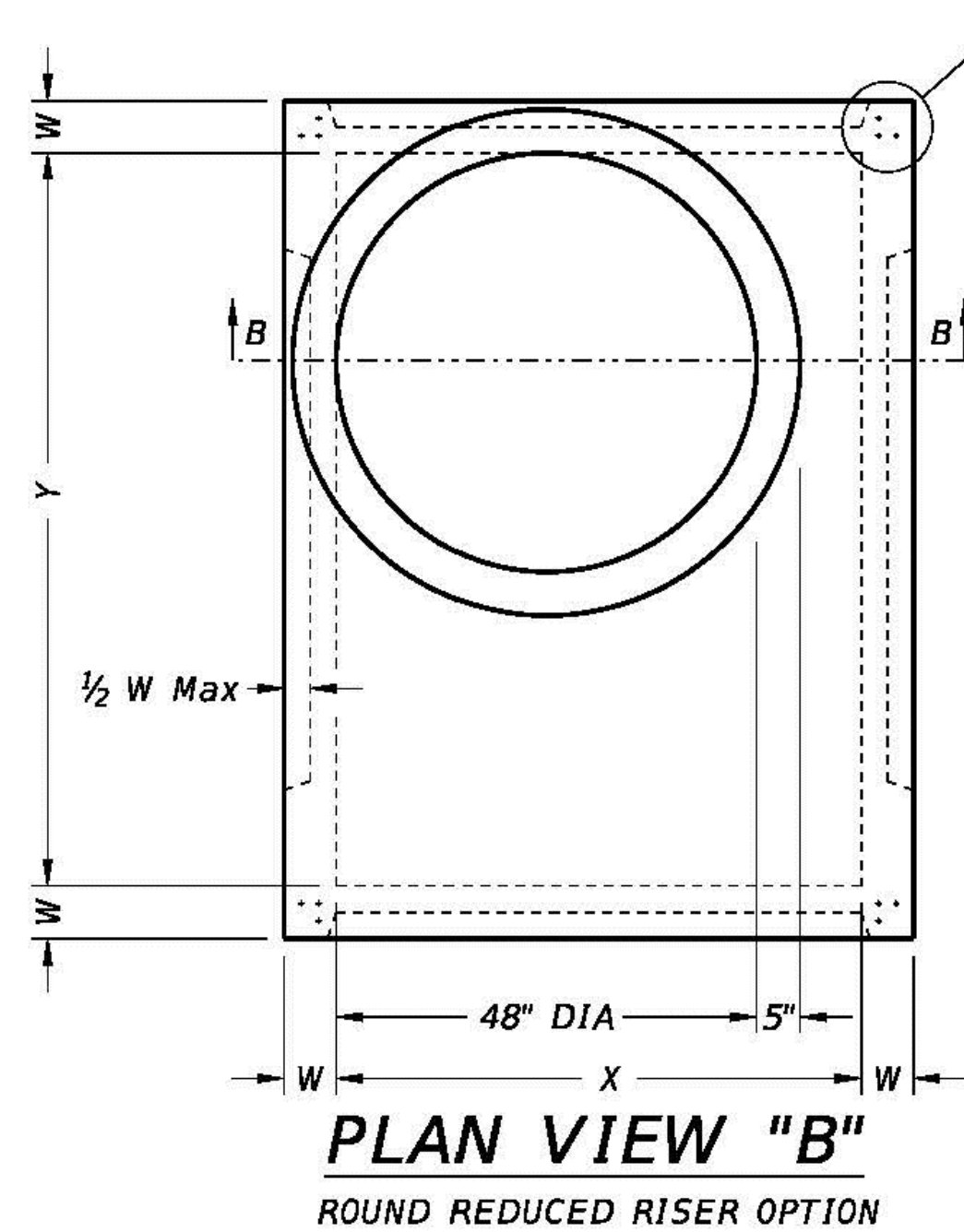
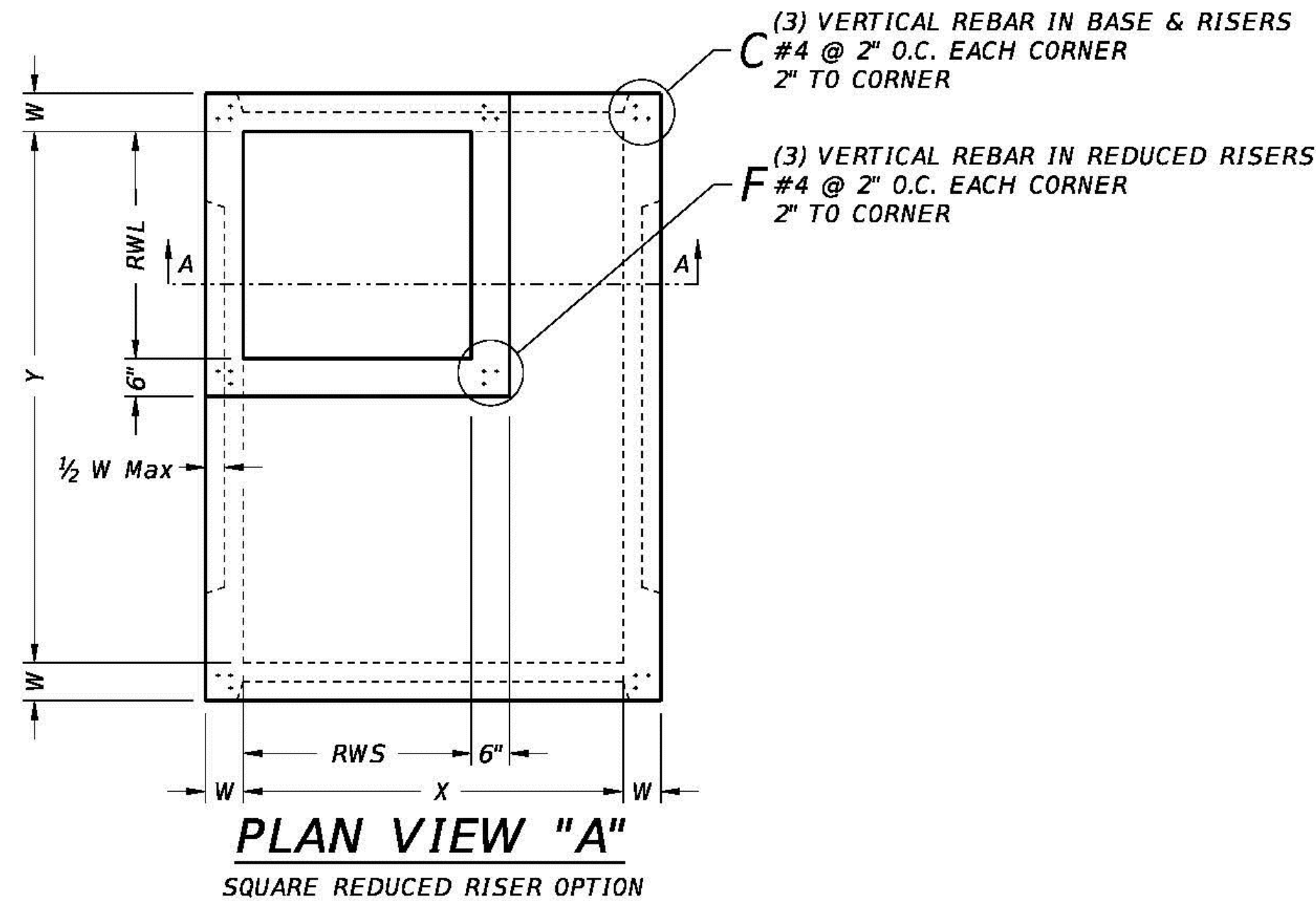
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TBPE FIRM REGISTRATION NO.: F-1416  
TBPLS FIRM REGISTRATION NO.: 10065600



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- FABRICATION NOTES:**
1. Provide Class "H" concrete in accordance with Item 421 and having a minimum compressive strength of 5,000 psi.
  2. Provide Grade 60 reinforcing steel or equivalent area of WWR.
  3. Provide typical clear cover of 1 1/2" to reinforcing steel at interior or exterior walls.
  4. Walls or slabs with a thickness of 8" or greater require shrinkage and temperature reinforcing steel. Provide steel area = 0.11 in<sup>2</sup>/ft each way.
  5. No substitution is allowed for vertical and horizontal #4 bars in corners.
  6. Manufacture base and risers to nearest 3" increment.
  7. Design tongue and groove joints for full closure on both shoulders. Minimum spigot depth is 3/4".
  8. Provide lifting devices in conformance with Manufacturer's recommendations.
  9. See sheet PDD for sizes, dimensions, and reinforcing steel not shown.
- INSTALLATION NOTES:**
1. Inverts (benching) to be provided by Contractor. Concrete or mortar used for invert is subsidiary to specified inlet or manhole.
  2. Seal tongue and groove joints with preformed or bulk mastic in conformance with Manufacturer's recommendations. Tongue and groove joints may be grouted no more than 1" between each section, or 1/2 the joint depth, whichever is greater.
  3. Do not grout rubber gasket joints without Manufacturer's recommendation.
  4. For rigid pipe, cut hole in thin wall panel (KO) 4" Max, 2" Min larger than pipe OD.
  5. For flexible pipe, consult boot/seal Manufacturer's specification for placement tolerance and hole size. Center pipe in hole and install boot/seal per Manufacturer's specification.
- GENERAL NOTES:**
1. Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PDD for sizes.
  2. Designed according to ASTM C913.
  3. Payment for precast base is subsidiary to the specified inlet, per Item 465, "Junction Boxes, Manholes, and Inlets."

Cover dimensions are clear dimensions, unless noted otherwise.

HL93 LOADING

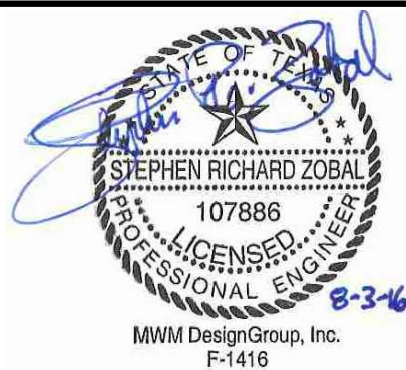
Texas Department of Transportation

Bridge Division Standard

PRECAST BASE

PB

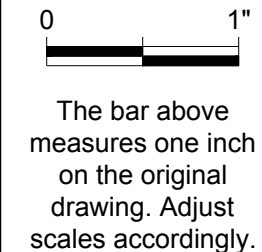
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©TxDOT January 2015	CONT	SECT	JOB	HIGHWAY
REVISIONS				
DIST	COUNTY	SHEET NO.		



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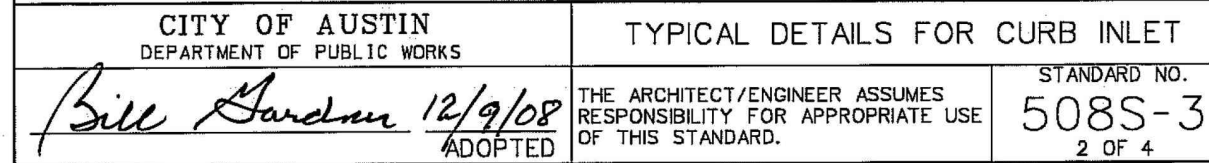
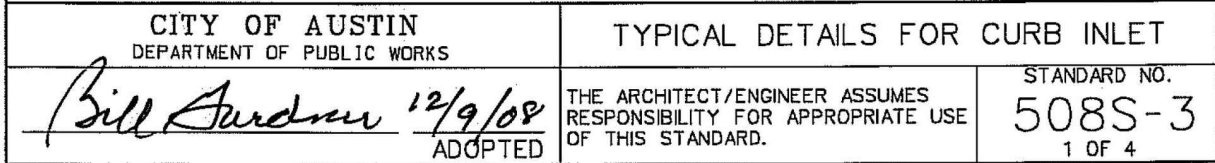
NO.	DATE	DESCRIPTION	BY



DRAINAGE AND MISC. DETAILS

GREENLAWN STORM DRAINAGE IMPROVEMENTS  
GREENLAWN BOULEVARD (PARKSIDE CIR. TO GATTIS SCHOOL RD.)  
ROUND ROCK, TEXAS 78664





Technical drawings of three reinforcement bars (BAR G, BAR K, and BAR A) showing dimensions in millimeters (mm) and inches (").

**BAR G:**

- Vertical section: 180 mm (7")
- Diagonal section: 560 mm (22")
- Vertical section: 740 mm (2'-5") MIN.

**BAR K:**

- Horizontal section: 300 mm (12")
- Vertical section: 500 mm (19 1/2")
- Horizontal section: 90 mm (3 1/2")

**BAR A:**

- Horizontal section: 90 mm (3 1/2")
- Horizontal section: 60 mm (2 1/2")
- Vertical section: 1.2 m (3'-10") MIN.

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPICAL DETAILS FOR CURB INLET	
<u>Bill Gurem</u> 12/9/08 _____ ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. 508S-3 3 OF 4

REFERENCES:

FOR EXPANSION JOINT DOWEL AND DOWEL LOCATION DETAILS  
SEE STD. 430S-3, "CURB EXPANSION JOINT DOWEL DETAIL".

FOR 18" MANHOLE FRAME AND COVER DETAILS  
SEE STD. 503S-1, "18" COVER AND FRAME".

CITY OF AUSTIN DEPARTMENT OF PUBLIC WORKS		TYPICAL DETAILS FOR CURB INLET	
<i>Bill Gardner</i> 12/9/08 ADOPTED		THE ARCHITECT/ENGINEER ASSUMES RESPONSIBILITY FOR APPROPRIATE USE OF THIS STANDARD.	STANDARD NO. <b>508S-3</b> 4 of 4

1. FOR INLET 0-1, THE CONTRACTOR SHALL TIE TO THE 5'X2' BOX CULVERT WITH SMOOTH #4 AND POUR AROUND THE BOX CULVERT.
2. THE CONTRACTOR HAS THE OPTION TO PROPOSE A PRECAST INLET AND AN ALTERNATE CONNECTION TO THE 5'X2' BOX CULVERT.



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TBPLS FIRM REGISTRATION NO.: 10065600

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0 1"

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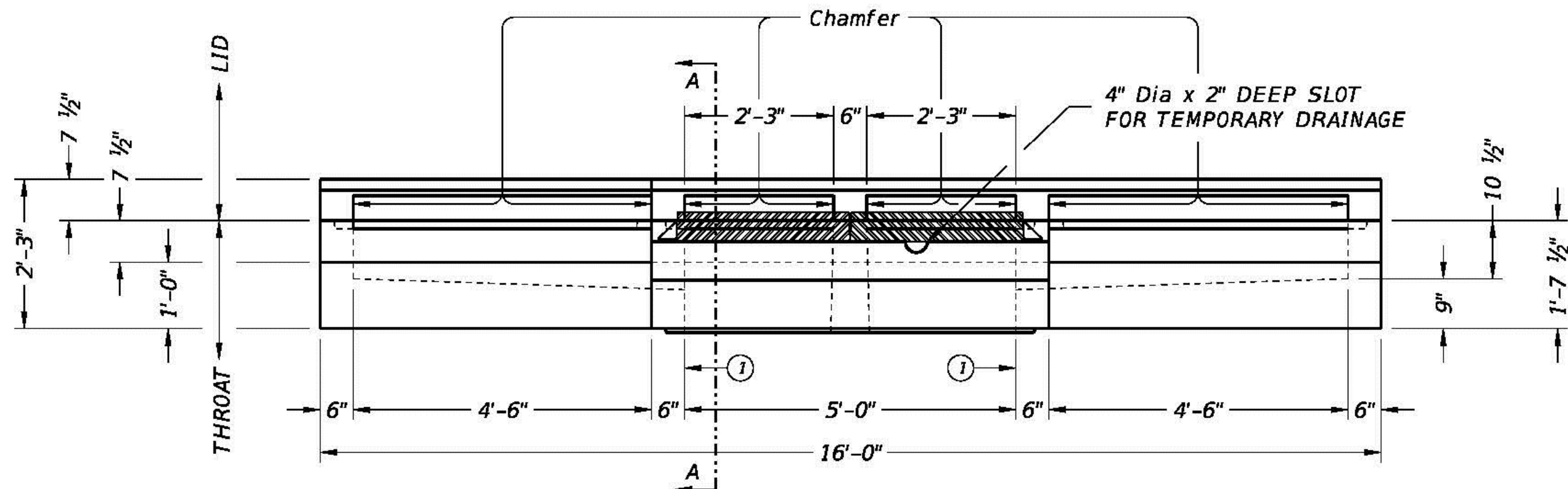
GREENLAWN STORM DRAINAGE IMPROVEMENTS  
GREENLAWN BOULEVARD (PARKSIDE CIR. TO GATTIS SCHOOL RD.)  
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16 OF 19

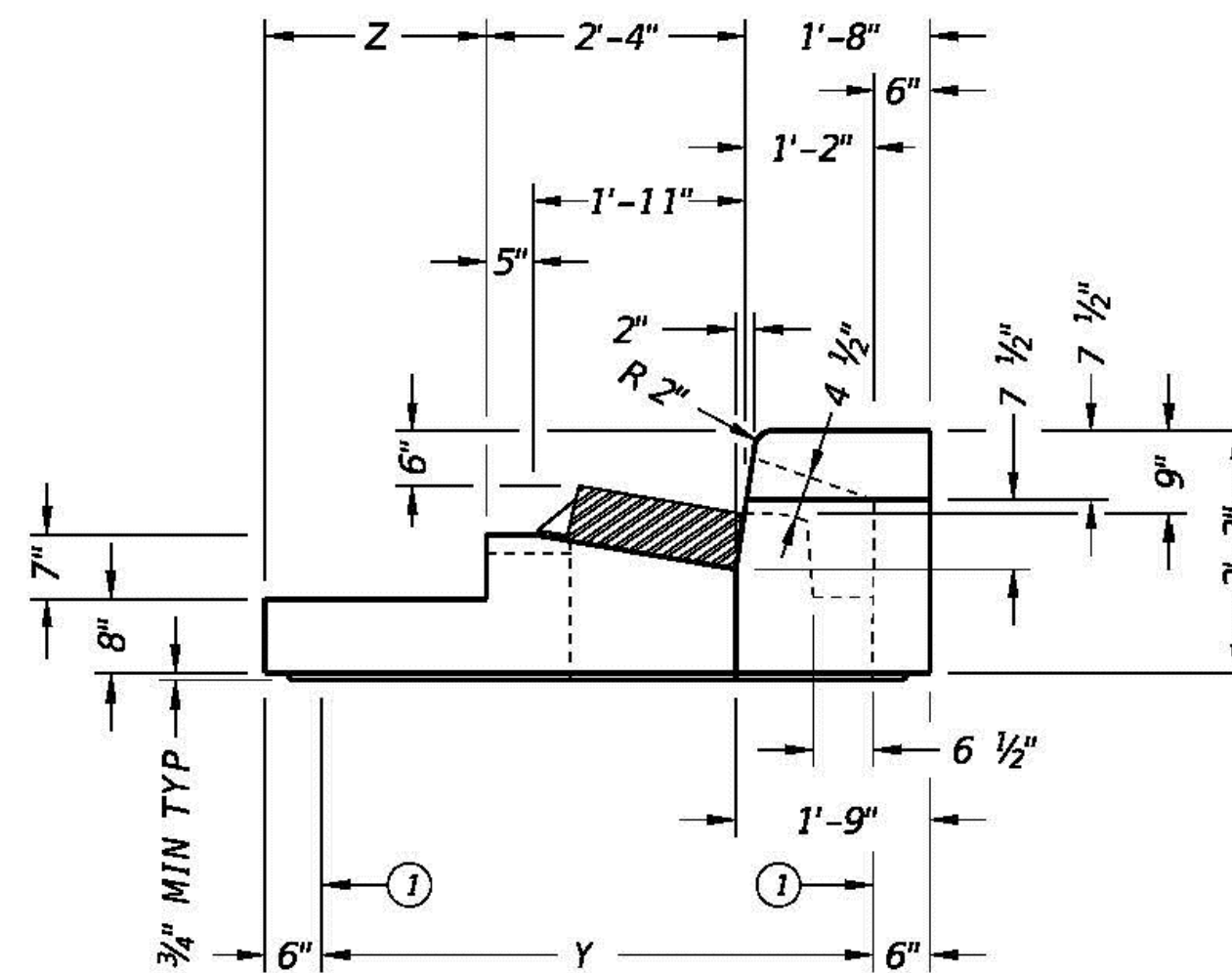


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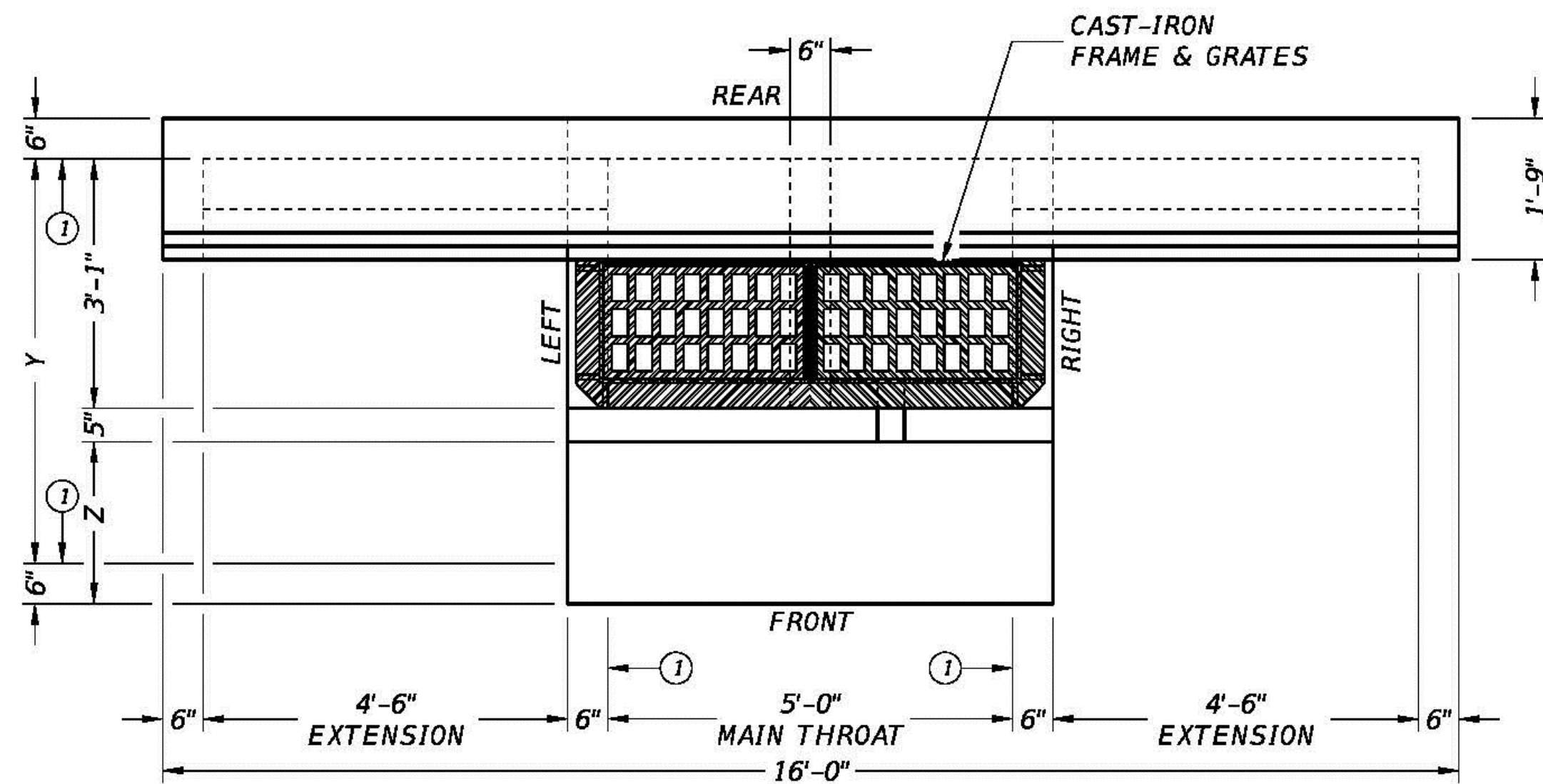


**FRONT VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)



**SECTION A-A**

① Matches inside face of wall of precast base or riser below inlet.

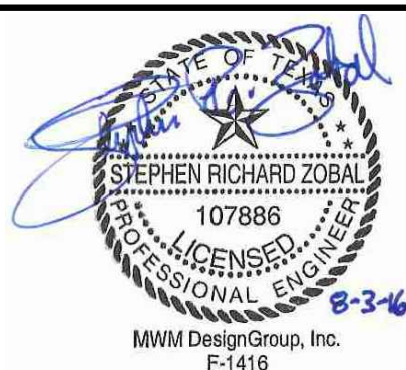


**PLAN VIEW**  
(SHOWING LEFT AND RIGHT EXTENSIONS)

HS20 LOADING

SHEET 1 OF 2

		Bridge Division Standard	
<b>PRECAST CURB INLET UNDER ROADWAY</b>			
<b>PCU</b>			
FILE: prest004.dgn	DN: TxDOT	CK: TxDOT	DM: TxDOT
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NO.	DATE	DESCRIPTION	BY

0 1"  
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**DRAINAGE AND MISC. DETAILS**

GREENLAWN STORM DRAINAGE IMPROVEMENTS  
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	Size	MAX DEPTH = 15 ft. to top of BASE SLAB										MAX DEPTH = 25 ft. to top of BASE SLAB										Min Height (See Gen Note 3)	Max HOLE DIA (See Fab Note 2)	Max KO DIA (See Fab Note 2)
		Base Slab			Base Unit or Riser Walls			Below Grade Slab (w/PJB) Reducing Slab (w/PB)				Base Slab			Base Unit or Riser Walls			Below Grade Slab (w/PJB) Reducing Slab (w/PB)						
		Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Reduced Riser Size	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness	Reduced Riser Size	Short Span Reinf Steel Area	Long Span Reinf Steel Area	Thickness			
		X x Y	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong	TS	Ashort	Along	BS	Bshort	Blong	W	RWSxRWL or ID	Dshort	Dlong			
	ft.	in <sup>2</sup> /ft	in <sup>2</sup> /ft	in.	in <sup>2</sup> /ft	in <sup>2</sup> /ft	in.	ft. **	in <sup>2</sup> /ft	in <sup>2</sup> /ft	in.	in <sup>2</sup> /ft	in <sup>2</sup> /ft	in.	in <sup>2</sup> /ft	in <sup>2</sup> /ft	in.	ft. **	in <sup>2</sup> /ft	in <sup>2</sup> /ft	in.	ft.	in.	in.
Precast Junction Box (PJB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	0.37	0.37	9	0.29	0.29	6	0.24	0.24	6	N/A	0.37	0.37	9	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	0.41	0.41	9	0.47	0.47	6	0.38	0.38	6	N/A	0.41	0.41	9	4.5	48	48
	3x5	0.29	0.18	6	0.19	0.35	6	N/A	0.48	0.48	9	0.39	0.18	6	0.23	0.59	6	N/A	0.48	0.48	9	3.5	36/60	36/60
	4x5	0.36	0.18	6	0.22	0.34	6	N/A	0.42	0.42	9	0.53	0.26	6	0.39	0.59	6	N/A	0.42	0.42	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	N/A	0.43	0.43	9	0.62	0.62	6	0.59	0.59	6	N/A	0.43	0.43	9	5.5	60	60
	5x6	0.27	0.27	9	0.34	0.45	6	N/A	0.48	0.48	9	0.47	0.45	9	0.38	0.54	8	N/A	0.48	0.48	9	5.5	60/72	60/72
	6x6	0.27	0.27	9	0.45	0.45	6	N/A	0.56	0.56	9	0.52	0.52	9	0.54	0.54	8	N/A	0.56	0.56	9	6.5	72	72
	8x8	0.46	0.46	9	0.51	0.51	8	N/A	0.45	0.45	12	0.87	0.87	9	0.59	0.59	10	N/A	0.45	0.45	12	8.5	96	72
INLETS  JUNCTION BOXES  Precast Base (PB)	3x3	0.23	0.23	6	0.19	0.19	6	N/A	N/A	N/A	N/A	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	3.5	36	36
	4x4	0.29	0.29	6	0.24	0.24	6	N/A	N/A	N/A	N/A	0.47	0.47	6	0.38	0.38	6	N/A	N/A	N/A	N/A	4.5	48	48
	3x5	0.29	0.18	6	0.19	0.35	6	3x3	0.30	0.34	9	0.39	0.18	6	0.23	0.59	6	3x3	0.40	0.40	9	3.5	36/60	36/60
	4x5	0.36	0.18	6	0.22	0.34	6	3x3	0.30	0.30	9	0.53	0.26	6	0.39	0.59	6	3x3	0.46	0.37	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	4x4	0.30	0.30	9	0.53	0.26	6	0.39	0.59	6	4x4	0.39	0.39	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	48"	0.39	0.39	9	0.53	0.26	6	0.39	0.59	6	48"	0.47	0.47	9	4.5	48/60	48/60
	4x5	0.36	0.18	6	0.22	0.34	6	3x5	0.33	0.40	9	0.53	0.26	6	0.39	0.59	6	3x5	0.48	0.48	9	4.5	48/60	48/60
	5x5	0.36	0.36	6	0.34	0.34	6	3x3	0.34	0.34	9	0.62	0.62	6	0.59	0.59	6	3x3	0.53	0.53	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	4x4	0.36	0.36	9	0.62	0.62	6	0.59	0.59	6	4x4	0.64	0.64	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	48"	0.36	0.36	9	0.62	0.62	6	0.59	0.59	6	48"	0.64	0.64	9	5.5	60	60
	5x5	0.36	0.36	6	0.34	0.34	6	3x5	0.34	0.40	9	0.62	0.62	6	0.59	0.59	6	3x5	0.53	0.53	9	5.5	60	60
	5x6	0.31	0.31	9	0.34	0.45	6	3x3	0.34	0.34	9	0.47	0.45	9	0.38	0.54	8	3x3	0.61	0.50	9	5.5	60/72	60/72
	5x6	0.27	0.27	9	0.34	0.45	6	4x4	0.36	0.45	9	0.47	0.45	9	0.38	0.54	8	4x4	0.74	0.57	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	48"	0.36	0.45	9	0.47	0.45	9	0.38	0.54	8	48"	0.74	0.57	9	5.5	60/72	60/72
	5x6	0.29	0.29	9	0.34	0.45	6	3x5	0.45	0.45	9	0.47	0.45	9	0.38	0.54	8	3x5	0.61	0.61	9	5.5	60/72	60/72
	6x6	0.29	0.29	9	0.45	0.45	6	3x3	0.41	0.41	9	0.52	0.52	9	0.54	0.54	8	3x3	0.74	0.74	9	6.5	72	72
	6x6	0.27	0.27	9	0.45	0.45	6	4x4	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	4x4	0.87	0.87	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	48"	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	48"	0.87	0.87	9	6.5	72	72
	6x6	0.29	0.29	9	0.45	0.45	6	3x5	0.45	0.45	9	0.52	0.52	9	0.54	0.54	8	3x5	0.87	0.87	9	6.5	72	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x3	0.61	0.61	12	0.91	0.91	9	0.70	0.70	10	3x3	0.85	0.85	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	4x4	0.70	0.70	12	0.87	0.87	9	0.70	0.70	10	4x4	1.01	1.01	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	48"	0.70	0.70	12	0.87	0.87	9	0.70	0.70	10	48"	1.01	1.01	12	8.5	96	72
	8x8	0.52	0.52	9	0.51	0.51	8	3x5	0.70	0.85	12	0.87	0.87	9	0.70	0.70	10	3x5	1.01	1.01	12	8.5	96	72

\*\* Unless otherwise indicated.


FABRICATION NOTES:

- Maximum spacing of reinforcement is 8".
- At manufacturer's option, provide cast or cored holes or thin wall panels (KO) to the maximum diameter shown for each. When no penetration is required, it is acceptable to provide a wall with no sectional reduction.

GENERAL NOTES:

- Precast Junction Box consists of base slab, base unit, risers (as required), and below grade slab. See sheet PJB for details.
- Precast Base consists of base slab, base unit, risers (as required), reducing slab (as required), and reduced risers (as required). See sheet PB for details.
- Min Height shown is for stock base units. Use stock base units whenever practical. Smaller height base units can be used in special installation circumstances, when noted elsewhere in the plans. Absolute minimum height of base units is 2'-6".

HL93 LOADING

		Bridge Division Standard	
DESIGN DATA FOR PRECAST BASE AND JUNCTION BOX			
PDD			
FILE: prestd10.dgn	DN: TxDOT	CK: TxDOT	DM: TxDOT
©TxDOT January 2015	CONT SECT	JOB	HIGHWAY
REVISIONS		DIST	COUNTY
			SHEET NO.



305 East Huntland Drive  
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TBAE FIRM REGISTRATION NO.: 1452  
TBPE FIRM REGISTRATION NO.: F-1416  
TBPLS FIRM REGISTRATION NO.: 10065600

NO.	DATE	DESCRIPTION	BY

0 1"  
The bar above  
measures one inch  
on the original  
drawing. Adjust  
scales accordingly.

DRAINAGE AND MISC. DETAILS

GREENLAWN STORM DRAINAGE IMPROVEMENTS  
GREENLAWN BOULEVARD (PARKSIDE CIR. TO GATTIS SCHOOL RD.)  
ROUND ROCK, TEXAS 78664

PLOTTED: 8/3/2016  
JOB NO: 702-13